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

Level IV Data Package for
Hahn and Associates
Mult 802 Decommisioning
Apex Laboratories Work Order number:
A9E0508

The information contained in this Data Package is intended solely for the purpose of validating client sample results submitted under the associated Chain of Custody(ies). An effort has been made to remove all traceable non-client data. Any incidental inclusion of non-client data is considered privileged and confidential information. The use of this information for any purpose other than data validation is strictly prohibited, and constitutes a breach of contract.

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

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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: A9E0508

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, May 29, 2019

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

RE: A9E0508 - 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 A9E0508, which was received by the laboratory on 5/15/2019 at 12:35:00PM.

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	4.9 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

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**	**A9E0508 - 05 29 19 1543**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
2708-190513-001	A9E0508-01	Solid	05/13/19 15:15	05/15/19 12:35
2708-190513-002	A9E0508-02	Solid	05/13/19 16:00	05/15/19 12:35
2708-190514-004	A9E0508-04	Solid	05/14/19 15:00	05/15/19 12:35
COMP1	A9E0508-05	Solid	05/13/19 15:15	05/15/19 12:35

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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**	**A9E0508 - 05 29 19 1543**

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
COMP1 (A9E0508-05)				**Matrix: Solid**		**Batch: 9051067**		
Diesel	**91500**	---	16900	mg/kg	100	05/21/19	NWTPH-Dx	**F-17**
Oil	**176000**	---	33900	mg/kg	100	05/21/19	NWTPH-Dx	**F-17**
Surrogate: o-Terphenyl (Surr)			*Recovery: %*	*Limits: 50-150 %*	*100*	*05/21/19*	*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**	**A9E0508 - 05 29 19 1543**

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
COMP1 (A9E0508-05)				**Matrix: Solid**			**Batch: 9051006**	**COMP**
Gasoline Range Organics	**2400**	---	1480	mg/kg	10000	05/17/19	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 117 %*		*Limits: 50-150 %*	*1*	*05/17/19*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*97 %*	*50-150 %*	*1*	*05/17/19*	*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**	**A9E0508 - 05 29 19 1543**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
COMP1 (A9E0508-05)				**Matrix: Solid**			**Batch: 9051006**	**COMP**
Acetone	ND	---	296000	ug/kg	10000	05/17/19	5035A/8260C	
Acrylonitrile	ND	---	29600	ug/kg	10000	05/17/19	5035A/8260C	
Benzene	**55400**	---	2960	ug/kg	10000	05/17/19	5035A/8260C	
Bromobenzene	ND	---	7390	ug/kg	10000	05/17/19	5035A/8260C	
Bromochloromethane	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
Bromodichloromethane	ND	---	29600	ug/kg	10000	05/17/19	5035A/8260C	
Bromoform	ND	---	59100	ug/kg	10000	05/17/19	5035A/8260C	
Bromomethane	ND	---	148000	ug/kg	10000	05/17/19	5035A/8260C	
2-Butanone (MEK)	ND	---	148000	ug/kg	10000	05/17/19	5035A/8260C	
n-Butylbenzene	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
sec-Butylbenzene	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
tert-Butylbenzene	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
Carbon disulfide	ND	---	148000	ug/kg	10000	05/17/19	5035A/8260C	
Carbon tetrachloride	ND	---	29600	ug/kg	10000	05/17/19	5035A/8260C	
Chlorobenzene	ND	---	7390	ug/kg	10000	05/17/19	5035A/8260C	
Chloroethane	ND	---	148000	ug/kg	10000	05/17/19	5035A/8260C	
Chloroform	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
Chloromethane	ND	---	73900	ug/kg	10000	05/17/19	5035A/8260C	
2-Chlorotoluene	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
4-Chlorotoluene	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
Dibromochloromethane	ND	---	29600	ug/kg	10000	05/17/19	5035A/8260C	
1,2-Dibromo-3-chloropropane	ND	---	73900	ug/kg	10000	05/17/19	5035A/8260C	
1,2-Dibromoethane (EDB)	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
Dibromomethane	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
1,2-Dichlorobenzene	ND	---	7390	ug/kg	10000	05/17/19	5035A/8260C	
1,3-Dichlorobenzene	ND	---	7390	ug/kg	10000	05/17/19	5035A/8260C	
1,4-Dichlorobenzene	ND	---	7390	ug/kg	10000	05/17/19	5035A/8260C	
Dichlorodifluoromethane	ND	---	29600	ug/kg	10000	05/17/19	5035A/8260C	
1,1-Dichloroethane	ND	---	7390	ug/kg	10000	05/17/19	5035A/8260C	
1,2-Dichloroethane (EDC)	ND	---	7390	ug/kg	10000	05/17/19	5035A/8260C	
1,1-Dichloroethene	ND	---	7390	ug/kg	10000	05/17/19	5035A/8260C	
cis-1,2-Dichloroethene	ND	---	7390	ug/kg	10000	05/17/19	5035A/8260C	
trans-1,2-Dichloroethene	ND	---	7390	ug/kg	10000	05/17/19	5035A/8260C	

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Philip Nerenberg, Lab Director

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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**	**A9E0508 - 05 29 19 1543**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
COMP1 (A9E0508-05)				**Matrix: Solid**			**Batch: 9051006**	**COMP**
1,2-Dichloropropane	ND	---	7390	ug/kg	10000	05/17/19	5035A/8260C	
1,3-Dichloropropane	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
2,2-Dichloropropane	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
1,1-Dichloropropene	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
cis-1,3-Dichloropropene	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
trans-1,3-Dichloropropene	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
Ethylbenzene	**12400**	---	7390	ug/kg	10000	05/17/19	5035A/8260C	
Hexachlorobutadiene	ND	---	29600	ug/kg	10000	05/17/19	5035A/8260C	
2-Hexanone	ND	---	148000	ug/kg	10000	05/17/19	5035A/8260C	
Isopropylbenzene	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
4-Isopropyltoluene	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
Methylene chloride	ND	---	73900	ug/kg	10000	05/17/19	5035A/8260C	
4-Methyl-2-pentanone (MiBK)	ND	---	148000	ug/kg	10000	05/17/19	5035A/8260C	
Methyl tert-butyl ether (MTBE)	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
Naphthalene	**475000**	---	29600	ug/kg	10000	05/17/19	5035A/8260C	
n-Propylbenzene	ND	---	7390	ug/kg	10000	05/17/19	5035A/8260C	
Styrene	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
1,1,1,2-Tetrachloroethane	ND	---	29600	ug/kg	10000	05/17/19	5035A/8260C	
1,1,2,2-Tetrachloroethane	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
Tetrachloroethene (PCE)	ND	---	7390	ug/kg	10000	05/17/19	5035A/8260C	
Toluene	**29300**	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
1,2,3-Trichlorobenzene	ND	---	73900	ug/kg	10000	05/17/19	5035A/8260C	
1,2,4-Trichlorobenzene	ND	---	73900	ug/kg	10000	05/17/19	5035A/8260C	
1,1,1-Trichloroethane	ND	---	7390	ug/kg	10000	05/17/19	5035A/8260C	
1,1,2-Trichloroethane	ND	---	7390	ug/kg	10000	05/17/19	5035A/8260C	
Trichloroethene (TCE)	ND	---	7390	ug/kg	10000	05/17/19	5035A/8260C	
Trichlorofluoromethane	ND	---	29600	ug/kg	10000	05/17/19	5035A/8260C	
1,2,3-Trichloropropane	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
1,2,4-Trimethylbenzene	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
1,3,5-Trimethylbenzene	ND	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
Vinyl chloride	ND	---	7390	ug/kg	10000	05/17/19	5035A/8260C	
m,p-Xylene	**17100**	---	14800	ug/kg	10000	05/17/19	5035A/8260C	
o-Xylene	**8020**	---	7390	ug/kg	10000	05/17/19	5035A/8260C	

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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**	**A9E0508 - 05 29 19 1543**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
COMP1 (A9E0508-05)				**Matrix: Solid**			**Batch: 9051006**	**COMP**
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*106 %*	*Limits: 80-120 %*	*1*	*05/17/19*	*5035A/8260C*	
Toluene-d8 (Surr)			*95 %*	*80-120 %*	*1*	*05/17/19*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*05/17/19*	*5035A/8260C*	

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434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
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ANALYTICAL SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
COMP1 (A9E0508-05)				**Matrix: Solid**			**Batch: 9051246**	
Acetone	ND	---	1.00	mg/L	50	05/24/19	1311/8260C	
Benzene	**0.720**	---	0.0125	mg/L	50	05/24/19	1311/8260C	
Bromobenzene	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
Bromochloromethane	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
Bromodichloromethane	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
Bromoform	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
Bromomethane	ND	---	0.250	mg/L	50	05/24/19	1311/8260C	
2-Butanone (MEK)	ND	---	0.500	mg/L	50	05/24/19	1311/8260C	
n-Butylbenzene	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
sec-Butylbenzene	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
tert-Butylbenzene	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
Carbon tetrachloride	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
Chlorobenzene	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
Chloroethane	ND	---	0.250	mg/L	50	05/24/19	1311/8260C	
Chloroform	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
Chloromethane	ND	---	0.250	mg/L	50	05/24/19	1311/8260C	
2-Chlorotoluene	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
4-Chlorotoluene	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
1,2-Dibromo-3-chloropropane	ND	---	0.250	mg/L	50	05/24/19	1311/8260C	
Dibromochloromethane	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
1,2-Dibromoethane (EDB)	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
Dibromomethane	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
1,2-Dichlorobenzene	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
1,3-Dichlorobenzene	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
1,4-Dichlorobenzene	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
Dichlorodifluoromethane	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
1,1-Dichloroethane	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
1,1-Dichloroethene	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
1,2-Dichloroethane (EDC)	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
cis-1,2-Dichloroethene	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
trans-1,2-Dichloroethene	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
1,2-Dichloropropane	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
1,3-Dichloropropane	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	

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Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0508 - 05 29 19 1543**

ANALYTICAL SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
COMP1 (A9E0508-05)				**Matrix: Solid**			**Batch: 9051246**	
2,2-Dichloropropane	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
1,1-Dichloropropene	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
cis-1,3-Dichloropropene	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
trans-1,3-Dichloropropene	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
Ethylbenzene	**0.126**	---	0.0250	mg/L	50	05/24/19	1311/8260C	
Hexachlorobutadiene	ND	---	0.250	mg/L	50	05/24/19	1311/8260C	
2-Hexanone	ND	---	0.500	mg/L	50	05/24/19	1311/8260C	
Isopropylbenzene	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
4-Isopropyltoluene	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
4-Methyl-2-pentanone (MiBK)	ND	---	0.500	mg/L	50	05/24/19	1311/8260C	
Methyl tert-butyl ether (MTBE)	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
Methylene chloride	ND	---	0.300	mg/L	50	05/24/19	1311/8260C	A-01
Naphthalene	**1.76**	---	0.100	mg/L	50	05/24/19	1311/8260C	**Q-42**
n-Propylbenzene	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
Styrene	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
1,1,1,2-Tetrachloroethane	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
1,1,2,2-Tetrachloroethane	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
Tetrachloroethene (PCE)	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
Toluene	**0.263**	---	0.0500	mg/L	50	05/24/19	1311/8260C	
1,2,3-Trichlorobenzene	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
1,2,4-Trichlorobenzene	ND	---	0.100	mg/L	50	05/24/19	1311/8260C	
1,1,1-Trichloroethane	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
1,1,2-Trichloroethane	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
Trichloroethene (TCE)	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
Trichlorofluoromethane	ND	---	0.100	mg/L	50	05/24/19	1311/8260C	
1,2,3-Trichloropropane	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
1,2,4-Trimethylbenzene	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
1,3,5-Trimethylbenzene	ND	---	0.0500	mg/L	50	05/24/19	1311/8260C	
Vinyl chloride	ND	---	0.0250	mg/L	50	05/24/19	1311/8260C	
m,p-Xylene	**0.113**	---	0.0500	mg/L	50	05/24/19	1311/8260C	
o-Xylene	**0.0634**	---	0.0250	mg/L	50	05/24/19	1311/8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery: 106 %*		*Limits: 80-120 %*	*1*	*05/24/19*	*1311/8260C*	
Toluene-d8 (Surr)			*98 %*	*80-120 %*	*1*	*05/24/19*	*1311/8260C*	

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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**	**A9E0508 - 05 29 19 1543**

ANALYTICAL SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
COMP1 (A9E0508-05)				**Matrix: Solid**			**Batch: 9051246**	
Surrogate: 4-Bromofluorobenzene (Surr)		*Recovery: 93 %*		*Limits: 80-120 %*	*1*	*05/24/19*	*1311/8260C*	

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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
COMP1 (A9E0508-05)				**Matrix: Solid**			**Batch: 9051065**	
Acenaphthene	**880000**	---	863000	ug/kg	10000	05/21/19	EPA 8270D	**B, Q-29**
Acenaphthylene	ND	---	863000	ug/kg	10000	05/21/19	EPA 8270D	
Anthracene	**2050000**	---	863000	ug/kg	10000	05/21/19	EPA 8270D	**B-02**
Benz(a)anthracene	**7230000**	---	863000	ug/kg	10000	05/21/19	EPA 8270D	
Benzo(a)pyrene	**9030000**	---	1290000	ug/kg	10000	05/21/19	EPA 8270D	
Benzo(b)fluoranthene	**10100000**	---	1290000	ug/kg	10000	05/21/19	EPA 8270D	**M-05**
Benzo(k)fluoranthene	**3740000**	---	1290000	ug/kg	10000	05/21/19	EPA 8270D	**M-05**
Benzo(g,h,i)perylene	**6990000**	---	863000	ug/kg	10000	05/21/19	EPA 8270D	
Chrysene	**7850000**	---	863000	ug/kg	10000	05/21/19	EPA 8270D	
Dibenz(a,h)anthracene	**973000**	---	863000	ug/kg	10000	05/21/19	EPA 8270D	
Fluoranthene	**18700000**	---	863000	ug/kg	10000	05/21/19	EPA 8270D	**B-02**
Fluorene	ND	---	863000	ug/kg	10000	05/21/19	EPA 8270D	
Indeno(1,2,3-cd)pyrene	**6560000**	---	863000	ug/kg	10000	05/21/19	EPA 8270D	
1-Methylnaphthalene	ND	---	1720000	ug/kg	10000	05/21/19	EPA 8270D	
2-Methylnaphthalene	ND	---	1720000	ug/kg	10000	05/21/19	EPA 8270D	
Naphthalene	ND	---	1720000	ug/kg	10000	05/21/19	EPA 8270D	Q-42
Phenanthrene	**8820000**	---	863000	ug/kg	10000	05/21/19	EPA 8270D	**B**
Pyrene	**18500000**	---	863000	ug/kg	10000	05/21/19	EPA 8270D	**B-02**
Carbazole	**2280000**	---	1290000	ug/kg	10000	05/21/19	EPA 8270D	
Dibenzofuran	ND	---	863000	ug/kg	10000	05/21/19	EPA 8270D	
4-Chloro-3-methylphenol	ND	---	8630000	ug/kg	10000	05/21/19	EPA 8270D	
2-Chlorophenol	ND	---	4300000	ug/kg	10000	05/21/19	EPA 8270D	
2,4-Dichlorophenol	ND	---	4300000	ug/kg	10000	05/21/19	EPA 8270D	
2,4-Dimethylphenol	ND	---	4300000	ug/kg	10000	05/21/19	EPA 8270D	
2,4-Dinitrophenol	ND	---	21600000	ug/kg	10000	05/21/19	EPA 8270D	
4,6-Dinitro-2-methylphenol	ND	---	21600000	ug/kg	10000	05/21/19	EPA 8270D	
2-Methylphenol	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
3+4-Methylphenol(s)	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
2-Nitrophenol	ND	---	8630000	ug/kg	10000	05/21/19	EPA 8270D	
4-Nitrophenol	ND	---	8630000	ug/kg	10000	05/21/19	EPA 8270D	
Pentachlorophenol (PCP)	ND	---	8630000	ug/kg	10000	05/21/19	EPA 8270D	
Phenol	ND	---	1720000	ug/kg	10000	05/21/19	EPA 8270D	
2,3,4,6-Tetrachlorophenol	ND	---	4300000	ug/kg	10000	05/21/19	EPA 8270D	

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Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0508 - 05 29 19 1543**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
COMP1 (A9E0508-05)				**Matrix: Solid**			**Batch: 9051065**	
2,3,5,6-Tetrachlorophenol	ND	---	4300000	ug/kg	10000	05/21/19	EPA 8270D	
2,4,5-Trichlorophenol	ND	---	4300000	ug/kg	10000	05/21/19	EPA 8270D	
2,4,6-Trichlorophenol	ND	---	4300000	ug/kg	10000	05/21/19	EPA 8270D	
Bis(2-ethylhexyl)phthalate	ND	---	12900000	ug/kg	10000	05/21/19	EPA 8270D	
Butyl benzyl phthalate	ND	---	8630000	ug/kg	10000	05/21/19	EPA 8270D	
Diethylphthalate	ND	---	8630000	ug/kg	10000	05/21/19	EPA 8270D	
Dimethylphthalate	ND	---	8630000	ug/kg	10000	05/21/19	EPA 8270D	
Di-n-butylphthalate	ND	---	8630000	ug/kg	10000	05/21/19	EPA 8270D	
Di-n-octyl phthalate	ND	---	8630000	ug/kg	10000	05/21/19	EPA 8270D	
N-Nitrosodimethylamine	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
N-Nitroso-di-n-propylamine	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
N-Nitrosodiphenylamine	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
Bis(2-Chloroethoxy) methane	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
Bis(2-Chloroethyl) ether	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
2,2'-Oxybis(1-Chloropropane)	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
Hexachlorobenzene	ND	---	863000	ug/kg	10000	05/21/19	EPA 8270D	
Hexachlorobutadiene	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
Hexachlorocyclopentadiene	ND	---	4300000	ug/kg	10000	05/21/19	EPA 8270D	
Hexachloroethane	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
2-Chloronaphthalene	ND	---	863000	ug/kg	10000	05/21/19	EPA 8270D	
1,2-Dichlorobenzene	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
1,3-Dichlorobenzene	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
1,4-Dichlorobenzene	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
1,2,4-Trichlorobenzene	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
4-Bromophenyl phenyl ether	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
4-Chlorophenyl phenyl ether	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
Aniline	ND	---	4300000	ug/kg	10000	05/21/19	EPA 8270D	
4-Chloroaniline	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
2-Nitroaniline	ND	---	17200000	ug/kg	10000	05/21/19	EPA 8270D	
3-Nitroaniline	ND	---	17200000	ug/kg	10000	05/21/19	EPA 8270D	
4-Nitroaniline	ND	---	17200000	ug/kg	10000	05/21/19	EPA 8270D	
Nitrobenzene	ND	---	8630000	ug/kg	10000	05/21/19	EPA 8270D	
2,4-Dinitrotoluene	ND	---	8630000	ug/kg	10000	05/21/19	EPA 8270D	

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434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0508 - 05 29 19 1543**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
COMP1 (A9E0508-05)				**Matrix: Solid**			**Batch: 9051065**	
2,6-Dinitrotoluene	ND	---	8630000	ug/kg	10000	05/21/19	EPA 8270D	
Benzoic acid	ND	---	108000000	ug/kg	10000	05/21/19	EPA 8270D	
Benzyl alcohol	ND	---	4300000	ug/kg	10000	05/21/19	EPA 8270D	
Isophorone	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
Azobenzene (1,2-DPH)	ND	---	2160000	ug/kg	10000	05/21/19	EPA 8270D	
Bis(2-Ethylhexyl) adipate	ND	---	21600000	ug/kg	10000	05/21/19	EPA 8270D	
3,3'-Dichlorobenzidine	ND	---	17300000	ug/kg	10000	05/21/19	EPA 8270D	Q-52
1,2-Dinitrobenzene	ND	---	21600000	ug/kg	10000	05/21/19	EPA 8270D	
1,3-Dinitrobenzene	ND	---	21600000	ug/kg	10000	05/21/19	EPA 8270D	
1,4-Dinitrobenzene	ND	---	21600000	ug/kg	10000	05/21/19	EPA 8270D	
Pyridine	ND	---	4300000	ug/kg	10000	05/21/19	EPA 8270D	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*1310 %*	*Limits:*	*37-122 %*	*10000*	*05/21/19*	*EPA 8270D*	*S-05*
2-Fluorobiphenyl (Surr)			*%*		*44-115 %*	*10000*	*05/21/19*	*EPA 8270D*	*S-01*
Phenol-d6 (Surr)			*%*		*33-122 %*	*10000*	*05/21/19*	*EPA 8270D*	*S-01*
p-Terphenyl-d14 (Surr)			*513 %*		*54-127 %*	*10000*	*05/21/19*	*EPA 8270D*	*S-05*
2-Fluorophenol (Surr)			*%*		*35-115 %*	*10000*	*05/21/19*	*EPA 8270D*	*S-01*
2,4,6-Tribromophenol (Surr)			*%*		*39-132 %*	*10000*	*05/21/19*	*EPA 8270D*	*S-01*

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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
COMP1 (A9E0508-05)				**Matrix: Solid**				
Batch: 9051011								
Aluminum	**1690**	---	51.9	mg/kg	10	05/20/19	EPA 6020A	
Antimony	ND	---	1.04	mg/kg	10	05/20/19	EPA 6020A	
Arsenic	**1.66**	---	1.04	mg/kg	10	05/20/19	EPA 6020A	
Barium	**20.5**	---	1.04	mg/kg	10	05/20/19	EPA 6020A	
Beryllium	**0.211**	---	0.207	mg/kg	10	05/20/19	EPA 6020A	
Cadmium	**0.349**	---	0.207	mg/kg	10	05/20/19	EPA 6020A	
Calcium	**559**	---	104	mg/kg	10	05/20/19	EPA 6020A	
Chromium	**2.83**	---	1.04	mg/kg	10	05/20/19	EPA 6020A	
Copper	**10.9**	---	1.04	mg/kg	10	05/20/19	EPA 6020A	
Iron	**30800**	---	51.9	mg/kg	10	05/20/19	EPA 6020A	
Lead	**26.8**	---	0.207	mg/kg	10	05/20/19	EPA 6020A	
Magnesium	**82.2**	---	51.9	mg/kg	10	05/20/19	EPA 6020A	
Manganese	**363**	---	1.04	mg/kg	10	05/20/19	EPA 6020A	
Mercury	ND	---	0.0830	mg/kg	10	05/20/19	EPA 6020A	
Nickel	**7.86**	---	1.04	mg/kg	10	05/20/19	EPA 6020A	
Potassium	ND	---	104	mg/kg	10	05/20/19	EPA 6020A	
Selenium	ND	---	1.04	mg/kg	10	05/20/19	EPA 6020A	
Silver	ND	---	0.207	mg/kg	10	05/20/19	EPA 6020A	
Thallium	ND	---	0.207	mg/kg	10	05/20/19	EPA 6020A	
Vanadium	**16.3**	---	1.04	mg/kg	10	05/20/19	EPA 6020A	
Zinc	**71.3**	---	4.15	mg/kg	10	05/20/19	EPA 6020A	
COMP1 (A9E0508-05RE1)				**Matrix: Solid**				
Batch: 9051011								
Sodium	ND	---	104	mg/kg	10	05/21/19	EPA 6020A	

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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
COMP1 (A9E0508-05)				**Matrix: Solid**			**Batch: 9051027**	
Cyanide, Total	**14.5**	---	1.97	mg/kg	20	05/20/19	D7511-12	

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ANALYTICAL SAMPLE RESULTS

TCLP Extraction by EPA 1311 (ZHE)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
COMP1 (A9E0508-05)				**Matrix: Solid**			**Batch: 9051218**	
TCLP ZHE Extraction	PREP	---		N/A	1	05/23/19	EPA 1311 ZHE	

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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 9051067 - EPA 3546 (Fuels)							**Solid**					
Blank (9051067-BLK1)			Prepared: 05/20/19 16:21		Analyzed: 05/21/19 02:49							
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 103 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (9051067-BS1)			Prepared: 05/20/19 16:21		Analyzed: 05/21/19 03:09							
NWTPH-Dx												
Diesel	111	---	25.0	mg/kg	1	125	---	89	70-130%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 104 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (9051067-DUP1)			Prepared: 05/20/19 16:21		Analyzed: 05/21/19 03:51							
QC Source Sample: COMP1 (A9E0508-05)												
NWTPH-Dx												
Diesel	**92800**	---	17500	mg/kg	100	---	91500	---	---	1	30%	F-17
Oil	**184000**	---	35100	mg/kg	100	---	176000	---	---	5	30%	F-17
Surr: o-Terphenyl (Surr)		*Recovery: %*	*Limits: 50-150 %*		*Dilution: 100x*							S-01

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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 9051006 - EPA 5035A								Soil				
Blank (9051006-BLK1)			Prepared: 05/17/19 10:00 Analyzed: 05/17/19 12:11									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*115 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*97 %*		*50-150 %*			*"*				
LCS (9051006-BS2)			Prepared: 05/17/19 10:00 Analyzed: 05/17/19 11:44									
NWTPH-Gx (MS)												
Gasoline Range Organics	28.1	---	5.00	mg/kg	50	25.0	---	113	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*111 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*100 %*		*50-150 %*			*"*				
Duplicate (9051006-DUP1)			Prepared: 05/14/19 00:00 Analyzed: 05/17/19 14:27									
QC Source Sample: Non-SDG (A9E0511-50)												
Gasoline Range Organics	ND	---	5.43	mg/kg	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*118 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*98 %*		*50-150 %*			*"*				
Duplicate (9051006-DUP2)			Prepared: 05/14/19 00:00 Analyzed: 05/17/19 15:21									
QC Source Sample: Non-SDG (A9E0511-51)												
Gasoline Range Organics	ND	---	5.78	mg/kg	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*128 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*102 %*		*50-150 %*			*"*				

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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**	**A9E0508 - 05 29 19 1543**

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 9051006 - EPA 5035A							**Soil**					
Blank (9051006-BLK1)			Prepared: 05/17/19 10:00 Analyzed: 05/17/19 12:11									
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	---	66.7	ug/kg	50	---	---	---	---	---	---	
Bromoform	ND	---	133	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	---	66.7	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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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**	**A9E0508 - 05 29 19 1543**

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 9051006 - EPA 5035A							**Soil**					
Blank (9051006-BLK1)			Prepared: 05/17/19 10:00 Analyzed: 05/17/19 12:11									
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	---	66.7	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: 105 %* *Limits: 80-120 %* *Dilution: 1x*

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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**	**A9E0508 - 05 29 19 1543**

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 9051006 - EPA 5035A							**Soil**					
Blank (9051006-BLK1)				Prepared: 05/17/19 10:00 Analyzed: 05/17/19 12:11								
Surr: Toluene-d8 (Surr)			*Recovery: 96 %*	*Limits: 80-120 %*				*Dilution: 1x*				
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*				*"*				
LCS (9051006-BS1)				Prepared: 05/17/19 10:00 Analyzed: 05/17/19 11:17								
5035A/8260C												
Acetone	1640	---	1000	ug/kg	50	2000	---	82	80-120%	---	---	
Acrylonitrile	945	---	100	ug/kg	50	1000	---	94	80-120%	---	---	
Benzene	1050	---	10.0	ug/kg	50	1000	---	105	80-120%	---	---	
Bromobenzene	1050	---	25.0	ug/kg	50	1000	---	105	80-120%	---	---	
Bromochloromethane	1030	---	50.0	ug/kg	50	1000	---	103	80-120%	---	---	
Bromodichloromethane	1070	---	100	ug/kg	50	1000	---	107	80-120%	---	---	
Bromoform	1240	---	200	ug/kg	50	1000	---	**124**	**80-120%**	---	---	Q-56
Bromomethane	1240	---	500	ug/kg	50	1000	---	**124**	**80-120%**	---	---	Q-56
2-Butanone (MEK)	1880	---	500	ug/kg	50	2000	---	94	80-120%	---	---	
n-Butylbenzene	1180	---	50.0	ug/kg	50	1000	---	118	80-120%	---	---	
sec-Butylbenzene	1180	---	50.0	ug/kg	50	1000	---	118	80-120%	---	---	
tert-Butylbenzene	1140	---	50.0	ug/kg	50	1000	---	114	80-120%	---	---	
Carbon disulfide	894	---	500	ug/kg	50	1000	---	89	80-120%	---	---	
Carbon tetrachloride	1230	---	100	ug/kg	50	1000	---	**123**	**80-120%**	---	---	Q-56
Chlorobenzene	978	---	25.0	ug/kg	50	1000	---	98	80-120%	---	---	
Chloroethane	1080	---	500	ug/kg	50	1000	---	108	80-120%	---	---	
Chloroform	1070	---	50.0	ug/kg	50	1000	---	107	80-120%	---	---	
Chloromethane	936	---	250	ug/kg	50	1000	---	94	80-120%	---	---	
2-Chlorotoluene	1100	---	50.0	ug/kg	50	1000	---	110	80-120%	---	---	
4-Chlorotoluene	1150	---	50.0	ug/kg	50	1000	---	115	80-120%	---	---	
Dibromochloromethane	1050	---	100	ug/kg	50	1000	---	105	80-120%	---	---	
1,2-Dibromo-3-chloropropane	908	---	250	ug/kg	50	1000	---	91	80-120%	---	---	
1,2-Dibromoethane (EDB)	975	---	50.0	ug/kg	50	1000	---	98	80-120%	---	---	
Dibromomethane	1070	---	50.0	ug/kg	50	1000	---	107	80-120%	---	---	
1,2-Dichlorobenzene	1040	---	25.0	ug/kg	50	1000	---	104	80-120%	---	---	
1,3-Dichlorobenzene	1060	---	25.0	ug/kg	50	1000	---	106	80-120%	---	---	
1,4-Dichlorobenzene	1010	---	25.0	ug/kg	50	1000	---	101	80-120%	---	---	
Dichlorodifluoromethane	992	---	100	ug/kg	50	1000	---	99	80-120%	---	---	
1,1-Dichloroethane	944	---	25.0	ug/kg	50	1000	---	94	80-120%	---	---	

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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**	**A9E0508 - 05 29 19 1543**

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 9051006 - EPA 5035A							**Soil**					
LCS (9051006-BS1)			Prepared: 05/17/19 10:00 Analyzed: 05/17/19 11:17									
1,2-Dichloroethane (EDC)	990	---	25.0	ug/kg	50	1000	---	99	80-120%	---	---	
1,1-Dichloroethene	836	---	25.0	ug/kg	50	1000	---	84	80-120%	---	---	
cis-1,2-Dichloroethene	1050	---	25.0	ug/kg	50	1000	---	105	80-120%	---	---	
trans-1,2-Dichloroethene	928	---	25.0	ug/kg	50	1000	---	93	80-120%	---	---	
1,2-Dichloropropane	1070	---	25.0	ug/kg	50	1000	---	107	80-120%	---	---	
1,3-Dichloropropane	1050	---	50.0	ug/kg	50	1000	---	105	80-120%	---	---	
2,2-Dichloropropane	1290	---	50.0	ug/kg	50	1000	---	**129**	**80-120%**	---	---	Q-56
1,1-Dichloropropene	1080	---	50.0	ug/kg	50	1000	---	108	80-120%	---	---	
cis-1,3-Dichloropropene	956	---	50.0	ug/kg	50	1000	---	96	80-120%	---	---	
trans-1,3-Dichloropropene	1000	---	50.0	ug/kg	50	1000	---	100	80-120%	---	---	
Ethylbenzene	1040	---	25.0	ug/kg	50	1000	---	104	80-120%	---	---	
Hexachlorobutadiene	1090	---	100	ug/kg	50	1000	---	109	80-120%	---	---	
2-Hexanone	1800	---	500	ug/kg	50	2000	---	90	80-120%	---	---	
Isopropylbenzene	1160	---	50.0	ug/kg	50	1000	---	116	80-120%	---	---	
4-Isopropyltoluene	1130	---	50.0	ug/kg	50	1000	---	113	80-120%	---	---	
Methylene chloride	742	---	250	ug/kg	50	1000	---	**74**	**80-120%**	---	---	Q-55
4-Methyl-2-pentanone (MiBK)	1950	---	500	ug/kg	50	2000	---	97	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	1030	---	50.0	ug/kg	50	1000	---	103	80-120%	---	---	
Naphthalene	870	---	100	ug/kg	50	1000	---	87	80-120%	---	---	
n-Propylbenzene	1140	---	25.0	ug/kg	50	1000	---	114	80-120%	---	---	
Styrene	1010	---	50.0	ug/kg	50	1000	---	101	80-120%	---	---	
1,1,1,2-Tetrachloroethane	1170	---	100	ug/kg	50	1000	---	117	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1140	---	50.0	ug/kg	50	1000	---	114	80-120%	---	---	
Tetrachloroethene (PCE)	993	---	25.0	ug/kg	50	1000	---	99	80-120%	---	---	
Toluene	933	---	50.0	ug/kg	50	1000	---	93	80-120%	---	---	
1,2,3-Trichlorobenzene	987	---	250	ug/kg	50	1000	---	99	80-120%	---	---	
1,2,4-Trichlorobenzene	1050	---	250	ug/kg	50	1000	---	105	80-120%	---	---	
1,1,1-Trichloroethane	1200	---	25.0	ug/kg	50	1000	---	120	80-120%	---	---	
1,1,2-Trichloroethane	1070	---	25.0	ug/kg	50	1000	---	107	80-120%	---	---	
Trichloroethene (TCE)	1060	---	25.0	ug/kg	50	1000	---	106	80-120%	---	---	
Trichlorofluoromethane	1160	---	100	ug/kg	50	1000	---	116	80-120%	---	---	
1,2,3-Trichloropropane	1060	---	50.0	ug/kg	50	1000	---	106	80-120%	---	---	
1,2,4-Trimethylbenzene	1160	---	50.0	ug/kg	50	1000	---	116	80-120%	---	---	
1,3,5-Trimethylbenzene	1170	---	50.0	ug/kg	50	1000	---	117	80-120%	---	---	

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Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0508 - 05 29 19 1543**

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 9051006 - EPA 5035A							**Soil**					
LCS (9051006-BS1)			Prepared: 05/17/19 10:00 Analyzed: 05/17/19 11:17									
Vinyl chloride	1010	---	25.0	ug/kg	50	1000	---	101	80-120%	---	---	
m,p-Xylene	2170	---	50.0	ug/kg	50	2000	---	109	80-120%	---	---	
o-Xylene	1090	---	25.0	ug/kg	50	1000	---	109	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 104 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*95 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*101 %*		*80-120 %*			*"*				
Duplicate (9051006-DUP1)			Prepared: 05/14/19 00:00 Analyzed: 05/17/19 14:27									
QC Source Sample: Non-SDG (A9E0511-50)												
Acetone	ND	---	1090	ug/kg	50	---	ND	---	---	---	30%	
Acrylonitrile	ND	---	109	ug/kg	50	---	ND	---	---	---	30%	
Benzene	ND	---	10.9	ug/kg	50	---	ND	---	---	---	30%	
Bromobenzene	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	109	ug/kg	50	---	ND	---	---	---	30%	
Bromoform	ND	---	217	ug/kg	50	---	ND	---	---	---	30%	
Bromomethane	ND	---	543	ug/kg	50	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	---	543	ug/kg	50	---	ND	---	---	---	30%	
n-Butylbenzene	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
Carbon disulfide	ND	---	543	ug/kg	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	109	ug/kg	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	
Chloroethane	ND	---	543	ug/kg	50	---	ND	---	---	---	30%	
Chloroform	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
Chloromethane	ND	---	271	ug/kg	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	109	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	271	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
Dibromomethane	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	27.1	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**	**A9E0508 - 05 29 19 1543**

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 9051006 - EPA 5035A							**Soil**					
Duplicate (9051006-DUP1)			Prepared: 05/14/19 00:00		Analyzed: 05/17/19 14:27							
QC Source Sample: Non-SDG (A9E0511-50)												
1,3-Dichlorobenzene	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	109	ug/kg	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	109	ug/kg	50	---	ND	---	---	---	30%	
2-Hexanone	ND	---	543	ug/kg	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
Methylene chloride	ND	---	271	ug/kg	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	543	ug/kg	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
Naphthalene	ND	---	109	ug/kg	50	---	ND	---	---	---	30%	
n-Propylbenzene	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	
Styrene	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	109	ug/kg	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	
Toluene	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	271	ug/kg	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	271	ug/kg	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	

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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**	**A9E0508 - 05 29 19 1543**

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 9051006 - EPA 5035A							**Soil**					
Duplicate (9051006-DUP1)			Prepared: 05/14/19 00:00 Analyzed: 05/17/19 14:27									
QC Source Sample: Non-SDG (A9E0511-50)												
Trichloroethene (TCE)	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	109	ug/kg	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	
m,p-Xylene	ND	---	54.3	ug/kg	50	---	ND	---	---	---	30%	
o-Xylene	ND	---	27.1	ug/kg	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*107 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*95 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*			*"*				
Duplicate (9051006-DUP2)			Prepared: 05/14/19 00:00 Analyzed: 05/17/19 15:21									
QC Source Sample: Non-SDG (A9E0511-51)												
Acetone	ND	---	1160	ug/kg	50	---	ND	---	---	---	30%	
Acrylonitrile	ND	---	116	ug/kg	50	---	ND	---	---	---	30%	
Benzene	ND	---	11.6	ug/kg	50	---	ND	---	---	---	30%	
Bromobenzene	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	116	ug/kg	50	---	ND	---	---	---	30%	
Bromoform	ND	---	231	ug/kg	50	---	ND	---	---	---	30%	
Bromomethane	ND	---	578	ug/kg	50	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	---	578	ug/kg	50	---	ND	---	---	---	30%	
n-Butylbenzene	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
Carbon disulfide	ND	---	578	ug/kg	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	116	ug/kg	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
Chloroethane	ND	---	578	ug/kg	50	---	ND	---	---	---	30%	
Chloroform	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
Chloromethane	ND	---	289	ug/kg	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	57.8	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**	**A9E0508 - 05 29 19 1543**

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 9051006 - EPA 5035A							**Soil**					
Duplicate (9051006-DUP2)			Prepared: 05/14/19 00:00		Analyzed: 05/17/19 15:21							
QC Source Sample: Non-SDG (A9E0511-51)												
4-Chlorotoluene	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	116	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	289	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
Dibromomethane	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	116	ug/kg	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	116	ug/kg	50	---	ND	---	---	---	30%	
2-Hexanone	ND	---	578	ug/kg	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
Methylene chloride	ND	---	289	ug/kg	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	578	ug/kg	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
Naphthalene	ND	---	116	ug/kg	50	---	ND	---	---	---	30%	
n-Propylbenzene	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
Styrene	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	116	ug/kg	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	

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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**	**A9E0508 - 05 29 19 1543**

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 9051006 - EPA 5035A							**Soil**					
Duplicate (9051006-DUP2)			Prepared: 05/14/19 00:00		Analyzed: 05/17/19 15:21							
QC Source Sample: Non-SDG (A9E0511-51)												
Tetrachloroethene (PCE)	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
Toluene	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	289	ug/kg	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	289	ug/kg	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	116	ug/kg	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
m,p-Xylene	ND	---	57.8	ug/kg	50	---	ND	---	---	---	30%	
o-Xylene	ND	---	28.9	ug/kg	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*110 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*93 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*			*"*				
Matrix Spike (9051006-MS1)			Prepared: 05/14/19 00:00		Analyzed: 05/17/19 16:15							
QC Source Sample: Non-SDG (A9E0511-53)												
5035A/8260C												
Acetone	2670	---	1220	ug/kg	50	2440	ND	109	36-164%	---	---	
Acrylonitrile	1500	---	122	ug/kg	50	1220	ND	123	65-134%	---	---	
Benzene	1320	---	12.2	ug/kg	50	1220	ND	108	77-121%	---	---	
Bromobenzene	1270	---	30.5	ug/kg	50	1220	ND	104	78-121%	---	---	
Bromochloromethane	1460	---	60.9	ug/kg	50	1220	ND	119	78-125%	---	---	
Bromodichloromethane	1500	---	122	ug/kg	50	1220	ND	123	75-127%	---	---	
Bromoform	1690	---	244	ug/kg	50	1220	ND	**139**	**67-132%**	---	---	Q-54c
Bromomethane	1720	---	609	ug/kg	50	1220	ND	141	53-143%	---	---	Q-54d
2-Butanone (MEK)	3090	---	609	ug/kg	50	2440	ND	127	51-148%	---	---	
n-Butylbenzene	1270	---	60.9	ug/kg	50	1220	ND	104	70-128%	---	---	
sec-Butylbenzene	1280	---	60.9	ug/kg	50	1220	ND	105	73-126%	---	---	
tert-Butylbenzene	1270	---	60.9	ug/kg	50	1220	ND	104	73-125%	---	---	

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434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0508 - 05 29 19 1543**

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 9051006 - EPA 5035A							**Soil**					
Matrix Spike (9051006-MS1)			Prepared: 05/14/19 00:00		Analyzed: 05/17/19 16:15							
QC Source Sample: Non-SDG (A9E0511-53)												
Carbon disulfide	1160	---	609	ug/kg	50	1220	ND	95	63-132%	---	---	
Carbon tetrachloride	1530	---	122	ug/kg	50	1220	ND	125	70-135%	---	---	Q-54b
Chlorobenzene	1170	---	30.5	ug/kg	50	1220	ND	96	79-120%	---	---	
Chloroethane	2490	---	609	ug/kg	50	1220	ND	**204**	**59-139%**	---	---	Q-01
Chloroform	1380	---	60.9	ug/kg	50	1220	ND	113	78-123%	---	---	
Chloromethane	1190	---	305	ug/kg	50	1220	ND	97	50-136%	---	---	
2-Chlorotoluene	1260	---	60.9	ug/kg	50	1220	ND	104	75-122%	---	---	
4-Chlorotoluene	1320	---	60.9	ug/kg	50	1220	ND	108	72-124%	---	---	
Dibromochloromethane	1390	---	122	ug/kg	50	1220	ND	114	74-126%	---	---	
1,2-Dibromo-3-chloropropane	1170	---	305	ug/kg	50	1220	ND	96	61-132%	---	---	
1,2-Dibromoethane (EDB)	1270	---	60.9	ug/kg	50	1220	ND	104	78-122%	---	---	
Dibromomethane	1540	---	60.9	ug/kg	50	1220	ND	**127**	**78-125%**	---	---	Q-01
1,2-Dichlorobenzene	1290	---	30.5	ug/kg	50	1220	ND	105	78-121%	---	---	
1,3-Dichlorobenzene	1250	---	30.5	ug/kg	50	1220	ND	103	77-121%	---	---	
1,4-Dichlorobenzene	1180	---	30.5	ug/kg	50	1220	ND	97	75-120%	---	---	
Dichlorodifluoromethane	1260	---	122	ug/kg	50	1220	ND	103	29-149%	---	---	
1,1-Dichloroethane	1220	---	30.5	ug/kg	50	1220	ND	100	76-125%	---	---	
1,2-Dichloroethane (EDC)	1400	---	30.5	ug/kg	50	1220	ND	115	73-128%	---	---	
1,1-Dichloroethene	1090	---	30.5	ug/kg	50	1220	ND	90	70-131%	---	---	
cis-1,2-Dichloroethene	1340	---	30.5	ug/kg	50	1220	ND	110	77-123%	---	---	
trans-1,2-Dichloroethene	1140	---	30.5	ug/kg	50	1220	ND	94	74-125%	---	---	
1,2-Dichloropropane	1450	---	30.5	ug/kg	50	1220	ND	119	76-123%	---	---	
1,3-Dichloropropane	1310	---	60.9	ug/kg	50	1220	ND	107	77-121%	---	---	
2,2-Dichloropropane	1460	---	60.9	ug/kg	50	1220	ND	120	67-133%	---	---	Q-54h
1,1-Dichloropropene	1310	---	60.9	ug/kg	50	1220	ND	107	76-125%	---	---	
cis-1,3-Dichloropropene	1140	---	60.9	ug/kg	50	1220	ND	93	74-126%	---	---	
trans-1,3-Dichloropropene	1260	---	60.9	ug/kg	50	1220	ND	103	71-130%	---	---	
Ethylbenzene	1190	---	30.5	ug/kg	50	1220	ND	97	76-122%	---	---	
Hexachlorobutadiene	1190	---	122	ug/kg	50	1220	ND	97	61-135%	---	---	
2-Hexanone	2610	---	609	ug/kg	50	2440	ND	107	53-145%	---	---	
Isopropylbenzene	1330	---	60.9	ug/kg	50	1220	ND	109	68-134%	---	---	
4-Isopropyltoluene	1240	---	60.9	ug/kg	50	1220	ND	101	73-127%	---	---	
Methylene chloride	1020	---	305	ug/kg	50	1220	ND	84	70-128%	---	---	Q-54i

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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**	**A9E0508 - 05 29 19 1543**

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 9051006 - EPA 5035A							**Soil**					
Matrix Spike (9051006-MS1)			Prepared: 05/14/19 00:00		Analyzed: 05/17/19 16:15							
QC Source Sample: Non-SDG (A9E0511-53)												
4-Methyl-2-pentanone (MiBK)	2900	---	609	ug/kg	50	2440	ND	119	65-135%	---	---	
Methyl tert-butyl ether (MTBE)	1450	---	60.9	ug/kg	50	1220	ND	119	73-125%	---	---	
Naphthalene	1020	---	122	ug/kg	50	1220	ND	84	62-129%	---	---	
n-Propylbenzene	1250	---	30.5	ug/kg	50	1220	ND	103	73-125%	---	---	
Styrene	1260	---	60.9	ug/kg	50	1220	ND	104	76-124%	---	---	
1,1,1,2-Tetrachloroethane	1420	---	122	ug/kg	50	1220	ND	117	78-125%	---	---	
1,1,2,2-Tetrachloroethane	1590	---	60.9	ug/kg	50	1220	ND	**130**	**70-124%**	---	---	Q-01
Tetrachloroethene (PCE)	1070	---	30.5	ug/kg	50	1220	ND	88	73-128%	---	---	
Toluene	1060	---	60.9	ug/kg	50	1220	ND	87	77-121%	---	---	
1,2,3-Trichlorobenzene	1180	---	305	ug/kg	50	1220	ND	97	66-130%	---	---	
1,2,4-Trichlorobenzene	1220	---	305	ug/kg	50	1220	ND	100	67-129%	---	---	
1,1,1-Trichloroethane	1490	---	30.5	ug/kg	50	1220	ND	122	73-130%	---	---	
1,1,2-Trichloroethane	1360	---	30.5	ug/kg	50	1220	ND	112	78-121%	---	---	
Trichloroethene (TCE)	1260	---	30.5	ug/kg	50	1220	ND	103	77-123%	---	---	
Trichlorofluoromethane	5040	---	122	ug/kg	50	1220	ND	**413**	**62-140%**	---	---	Q-01
1,2,3-Trichloropropane	1360	---	60.9	ug/kg	50	1220	ND	112	73-125%	---	---	
1,2,4-Trimethylbenzene	1320	---	60.9	ug/kg	50	1220	ND	108	75-123%	---	---	
1,3,5-Trimethylbenzene	1320	---	60.9	ug/kg	50	1220	ND	108	73-124%	---	---	
Vinyl chloride	1380	---	30.5	ug/kg	50	1220	ND	113	56-135%	---	---	
m,p-Xylene	2530	---	60.9	ug/kg	50	2440	ND	104	77-124%	---	---	
o-Xylene	1290	---	30.5	ug/kg	50	1220	ND	106	77-123%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 108 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*90 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*100 %*		*80-120 %*			*"*				

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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**	**A9E0508 - 05 29 19 1543**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051246 - EPA 1311/5030B TCLP Volatiles							**Water**					
Blank (9051246-BLK1)			Prepared: 05/24/19 09:00 Analyzed: 05/24/19 10:44									**TCLP**
1311/8260C												
Acetone	ND	---	1.00	mg/L	50	---	---	---	---	---	---	
Benzene	ND	---	0.0125	mg/L	50	---	---	---	---	---	---	
Bromobenzene	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
Bromochloromethane	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
Bromodichloromethane	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
Bromoform	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
Bromomethane	ND	---	0.250	mg/L	50	---	---	---	---	---	---	
2-Butanone (MEK)	ND	---	0.500	mg/L	50	---	---	---	---	---	---	
n-Butylbenzene	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
sec-Butylbenzene	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
tert-Butylbenzene	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
Chloroethane	ND	---	0.250	mg/L	50	---	---	---	---	---	---	
Chloroform	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
Chloromethane	ND	---	0.250	mg/L	50	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	0.250	mg/L	50	---	---	---	---	---	---	
Dibromochloromethane	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
Dibromomethane	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
1,2-Dichloropropane	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	

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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**	**A9E0508 - 05 29 19 1543**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051246 - EPA 1311/5030B TCLP Volatiles							**Water**					
Blank (9051246-BLK1)			Prepared: 05/24/19 09:00 Analyzed: 05/24/19 10:44									**TCLP**
2,2-Dichloropropane	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	0.250	mg/L	50	---	---	---	---	---	---	
2-Hexanone	ND	---	0.500	mg/L	50	---	---	---	---	---	---	
Isopropylbenzene	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
4-Isopropyltoluene	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	---	0.500	mg/L	50	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
Methylene chloride	**0.281**	---	0.250	mg/L	50	---	---	---	---	---	---	B
Naphthalene	ND	---	0.100	mg/L	50	---	---	---	---	---	---	
n-Propylbenzene	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
Styrene	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
Toluene	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	0.100	mg/L	50	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	0.100	mg/L	50	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	
m,p-Xylene	ND	---	0.0500	mg/L	50	---	---	---	---	---	---	
o-Xylene	ND	---	0.0250	mg/L	50	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 107 %*	*Limits: 80-120 %*	*Dilution: 1x*	
Toluene-d8 (Surr)	*97 %*	*80-120 %*	*"*	
4-Bromofluorobenzene (Surr)	*95 %*	*80-120 %*	*"*	

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QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051246 - EPA 1311/5030B TCLP Volatiles							**Water**					
LCS (9051246-BS1)			Prepared: 05/24/19 09:00 Analyzed: 05/24/19 10:15									**TCLP**
1311/8260C												
Acetone	2.02	---	1.00	mg/L	50	2.00	---	101	80-120%	---	---	
Benzene	1.12	---	0.0125	mg/L	50	1.00	---	112	80-120%	---	---	
Bromobenzene	1.04	---	0.0250	mg/L	50	1.00	---	104	80-120%	---	---	
Bromochloromethane	1.33	---	0.0500	mg/L	50	1.00	---	**133**	**80-120%**	---	---	Q-56
Bromodichloromethane	1.28	---	0.0500	mg/L	50	1.00	---	**128**	**80-120%**	---	---	Q-56
Bromoform	1.26	---	0.0500	mg/L	50	1.00	---	**126**	**80-120%**	---	---	Q-56
Bromomethane	1.62	---	0.250	mg/L	50	1.00	---	**162**	**80-120%**	---	---	E-05, Q-56
2-Butanone (MEK)	2.14	---	0.500	mg/L	50	2.00	---	107	80-120%	---	---	
n-Butylbenzene	1.11	---	0.0500	mg/L	50	1.00	---	111	80-120%	---	---	
sec-Butylbenzene	1.12	---	0.0500	mg/L	50	1.00	---	112	80-120%	---	---	
tert-Butylbenzene	1.06	---	0.0500	mg/L	50	1.00	---	106	80-120%	---	---	
Carbon tetrachloride	1.32	---	0.0500	mg/L	50	1.00	---	**132**	**80-120%**	---	---	Q-56
Chlorobenzene	1.08	---	0.0250	mg/L	50	1.00	---	108	80-120%	---	---	
Chloroethane	0.882	---	0.250	mg/L	50	1.00	---	88	80-120%	---	---	
Chloroform	1.18	---	0.0500	mg/L	50	1.00	---	118	80-120%	---	---	
Chloromethane	0.957	---	0.250	mg/L	50	1.00	---	96	80-120%	---	---	
2-Chlorotoluene	1.05	---	0.0500	mg/L	50	1.00	---	105	80-120%	---	---	
4-Chlorotoluene	1.09	---	0.0500	mg/L	50	1.00	---	109	80-120%	---	---	
1,2-Dibromo-3-chloropropane	0.940	---	0.250	mg/L	50	1.00	---	94	80-120%	---	---	
Dibromochloromethane	1.15	---	0.0500	mg/L	50	1.00	---	115	80-120%	---	---	
1,2-Dibromoethane (EDB)	1.10	---	0.0250	mg/L	50	1.00	---	110	80-120%	---	---	
Dibromomethane	1.18	---	0.0500	mg/L	50	1.00	---	118	80-120%	---	---	
1,2-Dichlorobenzene	1.03	---	0.0250	mg/L	50	1.00	---	103	80-120%	---	---	
1,3-Dichlorobenzene	1.06	---	0.0250	mg/L	50	1.00	---	106	80-120%	---	---	
1,4-Dichlorobenzene	1.03	---	0.0250	mg/L	50	1.00	---	103	80-120%	---	---	
Dichlorodifluoromethane	1.17	---	0.0500	mg/L	50	1.00	---	117	80-120%	---	---	
1,1-Dichloroethane	1.09	---	0.0250	mg/L	50	1.00	---	109	80-120%	---	---	
1,1-Dichloroethene	1.02	---	0.0250	mg/L	50	1.00	---	102	80-120%	---	---	
1,2-Dichloroethane (EDC)	1.17	---	0.0250	mg/L	50	1.00	---	117	80-120%	---	---	
cis-1,2-Dichloroethene	1.18	---	0.0500	mg/L	50	1.00	---	118	80-120%	---	---	
trans-1,2-Dichloroethene	1.08	---	0.0250	mg/L	50	1.00	---	108	80-120%	---	---	
1,2-Dichloropropane	1.15	---	0.0250	mg/L	50	1.00	---	115	80-120%	---	---	
1,3-Dichloropropane	1.10	---	0.0500	mg/L	50	1.00	---	110	80-120%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051246 - EPA 1311/5030B TCLP Volatiles							**Water**					
LCS (9051246-BS1)			Prepared: 05/24/19 09:00 Analyzed: 05/24/19 10:15									**TCLP**
2,2-Dichloropropane	1.13	---	0.0500	mg/L	50	1.00	---	113	80-120%	---	---	
1,1-Dichloropropene	1.16	---	0.0500	mg/L	50	1.00	---	116	80-120%	---	---	
cis-1,3-Dichloropropene	1.03	---	0.0500	mg/L	50	1.00	---	103	80-120%	---	---	
trans-1,3-Dichloropropene	1.13	---	0.0500	mg/L	50	1.00	---	113	80-120%	---	---	
Ethylbenzene	1.13	---	0.0250	mg/L	50	1.00	---	113	80-120%	---	---	
Hexachlorobutadiene	1.04	---	0.250	mg/L	50	1.00	---	104	80-120%	---	---	
2-Hexanone	1.96	---	0.500	mg/L	50	2.00	---	98	80-120%	---	---	
Isopropylbenzene	1.10	---	0.0500	mg/L	50	1.00	---	110	80-120%	---	---	
4-Isopropyltoluene	1.09	---	0.0500	mg/L	50	1.00	---	109	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	2.02	---	0.500	mg/L	50	2.00	---	101	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	1.03	---	0.0500	mg/L	50	1.00	---	103	80-120%	---	---	
Methylene chloride	1.32	---	0.250	mg/L	50	1.00	---	**132**	**80-120%**	---	---	B, Q-56
Naphthalene	0.863	---	0.100	mg/L	50	1.00	---	86	80-120%	---	---	
n-Propylbenzene	1.13	---	0.0250	mg/L	50	1.00	---	113	80-120%	---	---	
Styrene	1.15	---	0.0500	mg/L	50	1.00	---	115	80-120%	---	---	
1,1,1,2-Tetrachloroethane	1.18	---	0.0250	mg/L	50	1.00	---	118	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1.09	---	0.0250	mg/L	50	1.00	---	109	80-120%	---	---	
Tetrachloroethene (PCE)	1.11	---	0.0250	mg/L	50	1.00	---	111	80-120%	---	---	
Toluene	1.10	---	0.0500	mg/L	50	1.00	---	110	80-120%	---	---	
1,2,3-Trichlorobenzene	0.916	---	0.0500	mg/L	50	1.00	---	92	80-120%	---	---	
1,2,4-Trichlorobenzene	0.909	---	0.100	mg/L	50	1.00	---	91	80-120%	---	---	
1,1,1-Trichloroethane	1.18	---	0.0250	mg/L	50	1.00	---	118	80-120%	---	---	
1,1,2-Trichloroethane	1.08	---	0.0250	mg/L	50	1.00	---	108	80-120%	---	---	
Trichloroethene (TCE)	1.13	---	0.0250	mg/L	50	1.00	---	113	80-120%	---	---	
Trichlorofluoromethane	1.05	---	0.100	mg/L	50	1.00	---	105	80-120%	---	---	
1,2,3-Trichloropropane	1.10	---	0.0500	mg/L	50	1.00	---	110	80-120%	---	---	
1,2,4-Trimethylbenzene	1.10	---	0.0500	mg/L	50	1.00	---	110	80-120%	---	---	
1,3,5-Trimethylbenzene	1.09	---	0.0500	mg/L	50	1.00	---	109	80-120%	---	---	
Vinyl chloride	0.867	---	0.0250	mg/L	50	1.00	---	87	80-120%	---	---	
m,p-Xylene	2.25	---	0.0500	mg/L	50	2.00	---	113	80-120%	---	---	
o-Xylene	1.06	---	0.0250	mg/L	50	1.00	---	106	80-120%	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 105 %* *Limits: 80-120 %* *Dilution: 1x*
Toluene-d8 (Surr) *96 %* *80-120 %* *"*
4-Bromofluorobenzene (Surr) *91 %* *80-120 %* *"*

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QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051246 - EPA 1311/5030B TCLP Volatiles							**Water**					
Duplicate (9051246-DUP1)			Prepared: 05/24/19 10:48 Analyzed: 05/24/19 11:41									
QC Source Sample: COMP1 (A9E0508-05)												
1311/8260C												
Acetone	ND	---	1.00	mg/L	50	---	ND	---	---	---	30%	
Benzene	**0.737**	---	0.0125	mg/L	50	---	0.720	---	---	2	30%	
Bromobenzene	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
Bromoform	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
Bromomethane	ND	---	0.250	mg/L	50	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	---	0.500	mg/L	50	---	ND	---	---	---	30%	
n-Butylbenzene	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
Chloroethane	ND	---	0.250	mg/L	50	---	ND	---	---	---	30%	
Chloroform	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
Chloromethane	ND	---	0.250	mg/L	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	0.250	mg/L	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
Dibromomethane	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	

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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**	**A9E0508 - 05 29 19 1543**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051246 - EPA 1311/5030B TCLP Volatiles							**Water**					
Duplicate (9051246-DUP1)			Prepared: 05/24/19 10:48 Analyzed: 05/24/19 11:41									
QC Source Sample: COMP1 (A9E0508-05)												
1,2-Dichloropropane	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
Ethylbenzene	**0.127**	---	0.0250	mg/L	50	---	0.126	---	---	0.8	30%	
Hexachlorobutadiene	ND	---	0.250	mg/L	50	---	ND	---	---	---	30%	
2-Hexanone	ND	---	0.500	mg/L	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	0.500	mg/L	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
Methylene chloride	ND	---	0.350	mg/L	50	---	ND	---	---	---	30%	A-01
Naphthalene	**1.95**	---	0.100	mg/L	50	---	1.76	---	---	11	30%	
n-Propylbenzene	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
Styrene	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
Toluene	**0.266**	---	0.0500	mg/L	50	---	0.263	---	---	1	30%	
1,2,3-Trichlorobenzene	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	0.100	mg/L	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	0.100	mg/L	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	0.0500	mg/L	50	---	0.0418	---	---	***	30%	
1,3,5-Trimethylbenzene	ND	---	0.0500	mg/L	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	0.0250	mg/L	50	---	ND	---	---	---	30%	
m,p-Xylene	**0.112**	---	0.0500	mg/L	50	---	0.113	---	---	0.5	30%	
o-Xylene	**0.0632**	---	0.0250	mg/L	50	---	0.0634	---	---	0.4	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**	**A9E0508 - 05 29 19 1543**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051246 - EPA 1311/5030B TCLP Volatiles									**Water**			
Duplicate (9051246-DUP1)				Prepared: 05/24/19 10:48 Analyzed: 05/24/19 11:41								
QC Source Sample: COMP1 (A9E0508-05)												
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 106 %*	*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*98 %*	*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)			*94 %*	*80-120 %*			*"*					
Matrix Spike (9051246-MS1)				Prepared: 05/24/19 10:48 Analyzed: 05/24/19 12:09								
QC Source Sample: COMP1 (A9E0508-05)												
1311/8260C												
Acetone	2.10	---	1.00	mg/L	50	2.00	ND	105	70-130%	---	---	
Benzene	1.89	---	0.0125	mg/L	50	1.00	0.720	117	70-130%	---	---	
Bromobenzene	1.06	---	0.0250	mg/L	50	1.00	ND	106	70-130%	---	---	
Bromochloromethane	1.32	---	0.0500	mg/L	50	1.00	ND	**132**	**70-130%**	---	---	Q-54a
Bromodichloromethane	1.28	---	0.0500	mg/L	50	1.00	ND	128	70-130%	---	---	Q-54g
Bromoform	1.27	---	0.0500	mg/L	50	1.00	ND	127	70-130%	---	---	Q-54f
Bromomethane	1.41	---	0.250	mg/L	50	1.00	ND	**141**	**70-130%**	---	---	E-05, Q-54e
2-Butanone (MEK)	2.16	---	0.500	mg/L	50	2.00	ND	108	70-130%	---	---	
n-Butylbenzene	1.16	---	0.0500	mg/L	50	1.00	ND	116	70-130%	---	---	
sec-Butylbenzene	1.13	---	0.0500	mg/L	50	1.00	ND	113	70-130%	---	---	
tert-Butylbenzene	1.07	---	0.0500	mg/L	50	1.00	ND	107	70-130%	---	---	
Carbon tetrachloride	1.31	---	0.0500	mg/L	50	1.00	ND	**131**	**70-130%**	---	---	Q-54
Chlorobenzene	1.08	---	0.0250	mg/L	50	1.00	ND	108	70-130%	---	---	
Chloroethane	0.885	---	0.250	mg/L	50	1.00	ND	89	70-130%	---	---	
Chloroform	1.20	---	0.0500	mg/L	50	1.00	ND	120	70-130%	---	---	
Chloromethane	1.01	---	0.250	mg/L	50	1.00	ND	101	70-130%	---	---	
2-Chlorotoluene	1.06	---	0.0500	mg/L	50	1.00	ND	106	70-130%	---	---	
4-Chlorotoluene	1.09	---	0.0500	mg/L	50	1.00	ND	109	70-130%	---	---	
1,2-Dibromo-3-chloropropane	0.931	---	0.250	mg/L	50	1.00	ND	93	70-130%	---	---	
Dibromochloromethane	1.14	---	0.0500	mg/L	50	1.00	ND	114	70-130%	---	---	
1,2-Dibromoethane (EDB)	1.10	---	0.0250	mg/L	50	1.00	ND	110	70-130%	---	---	
Dibromomethane	1.21	---	0.0500	mg/L	50	1.00	ND	121	70-130%	---	---	
1,2-Dichlorobenzene	1.03	---	0.0250	mg/L	50	1.00	ND	103	70-130%	---	---	
1,3-Dichlorobenzene	1.06	---	0.0250	mg/L	50	1.00	ND	106	70-130%	---	---	
1,4-Dichlorobenzene	1.04	---	0.0250	mg/L	50	1.00	ND	104	70-130%	---	---	
Dichlorodifluoromethane	1.18	---	0.0500	mg/L	50	1.00	ND	118	70-130%	---	---	

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434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0508 - 05 29 19 1543**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051246 - EPA 1311/5030B TCLP Volatiles							**Water**					
Matrix Spike (9051246-MS1)			Prepared: 05/24/19 10:48 Analyzed: 05/24/19 12:09									
QC Source Sample: COMP1 (A9E0508-05)												
1,1-Dichloroethane	1.11	---	0.0250	mg/L	50	1.00	ND	111	70-130%	---	---	
1,1-Dichloroethene	1.03	---	0.0250	mg/L	50	1.00	ND	103	70-130%	---	---	
1,2-Dichloroethane (EDC)	1.19	---	0.0250	mg/L	50	1.00	ND	119	70-130%	---	---	
cis-1,2-Dichloroethene	1.18	---	0.0500	mg/L	50	1.00	ND	118	70-130%	---	---	
trans-1,2-Dichloroethene	1.08	---	0.0250	mg/L	50	1.00	ND	108	70-130%	---	---	
1,2-Dichloropropane	1.18	---	0.0250	mg/L	50	1.00	ND	118	70-130%	---	---	
1,3-Dichloropropane	1.10	---	0.0500	mg/L	50	1.00	ND	110	70-130%	---	---	
2,2-Dichloropropane	1.20	---	0.0500	mg/L	50	1.00	ND	120	70-130%	---	---	
1,1-Dichloropropene	1.18	---	0.0500	mg/L	50	1.00	ND	118	70-130%	---	---	
cis-1,3-Dichloropropene	1.02	---	0.0500	mg/L	50	1.00	ND	102	70-130%	---	---	
trans-1,3-Dichloropropene	1.14	---	0.0500	mg/L	50	1.00	ND	114	70-130%	---	---	
Ethylbenzene	1.27	---	0.0250	mg/L	50	1.00	0.126	114	70-130%	---	---	
Hexachlorobutadiene	1.04	---	0.250	mg/L	50	1.00	ND	104	70-130%	---	---	
2-Hexanone	1.96	---	0.500	mg/L	50	2.00	ND	98	70-130%	---	---	
Isopropylbenzene	1.11	---	0.0500	mg/L	50	1.00	ND	111	70-130%	---	---	
4-Isopropyltoluene	1.10	---	0.0500	mg/L	50	1.00	ND	110	70-130%	---	---	
4-Methyl-2-pentanone (MiBK)	2.00	---	0.500	mg/L	50	2.00	ND	100	70-130%	---	---	
Methyl tert-butyl ether (MTBE)	1.05	---	0.0500	mg/L	50	1.00	ND	105	70-130%	---	---	
Methylene chloride	1.29	---	0.250	mg/L	50	1.00	ND	102	70-130%	---	---	B, Q-54
Naphthalene	3.07	---	0.100	mg/L	50	1.00	1.76	**131**	**70-130%**	---	---	Q-01
n-Propylbenzene	1.15	---	0.0250	mg/L	50	1.00	ND	115	70-130%	---	---	
Styrene	1.19	---	0.0500	mg/L	50	1.00	ND	119	70-130%	---	---	
1,1,1,2-Tetrachloroethane	1.16	---	0.0250	mg/L	50	1.00	ND	116	70-130%	---	---	
1,1,2,2-Tetrachloroethane	1.09	---	0.0250	mg/L	50	1.00	ND	109	70-130%	---	---	
Tetrachloroethene (PCE)	1.11	---	0.0250	mg/L	50	1.00	ND	111	70-130%	---	---	
Toluene	1.37	---	0.0500	mg/L	50	1.00	0.263	111	70-130%	---	---	
1,2,3-Trichlorobenzene	0.964	---	0.0500	mg/L	50	1.00	ND	96	70-130%	---	---	
1,2,4-Trichlorobenzene	0.953	---	0.100	mg/L	50	1.00	ND	95	70-130%	---	---	
1,1,1-Trichloroethane	1.16	---	0.0250	mg/L	50	1.00	ND	116	70-130%	---	---	
1,1,2-Trichloroethane	1.07	---	0.0250	mg/L	50	1.00	ND	107	70-130%	---	---	
Trichloroethene (TCE)	1.12	---	0.0250	mg/L	50	1.00	ND	112	70-130%	---	---	
Trichlorofluoromethane	1.03	---	0.100	mg/L	50	1.00	ND	103	70-130%	---	---	
1,2,3-Trichloropropane	1.10	---	0.0500	mg/L	50	1.00	ND	110	70-130%	---	---	

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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**	**A9E0508 - 05 29 19 1543**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Volatile Organic Compounds by EPA 1311/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051246 - EPA 1311/5030B TCLP Volatiles							**Water**					
Matrix Spike (9051246-MS1)			Prepared: 05/24/19 10:48 Analyzed: 05/24/19 12:09									
QC Source Sample: COMP1 (A9E0508-05)												
1,2,4-Trimethylbenzene	1.18	---	0.0500	mg/L	50	1.00	0.0418	114	70-130%	---	---	
1,3,5-Trimethylbenzene	1.13	---	0.0500	mg/L	50	1.00	ND	113	70-130%	---	---	
Vinyl chloride	0.890	---	0.0250	mg/L	50	1.00	ND	89	70-130%	---	---	
m,p-Xylene	2.41	---	0.0500	mg/L	50	2.00	0.113	115	70-130%	---	---	
o-Xylene	1.15	---	0.0250	mg/L	50	1.00	0.0634	109	70-130%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 105 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*96 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*91 %*		*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**	A9E0508 - 05 29 19 1543

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051065 - EPA 3546							**Solid**					
Blank (9051065-BLK1)			Prepared: 05/20/19 16:13 Analyzed: 05/21/19 09:51									
EPA 8270D												
Acenaphthene	**148**	---	6.68	ug/kg	1	---	---	---	---	---	---	B, Q-29
Acenaphthylene	ND	---	6.68	ug/kg	1	---	---	---	---	---	---	
Anthracene	ND	---	6.68	ug/kg	1	---	---	---	---	---	---	B-02
Benz(a)anthracene	ND	---	6.68	ug/kg	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	10.0	ug/kg	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	10.0	ug/kg	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	10.0	ug/kg	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	6.68	ug/kg	1	---	---	---	---	---	---	
Chrysene	ND	---	6.68	ug/kg	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	6.68	ug/kg	1	---	---	---	---	---	---	
Fluoranthene	ND	---	6.68	ug/kg	1	---	---	---	---	---	---	B-02
Fluorene	**26.2**	---	6.68	ug/kg	1	---	---	---	---	---	---	B
Indeno(1,2,3-cd)pyrene	ND	---	6.68	ug/kg	1	---	---	---	---	---	---	
1-Methylnaphthalene	**108**	---	13.3	ug/kg	1	---	---	---	---	---	---	B
2-Methylnaphthalene	**223**	---	13.3	ug/kg	1	---	---	---	---	---	---	B, Q-29
Naphthalene	**1070**	---	13.3	ug/kg	1	---	---	---	---	---	---	B, Q-29
Phenanthrene	**27.7**	---	6.68	ug/kg	1	---	---	---	---	---	---	B
Pyrene	ND	---	6.68	ug/kg	1	---	---	---	---	---	---	B-02
Carbazole	ND	---	10.0	ug/kg	1	---	---	---	---	---	---	
Dibenzofuran	**46.6**	---	6.68	ug/kg	1	---	---	---	---	---	---	B
4-Chloro-3-methylphenol	ND	---	66.8	ug/kg	1	---	---	---	---	---	---	
2-Chlorophenol	ND	---	33.2	ug/kg	1	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	---	33.2	ug/kg	1	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	---	33.2	ug/kg	1	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	---	167	ug/kg	1	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	---	167	ug/kg	1	---	---	---	---	---	---	
2-Methylphenol	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	B-02
3+4-Methylphenol(s)	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	B-02
2-Nitrophenol	ND	---	66.8	ug/kg	1	---	---	---	---	---	---	
4-Nitrophenol	ND	---	66.8	ug/kg	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	---	66.8	ug/kg	1	---	---	---	---	---	---	
Phenol	**23.4**	---	13.3	ug/kg	1	---	---	---	---	---	---	B
2,3,4,6-Tetrachlorophenol	ND	---	33.2	ug/kg	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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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**	**A9E0508 - 05 29 19 1543**

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051065 - EPA 3546							**Solid**					
Blank (9051065-BLK1)			Prepared: 05/20/19 16:13		Analyzed: 05/21/19 09:51							
2,3,5,6-Tetrachlorophenol	ND	---	33.2	ug/kg	1	---	---	---	---	---	---	
2,4,5-Trichlorophenol	ND	---	33.2	ug/kg	1	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	---	33.2	ug/kg	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	---	100	ug/kg	1	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	---	66.8	ug/kg	1	---	---	---	---	---	---	
Diethylphthalate	ND	---	66.8	ug/kg	1	---	---	---	---	---	---	
Dimethylphthalate	ND	---	66.8	ug/kg	1	---	---	---	---	---	---	
Di-n-butylphthalate	ND	---	66.8	ug/kg	1	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	---	66.8	ug/kg	1	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	
2,2'-Oxybis(1-Chloropropane)	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	
Hexachlorobenzene	ND	---	6.68	ug/kg	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	---	33.2	ug/kg	1	---	---	---	---	---	---	
Hexachloroethane	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	
2-Chloronaphthalene	ND	---	6.68	ug/kg	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	
Aniline	ND	---	33.2	ug/kg	1	---	---	---	---	---	---	
4-Chloroaniline	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	
2-Nitroaniline	ND	---	133	ug/kg	1	---	---	---	---	---	---	
3-Nitroaniline	ND	---	133	ug/kg	1	---	---	---	---	---	---	
4-Nitroaniline	ND	---	133	ug/kg	1	---	---	---	---	---	---	
Nitrobenzene	ND	---	66.8	ug/kg	1	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	---	66.8	ug/kg	1	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	---	66.8	ug/kg	1	---	---	---	---	---	---	

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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**	**A9E0508 - 05 29 19 1543**

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051065 - EPA 3546							**Solid**					
Blank (9051065-BLK1)			Prepared: 05/20/19 16:13		Analyzed: 05/21/19 09:51							
Benzoic acid	ND	---	832	ug/kg	1	---	---	---	---	---	---	
Benzyl alcohol	ND	---	33.2	ug/kg	1	---	---	---	---	---	---	
Isophorone	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	
Azobenzene (1,2-DPH)	ND	---	16.7	ug/kg	1	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	---	167	ug/kg	1	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	---	134	ug/kg	1	---	---	---	---	---	---	Q-52
1,2-Dinitrobenzene	ND	---	167	ug/kg	1	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	---	167	ug/kg	1	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	---	167	ug/kg	1	---	---	---	---	---	---	
Pyridine	ND	---	33.2	ug/kg	1	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)		*Recovery:*	*87 %*	*Limits:*	*37-122 %*		*Dilution:*	*1x*				
2-Fluorobiphenyl (Surr)			*89 %*		*44-115 %*			*"*				
Phenol-d6 (Surr)			*79 %*		*33-122 %*			*"*				
p-Terphenyl-d14 (Surr)			*94 %*		*54-127 %*			*"*				
2-Fluorophenol (Surr)			*81 %*		*35-115 %*			*"*				
2,4,6-Tribromophenol (Surr)			*87 %*		*39-132 %*			*"*				
LCS (9051065-BS1)			Prepared: 05/20/19 16:13		Analyzed: 05/21/19 10:28							**Q-18**
EPA 8270D												
Acenaphthene	682	---	6.68	ug/kg	1	533	---	**128**	**40-122%**	---	---	B, Q-29
Acenaphthylene	567	---	6.68	ug/kg	1	533	---	106	32-132%	---	---	
Anthracene	550	---	6.68	ug/kg	1	533	---	103	47-123%	---	---	B-02
Benz(a)anthracene	557	---	6.68	ug/kg	1	533	---	104	49-126%	---	---	
Benzo(a)pyrene	592	---	10.0	ug/kg	1	533	---	111	45-129%	---	---	
Benzo(b)fluoranthene	545	---	10.0	ug/kg	1	533	---	102	45-132%	---	---	
Benzo(k)fluoranthene	539	---	10.0	ug/kg	1	533	---	101	47-132%	---	---	
Benzo(g,h,i)perylene	565	---	6.68	ug/kg	1	533	---	106	43-134%	---	---	
Chrysene	542	---	6.68	ug/kg	1	533	---	102	50-124%	---	---	
Dibenz(a,h)anthracene	558	---	6.68	ug/kg	1	533	---	105	45-134%	---	---	
Fluoranthene	554	---	6.68	ug/kg	1	533	---	104	50-127%	---	---	B-02
Fluorene	546	---	6.68	ug/kg	1	533	---	102	43-125%	---	---	B
Indeno(1,2,3-cd)pyrene	538	---	6.68	ug/kg	1	533	---	101	45-133%	---	---	
1-Methylnaphthalene	617	---	13.3	ug/kg	1	533	---	116	40-120%	---	---	B
2-Methylnaphthalene	740	---	13.3	ug/kg	1	533	---	**139**	**38-122%**	---	---	B, Q-29

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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**	**A9E0508 - 05 29 19 1543**

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051065 - EPA 3546							**Solid**					
LCS (9051065-BS1)			Prepared: 05/20/19 16:13		Analyzed: 05/21/19 10:28							**Q-18**
Naphthalene	1450	---	13.3	ug/kg	1	533	---	**273**	**35-123%**	---	---	Q-29, B
Phenanthrene	561	---	6.68	ug/kg	1	533	---	105	50-121%	---	---	B
Pyrene	546	---	6.68	ug/kg	1	533	---	102	47-127%	---	---	B-02
Carbazole	557	---	10.0	ug/kg	1	533	---	104	50-122%	---	---	
Dibenzofuran	606	---	6.68	ug/kg	1	533	---	114	44-120%	---	---	B
4-Chloro-3-methylphenol	521	---	66.8	ug/kg	1	533	---	98	45-122%	---	---	
2-Chlorophenol	537	---	33.2	ug/kg	1	533	---	101	34-121%	---	---	
2,4-Dichlorophenol	560	---	33.2	ug/kg	1	533	---	105	40-122%	---	---	
2,4-Dimethylphenol	584	---	33.2	ug/kg	1	533	---	109	30-127%	---	---	
2,4-Dinitrophenol	534	---	167	ug/kg	1	533	---	100	5-137%	---	---	
4,6-Dinitro-2-methylphenol	645	---	167	ug/kg	1	533	---	121	29-132%	---	---	
2-Methylphenol	550	---	16.7	ug/kg	1	533	---	103	32-122%	---	---	B-02
3+4-Methylphenol(s)	577	---	16.7	ug/kg	1	533	---	108	34-120%	---	---	B-02
2-Nitrophenol	563	---	66.8	ug/kg	1	533	---	106	36-123%	---	---	
4-Nitrophenol	520	---	66.8	ug/kg	1	533	---	97	30-132%	---	---	
Pentachlorophenol (PCP)	560	---	66.8	ug/kg	1	533	---	105	25-133%	---	---	
Phenol	547	---	13.3	ug/kg	1	533	---	103	34-120%	---	---	B
2,3,4,6-Tetrachlorophenol	545	---	33.2	ug/kg	1	533	---	102	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	555	---	33.2	ug/kg	1	533	---	104	40-120%	---	---	
2,4,5-Trichlorophenol	566	---	33.2	ug/kg	1	533	---	106	41-124%	---	---	
2,4,6-Trichlorophenol	548	---	33.2	ug/kg	1	533	---	103	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	596	---	100	ug/kg	1	533	---	112	51-133%	---	---	
Butyl benzyl phthalate	590	---	66.8	ug/kg	1	533	---	111	48-132%	---	---	
Diethylphthalate	573	---	66.8	ug/kg	1	533	---	107	50-124%	---	---	
Dimethylphthalate	571	---	66.8	ug/kg	1	533	---	107	48-124%	---	---	
Di-n-butylphthalate	576	---	66.8	ug/kg	1	533	---	108	51-128%	---	---	
Di-n-octyl phthalate	570	---	66.8	ug/kg	1	533	---	107	44-140%	---	---	
N-Nitrosodimethylamine	470	---	16.7	ug/kg	1	533	---	88	23-120%	---	---	
N-Nitroso-di-n-propylamine	507	---	16.7	ug/kg	1	533	---	95	36-120%	---	---	
N-Nitrosodiphenylamine	549	---	16.7	ug/kg	1	533	---	103	38-127%	---	---	
Bis(2-Chloroethoxy) methane	510	---	16.7	ug/kg	1	533	---	96	36-121%	---	---	
Bis(2-Chloroethyl) ether	489	---	16.7	ug/kg	1	533	---	92	31-120%	---	---	
2,2'-Oxybis(1-Chloropropane)	456	---	16.7	ug/kg	1	533	---	86	33-131%	---	---	
Hexachlorobenzene	539	---	6.68	ug/kg	1	533	---	101	44-122%	---	---	

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434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0508 - 05 29 19 1543**

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051065 - EPA 3546							**Solid**					
LCS (9051065-BS1)			Prepared: 05/20/19 16:13		Analyzed: 05/21/19 10:28							**Q-18**
Hexachlorobutadiene	520	---	16.7	ug/kg	1	533	---	98	32-123%	---	---	
Hexachlorocyclopentadiene	622	---	33.2	ug/kg	1	533	---	117	5-140%	---	---	
Hexachloroethane	521	---	16.7	ug/kg	1	533	---	98	28-120%	---	---	
2-Chloronaphthalene	580	---	6.68	ug/kg	1	533	---	109	41-120%	---	---	
1,2-Dichlorobenzene	523	---	16.7	ug/kg	1	533	---	98	33-120%	---	---	
1,3-Dichlorobenzene	495	---	16.7	ug/kg	1	533	---	93	30-120%	---	---	
1,4-Dichlorobenzene	523	---	16.7	ug/kg	1	533	---	98	31-120%	---	---	
1,2,4-Trichlorobenzene	517	---	16.7	ug/kg	1	533	---	97	34-120%	---	---	
4-Bromophenyl phenyl ether	552	---	16.7	ug/kg	1	533	---	104	46-124%	---	---	
4-Chlorophenyl phenyl ether	543	---	16.7	ug/kg	1	533	---	102	45-121%	---	---	
Aniline	378	---	33.2	ug/kg	1	533	---	71	7-120%	---	---	Q-31
4-Chloroaniline	307	---	16.7	ug/kg	1	533	---	58	16-120%	---	---	Q-31
2-Nitroaniline	591	---	133	ug/kg	1	533	---	111	44-127%	---	---	
3-Nitroaniline	638	---	133	ug/kg	1	533	---	120	33-120%	---	---	Q-41
4-Nitroaniline	589	---	133	ug/kg	1	533	---	110	35-120%	---	---	
Nitrobenzene	507	---	66.8	ug/kg	1	533	---	95	34-122%	---	---	
2,4-Dinitrotoluene	571	---	66.8	ug/kg	1	533	---	107	48-126%	---	---	
2,6-Dinitrotoluene	603	---	66.8	ug/kg	1	533	---	113	46-124%	---	---	
Benzoic acid	612	---	418	ug/kg	1	1070	---	57	5-140%	---	---	
Benzyl alcohol	525	---	33.2	ug/kg	1	533	---	98	29-122%	---	---	
Isophorone	516	---	16.7	ug/kg	1	533	---	97	30-122%	---	---	
Azobenzene (1,2-DPH)	545	---	16.7	ug/kg	1	533	---	102	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	559	---	167	ug/kg	1	533	---	105	60-121%	---	---	
3,3'-Dichlorobenzidine	2960	---	134	ug/kg	1	1070	---	**277**	**22-121%**	---	---	Q-29, Q-41
1,2-Dinitrobenzene	559	---	167	ug/kg	1	533	---	105	44-120%	---	---	
1,3-Dinitrobenzene	591	---	167	ug/kg	1	533	---	111	42-127%	---	---	
1,4-Dinitrobenzene	594	---	167	ug/kg	1	533	---	111	37-132%	---	---	
Pyridine	375	---	33.2	ug/kg	1	533	---	70	5-120%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 83 %*	*Limits: 37-122 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*93 %*	*44-115 %*	*"*
Phenol-d6 (Surr)	*89 %*	*33-122 %*	*"*
p-Terphenyl-d14 (Surr)	*97 %*	*54-127 %*	*"*
2-Fluorophenol (Surr)	*89 %*	*35-115 %*	*"*
2,4,6-Tribromophenol (Surr)	*105 %*	*39-132 %*	*"*

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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051065 - EPA 3546							**Solid**					
Duplicate (9051065-DUP1)			Prepared: 05/20/19 16:13 Analyzed: 05/21/19 11:40									
QC Source Sample: COMP1 (A9E0508-05)												
EPA 8270D												
Acenaphthene	ND	---	807000	ug/kg	10000	---	880000	---	---	***	30%	B
Acenaphthylene	ND	---	807000	ug/kg	10000	---	ND	---	---	---	30%	
Anthracene	**1970000**	---	807000	ug/kg	10000	---	2050000	---	---	4	30%	B-02
Benz(a)anthracene	**6290000**	---	807000	ug/kg	10000	---	7230000	---	---	14	30%	
Benzo(a)pyrene	**8270000**	---	1210000	ug/kg	10000	---	9030000	---	---	9	30%	
Benzo(b)fluoranthene	**9400000**	---	1210000	ug/kg	10000	---	10100000	---	---	7	30%	M-05
Benzo(k)fluoranthene	**3200000**	---	1210000	ug/kg	10000	---	3740000	---	---	15	30%	M-05
Benzo(g,h,i)perylene	**6320000**	---	807000	ug/kg	10000	---	6990000	---	---	10	30%	
Chrysene	**7370000**	---	807000	ug/kg	10000	---	7850000	---	---	6	30%	
Dibenz(a,h)anthracene	**961000**	---	807000	ug/kg	10000	---	973000	---	---	1	30%	
Fluoranthene	**17700000**	---	807000	ug/kg	10000	---	18700000	---	---	6	30%	B-02
Fluorene	ND	---	807000	ug/kg	10000	---	445000	---	---	***	30%	B
Indeno(1,2,3-cd)pyrene	**6140000**	---	807000	ug/kg	10000	---	6560000	---	---	7	30%	
1-Methylnaphthalene	ND	---	1610000	ug/kg	10000	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	---	1610000	ug/kg	10000	---	ND	---	---	---	30%	
Naphthalene	ND	---	1610000	ug/kg	10000	---	970000	---	---	***	**30%**	Q-17
Phenanthrene	**8650000**	---	807000	ug/kg	10000	---	8820000	---	---	2	30%	B
Pyrene	**17400000**	---	807000	ug/kg	10000	---	18500000	---	---	6	30%	B-02
Carbazole	**2170000**	---	1210000	ug/kg	10000	---	2280000	---	---	5	30%	
Dibenzofuran	ND	---	807000	ug/kg	10000	---	ND	---	---	---	30%	
4-Chloro-3-methylphenol	ND	---	8070000	ug/kg	10000	---	ND	---	---	---	30%	
2-Chlorophenol	ND	---	4020000	ug/kg	10000	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	---	4020000	ug/kg	10000	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	---	4020000	ug/kg	10000	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	---	20200000	ug/kg	10000	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	---	20200000	ug/kg	10000	---	ND	---	---	---	30%	
2-Methylphenol	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
2-Nitrophenol	ND	---	8070000	ug/kg	10000	---	ND	---	---	---	30%	
4-Nitrophenol	ND	---	8070000	ug/kg	10000	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	---	8070000	ug/kg	10000	---	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**	**A9E0508 - 05 29 19 1543**

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051065 - EPA 3546							**Solid**					
Duplicate (9051065-DUP1)			Prepared: 05/20/19 16:13 Analyzed: 05/21/19 11:40									
QC Source Sample: COMP1 (A9E0508-05)												
Phenol	ND	---	1610000	ug/kg	10000	---	ND	---	---	---	30%	
2,3,4,6-Tetrachlorophenol	ND	---	4020000	ug/kg	10000	---	ND	---	---	---	30%	
2,3,5,6-Tetrachlorophenol	ND	---	4020000	ug/kg	10000	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	---	4020000	ug/kg	10000	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	---	4020000	ug/kg	10000	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	---	12100000	ug/kg	10000	---	ND	---	---	---	30%	
Butyl benzyl phthalate	ND	---	8070000	ug/kg	10000	---	ND	---	---	---	30%	
Diethylphthalate	ND	---	8070000	ug/kg	10000	---	ND	---	---	---	30%	
Dimethylphthalate	ND	---	8070000	ug/kg	10000	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	---	8070000	ug/kg	10000	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	---	8070000	ug/kg	10000	---	ND	---	---	---	30%	
N-Nitrosodimethylamine	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
Bis(2-Chloroethoxy) methane	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
2,2'-Oxybis(1-Chloropropane)	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	---	807000	ug/kg	10000	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	---	4020000	ug/kg	10000	---	ND	---	---	---	30%	
Hexachloroethane	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	---	807000	ug/kg	10000	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
4-Bromophenyl phenyl ether	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
Aniline	ND	---	4020000	ug/kg	10000	---	ND	---	---	---	30%	
4-Chloroaniline	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
2-Nitroaniline	ND	---	16100000	ug/kg	10000	---	ND	---	---	---	30%	
3-Nitroaniline	ND	---	16100000	ug/kg	10000	---	ND	---	---	---	30%	
4-Nitroaniline	ND	---	16100000	ug/kg	10000	---	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**	**A9E0508 - 05 29 19 1543**

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051065 - EPA 3546							**Solid**					
Duplicate (9051065-DUP1)			Prepared: 05/20/19 16:13 Analyzed: 05/21/19 11:40									
QC Source Sample: COMP1 (A9E0508-05)												
Nitrobenzene	ND	---	8070000	ug/kg	10000	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	---	8070000	ug/kg	10000	---	ND	---	---	---	30%	
2,6-Dinitrotoluene	ND	---	8070000	ug/kg	10000	---	ND	---	---	---	30%	
Benzoic acid	ND	---	101000000	ug/kg	10000	---	ND	---	---	---	30%	
Benzyl alcohol	ND	---	4020000	ug/kg	10000	---	ND	---	---	---	30%	
Isophorone	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	---	2020000	ug/kg	10000	---	ND	---	---	---	30%	
Bis(2-Ethylhexyl) adipate	ND	---	20200000	ug/kg	10000	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	---	16100000	ug/kg	10000	---	ND	---	---	---	30%	Q-52
1,2-Dinitrobenzene	ND	---	20200000	ug/kg	10000	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	---	20200000	ug/kg	10000	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	---	20200000	ug/kg	10000	---	ND	---	---	---	30%	
Pyridine	ND	---	4020000	ug/kg	10000	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 865 %*		*Limits: 37-122 %*		*Dilution: 10000x*					S-05
2-Fluorobiphenyl (Surr)			*%*		*44-115 %*		*"*					S-01
Phenol-d6 (Surr)			*%*		*33-122 %*		*"*					S-01
p-Terphenyl-d14 (Surr)			*%*		*54-127 %*		*"*					S-01
2-Fluorophenol (Surr)			*%*		*35-115 %*		*"*					S-01
2,4,6-Tribromophenol (Surr)			*%*		*39-132 %*		*"*					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**	**A9E0508 - 05 29 19 1543**

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 9051011 - EPA 3051A							**Solid**					
Blank (9051011-BLK1)			Prepared: 05/17/19 12:15 Analyzed: 05/20/19 20:55									
EPA 6020A												
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	---	---	---	---	---	---	
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	---	---	---	---	---	---	
Manganese	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Mercury	ND	---	0.0769	mg/kg	10	---	---	---	---	---	---	
Nickel	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Selenium	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Silver	ND	---	0.192	mg/kg	10	---	---	---	---	---	---	
Thallium	ND	---	0.192	mg/kg	10	---	---	---	---	---	---	
Vanadium	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Zinc	ND	---	3.85	mg/kg	10	---	---	---	---	---	---	
Blank (9051011-BLK2)			Prepared: 05/17/19 12:15 Analyzed: 05/21/19 19:25									
EPA 6020A												
Aluminum	ND	---	48.1	mg/kg	10	---	---	---	---	---	---	
Calcium	ND	---	96.2	mg/kg	10	---	---	---	---	---	---	
Magnesium	ND	---	48.1	mg/kg	10	---	---	---	---	---	---	
Potassium	ND	---	96.2	mg/kg	10	---	---	---	---	---	---	
Sodium	ND	---	96.2	mg/kg	10	---	---	---	---	---	---	Q-16
LCS (9051011-BS1)			Prepared: 05/17/19 12:15 Analyzed: 05/20/19 20:59									
EPA 6020A												
Antimony	24.2	---	1.00	mg/kg	10	25.0	---	97	80-120%	---	---	
Arsenic	50.5	---	1.00	mg/kg	10	50.0	---	101	80-120%	---	---	
Barium	51.9	---	1.00	mg/kg	10	50.0	---	104	80-120%	---	---	
Beryllium	23.9	---	0.200	mg/kg	10	25.0	---	96	80-120%	---	---	
Cadmium	50.2	---	0.200	mg/kg	10	50.0	---	100	80-120%	---	---	

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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**	**A9E0508 - 05 29 19 1543**

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 9051011 - EPA 3051A							**Solid**					
LCS (9051011-BS1)			Prepared: 05/17/19 12:15 Analyzed: 05/20/19 20:59									
Chromium	51.7	---	1.00	mg/kg	10	50.0	---	103	80-120%	---	---	
Copper	50.6	---	1.00	mg/kg	10	50.0	---	101	80-120%	---	---	
Iron	2550	---	50.0	mg/kg	10	2500	---	102	80-120%	---	---	
Lead	48.6	---	0.200	mg/kg	10	50.0	---	97	80-120%	---	---	
Manganese	51.7	---	1.00	mg/kg	10	50.0	---	103	80-120%	---	---	
Mercury	0.969	---	0.0800	mg/kg	10	1.00	---	97	80-120%	---	---	
Nickel	52.3	---	1.00	mg/kg	10	50.0	---	105	80-120%	---	---	
Selenium	22.4	---	1.00	mg/kg	10	25.0	---	90	80-120%	---	---	
Silver	24.8	---	0.200	mg/kg	10	25.0	---	99	80-120%	---	---	
Thallium	24.6	---	0.200	mg/kg	10	25.0	---	99	80-120%	---	---	
Vanadium	50.5	---	1.00	mg/kg	10	50.0	---	101	80-120%	---	---	
Zinc	52.8	---	4.00	mg/kg	10	50.0	---	106	80-120%	---	---	
LCS (9051011-BS2)			Prepared: 05/17/19 12:15 Analyzed: 05/21/19 19:29									
EPA 6020A												
Aluminum	2420	---	50.0	mg/kg	10	2500	---	97	80-120%	---	---	
Calcium	2550	---	100	mg/kg	10	2500	---	102	80-120%	---	---	
Magnesium	2410	---	50.0	mg/kg	10	2500	---	96	80-120%	---	---	
Potassium	2600	---	100	mg/kg	10	2500	---	104	80-120%	---	---	
Sodium	2580	---	100	mg/kg	10	2500	---	103	80-120%	---	---	Q-16
Duplicate (9051011-DUP1)			Prepared: 05/17/19 12:15 Analyzed: 05/20/19 21:21									
QC Source Sample: COMP1 (A9E0508-05)												
EPA 6020A												
Aluminum	**1710**	---	49.9	mg/kg	10	---	1690	---	---	0.8	40%	
Antimony	ND	---	0.998	mg/kg	10	---	ND	---	---	---	40%	
Arsenic	**1.33**	---	0.998	mg/kg	10	---	1.66	---	---	22	40%	
Barium	**15.6**	---	0.998	mg/kg	10	---	20.5	---	---	27	40%	
Beryllium	ND	---	0.200	mg/kg	10	---	0.211	---	---	***	40%	
Cadmium	**0.557**	---	0.200	mg/kg	10	---	0.349	---	---	**46**	**40%**	Q-05
Calcium	**509**	---	99.8	mg/kg	10	---	559	---	---	9	40%	
Chromium	**2.38**	---	0.998	mg/kg	10	---	2.83	---	---	18	40%	
Copper	**7.83**	---	0.998	mg/kg	10	---	10.9	---	---	33	40%	
Iron	**33800**	---	49.9	mg/kg	10	---	30800	---	---	9	40%	

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434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0508 - 05 29 19 1543**

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 9051011 - EPA 3051A							**Solid**					
Duplicate (9051011-DUP1)			Prepared: 05/17/19 12:15 Analyzed: 05/20/19 21:21									
QC Source Sample: COMP1 (A9E0508-05)												
Lead	**22.8**	---	0.200	mg/kg	10	---	26.8	---	---	16	40%	
Magnesium	**106**	---	49.9	mg/kg	10	---	82.2	---	---	25	40%	
Manganese	**362**	---	0.998	mg/kg	10	---	363	---	---	0.3	40%	
Mercury	ND	---	0.0798	mg/kg	10	---	ND	---	---	---	40%	
Nickel	**9.17**	---	0.998	mg/kg	10	---	7.86	---	---	15	40%	
Potassium	ND	---	99.8	mg/kg	10	---	ND	---	---	---	40%	
Selenium	ND	---	0.998	mg/kg	10	---	ND	---	---	---	40%	
Silver	ND	---	0.200	mg/kg	10	---	ND	---	---	---	40%	
Thallium	ND	---	0.200	mg/kg	10	---	ND	---	---	---	40%	
Vanadium	**11.9**	---	0.998	mg/kg	10	---	16.3	---	---	32	40%	
Zinc	**74.0**	---	3.99	mg/kg	10	---	71.3	---	---	4	40%	
Duplicate (9051011-DUP2)			Prepared: 05/17/19 12:15 Analyzed: 05/21/19 19:37									
QC Source Sample: COMP1 (A9E0508-05RE1)												
EPA 6020A												
Sodium	ND	---	99.8	mg/kg	10	---	95.6	---	---	***	40%	Q-16
Matrix Spike (9051011-MS1)			Prepared: 05/17/19 12:15 Analyzed: 05/20/19 21:25									
QC Source Sample: COMP1 (A9E0508-05)												
EPA 6020A												
Aluminum	3640	---	52.4	mg/kg	10	2620	1690	**74**	**75-125%**	---	---	Q-04
Antimony	23.7	---	1.05	mg/kg	10	26.2	ND	90	75-125%	---	---	
Arsenic	50.4	---	1.05	mg/kg	10	52.4	1.66	93	75-125%	---	---	
Barium	64.0	---	1.05	mg/kg	10	52.4	20.5	83	75-125%	---	---	
Beryllium	23.4	---	0.210	mg/kg	10	26.2	0.211	88	75-125%	---	---	
Cadmium	50.3	---	0.210	mg/kg	10	52.4	0.349	95	75-125%	---	---	
Calcium	2810	---	105	mg/kg	10	2620	559	86	75-125%	---	---	
Chromium	61.6	---	1.05	mg/kg	10	52.4	2.83	112	75-125%	---	---	
Copper	77.0	---	1.05	mg/kg	10	52.4	10.9	**126**	**75-125%**	---	---	Q-04
Iron	32000	---	52.4	mg/kg	10	2620	30800	**47**	**75-125%**	---	---	Q-03, Q-04
Lead	66.9	---	0.210	mg/kg	10	52.4	26.8	77	75-125%	---	---	
Magnesium	2530	---	52.4	mg/kg	10	2620	82.2	93	75-125%	---	---	

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Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0508 - 05 29 19 1543**

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 9051011 - EPA 3051A							**Solid**					
Matrix Spike (9051011-MS1)			Prepared: 05/17/19 12:15		Analyzed: 05/20/19 21:25							
QC Source Sample: COMP1 (A9E0508-05)												
Manganese	181	---	1.05	mg/kg	10	52.4	363	**-346**	**75-125%**	---	---	Q-04
Mercury	0.960	---	0.0839	mg/kg	10	1.05	ND	92	75-125%	---	---	
Nickel	76.5	---	1.05	mg/kg	10	52.4	7.86	**131**	**75-125%**	---	---	Q-04
Potassium	2540	---	105	mg/kg	10	2620	ND	97	75-125%	---	---	
Selenium	21.7	---	1.05	mg/kg	10	26.2	ND	83	75-125%	---	---	
Silver	25.2	---	0.210	mg/kg	10	26.2	ND	96	75-125%	---	---	
Thallium	23.2	---	0.210	mg/kg	10	26.2	ND	89	75-125%	---	---	
Vanadium	60.5	---	1.05	mg/kg	10	52.4	16.3	84	75-125%	---	---	
Zinc	97.8	---	4.19	mg/kg	10	52.4	71.3	**51**	**75-125%**	---	---	Q-04
Matrix Spike (9051011-MS2)			Prepared: 05/17/19 12:15		Analyzed: 05/21/19 19:50							
QC Source Sample: COMP1 (A9E0508-05RE1)												
EPA 6020A												
Sodium	2620	---	105	mg/kg	10	2620	95.6	96	75-125%	---	---	Q-16

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434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0508 - 05 29 19 1543**

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 9051027 - ASTM D7511-12mod (S)							**Solid**					
Blank (9051027-BLK1)			Prepared: 05/20/19 07:51		Analyzed: 05/20/19 13:50							
D7511-12												
Cyanide, Total	ND	---	0.100	mg/kg	1	---	---	---	---	---	---	
LCS (9051027-BS1)			Prepared: 05/20/19 07:51		Analyzed: 05/20/19 13:52							
D7511-12												
Cyanide, Total	0.422	---	0.100	mg/kg	1	0.400	---	105	84-116%	---	---	
LCS (9051027-BS2)			Prepared: 05/20/19 07:51		Analyzed: 05/20/19 13:48							
D7511-12												
Cyanide, Total	0.108	---	0.100	mg/kg	1	0.200	---	**54**	**84-116%**	---	---	CN_I
Matrix Spike (9051027-MS1)			Prepared: 05/20/19 07:51		Analyzed: 05/20/19 14:00							
QC Source Sample: COMP1 (A9E0508-05)												
D7511-12												
Cyanide, Total	14.1	---	2.00	mg/kg	20	0.399	14.5	**-95**	**64-136%**	---	---	Q-03
Matrix Spike Dup (9051027-MSD1)			Prepared: 05/20/19 07:51		Analyzed: 05/20/19 14:04							
QC Source Sample: COMP1 (A9E0508-05)												
D7511-12												
Cyanide, Total	13.5	---	1.97	mg/kg	20	0.395	14.5	**-266**	**64-136%**	5	47%	Q-03

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Philip Nerenberg, Lab Director

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**	**A9E0508 - 05 29 19 1543**

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: 9051067							
A9E0508-05	Solid	NWTPH-Dx	05/13/19 15:15	05/20/19 16:21	1.18g/5mL	10g/5mL	8.47

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: 9051006							
A9E0508-05	Solid	NWTPH-Gx (MS)	05/13/19 15:15	05/13/19 15:15	10.15g/15mL	5g/5mL	1.48

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: 9051006							
A9E0508-05	Solid	5035A/8260C	05/13/19 15:15	05/13/19 15:15	10.15g/15mL	5g/5mL	1.48

TCLP Volatile Organic Compounds by EPA 1311/8260C

Prep: EPA 1311/5030B TCLP Volatiles

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9051246							
A9E0508-05	Solid	1311/8260C	05/13/19 15:15	05/24/19 10:48	5mL/5mL	5mL/5mL	1.00

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9051065							
A9E0508-05	Solid	EPA 8270D	05/13/19 15:15	05/20/19 16:13	1.16g/5mL	15g/2mL	32.30

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: 9051011							
A9E0508-05	Solid	EPA 6020A	05/13/19 15:15	05/17/19 12:15	0.482g/50mL	0.5g/50mL	1.04

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434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0508 - 05 29 19 1543**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020A (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A9E0508-05RE1	Solid	EPA 6020A	05/13/19 15:15	05/17/19 12:15	0.482g/50mL	0.5g/50mL	1.04

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: 9051027							
A9E0508-05	Solid	D7511-12	05/13/19 15:15	05/20/19 07:51	2.5342g/50mL	2.5g/50mL	0.99

TCLP Extraction by EPA 1311 (ZHE)

Prep: EPA 1311 TCLP/ZHE

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9051218							
A9E0508-05	Solid	EPA 1311 ZHE	05/13/19 15:15	05/23/19 15:35	25.06g/500mL	25g/500mL	NA

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QUALIFIER DEFINITIONS

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

Apex Laboratories

A-01	Reporting limit raised due to possible lab contamination.
B	Analyte detected in an associated blank at a level above the MRL. (See Notes and Conventions below.)
B-02	Analyte detected in an associated blank at a level between one-half the MRL and the MRL. (See Notes and Conventions below.)
CN_I	Cyanide Interference Challenge Solution. No Cyanide is present in spike solution. Results are valid if Non Detect (No Cyanide detected.)
COMP	Sample is a composite of discrete samples. See prep information for details.
E-05	Estimated Result. Initial Calibration Verification (ICV) failed high. No affect on non-detect results.
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-01	Spike recovery and/or RPD is outside acceptance limits.
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-16	Reanalysis of an original Batch QC sample.
Q-17	RPD between original and duplicate sample is outside of established control limits.
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-29	Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
Q-31	Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
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-52	Due to erratic or low blank spike recoveries, results for this analyte are considered Estimated Values.
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +12%. The results are reported as Estimated Values.
Q-54a	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +13%. The results are reported as Estimated Values.
Q-54b	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +3.3%. The results are reported as Estimated Values.

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Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0508 - 05 29 19 1543**

Q-54c	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +3.5%. The results are reported as Estimated Values.
Q-54d	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +3.6%. The results are reported as Estimated Values.
Q-54e	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +42%. The results are reported as Estimated Values.
Q-54f	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +6%. The results are reported as Estimated Values.
Q-54g	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +8%. The results are reported as Estimated Values.
Q-54h	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +9.1%. The results are reported as Estimated Values.
Q-54i	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by -5.9%. 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.
Q-56	Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260C
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.
TCLP	This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 9051218.

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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**	**A9E0508 - 05 29 19 1543**

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:**
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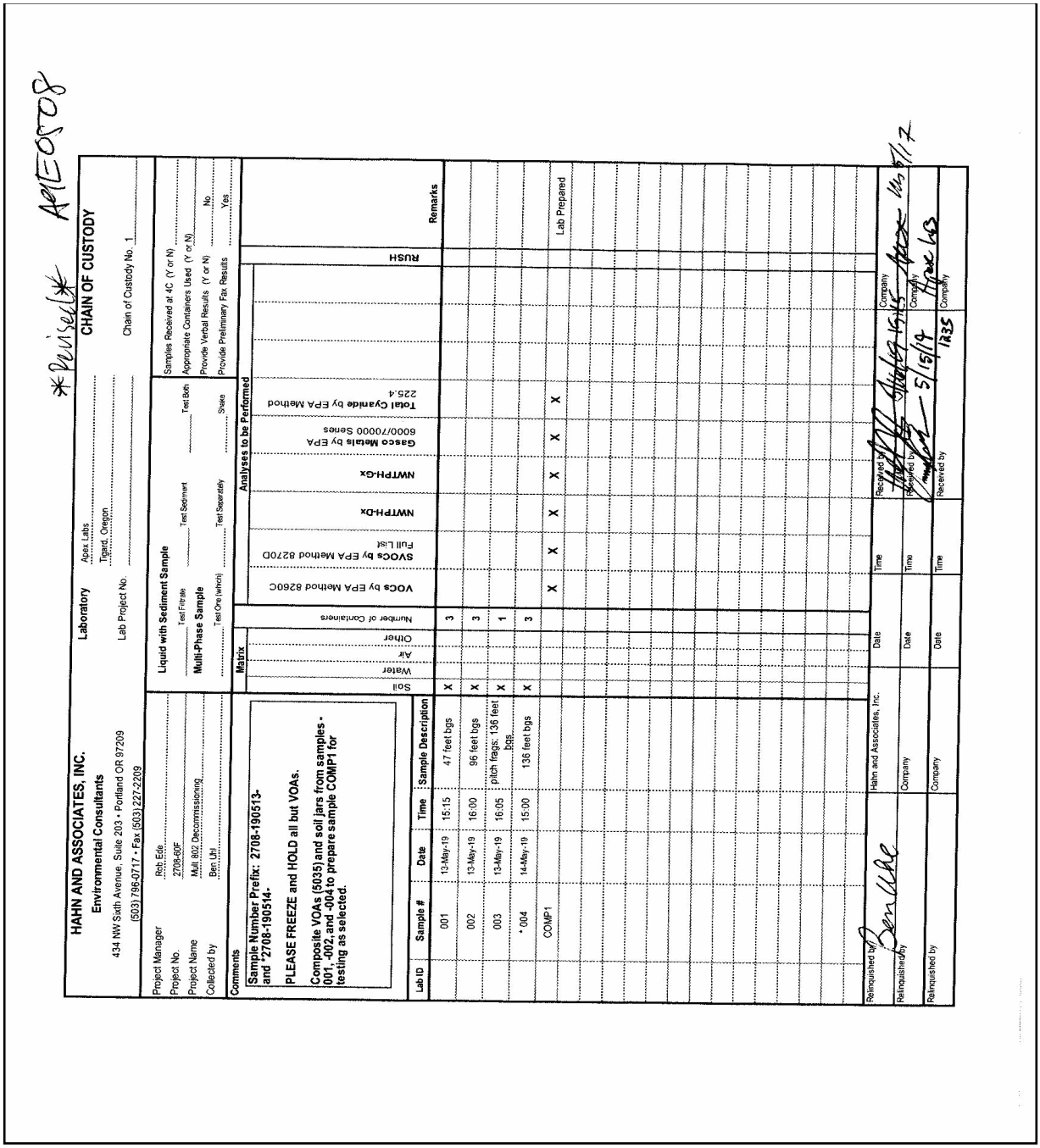

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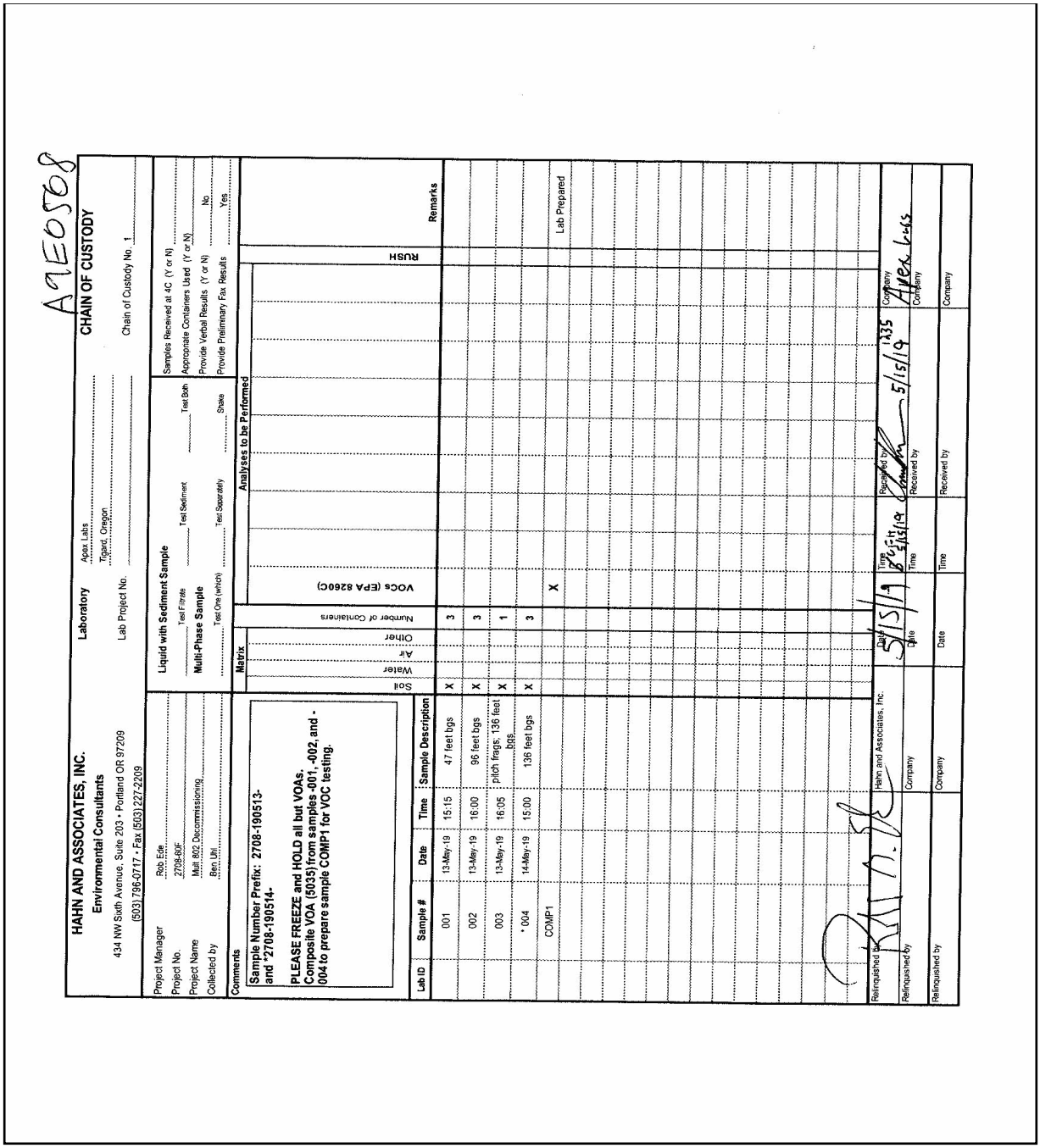

A9E0508

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: Ben Lin

Liquid with Sediment Sample — Test Sediment — Test Both
Multi-Phase Sample — Test Filtrate — 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: 2708-190513- and *2708-190514-

PLEASE FREEZE and HOLD all but VOAs. Composite VOA (5035) from samples -001, -002, and -004 to prepare sample COMP1 for VOC testing.

Lab ID	Sample #	Date	Time	Sample Description	Matrix: Soil	Water	Air	Other	Number of Containers	Analyses to be Performed: VOCs (EPA 8260C)	RUSH	Remarks
	001	13-May-19	15:15	47 feet bgs	X				3			
	002	13-May-19	16:00	96 feet bgs	X				3			
	003	13-May-19	16:05	pitch frags; 136 feet bgs	X				1			
	* 004	14-May-19	15:00	136 feet bgs	X				3	X		
	COMP1											Lab Prepared

Relinquished by: Hahn and Associates, Inc. — Date: 5/15/19 — Time: 1635 — Received by: Apex Labs — Company
Relinquished by — Company — Date — Time — Received by — Company
Relinquished by — Company — Date — Time — Received by — Company

Turn around time: 5 Days — 5/15/19 — 1635

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APEX LABS COOLER RECEIPT FORM

Client: Hahn Element WO#: A9 E0508

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

Delivery Info:

Date/time received: 5/15/19 @ 1235 By: CFH

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

Cooler Inspection Date/time inspected: 5/15/19 @ 1348 By: CFH

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)	4.9						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
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: 5/15/19 @ 1730 By: AB

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes ___ No X Comments: 2708-190513-001 Time on cnts. read 15:50

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: AB Witness: ACL Cooler Inspected by: CFH See Project Contact Form: Y

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Philip Nerenberg, Lab Director

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)

A9E0508

Apex Laboratories

Client:	**Hahn and Associates**	**Project Manager:**	**Philip Nerenberg**
Project:	**Mult 802 Decommissioning**	**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:	05/29/19 17:00 (9 day TAT)		
Received By:	Charles F. Hoffman	Date Received:	05/15/19 12:35
Logged In By:	Cameron L O'Brien	Date Logged In:	05/15/19 17:43

Cooler #1 received at 4.9°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
A9E0508-01 2708-190513-001 [Solid] Sampled 05/13/19 15:15 (GMT-08:00) Pacific Time (US & Canada) 3 Containers				**47 feet bgs, Time on conts. read 15:50**
Project Mgmt				
Data Package	07/01/19 17:00	10	08/20/19 15:15	Added 5/30 ST
Sample Control				
Archive Samples - Frozen	05/16/19 17:00	1	05/14/19 15:15	
Sample Compositing	05/16/19 17:00	1	08/20/19 15:15	Comp -01, -02, -04 into -05
Volatiles				
Sample Compositing (5035)	05/16/19 17:00	1	08/20/19 15:15	Comp -01, -02, -04 into -05
A9E0508-02 2708-190513-002 [Solid] Sampled 05/13/19 16:00 (GMT-08:00) Pacific Time (US & Canada) 3 Containers				**96 feet bgs**
Sample Control				
Archive Samples - Frozen	05/16/19 17:00	1	05/14/19 16:00	
Sample Compositing	05/16/19 17:00	1	08/20/19 16:00	Comp -01, -02, -04 into -05
Volatiles				
Sample Compositing (5035)	05/16/19 17:00	1	08/20/19 16:00	Comp -01, -02, -04 into -05
A9E0508-03 2708-190513-003 [Solid] Sampled 05/13/19 16:05 (GMT-08:00) Pacific Time (US & Canada) 1 Containers				**HOLD, Pitch frags, 136 feet bgs**
Sample Control				
Archive Samples - Frozen	05/16/19 17:00	1	05/14/19 16:05	
Hold Sample	05/29/19 17:00	10	02/05/22 16:05	

A9E0508

Apex Laboratories

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

Analysis	Due	TAT	Expires	Comments

Analysis	Due	TAT	Expires	Comments

A9E0508-04 2708-190514-004 [Solid] Sampled 05/14/19 15:00 (GMT-08:00) Pacific Time (US & Canada) 3 Containers — **136 feet bgs**

Sample Control				
Archive Samples - Frozen	05/16/19 17:00	1	05/15/19 15:00	
Sample Compositing	05/16/19 17:00	1	08/21/19 15:00	Comp -01, -02, -04 into -05
Volatiles				
Sample Compositing (5035)	05/16/19 17:00	1	08/21/19 15:00	Comp -01, -02, -04 into -05

A9E0508-05 COMP1 [Solid] Sampled 05/13/19 15:15 (GMT-08:00) Pacific Time (US & Canada) 2 Containers — **Composite of -01, -02, and -04**

Dry Weight				
~~Dry Weight~~	05/21/19 17:00	2	05/15/19 15:15	expedited on 5/17 AM
Fuels				
NWTPH-Dx (Diesel/Oil)	05/21/19 17:00	2	05/27/19 15:15	expedited on 5/17 AM
Metals				
Metals, Select 1	05/21/19 17:00	2	11/09/19 15:15	expedited on 5/17 AM
Sample Control				
Archive Samples - Frozen	05/16/20 17:00	1	05/14/19 15:15	expedited on 5/17 AM
Semivols (Scan)				
8270D LL Full List	05/21/19 17:00	2	05/27/19 15:15	expedited on 5/17 AM
Volatiles				
1311/8260C TCLP/ZHE Full List VOAs	05/29/19 17:00	5	05/27/19 15:15	Added 5/22
8260C Full List	05/21/19 17:00	2	05/15/19 15:15	expedited on 5/17 AM
NWTPH-Gx	05/21/19 17:00	2	05/15/19 15:15	expedited on 5/17 AM
TCLP/ZHE Extraction	05/24/19 17:00	2	05/27/19 15:15	Added 5/22
Wet Chem				
Cyanide, Total (ASTM D7511, OIA)	05/21/19 17:00	2	05/27/19 15:15	expedited on 5/17 AM

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

A9E0568

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: Ben Uhl

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: 2708-190513- and *2708-190514-

PLEASE FREEZE and HOLD all but VOAs. Composite VOA (5035) from samples -001, -002, and -004 to prepare sample COMP1 for VOC testing.

Lab ID	Sample #	Date	Time	Sample Description	Matrix: Soil	Water	Air	Other	Number of Containers	Analyses to be Performed: VOCs (EPA 8260C)	RUSH	Remarks
	001	13-May-19	15:15	47 feet bgs	X				3			
	002	13-May-19	16:00	96 feet bgs	X				3			
	003	13-May-19	16:05	pitch frags; 136 feet bgs	X				1			
	* 004	14-May-19	15:00	136 feet bgs	X				3			
	COMP1									X		Lab Prepared

Relinquished by	Hahn and Associates, Inc.	Date 5/15/19	Time 1605 5/15/19	Received by	Company
Relinquished by	Company	Date	Time	Received by 5/15/19 1235	Company Apex Labs
Relinquished by	Company	Date	Time	Received by	Company

Revised APE0508

HAHN AND ASSOCIATES, INC.
Environmental Consultants
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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: Ben Uhl

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: 2708-190513- and *2708-190514-

PLEASE FREEZE and HOLD all but VOAs.

Composite VOAs (5035) and soil jars from samples - 001, -002, and -004 to prepare sample COMP1 for testing as selected.

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	NWTPH-Dx	NWTPH-Gx	Gasco Metals by EPA 6000/70000 Series	Total Cyanide by EPA Method 225.4				RUSH	Remarks
	001	13-May-19	15:15	47 feet bgs	X				3											
	002	13-May-19	16:00	96 feet bgs	X				3											
	003	13-May-19	16:05	pitch frags; 136 feet bgs	X				1											
	*004	14-May-19	15:00	136 feet bgs	X				3											
	COMP1									X	X	X	X	X	X					Lab Prepared

Relinquished by: Ben Uhl	Hahn and Associates, Inc.	Date	Time	Received by	Company
Relinquished by	Company	Date	Time	Received by: 5/14/19 15:15	Company: Apex
Relinquished by	Company	Date	Time	Received by	Company

Revised APEO508

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: Ben Uhl

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: 2708-190513- and *2708-190514-

PLEASE FREEZE and HOLD all but VOAs.

Composite VOAs (5035) and soil jars from samples - 001, -002, and -004 to prepare sample COMP1 for testing as selected.

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	NWTPH-Dx	NWTPH-Gx	Gasco Metals by EPA 6000/7000 Series	Total Cyanide by EPA Method 225.4				RUSH	Remarks
	001	13-May-19	15:15	47 feet bgs	X				3											
	002	13-May-19	16:00	96 feet bgs	X				3											
	003	13-May-19	16:05	pitch frags; 136 feet bgs	X				1											
	* 004	14-May-19	15:00	136 feet bgs	X				3											
	COMP1									X	X	X	X	X	X					Lab Prepared

Relinquished by: Ben Uhl	Hahn and Associates, Inc.	Date	Time	Received by: [illegible]	Company	
Relinquished by	Company	Date	Time	Received by: 5/15/19 1235	Company: Apex	5/17
Relinquished by	Company	Date	Time	Received by	Company: Apex LIS	

APEX LABS COOLER RECEIPT FORM

Client: Hahn Element WO#: A9 E05508

Project/Project #: Mult 802 Decommissioning 2708-601

Delivery Info:

Date/time received: 5/15/19 @ 1235 By: CH

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

Cooler Inspection Date/time inspected: 5/15/19 @ 1348 By: CH

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)	4.9						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
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: 5/15/19 @ 1730 By: AB

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes ___ No X Comments: 2708-190513-001 Time on cnts. read 15:50

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: AB Witness: AM Cooler Inspected by: CH See Project Contact Form: Y

CLP-Like Forms

Apex Laboratories

SDG: A9E0508

CLASS: GC

METHOD: NWTPH-Dx

ANALYSES DATA PACKAGE COVER PAGE

NWTPH-Dx

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning

Client Sample Id:	Lab Sample Id:	Matrix
COMP1	A9E0508-05	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: 9/30/2019 12:02PM
Title: Technical Manager

METHOD DETECTION AND REPORTING LIMITS

NWTPH-Dx

Laboratory: Apex Laboratories **SDG:** A9E0508

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

COMP1

Laboratory:	Apex Laboratories			SDG:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	A9E0508-05	File ID:	4R052019.D
Sampled:	05/13/19 15:15	Prepared:	05/20/19 16:21	Analyzed:	05/21/19 03:30
		Preparation:	EPA 3546 (Fuels)	Initial/Final:	1.18 g / 5 mL

Batch: 9051067 Sequence: 9E20037 Calibration: A9D1904 Instrument: DUALFID4R

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg)	Q
68334-30-5	Diesel	100	91500	D
Oil	Oil	100	176000	D

SYSTEM MONITORING COMPOUND	ADDED (mg/kg)	CONC (mg/kg)	% REC	QC LIMITS	Q
o-Terphenyl (Surr)	212	ND		50 - 150	D

* Values outside of QC limits

PREPARATION BATCH SUMMARY

NWTPH-Dx

Laboratory: Apex Laboratories SDG: A9E0508

Client: Hahn and Associates Project: Mult 802 Decommissioning

Batch: 9051067 Batch Matrix: Solid Preparation: EPA 3546 (Fuels)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9051067-BLK1	4R052017.D	05/20/19 16:21	
LCS	9051067-BS1	4R052018.D	05/20/19 16:21	
COMP1 (Dup)	9051067-DUP1	4R052020.D	05/20/19 16:21	
COMP1	A9E0508-05	4R052019.D	05/20/19 16:21	

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:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	9051067-BLK1	File ID:	4R052017.D
Prepared:	05/20/19 16:21	Preparation:	EPA 3546 (Fuels)	Initial/Final:	10 g / 5 mL
Analyzed:	05/21/19 02:49	Instrument:	DUALFID4R		
Batch:	9051067	Sequence:	9E20037	Calibration:	A9D1904

CAS NO.	COMPOUND	CONC. (mg/kg)	Q
68334-30-5	Diesel	10.0	U
Oil	Oil	20.0	U

SYSTEM MONITORING COMPOUND	ADDED (mg/kg)	CONC (mg/kg)	% REC	QC LIMITS	Q
o-Terphenyl (Surr)	25.0	25.8	103	50 - 150	

LCS / LCS DUPLICATE RECOVERY

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Solid		
Batch:	9051067	Laboratory ID:	9051067-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	111	89	70 - 130

* = Values outside of QC limits

DUPLICATES

NWTPH-Dx

COMP1

Laboratory: Apex Laboratories
Client: Hahn and Associates
Matrix: Solid
Batch: 9051067
Preparation: EPA 3546 (Fuels)
Source Sample Name: COMP1

SDG: A9E0508
Project: Mult 802 Decommissioning
Laboratory ID: 9051067-DUP1
Lab Source ID: A9E0508-05
Initial/Final: 1.14 g / 5 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/kg)	C	DUPLICATE CONCENTRATION (mg/kg)	C	RPD %	Q	METHOD
Diesel	30	91500		92800		1		NWTPH-Dx
Oil	30	176000		184000		5		NWTPH-Dx

* Values outside of QC limits

ANALYSIS BATCH (SEQUENCE) SUMMARY

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9D18031	Instrument:	DUALFID4R
Matrix:	Solid	Calibration:	A9D1904

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Initial Cal Blank	9D18031-ICB1	4R041804.D	04/18/19 17:05
Cal Standard	9D18031-CAL1	4R041805.D	04/18/19 17:26
Cal Standard	9D18031-CAL2	4R041806.D	04/18/19 17:48
Cal Standard	9D18031-CAL3	4R041807.D	04/18/19 18:10
Cal Standard	9D18031-CAL4	4R041808.D	04/18/19 18:31
Cal Standard	9D18031-CAL5	4R041809.D	04/18/19 18:53
Cal Standard	9D18031-CAL6	4R041810.D	04/18/19 19:14
Cal Standard	9D18031-CAL7	4R041811.D	04/18/19 19:36
Cal Standard	9D18031-CAL8	4R041812.D	04/18/19 19:57
Cal Standard	9D18031-CAL9	4R041813.D	04/18/19 20:19
Cal Standard	9D18031-CALA	4R041814.D	04/18/19 20:40
Cal Standard	9D18031-CALB	4R041815.D	04/18/19 21:02
Cal Standard	9D18031-CALC	4R041816.D	04/18/19 21:23
Cal Standard	9D18031-CALD	4R041817.D	04/18/19 21:45
Cal Standard	9D18031-CALF	4R041819.D	04/18/19 22:28
Cal Standard	9D18031-CALG	4R041820.D	04/18/19 22:49
Cal Standard	9D18031-CALH	4R041821.D	04/18/19 23:10
Cal Standard	9D18031-CALI	4R041822.D	04/18/19 23:31
Cal Standard	9D18031-CALJ	4R041823.D	04/18/19 23:53
Cal Standard	9D18031-CALK	4R041825.D	04/19/19 00:36
Initial Cal Check	9D18031-ICV1	4R041827.D	04/19/19 01:18
Initial Cal Check	9D18031-ICV2	4R041828.D	04/19/19 01:40

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:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E20037	Instrument:	DUALFID4R
Matrix:	Solid	Calibration:	A9D1904

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	9E20037-CCV1	4R052003.D	05/20/19 18:17
Calibration Check	9E20037-CCV2	4R052004.D	05/20/19 18:38
Calibration Blank	9E20037-CCB1	4R052005.D	05/20/19 22:36
Blank	9051067-BLK1	4R052017.D	05/21/19 02:49
LCS	9051067-BS1	4R052018.D	05/21/19 03:09
COMP1	A9E0508-05	4R052019.D	05/21/19 03:30
COMP1 (Dup)	9051067-DUP1	4R052020.D	05/21/19 03:51
Calibration Check	9E20037-CCV3	4R052024.D	05/21/19 05:15
Calibration Check	9E20037-CCV4	4R052025.D	05/21/19 05:36

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.

INITIAL CALIBRATION DATA (Summary)

NWTPH-Dx

Laboratory: Apex Laboratories SDG: A9E0508

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9D1904 Date: 04/19/19 15:14 Instrument: DUALFID4R

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Diesel	1140517	Ave	4.202061	6	0			15	
Oil	1049293	Ave	2.834819	9	0			15	
o-Terphenyl (Surr)	1261586	Ave	1.021771	6.392	7.344847E-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

NWTPH-Dx

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9D1904
Instrument: DUALFID4R
Calibration Date: 04/19/19 15:14

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	1242553	40	1172274	100	1135692	250	1141236	500	1119926	1000	1113983
Diesel Range Organics (C12-C24)	25	1242553	40	1172274	100	1135692	250	1141236	500	1119926	1000	1113983

INITIAL CALIBRATION DATA (Continued)

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Calibration:	A9D1904	Instrument:	DUALFID4R
Matrix:		Calibration Date:	04/19/19 15:14

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	1106235	5000	1092238								
Diesel Range Organics (C12-C24)	2500	1106235	5000	1092238								
o-Terphenyl (Surr)					10	1255074	25	1269858	50	1269613	100	1271551

INITIAL CALIBRATION DATA (Continued)

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Calibration:	A9D1904	Instrument:	DUALFID4R
Matrix:		Calibration Date:	04/19/19 15:14

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	~~1256969~~	80	1108304	250	1042649	500	1039164	1000	1045982
o-Terphenyl (Surr)	200	1241835										
Residual Range Organics (>C24-C			40	~~1256969~~	80	1108304	250	1042649	500	1039164	1000	1045982

SECOND-SOURCE CALIBRATION VERIFICATION

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	DUALFID4R	Calibration:	A9D1904
Lab File ID:	4R041827.D		
Sequence:	9D18031	Inject Date:	04/19/19
Lab Sample ID:	9D18031-ICV1	Inject Time:	01:18

ANALYTE	EXPECTED (ug/mL)	FOUND (ug/mL)	% DRIFT	QC LIMIT
Diesel	1000	923	-7.7	85 - 115

SECOND-SOURCE CALIBRATION VERIFICATION

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	DUALFID4R	Calibration:	A9D1904
Lab File ID:	4R041828.D		
Sequence:	9D18031	Inject Date:	04/19/19
Lab Sample ID:	9D18031-ICV2	Inject Time:	01:40

ANALYTE	EXPECTED (ug/mL)	FOUND (ug/mL)	% DRIFT	QC LIMIT
Oil	1000	966	-3.4	85 - 115

CONTINUING CALIBRATION CHECK

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	DUALFID4R	Calibration:	A9D1904
Lab File ID:	4R052003.D	Calibration Date:	04/19/19 15:14
Sequence:	9E20037	Injection Date:	05/20/19
Lab Sample ID:	9E20037-CCV1	Injection Time:	18:17

COMPOUND	Curve Fit	Calculated Concentration (ug/mL) [L/Q Fits]			Response Factors [Ave RF]			Limit
		STD	CCV	% DIFF	ICAL	CCV	% Drift	
Oil	Ave	500	441		1049293	924624.2	-11.9	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:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	DUALFID4R	Calibration:	A9D1904
Lab File ID:	4R052004.D	Calibration Date:	04/19/19 15:14
Sequence:	9E20037	Injection Date:	05/20/19
Lab Sample ID:	9E20037-CCV2	Injection Time:	18:38

COMPOUND	Curve Fit	Calculated Concentration (ug/mL) [L/Q Fits]			Response Factors [Ave RF]			Limit
		STD	CCV	% DIFF	ICAL	CCV	% Drift	
Diesel	Ave	1000	912		1140517	1039945	-8.8	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:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	DUALFID4R	Calibration:	A9D1904
Lab File ID:	4R052024.D	Calibration Date:	04/19/19 15:14
Sequence:	9E20037	Injection Date:	05/21/19
Lab Sample ID:	9E20037-CCV3	Injection Time:	05:15

COMPOUND	Curve Fit	Calculated Concentration (ug/mL) [L/Q Fits]			Response Factors [Ave RF]			Limit
		STD	CCV	% DIFF	ICAL	CCV	% Drift	
Diesel	Ave	1000	922		1140517	1051381	-7.8	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:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	DUALFID4R	Calibration:	A9D1904
Lab File ID:	4R052025.D	Calibration Date:	04/19/19 15:14
Sequence:	9E20037	Injection Date:	05/21/19
Lab Sample ID:	9E20037-CCV4	Injection Time:	05:36

COMPOUND	Curve Fit	Calculated Concentration (ug/mL) [L/Q Fits]			Response Factors [Ave RF]			Limit
		STD	CCV	% DIFF	ICAL	CCV	% Drift	
Oil	Ave	500	469		1049293	984428.4	-6.2	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:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E20037	Instrument:	DUALFID4R
Matrix:	Solid	Calibration:	A9D1904

Surrogate Compound	Spike Level ug/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Calibration Check (9E20037-CCV1)			Lab File ID: 4R052003.D		Analyzed: 05/20/19 18:17			
o-Terphenyl (Surr)	50.0	93	80 - 120	6.38	6.392	-0.0120	+/-1.0	
Calibration Check (9E20037-CCV2)			Lab File ID: 4R052004.D		Analyzed: 05/20/19 18:38			
o-Terphenyl (Surr)	50.0	97	80 - 120	6.39	6.392	-0.0020	+/-1.0	
Calibration Blank (9E20037-CCB1)			Lab File ID: 4R052005.D		Analyzed: 05/20/19 22:36			
o-Terphenyl (Surr)			50 - 150	0	6.392	-6.3920	+/-1.0	
Blank (9051067-BLK1)			Lab File ID: 4R052017.D		Analyzed: 05/21/19 02:49			
o-Terphenyl (Surr)	25.0	103	50 - 150	6.39	6.392	-0.0020	+/-1.0	
LCS (9051067-BS1)			Lab File ID: 4R052018.D		Analyzed: 05/21/19 03:09			
o-Terphenyl (Surr)	25.0	104	50 - 150	6.39	6.392	-0.0020	+/-1.0	
COMP1 (A9E0508-05)			Lab File ID: 4R052019.D		Analyzed: 05/21/19 03:30			
o-Terphenyl (Surr)	212		50 - 150	0	6.392	-6.3920	+/-1.0	*
Duplicate (9051067-DUP1)			Lab File ID: 4R052020.D		Analyzed: 05/21/19 03:51			
o-Terphenyl (Surr)	219		50 - 150	0	6.392	-6.3920	+/-1.0	*
Calibration Check (9E20037-CCV3)			Lab File ID: 4R052024.D		Analyzed: 05/21/19 05:15			
o-Terphenyl (Surr)	50.0	100	80 - 120	6.38	6.392	-0.0120	+/-1.0	
Calibration Check (9E20037-CCV4)			Lab File ID: 4R052025.D		Analyzed: 05/21/19 05:36			
o-Terphenyl (Surr)	50.0	94	80 - 120	6.38	6.392	-0.0120	+/-1.0	

HOLDING TIME SUMMARY

NWTPH-Dx

Laboratory: Apex Laboratories
SDG: A9E0508
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
COMP1	05/13/19 15:15	05/15/19 12:35	05/20/19 16:21	7.05	14.00	05/21/19 03:30	0.46	40.00	

Apex Laboratories

SDG: A9E0508

CLASS: GCMS

METHOD: NWTPH-Gx (MS)

ANALYSES DATA PACKAGE COVER PAGE

NWTPH-Gx (MS)

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning

Client Sample Id:	Lab Sample Id:	Matrix
COMP1	A9E0508-05	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: 9/30/2019 12:03PM
Title: Technical Manager

METHOD DETECTION AND REPORTING LIMITS

NWTPH-Gx (MS)

Laboratory: Apex Laboratories **SDG:** A9E0508

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)

COMP1

Laboratory:	Apex Laboratories			SDG:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	A9E0508-05	File ID:	VF19051707.D
Sampled:	05/13/19 15:15	Prepared:	05/13/19 15:15	Analyzed:	05/17/19 13:06
		Preparation:	EPA 5035A	Initial/Final:	10.15 g / 15 mL

Batch: 9051006 Sequence: 9E17019 Calibration: A9E0804 Instrument: VOA-GCMS6

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg wet)	Q
8006-61-9	Gasoline Range Organics	10000	2400	D

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
4-Bromofluorobenzene (Sur)	50.0	58.7	117	50 - 150	
1,4-Difluorobenzene (Sur)	50.0	48.7	97	50 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene (IS)	300548	6.095	312773	6.095	

* Values outside of QC limits

PREPARATION BATCH SUMMARY

NWTPH-Gx (MS)

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Batch: 9051006 Batch Matrix: Soil Preparation: EPA 5035A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9051006-BLK1	VF19051705.D	05/17/19 10:00	
LCS	9051006-BS2	VF19051704.D	05/17/19 10:00	
COMP1	A9E0508-05	VF19051707.D	05/13/19 15:15	

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:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Soil	Laboratory ID:	9051006-BLK1	File ID:	VF19051705.D
Prepared:	05/17/19 10:00	Preparation:	EPA 5035A	Initial/Final:	7.5 g / 5 mL
Analyzed:	05/17/19 12:11	Instrument:	VOA-GCMS6		
Batch:	9051006	Sequence:	9E17019	Calibration:	A9E0804

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	57.7	115	50 - 150	
1,4-Difluorobenzene (Sur)	50.0	48.5	97	50 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene (IS)	298883	6.095	312773	6.095	

LCS / LCS DUPLICATE RECOVERY

NWTPH-Gx (MS)

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Soil		
Batch:	9051006	Laboratory ID:	9051006-BS2
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	28.1	113	80 - 120

* = Values outside of QC limits

ANALYSIS BATCH (SEQUENCE) SUMMARY

NWTPH-Gx (MS)

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E07048	Instrument:	VOA-GCMS6
Matrix:	Soil	Calibration:	A9E0804

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9E07048-TUN2	VF19050731.D	05/08/19 03:55
Initial Cal Blank	9E07048-ICB2	VF19050733.D	05/08/19 04:49
Cal Standard	9E07048-CALC	VF19050734.D	05/08/19 05:16
Cal Standard	9E07048-CALD	VF19050735.D	05/08/19 05:43
Cal Standard	9E07048-CALE	VF19050736.D	05/08/19 06:11
Cal Standard	9E07048-CALF	VF19050737.D	05/08/19 06:38
Cal Standard	9E07048-CALG	VF19050738.D	05/08/19 07:05
Cal Standard	9E07048-CALH	VF19050739.D	05/08/19 07:32
Cal Standard	9E07048-CALI	VF19050740.D	05/08/19 07:59
Cal Standard	9E07048-CALJ	VF19050741.D	05/08/19 08:26
Initial Cal Check	9E07048-ICV2	VF19050744.D	05/08/19 09:47

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:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E17019	Instrument:	VOA-GCMS6
Matrix:	Soil	Calibration:	A9E0804

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9E17019-TUN1	VF19051702.D	05/17/19 10:50
Calibration Check	9E17019-CCV2	VF19051704.D	05/17/19 11:44
Blank	9051006-BLK1	VF19051705.D	05/17/19 12:11
COMP1	A9E0508-05	VF19051707.D	05/17/19 13:06

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:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Lab File ID:	VF19050731.D	Injection Date:	05/08/19
Instrument ID:	VOA-GCMS6	Injection Time:	03:55
Sequence:	9E07048	Lab Sample ID:	9E07048-TUN2

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 50			
m/z 75			
m/z 95		120.75	
m/z 96	5 - 9% of m/z 95	6.90	PASS
m/z 173		0.34	
m/z 174	50 - 200% of m/z 95	82.82	PASS
m/z 175	5 - 9% of m/z 174	6.94	PASS
m/z 176	95 - 101% of m/z 174	97.64	PASS
m/z 177	5 - 9% of m/z 176	6.61	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

NWTPH-Gx (MS)

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Lab File ID:	VF19051702.D	Injection Date:	05/17/19
Instrument ID:	VOA-GCMS6	Injection Time:	10:50
Sequence:	9E17019	Lab Sample ID:	9E17019-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 50			
m/z 75			
m/z 95		122.82	
m/z 96	5 - 9% of m/z 95	7.32	PASS
m/z 173		0.37	
m/z 174	50 - 200% of m/z 95	81.42	PASS
m/z 175	5 - 9% of m/z 174	6.85	PASS
m/z 176	95 - 101% of m/z 174	97.35	PASS
m/z 177	5 - 9% of m/z 176	6.52	PASS

INITIAL CALIBRATION DATA (Summary)

NWTPH-Gx (MS)

Laboratory: Apex Laboratories SDG: A9E0508

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9E0804 Date: 05/08/19 13:09 Instrument: VOA-GCMS6

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Gasoline Range Organics	1.378936	XXX	25.00493	9.87	1.842533E-02				
4-Bromofluorobenzene (Sur)	2.427431	Ave	2.741646	10.86913	0.0240066			15	
1,4-Difluorobenzene (Sur)	3.942159	Ave	9.20496	6.65775	0.04122			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:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Calibration:	A9E0804	Instrument:	VOA-GCMS6
Matrix:		Calibration Date:	05/08/19 13:09

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	0.8607231
4-Bromofluorobenzene (Sur)											50	2.315462
1,4-Difluorobenzene (Sur)											50	3.752187

INITIAL CALIBRATION DATA (Continued)

NWTPH-Gx (MS)

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Calibration:	A9E0804	Instrument:	VOA-GCMS6
Matrix:		Calibration Date:	05/08/19 13:09

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	1.005202	250	1.178416	500	1.362	1000	1.574236	2500	1.575557	5000	1.580661
4-Bromofluorobenzene (Sur)	50	2.475316	50	2.411144	50	2.420186	50	2.536601	50	2.470386	50	2.397658
1,4-Difluorobenzene (Sur)	50	3.782215	50	3.750281	50	3.773772	50	3.792616	50	3.918931	50	3.946487

SECOND-SOURCE CALIBRATION VERIFICATION

NWTPH-Gx (MS)

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	VOA-GCMS6	Calibration:	A9E0804
Lab File ID:	VF19050744.D		
Sequence:	9E07048	Inject Date:	05/08/19
Lab Sample ID:	9E07048-ICV2	Inject Time:	09:47

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Gasoline Range Organics	500	528	5.6	70 - 130
4-Bromofluorobenzene (Sur)	50.0	46.5	-7.0	0 - 200
1,4-Difluorobenzene (Sur)	50.0	46.7	-6.5	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:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E07048	Instrument:	VOA-GCMS6
Matrix:	Soil	Calibration:	A9E0804

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Initial Cal Check (9E07048-ICV2)				Lab File ID: VF19050744.D		Analyzed: 05/08/19 09:47		
4-Bromofluorobenzene (Sur)	50.0	93	0 - 200	10.873	10.86913	0.0039	+/-1.0	
1,4-Difluorobenzene (Sur)	50.0	93	0 - 200	6.663	6.65775	0.0053	+/-1.0	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

NWTPH-Gx (MS)

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E17019	Instrument:	VOA-GCMS6
Matrix:	Soil	Calibration:	A9E0804

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
LCS (9051006-BS2)			Lab File ID: VF19051704.D		Analyzed: 05/17/19 11:44			
4-Bromofluorobenzene (Sur)	50.0	111	50 - 150	10.871	10.86913	0.0019	+/-1.0	
1,4-Difluorobenzene (Sur)	50.0	100	50 - 150	6.655	6.65775	-0.0027	+/-1.0	
Blank (9051006-BLK1)			Lab File ID: VF19051705.D		Analyzed: 05/17/19 12:11			
4-Bromofluorobenzene (Sur)	50.0	115	50 - 150	10.871	10.86913	0.0019	+/-1.0	
1,4-Difluorobenzene (Sur)	50.0	97	50 - 150	6.661	6.65775	0.0032	+/-1.0	
COMP1 (A9E0508-05)			Lab File ID: VF19051707.D		Analyzed: 05/17/19 13:06			
4-Bromofluorobenzene (Sur)	50.0	117	50 - 150	10.871	10.86913	0.0019	+/-1.0	
1,4-Difluorobenzene (Sur)	50.0	97	50 - 150	6.655	6.65775	-0.0027	+/-1.0	

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

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E17019	Instrument:	VOA-GCMS6
Matrix:	Soil	Calibration:	A9E0804

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (9051006-BS2)			Lab File ID: VF19051704.D			Analyzed: 05/17/19 11:44			
Pentafluorobenzene (IS)	312773	6.095	312773	6.095	100	50 - 200	0.0000	+/-0.50	
Calibration Check (9E17019-CCV2)			Lab File ID: VF19051704.D			Analyzed: 05/17/19 11:44			
Pentafluorobenzene (IS)	312773	6.095				50 - 200	6.0950	+/-0.50	*
Blank (9051006-BLK1)			Lab File ID: VF19051705.D			Analyzed: 05/17/19 12:11			
Pentafluorobenzene (IS)	298883	6.095	312773	6.095	96	50 - 200	0.0000	+/-0.50	
COMP1 (A9E0508-05)			Lab File ID: VF19051707.D			Analyzed: 05/17/19 13:06			
Pentafluorobenzene (IS)	300548	6.095	312773	6.095	96	50 - 200	0.0000	+/-0.50	
Duplicate (9051006-DUP1)			Lab File ID: VF19051710.D			Analyzed: 05/17/19 14:27			
Pentafluorobenzene (IS)	279775	6.092	312773	6.095	89	50 - 200	-0.0030	+/-0.50	
Duplicate (9051006-DUP2)			Lab File ID: VF19051712.D			Analyzed: 05/17/19 15:21			
Pentafluorobenzene (IS)	271459	6.09	312773	6.095	87	50 - 200	-0.0050	+/-0.50	

HOLDING TIME SUMMARY

NWTPH-Gx (MS)

Laboratory: Apex Laboratories SDG: A9E0508

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
COMP1	05/13/19 15:15	05/15/19 12:35	05/13/19 15:15	0.00	2.00	05/17/19 13:06	3.91	14.00	

Apex Laboratories

SDG: A9E0508

CLASS: GCMS

METHOD: 5035A/8260C

ANALYSES DATA PACKAGE COVER PAGE

5035A/8260C

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning

Client Sample Id:	Lab Sample Id:	Matrix
COMP1	A9E0508-05	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: 9/30/2019 12:03PM
Title: Technical Manager

METHOD DETECTION AND REPORTING LIMITS

5035A/8260C

Laboratory: Apex Laboratories **SDG:** A9E0508

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:** A9E0508

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

COMP1

Laboratory:	Apex Laboratories			SDG:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	A9E0508-05	File ID:	VF19051707.D
Sampled:	05/13/19 15:15	Prepared:	05/13/19 15:15	Analyzed:	05/17/19 13:06
		Preparation:	EPA 5035A	Initial/Final:	10.15 g / 15 mL

Batch: 9051006 Sequence: 9E17019 Calibration: A9E0804 Instrument: VOA-GCMS6

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg wet)	Q
67-64-1	Acetone	10000	148000	U
107-13-1	Acrylonitrile	10000	14800	U
71-43-2	Benzene	10000	55400	D
108-86-1	Bromobenzene	10000	3690	U
74-97-5	Bromochloromethane	10000	7390	U
75-27-4	Bromodichloromethane	10000	14800	U
75-25-2	Bromoform	10000	29600	U
74-83-9	Bromomethane	10000	148000	U
78-93-3	2-Butanone (MEK)	10000	73900	U
104-51-8	n-Butylbenzene	10000	7390	U
135-98-8	sec-Butylbenzene	10000	7390	U
98-06-6	tert-Butylbenzene	10000	7390	U
75-15-0	Carbon disulfide	10000	73900	U
56-23-5	Carbon tetrachloride	10000	14800	U
108-90-7	Chlorobenzene	10000	3690	U
75-00-3	Chloroethane	10000	73900	U
67-66-3	Chloroform	10000	7390	U
74-87-3	Chloromethane	10000	36900	U
95-49-8	2-Chlorotoluene	10000	7390	U
106-43-4	4-Chlorotoluene	10000	7390	U
124-48-1	Dibromochloromethane	10000	14800	U
96-12-8	1,2-Dibromo-3-chloropropane	10000	36900	U
106-93-4	1,2-Dibromoethane (EDB)	10000	7390	U
74-95-3	Dibromomethane	10000	7390	U
95-50-1	1,2-Dichlorobenzene	10000	3690	U
541-73-1	1,3-Dichlorobenzene	10000	3690	U
106-46-7	1,4-Dichlorobenzene	10000	3690	U
75-71-8	Dichlorodifluoromethane	10000	14800	U
75-34-3	1,1-Dichloroethane	10000	3690	U
107-06-2	1,2-Dichloroethane (EDC)	10000	3690	U
75-35-4	1,1-Dichloroethene	10000	3690	U
156-59-2	cis-1,2-Dichloroethene	10000	3690	U
156-60-5	trans-1,2-Dichloroethene	10000	3690	U
78-87-5	1,2-Dichloropropane	10000	3690	U
142-28-9	1,3-Dichloropropane	10000	7390	U
594-20-7	2,2-Dichloropropane	10000	7390	U
563-58-6	1,1-Dichloropropene	10000	7390	U
10061-01-5	cis-1,3-Dichloropropene	10000	7390	U
10061-02-6	trans-1,3-Dichloropropene	10000	7390	U
100-41-4	Ethylbenzene	10000	12400	D

ORGANIC ANALYSIS DATA SHEET

5035A/8260C

COMP1

Laboratory:	Apex Laboratories			SDG:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	A9E0508-05	File ID:	VF19051707.D
Sampled:	05/13/19 15:15	Prepared:	05/13/19 15:15	Analyzed:	05/17/19 13:06
		Preparation:	EPA 5035A	Initial/Final:	10.15 g / 15 mL

Batch: 9051006 Sequence: 9E17019 Calibration: A9E0804 Instrument: VOA-GCMS6

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg wet)	Q
87-68-3	Hexachlorobutadiene	10000	14800	U
591-78-6	2-Hexanone	10000	73900	U
98-82-8	Isopropylbenzene	10000	7390	U
99-87-6	4-Isopropyltoluene	10000	7390	U
75-09-2	Methylene chloride	10000	73900	U
108-10-1	4-Methyl-2-pentanone (MiBK)	10000	73900	U
1634-04-4	Methyl tert-butyl ether (MTBE)	10000	7390	U
91-20-3	Naphthalene	10000	475000	D
103-65-1	n-Propylbenzene	10000	3690	U
100-42-5	Styrene	10000	7390	U
630-20-6	1,1,1,2-Tetrachloroethane	10000	14800	U
79-34-5	1,1,2,2-Tetrachloroethane	10000	7390	U
127-18-4	Tetrachloroethene (PCE)	10000	3690	U
87-61-6	1,2,3-Trichlorobenzene	10000	36900	U
120-82-1	1,2,4-Trichlorobenzene	10000	36900	U
71-55-6	1,1,1-Trichloroethane	10000	3690	U
79-00-5	1,1,2-Trichloroethane	10000	3690	U
79-01-6	Trichloroethene (TCE)	10000	3690	U
75-69-4	Trichlorofluoromethane	10000	14800	U
96-18-4	1,2,3-Trichloropropane	10000	7390	U
95-63-6	1,2,4-Trimethylbenzene	10000	11600	JD
108-67-8	1,3,5-Trimethylbenzene	10000	7390	U
108-88-3	Toluene	10000	29300	D
75-01-4	Vinyl chloride	10000	3690	U
179601-23-1	m,p-Xylene	10000	17100	D
95-47-6	o-Xylene	10000	8020	D

SYSTEM MONITORING COMPOUND	ADDED (ng/mL)	CONC (ng/mL)	% REC	QC LIMITS	Q
1,4-Difluorobenzene (Surr)	50.0	52.8	106	80 - 120	
Toluene-d8 (Surr)	50.0	47.5	95	80 - 120	
4-Bromofluorobenzene (Surr)	50.0	49.9	100	80 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene (ISTD)	300548	6.095	307085	6.091	
Chlorobenzene-d5 (ISTD)	399940	9.806	398846	9.802	
1,4-Dichlorobenzene-d4 (ISTD)	182344	11.753	181920	11.749	

* Values outside of QC limits

PREPARATION BATCH SUMMARY

5035A/8260C

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Batch: 9051006 Batch Matrix: Soil Preparation: EPA 5035A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9051006-BLK1	VF19051705.D	05/17/19 10:00	
LCS	9051006-BS1	VF19051703.D	05/17/19 10:00	
COMP1	A9E0508-05	VF19051707.D	05/13/19 15:15	

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:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Soil	Laboratory ID:	9051006-BLK1	File ID:	VF19051705.D
Prepared:	05/17/19 10:00	Preparation:	EPA 5035A	Initial/Final:	7.5 g / 5 mL
Analyzed:	05/17/19 12:11	Instrument:	VOA-GCMS6		
Batch:	9051006	Sequence:	9E17019	Calibration:	A9E0804

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	33.3	U
75-25-2	Bromoform	66.7	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	33.3	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:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Soil	Laboratory ID:	9051006-BLK1	File ID:	VF19051705.D
Prepared:	05/17/19 10:00	Preparation:	EPA 5035A	Initial/Final:	7.5 g / 5 mL
Analyzed:	05/17/19 12:11	Instrument:	VOA-GCMS6		
Batch:	9051006	Sequence:	9E17019	Calibration:	A9E0804

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	167	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	33.3	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	33.3	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	52.6	105	80 - 120	
Toluene-d8 (Surr)	50.0	47.8	96	80 - 120	

METHOD BLANK DATA SHEET

5035A/8260C

Laboratory:	Apex Laboratories			SDG:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Soil	Laboratory ID:	9051006-BLK1	File ID:	VF19051705.D
Prepared:	05/17/19 10:00	Preparation:	EPA 5035A	Initial/Final:	7.5 g / 5 mL
Analyzed:	05/17/19 12:11	Instrument:	VOA-GCMS6		
Batch:	9051006	Sequence:	9E17019	Calibration:	A9E0804

SYSTEM MONITORING COMPOUND	ADDED (ng/mL)	CONC (ng/mL)	% REC	QC LIMITS	Q
4-Bromofluorobenzene (Surr)	50.0	51.1	102	80 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene (ISTD)	299864	6.095	307085	6.091	
Chlorobenzene-d5 (ISTD)	393771	9.806	398846	9.802	
1,4-Dichlorobenzene-d4 (ISTD)	175866	11.753	181920	11.749	

LCS / LCS DUPLICATE RECOVERY

5035A/8260C

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Matrix: Soil
Batch: 9051006
Laboratory ID: 9051006-BS1
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	1640	82	80 - 120
Acrylonitrile	1000	945	94	80 - 120
Benzene	1000	1050	105	80 - 120
Bromobenzene	1000	1050	105	80 - 120
Bromochloromethane	1000	1030	103	80 - 120
Bromodichloromethane	1000	1070	107	80 - 120
Bromoform	1000	1240	124 *	80 - 120
Bromomethane	1000	1240	124 *	80 - 120
2-Butanone (MEK)	2000	1880	94	80 - 120
n-Butylbenzene	1000	1180	118	80 - 120
sec-Butylbenzene	1000	1180	118	80 - 120
tert-Butylbenzene	1000	1140	114	80 - 120
Carbon disulfide	1000	894	89	80 - 120
Carbon tetrachloride	1000	1230	123 *	80 - 120
Chlorobenzene	1000	978	98	80 - 120
Chloroethane	1000	1080	108	80 - 120
Chloroform	1000	1070	107	80 - 120
Chloromethane	1000	936	94	80 - 120
2-Chlorotoluene	1000	1100	110	80 - 120
4-Chlorotoluene	1000	1150	115	80 - 120
Dibromochloromethane	1000	1050	105	80 - 120
1,2-Dibromo-3-chloropropane	1000	908	91	80 - 120
1,2-Dibromoethane (EDB)	1000	975	98	80 - 120
Dibromomethane	1000	1070	107	80 - 120
1,2-Dichlorobenzene	1000	1040	104	80 - 120
1,3-Dichlorobenzene	1000	1060	106	80 - 120
1,4-Dichlorobenzene	1000	1010	101	80 - 120
Dichlorodifluoromethane	1000	992	99	80 - 120
1,1-Dichloroethane	1000	944	94	80 - 120
1,2-Dichloroethane (EDC)	1000	990	99	80 - 120

LCS / LCS DUPLICATE RECOVERY

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Soil		
Batch:	9051006	Laboratory ID:	9051006-BS1
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	836	84	80 - 120
cis-1,2-Dichloroethene	1000	1050	105	80 - 120
trans-1,2-Dichloroethene	1000	928	93	80 - 120
1,2-Dichloropropane	1000	1070	107	80 - 120
1,3-Dichloropropane	1000	1050	105	80 - 120
2,2-Dichloropropane	1000	1290	129 *	80 - 120
1,1-Dichloropropene	1000	1080	108	80 - 120
cis-1,3-Dichloropropene	1000	956	96	80 - 120
trans-1,3-Dichloropropene	1000	1000	100	80 - 120
Ethylbenzene	1000	1040	104	80 - 120
Hexachlorobutadiene	1000	1090	109	80 - 120
2-Hexanone	2000	1800	90	80 - 120
Isopropylbenzene	1000	1160	116	80 - 120
4-Isopropyltoluene	1000	1130	113	80 - 120
Methylene chloride	1000	742	74 *	80 - 120
4-Methyl-2-pentanone (MiBK)	2000	1950	97	80 - 120
Methyl tert-butyl ether (MTBE)	1000	1030	103	80 - 120
Naphthalene	1000	870	87	80 - 120
n-Propylbenzene	1000	1140	114	80 - 120
Styrene	1000	1010	101	80 - 120
1,1,1,2-Tetrachloroethane	1000	1170	117	80 - 120
1,1,2,2-Tetrachloroethane	1000	1140	114	80 - 120
Tetrachloroethene (PCE)	1000	993	99	80 - 120
1,2,3-Trichlorobenzene	1000	987	99	80 - 120
1,2,4-Trichlorobenzene	1000	1050	105	80 - 120
1,1,1-Trichloroethane	1000	1200	120	80 - 120
1,1,2-Trichloroethane	1000	1070	107	80 - 120
Trichloroethene (TCE)	1000	1060	106	80 - 120
Trichlorofluoromethane	1000	1160	116	80 - 120
1,2,3-Trichloropropane	1000	1060	106	80 - 120

LCS / LCS DUPLICATE RECOVERY

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Soil		
Batch:	9051006	Laboratory ID:	9051006-BS1
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	1160	116	80 - 120
1,3,5-Trimethylbenzene	1000	1170	117	80 - 120
Toluene	1000	933	93	80 - 120
Vinyl chloride	1000	1010	101	80 - 120
m,p-Xylene	2000	2170	109	80 - 120
o-Xylene	1000	1090	109	80 - 120

* = Values outside of QC limits

ANALYSIS BATCH (SEQUENCE) SUMMARY

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E07048	Instrument:	VOA-GCMS6
Matrix:	Soil	Calibration:	A9E0804

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9E07048-TUN1	VF19050712.D	05/07/19 19:21
Initial Cal Blank	9E07048-ICB1	VF19050713.D	05/07/19 19:48
Cal Standard	9E07048-CAL1	VF19050714.D	05/07/19 20:15
Cal Standard	9E07048-CAL2	VF19050715.D	05/07/19 20:42
Cal Standard	9E07048-CAL3	VF19050716.D	05/07/19 21:09
Cal Standard	9E07048-CAL4	VF19050717.D	05/07/19 21:36
Cal Standard	9E07048-CAL5	VF19050718.D	05/07/19 22:04
Cal Standard	9E07048-CAL6	VF19050719.D	05/07/19 22:31
Cal Standard	9E07048-CAL7	VF19050720.D	05/07/19 22:58
Cal Standard	9E07048-CAL8	VF19050721.D	05/07/19 23:25
Cal Standard	9E07048-CAL9	VF19050722.D	05/07/19 23:52
Cal Standard	9E07048-CALA	VF19050724.D	05/08/19 00:46
Cal Standard	9E07048-CALB	VF19050726.D	05/08/19 01:40
Initial Cal Check	9E07048-ICV1	VF19050729.D	05/08/19 03:01

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

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E17019	Instrument:	VOA-GCMS6
Matrix:	Soil	Calibration:	A9E0804

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9E17019-TUN1	VF19051702.D	05/17/19 10:50
Calibration Check	9E17019-CCV1	VF19051703.D	05/17/19 11:17
Blank	9051006-BLK1	VF19051705.D	05/17/19 12:11
COMP1	A9E0508-05	VF19051707.D	05/17/19 13:06

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:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Lab File ID:	VF19050712.D	Injection Date:	05/07/19
Instrument ID:	VOA-GCMS6	Injection Time:	19:21
Sequence:	9E07048	Lab Sample ID:	9E07048-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 50			
m/z 75			
m/z 95		128.91	
m/z 96	5 - 9% of m/z 95	7.29	PASS
m/z 173		0.19	
m/z 174	50 - 200% of m/z 95	77.58	PASS
m/z 175	5 - 9% of m/z 174	7.27	PASS
m/z 176	95 - 101% of m/z 174	99.18	PASS
m/z 177	5 - 9% of m/z 176	6.36	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Lab File ID:	VF19051702.D	Injection Date:	05/17/19
Instrument ID:	VOA-GCMS6	Injection Time:	10:50
Sequence:	9E17019	Lab Sample ID:	9E17019-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 50			
m/z 75			
m/z 95		122.82	
m/z 96	5 - 9% of m/z 95	7.32	PASS
m/z 173		0.37	
m/z 174	50 - 200% of m/z 95	81.42	PASS
m/z 175	5 - 9% of m/z 174	6.85	PASS
m/z 176	95 - 101% of m/z 174	97.35	PASS
m/z 177	5 - 9% of m/z 176	6.52	PASS

INITIAL CALIBRATION DATA (Summary)

5035A/8260C

Laboratory: Apex Laboratories SDG: A9E0508

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9E0804 Date: 05/08/19 13:09 Instrument: VOA-GCMS6

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Acetone	0.2564407	Ave	7.744177	3.863333	0.1995287			20	
Acrylonitrile	0.2692675	Ave	12.01365	4.654875	0.2069527			20	
Benzene	2.41678	Ave	3.155137	6.006636	7.797203E-02			20	
Bromobenzene	0.8994337	Ave	8.785729	9.959273	33.16625			20	
Bromochloromethane	0.453775	Ave	11.05082	5.3408	0.1124728			20	
Bromodichloromethane	0.4523323	XXX	30.87602	7.259375	2.489057E-02				
Bromoform	0.1166506	XXX	43.09987	10.43567	2.334046E-02				
Bromomethane	0.4164018	Ave	11.21385	2.3	0.253578			20	
2-Butanone (MEK)	0.3832028	Ave	8.332168	5.7533	0.1715508			20	
n-Butylbenzene	2.199964	Ave	9.438812	11.94591	2.139637E-02			20	
sec-Butylbenzene	3.096842	Ave	9.585973	11.51836	0.0218418			20	
tert-Butylbenzene	1.483657	Ave	9.851129	10.34527	33.16626			20	
Carbon disulfide	1.053756	XXX	20.85792	3.141111	0.1301069				
Carbon tetrachloride	0.4035293	XXX	32.32495	5.548375	5.817391E-02				
Chlorobenzene	1.205131	Ave	4.792978	9.819818	1.090532E-02			20	
Chloroethane	0.0913605	Ave	10.7651	2.42675	0.2508377			20	
Chloroform	0.9293319	Ave	6.621218	5.421545	4.941593E-02			20	
Chloromethane	0.6802256	Ave	5.604576	1.8405	0.2072021			20	
2-Chlorotoluene	0.8034289	Ave	7.062893	11.1042	2.519217E-02			20	
4-Chlorotoluene	2.37608	Ave	8.107004	11.23573	2.794099E-02			20	
Dibromochloromethane	0.1991761	XXX	46.5533	9.075667	4.779145E-02				
1,2-Dibromo-3-chloropropane	0.1309833	XXX	52.52016	12.68437	0.0239431				
1,2-Dibromoethane (EDB)	0.3048663	XXX	30.44542	8.3809	35.13645				
Dibromomethane	0.2919693	Ave	14.83789	7.0789	4.527477E-02			20	
1,2-Dichlorobenzene	1.439925	Ave	4.379289	12.079	1.881118E-02			20	
1,3-Dichlorobenzene	1.534467	Ave	3.836305	11.69536	1.467601E-02			20	
1,4-Dichlorobenzene	1.677585	Ave	6.490518	11.76055	0.0194388			20	
Dichlorodifluoromethane	0.4667655	Ave	10.75654	1.630778	0.2906501			20	
1,1-Dichloroethane	1.045419	Ave	5.050409	4.578636	8.815815E-02			20	
1,2-Dichloroethane (EDC)	0.8175119	Ave	3.891625	6.224545	5.601535E-02			20	
1,1-Dichloroethene	0.8644626	Ave	6.059447	3.128727	0.1609455			20	
cis-1,2-Dichloroethene	0.7604442	Ave	8.811742	4.669455	33.16631			20	
trans-1,2-Dichloroethene	0.8258115	Ave	7.976692	3.580455	33.16642			20	

INITIAL CALIBRATION DATA (Summary)

5035A/8260C

Laboratory: Apex Laboratories SDG: A9E0508

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9E0804 Date: 05/08/19 13:09 Instrument: VOA-GCMS6

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,2-Dichloropropane	0.5776517	Ave	5.222789	7.1847	5.854618E-02			20	
1,3-Dichloropropane	0.7092434	Ave	7.764625	9.174	5.111819E-02			20	
2,2-Dichloropropane	0.5239617	Ave	13.31556	5.239143	6.028937E-02			20	
1,1-Dichloropropene	0.7724776	Ave	9.397248	5.749	7.218244E-02			20	
cis-1,3-Dichloropropene	0.4730113	XXX	28.49459	7.965111	4.683205E-02				
trans-1,3-Dichloropropene	0.4043419	XXX	37.74548	8.716778	5.705373E-02				
Ethylbenzene	2.012914	Ave	5.161089	9.846455	2.811805E-02			20	
Hexachlorobutadiene	0.2054685	Ave	4.16965	13.18913	2.531843E-02			20	
2-Hexanone	0.3946841	Ave	13.40766	9.544333	4.204365E-02			20	
Isopropylbenzene	1.539761	Ave	13.51672	10.6305	2.251522E-02			20	
4-Isopropyltoluene	2.577173	Ave	12.9107	11.6265	7.011429E-03			20	
Methylene chloride	1.826097	XXX	116.7711	3.774889	0.1136738				
4-Methyl-2-pentanone (MiBK)	0.5464244	Ave	14.83451	8.67675	0.0402065			20	
Methyl tert-butyl ether (MTBE)	1.669041	Ave	6.686993	4.085909	0.2042592			20	
Naphthalene	2.413637	XXX	25.86756	13.50178	1.756379E-02				
n-Propylbenzene	3.996031	Ave	6.079878	10.97355	0.0181964			20	
Styrene	0.8661843	XXX	26.03761	10.4127	2.984329E-02				
1,1,1,2-Tetrachloroethane	0.2257314	XXX	40.98196	9.883333	4.438073E-02				
1,1,2,2-Tetrachloroethane	0.9501049	Ave	12.77652	11.0386	1.681372E-02			20	
Tetrachloroethene (PCE)	0.4628382	Ave	6.885747	8.675091	5.013449E-02			20	
1,2,3-Trichlorobenzene	0.7871333	Ave	11.97016	13.664	1.017938E-02			20	
1,2,4-Trichlorobenzene	0.7731788	Ave	13.57468	13.2262	2.013817E-02			20	
1,1,1-Trichloroethane	0.6547532	Ave	13.25628	5.622	7.602732E-02			20	
1,1,2-Trichloroethane	0.3664796	Ave	10.39357	8.8892	5.102461E-02			20	
Trichloroethene (TCE)	0.5838813	Ave	6.390334	6.6251	5.740967E-02			20	
Trichlorofluoromethane	0.1185601	Ave	6.44325	2.555556	0.1875039			20	
1,2,3-Trichloropropane	0.376742	Ave	7.974877	11.14556	1.672472E-02			20	
1,2,4-Trimethylbenzene	2.59642	Ave	11.98981	11.43709	2.198909E-02			20	
1,3,5-Trimethylbenzene	2.583933	Ave	12.34047	11.13	1.998858E-02			20	
Toluene	2.113834	Ave	12.92352	8.227273	4.010907E-02			20	
Vinyl chloride	0.6726011	Ave	5.402368	1.9401	0.2640991			20	
m,p-Xylene	1.40996	Ave	9.205493	9.982	0.0369797			20	
o-Xylene	1.357163	Ave	9.18818	10.36309	2.353736E-02			20	

INITIAL CALIBRATION DATA (Summary)

5035A/8260C

Laboratory: Apex Laboratories SDG: A9E0508

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9E0804 Date: 05/08/19 13:09 Instrument: VOA-GCMS6

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,4-Difluorobenzene (Surr)	1.54484	Ave	0.9604008	6.659818	4.572574E-02			20	
Toluene-d8 (Surr)	1.478298	Ave	4.641448	8.169091	2.954905E-02			20	
4-Bromofluorobenzene (Surr)	0.7698666	Ave	2.590052	10.87082	0.0236891			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: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9E0804
Instrument: VOA-GCMS6
Calibration Date: 05/08/19 13:09

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	~~1.752833~~	0.4	~~0.7928243~~	0.8	~~0.5405725~~	2	~~0.3375024~~	4	~~0.3151775~~	10	0.2884519
Acrylonitrile	0.1	~~0~~	0.2	~~0~~	0.4	~~0.1282545~~	1	0.1993508	2	0.2543231	5	0.2703496
Benzene	0.1	2.347525	0.2	2.41932	0.4	2.409781	1	2.282604	2	2.403826	5	2.440741
Bromobenzene	0.1	0.68146	0.2	0.9540496	0.4	0.8390237	1	0.9348568	2	0.9115158	5	0.903457
Bromochloromethane	0.1	~~0~~	0.2	0.3257912	0.4	0.4629184	1	0.4181783	2	0.4834402	5	0.4764469
Bromodichloromethane	0.1	~~0~~	0.2	~~0.1279543~~	0.4	~~0.2850656~~	1	0.29979	2	0.3240767	5	0.3523224
Bromoform	0.1	~~0~~	0.2	~~0~~	0.4	~~0~~	1	~~0~~	2	7.313852E-02	5	7.631046E-02
Bromomethane	0.1	~~4.168056~~	0.2	~~1.126982~~	0.4	~~1.203387~~	1	~~0.5877411~~	2	~~0.6026798~~	5	0.4854076
2-Butanone (MEK)	0.2	~~0~~	0.4	0.4379973	0.8	0.375495	2	0.3258545	4	0.3618343	10	0.3851115
n-Butylbenzene	0.1	2.14234	0.2	1.948886	0.4	1.990605	1	2.017397	2	1.935363	5	2.146733
sec-Butylbenzene	0.1	3.045274	0.2	2.64935	0.4	2.741365	1	2.781959	2	2.865464	5	3.106363
tert-Butylbenzene	0.1	1.252183	0.2	1.379648	0.4	1.273073	1	1.418891	2	1.406385	5	1.495777
Carbon disulfide	0.1	~~1.468505~~	0.2	~~0~~	0.4	0.9764373	1	0.8210807	2	0.8549453	5	0.8917758
Carbon tetrachloride	0.1	~~0~~	0.2	~~0~~	0.4	~~0.1963896~~	1	0.2564445	2	0.2923892	5	0.3190912
Chlorobenzene	0.1	1.345987	0.2	1.286034	0.4	1.199333	1	1.194492	2	1.183866	5	1.166751
Chloroethane	0.1	~~0~~	0.2	~~0~~	0.4	~~0~~	1	9.089173E-02	2	0.1113178	5	9.189795E-02
Chloroform	0.1	0.8831862	0.2	0.8789474	0.4	0.8511888	1	0.8585068	2	0.8963037	5	0.9403166
Chloromethane	0.1	~~2.355857~~	0.2	~~0.784458~~	0.4	~~1.026036~~	1	0.644262	2	0.7430102	5	0.678325
2-Chlorotoluene	0.1	~~0~~	0.2	0.7820369	0.4	0.6946868	1	0.7825804	2	0.7385259	5	0.7866614
4-Chlorotoluene	0.1	2.057158	0.2	2.221978	0.4	2.105867	1	2.306757	2	2.297682	5	2.396533
Dibromochloromethane	0.1	~~0~~	0.2	~~0~~	0.4	9.525548E-02	1	0.1004219	2	0.1410199	5	0.1536236
1,2-Dibromo-3-chloropropane	0.1	~~0~~	0.2	~~0~~	0.4	~~0~~	1	4.911001E-02	2	7.025799E-02	5	8.207467E-02
1,2-Dibromoethane (EDB)	0.1	~~0~~	0.2	0.1475647	0.4	0.2024733	1	0.2204307	2	0.2735547	5	0.3062803
Dibromomethane	0.1	~~0~~	0.2	0.2027583	0.4	0.2770497	1	0.2562536	2	0.278706	5	0.2856592
1,2-Dichlorobenzene	0.1	1.358661	0.2	1.416888	0.4	1.377951	1	1.362361	2	1.407202	5	1.464473
1,3-Dichlorobenzene	0.1	1.537544	0.2	1.457674	0.4	1.444408	1	1.466588	2	1.531992	5	1.541542
1,4-Dichlorobenzene	0.1	1.980493	0.2	1.65274	0.4	1.698815	1	1.694825	2	1.681699	5	1.611619
Dichlorodifluoromethane	0.1	~~0~~	0.2	~~0~~	0.4	0.4238409	1	0.3752148	2	0.4555593	5	0.4623427
1,1-Dichloroethane	0.1	1.047742	0.2	1.00198	0.4	1.000986	1	0.9847241	2	1.066984	5	1.085818
1,2-Dichloroethane (EDC)	0.1	0.7686219	0.2	0.8238286	0.4	0.7775427	1	0.8185984	2	0.8227434	5	0.8484588
1,1-Dichloroethene	0.1	0.9665056	0.2	0.817923	0.4	0.8511888	1	0.7800267	2	0.8460975	5	0.8523163

INITIAL CALIBRATION DATA

5035A/8260C

Laboratory: Apex Laboratories

Client: Hahn and Associates

Calibration: A9E0804

SDG: A9E0508

Project: Mult 802 Decommissioning

Instrument: VOA-GCMS6

Calibration Date: 05/08/19 13:09

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	0.6394768	0.2	0.687016	0.4	0.7249383	1	0.685507	2	0.78406	5	0.7989938
trans-1,2-Dichloroethene	0.1	0.6665556	0.2	0.8385925	0.4	0.7900675	1	0.7750621	2	0.8203771	5	0.8471327
1,2-Dichloropropane	0.1	~~0~~	0.2	0.578747	0.4	0.5180278	1	0.5548978	2	0.5622475	5	0.5712782
1,3-Dichloropropane	0.1	0.7015103	0.2	0.5973991	0.4	0.6787507	1	0.6466797	2	0.7158905	5	0.7480287
2,2-Dichloropropane	0.1	~~0~~	0.2	~~0.4340602~~	0.4	~~0.4594115~~	1	0.4410922	2	0.473152	5	0.4760852
1,1-Dichloropropene	0.1	~~0~~	0.2	0.672252	0.4	0.7094075	1	0.6715677	2	0.7543272	5	0.7741207
cis-1,3-Dichloropropene	0.1	~~0~~	0.2	~~0.2657751~~	0.4	0.3203242	1	0.3301797	2	0.3689207	5	0.3980606
trans-1,3-Dichloropropene	0.1	~~0~~	0.2	~~0~~	0.4	0.2224105	1	0.2459248	2	0.2844378	5	0.3200312
Ethylbenzene	0.1	2.233806	0.2	2.09764	0.4	1.94144	1	1.891538	2	1.899019	5	1.92538
Hexachlorobutadiene	0.1	~~0~~	0.2	~~0~~	0.4	~~0~~	1	0.1936136	2	0.1995409	5	0.2057826
n-Hexane	0.1	~~3.82228~~	0.2	~~1.812029~~	0.4	~~1.014012~~	1	~~0.4105404~~	2	~~0.2876567~~	5	0.1795365
2-Hexanone	0.2	~~0~~	0.4	~~0.2030998~~	0.8	~~0.2310499~~	2	~~0.2485675~~	4	~~0.2943526~~	10	0.318384
Isopropylbenzene	0.1	~~1.153975~~	0.2	1.286034	0.4	1.242309	1	1.378081	2	1.368603	5	1.531688
4-Isopropyltoluene	0.1	~~2.023084~~	0.2	~~1.945339~~	0.4	~~1.926224~~	1	2.083819	2	2.11693	5	2.396374
Methylene chloride	0.1	~~30.86986~~	0.2	~~13.61236~~	0.4	7.017423	1	3.178728	2	1.918637	5	1.117924
4-Methyl-2-pentanone (MiBK)	0.2	~~0.3716674~~	0.4	~~0.3732753~~	0.8	~~0.3841233~~	2	0.400444	4	0.4826865	10	0.5175396
Methyl tert-butyl ether (MTBE)	0.1	1.63931	0.2	1.718524	0.4	1.560095	1	1.53523	2	1.610301	5	1.619124
Naphthalene	0.1	~~0~~	0.2	~~0~~	0.4	1.638588	1	1.629463	2	1.868781	5	2.105656
n-Propylbenzene	0.1	3.89284	0.2	3.768318	0.4	3.659307	1	3.801963	2	3.748182	5	3.903354
Styrene	0.1	~~0~~	0.2	0.5886721	0.4	0.6238126	1	0.6623803	2	0.6846245	5	0.8039634
1,1,1,2-Tetrachloroethane	0.1	~~0~~	0.2	~~0~~	0.4	0.1293702	1	0.1220297	2	0.1568835	5	0.1711345
1,1,2,2-Tetrachloroethane	0.1	~~0.5877593~~	0.2	0.7802636	0.4	0.8006031	1	0.8352235	2	0.8935428	5	0.9184736
Tetrachloroethene (PCE)	0.1	0.4581679	0.2	0.3990594	0.4	0.4669734	1	0.4161446	2	0.4681603	5	0.4815688
1,2,3-Trichlorobenzene	0.1	~~0~~	0.2	~~0.6313042~~	0.4	0.6230375	1	0.6613953	2	0.7522099	5	0.7903163
1,2,4-Trichlorobenzene	0.1	~~0~~	0.2	0.5781044	0.4	0.7071475	1	0.6638684	2	0.74547	5	0.753768
1,1,1-Trichloroethane	0.1	~~0~~	0.2	~~0.5423292~~	0.4	0.6097097	1	0.5722742	2	0.5888937	5	0.6159212
1,1,2-Trichloroethane	0.1	~~0~~	0.2	0.291956	0.4	0.3340588	1	0.3258271	2	0.3833086	5	0.3790456
Trichloroethene (TCE)	0.1	~~0.4270122~~	0.2	0.6043378	0.4	0.5465844	1	0.5382853	2	0.5398193	5	0.5746937
Trichlorofluoromethane	0.1	~~0~~	0.2	~~0~~	0.4	0.1112207	1	0.1176246	2	0.1292192	5	0.1281026
1,2,3-Trichloropropane	0.1	~~0~~	0.2	~~0.2393991~~	0.4	0.3146339	1	0.3437701	2	0.3929546	5	0.3780361
1,1,2-Trichloro-1,2,2-trifluoroethan	0.1	~~0~~	0.2	0.4507927	0.4	0.5215347	1	0.5367577	2	0.520066	5	0.5370425

INITIAL CALIBRATION DATA

5035A/8260C

Laboratory: Apex Laboratories

Client: Hahn and Associates

Calibration: A9E0804

SDG: A9E0508

Project: Mult 802 Decommissioning

Instrument: VOA-GCMS6

Calibration Date: 05/08/19 13:09

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	2.389369	0.2	2.218431	0.4	2.254357	1	2.255174	2	2.343431	5	2.577288
1,3,5-Trimethylbenzene	0.1	2.334001	0.2	2.195378	0.4	2.255396	1	2.262594	2	2.345678	5	2.511342
Toluene	0.1	2.876382	0.2	2.258692	0.4	2.052645	1	1.957916	2	2.101003	5	2.068869
Vinyl chloride	0.1	~~0~~	0.2	0.6752048	0.4	0.6277454	1	0.6316593	2	0.6601906	5	0.6598409
m,p-Xylene	0.2	1.375454	0.4	1.338793	0.8	1.198225	2	1.290328	4	1.297955	10	1.366337
o-Xylene	0.1	1.465757	0.2	1.317769	0.4	1.198004	1	1.191228	2	1.227215	5	1.272891
trans-1,4-Dichloro-2-butene	0.1	~~0~~	0.2	~~0~~	0.4	~~0~~	1	~~0~~	2	4.840449E-02	5	4.608258E-02
Xylenes, total	0.3	1.405555	0.6	1.331785	1.2	1.198151	3	1.257295	6	1.274375	15	1.335188
1,4-Difluorobenzene (Surr)	50	1.553041	50	1.549664	50	1.538296	50	1.535608	50	1.540362	50	1.535994
Toluene-d8 (Surr)	50	1.569679	50	1.433139	50	1.535788	50	1.441468	50	1.53882	50	1.533396
4-Bromofluorobenzene (Surr)	50	0.7694791	50	0.7869029	50	0.7813886	50	0.7970449	50	0.765951	50	0.7634931

INITIAL CALIBRATION DATA (Continued)

5035A/8260C

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9E0804
Instrument: VOA-GCMS6
Matrix:
Calibration Date: 05/08/19 13:09

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	0.2419019	40	0.2742404	100	0.246246	200	0.2433386	400	0.2444651		
Acrylonitrile	10	0.2620644	20	0.2971292	50	0.2890354	100	0.2857635	200	0.2961238		
Benzene	10	2.360772	20	2.550772	50	2.456006	100	2.390489	200	2.52274		
Bromobenzene	10	0.9492825	20	0.9387664	50	0.9447975	100	0.9118558	200	0.9247052		
Bromochloromethane	10	0.4621196	20	0.5042704	50	0.4748457	100	0.4549383	200	0.4748012		
Bromodichloromethane	10	0.370656	20	0.4599386	50	0.54191	100	0.583295	200	0.6866693		
Bromoform	10	8.486507E-02	20	0.1134038	50	0.153396	100	0.1987895	200	~~0.2389616~~		
Bromomethane	10	0.4462014	20	0.4123009	50	0.4177758	100	0.3507855	200	0.3859397		
2-Butanone (MEK)	20	0.3526488	40	0.4080648	100	0.387426	200	0.3863811	400	0.4112151		
n-Butylbenzene	10	2.373551	20	2.397669	50	2.472164	100	2.411971	200	2.36293		
sec-Butylbenzene	10	3.35742	20	3.380716	50	3.465874	100	3.350017	200	3.321464		
tert-Butylbenzene	10	1.616203	20	1.621271	50	1.66482	100	1.595885	200	1.596089		
Carbon disulfide	10	0.8940664	20	1.082939	50	1.240152	100	1.288944	200	1.433464		
Carbon tetrachloride	10	0.3318058	20	0.3965901	50	0.4736746	100	0.523393	200	0.6348459		
Chlorobenzene	10	1.176012	20	1.188317	50	1.189156	100	1.160765	200	1.165733		
Chloroethane	10	8.365567E-02	20	9.475985E-02	50	9.429338E-02	100	7.851257E-02	200	8.555506E-02		
Chloroform	10	0.921271	20	1.008278	50	0.988711	100	0.9695525	200	1.026389		
Chloromethane	10	0.6261792	20	0.697824	50	0.7159711	100	0.676284	200	0.6599496		
2-Chlorotoluene	10	0.8577657	20	0.8398971	50	0.8713309	100	0.8319615	200	0.8488422		
4-Chlorotoluene	10	2.5802	20	2.54733	50	2.614956	100	2.491408	200	2.517011		
Dibromochloromethane	10	0.158684	20	0.213768	50	0.2626913	100	0.313983	200	0.3531375		
1,2-Dibromo-3-chloropropane	10	0.0968574	20	0.1294979	50	0.1711681	100	0.2177268	200	0.2311736		
1,2-Dibromoethane (EDB)	10	0.3109729	20	0.3885904	50	0.3899816	100	0.4110444	200	0.3977697		
Dibromomethane	10	0.2890233	20	0.3267916	50	0.3254618	100	0.3239474	200	0.3540424		
1,2-Dichlorobenzene	10	1.456458	20	1.560407	50	1.513843	100	1.459579	200	1.461352		
1,3-Dichlorobenzene	10	1.550627	20	1.622393	50	1.619071	100	1.547067	200	1.560233		
1,4-Dichlorobenzene	10	1.629428	20	1.684319	50	1.655046	100	1.57984	200	1.584612		
Dichlorodifluoromethane	10	0.4464471	20	0.4743755	50	0.5329335	100	0.5032896	200	0.5268858		
1,1-Dichloroethane	10	1.029277	20	1.152566	50	1.107124	100	1.024209	200	0.998194		
1,2-Dichloroethane (EDC)	10	0.7945681	20	0.8769001	50	0.8252766	100	0.7957578	200	0.8403346		
1,1-Dichloroethene	10	0.8213569	20	0.908352	50	0.9011528	100	0.8564178	200	0.9077515		

INITIAL CALIBRATION DATA (Continued)

5035A/8260C

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9E0804
Instrument: VOA-GCMS6
Matrix:
Calibration Date: 05/08/19 13:09

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	0.760482	20	0.8486127	50	0.8231251	100	0.8017893	200	0.8108853		
trans-1,2-Dichloroethene	10	0.8182564	20	0.8933085	50	0.8781558	100	0.8597056	200	0.8967125		
1,2-Dichloropropane	10	0.5681024	20	0.6097872	50	0.603212	100	0.5884503	200	0.6217671		
1,3-Dichloropropane	10	0.7102991	20	0.8044618	50	0.7374997	100	0.7477423	200	0.713416		
2,2-Dichloropropane	10	0.4911013	20	0.5688523	50	0.6083495	100	0.6090996	200	~~0.6754078~~		
1,1-Dichloropropene	10	0.7601039	20	0.8359855	50	0.8411755	100	0.8301044	200	0.8757318		
cis-1,3-Dichloropropene	10	0.409021	20	0.5505736	50	0.5752381	100	0.6412444	200	0.6635391		
trans-1,3-Dichloropropene	10	0.3489509	20	0.473147	50	0.5279537	100	0.5916959	200	0.6245255		
Ethylbenzene	10	1.946884	20	2.05753	50	2.074955	100	2.028917	200	2.044943		
Hexachlorobutadiene	10	0.2030881	20	0.2185117	50	0.2164735	100	0.2073872	200	0.1993501		
n-Hexane	10	0.1465345	20	0.1441567	50	0.1331258	100	0.1301553	200	0.1324706		
2-Hexanone	20	0.3366006	40	0.4196367	100	0.4246755	200	0.442425	400	0.4263828		
Isopropylbenzene	10	1.596504	20	1.705482	50	1.775627	100	1.733204	200	1.780079		
4-Isopropyltoluene	10	2.67317	20	2.79289	50	2.908842	100	2.803164	200	2.842191		
Methylene chloride	10	0.8086715	20	0.7197725	50	0.5931839	100	0.5369313	200	0.5435988		
4-Methyl-2-pentanone (MiBK)	20	0.5152713	40	0.6249499	100	0.6042894	200	0.6274063	400	0.5988082		
Methyl tert-butyl ether (MTBE)	10	1.55798	20	1.757915	50	1.743013	100	1.707382	200	1.910579		
Naphthalene	10	2.400872	20	2.919477	50	2.971083	100	3.187857	200	3.000956		
n-Propylbenzene	10	4.202144	20	4.218527	50	4.353542	100	4.21684	200	4.191329		
Styrene	10	0.8847117	20	1.004107	50	1.11364	100	1.101819	200	1.194112		
1,1,1,2-Tetrachloroethane	10	0.1924352	20	0.2493535	50	0.3024805	100	0.3423881	200	0.3655074		
1,1,2,2-Tetrachloroethane	10	0.9902634	20	1.09488	50	1.077614	100	1.094781	200	1.015404		
Tetrachloroethene (PCE)	10	0.4558453	20	0.5144691	50	0.4732682	100	0.4876975	200	0.4698653		
1,2,3-Trichlorobenzene	10	0.7954587	20	0.8881317	50	0.8600013	100	0.8864916	200	0.8271571		
1,2,4-Trichlorobenzene	10	0.7768937	20	0.8762108	50	0.8716825	100	0.8989497	200	0.8596929		
1,1,1-Trichloroethane	10	0.6492625	20	0.7401237	50	0.8070877	100	~~0.8232~~	200	~~0.9044973~~		
1,1,2-Trichloroethane	10	0.3665807	20	0.4204243	50	0.3894328	100	0.3931444	200	0.3810173		
Trichloroethene (TCE)	10	0.5590089	20	0.6149634	50	0.6127348	100	0.6024215	200	0.6459636		
Trichlorofluoromethane	10	0.1106713	20	0.1250389	50	0.1206469	100	0.1091402	200	0.1153767		
1,2,3-Trichloropropane	10	0.3901544	20	0.4117848	50	0.3922972	100	0.3951544	200	0.3718928		
1,1,2-Trichloro-1,2,2-trifluoroethan	10	0.515489	20	0.5471059	50	0.5520578	100	0.5278398	200	0.560459		

INITIAL CALIBRATION DATA (Continued)

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Calibration:	A9E0804	Instrument:	VOA-GCMS6
Matrix:		Calibration Date:	05/08/19 13:09

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	2.839455	20	2.921522	50	2.97654	100	2.87091	200	2.914147		
1,3,5-Trimethylbenzene	10	2.816603	20	2.880625	50	2.979177	100	2.875496	200	2.96697		
Toluene	10	1.955228	20	2.131224	50	1.978733	100	1.99247	200	1.879017		
Vinyl chloride	10	0.6484118	20	0.6918793	50	0.7415089	100	0.6704769	200	0.719093		
m,p-Xylene	20	1.421015	40	1.525141	100	1.552606	200	1.536775	400	1.606933		
o-Xylene	10	1.336833	20	1.433145	50	1.500381	100	1.462682	200	1.522892		
trans-1,4-Dichloro-2-butene	10	6.016349E-02	20	7.542077E-02	50	0.1074294	100	0.1280113	200	0.1432857		
Xylenes, total	30	1.392954	60	1.494476	150	1.535197	300	1.512078	600	1.578919		
1,4-Difluorobenzene (Surr)	50	1.531301	50	1.549395	50	1.541734	50	1.533681	50	1.584166		
Toluene-d8 (Surr)	50	1.452187	50	1.531564	50	1.417982	50	1.462872	50	1.34438		
4-Bromofluorobenzene (Surr)	50	0.7979001	50	0.7597709	50	0.7677041	50	0.7422173	50	0.7366811		

SECOND-SOURCE CALIBRATION VERIFICATION

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	VOA-GCMS6	Calibration:	A9E0804
Lab File ID:	VF19050729.D		
Sequence:	9E07048	Inject Date:	05/08/19
Lab Sample ID:	9E07048-ICV1	Inject Time:	03:01

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
Acetone	40.0	41.8	4.6	70 - 130
Acrylonitrile	20.0	21.9	9.4	70 - 130
Benzene	20.0	20.4	1.9	70 - 130
Bromobenzene	20.0	20.1	0.3	70 - 130
Bromochloromethane	20.0	21.7	8.5	70 - 130
Bromodichloromethane	20.0	20.0	0.08	70 - 130
Bromoform	20.0	21.5	7.5	70 - 130
Bromomethane	20.0	20.2	0.8	70 - 130
2-Butanone (MEK)	40.0	42.1	5.3	70 - 130
n-Butylbenzene	20.0	21.0	5.0	70 - 130
sec-Butylbenzene	20.0	21.1	5.6	70 - 130
tert-Butylbenzene	20.0	21.0	5.0	70 - 130
Carbon disulfide	20.0	18.0	-10.0	70 - 130
Carbon tetrachloride	20.0	22.3	11.4	70 - 130
Chlorobenzene	20.0	18.6	-6.9	70 - 130
Chloroethane	20.0	24.2	20.9	70 - 130
Chloroform	20.0	21.2	5.8	70 - 130
Chloromethane	20.0	24.4	22.2	70 - 130
2-Chlorotoluene	20.0	20.3	1.6	70 - 130
4-Chlorotoluene	20.0	21.1	5.3	70 - 130
Dibromochloromethane	20.0	20.1	0.5	70 - 130
1,2-Dibromo-3-chloropropane	20.0	19.6	-2.0	70 - 130
1,2-Dibromoethane (EDB)	20.0	21.4	7.0	70 - 130
Dibromomethane	20.0	21.7	8.3	70 - 130
1,2-Dichlorobenzene	20.0	21.1	5.6	70 - 130
1,3-Dichlorobenzene	20.0	20.4	2.0	70 - 130
1,4-Dichlorobenzene	20.0	19.4	-2.8	70 - 130
Dichlorodifluoromethane	20.0	24.2	21.2	70 - 130
1,1-Dichloroethane	20.0	21.6	7.9	70 - 130
1,2-Dichloroethane (EDC)	20.0	21.0	4.9	70 - 130
1,1-Dichloroethene	20.0	20.9	4.4	70 - 130

SECOND-SOURCE CALIBRATION VERIFICATION

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	VOA-GCMS6	Calibration:	A9E0804
Lab File ID:	VF19050729.D		
Sequence:	9E07048	Inject Date:	05/08/19
Lab Sample ID:	9E07048-ICV1	Inject Time:	03:01

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
cis-1,2-Dichloroethene	20.0	21.8	8.9	70 - 130
trans-1,2-Dichloroethene	20.0	21.4	6.9	70 - 130
1,2-Dichloropropane	20.0	20.6	3.0	70 - 130
1,3-Dichloropropane	20.0	22.4	11.8	70 - 130
2,2-Dichloropropane	20.0	21.2	6.0	70 - 130
1,1-Dichloropropene	20.0	21.6	7.9	70 - 130
cis-1,3-Dichloropropene	20.0	20.1	0.7	70 - 130
trans-1,3-Dichloropropene	20.0	20.3	1.4	70 - 130
Ethylbenzene	20.0	19.8	-1.2	70 - 130
Hexachlorobutadiene	20.0	21.2	6.0	70 - 130
n-Hexane	20.0	19.9	-0.7	70 - 130
2-Hexanone	40.0	42.7	6.8	70 - 130
Isopropylbenzene	20.0	21.5	7.6	70 - 130
4-Isopropyltoluene	20.0	20.8	4.0	70 - 130
Methylene chloride	20.0	21.6	8.2	70 - 130
4-Methyl-2-pentanone (MiBK)	40.0	44.5	11.2	70 - 130
Methyl tert-butyl ether (MTBE)	20.0	20.8	4.1	70 - 130
Naphthalene	20.0	19.7	-1.4	70 - 130
n-Propylbenzene	20.0	20.1	0.4	70 - 130
Styrene	20.0	19.2	-4.0	70 - 130
1,1,1,2-Tetrachloroethane	20.0	20.3	1.3	70 - 130
1,1,2,2-Tetrachloroethane	20.0	22.9	14.6	70 - 130
Tetrachloroethene (PCE)	20.0	21.5	7.5	70 - 130
1,2,3-Trichlorobenzene	20.0	22.3	11.7	70 - 130
1,2,4-Trichlorobenzene	20.0	22.2	11.1	70 - 130
1,1,1-Trichloroethane	20.0	24.2	21.1	70 - 130
1,1,2-Trichloroethane	20.0	22.5	12.6	70 - 130
Trichloroethene (TCE)	20.0	20.4	2.1	70 - 130
Trichlorofluoromethane	20.0	22.3	11.5	70 - 130
1,2,3-Trichloropropane	20.0	20.9	4.7	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	20.0	21.3	6.6	70 - 130

SECOND-SOURCE CALIBRATION VERIFICATION

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	VOA-GCMS6	Calibration:	A9E0804
Lab File ID:	VF19050729.D		
Sequence:	9E07048	Inject Date:	05/08/19
Lab Sample ID:	9E07048-ICV1	Inject Time:	03:01

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
1,2,4-Trimethylbenzene	20.0	21.1	5.5	70 - 130
1,3,5-Trimethylbenzene	20.0	21.1	5.6	70 - 130
Toluene	20.0	19.3	-3.7	70 - 130
Vinyl chloride	20.0	23.0	15.0	70 - 130
m,p-Xylene	40.0	41.3	3.3	70 - 130
o-Xylene	20.0	20.5	2.4	70 - 130
trans-1,4-Dichloro-2-butene	20.0	17.6	-11.8	70 - 130
Xylenes, total	60.0	61.8	3.0	70 - 130
1,4-Difluorobenzene (Surr)	50.0	49.8	-0.4	70 - 130
Toluene-d8 (Surr)	50.0	51.7	3.3	70 - 130
4-Bromofluorobenzene (Surr)	50.0	49.8	-0.5	70 - 130

SURROGATE STANDARD RECOVERY AND RT SUMMARY

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E07048	Instrument:	VOA-GCMS6
Matrix:	Soil	Calibration:	A9E0804

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Initial Cal Check (9E07048-ICV1)				Lab File ID: VF19050729.D		Analyzed: 05/08/19 03:01		
1,4-Difluorobenzene (Surr)	50.0	100	70 - 130	6.661	6.659818	0.0012	+/-1.0	
Toluene-d8 (Surr)	50.0	103	70 - 130	8.17	8.169091	0.0009	+/-1.0	
4-Bromofluorobenzene (Surr)	50.0	100	70 - 130	10.871	10.87082	0.0002	+/-1.0	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E17019	Instrument:	VOA-GCMS6
Matrix:	Soil	Calibration:	A9E0804

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
LCS (9051006-BS1)			Lab File ID: VF19051703.D		Analyzed: 05/17/19 11:17			
1,4-Difluorobenzene (Surr)	50.0	104	80 - 120	6.657	6.659818	-0.0028	+/-1.0	
Toluene-d8 (Surr)	50.0	95	80 - 120	8.166	8.169091	-0.0031	+/-1.0	
4-Bromofluorobenzene (Surr)	50.0	101	80 - 120	10.867	10.87082	-0.0038	+/-1.0	
Blank (9051006-BLK1)			Lab File ID: VF19051705.D		Analyzed: 05/17/19 12:11			
1,4-Difluorobenzene (Surr)	50.0	105	80 - 120	6.661	6.659818	0.0012	+/-1.0	
Toluene-d8 (Surr)	50.0	96	80 - 120	8.17	8.169091	0.0009	+/-1.0	
4-Bromofluorobenzene (Surr)	50.0	102	80 - 120	10.871	10.87082	0.0002	+/-1.0	
COMP1 (A9E0508-05)			Lab File ID: VF19051707.D		Analyzed: 05/17/19 13:06			
1,4-Difluorobenzene (Surr)	50.0	106	80 - 120	6.655	6.659818	-0.0048	+/-1.0	
Toluene-d8 (Surr)	50.0	95	80 - 120	8.17	8.169091	0.0009	+/-1.0	
4-Bromofluorobenzene (Surr)	50.0	100	80 - 120	10.871	10.87082	0.0002	+/-1.0	

INTERNAL STANDARD AREA AND RT SUMMARY
5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E17019	Instrument:	VOA-GCMS6
Matrix:	Soil	Calibration:	A9E0804

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (9051006-BS1)			Lab File ID: VF19051703.D			Analyzed: 05/17/19 11:17			
Pentafluorobenzene (ISTD)	307085	6.091	307085	6.091	100	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5 (ISTD)	398846	9.802	398846	9.802	100	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	181920	11.749	181920	11.749	100	50 - 200	0.0000	+/-0.50	
Calibration Check (9E17019-CCV1)			Lab File ID: VF19051703.D			Analyzed: 05/17/19 11:17			
Pentafluorobenzene (ISTD)	307085	6.091	247283	6.097	124	50 - 200	-0.0060	+/-0.50	
Chlorobenzene-d5 (ISTD)	398846	9.802	274550	9.802	145	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	181920	11.749	127087	11.749	143	50 - 200	0.0000	+/-0.50	
Blank (9051006-BLK1)			Lab File ID: VF19051705.D			Analyzed: 05/17/19 12:11			
Pentafluorobenzene (ISTD)	299864	6.095	307085	6.091	98	50 - 200	0.0040	+/-0.50	
Chlorobenzene-d5 (ISTD)	393771	9.806	398846	9.802	99	50 - 200	0.0040	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	175866	11.753	181920	11.749	97	50 - 200	0.0040	+/-0.50	
COMP1 (A9E0508-05)			Lab File ID: VF19051707.D			Analyzed: 05/17/19 13:06			
Pentafluorobenzene (ISTD)	300548	6.095	307085	6.091	98	50 - 200	0.0040	+/-0.50	
Chlorobenzene-d5 (ISTD)	399940	9.806	398846	9.802	100	50 - 200	0.0040	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	182344	11.753	181920	11.749	100	50 - 200	0.0040	+/-0.50	
Duplicate (9051006-DUP1)			Lab File ID: VF19051710.D			Analyzed: 05/17/19 14:27			
Pentafluorobenzene (ISTD)	279775	6.092	307085	6.091	91	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5 (ISTD)	376967	9.803	398846	9.802	95	50 - 200	0.0010	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	167768	11.75	181920	11.749	92	50 - 200	0.0010	+/-0.50	
Duplicate (9051006-DUP2)			Lab File ID: VF19051712.D			Analyzed: 05/17/19 15:21			
Pentafluorobenzene (ISTD)	271459	6.09	307085	6.091	88	50 - 200	-0.0010	+/-0.50	
Chlorobenzene-d5 (ISTD)	391035	9.801	398846	9.802	98	50 - 200	-0.0010	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	173468	11.748	181920	11.749	95	50 - 200	-0.0010	+/-0.50	
Matrix Spike (9051006-MS1)			Lab File ID: VF19051714.D			Analyzed: 05/17/19 16:15			
Pentafluorobenzene (ISTD)	276373	6.096	307085	6.091	90	50 - 200	0.0050	+/-0.50	
Chlorobenzene-d5 (ISTD)	406127	9.807	398846	9.802	102	50 - 200	0.0050	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	195853	11.747	181920	11.749	108	50 - 200	-0.0020	+/-0.50	

HOLDING TIME SUMMARY

5035A/8260C

Laboratory: Apex Laboratories SDG: A9E0508

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
COMP1	05/13/19 15:15	05/15/19 12:35	05/13/19 15:15	0.00	2.00	05/17/19 13:06	3.91	14.00	

Apex Laboratories

SDG: A9E0508

CLASS: GCMS

METHOD: 1311/8260C

ANALYSES DATA PACKAGE COVER PAGE

1311/8260C

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning

Client Sample Id:	Lab Sample Id:	Matrix
COMP1	A9E0508-05	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 2:32PM
Title: Technical Manager

METHOD DETECTION AND REPORTING LIMITS

1311/8260C

Laboratory: Apex Laboratories **SDG:** A9E0508

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

Batch Matrix: Water

Analyte	MDL	MRL	Units
Acetone	0.500	1.00	mg/L
Benzene	0.00625	0.0125	mg/L
Bromobenzene	0.0125	0.0250	mg/L
Bromochloromethane	0.0250	0.0500	mg/L
Bromodichloromethane	0.0250	0.0500	mg/L
Bromoform	0.0250	0.0500	mg/L
Bromomethane	0.250	0.250	mg/L
2-Butanone (MEK)	0.250	0.500	mg/L
n-Butylbenzene	0.0250	0.0500	mg/L
sec-Butylbenzene	0.0250	0.0500	mg/L
tert-Butylbenzene	0.0250	0.0500	mg/L
Carbon tetrachloride	0.0250	0.0500	mg/L
Chlorobenzene	0.0125	0.0250	mg/L
Chloroethane	0.250	0.250	mg/L
Chloroform	0.0250	0.0500	mg/L
Chloromethane	0.125	0.250	mg/L
2-Chlorotoluene	0.0250	0.0500	mg/L
4-Chlorotoluene	0.0250	0.0500	mg/L
1,2-Dibromo-3-chloropropane	0.125	0.250	mg/L
Dibromochloromethane	0.0250	0.0500	mg/L
1,2-Dibromoethane (EDB)	0.0125	0.0250	mg/L
Dibromomethane	0.0250	0.0500	mg/L
1,2-Dichlorobenzene	0.0125	0.0250	mg/L
1,3-Dichlorobenzene	0.0125	0.0250	mg/L
1,4-Dichlorobenzene	0.0125	0.0250	mg/L
Dichlorodifluoromethane	0.0250	0.0500	mg/L
1,1-Dichloroethane	0.0125	0.0250	mg/L
1,1-Dichloroethene	0.0125	0.0250	mg/L
1,2-Dichloroethane (EDC)	0.0125	0.0250	mg/L
cis-1,2-Dichloroethene	0.0250	0.0500	mg/L
trans-1,2-Dichloroethene	0.0125	0.0250	mg/L
1,2-Dichloropropane	0.0125	0.0250	mg/L
1,3-Dichloropropane	0.0250	0.0500	mg/L
2,2-Dichloropropane	0.0250	0.0500	mg/L
1,1-Dichloropropene	0.0250	0.0500	mg/L
cis-1,3-Dichloropropene	0.0250	0.0500	mg/L
trans-1,3-Dichloropropene	0.0250	0.0500	mg/L

METHOD DETECTION AND REPORTING LIMITS

1311/8260C

Laboratory: Apex Laboratories **SDG:** A9E0508

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

Batch Matrix: Water

Analyte	MDL	MRL	Units
Ethylbenzene	0.0125	0.0250	mg/L
Hexachlorobutadiene	0.125	0.250	mg/L
2-Hexanone	0.250	0.500	mg/L
Isopropylbenzene	0.0250	0.0500	mg/L
4-Isopropyltoluene	0.0250	0.0500	mg/L
4-Methyl-2-pentanone (MiBK)	0.250	0.500	mg/L
Methyl tert-butyl ether (MTBE)	0.0250	0.0500	mg/L
Methylene chloride	0.125	0.250	mg/L
Naphthalene	0.0500	0.100	mg/L
n-Propylbenzene	0.0125	0.0250	mg/L
Styrene	0.0250	0.0500	mg/L
1,1,1,2-Tetrachloroethane	0.0125	0.0250	mg/L
1,1,2,2-Tetrachloroethane	0.0125	0.0250	mg/L
Tetrachloroethene (PCE)	0.0125	0.0250	mg/L
Toluene	0.0250	0.0500	mg/L
1,2,3-Trichlorobenzene	0.0250	0.0500	mg/L
1,2,4-Trichlorobenzene	0.0500	0.100	mg/L
1,1,1-Trichloroethane	0.0125	0.0250	mg/L
1,1,2-Trichloroethane	0.0125	0.0250	mg/L
Trichloroethene (TCE)	0.0125	0.0250	mg/L
Trichlorofluoromethane	0.0500	0.100	mg/L
1,2,3-Trichloropropane	0.0250	0.0500	mg/L
1,2,4-Trimethylbenzene	0.0250	0.0500	mg/L
1,3,5-Trimethylbenzene	0.0250	0.0500	mg/L
Vinyl chloride	0.0125	0.0250	mg/L
m,p-Xylene	0.0250	0.0500	mg/L
o-Xylene	0.0125	0.0250	mg/L

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

ORGANIC ANALYSIS DATA SHEET

1311/8260C

COMP1

Laboratory:	Apex Laboratories			SDG:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	A9E0508-05	File ID:	VA19052406.D
Sampled:	05/13/19 15:15	Prepared:	05/24/19 10:48	Analyzed:	05/24/19 11:12
		Preparation:	EPA 1311/5030B TCLP Vola	Initial/Final:	5 mL / 5 mL

Batch: 9051246 Sequence: 9E24013 Calibration: A9C0602 Instrument: VOA-GCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (mg/L)	Q
67-64-1	Acetone	50	0.500	U
71-43-2	Benzene	50	0.720	
108-86-1	Bromobenzene	50	0.0125	U
74-97-5	Bromochloromethane	50	0.0250	U
75-27-4	Bromodichloromethane	50	0.0250	U
75-25-2	Bromoform	50	0.0250	U
74-83-9	Bromomethane	50	0.250	U
78-93-3	2-Butanone (MEK)	50	0.250	U
104-51-8	n-Butylbenzene	50	0.0250	U
135-98-8	sec-Butylbenzene	50	0.0250	U
98-06-6	tert-Butylbenzene	50	0.0250	U
56-23-5	Carbon tetrachloride	50	0.0250	U
108-90-7	Chlorobenzene	50	0.0125	U
75-00-3	Chloroethane	50	0.250	U
67-66-3	Chloroform	50	0.0250	U
74-87-3	Chloromethane	50	0.125	U
95-49-8	2-Chlorotoluene	50	0.0250	U
106-43-4	4-Chlorotoluene	50	0.0250	U
96-12-8	1,2-Dibromo-3-chloropropane	50	0.125	U
124-48-1	Dibromochloromethane	50	0.0250	U
106-93-4	1,2-Dibromoethane (EDB)	50	0.0125	U
74-95-3	Dibromomethane	50	0.0250	U
95-50-1	1,2-Dichlorobenzene	50	0.0125	U
541-73-1	1,3-Dichlorobenzene	50	0.0125	U
106-46-7	1,4-Dichlorobenzene	50	0.0125	U
75-71-8	Dichlorodifluoromethane	50	0.0250	U
75-34-3	1,1-Dichloroethane	50	0.0125	U
75-35-4	1,1-Dichloroethene	50	0.0125	U
107-06-2	1,2-Dichloroethane (EDC)	50	0.0125	U
156-59-2	cis-1,2-Dichloroethene	50	0.0250	U
156-60-5	trans-1,2-Dichloroethene	50	0.0125	U
78-87-5	1,2-Dichloropropane	50	0.0125	U
142-28-9	1,3-Dichloropropane	50	0.0250	U
594-20-7	2,2-Dichloropropane	50	0.0250	U
563-58-6	1,1-Dichloropropene	50	0.0250	U
10061-01-5	cis-1,3-Dichloropropene	50	0.0250	U
10061-02-6	trans-1,3-Dichloropropene	50	0.0250	U
100-41-4	Ethylbenzene	50	0.126	
87-68-3	Hexachlorobutadiene	50	0.125	U
591-78-6	2-Hexanone	50	0.250	U

ORGANIC ANALYSIS DATA SHEET

1311/8260C

COMP1

Laboratory: Apex Laboratories | SDG: A9E0508

Client: Hahn and Associates | Project: Mult 802 Decommissioning

Matrix: Solid | Laboratory ID: A9E0508-05 | File ID: VA19052406.D

Sampled: 05/13/19 15:15 | Prepared: 05/24/19 10:48 | Analyzed: 05/24/19 11:12

Preparation: EPA 1311/5030B TCLP Vola | Initial/Final: 5 mL / 5 mL

Batch: 9051246 | Sequence: 9E24013 | Calibration: A9C0602 | Instrument: VOA-GCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (mg/L)	Q
98-82-8	Isopropylbenzene	50	0.0250	U
99-87-6	4-Isopropyltoluene	50	0.0250	U
108-10-1	4-Methyl-2-pentanone (MiBK)	50	0.250	U
1634-04-4	Methyl tert-butyl ether (MTBE)	50	0.0250	U
75-09-2	Methylene chloride	50	0.300	U
91-20-3	Naphthalene	50	1.76	
103-65-1	n-Propylbenzene	50	0.0125	U
100-42-5	Styrene	50	0.0250	U
630-20-6	1,1,1,2-Tetrachloroethane	50	0.0125	U
79-34-5	1,1,2,2-Tetrachloroethane	50	0.0125	U
127-18-4	Tetrachloroethene (PCE)	50	0.0125	U
108-88-3	Toluene	50	0.263	
87-61-6	1,2,3-Trichlorobenzene	50	0.0250	U
120-82-1	1,2,4-Trichlorobenzene	50	0.0500	U
71-55-6	1,1,1-Trichloroethane	50	0.0125	U
79-00-5	1,1,2-Trichloroethane	50	0.0125	U
79-01-6	Trichloroethene (TCE)	50	0.0125	U
75-69-4	Trichlorofluoromethane	50	0.0500	U
96-18-4	1,2,3-Trichloropropane	50	0.0250	U
95-63-6	1,2,4-Trimethylbenzene	50	0.0418	J
108-67-8	1,3,5-Trimethylbenzene	50	0.0250	U
75-01-4	Vinyl chloride	50	0.0125	U
179601-23-1	m,p-Xylene	50	0.113	
95-47-6	o-Xylene	50	0.0634	

SYSTEM MONITORING COMPOUND	ADDED (ng/mL)	CONC (ng/mL)	% REC	QC LIMITS	Q
1,4-Difluorobenzene (Surr)	50.0	53.1	106	80 - 120	
Toluene-d8 (Surr)	50.0	48.8	98	80 - 120	
4-Bromofluorobenzene (Surr)	50.0	46.6	93	80 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene (ISTD)	197198	6.193	204108	6.194	
Chlorobenzene-d5 (ISTD)	278924	9.891	291658	9.891	
1,4-Dichlorobenzene-d4 (ISTD)	150316	11.837	164540	11.837	

* Values outside of QC limits

PREPARATION BATCH SUMMARY

1311/8260C

Laboratory: Apex Laboratories SDG: A9E0508

Client: Hahn and Associates Project: Mult 802 Decommissioning

Batch: 9051246 Batch Matrix: Water Preparation: EPA 1311/5030B TCLP Volatiles

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9051246-BLK1	VA19052405.D	05/24/19 09:00	
LCS	9051246-BS1	VA19052404.D	05/24/19 09:00	
COMP1 (Dup)	9051246-DUP1	VA19052407.D	05/24/19 10:48	
COMP1 (MS)	9051246-MS1	VA19052408.D	05/24/19 10:48	
COMP1	A9E0508-05	VA19052406.D	05/24/19 10:48	

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
1311/8260C

Laboratory:	Apex Laboratories			SDG:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Water	Laboratory ID:	9051246-BLK1	File ID:	VA19052405.D
Prepared:	05/24/19 09:00	Preparation:	EPA 1311/5030B TCLP Vola	Initial/Final:	5 mL / 5 mL
Analyzed:	05/24/19 10:44	Instrument:	VOA-GCMS1		
Batch:	9051246	Sequence:	9E24013	Calibration:	A9C0602

CAS NO.	COMPOUND	CONC. (mg/L)	Q
67-64-1	Acetone	0.500	U
71-43-2	Benzene	0.00625	U
108-86-1	Bromobenzene	0.0125	U
74-97-5	Bromochloromethane	0.0250	U
75-27-4	Bromodichloromethane	0.0250	U
75-25-2	Bromoform	0.0250	U
74-83-9	Bromomethane	0.250	U
78-93-3	2-Butanone (MEK)	0.250	U
104-51-8	n-Butylbenzene	0.0250	U
135-98-8	sec-Butylbenzene	0.0250	U
98-06-6	tert-Butylbenzene	0.0250	U
56-23-5	Carbon tetrachloride	0.0250	U
108-90-7	Chlorobenzene	0.0125	U
75-00-3	Chloroethane	0.250	U
67-66-3	Chloroform	0.0250	U
74-87-3	Chloromethane	0.125	U
95-49-8	2-Chlorotoluene	0.0250	U
106-43-4	4-Chlorotoluene	0.0250	U
96-12-8	1,2-Dibromo-3-chloropropane	0.125	U
124-48-1	Dibromochloromethane	0.0250	U
106-93-4	1,2-Dibromoethane (EDB)	0.0125	U
74-95-3	Dibromomethane	0.0250	U
95-50-1	1,2-Dichlorobenzene	0.0125	U
541-73-1	1,3-Dichlorobenzene	0.0125	U
106-46-7	1,4-Dichlorobenzene	0.0125	U
75-71-8	Dichlorodifluoromethane	0.0250	U
75-34-3	1,1-Dichloroethane	0.0125	U
75-35-4	1,1-Dichloroethene	0.0125	U
107-06-2	1,2-Dichloroethane (EDC)	0.0125	U
156-59-2	cis-1,2-Dichloroethene	0.0250	U
156-60-5	trans-1,2-Dichloroethene	0.0125	U
78-87-5	1,2-Dichloropropane	0.0125	U
142-28-9	1,3-Dichloropropane	0.0250	U
594-20-7	2,2-Dichloropropane	0.0250	U
563-58-6	1,1-Dichloropropene	0.0250	U

METHOD BLANK DATA SHEET

1311/8260C

Laboratory:	Apex Laboratories			SDG:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Water	Laboratory ID:	9051246-BLK1	File ID:	VA19052405.D
Prepared:	05/24/19 09:00	Preparation:	EPA 1311/5030B TCLP Vola	Initial/Final:	5 mL / 5 mL
Analyzed:	05/24/19 10:44	Instrument:	VOA-GCMS1		
Batch:	9051246	Sequence:	9E24013	Calibration:	A9C0602

CAS NO.	COMPOUND	CONC. (mg/L)	Q
10061-01-5	cis-1,3-Dichloropropene	0.0250	U
10061-02-6	trans-1,3-Dichloropropene	0.0250	U
100-41-4	Ethylbenzene	0.0125	U
87-68-3	Hexachlorobutadiene	0.125	U
591-78-6	2-Hexanone	0.250	U
98-82-8	Isopropylbenzene	0.0250	U
99-87-6	4-Isopropyltoluene	0.0250	U
108-10-1	4-Methyl-2-pentanone (MiBK)	0.250	U
1634-04-4	Methyl tert-butyl ether (MTBE)	0.0250	U
75-09-2	Methylene chloride	0.281	B
91-20-3	Naphthalene	0.0500	U
103-65-1	n-Propylbenzene	0.0125	U
100-42-5	Styrene	0.0250	U
630-20-6	1,1,1,2-Tetrachloroethane	0.0125	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0125	U
127-18-4	Tetrachloroethene (PCE)	0.0125	U
108-88-3	Toluene	0.0250	U
87-61-6	1,2,3-Trichlorobenzene	0.0250	U
120-82-1	1,2,4-Trichlorobenzene	0.0500	U
71-55-6	1,1,1-Trichloroethane	0.0125	U
79-00-5	1,1,2-Trichloroethane	0.0125	U
79-01-6	Trichloroethene (TCE)	0.0125	U
75-69-4	Trichlorofluoromethane	0.0500	U
96-18-4	1,2,3-Trichloropropane	0.0250	U
95-63-6	1,2,4-Trimethylbenzene	0.0250	U
108-67-8	1,3,5-Trimethylbenzene	0.0250	U
75-01-4	Vinyl chloride	0.0125	U
179601-23-1	m,p-Xylene	0.0250	U
95-47-6	o-Xylene	0.0125	U

SYSTEM MONITORING COMPOUND	ADDED (ng/mL)	CONC (ng/mL)	% REC	QC LIMITS	Q
1,4-Difluorobenzene (Surr)	50.0	53.6	107	80 - 120	
Toluene-d8 (Surr)	50.0	48.7	97	80 - 120	
4-Bromofluorobenzene (Surr)	50.0	47.7	95	80 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q

METHOD BLANK DATA SHEET

1311/8260C

Laboratory:	Apex Laboratories			SDG:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Water	Laboratory ID:	9051246-BLK1	File ID:	VA19052405.D
Prepared:	05/24/19 09:00	Preparation:	EPA 1311/5030B TCLP Vola	Initial/Final:	5 mL / 5 mL
Analyzed:	05/24/19 10:44	Instrument:	VOA-GCMS1		
Batch:	9051246	Sequence:	9E24013	Calibration:	A9C0602

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene (ISTD)	191921	6.194	204108	6.194	
Chlorobenzene-d5 (ISTD)	278249	9.891	291658	9.891	
1,4-Dichlorobenzene-d4 (ISTD)	142479	11.837	164540	11.837	

LCS / LCS DUPLICATE RECOVERY

1311/8260C

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Matrix: Water
Batch: 9051246
Laboratory ID: 9051246-BS1
Preparation: EPA 1311/5030B TCLP Volatiles
Initial/Final: 5 mL / 5 mL

COMPOUND	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC. (*=Out)	QC LIMITS REC.
Acetone	2.00	2.02	101	80 - 120
Benzene	1.00	1.12	112	80 - 120
Bromobenzene	1.00	1.04	104	80 - 120
Bromochloromethane	1.00	1.33	133 *	80 - 120
Bromodichloromethane	1.00	1.28	128 *	80 - 120
Bromoform	1.00	1.26	126 *	80 - 120
Bromomethane	1.00	1.62	162 *	80 - 120
2-Butanone (MEK)	2.00	2.14	107	80 - 120
n-Butylbenzene	1.00	1.11	111	80 - 120
sec-Butylbenzene	1.00	1.12	112	80 - 120
tert-Butylbenzene	1.00	1.06	106	80 - 120
Carbon tetrachloride	1.00	1.32	132 *	80 - 120
Chlorobenzene	1.00	1.08	108	80 - 120
Chloroethane	1.00	0.882	88	80 - 120
Chloroform	1.00	1.18	118	80 - 120
Chloromethane	1.00	0.957	96	80 - 120
2-Chlorotoluene	1.00	1.05	105	80 - 120
4-Chlorotoluene	1.00	1.09	109	80 - 120
1,2-Dibromo-3-chloropropane	1.00	0.940	94	80 - 120
Dibromochloromethane	1.00	1.15	115	80 - 120
1,2-Dibromoethane (EDB)	1.00	1.10	110	80 - 120
Dibromomethane	1.00	1.18	118	80 - 120
1,2-Dichlorobenzene	1.00	1.03	103	80 - 120
1,3-Dichlorobenzene	1.00	1.06	106	80 - 120
1,4-Dichlorobenzene	1.00	1.03	103	80 - 120
Dichlorodifluoromethane	1.00	1.17	117	80 - 120
1,1-Dichloroethane	1.00	1.09	109	80 - 120
1,1-Dichloroethene	1.00	1.02	102	80 - 120
1,2-Dichloroethane (EDC)	1.00	1.17	117	80 - 120
cis-1,2-Dichloroethene	1.00	1.18	118	80 - 120

LCS / LCS DUPLICATE RECOVERY

1311/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Water		
Batch:	9051246	Laboratory ID:	9051246-BS1
Preparation:	EPA 1311/5030B TCLP Volatiles	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC. (*=Out)	QC LIMITS REC.
trans-1,2-Dichloroethene	1.00	1.08	108	80 - 120
1,2-Dichloropropane	1.00	1.15	115	80 - 120
1,3-Dichloropropane	1.00	1.10	110	80 - 120
2,2-Dichloropropane	1.00	1.13	113	80 - 120
1,1-Dichloropropene	1.00	1.16	116	80 - 120
cis-1,3-Dichloropropene	1.00	1.03	103	80 - 120
trans-1,3-Dichloropropene	1.00	1.13	113	80 - 120
Ethylbenzene	1.00	1.13	113	80 - 120
Hexachlorobutadiene	1.00	1.04	104	80 - 120
2-Hexanone	2.00	1.96	98	80 - 120
Isopropylbenzene	1.00	1.10	110	80 - 120
4-Isopropyltoluene	1.00	1.09	109	80 - 120
4-Methyl-2-pentanone (MiBK)	2.00	2.02	101	80 - 120
Methyl tert-butyl ether (MTBE)	1.00	1.03	103	80 - 120
Methylene chloride	1.00	1.32	132 *	80 - 120
Naphthalene	1.00	0.863	86	80 - 120
n-Propylbenzene	1.00	1.13	113	80 - 120
Styrene	1.00	1.15	115	80 - 120
1,1,1,2-Tetrachloroethane	1.00	1.18	118	80 - 120
1,1,2,2-Tetrachloroethane	1.00	1.09	109	80 - 120
Tetrachloroethene (PCE)	1.00	1.11	111	80 - 120
Toluene	1.00	1.10	110	80 - 120
1,2,3-Trichlorobenzene	1.00	0.916	92	80 - 120
1,2,4-Trichlorobenzene	1.00	0.909	91	80 - 120
1,1,1-Trichloroethane	1.00	1.18	118	80 - 120
1,1,2-Trichloroethane	1.00	1.08	108	80 - 120
Trichloroethene (TCE)	1.00	1.13	113	80 - 120
Trichlorofluoromethane	1.00	1.05	105	80 - 120
1,2,3-Trichloropropane	1.00	1.10	110	80 - 120
1,2,4-Trimethylbenzene	1.00	1.10	110	80 - 120

LCS / LCS DUPLICATE RECOVERY

1311/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Water		
Batch:	9051246	Laboratory ID:	9051246-BS1
Preparation:	EPA 1311/5030B TCLP Volatiles	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC. (*=Out)	QC LIMITS REC.
1,3,5-Trimethylbenzene	1.00	1.09	109	80 - 120
Vinyl chloride	1.00	0.867	87	80 - 120
m,p-Xylene	2.00	2.25	113	80 - 120
o-Xylene	1.00	1.06	106	80 - 120

* = Values outside of QC limits

COMP1

DUPLICATES

1311/8260C

Laboratory: Apex Laboratories
Client: Hahn and Associates
Matrix: Water
Batch: 9051246
Preparation: EPA 1311/5030B TCLP Volatiles
Source Sample Name: COMP1

SDG: A9E0508
Project: Mult 802 Decommissioning
Laboratory ID: 9051246-DUP1
Lab Source ID: A9E0508-05
Initial/Final: 5 mL / 5 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	C	DUPLICATE CONCENTRATION (mg/L)	C	RPD %	Q	METHOD
Acetone	30	0.0482		ND				1311/8260C
Benzene	30	0.720		0.737		2		1311/8260C
Bromobenzene	30	0.00		ND				1311/8260C
Bromochloromethane	30	0.00		ND				1311/8260C
Bromodichloromethane	30	0.00		ND				1311/8260C
Bromoform	30	0.00		ND				1311/8260C
Bromomethane	30	0.00		ND				1311/8260C
2-Butanone (MEK)	30	0.00		ND				1311/8260C
n-Butylbenzene	30	0.00		ND				1311/8260C
sec-Butylbenzene	30	0.00		ND				1311/8260C
tert-Butylbenzene	30	0.00755		ND				1311/8260C
Carbon tetrachloride	30	0.00		ND				1311/8260C
Chlorobenzene	30	0.00		ND				1311/8260C
Chloroethane	30	0.00		ND				1311/8260C
Chloroform	30	0.00		ND				1311/8260C
Chloromethane	30	0.00445		ND				1311/8260C
2-Chlorotoluene	30	0.00		ND				1311/8260C
4-Chlorotoluene	30	0.00		ND				1311/8260C
1,2-Dibromo-3-chloropropane	30	0.00		ND				1311/8260C
Dibromochloromethane	30	0.00		ND				1311/8260C
1,2-Dibromoethane (EDB)	30	0.00		ND				1311/8260C
Dibromomethane	30	0.00		ND				1311/8260C
1,2-Dichlorobenzene	30	0.00		ND				1311/8260C
1,3-Dichlorobenzene	30	0.00		ND				1311/8260C
1,4-Dichlorobenzene	30	0.00		ND				1311/8260C
Dichlorodifluoromethane	30	0.00		ND				1311/8260C
1,1-Dichloroethane	30	0.00		ND				1311/8260C
1,1-Dichloroethene	30	0.00		ND				1311/8260C
1,2-Dichloroethane (EDC)	30	0.00		ND				1311/8260C
cis-1,2-Dichloroethene	30	0.00		ND				1311/8260C
trans-1,2-Dichloroethene	30	0.00		ND				1311/8260C
1,2-Dichloropropane	30	0.00		ND				1311/8260C

COMP1

DUPLICATES

1311/8260C

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Matrix: Water
Laboratory ID: 9051246-DUP1
Batch: 9051246
Lab Source ID: A9E0508-05
Preparation: EPA 1311/5030B TCLP Volatiles
Initial/Final: 5 mL / 5 mL
Source Sample Name: COMP1
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	C	DUPLICATE CONCENTRATION (mg/L)	C	RPD %	Q	METHOD
1,3-Dichloropropane	30	0.00		ND				1311/8260C
2,2-Dichloropropane	30	0.00		ND				1311/8260C
1,1-Dichloropropene	30	0.00		ND				1311/8260C
cis-1,3-Dichloropropene	30	0.00		ND				1311/8260C
trans-1,3-Dichloropropene	30	0.00		ND				1311/8260C
Ethylbenzene	30	0.126		0.127		0.8		1311/8260C
Hexachlorobutadiene	30	0.00		ND				1311/8260C
2-Hexanone	30	0.00765		ND				1311/8260C
Isopropylbenzene	30	0.00785		ND				1311/8260C
4-Isopropyltoluene	30	0.00		ND				1311/8260C
4-Methyl-2-pentanone (MiBK)	30	0.00		ND				1311/8260C
Methyl tert-butyl ether (MTBE)	30	0.00		ND				1311/8260C
Methylene chloride	30	0.277		ND				1311/8260C
Naphthalene	30	1.76		1.95		11		1311/8260C
n-Propylbenzene	30	0.00690		ND				1311/8260C
Styrene	30	0.0158		ND				1311/8260C
1,1,1,2-Tetrachloroethane	30	0.00		ND				1311/8260C
1,1,2,2-Tetrachloroethane	30	0.00		ND				1311/8260C
Tetrachloroethene (PCE)	30	0.00		ND				1311/8260C
Toluene	30	0.263		0.266		1		1311/8260C
1,2,3-Trichlorobenzene	30	0.00		ND				1311/8260C
1,2,4-Trichlorobenzene	30	0.00		ND				1311/8260C
1,1,1-Trichloroethane	30	0.00		ND				1311/8260C
1,1,2-Trichloroethane	30	0.00		ND				1311/8260C
Trichloroethene (TCE)	30	0.00		ND				1311/8260C
Trichlorofluoromethane	30	0.00		ND				1311/8260C
1,2,3-Trichloropropane	30	0.00		ND				1311/8260C
1,2,4-Trimethylbenzene	30	0.0418		0.0424		2		1311/8260C
1,3,5-Trimethylbenzene	30	0.0140		ND				1311/8260C
Vinyl chloride	30	0.00		ND				1311/8260C
m,p-Xylene	30	0.113		0.112		0.5		1311/8260C
o-Xylene	30	0.0634		0.0632		0.4		1311/8260C

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

1311/8260C

COMP1

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Matrix: Water
Batch: 9051246
Laboratory ID: 9051246-MS1
Preparation: EPA 1311/5030B TCLP Volatiles
Initial/Final: 5 mL / 5 mL
Source Sample Name: COMP1

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC. (*=Out)	QC LIMITS REC.
Acetone	2.00	ND	2.10	105	70 - 130
Benzene	1.00	0.720	1.89	117	70 - 130
Bromobenzene	1.00	ND	1.06	106	70 - 130
Bromochloromethane	1.00	ND	1.32	132 *	70 - 130
Bromodichloromethane	1.00	ND	1.28	128	70 - 130
Bromoform	1.00	ND	1.27	127	70 - 130
Bromomethane	1.00	ND	1.41	141 *	70 - 130
2-Butanone (MEK)	2.00	ND	2.16	108	70 - 130
n-Butylbenzene	1.00	ND	1.16	116	70 - 130
sec-Butylbenzene	1.00	ND	1.13	113	70 - 130
tert-Butylbenzene	1.00	ND	1.07	107	70 - 130
Carbon tetrachloride	1.00	ND	1.31	131 *	70 - 130
Chlorobenzene	1.00	ND	1.08	108	70 - 130
Chloroethane	1.00	ND	0.885	89	70 - 130
Chloroform	1.00	ND	1.20	120	70 - 130
Chloromethane	1.00	ND	1.01	101	70 - 130
2-Chlorotoluene	1.00	ND	1.06	106	70 - 130
4-Chlorotoluene	1.00	ND	1.09	109	70 - 130
1,2-Dibromo-3-chloropropane	1.00	ND	0.931	93	70 - 130
Dibromochloromethane	1.00	ND	1.14	114	70 - 130
1,2-Dibromoethane (EDB)	1.00	ND	1.10	110	70 - 130
Dibromomethane	1.00	ND	1.21	121	70 - 130
1,2-Dichlorobenzene	1.00	ND	1.03	103	70 - 130
1,3-Dichlorobenzene	1.00	ND	1.06	106	70 - 130
1,4-Dichlorobenzene	1.00	ND	1.04	104	70 - 130
Dichlorodifluoromethane	1.00	ND	1.18	118	70 - 130
1,1-Dichloroethane	1.00	ND	1.11	111	70 - 130
1,1-Dichloroethene	1.00	ND	1.03	103	70 - 130
1,2-Dichloroethane (EDC)	1.00	ND	1.19	119	70 - 130
cis-1,2-Dichloroethene	1.00	ND	1.18	118	70 - 130
trans-1,2-Dichloroethene	1.00	ND	1.08	108	70 - 130
1,2-Dichloropropane	1.00	ND	1.18	118	70 - 130
1,3-Dichloropropane	1.00	ND	1.10	110	70 - 130
2,2-Dichloropropane	1.00	ND	1.20	120	70 - 130
1,1-Dichloropropene	1.00	ND	1.18	118	70 - 130
cis-1,3-Dichloropropene	1.00	ND	1.02	102	70 - 130
trans-1,3-Dichloropropene	1.00	ND	1.14	114	70 - 130

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

1311/8260C

COMP1

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Matrix: Water
Batch: 9051246
Laboratory ID: 9051246-MS1
Preparation: EPA 1311/5030B TCLP Volatiles
Initial/Final: 5 mL / 5 mL

Source Sample Name: COMP1

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC. (*=Out)	QC LIMITS REC.
Ethylbenzene	1.00	0.126	1.27	114	70 - 130
Hexachlorobutadiene	1.00	ND	1.04	104	70 - 130
2-Hexanone	2.00	ND	1.96	98	70 - 130
Isopropylbenzene	1.00	ND	1.11	111	70 - 130
4-Isopropyltoluene	1.00	ND	1.10	110	70 - 130
4-Methyl-2-pentanone (MiBK)	2.00	ND	2.00	100	70 - 130
Methyl tert-butyl ether (MTBE)	1.00	ND	1.05	105	70 - 130
Methylene chloride	1.00	0.277	1.29	102	70 - 130
Naphthalene	1.00	1.76	3.07	131 *	70 - 130
n-Propylbenzene	1.00	ND	1.15	115	70 - 130
Styrene	1.00	ND	1.19	119	70 - 130
1,1,1,2-Tetrachloroethane	1.00	ND	1.16	116	70 - 130
1,1,2,2-Tetrachloroethane	1.00	ND	1.09	109	70 - 130
Tetrachloroethene (PCE)	1.00	ND	1.11	111	70 - 130
Toluene	1.00	0.263	1.37	111	70 - 130
1,2,3-Trichlorobenzene	1.00	ND	0.964	96	70 - 130
1,2,4-Trichlorobenzene	1.00	ND	0.953	95	70 - 130
1,1,1-Trichloroethane	1.00	ND	1.16	116	70 - 130
1,1,2-Trichloroethane	1.00	ND	1.07	107	70 - 130
Trichloroethene (TCE)	1.00	ND	1.12	112	70 - 130
Trichlorofluoromethane	1.00	ND	1.03	103	70 - 130
1,2,3-Trichloropropane	1.00	ND	1.10	110	70 - 130
1,2,4-Trimethylbenzene	1.00	0.0418	1.18	114	70 - 130
1,3,5-Trimethylbenzene	1.00	ND	1.13	113	70 - 130
Vinyl chloride	1.00	ND	0.890	89	70 - 130
m,p-Xylene	2.00	0.113	2.41	115	70 - 130
o-Xylene	1.00	0.0634	1.15	109	70 - 130

ANALYSIS BATCH (SEQUENCE) SUMMARY

1311/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9C05053	Instrument:	VOA-GCMS1
Matrix:	Water	Calibration:	A9C0602

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9C05053-TUN1	VA19030514.D	03/05/19 15:43
Initial Cal Blank	9C05053-ICB1	VA19030515.D	03/05/19 16:12
Cal Standard	9C05053-CAL1	VA19030516.D	03/05/19 16:40
Cal Standard	9C05053-CAL2	VA19030517.D	03/05/19 17:09
Cal Standard	9C05053-CAL3	VA19030518.D	03/05/19 17:37
Cal Standard	9C05053-CAL4	VA19030519.D	03/05/19 18:06
Cal Standard	9C05053-CAL5	VA19030520.D	03/05/19 18:34
Cal Standard	9C05053-CAL6	VA19030521.D	03/05/19 19:03
Cal Standard	9C05053-CAL7	VA19030522.D	03/05/19 19:31
Cal Standard	9C05053-CAL8	VA19030523.D	03/05/19 20:03
Cal Standard	9C05053-CAL9	VA19030524.D	03/05/19 20:31
Cal Standard	9C05053-CALA	VA19030526.D	03/05/19 21:28
Cal Standard	9C05053-CALB	VA19030528.D	03/05/19 22:25
Initial Cal Check	9C05053-ICV1	VA19030531.D	03/05/19 23:51

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

1311/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E24013	Instrument:	VOA-GCMS1
Matrix:	Water	Calibration:	A9C0602

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9E24013-TUN1	VA19052403.D	05/24/19 09:47
Calibration Check	9E24013-CCV1	VA19052404.D	05/24/19 10:15
Blank	9051246-BLK1	VA19052405.D	05/24/19 10:44
COMP1	A9E0508-05	VA19052406.D	05/24/19 11:12
COMP1 (Dup)	9051246-DUP1	VA19052407.D	05/24/19 11:41
COMP1 (MS)	9051246-MS1	VA19052408.D	05/24/19 12:09

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

1311/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Lab File ID:	VA19030514.D	Injection Date:	03/05/19
Instrument ID:	VOA-GCMS1	Injection Time:	15:43
Sequence:	9C05053	Lab Sample ID:	9C05053-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 95	50 - 200% of m/z 174	109.30	PASS
m/z 96	5 - 9% of m/z 95	6.97	PASS
m/z 173	Less than 2% of m/z 174	0.31	PASS
m/z 174	50 - 200% of m/z 95	91.49	PASS
m/z 175	5 - 9% of m/z 174	7.13	PASS
m/z 176	95 - 105% of m/z 174	97.06	PASS
m/z 177	5 - 10% of m/z 176	6.38	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

1311/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Lab File ID:	VA19052403.D	Injection Date:	05/24/19
Instrument ID:	VOA-GCMS1	Injection Time:	09:47
Sequence:	9E24013	Lab Sample ID:	9E24013-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 50			
m/z 75			
m/z 95		114.07	
m/z 96	5 - 9% of m/z 95	6.82	PASS
m/z 173		0.52	
m/z 174	50 - 200% of m/z 95	87.66	PASS
m/z 175	5 - 9% of m/z 174	7.37	PASS
m/z 176	95 - 101% of m/z 174	96.85	PASS
m/z 177	5 - 9% of m/z 176	6.42	PASS

INITIAL CALIBRATION DATA (Summary)

1311/8260C

Laboratory: Apex Laboratories SDG: A9E0508

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9C0602 Date: 03/06/19 11:13 Instrument: VOA-GCMS1

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Acetone	0.2037506	Ave	8.400544	3.948	7.922131E-02				***
Benzene	2.008091	Ave	8.096275	6.112727	4.954956E-02				***
Bromobenzene	0.8262824	Ave	4.269043	11.04145	1.593323E-02				***
Bromochloromethane	0.355731	Ave	8.297997	5.4363	5.341976E-02				***
Bromodichloromethane	0.5680727	Ave	8.482416	7.355	2.554329E-02				***
Bromoform	0.2362884	Ave	13.77678	10.517	0.0187919				***
Bromomethane	0.1131829	XXX	16.5433	2.432	0.119535				
2-Butanone (MEK)	0.3190981	Ave	6.976726	5.829875	0.078201				***
n-Butylbenzene	2.652318	Ave	4.460915	12.04445	9.534377E-03				***
sec-Butylbenzene	3.602956	Ave	3.363197	11.61864	9.656513E-03				***
tert-Butylbenzene	1.595421	Ave	5.213174	11.47882	7.208722E-03				***
Carbon tetrachloride	0.5880072	Ave	3.337419	5.665	6.208993E-02				***
Chlorobenzene	1.048119	Ave	3.063228	9.908	2.297001E-02				***
Chloroethane	0.435915	Ave	12.14111	2.574111	0.2492867				***
Chloroform	0.8212363	Ave	4.020375	5.5197	5.673831E-02				
Chloromethane	1.072725	Ave	12.28513	1.968	5.685115E-02				***
2-Chlorotoluene	0.7752578	Ave	2.866104	11.1929	1.081933E-02				***
4-Chlorotoluene	2.326904	Ave	4.256282	11.32227	1.617022E-02				***
1,2-Dibromo-3-chloropropane	0.2143763	Ave	6.314847	12.77412	1.590625E-02				***
Dibromochloromethane	0.3398402	Ave	6.431757	9.158889	2.955407E-02				***
1,2-Dibromoethane (EDB)	0.3396221	Ave	7.180344	9.3922	1.847979E-02				***
Dibromomethane	0.2879774	Ave	3.49721	7.169222	5.198953E-02				***
1,2-Dichlorobenzene	1.587016	Ave	3.435767	12.16655	2.083619E-02				***
1,3-Dichlorobenzene	1.635139	Ave	3.771446	11.78282	2.412088E-02				***
1,4-Dichlorobenzene	1.694833	Ave	4.931722	11.84973	0.0204381				***
Dichlorodifluoromethane	0.5831485	Ave	6.456935	1.7657	0.1003234				***
1,1-Dichloroethane	0.8410274	Ave	3.358737	4.692444	3.324566E-02				***
1,1-Dichloroethene	0.6805044	Ave	3.076848	3.284889	8.399829E-02				
1,2-Dichloroethane (EDC)	0.6525087	Ave	2.820464	6.3157	2.000375E-02				***
cis-1,2-Dichloroethene	0.6261632	Ave	10.06859	4.763182	33.16629				***
trans-1,2-Dichloroethene	0.6478969	Ave	3.196917	4.066889	5.015931E-02				***
1,2-Dichloropropane	0.4909814	Ave	5.695996	7.2808	3.193928E-02				
1,3-Dichloropropane	0.5979363	Ave	2.601638	9.253	1.154245E-02				***

INITIAL CALIBRATION DATA (Summary)

1311/8260C

Laboratory: Apex Laboratories SDG: A9E0508

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9C0602 Date: 03/06/19 11:13 Instrument: VOA-GCMS1

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
2,2-Dichloropropane	0.6692864	Ave	5.139982	5.349375	3.915599E-02				***
1,1-Dichloropropene	0.6586675	Ave	3.862066	5.860333	4.907269E-02				***
cis-1,3-Dichloropropene	0.551911	Ave	3.581115	8.056333	3.075892E-02				***
trans-1,3-Dichloropropene	0.5126166	Ave	5.465755	8.801	3.006177E-02				***
Ethylbenzene	1.772248	Ave	3.057446	9.940182	1.260104E-02				
Hexachlorobutadiene	0.3623472	Ave	4.963636	13.3008	2.289162E-02				***
2-Hexanone	0.3071409	Ave	8.815472	9.63	4.864558E-02				***
Isopropylbenzene	1.770166	Ave	3.155109	10.72464	6.397916E-03				***
4-Isopropyltoluene	3.058085	Ave	2.987133	11.72764	1.840213E-02				***
4-Methyl-2-pentanone (MiBK)	0.452588	Ave	7.310463	8.767778	4.444596E-02				***
Methyl tert-butyl ether (MTBE)	1.626799	Ave	9.323738	4.197889	0.1139946				***
Methylene chloride	0.9789265	Lin 1/a	93.14392	2.479182	79.2825				
Naphthalene	2.680316	Ave	12.75421	13.60413	1.310579E-02				***
n-Propylbenzene	3.823995	Ave	3.14863	11.06964	1.620453E-02				***
Styrene	0.967572	Ave	13.34976	10.4996	1.327027E-02				***
1,1,1,2-Tetrachloroethane	0.3334222	Ave	5.023508	9.97	1.812121E-02				***
1,1,2,2-Tetrachloroethane	0.9406329	Ave	4.422808	11.11891	0.0217552				***
Tetrachloroethene (PCE)	0.4152236	Ave	4.265568	8.7786	1.387225E-02				***
Toluene	1.580196	Ave	4.940072	8.334091	0.0276308				
1,2,3-Trichlorobenzene	1.105228	Ave	4.217924	13.7655	1.022472E-02				***
1,2,4-Trichlorobenzene	1.088145	Ave	4.831368	13.32755	9.597715E-03				***
1,1,1-Trichloroethane	0.7230021	Ave	3.61903	5.73	8.419836E-02				***
1,1,2-Trichloroethane	0.3403772	Ave	3.830573	8.9732	1.873589E-02				***
Trichloroethene (TCE)	0.5132921	Ave	3.450331	6.728	3.928385E-02				***
Trichlorofluoromethane	0.8343536	Ave	2.388023	2.739667	6.751472E-02				***
1,2,3-Trichloropropane	0.3115154	Ave	4.676299	11.22678	2.407186E-02				***
1,2,4-Trimethylbenzene	2.682955	Ave	4.300172	11.53245	2.300787E-02				***
1,3,5-Trimethylbenzene	2.663678	Ave	4.400595	11.22673	2.378214E-02				*
Vinyl chloride	0.7635245	Ave	2.747713	2.0692	9.627039E-02				***
m,p-Xylene	1.357307	Ave	3.635937	10.074	9.78654E-03				***
o-Xylene	1.37343	Ave	3.524508	10.45436	2.537661E-02				***
1,4-Difluorobenzene (Surr)	1.452698	Ave	0.5827917	6.759636	0.0158857				***
Toluene-d8 (Surr)	1.292406	Ave	1.816158	8.273818	5.844708E-03				***

INITIAL CALIBRATION DATA (Summary)

1311/8260C

Laboratory: Apex Laboratories SDG: A9E0508

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9C0602 Date: 03/06/19 11:13 Instrument: VOA-GCMS1

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
4-Bromofluorobenzene (Surr)	0.7701797	Ave	2.838341	10.95582	1.079895E-02				***

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

1311/8260C

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9C0602
Instrument: VOA-GCMS1
Calibration Date: 03/06/19 11:13

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	~~0.3600921~~	4	0.2394561	10	0.2003087
Benzene	0.1	2.326877	0.2	2.272169	0.4	2.100303	1	1.981827	2	1.972199	5	1.942697
Bromobenzene	0.1	0.777964	0.2	0.801844	0.4	0.8694559	1	0.8425337	2	0.8757031	5	0.8603552
Bromochloromethane	0.1	~~0~~	0.2	0.3800144	0.4	0.3780441	1	0.3714656	2	0.3999839	5	0.3765387
Bromodichloromethane	0.1	~~0~~	0.2	0.4908519	0.4	0.4924454	1	0.5676579	2	0.5742712	5	0.5707891
Bromoform	0.1	~~0~~	0.2	~~0~~	0.4	0.2140554	1	0.1893004	2	0.2208479	5	0.225823
Bromomethane	0.1	~~0~~	0.2	~~0~~	0.4	~~0~~	1	~~0~~	2	~~0~~	5	0.1241752
2-Butanone (MEK)	0.2	~~0~~	0.4	~~0~~	0.8	~~0~~	2	0.3643572	4	0.3287166	10	0.2976462
n-Butylbenzene	0.1	2.399435	0.2	2.638325	0.4	2.589371	1	2.579397	2	2.672219	5	2.656589
sec-Butylbenzene	0.1	3.354079	0.2	3.695955	0.4	3.579382	1	3.640939	2	3.646734	5	3.644835
tert-Butylbenzene	0.1	1.735458	0.2	1.750262	0.4	1.58767	1	1.58063	2	1.59789	5	1.562402
Carbon disulfide	0.1	~~0~~	0.2	~~0~~	0.4	1.314574	1	1.301247	2	1.358917	5	1.328613
Carbon tetrachloride	0.1	~~0~~	0.2	~~0~~	0.4	0.6104866	1	0.582484	2	0.5770937	5	0.6001929
Chlorobenzene	0.1	~~0~~	0.2	1.059758	0.4	1.085765	1	1.089056	2	1.049355	5	1.059248
Chloroethane	0.1	~~0~~	0.2	~~0~~	0.4	0.4976454	1	0.4852003	2	0.4671183	5	0.4461123
Chloroform	0.1	~~0~~	0.2	0.871856	0.4	0.8548893	1	0.8022357	2	0.8428088	5	0.8273973
Chloromethane	0.1	~~7.579887~~	0.2	~~4.507723~~	0.4	~~3.589599~~	1	~~2.633364~~	2	~~1.577053~~	5	1.249084
2-Chlorotoluene	0.1	~~0~~	0.2	0.793222	0.4	0.791278	1	0.7814479	2	0.8002337	5	0.780816
4-Chlorotoluene	0.1	2.516272	0.2	2.447205	0.4	2.342417	1	2.318164	2	2.331103	5	2.331887
1,2-Dibromo-3-chloropropane	0.1	~~0~~	0.2	~~0~~	0.4	~~0~~	1	0.2102816	2	0.2201072	5	0.1954378
Dibromochloromethane	0.1	~~0~~	0.2	~~0~~	0.4	0.322473	1	0.319512	2	0.3300787	5	0.3330852
1,2-Dibromoethane (EDB)	0.1	~~0~~	0.2	0.2959211	0.4	0.3053963	1	0.3253746	2	0.3613315	5	0.3575803
Dibromomethane	0.1	~~0~~	0.2	~~0.1494327~~	0.4	0.273003	1	0.282915	2	0.2838595	5	0.2927262
1,2-Dichlorobenzene	0.1	1.655667	0.2	1.595066	0.4	1.61032	1	1.588512	2	1.662189	5	1.59062
1,3-Dichlorobenzene	0.1	1.581575	0.2	1.748825	0.4	1.613973	1	1.660577	2	1.688109	5	1.646452
1,4-Dichlorobenzene	0.1	1.829498	0.2	1.796245	0.4	1.749141	1	1.701395	2	1.739663	5	1.696123
Dichlorodifluoromethane	0.1	~~0~~	0.2	0.5096547	0.4	0.5792863	1	0.5209455	2	0.5982622	5	0.6049006
1,1-Dichloroethane	0.1	~~0~~	0.2	~~0~~	0.4	0.8086088	1	0.8495575	2	0.853897	5	0.8650974
1,1-Dichloroethene	0.1	~~0~~	0.2	~~0~~	0.4	0.6879675	1	0.6712377	2	0.6958389	5	0.6929192
1,2-Dichloroethane (EDC)	0.1	~~0~~	0.2	0.6432536	0.4	0.6541671	1	0.6789554	2	0.6584412	5	0.6577658
cis-1,2-Dichloroethene	0.1	0.4509452	0.2	0.6858073	0.4	0.6661272	1	0.6172137	2	0.65703	5	0.643797

INITIAL CALIBRATION DATA

1311/8260C

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9C0602
Instrument: VOA-GCMS1
Calibration Date: 03/06/19 11:13

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
trans-1,2-Dichloroethene	0.1	~~0~~	0.2	~~0~~	0.4	0.646367	1	0.6367111	2	0.6787025	5	0.6522091
1,2-Dichloropropane	0.1	~~0~~	0.2	0.561115	0.4	0.4934854	1	0.4919025	2	0.4835491	5	0.4886359
1,3-Dichloropropane	0.1	~~0~~	0.2	~~0~~	0.4	0.5853759	1	0.5817864	2	0.6032712	5	0.6156679
2,2-Dichloropropane	0.1	~~0~~	0.2	~~0~~	0.4	~~0~~	1	0.7285113	2	0.6971493	5	0.6875941
1,1-Dichloropropene	0.1	~~0~~	0.2	~~0~~	0.4	0.6650872	1	0.6966249	2	0.6678158	5	0.6693807
cis-1,3-Dichloropropene	0.1	~~0~~	0.2	~~0~~	0.4	0.5631364	1	0.5186863	2	0.5499259	5	0.5493
trans-1,3-Dichloropropene	0.1	~~0~~	0.2	~~0~~	0.4	0.5107147	1	0.481505	2	0.485111	5	0.4964251
Ethylbenzene	0.1	1.831753	0.2	1.838616	0.4	1.719194	1	1.810311	2	1.750387	5	1.771858
Hexachlorobutadiene	0.1	~~0~~	0.2	0.3649971	0.4	0.3952737	1	0.3606033	2	0.3817865	5	0.3614471
2-Hexanone	0.2	~~0~~	0.4	~~0~~	0.8	0.3069848	2	0.2699884	4	0.2875103	10	0.2766665
Isopropylbenzene	0.1	1.778372	0.2	1.740977	0.4	1.685438	1	1.756622	2	1.746384	5	1.777611
4-Isopropyltoluene	0.1	2.98077	0.2	3.063676	0.4	3.0599	1	2.985604	2	3.025937	5	3.056156
4-Methyl-2-pentanone (MiBK)	0.2	~~0~~	0.4	~~0~~	0.8	0.4573001	2	0.4306701	4	0.4204116	10	0.4067335
Methyl tert-butyl ether (MTBE)	0.1	~~0~~	0.2	~~0~~	0.4	2.002022	1	1.67718	2	1.61929	5	1.571831
Methylene chloride	0.1	3.443217	0.2	1.824861	0.4	1.095132	1	0.7181533	2	0.6140881	5	0.5431603
Naphthalene	0.1	~~0~~	0.2	~~0~~	0.4	~~1.94422~~	1	2.06425	2	2.399412	5	2.524189
n-Propylbenzene	0.1	3.909768	0.2	3.813788	0.4	3.995114	1	3.850658	2	3.862689	5	3.871021
Styrene	0.1	~~0~~	0.2	0.8396949	0.4	0.8351734	1	0.888339	2	0.8601445	5	0.9026989
1,1,1,2-Tetrachloroethane	0.1	~~0~~	0.2	0.3349767	0.4	0.3121475	1	0.3099467	2	0.3205335	5	0.3387493
1,1,2,2-Tetrachloroethane	0.1	0.9745921	0.2	0.9311736	0.4	0.999509	1	0.9131906	2	1.000149	5	0.9550213
Tetrachloroethene (PCE)	0.1	~~0~~	0.2	0.3755344	0.4	0.4273165	1	0.425656	2	0.427532	5	0.4307392
Tetrahydrofuran	0.1	~~0~~	0.2	~~0~~	0.4	~~0~~	1	~~0~~	2	0.2444458	5	0.2342659
Toluene	0.1	1.621277	0.2	1.759003	0.4	1.60482	1	1.612834	2	1.591198	5	1.577855
1,2,3-Trichlorobenzene	0.1	~~0~~	0.2	1.13379	0.4	1.107643	1	0.99933	2	1.162401	5	1.096003
1,2,4-Trichlorobenzene	0.1	1.062932	0.2	1.023141	0.4	1.122256	1	0.9762469	2	1.104546	5	1.111845
1,1,1-Trichloroethane	0.1	~~0~~	0.2	0.7649769	0.4	0.7207278	1	0.7376506	2	0.7354542	5	0.7344781
1,1,2-Trichloroethane	0.1	~~0~~	0.2	0.3417363	0.4	0.319296	1	0.3409568	2	0.3642567	5	0.3409438
Trichloroethene (TCE)	0.1	~~0~~	0.2	0.4967897	0.4	0.4976454	1	0.5280539	2	0.5294141	5	0.5095505
Trichlorofluoromethane	0.1	~~0~~	0.2	~~0~~	0.4	0.8403291	1	0.86743	2	0.8588363	5	0.8376616
1,2,3-Trichloropropane	0.1	~~0~~	0.2	~~0~~	0.4	0.3127119	1	0.2916355	2	0.3325237	5	0.3197523
1,2,4-Trimethylbenzene	0.1	2.749946	0.2	2.826572	0.4	2.486352	1	2.578271	2	2.649593	5	2.66451

INITIAL CALIBRATION DATA

1311/8260C

Laboratory: Apex Laboratories

SDG: A9E0508

Client: Hahn and Associates

Project: Mult 802 Decommissioning

Calibration: A9C0602

Instrument: VOA-GCMS1

Calibration Date: 03/06/19 11:13

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
1,3,5-Trimethylbenzene	0.1	2.900979	0.2	2.494626	0.4	2.606907	1	2.632883	2	2.665202	5	2.657415
Vinyl chloride	0.1	~~0~~	0.2	0.8124787	0.4	0.7690884	1	0.7398847	2	0.7394863	5	0.7609878
m,p-Xylene	0.2	1.381822	0.4	1.282074	0.8	1.326826	2	1.356113	4	1.329976	10	1.340422
o-Xylene	0.1	1.333016	0.2	1.448812	0.4	1.362568	1	1.318623	2	1.359342	5	1.361462
1,4-Difluorobenzene (Surr)	50	1.458609	50	1.460898	50	1.444272	50	1.437651	50	1.457635	50	1.438638
Toluene-d8 (Surr)	50	1.314317	50	1.30448	50	1.303268	50	1.306528	50	1.306422	50	1.307179
4-Bromofluorobenzene (Surr)	50	0.7919502	50	0.79459	50	0.7845795	50	0.7859745	50	0.7805057	50	0.7841494

INITIAL CALIBRATION DATA (Continued)

1311/8260C

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9C0602
Instrument: VOA-GCMS1
Matrix:
Calibration Date: 03/06/19 11:13

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	0.2006333	40	0.2078355	100	0.1861088	200	0.1983949	400	0.1935172		
Benzene	10	1.890297	20	1.920215	50	1.786506	100	1.959666	200	1.936241		
Bromobenzene	10	0.8043873	20	0.839561	50	0.7721476	100	0.8316803	200	0.8134743		
Bromochloromethane	10	0.3461811	20	0.3414211	50	0.3156722	100	0.3340098	200	0.3139795		
Bromodichloromethane	10	0.5628137	20	0.5958683	50	0.560961	100	0.6306172	200	0.6344517		
Bromoform	10	0.2366386	20	0.2513397	50	0.2542076	100	0.2980944	200	~~0.3128469~~		
Bromomethane	10	0.0968246	20	0.1002492	50	9.688101E-02	100	0.1175822	200	0.143385		
2-Butanone (MEK)	20	0.310048	40	0.319961	100	0.2912639	200	0.3223349	400	0.3184568		
n-Butylbenzene	10	2.665375	20	2.788971	50	2.591914	100	2.827115	200	2.766789		
sec-Butylbenzene	10	3.574798	20	3.697132	50	3.405781	100	3.744168	200	3.648712		
tert-Butylbenzene	10	1.532052	20	1.585109	50	1.456922	100	1.595986	200	1.565251		
Carbon disulfide	10	1.314013	20	1.345393	50	1.259775	100	1.401582	200	1.372069		
Carbon tetrachloride	10	0.5658809	20	0.5938668	50	0.558406	100	0.6175649	200	0.5860891		
Chlorobenzene	10	1.025522	20	1.044804	50	0.9765625	100	1.057142	200	1.033979		
Chloroethane	10	0.4415343	20	0.4406388	50	0.4236131	100	0.4029186	200	0.318454		
Chloroform	10	0.8012277	20	0.8154116	50	0.7523511	100	0.8280425	200	0.8161434		
Chloromethane	10	1.183241	20	1.118845	50	1.000135	100	0.9758383	200	0.9092086		
2-Chlorotoluene	10	0.7631261	20	0.7755743	50	0.7219761	100	0.7816478	200	0.7632563		
4-Chlorotoluene	10	2.260597	20	2.315923	50	2.127277	100	2.332905	200	2.272198		
1,2-Dibromo-3-chloropropane	10	0.2022101	20	0.2200866	50	0.203976	100	0.2303608	200	0.2325501		
Dibromochloromethane	10	0.3282492	20	0.3386582	50	0.3324001	100	0.3753669	200	0.3787382		
1,2-Dibromoethane (EDB)	10	0.3392282	20	0.3532824	50	0.3338968	100	0.3667763	200	0.3574339		
Dibromomethane	10	0.2919452	20	0.294794	50	0.2753167	100	0.3046638	200	0.2925728		
1,2-Dichlorobenzene	10	1.553356	20	1.601038	50	1.462115	100	1.593387	200	1.544904		
1,3-Dichlorobenzene	10	1.610891	20	1.653872	50	1.506789	100	1.657497	200	1.617965		
1,4-Dichlorobenzene	10	1.614905	20	1.670574	50	1.534966	100	1.675136	200	1.635517		
Dichlorodifluoromethane	10	0.5918694	20	0.5976554	50	0.619174	100	0.6159394	200	0.5937975		
1,1-Dichloroethane	10	0.8415368	20	0.8530727	50	0.7807631	100	0.8666338	200	0.8500799		
1,1-Dichloroethene	10	0.6734201	20	0.6773074	50	0.6319891	100	0.7002936	200	0.6935665		
1,2-Dichloroethane (EDC)	10	0.6497942	20	0.6570267	50	0.6071549	100	0.6625487	200	0.6559793		
cis-1,2-Dichloroethene	10	0.635598	20	0.6456202	50	0.5915938	100	0.6497195	200	0.6443434		

INITIAL CALIBRATION DATA (Continued)

1311/8260C

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9C0602
Instrument: VOA-GCMS1
Matrix:
Calibration Date: 03/06/19 11:13

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
trans-1,2-Dichloroethene	10	0.6356809	20	0.6512775	50	0.6062674	100	0.6669116	200	0.656945		
1,2-Dichloropropane	10	0.4720407	20	0.485969	50	0.4503019	100	0.4939942	200	0.4888198		
1,3-Dichloropropane	10	0.6039518	20	0.6085849	50	0.5712441	100	0.6155098	200	0.5960351		
2,2-Dichloropropane	10	0.6432867	20	0.6636133	50	0.6213231	100	0.669145	200	0.6436682		
1,1-Dichloropropene	10	0.6368622	20	0.6492453	50	0.6064545	100	0.6715516	200	0.6649855		
cis-1,3-Dichloropropene	10	0.5400997	20	0.5588062	50	0.5331735	100	0.5835102	200	0.5705605		
trans-1,3-Dichloropropene	10	0.4988119	20	0.5214493	50	0.5062209	100	0.5637805	200	0.5495311		
Ethylbenzene	10	1.739295	20	1.773614	50	1.659112	100	1.82492	200	1.775672		
Hexachlorobutadiene	10	0.3658255	20	0.3672859	50	0.3329758	100	0.3514216	200	0.3418559		
2-Hexanone	20	0.2973806	40	0.3260916	100	0.3124704	200	0.3475217	400	0.3396534		
Isopropylbenzene	10	1.760273	20	1.799959	50	1.705187	100	1.880022	200	1.840976		
4-Isopropyltoluene	10	3.035076	20	3.14733	50	2.901338	100	3.226518	200	3.156627		
4-Methyl-2-pentanone (MiBK)	20	0.4379222	40	0.4692625	100	0.4497992	200	0.502407	400	0.4987858		
Methyl tert-butyl ether (MTBE)	10	1.559245	20	1.578631	50	1.462297	100	1.596779	200	1.573915		
Methylene chloride	10	0.5248465	20	0.5331373	50	0.4724337	100	0.5082527	200	0.4909099		
Naphthalene	10	2.668096	20	2.908858	50	2.778052	100	3.039779	200	3.059892		
n-Propylbenzene	10	3.741987	20	3.868008	50	3.537834	100	3.886069	200	3.727014		
Styrene	10	0.9535214	20	1.021202	50	1.019427	100	1.169651	200	1.185868		
1,1,1,2-Tetrachloroethane	10	0.3299443	20	0.3462408	50	0.3292487	100	0.3629716	200	0.3494626		
1,1,2,2-Tetrachloroethane	10	0.9060971	20	0.9454729	50	0.8612742	100	0.9437735	200	0.9167084		
Tetrachloroethene (PCE)	10	0.4116022	20	0.4225321	50	0.3943316	100	0.4246743	200	0.4123175		
Tetrahydrofuran	10	0.2189952	20	0.2295917	50	0.2040738	100	0.2241551	200	0.2222906		
Toluene	10	1.531954	20	1.555302	50	1.444087	100	1.565114	200	1.518713		
1,2,3-Trichlorobenzene	10	1.09382	20	1.152765	50	1.068906	100	1.125553	200	1.112067		
1,2,4-Trichlorobenzene	10	1.118671	20	1.159128	50	1.070252	100	1.132542	200	1.088031		
1,1,1-Trichloroethane	10	0.6995536	20	0.7177052	50	0.6658097	100	0.7295838	200	0.7240809		
1,1,2-Trichloroethane	10	0.3400679	20	0.3453416	50	0.3207067	100	0.3504298	200	0.3400363		
Trichloroethene (TCE)	10	0.51007	20	0.5179319	50	0.480071	100	0.5323316	200	0.5310632		
Trichlorofluoromethane	10	0.8249779	20	0.8344771	50	0.823606	100	0.819155	200	0.8027098		
1,2,3-Trichloropropane	10	0.3042773	20	0.3059721	50	0.2905448	100	0.3229437	200	0.3232776		
1,2,4-Trimethylbenzene	10	2.621365	20	2.794209	50	2.562726	100	2.831945	200	2.747016		

INITIAL CALIBRATION DATA (Continued)

1311/8260C

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9C0602
Instrument: VOA-GCMS1
Matrix:
Calibration Date: 03/06/19 11:13

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
1,3,5-Trimethylbenzene	10	2.597064	20	2.72162	50	2.516262	100	2.789422	200	2.718076		
Vinyl chloride	10	0.7518414	20	0.7687437	50	0.7657591	100	0.7740193	200	0.7529553		
m,p-Xylene	20	1.344892	40	1.383626	100	1.309899	200	1.447828	400	1.426899		
o-Xylene	10	1.338143	20	1.395922	50	1.318653	100	1.444892	200	1.426293		
1,4-Difluorobenzene (Surr)	50	1.458375	50	1.459081	50	1.452463	50	1.455728	50	1.456327		
Toluene-d8 (Surr)	50	1.294336	50	1.289299	50	1.288575	50	1.26974	50	1.232325		
4-Bromofluorobenzene (Surr)	50	0.7586838	50	0.7685732	50	0.7494263	50	0.745515	50	0.7280295		

SECOND-SOURCE CALIBRATION VERIFICATION

1311/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	VOA-GCMS1	Calibration:	A9C0602
Lab File ID:	VA19030531.D		
Sequence:	9C05053	Inject Date:	03/05/19
Lab Sample ID:	9C05053-ICV1	Inject Time:	23:51

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
Acetone	40.0	40.4	1.1	70 - 130
Benzene	20.0	20.3	1.6	70 - 130
Bromobenzene	20.0	21.8	8.8	70 - 130
Bromochloromethane	20.0	19.6	-2.2	70 - 130
Bromodichloromethane	20.0	22.0	9.8	70 - 130
Bromoform	20.0	22.1	10.6	70 - 130
Bromomethane	20.0	30.7	53.4	70 - 130
2-Butanone (MEK)	40.0	38.5	-3.6	70 - 130
n-Butylbenzene	20.0	22.6	12.9	70 - 130
sec-Butylbenzene	20.0	22.0	10.2	70 - 130
tert-Butylbenzene	20.0	21.3	6.6	70 - 130
Carbon tetrachloride	20.0	21.3	6.6	70 - 130
Chlorobenzene	20.0	21.1	5.6	70 - 130
Chloroethane	20.0	20.9	4.7	70 - 130
Chloroform	20.0	20.5	2.7	70 - 130
Chloromethane	20.0	18.0	-9.9	70 - 130
2-Chlorotoluene	20.0	21.7	8.5	70 - 130
4-Chlorotoluene	20.0	21.5	7.6	70 - 130
1,2-Dibromo-3-chloropropane	20.0	20.8	4.2	70 - 130
Dibromochloromethane	20.0	20.8	4.0	70 - 130
1,2-Dibromoethane (EDB)	20.0	21.8	9.1	70 - 130
Dibromomethane	20.0	22.1	10.6	70 - 130
1,2-Dichlorobenzene	20.0	21.1	5.5	70 - 130
1,3-Dichlorobenzene	20.0	21.3	6.6	70 - 130
1,4-Dichlorobenzene	20.0	20.9	4.5	70 - 130
Dichlorodifluoromethane	20.0	19.2	-4.1	70 - 130
1,1-Dichloroethane	20.0	20.8	3.9	70 - 130
1,1-Dichloroethene	20.0	20.9	4.3	70 - 130
1,2-Dichloroethane (EDC)	20.0	21.3	6.7	70 - 130
cis-1,2-Dichloroethene	20.0	22.1	10.5	70 - 130
trans-1,2-Dichloroethene	20.0	21.2	5.9	70 - 130

SECOND-SOURCE CALIBRATION VERIFICATION

1311/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	VOA-GCMS1	Calibration:	A9C0602
Lab File ID:	VA19030531.D		
Sequence:	9C05053	Inject Date:	03/05/19
Lab Sample ID:	9C05053-ICV1	Inject Time:	23:51

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
1,2-Dichloropropane	20.0	20.5	2.3	70 - 130
1,3-Dichloropropane	20.0	21.6	8.0	70 - 130
2,2-Dichloropropane	20.0	19.9	-0.3	70 - 130
1,1-Dichloropropene	20.0	21.2	6.1	70 - 130
cis-1,3-Dichloropropene	20.0	20.9	4.3	70 - 130
trans-1,3-Dichloropropene	20.0	20.0	-0.2	70 - 130
Ethylbenzene	20.0	21.7	8.4	70 - 130
Hexachlorobutadiene	20.0	21.9	9.5	70 - 130
2-Hexanone	40.0	41.4	3.5	70 - 130
Isopropylbenzene	20.0	22.0	10.2	70 - 130
4-Isopropyltoluene	20.0	21.9	9.5	70 - 130
4-Methyl-2-pentanone (MiBK)	40.0	41.0	2.5	70 - 130
Methyl tert-butyl ether (MTBE)	20.0	18.9	-5.3	70 - 130
Methylene chloride	20.0	20.9	4.4	70 - 130
Naphthalene	20.0	23.2	16.2	70 - 130
n-Propylbenzene	20.0	21.6	7.9	70 - 130
Styrene	20.0	22.7	13.4	70 - 130
1,1,1,2-Tetrachloroethane	20.0	22.1	10.5	70 - 130
1,1,2,2-Tetrachloroethane	20.0	20.6	3.1	70 - 130
Tetrachloroethene (PCE)	20.0	21.7	8.3	70 - 130
Toluene	20.0	21.1	5.5	70 - 130
1,2,3-Trichlorobenzene	20.0	22.4	11.8	70 - 130
1,2,4-Trichlorobenzene	20.0	23.5	17.3	70 - 130
1,1,1-Trichloroethane	20.0	20.8	3.9	70 - 130
1,1,2-Trichloroethane	20.0	21.1	5.6	70 - 130
Trichloroethene (TCE)	20.0	21.6	8.2	70 - 130
Trichlorofluoromethane	20.0	19.5	-2.7	70 - 130
1,2,3-Trichloropropane	20.0	21.2	6.2	70 - 130
1,2,4-Trimethylbenzene	20.0	22.3	11.3	70 - 130
1,3,5-Trimethylbenzene	20.0	21.8	9.2	70 - 130
Vinyl chloride	20.0	19.5	-2.7	70 - 130

SECOND-SOURCE CALIBRATION VERIFICATION

1311/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	VOA-GCMS1	Calibration:	A9C0602
Lab File ID:	VA19030531.D		
Sequence:	9C05053	Inject Date:	03/05/19
Lab Sample ID:	9C05053-ICV1	Inject Time:	23:51

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
m,p-Xylene	40.0	43.7	9.3	70 - 130
o-Xylene	20.0	21.8	8.9	70 - 130
1,4-Difluorobenzene (Surr)	50.0	50.2	0.4	70 - 130
Toluene-d8 (Surr)	50.0	50.2	0.4	70 - 130
4-Bromofluorobenzene (Surr)	50.0	49.9	-0.1	70 - 130

SURROGATE STANDARD RECOVERY AND RT SUMMARY

1311/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9C05053	Instrument:	VOA-GCMS1
Matrix:	Water	Calibration:	A9C0602

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Initial Cal Check (9C05053-ICV1)				Lab File ID: VA19030531.D		Analyzed: 03/05/19 23:51		
1,4-Difluorobenzene (Surr)	50.0	100	70 - 130	6.76	6.759636	0.0004	+/-1.0	
Toluene-d8 (Surr)	50.0	100	70 - 130	8.274	8.273818	0.0002	+/-1.0	
4-Bromofluorobenzene (Surr)	50.0	100	70 - 130	10.956	10.95582	0.0002	+/-1.0	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

1311/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E24013	Instrument:	VOA-GCMS1
Matrix:	Water	Calibration:	A9C0602

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
LCS (9051246-BS1)				Lab File ID: VA19052404.D		Analyzed: 05/24/19 10:15		
1,4-Difluorobenzene (Surr)	50.0	105	80 - 120	6.76	6.759636	0.0004	+/-1.0	
Toluene-d8 (Surr)	50.0	96	80 - 120	8.274	8.273818	0.0002	+/-1.0	
4-Bromofluorobenzene (Surr)	50.0	91	80 - 120	10.956	10.95582	0.0002	+/-1.0	
Blank (9051246-BLK1)				Lab File ID: VA19052405.D		Analyzed: 05/24/19 10:44		
1,4-Difluorobenzene (Surr)	50.0	107	80 - 120	6.759	6.759636	-0.0006	+/-1.0	
Toluene-d8 (Surr)	50.0	97	80 - 120	8.274	8.273818	0.0002	+/-1.0	
4-Bromofluorobenzene (Surr)	50.0	95	80 - 120	10.955	10.95582	-0.0008	+/-1.0	
COMP1 (A9E0508-05)				Lab File ID: VA19052406.D		Analyzed: 05/24/19 11:12		
1,4-Difluorobenzene (Surr)	50.0	106	80 - 120	6.759	6.759636	-0.0006	+/-1.0	
Toluene-d8 (Surr)	50.0	98	80 - 120	8.273	8.273818	-0.0008	+/-1.0	
4-Bromofluorobenzene (Surr)	50.0	93	80 - 120	10.955	10.95582	-0.0008	+/-1.0	
Duplicate (9051246-DUP1)				Lab File ID: VA19052407.D		Analyzed: 05/24/19 11:41		
1,4-Difluorobenzene (Surr)	50.0	106	80 - 120	6.76	6.759636	0.0004	+/-1.0	
Toluene-d8 (Surr)	50.0	98	80 - 120	8.274	8.273818	0.0002	+/-1.0	
4-Bromofluorobenzene (Surr)	50.0	94	80 - 120	10.956	10.95582	0.0002	+/-1.0	
Matrix Spike (9051246-MS1)				Lab File ID: VA19052408.D		Analyzed: 05/24/19 12:09		
1,4-Difluorobenzene (Surr)	50.0	105	80 - 120	6.759	6.759636	-0.0006	+/-1.0	
Toluene-d8 (Surr)	50.0	96	80 - 120	8.273	8.273818	-0.0008	+/-1.0	
4-Bromofluorobenzene (Surr)	50.0	91	80 - 120	10.955	10.95582	-0.0008	+/-1.0	

INTERNAL STANDARD AREA AND RT SUMMARY
1311/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E24013	Instrument:	VOA-GCMS1
Matrix:	Water	Calibration:	A9C0602

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (9051246-BS1)			Lab File ID: VA19052404.D			Analyzed: 05/24/19 10:15			
Pentafluorobenzene (ISTD)	204108	6.194	204108	6.194	100	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5 (ISTD)	291658	9.891	291658	9.891	100	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	164540	11.837	164540	11.837	100	50 - 200	0.0000	+/-0.50	
Calibration Check (9E24013-CCV1)			Lab File ID: VA19052404.D			Analyzed: 05/24/19 10:15			
Pentafluorobenzene (ISTD)	204108	6.194	244815	6.194	83	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5 (ISTD)	291658	9.891	328052	9.891	89	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	164540	11.837	184257	11.837	89	50 - 200	0.0000	+/-0.50	
Blank (9051246-BLK1)			Lab File ID: VA19052405.D			Analyzed: 05/24/19 10:44			
Pentafluorobenzene (ISTD)	191921	6.194	204108	6.194	94	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5 (ISTD)	278249	9.891	291658	9.891	95	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	142479	11.837	164540	11.837	87	50 - 200	0.0000	+/-0.50	
COMP1 (A9E0508-05)			Lab File ID: VA19052406.D			Analyzed: 05/24/19 11:12			
Pentafluorobenzene (ISTD)	197198	6.193	204108	6.194	97	50 - 200	-0.0010	+/-0.50	
Chlorobenzene-d5 (ISTD)	278924	9.891	291658	9.891	96	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	150316	11.837	164540	11.837	91	50 - 200	0.0000	+/-0.50	
Duplicate (9051246-DUP1)			Lab File ID: VA19052407.D			Analyzed: 05/24/19 11:41			
Pentafluorobenzene (ISTD)	192573	6.194	204108	6.194	94	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5 (ISTD)	270807	9.891	291658	9.891	93	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	142979	11.837	164540	11.837	87	50 - 200	0.0000	+/-0.50	
Matrix Spike (9051246-MS1)			Lab File ID: VA19052408.D			Analyzed: 05/24/19 12:09			
Pentafluorobenzene (ISTD)	207025	6.194	204108	6.194	101	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5 (ISTD)	296833	9.891	291658	9.891	102	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	167337	11.837	164540	11.837	102	50 - 200	0.0000	+/-0.50	

HOLDING TIME SUMMARY

1311/8260C

Laboratory: Apex Laboratories SDG: A9E0508

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
COMP1	05/13/19 15:15	05/15/19 12:35	05/24/19 10:48	10.81	14.00	05/24/19 11:12	10.83	14.00	

Apex Laboratories

SDG: A9E0508

CLASS: GCMS

METHOD: EPA 8270D

ANALYSES DATA PACKAGE COVER PAGE

EPA 8270D

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning

Client Sample Id:	Lab Sample Id:	Matrix
COMP1	A9E0508-05	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: 9/30/2019 12:03PM
Title: Technical Manager

METHOD DETECTION AND REPORTING LIMITS

EPA 8270D

Laboratory: Apex Laboratories **SDG:** A9E0508

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

Batch Matrix: Solid

Analyte	MDL	MRL	Units
Acenaphthene	1.33	2.67	ug/kg
Acenaphthylene	1.33	2.67	ug/kg
Anthracene	1.33	2.67	ug/kg
Benz(a)anthracene	1.33	2.67	ug/kg
Benzo(a)pyrene	2.00	4.00	ug/kg
Benzo(b)fluoranthene	2.00	4.00	ug/kg
Benzo(k)fluoranthene	2.00	4.00	ug/kg
Benzo(g,h,i)perylene	1.33	2.67	ug/kg
Chrysene	1.33	2.67	ug/kg
Dibenz(a,h)anthracene	1.33	2.67	ug/kg
Fluoranthene	1.33	2.67	ug/kg
Fluorene	1.33	2.67	ug/kg
Indeno(1,2,3-cd)pyrene	1.33	2.67	ug/kg
1-Methylnaphthalene	2.67	5.33	ug/kg
2-Methylnaphthalene	2.67	5.33	ug/kg
Naphthalene	2.67	5.33	ug/kg
Phenanthrene	1.33	2.67	ug/kg
Pyrene	1.33	2.67	ug/kg
Carbazole	2.00	4.00	ug/kg
Dibenzofuran	1.33	2.67	ug/kg
4-Chloro-3-methylphenol	13.3	26.7	ug/kg
2-Chlorophenol	6.67	13.3	ug/kg
2,4-Dichlorophenol	6.67	13.3	ug/kg
2,4-Dimethylphenol	6.67	13.3	ug/kg
2,4-Dinitrophenol	33.3	66.7	ug/kg
4,6-Dinitro-2-methylphenol	33.3	66.7	ug/kg
2-Methylphenol	3.33	6.67	ug/kg
3+4-Methylphenol(s)	3.33	6.67	ug/kg
2-Nitrophenol	13.3	26.7	ug/kg
4-Nitrophenol	13.3	26.7	ug/kg
Pentachlorophenol (PCP)	13.3	26.7	ug/kg
Phenol	2.67	5.33	ug/kg
2,3,4,6-Tetrachlorophenol	6.67	13.3	ug/kg
2,3,5,6-Tetrachlorophenol	6.67	13.3	ug/kg
2,4,5-Trichlorophenol	6.67	13.3	ug/kg
2,4,6-Trichlorophenol	6.67	13.3	ug/kg
Bis(2-ethylhexyl)phthalate	20.0	40.0	ug/kg

METHOD DETECTION AND REPORTING LIMITS

EPA 8270D

Laboratory: Apex Laboratories **SDG:** A9E0508

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

Batch Matrix: Solid

Analyte	MDL	MRL	Units
Butyl benzyl phthalate	13.3	26.7	ug/kg
Diethylphthalate	13.3	26.7	ug/kg
Dimethylphthalate	13.3	26.7	ug/kg
Di-n-butylphthalate	13.3	26.7	ug/kg
Di-n-octyl phthalate	13.3	26.7	ug/kg
N-Nitrosodimethylamine	3.33	6.67	ug/kg
N-Nitroso-di-n-propylamine	3.33	6.67	ug/kg
N-Nitrosodiphenylamine	3.33	6.67	ug/kg
Bis(2-Chloroethoxy) methane	3.33	6.67	ug/kg
Bis(2-Chloroethyl) ether	3.33	6.67	ug/kg
2,2'-Oxybis(1-Chloropropane)	3.33	6.67	ug/kg
Hexachlorobenzene	1.33	2.67	ug/kg
Hexachlorobutadiene	3.33	6.67	ug/kg
Hexachlorocyclopentadiene	6.67	13.3	ug/kg
Hexachloroethane	3.33	6.67	ug/kg
2-Chloronaphthalene	1.33	2.67	ug/kg
1,2-Dichlorobenzene	3.33	6.67	ug/kg
1,3-Dichlorobenzene	3.33	6.67	ug/kg
1,4-Dichlorobenzene	3.33	6.67	ug/kg
1,2,4-Trichlorobenzene	3.33	6.67	ug/kg
4-Bromophenyl phenyl ether	3.33	6.67	ug/kg
4-Chlorophenyl phenyl ether	3.33	6.67	ug/kg
Aniline	6.67	13.3	ug/kg
4-Chloroaniline	3.33	6.67	ug/kg
2-Nitroaniline	26.7	53.3	ug/kg
3-Nitroaniline	26.7	53.3	ug/kg
4-Nitroaniline	26.7	53.3	ug/kg
Nitrobenzene	13.3	26.7	ug/kg
2,4-Dinitrotoluene	13.3	26.7	ug/kg
2,6-Dinitrotoluene	13.3	26.7	ug/kg
Benzoic acid	167	333	ug/kg
Benzyl alcohol	6.67	13.3	ug/kg
Isophorone	3.33	6.67	ug/kg
Azobenzene (1,2-DPH)	3.33	6.67	ug/kg
Bis(2-Ethylhexyl) adipate	33.3	66.7	ug/kg
3,3'-Dichlorobenzidine	26.7	53.3	ug/kg
1,2-Dinitrobenzene	33.3	66.7	ug/kg

METHOD DETECTION AND REPORTING LIMITS

EPA 8270D

Laboratory: Apex Laboratories **SDG:** A9E0508

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

Batch Matrix: Solid

Analyte	MDL	MRL	Units
1,3-Dinitrobenzene	33.3	66.7	ug/kg
1,4-Dinitrobenzene	33.3	66.7	ug/kg
Pyridine	6.67	13.3	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

COMP1

Laboratory:	Apex Laboratories			SDG:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	A9E0508-05	File ID:	I05211906.D
Sampled:	05/13/19 15:15	Prepared:	05/20/19 16:13	Analyzed:	05/21/19 11:04
		Preparation:	EPA 3546	Initial/Final:	1.16 g / 5 mL

Batch: 9051065 Sequence: 9E21026 Calibration: A9E1009 Instrument: SV-GCMS9

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg)	Q
83-32-9	Acenaphthene	10000	880000	BD
208-96-8	Acenaphthylene	10000	430000	U
120-12-7	Anthracene	10000	2050000	D
56-55-3	Benz(a)anthracene	10000	7230000	D
50-32-8	Benzo(a)pyrene	10000	9030000	D
205-99-2	Benzo(b)fluoranthene	10000	10100000	D
207-08-9	Benzo(k)fluoranthene	10000	3740000	D
191-24-2	Benzo(g,h,i)perylene	10000	6990000	D
218-01-9	Chrysene	10000	7850000	D
53-70-3	Dibenz(a,h)anthracene	10000	973000	D
206-44-0	Fluoranthene	10000	18700000	D
86-73-7	Fluorene	10000	445000	JBD
193-39-5	Indeno(1,2,3-cd)pyrene	10000	6560000	D
90-12-0	1-Methylnaphthalene	10000	863000	U
91-57-6	2-Methylnaphthalene	10000	863000	U
91-20-3	Naphthalene	10000	970000	JBD
85-01-8	Phenanthrene	10000	8820000	BD
129-00-0	Pyrene	10000	18500000	D
86-74-8	Carbazole	10000	2280000	D
132-64-9	Dibenzofuran	10000	430000	U
59-50-7	4-Chloro-3-methylphenol	10000	4300000	U
95-57-8	2-Chlorophenol	10000	2160000	U
120-83-2	2,4-Dichlorophenol	10000	2160000	U
105-67-9	2,4-Dimethylphenol	10000	2160000	U
51-28-5	2,4-Dinitrophenol	10000	10800000	U
534-52-1	4,6-Dinitro-2-methylphenol	10000	10800000	U
95-48-7	2-Methylphenol	10000	1080000	U
NA	3+4-Methylphenol(s)	10000	1080000	U
88-75-5	2-Nitrophenol	10000	4300000	U
100-02-7	4-Nitrophenol	10000	4300000	U
87-86-5	Pentachlorophenol (PCP)	10000	4300000	U
108-95-2	Phenol	10000	863000	U
58-90-2	2,3,4,6-Tetrachlorophenol	10000	2160000	U
935-95-5	2,3,5,6-Tetrachlorophenol	10000	2160000	U
95-95-4	2,4,5-Trichlorophenol	10000	2160000	U
88-06-2	2,4,6-Trichlorophenol	10000	2160000	U
117-81-7	Bis(2-ethylhexyl)phthalate	10000	6470000	U
85-68-7	Butyl benzyl phthalate	10000	4300000	U
84-66-2	Diethylphthalate	10000	4300000	U
131-11-3	Dimethylphthalate	10000	4300000	U

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

COMP1

Laboratory:	Apex Laboratories			SDG:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	A9E0508-05	File ID:	I05211906.D
Sampled:	05/13/19 15:15	Prepared:	05/20/19 16:13	Analyzed:	05/21/19 11:04
		Preparation:	EPA 3546	Initial/Final:	1.16 g / 5 mL

Batch: 9051065 Sequence: 9E21026 Calibration: A9E1009 Instrument: SV-GCMS9

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg)	Q
84-74-2	Di-n-butylphthalate	10000	4300000	U
117-84-0	Di-n-octyl phthalate	10000	4300000	U
62-75-9	N-Nitrosodimethylamine	10000	1080000	U
621-64-7	N-Nitroso-di-n-propylamine	10000	1080000	U
86-30-6	N-Nitrosodiphenylamine	10000	1080000	U
111-91-1	Bis(2-Chloroethoxy) methane	10000	1080000	U
111-44-4	Bis(2-Chloroethyl) ether	10000	1080000	U
108-60-1	2,2'-Oxybis(1-Chloropropane)	10000	1080000	U
118-74-1	Hexachlorobenzene	10000	430000	U
87-68-3	Hexachlorobutadiene	10000	1080000	U
77-47-4	Hexachlorocyclopentadiene	10000	2160000	U
67-72-1	Hexachloroethane	10000	1080000	U
91-58-7	2-Chloronaphthalene	10000	430000	U
95-50-1	1,2-Dichlorobenzene	10000	1080000	U
541-73-1	1,3-Dichlorobenzene	10000	1080000	U
106-46-7	1,4-Dichlorobenzene	10000	1080000	U
120-82-1	1,2,4-Trichlorobenzene	10000	1080000	U
101-55-3	4-Bromophenyl phenyl ether	10000	1080000	U
7005-72-3	4-Chlorophenyl phenyl ether	10000	1080000	U
62-53-3	Aniline	10000	2160000	U
106-47-8	4-Chloroaniline	10000	1080000	U
88-74-4	2-Nitroaniline	10000	8630000	U
99-09-2	3-Nitroaniline	10000	8630000	U
100-01-6	4-Nitroaniline	10000	8630000	U
98-95-3	Nitrobenzene	10000	4300000	U
121-14-2	2,4-Dinitrotoluene	10000	4300000	U
606-20-2	2,6-Dinitrotoluene	10000	4300000	U
65-85-0	Benzoic acid	10000	54000000	U
100-51-6	Benzyl alcohol	10000	2160000	U
78-59-1	Isophorone	10000	1080000	U
103-33-3	Azobenzene (1,2-DPH)	10000	1080000	U
103-23-1	Bis(2-Ethylhexyl) adipate	10000	10800000	U
91-94-1	3,3'-Dichlorobenzidine	10000	8600000	U
528-29-0	1,2-Dinitrobenzene	10000	10800000	U
99-65-0	1,3-Dinitrobenzene	10000	10800000	U
100-25-4	1,4-Dinitrobenzene	10000	10800000	U
110-86-1	Pyridine	10000	2160000	U

SYSTEM MONITORING COMPOUND	ADDED (ug/kg)	CONC (ug/kg)	% REC	QC LIMITS	Q
Nitrobenzene-d5 (Surr)	4310	56600	1310	37 - 122	D
2-Fluorobiphenyl (Surr)	4310	0.00		44 - 115	D

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

COMP1

Laboratory:	Apex Laboratories			SDG:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	A9E0508-05	File ID:	I05211906.D
Sampled:	05/13/19 15:15	Prepared:	05/20/19 16:13	Analyzed:	05/21/19 11:04
		Preparation:	EPA 3546	Initial/Final:	1.16 g / 5 mL

Batch: 9051065 Sequence: 9E21026 Calibration: A9E1009 Instrument: SV-GCMS9

SYSTEM MONITORING COMPOUND	ADDED (ug/kg)	CONC (ug/kg)	% REC	QC LIMITS	Q
Phenol-d6 (Surr)	4310	0.00		33 - 122	D
p-Terphenyl-d14 (Surr)	4310	22100	513	54 - 127	D
2-Fluorophenol (Surr)	4310	0.00		35 - 115	D
2,4,6-Tribromophenol (Surr)	4310	0.00		39 - 132	D

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4 (ISTD)	88237	6.691	84488	6.685	
Naphthalene-d8 (ISTD)	344817	7.942	319520	7.937	
Acenaphthene-d10 (ISTD)	155307	9.713	159574	9.707	
Phenanthrene-d10 (ISTD)	313143	11.221	304901	11.216	
Chrysene-d12 (ISTD)	314073	15.045	298923	15.045	
Perylene-d12 (ISTD)	294829	18.532	286034	18.533	
Dibenz(a,h)anthracene-d14 (ISTD)	283053	20.918	278158	20.913	

* Values outside of QC limits

PREPARATION BATCH SUMMARY

EPA 8270D

Laboratory: Apex Laboratories SDG: A9E0508

Client: Hahn and Associates Project: Mult 802 Decommissioning

Batch: 9051065 Batch Matrix: Solid Preparation: EPA 3546

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9051065-BLK1	I05211904.D	05/20/19 16:13	
LCS	9051065-BS1	I05211905.D	05/20/19 16:13	
COMP1 (Dup)	9051065-DUP1	I05211907.D	05/20/19 16:13	
COMP1	A9E0508-05	I05211906.D	05/20/19 16:13	

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

Laboratory:	Apex Laboratories			SDG:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	9051065-BLK1	File ID:	I05211904.D
Prepared:	05/20/19 16:13	Preparation:	EPA 3546	Initial/Final:	15 g / 5 mL
Analyzed:	05/21/19 09:51	Instrument:	SV-GCMS9		
Batch:	9051065	Sequence:	9E21026	Calibration:	A9E1009

CAS NO.	COMPOUND	CONC. (ug/kg)	Q
83-32-9	Acenaphthene	148	B
208-96-8	Acenaphthylene	3.32	U
120-12-7	Anthracene	5.30	J
56-55-3	Benz(a)anthracene	3.32	U
50-32-8	Benzo(a)pyrene	5.00	U
205-99-2	Benzo(b)fluoranthene	5.00	U
207-08-9	Benzo(k)fluoranthene	5.00	U
191-24-2	Benzo(g,h,i)perylene	3.32	U
218-01-9	Chrysene	3.32	U
53-70-3	Dibenz(a,h)anthracene	3.32	U
206-44-0	Fluoranthene	5.25	J
86-73-7	Fluorene	26.2	B
193-39-5	Indeno(1,2,3-cd)pyrene	3.32	U
90-12-0	1-Methylnaphthalene	108	B
91-57-6	2-Methylnaphthalene	223	B
91-20-3	Naphthalene	1070	B
85-01-8	Phenanthrene	27.7	B
129-00-0	Pyrene	3.91	J
86-74-8	Carbazole	5.00	U
132-64-9	Dibenzofuran	46.6	B
59-50-7	4-Chloro-3-methylphenol	33.2	U
95-57-8	2-Chlorophenol	16.7	U
120-83-2	2,4-Dichlorophenol	16.7	U
105-67-9	2,4-Dimethylphenol	16.7	U
51-28-5	2,4-Dinitrophenol	83.2	U
534-52-1	4,6-Dinitro-2-methylphenol	83.2	U
95-48-7	2-Methylphenol	9.24	J
NA	3+4-Methylphenol(s)	13.2	J
88-75-5	2-Nitrophenol	33.2	U
100-02-7	4-Nitrophenol	33.2	U
87-86-5	Pentachlorophenol (PCP)	33.2	U
108-95-2	Phenol	23.4	B
58-90-2	2,3,4,6-Tetrachlorophenol	16.7	U
935-95-5	2,3,5,6-Tetrachlorophenol	16.7	U
95-95-4	2,4,5-Trichlorophenol	16.7	U

METHOD BLANK DATA SHEET

EPA 8270D

Laboratory:	Apex Laboratories			SDG:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	9051065-BLK1	File ID:	I05211904.D
Prepared:	05/20/19 16:13	Preparation:	EPA 3546	Initial/Final:	15 g / 5 mL
Analyzed:	05/21/19 09:51	Instrument:	SV-GCMS9		
Batch:	9051065	Sequence:	9E21026	Calibration:	A9E1009

CAS NO.	COMPOUND	CONC. (ug/kg)	Q
88-06-2	2,4,6-Trichlorophenol	16.7	U
117-81-7	Bis(2-ethylhexyl)phthalate	50.0	U
85-68-7	Butyl benzyl phthalate	33.2	U
84-66-2	Diethylphthalate	33.2	U
131-11-3	Dimethylphthalate	33.2	U
84-74-2	Di-n-butylphthalate	33.2	U
117-84-0	Di-n-octyl phthalate	33.2	U
62-75-9	N-Nitrosodimethylamine	8.32	U
621-64-7	N-Nitroso-di-n-propylamine	8.32	U
86-30-6	N-Nitrosodiphenylamine	8.32	U
111-91-1	Bis(2-Chloroethoxy) methane	8.32	U
111-44-4	Bis(2-Chloroethyl) ether	8.32	U
108-60-1	2,2'-Oxybis(1-Chloropropane)	8.32	U
118-74-1	Hexachlorobenzene	3.32	U
87-68-3	Hexachlorobutadiene	8.32	U
77-47-4	Hexachlorocyclopentadiene	16.7	U
67-72-1	Hexachloroethane	8.32	U
91-58-7	2-Chloronaphthalene	3.32	U
95-50-1	1,2-Dichlorobenzene	8.32	U
541-73-1	1,3-Dichlorobenzene	8.32	U
106-46-7	1,4-Dichlorobenzene	8.32	U
120-82-1	1,2,4-Trichlorobenzene	8.32	U
101-55-3	4-Bromophenyl phenyl ether	8.32	U
7005-72-3	4-Chlorophenyl phenyl ether	8.32	U
62-53-3	Aniline	16.7	U
106-47-8	4-Chloroaniline	8.32	U
88-74-4	2-Nitroaniline	66.8	U
99-09-2	3-Nitroaniline	66.8	U
100-01-6	4-Nitroaniline	66.8	U
98-95-3	Nitrobenzene	33.2	U
121-14-2	2,4-Dinitrotoluene	33.2	U
606-20-2	2,6-Dinitrotoluene	33.2	U
65-85-0	Benzoic acid	418	U
100-51-6	Benzyl alcohol	16.7	U
78-59-1	Isophorone	8.32	U

METHOD BLANK DATA SHEET

EPA 8270D

Laboratory:	Apex Laboratories			SDG:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	9051065-BLK1	File ID:	I05211904.D
Prepared:	05/20/19 16:13	Preparation:	EPA 3546	Initial/Final:	15 g / 5 mL
Analyzed:	05/21/19 09:51	Instrument:	SV-GCMS9		
Batch:	9051065	Sequence:	9E21026	Calibration:	A9E1009

CAS NO.	COMPOUND	CONC. (ug/kg)	Q
103-33-3	Azobenzene (1,2-DPH)	8.32	U
103-23-1	Bis(2-Ethylhexyl) adipate	83.2	U
91-94-1	3,3'-Dichlorobenzidine	66.5	U
528-29-0	1,2-Dinitrobenzene	83.2	U
99-65-0	1,3-Dinitrobenzene	83.2	U
100-25-4	1,4-Dinitrobenzene	83.2	U
110-86-1	Pyridine	16.7	U

SYSTEM MONITORING COMPOUND	ADDED (ug/kg)	CONC (ug/kg)	% REC	QC LIMITS	Q
Nitrobenzene-d5 (Surr)	333	290	87	37 - 122	
2-Fluorobiphenyl (Surr)	333	297	89	44 - 115	
Phenol-d6 (Surr)	333	264	79	33 - 122	
p-Terphenyl-d14 (Surr)	333	313	94	54 - 127	
2-Fluorophenol (Surr)	333	270	81	35 - 115	
2,4,6-Tribromophenol (Surr)	333	290	87	39 - 132	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4 (ISTD)	89774	6.691	84488	6.685	
Naphthalene-d8 (ISTD)	348983	7.942	319520	7.937	
Acenaphthene-d10 (ISTD)	161332	9.713	159574	9.707	
Phenanthrene-d10 (ISTD)	315328	11.221	304901	11.216	
Chrysene-d12 (ISTD)	320540	15.045	298923	15.045	
Perylene-d12 (ISTD)	296996	18.532	286034	18.533	
Dibenz(a,h)anthracene-d14 (ISTD)	282864	20.913	278158	20.913	

LCS / LCS DUPLICATE RECOVERY

EPA 8270D

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Solid		
Batch:	9051065	Laboratory ID:	9051065-BS1
Preparation:	EPA 3546	Initial/Final:	15 g / 5 mL

COMPOUND	SPIKE ADDED (ug/kg)	LCS CONCENTRATION (ug/kg)	LCS % REC. (*=Out)	QC LIMITS REC.
Acenaphthene	533	682	128 *	40 - 122
Acenaphthylene	533	567	106	32 - 132
Anthracene	533	550	103	47 - 123
Benz(a)anthracene	533	557	104	49 - 126
Benzo(a)pyrene	533	592	111	45 - 129
Benzo(b)fluoranthene	533	545	102	45 - 132
Benzo(k)fluoranthene	533	539	101	47 - 132
Benzo(g,h,i)perylene	533	565	106	43 - 134
Chrysene	533	542	102	50 - 124
Dibenz(a,h)anthracene	533	558	105	45 - 134
Fluoranthene	533	554	104	50 - 127
Fluorene	533	546	102	43 - 125
Indeno(1,2,3-cd)pyrene	533	538	101	45 - 133
1-Methylnaphthalene	533	617	116	40 - 120
2-Methylnaphthalene	533	740	139 *	38 - 122
Naphthalene	533	1450	273 *	35 - 123
Phenanthrene	533	561	105	50 - 121
Pyrene	533	546	102	47 - 127
Carbazole	533	557	104	50 - 122
Dibenzofuran	533	606	114	44 - 120
4-Chloro-3-methylphenol	533	521	98	45 - 122
2-Chlorophenol	533	537	101	34 - 121
2,4-Dichlorophenol	533	560	105	40 - 122
2,4-Dimethylphenol	533	584	109	30 - 127
2,4-Dinitrophenol	533	534	100	5 - 137
4,6-Dinitro-2-methylphenol	533	645	121	29 - 132
2-Methylphenol	533	550	103	32 - 122
3+4-Methylphenol(s)	533	577	108	34 - 120
2-Nitrophenol	533	563	106	36 - 123
4-Nitrophenol	533	520	97	30 - 132

LCS / LCS DUPLICATE RECOVERY

EPA 8270D

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Solid		
Batch:	9051065	Laboratory ID:	9051065-BS1
Preparation:	EPA 3546	Initial/Final:	15 g / 5 mL

COMPOUND	SPIKE ADDED (ug/kg)	LCS CONCENTRATION (ug/kg)	LCS % REC. (*=Out)	QC LIMITS REC.
Pentachlorophenol (PCP)	533	560	105	25 - 133
Phenol	533	547	103	34 - 120
2,3,4,6-Tetrachlorophenol	533	545	102	44 - 125
2,3,5,6-Tetrachlorophenol	533	555	104	40 - 120
2,4,5-Trichlorophenol	533	566	106	41 - 124
2,4,6-Trichlorophenol	533	548	103	39 - 126
Bis(2-ethylhexyl)phthalate	533	596	112	51 - 133
Butyl benzyl phthalate	533	590	111	48 - 132
Diethylphthalate	533	573	107	50 - 124
Dimethylphthalate	533	571	107	48 - 124
Di-n-butylphthalate	533	576	108	51 - 128
Di-n-octyl phthalate	533	570	107	44 - 140
N-Nitrosodimethylamine	533	470	88	23 - 120
N-Nitroso-di-n-propylamine	533	507	95	36 - 120
N-Nitrosodiphenylamine	533	549	103	38 - 127
Bis(2-Chloroethoxy) methane	533	510	96	36 - 121
Bis(2-Chloroethyl) ether	533	489	92	31 - 120
2,2'-Oxybis(1-Chloropropane)	533	456	86	33 - 131
Hexachlorobenzene	533	539	101	44 - 122
Hexachlorobutadiene	533	520	98	32 - 123
Hexachlorocyclopentadiene	533	622	117	5 - 140
Hexachloroethane	533	521	98	28 - 120
2-Chloronaphthalene	533	580	109	41 - 120
1,2-Dichlorobenzene	533	523	98	33 - 120
1,3-Dichlorobenzene	533	495	93	30 - 120
1,4-Dichlorobenzene	533	523	98	31 - 120
1,2,4-Trichlorobenzene	533	517	97	34 - 120
4-Bromophenyl phenyl ether	533	552	104	46 - 124
4-Chlorophenyl phenyl ether	533	543	102	45 - 121
Aniline	533	378	71	7 - 120

LCS / LCS DUPLICATE RECOVERY

EPA 8270D

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Solid		
Batch:	9051065	Laboratory ID:	9051065-BS1
Preparation:	EPA 3546	Initial/Final:	15 g / 5 mL

COMPOUND	SPIKE ADDED (ug/kg)	LCS CONCENTRATION (ug/kg)	LCS % REC. (*=Out)	QC LIMITS REC.
4-Chloroaniline	533	307	58	16 - 120
2-Nitroaniline	533	591	111	44 - 127
3-Nitroaniline	533	638	120	33 - 120
4-Nitroaniline	533	589	110	35 - 120
Nitrobenzene	533	507	95	34 - 122
2,4-Dinitrotoluene	533	571	107	48 - 126
2,6-Dinitrotoluene	533	603	113	46 - 124
Benzoic acid	1070	612	57	5 - 140
Benzyl alcohol	533	525	98	29 - 122
Isophorone	533	516	97	30 - 122
Azobenzene (1,2-DPH)	533	545	102	39 - 125
Bis(2-Ethylhexyl) adipate	533	559	105	60 - 121
3,3'-Dichlorobenzidine	1070	2960	277 *	22 - 121
1,2-Dinitrobenzene	533	559	105	44 - 120
1,3-Dinitrobenzene	533	591	111	42 - 127
1,4-Dinitrobenzene	533	594	111	37 - 132
Pyridine	533	375	70	5 - 120

* = Values outside of QC limits

DUPLICATES

EPA 8270D

COMP1

Laboratory: Apex Laboratories
Client: Hahn and Associates
Matrix: Solid
Batch: 9051065
Preparation: EPA 3546
Source Sample Name: COMP1

SDG: A9E0508
Project: Mult 802 Decommissioning
Laboratory ID: 9051065-DUP1
Lab Source ID: A9E0508-05
Initial/Final: 1.24 g / 5 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/kg)	C	DUPLICATE CONCENTRATION (ug/kg)	C	RPD %	Q	METHOD
Acenaphthene	30	880000		767000		14		EPA 8270D
Acenaphthylene	30	0.00		ND				EPA 8270D
Anthracene	30	2050000		1970000		4		EPA 8270D
Benz(a)anthracene	30	7230000		6290000		14		EPA 8270D
Benzo(a)pyrene	30	9030000		8270000		9		EPA 8270D
Benzo(b)fluoranthene	30	10100000		9400000		7		EPA 8270D
Benzo(k)fluoranthene	30	3740000		3200000		15		EPA 8270D
Benzo(g,h,i)perylene	30	6990000		6320000		10		EPA 8270D
Chrysene	30	7850000		7370000		6		EPA 8270D
Dibenz(a,h)anthracene	30	973000		961000		1		EPA 8270D
Fluoranthene	30	18700000		17700000		6		EPA 8270D
Fluorene	30	445000		461000		3		EPA 8270D
Indeno(1,2,3-cd)pyrene	30	6560000		6140000		7		EPA 8270D
1-Methylnaphthalene	30	253000		ND				EPA 8270D
2-Methylnaphthalene	30	232000		ND				EPA 8270D
Naphthalene	30	970000		ND				EPA 8270D
Phenanthrene	30	8820000		8650000		2		EPA 8270D
Pyrene	30	18500000		17400000		6		EPA 8270D
Carbazole	30	2280000		2170000		5		EPA 8270D
Dibenzofuran	30	162000		ND				EPA 8270D
4-Chloro-3-methylphenol	30	0.00		ND				EPA 8270D
2-Chlorophenol	30	0.00		ND				EPA 8270D
2,4-Dichlorophenol	30	0.00		ND				EPA 8270D
2,4-Dimethylphenol	30	0.00		ND				EPA 8270D
2,4-Dinitrophenol	30	0.00		ND				EPA 8270D
4,6-Dinitro-2-methylphenol	30	0.00		ND				EPA 8270D
2-Methylphenol	30	0.00		ND				EPA 8270D
3+4-Methylphenol(s)	30	0.00		ND				EPA 8270D
2-Nitrophenol	30	0.00		ND				EPA 8270D
4-Nitrophenol	30	0.00		ND				EPA 8270D
Pentachlorophenol (PCP)	30	0.00		ND				EPA 8270D
Phenol	30	0.00		ND				EPA 8270D

COMP1

DUPLICATES

EPA 8270D

Laboratory: Apex Laboratories
Client: Hahn and Associates
Matrix: Solid
Batch: 9051065
Preparation: EPA 3546
Source Sample Name: COMP1

SDG: A9E0508
Project: Mult 802 Decommissioning
Laboratory ID: 9051065-DUP1
Lab Source ID: A9E0508-05
Initial/Final: 1.24 g / 5 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/kg)	C	DUPLICATE CONCENTRATION (ug/kg)	C	RPD %	Q	METHOD
2,3,4,6-Tetrachlorophenol	30	0.00		ND				EPA 8270D
2,3,5,6-Tetrachlorophenol	30	0.00		ND				EPA 8270D
2,4,5-Trichlorophenol	30	0.00		ND				EPA 8270D
2,4,6-Trichlorophenol	30	0.00		ND				EPA 8270D
Bis(2-ethylhexyl)phthalate	30	0.00		ND				EPA 8270D
Butyl benzyl phthalate	30	0.00		ND				EPA 8270D
Diethylphthalate	30	0.00		ND				EPA 8270D
Dimethylphthalate	30	0.00		ND				EPA 8270D
Di-n-butylphthalate	30	0.00		ND				EPA 8270D
Di-n-octyl phthalate	30	0.00		ND				EPA 8270D
N-Nitrosodimethylamine	30	0.00		ND				EPA 8270D
N-Nitroso-di-n-propylamine	30	0.00		ND				EPA 8270D
N-Nitrosodiphenylamine	30	0.00		ND				EPA 8270D
Bis(2-Chloroethoxy) methane	30	0.00		ND				EPA 8270D
Bis(2-Chloroethyl) ether	30	0.00		ND				EPA 8270D
2,2'-Oxybis(1-Chloropropane)	30	0.00		ND				EPA 8270D
Hexachlorobenzene	30	0.00		ND				EPA 8270D
Hexachlorobutadiene	30	0.00		ND				EPA 8270D
Hexachlorocyclopentadiene	30	0.00		ND				EPA 8270D
Hexachloroethane	30	0.00		ND				EPA 8270D
2-Chloronaphthalene	30	0.00		ND				EPA 8270D
1,2-Dichlorobenzene	30	0.00		ND				EPA 8270D
1,3-Dichlorobenzene	30	0.00		ND				EPA 8270D
1,4-Dichlorobenzene	30	0.00		ND				EPA 8270D
1,2,4-Trichlorobenzene	30	0.00		ND				EPA 8270D
4-Bromophenyl phenyl ether	30	0.00		ND				EPA 8270D
4-Chlorophenyl phenyl ether	30	0.00		ND				EPA 8270D
Aniline	30	0.00		ND				EPA 8270D
4-Chloroaniline	30	480000		ND				EPA 8270D
2-Nitroaniline	30	0.00		ND				EPA 8270D
3-Nitroaniline	30	0.00		ND				EPA 8270D
4-Nitroaniline	30	0.00		ND				EPA 8270D

DUPLICATES

COMP1

EPA 8270D

Laboratory: Apex Laboratories
Client: Hahn and Associates
Matrix: Solid
Batch: 9051065
Preparation: EPA 3546
Source Sample Name: COMP1

SDG: A9E0508
Project: Mult 802 Decommissioning
Laboratory ID: 9051065-DUP1
Lab Source ID: A9E0508-05
Initial/Final: 1.24 g / 5 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/kg)	C	DUPLICATE CONCENTRATION (ug/kg)	C	RPD %	Q	METHOD
Nitrobenzene	30	0.00		ND				EPA 8270D
2,4-Dinitrotoluene	30	1480000		ND				EPA 8270D
2,6-Dinitrotoluene	30	0.00		ND				EPA 8270D
Benzoic acid	30	0.00		ND				EPA 8270D
Benzyl alcohol	30	1190000		ND				EPA 8270D
Isophorone	30	0.00		ND				EPA 8270D
Azobenzene (1,2-DPH)	30	0.00		ND				EPA 8270D
Bis(2-Ethylhexyl) adipate	30	417000		ND				EPA 8270D
3,3'-Dichlorobenzidine	30	0.00		ND				EPA 8270D
1,2-Dinitrobenzene	30	0.00		ND				EPA 8270D
1,3-Dinitrobenzene	30	0.00		ND				EPA 8270D
1,4-Dinitrobenzene	30	0.00		ND				EPA 8270D
Pyridine	30	0.00		ND				EPA 8270D
1,4-Dichlorobenzene-d4 (ISTD)		2000		2000				EPA 8270D

* Values outside of QC limits

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270D

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E08056	Instrument:	SV-GCMS9
Matrix:	Solid	Calibration:	A9E1009

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9E08056-TUN1	I05081917.D	05/08/19 19:08
Initial Cal Blank	9E08056-ICB1	I05081918.D	05/08/19 19:35
Cal Standard	9E08056-CAL1	I05081919.D	05/08/19 20:12
Cal Standard	9E08056-CAL2	I05081920.D	05/08/19 20:48
Cal Standard	9E08056-CAL3	I05081921.D	05/08/19 21:25
Cal Standard	9E08056-CAL4	I05081922.D	05/08/19 22:01
Cal Standard	9E08056-CAL5	I05081923.D	05/08/19 22:38
Cal Standard	9E08056-CAL6	I05081924.D	05/08/19 23:14
Cal Standard	9E08056-CAL7	I05081925.D	05/08/19 23:50
Cal Standard	9E08056-CAL8	I05081926.D	05/09/19 00:26
Cal Standard	9E08056-CAL9	I05081927.D	05/09/19 01:01
Cal Standard	9E08056-CALA	I05081928.D	05/09/19 01:37
Initial Cal Check	9E08056-ICV1	I05081930.D	05/09/19 02:48

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

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E21026	Instrument:	SV-GCMS9
Matrix:	Solid	Calibration:	A9E1009

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9E21026-TUN1	I05211901.D	05/21/19 08:10
Calibration Check	9E21026-CCV1	I05211902.D	05/21/19 08:38
Calibration Blank	9E21026-CCB1	I05211903.D	05/21/19 09:15
Blank	9051065-BLK1	I05211904.D	05/21/19 09:51
LCS	9051065-BS1	I05211905.D	05/21/19 10:28
COMP1	A9E0508-05	I05211906.D	05/21/19 11:04
COMP1 (Dup)	9051065-DUP1	I05211907.D	05/21/19 11:40

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

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Lab File ID:	I05081917.D	Injection Date:	05/08/19
Instrument ID:	SV-GCMS9	Injection Time:	19:08
Sequence:	9E08056	Lab Sample ID:	9E08056-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	0.47	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	7.11	PASS
m/z 365	1 - 100% of m/z 198	2.92	PASS
m/z 441	Less than 24% of m/z 443	43.20	FAIL
m/z 442	50 - 200% of m/z 198	91.72	PASS
m/z 443	15 - 24% of m/z 442	20.20	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8270D

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Lab File ID:	I05211901.D	Injection Date:	05/21/19
Instrument ID:	SV-GCMS9	Injection Time:	08:10
Sequence:	9E21026	Lab Sample ID:	9E21026-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	0.59	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	6.79	PASS
m/z 365	1 - 100% of m/z 198	3.33	PASS
m/z 441	Less than 24% of m/z 443	84.22	FAIL
m/z 442	50 - 200% of m/z 198	112.61	PASS
m/z 443	15 - 24% of m/z 442	19.55	PASS

INITIAL CALIBRATION DATA (Summary)

EPA 8270D

Laboratory: Apex Laboratories SDG: A9E0508

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9E1009 Date: 05/10/19 17:06 Instrument: SV-GCMS9

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Acenaphthene	1.246362	Ave	13.87219	9.7507	7.072931E-02			20	
Acenaphthylene	1.978454	Ave	13.33308	9.573111	0.0608599			20	
Anthracene	1.06825	Ave	14.38712	11.30011	5.303121E-02			20	
Benz(a)anthracene	1.161693	Ave	5.391775	15.0358	9.314707E-02			20	
Benzo(a)pyrene	1.052651	XXX	11.81329	18.4065	0.1593326				
Benzo(b)fluoranthene	1.222586	XXX	9.234768	17.6298	0.1366649				
Benzo(k)fluoranthene	1.138397	XXX	12.73071	17.6977	0.1499183				
Benzo(g,h,i)perylene	1.073878	Ave	6.075218	21.4733	0.1473093			20	
Chrysene	1.071717	Ave	4.434002	15.121	0.1256095			20	
Dibenz(a,h)anthracene	0.9695725	Ave	6.841868	21.0005	0.1397927			20	
Fluoranthene	1.248412	Ave	12.71245	12.52533	4.516384E-02			20	
Fluorene	1.461705	Ave	10.98918	10.27013	5.132872E-02			20	
Indeno(1,2,3-cd)pyrene	1.098245	Ave	1.815585	20.9369	0.1565769			20	
1-Methylnaphthalene	0.7088084	Ave	10.96283	8.7613	6.246145E-02			20	
2-Methylnaphthalene	0.7525787	Ave	7.980811	8.661	0.0255116			20	
Naphthalene	0.9975462	Ave	12.5204	7.9701	8.103341E-02			20	
Phenanthrene	1.068375	Ave	13.94355	11.24767	5.196918E-02			20	
Pyrene	1.270483	Ave	14.04786	12.82278	5.314098E-02			20	
Carbazole	0.9362039	Ave	13.91313	10.18222	37.50003			20	
Dibenzofuran	1.696097	Ave	12.81337	9.922555	0.0510292			20	
4-Chloro-3-methylphenol	0.2730857	XXX	27.63199	8.5	0.0714853				
2-Chlorophenol	1.365821	Ave	3.539145	6.501	4.083644E-02			20	
2,4-Dichlorophenol	0.2377673	XXX	17.70644	7.809889	0.1048885				
2,4-Dimethylphenol	0.2837466	Ave	10.48648	7.604222	0.132719			20	
2,4-Dinitrophenol	0.1206814	XXX	47.41214	9.773857	0.1200607				
4,6-Dinitro-2-methylphenol	0.16763	XXX	34.03061	10.32113	0.1426601				
2-Methylphenol	1.035993	Ave	6.10587	6.9347	7.623988E-02			20	
3+4-Methylphenol(s)	1.288151	Ave	6.68875	7.0835	0.1181184			20	
2-Nitrophenol	0.189115	Ave	13.19256	7.5663	6.919828E-02			20	
4-Nitrophenol	0.2179687	XXX	28.71261	9.8415	0.1154792				
Pentachlorophenol (PCP)	0.1023087	XXX	26.74241	11.03775	4.677226E-02				
Phenol	1.808658	Ave	5.593781	6.3574	0.1392597			20	
2,3,4,6-Tetrachlorophenol	0.2799104	XXX	22.91784	10.0523	6.591509E-02				

INITIAL CALIBRATION DATA (Summary)

EPA 8270D

Laboratory: Apex Laboratories SDG: A9E0508

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9E1009 Date: 05/10/19 17:06 Instrument: SV-GCMS9

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
2,3,5,6-Tetrachlorophenol	0.2621185	XXX	27.45989	10.00878	6.369047E-02				
2,4,5-Trichlorophenol	0.3135775	XXX	23.07667	8.986556	0.0636193				
2,4,6-Trichlorophenol	0.3274987	XXX	25.5561	8.946111	5.780616E-02				
Bis(2-ethylhexyl)phthalate	0.7051378	Ave	13.69529	15.18638	5.498995E-02			20	
Butyl benzyl phthalate	0.5385928	XXX	25.47746	13.8463	6.957219E-02				
Diethylphthalate	1.355775	Ave	11.16852	10.13525	0.0608516			20	
Dimethylphthalate	1.399174	Ave	11.07178	9.4309	0.1625335			20	
Di-n-butylphthalate	1.213073	Ave	9.341261	11.79386	3.268408E-02			20	
Di-n-octyl phthalate	1.274584	XXX	23.84729	16.85238	8.408778E-02				
N-Nitrosodimethylamine	0.9994518	Ave	8.417646	4.1749	0.2456573			20	
N-Nitroso-di-n-propylamine	1.038343	Ave	7.40199	7.0852	0.1718028			20	
N-Nitrosodiphenylamine	0.617737	Ave	13.50961	10.37925	5.837758E-02			20	
Bis(2-Chloroethoxy) methane	0.4346998	Ave	8.397769	7.6893	0.1028808			20	
Bis(2-Chloroethyl) ether	1.522164	Ave	6.931483	6.435	9.991866E-02			20	
2,2'-Oxybis(1-Chloropropane)	1.85392	Ave	12.12271	6.9534	6.513491E-02			20	
Hexachlorobenzene	0.2442594	Ave	12.77258	10.84067	5.620959E-02			20	
Hexachlorobutadiene	0.166018	Ave	9.741395	8.0965	0.0548252			20	
Hexachlorocyclopentadiene	0.2556701	XXX	31.73959	8.827333	2.881535E-02				
Hexachloroethane	0.4701075	Ave	5.054182	7.1958	3.747133E-02			20	
2-Chloronaphthalene	1.20418	Ave	9.88966	9.151125	3.653769E-02			20	
1,2-Dichlorobenzene	1.407877	Ave	8.949005	6.8642	4.142653E-02			20	
1,3-Dichlorobenzene	1.562184	Ave	8.093414	6.6448	4.455832E-02			20	
1,4-Dichlorobenzene	1.459183	Ave	7.343118	6.7133	5.823049E-02			20	
1,2,4-Trichlorobenzene	0.3197364	Ave	11.19025	7.8916	4.780519E-02			20	
4-Bromophenyl phenyl ether	0.2198931	Ave	11.23192	10.7598	5.866323E-02			20	
4-Chlorophenyl phenyl ether	0.6829022	Ave	12.71016	10.26144	4.740166E-02			20	
Aniline	1.539056	Ave	16.89665	6.384111	7.810778E-02			20	
4-Chloroaniline	0.2556341	Ave	13.18349	8.0254	0.1733764			20	
2-Nitroaniline	0.4040472	Ave	13.26209	9.254857	0.1020166			20	
3-Nitroaniline	0.2422426	XXX	16.75589	8.054333	48.98985				
4-Nitroaniline	0.2995021	Ave	9.169683	10.29186	0.1663535			20	
Nitrobenzene	1.39112	Ave	7.217683	7.2535	0.1071721			20	
2,4-Dinitrotoluene	0.3672234	XXX	24.74855	9.902889	0.1393943				

INITIAL CALIBRATION DATA (Summary)

EPA 8270D

Laboratory: Apex Laboratories SDG: A9E0508

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9E1009 Date: 05/10/19 17:06 Instrument: SV-GCMS9

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
2,6-Dinitrotoluene	0.3128654	Ave	12.47982	9.492625	0.1125431			20	
Benzoic acid	0.1697623	XXX	41.45533	7.755	0.8960374				
Benzyl alcohol	0.7337486	XXX	26.01605	6.830444	0.1320465				
Isophorone	0.7406279	Ave	4.835266	7.4862	0.1627337			20	
Azobenzene (1,2-DPH)	0.6933106	Ave	13.73276	10.42267	5.956098E-02			20	
Bis(2-Ethylhexyl) adipate	0.5272206	Ave	11.82306	14.017	5.882476E-02			20	
3,3'-Dichlorobenzidine	0.1639363	XXX	47.84628	14.99883	8.565957E-02				
1,2-Dinitrobenzene	0.1551751	Ave	7.871382	9.555429	0.181337			20	
1,3-Dinitrobenzene	0.2246904	Ave	10.69776	9.466571	0.1621668			20	
1,4-Dinitrobenzene	0.1817709	XXX	28.96064	9.38025	0.1133143				
Pyridine	1.52558	Ave	9.076905	4.1931	0.5452424			20	
Nitrobenzene-d5 (Surr)	1.414255	Ave	4.398612	7.2342	8.875683E-02			20	
2-Fluorobiphenyl (Surr)	1.499573	Ave	12.95656	9.024889	4.749493E-02			20	
Phenol-d6 (Surr)	1.700623	Ave	9.466828	6.344	0.1309956			20	
p-Terphenyl-d14 (Surr)	0.9800873	Ave	6.065597	13.0273	5.271297E-02			20	
2-Fluorophenol (Surr)	1.306892	Ave	11.05673	5.469	4.502382E-02			20	
2,4,6-Tribromophenol (Surr)	9.203934E-02	Ave	11.41246	10.518	6.801967E-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

EPA 8270D

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9E1009
Instrument: SV-GCMS9
Calibration Date: 05/10/19 17:06

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	1.288501	50	1.419587	100	1.406563	200	1.39259	500	1.371812	1000	1.306586
Acenaphthylene	20	1.863144	50	2.010742	100	2.189345	200	2.231277	500	2.22154	1000	2.159684
Anthracene	20	1.127751	50	1.14128	100	1.199078	200	1.200488	500	1.187601	1000	1.107107
Benz(a)anthracene	20	1.238278	50	1.146912	100	1.156658	200	1.2101	500	1.232807	1000	1.201567
Benzo(a)pyrene	20	0.831374	50	0.9495318	100	1.011327	200	1.09916	500	1.217697	1000	1.226816
Benzo(b)fluoranthene	20	1.040836	50	1.069929	100	1.095045	200	1.220618	500	1.317848	1000	1.340094
Benzo(k)fluoranthene	20	1.017948	50	1.107924	100	1.153141	200	1.268315	500	1.343987	1000	1.310869
Benzo(b+k)fluoranthene(s)	40	1.029392	100	1.129669	200	1.170828	400	1.277505	1000	1.367083	2000	1.355767
Benzo(g,h,i)perylene	20	1.007868	50	1.040986	100	1.074444	200	1.126319	500	1.174934	1000	1.133316
Chrysene	20	1.103678	50	1.076118	100	1.102162	200	1.124544	500	1.126938	1000	1.0793
Dibenz(a,h)anthracene	20	0.9716498	50	0.9790812	100	1.003394	200	1.034606	500	1.04517	1000	0.998845
Fluoranthene	20	1.230029	50	1.262474	100	1.342926	200	1.395811	500	1.432339	1000	1.352739
Fluorene	20	1.519659	50	1.512221	100	1.603912	200	1.583846	500	1.575582	1000	1.45017
Indeno(1,2,3-cd)pyrene	20	1.127763	50	1.08833	100	1.108311	200	1.085168	500	1.136381	1000	1.091439
1-Methylnaphthalene	20	0.7161269	50	0.7230382	100	0.7606168	200	0.7740158	500	0.8013938	1000	0.7657356
2-Methylnaphthalene	20	0.6944655	50	0.7202952	100	0.7636913	200	0.7871127	500	0.8385005	1000	0.8146151
Naphthalene	20	1.068125	50	1.095144	100	1.106694	200	1.09884	500	1.083677	1000	1.048114
Phenanthrene	20	1.134929	50	1.183318	100	1.186359	200	1.183071	500	1.169809	1000	1.091993
Pyrene	20	1.317504	50	1.337785	100	1.404394	200	1.440178	500	1.421049	1000	1.349333
Carbazole	20	0.8810276	50	0.9494272	100	1.015353	200	1.061283	500	1.074229	1000	1.02904
Dibenzofuran	20	1.47976	50	1.738961	100	1.834585	200	1.920675	500	1.943877	1000	1.835112
4-Chloro-3-methylphenol	20	~~0.1122062~~	50	~~0.1230065~~	100	0.1262715	200	0.1919174	500	0.2659416	1000	0.3083995
2-Chlorophenol	20	1.314571	50	1.287184	100	1.360969	200	1.367597	500	1.432557	1000	1.399386
2,4-Dichlorophenol	20	~~0.1483808~~	50	0.1514651	100	0.1950366	200	0.2221574	500	0.2530891	1000	0.2715491
2,4-Dimethylphenol	20	~~0.2241958~~	50	0.2187544	100	0.2603808	200	0.2803587	500	0.3010278	1000	0.3104036
2,4-Dinitrophenol	20	~~0~~	50	~~0~~	100	~~1.038239E-02~~	200	2.957144E-02	500	6.577932E-02	1000	0.1079237
4,6-Dinitro-2-methylphenol	20	~~0~~	50	~~3.688344E-02~~	100	0.063634	200	0.1025415	500	0.1526732	1000	0.1872498
2-Methylphenol	20	1.00711	50	0.9144437	100	1.105322	200	1.011356	500	1.117853	1000	1.061494
3+4-Methylphenol(s)	20	1.187918	50	1.142116	100	1.289658	200	1.31547	500	1.405096	1000	1.34953
2-Nitrophenol	20	0.1412325	50	0.1586655	100	0.1719994	200	0.1975182	500	0.2268856	1000	0.2034607
4-Nitrophenol	20	~~7.502884E-02~~	50	~~6.883775E-02~~	100	0.1087639	200	0.1442678	500	0.1998079	1000	0.2380584

INITIAL CALIBRATION DATA

EPA 8270D

Laboratory: Apex Laboratories

Client: Hahn and Associates

Calibration: A9E1009

SDG: A9E0508

Project: Mult 802 Decommissioning

Instrument: SV-GCMS9

Calibration Date: 05/10/19 17:06

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
Pentachlorophenol (PCP)	20	~~0.1155115~~	50	~~6.994367E-02~~	100	5.531214E-02	200	6.709891E-02	500	9.704437E-02	1000	0.1095413
Phenol	20	1.607183	50	1.682112	100	1.785201	200	1.828256	500	1.90949	1000	1.842957
2,3,4,6-Tetrachlorophenol	20	0.1526598	50	0.1844172	100	0.2538662	200	0.2928592	500	0.32725	1000	0.3393464
2,3,5,6-Tetrachlorophenol	20	~~9.237655E-02~~	50	0.1223782	100	0.1637738	200	0.2411398	500	0.2918818	1000	0.3153475
2,4,5-Trichlorophenol	20	~~0.1799825~~	50	0.1840772	100	0.2253983	200	0.259576	500	0.3397883	1000	0.3769458
2,4,6-Trichlorophenol	20	~~0.1491903~~	50	0.1677601	100	0.2172766	200	0.2906159	500	0.3703367	1000	0.3945046
Bis(2-ethylhexyl)phthalate	20	~~0.3788428~~	50	~~0.4304644~~	100	0.502371	200	0.6149371	500	0.7295725	1000	0.7456653
Butyl benzyl phthalate	20	0.3139959	50	0.3724338	100	0.395015	200	0.4909578	500	0.561584	1000	0.6001846
Diethylphthalate	20	1.340544	50	1.40208	100	1.484431	200	1.508918	500	1.456733	1000	1.378609
Dimethylphthalate	20	1.304548	50	1.473468	100	1.54212	200	1.564146	500	1.574707	1000	1.490367
Di-n-butylphthalate	20	~~1.054631~~	50	1.069906	100	1.202292	200	1.27455	500	1.355582	1000	1.325249
Di-n-octyl phthalate	20	~~0.5162564~~	50	~~0.5928279~~	100	0.6860704	200	0.9387831	500	1.249867	1000	1.418885
N-Nitrosodimethylamine	20	1.210628	50	0.9731538	100	0.974643	200	0.9311297	500	0.9375772	1000	0.9187962
N-Nitroso-di-n-propylamine	20	1.076114	50	1.073166	100	1.092687	200	1.10156	500	1.119614	1000	1.066619
N-Nitrosodiphenylamine	20	0.5463807	50	0.5694775	100	0.6706257	200	0.7125663	500	0.7210734	1000	0.6544348
Bis(2-Chloroethoxy) methane	20	0.4094011	50	0.4633102	100	0.4797537	200	0.460457	500	0.473139	1000	0.4511814
Bis(2-Chloroethyl) ether	20	1.678808	50	1.527145	100	1.547209	200	1.557647	500	1.532854	1000	1.567433
2,2'-Oxybis(1-Chloropropane)	20	1.993257	50	1.994095	100	2.12341	200	2.027618	500	2.009041	1000	1.880868
Hexachlorobenzene	20	0.2330417	50	0.2783436	100	0.2804081	200	0.2604668	500	0.2659926	1000	0.2488493
Hexachlorobutadiene	20	0.1854219	50	0.1720377	100	0.175507	200	0.1750512	500	0.1796679	1000	0.1706737
Hexachlorocyclopentadiene	20	~~2.428679E-02~~	50	0.1006221	100	0.1502935	200	0.2171563	500	0.2812816	1000	0.3091032
Hexachloroethane	20	0.4935101	50	0.4806035	100	0.4810039	200	0.4791992	500	0.5047321	1000	0.4718837
2-Chloronaphthalene	20	1.065583	50	1.120441	100	1.219931	200	1.313217	500	1.372841	1000	1.297531
1,2-Dichlorobenzene	20	1.391437	50	1.480723	100	1.532497	200	1.531708	500	1.54352	1000	1.441976
1,3-Dichlorobenzene	20	1.764408	50	1.575956	100	1.688793	200	1.623242	500	1.642191	1000	1.568358
1,4-Dichlorobenzene	20	1.513722	50	1.546942	100	1.518996	200	1.558894	500	1.55659	1000	1.498483
1,2,4-Trichlorobenzene	20	0.3312033	50	0.342361	100	0.3540885	200	0.3497403	500	0.3512451	1000	0.3360108
4-Bromophenyl phenyl ether	20	0.2189111	50	0.2219057	100	0.2460077	200	0.2401504	500	0.2493611	1000	0.2342623
4-Chlorophenyl phenyl ether	20	0.6297218	50	0.7293402	100	0.7569097	200	0.7838675	500	0.7622339	1000	0.708171
Aniline	20	~~1.936481~~	50	1.733996	100	1.841108	200	1.763659	500	1.793414	1000	1.388555
4-Chloroaniline	20	0.2961118	50	0.2936727	100	0.2846738	200	0.27282	500	0.2289061	1000	0.2636523

INITIAL CALIBRATION DATA

EPA 8270D

Laboratory: Apex Laboratories

Client: Hahn and Associates

Calibration: A9E1009

SDG: A9E0508

Project: Mult 802 Decommissioning

Instrument: SV-GCMS9

Calibration Date: 05/10/19 17:06

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
2-Nitroaniline	20	~~8.587116E-02~~	50	~~0.129007~~	100	~~0.1619318~~	200	0.2871081	500	0.3920173	1000	0.435502
3-Nitroaniline	20	~~0.1210003~~	50	~~0.1550124~~	100	~~0.1898135~~	200	0.2568432	500	0.2979709	1000	0.2738699
4-Nitroaniline	20	~~0.1717423~~	50	~~0.2158616~~	100	~~0.2287475~~	200	0.3129678	500	0.3374728	1000	0.326831
Nitrobenzene	20	1.478783	50	1.409383	100	1.486975	200	1.519155	500	1.461204	1000	1.390457
2,4-Dinitrotoluene	20	~~0.1795488~~	50	0.1842472	100	0.2569641	200	0.3623215	500	0.4347267	1000	0.4479817
2,6-Dinitrotoluene	20	~~0.134011~~	50	~~0.1776184~~	100	0.237539	200	0.3087666	500	0.3578841	1000	0.3501717
Benzoic acid	40	~~0~~	100	~~6.728927E-03~~	200	~~1.234135E-02~~	400	~~1.925137E-02~~	1000	5.611395E-02	2000	0.1323593
Benzyl alcohol	20	~~0.3441469~~	50	0.4212107	100	0.501601	200	0.5794619	500	0.72107	1000	0.7850446
Isophorone	20	0.6732373	50	0.7113805	100	0.716058	200	0.7557014	500	0.7964985	1000	0.7778429
Azobenzene (1,2-DPH)	20	0.6298181	50	0.6864676	100	0.7844185	200	0.8002232	500	0.8012009	1000	0.7384806
Benzidine	40	~~0.5985291~~	100	~~0.2982892~~	200	~~0.325898~~	400	0.4124002	1000	0.3544726	2000	0.2808198
Bis(2-Ethylhexyl) adipate	20	0.635031	50	0.4416961	100	0.4385854	200	0.4728715	500	0.5076291	1000	0.5356732
3,3'-Dichlorobenzidine	40	~~0.275493~~	100	~~0.2664131~~	200	~~0.2975086~~	400	0.3011133	1000	0.211599	2000	0.14549
1,2-Dinitrobenzene	20	~~4.683881E-02~~	50	~~0.0882143~~	100	~~0.1055822~~	200	0.1418205	500	0.1608034	1000	0.1702692
1,3-Dinitrobenzene	20	~~0.0477062~~	50	~~0.1048713~~	100	~~0.139325~~	200	0.1724933	500	0.2276633	1000	0.2437779
1,4-Dinitrobenzene	20	~~5.030835E-02~~	50	~~5.150083E-02~~	100	7.996115E-02	200	0.1238737	500	0.177304	1000	0.2047553
Pyridine	20	1.39231	50	1.405629	100	1.367027	200	1.433441	500	1.518192	1000	1.469142
2,3,5-Trimethylnaphthalene	20	1.268551	50	1.270524	100	1.338324	200	1.303468	500	1.307919	1000	1.207273
2,6-Dimethylnaphthalene	20	1.11459	50	1.215284	100	1.31354	200	1.402747	500	1.409564	1000	1.340618
Benzo(e)pyrene	20	1.085456	50	1.132828	100	1.183546	200	1.245102	500	1.321292	1000	1.297193
1,1'-Biphenyl	20	1.43162	50	1.544515	100	1.686134	200	1.811608	500	1.920156	1000	1.818692
Perylene	20	1.029276	50	0.9863375	100	1.041456	200	1.03607	500	1.098192	1000	1.079829
Nitrobenzene-d5 (Surr)	20	1.553028	50	1.376274	100	1.414972	200	1.465448	500	1.447388	1000	1.395719
2-Fluorobiphenyl (Surr)	20	1.342713	50	1.501853	100	1.633133	200	1.702499	500	1.728598	1000	1.620679
Phenol-d6 (Surr)	20	1.463061	50	1.475944	100	1.583384	200	1.633634	500	1.720105	1000	1.694929
p-Terphenyl-d14 (Surr)	20	0.975051	50	0.9304463	100	1.015495	200	1.036821	500	1.060335	1000	1.023652
2-Fluorophenol (Surr)	20	1.132016	50	1.060195	100	1.213847	200	1.246799	500	1.324304	1000	1.304523
2,4,6-Tribromophenol (Surr)	20	~~6.639108E-02~~	50	7.065921E-02	100	8.120293E-02	200	9.200568E-02	500	0.1017594	1000	0.1038965

INITIAL CALIBRATION DATA (Continued)

EPA 8270D

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9E1009
Instrument: SV-GCMS9
Matrix:
Calibration Date: 05/10/19 17:06

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	1.222855	4000	1.106924	6000	1.010154	8000	0.9380463				
Acenaphthylene	2000	1.960702	4000	1.71094	6000	1.458714	8000	~~1.265118~~				
Anthracene	2000	1.003325	4000	0.8786621	6000	0.7689579	8000	~~0.7009088~~				
Benz(a)anthracene	2000	1.160517	4000	1.142753	6000	1.081444	8000	1.045892				
Benzo(a)pyrene	2000	1.147208	4000	1.065859	6000	1.009417	8000	0.9681162				
Benzo(b)fluoranthene	2000	1.329545	4000	1.268328	6000	1.25114	8000	1.292479				
Benzo(k)fluoranthene	2000	1.20272	4000	1.090877	6000	0.9800293	8000	0.9081583				
Benzo(b+k)fluoranthene(s)	4000	1.294432	8000	1.210313	12000	1.145537	16000	1.109431				
Benzo(g,h,i)perylene	2000	1.118641	4000	1.079451	6000	1.010582	8000	0.9722367				
Chrysene	2000	1.062123	4000	1.050158	6000	1.011204	8000	0.9809463				
Dibenz(a,h)anthracene	2000	1.007409	4000	0.9374441	6000	0.8774625	8000	0.8406638				
Fluoranthene	2000	1.198634	4000	1.08033	6000	0.9404231	8000	~~0.8869122~~				
Fluorene	2000	1.306492	4000	1.141754	6000	~~1.005022~~	8000	~~0.9276221~~				
Indeno(1,2,3-cd)pyrene	2000	1.081306	4000	1.100069	6000	1.079962	8000	1.083719				
1-Methylnaphthalene	2000	0.7168087	4000	0.6691839	6000	0.6008326	8000	0.5603313				
2-Methylnaphthalene	2000	0.7727834	4000	0.7348567	6000	0.6468876	8000	~~0.6157905~~				
Naphthalene	2000	0.982297	4000	0.9083996	6000	0.8158451	8000	0.7683261				
Phenanthrene	2000	1.004201	4000	0.8809291	6000	0.7807684	8000	~~0.7273861~~				
Pyrene	2000	1.182555	4000	1.055062	6000	0.9264856	8000	~~0.8683642~~				
Carbazole	2000	0.9197705	4000	0.8243731	6000	0.6713318	8000	~~0.5631641~~				
Dibenzofuran	2000	1.689888	4000	1.501242	6000	1.320772	8000	~~1.198853~~				
4-Chloro-3-methylphenol	2000	0.3181131	4000	0.3406578	6000	0.3199417	8000	0.3134429				
2-Chlorophenol	2000	1.423161	4000	1.393311	6000	1.364312	8000	1.315164				
2,4-Dichlorophenol	2000	0.2770721	4000	0.2777324	6000	0.2482813	8000	0.2435223				
2,4-Dimethylphenol	2000	0.3111687	4000	0.306541	6000	0.2855238	8000	0.2795605				
2,4-Dinitrophenol	2000	0.1240746	4000	0.1643289	6000	0.1747016	8000	0.1783903				
4,6-Dinitro-2-methylphenol	2000	0.1923731	4000	0.2155312	6000	0.2141173	8000	0.2129201				
2-Methylphenol	2000	1.063794	4000	1.078184	6000	1.035697	8000	0.9646772				
3+4-Methylphenol(s)	2000	1.354181	4000	1.357124	6000	1.282245	8000	1.198168				
2-Nitrophenol	2000	0.2014452	4000	0.2030443	6000	0.1945933	8000	0.1923049				
4-Nitrophenol	2000	0.2340118	4000	0.272251	6000	0.2740057	8000	0.2725831				

INITIAL CALIBRATION DATA (Continued)

EPA 8270D

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9E1009
Instrument: SV-GCMS9
Matrix:
Calibration Date: 05/10/19 17:06

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
Pentachlorophenol (PCP)	2000	0.1143396	4000	0.1277543	6000	0.1252676	8000	0.1221115				
Phenol	2000	1.896969	4000	1.899182	6000	1.877133	8000	1.758094				
2,3,4,6-Tetrachlorophenol	2000	0.3279991	4000	0.3252399	6000	0.3048896	8000	0.290577				
2,3,5,6-Tetrachlorophenol	2000	0.3109245	4000	0.3167555	6000	0.3048764	8000	0.2919889				
2,4,5-Trichlorophenol	2000	0.3792326	4000	0.3753727	6000	0.3481242	8000	0.3336824				
2,4,6-Trichlorophenol	2000	0.3934518	4000	0.3887167	6000	0.371188	8000	0.3536381				
Bis(2-ethylhexyl)phthalate	2000	0.7515566	4000	0.7829898	6000	0.7668836	8000	0.7471264				
Butyl benzyl phthalate	2000	0.6211495	4000	0.673607	6000	0.675999	8000	0.681001				
Diethylphthalate	2000	1.215101	4000	1.059783	6000	~~0.9303606~~	8000	~~0.8566059~~				
Dimethylphthalate	2000	1.401869	4000	1.296864	6000	1.192857	8000	1.150796				
Di-n-butylphthalate	2000	1.189422	4000	1.074511	6000	~~0.9489944~~	8000	~~0.8745828~~				
Di-n-octyl phthalate	2000	1.467974	4000	1.530108	6000	1.46188	8000	1.443103				
N-Nitrosodimethylamine	2000	0.9762372	4000	1.00744	6000	1.029661	8000	1.035252				
N-Nitroso-di-n-propylamine	2000	1.037705	4000	0.9990181	6000	0.9296044	8000	0.887346				
N-Nitrosodiphenylamine	2000	0.5747862	4000	0.4925515	6000	~~0.4307178~~	8000	~~0.4069141~~				
Bis(2-Chloroethoxy) methane	2000	0.4283134	4000	0.4194047	6000	0.3862396	8000	0.3757984				
Bis(2-Chloroethyl) ether	2000	1.61302	4000	1.507799	6000	1.355938	8000	1.333792				
2,2'-Oxybis(1-Chloropropane)	2000	1.829203	4000	1.678026	6000	1.566936	8000	1.436743				
Hexachlorobenzene	2000	0.2334501	4000	0.2089622	6000	0.18882	8000	~~0.177374~~				
Hexachlorobutadiene	2000	0.1669681	4000	0.1565817	6000	0.1427606	8000	0.1355106				
Hexachlorocyclopentadiene	2000	0.3148038	4000	0.3217185	6000	0.3129752	8000	0.2930771				
Hexachloroethane	2000	0.4664723	4000	0.4523443	6000	0.4482731	8000	0.4230528				
2-Chloronaphthalene	2000	1.193474	4000	1.050421	6000	~~0.9557868~~	8000	~~0.8778734~~				
1,2-Dichlorobenzene	2000	1.412957	4000	1.314003	6000	1.257389	8000	1.172556				
1,3-Dichlorobenzene	2000	1.531631	4000	1.453453	6000	1.42144	8000	1.352365				
1,4-Dichlorobenzene	2000	1.445139	4000	1.380193	6000	1.317908	8000	1.254964				
1,2,4-Trichlorobenzene	2000	0.3154796	4000	0.2942943	6000	0.2679857	8000	0.2549555				
4-Bromophenyl phenyl ether	2000	0.2222988	4000	0.2034246	6000	0.1869045	8000	0.175705				
4-Chlorophenyl phenyl ether	2000	0.6557002	4000	0.5898911	6000	0.5302842	8000	~~0.4866619~~				
Aniline	2000	1.120234	4000	1.260284	6000	1.39553	8000	1.554727				
4-Chloroaniline	2000	0.2089627	4000	0.2255068	6000	0.2118092	8000	0.2702255				

INITIAL CALIBRATION DATA (Continued)

EPA 8270D

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9E1009
Instrument: SV-GCMS9
Matrix:
Calibration Date: 05/10/19 17:06

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
2-Nitroaniline	2000	0.4291441	4000	0.4333246	6000	0.4265592	8000	0.4246749				
3-Nitroaniline	2000	0.2254168	4000	0.2021134	6000	0.1972412	8000	~~0.2228819~~				
4-Nitroaniline	2000	0.287495	4000	0.2936802	6000	0.2768043	8000	0.2612633				
Nitrobenzene	2000	1.353928	4000	1.327597	6000	1.275361	8000	1.208355				
2,4-Dinitrotoluene	2000	0.4353404	4000	0.4297613	6000	0.3941739	8000	0.3594939				
2,6-Dinitrotoluene	2000	0.3369258	4000	0.3240152	6000	0.3019617	8000	0.285659				
Benzoic acid	4000	0.1490699	8000	0.2179232	12000	0.2258705	16000	0.2372372				
Benzyl alcohol	2000	0.8528164	4000	0.9348581	6000	0.9246661	8000	0.883009				
Isophorone	2000	0.7565157	4000	0.7587814	6000	0.7284766	8000	0.7317872				
Azobenzene (1,2-DPH)	2000	0.6682561	4000	0.5947416	6000	0.5361888	8000	~~0.5056705~~				
Benzidine	4000	0.1934969	8000	0.3139192	12000	0.340993	16000	0.3675681				
Bis(2-Ethylhexyl) adipate	2000	0.5432156	4000	0.5707897	6000	0.5639242	8000	0.5627904				
3,3'-Dichlorobenzidine	4000	0.116084	8000	0.1017726	12000	0.1075586	16000	~~0.1177742~~				
1,2-Dinitrobenzene	2000	0.1639202	4000	0.1621875	6000	0.1492804	8000	0.1379443				
1,3-Dinitrobenzene	2000	0.2344492	4000	0.2397918	6000	0.2313103	8000	0.2233469				
1,4-Dinitrobenzene	2000	0.2064962	4000	0.2207801	6000	0.2204162	8000	0.2205809				
Pyridine	2000	1.53678	4000	1.706171	6000	1.7048	8000	1.722311				
2,3,5-Trimethylnaphthalene	2000	1.087459	4000	0.9300448	6000	~~0.816687~~	8000	~~0.7644802~~				
2,6-Dimethylnaphthalene	2000	1.236377	4000	1.084785	6000	0.9655195	8000	~~0.890492~~				
Benzo(e)pyrene	2000	1.261601	4000	1.194903	6000	1.135328	8000	1.100916				
1,1'-Biphenyl	2000	1.679269	4000	1.477851	6000	~~1.309359~~	8000	~~1.20655~~				
Perylene	2000	1.033019	4000	0.976321	6000	0.9367363	8000	0.9079865				
Nitrobenzene-d5 (Surr)	2000	1.393371	4000	1.394111	6000	1.376127	8000	1.326111				
2-Fluorobiphenyl (Surr)	2000	1.495217	4000	1.313224	6000	1.158242	8000	~~1.073407~~				
Phenol-d6 (Surr)	2000	1.792311	4000	1.893767	6000	1.901965	8000	1.847127				
p-Terphenyl-d14 (Surr)	2000	1.00833	4000	0.9646131	6000	0.9057975	8000	0.880332				
2-Fluorophenol (Surr)	2000	1.390615	4000	1.440466	6000	1.492937	8000	1.463219				
2,4,6-Tribromophenol (Surr)	2000	9.822309E-02	4000	9.740403E-02	6000	9.328247E-02	8000	8.992075E-02				

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8270D

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	SV-GCMS9	Calibration:	A9E1009
Lab File ID:	I05081930.D		
Sequence:	9E08056	Inject Date:	05/09/19
Lab Sample ID:	9E08056-ICV1	Inject Time:	02:48

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
Acenaphthene	1000	1040	3.9	70 - 130
Acenaphthylene	1000	1090	8.9	70 - 130
Anthracene	1000	1030	2.7	70 - 130
Benz(a)anthracene	1000	1040	4.5	70 - 130
Benzo(a)pyrene	1000	1030	2.6	70 - 130
Benzo(b)fluoranthene	1000	1040	3.5	70 - 130
Benzo(k)fluoranthene	1000	1010	0.9	70 - 130
Benzo(g,h,i)perylene	1000	1060	5.6	70 - 130
Chrysene	1000	1000	0.005	70 - 130
Dibenz(a,h)anthracene	1000	1030	2.8	70 - 130
Fluoranthene	1000	1070	6.8	70 - 130
Fluorene	1000	981	-1.9	70 - 130
Indeno(1,2,3-cd)pyrene	1000	987	-1.3	70 - 130
1-Methylnaphthalene	1000	1040	4.2	70 - 130
2-Methylnaphthalene	1000	1060	6.2	70 - 130
Naphthalene	1000	1010	1.0	70 - 130
Phenanthrene	1000	1010	0.7	70 - 130
Pyrene	1000	1040	4.1	70 - 130
Carbazole	1000	1080	8.4	70 - 130
Dibenzofuran	1000	1070	7.4	70 - 130
4-Chloro-3-methylphenol	1000	1010	0.7	70 - 130
2-Chlorophenol	1000	1030	2.8	70 - 130
2,4-Dichlorophenol	1000	1030	3.5	70 - 130
2,4-Dimethylphenol	1000	1030	2.9	70 - 130
2,4-Dinitrophenol	1000	947	-5.3	70 - 130
4,6-Dinitro-2-methylphenol	1000	1160	16.4	70 - 130
2-Methylphenol	1000	1040	4.3	70 - 130
3+4-Methylphenol(s)	1000	1050	5.3	70 - 130
2-Nitrophenol	1000	1110	11.2	70 - 130
4-Nitrophenol	1000	1030	3.5	70 - 130
Pentachlorophenol (PCP)	1000	1040	3.8	70 - 130

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8270D

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	SV-GCMS9	Calibration:	A9E1009
Lab File ID:	I05081930.D		
Sequence:	9E08056	Inject Date:	05/09/19
Lab Sample ID:	9E08056-ICV1	Inject Time:	02:48

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
Phenol	1000	1060	5.5	70 - 130
2,3,4,6-Tetrachlorophenol	1000	1060	5.8	70 - 130
2,3,5,6-Tetrachlorophenol	1000	1040	3.6	70 - 130
2,4,5-Trichlorophenol	1000	1090	8.7	70 - 130
2,4,6-Trichlorophenol	1000	1040	4.3	70 - 130
Bis(2-ethylhexyl)phthalate	1000	1060	6.0	70 - 130
Butyl benzyl phthalate	1000	1060	6.2	70 - 130
Diethylphthalate	1000	1010	0.9	70 - 130
Dimethylphthalate	1000	1060	6.2	70 - 130
Di-n-butylphthalate	1000	1080	7.6	70 - 130
Di-n-octyl phthalate	1000	1010	1.3	70 - 130
N-Nitrosodimethylamine	1000	980	-2.0	70 - 130
N-Nitroso-di-n-propylamine	1000	1030	3.4	70 - 130
N-Nitrosodiphenylamine	1000	1040	4.1	70 - 130
Bis(2-Chloroethoxy) methane	1000	1030	3.0	70 - 130
Bis(2-Chloroethyl) ether	1000	1040	3.9	70 - 130
2,2'-Oxybis(1-Chloropropane)	1000	986	-1.4	70 - 130
Hexachlorobenzene	1000	1010	0.9	70 - 130
Hexachlorobutadiene	1000	1020	2.3	70 - 130
Hexachlorocyclopentadiene	1000	1070	7.2	70 - 130
Hexachloroethane	1000	1000	0.3	70 - 130
2-Chloronaphthalene	1000	1080	7.6	70 - 130
1,2-Dichlorobenzene	1000	1020	2.2	70 - 130
1,3-Dichlorobenzene	1000	989	-1.1	70 - 130
1,4-Dichlorobenzene	1000	1010	0.8	70 - 130
1,2,4-Trichlorobenzene	1000	1010	1.2	70 - 130
4-Bromophenyl phenyl ether	1000	1070	6.8	70 - 130
4-Chlorophenyl phenyl ether	1000	1020	2.1	70 - 130
Aniline	1000	1020	1.7	70 - 130
4-Chloroaniline	1000	967	-3.3	70 - 130
2-Nitroaniline	1000	1100	10.0	70 - 130

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8270D

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	SV-GCMS9	Calibration:	A9E1009
Lab File ID:	I05081930.D		
Sequence:	9E08056	Inject Date:	05/09/19
Lab Sample ID:	9E08056-ICV1	Inject Time:	02:48

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
3-Nitroaniline	1000	1150	14.8	70 - 130
4-Nitroaniline	1000	1150	14.8	70 - 130
Nitrobenzene	1000	998	-0.2	70 - 130
2,4-Dinitrotoluene	1000	1030	2.8	70 - 130
2,6-Dinitrotoluene	1000	1130	12.6	70 - 130
Benzoic acid	2000	1880	-5.8	70 - 130
Benzyl alcohol	1000	966	-3.4	70 - 130
Isophorone	1000	1040	4.2	70 - 130
Azobenzene (1,2-DPH)	1000	1060	6.3	70 - 130
Bis(2-Ethylhexyl) adipate	1000	996	-0.4	70 - 130
3,3'-Dichlorobenzidine	2000	2070	3.7	70 - 130
1,2-Dinitrobenzene	1000	1070	7.0	70 - 130
1,3-Dinitrobenzene	1000	1100	9.6	70 - 130
1,4-Dinitrobenzene	1000	1070	7.3	70 - 130
Pyridine	1000	944	-5.6	70 - 130
Nitrobenzene-d5 (Surr)	1000	983	-1.7	70 - 130
2-Fluorobiphenyl (Surr)	1000	1080	8.0	70 - 130
Phenol-d6 (Surr)	1000	1000	0.3	70 - 130
p-Terphenyl-d14 (Surr)	1000	1040	4.3	70 - 130
2-Fluorophenol (Surr)	1000	1020	1.5	70 - 130
2,4,6-Tribromophenol (Surr)	1000	1090	8.6	70 - 130

CONTINUING CALIBRATION CHECK

EPA 8270D

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	SV-GCMS9	Calibration:	A9E1009
Lab File ID:	I05211902.D	Calibration Date:	05/10/19 17:06
Sequence:	9E21026	Injection Date:	05/21/19
Lab Sample ID:	9E21026-CCV1	Injection Time:	08:38

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		1.246362	1.296916	4.1	20
Acenaphthylene	Ave	1000	1070		1.978454	2.119054	7.1	20
Anthracene	Ave	1000	1050		1.06825	1.121636	5.0	20
Benz(a)anthracene	Ave	1000	1000		1.161693	1.162032	0.03	20
Benzo(a)pyrene	XXX	1000	1020	2.1				20
Benzo(b)fluoranthene	XXX	1000	997	-0.3				20
Benzo(k)fluoranthene	XXX	1000	990	-1.0				20
Benzo(g,h,i)perylene	Ave	1000	1040		1.073878	1.118932	4.2	20
Chrysene	Ave	1000	1010		1.071717	1.080981	0.9	20
Dibenz(a,h)anthracene	Ave	1000	1030		0.9695725	1.002114	3.4	20
Fluoranthene	Ave	1000	1020		1.248412	1.268681	1.6	20
Fluorene	Ave	1000	992		1.461705	1.450449	-0.8	20
Indeno(1,2,3-cd)pyrene	Ave	1000	992		1.098245	1.089165	-0.8	20
1-Methylnaphthalene	Ave	1000	1020		0.7088084	0.7198047	1.6	20
2-Methylnaphthalene	Ave	1000	1030		0.7525787	0.7755508	3.1	20
Naphthalene	Ave	1000	1040		0.9975462	1.037081	4.0	20
Phenanthrene	Ave	1000	1020		1.068375	1.085041	1.6	20
Pyrene	Ave	1000	1000		1.270483	1.273305	0.2	20
Carbazole	Ave	1000	1020		0.9362039	0.9508332	1.6	20
Dibenzofuran	Ave	1000	1080		1.696097	1.824783	7.6	20
4-Chloro-3-methylphenol	XXX	1000	961	-3.9				20
2-Chlorophenol	Ave	1000	1040		1.365821	1.418758	3.9	20
2,4-Dichlorophenol	XXX	1000	987	-1.3				20
2,4-Dimethylphenol	Ave	1000	1040		0.2837466	0.2947233	3.9	20
2,4-Dinitrophenol	XXX	1000	967	-3.3				20
4,6-Dinitro-2-methylphenol	XXX	1000	1040	3.9				20
2-Methylphenol	Ave	1000	1050		1.035993	1.092936	5.5	20
3+4-Methylphenol(s)	Ave	1000	1020		1.288151	1.316329	2.2	20
2-Nitrophenol	Ave	1000	1090		0.189115	0.2066412	9.3	20
4-Nitrophenol	XXX	1000	884	-11.6				20

CONTINUING CALIBRATION CHECK

EPA 8270D

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	SV-GCMS9	Calibration:	A9E1009
Lab File ID:	I05211902.D	Calibration Date:	05/10/19 17:06
Sequence:	9E21026	Injection Date:	05/21/19
Lab Sample ID:	9E21026-CCV1	Injection Time:	08:38

COMPOUND	Curve Fit	Calculated Concentration (ng/mL) [L/Q Fits]			Response Factors [Ave RF]			Limit
		STD	CCV	% DIFF	ICAL	CCV	% Drift	
Pentachlorophenol (PCP)	XXX	1000	1130	13.1				20
Phenol	Ave	1000	973		1.808658	1.759114	-2.7	20
2,3,4,6-Tetrachlorophenol	XXX	1000	1040	4.4				20
2,3,5,6-Tetrachlorophenol	XXX	1000	996	-0.4				20
2,4,5-Trichlorophenol	XXX	1000	1010	1.3				20
2,4,6-Trichlorophenol	XXX	1000	1010	1.3				20
Bis(2-ethylhexyl)phthalate	Ave	1000	1090		0.7051378	0.7651402	8.5	20
Butyl benzyl phthalate	XXX	1000	1070	6.8				20
Diethylphthalate	Ave	1000	1040		1.355775	1.408563	3.9	20
Dimethylphthalate	Ave	1000	1060		1.399174	1.480504	5.8	20
Di-n-butylphthalate	Ave	1000	1060		1.213073	1.286864	6.1	20
Di-n-octyl phthalate	XXX	1000	1020	1.9				20
N-Nitrosodimethylamine	Ave	1000	919		0.9994518	0.9181659	-8.1	20
N-Nitroso-di-n-propylamine	Ave	1000	986		1.038343	1.024193	-1.4	20
N-Nitrosodiphenylamine	Ave	1000	1050		0.617737	0.6508342	5.4	20
Bis(2-Chloroethoxy) methane	Ave	1000	967		0.4346998	0.4205558	-3.3	20
Bis(2-Chloroethyl) ether	Ave	1000	979		1.522164	1.490294	-2.1	20
2,2'-Oxybis(1-Chloropropane)	Ave	1000	938		1.85392	1.738495	-6.2	20
Hexachlorobenzene	Ave	1000	995		0.2442594	0.2429379	-0.5	20
Hexachlorobutadiene	Ave	1000	1080		0.166018	0.1787556	7.7	20
Hexachlorocyclopentadiene	XXX	1000	1110	11.3				20
Hexachloroethane	Ave	1000	984		0.4701075	0.4626693	-1.6	20
2-Chloronaphthalene	Ave	1000	1070		1.20418	1.292341	7.3	20
1,2-Dichlorobenzene	Ave	1000	1040		1.407877	1.46551	4.1	20
1,3-Dichlorobenzene	Ave	1000	976		1.562184	1.524714	-2.4	20
1,4-Dichlorobenzene	Ave	1000	997		1.459183	1.454313	-0.3	20
1,2,4-Trichlorobenzene	Ave	1000	1000		0.3197364	0.3196607	-0.02	20
4-Bromophenyl phenyl ether	Ave	1000	1020		0.2198931	0.2253715	2.5	20
4-Chlorophenyl phenyl ether	Ave	1000	1020		0.6829022	0.6990863	2.4	20
Aniline	Ave	1000	693		1.539056	1.065808	-30.7*	20

CONTINUING CALIBRATION CHECK

EPA 8270D

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	SV-GCMS9	Calibration:	A9E1009
Lab File ID:	I05211902.D	Calibration Date:	05/10/19 17:06
Sequence:	9E21026	Injection Date:	05/21/19
Lab Sample ID:	9E21026-CCV1	Injection Time:	08:38

COMPOUND	Curve Fit	Calculated Concentration (ng/mL) [L/Q Fits]			Response Factors [Ave RF]			Limit
		STD	CCV	% DIFF	ICAL	CCV	% Drift	
4-Chloroaniline	Ave	1000	771		0.2556341	0.1969955	-22.9*	20
2-Nitroaniline	Ave	1000	1080		0.4040472	0.4352714	7.7	20
3-Nitroaniline	XXX	1000	1210	21.3 *				20
4-Nitroaniline	Ave	1000	956		0.2995021	0.2861995	-4.4	20
Nitrobenzene	Ave	1000	983		1.39112	1.367176	-1.7	20
2,4-Dinitrotoluene	XXX	1000	1020	1.6				20
2,6-Dinitrotoluene	Ave	1000	1100		0.3128654	0.3452191	10.3	20
Benzoic acid	XXX	2000	1890	-5.4				20
Benzyl alcohol	XXX	1000	923	-7.7				20
Isophorone	Ave	1000	973		0.7406279	0.7203117	-2.7	20
Azobenzene (1,2-DPH)	Ave	1000	1040		0.6933106	0.7221492	4.2	20
Bis(2-Ethylhexyl) adipate	Ave	1000	990		0.5272206	0.5218267	-1.0	20
3,3'-Dichlorobenzidine	XXX	2000	2510	25.5 *				20
1,2-Dinitrobenzene	Ave	1000	1070		0.1551751	0.1657037	6.8	20
1,3-Dinitrobenzene	Ave	1000	1070		0.2246904	0.2399764	6.8	20
1,4-Dinitrobenzene	XXX	1000	1070	6.8				20
Pyridine	Ave	1000	932		1.52558	1.422237	-6.8	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

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E08056	Instrument:	SV-GCMS9
Matrix:	Solid	Calibration:	A9E1009

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Initial Cal Check (9E08056-ICV1)				Lab File ID: I05081930.D		Analyzed: 05/09/19 02:48		
Nitrobenzene-d5 (Surr)	1000	98	70 - 130	7.231	7.2342	-0.0032	+/-1.0	
2-Fluorobiphenyl (Surr)	1000	108	70 - 130	9.023	9.024889	-0.0019	+/-1.0	
Phenol-d6 (Surr)	1000	100	70 - 130	6.338	6.344	-0.0060	+/-1.0	
p-Terphenyl-d14 (Surr)	1000	104	70 - 130	13.024	13.0273	-0.0033	+/-1.0	
2-Fluorophenol (Surr)	1000	102	70 - 130	5.466	5.469	-0.0030	+/-1.0	
2,4,6-Tribromophenol (Surr)	1000	109	70 - 130	10.516	10.518	-0.0020	+/-1.0	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8270D

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E21026	Instrument:	SV-GCMS9
Matrix:	Solid	Calibration:	A9E1009

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Calibration Check (9E21026-CCV1)			Lab File ID: I05211902.D		Analyzed: 05/21/19 08:38			
Nitrobenzene-d5 (Surr)	1000	100	80 - 120	7.22	7.2342	-0.0142	+/-1.0	
2-Fluorobiphenyl (Surr)	1000	110	80 - 120	9.017	9.024889	-0.0079	+/-1.0	
Phenol-d6 (Surr)	1000	98	80 - 120	6.332	6.344	-0.0120	+/-1.0	
p-Terphenyl-d14 (Surr)	1000	105	80 - 120	13.018	13.0273	-0.0093	+/-1.0	
2-Fluorophenol (Surr)	1000	98	80 - 120	5.461	5.469	-0.0080	+/-1.0	
2,4,6-Tribromophenol (Surr)	1000	115	80 - 120	10.51	10.518	-0.0080	+/-1.0	
Calibration Blank (9E21026-CCB1)			Lab File ID: I05211903.D		Analyzed: 05/21/19 09:15			
Nitrobenzene-d5 (Surr)			37 - 122	7.167	7.2342	-0.0672	+/-1.0	
2-Fluorobiphenyl (Surr)			44 - 115	0	9.024889	-9.0249	+/-1.0	
Phenol-d6 (Surr)			33 - 122	0	6.344	-6.3440	+/-1.0	
p-Terphenyl-d14 (Surr)			54 - 127	0	13.0273	-13.0273	+/-1.0	
2-Fluorophenol (Surr)			35 - 115	0	5.469	-5.4690	+/-1.0	
2,4,6-Tribromophenol (Surr)			39 - 132	0	10.518	-10.5180	+/-1.0	
Blank (9051065-BLK1)			Lab File ID: I05211904.D		Analyzed: 05/21/19 09:51			
Nitrobenzene-d5 (Surr)	333	87	37 - 122	7.225	7.2342	-0.0092	+/-1.0	
2-Fluorobiphenyl (Surr)	333	89	44 - 115	9.017	9.024889	-0.0079	+/-1.0	
Phenol-d6 (Surr)	333	79	33 - 122	6.338	6.344	-0.0060	+/-1.0	
p-Terphenyl-d14 (Surr)	333	94	54 - 127	13.018	13.0273	-0.0093	+/-1.0	
2-Fluorophenol (Surr)	333	81	35 - 115	5.466	5.469	-0.0030	+/-1.0	
2,4,6-Tribromophenol (Surr)	333	87	39 - 132	10.51	10.518	-0.0080	+/-1.0	
LCS (9051065-BS1)			Lab File ID: I05211905.D		Analyzed: 05/21/19 10:28			
Nitrobenzene-d5 (Surr)	333	83	37 - 122	7.225	7.2342	-0.0092	+/-1.0	
2-Fluorobiphenyl (Surr)	333	93	44 - 115	9.023	9.024889	-0.0019	+/-1.0	
Phenol-d6 (Surr)	333	89	33 - 122	6.343	6.344	-0.0010	+/-1.0	
p-Terphenyl-d14 (Surr)	333	97	54 - 127	13.018	13.0273	-0.0093	+/-1.0	
2-Fluorophenol (Surr)	333	89	35 - 115	5.471	5.469	0.0020	+/-1.0	
2,4,6-Tribromophenol (Surr)	333	105	39 - 132	10.515	10.518	-0.0030	+/-1.0	
COMP1 (A9E0508-05)			Lab File ID: I05211906.D		Analyzed: 05/21/19 11:04			
Nitrobenzene-d5 (Surr)	4310	1310	37 - 122	7.247	7.2342	0.0128	+/-1.0	*
2-Fluorobiphenyl (Surr)	4310		44 - 115	0	9.024889	-9.0249	+/-1.0	*
Phenol-d6 (Surr)	4310		33 - 122	0	6.344	-6.3440	+/-1.0	*
p-Terphenyl-d14 (Surr)	4310	513	54 - 127	13.023	13.0273	-0.0043	+/-1.0	*
2-Fluorophenol (Surr)	4310		35 - 115	0	5.469	-5.4690	+/-1.0	*
2,4,6-Tribromophenol (Surr)	4310		39 - 132	0	10.518	-10.5180	+/-1.0	*

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8270D

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E21026	Instrument:	SV-GCMS9
Matrix:	Solid	Calibration:	A9E1009

Surrogate Compound	Spike Level ug/kg	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Duplicate (9051065-DUP1)				Lab File ID: I05211907.D		Analyzed: 05/21/19 11:40		
Nitrobenzene-d5 (Surr)	4030	865	37 - 122	7.177	7.2342	-0.0572	+/-1.0	*
2-Fluorobiphenyl (Surr)	4030		44 - 115	0	9.024889	-9.0249	+/-1.0	*
Phenol-d6 (Surr)	4030		33 - 122	0	6.344	-6.3440	+/-1.0	*
p-Terphenyl-d14 (Surr)	4030		54 - 127	0	13.0273	-13.0273	+/-1.0	*
2-Fluorophenol (Surr)	4030		35 - 115	0	5.469	-5.4690	+/-1.0	*
2,4,6-Tribromophenol (Surr)	4030		39 - 132	0	10.518	-10.5180	+/-1.0	*

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8270D

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E21026	Instrument:	SV-GCMS9
Matrix:	Solid	Calibration:	A9E1009

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (9E21026-CCV1)			Lab File ID: I05211902.D			Analyzed: 05/21/19 08:38			
1,4-Dichlorobenzene-d4 (ISTD)	84488	6.685	116694	6.697	72	50 - 200	-0.0120	+/-0.50	
Naphthalene-d8 (ISTD)	319520	7.937	435111	7.948	73	50 - 200	-0.0110	+/-0.50	
Acenaphthene-d10 (ISTD)	159574	9.707	224844	9.719	71	50 - 200	-0.0120	+/-0.50	
Phenanthrene-d10 (ISTD)	304901	11.216	425173	11.222	72	50 - 200	-0.0060	+/-0.50	
Chrysene-d12 (ISTD)	298923	15.045	428978	15.057	70	50 - 200	-0.0120	+/-0.50	
Perylene-d12 (ISTD)	286034	18.533	400554	18.539	71	50 - 200	-0.0060	+/-0.50	
Dibenz(a,h)anthracene-d14 (ISTD)	278158	20.913	399119	20.924	70	50 - 200	-0.0110	+/-0.50	
Calibration Blank (9E21026-CCB1)			Lab File ID: I05211903.D			Analyzed: 05/21/19 09:15			
1,4-Dichlorobenzene-d4 (ISTD)	80937	6.685	84488	6.685	96	50 - 200	0.0000	+/-0.50	
Naphthalene-d8 (ISTD)	333025	7.942	319520	7.937	104	50 - 200	0.0050	+/-0.50	
Acenaphthene-d10 (ISTD)	157346	9.707	159574	9.707	99	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10 (ISTD)	307390	11.216	304901	11.216	101	50 - 200	0.0000	+/-0.50	
Chrysene-d12 (ISTD)	305366	15.045	298923	15.045	102	50 - 200	0.0000	+/-0.50	
Perylene-d12 (ISTD)	281155	18.527	286034	18.533	98	50 - 200	-0.0060	+/-0.50	
Dibenz(a,h)anthracene-d14 (ISTD)	260638	20.907	278158	20.913	94	50 - 200	-0.0060	+/-0.50	
Blank (9051065-BLK1)			Lab File ID: I05211904.D			Analyzed: 05/21/19 09:51			
1,4-Dichlorobenzene-d4 (ISTD)	89774	6.691	84488	6.685	106	50 - 200	0.0060	+/-0.50	
Naphthalene-d8 (ISTD)	348983	7.942	319520	7.937	109	50 - 200	0.0050	+/-0.50	
Acenaphthene-d10 (ISTD)	161332	9.713	159574	9.707	101	50 - 200	0.0060	+/-0.50	
Phenanthrene-d10 (ISTD)	315328	11.221	304901	11.216	103	50 - 200	0.0050	+/-0.50	
Chrysene-d12 (ISTD)	320540	15.045	298923	15.045	107	50 - 200	0.0000	+/-0.50	
Perylene-d12 (ISTD)	296996	18.532	286034	18.533	104	50 - 200	-0.0010	+/-0.50	
Dibenz(a,h)anthracene-d14 (ISTD)	282864	20.913	278158	20.913	102	50 - 200	0.0000	+/-0.50	
LCS (9051065-BS1)			Lab File ID: I05211905.D			Analyzed: 05/21/19 10:28			
1,4-Dichlorobenzene-d4 (ISTD)	83244	6.691	84488	6.685	99	50 - 200	0.0060	+/-0.50	
Naphthalene-d8 (ISTD)	312447	7.942	319520	7.937	98	50 - 200	0.0050	+/-0.50	
Acenaphthene-d10 (ISTD)	156647	9.713	159574	9.707	98	50 - 200	0.0060	+/-0.50	
Phenanthrene-d10 (ISTD)	299885	11.221	304901	11.216	98	50 - 200	0.0050	+/-0.50	
Chrysene-d12 (ISTD)	287291	15.056	298923	15.045	96	50 - 200	0.0110	+/-0.50	
Perylene-d12 (ISTD)	276396	18.532	286034	18.533	97	50 - 200	-0.0010	+/-0.50	
Dibenz(a,h)anthracene-d14 (ISTD)	279119	20.923	278158	20.913	100	50 - 200	0.0100	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8270D

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E21026	Instrument:	SV-GCMS9
Matrix:	Solid	Calibration:	A9E1009

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
COMP1 (A9E0508-05)			Lab File ID: I05211906.D			Analyzed: 05/21/19 11:04			
1,4-Dichlorobenzene-d4 (ISTD)	88237	6.691	84488	6.685	104	50 - 200	0.0060	+/-0.50	
Naphthalene-d8 (ISTD)	344817	7.942	319520	7.937	108	50 - 200	0.0050	+/-0.50	
Acenaphthene-d10 (ISTD)	155307	9.713	159574	9.707	97	50 - 200	0.0060	+/-0.50	
Phenanthrene-d10 (ISTD)	313143	11.221	304901	11.216	103	50 - 200	0.0050	+/-0.50	
Chrysene-d12 (ISTD)	314073	15.045	298923	15.045	105	50 - 200	0.0000	+/-0.50	
Perylene-d12 (ISTD)	294829	18.532	286034	18.533	103	50 - 200	-0.0010	+/-0.50	
Dibenz(a,h)anthracene-d14 (ISTD)	283053	20.918	278158	20.913	102	50 - 200	0.0050	+/-0.50	
Duplicate (9051065-DUP1)			Lab File ID: I05211907.D			Analyzed: 05/21/19 11:40			
1,4-Dichlorobenzene-d4 (ISTD)	85029	6.691	84488	6.685	101	50 - 200	0.0060	+/-0.50	
Naphthalene-d8 (ISTD)	343429	7.942	319520	7.937	107	50 - 200	0.0050	+/-0.50	
Acenaphthene-d10 (ISTD)	159071	9.713	159574	9.707	100	50 - 200	0.0060	+/-0.50	
Phenanthrene-d10 (ISTD)	305611	11.221	304901	11.216	100	50 - 200	0.0050	+/-0.50	
Chrysene-d12 (ISTD)	316097	15.045	298923	15.045	106	50 - 200	0.0000	+/-0.50	
Perylene-d12 (ISTD)	292045	18.527	286034	18.533	102	50 - 200	-0.0060	+/-0.50	
Dibenz(a,h)anthracene-d14 (ISTD)	278608	20.913	278158	20.913	100	50 - 200	0.0000	+/-0.50	

HOLDING TIME SUMMARY

EPA 8270D

Laboratory: Apex Laboratories SDG: A9E0508

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
COMP1	05/13/19 15:15	05/15/19 12:35	05/20/19 16:13	7.04	14.00	05/21/19 11:04	0.79	40.00	

Apex Laboratories

SDG: A9E0508

CLASS: METALS

METHOD: EPA 6020A

ANALYSES DATA PACKAGE COVER PAGE

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning

Client Sample Id:	Lab Sample Id:	Matrix
COMP1	A9E0508-05	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: 9/30/2019 12:03PM
Title: Technical Manager

METHOD DETECTION AND REPORTING LIMITS

EPA 6020A

Laboratory: Apex Laboratories **SDG:** A9E0508

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

COMP1

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Matrix: Solid
Laboratory ID: A9E0508-05
File ID: 9E20033-073
Sampled: 05/13/19 15:15
Prepared: 05/17/19 12:15
Analyzed: 05/20/19 21:16
Solids: N/A
Preparation: EPA 3051A
Initial/Final: 0.482 g / 50 mL
Batch: 9051011
Sequence: 9E20033
Instrument: ICPMS5

CAS NO.	Analyte	Concentration (mg/kg)	Dilution Factor	Q	Method
7429-90-5	Aluminum	1690	10		EPA 6020A
7440-36-0	Antimony	0.519	10	U	EPA 6020A
7440-38-2	Arsenic	1.66	10		EPA 6020A
7440-39-3	Barium	20.5	10		EPA 6020A
7440-41-7	Beryllium	0.211	10		EPA 6020A
7440-43-9	Cadmium	0.349	10		EPA 6020A
7440-70-2	Calcium	559	10		EPA 6020A
7440-47-3	Chromium	2.83	10		EPA 6020A
7440-50-8	Copper	10.9	10		EPA 6020A
7439-89-6	Iron	30800	10		EPA 6020A
7439-92-1	Lead	26.8	10		EPA 6020A
7439-95-4	Magnesium	82.2	10		EPA 6020A
7439-96-5	Manganese	363	10		EPA 6020A
7439-97-6	Mercury	0.0415	10	U	EPA 6020A
7440-02-0	Nickel	7.86	10		EPA 6020A
7440-09-7	Potassium	51.9	10	U	EPA 6020A
7782-49-2	Selenium	0.519	10	U	EPA 6020A
7440-22-4	Silver	0.104	10	U	EPA 6020A
7440-28-0	Thallium	0.104	10	U	EPA 6020A
7440-62-2	Vanadium	16.3	10		EPA 6020A
7440-66-6	Zinc	71.3	10		EPA 6020A

INORGANIC ANALYSIS DATA SHEET

EPA 6020A

COMP1

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Matrix: Solid
Laboratory ID: A9E0508-05RE1
File ID: 9E21039-044
Sampled: 05/13/19 15:15
Prepared: 05/17/19 12:15
Analyzed: 05/21/19 19:33
Solids: N/A
Preparation: EPA 3051A
Initial/Final: 0.482 g / 50 mL
Batch: 9051011
Sequence: 9E21039
Instrument: ICPMS5

CAS NO.	Analyte	Concentration (mg/kg)	Dilution Factor	Q	Method
7440-23-5	Sodium	95.6	10	J	EPA 6020A

PREPARATION BATCH SUMMARY

EPA 6020A

Laboratory: Apex Laboratories SDG: A9E0508

Client: Hahn and Associates Project: Mult 802 Decommissioning

Batch: 9051011 Batch Matrix: Solid Preparation: EPA 3051A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9051011-BLK1	9E20033-068	05/17/19 12:15	
Blank	9051011-BLK2	9E21039-042	05/17/19 12:15	
LCS	9051011-BS1	9E20033-069	05/17/19 12:15	
LCS	9051011-BS2	9E21039-043	05/17/19 12:15	
COMP1 (Dup)	9051011-DUP1	9E20033-074	05/17/19 12:15	
COMP1 (Dup)	9051011-DUP2	9E21039-045	05/17/19 12:15	
COMP1 (MS)	9051011-MS1	9E20033-075	05/17/19 12:15	
COMP1 (MS)	9051011-MS2	9E21039-048	05/17/19 12:15	
COMP1	A9E0508-05	9E20033-073	05/17/19 12:15	
COMP1	A9E0508-05RE1	9E21039-044	05/17/19 12:15	

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:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	9051011-BLK1	File ID:	9E20033-068
Prepared:	05/17/19 12:15	Preparation:	EPA 3051A	Initial/Final:	0.52 g / 50 mL
Analyzed:	05/20/19 20:55	Instrument:	ICPMS5		
Batch:	9051011	Sequence:	9E20033	Calibration:	UNASSIGNED

CAS NO.	COMPOUND	CONC. (mg/kg)	Q
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
7440-47-3	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
7439-96-5	Manganese	0.481	U
7439-97-6	Mercury	0.0385	U
7440-02-0	Nickel	0.481	U
7782-49-2	Selenium	0.481	U
7440-22-4	Silver	0.0962	U
7440-28-0	Thallium	0.0962	U
7440-62-2	Vanadium	0.481	U
7440-66-6	Zinc	1.92	U

METHOD BLANK DATA SHEET

EPA 6020A

Laboratory:	Apex Laboratories			SDG:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	9051011-BLK2	File ID:	9E21039-042
Prepared:	05/17/19 12:15	Preparation:	EPA 3051A	Initial/Final:	0.52 g / 50 mL
Analyzed:	05/21/19 19:25	Instrument:	ICPMS5		
Batch:	9051011	Sequence:	9E21039	Calibration:	UNASSIGNED

CAS NO.	COMPOUND	CONC. (mg/kg)	Q
7429-90-5	Aluminum	24.0	U
7440-70-2	Calcium	48.1	U
7439-95-4	Magnesium	24.0	U
7440-09-7	Potassium	48.1	U
7440-23-5	Sodium	48.1	U

LCS / LCS DUPLICATE RECOVERY

EPA 6020A

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Solid		
Batch:	9051011	Laboratory ID:	9051011-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.
Antimony	25.0	24.2	97	80 - 120
Arsenic	50.0	50.5	101	80 - 120
Barium	50.0	51.9	104	80 - 120
Beryllium	25.0	23.9	96	80 - 120
Cadmium	50.0	50.2	100	80 - 120
Chromium	50.0	51.7	103	80 - 120
Copper	50.0	50.6	101	80 - 120
Iron	2500	2550	102	80 - 120
Lead	50.0	48.6	97	80 - 120
Manganese	50.0	51.7	103	80 - 120
Mercury	1.00	0.969	97	80 - 120
Nickel	50.0	52.3	105	80 - 120
Selenium	25.0	22.4	90	80 - 120
Silver	25.0	24.8	99	80 - 120
Thallium	25.0	24.6	99	80 - 120
Vanadium	50.0	50.5	101	80 - 120
Zinc	50.0	52.8	106	80 - 120

* = Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

EPA 6020A

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Solid		
Batch:	9051011	Laboratory ID:	9051011-BS2
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	2420	97	80 - 120
Calcium	2500	2550	102	80 - 120
Magnesium	2500	2410	96	80 - 120
Potassium	2500	2600	104	80 - 120
Sodium	2500	2580	103	80 - 120

* = Values outside of QC limits

COMP1

DUPLICATES

EPA 6020A

Laboratory: Apex Laboratories
Client: Hahn and Associates
Matrix: Solid
Batch: 9051011
Preparation: EPA 3051A
Source Sample Name: COMP1

SDG: A9E0508
Project: Mult 802 Decommissioning
Laboratory ID: 9051011-DUP1
Lab Source ID: A9E0508-05
Initial/Final: 0.501 g / 50 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/kg)	C	DUPLICATE CONCENTRATION (mg/kg)	C	RPD %	Q	METHOD
Aluminum	40	1690		1710		0.8		EPA 6020A
Antimony	40	0.173		ND				EPA 6020A
Arsenic	40	1.66		1.33		22		EPA 6020A
Barium	40	20.5		15.6		27		EPA 6020A
Beryllium	40	0.211		0.195		8		EPA 6020A
Cadmium	40	0.349		0.557		46	*	EPA 6020A
Calcium	40	559		509		9		EPA 6020A
Chromium	40	2.83		2.38		18		EPA 6020A
Copper	40	10.9		7.83		33		EPA 6020A
Iron	40	30800		33800		9		EPA 6020A
Lead	40	26.8		22.8		16		EPA 6020A
Magnesium	40	82.2		106		25		EPA 6020A
Manganese	40	363		362		0.3		EPA 6020A
Mercury	40	0.0327		ND				EPA 6020A
Nickel	40	7.86		9.17		15		EPA 6020A
Potassium	40	11.6		ND				EPA 6020A
Selenium	40	0.424		ND				EPA 6020A
Silver	40	0.0232		ND				EPA 6020A
Thallium	40	0.0274		ND				EPA 6020A
Vanadium	40	16.3		11.9		32		EPA 6020A
Zinc	40	71.3		74.0		4		EPA 6020A

* Values outside of QC limits

DUPLICATES

COMP1

EPA 6020A

Laboratory: Apex Laboratories
Client: Hahn and Associates
Matrix: Solid
Batch: 9051011
Preparation: EPA 3051A
Source Sample Name: COMP1

SDG: A9E0508
Project: Mult 802 Decommissioning
Laboratory ID: 9051011-DUP2
Lab Source ID: A9E0508-05RE1
Initial/Final: 0.501 g / 50 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/kg)	C	DUPLICATE CONCENTRATION (mg/kg)	C	RPD %	Q	METHOD
Sodium	40	95.6		95.8		0.3		EPA 6020A

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 6020A

COMP1

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Matrix: Solid
Batch: 9051011
Laboratory ID: 9051011-MS1
Preparation: EPA 3051A
Initial/Final: 0.477 g / 50 mL
Source Sample Name: COMP1

COMPOUND	SPIKE ADDED (mg/kg)	SAMPLE CONCENTRATION (mg/kg)	MS CONCENTRATION (mg/kg)	MS % REC. (*=Out)	QC LIMITS REC.
Aluminum	2620	1690	3640	74 *	75 - 125
Antimony	26.2	ND	23.7	90	75 - 125
Arsenic	52.4	1.66	50.4	93	75 - 125
Barium	52.4	20.5	64.0	83	75 - 125
Beryllium	26.2	0.211	23.4	88	75 - 125
Cadmium	52.4	0.349	50.3	95	75 - 125
Calcium	2620	559	2810	86	75 - 125
Chromium	52.4	2.83	61.6	112	75 - 125
Copper	52.4	10.9	77.0	126 *	75 - 125
Iron	2620	30800	32000	47 *	75 - 125
Lead	52.4	26.8	66.9	77	75 - 125
Magnesium	2620	82.2	2530	93	75 - 125
Manganese	52.4	363	181	-346 *	75 - 125
Mercury	1.05	ND	0.960	92	75 - 125
Nickel	52.4	7.86	76.5	131 *	75 - 125
Potassium	2620	ND	2540	97	75 - 125
Selenium	26.2	ND	21.7	83	75 - 125
Silver	26.2	ND	25.2	96	75 - 125
Thallium	26.2	ND	23.2	89	75 - 125
Vanadium	52.4	16.3	60.5	84	75 - 125
Zinc	52.4	71.3	97.8	51 *	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 6020A

COMP1

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Solid		
Batch:	9051011	Laboratory ID:	9051011-MS2
Preparation:	EPA 3051A	Initial/Final:	0.477 g / 50 mL

Source Sample Name: COMP1

COMPOUND	SPIKE ADDED (mg/kg)	SAMPLE CONCENTRATION (mg/kg)	MS CONCENTRATION (mg/kg)	MS % REC. (*=Out)	QC LIMITS REC.
Sodium	2620	95.6	2620	96	75 - 125

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020A

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E20033	Instrument:	ICPMS5
Matrix:	Solid	Calibration:	UNASSIGNED

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Initial Cal Check	9E20033-ICV1	9E20033-014	05/20/19 16:56
Initial Cal Blank	9E20033-ICB1	9E20033-015	05/20/19 17:00
Instrument RL Check	9E20033-CRL1	9E20033-016	05/20/19 17:04
Instrument RL Check	9E20033-CRL2	9E20033-017	05/20/19 17:09
Instrument RL Check	9E20033-CRL3	9E20033-018	05/20/19 17:13
Calibration Check	9E20033-CCV1	9E20033-032	05/20/19 18:20
Calibration Blank	9E20033-CCB1	9E20033-033	05/20/19 18:24
Calibration Check	9E20033-CCV3	9E20033-045	05/20/19 19:16
Calibration Blank	9E20033-CCB3	9E20033-047	05/20/19 19:26
Calibration Check	9E20033-CCV4	9E20033-058	05/20/19 20:13
Calibration Blank	9E20033-CCB4	9E20033-059	05/20/19 20:17
Blank	9051011-BLK1	9E20033-068	05/20/19 20:55
LCS	9051011-BS1	9E20033-069	05/20/19 20:59
Calibration Check	9E20033-CCV5	9E20033-070	05/20/19 21:04
Calibration Blank	9E20033-CCB5	9E20033-071	05/20/19 21:08
COMP1	A9E0508-05	9E20033-073	05/20/19 21:16
COMP1 (Dup)	9051011-DUP1	9E20033-074	05/20/19 21:21
COMP1 (MS)	9051011-MS1	9E20033-075	05/20/19 21:25
Calibration Check	9E20033-CCV6	9E20033-082	05/20/19 21:54
Calibration Blank	9E20033-CCB6	9E20033-083	05/20/19 21:59
Calibration Check	9E20033-CCV7	9E20033-088	05/20/19 22:20
Calibration Blank	9E20033-CCB7	9E20033-089	05/20/19 22:24
Instrument RL Check	9E20033-CRL4	9E20033-090	05/20/19 22:28
Instrument RL Check	9E20033-CRL5	9E20033-091	05/20/19 22:32
Instrument RL Check	9E20033-CRL6	9E20033-092	05/20/19 22:37
Instrument RL Check	9E20033-CRL7	9E20033-093	05/20/19 22:41

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 6020A

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E21039	Instrument:	ICPMS5
Matrix:	Solid	Calibration:	UNASSIGNED

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Initial Cal Check	9E21039-ICV1	9E21039-016	05/21/19 16:24
Initial Cal Blank	9E21039-ICB1	9E21039-017	05/21/19 16:28
Instrument RL Check	9E21039-CRL1	9E21039-018	05/21/19 16:32
Instrument RL Check	9E21039-CRL2	9E21039-019	05/21/19 16:36
Instrument RL Check	9E21039-CRL3	9E21039-020	05/21/19 16:41
Calibration Check	9E21039-CCV1	9E21039-034	05/21/19 18:04
Calibration Blank	9E21039-CCB1	9E21039-035	05/21/19 18:08
Blank	9051011-BLK2	9E21039-042	05/21/19 19:25
LCS	9051011-BS2	9E21039-043	05/21/19 19:29
COMP1	A9E0508-05RE1	9E21039-044	05/21/19 19:33
COMP1 (Dup)	9051011-DUP2	9E21039-045	05/21/19 19:37
Calibration Check	9E21039-CCV2	9E21039-046	05/21/19 19:42
Calibration Blank	9E21039-CCB2	9E21039-047	05/21/19 19:46
COMP1 (MS)	9051011-MS2	9E21039-048	05/21/19 19:50
Calibration Check	9E21039-CCV3	9E21039-049	05/21/19 20:12
Calibration Blank	9E21039-CCB3	9E21039-050	05/21/19 20:16
Instrument RL Check	9E21039-CRL4	9E21039-051	05/21/19 20:20
Instrument RL Check	9E21039-CRL5	9E21039-052	05/21/19 20:25
Instrument RL Check	9E21039-CRL6	9E21039-053	05/21/19 20:29
Calibration Check	9E21039-CCV5	9E21039-065	05/21/19 21:23
Calibration Blank	9E21039-CCB4	9E21039-066	05/21/19 21:27
Calibration Check	9E21039-CCV6	9E21039-077	05/21/19 22:14
Calibration Blank	9E21039-CCB5	9E21039-078	05/21/19 22:18
Calibration Check	9E21039-CCV7	9E21039-085	05/21/19 22:48
Calibration Blank	9E21039-CCB6	9E21039-086	05/21/19 22:52
Instrument RL Check	9E21039-CRL7	9E21039-087	05/21/19 22:56
Instrument RL Check	9E21039-CRL8	9E21039-088	05/21/19 23:00
Instrument RL Check	9E21039-CRL9	9E21039-089	05/21/19 23:05
Instrument RL Check	9E21039-CRLA	9E21039-090	05/21/19 23:09

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: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Control Limt: +/- 10.00%
Sequence: 9E20033

Lab Sample ID	Analyte	True	Found	%R	Units	Method
9E20033-ICV1	Aluminum	4000	4000	100	ug/L	EPA 6020A
	Antimony	40.0	43.4	108	ug/L	EPA 6020A
	Arsenic	100	97.6	98	ug/L	EPA 6020A
	Barium	100	103	103	ug/L	EPA 6020A
	Beryllium	40.0	39.6	99	ug/L	EPA 6020A
	Cadmium	100	96.7	97	ug/L	EPA 6020A
	Calcium	4000	4150	104	ug/L	EPA 6020A
	Chromium	100	99.8	100	ug/L	EPA 6020A
	Copper	100	100	100	ug/L	EPA 6020A
	Iron	4000	4040	101	ug/L	EPA 6020A
	Lead	100	93.4	93	ug/L	EPA 6020A
	Magnesium	4000	4090	102	ug/L	EPA 6020A
	Manganese	100	97.1	97	ug/L	EPA 6020A
	Mercury	800	780	98	ng/L	EPA 6020A
	Nickel	100	104	104	ug/L	EPA 6020A
	Potassium	4000	4090	102	ug/L	EPA 6020A
	Selenium	40.0	39.3	98	ug/L	EPA 6020A
	Silver	40.0	40.7	102	ug/L	EPA 6020A
	Sodium	4000	4020	101	ug/L	EPA 6020A
	Thallium	40.0	39.7	99	ug/L	EPA 6020A
	Vanadium	100	98.2	98	ug/L	EPA 6020A
	Zinc	100	104	104	ug/L	EPA 6020A
9E20033-CCV1	Aluminum	4000	3960	99	ug/L	EPA 6020A
	Antimony	40.0	43.3	108	ug/L	EPA 6020A
	Arsenic	100	98.7	99	ug/L	EPA 6020A
	Barium	100	102	102	ug/L	EPA 6020A
	Beryllium	40.0	39.8	99	ug/L	EPA 6020A
	Cadmium	100	99.3	99	ug/L	EPA 6020A
	Calcium	4000	4130	103	ug/L	EPA 6020A
	Chromium	100	100	100	ug/L	EPA 6020A
	Copper	100	101	101	ug/L	EPA 6020A
	Iron	4000	4050	101	ug/L	EPA 6020A
	Lead	100	94.2	94	ug/L	EPA 6020A
	Magnesium	4000	4100	102	ug/L	EPA 6020A
	Manganese	100	95.5	96	ug/L	EPA 6020A
	Mercury	800	826	103	ng/L	EPA 6020A
	Nickel	100	104	104	ug/L	EPA 6020A
	Potassium	4000	4050	101	ug/L	EPA 6020A
	Selenium	40.0	39.6	99	ug/L	EPA 6020A
	Silver	40.0	41.1	103	ug/L	EPA 6020A
	Sodium	4000	4100	102	ug/L	EPA 6020A
	Thallium	40.0	40.4	101	ug/L	EPA 6020A
	Vanadium	100	98.0	98	ug/L	EPA 6020A
	Zinc	100	103	103	ug/L	EPA 6020A
9E20033-CCV3	Aluminum	4000	4090	102	ug/L	EPA 6020A
	Antimony	40.0	43.0	107	ug/L	EPA 6020A

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Control Limt: +/- 10.00%
Sequence: 9E20033

Lab Sample ID	Analyte	True	Found	%R	Units	Method
9E20033-CCV3	Arsenic	100	97.5	97	ug/L	EPA 6020A
	Barium	100	104	104	ug/L	EPA 6020A
	Beryllium	40.0	38.4	96	ug/L	EPA 6020A
	Cadmium	100	98.0	98	ug/L	EPA 6020A
	Calcium	4000	4220	105	ug/L	EPA 6020A
	Chromium	100	104	104	ug/L	EPA 6020A
	Copper	100	101	101	ug/L	EPA 6020A
	Iron	4000	4360	109	ug/L	EPA 6020A
	Lead	100	92.5	92	ug/L	EPA 6020A
	Magnesium	4000	4230	106	ug/L	EPA 6020A
	Manganese	100	100	100	ug/L	EPA 6020A
	Mercury	800	794	99	ng/L	EPA 6020A
	Nickel	100	106	106	ug/L	EPA 6020A
	Potassium	4000	4020	101	ug/L	EPA 6020A
	Selenium	40.0	40.8	102	ug/L	EPA 6020A
	Silver	40.0	40.9	102	ug/L	EPA 6020A
	Sodium	4000	4430	111 *	ug/L	EPA 6020A
	Thallium	40.0	39.5	99	ug/L	EPA 6020A
	Vanadium	100	103	103	ug/L	EPA 6020A
	Zinc	100	104	104	ug/L	EPA 6020A
9E20033-CCV4	Aluminum	4000	3920	98	ug/L	EPA 6020A
	Antimony	40.0	41.9	105	ug/L	EPA 6020A
	Arsenic	100	96.4	96	ug/L	EPA 6020A
	Barium	100	101	101	ug/L	EPA 6020A
	Beryllium	40.0	38.8	97	ug/L	EPA 6020A
	Cadmium	100	97.9	98	ug/L	EPA 6020A
	Calcium	4000	4010	100	ug/L	EPA 6020A
	Chromium	100	101	101	ug/L	EPA 6020A
	Copper	100	100	100	ug/L	EPA 6020A
	Iron	4000	4200	105	ug/L	EPA 6020A
	Lead	100	92.8	93	ug/L	EPA 6020A
	Magnesium	4000	4100	102	ug/L	EPA 6020A
	Manganese	100	97.4	97	ug/L	EPA 6020A
	Mercury	800	771	96	ng/L	EPA 6020A
	Nickel	100	104	104	ug/L	EPA 6020A
	Potassium	4000	3910	98	ug/L	EPA 6020A
	Selenium	40.0	40.0	100	ug/L	EPA 6020A
	Silver	40.0	39.7	99	ug/L	EPA 6020A
	Sodium	4000	4220	106	ug/L	EPA 6020A
	Thallium	40.0	38.4	96	ug/L	EPA 6020A
	Vanadium	100	101	101	ug/L	EPA 6020A
	Zinc	100	103	103	ug/L	EPA 6020A
9E20033-CCV5	Aluminum	4000	3960	99	ug/L	EPA 6020A
	Antimony	40.0	44.1	110	ug/L	EPA 6020A
	Arsenic	100	96.2	96	ug/L	EPA 6020A
	Barium	100	102	102	ug/L	EPA 6020A

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Control Limt: +/- 10.00%
Sequence: 9E20033

Lab Sample ID	Analyte	True	Found	%R	Units	Method
9E20033-CCV5	Beryllium	40.0	39.4	99	ug/L	EPA 6020A
	Cadmium	100	98.2	98	ug/L	EPA 6020A
	Calcium	4000	4170	104	ug/L	EPA 6020A
	Chromium	100	99.8	100	ug/L	EPA 6020A
	Copper	100	99.2	99	ug/L	EPA 6020A
	Iron	4000	4090	102	ug/L	EPA 6020A
	Lead	100	93.7	94	ug/L	EPA 6020A
	Magnesium	4000	4110	103	ug/L	EPA 6020A
	Manganese	100	96.7	97	ug/L	EPA 6020A
	Mercury	800	786	98	ng/L	EPA 6020A
	Nickel	100	103	103	ug/L	EPA 6020A
	Potassium	4000	3970	99	ug/L	EPA 6020A
	Selenium	40.0	39.0	98	ug/L	EPA 6020A
	Silver	40.0	40.4	101	ug/L	EPA 6020A
	Sodium	4000	4240	106	ug/L	EPA 6020A
	Thallium	40.0	40.3	101	ug/L	EPA 6020A
	Vanadium	100	98.4	98	ug/L	EPA 6020A
	Zinc	100	103	103	ug/L	EPA 6020A
9E20033-CCV6	Aluminum	4000	3920	98	ug/L	EPA 6020A
	Antimony	40.0	43.5	109	ug/L	EPA 6020A
	Arsenic	100	98.6	99	ug/L	EPA 6020A
	Barium	100	103	103	ug/L	EPA 6020A
	Beryllium	40.0	39.9	100	ug/L	EPA 6020A
	Cadmium	100	98.4	98	ug/L	EPA 6020A
	Calcium	4000	4100	102	ug/L	EPA 6020A
	Chromium	100	99.8	100	ug/L	EPA 6020A
	Copper	100	101	101	ug/L	EPA 6020A
	Iron	4000	3990	100	ug/L	EPA 6020A
	Lead	100	93.6	94	ug/L	EPA 6020A
	Magnesium	4000	4090	102	ug/L	EPA 6020A
	Manganese	100	96.1	96	ug/L	EPA 6020A
	Mercury	800	785	98	ng/L	EPA 6020A
	Nickel	100	104	104	ug/L	EPA 6020A
	Potassium	4000	4040	101	ug/L	EPA 6020A
	Selenium	40.0	38.8	97	ug/L	EPA 6020A
	Silver	40.0	40.9	102	ug/L	EPA 6020A
	Sodium	4000	4040	101	ug/L	EPA 6020A
	Thallium	40.0	40.4	101	ug/L	EPA 6020A
	Vanadium	100	98.6	99	ug/L	EPA 6020A
	Zinc	100	106	106	ug/L	EPA 6020A
9E20033-CCV7	Aluminum	4000	3910	98	ug/L	EPA 6020A
	Antimony	40.0	43.5	109	ug/L	EPA 6020A
	Arsenic	100	100	100	ug/L	EPA 6020A
	Barium	100	102	102	ug/L	EPA 6020A
	Beryllium	40.0	39.5	99	ug/L	EPA 6020A
	Cadmium	100	99.1	99	ug/L	EPA 6020A

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Control Limt: +/- 10.00%
Sequence: 9E20033

Lab Sample ID	Analyte	True	Found	%R	Units	Method
9E20033-CCV7	Calcium	4000	4160	104	ug/L	EPA 6020A
	Chromium	100	100	100	ug/L	EPA 6020A
	Copper	100	101	101	ug/L	EPA 6020A
	Iron	4000	4020	101	ug/L	EPA 6020A
	Lead	100	93.6	94	ug/L	EPA 6020A
	Magnesium	4000	4060	102	ug/L	EPA 6020A
	Manganese	100	97.2	97	ug/L	EPA 6020A
	Mercury	800	796	100	ng/L	EPA 6020A
	Nickel	100	105	105	ug/L	EPA 6020A
	Potassium	4000	4050	101	ug/L	EPA 6020A
	Selenium	40.0	39.8	100	ug/L	EPA 6020A
	Silver	40.0	41.2	103	ug/L	EPA 6020A
	Sodium	4000	4110	103	ug/L	EPA 6020A
	Thallium	40.0	40.5	101	ug/L	EPA 6020A
	Vanadium	100	99.0	99	ug/L	EPA 6020A
	Zinc	100	105	105	ug/L	EPA 6020A

* Values outside of QC limits

INSTRUMENT BLANKS
EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Instrument ID: ICPMS5
Project: Mult 802 Decommissioning
Sequence: 9E20033
Calibration: UNASSIGNED

Lab Sample ID	Analyte	Found	RL	Units	C	Method
9E20033-ICB1	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Iron	ND	25.0 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Antimony	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
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Beryllium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Aluminum	ND	25.0 (Inst)	ug/L		EPA 6020A
	Arsenic	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
	Manganese	ND	0.500 (Inst)	ug/L		EPA 6020A
	Magnesium	ND	25.0 (Inst)	ug/L		EPA 6020A
	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Selenium	ND	0.500 (Inst)	ug/L		EPA 6020A
9E20033-CCB1	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Iron	ND	25.0 (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
	Manganese	ND	0.500 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A

INSTRUMENT BLANKS
EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Instrument ID: ICPMS5
Project: Mult 802 Decommissioning
Sequence: 9E20033
Calibration: UNASSIGNED

Lab Sample ID	Analyte	Found	RL	Units	C	Method
9E20033-CCB1	Aluminum	ND	25.0 (Inst)	ug/L		EPA 6020A
	Magnesium	ND	25.0 (Inst)	ug/L		EPA 6020A
	Selenium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Antimony	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
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Beryllium	ND	0.100 (Inst)	ug/L		EPA 6020A
9E20033-CCB3	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Antimony	ND	0.500 (Inst)	ug/L		EPA 6020A
	Calcium	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
	Selenium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Thallium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Mercury	ND	40.0 (Inst)	ng/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
	Aluminum	ND	25.0 (Inst)	ug/L		EPA 6020A
	Iron	ND	25.0 (Inst)	ug/L		EPA 6020A

INSTRUMENT BLANKS
EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Instrument ID: ICPMS5
Project: Mult 802 Decommissioning
Sequence: 9E20033
Calibration: UNASSIGNED

Lab Sample ID	Analyte	Found	RL	Units	C	Method
9E20033-CCB4	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
	Silver	ND	0.100 (Inst)	ug/L		EPA 6020A
	Thallium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Vanadium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Potassium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (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
	Selenium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
9E20033-CCB5	Silver	ND	0.100 (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
	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Sodium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Potassium	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: A9E0508
Client: Hahn and Associates
Instrument ID: ICPMS5
Project: Mult 802 Decommissioning
Sequence: 9E20033
Calibration: UNASSIGNED

Lab Sample ID	Analyte	Found	RL	Units	C	Method
9E20033-CCB5	Vanadium	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
	Thallium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
9E20033-CCB6	Mercury	ND	40.0 (Inst)	ng/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
	Nickel	ND	0.500 (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
	Manganese	ND	0.500 (Inst)	ug/L		EPA 6020A
	Chromium	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
	Copper	ND	0.500 (Inst)	ug/L		EPA 6020A
9E20033-CCB7	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A

INSTRUMENT BLANKS
EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Instrument ID: ICPMS5
Project: Mult 802 Decommissioning
Sequence: 9E20033
Calibration: UNASSIGNED

Lab Sample ID	Analyte	Found	RL	Units	C	Method
9E20033-CCB7	Manganese	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
	Beryllium	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
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Magnesium	ND	25.0 (Inst)	ug/L		EPA 6020A
	Nickel	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

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

INSTRUMENT BLANKS
EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Instrument ID: ICPMS5
Project: Mult 802 Decommissioning
Sequence: 9E21039
Calibration: UNASSIGNED

Lab Sample ID	Analyte	Found	RL	Units	C	Method
9E21039-ICB1	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Nickel	ND	0.500 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Silver	ND	0.100 (Inst)	ug/L		EPA 6020A
	Sodium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Thallium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Antimony	ND	0.500 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Beryllium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Chromium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Copper	ND	0.500 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Selenium	ND	0.500 (Inst)	ug/L		EPA 6020A
9E21039-CCB1	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Nickel	ND	0.500 (Inst)	ug/L		EPA 6020A
	Silver	ND	0.100 (Inst)	ug/L		EPA 6020A
	Sodium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Antimony	ND	0.500 (Inst)	ug/L		EPA 6020A
	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Beryllium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Chromium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Copper	ND	0.500 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Selenium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Thallium	ND	0.100 (Inst)	ug/L		EPA 6020A
9E21039-CCB2	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Beryllium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A

INSTRUMENT BLANKS
EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Instrument ID: ICPMS5
Project: Mult 802 Decommissioning
Sequence: 9E21039
Calibration: UNASSIGNED

Lab Sample ID	Analyte	Found	RL	Units	C	Method
9E21039-CCB2	Chromium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Copper	ND	0.500 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Selenium	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
	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Nickel	ND	0.500 (Inst)	ug/L		EPA 6020A
	Silver	ND	0.100 (Inst)	ug/L		EPA 6020A
	Sodium	ND	50.0 (Inst)	ug/L		EPA 6020A
9E21039-CCB3	Thallium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Nickel	ND	0.500 (Inst)	ug/L		EPA 6020A
	Sodium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Antimony	ND	0.500 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Beryllium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Chromium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Copper	ND	0.500 (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
	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
9E21039-CCB4	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Nickel	ND	0.500 (Inst)	ug/L		EPA 6020A
	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Thallium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Silver	ND	0.100 (Inst)	ug/L		EPA 6020A
	Antimony	ND	0.500 (Inst)	ug/L		EPA 6020A

INSTRUMENT BLANKS
EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Instrument ID: ICPMS5
Project: Mult 802 Decommissioning
Sequence: 9E21039
Calibration: UNASSIGNED

Lab Sample ID	Analyte	Found	RL	Units	C	Method
9E21039-CCB4	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Beryllium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Chromium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Copper	ND	0.500 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Selenium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Sodium	ND	50.0 (Inst)	ug/L		EPA 6020A
9E21039-CCB5	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Sodium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Silver	ND	0.100 (Inst)	ug/L		EPA 6020A
	Thallium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Antimony	ND	0.500 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Beryllium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Chromium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Copper	ND	0.500 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Selenium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Nickel	ND	0.500 (Inst)	ug/L		EPA 6020A
9E21039-CCB6	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Sodium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Thallium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Antimony	ND	0.500 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Beryllium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Chromium	ND	0.500 (Inst)	ug/L		EPA 6020A

INSTRUMENT BLANKS
EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Instrument ID: ICPMS5
Project: Mult 802 Decommissioning
Sequence: 9E21039
Calibration: UNASSIGNED

Lab Sample ID	Analyte	Found	RL	Units	C	Method
9E21039-CCB6	Copper	ND	0.500 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Selenium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Silver	ND	0.100 (Inst)	ug/L		EPA 6020A
	Nickel	ND	0.500 (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: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Sequence: 9E20033

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9E20033-CRL1	Aluminum	9.00	9.00	100	ug/L	70 - 130
	Antimony	0.180	0.195	108	ug/L	70 - 130
	Arsenic	0.180	0.180	100	ug/L	70 - 130
	Barium	0.180	0.171	95	ug/L	70 - 130
	Beryllium	0.180	0.192	107	ug/L	70 - 130
	Cadmium	0.180	0.212	118	ug/L	70 - 130
	Chromium	0.180	0.176	98	ug/L	70 - 130
	Copper	0.180	0.198	110	ug/L	70 - 130
	Iron	9.00	9.80	109	ug/L	70 - 130
	Lead	0.180	0.188	105	ug/L	70 - 130
	Magnesium	9.00	8.31	92	ug/L	70 - 130
	Manganese	0.180	0.156	87	ug/L	70 - 130
	Mercury	7.20	7.51	104	ng/L	70 - 130
	Nickel	0.180	0.198	110	ug/L	70 - 130
	Potassium	9.00	9.03	100	ug/L	70 - 130
	Selenium	0.180	0.176	98	ug/L	70 - 130
	Silver	0.180	0.196	109	ug/L	70 - 130
	Sodium	9.00	7.81	87	ug/L	70 - 130
	Thallium	0.180	0.193	107	ug/L	70 - 130
	Vanadium	0.180	0.143	79	ug/L	70 - 130
9E20033-CRL2	Aluminum	45.0	44.6	99	ug/L	70 - 130
	Antimony	0.900	0.880	98	ug/L	70 - 130
	Arsenic	0.900	0.884	98	ug/L	70 - 130
	Barium	0.900	0.904	100	ug/L	70 - 130
	Beryllium	0.900	0.846	94	ug/L	70 - 130
	Cadmium	0.900	0.946	105	ug/L	70 - 130
	Calcium	45.0	45.6	101	ug/L	70 - 130
	Chromium	0.900	0.868	96	ug/L	70 - 130

CRDL STANDARD

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Sequence: 9E20033

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9E20033-CRL2	Copper	0.900	0.933	104	ug/L	70 - 130
	Iron	45.0	44.5	99	ug/L	70 - 130
	Lead	0.900	0.894	99	ug/L	70 - 130
	Magnesium	45.0	45.4	101	ug/L	70 - 130
	Manganese	0.900	0.900	100	ug/L	70 - 130
	Mercury	36.0	43.5	121	ng/L	70 - 130
	Nickel	0.900	1.00	111	ug/L	70 - 130
	Potassium	45.0	47.0	104	ug/L	70 - 130
	Selenium	0.900	0.946	105	ug/L	70 - 130
	Silver	0.900	0.939	104	ug/L	70 - 130
	Sodium	45.0	43.4	96	ug/L	70 - 130
	Thallium	0.900	0.927	103	ug/L	70 - 130
	Vanadium	0.900	0.924	103	ug/L	70 - 130
	Zinc	0.900	0.718	80	ug/L	70 - 130
9E20033-CRL3	Aluminum	90.0	91.2	101	ug/L	70 - 130
	Antimony	1.80	1.72	96	ug/L	70 - 130
	Arsenic	1.80	1.72	95	ug/L	70 - 130
	Barium	1.80	1.82	101	ug/L	70 - 130
	Beryllium	1.80	1.83	101	ug/L	70 - 130
	Cadmium	1.80	1.83	102	ug/L	70 - 130
	Calcium	90.0	87.5	97	ug/L	70 - 130
	Chromium	1.80	1.74	97	ug/L	70 - 130
	Copper	1.80	1.86	104	ug/L	70 - 130
	Iron	90.0	88.6	98	ug/L	70 - 130
	Lead	1.80	1.78	99	ug/L	70 - 130
	Magnesium	90.0	88.5	98	ug/L	70 - 130
	Manganese	1.80	1.66	92	ug/L	70 - 130
	Mercury	72.0	89.1	124	ng/L	70 - 130

CRDL STANDARD

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Sequence: 9E20033

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9E20033-CRL3	Nickel	1.80	1.82	101	ug/L	70 - 130
	Potassium	90.0	89.2	99	ug/L	70 - 130
	Selenium	1.80	1.82	101	ug/L	70 - 130
	Silver	1.80	1.81	100	ug/L	70 - 130
	Sodium	90.0	87.6	97	ug/L	70 - 130
	Thallium	1.80	1.86	103	ug/L	70 - 130
	Vanadium	1.80	1.84	102	ug/L	70 - 130
	Zinc	1.80	1.83	102	ug/L	70 - 130
9E20033-CRL4	Aluminum	9.00	8.59	95	ug/L	70 - 130
	Antimony	0.180	0.213	118	ug/L	70 - 130
	Arsenic	0.180	0.172	96	ug/L	70 - 130
	Barium	0.180	0.178	99	ug/L	70 - 130
	Beryllium	0.180	0.176	98	ug/L	70 - 130
	Cadmium	0.180	0.187	104	ug/L	70 - 130
	Calcium	9.00	6.40	71	ug/L	70 - 130
	Chromium	0.180	0.154	85	ug/L	70 - 130
	Copper	0.180	0.211	117	ug/L	70 - 130
	Iron	9.00	8.78	98	ug/L	70 - 130
	Lead	0.180	0.191	106	ug/L	70 - 130
	Magnesium	9.00	8.50	94	ug/L	70 - 130
	Manganese	0.180	0.196	109	ug/L	70 - 130
	Nickel	0.180	0.151	84	ug/L	70 - 130
	Potassium	9.00	9.93	110	ug/L	70 - 130
	Selenium	0.180	0.203	113	ug/L	70 - 130
	Silver	0.180	0.192	107	ug/L	70 - 130
	Thallium	0.180	0.181	101	ug/L	70 - 130
	Vanadium	0.180	0.151	84	ug/L	70 - 130
9E20033-CRL5	Aluminum	45.0	44.6	99	ug/L	70 - 130

CRDL STANDARD

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Sequence: 9E20033

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9E20033-CRL5	Antimony	0.900	0.921	102	ug/L	70 - 130
	Arsenic	0.900	0.861	96	ug/L	70 - 130
	Barium	0.900	0.957	106	ug/L	70 - 130
	Beryllium	0.900	0.840	93	ug/L	70 - 130
	Cadmium	0.900	0.873	97	ug/L	70 - 130
	Calcium	45.0	46.1	102	ug/L	70 - 130
	Chromium	0.900	0.907	101	ug/L	70 - 130
	Copper	0.900	0.890	99	ug/L	70 - 130
	Iron	45.0	44.5	99	ug/L	70 - 130
	Lead	0.900	0.884	98	ug/L	70 - 130
	Magnesium	45.0	46.5	103	ug/L	70 - 130
	Manganese	0.900	0.820	91	ug/L	70 - 130
	Mercury	36.0	37.8	105	ng/L	70 - 130
	Nickel	0.900	0.929	103	ug/L	70 - 130
	Potassium	45.0	47.2	105	ug/L	70 - 130
	Selenium	0.900	1.02	113	ug/L	70 - 130
	Silver	0.900	0.922	102	ug/L	70 - 130
	Sodium	45.0	49.4	110	ug/L	70 - 130
	Thallium	0.900	0.916	102	ug/L	70 - 130
	Vanadium	0.900	0.887	99	ug/L	70 - 130
	Zinc	0.900	0.681	76	ug/L	70 - 130
9E20033-CRL6	Aluminum	90.0	88.3	98	ug/L	70 - 130
	Antimony	1.80	1.96	109	ug/L	70 - 130
	Arsenic	1.80	1.80	100	ug/L	70 - 130
	Barium	1.80	1.83	101	ug/L	70 - 130
	Beryllium	1.80	1.78	99	ug/L	70 - 130
	Cadmium	1.80	1.81	100	ug/L	70 - 130
	Calcium	90.0	91.9	102	ug/L	70 - 130

CRDL STANDARD

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Sequence: 9E20033

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9E20033-CRL6	Chromium	1.80	1.79	100	ug/L	70 - 130
	Copper	1.80	1.87	104	ug/L	70 - 130
	Iron	90.0	93.4	104	ug/L	70 - 130
	Lead	1.80	1.81	100	ug/L	70 - 130
	Magnesium	90.0	90.7	101	ug/L	70 - 130
	Manganese	1.80	1.82	101	ug/L	70 - 130
	Mercury	72.0	75.0	104	ng/L	70 - 130
	Nickel	1.80	1.82	101	ug/L	70 - 130
	Potassium	90.0	96.7	107	ug/L	70 - 130
	Selenium	1.80	1.74	97	ug/L	70 - 130
	Silver	1.80	1.91	106	ug/L	70 - 130
	Sodium	90.0	97.2	108	ug/L	70 - 130
	Thallium	1.80	1.90	105	ug/L	70 - 130
	Vanadium	1.80	1.79	100	ug/L	70 - 130
	Zinc	1.80	1.60	89	ug/L	70 - 130
9E20033-CRL7	Aluminum	180	174	97	ug/L	70 - 130
	Antimony	3.60	3.69	103	ug/L	70 - 130
	Arsenic	3.60	3.60	100	ug/L	70 - 130
	Barium	3.60	3.73	104	ug/L	70 - 130
	Beryllium	3.60	3.70	103	ug/L	70 - 130
	Cadmium	3.60	3.69	102	ug/L	70 - 130
	Calcium	180	189	105	ug/L	70 - 130
	Chromium	3.60	3.54	98	ug/L	70 - 130
	Copper	3.60	3.79	105	ug/L	70 - 130
	Iron	180	182	101	ug/L	70 - 130
	Lead	3.60	3.64	101	ug/L	70 - 130
	Magnesium	180	174	97	ug/L	70 - 130
	Manganese	3.60	3.64	101	ug/L	70 - 130

CRDL STANDARD

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Sequence: 9E20033

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9E20033-CRL7	Mercury	144	159	110	ng/L	70 - 130
	Nickel	3.60	3.70	103	ug/L	70 - 130
	Potassium	180	181	101	ug/L	70 - 130
	Selenium	3.60	3.57	99	ug/L	70 - 130
	Silver	3.60	3.75	104	ug/L	70 - 130
	Sodium	180	186	104	ug/L	70 - 130
	Thallium	3.60	3.80	106	ug/L	70 - 130
	Vanadium	3.60	3.37	94	ug/L	70 - 130
	Zinc	3.60	3.47	97	ug/L	70 - 130

* Values outside of QC limits

CRDL STANDARD

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Sequence: 9E21039

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9E21039-CRL1	Antimony	0.180	0.156	87	ug/L	70 - 130
	Arsenic	0.180	0.209	116	ug/L	70 - 130
	Barium	0.180	0.189	105	ug/L	70 - 130
	Beryllium	0.180	0.201	111	ug/L	70 - 130
	Cadmium	0.180	0.177	98	ug/L	70 - 130
	Chromium	0.180	0.200	111	ug/L	70 - 130
	Copper	0.180	0.234	130	ug/L	70 - 130
	Lead	0.180	0.188	104	ug/L	70 - 130
	Mercury	7.20	5.84	81	ng/L	70 - 130
	Selenium	0.180	0.231	129	ug/L	70 - 130
	Silver	0.180	0.180	100	ug/L	70 - 130
	Sodium	9.00	7.03	78	ug/L	70 - 130
	Thallium	0.180	0.184	102	ug/L	70 - 130
9E21039-CRL2	Antimony	0.900	0.838	93	ug/L	70 - 130
	Arsenic	0.900	0.981	109	ug/L	70 - 130
	Barium	0.900	1.01	112	ug/L	70 - 130
	Beryllium	0.900	0.892	99	ug/L	70 - 130
	Cadmium	0.900	0.897	100	ug/L	70 - 130
	Chromium	0.900	0.965	107	ug/L	70 - 130
	Copper	0.900	1.07	119	ug/L	70 - 130
	Lead	0.900	0.958	106	ug/L	70 - 130
	Mercury	36.0	37.5	104	ng/L	70 - 130
	Nickel	0.900	0.811	90	ug/L	70 - 130
	Selenium	0.900	0.942	105	ug/L	70 - 130
	Silver	0.900	0.890	99	ug/L	70 - 130
	Sodium	45.0	43.1	96	ug/L	70 - 130
	Thallium	0.900	0.888	99	ug/L	70 - 130
	Zinc	0.900	0.768	85	ug/L	70 - 130

CRDL STANDARD

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Sequence: 9E21039

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9E21039-CRL3	Antimony	1.80	1.78	99	ug/L	70 - 130
	Arsenic	1.80	1.76	98	ug/L	70 - 130
	Barium	1.80	1.90	106	ug/L	70 - 130
	Beryllium	1.80	1.81	100	ug/L	70 - 130
	Cadmium	1.80	1.75	97	ug/L	70 - 130
	Chromium	1.80	1.82	101	ug/L	70 - 130
	Copper	1.80	1.91	106	ug/L	70 - 130
	Lead	1.80	1.87	104	ug/L	70 - 130
	Mercury	72.0	70.3	98	ng/L	70 - 130
	Nickel	1.80	1.76	98	ug/L	70 - 130
	Selenium	1.80	1.75	97	ug/L	70 - 130
	Silver	1.80	1.86	103	ug/L	70 - 130
	Sodium	90.0	87.1	97	ug/L	70 - 130
	Thallium	1.80	1.82	101	ug/L	70 - 130
	Zinc	1.80	2.01	112	ug/L	70 - 130
9E21039-CRL4	Antimony	0.180	0.169	94	ug/L	70 - 130
	Arsenic	0.180	0.200	111	ug/L	70 - 130
	Barium	0.180	0.220	122	ug/L	70 - 130
	Beryllium	0.180	0.193	107	ug/L	70 - 130
	Cadmium	0.180	0.202	112	ug/L	70 - 130
	Chromium	0.180	0.179	100	ug/L	70 - 130
	Copper	0.180	0.165	91	ug/L	70 - 130
	Lead	0.180	0.181	101	ug/L	70 - 130
	Selenium	0.180	0.204	113	ug/L	70 - 130
	Silver	0.180	0.175	97	ug/L	70 - 130
	Thallium	0.180	0.167	93	ug/L	70 - 130
	Zinc	0.180	0.193	107	ug/L	70 - 130
9E21039-CRL5	Antimony	0.900	0.824	92	ug/L	70 - 130

CRDL STANDARD

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Sequence: 9E21039

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9E21039-CRL5	Arsenic	0.900	0.803	89	ug/L	70 - 130
	Barium	0.900	1.01	112	ug/L	70 - 130
	Beryllium	0.900	0.947	105	ug/L	70 - 130
	Cadmium	0.900	0.915	102	ug/L	70 - 130
	Chromium	0.900	0.890	99	ug/L	70 - 130
	Copper	0.900	0.921	102	ug/L	70 - 130
	Lead	0.900	0.919	102	ug/L	70 - 130
	Mercury	36.0	40.0	111	ng/L	70 - 130
	Nickel	0.900	0.676	75	ug/L	70 - 130
	Selenium	0.900	0.881	98	ug/L	70 - 130
	Silver	0.900	0.876	97	ug/L	70 - 130
	Sodium	45.0	45.6	101	ug/L	70 - 130
	Thallium	0.900	0.893	99	ug/L	70 - 130
	Zinc	0.900	0.699	78	ug/L	70 - 130
9E21039-CRL6	Antimony	1.80	1.78	99	ug/L	70 - 130
	Arsenic	1.80	1.78	99	ug/L	70 - 130
	Barium	1.80	1.92	107	ug/L	70 - 130
	Beryllium	1.80	1.71	95	ug/L	70 - 130
	Cadmium	1.80	1.85	103	ug/L	70 - 130
	Chromium	1.80	1.79	99	ug/L	70 - 130
	Copper	1.80	1.96	109	ug/L	70 - 130
	Lead	1.80	1.85	103	ug/L	70 - 130
	Mercury	72.0	68.1	95	ng/L	70 - 130
	Nickel	1.80	1.57	87	ug/L	70 - 130
	Selenium	1.80	1.83	102	ug/L	70 - 130
	Silver	1.80	1.78	99	ug/L	70 - 130
	Sodium	90.0	89.4	99	ug/L	70 - 130
	Thallium	1.80	1.82	101	ug/L	70 - 130

CRDL STANDARD

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Sequence: 9E21039

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9E21039-CRL6	Zinc	1.80	1.80	100	ug/L	70 - 130
9E21039-CRL7	Antimony	0.180	0.214	119	ug/L	70 - 130
	Arsenic	0.180	0.157	87	ug/L	70 - 130
	Barium	0.180	0.191	106	ug/L	70 - 130
	Beryllium	0.180	0.188	104	ug/L	70 - 130
	Cadmium	0.180	0.205	114	ug/L	70 - 130
	Chromium	0.180	0.170	94	ug/L	70 - 130
	Copper	0.180	0.182	101	ug/L	70 - 130
	Lead	0.180	0.175	97	ug/L	70 - 130
	Silver	0.180	0.180	100	ug/L	70 - 130
	Thallium	0.180	0.183	102	ug/L	70 - 130
9E21039-CRL8	Antimony	0.900	0.891	99	ug/L	70 - 130
	Arsenic	0.900	0.914	102	ug/L	70 - 130
	Barium	0.900	0.939	104	ug/L	70 - 130
	Beryllium	0.900	0.992	110	ug/L	70 - 130
	Cadmium	0.900	0.920	102	ug/L	70 - 130
	Chromium	0.900	0.871	97	ug/L	70 - 130
	Copper	0.900	0.853	95	ug/L	70 - 130
	Lead	0.900	0.964	107	ug/L	70 - 130
	Mercury	36.0	35.3	98	ng/L	70 - 130
	Nickel	0.900	0.645	72	ug/L	70 - 130
	Selenium	0.900	0.882	98	ug/L	70 - 130
	Silver	0.900	0.899	100	ug/L	70 - 130
	Sodium	45.0	41.1	91	ug/L	70 - 130
	Thallium	0.900	0.910	101	ug/L	70 - 130
	Zinc	0.900	0.830	92	ug/L	70 - 130
9E21039-CRL9	Antimony	1.80	1.79	99	ug/L	70 - 130
	Arsenic	1.80	1.94	108	ug/L	70 - 130

CRDL STANDARD

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Sequence: 9E21039

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9E21039-CRL9	Barium	1.80	1.99	111	ug/L	70 - 130
	Beryllium	1.80	1.81	100	ug/L	70 - 130
	Cadmium	1.80	1.85	103	ug/L	70 - 130
	Chromium	1.80	1.81	101	ug/L	70 - 130
	Copper	1.80	1.97	109	ug/L	70 - 130
	Lead	1.80	1.84	102	ug/L	70 - 130
	Mercury	72.0	78.0	108	ng/L	70 - 130
	Nickel	1.80	1.61	89	ug/L	70 - 130
	Selenium	1.80	1.87	104	ug/L	70 - 130
	Silver	1.80	1.82	101	ug/L	70 - 130
	Sodium	90.0	85.3	95	ug/L	70 - 130
	Thallium	1.80	1.82	101	ug/L	70 - 130
	Zinc	1.80	2.05	114	ug/L	70 - 130
9E21039-CRLA	Antimony	3.60	3.56	99	ug/L	70 - 130
	Arsenic	3.60	3.65	101	ug/L	70 - 130
	Barium	3.60	3.82	106	ug/L	70 - 130
	Beryllium	3.60	3.56	99	ug/L	70 - 130
	Cadmium	3.60	3.51	98	ug/L	70 - 130
	Chromium	3.60	3.65	101	ug/L	70 - 130
	Copper	3.60	3.97	110	ug/L	70 - 130
	Lead	3.60	3.60	100	ug/L	70 - 130
	Mercury	144	151	105	ng/L	70 - 130
	Nickel	3.60	3.46	96	ug/L	70 - 130
	Selenium	3.60	3.54	98	ug/L	70 - 130
	Silver	3.60	3.62	100	ug/L	70 - 130
	Sodium	180	175	97	ug/L	70 - 130
	Thallium	3.60	3.64	101	ug/L	70 - 130
	Zinc	3.60	3.43	95	ug/L	70 - 130

* Values outside of QC limits

HOLDING TIME SUMMARY

EPA 6020A

Laboratory: Apex Laboratories SDG: A9E0508

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
COMP1	05/13/19 15:15	05/15/19 12:35	05/17/19 12:15	3.88	28.00	05/20/19 21:16	7.25	28.00	
COMP1	05/13/19 15:15	05/15/19 12:35	05/17/19 12:15	3.88	180.00	05/20/19 21:16	7.25	180.00	
COMP1	05/13/19 15:15	05/15/19 12:35	05/17/19 12:15	3.88	180.00	05/21/19 19:33	8.18	180.00	

Apex Laboratories

SDG: A9E0508

CLASS: WET

METHOD: D7511-12

ANALYSES DATA PACKAGE COVER PAGE

D7511-12

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning

Client Sample Id:	Lab Sample Id:	Matrix
COMP1	A9E0508-05	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: 9/30/2019 12:03PM
Title: Technical Manager

METHOD DETECTION AND REPORTING LIMITS

D7511-12

Laboratory: Apex Laboratories **SDG:** A9E0508

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

COMP1

Laboratory: Apex Laboratories | SDG: A9E0508

Client: Hahn and Associates | Project: Mult 802 Decommissioning

Matrix: Solid | Laboratory ID: A9E0508-05 | File ID: 9E20027-023

Sampled: 05/13/19 15:15 | Prepared: 05/20/19 07:51 | Analyzed: 05/20/19 13:56

Solids: N/A | Preparation: ASTM D7511-12mod (S) | Initial/Final: 2.5342 g / 50 mL

Batch: 9051027 | Sequence: 9E20027 | Calibration: A9E2001 | Instrument: OIA FS3000-2

CAS NO.	Analyte	Concentration (mg/kg)	Dilution Factor	Q	Method
57-12-5	Cyanide, Total	14.5	20	D	D7511-12

PREPARATION BATCH SUMMARY

D7511-12

Laboratory: Apex Laboratories | SDG: A9E0508

Client: Hahn and Associates | Project: Mult 802 Decommissioning

Batch: 9051027 | Batch Matrix: Solid | Preparation: ASTM D7511-12mod (S)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9051027-BLK1	9E20027-020	05/20/19 07:51	
LCS	9051027-BS1	9E20027-021	05/20/19 07:51	
LCS	9051027-BS2	9E20027-019	05/20/19 07:51	
COMP1 (MS)	9051027-MS1	9E20027-025	05/20/19 07:51	
COMP1 (MSD)	9051027-MSD1	9E20027-027	05/20/19 07:51	
COMP1	A9E0508-05	9E20027-023	05/20/19 07:51	

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:	A9E0508	
Client:	Hahn and Associates		Project:	Mult 802 Decommissioning	
Matrix:	Solid	Laboratory ID:	9051027-BLK1	File ID:	9E20027-020
Prepared:	05/20/19 07:51	Preparation:	ASTM D7511-12mod (S)	Initial/Final:	2.5 g / 50 mL
Analyzed:	05/20/19 13:50	Instrument:	OIA FS3000-2		
Batch:	9051027	Sequence:	9E20027	Calibration:	A9E2001

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:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Solid		
Batch:	9051027	Laboratory ID:	9051027-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	0.422	105	84 - 116

* = Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

D7511-12

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Solid		
Batch:	9051027	Laboratory ID:	9051027-BS2
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	0.200	0.108	54 *	84 - 116

* = Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

D7511-12

COMP1

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Solid		
Batch:	9051027	Laboratory ID:	9051027-MS1
Preparation:	ASTM D7511-12mod (S)	Initial/Final:	2.504 g / 50 mL

Source Sample Name: COMP1

COMPOUND	SPIKE ADDED (mg/kg)	SAMPLE CONCENTRATION (mg/kg)	MS CONCENTRATION (mg/kg)	MS % REC. (*=Out)	QC LIMITS REC.
Cyanide, Total	0.399	14.5	14.1	-95 *	64 - 136

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

D7511-12

COMP1

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Solid		
Batch:	9051027	Laboratory ID:	9051027-MSD1
Preparation:	ASTM D7511-12mod (S)	Initial/Final:	2.5327 g / 50 mL

Source Sample Name: COMP1

COMPOUND	SPIKE ADDED (mg/kg)	MSD CONCENTRATION (mg/kg)	MSD % RECOVERY	% RPD	QC LIMITS RPD	QC LIMITS REC.
Cyanide, Total	0.395	13.5	-266 *	5	47	64 - 136

ANALYSIS BATCH (SEQUENCE) SUMMARY

D7511-12

Laboratory:	Apex Laboratories	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E20027	Instrument:	OIA FS3000-2
Matrix:	Solid	Calibration:	A9E2001

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9E20027-CAL2	9E20027-008	05/20/19 13:26
Cal Standard	9E20027-CAL3	9E20027-009	05/20/19 13:28
Cal Standard	9E20027-CAL4	9E20027-010	05/20/19 13:30
Cal Standard	9E20027-CAL5	9E20027-011	05/20/19 13:32
Cal Standard	9E20027-CAL6	9E20027-012	05/20/19 13:34
Cal Standard	9E20027-CAL7	9E20027-013	05/20/19 13:36
Initial Cal Check	9E20027-ICV1	9E20027-016	05/20/19 13:42
Initial Cal Blank	9E20027-ICB1	9E20027-017	05/20/19 13:44
LCS	9051027-BS2	9E20027-019	05/20/19 13:48
Blank	9051027-BLK1	9E20027-020	05/20/19 13:50
LCS	9051027-BS1	9E20027-021	05/20/19 13:52
COMP1	A9E0508-05	9E20027-023	05/20/19 13:56
COMP1 (MS)	9051027-MS1	9E20027-025	05/20/19 14:00
COMP1 (MSD)	9051027-MSD1	9E20027-027	05/20/19 14:04
Calibration Check	9E20027-CCV1	9E20027-033	05/20/19 14:16
Calibration Blank	9E20027-CCB1	9E20027-034	05/20/19 14:18
Calibration Check	9E20027-CCV2	9E20027B-009	05/20/19 15:45
Calibration Blank	9E20027-CCB2	9E20027B-010	05/20/19 15:47
Calibration Check	9E20027-CCV3	9E20027B-016	05/20/19 15:59
Calibration Blank	9E20027-CCB3	9E20027B-017	05/20/19 16:01

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.

INITIAL CALIBRATION DATA (Summary)

D7511-12

Laboratory: Apex Laboratories SDG: A9E0508

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9E2001 Date: 05/20/19 08:53 Instrument: OIA FS3000-2

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Cyanide, Total	25876.52	Q **	59.13829				0.9994014		

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	SDG:	A9E0508
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Calibration:	A9E2001	Instrument:	OIA FS3000-2
		Calibration Date:	05/20/19 08:53

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	1241	2	13321.5	5	31951.4	10	30737.4	25	38238.4	50	39769.42

INITIAL AND CONTINUING CALIBRATION CHECK

D7511-12

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: OIA FS3000-2
Calibration: A9E2001
Control Limt: +/- 10.00%
Sequence: 9E20027

Lab Sample ID	Analyte	True	Found	%R	Units	Method
9E20027-ICV1	Cyanide, Total	25.0	25.7	103	ug/L	D7511-12
9E20027-CCV1	Cyanide, Total	25.0	24.9	99	ug/L	D7511-12
9E20027-CCV2	Cyanide, Total	25.0	24.2	97	ug/L	D7511-12
9E20027-CCV3	Cyanide, Total	25.0	23.3	93	ug/L	D7511-12

* Values outside of QC limits

INSTRUMENT BLANKS
D7511-12

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Instrument ID: OIA FS3000-2
Project: Mult 802 Decommissioning
Sequence: 9E20027
Calibration: A9E2001

Lab Sample ID	Analyte	Found	RL	Units	C	Method
9E20027-ICB1	Cyanide, Total	ND	2.50 (Inst)	ug/L		D7511-12
9E20027-CCB1	Cyanide, Total	ND	2.50 (Inst)	ug/L		D7511-12
9E20027-CCB2	Cyanide, Total	ND	2.50 (Inst)	ug/L		D7511-12
9E20027-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: A9E0508

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
COMP1	05/13/19 15:15	05/15/19 12:35	05/20/19 07:51	6.69	14.00	05/20/19 13:56	6.95	14.00	

Apex Laboratories

SDG: A9E0508

CLASS: GCMS

METHOD: EPA 1311 ZHE

ANALYSES DATA PACKAGE COVER PAGE

EPA 1311 ZHE

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning

Client Sample Id:	Lab Sample Id:	Matrix
COMP1	A9E0508-05	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: 9/30/2019 12:03PM
Title: Technical Manager

METHOD DETECTION AND REPORTING LIMITS

EPA 1311 ZHE

Laboratory: Apex Laboratories **SDG:** A9E0508

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

Batch Matrix: Solid

Analyte	MDL	MRL	Units

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

ORGANIC ANALYSIS DATA SHEET

EPA 1311 ZHE

COMP1

Laboratory:	Apex Laboratories			SDG:	A9E0508
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	A9E0508-05	File ID:	
Sampled:	05/13/19 15:15	Prepared:	05/23/19 15:35	Analyzed:	05/23/19 15:35
		Preparation:	EPA 1311 TCLP/ZHE	Initial/Final:	25.06 g / 500 mL

Batch: 9051218 Sequence: Calibration: Instrument: Inst

CAS NO.	COMPOUND	DILUTION	CONC. (N/A)	Q
NA	TCLP ZHE Extraction	1	PREP	

* Values outside of QC limits

PREPARATION BATCH SUMMARY

EPA 1311 ZHE

Laboratory: Apex Laboratories
SDG: A9E0508
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Batch: 9051218 Batch Matrix: Solid Preparation: EPA 1311 TCLP/ZHE

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
COMP1	A9E0508-05		05/23/19 15:35	

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.

HOLDING TIME SUMMARY

EPA 1311 ZHE

Laboratory: Apex Laboratories

SDG: A9E0508

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
COMP1	05/13/19 15:15	05/15/19 12:35	05/23/19 15:35	10.01	14.00	05/23/19 15:35	0.00		

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

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 9051067

Sequence 9E20037 (A9E0508-05)

Apex Laboratories

PREPARATION BENCH SHEET

BATCH #: 9051067 (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
	9051067-BLK1		QC	05/20/19 16:21	10	5				100					
	9051067-BS1		QC	05/20/19 16:21	10	5	A19E090		100	100					
	A9E0508-05	A	NWTPH-Dx (Diesel/Oil)	05/20/19 16:21	1.18	5				100	COMP1	expedited on 5/17 AM			
	9051067-DUP1		QC	05/20/19 16:21	1.14	5		A9E0508-05		100					
	A9E0582-01	A	NWTPH-Dx (Diesel/Oil)	05/20/19 16:21	0.49	5				100	2708-190515-005	expedited 5/20			

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
A19E090	11/04/19	NWTPH-DX Spike in Methanol

Surrogate(s)

Std ID	Exp. Date	Description
A19E078	08/31/19	NWTPH-DX Soil Surrogate in DCM

Method 3546 digestion time and temperature achieved.
Initial:

Witness: _____

Prepared By: _____ Date _____

Reviewed By: Keff 5/21/19 Date

Apex Laboratories

PREPARATION BENCH SHEET

BATCH #: 9051067 (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
12	9051067-BLK1		QC	05/20/19 16:21	~~10~~ 10	5 ✓				100					
13	9051067-BS1		QC	05/20/19 16:21	10	5 ✓	A19E090		100	100					
14	A9E0508-05	A	NWTPH-Dx (Diesel/Oil)	05/20/19 16:21	~~10~~ 1.18	5 ✓				100	COMP1	expedited on 5/17 AM Black bits, strong odor			
15	9051067-DUP1		QC	05/20/19 16:21	~~10~~ 1.14	5 ✓		A9E0508-05		100					
16	A9E0582-01	A	NWTPH-Dx (Diesel/Oil)	05/20/19 16:21	~~10~~ 0.49	5 ✓				100	2708-190515-005	expedited 5/20 TAR			

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
A19E090	11/04/19	NWTPH-DX Spike in Methanol

JC

Surrogate(s)

Std ID	Exp. Date	Description
A19E078	08/31/19	NWTPH-DX Soil Surrogate in DCM

JC

Method 3546 digestion time and temperature achieved.

Initial: ~~JC~~

Witness: Cuth 5/20/19

CAS 5/20/19
Prepared By: Date

JC 5-20-19
JRA 05/20/19

am 5-20-19
Reviewed By: Date

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence:	**9E20037**	Instrument:	**DUALFID4R**
Date:	**05/20/19 13:21**	Calibration:	**A9D1904**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E20037-RES1	Soil	QC	QC				A19D354
2	9E20037-CCV1	Soil	QC	QC				A19E193
3	9E20037-CCV2	Soil	QC	QC				A19E192
4	9E20037-CCB1	Soil	QC	QC				
5	A9E0623-01	Soil	NWTPH-Dx (Diesel/Oil)		05/21/19	9051053		
6	A9E0623-02	Soil	NWTPH-Dx (Diesel/Oil)		05/21/19	9051053		
7	A9E0624-01	Soil	NWTPH-Dx (Diesel/Oil)		05/21/19	9051053		
8	A9E0624-02	Soil	NWTPH-Dx (Diesel/Oil)		05/21/19	9051053		
9	A9E0627-02	Soil	NWTPH-Dx (Diesel/Oil)		05/21/19	9051053		
10	9E20037-IBL1	Soil	QC	QC				
11	A9E0629-01	Soil	NWTPH-Dx (Diesel/Oil)		05/21/19	9051053		
12	9051053-DUP2	Soil	QC	QC		9051053		
13	A9E0627-03	Soil	NWTPH-Dx (Diesel/Oil)		05/21/19	9051053		
14	A9E0627-04	Soil	NWTPH-Dx (Diesel/Oil)		05/21/19	9051053		
15	9E20037-IBL2	Soil	QC	QC				
16	9051067-BLK1	Solid	QC	QC		9051067		
17	9051067-BS1	Solid	QC	QC		9051067		
18	A9E0508-05	Solid	NWTPH-Dx (Diesel/Oil)	Hahn and Associates	05/21/19	9051067		
19	9051067-DUP1	Solid	QC	QC		9051067		
20	9E20037-IBL3	Soil	QC	QC				
21	A9E0582-01	Solid	NWTPH-Dx (Diesel/Oil)	Hahn and Associates	05/23/19	9051067		
22	9E20037-IBL4	Soil	QC	QC				
23	9E20037-CCV3	Soil	QC	QC				A19E192
24	9E20037-CCV4	Soil	QC	QC				A19E193

Data Entered By: KEH 5/21/19

Data Reviewed By: [signature] 5/21/19

Comments:

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052002.D Vial: 95
Acq On : 20 May 2019 17:55 Operator: KEH
Sample : 9E20037-RES1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:04 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	493797616	432.959	ug/ml
2)	H	Diesel	6.00	493797616	432.959	ug/ml
3)	H	DRO(C12-C24)	6.00	417831563	366.353	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	341867522	399.374	ug/ml
5)	H	TPHd (C10-C25)	6.00	435953016	413.241	ug/ml
7)	H	Oil	9.00	298944802	284.901	ug/ml
8)	H	RRO (C24-C40)	9.00	77851849	74.195	ug/ml
9)	H	TPHmo (C25-C36)	8.00	70506783	111.157	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	132117513	198.329	ug/ml

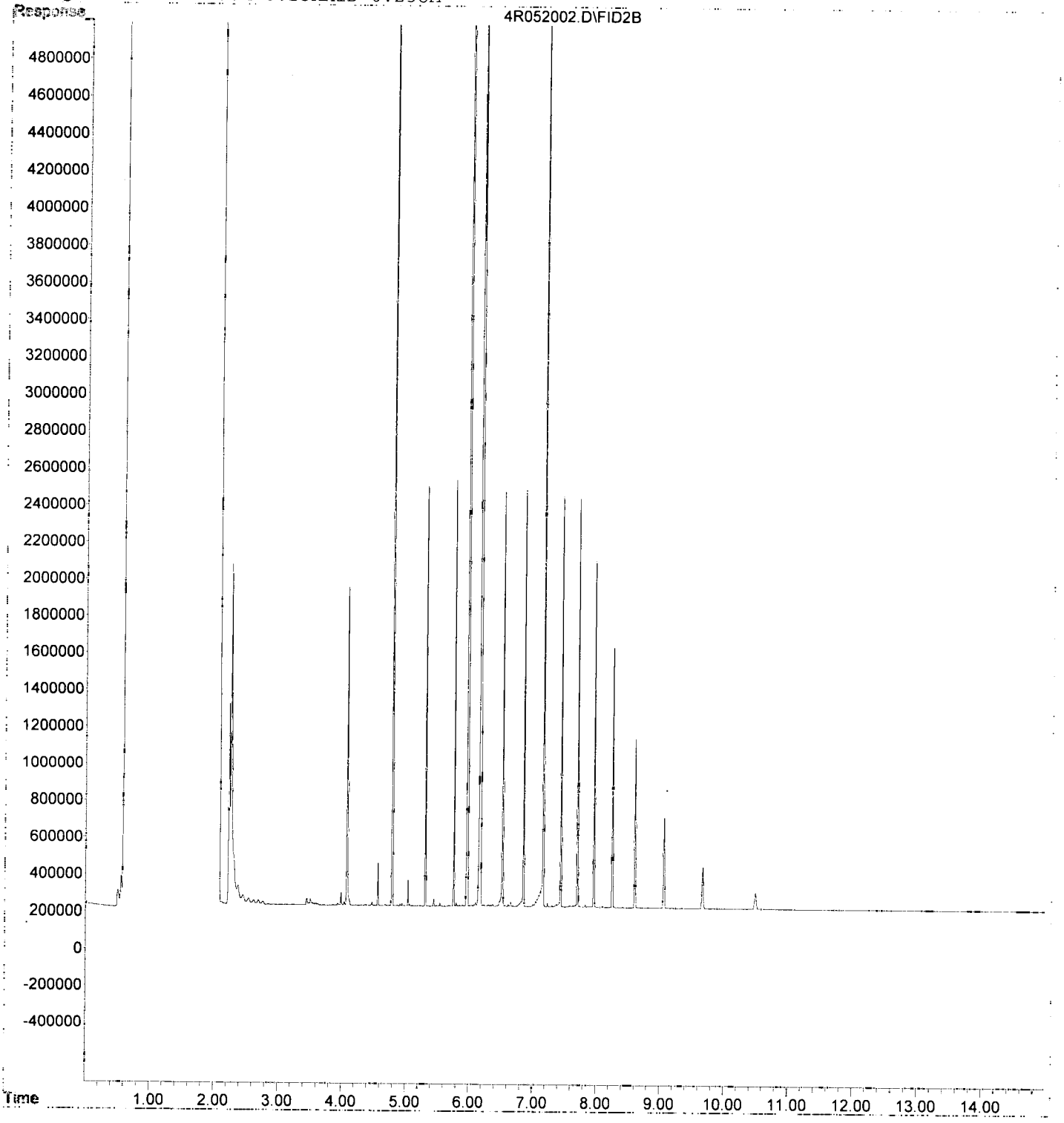
Quantitation Report (Not Reviewed)

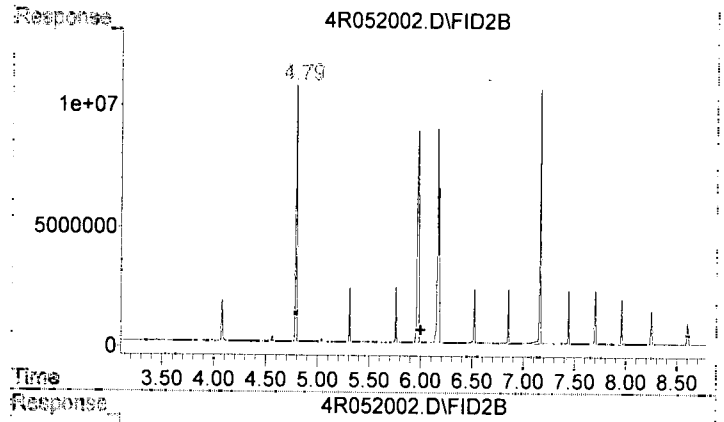
Data File : G:\4\DATA\2019-05\9E20037\4R052002.D
Acq On : 20 May 2019 17:55
Sample : 9E20037-RES1
Misc :
IntFile : SUR.E
Quant Time: May 21 8:04 2019 Quant Results File: 4R90418D.RES

Vial: 95
Operator: KEH
Inst : HP G1530A
Multiplr: 1.00

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

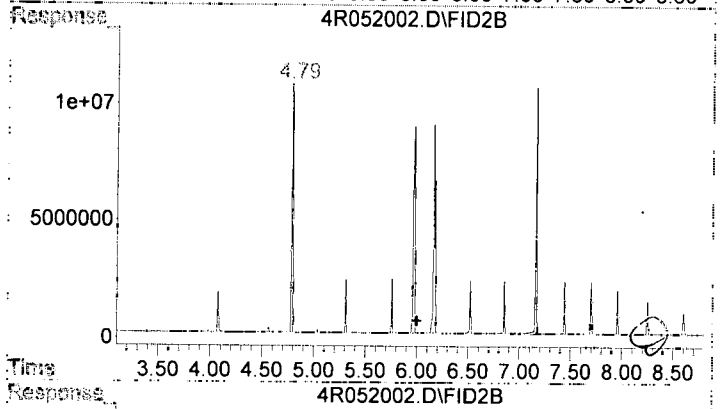
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





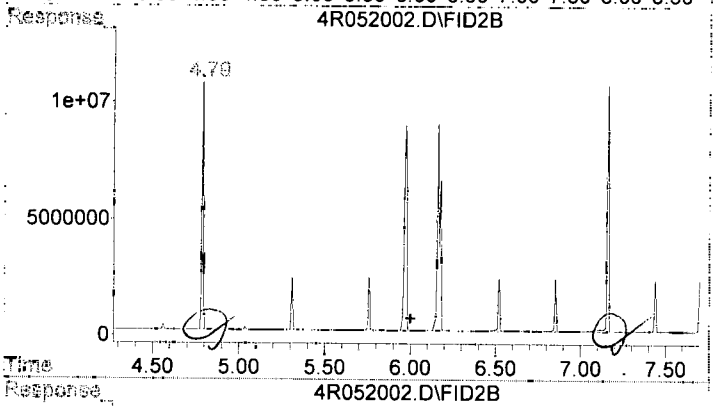
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 493797616
Conc: 432.96 ug/ml m



#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 493797616
Conc: 432.96 ug/ml m



#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 417831563
Conc: 366.35 ug/ml m

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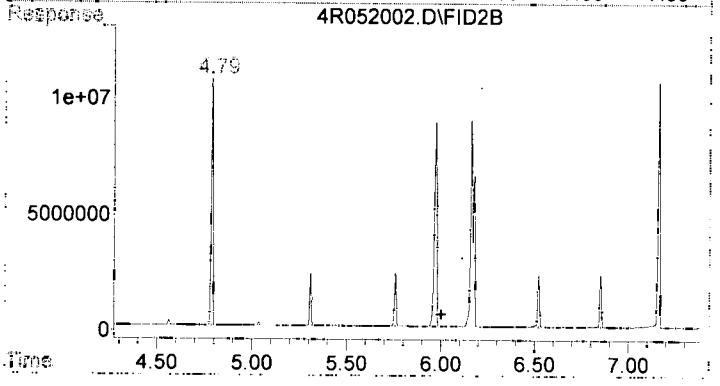
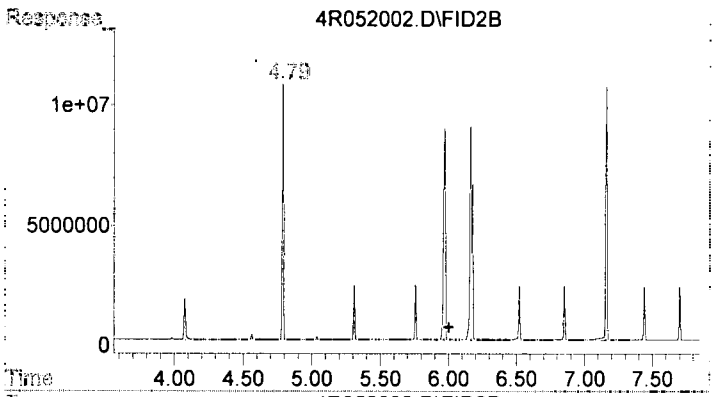


#4 CA LUFT DRO (C12-C22)

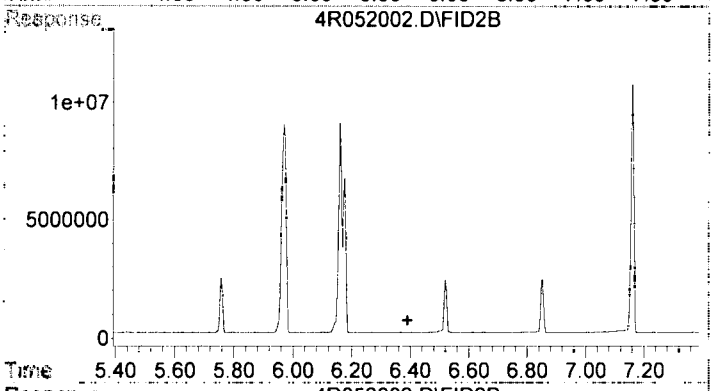
R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 341867522
Conc: 399.37 ug/ml m

✓



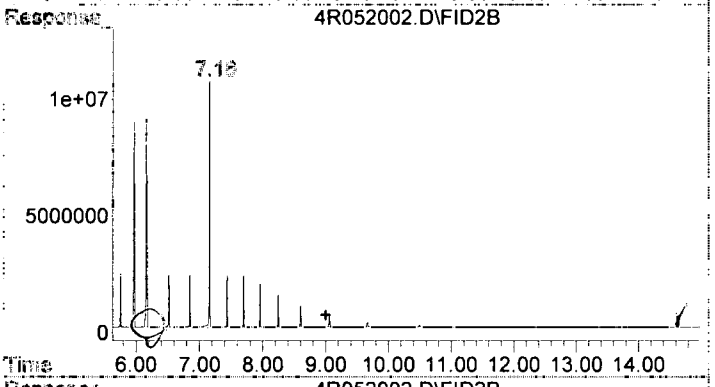
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 435953016
Conc: 413.24 ug/ml m



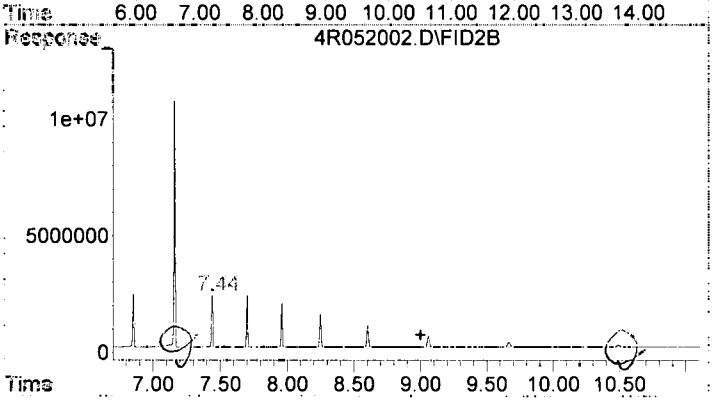
#6 o-Terphenyl

R.T.: 0.000 min
Exp R.T. : 6.390 min
Response: 0
Conc: N.D.



#7 Oil

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 298944802
Conc: 284.90 ug/ml m



#8 RRO (C24-C40)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 77851849
Conc: 74.19 ug/ml m

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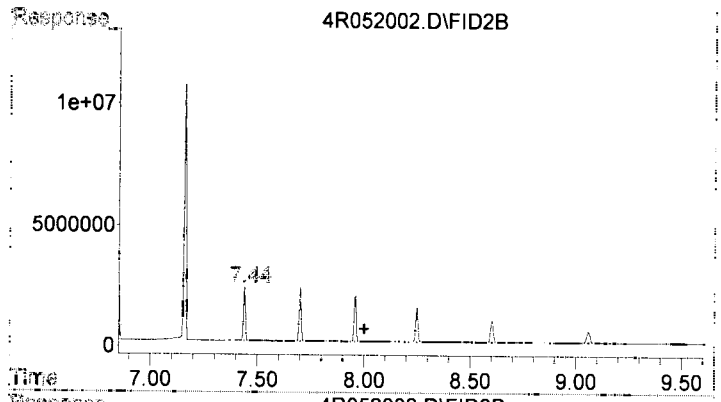
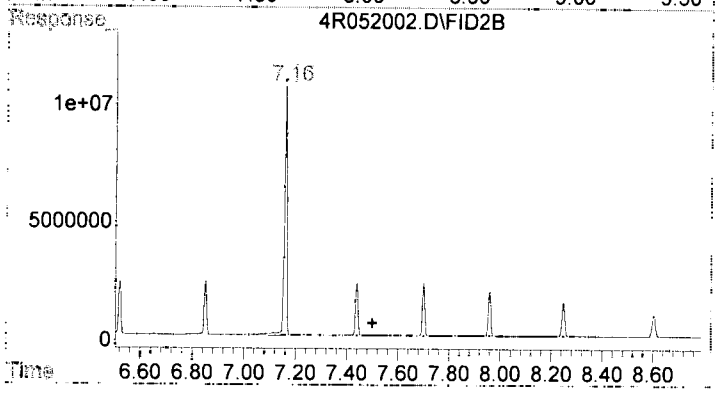


#9 TPHmo (C25-C36)

R.T.: 8.000 min
Delta R.T.: 0.000 min
Response: 70506783
Conc: 111.16 ug/ml m



#10 CA LUFT ORO (C23-C32)

R.T.: 7.500 min
Delta R.T.: 0.000 min
Response: 132117513
Conc: 198.33 ug/ml m

Evaluate Continuing Calibration Report

Data File : G:\4\DATA\2019-05\9E20037\4R052003.D Vial: 2
Acq On : 20 May 2019 18:17 Operator: KEH
Sample : 9E20037-CCV1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E

Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 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	314.568	0.0	92	0.00
2	H	Diesel	-1.000	314.568	0.0	92	0.00
3	H	DRO(C12-C24)	-1.000	78.896	0.0	23	0.00
4	H	CA LUFT DRO (C12-C22)	-1.000	34.523	0.0	94	0.00
5	H	TPHd (C10-C25)	-1.000	124.541	0.0	95	0.00
6	S	o-Terphenyl	-1.000	46.539	0.0	0	0.00
7	H	Oil	500.000	440.594	11.9	89	0.00
8	H	RRO (C24-C40)	500.000	344.183	31.2#	70	0.00
9	H	TPHmo (C25-C36)	500.000	434.312	13.1	88	0.00
10	H	CA LUFT ORO (C23-C32)	500.000	461.490	7.7	92	0.00

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

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052003.D Vial: 2
Acq On : 20 May 2019 18:17 Operator: KEH
Sample : 9E20037-CCV1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:04 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	6.38	58713493	46.539	ug/ml
		Target Compounds				
1)	H	Mineral Oil	6.00	358769769	314.568	ug/ml
2)	H	Diesel	6.00	358769769	314.568	ug/ml
3)	H	DRO(C12-C24)	6.00	89982375	78.896	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	29552067	34.523	ug/ml
5)	H	TPHd (C10-C25)	6.00	131385538	124.541	ug/ml
7)	H	Oil	9.00	462312088	440.594	ug/ml
8)	H	RRO (C24-C40)	9.00	361148790	344.183	ug/ml
9)	H	TPHmo (C25-C36)	8.00	275483759	434.312	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	307423364	461.490	ug/ml

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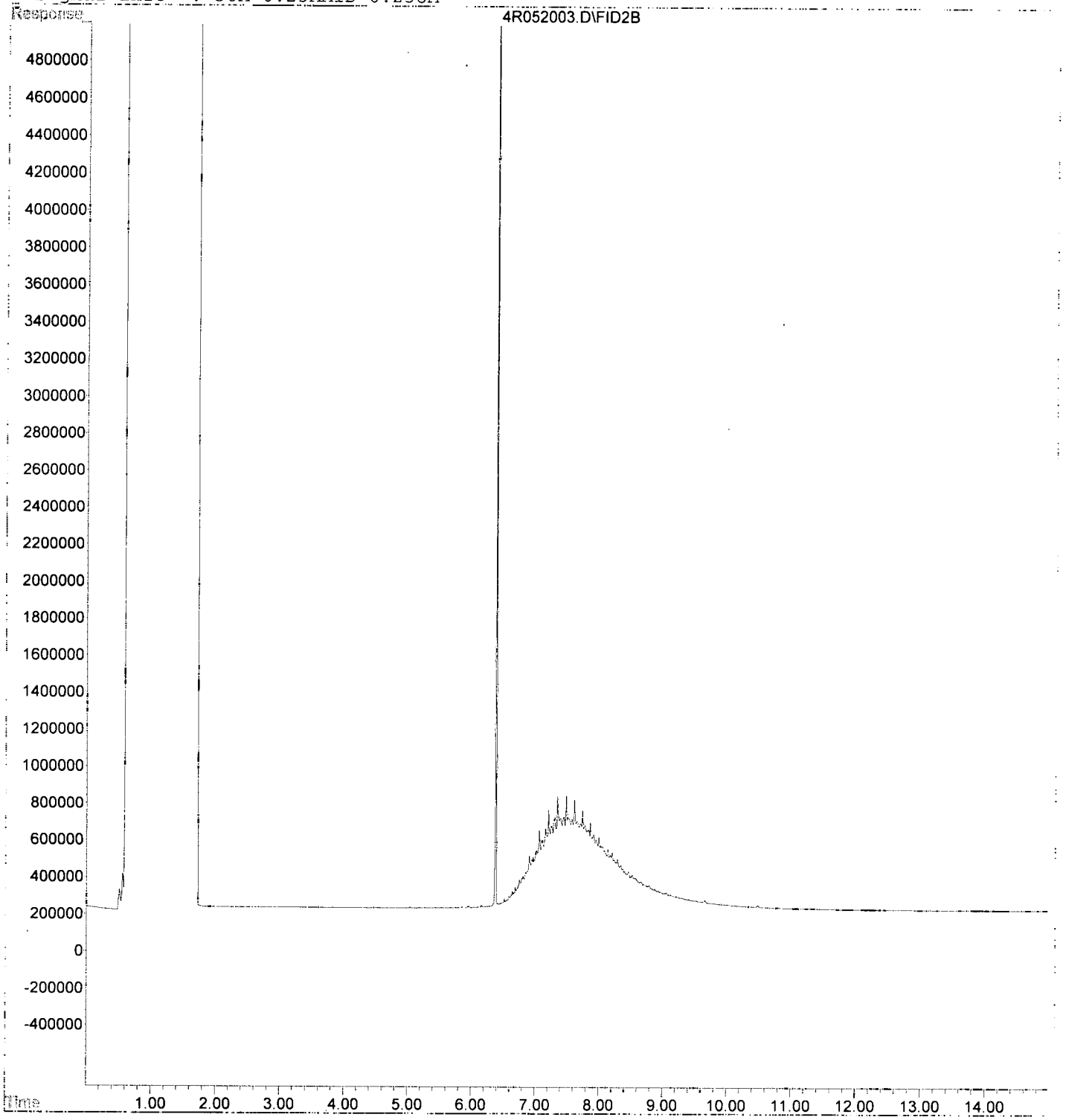
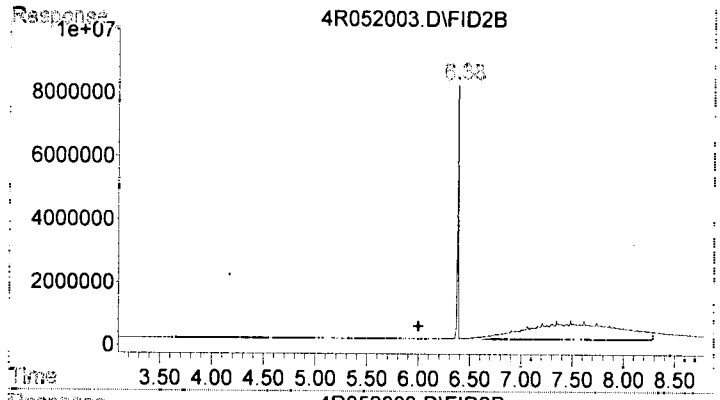
Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052003.D Vial: 2
Acq On : 20 May 2019 18:17 Operator: KEH
Sample : 9E20037-CCV1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:04 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

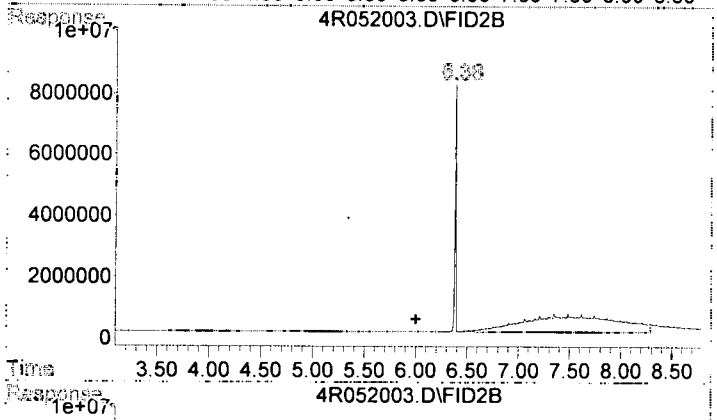
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





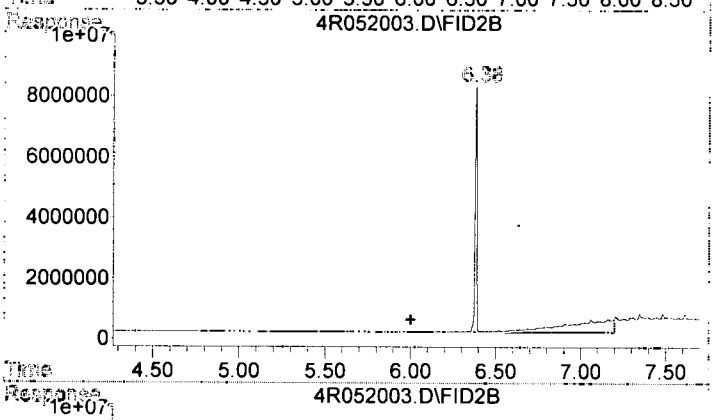
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 358769769
Conc: 314.57 ug/ml m



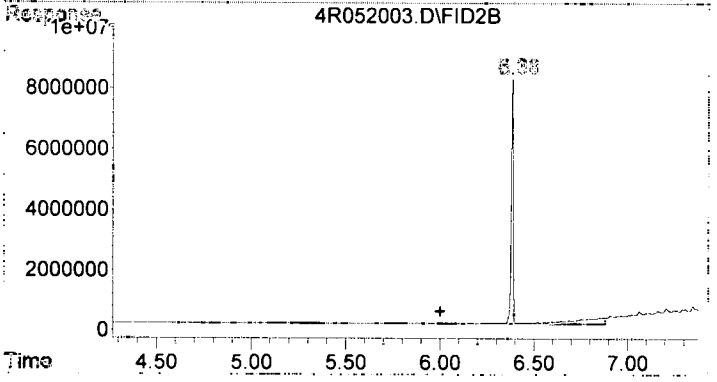
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 358769769
Conc: 314.57 ug/ml m



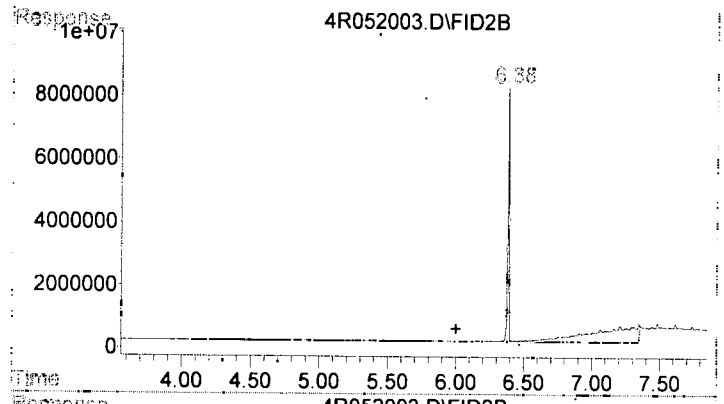
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 89982375
Conc: 78.90 ug/ml m



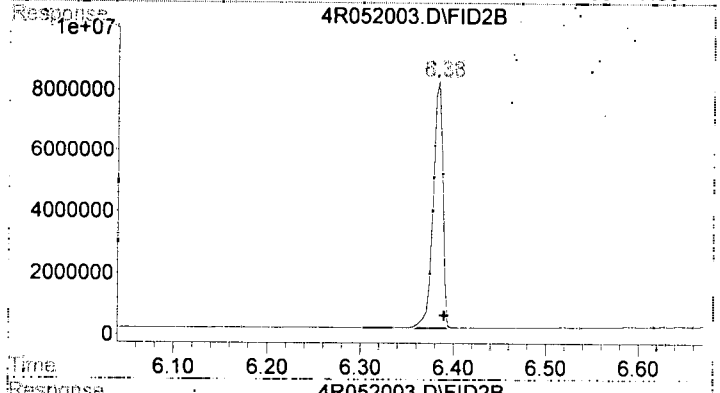
#4 CA LUFT DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 29552067
Conc: 34.52 ug/ml m



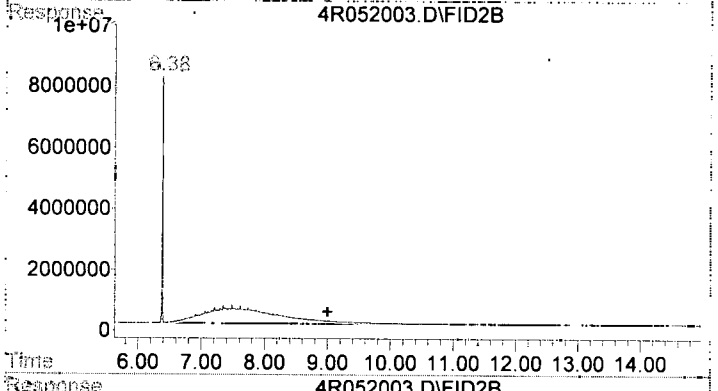
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 131385538
Conc: 124.54 ug/ml m



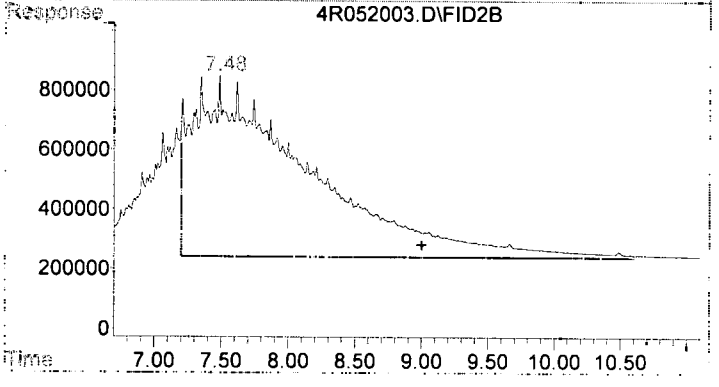
#6 o-Terphenyl

R.T.: 6.384 min
Delta R.T.: -0.006 min
Response: 58713493
Conc: 46.54 ug/ml



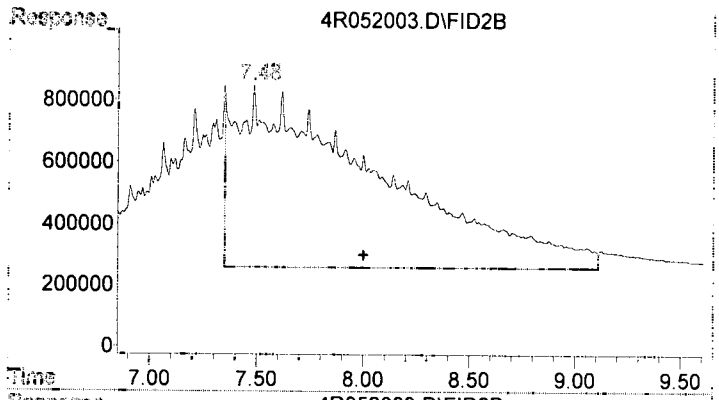
#7 Oil

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 462312088
Conc: 440.59 ug/ml m



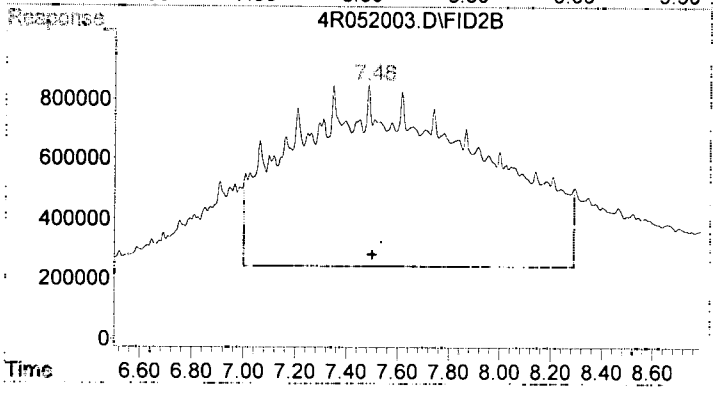
#8 RRO (C24-C40)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 361148790
Conc: 344.18 ug/ml m



#9 TPHmo (C25-C36)

R.T.: 8.000 min
Delta R.T.: 0.000 min
Response: 275483759
Conc: 434.31 ug/ml m



#10 CA LUFT ORO (C23-C32)

R.T.: 7.500 min
Delta R.T.: 0.000 min
Response: 307423364
Conc: 461.49 ug/ml m

Evaluate Continuing Calibration Report

Data File : G:\4\DATA\2019-05\9E20037\4R052004.D
Acq On : 20 May 2019 18:38
Sample : 9E20037-CCV2
Misc :
IntFile : SUR.E

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

Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 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	911.819	8.8	93	0.00
2	H	Diesel	1000.000	911.819	8.8	93	0.00
3	H	DRO(C12-C24)	1000.000	740.063	26.0#	76	0.00
4	H	CA LUFT DRO (C12-C22)	1000.000	942.685	5.7	94	0.00
5	H	TPHd (C10-C25)	1000.000	935.225	6.5	93	0.00
6	S	o-Terphenyl	-1.000	48.655	0.0	0	0.00
7	H	Oil	-1.000	281.782	0.0	0	0.00
8	H	RRO (C24-C40)	-1.000	17.475	0.0	0	0.00
9	H	TPHmo (C25-C36)	-1.000	16.243	0.0	75	0.00
10	H	CA LUFT ORO (C23-C32)	-1.000	48.695	0.0	87	0.00

Kept 5/21/19

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

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052004.D Vial: 1
Acq On : 20 May 2019 18:38 Operator: KEH
Sample : 9E20037-CCV2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:04 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	6.39	61382774	48.655	ug/ml
		Target Compounds				
1)	H	Mineral Oil	6.00	1039944871	911.819	ug/ml
2)	H	Diesel	6.00	1039944871	911.819	ug/ml
3)	H	DRO(C12-C24)	6.00	844054212	740.063	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	806946097	942.685	ug/ml
5)	H	TPHd (C10-C25)	6.00	986626128	935.225	ug/ml
7)	H	Oil	9.00	295672142	281.782	ug/ml
8)	H	RRO (C24-C40)	9.00	18336643	17.475	ug/ml
9)	H	TPHmo (C25-C36)	8.00	10302831	16.243	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	32438268	48.695	ug/ml

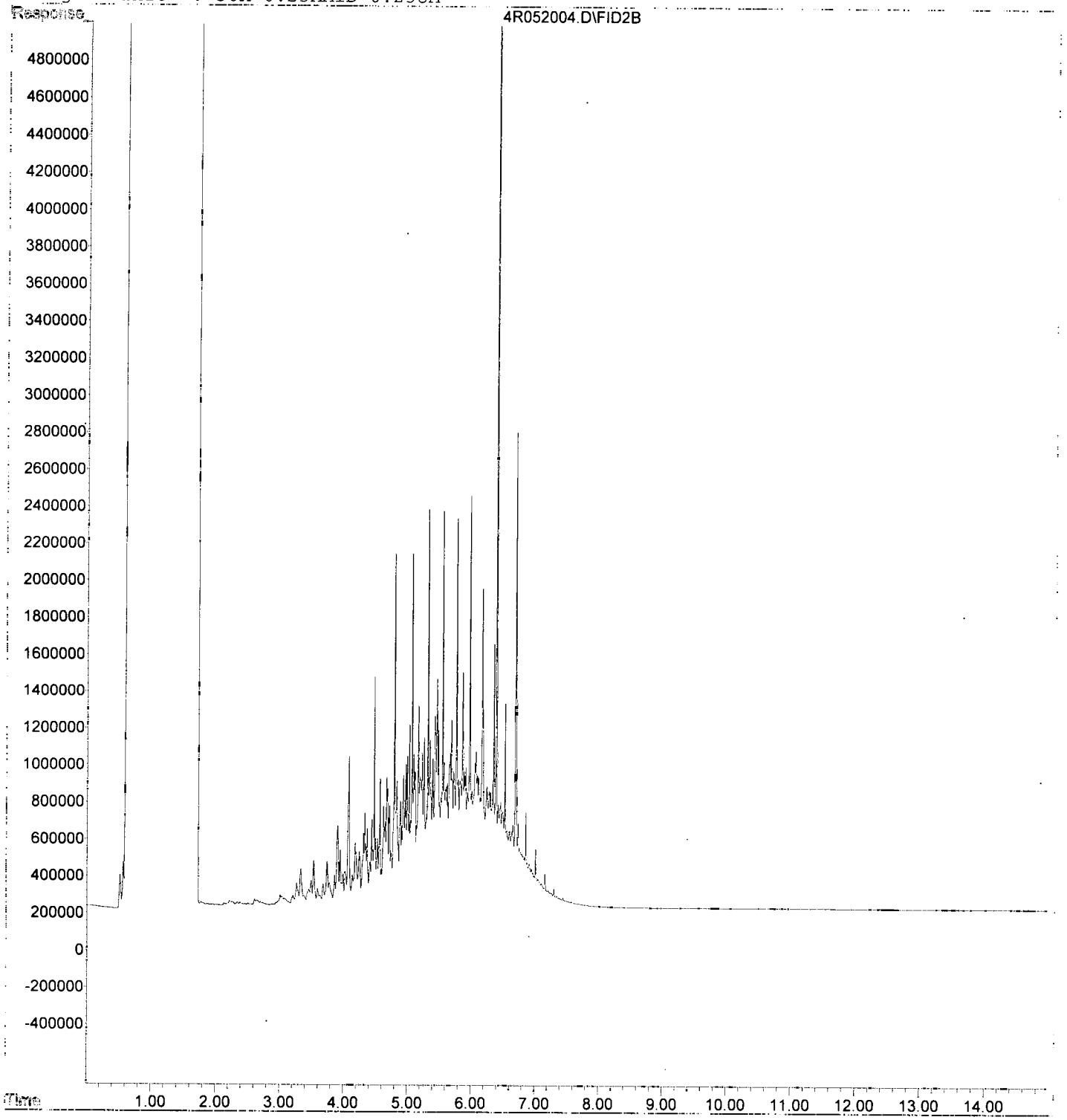
KEH 5/21/19

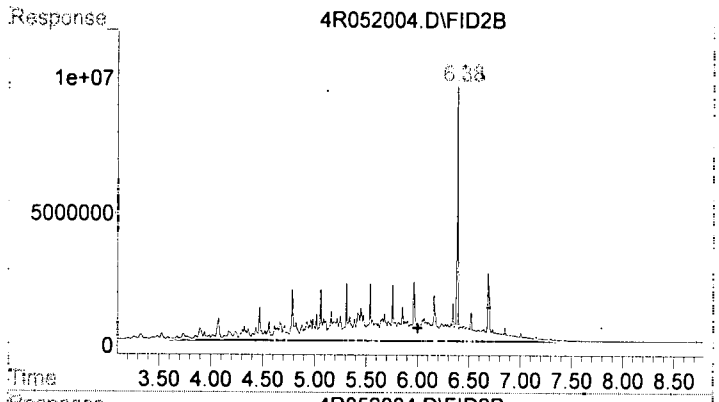
Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052004.D Vial: 1
Acq On : 20 May 2019 18:38 Operator: KEH
Sample : 9E20037-CCV2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:04 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

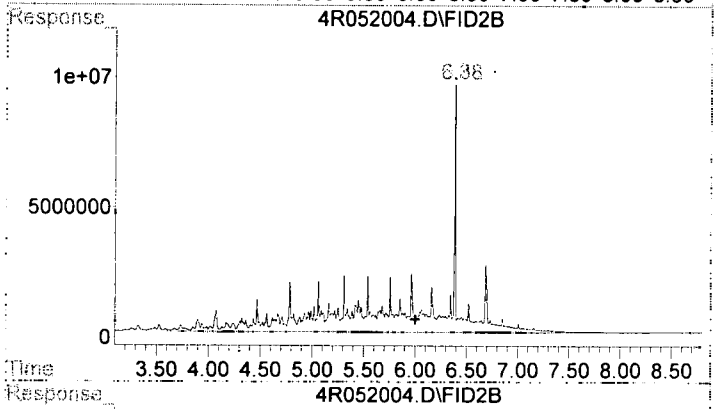
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





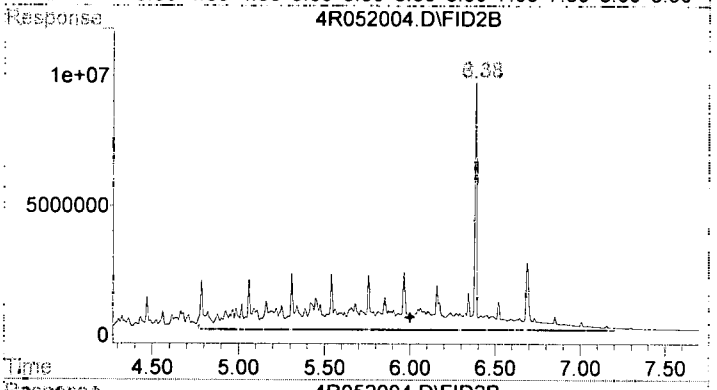
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 1039944871
Conc: 911.82 ug/ml m



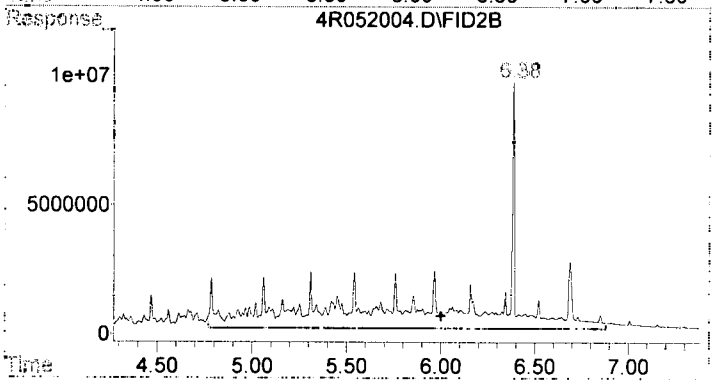
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 1039944871
Conc: 911.82 ug/ml m



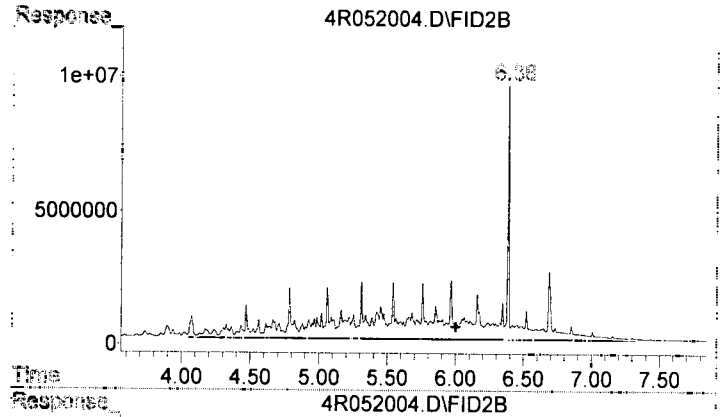
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 844054212
Conc: 740.06 ug/ml m



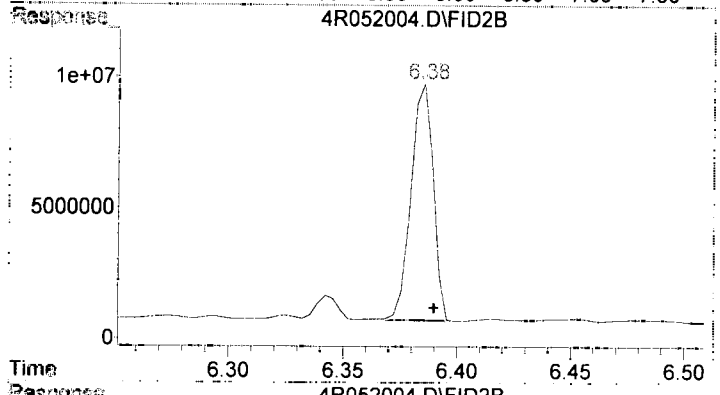
#4 CA LUFT DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 806946097
Conc: 942.69 ug/ml m



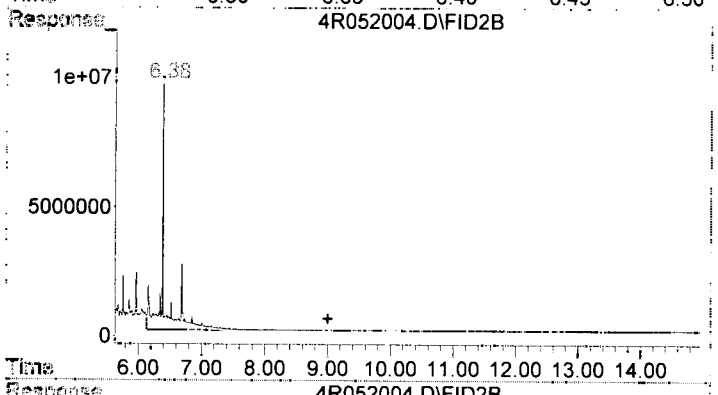
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 986626128
Conc: 935.22 ug/ml m



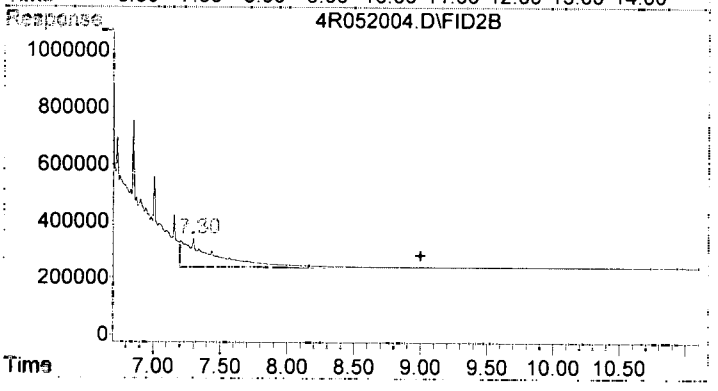
#6 o-Terphenyl

R.T.: 6.386 min
Delta R.T.: -0.004 min
Response: 61382774
Conc: 48.66 ug/ml



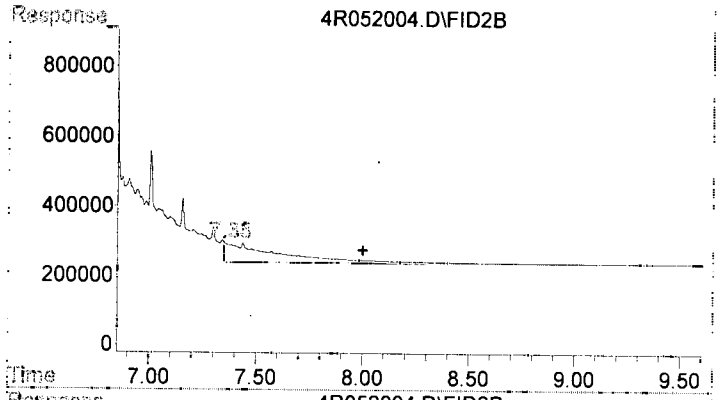
#7 Oil

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 295672142
Conc: 281.78 ug/ml m



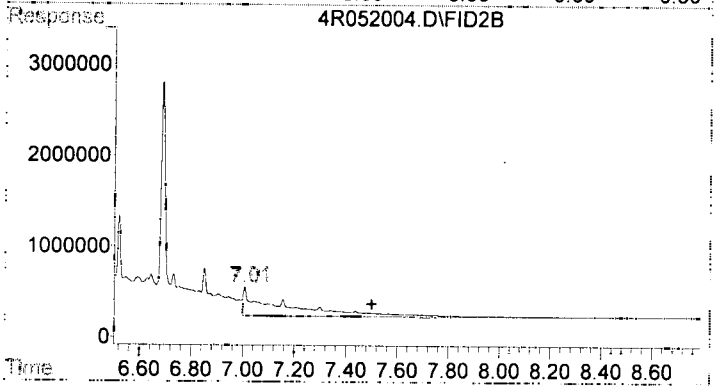
#8 RRO (C24-C40)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 18336643
Conc: 17.48 ug/ml m



#9 TPHmo (C25-C36)

R.T.: 8.000 min
Delta R.T.: 0.000 min
Response: 10302831
Conc: 16.24 ug/ml m



#10 CA LUFT ORO (C23-C32)

R.T.: 7.500 min
Delta R.T.: 0.000 min
Response: 32438268
Conc: 48.69 ug/ml m

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052005.D Vial: 100
Acq On : 20 May 2019 22:36 Operator: KEH
Sample : 9E20037-CCB1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:04 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	2305776	2.022	ug/ml
2)	H	Diesel	6.00	2305776	2.022	ug/ml
3)	H	DRO(C12-C24)	6.00	764922	0.671	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	688361	0.804	ug/ml
5)	H	TPHd (C10-C25)	6.00	1105961	1.048	ug/ml
7)	H	Oil	9.00	5468443	5.212	ug/ml
8)	H	RRO (C24-C40)	9.00	2932778	2.795	ug/ml
9)	H	TPHmo (C25-C36)	8.00	787806	1.242	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	726268	1.090	ug/ml

+ m.D.

< 1/2 MRL

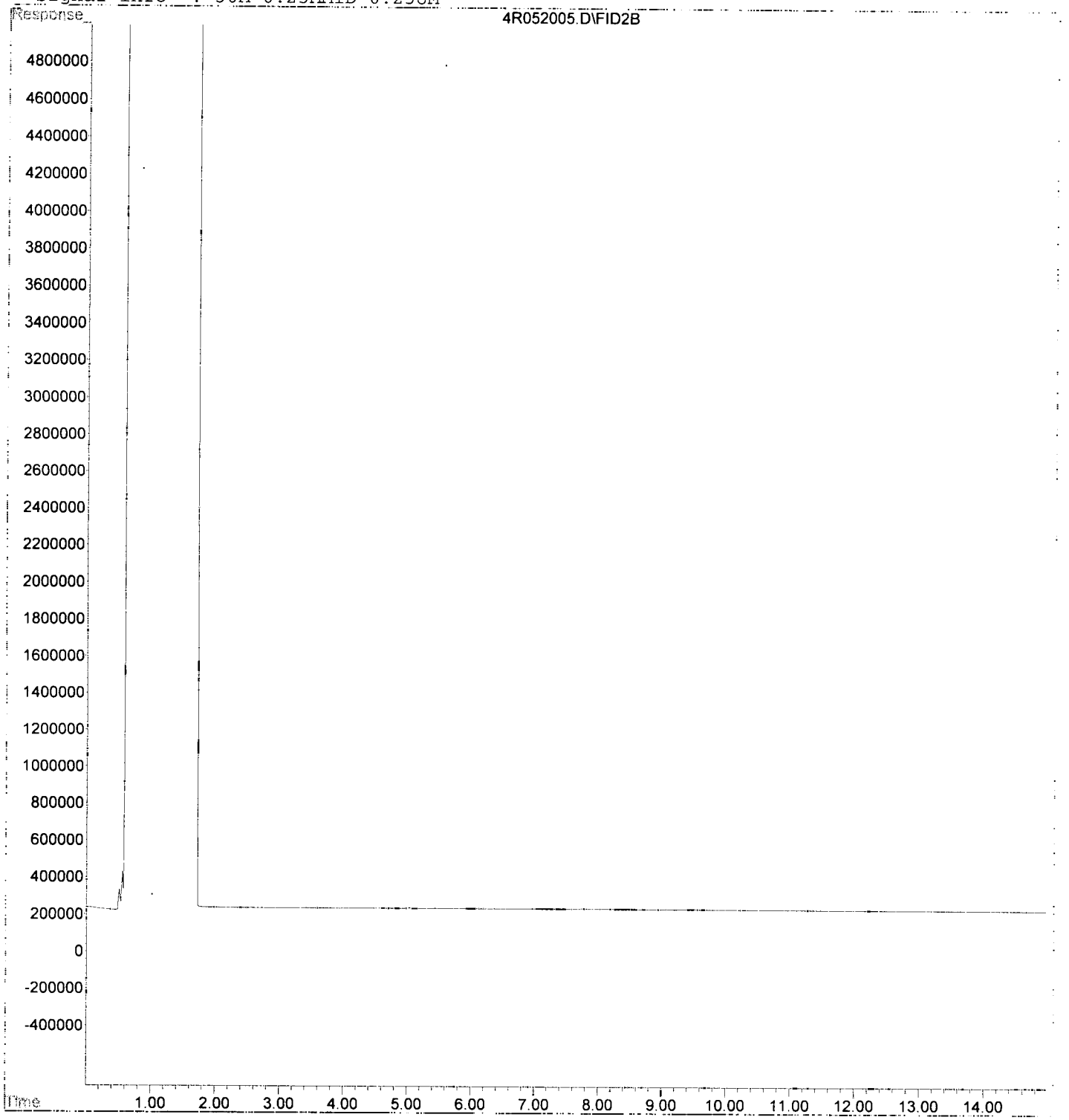
KEH 5/21/19

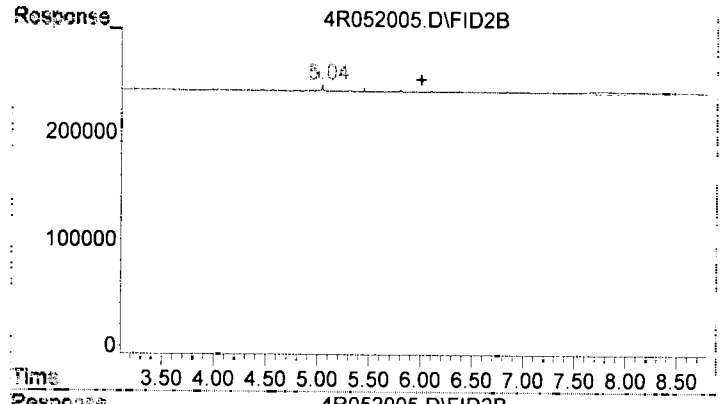
Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052005.D Vial: 100
Acq On : 20 May 2019 22:36 Operator: KEH
Sample : 9E20037-CCB1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:04 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

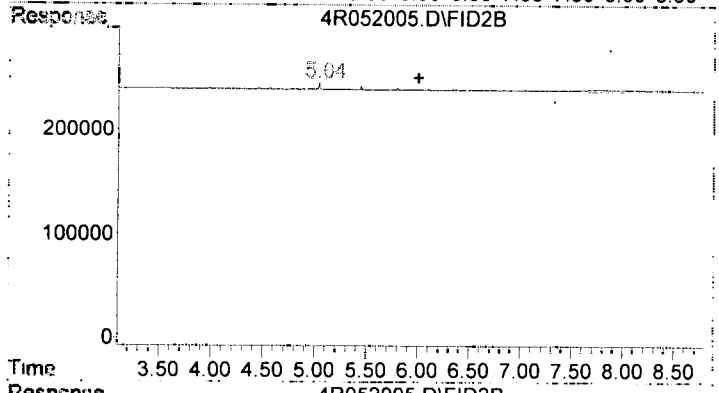
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





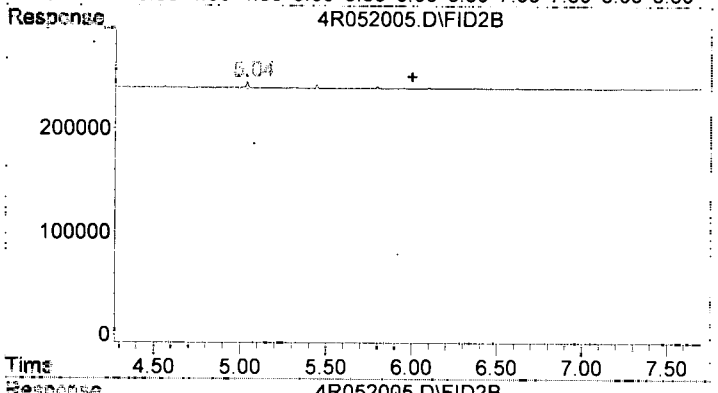
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 2305776
Conc: 2.02 ug/ml m



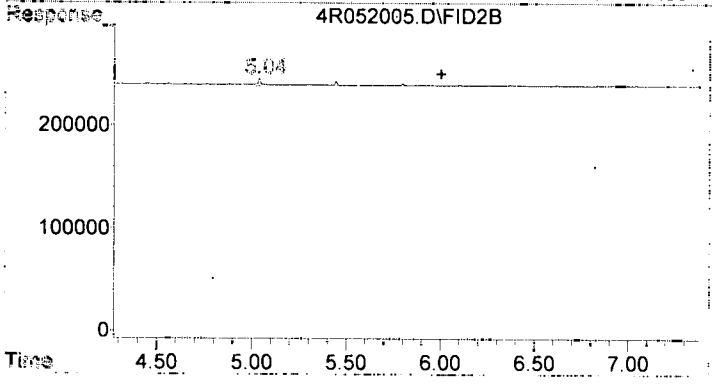
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 2305776
Conc: 2.02 ug/ml m



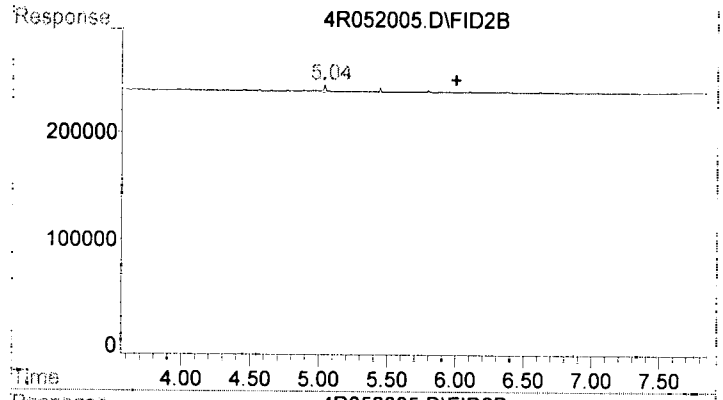
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 764922
Conc: 0.67 ug/ml m



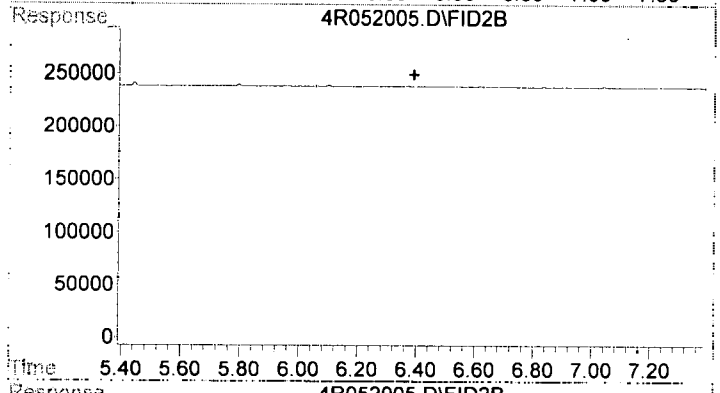
#4 CA LUFT DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 688361
Conc: 0.80 ug/ml m



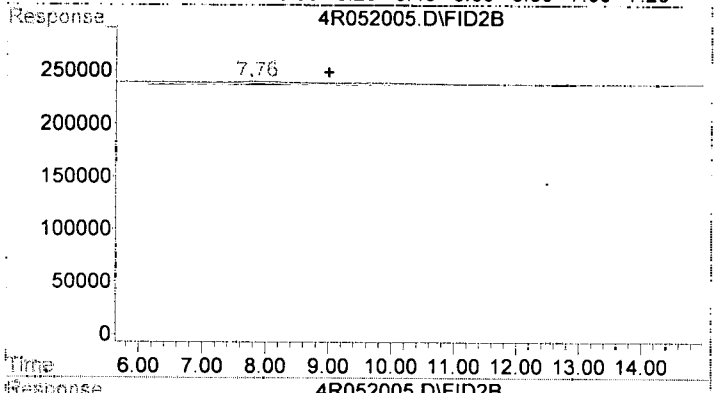
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 1105961
Conc: 1.05 ug/ml m



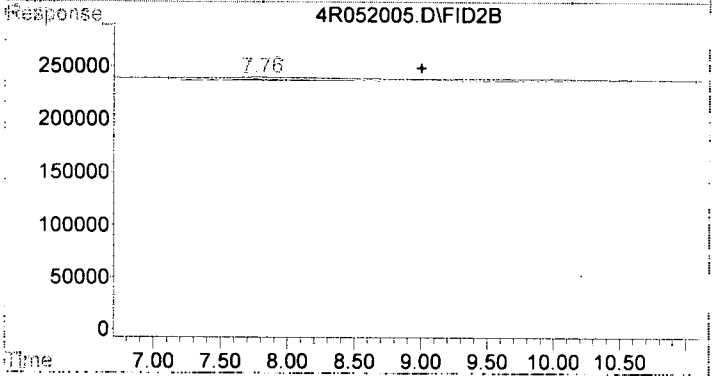
#6 o-Terphenyl

R.T.: 0.000 min
Exp R.T. : 6.390 min
Response: 0
Conc: N.D.



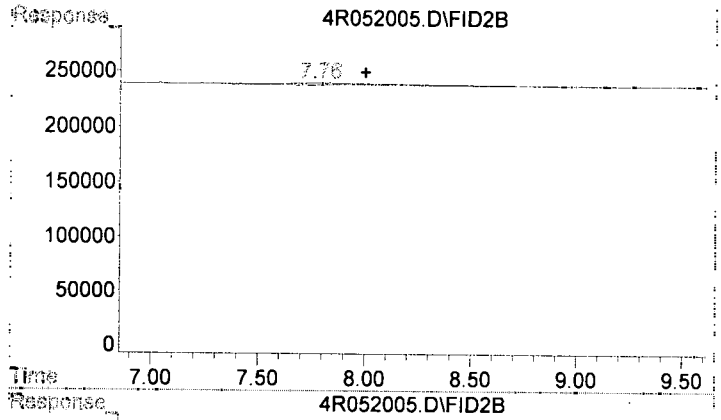
#7 Oil

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 5468443
Conc: 5.21 ug/ml m



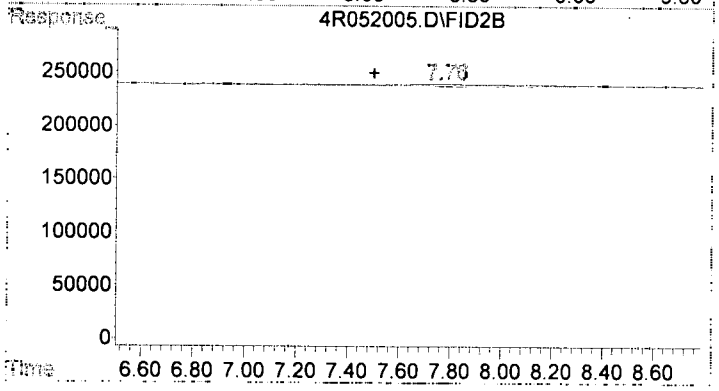
#8 RRO (C24-C40)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 2932778
Conc: 2.80 ug/ml m



#9 TPHmo (C25-C36)

R.T.: 8.000 min
Delta R.T.: 0.000 min
Response: 787806
Conc: 1.24 ug/ml m



#10 CA LUFT ORO (C23-C32)

R.T.: 7.500 min
Delta R.T.: 0.000 min
Response: 726268
Conc: 1.09 ug/ml m

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052017.D Vial: 60
Acq On : 21 May 2019 2:49 Operator: KEH
Sample : 9051067-BLK1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:05 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	6.39	65158715	51.648 ug/ml
		Target Compounds			
1)	H	Mineral Oil	6.00	5113915	4.484 ug/ml
2)	H	Diesel	6.00	5113915	4.484 ug/ml
3)	H	DRO(C12-C24)	6.00	2401097	2.105 ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	1987154	2.321 ug/ml
5)	H	TPHd (C10-C25)	6.00	3006826	2.850 ug/ml
7)	H	Oil	9.00	7310378	6.967 ug/ml
8)	H	RRO (C24-C40)	9.00	3829691	3.650 ug/ml
9)	H	TPHmo (C25-C36)	8.00	1397763	2.204 ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	1423419	2.137 ug/ml

< 1/2 MRL

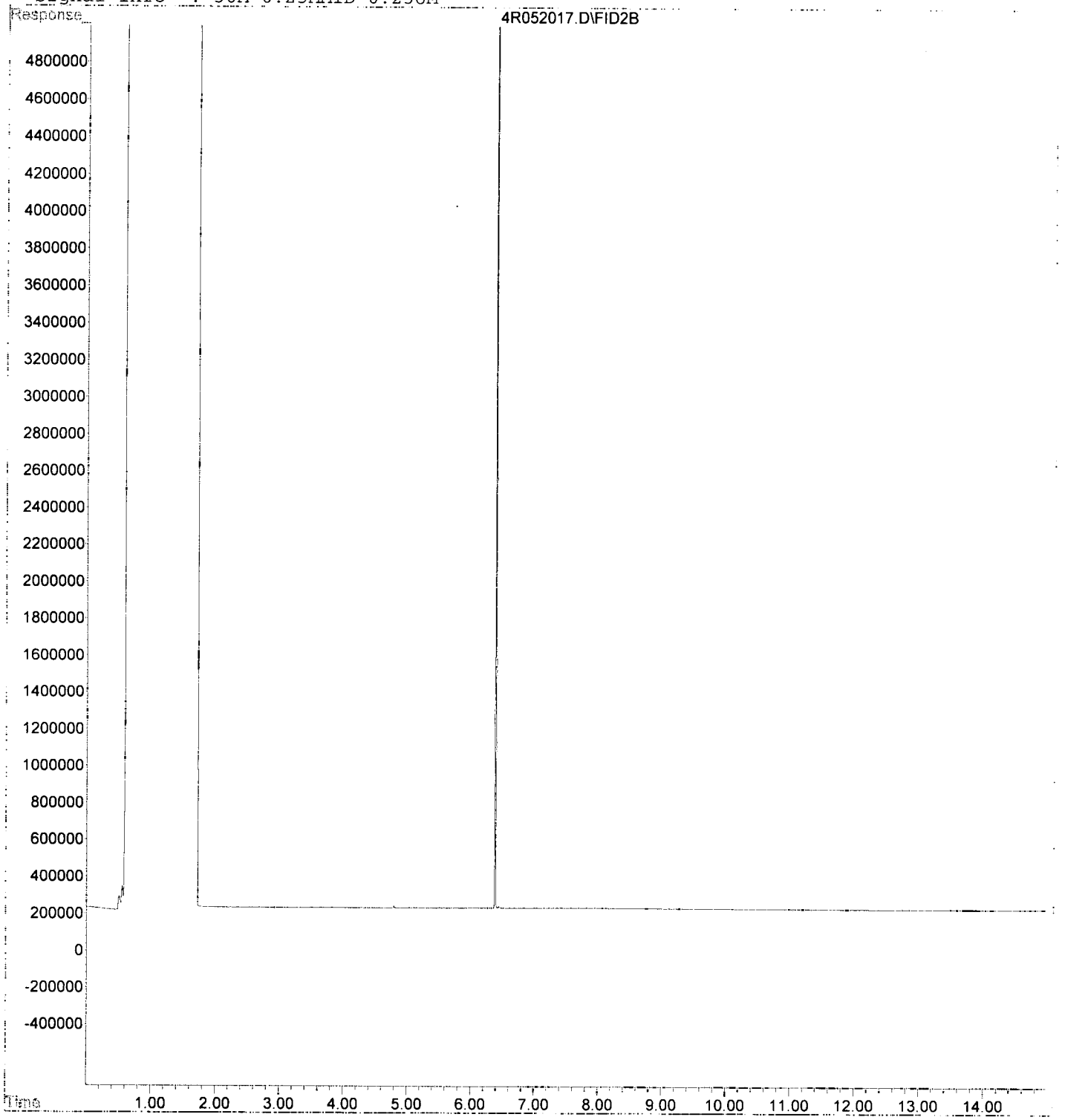
KEH 5/21/19

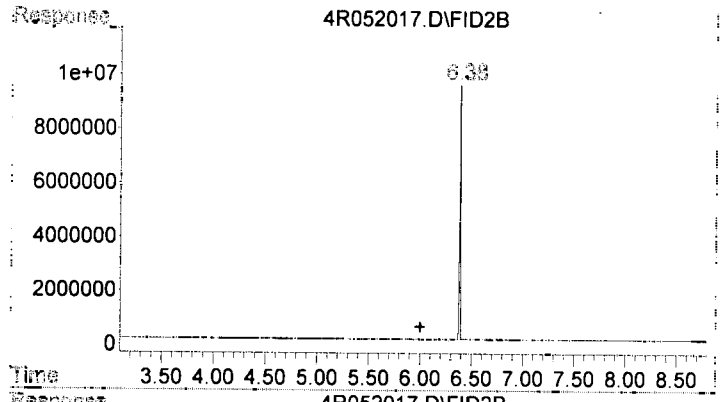
Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052017.D Vial: 60
Acq On : 21 May 2019 2:49 Operator: KEH
Sample : 9051067-BLK1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:05 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

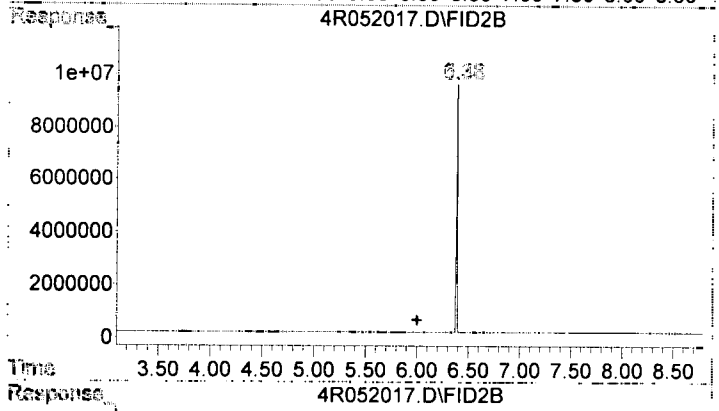
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





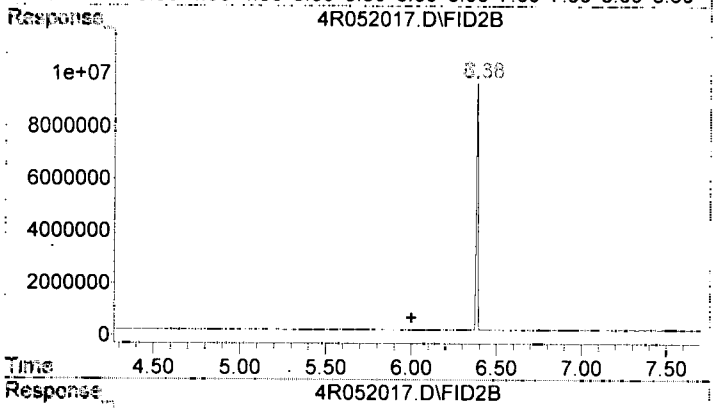
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 5113915
Conc: 4.48 ug/ml m



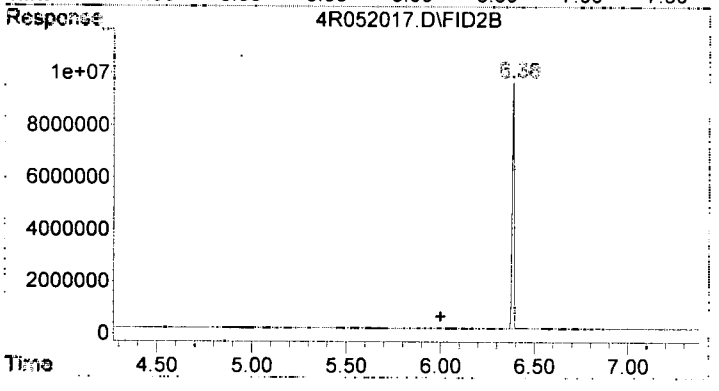
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 5113915
Conc: 4.48 ug/ml m



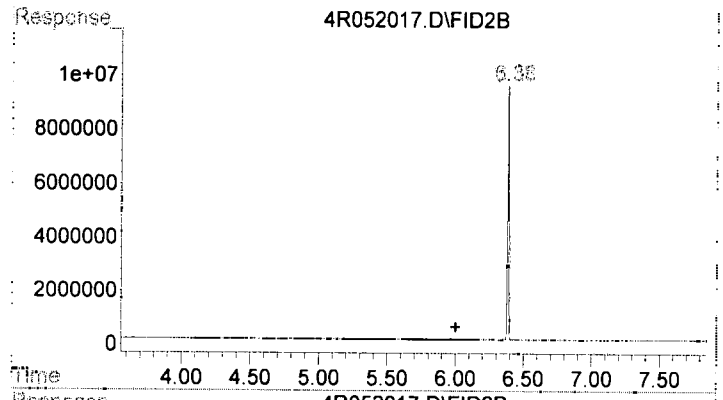
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 2401097
Conc: 2.11 ug/ml m



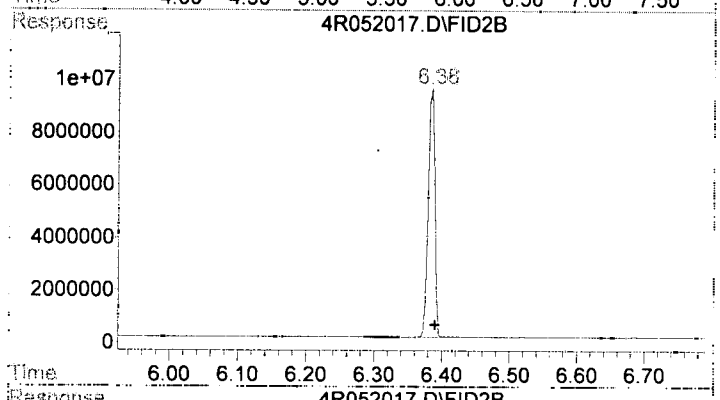
#4 CA LUFT DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 1987154
Conc: 2.32 ug/ml m



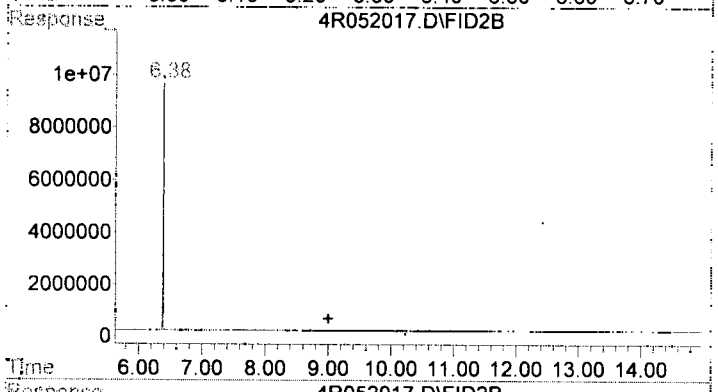
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 3006826
Conc: 2.85 ug/ml m



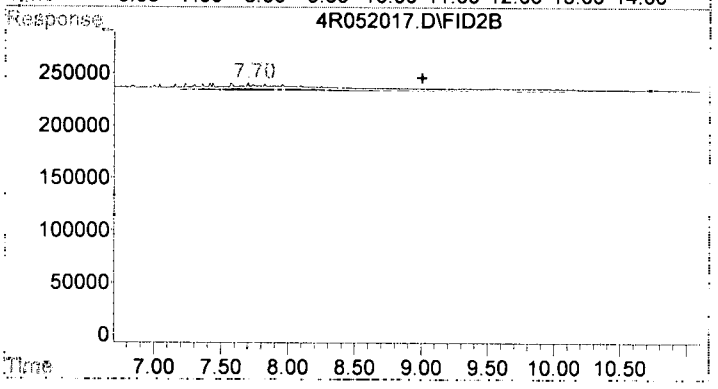
#6 o-Terphenyl

R.T.: 6.386 min
Delta R.T.: -0.004 min
Response: 65158715
Conc: 51.65 ug/ml



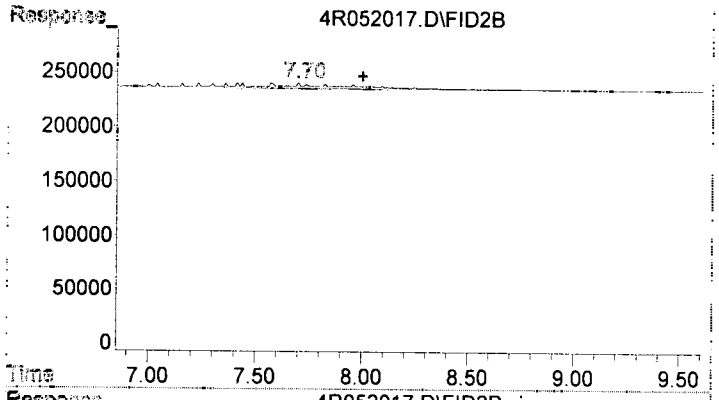
#7 Oil

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 7310378
Conc: 6.97 ug/ml m



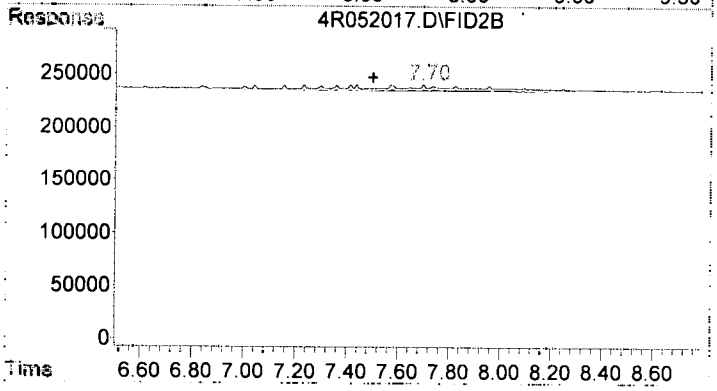
#8 RRO (C24-C40)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 3829691
Conc: 3.65 ug/ml m



#9 TPHmo (C25-C36)

R.T.:	8.000 min
Delta R.T.:	0.000 min
Response:	1397763
Conc:	2.20 ug/ml m



#10 CA LUFT ORO (C23-C32)

R.T.:	7.500 min
Delta R.T.:	0.000 min
Response:	1423419
Conc:	2.14 ug/ml m

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052018.D Vial: 61
Acq On : 21 May 2019 3:09 Operator: KEH
Sample : 9051067-BS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:05 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	6.39	65579603	51.982 ug/ml
		Target Compounds			
1)	H	Mineral Oil	6.00	253311136	222.102 ug/ml
2)	H	Diesel	6.00	253311136	222.102 ug/ml
3)	H	DRO(C12-C24)	6.00	209974630	184.105 ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	199523482	233.086 ug/ml
5)	H	TPHd (C10-C25)	6.00	239347281	226.878 ug/ml
7)	H	Oil	9.00	83846838	79.908 ug/ml
8)	H	RRO (C24-C40)	9.00	7859698	7.490 ug/ml
9)	H	TPHmo (C25-C36)	8.00	4476715	7.058 ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	10027073	15.052 ug/ml

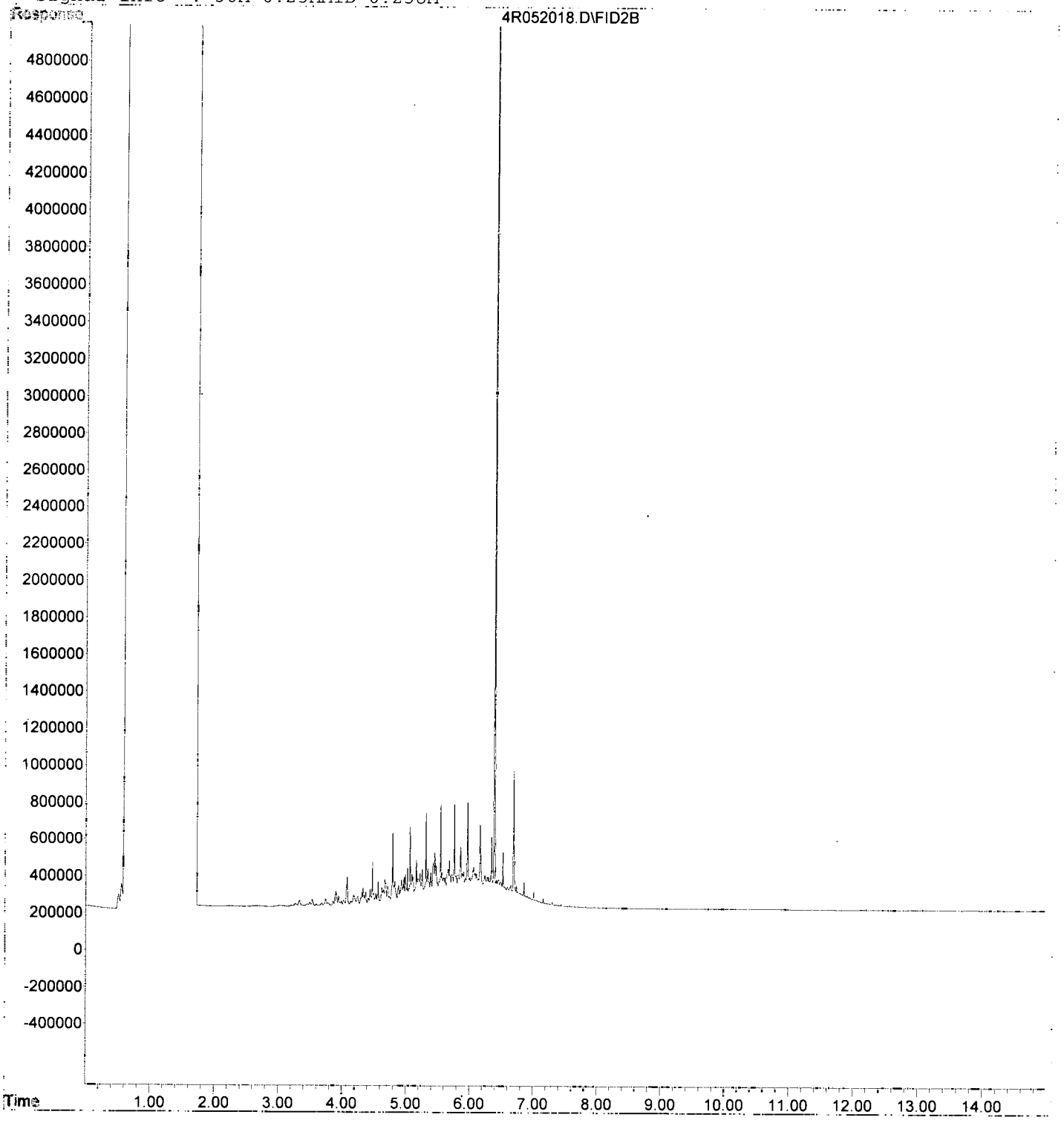
KGH 5/21/19

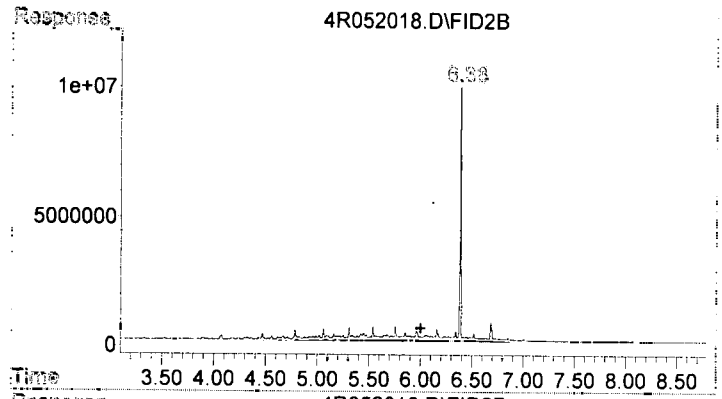
Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052018.D Vial: 61
Acq On : 21 May 2019 3:09 Operator: KEH
Sample : 9051067-BS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:05 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

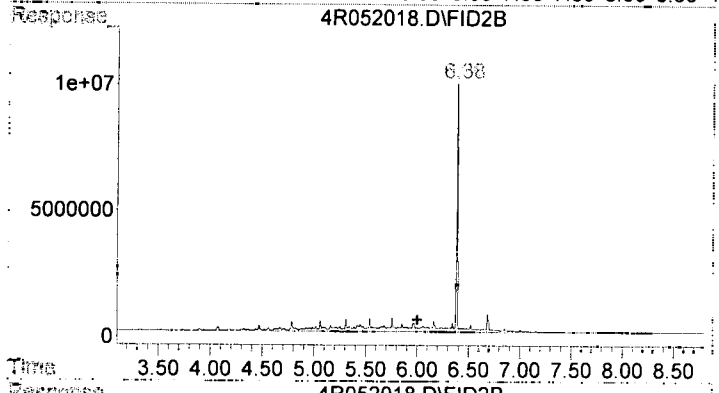
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





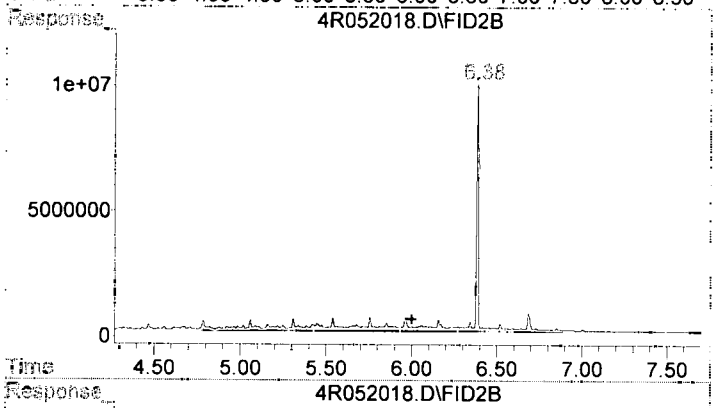
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 253311136
Conc: 222.10 ug/ml m



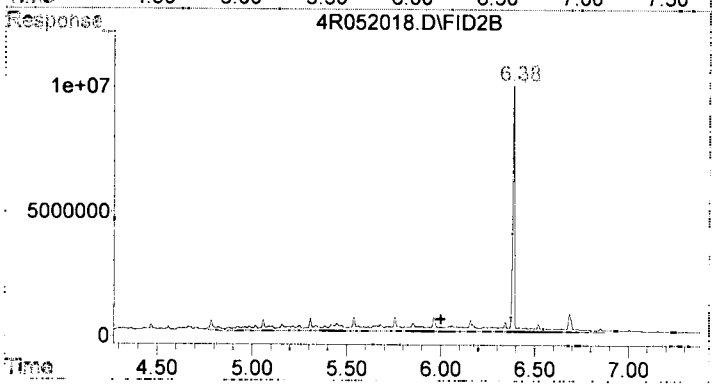
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 253311136
Conc: 222.10 ug/ml m



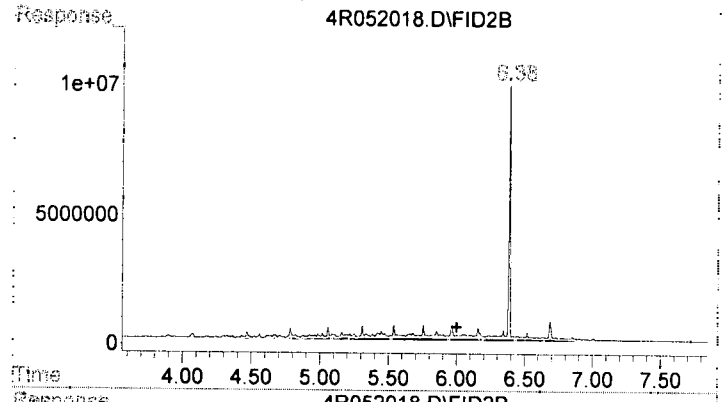
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 209974630
Conc: 184.10 ug/ml m



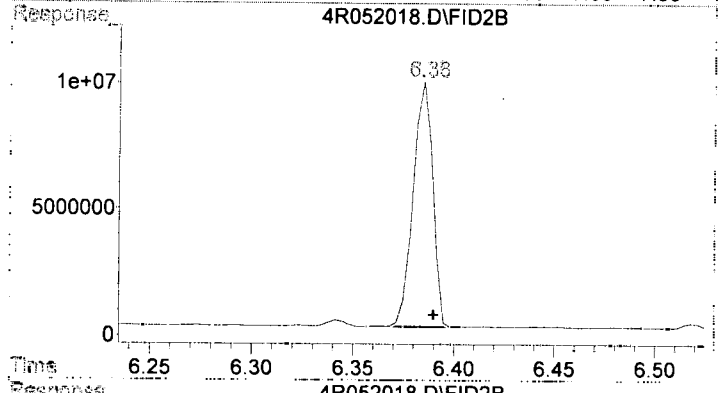
#4 CA LUFT DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 199523482
Conc: 233.09 ug/ml m



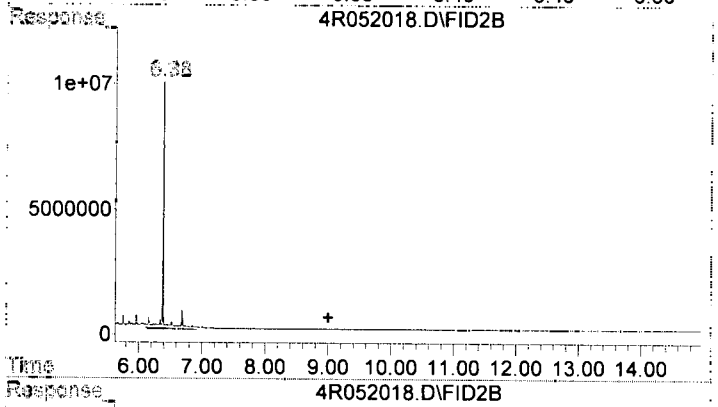
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 239347281
Conc: 226.88 ug/ml m



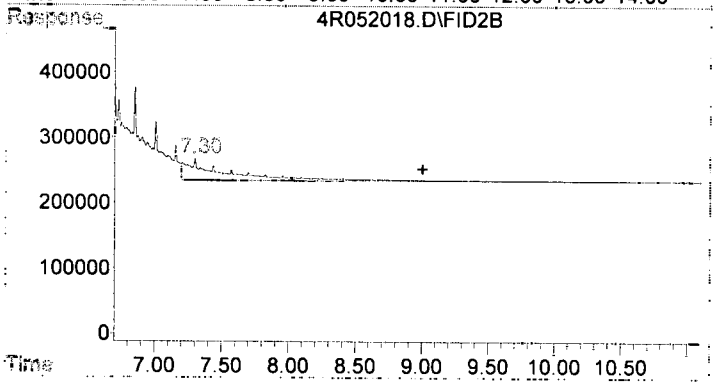
#6 o-Terphenyl

R.T.: 6.386 min
Delta R.T.: -0.004 min
Response: 65579603
Conc: 51.98 ug/ml



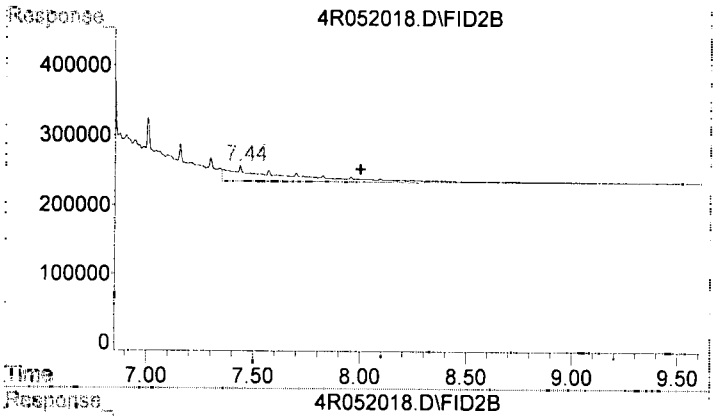
#7 Oil

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 83846838
Conc: 79.91 ug/ml m



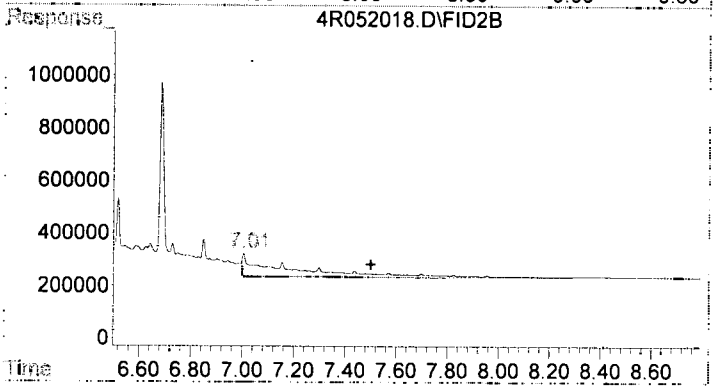
#8 RRO (C24-C40)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 7859698
Conc: 7.49 ug/ml m



#9 TPHmo (C25-C36)

R.T.:	8.000 min
Delta R.T.:	0.000 min
Response:	4476715
Conc:	7.06 ug/ml m



#10 CA LUFT ORO (C23-C32)

R.T.:	7.500 min
Delta R.T.:	0.000 min
Response:	10027073
Conc:	15.05 ug/ml m

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052019.D Vial: 62
Acq On : 21 May 2019 3:30 Operator: KEH
Sample : A9E0508-05@100 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:05 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	6.38	1178476	0.934 ug/ml
		Target Compounds			
1)	H	Mineral Oil	6.00	531598123	466.103 ug/ml
2)	H	Diesel	6.00	531598123	466.103 ug/ml
3)	H	DRO(C12-C24)	6.00	246218110	215.883 ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	194677343	227.425 ug/ml
5)	H	TPHd (C10-C25)	6.00	270709177	256.606 ug/ml
7)	H	Oil	9.00	704872625	671.760 ug/ml
8)	H	RRO (C24-C40)	9.00	435577720	415.116 ug/ml
9)	H	TPHmo (C25-C36)	8.00	353077996	556.643 ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	304356050	456.886 ug/ml

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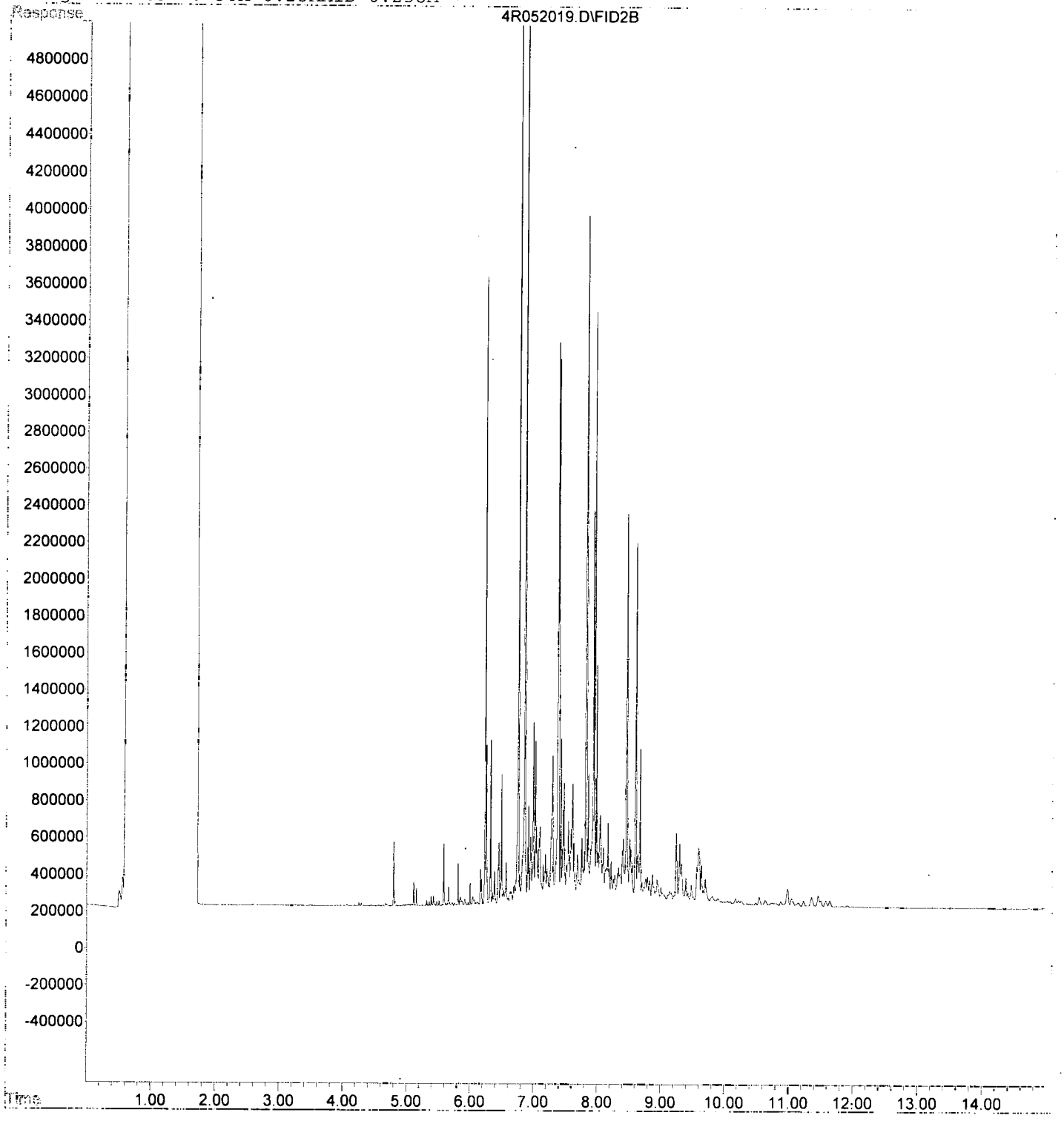
Create → DRO/RRO
KH 5/21/19

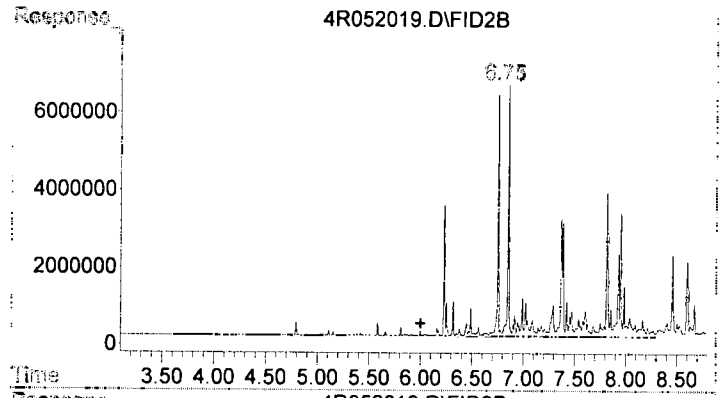
Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052019.D Vial: 62
Acq On : 21 May 2019 3:30 Operator: KEH
Sample : A9E0508-05@100 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:05 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

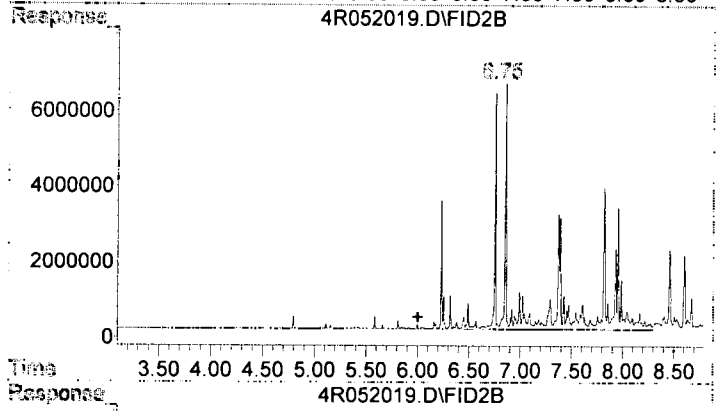
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





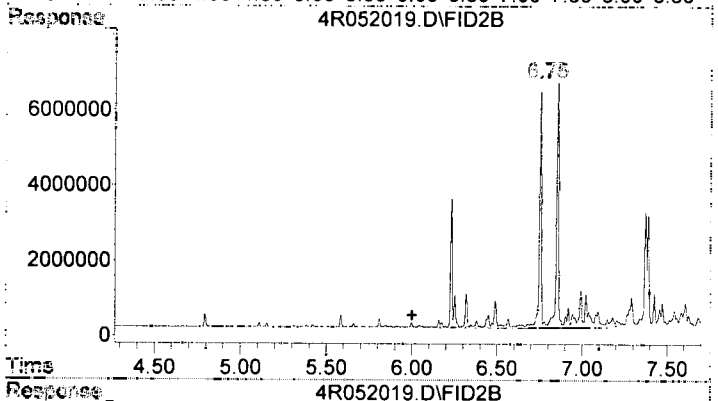
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 531598123
Conc: 466.10 ug/ml m



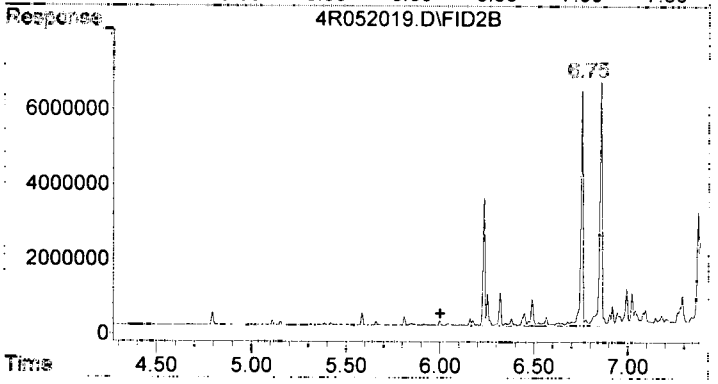
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 531598123
Conc: 466.10 ug/ml m



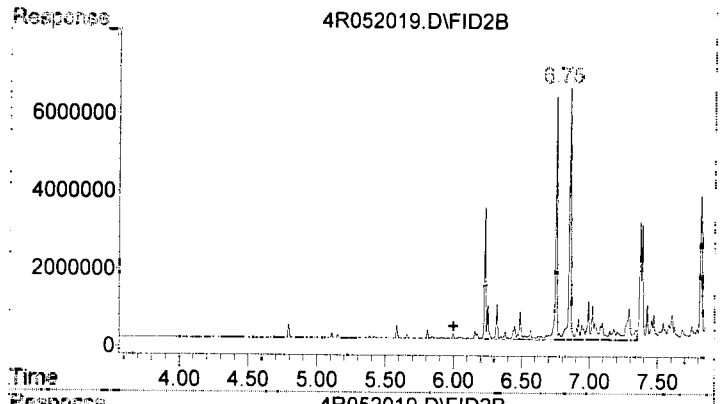
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 246218110
Conc: 215.88 ug/ml m



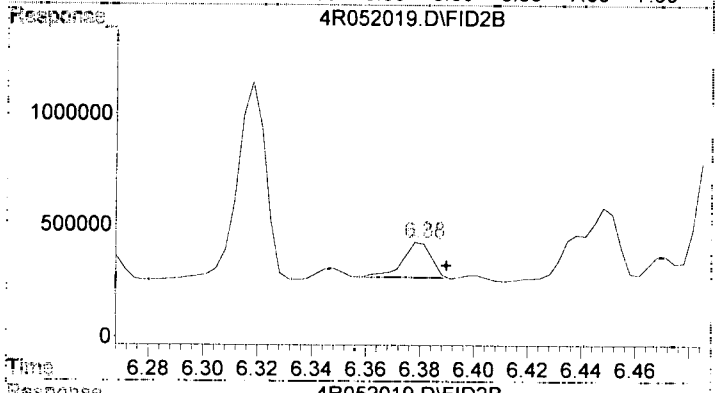
#4 CA LUFT DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 194677343
Conc: 227.42 ug/ml m



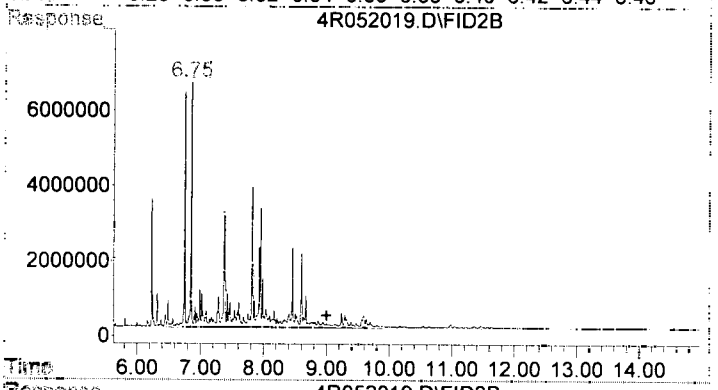
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 270709177
Conc: 256.61 ug/ml m



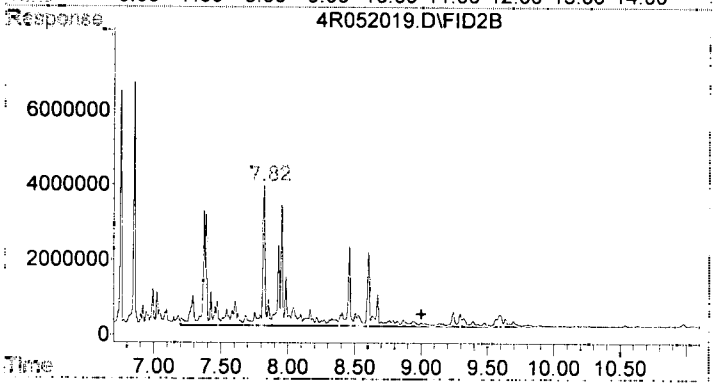
#6 o-Terphenyl

R.T.: 6.381 min
Delta R.T.: -0.009 min
Response: 1178476
Conc: 0.93 ug/ml



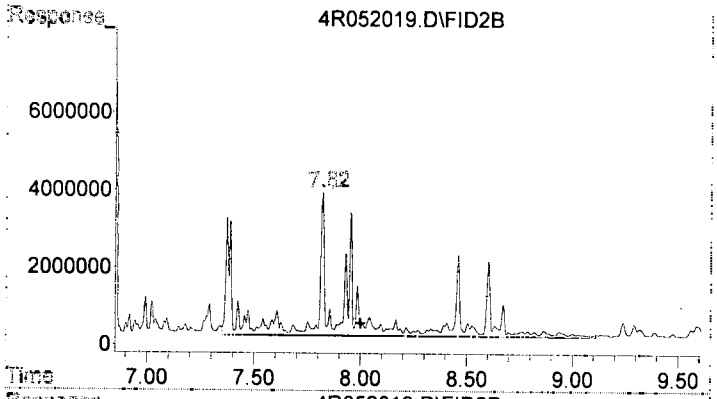
#7 Oil

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 704872625
Conc: 671.76 ug/ml m



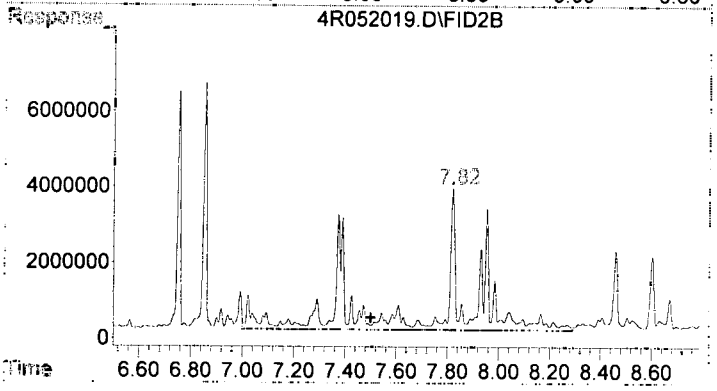
#8 RRO (C24-C40)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 435577720
Conc: 415.12 ug/ml m



#9 TPHmo (C25-C36)

R.T.: 8.000 min
Delta R.T.: 0.000 min
Response: 353077996
Conc: 556.64 ug/ml m



#10 CA LUFT ORO (C23-C32)

R.T.: 7.500 min
Delta R.T.: 0.000 min
Response: 304356050
Conc: 456.89 ug/ml m

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052020.D Vial: 63
Acq On : 21 May 2019 3:51 Operator: KEH
Sample : 9051067-DUP1@100 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:05 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	6.38	1253815	0.994 ug/ml
		Target Compounds			
1)	H	Mineral Oil	6.00	526474020	461.610 ug/ml
2)	H	Diesel	6.00	526474020	461.610 ug/ml
3)	H	DRO(C12-C24)	6.00	241264076	211.539 ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	190124215	222.106 ug/ml
5)	H	TPHd (C10-C25)	6.00	264996344	251.191 ug/ml
7)	H	Oil	9.00	708709558	675.416 ug/ml
8)	H	RRO (C24-C40)	9.00	440576553	419.880 ug/ml
9)	H	TPHmo (C25-C36)	8.00	356375252	561.841 ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	305807108	459.064 ug/ml

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Create → DRO/KRO
KEH 5/21/19

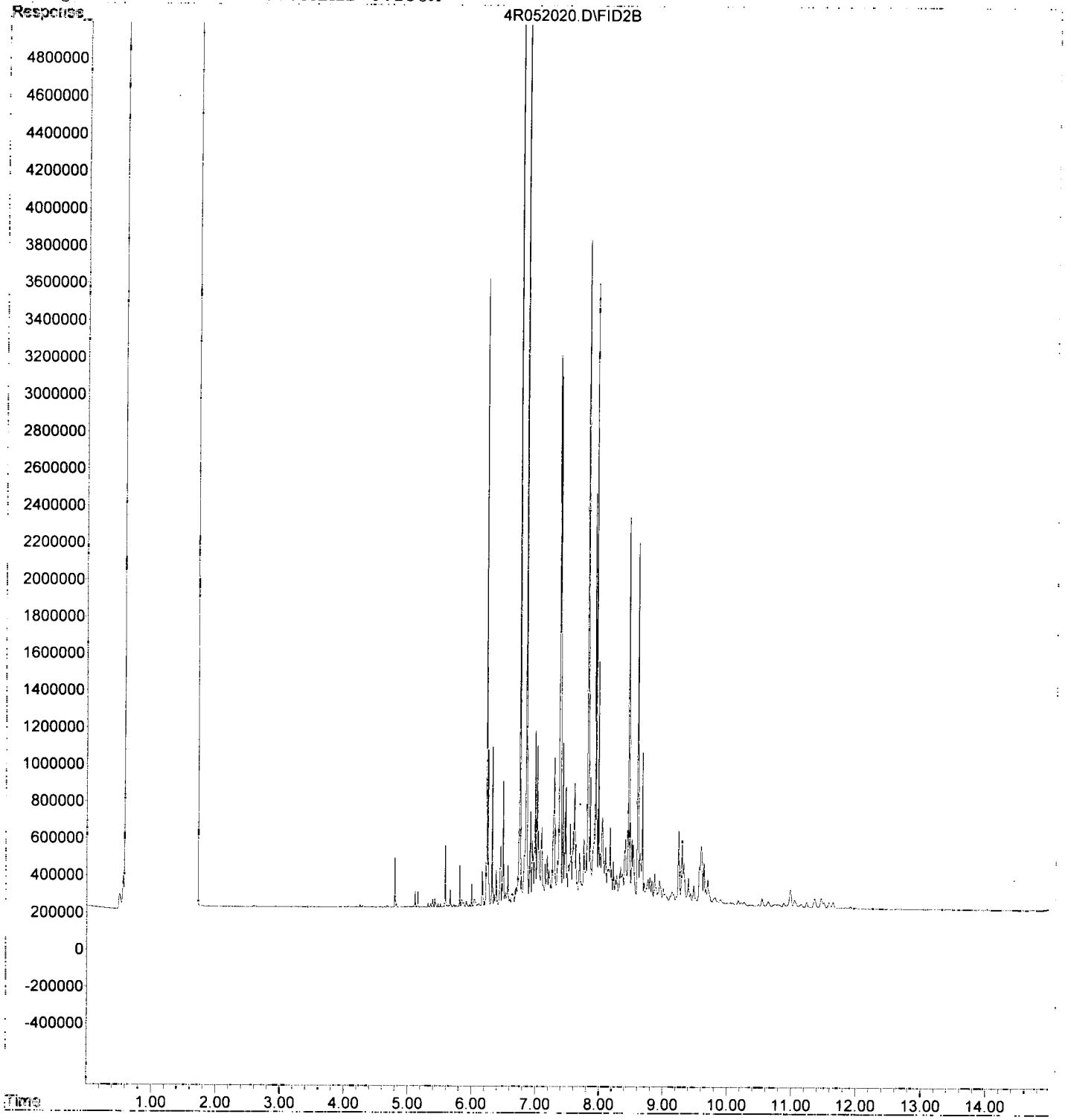
(f)=RT Delta > 1/2 Width
4R052020.D 4R90418D.M Tue May 21 08:05:31 2019 SV-GCMS3

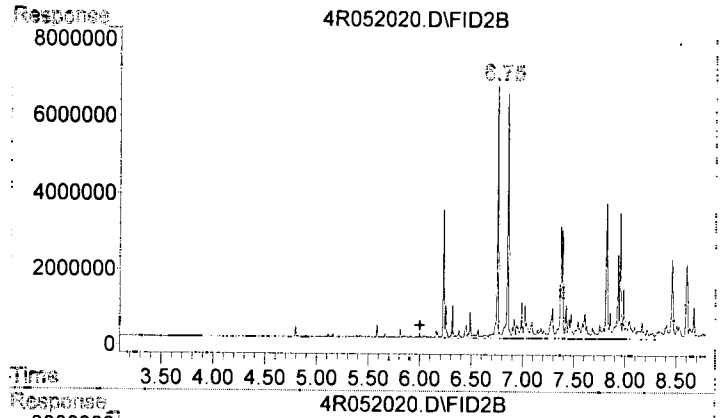
Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052020.D Vial: 63
Acq On : 21 May 2019 3:51 Operator: KEH
Sample : 9051067-DUP1@100 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:05 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

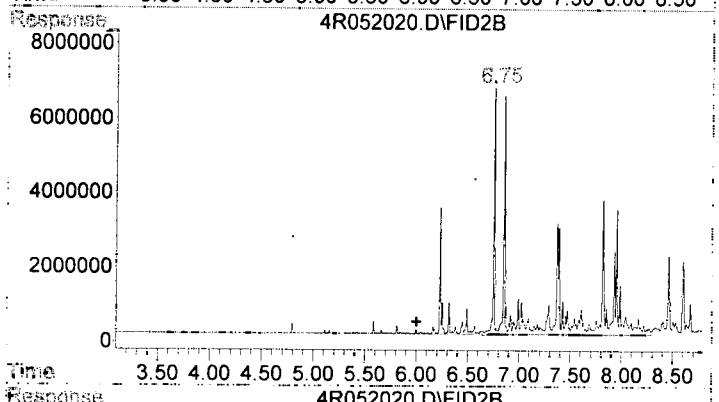
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





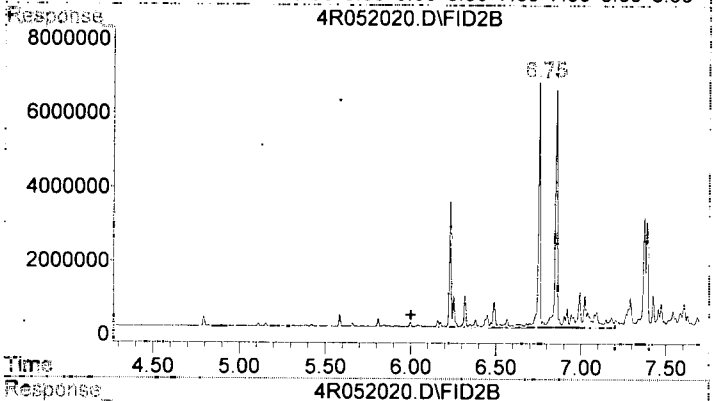
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 526474020
Conc: 461.61 ug/ml m



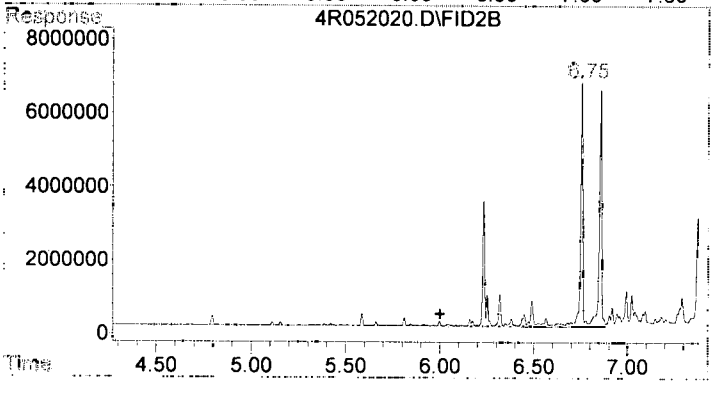
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 526474020
Conc: 461.61 ug/ml m



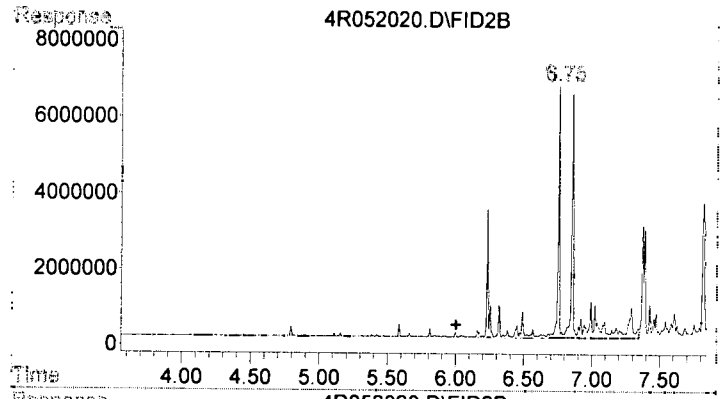
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 241264076
Conc: 211.54 ug/ml m



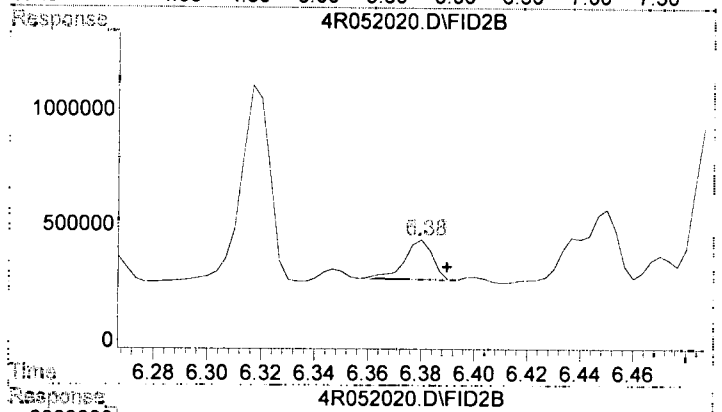
#4 CA LUFT DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 190124215
Conc: 222.11 ug/ml m



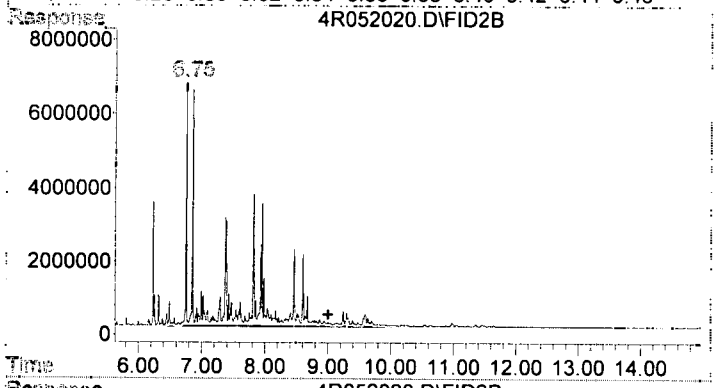
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 264996344
Conc: 251.19 ug/ml m



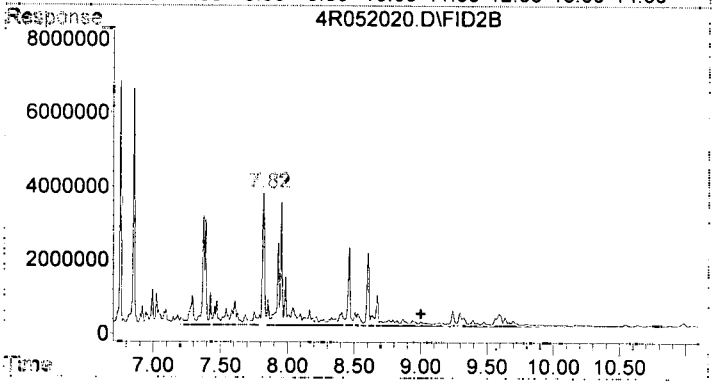
#6 o-Terphenyl

R.T.: 6.381 min
Delta R.T.: -0.009 min
Response: 1253815
Conc: 0.99 ug/ml



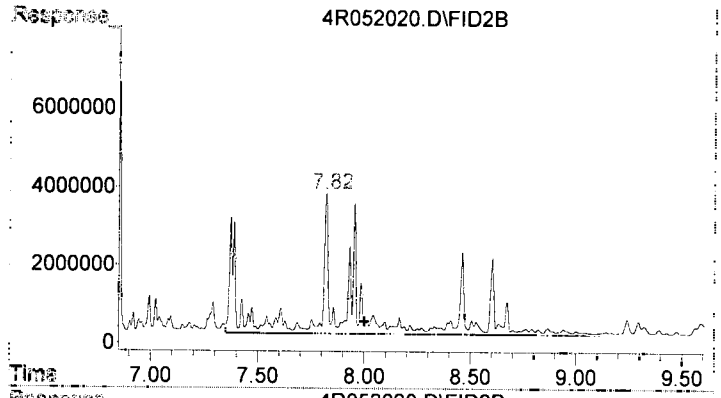
#7 Oil

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 708709558
Conc: 675.42 ug/ml m



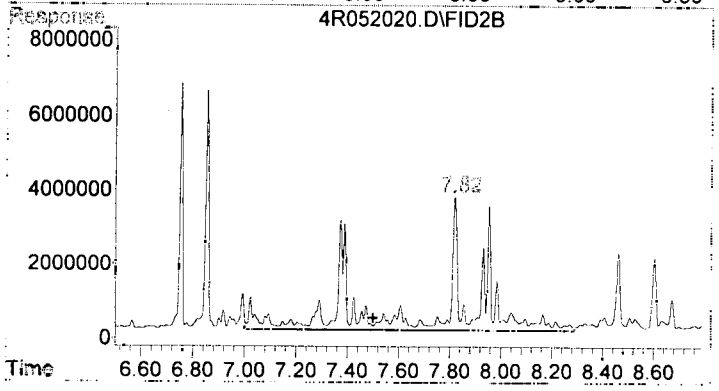
#8 RRO (C24-C40)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 440576553
Conc: 419.88 ug/ml m



#9 TPHmo (C25-C36)

R.T.: 8.000 min
Delta R.T.: 0.000 min
Response: 356375252
Conc: 561.84 ug/ml m



#10 CA LUFT ORO (C23-C32)

R.T.: 7.500 min
Delta R.T.: 0.000 min
Response: 305807108
Conc: 459.06 ug/ml m

Evaluate Continuing Calibration Report

Data File : G:\4\DATA\2019-05\9E20037\4R052024.D
Acq On : 21 May 2019 5:15
Sample : 9E20037-CCV3
Misc :
IntFile : SUR.E

Vial: 65
Operator: KEH
Inst : HP G1530A
Multiplr: 1.00

Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 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	921.846	7.8	94	0.00
2	H	Diesel	1000.000	921.846	7.8	94	0.00
3	H	DRO(C12-C24)	1000.000	749.026	25.1#	77	0.00
4	H	CA LUFT DRO (C12-C22)	1000.000	954.302	4.6	95	0.00
5	H	TPHd (C10-C25)	1000.000	944.979	5.5	94	0.00
6	S	o-Terphenyl	-1.000	49.921	0.0	0	0.00
7	H	Oil	-1.000	287.014	0.0	0	0.00
8	H	RRO (C24-C40)	-1.000	18.544	0.0	0	0.00
9	H	TPHmo (C25-C36)	-1.000	17.067	0.0	78	0.00
10	H	CA LUFT ORO (C23-C32)	-1.000	49.759	0.0	89	0.00

KEH 5/21/19

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

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052024.D Vial: 65
Acq On : 21 May 2019 5:15 Operator: KEH
Sample : 9E20037-CCV3 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:05 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	6.38	62979431	49.921	ug/ml
		Target Compounds				
1)	H	Mineral Oil	6.00	1051381427	921.846	ug/ml
2)	H	Diesel	6.00	1051381427	921.846	ug/ml
3)	H	DRO(C12-C24)	6.00	854276903	749.026	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	816889605	954.302	ug/ml
5)	H	TPHd (C10-C25)	6.00	996916607	944.979	ug/ml
7)	H	Oil	9.00	301161366	287.014	ug/ml
8)	H	RRO (C24-C40)	9.00	19457584	18.544	ug/ml
9)	H	TPHmo (C25-C36)	8.00	10825859	17.067	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	33147333	49.759	ug/ml

KEH 5/21/19

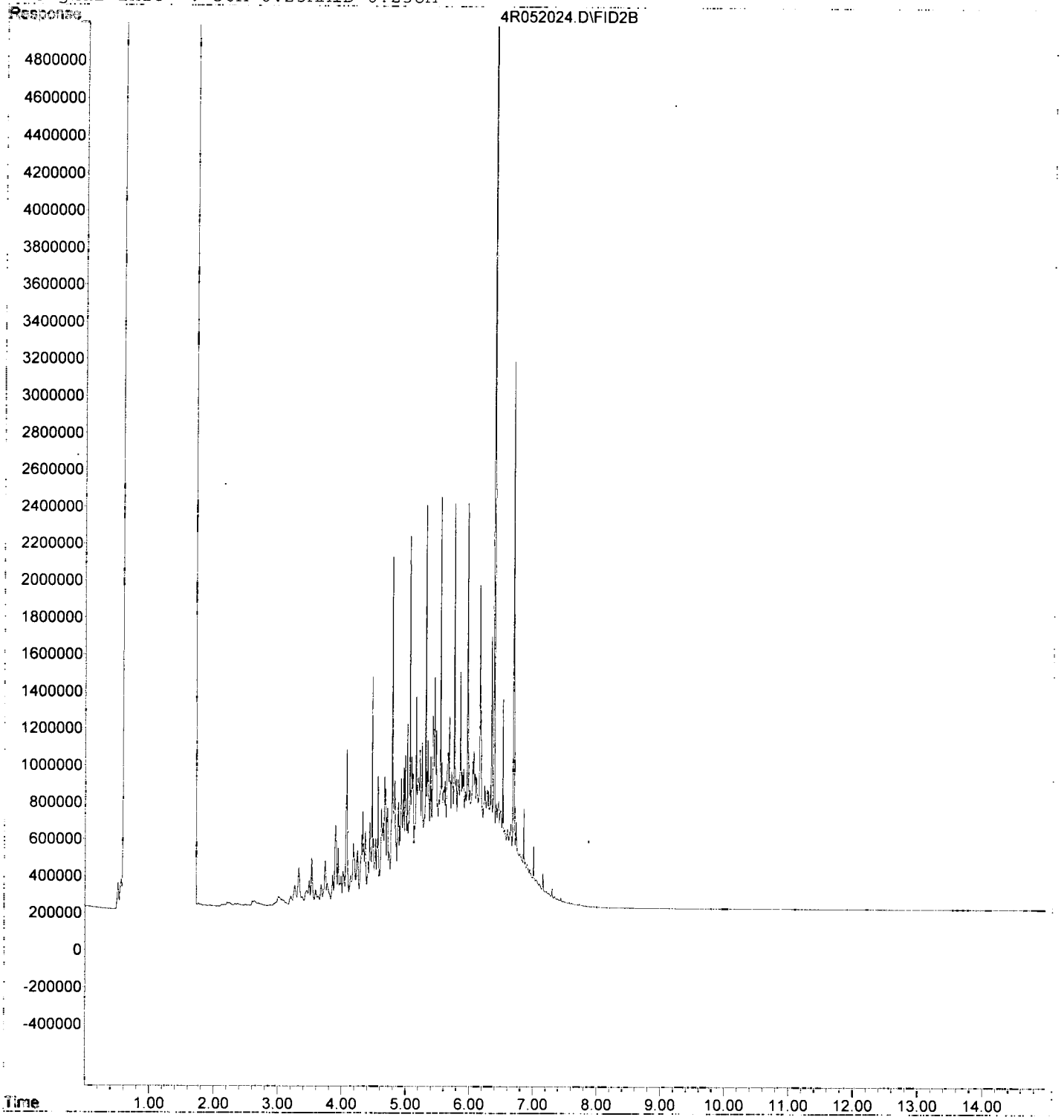
(f)=RT Delta > 1/2 window (m)=manual int.

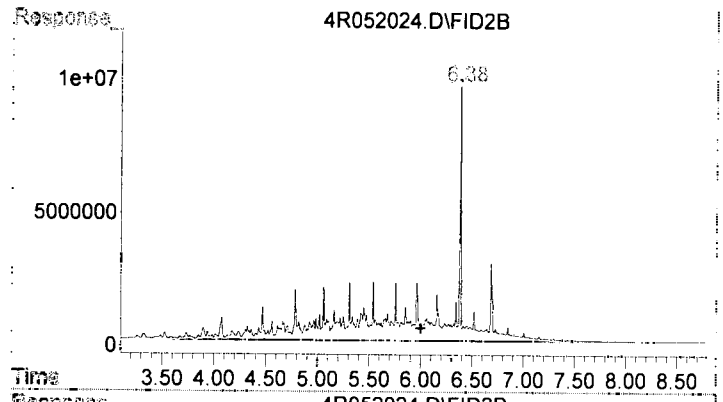
Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052024.D Vial: 65
Acq On : 21 May 2019 5:15 Operator: KEH
Sample : 9E20037-CCV3 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:05 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

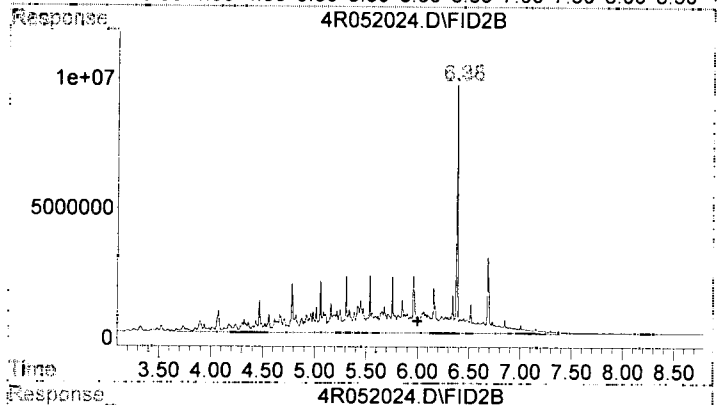
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





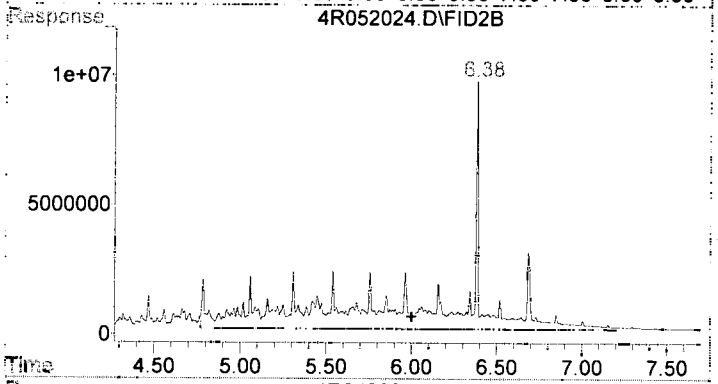
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 1051381427
Conc: 921.85 ug/ml m



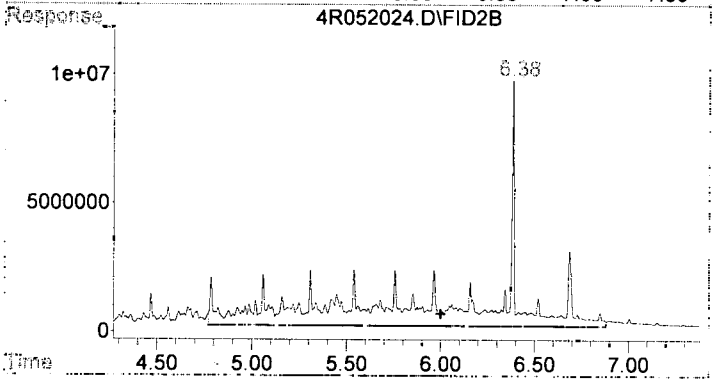
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 1051381427
Conc: 921.85 ug/ml m



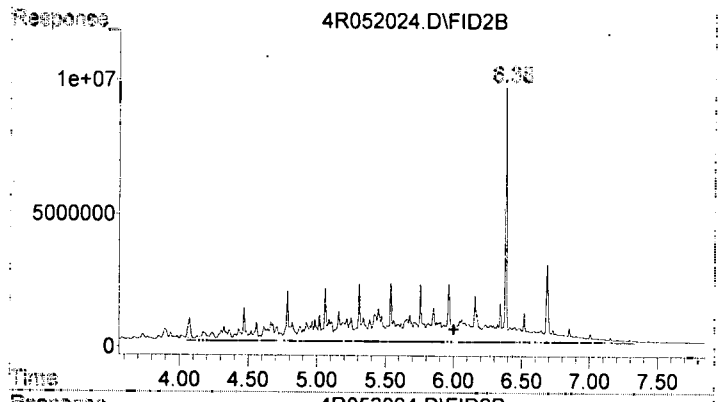
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 854276903
Conc: 749.03 ug/ml m



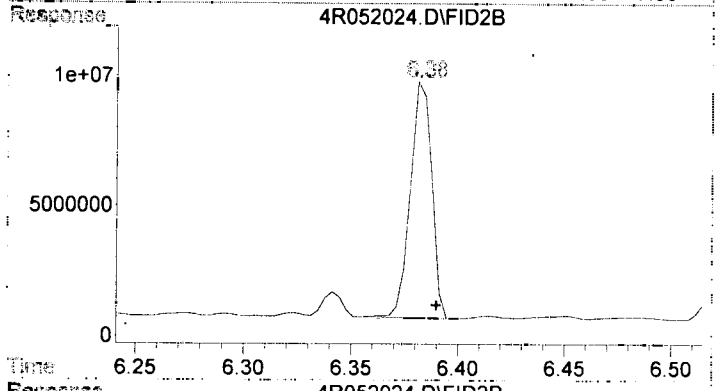
#4 CA LUFT DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 816889605
Conc: 954.30 ug/ml m



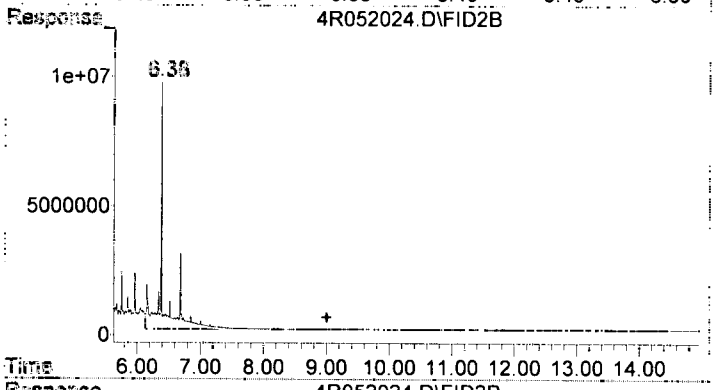
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 996916607
Conc: 944.98 ug/ml m



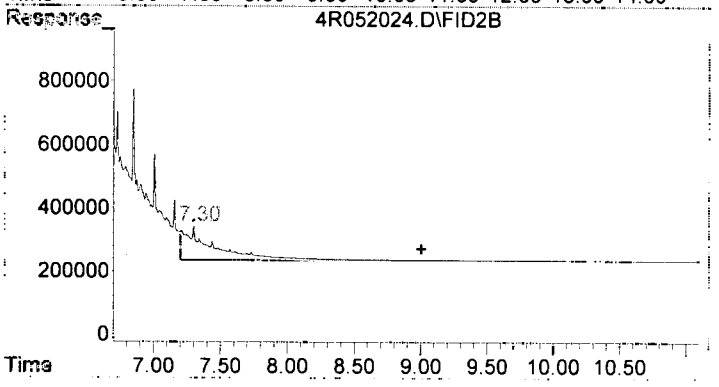
#6 o-Terphenyl

R.T.: 6.384 min
Delta R.T.: -0.006 min
Response: 62979431
Conc: 49.92 ug/ml



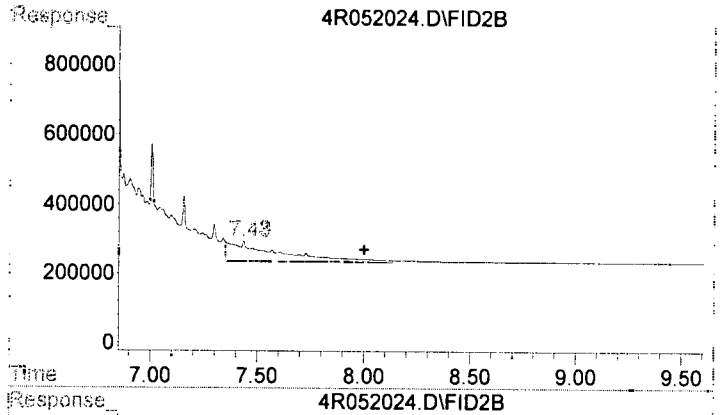
#7 Oil

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 301161366
Conc: 287.01 ug/ml m



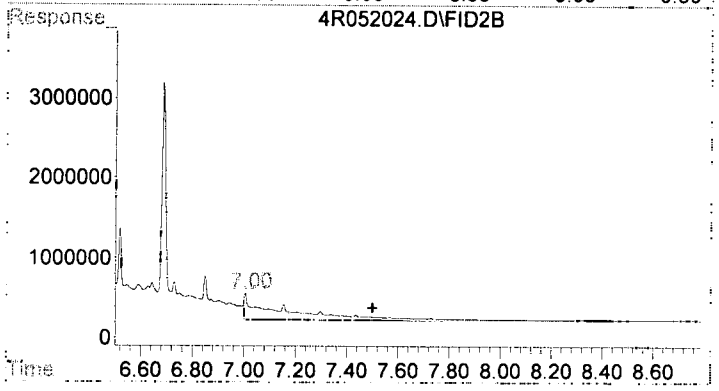
#8 RRO (C24-C40)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 19457584
Conc: 18.54 ug/ml m



#9 TPHmo (C25-C36)

R.T.: 8.000 min
Delta R.T.: 0.000 min
Response: 10825859
Conc: 17.07 ug/ml m



#10 CA LUFT ORO (C23-C32)

R.T.: 7.500 min
Delta R.T.: 0.000 min
Response: 33147333
Conc: 49.76 ug/ml m

Evaluate Continuing Calibration Report

Data File : G:\4\DATA\2019-05\9E20037\4R052025.D
Acq On : 21 May 2019 5:36
Sample : 9E20037-CCV4
Misc :
IntFile : SUR.E

Vial: 66
Operator: KEH
Inst : HP G1530A
Multiplr: 1.00

Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 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	326.763	0.0	96	0.00
2	H	Diesel	-1.000	326.763	0.0	96	0.00
3	H	DRO(C12-C24)	-1.000	82.381	0.0	24	0.00
4	H	CA LUFT DRO (C12-C22)	-1.000	36.042	0.0	98	0.00
5	H	TPHd (C10-C25)	-1.000	129.775	0.0	99	0.00
6	S	o-Terphenyl	-1.000	47.245	0.0	0	0.00
7	H	Oil	500.000	469.091	6.2	95	0.00
8	H	RRO (C24-C40)	500.000	360.166	28.0#	73	0.00
9	H	TPHmo (C25-C36)	500.000	454.675	9.1	92	0.00
10	H	CA LUFT ORO (C23-C32)	500.000	480.742	3.9	96	0.00

KEH 5/17/19

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

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052025.D Vial: 66
Acq On : 21 May 2019 5:36 Operator: KEH
Sample : 9E20037-CCV4 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:05 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	6.38	59603343	47.245 ug/ml
		Target Compounds			
1)	H	Mineral Oil	6.00	372678765	326.763 ug/ml
2)	H	Diesel	6.00	372678765	326.763 ug/ml
3)	H	DRO(C12-C24)	6.00	93956826	82.381 ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	30851995	36.042 ug/ml
5)	H	TPHd (C10-C25)	6.00	136907773	129.775 ug/ml
7)	H	Oil	9.00	492214161	469.091 ug/ml
8)	H	RRO (C24-C40)	9.00	377919231	360.166 ug/ml
9)	H	TPHmo (C25-C36)	8.00	288399922	454.675 ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	320247924	480.742 ug/ml

KEH 5/21/19

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

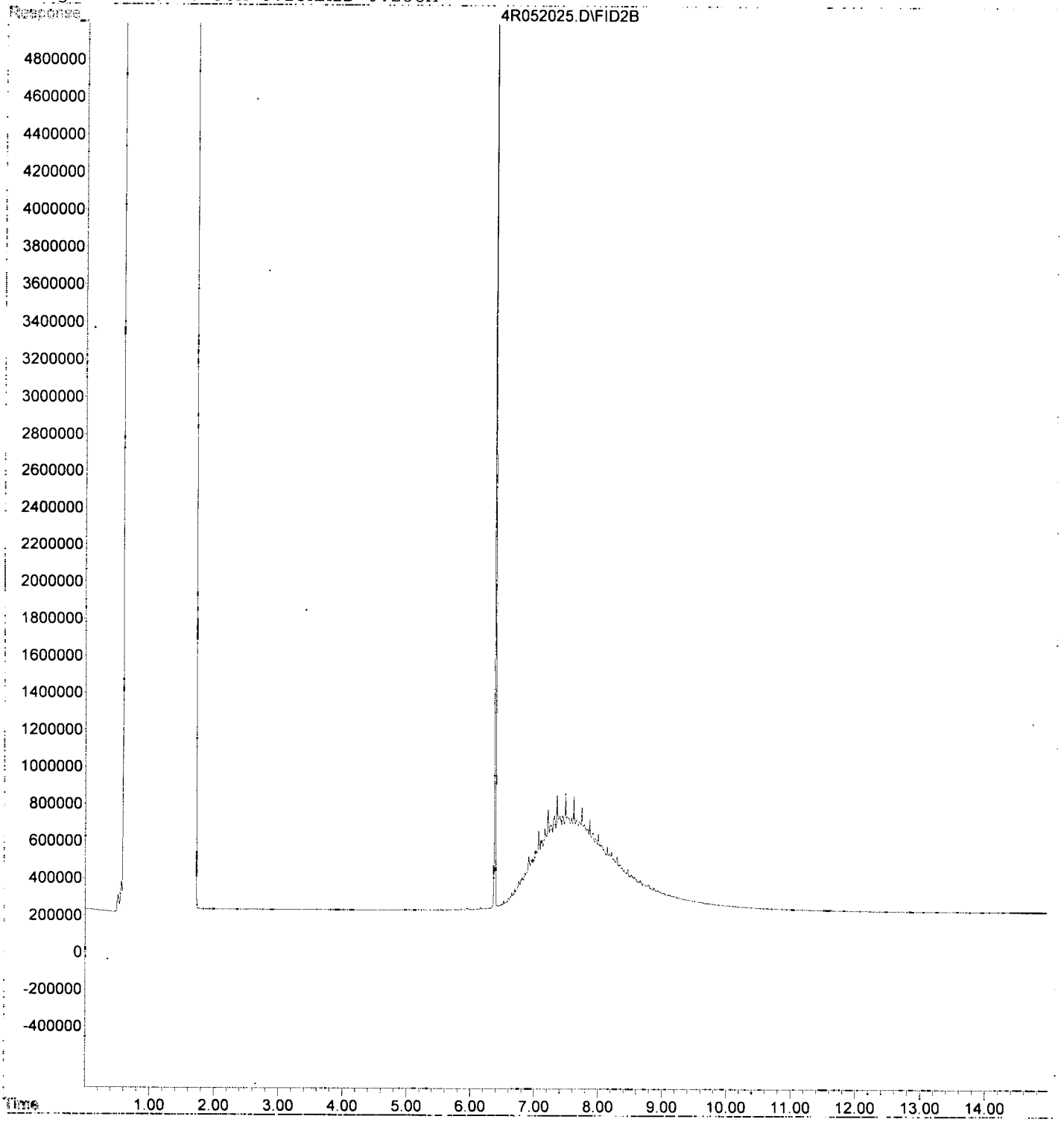
06/08/19 Hahn & Associates- Mult 802 Decommisioning - Level IV Data Package Page 347 of 1564

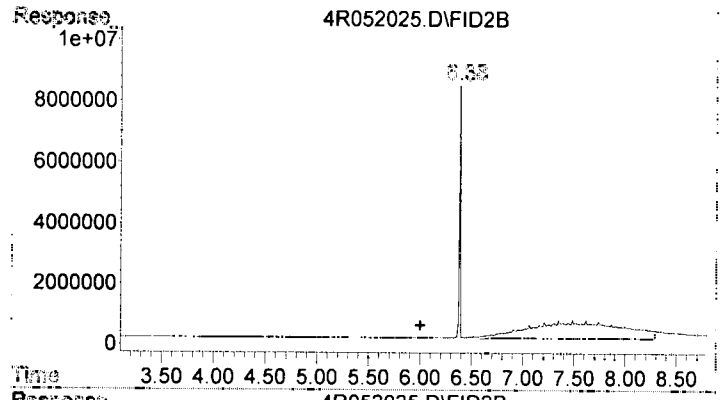
Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-05\9E20037\4R052025.D Vial: 66
Acq On : 21 May 2019 5:36 Operator: KEH
Sample : 9E20037-CCV4 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: May 21 8:05 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Tue May 21 08:03:05 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

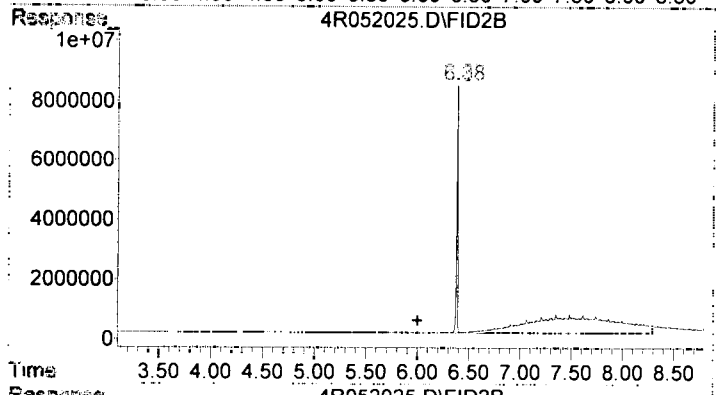
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





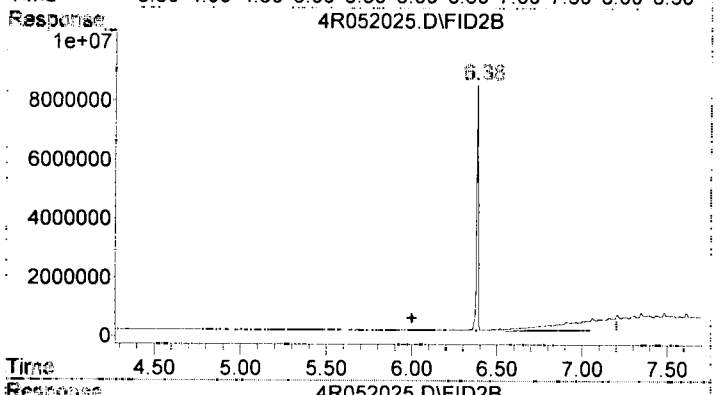
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 372678765
Conc: 326.76 ug/ml m



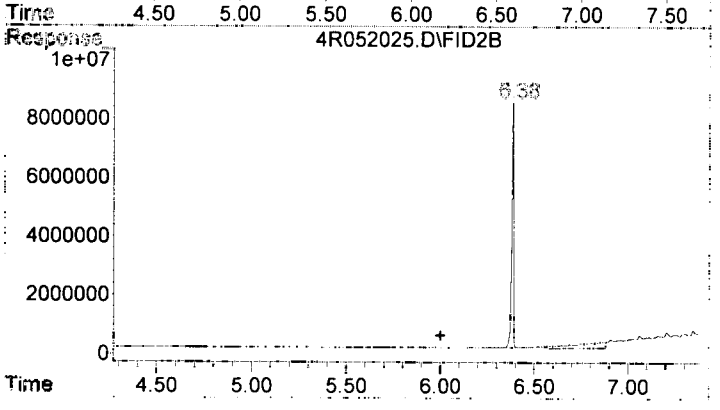
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 372678765
Conc: 326.76 ug/ml m



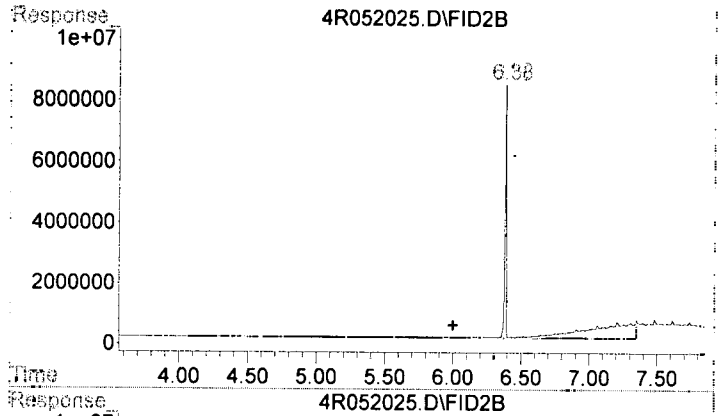
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 93956826
Conc: 82.38 ug/ml m



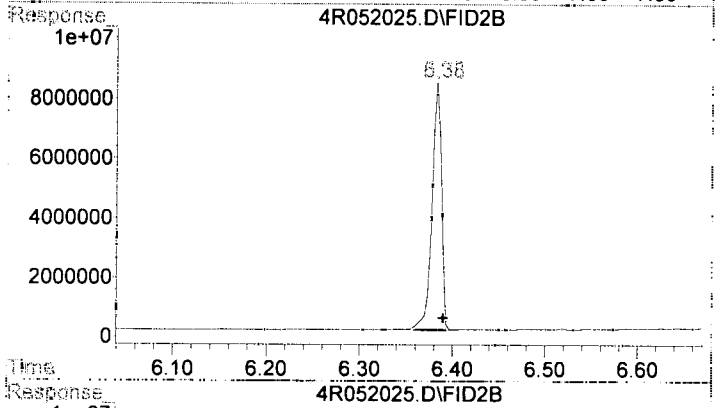
#4 CA LUFT DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 30851995
Conc: 36.04 ug/ml m



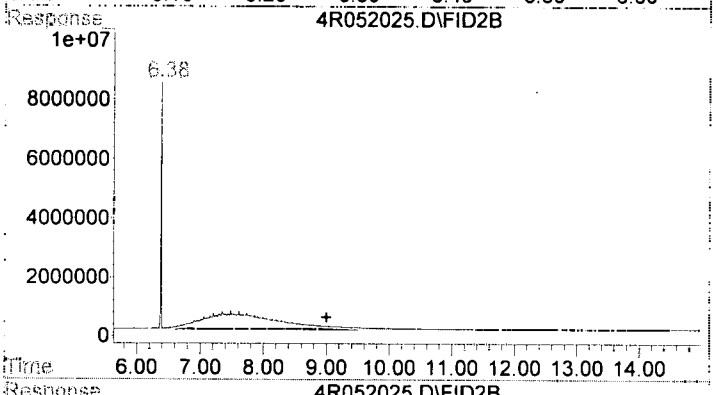
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 136907773
Conc: 129.78 ug/ml m



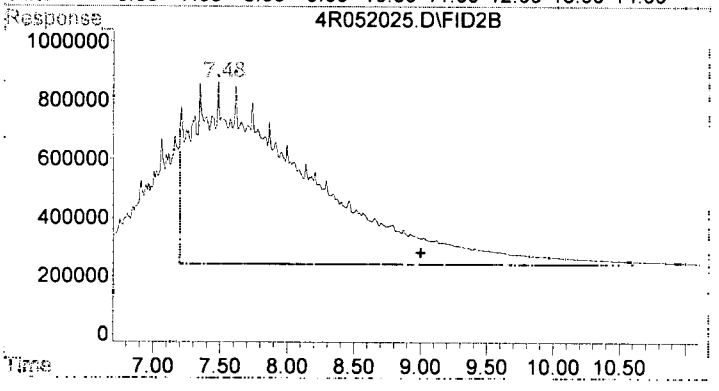
#6 o-Terphenyl

R.T.: 6.384 min
Delta R.T.: -0.006 min
Response: 59603343
Conc: 47.24 ug/ml



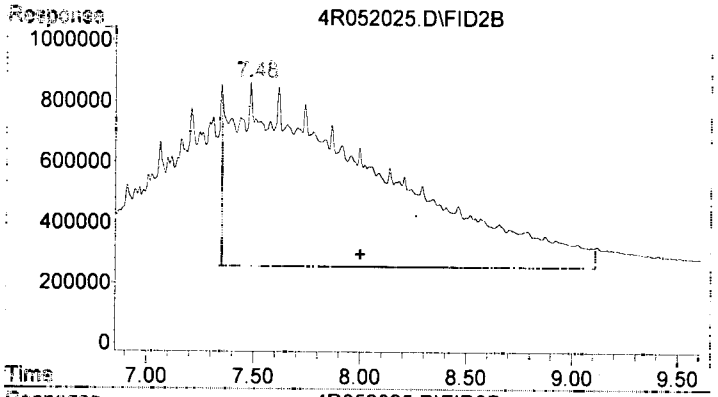
#7 Oil

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 492214161
Conc: 469.09 ug/ml m



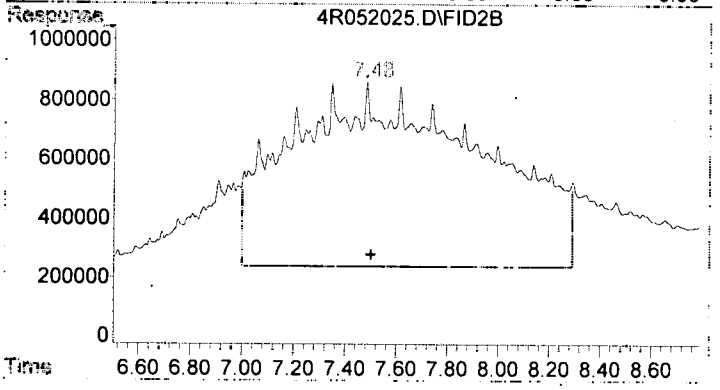
#8 RRO (C24-C40)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 377919231
Conc: 360.17 ug/ml m



#9 TPHmo (C25-C36)

R.T.: 8.000 min
Delta R.T.: 0.000 min
Response: 288399922
Conc: 454.67 ug/ml m



#10 CA LUFT ORO (C23-C32)

R.T.: 7.500 min
Delta R.T.: 0.000 min
Response: 320247924
Conc: 480.74 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 9D18031 (Cal ID A9D1904) DUALFID4R

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence:	**9D18031**	Instrument:	**DUALFID4R**
Date:	**04/18/19 11:35**	Calibration:	**A9D1904**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9D18031-RES1	Soil	QC	QC				A19C198
2	9D18031-ICB1	Soil	QC	QC				
3	9D18031-CAL1	Soil	QC	QC				A19C305
4	9D18031-CAL2	Soil	QC	QC				A19C306
5	9D18031-CAL3	Soil	QC	QC				A19C307
6	9D18031-CAL4	Soil	QC	QC				A19C308
7	9D18031-CAL5	Soil	QC	QC				A19C309
8	9D18031-CAL6	Soil	QC	QC				A19C310
9	9D18031-CAL7	Soil	QC	QC				A19C311
10	9D18031-CAL8	Soil	QC	QC				A19C204
11	9D18031-CAL9	Soil	QC	QC				A19D191
12	9D18031-CALA	Soil	QC	QC				A19D192
13	9D18031-CALB	Soil	QC	QC				A19D193
14	9D18031-CALC	Soil	QC	QC				A19D194
15	9D18031-CALD	Soil	QC	QC				A19C210
16	9D18031-CALE	Soil	QC	QC				A19C365
17	9D18031-CALF	Soil	QC	QC				A19C366
18	9D18031-CALG	Soil	QC	QC				A19C367
19	9D18031-CALH	Soil	QC	QC				A19C368
20	9D18031-CALI	Soil	QC	QC				A19C373
21	9D18031-CALJ	Soil	QC	QC				A19C370
22	9D18031-IBL1	Soil	QC	QC				
23	9D18031-CALK	Soil	QC	QC				A19C364
24	9D18031-IBL2	Soil	QC	QC				
25	9D18031-ICV1	Soil	QC	QC				A19D271
26	9D18031-ICV2	Soil	QC	QC				A19D272

Data Entered By: kcH 4/19/19

Data Reviewed By: [illegible] 4/19/19

Comments:

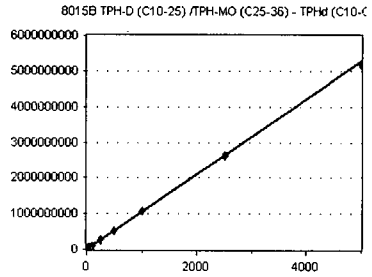
Element Calibration Review Sheet

Calibration ID: **A9D1904** Instrument: **DUALFID4R** Calibration Date: **04/19/2019**

Analysis: **8015B TPH-D (C10-25) /TPH·** Instrument Cal ID: **4R90418D.m**

TPHd (C10-C25)

Curve Fit: **AVERAGE RF**

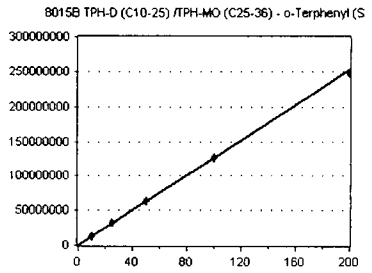


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL1	25	!.67869E+07	1071476.000	6.00
9D18031-CAL2	40	208758E+07	1052190.000	6.00
9D18031-CAL3	100	045048E+08	1045048.000	6.00
9D18031-CAL4	250	669609E+08	1067844.000	6.00
9D18031-CAL5	500	295566E+08	1059113.000	6.00
9D18031-CAL6	1000	055236E+09	1055236.000	6.00
9D18031-CAL7	2500	526371E+09	1050548.000	6.00
9D18031-CAL8	5000	191186E+09	1038237.000	6.00

AVE RF **1054961.000** RF RSD **1.05** AVE RT **6.00**

o-Terphenyl (Surr)

Curve Fit: **AVERAGE RF**

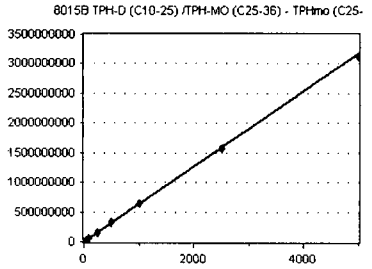


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL9	10	255074E+07	1255074.000	6.39
9D18031-CALA	25	174645E+07	1269858.000	6.39
9D18031-CALB	50	348063E+07	1269613.000	6.39
9D18031-CALC	100	271551E+08	1271551.000	6.39
9D18031-CALD	200	!.48367E+08	1241835.000	6.40

AVE RF **1261586.000** RF RSD **1.02** AVE RT **6.39**

TPHmo (C25-C36)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9D18031-CALE	40	664826E+07	666206.500	8.00
9D18031-CALF	80	058855E+07	632356.900	8.00
9D18031-CALG	250	546685E+08	618674.000	8.00
9D18031-CALH	500	143661E+08	628732.300	8.00
9D18031-CALI	1000	364105E+08	636410.500	8.00
9D18031-CALJ	2500	.57951E+09	631804.000	8.00
9D18031-CALK	5000	129553E+09	625910.600	8.00

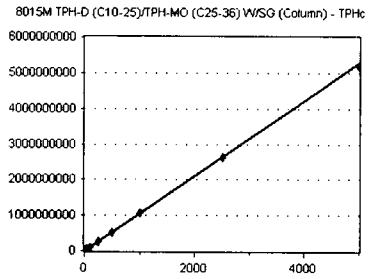
AVE RF **634299.200** RF RSD **2.39** AVE RT **8.00**

Element Calibration Review Sheet

Calibration ID: **A9D1904** Instrument: **DUALFID4R** Calibration Date: **04/19/2019**

Analysis: **8015M TPH-D (C10-25)/TPH-** Instrument Cal ID: **4R90418D.m**

TPHd (C10-C25)

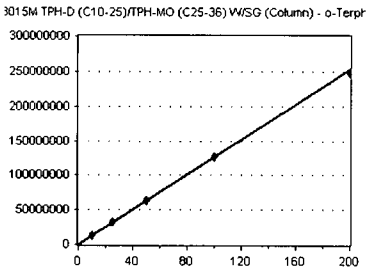


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9D18031-CAL1	25	!.67869E+07	1071476.000	6.00
9D18031-CAL2	40	208758E+07	1052190.000	6.00
9D18031-CAL3	100	045048E+08	1045048.000	6.00
9D18031-CAL4	250	669609E+08	1067844.000	6.00
9D18031-CAL5	500	295566E+08	1059113.000	6.00
9D18031-CAL6	1000	055236E+09	1055236.000	6.00
9D18031-CAL7	2500	626371E+09	1050548.000	6.00
9D18031-CAL8	5000	191186E+09	1038237.000	6.00

AVE RF **1054961.000** RF RSD **1.05** AVE RT **6.00**

o-Terphenyl (Surr)

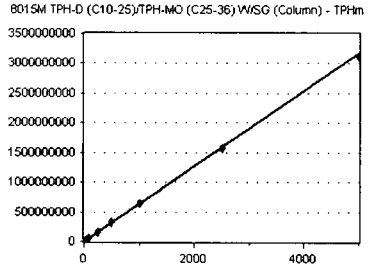


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9D18031-CAL9	10	255074E+07	1255074.000	6.39
9D18031-CALA	25	174645E+07	1269858.000	6.39
9D18031-CALB	50	348063E+07	1269613.000	6.39
9D18031-CALC	100	271551E+08	1271551.000	6.39
9D18031-CALD	200	!.48367E+08	1241835.000	6.40

AVE RF **1261586.000** RF RSD **1.02** AVE RT **6.39**

TPHmo (C25-C36)



Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9D18031-CALE	40	564826E+07	666206.500	8.00
9D18031-CALF	80	058855E+07	632356.900	8.00
9D18031-CALG	250	546685E+08	618674.000	8.00
9D18031-CALH	500	143661E+08	628732.300	8.00
9D18031-CALI	1000	364105E+08	636410.500	8.00
9D18031-CALJ	2500	.57951E+09	631804.000	8.00
9D18031-CALK	5000	129553E+09	625910.600	8.00

AVE RF **634299.200** RF RSD **2.39** AVE RT **8.00**

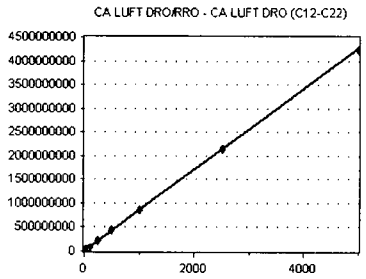
Element Calibration Review Sheet

Calibration ID: **A9D1904** Instrument: **DUALFID4R** Calibration Date: **04/19/2019**

Analysis: **CA LUFT DRO/RRO** Instrument Cal ID: **4R90418D.m**

CA LUFT DRO (C12-C22)

Curve Fit: **AVERAGE RF**

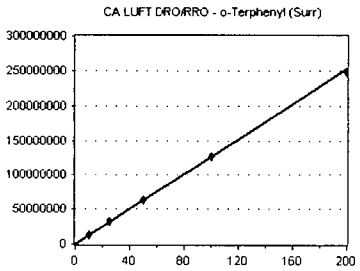


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL1	25	1.17237E+07	868948.000	6.00
9D18031-CAL2	40	390809E+07	847702.200	6.00
9D18031-CAL3	100	406751E+07	840675.100	6.00
9D18031-CAL4	250	161329E+08	864531.600	6.00
9D18031-CAL5	500	1.30197E+08	860394.000	6.00
9D18031-CAL6	1000	599682E+08	859968.200	6.00
9D18031-CAL7	2500	144994E+09	857997.600	6.00
9D18031-CAL8	5000	1.23923E+09	847846.000	6.00

AVE RF **856007.800** RF RSD **1.13** AVE RT **6.00**

o-Terphenyl (Surr)

Curve Fit: **AVERAGE RF**

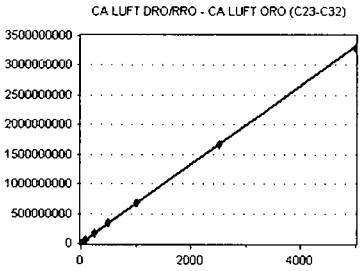


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL9	10	255074E+07	1255074.000	6.39
9D18031-CALA	25	174645E+07	1269858.000	6.39
9D18031-CALB	50	348063E+07	1269613.000	6.39
9D18031-CALC	100	271551E+08	1271551.000	6.39
9D18031-CALD	200	1.48367E+08	1241835.000	6.40

AVE RF **1261586.000** RF RSD **1.02** AVE RT **6.39**

CA LUFT ORO (C23-C32)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9D18031-CALE	40	517726E+07	654431.500	7.50
9D18031-CALF	80	389286E+07	673660.800	7.50
9D18031-CALG	250	1.65375E+08	661500.100	7.50
9D18031-CALH	500	348875E+08	669775.000	7.50
9D18031-CALI	1000	1.76161E+08	676161.000	7.50
9D18031-CALJ	2500	672335E+09	668934.000	7.50
9D18031-CALK	5000	293064E+09	658612.800	7.50

AVE RF **666153.600** RF RSD **1.22** AVE RT **7.50**

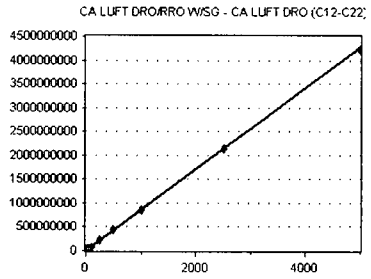
Element Calibration Review Sheet

Calibration ID: **A9D1904** Instrument: **DUALFID4R** Calibration Date: **04/19/2019**

Analysis: **CA LUFT DRO/RRO W/SG** Instrument Cal ID: **4R90418D.m**

CA LUFT DRO (C12-C22)

Curve Fit: **AVERAGE RF**

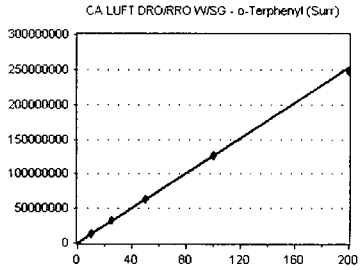


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL1	25	1.17237E+07	868948.000	6.00
9D18031-CAL2	40	390809E+07	847702.200	6.00
9D18031-CAL3	100	406751E+07	840675.100	6.00
9D18031-CAL4	250	161329E+08	864531.600	6.00
9D18031-CAL5	500	1.30197E+08	860394.000	6.00
9D18031-CAL6	1000	599682E+08	859968.200	6.00
9D18031-CAL7	2500	144994E+09	857997.600	6.00
9D18031-CAL8	5000	1.23923E+09	847846.000	6.00

AVE RF **856007.800** RF RSD **1.13** AVE RT **6.00**

o-Terphenyl (Surr)

Curve Fit: **AVERAGE RF**

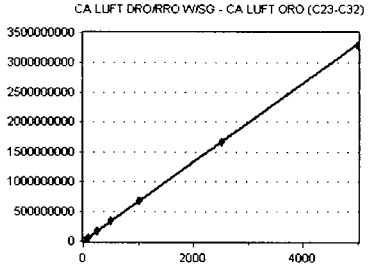


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL9	10	255074E+07	1255074.000	6.39
9D18031-CALA	25	174645E+07	1269858.000	6.39
9D18031-CALB	50	348063E+07	1269613.000	6.39
9D18031-CALC	100	271551E+08	1271551.000	6.39
9D18031-CALD	200	1.48367E+08	1241835.000	6.40

AVE RF **1261586.000** RF RSD **1.02** AVE RT **6.39**

CA LUFT ORO (C23-C32)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9D18031-CALE	40	517726E+07	654431.500	7.50
9D18031-CALF	80	389286E+07	673660.800	7.50
9D18031-CALG	250	1.65375E+08	661500.100	7.50
9D18031-CALH	500	348875E+08	669775.000	7.50
9D18031-CALI	1000	1.76161E+08	676161.000	7.50
9D18031-CALJ	2500	672335E+09	668934.000	7.50
9D18031-CALK	5000	293064E+09	658612.800	7.50

AVE RF **666153.600** RF RSD **1.22** AVE RT **7.50**

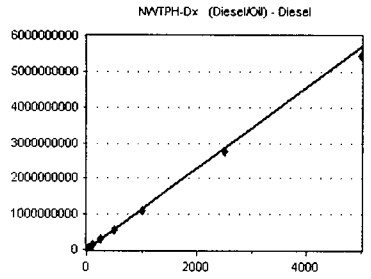
Element Calibration Review Sheet

Calibration ID: **A9D1904** Instrument: **DUALFID4R** Calibration Date: **04/19/2019**

Analysis: **NWTPH-Dx (Diesel/Oil)** Instrument Cal ID: **4R90418D.m**

Diesel

Curve Fit: **AVERAGE RF**

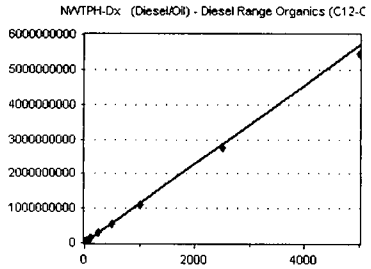


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL1	25	106382E+07	1242553.000	6.00
9D18031-CAL2	40	589096E+07	1172274.000	6.00
9D18031-CAL3	100	135692E+08	1135692.000	6.00
9D18031-CAL4	250	853091E+08	1141236.000	6.00
9D18031-CAL5	500	.59963E+08	1119926.000	6.00
9D18031-CAL6	1000	113983E+09	1113983.000	6.00
9D18031-CAL7	2500	765587E+09	1106235.000	6.00
9D18031-CAL8	5000	461189E+09	1092238.000	6.00

AVE RF **1140517.000** RF RSD **4.20** AVE RT **6.00**

Diesel Range Organics (C12-C24)

Curve Fit: **AVERAGE RF**

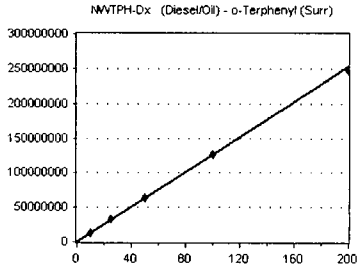


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL1	25	106382E+07	1242553.000	6.00
9D18031-CAL2	40	589096E+07	1172274.000	6.00
9D18031-CAL3	100	135692E+08	1135692.000	6.00
9D18031-CAL4	250	853091E+08	1141236.000	6.00
9D18031-CAL5	500	.59963E+08	1119926.000	6.00
9D18031-CAL6	1000	113983E+09	1113983.000	6.00
9D18031-CAL7	2500	765587E+09	1106235.000	6.00
9D18031-CAL8	5000	461189E+09	1092238.000	6.00

AVE RF **1140517.000** RF RSD **4.20** AVE RT **6.00**

o-Terphenyl (Surr)

Curve Fit: **AVERAGE RF**

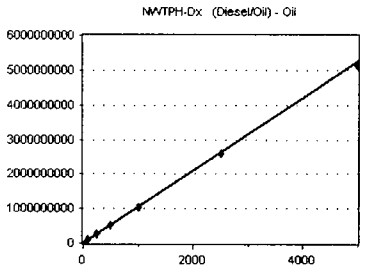


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL9	10	255074E+07	1255074.000	6.39
9D18031-CALA	25	174645E+07	1269858.000	6.39
9D18031-CALB	50	348063E+07	1269613.000	6.39
9D18031-CALC	100	271551E+08	1271551.000	6.39
9D18031-CALD	200	.48367E+08	1241835.000	6.40

AVE RF **1261586.000** RF RSD **1.02** AVE RT **6.39**

Oil

Curve Fit: **AVERAGE RF**

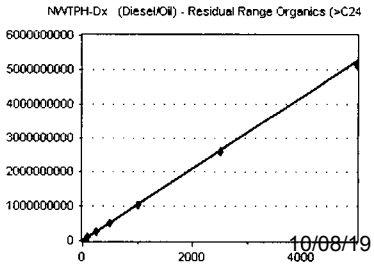


Standard	Concentration	Response	Response Factor	RT
~~9D18031-CALE~~	~~40~~	~~027874E+07~~	~~1256969.000~~	~~9.00~~
9D18031-CALF	80	.86643E+07	1108304.000	9.00
9D18031-CALG	250	506622E+08	1042649.000	9.00
9D18031-CALH	500	195821E+08	1039164.000	9.00
9D18031-CALI	1000	045982E+09	1045982.000	9.00
9D18031-CALJ	2500	583642E+09	1033457.000	9.00
9D18031-CALK	5000	131005E+09	1026201.000	9.00

AVE RF **1049293.000** RF RSD **2.83** AVE RT **9.00**

Residual Range Organics (>C24)

Curve Fit: **AVERAGE RF** ✓



Standard	Concentration	Response	Response Factor	RT
~~9D18031-CALE~~	~~40~~	~~027874E+07~~	~~1256969.000~~	~~9.00~~
9D18031-CALF	80	.86643E+07	1108304.000	9.00
9D18031-CALG	250	506622E+08	1042649.000	9.00
9D18031-CALH	500	195821E+08	1039164.000	9.00
9D18031-CALI	1000	045982E+09	1045982.000	9.00
9D18031-CALJ	2500	583642E+09	1033457.000	9.00
9D18031-CALK	5000	131005E+09	1026201.000	9.00

AVE RF **1049293.000** RF RSD **2.83** AVE RT **9.00**

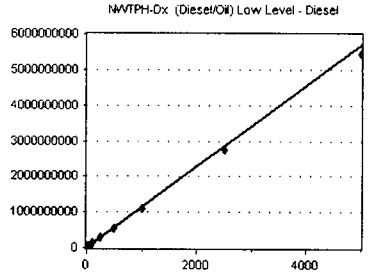
Element Calibration Review Sheet

Calibration ID: **A9D1904** Instrument: **DUALFID4R** Calibration Date: **04/19/2019**

Analysis: **NWTPH-Dx (Diesel/Oil) Low** Instrument Cal ID: **4R90418D.m**

Diesel

Curve Fit: **AVERAGE RF**

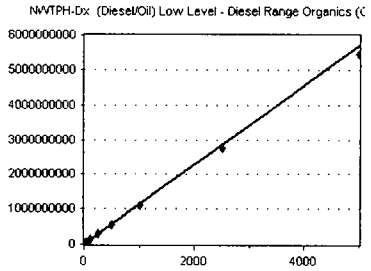


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL1	25	106382E+07	1242553.000	6.00
9D18031-CAL2	40	689096E+07	1172274.000	6.00
9D18031-CAL3	100	135692E+08	1135692.000	6.00
9D18031-CAL4	250	853091E+08	1141236.000	6.00
9D18031-CAL5	500	5.59963E+08	1119926.000	6.00
9D18031-CAL6	1000	113983E+09	1113983.000	6.00
9D18031-CAL7	2500	765587E+09	1106235.000	6.00
9D18031-CAL8	5000	461189E+09	1092238.000	6.00

AVE RF **1140517.000** RF RSD **4.20** AVE RT **6.00**

Diesel Range Organics (C12-C24

Curve Fit: **AVERAGE RF**

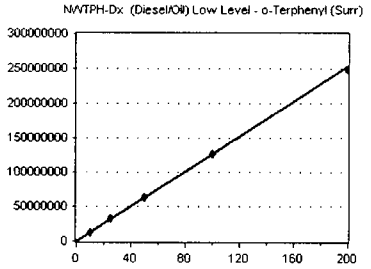


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL1	25	106382E+07	1242553.000	6.00
9D18031-CAL2	40	689096E+07	1172274.000	6.00
9D18031-CAL3	100	135692E+08	1135692.000	6.00
9D18031-CAL4	250	853091E+08	1141236.000	6.00
9D18031-CAL5	500	5.59963E+08	1119926.000	6.00
9D18031-CAL6	1000	113983E+09	1113983.000	6.00
9D18031-CAL7	2500	765587E+09	1106235.000	6.00
9D18031-CAL8	5000	461189E+09	1092238.000	6.00

AVE RF **1140517.000** RF RSD **4.20** AVE RT **6.00**

o-Terphenyl (Surr)

Curve Fit: **AVERAGE RF**

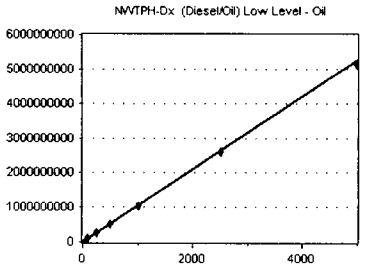


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL9	10	255074E+07	1255074.000	6.39
9D18031-CALA	25	174645E+07	1269858.000	6.39
9D18031-CALB	50	348063E+07	1269613.000	6.39
9D18031-CALC	100	271551E+08	1271551.000	6.39
9D18031-CALD	200	2.48367E+08	1241835.000	6.40

AVE RF **1261586.000** RF RSD **1.02** AVE RT **6.39**

Oil

Curve Fit: **AVERAGE RF**

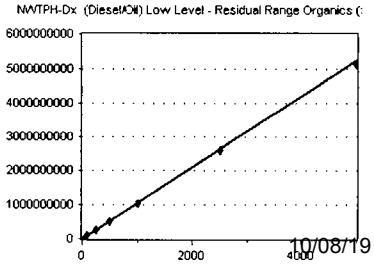


Standard	Concentration	Response	Response Factor	RT
~~9D18031-CALE~~	~~40~~	~~927874E+07~~	~~1256969.000~~	~~9.00~~
9D18031-CALF	80	9.86643E+07	1108304.000	9.00
9D18031-CALG	250	506622E+08	1042649.000	9.00
9D18031-CALH	500	195821E+08	1039164.000	9.00
9D18031-CALI	1000	045982E+09	1045982.000	9.00
9D18031-CALJ	2500	583642E+09	1033457.000	9.00
9D18031-CALK	5000	131005E+09	1026201.000	9.00

AVE RF **1049293.000** RF RSD **2.83** AVE RT **9.00**

Residual Range Organics (>C24

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9D18031-CALE~~	~~40~~	~~927874E+07~~	~~1256969.000~~	~~9.00~~
9D18031-CALF	80	9.86643E+07	1108304.000	9.00
9D18031-CALG	250	506622E+08	1042649.000	9.00
9D18031-CALH	500	195821E+08	1039164.000	9.00
9D18031-CALI	1000	045982E+09	1045982.000	9.00
9D18031-CALJ	2500	583642E+09	1033457.000	9.00
9D18031-CALK	5000	131005E+09	1026201.000	9.00

AVE RF **1049293.000** RF RSD **2.83** AVE RT **9.00**

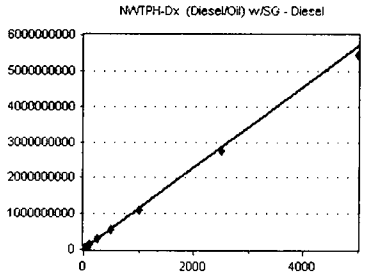
Element Calibration Review Sheet

Calibration ID: **A9D1904** Instrument: **DUALFID4R** Calibration Date: **04/19/2019**

Analysis: **NWTPH-Dx (Diesel/Oil) w/S** Instrument Cal ID: **4R90418D.m**

Diesel

Curve Fit: **AVERAGE RF**

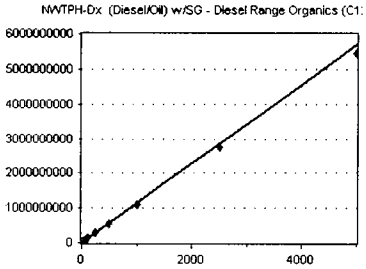


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL1	25	106382E+07	1242553.000	6.00
9D18031-CAL2	40	689096E+07	1172274.000	6.00
9D18031-CAL3	100	135692E+08	1135692.000	6.00
9D18031-CAL4	250	853091E+08	1141236.000	6.00
9D18031-CAL5	500	5.59963E+08	1119926.000	6.00
9D18031-CAL6	1000	113983E+09	1113983.000	6.00
9D18031-CAL7	2500	765587E+09	1106235.000	6.00
9D18031-CAL8	5000	461189E+09	1092238.000	6.00

AVE RF **1140517.000** RF RSD **4.20** AVE RT **6.00**

Diesel Range Organics (C12-C24)

Curve Fit: **AVERAGE RF**

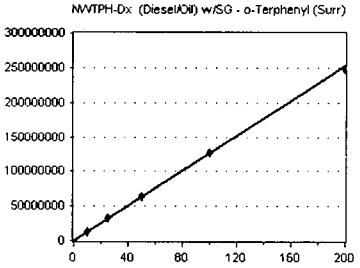


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL1	25	106382E+07	1242553.000	6.00
9D18031-CAL2	40	689096E+07	1172274.000	6.00
9D18031-CAL3	100	135692E+08	1135692.000	6.00
9D18031-CAL4	250	853091E+08	1141236.000	6.00
9D18031-CAL5	500	5.59963E+08	1119926.000	6.00
9D18031-CAL6	1000	113983E+09	1113983.000	6.00
9D18031-CAL7	2500	765587E+09	1106235.000	6.00
9D18031-CAL8	5000	461189E+09	1092238.000	6.00

AVE RF **1140517.000** RF RSD **4.20** AVE RT **6.00**

o-Terphenyl (Surr)

Curve Fit: **AVERAGE RF**

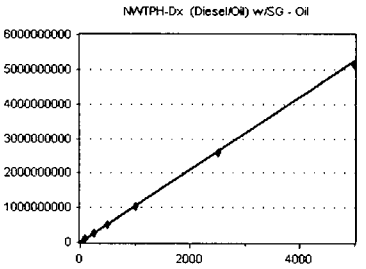


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL9	10	255074E+07	1255074.000	6.39
9D18031-CALA	25	174645E+07	1269858.000	6.39
9D18031-CALB	50	348063E+07	1269613.000	6.39
9D18031-CALC	100	271551E+08	1271551.000	6.39
9D18031-CALD	200	1.48367E+08	1241835.000	6.40

AVE RF **1261586.000** RF RSD **1.02** AVE RT **6.39**

Oil

Curve Fit: **AVERAGE RF**

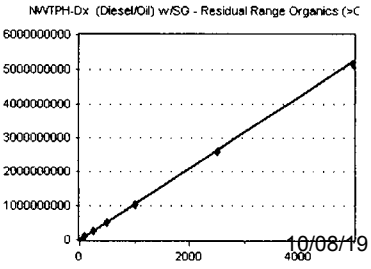


Standard	Concentration	Response	Response Factor	RT
~~9D18031-CALE~~	~~40~~	~~027874E+07~~	~~1256969.000~~	~~9.00~~
9D18031-CALF	80	1.86643E+07	1108304.000	9.00
9D18031-CALG	250	606622E+08	1042649.000	9.00
9D18031-CALH	500	195821E+08	1039164.000	9.00
9D18031-CALI	1000	045982E+09	1045982.000	9.00
9D18031-CALJ	2500	583642E+09	1033457.000	9.00
9D18031-CALK	5000	131005E+09	1026201.000	9.00

AVE RF **1049293.000** RF RSD **2.83** AVE RT **9.00**

Residual Range Organics (>C24)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9D18031-CALE~~	~~40~~	~~027874E+07~~	~~1256969.000~~	~~9.00~~
9D18031-CALF	80	1.86643E+07	1108304.000	9.00
9D18031-CALG	250	606622E+08	1042649.000	9.00
9D18031-CALH	500	195821E+08	1039164.000	9.00
9D18031-CALI	1000	045982E+09	1045982.000	9.00
9D18031-CALJ	2500	583642E+09	1033457.000	9.00
9D18031-CALK	5000	131005E+09	1026201.000	9.00

AVE RF **1049293.000** RF RSD **2.83** AVE RT **9.00**

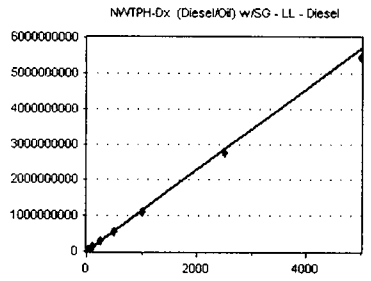
Element Calibration Review Sheet

Calibration ID: **A9D1904** Instrument: **DUALFID4R** Calibration Date: **04/19/2019**

Analysis: **NWTPH-Dx (Diesel/Oil) w/S** Instrument Cal ID: **4R90418D.m**

Diesel

Curve Fit: **AVERAGE RF**

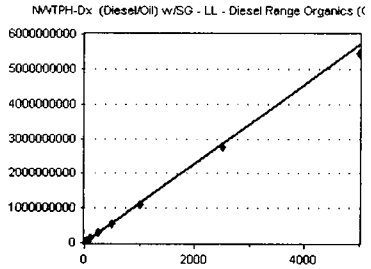


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL1	25	106382E+07	1242553.000	6.00
9D18031-CAL2	40	689096E+07	1172274.000	6.00
9D18031-CAL3	100	135692E+08	1135692.000	6.00
9D18031-CAL4	250	853091E+08	1141236.000	6.00
9D18031-CAL5	500	.59963E+08	1119926.000	6.00
9D18031-CAL6	1000	113983E+09	1113983.000	6.00
9D18031-CAL7	2500	765587E+09	1106235.000	6.00
9D18031-CAL8	5000	461189E+09	1092238.000	6.00

AVE RF **1140517.000** RF RSD **4.20** AVE RT **6.00**

Diesel Range Organics (C12-C24

Curve Fit: **AVERAGE RF**

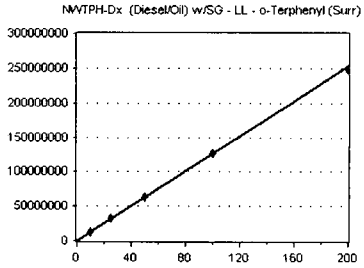


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL1	25	106382E+07	1242553.000	6.00
9D18031-CAL2	40	689096E+07	1172274.000	6.00
9D18031-CAL3	100	135692E+08	1135692.000	6.00
9D18031-CAL4	250	853091E+08	1141236.000	6.00
9D18031-CAL5	500	.59963E+08	1119926.000	6.00
9D18031-CAL6	1000	113983E+09	1113983.000	6.00
9D18031-CAL7	2500	765587E+09	1106235.000	6.00
9D18031-CAL8	5000	461189E+09	1092238.000	6.00

AVE RF **1140517.000** RF RSD **4.20** AVE RT **6.00**

o-Terphenyl (Surr)

Curve Fit: **AVERAGE RF**

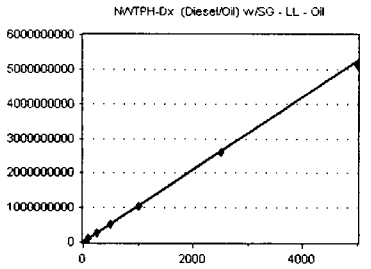


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL9	10	255074E+07	1255074.000	6.39
9D18031-CALA	25	174645E+07	1269858.000	6.39
9D18031-CALB	50	348063E+07	1269613.000	6.39
9D18031-CALC	100	271551E+08	1271551.000	6.39
9D18031-CALD	200	.48367E+08	1241835.000	6.40

AVE RF **1261586.000** RF RSD **1.02** AVE RT **6.39**

Oil

Curve Fit: **AVERAGE RF**

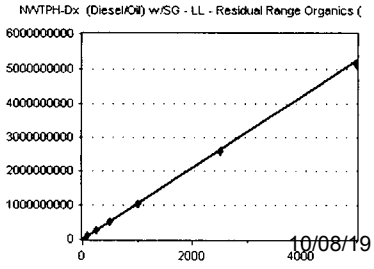


Standard	Concentration	Response	Response Factor	RT
~~9D18031-CALE~~	~~40~~	~~027874E+07~~	~~1256969.000~~	~~9.00~~
9D18031-CALF	80	.86643E+07	1108304.000	9.00
9D18031-CALG	250	606622E+08	1042649.000	9.00
9D18031-CALH	500	195821E+08	1039164.000	9.00
9D18031-CALI	1000	045982E+09	1045982.000	9.00
9D18031-CALJ	2500	583642E+09	1033457.000	9.00
9D18031-CALK	5000	131005E+09	1026201.000	9.00

AVE RF **1049293.000** RF RSD **2.83** AVE RT **9.00**

Residual Range Organics (>C24

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9D18031-CALE~~	~~40~~	~~027874E+07~~	~~1256969.000~~	~~9.00~~
9D18031-CALF	80	.86643E+07	1108304.000	9.00
9D18031-CALG	250	606622E+08	1042649.000	9.00
9D18031-CALH	500	195821E+08	1039164.000	9.00
9D18031-CALI	1000	045982E+09	1045982.000	9.00
9D18031-CALJ	2500	583642E+09	1033457.000	9.00
9D18031-CALK	5000	131005E+09	1026201.000	9.00

AVE RF **1049293.000** RF RSD **2.83** AVE RT **9.00**

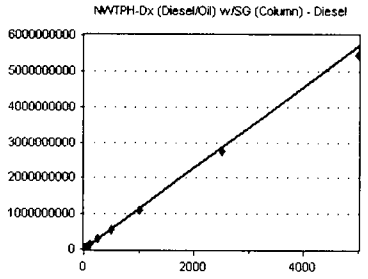
Element Calibration Review Sheet

Calibration ID: **A9D1904** Instrument: **DUALFID4R** Calibration Date: **04/19/2019**

Analysis: **NWTPH-Dx (Diesel/Oil) w/SG** Instrument Cal ID: **4R90418D.m**

Diesel

Curve Fit: **AVERAGE RF**

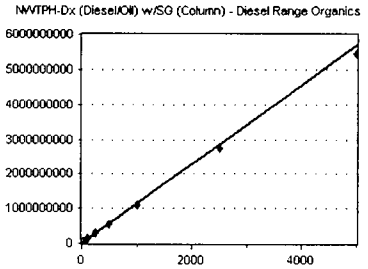


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL1	25	106382E+07	1242553.000	6.00
9D18031-CAL2	40	689096E+07	1172274.000	6.00
9D18031-CAL3	100	135692E+08	1135692.000	6.00
9D18031-CAL4	250	853091E+08	1141236.000	6.00
9D18031-CAL5	500	.59963E+08	1119926.000	6.00
9D18031-CAL6	1000	113983E+09	1113983.000	6.00
9D18031-CAL7	2500	765587E+09	1106235.000	6.00
9D18031-CAL8	5000	461189E+09	1092238.000	6.00

AVE RF **1140517.000** RF RSD **4.20** AVE RT **6.00**

Diesel Range Organics (C12-C24)

Curve Fit: **AVERAGE RF**

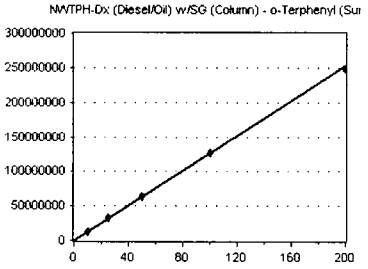


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL1	25	106382E+07	1242553.000	6.00
9D18031-CAL2	40	689096E+07	1172274.000	6.00
9D18031-CAL3	100	135692E+08	1135692.000	6.00
9D18031-CAL4	250	853091E+08	1141236.000	6.00
9D18031-CAL5	500	.59963E+08	1119926.000	6.00
9D18031-CAL6	1000	113983E+09	1113983.000	6.00
9D18031-CAL7	2500	765587E+09	1106235.000	6.00
9D18031-CAL8	5000	461189E+09	1092238.000	6.00

AVE RF **1140517.000** RF RSD **4.20** AVE RT **6.00**

o-Terphenyl (Surr)

Curve Fit: **AVERAGE RF**

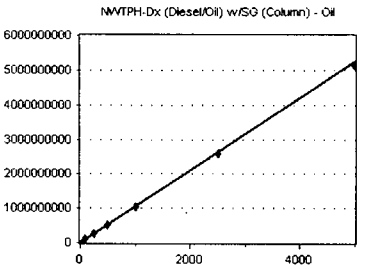


Standard	Concentration	Response	Response Factor	RT
9D18031-CAL9	10	255074E+07	1255074.000	6.39
9D18031-CALA	25	174645E+07	1269858.000	6.39
9D18031-CALB	50	348063E+07	1269613.000	6.39
9D18031-CALC	100	271551E+08	1271551.000	6.39
9D18031-CALD	200	.48367E+08	1241835.000	6.40

AVE RF **1261586.000** RF RSD **1.02** AVE RT **6.39**

Oil

Curve Fit: **AVERAGE RF**

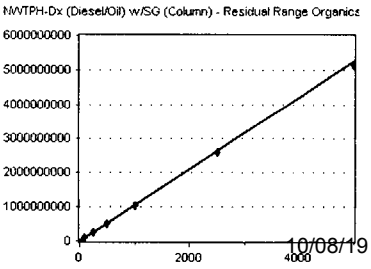


Standard	Concentration	Response	Response Factor	RT
~~9D18031-CALE~~	~~40~~	~~927874E+07~~	~~1256969.000~~	~~9.00~~
9D18031-CALF	80	.86643E+07	1108304.000	9.00
9D18031-CALG	250	606622E+08	1042649.000	9.00
9D18031-CALH	500	195821E+08	1039164.000	9.00
9D18031-CALI	1000	045982E+09	1045982.000	9.00
9D18031-CALJ	2500	583642E+09	1033457.000	9.00
9D18031-CALK	5000	131005E+09	1026201.000	9.00

AVE RF **1049293.000** RF RSD **2.83** AVE RT **9.00**

Residual Range Organics (>C24)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9D18031-CALE~~	~~40~~	~~927874E+07~~	~~1256969.000~~	~~9.00~~
9D18031-CALF	80	.86643E+07	1108304.000	9.00
9D18031-CALG	250	606622E+08	1042649.000	9.00
9D18031-CALH	500	195821E+08	1039164.000	9.00
9D18031-CALI	1000	045982E+09	1045982.000	9.00
9D18031-CALJ	2500	583642E+09	1033457.000	9.00
9D18031-CALK	5000	131005E+09	1026201.000	9.00

AVE RF **1049293.000** RF RSD **2.83** AVE RT **9.00**

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9D18031 **Seq. Date: 4/19/2019**

SEQUENCE LOG

SampleID	Analysis	Matrix	STDID	Analyzed
9D18031-ICB1	8015B TPH-D (C10-25) /TPH-MO	Soil		4/18/2019 5:05:00PM
"	+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 (	"		"
9D18031-CAL1	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C305	4/18/2019 5:26:00PM
"	+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	"
9D18031-CAL2	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C306	4/18/2019 5:48:00PM
"	+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	"
9D18031-CAL3	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C307	4/18/2019 6:10:00PM
"	+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	"
9D18031-CAL4	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C308	4/18/2019 6:31:00PM
"	+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: 9D18031 **Seq. Date: 4/19/2019**

9D18031-CAL5	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C309	4/18/2019	6:53:00PM
"	+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		"
9D18031-CAL6	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C310	4/18/2019	7:14:00PM
"	+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		"
9D18031-CAL7	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C311	4/18/2019	7:36:00PM
"	+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		"
9D18031-CAL8	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C204	4/18/2019	7:57:00PM
"	+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		"
9D18031-CAL9	8015B TPH-D (C10-25) /TPH-MO	Soil	A19D191	4/18/2019	8:19:00PM
"	+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		"
9D18031-CALA	8015B TPH-D (C10-25) /TPH-MO	Soil	A19D192	4/18/2019	8:40:00PM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19D192		"
"	+CA LUFT DRO/RRO	"	A19D192		"
"	+CA LUFT DRO/RRO W/SG	"	A19D192		"

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9D18031 **Seq. Date: 4/19/2019**

"	+NWTPH-Dx (Diesel/Oil)	"	A19D192		"
"	+NWTPH-Dx (Diesel/Oil) Low Le	"	A19D192		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19D192		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19D192		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19D192		"
9D18031-CALB	8015B TPH-D (C10-25) /TPH-MO	Soil	A19D193	4/18/2019 9:02:00PM	
"	+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 Le	"	A19D193		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19D193		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19D193		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19D193		"
9D18031-CALC	8015B TPH-D (C10-25) /TPH-MO	Soil	A19D194	4/18/2019 9:23:00PM	
"	+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 Le	"	A19D194		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19D194		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19D194		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19D194		"
9D18031-CALD	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C210	4/18/2019 9:45:00PM	
"	+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 Le	"	A19C210		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C210		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C210		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C210		"
9D18031-CALE	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C365	4/18/2019 10:06:00PM	
"	+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 Le	"	A19C365		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C365		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C365		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C365		"
9D18031-CALF	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C366	4/18/2019 10:28:00PM	
"	+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 Le	"	A19C366		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C366		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C366		"

"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C366	"
9D18031-CALG	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C367	4/18/2019 10:49:00PM
"	+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	"
9D18031-CALH	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C368	4/18/2019 11:10:00PM
"	+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	"
9D18031-CALI	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C373	4/18/2019 11:31:00PM
"	+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	"
9D18031-CALJ	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C370	4/18/2019 11:53:00PM
"	+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	"
9D18031-CALK	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C364	4/19/2019 12:36:00AM
"	+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	"
9D18031-ICV1	8015B TPH-D (C10-25) /TPH-MO	Soil	A19D271	4/19/2019 1:18:00AM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19D271	"
"	+CA LUFT DRO/RRO	"	A19D271	"

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9D18031 **Seq. Date: 4/19/2019**

"	+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		"
9D18031-ICV2	8015B TPH-D (C10-25) /TPH-MO	Soil	A19D272	4/19/2019 1:40:00AM	
"	+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: **A9D1904** Instrument: **DUALFID4R**

8015B TPH-D (C10-25) /TPH- Sequence: **9D18031** Matrix: **Soil**

9D18031-CAL1	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D18031-CAL2	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D18031-CAL3	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D18031-CAL4	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D18031-CAL5	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D18031-CAL6	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D18031-CAL7	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D18031-CAL8	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D18031-CALE	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D18031-CALF	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D18031-CALG	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D18031-CALH	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D18031-CALI	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D18031-CALJ	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D18031-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: 9D18031 Seq. Date: 4/19/2019

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: **A9D1904** Instrument: **DUALFID4R**

NWTPH-Dx (Diesel/Oil) w/SG Sequence: **9D18031** Matrix: **Soil**

9D18031-ICV1	**Inst. MRL**	**ICV Level**	**Result**	**%Rec.**	**Qual**
9D18031-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 : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:53:05 2019
Response via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	D1	25.00	0.00	G:\4\DATA\2019-04\9D18031\4R041805.D
2	D2	40.00	0.00	G:\4\DATA\2019-04\9D18031\4R041806.D
3	D3	100.00	0.00	G:\4\DATA\2019-04\9D18031\4R041807.D
4	D4	250.00	0.00	G:\4\DATA\2019-04\9D18031\4R041808.D
5	D5	500.00	0.00	G:\4\DATA\2019-04\9D18031\4R041809.D
6	D6	1000.00	0.00	G:\4\DATA\2019-04\9D18031\4R041810.D
7	D7	2500.00	0.00	G:\4\DATA\2019-04\9D18031\4R041811.D
8	D8	5000.00	0.00	G:\4\DATA\2019-04\9D18031\4R041812.D
9	S1	-1.00	0.00	G:\4\DATA\2019-04\9D18031\4R041813.D
10	S2	-1.00	0.00	G:\4\DATA\2019-04\9D18031\4R041814.D
11	S3	-1.00	0.00	G:\4\DATA\2019-04\9D18031\4R041815.D
12	S4	-1.00	0.00	G:\4\DATA\2019-04\9D18031\4R041816.D
13	S5	-1.00	0.00	G:\4\DATA\2019-04\9D18031\4R041817.D
14	O1	-1.00	0.00	G:\4\DATA\2019-04\9D18031\4R041818.D
15	O2	-1.00	0.00	G:\4\DATA\2019-04\9D18031\4R041819.D
16	O3	-1.00	0.00	G:\4\DATA\2019-04\9D18031\4R041820.D
17	O4	-1.00	0.00	G:\4\DATA\2019-04\9D18031\4R041821.D
18	O5	-1.00	0.00	G:\4\DATA\2019-04\9D18031\4R041822.D
19	O6	-1.00	0.00	G:\4\DATA\2019-04\9D18031\4R041823.D
20	O7	-1.00	0.00	G:\4\DATA\2019-04\9D18031\4R041825.D

A9D/19/04

Kat 4/19/19

#	ID	Update Time	Quant Time	Acquisition Time
1	D1	Apr 19 14:40 2019	Apr 19 14:19 2019	18 Apr 2019 17:26
2	D2	Apr 19 14:40 2019	Apr 19 14:20 2019	18 Apr 2019 17:48
3	D3	Apr 19 14:41 2019	Apr 19 14:20 2019	18 Apr 2019 18:10
4	D4	Apr 19 14:41 2019	Apr 19 14:21 2019	18 Apr 2019 18:31
5	D5	Apr 19 14:41 2019	Apr 19 14:21 2019	18 Apr 2019 18:53
6	D6	Apr 19 14:41 2019	Apr 19 14:22 2019	18 Apr 2019 19:14
7	D7	Apr 19 14:41 2019	Apr 19 14:22 2019	18 Apr 2019 19:36
8	D8	Apr 19 14:42 2019	Apr 19 14:23 2019	18 Apr 2019 19:57
9	S1	Apr 19 14:42 2019	Apr 19 14:24 2019	18 Apr 2019 20:19
10	S2	Apr 19 14:42 2019	Apr 19 14:24 2019	18 Apr 2019 20:40
11	S3	Apr 19 14:43 2019	Apr 19 14:24 2019	18 Apr 2019 21:02
12	S4	Apr 19 14:44 2019	Apr 19 14:24 2019	18 Apr 2019 21:23
13	S5	Apr 19 14:44 2019	Apr 19 14:24 2019	18 Apr 2019 21:45
14	O1	Apr 19 14:44 2019	Apr 19 14:25 2019	18 Apr 2019 22:06
15	O2	Apr 19 14:44 2019	Apr 19 14:25 2019	18 Apr 2019 22:28
16	O3	Apr 19 14:45 2019	Apr 19 14:26 2019	18 Apr 2019 22:49
17	O4	Apr 19 14:45 2019	Apr 19 14:27 2019	18 Apr 2019 23:10
18	O5	Apr 19 14:45 2019	Apr 19 14:27 2019	18 Apr 2019 23:31
19	O6	Apr 19 14:45 2019	Apr 19 14:28 2019	18 Apr 2019 23:53
20	O7	Apr 19 14:46 2019	Apr 19 14:28 2019	19 Apr 2019 00:36

4R90418D.M Fri Apr 19 14:55:09 2019 SV-GCMS3

Response Factor Report HP G1530A

Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:53:05 2019

Calibration Files
D1 =4R041805.D D2 =4R041806.D D3 =4R041807.D
D4 =4R041808.D D5 =4R041809.D D6 =4R041810.D

		Compound	D1	D2	D3	D4	D5	D6	Avg		%RSD
1)	H	Mineral Oil	1.243	1.172	1.136	1.141	1.120	1.114	1.141	E6	4.20
2)	H	Diesel	1.243	1.172	1.136	1.141	1.120	1.114	1.141	E6	4.20
3)	H	DRO(C12-C24)	1.243	1.172	1.136	1.141	1.120	1.114	1.141	E6	4.20
4)	H	CA LUFT DRO (C12-C2	8.689	8.477	8.407	8.645	8.604	8.600	8.560	E5	1.13
5)	H	TPHd (C10-C25)	1.071	1.052	1.045	1.068	1.059	1.055	1.055	E6	1.05
6)	S	o-Terphenyl							1.262	E6	1.02
7)	H	Oil							1.049	E6	2.83
8)	H	RRO (C24-C40)							1.049	E6	2.83
9)	H	TPHmo (C25-C36)							6.343	E5	2.39
10)	H	CA LUFT ORO (C23-C3							6.662	E5	1.22

Kcat 4/19/19

(#) = Out of Range ### Number of calibration levels exceeded format ###

Compound List Report HP G1530A

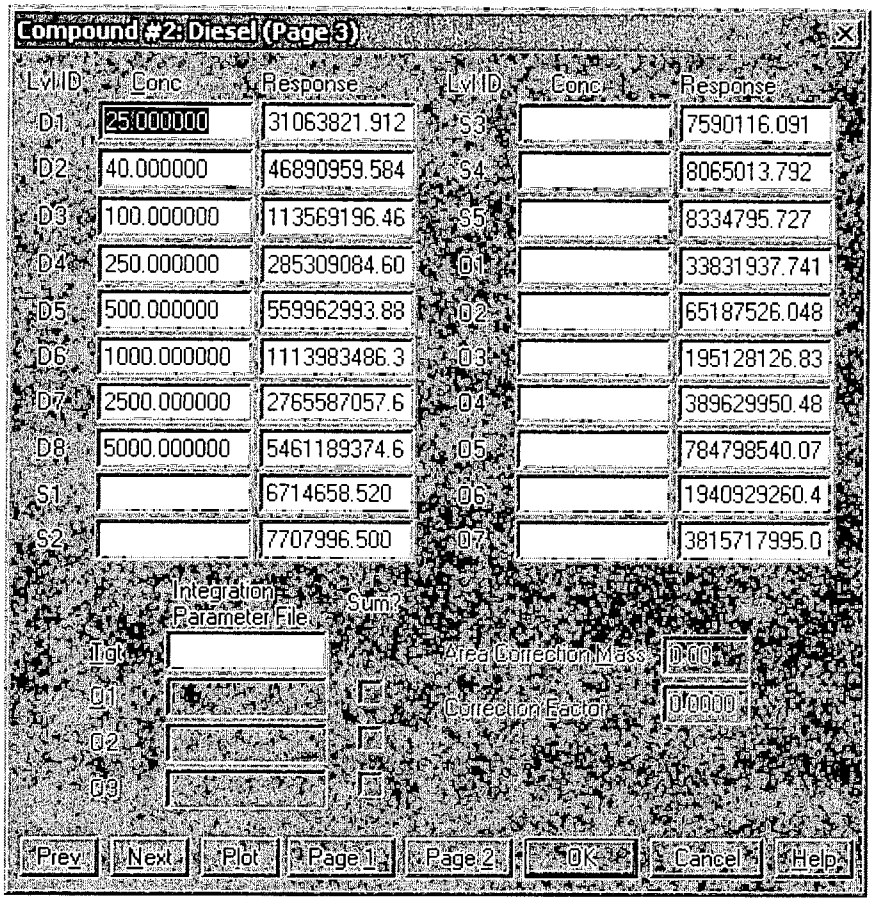
Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:53:05 2019
Response via : Initial Calibration
Total Cpnds : 10

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	6.39	1.000	A	A	R
7	H	Oil	9.00	1.000	A	A	A
8	H	RRO (C24-C40)	9.00	1.000	A	A	A
9	H	TPHmo (C25-C36)	8.00	1.000	A	A	A
10	H	CA LUFT ORO (C23-C32)	7.50	1.000	A	A	A

KCH 4/19/19

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

4R90418D.M Fri Apr 19 14:56:04 2019 SV-GCMS3


Compound #2: Diesel (Page 3)
Lvl ID
Conc
Response
D1 25.000000 31063821.912
D2 40.000000 46890959.584
D3 100.000000 113569196.46
D4 250.000000 285309084.60
D5 500.000000 559962993.88
D6 1000.000000 1113983486.3
D7 2500.000000 2765587057.6
D8 5000.000000 5461189374.6
S1 6714658.520
S2 7707996.500
S3 7590116.091
S4 8065013.792
S5 8334795.727
Q1 33831937.741
Q2 65187526.048
Q3 195128126.83
Q4 389629950.48
Q5 784798540.07
Q6 1940929260.4
Q7 3815717995.0
Integration Parameter File
Sum?
Lgt
Q1
Q2
Q3
Area Correction Mass
0.00
Correction Factor
0.0000
Prev
Next
Plot
Page 1
Page 2
OK
Cancel
Help

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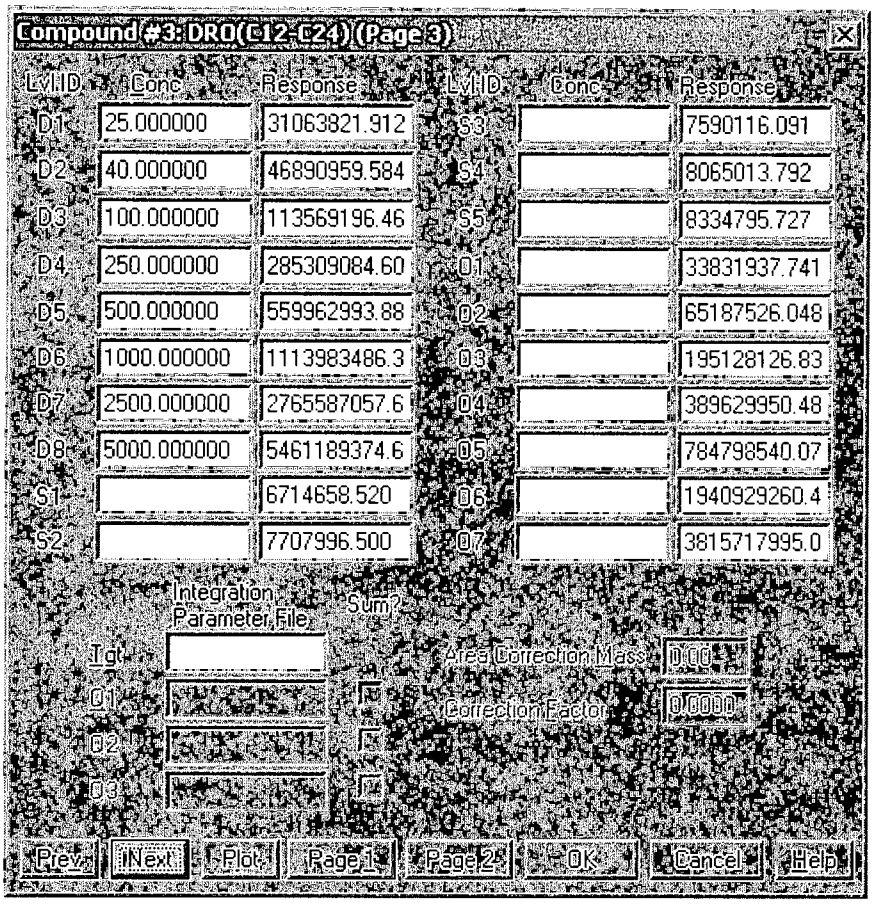
Compound #3: DRO(C12-C24) (Page 3)
Lvl ID
Conc
Response
D1 25.000000 31063821.912
D2 40.000000 46890959.584
D3 100.000000 113569196.46
D4 250.000000 285309084.60
D5 500.000000 559962993.88
D6 1000.000000 1113983486.3
D7 2500.000000 2765587057.6
D8 5000.000000 5461189374.6
S1 6714658.520
S2 7707996.500
S3 7590116.091
S4 8065013.792
S5 8334795.727
O1 33831937.741
O2 65187526.048
O3 195128126.83
O4 389629950.48
O5 784798540.07
O6 1940929260.4
O7 3815717995.0
Integration Parameter File
Sum?
Tgt
O1
O2
O3
Area Correction Mass
0.00
Correction Factor
0.0000
Prev
Next
Plot
Page 1
Page 2
OK
Cancel
Help

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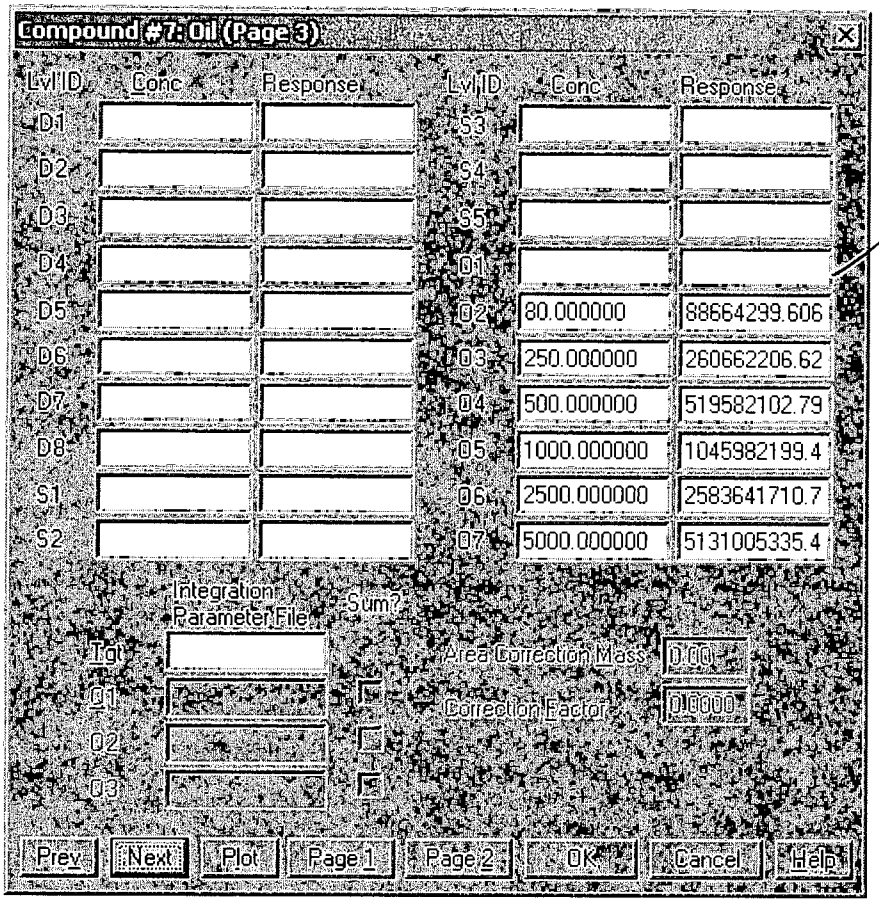
Compound #7: Oil (Page 3)
Lvl ID
Conc
Response
Lvl ID
Conc
Response
D1
D2
D3
D4
D5
D6
D7
D8
S1
S2
S3
S4
S5
Q1
Q2
Q3
Q4
Q5
Q6
Q7
80.000000
88664299.606
250.000000
260662206.62
500.000000
519582102.79
1000.000000
1045982199.4
2500.000000
2583641710.7
5000.000000
5131005335.4
Integration Parameter File
Sum?
Tgt
Q1
Q2
Q3
Area Correction Mass
0.00
Correction Factor
1.0000
Prev
Next
Plot
Page 1
Page 2
OK
Cancel
Help

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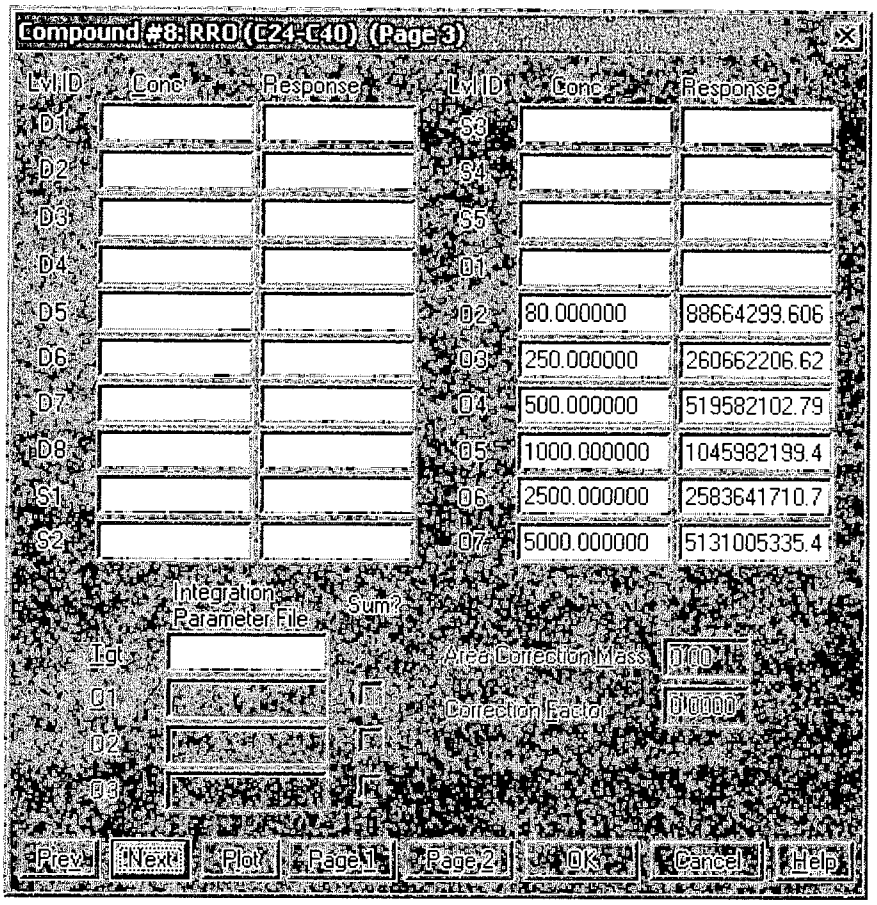
Compound #8: RRO (C24-C40) (Page 3)
Lvl ID
Conc
Response
D1
D2
D3
D4
D5
D6
D7
D8
S1
S2
Lvl ID
Conc
Response
S3
S4
S5
01
02 80.000000 88664299.606
03 250.000000 260662206.62
04 500.000000 519582102.79
05 1000.000000 1045982199.4
06 2500.000000 2583641710.7
07 5000.000000 5131005335.4
Integration Parameter File
Sum?
Tgt
Area Correction Mass
0.0 lb
01
Correction Factor
1.0000
02
03
Prev
Next
Plot
Page 1
Page 2
OK
Cancel
Help

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Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\REQUANTR\4R041804.D Vial: 100
Acq On : 18 Apr 2019 17:05 Operator: KEH
Sample : 9D18031-ICB1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:57 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:53:05 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	3973901	3.484	ug/ml
2)	H	Diesel	6.00	3973901	3.484	ug/ml
3)	H	DRO(C12-C24)	6.00	3973901	3.484	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	1244158	1.453	ug/ml
5)	H	TPHd (C10-C25)	6.00	2193902	2.080	ug/ml
7)	H	Oil	9.00	7733397	7.370	ug/ml
8)	H	RRO (C24-C40)	9.00	7733397	7.370	ug/ml
9)	H	TPHmo (C25-C36)	8.00	2558020	4.033	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	1594461	2.394	ug/ml

< 1/2 MRL

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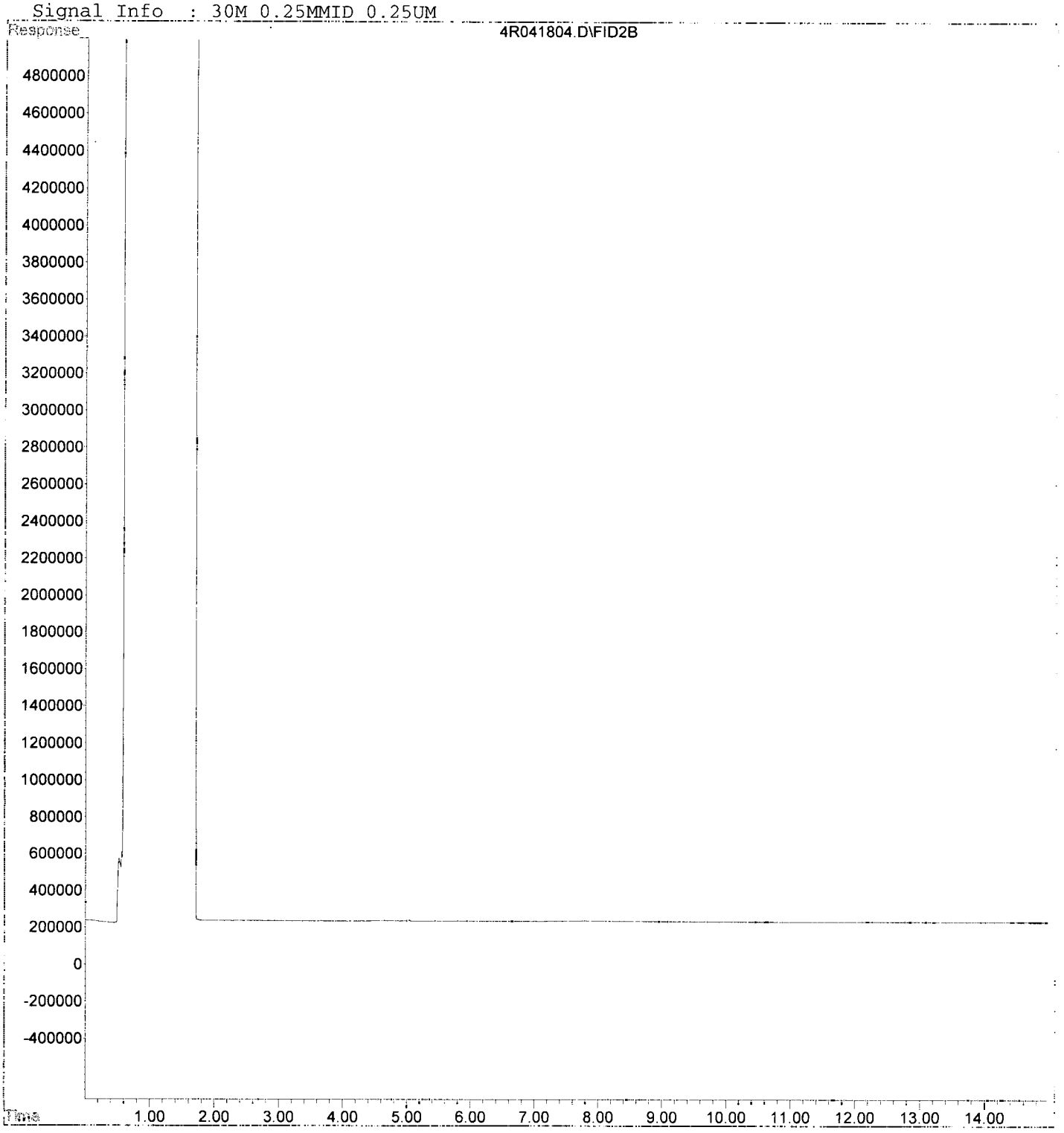
Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\REQUANTR\4R041804.D Vial: 100
Acq On : 18 Apr 2019 17:05 Operator: KEH
Sample : 9D18031-ICB1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:57 2019 Quant Results File: 4R90418D.RES

Quant Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:53:05 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Evaluate Continuing Calibration Report

Data File : G:\4\DATA\2019-04\9D18031\REQUANTR\4R041827.D Vial: 21
Acq On : 19 Apr 2019 1:18 Operator: KEH
Sample : 9D18031-ICV1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E

Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:53:05 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	922.687	7.7	94	0.00
2	H	Diesel	1000.000	922.687	7.7	94	0.00
3	H	DRO(C12-C24)	1000.000	922.687	7.7	94	0.00
4	H	CA LUFT DRO (C12-C22)	1000.000	950.926	4.9	95	0.00
5	H	TPHd (C10-C25)	1000.000	945.634	5.4	95	0.00
7	H	Oil	-1.000	290.707	0.0	0	0.00
8	H	RRO (C24-C40)	-1.000	290.707	0.0	0	0.00
9	H	TPHmo (C25-C36)	-1.000	21.324	0.0	98	0.00
10	H	CA LUFT ORO (C23-C32)	-1.000	53.949	0.0	96	0.00

4/19/19

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

Evaluate Continuing Calibration Report

Data File : G:\4\DATA\2019-04\9D18031\REQUANTR\4R041828.D Vial: 22
Acq On : 19 Apr 2019 1:40 Operator: KEH
Sample : 9D18031-ICV2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E

Method : G:\4\METHODS\4R90418D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:53:05 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	694.325	0.0	101	0.00
2	H	Diesel	-1.000	694.325	0.0	101	0.00
3	H	DRO(C12-C24)	-1.000	694.325	0.0	101	0.00
4	H	CA LUFT DRO (C12-C22)	-1.000	92.059	0.0	125	0.00
5	H	TPHd (C10-C25)	-1.000	285.484	0.0	108	0.00
7	H	Oil	1000.000	966.397	3.4	97	0.00
8	H	RRO (C24-C40)	1000.000	966.397	3.4	97	0.00
9	H	TPHmo (C25-C36)	1000.000	918.692	8.1	92	0.00
10	H	CA LUFT ORO (C23-C32)	1000.000	993.245	0.7	98	0.00

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

Sequence: C:\HPCHEM\4\SEQUENCE\9D18030.S

Sequence Table (Front Injector):

Method and Injection Info Part:

Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 99	DCM	A4F60831	1	Sample		
2	Vial 94	9D18030-RES1	A4F60831	1	Sample		
3	Vial 99	9D18030-ICB1	A4F60831	1	Sample		
4	Vial 1	9D18030-CAL1	A4F60831	1	Sample		
5	Vial 2	9D18030-CAL2	A4F60831	1	Sample		
6	Vial 3	9D18030-CAL3	A4F60831	1	Sample		
7	Vial 4	9D18030-CAL4	A4F60831	1	Sample		
8	Vial 5	9D18030-CAL5	A4F60831	1	Sample		
9	Vial 6	9D18030-CAL6	A4F60831	1	Sample		
10	Vial 7	9D18030-CAL7	A4F60831	1	Sample		
11	Vial 8	9D18030-CAL8	A4F60831	1	Sample		
12	Vial 9	9D18030-CAL9	A4F60831	1	Sample		
13	Vial 10	9D18030-CALA	A4F60831	1	Sample		
14	Vial 11	9D18030-CALB	A4F60831	1	Sample		
15	Vial 12	9D18030-CALC	A4F60831	1	Sample		
16	Vial 13	9D18030-CALD	A4F60831	1	Sample		
17	Vial 14	9D18030-CALE	A4F60831	1	Sample		
18	Vial 15	9D18030-CALF	A4F60831	1	Sample		
19	Vial 16	9D18030-CALG	A4F60831	1	Sample		
20	Vial 17	9D18030-CALH	A4F60831	1	Sample		
21	Vial 18	9D18030-CALI	A4F60831	1	Sample		
22	Vial 19	9D18030-CALJ	A4F60831	1	Sample		
23	Vial 99	9D18030-IBL1	A4F60831	1	Sample		
24	Vial 20	9D18030-CALK	A4F60831	1	Sample		
25	Vial 99	9D18030-IBL2	A4F60831	1	Sample		
26	Vial 21	9D18030-ICV1	A4F60831	1	Sample		
27	Vial 22	9D18030-ICV2	A4F60831	1	Sample		
28	Vial 99	DCM	A4F60831	1	Sample		
29	Vial 99	DCM	A4F60831	1	Sample		

Sequence Table (Back Injector):

Method and Injection Info Part:

Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 100	DCM	A4F60831	1	Sample		
2	Vial 100	DCM	A4F60831	1	Sample		
3	Vial 95	9D18031-RES1	A4F60831	1	Sample		
4	Vial 100	9D18031-ICB1	A4F60831	1	Sample		
5	Vial 1	9D18031-CAL1	A4F60831	1	Sample		
6	Vial 2	9D18031-CAL2	A4F60831	1	Sample		
7	Vial 3	9D18031-CAL3	A4F60831	1	Sample		
8	Vial 4	9D18031-CAL4	A4F60831	1	Sample		
9	Vial 5	9D18031-CAL5	A4F60831	1	Sample		
10	Vial 6	9D18031-CAL6	A4F60831	1	Sample		
11	Vial 7	9D18031-CAL7	A4F60831	1	Sample		
12	Vial 8	9D18031-CAL8	A4F60831	1	Sample		
13	Vial 9	9D18031-CAL9	A4F60831	1	Sample		
14	Vial 10	9D18031-CALA	A4F60831	1	Sample		
15	Vial 11	9D18031-CALB	A4F60831	1	Sample		
16	Vial 12	9D18031-CALC	A4F60831	1	Sample		
17	Vial 13	9D18031-CALD	A4F60831	1	Sample		
18	Vial 14	9D18031-CALE	A4F60831	1	Sample		
19	Vial 15	9D18031-CALF	A4F60831	1	Sample		
20	Vial 16	9D18031-CALG	A4F60831	1	Sample		
21	Vial 17	9D18031-CALH	A4F60831	1	Sample		

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Sequence: C:\HPCHEM\4\SEQUENCE\9D18030.S

Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
22	Vial 18	9D18031-CALI	A4F60831	1	Sample		
23	Vial 19	9D18031-CALJ	A4F60831	1	Sample		
24	Vial 100	9D18031-IBL1	A4F60831	1	Sample		
25	Vial 20	9D18031-CALK	A4F60831	1	Sample		
26	Vial 100	9D18031-IBL2	A4F60831	1	Sample		
27	Vial 21	9D18031-ICV1	A4F60831	1	Sample		
28	Vial 22	9D18031-ICV2	A4F60831	1	Sample		
29	Vial 100	DCM	A4F60831	1	Sample		

Injection Log

Directory: G:\4\DATA\2019-04\9D18031

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	100	4r041801.d	1.	DCM		18 Apr 2019 16:00
2	100	4r041802.d	1.	DCM		18 Apr 2019 16:21
3	95	4r041803.d	1.	9D18031-RES1		18 Apr 2019 16:43
4	100	4r041804.d	1.	9D18031-ICB1		18 Apr 2019 17:05
5	1	4r041805.d	1.	9D18031-CAL1		18 Apr 2019 17:26
6	2	4r041806.d	1.	9D18031-CAL2		18 Apr 2019 17:48
7	3	4r041807.d	1.	9D18031-CAL3		18 Apr 2019 18:10
8	4	4r041808.d	1.	9D18031-CAL4		18 Apr 2019 18:31
9	5	4r041809.d	1.	9D18031-CAL5		18 Apr 2019 18:53
10	6	4r041810.d	1.	9D18031-CAL6		18 Apr 2019 19:14
11	7	4r041811.d	1.	9D18031-CAL7		18 Apr 2019 19:36
12	8	4r041812.d	1.	9D18031-CAL8		18 Apr 2019 19:57
13	9	4r041813.d	1.	9D18031-CAL9		18 Apr 2019 20:19
14	10	4r041814.d	1.	9D18031-CALA		18 Apr 2019 20:40
15	11	4r041815.d	1.	9D18031-CALB		18 Apr 2019 21:02
16	12	4r041816.d	1.	9D18031-CALC		18 Apr 2019 21:23
17	13	4r041817.d	1.	9D18031-CALD		18 Apr 2019 21:45
18	14	4r041818.d	1.	9D18031-CALE		18 Apr 2019 22:06
19	15	4r041819.d	1.	9D18031-CALF		18 Apr 2019 22:28
20	16	4r041820.d	1.	9D18031-CALG		18 Apr 2019 22:49
21	17	4r041821.d	1.	9D18031-CALH		18 Apr 2019 23:10
22	18	4r041822.d	1.	9D18031-CALI		18 Apr 2019 23:31
23	19	4r041823.d	1.	9D18031-CALJ		18 Apr 2019 23:53
24	100	4r041824.d	1.	9D18031-IBL1		19 Apr 2019 00:14
25	20	4r041825.d	1.	9D18031-CALK		19 Apr 2019 00:36
26	100	4r041826.d	1.	9D18031-IBL2		19 Apr 2019 00:57
27	21	4r041827.d	1.	9D18031-ICV1		19 Apr 2019 01:18
28	22	4r041828.d	1.	9D18031-ICV2		19 Apr 2019 01:40
29	100	4r041829.d	1.	DCM		19 Apr 2019 02:01

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041803.D Vial: 95
Acq On : 18 Apr 2019 16:43 Operator: KEH
Sample : 9D18031-RES1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:18 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.M

KEH 4/19/19

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

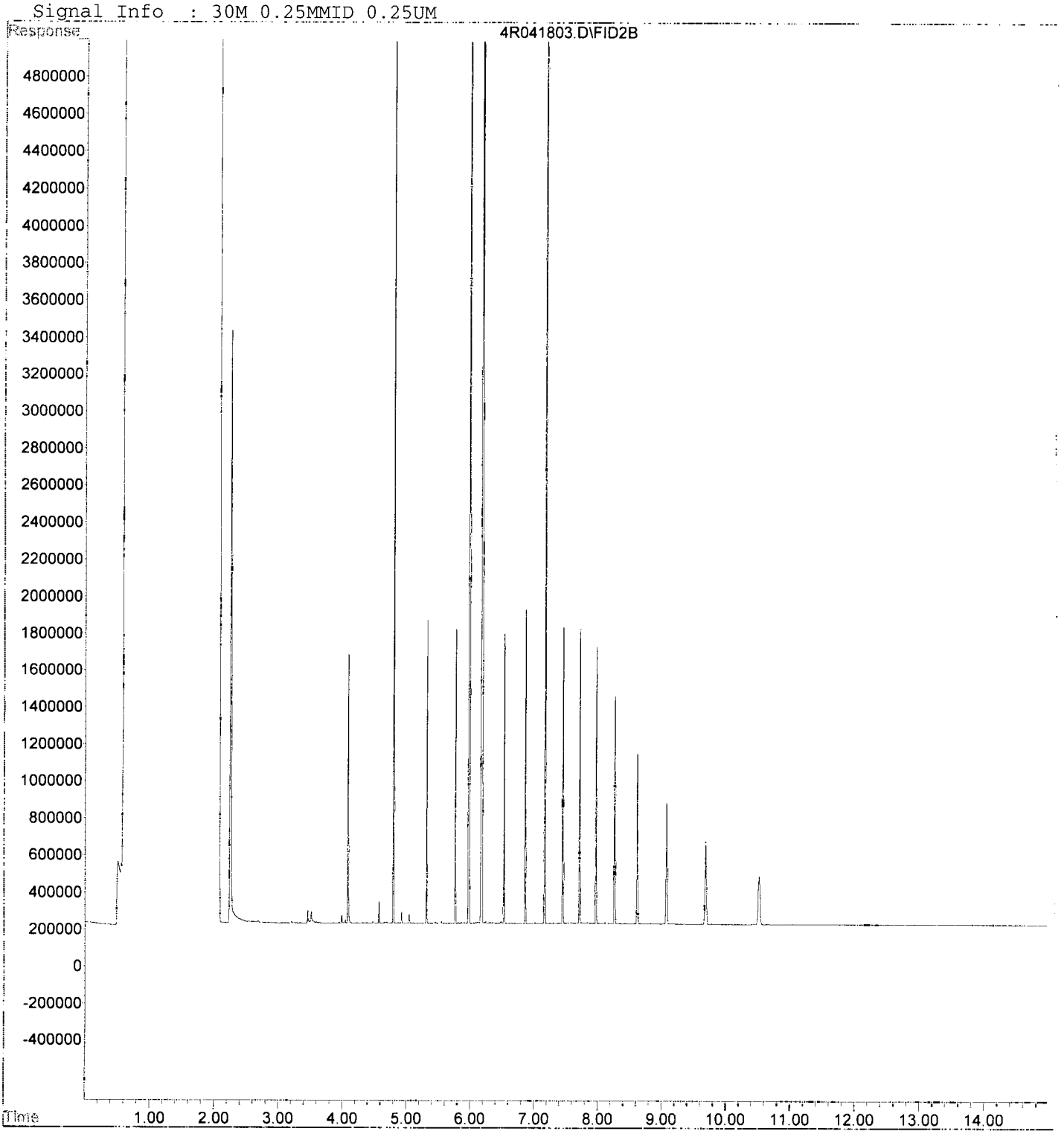
		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	6.53	10509629	6.141	ug/ml
		Target Compounds				
1)	H	Mineral Oil	6.00	355127746	244.988	ug/ml
2)	H	Diesel	6.00	355127746	244.988	ug/ml
3)	H	DRO(C12-C24)	6.00	355127746	244.988	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	241662170	225.493	ug/ml
5)	H	TPHd (C10-C25)	6.00	310330619	230.175	ug/ml
7)	H	Oil	9.00	227725877	169.173	ug/ml
8)	H	RRO (C24-C40)	9.00	227725877	169.173	ug/ml
9)	H	TPHmo (C25-C36)	8.00	61273482	74.120	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	99577230	113.283	ug/ml

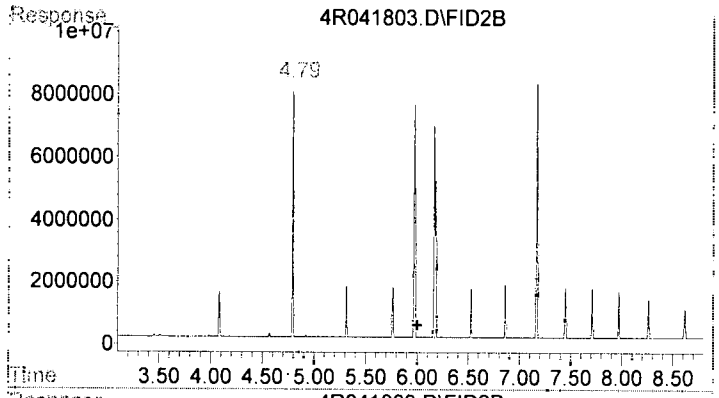
Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041803.D Vial: 95
Acq On : 18 Apr 2019 16:43 Operator: KEH
Sample : 9D18031-RES1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:18 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

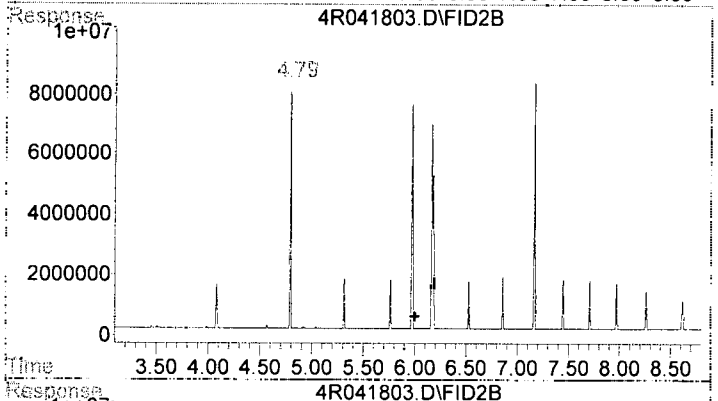
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





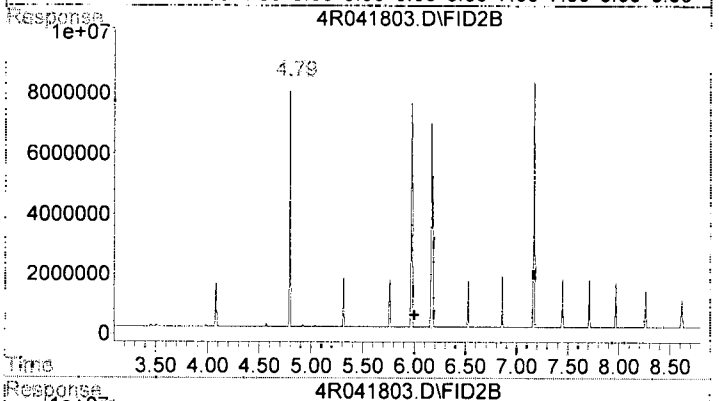
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 355127746
Conc: 244.99 ug/ml m



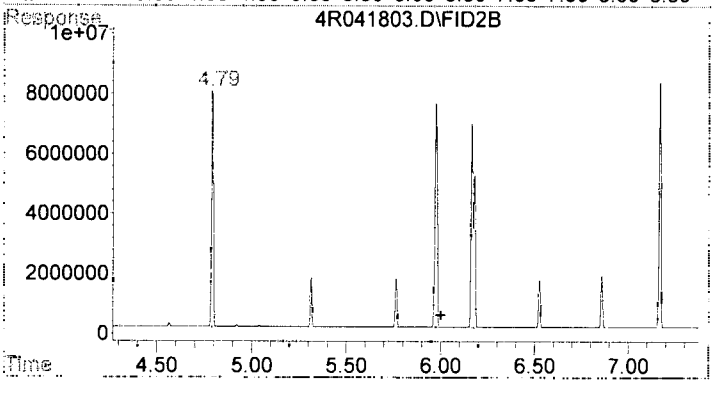
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 355127746
Conc: 244.99 ug/ml m



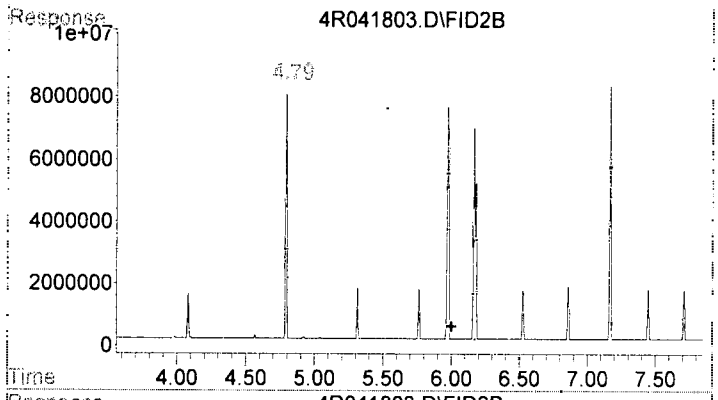
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 355127746
Conc: 244.99 ug/ml m



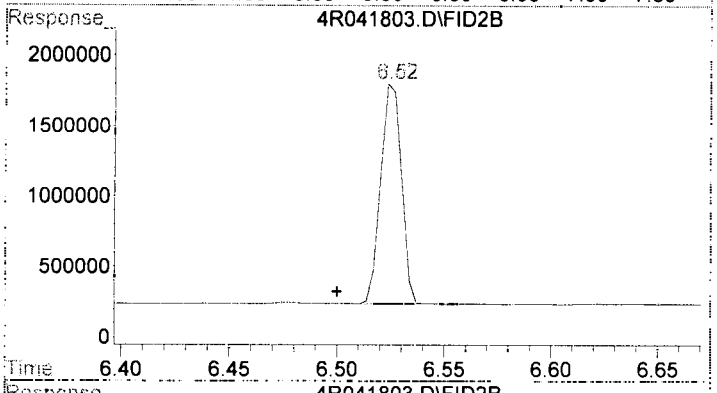
#4 CA LUFT DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 241662170
Conc: 225.49 ug/ml m



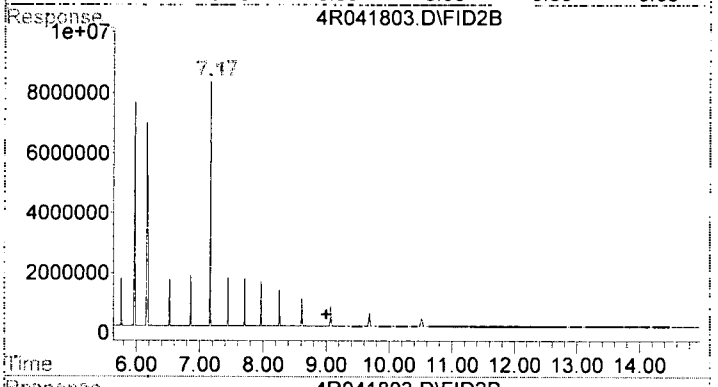
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 310330619
Conc: 230.17 ug/ml m



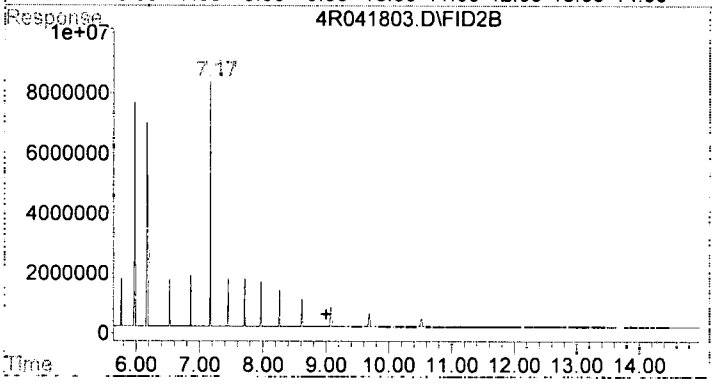
#6 o-Terphenyl

R.T.: 6.526 min
Delta R.T.: 0.026 min
Response: 10509629
Conc: 6.14 ug/ml



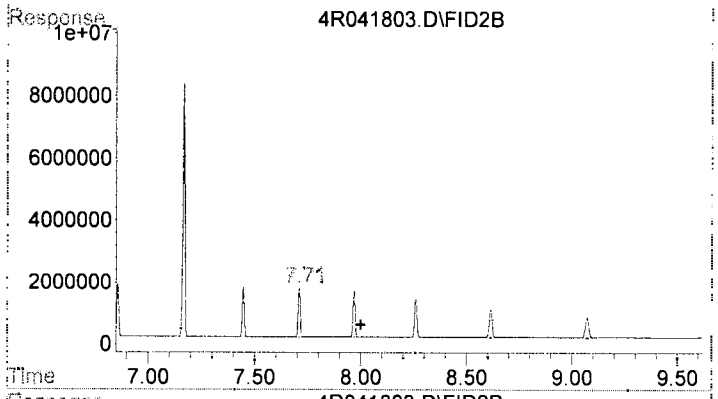
#7 Oil

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 227725877
Conc: 169.17 ug/ml m



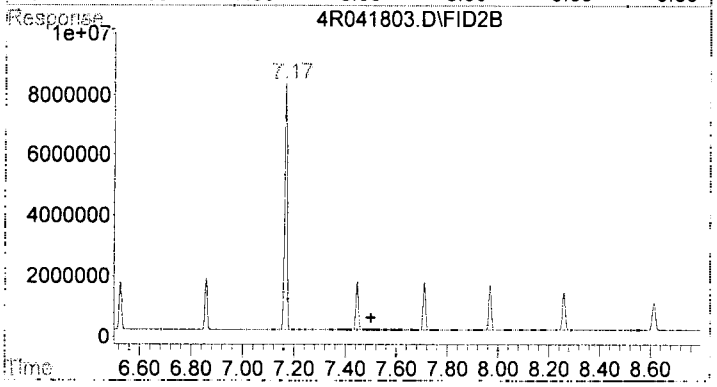
#8 RRO (C24-C40)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 227725877
Conc: 169.17 ug/ml m



#9 TPHmo (C25-C36)

R.T.: 8.000 min
Delta R.T.: 0.000 min
Response: 61273482
Conc: 74.12 ug/ml m



#10 CA LUFT ORO (C23-C32)

R.T.: 7.500 min
Delta R.T.: 0.000 min
Response: 99577230
Conc: 113.28 ug/ml m

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041804.D Vial: 100
Acq On : 18 Apr 2019 17:05 Operator: KEH
Sample : 9D18031-ICB1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:19 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	3973901	2.741	ug/ml
2)	H	Diesel	6.00	3973901	2.741	ug/ml
3)	H	DRO(C12-C24)	6.00	3973901	2.741	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	1244158	1.161	ug/ml
5)	H	TPHd (C10-C25)	6.00	2193902	1.627	ug/ml
7)	H	Oil	9.00	7733397	5.745	ug/ml
8)	H	RRO (C24-C40)	9.00	7733397	5.745	ug/ml
9)	H	TPHmo (C25-C36)	8.00	2558020	3.094	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	1594461	1.814	ug/ml

KAT 4/19/19

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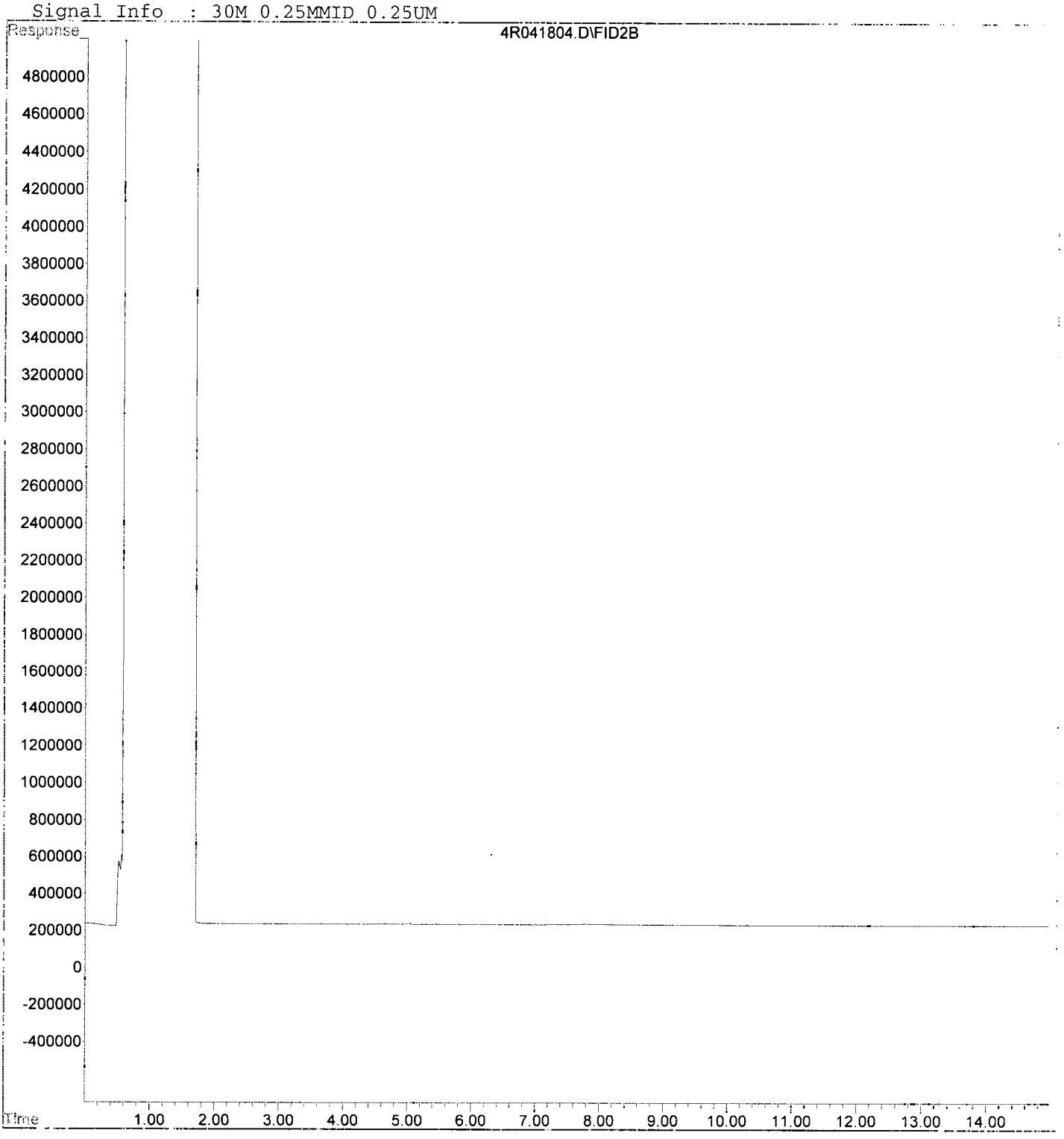
Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041804.D Vial: 100
Acq On : 18 Apr 2019 17:05 Operator: KEH
Sample : 9D18031-ICB1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:19 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041805.D Vial: 1
Acq On : 18 Apr 2019 17:26 Operator: KEH
Sample : 9D18031-CAL1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:19 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	31063822	21.430	ug/ml
2)	H	Diesel	6.00	31063822	21.430	ug/ml
3)	H	DRO(C12-C24)	6.00	31063822	21.430	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	21723696	20.270	ug/ml
5)	H	TPHd (C10-C25)	6.00	26786901	19.868	ug/ml
7)	H	Oil	9.00	14828815	11.016	ug/ml
8)	H	RRO (C24-C40)	9.00	14828815	11.016	ug/ml
9)	H	TPHmo (C25-C36)	8.00	2951222	3.570	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	2586250	2.942	ug/ml

4/19/19

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

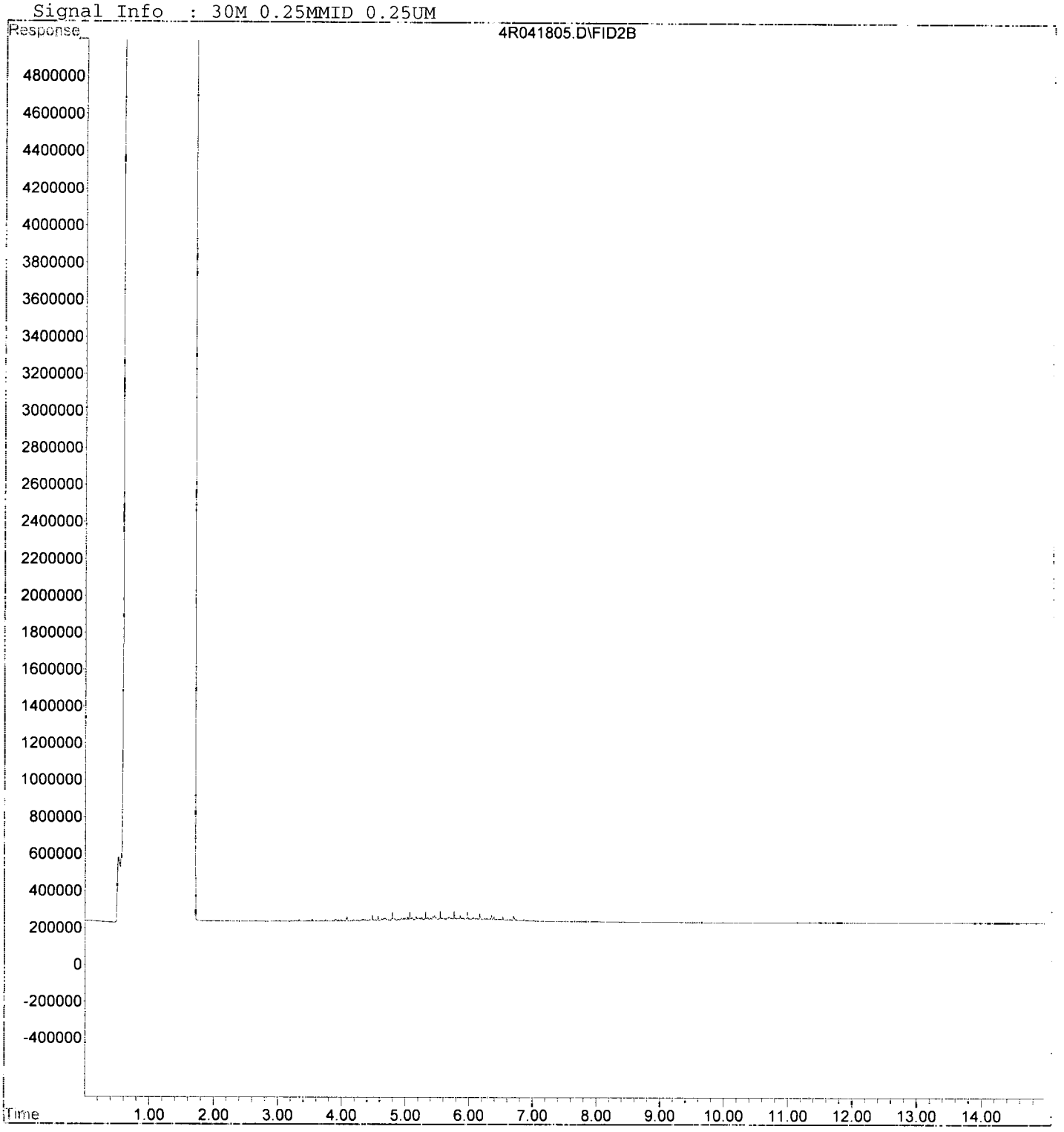
4R041805.D 4R90406D.M Fri Apr 19 14:30:32 2019 SV-GCMS3 Page 1

Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041805.D Vial: 1
Acq On : 18 Apr 2019 17:26 Operator: KEH
Sample : 9D18031-CAL1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:19 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041806.D Vial: 2
Acq On : 18 Apr 2019 17:48 Operator: KEH
Sample : 9D18031-CAL2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:20 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	46890960	32.348	ug/ml
2)	H	Diesel	6.00	46890960	32.348	ug/ml
3)	H	DRO(C12-C24)	6.00	46890960	32.348	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	33908092	31.639	ug/ml
5)	H	TPHd (C10-C25)	6.00	42087582	31.217	ug/ml
7)	H	Oil	9.00	18724217	13.910	ug/ml
8)	H	RRO (C24-C40)	9.00	18724217	13.910	ug/ml
9)	H	TPHmo (C25-C36)	8.00	3472325	4.200	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	3035856	3.454	ug/ml

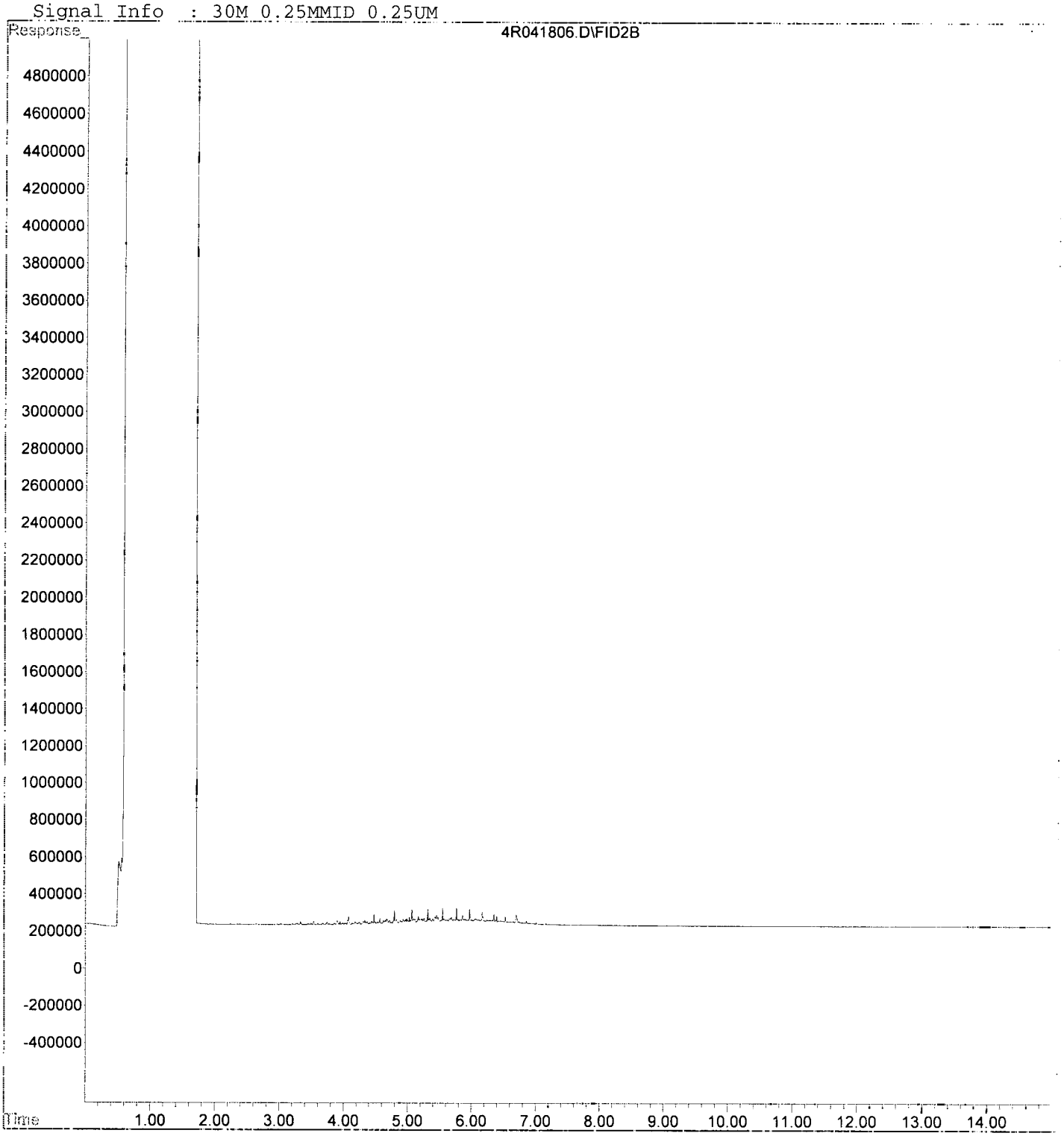
KEH 4/19/19

Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041806.D Vial: 2
Acq On : 18 Apr 2019 17:48 Operator: KEH
Sample : 9D18031-CAL2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:20 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041807.D Vial: 3
Acq On : 18 Apr 2019 18:10 Operator: KEH
Sample : 9D18031-CAL3 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:20 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	113569196	78.347	ug/ml
2)	H	Diesel	6.00	113569196	78.347	ug/ml
3)	H	DRO(C12-C24)	6.00	113569196	78.347	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	84067512	78.443	ug/ml
5)	H	TPHd (C10-C25)	6.00	104504849	77.512	ug/ml
7)	H	Oil	9.00	38665515	28.724	ug/ml
8)	H	RRO (C24-C40)	9.00	38665515	28.724	ug/ml
9)	H	TPHmo (C25-C36)	8.00	3540479	4.283	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	5067074	5.765	ug/ml

KGH 4/19/19

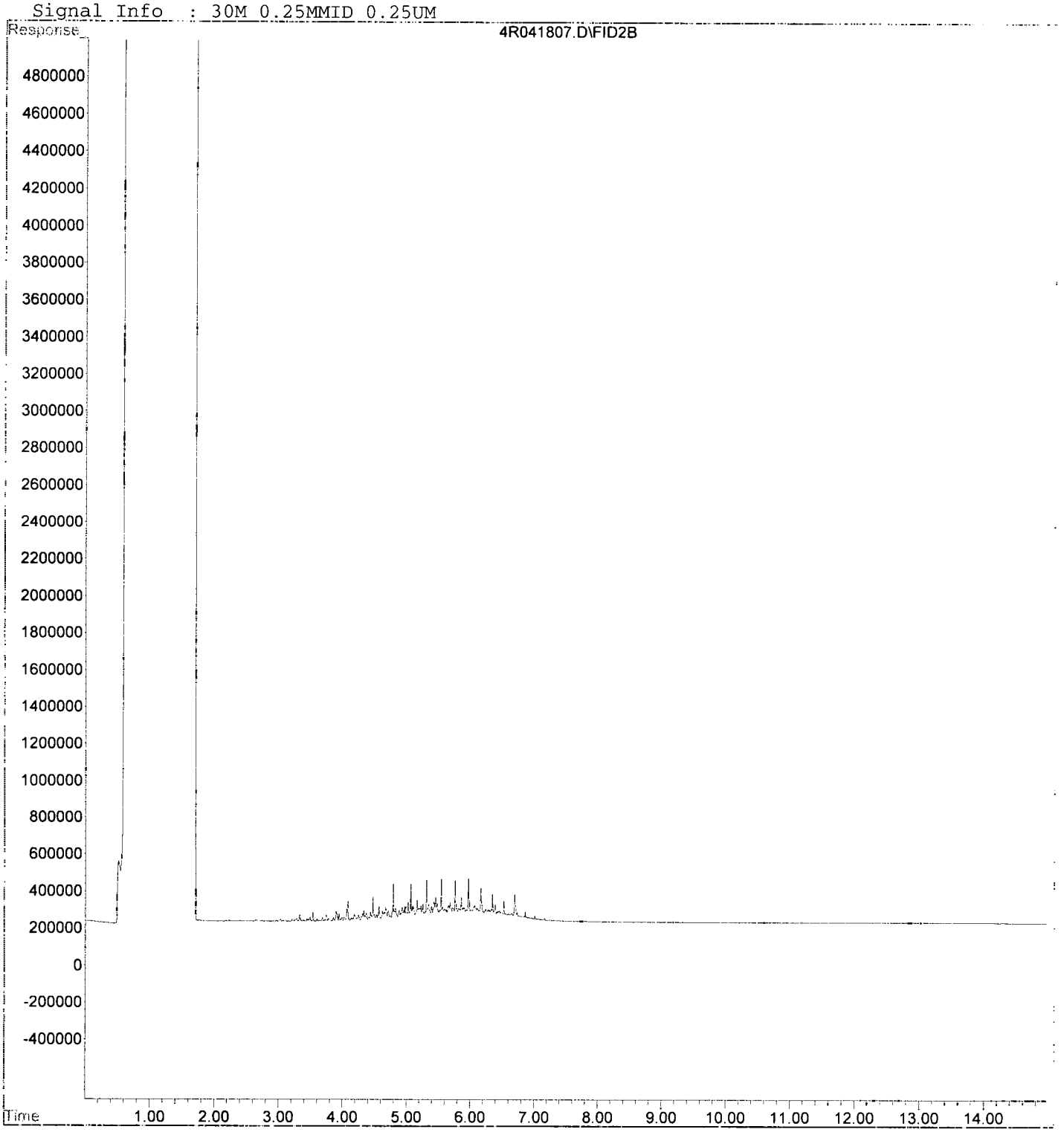
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041807.D Vial: 3
Acq On : 18 Apr 2019 18:10 Operator: KEH
Sample : 9D18031-CAL3 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:20 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041808.D Vial: 4
Acq On : 18 Apr 2019 18:31 Operator: KEH
Sample : 9D18031-CAL4 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:21 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	285309085	196.823	ug/ml
2)	H	Diesel	6.00	285309085	196.823	ug/ml
3)	H	DRO(C12-C24)	6.00	285309085	196.823	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	216132868	201.672	ug/ml
5)	H	TPHd (C10-C25)	6.00	266960886	198.007	ug/ml
7)	H	Oil	9.00	84532286	62.797	ug/ml
8)	H	RRO (C24-C40)	9.00	84532286	62.797	ug/ml
9)	H	TPHmo (C25-C36)	8.00	5384184	6.513	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	10683444	12.154	ug/ml

KSH 4/19/19

(f)=RT Delta > 1/2 Window (h)=Manual Int.

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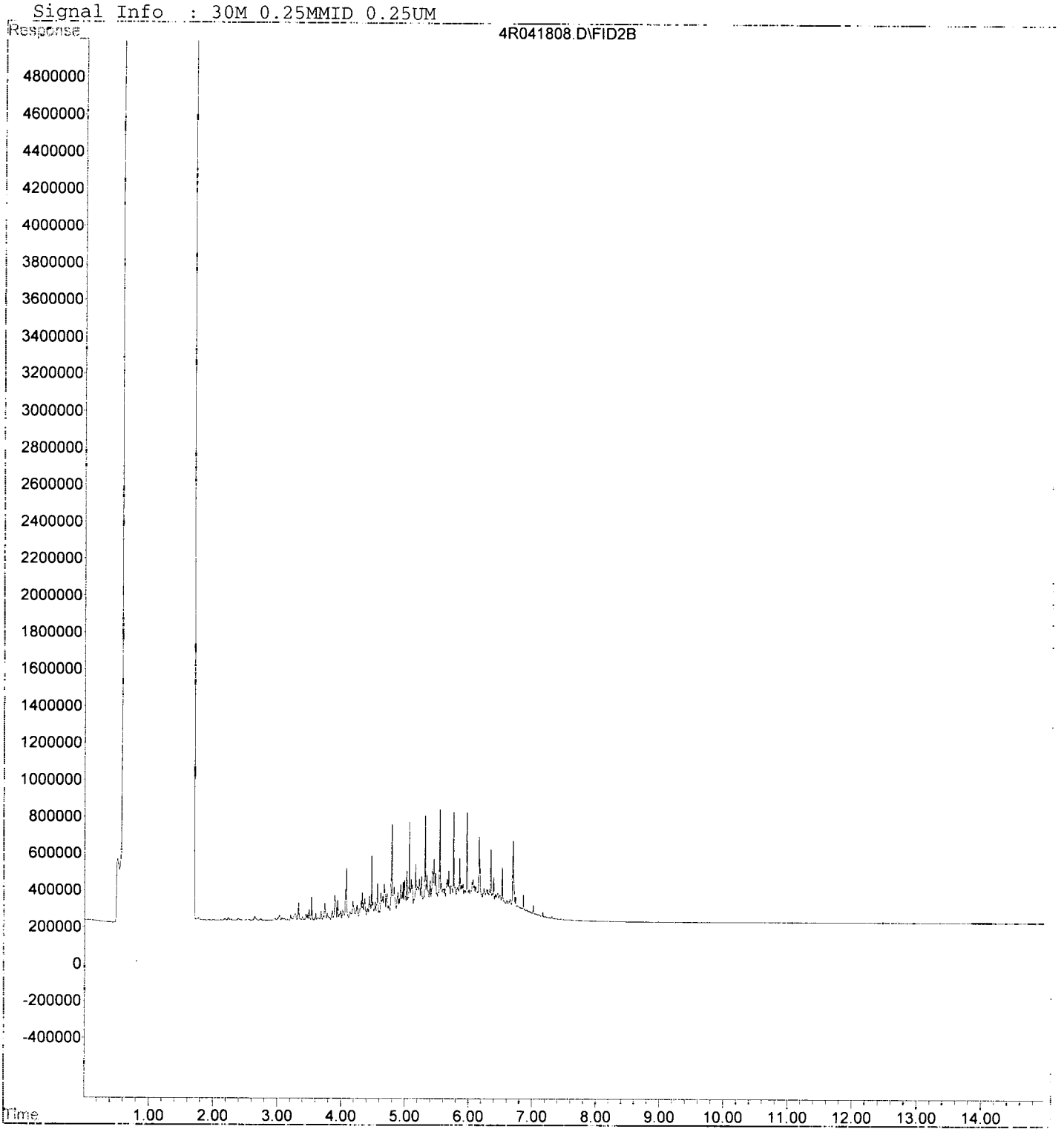
Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041808.D Vial: 4
Acq On : 18 Apr 2019 18:31 Operator: KEH
Sample : 9D18031-CAL4 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:21 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041809.D Vial: 5
Acq On : 18 Apr 2019 18:53 Operator: KEH
Sample : 9D18031-CAL5 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:21 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	559962994	386.295	ug/ml
2)	H	Diesel	6.00	559962994	386.295	ug/ml
3)	H	DRO(C12-C24)	6.00	559962994	386.295	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	430197001	401.414	ug/ml
5)	H	TPHd (C10-C25)	6.00	529556606	392.776	ug/ml
7)	H	Oil	9.00	161146941	119.713	ug/ml
8)	H	RRO (C24-C40)	9.00	161146941	119.713	ug/ml
9)	H	TPHmo (C25-C36)	8.00	7909206	9.567	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	19109281	21.740	ug/ml

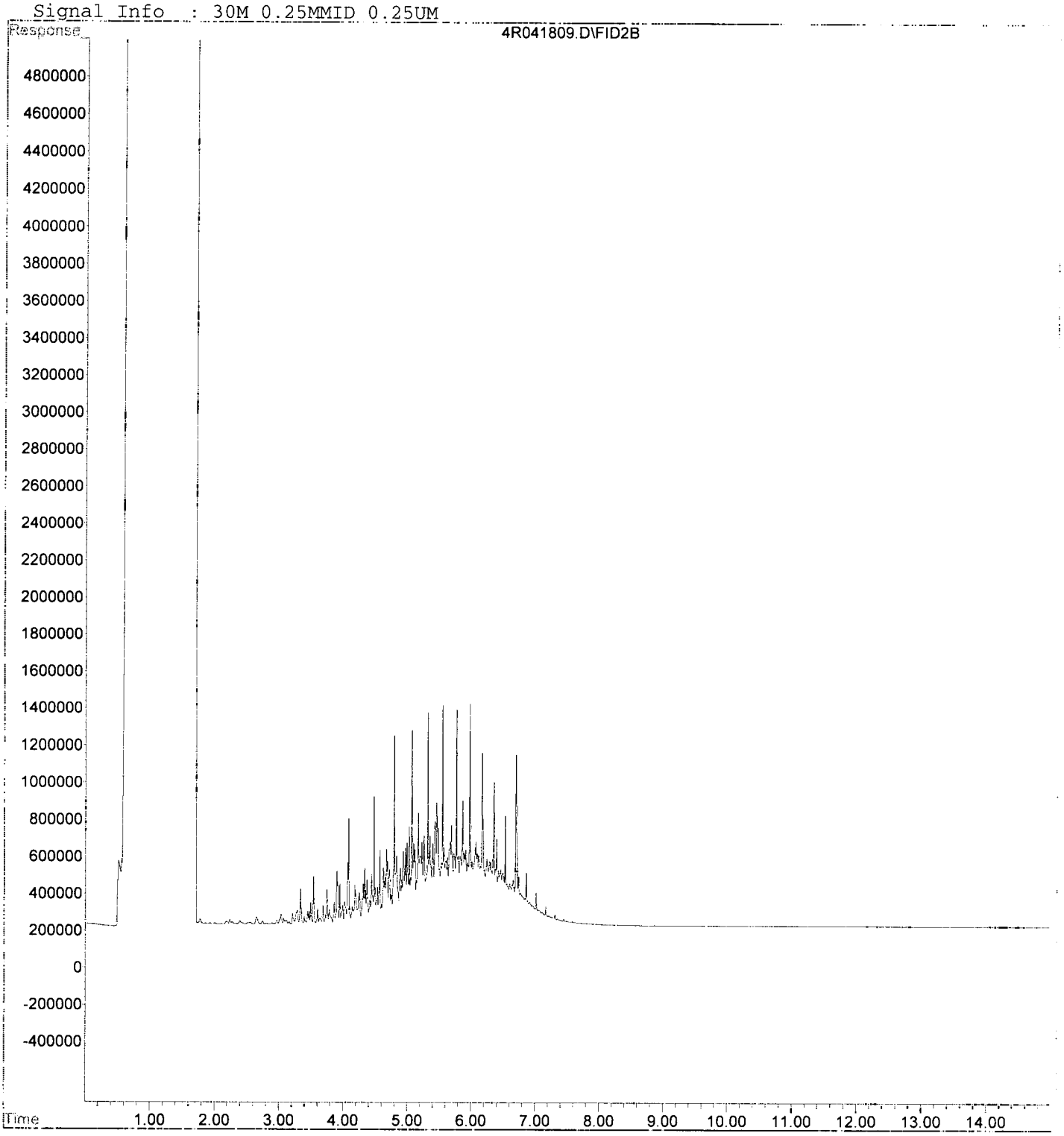
KEH 4/19/19

Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041809.D Vial: 5
Acq On : 18 Apr 2019 18:53 Operator: KEH
Sample : 9D18031-CAL5 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:21 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041810.D Vial: 6
Acq On : 18 Apr 2019 19:14 Operator: KEH
Sample : 9D18031-CAL6 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:22 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	1113983486	768.491	ug/ml
2)	H	Diesel	6.00	1113983486	768.491	ug/ml
3)	H	DRO(C12-C24)	6.00	1113983486	768.491	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	859968164	802.430	ug/ml
5)	H	TPHd (C10-C25)	6.00	1055235950	782.677	ug/ml
7)	H	Oil	9.00	316731417	235.293	ug/ml
8)	H	RRO (C24-C40)	9.00	316731417	235.293	ug/ml
9)	H	TPHmo (C25-C36)	8.00	13816994	16.714	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	37404444	42.553	ug/ml

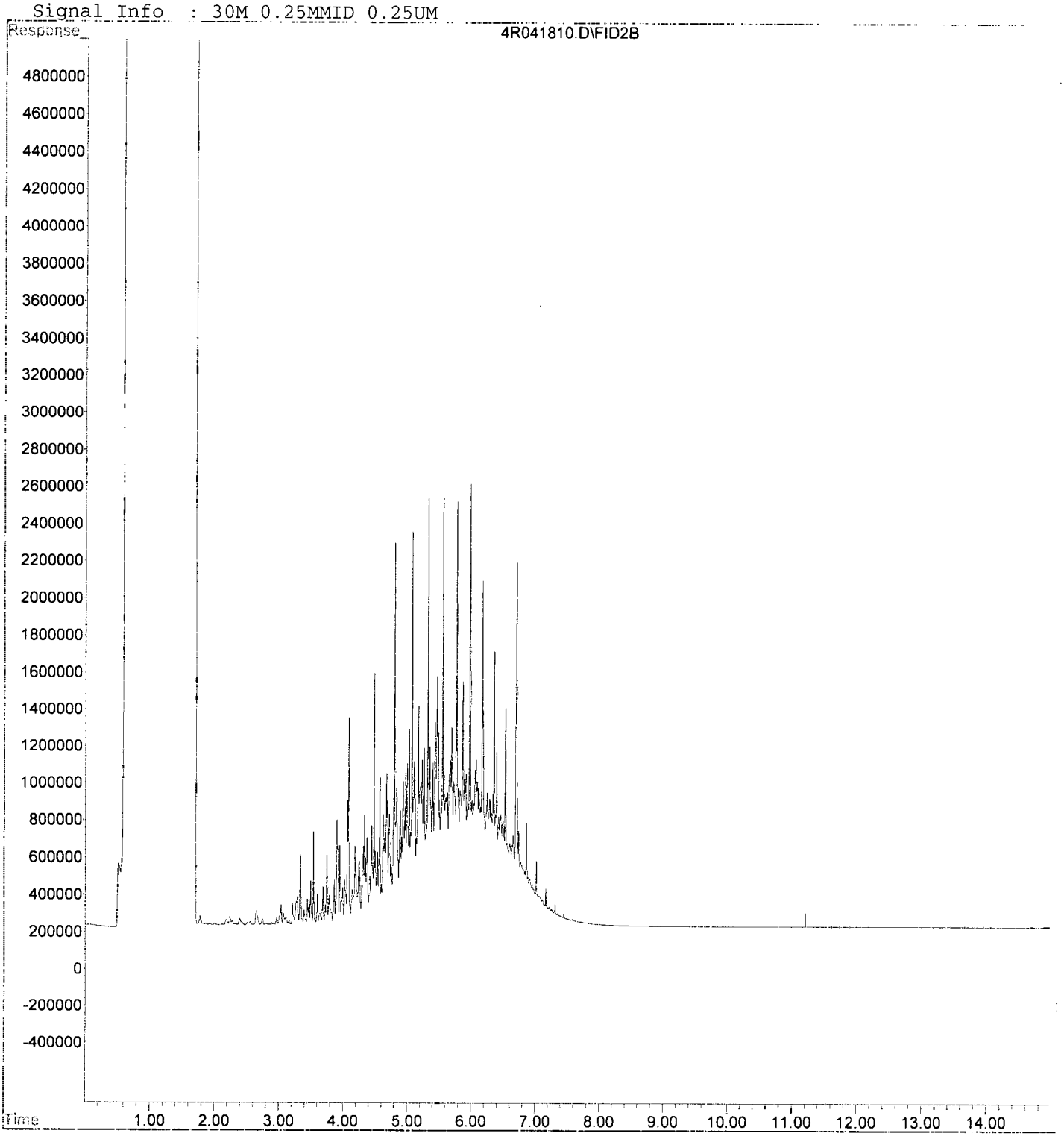
KEH 4/19/19

Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041810.D Vial: 6
Acq On : 18 Apr 2019 19:14 Operator: KEH
Sample : 9D18031-CAL6 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:22 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041811.D Vial: 7
Acq On : 18 Apr 2019 19:36 Operator: KEH
Sample : 9D18031-CAL7 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:22 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	2765587058	1907.865	ug/ml
2)	H	Diesel	6.00	2765587058	1907.865	ug/ml
3)	H	DRO(C12-C24)	6.00	2765587058	1907.865	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	2144994079	2001.478	ug/ml
5)	H	TPHd (C10-C25)	6.00	2626370489	1947.999	ug/ml
7)	H	Oil	9.00	781321350	580.427	ug/ml
8)	H	RRO (C24-C40)	9.00	781321350	580.427	ug/ml
9)	H	TPHmo (C25-C36)	8.00	30150852	36.472	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	90438866	102.887	ug/ml

KM 4/19/19

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

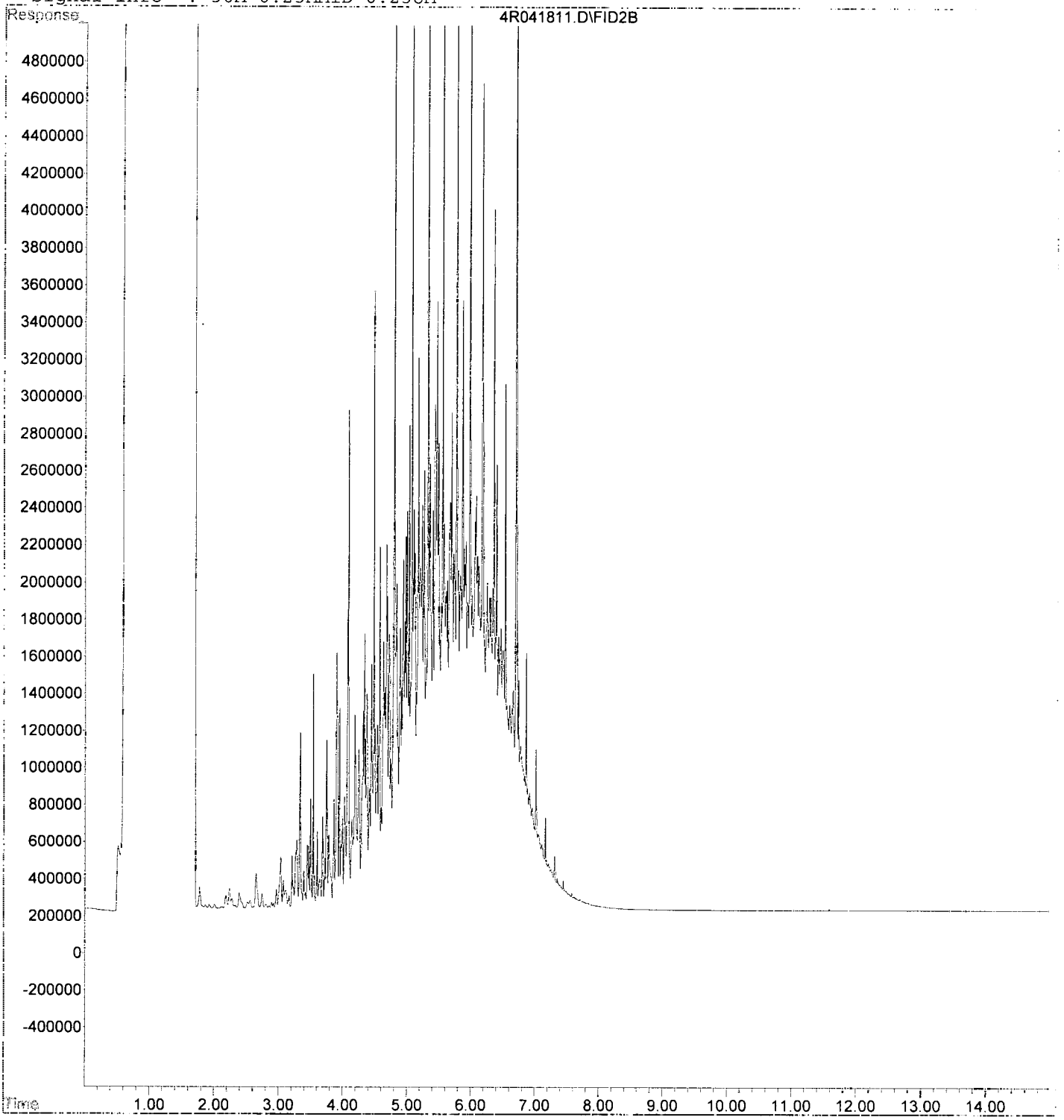
4R041811.D 4R90406D.M Fri Apr 19 14:30:36 2019 SV-GCMS3 Page 1

Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041811.D Vial: 7
Acq On : 18 Apr 2019 19:36 Operator: KEH
Sample : 9D18031-CAL7 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:22 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041812.D Vial: 8
Acq On : 18 Apr 2019 19:57 Operator: KEH
Sample : 9D18031-CAL8 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:23 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	5461189375	3767.450	ug/ml
2)	H	Diesel	6.00	5461189375	3767.450	ug/ml
3)	H	DRO(C12-C24)	6.00	5461189375	3767.450	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	4239230034	3955.595	ug/ml
5)	H	TPHd (C10-C25)	6.00	5191186662	3850.343	ug/ml
7)	H	Oil	9.00	1541796568	1145.367	ug/ml
8)	H	RRO (C24-C40)	9.00	1541796568	1145.367	ug/ml
9)	H	TPHmo (C25-C36)	8.00	56714707	68.606	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	176024383	200.253	ug/ml

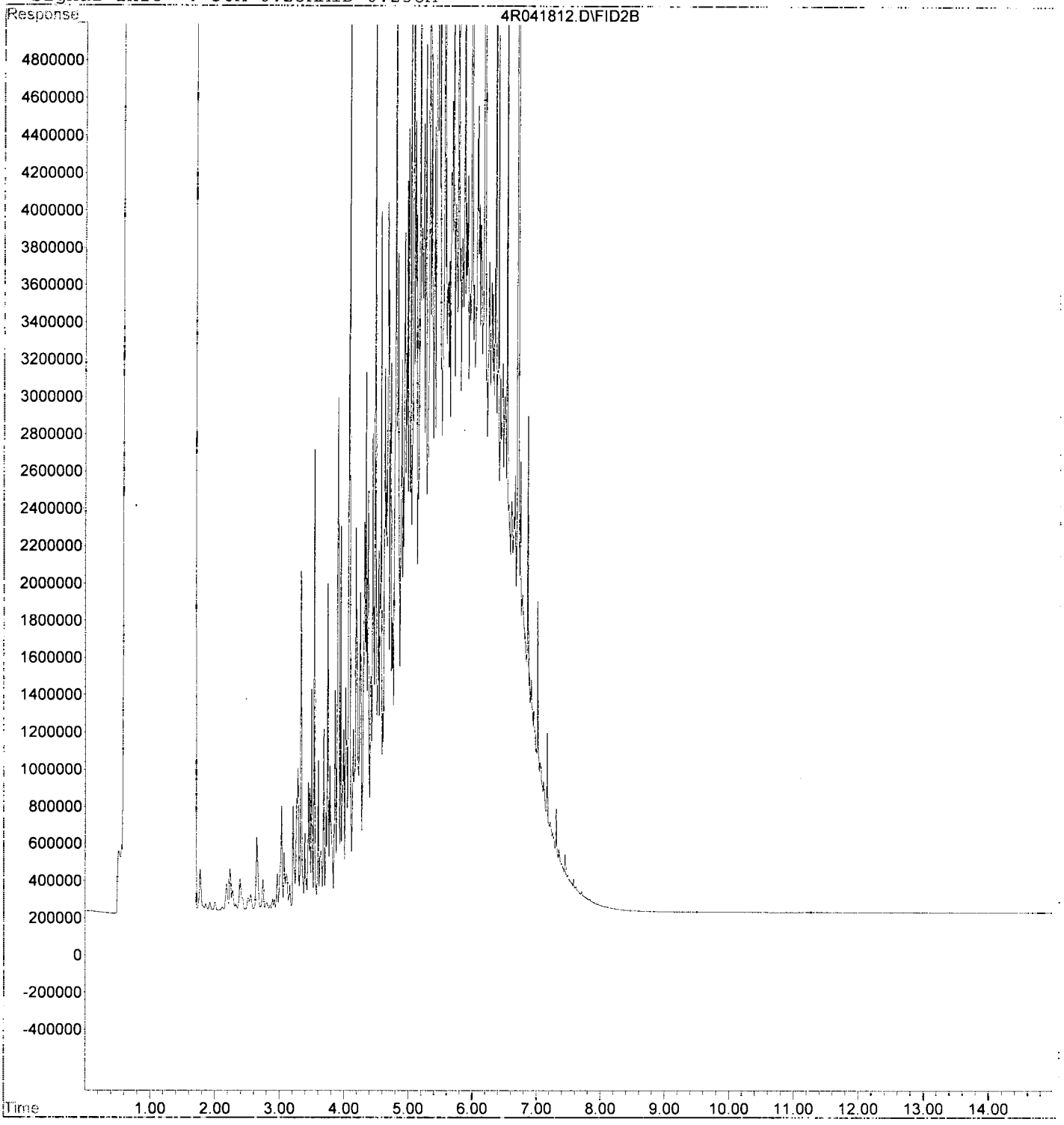
KEH 4/19/19

Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041812.D Vial: 8
Acq On : 18 Apr 2019 19:57 Operator: KEH
Sample : 9D18031-CAL8 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:23 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:18:14 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041813.D Vial: 9
Acq On : 18 Apr 2019 20:19 Operator: KEH
Sample : 9D18031-CAL9 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:24 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	6.39	12550742	7.334 ug/ml
		Target Compounds			
1)	H	Mineral Oil	6.00	6714659	4.632 ug/ml
2)	H	Diesel	6.00	6714659	4.632 ug/ml
3)	H	DRO(C12-C24)	6.00	6714659	4.632 ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	1021353	0.953 ug/ml
5)	H	TPHd (C10-C25)	6.00	3211833	2.382 ug/ml
7)	H	Oil	9.00	6839852	5.081 ug/ml
8)	H	RRO (C24-C40)	9.00	6839852	5.081 ug/ml
9)	H	TPHmo (C25-C36)	8.00	2167342	2.622 ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	1641437	1.867 ug/ml

KH 4/19/19

J

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

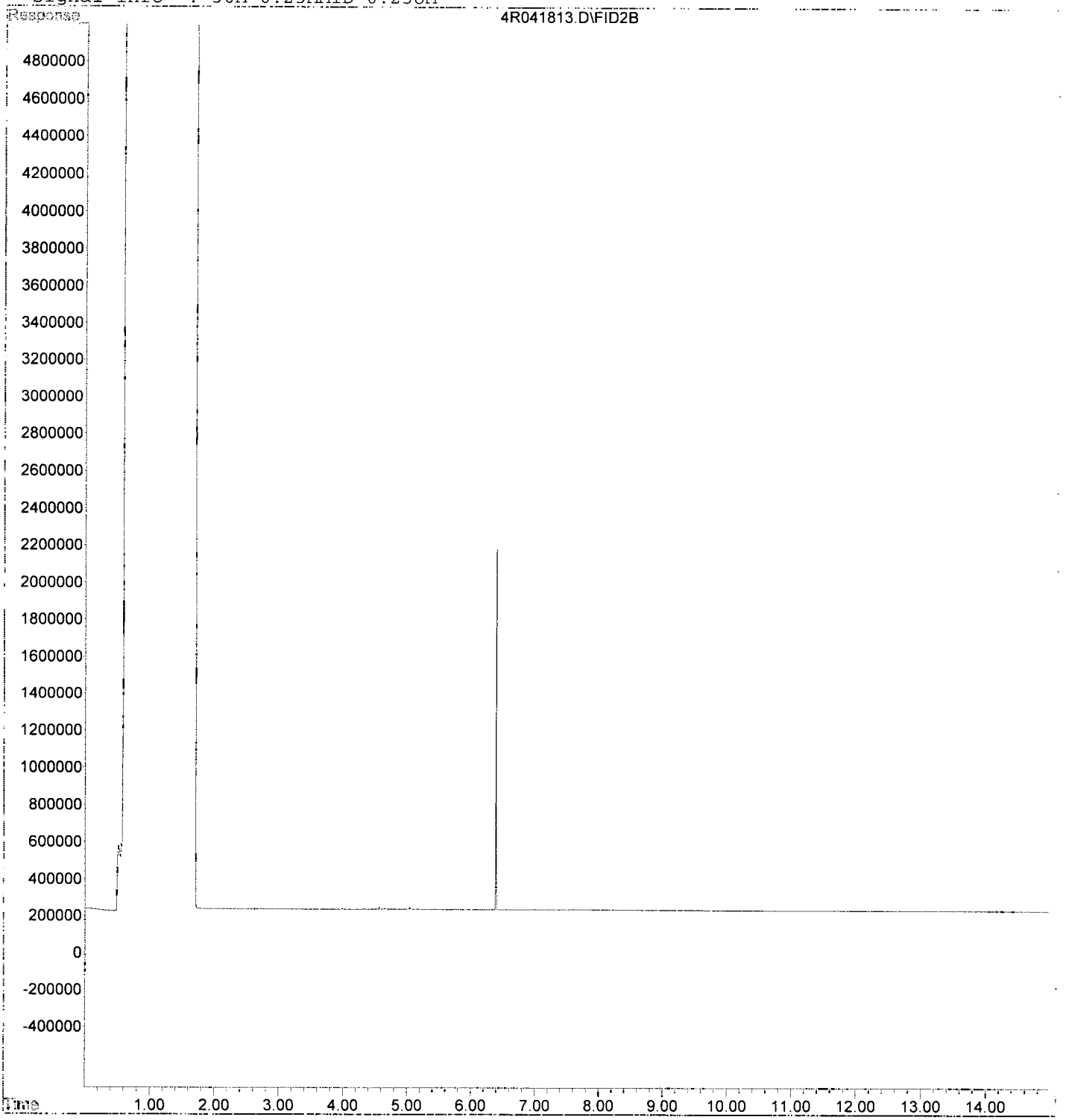
4R041813.D 4R90406D.M Fri Apr 19 14:30:37 2019 SV-GCMS3 Page 1

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041813.D Vial: 9
Acq On : 18 Apr 2019 20:19 Operator: KEH
Sample : 9D18031-CAL9 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:24 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041814.D Vial: 10
Acq On : 18 Apr 2019 20:40 Operator: KEH
Sample : 9D18031-CALA Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:24 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	6.39	31746450	18.551 ug/ml
		Target Compounds			
1)	H	Mineral Oil	6.00	7707996	5.317 ug/ml
2)	H	Diesel	6.00	7707996	5.317 ug/ml
3)	H	DRO(C12-C24)	6.00	7707996	5.317 ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	1626532	1.518 ug/ml
5)	H	TPHd (C10-C25)	6.00	3727896	2.765 ug/ml
7)	H	Oil	9.00	8172173	6.071 ug/ml
8)	H	RRO (C24-C40)	9.00	8172173	6.071 ug/ml
9)	H	TPHmo (C25-C36)	8.00	2472518	2.991 ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	1811288	2.061 ug/ml

KEH 4/19/19

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

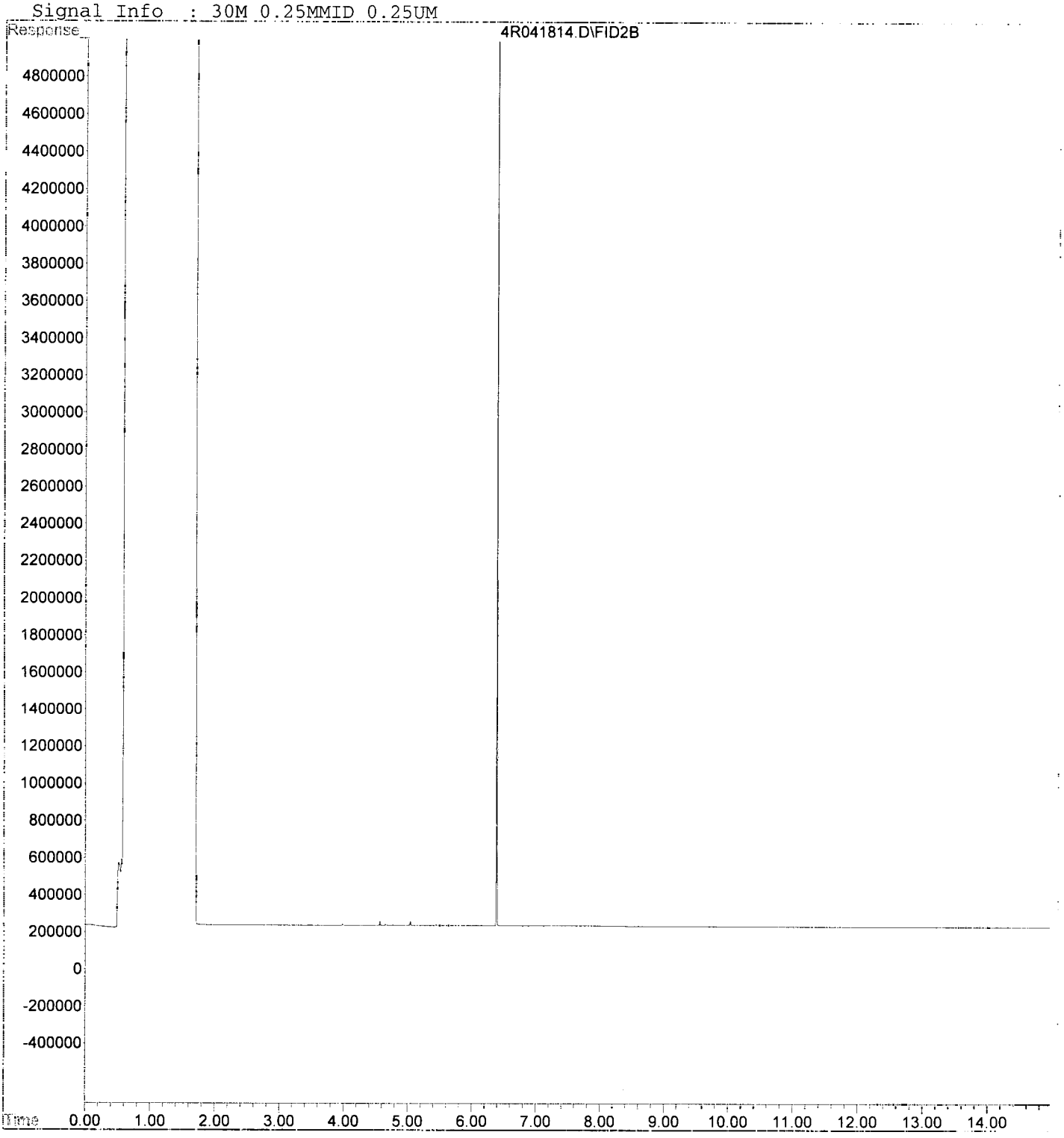
4R041814.D 4R90406D.M Fri Apr 19 14:30:38 2019 SV-GCMS3 Page 1

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041814.D Vial: 10
Acq On : 18 Apr 2019 20:40 Operator: KEH
Sample : 9D18031-CALA Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:24 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041815.D Vial: 11
Acq On : 18 Apr 2019 21:02 Operator: KEH
Sample : 9D18031-CALB Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:24 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	6.39	63480632	37.095 ug/ml
		Target Compounds			
1)	H	Mineral Oil	6.00	7590116	5.236 ug/ml
2)	H	Diesel	6.00	7590116	5.236 ug/ml
3)	H	DRO(C12-C24)	6.00	7590116	5.236 ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	1726279	1.611 ug/ml
5)	H	TPHd (C10-C25)	6.00	3815550	2.830 ug/ml
7)	H	Oil	9.00	7720331	5.735 ug/ml
8)	H	RRO (C24-C40)	9.00	7720331	5.735 ug/ml
9)	H	TPHmo (C25-C36)	8.00	2441284	2.953 ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	1954026	2.223 ug/ml

KEH 4/19/19

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Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041815.D Vial: 11
Acq On : 18 Apr 2019 21:02 Operator: KEH
Sample : 9D18031-CALB Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:24 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041816.D Vial: 12
Acq On : 18 Apr 2019 21:23 Operator: KEH
Sample : 9D18031-CALC Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:24 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	6.39	127155147	74.303 ug/ml
		Target Compounds			
1)	H	Mineral Oil	6.00	8065014	5.564 ug/ml
2)	H	Diesel	6.00	8065014	5.564 ug/ml
3)	H	DRO(C12-C24)	6.00	8065014	5.564 ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	1504302	1.404 ug/ml
5)	H	TPHd (C10-C25)	6.00	3952102	2.931 ug/ml
7)	H	Oil	9.00	7784729	5.783 ug/ml
8)	H	RRO (C24-C40)	9.00	7784729	5.783 ug/ml
9)	H	TPHmo (C25-C36)	8.00	2292236	2.773 ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	1961237	2.231 ug/ml

Ret# 4/19/19

J

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

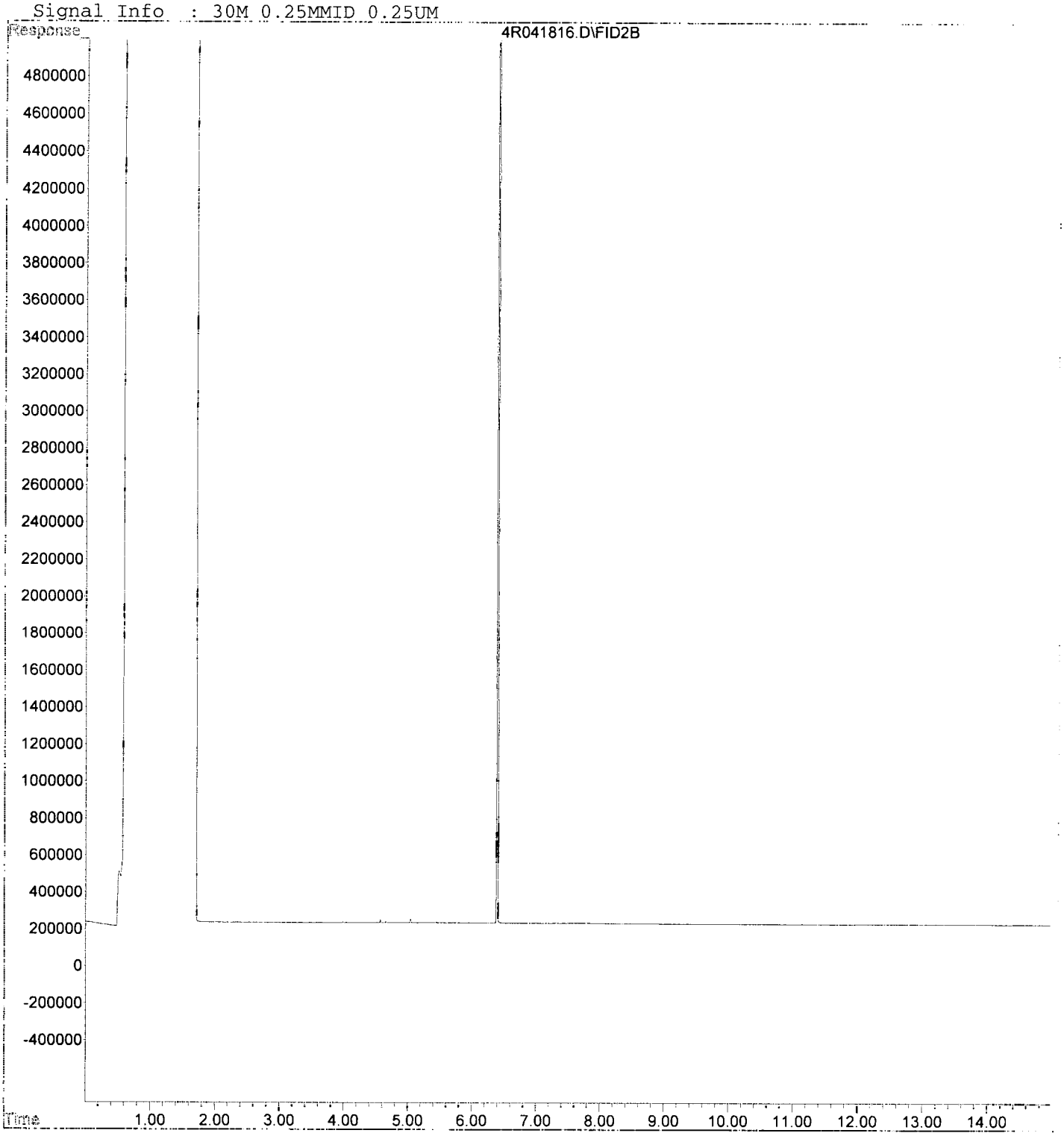
4R041816.D 4R90406D.M Fri Apr 19 14:30:39 2019 SV-GCMS3 Page 1

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041816.D Vial: 12
Acq On : 18 Apr 2019 21:23 Operator: KEH
Sample : 9D18031-CALC Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:24 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041817.D Vial: 13
Acq On : 18 Apr 2019 21:45 Operator: KEH
Sample : 9D18031-CALD Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:24 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	6.40	248366958	145.133 ug/ml
		Target Compounds			
1)	H	Mineral Oil	6.00	8334796	5.750 ug/ml
2)	H	Diesel	6.00	8334796	5.750 ug/ml
3)	H	DRO(C12-C24)	6.00	8334796	5.750 ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	1840398	1.717 ug/ml
5)	H	TPHd (C10-C25)	6.00	4587572	3.403 ug/ml
7)	H	Oil	9.00	7408869	5.504 ug/ml
8)	H	RRO (C24-C40)	9.00	7408869	5.504 ug/ml
9)	H	TPHmo (C25-C36)	8.00	2165719	2.620 ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	1957828	2.227 ug/ml

KAT 4/19/19

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

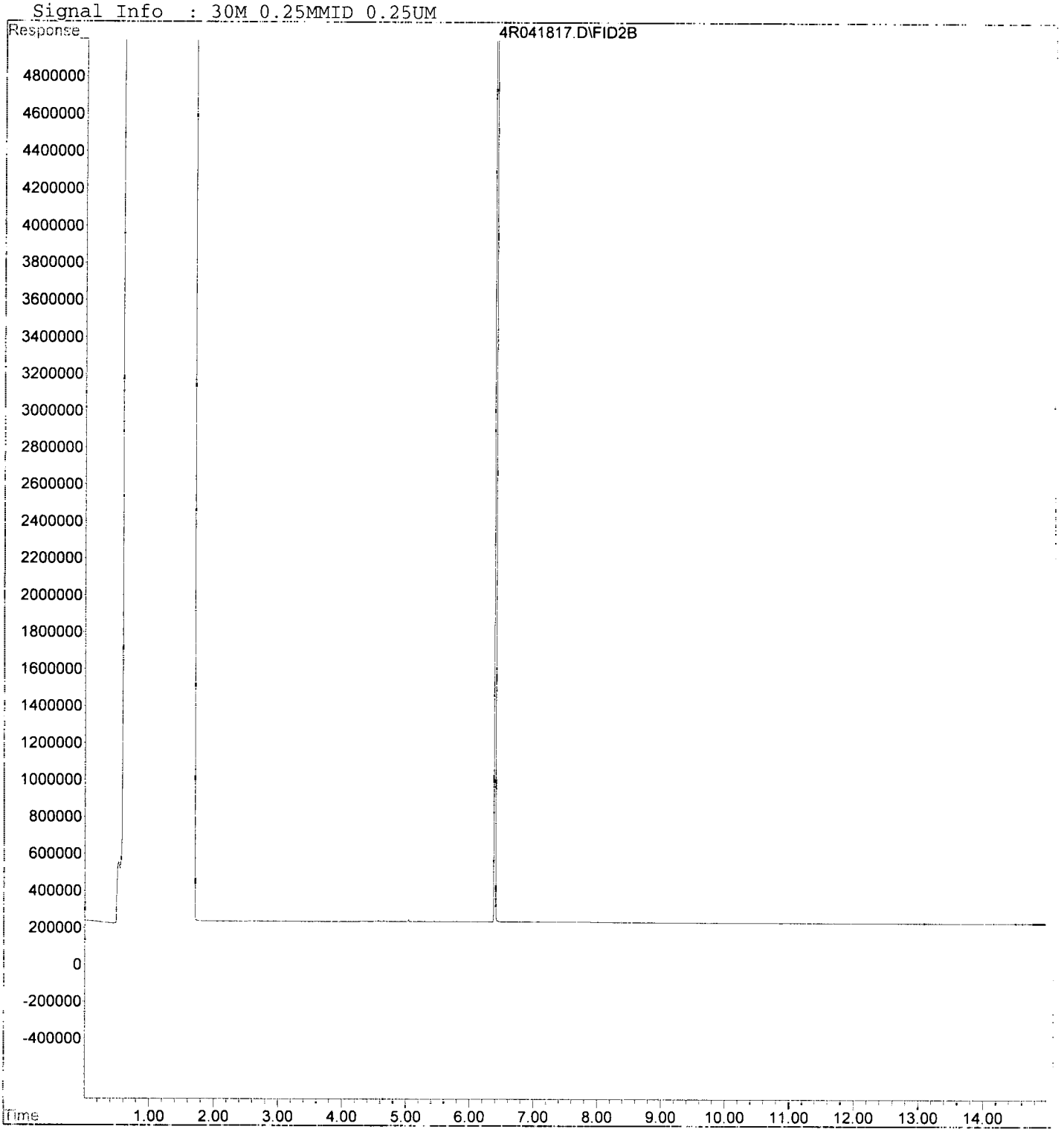
4R041817.D 4R90406D.M Fri Apr 19 14:30:39 2019 SV-GCMS3

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041817.D Vial: 13
Acq On : 18 Apr 2019 21:45 Operator: KEH
Sample : 9D18031-CALD Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:24 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041818.D Vial: 14
Acq On : 18 Apr 2019 22:06 Operator: KEH
Sample : 9D18031-CALE Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:25 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	33831938	23.339	ug/ml
2)	H	Diesel	6.00	33831938	23.339	ug/ml
3)	H	DRO(C12-C24)	6.00	33831938	23.339	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	4208882	3.927	ug/ml
5)	H	TPHd (C10-C25)	6.00	13541300	10.044	ug/ml
7)	H	Oil	9.00	50278734	37.351	ug/ml
8)	H	RRO (C24-C40)	9.00	50278734	37.351	ug/ml
9)	H	TPHmo (C25-C36)	8.00	26648263	32.236	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	26177260	29.780	ug/ml

KEH 4/19/19

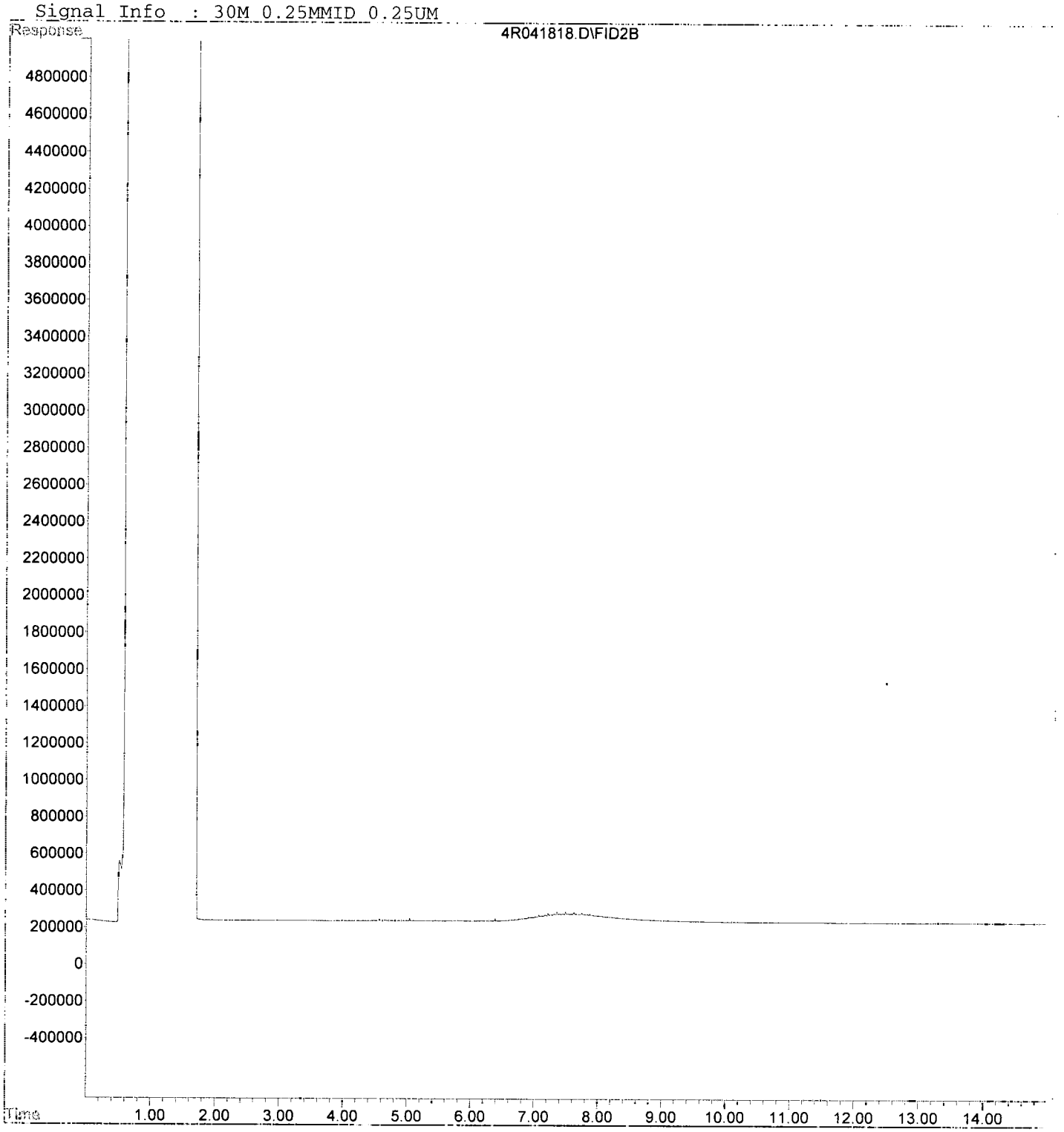
(f)=RT Delta > 1/2 window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041818.D Vial: 14
Acq On : 18 Apr 2019 22:06 Operator: KEH
Sample : 9D18031-CALE Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:25 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041819.D Vial: 15
Acq On : 18 Apr 2019 22:28 Operator: KEH
Sample : 9D18031-CALF Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:25 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	65187526	44.970	ug/ml
2)	H	Diesel	6.00	65187526	44.970	ug/ml
3)	H	DRO(C12-C24)	6.00	65187526	44.970	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	6355685	5.930	ug/ml
5)	H	TPHd (C10-C25)	6.00	24241743	17.980	ug/ml
7)	H	Oil	9.00	88664300	65.867	ug/ml
8)	H	RRO (C24-C40)	9.00	88664300	65.867	ug/ml
9)	H	TPHmo (C25-C36)	8.00	50588553	61.195	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	53892862	61.311	ug/ml

KEH 4/19/19

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

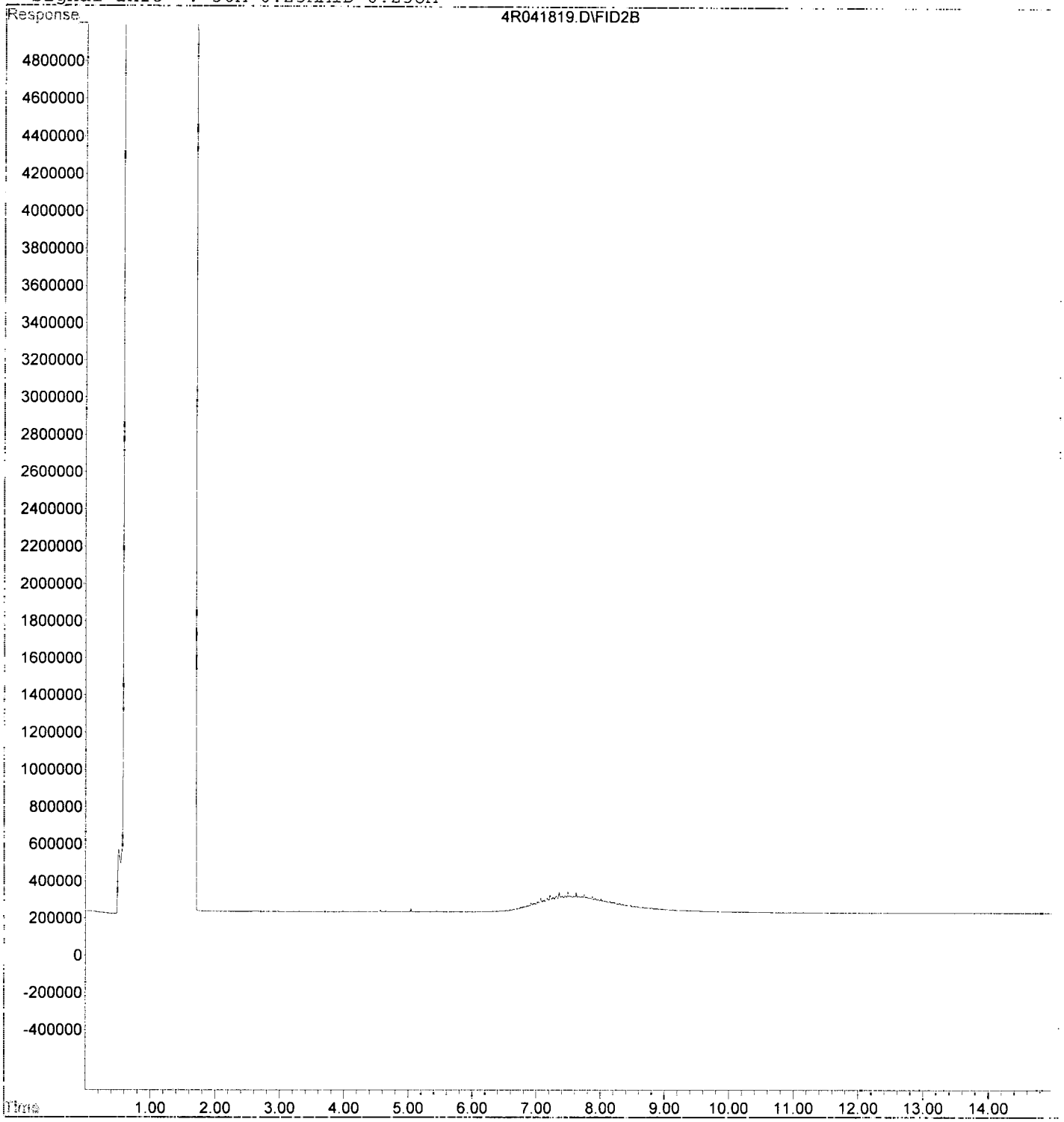
4R041819.D 4R90406D.M Fri Apr 19 14:30:41 2019 SV-GCMS3 Page 1

Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041819.D Vial: 15
Acq On : 18 Apr 2019 22:28 Operator: KEH
Sample : 9D18031-CALF Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:25 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041820.D Vial: 16
Acq On : 18 Apr 2019 22:49 Operator: KEH
Sample : 9D18031-CALG Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:26 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	195128127	134.611	ug/ml
2)	H	Diesel	6.00	195128127	134.611	ug/ml
3)	H	DRO(C12-C24)	6.00	195128127	134.611	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	16890564	15.760	ug/ml
5)	H	TPHd (C10-C25)	6.00	70169110	52.045	ug/ml
7)	H	Oil	9.00	260662207	193.640	ug/ml
8)	H	RRO (C24-C40)	9.00	260662207	193.640	ug/ml
9)	H	TPHmo (C25-C36)	8.00	154668552	187.097	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	165374964	188.138	ug/ml

KEH 4/19/19

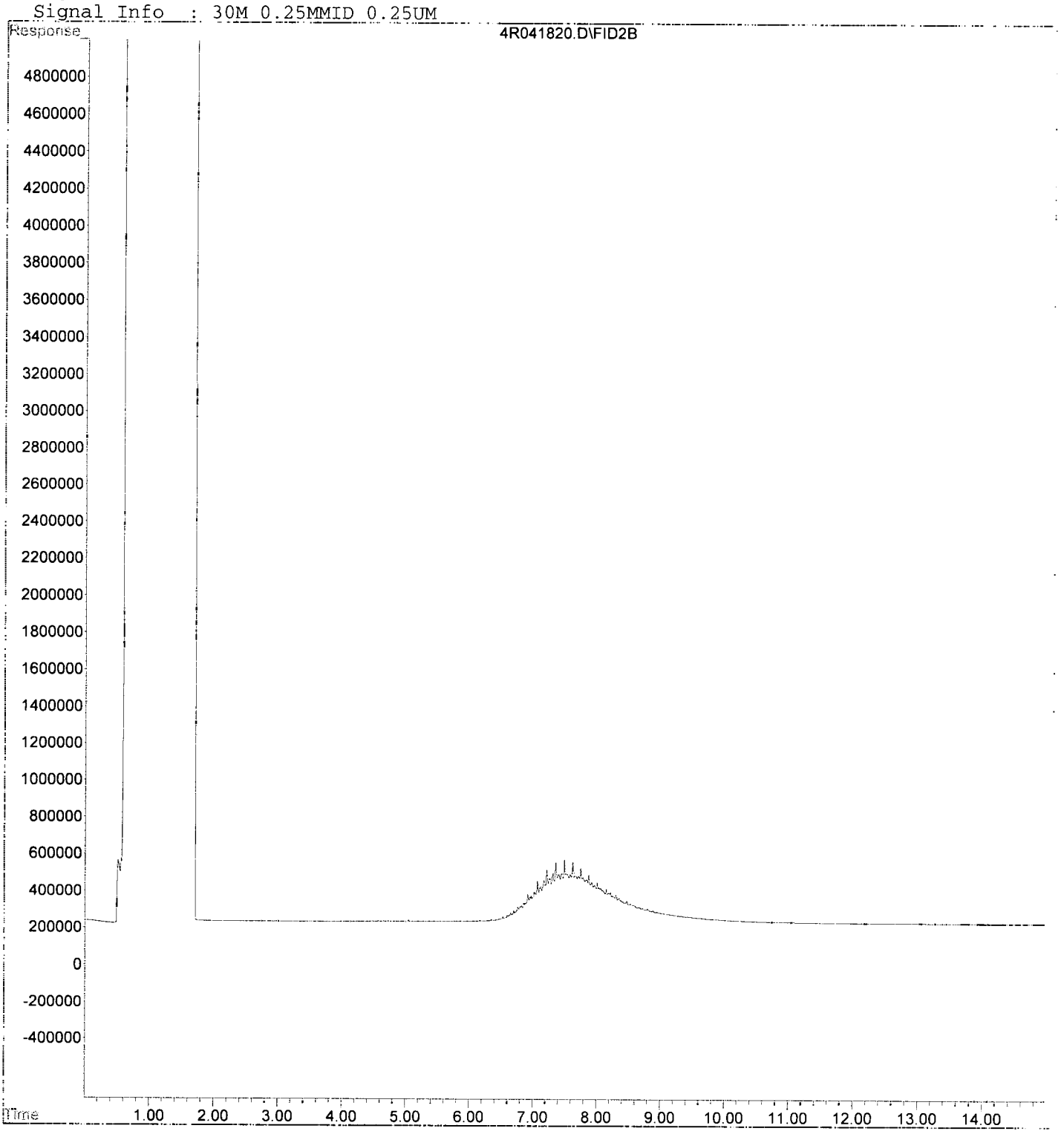
✓

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041820.D Vial: 16
Acq On : 18 Apr 2019 22:49 Operator: KEH
Sample : 9D18031-CALG Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:26 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041821.D Vial: 17
Acq On : 18 Apr 2019 23:10 Operator: KEH
Sample : 9D18031-CALH Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:27 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	389629950	268.790	ug/ml
2)	H	Diesel	6.00	389629950	268.790	ug/ml
3)	H	DRO(C12-C24)	6.00	389629950	268.790	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	31581225	29.468	ug/ml
5)	H	TPHd (C10-C25)	6.00	138610255	102.808	ug/ml
7)	H	Oil	9.00	519582103	385.986	ug/ml
8)	H	RRO (C24-C40)	9.00	519582103	385.986	ug/ml
9)	H	TPHmo (C25-C36)	8.00	314366076	380.278	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	334887504	380.983	ug/ml

KEH 4/19/19

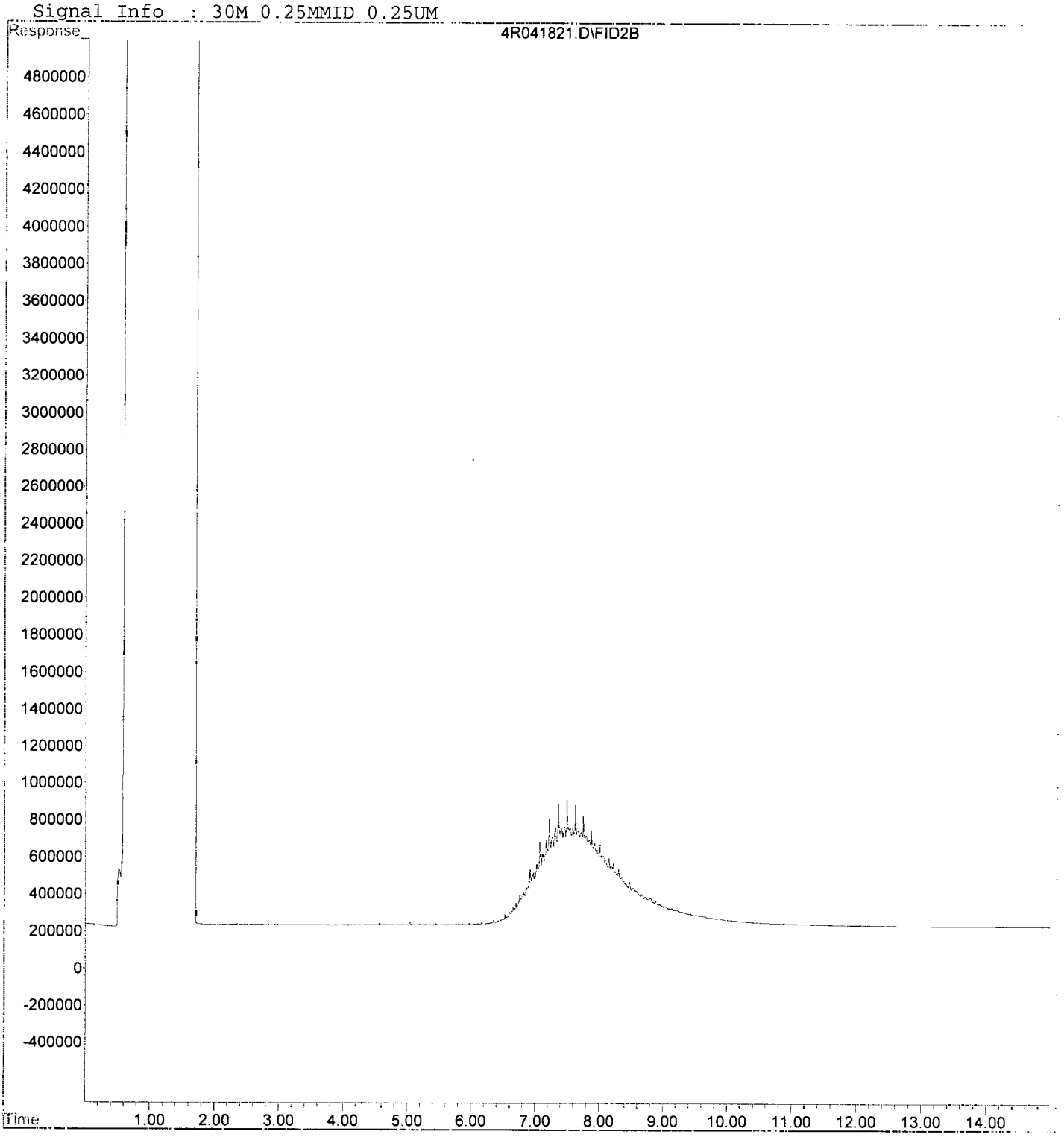
✓

Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041821.D Vial: 17
Acq On : 18 Apr 2019 23:10 Operator: KEH
Sample : 9D18031-CALH Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:27 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041822.D Vial: 18
Acq On : 18 Apr 2019 23:31 Operator: KEH
Sample : 9D18031-CALI Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:27 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	784798540	541.400	ug/ml
2)	H	Diesel	6.00	784798540	541.400	ug/ml
3)	H	DRO(C12-C24)	6.00	784798540	541.400	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	63159064	58.933	ug/ml
5)	H	TPHd (C10-C25)	6.00	279016441	206.949	ug/ml
7)	H	Oil	9.00	1045982199	777.037	ug/ml
8)	H	RRO (C24-C40)	9.00	1045982199	777.037	ug/ml
9)	H	TPHmo (C25-C36)	8.00	636410473	769.844	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	676161034	769.231	ug/ml

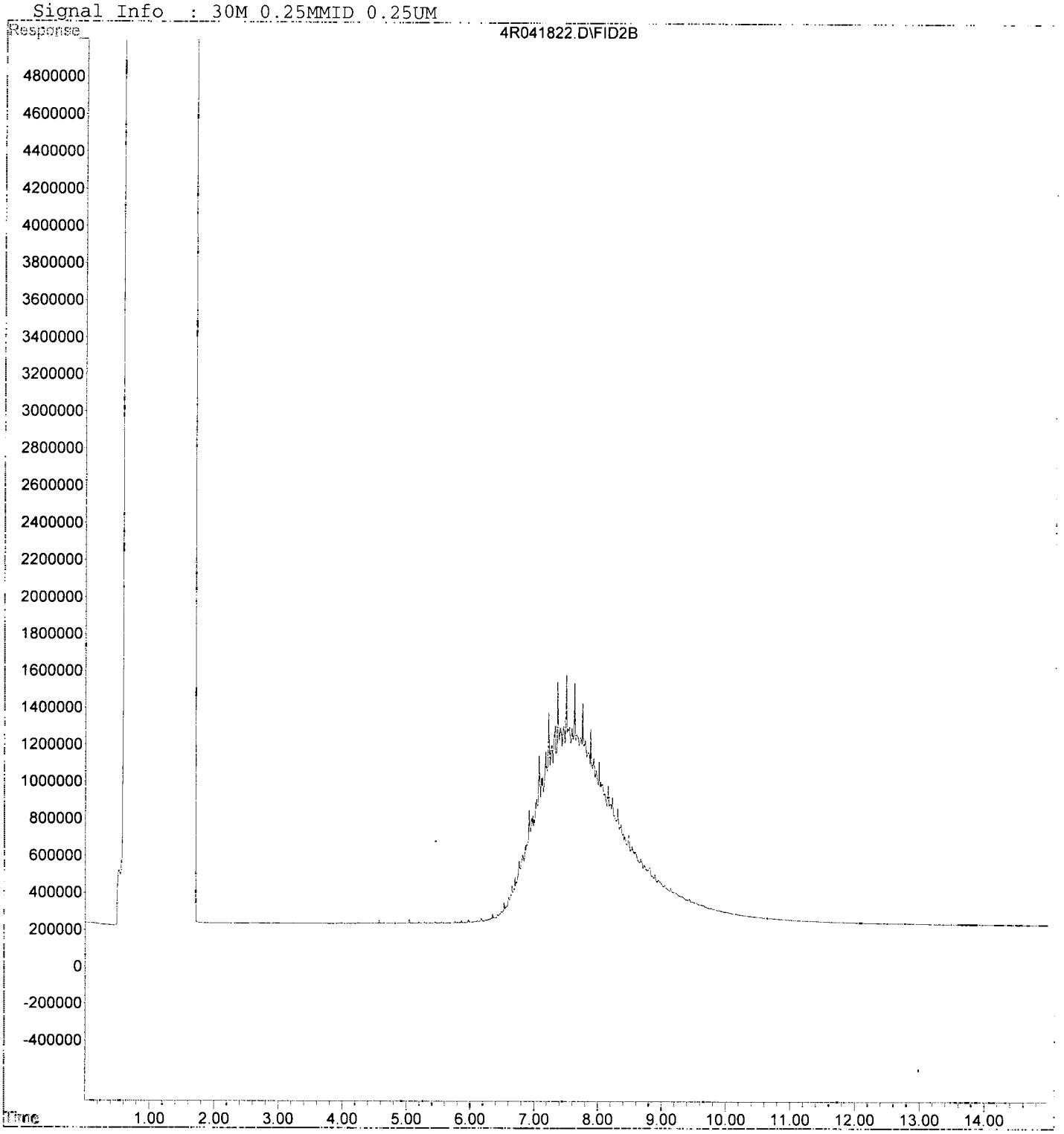
KEH 4/19/19

Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041822.D Vial: 18
Acq On : 18 Apr 2019 23:31 Operator: KEH
Sample : 9D18031-CALI Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:27 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041823.D Vial: 19
Acq On : 18 Apr 2019 23:53 Operator: KEH
Sample : 9D18031-CALJ Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:28 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	1940929260	1338.967	ug/ml
2)	H	Diesel	6.00	1940929260	1338.967	ug/ml
3)	H	DRO(C12-C24)	6.00	1940929260	1338.967	ug/ml
4)	H	CA LUFT DRO (C12-C22)	0.00	0	N.D.	ug/ml
5)	H	TPHd (C10-C25)	6.00	690398516	512.074	ug/ml
7)	H	Oil	9.00	2583641711	1919.331	ug/ml
8)	H	RRO (C24-C40)	9.00	2583641711	1919.331	ug/ml
9)	H	TPHmo (C25-C36)	8.00	1579509857	1910.679	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	1672335453	1902.523	ug/ml

KEK 4/19/19

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

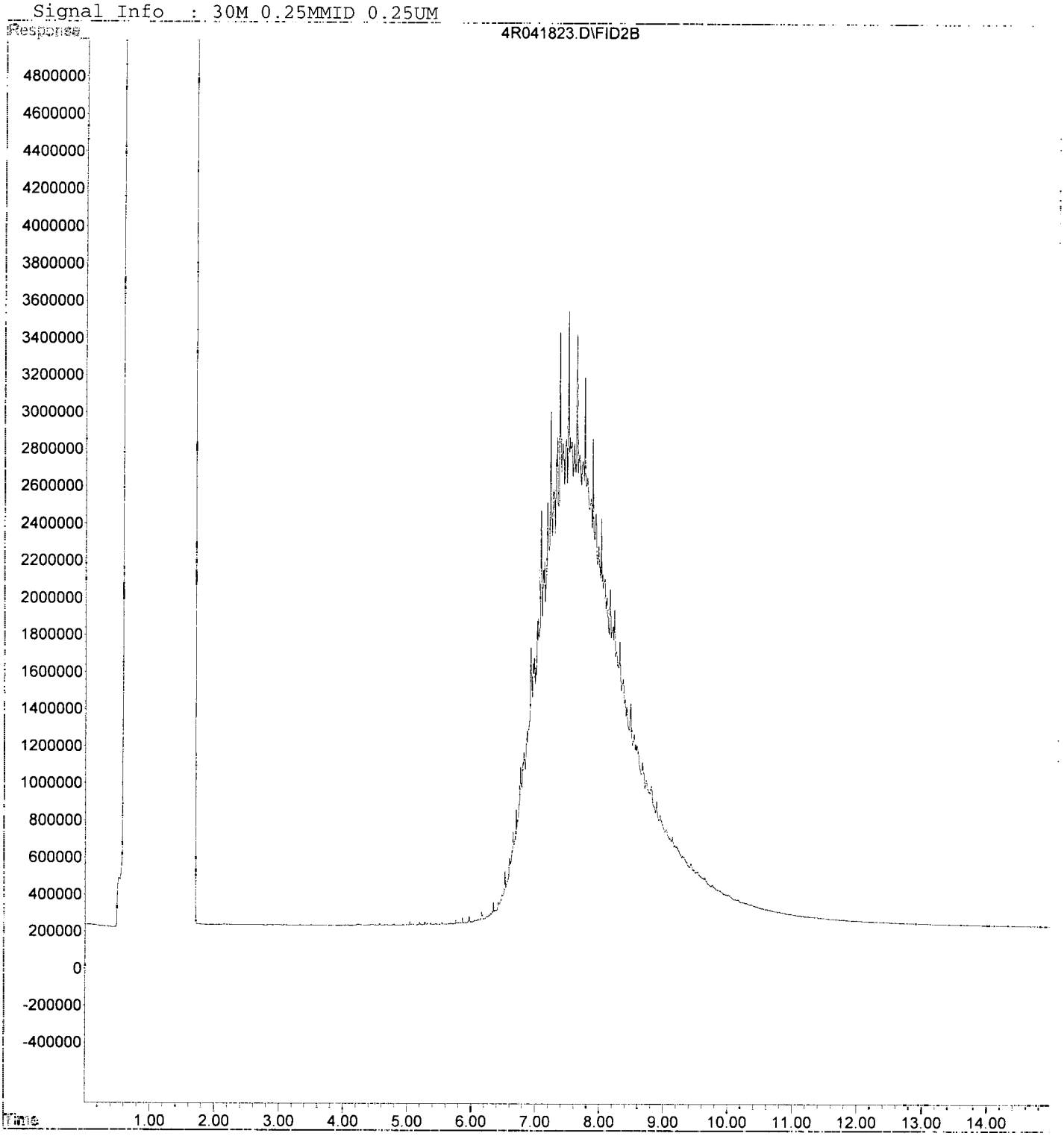
4R041823.D 4R90406D.M Fri Apr 19 14:30:43 2019 SV-GCMS3 Page 1

Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041823.D Vial: 19
Acq On : 18 Apr 2019 23:53 Operator: KEH
Sample : 9D18031-CALJ Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:28 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041824.D Vial: 100
Acq On : 19 Apr 2019 00:14 Operator: KEH
Sample : 9D18031-IBL1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:28 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	6652230	4.589	ug/ml
2)	H	Diesel	6.00	6652230	4.589	ug/ml
3)	H	DRO(C12-C24)	6.00	6652230	4.589	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	2049113	1.912	ug/ml
5)	H	TPHd (C10-C25)	6.00	3474071	2.577	ug/ml
7)	H	Oil	9.00	15400229	11.440	ug/ml
8)	H	RRO (C24-C40)	9.00	15400229	11.440	ug/ml
9)	H	TPHmo (C25-C36)	8.00	4759249	5.757	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	3531749	4.018	ug/ml

NP
KEH 4/19/19

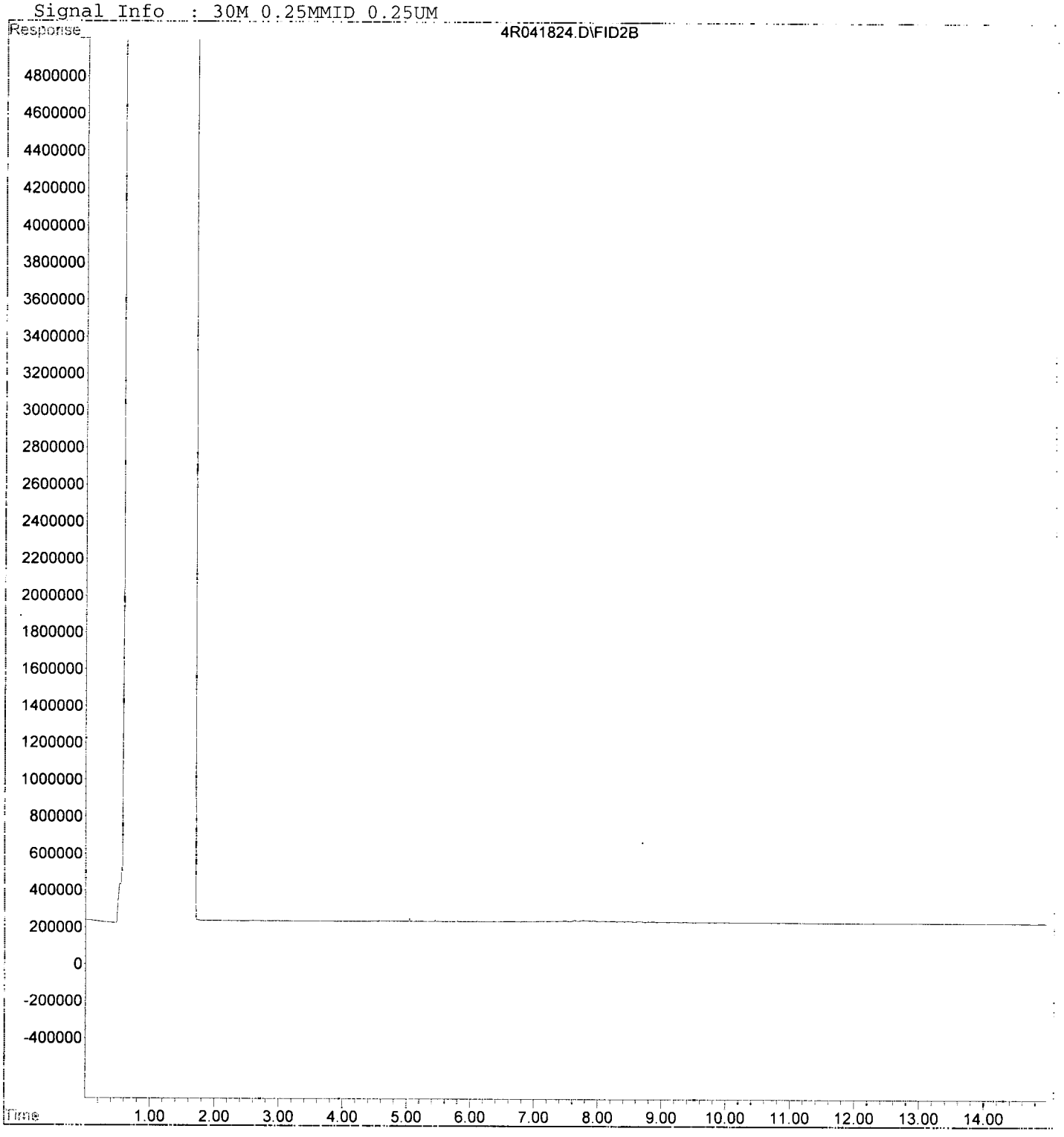
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041824.D Vial: 100
Acq On : 19 Apr 2019 00:14 Operator: KEH
Sample : 9D18031-IBL1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:28 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041825.D Vial: 20
Acq On : 19 Apr 2019 00:36 Operator: KEH
Sample : 9D18031-CALK Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:28 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	3815717995	2632.307	ug/ml
2)	H	Diesel	6.00	3815717995	2632.307	ug/ml
3)	H	DRO(C12-C24)	6.00	3815717995	2632.307	ug/ml
4)	H	CA LUFT DRO (C12-C22)	0.00	0	N.D.	ug/ml
5)	H	TPHd (C10-C25)	6.00	1336624381	991.384	ug/ml
7)	H	Oil	9.00	5131005335	3811.712	ug/ml
8)	H	RRO (C24-C40)	9.00	5131005335	3811.712	ug/ml
9)	H	TPHmo (C25-C36)	8.00	3129553252	3785.714	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	3293063992	3746.336	ug/ml

KAK 4/19/19

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

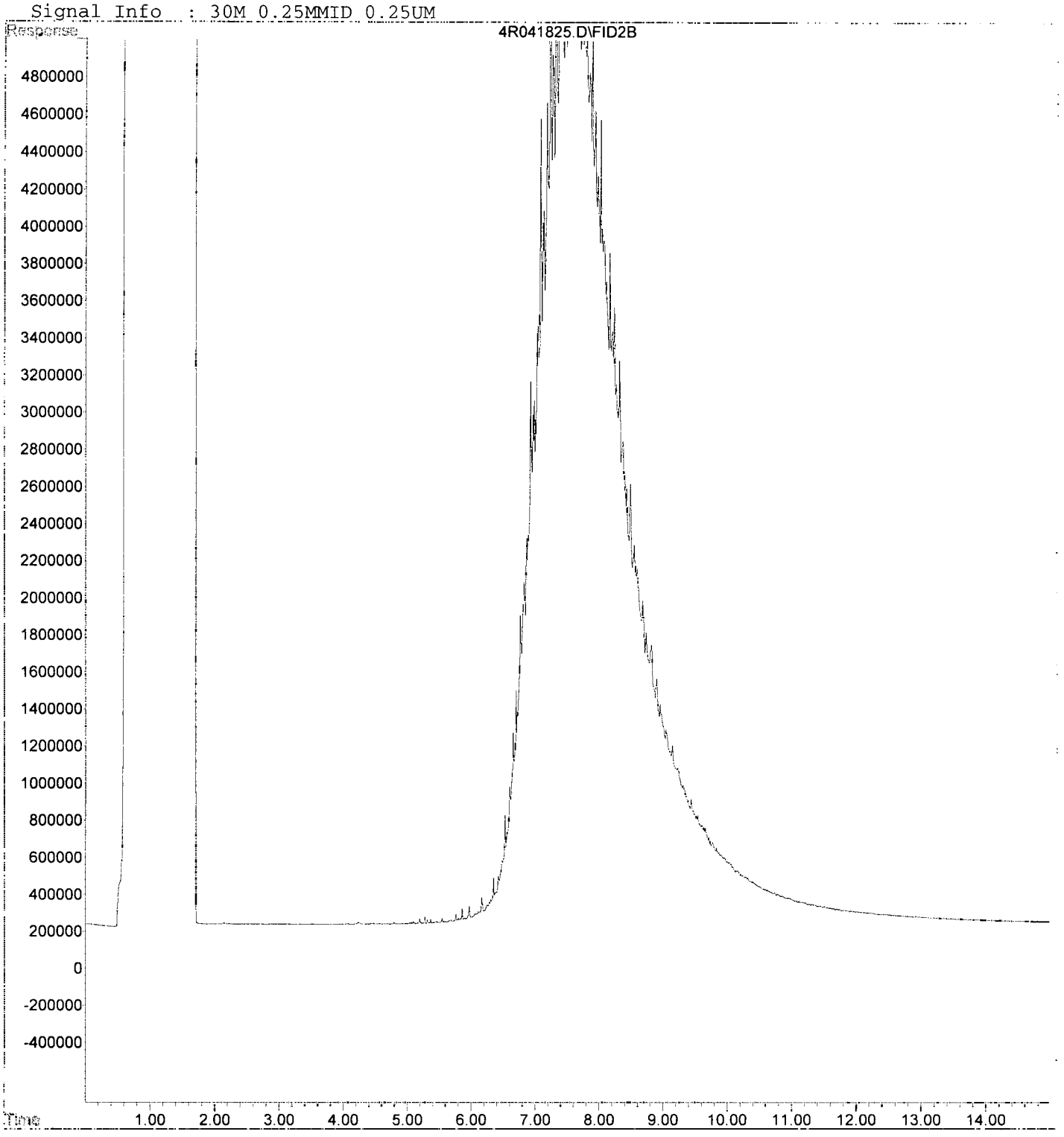
4R041825.D 4R90406D.M Fri Apr 19 14:30:44 2019 SV-GCMS3

Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041825.D Vial: 20
Acq On : 19 Apr 2019 00:36 Operator: KEH
Sample : 9D18031-CALK Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:28 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041826.D Vial: 100
Acq On : 19 Apr 2019 00:57 Operator: KEH
Sample : 9D18031-IBL2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:29 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	12242588	8.446	ug/ml
2)	H	Diesel	6.00	12242588	8.446	ug/ml
3)	H	DRO(C12-C24)	6.00	12242588	8.446	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	2987451	2.788	ug/ml
5)	H	TPHd (C10-C25)	6.00	5346048	3.965	ug/ml
7)	H	Oil	9.00	26283677	19.526	ug/ml
8)	H	RRO (C24-C40)	9.00	26283677	19.526	ug/ml
9)	H	TPHmo (C25-C36)	8.00	8955444	10.833	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	7198138	8.189	ug/ml

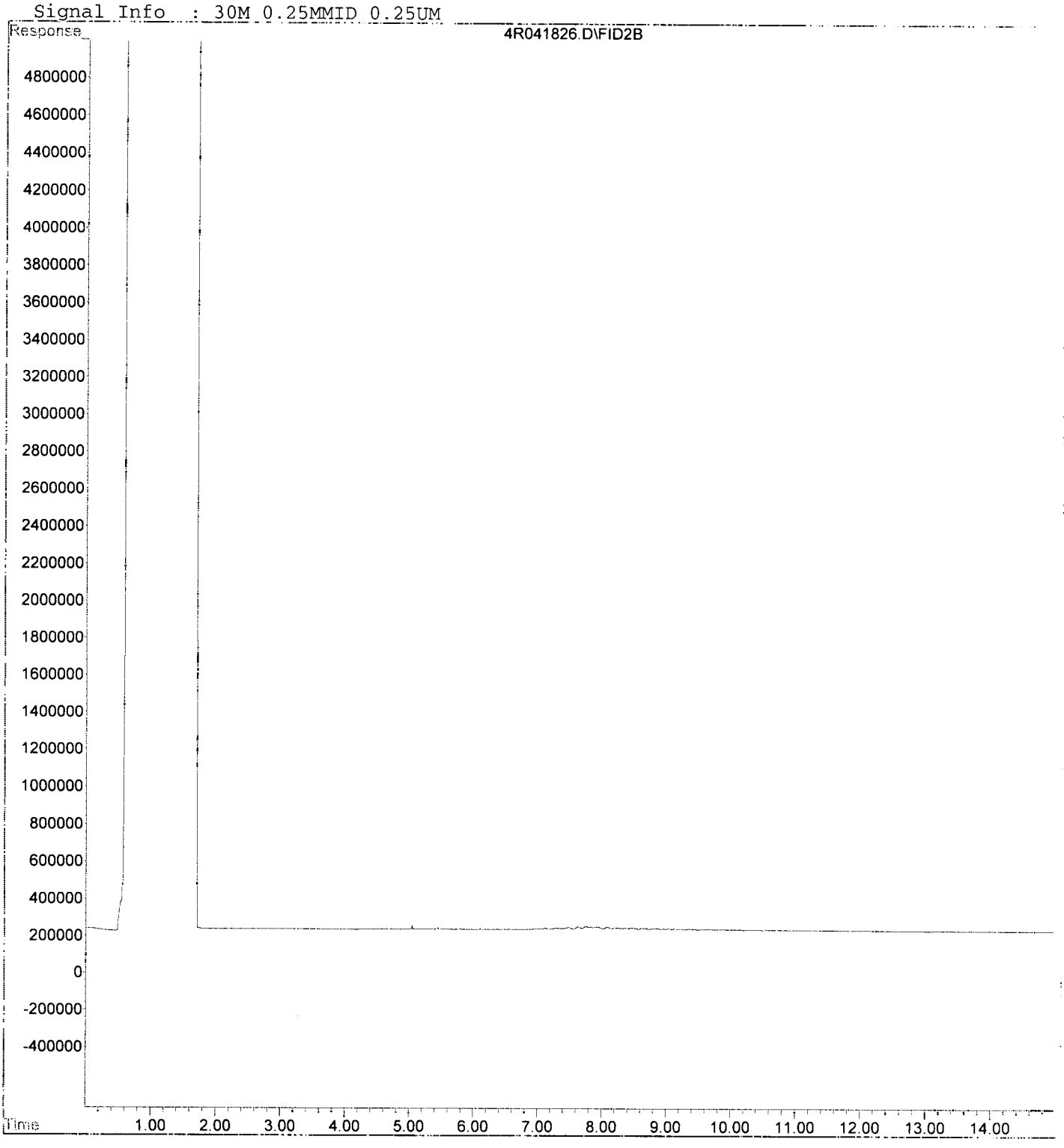
NR
KEH 4/19/19

Quantitation Report (Not Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041826.D Vial: 100
Acq On : 19 Apr 2019 00:57 Operator: KEH
Sample : 9D18031-IBL2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:29 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



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Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041827.D Vial: 21
Acq On : 19 Apr 2019 1:18 Operator: KEH
Sample : 9D18031-ICV1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:29 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	1052340698	725.967	ug/ml
2)	H	Diesel	6.00	1052340698	725.967	ug/ml
3)	H	DRO(C12-C24)	6.00	1052340698	725.967	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	813999920	759.537	ug/ml
5)	H	TPHd (C10-C25)	6.00	997607792	739.933	ug/ml
7)	H	Oil	9.00	305036934	226.605	ug/ml
8)	H	RRO (C24-C40)	9.00	305036934	226.605	ug/ml
9)	H	TPHmo (C25-C36)	8.00	13525850	16.362	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	35938638	40.885	ug/ml

KEH 4/19/19

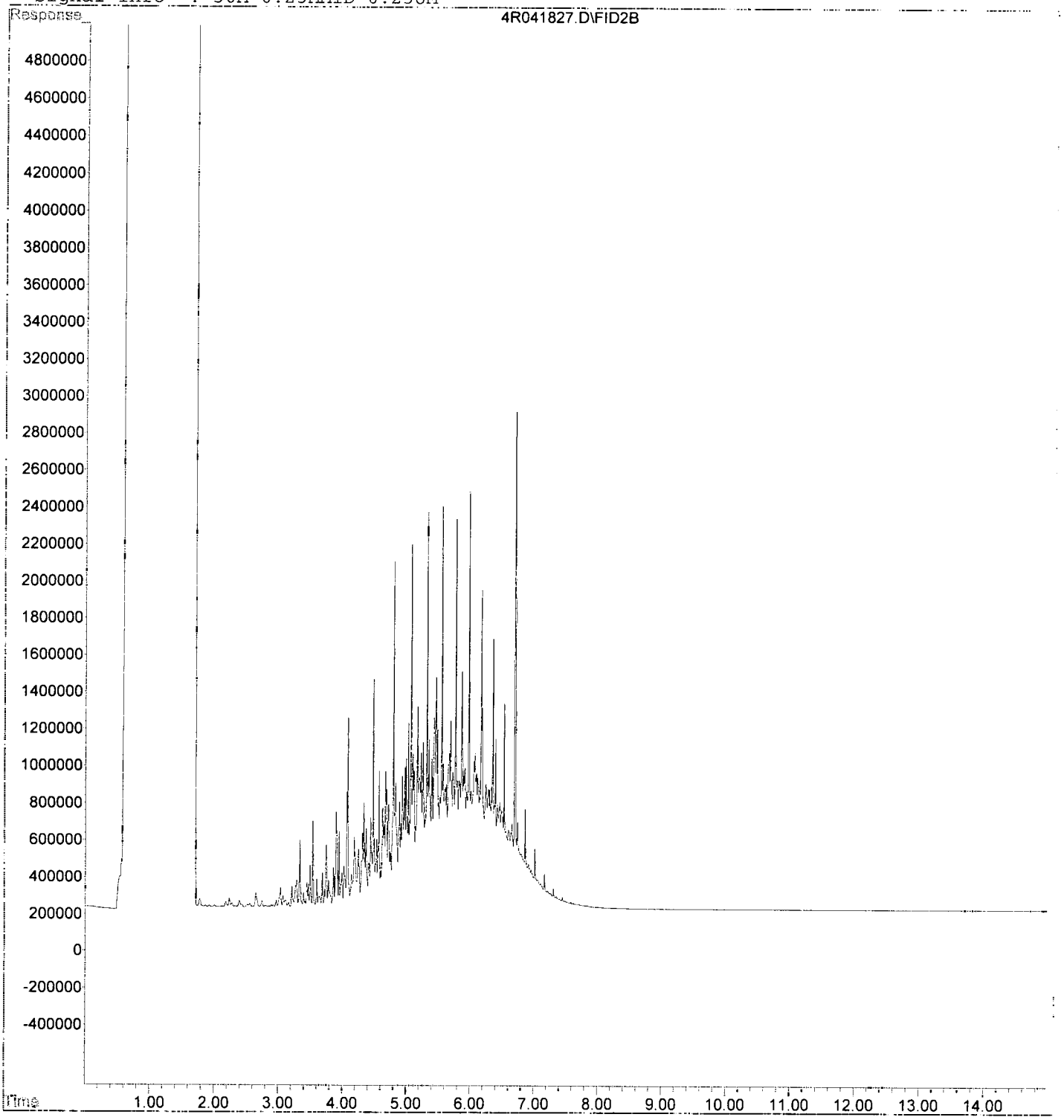
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041827.D Vial: 21
Acq On : 19 Apr 2019 1:18 Operator: KEH
Sample : 9D18031-ICV1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:29 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.M

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



Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041828.D Vial: 22
Acq On : 19 Apr 2019 1:40 Operator: KEH
Sample : 9D18031-ICV2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:30 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Initial Calibration
DataAcq Meth : A4F60831.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	791889949	546.292	ug/ml
2)	H	Diesel	6.00	791889949	546.292	ug/ml
3)	H	DRO(C12-C24)	6.00	791889949	546.292	ug/ml
4)	H	CA LUFT DRO (C12-C22)	6.00	78803389	73.531	ug/ml
5)	H	TPHd (C10-C25)	6.00	301175012	223.384	ug/ml
7)	H	Oil	9.00	1014033369	753.303	ug/ml
8)	H	RRO (C24-C40)	9.00	1014033369	753.303	ug/ml
9)	H	TPHmo (C25-C36)	8.00	582725417	704.903	ug/ml
10)	H	CA LUFT ORO (C23-C32)	7.50	661653772	752.727	ug/ml

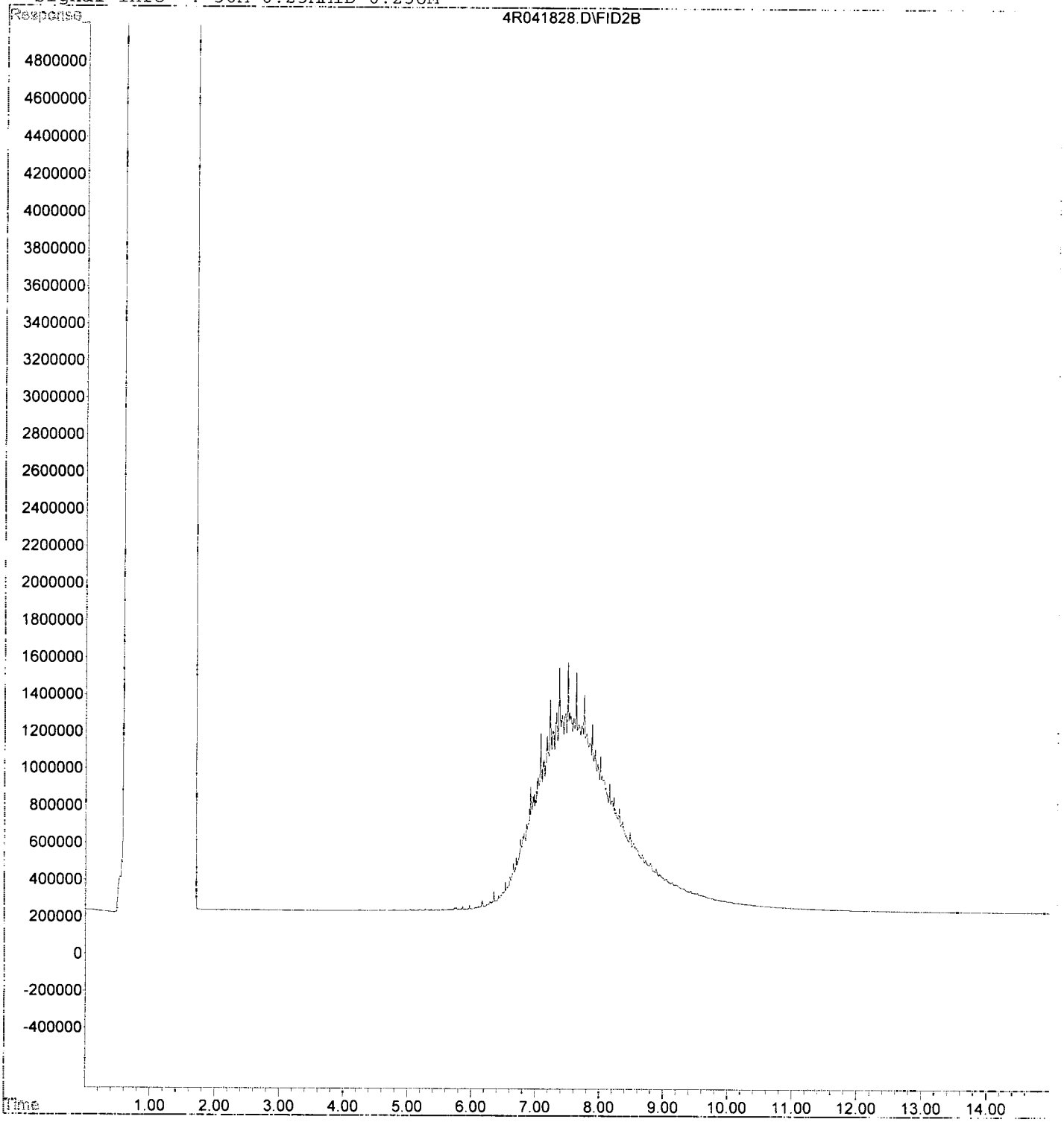
KH 4/19/19

Quantitation Report (QT Reviewed)

Data File : G:\4\DATA\2019-04\9D18031\4R041828.D Vial: 22
Acq On : 19 Apr 2019 1:40 Operator: KEH
Sample : 9D18031-ICV2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 19 14:30 2019 Quant Results File: 4R90406D.RES

Quant Method : G:\4\METHODS\4R90406D.M (Chemstation Integrator)
Title : DUALFID4R, NWTPH-Dx
Last Update : Fri Apr 19 14:23:52 2019
Response via : Multiple Level Calibration
DataAcq Meth : A4F60831.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 9051006

Sequence 9E17019 (A9E0508-05)

PREPARATION BENCH SHEET

BATCH #: 9051006 (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*
9051006-BLK1		QC	05/17/19 10:00	7.5	5							
9051006-BS1		QC	05/17/19 10:00	5	5	A19E146		250				
9051006-BS2		QC	05/17/19 10:00	5	5	A19E162		250				
A9E0484-01	B	8260C Halogenated VOCs	05/15/19 13:05	0.76	5					GAS	MOD	
A9E0486-01	B	8260C Halogenated VOCs	05/15/19 13:20	0.97	5					Composite	MOD	
A9E0508-05	A	8260C Full List	(Date Sampled)	10.15	15					COMP1	FP, COMP	
A9E0508-05	B	NWTPH-Gx	(Date Sampled)	10.15	15					COMP1	FP, COMP	
A9E0511-47RE1	B	NWTPH-Gx	(Date Sampled)	5.99	5					GP-18 8-12	FP 50X T03	
A9E0511-50	B	8260C Full List	(Date Sampled)	6.3	5					GP-19 4-8	FP, Added for BatchQC in: 905100	
A9E0511-50	B	8260C Halogenated VOCs	(Date Sampled)	6.3	5					GP-19 4-8	FP, Added for BatchQC in: 905100	
A9E0511-50	B	NWTPH-Gx	(Date Sampled)	6.3	5					GP-19 4-8	FP	
9051006-DUP1		QC	05/14/19 00:00	6.3	5		A9E0511-50					
A9E0511-51	B	8260C Full List	(Date Sampled)	5.74	5					GP-19 8-12	FP, Added for BatchQC in: 905100	
A9E0511-51	B	8260C Halogenated VOCs	(Date Sampled)	5.74	5					GP-19 8-12	FP, Added for BatchQC in: 905100	
A9E0511-51	B	NWTPH-Gx	(Date Sampled)	5.74	5					GP-19 8-12	FP	
9051006-DUP2		QC	05/14/19 00:00	5.74	5		A9E0511-51					
A9E0511-53	B	8260C Full List	(Date Sampled)	5.41	5					GP-20 5-10	FP, Added for BatchQC in: 905100	
A9E0511-53	B	8260C Halogenated VOCs	(Date Sampled)	5.41	5					GP-20 5-10	FP, Added for BatchQC in: 905100	
A9E0511-53	B	NWTPH-Gx	(Date Sampled)	5.41	5					GP-20 5-10	FP	
9051006-MS1		QC	05/14/19 00:00	5.41	5	A19E146	A9E0511-53	330			DW=70.6% @50X	
A9E0511-54	B	NWTPH-Gx	(Date Sampled)	3.84	5					GP-20 10-15	FP	
A9E0565-01	B	NWTPH-Gx	(Date Sampled)	5.04	5					19-25900 B1@9'	FP	

Prepared By: 5/18/19 Date

Reviewed By: 5/18/19 Date

PREPARATION BENCH SHEET

BATCH #: 9051006 (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*
A9E0565-02	B	NWTPH-Gx	(Date Sampled)	6.25	5					19-25900 B1@18'	FP	
A9E0565-03	B	NWTPH-Gx	(Date Sampled)	6.47	5					19-25900 B1@39'	FP	
A9E0565-04	B	NWTPH-Gx	(Date Sampled)	5.06	5					19-25900 B2@11'	FP	
A9E0565-05	B	NWTPH-Gx	(Date Sampled)	5.03	5					19-25900 B3@14'	FP	
A9E0565-06	B	NWTPH-Gx	(Date Sampled)	4.89	5					19-25900 B4@14'	FP	
A9E0565-07	B	NWTPH-Gx	(Date Sampled)	5.76	5					19-25900 B5@13'	FP	
A9E0565-08	B	NWTPH-Gx	(Date Sampled)	6.05	5					19-25900 B5@13' Duplicate	FP	
A9E0565-09	B	NWTPH-Gx	(Date Sampled)	6.01	5					19-25900 B6@13'	FP	
A9E0565-10	B	NWTPH-Gx	(Date Sampled)	5.93	5					19-25900 B7@13'	FP	

*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
A19E146	11/09/19	8260B Cal. Std. B VOC Spike Mix (20-40ug/ml
A19E162	11/09/19	Prime. NWTPH-Gx stock (5000 ug/mL)

Surrogate(s)

Std ID	Exp. Date	Description

SOIL MS6

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: 9051006

Matrix Spike

Sample Weight	Final Volume	Dilution	Dry Weight
g	mL		%
5.410	5	50	70.6
			0.706

Final Spike Level	**Spike Amount**
ug/kg	**ul**
1725.52	**330**

Assumptions:
Spiking Solution = 20ug/mL
Spike Amount into 50mL = 50ul
Dilution = 1mL of MeOH to 50mL of water
Initial Spike Concentration = 20ug/L

5/18/19

A9E0511-53

Worksheet

5035 Field Prep Worksheet (Validated 7/11/16)

Sample ID	Container	Container Weight (g)	Tare Weight (g)	Net Sample Weight (g)	Formula Check
A9E0511-50	B	39.87	33.57	6.3	
A9E0511-51	B	39	33.26	5.74	
A9E0511-53	B	39.15	33.74	5.41	
A9E0511-54	B	36.72	32.88	3.84	
A9E0565-01	B	38.76	33.72	5.04	
A9E0565-02	B	39.84	33.59	6.25	
A9E0565-03	B	39.69	33.22	6.47	
A9E0565-04	B	38.69	33.63	5.06	
A9E0565-05	B	38.73	33.7	5.03	
A9E0565-06	B	38.36	33.47	4.89	
A9E0565-07	B	39.45	33.69	5.76	
A9E0565-08	B	39.63	33.58	6.05	
A9E0565-09	B	39.67	33.66	6.01	
A9E0565-10	B	39.67	33.74	5.93	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	

5/18/19

A9E0484

5035 Container Prep Worksheet
~Soil Jar Extraction~

A9E0484-01	GAS	Sampled: 05/15/19 07:30

		Container Used	Sample Weight (g)	Volume MeOH (mL)	Prepared By:	Prepared date/time	Within 48 hours?	Notes:
B Liquid	40 mL VOA - In House Prep - 5035 (MeOH)	A	0.76	(5) 10 15	CB	@ 5/15/19 BOS	(Y) N	mod

8260C Halogenated VOCs Expires: 05/17/19 07:30 Due: 05/29/19 17:00

A9E0486

5035 Container Prep Worksheet
~Soil Jar Extraction~

A9E0486-01	Composite	Sampled: 05/14/19 10:00

		Container Used	Sample Weight (g)	Volume MeOH (mL)	Prepared By:	Prepared date/time	Within 48 hours?	Notes:
B Oil	40 mL VOA - In House Prep - 5035 (MeOH)	A	0.97	5 10 15	AB	@ 5/15/19 1320	(Y) N	Mod

8260C Halogenated VOCs Expires: 05/16/19 10:00 Due: 05/29/19 17:00

Methanol Reagent ID: A19C375~ Balance ID: A18J327~

A9E0511

5035 Container Prep Worksheet
~Field MeOH Preserved~

(Prepared = Sampled Date/Time)

A9E0511-50 GP-19 4-8 Sampled: **05/14/19 00:00**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.87	Tare Weight (g): 33.57	Volume MeOH (mL): (5) 10 15 Other	Notes: Dup1 GX
Due:	TAT:				

A9E0511-51 GP-19 8-12 Sampled: **05/14/19 00:00**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.00	Tare Weight (g): 33.26	Volume MeOH (mL): (5) 10 15 Other	Notes: Dup2
Due:	TAT:				

A9E0511-53 GP-20 5-10 Sampled: **05/14/19 00:00**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.15	Tare Weight (g): 33.74	Volume MeOH (mL): (5) 10 15 Other	Notes: MS
Due:	TAT:				

A9E0511-54 GP-20 10-15 Sampled: **05/14/19 00:00**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 36.72	Tare Weight (g): 32.88	Volume MeOH (mL): (5) 10 15 Other	Notes:
Due:	TAT:				

A9E0511-56 GP-21 5-10 Sampled: **05/14/19 00:00**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.28	Tare Weight (g): 33.25	Volume MeOH (mL): (5) 10 15 Other	Notes:
Due:	TAT:				

A9E0511-57 GP-21 10-15 Sampled: **05/14/19 00:00**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.36	Tare Weight (g): 33.52	Volume MeOH (mL): (5) 10 15 Other	Notes:
Due:	TAT:				

A9E0511-59 GP-22 5-10 Sampled: **05/14/19 00:00**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.35	Tare Weight (g): 33.62	Volume MeOH (mL): (5) 10 15 Other	Notes:
Due:	TAT:				

A9E0511-60 GP-22 10-15 Sampled: **05/14/19 00:00**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.05	Tare Weight (g): 33.40	Volume MeOH (mL): (5) 10 15 Other	Notes:
Due:	TAT:				

Weighed by: AB @ 5/15/19 2048

Methanol Reagent ID: A19C375~ Balance ID: A18J327~

A9E0565

5035 Container Prep Worksheet
~Field MeOH Preserved~

(Prepared = Sampled Date/Time)

A9E0565-01	**19-25900 B1@9'**			Sampled:	**05/15/19 10:16**
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 38.76	Tare Weight (g): 33.72	Volume MeOH (mL): (5) 10 15 Other	Notes:
6X		Due:	TAT:		
A9E0565-02	**19-25900 B1@18'**			Sampled:	**05/15/19 10:25**
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.84	Tare Weight (g): 33.59	Volume MeOH (mL): (5) 10 15 Other	Notes:
		Due:	TAT:		
A9E0565-03	**19-25900 B1@39'**			Sampled:	**05/15/19 10:41**
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.69	Tare Weight (g): 33.22	Volume MeOH (mL): (5) 10 15 Other	Notes:
		Due:	TAT:		
A9E0565-04	**19-25900 B2@11'**			Sampled:	**05/15/19 11:06**
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 38.69	Tare Weight (g): 33.63	Volume MeOH (mL): (5) 10 15 Other	Notes:
		Due:	TAT:		
A9E0565-05	**19-25900 B3@14'**			Sampled:	**05/15/19 11:58**
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 38.73	Tare Weight (g): 33.70	Volume MeOH (mL): (5) 10 15 Other	Notes:
		Due:	TAT:		
A9E0565-06	**19-25900 B4@14'**			Sampled:	**05/15/19 12:42**
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 38.36	Tare Weight (g): 33.47	Volume MeOH (mL): (5) 10 15 Other	Notes:
		Due:	TAT:		
A9E0565-07	**19-25900 B5@13'**			Sampled:	**05/15/19 13:33**
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.45	Tare Weight (g): 33.69	Volume MeOH (mL): (5) 10 15 Other	Notes:
		Due:	TAT:		
A9E0565-08	**19-25900 B5@13' Duplicate**			Sampled:	**05/15/19 13:33**
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.63	Tare Weight (g): 33.58	Volume MeOH (mL): (5) 10 15 Other	Notes:
		Due:	TAT:		

Weighed by: _____ @ 5/16/19 1925

Methanol Reagent ID: A19O375 Balance ID: A19J927

A9E0565

5035 Container Prep Worksheet
~Field MeOH Preserved~

(Prepared = Sampled Date/Time)

A9E0565-09	19-25900 B6@13'				Sampled: 05/15/19 14:47
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.67	Tare Weight (g): 33.66	Volume MeOH (mL): (5) 10 15 Other	Notes:
64		Due:	TAT:		

A9E0565-10	19-25900 B7@13'				Sampled: 05/15/19 15:32
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.67	Tare Weight (g): 33.74	Volume MeOH (mL): (5) 10 15 Other	Notes:
		Due:	TAT:		

Weighed by: _____ @ 5/16/19 1925

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence:	9E17019	Instrument:	VOA-GCMS6
Date:	05/17/19 09:57	Calibration:	A9E0804

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E17019-IBL1	Soil	QC	QC			A19D196	
2	9E17019-TUN1	Soil	QC	QC			A19D196	
3	9E17019-CCV1	Soil	QC	QC			A19D196	
4	9051006-BS1	Soil	QC	QC		9051006	A19D196	
5	9E17019-CCV2	Soil	QC	QC			A19D196	
6	9051006-BS2	Soil	QC	QC		9051006	A19D196	
7	9051006-BLK1	Soil	QC	QC		9051006	A19D196	
8	A9E0511-47RE1	Soil	NWTPH-Gx		05/21/19	9051006	A19D196	
9	A9E0508-05	Soil	8260C Full List	Hahn and Associates	05/21/19	9051006	A19D196	
"	"	Soil	NWTPH-Gx	"	05/21/19	9051006	A19D196	
10	9E17019-IBL2	Soil	QC	QC			A19D196	
11	A9E0511-50	Soil	NWTPH-Gx		05/21/19	9051006	A19D196	
"	"	Soil	8260C Full List	(QC Source)		9051006	A19D196	
"	"	Soil	8260C Halogenated VOCs	(QC Source)		9051006	A19D196	
12	9051006-DUP1	Soil	QC	QC		9051006	A19D196	
13	A9E0511-51	Soil	NWTPH-Gx		05/21/19	9051006	A19D196	
"	"	Soil	8260C Full List	(QC Source)		9051006	A19D196	
"	"	Soil	8260C Halogenated VOCs	(QC Source)		9051006	A19D196	
14	9051006-DUP2	Soil	QC	QC		9051006	A19D196	
15	A9E0511-53	Soil	NWTPH-Gx		05/21/19	9051006	A19D196	
"	"	Soil	8260C Full List	(QC Source)		9051006	A19D196	
"	"	Soil	8260C Halogenated VOCs	(QC Source)		9051006	A19D196	
16	9051006-MS1	Soil	QC	QC		9051006	A19D196	
17	9E17019-IBL3	Soil	QC	QC			A19D196	
18	A9E0565-01	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
19	A9E0565-02	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
20	A9E0565-03	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
21	A9E0565-04	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
22	A9E0565-05	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
23	A9E0565-06	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
24	A9E0565-07	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
25	A9E0565-08	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
26	A9E0565-09	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
27	A9E0565-10	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
28	A9E0511-54	Soil	NWTPH-Gx		05/21/19	9051006	A19D196	
29	A9E0484-01	Soil	8260C Halogenated VOCs		05/29/19	9051006	A19D196	
30	A9E0486-01	Soil	8260C Halogenated VOCs		05/29/19	9051006	A19D196	
31	9E17019-IBL4	Soil	QC	QC			A19D196	

Data Entered By: 5/18/19

Data Reviewed By: 5/20/19

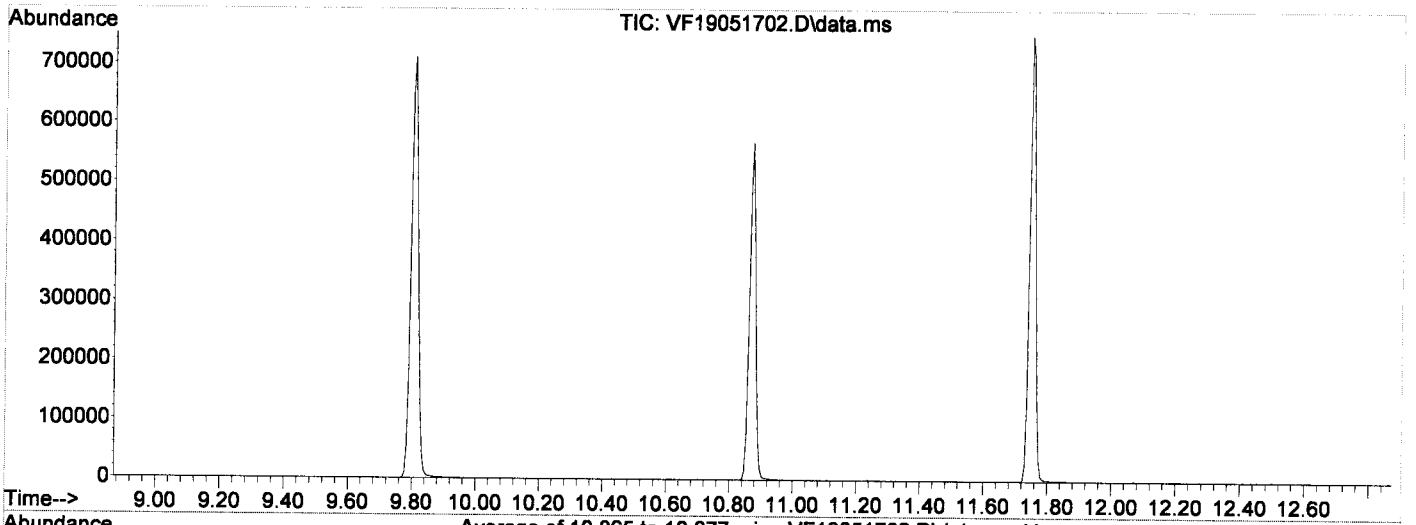
Comments: ↑MDL=MRL for DCM (QSS)
↑MDL MRL for 1112TCA, $BrCl_2CH$, $CHBr_3$, $FCCl_4$

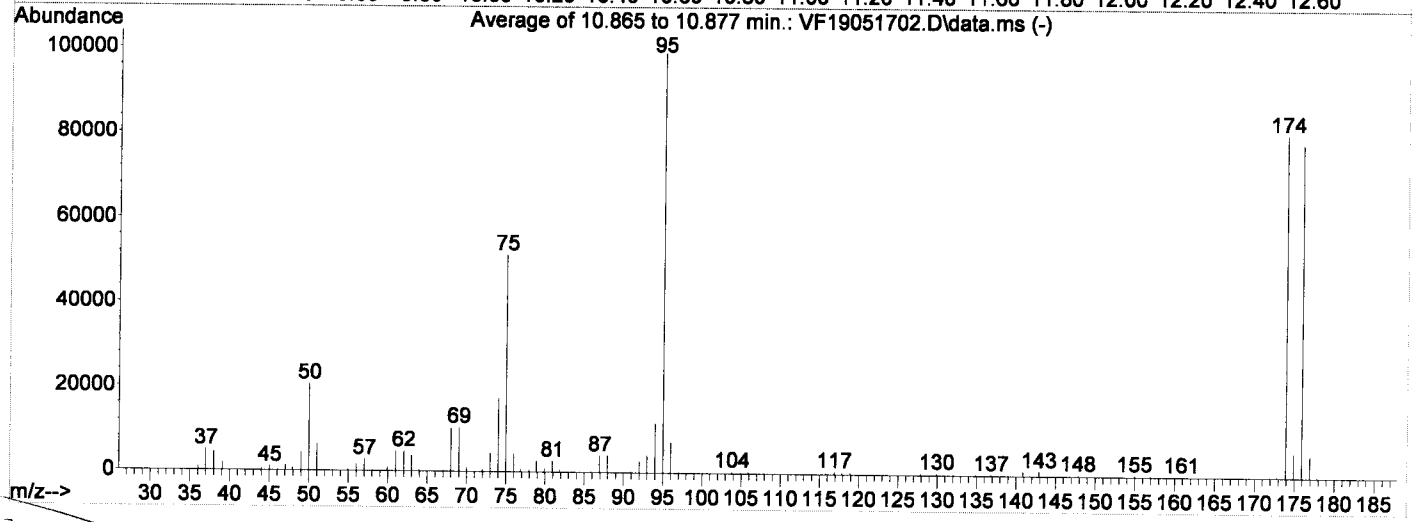
Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051702.D
Acq On : 17 May 2019 10:50 am
Operator : TB
Sample : 9E17019-TUN1
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\VF190507S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Wed May 08 13:32:58 2019

5/17/19





AutoFind: Scans 1525, 1526, 1527; Background Corrected with Scan 1518

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	12	40	20.7	20450	PASS
75	95	30	60	52.0	51394	PASS
95	95	100	100	100.0	98901	PASS
96	95	5	9	7.3	7244	PASS
173	174	0.00	2	0.4	295	PASS
174	95	50	200	81.4	80522	PASS
175	174	5	9	6.9	5518	PASS
176	174	95	101	97.3	78386	PASS
177	176	5	9	6.5	5114	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051702.D
Acq On : 17 May 2019 10:50 am
Operator : TB
Sample : 9E17019-TUN1
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:34:18 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

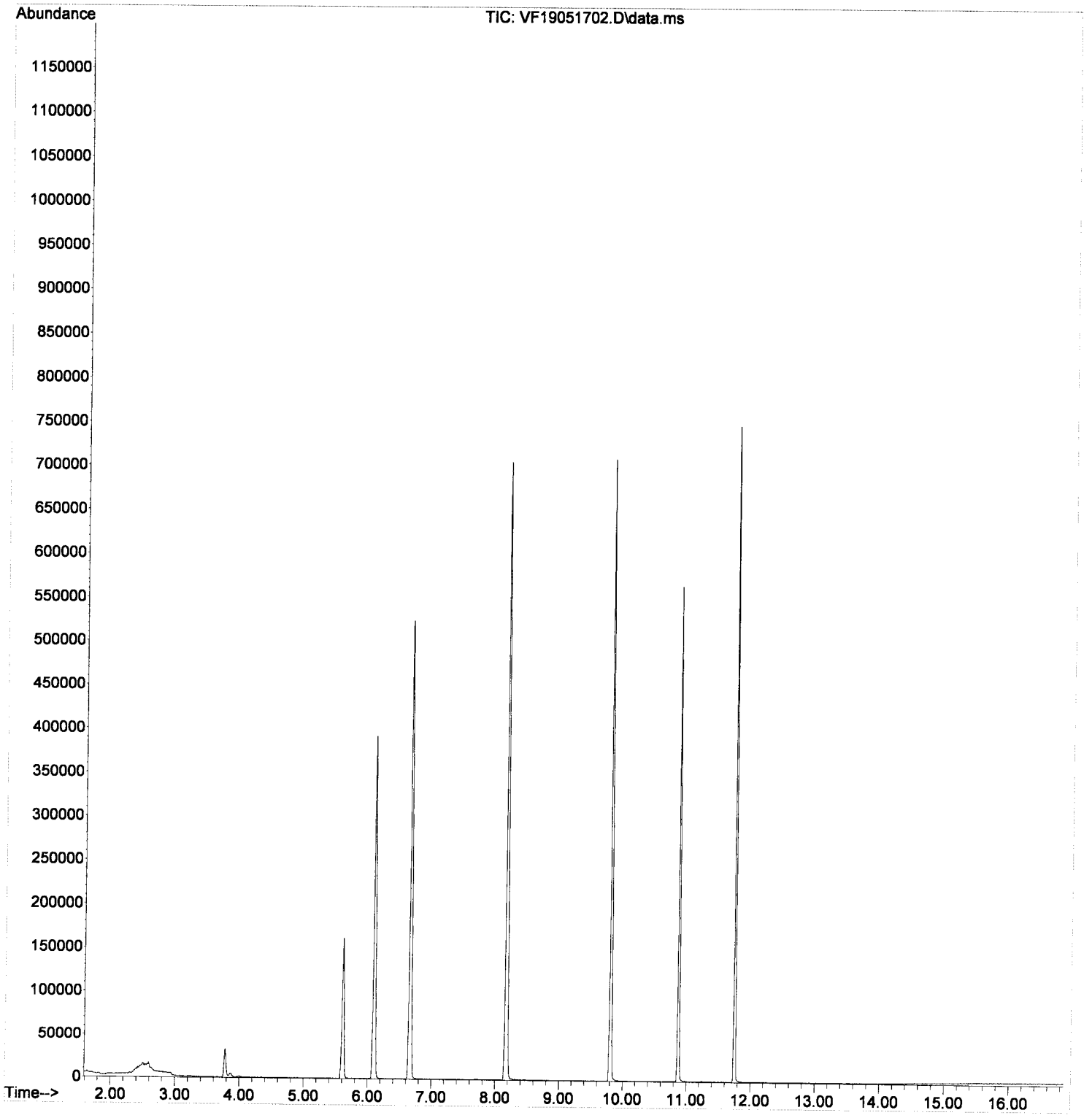
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.096	168	291109	50.00	ug/L	0.00
37) Chlorobenzene-d5 (I)	9.807	117	364873	50.00	ug/L	0.00
57) 1,4-Dichlorobenzene-d4...	11.753	152	159053	50.00	ug/L	0.00
System Monitoring Compounds						
26) Dibromofluoromethane (S)	5.609	111	105413	45.13	ug/L	0.00
32) 1,4-Difluorobenzene (S)	6.661	114	464396	51.63	ug/L	0.00
39) Toluene-d8 (S)	8.170	98	525978	48.76	ug/L	0.00
58) 4-Bromofluorobenzene (S)	10.871	174	125700	51.33	ug/L	0.00
Target Compounds						Qvalue
5) Bromomethane	2.306	96	702	0.29	ug/L	79
12) Methylene Chloride	3.778	84	15753	0.12	ug/L	96
13) Acetone	3.869	43	5978	4.00	ug/L	90
28) 2-Butanone (MEK)	5.755	43	767	0.34	ug/L	54

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051702.D
Acq On : 17 May 2019 10:50 am
Operator : TB
Sample : 9E17019-TUN1
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:34:18 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:38:42 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

5/17/19

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 (I)	50.000	50.000	0.0	124	0.00	
2		Dichlorodifluoromethane	20.000	19.845	0.8	121	-0.01	
3	P	Chloromethane	20.000	18.729	6.4	113	0.00	
4	C	Vinyl Chloride	20.000	20.289	-1.4	122	-0.02	
5		Bromomethane	20.000	24.723	-23.6#	155	-0.01	-QS6
6		Chloroethane	20.000	21.616	-8.1	129	0.00	
7		Trichlorofluoromethane	20.000	23.267	-16.3	137	0.00	
8	C	1,1-Dichloroethene	20.000	16.730	16.3	99	0.00	
9		Carbon Disulfide	20.000	17.889	10.6	114	0.00	
10		Freon 113	20.000	21.603	-8.0	129	0.00	
11		Iodomethane	20.000	9.683	51.6#	64	0.00	-NR
12		Methylene Chloride	20.000	14.830	25.9#	92	0.00	-QS5
13		Acetone	40.000	32.830	17.9	95	0.00	
14		t-1,2-Dichloroethene	20.000	18.565	7.2	107	0.00	
15		n-Hexane	20.000	21.870	-9.4	136	0.00	
16		Methyl-tert-butyl-ether	20.000	20.691	-3.5	122	-0.01	
17	P	1,1-Dichloroethane	20.000	18.872	5.6	106	0.00	
18		Acrylonitrile	20.000	18.893	5.5	106	0.00	
19		c-1,2-Dichloroethene	20.000	21.046	-5.2	117	0.00	
20		2,2-Dichloropropane	20.000	25.818	-29.1#	148	0.00	-QS6 ✓
21		Bromochloromethane	20.000	20.531	-2.7	115	0.00	
22	C	Chloroform	20.000	21.308	-6.5	122	0.00	
23		Carbon Tetrachloride	20.000	24.662	-23.3#	163	0.00	-QS6
24		Tetrahydrofuran	20.000	18.130	9.4	105	0.00	
25		1,1,1-Trichloroethane	20.000	24.048	-20.2#	132	0.00	
26	S	Dibromofluoromethane (S)	50.000	51.404	-2.8	121	0.00	
27		1,1-Dichloropropene	20.000	21.556	-7.8	124	0.00	
28		2-Butanone (MEK)	40.000	37.517	6.2	109	0.00	
29		Benzene	20.000	20.921	-4.6	123	0.00	
30		1,2-Dichloroethane (EDC)	20.000	19.807	1.0	115	0.00	
31		iso-Butyl Alcohol	500.000	516.938	-3.4	140	0.01	
32	S	1,4-Difluorobenzene (S)	50.000	51.939	-3.9	129	0.00	
33		Trichloroethene (TCE)	20.000	21.102	-5.5	124	0.00	
34		Dibromomethane	20.000	21.329	-6.6	118	0.00	
35	C	1,2-Dichloropropane	20.000	21.415	-7.1	126	0.00	
36		Bromodichloromethane	20.000	21.344	-6.7	138	0.00	
37		Chlorobenzene-d5 (I)	50.000	50.000	0.0	145	0.00	
38		c-1,3-Dichloropropene	20.000	19.110	4.5	138	0.00	
39	S	Toluene-d8 (S)	50.000	47.397	5.2	133	0.00	
40	C	Toluene	20.000	18.661	6.7	134	0.00	
41		Tetrachloroethene (PCE)	20.000	19.856	0.7	130	0.00	
42		4-Methyl-2-Pentanone (MIBK)	40.000	38.971	2.6	124	0.00	
43		t-1,3-Dichloropropene	20.000	20.074	-0.4	151	0.00	
44		1,1,2-Trichloroethane	20.000	21.377	-6.9	135	0.00	
45		Dibromochloromethane	20.000	21.062	-5.3	169	0.00	
46		1,3-Dichloropropane	20.000	20.956	-4.8	134	0.00	
47		1,2-Dibromoethane (EDB)	20.000	19.505	2.5	139	0.00	
48		2-Hexanone	40.000	36.084	9.8	123	0.00	
49	P	Chlorobenzene	20.000	19.567	2.2	144	0.00	
50	C	Ethylbenzene	20.000	20.701	-3.5	147	0.00	

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:38:42 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

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)	
51		1,1,1,2-Tetrachloroethane	20.000	23.412	-17.1	189	0.00	
52		m,p-Xylenes (2)	40.000	43.474	-8.7	146	0.00	
53		o-Xylene	20.000	21.727	-8.6	149	0.00	
54		Styrene	20.000	20.291	-1.5	149	0.00	
55	P	Bromoform	20.000	24.706	-23.5#	190	0.00	-Q56
56		Isopropylbenzene	20.000	23.282	-16.4	153	0.00	
57	I	1,4-Dichlorobenzene-d4 (I)	50.000	50.000	0.0	143	0.00	
58	S	4-Bromofluorobenzene (S)	50.000	50.525	-1.0	147	0.00	
59		Bromobenzene	20.000	20.988	-4.9	144	0.00	
60		n-Propylbenzene	20.000	22.865	-14.3	155	0.00	
61	P	1,1,2,2-Tetrachloroethane	20.000	22.829	-14.1	142	0.00	
62		2-Chlorotoluene	20.000	21.942	-9.7	150	0.00	
63		1,3,5-Trimethylbenzene	20.000	23.361	-16.8	150	0.00	
64		1,2,3-Trichloropropane	20.000	21.104	-5.5	138	0.00	
65		t-1,4-Dichloro-2-butene	20.000	20.607	-3.0	182	0.00	
66		4-Chlorotoluene	20.000	22.929	-14.6	153	0.00	
67		tert-Butylbenzene	20.000	22.782	-13.9	149	0.00	
68		1,2,4-Trimethylbenzene	20.000	23.269	-16.3	148	0.00	
69		sec-Butylbenzene	20.000	23.543	-17.7	154	0.00	
70		4-Isopropyltoluene	20.000	22.583	-12.9	149	0.00	
71		1,3-Dichlorobenzene	20.000	21.257	-6.3	144	0.00	
72		1,4-Dichlorobenzene	20.000	20.122	-0.6	143	0.00	
73		n-Butylbenzene	20.000	23.602	-18.0	155	0.00	
74		1,2-Dichlorobenzene	20.000	20.812	-4.1	137	0.00	
75		1,2-Dibromo-3-Chloropropane	20.000	18.163	9.2	155	0.00	
76		Hexachlorobutadiene	20.000	21.816	-9.1	147	0.00	
77		1,2,4-Trichlorobenzene	20.000	21.059	-5.3	133	0.00	
78		Naphthalene	20.000	17.405	13.0	125	0.00	
79		1,2,3-Trichlorobenzene	20.000	19.747	1.3	125	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\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:35:00 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

5/17/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.091	168	307085	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.802	117	398846	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.749	152	181920	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.605	111	126649	51.40	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.657	114	492795	51.94	ug/L		0.00
39) Toluene-d8 (S)	8.166	98	558917	47.40	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.867	174	141525	50.53	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.620	85	56890	19.84	ug/L		98
3) Chloromethane	1.833	50	78247	18.73	ug/L		97
4) Vinyl Chloride	1.924	62	83813	20.29	ug/L		96
5) Bromomethane	2.289	96	63227	24.72	ug/L		95
6) Chloroethane	2.423	64	12129	21.62	ug/L	#	71
7) Trichlorofluoromethane	2.557	101	16942	23.27	ug/L		97
8) 1,1-Dichloroethene	3.129	61	88826	16.73	ug/L		80
9) Carbon Disulfide	3.147	76	122391	17.89	ug/L		99
10) Freon 113	3.177	101	69911	21.60	ug/L		82
11) Iodomethane	3.281	142	12458	9.68	ug/L		92
12) Methylene Chloride	3.774	84	65593	14.83	ug/L		91
13) Acetone	~~3.859~~	~~43~~	~~27720~~	~~17.60~~	~~ug/L~~		~~94~~ MI same as curve
14) t-1,2-Dichloroethene	3.938	61	94162	18.57	ug/L		98
15) n-Hexane	4.017	86	19386	21.87	ug/L	#	86
16) Methyl-tert-butyl-ether	4.072	73	212096	20.69	ug/L		96
17) 1,1-Dichloroethane	4.577	63	121168	18.87	ug/L		96
18) Acrylonitrile	~~4.650~~	~~53~~	~~20586~~	~~12.45~~	~~ug/L~~		~~95~~ MI
19) c-1,2-Dichloroethene	5.130	61	98293	21.05	ug/L		92
20) 2,2-Dichloropropane	5.234	77	83084	25.82	ug/L		89
21) Bromochloromethane	5.331	49	57218	20.53	ug/L		84
22) Chloroform	5.416	83	121620	21.31	ug/L		95
23) Carbon Tetrachloride	5.544	117	63793	24.66	ug/L		96
24) Tetrahydrofuran	5.593	42	31258	18.13	ug/L		98
25) 1,1,1-Trichloroethane	5.617	97	96703	24.05	ug/L		96
27) 1,1-Dichloropropene	5.745	75	102270	21.56	ug/L		98
28) 2-Butanone (MEK)	5.751	43	88298	37.52	ug/L		93
29) Benzene	6.000	78	310533	20.92	ug/L		98
30) 1,2-Dichloroethane (EDC)	6.219	62	99450	19.81	ug/L		97
31) iso-Butyl Alcohol	6.298	43	88175	516.94	ug/L		97
33) Trichloroethene (TCE)	6.621	130	75673	21.10	ug/L		94
34) Dibromomethane	7.077	93	38247	21.33	ug/L		87
35) 1,2-Dichloropropane	7.180	63	75975	21.41	ug/L		100
36) Bromodichloromethane	7.259	83	62713	21.34	ug/L		98
38) c-1,3-Dichloropropene	7.965	75	83527	19.11	ug/L		93
40) Toluene	8.227	91	314661	18.66	ug/L		99
41) Tetrachloroethene (PCE)	8.671	166	73308	19.86	ug/L		91
42) 4-Methyl-2-Pentanone (...	8.677	43	169867	38.97	ug/L		93
43) t-1,3-Dichloropropene	8.713	75	78279	20.07	ug/L		95
44) 1,1,2-Trichloroethane	8.884	97	62492	21.38	ug/L		93
45) Dibromochloromethane	9.072	129	39645	21.06	ug/L		96
46) 1,3-Dichloropropane	9.170	76	118563	20.96	ug/L		92
47) 1,2-Dibromoethane (EDB)	9.310	107	59508	19.50	ug/L		97
48) 2-Hexanone	9.547	43	113606	36.08	ug/L		94

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:35:00 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

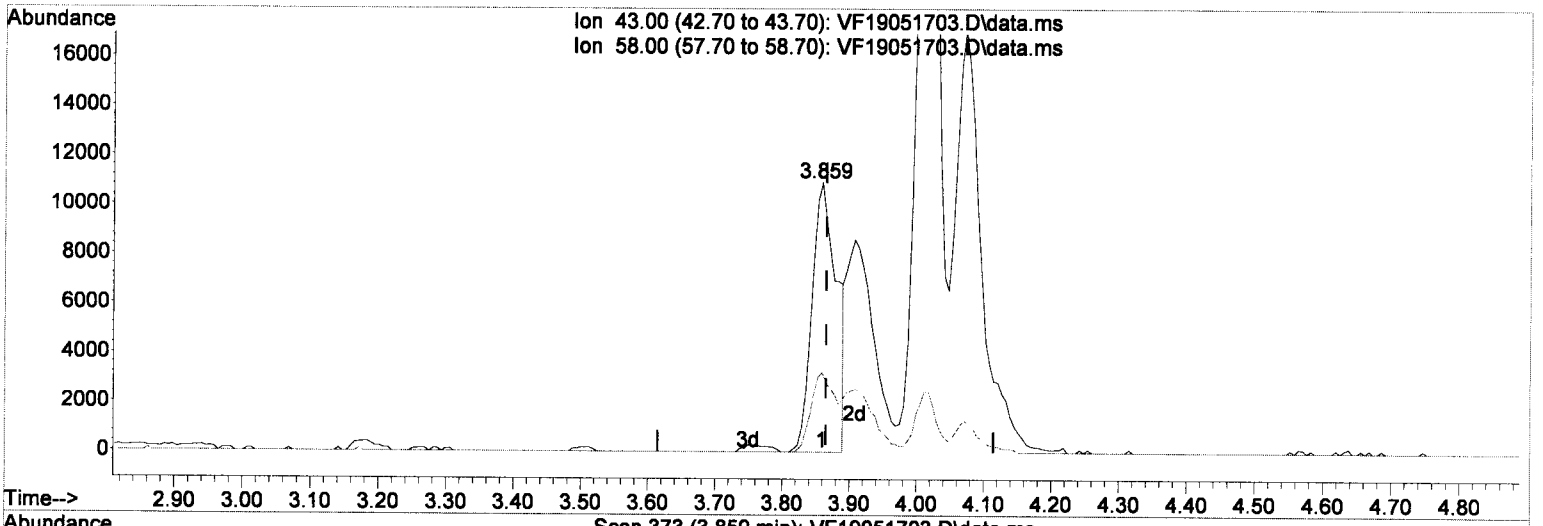
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
49) Chlorobenzene	9.821	112	188107	19.57 ug/L	96
50) Ethylbenzene	9.845	91	332394	20.70 ug/L	97
51) 1,1,1,2-Tetrachloroethane	9.881	131	51625	23.41 ug/L	98
52) m,p-Xylenes (2)	9.979	91	488959	43.47 ug/L	96
53) o-Xylene	10.362	91	235215	21.73 ug/L	96
54) Styrene	10.411	104	164250	20.29 ug/L	95
55) Bromoform	10.435	173	23608	24.71 ug/L	96
56) Isopropylbenzene	10.630	105	285959	23.28 ug/L	97
59) Bromobenzene	10.952	156	68683	20.99 ug/L #	84
60) n-Propylbenzene	10.970	91	332443	22.87 ug/L	95
61) 1,1,2,2-Tetrachloroethane	11.037	83	78915	22.83 ug/L	99
62) 2-Chlorotoluene	11.104	126	64140	21.94 ug/L #	81
63) 1,3,5-Trimethylbenzene	11.129	105	219621	23.36 ug/L	96
64) 1,2,3-Trichloropropane	11.147	110	28928	21.10 ug/L #	79
65) t-1,4-Dichloro-2-butene	11.177	88	6969	20.61 ug/L #	86
66) 4-Chlorotoluene	11.232	91	198223	22.93 ug/L	96
67) tert-Butylbenzene	11.378	91	122978	22.78 ug/L	87
68) 1,2,4-Trimethylbenzene	11.433	105	219819	23.27 ug/L	98
69) sec-Butylbenzene	11.518	105	265271	23.54 ug/L	97
70) 4-Isopropyltoluene	11.627	119	211758	22.58 ug/L	97
71) 1,3-Dichlorobenzene	11.694	146	118680	21.26 ug/L	97
72) 1,4-Dichlorobenzene	11.761	146	122820	20.12 ug/L	98
73) n-Butylbenzene	11.944	91	188922	23.60 ug/L	95
74) 1,2-Dichlorobenzene	12.078	146	109036	20.81 ug/L	99
75) 1,2-Dibromo-3-Chloropr...	12.686	157	10211	18.16 ug/L #	69
76) Hexachlorobutadiene	13.191	223	16309	21.82 ug/L	94
77) 1,2,4-Trichlorobenzene	13.227	180	59242	21.06 ug/L	98
78) Naphthalene	13.501	128	185441	17.40 ug/L	99
79) 1,2,3-Trichlorobenzene	13.665	180	56553	19.75 ug/L	99

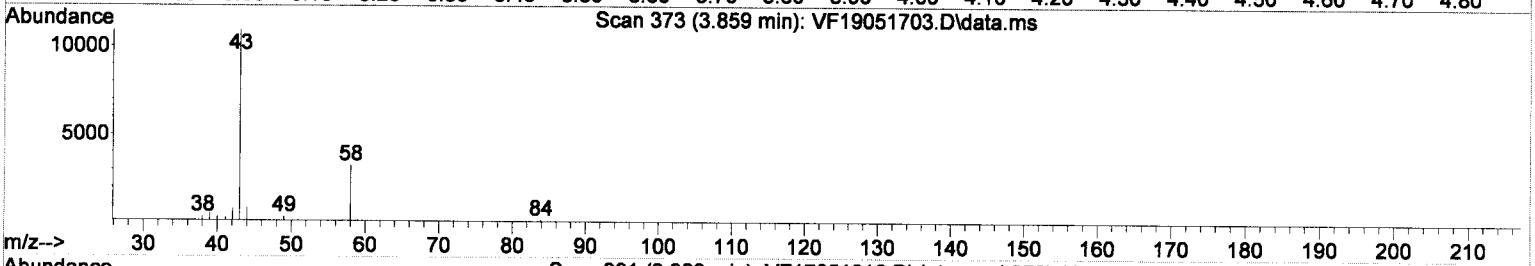
(#) = qualifier out of range (m) = manual integration (+) = signals summed

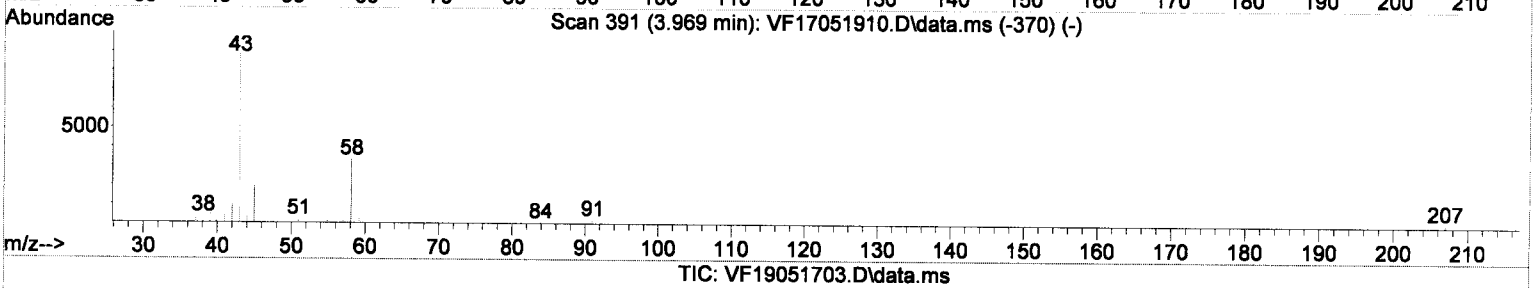
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:35:00 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration







TIC: VF19051703.D\data.ms

(13) Acetone

3.859min (-0.006) 17.60 ug/L

response 27720

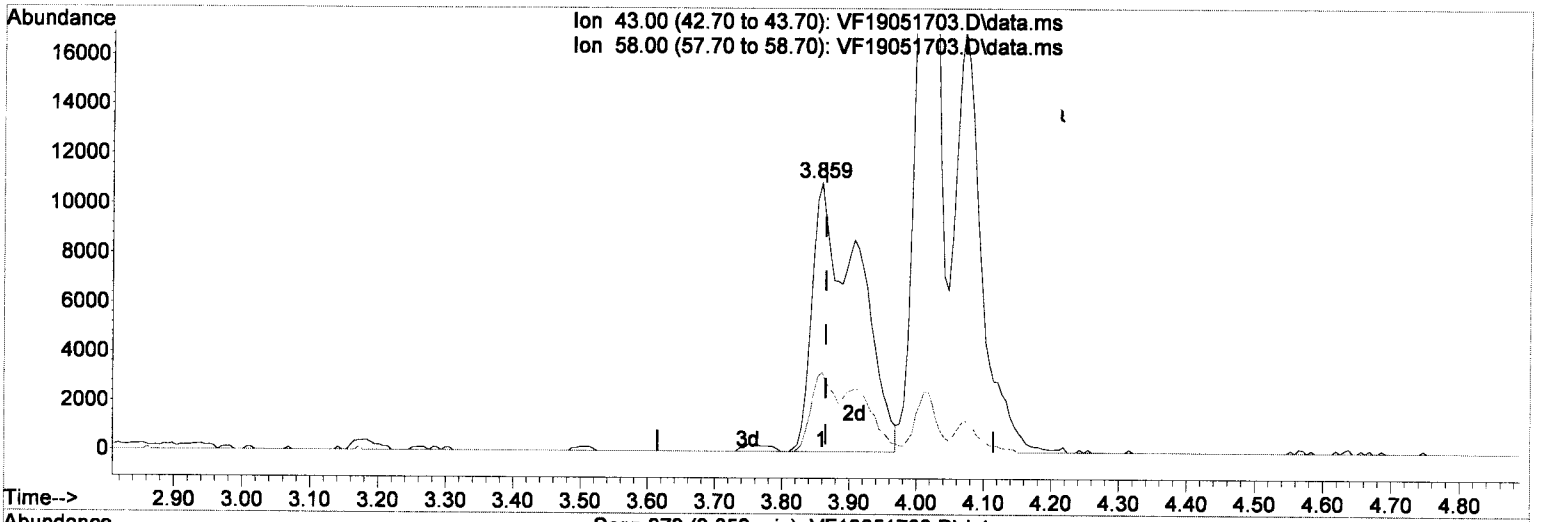
Ion	Exp%	Act%
43.00	100	100
58.00	33.10	29.79
0.00	0.00	0.00
0.00	0.00	0.00

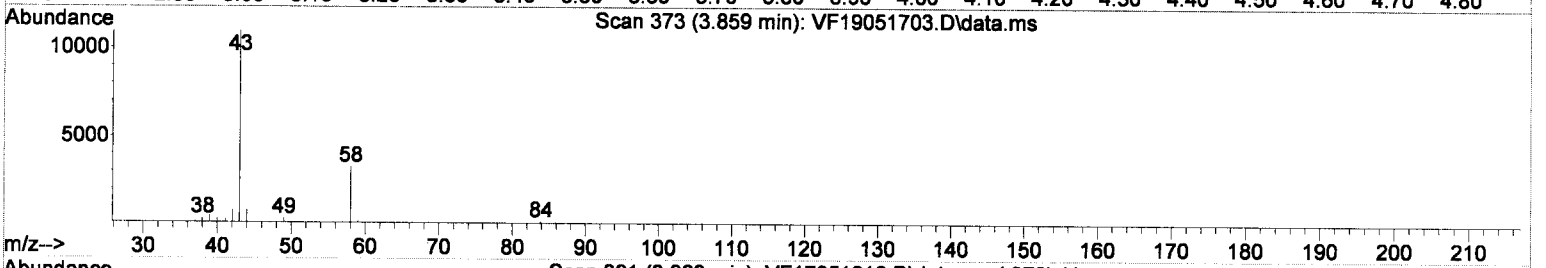
MI

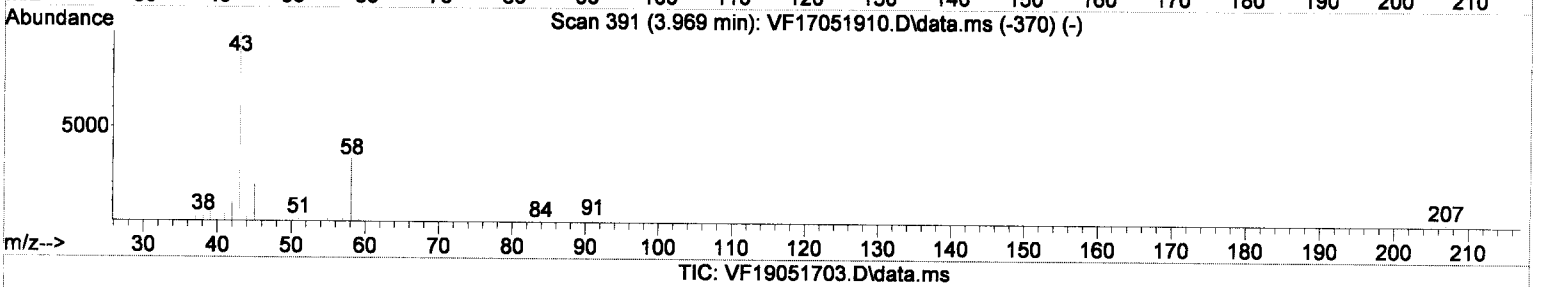
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:35:00 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration







TIC: VF19051703.D\data.ms

(13) Acetone

3.859min (-0.006) 32.83 ug/L (m)

response 51707

Ion	Exp%	Act%
43.00	100	100
58.00	33.10	29.79
0.00	0.00	0.00
0.00	0.00	0.00

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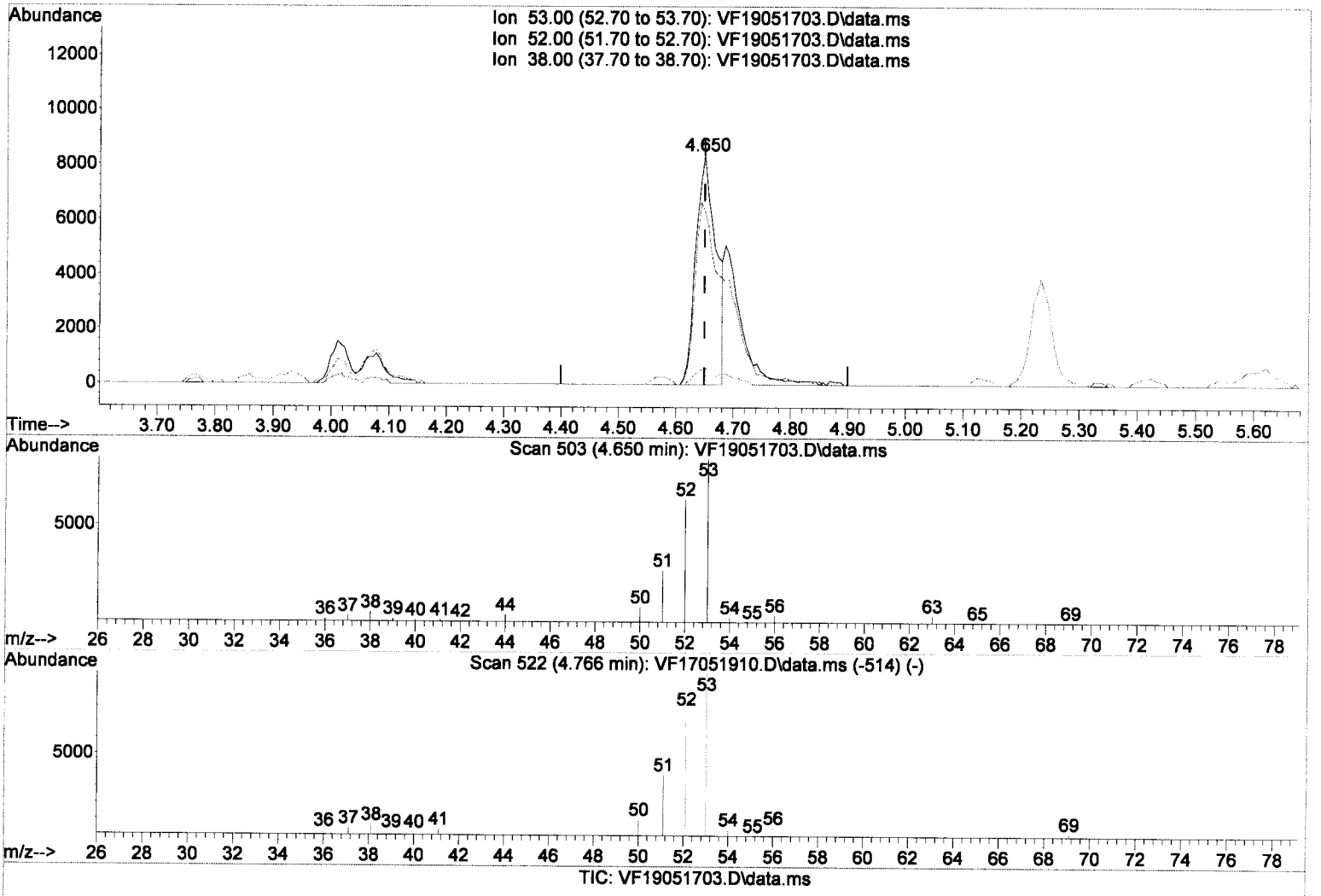
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:36:42 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



TIC: VF19051703.D\data.ms

(18) Acrylonitrile

4.650min (+0.000) 12.45 ug/L

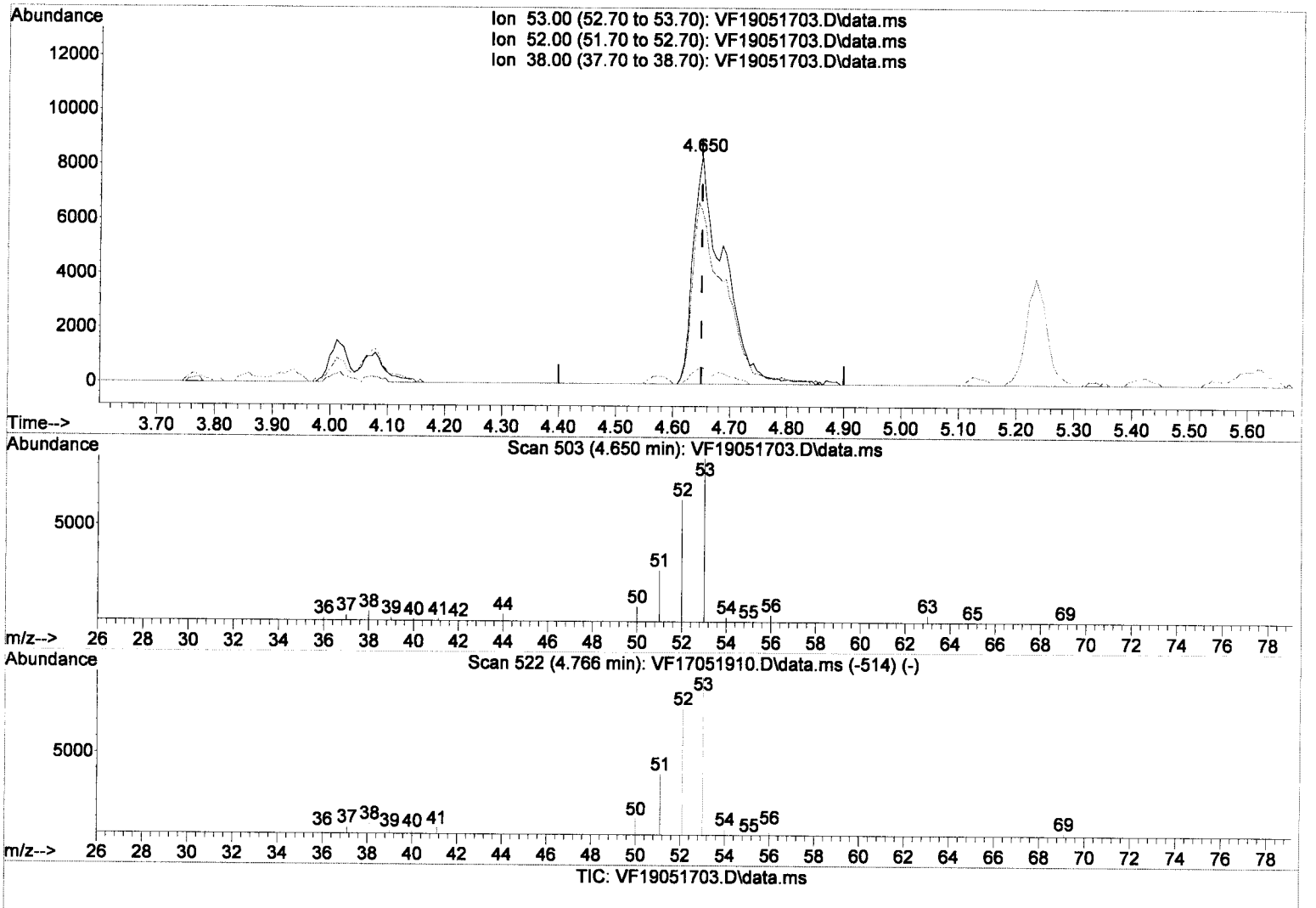
response 20586

Ion	Exp%	Act%
53.00	100	100
52.00	80.20	75.66
38.00	6.00	7.34
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:36:42 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



TIC: VF19051703.D\data.ms

(18) Acrylonitrile

4.650min (+0.000) 18.89 ug/L m

response 31244

Ion	Exp%	Act%
53.00	100	100
52.00	80.20	75.66
38.00	6.00	7.34
0.00	0.00	0.00

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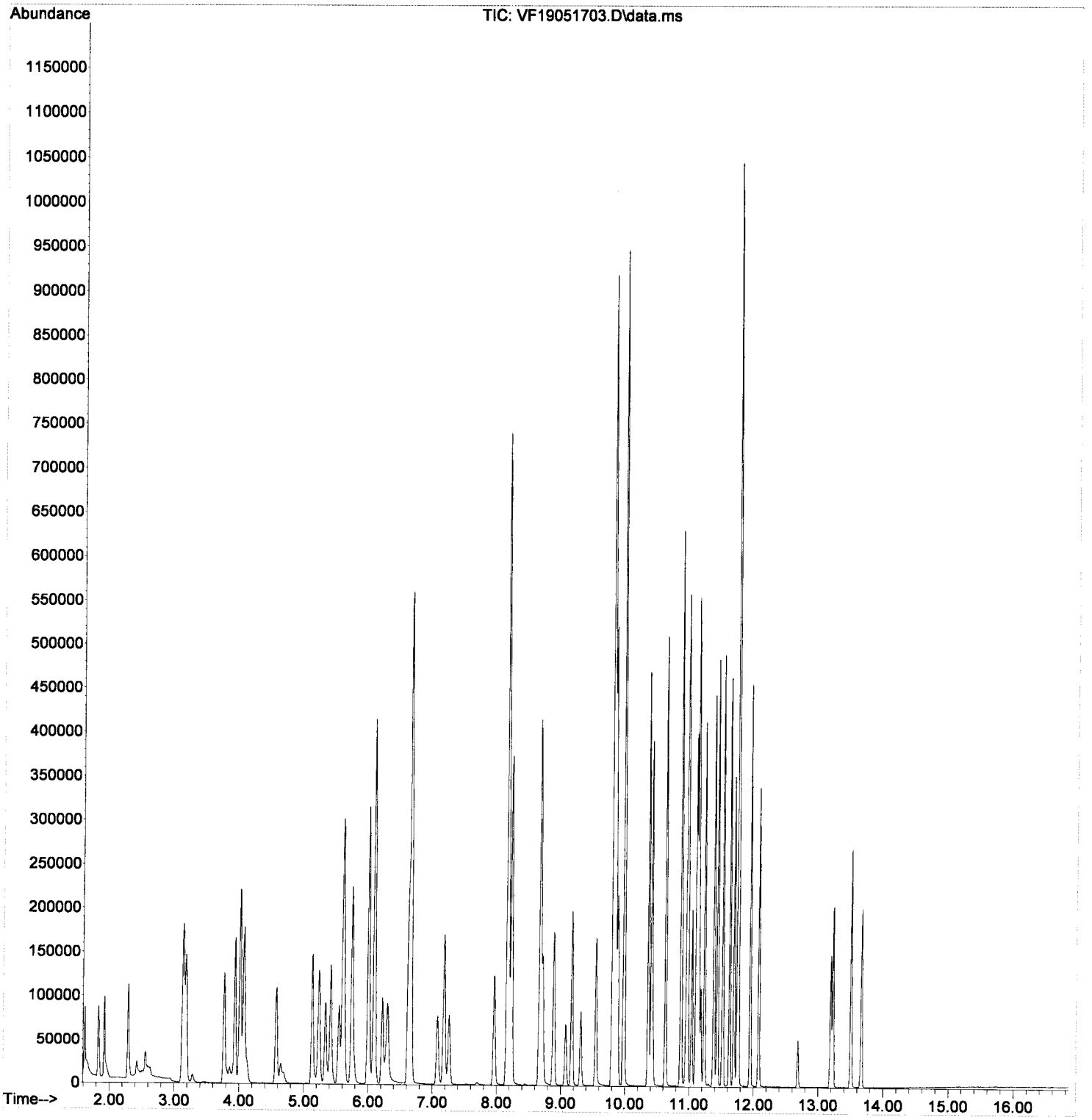
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:35:00 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051704.D
Acq On : 17 May 2019 11:44 am
Operator : TB
Sample : 9051006-BS2
Misc : 50X 5g/5mLx1000uL/50mL GX+MeOH A19E163
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:00 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

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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	118	0.00
2	S	1,4-Difluorobenzene (Sur)	50.000	49.914	0.2	123	0.00
3	S	4-Bromofluorobenzene (Sur)	50.000	55.663	-11.3	132	0.00
4	S	Chlorobenzene-d5 (NR)	-1.000	0.000	0.0	126	0.00
5	H	TPHg (C5-C9)	500.000	557.876	-11.6	130	0.00
6	H	TPHg (C6-C10)	500.000	561.608	-12.3	130	0.00
7	H	CA-LUFT (C5-C12)	500.000	560.626	-12.1	131	0.00
8	H	NWTPH-Gx	500.000	562.687	-12.5	136	0.00
9		Benzene (NR)	-1.000	0.000	0.0	129	0.00
10	S	Toluene-d8 (NR)	-1.000	0.000	0.0	122	0.00
11	C	Toluene (NR)	-1.000	0.000	0.0	125	0.00
12	S	1,4-Dichlorobenzene-d4 (NR)	-1.000	0.000	0.0	132	0.00
13		Naphthalene (NR)	-1.000	0.000	0.0	128	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\9E17019\
Data File : VF19051704.D
Acq On : 17 May 2019 11:44 am
Operator : TB
Sample : 9051006-BS2
Misc : 50X 5g/5mLx1000uL/50mL GX+MeOH A19E163
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:00 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

5/18/19

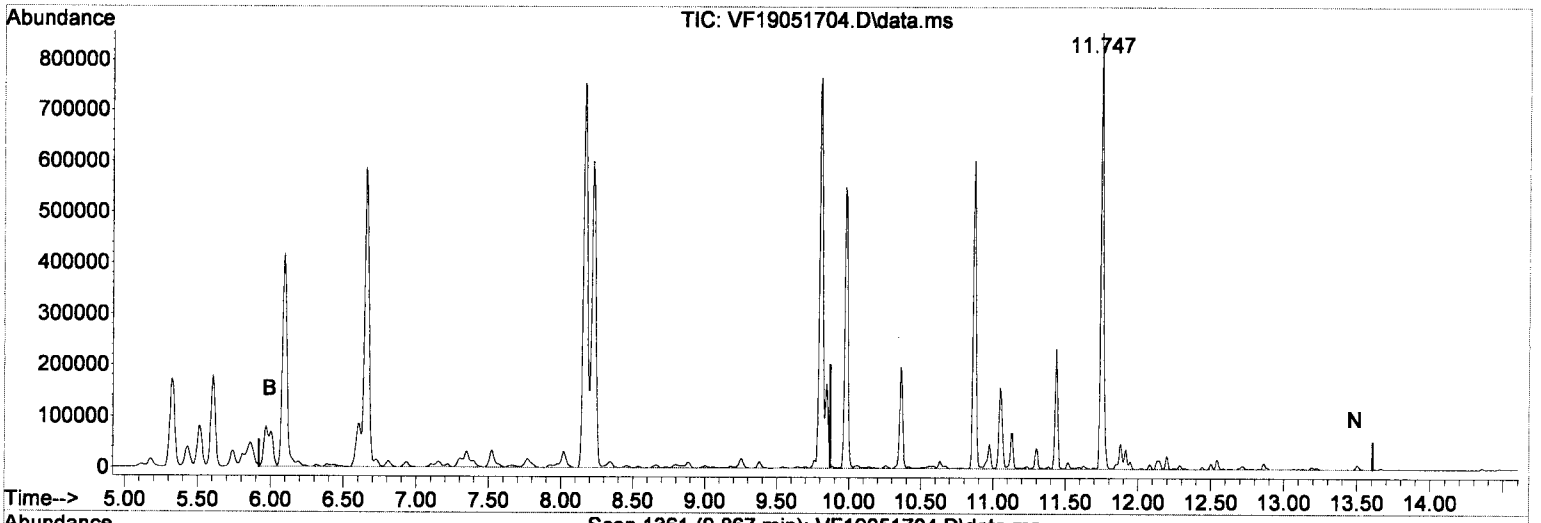
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.095	168	312773	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.655	TIC	1230874	49.91	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	845232	55.66	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.806	TIC	1258071	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.164	TIC	1596253	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	1152133	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	7658933m	557.88	ug/L	
6) TPHg (C6-C10)	9.860	TIC	6111179m	561.61	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	8777568m	560.63	ug/L	
8) NWTPH-Gx	9.870	TIC	4899063m	562.69	ug/L	

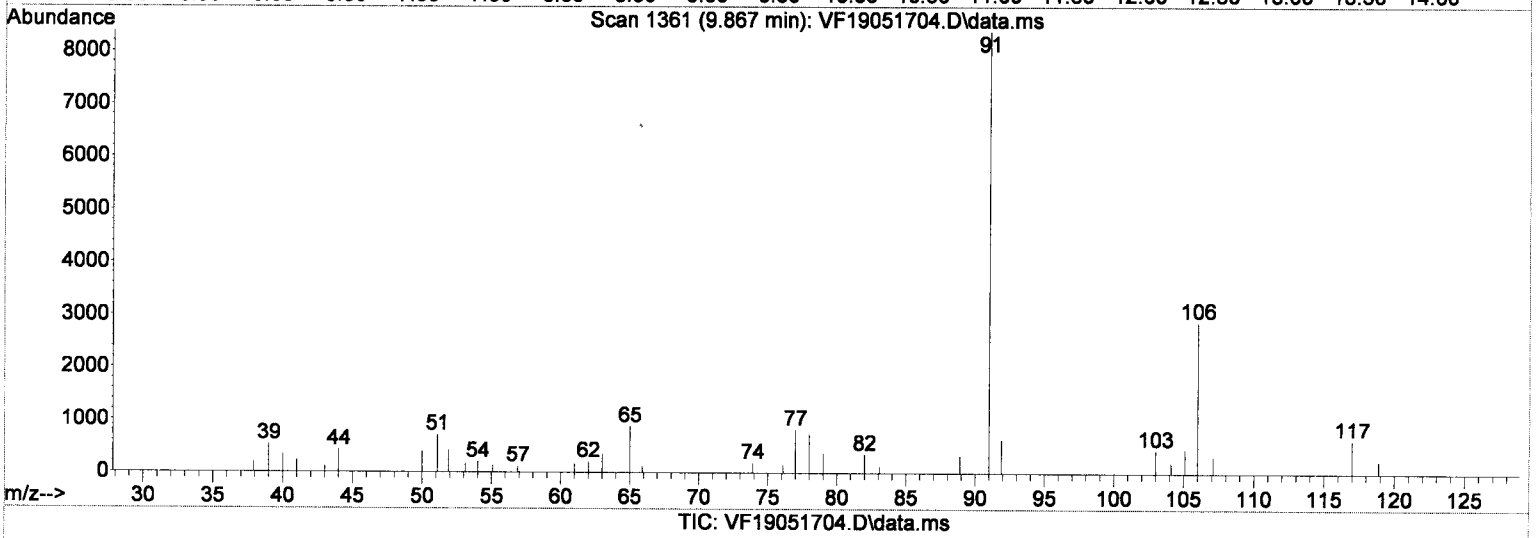
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051704.D
Acq On : 17 May 2019 11:44 am
Operator : TB
Sample : 9051006-BS2
Misc : 50X 5g/5mLx1000uL/50mL GX+MeOH A19E163
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:00 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





TIC: VF19051704.D\data.ms

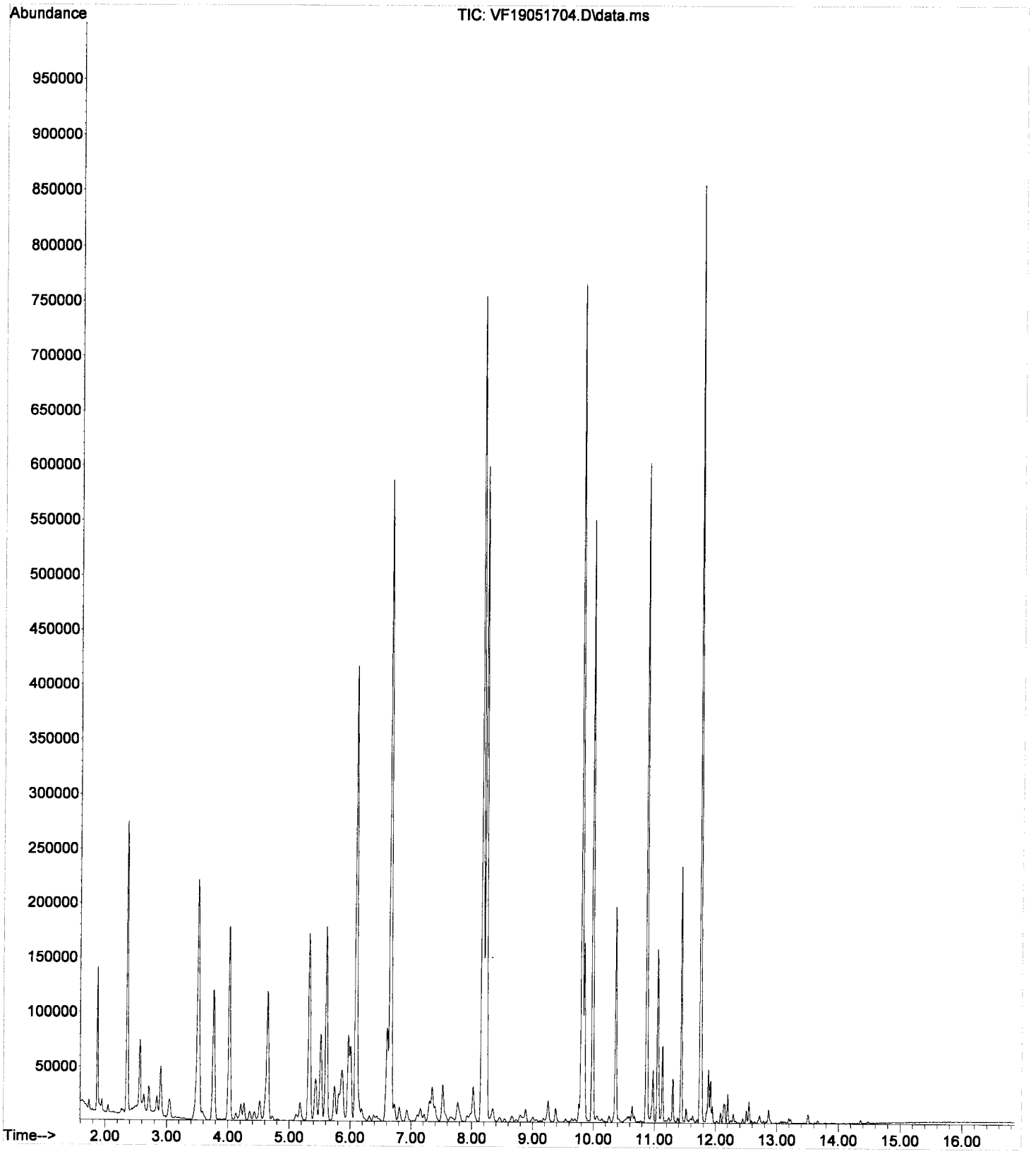
(8) NWTPH-Gx (H)

9.870min (0.000) 562.69 ug/L m

response 4899063

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

File :C:\msdchem\1\DATA\2019-05\9E17019\VF19051704.D
Operator : TB
Acquired : 17 May 2019 11:44 am using AcqMethod VF1601RUN.M
Instrument : VOA-GCMS6
Sample Name: 9051006-BS2
Misc Info : 50X 5g/5mLx1000uL/50mL GX+MeOH A19E163
Vial Number: 4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051705.D
Acq On : 17 May 2019 12:11 pm
Operator : TB
Sample : 9051006-BLK1
Misc : 50X 7.5g/5mLx1000uL/50mL DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:41 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

5/18/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.095	168	298883	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.661	TIC	1142820	48.50	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	836769	57.67	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.806	TIC	1210472	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1496249	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	1082017	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	411255m	0.56	ug/L	
6) TPHg (C6-C10)	9.860	TIC	381625m	15.59	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	416561m	4.40	ug/L	
8) NWTPH-Gx	9.870	TIC	-3114m	23.16	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051705.D
Acq On : 17 May 2019 12:11 pm
Operator : TB
Sample : 9051006-BLK1
Misc : 50X 7.5g/5mLx1000uL/50mL DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:35 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

5/18/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.095	168	299864	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.806	117	393771	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.753	152	175866	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.609	111	113630	47.23	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.661	114	487589	52.63	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	556578	47.81	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.871	174	138473	51.14	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.843	50	933	0.23	ug/L		87
5) Bromomethane	2.305	96	1118	0.45	ug/L		95
6) Chloroethane	2.476	64	116	0.21	ug/L	#	1
9) Carbon Disulfide	3.163	76	454	0.29	ug/L		77
12) Methylene Chloride	3.777	84	6958	Below Cal			95
13) Acetone	3.863	43	1275	0.83	ug/L		97
15) n-Hexane	4.027	86	1007	1.16	ug/L	#	80
28) 2-Butanone (MEK)	5.767	43	442	0.19	ug/L		54
40) Toluene	8.231	91	1939	0.12	ug/L		83
52) m,p-Xylenes (2)	9.989	91	1040	0.09	ug/L		91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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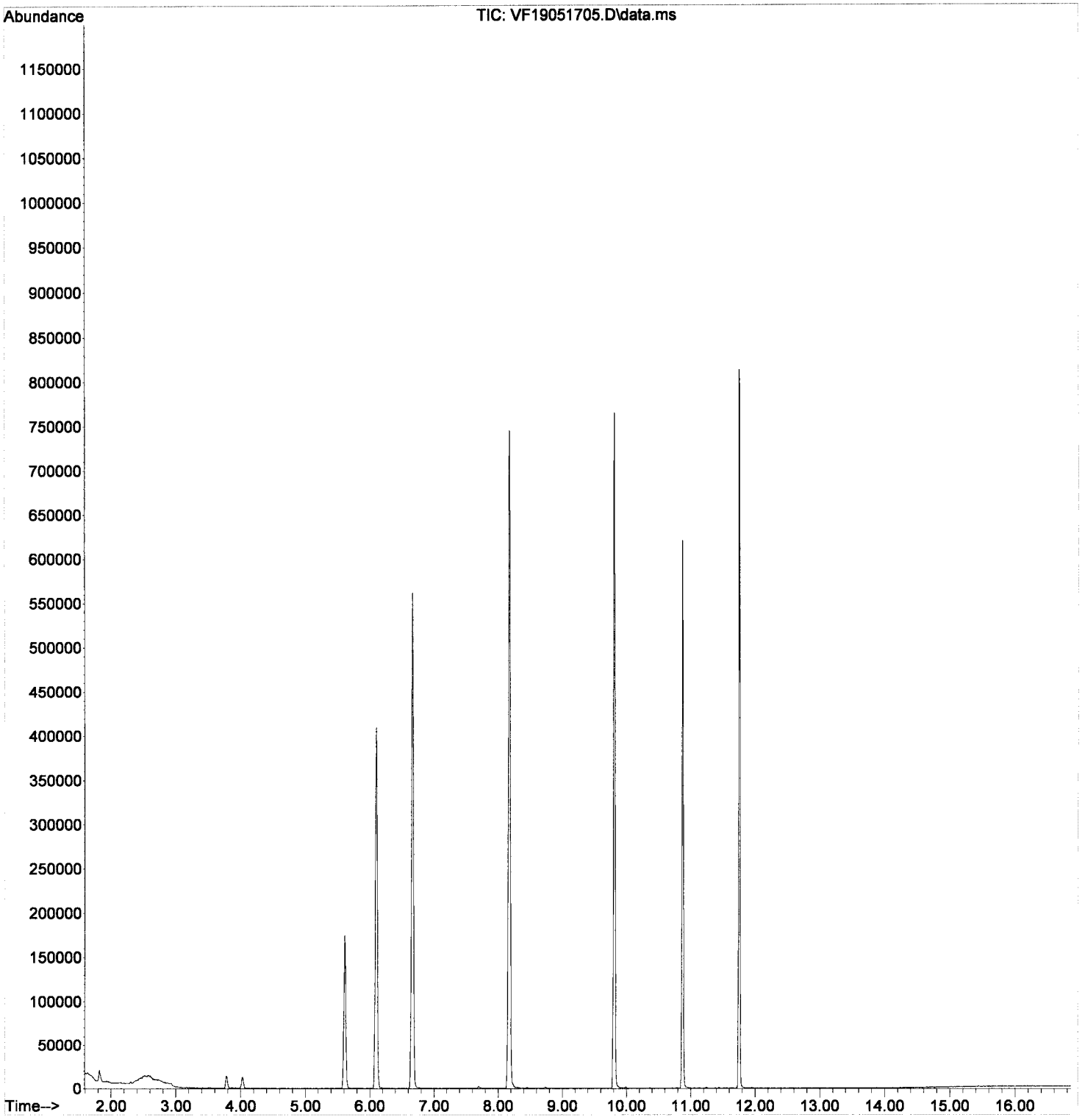
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051705.D
Acq On : 17 May 2019 12:11 pm
Operator : TB
Sample : 9051006-BLK1
Misc : 50X 7.5g/5mLx1000uL/50mL DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:35 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:19:07 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

5/18/19

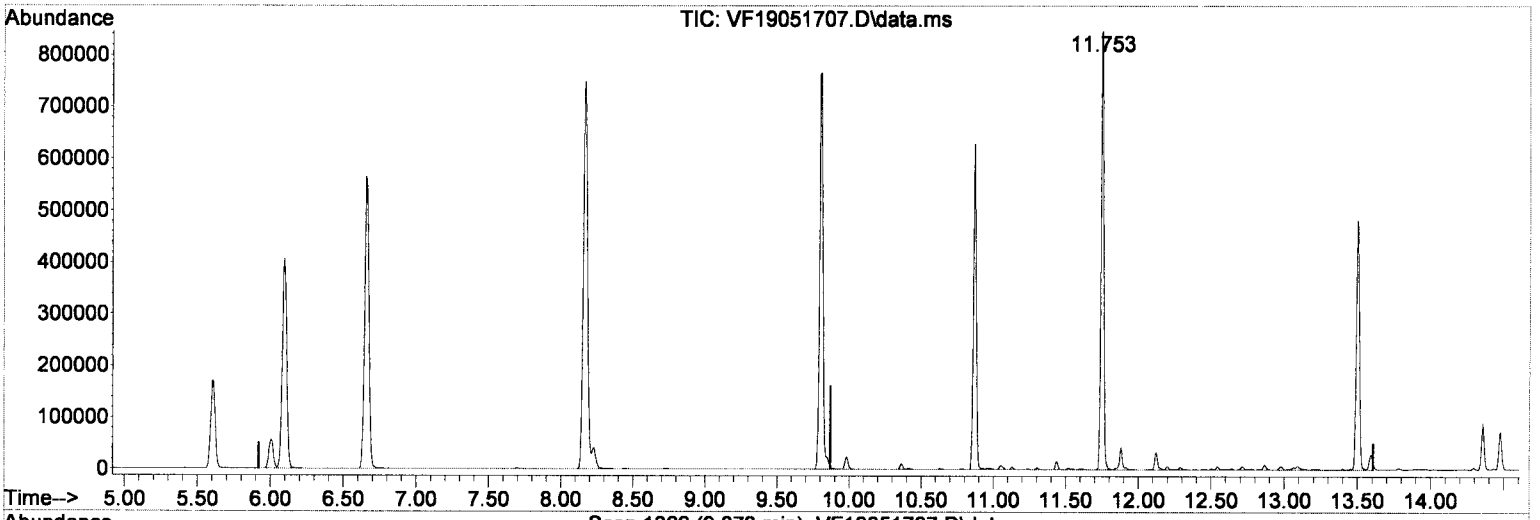
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Pentafluorobenzene (IS)	6.095	168	300548	50.00 ug/L	0.00
System Monitoring Compounds					
2) 1,4-Difluorobenzene (Sur)	6.655	TIC	1152953	48.66 ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	856835	58.72 ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.806	TIC	1266003	0.00 ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1521976	0.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.753	TIC	1133266	0.00 ug/L	0.00
Target Compounds					Qvalue
5) TPHg (C5-C9)	9.860	TIC	682122m	22.32 ug/L	NR
6) TPHg (C6-C10)	9.860	TIC	623137m	39.68 ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	874925m	36.43 ug/L	
8) NWTPH-Gx	9.870	TIC	1199678m	162.68 ug/L	

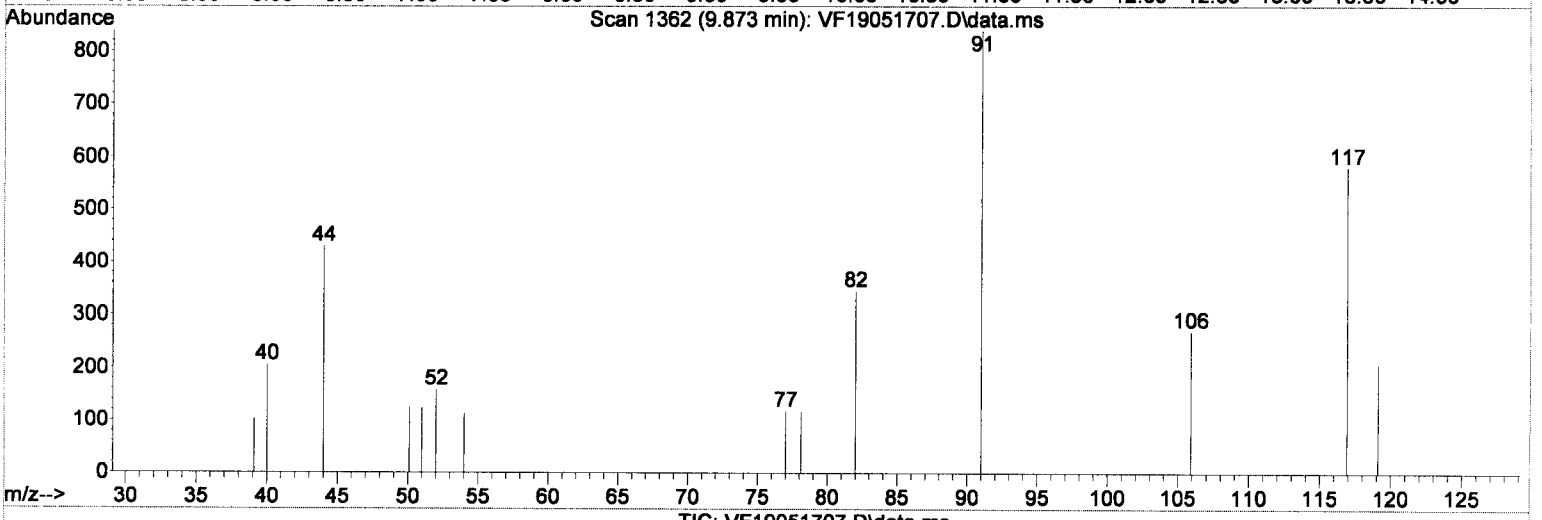
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:19:07 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx' by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





TIC: VF19051707.D\data.ms

(8) NWTPH-Gx (H)

9.870min (0.000) 162.68 ug/L m

response 1199678

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	2.47#
0.00	0.00	1.86#
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

5/18/19

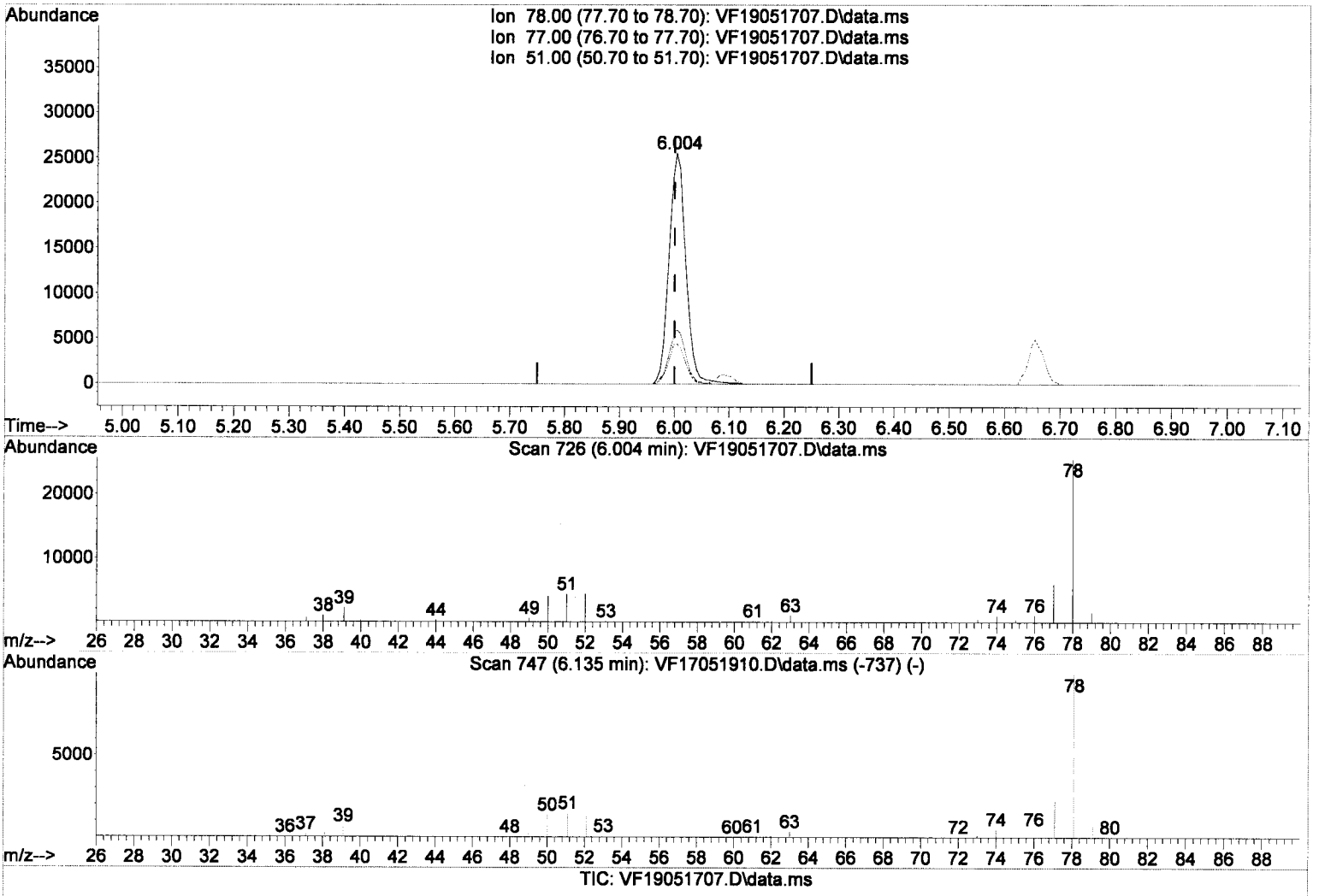
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Pentafluorobenzene (I)	6.095	168	300548	50.00 ug/L	0.00
37) Chlorobenzene-d5 (I)	9.806	117	399940	50.00 ug/L	0.00
57) 1,4-Dichlorobenzene-d4...	11.753	152	182344	50.00 ug/L	0.00
System Monitoring Compounds					
26) Dibromofluoromethane (S)	5.602	111	112857	46.80 ug/L	0.00
32) 1,4-Difluorobenzene (S)	6.655	114	490348	52.81 ug/L	0.00
39) Toluene-d8 (S)	8.170	98	561673	47.50 ug/L	0.00
58) 4-Bromofluorobenzene (S)	10.871	174	140118	49.91 ug/L	0.00
Target Compounds					Qvalue
3) Chloromethane	1.837	50	488	0.12 ug/L #	48 <MDL
5) Bromomethane	2.293	96	677	0.27 ug/L	88
9) Carbon Disulfide	3.151	76	318	0.27 ug/L	77
12) Methylene Chloride	3.777	84	7772	Below Cal	88
13) Acetone	3.862	43	1961	1.27 ug/L	98
15) n-Hexane	4.021	86	852	0.98 ug/L #	76
28) 2-Butanone (MEK)	5.761	43	525	0.23 ug/L	54
29) Benzene	6.004	78	54421	3.75 ug/L	98
40) Toluene	8.230	91	33483	1.98 ug/L	96
50) Ethylbenzene	9.849	91	13535	0.84 ug/L	98
52) m,p-Xylenes (2)	9.982	91	13074	1.16 ug/L	96
53) o-Xylene	10.366	91	5892	0.54 ug/L	98
54) Styrene	10.420	104	1113	0.33 ug/L	92 <MDL
56) Isopropylbenzene	10.633	105	1382	0.11 ug/L	93
60) n-Propylbenzene	10.980	91	1753	0.12 ug/L	88
63) 1,3,5-Trimethylbenzene	11.132	105	2828	0.30 ug/L	84
67) tert-Butylbenzene	11.436	91	828	0.15 ug/L #	51
68) 1,2,4-Trimethylbenzene	11.436	105	7450	0.79 ug/L	97
69) sec-Butylbenzene	11.522	105	1435	0.13 ug/L	83 <MDL
78) Naphthalene	13.505	128	347664	32.16 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



TIC: VF19051707.D\data.ms

(29) Benzene

6.004min (+0.004) 3.75 ug/L

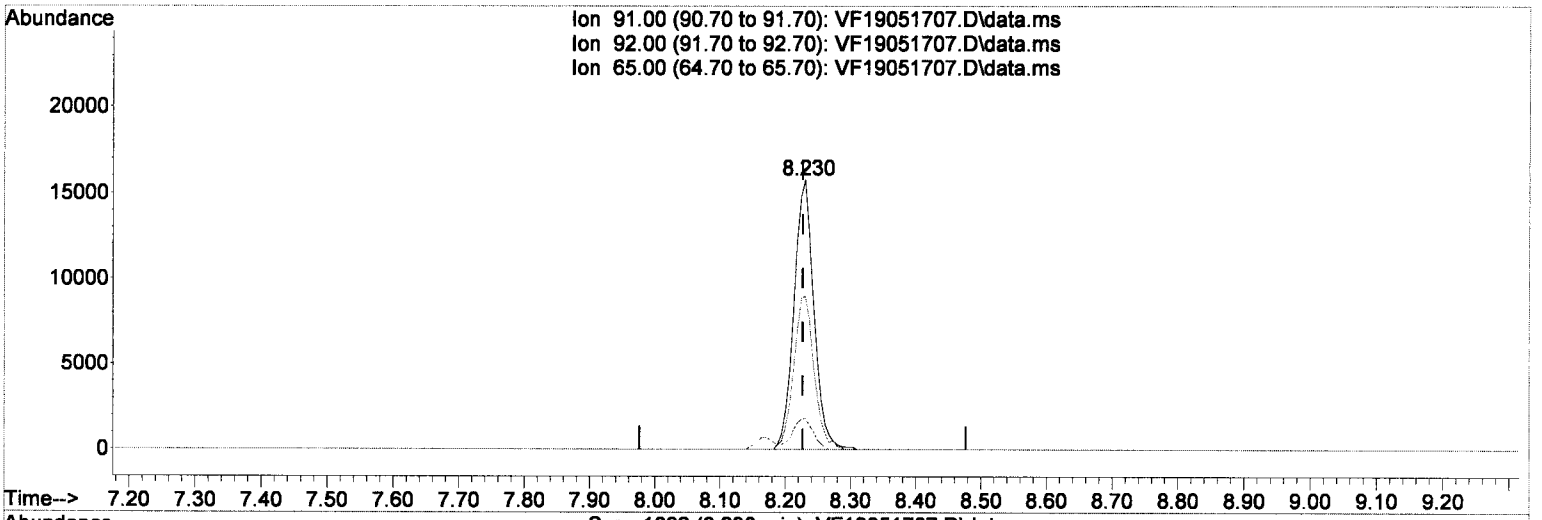
response 54421

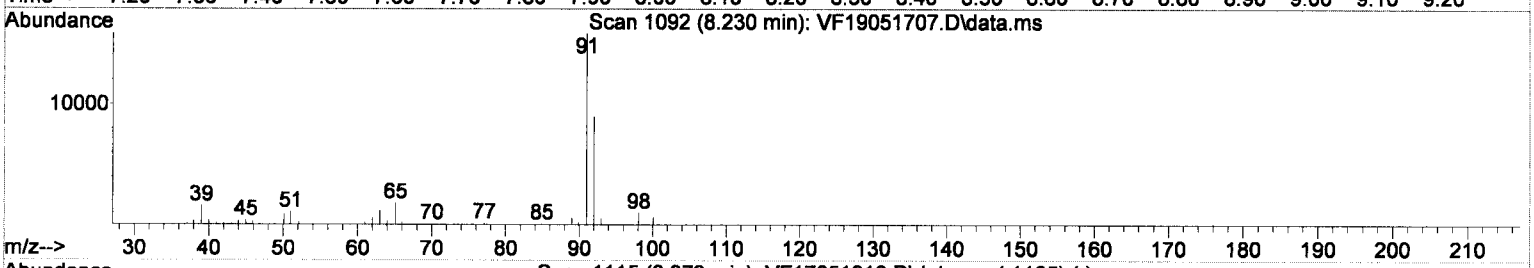
Ion	Exp%	Act%
78.00	100	100
77.00	23.20	23.56
51.00	15.50	17.48
0.00	0.00	0.00

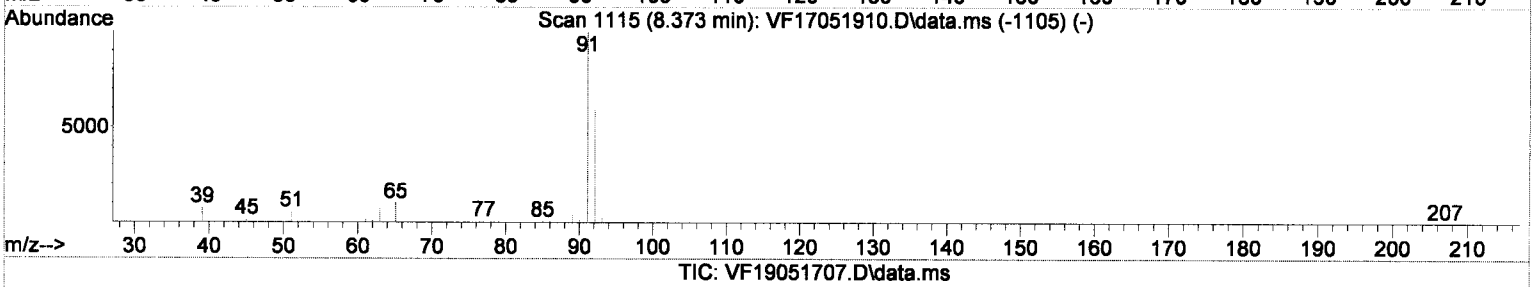
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration







TIC: VF19051707.D\data.ms

(40) Toluene (C)

8.230min (+0.004) 1.98 ug/L

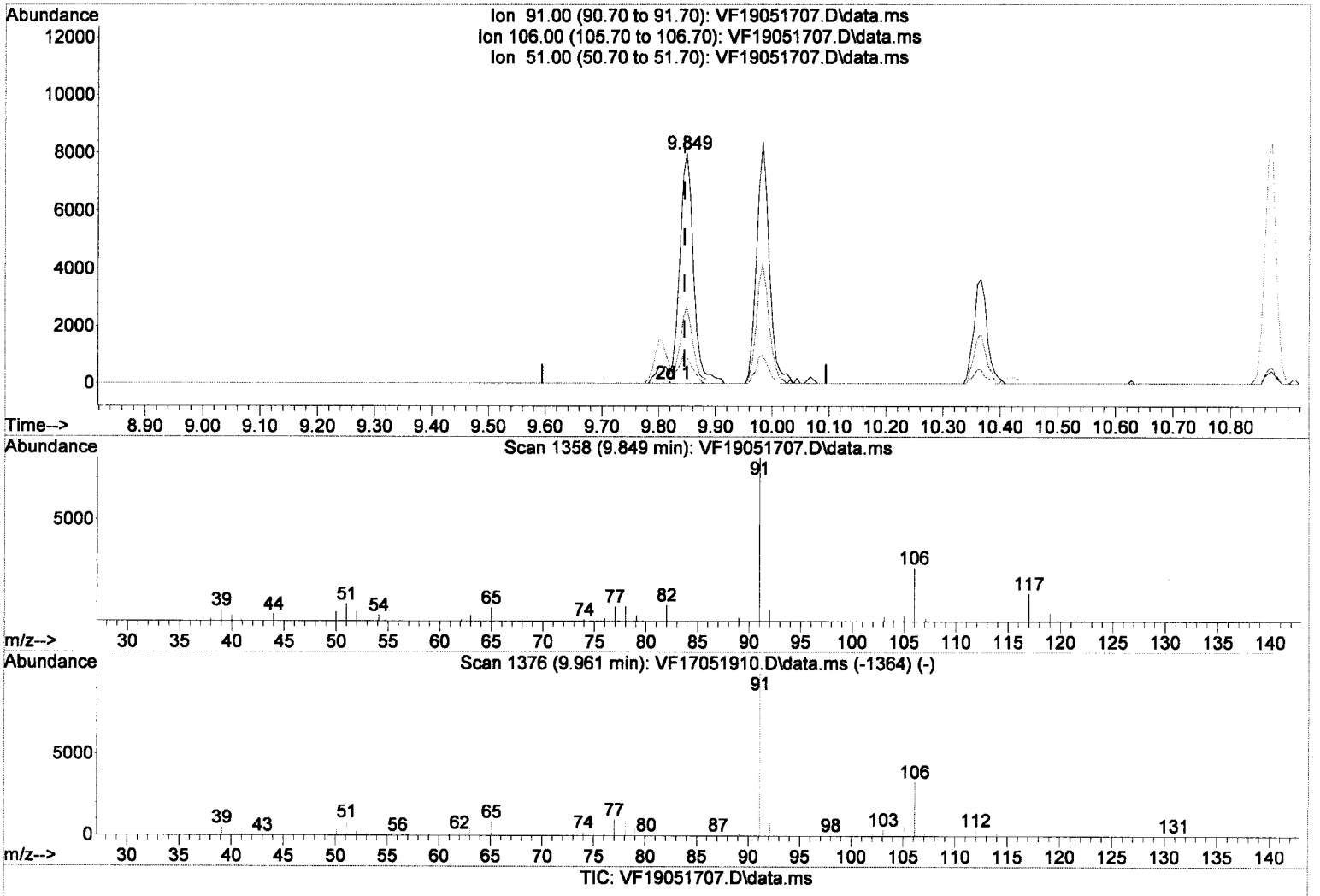
response 33483

Ion	Exp%	Act%
91.00	100	100
92.00	60.20	56.87
65.00	11.90	11.67
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



TIC: VF19051707.D\data.ms

(50) Ethylbenzene (C)

9.849min (+0.004) 0.84 ug/L

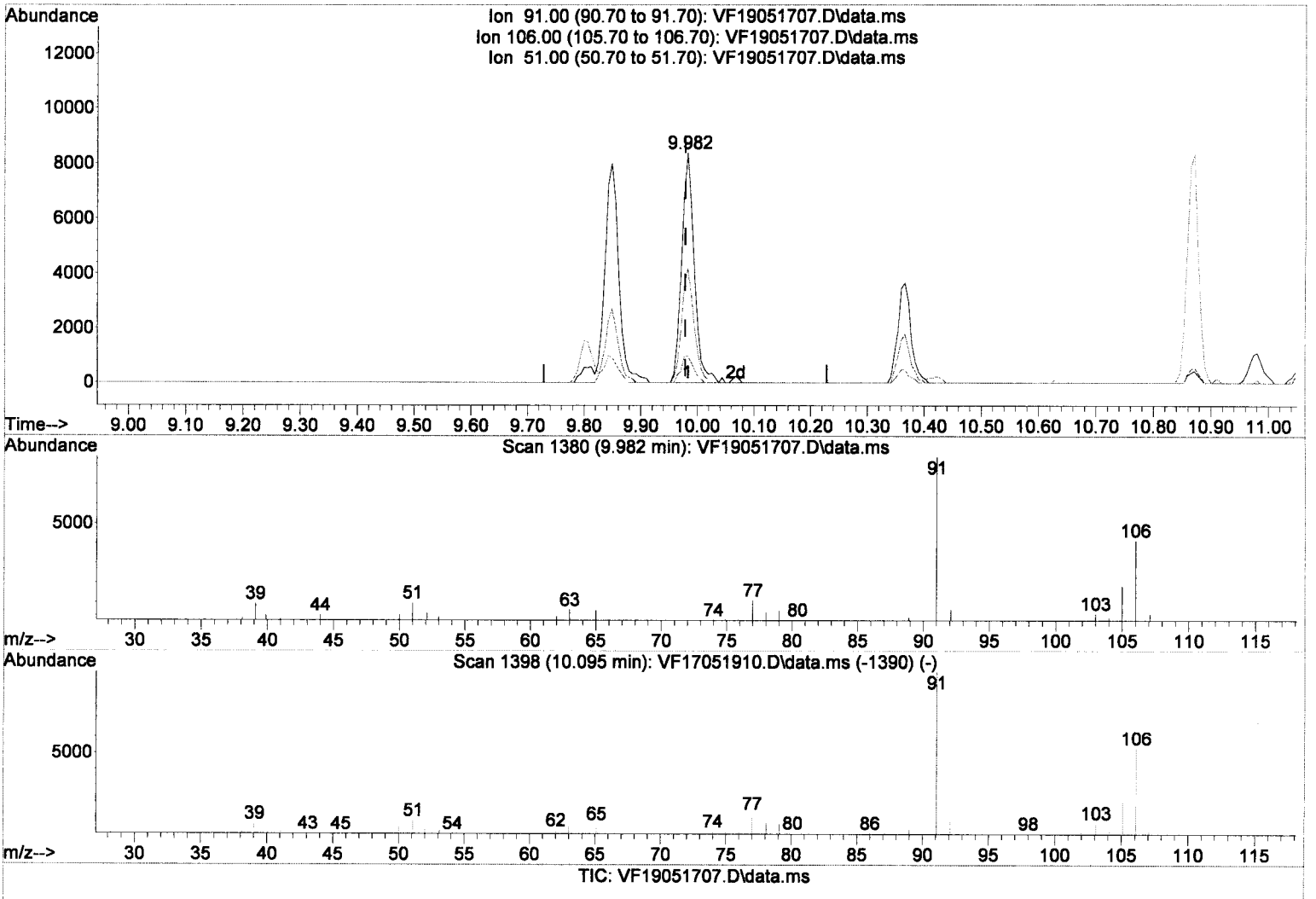
response 13535

Ion	Exp%	Act%
91.00	100	100
106.00	33.20	33.58
51.00	9.50	11.55
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



TIC: VF19051707.D\data.ms

(52) m,p-Xylenes (2)

9.982min (+0.004) 1.16 ug/L

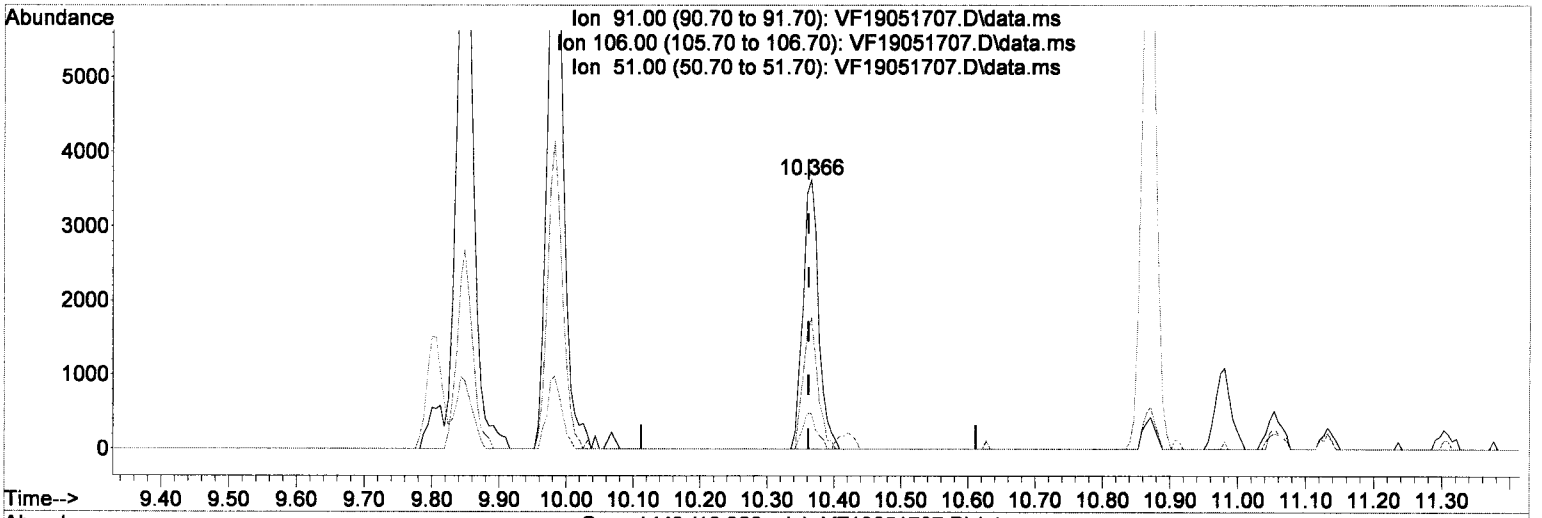
response 13074

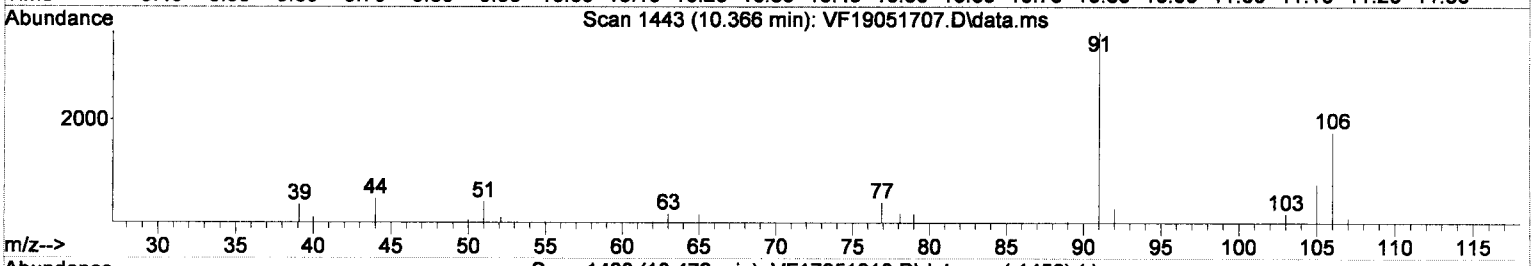
Ion	Exp%	Act%
91.00	100	100
106.00	52.70	49.59
51.00	10.10	11.64
0.00	0.00	0.00

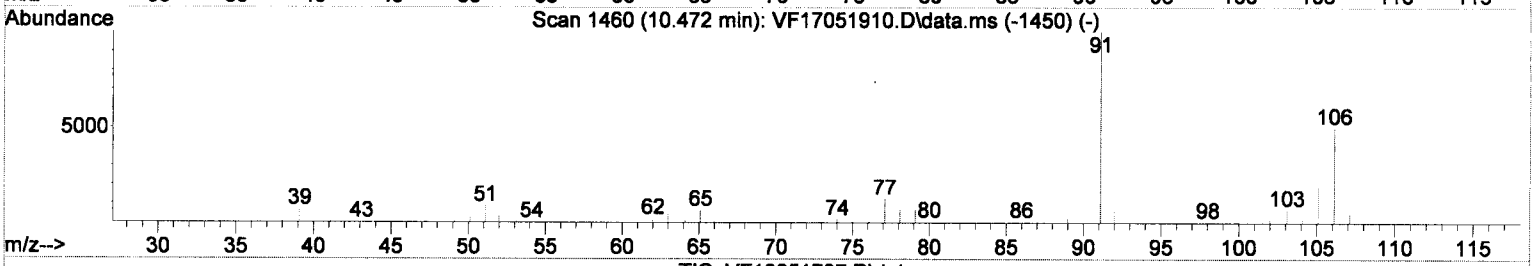
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration







TIC: VF19051707.D\data.ms

(53) o-Xylene

10.366min (+0.004) 0.54 ug/L

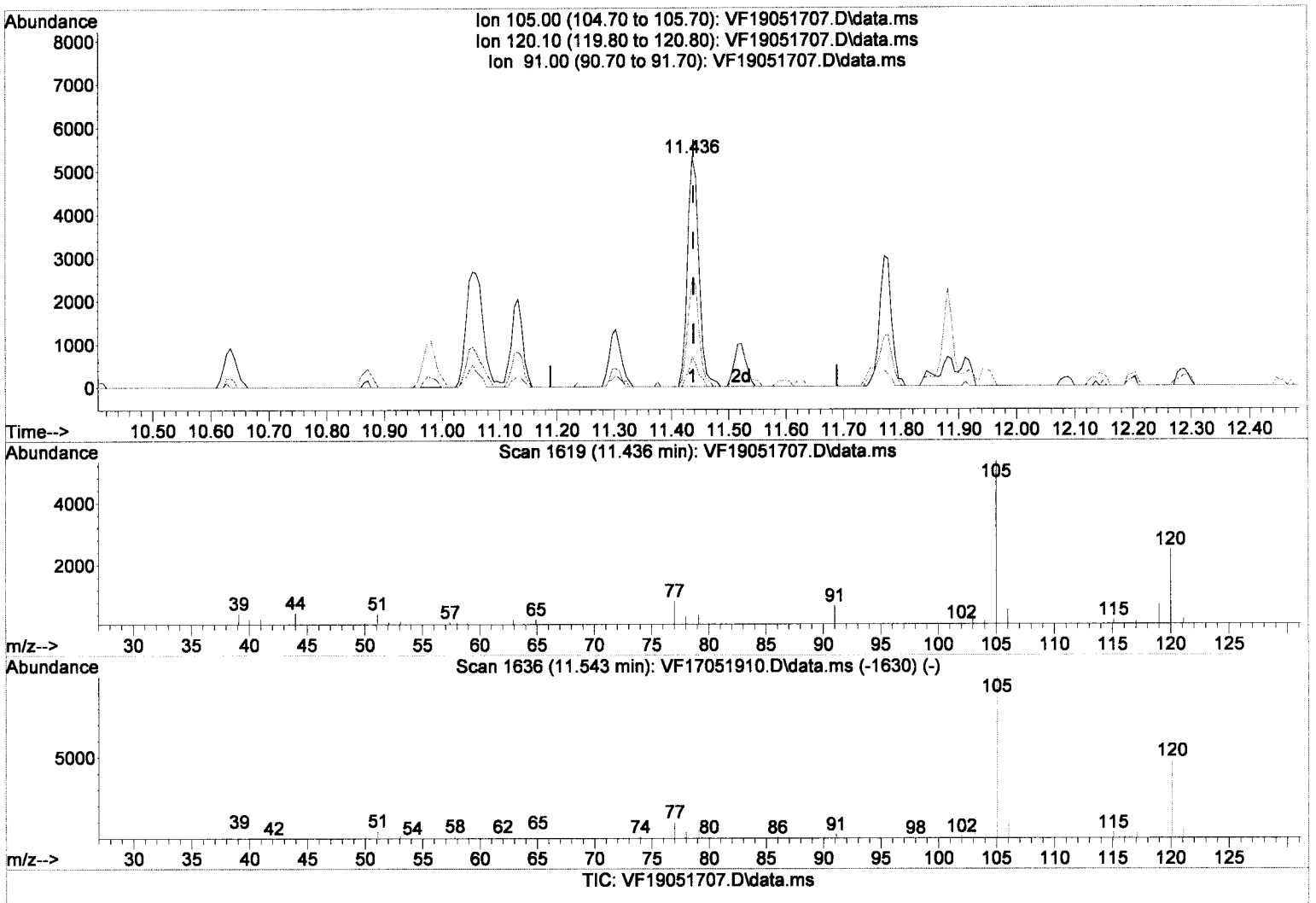
response 5892

Ion	Exp%	Act%
91.00	100	100
106.00	49.40	48.69
51.00	10.00	13.27
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



TIC: VF19051707.D\data.ms

(68) 1,2,4-Trimethylbenzene

11.436min (-0.002) 0.79 ug/L

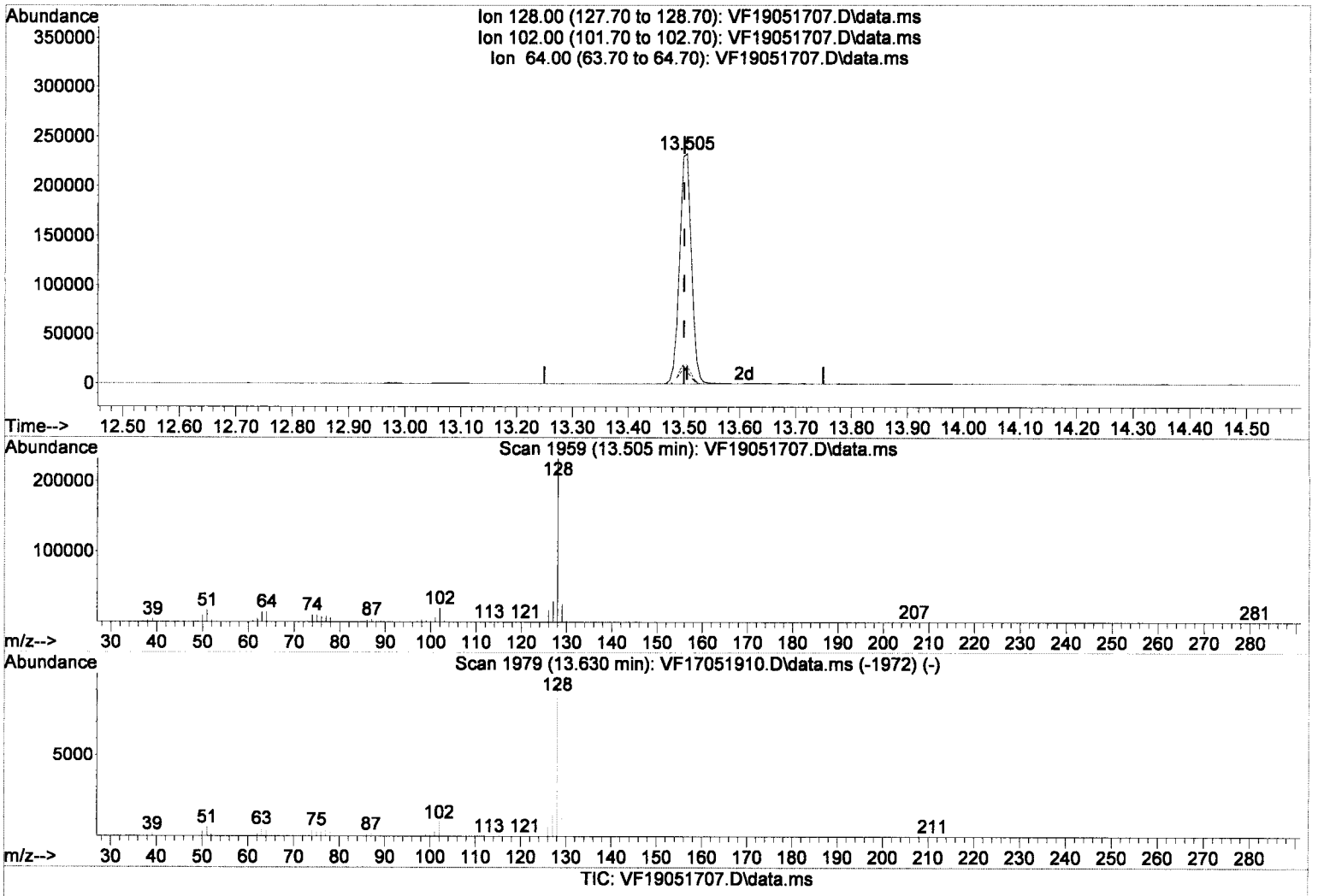
response 7450

Ion	Exp%	Act%
105.00	100	100
120.10	48.00	46.56
91.00	10.60	13.11
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



TIC: VF19051707.D\data.ms

(78) Naphthalene

13.505min (+0.005) 32.16 ug/L

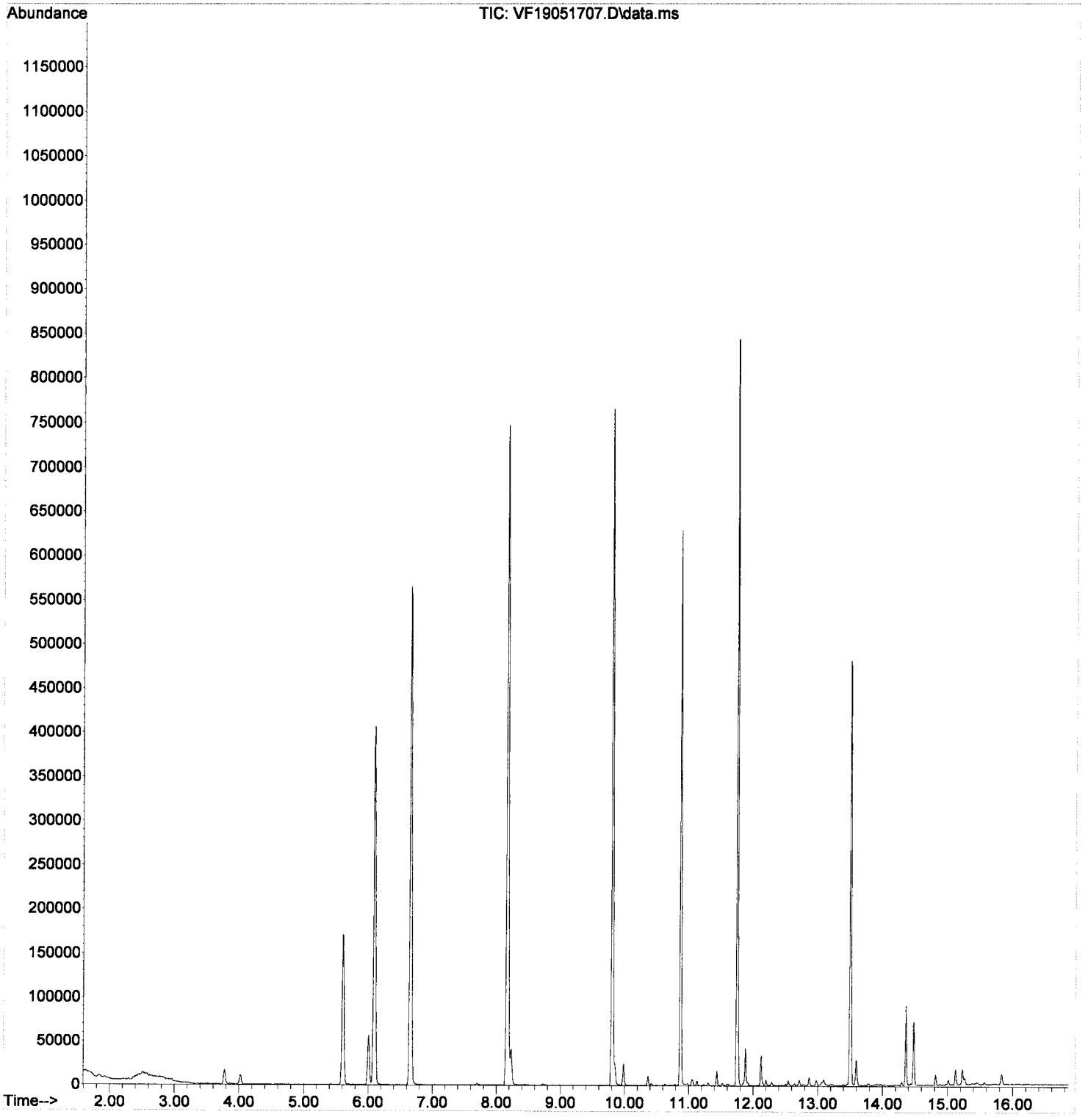
response 347664

Ion	Exp%	Act%
128.00	100	100
102.00	8.50	8.39
64.00	6.40	6.22
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 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 9E07048 (Cal ID A9E0804) VOA-GCMS6

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence:	**9E07048**	Instrument:	**VOA-GCMS6**
Date:	**05/07/19 18:19**	Calibration:	**A9E0804**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E07048-IBL1	Soil	QC	QC			A19D196	
2	9E07048-TUN1	Soil	QC	QC			A19D196	
3	9E07048-ICB1	Soil	QC	QC			A19D196	
4	9E07048-CAL1	Soil	QC	QC			A19D196	A19E092
5	9E07048-CAL2	Soil	QC	QC			A19D196	A19E093
6	9E07048-CAL3	Soil	QC	QC			A19D196	A19E094
7	9E07048-CAL4	Soil	QC	QC			A19D196	A19E095
8	9E07048-CAL5	Soil	QC	QC			A19D196	A19E096
9	9E07048-CAL6	Soil	QC	QC			A19D196	A19E097
10	9E07048-CAL7	Soil	QC	QC			A19D196	A19E098
11	9E07048-CAL8	Soil	QC	QC			A19D196	A19E099
12	9E07048-CAL9	Soil	QC	QC			A19D196	A19D177
13	9E07048-IBL2	Soil	QC	QC			A19D196	
14	9E07048-CALA	Soil	QC	QC			A19D196	A19D178
15	9E07048-IBL3	Soil	QC	QC			A19D196	
16	9E07048-CALB	Soil	QC	QC			A19D196	A19D179
17	9E07048-IBL4	Soil	QC	QC			A19D196	
18	9E07048-IBL5	Soil	QC	QC			A19D196	
19	9E07048-ICV1	Soil	QC	QC			A19D196	A19D180
20	9E07048-IBL6	Soil	QC	QC			A19D196	
21	9E07048-TUN2	Soil	QC	QC			A19D196	
22	9E07048-IBL7	Soil	QC	QC			A19D196	
23	9E07048-ICB2	Soil	QC	QC			A19D196	
24	9E07048-CALC	Soil	QC	QC			A19D196	A19E016
25	9E07048-CALD	Soil	QC	QC			A19D196	A19E017
26	9E07048-CALE	Soil	QC	QC			A19D196	A19E018
27	9E07048-CALF	Soil	QC	QC			A19D196	A19E019
28	9E07048-CALG	Soil	QC	QC			A19D196	A19B200
29	9E07048-CALH	Soil	QC	QC			A19D196	A19B201
30	9E07048-CALI	Soil	QC	QC			A19D196	A19B202
31	9E07048-CALJ	Soil	QC	QC			A19D196	A19B203
32	9E07048-IBL8	Soil	QC	QC			A19D196	
33	9E07048-IBL9	Soil	QC	QC			A19D196	
34	9E07048-ICV2	Soil	QC	QC			A19D196	A19B262
35	9E07048-IBLA	Soil	QC	QC			A19D196	

Carbon tet ↑ 1/2
Bromodichloro ↑ 1/2
1112 TCA ↑ 1/2
Bromoform ↑ 2/4

Data Entered By: 5/8/19

Data Reviewed By: 5/8/19

Comments: Iodomethane NR
↑MDL MRL for carbon tet, $BrCl_2CH$, 1112 tetrachloroethane, & Bromoform

Calibration Status Report VOA-GCMS6

Method Path : C:\msdchem\1\METHODS\
Method File : VF190507S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Wed May 08 13:32:58 2019
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	-1	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050714.D
2	2	0	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050715.D
3	3	0	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050716.D
4	4	1	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050717.D
5	5	2	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050718.D
6	6	5	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050719.D
7	7	10	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050720.D
8	8	20	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050721.D
9	9	50	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050722.D
10	10	100	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050724.D
11	11	200	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050726.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	May 08 10:44 2019	May 08 10:29 2019	
2	2	May 08 10:44 2019	May 08 10:30 2019	
3	3	May 08 10:44 2019	May 08 10:32 2019	
4	4	May 08 10:44 2019	May 08 10:33 2019	
5	5	May 08 10:44 2019	May 08 10:24 2019	
6	6	May 08 10:44 2019	May 08 10:24 2019	
7	7	May 08 10:44 2019	May 08 10:24 2019	
8	8	May 08 10:44 2019	May 08 10:24 2019	
9	9	May 08 10:44 2019	May 08 10:24 2019	
10	10	May 08 10:44 2019	May 08 10:24 2019	
11	11	May 08 10:44 2019	May 08 10:24 2019	

VF190507S.M Wed May 08 13:51:54 2019

↑ MDL/MRL for Carbon tetrachloride, Bromodichloro methane, 1112 tetrachloro ethane, & Bromoform

Iodomethane NR

Response Factor Report VOA-GCMS6

Method Path : C:\msdchem\1\METHODS\
Method File : VF190507S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Wed May 08 11:54:03 2019
Response Via : Initial Calibration

Calibration Files
1 =VF19050714.D 2 =VF19050715.D 3 =VF19050716.D 4 =VF19050717.D 5 =VF19050718.D 6 =VF19050719.D
7 =VF19050720.D 8 =VF19050721.D 9 =VF19050722.D 10 =VF19050724.D 11 =VF19050726.D

		Compound	1	2	3	4	5	6	7	8	9	10	11	Avg	%RSD
1)	I	Pentafluorobenzene...	ISTD												
2)		Dichlorodifluo...		0.424	0.375	0.456	0.462	0.446	0.474	0.533	0.503	0.527	0.467		10.76
3)	P	Chloromethane			0.644	0.743	0.678	0.626	0.698	0.716	0.676	0.660	0.680		5.60
4)	C	Vinyl Chloride	0.675	0.628	0.632	0.660	0.660	0.648	0.692	0.742	0.670	0.719	0.673		5.40
5)		Bromomethane					0.485	0.446	0.412	0.418	0.351	0.386	0.416		11.21
6)		Chloroethane			0.091	0.111	0.092	0.084	0.095	0.094	0.079	0.086	0.091		10.77
7)		Trichlorofluor...		0.111	0.118	0.129	0.128	0.111	0.125	0.121	0.109	0.115	0.119		6.44
8)	C	1,1-Dichloroet...	0.967	0.818	0.851	0.780	0.846	0.852	0.821	0.908	0.901	0.856	0.908	0.864	6.06
9)		Carbon Disulfide			0.976	0.821	0.855	0.892	0.894	1.083	1.240	1.289	1.433	1.054	20.86
10)		Freon 113		0.451	0.522	0.537	0.520	0.537	0.515	0.547	0.552	0.528	0.560	0.527	5.79
11)		Iodomethane				0.121	0.089	0.103	0.168	0.198	0.320	0.324	0.444	0.221	57.97
12)		Methylene Chlo...			7.017	3.179	1.919	1.118	0.809	0.720	0.593	0.537	0.544	1.826	116.77
13)		Acetone						0.288	0.242	0.274	0.246	0.243	0.244	0.256	7.74
14)		t-1,2-Dichloro...	0.667	0.839	0.790	0.775	0.820	0.847	0.818	0.893	0.878	0.860	0.897	0.826	7.98
15)		n-Hexane						0.180	0.147	0.144	0.133	0.130	0.132	0.144	12.82
16)		Methyl-tert-bu...	1.639	1.719	1.560	1.535	1.610	1.619	1.558	1.758	1.743	1.707	1.911	1.669	6.69
17)	P	1,1-Dichloroet...	1.048	1.002	1.001	0.985	1.067	1.086	1.029	1.153	1.107	1.024	0.998	1.045	5.05
18)		Acrylonitrile				0.199	0.254	0.270	0.262	0.297	0.289	0.286	0.296	0.269	12.01
19)		c-1,2-Dichloro...	0.639	0.687	0.725	0.686	0.784	0.799	0.760	0.849	0.823	0.802	0.811	0.760	8.81
20)		2,2-Dichloropr...				0.441	0.473	0.476	0.491	0.569	0.608	0.609		0.524	13.32
21)		Bromochloromet...		0.326	0.463	0.418	0.483	0.476	0.462	0.504	0.475	0.455	0.475	0.454	11.05
22)	C	Chloroform	0.883	0.879	0.851	0.859	0.896	0.940	0.921	1.008	0.989	0.970	1.026	0.929	6.62
23)		Carbon Tetrach...				0.256	0.292	0.319	0.332	0.397	0.474	0.523	0.635	0.404	32.32
24)		Tetrahydrofuran			0.294	0.248	0.279	0.292	0.257	0.300	0.280	0.282	0.295	0.281	6.33
25)		1,1,1-Trichlor...			0.610	0.572	0.589	0.616	0.649	0.740	0.807			0.655	13.26
26)	S	Dibromofluorom...	0.381	0.367	0.382	0.369	0.391	0.400	0.395	0.424	0.417	0.431	0.456	0.401	6.96
27)		1,1-Dichloropr...		0.672	0.709	0.672	0.754	0.774	0.760	0.836	0.841	0.830	0.876	0.772	9.40
28)		2-Butanone (MEK)		0.438	0.375	0.326	0.362	0.385	0.353	0.408	0.387	0.386	0.411	0.383	8.33
29)		Benzene	2.348	2.419	2.410	2.283	2.404	2.441	2.361	2.551	2.456	2.390	2.523	2.417	3.16
30)		1,2-Dichloroet...	0.769	0.824	0.778	0.819	0.823	0.848	0.795	0.877	0.825	0.796	0.840	0.818	3.89
31)		iso-Butyl Alcohol				0.012	0.016	0.017	0.018	0.026	0.030	0.037	0.039	0.024	41.48
32)	S	1,4-Difluorobe...	1.553	1.550	1.538	1.536	1.540	1.536	1.531	1.549	1.542	1.534	1.584	1.545	0.96
33)		Trichloroethen...		0.604	0.547	0.538	0.540	0.575	0.559	0.615	0.613	0.602	0.646	0.584	6.39
34)		Dibromomethane		0.203	0.277	0.256	0.279	0.286	0.289	0.327	0.325	0.324	0.354	0.292	14.84
35)	C	1,2-Dichloropr...		0.579	0.518	0.555	0.562	0.571	0.568	0.610	0.603	0.588	0.622	0.578	5.22
36)		Bromodichlorom...				0.300	0.324	0.352	0.371	0.460	0.542	0.583	0.687	0.452	30.88
37)		Chlorobenzene-d5 (I)	ISTD												
38)		c-1,3-Dichloro...		0.320	0.330	0.369	0.398	0.409	0.551	0.575	0.641	0.664	0.473		28.49
39)	S	Toluene-d8 (S)	1.570	1.433	1.536	1.441	1.539	1.533	1.452	1.532	1.418	1.463	1.344	1.478	4.64
40)	C	Toluene	2.876	2.259	2.053	1.958	2.101	2.069	1.955	2.131	1.979	1.992	1.879	2.114	12.92

Method Path : C:\msdchem\1\METHODS\
Method File : VF190507S.M
Title : EPA 8260: Volatile Organic Compounds

41)		Tetrachloroeth...	0.458	0.399	0.467	0.416	0.468	0.482	0.456	0.514	0.473	0.488	0.470	0.463	6.89
42)		4-Methyl-2-Pen...				0.400	0.483	0.518	0.515	0.625	0.604	0.627	0.599	0.546	14.83
43)		t-1,3-Dichloro...			0.222	0.246	0.284	0.320	0.349	0.473	0.528	0.592	0.625	0.404	37.75
44)		1,1,2-Trichlor...		0.292	0.334	0.326	0.383	0.379	0.367	0.420	0.389	0.393	0.381	0.366	10.39
45)		Dibromochlorom...			0.095	0.100	0.141	0.154	0.159	0.214	0.263	0.314	0.353	0.199	46.55
46)		1,3-Dichloropr...	0.702	0.597	0.679	0.647	0.716	0.748	0.710	0.804	0.737	0.748	0.713	0.709	7.76
47)		1,2-Dibromoeth...		0.148	0.202	0.220	0.274	0.306	0.311	0.389	0.390	0.411	0.398	0.305	30.45
48)		2-Hexanone						0.318	0.337	0.420	0.425	0.442	0.426	0.395	13.41
49)	P	Chlorobenzene	1.346	1.286	1.199	1.194	1.184	1.167	1.176	1.188	1.189	1.161	1.166	1.205	4.79
50)	C	Ethylbenzene	2.234	2.098	1.941	1.892	1.899	1.925	1.947	2.058	2.075	2.029	2.045	2.013	5.16
51)		1,1,1,2-Tetrac...			0.129	0.122	0.157	0.171	0.192	0.249	0.302	0.342	0.366	0.226	40.98
52)		m,p-Xylenes (2)	1.375	1.339	1.198	1.290	1.298	1.366	1.421	1.525	1.553	1.537	1.607	1.410	9.21
53)		o-Xylene	1.466	1.318	1.198	1.191	1.227	1.273	1.337	1.433	1.500	1.463	1.523	1.357	9.19
54)		Styrene		0.589	0.624	0.662	0.685	0.804	0.885	1.004	1.114	1.102	1.194	0.866	26.04
55)	P	Bromoform					0.073	0.076	0.085	0.113	0.153	0.199		0.117	43.10
56)		Isopropylbenzene		1.286	1.242	1.378	1.369	1.532	1.597	1.705	1.776	1.733	1.780	1.540	13.52
57)	I	1,4-Dichlorobenzen...	----------			ISTD	----------								
58)	S	4-Bromofluorob...	0.769	0.787	0.781	0.797	0.766	0.763	0.798	0.760	0.768	0.742	0.737	0.770	2.59
59)		Bromobenzene	0.681	0.954	0.839	0.935	0.912	0.903	0.949	0.939	0.945	0.912	0.925	0.899	8.79
60)		n-Propylbenzene	3.893	3.768	3.659	3.802	3.748	3.903	4.202	4.219	4.354	4.217	4.191	3.996	6.08
61)	P	1,1,2,2-Tetrac...		0.780	0.801	0.835	0.894	0.918	0.990	1.095	1.078	1.095	1.015	0.950	12.78
62)		2-Chlorotoluene		0.782	0.695	0.783	0.739	0.787	0.858	0.840	0.871	0.832	0.849	0.803	7.06
63)		1,3,5-Trimethy...	2.334	2.195	2.255	2.263	2.346	2.511	2.817	2.881	2.979	2.875	2.967	2.584	12.34
64)		1,2,3-Trichlor...			0.315	0.344	0.393	0.378	0.390	0.412	0.392	0.395	0.372	0.377	7.97
65)		t-1,4-Dichloro...					0.048	0.046	0.060	0.075	0.107	0.128	0.143	0.087	45.23
66)		4-Chlorotoluene	2.057	2.222	2.106	2.307	2.298	2.397	2.580	2.547	2.615	2.491	2.517	2.376	8.11
67)		tert-Butylbenzene	1.252	1.380	1.273	1.419	1.406	1.496	1.616	1.621	1.665	1.596	1.596	1.484	9.85
68)		1,2,4-Trimethy...	2.389	2.218	2.254	2.255	2.343	2.577	2.839	2.922	2.977	2.871	2.914	2.596	11.99
69)		sec-Butylbenzene	3.045	2.649	2.741	2.782	2.865	3.106	3.357	3.381	3.466	3.350	3.321	3.097	9.59
70)		4-Isopropyltol...				2.084	2.117	2.396	2.673	2.793	2.909	2.803	2.842	2.577	12.91
71)		1,3-Dichlorobe...	1.538	1.458	1.444	1.467	1.532	1.542	1.551	1.622	1.619	1.547	1.560	1.534	3.84
72)		1,4-Dichlorobe...	1.980	1.653	1.699	1.695	1.682	1.612	1.629	1.684	1.655	1.580	1.585	1.678	6.49
73)		n-Butylbenzene	2.142	1.949	1.991	2.017	1.935	2.147	2.374	2.398	2.472	2.412	2.363	2.200	9.44
74)		1,2-Dichlorobe...	1.359	1.417	1.378	1.362	1.407	1.464	1.456	1.560	1.514	1.460	1.461	1.440	4.38
75)		1,2-Dibromo-3-...				0.049	0.070	0.082	0.097	0.129	0.171	0.218	0.231	0.131	52.52
76)		Hexachlorobuta...				0.194	0.200	0.206	0.203	0.219	0.216	0.207	0.199	0.205	4.17
77)		1,2,4-Trichlor...		0.578	0.707	0.664	0.745	0.754	0.777	0.876	0.872	0.899	0.860	0.773	13.57
78)		Naphthalene			1.639	1.629	1.869	2.106	2.401	2.919	2.971	3.188	3.001	2.414	25.87
79)		1,2,3-Trichlor...			0.623	0.661	0.752	0.790	0.795	0.888	0.860	0.886	0.827	0.787	11.97

(#) = Out of Range

Compound List Report VOA-GCMS6

Method Path : C:\msdchem\1\METHODS\
Method File : VF190507S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Wed May 08 11:54:03 2019
Response Via : Initial Calibration

5/8/19

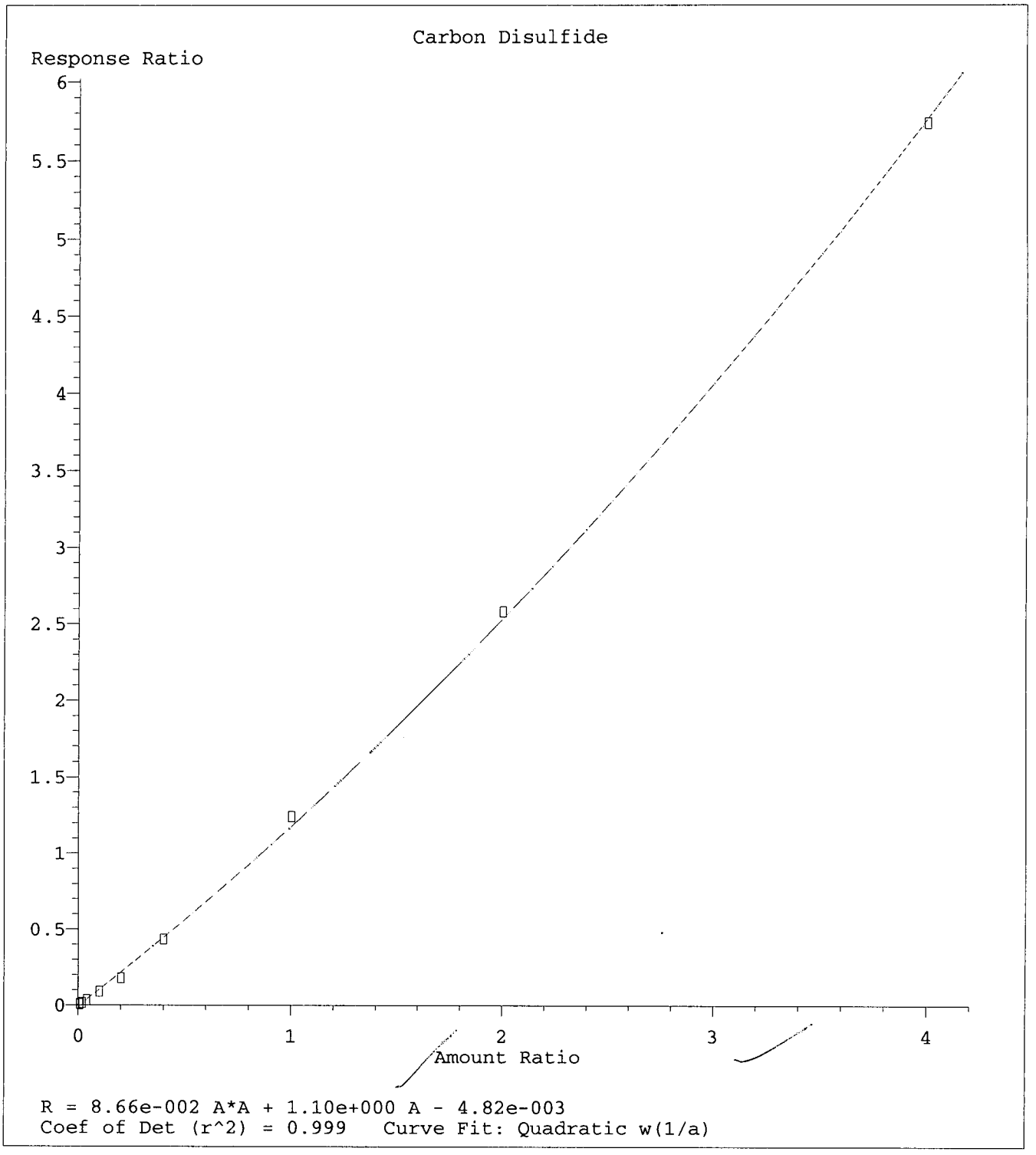
Total Cpnds : 79

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	Pentafluorobenzene (I)	168	6.097	1.000	A	2	A	R
2		Dichlorodifluoromethane	85	1.632	0.268	A	2	A	R
3	P	Chloromethane	50	1.838	0.301	A	2	A	R
4	C	Vinyl Chloride	62	1.942	0.319	A	2	A	R
5		Bromomethane	96	2.301	0.377	A	2	A	R
6		Chloroethane	64	2.423	0.397	A	2	A	R
7		Trichlorofluoromethane	101	2.556	0.419	A	2	A	R
8	C	1,1-Dichloroethene	61	3.123	0.512	A	2	A	R
9		Carbon Disulfide	76	3.140	0.515	Q 1/a	2	A	R
10		Freon 113	101	3.177	0.521	A	2	A	R
11		Iodomethane	142	3.280	0.538	Q 1/a	2	A	R
12		Methylene Chloride	84	3.773	0.619	Q ↓	2	A	R
13		Acetone	43	3.865	0.634	A	1	A	R
14		t-1,2-Dichloroethene	61	3.938	0.646	A	2	A	R
15		n-Hexane	86	4.016	0.659	A	3	A	R
16		Methyl-tert-butyl-ether	73	4.084	0.670	A	3	A	R
17	P	1,1-Dichloroethane	63	4.576	0.751	A	2	A	R
18		Acrylonitrile	53	4.649	0.763	A	2	A	R
19		c-1,2-Dichloroethene	61	5.136	0.842	A	2	A	R
20		2,2-Dichloropropane	77	5.240	0.859	A	2	A	R
21		Bromochloromethane	49	5.337	0.875	A	2	A	R
22	C	Chloroform	83	5.422	0.889	A	2	A	R
23		Carbon Tetrachloride	117	5.543	0.909	Q 1/a	2	A	R
24		Tetrahydrofuran	42	5.598	0.918	A	2	A	R
25		1,1,1-Trichloroethane	97	5.617	0.921	A	2	A	R
26	S	Dibromofluoromethane (S)	111	5.605	0.919	A	2	A	R
27		1,1-Dichloropropene	75	5.745	0.942	A	2	A	R
28		2-Butanone (MEK)	43	5.751	0.943	A	2	A	R
29		Benzene	78	6.000	0.984	A	2	A	R
30		1,2-Dichloroethane (EDC)	62	6.219	1.020	A	2	A	R
31		iso-Butyl Alcohol	43	6.285	1.031	Q 1/a	2	A	R
32	S	1,4-Difluorobenzene (S)	114	6.657	1.092	A	2	A	R
33		Trichloroethene (TCE)	130	6.620	1.086	A	2	A	R
34		Dibromomethane	93	7.077	1.161	A	2	A	R
35	C	1,2-Dichloropropane	63	7.180	1.178	A	2	A	R
36		Bromodichloromethane	83	7.259	1.191	Q 1/a	2	A	R
37	I	Chlorobenzene-d5 (I)	117	9.802	1.000	A	2	A	R
38		c-1,3-Dichloropropene	75	7.964	0.812	Q 1/a	2	A	R
39	S	Toluene-d8 (S)	98	8.166	0.833	A	2	A	R
40	C	Toluene	91	8.227	0.839	A	2	A	R
41		Tetrachloroethene (PCE)	166	8.671	0.885	A	2	A	R
42		4-Methyl-2-Pentanone (MIBK)	43	8.677	0.885	A	2	A	R
43		t-1,3-Dichloropropene	75	8.713	0.889	Q 1/a	2	A	R
44		1,1,2-Trichloroethane	97	8.890	0.907	A	2	A	R
45		Dibromochloromethane	129	9.078	0.926	Q 1/a	2	A	R
46		1,3-Dichloropropane	76	9.169	0.935	A	2	A	R
47		1,2-Dibromoethane (EDB)	107	9.309	0.950	Q 1/a	2	A	R
48		2-Hexanone	43	9.546	0.974	A	2	A	R
49	P	Chlorobenzene	112	9.820	1.002	A	2	A	R
50	C	Ethylbenzene	91	9.845	1.004	A	2	A	R
51		1,1,1,2-Tetrachloroethane	131	9.881	1.008	Q 1/a	2	A	R
52		m,p-Xylenes (2)	91	9.979	1.018	A	2	A	R
53		o-Xylene	91	10.362	1.057	A	2	A	R
54		Styrene	104	10.410	1.062	Q 1/a	2	A	R
55	P	Bromoform	173	10.434	1.064	Q ↓	2	A	R

56		Isopropylbenzene	105	10.629	1.084	A	2	A	R
57	I	1,4-Dichlorobenzene-d4 (I)	152	11.749	1.000	A	2	A	R
58	S	4-Bromofluorobenzene (S)	174	10.873	0.925	A	2	A	R
59		Bromobenzene	156	10.952	0.932	A	2	A	R
60		n-Propylbenzene	91	10.970	0.934	A	2	A	R
61	P	1,1,2,2-Tetrachloroethane	83	11.037	0.939	A	2	A	R
62		2-Chlorotoluene	126	11.104	0.945	A	2	A	R
63		1,3,5-Trimethylbenzene	105	11.128	0.947	A	2	A	R
64		1,2,3-Trichloropropane	110	11.147	0.949	A	2	A	R
65		t-1,4-Dichloro-2-butene	88	11.177	0.951	Q1/a	3	A	R
66		4-Chlorotoluene	91	11.232	0.956	A	2	A	R
67		tert-Butylbenzene	91	11.378	0.968	A	2	A	R
68		1,2,4-Trimethylbenzene	105	11.439	0.974	A	2	A	R
69		sec-Butylbenzene	105	11.518	0.980	A	2	A	R
70		4-Isopropyltoluene	119	11.627	0.990	A	2	A	R
71		1,3-Dichlorobenzene	146	11.694	0.995	A	2	A	R
72		1,4-Dichlorobenzene	146	11.761	1.001	A	2	A	R
73		n-Butylbenzene	91	11.944	1.017	A	2	A	R
74		1,2-Dichlorobenzene	146	12.077	1.028	A	2	A	R
75		1,2-Dibromo-3-Chloropropane	157	12.685	1.080	Q1/a	2	A	R
76		Hexachlorobutadiene	223	13.190	1.123	A	3	A	R
77		1,2,4-Trichlorobenzene	180	13.227	1.126	A	2	A	R
78		Naphthalene	128	13.500	1.149	Q1/a	2	A	R
79		1,2,3-Trichlorobenzene	180	13.665	1.163	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

VF190507S.M Wed May 08 12:03:31 2019



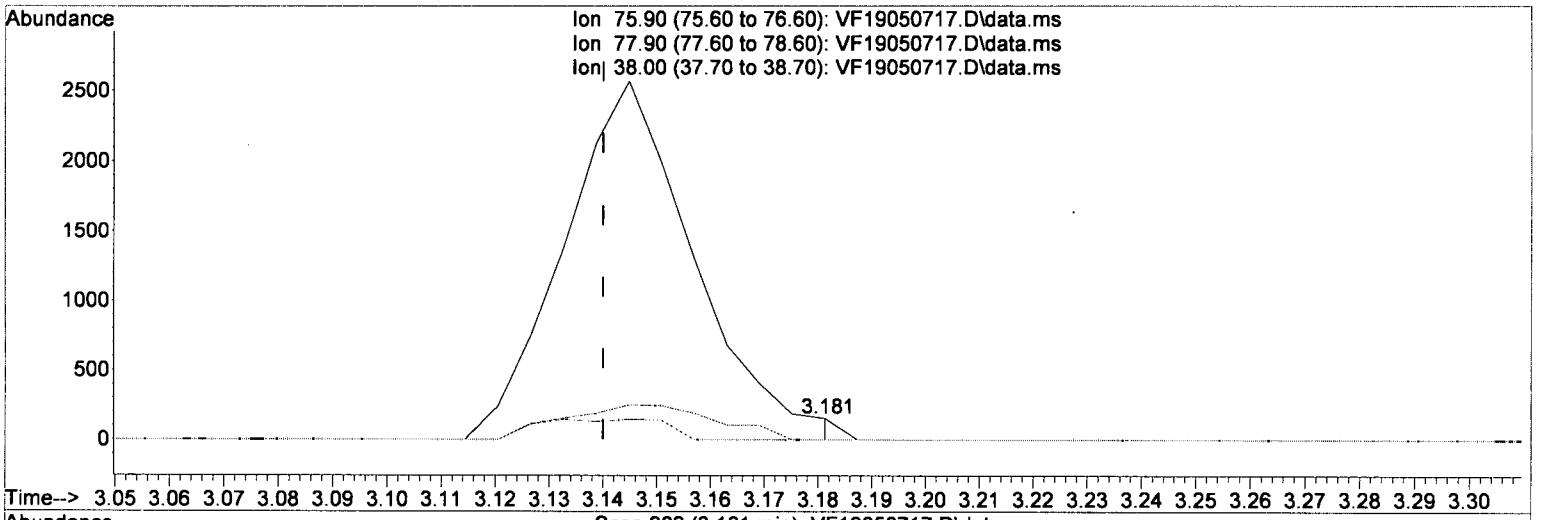
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

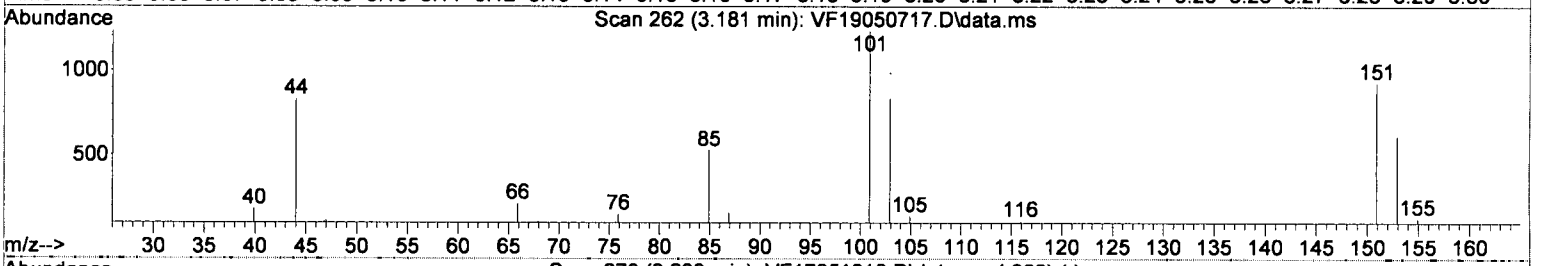
Int = 0.22

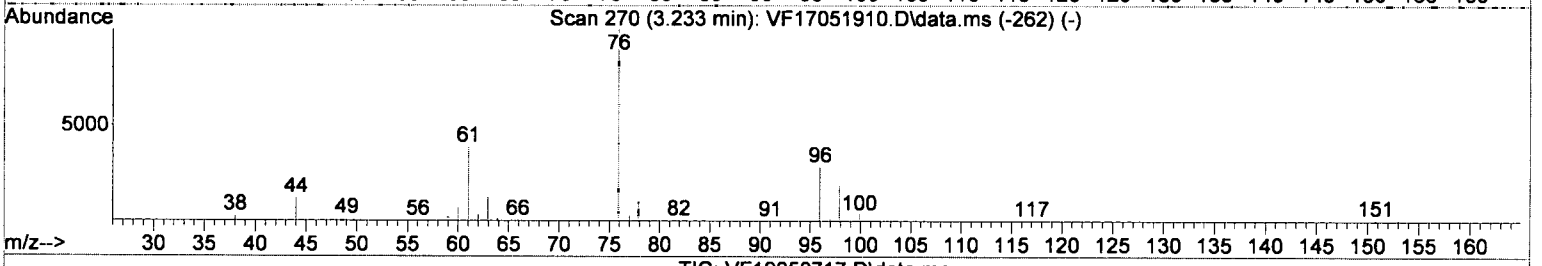
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







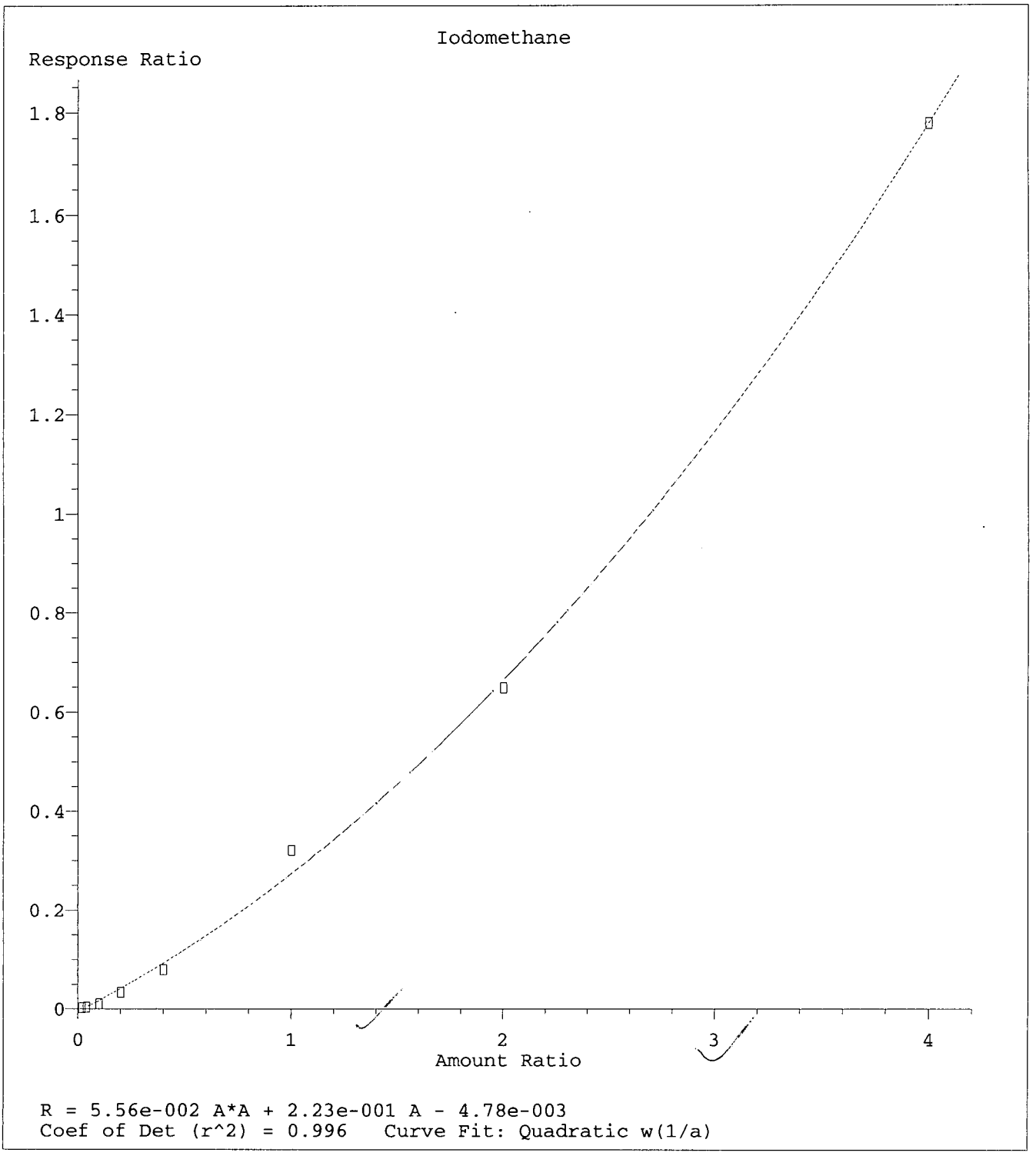
TIC: VF19050717.D\data.ms

(9) Carbon Disulfide

3.181min (+0.041) 0.22 ug/L m

response 0

Ion	Exp%	Act%
75.90	100	0.00
77.90	9.50	0.00
38.00	1.60	0.00
0.00	0.00	0.00



Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

Int = 1.10

Quantitation Report (Qedit)

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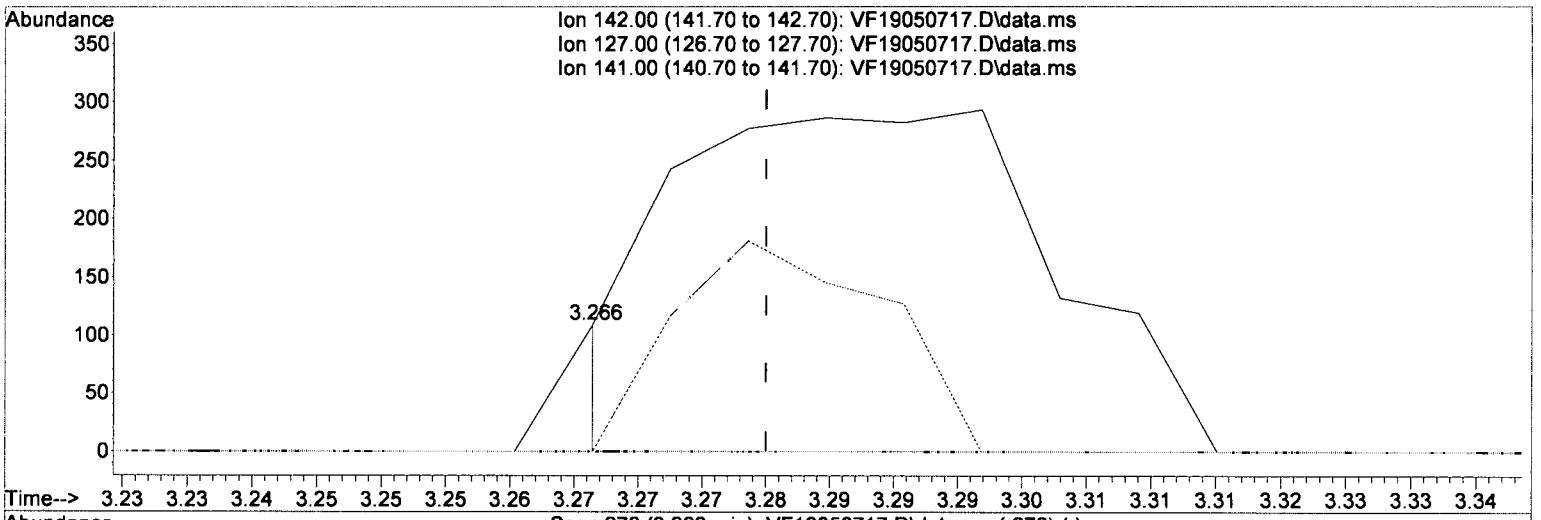
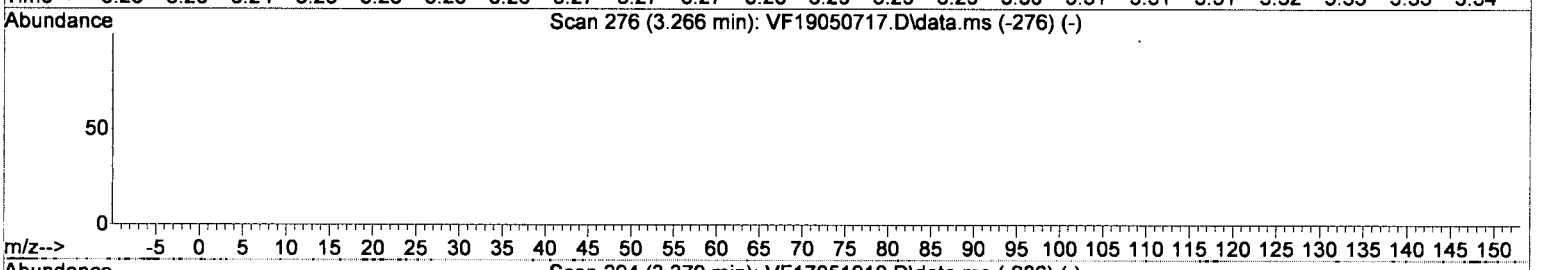
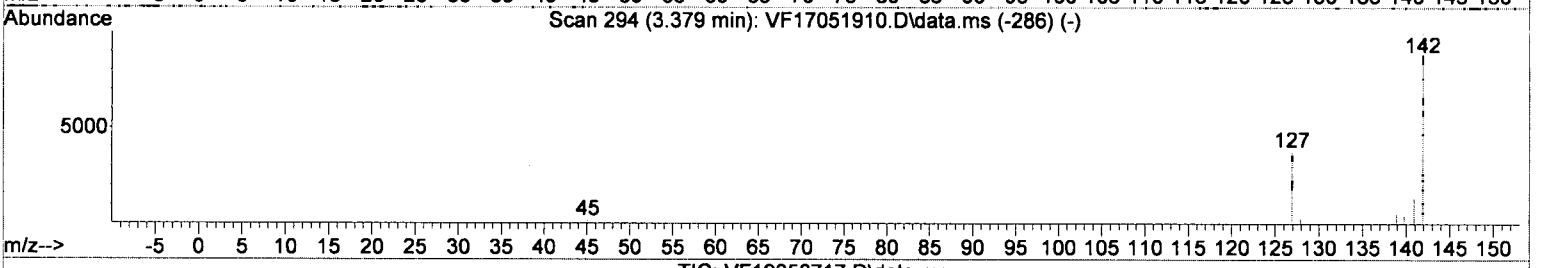
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







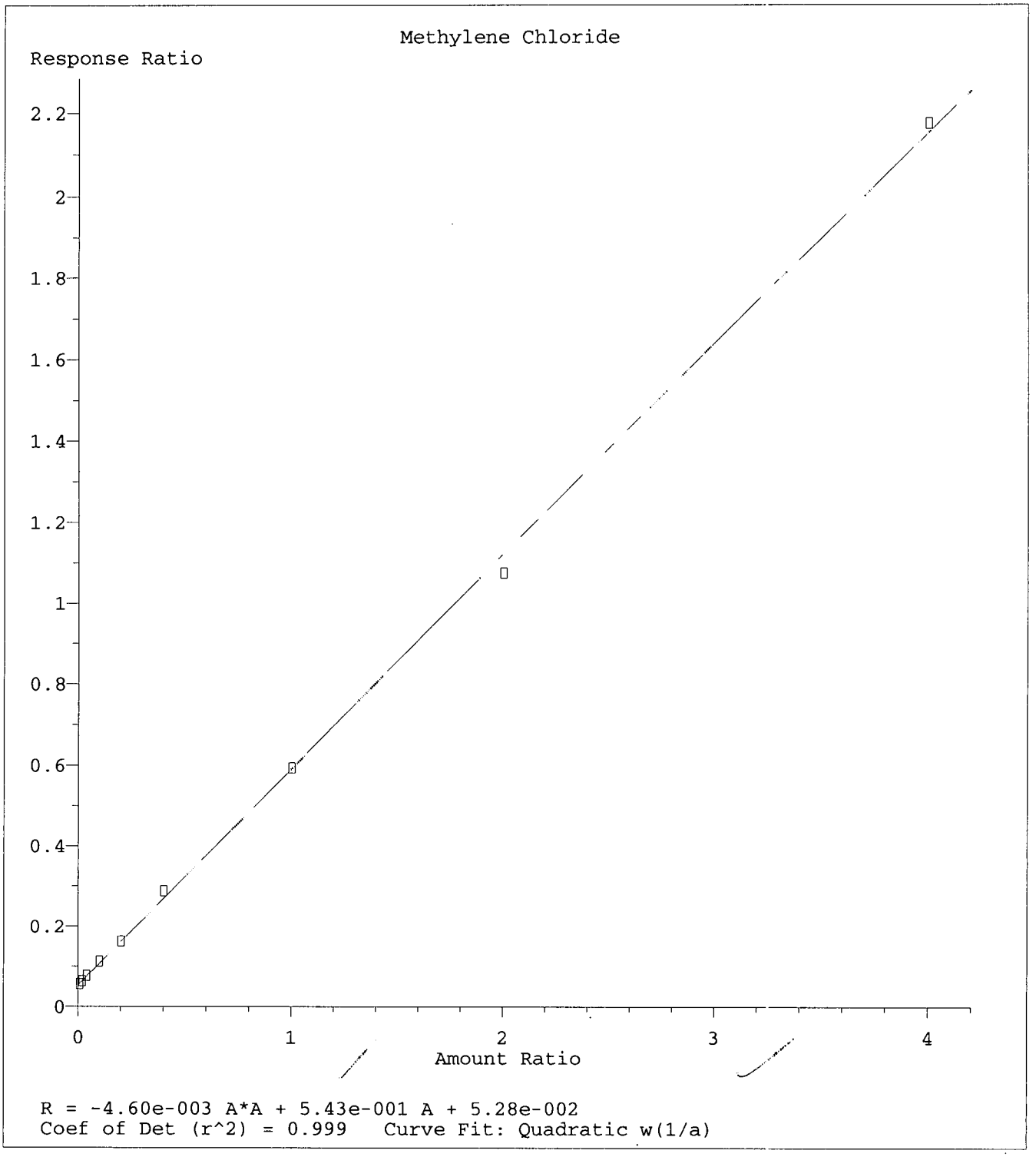
TIC: VF19050717.D\data.ms

(11) Iodomethane

3.266min (-0.014) 1.10 ug/L m

response 40

Ion	Exp%	Act%
142.00	100	100
127.00	35.00	0.00#
141.00	15.00	0.00#
0.00	0.00	0.00



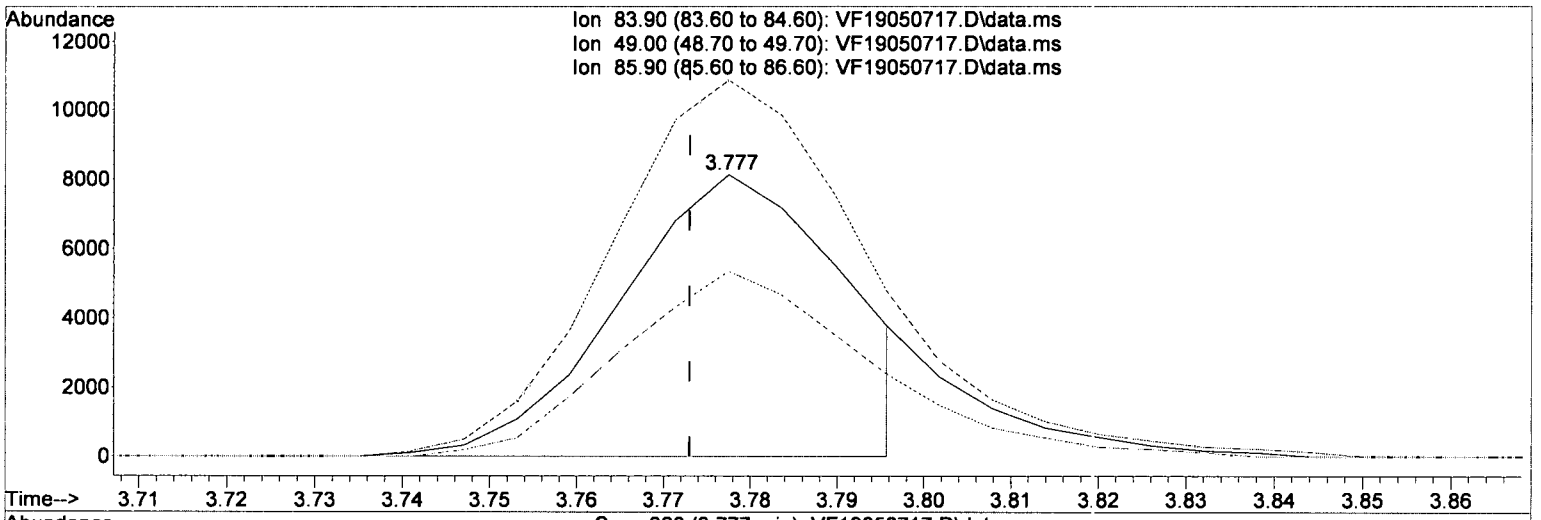
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

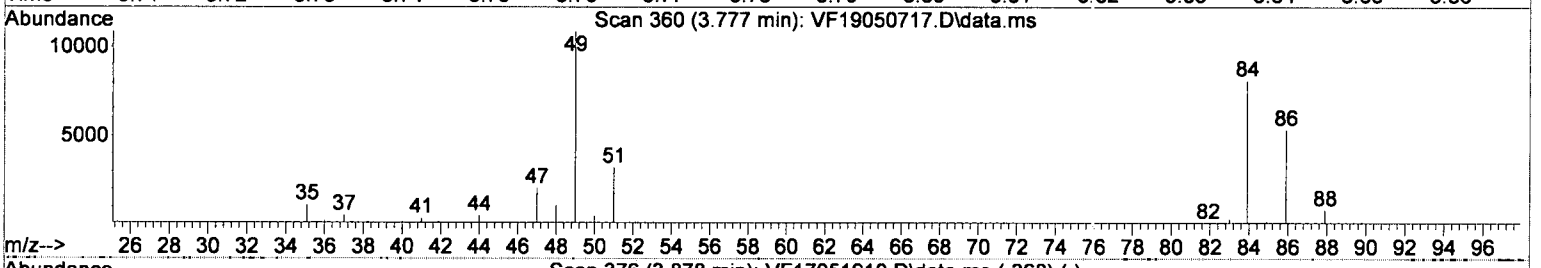
Int =(-)

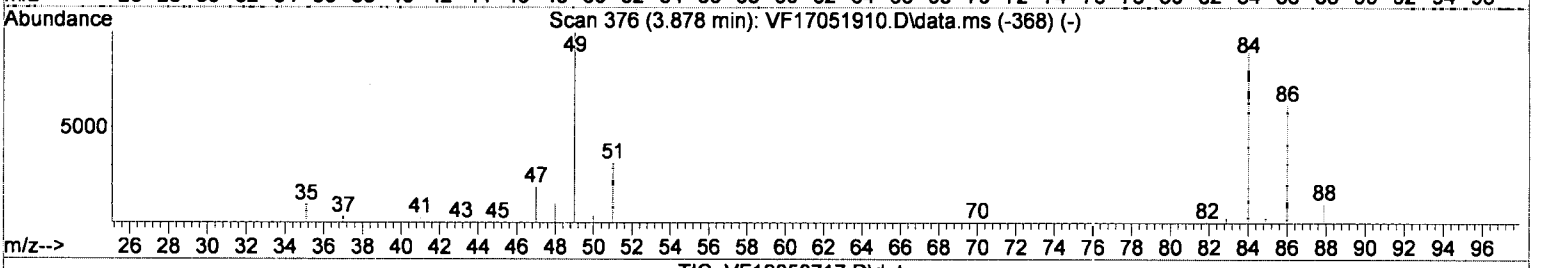
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







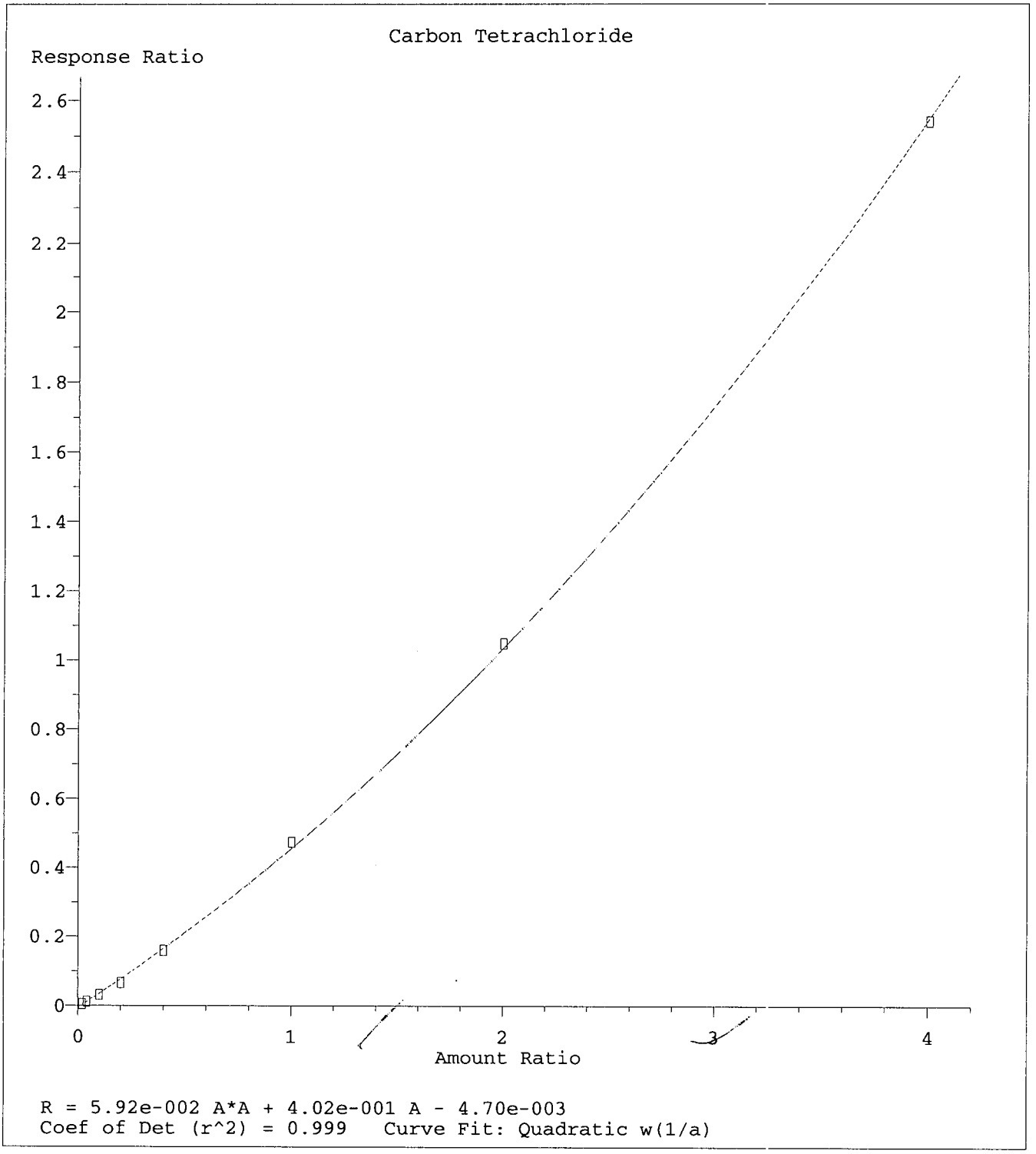
TIC: VF19050717.D\data.ms

(12) Methylene Chloride

3.777min (+0.004) 0.26 ug/L m

response 14573

Ion	Exp%	Act%
83.90	100	100
49.00	121.90	133.43
85.90	60.10	65.74
0.00	0.00	0.00



Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

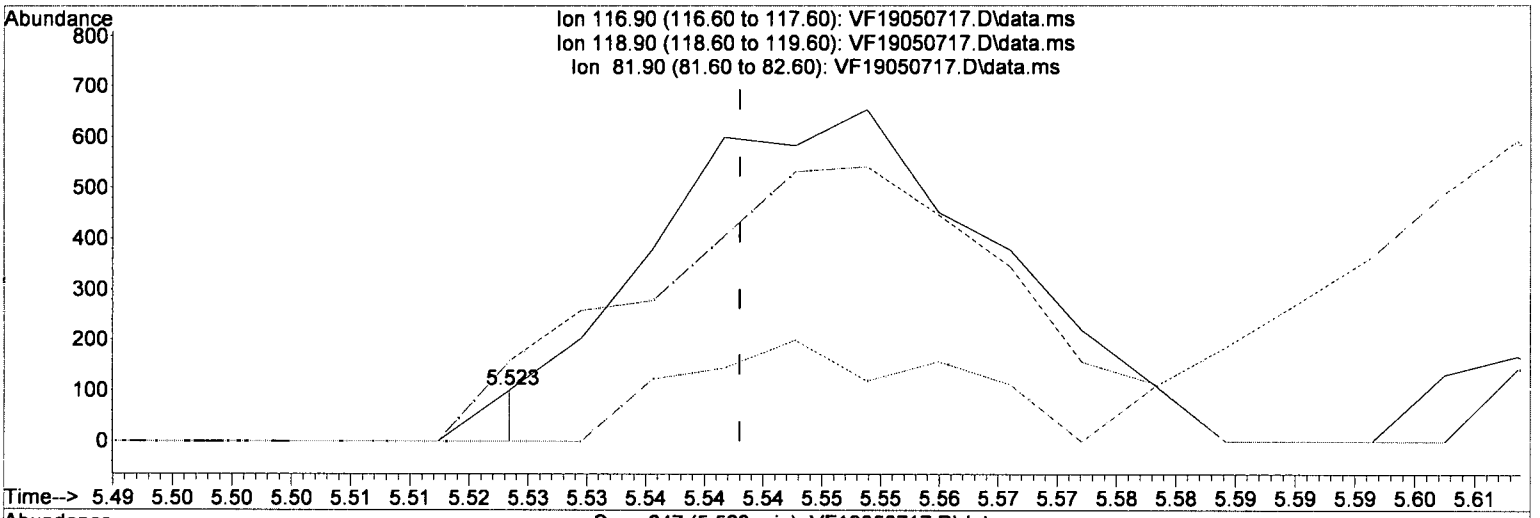
IuT = 0.60

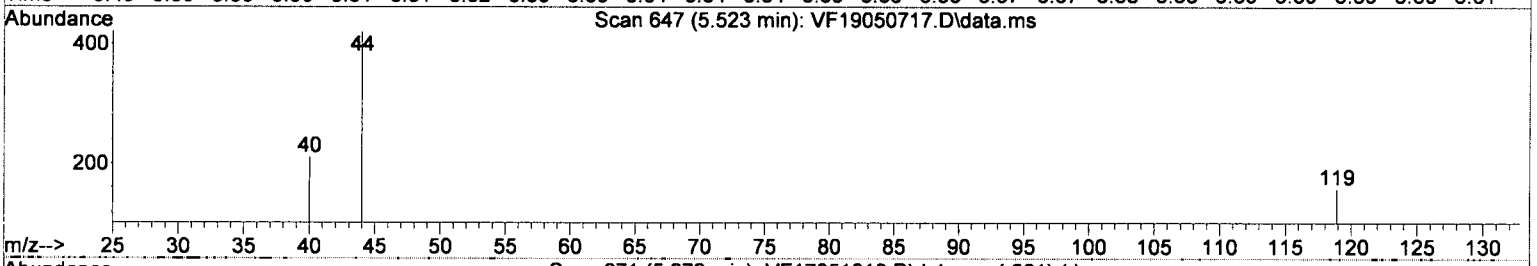
↑ MDL MRL

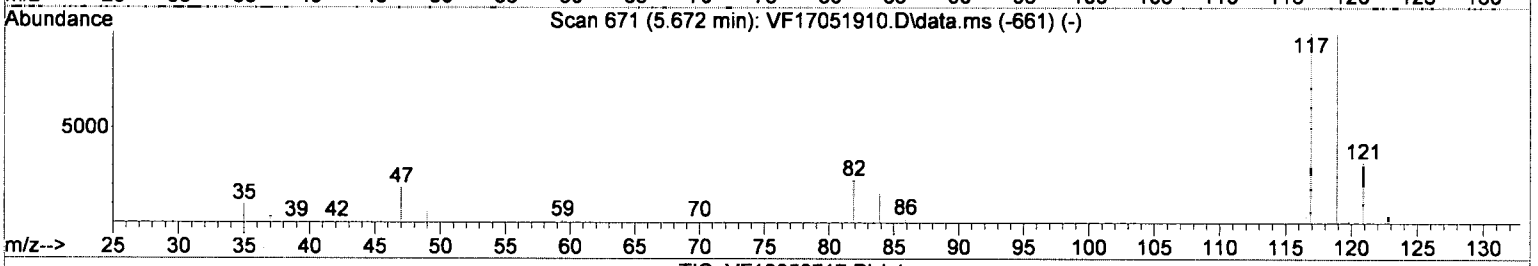
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







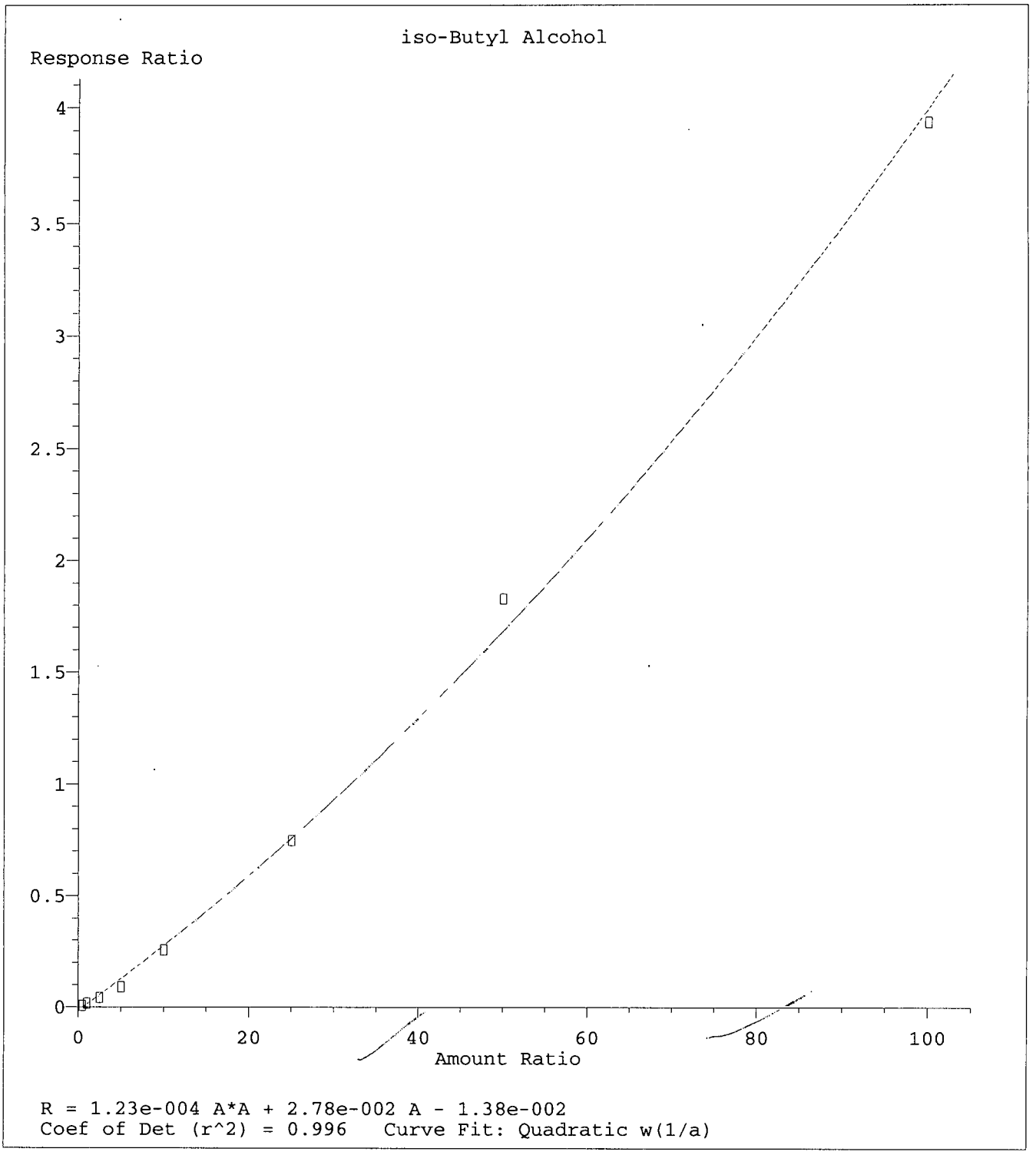
TIC: VF19050717.D\data.ms

(23) Carbon Tetrachloride

5.523min (-0.020) 0.60 ug/L m

response 37

Ion	Exp%	Act%
116.90	100	100
118.90	93.00	156.44#
81.90	23.10	0.00
0.00	0.00	0.00



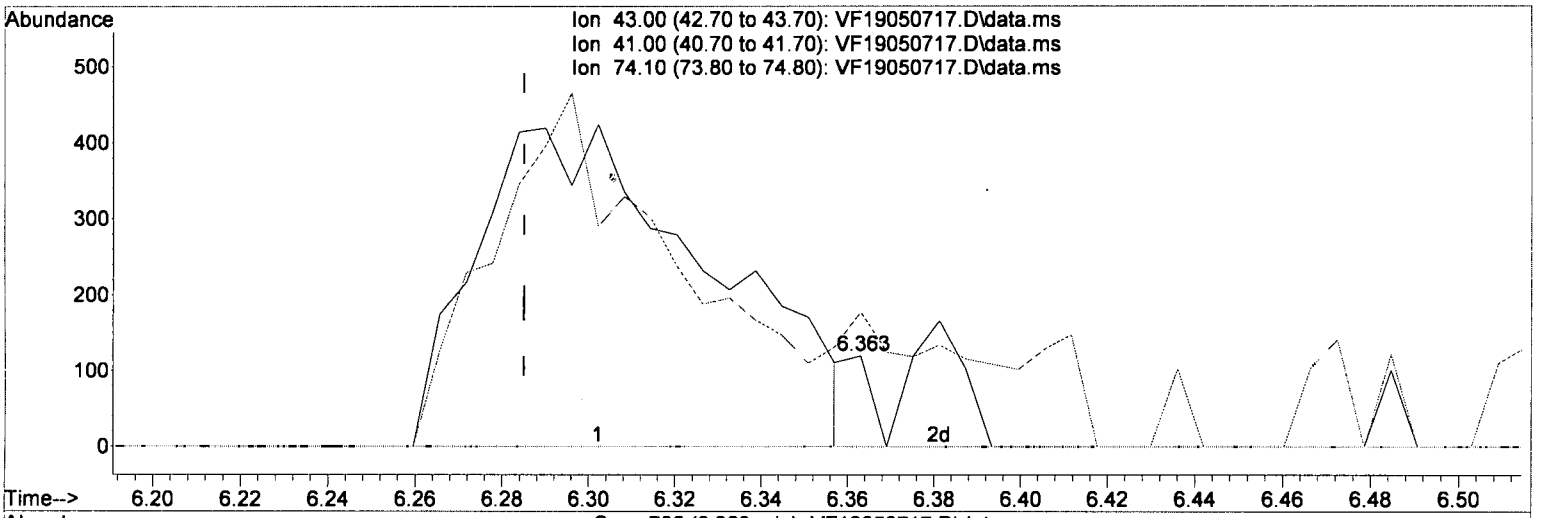
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

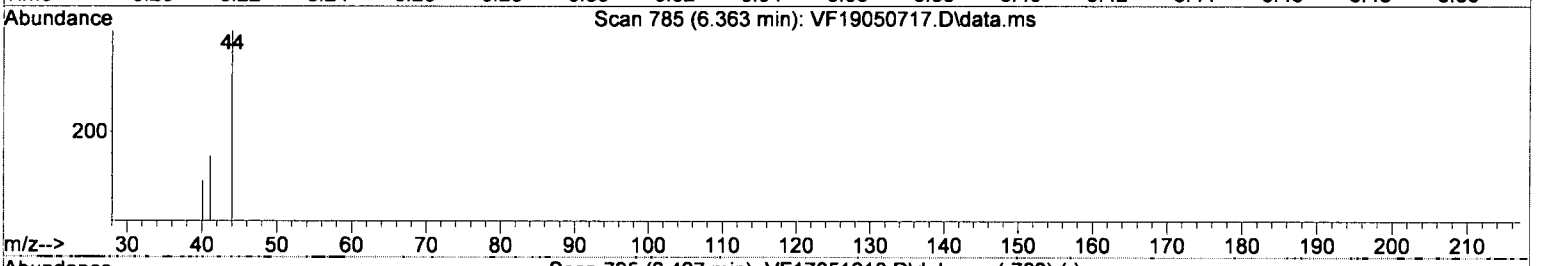
$t_{WT} = 24.97$

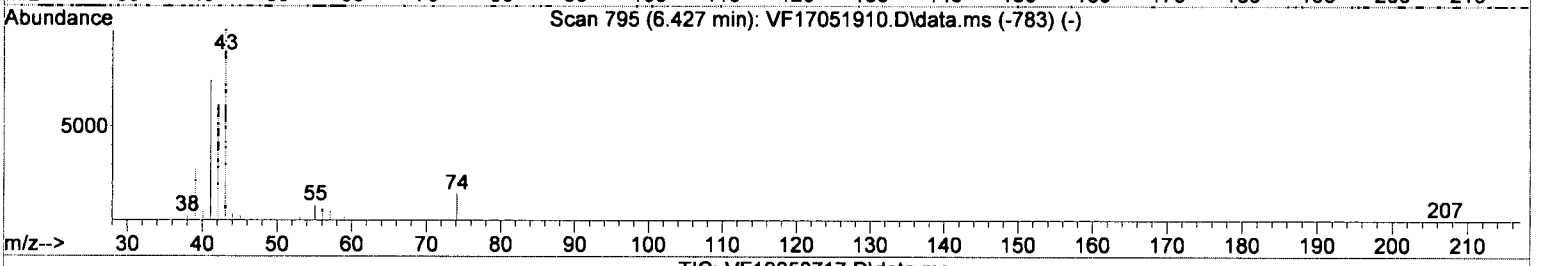
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







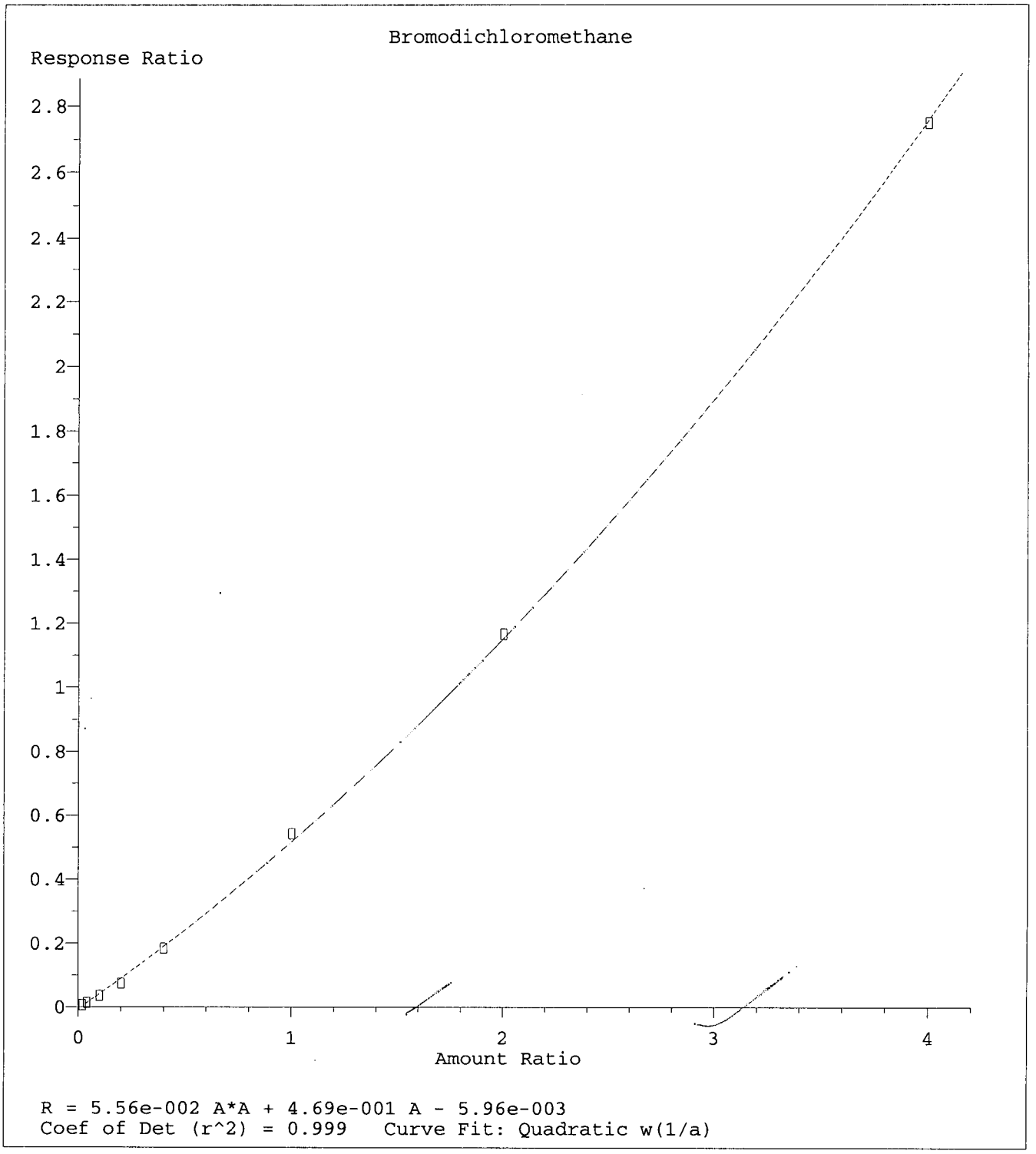
TIC: VF19050717.D\data.ms

(31) iso-Butyl Alcohol

6.363min (+0.078) 24.97 ug/L m

response 44

Ion	Exp%	Act%
43.00	100	100
41.00	78.40	148.33#
74.10	9.40	0.00
0.00	0.00	0.00



Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

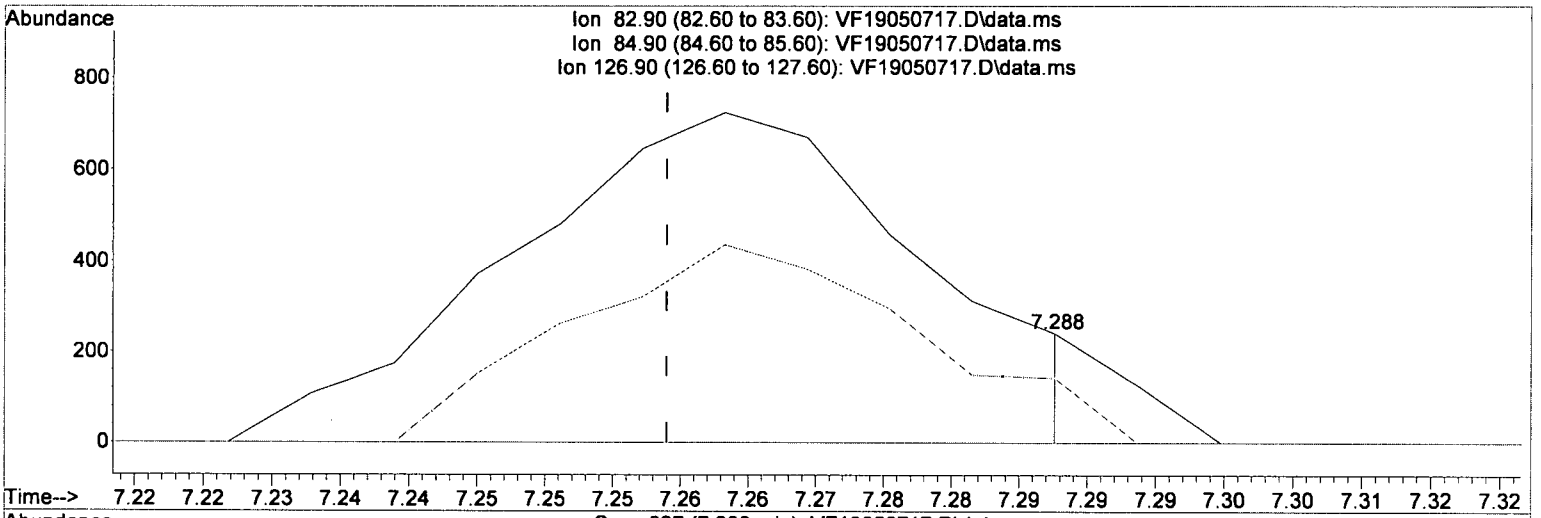
Int = 0.65

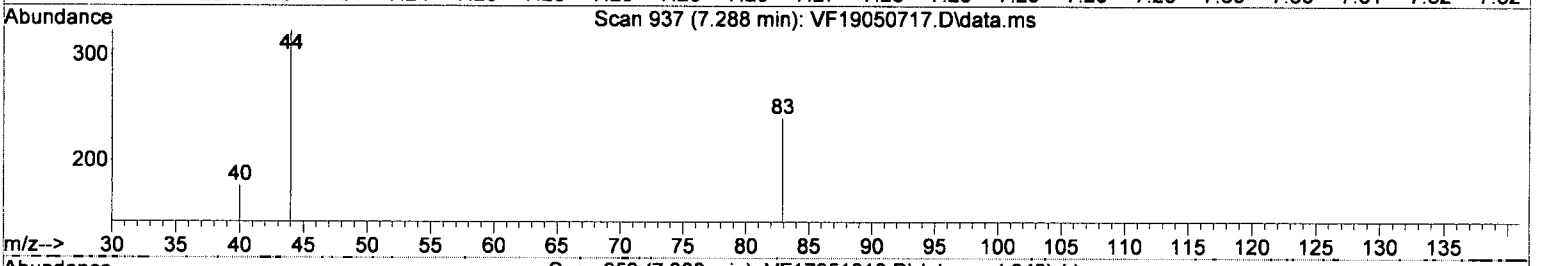
9 MDL MRL

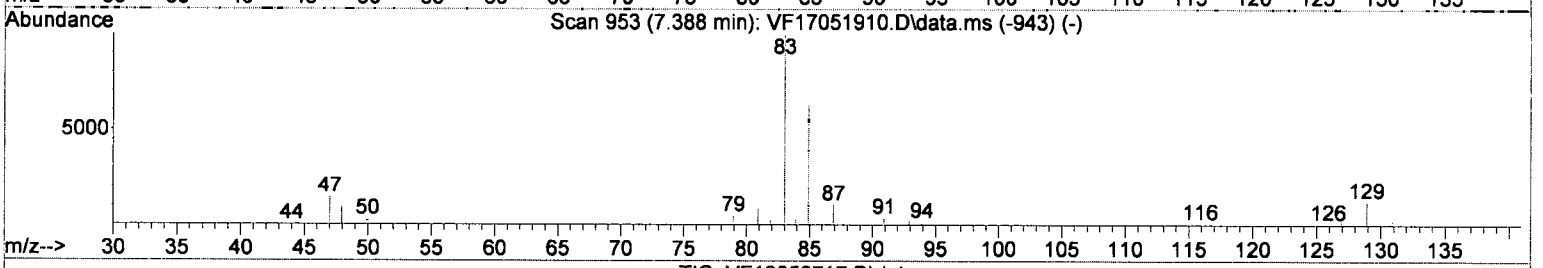
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







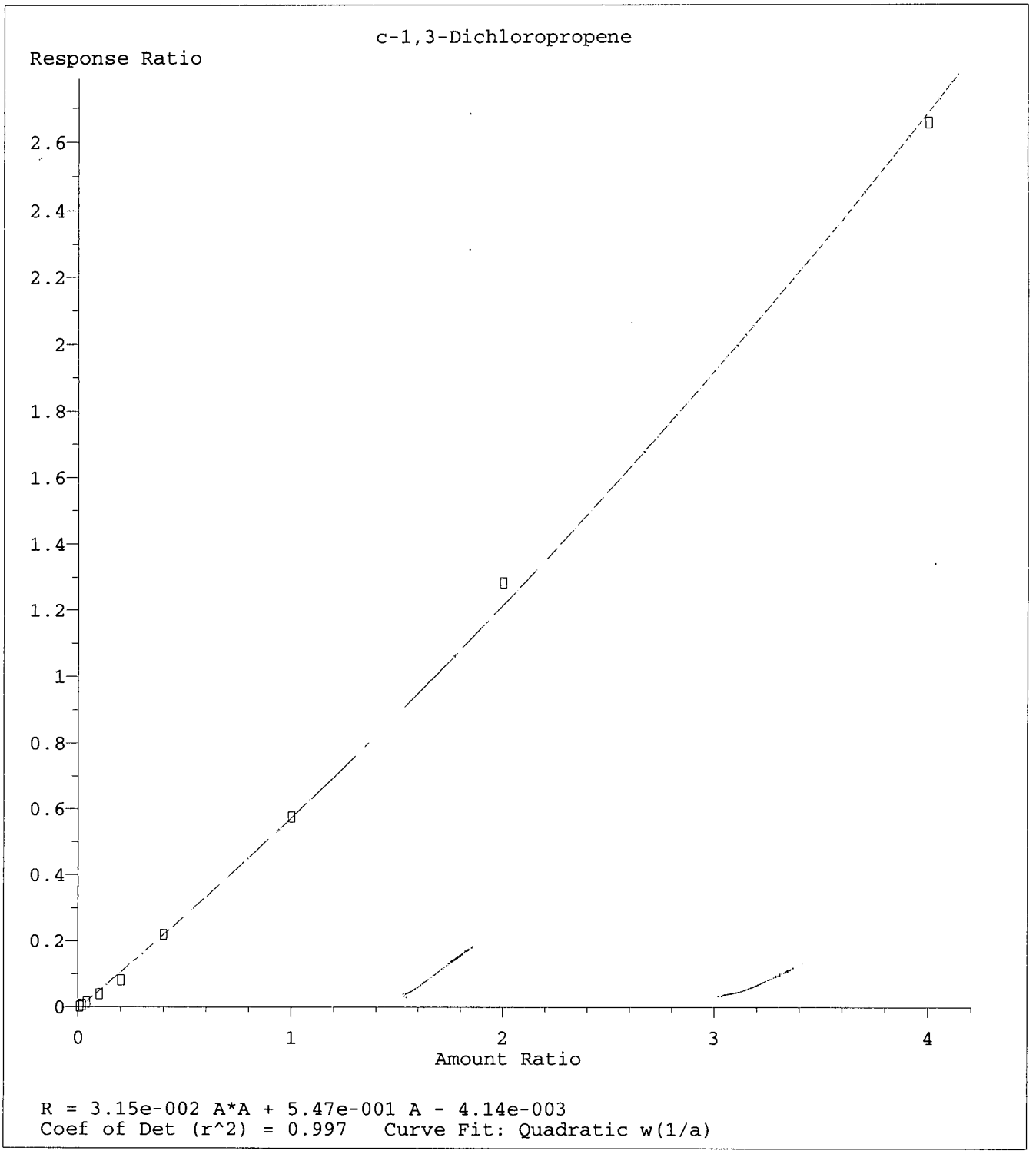
TIC: VF19050717.D\data.ms

(36) Bromodichloromethane

7.288min (+0.029) 0.65 ug/L m

response 46

Ion	Exp%	Act%
82.90	100	100
84.90	63.00	59.17
126.90	9.30	0.00
0.00	0.00	0.00



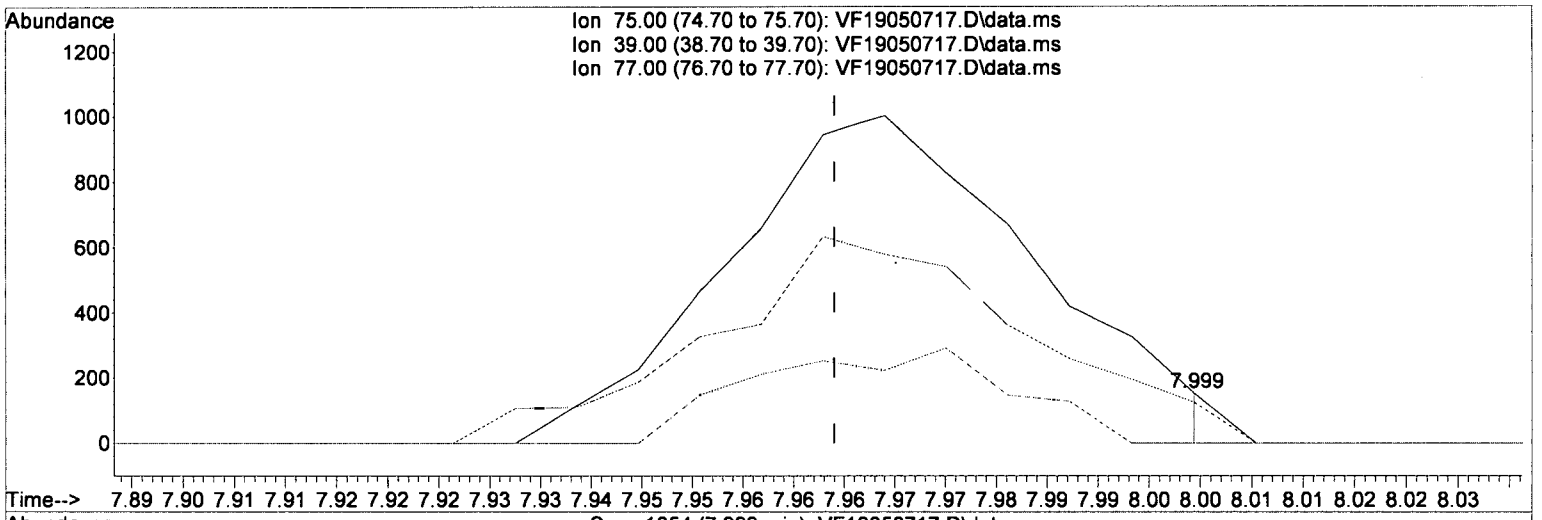
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

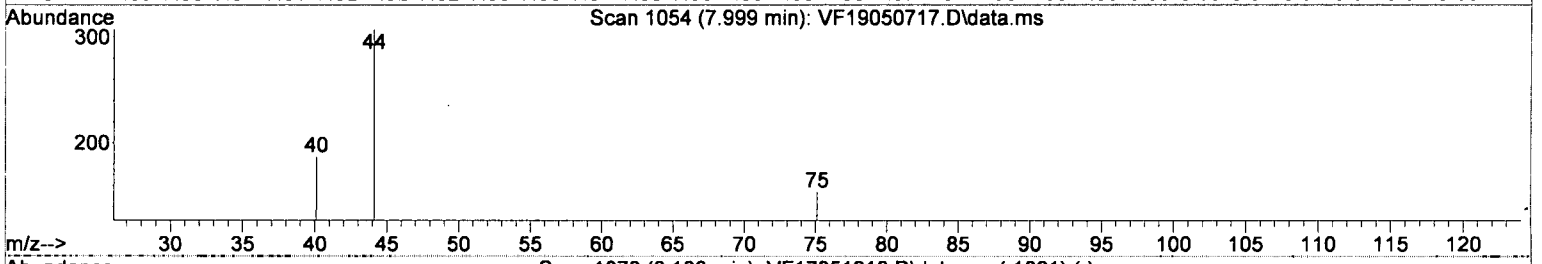
Int = 0.38

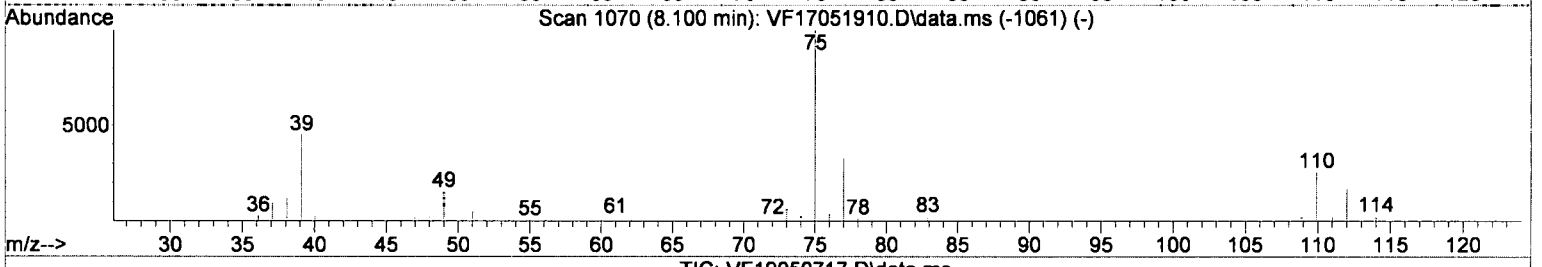
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







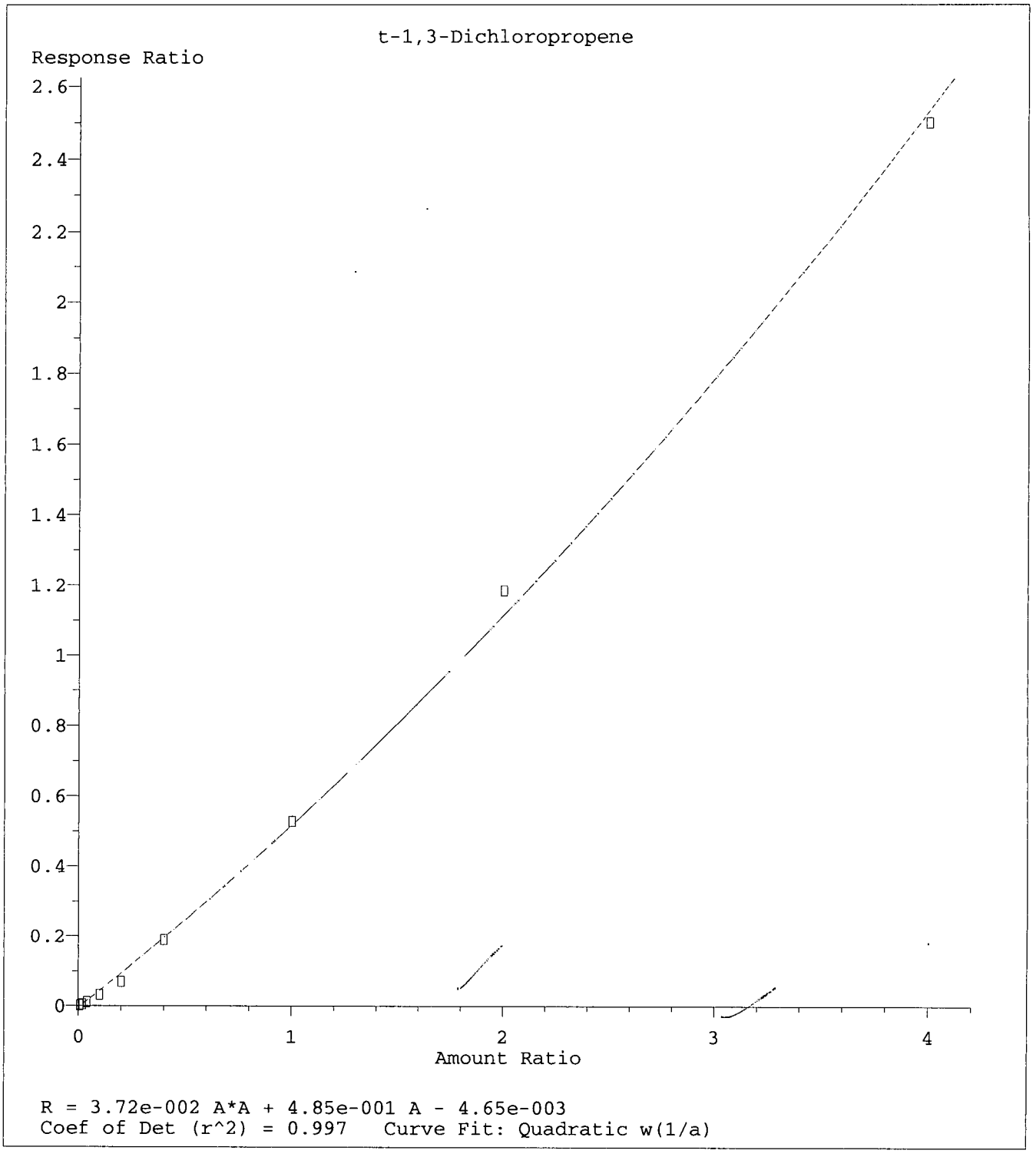
TIC: VF19050717.D\data.ms

(38) c-1,3-Dichloropropene

7.999min (+0.035) 0.38 ug/L m

response 0

Ion	Exp%	Act%
75.00	100	0.00
39.00	46.20	0.00#
77.00	33.30	0.00#
0.00	0.00	0.00



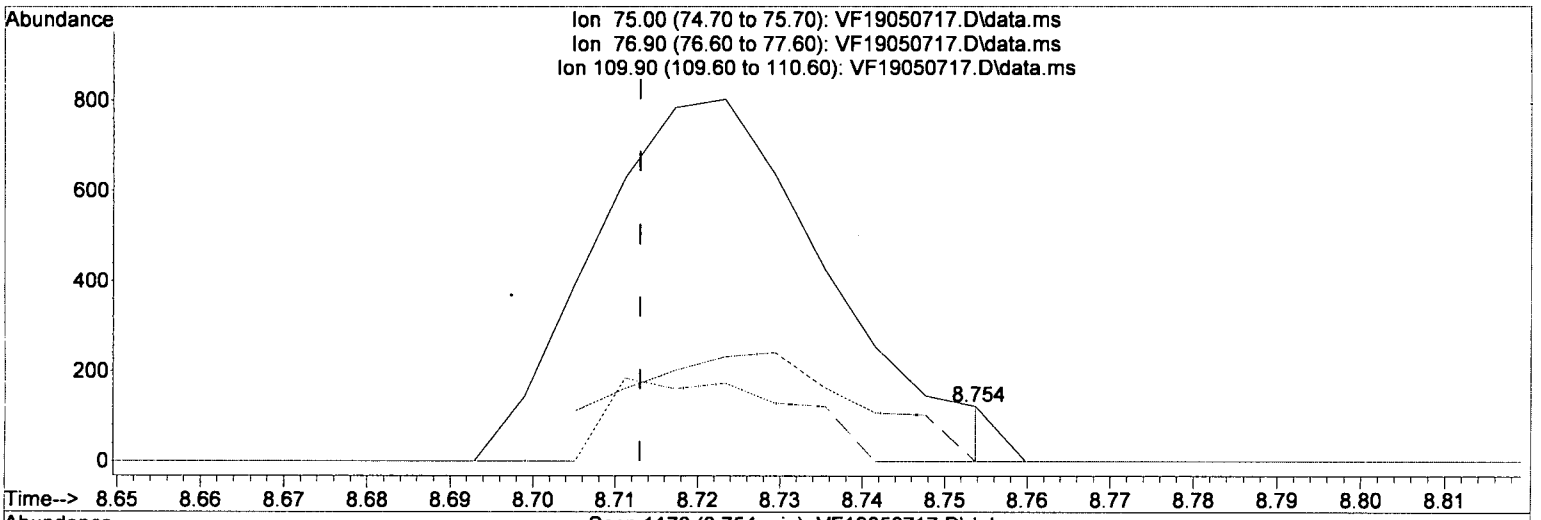
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

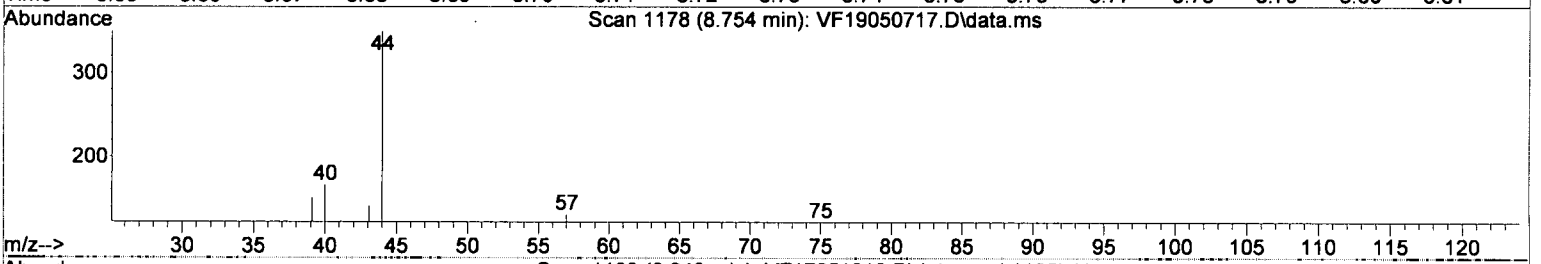
Int = 0.48

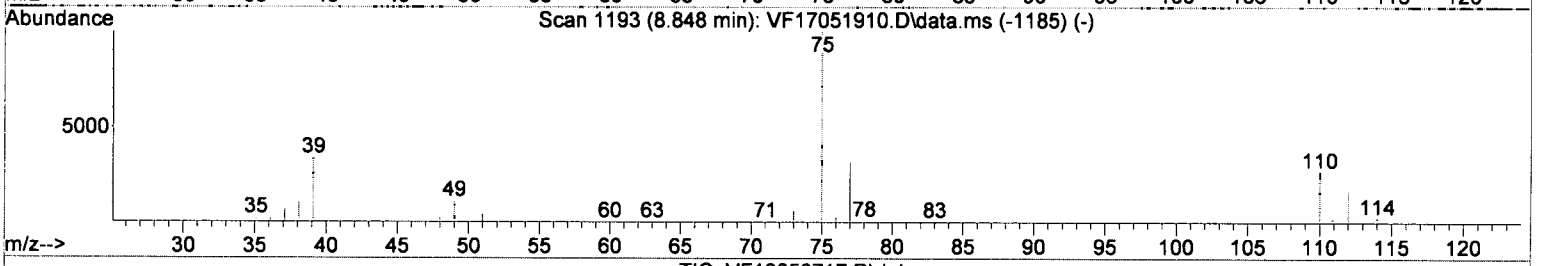
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







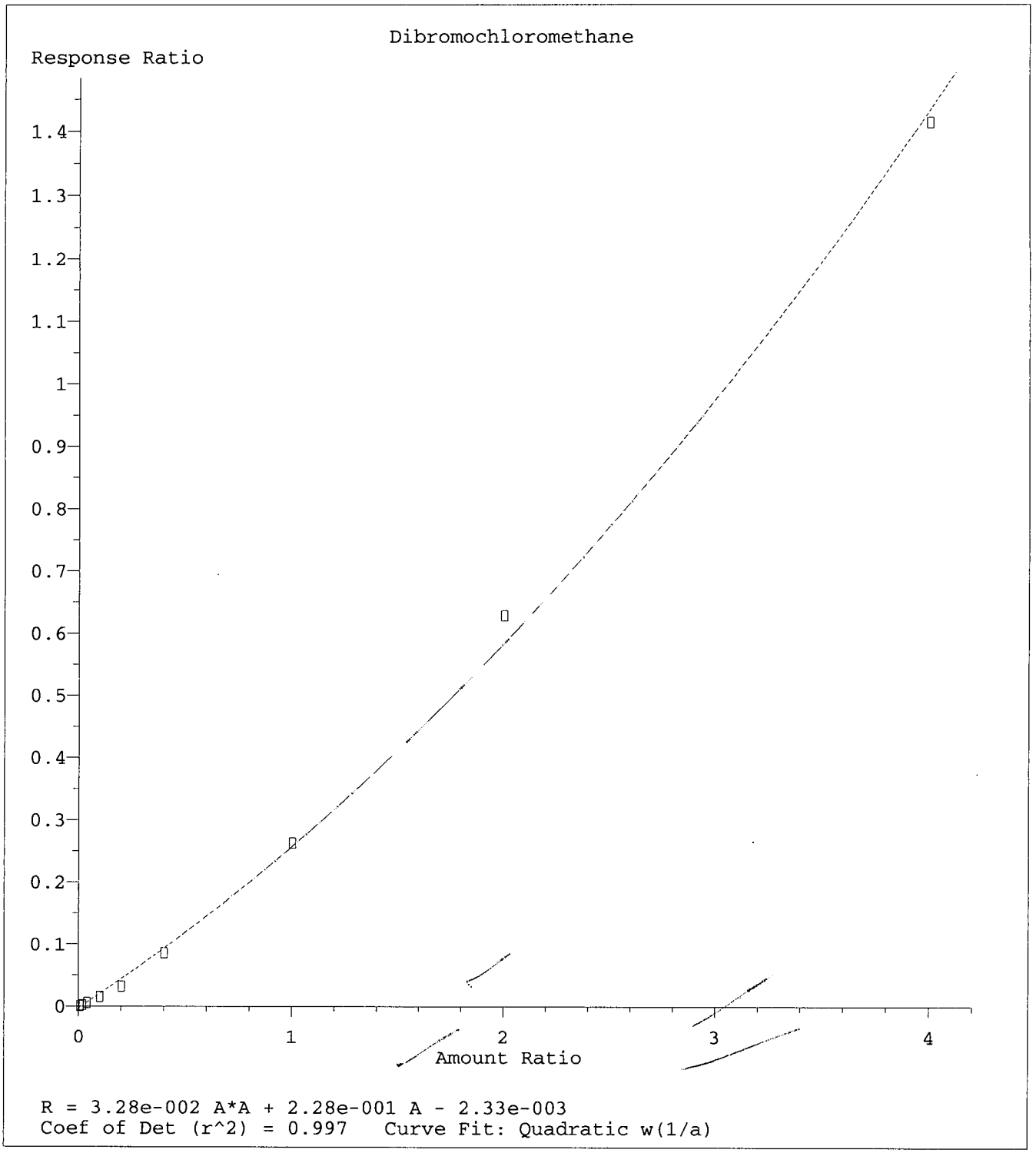
TIC: VF19050717.D\data.ms

(43) t-1,3-Dichloropropene

8.754min (+0.041) 0.48 ug/L m

response 0

Ion	Exp%	Act%
75.00	100	0.00
76.90	29.50	0.00
109.90	26.40	0.00
0.00	0.00	0.00



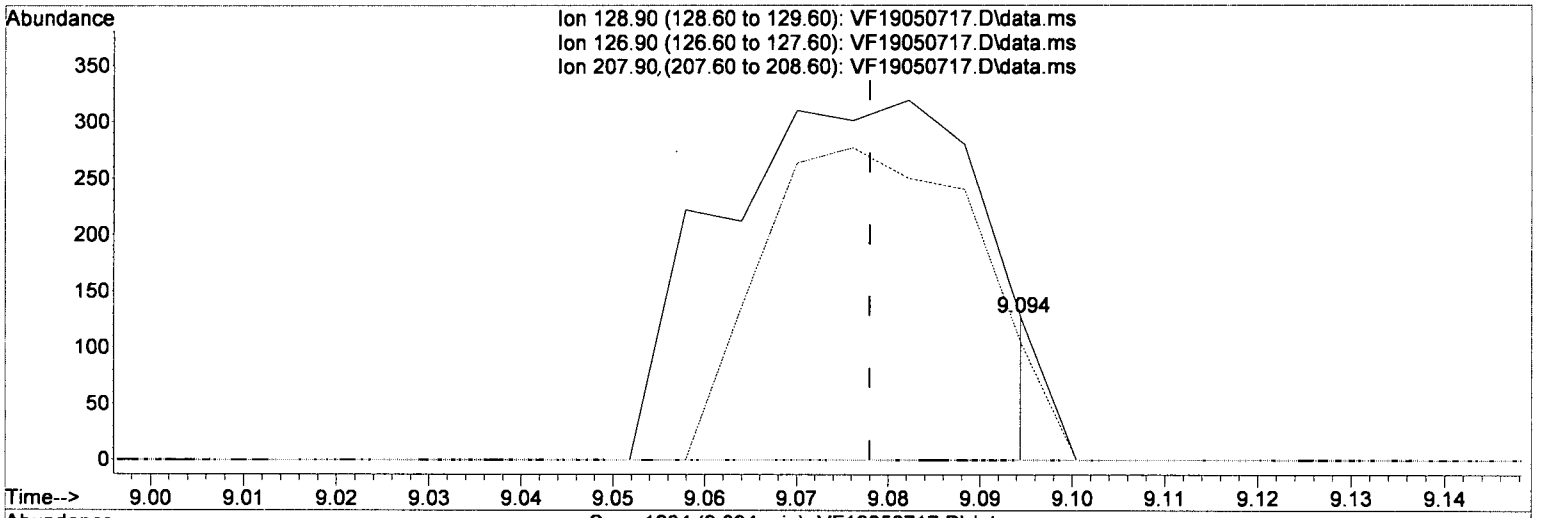
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

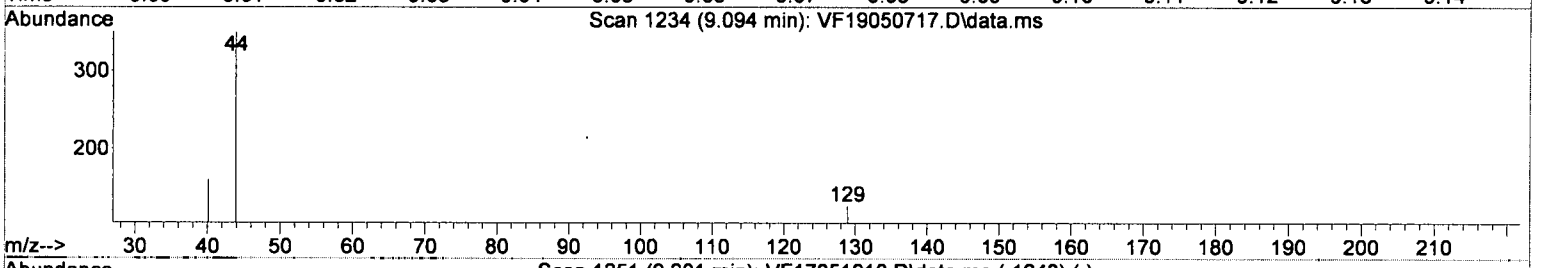
Int= 0.51

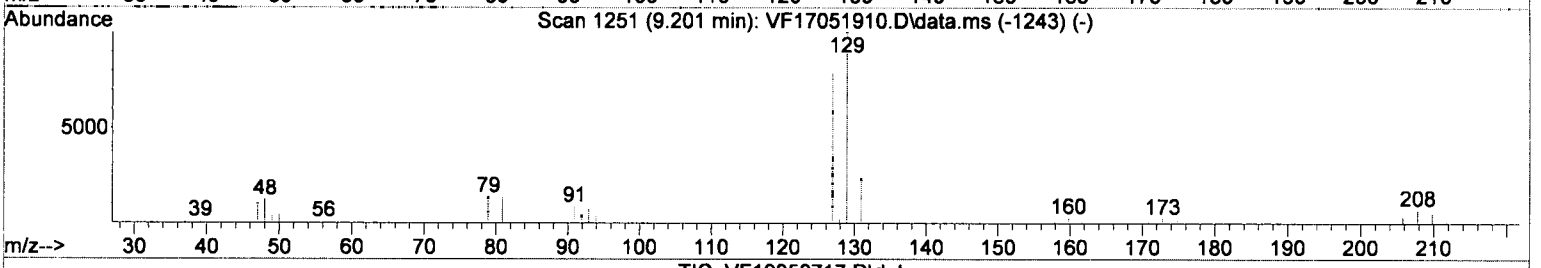
Quantitation Report (Qedit)

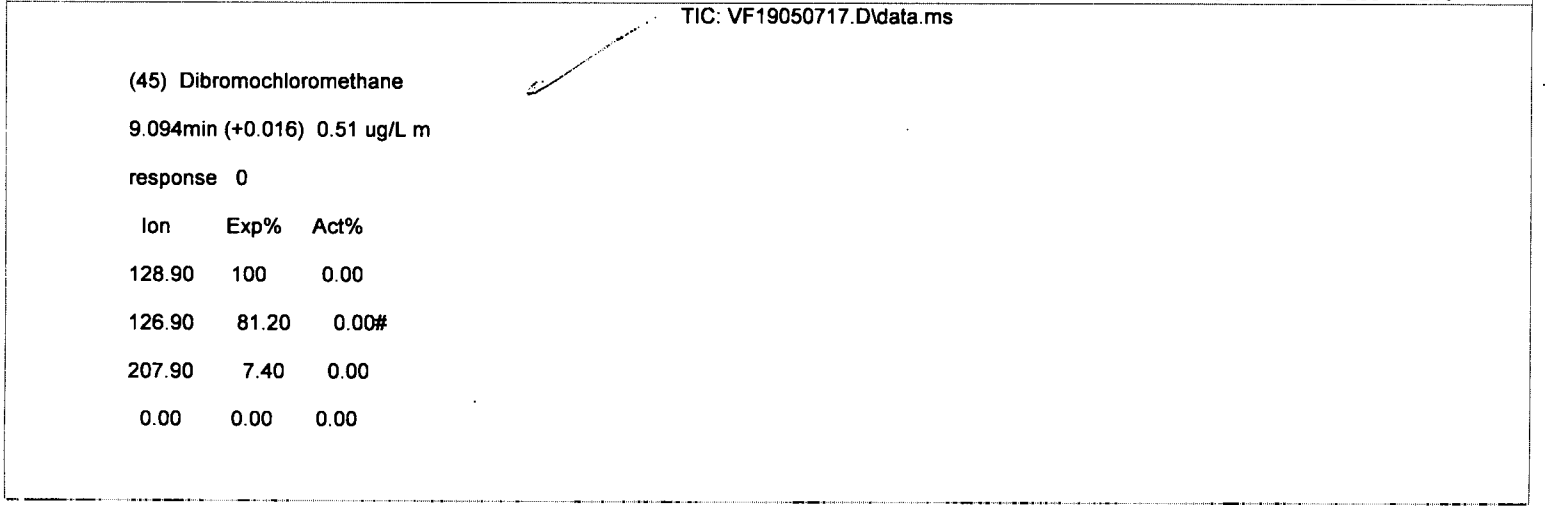
Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







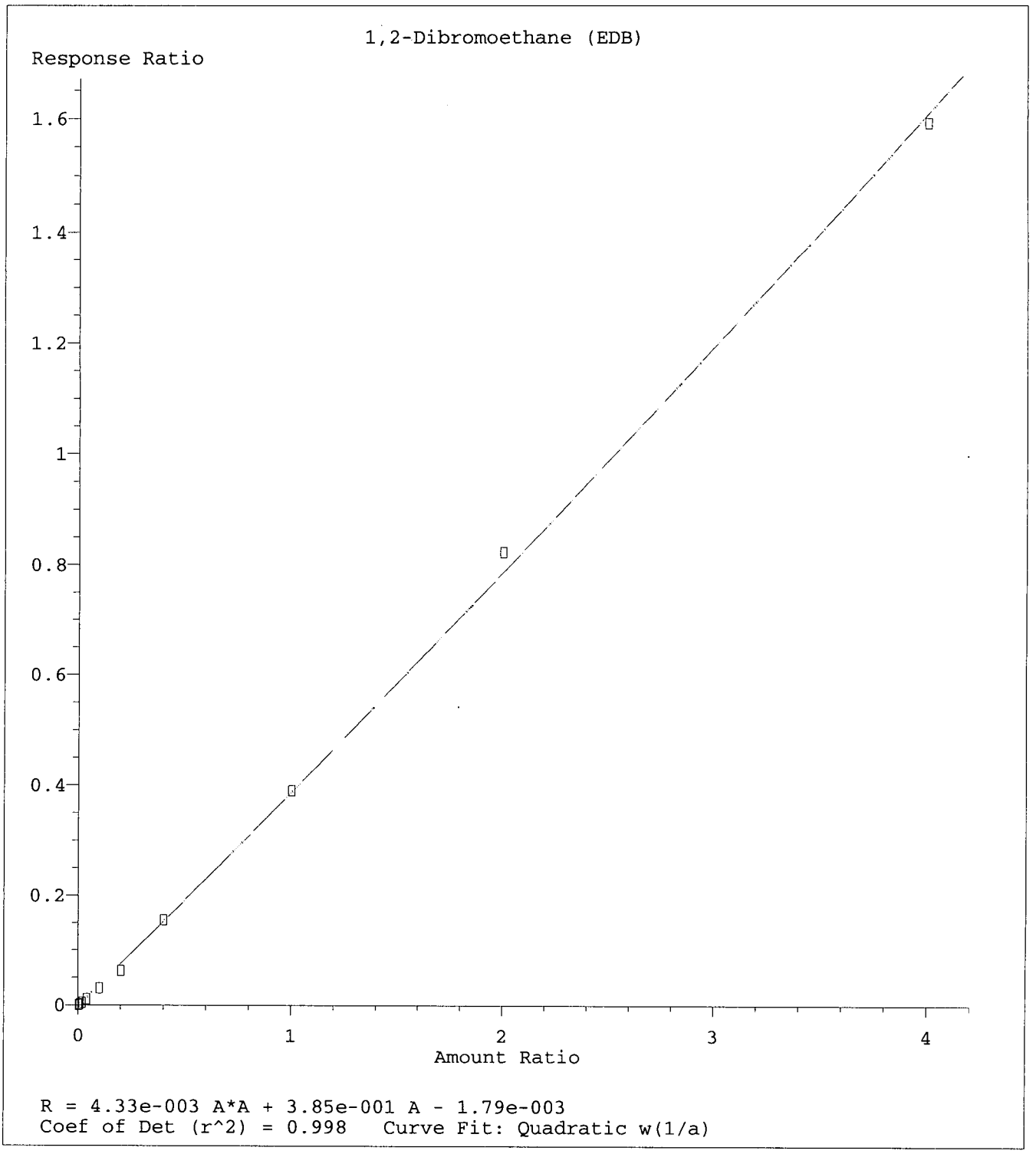


(45) Dibromochloromethane

9.094min (+0.016) 0.51 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



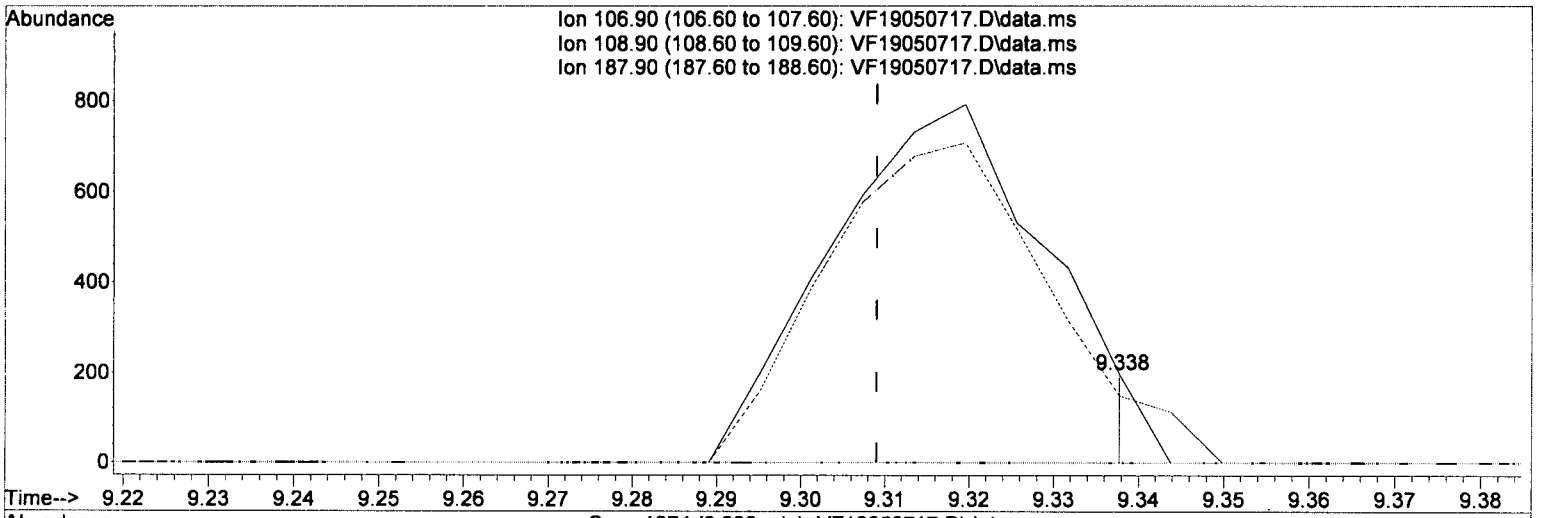
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

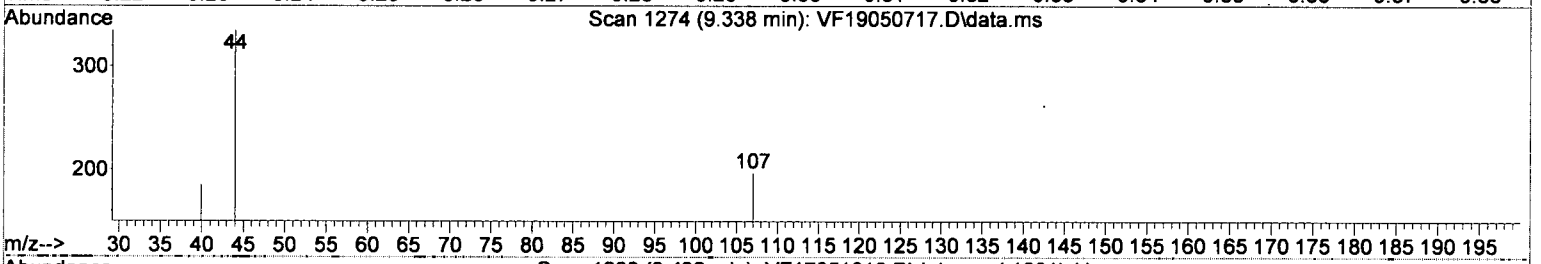
Int= 0.23

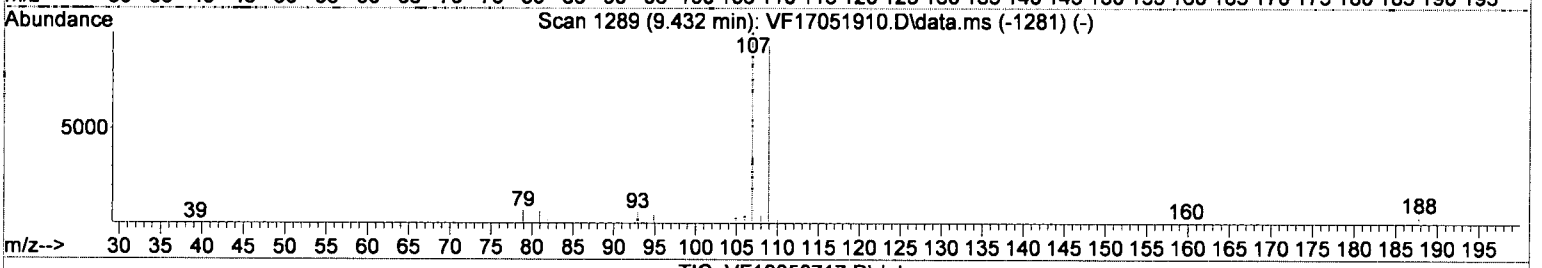
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







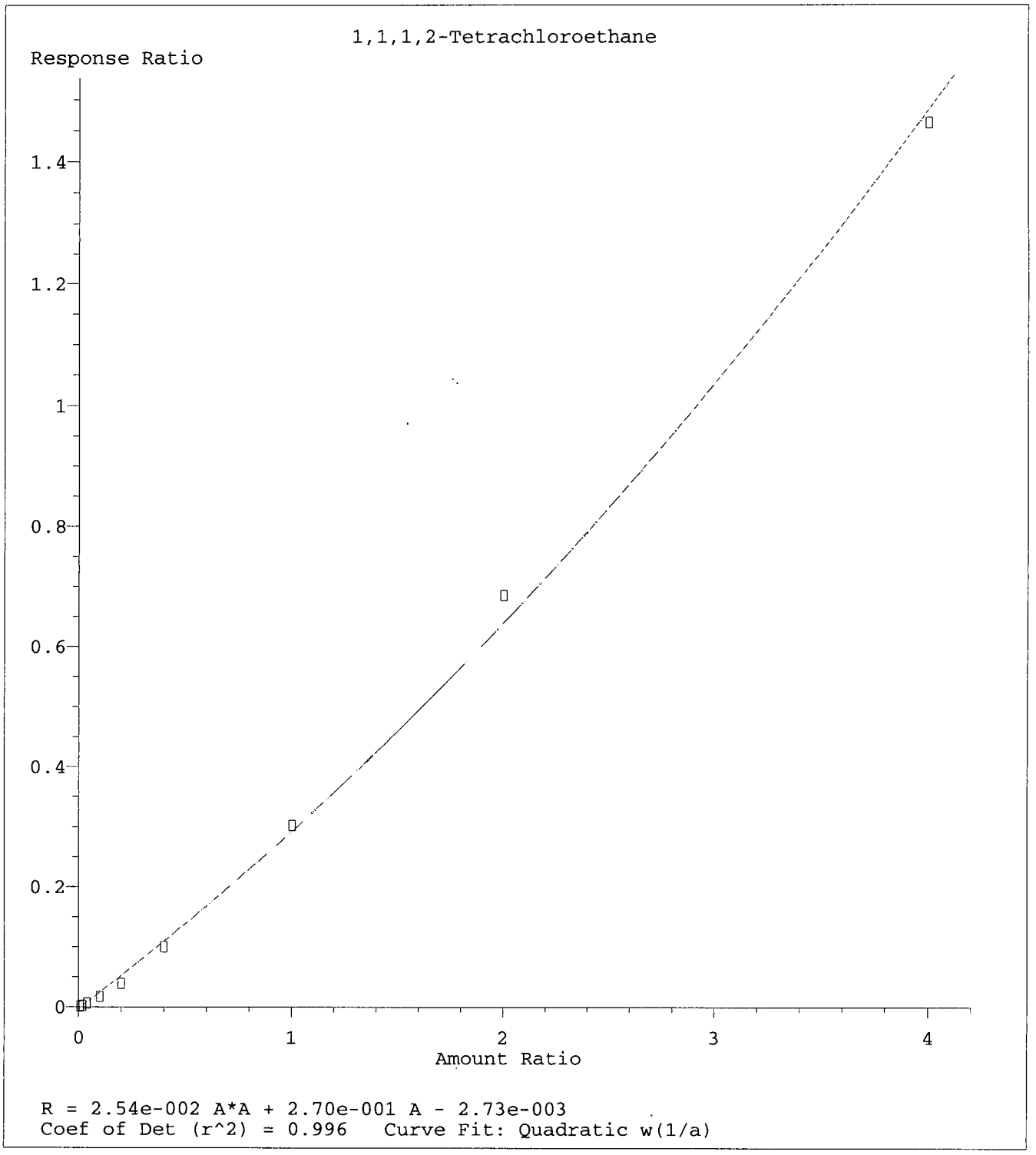
TIC: VF19050717.D\data.ms

(47) 1,2-Dibromoethane (EDB)

9.338min (+0.029) 0.23 ug/L m

response 0

Ion	Exp%	Act%
106.90	100	0.00
108.90	93.90	0.00#
187.90	4.70	0.00
0.00	0.00	0.00



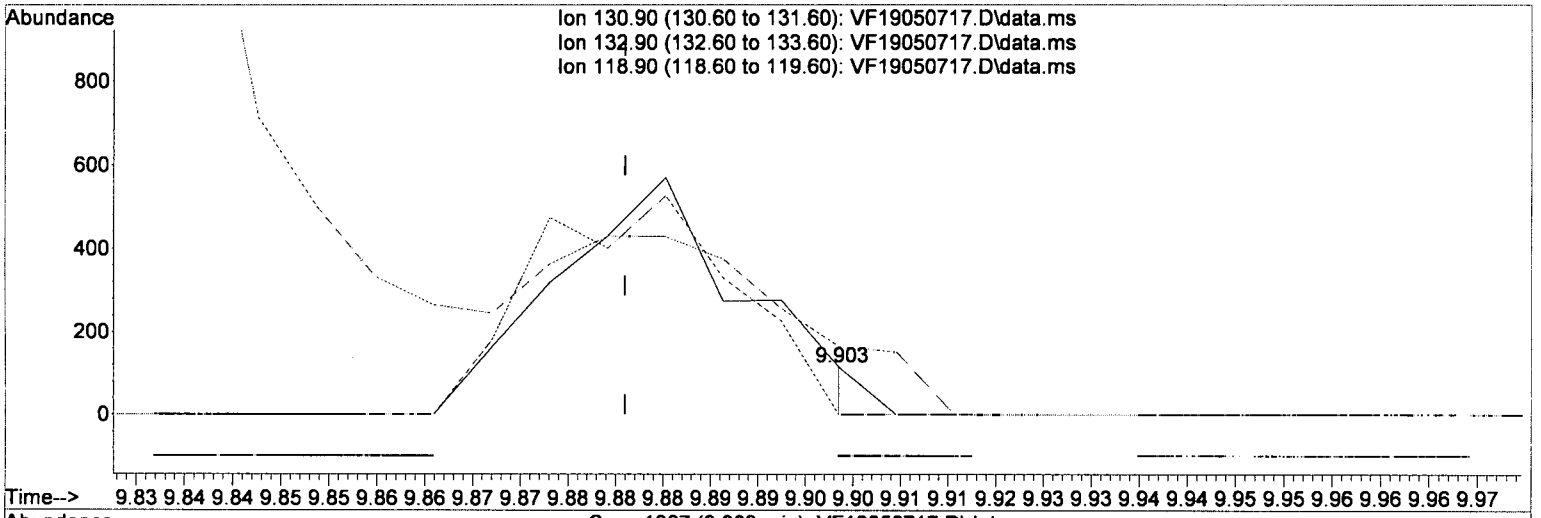
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

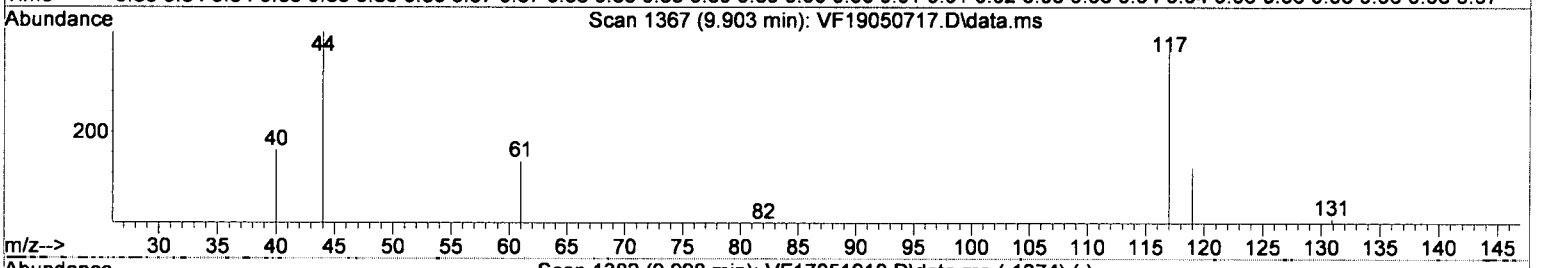
Int = 0.5 ppm MRL

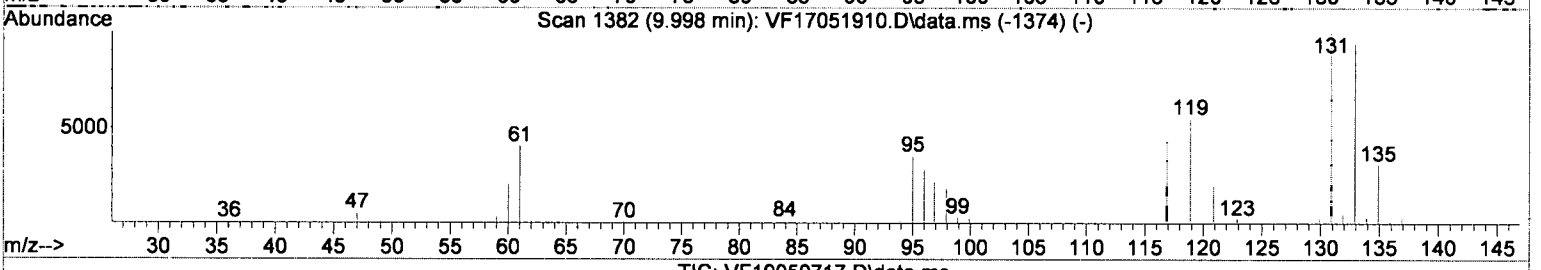
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







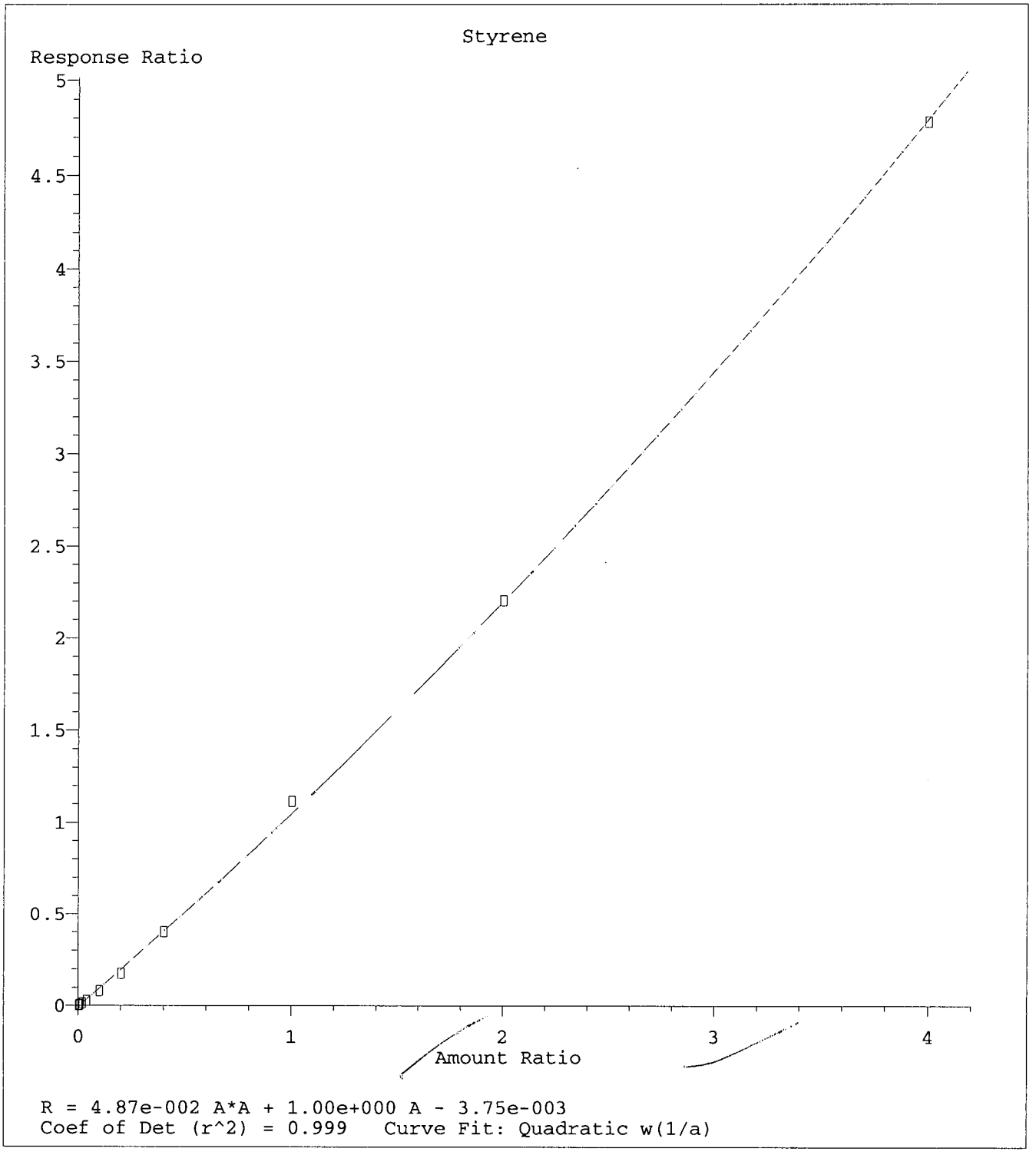
TIC: VF19050717.D\data.ms

(51) 1,1,1,2-Tetrachloroethane

9.903min (+0.022) 0.50 ug/L m

response 0

Ion	Exp%	Act%
130.90	100	0.00
132.90	95.60	0.00#
118.90	62.00	0.00#
0.00	0.00	0.00



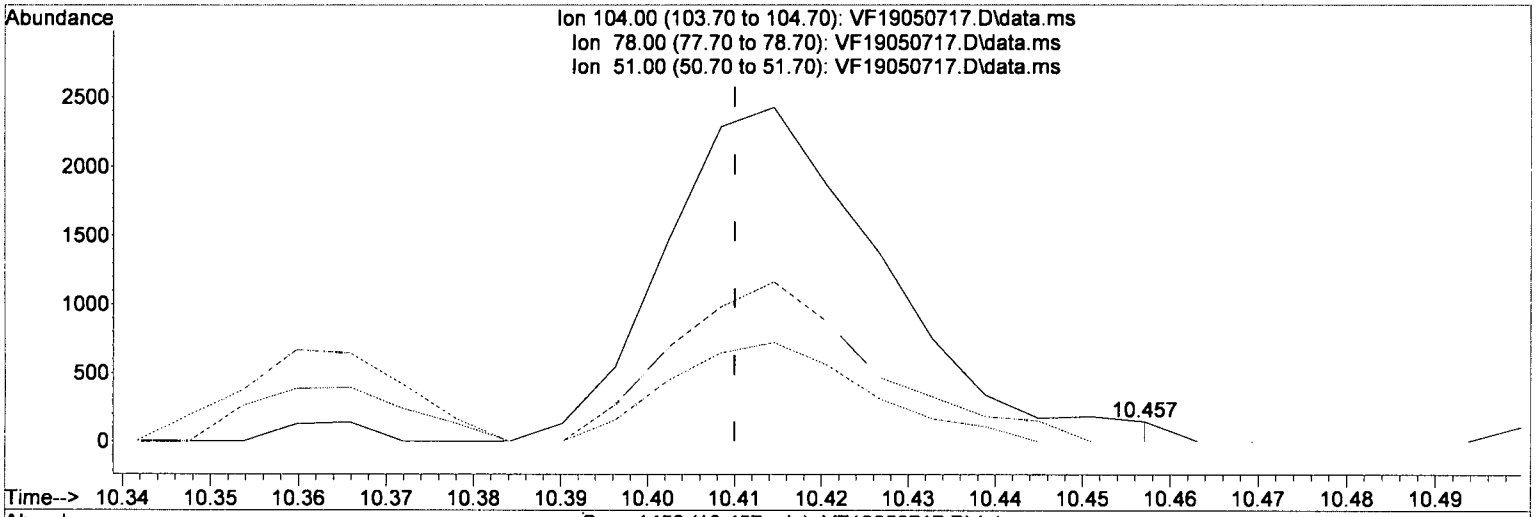
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

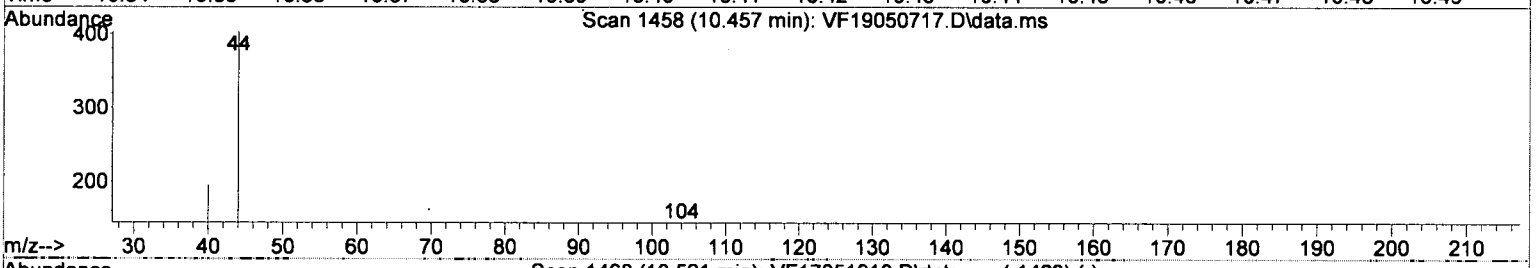
Int = 0.19

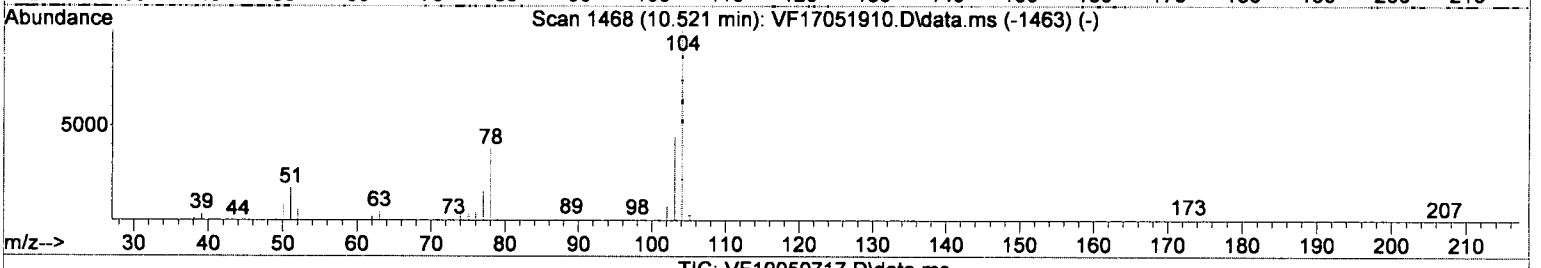
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







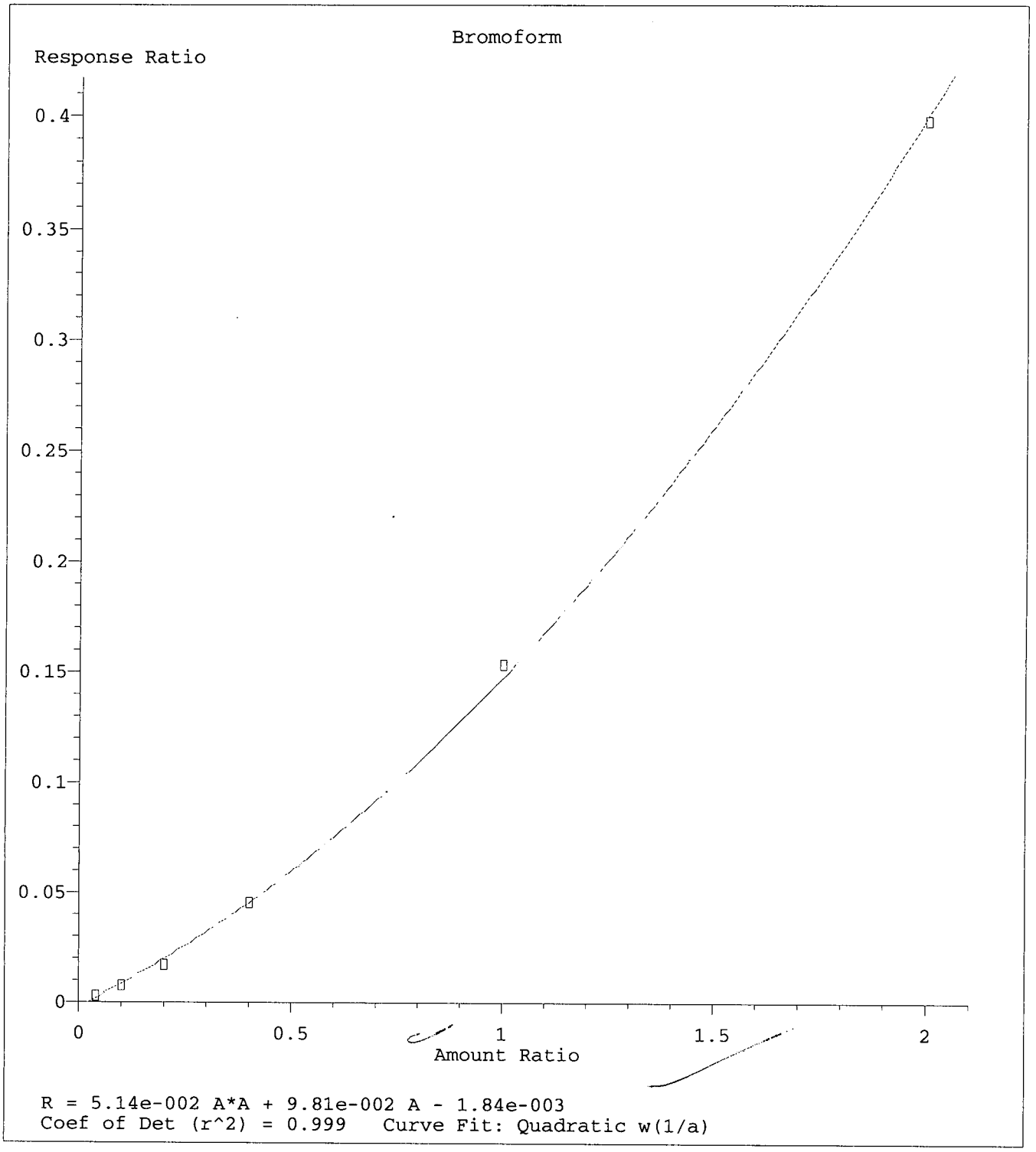
TIC: VF19050717.D\data.ms

(54) Styrene

10.457min (+0.047) 0.19 ug/L m

response 0

Ion	Exp%	Act%
104.00	100	0.00
78.00	40.60	0.00#
51.00	21.90	0.00
0.00	0.00	0.00



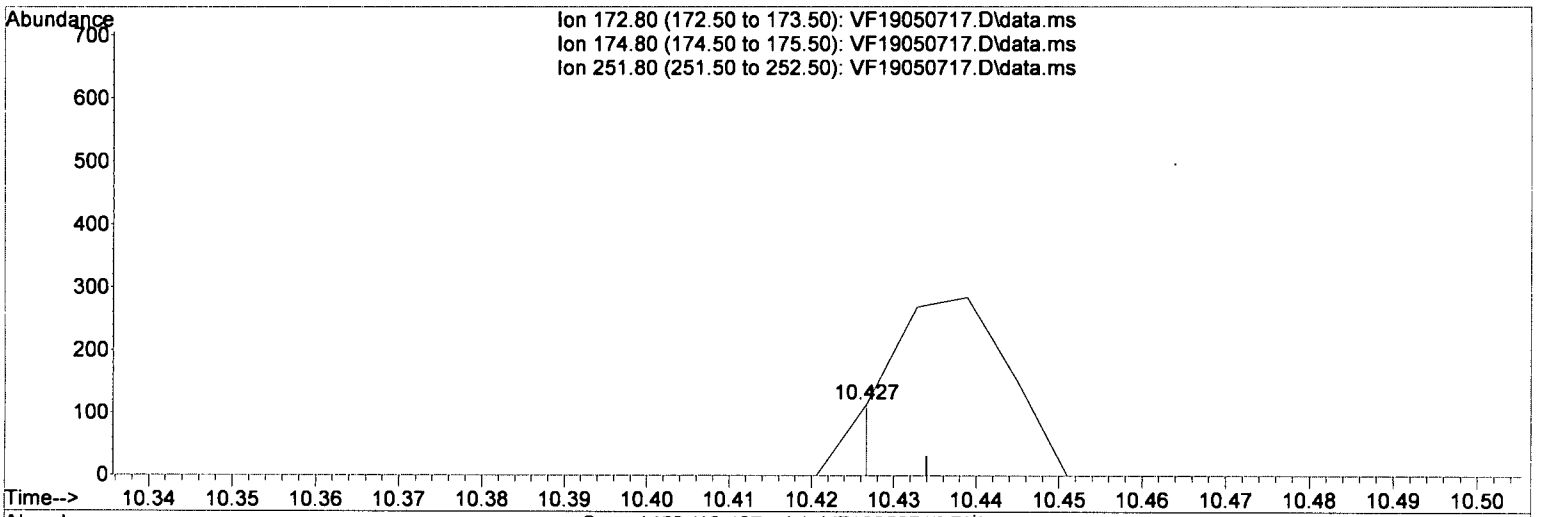
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

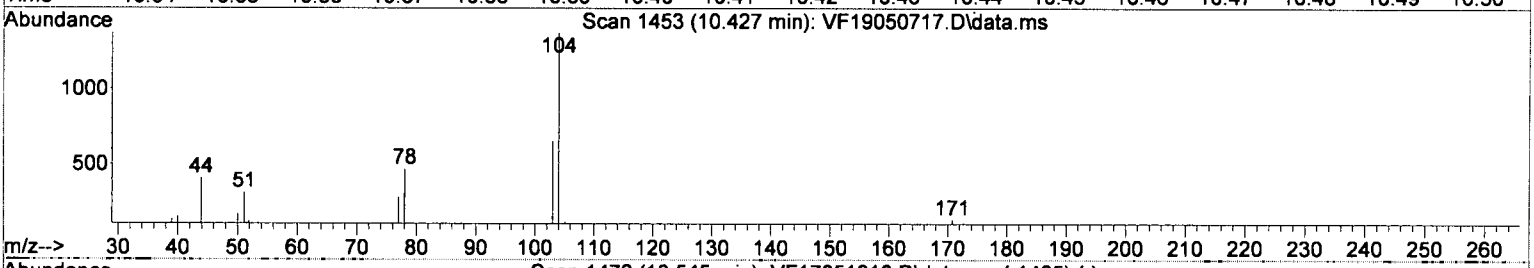
Int= 1.76
1 mol MRL

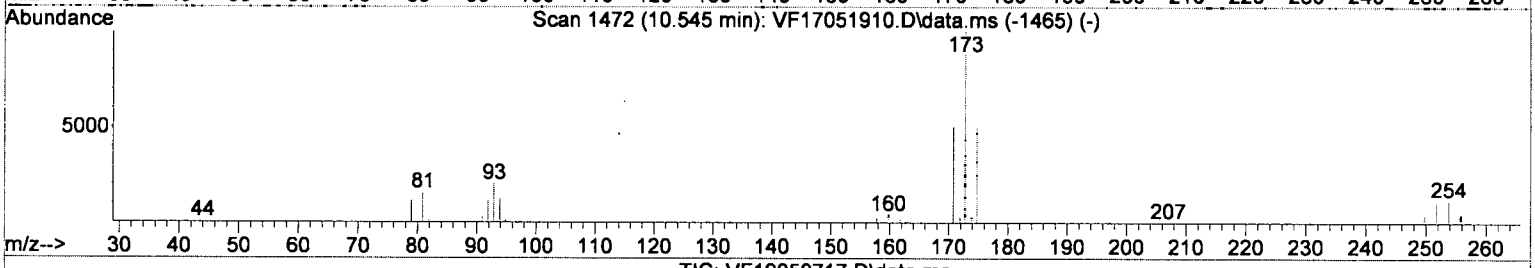
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







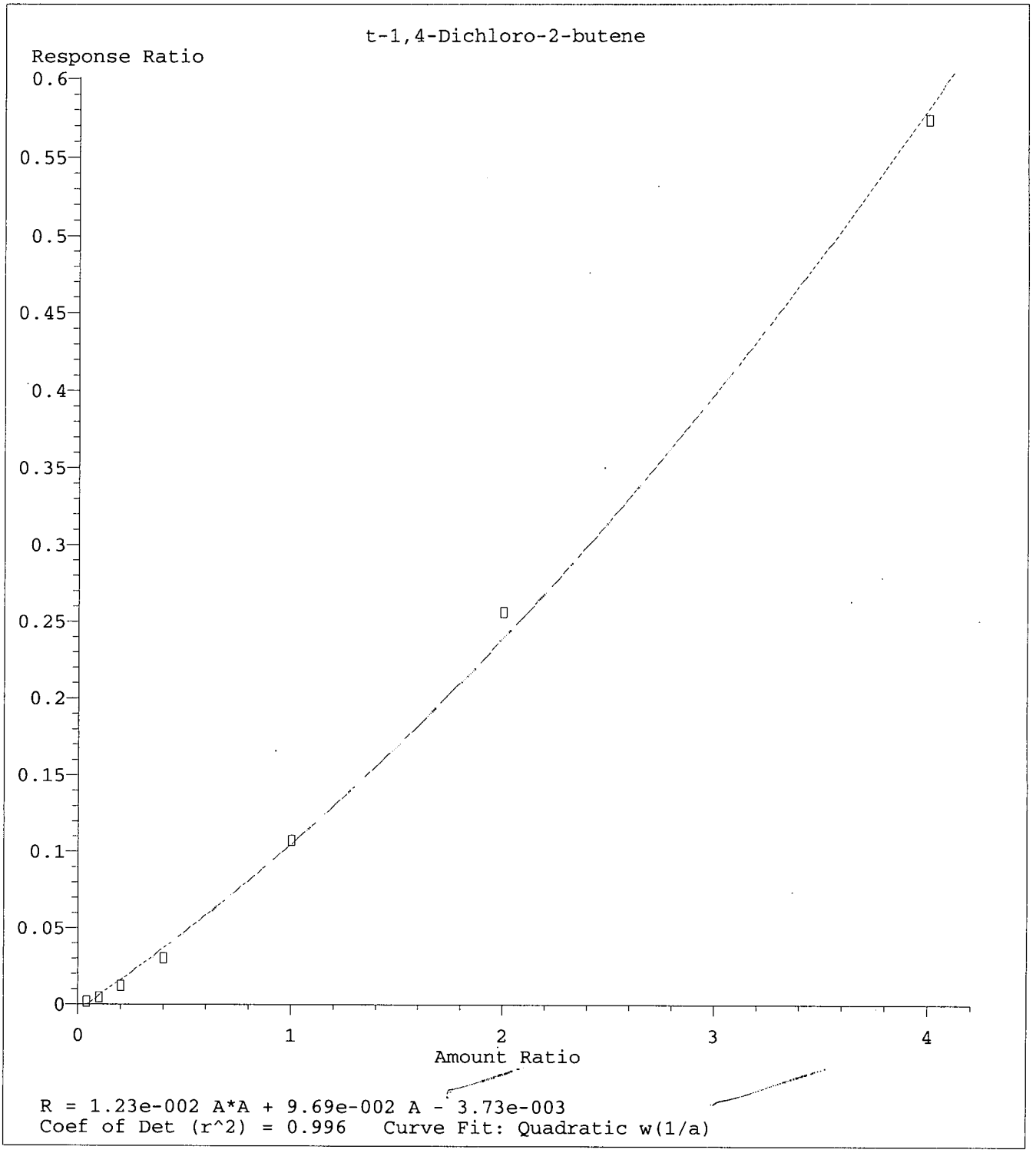
TIC: VF19050717.D\data.ms

(55) Bromoform (P)

10.427min (-0.007) 1.76 ug/L m

response 42

Ion	Exp%	Act%
172.80	100	100
174.80	49.10	0.00#
251.80	12.50	0.00
0.00	0.00	0.00



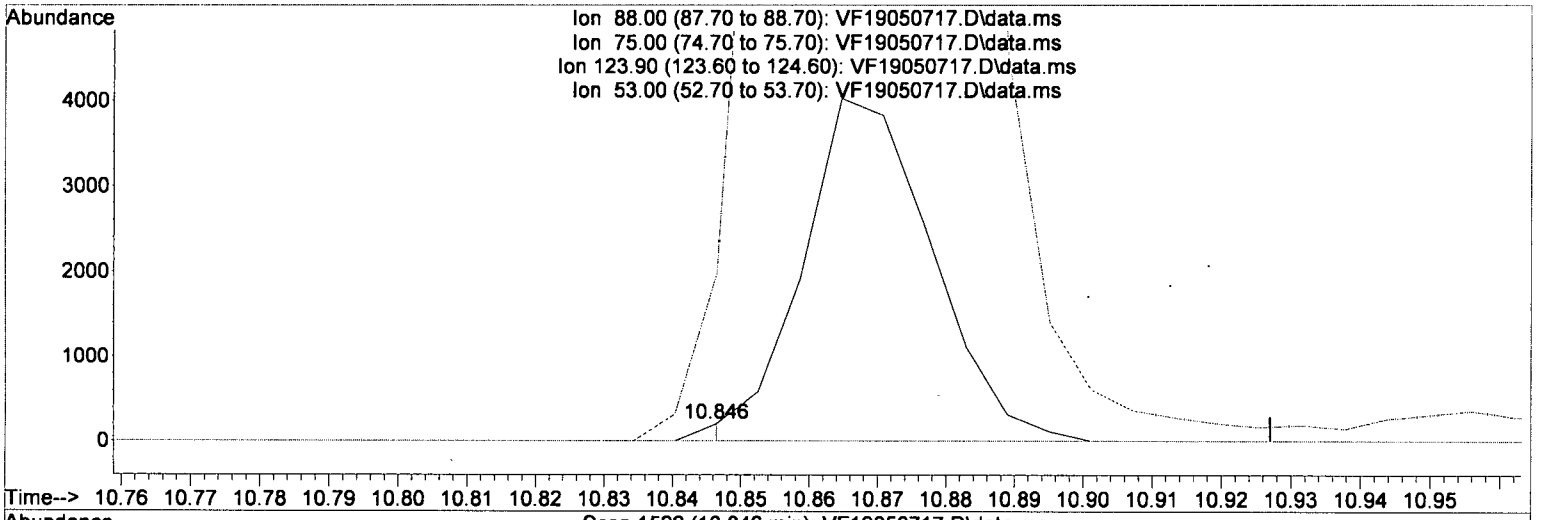
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

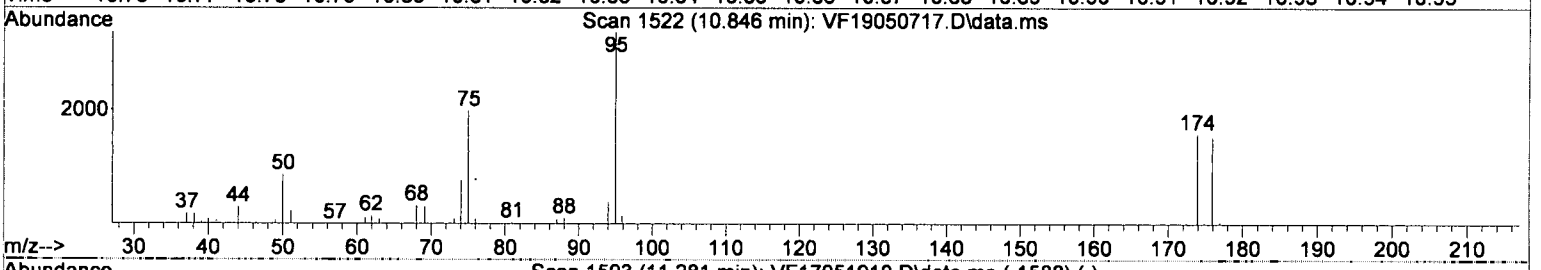
Int = 2,18

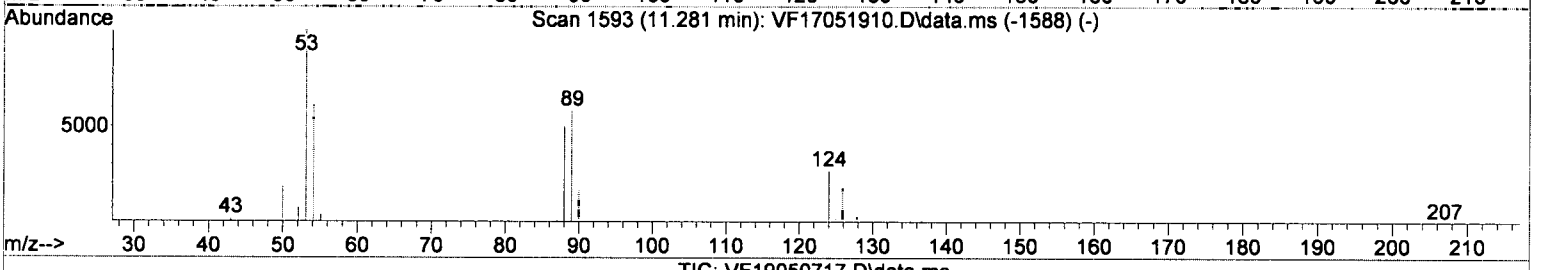
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







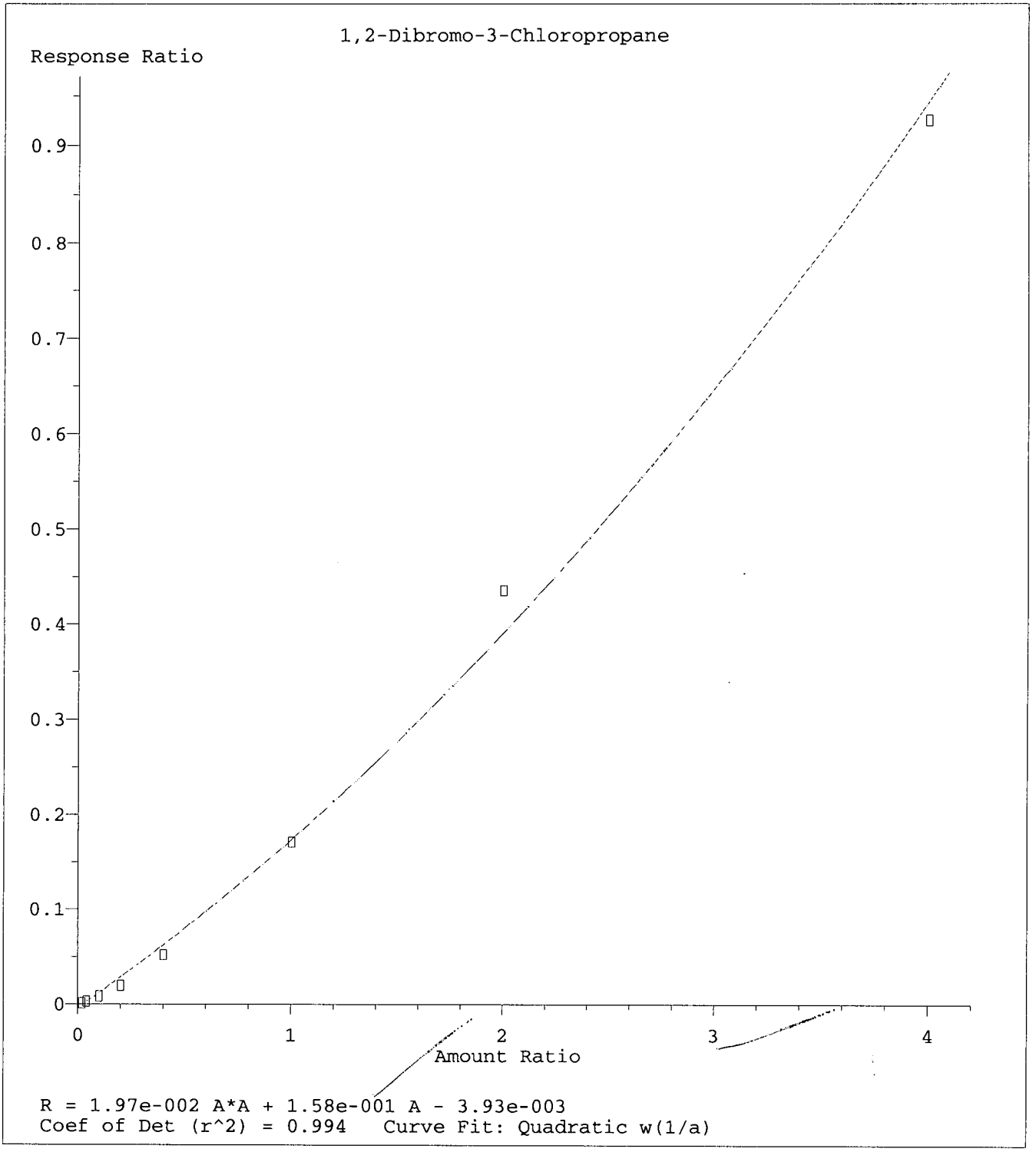
TIC: VF19050717.D\data.ms

(65) t-1,4-Dichloro-2-butene

10.846min (-0.331) 2.18 ug/L m

response 75

Ion	Exp%	Act%
88.00	100	100
75.00	240.20	964.56#
123.90	48.30	0.00#
53.00	249.20	0.00#



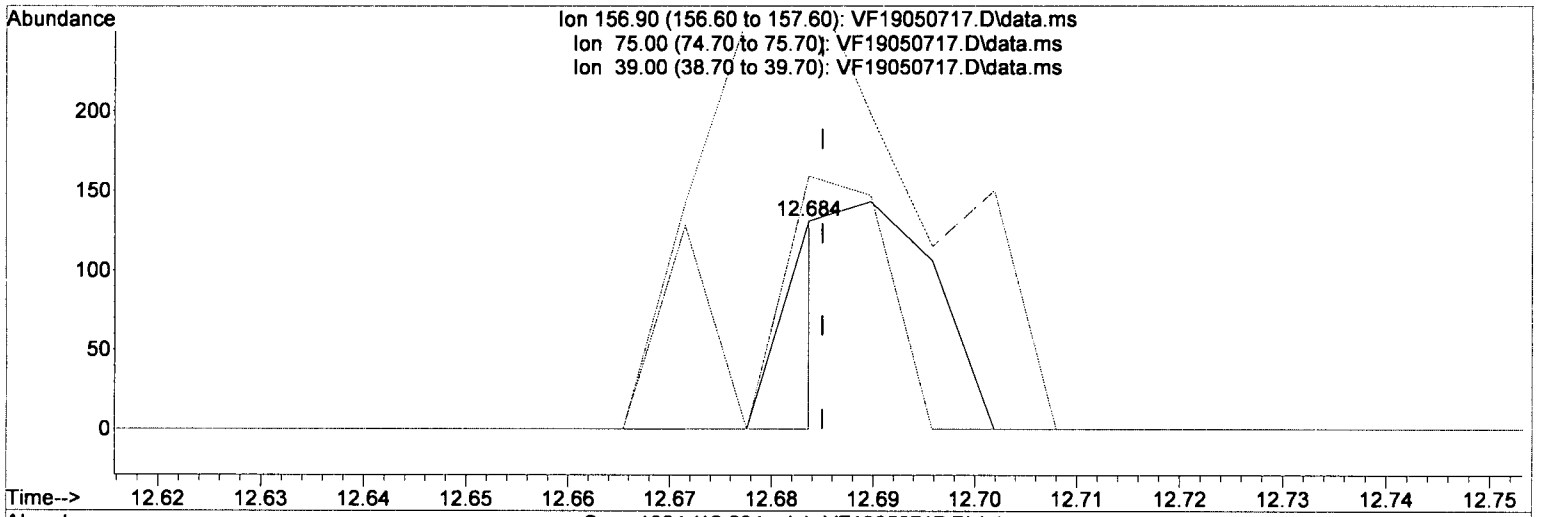
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

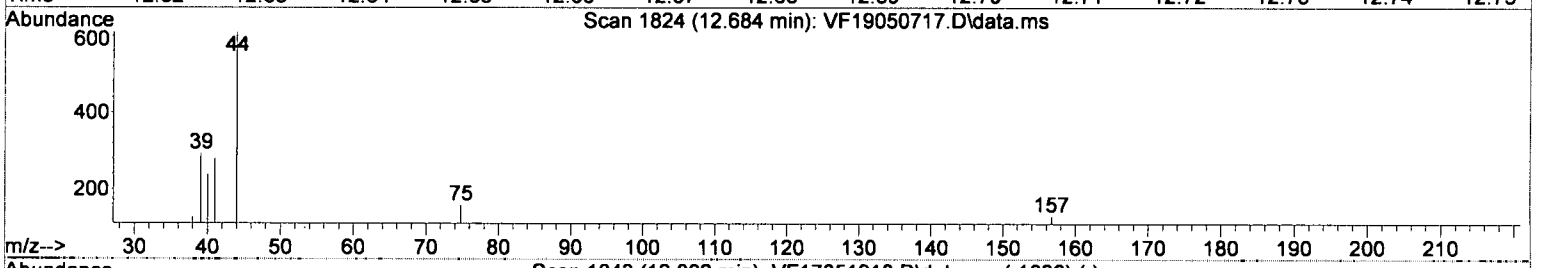
Int = 1.35

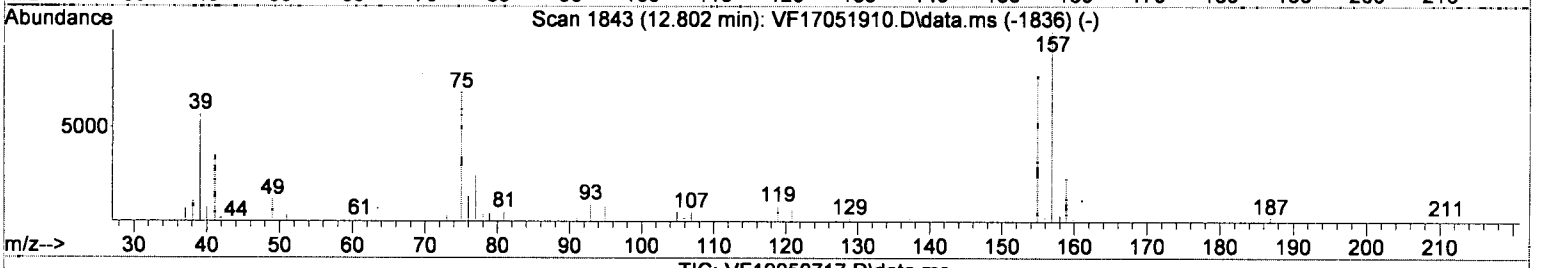
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







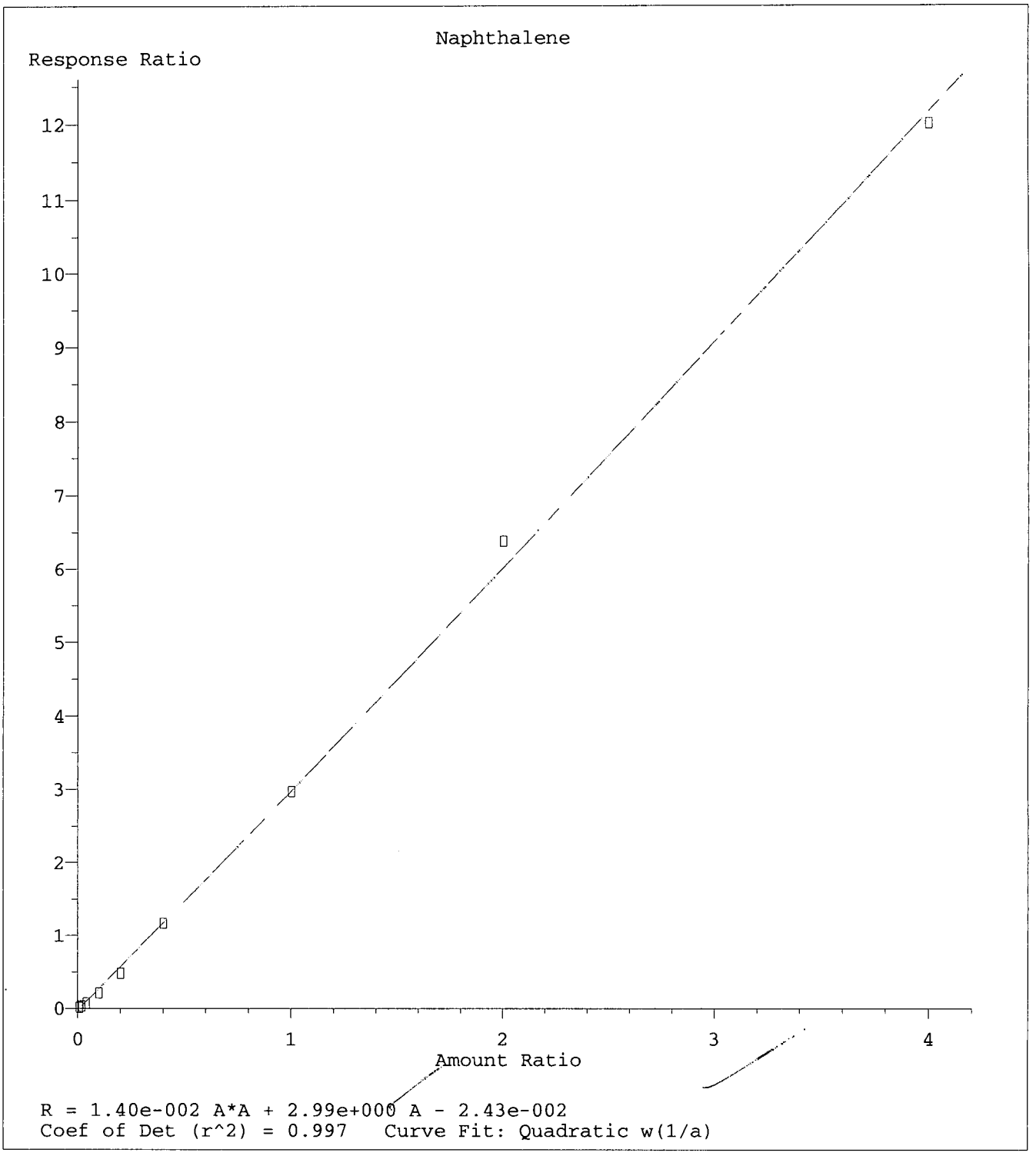
TIC: VF19050717.D\data.ms

(75) 1,2-Dibromo-3-Chloropropane

12.684min (-0.001) 1.35 ug/L m

response 48

Ion	Exp%	Act%
156.90	100	100
75.00	79.00	121.37#
39.00	63.10	223.66#
0.00	0.00	0.00



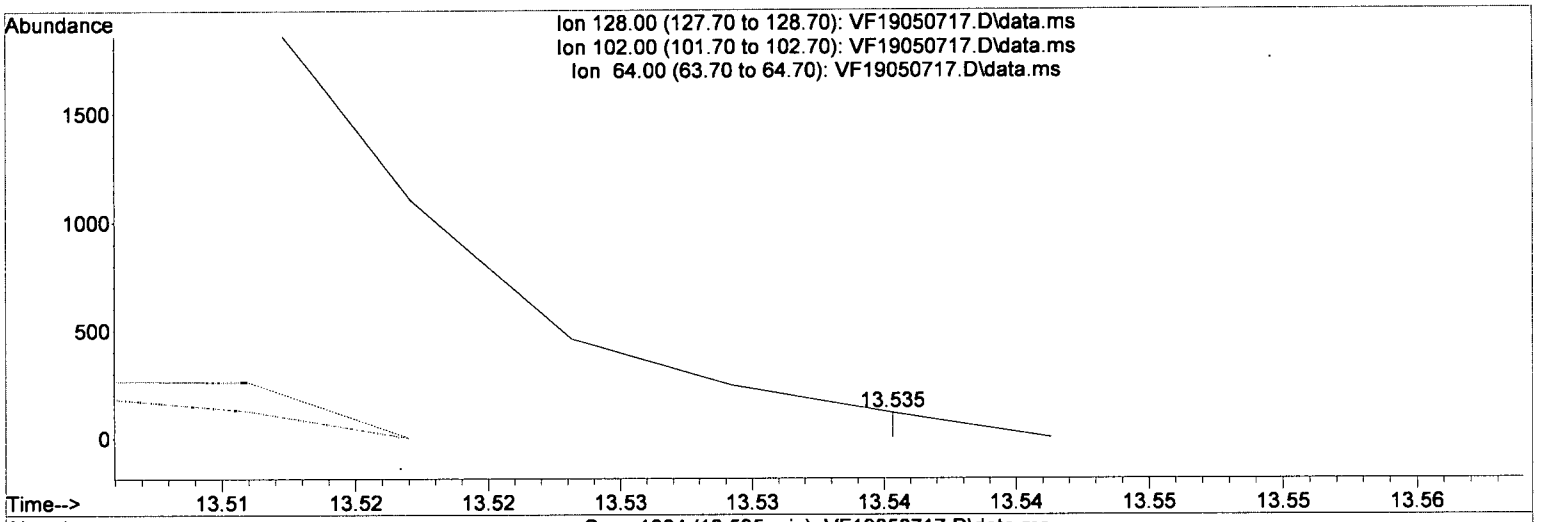
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

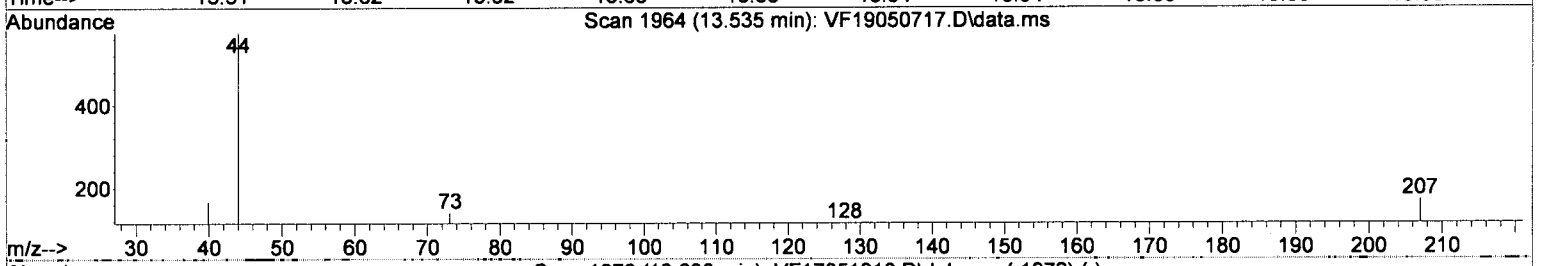
INT = 0.41

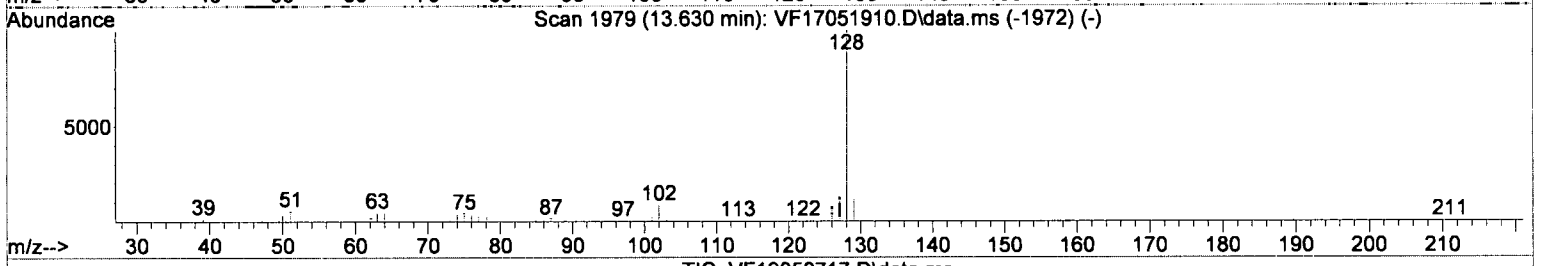
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







TIC: VF19050717.D\data.ms

(78) Naphthalene

13.535min (+0.035) 0.41 ug/L m

response 0

Ion	Exp%	Act%
128.00	100	0.00
102.00	8.50	0.00
64.00	6.40	0.00
0.00	0.00	0.00

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9E07048

Analysis Included
8260C Full List

INSTRUMENT SEQUENCE LOG

SampleID	SampleName	Matrix	STDID	ISTD ID	Analyzed
9E07048-TUN1	MS Tune	Soil		A19D196	5/7/2019 7:21:00PM
9E07048-ICB1	Initial Cal Blank	Soil		A19D196	5/7/2019 7:48:00PM
9E07048-CAL1	Cal Standard	Soil	A19E092	"	5/7/2019 8:15:00PM
9E07048-CAL2	Cal Standard	Soil	A19E093	"	5/7/2019 8:42:00PM
9E07048-CAL3	Cal Standard	Soil	A19E094	"	5/7/2019 9:09:00PM
9E07048-CAL4	Cal Standard	Soil	A19E095	"	5/7/2019 9:36:00PM
9E07048-CAL5	Cal Standard	Soil	A19E096	"	5/7/2019 10:04:00PM
9E07048-CAL6	Cal Standard	Soil	A19E097	"	5/7/2019 10:31:00PM
9E07048-CAL7	Cal Standard	Soil	A19E098	"	5/7/2019 10:58:00PM
9E07048-CAL8	Cal Standard	Soil	A19E099	"	5/7/2019 11:25:00PM
9E07048-CAL9	Cal Standard	Soil	A19D177	"	5/7/2019 11:52:00PM
9E07048-CALA	Cal Standard	Soil	A19D178	"	5/8/2019 12:46:00AM
9E07048-CALB	Cal Standard	Soil	A19D179	"	5/8/2019 1:40:00AM
9E07048-ICV1	Initial Cal Check	Soil	A19D180	"	5/8/2019 3:01:00AM

CALIBRATION STANDARD RECOVERIES

Calibration: **A9E0804** Instrument: **VOA-GCMS6**

8260C Full List Sequence: **9E07048** Matrix: **Soil**

9E07048-CAL1	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CAL2	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CAL3	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CAL4	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CAL5	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CAL6	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CAL7	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CAL8	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CAL9	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CALA	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CALB	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9E07048

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: **A9E0804** Instrument: **VOA-GCMS6**

8260C Full List Sequence: **9E07048** Matrix: **Soil**

9E07048-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\9E07048\
Data File : VF19050729.D
Acq On : 8 May 2019 3:01 am
Operator : TB
Sample : 9E07048-ICV1
Misc : 1X 50ppb VOC MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 13:55:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

5/8/19

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	106	0.00
2		Dichlorodifluoromethane	20.000	24.236	-21.2	126	0.00
3	P	Chloromethane	20.000	24.447	-22.2	126	0.00
4	C	Vinyl Chloride	20.000	23.000	-15.0	119	0.00
5		Bromomethane	20.000	20.167	-0.8	108	0.00
6		Chloroethane	20.000	24.180	-20.9	124	0.00
7		Trichlorofluoromethane	20.000	22.294	-11.5	112	0.00
8	C	1,1-Dichloroethene	20.000	20.872	-4.4	105	0.00
9		Carbon Disulfide	20.000	18.006	10.0	98	0.00
10		Freon 113	20.000	21.311	-6.6	109	0.00
11		Iodomethane	20.000	12.962	35.2#	76	0.01 — NR
12		Methylene Chloride	20.000	21.636	-8.2	106	0.00
13		Acetone	40.000	41.830	-4.6	104	0.00
14		t-1,2-Dichloroethene	20.000	21.376	-6.9	105	0.00
15		n-Hexane	20.000	19.864	0.7	105	0.00
16		Methyl-tert-butyl-ether	20.000	20.815	-4.1	105	0.00
17	P	1,1-Dichloroethane	20.000	21.571	-7.9	104	0.00
18		Acrylonitrile	20.000	21.881	-9.4	105	0.00
19		c-1,2-Dichloroethene	20.000	21.783	-8.9	103	0.00
20		2,2-Dichloropropane	20.000	21.201	-6.0	104	0.00
21		Bromochloromethane	20.000	21.702	-8.5	104	0.00
22	C	Chloroform	20.000	21.162	-5.8	103	0.00
23		Carbon Tetrachloride	20.000	22.273	-11.4	124	0.00
24		Tetrahydrofuran	20.000	20.264	-1.3	101	0.00
25		1,1,1-Trichloroethane	20.000	24.219	-21.1	114	0.00
26	S	Dibromofluoromethane (S)	50.000	54.171	-8.3	109	0.00
27		1,1-Dichloropropene	20.000	21.584	-7.9	106	0.00
28		2-Butanone (MEK)	40.000	42.115	-5.3	105	0.00
29		Benzene	20.000	20.387	-1.9	102	0.00
30		1,2-Dichloroethane (EDC)	20.000	20.981	-4.9	104	0.00
31		iso-Butyl Alcohol	500.000	504.302	-0.9	116	0.00
32	S	1,4-Difluorobenzene (S)	50.000	49.787	0.4	105	0.00
33		Trichloroethene (TCE)	20.000	20.413	-2.1	103	0.00
34		Dibromomethane	20.000	21.669	-8.3	103	0.00
35	C	1,2-Dichloropropane	20.000	20.610	-3.0	103	0.00
36		Bromodichloromethane	20.000	20.015	-0.1	110	0.00
37		Chlorobenzene-d5 (I)	50.000	50.000	0.0	105	0.00
38		c-1,3-Dichloropropene	20.000	20.143	-0.7	105	0.00
39	S	Toluene-d8 (S)	50.000	51.657	-3.3	105	0.00
40	C	Toluene	20.000	19.257	3.7	100	0.00
41		Tetrachloroethene (PCE)	20.000	21.505	-7.5	102	0.00
42		4-Methyl-2-Pentanone (MIBK)	40.000	44.467	-11.2	102	0.00
43		t-1,3-Dichloropropene	20.000	20.277	-1.4	110	0.00
44		1,1,2-Trichloroethane	20.000	22.527	-12.6	103	0.00
45		Dibromochloromethane	20.000	20.100	-0.5	116	0.00
46		1,3-Dichloropropane	20.000	22.357	-11.8	103	0.00
47		1,2-Dibromoethane (EDB)	20.000	21.395	-7.0	111	0.00
48		2-Hexanone	40.000	42.724	-6.8	105	0.00
49	P	Chlorobenzene	20.000	18.629	6.9	99	0.00
50	C	Ethylbenzene	20.000	19.761	1.2	101	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050729.D
Acq On : 8 May 2019 3:01 am
Operator : TB
Sample : 9E07048-ICV1
Misc : 1X 50ppb VOC MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 13:55:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 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	20.269	-1.3	117	0.00
52		m,p-Xylenes (2)	40.000	41.307	-3.3	100	0.00
53		o-Xylene	20.000	20.475	-2.4	102	0.00
54		Styrene	20.000	19.209	4.0	102	0.00
55	P	Bromoform	20.000	21.499	-7.5	115	0.00
56		Isopropylbenzene	20.000	21.525	-7.6	102	0.00
57	I	1,4-Dichlorobenzene-d4 (I)	50.000	50.000	0.0	106	0.00
58	S	4-Bromofluorobenzene (S)	50.000	49.754	0.5	107	0.00
59		Bromobenzene	20.000	20.054	-0.3	102	0.00
60		n-Propylbenzene	20.000	20.081	-0.4	101	0.00
61	P	1,1,2,2-Tetrachloroethane	20.000	22.914	-14.6	106	0.00
62		2-Chlorotoluene	20.000	20.315	-1.6	103	0.00
63		1,3,5-Trimethylbenzene	20.000	21.121	-5.6	101	0.00
64		1,2,3-Trichloropropane	20.000	20.932	-4.7	102	0.00
65		t-1,4-Dichloro-2-butene	20.000	17.631	11.8	113	0.00
66		4-Chlorotoluene	20.000	21.060	-5.3	105	0.00
67		tert-Butylbenzene	20.000	21.006	-5.0	102	0.00
68		1,2,4-Trimethylbenzene	20.000	21.106	-5.5	100	0.00
69		sec-Butylbenzene	20.000	21.130	-5.6	103	0.00
70		4-Isopropyltoluene	20.000	20.796	-4.0	102	0.00
71		1,3-Dichlorobenzene	20.000	20.394	-2.0	103	0.00
72		1,4-Dichlorobenzene	20.000	19.438	2.8	103	0.00
73		n-Butylbenzene	20.000	20.997	-5.0	103	0.00
74		1,2-Dichlorobenzene	20.000	21.126	-5.6	104	0.00
75		1,2-Dibromo-3-Chloropropane	20.000	19.592	2.0	126	0.00
76		Hexachlorobutadiene	20.000	21.199	-6.0	106	0.00
77		1,2,4-Trichlorobenzene	20.000	22.221	-11.1	104	0.00
78		Naphthalene	20.000	19.718	1.4	106	0.00
79		1,2,3-Trichlorobenzene	20.000	22.342	-11.7	105	0.00

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

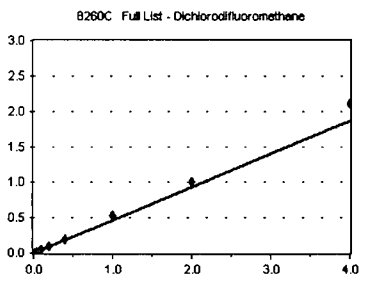
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Dichlorodifluoromethane

Curve Fit: **AVERAGE RF**

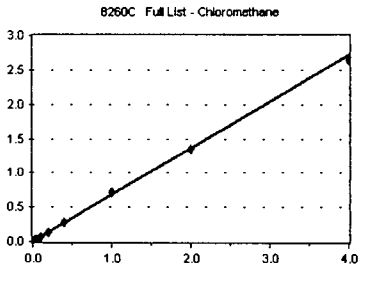


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL3	0.4	846	0.424	1.64
9E07048-CAL4	1	1965	0.375	1.63
9E07048-CAL5	2	4428	0.456	1.63
9E07048-CAL6	5	11506	0.462	1.63
9E07048-CAL7	10	23615	0.446	1.63
9E07048-CAL8	20	46922	0.474	1.63
9E07048-CAL9	50	142427	0.533	1.62
9E07048-CALA	100	284874	0.503	1.63
9E07048-CALB	200	615567	0.527	1.63

AVE RF **0.467** RF RSD **10.76** AVE RT **1.63**

Chloromethane

Curve Fit: **AVERAGE RF**

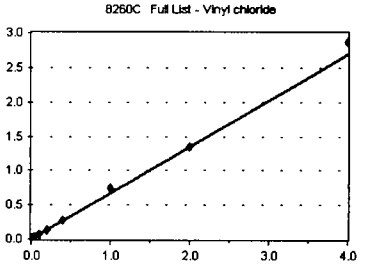


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~1131~~	~~2.356~~	~~1.84~~
~~9E07048-CAL2~~	~~0.2~~	~~797~~	~~0.784~~	~~1.85~~
~~9E07048-CAL3~~	~~0.4~~	~~2048~~	~~1.026~~	~~1.85~~
9E07048-CAL4	1	3374	0.644	1.84
9E07048-CAL5	2	7222	0.743	1.84
9E07048-CAL6	5	16881	0.678	1.84
9E07048-CAL7	10	33122	0.626	1.85
9E07048-CAL8	20	69024	0.698	1.84
9E07048-CAL9	50	191344	0.716	1.83
9E07048-CALA	100	382793	0.676	1.84
9E07048-CALB	200	771027	0.660	1.84

AVE RF **0.680** RF RSD **5.60** AVE RT **1.84**

Vinyl chloride

Curve Fit: **AVERAGE RF**

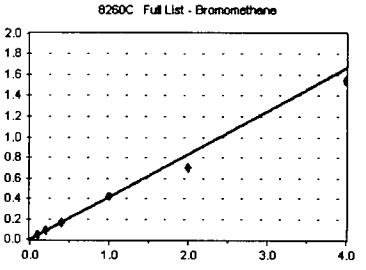


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	686	0.675	1.94
9E07048-CAL3	0.4	1253	0.628	1.95
9E07048-CAL4	1	3308	0.632	1.94
9E07048-CAL5	2	6417	0.660	1.94
9E07048-CAL6	5	16421	0.660	1.94
9E07048-CAL7	10	34298	0.648	1.94
9E07048-CAL8	20	68436	0.692	1.94
9E07048-CAL9	50	198169	0.742	1.93
9E07048-CALA	100	379506	0.670	1.94
9E07048-CALB	200	840125	0.719	1.93

AVE RF **0.673** RF RSD **5.40** AVE RT **1.94**

Bromomethane

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~2001~~	~~4.168~~	~~2.31~~
~~9E07048-CAL2~~	~~0.2~~	~~1145~~	~~1.127~~	~~2.30~~
~~9E07048-CAL3~~	~~0.4~~	~~2402~~	~~1.203~~	~~2.31~~
~~9E07048-CAL4~~	~~1~~	~~3078~~	~~0.588~~	~~2.30~~
~~9E07048-CAL5~~	~~2~~	~~5858~~	~~0.603~~	~~2.31~~
9E07048-CAL6	5	12080	0.485	2.30
9E07048-CAL7	10	23602	0.446	2.31
9E07048-CAL8	20	40782	0.412	2.30
9E07048-CAL9	50	111651	0.418	2.29
9E07048-CALA	100	198553	0.351	2.30
9E07048-CALB	200	450898	0.386	2.30

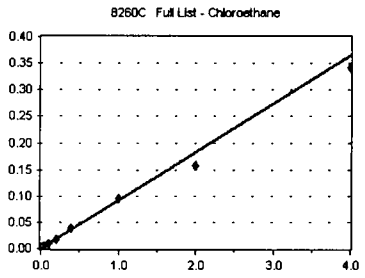
AVE RF **0.416** RF RSD **11.21** AVE RT **2.30**

Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Chloroethane

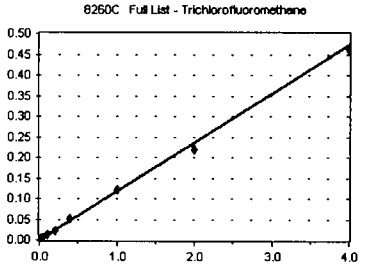


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL4	1	476	9.089	2.43
9E07048-CAL5	2	1082	0.111	2.42
9E07048-CAL6	5	2287	9.190	2.43
9E07048-CAL7	10	4425	8.366	2.44
9E07048-CAL8	20	9373	9.476	2.42
9E07048-CAL9	50	25200	9.429	2.42
9E07048-CALA	100	44440	7.851	2.43
9E07048-CALB	200	99955	8.556	2.43

AVE RF **0.091** RF RSD **10.77** AVE RT **2.43**

Trichlorofluoromethane

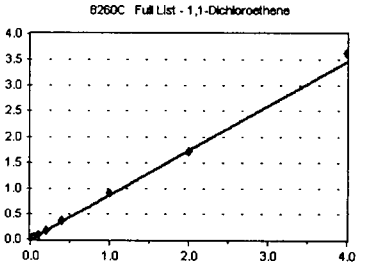


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL3	0.4	222	0.111	2.56
9E07048-CAL4	1	616	0.118	2.56
9E07048-CAL5	2	1256	0.129	2.56
9E07048-CAL6	5	3188	0.128	2.56
9E07048-CAL7	10	5854	0.111	2.56
9E07048-CAL8	20	12368	0.125	2.56
9E07048-CAL9	50	32243	0.121	2.55
9E07048-CALA	100	61776	0.109	2.56
9E07048-CALB	200	134796	0.115	2.55

AVE RF **0.119** RF RSD **6.44** AVE RT **2.56**

1,1-Dichloroethene

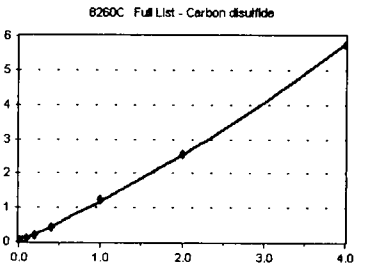


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	464	0.967	3.13
9E07048-CAL2	0.2	831	0.818	3.14
9E07048-CAL3	0.4	1699	0.851	3.14
9E07048-CAL4	1	4085	0.780	3.13
9E07048-CAL5	2	8224	0.846	3.13
9E07048-CAL6	5	21211	0.852	3.12
9E07048-CAL7	10	43446	0.821	3.14
9E07048-CAL8	20	89848	0.908	3.12
9E07048-CAL9	50	240834	0.901	3.12
9E07048-CALA	100	484753	0.856	3.13
9E07048-CALB	200	1060537	0.908	3.13

AVE RF **0.864** RF RSD **6.06** AVE RT **3.13**

Carbon disulfide



Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~705~~	~~1.469~~	~~3.15~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL3	0.4	1949	0.976	3.14
9E07048-CAL4	1	4300	0.821	3.15
9E07048-CAL5	2	8310	0.855	3.14
9E07048-CAL6	5	22193	0.892	3.14
9E07048-CAL7	10	47292	0.894	3.15
9E07048-CAL8	20	107117	1.083	3.14
9E07048-CAL9	50	331432	1.240	3.14
9E07048-CALA	100	729573	1.289	3.14
9E07048-CALB	200	1674733	1.433	3.14

AVE RF **1.054** RF RSD **20.86** AVE RT **3.14**

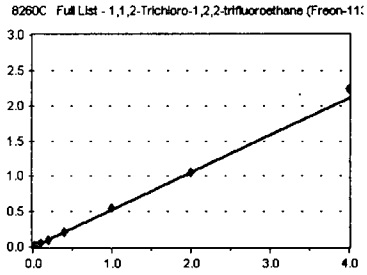
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

1,1,2-Trichloro-1,2,2-trifluoroetha

Curve Fit: **AVERAGE RF**

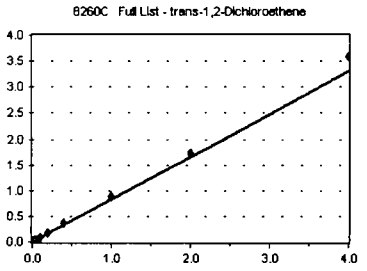


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	458	0.451	3.18
9E07048-CAL3	0.4	1041	0.522	3.18
9E07048-CAL4	1	2811	0.537	3.18
9E07048-CAL5	2	5055	0.520	3.18
9E07048-CAL6	5	13365	0.537	3.17
9E07048-CAL7	10	27267	0.515	3.18
9E07048-CAL8	20	54116	0.547	3.18
9E07048-CAL9	50	147538	0.552	3.17
9E07048-CALA	100	298770	0.528	3.18
9E07048-CALB	200	654791	0.560	3.18

AVE RF **0.527** RF RSD **5.79** AVE RT **3.18**

trans-1,2-Dichloroethene

Curve Fit: **AVERAGE RF**

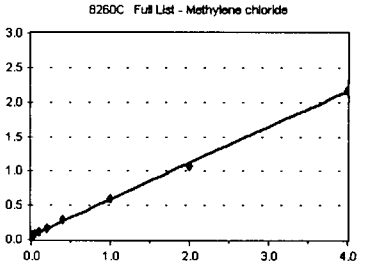


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	320	0.667	0.00
9E07048-CAL2	0.2	852	0.839	3.94
9E07048-CAL3	0.4	1577	0.790	3.95
9E07048-CAL4	1	4059	0.775	3.94
9E07048-CAL5	2	7974	0.820	3.94
9E07048-CAL6	5	21082	0.847	3.94
9E07048-CAL7	10	43282	0.818	3.94
9E07048-CAL8	20	88360	0.893	3.94
9E07048-CAL9	50	234688	0.878	3.93
9E07048-CALA	100	486614	0.860	3.94
9E07048-CALB	200	1047640	0.897	3.94

AVE RF **0.826** RF RSD **7.98** AVE RT **3.58**

Methylene chloride

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

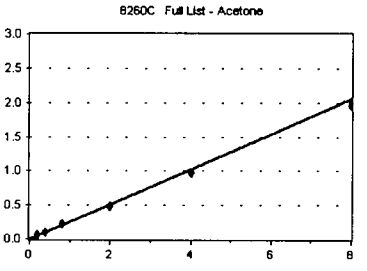


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~14820~~	~~30.870~~	~~3.78~~
~~9E07048-CAL2~~	~~0.2~~	~~13830~~	~~13.612~~	~~3.78~~
9E07048-CAL3	0.4	14007	7.017	3.78
9E07048-CAL4	1	16647	3.179	3.78
9E07048-CAL5	2	18649	1.919	3.78
9E07048-CAL6	5	27821	1.118	3.78
9E07048-CAL7	10	42775	0.809	3.78
9E07048-CAL8	20	71195	0.720	3.77
9E07048-CAL9	50	158529	0.593	3.77
9E07048-CALA	100	303916	0.537	3.77
9E07048-CALB	200	635093	0.544	3.77

AVE RF **1.826** RF RSD **116.77** AVE RT **3.77**

Acetone

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.2~~	~~1683~~	~~1.753~~	~~3.88~~
~~9E07048-CAL2~~	~~0.4~~	~~1611~~	~~0.793~~	~~3.87~~
~~9E07048-CAL3~~	~~0.8~~	~~2158~~	~~0.541~~	~~3.88~~
~~9E07048-CAL4~~	~~2~~	~~3535~~	~~0.338~~	~~3.88~~
~~9E07048-CAL5~~	4	~~6127~~	~~0.315~~	~~3.88~~
9E07048-CAL6	10	14357	0.288	3.87
9E07048-CAL7	20	25591	0.242	3.87
9E07048-CAL8	40	54252	0.274	3.87
9E07048-CAL9	100	131619	0.246	3.85
9E07048-CALA	200	275471	0.243	3.86
9E07048-CALB	400	571223	0.244	3.86

AVE RF **0.256** RF RSD **7.74** AVE RT **3.86**

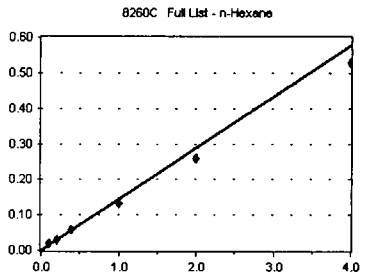
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

n-Hexane

Curve Fit: **AVERAGE RF**

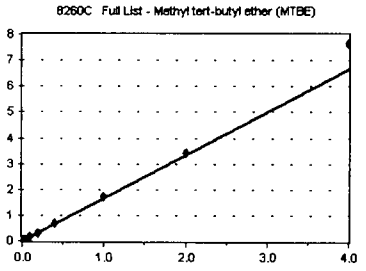


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~1835~~	~~3.822~~	~~4.02~~
~~9E07048-CAL2~~	~~0.2~~	~~1841~~	~~1.812~~	~~4.02~~
~~9E07048-CAL3~~	~~0.4~~	~~2024~~	~~1.014~~	~~4.02~~
~~9E07048-CAL4~~	~~1~~	~~2150~~	~~0.411~~	~~4.02~~
~~9E07048-CAL5~~	~~2~~	~~2796~~	~~0.288~~	~~4.02~~
9E07048-CAL6	5	4468	0.180	4.02
9E07048-CAL7	10	7751	0.147	4.02
9E07048-CAL8	20	14259	0.144	4.02
9E07048-CAL9	50	35578	0.133	4.01
9E07048-CALA	100	73671	0.130	4.02
9E07048-CALB	200	154767	0.132	4.01

AVE RF **0.144** RF RSD **12.82** AVE RT **4.02**

Methyl tert-butyl ether (MTBE)

Curve Fit: **AVERAGE RF**

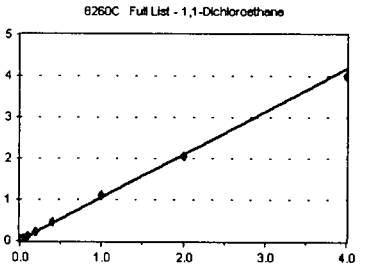


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	787	1.639	4.09
9E07048-CAL2	0.2	1746	1.719	4.08
9E07048-CAL3	0.4	3114	1.560	4.10
9E07048-CAL4	1	8040	1.535	4.09
9E07048-CAL5	2	15652	1.610	4.09
9E07048-CAL6	5	40294	1.619	4.09
9E07048-CAL7	10	82410	1.558	4.09
9E07048-CAL8	20	173881	1.758	4.08
9E07048-CAL9	50	465822	1.743	4.07
9E07048-CALA	100	966419	1.707	4.08
9E07048-CALB	200	2232152	1.911	4.08

AVE RF **1.669** RF RSD **6.69** AVE RT **4.09**

1,1-Dichloroethane

Curve Fit: **AVERAGE RF**

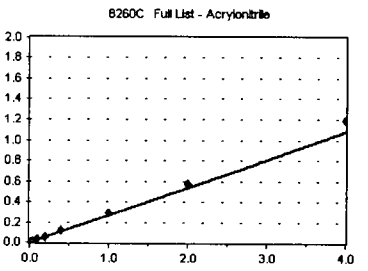


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	503	1.048	4.58
9E07048-CAL2	0.2	1018	1.002	4.58
9E07048-CAL3	0.4	1998	1.001	4.58
9E07048-CAL4	1	5157	0.985	4.58
9E07048-CAL5	2	10371	1.067	4.58
9E07048-CAL6	5	27022	1.086	4.58
9E07048-CAL7	10	54444	1.029	4.58
9E07048-CAL8	20	114004	1.153	4.58
9E07048-CAL9	50	295880	1.107	4.57
9E07048-CALA	100	579727	1.024	4.58
9E07048-CALB	200	1166202	0.998	4.58

AVE RF **1.045** RF RSD **5.05** AVE RT **4.58**

Acrylonitrile

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL3~~	~~0.4~~	~~256~~	~~0.128~~	~~4.67~~
9E07048-CAL4	1	1044	0.199	4.67
9E07048-CAL5	2	2472	0.254	4.66
9E07048-CAL6	5	6728	0.270	4.66
9E07048-CAL7	10	13862	0.262	4.66
9E07048-CAL8	20	29390	0.297	4.65
9E07048-CAL9	50	77245	0.289	4.64
9E07048-CALA	100	161749	0.286	4.65
9E07048-CALB	200	345965	0.296	4.65

AVE RF **0.269** RF RSD **12.01** AVE RT **4.65**

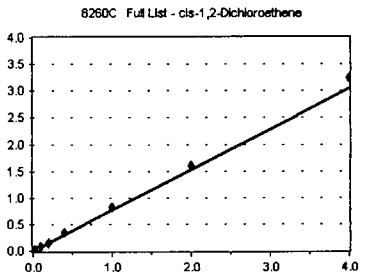
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

cis-1,2-Dichloroethene

Curve Fit: **AVERAGE RF**

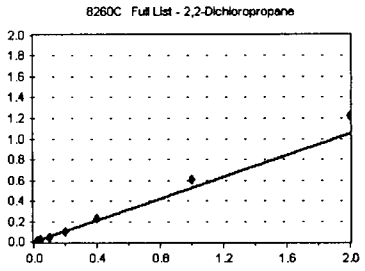


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	307	0.639	0.00
9E07048-CAL2	0.2	698	0.687	5.14
9E07048-CAL3	0.4	1447	0.725	5.14
9E07048-CAL4	1	3590	0.686	5.14
9E07048-CAL5	2	7621	0.784	5.13
9E07048-CAL6	5	19884	0.799	5.14
9E07048-CAL7	10	40226	0.760	5.14
9E07048-CAL8	20	83939	0.849	5.14
9E07048-CAL9	50	219981	0.823	5.13
9E07048-CALA	100	453832	0.802	5.14
9E07048-CALB	200	947367	0.811	5.13

AVE RF **0.760** RF RSD **8.81** AVE RT **4.67**

2,2-Dichloropropane

Curve Fit: **AVERAGE RF**

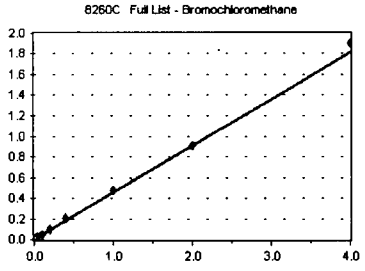


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~441~~	~~0.434~~	~~5.25~~
~~9E07048-CAL3~~	~~0.4~~	~~917~~	~~0.459~~	~~5.24~~
9E07048-CAL4	1	2310	0.441	5.24
9E07048-CAL5	2	4599	0.473	5.24
9E07048-CAL6	5	11848	0.476	5.24
9E07048-CAL7	10	25977	0.491	5.24
9E07048-CAL8	20	56267	0.569	5.24
9E07048-CAL9	50	162582	0.608	5.23
9E07048-CALA	100	344765	0.609	5.24
~~9E07048-CALB~~	~~200~~	~~789087~~	~~0.675~~	~~5.24~~

AVE RF **0.524** RF RSD **13.32** AVE RT **5.24**

Bromochloromethane

Curve Fit: **AVERAGE RF**

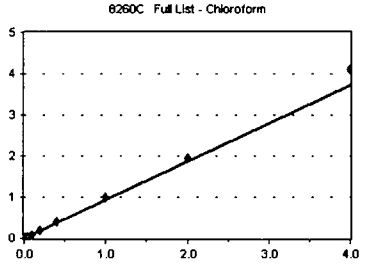


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	331	0.326	5.34
9E07048-CAL3	0.4	924	0.463	5.35
9E07048-CAL4	1	2190	0.418	5.35
9E07048-CAL5	2	4699	0.483	5.34
9E07048-CAL6	5	11857	0.476	5.34
9E07048-CAL7	10	24444	0.462	5.34
9E07048-CAL8	20	49879	0.504	5.34
9E07048-CAL9	50	126903	0.475	5.33
9E07048-CALA	100	257506	0.455	5.34
9E07048-CALB	200	554716	0.475	5.33

AVE RF **0.454** RF RSD **11.05** AVE RT **5.34**

Chloroform

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	424	0.883	5.43
9E07048-CAL2	0.2	893	0.879	5.42
9E07048-CAL3	0.4	1699	0.851	5.42
9E07048-CAL4	1	4496	0.859	5.42
9E07048-CAL5	2	8712	0.896	5.42
9E07048-CAL6	5	23401	0.940	5.42
9E07048-CAL7	10	48731	0.921	5.42
9E07048-CAL8	20	99732	1.008	5.42
9E07048-CAL9	50	264234	0.989	5.42
9E07048-CALA	100	548790	0.970	5.42
9E07048-CALB	200	1199142	1.026	5.42

AVE RF **0.929** RF RSD **6.62** AVE RT **5.42**

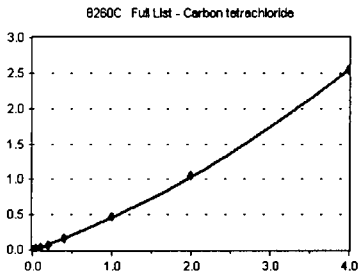
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Carbon tetrachloride

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

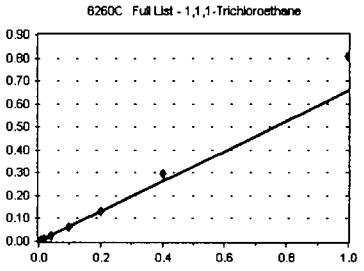


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL3~~	~~0.4~~	~~392~~	~~0.196~~	~~5.55~~
9E07048-CAL4	1	1343	0.256	5.55
9E07048-CAL5	2	2842	0.292	5.55
9E07048-CAL6	5	7941	0.319	5.55
9E07048-CAL7	10	17551	0.332	5.55
9E07048-CAL8	20	39228	0.397	5.54
9E07048-CAL9	50	126590	0.474	5.55
9E07048-CALA	100	296253	0.523	5.55
9E07048-CALB	200	741698	0.635	5.55

AVE RF **0.404** RF RSD **32.32** AVE RT **5.55**

1,1,1-Trichloroethane

Curve Fit: **AVERAGE RF**

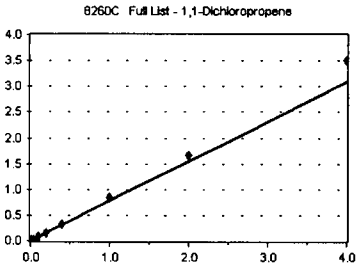


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~551~~	~~0.542~~	~~5.62~~
9E07048-CAL3	0.4	1217	0.610	5.63
9E07048-CAL4	1	2997	0.572	5.62
9E07048-CAL5	2	5724	0.589	5.62
9E07048-CAL6	5	15328	0.616	5.62
9E07048-CAL7	10	34343	0.649	5.62
9E07048-CAL8	20	73208	0.740	5.62
9E07048-CAL9	50	215695	0.807	5.62
~~9E07048-CALA~~	~~100~~	~~465951~~	~~0.823~~	~~5.62~~
~~9E07048-CALB~~	~~200~~	~~1056735~~	~~0.804~~	~~5.62~~

AVE RF **0.655** RF RSD **13.26** AVE RT **5.62**

1,1-Dichloropropene

Curve Fit: **AVERAGE RF**

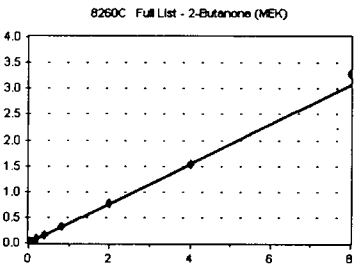


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	683	0.672	5.76
9E07048-CAL3	0.4	1416	0.709	5.75
9E07048-CAL4	1	3517	0.672	5.75
9E07048-CAL5	2	7332	0.754	5.75
9E07048-CAL6	5	19265	0.774	5.75
9E07048-CAL7	10	40206	0.760	5.75
9E07048-CAL8	20	82690	0.836	5.75
9E07048-CAL9	50	224805	0.841	5.75
9E07048-CALA	100	469859	0.830	5.74
9E07048-CALB	200	1023128	0.876	5.75

AVE RF **0.772** RF RSD **9.40** AVE RT **5.75**

2-Butanone (MEK)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.4	890	0.438	5.77
9E07048-CAL3	0.8	1499	0.375	5.76
9E07048-CAL4	2	3413	0.326	5.76
9E07048-CAL5	4	7034	0.362	5.76
9E07048-CAL6	10	19168	0.385	5.75
9E07048-CAL7	20	37307	0.353	5.76
9E07048-CAL8	40	80726	0.408	5.75
9E07048-CAL9	100	207080	0.387	5.74
9E07048-CALA	200	437402	0.386	5.74
9E07048-CALB	400	960855	0.411	5.74

AVE RF **0.383** RF RSD **8.33** AVE RT **5.75**

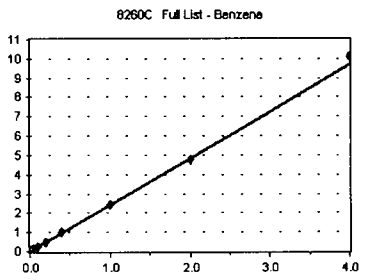
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Benzene

Curve Fit: **AVERAGE RF**

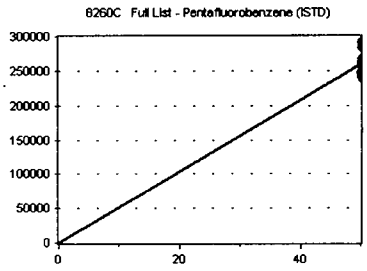


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	1127	2.348	6.01
9E07048-CAL2	0.2	2458	2.419	6.01
9E07048-CAL3	0.4	4810	2.410	6.01
9E07048-CAL4	1	11954	2.283	6.01
9E07048-CAL5	2	23365	2.404	6.00
9E07048-CAL6	5	60741	2.441	6.01
9E07048-CAL7	10	124874	2.361	6.01
9E07048-CAL8	20	252305	2.551	6.00
9E07048-CAL9	50	656370	2.456	6.00
9E07048-CALA	100	1353074	2.390	6.00
9E07048-CALB	200	2947348	2.523	6.00

AVE RF **2.417** RF RSD **3.16** AVE RT **6.01**

Pentafluorobenzene (ISTD)

Curve Fit: **AVERAGE RF**

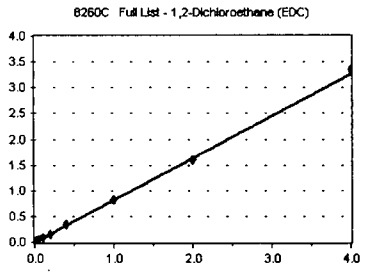


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	50	240040	4800.800	6.10
9E07048-CAL2	50	253997	5079.940	6.10
9E07048-CAL3	50	249504	4990.080	6.10
9E07048-CAL4	50	261850	5237.000	6.10
9E07048-CAL5	50	242998	4859.960	6.10
9E07048-CAL6	50	248863	4977.260	6.10
9E07048-CAL7	50	264477	5289.540	6.10
9E07048-CAL8	50	247283	4945.660	6.10
9E07048-CAL9	50	267251	5345.020	6.09
9E07048-CALA	50	283012	5660.240	6.10
9E07048-CALB	50	292078	5841.560	6.10

AVE RF **5184.278** RF RSD **6.39** AVE RT **6.10**

1,2-Dichloroethane (EDC)

Curve Fit: **AVERAGE RF**

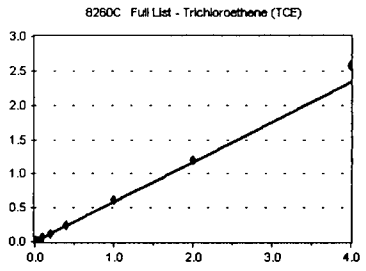


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	369	0.769	6.23
9E07048-CAL2	0.2	837	0.824	6.23
9E07048-CAL3	0.4	1552	0.778	6.23
9E07048-CAL4	1	4287	0.819	6.23
9E07048-CAL5	2	7997	0.823	6.22
9E07048-CAL6	5	21115	0.848	6.23
9E07048-CAL7	10	42029	0.795	6.23
9E07048-CAL8	20	86737	0.877	6.22
9E07048-CAL9	50	220556	0.825	6.22
9E07048-CALA	100	450418	0.796	6.22
9E07048-CALB	200	981773	0.840	6.22

AVE RF **0.818** RF RSD **3.89** AVE RT **6.22**

Trichloroethene (TCE)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~205~~	~~0.427~~	~~0.00~~
9E07048-CAL2	0.2	614	0.604	6.63
9E07048-CAL3	0.4	1091	0.547	6.63
9E07048-CAL4	1	2819	0.538	6.63
9E07048-CAL5	2	5247	0.540	6.63
9E07048-CAL6	5	14302	0.575	6.63
9E07048-CAL7	10	29569	0.559	6.63
9E07048-CAL8	20	60828	0.615	6.62
9E07048-CAL9	50	163754	0.613	6.62
9E07048-CALA	100	340985	0.602	6.62
9E07048-CALB	200	754687	0.646	6.62

AVE RF **0.584** RF RSD **6.39** AVE RT **6.63**

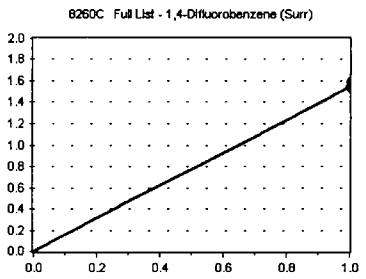
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

1,4-Difluorobenzene (Surr)

Curve Fit: **AVERAGE RF**

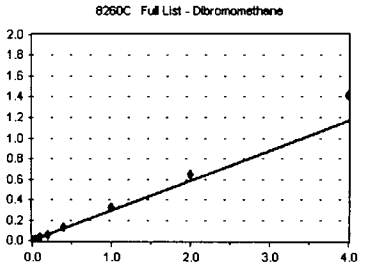


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	50	372792	1.553	6.66
9E07048-CAL2	50	393610	1.550	6.66
9E07048-CAL3	50	383811	1.538	6.66
9E07048-CAL4	50	402099	1.536	6.66
9E07048-CAL5	50	374305	1.540	6.66
9E07048-CAL6	50	382252	1.536	6.66
9E07048-CAL7	50	404994	1.531	6.66
9E07048-CAL8	50	383139	1.549	6.66
9E07048-CAL9	50	412030	1.542	6.66
9E07048-CALA	50	434050	1.534	6.66
9E07048-CALB	50	462700	1.584	6.66

AVE RF **1.545** RF RSD **0.96** AVE RT **6.66**

Dibromomethane

Curve Fit: **AVERAGE RF**

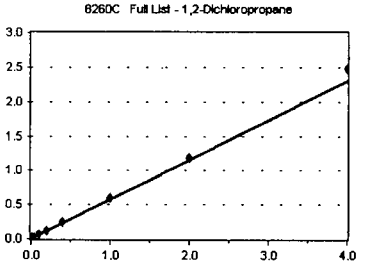


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	206	0.203	7.08
9E07048-CAL3	0.4	553	0.277	7.08
9E07048-CAL4	1	1342	0.256	7.08
9E07048-CAL5	2	2709	0.279	7.08
9E07048-CAL6	5	7109	0.286	7.08
9E07048-CAL7	10	15288	0.289	7.08
9E07048-CAL8	20	32324	0.327	7.08
9E07048-CAL9	50	86980	0.325	7.08
9E07048-CALA	100	183362	0.324	7.08
9E07048-CALB	200	413632	0.354	7.07

AVE RF **0.292** RF RSD **14.84** AVE RT **7.08**

1,2-Dichloropropane

Curve Fit: **AVERAGE RF**

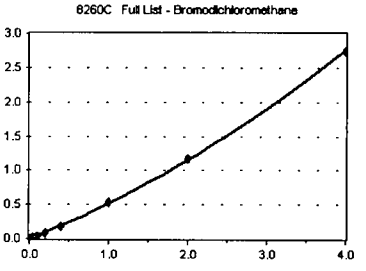


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	588	0.579	7.19
9E07048-CAL3	0.4	1034	0.518	7.19
9E07048-CAL4	1	2906	0.555	7.18
9E07048-CAL5	2	5465	0.562	7.18
9E07048-CAL6	5	14217	0.571	7.19
9E07048-CAL7	10	30050	0.568	7.19
9E07048-CAL8	20	60316	0.610	7.18
9E07048-CAL9	50	161209	0.603	7.18
9E07048-CALA	100	333077	0.588	7.18
9E07048-CALB	200	726418	0.622	7.18

AVE RF **0.578** RF RSD **5.22** AVE RT **7.18**

Bromodichloromethane

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~130~~	~~0.128~~	~~0.00~~
~~9E07048-CAL3~~	~~0.4~~	~~569~~	~~0.285~~	~~7.27~~
9E07048-CAL4	1	1570	0.300	7.26
9E07048-CAL5	2	3150	0.324	7.26
9E07048-CAL6	5	8768	0.352	7.26
9E07048-CAL7	10	19606	0.371	7.26
9E07048-CAL8	20	45494	0.460	7.26
9E07048-CAL9	50	144826	0.542	7.26
9E07048-CALA	100	330159	0.583	7.26
9E07048-CALB	200	802244	0.687	7.26

AVE RF **0.452** RF RSD **30.88** AVE RT **7.26**

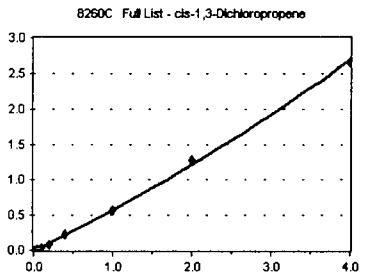
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

cis-1,3-Dichloropropene

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

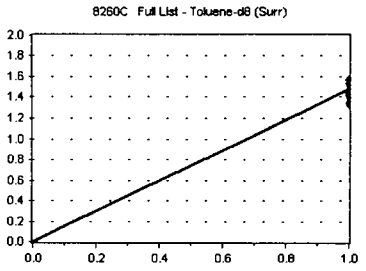


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~335~~	~~0.266~~	~~7.97~~
9E07048-CAL3	0.4	723	0.320	7.97
9E07048-CAL4	1	2124	0.330	7.97
9E07048-CAL5	2	4000	0.369	7.96
9E07048-CAL6	5	11116	0.398	7.97
9E07048-CAL7	10	26031	0.409	7.97
9E07048-CAL8	20	60464	0.551	7.97
9E07048-CAL9	50	189721	0.575	7.96
9E07048-CALA	100	428450	0.641	7.96
9E07048-CALB	200	1015167	0.664	7.96

AVE RF **0.473** RF RSD **28.49** AVE RT **7.97**

Toluene-d8 (Surr)

Curve Fit: **AVERAGE RF**

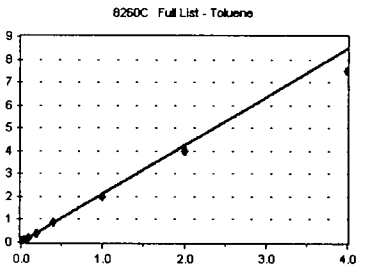


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	50	412832	1.570	8.17
9E07048-CAL2	50	451605	1.433	8.17
9E07048-CAL3	50	433301	1.536	8.17
9E07048-CAL4	50	463638	1.441	8.17
9E07048-CAL5	50	417114	1.539	8.17
9E07048-CAL6	50	428207	1.533	8.17
9E07048-CAL7	50	462102	1.452	8.17
9E07048-CAL8	50	420491	1.532	8.17
9E07048-CAL9	50	467669	1.418	8.17
9E07048-CALA	50	488712	1.463	8.17
9E07048-CALB	50	514201	1.344	8.17

AVE RF **1.478** RF RSD **4.64** AVE RT **8.17**

Toluene

Curve Fit: **AVERAGE RF**

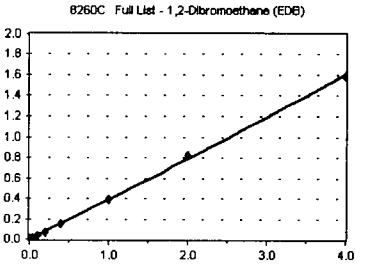


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	1513	2.876	8.23
9E07048-CAL2	0.2	2847	2.259	8.23
9E07048-CAL3	0.4	4633	2.053	8.23
9E07048-CAL4	1	12595	1.958	8.23
9E07048-CAL5	2	22780	2.101	8.23
9E07048-CAL6	5	57774	2.069	8.23
9E07048-CAL7	10	124435	1.955	8.23
9E07048-CAL8	20	234051	2.131	8.23
9E07048-CAL9	50	652612	1.979	8.22
9E07048-CALA	100	1331277	1.992	8.23
9E07048-CALB	200	2874760	1.879	8.22

AVE RF **2.114** RF RSD **12.92** AVE RT **8.23**

1,2-Dibromoethane (EDB)

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	186	0.148	0.00
9E07048-CAL3	0.4	457	0.202	9.32
9E07048-CAL4	1	1418	0.220	9.32
9E07048-CAL5	2	2966	0.274	9.31
9E07048-CAL6	5	8553	0.306	9.32
9E07048-CAL7	10	19791	0.311	9.31
9E07048-CAL8	20	42675	0.389	9.31
9E07048-CAL9	50	128621	0.390	9.31
9E07048-CALA	100	274641	0.411	9.31
9E07048-CALB	200	608559	0.398	9.31

AVE RF **0.305** RF RSD **30.45** AVE RT **8.38**

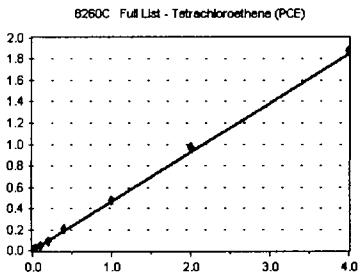
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Tetrachloroethene (PCE)

Curve Fit: **AVERAGE RF**

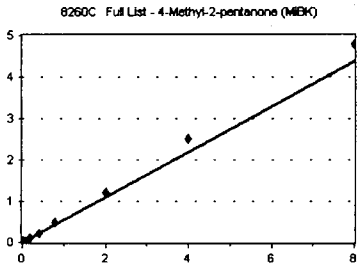


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	241	0.458	8.68
9E07048-CAL2	0.2	503	0.399	8.67
9E07048-CAL3	0.4	1054	0.467	8.68
9E07048-CAL4	1	2677	0.416	8.68
9E07048-CAL5	2	5076	0.468	8.68
9E07048-CAL6	5	13448	0.482	8.68
9E07048-CAL7	10	29011	0.456	8.68
9E07048-CAL8	20	56499	0.514	8.67
9E07048-CAL9	50	156090	0.473	8.67
9E07048-CALA	100	325857	0.488	8.67
9E07048-CALB	200	718860	0.470	8.67

AVE RF **0.463** RF RSD **6.89** AVE RT **8.68**

4-Methyl-2-pentanone (MiBK)

Curve Fit: **AVERAGE RF**

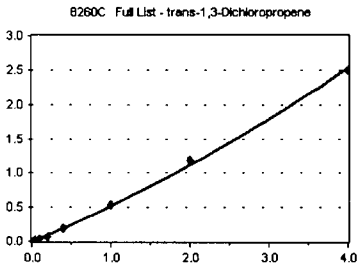


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.2~~	~~391~~	~~0.372~~	~~8.69~~
~~9E07048-CAL2~~	~~0.4~~	~~941~~	~~0.373~~	~~8.68~~
~~9E07048-CAL3~~	~~0.8~~	~~1734~~	~~0.384~~	~~8.68~~
9E07048-CAL4	2	5152	0.400	8.68
9E07048-CAL5	4	10467	0.483	8.68
9E07048-CAL6	10	28905	0.518	8.68
9E07048-CAL7	20	65586	0.515	8.68
9E07048-CAL8	40	137264	0.625	8.68
9E07048-CAL9	100	398605	0.604	8.67
9E07048-CALA	200	838408	0.627	8.68
9E07048-CALB	400	1832267	0.599	8.67

AVE RF **0.546** RF RSD **14.83** AVE RT **8.68**

trans-1,3-Dichloropropene

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

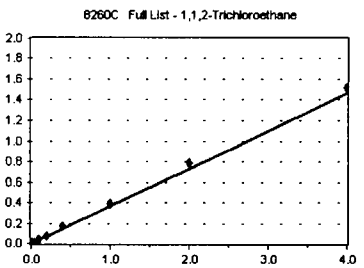


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL3	0.4	502	0.222	8.72
9E07048-CAL4	1	1582	0.246	8.72
9E07048-CAL5	2	3084	0.284	8.72
9E07048-CAL6	5	8937	0.320	8.72
9E07048-CAL7	10	22208	0.349	8.71
9E07048-CAL8	20	51961	0.473	8.71
9E07048-CAL9	50	174126	0.528	8.71
9E07048-CALA	100	395344	0.592	8.71
9E07048-CALB	200	955479	0.625	8.71

AVE RF **0.404** RF RSD **37.75** AVE RT **8.72**

1,1,2-Trichloroethane

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	368	0.292	8.89
9E07048-CAL3	0.4	754	0.334	8.90
9E07048-CAL4	1	2096	0.326	8.88
9E07048-CAL5	2	4156	0.383	8.89
9E07048-CAL6	5	10585	0.379	8.89
9E07048-CAL7	10	23330	0.367	8.89
9E07048-CAL8	20	46171	0.420	8.89
9E07048-CAL9	50	128440	0.389	8.88
9E07048-CALA	100	262681	0.393	8.89
9E07048-CALB	200	582929	0.381	8.89

AVE RF **0.366** RF RSD **10.39** AVE RT **8.89**

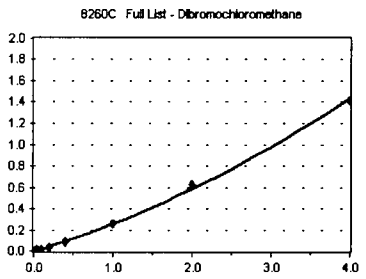
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Dibromochloromethane

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

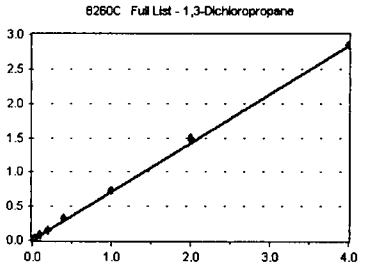


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL3	0.4	215	9.526	9.07
9E07048-CAL4	1	646	0.100	9.08
9E07048-CAL5	2	1529	0.141	9.08
9E07048-CAL6	5	4290	0.154	9.07
9E07048-CAL7	10	10099	0.159	9.08
9E07048-CAL8	20	23476	0.214	9.08
9E07048-CAL9	50	86639	0.263	9.07
9E07048-CALA	100	209789	0.314	9.08
9E07048-CALB	200	540275	0.353	9.08

AVE RF **0.199** RF RSD **46.55** AVE RT **9.08**

1,3-Dichloropropane

Curve Fit: **AVERAGE RF**

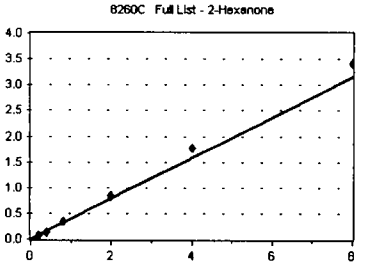


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	369	0.702	9.17
9E07048-CAL2	0.2	753	0.597	9.17
9E07048-CAL3	0.4	1532	0.679	9.18
9E07048-CAL4	1	4160	0.647	9.18
9E07048-CAL5	2	7762	0.716	9.17
9E07048-CAL6	5	20889	0.748	9.18
9E07048-CAL7	10	45205	0.710	9.18
9E07048-CAL8	20	88346	0.804	9.17
9E07048-CAL9	50	243237	0.737	9.17
9E07048-CALA	100	499607	0.748	9.17
9E07048-CALB	200	1091475	0.713	9.17

AVE RF **0.709** RF RSD **7.76** AVE RT **9.17**

2-Hexanone

Curve Fit: **AVERAGE RF**

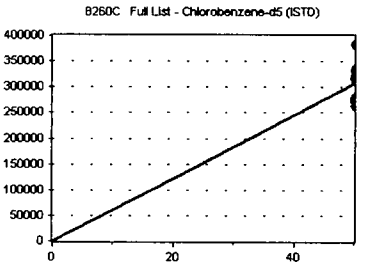


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.4~~	~~512~~	~~0.203~~	~~9.55~~
~~9E07048-CAL3~~	~~0.8~~	~~1043~~	~~0.231~~	~~9.55~~
~~9E07048-CAL4~~	~~2~~	~~3198~~	~~0.249~~	~~9.55~~
~~9E07048-CAL5~~	~~4~~	~~6383~~	~~0.294~~	~~9.55~~
9E07048-CAL6	10	17782	0.318	9.55
9E07048-CAL7	20	42844	0.337	9.55
9E07048-CAL8	40	92169	0.420	9.55
9E07048-CAL9	100	280127	0.425	9.54
9E07048-CALA	200	591216	0.442	9.55
9E07048-CALB	400	1304670	0.426	9.54

AVE RF **0.395** RF RSD **13.41** AVE RT **9.54**

Chlorobenzene-d5 (ISTD)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	50	263004	5260.080	9.81
9E07048-CAL2	50	315116	6302.320	9.80
9E07048-CAL3	50	282136	5642.720	9.80
9E07048-CAL4	50	321643	6432.860	9.81
9E07048-CAL5	50	271061	5421.220	9.81
9E07048-CAL6	50	279254	5585.080	9.80
9E07048-CAL7	50	318211	6364.220	9.80
9E07048-CAL8	50	274550	5491.000	9.80
9E07048-CAL9	50	329813	6596.260	9.80
9E07048-CALA	50	334077	6681.540	9.81
9E07048-CALB	50	382482	7649.640	9.81

AVE RF **6129.722** RF RSD **11.77** AVE RT **9.80**

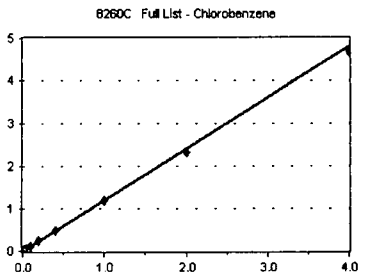
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Chlorobenzene

Curve Fit: **AVERAGE RF**

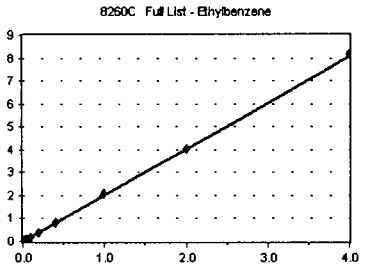


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	708	1.346	9.82
9E07048-CAL2	0.2	1621	1.286	9.82
9E07048-CAL3	0.4	2707	1.199	9.82
9E07048-CAL4	1	7684	1.194	9.82
9E07048-CAL5	2	12836	1.184	9.82
9E07048-CAL6	5	32582	1.167	9.82
9E07048-CAL7	10	74844	1.176	9.82
9E07048-CAL8	20	130501	1.188	9.82
9E07048-CAL9	50	392199	1.189	9.82
9E07048-CALA	100	775570	1.161	9.82
9E07048-CALB	200	1783488	1.166	9.82

AVE RF **1.205** RF RSD **4.79** AVE RT **9.82**

Ethylbenzene

Curve Fit: **AVERAGE RF**

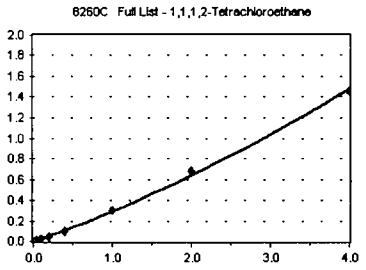


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	1175	2.234	9.85
9E07048-CAL2	0.2	2644	2.098	9.85
9E07048-CAL3	0.4	4382	1.941	9.85
9E07048-CAL4	1	12168	1.892	9.85
9E07048-CAL5	2	20590	1.899	9.85
9E07048-CAL6	5	53767	1.925	9.85
9E07048-CAL7	10	123904	1.947	9.85
9E07048-CAL8	20	225958	2.058	9.85
9E07048-CAL9	50	684347	2.075	9.85
9E07048-CALA	100	1355629	2.029	9.84
9E07048-CALB	200	3128616	2.045	9.84

AVE RF **2.013** RF RSD **5.16** AVE RT **9.85**

1,1,1,2-Tetrachloroethane

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

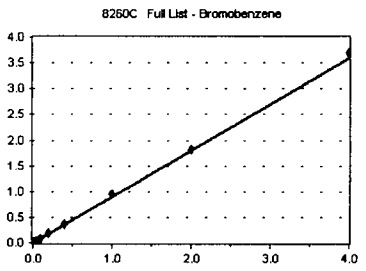


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL3	0.4	292	0.129	9.89
9E07048-CAL4	1	785	0.122	9.89
9E07048-CAL5	2	1701	0.157	9.89
9E07048-CAL6	5	4779	0.171	9.88
9E07048-CAL7	10	12247	0.192	9.88
9E07048-CAL8	20	27384	0.249	9.88
9E07048-CAL9	50	99762	0.302	9.88
9E07048-CALA	100	228768	0.342	9.88
9E07048-CALB	200	559200	0.366	9.88

AVE RF **0.226** RF RSD **40.98** AVE RT **9.88**

Bromobenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	160	0.681	0.00
9E07048-CAL2	0.2	538	0.954	10.96
9E07048-CAL3	0.4	808	0.839	10.95
9E07048-CAL4	1	2646	0.935	10.96
9E07048-CAL5	2	4463	0.912	10.96
9E07048-CAL6	5	11371	0.903	10.95
9E07048-CAL7	10	26129	0.949	10.96
9E07048-CAL8	20	47722	0.939	10.95
9E07048-CAL9	50	145102	0.945	10.95
9E07048-CALA	100	284944	0.912	10.96
9E07048-CALB	200	686712	0.925	10.96

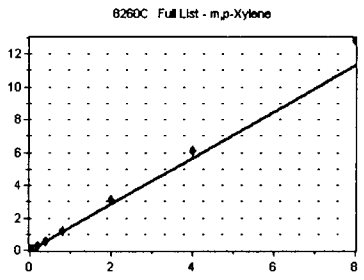
AVE RF **0.899** RF RSD **8.79** AVE RT **9.96**

Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

m,p-Xylene

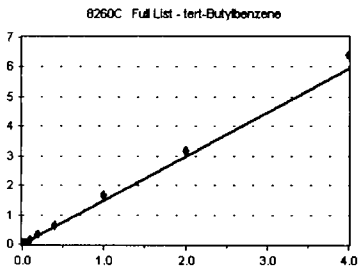


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.2	1447	1.375	9.99
9E07048-CAL2	0.4	3375	1.339	9.99
9E07048-CAL3	0.8	5409	1.198	9.99
9E07048-CAL4	2	16601	1.290	9.98
9E07048-CAL5	4	28146	1.298	9.98
9E07048-CAL6	10	76311	1.366	9.98
9E07048-CAL7	20	180873	1.421	9.98
9E07048-CAL8	40	334982	1.525	9.98
9E07048-CAL9	100	1024139	1.553	9.98
9E07048-CALA	200	2053605	1.537	9.98
9E07048-CALB	400	4916984	1.607	9.98

AVE RF **1.410** RF RSD **9.21** AVE RT **9.98**

tert-Butylbenzene

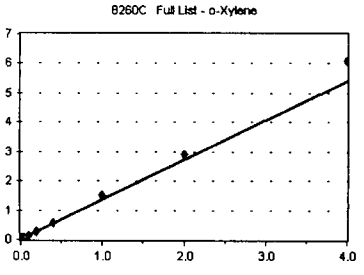


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	294	1.252	0.00
9E07048-CAL2	0.2	778	1.380	11.38
9E07048-CAL3	0.4	1226	1.273	11.38
9E07048-CAL4	1	4016	1.419	11.38
9E07048-CAL5	2	6886	1.406	11.38
9E07048-CAL6	5	18826	1.496	11.38
9E07048-CAL7	10	44486	1.616	11.38
9E07048-CAL8	20	82417	1.621	11.38
9E07048-CAL9	50	255683	1.665	11.38
9E07048-CALA	100	498695	1.596	11.38
9E07048-CALB	200	1185300	1.596	11.38

AVE RF **1.484** RF RSD **9.85** AVE RT **10.35**

o-Xylene

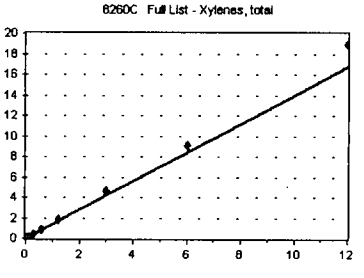


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	771	1.466	10.37
9E07048-CAL2	0.2	1661	1.318	10.36
9E07048-CAL3	0.4	2704	1.198	10.36
9E07048-CAL4	1	7663	1.191	10.37
9E07048-CAL5	2	13306	1.227	10.37
9E07048-CAL6	5	35546	1.273	10.36
9E07048-CAL7	10	85079	1.337	10.36
9E07048-CAL8	20	157388	1.433	10.36
9E07048-CAL9	50	494845	1.500	10.36
9E07048-CALA	100	977297	1.463	10.36
9E07048-CALB	200	2329915	1.523	10.36

AVE RF **1.357** RF RSD **9.19** AVE RT **10.36**

Xylenes, total



Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.3	2218	1.406	10.37
9E07048-CAL2	0.6	5036	1.332	10.36
9E07048-CAL3	1.2	8113	1.198	10.36
9E07048-CAL4	3	24264	1.257	10.37
9E07048-CAL5	6	41452	1.274	10.37
9E07048-CAL6	15	111857	1.335	10.36
9E07048-CAL7	30	265952	1.393	10.36
9E07048-CAL8	60	492370	1.494	10.36
9E07048-CAL9	150	1518984	1.535	10.36
9E07048-CALA	300	3030902	1.512	10.36
9E07048-CALB	600	7246899	1.579	10.36

AVE RF **1.392** RF RSD **9.00** AVE RT **10.36**

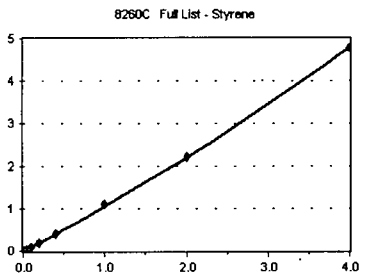
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Styrene

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

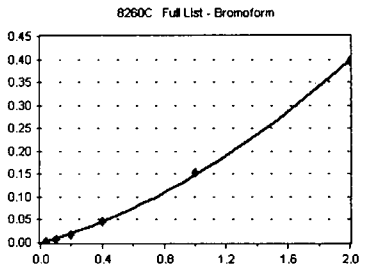


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	742	0.589	10.42
9E07048-CAL3	0.4	1408	0.624	10.42
9E07048-CAL4	1	4261	0.662	10.42
9E07048-CAL5	2	7423	0.685	10.42
9E07048-CAL6	5	22451	0.804	10.41
9E07048-CAL7	10	56305	0.885	10.41
9E07048-CAL8	20	110271	1.004	10.41
9E07048-CAL9	50	367293	1.114	10.41
9E07048-CALA	100	736185	1.102	10.41
9E07048-CALB	200	1826906	1.194	10.41

AVE RF **0.866** RF RSD **26.04** AVE RT **10.41**

Bromoform

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

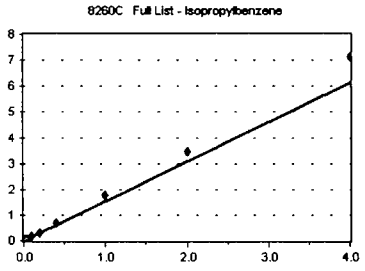


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL4~~	~~1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL5	2	793	7.314	10.44
9E07048-CAL6	5	2131	7.631	10.44
9E07048-CAL7	10	5401	8.487	10.44
9E07048-CAL8	20	12454	0.113	10.44
9E07048-CAL9	50	50592	0.153	10.44
9E07048-CALA	100	132822	0.199	10.43
~~9E07048-CALB~~	~~200~~	~~365594~~	~~0.239~~	~~10.43~~

AVE RF **0.117** RF RSD **43.10** AVE RT **10.44**

Isopropylbenzene

Curve Fit: **AVERAGE RF**

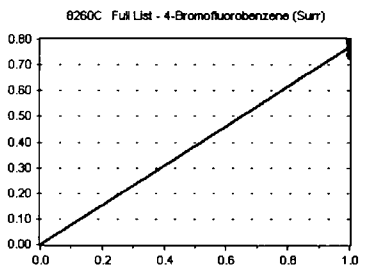


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~607~~	~~1.154~~	~~0.00~~
9E07048-CAL2	0.2	1621	1.286	10.63
9E07048-CAL3	0.4	2804	1.242	10.63
9E07048-CAL4	1	8865	1.378	10.63
9E07048-CAL5	2	14839	1.369	10.63
9E07048-CAL6	5	42773	1.532	10.63
9E07048-CAL7	10	101605	1.597	10.63
9E07048-CAL8	20	187296	1.705	10.63
9E07048-CAL9	50	585625	1.776	10.63
9E07048-CALA	100	1158047	1.733	10.63
9E07048-CALB	200	2723392	1.780	10.63

AVE RF **1.540** RF RSD **13.52** AVE RT **10.63**

4-Bromofluorobenzene (Surr)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	50	90333	0.769	10.87
9E07048-CAL2	50	110936	0.787	10.87
9E07048-CAL3	50	94062	0.781	10.87
9E07048-CAL4	50	112797	0.797	10.87
9E07048-CAL5	50	93757	0.766	10.87
9E07048-CAL6	50	96094	0.763	10.87
9E07048-CAL7	50	109811	0.798	10.87
9E07048-CAL8	50	96557	0.760	10.87
9E07048-CAL9	50	117904	0.768	10.87
9E07048-CALA	50	115967	0.742	10.87
9E07048-CALB	50	136770	0.737	10.87

AVE RF **0.770** RF RSD **2.59** AVE RT **10.87**

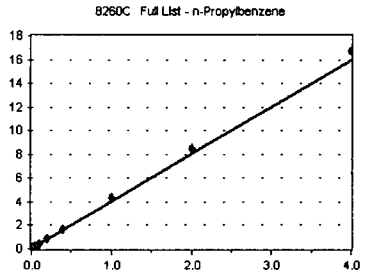
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

n-Propylbenzene

Curve Fit: **AVERAGE RF**

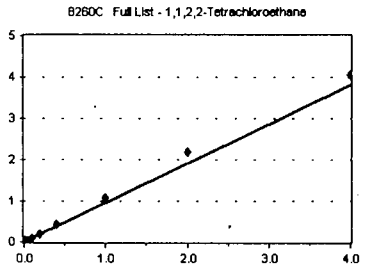


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	914	3.893	10.98
9E07048-CAL2	0.2	2125	3.768	10.98
9E07048-CAL3	0.4	3524	3.659	10.98
9E07048-CAL4	1	10761	3.802	10.97
9E07048-CAL5	2	18352	3.748	10.97
9E07048-CAL6	5	49128	3.903	10.97
9E07048-CAL7	10	115664	4.202	10.97
9E07048-CAL8	20	214448	4.219	10.97
9E07048-CAL9	50	668617	4.354	10.97
9E07048-CALA	100	1317712	4.217	10.98
9E07048-CALB	200	3112598	4.191	10.97

AVE RF **3.996** RF RSD **6.08** AVE RT **10.97**

1,1,2,2-Tetrachloroethane

Curve Fit: **AVERAGE RF**

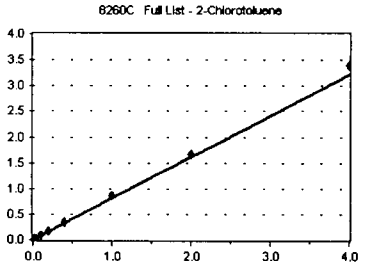


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~138~~	~~0.588~~	~~0.00~~
9E07048-CAL2	0.2	440	0.780	11.04
9E07048-CAL3	0.4	771	0.801	11.04
9E07048-CAL4	1	2364	0.835	11.04
9E07048-CAL5	2	4375	0.894	11.04
9E07048-CAL6	5	11560	0.918	11.04
9E07048-CAL7	10	27257	0.990	11.04
9E07048-CAL8	20	55658	1.095	11.04
9E07048-CAL9	50	165500	1.078	11.04
9E07048-CALA	100	342106	1.095	11.04
9E07048-CALB	200	754067	1.015	11.04

AVE RF **0.950** RF RSD **12.78** AVE RT **11.04**

2-Chlorotoluene

Curve Fit: **AVERAGE RF**

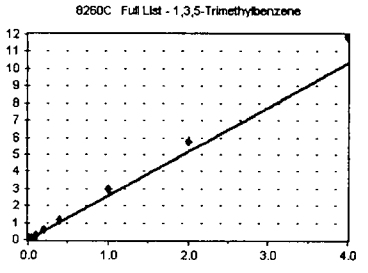


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	441	0.782	11.11
9E07048-CAL3	0.4	669	0.695	11.11
9E07048-CAL4	1	2215	0.783	11.11
9E07048-CAL5	2	3616	0.739	11.11
9E07048-CAL6	5	9901	0.787	11.11
9E07048-CAL7	10	23610	0.858	11.11
9E07048-CAL8	20	42696	0.840	11.10
9E07048-CAL9	50	133819	0.871	11.10
9E07048-CALA	100	259978	0.832	11.10
9E07048-CALB	200	630374	0.849	11.10

AVE RF **0.803** RF RSD **7.06** AVE RT **11.10**

1,3,5-Trimethylbenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	548	2.334	11.13
9E07048-CAL2	0.2	1238	2.195	11.13
9E07048-CAL3	0.4	2172	2.255	11.13
9E07048-CAL4	1	6404	2.263	11.13
9E07048-CAL5	2	11485	2.346	11.13
9E07048-CAL6	5	31608	2.511	11.13
9E07048-CAL7	10	77527	2.817	11.13
9E07048-CAL8	20	146436	2.881	11.13
9E07048-CAL9	50	457542	2.979	11.13
9E07048-CALA	100	898558	2.875	11.13
9E07048-CALB	200	2203355	2.967	11.13

AVE RF **2.584** RF RSD **12.34** AVE RT **11.13**

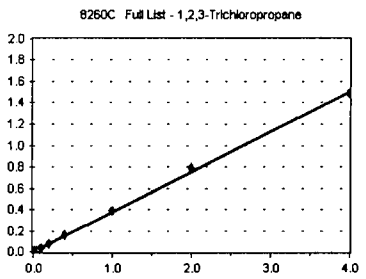
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

1,2,3-Trichloropropane

Curve Fit: **AVERAGE RF**

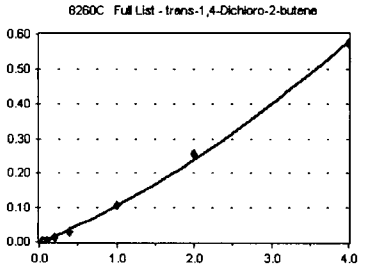


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~135~~	~~0.239~~	~~11.15~~
9E07048-CAL3	0.4	303	0.315	11.15
9E07048-CAL4	1	973	0.344	11.15
9E07048-CAL5	2	1924	0.393	11.15
9E07048-CAL6	5	4758	0.378	11.14
9E07048-CAL7	10	10739	0.390	11.15
9E07048-CAL8	20	20933	0.412	11.15
9E07048-CAL9	50	60249	0.392	11.15
9E07048-CALA	100	123481	0.395	11.15
9E07048-CALB	200	276178	0.372	11.14

AVE RF **0.377** RF RSD **7.97** AVE RT **11.15**

trans-1,4-Dichloro-2-butene

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

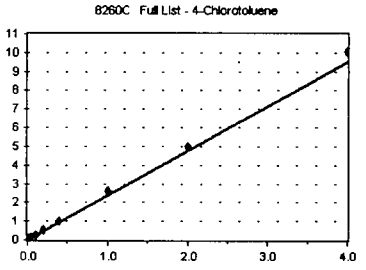


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL4~~	~~1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL5	2	237	4.840	11.18
9E07048-CAL6	5	580	4.608	11.18
9E07048-CAL7	10	1656	6.016	11.18
9E07048-CAL8	20	3834	7.542	11.18
9E07048-CAL9	50	16499	0.107	11.18
9E07048-CALA	100	40002	0.128	11.18
9E07048-CALB	200	106408	0.143	11.17

AVE RF **0.087** RF RSD **45.23** AVE RT **11.18**

4-Chlorotoluene

Curve Fit: **AVERAGE RF**

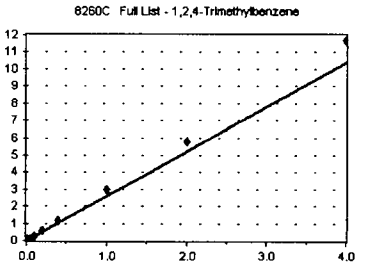


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	483	2.057	11.24
9E07048-CAL2	0.2	1253	2.222	11.24
9E07048-CAL3	0.4	2028	2.106	11.24
9E07048-CAL4	1	6529	2.307	11.24
9E07048-CAL5	2	11250	2.298	11.24
9E07048-CAL6	5	30163	2.397	11.23
9E07048-CAL7	10	71020	2.580	11.23
9E07048-CAL8	20	129493	2.547	11.23
9E07048-CAL9	50	401605	2.615	11.23
9E07048-CALA	100	778535	2.491	11.24
9E07048-CALB	200	1869203	2.517	11.24

AVE RF **2.376** RF RSD **8.11** AVE RT **11.24**

1,2,4-Trimethylbenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	561	2.389	11.44
9E07048-CAL2	0.2	1251	2.218	11.44
9E07048-CAL3	0.4	2171	2.254	11.44
9E07048-CAL4	1	6383	2.255	11.44
9E07048-CAL5	2	11474	2.343	11.44
9E07048-CAL6	5	32438	2.577	11.43
9E07048-CAL7	10	78156	2.839	11.44
9E07048-CAL8	20	148515	2.922	11.44
9E07048-CAL9	50	457137	2.977	11.43
9E07048-CALA	100	897125	2.871	11.44
9E07048-CALB	200	2164127	2.914	11.44

AVE RF **2.596** RF RSD **11.99** AVE RT **11.44**

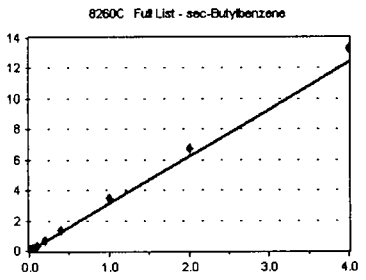
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

sec-Butylbenzene

Curve Fit: **AVERAGE RF**

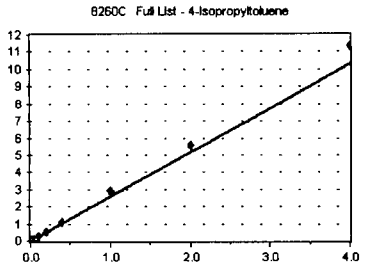


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	715	3.045	11.52
9E07048-CAL2	0.2	1494	2.649	11.52
9E07048-CAL3	0.4	2640	2.741	11.52
9E07048-CAL4	1	7874	2.782	11.52
9E07048-CAL5	2	14030	2.865	11.52
9E07048-CAL6	5	39097	3.106	11.52
9E07048-CAL7	10	92413	3.357	11.52
9E07048-CAL8	20	171858	3.381	11.52
9E07048-CAL9	50	532289	3.466	11.52
9E07048-CALA	100	1046840	3.350	11.52
9E07048-CALB	200	2466612	3.321	11.52

AVE RF **3.097** RF RSD **9.59** AVE RT **11.52**

4-Isopropyltoluene

Curve Fit: **AVERAGE RF**

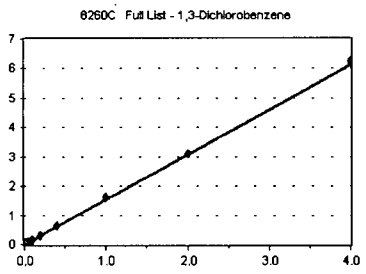


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~475~~	~~2.023~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~1097~~	~~1.945~~	~~11.63~~
~~9E07048-CAL3~~	~~0.4~~	~~1855~~	~~1.926~~	~~11.63~~
9E07048-CAL4	1	5898	2.084	11.63
9E07048-CAL5	2	10365	2.117	11.63
9E07048-CAL6	5	30161	2.396	11.63
9E07048-CAL7	10	73579	2.673	11.63
9E07048-CAL8	20	141976	2.793	11.63
9E07048-CAL9	50	446740	2.909	11.63
9E07048-CALA	100	875955	2.803	11.63
9E07048-CALB	200	2110691	2.842	11.63

AVE RF **2.577** RF RSD **12.91** AVE RT **11.63**

1,3-Dichlorobenzene

Curve Fit: **AVERAGE RF**

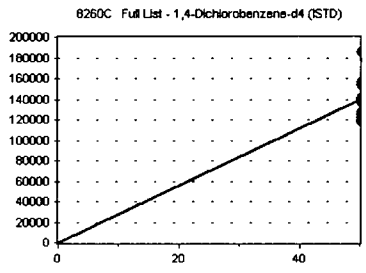


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	361	1.538	11.69
9E07048-CAL2	0.2	822	1.458	11.70
9E07048-CAL3	0.4	1391	1.444	11.70
9E07048-CAL4	1	4151	1.467	11.70
9E07048-CAL5	2	7501	1.532	11.70
9E07048-CAL6	5	19402	1.542	11.70
9E07048-CAL7	10	42681	1.551	11.70
9E07048-CAL8	20	82474	1.622	11.69
9E07048-CAL9	50	248657	1.619	11.70
9E07048-CALA	100	483440	1.547	11.69
9E07048-CALB	200	1158673	1.560	11.69

AVE RF **1.534** RF RSD **3.84** AVE RT **11.70**

1,4-Dichlorobenzene-d4 (ISTD)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	50	117395	2347.900	11.75
9E07048-CAL2	50	140978	2819.560	11.75
9E07048-CAL3	50	120378	2407.560	11.75
9E07048-CAL4	50	141519	2830.380	11.75
9E07048-CAL5	50	122406	2448.120	11.75
9E07048-CAL6	50	125861	2517.220	11.75
9E07048-CAL7	50	137625	2752.500	11.75
9E07048-CAL8	50	127087	2541.740	11.75
9E07048-CAL9	50	153580	3071.600	11.75
9E07048-CALA	50	156244	3124.880	11.75
9E07048-CALB	50	185657	3713.140	11.75

AVE RF **2779.509** RF RSD **14.57** AVE RT **11.75**

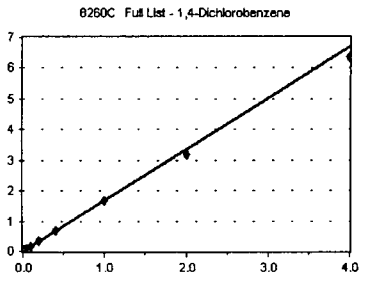
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

1,4-Dichlorobenzene

Curve Fit: **AVERAGE RF**

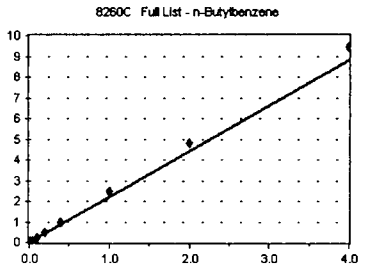


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	465	1.980	11.76
9E07048-CAL2	0.2	932	1.653	11.76
9E07048-CAL3	0.4	1636	1.699	11.76
9E07048-CAL4	1	4797	1.695	11.76
9E07048-CAL5	2	8234	1.682	11.76
9E07048-CAL6	5	20284	1.612	11.76
9E07048-CAL7	10	44850	1.629	11.76
9E07048-CAL8	20	85622	1.684	11.76
9E07048-CAL9	50	254182	1.655	11.76
9E07048-CALA	100	493681	1.580	11.76
9E07048-CALB	200	1176777	1.585	11.76

AVE RF **1.678** RF RSD **6.49** AVE RT **11.76**

n-Butylbenzene

Curve Fit: **AVERAGE RF**

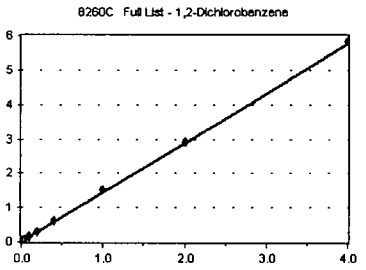


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	503	2.142	11.95
9E07048-CAL2	0.2	1099	1.949	11.95
9E07048-CAL3	0.4	1917	1.991	11.95
9E07048-CAL4	1	5710	2.017	11.95
9E07048-CAL5	2	9476	1.935	11.95
9E07048-CAL6	5	27019	2.147	11.95
9E07048-CAL7	10	65332	2.374	11.94
9E07048-CAL8	20	121885	2.398	11.94
9E07048-CAL9	50	379675	2.472	11.94
9E07048-CALA	100	753712	2.412	11.94
9E07048-CALB	200	1754778	2.363	11.95

AVE RF **2.200** RF RSD **9.44** AVE RT **11.95**

1,2-Dichlorobenzene

Curve Fit: **AVERAGE RF**

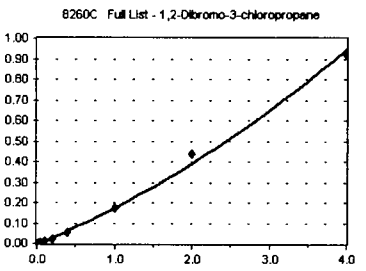


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	319	1.359	12.08
9E07048-CAL2	0.2	799	1.417	12.08
9E07048-CAL3	0.4	1327	1.378	12.08
9E07048-CAL4	1	3856	1.362	12.08
9E07048-CAL5	2	6890	1.407	12.08
9E07048-CAL6	5	18432	1.464	12.08
9E07048-CAL7	10	40089	1.456	12.08
9E07048-CAL8	20	79323	1.560	12.08
9E07048-CAL9	50	232496	1.514	12.08
9E07048-CALA	100	456101	1.460	12.08
9E07048-CALB	200	1085241	1.461	12.08

AVE RF **1.440** RF RSD **4.38** AVE RT **12.08**

1,2-Dibromo-3-chloropropane

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL4	1	139	4.911	12.69
9E07048-CAL5	2	344	7.026	12.68
9E07048-CAL6	5	1033	8.207	12.68
9E07048-CAL7	10	2666	0.097	12.69
9E07048-CAL8	20	6583	0.129	12.69
9E07048-CAL9	50	26288	0.171	12.69
9E07048-CALA	100	68037	0.218	12.68
9E07048-CALB	200	171676	0.231	12.68

AVE RF **0.131** RF RSD **52.52** AVE RT **12.68**

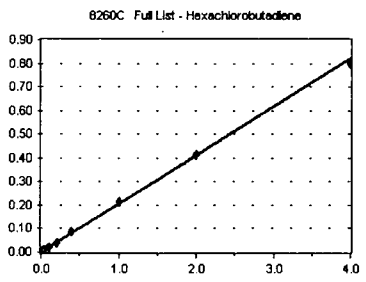
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Hexachlorobutadiene

Curve Fit: **AVERAGE RF**

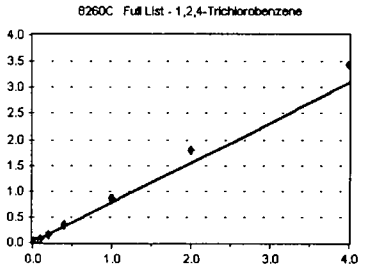


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL4	1	548	0.194	13.18
9E07048-CAL5	2	977	0.200	13.19
9E07048-CAL6	5	2590	0.206	13.19
9E07048-CAL7	10	5590	0.203	13.19
9E07048-CAL8	20	11108	0.219	13.19
9E07048-CAL9	50	33246	0.216	13.19
9E07048-CALA	100	64806	0.207	13.19
9E07048-CALB	200	148043	0.199	13.19

AVE RF **0.205** RF RSD **4.17** AVE RT **13.19**

1,2,4-Trichlorobenzene

Curve Fit: **AVERAGE RF**

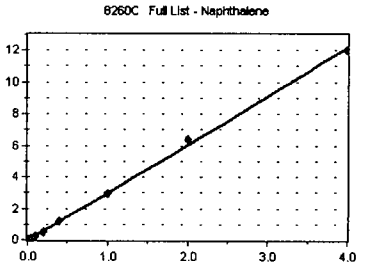


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	326	0.578	13.23
9E07048-CAL3	0.4	681	0.707	13.23
9E07048-CAL4	1	1879	0.664	13.23
9E07048-CAL5	2	3650	0.745	13.23
9E07048-CAL6	5	9487	0.754	13.23
9E07048-CAL7	10	21384	0.777	13.23
9E07048-CAL8	20	44542	0.876	13.23
9E07048-CAL9	50	133873	0.872	13.22
9E07048-CALA	100	280911	0.899	13.23
9E07048-CALB	200	638432	0.860	13.23

AVE RF **0.773** RF RSD **13.57** AVE RT **13.23**

Naphthalene

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

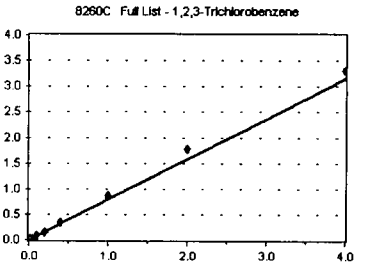


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL3	0.4	1578	1.639	13.50
9E07048-CAL4	1	4612	1.629	13.51
9E07048-CAL5	2	9150	1.869	13.51
9E07048-CAL6	5	26502	2.106	13.50
9E07048-CAL7	10	66084	2.401	13.50
9E07048-CAL8	20	148411	2.919	13.50
9E07048-CAL9	50	456299	2.971	13.50
9E07048-CALA	100	996167	3.188	13.50
9E07048-CALB	200	2228594	3.001	13.50

AVE RF **2.414** RF RSD **25.87** AVE RT **13.50**

1,2,3-Trichlorobenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~356~~	~~0.631~~	~~13.67~~
9E07048-CAL3	0.4	600	0.623	13.67
9E07048-CAL4	1	1872	0.661	13.66
9E07048-CAL5	2	3683	0.752	13.66
9E07048-CAL6	5	9947	0.790	13.66
9E07048-CAL7	10	21895	0.795	13.67
9E07048-CAL8	20	45148	0.888	13.67
9E07048-CAL9	50	132079	0.860	13.67
9E07048-CALA	100	277018	0.886	13.66
9E07048-CALB	200	614270	0.827	13.66

AVE RF **0.787** RF RSD **11.97** AVE RT **13.66**

Calibration Status Report VOA-GCMS6

Method Path : C:\msdchem\1\METHODS\
Method File : VF190507G.M
Title : NWTPH-Gx by GC/MS
Last Update : Wed May 08 11:36:04 2019
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	50	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050734.D
2	2	100	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050735.D
3	3	250	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050736.D
4	4	500	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050737.D
5	5	1000	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050738.D
6	6	2500	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050739.D
7	7	5000	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050740.D
8	8	10000	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050741.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	May 08 11:35 2019	May 08 11:26 2019	
2	2	May 08 11:35 2019	May 08 11:26 2019	
3	3	May 08 11:35 2019	May 08 11:26 2019	
4	4	May 08 11:35 2019	May 08 11:26 2019	
5	5	May 08 11:35 2019	May 08 11:26 2019	
6	6	May 08 11:35 2019	May 08 11:26 2019	
7	7	May 08 11:35 2019	May 08 11:28 2019	
8	8	May 08 11:35 2019	May 08 11:29 2019	

VF190507G.M Wed May 08 14:01:13 2019

Response Factor Report VOA-GCMS6

Method Path : C:\msdchem\1\METHODS\
Method File : VF190507G.M
Title : NWTPH-Gx by GC/MS
Last Update : Wed May 08 11:36:04 2019
Response Via : Initial Calibration

Calibration Files
1 =VF19050734.D 2 =VF19050735.D 3 =VF19050736.D 4 =VF19050737.D 5 =VF19050738.D 6 =VF19050739.D
7 =VF19050740.D 8 =VF19050741.D

		Compound	1	2	3	4	5	6	7	8	Avg	%RSD
1)	I	Pentafluorobenzene...	ISTD									
2)	S	1,4-Difluorobe...	3.752	3.782	3.750	3.774	3.793	3.919	3.946	4.821	3.942	9.20
3)	S	4-Bromofluorob...	2.315	2.475	2.411	2.420	2.537	2.470	2.398	2.393	2.427	2.74
4)	S	Chlorobenzene-...									0.000	-1.00
5)	H	TPHg (C5-C9)	3.421	2.579	2.252	2.227	2.362	2.295	2.106	2.475	2.465	16.78
6)	H	TPHg (C6-C10)	2.469	1.903	1.712	1.771	1.882	1.851	1.727	2.047	1.920	12.85
7)	H	CA-LUFT (C5-C12)	3.596	2.783	2.502	2.529	2.733	2.651	2.479	2.946	2.777	13.22
8)	H	NWTPH-Gx	0.861	1.005	1.178	1.362	1.574	1.576	1.581	1.895	1.379	25.00
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

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Compound List Report VOA-GCMS6

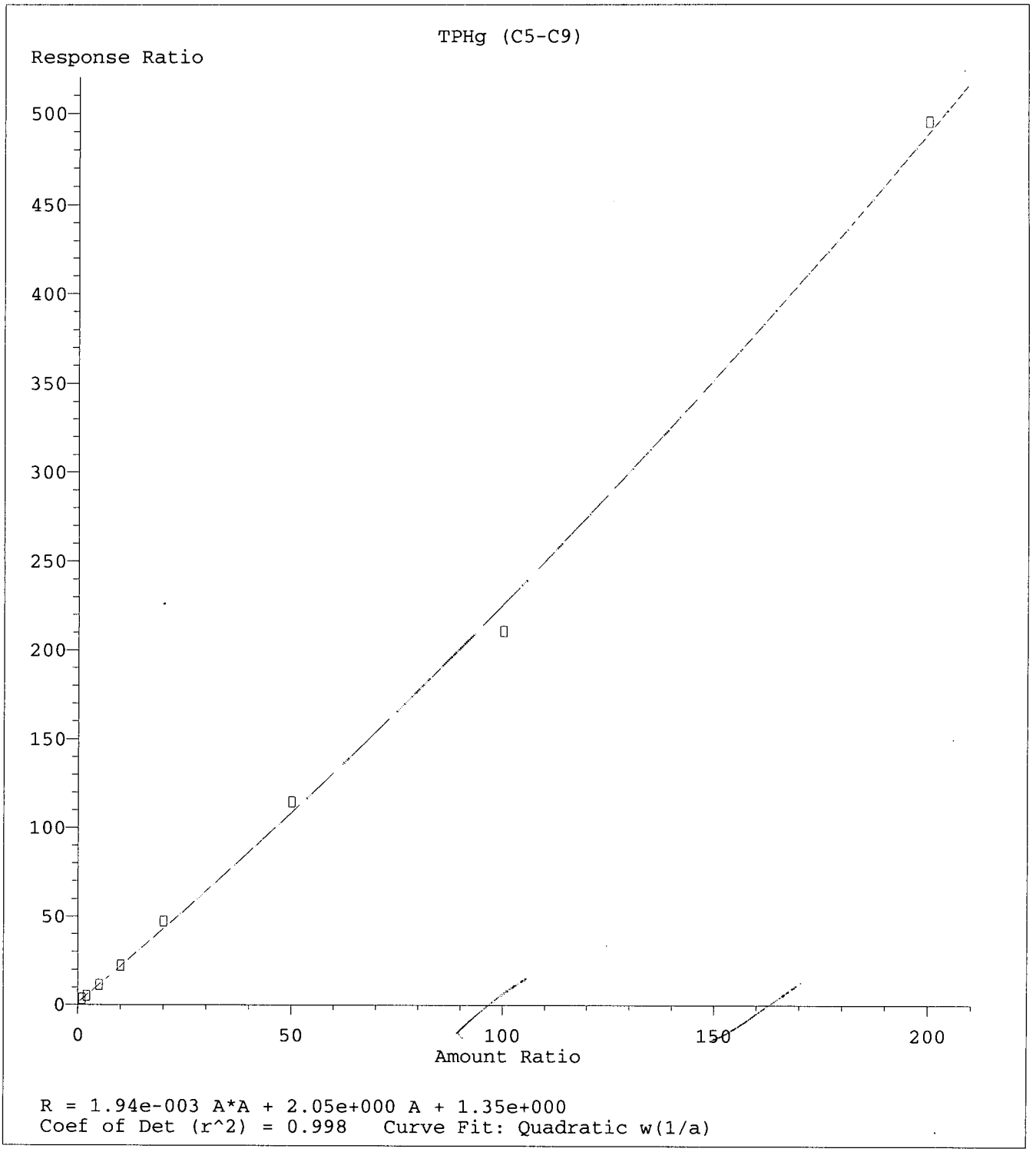
Method Path : C:\msdchem\1\METHODS\
Method File : VF190507G.M
Title : NWTPH-Gx by GC/MS
Last Update : Wed May 08 11:36:04 2019
Response Via : Initial Calibration

Total Cpnds : 13

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	Pentafluorobenzene (IS)	168	6.096	1.000	A	2	A	A
2	S	1,4-Difluorobenzene (Sur)	TIC	6.661	1.093	A	2	A	A
3	S	4-Bromofluorobenzene (Sur)	TIC	10.871	1.783	A	2	A	A
4	S	Chlorobenzene-d5 (NR)	TIC	9.806	1.609	A	2	A	A
5	H	TPHg (C5-C9)	TIC	9.860	1.618	Q	0	A	A
6	H	TPHg (C6-C10)	TIC	9.860	1.618	Q	0	A	A
7	H	CA-LUFT (C5-C12)	TIC	9.860	1.618	Q	0	A	A
8	H	NWTPH-Gx	TIC	9.870	1.619	Q	0	A	A
9		Benzene (NR)	78	6.004	0.985	A	2	A	A
10	S	Toluene-d8 (NR)	TIC	8.170	1.340	A	2	A	A
11	C	Toluene (NR)	91	8.225	1.349	A	2	A	A
12	S	1,4-Dichlorobenzene-d4 (NR)	TIC	11.747	1.927	A	2	A	A
13		Naphthalene (NR)	128	13.499	2.215	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

VF190507G.M Wed May 08 14:01:29 2019



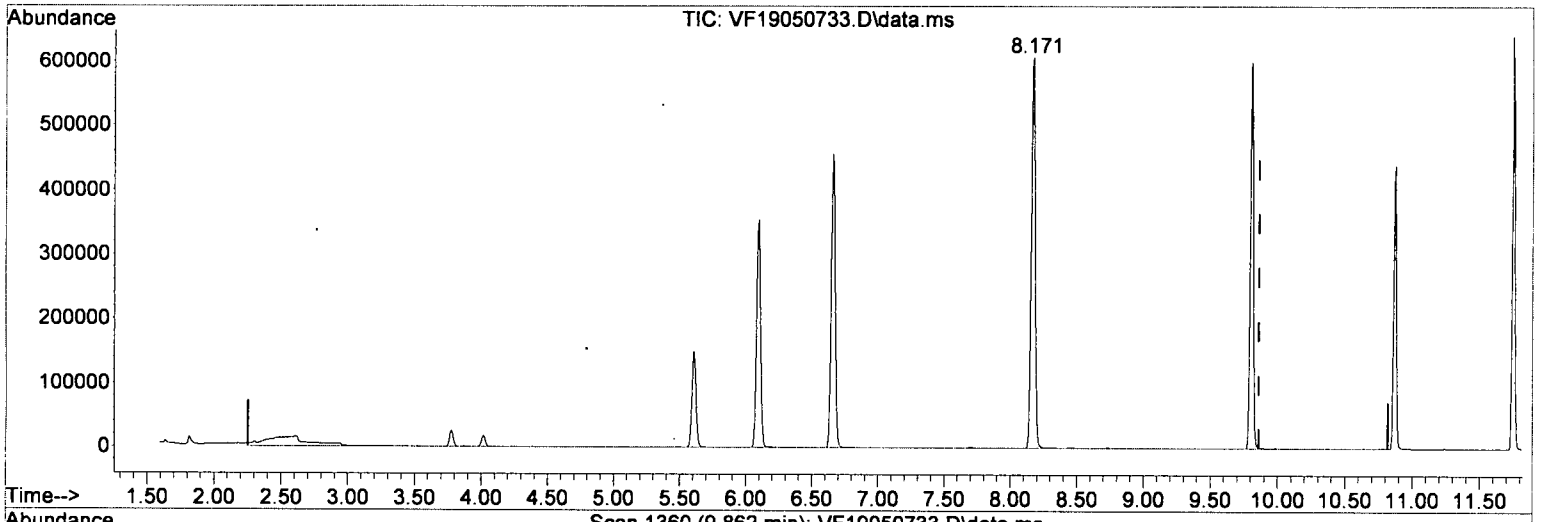
Method Name: C:\msdchem\1\METHODS\VF190507G.M
Calibration Table Last Updated: Wed May 08 11:36:04 2019

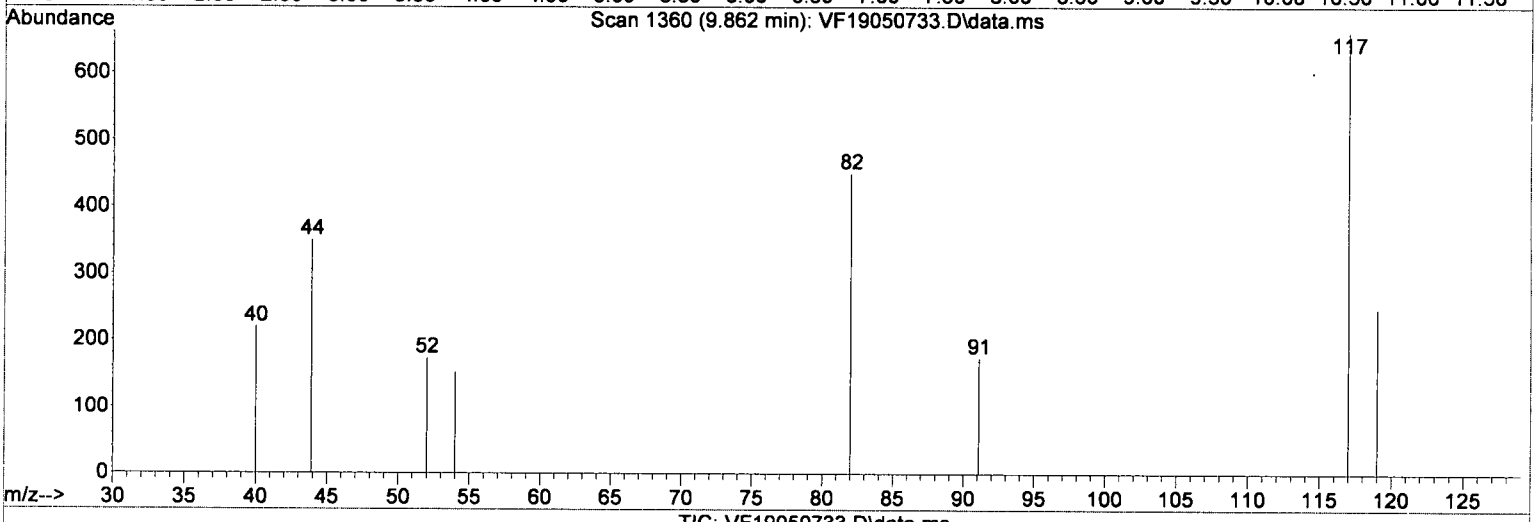
Int = 6.92

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050733.D
Acq On : 8 May 2019 4:49 am
Operator : TB
Sample : 9E07048-ICB2
Misc : 1X DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:13 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





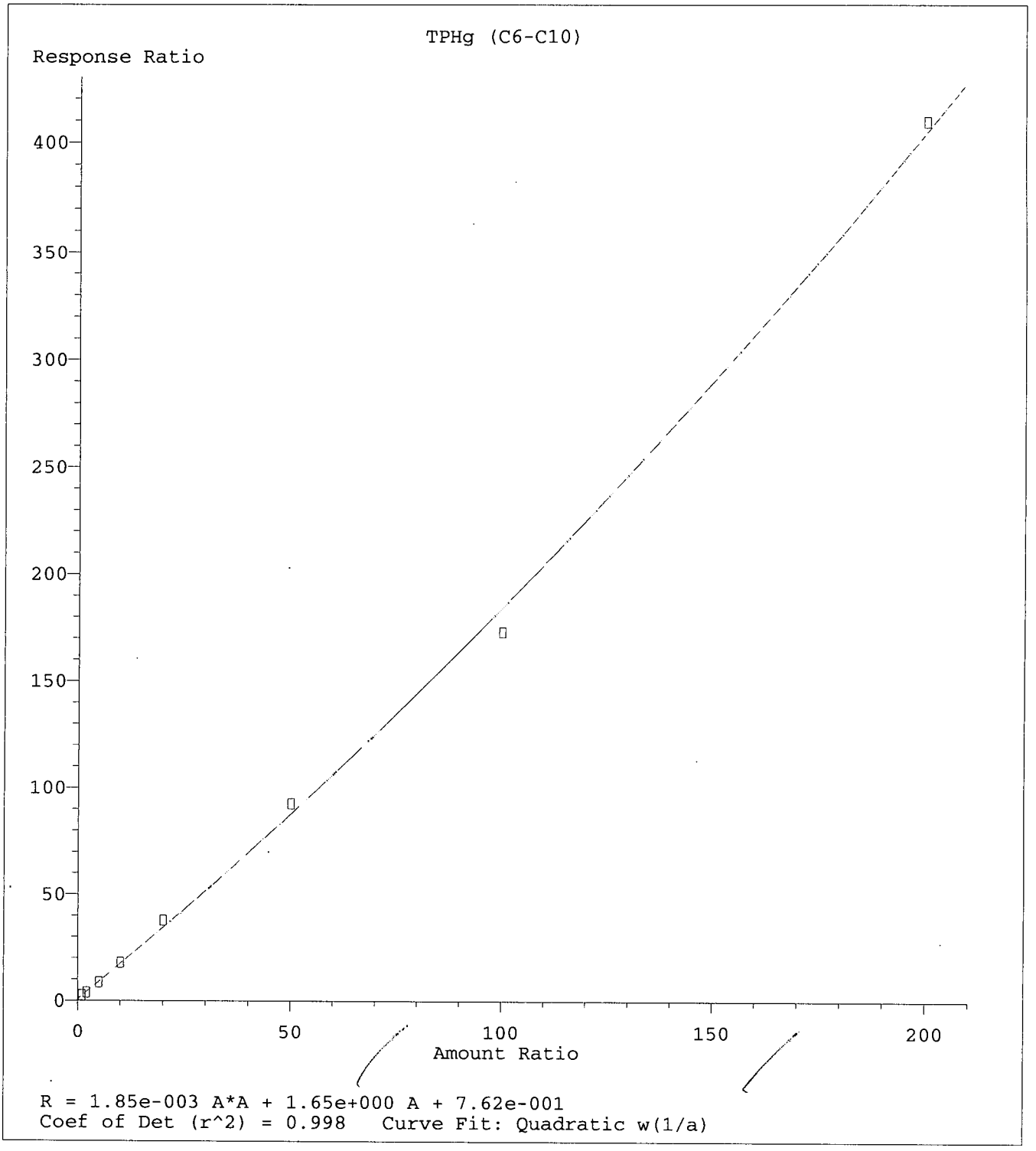
TIC: VF19050733.D\data.ms

(5) TPHg (C5-C9) (H)

9.860min (0.000) 6.52 ug/L m

response 429036

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00



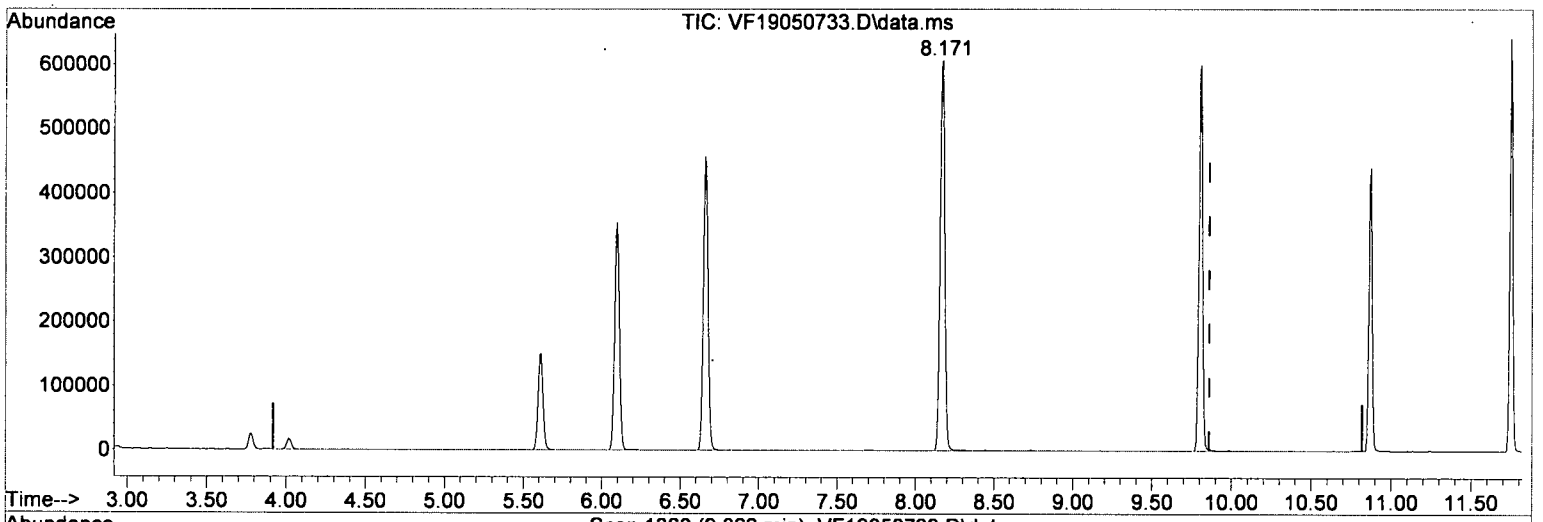
Method Name: C:\msdchem\1\METHODS\VF190507G.M
Calibration Table Last Updated: Wed May 08 11:36:04 2019

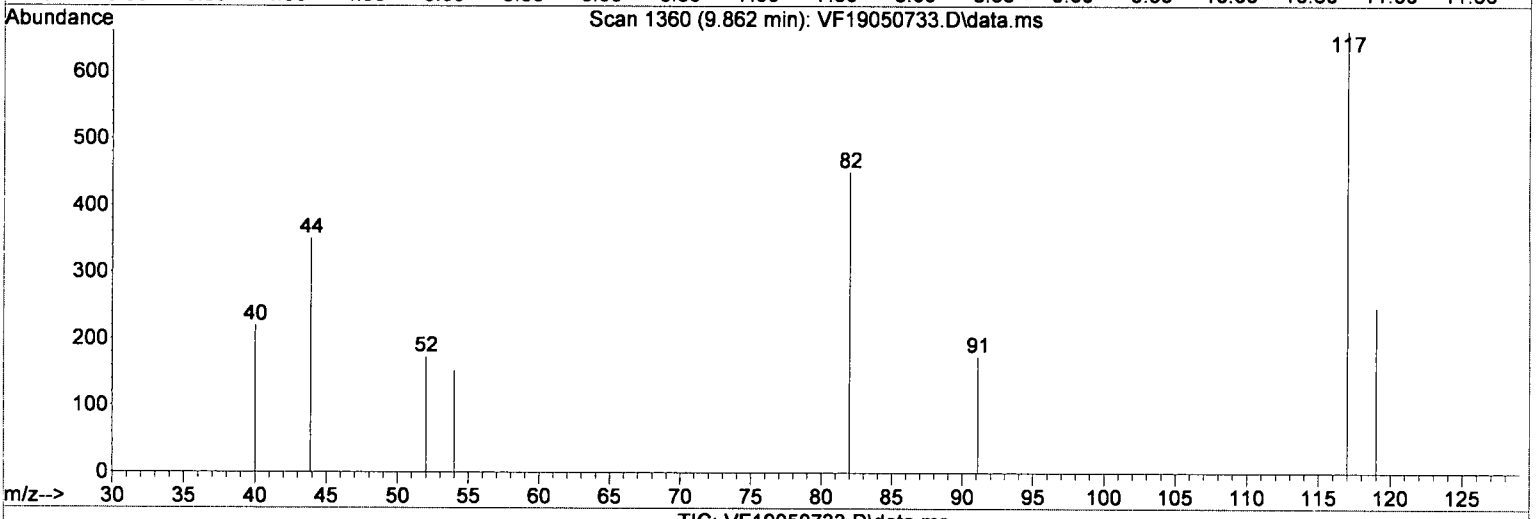
INT = 18,93

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050733.D
Acq On : 8 May 2019 4:49 am
Operator : TB
Sample : 9E07048-ICB2
Misc : 1X DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:13 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





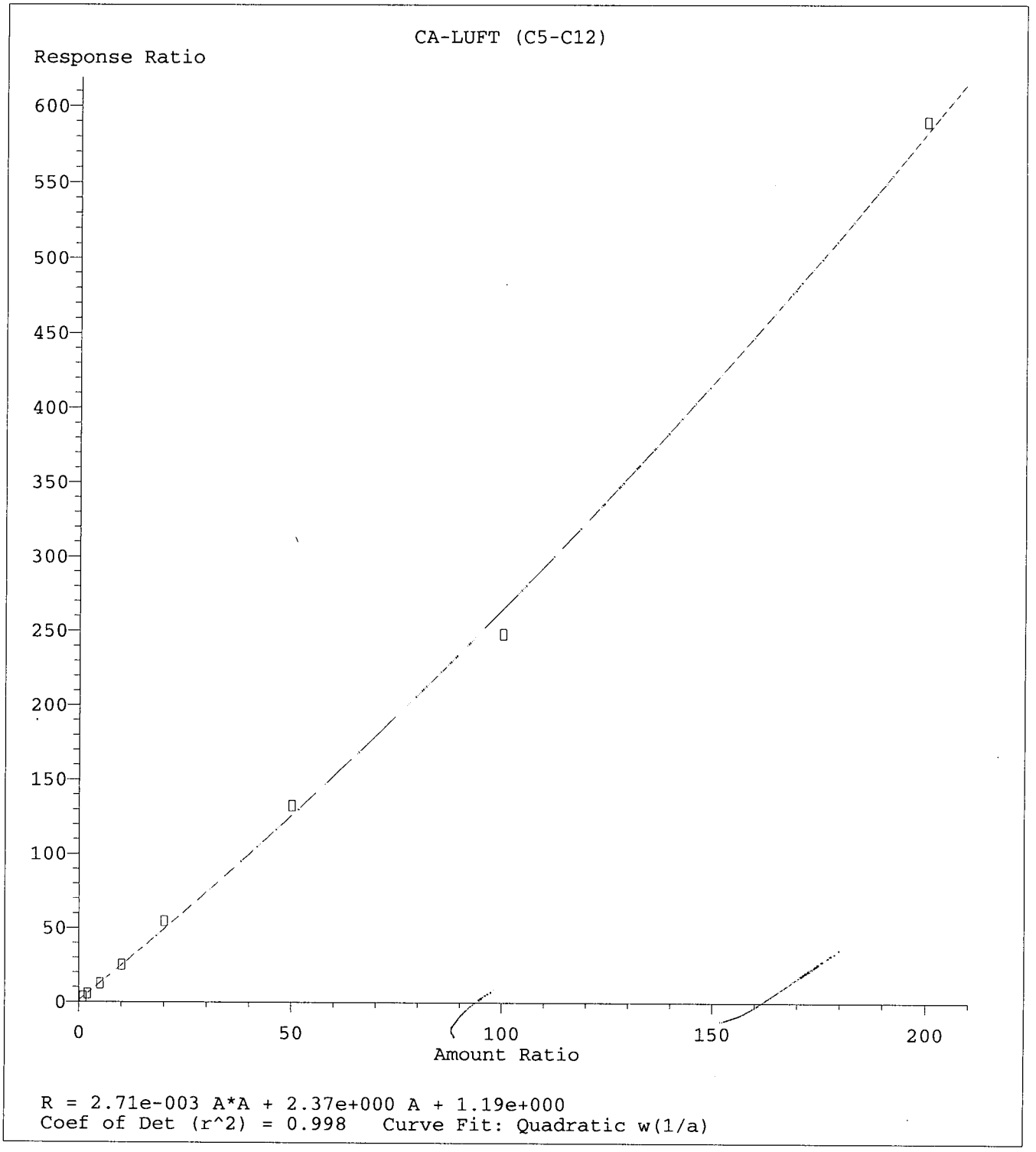
TIC: VF19050733.D\data.ms

(6) TPHg (C6-C10) (H)

9.860min (0.000) 18.93 ug/L m

response 367227

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00



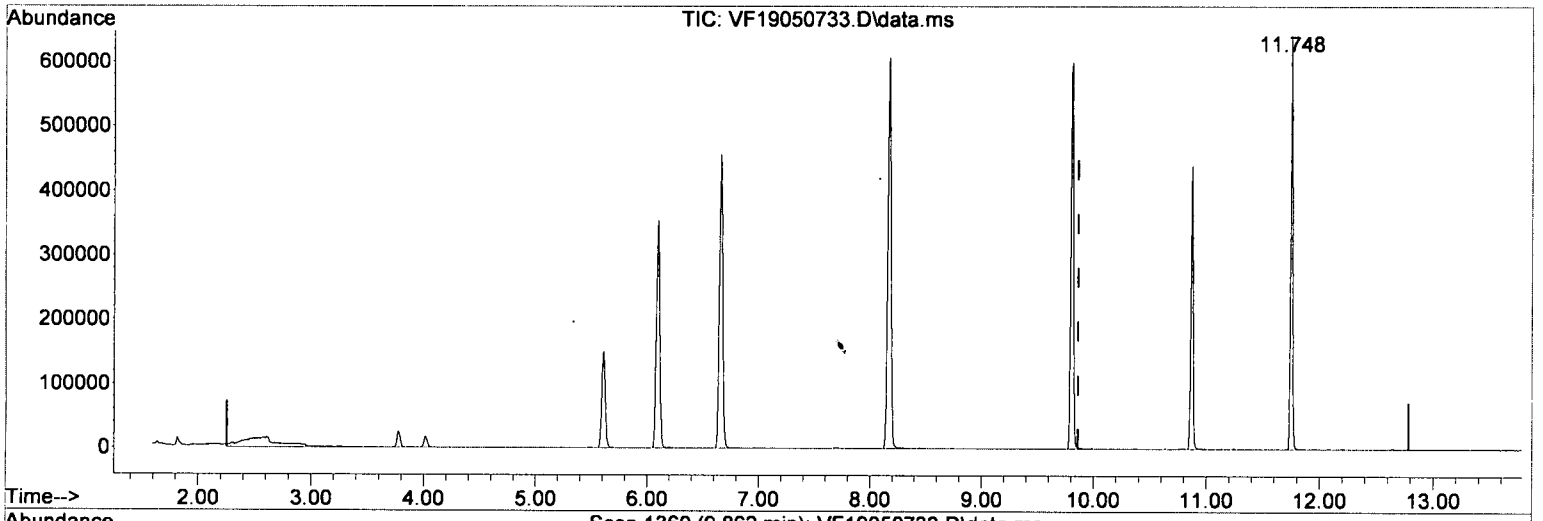
Method Name: C:\msdchem\1\METHODS\VF190507G.M
Calibration Table Last Updated: Wed May 08 11:36:04 2019

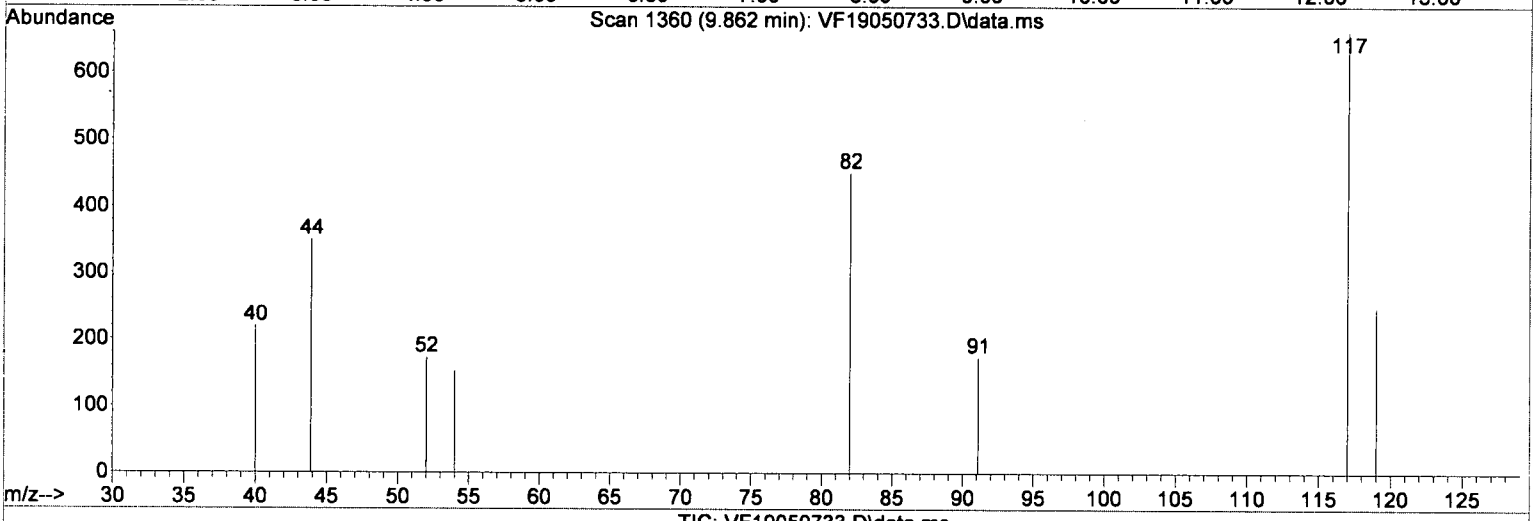
INT = 9,2

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050733.D
Acq On : 8 May 2019 4:49 am
Operator : TB
Sample : 9E07048-ICB2
Misc : 1X DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:13 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





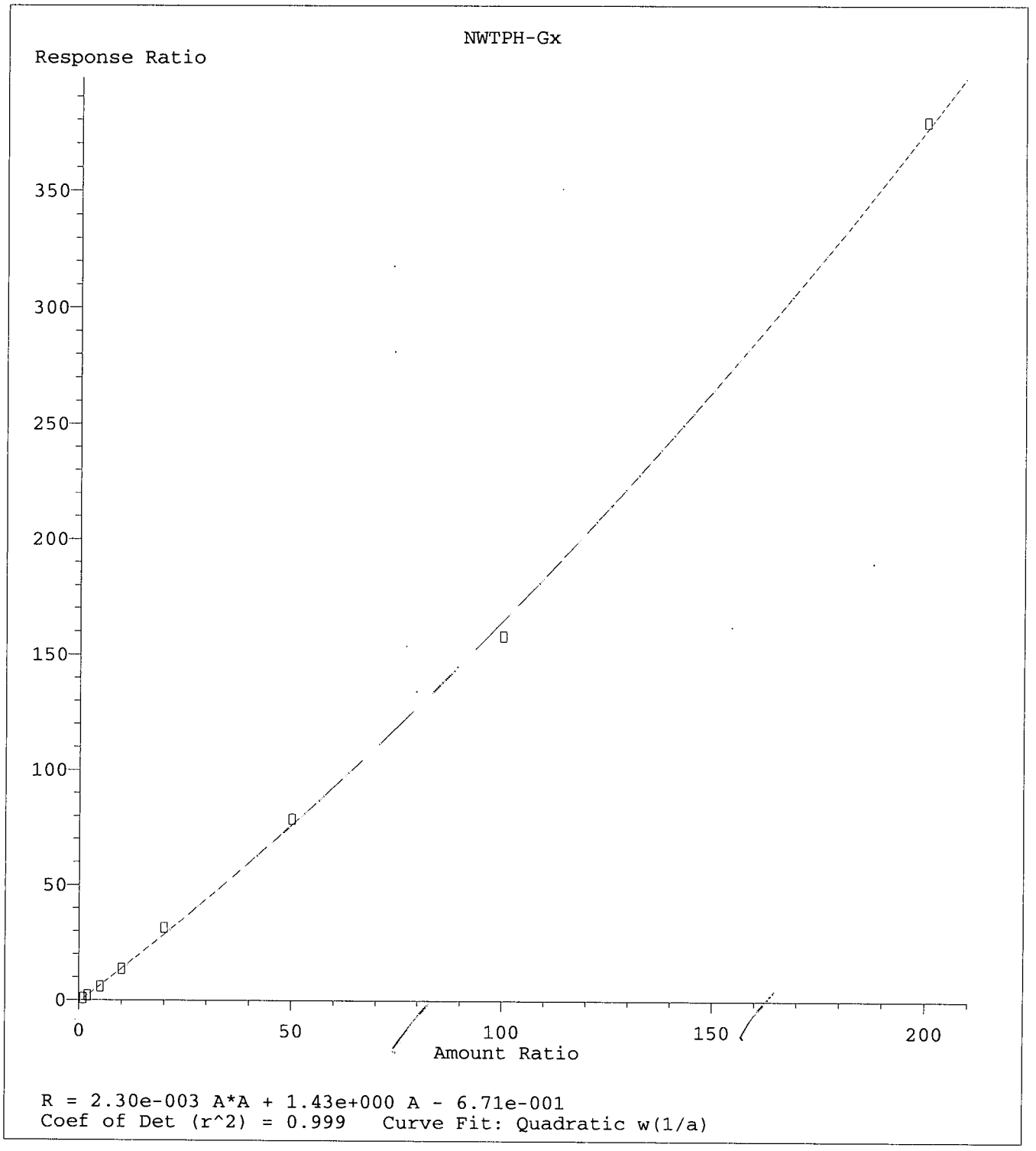
TIC: VF19050733.D\data.ms

(7) CA-LUFT (C5-C12) (H)

9.860min (0.000) 9.20 ug/L m

response 429036

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00



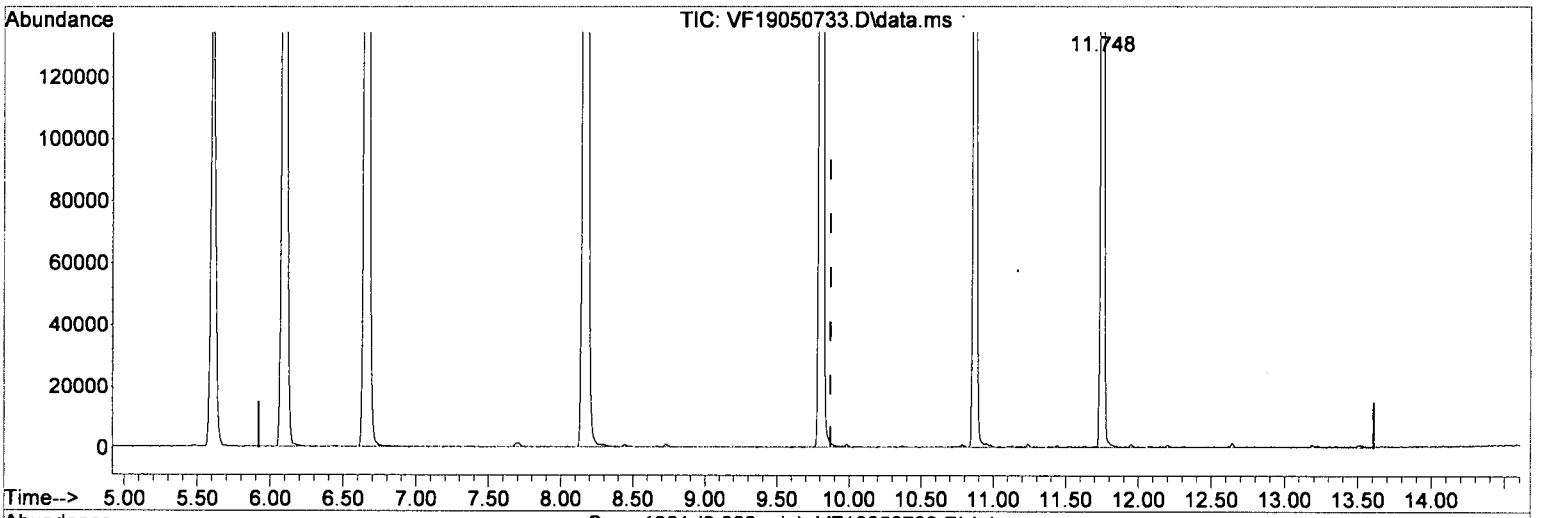
Method Name: C:\msdchem\1\METHODS\VF190507G.M
Calibration Table Last Updated: Wed May 08 11:36:04 2019

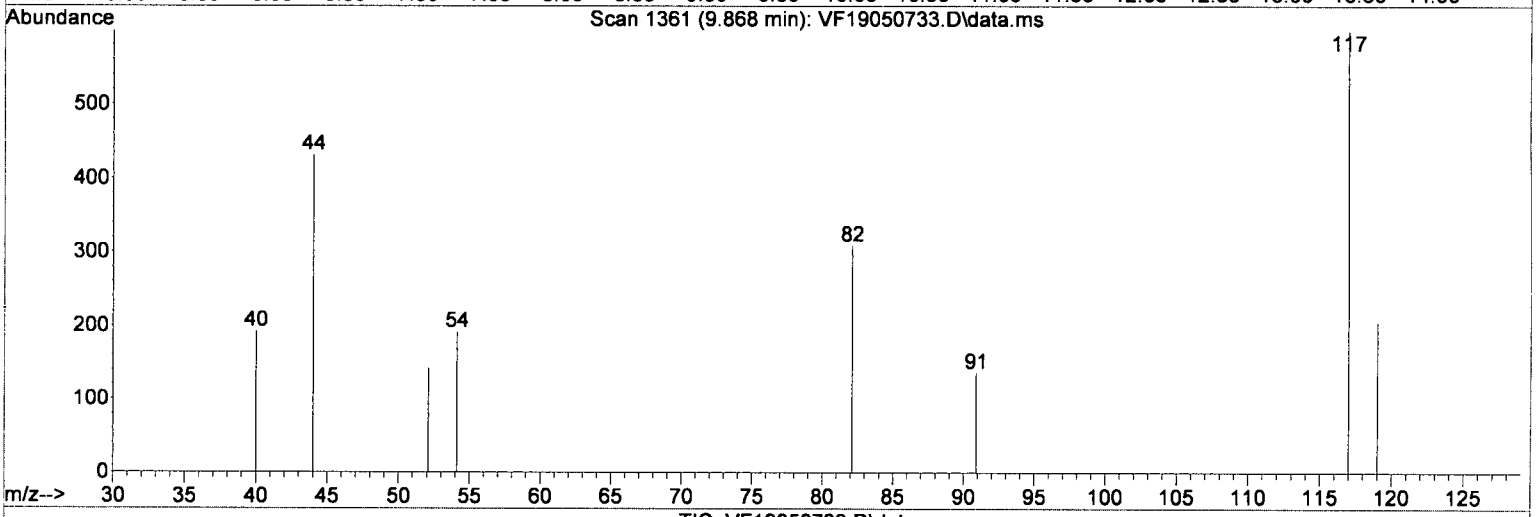
Int = 24.2

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050733.D
Acq On : 8 May 2019 4:49 am
Operator : TB
Sample : 9E07048-ICB2
Misc : 1X DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:13 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





TIC: VF19050733.D\data.ms

(8) NWTPH-Gx (H)

9.870min (0.000) 24.20 ug/L m

response 5129

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: 9E07048

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	
9E07048-TUN2	MS Tune	Soil		A19D196	5/8/2019	3:55:00AM
9E07048-ICB2	Initial Cal Blank	Soil		A19D196	5/8/2019	4:49:00AM
9E07048-CALC	Cal Standard	Soil	A19E016	"	5/8/2019	5:16:00AM
9E07048-CALD	Cal Standard	Soil	A19E017	"	5/8/2019	5:43:00AM
9E07048-CALE	Cal Standard	Soil	A19E018	"	5/8/2019	6:11:00AM
9E07048-CALF	Cal Standard	Soil	A19E019	"	5/8/2019	6:38:00AM
9E07048-CALG	Cal Standard	Soil	A19B200	"	5/8/2019	7:05:00AM
9E07048-CALH	Cal Standard	Soil	A19B201	"	5/8/2019	7:32:00AM
9E07048-CALI	Cal Standard	Soil	A19B202	"	5/8/2019	7:59:00AM
9E07048-CALJ	Cal Standard	Soil	A19B203	"	5/8/2019	8:26:00AM
9E07048-ICV2	Initial Cal Check	Soil	A19B262	"	5/8/2019	9:47:00AM

CALIBRATION STANDARD RECOVERIES

Calibration: **A9E0804** Instrument: **VOA-GCMS6**

8015D-Mod Gasoline (C6-C10 Sequence: **9E07048** Matrix: **Soil**

9E07048-CALC	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E07048-CALD	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E07048-CALE	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E07048-CALF	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E07048-CALG	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E07048-CALH	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E07048-CALI	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E07048-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: 9E07048

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: **A9E0804** Instrument: **VOA-GCMS6**

CA LUFT GRO Sequence: **9E07048** Matrix: **Soil**

9E07048-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\9E07048\
Data File : VF19050744.D
Acq On : 8 May 2019 9:47 am
Operator : TB
Sample : 9E07048-ICV2
Misc : 1X 500ppb GX MeOH
ALS Vial : 34 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:19 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

5/8/19

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	103	0.00
2	S	1,4-Difluorobenzene (Sur)	50.000	46.728	6.5	101	0.00
3	S	4-Bromofluorobenzene (Sur)	50.000	46.479	7.0	96	0.00
4	S	Chlorobenzene-d5 (NR)	-1.000	0.000	0.0	96	0.00
5	H	TPHg (C5-C9)	500.000	533.693	-6.7	109	0.00
6	H	TPHg (C6-C10)	500.000	543.075	-8.6	110	0.00
7	H	CA-LUFT (C5-C12)	500.000	532.586	-6.5	109	0.00
8	H	NWTPH-Gx	500.000	528.073	-5.6	111	0.00
9		Benzene (NR)	-1.000	0.000	0.0	110	0.00
10	S	Toluene-d8 (NR)	-1.000	0.000	0.0	100	0.00
11	C	Toluene (NR)	-1.000	0.000	0.0	109	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	118	0.00

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

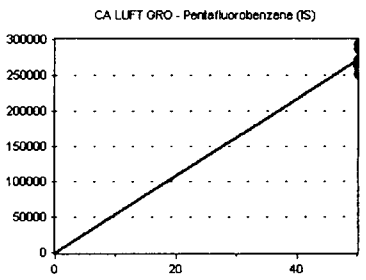
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **CA LUFT GRO** Instrument Cal ID: **VF190507S/G**

Pentafluorobenzene (IS)

Curve Fit: **AVERAGE RF**

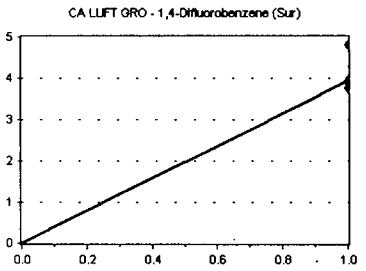


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	251815	5036.300	6.10
9E07048-CALD	50	268659	5373.180	6.10
9E07048-CALE	50	260344	5206.880	6.09
9E07048-CALF	50	264609	5292.180	6.10
9E07048-CALG	50	262223	5244.460	6.09
9E07048-CALH	50	271709	5434.180	6.10
9E07048-CALI	50	287647	5752.940	6.10
9E07048-CALJ	50	293025	5860.500	6.10

AVE RF **5400.078** RF RSD **5.16** AVE RT **6.10**

1,4-Difluorobenzene (Sur)

Curve Fit: **AVERAGE RF**

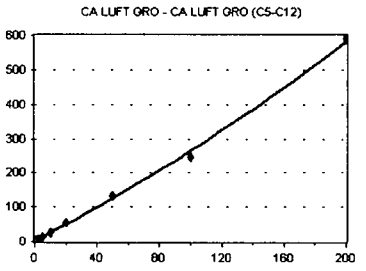


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	944857	3.752	6.66
9E07048-CALD	50	1016126	3.782	6.66
9E07048-CALE	50	976363	3.750	6.66
9E07048-CALF	50	998574	3.774	6.66
9E07048-CALG	50	994511	3.793	6.66
9E07048-CALH	50	1064809	3.919	6.66
9E07048-CALI	50	1135195	3.946	6.66
9E07048-CALJ	50	1412610	4.821	6.66

AVE RF **3.942** RF RSD **9.20** AVE RT **6.66**

CA LUFT GRO (C5-C12)

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

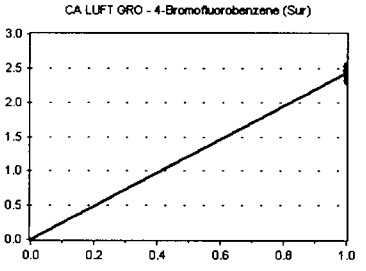


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	905552	3.596	9.86
9E07048-CALD	100	1495406	2.783	9.86
9E07048-CALE	250	3256728	2.502	9.86
9E07048-CALF	500	6691065	2.529	9.86
9E07048-CALG	1000	1.433345E+07	2.733	9.86
9E07048-CALH	2500	3.600874E+07	2.651	9.86
9E07048-CALI	5000	7.131647E+07	2.479	9.86
9E07048-CALJ	10000	1.726612E+08	2.946	9.86

AVE RF **2.777** RF RSD **13.22** AVE RT **9.86**

4-Bromofluorobenzene (Sur)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	583068	2.315	10.87
9E07048-CALD	50	665016	2.475	10.87
9E07048-CALE	50	627727	2.411	10.87
9E07048-CALF	50	640403	2.420	10.87
9E07048-CALG	50	665155	2.537	10.87
9E07048-CALH	50	671226	2.470	10.87
9E07048-CALI	50	689679	2.398	10.87
9E07048-CALJ	50	701119	2.393	10.87

AVE RF **2.427** RF RSD **2.74** AVE RT **10.87**

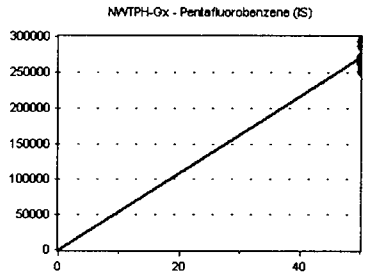
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **NWTPH-Gx** Instrument Cal ID: **VF190507S/G**

Pentafluorobenzene (IS)

Curve Fit: **AVERAGE RF**

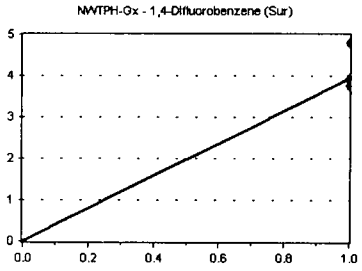


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	251815	5036.300	6.10
9E07048-CALD	50	268659	5373.180	6.10
9E07048-CALE	50	260344	5206.880	6.09
9E07048-CALF	50	264609	5292.180	6.10
9E07048-CALG	50	262223	5244.460	6.09
9E07048-CALH	50	271709	5434.180	6.10
9E07048-CALI	50	287647	5752.940	6.10
9E07048-CALJ	50	293025	5860.500	6.10

AVE RF **5400.078** RF RSD **5.16** AVE RT **6.10**

1,4-Difluorobenzene (Sur)

Curve Fit: **AVERAGE RF**

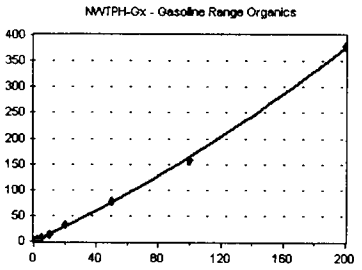


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	944857	3.752	6.66
9E07048-CALD	50	1016126	3.782	6.66
9E07048-CALE	50	976363	3.750	6.66
9E07048-CALF	50	998574	3.774	6.66
9E07048-CALG	50	994511	3.793	6.66
9E07048-CALH	50	1064809	3.919	6.66
9E07048-CALI	50	1135195	3.946	6.66
9E07048-CALJ	50	1412610	4.821	6.66

AVE RF **3.942** RF RSD **9.20** AVE RT **6.66**

Gasoline Range Organics

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

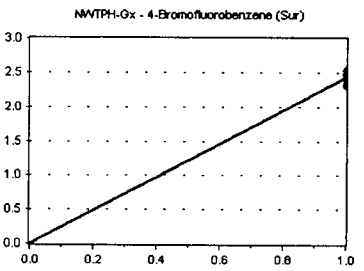


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	216743	0.861	9.87
9E07048-CALD	100	540113	1.005	9.87
9E07048-CALE	250	1533968	1.178	9.87
9E07048-CALF	500	3603975	1.362	9.87
9E07048-CALG	1000	8256018	1.574	9.87
9E07048-CALH	2500	2.140465E+07	1.576	9.87
9E07048-CALI	5000	4.546724E+07	1.581	9.87
9E07048-CALJ	10000	1.110386E+08	1.895	9.87

AVE RF **1.379** RF RSD **25.00** AVE RT **9.87**

4-Bromofluorobenzene (Sur)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	583068	2.315	10.87
9E07048-CALD	50	665016	2.475	10.87
9E07048-CALE	50	627727	2.411	10.87
9E07048-CALF	50	640403	2.420	10.87
9E07048-CALG	50	665155	2.537	10.87
9E07048-CALH	50	671226	2.470	10.87
9E07048-CALI	50	689679	2.398	10.87
9E07048-CALJ	50	701119	2.393	10.87

AVE RF **2.427** RF RSD **2.74** AVE RT **10.87**

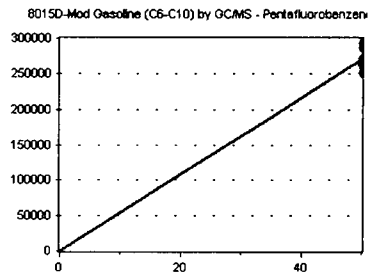
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8015D-Mod Gasoline (C6-C1** Instrument Cal ID: **VF190507S/G**

Pentafluorobenzene (IS)

Curve Fit: **AVERAGE RF**

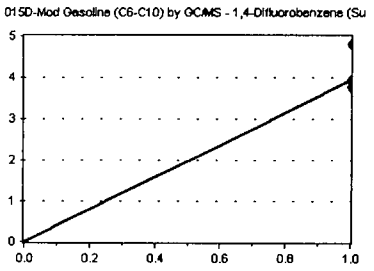


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	251815	5036.300	6.10
9E07048-CALD	50	268659	5373.180	6.10
9E07048-CALE	50	260344	5206.880	6.09
9E07048-CALF	50	264609	5292.180	6.10
9E07048-CALG	50	262223	5244.460	6.09
9E07048-CALH	50	271709	5434.180	6.10
9E07048-CALI	50	287647	5752.940	6.10
9E07048-CALJ	50	293025	5860.500	6.10

AVE RF **5400.078** RF RSD **5.16** AVE RT **6.10**

1,4-Difluorobenzene (Sur)

Curve Fit: **AVERAGE RF**

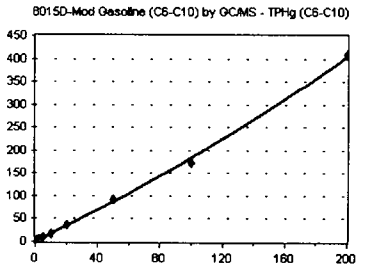


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	944857	3.752	6.66
9E07048-CALD	50	1016126	3.782	6.66
9E07048-CALE	50	976363	3.750	6.66
9E07048-CALF	50	998574	3.774	6.66
9E07048-CALG	50	994511	3.793	6.66
9E07048-CALH	50	1064809	3.919	6.66
9E07048-CALI	50	1135195	3.946	6.66
9E07048-CALJ	50	1412610	4.821	6.66

AVE RF **3.942** RF RSD **9.20** AVE RT **6.66**

TPHg (C6-C10)

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

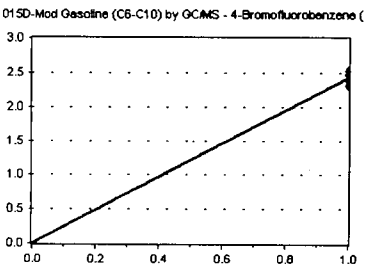


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	621653	2.469	9.86
9E07048-CALD	100	1022515	1.903	9.86
9E07048-CALE	250	2228270	1.712	9.86
9E07048-CALF	500	4686857	1.771	9.86
9E07048-CALG	1000	9868759	1.882	9.86
9E07048-CALH	2500	2.515076E+07	1.851	9.86
9E07048-CALI	5000	4.969054E+07	1.727	9.86
9E07048-CALJ	10000	1.199672E+08	2.047	9.86

AVE RF **1.920** RF RSD **12.85** AVE RT **9.86**

4-Bromofluorobenzene (Sur)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	583068	2.315	10.87
9E07048-CALD	50	665016	2.475	10.87
9E07048-CALE	50	627727	2.411	10.87
9E07048-CALF	50	640403	2.420	10.87
9E07048-CALG	50	665155	2.537	10.87
9E07048-CALH	50	671226	2.470	10.87
9E07048-CALI	50	689679	2.398	10.87
9E07048-CALJ	50	701119	2.393	10.87

AVE RF **2.427** RF RSD **2.74** AVE RT **10.87**

Injection Log

Directory: k:\DATA\2019-05\9E07048

Line	Vial	FileName	Multiplier	SampleName		Misc Info	Injected
1	1	Vf19050711.d	1.	9E07048-IBL1		1X 5mL DI+MeOH	7 May 2019 18:53
2	2	Vf19050712.d	1.	9E07048-TUN1		A19D196 BFB (IS/...	7 May 2019 19:21
3	3	Vf19050713.d	1.	9E07048-ICB1		1X DI+MeOH	7 May 2019 19:48
4	4	Vf19050714.d	1.	9E07048-CAL1		1X 0.1ppb VOC MeOH	7 May 2019 20:15
5	5	Vf19050715.d	1.	9E07048-CAL2		1X 0.2ppb VOC MeOH	7 May 2019 20:42
6	6	Vf19050716.d	1.	9E07048-CAL3		1X 0.4ppb VOC MeOH	7 May 2019 21:09
7	7	Vf19050717.d	1.	9E07048-CAL4		1X 1ppb VOC MeOH	7 May 2019 21:36
8	8	Vf19050718.d	1.	9E07048-CAL5		1X 2ppb VOC MeOH	7 May 2019 22:04
9	9	Vf19050719.d	1.	9E07048-CAL6		1X 5ppb VOC MeOH	7 May 2019 22:31
10	10	Vf19050720.d	1.	9E07048-CAL7		1X 10ppb VOC MeOH	7 May 2019 22:58
11	11	Vf19050721.d	1.	9E07048-CAL8		1X 20ppb VOC MeOH	7 May 2019 23:25
12	12	Vf19050722.d	1.	9E07048-CAL9		1X 50ppb VOC MeOH	7 May 2019 23:52
13	13	Vf19050723.d	1.	9E07048-IBL2		1X 5mL DI+MeOH	8 May 2019 00:19
14	14	Vf19050724.d	1.	9E07048-CALA		1X 100ppb VOC MeOH	8 May 2019 00:46
15	15	Vf19050725.d	1.	9E07048-IBL3		1X 5mL DI+MeOH	8 May 2019 01:13
16	16	Vf19050726.d	1.	9E07048-CALB		1X 200ppb VOC MeOH	8 May 2019 01:40
17	17	Vf19050727.d	1.	9E07048-IBL4		1X 5mL DI+MeOH	8 May 2019 02:07
18	18	Vf19050728.d	1.	9E07048-IBL5		1X 5mL DI+MeOH	8 May 2019 02:34
19	19	Vf19050729.d	1.	9E07048-ICV1		1X 50ppb VOC MeOH	8 May 2019 03:01
20	20	Vf19050730.d	1.	9E07048-IBL6		1X 5mL DI+MeOH	8 May 2019 03:28
21	21	Vf19050731.d	1.	9E07048-TUN2	RT	A19D196 BFB (IS/...	8 May 2019 03:55
22	22	Vf19050732.d	1.	9E07048-IBL7		1X 5mL DI+MeOH	8 May 2019 04:22
23	23	Vf19050733.d	1.	9E07048-ICB2		1X DI+MeOH	8 May 2019 04:49
24	24	Vf19050734.d	1.	9E07048-CALC		1X 50ppb GX MeOH	8 May 2019 05:16
25	25	Vf19050735.d	1.	9E07048-CALD		1X 100ppb GX MeOH	8 May 2019 05:43
26	26	Vf19050736.d	1.	9E07048-CALE		1X 250ppb GX MeOH	8 May 2019 06:11
27	27	Vf19050737.d	1.	9E07048-CALF		1X 500ppb GX MeOH	8 May 2019 06:38
28	28	Vf19050738.d	1.	9E07048-CALG		1X 1000ppb GX MeOH	8 May 2019 07:05
29	29	Vf19050739.d	1.	9E07048-CALH		1X 2500ppb GX MeOH	8 May 2019 07:32
30	30	Vf19050740.d	1.	9E07048-CALI		1X 5000ppb GX MeOH	8 May 2019 07:59
31	31	Vf19050741.d	1.	9E07048-CALJ		1X 10000ppb GX MeOH	8 May 2019 08:26
32	32	Vf19050742.d	1.	9E07048-IBL8		1X 5mL DI+MeOH	8 May 2019 08:53
33	33	Vf19050743.d	1.	9E07048-IBL9		1X 5mL DI+MeOH	8 May 2019 09:20
34	34	Vf19050744.d	1.	9E07048-ICV2		1X 500ppb GX MeOH	8 May 2019 09:47
35	35	Vf19050745.d	1.	9E07048-IBLA		1X 5mL DI+MeOH	8 May 2019 10:14

KJ 5/8/19

5/8/19

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050711.D
Acq On : 7 May 2019 6:53 pm
Operator : TB
Sample : 9E07048-IBL1
Misc : 1X 5mL DI+MeOH
ALS Vial : 1 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

NR

Quant Time: May 08 11:41:11 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

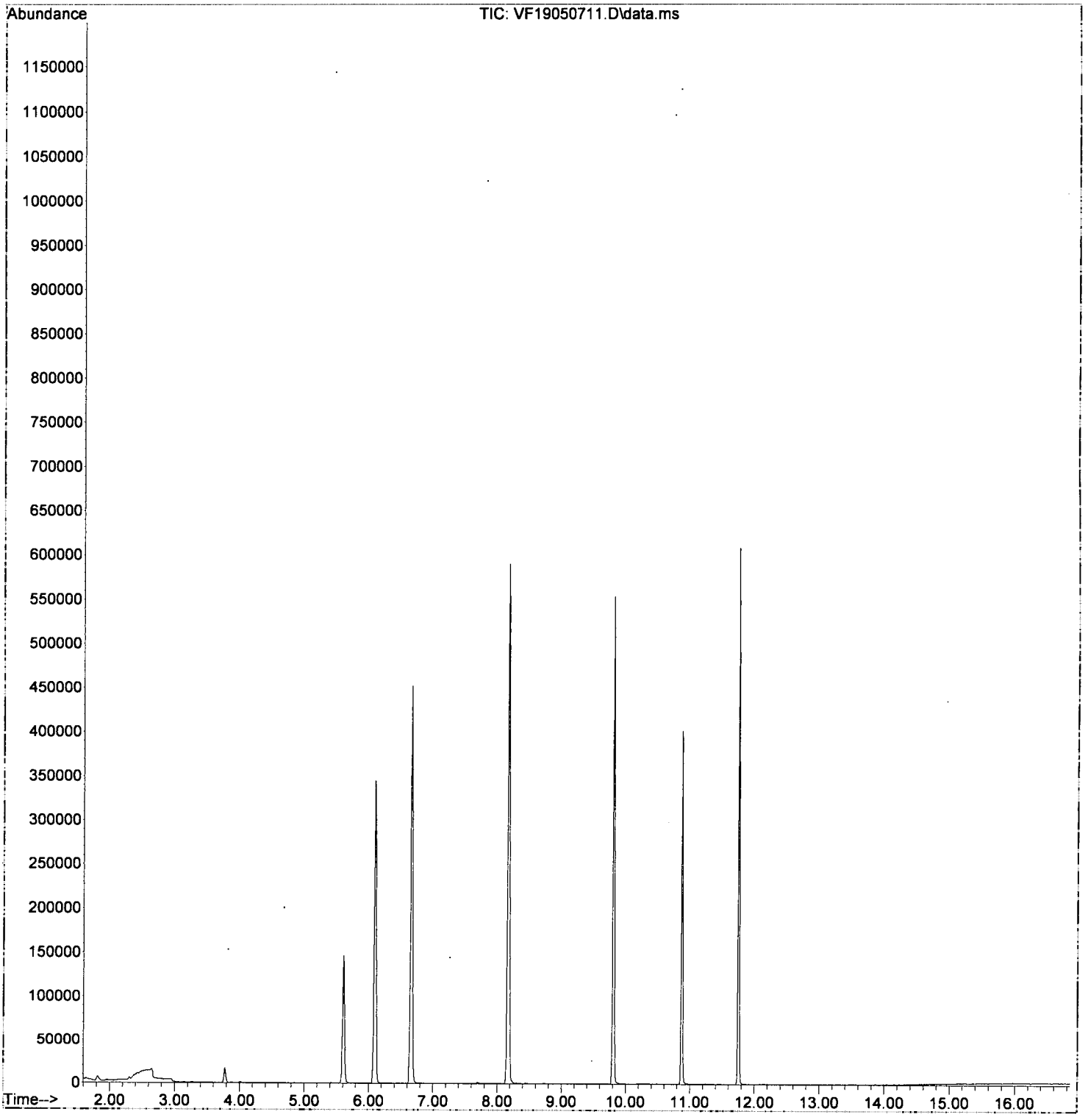
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.098	168	262943	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.802	117	288034	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.749	152	126489	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.605	111	99051	46.95	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.657	114	399530	49.18	ug/L		0.00
39) Toluene-d8 (S)	8.166	98	446866	52.47	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.873	174	97730	50.18	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.839	50	725	0.20	ug/L		89
5) Bromomethane	2.302	96	1543	0.70	ug/L		99
9) Carbon Disulfide	3.135	76	262	0.27	ug/L		77
11) Iodomethane	3.281	142	236	1.26	ug/L	#	47
12) Methylene Chloride	3.774	84	7598	Below Cal			87
13) Acetone	3.877	43	865	0.64	ug/L		93
28) 2-Butanone (MEK)	5.775	43	277	0.14	ug/L		54

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050711.D
Acq On : 7 May 2019 6:53 pm
Operator : TB
Sample : 9E07048-IBL1
Misc : 1X 5mL DI+MeOH
ALS Vial : 1 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:11 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration



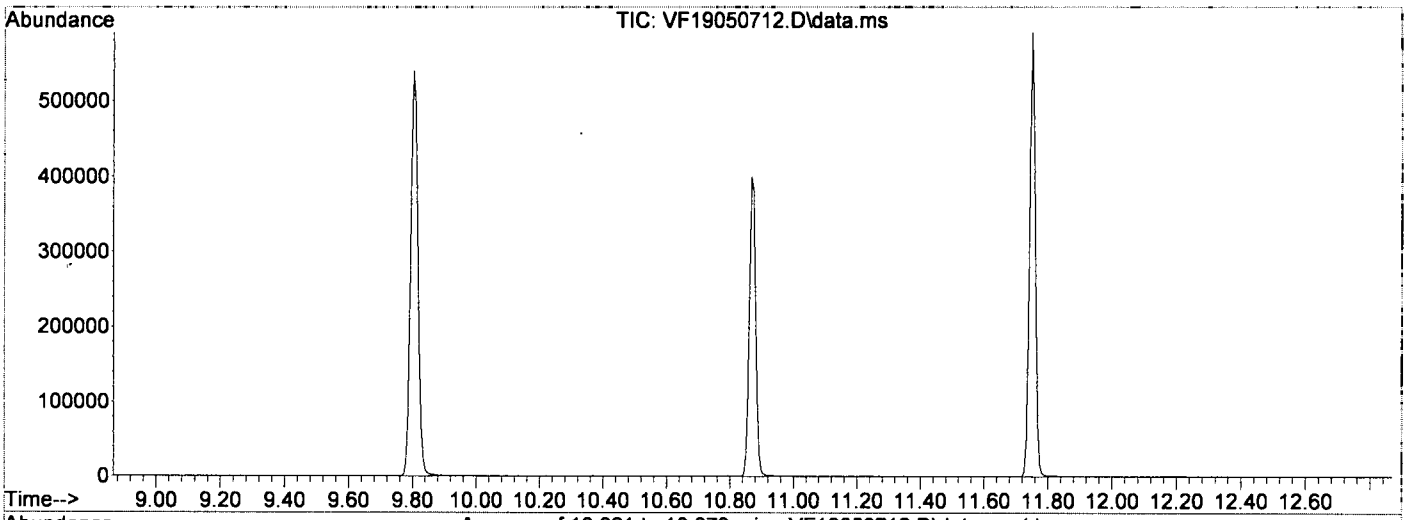
BFB

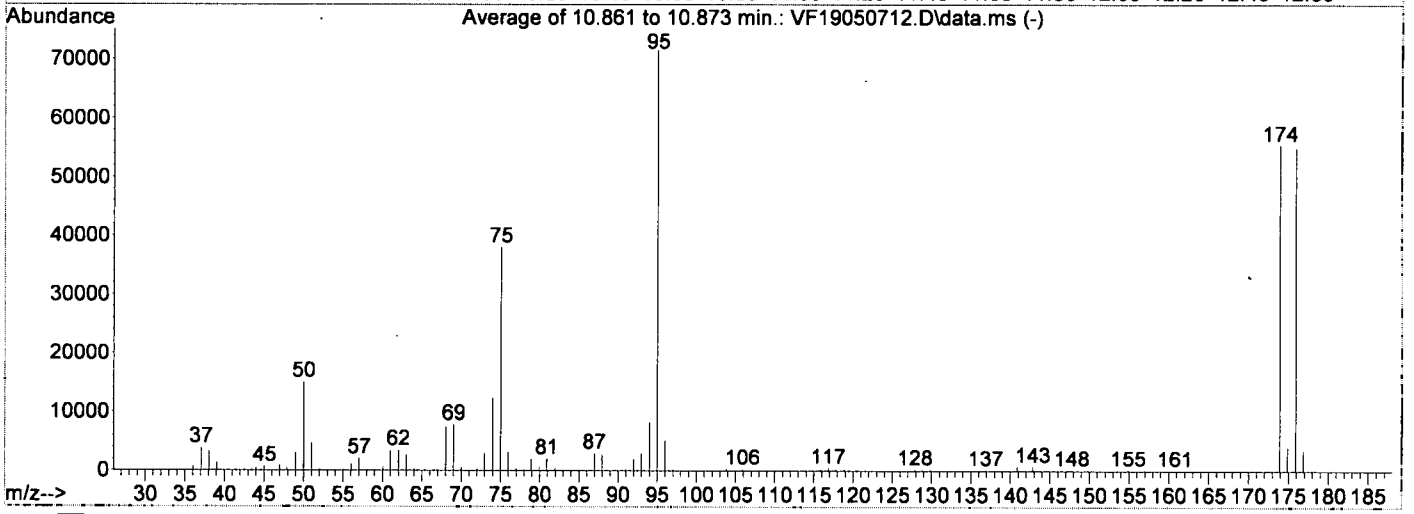
Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050712.D
Acq On : 7 May 2019 7:21 pm
Operator : TB
Sample : 9E07048-TUN1
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\VF190507S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Wed May 08 11:09:13 2019

5/8/19





AutoFind: Scans 1524, 1525, 1526; Background Corrected with Scan 1518

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	12	40	21.1	15041	PASS
75	95	30	60	53.2	37978	PASS
95	95	100	100	100.0	71448	PASS
96	95	5	9	7.3	5205	PASS
173	174	0.00	2	0.2	107	PASS
174	95	50	200	77.6	55426	PASS
175	174	5	9	7.3	4027	PASS
176	174	95	101	99.2	54970	PASS
177	176	5	9	6.4	3496	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050712.D
Acq On : 7 May 2019 7:21 pm
Operator : TB
Sample : 9E07048-TUN1
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:14 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

5/8/19

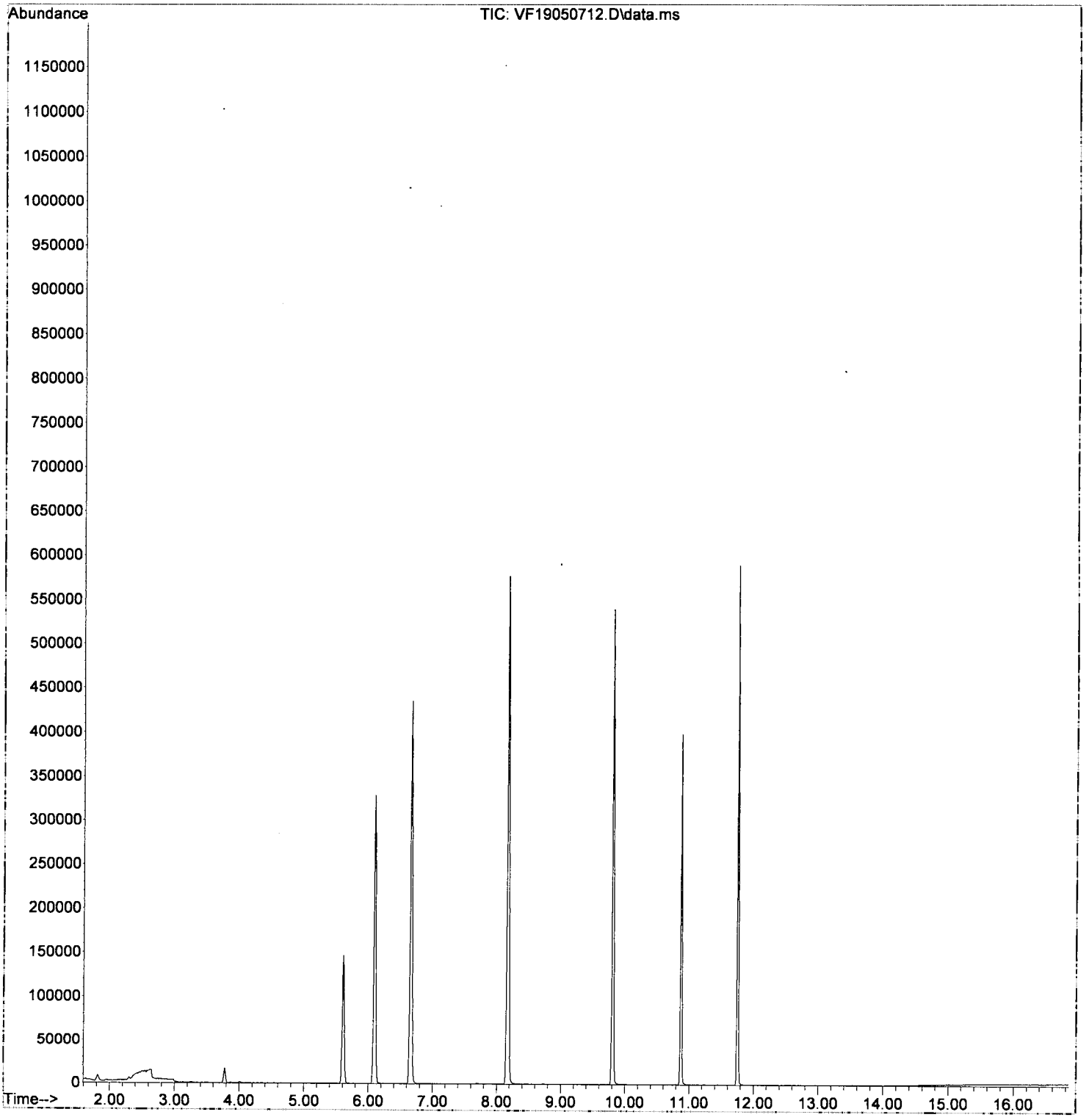
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.098	168	251113	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	284438	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.749	152	121728	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.605	111	96673	47.98	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.658	114	385956	49.75	ug/L		0.00
39) Toluene-d8 (S)	8.166	98	431968	51.37	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.873	174	94724	50.54	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.839	50	630	0.18	ug/L		75
5) Bromomethane	2.302	96	1360	0.65	ug/L		88
9) Carbon Disulfide	3.135	76	100	0.24	ug/L		77
12) Methylene Chloride	3.774	84	7948	Below Cal			90
13) Acetone	3.865	43	913	0.71	ug/L	#	42
28) 2-Butanone (MEK)	5.763	43	239	0.12	ug/L		54

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050712.D
Acq On : 7 May 2019 7:21 pm
Operator : TB
Sample : 9E07048-TUN1
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:14 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050713.D
Acq On : 7 May 2019 7:48 pm
Operator : TB
Sample : 9E07048-ICB1
Misc : 1X DI+MeOH
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:58:13 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:54:03 2019
Response via : Initial Calibration

5/8/19

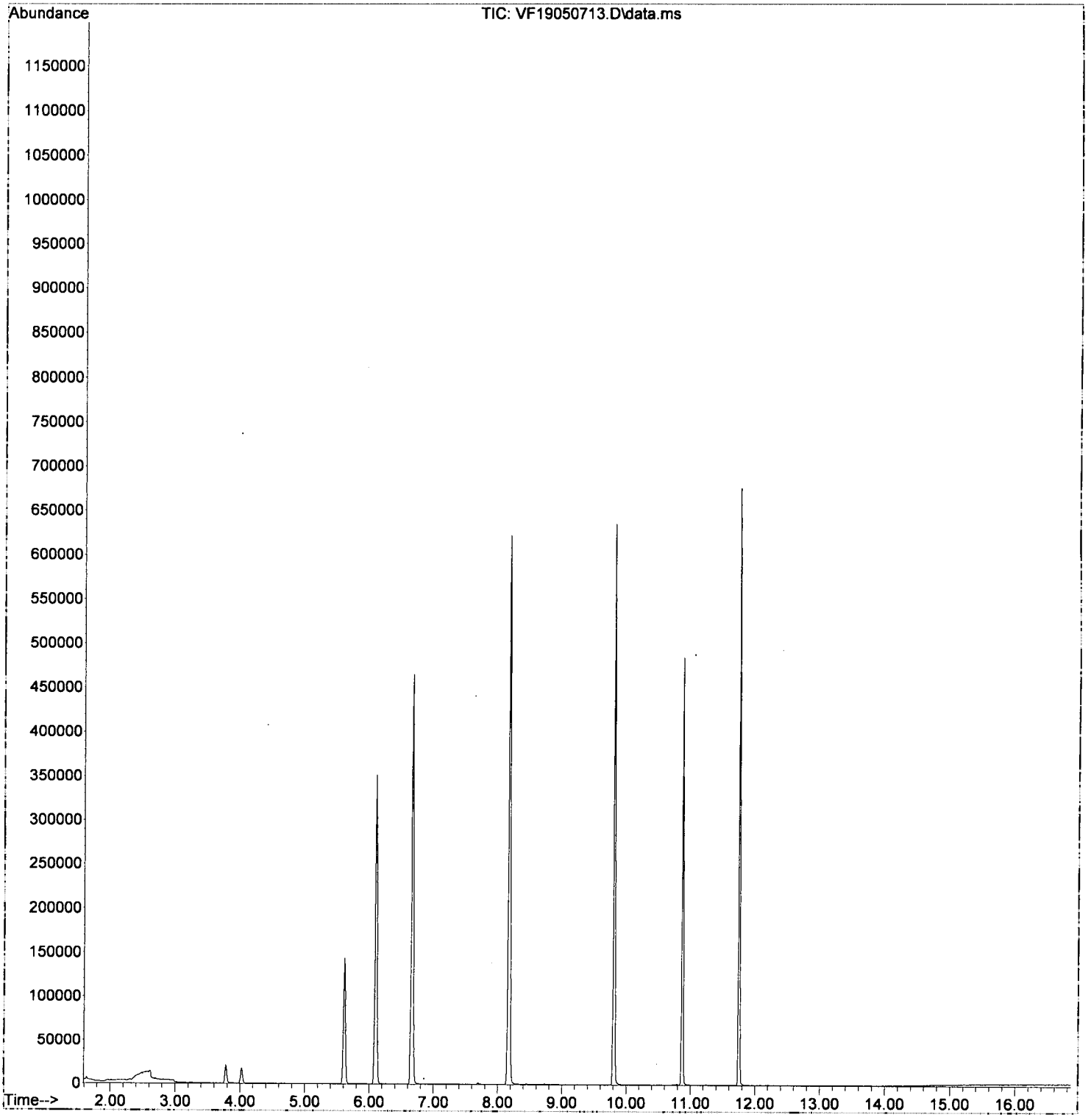
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.102	168	264636	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.807	117	322849	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.747	152	140430	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.609	111	96364	45.39	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.661	114	405814	49.63	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	463703	48.58	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.871	174	112463	52.01	ug/L		0.00
Target Compounds							Qvalue
5) Bromomethane	2.306	96	547	0.25	ug/L		88
9) Carbon Disulfide	3.145	76	321	0.28	ug/L		77
12) Methylene Chloride	3.778	84	10211	Below Cal			92
13) Acetone	3.875	43	1043	0.77	ug/L	#	42
15) n-Hexane	4.021	86	1427	1.87	ug/L	#	85
28) 2-Butanone (MEK)	5.761	43	170	0.08	ug/L		54

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050713.D
Acq On : 7 May 2019 7:48 pm
Operator : TB
Sample : 9E07048-ICB1
Misc : 1X DI+MeOH
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:58:13 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:54:03 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050714.D
Acq On : 7 May 2019 8:15 pm
Operator : TB
Sample : 9E07048-CAL1
Misc : 1X 0.1ppb VOC MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:30 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19 pre

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Pentafluorobenzene (I)	6.096	168	240040	50.00 ug/L	0.00
37) Chlorobenzene-d5 (I)	9.807	117	263004	50.00 ug/L	0.00
57) 1,4-Dichlorobenzene-d4...	11.748	152	117395	50.00 ug/L	0.00
System Monitoring Compounds					
26) Dibromofluoromethane (S)	5.609	111	91510	44.95 ug/L	0.00
32) 1,4-Difluorobenzene (S)	6.662	114	372792	50.12 ug/L	0.00
39) Toluene-d8 (S)	8.170	98	412832	51.24 ug/L	0.00
58) 4-Bromofluorobenzene (S)	10.872	174	90333	50.64 ug/L	0.00
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.637	85	227	0.10 ug/L #	50
3) Chloromethane	1.844	50	1131	0.34 ug/L	90
4) Vinyl Chloride	1.953	62	289	0.09 ug/L #	40
5) Bromomethane	2.306	96	2001	1.01 ug/L	92
6) Chloroethane	0.000		0	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) 1,1-Dichloroethene	3.127	61	464	0.11 ug/L #	56
9) Carbon Disulfide	3.146	76	705	0.14 ug/L	77
10) Freon 113	3.188	101	134	0.05 ug/L #	69
11) Iodomethane	3.285	142	211	0.22 ug/L #	47
12) Methylene Chloride	3.778	84	14820	4.29 ug/L	90
13) Acetone	3.882	43	1683	1.28 ug/L	86
14) t-1,2-Dichloroethene	3.936	61	320	0.07 ug/L #	70
15) n-Hexane	4.022	86	1835	2.65 ug/L #	77
16) Methyl-tert-butyl-ether	4.088	73	787	0.09 ug/L	60
17) 1,1-Dichloroethane	4.575	63	503	0.09 ug/L #	49
18) Acrylonitrile	0.000		0	N.D.	
19) c-1,2-Dichloroethene	5.147	61	307	0.08 ug/L #	58
20) 2,2-Dichloropropane	0.000		0	N.D.	
21) Bromochloromethane	5.336	49	192	0.08 ug/L #	54
22) Chloroform	5.427	83	424	0.09 ug/L	80
23) Carbon Tetrachloride	0.000		0	N.D.	
24) Tetrahydrofuran	0.000		0	N.D.	
25) 1,1,1-Trichloroethane	5.621	97	140	0.04 ug/L #	24
27) 1,1-Dichloropropene	5.755	75	346	0.09 ug/L #	41
28) 2-Butanone (MEK)	5.774	43	470	0.24 ug/L	54
29) Benzene	6.011	78	1127	0.09 ug/L	80
30) 1,2-Dichloroethane (EDC)	6.230	62	369	0.09 ug/L	78
31) iso-Butyl Alcohol	0.000		0	N.D.	
33) Trichloroethene (TCE)	6.625	130	205	0.07 ug/L #	70
34) Dibromomethane	0.000		0	N.D.	
35) 1,2-Dichloropropane	7.179	63	134	0.05 ug/L #	37
36) Bromodichloromethane	0.000		0	N.D.	
38) c-1,3-Dichloropropene	0.000		0	N.D.	
40) Toluene	8.231	91	1513	0.13 ug/L	86
41) Tetrachloroethene (PCE)	8.681	166	241	0.09 ug/L #	77
42) 4-Methyl-2-Pentanone (...	8.688	43	391	0.12 ug/L #	41
43) t-1,3-Dichloropropene	0.000		0	N.D.	
44) 1,1,2-Trichloroethane	0.000		0	N.D.	
45) Dibromochloromethane	0.000		0	N.D.	
46) 1,3-Dichloropropane	9.168	76	369	0.09 ug/L #	67
47) 1,2-Dibromoethane (EDB)	0.000		0	N.D.	
48) 2-Hexanone	9.557	43	209	0.09 ug/L #	31

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050714.D
Acq On : 7 May 2019 8:15 pm
Operator : TB
Sample : 9E07048-CAL1
Misc : 1X 0.1ppb VOC MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:30 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.819	112	708	0.11	ug/L	#	1
50) Ethylbenzene	9.849	91	1175	0.11	ug/L		92
51) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.			
52) m,p-Xylenes (2)	9.989	91	1447	0.18	ug/L		93
53) o-Xylene	10.367	91	771	0.10	ug/L		82
54) Styrene	10.421	104	268	0.05	ug/L	#	41
55) Bromoform	0.000		0	N.D.			
56) Isopropylbenzene	10.628	105	607	0.07	ug/L		78
59) Bromobenzene	10.963	156	160	0.07	ug/L		91
60) n-Propylbenzene	10.975	91	914	0.09	ug/L		81
61) 1,1,2,2-Tetrachloroethane	11.036	83	138	0.05	ug/L		83
62) 2-Chlorotoluene	0.000		0	N.D.			
63) 1,3,5-Trimethylbenzene	11.133	105	548	0.08	ug/L		92
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	11.243	91	483	0.08	ug/L		81
67) tert-Butylbenzene	11.376	91	294	0.08	ug/L	#	58
68) 1,2,4-Trimethylbenzene	11.437	105	561	0.08	ug/L		90
69) sec-Butylbenzene	11.516	105	715	0.09	ug/L		81
70) 4-Isopropyltoluene	11.626	119	475	0.07	ug/L		67
71) 1,3-Dichlorobenzene	11.693	146	361	0.09	ug/L		85
72) 1,4-Dichlorobenzene	11.760	146	465	0.12	ug/L	#	1
73) n-Butylbenzene	11.948	91	503	0.09	ug/L		88
74) 1,2-Dichlorobenzene	12.082	146	319	0.09	ug/L		73
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.			
76) Hexachlorobutadiene	0.000		0	N.D.			
77) 1,2,4-Trichlorobenzene	13.226	180	160	0.08	ug/L		67
78) Naphthalene	13.500	128	347	0.05	ug/L		78
79) 1,2,3-Trichlorobenzene	0.000		0	N.D.			

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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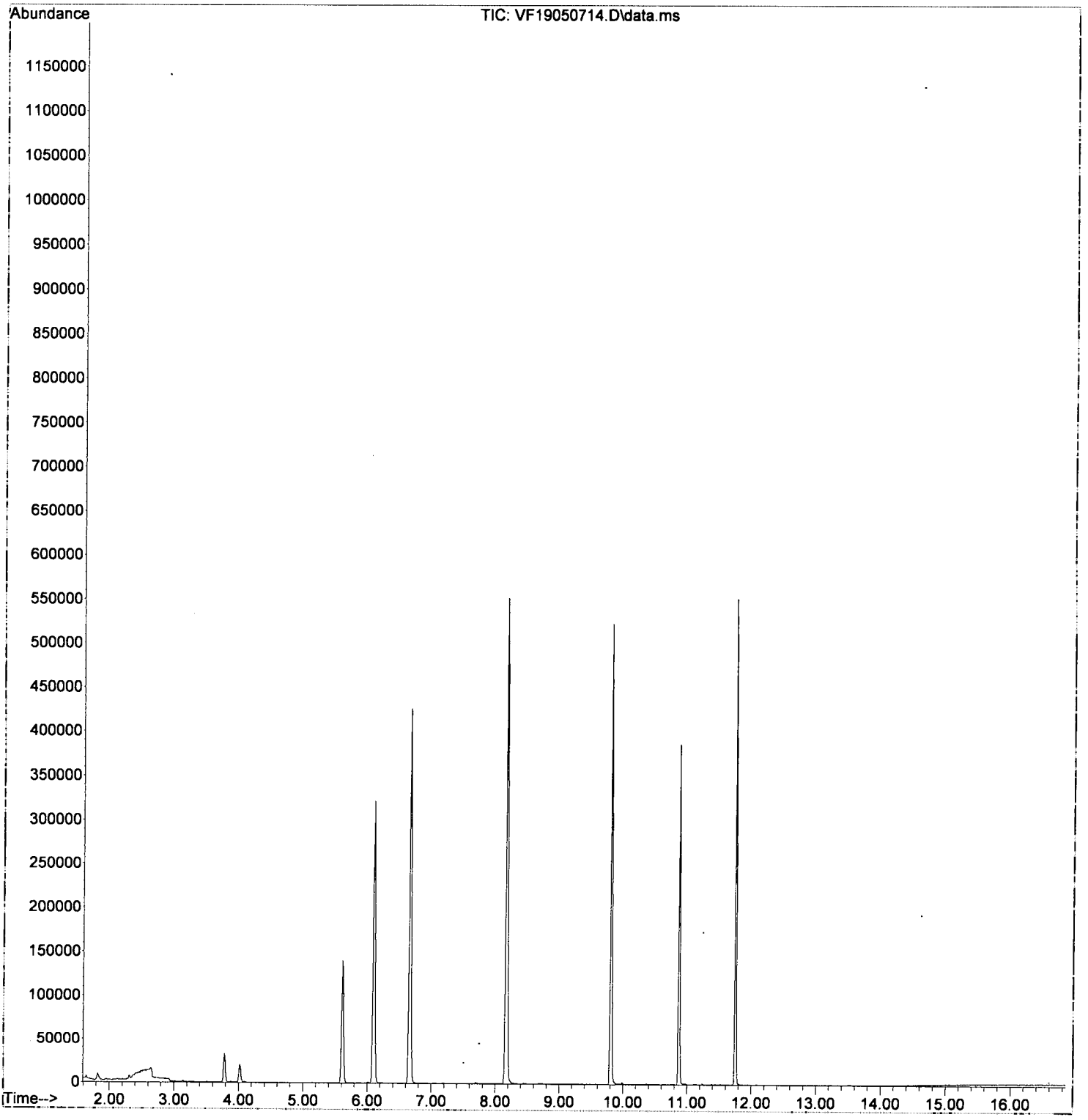
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050714.D
Acq On : 7 May 2019 8:15 pm
Operator : TB
Sample : 9E07048-CAL1
Misc : 1X 0.1ppb VOC MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:30 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050714.D
Acq On : 7 May 2019 8:15 pm
Operator : TB
Sample : 9E07048-CAL1
Misc : 1X 0.1ppb VOC MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:29:18 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

post 5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.096	168	240040	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.807	117	263004	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.748	152	117395	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.609	111	91510	44.95	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.662	114	372792	50.12	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	412832	51.24	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.872	174	90333	50.64	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	d		
3) Chloromethane	1.844	50	1131	0.34	ug/L		90
4) Vinyl Chloride	0.000		0	N.D.	d		
5) Bromomethane	2.306	96	2001	1.01	ug/L		92
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) 1,1-Dichloroethene	3.127	61	464	0.11	ug/L	#	56
9) Carbon Disulfide	3.146	76	705	0.14	ug/L		77
10) Freon 113	0.000		0	N.D.	d		
11) Iodomethane	0.000		0	N.D.	d		
12) Methylene Chloride	3.778	84	14820	4.29	ug/L		90
13) Acetone	3.882	43	1683	1.28	ug/L		86
14) t-1,2-Dichloroethene	3.936	61	320	0.07	ug/L	#	70
15) n-Hexane	4.022	86	1835	2.65	ug/L	#	77
16) Methyl-tert-butyl-ether	4.088	73	787	0.09	ug/L		60
17) 1,1-Dichloroethane	4.575	63	503	0.09	ug/L	#	49
18) Acrylonitrile	0.000		0	N.D.			
19) c-1,2-Dichloroethene	5.147	61	307	0.08	ug/L	#	58
20) 2,2-Dichloropropane	0.000		0	N.D.			
21) Bromochloromethane	0.000		0	N.D.	d		
22) Chloroform	5.427	83	424	0.09	ug/L		80
23) Carbon Tetrachloride	0.000		0	N.D.			
24) Tetrahydrofuran	0.000		0	N.D.			
25) 1,1,1-Trichloroethane	0.000		0	N.D.	d		
27) 1,1-Dichloropropene	0.000		0	N.D.	d		
28) 2-Butanone (MEK)	0.000		0	N.D.	d		
29) Benzene	6.011	78	1127	0.09	ug/L		80
30) 1,2-Dichloroethane (EDC)	6.230	62	369	0.09	ug/L		78
31) iso-Butyl Alcohol	0.000		0	N.D.			
33) Trichloroethene (TCE)	6.625	130	205	0.07	ug/L	#	70
34) Dibromomethane	0.000		0	N.D.			
35) 1,2-Dichloropropane	0.000		0	N.D.	d		
36) Bromodichloromethane	0.000		0	N.D.			
38) c-1,3-Dichloropropene	0.000		0	N.D.			
40) Toluene	8.231	91	1513	0.13	ug/L		86
41) Tetrachloroethene (PCE)	8.681	166	241	0.09	ug/L	#	77
42) 4-Methyl-2-Pentanone (...	8.688	43	391	0.12	ug/L	#	41
43) t-1,3-Dichloropropene	0.000		0	N.D.			
44) 1,1,2-Trichloroethane	0.000		0	N.D.			
45) Dibromochloromethane	0.000		0	N.D.			
46) 1,3-Dichloropropane	9.168	76	369	0.09	ug/L	#	67
47) 1,2-Dibromoethane (EDB)	0.000		0	N.D.			
48) 2-Hexanone	0.000		0	N.D.	d		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050714.D
Acq On : 7 May 2019 8:15 pm
Operator : TB
Sample : 9E07048-CAL1
Misc : 1X 0.1ppb VOC MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:29:18 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.819	112	708	0.11	ug/L	#	1
50) Ethylbenzene	9.849	91	1175	0.11	ug/L		92
51) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.			
52) m,p-Xylenes (2)	9.989	91	1447	0.18	ug/L		93
53) o-Xylene	10.367	91	771	0.10	ug/L		82
54) Styrene	0.000		0	N.D.	d		
55) Bromoform	0.000		0	N.D.			
56) Isopropylbenzene	10.628	105	607	0.07	ug/L		78
59) Bromobenzene	10.963	156	160	0.07	ug/L		91
60) n-Propylbenzene	10.975	91	914	0.09	ug/L		81
61) 1,1,2,2-Tetrachloroethane	11.036	83	138	0.05	ug/L		83
62) 2-Chlorotoluene	0.000		0	N.D.			
63) 1,3,5-Trimethylbenzene	11.133	105	548	0.08	ug/L		92
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	11.243	91	483	0.08	ug/L		81
67) tert-Butylbenzene	11.376	91	294	0.08	ug/L	#	58
68) 1,2,4-Trimethylbenzene	11.437	105	561	0.08	ug/L		90
69) sec-Butylbenzene	11.516	105	715	0.09	ug/L		81
70) 4-Isopropyltoluene	11.626	119	475	0.07	ug/L		67
71) 1,3-Dichlorobenzene	11.693	146	361	0.09	ug/L		85
72) 1,4-Dichlorobenzene	11.760	146	465	0.12	ug/L	#	1
73) n-Butylbenzene	11.948	91	503	0.09	ug/L		88
74) 1,2-Dichlorobenzene	12.082	146	319	0.09	ug/L		73
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.			
76) Hexachlorobutadiene	0.000		0	N.D.			
77) 1,2,4-Trichlorobenzene	0.000		0	N.D.	d		
78) Naphthalene	0.000		0	N.D.	d		
79) 1,2,3-Trichlorobenzene	0.000		0	N.D.			

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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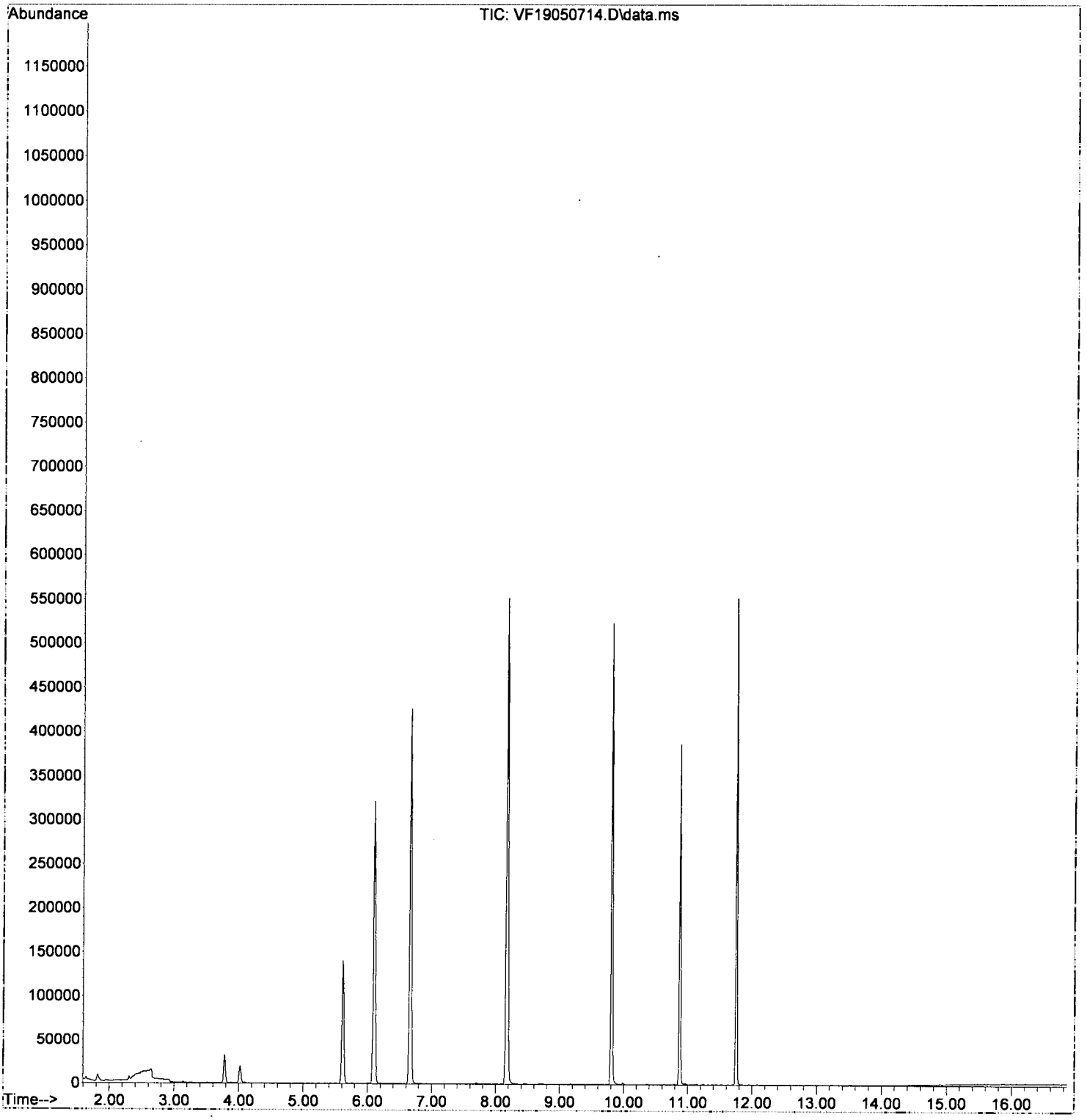
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050714.D
Acq On : 7 May 2019 8:15 pm
Operator : TB
Sample : 9E07048-CAL1
Misc : 1X 0.1ppb VOC MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:29:18 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050715.D
Acq On : 7 May 2019 8:42 pm
Operator : TB
Sample : 9E07048-CAL2
Misc : 1X 0.2ppb VOC MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:33 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19 pre

Compound	R.T.	QIon	Response	Conc Units		Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.098	168	253997	50.00 ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	315116	50.00 ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.749	152	140978	50.00 ug/L		0.00
System Monitoring Compounds						
26) Dibromofluoromethane (S)	5.605	111	93146	43.24 ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.658	114	393610	50.01 ug/L		0.00
39) Toluene-d8 (S)	8.166	98	451605	46.79 ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.867	174	110936	51.79 ug/L		0.00
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.633	85	337	0.14 ug/L	#	50
3) Chloromethane	1.846	50	797	0.22 ug/L		87
4) Vinyl Chloride	1.937	62	686	0.20 ug/L		92
5) Bromomethane	2.296	96	1145	0.55 ug/L		96
6) Chloroethane	0.000		0	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) 1,1-Dichloroethene	3.135	61	831	0.18 ug/L		76
9) Carbon Disulfide	3.147	76	1068	0.19 ug/L		77
10) Freon 113	3.184	101	458	0.16 ug/L	#	73
11) Iodomethane	0.000		0	N.D.		
12) Methylene Chloride	3.780	84	13830	3.78 ug/L		83
13) Acetone	3.871	43	1611	1.16 ug/L		90
14) t-1,2-Dichloroethene	3.938	61	852	0.19 ug/L		83
15) n-Hexane	4.023	86	1841	2.51 ug/L		95
16) Methyl-tert-butyl-ether	4.078	73	1746	0.20 ug/L		78
17) 1,1-Dichloroethane	4.583	63	1018	0.17 ug/L		85
18) Acrylonitrile	0.000		0	N.D.		
19) c-1,2-Dichloroethene	5.137	61	698	0.16 ug/L		94
20) 2,2-Dichloropropane	5.246	77	441	0.15 ug/L		73
21) Bromochloromethane	5.344	49	331	0.13 ug/L		85
22) Chloroform	5.423	83	893	0.17 ug/L		92
23) Carbon Tetrachloride	0.000		0	N.D.		
24) Tetrahydrofuran	5.599	42	254	0.17 ug/L	#	64
25) 1,1,1-Trichloroethane	5.623	97	551	0.15 ug/L		94
27) 1,1-Dichloropropene	5.757	75	683	0.16 ug/L		98
28) 2-Butanone (MEK)	5.769	43	890	0.43 ug/L		54
29) Benzene	6.013	78	2458	0.19 ug/L		98
30) 1,2-Dichloroethane (EDC)	6.226	62	837	0.19 ug/L		89
31) iso-Butyl Alcohol	0.000		0	N.D.		
33) Trichloroethene (TCE)	6.627	130	614	0.20 ug/L		88
34) Dibromomethane	7.083	93	206	0.12 ug/L	#	57
35) 1,2-Dichloropropane	7.187	63	588	0.19 ug/L		92
36) Bromodichloromethane	7.266	83	130	0.06 ug/L	#	26
38) c-1,3-Dichloropropene	7.966	75	335	0.10 ug/L	#	60
40) Toluene	8.227	91	2847	0.21 ug/L		95
41) Tetrachloroethene (PCE)	8.671	166	503	0.16 ug/L		93
42) 4-Methyl-2-Pentanone (...	8.683	43	941	0.24 ug/L		87
43) t-1,3-Dichloropropene	8.726	75	216	0.07 ug/L		47
44) 1,1,2-Trichloroethane	8.890	97	368	0.14 ug/L		96
45) Dibromochloromethane	0.000		0	N.D.		
46) 1,3-Dichloropropane	9.170	76	753	0.15 ug/L		89
47) 1,2-Dibromoethane (EDB)	9.310	107	186	0.08 ug/L		79
48) 2-Hexanone	9.553	43	512	0.19 ug/L		67

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050715.D
Acq On : 7 May 2019 8:42 pm
Operator : TB
Sample : 9E07048-CAL2
Misc : 1X 0.2ppb VOC MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:33 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

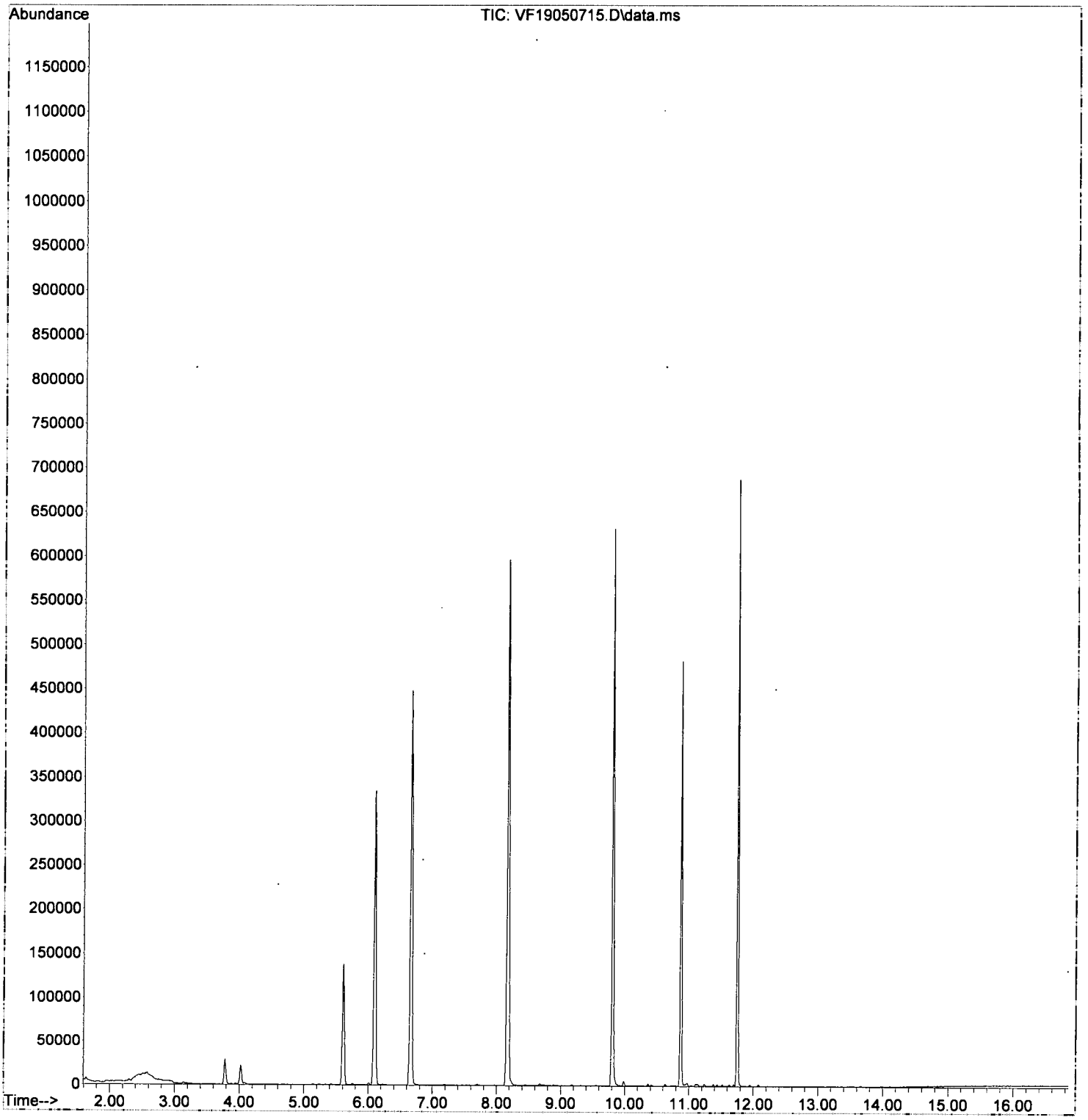
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
49) Chlorobenzene	9.821	112	1621	0.22 ug/L #	35
50) Ethylbenzene	9.845	91	2644	0.20 ug/L	90
51) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
52) m,p-Xylenes (2)	9.985	91	3375	0.35 ug/L	98
53) o-Xylene	10.362	91	1661	0.18 ug/L	97
54) Styrene	10.417	104	742	0.12 ug/L	77
55) Bromoform	0.000		0	N.D.	
56) Isopropylbenzene	10.630	105	1621	0.15 ug/L	96
59) Bromobenzene	10.959	156	538	0.20 ug/L	94
60) n-Propylbenzene	10.977	91	2125	0.18 ug/L	96
61) 1,1,2,2-Tetrachloroethane	11.038	83	440	0.14 ug/L	73
62) 2-Chlorotoluene	11.105	126	441	0.19 ug/L	85
63) 1,3,5-Trimethylbenzene	11.129	105	1238	0.15 ug/L	97
64) 1,2,3-Trichloropropane	11.147	110	135	0.12 ug/L	87
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.	
66) 4-Chlorotoluene	11.238	91	1253	0.17 ug/L	95
67) tert-Butylbenzene	11.378	91	778	0.17 ug/L #	66
68) 1,2,4-Trimethylbenzene	11.439	105	1251	0.15 ug/L	94
69) sec-Butylbenzene	11.518	105	1494	0.16 ug/L	91
70) 4-Isopropyltoluene	11.628	119	1097	0.14 ug/L	96
71) 1,3-Dichlorobenzene	11.695	146	822	0.18 ug/L	97
72) 1,4-Dichlorobenzene	11.762	146	932	0.20 ug/L #	30
73) n-Butylbenzene	11.950	91	1099	0.16 ug/L	97
74) 1,2-Dichlorobenzene	12.084	146	799	0.18 ug/L	92
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.	
76) Hexachlorobutadiene	0.000		0	N.D.	
77) 1,2,4-Trichlorobenzene	13.228	180	326	0.13 ug/L	84
78) Naphthalene	13.501	128	754	0.09 ug/L	78
79) 1,2,3-Trichlorobenzene	13.666	180	356	0.14 ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050715.D
Acq On : 7 May 2019 8:42 pm
Operator : TB
Sample : 9E07048-CAL2
Misc : 1X 0.2ppb VOC MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:33 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050715.D
Acq On : 7 May 2019 8:42 pm
Operator : TB
Sample : 9E07048-CAL2
Misc : 1X 0.2ppb VOC MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:30:57 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

post 5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.098	168	253997	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	315116	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.749	152	140978	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.605	111	93146	43.24	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.658	114	393610	50.01	ug/L		0.00
39) Toluene-d8 (S)	8.166	98	451605	46.79	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.867	174	110936	51.79	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	d		
3) Chloromethane	1.846	50	797	0.22	ug/L		87
4) Vinyl Chloride	1.937	62	686	0.20	ug/L		92
5) Bromomethane	2.296	96	1145	0.35	ug/L		96
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) 1,1-Dichloroethene	3.135	61	831	0.18	ug/L		76
9) Carbon Disulfide	0.000		0	N.D.	d		
10) Freon 113	3.184	101	458	0.16	ug/L	#	73
11) Iodomethane	0.000		0	N.D.			
12) Methylene Chloride	3.780	84	13830	3.78	ug/L		83
13) Acetone	3.871	43	1611	1.16	ug/L		90
14) t-1,2-Dichloroethene	3.938	61	852	0.19	ug/L		83
15) n-Hexane	4.023	86	1841	2.51	ug/L		95
16) Methyl-tert-butyl-ether	4.078	73	1746	0.20	ug/L		78
17) 1,1-Dichloroethane	4.583	63	1018	0.17	ug/L		85
18) Acrylonitrile	0.000		0	N.D.			
19) c-1,2-Dichloroethene	5.137	61	698	0.16	ug/L		94
20) 2,2-Dichloropropane	5.246	77	441	0.15	ug/L		73
21) Bromochloromethane	5.344	49	331	0.13	ug/L		85
22) Chloroform	5.423	83	893	0.17	ug/L		92
23) Carbon Tetrachloride	0.000		0	N.D.			
24) Tetrahydrofuran	0.000		0	N.D.	d		
25) 1,1,1-Trichloroethane	5.623	97	551	0.15	ug/L		94
27) 1,1-Dichloropropene	5.757	75	683	0.16	ug/L		98
28) 2-Butanone (MEK)	5.769	43	890	0.43	ug/L		54
29) Benzene	6.013	78	2458	0.19	ug/L		98
30) 1,2-Dichloroethane (EDC)	6.226	62	837	0.19	ug/L		89
31) iso-Butyl Alcohol	0.000		0	N.D.			
33) Trichloroethene (TCE)	6.627	130	614	0.20	ug/L		88
34) Dibromomethane	7.083	93	206	0.12	ug/L	#	57
35) 1,2-Dichloropropane	7.187	63	588	0.19	ug/L		92
36) Bromodichloromethane	7.266	83	130	0.06	ug/L	#	26
38) c-1,3-Dichloropropene	7.966	75	335	0.10	ug/L	#	60
40) Toluene	8.227	91	2847	0.21	ug/L		95
41) Tetrachloroethene (PCE)	8.671	166	503	0.16	ug/L		93
42) 4-Methyl-2-Pentanone (...	8.683	43	941	0.24	ug/L		87
43) t-1,3-Dichloropropene	0.000		0	N.D.	d		
44) 1,1,2-Trichloroethane	8.890	97	368	0.14	ug/L		96
45) Dibromochloromethane	0.000		0	N.D.			
46) 1,3-Dichloropropane	9.170	76	753	0.15	ug/L		89
47) 1,2-Dibromoethane (EDB)	9.310	107	186	0.08	ug/L		79
48) 2-Hexanone	9.553	43	512	0.19	ug/L		67

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050715.D
Acq On : 7 May 2019 8:42 pm
Operator : TB
Sample : 9E07048-CAL2
Misc : 1X 0.2ppb VOC MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:30:57 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.821	112	1621	0.22	ug/L	#	35
50) Ethylbenzene	9.845	91	2644	0.20	ug/L		90
51) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.			
52) m,p-Xylenes (2)	9.985	91	3375	0.35	ug/L		98
53) o-Xylene	10.362	91	1661	0.18	ug/L		97
54) Styrene	10.417	104	742	0.12	ug/L		77
55) Bromoform	0.000		0	N.D.			
56) Isopropylbenzene	10.630	105	1621	0.15	ug/L		96
59) Bromobenzene	10.959	156	538	0.20	ug/L		94
60) n-Propylbenzene	10.977	91	2125	0.18	ug/L		96
61) 1,1,2,2-Tetrachloroethane	11.038	83	440	0.14	ug/L		73
62) 2-Chlorotoluene	11.105	126	441	0.19	ug/L		85
63) 1,3,5-Trimethylbenzene	11.129	105	1238	0.15	ug/L		97
64) 1,2,3-Trichloropropane	11.147	110	135	0.12	ug/L		87
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
66) 4-Chlorotoluene	11.238	91	1253	0.17	ug/L		95
67) tert-Butylbenzene	11.378	91	778	0.17	ug/L	#	66
68) 1,2,4-Trimethylbenzene	11.439	105	1251	0.15	ug/L		94
69) sec-Butylbenzene	11.518	105	1494	0.16	ug/L		91
70) 4-Isopropyltoluene	11.628	119	1097	0.14	ug/L		96
71) 1,3-Dichlorobenzene	11.695	146	822	0.18	ug/L		97
72) 1,4-Dichlorobenzene	11.762	146	932	0.20	ug/L	#	30
73) n-Butylbenzene	11.950	91	1099	0.16	ug/L		97
74) 1,2-Dichlorobenzene	12.084	146	799	0.18	ug/L		92
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.			
76) Hexachlorobutadiene	0.000		0	N.D.			
77) 1,2,4-Trichlorobenzene	13.228	180	326	0.13	ug/L		84
78) Naphthalene	0.000		0	N.D.	d		
79) 1,2,3-Trichlorobenzene	13.666	180	356	0.14	ug/L		79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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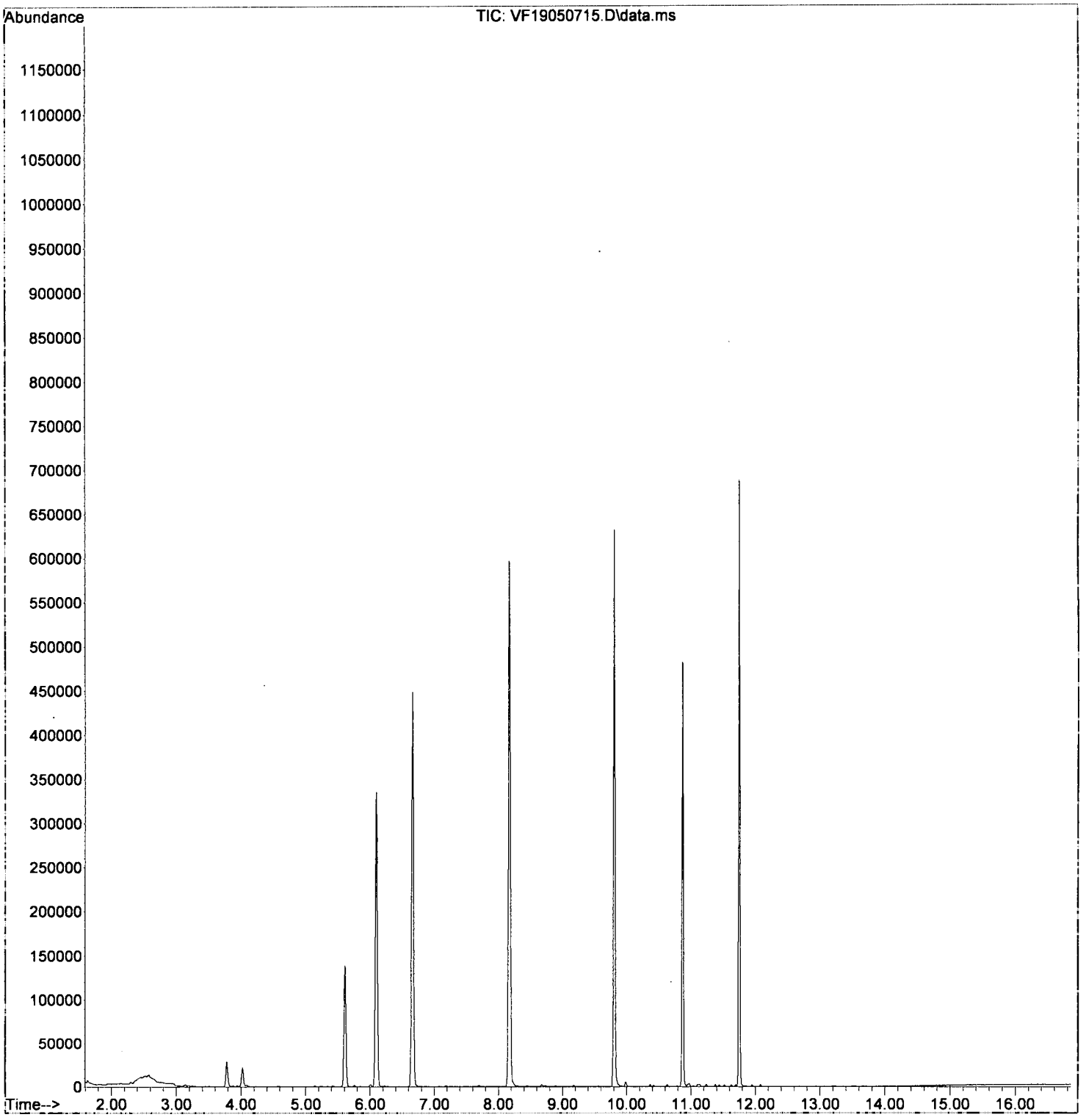
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050715.D
Acq On : 7 May 2019 8:42 pm
Operator : TB
Sample : 9E07048-CAL2
Misc : 1X 0.2ppb VOC MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:30:57 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050716.D
Acq On : 7 May 2019 9:09 pm
Operator : TB
Sample : 9E07048-CAL3
Misc : 1X 0.4ppb VOC MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:35 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19 pre

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.098	168	249504	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	282136	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.750	152	120378	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.612	111	95325	45.05	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.664	114	383811	49.64	ug/L		0.00
39) Toluene-d8 (S)	8.173	98	433301	50.14	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.874	174	94062	51.42	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.639	85	846	0.36	ug/L		87
3) Chloromethane	1.846	50	2048	0.59	ug/L		98
4) Vinyl Chloride	1.949	62	1253	0.36	ug/L		55
5) Bromomethane	2.308	96	2402	1.17	ug/L		97
6) Chloroethane	2.430	64	256	0.54	ug/L	#	1
7) Trichlorofluoromethane	2.558	101	222	0.36	ug/L	#	25
8) 1,1-Dichloroethene	3.136	61	1699	0.37	ug/L		92
9) Carbon Disulfide	3.142	76	1949	0.36	ug/L		87
10) Freon 113	3.178	101	1041	0.38	ug/L		78
11) Iodomethane	3.294	142	258	0.26	ug/L	#	47
12) Methylene Chloride	3.781	84	14007	3.90	ug/L		86
13) Acetone	3.878	43	2158	1.58	ug/L		84
14) t-1,2-Dichloroethene	3.945	61	1577	0.35	ug/L		99
15) n-Hexane	4.024	86	2024	2.81	ug/L	#	78
16) Methyl-tert-butyl-ether	4.097	73	3114	0.35	ug/L		94
17) 1,1-Dichloroethane	4.584	63	1998	0.35	ug/L		94
18) Acrylonitrile	4.669	53	256	0.17	ug/L	#	14
19) c-1,2-Dichloroethene	5.143	61	1447	0.34	ug/L		91
20) 2,2-Dichloropropane	5.241	77	917	0.32	ug/L	#	59
21) Bromochloromethane	5.350	49	924	0.37	ug/L		90
22) Chloroform	5.423	83	1699	0.34	ug/L		85
23) Carbon Tetrachloride	5.545	117	392	0.20	ug/L		71
24) Tetrahydrofuran	5.618	42	586	0.39	ug/L	#	57
25) 1,1,1-Trichloroethane	5.630	97	1217	0.33	ug/L		88
27) 1,1-Dichloropropene	5.752	75	1416	0.34	ug/L		87
28) 2-Butanone (MEK)	5.764	43	1499	0.74	ug/L		94
29) Benzene	6.013	78	4810	0.38	ug/L		85
30) 1,2-Dichloroethane (EDC)	6.226	62	1552	0.35	ug/L		92
31) iso-Butyl Alcohol	6.305	43	507	3.98	ug/L	#	64
33) Trichloroethene (TCE)	6.628	130	1091	0.36	ug/L		79
34) Dibromomethane	7.078	93	553	0.34	ug/L	#	64
35) 1,2-Dichloropropane	7.193	63	1034	0.34	ug/L		90
36) Bromodichloromethane	7.266	83	569	0.25	ug/L		91
38) c-1,3-Dichloropropene	7.972	75	723	0.23	ug/L		74
40) Toluene	8.228	91	4633	0.39	ug/L		98
41) Tetrachloroethene (PCE)	8.678	166	1054	0.36	ug/L		87
42) 4-Methyl-2-Pentanone (...	8.684	43	1734	0.49	ug/L		96
43) t-1,3-Dichloropropene	8.720	75	502	0.19	ug/L		47
44) 1,1,2-Trichloroethane	8.897	97	754	0.32	ug/L		76
45) Dibromochloromethane	9.067	129	215	0.18	ug/L	#	15
46) 1,3-Dichloropropane	9.183	76	1532	0.34	ug/L		90
47) 1,2-Dibromoethane (EDB)	9.316	107	457	0.21	ug/L		84
48) 2-Hexanone	9.554	43	1043	0.44	ug/L		82

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050716.D
Acq On : 7 May 2019 9:09 pm
Operator : TB
Sample : 9E07048-CAL3
Misc : 1X 0.4ppb VOC MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:35 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units		Dev(Min)
49) Chlorobenzene	9.821	112	2707	0.40 ug/L	#	67
50) Ethylbenzene	9.852	91	4382	0.38 ug/L		86
51) 1,1,1,2-Tetrachloroethane	9.894	131	292	0.21 ug/L	#	74
52) m,p-Xylenes (2)	9.986	91	5409	0.63 ug/L		97
53) o-Xylene	10.363	91	2704	0.33 ug/L		96
54) Styrene	10.418	104	1408	0.25 ug/L		93
55) Bromoform	0.000		0	N.D.		
56) Isopropylbenzene	10.631	105	2804	0.29 ug/L		94
59) Bromobenzene	10.953	156	808	0.36 ug/L	#	80
60) n-Propylbenzene	10.977	91	3524	0.35 ug/L		97
61) 1,1,2,2-Tetrachloroethane	11.038	83	771	0.29 ug/L		85
62) 2-Chlorotoluene	11.105	126	669	0.33 ug/L		88
63) 1,3,5-Trimethylbenzene	11.129	105	2172	0.31 ug/L		97
64) 1,2,3-Trichloropropane	11.148	110	303	0.31 ug/L		88
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.		
66) 4-Chlorotoluene	11.239	91	2028	0.33 ug/L		86
67) tert-Butylbenzene	11.379	91	1226	0.31 ug/L		84
68) 1,2,4-Trimethylbenzene	11.440	105	2171	0.31 ug/L		84
69) sec-Butylbenzene	11.519	105	2640	0.32 ug/L		93
70) 4-Isopropyltoluene	11.628	119	1855	0.28 ug/L		92
71) 1,3-Dichlorobenzene	11.701	146	1391	0.36 ug/L		90
72) 1,4-Dichlorobenzene	11.762	146	1636	0.40 ug/L		79
73) n-Butylbenzene	11.945	91	1917	0.33 ug/L		91
74) 1,2-Dichlorobenzene	12.078	146	1327	0.35 ug/L		91
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.		
76) Hexachlorobutadiene	13.186	223	127	0.24 ug/L	#	80
77) 1,2,4-Trichlorobenzene	13.228	180	681	0.32 ug/L		94
78) Naphthalene	13.502	128	1578	0.22 ug/L		78
79) 1,2,3-Trichlorobenzene	13.666	180	600	0.28 ug/L		90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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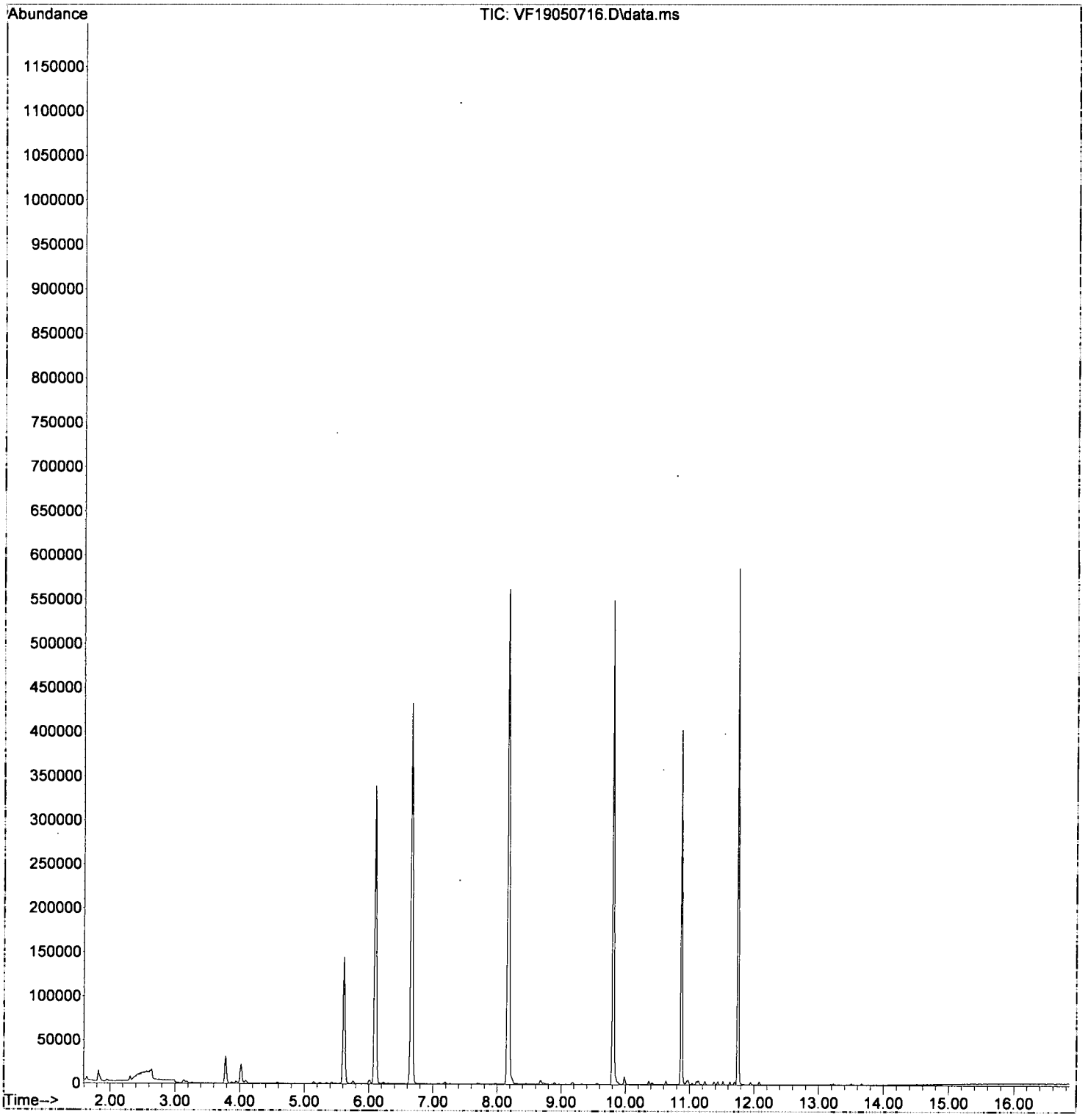
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050716.D
Acq On : 7 May 2019 9:09 pm
Operator : TB
Sample : 9E07048-CAL3
Misc : 1X 0.4ppb VOC MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:35 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050716.D
Acq On : 7 May 2019 9:09 pm
Operator : TB
Sample : 9E07048-CAL3
Misc : 1X 0.4ppb VOC MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:32:07 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S~~.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

post 5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.098	168	249504	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	282136	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.750	152	120378	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.612	111	95325	45.05	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.664	114	383811	49.64	ug/L		0.00
39) Toluene-d8 (S)	8.173	98	433301	50.14	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.874	174	94062	51.42	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.639	85	846	0.36	ug/L		87
3) Chloromethane	1.846	50	2048	0.59	ug/L		98
4) Vinyl Chloride	1.949	62	1253	0.36	ug/L		55
5) Bromomethane	2.308	96	2402	1.17	ug/L		97
6) Chloroethane	0.000		0	N.D.	d		
7) Trichlorofluoromethane	2.558	101	222	0.36	ug/L	#	25
8) 1,1-Dichloroethene	3.136	61	1699	0.37	ug/L		92
9) Carbon Disulfide	3.142	76	1949	0.36	ug/L		87
10) Freon 113	3.178	101	1041	0.38	ug/L		78
11) Iodomethane	0.000		0	N.D.	d		
12) Methylene Chloride	3.781	84	14007	3.90	ug/L		86
13) Acetone	3.878	43	2158	1.58	ug/L		84
14) t-1,2-Dichloroethene	3.945	61	1577	0.35	ug/L		99
15) n-Hexane	4.024	86	2024	2.81	ug/L	#	78
16) Methyl-tert-butyl-ether	4.097	73	3114	0.35	ug/L		94
17) 1,1-Dichloroethane	4.584	63	1998	0.35	ug/L		94
18) Acrylonitrile	4.669	53	256	0.17	ug/L	#	14
19) c-1,2-Dichloroethene	5.143	61	1447	0.34	ug/L		91
20) 2,2-Dichloropropane	5.241	77	917	0.32	ug/L	#	59
21) Bromochloromethane	5.350	49	924	0.37	ug/L		90
22) Chloroform	5.423	83	1699	0.34	ug/L		85
23) Carbon Tetrachloride	5.545	117	392	0.20	ug/L		71
24) Tetrahydrofuran	5.618	42	586	0.39	ug/L	#	57
25) 1,1,1-Trichloroethane	5.630	97	1217	0.33	ug/L		88
27) 1,1-Dichloropropene	5.752	75	1416	0.34	ug/L		87
28) 2-Butanone (MEK)	5.764	43	1499	0.74	ug/L		94
29) Benzene	6.013	78	4810	0.38	ug/L		85
30) 1,2-Dichloroethane (EDC)	6.226	62	1552	0.35	ug/L		92
31) iso-Butyl Alcohol	6.305	43	507	3.98	ug/L	#	64
33) Trichloroethene (TCE)	6.628	130	1091	0.36	ug/L		79
34) Dibromomethane	7.078	93	553	0.34	ug/L	#	64
35) 1,2-Dichloropropane	7.193	63	1034	0.34	ug/L		90
36) Bromodichloromethane	7.266	83	569	0.25	ug/L		91
38) c-1,3-Dichloropropene	7.972	75	723	0.23	ug/L		74
40) Toluene	8.228	91	4633	0.39	ug/L		98
41) Tetrachloroethene (PCE)	8.678	166	1054	0.36	ug/L		87
42) 4-Methyl-2-Pentanone (...	8.684	43	1734	0.49	ug/L		96
43) t-1,3-Dichloropropene	8.720	75	502	0.19	ug/L		47
44) 1,1,2-Trichloroethane	8.897	97	754	0.32	ug/L		76
45) Dibromochloromethane	9.067	129	215	0.18	ug/L	#	15
46) 1,3-Dichloropropane	9.183	76	1532	0.34	ug/L		90
47) 1,2-Dibromoethane (EDB)	9.316	107	457	0.21	ug/L		84
48) 2-Hexanone	9.554	43	1043	0.44	ug/L		82

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050716.D
Acq On : 7 May 2019 9:09 pm
Operator : TB
Sample : 9E07048-CAL3
Misc : 1X 0.4ppb VOC MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:32:07 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

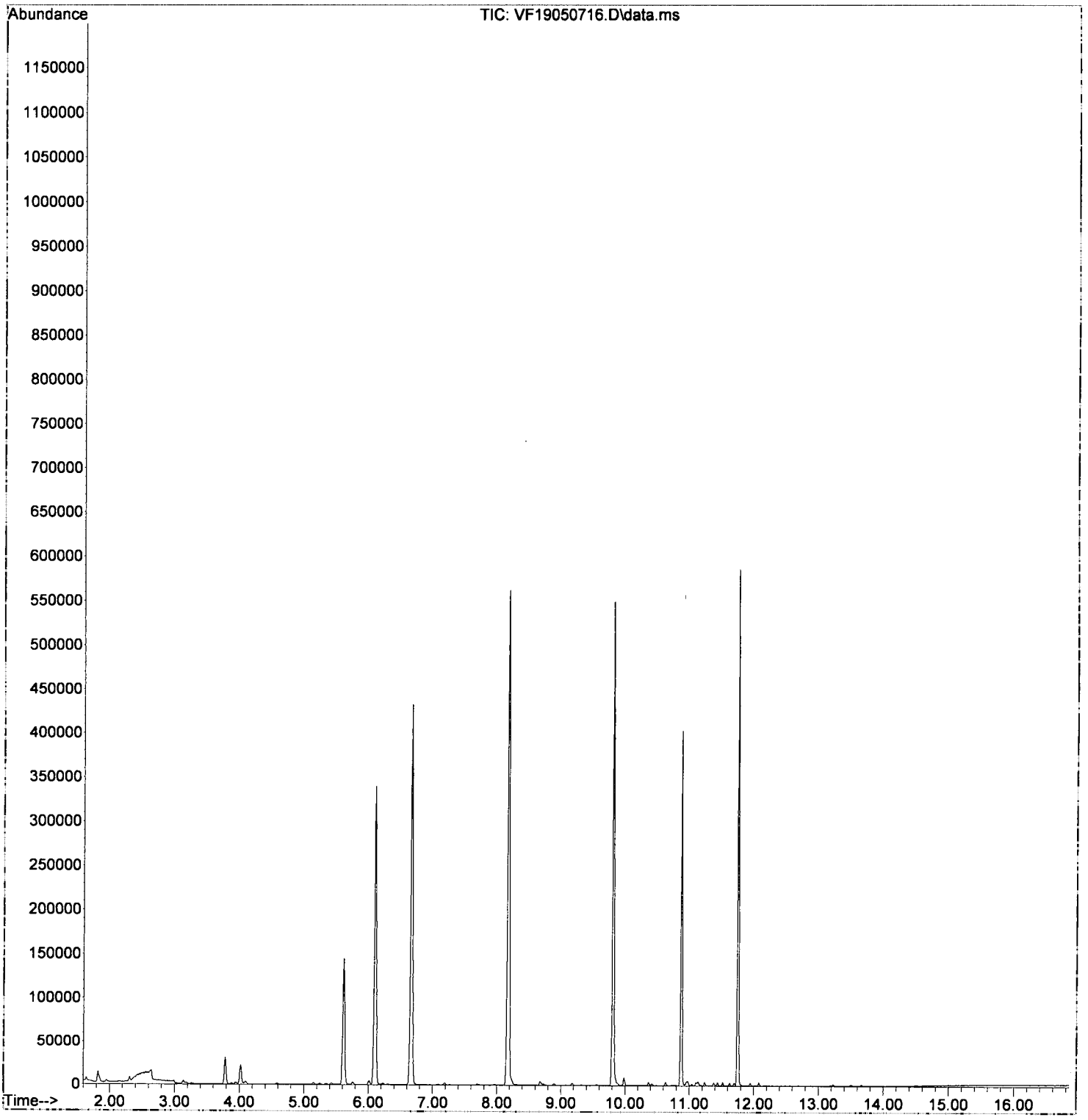
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) Chlorobenzene	9.821	112	2707	0.40	ug/L #	67
50) Ethylbenzene	9.852	91	4382	0.38	ug/L	86
51) 1,1,1,2-Tetrachloroethane	9.894	131	292	0.21	ug/L #	74
52) m,p-Xylenes (2)	9.986	91	5409	0.63	ug/L	97
53) o-Xylene	10.363	91	2704	0.33	ug/L	96
54) Styrene	10.418	104	1408	0.25	ug/L	93
55) Bromoform	0.000		0	N.D.		
56) Isopropylbenzene	10.631	105	2804	0.29	ug/L	94
59) Bromobenzene	10.953	156	808	0.36	ug/L #	80
60) n-Propylbenzene	10.977	91	3524	0.35	ug/L	97
61) 1,1,2,2-Tetrachloroethane	11.038	83	771	0.29	ug/L	85
62) 2-Chlorotoluene	11.105	126	669	0.33	ug/L	88
63) 1,3,5-Trimethylbenzene	11.129	105	2172	0.31	ug/L	97
64) 1,2,3-Trichloropropane	11.148	110	303	0.31	ug/L	88
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.		
66) 4-Chlorotoluene	11.239	91	2028	0.33	ug/L	86
67) tert-Butylbenzene	11.379	91	1226	0.31	ug/L	84
68) 1,2,4-Trimethylbenzene	11.440	105	2171	0.31	ug/L	84
69) sec-Butylbenzene	11.519	105	2640	0.32	ug/L	93
70) 4-Isopropyltoluene	11.628	119	1855	0.28	ug/L	92
71) 1,3-Dichlorobenzene	11.701	146	1391	0.36	ug/L	90
72) 1,4-Dichlorobenzene	11.762	146	1636	0.40	ug/L	79
73) n-Butylbenzene	11.945	91	1917	0.38	ug/L	91
74) 1,2-Dichlorobenzene	12.078	146	1327	0.35	ug/L	91
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.		
76) Hexachlorobutadiene	0.000		0	N.D.	d	
77) 1,2,4-Trichlorobenzene	13.228	180	681	0.32	ug/L	94
78) Naphthalene	13.502	128	1578	0.22	ug/L	78
79) 1,2,3-Trichlorobenzene	13.666	180	600	0.28	ug/L	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050716.D
Acq On : 7 May 2019 9:09 pm
Operator : TB
Sample : 9E07048-CAL3
Misc : 1X 0.4ppb VOC MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:32:07 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:37 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19 pre

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.095	168	261850	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.806	117	321643	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.753	152	141519	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.609	111	96607	43.51	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.661	114	402099	49.56	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	463638	47.06	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.871	174	112797	52.45	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.630	85	1965	0.79	ug/L		84
3) Chloromethane	1.843	50	3374	0.92	ug/L		95
4) Vinyl Chloride	1.940	62	3308	0.91	ug/L		98
5) Bromomethane	2.299	96	3078	1.43	ug/L		97
6) Chloroethane	2.433	64	476	0.96	ug/L	#	1
7) Trichlorofluoromethane	2.555	101	616	0.94	ug/L		82
8) 1,1-Dichloroethene	3.133	61	4085	0.86	ug/L		80
9) Carbon Disulfide	3.145	76	4300	0.76	ug/L		98
10) Freon 113	3.181	101	2811	0.98	ug/L		80
11) Iodomethane	3.297	142	635	0.61	ug/L	#	47
12) Methylene Chloride	3.777	84	16647	4.42	ug/L		91
13) Acetone	3.881	43	3535	2.46	ug/L		87
14) t-1,2-Dichloroethene	3.942	61	4059	0.87	ug/L		95
15) n-Hexane	4.021	86	2150	2.85	ug/L		98
16) Methyl-tert-butyl-ether	4.094	73	8040	0.87	ug/L		96
17) 1,1-Dichloroethane	4.580	63	5157	0.85	ug/L		97
18) Acrylonitrile	4.672	53	1044	0.67	ug/L		87
19) c-1,2-Dichloroethene	5.140	61	3590	0.81	ug/L		99
20) 2,2-Dichloropropane	5.237	77	2310	0.78	ug/L		79
21) Bromochloromethane	5.347	49	2190	0.83	ug/L		83
22) Chloroform	5.420	83	4496	0.85	ug/L		92
23) Carbon Tetrachloride	5.554	117	1343	0.65	ug/L		90
24) Tetrahydrofuran	5.596	42	1298	0.83	ug/L		87
25) 1,1,1-Trichloroethane	5.621	97	2997	0.77	ug/L		88
27) 1,1-Dichloropropene	5.748	75	3517	0.80	ug/L		97
28) 2-Butanone (MEK)	5.761	43	3413	1.60	ug/L		86
29) Benzene	6.010	78	11954	0.89	ug/L		97
30) 1,2-Dichloroethane (EDC)	6.229	62	4287	0.93	ug/L		92
31) iso-Butyl Alcohol	6.302	43	1628	12.19	ug/L		87
33) Trichloroethene (TCE)	6.631	130	2819	0.88	ug/L		89
34) Dibromomethane	7.081	93	1342	0.78	ug/L		90
35) 1,2-Dichloropropane	7.184	63	2906	0.91	ug/L		89
36) Bromodichloromethane	7.263	83	1570	0.65	ug/L		94
38) c-1,3-Dichloropropene	7.969	75	2124	0.60	ug/L		82
40) Toluene	8.231	91	12595	0.92	ug/L		97
41) Tetrachloroethene (PCE)	8.681	166	2677	0.81	ug/L		90
42) 4-Methyl-2-Pentanone (...	8.681	43	5152	1.28	ug/L		92
43) t-1,3-Dichloropropene	8.723	75	1582	0.52	ug/L		95
44) 1,1,2-Trichloroethane	8.881	97	2096	0.77	ug/L		86
45) Dibromochloromethane	9.082	129	646	0.47	ug/L		95
46) 1,3-Dichloropropane	9.180	76	4160	0.80	ug/L		95
47) 1,2-Dibromoethane (EDB)	9.319	107	1418	0.57	ug/L		95
48) 2-Hexanone	9.551	43	3198	1.18	ug/L		93

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:37 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

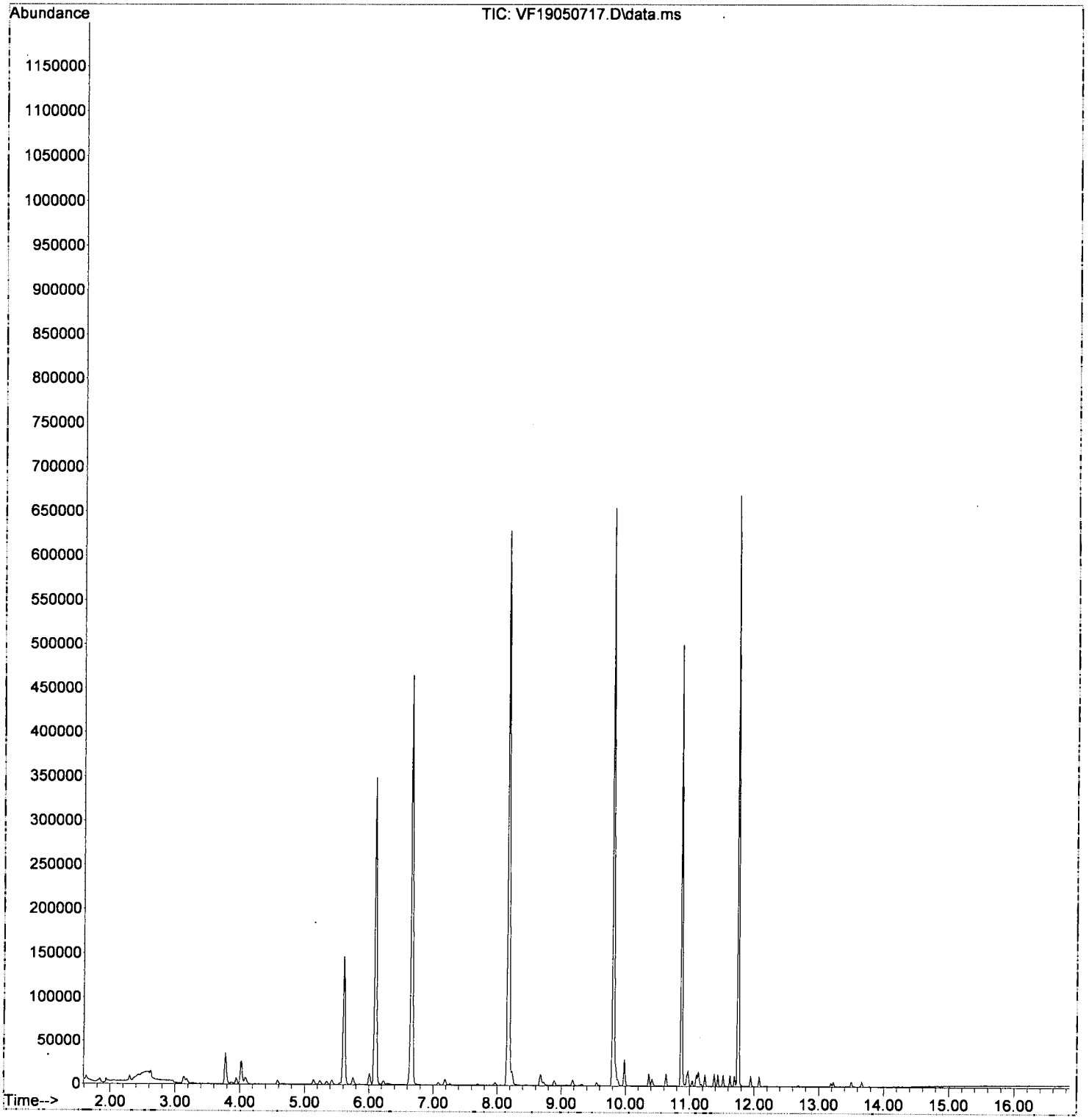
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
49) Chlorobenzene	9.818	112	7684	1.01 ug/L	80
50) Ethylbenzene	9.849	91	12168	0.92 ug/L	95
51) 1,1,1,2-Tetrachloroethane	9.885	131	785	0.49 ug/L	91
52) m,p-Xylenes (2)	9.983	91	16601	1.69 ug/L	91
53) o-Xylene	10.366	91	7663	0.83 ug/L	98
54) Styrene	10.415	104	4261	0.66 ug/L	87
55) Bromoform	10.439	173	299	0.41 ug/L #	36
56) Isopropylbenzene	10.634	105	8865	0.81 ug/L	94
59) Bromobenzene	10.956	156	2646	1.00 ug/L #	81
60) n-Propylbenzene	10.974	91	10761	0.90 ug/L	96
61) 1,1,2,2-Tetrachloroethane	11.041	83	2364	0.76 ug/L	87
62) 2-Chlorotoluene	11.108	126	2215	0.93 ug/L	95
63) 1,3,5-Trimethylbenzene	11.132	105	6404	0.79 ug/L	96
64) 1,2,3-Trichloropropane	11.145	110	973	0.83 ug/L #	68
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.	
66) 4-Chlorotoluene	11.236	91	6529	0.91 ug/L	99
67) tert-Butylbenzene	11.382	91	4016	0.88 ug/L	81
68) 1,2,4-Trimethylbenzene	11.437	105	6383	0.77 ug/L	98
69) sec-Butylbenzene	11.522	105	7874	0.82 ug/L	98
70) 4-Isopropyltoluene	11.625	119	5898	0.75 ug/L	95
71) 1,3-Dichlorobenzene	11.698	146	4151	0.90 ug/L	96
72) 1,4-Dichlorobenzene	11.759	146	4797	1.01 ug/L	82
73) n-Butylbenzene	11.948	91	5710	0.84 ug/L	94
74) 1,2-Dichlorobenzene	12.081	146	3856	0.87 ug/L	94
75) 1,2-Dibromo-3-Chloropr...	12.690	157	139	0.38 ug/L #	42
76) Hexachlorobutadiene	13.182	223	548	0.89 ug/L	89
77) 1,2,4-Trichlorobenzene	13.225	180	1879	0.76 ug/L	97
78) Naphthalene	13.505	128	4612	0.56 ug/L	99
79) 1,2,3-Trichlorobenzene	13.663	180	1872	0.74 ug/L	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:37 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

post 5/8/19

Quant Time: May 08 10:33:31 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.095	168	261850	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.806	117	321643	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.753	152	141519	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.609	111	96607	43.51	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.661	114	402099	49.56	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	463638	47.06	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.871	174	112797	52.45	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.630	85	1965	0.79	ug/L		84
3) Chloromethane	1.843	50	3374	0.92	ug/L		95
4) Vinyl Chloride	1.940	62	3308	0.91	ug/L		98
5) Bromomethane	2.299	96	3078	1.43	ug/L		97
6) Chloroethane	2.433	64	476	0.96	ug/L	#	1
7) Trichlorofluoromethane	2.555	101	616	0.94	ug/L		82
8) 1,1-Dichloroethene	3.133	61	4085	0.86	ug/L		80
9) Carbon Disulfide	3.145	76	4300	0.76	ug/L		98
10) Freon 113	3.181	101	2811	0.98	ug/L		80
11) Iodomethane	3.297	142	635	0.61	ug/L	#	47
12) Methylene Chloride	3.777	84	16647	4.42	ug/L		91
13) Acetone	3.881	43	3535	2.46	ug/L		87
14) t-1,2-Dichloroethene	3.942	61	4059	0.87	ug/L		95
15) n-Hexane	4.021	86	2150	2.85	ug/L		98
16) Methyl-tert-butyl-ether	4.094	73	8040	0.87	ug/L		96
17) 1,1-Dichloroethane	4.580	63	5157	0.85	ug/L		97
18) Acrylonitrile	4.672	53	1044	0.67	ug/L		87
19) c-1,2-Dichloroethene	5.140	61	3590	0.81	ug/L		99
20) 2,2-Dichloropropane	5.237	77	2310	0.78	ug/L		79
21) Bromochloromethane	5.347	49	2190	0.83	ug/L		83
22) Chloroform	5.420	83	4496	0.85	ug/L		92
23) Carbon Tetrachloride	5.554	117	1343	0.65	ug/L		90
24) Tetrahydrofuran	5.596	42	1298	0.83	ug/L		87
25) 1,1,1-Trichloroethane	5.621	97	2997	0.77	ug/L		88
27) 1,1-Dichloropropene	5.748	75	3517	0.80	ug/L		97
28) 2-Butanone (MEK)	5.761	43	3413	1.60	ug/L		86
29) Benzene	6.010	78	11954	0.89	ug/L		97
30) 1,2-Dichloroethane (EDC)	6.229	62	4287	0.93	ug/L		92
31) iso-Butyl Alcohol	6.302	43	1628	12.19	ug/L		87
33) Trichloroethene (TCE)	6.631	130	2819	0.88	ug/L		89
34) Dibromomethane	7.081	93	1342	0.78	ug/L		90
35) 1,2-Dichloropropane	7.184	63	2906	0.91	ug/L		89
36) Bromodichloromethane	7.263	83	1570	0.65	ug/L		94
38) c-1,3-Dichloropropene	7.969	75	2124	0.60	ug/L		82
40) Toluene	8.231	91	12595	0.92	ug/L		97
41) Tetrachloroethene (PCE)	8.681	166	2677	0.81	ug/L		90
42) 4-Methyl-2-Pentanone (...	8.681	43	5152	1.28	ug/L		92
43) t-1,3-Dichloropropene	8.723	75	1582	0.52	ug/L		95
44) 1,1,2-Trichloroethane	8.881	97	2096	0.77	ug/L		86
45) Dibromochloromethane	9.082	129	646	0.47	ug/L		95
46) 1,3-Dichloropropane	9.180	76	4160	0.80	ug/L		95
47) 1,2-Dibromoethane (EDB)	9.319	107	1418	0.57	ug/L		95
48) 2-Hexanone	9.551	43	3198	1.18	ug/L		93

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Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:33:31 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

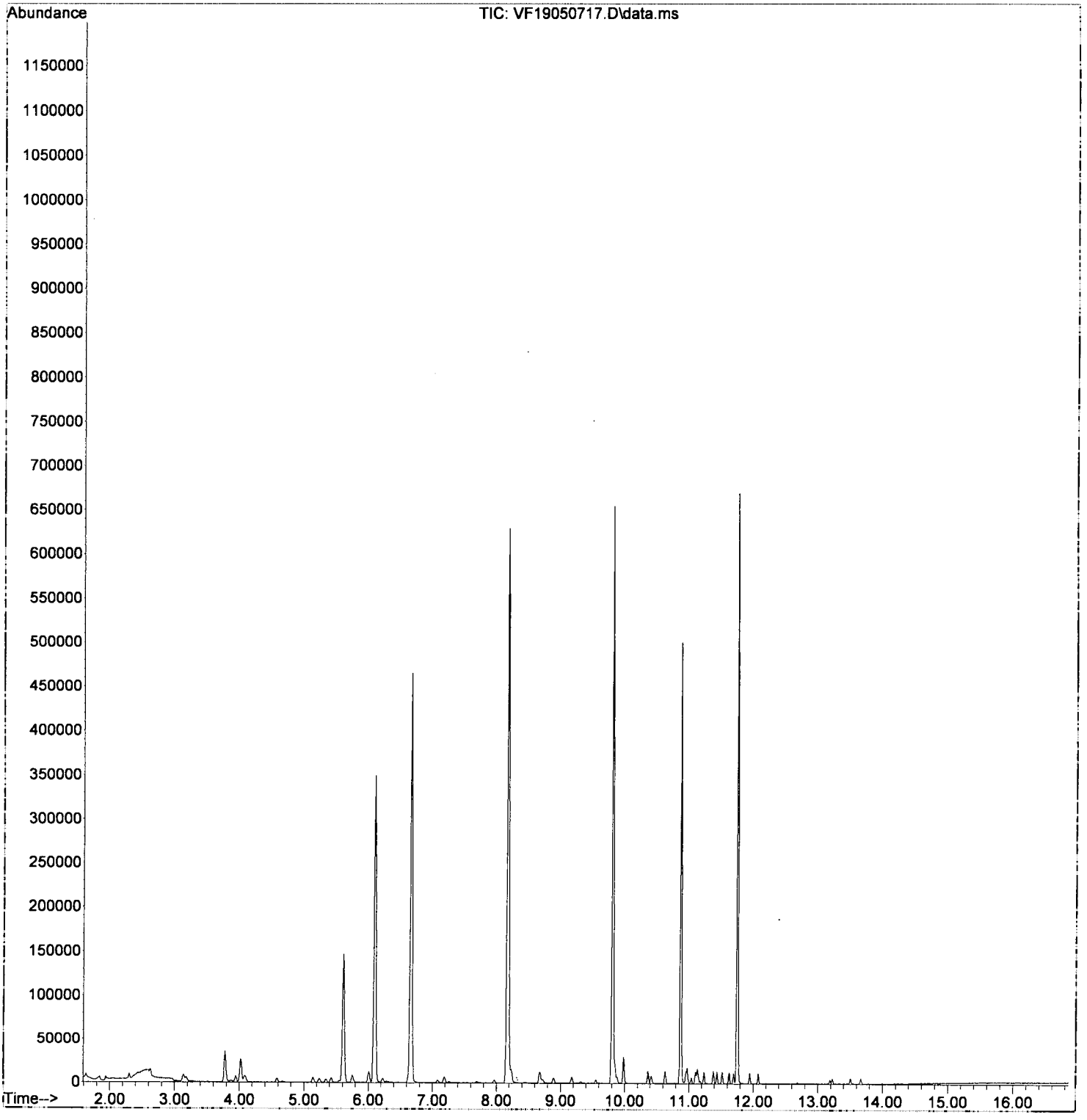
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.818	112	7684	1.01	ug/L		80
50) Ethylbenzene	9.849	91	12168	0.92	ug/L		95
51) 1,1,1,2-Tetrachloroethane	9.885	131	785	0.49	ug/L		91
52) m,p-Xylenes (2)	9.983	91	16601	1.69	ug/L		91
53) o-Xylene	10.366	91	7663	0.83	ug/L		98
54) Styrene	10.415	104	4261	0.66	ug/L		87
55) Bromoform	0.000		0	N.D.	d		
56) Isopropylbenzene	10.634	105	8865	0.81	ug/L		94
59) Bromobenzene	10.956	156	2646	1.00	ug/L	#	81
60) n-Propylbenzene	10.974	91	10761	0.90	ug/L		96
61) 1,1,2,2-Tetrachloroethane	11.041	83	2364	0.76	ug/L		87
62) 2-Chlorotoluene	11.108	126	2215	0.93	ug/L		95
63) 1,3,5-Trimethylbenzene	11.132	105	6404	0.79	ug/L		96
64) 1,2,3-Trichloropropane	11.145	110	973	0.83	ug/L	#	68
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
66) 4-Chlorotoluene	11.236	91	6529	0.91	ug/L		99
67) tert-Butylbenzene	11.382	91	4016	0.88	ug/L		81
68) 1,2,4-Trimethylbenzene	11.437	105	6383	0.77	ug/L		98
69) sec-Butylbenzene	11.522	105	7874	0.82	ug/L		98
70) 4-Isopropyltoluene	11.625	119	5898	0.75	ug/L		95
71) 1,3-Dichlorobenzene	11.698	146	4151	0.90	ug/L		96
72) 1,4-Dichlorobenzene	11.759	146	4797	1.01	ug/L		82
73) n-Butylbenzene	11.948	91	5710	0.84	ug/L		94
74) 1,2-Dichlorobenzene	12.081	146	3856	0.87	ug/L		94
75) 1,2-Dibromo-3-Chloropr...	12.690	157	139	0.38	ug/L	#	42
76) Hexachlorobutadiene	13.182	223	548	0.89	ug/L		89
77) 1,2,4-Trichlorobenzene	13.225	180	1879	0.76	ug/L		97
78) Naphthalene	13.505	128	4612	0.56	ug/L		99
79) 1,2,3-Trichlorobenzene	13.663	180	1872	0.74	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:33:31 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050718.D
Acq On : 7 May 2019 10:04 pm
Operator : TB
Sample : 9E07048-CAL5
Misc : 1X 2ppb VOC MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.095	168	242998	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.806	117	271061	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.753	152	122406	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.609	111	94993	46.10	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.661	114	374305	49.71	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	417114	50.24	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.871	174	93757	50.41	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.630	85	4428	1.92	ug/L		93
3) Chloromethane	1.837	50	7222	2.13	ug/L		95
4) Vinyl Chloride	1.940	62	6417	1.91	ug/L		99
5) Bromomethane	2.305	96	5858	2.92	ug/L		94
6) Chloroethane	2.421	64	1082	2.35	ug/L	#	1
7) Trichlorofluoromethane	2.555	101	1256	2.07	ug/L		81
8) 1,1-Dichloroethene	3.127	61	8224	1.86	ug/L		78
9) Carbon Disulfide	3.139	76	8310	1.58	ug/L		96
10) Freon 113	3.175	101	5055	1.90	ug/L		83
11) Iodomethane	3.285	142	862	0.89	ug/L	#	65
12) Methylene Chloride	3.777	84	18649	5.33	ug/L		90
13) Acetone	3.875	43	6127	4.60	ug/L		90
14) t-1,2-Dichloroethene	3.936	61	7974	1.84	ug/L		90
15) n-Hexane	4.015	86	2796	3.99	ug/L		95
16) Methyl-tert-butyl-ether	4.094	73	15652	1.83	ug/L		96
17) 1,1-Dichloroethane	4.580	63	10371	1.85	ug/L		93
18) Acrylonitrile	4.660	53	2472	1.71	ug/L		98
19) c-1,2-Dichloroethene	5.134	61	7621	1.85	ug/L		82
20) 2,2-Dichloropropane	5.244	77	4599	1.66	ug/L		70
21) Bromochloromethane	5.341	49	4699	1.92	ug/L		82
22) Chloroform	5.420	83	8712	1.78	ug/L		92
23) Carbon Tetrachloride	5.548	117	2842	1.47	ug/L		100
24) Tetrahydrofuran	5.609	42	2709	1.86	ug/L		89
25) 1,1,1-Trichloroethane	5.621	97	5724	1.59	ug/L		94
27) 1,1-Dichloropropene	5.749	75	7332	1.80	ug/L		97
28) 2-Butanone (MEK)	5.755	43	7034	3.55	ug/L		95
29) Benzene	6.004	78	23365	1.88	ug/L		96
30) 1,2-Dichloroethane (EDC)	6.223	62	7997	1.88	ug/L		98
31) iso-Butyl Alcohol	6.290	43	3909	31.54	ug/L		99
33) Trichloroethene (TCE)	6.625	130	5247	1.76	ug/L		89
34) Dibromomethane	7.081	93	2709	1.71	ug/L	#	79
35) 1,2-Dichloropropane	7.184	63	5465	1.84	ug/L		95
36) Bromodichloromethane	7.257	83	3150	1.41	ug/L		89
38) c-1,3-Dichloropropene	7.963	75	4000	1.34	ug/L		85
40) Toluene	8.231	91	22780	1.97	ug/L		96
41) Tetrachloroethene (PCE)	8.675	166	5076	1.82	ug/L		90
42) 4-Methyl-2-Pentanone (...	8.681	43	10467	3.09	ug/L		91
43) t-1,3-Dichloropropene	8.723	75	3084	1.20	ug/L		85
44) 1,1,2-Trichloroethane	8.894	97	4156	1.82	ug/L		94
45) Dibromochloromethane	9.076	129	1529	1.32	ug/L		88
46) 1,3-Dichloropropane	9.174	76	7762	1.78	ug/L		82
47) 1,2-Dibromoethane (EDB)	9.313	107	2966	1.41	ug/L		83
48) 2-Hexanone	9.545	43	6383	2.81	ug/L		90

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050718.D
Acq On : 7 May 2019 10:04 pm
Operator : TB
Sample : 9E07048-CAL5
Misc : 1X 2ppb VOC MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

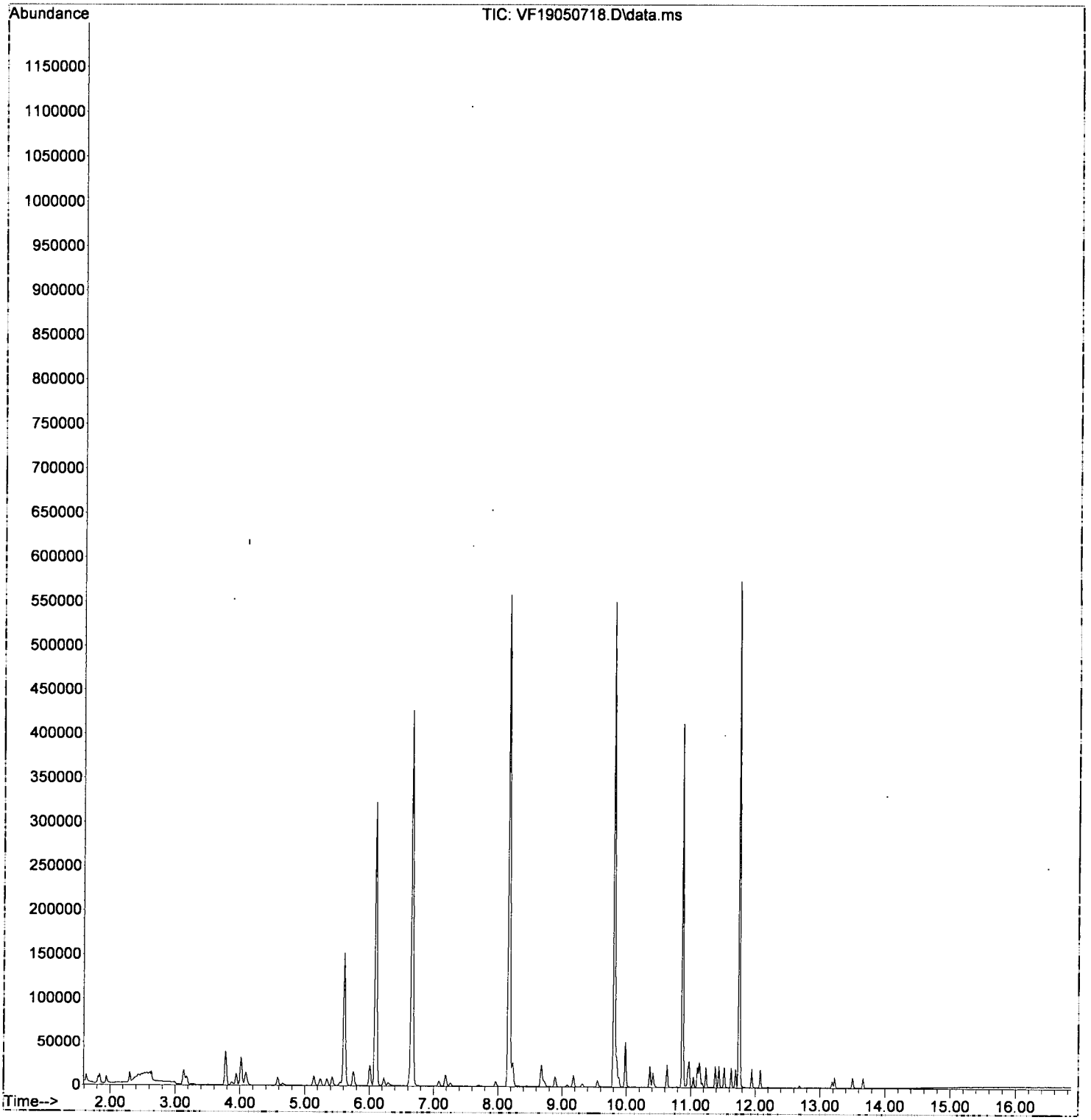
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.818	112	12836	1.99	ug/L		89
50) Ethylbenzene	9.849	91	20590	1.85	ug/L		96
51) 1,1,1,2-Tetrachloroethane	9.885	131	1701	1.26	ug/L		86
52) m,p-Xylenes (2)	9.983	91	28146	3.40	ug/L		94
53) o-Xylene	10.366	91	13306	1.71	ug/L		95
54) Styrene	10.415	104	7423	1.36	ug/L		93
55) Bromoform	10.439	173	793	1.29	ug/L		92
56) Isopropylbenzene	10.634	105	14839	1.60	ug/L		99
59) Bromobenzene	10.956	156	4463	1.94	ug/L		90
60) n-Propylbenzene	10.974	91	18352	1.78	ug/L		97
61) 1,1,2,2-Tetrachloroethane	11.041	83	4375	1.63	ug/L		97
62) 2-Chlorotoluene	11.108	126	3616	1.76	ug/L		95
63) 1,3,5-Trimethylbenzene	11.132	105	11485	1.63	ug/L		92
64) 1,2,3-Trichloropropane	11.145	110	1924	1.91	ug/L		88
65) t-1,4-Dichloro-2-butene	11.181	88	237	1.28	ug/L	#	62
66) 4-Chlorotoluene	11.236	91	11250	1.80	ug/L		97
67) tert-Butylbenzene	11.382	91	6886	1.73	ug/L		94
68) 1,2,4-Trimethylbenzene	11.437	105	11474	1.60	ug/L		92
69) sec-Butylbenzene	11.522	105	14030	1.70	ug/L		97
70) 4-Isopropyltoluene	11.625	119	10365	1.52	ug/L		93
71) 1,3-Dichlorobenzene	11.698	146	7501	1.89	ug/L		98
72) 1,4-Dichlorobenzene	11.759	146	8234	2.00	ug/L		88
73) n-Butylbenzene	11.948	91	9476	1.61	ug/L		97
74) 1,2-Dichlorobenzene	12.081	146	6890	1.80	ug/L		97
75) 1,2-Dibromo-3-Chloropr...	12.678	157	344	1.09	ug/L	#	22
76) Hexachlorobutadiene	13.189	223	977	1.83	ug/L		81
77) 1,2,4-Trichlorobenzene	13.225	180	3650	1.70	ug/L		96
78) Naphthalene	13.505	128	9150	1.28	ug/L		99
79) 1,2,3-Trichlorobenzene	13.663	180	3683	1.69	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050718.D
Acq On : 7 May 2019 10:04 pm
Operator : TB
Sample : 9E07048-CAL5
Misc : 1X 2ppb VOC MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050719.D
Acq On : 7 May 2019 10:31 pm
Operator : TB
Sample : 9E07048-CAL6
Misc : 1X 5ppb VOC MeOH
ALS Vial : 9 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:41 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.099	168	248863	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	279254	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.750	152	125861	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.606	111	99623	47.20	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.658	114	382252	49.57	ug/L		0.00
39) Toluene-d8 (S)	8.167	98	428207	50.06	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.868	174	96094	50.24	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.633	85	11506	4.87	ug/L		97
3) Chloromethane	1.840	50	16881	4.86	ug/L		97
4) Vinyl Chloride	1.944	62	16421	4.77	ug/L		99
5) Bromomethane	2.302	96	12080	5.89	ug/L		96
6) Chloroethane	2.430	64	2287	4.85	ug/L	#	1
7) Trichlorofluoromethane	2.558	101	3188	5.12	ug/L		97
8) 1,1-Dichloroethene	3.124	61	21211	4.69	ug/L		77
9) Carbon Disulfide	3.136	76	22193	4.12	ug/L		96
10) Freon 113	3.172	101	13365	4.91	ug/L		82
11) Iodomethane	3.282	142	2570	2.60	ug/L		92
12) Methylene Chloride	3.775	84	27821	7.77	ug/L		88
13) Acetone	3.872	43	14357	10.52	ug/L		94
14) t-1,2-Dichloroethene	3.939	61	21082	4.74	ug/L		96
15) n-Hexane	4.018	86	4468	6.23	ug/L	#	77
16) Methyl-tert-butyl-ether	4.091	73	40294	4.61	ug/L		97
17) 1,1-Dichloroethane	4.578	63	27022	4.71	ug/L		96
18) Acrylonitrile	4.663	53	6728	4.55	ug/L		99
19) c-1,2-Dichloroethene	5.137	61	19884	4.71	ug/L		98
20) 2,2-Dichloropropane	5.241	77	11848	4.18	ug/L		74
21) Bromochloromethane	5.344	49	11857	4.72	ug/L		89
22) Chloroform	5.423	83	23401	4.66	ug/L		93
23) Carbon Tetrachloride	5.551	117	7941	4.02	ug/L		97
24) Tetrahydrofuran	5.600	42	7275	4.88	ug/L		93
25) 1,1,1-Trichloroethane	5.624	97	15328	4.16	ug/L		93
27) 1,1-Dichloropropene	5.752	75	19265	4.63	ug/L		98
28) 2-Butanone (MEK)	5.752	43	19168	9.44	ug/L		95
29) Benzene	6.007	78	60741	4.78	ug/L		97
30) 1,2-Dichloroethane (EDC)	6.226	62	21115	4.84	ug/L		97
31) iso-Butyl Alcohol	6.299	43	10550	83.12	ug/L		100
33) Trichloroethene (TCE)	6.628	130	14302	4.67	ug/L		95
34) Dibromomethane	7.078	93	7109	4.37	ug/L		86
35) 1,2-Dichloropropane	7.188	63	14217	4.68	ug/L		98
36) Bromodichloromethane	7.261	83	8768	3.83	ug/L		98
38) c-1,3-Dichloropropene	7.966	75	11116	3.61	ug/L		91
40) Toluene	8.228	91	57774	4.85	ug/L		97
41) Tetrachloroethene (PCE)	8.678	166	13448	4.68	ug/L		96
42) 4-Methyl-2-Pentanone (...	8.678	43	28905	8.28	ug/L		93
43) t-1,3-Dichloropropene	8.721	75	8937	3.38	ug/L		92
44) 1,1,2-Trichloroethane	8.891	97	10585	4.51	ug/L		85
45) Dibromochloromethane	9.073	129	4290	3.59	ug/L		92
46) 1,3-Dichloropropane	9.177	76	20889	4.65	ug/L		89
47) 1,2-Dibromoethane (EDB)	9.317	107	8553	3.94	ug/L		97
48) 2-Hexanone	9.548	43	17782	7.59	ug/L		96

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050719.D
Acq On : 7 May 2019 10:31 pm
Operator : TB
Sample : 9E07048-CAL6
Misc : 1X 5ppb VOC MeOH
ALS Vial : 9 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:41 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

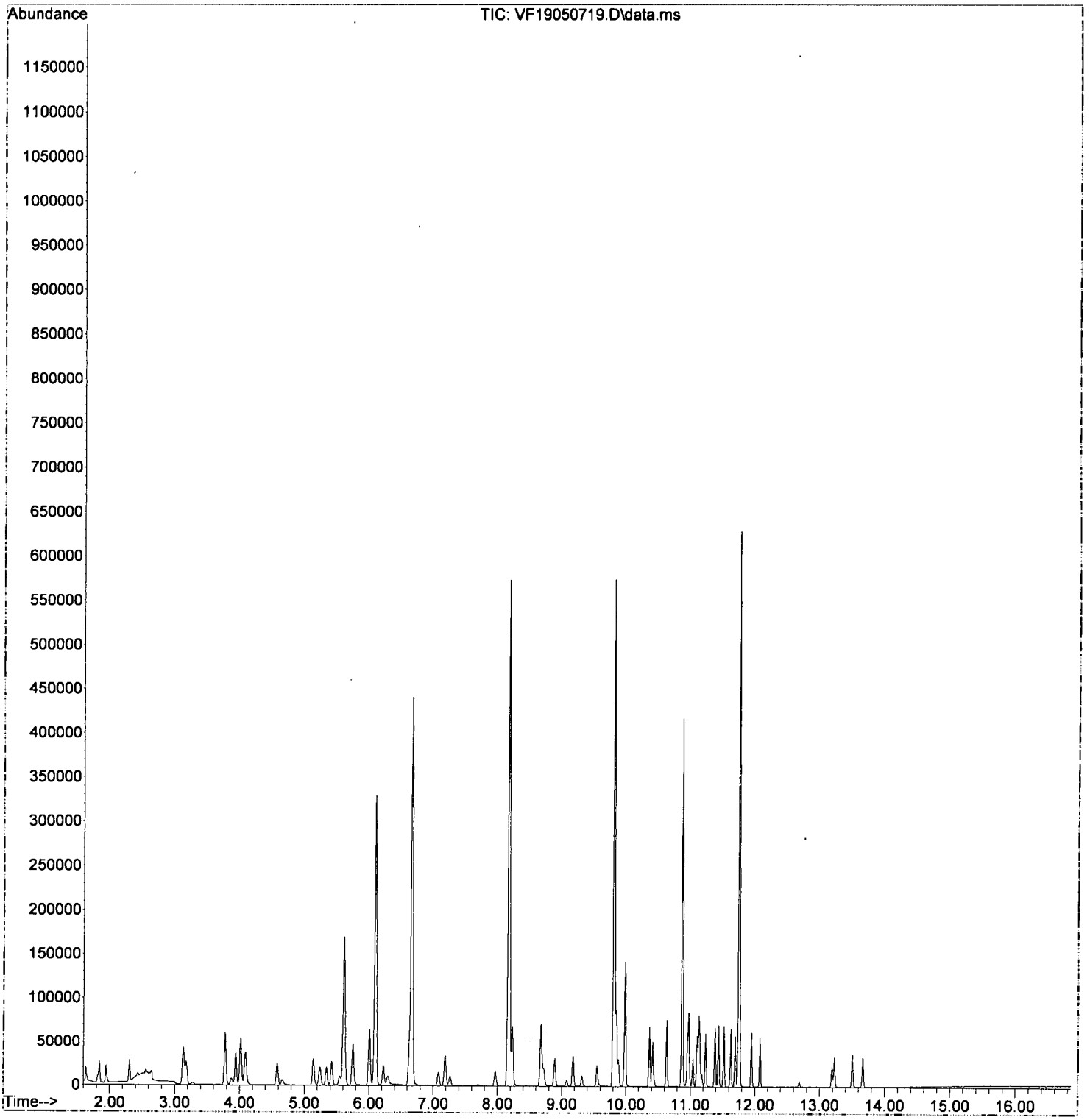
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.822	112	32582	4.91	ug/L		94
50) Ethylbenzene	9.846	91	53767	4.68	ug/L		97
51) 1,1,1,2-Tetrachloroethane	9.882	131	4779	3.43	ug/L		94
52) m,p-Xylenes (2)	9.980	91	76311	8.96	ug/L		96
53) o-Xylene	10.363	91	35546	4.44	ug/L		95
54) Styrene	10.412	104	22451	3.98	ug/L		96
55) Bromoform	10.436	173	2131	3.36	ug/L		98
56) Isopropylbenzene	10.631	105	42773	4.49	ug/L		97
59) Bromobenzene	10.953	156	11371	4.81	ug/L		86
60) n-Propylbenzene	10.971	91	49128	4.63	ug/L		96
61) 1,1,2,2-Tetrachloroethane	11.038	83	11560	4.19	ug/L		98
62) 2-Chlorotoluene	11.105	126	9901	4.68	ug/L		84
63) 1,3,5-Trimethylbenzene	11.130	105	31608	4.36	ug/L		98
64) 1,2,3-Trichloropropane	11.142	110	4758	4.59	ug/L	#	69
65) t-1,4-Dichloro-2-butene	11.178	88	580	3.06	ug/L	#	27
66) 4-Chlorotoluene	11.233	91	30163	4.70	ug/L		96
67) tert-Butylbenzene	11.379	91	18826	4.61	ug/L		89
68) 1,2,4-Trimethylbenzene	11.434	105	32438	4.41	ug/L		100
69) sec-Butylbenzene	11.519	105	39097	4.59	ug/L		96
70) 4-Isopropyltoluene	11.628	119	30161	4.29	ug/L		95
71) 1,3-Dichlorobenzene	11.695	146	19402	4.75	ug/L		97
72) 1,4-Dichlorobenzene	11.762	146	20284	4.78	ug/L		97
73) n-Butylbenzene	11.945	91	27019	4.48	ug/L		93
74) 1,2-Dichlorobenzene	12.079	146	18432	4.69	ug/L		97
75) 1,2-Dibromo-3-Chloropr...	12.681	157	1033	3.17	ug/L	#	12
76) Hexachlorobutadiene	13.192	223	2590	4.71	ug/L		91
77) 1,2,4-Trichlorobenzene	13.228	180	9487	4.30	ug/L		98
78) Naphthalene	13.502	128	26502	3.61	ug/L		99
79) 1,2,3-Trichlorobenzene	13.660	180	9947	4.45	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050719.D
Acq On : 7 May 2019 10:31 pm
Operator : TB
Sample : 9E07048-CAL6
Misc : 1X 5ppb VOC MeOH
ALS Vial : 9 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:41 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050720.D
Acq On : 7 May 2019 10:58 pm
Operator : TB
Sample : 9E07048-CAL7
Misc : 1X 10ppb VOC MeOH
ALS Vial : 10 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:43 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.098	168	264477	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	318211	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.750	152	137625	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.611	111	104380	46.54	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.664	114	404994	49.42	ug/L		0.00
39) Toluene-d8 (S)	8.172	98	462102	47.41	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.874	174	109811	52.51	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.633	85	23615	9.41	ug/L		96
3) Chloromethane	1.846	50	33122	8.97	ug/L		97
4) Vinyl Chloride	1.943	62	34298	9.37	ug/L		93
5) Bromomethane	2.308	96	23602	10.82	ug/L		100
6) Chloroethane	2.436	64	4425	8.83	ug/L	#	38
7) Trichlorofluoromethane	2.563	101	5854	8.85	ug/L		96
8) 1,1-Dichloroethene	3.135	61	43446	9.04	ug/L		79
9) Carbon Disulfide	3.148	76	47292	8.26	ug/L		99
10) Freon 113	3.184	101	27267	9.42	ug/L		85
11) Iodomethane	3.287	142	8901	8.49	ug/L		93
12) Methylene Chloride	3.780	84	42775	11.24	ug/L		90
13) Acetone	3.871	43	25591	17.64	ug/L		91
14) t-1,2-Dichloroethene	3.944	61	43282	9.16	ug/L		97
15) n-Hexane	4.024	86	7751	10.16	ug/L	#	87
16) Methyl-tert-butyl-ether	4.090	73	82410	8.86	ug/L		99
17) 1,1-Dichloroethane	4.583	63	54444	8.93	ug/L		98
18) Acrylonitrile	4.656	53	13862	8.82	ug/L		94
19) c-1,2-Dichloroethene	5.137	61	40226	8.96	ug/L		91
20) 2,2-Dichloropropane	5.240	77	25977	8.63	ug/L		71
21) Bromochloromethane	5.344	49	24444	9.16	ug/L		88
22) Chloroform	5.423	83	48731	9.14	ug/L		96
23) Carbon Tetrachloride	5.550	117	17551	8.37	ug/L		98
24) Tetrahydrofuran	5.605	42	13580	8.56	ug/L		94
25) 1,1,1-Trichloroethane	5.623	97	34343	8.77	ug/L		95
27) 1,1-Dichloropropene	5.751	75	40206	9.09	ug/L		99
28) 2-Butanone (MEK)	5.757	43	37307	17.28	ug/L		95
29) Benzene	6.007	78	124874	9.26	ug/L		98
30) 1,2-Dichloroethane (EDC)	6.226	62	42029	9.06	ug/L		97
31) iso-Butyl Alcohol	6.293	43	23588	174.87	ug/L		96
33) Trichloroethene (TCE)	6.627	130	29569	9.09	ug/L		92
34) Dibromomethane	7.084	93	15288	8.84	ug/L		90
35) 1,2-Dichloropropane	7.187	63	30050	9.32	ug/L		98
36) Bromodichloromethane	7.260	83	19606	8.06	ug/L		99
38) c-1,3-Dichloropropene	7.966	75	26031	7.43	ug/L		85
40) Toluene	8.227	91	124435	9.17	ug/L		98
41) Tetrachloroethene (PCE)	8.677	166	29011	8.86	ug/L		95
42) 4-Methyl-2-Pentanone (...	8.677	43	65586	16.49	ug/L		91
43) t-1,3-Dichloropropene	8.714	75	22208	7.38	ug/L		94
44) 1,1,2-Trichloroethane	8.890	97	23330	8.72	ug/L		92
45) Dibromochloromethane	9.079	129	10099	7.42	ug/L		90
46) 1,3-Dichloropropane	9.176	76	45205	8.88	ug/L		91
47) 1,2-Dibromoethane (EDB)	9.310	107	19791	8.00	ug/L		98
48) 2-Hexanone	9.547	43	42844	16.04	ug/L		94

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050720.D
Acq On : 7 May 2019 10:58 pm
Operator : TB
Sample : 9E07048-CAL7
Misc : 1X 10ppb VOC MeOH
ALS Vial : 10 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:43 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.821	112	74844	9.90	ug/L		96
50) Ethylbenzene	9.845	91	123904	9.46	ug/L		96
51) 1,1,1,2-Tetrachloroethane	9.882	131	12247	7.72	ug/L		98
52) m,p-Xylenes (2)	9.979	91	180873	18.63	ug/L		96
53) o-Xylene	10.363	91	85079	9.33	ug/L		96
54) Styrene	10.411	104	56305	8.76	ug/L		95
55) Bromoform	10.435	173	5401	7.48	ug/L		98
56) Isopropylbenzene	10.630	105	101605	9.36	ug/L		97
59) Bromobenzene	10.959	156	26129	10.11	ug/L		95
60) n-Propylbenzene	10.971	91	115664	9.96	ug/L		97
61) 1,1,2,2-Tetrachloroethane	11.038	83	27257	9.04	ug/L		99
62) 2-Chlorotoluene	11.105	126	23610	10.21	ug/L		94
63) 1,3,5-Trimethylbenzene	11.129	105	77527	9.78	ug/L		97
64) 1,2,3-Trichloropropane	11.147	110	10739	9.47	ug/L	#	79
65) t-1,4-Dichloro-2-butene	11.178	88	1656	7.98	ug/L	#	47
66) 4-Chlorotoluene	11.232	91	71020	10.13	ug/L		97
67) tert-Butylbenzene	11.378	91	44486	9.97	ug/L		83
68) 1,2,4-Trimethylbenzene	11.439	105	78156	9.72	ug/L		100
69) sec-Butylbenzene	11.518	105	92413	9.93	ug/L		97
70) 4-Isopropyltoluene	11.628	119	73579	9.57	ug/L		98
71) 1,3-Dichlorobenzene	11.695	146	42681	9.56	ug/L		97
72) 1,4-Dichlorobenzene	11.762	146	44850	9.67	ug/L		98
73) n-Butylbenzene	11.944	91	65332	9.90	ug/L		93
74) 1,2-Dichlorobenzene	12.078	146	40089	9.33	ug/L		98
75) 1,2-Dibromo-3-Chloropr...	12.686	157	2666	7.48	ug/L	#	50
76) Hexachlorobutadiene	13.191	223	5590	9.29	ug/L		97
77) 1,2,4-Trichlorobenzene	13.228	180	21384	8.87	ug/L		98
78) Naphthalene	13.502	128	66084	8.22	ug/L		99
79) 1,2,3-Trichlorobenzene	13.666	180	21895	8.96	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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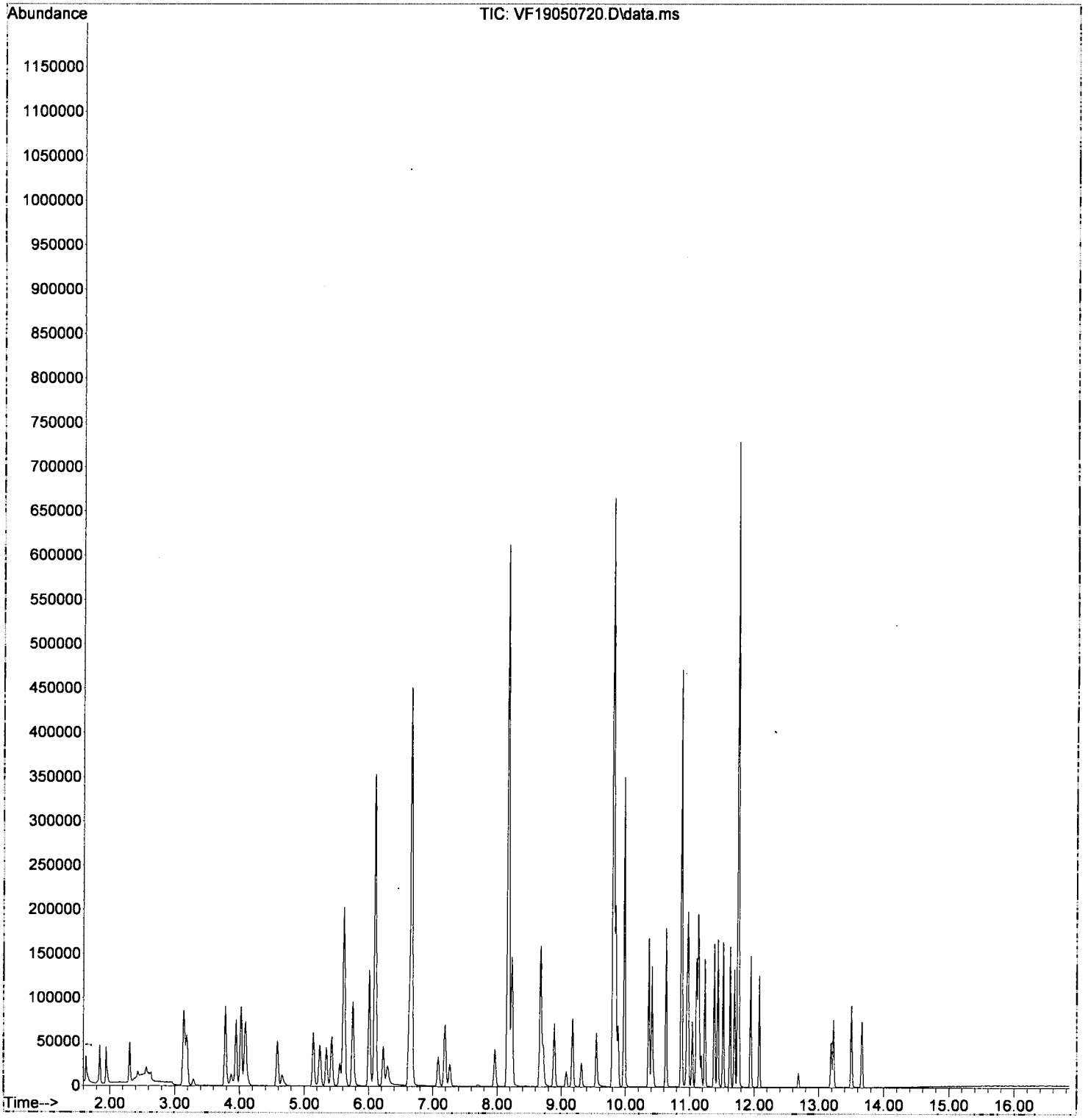
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050720.D
Acq On : 7 May 2019 10:58 pm
Operator : TB
Sample : 9E07048-CAL7
Misc : 1X 10ppb VOC MeOH
ALS Vial : 10 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:43 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050721.D
Acq On : 7 May 2019 11:25 pm
Operator : TB
Sample : 9E07048-CAL8
Misc : 1X 20ppb VOC MeOH
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:45 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.097	168	247283	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.802	117	274550	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.749	152	127087	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.605	111	104852	50.00	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.657	114	383139	50.00	ug/L		0.00
39) Toluene-d8 (S)	8.166	98	420491	50.00	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.873	174	96557	50.00	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.632	85	46922	20.00	ug/L		97
3) Chloromethane	1.839	50	69024	20.00	ug/L		97
4) Vinyl Chloride	1.942	62	68436	20.00	ug/L		96
5) Bromomethane	2.301	96	40782	20.00	ug/L		96
6) Chloroethane	2.423	64	9373	20.00	ug/L		76
7) Trichlorofluoromethane	2.557	101	12368	20.00	ug/L		96
8) 1,1-Dichloroethene	3.123	61	89848	20.00	ug/L		78
9) Carbon Disulfide	3.141	76	107117	20.00	ug/L		99
10) Freon 113	3.177	101	54116	20.00	ug/L		82
11) Iodomethane	3.281	142	19614	20.00	ug/L		97
12) Methylene Chloride	3.773	84	71195	20.00	ug/L		89
13) Acetone	3.865	43	54252	40.00	ug/L		93
14) t-1,2-Dichloroethene	3.938	61	88360	20.00	ug/L		95
15) n-Hexane	4.017	86	14259	20.00	ug/L	#	91
16) Methyl-tert-butyl-ether	4.084	73	173881	20.00	ug/L		97
17) 1,1-Dichloroethane	4.576	63	114004	20.00	ug/L		98
18) Acrylonitrile	4.649	53	29390	20.00	ug/L		100
19) c-1,2-Dichloroethene	5.136	61	83939	20.00	ug/L		92
20) 2,2-Dichloropropane	5.240	77	56267	20.00	ug/L		81
21) Bromochloromethane	5.337	49	49879	20.00	ug/L		87
22) Chloroform	5.422	83	99732	20.00	ug/L		96
23) Carbon Tetrachloride	5.544	117	39228	20.00	ug/L		96
24) Tetrahydrofuran	5.598	42	29649	20.00	ug/L		95
25) 1,1,1-Trichloroethane	5.617	97	73208	20.00	ug/L		94
27) 1,1-Dichloropropene	5.745	75	82690	20.00	ug/L		98
28) 2-Butanone (MEK)	5.751	43	80726	40.00	ug/L		97
29) Benzene	6.000	78	252305	20.00	ug/L		96
30) 1,2-Dichloroethane (EDC)	6.219	62	86737	20.00	ug/L		98
31) iso-Butyl Alcohol	6.286	43	63060	500.00	ug/L		98
33) Trichloroethene (TCE)	6.621	130	60828	20.00	ug/L		93
34) Dibromomethane	7.077	93	32324	20.00	ug/L		84
35) 1,2-Dichloropropane	7.180	63	60316	20.00	ug/L		98
36) Bromodichloromethane	7.259	83	45494	20.00	ug/L		98
38) c-1,3-Dichloropropene	7.965	75	60464	20.00	ug/L		89
40) Toluene	8.227	91	234051	20.00	ug/L		99
41) Tetrachloroethene (PCE)	8.671	166	56499	20.00	ug/L		92
42) 4-Methyl-2-Pentanone (...	8.677	43	137264	40.00	ug/L		93
43) t-1,3-Dichloropropene	8.713	75	51961	20.00	ug/L		95
44) 1,1,2-Trichloroethane	8.890	97	46171	20.00	ug/L		92
45) Dibromochloromethane	9.078	129	23476	20.00	ug/L		95
46) 1,3-Dichloropropane	9.169	76	88346	20.00	ug/L		90
47) 1,2-Dibromoethane (EDB)	9.309	107	42675	20.00	ug/L		99
48) 2-Hexanone	9.547	43	92169	40.00	ug/L		95

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050721.D
Acq On : 7 May 2019 11:25 pm
Operator : TB
Sample : 9E07048-CAL8
Misc : 1X 20ppb VOC MeOH
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:45 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19

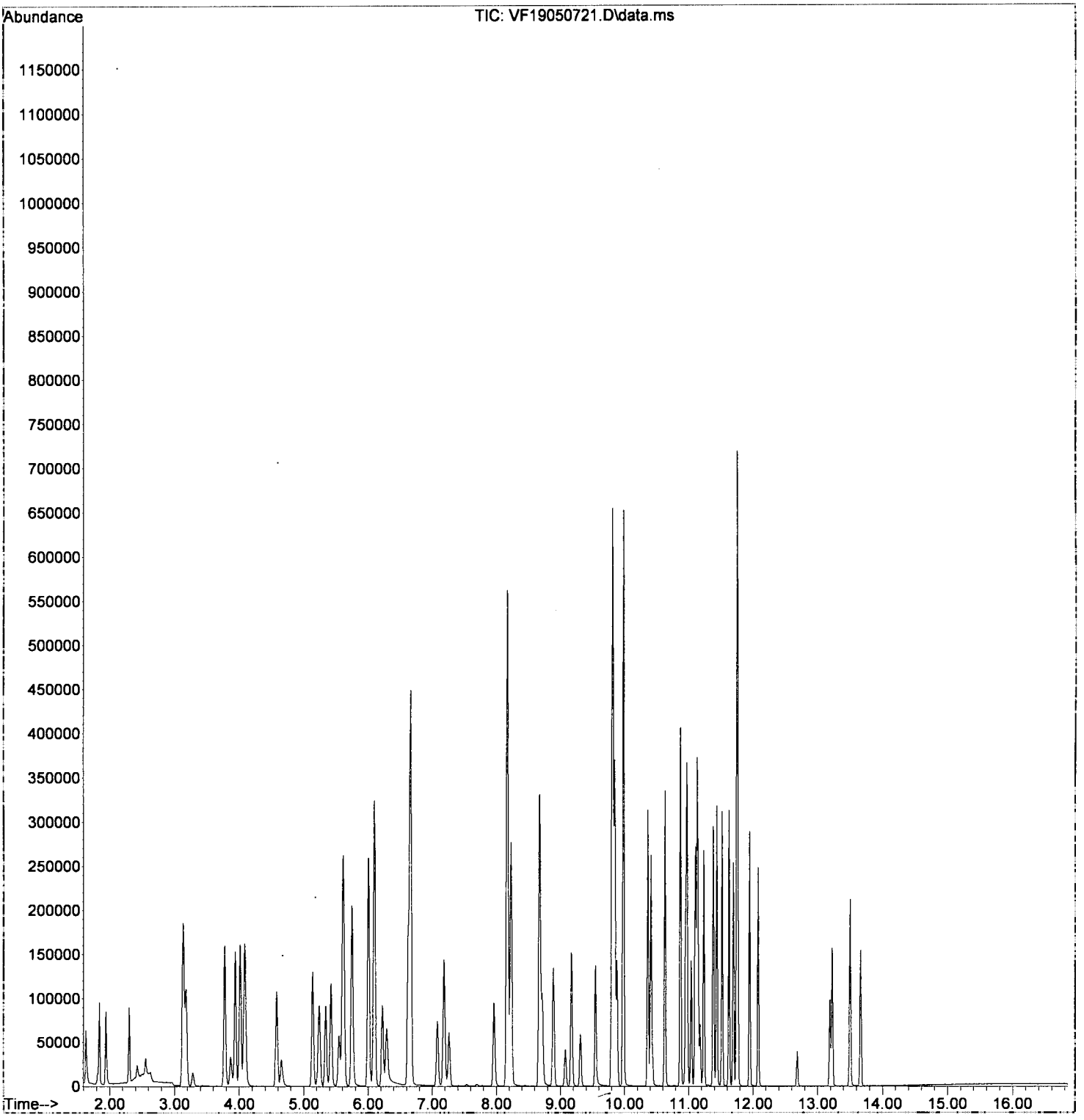
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.820	112	130501	20.00	ug/L		98
50) Ethylbenzene	9.845	91	225958	20.00	ug/L		97
51) 1,1,1,2-Tetrachloroethane	9.881	131	27384	20.00	ug/L		97
52) m,p-Xylenes (2)	9.979	91	334982	40.00	ug/L		94
53) o-Xylene	10.362	91	157388	20.00	ug/L		97
54) Styrene	10.411	104	110271	19.89	ug/L		93
55) Bromoform	10.435	173	12454	20.00	ug/L		96
56) Isopropylbenzene	10.630	105	187296	20.00	ug/L		97
59) Bromobenzene	10.952	156	47722	20.00	ug/L		86
60) n-Propylbenzene	10.970	91	214448	20.00	ug/L		96
61) 1,1,2,2-Tetrachloroethane	11.037	83	55658	20.00	ug/L		98
62) 2-Chlorotoluene	11.104	126	42696	20.00	ug/L		85
63) 1,3,5-Trimethylbenzene	11.128	105	146436	20.00	ug/L		97
64) 1,2,3-Trichloropropane	11.147	110	20933	20.00	ug/L	#	76
65) t-1,4-Dichloro-2-butene	11.177	88	3834	20.00	ug/L	#	63
66) 4-Chlorotoluene	11.232	91	129493	20.00	ug/L		95
67) tert-Butylbenzene	11.378	91	82417	20.00	ug/L		87
68) 1,2,4-Trimethylbenzene	11.439	105	148515	20.00	ug/L		100
69) sec-Butylbenzene	11.518	105	171858	20.00	ug/L		98
70) 4-Isopropyltoluene	11.627	119	141976	20.00	ug/L		97
71) 1,3-Dichlorobenzene	11.694	146	82474	20.00	ug/L		97
72) 1,4-Dichlorobenzene	11.761	146	85622	20.00	ug/L		98
73) n-Butylbenzene	11.944	91	121885	20.00	ug/L		96
74) 1,2-Dichlorobenzene	12.077	146	79323	20.00	ug/L		98
75) 1,2-Dibromo-3-Chloropr...	12.686	157	6583	20.00	ug/L	#	44
76) Hexachlorobutadiene	13.191	223	11108	20.00	ug/L		99
77) 1,2,4-Trichlorobenzene	13.227	180	44542	20.00	ug/L		99
78) Naphthalene	13.501	128	148411	20.00	ug/L		99
79) 1,2,3-Trichlorobenzene	13.665	180	45148	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\9E07048\
Data File : VF19050721.D
Acq On : 7 May 2019 11:25 pm
Operator : TB
Sample : 9E07048-CAL8
Misc : 1X 20ppb VOC MeOH
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:45 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050722.D
Acq On : 7 May 2019 11:52 pm
Operator : TB
Sample : 9E07048-CAL9
Misc : 1X 50ppb VOC MeOH
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:47 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.092	168	267251	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	329813	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.750	152	153580	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.605	111	111422	49.16	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.658	114	412030	49.75	ug/L		0.00
39) Toluene-d8 (S)	8.167	98	467669	46.29	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.868	174	117904	50.52	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.621	85	142427	56.17	ug/L		98
3) Chloromethane	1.834	50	191344	51.30	ug/L		98
4) Vinyl Chloride	1.931	62	198169	53.59	ug/L		96
5) Bromomethane	2.290	96	111651	50.66	ug/L		97
6) Chloroethane	2.418	64	25200	49.75	ug/L		89
7) Trichlorofluoromethane	2.545	101	32243	48.24	ug/L		98
8) 1,1-Dichloroethene	3.123	61	240834	49.60	ug/L		80
9) Carbon Disulfide	3.136	76	331432	57.26	ug/L		99
10) Freon 113	3.172	101	147538	50.45	ug/L		82
11) Iodomethane	3.282	142	85623	80.78	ug/L		91
12) Methylene Chloride	3.768	84	158529	41.21	ug/L		88
13) Acetone	3.853	43	131619	89.79	ug/L		93
14) t-1,2-Dichloroethene	3.932	61	234688	49.15	ug/L		96
15) n-Hexane	4.012	86	35578	46.17	ug/L	#	85
16) Methyl-tert-butyl-ether	4.072	73	465822	49.58	ug/L		98
17) 1,1-Dichloroethane	4.571	63	295880	48.03	ug/L		98
18) Acrylonitrile	4.644	53	77245	48.64	ug/L		97
19) c-1,2-Dichloroethene	5.131	61	219981	48.50	ug/L		92
20) 2,2-Dichloropropane	5.234	77	162582	53.47	ug/L		89
21) Bromochloromethane	5.332	49	126903	47.08	ug/L		89
22) Chloroform	5.417	83	264234	49.03	ug/L		96
23) Carbon Tetrachloride	5.545	117	126590	59.72	ug/L		96
24) Tetrahydrofuran	5.587	42	74940	46.77	ug/L		95
25) 1,1,1-Trichloroethane	5.618	97	215695	54.52	ug/L		96
27) 1,1-Dichloropropene	5.745	75	224805	50.31	ug/L		98
28) 2-Butanone (MEK)	5.739	43	207080	94.94	ug/L		97
29) Benzene	6.001	78	656370	48.14	ug/L		97
30) 1,2-Dichloroethane (EDC)	6.220	62	220556	47.06	ug/L		98
31) iso-Butyl Alcohol	6.275	43	199734	1465.36	ug/L		96
33) Trichloroethene (TCE)	6.621	130	163754	49.82	ug/L		95
34) Dibromomethane	7.078	93	86980	49.80	ug/L		89
35) 1,2-Dichloropropane	7.181	63	161209	49.46	ug/L		98
36) Bromodichloromethane	7.260	83	144826	58.91	ug/L		97
38) c-1,3-Dichloropropene	7.960	75	189721	52.24	ug/L		89
40) Toluene	8.221	91	652612	46.42	ug/L		99
41) Tetrachloroethene (PCE)	8.671	166	156090	46.00	ug/L		92
42) 4-Methyl-2-Pentanone (...	8.671	43	398605	96.69	ug/L		95
43) t-1,3-Dichloropropene	8.714	75	174126	55.79	ug/L		95
44) 1,1,2-Trichloroethane	8.884	97	128440	46.31	ug/L		95
45) Dibromochloromethane	9.073	129	86639	61.44	ug/L		96
46) 1,3-Dichloropropane	9.170	76	243237	45.84	ug/L		91
47) 1,2-Dibromoethane (EDB)	9.310	107	128621	50.18	ug/L		99
48) 2-Hexanone	9.541	43	280127	101.20	ug/L		94

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050722.D
Acq On : 7 May 2019 11:52 pm
Operator : TB
Sample : 9E07048-CAL9
Misc : 1X 50ppb VOC MeOH
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:47 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

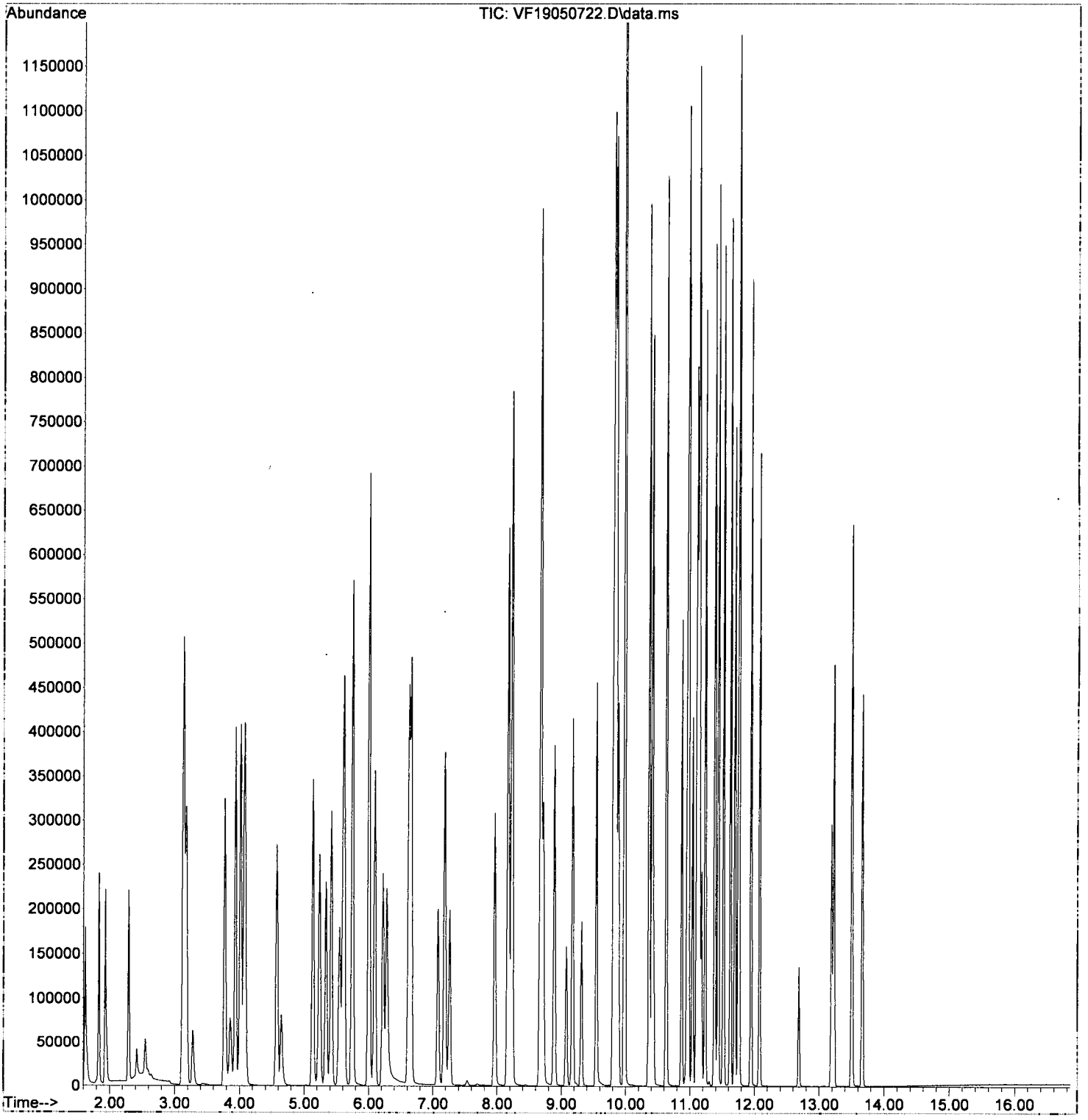
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.821	112	392199	50.04	ug/L		98
50) Ethylbenzene	9.846	91	684347	50.42	ug/L		97
51) 1,1,1,2-Tetrachloroethane	9.882	131	99762	60.65	ug/L		99
52) m,p-Xylenes (2)	9.979	91	1024139	101.80	ug/L		97
53) o-Xylene	10.363	91	494845	52.35	ug/L		97
54) Styrene	10.411	104	367293	55.14	ug/L		95
55) Bromoform	10.436	173	50592	67.63	ug/L		99
56) Isopropylbenzene	10.630	105	585625	52.06	ug/L		99
59) Bromobenzene	10.953	156	145102	50.32	ug/L		89
60) n-Propylbenzene	10.971	91	668617	51.60	ug/L		96
61) 1,1,2,2-Tetrachloroethane	11.038	83	165500	49.21	ug/L		99
62) 2-Chlorotoluene	11.099	126	133819	51.87	ug/L	#	80
63) 1,3,5-Trimethylbenzene	11.129	105	457542	51.71	ug/L		98
64) 1,2,3-Trichloropropane	11.147	110	60249	47.63	ug/L	#	81
65) t-1,4-Dichloro-2-butene	11.178	88	16499	71.22	ug/L		93
66) 4-Chlorotoluene	11.233	91	401605	51.33	ug/L		97
67) tert-Butylbenzene	11.379	91	255683	51.34	ug/L		87
68) 1,2,4-Trimethylbenzene	11.433	105	457137	50.94	ug/L		98
69) sec-Butylbenzene	11.519	105	532289	51.26	ug/L		98
70) 4-Isopropyltoluene	11.628	119	446740	52.08	ug/L		98
71) 1,3-Dichlorobenzene	11.695	146	248657	49.90	ug/L		98
72) 1,4-Dichlorobenzene	11.762	146	254182	49.13	ug/L		99
73) n-Butylbenzene	11.944	91	379675	51.55	ug/L		96
74) 1,2-Dichlorobenzene	12.078	146	232496	48.51	ug/L		99
75) 1,2-Dibromo-3-Chloropr...	12.687	157	26288	66.09	ug/L		77
76) Hexachlorobutadiene	13.191	223	33246	49.53	ug/L		98
77) 1,2,4-Trichlorobenzene	13.222	180	133873	49.74	ug/L		98
78) Naphthalene	13.502	128	456299	50.88	ug/L		99
79) 1,2,3-Trichlorobenzene	13.666	180	132079	48.42	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050722.D
Acq On : 7 May 2019 11:52 pm
Operator : TB
Sample : 9E07048-CAL9
Misc : 1X 50ppb VOC MeOH
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:47 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050723.D
Acq On : 8 May 2019 12:19 am
Operator : TB
Sample : 9E07048-IBL2
Misc : 1X 5mL DI+MeOH
ALS Vial : 13 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:18 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

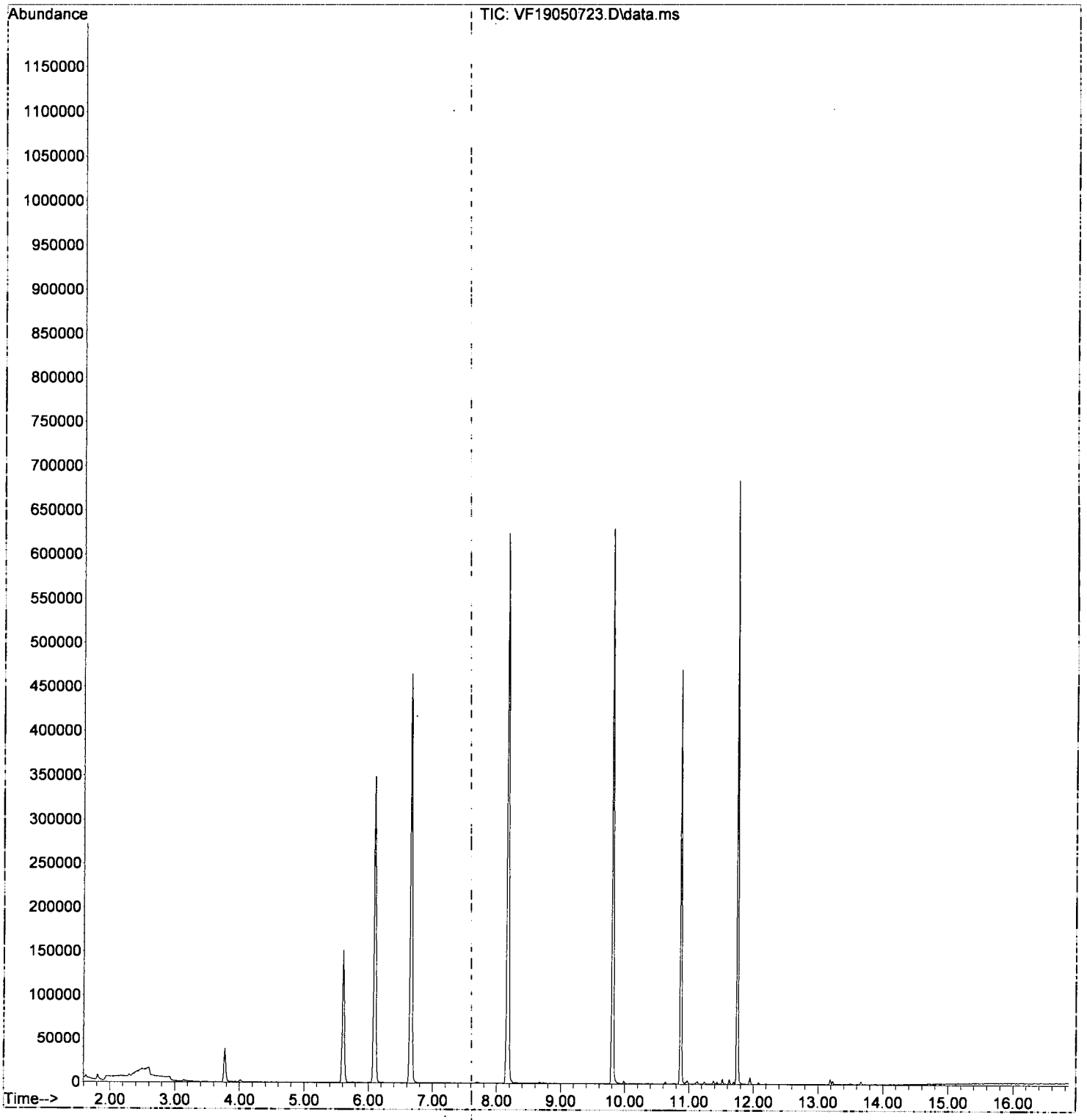
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.096	168	267959	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.807	117	327429	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.748	152	140340	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.604	111	101432	47.18	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.656	114	412382	49.81	ug/L		0.00
39) Toluene-d8 (S)	8.165	98	473267	48.89	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.872	174	113704	52.62	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.625	85	356	0.14	ug/L		82
3) Chloromethane	1.838	50	631	0.17	ug/L		86
5) Bromomethane	2.300	96	1170	0.52	ug/L		89
9) Carbon Disulfide	3.146	76	1804	0.53	ug/L		86
10) Freon 113	3.170	101	608	0.22	ug/L	#	69
11) Iodomethane	3.286	142	410	1.40	ug/L	#	83
12) Methylene Chloride	3.772	84	18030	1.33	ug/L		87
13) Acetone	3.864	43	1398	1.02	ug/L		80
14) t-1,2-Dichloroethene	3.937	61	613	0.14	ug/L		98
27) 1,1-Dichloropropene	5.743	75	565	0.14	ug/L	#	66
28) 2-Butanone (MEK)	5.756	43	215	0.10	ug/L		54
33) Trichloroethene (TCE)	6.620	130	345	0.11	ug/L	#	79
41) Tetrachloroethene (PCE)	8.676	166	632	0.21	ug/L		92
49) Chlorobenzene	9.819	112	921	0.12	ug/L	#	1
50) Ethylbenzene	9.850	91	1271	0.10	ug/L		84
52) m,p-Xylenes (2)	9.984	91	2009	0.22	ug/L		98
54) Styrene	10.416	104	346	0.24	ug/L	#	41
56) Isopropylbenzene	10.629	105	1471	0.15	ug/L		96
59) Bromobenzene	10.957	156	230	0.09	ug/L	#	78
60) n-Propylbenzene	10.975	91	2680	0.24	ug/L		99
62) 2-Chlorotoluene	11.109	126	287	0.13	ug/L	#	74
63) 1,3,5-Trimethylbenzene	11.133	105	1491	0.21	ug/L		96
66) 4-Chlorotoluene	11.237	91	1122	0.17	ug/L		91
67) tert-Butylbenzene	11.377	91	1260	0.30	ug/L		79
68) 1,2,4-Trimethylbenzene	11.438	105	1366	0.19	ug/L		91
69) sec-Butylbenzene	11.517	105	3620	0.42	ug/L		91
70) 4-Isopropyltoluene	11.626	119	2751	0.38	ug/L		94
71) 1,3-Dichlorobenzene	11.699	146	1117	0.26	ug/L		92
72) 1,4-Dichlorobenzene	11.760	146	1279	0.27	ug/L	#	75
73) n-Butylbenzene	11.949	91	3906	0.63	ug/L		94
74) 1,2-Dichlorobenzene	12.082	146	687	0.17	ug/L		92
76) Hexachlorobutadiene	13.190	223	621	1.08	ug/L		96
77) 1,2,4-Trichlorobenzene	13.226	180	1342	0.62	ug/L		86
78) Naphthalene	13.500	128	1186	0.55	ug/L		80
79) 1,2,3-Trichlorobenzene	13.664	180	1151	0.52	ug/L	#	68

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050723.D
Acq On : 8 May 2019 12:19 am
Operator : TB
Sample : 9E07048-IBL2
Misc : 1X 5mL DI+MeOH
ALS Vial : 13 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:18 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050724.D
Acq On : 8 May 2019 12:46 am
Operator : TB
Sample : 9E07048-CALA
Misc : 1X 100ppb VOC MeOH
ALS Vial : 14 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:49 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.096	168	283012	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.807	117	334077	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.747	152	156244	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.603	111	121970	50.82	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.655	114	434050	49.49	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	488712	47.76	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.871	174	115967	48.84	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.630	85	284874	106.10	ug/L		97
3) Chloromethane	1.843	50	382793	96.91	ug/L		98
4) Vinyl Chloride	1.941	62	379506	96.91	ug/L		97
5) Bromomethane	2.300	96	198553	85.08	ug/L		98
6) Chloroethane	2.427	64	44440	82.85	ug/L		92
7) Trichlorofluoromethane	2.555	101	61776	87.29	ug/L		99
8) 1,1-Dichloroethene	3.127	61	484753	94.28	ug/L		81
9) Carbon Disulfide	3.139	76	729573	119.02	ug/L		99
10) Freon 113	3.176	101	298770	96.48	ug/L		84
11) Iodomethane	3.279	142	183342	163.35	ug/L		92
12) Methylene Chloride	3.772	84	303916	74.60	ug/L		89
13) Acetone	3.863	43	275471	177.46	ug/L		95
14) t-1,2-Dichloroethene	3.936	61	486614	96.24	ug/L		98
15) n-Hexane	4.015	86	73671	90.29	ug/L	#	90
16) Methyl-tert-butyl-ether	4.082	73	966419	97.13	ug/L		98
17) 1,1-Dichloroethane	4.575	63	579727	88.86	ug/L		98
18) Acrylonitrile	4.648	53	161749	96.17	ug/L		98
19) c-1,2-Dichloroethene	5.135	61	453832	94.48	ug/L		94
20) 2,2-Dichloropropane	5.238	77	344765	107.08	ug/L		91
21) Bromochloromethane	5.335	49	257506	90.22	ug/L		91
22) Chloroform	5.420	83	548790	96.16	ug/L		96
23) Carbon Tetrachloride	5.548	117	296253	131.97	ug/L		96
24) Tetrahydrofuran	5.591	42	159679	94.11	ug/L		94
25) 1,1,1-Trichloroethane	5.615	97	465951	111.22	ug/L		96
27) 1,1-Dichloropropene	5.743	75	469859	99.30	ug/L		98
28) 2-Butanone (MEK)	5.743	43	437402	189.37	ug/L		95
29) Benzene	6.004	78	1353074	93.72	ug/L		97
30) 1,2-Dichloroethane (EDC)	6.223	62	450418	90.75	ug/L		98
31) iso-Butyl Alcohol	6.290	43	517270	3583.63	ug/L		93
33) Trichloroethene (TCE)	6.619	130	340985	97.96	ug/L		93
34) Dibromomethane	7.075	93	183362	99.13	ug/L		88
35) 1,2-Dichloropropane	7.179	63	333077	96.50	ug/L		100
36) Bromodichloromethane	7.258	83	330159	126.82	ug/L		99
38) c-1,3-Dichloropropene	7.963	75	428450	116.47	ug/L		91
40) Toluene	8.225	91	1331277	93.49	ug/L		99
41) Tetrachloroethene (PCE)	8.669	166	325857	94.80	ug/L		91
42) 4-Methyl-2-Pentanone (...	8.675	43	838408	200.79	ug/L		96
43) t-1,3-Dichloropropene	8.712	75	395344	125.06	ug/L		95
44) 1,1,2-Trichloroethane	8.888	97	262681	93.51	ug/L		94
45) Dibromochloromethane	9.077	129	209789	146.88	ug/L		96
46) 1,3-Dichloropropane	9.174	76	499607	92.95	ug/L		93
47) 1,2-Dibromoethane (EDB)	9.308	107	274641	105.78	ug/L		98
48) 2-Hexanone	9.545	43	591216	210.86	ug/L		95

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050724.D
Acq On : 8 May 2019 12:46 am
Operator : TB
Sample : 9E07048-CALA
Misc : 1X 100ppb VOC MeOH
ALS Vial : 14 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:49 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

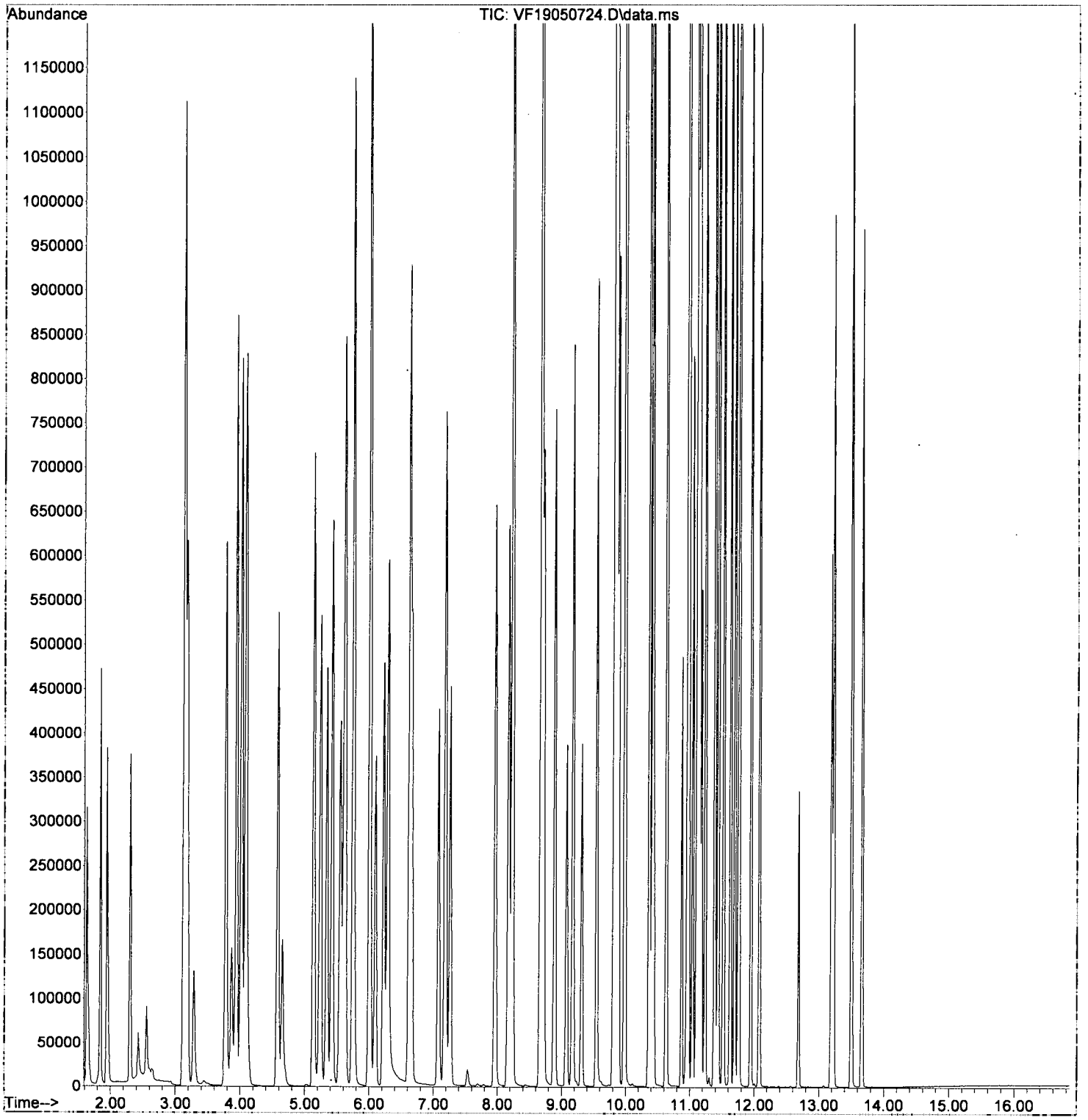
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) Chlorobenzene	9.819	112	775570	97.68	ug/L	98
50) Ethylbenzene	9.843	91	1355629	98.61	ug/L	97
51) 1,1,1,2-Tetrachloroethane	9.880	131	228768	137.31	ug/L	98
52) m,p-Xylenes (2)	9.977	91	2053605	201.53	ug/L	97
53) o-Xylene	10.360	91	977297	102.06	ug/L	97
54) Styrene	10.409	104	736185	109.11	ug/L	94
55) Bromoform	10.433	173	132822	175.29	ug/L	98
56) Isopropylbenzene	10.628	105	1158047	101.63	ug/L	98
59) Bromobenzene	10.956	156	284944	97.13	ug/L	94
60) n-Propylbenzene	10.975	91	1317712	99.96	ug/L	98
61) 1,1,2,2-Tetrachloroethane	11.036	83	342106	99.99	ug/L	97
62) 2-Chlorotoluene	11.102	126	259978	99.06	ug/L	86
63) 1,3,5-Trimethylbenzene	11.127	105	898558	99.82	ug/L	97
64) 1,2,3-Trichloropropane	11.145	110	123481	95.96	ug/L	82
65) t-1,4-Dichloro-2-butene	11.175	88	40002	169.73	ug/L	97
66) 4-Chlorotoluene	11.236	91	778535	97.80	ug/L	99
67) tert-Butylbenzene	11.382	91	498695	98.43	ug/L	92
68) 1,2,4-Trimethylbenzene	11.437	105	897125	98.27	ug/L	99
69) sec-Butylbenzene	11.516	105	1046840	99.09	ug/L	97
70) 4-Isopropyltoluene	11.626	119	875955	100.37	ug/L	97
71) 1,3-Dichlorobenzene	11.693	146	483440	95.36	ug/L	97
72) 1,4-Dichlorobenzene	11.759	146	493681	93.80	ug/L	98
73) n-Butylbenzene	11.942	91	753712	100.60	ug/L	95
74) 1,2-Dichlorobenzene	12.076	146	456101	93.54	ug/L	98
75) 1,2-Dibromo-3-Chloropr...	12.684	157	68037	168.13	ug/L	81
76) Hexachlorobutadiene	13.189	223	64806	94.91	ug/L	99
77) 1,2,4-Trichlorobenzene	13.226	180	280911	102.60	ug/L	98
78) Naphthalene	13.499	128	996167	109.19	ug/L	99
79) 1,2,3-Trichlorobenzene	13.664	180	277018	99.82	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050724.D
Acq On : 8 May 2019 12:46 am
Operator : TB
Sample : 9E07048-CALA
Misc : 1X 100ppb VOC MeOH
ALS Vial : 14 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:49 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050725.D
Acq On : 8 May 2019 1:13 am
Operator : TB
Sample : 9E07048-IBL3
Misc : 1X 5mL DI+MeOH
ALS Vial : 15 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:20 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.092	168	267819	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	300406	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.750	152	129798	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.606	111	103935	48.37	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.658	114	407507	49.25	ug/L		0.00
39) Toluene-d8 (S)	8.167	98	457064	51.46	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.868	174	103098	51.59	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.627	85	841	0.34	ug/L		95
3) Chloromethane	1.840	50	1886	0.52	ug/L		95
4) Vinyl Chloride	1.937	62	505	0.14	ug/L		72
5) Bromomethane	2.296	96	3276	1.47	ug/L		95
8) 1,1-Dichloroethene	3.124	61	596	0.13	ug/L		72
9) Carbon Disulfide	3.136	76	3483	0.81	ug/L		95
10) Freon 113	3.166	101	1261	0.45	ug/L	#	61
11) Iodomethane	3.282	142	1041	1.92	ug/L	#	86
12) Methylene Chloride	3.768	84	8317	Below Cal			96
13) Acetone	3.866	43	1199	0.87	ug/L		92
14) t-1,2-Dichloroethene	3.939	61	1053	0.24	ug/L		93
15) n-Hexane	4.012	86	287	0.37	ug/L		93
19) c-1,2-Dichloroethene	5.143	61	537	0.13	ug/L	#	67
22) Chloroform	5.423	83	664	0.13	ug/L		78
27) 1,1-Dichloropropene	5.752	75	946	0.23	ug/L		87
28) 2-Butanone (MEK)	5.764	43	528	0.26	ug/L		54
29) Benzene	6.013	78	1091	0.08	ug/L		80
33) Trichloroethene (TCE)	6.622	130	639	0.20	ug/L	#	73
40) Toluene	8.222	91	2295	0.18	ug/L		81
41) Tetrachloroethene (PCE)	8.672	166	986	0.35	ug/L	#	59
49) Chlorobenzene	9.815	112	1330	0.18	ug/L	#	1
50) Ethylbenzene	9.852	91	2251	0.19	ug/L		95
52) m,p-Xylenes (2)	9.986	91	3417	0.40	ug/L		95
53) o-Xylene	10.363	91	1103	0.14	ug/L		93
54) Styrene	10.412	104	460	0.26	ug/L		77
56) Isopropylbenzene	10.631	105	2232	0.24	ug/L		93
59) Bromobenzene	10.959	156	407	0.17	ug/L		89
60) n-Propylbenzene	10.977	91	4531	0.44	ug/L		99
62) 2-Chlorotoluene	11.099	126	549	0.26	ug/L		94
63) 1,3,5-Trimethylbenzene	11.129	105	2507	0.37	ug/L		94
66) 4-Chlorotoluene	11.239	91	2205	0.36	ug/L		96
67) tert-Butylbenzene	11.379	91	2213	0.57	ug/L	#	72
68) 1,2,4-Trimethylbenzene	11.440	105	2296	0.34	ug/L		92
69) sec-Butylbenzene	11.519	105	6114	0.76	ug/L		96
70) 4-Isopropyltoluene	11.628	119	4723	0.71	ug/L		94
71) 1,3-Dichlorobenzene	11.695	146	1746	0.44	ug/L		89
72) 1,4-Dichlorobenzene	11.762	146	2056	0.47	ug/L		83
73) n-Butylbenzene	11.945	91	6696	1.17	ug/L		97
74) 1,2-Dichlorobenzene	12.078	146	1157	0.31	ug/L		88
76) Hexachlorobutadiene	13.192	223	1162	2.18	ug/L		90
77) 1,2,4-Trichlorobenzene	13.228	180	2579	1.28	ug/L		96
78) Naphthalene	13.502	128	2246	0.69	ug/L		97
79) 1,2,3-Trichlorobenzene	13.660	180	2292	1.12	ug/L		82

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050725.D
Acq On : 8 May 2019 1:13 am
Operator : TB
Sample : 9E07048-IBL3
Misc : 1X 5mL DI+MeOH
ALS Vial : 15 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:20 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

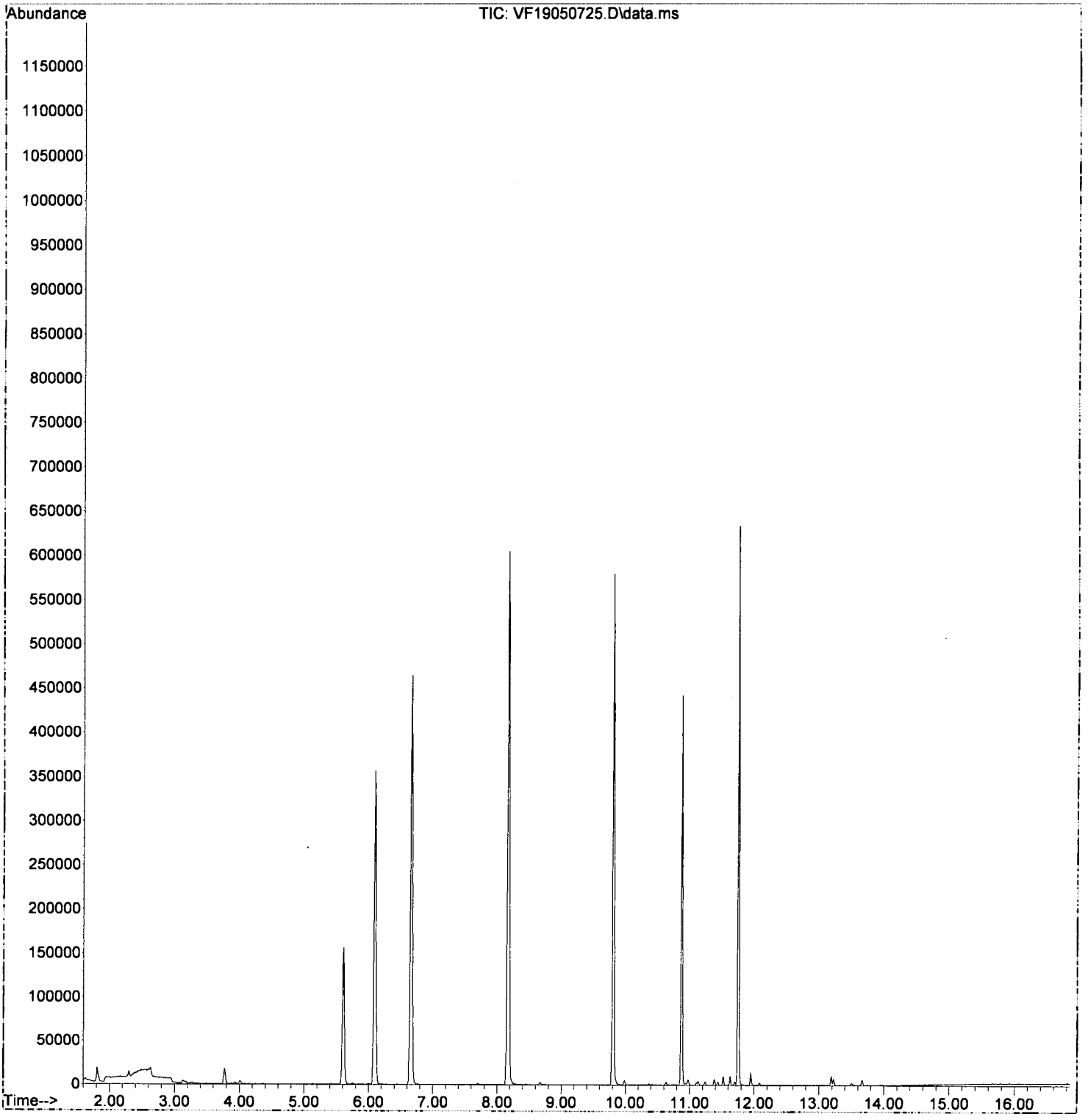
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050725.D
Acq On : 8 May 2019 1:13 am
Operator : TB
Sample : 9E07048-IBL3
Misc : 1X 5mL DI+MeOH
ALS Vial : 15 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:20 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050726.D
Acq On : 8 May 2019 1:40 am
Operator : TB
Sample : 9E07048-CALB
Misc : 1X 200ppb VOC MeOH
ALS Vial : 16 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:51 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.095	168	292078	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.806	117	382482	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.752	152	185657	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.602	111	133184	53.77	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.660	114	462700	51.12	ug/L		0.00
39) Toluene-d8 (S)	8.169	98	514201	43.89	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.870	174	136770	48.48	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.629	85	615567	222.14	ug/L		98
3) Chloromethane	1.842	50	771027	189.15	ug/L		97
4) Vinyl Chloride	1.934	62	840125	207.87	ug/L		96
5) Bromomethane	2.299	96	450898	187.21	ug/L		96
6) Chloroethane	2.426	64	99955	180.57	ug/L		96
7) Trichlorofluoromethane	2.554	101	134796	184.55	ug/L		97
8) 1,1-Dichloroethene	3.126	61	1060537	199.87	ug/L		81
9) Carbon Disulfide	3.144	76	1674733	264.74	ug/L		99
10) Freon 113	3.181	101	654791	204.88	ug/L		84
11) Iodomethane	3.284	142	519037	448.08	ug/L		91
12) Methylene Chloride	3.771	84	635093	151.05	ug/L		89
13) Acetone	3.856	43	571223	356.57	ug/L		96
14) t-1,2-Dichloroethene	3.935	61	1047640	200.76	ug/L		97
15) n-Hexane	4.014	86	154767	183.79	ug/L	#	92
16) Methyl-tert-butyl-ether	4.075	73	2232152	217.37	ug/L		97
17) 1,1-Dichloroethane	4.580	63	1166202	173.21	ug/L		97
18) Acrylonitrile	4.647	53	345965	199.32	ug/L		98
19) c-1,2-Dichloroethene	5.134	61	947367	191.11	ug/L		94
20) 2,2-Dichloropropane	5.237	77	789087	237.46	ug/L		96
21) Bromochloromethane	5.334	49	554716	188.31	ug/L		90
22) Chloroform	5.419	83	1199142	203.59	ug/L		97
23) Carbon Tetrachloride	5.547	117	741698	320.15	ug/L		96
24) Tetrahydrofuran	5.590	42	344689	196.85	ug/L		94
25) 1,1,1-Trichloroethane	5.620	97	1056735	244.42	ug/L		97
27) 1,1-Dichloropropene	5.748	75	1023128	209.51	ug/L		99
28) 2-Butanone (MEK)	5.742	43	960855	403.09	ug/L		97
29) Benzene	6.003	78	2947348	197.80	ug/L		97
30) 1,2-Dichloroethane (EDC)	6.222	62	981773	191.66	ug/L		98
31) iso-Butyl Alcohol	6.277	43	1148494	7709.75	ug/L		93
33) Trichloroethene (TCE)	6.624	130	754687	210.08	ug/L		95
34) Dibromomethane	7.074	93	413632	216.68	ug/L		87
35) 1,2-Dichloropropane	7.184	63	726418	203.93	ug/L		99
36) Bromodichloromethane	7.257	83	802244	298.59	ug/L		99
38) c-1,3-Dichloropropene	7.962	75	1015167	241.04	ug/L		92
40) Toluene	8.224	91	2874760	176.33	ug/L		100
41) Tetrachloroethene (PCE)	8.674	166	718860	182.66	ug/L		95
42) 4-Methyl-2-Pentanone (...	8.674	43	1832267	383.27	ug/L		98
43) t-1,3-Dichloropropene	8.711	75	955479	263.99	ug/L		96
44) 1,1,2-Trichloroethane	8.887	97	582929	181.25	ug/L		94
45) Dibromochloromethane	9.076	129	540275	330.39	ug/L		96
46) 1,3-Dichloropropane	9.173	76	1091475	177.36	ug/L		94
47) 1,2-Dibromoethane (EDB)	9.307	107	608559	204.72	ug/L		99
48) 2-Hexanone	9.538	43	1304670	406.43	ug/L		96

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050726.D
Acq On : 8 May 2019 1:40 am
Operator : TB
Sample : 9E07048-CALB
Misc : 1X 200ppb VOC MeOH
ALS Vial : 16 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:51 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.818	112	1783488	196.20	ug/L		96
50) Ethylbenzene	9.842	91	3128616	198.78	ug/L		98
51) 1,1,1,2-Tetrachloroethane	9.879	131	559200	293.16	ug/L		99
52) m,p-Xylenes (2)	9.982	91	4916984	421.45	ug/L		100
53) o-Xylene	10.359	91	2329915	212.52	ug/L		97
54) Styrene	10.408	104	1826906	236.51	ug/L		94
55) Bromoform	10.432	173	365594	421.44	ug/L		98
56) Isopropylbenzene	10.627	105	2723392	208.75	ug/L		99
59) Bromobenzene	10.955	156	686712	197.00	ug/L		92
60) n-Propylbenzene	10.974	91	3112598	198.71	ug/L		99
61) 1,1,2,2-Tetrachloroethane	11.041	83	754067	185.48	ug/L		99
62) 2-Chlorotoluene	11.101	126	630374	202.13	ug/L		87
63) 1,3,5-Trimethylbenzene	11.132	105	2203355	205.99	ug/L		98
64) 1,2,3-Trichloropropane	11.144	110	276178	180.62	ug/L	#	80
65) t-1,4-Dichloro-2-butene	11.174	88	106408	379.96	ug/L	#	89
66) 4-Chlorotoluene	11.235	91	1869203	197.62	ug/L		99
67) tert-Butylbenzene	11.381	91	1185300	196.89	ug/L		93
68) 1,2,4-Trimethylbenzene	11.436	105	2164127	199.50	ug/L		99
69) sec-Butylbenzene	11.515	105	2466612	196.49	ug/L		98
70) 4-Isopropyltoluene	11.625	119	2110691	203.53	ug/L		97
71) 1,3-Dichlorobenzene	11.692	146	1158673	192.34	ug/L		97
72) 1,4-Dichlorobenzene	11.758	146	1176777	188.16	ug/L		98
73) n-Butylbenzene	11.947	91	1754778	197.10	ug/L		98
74) 1,2-Dichlorobenzene	12.075	146	1085241	187.30	ug/L		99
75) 1,2-Dibromo-3-Chloropr...	12.683	157	171676	357.03	ug/L		86
76) Hexachlorobutadiene	13.188	223	148043	182.46	ug/L		98
77) 1,2,4-Trichlorobenzene	13.225	180	638432	196.23	ug/L		99
78) Naphthalene	13.498	128	2228594	205.58	ug/L		99
79) 1,2,3-Trichlorobenzene	13.663	180	614270	186.27	ug/L		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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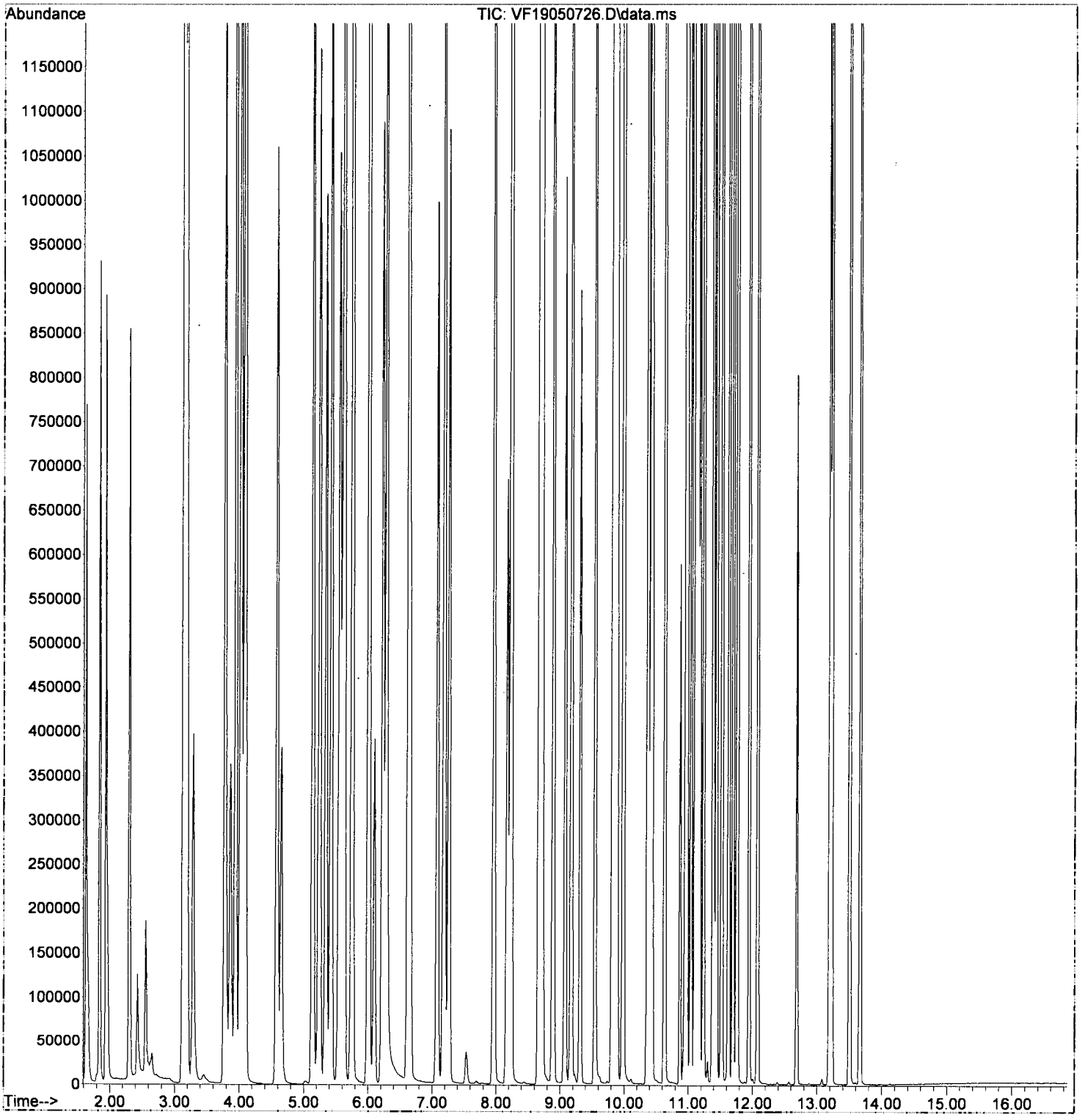
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050726.D
Acq On : 8 May 2019 1:40 am
Operator : TB
Sample : 9E07048-CALB
Misc : 1X 200ppb VOC MeOH
ALS Vial : 16 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:51 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050727.D
Acq On : 8 May 2019 2:07 am
Operator : TB
Sample : 9E07048-IBL4
Misc : 1X 5mL DI+MeOH
ALS Vial : 17 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:22 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.090	168	283178	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.807	117	334560	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.748	152	142077	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.603	111	108613	47.81	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.656	114	429244	49.06	ug/L		0.00
39) Toluene-d8 (S)	8.165	98	491193	49.66	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.872	174	115248	52.68	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.625	85	1945	0.74	ug/L		91
3) Chloromethane	1.832	50	1775	0.46	ug/L		89
4) Vinyl Chloride	1.935	62	946	0.25	ug/L		91
5) Bromomethane	2.294	96	2439	1.03	ug/L		92
7) Trichlorofluoromethane	2.543	101	179	0.27	ug/L		86
8) 1,1-Dichloroethene	3.115	61	1322	0.27	ug/L		73
9) Carbon Disulfide	3.133	76	7486	1.42	ug/L		97
10) Freon 113	3.170	101	2435	0.82	ug/L		86
11) Iodomethane	3.279	142	783	1.67	ug/L	#	71
12) Methylene Chloride	3.772	84	17968	0.98	ug/L		95
13) Acetone	3.870	43	1608	1.11	ug/L	#	42
14) t-1,2-Dichloroethene	3.937	61	2185	0.47	ug/L		93
15) n-Hexane	4.010	86	564	0.69	ug/L	#	70
19) c-1,2-Dichloroethene	5.129	61	818	0.19	ug/L		92
21) Bromochloromethane	5.330	49	303	0.12	ug/L	#	15
22) Chloroform	5.421	83	603	0.11	ug/L		74
23) Carbon Tetrachloride	5.543	117	295	0.71	ug/L		77
24) Tetrahydrofuran	5.597	42	229	0.14	ug/L	#	37
25) 1,1,1-Trichloroethane	5.622	97	399	0.11	ug/L		78
27) 1,1-Dichloropropene	5.743	75	2134	0.49	ug/L		94
28) 2-Butanone (MEK)	5.755	43	762	0.35	ug/L		70
29) Benzene	6.005	78	2241	0.16	ug/L		90
30) 1,2-Dichloroethane (EDC)	6.218	62	597	0.13	ug/L		75
33) Trichloroethene (TCE)	6.631	130	1252	0.38	ug/L	#	83
34) Dibromomethane	7.082	93	307	0.19	ug/L	#	76
38) c-1,3-Dichloropropene	7.964	75	355	0.48	ug/L	#	27
40) Toluene	8.231	91	3293	0.23	ug/L		89
41) Tetrachloroethene (PCE)	8.676	166	2391	0.77	ug/L		97
43) t-1,3-Dichloropropene	8.736	75	360	0.59	ug/L		47
46) 1,3-Dichloropropane	9.174	76	460	0.10	ug/L	#	51
47) 1,2-Dibromoethane (EDB)	9.314	107	158	0.29	ug/L		99
49) Chlorobenzene	9.819	112	2838	0.35	ug/L	#	67
50) Ethylbenzene	9.850	91	4704	0.35	ug/L		96
52) m,p-Xylenes (2)	9.983	91	7426	0.79	ug/L		97
53) o-Xylene	10.367	91	2422	0.27	ug/L		86
54) Styrene	10.409	104	1330	0.38	ug/L		99
56) Isopropylbenzene	10.628	105	5234	0.51	ug/L		95
59) Bromobenzene	10.963	156	887	0.35	ug/L		85
60) n-Propylbenzene	10.975	91	10278	0.91	ug/L		95
62) 2-Chlorotoluene	11.103	126	1184	0.52	ug/L	#	61
63) 1,3,5-Trimethylbenzene	11.127	105	5906	0.80	ug/L		97
66) 4-Chlorotoluene	11.237	91	4684	0.69	ug/L		92
67) tert-Butylbenzene	11.377	91	4968	1.18	ug/L	#	70

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050727.D
Acq On : 8 May 2019 2:07 am
Operator : TB
Sample : 9E07048-IBL4
Misc : 1X 5mL DI+MeOH
ALS Vial : 17 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:22 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

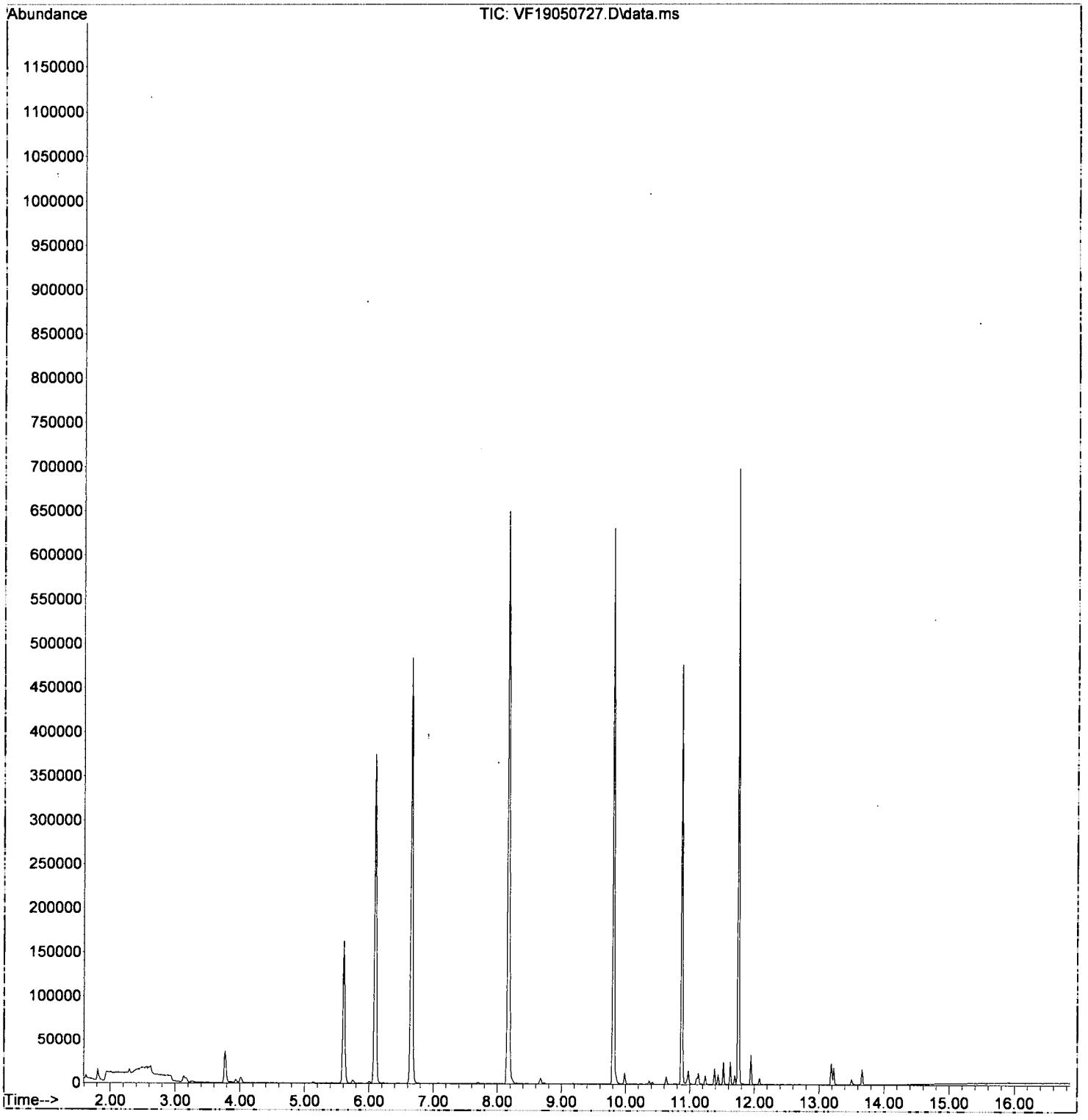
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
68) 1,2,4-Trimethylbenzene	11.437	105	5397	0.73	ug/L	96
69) sec-Butylbenzene	11.517	105	14769	1.68	ug/L	96
70) 4-Isopropyltoluene	11.626	119	11627	1.59	ug/L	95
71) 1,3-Dichlorobenzene	11.693	146	3751	0.86	ug/L	93
72) 1,4-Dichlorobenzene	11.760	146	4398	0.92	ug/L	91
73) n-Butylbenzene	11.942	91	15197	2.43	ug/L	97
74) 1,2-Dichlorobenzene	12.076	146	2583	0.63	ug/L	90
76) Hexachlorobutadiene	13.189	223	2652	4.54	ug/L	95
77) 1,2,4-Trichlorobenzene	13.226	180	5439	2.48	ug/L	95
78) Naphthalene	13.500	128	4569	0.94	ug/L	98
79) 1,2,3-Trichlorobenzene	13.664	180	5094	2.28	ug/L	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050727.D
Acq On : 8 May 2019 2:07 am
Operator : TB
Sample : 9E07048-IBL4
Misc : 1X 5mL DI+MeOH
ALS Vial : 17 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:22 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050728.D
Acq On : 8 May 2019 2:34 am
Operator : TB
Sample : 9E07048-IBL5
Misc : 1X 5mL DI+MeOH
ALS Vial : 18 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:24 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

NR

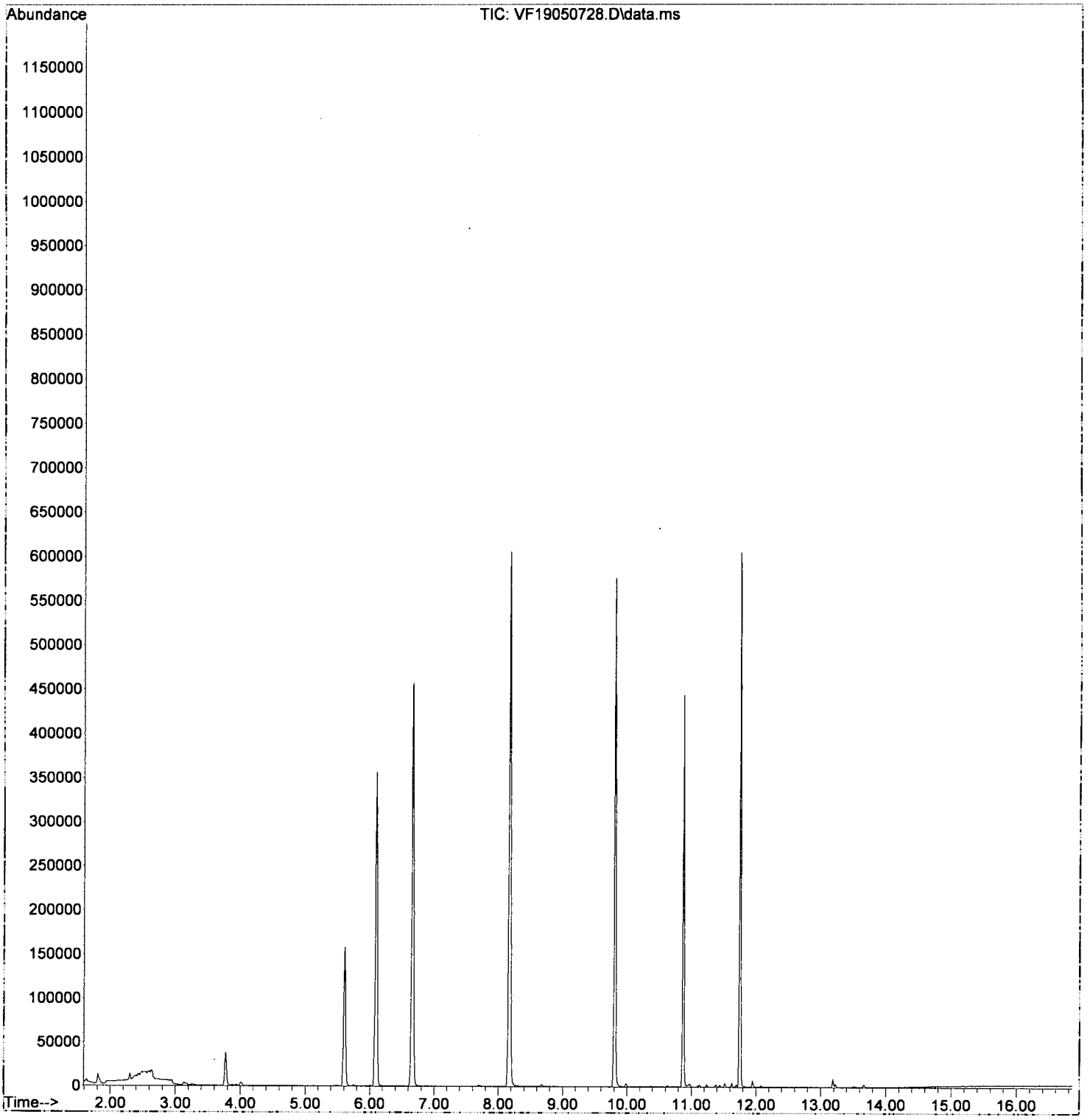
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.095	168	267878	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.806	117	295788	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.753	152	131412	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.608	111	106516	49.56	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.661	114	410042	49.54	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	458463	52.42	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.871	174	101675	50.25	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.630	85	723	0.29	ug/L		88
3) Chloromethane	1.837	50	2108	0.58	ug/L		93
5) Bromomethane	2.305	96	3673	1.65	ug/L		95
8) 1,1-Dichloroethene	3.126	61	550	0.12	ug/L		82
9) Carbon Disulfide	3.132	76	2990	0.73	ug/L		92
10) Freon 113	3.169	101	1153	0.41	ug/L	#	73
11) Iodomethane	3.278	142	737	1.67	ug/L	#	80
12) Methylene Chloride	3.771	84	17465	1.14	ug/L		87
13) Acetone	3.869	43	1671	1.22	ug/L		90
14) t-1,2-Dichloroethene	3.935	61	780	0.18	ug/L		95
15) n-Hexane	4.015	86	315	0.41	ug/L	#	89
27) 1,1-Dichloropropene	5.742	75	859	0.21	ug/L		81
28) 2-Butanone (MEK)	5.754	43	238	0.12	ug/L		54
33) Trichloroethene (TCE)	6.624	130	412	0.13	ug/L		87
40) Toluene	8.230	91	1316	0.11	ug/L		87
41) Tetrachloroethene (PCE)	8.674	166	829	0.30	ug/L		82
49) Chlorobenzene	9.818	112	1014	0.14	ug/L	#	15
50) Ethylbenzene	9.849	91	1458	0.12	ug/L		90
52) m,p-Xylenes (2)	9.982	91	2303	0.28	ug/L		97
53) o-Xylene	10.366	91	795	0.10	ug/L		84
54) Styrene	10.414	104	374	0.25	ug/L		83
56) Isopropylbenzene	10.633	105	1371	0.15	ug/L		91
59) Bromobenzene	10.956	156	244	0.10	ug/L	#	63
60) n-Propylbenzene	10.974	91	2568	0.24	ug/L		98
62) 2-Chlorotoluene	11.108	126	241	0.11	ug/L	#	79
63) 1,3,5-Trimethylbenzene	11.132	105	1233	0.18	ug/L		100
66) 4-Chlorotoluene	11.242	91	1302	0.21	ug/L		84
67) tert-Butylbenzene	11.382	91	869	0.22	ug/L		89
68) 1,2,4-Trimethylbenzene	11.442	105	1294	0.19	ug/L		92
69) sec-Butylbenzene	11.522	105	2821	0.35	ug/L		98
70) 4-Isopropyltoluene	11.625	119	2447	0.36	ug/L		92
71) 1,3-Dichlorobenzene	11.698	146	1165	0.29	ug/L		81
72) 1,4-Dichlorobenzene	11.759	146	1431	0.32	ug/L	#	55
73) n-Butylbenzene	11.947	91	3591	0.62	ug/L		99
74) 1,2-Dichlorobenzene	12.081	146	610	0.16	ug/L		93
76) Hexachlorobutadiene	13.188	223	1049	1.94	ug/L		93
77) 1,2,4-Trichlorobenzene	13.231	180	1374	0.68	ug/L		94
78) Naphthalene	13.505	128	1033	0.54	ug/L		78
79) 1,2,3-Trichlorobenzene	13.669	180	1019	0.49	ug/L		84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050728.D
Acq On : 8 May 2019 2:34 am
Operator : TB
Sample : 9E07048-IBL5
Misc : 1X 5mL DI+MeOH
ALS Vial : 18 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:24 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050729.D
Acq On : 8 May 2019 3:01 am
Operator : TB
Sample : 9E07048-ICV1
Misc : 1X 50ppb VOC MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 13:55:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.095	168	262163	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.806	117	288159	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.753	152	135304	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.609	111	113942	54.17	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.661	114	403276	49.79	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	440104	51.66	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.871	174	103653	49.75	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.636	85	59315	24.24	ug/L		97
3) Chloromethane	1.843	50	87194	24.45	ug/L		97
4) Vinyl Chloride	1.946	62	81114	23.00	ug/L		96
5) Bromomethane	2.305	96	44030	20.17	ug/L		97
6) Chloroethane	2.427	64	11583	24.18	ug/L		78
7) Trichlorofluoromethane	2.555	101	13859	22.29	ug/L		97
8) 1,1-Dichloroethene	3.127	61	94606	20.87	ug/L		77
9) Carbon Disulfide	3.145	76	105199	18.01	ug/L		98
10) Freon 113	3.175	101	58878	21.31	ug/L		82
11) Iodomethane	3.291	142	14908	12.96	ug/L		91
12) Methylene Chloride	3.778	84	75271	21.64	ug/L		88
13) Acetone	3.869	43	56244	41.83	ug/L		95
14) t-1,2-Dichloroethene	3.942	61	92558	21.38	ug/L		99
15) n-Hexane	4.015	86	15032	19.86	ug/L	#	85
16) Methyl-tert-butyl-ether	4.088	73	182160	20.82	ug/L		99
17) 1,1-Dichloroethane	4.581	63	118241	21.57	ug/L		98
18) Acrylonitrile	4.654	53	30892	21.88	ug/L		95
19) c-1,2-Dichloroethene	5.134	61	86855	21.78	ug/L		92
20) 2,2-Dichloropropane	5.244	77	58246	21.20	ug/L		87
21) Bromochloromethane	5.341	49	51635	21.70	ug/L		91
22) Chloroform	5.420	83	103118	21.16	ug/L		97
23) Carbon Tetrachloride	5.548	117	48737	22.27	ug/L		96
24) Tetrahydrofuran	5.597	42	29827	20.26	ug/L		96
25) 1,1,1-Trichloroethane	5.621	97	83146	24.22	ug/L		96
27) 1,1-Dichloropropene	5.749	75	87420	21.58	ug/L		98
28) 2-Butanone (MEK)	5.749	43	84619	42.12	ug/L		96
29) Benzene	6.004	78	258337	20.39	ug/L		98
30) 1,2-Dichloroethane (EDC)	6.223	62	89933	20.98	ug/L		99
31) iso-Butyl Alcohol	6.284	43	73266	504.30	ug/L		97
33) Trichloroethene (TCE)	6.625	130	62492	20.41	ug/L		94
34) Dibromomethane	7.075	93	33172	21.67	ug/L		86
35) 1,2-Dichloropropane	7.184	63	62422	20.61	ug/L		99
36) Bromodichloromethane	7.263	83	49951	20.01	ug/L		98
38) c-1,3-Dichloropropene	7.963	75	63748	20.14	ug/L		89
40) Toluene	8.225	91	234591	19.26	ug/L		99
41) Tetrachloroethene (PCE)	8.675	166	57363	21.51	ug/L		95
42) 4-Methyl-2-Pentanone (...	8.675	43	140033	44.47	ug/L		93
43) t-1,3-Dichloropropene	8.717	75	57159	20.28	ug/L		94
44) 1,1,2-Trichloroethane	8.888	97	47579	22.53	ug/L		95
45) Dibromochloromethane	9.076	129	27231	20.10	ug/L		97
46) 1,3-Dichloropropane	9.174	76	91385	22.36	ug/L		91
47) 1,2-Dibromoethane (EDB)	9.314	107	47230	21.40	ug/L		99
48) 2-Hexanone	9.545	43	97181	42.72	ug/L		94

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050729.D
Acq On : 8 May 2019 3:01 am
Operator : TB
Sample : 9E07048-ICV1
Misc : 1X 50ppb VOC MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 13:55:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.818	112	129383	18.63	ug/L		95
50) Ethylbenzene	9.849	91	229244	19.76	ug/L		97
51) 1,1,1,2-Tetrachloroethane	9.879	131	31999	20.27	ug/L		99
52) m,p-Xylenes (2)	9.983	91	335654	41.31	ug/L		97
53) o-Xylene	10.360	91	160147	20.48	ug/L		94
54) Styrene	10.409	104	112165	19.21	ug/L		91
55) Bromoform	10.439	173	14365	21.50	ug/L		95
56) Isopropylbenzene	10.628	105	191014	21.53	ug/L		97
59) Bromobenzene	10.956	156	48811	20.05	ug/L		90
60) n-Propylbenzene	10.974	91	217147	20.08	ug/L		97
61) 1,1,2,2-Tetrachloroethane	11.041	83	58914	22.91	ug/L		99
62) 2-Chlorotoluene	11.102	126	44168	20.32	ug/L	#	83
63) 1,3,5-Trimethylbenzene	11.126	105	147687	21.12	ug/L		97
64) 1,2,3-Trichloropropane	11.145	110	21340	20.93	ug/L	#	74
65) t-1,4-Dichloro-2-butene	11.175	88	4327	17.63	ug/L	#	72
66) 4-Chlorotoluene	11.236	91	135416	21.06	ug/L		97
67) tert-Butylbenzene	11.382	91	84335	21.01	ug/L		92
68) 1,2,4-Trimethylbenzene	11.437	105	148293	21.11	ug/L		98
69) sec-Butylbenzene	11.522	105	177076	21.13	ug/L		97
70) 4-Isopropyltoluene	11.625	119	145034	20.80	ug/L		96
71) 1,3-Dichlorobenzene	11.692	146	84684	20.39	ug/L		97
72) 1,4-Dichlorobenzene	11.759	146	88242	19.44	ug/L		97
73) n-Butylbenzene	11.948	91	124999	21.00	ug/L		97
74) 1,2-Dichlorobenzene	12.082	146	82320	21.13	ug/L		99
75) 1,2-Dibromo-3-Chloropr...	12.684	157	8264	19.59	ug/L	#	48
76) Hexachlorobutadiene	13.189	223	11787	21.20	ug/L		95
77) 1,2,4-Trichlorobenzene	13.225	180	46492	22.22	ug/L		99
78) Naphthalene	13.499	128	156730	19.72	ug/L		99
79) 1,2,3-Trichlorobenzene	13.663	180	47589	22.34	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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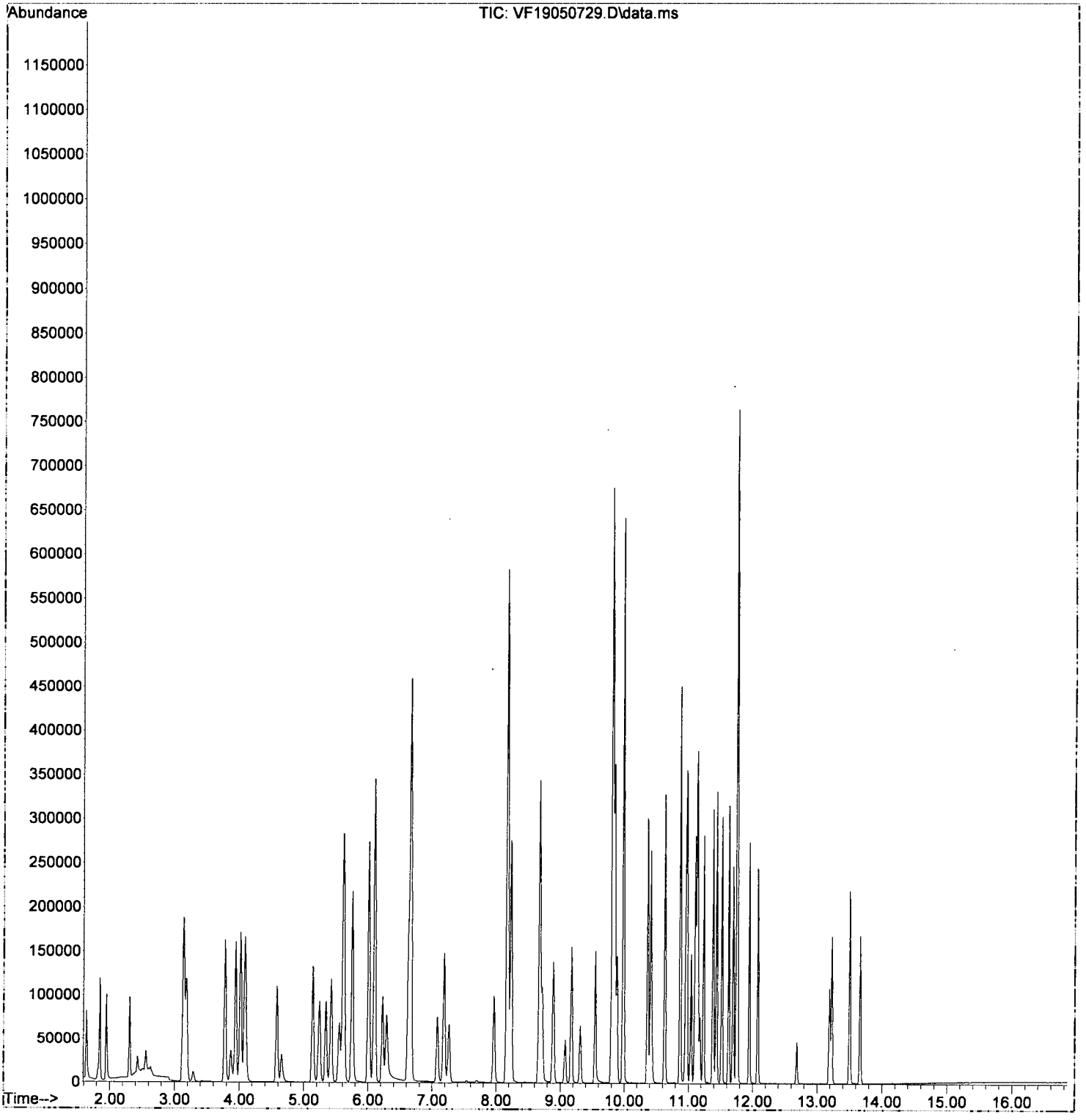
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050729.D
Acq On : 8 May 2019 3:01 am
Operator : TB
Sample : 9E07048-ICV1
Misc : 1X 50ppb VOC MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 13:55:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050730.D
Acq On : 8 May 2019 3:28 am
Operator : TB
Sample : 9E07048-IBL6
Misc : 1X 5mL DI+MeOH
ALS Vial : 20 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:28 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

NR

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.092	168	252291	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	281229	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.750	152	123851	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.606	111	98914	48.87	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.658	114	388439	49.83	ug/L		0.00
39) Toluene-d8 (S)	8.167	98	430453	51.77	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.868	174	95472	50.06	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.621	85	416	0.18	ug/L	#	50
3) Chloromethane	1.828	50	1703	0.50	ug/L		88
5) Bromomethane	2.296	96	3753	1.79	ug/L		96
9) Carbon Disulfide	3.130	76	1833	0.55	ug/L		94
10) Freon 113	3.166	101	648	0.24	ug/L	#	60
11) Iodomethane	3.276	142	782	1.75	ug/L	#	81
12) Methylene Chloride	3.768	84	16971	1.33	ug/L		89
13) Acetone	3.866	43	1481	1.14	ug/L		78
14) t-1,2-Dichloroethene	3.927	61	494	0.12	ug/L		84
15) n-Hexane	4.006	86	127	0.17	ug/L	#	77
27) 1,1-Dichloropropene	5.739	75	414	0.11	ug/L	#	56
28) 2-Butanone (MEK)	5.764	43	184	0.10	ug/L		54
41) Tetrachloroethene (PCE)	8.672	166	560	0.22	ug/L		97
49) Chlorobenzene	9.815	112	732	0.11	ug/L	#	1
50) Ethylbenzene	9.852	91	979	0.09	ug/L		89
52) m,p-Xylenes (2)	9.986	91	1479	0.19	ug/L		89
54) Styrene	10.424	104	105	0.21	ug/L	#	41
56) Isopropylbenzene	10.637	105	894	0.10	ug/L		90
59) Bromobenzene	10.959	156	211	0.09	ug/L		87
60) n-Propylbenzene	10.971	91	1841	0.19	ug/L		90
62) 2-Chlorotoluene	11.111	126	218	0.11	ug/L	#	45
63) 1,3,5-Trimethylbenzene	11.135	105	975	0.15	ug/L		88
66) 4-Chlorotoluene	11.239	91	923	0.16	ug/L		87
67) tert-Butylbenzene	11.379	91	687	0.19	ug/L		90
68) 1,2,4-Trimethylbenzene	11.440	105	848	0.13	ug/L		95
69) sec-Butylbenzene	11.519	105	1994	0.26	ug/L		95
70) 4-Isopropyltoluene	11.628	119	1636	0.26	ug/L		98
71) 1,3-Dichlorobenzene	11.695	146	822	0.22	ug/L		89
72) 1,4-Dichlorobenzene	11.762	146	995	0.24	ug/L	#	57
73) n-Butylbenzene	11.945	91	2355	0.43	ug/L		89
74) 1,2-Dichlorobenzene	12.078	146	553	0.16	ug/L	#	72
76) Hexachlorobutadiene	13.186	223	502	0.99	ug/L		93
77) 1,2,4-Trichlorobenzene	13.228	180	979	0.51	ug/L		96
78) Naphthalene	13.508	128	907	0.53	ug/L		78
79) 1,2,3-Trichlorobenzene	13.666	180	769	0.39	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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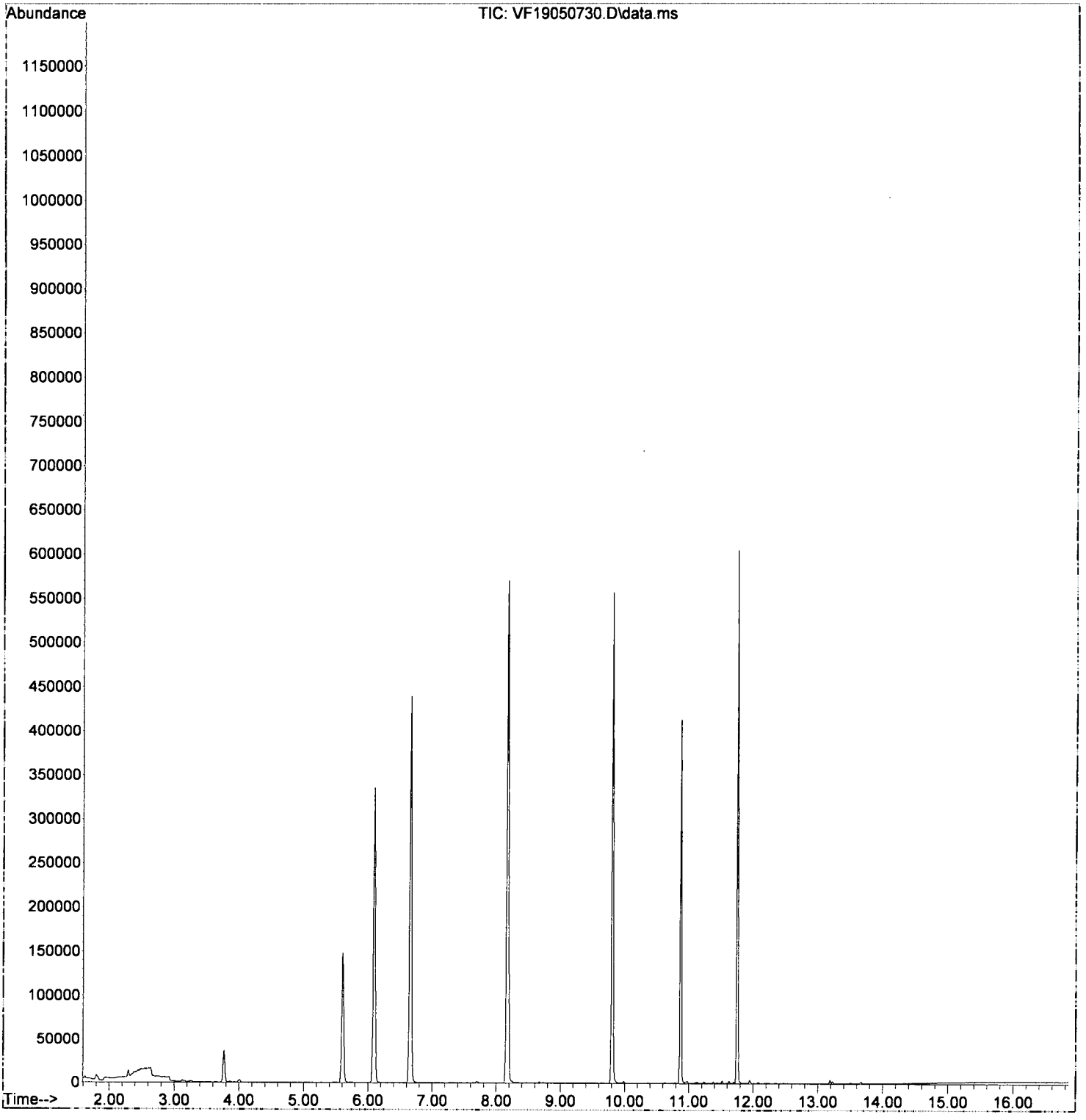
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050730.D
Acq On : 8 May 2019 3:28 am
Operator : TB
Sample : 9E07048-IBL6
Misc : 1X 5mL DI+MeOH
ALS Vial : 20 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:28 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration



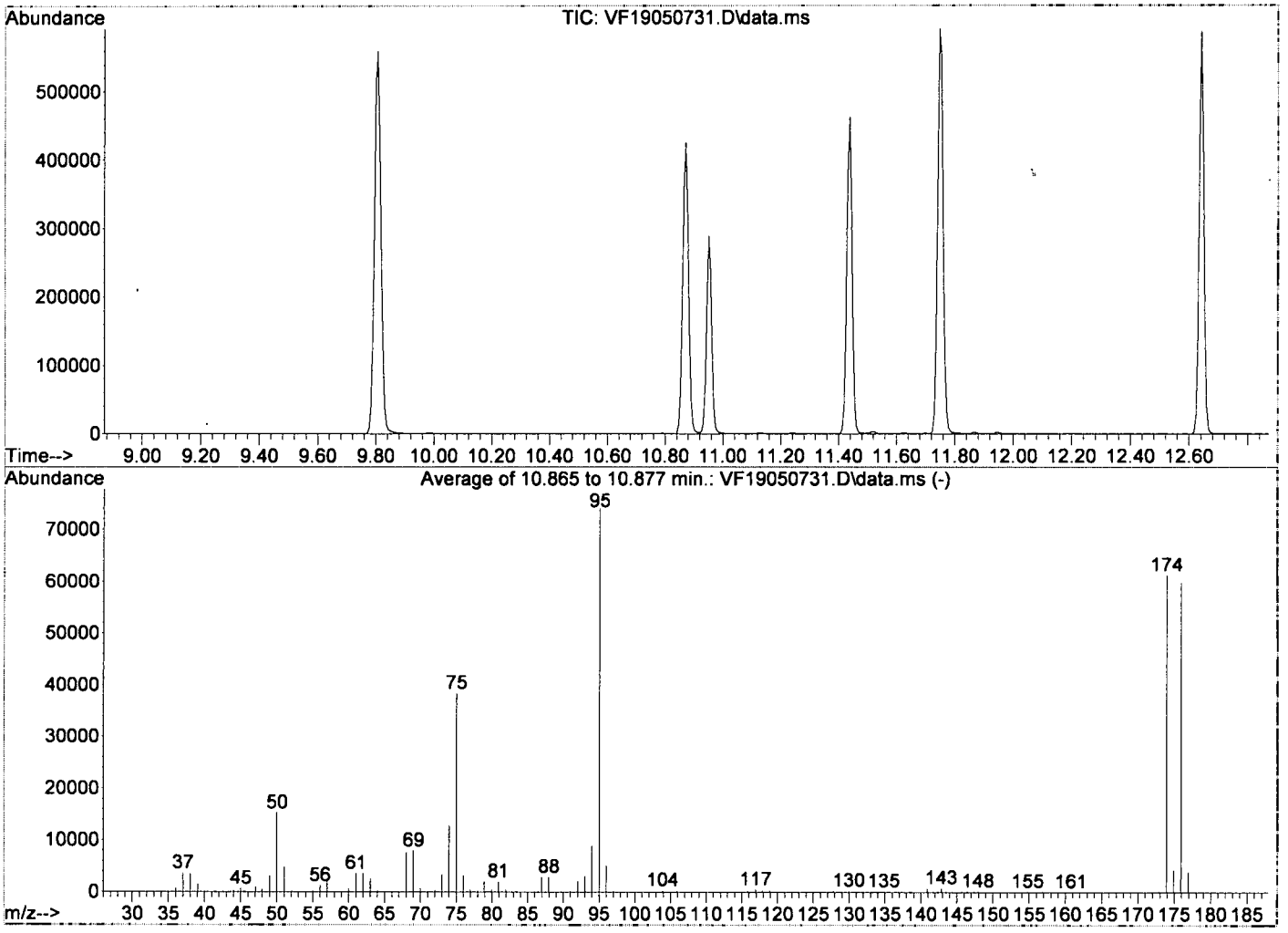
BFB

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050731.D
Acq On : 8 May 2019 3:55 am
Operator : TB
Sample : 9E07048-TUN2 RT
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\VF190507G.M
Title : NWTPH-Gx by GC/MS
Last Update : Wed May 08 11:36:04 2019

5/8/19



AutoFind: Scans 1525, 1526, 1527; Background Corrected with Scan 1518

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	12	40	20.7	15284	PASS
75	95	30	60	51.9	38373	PASS
95	95	100	100	100.0	73986	PASS
96	95	5	9	6.9	5106	PASS
173	174	0.00	2	0.3	211	PASS
174	95	50	100	82.8	61272	PASS
175	174	5	9	6.9	4253	PASS
176	174	95	101	97.6	59824	PASS
177	176	5	9	6.6	3953	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050731.D
Acq On : 8 May 2019 3:55 am
Operator : TB
Sample : 9E07048-TUN2 RT
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

5/8/19

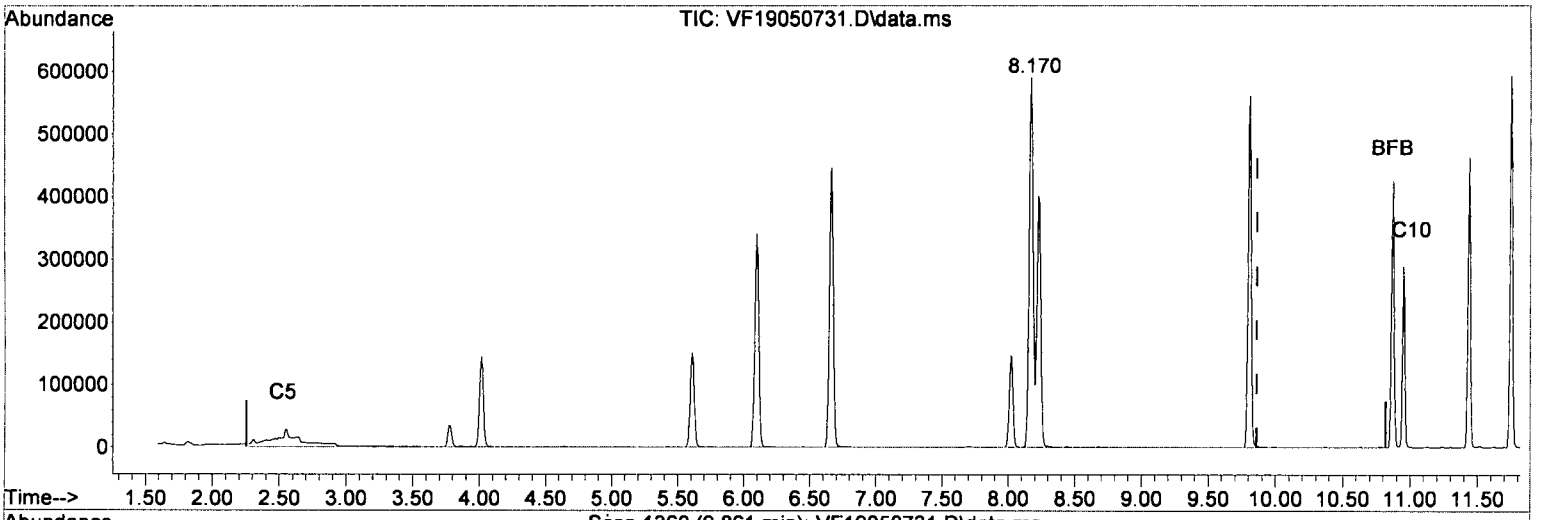
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.095	168	256053	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.661	TIC	927362	45.94	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	573331	46.12	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.806	TIC	876906	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1226539	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	781620	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	1843880m	142.13	ug/L	
6) TPHg (C6-C10)	9.860	TIC	1719873m	179.63	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	3432981m	256.69	ug/L	
8) NWTPH-Gx	9.870	TIC	3320447m	471.20	ug/L	

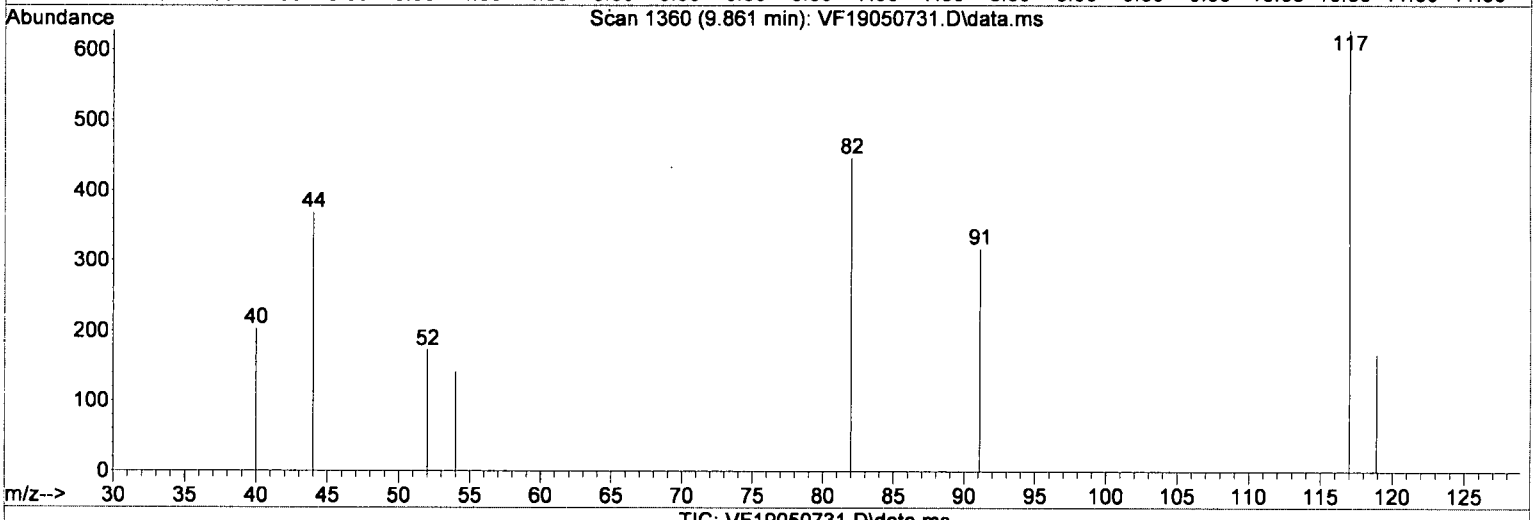
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050731.D
Acq On : 8 May 2019 3:55 am
Operator : TB
Sample : 9E07048-TUN2 RT
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





TIC: VF19050731.D\data.ms

(5) TPHg (C5-C9) (H)

9.860min (0.000) 142.13 ug/L m

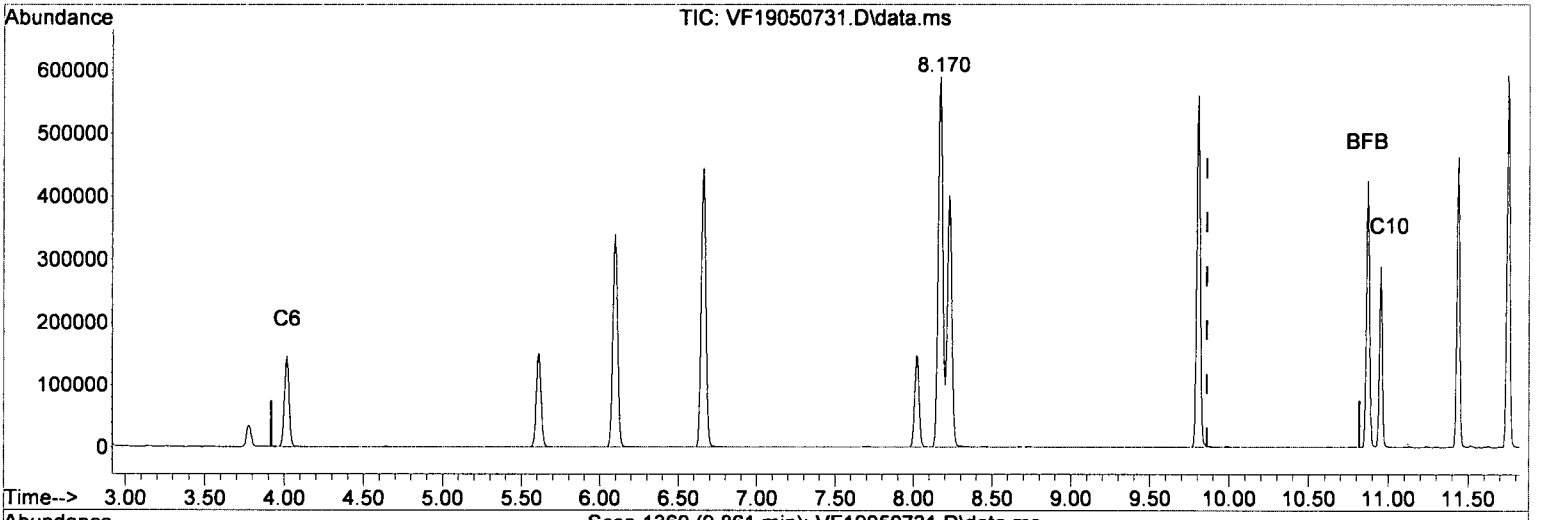
response 1843880

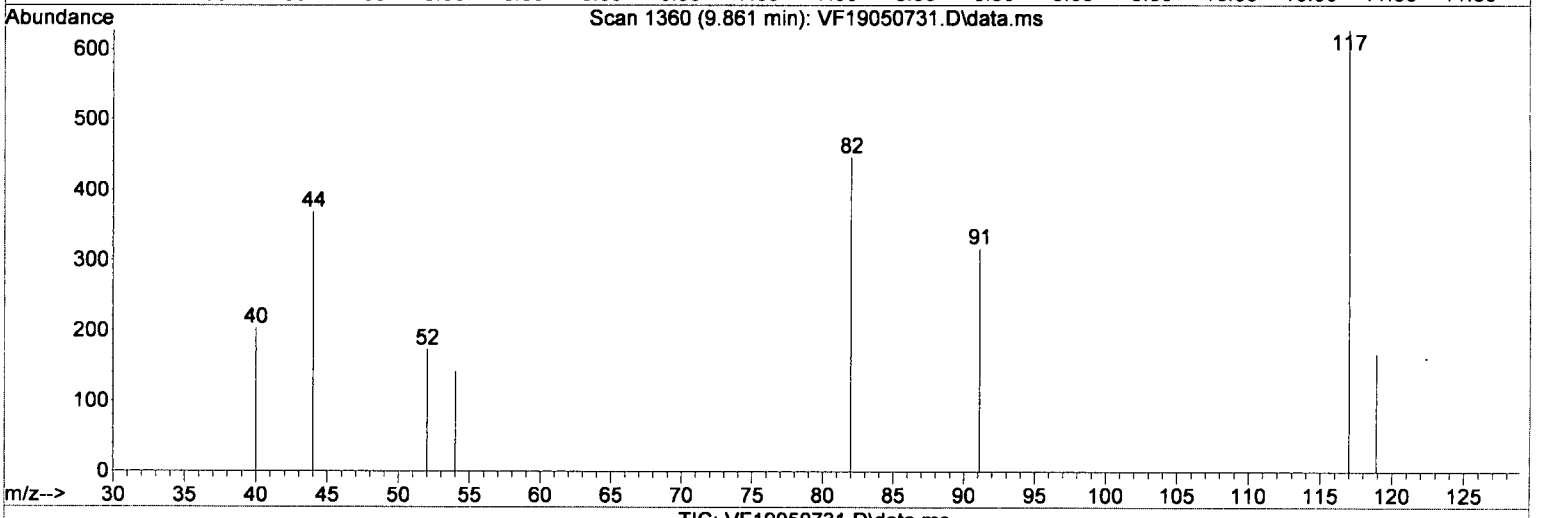
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	1.43#
0.00	0.00	1.05#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050731.D
Acq On : 8 May 2019 3:55 am
Operator : TB
Sample : 9E07048-TUN2 RT
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





TIC: VF19050731.D\data.ms

(6) TPHg (C6-C10) (H)

9.860min (0.000) 179.63 ug/L m

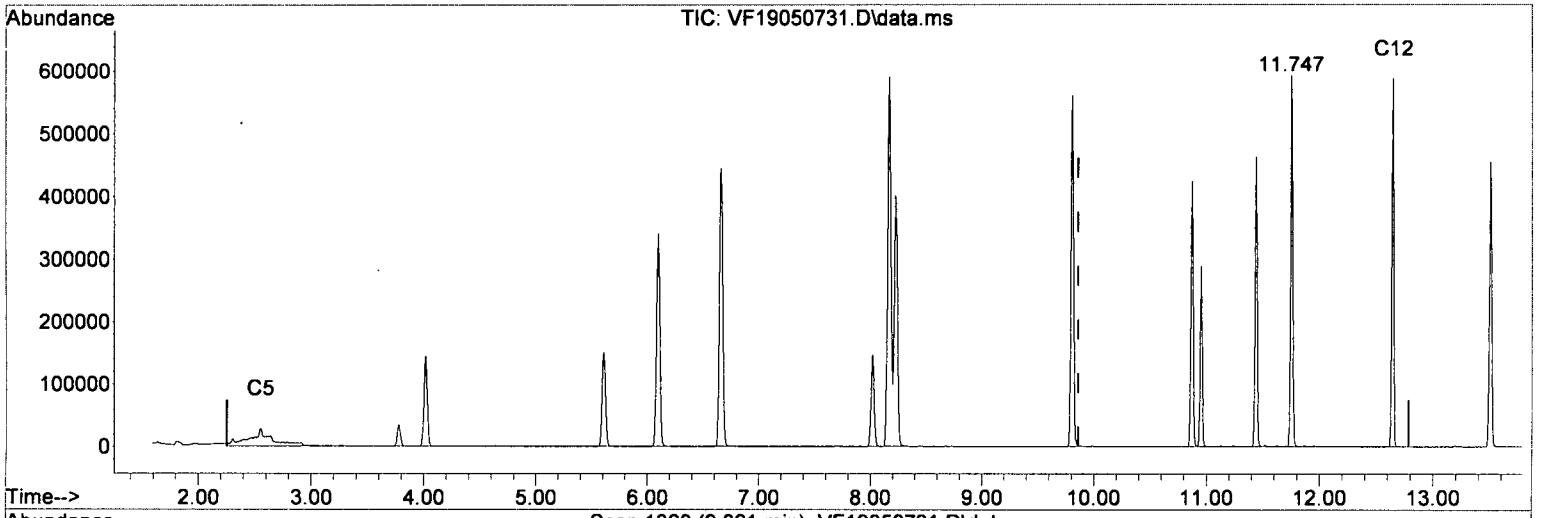
response 1719873

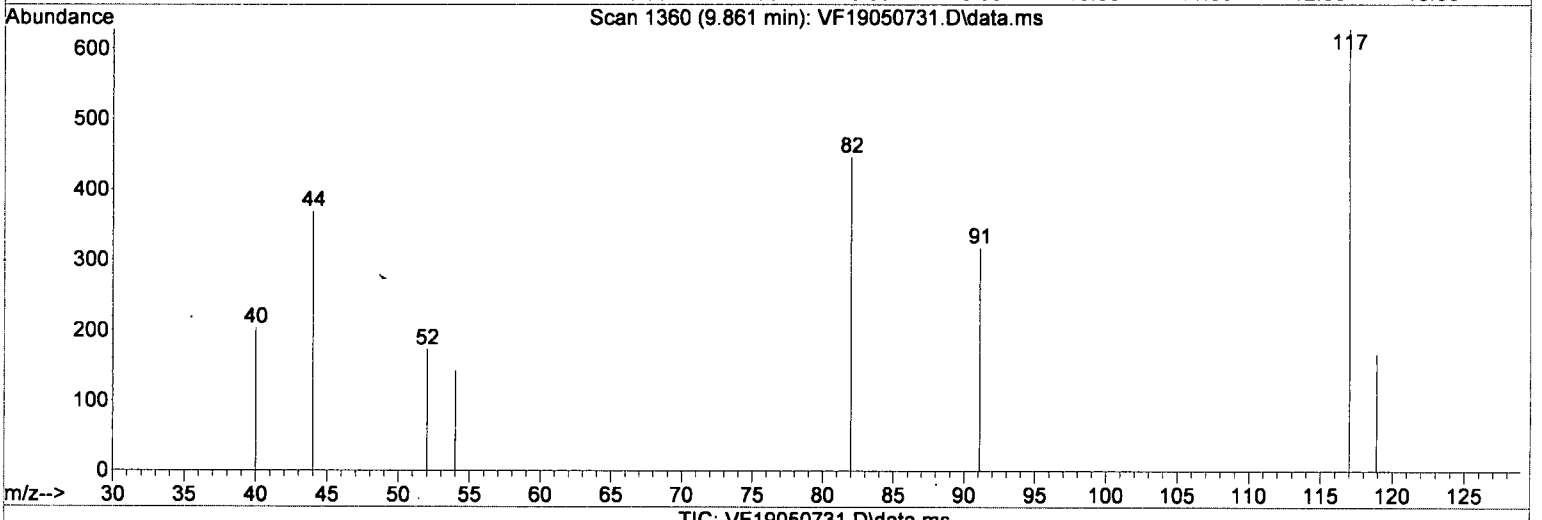
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	1.54#
0.00	0.00	1.13#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050731.D
Acq On : 8 May 2019 3:55 am
Operator : TB
Sample : 9E07048-TUN2 RT
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





TIC: VF19050731.D\data.ms

(7) CA-LUFT (C5-C12) (H)

9.860min (0.000) 256.69 ug/L m

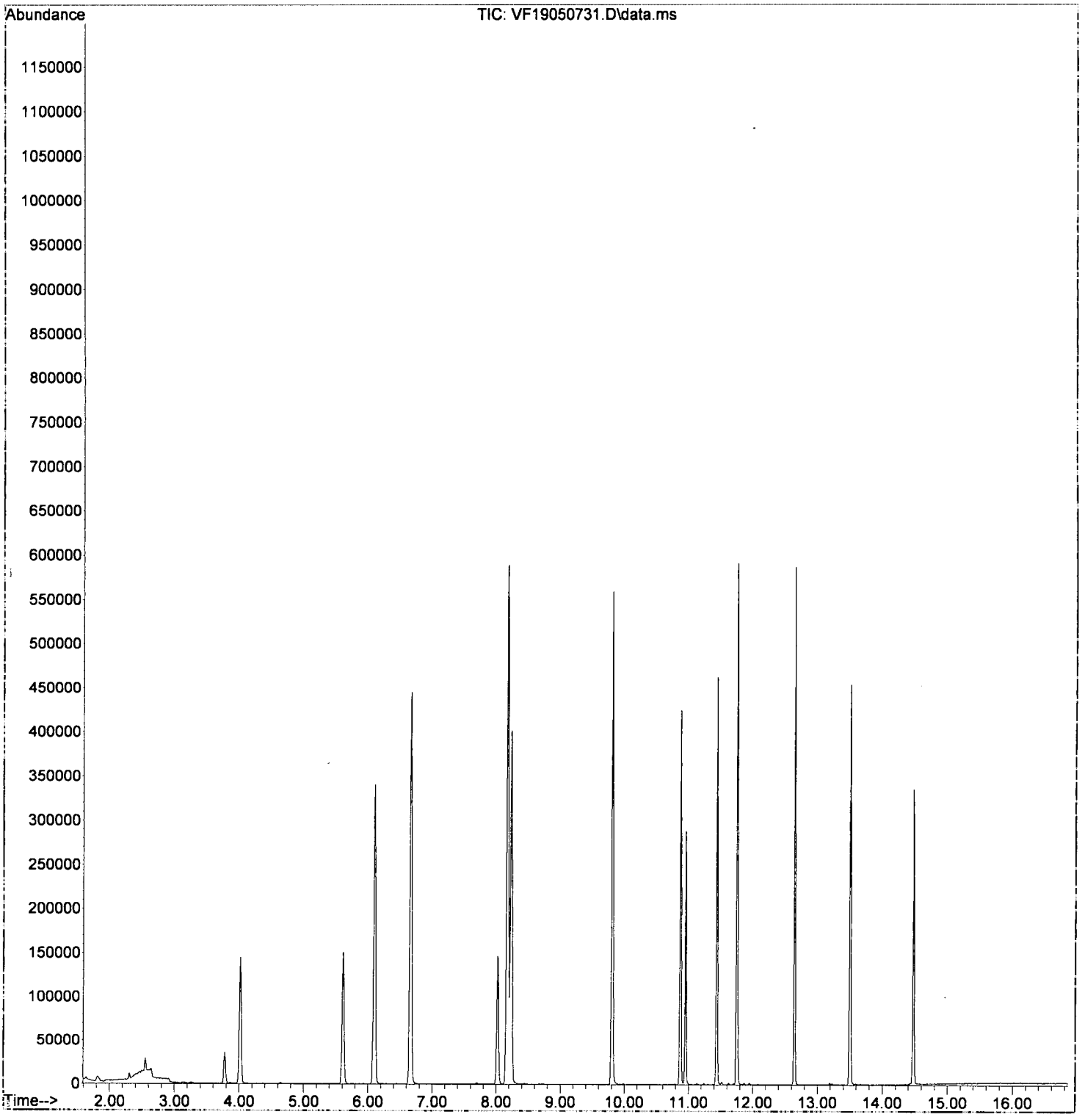
response 3432981

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.77#
0.00	0.00	0.56#
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050731.D
Acq On : 8 May 2019 3:55 am
Operator : TB
Sample : 9E07048-TUN2 RT
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050732.D
Acq On : 8 May 2019 4:22 am
Operator : TB
Sample : 9E07048-IBL7
Misc : 1X 5mL DI+MeOH
ALS Vial : 22 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:11 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

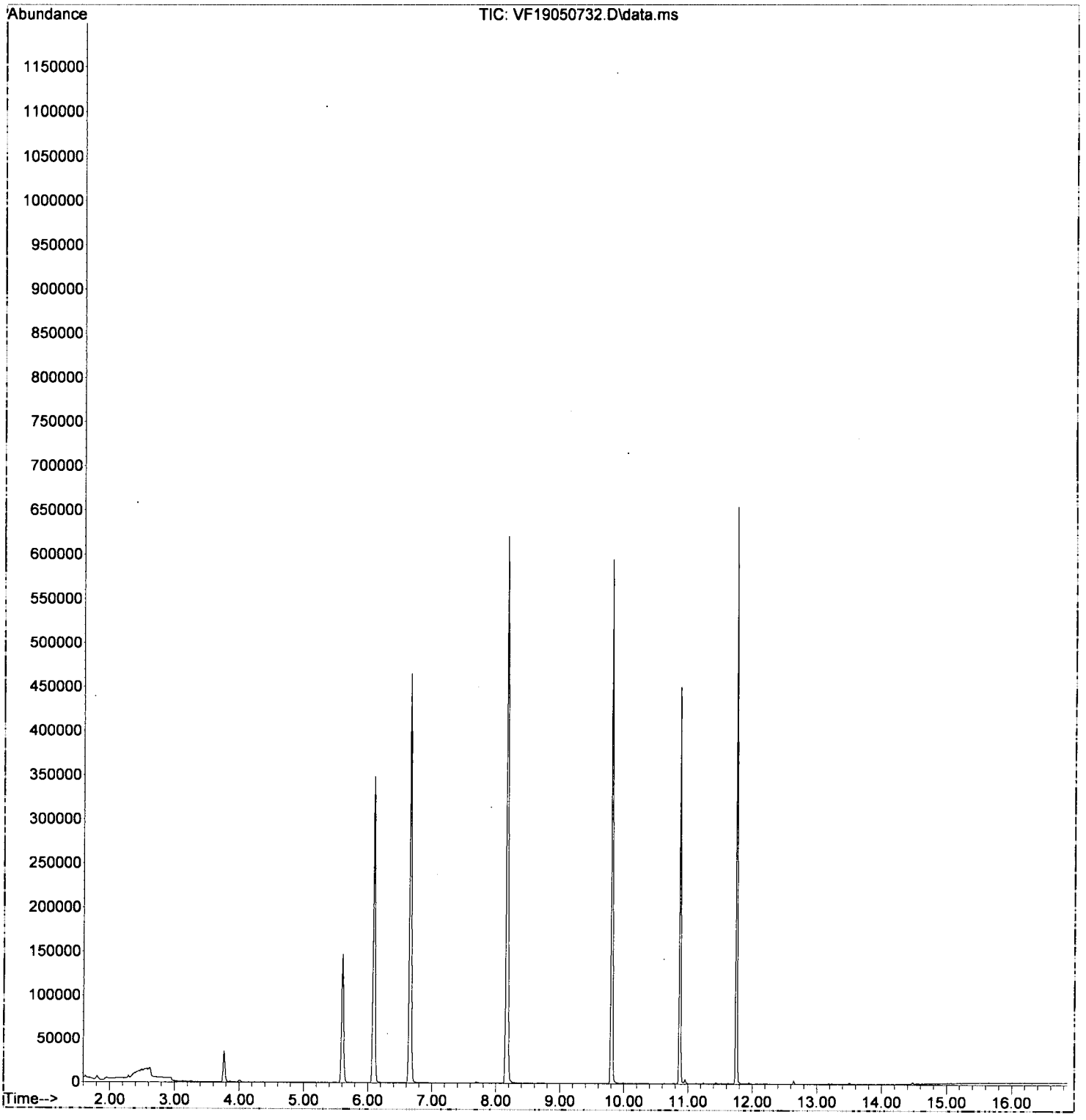
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.090	168	264063	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.656	TIC	949029	45.58	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.866	TIC	629967	49.14	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.801	TIC	966700	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.165	TIC	1246851	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.748	TIC	815701	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	435202m	7.19	ug/L	
6) TPHg (C6-C10)	9.860	TIC	326742m	14.39	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	449496m	10.92	ug/L	
8) NWTPH-Gx	9.870	TIC	14888m	25.50	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050732.D
Acq On : 8 May 2019 4:22 am
Operator : TB
Sample : 9E07048-IBL7
Misc : 1X 5mL DI+MeOH
ALS Vial : 22 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:11 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050733.D
Acq On : 8 May 2019 4:49 am
Operator : TB
Sample : 9E07048-ICB2
Misc : 1X DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:13 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

5/8/19

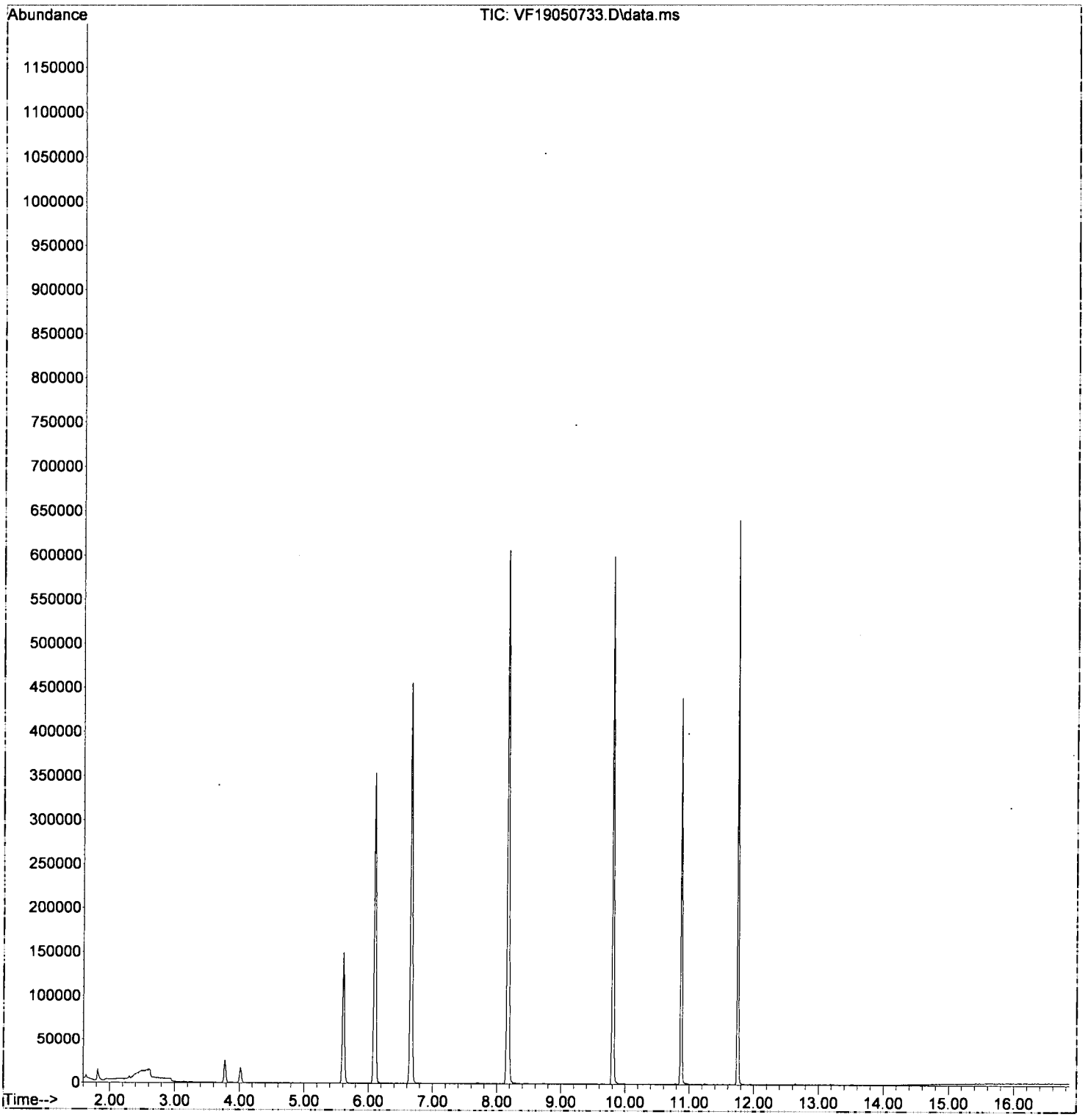
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.096	168	264736	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.656	TIC	955227	45.76	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.872	TIC	619863	48.23	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.807	TIC	959349	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.171	TIC	1248121	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.748	TIC	805712	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	429036m	6.52	ug/L	<MDL
6) TPHg (C6-C10)	9.860	TIC	367227m	18.93	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	429036m	9.20	ug/L	
8) NWTPH-Gx	9.870	TIC	5129m	24.20	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050733.D
Acq On : 8 May 2019 4:49 am
Operator : TB
Sample : 9E07048-ICB2
Misc : 1X DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:13 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050734.D
Acq On : 8 May 2019 5:16 am
Operator : TB
Sample : 9E07048-CALC
Misc : 1X 50ppb GX MeOH
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:22 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507G.M~~
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

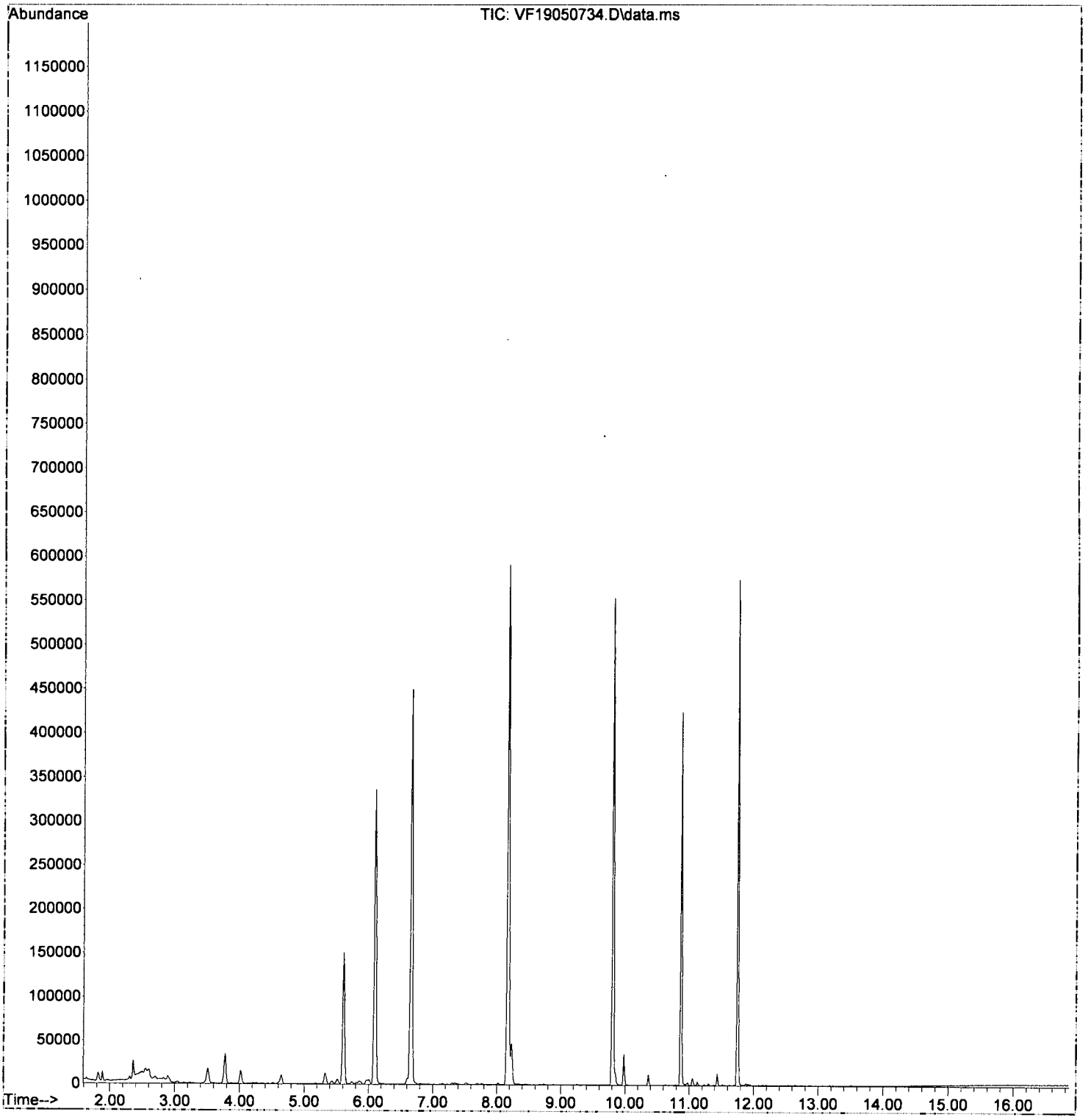
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.095	168	251815	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.661	TIC	944857	49.85	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	583068	47.82	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.806	TIC	910722	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1202713	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	768593	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	861461m	76.48	ug/L	
6) TPHg (C6-C10)	9.860	TIC	621653m	69.33	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	905552m	70.83	ug/L	
8) NWTPH-Gx	9.870	TIC	216743m	31.39	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050734.D
Acq On : 8 May 2019 5:16 am
Operator : TB
Sample : 9E07048-CALC
Misc : 1X 50ppb GX MeOH
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:22 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050735.D
Acq On : 8 May 2019 5:43 am
Operator : TB
Sample : 9E07048-CALD
Misc : 1X 100ppb GX MeOH
ALS Vial : 25 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:25 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507G.M~~
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

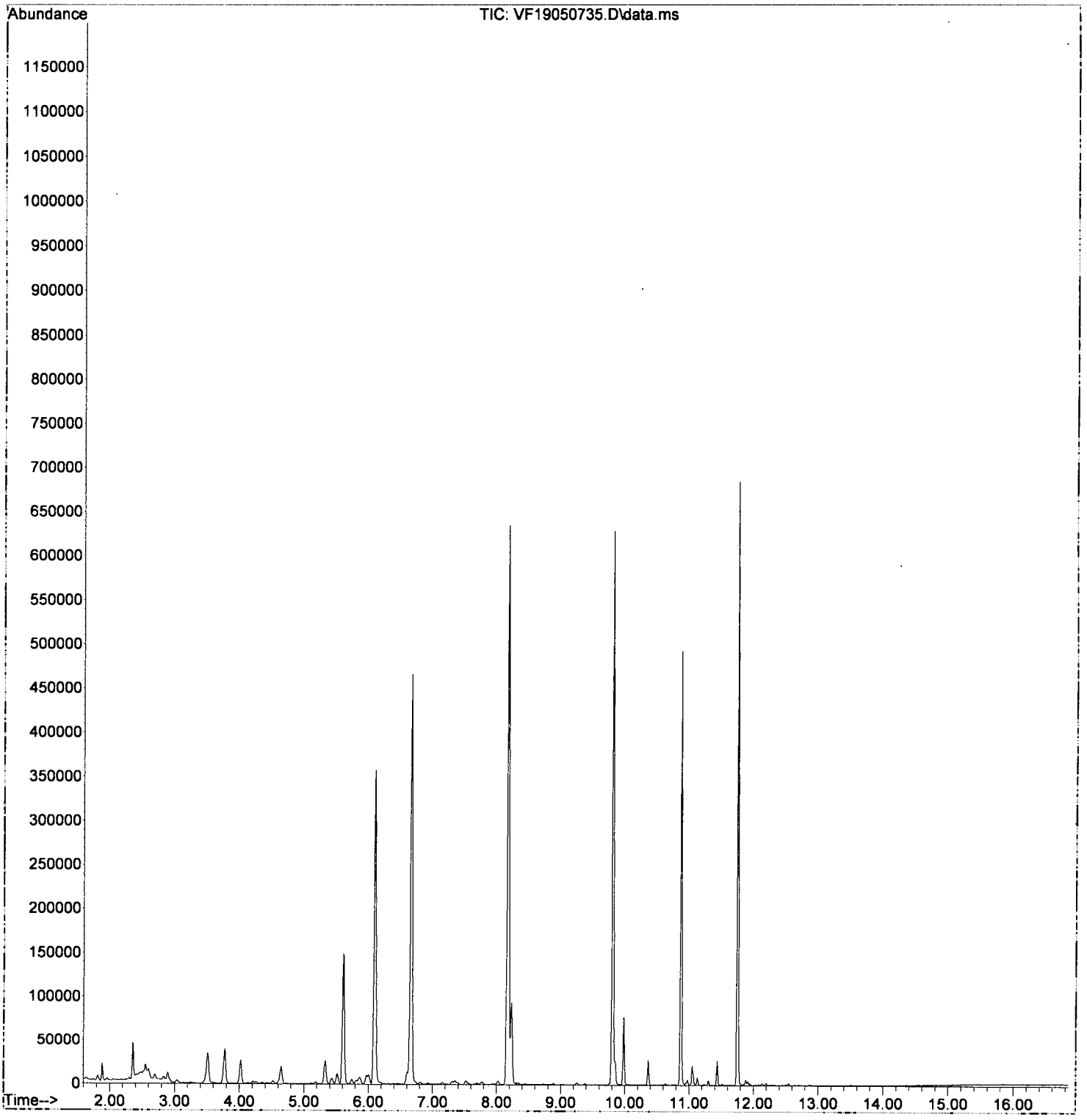
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.098	168	268659	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.658	TIC	1016126	50.25	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.868	TIC	665016	51.12	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.803	TIC	1040846	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.167	TIC	1310310	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.750	TIC	853569	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	1385857m	115.32	ug/L	
6) TPHg (C6-C10)	9.860	TIC	1022515m	106.88	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	1495406m	109.63	ug/L	
8) NWTPH-Gx	9.870	TIC	540113m	73.32	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050735.D
Acq On : 8 May 2019 5:43 am
Operator : TB
Sample : 9E07048-CALD
Misc : 1X 100ppb GX MeOH
ALS Vial : 25 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:25 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050736.D
Acq On : 8 May 2019 6:11 am
Operator : TB
Sample : 9E07048-CALE
Misc : 1X 250ppb GX MeOH
ALS Vial : 26 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:27 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

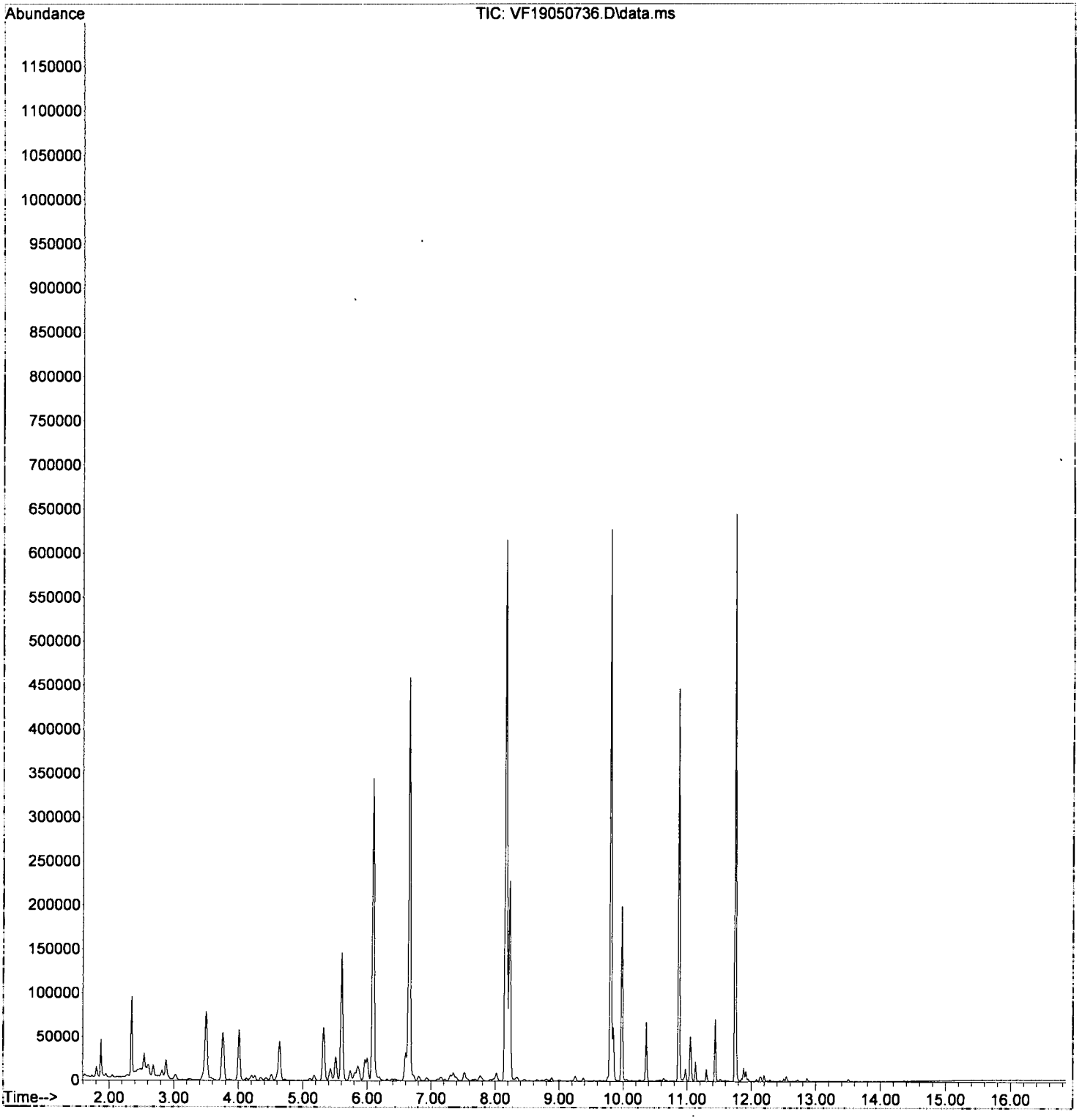
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.092	168	260344	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.657	TIC	976363	49.83	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.867	TIC	627727	49.80	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.803	TIC	970860	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.166	TIC	1270597	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.749	TIC	827127	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	2931259m	251.71	ug/L	
6) TPHg (C6-C10)	9.860	TIC	2228270m	240.36	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	3256728m	246.37	ug/L	
8) NWTPH-Gx	9.870	TIC	1533968m	214.89	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050736.D
Acq On : 8 May 2019 6:11 am
Operator : TB
Sample : 9E07048-CALE
Misc : 1X 250ppb GX MeOH
ALS Vial : 26 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:27 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050737.D
Acq On : 8 May 2019 6:38 am
Operator : TB
Sample : 9E07048-CALF
Misc : 1X 500ppb GX MeOH
ALS Vial : 27 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:29 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

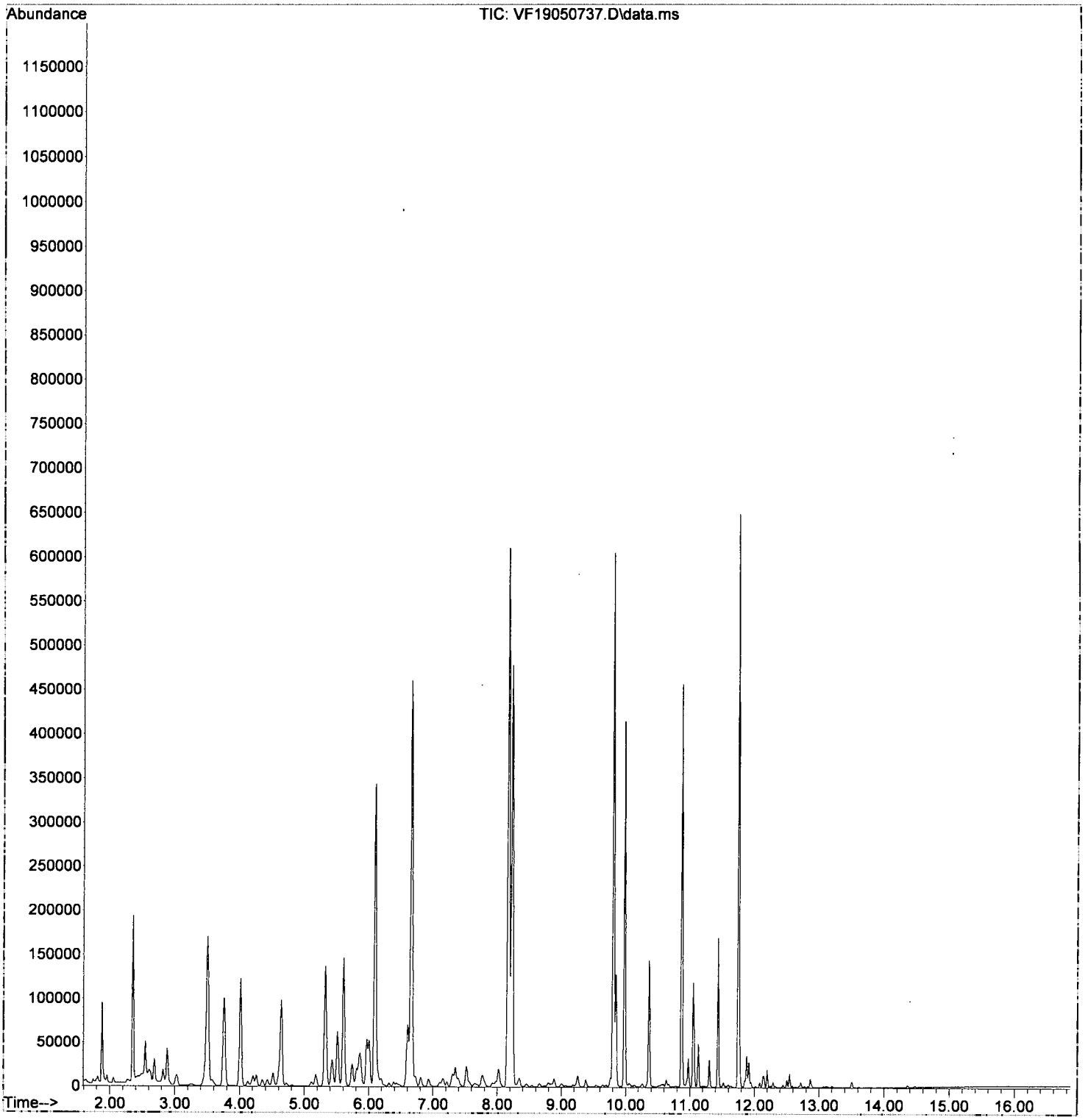
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.096	168	264609	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.655	TIC	998574	50.14	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	640403	49.98	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.807	TIC	999941	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1306294	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	871732	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	5892671m	497.85	ug/L	
6) TPHg (C6-C10)	9.860	TIC	4686857m	497.42	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	6691065m	498.02	ug/L	
8) NWTPH-Gx	9.870	TIC	3603975m	496.73	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050737.D
Acq On : 8 May 2019 6:38 am
Operator : TB
Sample : 9E07048-CALF
Misc : 1X 500ppb GX MeOH
ALS Vial : 27 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:29 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050738.D
Acq On : 8 May 2019 7:05 am
Operator : TB
Sample : 9E07048-CALG
Misc : 1X 1000ppb GX MeOH
ALS Vial : 28 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:31 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

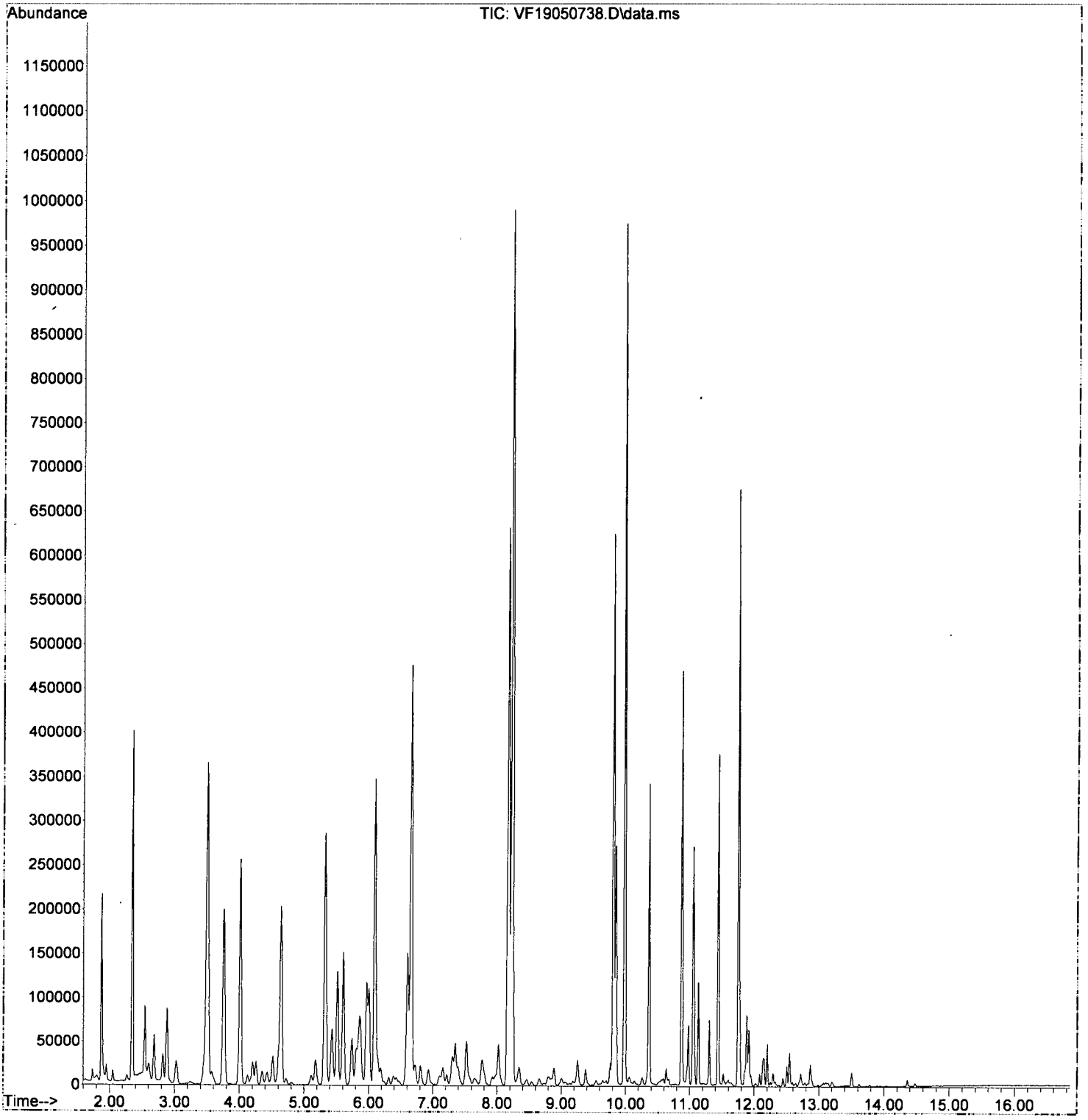
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.090	168	262223	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.656	TIC	994511	50.39	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.866	TIC	665155	52.39	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.801	TIC	994303	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.165	TIC	1316271	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.748	TIC	947602	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	12387853m	1056.13	ug/L	
6) TPHg (C6-C10)	9.860	TIC	9868759m	1056.91	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	14333454m	1076.56	ug/L	
8) NWTPH-Gx	9.870	TIC	8256018m	1148.27	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050738.D
Acq On : 8 May 2019 7:05 am
Operator : TB
Sample : 9E07048-CALG
Misc : 1X 1000ppb GX MeOH
ALS Vial : 28 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:31 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050739.D
Acq On : 8 May 2019 7:32 am
Operator : TB
Sample : 9E07048-CALH
Misc : 1X 2500ppb GX MeOH
ALS Vial : 29 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:33 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

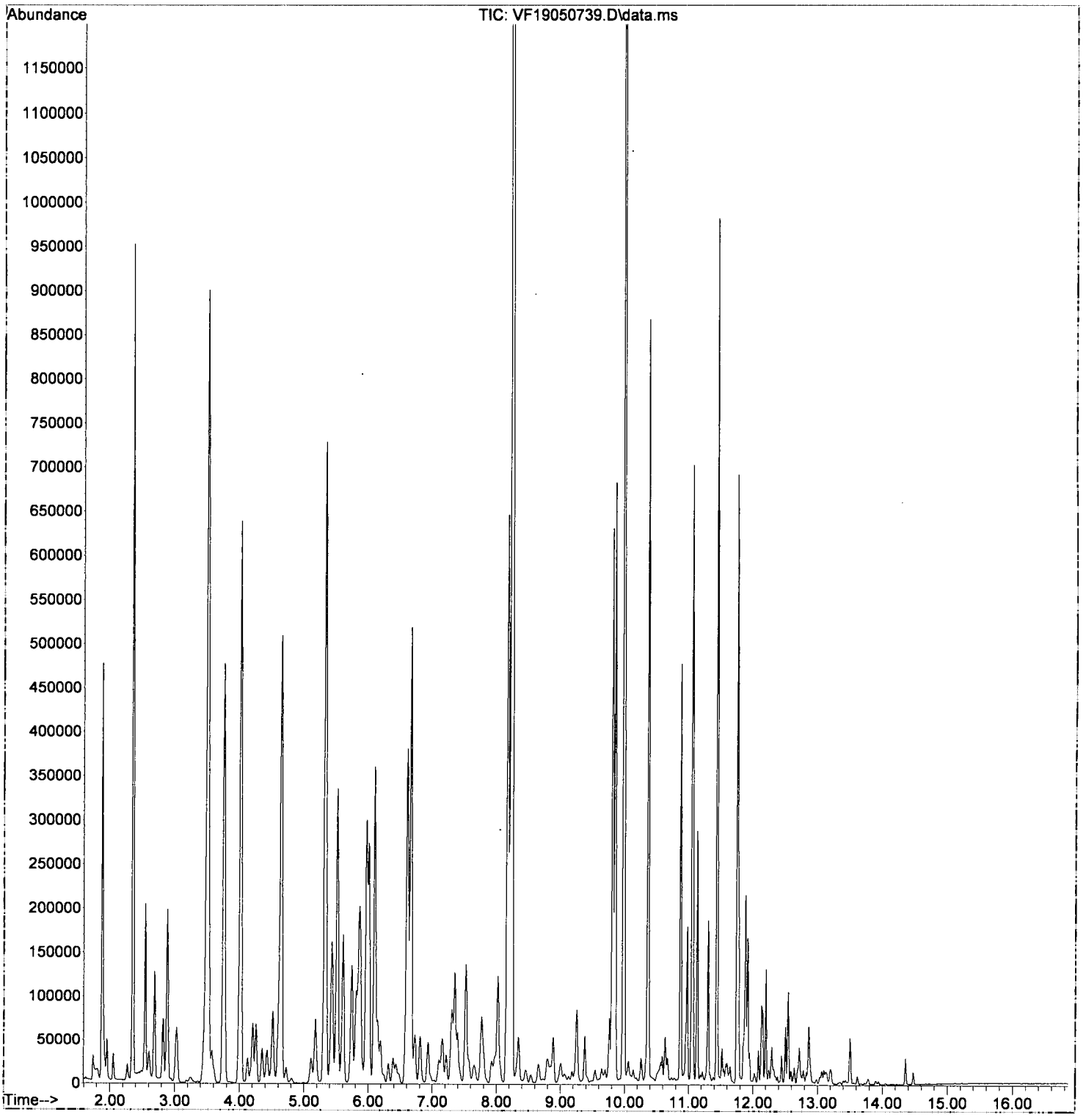
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.096	168	271709	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.655	TIC	1064809	52.07	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	671226	51.02	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.806	TIC	1029963	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1322775	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	1141336	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	31174102m	2564.97	ug/L	
6) TPHg (C6-C10)	9.860	TIC	25150758m	2599.53	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	36008736m	2610.13	ug/L	
8) NWTPH-Gx	9.870	TIC	21404654m	2873.09	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050739.D
Acq On : 8 May 2019 7:32 am
Operator : TB
Sample : 9E07048-CALH
Misc : 1X 2500ppb GX MeOH
ALS Vial : 29 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:33 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050740.D
Acq On : 8 May 2019 7:59 am
Operator : TB
Sample : 9E07048-CALI
Misc : 1X 5000ppb GX MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:28:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.096	168	287647	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.662	TIC	1135195	52.43	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	689679	49.52	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.807	TIC	1132386	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1419979	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	1091643m	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	60591403m	4709.17	ug/L	
6) TPHg (C6-C10)	9.860	TIC	49690540m	4851.33	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	71316473m	4883.02	ug/L	
8) NWTPH-Gx	9.870	TIC	45467241m	5764.80	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050740.D
Acq On : 8 May 2019 7:59 am
Operator : TB
Sample : 9E07048-CALI
Misc : 1X 5000ppb GX MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:35 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

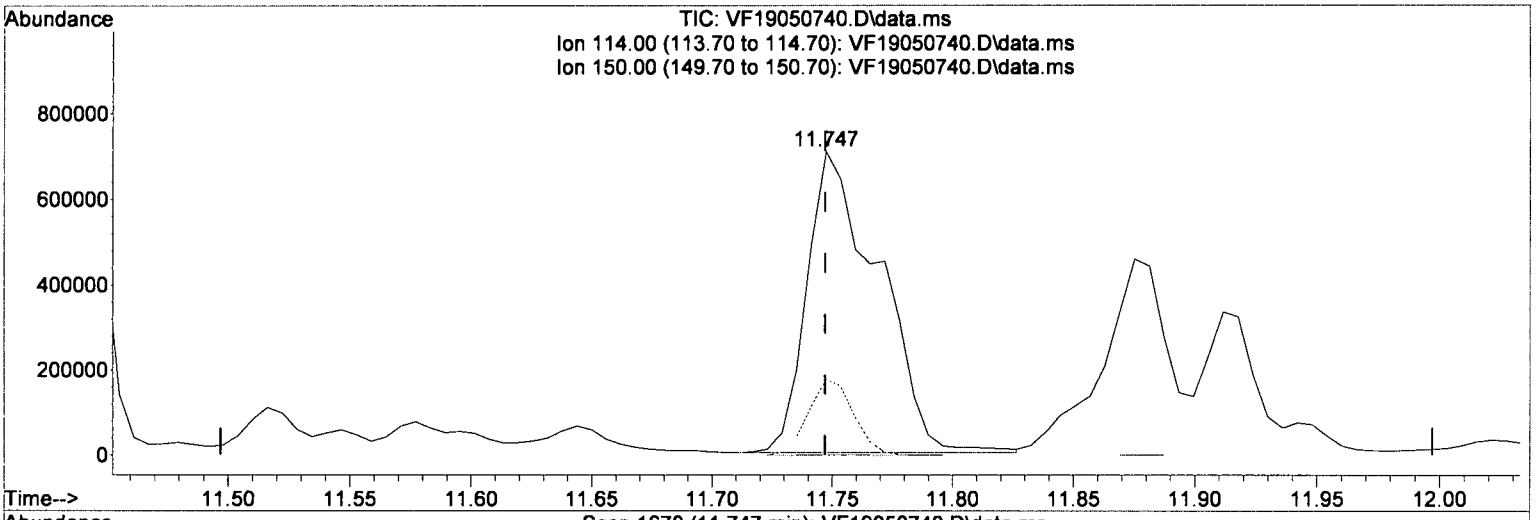
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.096	168	287647	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.662	TIC	1135195	52.43	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	689679	49.52	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.807	TIC	1132386	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1419979	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	1459749	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	60591403m	4709.17	ug/L	
6) TPHg (C6-C10)	9.860	TIC	49690540m	4851.33	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	70948367m	4857.81	ug/L	
8) NWTPH-Gx	9.870	TIC	45099135m	5718.13	ug/L	

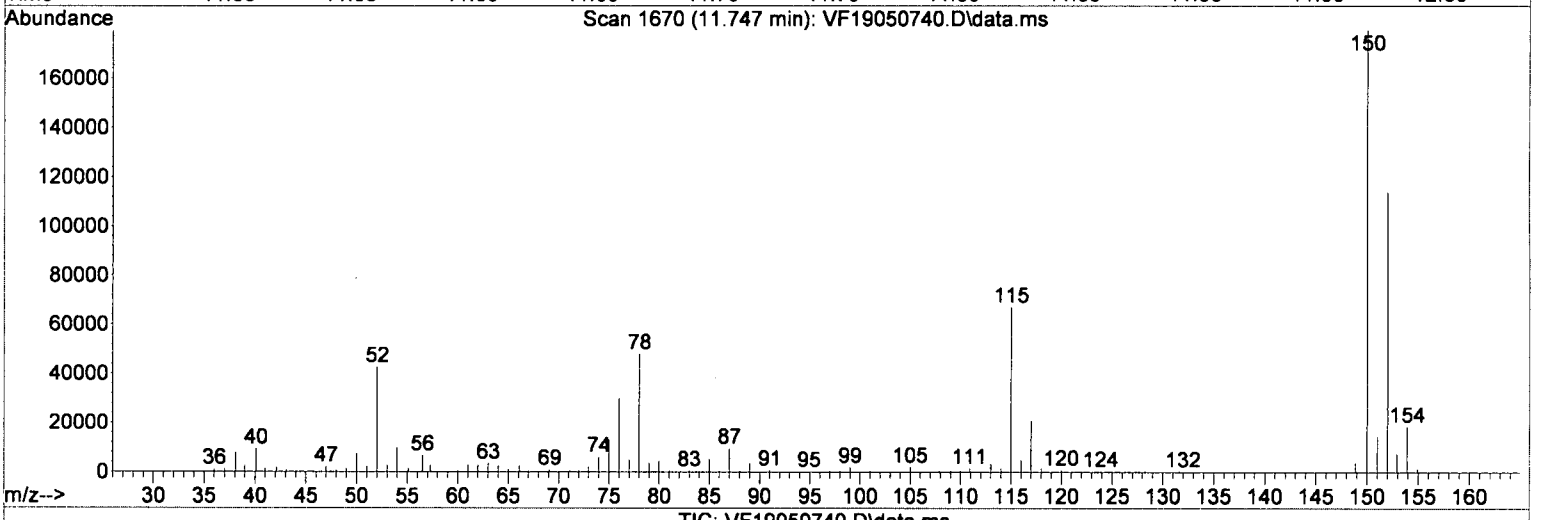
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050740.D
Acq On : 8 May 2019 7:59 am
Operator : TB
Sample : 9E07048-CALI
Misc : 1X 5000ppb GX MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:35 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration





TIC: VF19050740.D\data.ms

(12) 1,4-Dichlorobenzene-d4 (NR) (S)

11.747min (+0.000) 0.00 ug/L

response 1459749

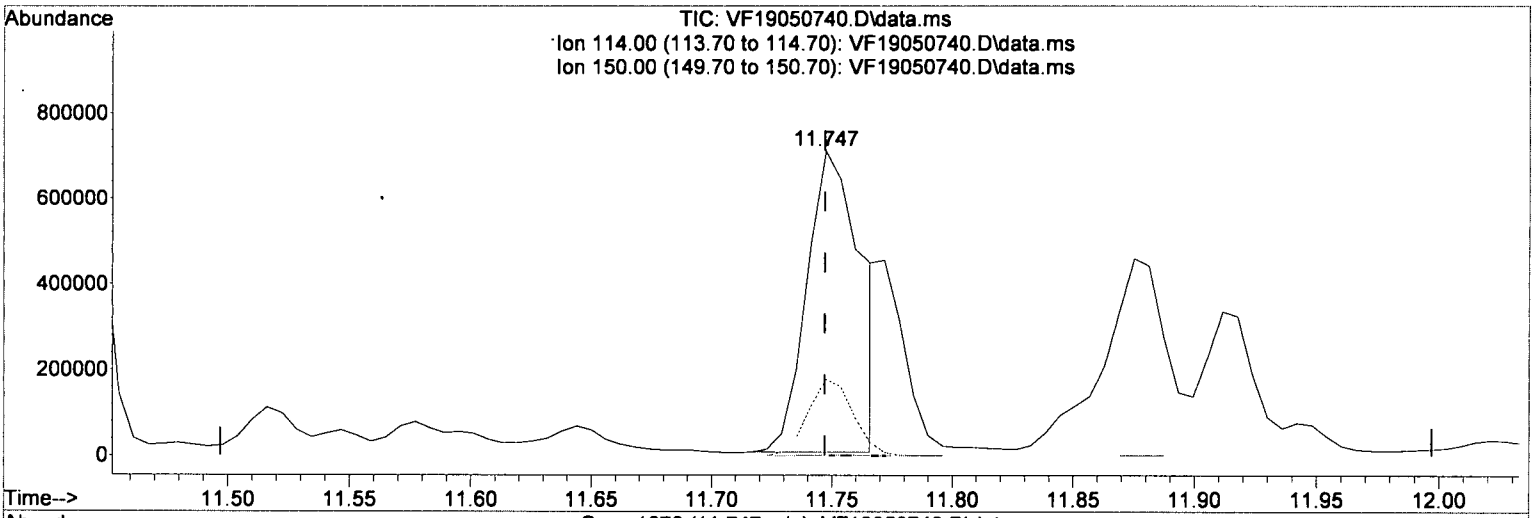
Signal	Exp%	Act%
TIC	100	100
114.00	0.20	0.00
150.00	24.00	16.09
0.00	0.00	0.00

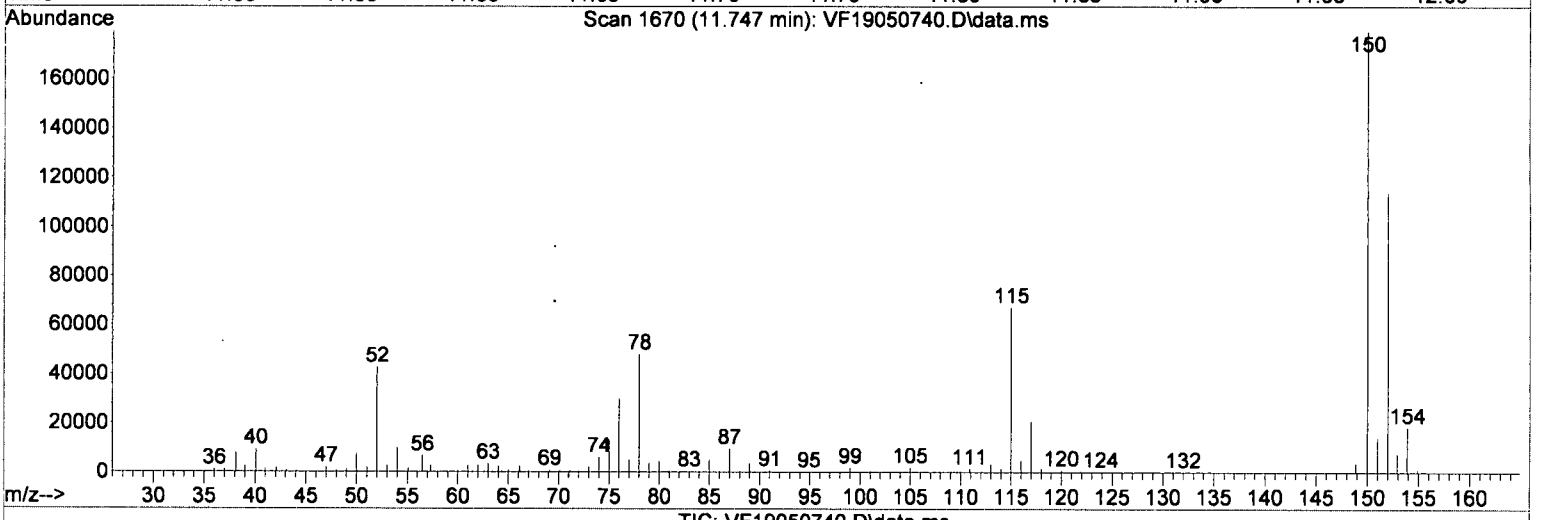
MT

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050740.D
Acq On : 8 May 2019 7:59 am
Operator : TB
Sample : 9E07048-CALI
Misc : 1X 5000ppb GX MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:35 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration





TIC: VF19050740.D\data.ms

(12) 1,4-Dichlorobenzene-d4 (NR) (S)

11.747min (+0.000) 0.00 ug/L m

response 1091643

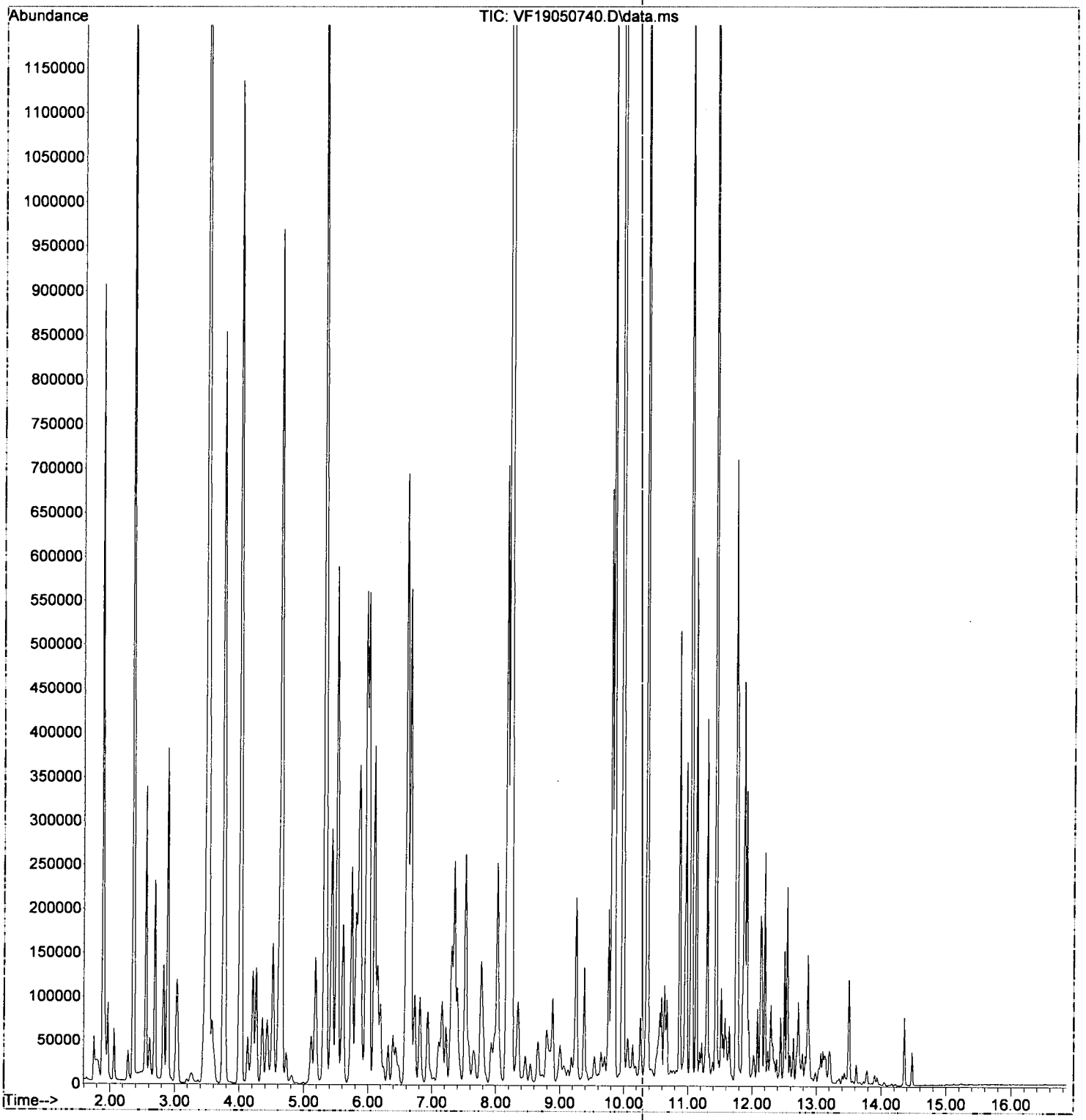
Signal	Exp%	Act%
TIC	100	100
114.00	0.20	0.64
150.00	24.00	0.47
0.00	0.00	0.00

5/8/19

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050740.D
Acq On : 8 May 2019 7:59 am
Operator : TB
Sample : 9E07048-CALI
Misc : 1X 5000ppb GX MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:35 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050741.D
Acq On : 8 May 2019 8:26 am
Operator : TB
Sample : 9E07048-CALK J 5/8/19
Misc : 1X 10000ppb GX MeOH
ALS Vial : 31 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:29:47 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.098	168	293025	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.658	TIC	1412610	64.05	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.868	TIC	701119	49.42	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.803	TIC	1179576	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.167	TIC	1494328	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.750	TIC	946889m	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	145061489m	11067.27	ug/L	
6) TPHg (C6-C10)	9.860	TIC	119967223m	11497.54	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	172661182m	11605.09	ug/L	
8) NWTPH-Gx	9.870	TIC	111038614m	13820.21	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050741.D
Acq On : 8 May 2019 8:26 am
Operator : TB
Sample : 9E07048-CALK J 5/8/19
Misc : 1X 10000ppb GX MeOH
ALS Vial : 31 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:37 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.098	168	293025	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.658	TIC	1412610	64.05	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.868	TIC	701119	49.42	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.803	TIC	1179576	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.167	TIC	1494328	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.768	TIC	2214101	0.00	ug/L	0.02
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	145061489m	11067.27	ug/L	
6) TPHg (C6-C10)	9.860	TIC	119967223m	11497.54	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	171393970m	11519.91	ug/L	
8) NWTPH-Gx	9.870	TIC	109771402m	13662.49	ug/L	

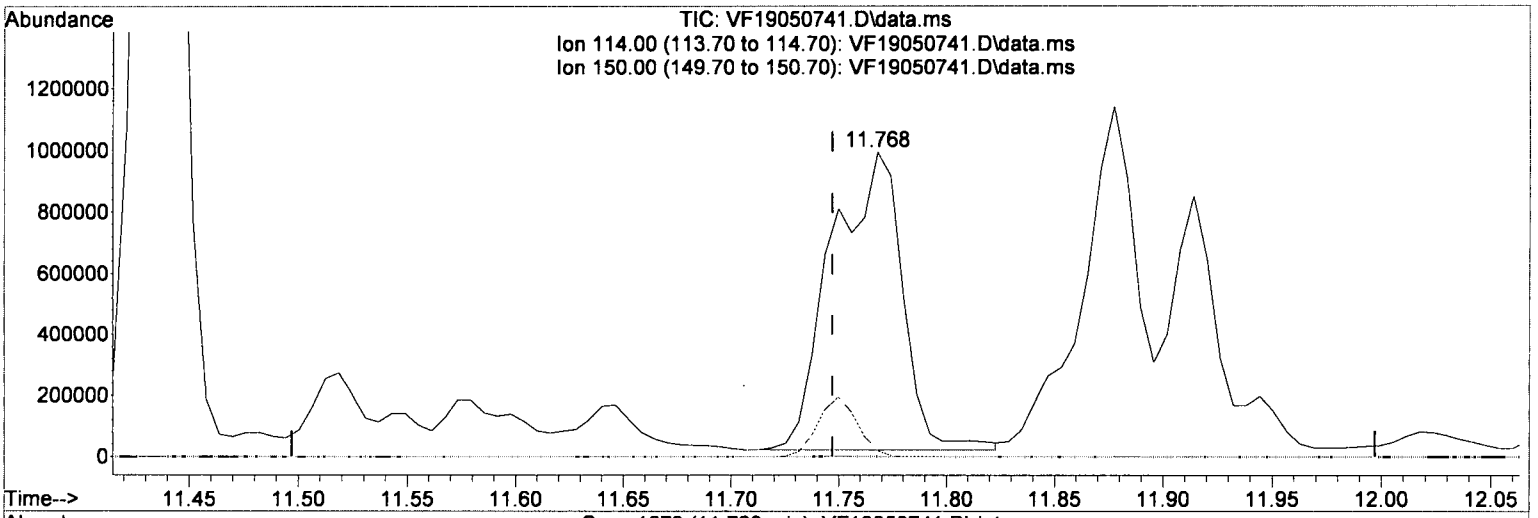
NF

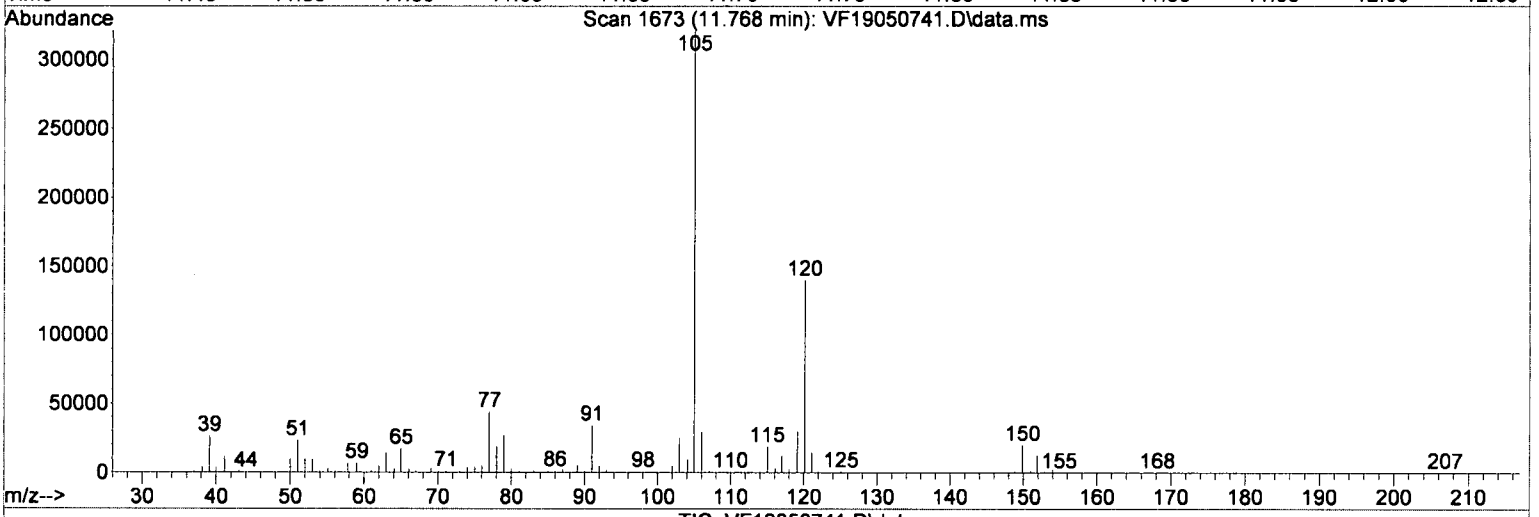
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050741.D
Acq On : 8 May 2019 8:26 am
Operator : TB
Sample : 9E07048-CALK J TB 5/8/19
Misc : 1X 10000ppb GX MeOH
ALS Vial : 31 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:37 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration





TIC: VF19050741.D\data.ms

(12) 1,4-Dichlorobenzene-d4 (NR) (S)

11.768min (+0.021) 0.00 ug/L

response 2214101

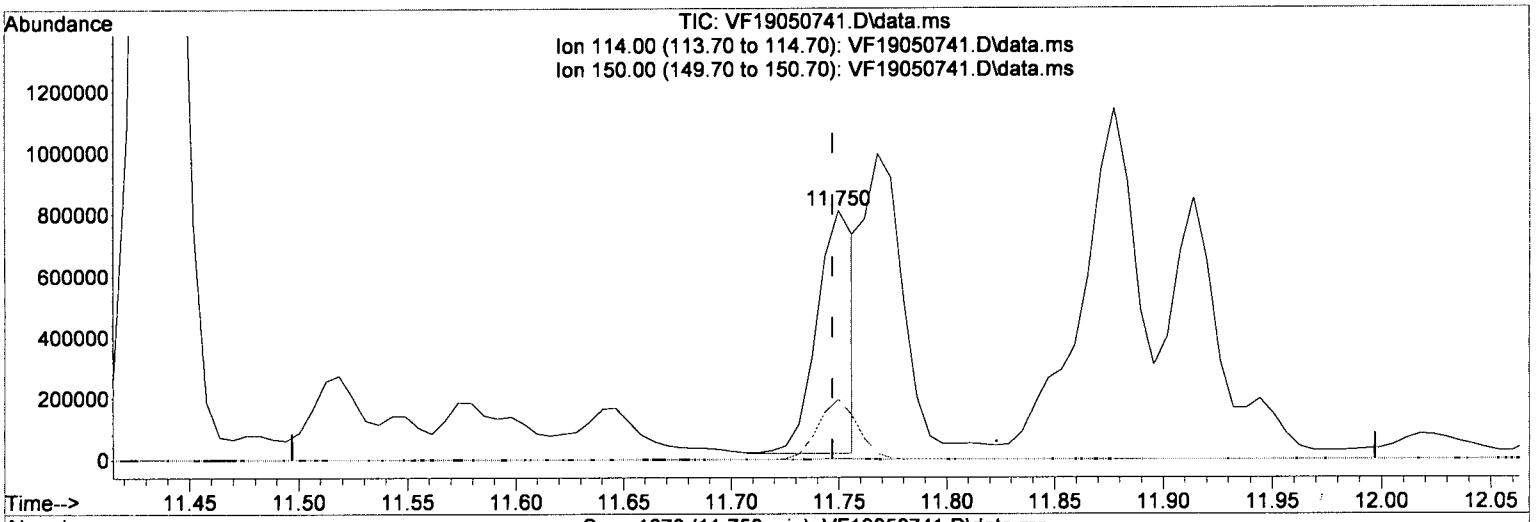
Signal	Exp%	Act%
TIC	100	100
114.00	0.20	0.00
150.00	24.00	11.23
0.00	0.00	0.00

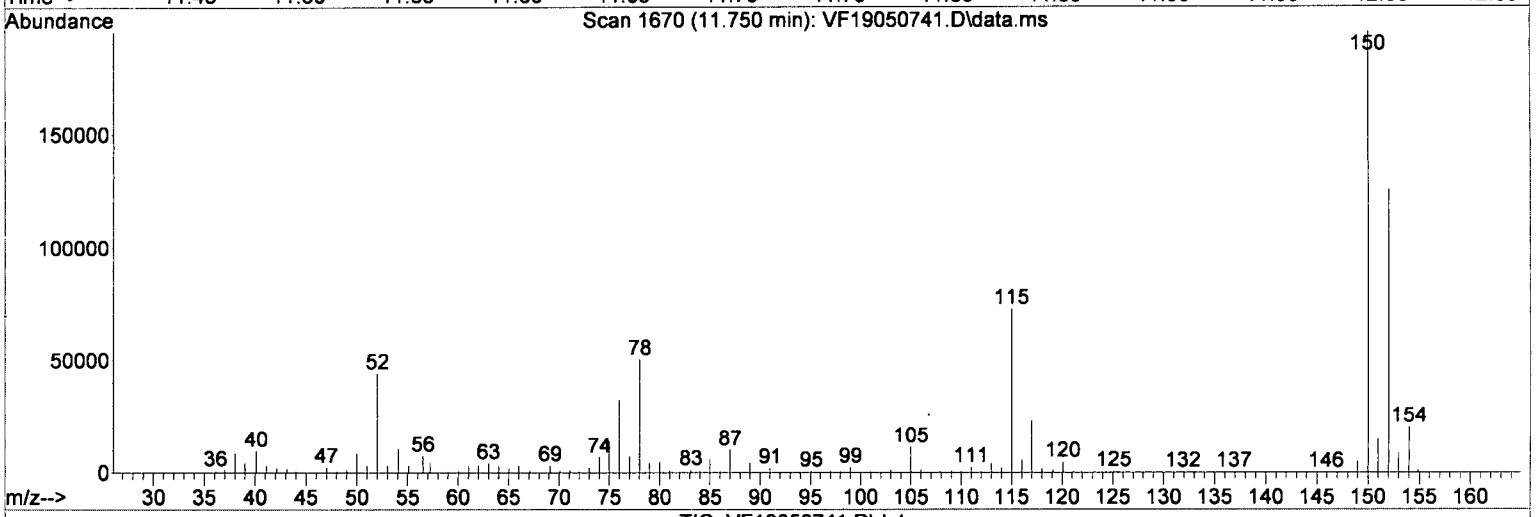
MT

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050741.D
Acq On : 8 May 2019 8:26 am
Operator : TB
Sample : 9E07048-CALK ~~J~~ TB 5/8/19
Misc : 1X 10000ppb GX MeOH
ALS Vial : 31 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:37 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration





TIC: VF19050741.D\data.ms

(12) 1,4-Dichlorobenzene-d4 (NR) (S)

11.750min (+0.003) 0.00 ug/L m

response 946889

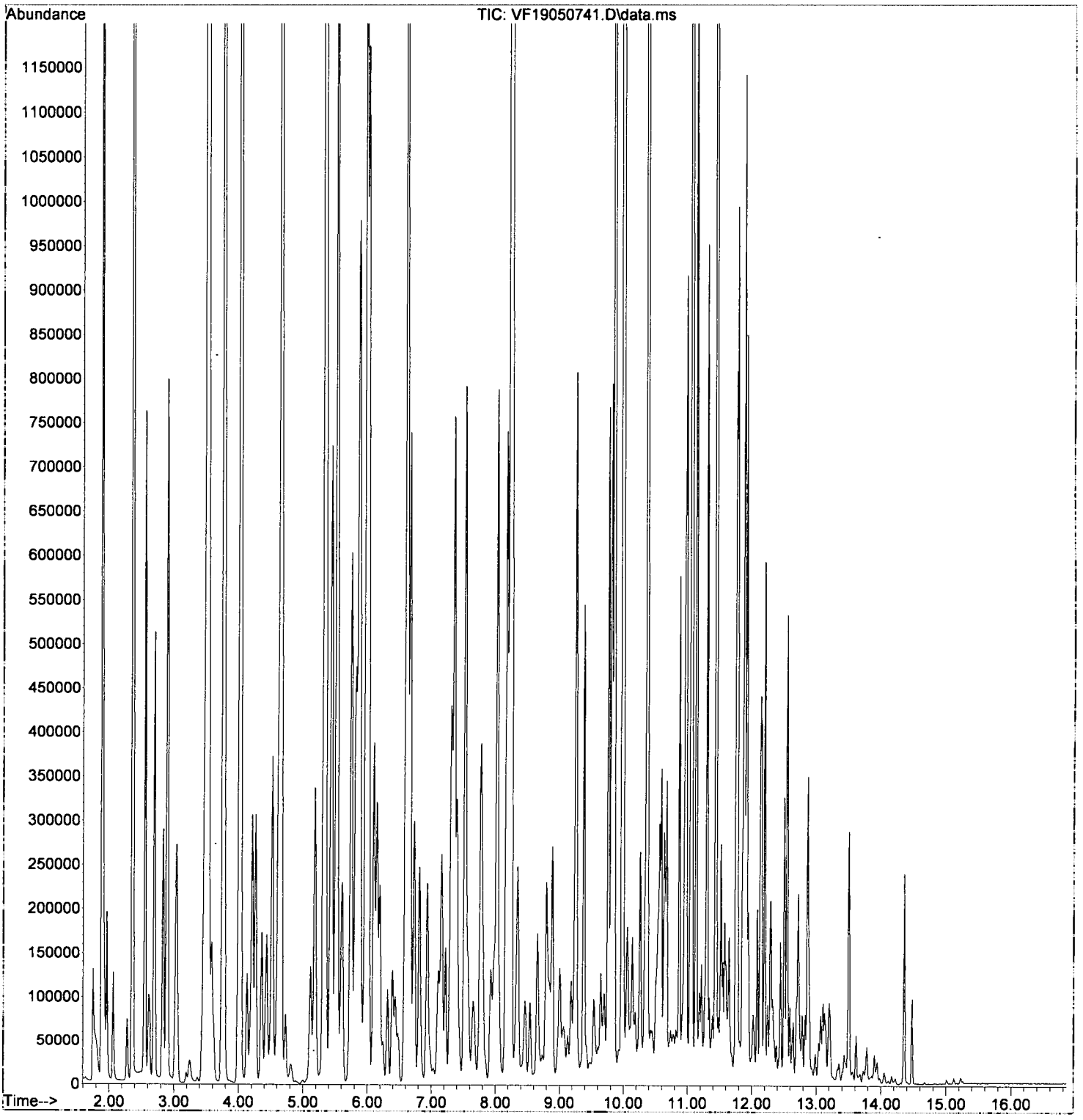
Signal	Exp%	Act%
TIC	100	100
114.00	0.20	0.00
150.00	24.00	26.25
0.00	0.00	0.00

TB 5/8/19

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050741.D
Acq On : 8 May 2019 8:26 am
Operator : TB
Sample : 9E07048-CALK J 5/8/19
Misc : 1X 10000ppb GX MeOH
ALS Vial : 31 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:37 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050742.D
Acq On : 8 May 2019 8:53 am
Operator : TB
Sample : 9E07048-IBL8
Misc : 1X 5mL DI+MeOH
ALS Vial : 32 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:15 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

NR

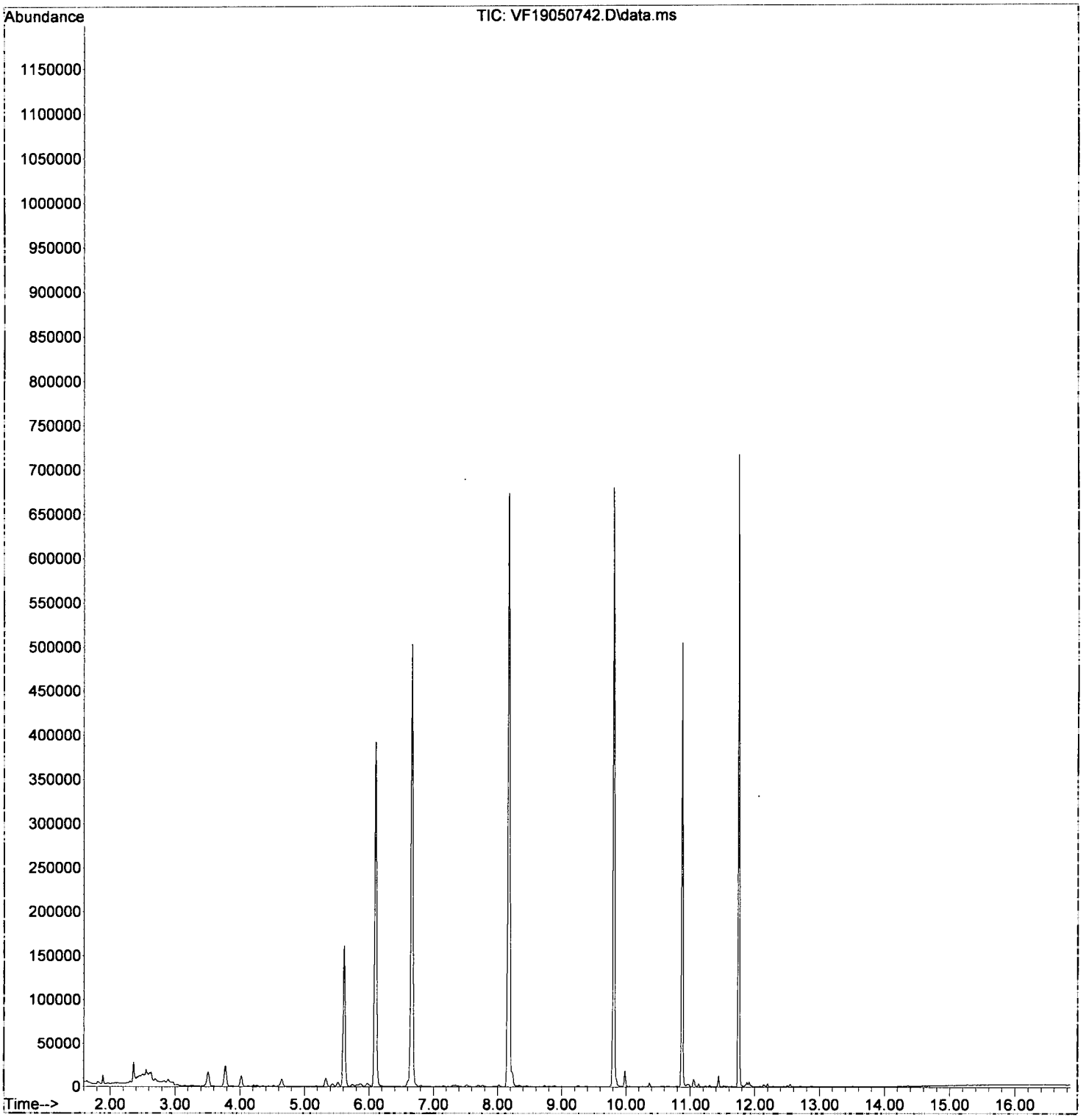
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.097	168	300299	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.657	TIC	1091415	46.10	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.867	TIC	718071	49.25	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.802	TIC	1100182	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.172	TIC	1429075	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.749	TIC	908097	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	718266m	25.30	ug/L	
6) TPHg (C6-C10)	9.860	TIC	531285m	30.49	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	783628m	30.07	ug/L	
8) NWTPH-Gx	9.870	TIC	130677m	38.75	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050742.D
Acq On : 8 May 2019 8:53 am
Operator : TB
Sample : 9E07048-IBL8
Misc : 1X 5mL DI+MeOH
ALS Vial : 32 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:15 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050743.D
Acq On : 8 May 2019 9:20 am
Operator : TB
Sample : 9E07048-IBL9
Misc : 1X 5mL DI+MeOH
ALS Vial : 33 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:17 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

NR

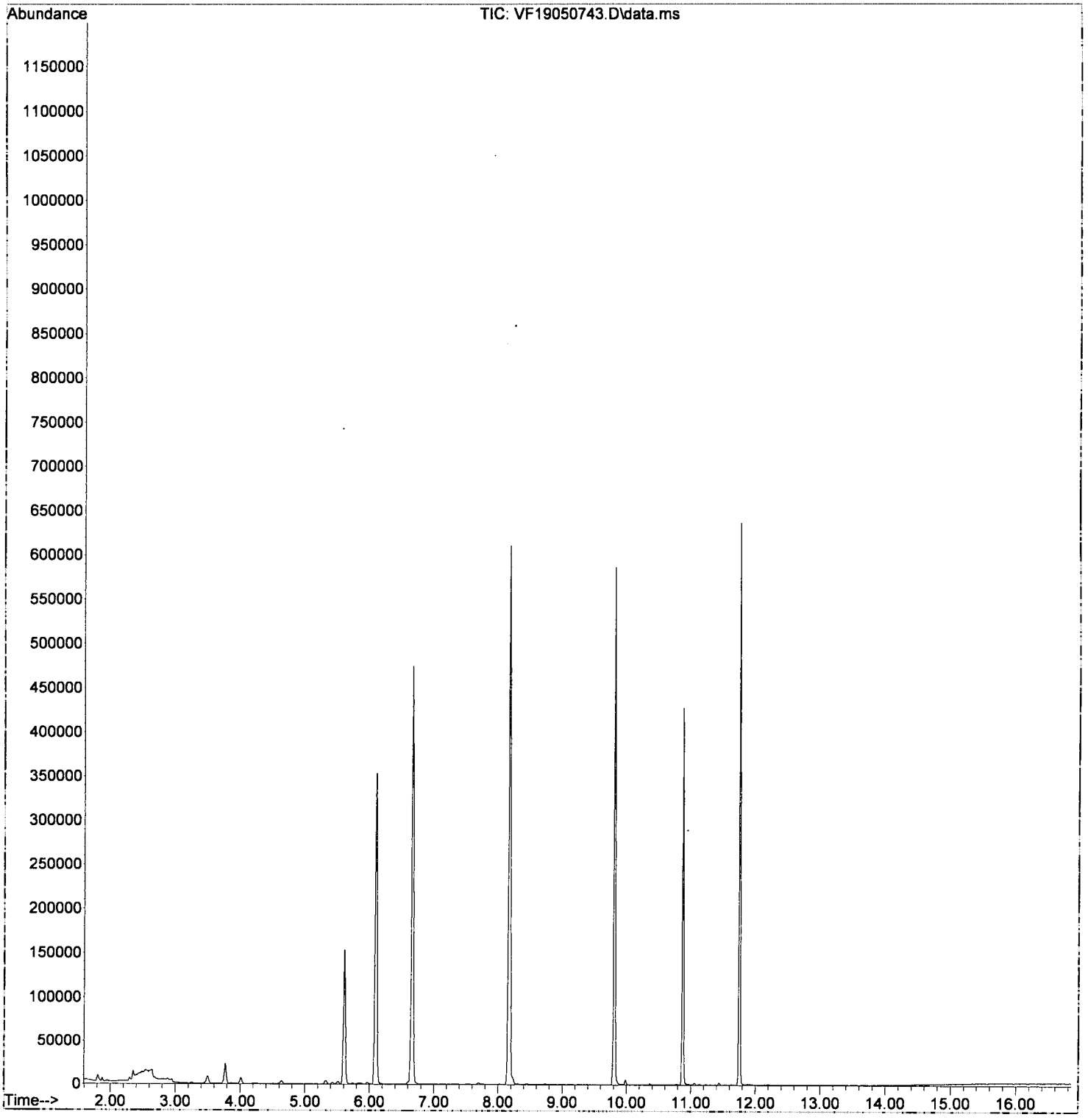
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.097	168	273596	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.657	TIC	987251	45.77	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.867	TIC	608879	45.84	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.802	TIC	925145	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.166	TIC	1264759	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.749	TIC	797642	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	502008m	11.74	ug/L	
6) TPHg (C6-C10)	9.860	TIC	398133m	20.99	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	502008m	13.72	ug/L	
8) NWTPH-Gx	9.870	TIC	19964m	26.08	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050743.D
Acq On : 8 May 2019 9:20 am
Operator : TB
Sample : 9E07048-IBL9
Misc : 1X 5mL DI+MeOH
ALS Vial : 33 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:17 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050744.D
Acq On : 8 May 2019 9:47 am
Operator : TB
Sample : 9E07048-ICV2
Misc : 1X 500ppb GX MeOH
ALS Vial : 34 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:19 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

5/8/19

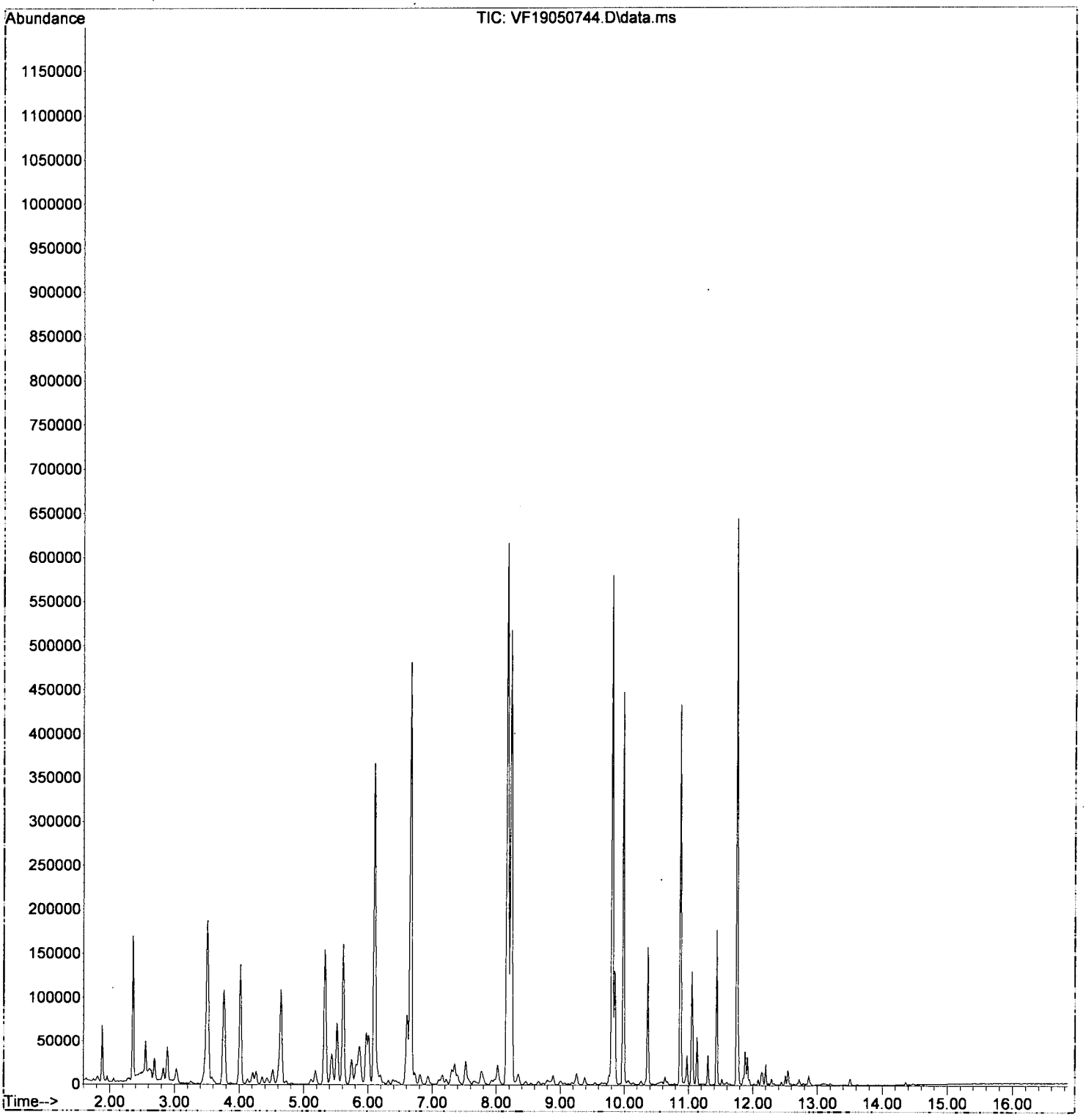
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.097	168	273841	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.663	TIC	1008883	46.73	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.873	TIC	617926	46.48	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.808	TIC	960704	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.172	TIC	1300790	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.749	TIC	861687	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	6428232m	533.69	ug/L	
6) TPHg (C6-C10)	9.860	TIC	5178782m	543.08	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	7312430m	532.59	ug/L	
8) NWTPH-Gx	9.870	TIC	4009491m	528.07	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050744.D
Acq On : 8 May 2019 9:47 am
Operator : TB
Sample : 9E07048-ICV2
Misc : 1X 500ppb GX MeOH
ALS Vial : 34 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:19 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050745.D
Acq On : 8 May 2019 10:14 am
Operator : TB
Sample : 9E07048-IBLA
Misc : 1X 5mL DI+MeOH
ALS Vial : 35 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:21 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

NR

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.095	168	277007	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.661	TIC	1000763	45.82	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	640294	47.61	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.806	TIC	981084	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1297377	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	828252	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	465462m	7.97	ug/L	
6) TPHg (C6-C10)	9.860	TIC	349743m	15.16	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	465878m	10.49	ug/L	
8) NWTPH-Gx	9.870	TIC	-9851m	22.28	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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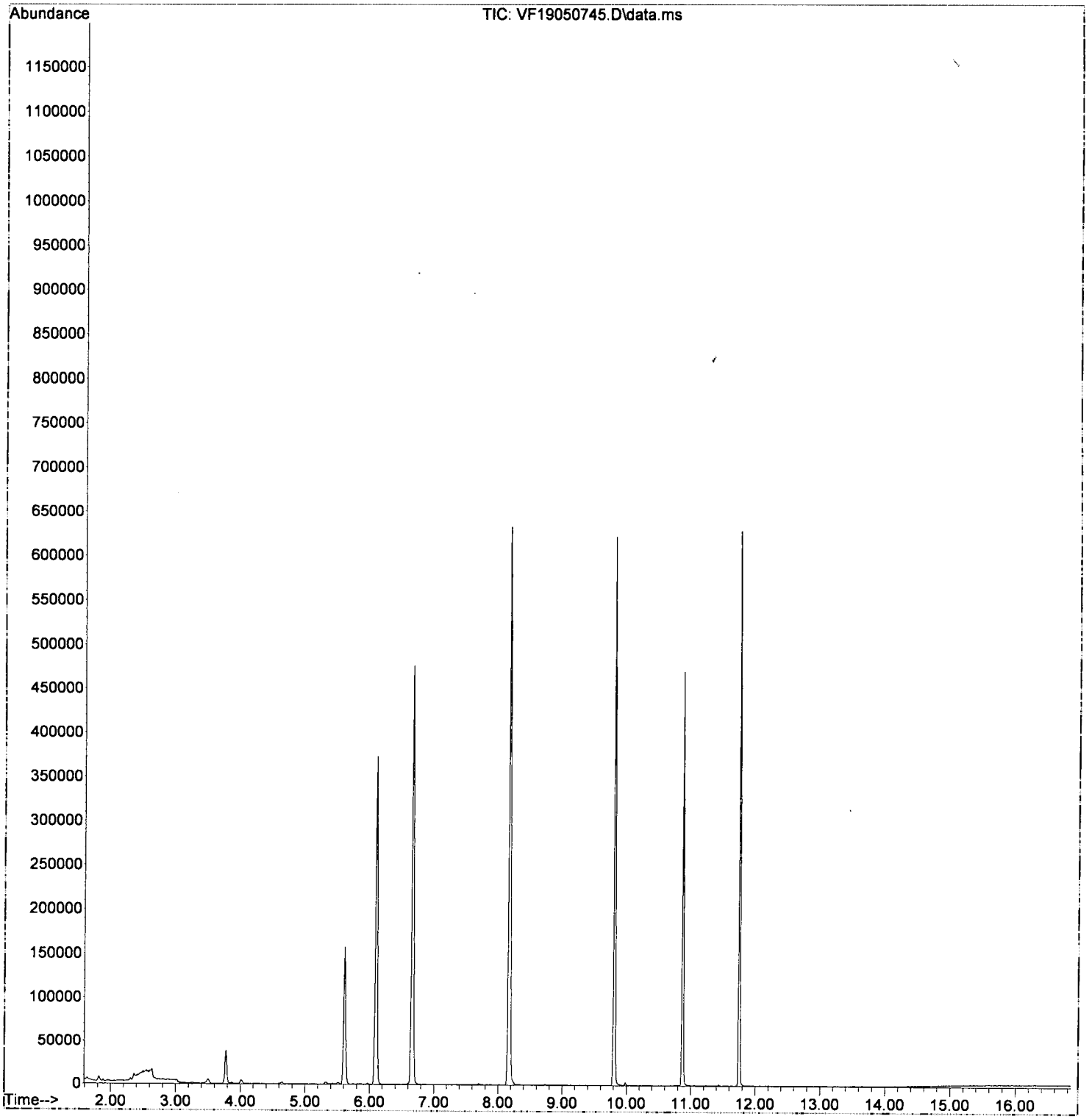
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050745.D
Acq On : 8 May 2019 10:14 am
Operator : TB
Sample : 9E07048-IBLA
Misc : 1X 5mL DI+MeOH
ALS Vial : 35 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:21 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 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 9051006

Sequence 9E17019 (A9E0508-05)

PREPARATION BENCH SHEET

BATCH #: 9051006 (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*
9051006-BLK1		QC	05/17/19 10:00	7.5	5							
9051006-BS1		QC	05/17/19 10:00	5	5	A19E146		250				
9051006-BS2		QC	05/17/19 10:00	5	5	A19E162		250				
A9E0484-01	B	8260C Halogenated VOCs	05/15/19 13:05	0.76	5					GAS	MOD	
A9E0486-01	B	8260C Halogenated VOCs	05/15/19 13:20	0.97	5					Composite	MOD	
A9E0508-05	A	8260C Full List	(Date Sampled)	10.15	15					COMP1	FP, COMP	
A9E0508-05	B	NWTPH-Gx	(Date Sampled)	10.15	15					COMP1	FP, COMP	
A9E0511-47RE1	B	NWTPH-Gx	(Date Sampled)	5.99	5					GP-18 8-12	FP 50X T03	
A9E0511-50	B	8260C Full List	(Date Sampled)	6.3	5					GP-19 4-8	FP, Added for BatchQC in: 905100	
A9E0511-50	B	8260C Halogenated VOCs	(Date Sampled)	6.3	5					GP-19 4-8	FP, Added for BatchQC in: 905100	
A9E0511-50	B	NWTPH-Gx	(Date Sampled)	6.3	5					GP-19 4-8	FP	
9051006-DUP1		QC	05/14/19 00:00	6.3	5		A9E0511-50					
A9E0511-51	B	8260C Full List	(Date Sampled)	5.74	5					GP-19 8-12	FP, Added for BatchQC in: 905100	
A9E0511-51	B	8260C Halogenated VOCs	(Date Sampled)	5.74	5					GP-19 8-12	FP, Added for BatchQC in: 905100	
A9E0511-51	B	NWTPH-Gx	(Date Sampled)	5.74	5					GP-19 8-12	FP	
9051006-DUP2		QC	05/14/19 00:00	5.74	5		A9E0511-51					
A9E0511-53	B	8260C Full List	(Date Sampled)	5.41	5					GP-20 5-10	FP, Added for BatchQC in: 905100	
A9E0511-53	B	8260C Halogenated VOCs	(Date Sampled)	5.41	5					GP-20 5-10	FP, Added for BatchQC in: 905100	
A9E0511-53	B	NWTPH-Gx	(Date Sampled)	5.41	5					GP-20 5-10	FP	
9051006-MS1		QC	05/14/19 00:00	5.41	5	A19E146	A9E0511-53	330			DW=70.6% @50X	
A9E0511-54	B	NWTPH-Gx	(Date Sampled)	3.84	5					GP-20 10-15	FP	
A9E0565-01	B	NWTPH-Gx	(Date Sampled)	5.04	5					19-25900 B1@9'	FP	

Prepared By: 5/18/19 Date

Reviewed By: 5/18/19 Date

PREPARATION BENCH SHEET

BATCH #: 9051006 (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*
A9E0565-02	B	NWTPH-Gx	(Date Sampled)	6.25	5					19-25900 B1@18'	FP	
A9E0565-03	B	NWTPH-Gx	(Date Sampled)	6.47	5					19-25900 B1@39'	FP	
A9E0565-04	B	NWTPH-Gx	(Date Sampled)	5.06	5					19-25900 B2@11'	FP	
A9E0565-05	B	NWTPH-Gx	(Date Sampled)	5.03	5					19-25900 B3@14'	FP	
A9E0565-06	B	NWTPH-Gx	(Date Sampled)	4.89	5					19-25900 B4@14'	FP	
A9E0565-07	B	NWTPH-Gx	(Date Sampled)	5.76	5					19-25900 B5@13'	FP	
A9E0565-08	B	NWTPH-Gx	(Date Sampled)	6.05	5					19-25900 B5@13' Duplicate	FP	
A9E0565-09	B	NWTPH-Gx	(Date Sampled)	6.01	5					19-25900 B6@13'	FP	
A9E0565-10	B	NWTPH-Gx	(Date Sampled)	5.93	5					19-25900 B7@13'	FP	

*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
A19E146	11/09/19	8260B Cal. Std. B VOC Spike Mix (20-40ug/ml
A19E162	11/09/19	Prime. NWTPH-Gx stock (5000 ug/mL)

Surrogate(s)

Std ID	Exp. Date	Description

SOIL MS6

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: 9051006

Matrix Spike

Sample Weight	Final Volume	Dilution	Dry Weight
g	mL		%
5.410	5	50	70.6
			0.706

Final Spike Level	**Spike Amount**
ug/kg	**ul**
1725.52	**330**

Assumptions:
Spiking Solution = 20ug/mL
Spike Amount into 50mL = 50ul
Dilution = 1mL of MeOH to 50mL of water
Initial Spike Concentration = 20ug/L

5/18/19

A9E0511-53

Worksheet

5035 Field Prep Worksheet (Validated 7/11/16)

Sample ID	Container	Container Weight (g)	Tare Weight (g)	Net Sample Weight (g)	Formula Check
A9E0511-50	B	39.87	33.57	6.3	
A9E0511-51	B	39	33.26	5.74	
A9E0511-53	B	39.15	33.74	5.41	
A9E0511-54	B	36.72	32.88	3.84	
A9E0565-01	B	38.76	33.72	5.04	
A9E0565-02	B	39.84	33.59	6.25	
A9E0565-03	B	39.69	33.22	6.47	
A9E0565-04	B	38.69	33.63	5.06	
A9E0565-05	B	38.73	33.7	5.03	
A9E0565-06	B	38.36	33.47	4.89	
A9E0565-07	B	39.45	33.69	5.76	
A9E0565-08	B	39.63	33.58	6.05	
A9E0565-09	B	39.67	33.66	6.01	
A9E0565-10	B	39.67	33.74	5.93	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	

5/18/19

A9E0484

5035 Container Prep Worksheet
~Soil Jar Extraction~

A9E0484-01	GAS	Sampled: 05/15/19 07:30

		Container Used	Sample Weight (g)	Volume MeOH (mL)	Prepared By:	Prepared date/time	Within 48 hours?	Notes:
B Liquid	40 mL VOA - In House Prep - 5035 (MeOH)	A	0.76	(5) 10 15	CB	@ 5/15/19 BOS	(Y) N	mod

8260C Halogenated VOCs Expires: 05/17/19 07:30 Due: 05/29/19 17:00

A9E0486

5035 Container Prep Worksheet
~Soil Jar Extraction~

A9E0486-01	Composite	Sampled: 05/14/19 10:00

		Container Used	Sample Weight (g)	Volume MeOH (mL)	Prepared By:	Prepared date/time	Within 48 hours?	Notes:
B Oil	40 mL VOA - In House Prep - 5035 (MeOH)	A	0.97	5 (10) 15	AB	@ 5/15/19 1320	(Y) N	Mod

8260C Halogenated VOCs Expires: 05/16/19 10:00 Due: 05/29/19 17:00

Methanol Reagent ID: A19C375~ Balance ID: A18J327~

A9E0511

5035 Container Prep Worksheet
~Field MeOH Preserved~

(Prepared = Sampled Date/Time)

A9E0511-50 GP-19 4-8 Sampled: **05/14/19 00:00**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.87	Tare Weight (g): 33.57	Volume MeOH (mL): (5) 10 15 Other	Notes: Dup1
Due:		TAT:			GX

A9E0511-51 GP-19 8-12 Sampled: **05/14/19 00:00**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.00	Tare Weight (g): 33.26	Volume MeOH (mL): (5) 10 15 Other	Notes: Dup2
Due:		TAT:			

A9E0511-53 GP-20 5-10 Sampled: **05/14/19 00:00**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.15	Tare Weight (g): 33.74	Volume MeOH (mL): (5) 10 15 Other	Notes: MS
Due:		TAT:			

A9E0511-54 GP-20 10-15 Sampled: **05/14/19 00:00**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 36.72	Tare Weight (g): 32.88	Volume MeOH (mL): (5) 10 15 Other	Notes:
Due:		TAT:			

A9E0511-56 GP-21 5-10 Sampled: **05/14/19 00:00**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.28	Tare Weight (g): 33.25	Volume MeOH (mL): (5) 10 15 Other	Notes:
Due:		TAT:			

A9E0511-57 GP-21 10-15 Sampled: **05/14/19 00:00**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.36	Tare Weight (g): 33.52	Volume MeOH (mL): (5) 10 15 Other	Notes:
Due:		TAT:			

A9E0511-59 GP-22 5-10 Sampled: **05/14/19 00:00**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.35	Tare Weight (g): 33.62	Volume MeOH (mL): (5) 10 15 Other	Notes:
Due:		TAT:			

A9E0511-60 GP-22 10-15 Sampled: **05/14/19 00:00**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.05	Tare Weight (g): 33.40	Volume MeOH (mL): (5) 10 15 Other	Notes:
Due:		TAT:			

Weighed by: AB @ 5/15/19 2048

Methanol Reagent ID: A19C375~ Balance ID: A18J327~

A9E0565

5035 Container Prep Worksheet
~Field MeOH Preserved~

(Prepared = Sampled Date/Time)

A9E0565-01	**19-25900 B1@9'**			Sampled:	**05/15/19 10:16**
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 38.76	Tare Weight (g): 33.72	Volume MeOH (mL): (5) 10 15 Other	Notes:
6X	Due:	TAT:			
A9E0565-02	**19-25900 B1@18'**			Sampled:	**05/15/19 10:25**
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.84	Tare Weight (g): 33.59	Volume MeOH (mL): (5) 10 15 Other	Notes:
	Due:	TAT:			
A9E0565-03	**19-25900 B1@39'**			Sampled:	**05/15/19 10:41**
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.69	Tare Weight (g): 33.22	Volume MeOH (mL): (5) 10 15 Other	Notes:
	Due:	TAT:			
A9E0565-04	**19-25900 B2@11'**			Sampled:	**05/15/19 11:06**
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 38.69	Tare Weight (g): 33.63	Volume MeOH (mL): (5) 10 15 Other	Notes:
	Due:	TAT:			
A9E0565-05	**19-25900 B3@14'**			Sampled:	**05/15/19 11:58**
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 38.73	Tare Weight (g): 33.70	Volume MeOH (mL): (5) 10 15 Other	Notes:
	Due:	TAT:			
A9E0565-06	**19-25900 B4@14'**			Sampled:	**05/15/19 12:42**
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 38.36	Tare Weight (g): 33.47	Volume MeOH (mL): (5) 10 15 Other	Notes:
	Due:	TAT:			
A9E0565-07	**19-25900 B5@13'**			Sampled:	**05/15/19 13:33**
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.45	Tare Weight (g): 33.69	Volume MeOH (mL): (5) 10 15 Other	Notes:
	Due:	TAT:			
A9E0565-08	**19-25900 B5@13' Duplicate**			Sampled:	**05/15/19 13:33**
B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.63	Tare Weight (g): 33.58	Volume MeOH (mL): (5) 10 15 Other	Notes:
	Due:	TAT:			

Weighed by: _____ @ 5/16/19 1925

Methanol Reagent ID: A19O375 Balance ID: A19J927

A9E0565

5035 Container Prep Worksheet
~Field MeOH Preserved~

(Prepared = Sampled Date/Time)

A9E0565-09	19-25900 B6@13'	Sampled: 05/15/19 14:47

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
		39.67	33.66	(5) 10 15 Other	

64 Due: TAT:

A9E0565-10	19-25900 B7@13'	Sampled: 05/15/19 15:32

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
		39.67	33.74	(5) 10 15 Other	

Due: TAT:

Weighed by: _____ @ 5/16/19 1925

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence: **9E17019** Instrument: **VOA-GCMS6**

Date: **05/17/19 09:57** Calibration: **A9E0804**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E17019-IBL1	Soil	QC	QC			A19D196	
2	9E17019-TUN1	Soil	QC	QC			A19D196	
3	9E17019-CCV1	Soil	QC	QC			A19D196	
4	9051006-BS1	Soil	QC	QC		9051006	A19D196	
5	9E17019-CCV2	Soil	QC	QC			A19D196	
6	9051006-BS2	Soil	QC	QC		9051006	A19D196	
7	9051006-BLK1	Soil	QC	QC		9051006	A19D196	
8	A9E0511-47RE1	Soil	NWTPH-Gx		05/21/19	9051006	A19D196	
9	A9E0508-05	Soil	8260C Full List	Hahn and Associates	05/21/19	9051006	A19D196	
"	"	Soil	NWTPH-Gx	"	05/21/19	9051006	A19D196	
10	9E17019-IBL2	Soil	QC	QC			A19D196	
11	A9E0511-50	Soil	NWTPH-Gx		05/21/19	9051006	A19D196	
"	"	Soil	8260C Full List	(QC Source)		9051006	A19D196	
"	"	Soil	8260C Halogenated VOCs	(QC Source)		9051006	A19D196	
12	9051006-DUP1	Soil	QC	QC		9051006	A19D196	
13	A9E0511-51	Soil	NWTPH-Gx		05/21/19	9051006	A19D196	
"	"	Soil	8260C Full List	(QC Source)		9051006	A19D196	
"	"	Soil	8260C Halogenated VOCs	(QC Source)		9051006	A19D196	
14	9051006-DUP2	Soil	QC	QC		9051006	A19D196	
15	A9E0511-53	Soil	NWTPH-Gx		05/21/19	9051006	A19D196	
"	"	Soil	8260C Full List	(QC Source)		9051006	A19D196	
"	"	Soil	8260C Halogenated VOCs	(QC Source)		9051006	A19D196	
16	9051006-MS1	Soil	QC	QC		9051006	A19D196	
17	9E17019-IBL3	Soil	QC	QC			A19D196	
18	A9E0565-01	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
19	A9E0565-02	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
20	A9E0565-03	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
21	A9E0565-04	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
22	A9E0565-05	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
23	A9E0565-06	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
24	A9E0565-07	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
25	A9E0565-08	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
26	A9E0565-09	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
27	A9E0565-10	Soil	NWTPH-Gx		05/20/19	9051006	A19D196	
28	A9E0511-54	Soil	NWTPH-Gx		05/21/19	9051006	A19D196	
29	A9E0484-01	Soil	8260C Halogenated VOCs		05/29/19	9051006	A19D196	
30	A9E0486-01	Soil	8260C Halogenated VOCs		05/29/19	9051006	A19D196	
31	9E17019-IBL4	Soil	QC	QC			A19D196	

Data Entered By: 5/18/19

Data Reviewed By: 5/20/19

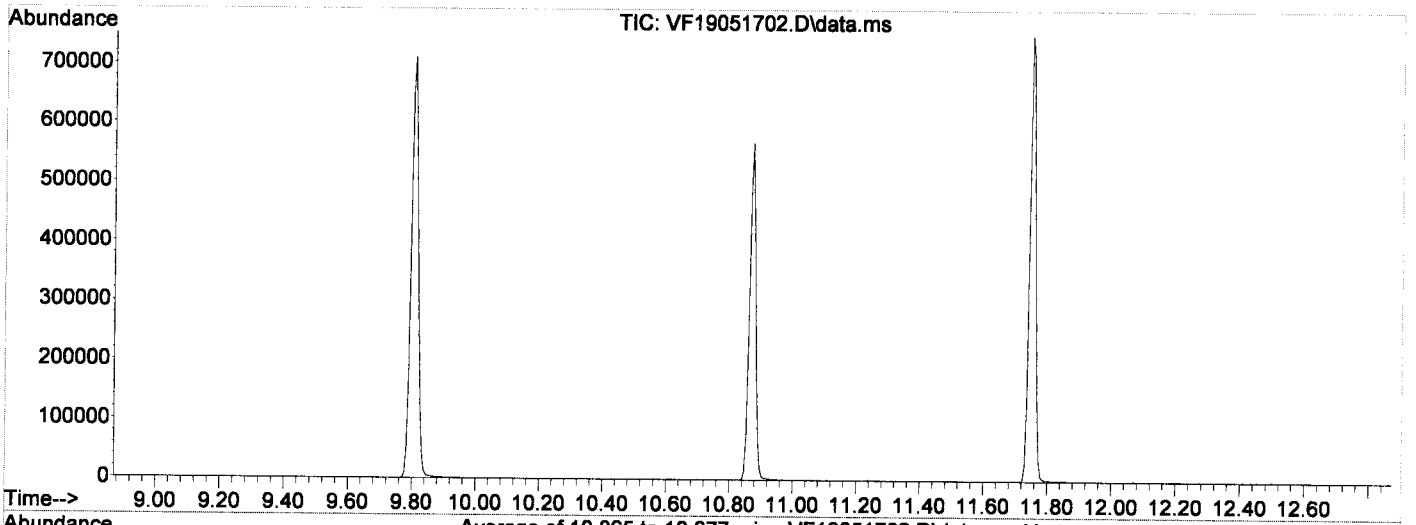
Comments: ↑MDL=MRL for DCM (QSS)
↑MDL MRL for 1112TCA, $BrCl_2CH$, $CHBr_3$, $FCCl_4$

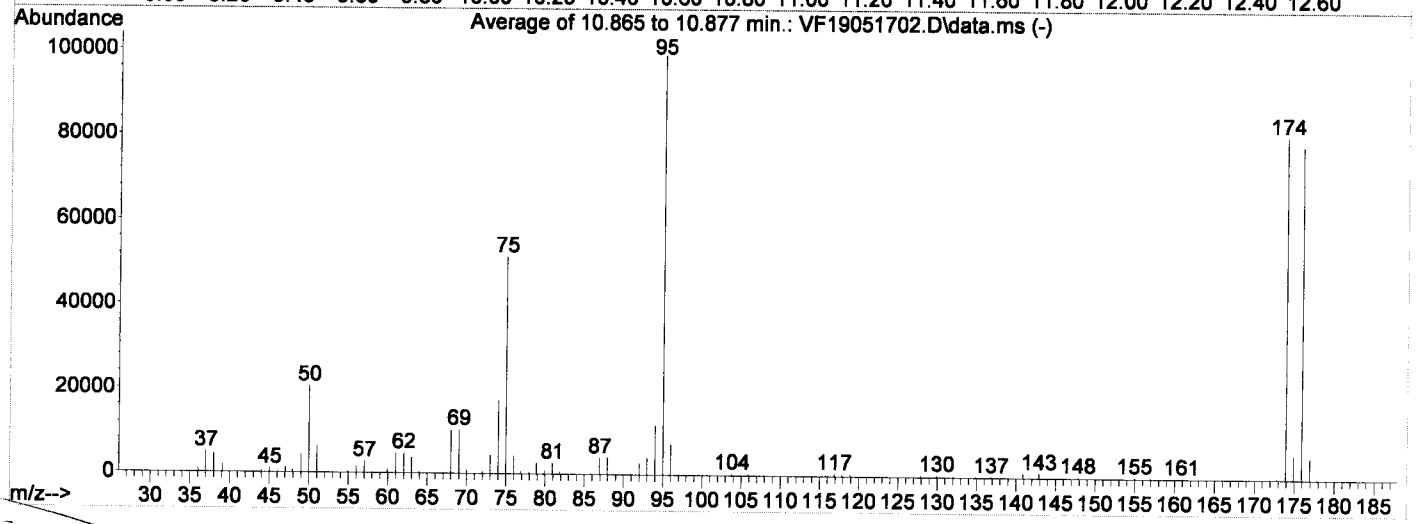
Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051702.D
Acq On : 17 May 2019 10:50 am
Operator : TB
Sample : 9E17019-TUN1
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\VF190507S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Wed May 08 13:32:58 2019

5/17/19





AutoFind: Scans 1525, 1526, 1527; Background Corrected with Scan 1518

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	12	40	20.7	20450	PASS
75	95	30	60	52.0	51394	PASS
95	95	100	100	100.0	98901	PASS
96	95	5	9	7.3	7244	PASS
173	174	0.00	2	0.4	295	PASS
174	95	50	200	81.4	80522	PASS
175	174	5	9	6.9	5518	PASS
176	174	95	101	97.3	78386	PASS
177	176	5	9	6.5	5114	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051702.D
Acq On : 17 May 2019 10:50 am
Operator : TB
Sample : 9E17019-TUN1
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:34:18 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

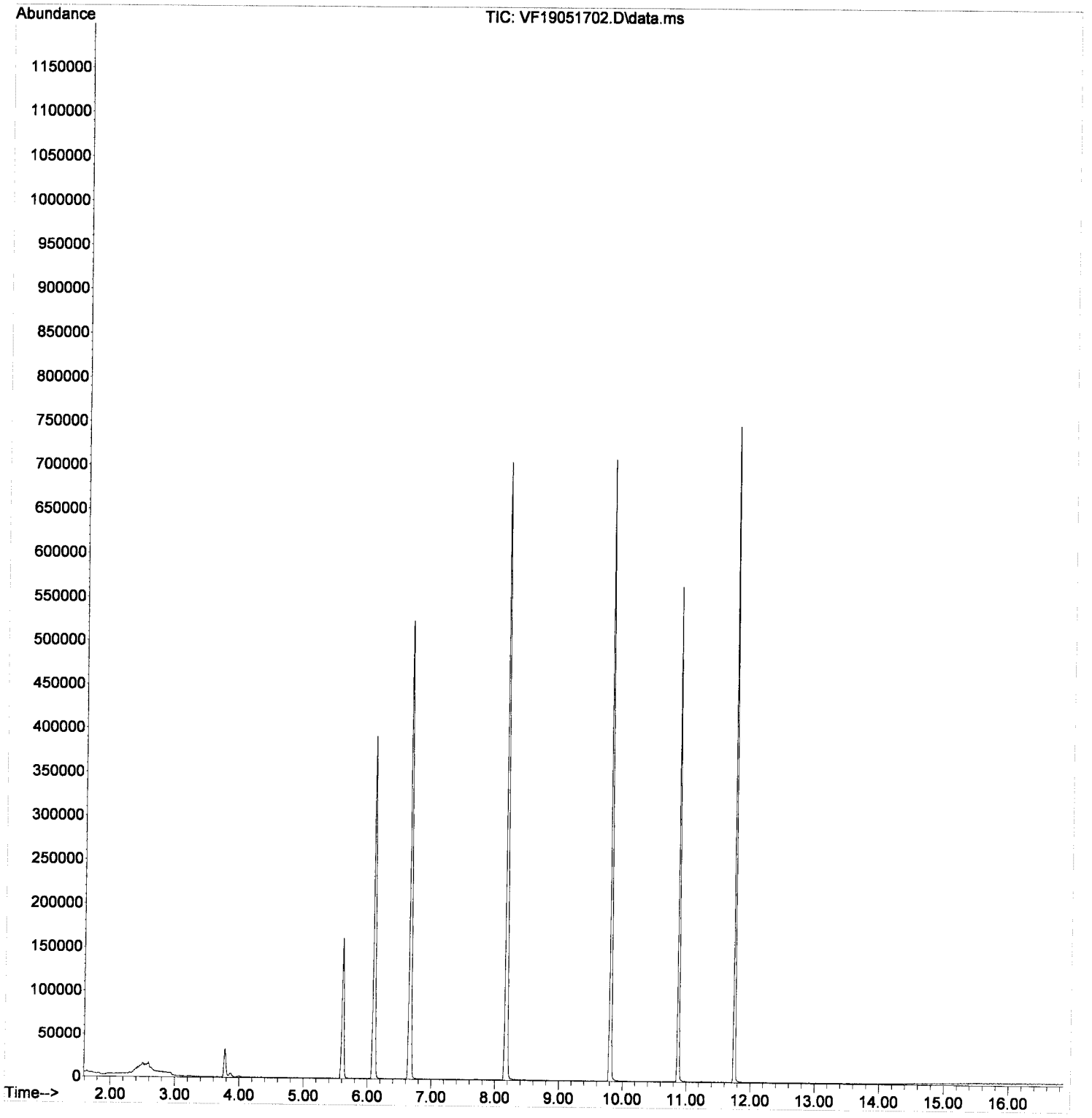
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.096	168	291109	50.00	ug/L	0.00
37) Chlorobenzene-d5 (I)	9.807	117	364873	50.00	ug/L	0.00
57) 1,4-Dichlorobenzene-d4...	11.753	152	159053	50.00	ug/L	0.00
System Monitoring Compounds						
26) Dibromofluoromethane (S)	5.609	111	105413	45.13	ug/L	0.00
32) 1,4-Difluorobenzene (S)	6.661	114	464396	51.63	ug/L	0.00
39) Toluene-d8 (S)	8.170	98	525978	48.76	ug/L	0.00
58) 4-Bromofluorobenzene (S)	10.871	174	125700	51.33	ug/L	0.00
Target Compounds						Qvalue
5) Bromomethane	2.306	96	702	0.29	ug/L	79
12) Methylene Chloride	3.778	84	15753	0.12	ug/L	96
13) Acetone	3.869	43	5978	4.00	ug/L	90
28) 2-Butanone (MEK)	5.755	43	767	0.34	ug/L	54

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051702.D
Acq On : 17 May 2019 10:50 am
Operator : TB
Sample : 9E17019-TUN1
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:34:18 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:38:42 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

5/17/19

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 (I)	50.000	50.000	0.0	124	0.00	
2		Dichlorodifluoromethane	20.000	19.845	0.8	121	-0.01	
3	P	Chloromethane	20.000	18.729	6.4	113	0.00	
4	C	Vinyl Chloride	20.000	20.289	-1.4	122	-0.02	
5		Bromomethane	20.000	24.723	-23.6#	155	-0.01	-QS6
6		Chloroethane	20.000	21.616	-8.1	129	0.00	
7		Trichlorofluoromethane	20.000	23.267	-16.3	137	0.00	
8	C	1,1-Dichloroethene	20.000	16.730	16.3	99	0.00	
9		Carbon Disulfide	20.000	17.889	10.6	114	0.00	
10		Freon 113	20.000	21.603	-8.0	129	0.00	
11		Iodomethane	20.000	9.683	51.6#	64	0.00	-NR
12		Methylene Chloride	20.000	14.830	25.9#	92	0.00	-QS5
13		Acetone	40.000	32.830	17.9	95	0.00	
14		t-1,2-Dichloroethene	20.000	18.565	7.2	107	0.00	
15		n-Hexane	20.000	21.870	-9.4	136	0.00	
16		Methyl-tert-butyl-ether	20.000	20.691	-3.5	122	-0.01	
17	P	1,1-Dichloroethane	20.000	18.872	5.6	106	0.00	
18		Acrylonitrile	20.000	18.893	5.5	106	0.00	
19		c-1,2-Dichloroethene	20.000	21.046	-5.2	117	0.00	
20		2,2-Dichloropropane	20.000	25.818	-29.1#	148	0.00	-QS6 ✓
21		Bromochloromethane	20.000	20.531	-2.7	115	0.00	
22	C	Chloroform	20.000	21.308	-6.5	122	0.00	
23		Carbon Tetrachloride	20.000	24.662	-23.3#	163	0.00	-QS6
24		Tetrahydrofuran	20.000	18.130	9.4	105	0.00	
25		1,1,1-Trichloroethane	20.000	24.048	-20.2#	132	0.00	
26	S	Dibromofluoromethane (S)	50.000	51.404	-2.8	121	0.00	
27		1,1-Dichloropropene	20.000	21.556	-7.8	124	0.00	
28		2-Butanone (MEK)	40.000	37.517	6.2	109	0.00	
29		Benzene	20.000	20.921	-4.6	123	0.00	
30		1,2-Dichloroethane (EDC)	20.000	19.807	1.0	115	0.00	
31		iso-Butyl Alcohol	500.000	516.938	-3.4	140	0.01	
32	S	1,4-Difluorobenzene (S)	50.000	51.939	-3.9	129	0.00	
33		Trichloroethene (TCE)	20.000	21.102	-5.5	124	0.00	
34		Dibromomethane	20.000	21.329	-6.6	118	0.00	
35	C	1,2-Dichloropropane	20.000	21.415	-7.1	126	0.00	
36		Bromodichloromethane	20.000	21.344	-6.7	138	0.00	
37		Chlorobenzene-d5 (I)	50.000	50.000	0.0	145	0.00	
38		c-1,3-Dichloropropene	20.000	19.110	4.5	138	0.00	
39	S	Toluene-d8 (S)	50.000	47.397	5.2	133	0.00	
40	C	Toluene	20.000	18.661	6.7	134	0.00	
41		Tetrachloroethene (PCE)	20.000	19.856	0.7	130	0.00	
42		4-Methyl-2-Pentanone (MIBK)	40.000	38.971	2.6	124	0.00	
43		t-1,3-Dichloropropene	20.000	20.074	-0.4	151	0.00	
44		1,1,2-Trichloroethane	20.000	21.377	-6.9	135	0.00	
45		Dibromochloromethane	20.000	21.062	-5.3	169	0.00	
46		1,3-Dichloropropane	20.000	20.956	-4.8	134	0.00	
47		1,2-Dibromoethane (EDB)	20.000	19.505	2.5	139	0.00	
48		2-Hexanone	40.000	36.084	9.8	123	0.00	
49	P	Chlorobenzene	20.000	19.567	2.2	144	0.00	
50	C	Ethylbenzene	20.000	20.701	-3.5	147	0.00	

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:38:42 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

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)	
51		1,1,1,2-Tetrachloroethane	20.000	23.412	-17.1	189	0.00	
52		m,p-Xylenes (2)	40.000	43.474	-8.7	146	0.00	
53		o-Xylene	20.000	21.727	-8.6	149	0.00	
54		Styrene	20.000	20.291	-1.5	149	0.00	
55	P	Bromoform	20.000	24.706	-23.5#	190	0.00	-QS6
56		Isopropylbenzene	20.000	23.282	-16.4	153	0.00	
57	I	1,4-Dichlorobenzene-d4 (I)	50.000	50.000	0.0	143	0.00	
58	S	4-Bromofluorobenzene (S)	50.000	50.525	-1.0	147	0.00	
59		Bromobenzene	20.000	20.988	-4.9	144	0.00	
60		n-Propylbenzene	20.000	22.865	-14.3	155	0.00	
61	P	1,1,2,2-Tetrachloroethane	20.000	22.829	-14.1	142	0.00	
62		2-Chlorotoluene	20.000	21.942	-9.7	150	0.00	
63		1,3,5-Trimethylbenzene	20.000	23.361	-16.8	150	0.00	
64		1,2,3-Trichloropropane	20.000	21.104	-5.5	138	0.00	
65		t-1,4-Dichloro-2-butene	20.000	20.607	-3.0	182	0.00	
66		4-Chlorotoluene	20.000	22.929	-14.6	153	0.00	
67		tert-Butylbenzene	20.000	22.782	-13.9	149	0.00	
68		1,2,4-Trimethylbenzene	20.000	23.269	-16.3	148	0.00	
69		sec-Butylbenzene	20.000	23.543	-17.7	154	0.00	
70		4-Isopropyltoluene	20.000	22.583	-12.9	149	0.00	
71		1,3-Dichlorobenzene	20.000	21.257	-6.3	144	0.00	
72		1,4-Dichlorobenzene	20.000	20.122	-0.6	143	0.00	
73		n-Butylbenzene	20.000	23.602	-18.0	155	0.00	
74		1,2-Dichlorobenzene	20.000	20.812	-4.1	137	0.00	
75		1,2-Dibromo-3-Chloropropane	20.000	18.163	9.2	155	0.00	
76		Hexachlorobutadiene	20.000	21.816	-9.1	147	0.00	
77		1,2,4-Trichlorobenzene	20.000	21.059	-5.3	133	0.00	
78		Naphthalene	20.000	17.405	13.0	125	0.00	
79		1,2,3-Trichlorobenzene	20.000	19.747	1.3	125	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\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:35:00 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

5/17/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.091	168	307085	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.802	117	398846	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.749	152	181920	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.605	111	126649	51.40	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.657	114	492795	51.94	ug/L		0.00
39) Toluene-d8 (S)	8.166	98	558917	47.40	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.867	174	141525	50.53	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.620	85	56890	19.84	ug/L		98
3) Chloromethane	1.833	50	78247	18.73	ug/L		97
4) Vinyl Chloride	1.924	62	83813	20.29	ug/L		96
5) Bromomethane	2.289	96	63227	24.72	ug/L		95
6) Chloroethane	2.423	64	12129	21.62	ug/L	#	71
7) Trichlorofluoromethane	2.557	101	16942	23.27	ug/L		97
8) 1,1-Dichloroethene	3.129	61	88826	16.73	ug/L		80
9) Carbon Disulfide	3.147	76	122391	17.89	ug/L		99
10) Freon 113	3.177	101	69911	21.60	ug/L		82
11) Iodomethane	3.281	142	12458	9.68	ug/L		92
12) Methylene Chloride	3.774	84	65593	14.83	ug/L		91
13) Acetone	~~3.859~~	~~43~~	~~27720~~	~~17.60~~	~~ug/L~~		~~94~~ MI same as curve
14) t-1,2-Dichloroethene	3.938	61	94162	18.57	ug/L		98
15) n-Hexane	4.017	86	19386	21.87	ug/L	#	86
16) Methyl-tert-butyl-ether	4.072	73	212096	20.69	ug/L		96
17) 1,1-Dichloroethane	4.577	63	121168	18.87	ug/L		96
18) Acrylonitrile	~~4.650~~	~~53~~	~~20586~~	~~12.45~~	~~ug/L~~		~~95~~ MI
19) c-1,2-Dichloroethene	5.130	61	98293	21.05	ug/L		92
20) 2,2-Dichloropropane	5.234	77	83084	25.82	ug/L		89
21) Bromochloromethane	5.331	49	57218	20.53	ug/L		84
22) Chloroform	5.416	83	121620	21.31	ug/L		95
23) Carbon Tetrachloride	5.544	117	63793	24.66	ug/L		96
24) Tetrahydrofuran	5.593	42	31258	18.13	ug/L		98
25) 1,1,1-Trichloroethane	5.617	97	96703	24.05	ug/L		96
27) 1,1-Dichloropropene	5.745	75	102270	21.56	ug/L		98
28) 2-Butanone (MEK)	5.751	43	88298	37.52	ug/L		93
29) Benzene	6.000	78	310533	20.92	ug/L		98
30) 1,2-Dichloroethane (EDC)	6.219	62	99450	19.81	ug/L		97
31) iso-Butyl Alcohol	6.298	43	88175	516.94	ug/L		97
33) Trichloroethene (TCE)	6.621	130	75673	21.10	ug/L		94
34) Dibromomethane	7.077	93	38247	21.33	ug/L		87
35) 1,2-Dichloropropane	7.180	63	75975	21.41	ug/L		100
36) Bromodichloromethane	7.259	83	62713	21.34	ug/L		98
38) c-1,3-Dichloropropene	7.965	75	83527	19.11	ug/L		93
40) Toluene	8.227	91	314661	18.66	ug/L		99
41) Tetrachloroethene (PCE)	8.671	166	73308	19.86	ug/L		91
42) 4-Methyl-2-Pentanone (...	8.677	43	169867	38.97	ug/L		93
43) t-1,3-Dichloropropene	8.713	75	78279	20.07	ug/L		95
44) 1,1,2-Trichloroethane	8.884	97	62492	21.38	ug/L		93
45) Dibromochloromethane	9.072	129	39645	21.06	ug/L		96
46) 1,3-Dichloropropane	9.170	76	118563	20.96	ug/L		92
47) 1,2-Dibromoethane (EDB)	9.310	107	59508	19.50	ug/L		97
48) 2-Hexanone	9.547	43	113606	36.08	ug/L		94

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:35:00 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

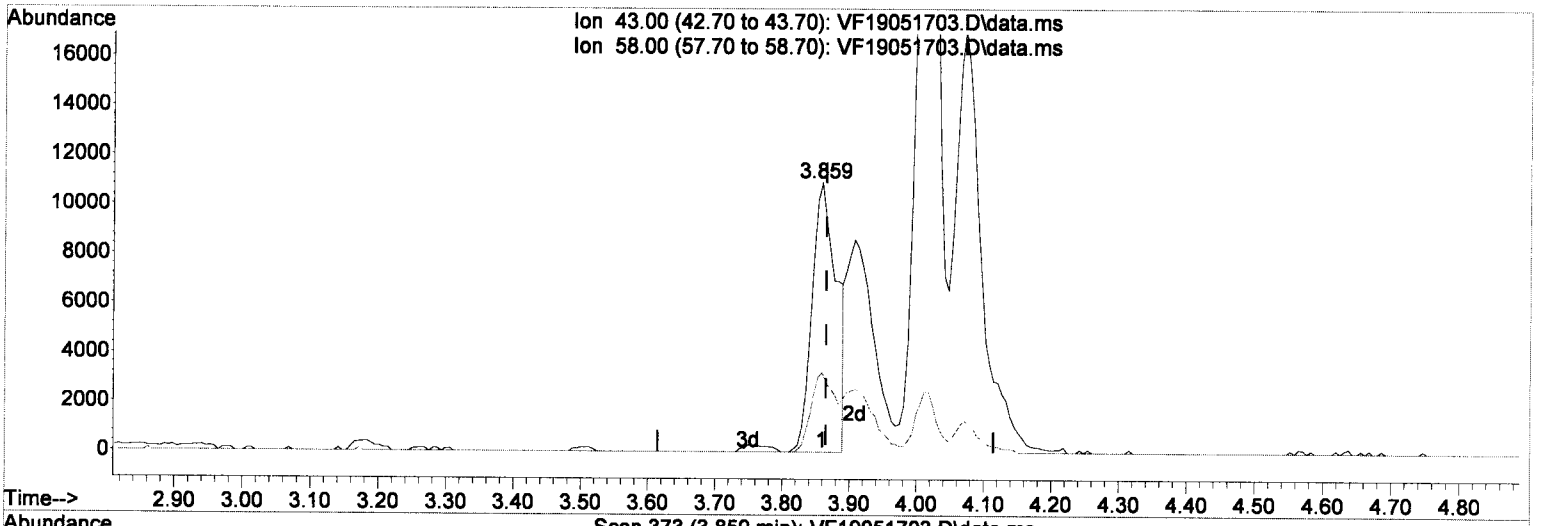
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
49) Chlorobenzene	9.821	112	188107	19.57 ug/L	96
50) Ethylbenzene	9.845	91	332394	20.70 ug/L	97
51) 1,1,1,2-Tetrachloroethane	9.881	131	51625	23.41 ug/L	98
52) m,p-Xylenes (2)	9.979	91	488959	43.47 ug/L	96
53) o-Xylene	10.362	91	235215	21.73 ug/L	96
54) Styrene	10.411	104	164250	20.29 ug/L	95
55) Bromoform	10.435	173	23608	24.71 ug/L	96
56) Isopropylbenzene	10.630	105	285959	23.28 ug/L	97
59) Bromobenzene	10.952	156	68683	20.99 ug/L #	84
60) n-Propylbenzene	10.970	91	332443	22.87 ug/L	95
61) 1,1,2,2-Tetrachloroethane	11.037	83	78915	22.83 ug/L	99
62) 2-Chlorotoluene	11.104	126	64140	21.94 ug/L #	81
63) 1,3,5-Trimethylbenzene	11.129	105	219621	23.36 ug/L	96
64) 1,2,3-Trichloropropane	11.147	110	28928	21.10 ug/L #	79
65) t-1,4-Dichloro-2-butene	11.177	88	6969	20.61 ug/L #	86
66) 4-Chlorotoluene	11.232	91	198223	22.93 ug/L	96
67) tert-Butylbenzene	11.378	91	122978	22.78 ug/L	87
68) 1,2,4-Trimethylbenzene	11.433	105	219819	23.27 ug/L	98
69) sec-Butylbenzene	11.518	105	265271	23.54 ug/L	97
70) 4-Isopropyltoluene	11.627	119	211758	22.58 ug/L	97
71) 1,3-Dichlorobenzene	11.694	146	118680	21.26 ug/L	97
72) 1,4-Dichlorobenzene	11.761	146	122820	20.12 ug/L	98
73) n-Butylbenzene	11.944	91	188922	23.60 ug/L	95
74) 1,2-Dichlorobenzene	12.078	146	109036	20.81 ug/L	99
75) 1,2-Dibromo-3-Chloropr...	12.686	157	10211	18.16 ug/L #	69
76) Hexachlorobutadiene	13.191	223	16309	21.82 ug/L	94
77) 1,2,4-Trichlorobenzene	13.227	180	59242	21.06 ug/L	98
78) Naphthalene	13.501	128	185441	17.40 ug/L	99
79) 1,2,3-Trichlorobenzene	13.665	180	56553	19.75 ug/L	99

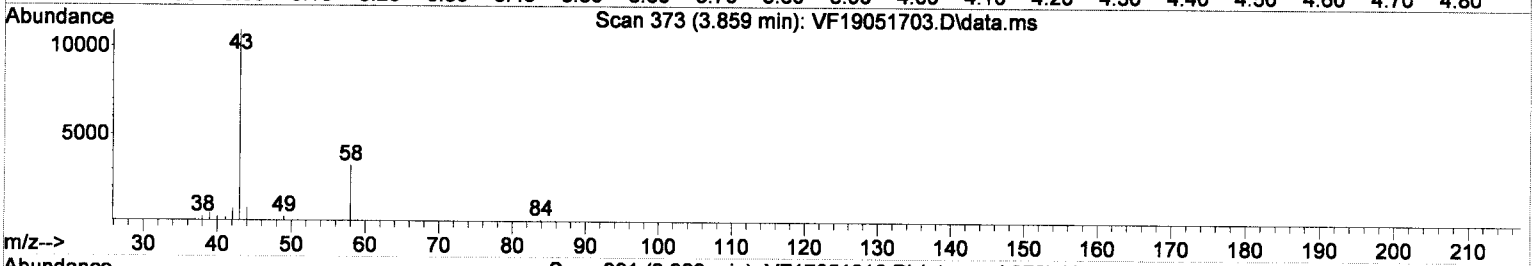
(#) = qualifier out of range (m) = manual integration (+) = signals summed

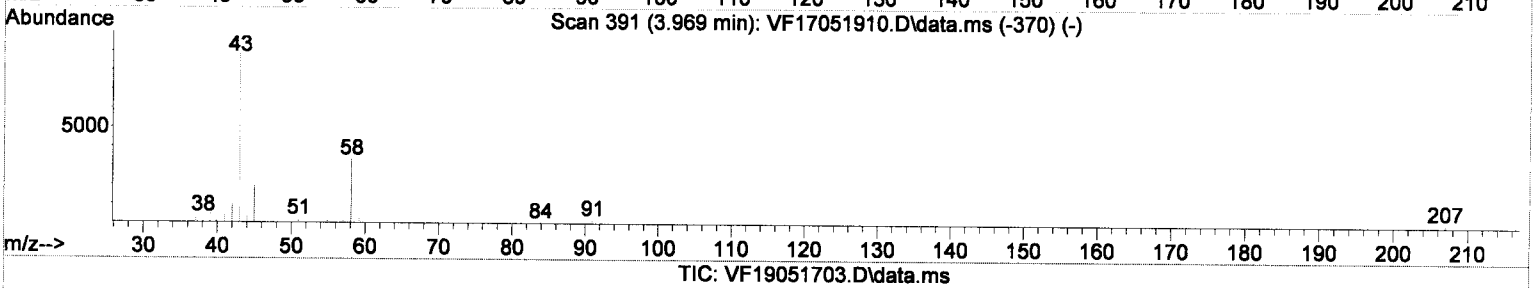
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:35:00 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration







TIC: VF19051703.D\data.ms

(13) Acetone

3.859min (-0.006) 17.60 ug/L

response 27720

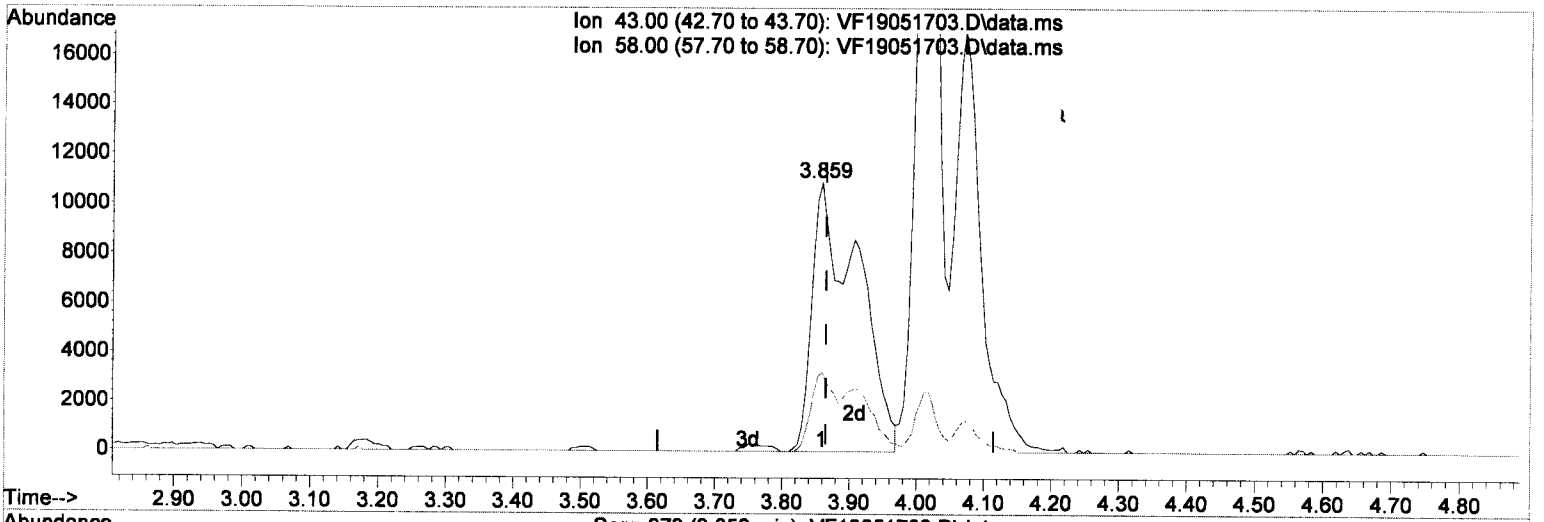
Ion	Exp%	Act%
43.00	100	100
58.00	33.10	29.79
0.00	0.00	0.00
0.00	0.00	0.00

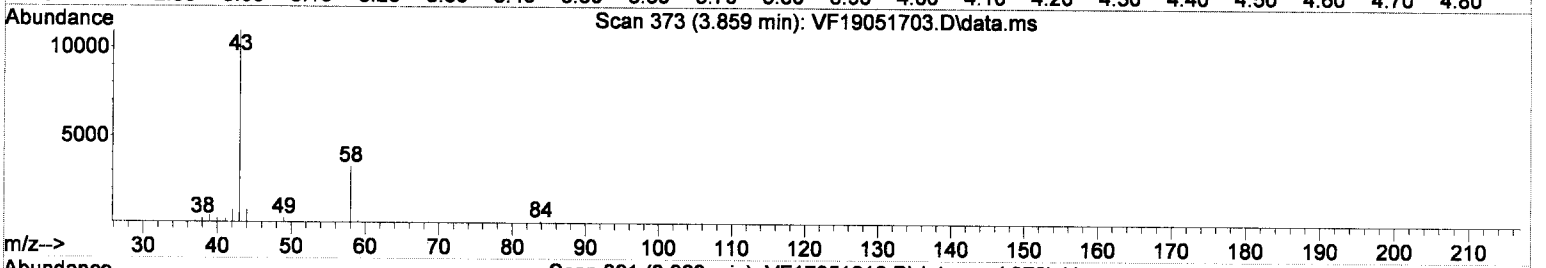
MI

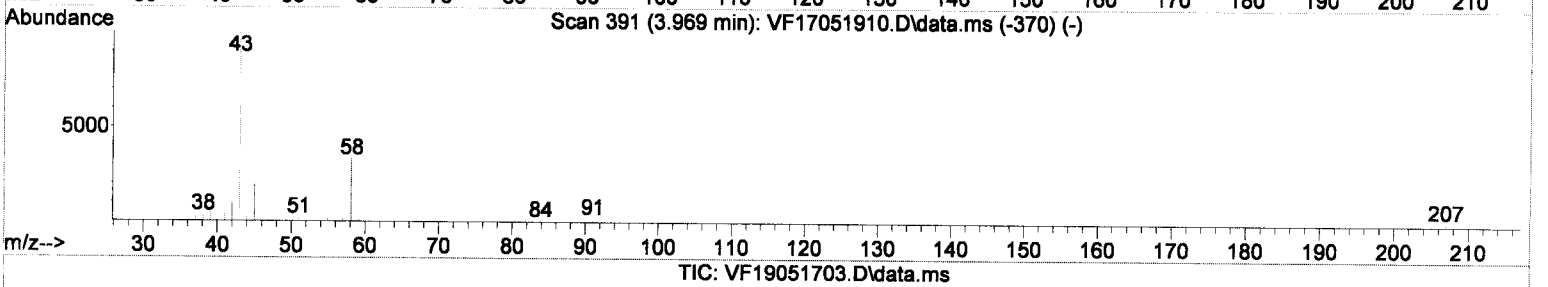
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:35:00 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration







TIC: VF19051703.D\data.ms

(13) Acetone

3.859min (-0.006) 32.83 ug/L (m)

5/17/19

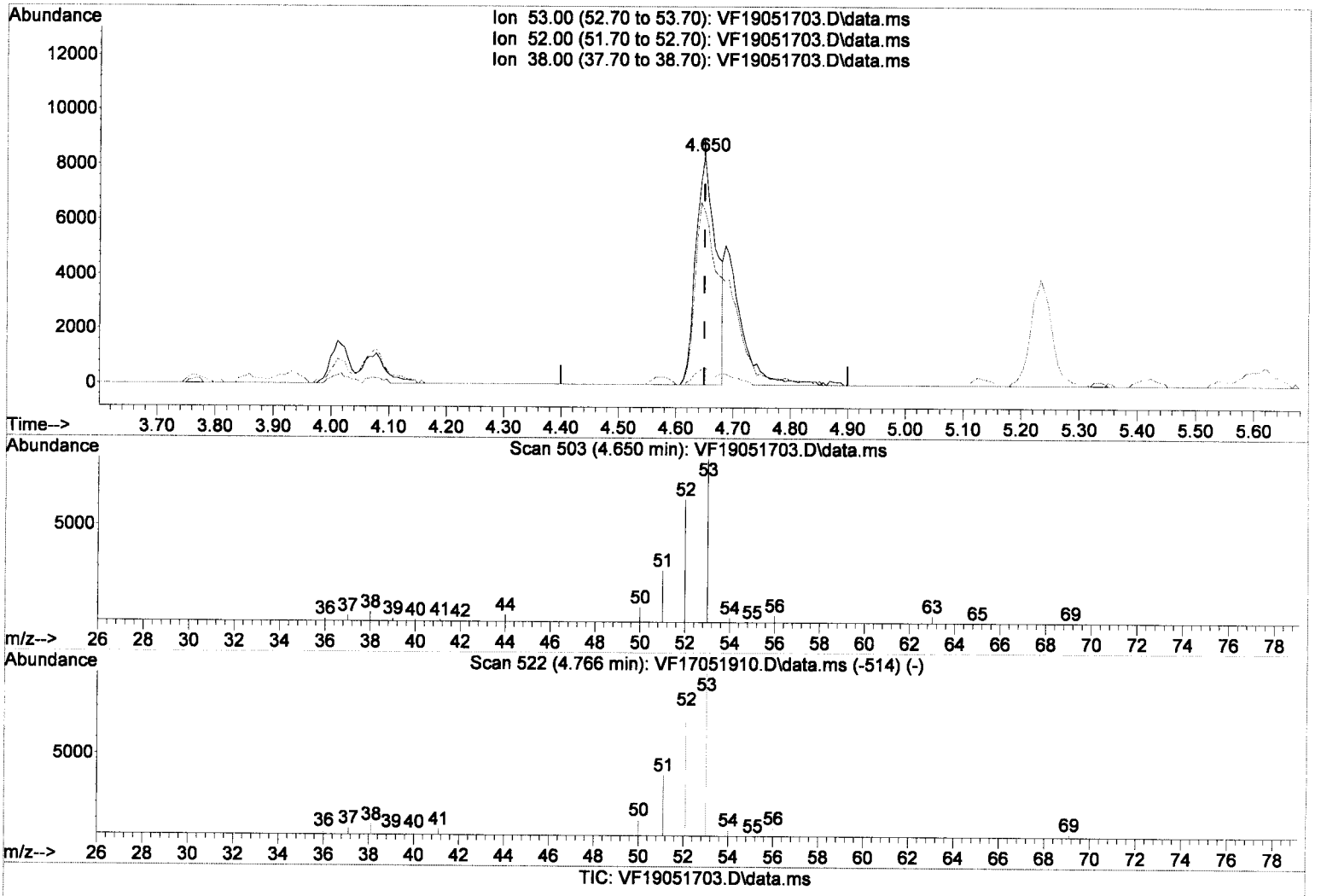
response 51707

Ion	Exp%	Act%
43.00	100	100
58.00	33.10	29.79
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:36:42 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



TIC: VF19051703.D\data.ms

(18) Acrylonitrile

4.650min (+0.000) 12.45 ug/L

response 20586

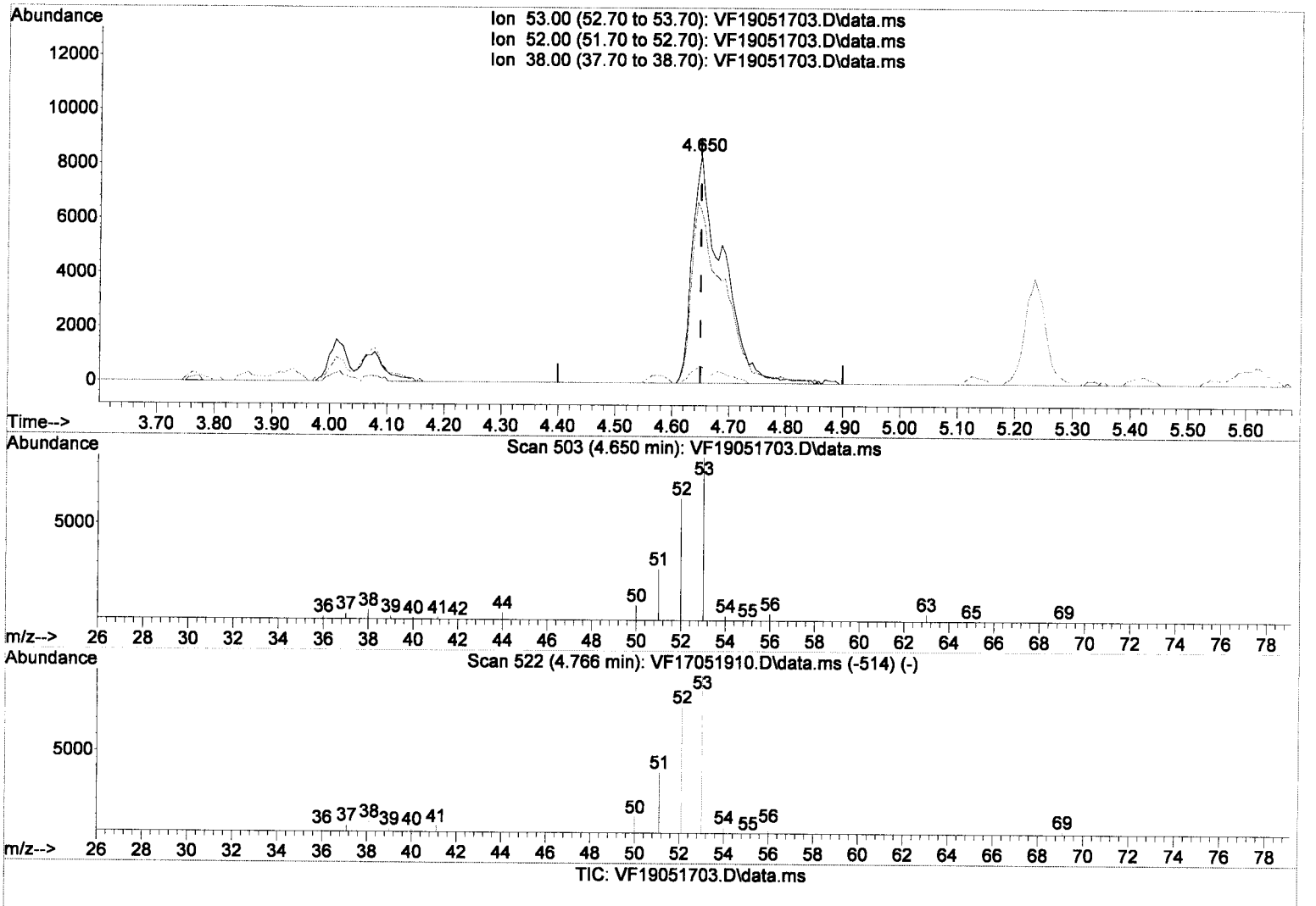
Ion	Exp%	Act%
53.00	100	100
52.00	80.20	75.66
38.00	6.00	7.34
0.00	0.00	0.00

MI

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:36:42 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



TIC: VF19051703.D\data.ms

(18) Acrylonitrile

4.650min (+0.000) 18.89 ug/L m

response 31244

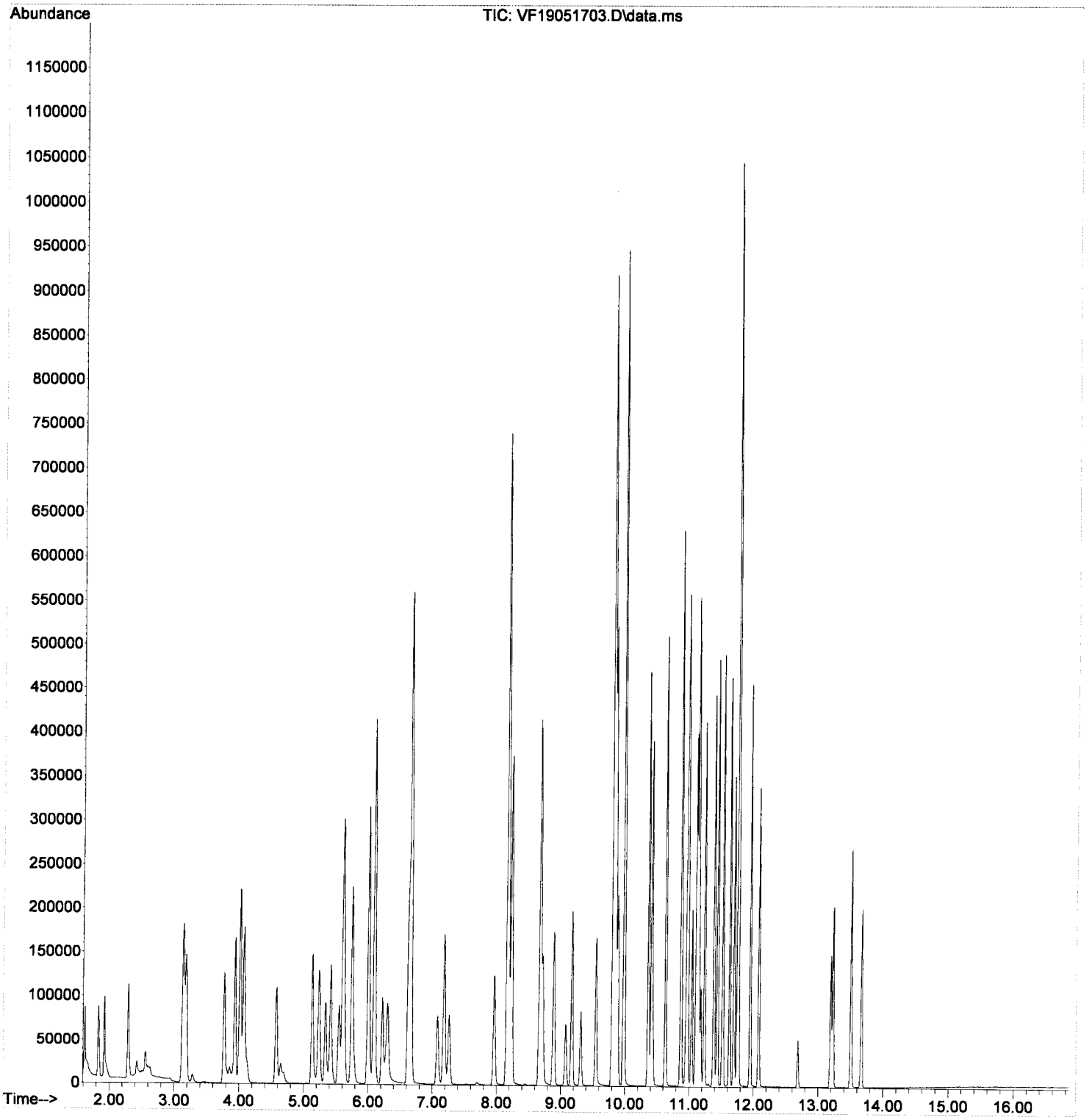
Ion	Exp%	Act%
53.00	100	100
52.00	80.20	75.66
38.00	6.00	7.34
0.00	0.00	0.00

5/17/19

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051703.D
Acq On : 17 May 2019 11:17 am
Operator : TB
Sample : 9051006-BS1
Misc : 50X 5g/5mLx1000uL/50mL VOC+MeOH A19E146
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 17 11:35:00 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051704.D
Acq On : 17 May 2019 11:44 am
Operator : TB
Sample : 9051006-BS2
Misc : 50X 5g/5mLx1000uL/50mL GX+MeOH A19E163
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:00 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

5/18/19

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	118	0.00
2	S	1,4-Difluorobenzene (Sur)	50.000	49.914	0.2	123	0.00
3	S	4-Bromofluorobenzene (Sur)	50.000	55.663	-11.3	132	0.00
4	S	Chlorobenzene-d5 (NR)	-1.000	0.000	0.0	126	0.00
5	H	TPHg (C5-C9)	500.000	557.876	-11.6	130	0.00
6	H	TPHg (C6-C10)	500.000	561.608	-12.3	130	0.00
7	H	CA-LUFT (C5-C12)	500.000	560.626	-12.1	131	0.00
8	H	NWTPH-Gx	500.000	562.687	-12.5	136	0.00
9		Benzene (NR)	-1.000	0.000	0.0	129	0.00
10	S	Toluene-d8 (NR)	-1.000	0.000	0.0	122	0.00
11	C	Toluene (NR)	-1.000	0.000	0.0	125	0.00
12	S	1,4-Dichlorobenzene-d4 (NR)	-1.000	0.000	0.0	132	0.00
13		Naphthalene (NR)	-1.000	0.000	0.0	128	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\9E17019\
Data File : VF19051704.D
Acq On : 17 May 2019 11:44 am
Operator : TB
Sample : 9051006-BS2
Misc : 50X 5g/5mLx1000uL/50mL GX+MeOH A19E163
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:00 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

5/18/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.095	168	312773	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.655	TIC	1230874	49.91	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	845232	55.66	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.806	TIC	1258071	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.164	TIC	1596253	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	1152133	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	7658933m	557.88	ug/L	
6) TPHg (C6-C10)	9.860	TIC	6111179m	561.61	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	8777568m	560.63	ug/L	
8) NWTPH-Gx	9.870	TIC	4899063m	562.69	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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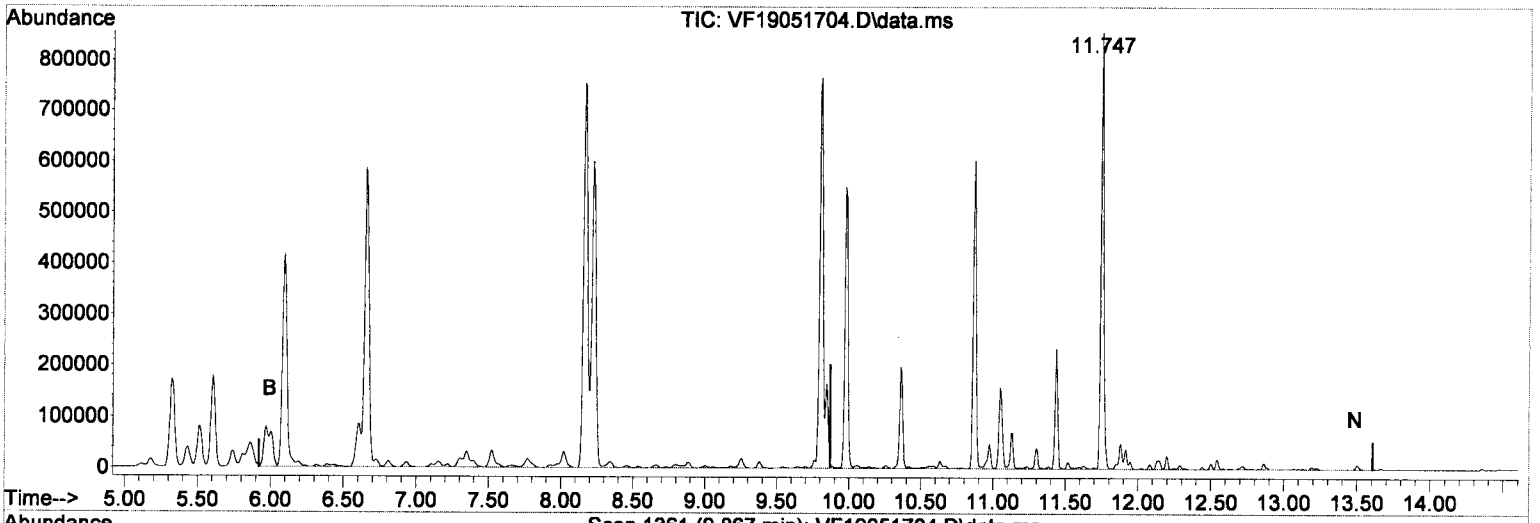
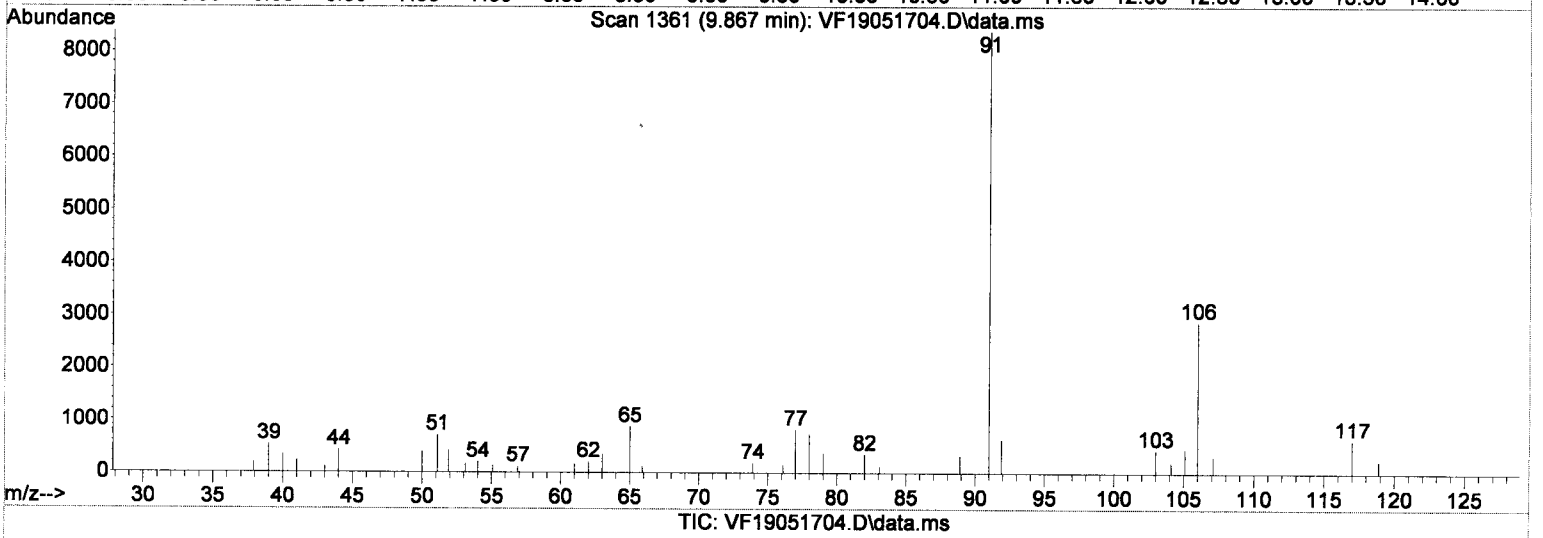
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051704.D
Acq On : 17 May 2019 11:44 am
Operator : TB
Sample : 9051006-BS2
Misc : 50X 5g/5mLx1000uL/50mL GX+MeOH A19E163
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:00 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





TIC: VF19051704.D\data.ms

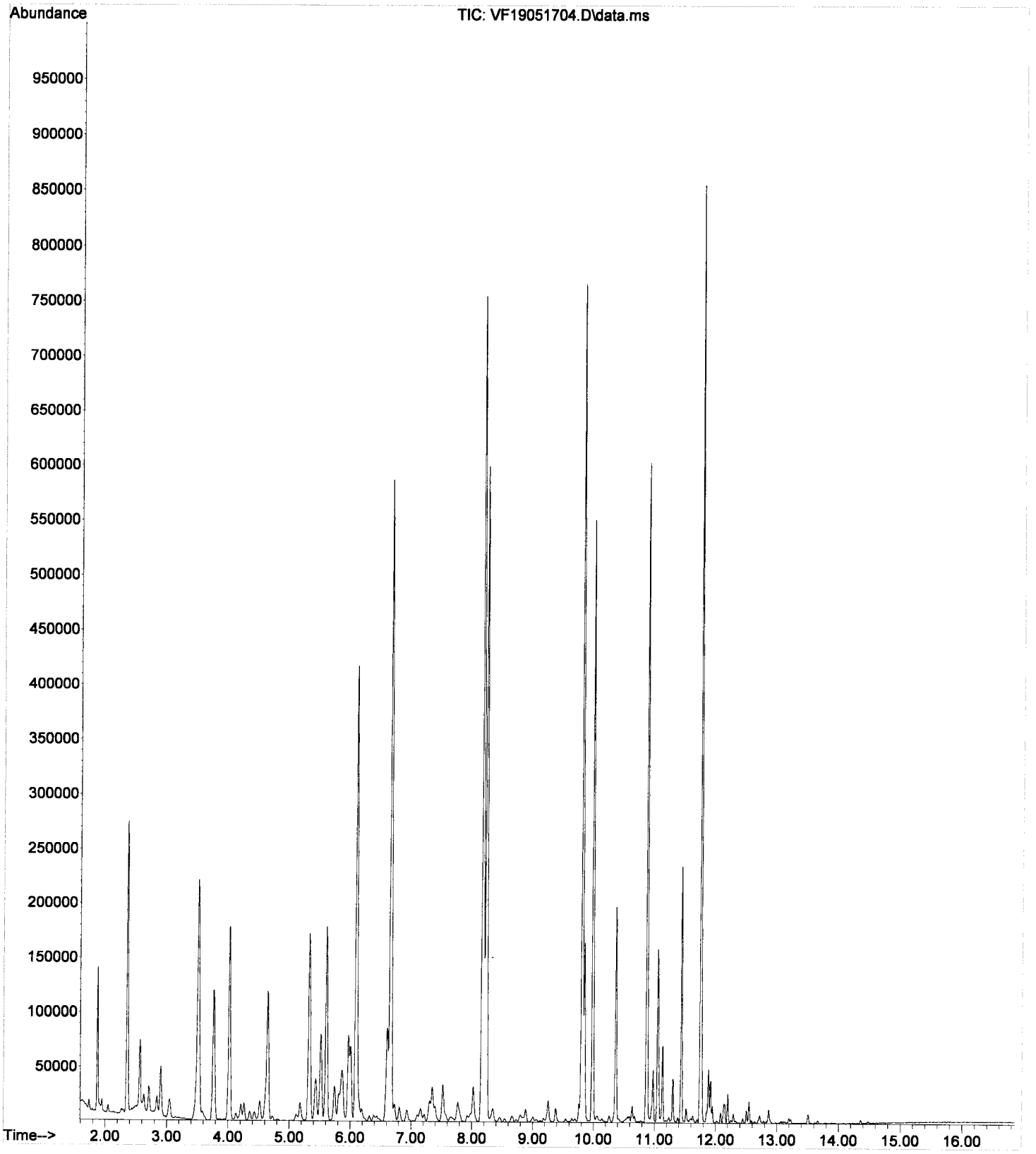
(8) NWTPH-Gx (H)

9.870min (0.000) 562.69 ug/L m

response 4899063

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

File :C:\msdchem\1\DATA\2019-05\9E17019\VF19051704.D
Operator : TB
Acquired : 17 May 2019 11:44 am using AcqMethod VF1601RUN.M
Instrument : VOA-GCMS6
Sample Name: 9051006-BS2
Misc Info : 50X 5g/5mLx1000uL/50mL GX+MeOH A19E163
Vial Number: 4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051705.D
Acq On : 17 May 2019 12:11 pm
Operator : TB
Sample : 9051006-BLK1
Misc : 50X 7.5g/5mLx1000uL/50mL DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:41 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

5/18/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.095	168	298883	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.661	TIC	1142820	48.50	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	836769	57.67	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.806	TIC	1210472	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1496249	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	1082017	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	411255m	0.56	ug/L	
6) TPHg (C6-C10)	9.860	TIC	381625m	15.59	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	416561m	4.40	ug/L	
8) NWTPH-Gx	9.870	TIC	-3114m	23.16	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051705.D
Acq On : 17 May 2019 12:11 pm
Operator : TB
Sample : 9051006-BLK1
Misc : 50X 7.5g/5mLx1000uL/50mL DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:35 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

5/18/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.095	168	299864	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.806	117	393771	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.753	152	175866	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.609	111	113630	47.23	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.661	114	487589	52.63	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	556578	47.81	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.871	174	138473	51.14	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.843	50	933	0.23	ug/L		87
5) Bromomethane	2.305	96	1118	0.45	ug/L		95
6) Chloroethane	2.476	64	116	0.21	ug/L	#	1
9) Carbon Disulfide	3.163	76	454	0.29	ug/L		77
12) Methylene Chloride	3.777	84	6958	Below Cal			95
13) Acetone	3.863	43	1275	0.83	ug/L		97
15) n-Hexane	4.027	86	1007	1.16	ug/L	#	80
28) 2-Butanone (MEK)	5.767	43	442	0.19	ug/L		54
40) Toluene	8.231	91	1939	0.12	ug/L		83
52) m,p-Xylenes (2)	9.989	91	1040	0.09	ug/L		91

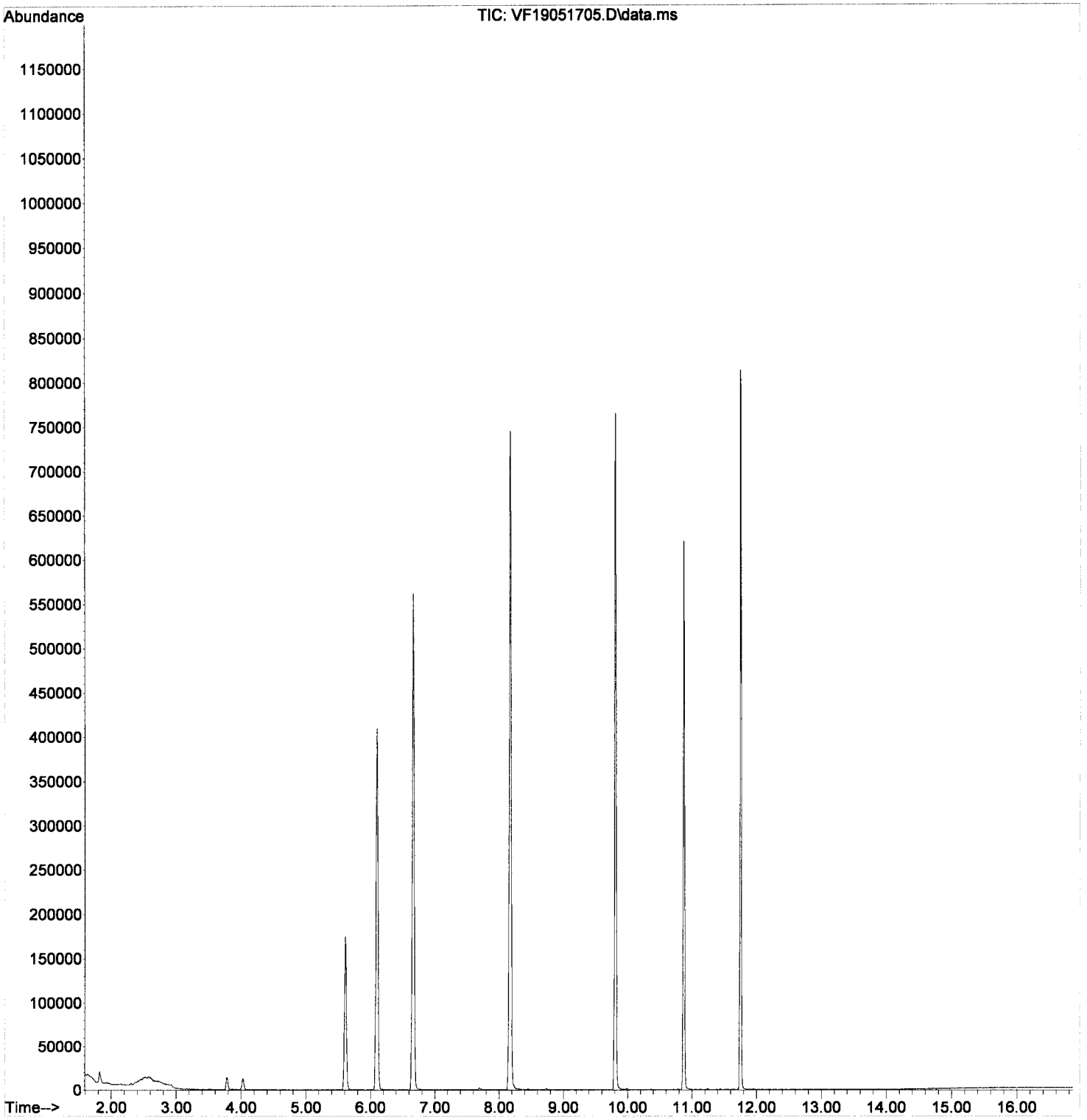
<LMDL

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051705.D
Acq On : 17 May 2019 12:11 pm
Operator : TB
Sample : 9051006-BLK1
Misc : 50X 7.5g/5mLx1000uL/50mL DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:35 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:19:07 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

5/18/19

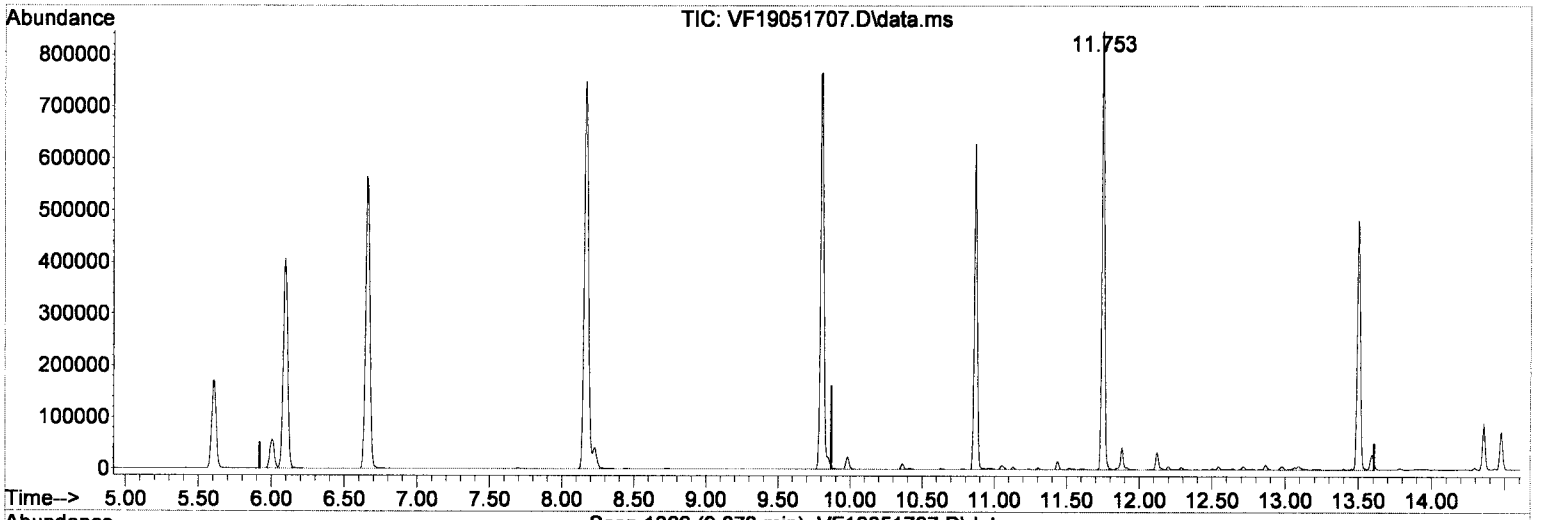
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Pentafluorobenzene (IS)	6.095	168	300548	50.00 ug/L	0.00
System Monitoring Compounds					
2) 1,4-Difluorobenzene (Sur)	6.655	TIC	1152953	48.66 ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	856835	58.72 ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.806	TIC	1266003	0.00 ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1521976	0.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.753	TIC	1133266	0.00 ug/L	0.00
Target Compounds					Qvalue
5) TPHg (C5-C9)	9.860	TIC	682122m	22.32 ug/L	NR
6) TPHg (C6-C10)	9.860	TIC	623137m	39.68 ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	874925m	36.43 ug/L	
8) NWTPH-Gx	9.870	TIC	1199678m	162.68 ug/L	

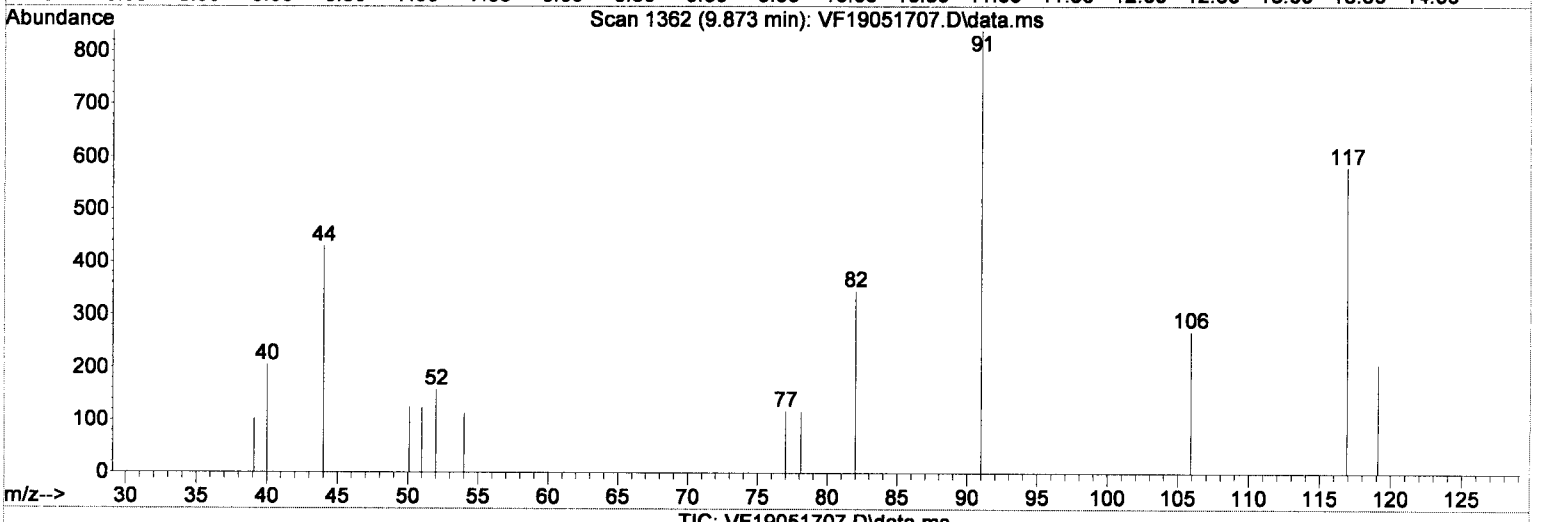
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:19:07 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx' by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





TIC: VF19051707.D\data.ms

(8) NWTPH-Gx (H)

9.870min (0.000) 162.68 ug/L m

response 1199678

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	2.47#
0.00	0.00	1.86#
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

5/18/19

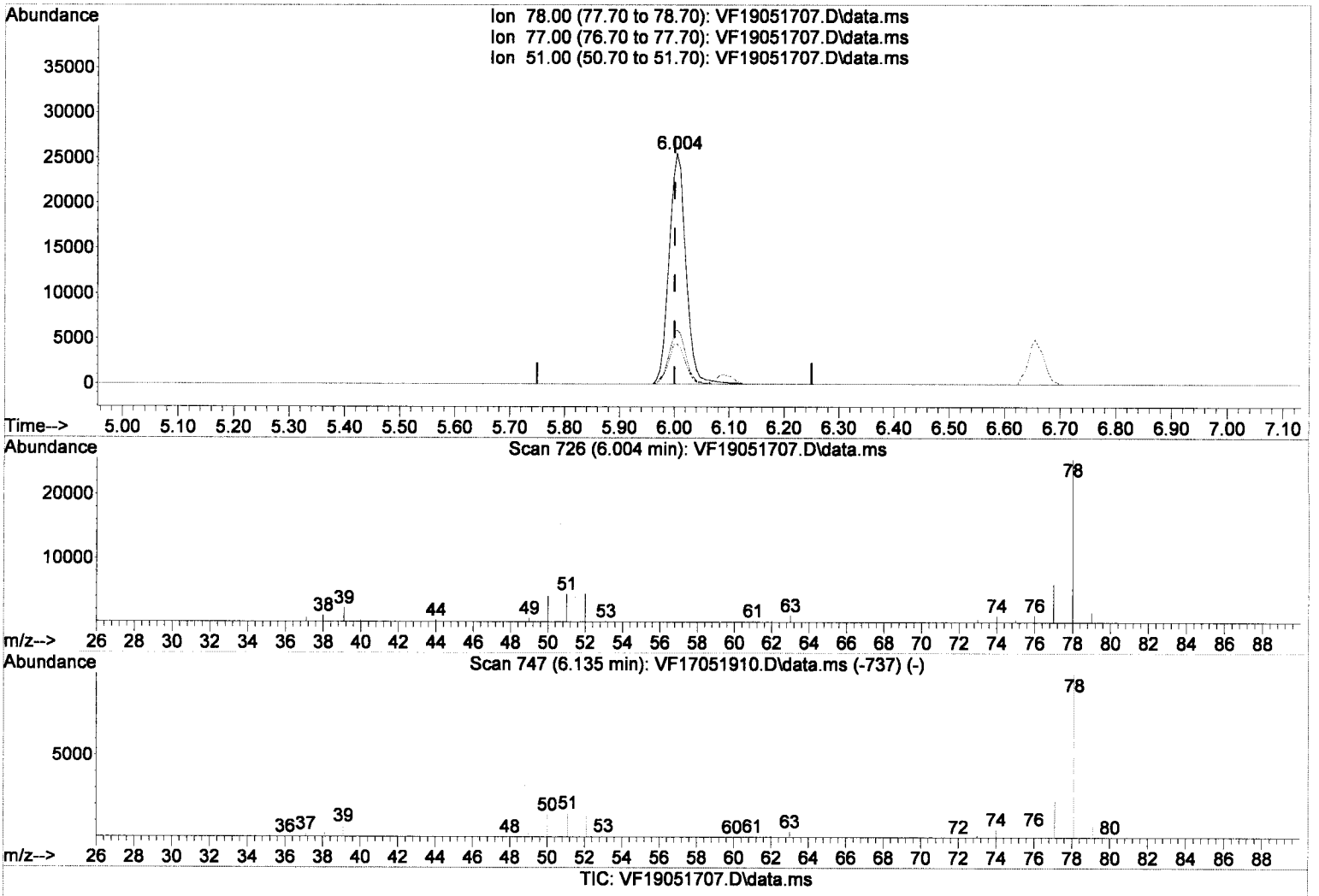
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Pentafluorobenzene (I)	6.095	168	300548	50.00 ug/L	0.00
37) Chlorobenzene-d5 (I)	9.806	117	399940	50.00 ug/L	0.00
57) 1,4-Dichlorobenzene-d4...	11.753	152	182344	50.00 ug/L	0.00
System Monitoring Compounds					
26) Dibromofluoromethane (S)	5.602	111	112857	46.80 ug/L	0.00
32) 1,4-Difluorobenzene (S)	6.655	114	490348	52.81 ug/L	0.00
39) Toluene-d8 (S)	8.170	98	561673	47.50 ug/L	0.00
58) 4-Bromofluorobenzene (S)	10.871	174	140118	49.91 ug/L	0.00
Target Compounds					Qvalue
3) Chloromethane	1.837	50	488	0.12 ug/L #	48 <MDL
5) Bromomethane	2.293	96	677	0.27 ug/L	88
9) Carbon Disulfide	3.151	76	318	0.27 ug/L	77
12) Methylene Chloride	3.777	84	7772	Below Cal	88
13) Acetone	3.862	43	1961	1.27 ug/L	98
15) n-Hexane	4.021	86	852	0.98 ug/L #	76
28) 2-Butanone (MEK)	5.761	43	525	0.23 ug/L	54
29) Benzene	6.004	78	54421	3.75 ug/L	98
40) Toluene	8.230	91	33483	1.98 ug/L	96
50) Ethylbenzene	9.849	91	13535	0.84 ug/L	98
52) m,p-Xylenes (2)	9.982	91	13074	1.16 ug/L	96
53) o-Xylene	10.366	91	5892	0.54 ug/L	98
54) Styrene	10.420	104	1113	0.33 ug/L	92 <MDL
56) Isopropylbenzene	10.633	105	1382	0.11 ug/L	93
60) n-Propylbenzene	10.980	91	1753	0.12 ug/L	88
63) 1,3,5-Trimethylbenzene	11.132	105	2828	0.30 ug/L	84
67) tert-Butylbenzene	11.436	91	828	0.15 ug/L #	51
68) 1,2,4-Trimethylbenzene	11.436	105	7450	0.79 ug/L	97
69) sec-Butylbenzene	11.522	105	1435	0.13 ug/L	83 <MDL
78) Naphthalene	13.505	128	347664	32.16 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



TIC: VF19051707.D\data.ms

(29) Benzene

6.004min (+0.004) 3.75 ug/L

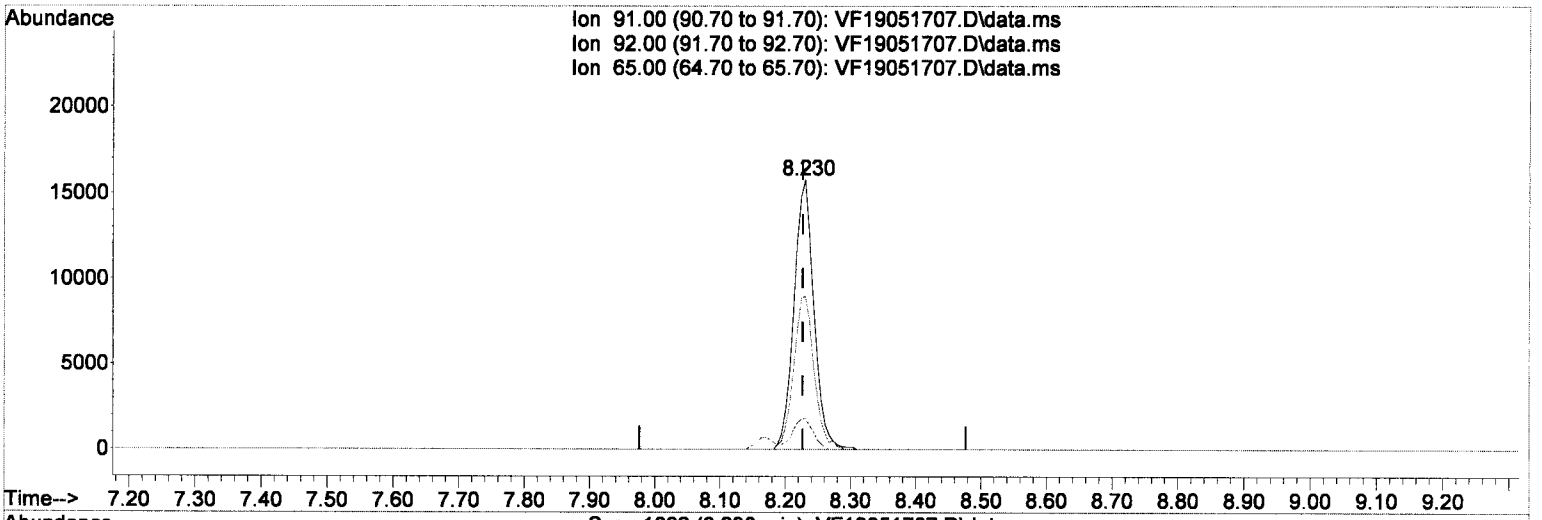
response 54421

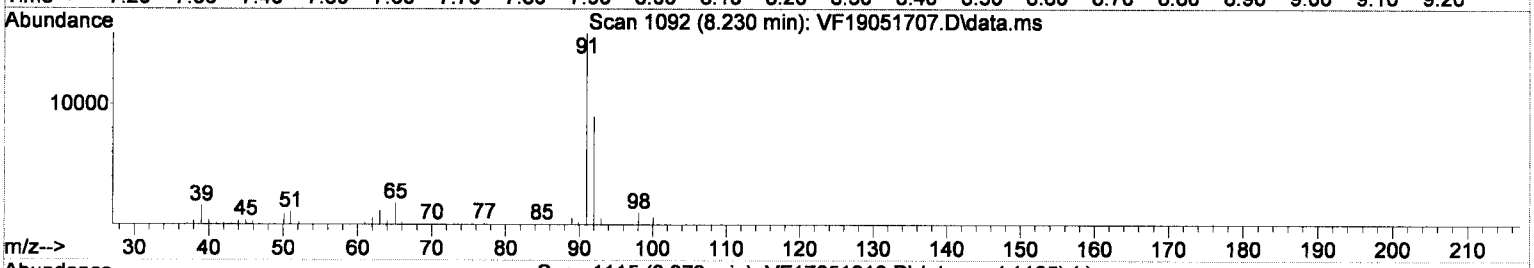
Ion	Exp%	Act%
78.00	100	100
77.00	23.20	23.56
51.00	15.50	17.48
0.00	0.00	0.00

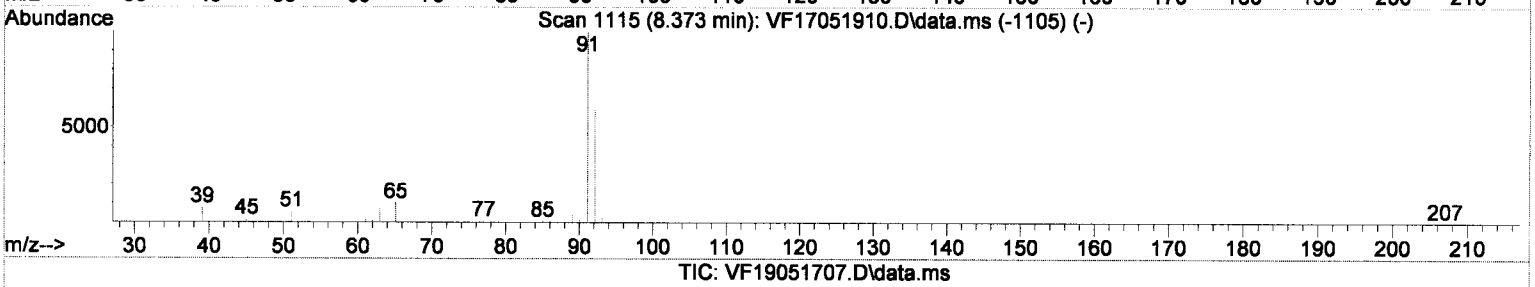
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration







TIC: VF19051707.D\data.ms

(40) Toluene (C)

8.230min (+0.004) 1.98 ug/L

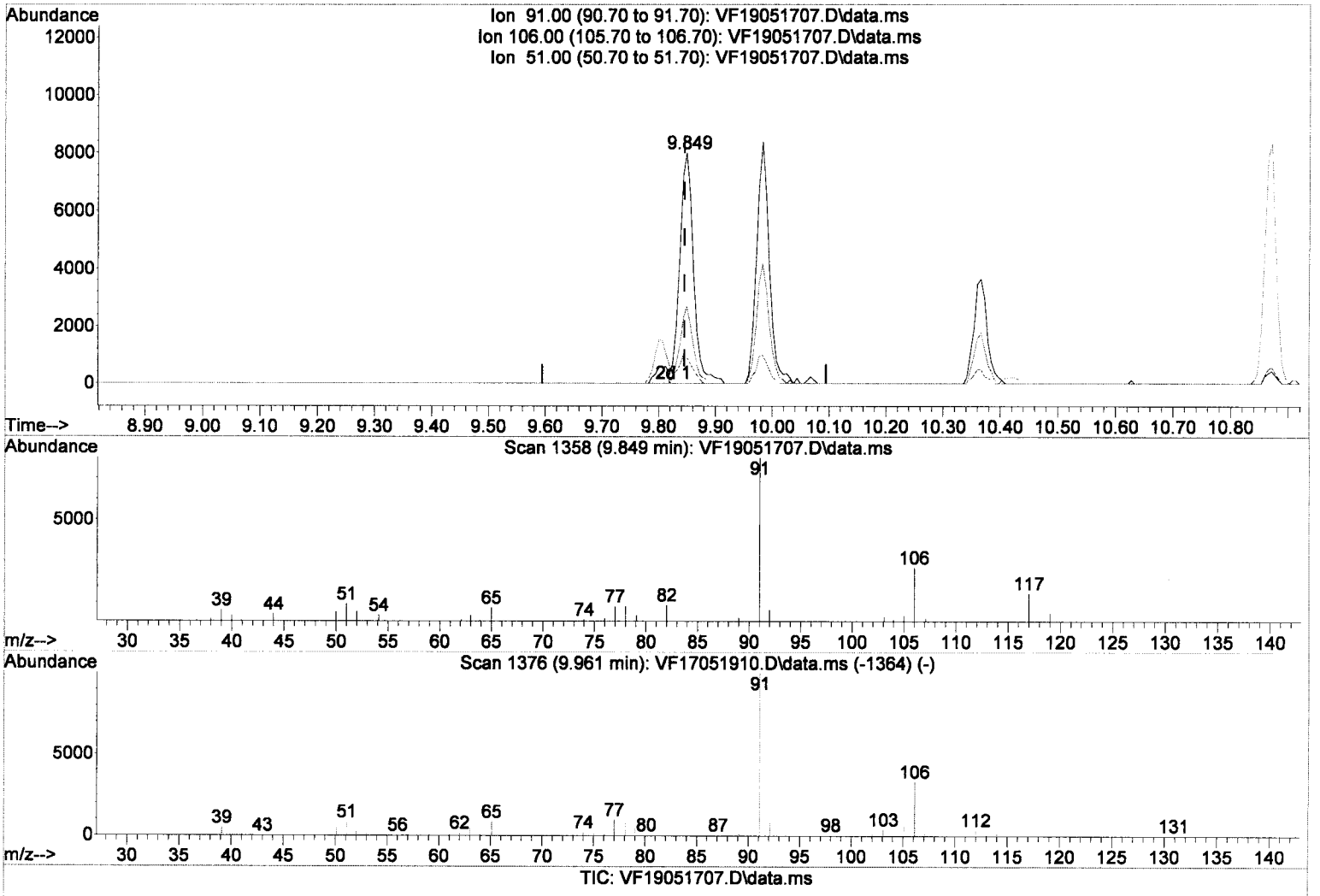
response 33483

Ion	Exp%	Act%
91.00	100	100
92.00	60.20	56.87
65.00	11.90	11.67
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



TIC: VF19051707.D\data.ms

(50) Ethylbenzene (C)

9.849min (+0.004) 0.84 ug/L

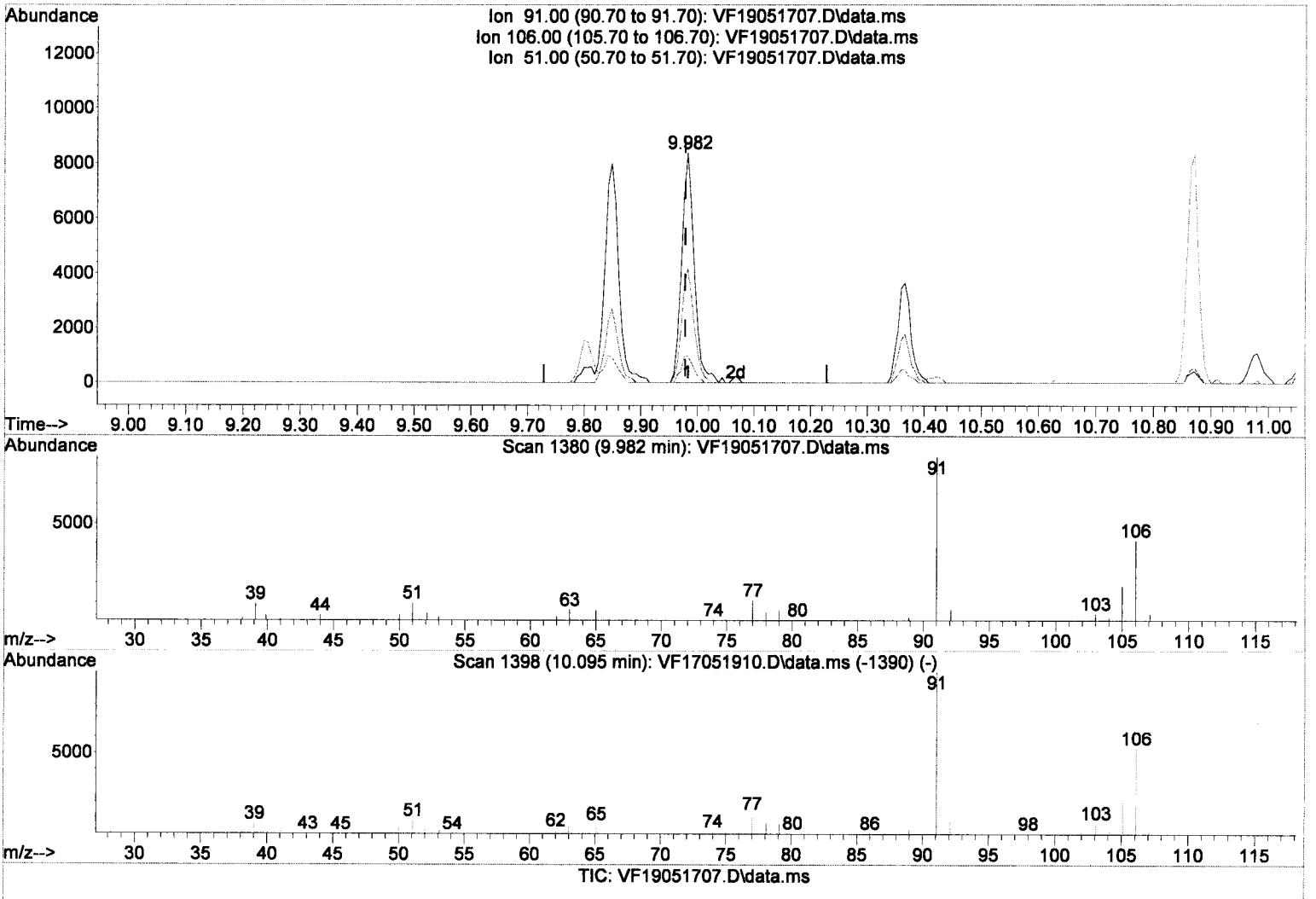
response 13535

Ion	Exp%	Act%
91.00	100	100
106.00	33.20	33.58
51.00	9.50	11.55
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



TIC: VF19051707.D\data.ms

(52) m,p-Xylenes (2)

9.982min (+0.004) 1.16 ug/L

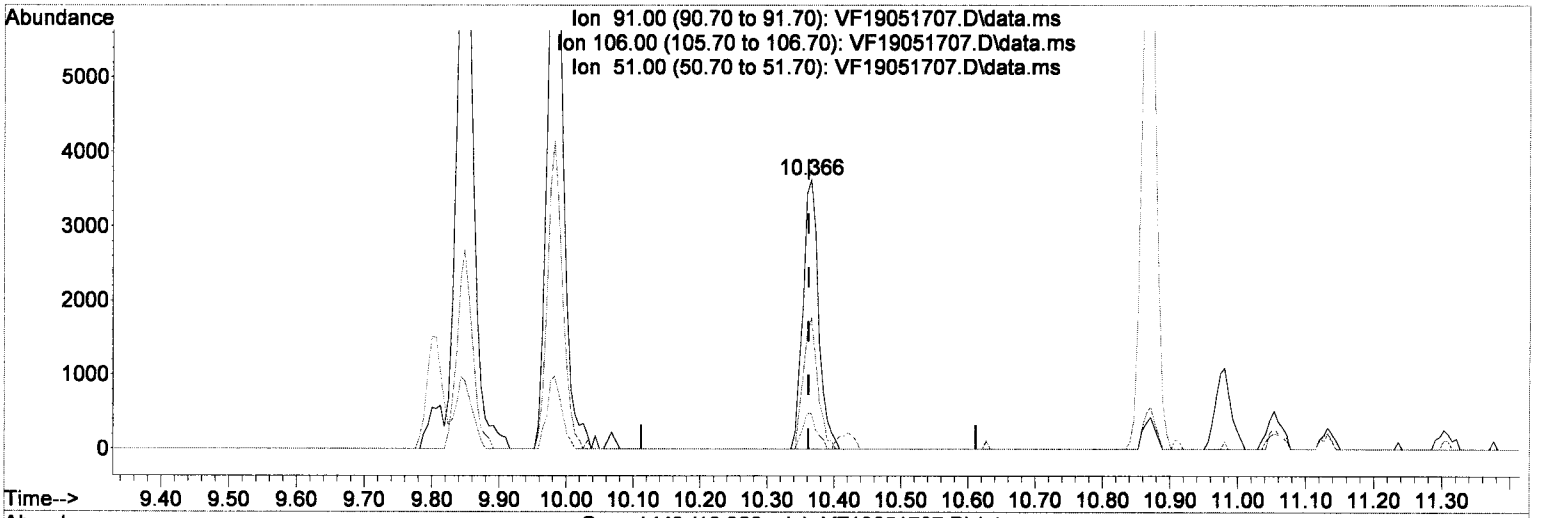
response 13074

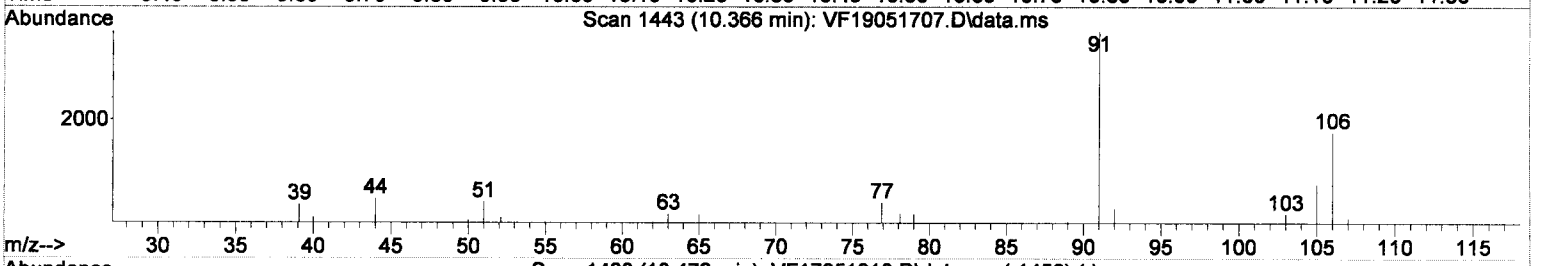
Ion	Exp%	Act%
91.00	100	100
106.00	52.70	49.59
51.00	10.10	11.64
0.00	0.00	0.00

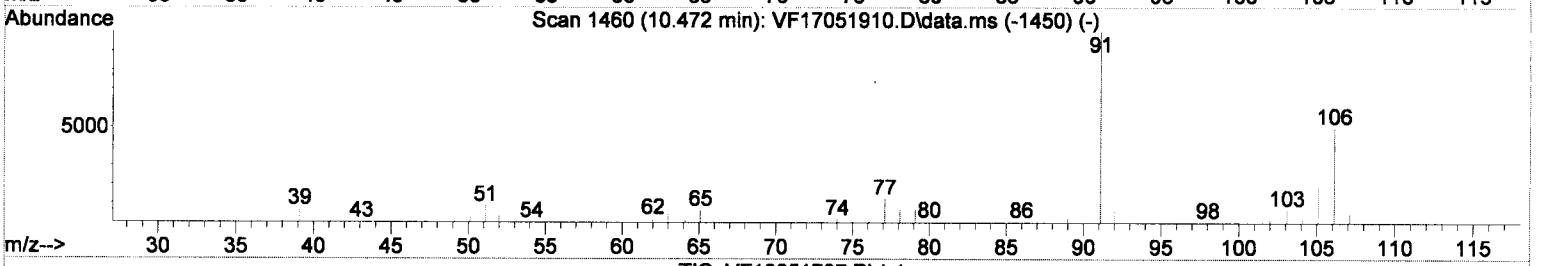
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration







TIC: VF19051707.D\data.ms

(53) o-Xylene

10.366min (+0.004) 0.54 ug/L

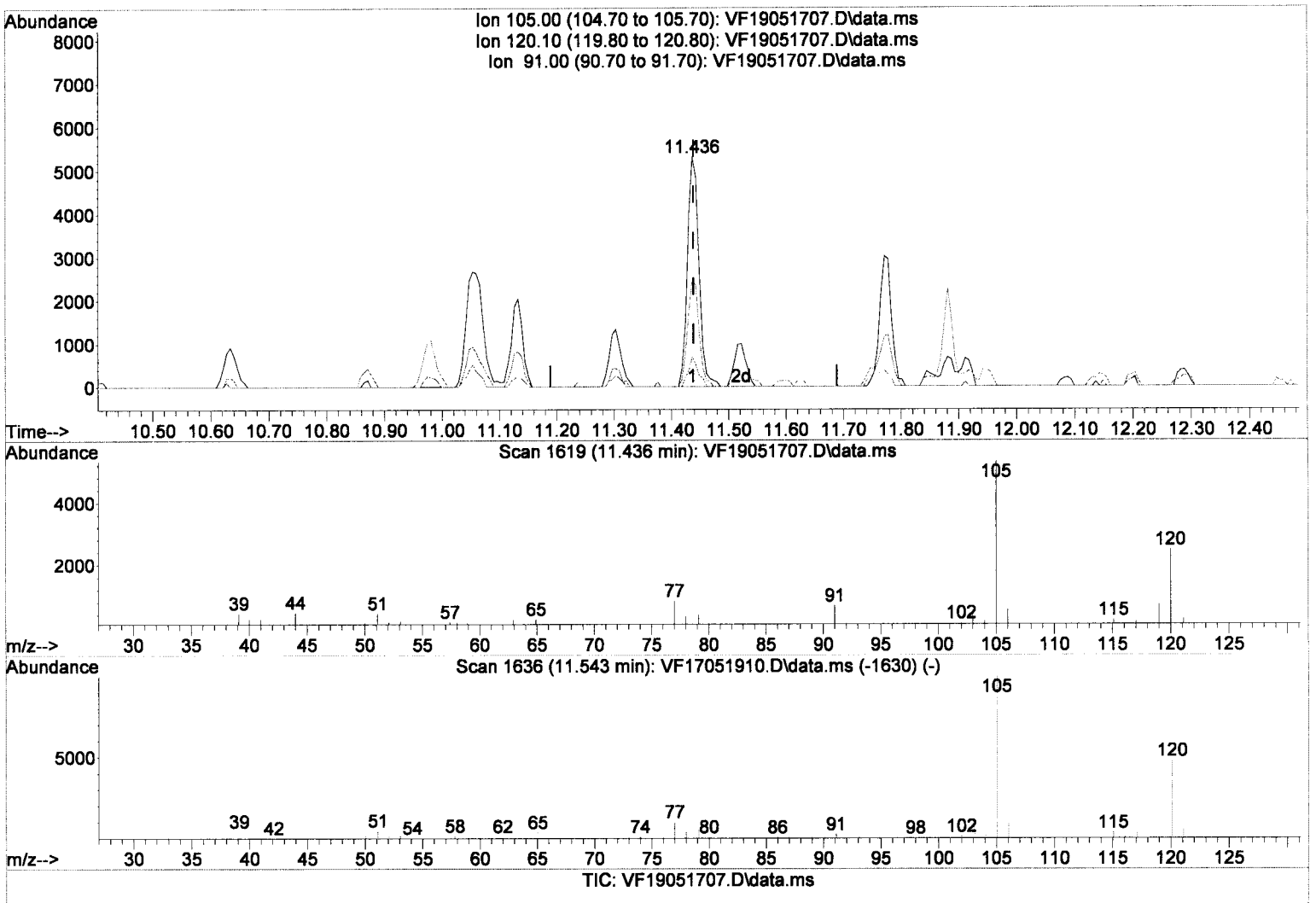
response 5892

Ion	Exp%	Act%
91.00	100	100
106.00	49.40	48.69
51.00	10.00	13.27
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



TIC: VF19051707.D\data.ms

(68) 1,2,4-Trimethylbenzene

11.436min (-0.002) 0.79 ug/L

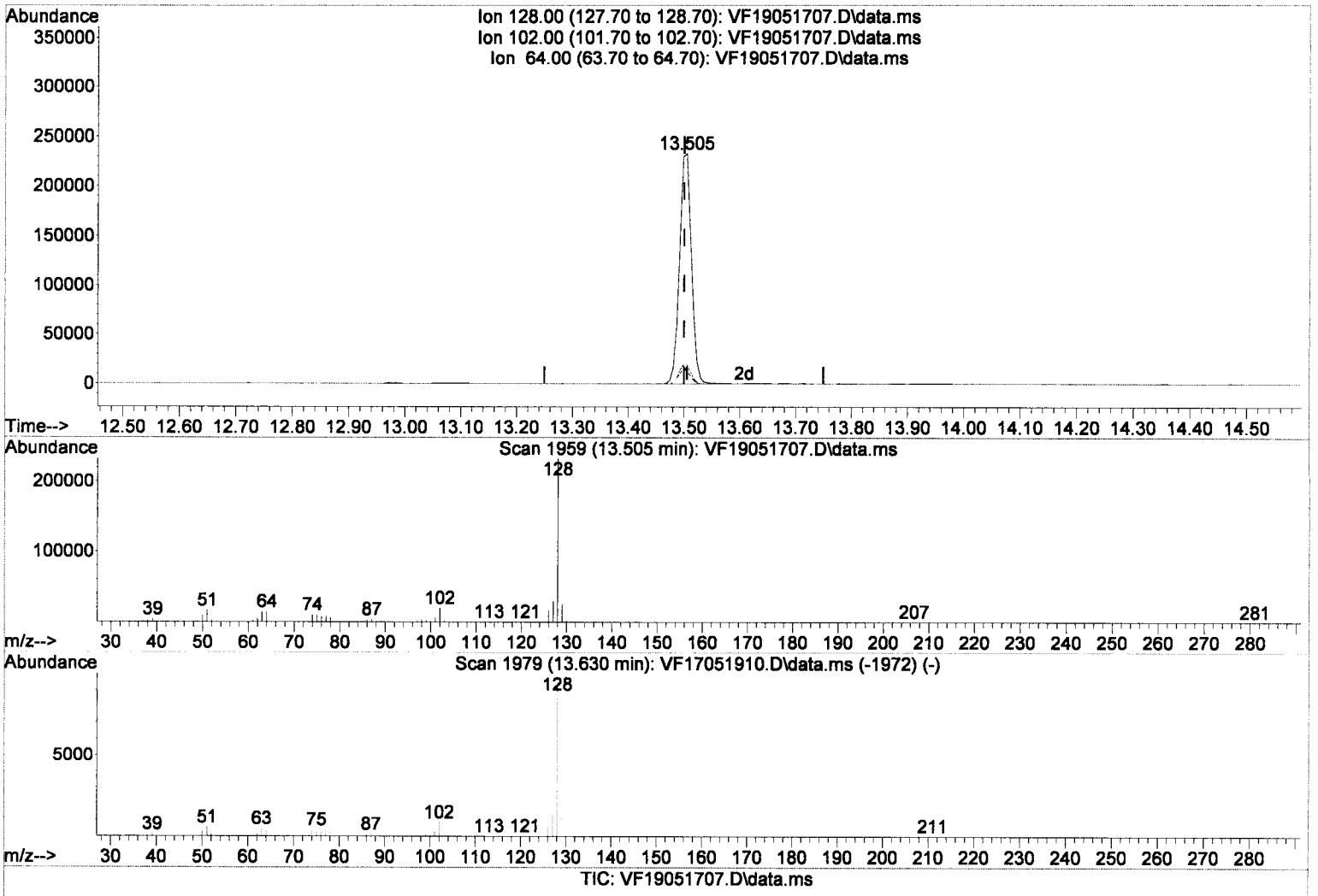
response 7450

Ion	Exp%	Act%
105.00	100	100
120.10	48.00	46.56
91.00	10.60	13.11
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



TIC: VF19051707.D\data.ms

(78) Naphthalene

13.505min (+0.005) 32.16 ug/L

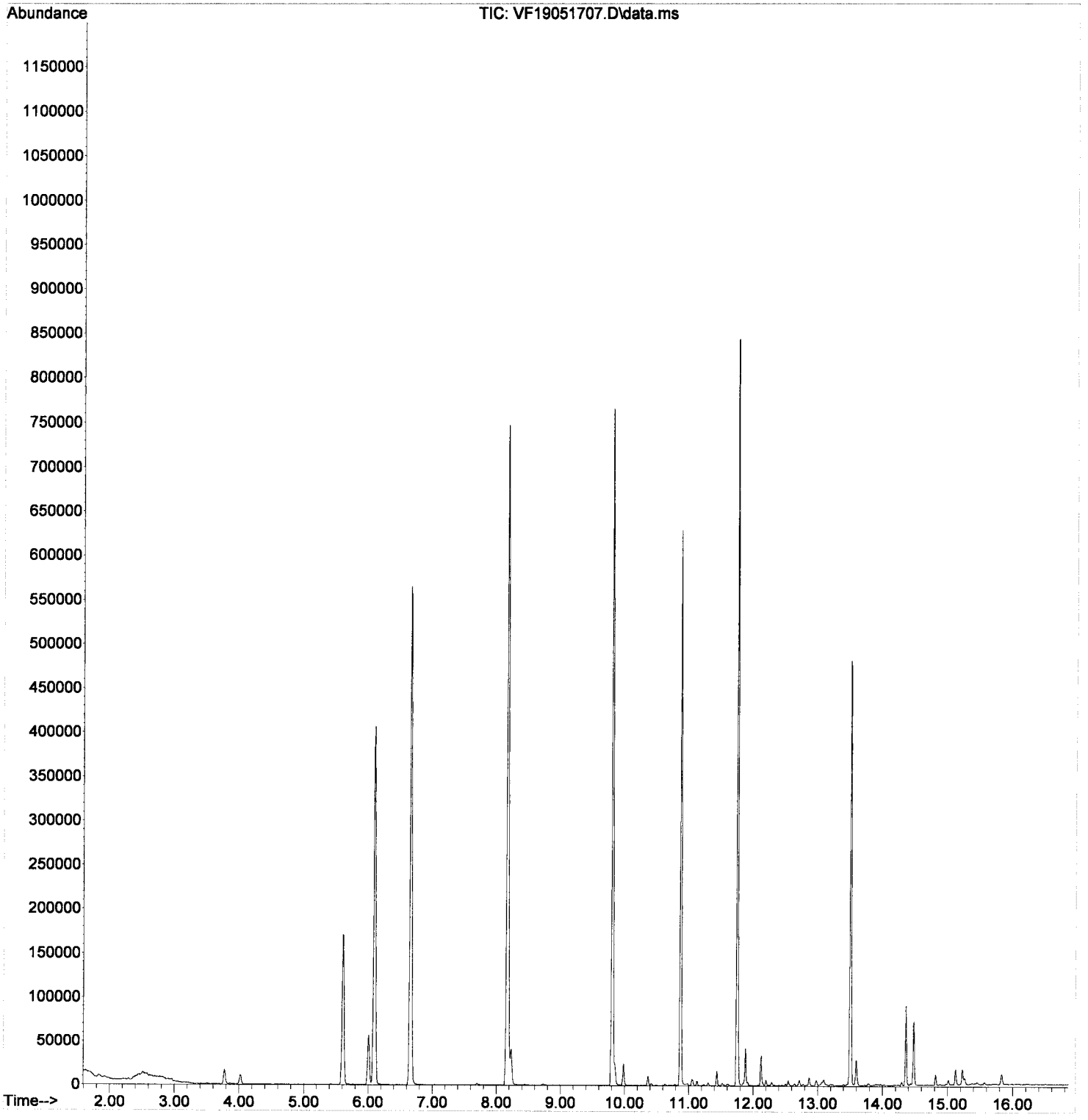
response 347664

Ion	Exp%	Act%
128.00	100	100
102.00	8.50	8.39
64.00	6.40	6.22
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E17019\
Data File : VF19051707.D
Acq On : 17 May 2019 1:06 pm
Operator : TB
Sample : A9E0508-05@10000
Misc : 10000X ~5g/5mLx5uL/50mL GX/8260 COMP
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 18 10:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 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 9E07048 (Cal ID A9E0804) VOA-GCMS6

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence:	9E07048	Instrument:	VOA-GCMS6
Date:	05/07/19 18:19	Calibration:	A9E0804

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E07048-IBL1	Soil	QC	QC			A19D196	
2	9E07048-TUN1	Soil	QC	QC			A19D196	
3	9E07048-ICB1	Soil	QC	QC			A19D196	
4	9E07048-CAL1	Soil	QC	QC			A19D196	A19E092
5	9E07048-CAL2	Soil	QC	QC			A19D196	A19E093
6	9E07048-CAL3	Soil	QC	QC			A19D196	A19E094
7	9E07048-CAL4	Soil	QC	QC			A19D196	A19E095
8	9E07048-CAL5	Soil	QC	QC			A19D196	A19E096
9	9E07048-CAL6	Soil	QC	QC			A19D196	A19E097
10	9E07048-CAL7	Soil	QC	QC			A19D196	A19E098
11	9E07048-CAL8	Soil	QC	QC			A19D196	A19E099
12	9E07048-CAL9	Soil	QC	QC			A19D196	A19D177
13	9E07048-IBL2	Soil	QC	QC			A19D196	
14	9E07048-CALA	Soil	QC	QC			A19D196	A19D178
15	9E07048-IBL3	Soil	QC	QC			A19D196	
16	9E07048-CALB	Soil	QC	QC			A19D196	A19D179
17	9E07048-IBL4	Soil	QC	QC			A19D196	
18	9E07048-IBL5	Soil	QC	QC			A19D196	
19	9E07048-ICV1	Soil	QC	QC			A19D196	A19D180
20	9E07048-IBL6	Soil	QC	QC			A19D196	
21	9E07048-TUN2	Soil	QC	QC			A19D196	
22	9E07048-IBL7	Soil	QC	QC			A19D196	
23	9E07048-ICB2	Soil	QC	QC			A19D196	
24	9E07048-CALC	Soil	QC	QC			A19D196	A19E016
25	9E07048-CALD	Soil	QC	QC			A19D196	A19E017
26	9E07048-CALE	Soil	QC	QC			A19D196	A19E018
27	9E07048-CALF	Soil	QC	QC			A19D196	A19E019
28	9E07048-CALG	Soil	QC	QC			A19D196	A19B200
29	9E07048-CALH	Soil	QC	QC			A19D196	A19B201
30	9E07048-CALI	Soil	QC	QC			A19D196	A19B202
31	9E07048-CALJ	Soil	QC	QC			A19D196	A19B203
32	9E07048-IBL8	Soil	QC	QC			A19D196	
33	9E07048-IBL9	Soil	QC	QC			A19D196	
34	9E07048-ICV2	Soil	QC	QC			A19D196	A19B262
35	9E07048-IBLA	Soil	QC	QC			A19D196	

Carbon tet ↑ 1/2
Bromodichloro ↑ 1/2
1112 TCA ↑ 1/2
Bromoform ↑ 2/4

Comments: Iodomethane NR
↑MDL MRL for carbon tet, $BrCl_2CH$, 1112 tetrachloroethane, & Bromoform

Data Entered By: 5/8/19

Data Reviewed By: 5/8/19

Calibration Status Report VOA-GCMS6

Method Path : C:\msdchem\1\METHODS\
Method File : VF190507S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Wed May 08 13:32:58 2019
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	-1	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050714.D
2	2	0	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050715.D
3	3	0	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050716.D
4	4	1	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050717.D
5	5	2	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050718.D
6	6	5	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050719.D
7	7	10	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050720.D
8	8	20	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050721.D
9	9	50	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050722.D
10	10	100	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050724.D
11	11	200	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050726.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	May 08 10:44 2019	May 08 10:29 2019	
2	2	May 08 10:44 2019	May 08 10:30 2019	
3	3	May 08 10:44 2019	May 08 10:32 2019	
4	4	May 08 10:44 2019	May 08 10:33 2019	
5	5	May 08 10:44 2019	May 08 10:24 2019	
6	6	May 08 10:44 2019	May 08 10:24 2019	
7	7	May 08 10:44 2019	May 08 10:24 2019	
8	8	May 08 10:44 2019	May 08 10:24 2019	
9	9	May 08 10:44 2019	May 08 10:24 2019	
10	10	May 08 10:44 2019	May 08 10:24 2019	
11	11	May 08 10:44 2019	May 08 10:24 2019	

VF190507S.M Wed May 08 13:51:54 2019

↑ MDL/MRL for Carbon tetrachloride, Bromodichloro methane, 1112 tetrachloro ethane, & Bromoform

Iodomethane NR

Response Factor Report VOA-GCMS6

Method Path : C:\msdchem\1\METHODS\
Method File : VF190507S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Wed May 08 11:54:03 2019
Response Via : Initial Calibration

Calibration Files
1 =VF19050714.D 2 =VF19050715.D 3 =VF19050716.D 4 =VF19050717.D 5 =VF19050718.D 6 =VF19050719.D
7 =VF19050720.D 8 =VF19050721.D 9 =VF19050722.D 10 =VF19050724.D 11 =VF19050726.D

		Compound	1	2	3	4	5	6	7	8	9	10	11	Avg	%RSD
1)	I	Pentafluorobenzene...	ISTD												
2)		Dichlorodifluo...		0.424	0.375	0.456	0.462	0.446	0.474	0.533	0.503	0.527	0.467		10.76
3)	P	Chloromethane			0.644	0.743	0.678	0.626	0.698	0.716	0.676	0.660	0.680		5.60
4)	C	Vinyl Chloride	0.675	0.628	0.632	0.660	0.660	0.648	0.692	0.742	0.670	0.719	0.673		5.40
5)		Bromomethane					0.485	0.446	0.412	0.418	0.351	0.386	0.416		11.21
6)		Chloroethane			0.091	0.111	0.092	0.084	0.095	0.094	0.079	0.086	0.091		10.77
7)		Trichlorofluor...		0.111	0.118	0.129	0.128	0.111	0.125	0.121	0.109	0.115	0.119		6.44
8)	C	1,1-Dichloroet...	0.967	0.818	0.851	0.780	0.846	0.852	0.821	0.908	0.901	0.856	0.908	0.864	6.06
9)		Carbon Disulfide			0.976	0.821	0.855	0.892	0.894	1.083	1.240	1.289	1.433	1.054	20.86
10)		Freon 113		0.451	0.522	0.537	0.520	0.537	0.515	0.547	0.552	0.528	0.560	0.527	5.79
11)		Iodomethane				0.121	0.089	0.103	0.168	0.198	0.320	0.324	0.444	0.221	57.97
12)		Methylene Chlo...			7.017	3.179	1.919	1.118	0.809	0.720	0.593	0.537	0.544	1.826	116.77
13)		Acetone						0.288	0.242	0.274	0.246	0.243	0.244	0.256	7.74
14)		t-1,2-Dichloro...	0.667	0.839	0.790	0.775	0.820	0.847	0.818	0.893	0.878	0.860	0.897	0.826	7.98
15)		n-Hexane						0.180	0.147	0.144	0.133	0.130	0.132	0.144	12.82
16)		Methyl-tert-bu...	1.639	1.719	1.560	1.535	1.610	1.619	1.558	1.758	1.743	1.707	1.911	1.669	6.69
17)	P	1,1-Dichloroet...	1.048	1.002	1.001	0.985	1.067	1.086	1.029	1.153	1.107	1.024	0.998	1.045	5.05
18)		Acrylonitrile				0.199	0.254	0.270	0.262	0.297	0.289	0.286	0.296	0.269	12.01
19)		c-1,2-Dichloro...	0.639	0.687	0.725	0.686	0.784	0.799	0.760	0.849	0.823	0.802	0.811	0.760	8.81
20)		2,2-Dichloropr...				0.441	0.473	0.476	0.491	0.569	0.608	0.609		0.524	13.32
21)		Bromochloromet...		0.326	0.463	0.418	0.483	0.476	0.462	0.504	0.475	0.455	0.475	0.454	11.05
22)	C	Chloroform	0.883	0.879	0.851	0.859	0.896	0.940	0.921	1.008	0.989	0.970	1.026	0.929	6.62
23)		Carbon Tetrach...				0.256	0.292	0.319	0.332	0.397	0.474	0.523	0.635	0.404	32.32
24)		Tetrahydrofuran			0.294	0.248	0.279	0.292	0.257	0.300	0.280	0.282	0.295	0.281	6.33
25)		1,1,1-Trichlor...			0.610	0.572	0.589	0.616	0.649	0.740	0.807			0.655	13.26
26)	S	Dibromofluorom...	0.381	0.367	0.382	0.369	0.391	0.400	0.395	0.424	0.417	0.431	0.456	0.401	6.96
27)		1,1-Dichloropr...		0.672	0.709	0.672	0.754	0.774	0.760	0.836	0.841	0.830	0.876	0.772	9.40
28)		2-Butanone (MEK)		0.438	0.375	0.326	0.362	0.385	0.353	0.408	0.387	0.386	0.411	0.383	8.33
29)		Benzene	2.348	2.419	2.410	2.283	2.404	2.441	2.361	2.551	2.456	2.390	2.523	2.417	3.16
30)		1,2-Dichloroet...	0.769	0.824	0.778	0.819	0.823	0.848	0.795	0.877	0.825	0.796	0.840	0.818	3.89
31)		iso-Butyl Alcohol				0.012	0.016	0.017	0.018	0.026	0.030	0.037	0.039	0.024	41.48
32)	S	1,4-Difluorobe...	1.553	1.550	1.538	1.536	1.540	1.536	1.531	1.549	1.542	1.534	1.584	1.545	0.96
33)		Trichloroethen...		0.604	0.547	0.538	0.540	0.575	0.559	0.615	0.613	0.602	0.646	0.584	6.39
34)		Dibromomethane		0.203	0.277	0.256	0.279	0.286	0.289	0.327	0.325	0.324	0.354	0.292	14.84
35)	C	1,2-Dichloropr...		0.579	0.518	0.555	0.562	0.571	0.568	0.610	0.603	0.588	0.622	0.578	5.22
36)		Bromodichlorom...				0.300	0.324	0.352	0.371	0.460	0.542	0.583	0.687	0.452	30.88
37)		Chlorobenzene-d5 (I)	ISTD												
38)		c-1,3-Dichloro...		0.320	0.330	0.369	0.398	0.409	0.551	0.575	0.641	0.664	0.473		28.49
39)	S	Toluene-d8 (S)	1.570	1.433	1.536	1.441	1.539	1.533	1.452	1.532	1.418	1.463	1.344	1.478	4.64
40)	C	Toluene	2.876	2.259	2.053	1.958	2.101	2.069	1.955	2.131	1.979	1.992	1.879	2.114	12.92

Method Path : C:\msdchem\1\METHODS\
Method File : VF190507S.M
Title : EPA 8260: Volatile Organic Compounds

41)		Tetrachloroeth...	0.458	0.399	0.467	0.416	0.468	0.482	0.456	0.514	0.473	0.488	0.470	0.463	6.89
42)		4-Methyl-2-Pen...				0.400	0.483	0.518	0.515	0.625	0.604	0.627	0.599	0.546	14.83
43)		t-1,3-Dichloro...			0.222	0.246	0.284	0.320	0.349	0.473	0.528	0.592	0.625	0.404	37.75
44)		1,1,2-Trichlor...		0.292	0.334	0.326	0.383	0.379	0.367	0.420	0.389	0.393	0.381	0.366	10.39
45)		Dibromochlorom...			0.095	0.100	0.141	0.154	0.159	0.214	0.263	0.314	0.353	0.199	46.55
46)		1,3-Dichloropr...	0.702	0.597	0.679	0.647	0.716	0.748	0.710	0.804	0.737	0.748	0.713	0.709	7.76
47)		1,2-Dibromoeth...		0.148	0.202	0.220	0.274	0.306	0.311	0.389	0.390	0.411	0.398	0.305	30.45
48)		2-Hexanone						0.318	0.337	0.420	0.425	0.442	0.426	0.395	13.41
49)	P	Chlorobenzene	1.346	1.286	1.199	1.194	1.184	1.167	1.176	1.188	1.189	1.161	1.166	1.205	4.79
50)	C	Ethylbenzene	2.234	2.098	1.941	1.892	1.899	1.925	1.947	2.058	2.075	2.029	2.045	2.013	5.16
51)		1,1,1,2-Tetrac...			0.129	0.122	0.157	0.171	0.192	0.249	0.302	0.342	0.366	0.226	40.98
52)		m,p-Xylenes (2)	1.375	1.339	1.198	1.290	1.298	1.366	1.421	1.525	1.553	1.537	1.607	1.410	9.21
53)		o-Xylene	1.466	1.318	1.198	1.191	1.227	1.273	1.337	1.433	1.500	1.463	1.523	1.357	9.19
54)		Styrene		0.589	0.624	0.662	0.685	0.804	0.885	1.004	1.114	1.102	1.194	0.866	26.04
55)	P	Bromoform					0.073	0.076	0.085	0.113	0.153	0.199		0.117	43.10
56)		Isopropylbenzene		1.286	1.242	1.378	1.369	1.532	1.597	1.705	1.776	1.733	1.780	1.540	13.52
57)	I	1,4-Dichlorobenzen...	----------			ISTD	----------								
58)	S	4-Bromofluorob...	0.769	0.787	0.781	0.797	0.766	0.763	0.798	0.760	0.768	0.742	0.737	0.770	2.59
59)		Bromobenzene	0.681	0.954	0.839	0.935	0.912	0.903	0.949	0.939	0.945	0.912	0.925	0.899	8.79
60)		n-Propylbenzene	3.893	3.768	3.659	3.802	3.748	3.903	4.202	4.219	4.354	4.217	4.191	3.996	6.08
61)	P	1,1,2,2-Tetrac...		0.780	0.801	0.835	0.894	0.918	0.990	1.095	1.078	1.095	1.015	0.950	12.78
62)		2-Chlorotoluene		0.782	0.695	0.783	0.739	0.787	0.858	0.840	0.871	0.832	0.849	0.803	7.06
63)		1,3,5-Trimethy...	2.334	2.195	2.255	2.263	2.346	2.511	2.817	2.881	2.979	2.875	2.967	2.584	12.34
64)		1,2,3-Trichlor...			0.315	0.344	0.393	0.378	0.390	0.412	0.392	0.395	0.372	0.377	7.97
65)		t-1,4-Dichloro...					0.048	0.046	0.060	0.075	0.107	0.128	0.143	0.087	45.23
66)		4-Chlorotoluene	2.057	2.222	2.106	2.307	2.298	2.397	2.580	2.547	2.615	2.491	2.517	2.376	8.11
67)		tert-Butylbenzene	1.252	1.380	1.273	1.419	1.406	1.496	1.616	1.621	1.665	1.596	1.596	1.484	9.85
68)		1,2,4-Trimethy...	2.389	2.218	2.254	2.255	2.343	2.577	2.839	2.922	2.977	2.871	2.914	2.596	11.99
69)		sec-Butylbenzene	3.045	2.649	2.741	2.782	2.865	3.106	3.357	3.381	3.466	3.350	3.321	3.097	9.59
70)		4-Isopropyltol...				2.084	2.117	2.396	2.673	2.793	2.909	2.803	2.842	2.577	12.91
71)		1,3-Dichlorobe...	1.538	1.458	1.444	1.467	1.532	1.542	1.551	1.622	1.619	1.547	1.560	1.534	3.84
72)		1,4-Dichlorobe...	1.980	1.653	1.699	1.695	1.682	1.612	1.629	1.684	1.655	1.580	1.585	1.678	6.49
73)		n-Butylbenzene	2.142	1.949	1.991	2.017	1.935	2.147	2.374	2.398	2.472	2.412	2.363	2.200	9.44
74)		1,2-Dichlorobe...	1.359	1.417	1.378	1.362	1.407	1.464	1.456	1.560	1.514	1.460	1.461	1.440	4.38
75)		1,2-Dibromo-3-...				0.049	0.070	0.082	0.097	0.129	0.171	0.218	0.231	0.131	52.52
76)		Hexachlorobuta...				0.194	0.200	0.206	0.203	0.219	0.216	0.207	0.199	0.205	4.17
77)		1,2,4-Trichlor...		0.578	0.707	0.664	0.745	0.754	0.777	0.876	0.872	0.899	0.860	0.773	13.57
78)		Naphthalene			1.639	1.629	1.869	2.106	2.401	2.919	2.971	3.188	3.001	2.414	25.87
79)		1,2,3-Trichlor...			0.623	0.661	0.752	0.790	0.795	0.888	0.860	0.886	0.827	0.787	11.97

(#) = Out of Range

Compound List Report VOA-GCMS6

Method Path : C:\msdchem\1\METHODS\
Method File : VF190507S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Wed May 08 11:54:03 2019
Response Via : Initial Calibration

5/8/19

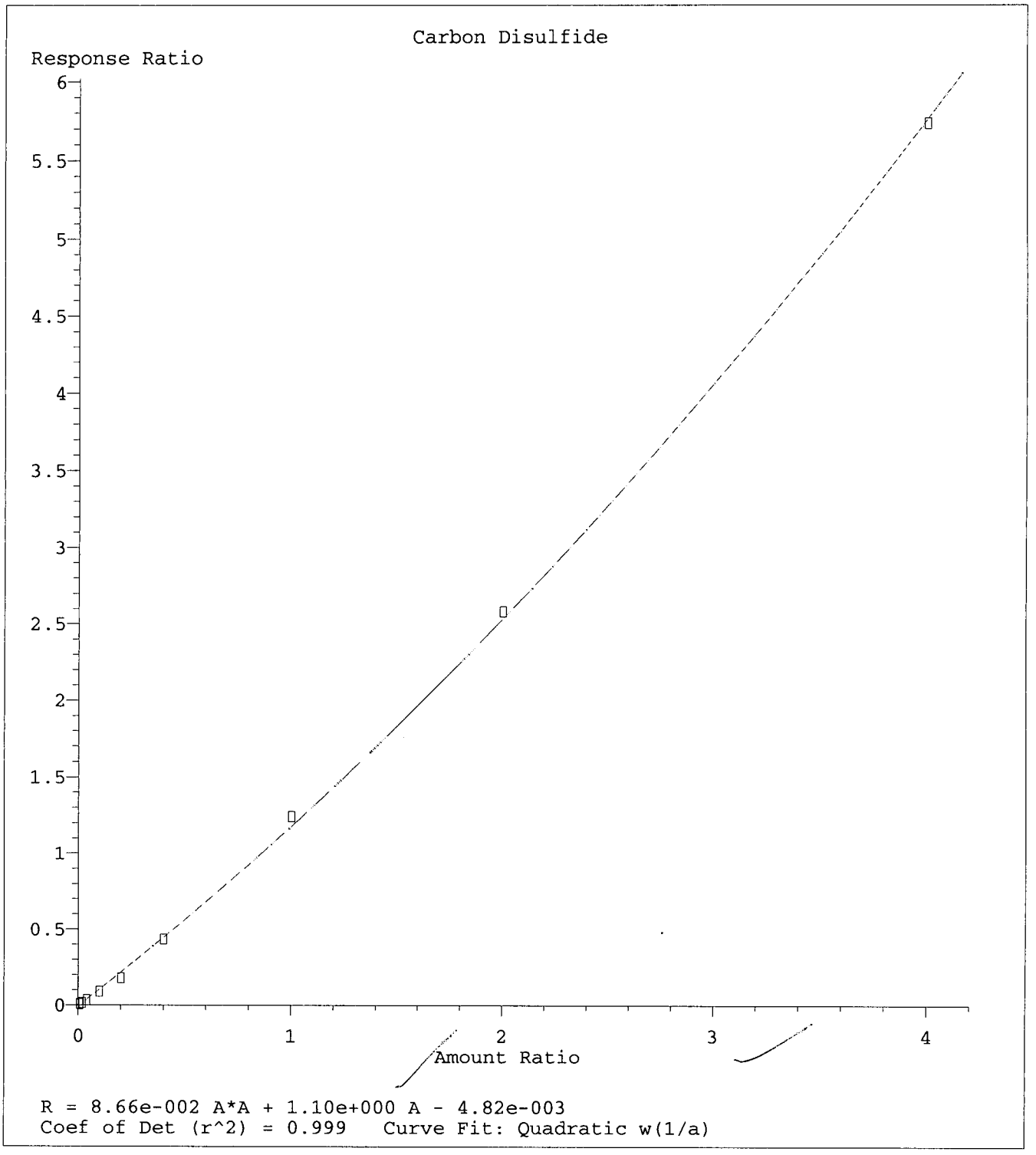
Total Cpnds : 79

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	Pentafluorobenzene (I)	168	6.097	1.000	A	2	A	R
2		Dichlorodifluoromethane	85	1.632	0.268	A	2	A	R
3	P	Chloromethane	50	1.838	0.301	A	2	A	R
4	C	Vinyl Chloride	62	1.942	0.319	A	2	A	R
5		Bromomethane	96	2.301	0.377	A	2	A	R
6		Chloroethane	64	2.423	0.397	A	2	A	R
7		Trichlorofluoromethane	101	2.556	0.419	A	2	A	R
8	C	1,1-Dichloroethene	61	3.123	0.512	A	2	A	R
9		Carbon Disulfide	76	3.140	0.515	Q 1/a	2	A	R
10		Freon 113	101	3.177	0.521	A	2	A	R
11		Iodomethane	142	3.280	0.538	Q 1/a	2	A	R
12		Methylene Chloride	84	3.773	0.619	Q ↓	2	A	R
13		Acetone	43	3.865	0.634	A	1	A	R
14		t-1,2-Dichloroethene	61	3.938	0.646	A	2	A	R
15		n-Hexane	86	4.016	0.659	A	3	A	R
16		Methyl-tert-butyl-ether	73	4.084	0.670	A	3	A	R
17	P	1,1-Dichloroethane	63	4.576	0.751	A	2	A	R
18		Acrylonitrile	53	4.649	0.763	A	2	A	R
19		c-1,2-Dichloroethene	61	5.136	0.842	A	2	A	R
20		2,2-Dichloropropane	77	5.240	0.859	A	2	A	R
21		Bromochloromethane	49	5.337	0.875	A	2	A	R
22	C	Chloroform	83	5.422	0.889	A	2	A	R
23		Carbon Tetrachloride	117	5.543	0.909	Q 1/a	2	A	R
24		Tetrahydrofuran	42	5.598	0.918	A	2	A	R
25		1,1,1-Trichloroethane	97	5.617	0.921	A	2	A	R
26	S	Dibromofluoromethane (S)	111	5.605	0.919	A	2	A	R
27		1,1-Dichloropropene	75	5.745	0.942	A	2	A	R
28		2-Butanone (MEK)	43	5.751	0.943	A	2	A	R
29		Benzene	78	6.000	0.984	A	2	A	R
30		1,2-Dichloroethane (EDC)	62	6.219	1.020	A	2	A	R
31		iso-Butyl Alcohol	43	6.285	1.031	Q 1/a	2	A	R
32	S	1,4-Difluorobenzene (S)	114	6.657	1.092	A	2	A	R
33		Trichloroethene (TCE)	130	6.620	1.086	A	2	A	R
34		Dibromomethane	93	7.077	1.161	A	2	A	R
35	C	1,2-Dichloropropane	63	7.180	1.178	A	2	A	R
36		Bromodichloromethane	83	7.259	1.191	Q 1/a	2	A	R
37	I	Chlorobenzene-d5 (I)	117	9.802	1.000	A	2	A	R
38		c-1,3-Dichloropropene	75	7.964	0.812	Q 1/a	2	A	R
39	S	Toluene-d8 (S)	98	8.166	0.833	A	2	A	R
40	C	Toluene	91	8.227	0.839	A	2	A	R
41		Tetrachloroethene (PCE)	166	8.671	0.885	A	2	A	R
42		4-Methyl-2-Pentanone (MIBK)	43	8.677	0.885	A	2	A	R
43		t-1,3-Dichloropropene	75	8.713	0.889	Q 1/a	2	A	R
44		1,1,2-Trichloroethane	97	8.890	0.907	A	2	A	R
45		Dibromochloromethane	129	9.078	0.926	Q 1/a	2	A	R
46		1,3-Dichloropropane	76	9.169	0.935	A	2	A	R
47		1,2-Dibromoethane (EDB)	107	9.309	0.950	Q 1/a	2	A	R
48		2-Hexanone	43	9.546	0.974	A	2	A	R
49	P	Chlorobenzene	112	9.820	1.002	A	2	A	R
50	C	Ethylbenzene	91	9.845	1.004	A	2	A	R
51		1,1,1,2-Tetrachloroethane	131	9.881	1.008	Q 1/a	2	A	R
52		m,p-Xylenes (2)	91	9.979	1.018	A	2	A	R
53		o-Xylene	91	10.362	1.057	A	2	A	R
54		Styrene	104	10.410	1.062	Q 1/a	2	A	R
55	P	Bromoform	173	10.434	1.064	Q ↓	2	A	R

56		Isopropylbenzene	105	10.629	1.084	A	2	A	R
57	I	1,4-Dichlorobenzene-d4 (I)	152	11.749	1.000	A	2	A	R
58	S	4-Bromofluorobenzene (S)	174	10.873	0.925	A	2	A	R
59		Bromobenzene	156	10.952	0.932	A	2	A	R
60		n-Propylbenzene	91	10.970	0.934	A	2	A	R
61	P	1,1,2,2-Tetrachloroethane	83	11.037	0.939	A	2	A	R
62		2-Chlorotoluene	126	11.104	0.945	A	2	A	R
63		1,3,5-Trimethylbenzene	105	11.128	0.947	A	2	A	R
64		1,2,3-Trichloropropane	110	11.147	0.949	A	2	A	R
65		t-1,4-Dichloro-2-butene	88	11.177	0.951	Q1/a	3	A	R
66		4-Chlorotoluene	91	11.232	0.956	A	2	A	R
67		tert-Butylbenzene	91	11.378	0.968	A	2	A	R
68		1,2,4-Trimethylbenzene	105	11.439	0.974	A	2	A	R
69		sec-Butylbenzene	105	11.518	0.980	A	2	A	R
70		4-Isopropyltoluene	119	11.627	0.990	A	2	A	R
71		1,3-Dichlorobenzene	146	11.694	0.995	A	2	A	R
72		1,4-Dichlorobenzene	146	11.761	1.001	A	2	A	R
73		n-Butylbenzene	91	11.944	1.017	A	2	A	R
74		1,2-Dichlorobenzene	146	12.077	1.028	A	2	A	R
75		1,2-Dibromo-3-Chloropropane	157	12.685	1.080	Q1/a	2	A	R
76		Hexachlorobutadiene	223	13.190	1.123	A	3	A	R
77		1,2,4-Trichlorobenzene	180	13.227	1.126	A	2	A	R
78		Naphthalene	128	13.500	1.149	Q1/a	2	A	R
79		1,2,3-Trichlorobenzene	180	13.665	1.163	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

VF190507S.M Wed May 08 12:03:31 2019



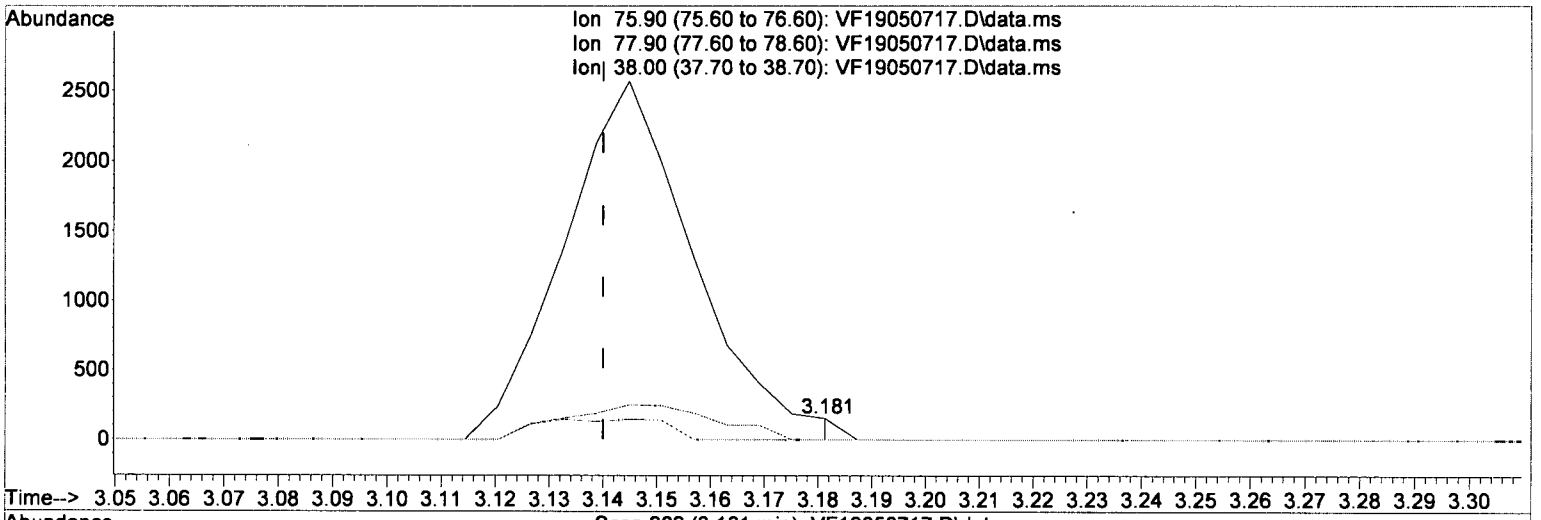
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

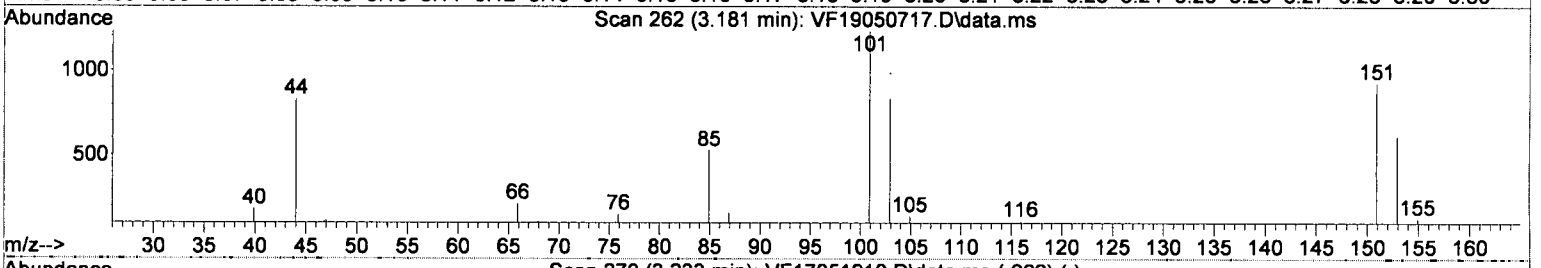
Int = 0.22

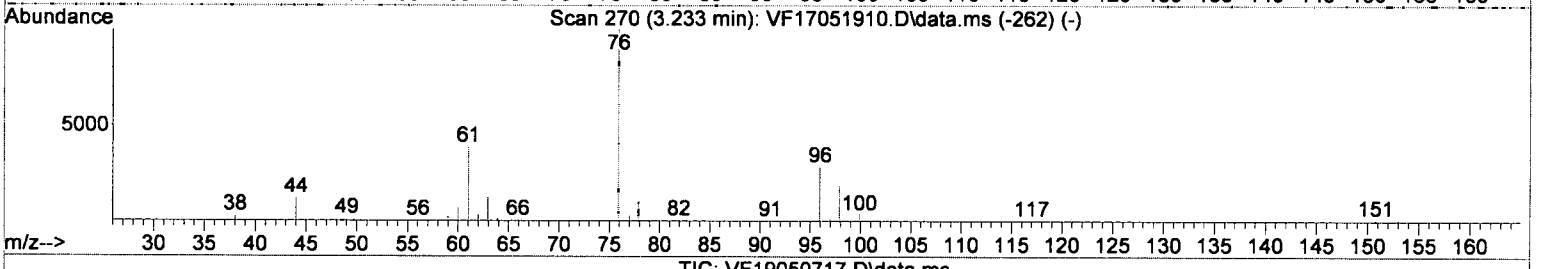
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







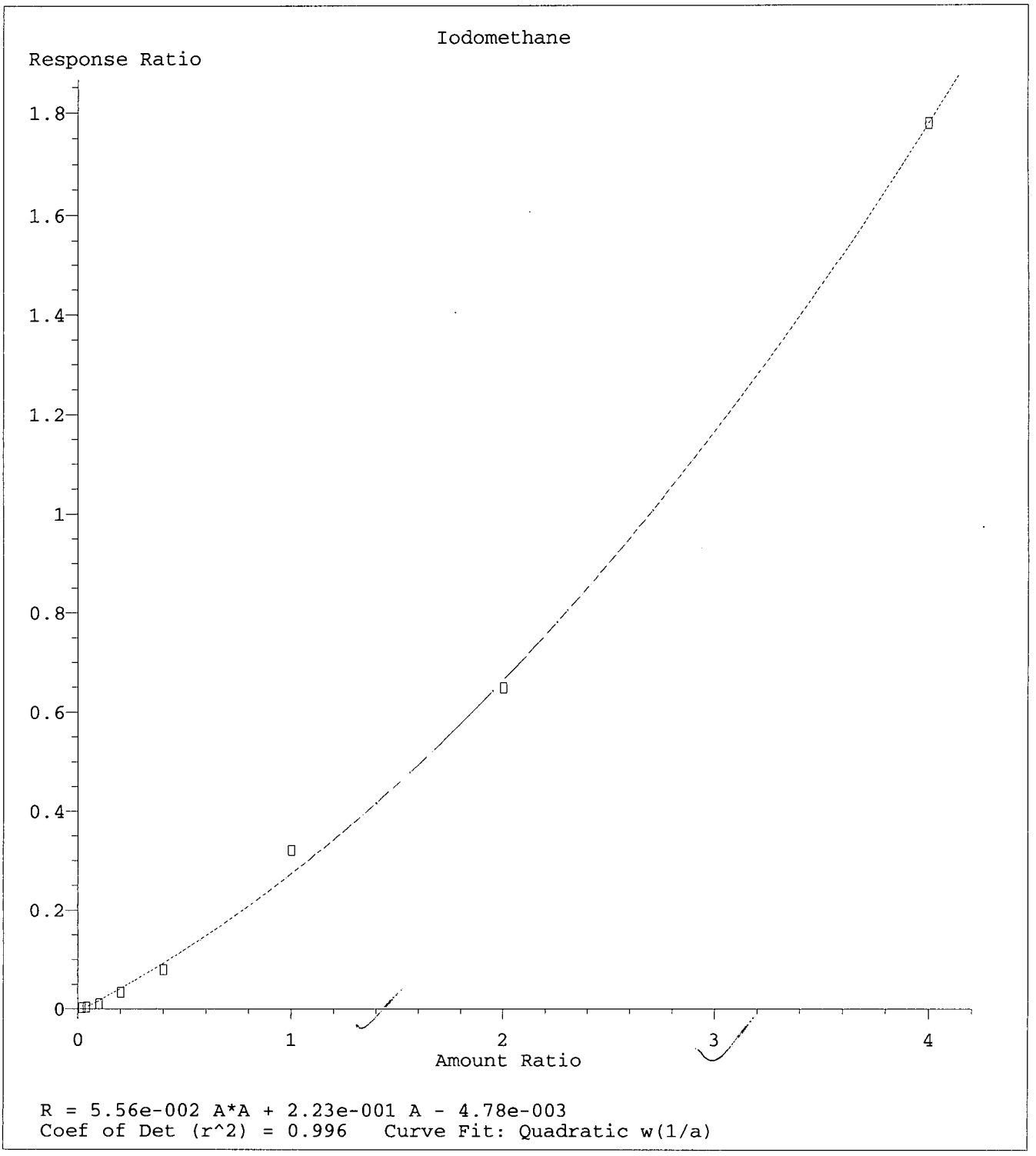
TIC: VF19050717.D\data.ms

(9) Carbon Disulfide

3.181min (+0.041) 0.22 ug/L m

response 0

Ion	Exp%	Act%
75.90	100	0.00
77.90	9.50	0.00
38.00	1.60	0.00
0.00	0.00	0.00



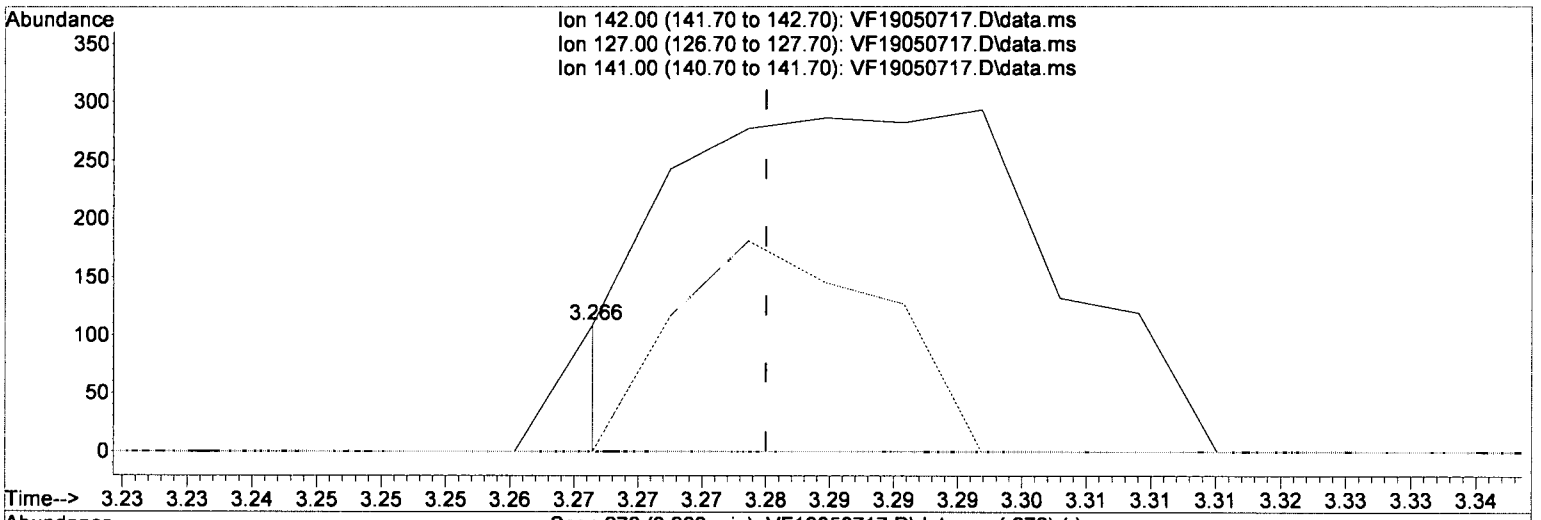
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

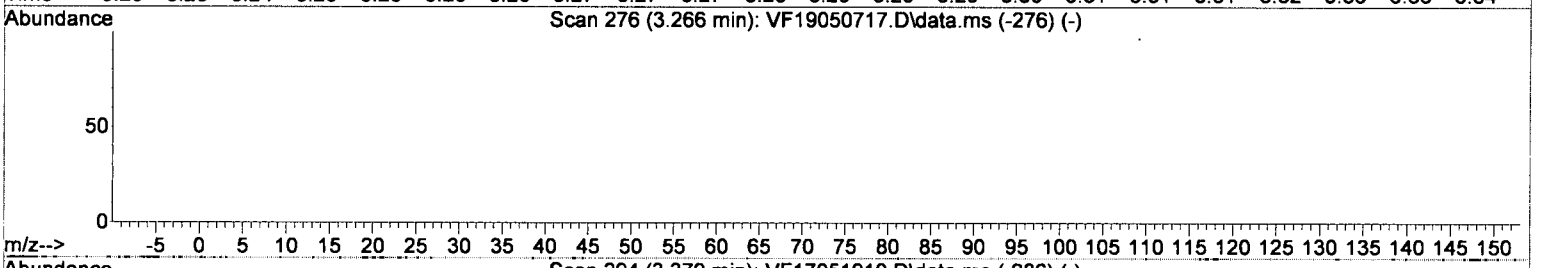
Int = 1.10

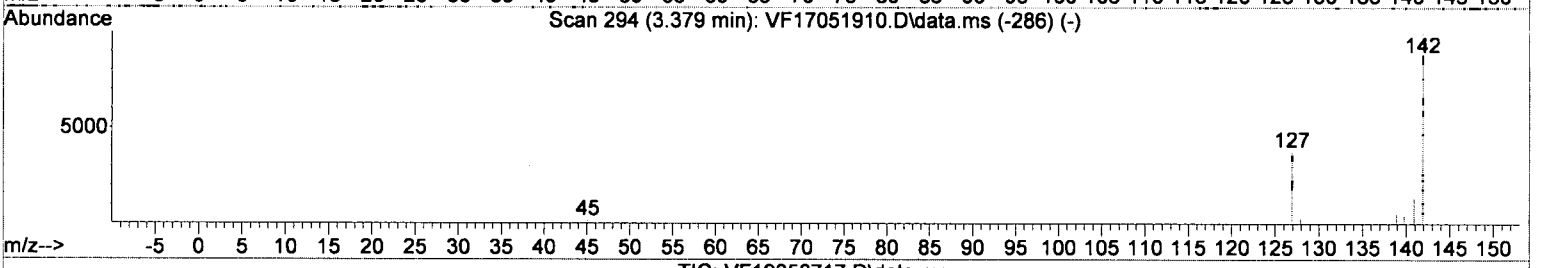
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







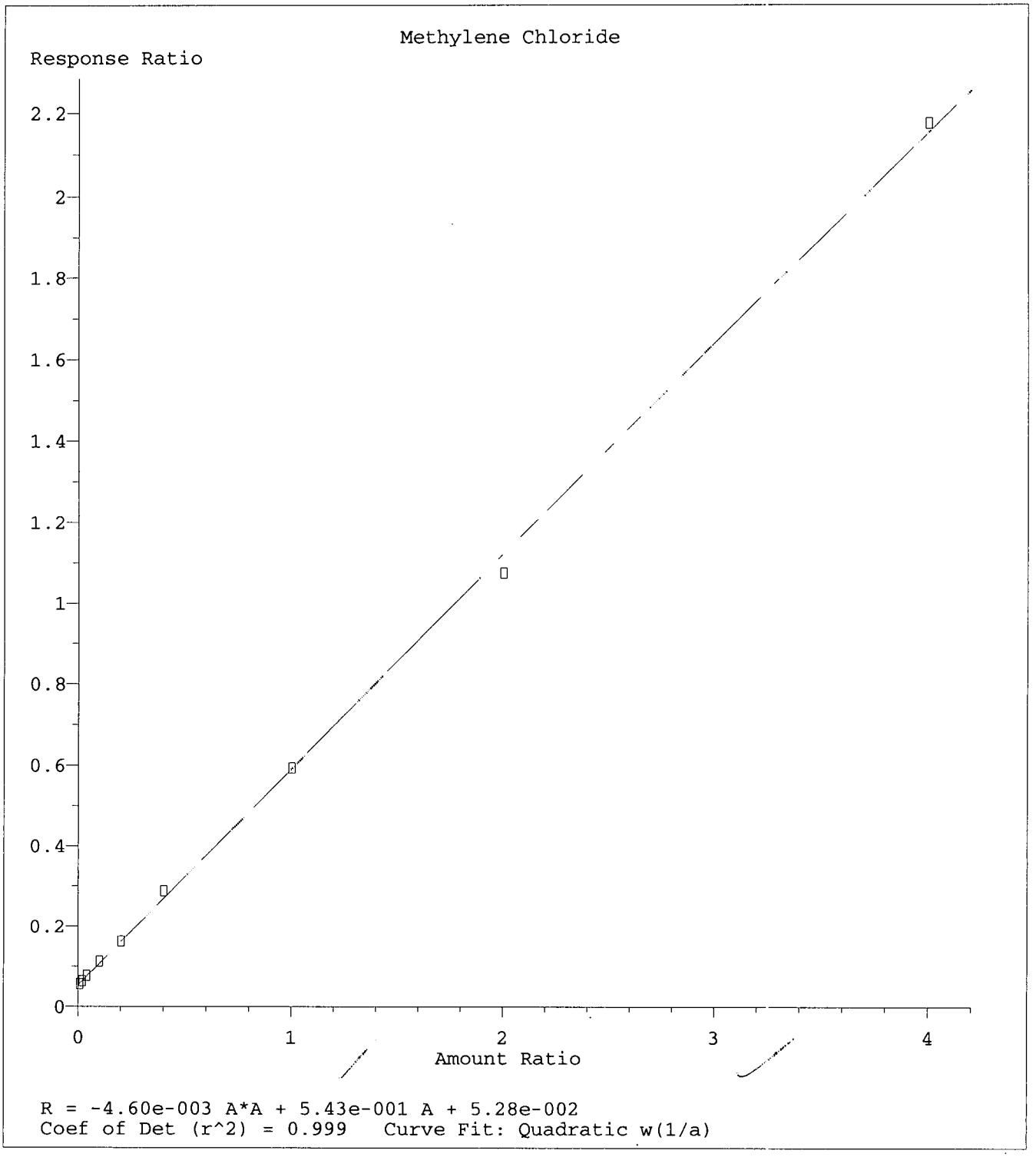
TIC: VF19050717.D\data.ms

(11) Iodomethane

3.266min (-0.014) 1.10 ug/L m

response 40

Ion	Exp%	Act%
142.00	100	100
127.00	35.00	0.00#
141.00	15.00	0.00#
0.00	0.00	0.00



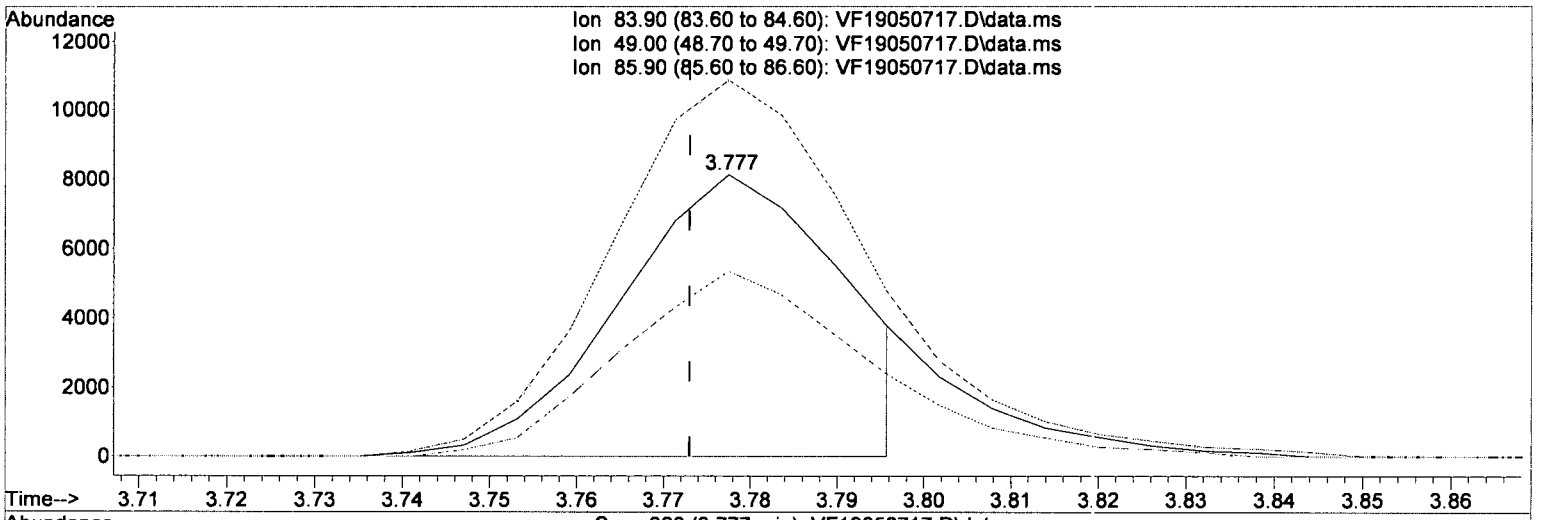
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

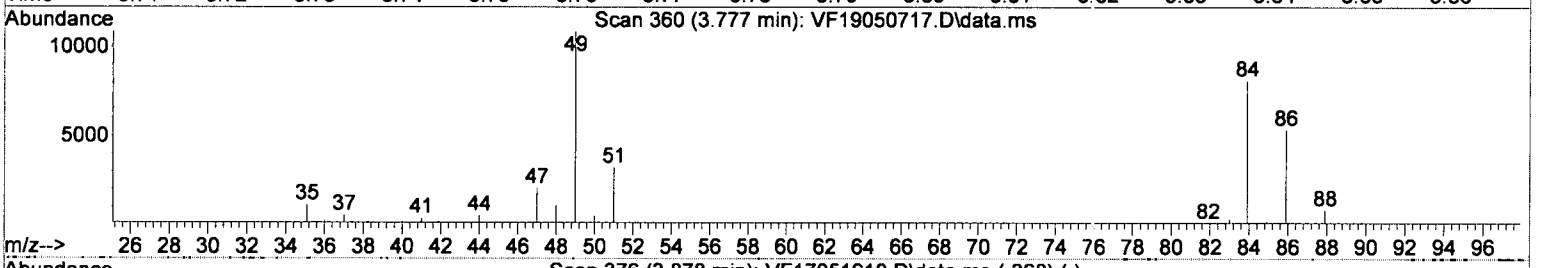
Int =(-)

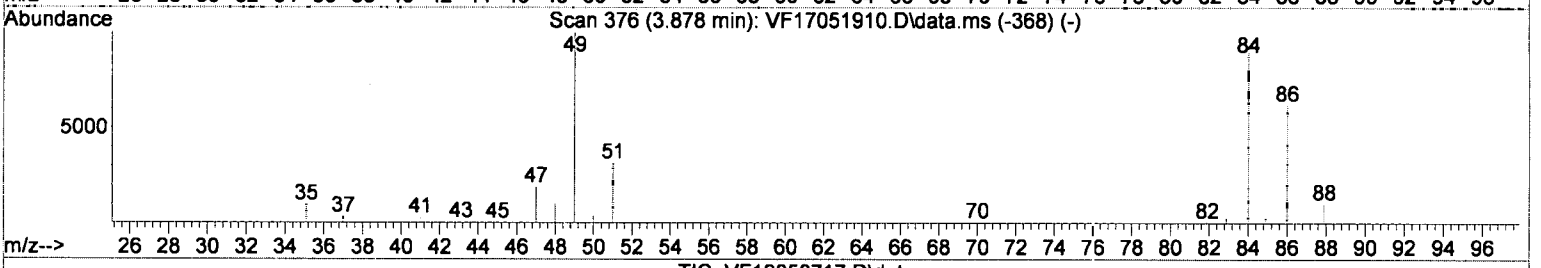
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







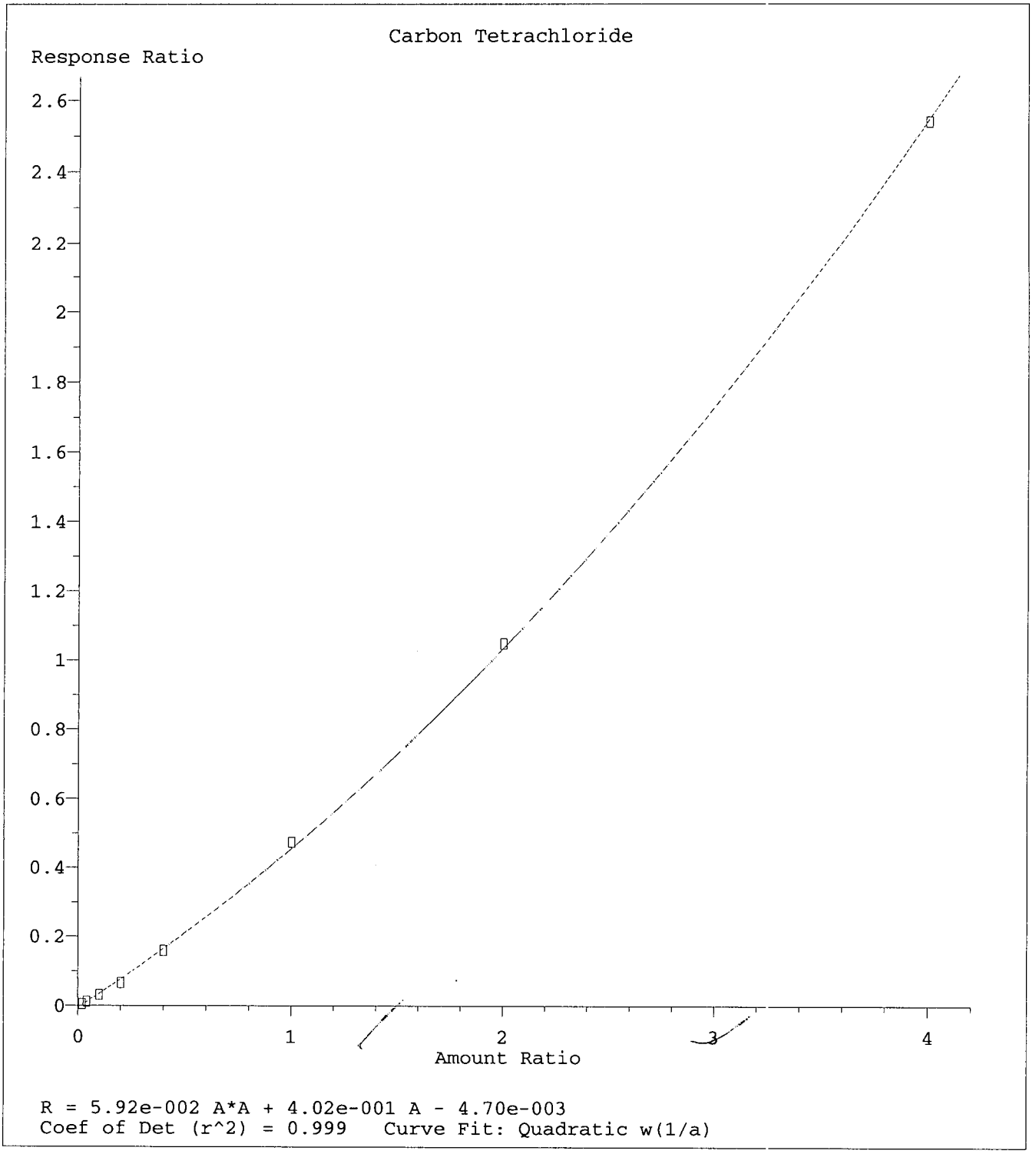
TIC: VF19050717.D\data.ms

(12) Methylene Chloride

3.777min (+0.004) 0.26 ug/L m

response 14573

Ion	Exp%	Act%
83.90	100	100
49.00	121.90	133.43
85.90	60.10	65.74
0.00	0.00	0.00



Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

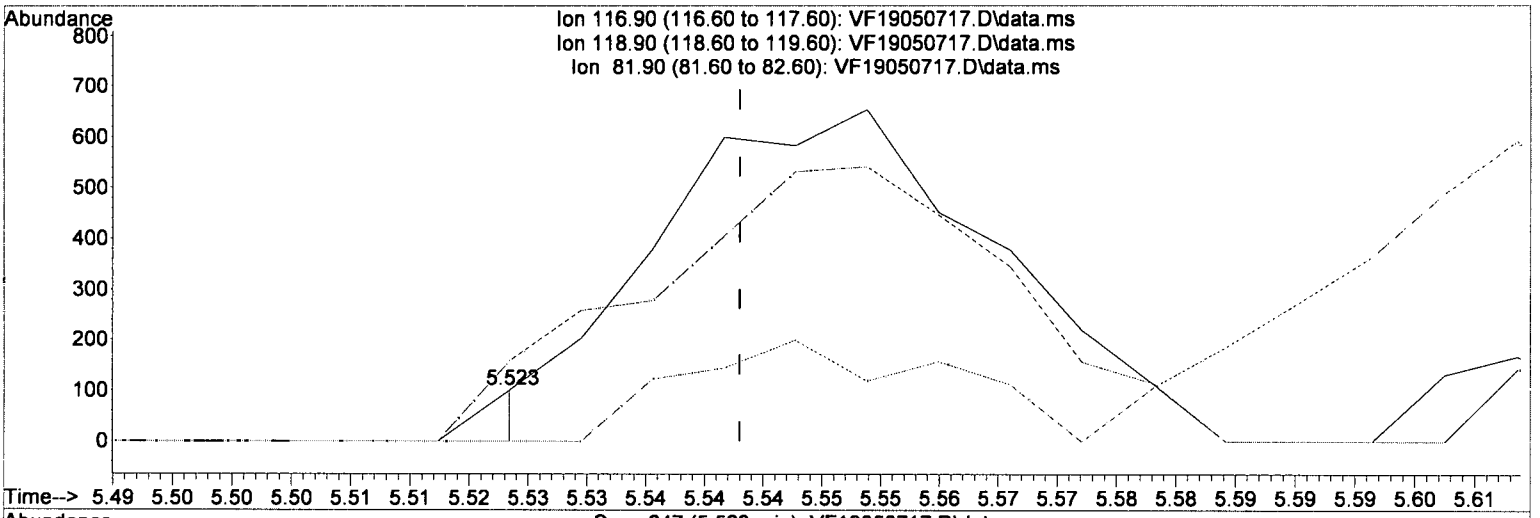
IuT = 0.60

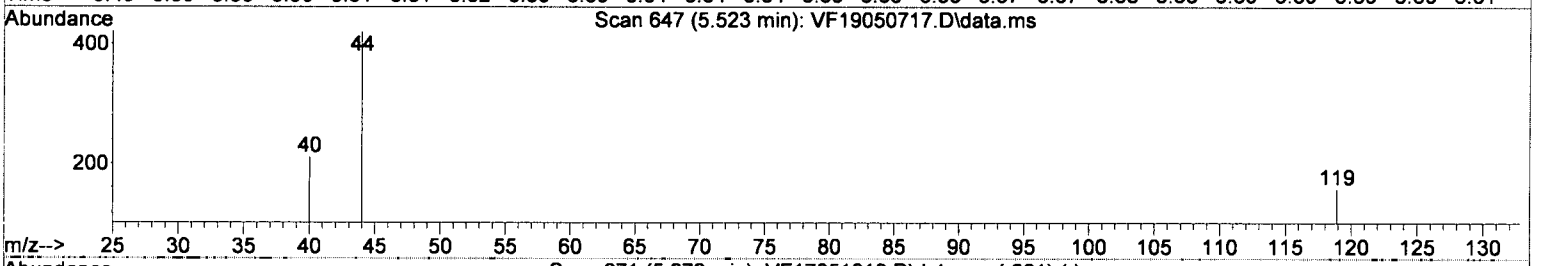
↑ MDL MRL

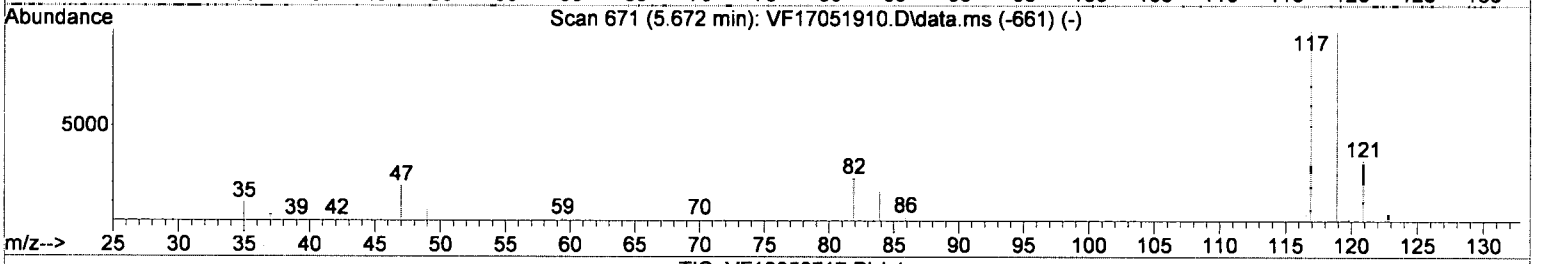
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







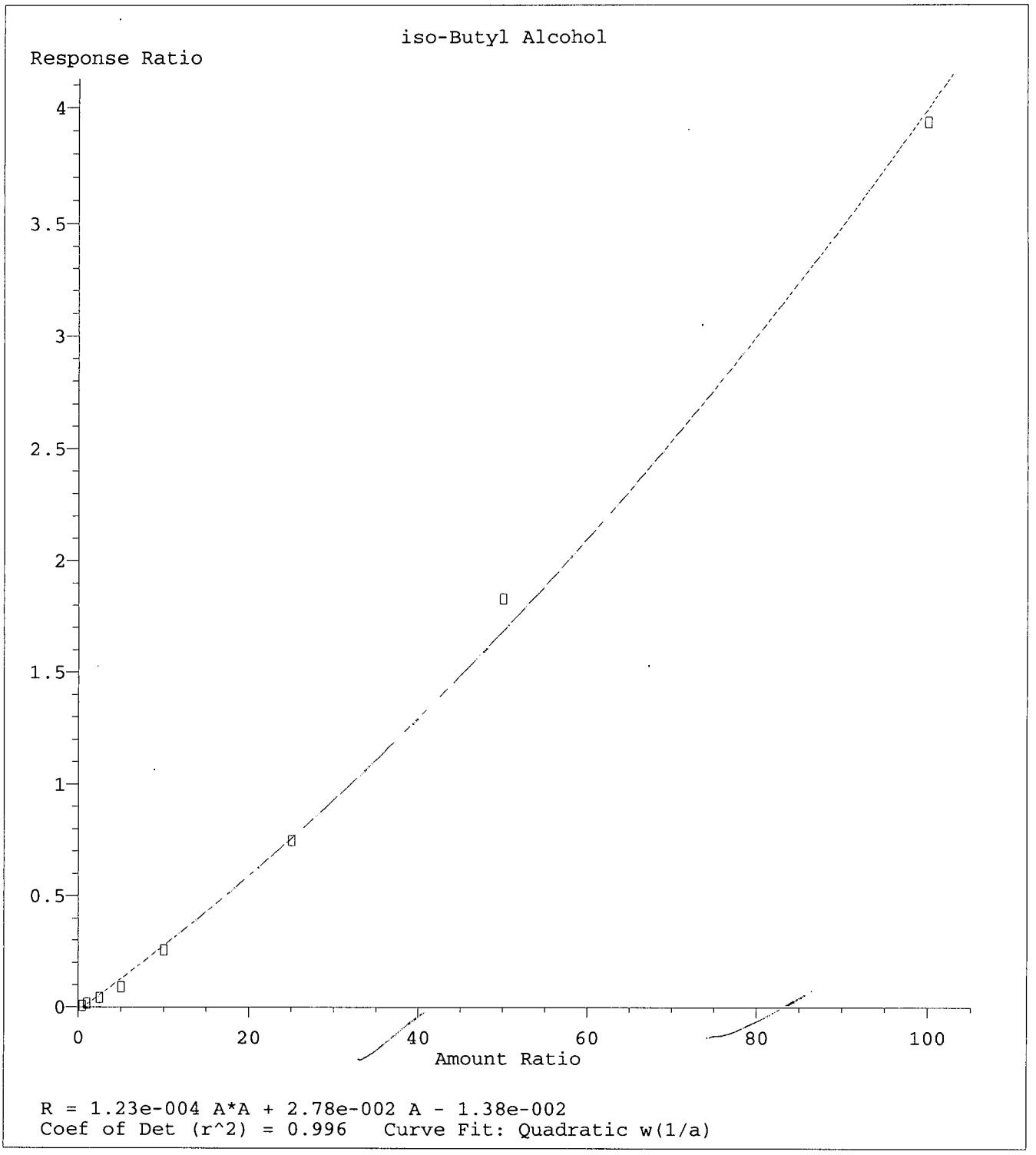
TIC: VF19050717.D\data.ms

(23) Carbon Tetrachloride

5.523min (-0.020) 0.60 ug/L m

response 37

Ion	Exp%	Act%
116.90	100	100
118.90	93.00	156.44#
81.90	23.10	0.00
0.00	0.00	0.00



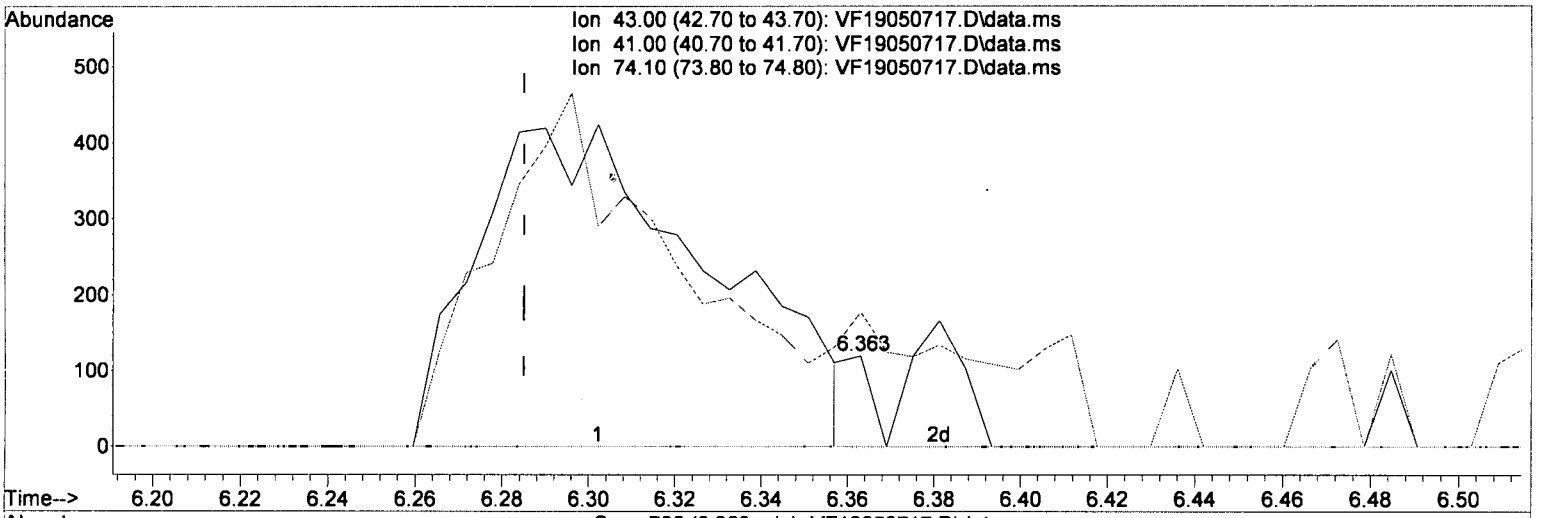
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

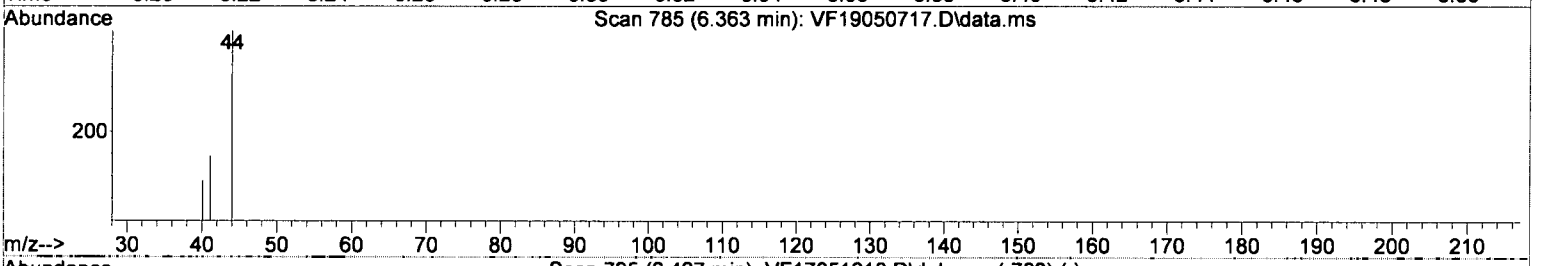
$\bar{x}_{WT} = 24.97$

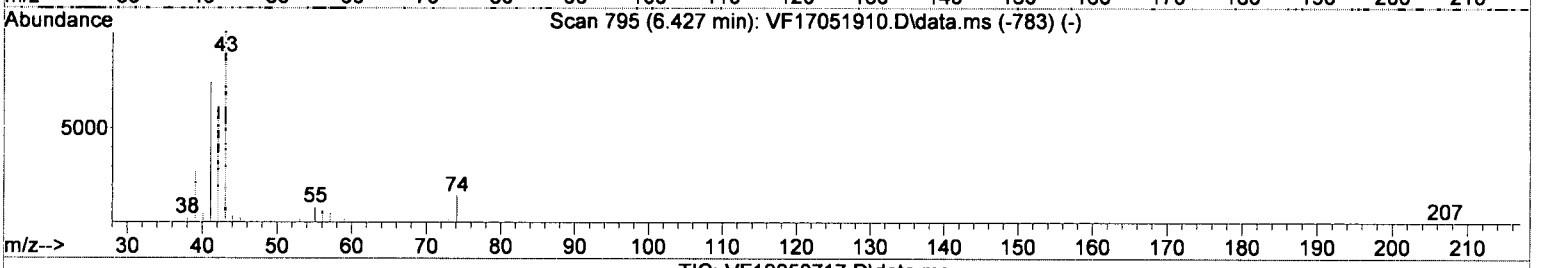
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







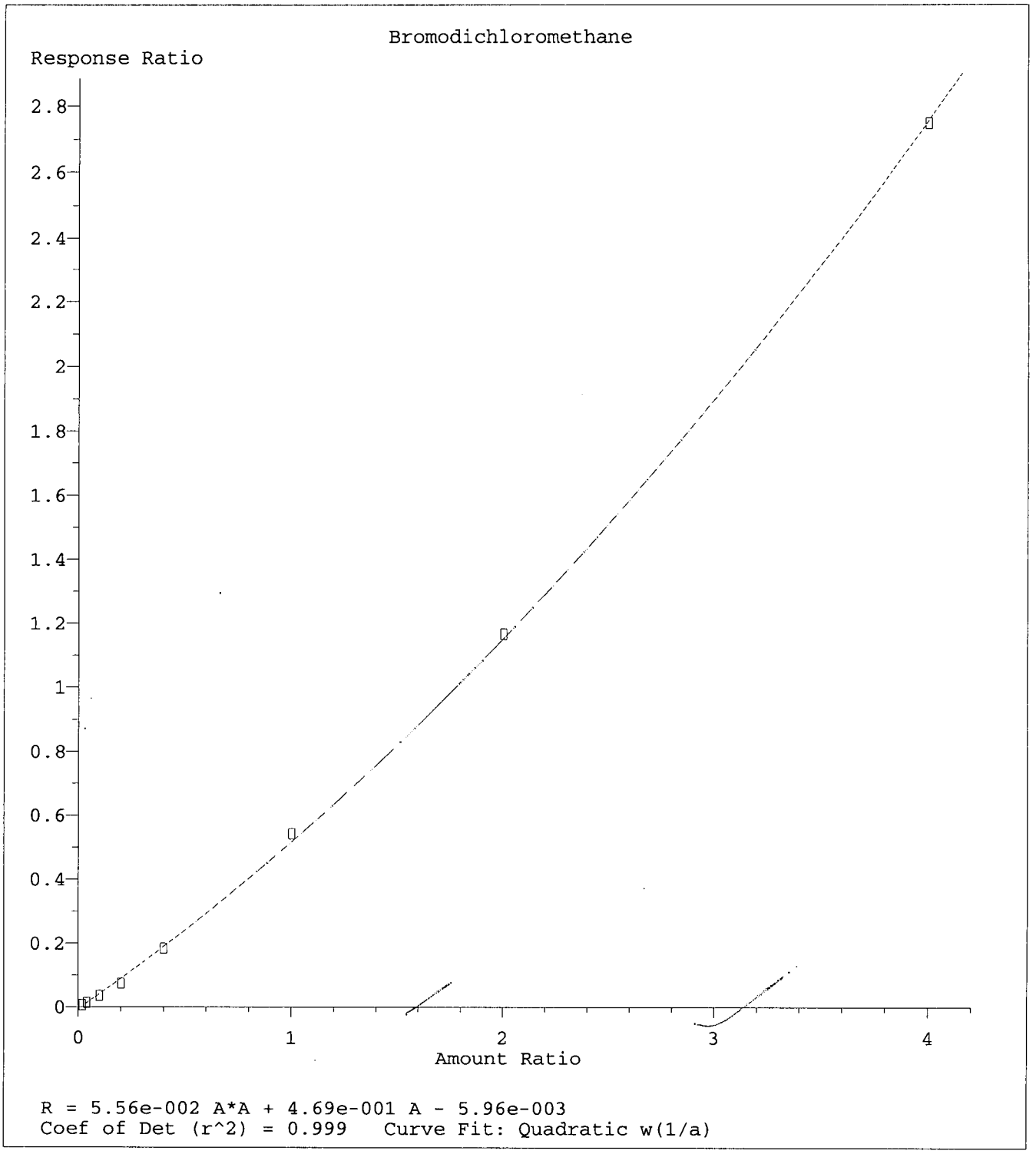
TIC: VF19050717.D\data.ms

(31) iso-Butyl Alcohol

6.363min (+0.078) 24.97 ug/L m

response 44

Ion	Exp%	Act%
43.00	100	100
41.00	78.40	148.33#
74.10	9.40	0.00
0.00	0.00	0.00



Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

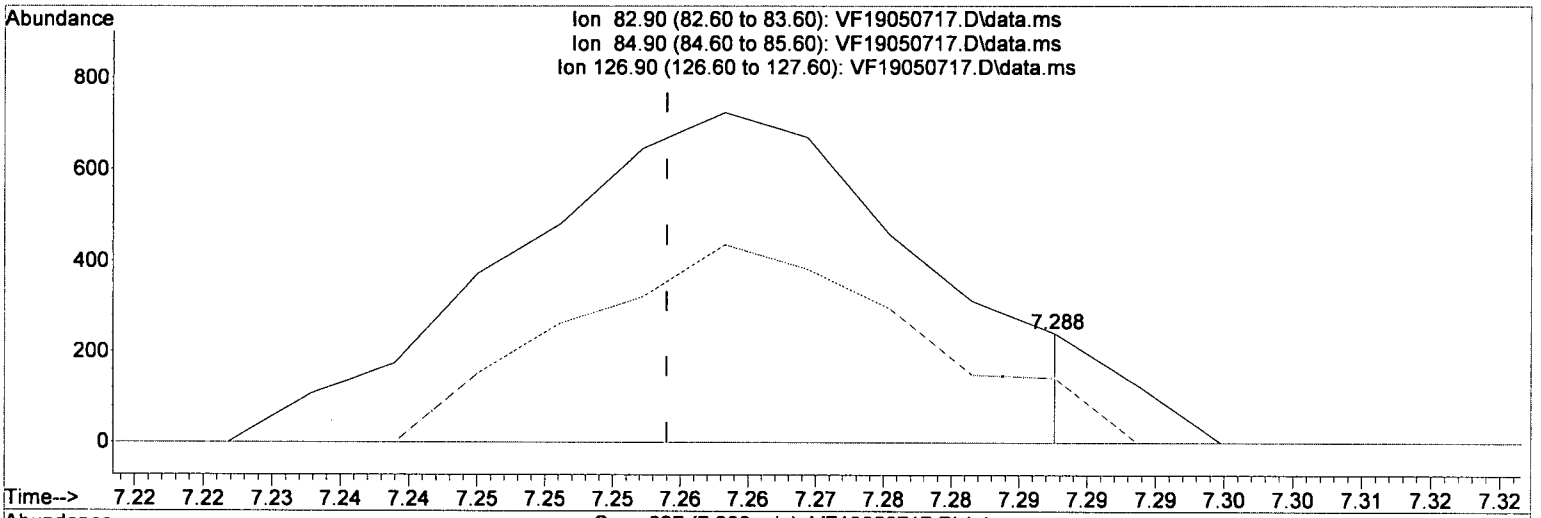
Int = 0.65

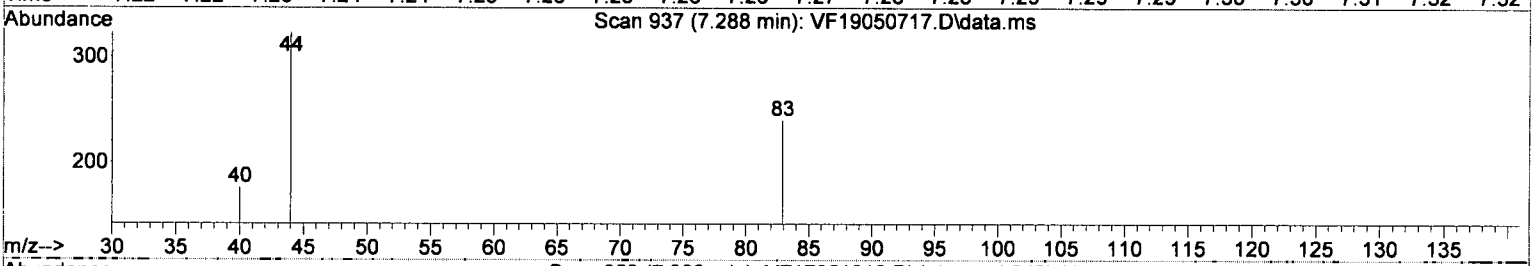
9 MDL MRL

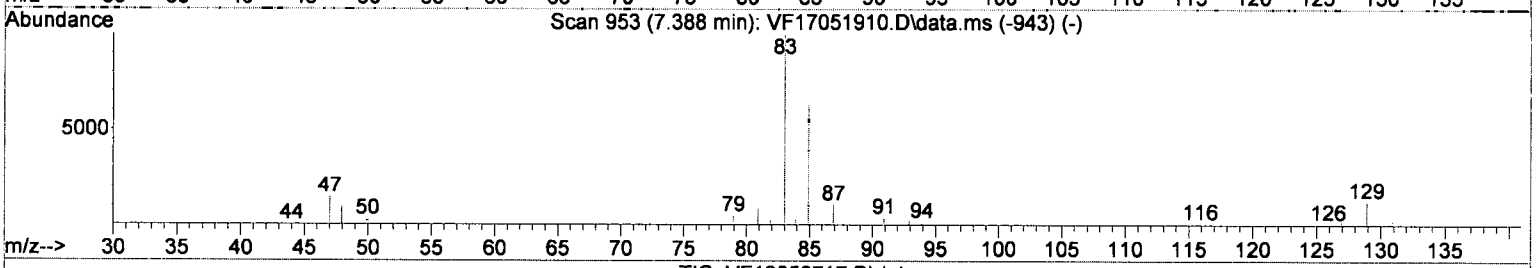
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







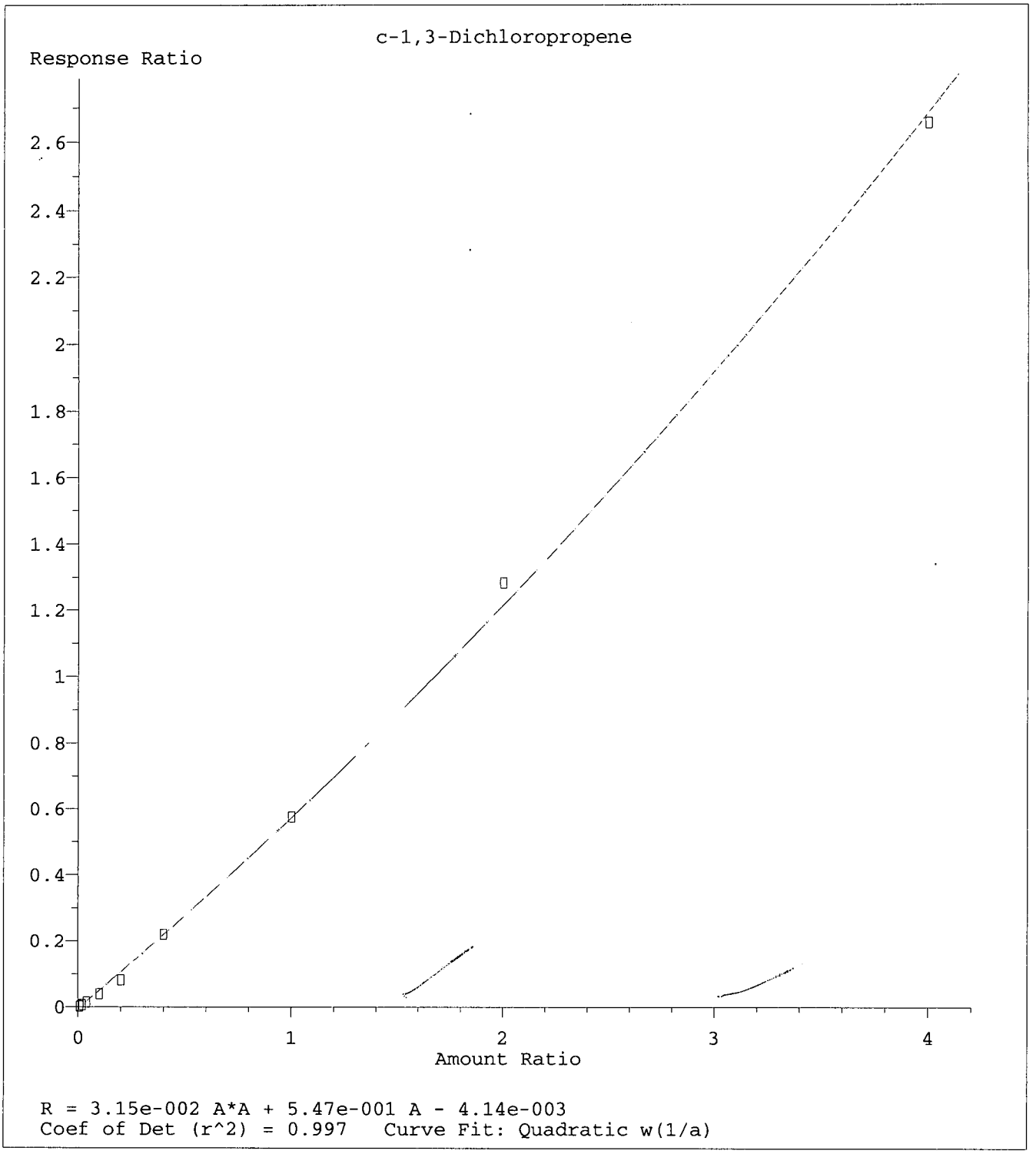
TIC: VF19050717.D\data.ms

(36) Bromodichloromethane

7.288min (+0.029) 0.65 ug/L m

response 46

Ion	Exp%	Act%
82.90	100	100
84.90	63.00	59.17
126.90	9.30	0.00
0.00	0.00	0.00



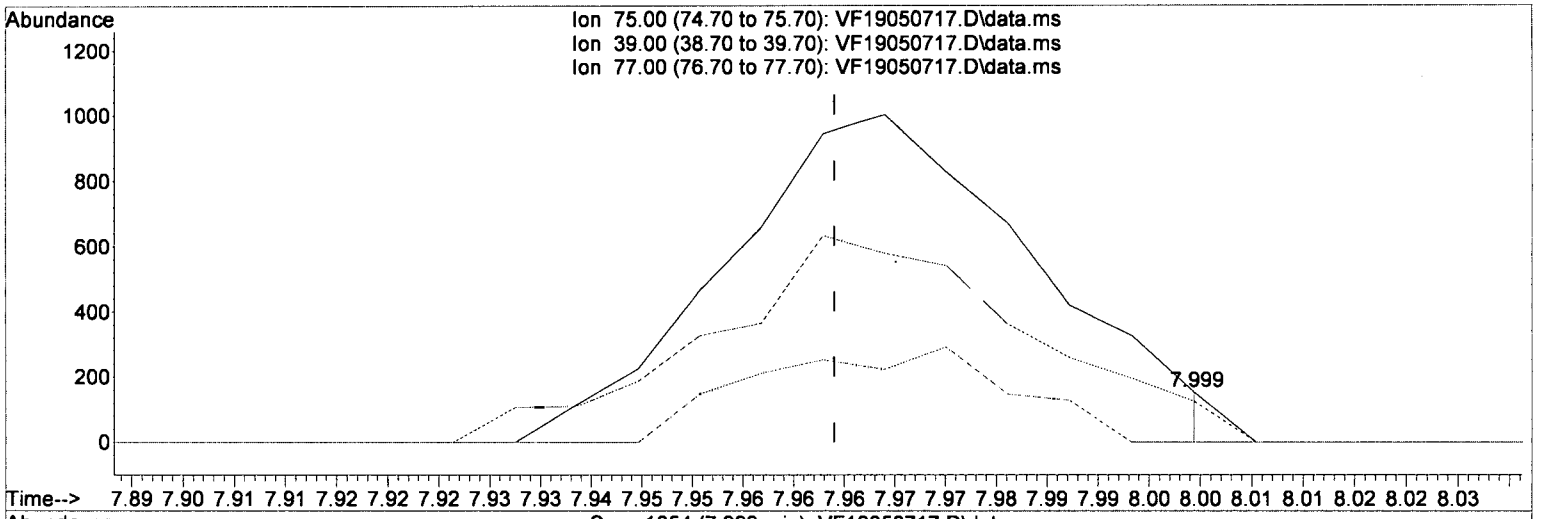
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

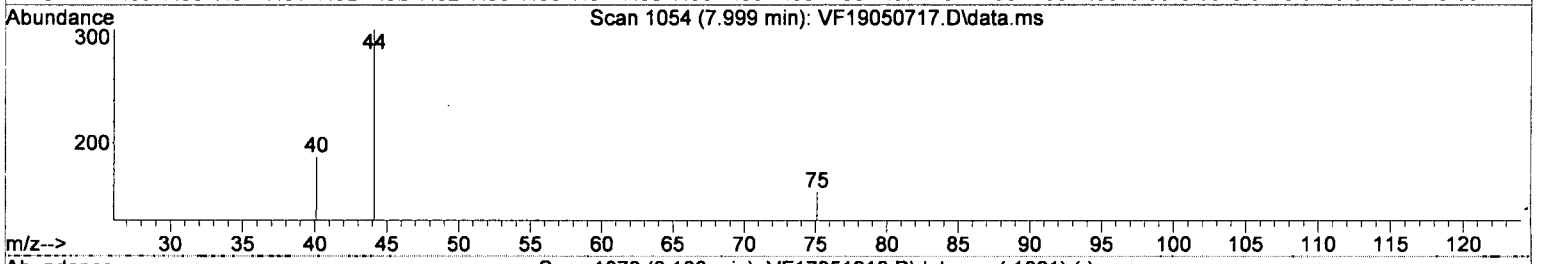
Int = 0.38

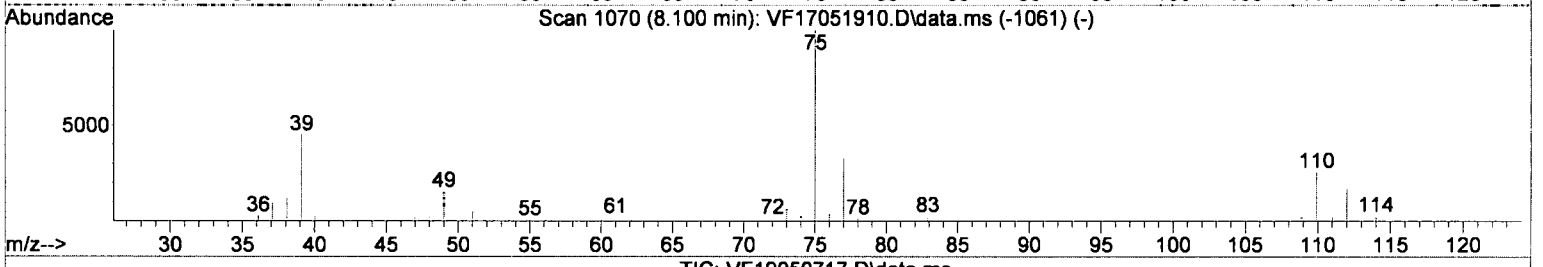
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







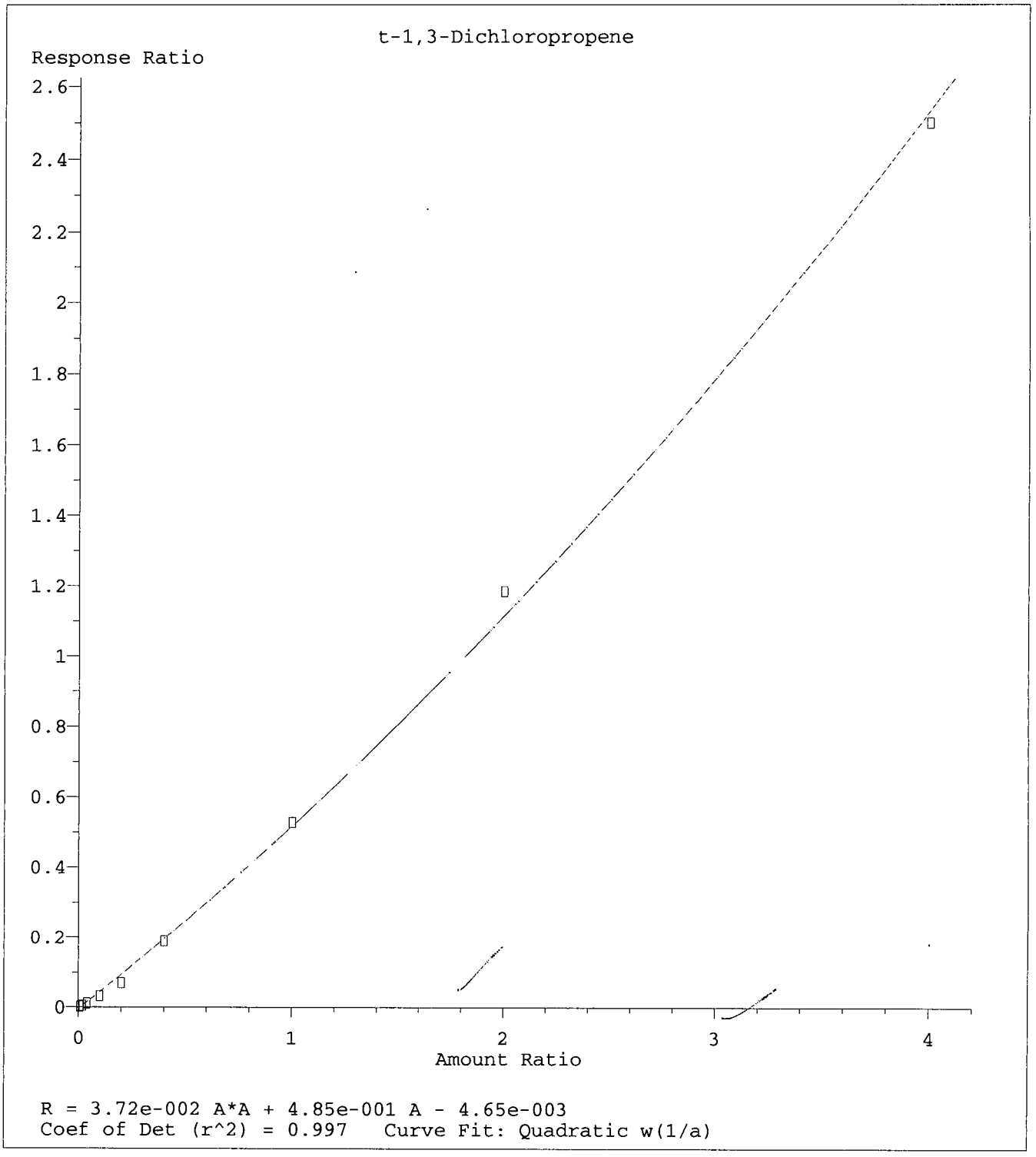
TIC: VF19050717.D\data.ms

(38) c-1,3-Dichloropropene

7.999min (+0.035) 0.38 ug/L m

response 0

Ion	Exp%	Act%
75.00	100	0.00
39.00	46.20	0.00#
77.00	33.30	0.00#
0.00	0.00	0.00



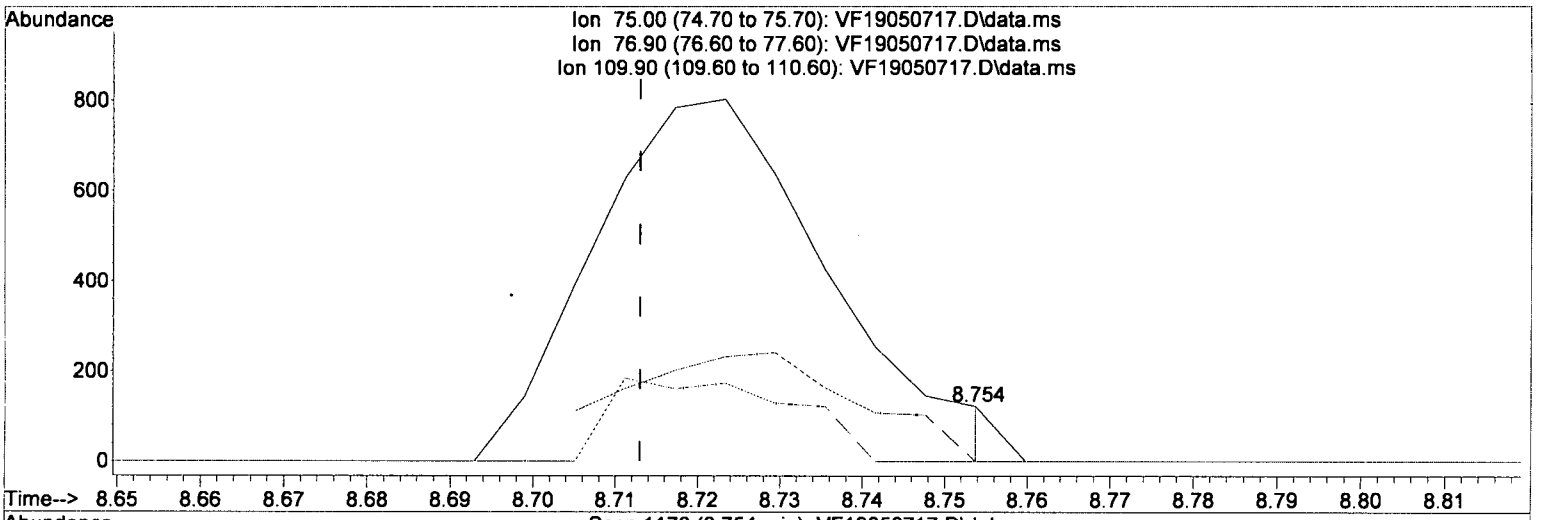
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

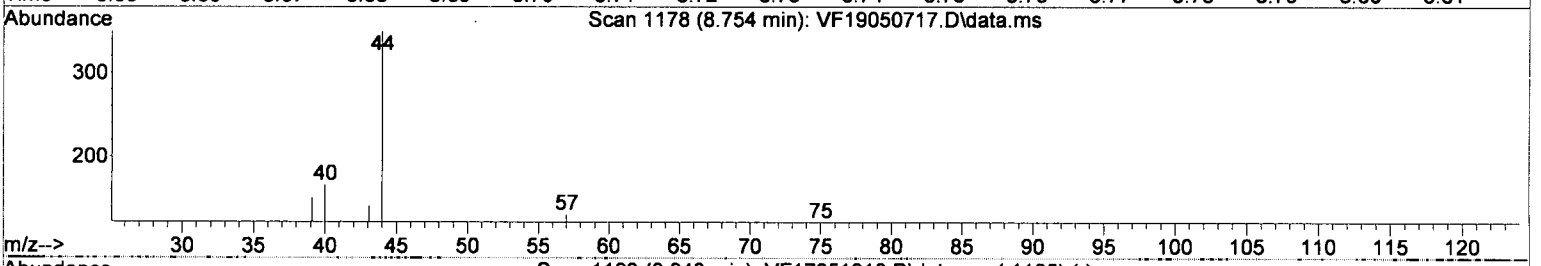
Int = 0.48

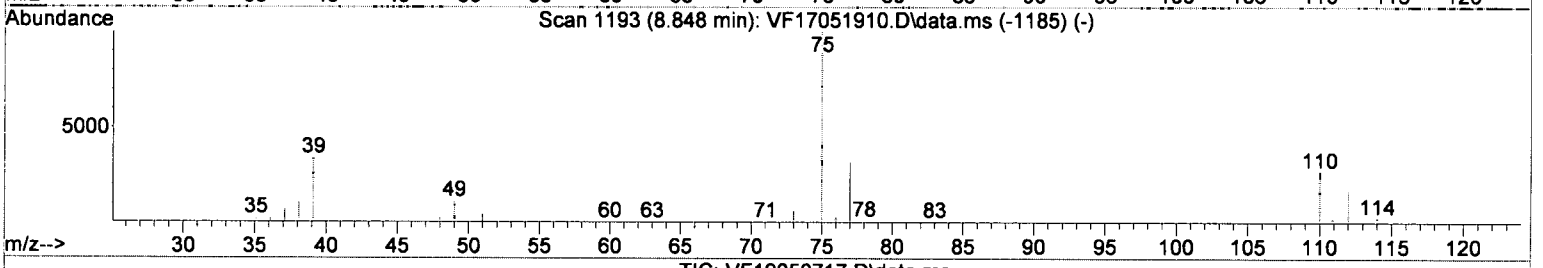
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







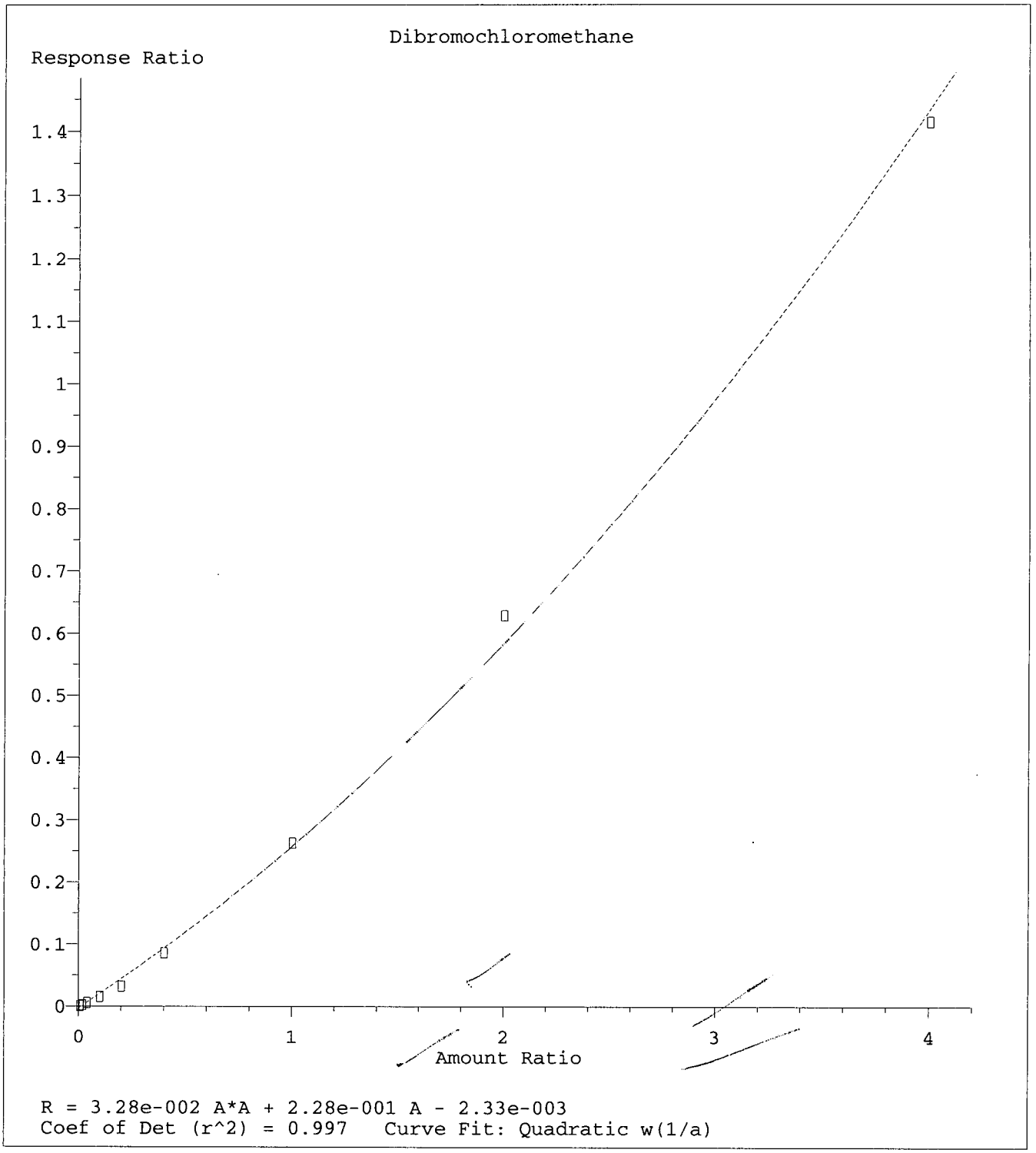
TIC: VF19050717.D\data.ms

(43) t-1,3-Dichloropropene

8.754min (+0.041) 0.48 ug/L m

response 0

Ion	Exp%	Act%
75.00	100	0.00
76.90	29.50	0.00
109.90	26.40	0.00
0.00	0.00	0.00



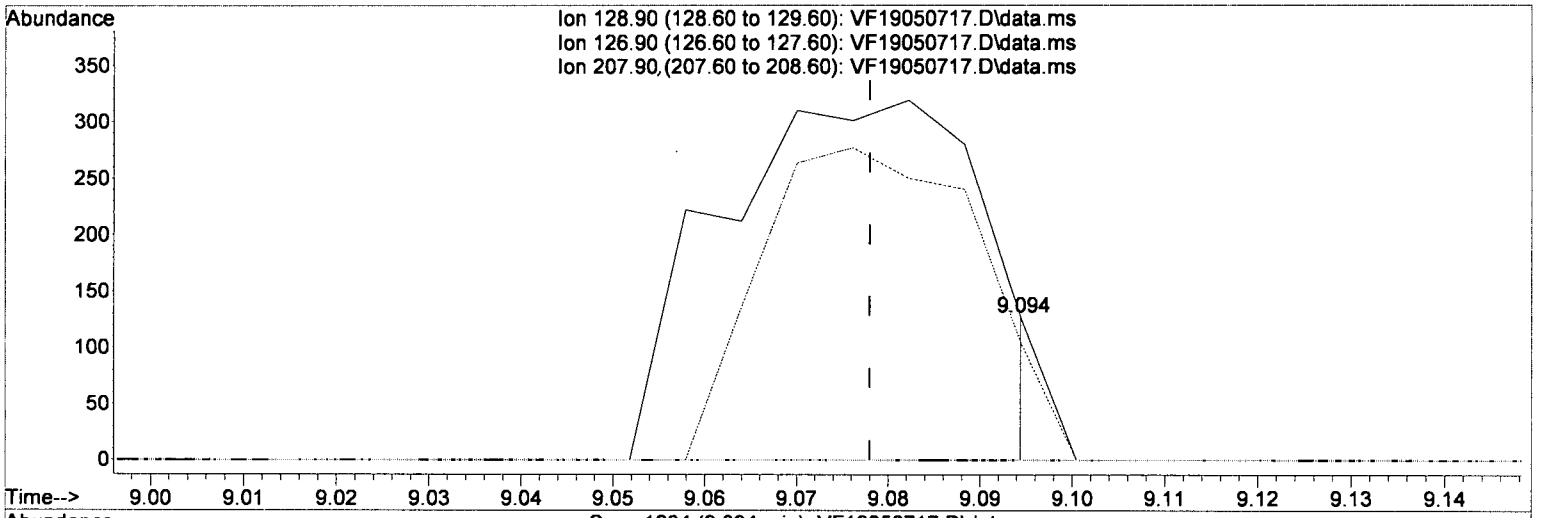
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

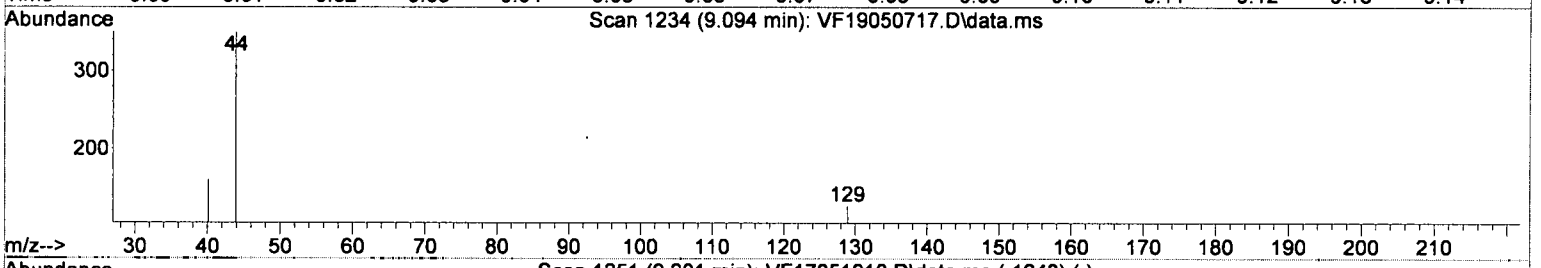
Int= 0.51

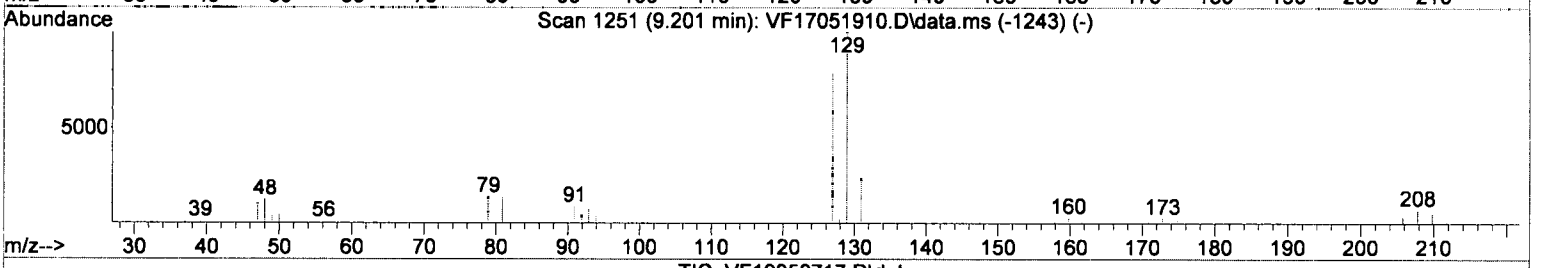
Quantitation Report (Qedit)

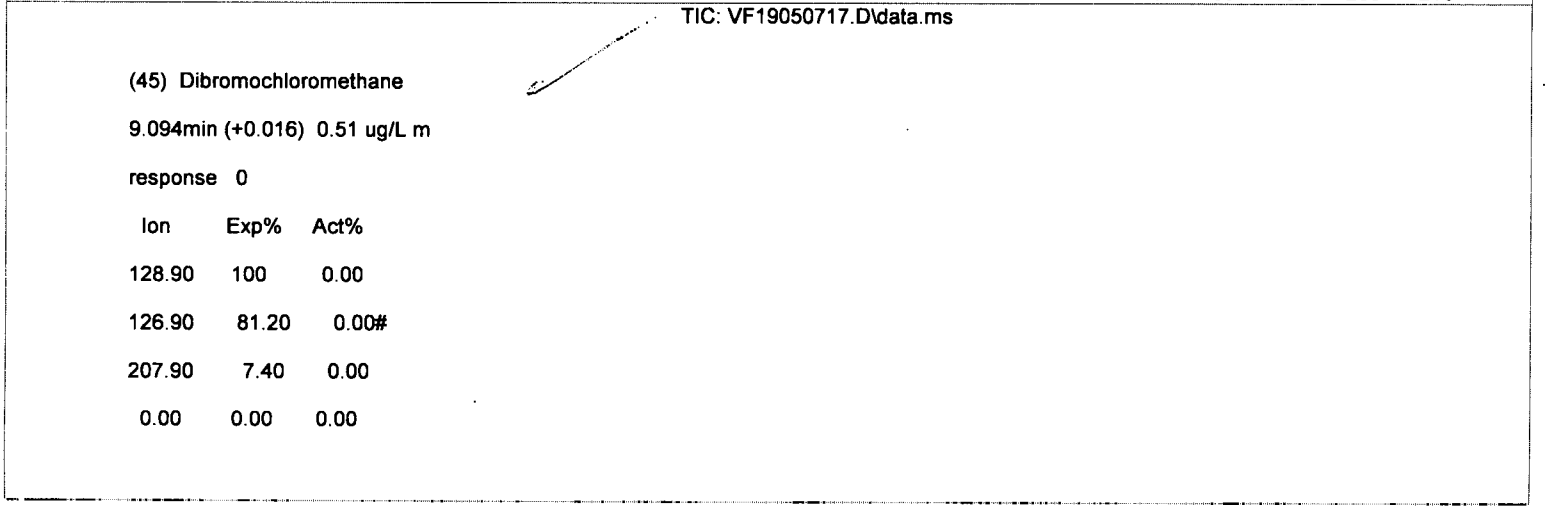
Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







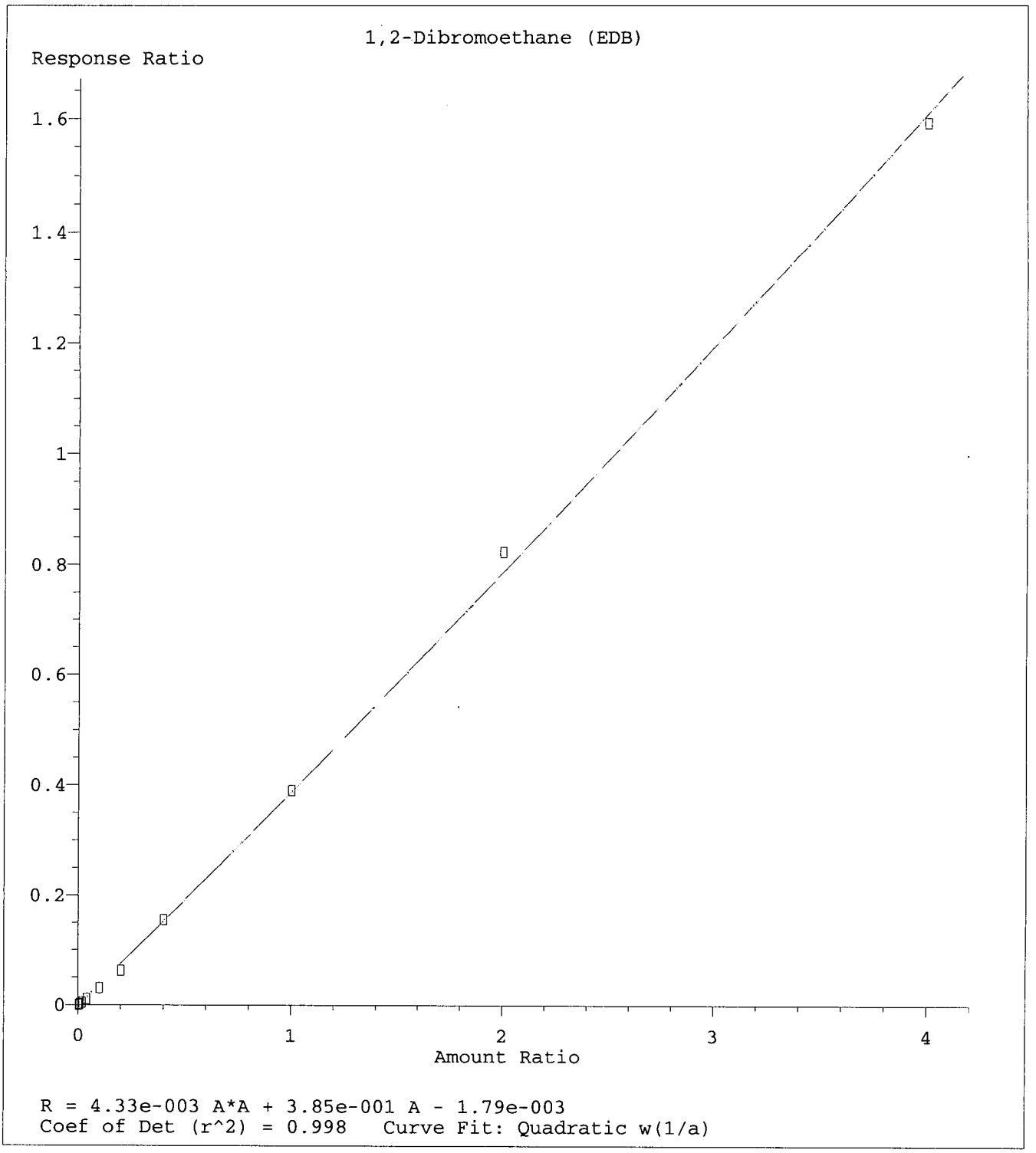


(45) Dibromochloromethane

9.094min (+0.016) 0.51 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



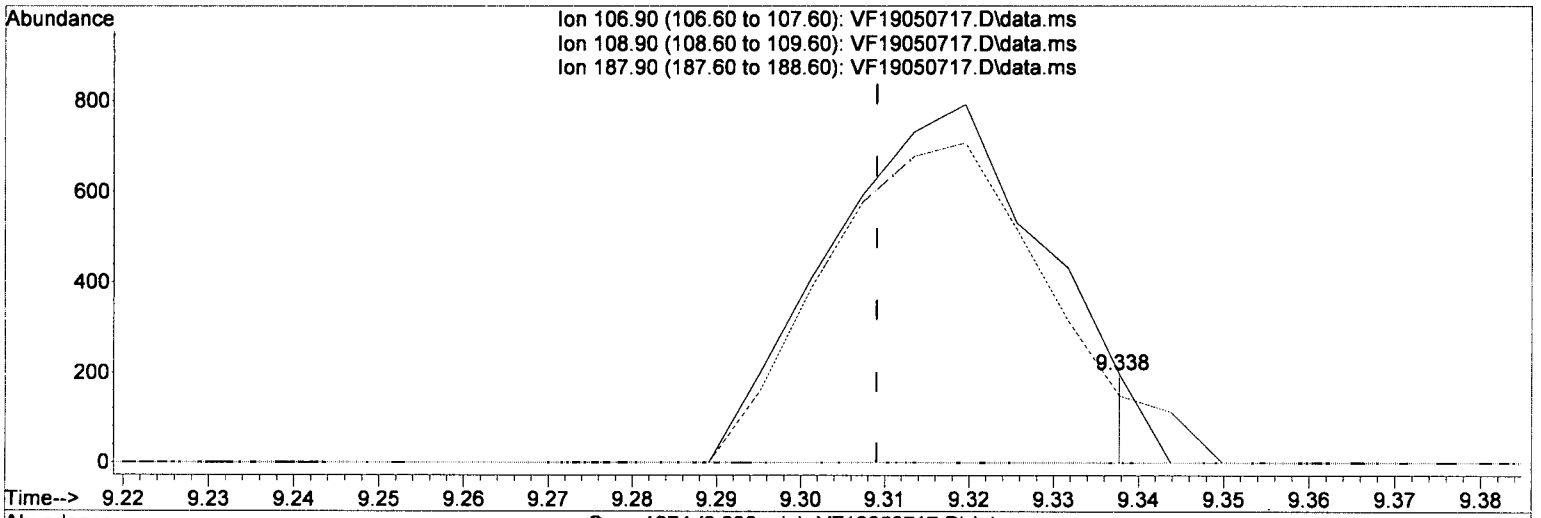
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

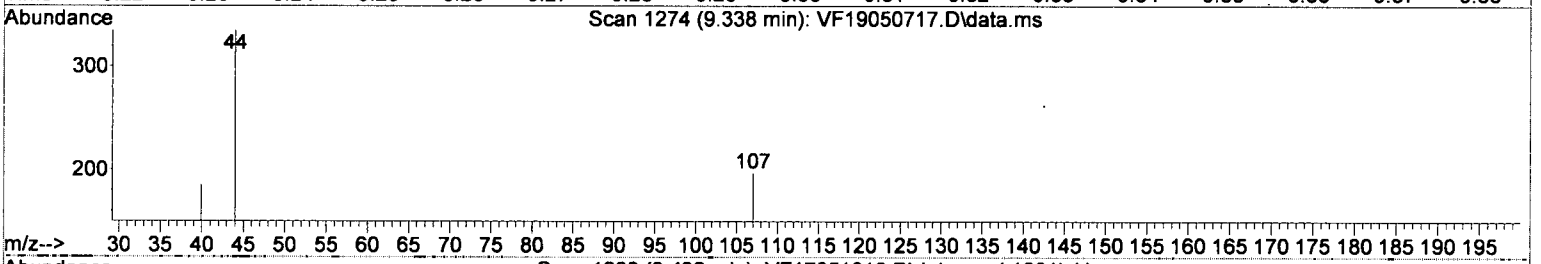
Int= 0.23

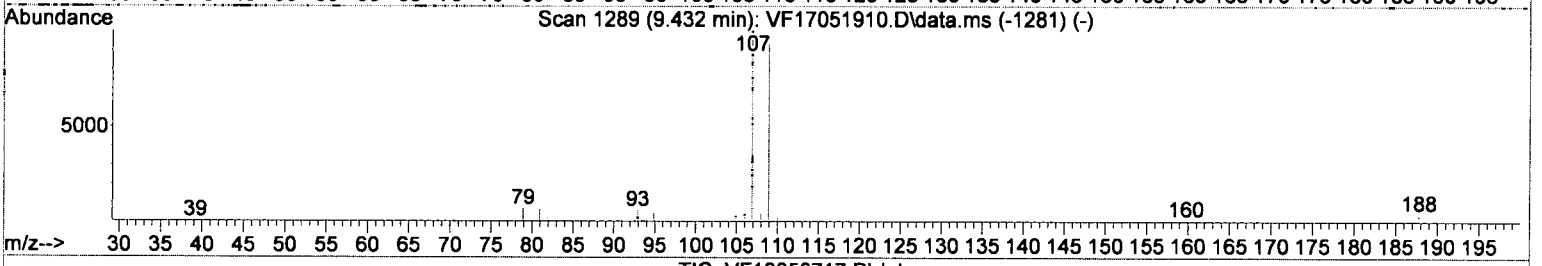
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







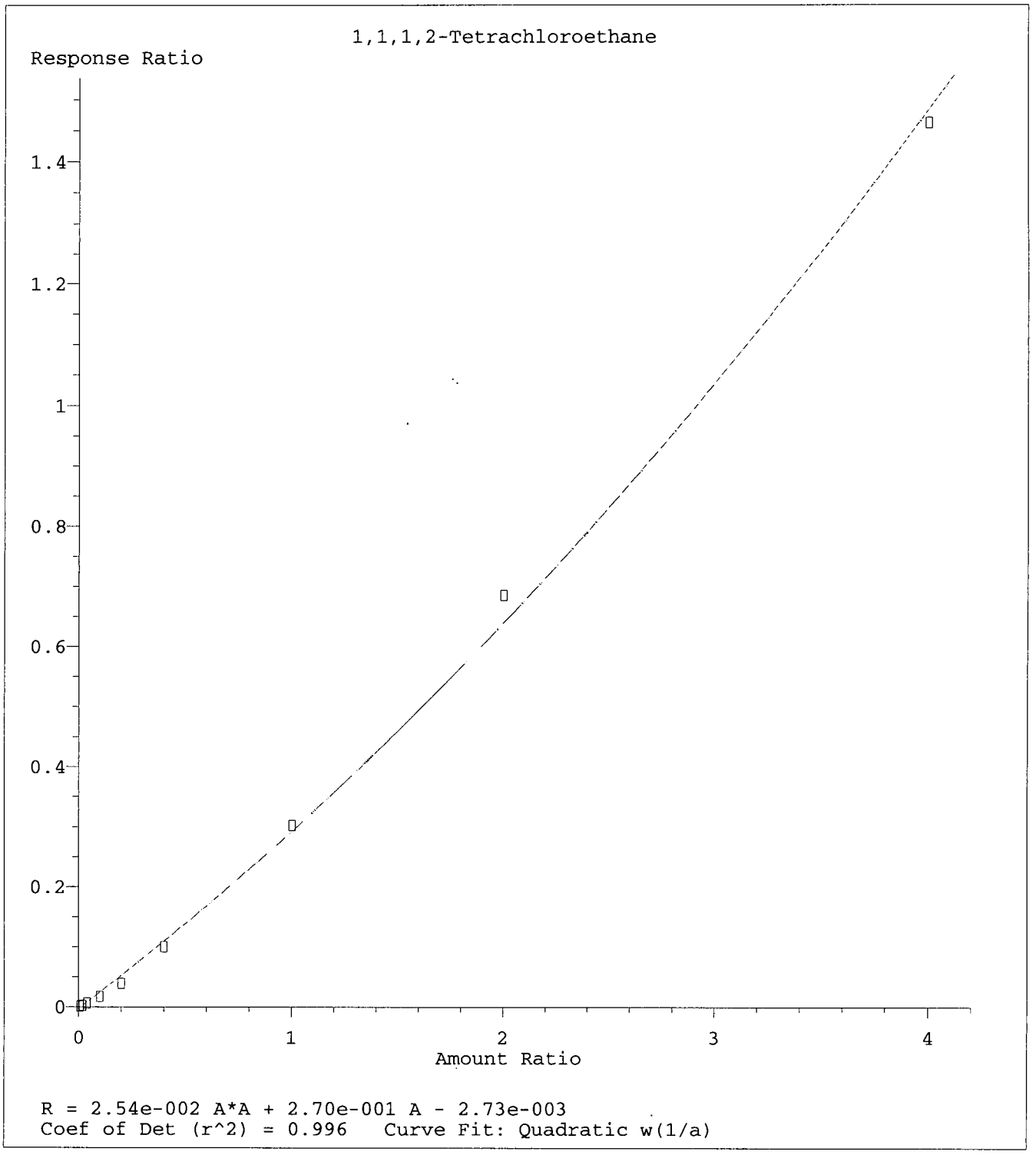
TIC: VF19050717.D\data.ms

(47) 1,2-Dibromoethane (EDB)

9.338min (+0.029) 0.23 ug/L m

response 0

Ion	Exp%	Act%
106.90	100	0.00
108.90	93.90	0.00#
187.90	4.70	0.00
0.00	0.00	0.00



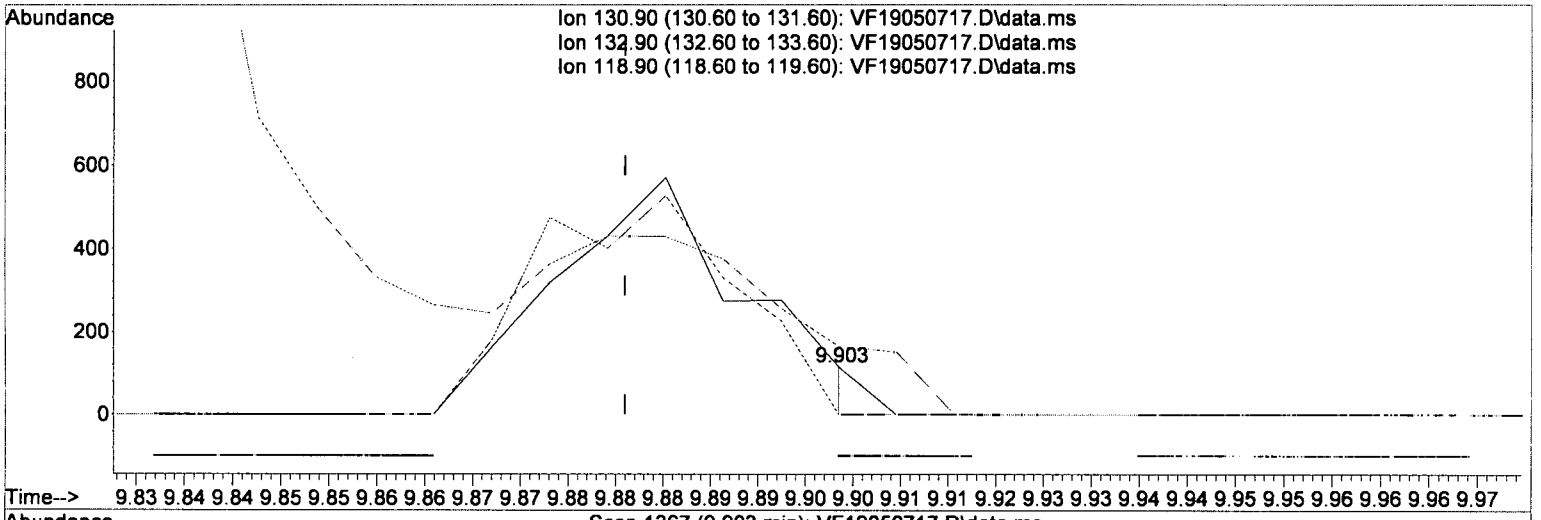
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

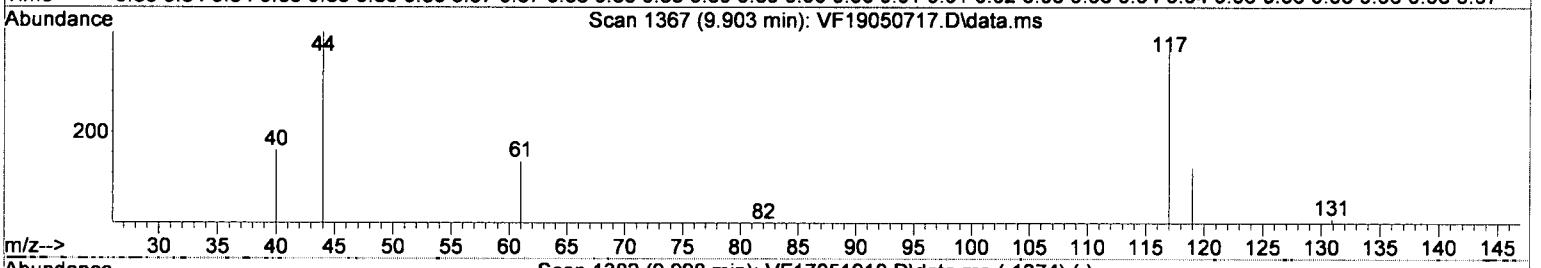
Int = 0.5 ppm MRL

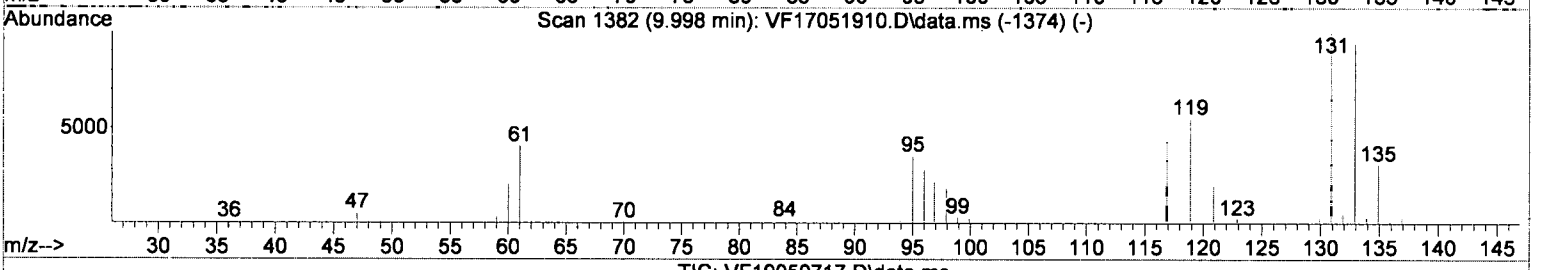
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







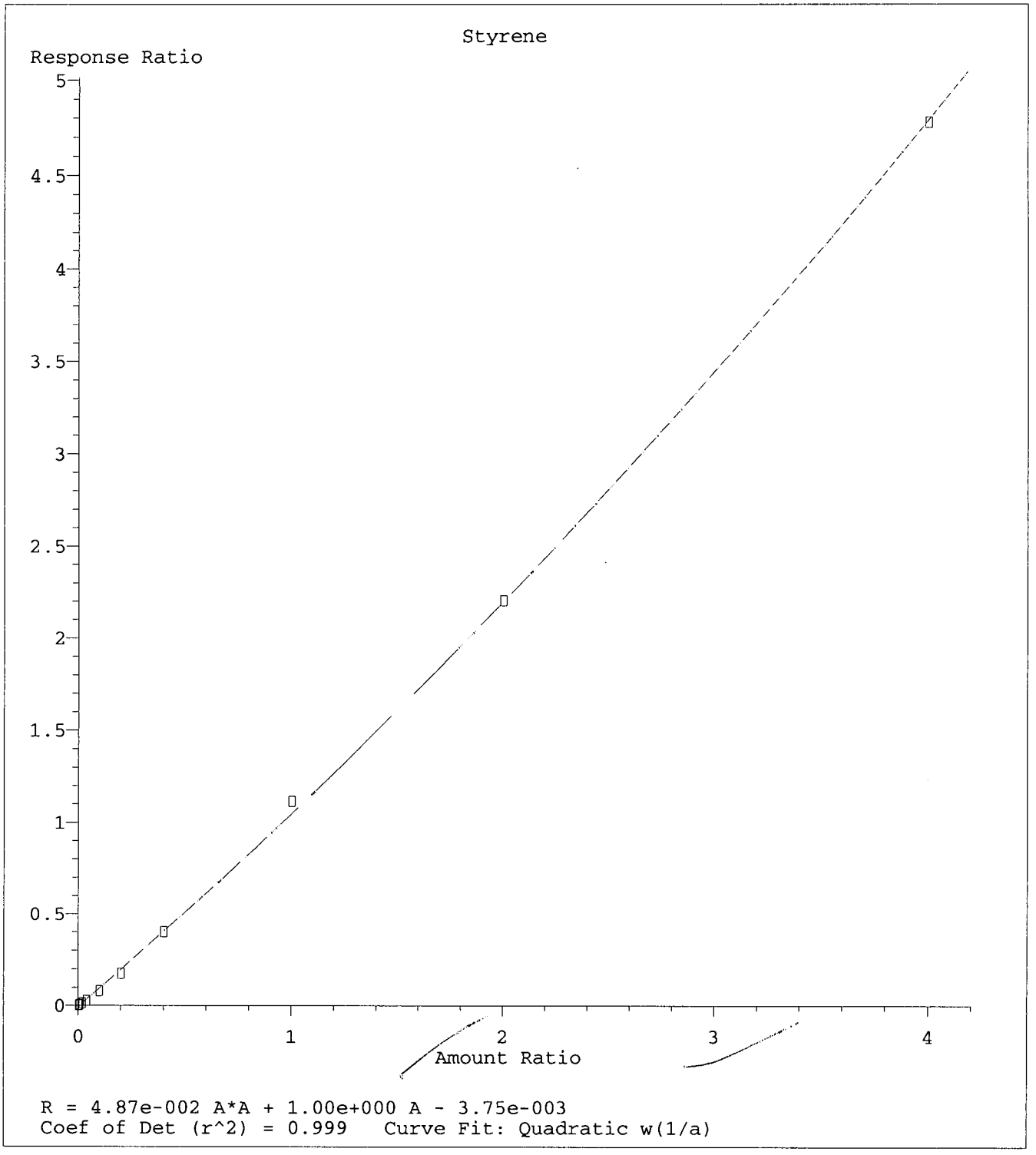
TIC: VF19050717.D\data.ms

(51) 1,1,1,2-Tetrachloroethane

9.903min (+0.022) 0.50 ug/L m

response 0

Ion	Exp%	Act%
130.90	100	0.00
132.90	95.60	0.00#
118.90	62.00	0.00#
0.00	0.00	0.00



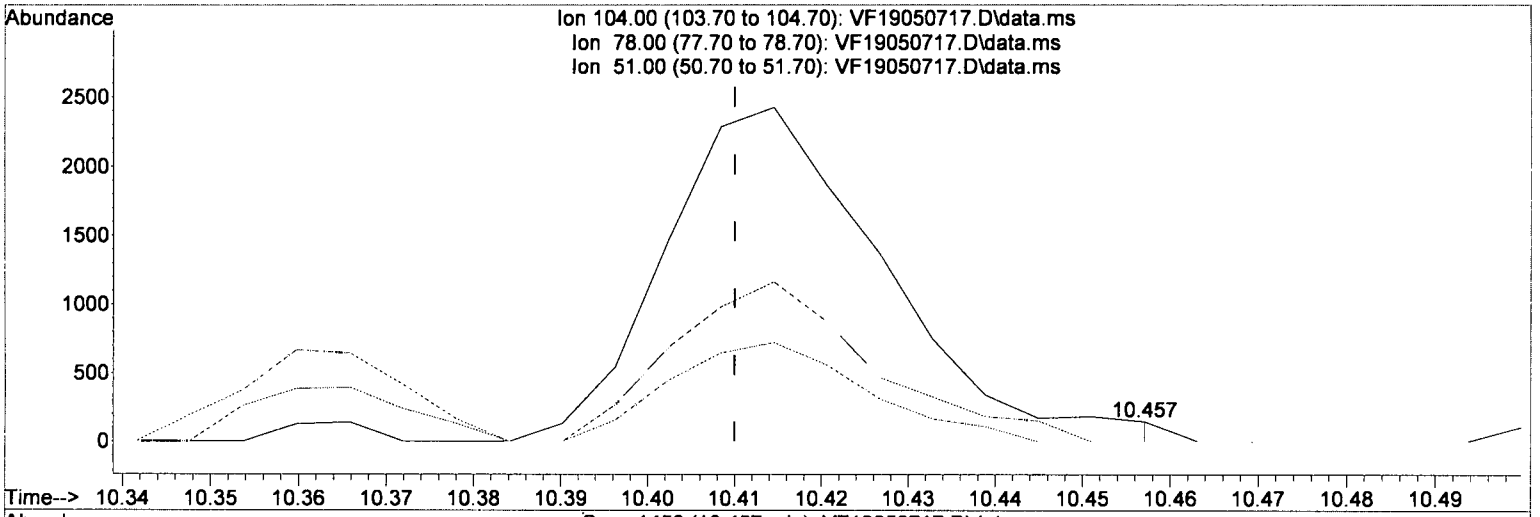
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

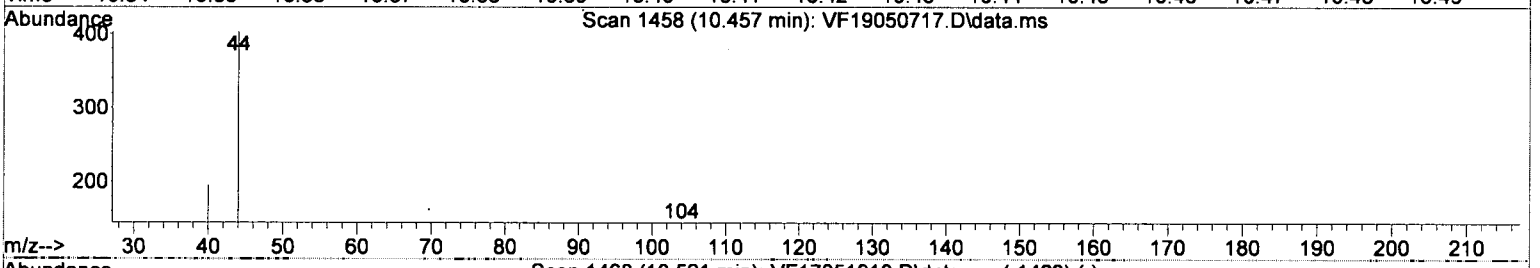
Int = 0.19

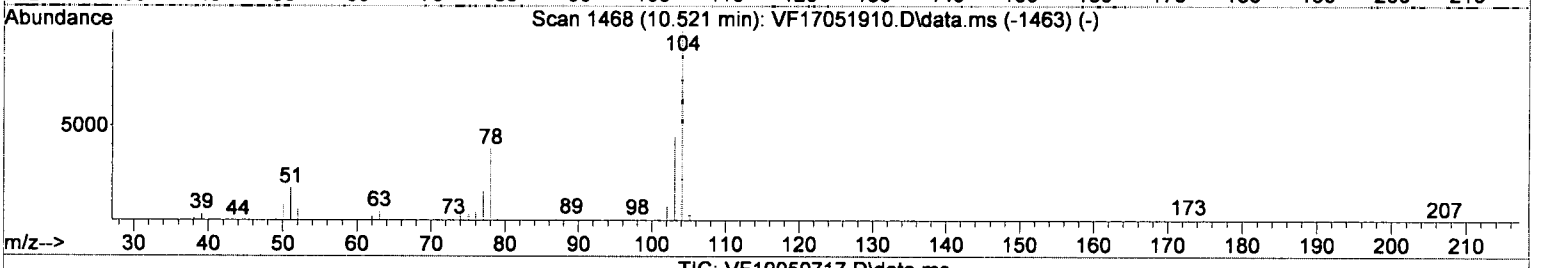
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







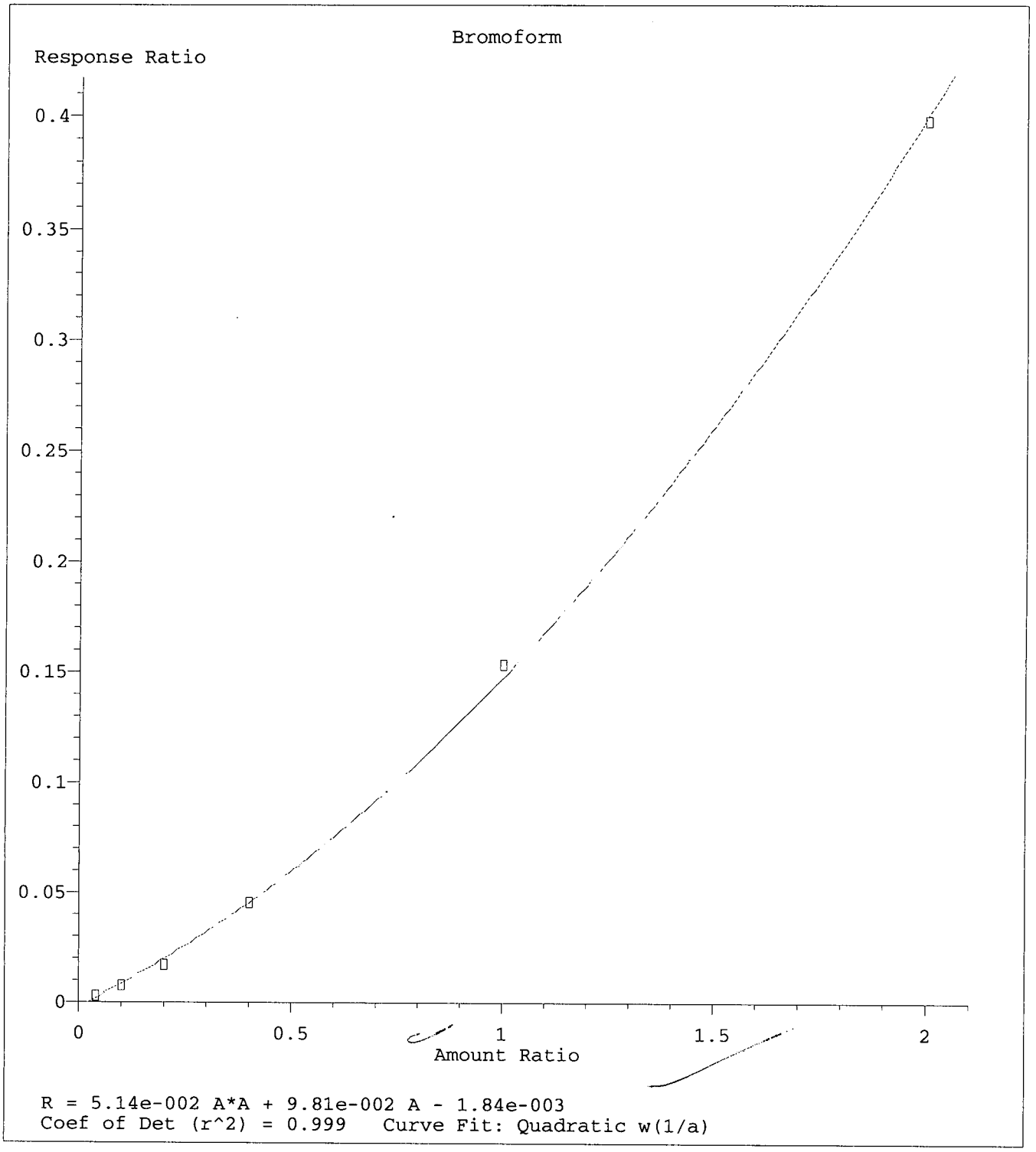
TIC: VF19050717.D\data.ms

(54) Styrene

10.457min (+0.047) 0.19 ug/L m

response 0

Ion	Exp%	Act%
104.00	100	0.00
78.00	40.60	0.00#
51.00	21.90	0.00
0.00	0.00	0.00



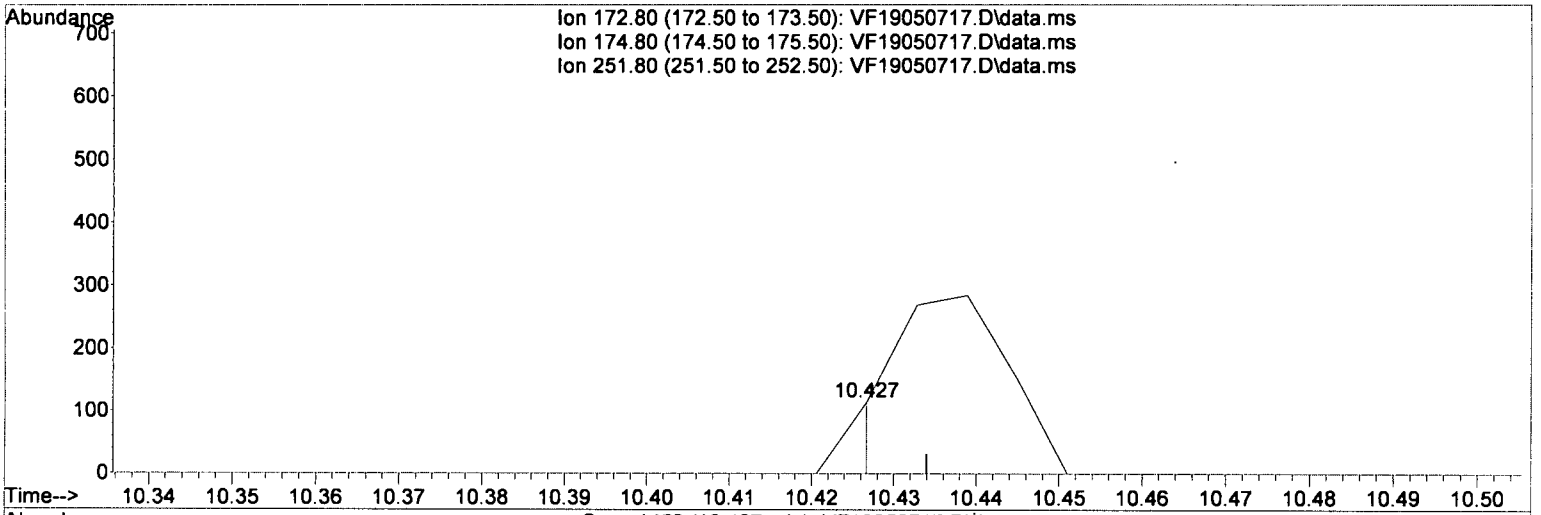
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

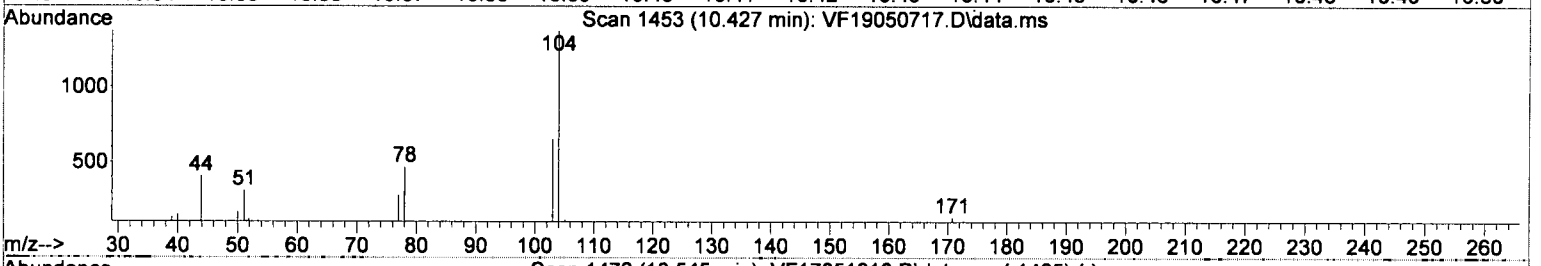
Int= 1.76
µ mol/mL

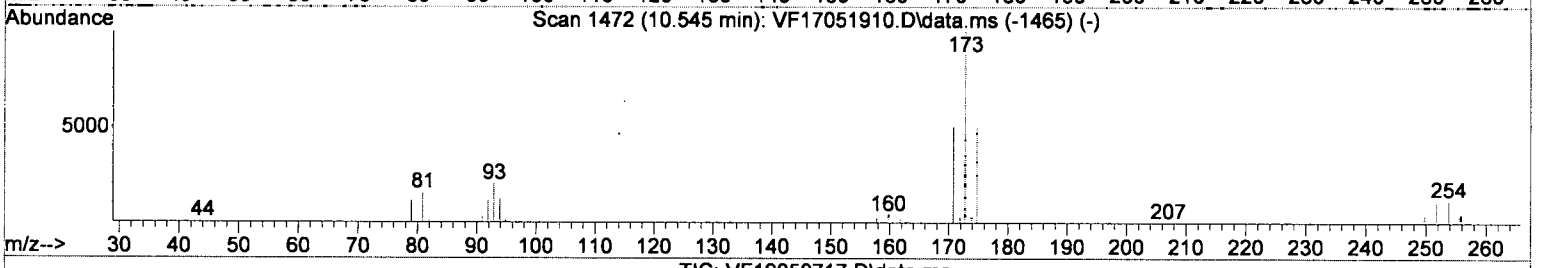
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







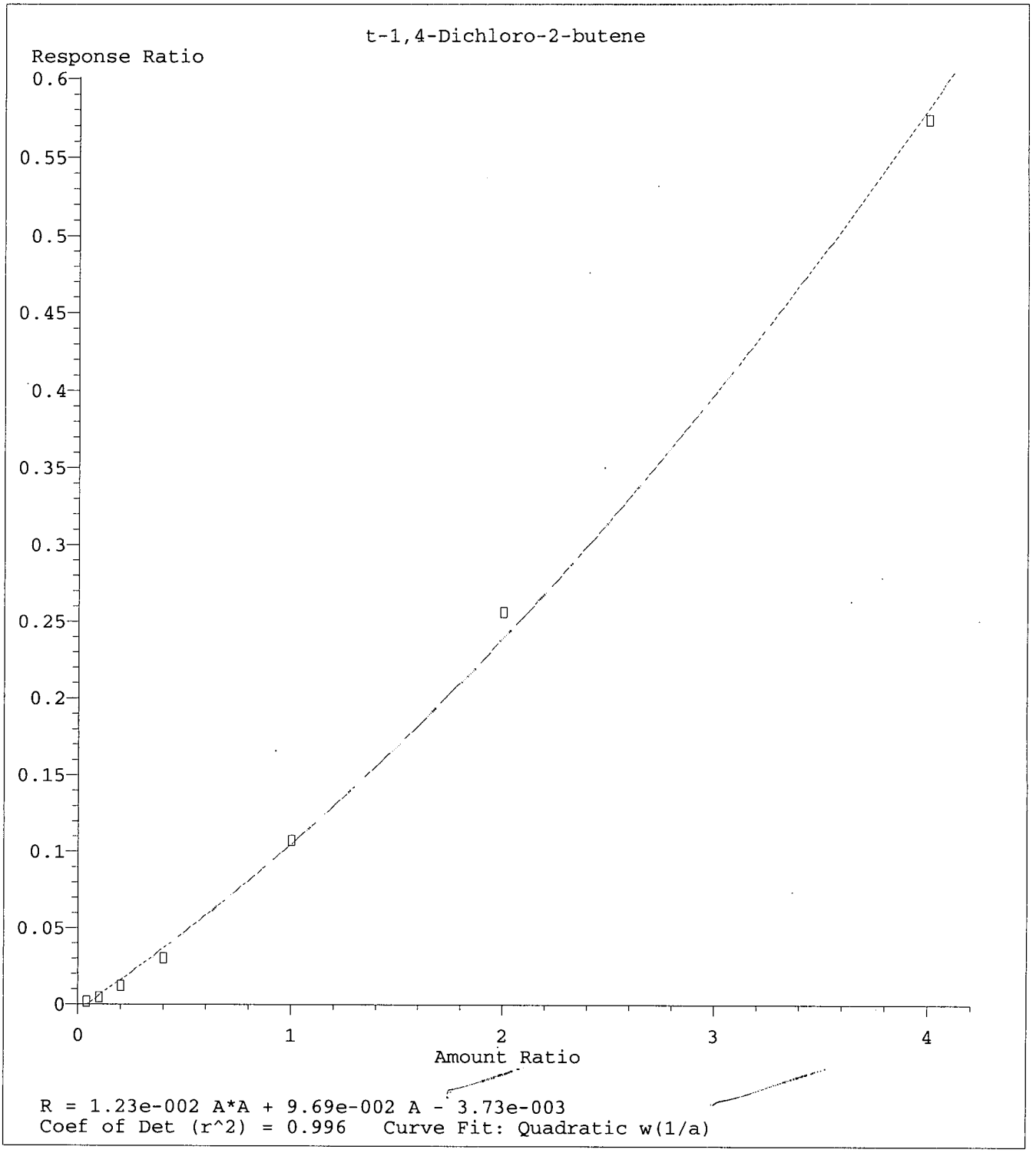
TIC: VF19050717.D\data.ms

(55) Bromoform (P)

10.427min (-0.007) 1.76 ug/L m

response 42

Ion	Exp%	Act%
172.80	100	100
174.80	49.10	0.00#
251.80	12.50	0.00
0.00	0.00	0.00



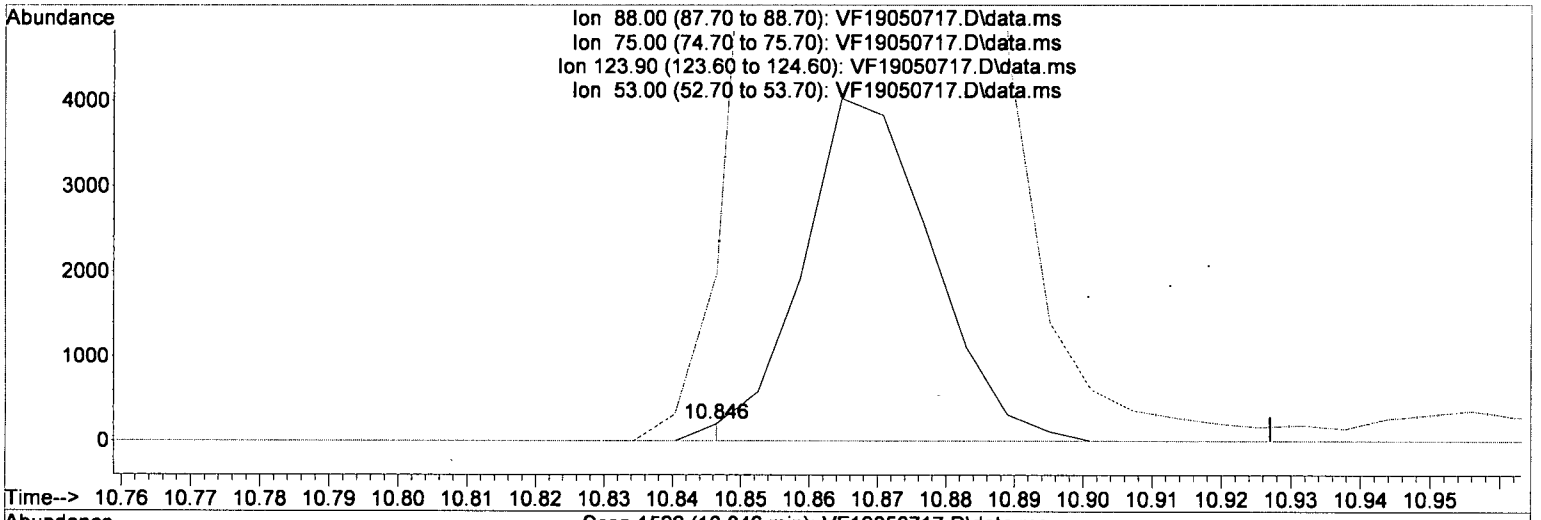
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

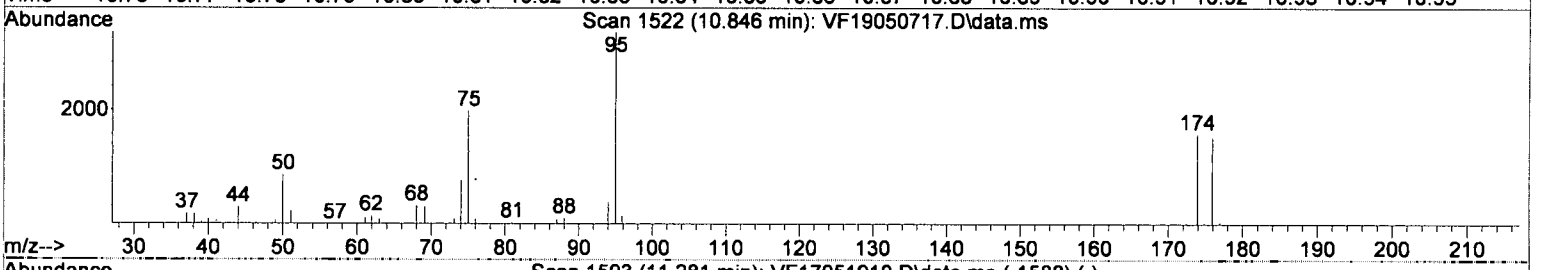
Int = 2,18

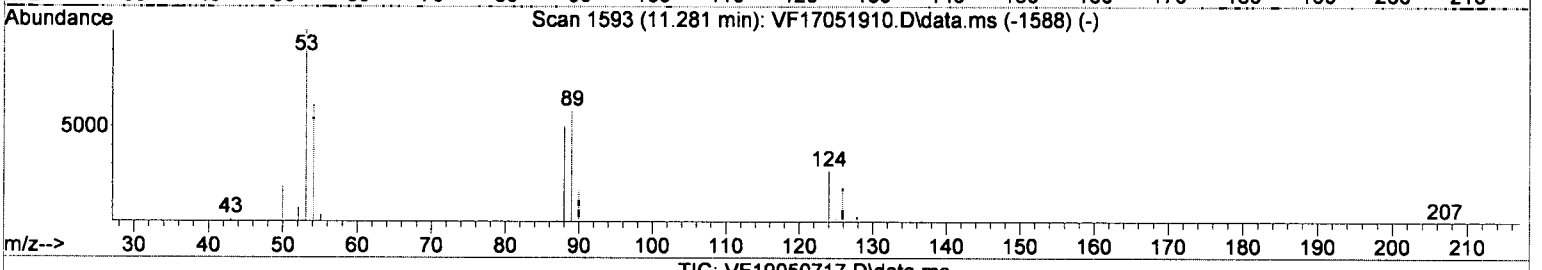
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







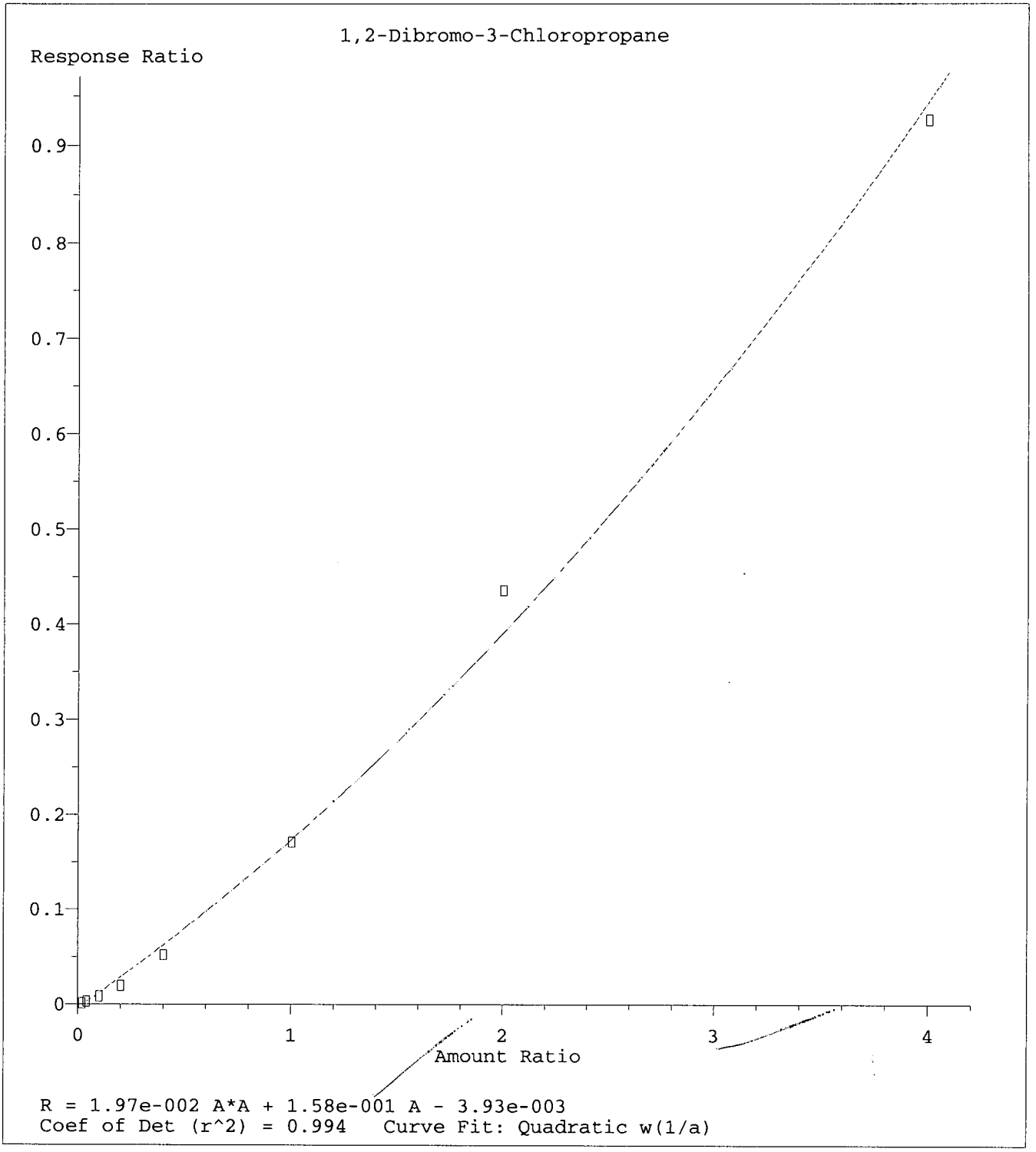
TIC: VF19050717.D\data.ms

(65) t-1,4-Dichloro-2-butene

10.846min (-0.331) 2.18 ug/L m

response 75

Ion	Exp%	Act%
88.00	100	100
75.00	240.20	964.56#
123.90	48.30	0.00#
53.00	249.20	0.00#



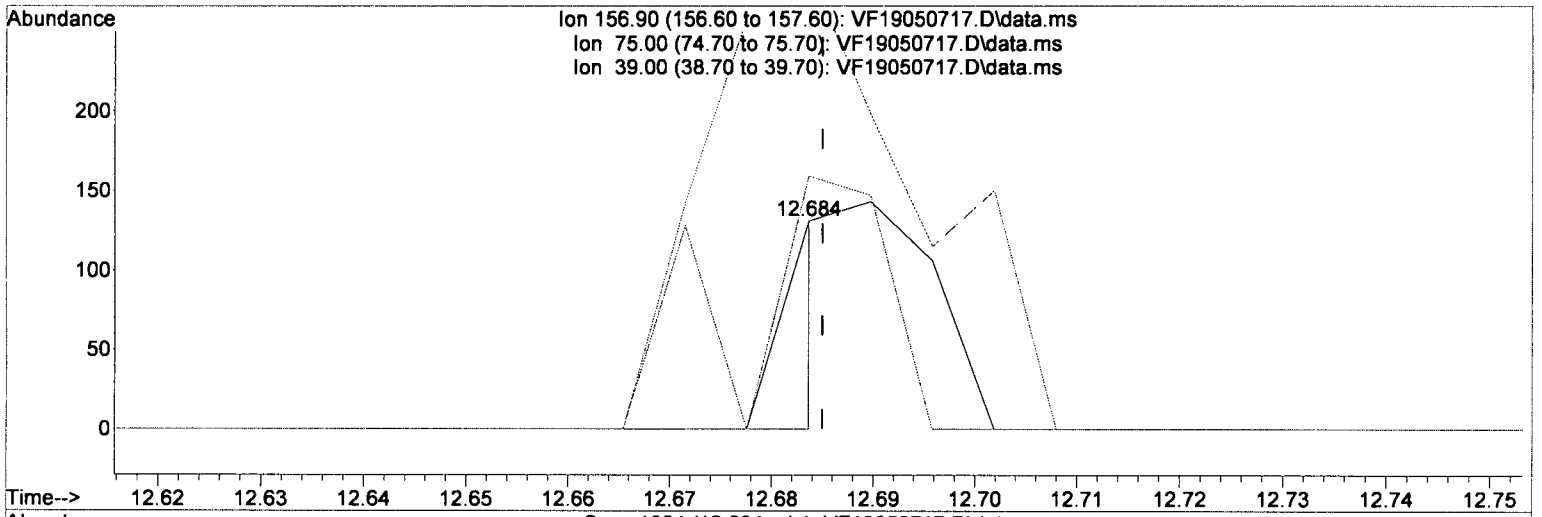
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

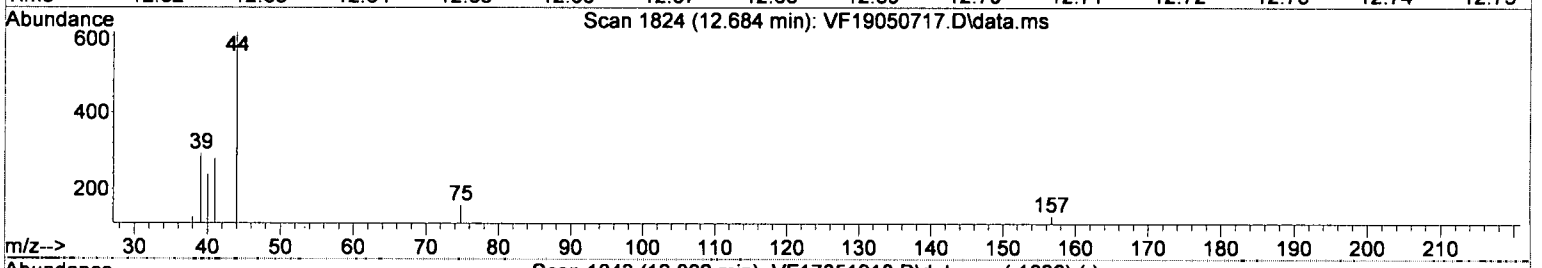
Int = 1.35

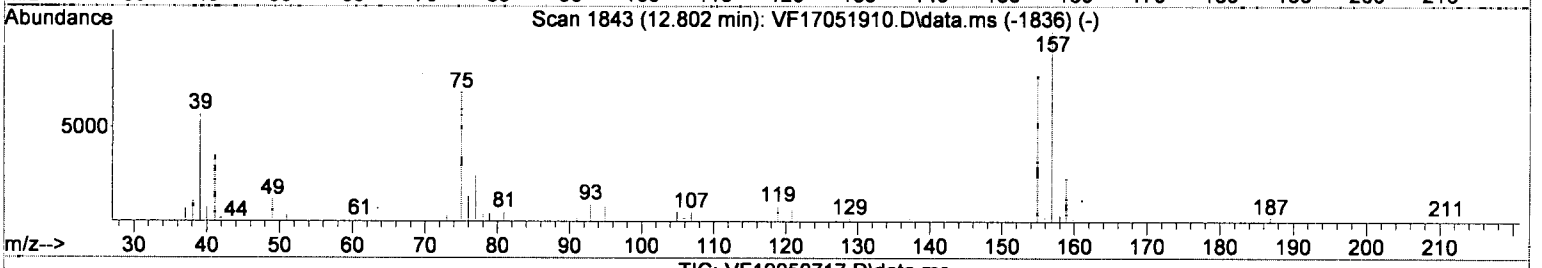
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







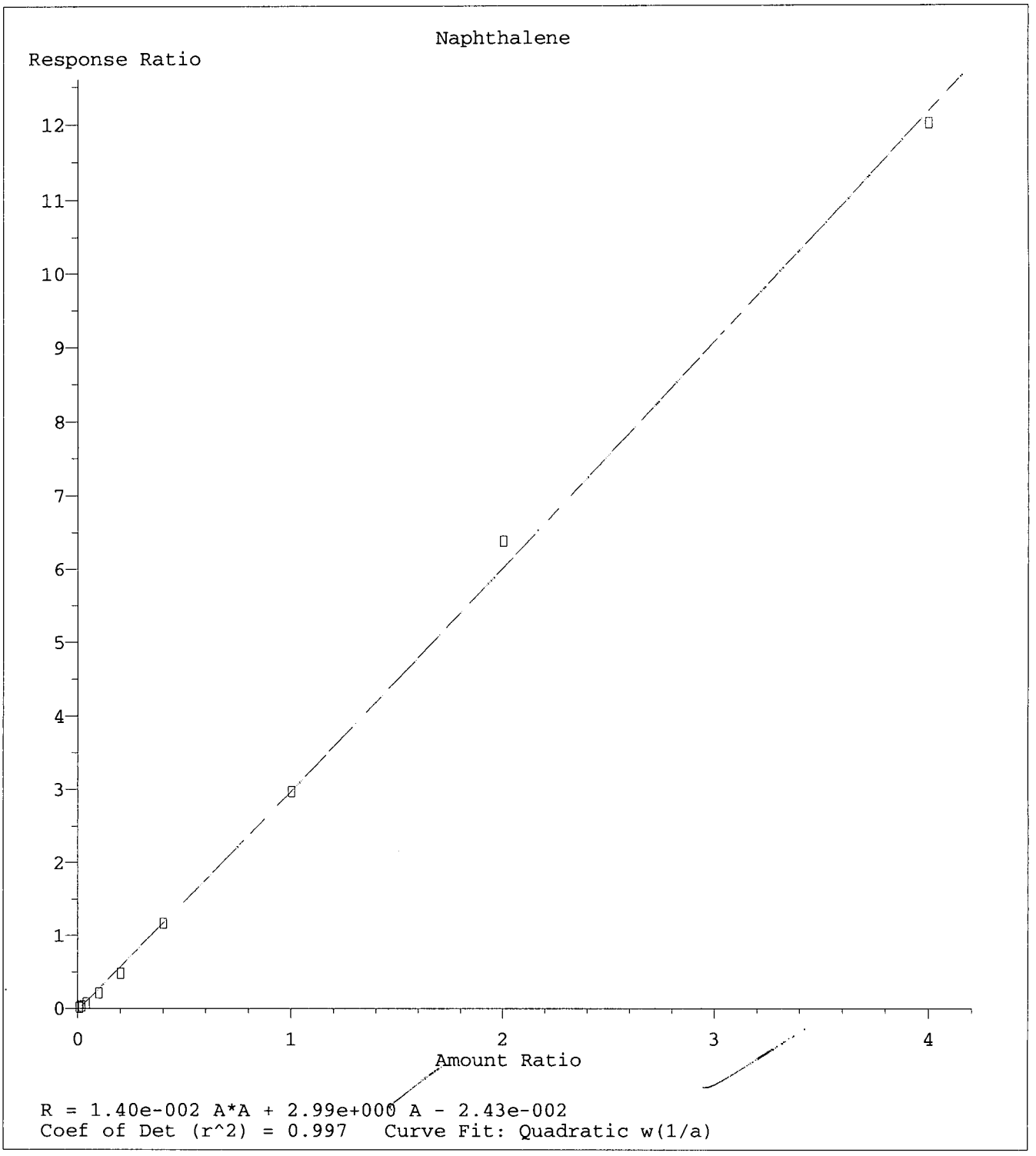
TIC: VF19050717.D\data.ms

(75) 1,2-Dibromo-3-Chloropropane

12.684min (-0.001) 1.35 ug/L m

response 48

Ion	Exp%	Act%
156.90	100	100
75.00	79.00	121.37#
39.00	63.10	223.66#
0.00	0.00	0.00



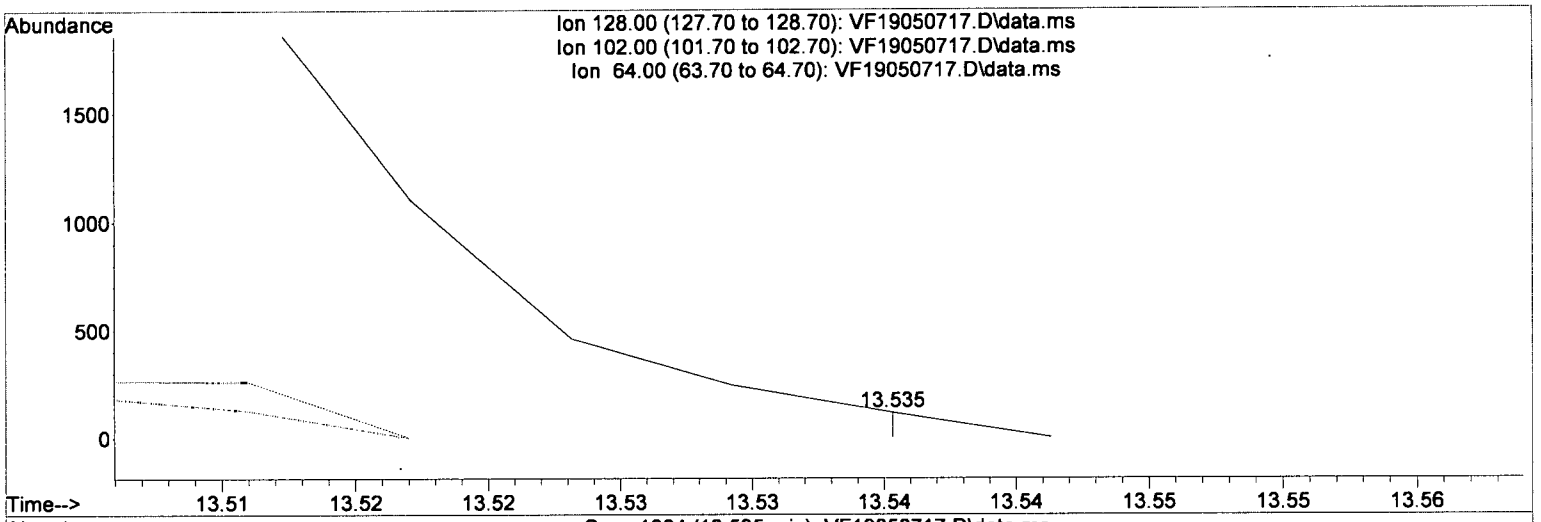
Method Name: C:\msdchem\1\METHODS\VF190507S.M
Calibration Table Last Updated: Wed May 08 11:54:03 2019

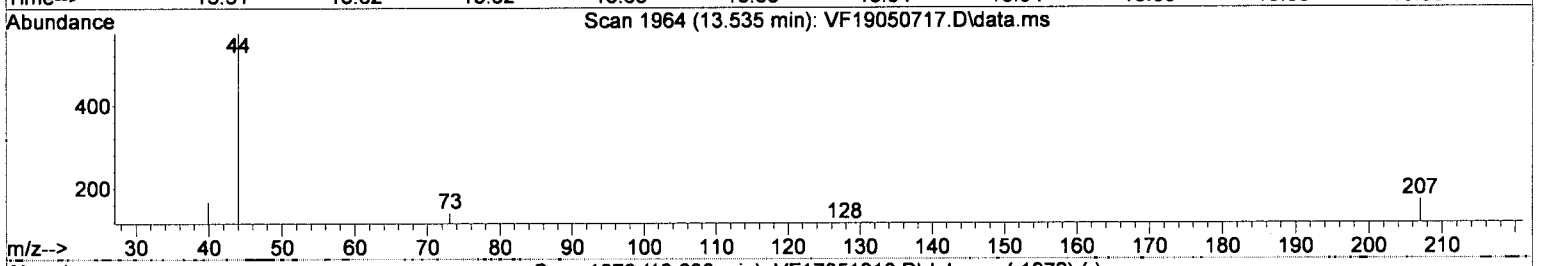
INT = 0.41

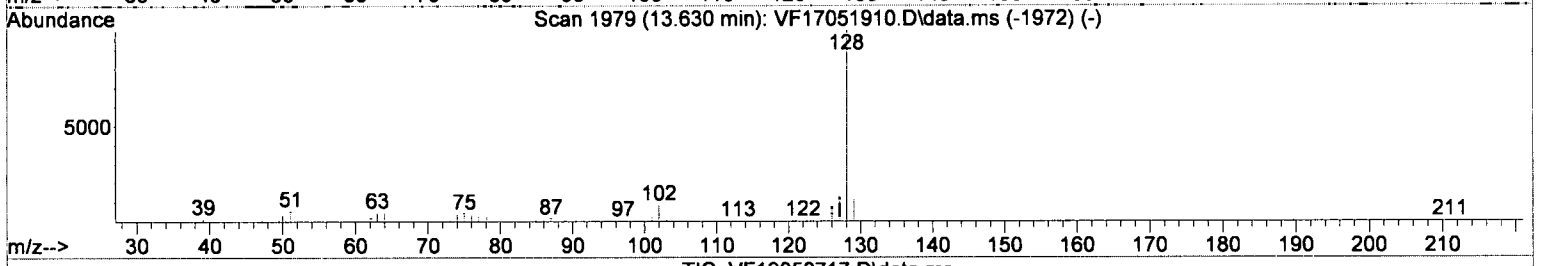
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\REQUANT\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:49:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration







TIC: VF19050717.D\data.ms

(78) Naphthalene

13.535min (+0.035) 0.41 ug/L m

response 0

Ion	Exp%	Act%
128.00	100	0.00
102.00	8.50	0.00
64.00	6.40	0.00
0.00	0.00	0.00

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9E07048

Analysis Included
8260C Full List

INSTRUMENT SEQUENCE LOG

SampleID	SampleName	Matrix	STDID	ISTD ID	Analyzed
9E07048-TUN1	MS Tune	Soil		A19D196	5/7/2019 7:21:00PM
9E07048-ICB1	Initial Cal Blank	Soil		A19D196	5/7/2019 7:48:00PM
9E07048-CAL1	Cal Standard	Soil	A19E092	"	5/7/2019 8:15:00PM
9E07048-CAL2	Cal Standard	Soil	A19E093	"	5/7/2019 8:42:00PM
9E07048-CAL3	Cal Standard	Soil	A19E094	"	5/7/2019 9:09:00PM
9E07048-CAL4	Cal Standard	Soil	A19E095	"	5/7/2019 9:36:00PM
9E07048-CAL5	Cal Standard	Soil	A19E096	"	5/7/2019 10:04:00PM
9E07048-CAL6	Cal Standard	Soil	A19E097	"	5/7/2019 10:31:00PM
9E07048-CAL7	Cal Standard	Soil	A19E098	"	5/7/2019 10:58:00PM
9E07048-CAL8	Cal Standard	Soil	A19E099	"	5/7/2019 11:25:00PM
9E07048-CAL9	Cal Standard	Soil	A19D177	"	5/7/2019 11:52:00PM
9E07048-CALA	Cal Standard	Soil	A19D178	"	5/8/2019 12:46:00AM
9E07048-CALB	Cal Standard	Soil	A19D179	"	5/8/2019 1:40:00AM
9E07048-ICV1	Initial Cal Check	Soil	A19D180	"	5/8/2019 3:01:00AM

CALIBRATION STANDARD RECOVERIES

Calibration: **A9E0804** Instrument: **VOA-GCMS6**

8260C Full List Sequence: **9E07048** Matrix: **Soil**

9E07048-CAL1	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CAL2	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CAL3	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CAL4	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CAL5	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CAL6	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CAL7	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CAL8	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CAL9	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CALA	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E07048-CALB	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9E07048

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: **A9E0804** Instrument: **VOA-GCMS6**

8260C Full List Sequence: **9E07048** Matrix: **Soil**

9E07048-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\9E07048\
Data File : VF19050729.D
Acq On : 8 May 2019 3:01 am
Operator : TB
Sample : 9E07048-ICV1
Misc : 1X 50ppb VOC MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 13:55:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

5/8/19

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	106	0.00	
2		Dichlorodifluoromethane	20.000	24.236	-21.2	126	0.00	
3	P	Chloromethane	20.000	24.447	-22.2	126	0.00	
4	C	Vinyl Chloride	20.000	23.000	-15.0	119	0.00	
5		Bromomethane	20.000	20.167	-0.8	108	0.00	
6		Chloroethane	20.000	24.180	-20.9	124	0.00	
7		Trichlorofluoromethane	20.000	22.294	-11.5	112	0.00	
8	C	1,1-Dichloroethene	20.000	20.872	-4.4	105	0.00	
9		Carbon Disulfide	20.000	18.006	10.0	98	0.00	
10		Freon 113	20.000	21.311	-6.6	109	0.00	
11		Iodomethane	20.000	12.962	-35.2#	76	0.01	— NR
12		Methylene Chloride	20.000	21.636	-8.2	106	0.00	
13		Acetone	40.000	41.830	-4.6	104	0.00	
14		t-1,2-Dichloroethene	20.000	21.376	-6.9	105	0.00	
15		n-Hexane	20.000	19.864	0.7	105	0.00	
16		Methyl-tert-butyl-ether	20.000	20.815	-4.1	105	0.00	
17	P	1,1-Dichloroethane	20.000	21.571	-7.9	104	0.00	
18		Acrylonitrile	20.000	21.881	-9.4	105	0.00	
19		c-1,2-Dichloroethene	20.000	21.783	-8.9	103	0.00	
20		2,2-Dichloropropane	20.000	21.201	-6.0	104	0.00	
21		Bromochloromethane	20.000	21.702	-8.5	104	0.00	
22	C	Chloroform	20.000	21.162	-5.8	103	0.00	
23		Carbon Tetrachloride	20.000	22.273	-11.4	124	0.00	
24		Tetrahydrofuran	20.000	20.264	-1.3	101	0.00	
25		1,1,1-Trichloroethane	20.000	24.219	-21.1	114	0.00	
26	S	Dibromofluoromethane (S)	50.000	54.171	-8.3	109	0.00	
27		1,1-Dichloropropene	20.000	21.584	-7.9	106	0.00	
28		2-Butanone (MEK)	40.000	42.115	-5.3	105	0.00	
29		Benzene	20.000	20.387	-1.9	102	0.00	
30		1,2-Dichloroethane (EDC)	20.000	20.981	-4.9	104	0.00	
31		iso-Butyl Alcohol	500.000	504.302	-0.9	116	0.00	
32	S	1,4-Difluorobenzene (S)	50.000	49.787	0.4	105	0.00	
33		Trichloroethene (TCE)	20.000	20.413	-2.1	103	0.00	
34		Dibromomethane	20.000	21.669	-8.3	103	0.00	
35	C	1,2-Dichloropropane	20.000	20.610	-3.0	103	0.00	
36		Bromodichloromethane	20.000	20.015	-0.1	110	0.00	
37		Chlorobenzene-d5 (I)	50.000	50.000	0.0	105	0.00	
38		c-1,3-Dichloropropene	20.000	20.143	-0.7	105	0.00	
39	S	Toluene-d8 (S)	50.000	51.657	-3.3	105	0.00	
40	C	Toluene	20.000	19.257	3.7	100	0.00	
41		Tetrachloroethene (PCE)	20.000	21.505	-7.5	102	0.00	
42		4-Methyl-2-Pentanone (MIBK)	40.000	44.467	-11.2	102	0.00	
43		t-1,3-Dichloropropene	20.000	20.277	-1.4	110	0.00	
44		1,1,2-Trichloroethane	20.000	22.527	-12.6	103	0.00	
45		Dibromochloromethane	20.000	20.100	-0.5	116	0.00	
46		1,3-Dichloropropane	20.000	22.357	-11.8	103	0.00	
47		1,2-Dibromoethane (EDB)	20.000	21.395	-7.0	111	0.00	
48		2-Hexanone	40.000	42.724	-6.8	105	0.00	
49	P	Chlorobenzene	20.000	18.629	6.9	99	0.00	
50	C	Ethylbenzene	20.000	19.761	1.2	101	0.00	

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050729.D
Acq On : 8 May 2019 3:01 am
Operator : TB
Sample : 9E07048-ICV1
Misc : 1X 50ppb VOC MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 13:55:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 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	20.269	-1.3	117	0.00
52		m,p-Xylenes (2)	40.000	41.307	-3.3	100	0.00
53		o-Xylene	20.000	20.475	-2.4	102	0.00
54		Styrene	20.000	19.209	4.0	102	0.00
55	P	Bromoform	20.000	21.499	-7.5	115	0.00
56		Isopropylbenzene	20.000	21.525	-7.6	102	0.00
57	I	1,4-Dichlorobenzene-d4 (I)	50.000	50.000	0.0	106	0.00
58	S	4-Bromofluorobenzene (S)	50.000	49.754	0.5	107	0.00
59		Bromobenzene	20.000	20.054	-0.3	102	0.00
60		n-Propylbenzene	20.000	20.081	-0.4	101	0.00
61	P	1,1,2,2-Tetrachloroethane	20.000	22.914	-14.6	106	0.00
62		2-Chlorotoluene	20.000	20.315	-1.6	103	0.00
63		1,3,5-Trimethylbenzene	20.000	21.121	-5.6	101	0.00
64		1,2,3-Trichloropropane	20.000	20.932	-4.7	102	0.00
65		t-1,4-Dichloro-2-butene	20.000	17.631	11.8	113	0.00
66		4-Chlorotoluene	20.000	21.060	-5.3	105	0.00
67		tert-Butylbenzene	20.000	21.006	-5.0	102	0.00
68		1,2,4-Trimethylbenzene	20.000	21.106	-5.5	100	0.00
69		sec-Butylbenzene	20.000	21.130	-5.6	103	0.00
70		4-Isopropyltoluene	20.000	20.796	-4.0	102	0.00
71		1,3-Dichlorobenzene	20.000	20.394	-2.0	103	0.00
72		1,4-Dichlorobenzene	20.000	19.438	2.8	103	0.00
73		n-Butylbenzene	20.000	20.997	-5.0	103	0.00
74		1,2-Dichlorobenzene	20.000	21.126	-5.6	104	0.00
75		1,2-Dibromo-3-Chloropropane	20.000	19.592	2.0	126	0.00
76		Hexachlorobutadiene	20.000	21.199	-6.0	106	0.00
77		1,2,4-Trichlorobenzene	20.000	22.221	-11.1	104	0.00
78		Naphthalene	20.000	19.718	1.4	106	0.00
79		1,2,3-Trichlorobenzene	20.000	22.342	-11.7	105	0.00

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

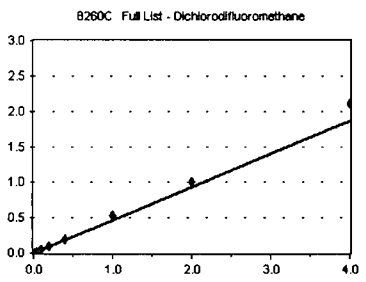
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Dichlorodifluoromethane

Curve Fit: **AVERAGE RF**

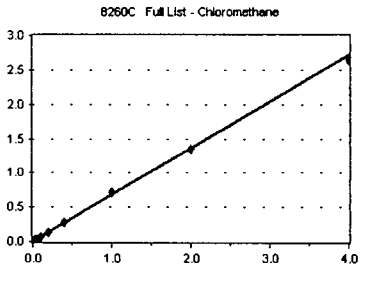


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL3	0.4	846	0.424	1.64
9E07048-CAL4	1	1965	0.375	1.63
9E07048-CAL5	2	4428	0.456	1.63
9E07048-CAL6	5	11506	0.462	1.63
9E07048-CAL7	10	23615	0.446	1.63
9E07048-CAL8	20	46922	0.474	1.63
9E07048-CAL9	50	142427	0.533	1.62
9E07048-CALA	100	284874	0.503	1.63
9E07048-CALB	200	615567	0.527	1.63

AVE RF **0.467** RF RSD **10.76** AVE RT **1.63**

Chloromethane

Curve Fit: **AVERAGE RF**

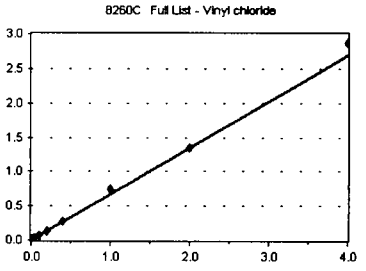


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~1131~~	~~2.356~~	~~1.84~~
~~9E07048-CAL2~~	~~0.2~~	~~797~~	~~0.784~~	~~1.85~~
~~9E07048-CAL3~~	~~0.4~~	~~2048~~	~~1.026~~	~~1.85~~
9E07048-CAL4	1	3374	0.644	1.84
9E07048-CAL5	2	7222	0.743	1.84
9E07048-CAL6	5	16881	0.678	1.84
9E07048-CAL7	10	33122	0.626	1.85
9E07048-CAL8	20	69024	0.698	1.84
9E07048-CAL9	50	191344	0.716	1.83
9E07048-CALA	100	382793	0.676	1.84
9E07048-CALB	200	771027	0.660	1.84

AVE RF **0.680** RF RSD **5.60** AVE RT **1.84**

Vinyl chloride

Curve Fit: **AVERAGE RF**

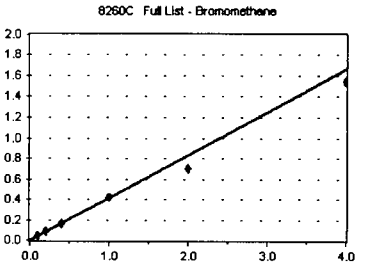


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	686	0.675	1.94
9E07048-CAL3	0.4	1253	0.628	1.95
9E07048-CAL4	1	3308	0.632	1.94
9E07048-CAL5	2	6417	0.660	1.94
9E07048-CAL6	5	16421	0.660	1.94
9E07048-CAL7	10	34298	0.648	1.94
9E07048-CAL8	20	68436	0.692	1.94
9E07048-CAL9	50	198169	0.742	1.93
9E07048-CALA	100	379506	0.670	1.94
9E07048-CALB	200	840125	0.719	1.93

AVE RF **0.673** RF RSD **5.40** AVE RT **1.94**

Bromomethane

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~2001~~	~~4.168~~	~~2.31~~
~~9E07048-CAL2~~	~~0.2~~	~~1145~~	~~1.127~~	~~2.30~~
~~9E07048-CAL3~~	~~0.4~~	~~2402~~	~~1.203~~	~~2.31~~
~~9E07048-CAL4~~	~~1~~	~~3078~~	~~0.588~~	~~2.30~~
~~9E07048-CAL5~~	~~2~~	~~5858~~	~~0.603~~	~~2.31~~
9E07048-CAL6	5	12080	0.485	2.30
9E07048-CAL7	10	23602	0.446	2.31
9E07048-CAL8	20	40782	0.412	2.30
9E07048-CAL9	50	111651	0.418	2.29
9E07048-CALA	100	198553	0.351	2.30
9E07048-CALB	200	450898	0.386	2.30

AVE RF **0.416** RF RSD **11.21** AVE RT **2.30**

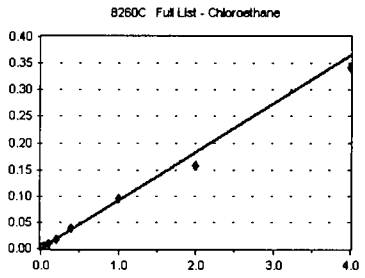
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Chloroethane

Curve Fit: **AVERAGE RF**

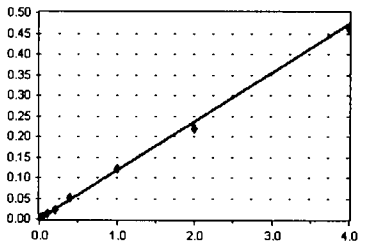


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL4	1	476	9.089	2.43
9E07048-CAL5	2	1082	0.111	2.42
9E07048-CAL6	5	2287	9.190	2.43
9E07048-CAL7	10	4425	8.366	2.44
9E07048-CAL8	20	9373	9.476	2.42
9E07048-CAL9	50	25200	9.429	2.42
9E07048-CALA	100	44440	7.851	2.43
9E07048-CALB	200	99955	8.556	2.43

AVE RF **0.091** RF RSD **10.77** AVE RT **2.43**

Trichlorofluoromethane

Curve Fit: **AVERAGE RF**

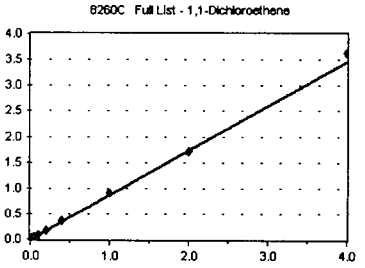


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL3	0.4	222	0.111	2.56
9E07048-CAL4	1	616	0.118	2.56
9E07048-CAL5	2	1256	0.129	2.56
9E07048-CAL6	5	3188	0.128	2.56
9E07048-CAL7	10	5854	0.111	2.56
9E07048-CAL8	20	12368	0.125	2.56
9E07048-CAL9	50	32243	0.121	2.55
9E07048-CALA	100	61776	0.109	2.56
9E07048-CALB	200	134796	0.115	2.55

AVE RF **0.119** RF RSD **6.44** AVE RT **2.56**

1,1-Dichloroethene

Curve Fit: **AVERAGE RF**

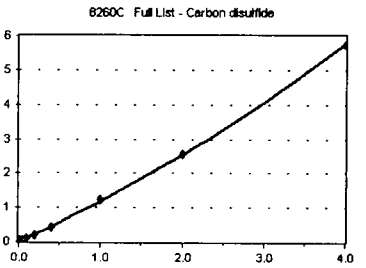


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	464	0.967	3.13
9E07048-CAL2	0.2	831	0.818	3.14
9E07048-CAL3	0.4	1699	0.851	3.14
9E07048-CAL4	1	4085	0.780	3.13
9E07048-CAL5	2	8224	0.846	3.13
9E07048-CAL6	5	21211	0.852	3.12
9E07048-CAL7	10	43446	0.821	3.14
9E07048-CAL8	20	89848	0.908	3.12
9E07048-CAL9	50	240834	0.901	3.12
9E07048-CALA	100	484753	0.856	3.13
9E07048-CALB	200	1060537	0.908	3.13

AVE RF **0.864** RF RSD **6.06** AVE RT **3.13**

Carbon disulfide

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~705~~	~~1.469~~	~~3.15~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL3	0.4	1949	0.976	3.14
9E07048-CAL4	1	4300	0.821	3.15
9E07048-CAL5	2	8310	0.855	3.14
9E07048-CAL6	5	22193	0.892	3.14
9E07048-CAL7	10	47292	0.894	3.15
9E07048-CAL8	20	107117	1.083	3.14
9E07048-CAL9	50	331432	1.240	3.14
9E07048-CALA	100	729573	1.289	3.14
9E07048-CALB	200	1674733	1.433	3.14

AVE RF **1.054** RF RSD **20.86** AVE RT **3.14**

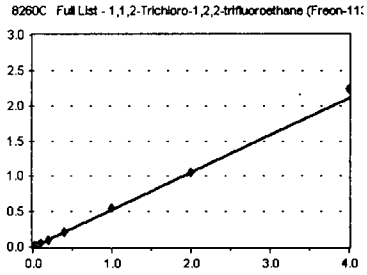
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

1,1,2-Trichloro-1,2,2-trifluoroetha

Curve Fit: **AVERAGE RF**

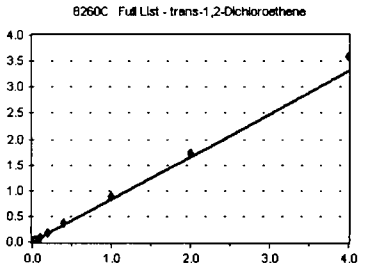


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	458	0.451	3.18
9E07048-CAL3	0.4	1041	0.522	3.18
9E07048-CAL4	1	2811	0.537	3.18
9E07048-CAL5	2	5055	0.520	3.18
9E07048-CAL6	5	13365	0.537	3.17
9E07048-CAL7	10	27267	0.515	3.18
9E07048-CAL8	20	54116	0.547	3.18
9E07048-CAL9	50	147538	0.552	3.17
9E07048-CALA	100	298770	0.528	3.18
9E07048-CALB	200	654791	0.560	3.18

AVE RF **0.527** RF RSD **5.79** AVE RT **3.18**

trans-1,2-Dichloroethene

Curve Fit: **AVERAGE RF**

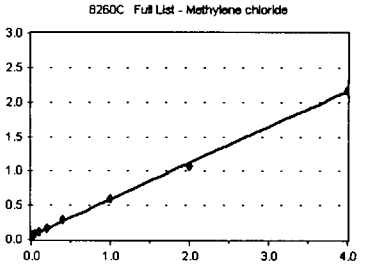


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	320	0.667	0.00
9E07048-CAL2	0.2	852	0.839	3.94
9E07048-CAL3	0.4	1577	0.790	3.95
9E07048-CAL4	1	4059	0.775	3.94
9E07048-CAL5	2	7974	0.820	3.94
9E07048-CAL6	5	21082	0.847	3.94
9E07048-CAL7	10	43282	0.818	3.94
9E07048-CAL8	20	88360	0.893	3.94
9E07048-CAL9	50	234688	0.878	3.93
9E07048-CALA	100	486614	0.860	3.94
9E07048-CALB	200	1047640	0.897	3.94

AVE RF **0.826** RF RSD **7.98** AVE RT **3.58**

Methylene chloride

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

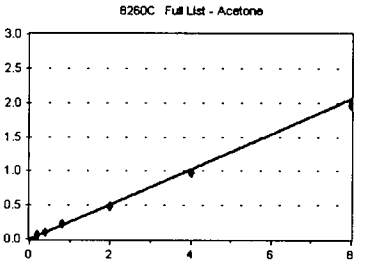


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~14820~~	~~30.870~~	~~3.78~~
~~9E07048-CAL2~~	~~0.2~~	~~13830~~	~~13.612~~	~~3.78~~
9E07048-CAL3	0.4	14007	7.017	3.78
9E07048-CAL4	1	16647	3.179	3.78
9E07048-CAL5	2	18649	1.919	3.78
9E07048-CAL6	5	27821	1.118	3.78
9E07048-CAL7	10	42775	0.809	3.78
9E07048-CAL8	20	71195	0.720	3.77
9E07048-CAL9	50	158529	0.593	3.77
9E07048-CALA	100	303916	0.537	3.77
9E07048-CALB	200	635093	0.544	3.77

AVE RF **1.826** RF RSD **116.77** AVE RT **3.77**

Acetone

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.2~~	~~1683~~	~~1.753~~	~~3.88~~
~~9E07048-CAL2~~	~~0.4~~	~~1611~~	~~0.793~~	~~3.87~~
~~9E07048-CAL3~~	~~0.8~~	~~2158~~	~~0.541~~	~~3.88~~
~~9E07048-CAL4~~	~~2~~	~~3535~~	~~0.338~~	~~3.88~~
~~9E07048-CAL5~~	4	~~6127~~	~~0.315~~	~~3.88~~
9E07048-CAL6	10	14357	0.288	3.87
9E07048-CAL7	20	25591	0.242	3.87
9E07048-CAL8	40	54252	0.274	3.87
9E07048-CAL9	100	131619	0.246	3.85
9E07048-CALA	200	275471	0.243	3.86
9E07048-CALB	400	571223	0.244	3.86

AVE RF **0.256** RF RSD **7.74** AVE RT **3.86**

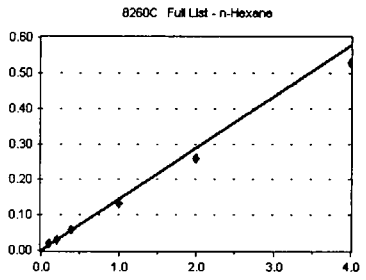
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

n-Hexane

Curve Fit: **AVERAGE RF**

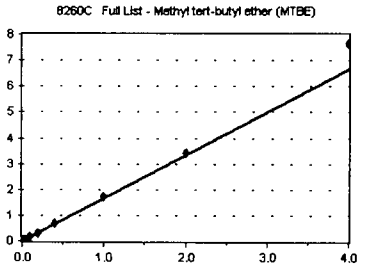


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~1835~~	~~3.822~~	~~4.02~~
~~9E07048-CAL2~~	~~0.2~~	~~1841~~	~~1.812~~	~~4.02~~
~~9E07048-CAL3~~	~~0.4~~	~~2024~~	~~1.014~~	~~4.02~~
~~9E07048-CAL4~~	~~1~~	~~2150~~	~~0.411~~	~~4.02~~
~~9E07048-CAL5~~	~~2~~	~~2796~~	~~0.288~~	~~4.02~~
9E07048-CAL6	5	4468	0.180	4.02
9E07048-CAL7	10	7751	0.147	4.02
9E07048-CAL8	20	14259	0.144	4.02
9E07048-CAL9	50	35578	0.133	4.01
9E07048-CALA	100	73671	0.130	4.02
9E07048-CALB	200	154767	0.132	4.01

AVE RF **0.144** RF RSD **12.82** AVE RT **4.02**

Methyl tert-butyl ether (MTBE)

Curve Fit: **AVERAGE RF**

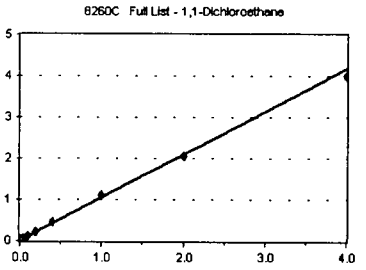


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	787	1.639	4.09
9E07048-CAL2	0.2	1746	1.719	4.08
9E07048-CAL3	0.4	3114	1.560	4.10
9E07048-CAL4	1	8040	1.535	4.09
9E07048-CAL5	2	15652	1.610	4.09
9E07048-CAL6	5	40294	1.619	4.09
9E07048-CAL7	10	82410	1.558	4.09
9E07048-CAL8	20	173881	1.758	4.08
9E07048-CAL9	50	465822	1.743	4.07
9E07048-CALA	100	966419	1.707	4.08
9E07048-CALB	200	2232152	1.911	4.08

AVE RF **1.669** RF RSD **6.69** AVE RT **4.09**

1,1-Dichloroethane

Curve Fit: **AVERAGE RF**

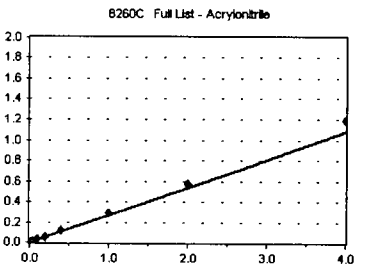


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	503	1.048	4.58
9E07048-CAL2	0.2	1018	1.002	4.58
9E07048-CAL3	0.4	1998	1.001	4.58
9E07048-CAL4	1	5157	0.985	4.58
9E07048-CAL5	2	10371	1.067	4.58
9E07048-CAL6	5	27022	1.086	4.58
9E07048-CAL7	10	54444	1.029	4.58
9E07048-CAL8	20	114004	1.153	4.58
9E07048-CAL9	50	295880	1.107	4.57
9E07048-CALA	100	579727	1.024	4.58
9E07048-CALB	200	1166202	0.998	4.58

AVE RF **1.045** RF RSD **5.05** AVE RT **4.58**

Acrylonitrile

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL3~~	~~0.4~~	~~256~~	~~0.128~~	~~4.67~~
9E07048-CAL4	1	1044	0.199	4.67
9E07048-CAL5	2	2472	0.254	4.66
9E07048-CAL6	5	6728	0.270	4.66
9E07048-CAL7	10	13862	0.262	4.66
9E07048-CAL8	20	29390	0.297	4.65
9E07048-CAL9	50	77245	0.289	4.64
9E07048-CALA	100	161749	0.286	4.65
9E07048-CALB	200	345965	0.296	4.65

AVE RF **0.269** RF RSD **12.01** AVE RT **4.65**

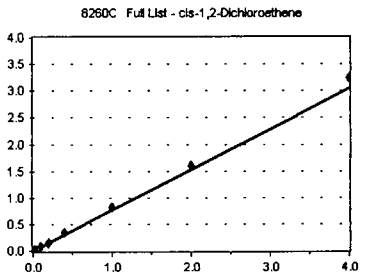
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

cis-1,2-Dichloroethene

Curve Fit: **AVERAGE RF**

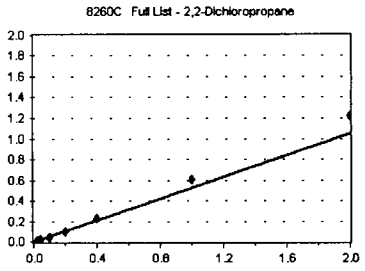


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	307	0.639	0.00
9E07048-CAL2	0.2	698	0.687	5.14
9E07048-CAL3	0.4	1447	0.725	5.14
9E07048-CAL4	1	3590	0.686	5.14
9E07048-CAL5	2	7621	0.784	5.13
9E07048-CAL6	5	19884	0.799	5.14
9E07048-CAL7	10	40226	0.760	5.14
9E07048-CAL8	20	83939	0.849	5.14
9E07048-CAL9	50	219981	0.823	5.13
9E07048-CALA	100	453832	0.802	5.14
9E07048-CALB	200	947367	0.811	5.13

AVE RF **0.760** RF RSD **8.81** AVE RT **4.67**

2,2-Dichloropropane

Curve Fit: **AVERAGE RF**

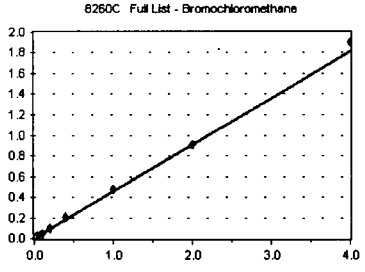


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~441~~	~~0.434~~	~~5.25~~
~~9E07048-CAL3~~	~~0.4~~	~~917~~	~~0.459~~	~~5.24~~
9E07048-CAL4	1	2310	0.441	5.24
9E07048-CAL5	2	4599	0.473	5.24
9E07048-CAL6	5	11848	0.476	5.24
9E07048-CAL7	10	25977	0.491	5.24
9E07048-CAL8	20	56267	0.569	5.24
9E07048-CAL9	50	162582	0.608	5.23
9E07048-CALA	100	344765	0.609	5.24
~~9E07048-CALB~~	~~200~~	~~789087~~	~~0.675~~	~~5.24~~

AVE RF **0.524** RF RSD **13.32** AVE RT **5.24**

Bromochloromethane

Curve Fit: **AVERAGE RF**

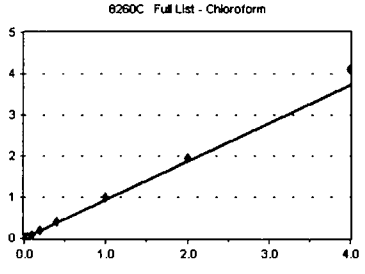


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	331	0.326	5.34
9E07048-CAL3	0.4	924	0.463	5.35
9E07048-CAL4	1	2190	0.418	5.35
9E07048-CAL5	2	4699	0.483	5.34
9E07048-CAL6	5	11857	0.476	5.34
9E07048-CAL7	10	24444	0.462	5.34
9E07048-CAL8	20	49879	0.504	5.34
9E07048-CAL9	50	126903	0.475	5.33
9E07048-CALA	100	257506	0.455	5.34
9E07048-CALB	200	554716	0.475	5.33

AVE RF **0.454** RF RSD **11.05** AVE RT **5.34**

Chloroform

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	424	0.883	5.43
9E07048-CAL2	0.2	893	0.879	5.42
9E07048-CAL3	0.4	1699	0.851	5.42
9E07048-CAL4	1	4496	0.859	5.42
9E07048-CAL5	2	8712	0.896	5.42
9E07048-CAL6	5	23401	0.940	5.42
9E07048-CAL7	10	48731	0.921	5.42
9E07048-CAL8	20	99732	1.008	5.42
9E07048-CAL9	50	264234	0.989	5.42
9E07048-CALA	100	548790	0.970	5.42
9E07048-CALB	200	1199142	1.026	5.42

AVE RF **0.929** RF RSD **6.62** AVE RT **5.42**

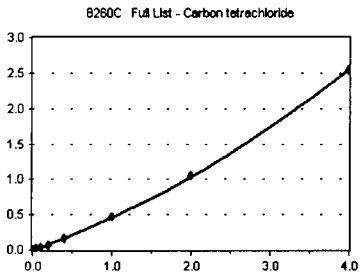
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Carbon tetrachloride

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

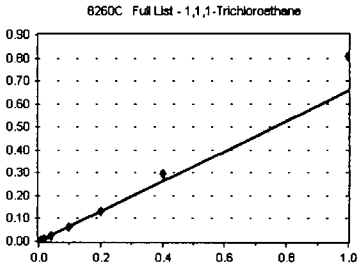


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL3~~	~~0.4~~	~~392~~	~~0.196~~	~~5.55~~
9E07048-CAL4	1	1343	0.256	5.55
9E07048-CAL5	2	2842	0.292	5.55
9E07048-CAL6	5	7941	0.319	5.55
9E07048-CAL7	10	17551	0.332	5.55
9E07048-CAL8	20	39228	0.397	5.54
9E07048-CAL9	50	126590	0.474	5.55
9E07048-CALA	100	296253	0.523	5.55
9E07048-CALB	200	741698	0.635	5.55

AVE RF **0.404** RF RSD **32.32** AVE RT **5.55**

1,1,1-Trichloroethane

Curve Fit: **AVERAGE RF**

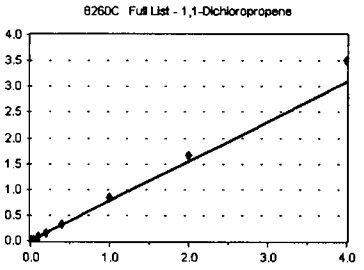


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~551~~	~~0.542~~	~~5.62~~
9E07048-CAL3	0.4	1217	0.610	5.63
9E07048-CAL4	1	2997	0.572	5.62
9E07048-CAL5	2	5724	0.589	5.62
9E07048-CAL6	5	15328	0.616	5.62
9E07048-CAL7	10	34343	0.649	5.62
9E07048-CAL8	20	73208	0.740	5.62
9E07048-CAL9	50	215695	0.807	5.62
~~9E07048-CALA~~	~~100~~	~~465951~~	~~0.823~~	~~5.62~~
~~9E07048-CALB~~	~~200~~	~~1056735~~	~~0.804~~	~~5.62~~

AVE RF **0.655** RF RSD **13.26** AVE RT **5.62**

1,1-Dichloropropene

Curve Fit: **AVERAGE RF**

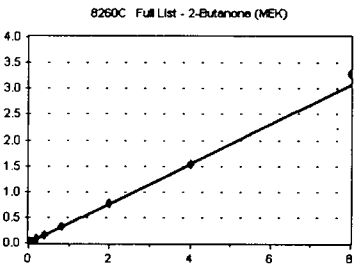


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	683	0.672	5.76
9E07048-CAL3	0.4	1416	0.709	5.75
9E07048-CAL4	1	3517	0.672	5.75
9E07048-CAL5	2	7332	0.754	5.75
9E07048-CAL6	5	19265	0.774	5.75
9E07048-CAL7	10	40206	0.760	5.75
9E07048-CAL8	20	82690	0.836	5.75
9E07048-CAL9	50	224805	0.841	5.75
9E07048-CALA	100	469859	0.830	5.74
9E07048-CALB	200	1023128	0.876	5.75

AVE RF **0.772** RF RSD **9.40** AVE RT **5.75**

2-Butanone (MEK)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.4	890	0.438	5.77
9E07048-CAL3	0.8	1499	0.375	5.76
9E07048-CAL4	2	3413	0.326	5.76
9E07048-CAL5	4	7034	0.362	5.76
9E07048-CAL6	10	19168	0.385	5.75
9E07048-CAL7	20	37307	0.353	5.76
9E07048-CAL8	40	80726	0.408	5.75
9E07048-CAL9	100	207080	0.387	5.74
9E07048-CALA	200	437402	0.386	5.74
9E07048-CALB	400	960855	0.411	5.74

AVE RF **0.383** RF RSD **8.33** AVE RT **5.75**

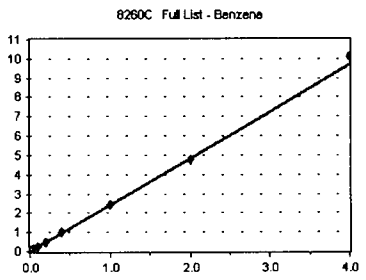
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Benzene

Curve Fit: **AVERAGE RF**

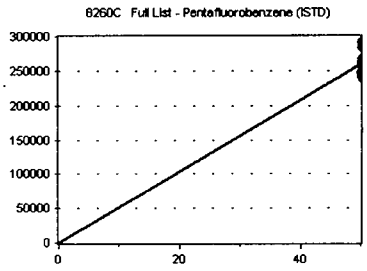


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	1127	2.348	6.01
9E07048-CAL2	0.2	2458	2.419	6.01
9E07048-CAL3	0.4	4810	2.410	6.01
9E07048-CAL4	1	11954	2.283	6.01
9E07048-CAL5	2	23365	2.404	6.00
9E07048-CAL6	5	60741	2.441	6.01
9E07048-CAL7	10	124874	2.361	6.01
9E07048-CAL8	20	252305	2.551	6.00
9E07048-CAL9	50	656370	2.456	6.00
9E07048-CALA	100	1353074	2.390	6.00
9E07048-CALB	200	2947348	2.523	6.00

AVE RF **2.417** RF RSD **3.16** AVE RT **6.01**

Pentafluorobenzene (ISTD)

Curve Fit: **AVERAGE RF**

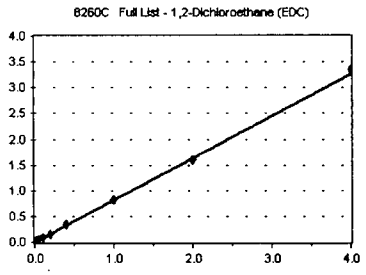


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	50	240040	4800.800	6.10
9E07048-CAL2	50	253997	5079.940	6.10
9E07048-CAL3	50	249504	4990.080	6.10
9E07048-CAL4	50	261850	5237.000	6.10
9E07048-CAL5	50	242998	4859.960	6.10
9E07048-CAL6	50	248863	4977.260	6.10
9E07048-CAL7	50	264477	5289.540	6.10
9E07048-CAL8	50	247283	4945.660	6.10
9E07048-CAL9	50	267251	5345.020	6.09
9E07048-CALA	50	283012	5660.240	6.10
9E07048-CALB	50	292078	5841.560	6.10

AVE RF **5184.278** RF RSD **6.39** AVE RT **6.10**

1,2-Dichloroethane (EDC)

Curve Fit: **AVERAGE RF**

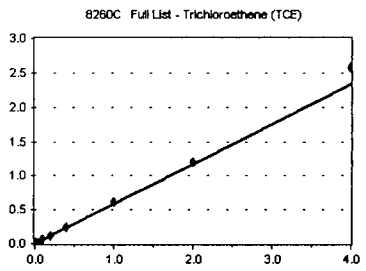


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	369	0.769	6.23
9E07048-CAL2	0.2	837	0.824	6.23
9E07048-CAL3	0.4	1552	0.778	6.23
9E07048-CAL4	1	4287	0.819	6.23
9E07048-CAL5	2	7997	0.823	6.22
9E07048-CAL6	5	21115	0.848	6.23
9E07048-CAL7	10	42029	0.795	6.23
9E07048-CAL8	20	86737	0.877	6.22
9E07048-CAL9	50	220556	0.825	6.22
9E07048-CALA	100	450418	0.796	6.22
9E07048-CALB	200	981773	0.840	6.22

AVE RF **0.818** RF RSD **3.89** AVE RT **6.22**

Trichloroethene (TCE)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~205~~	~~0.427~~	~~0.00~~
9E07048-CAL2	0.2	614	0.604	6.63
9E07048-CAL3	0.4	1091	0.547	6.63
9E07048-CAL4	1	2819	0.538	6.63
9E07048-CAL5	2	5247	0.540	6.63
9E07048-CAL6	5	14302	0.575	6.63
9E07048-CAL7	10	29569	0.559	6.63
9E07048-CAL8	20	60828	0.615	6.62
9E07048-CAL9	50	163754	0.613	6.62
9E07048-CALA	100	340985	0.602	6.62
9E07048-CALB	200	754687	0.646	6.62

AVE RF **0.584** RF RSD **6.39** AVE RT **6.63**

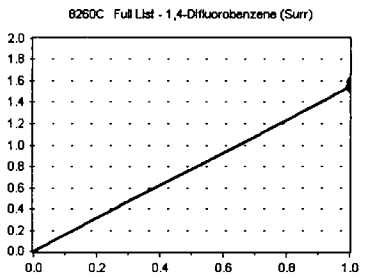
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

1,4-Difluorobenzene (Surr)

Curve Fit: **AVERAGE RF**

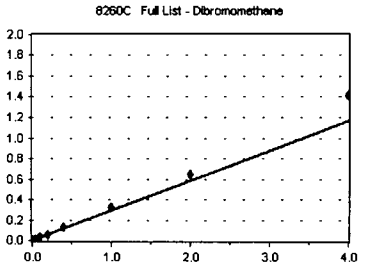


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	50	372792	1.553	6.66
9E07048-CAL2	50	393610	1.550	6.66
9E07048-CAL3	50	383811	1.538	6.66
9E07048-CAL4	50	402099	1.536	6.66
9E07048-CAL5	50	374305	1.540	6.66
9E07048-CAL6	50	382252	1.536	6.66
9E07048-CAL7	50	404994	1.531	6.66
9E07048-CAL8	50	383139	1.549	6.66
9E07048-CAL9	50	412030	1.542	6.66
9E07048-CALA	50	434050	1.534	6.66
9E07048-CALB	50	462700	1.584	6.66

AVE RF **1.545** RF RSD **0.96** AVE RT **6.66**

Dibromomethane

Curve Fit: **AVERAGE RF**

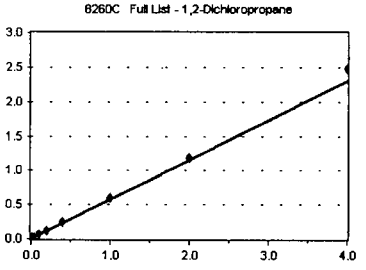


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	206	0.203	7.08
9E07048-CAL3	0.4	553	0.277	7.08
9E07048-CAL4	1	1342	0.256	7.08
9E07048-CAL5	2	2709	0.279	7.08
9E07048-CAL6	5	7109	0.286	7.08
9E07048-CAL7	10	15288	0.289	7.08
9E07048-CAL8	20	32324	0.327	7.08
9E07048-CAL9	50	86980	0.325	7.08
9E07048-CALA	100	183362	0.324	7.08
9E07048-CALB	200	413632	0.354	7.07

AVE RF **0.292** RF RSD **14.84** AVE RT **7.08**

1,2-Dichloropropane

Curve Fit: **AVERAGE RF**

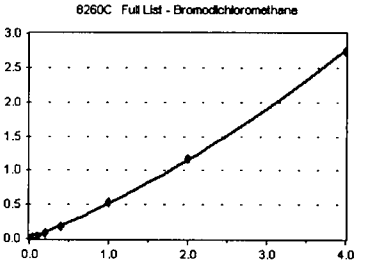


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	588	0.579	7.19
9E07048-CAL3	0.4	1034	0.518	7.19
9E07048-CAL4	1	2906	0.555	7.18
9E07048-CAL5	2	5465	0.562	7.18
9E07048-CAL6	5	14217	0.571	7.19
9E07048-CAL7	10	30050	0.568	7.19
9E07048-CAL8	20	60316	0.610	7.18
9E07048-CAL9	50	161209	0.603	7.18
9E07048-CALA	100	333077	0.588	7.18
9E07048-CALB	200	726418	0.622	7.18

AVE RF **0.578** RF RSD **5.22** AVE RT **7.18**

Bromodichloromethane

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~130~~	~~0.128~~	~~0.00~~
~~9E07048-CAL3~~	~~0.4~~	~~569~~	~~0.285~~	~~7.27~~
9E07048-CAL4	1	1570	0.300	7.26
9E07048-CAL5	2	3150	0.324	7.26
9E07048-CAL6	5	8768	0.352	7.26
9E07048-CAL7	10	19606	0.371	7.26
9E07048-CAL8	20	45494	0.460	7.26
9E07048-CAL9	50	144826	0.542	7.26
9E07048-CALA	100	330159	0.583	7.26
9E07048-CALB	200	802244	0.687	7.26

AVE RF **0.452** RF RSD **30.88** AVE RT **7.26**

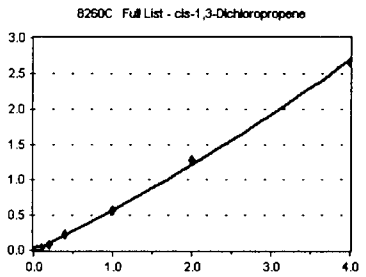
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

cis-1,3-Dichloropropene

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

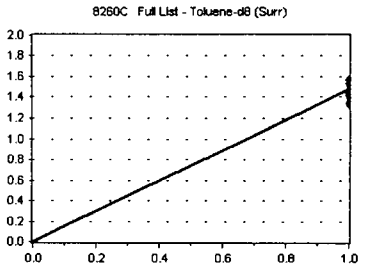


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~335~~	~~0.266~~	~~7.97~~
9E07048-CAL3	0.4	723	0.320	7.97
9E07048-CAL4	1	2124	0.330	7.97
9E07048-CAL5	2	4000	0.369	7.96
9E07048-CAL6	5	11116	0.398	7.97
9E07048-CAL7	10	26031	0.409	7.97
9E07048-CAL8	20	60464	0.551	7.97
9E07048-CAL9	50	189721	0.575	7.96
9E07048-CALA	100	428450	0.641	7.96
9E07048-CALB	200	1015167	0.664	7.96

AVE RF **0.473** RF RSD **28.49** AVE RT **7.97**

Toluene-d8 (Surr)

Curve Fit: **AVERAGE RF**

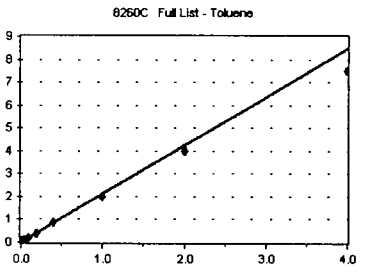


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	50	412832	1.570	8.17
9E07048-CAL2	50	451605	1.433	8.17
9E07048-CAL3	50	433301	1.536	8.17
9E07048-CAL4	50	463638	1.441	8.17
9E07048-CAL5	50	417114	1.539	8.17
9E07048-CAL6	50	428207	1.533	8.17
9E07048-CAL7	50	462102	1.452	8.17
9E07048-CAL8	50	420491	1.532	8.17
9E07048-CAL9	50	467669	1.418	8.17
9E07048-CALA	50	488712	1.463	8.17
9E07048-CALB	50	514201	1.344	8.17

AVE RF **1.478** RF RSD **4.64** AVE RT **8.17**

Toluene

Curve Fit: **AVERAGE RF**

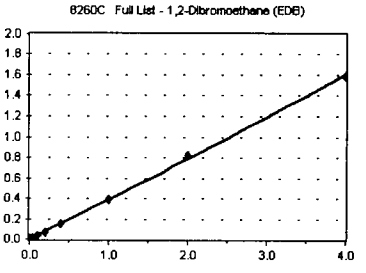


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	1513	2.876	8.23
9E07048-CAL2	0.2	2847	2.259	8.23
9E07048-CAL3	0.4	4633	2.053	8.23
9E07048-CAL4	1	12595	1.958	8.23
9E07048-CAL5	2	22780	2.101	8.23
9E07048-CAL6	5	57774	2.069	8.23
9E07048-CAL7	10	124435	1.955	8.23
9E07048-CAL8	20	234051	2.131	8.23
9E07048-CAL9	50	652612	1.979	8.22
9E07048-CALA	100	1331277	1.992	8.23
9E07048-CALB	200	2874760	1.879	8.22

AVE RF **2.114** RF RSD **12.92** AVE RT **8.23**

1,2-Dibromoethane (EDB)

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	186	0.148	0.00
9E07048-CAL3	0.4	457	0.202	9.32
9E07048-CAL4	1	1418	0.220	9.32
9E07048-CAL5	2	2966	0.274	9.31
9E07048-CAL6	5	8553	0.306	9.32
9E07048-CAL7	10	19791	0.311	9.31
9E07048-CAL8	20	42675	0.389	9.31
9E07048-CAL9	50	128621	0.390	9.31
9E07048-CALA	100	274641	0.411	9.31
9E07048-CALB	200	608559	0.398	9.31

AVE RF **0.305** RF RSD **30.45** AVE RT **8.38**

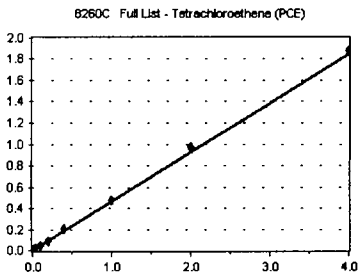
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Tetrachloroethene (PCE)

Curve Fit: **AVERAGE RF**

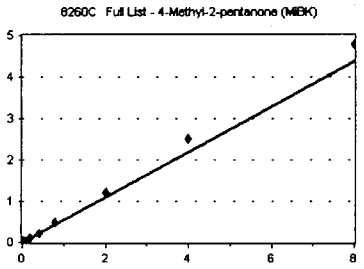


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	241	0.458	8.68
9E07048-CAL2	0.2	503	0.399	8.67
9E07048-CAL3	0.4	1054	0.467	8.68
9E07048-CAL4	1	2677	0.416	8.68
9E07048-CAL5	2	5076	0.468	8.68
9E07048-CAL6	5	13448	0.482	8.68
9E07048-CAL7	10	29011	0.456	8.68
9E07048-CAL8	20	56499	0.514	8.67
9E07048-CAL9	50	156090	0.473	8.67
9E07048-CALA	100	325857	0.488	8.67
9E07048-CALB	200	718860	0.470	8.67

AVE RF **0.463** RF RSD **6.89** AVE RT **8.68**

4-Methyl-2-pentanone (MiBK)

Curve Fit: **AVERAGE RF**

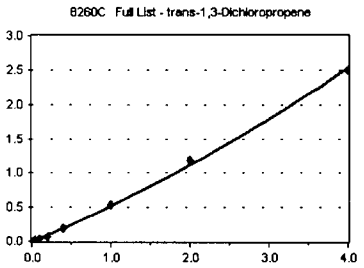


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.2~~	~~391~~	~~0.372~~	~~8.69~~
~~9E07048-CAL2~~	~~0.4~~	~~941~~	~~0.373~~	~~8.68~~
~~9E07048-CAL3~~	~~0.8~~	~~1734~~	~~0.384~~	~~8.68~~
9E07048-CAL4	2	5152	0.400	8.68
9E07048-CAL5	4	10467	0.483	8.68
9E07048-CAL6	10	28905	0.518	8.68
9E07048-CAL7	20	65586	0.515	8.68
9E07048-CAL8	40	137264	0.625	8.68
9E07048-CAL9	100	398605	0.604	8.67
9E07048-CALA	200	838408	0.627	8.68
9E07048-CALB	400	1832267	0.599	8.67

AVE RF **0.546** RF RSD **14.83** AVE RT **8.68**

trans-1,3-Dichloropropene

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

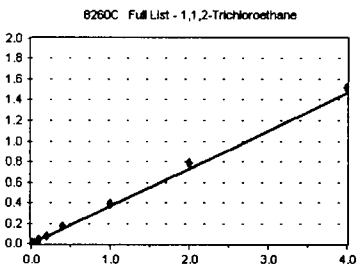


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL3	0.4	502	0.222	8.72
9E07048-CAL4	1	1582	0.246	8.72
9E07048-CAL5	2	3084	0.284	8.72
9E07048-CAL6	5	8937	0.320	8.72
9E07048-CAL7	10	22208	0.349	8.71
9E07048-CAL8	20	51961	0.473	8.71
9E07048-CAL9	50	174126	0.528	8.71
9E07048-CALA	100	395344	0.592	8.71
9E07048-CALB	200	955479	0.625	8.71

AVE RF **0.404** RF RSD **37.75** AVE RT **8.72**

1,1,2-Trichloroethane

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	368	0.292	8.89
9E07048-CAL3	0.4	754	0.334	8.90
9E07048-CAL4	1	2096	0.326	8.88
9E07048-CAL5	2	4156	0.383	8.89
9E07048-CAL6	5	10585	0.379	8.89
9E07048-CAL7	10	23330	0.367	8.89
9E07048-CAL8	20	46171	0.420	8.89
9E07048-CAL9	50	128440	0.389	8.88
9E07048-CALA	100	262681	0.393	8.89
9E07048-CALB	200	582929	0.381	8.89

AVE RF **0.366** RF RSD **10.39** AVE RT **8.89**

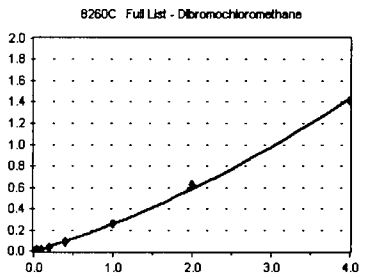
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Dibromochloromethane

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

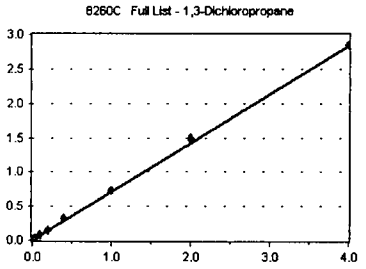


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL3	0.4	215	9.526	9.07
9E07048-CAL4	1	646	0.100	9.08
9E07048-CAL5	2	1529	0.141	9.08
9E07048-CAL6	5	4290	0.154	9.07
9E07048-CAL7	10	10099	0.159	9.08
9E07048-CAL8	20	23476	0.214	9.08
9E07048-CAL9	50	86639	0.263	9.07
9E07048-CALA	100	209789	0.314	9.08
9E07048-CALB	200	540275	0.353	9.08

AVE RF **0.199** RF RSD **46.55** AVE RT **9.08**

1,3-Dichloropropane

Curve Fit: **AVERAGE RF**

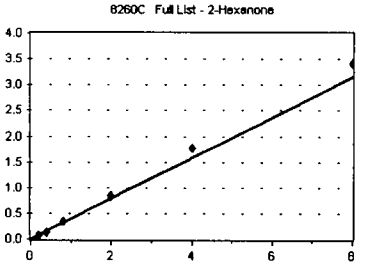


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	369	0.702	9.17
9E07048-CAL2	0.2	753	0.597	9.17
9E07048-CAL3	0.4	1532	0.679	9.18
9E07048-CAL4	1	4160	0.647	9.18
9E07048-CAL5	2	7762	0.716	9.17
9E07048-CAL6	5	20889	0.748	9.18
9E07048-CAL7	10	45205	0.710	9.18
9E07048-CAL8	20	88346	0.804	9.17
9E07048-CAL9	50	243237	0.737	9.17
9E07048-CALA	100	499607	0.748	9.17
9E07048-CALB	200	1091475	0.713	9.17

AVE RF **0.709** RF RSD **7.76** AVE RT **9.17**

2-Hexanone

Curve Fit: **AVERAGE RF**

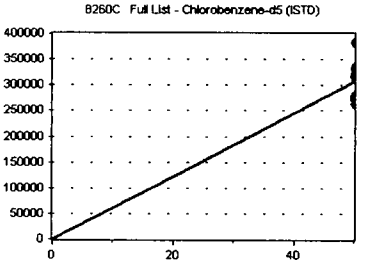


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.4~~	~~512~~	~~0.203~~	~~9.55~~
~~9E07048-CAL3~~	~~0.8~~	~~1043~~	~~0.231~~	~~9.55~~
~~9E07048-CAL4~~	~~2~~	~~3198~~	~~0.249~~	~~9.55~~
~~9E07048-CAL5~~	~~4~~	~~6383~~	~~0.294~~	~~9.55~~
9E07048-CAL6	10	17782	0.318	9.55
9E07048-CAL7	20	42844	0.337	9.55
9E07048-CAL8	40	92169	0.420	9.55
9E07048-CAL9	100	280127	0.425	9.54
9E07048-CALA	200	591216	0.442	9.55
9E07048-CALB	400	1304670	0.426	9.54

AVE RF **0.395** RF RSD **13.41** AVE RT **9.54**

Chlorobenzene-d5 (ISTD)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	50	263004	5260.080	9.81
9E07048-CAL2	50	315116	6302.320	9.80
9E07048-CAL3	50	282136	5642.720	9.80
9E07048-CAL4	50	321643	6432.860	9.81
9E07048-CAL5	50	271061	5421.220	9.81
9E07048-CAL6	50	279254	5585.080	9.80
9E07048-CAL7	50	318211	6364.220	9.80
9E07048-CAL8	50	274550	5491.000	9.80
9E07048-CAL9	50	329813	6596.260	9.80
9E07048-CALA	50	334077	6681.540	9.81
9E07048-CALB	50	382482	7649.640	9.81

AVE RF **6129.722** RF RSD **11.77** AVE RT **9.80**

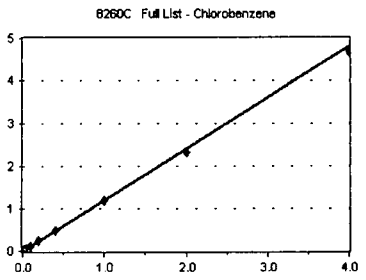
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Chlorobenzene

Curve Fit: **AVERAGE RF**

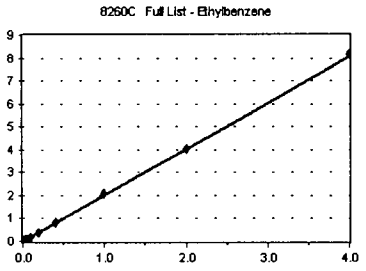


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	708	1.346	9.82
9E07048-CAL2	0.2	1621	1.286	9.82
9E07048-CAL3	0.4	2707	1.199	9.82
9E07048-CAL4	1	7684	1.194	9.82
9E07048-CAL5	2	12836	1.184	9.82
9E07048-CAL6	5	32582	1.167	9.82
9E07048-CAL7	10	74844	1.176	9.82
9E07048-CAL8	20	130501	1.188	9.82
9E07048-CAL9	50	392199	1.189	9.82
9E07048-CALA	100	775570	1.161	9.82
9E07048-CALB	200	1783488	1.166	9.82

AVE RF **1.205** RF RSD **4.79** AVE RT **9.82**

Ethylbenzene

Curve Fit: **AVERAGE RF**

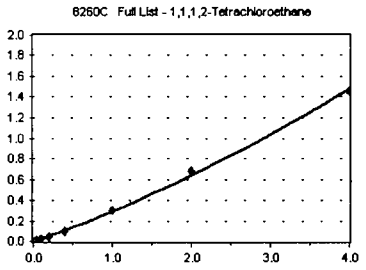


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	1175	2.234	9.85
9E07048-CAL2	0.2	2644	2.098	9.85
9E07048-CAL3	0.4	4382	1.941	9.85
9E07048-CAL4	1	12168	1.892	9.85
9E07048-CAL5	2	20590	1.899	9.85
9E07048-CAL6	5	53767	1.925	9.85
9E07048-CAL7	10	123904	1.947	9.85
9E07048-CAL8	20	225958	2.058	9.85
9E07048-CAL9	50	684347	2.075	9.85
9E07048-CALA	100	1355629	2.029	9.84
9E07048-CALB	200	3128616	2.045	9.84

AVE RF **2.013** RF RSD **5.16** AVE RT **9.85**

1,1,1,2-Tetrachloroethane

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

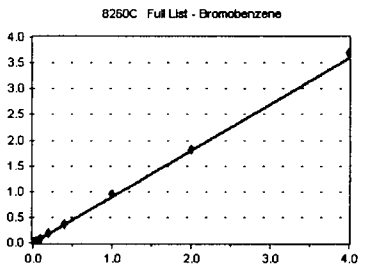


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL3	0.4	292	0.129	9.89
9E07048-CAL4	1	785	0.122	9.89
9E07048-CAL5	2	1701	0.157	9.89
9E07048-CAL6	5	4779	0.171	9.88
9E07048-CAL7	10	12247	0.192	9.88
9E07048-CAL8	20	27384	0.249	9.88
9E07048-CAL9	50	99762	0.302	9.88
9E07048-CALA	100	228768	0.342	9.88
9E07048-CALB	200	559200	0.366	9.88

AVE RF **0.226** RF RSD **40.98** AVE RT **9.88**

Bromobenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	160	0.681	0.00
9E07048-CAL2	0.2	538	0.954	10.96
9E07048-CAL3	0.4	808	0.839	10.95
9E07048-CAL4	1	2646	0.935	10.96
9E07048-CAL5	2	4463	0.912	10.96
9E07048-CAL6	5	11371	0.903	10.95
9E07048-CAL7	10	26129	0.949	10.96
9E07048-CAL8	20	47722	0.939	10.95
9E07048-CAL9	50	145102	0.945	10.95
9E07048-CALA	100	284944	0.912	10.96
9E07048-CALB	200	686712	0.925	10.96

AVE RF **0.899** RF RSD **8.79** AVE RT **9.96**

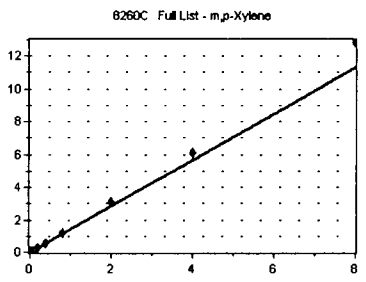
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

m,p-Xylene

Curve Fit: **AVERAGE RF**

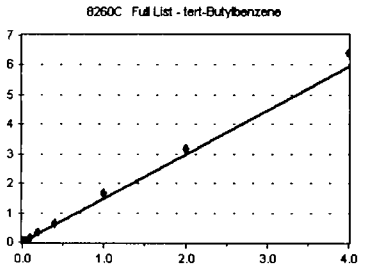


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.2	1447	1.375	9.99
9E07048-CAL2	0.4	3375	1.339	9.99
9E07048-CAL3	0.8	5409	1.198	9.99
9E07048-CAL4	2	16601	1.290	9.98
9E07048-CAL5	4	28146	1.298	9.98
9E07048-CAL6	10	76311	1.366	9.98
9E07048-CAL7	20	180873	1.421	9.98
9E07048-CAL8	40	334982	1.525	9.98
9E07048-CAL9	100	1024139	1.553	9.98
9E07048-CALA	200	2053605	1.537	9.98
9E07048-CALB	400	4916984	1.607	9.98

AVE RF **1.410** RF RSD **9.21** AVE RT **9.98**

tert-Butylbenzene

Curve Fit: **AVERAGE RF**

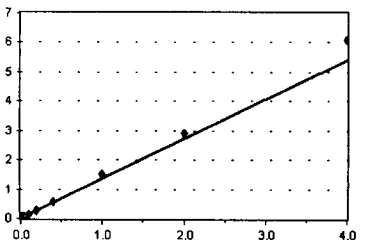


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	294	1.252	0.00
9E07048-CAL2	0.2	778	1.380	11.38
9E07048-CAL3	0.4	1226	1.273	11.38
9E07048-CAL4	1	4016	1.419	11.38
9E07048-CAL5	2	6886	1.406	11.38
9E07048-CAL6	5	18826	1.496	11.38
9E07048-CAL7	10	44486	1.616	11.38
9E07048-CAL8	20	82417	1.621	11.38
9E07048-CAL9	50	255683	1.665	11.38
9E07048-CALA	100	498695	1.596	11.38
9E07048-CALB	200	1185300	1.596	11.38

AVE RF **1.484** RF RSD **9.85** AVE RT **10.35**

o-Xylene

Curve Fit: **AVERAGE RF**

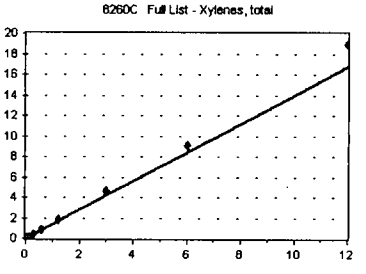


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	771	1.466	10.37
9E07048-CAL2	0.2	1661	1.318	10.36
9E07048-CAL3	0.4	2704	1.198	10.36
9E07048-CAL4	1	7663	1.191	10.37
9E07048-CAL5	2	13306	1.227	10.37
9E07048-CAL6	5	35546	1.273	10.36
9E07048-CAL7	10	85079	1.337	10.36
9E07048-CAL8	20	157388	1.433	10.36
9E07048-CAL9	50	494845	1.500	10.36
9E07048-CALA	100	977297	1.463	10.36
9E07048-CALB	200	2329915	1.523	10.36

AVE RF **1.357** RF RSD **9.19** AVE RT **10.36**

Xylenes, total

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.3	2218	1.406	10.37
9E07048-CAL2	0.6	5036	1.332	10.36
9E07048-CAL3	1.2	8113	1.198	10.36
9E07048-CAL4	3	24264	1.257	10.37
9E07048-CAL5	6	41452	1.274	10.37
9E07048-CAL6	15	111857	1.335	10.36
9E07048-CAL7	30	265952	1.393	10.36
9E07048-CAL8	60	492370	1.494	10.36
9E07048-CAL9	150	1518984	1.535	10.36
9E07048-CALA	300	3030902	1.512	10.36
9E07048-CALB	600	7246899	1.579	10.36

AVE RF **1.392** RF RSD **9.00** AVE RT **10.36**

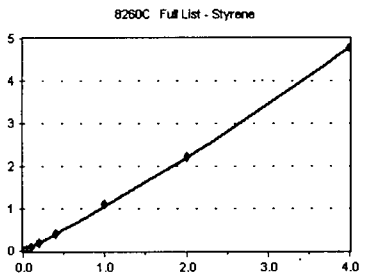
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Styrene

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

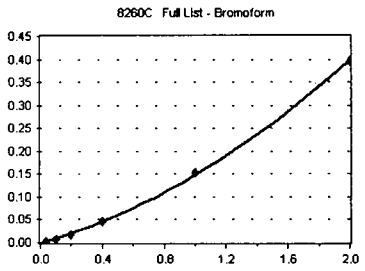


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	742	0.589	10.42
9E07048-CAL3	0.4	1408	0.624	10.42
9E07048-CAL4	1	4261	0.662	10.42
9E07048-CAL5	2	7423	0.685	10.42
9E07048-CAL6	5	22451	0.804	10.41
9E07048-CAL7	10	56305	0.885	10.41
9E07048-CAL8	20	110271	1.004	10.41
9E07048-CAL9	50	367293	1.114	10.41
9E07048-CALA	100	736185	1.102	10.41
9E07048-CALB	200	1826906	1.194	10.41

AVE RF **0.866** RF RSD **26.04** AVE RT **10.41**

Bromoform

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

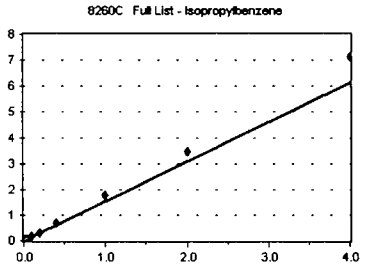


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL4~~	~~1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL5	2	793	7.314	10.44
9E07048-CAL6	5	2131	7.631	10.44
9E07048-CAL7	10	5401	8.487	10.44
9E07048-CAL8	20	12454	0.113	10.44
9E07048-CAL9	50	50592	0.153	10.44
9E07048-CALA	100	132822	0.199	10.43
~~9E07048-CALB~~	~~200~~	~~365594~~	~~0.239~~	~~10.43~~

AVE RF **0.117** RF RSD **43.10** AVE RT **10.44**

Isopropylbenzene

Curve Fit: **AVERAGE RF**

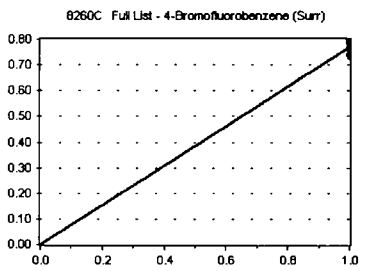


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~607~~	~~1.154~~	~~0.00~~
9E07048-CAL2	0.2	1621	1.286	10.63
9E07048-CAL3	0.4	2804	1.242	10.63
9E07048-CAL4	1	8865	1.378	10.63
9E07048-CAL5	2	14839	1.369	10.63
9E07048-CAL6	5	42773	1.532	10.63
9E07048-CAL7	10	101605	1.597	10.63
9E07048-CAL8	20	187296	1.705	10.63
9E07048-CAL9	50	585625	1.776	10.63
9E07048-CALA	100	1158047	1.733	10.63
9E07048-CALB	200	2723392	1.780	10.63

AVE RF **1.540** RF RSD **13.52** AVE RT **10.63**

4-Bromofluorobenzene (Surr)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	50	90333	0.769	10.87
9E07048-CAL2	50	110936	0.787	10.87
9E07048-CAL3	50	94062	0.781	10.87
9E07048-CAL4	50	112797	0.797	10.87
9E07048-CAL5	50	93757	0.766	10.87
9E07048-CAL6	50	96094	0.763	10.87
9E07048-CAL7	50	109811	0.798	10.87
9E07048-CAL8	50	96557	0.760	10.87
9E07048-CAL9	50	117904	0.768	10.87
9E07048-CALA	50	115967	0.742	10.87
9E07048-CALB	50	136770	0.737	10.87

AVE RF **0.770** RF RSD **2.59** AVE RT **10.87**

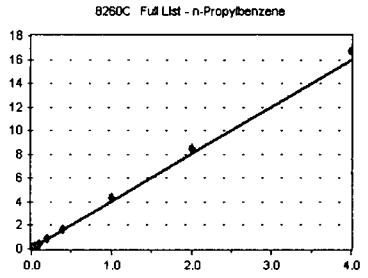
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

n-Propylbenzene

Curve Fit: **AVERAGE RF**

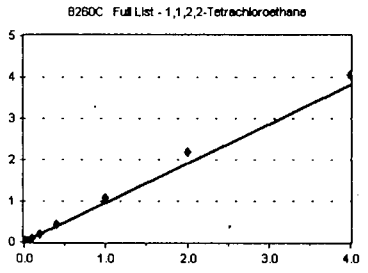


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	914	3.893	10.98
9E07048-CAL2	0.2	2125	3.768	10.98
9E07048-CAL3	0.4	3524	3.659	10.98
9E07048-CAL4	1	10761	3.802	10.97
9E07048-CAL5	2	18352	3.748	10.97
9E07048-CAL6	5	49128	3.903	10.97
9E07048-CAL7	10	115664	4.202	10.97
9E07048-CAL8	20	214448	4.219	10.97
9E07048-CAL9	50	668617	4.354	10.97
9E07048-CALA	100	1317712	4.217	10.98
9E07048-CALB	200	3112598	4.191	10.97

AVE RF **3.996** RF RSD **6.08** AVE RT **10.97**

1,1,2,2-Tetrachloroethane

Curve Fit: **AVERAGE RF**

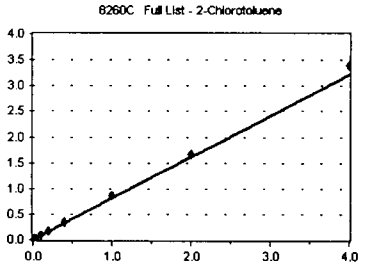


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~138~~	~~0.588~~	~~0.00~~
9E07048-CAL2	0.2	440	0.780	11.04
9E07048-CAL3	0.4	771	0.801	11.04
9E07048-CAL4	1	2364	0.835	11.04
9E07048-CAL5	2	4375	0.894	11.04
9E07048-CAL6	5	11560	0.918	11.04
9E07048-CAL7	10	27257	0.990	11.04
9E07048-CAL8	20	55658	1.095	11.04
9E07048-CAL9	50	165500	1.078	11.04
9E07048-CALA	100	342106	1.095	11.04
9E07048-CALB	200	754067	1.015	11.04

AVE RF **0.950** RF RSD **12.78** AVE RT **11.04**

2-Chlorotoluene

Curve Fit: **AVERAGE RF**

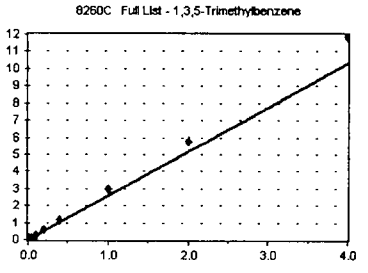


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	441	0.782	11.11
9E07048-CAL3	0.4	669	0.695	11.11
9E07048-CAL4	1	2215	0.783	11.11
9E07048-CAL5	2	3616	0.739	11.11
9E07048-CAL6	5	9901	0.787	11.11
9E07048-CAL7	10	23610	0.858	11.11
9E07048-CAL8	20	42696	0.840	11.10
9E07048-CAL9	50	133819	0.871	11.10
9E07048-CALA	100	259978	0.832	11.10
9E07048-CALB	200	630374	0.849	11.10

AVE RF **0.803** RF RSD **7.06** AVE RT **11.10**

1,3,5-Trimethylbenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	548	2.334	11.13
9E07048-CAL2	0.2	1238	2.195	11.13
9E07048-CAL3	0.4	2172	2.255	11.13
9E07048-CAL4	1	6404	2.263	11.13
9E07048-CAL5	2	11485	2.346	11.13
9E07048-CAL6	5	31608	2.511	11.13
9E07048-CAL7	10	77527	2.817	11.13
9E07048-CAL8	20	146436	2.881	11.13
9E07048-CAL9	50	457542	2.979	11.13
9E07048-CALA	100	898558	2.875	11.13
9E07048-CALB	200	2203355	2.967	11.13

AVE RF **2.584** RF RSD **12.34** AVE RT **11.13**

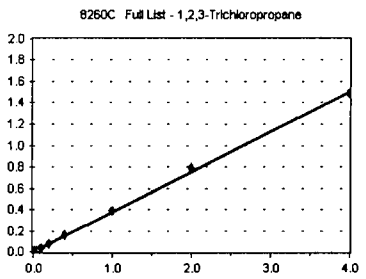
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

1,2,3-Trichloropropane

Curve Fit: **AVERAGE RF**

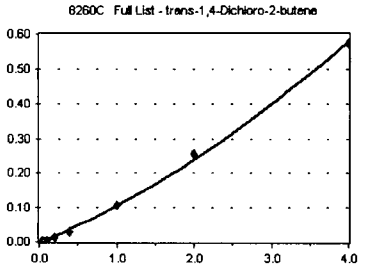


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~135~~	~~0.239~~	~~11.15~~
9E07048-CAL3	0.4	303	0.315	11.15
9E07048-CAL4	1	973	0.344	11.15
9E07048-CAL5	2	1924	0.393	11.15
9E07048-CAL6	5	4758	0.378	11.14
9E07048-CAL7	10	10739	0.390	11.15
9E07048-CAL8	20	20933	0.412	11.15
9E07048-CAL9	50	60249	0.392	11.15
9E07048-CALA	100	123481	0.395	11.15
9E07048-CALB	200	276178	0.372	11.14

AVE RF **0.377** RF RSD **7.97** AVE RT **11.15**

trans-1,4-Dichloro-2-butene

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

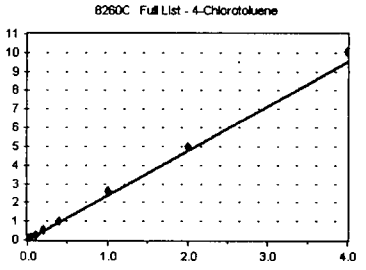


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL4~~	~~1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL5	2	237	4.840	11.18
9E07048-CAL6	5	580	4.608	11.18
9E07048-CAL7	10	1656	6.016	11.18
9E07048-CAL8	20	3834	7.542	11.18
9E07048-CAL9	50	16499	0.107	11.18
9E07048-CALA	100	40002	0.128	11.18
9E07048-CALB	200	106408	0.143	11.17

AVE RF **0.087** RF RSD **45.23** AVE RT **11.18**

4-Chlorotoluene

Curve Fit: **AVERAGE RF**

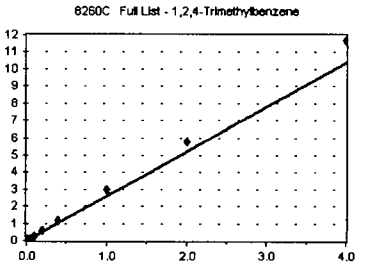


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	483	2.057	11.24
9E07048-CAL2	0.2	1253	2.222	11.24
9E07048-CAL3	0.4	2028	2.106	11.24
9E07048-CAL4	1	6529	2.307	11.24
9E07048-CAL5	2	11250	2.298	11.24
9E07048-CAL6	5	30163	2.397	11.23
9E07048-CAL7	10	71020	2.580	11.23
9E07048-CAL8	20	129493	2.547	11.23
9E07048-CAL9	50	401605	2.615	11.23
9E07048-CALA	100	778535	2.491	11.24
9E07048-CALB	200	1869203	2.517	11.24

AVE RF **2.376** RF RSD **8.11** AVE RT **11.24**

1,2,4-Trimethylbenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	561	2.389	11.44
9E07048-CAL2	0.2	1251	2.218	11.44
9E07048-CAL3	0.4	2171	2.254	11.44
9E07048-CAL4	1	6383	2.255	11.44
9E07048-CAL5	2	11474	2.343	11.44
9E07048-CAL6	5	32438	2.577	11.43
9E07048-CAL7	10	78156	2.839	11.44
9E07048-CAL8	20	148515	2.922	11.44
9E07048-CAL9	50	457137	2.977	11.43
9E07048-CALA	100	897125	2.871	11.44
9E07048-CALB	200	2164127	2.914	11.44

AVE RF **2.596** RF RSD **11.99** AVE RT **11.44**

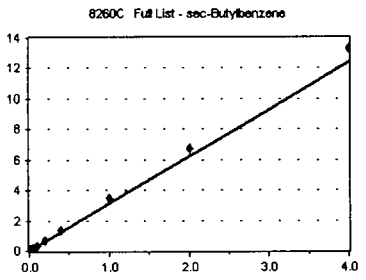
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

sec-Butylbenzene

Curve Fit: **AVERAGE RF**

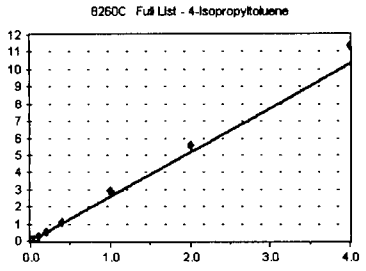


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	715	3.045	11.52
9E07048-CAL2	0.2	1494	2.649	11.52
9E07048-CAL3	0.4	2640	2.741	11.52
9E07048-CAL4	1	7874	2.782	11.52
9E07048-CAL5	2	14030	2.865	11.52
9E07048-CAL6	5	39097	3.106	11.52
9E07048-CAL7	10	92413	3.357	11.52
9E07048-CAL8	20	171858	3.381	11.52
9E07048-CAL9	50	532289	3.466	11.52
9E07048-CALA	100	1046840	3.350	11.52
9E07048-CALB	200	2466612	3.321	11.52

AVE RF **3.097** RF RSD **9.59** AVE RT **11.52**

4-Isopropyltoluene

Curve Fit: **AVERAGE RF**

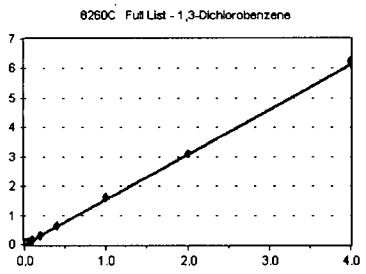


Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~475~~	~~2.023~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~1097~~	~~1.945~~	~~11.63~~
~~9E07048-CAL3~~	~~0.4~~	~~1855~~	~~1.926~~	~~11.63~~
9E07048-CAL4	1	5898	2.084	11.63
9E07048-CAL5	2	10365	2.117	11.63
9E07048-CAL6	5	30161	2.396	11.63
9E07048-CAL7	10	73579	2.673	11.63
9E07048-CAL8	20	141976	2.793	11.63
9E07048-CAL9	50	446740	2.909	11.63
9E07048-CALA	100	875955	2.803	11.63
9E07048-CALB	200	2110691	2.842	11.63

AVE RF **2.577** RF RSD **12.91** AVE RT **11.63**

1,3-Dichlorobenzene

Curve Fit: **AVERAGE RF**

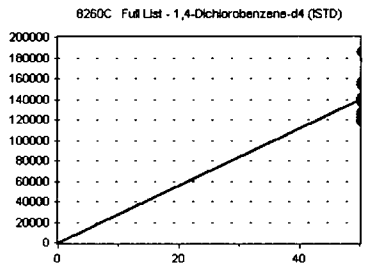


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	361	1.538	11.69
9E07048-CAL2	0.2	822	1.458	11.70
9E07048-CAL3	0.4	1391	1.444	11.70
9E07048-CAL4	1	4151	1.467	11.70
9E07048-CAL5	2	7501	1.532	11.70
9E07048-CAL6	5	19402	1.542	11.70
9E07048-CAL7	10	42681	1.551	11.70
9E07048-CAL8	20	82474	1.622	11.69
9E07048-CAL9	50	248657	1.619	11.70
9E07048-CALA	100	483440	1.547	11.69
9E07048-CALB	200	1158673	1.560	11.69

AVE RF **1.534** RF RSD **3.84** AVE RT **11.70**

1,4-Dichlorobenzene-d4 (ISTD)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	50	117395	2347.900	11.75
9E07048-CAL2	50	140978	2819.560	11.75
9E07048-CAL3	50	120378	2407.560	11.75
9E07048-CAL4	50	141519	2830.380	11.75
9E07048-CAL5	50	122406	2448.120	11.75
9E07048-CAL6	50	125861	2517.220	11.75
9E07048-CAL7	50	137625	2752.500	11.75
9E07048-CAL8	50	127087	2541.740	11.75
9E07048-CAL9	50	153580	3071.600	11.75
9E07048-CALA	50	156244	3124.880	11.75
9E07048-CALB	50	185657	3713.140	11.75

AVE RF **2779.509** RF RSD **14.57** AVE RT **11.75**

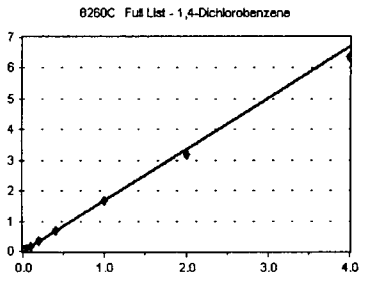
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

1,4-Dichlorobenzene

Curve Fit: **AVERAGE RF**

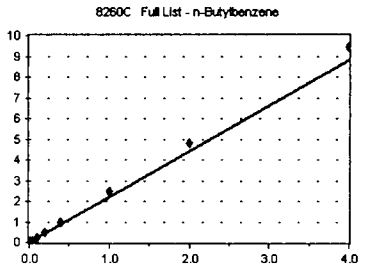


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	465	1.980	11.76
9E07048-CAL2	0.2	932	1.653	11.76
9E07048-CAL3	0.4	1636	1.699	11.76
9E07048-CAL4	1	4797	1.695	11.76
9E07048-CAL5	2	8234	1.682	11.76
9E07048-CAL6	5	20284	1.612	11.76
9E07048-CAL7	10	44850	1.629	11.76
9E07048-CAL8	20	85622	1.684	11.76
9E07048-CAL9	50	254182	1.655	11.76
9E07048-CALA	100	493681	1.580	11.76
9E07048-CALB	200	1176777	1.585	11.76

AVE RF **1.678** RF RSD **6.49** AVE RT **11.76**

n-Butylbenzene

Curve Fit: **AVERAGE RF**

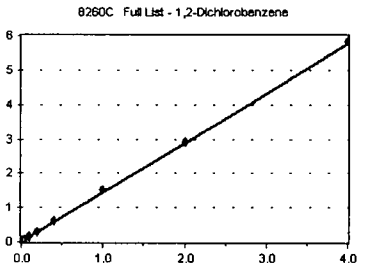


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	503	2.142	11.95
9E07048-CAL2	0.2	1099	1.949	11.95
9E07048-CAL3	0.4	1917	1.991	11.95
9E07048-CAL4	1	5710	2.017	11.95
9E07048-CAL5	2	9476	1.935	11.95
9E07048-CAL6	5	27019	2.147	11.95
9E07048-CAL7	10	65332	2.374	11.94
9E07048-CAL8	20	121885	2.398	11.94
9E07048-CAL9	50	379675	2.472	11.94
9E07048-CALA	100	753712	2.412	11.94
9E07048-CALB	200	1754778	2.363	11.95

AVE RF **2.200** RF RSD **9.44** AVE RT **11.95**

1,2-Dichlorobenzene

Curve Fit: **AVERAGE RF**

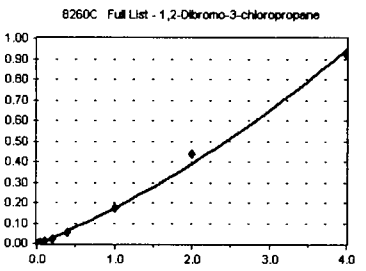


Standard	Concentration	Response	Response Factor	RT
9E07048-CAL1	0.1	319	1.359	12.08
9E07048-CAL2	0.2	799	1.417	12.08
9E07048-CAL3	0.4	1327	1.378	12.08
9E07048-CAL4	1	3856	1.362	12.08
9E07048-CAL5	2	6890	1.407	12.08
9E07048-CAL6	5	18432	1.464	12.08
9E07048-CAL7	10	40089	1.456	12.08
9E07048-CAL8	20	79323	1.560	12.08
9E07048-CAL9	50	232496	1.514	12.08
9E07048-CALA	100	456101	1.460	12.08
9E07048-CALB	200	1085241	1.461	12.08

AVE RF **1.440** RF RSD **4.38** AVE RT **12.08**

1,2-Dibromo-3-chloropropane

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL4	1	139	4.911	12.69
9E07048-CAL5	2	344	7.026	12.68
9E07048-CAL6	5	1033	8.207	12.68
9E07048-CAL7	10	2666	0.097	12.69
9E07048-CAL8	20	6583	0.129	12.69
9E07048-CAL9	50	26288	0.171	12.69
9E07048-CALA	100	68037	0.218	12.68
9E07048-CALB	200	171676	0.231	12.68

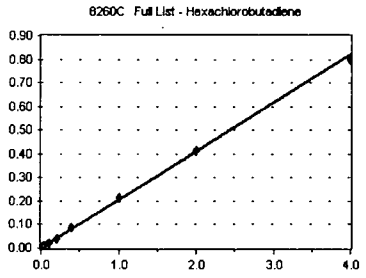
AVE RF **0.131** RF RSD **52.52** AVE RT **12.68**

Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VF190507S/G**

Hexachlorobutadiene

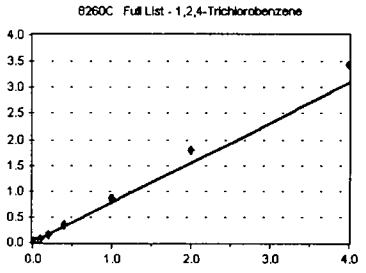


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL4	1	548	0.194	13.18
9E07048-CAL5	2	977	0.200	13.19
9E07048-CAL6	5	2590	0.206	13.19
9E07048-CAL7	10	5590	0.203	13.19
9E07048-CAL8	20	11108	0.219	13.19
9E07048-CAL9	50	33246	0.216	13.19
9E07048-CALA	100	64806	0.207	13.19
9E07048-CALB	200	148043	0.199	13.19

AVE RF **0.205** RF RSD **4.17** AVE RT **13.19**

1,2,4-Trichlorobenzene

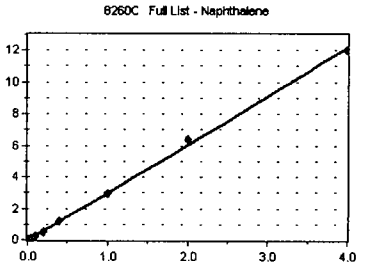


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL2	0.2	326	0.578	13.23
9E07048-CAL3	0.4	681	0.707	13.23
9E07048-CAL4	1	1879	0.664	13.23
9E07048-CAL5	2	3650	0.745	13.23
9E07048-CAL6	5	9487	0.754	13.23
9E07048-CAL7	10	21384	0.777	13.23
9E07048-CAL8	20	44542	0.876	13.23
9E07048-CAL9	50	133873	0.872	13.22
9E07048-CALA	100	280911	0.899	13.23
9E07048-CALB	200	638432	0.860	13.23

AVE RF **0.773** RF RSD **13.57** AVE RT **13.23**

Naphthalene

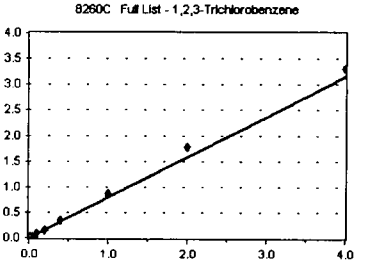


Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E07048-CAL3	0.4	1578	1.639	13.50
9E07048-CAL4	1	4612	1.629	13.51
9E07048-CAL5	2	9150	1.869	13.51
9E07048-CAL6	5	26502	2.106	13.50
9E07048-CAL7	10	66084	2.401	13.50
9E07048-CAL8	20	148411	2.919	13.50
9E07048-CAL9	50	456299	2.971	13.50
9E07048-CALA	100	996167	3.188	13.50
9E07048-CALB	200	2228594	3.001	13.50

AVE RF **2.414** RF RSD **25.87** AVE RT **13.50**

1,2,3-Trichlorobenzene



Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
~~9E07048-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E07048-CAL2~~	~~0.2~~	~~356~~	~~0.631~~	~~13.67~~
9E07048-CAL3	0.4	600	0.623	13.67
9E07048-CAL4	1	1872	0.661	13.66
9E07048-CAL5	2	3683	0.752	13.66
9E07048-CAL6	5	9947	0.790	13.66
9E07048-CAL7	10	21895	0.795	13.67
9E07048-CAL8	20	45148	0.888	13.67
9E07048-CAL9	50	132079	0.860	13.67
9E07048-CALA	100	277018	0.886	13.66
9E07048-CALB	200	614270	0.827	13.66

AVE RF **0.787** RF RSD **11.97** AVE RT **13.66**

Calibration Status Report VOA-GCMS6

Method Path : C:\msdchem\1\METHODS\
Method File : VF190507G.M
Title : NWTPH-Gx by GC/MS
Last Update : Wed May 08 11:36:04 2019
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	50	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050734.D
2	2	100	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050735.D
3	3	250	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050736.D
4	4	500	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050737.D
5	5	1000	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050738.D
6	6	2500	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050739.D
7	7	5000	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050740.D
8	8	10000	50	C:\msdchem\1\DATA\2019-05\9E07048\VF19050741.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	May 08 11:35 2019	May 08 11:26 2019	
2	2	May 08 11:35 2019	May 08 11:26 2019	
3	3	May 08 11:35 2019	May 08 11:26 2019	
4	4	May 08 11:35 2019	May 08 11:26 2019	
5	5	May 08 11:35 2019	May 08 11:26 2019	
6	6	May 08 11:35 2019	May 08 11:26 2019	
7	7	May 08 11:35 2019	May 08 11:28 2019	
8	8	May 08 11:35 2019	May 08 11:29 2019	

VF190507G.M Wed May 08 14:01:13 2019

Response Factor Report VOA-GCMS6

Method Path : C:\msdchem\1\METHODS\
Method File : VF190507G.M
Title : NWTPH-Gx by GC/MS
Last Update : Wed May 08 11:36:04 2019
Response Via : Initial Calibration

Calibration Files
1 =VF19050734.D 2 =VF19050735.D 3 =VF19050736.D 4 =VF19050737.D 5 =VF19050738.D 6 =VF19050739.D
7 =VF19050740.D 8 =VF19050741.D

		Compound	1	2	3	4	5	6	7	8	Avg	%RSD
1)	I	Pentafluorobenzene...	ISTD									
2)	S	1,4-Difluorobe...	3.752	3.782	3.750	3.774	3.793	3.919	3.946	4.821	3.942	9.20
3)	S	4-Bromofluorob...	2.315	2.475	2.411	2.420	2.537	2.470	2.398	2.393	2.427	2.74
4)	S	Chlorobenzene-...									0.000	-1.00
5)	H	TPHg (C5-C9)	3.421	2.579	2.252	2.227	2.362	2.295	2.106	2.475	2.465	16.78
6)	H	TPHg (C6-C10)	2.469	1.903	1.712	1.771	1.882	1.851	1.727	2.047	1.920	12.85
7)	H	CA-LUFT (C5-C12)	3.596	2.783	2.502	2.529	2.733	2.651	2.479	2.946	2.777	13.22
8)	H	NWTPH-Gx	0.861	1.005	1.178	1.362	1.574	1.576	1.581	1.895	1.379	25.00
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

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Compound List Report VOA-GCMS6

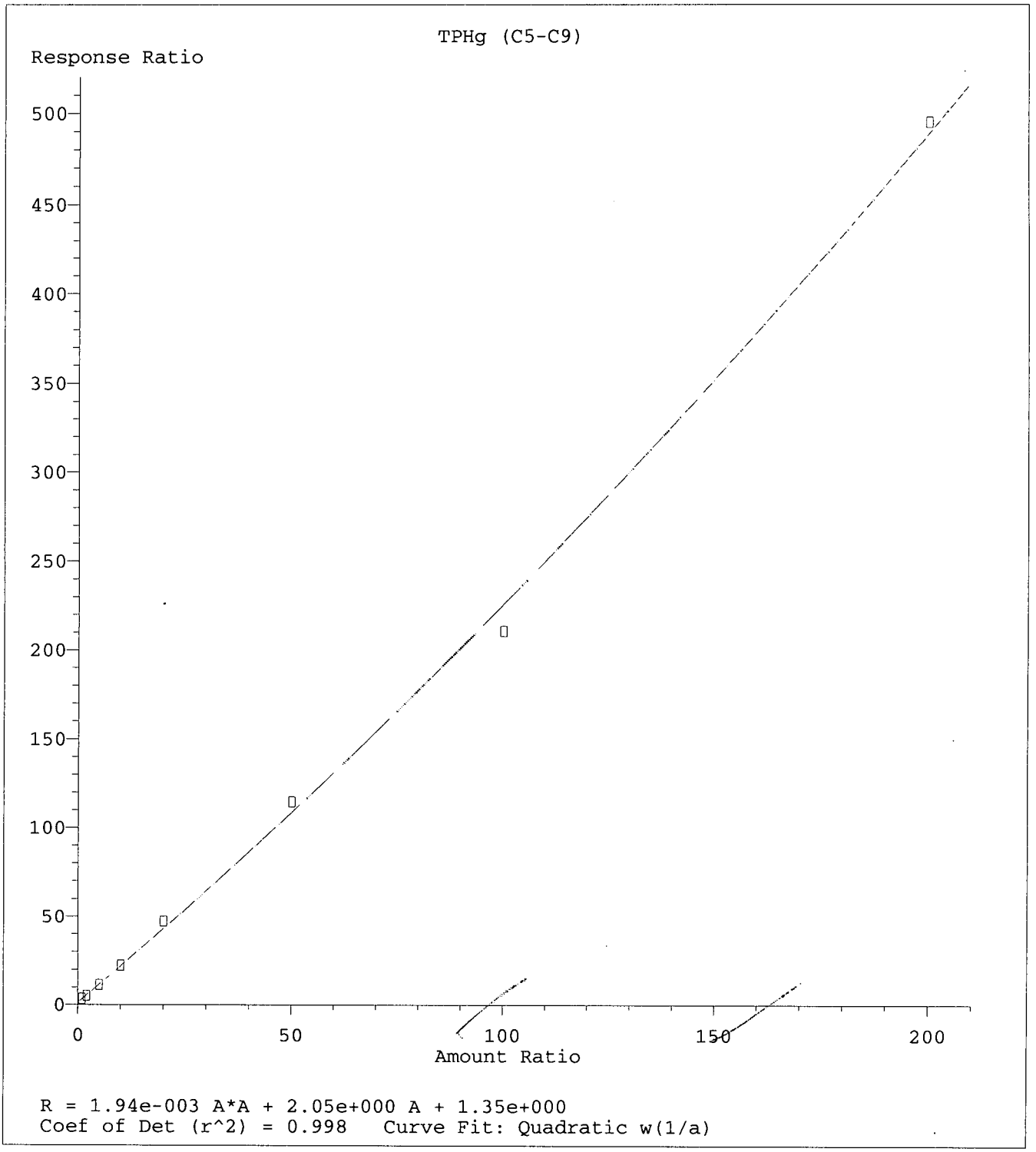
Method Path : C:\msdchem\1\METHODS\
Method File : VF190507G.M
Title : NWTPH-Gx by GC/MS
Last Update : Wed May 08 11:36:04 2019
Response Via : Initial Calibration

Total Cpnds : 13

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	Pentafluorobenzene (IS)	168	6.096	1.000	A	2	A	A
2	S	1,4-Difluorobenzene (Sur)	TIC	6.661	1.093	A	2	A	A
3	S	4-Bromofluorobenzene (Sur)	TIC	10.871	1.783	A	2	A	A
4	S	Chlorobenzene-d5 (NR)	TIC	9.806	1.609	A	2	A	A
5	H	TPHg (C5-C9)	TIC	9.860	1.618	Q	0	A	A
6	H	TPHg (C6-C10)	TIC	9.860	1.618	Q	0	A	A
7	H	CA-LUFT (C5-C12)	TIC	9.860	1.618	Q	0	A	A
8	H	NWTPH-Gx	TIC	9.870	1.619	Q	0	A	A
9		Benzene (NR)	78	6.004	0.985	A	2	A	A
10	S	Toluene-d8 (NR)	TIC	8.170	1.340	A	2	A	A
11	C	Toluene (NR)	91	8.225	1.349	A	2	A	A
12	S	1,4-Dichlorobenzene-d4 (NR)	TIC	11.747	1.927	A	2	A	A
13		Naphthalene (NR)	128	13.499	2.215	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

VF190507G.M Wed May 08 14:01:29 2019



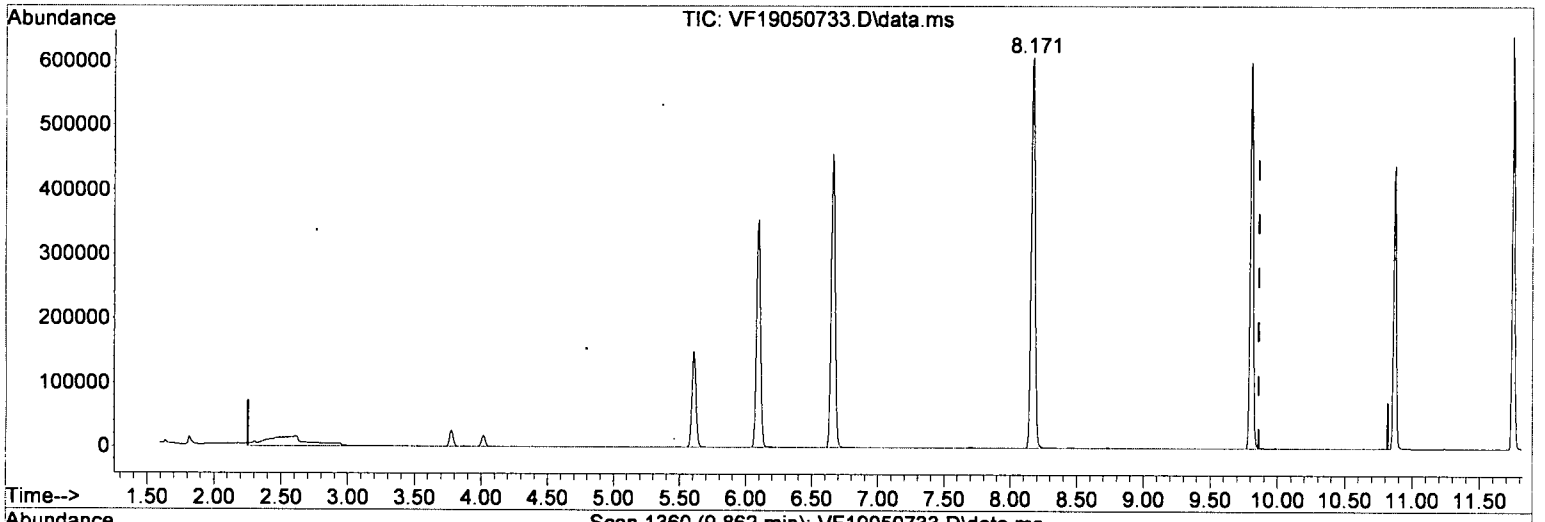
Method Name: C:\msdchem\1\METHODS\VF190507G.M
Calibration Table Last Updated: Wed May 08 11:36:04 2019

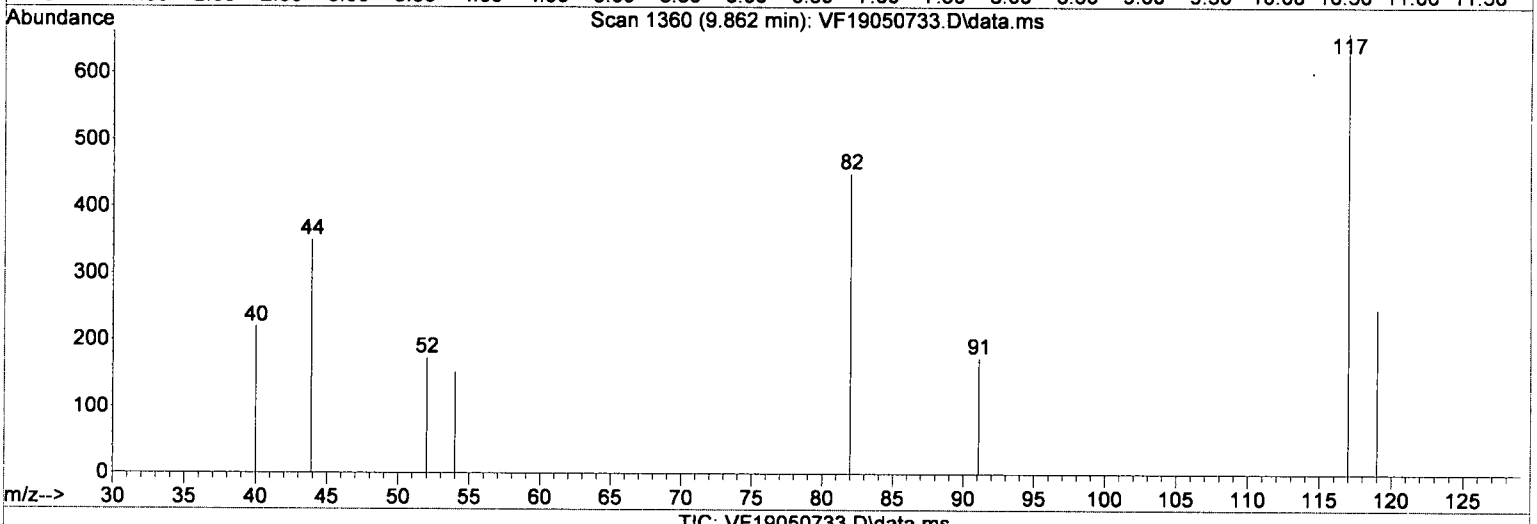
Int = 6.92

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050733.D
Acq On : 8 May 2019 4:49 am
Operator : TB
Sample : 9E07048-ICB2
Misc : 1X DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:13 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





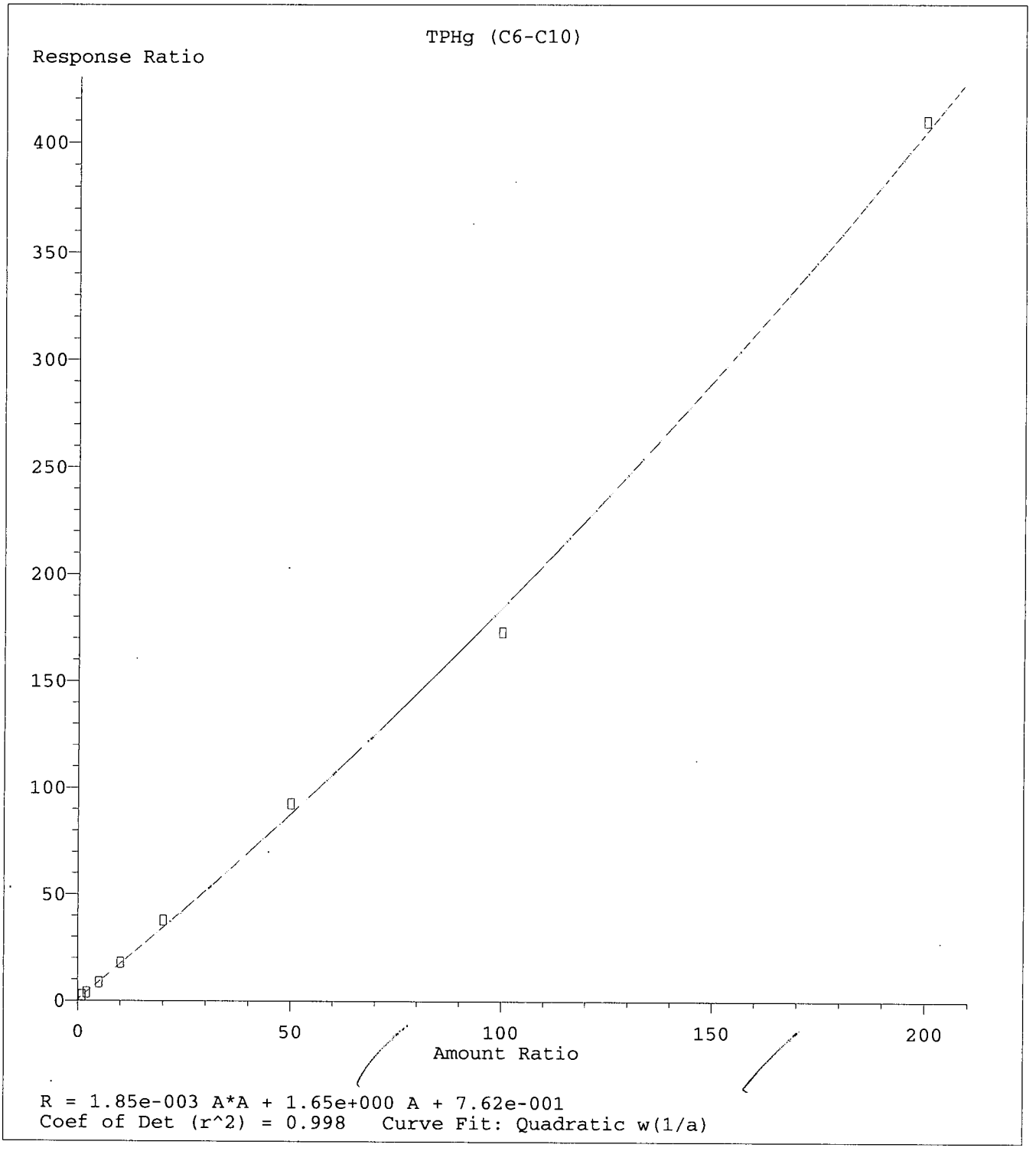
TIC: VF19050733.D\data.ms

(5) TPHg (C5-C9) (H)

9.860min (0.000) 6.52 ug/L m

response 429036

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00



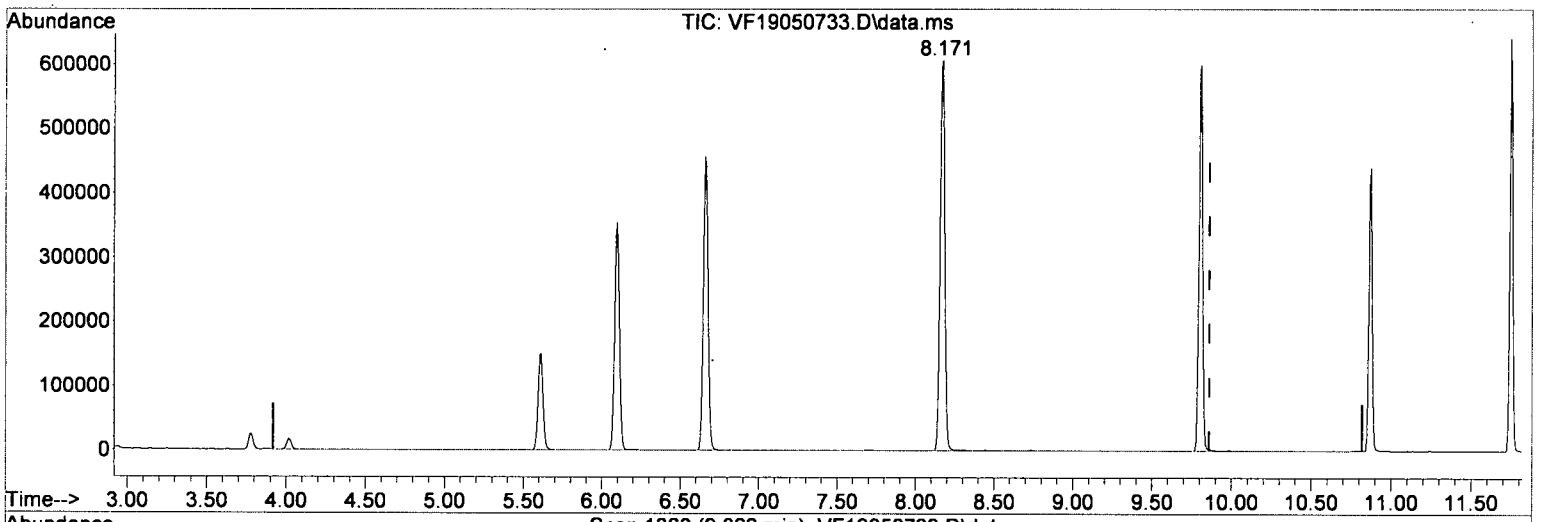
Method Name: C:\msdchem\1\METHODS\VF190507G.M
Calibration Table Last Updated: Wed May 08 11:36:04 2019

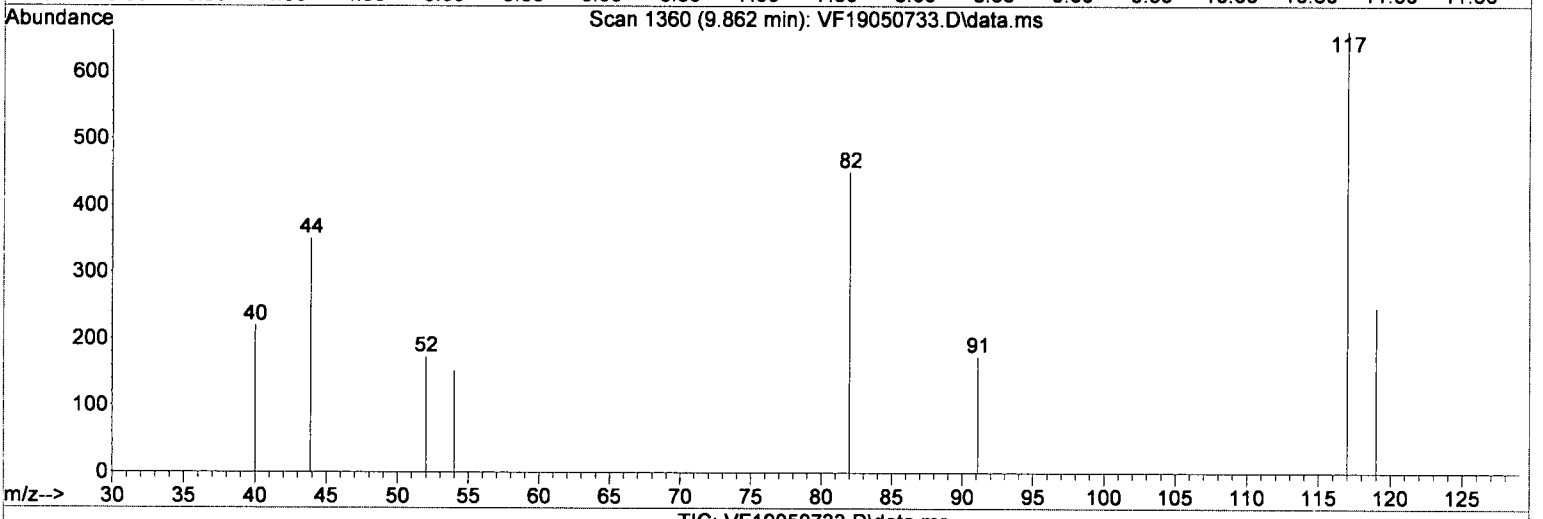
INT = 18,93

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050733.D
Acq On : 8 May 2019 4:49 am
Operator : TB
Sample : 9E07048-ICB2
Misc : 1X DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:13 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





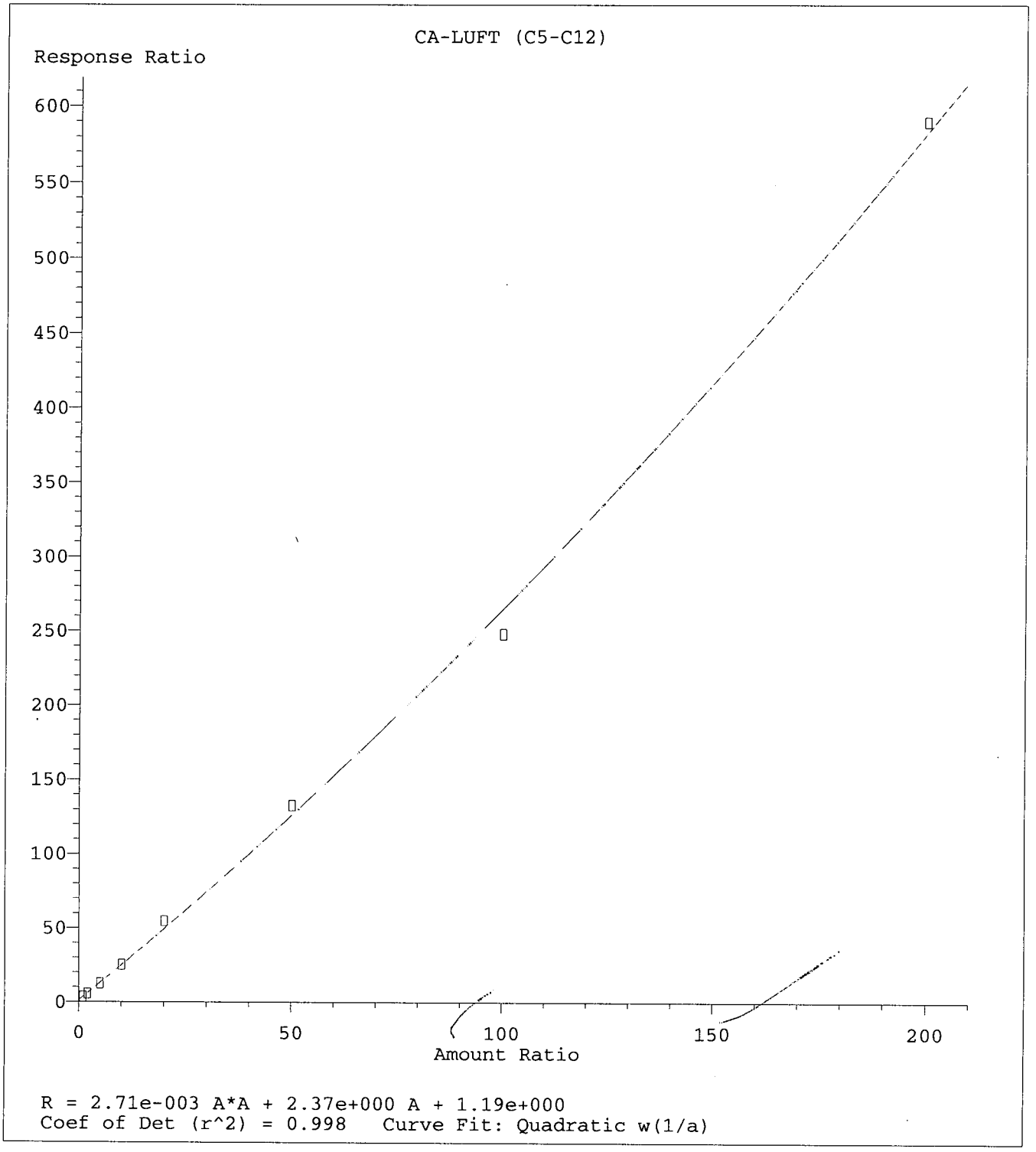
TIC: VF19050733.D\data.ms

(6) TPHg (C6-C10) (H)

9.860min (0.000) 18.93 ug/L m

response 367227

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00



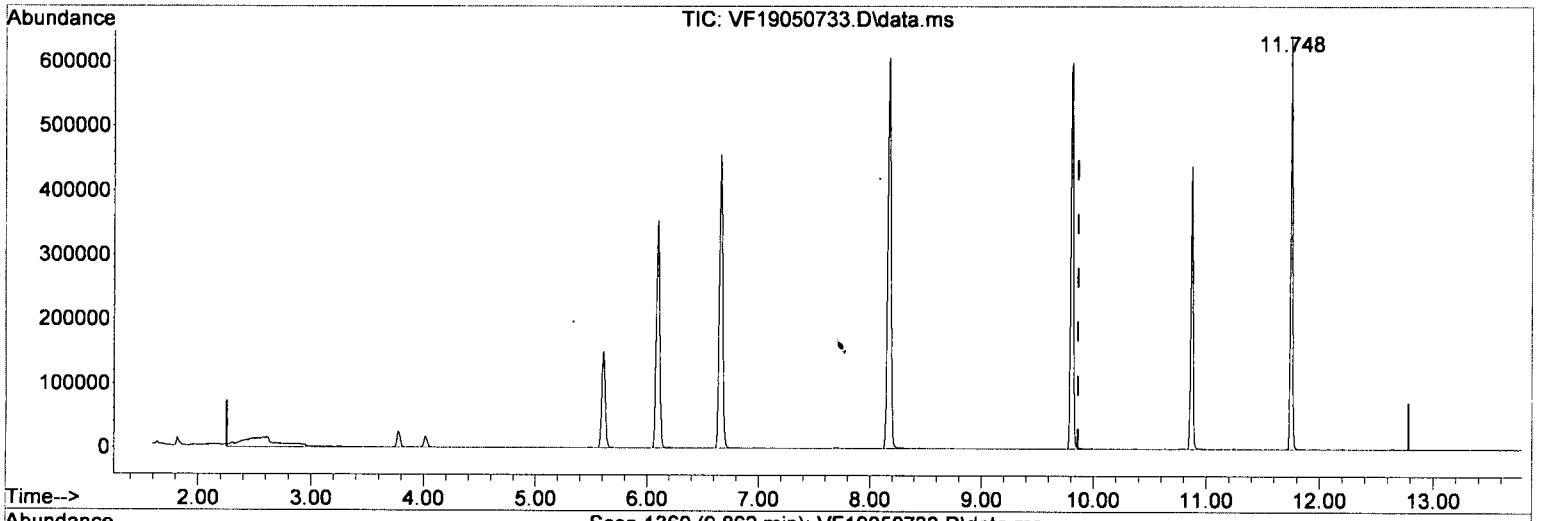
Method Name: C:\msdchem\1\METHODS\VF190507G.M
Calibration Table Last Updated: Wed May 08 11:36:04 2019

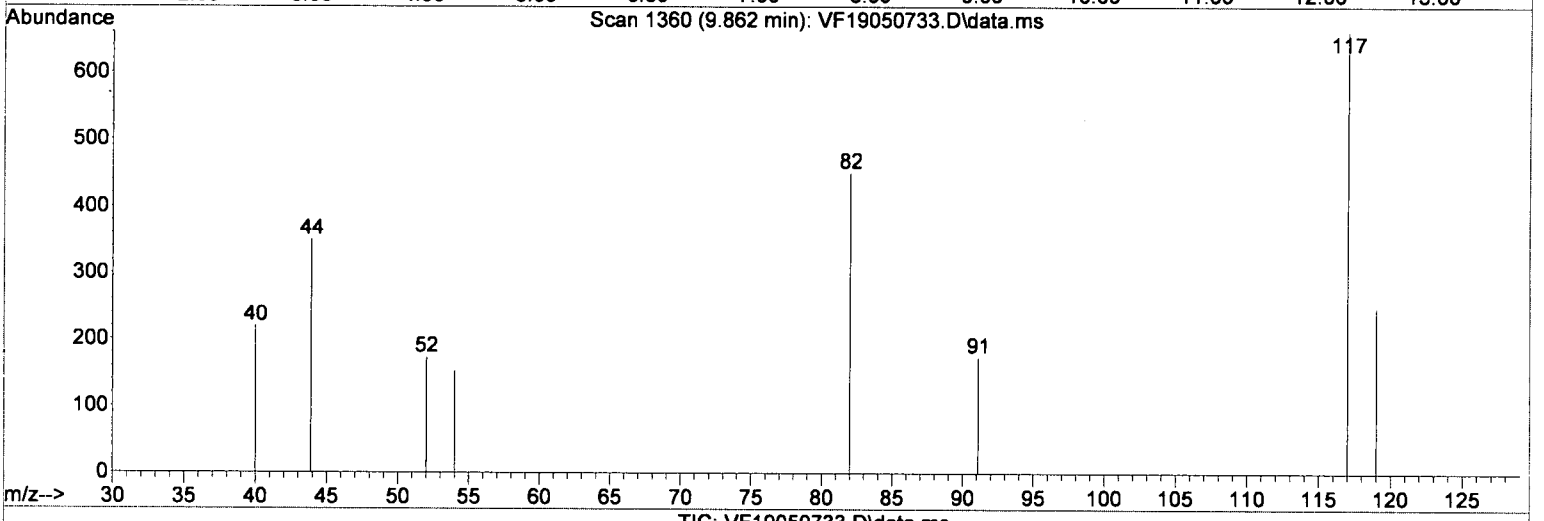
INT = 9,2

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050733.D
Acq On : 8 May 2019 4:49 am
Operator : TB
Sample : 9E07048-ICB2
Misc : 1X DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:13 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





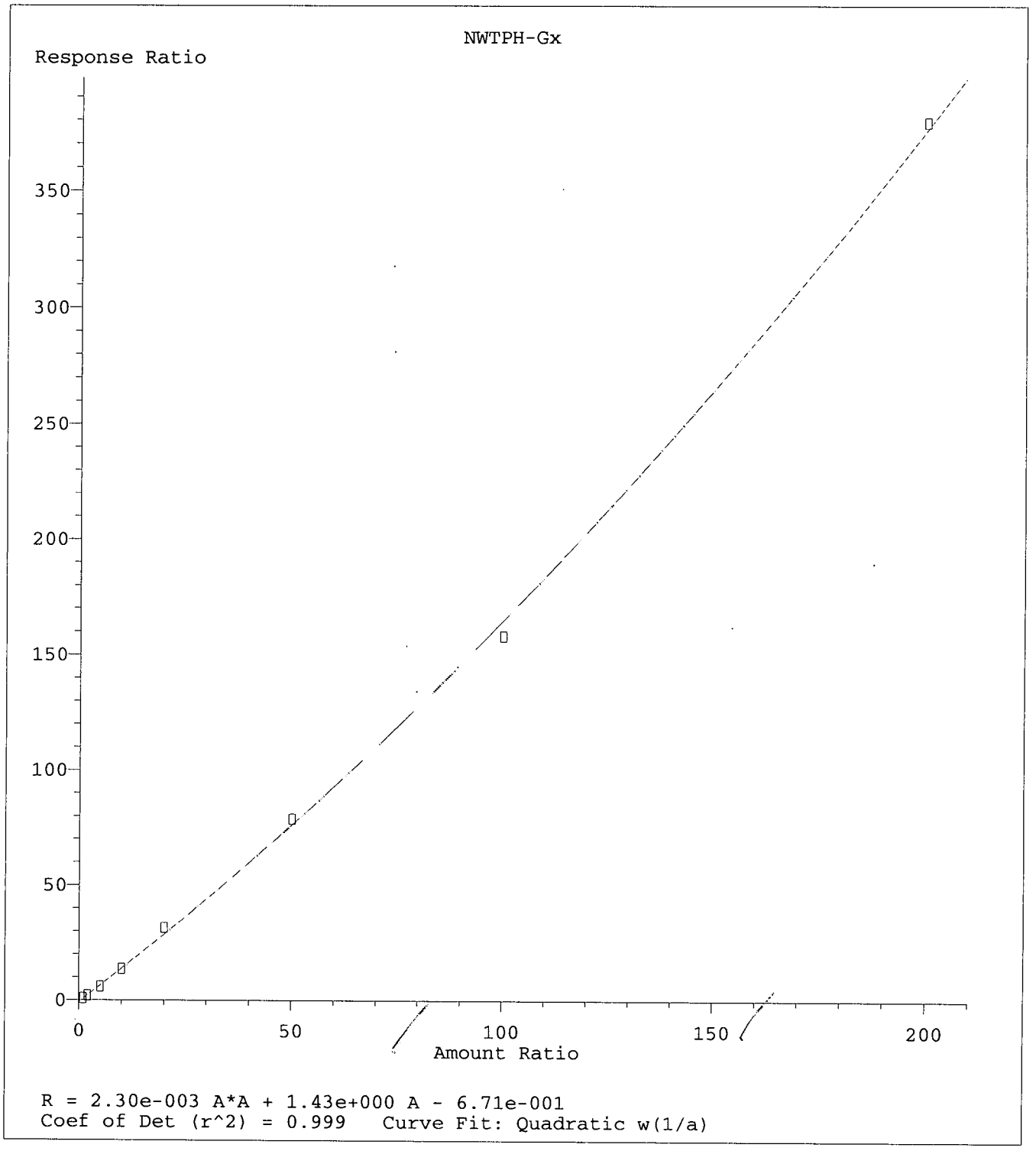
TIC: VF19050733.D\data.ms

(7) CA-LUFT (C5-C12) (H)

9.860min (0.000) 9.20 ug/L m

response 429036

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00



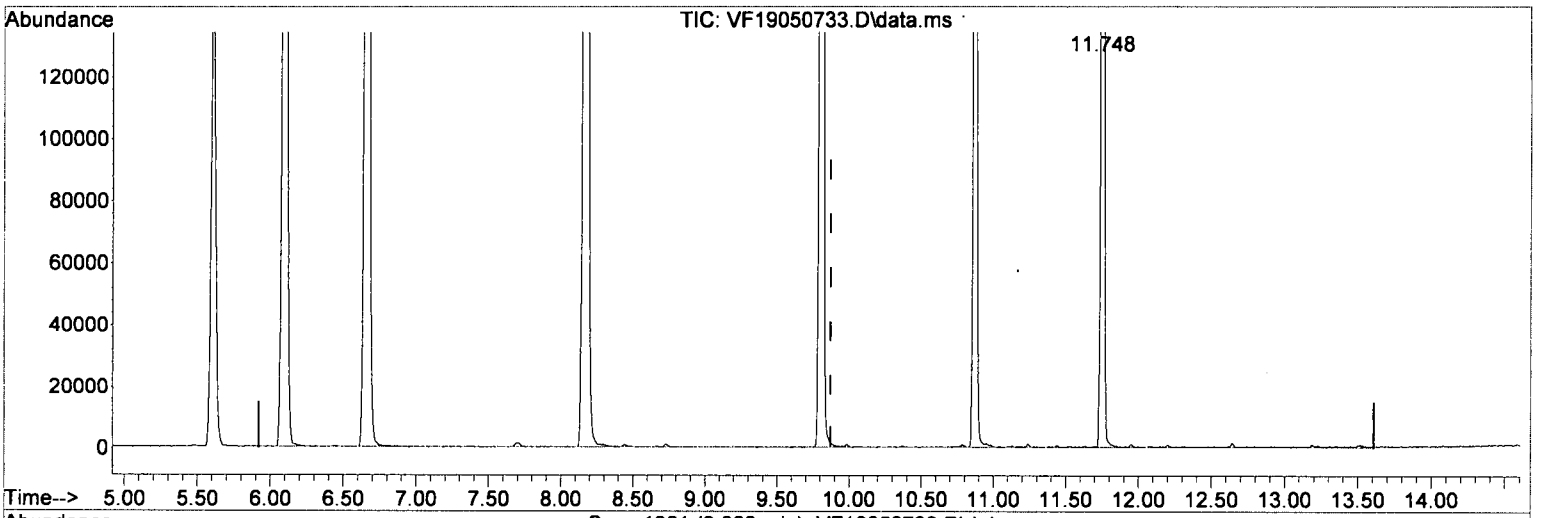
Method Name: C:\msdchem\1\METHODS\VF190507G.M
Calibration Table Last Updated: Wed May 08 11:36:04 2019

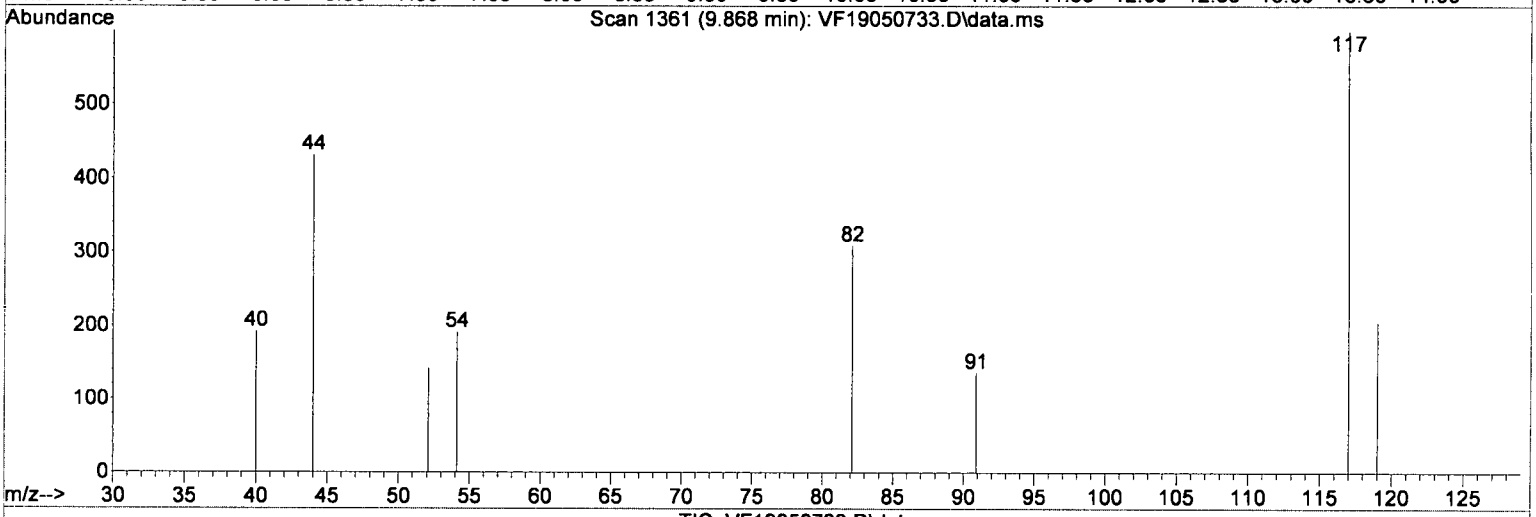
Int = 24.2

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050733.D
Acq On : 8 May 2019 4:49 am
Operator : TB
Sample : 9E07048-ICB2
Misc : 1X DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:13 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





TIC: VF19050733.D\data.ms

(8) NWTPH-Gx (H)

9.870min (0.000) 24.20 ug/L m

response 5129

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: 9E07048

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	
9E07048-TUN2	MS Tune	Soil		A19D196	5/8/2019	3:55:00AM
9E07048-ICB2	Initial Cal Blank	Soil		A19D196	5/8/2019	4:49:00AM
9E07048-CALC	Cal Standard	Soil	A19E016	"	5/8/2019	5:16:00AM
9E07048-CALD	Cal Standard	Soil	A19E017	"	5/8/2019	5:43:00AM
9E07048-CALE	Cal Standard	Soil	A19E018	"	5/8/2019	6:11:00AM
9E07048-CALF	Cal Standard	Soil	A19E019	"	5/8/2019	6:38:00AM
9E07048-CALG	Cal Standard	Soil	A19B200	"	5/8/2019	7:05:00AM
9E07048-CALH	Cal Standard	Soil	A19B201	"	5/8/2019	7:32:00AM
9E07048-CALI	Cal Standard	Soil	A19B202	"	5/8/2019	7:59:00AM
9E07048-CALJ	Cal Standard	Soil	A19B203	"	5/8/2019	8:26:00AM
9E07048-ICV2	Initial Cal Check	Soil	A19B262	"	5/8/2019	9:47:00AM

CALIBRATION STANDARD RECOVERIES

Calibration: **A9E0804** Instrument: **VOA-GCMS6**

8015D-Mod Gasoline (C6-C10 Sequence: **9E07048** Matrix: **Soil**

9E07048-CALC	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E07048-CALD	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E07048-CALE	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E07048-CALF	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E07048-CALG	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E07048-CALH	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E07048-CALI	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E07048-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: 9E07048

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: **A9E0804** Instrument: **VOA-GCMS6**

CA LUFT GRO Sequence: **9E07048** Matrix: **Soil**

9E07048-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\9E07048\
Data File : VF19050744.D
Acq On : 8 May 2019 9:47 am
Operator : TB
Sample : 9E07048-ICV2
Misc : 1X 500ppb GX MeOH
ALS Vial : 34 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:19 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

5/8/19

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	103	0.00
2	S	1,4-Difluorobenzene (Sur)	50.000	46.728	6.5	101	0.00
3	S	4-Bromofluorobenzene (Sur)	50.000	46.479	7.0	96	0.00
4	S	Chlorobenzene-d5 (NR)	-1.000	0.000	0.0	96	0.00
5	H	TPHg (C5-C9)	500.000	533.693	-6.7	109	0.00
6	H	TPHg (C6-C10)	500.000	543.075	-8.6	110	0.00
7	H	CA-LUFT (C5-C12)	500.000	532.586	-6.5	109	0.00
8	H	NWTPH-Gx	500.000	528.073	-5.6	111	0.00
9		Benzene (NR)	-1.000	0.000	0.0	110	0.00
10	S	Toluene-d8 (NR)	-1.000	0.000	0.0	100	0.00
11	C	Toluene (NR)	-1.000	0.000	0.0	109	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	118	0.00

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

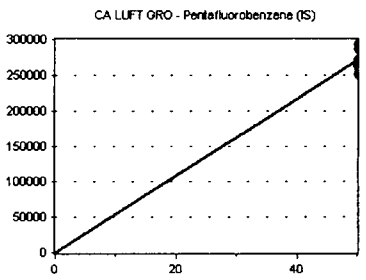
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **CA LUFT GRO** Instrument Cal ID: **VF190507S/G**

Pentafluorobenzene (IS)

Curve Fit: **AVERAGE RF**

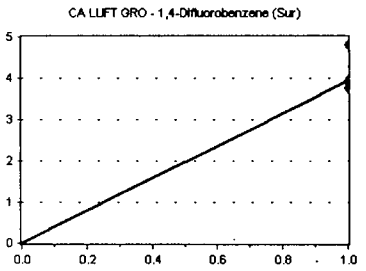


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	251815	5036.300	6.10
9E07048-CALD	50	268659	5373.180	6.10
9E07048-CALE	50	260344	5206.880	6.09
9E07048-CALF	50	264609	5292.180	6.10
9E07048-CALG	50	262223	5244.460	6.09
9E07048-CALH	50	271709	5434.180	6.10
9E07048-CALI	50	287647	5752.940	6.10
9E07048-CALJ	50	293025	5860.500	6.10

AVE RF **5400.078** RF RSD **5.16** AVE RT **6.10**

1,4-Difluorobenzene (Sur)

Curve Fit: **AVERAGE RF**

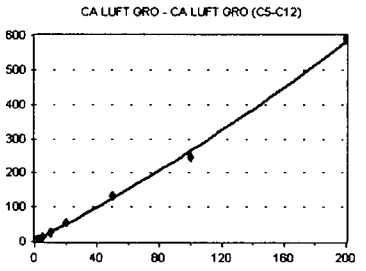


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	944857	3.752	6.66
9E07048-CALD	50	1016126	3.782	6.66
9E07048-CALE	50	976363	3.750	6.66
9E07048-CALF	50	998574	3.774	6.66
9E07048-CALG	50	994511	3.793	6.66
9E07048-CALH	50	1064809	3.919	6.66
9E07048-CALI	50	1135195	3.946	6.66
9E07048-CALJ	50	1412610	4.821	6.66

AVE RF **3.942** RF RSD **9.20** AVE RT **6.66**

CA LUFT GRO (C5-C12)

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

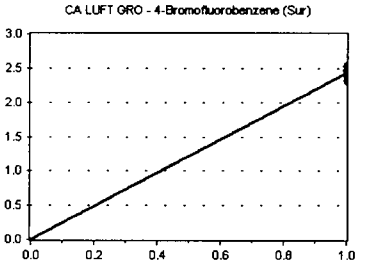


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	905552	3.596	9.86
9E07048-CALD	100	1495406	2.783	9.86
9E07048-CALE	250	3256728	2.502	9.86
9E07048-CALF	500	6691065	2.529	9.86
9E07048-CALG	1000	1.433345E+07	2.733	9.86
9E07048-CALH	2500	3.600874E+07	2.651	9.86
9E07048-CALI	5000	7.131647E+07	2.479	9.86
9E07048-CALJ	10000	1.726612E+08	2.946	9.86

AVE RF **2.777** RF RSD **13.22** AVE RT **9.86**

4-Bromofluorobenzene (Sur)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	583068	2.315	10.87
9E07048-CALD	50	665016	2.475	10.87
9E07048-CALE	50	627727	2.411	10.87
9E07048-CALF	50	640403	2.420	10.87
9E07048-CALG	50	665155	2.537	10.87
9E07048-CALH	50	671226	2.470	10.87
9E07048-CALI	50	689679	2.398	10.87
9E07048-CALJ	50	701119	2.393	10.87

AVE RF **2.427** RF RSD **2.74** AVE RT **10.87**

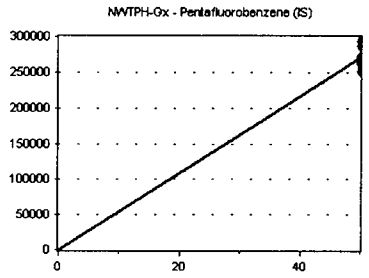
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **NWTPH-Gx** Instrument Cal ID: **VF190507S/G**

Pentafluorobenzene (IS)

Curve Fit: **AVERAGE RF**

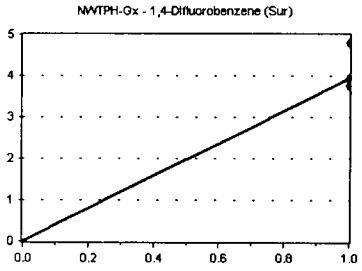


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	251815	5036.300	6.10
9E07048-CALD	50	268659	5373.180	6.10
9E07048-CALE	50	260344	5206.880	6.09
9E07048-CALF	50	264609	5292.180	6.10
9E07048-CALG	50	262223	5244.460	6.09
9E07048-CALH	50	271709	5434.180	6.10
9E07048-CALI	50	287647	5752.940	6.10
9E07048-CALJ	50	293025	5860.500	6.10

AVE RF **5400.078** RF RSD **5.16** AVE RT **6.10**

1,4-Difluorobenzene (Sur)

Curve Fit: **AVERAGE RF**

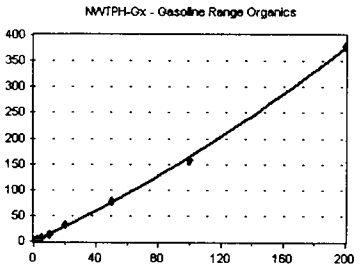


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	944857	3.752	6.66
9E07048-CALD	50	1016126	3.782	6.66
9E07048-CALE	50	976363	3.750	6.66
9E07048-CALF	50	998574	3.774	6.66
9E07048-CALG	50	994511	3.793	6.66
9E07048-CALH	50	1064809	3.919	6.66
9E07048-CALI	50	1135195	3.946	6.66
9E07048-CALJ	50	1412610	4.821	6.66

AVE RF **3.942** RF RSD **9.20** AVE RT **6.66**

Gasoline Range Organics

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

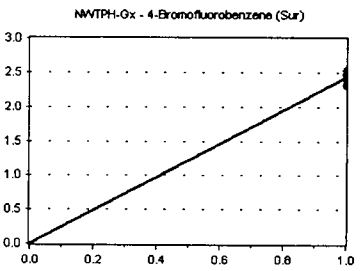


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	216743	0.861	9.87
9E07048-CALD	100	540113	1.005	9.87
9E07048-CALE	250	1533968	1.178	9.87
9E07048-CALF	500	3603975	1.362	9.87
9E07048-CALG	1000	8256018	1.574	9.87
9E07048-CALH	2500	2.140465E+07	1.576	9.87
9E07048-CALI	5000	4.546724E+07	1.581	9.87
9E07048-CALJ	10000	1.110386E+08	1.895	9.87

AVE RF **1.379** RF RSD **25.00** AVE RT **9.87**

4-Bromofluorobenzene (Sur)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	583068	2.315	10.87
9E07048-CALD	50	665016	2.475	10.87
9E07048-CALE	50	627727	2.411	10.87
9E07048-CALF	50	640403	2.420	10.87
9E07048-CALG	50	665155	2.537	10.87
9E07048-CALH	50	671226	2.470	10.87
9E07048-CALI	50	689679	2.398	10.87
9E07048-CALJ	50	701119	2.393	10.87

AVE RF **2.427** RF RSD **2.74** AVE RT **10.87**

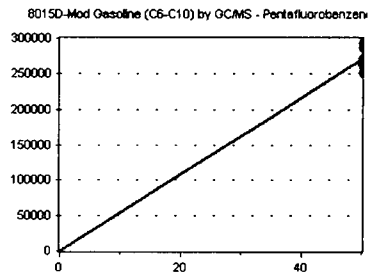
Element Calibration Review Sheet

Calibration ID: **A9E0804** Instrument: **VOA-GCMS6** Calibration Date: **05/08/2019**

Analysis: **8015D-Mod Gasoline (C6-C1** Instrument Cal ID: **VF190507S/G**

Pentafluorobenzene (IS)

Curve Fit: **AVERAGE RF**

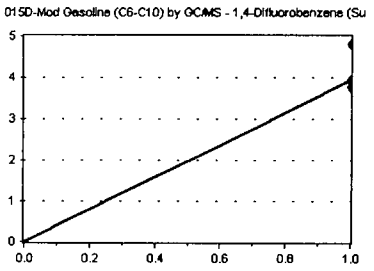


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	251815	5036.300	6.10
9E07048-CALD	50	268659	5373.180	6.10
9E07048-CALE	50	260344	5206.880	6.09
9E07048-CALF	50	264609	5292.180	6.10
9E07048-CALG	50	262223	5244.460	6.09
9E07048-CALH	50	271709	5434.180	6.10
9E07048-CALI	50	287647	5752.940	6.10
9E07048-CALJ	50	293025	5860.500	6.10

AVE RF **5400.078** RF RSD **5.16** AVE RT **6.10**

1,4-Difluorobenzene (Sur)

Curve Fit: **AVERAGE RF**

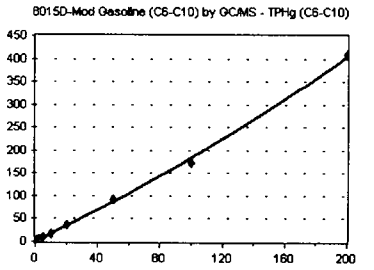


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	944857	3.752	6.66
9E07048-CALD	50	1016126	3.782	6.66
9E07048-CALE	50	976363	3.750	6.66
9E07048-CALF	50	998574	3.774	6.66
9E07048-CALG	50	994511	3.793	6.66
9E07048-CALH	50	1064809	3.919	6.66
9E07048-CALI	50	1135195	3.946	6.66
9E07048-CALJ	50	1412610	4.821	6.66

AVE RF **3.942** RF RSD **9.20** AVE RT **6.66**

TPHg (C6-C10)

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

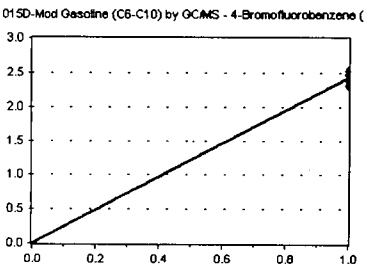


Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	621653	2.469	9.86
9E07048-CALD	100	1022515	1.903	9.86
9E07048-CALE	250	2228270	1.712	9.86
9E07048-CALF	500	4686857	1.771	9.86
9E07048-CALG	1000	9868759	1.882	9.86
9E07048-CALH	2500	2.515076E+07	1.851	9.86
9E07048-CALI	5000	4.969054E+07	1.727	9.86
9E07048-CALJ	10000	1.199672E+08	2.047	9.86

AVE RF **1.920** RF RSD **12.85** AVE RT **9.86**

4-Bromofluorobenzene (Sur)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E07048-CALC	50	583068	2.315	10.87
9E07048-CALD	50	665016	2.475	10.87
9E07048-CALE	50	627727	2.411	10.87
9E07048-CALF	50	640403	2.420	10.87
9E07048-CALG	50	665155	2.537	10.87
9E07048-CALH	50	671226	2.470	10.87
9E07048-CALI	50	689679	2.398	10.87
9E07048-CALJ	50	701119	2.393	10.87

AVE RF **2.427** RF RSD **2.74** AVE RT **10.87**

Injection Log

Directory: k:\DATA\2019-05\9E07048

Line	Vial	FileName	Multiplier	SampleName		Misc Info	Injected
1	1	Vf19050711.d	1.	9E07048-IBL1		1X 5mL DI+MeOH	7 May 2019 18:53
2	2	Vf19050712.d	1.	9E07048-TUN1		A19D196 BFB (IS/...	7 May 2019 19:21
3	3	Vf19050713.d	1.	9E07048-ICB1		1X DI+MeOH	7 May 2019 19:48
4	4	Vf19050714.d	1.	9E07048-CAL1		1X 0.1ppb VOC MeOH	7 May 2019 20:15
5	5	Vf19050715.d	1.	9E07048-CAL2		1X 0.2ppb VOC MeOH	7 May 2019 20:42
6	6	Vf19050716.d	1.	9E07048-CAL3		1X 0.4ppb VOC MeOH	7 May 2019 21:09
7	7	Vf19050717.d	1.	9E07048-CAL4		1X 1ppb VOC MeOH	7 May 2019 21:36
8	8	Vf19050718.d	1.	9E07048-CAL5		1X 2ppb VOC MeOH	7 May 2019 22:04
9	9	Vf19050719.d	1.	9E07048-CAL6		1X 5ppb VOC MeOH	7 May 2019 22:31
10	10	Vf19050720.d	1.	9E07048-CAL7		1X 10ppb VOC MeOH	7 May 2019 22:58
11	11	Vf19050721.d	1.	9E07048-CAL8		1X 20ppb VOC MeOH	7 May 2019 23:25
12	12	Vf19050722.d	1.	9E07048-CAL9		1X 50ppb VOC MeOH	7 May 2019 23:52
13	13	Vf19050723.d	1.	9E07048-IBL2		1X 5mL DI+MeOH	8 May 2019 00:19
14	14	Vf19050724.d	1.	9E07048-CALA		1X 100ppb VOC MeOH	8 May 2019 00:46
15	15	Vf19050725.d	1.	9E07048-IBL3		1X 5mL DI+MeOH	8 May 2019 01:13
16	16	Vf19050726.d	1.	9E07048-CALB		1X 200ppb VOC MeOH	8 May 2019 01:40
17	17	Vf19050727.d	1.	9E07048-IBL4		1X 5mL DI+MeOH	8 May 2019 02:07
18	18	Vf19050728.d	1.	9E07048-IBL5		1X 5mL DI+MeOH	8 May 2019 02:34
19	19	Vf19050729.d	1.	9E07048-ICV1		1X 50ppb VOC MeOH	8 May 2019 03:01
20	20	Vf19050730.d	1.	9E07048-IBL6		1X 5mL DI+MeOH	8 May 2019 03:28
21	21	Vf19050731.d	1.	9E07048-TUN2	RT	A19D196 BFB (IS/...	8 May 2019 03:55
22	22	Vf19050732.d	1.	9E07048-IBL7		1X 5mL DI+MeOH	8 May 2019 04:22
23	23	Vf19050733.d	1.	9E07048-ICB2		1X DI+MeOH	8 May 2019 04:49
24	24	Vf19050734.d	1.	9E07048-CALC		1X 50ppb GX MeOH	8 May 2019 05:16
25	25	Vf19050735.d	1.	9E07048-CALD		1X 100ppb GX MeOH	8 May 2019 05:43
26	26	Vf19050736.d	1.	9E07048-CALE		1X 250ppb GX MeOH	8 May 2019 06:11
27	27	Vf19050737.d	1.	9E07048-CALF		1X 500ppb GX MeOH	8 May 2019 06:38
28	28	Vf19050738.d	1.	9E07048-CALG		1X 1000ppb GX MeOH	8 May 2019 07:05
29	29	Vf19050739.d	1.	9E07048-CALH		1X 2500ppb GX MeOH	8 May 2019 07:32
30	30	Vf19050740.d	1.	9E07048-CALI		1X 5000ppb GX MeOH	8 May 2019 07:59
31	31	Vf19050741.d	1.	9E07048-CALJ		1X 10000ppb GX MeOH	8 May 2019 08:26
32	32	Vf19050742.d	1.	9E07048-IBL8		1X 5mL DI+MeOH	8 May 2019 08:53
33	33	Vf19050743.d	1.	9E07048-IBL9		1X 5mL DI+MeOH	8 May 2019 09:20
34	34	Vf19050744.d	1.	9E07048-ICV2		1X 500ppb GX MeOH	8 May 2019 09:47
35	35	Vf19050745.d	1.	9E07048-IBLA		1X 5mL DI+MeOH	8 May 2019 10:14

KJ 10/8/19

5/8/19

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050711.D
Acq On : 7 May 2019 6:53 pm
Operator : TB
Sample : 9E07048-IBL1
Misc : 1X 5mL DI+MeOH
ALS Vial : 1 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:11 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

NR

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.098	168	262943	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.802	117	288034	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.749	152	126489	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.605	111	99051	46.95	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.657	114	399530	49.18	ug/L		0.00
39) Toluene-d8 (S)	8.166	98	446866	52.47	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.873	174	97730	50.18	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.839	50	725	0.20	ug/L		89
5) Bromomethane	2.302	96	1543	0.70	ug/L		99
9) Carbon Disulfide	3.135	76	262	0.27	ug/L		77
11) Iodomethane	3.281	142	236	1.26	ug/L	#	47
12) Methylene Chloride	3.774	84	7598	Below Cal			87
13) Acetone	3.877	43	865	0.64	ug/L		93
28) 2-Butanone (MEK)	5.775	43	277	0.14	ug/L		54

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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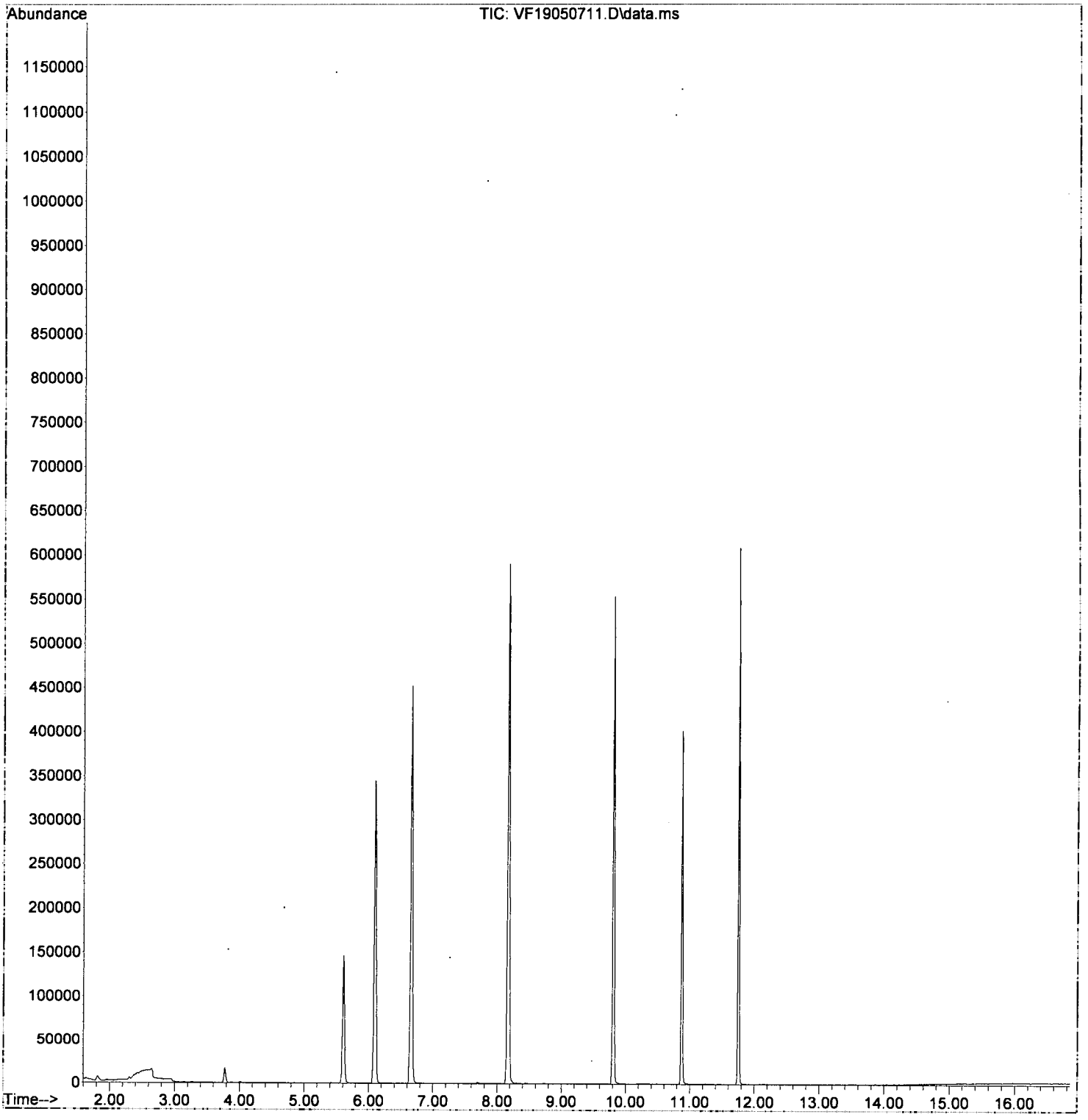
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050711.D
Acq On : 7 May 2019 6:53 pm
Operator : TB
Sample : 9E07048-IBL1
Misc : 1X 5mL DI+MeOH
ALS Vial : 1 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:11 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration



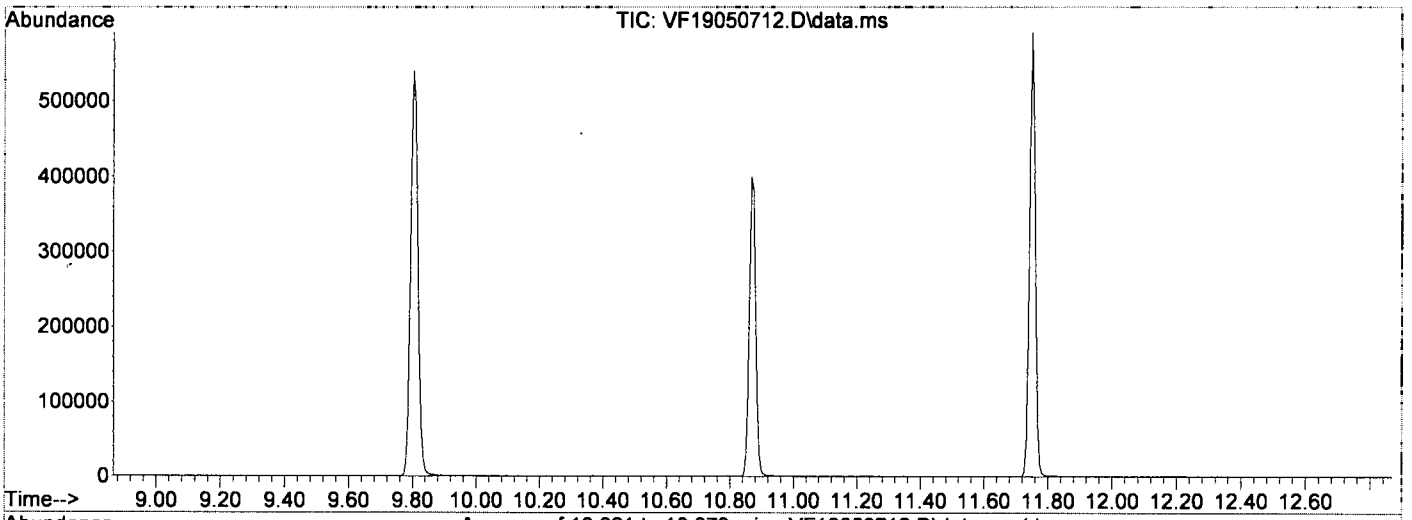
BFB

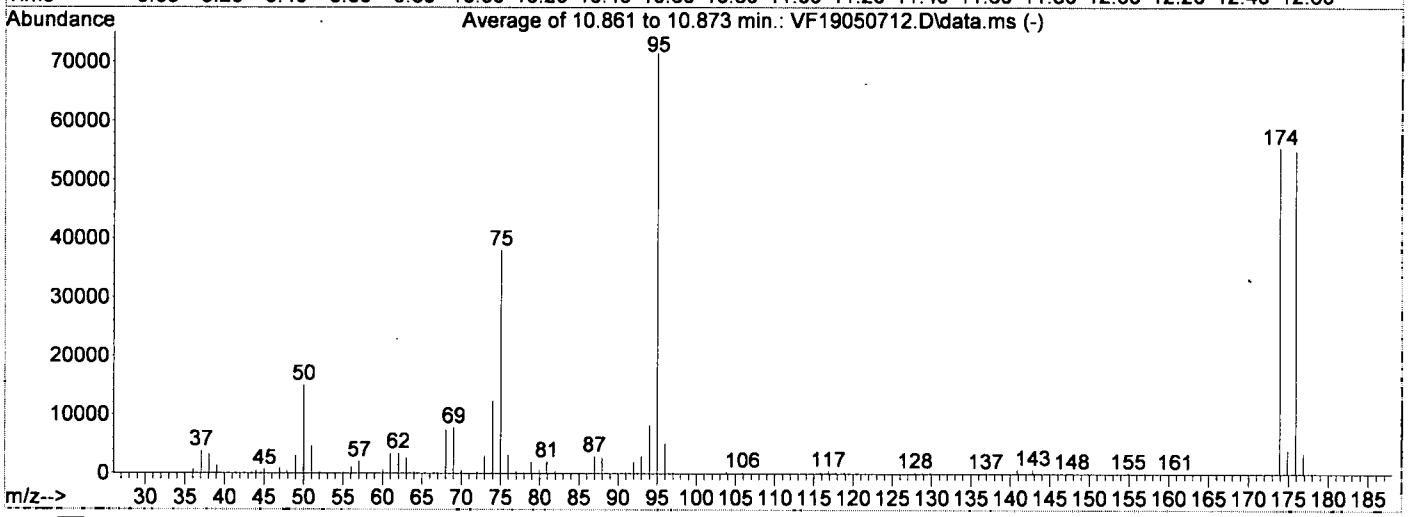
Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050712.D
Acq On : 7 May 2019 7:21 pm
Operator : TB
Sample : 9E07048-TUN1
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\VF190507S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Wed May 08 11:09:13 2019

5/8/19





AutoFind: Scans 1524, 1525, 1526; Background Corrected with Scan 1518

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	12	40	21.1	15041	PASS
75	95	30	60	53.2	37978	PASS
95	95	100	100	100.0	71448	PASS
96	95	5	9	7.3	5205	PASS
173	174	0.00	2	0.2	107	PASS
174	95	50	200	77.6	55426	PASS
175	174	5	9	7.3	4027	PASS
176	174	95	101	99.2	54970	PASS
177	176	5	9	6.4	3496	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050712.D
Acq On : 7 May 2019 7:21 pm
Operator : TB
Sample : 9E07048-TUN1
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:14 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

5/8/19

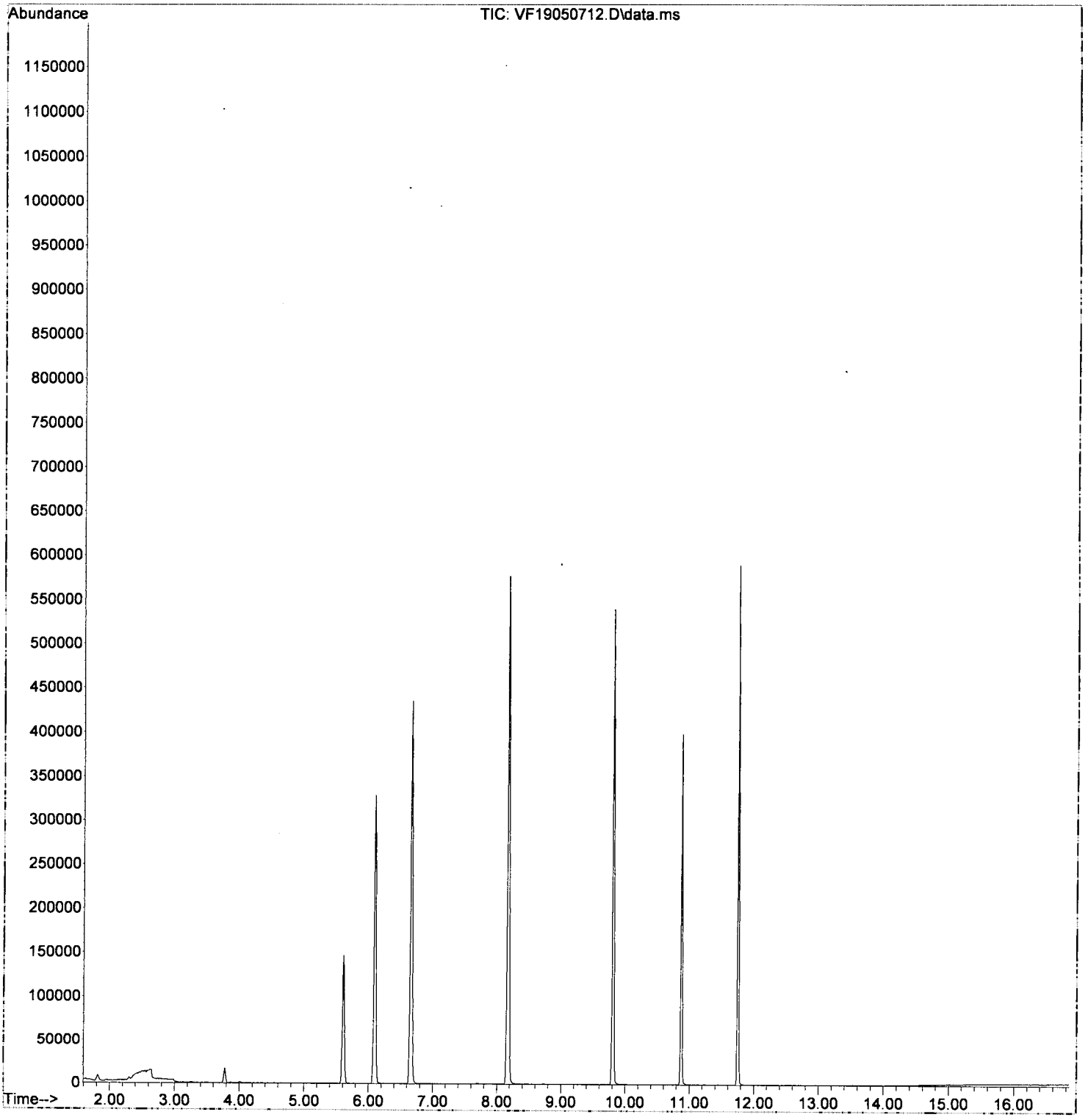
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.098	168	251113	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	284438	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.749	152	121728	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.605	111	96673	47.98	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.658	114	385956	49.75	ug/L		0.00
39) Toluene-d8 (S)	8.166	98	431968	51.37	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.873	174	94724	50.54	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.839	50	630	0.18	ug/L		75
5) Bromomethane	2.302	96	1360	0.65	ug/L		88
9) Carbon Disulfide	3.135	76	100	0.24	ug/L		77
12) Methylene Chloride	3.774	84	7948	Below Cal			90
13) Acetone	3.865	43	913	0.71	ug/L	#	42
28) 2-Butanone (MEK)	5.763	43	239	0.12	ug/L		54

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050712.D
Acq On : 7 May 2019 7:21 pm
Operator : TB
Sample : 9E07048-TUN1
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:14 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050713.D
Acq On : 7 May 2019 7:48 pm
Operator : TB
Sample : 9E07048-ICB1
Misc : 1X DI+MeOH
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:58:13 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:54:03 2019
Response via : Initial Calibration

5/8/19

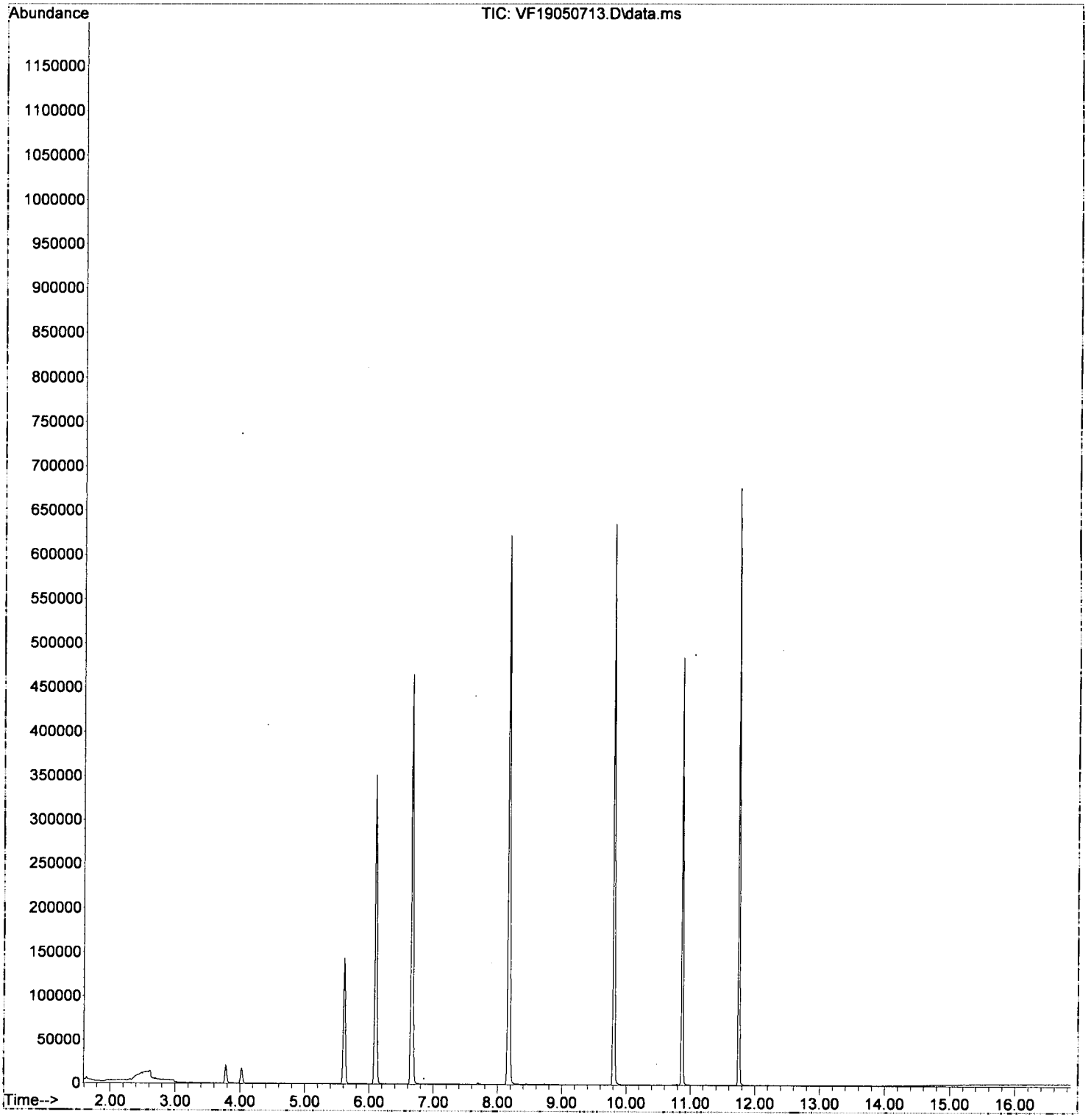
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.102	168	264636	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.807	117	322849	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.747	152	140430	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.609	111	96364	45.39	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.661	114	405814	49.63	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	463703	48.58	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.871	174	112463	52.01	ug/L		0.00
Target Compounds							Qvalue
5) Bromomethane	2.306	96	547	0.25	ug/L		88
9) Carbon Disulfide	3.145	76	321	0.28	ug/L		77
12) Methylene Chloride	3.778	84	10211	Below Cal			92
13) Acetone	3.875	43	1043	0.77	ug/L	#	42
15) n-Hexane	4.021	86	1427	1.87	ug/L	#	85
28) 2-Butanone (MEK)	5.761	43	170	0.08	ug/L		54

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050713.D
Acq On : 7 May 2019 7:48 pm
Operator : TB
Sample : 9E07048-ICB1
Misc : 1X DI+MeOH
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:58:13 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:54:03 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050714.D
Acq On : 7 May 2019 8:15 pm
Operator : TB
Sample : 9E07048-CAL1
Misc : 1X 0.1ppb VOC MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:30 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19 pre

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Pentafluorobenzene (I)	6.096	168	240040	50.00 ug/L	0.00
37) Chlorobenzene-d5 (I)	9.807	117	263004	50.00 ug/L	0.00
57) 1,4-Dichlorobenzene-d4...	11.748	152	117395	50.00 ug/L	0.00
System Monitoring Compounds					
26) Dibromofluoromethane (S)	5.609	111	91510	44.95 ug/L	0.00
32) 1,4-Difluorobenzene (S)	6.662	114	372792	50.12 ug/L	0.00
39) Toluene-d8 (S)	8.170	98	412832	51.24 ug/L	0.00
58) 4-Bromofluorobenzene (S)	10.872	174	90333	50.64 ug/L	0.00
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.637	85	227	0.10 ug/L #	50
3) Chloromethane	1.844	50	1131	0.34 ug/L	90
4) Vinyl Chloride	1.953	62	289	0.09 ug/L #	40
5) Bromomethane	2.306	96	2001	1.01 ug/L	92
6) Chloroethane	0.000		0	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) 1,1-Dichloroethene	3.127	61	464	0.11 ug/L #	56
9) Carbon Disulfide	3.146	76	705	0.14 ug/L	77
10) Freon 113	3.188	101	134	0.05 ug/L #	69
11) Iodomethane	3.285	142	211	0.22 ug/L #	47
12) Methylene Chloride	3.778	84	14820	4.29 ug/L	90
13) Acetone	3.882	43	1683	1.28 ug/L	86
14) t-1,2-Dichloroethene	3.936	61	320	0.07 ug/L #	70
15) n-Hexane	4.022	86	1835	2.65 ug/L #	77
16) Methyl-tert-butyl-ether	4.088	73	787	0.09 ug/L	60
17) 1,1-Dichloroethane	4.575	63	503	0.09 ug/L #	49
18) Acrylonitrile	0.000		0	N.D.	
19) c-1,2-Dichloroethene	5.147	61	307	0.08 ug/L #	58
20) 2,2-Dichloropropane	0.000		0	N.D.	
21) Bromochloromethane	5.336	49	192	0.08 ug/L #	54
22) Chloroform	5.427	83	424	0.09 ug/L	80
23) Carbon Tetrachloride	0.000		0	N.D.	
24) Tetrahydrofuran	0.000		0	N.D.	
25) 1,1,1-Trichloroethane	5.621	97	140	0.04 ug/L #	24
27) 1,1-Dichloropropene	5.755	75	346	0.09 ug/L #	41
28) 2-Butanone (MEK)	5.774	43	470	0.24 ug/L	54
29) Benzene	6.011	78	1127	0.09 ug/L	80
30) 1,2-Dichloroethane (EDC)	6.230	62	369	0.09 ug/L	78
31) iso-Butyl Alcohol	0.000		0	N.D.	
33) Trichloroethene (TCE)	6.625	130	205	0.07 ug/L #	70
34) Dibromomethane	0.000		0	N.D.	
35) 1,2-Dichloropropane	7.179	63	134	0.05 ug/L #	37
36) Bromodichloromethane	0.000		0	N.D.	
38) c-1,3-Dichloropropene	0.000		0	N.D.	
40) Toluene	8.231	91	1513	0.13 ug/L	86
41) Tetrachloroethene (PCE)	8.681	166	241	0.09 ug/L #	77
42) 4-Methyl-2-Pentanone (...	8.688	43	391	0.12 ug/L #	41
43) t-1,3-Dichloropropene	0.000		0	N.D.	
44) 1,1,2-Trichloroethane	0.000		0	N.D.	
45) Dibromochloromethane	0.000		0	N.D.	
46) 1,3-Dichloropropane	9.168	76	369	0.09 ug/L #	67
47) 1,2-Dibromoethane (EDB)	0.000		0	N.D.	
48) 2-Hexanone	9.557	43	209	0.09 ug/L #	31

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050714.D
Acq On : 7 May 2019 8:15 pm
Operator : TB
Sample : 9E07048-CAL1
Misc : 1X 0.1ppb VOC MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:30 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.819	112	708	0.11	ug/L	#	1
50) Ethylbenzene	9.849	91	1175	0.11	ug/L		92
51) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.			
52) m,p-Xylenes (2)	9.989	91	1447	0.18	ug/L		93
53) o-Xylene	10.367	91	771	0.10	ug/L		82
54) Styrene	10.421	104	268	0.05	ug/L	#	41
55) Bromoform	0.000		0	N.D.			
56) Isopropylbenzene	10.628	105	607	0.07	ug/L		78
59) Bromobenzene	10.963	156	160	0.07	ug/L		91
60) n-Propylbenzene	10.975	91	914	0.09	ug/L		81
61) 1,1,2,2-Tetrachloroethane	11.036	83	138	0.05	ug/L		83
62) 2-Chlorotoluene	0.000		0	N.D.			
63) 1,3,5-Trimethylbenzene	11.133	105	548	0.08	ug/L		92
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	11.243	91	483	0.08	ug/L		81
67) tert-Butylbenzene	11.376	91	294	0.08	ug/L	#	58
68) 1,2,4-Trimethylbenzene	11.437	105	561	0.08	ug/L		90
69) sec-Butylbenzene	11.516	105	715	0.09	ug/L		81
70) 4-Isopropyltoluene	11.626	119	475	0.07	ug/L		67
71) 1,3-Dichlorobenzene	11.693	146	361	0.09	ug/L		85
72) 1,4-Dichlorobenzene	11.760	146	465	0.12	ug/L	#	1
73) n-Butylbenzene	11.948	91	503	0.09	ug/L		88
74) 1,2-Dichlorobenzene	12.082	146	319	0.09	ug/L		73
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.			
76) Hexachlorobutadiene	0.000		0	N.D.			
77) 1,2,4-Trichlorobenzene	13.226	180	160	0.08	ug/L		67
78) Naphthalene	13.500	128	347	0.05	ug/L		78
79) 1,2,3-Trichlorobenzene	0.000		0	N.D.			

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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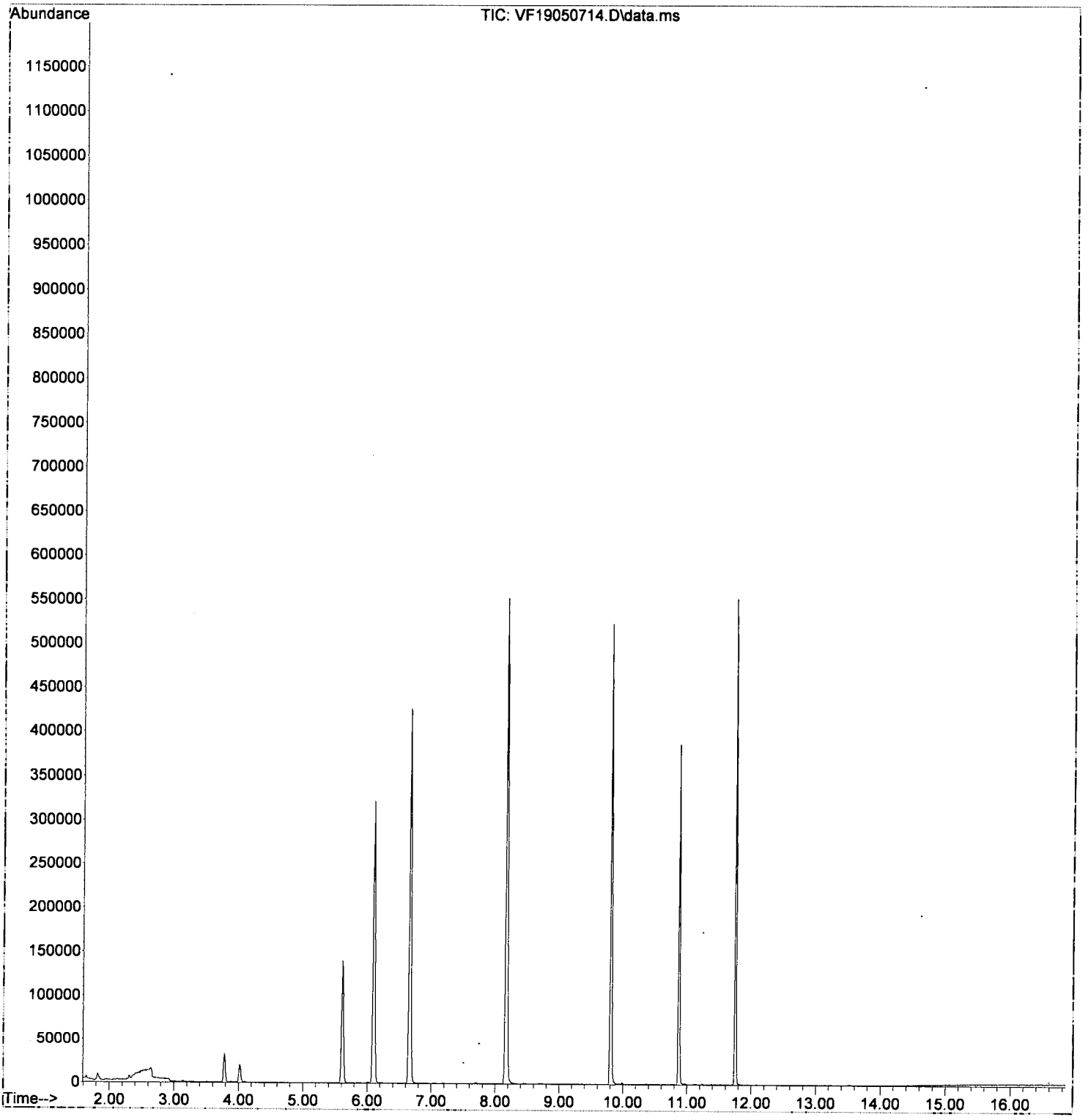
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050714.D
Acq On : 7 May 2019 8:15 pm
Operator : TB
Sample : 9E07048-CAL1
Misc : 1X 0.1ppb VOC MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:30 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050714.D
Acq On : 7 May 2019 8:15 pm
Operator : TB
Sample : 9E07048-CAL1
Misc : 1X 0.1ppb VOC MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:29:18 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

post 5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.096	168	240040	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.807	117	263004	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.748	152	117395	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.609	111	91510	44.95	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.662	114	372792	50.12	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	412832	51.24	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.872	174	90333	50.64	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	d		
3) Chloromethane	1.844	50	1131	0.34	ug/L		90
4) Vinyl Chloride	0.000		0	N.D.	d		
5) Bromomethane	2.306	96	2001	1.01	ug/L		92
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) 1,1-Dichloroethene	3.127	61	464	0.11	ug/L	#	56
9) Carbon Disulfide	3.146	76	705	0.14	ug/L		77
10) Freon 113	0.000		0	N.D.	d		
11) Iodomethane	0.000		0	N.D.	d		
12) Methylene Chloride	3.778	84	14820	4.29	ug/L		90
13) Acetone	3.882	43	1683	1.28	ug/L		86
14) t-1,2-Dichloroethene	3.936	61	320	0.07	ug/L	#	70
15) n-Hexane	4.022	86	1835	2.65	ug/L	#	77
16) Methyl-tert-butyl-ether	4.088	73	787	0.09	ug/L		60
17) 1,1-Dichloroethane	4.575	63	503	0.09	ug/L	#	49
18) Acrylonitrile	0.000		0	N.D.			
19) c-1,2-Dichloroethene	5.147	61	307	0.08	ug/L	#	58
20) 2,2-Dichloropropane	0.000		0	N.D.			
21) Bromochloromethane	0.000		0	N.D.	d		
22) Chloroform	5.427	83	424	0.09	ug/L		80
23) Carbon Tetrachloride	0.000		0	N.D.			
24) Tetrahydrofuran	0.000		0	N.D.			
25) 1,1,1-Trichloroethane	0.000		0	N.D.	d		
27) 1,1-Dichloropropene	0.000		0	N.D.	d		
28) 2-Butanone (MEK)	0.000		0	N.D.	d		
29) Benzene	6.011	78	1127	0.09	ug/L		80
30) 1,2-Dichloroethane (EDC)	6.230	62	369	0.09	ug/L		78
31) iso-Butyl Alcohol	0.000		0	N.D.			
33) Trichloroethene (TCE)	6.625	130	205	0.07	ug/L	#	70
34) Dibromomethane	0.000		0	N.D.			
35) 1,2-Dichloropropane	0.000		0	N.D.	d		
36) Bromodichloromethane	0.000		0	N.D.			
38) c-1,3-Dichloropropene	0.000		0	N.D.			
40) Toluene	8.231	91	1513	0.13	ug/L		86
41) Tetrachloroethene (PCE)	8.681	166	241	0.09	ug/L	#	77
42) 4-Methyl-2-Pentanone (...	8.688	43	391	0.12	ug/L	#	41
43) t-1,3-Dichloropropene	0.000		0	N.D.			
44) 1,1,2-Trichloroethane	0.000		0	N.D.			
45) Dibromochloromethane	0.000		0	N.D.			
46) 1,3-Dichloropropane	9.168	76	369	0.09	ug/L	#	67
47) 1,2-Dibromoethane (EDB)	0.000		0	N.D.			
48) 2-Hexanone	0.000		0	N.D.	d		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050714.D
Acq On : 7 May 2019 8:15 pm
Operator : TB
Sample : 9E07048-CAL1
Misc : 1X 0.1ppb VOC MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:29:18 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) Chlorobenzene	9.819	112	708	0.11	ug/L #	1
50) Ethylbenzene	9.849	91	1175	0.11	ug/L	92
51) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
52) m,p-Xylenes (2)	9.989	91	1447	0.18	ug/L	93
53) o-Xylene	10.367	91	771	0.10	ug/L	82
54) Styrene	0.000		0	N.D. d		
55) Bromoform	0.000		0	N.D.		
56) Isopropylbenzene	10.628	105	607	0.07	ug/L	78
59) Bromobenzene	10.963	156	160	0.07	ug/L	91
60) n-Propylbenzene	10.975	91	914	0.09	ug/L	81
61) 1,1,2,2-Tetrachloroethane	11.036	83	138	0.05	ug/L	83
62) 2-Chlorotoluene	0.000		0	N.D.		
63) 1,3,5-Trimethylbenzene	11.133	105	548	0.08	ug/L	92
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	11.243	91	483	0.08	ug/L	81
67) tert-Butylbenzene	11.376	91	294	0.08	ug/L #	58
68) 1,2,4-Trimethylbenzene	11.437	105	561	0.08	ug/L	90
69) sec-Butylbenzene	11.516	105	715	0.09	ug/L	81
70) 4-Isopropyltoluene	11.626	119	475	0.07	ug/L	67
71) 1,3-Dichlorobenzene	11.693	146	361	0.09	ug/L	85
72) 1,4-Dichlorobenzene	11.760	146	465	0.12	ug/L #	1
73) n-Butylbenzene	11.948	91	503	0.09	ug/L	88
74) 1,2-Dichlorobenzene	12.082	146	319	0.09	ug/L	73
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.		
76) Hexachlorobutadiene	0.000		0	N.D.		
77) 1,2,4-Trichlorobenzene	0.000		0	N.D. d		
78) Naphthalene	0.000		0	N.D. d		
79) 1,2,3-Trichlorobenzene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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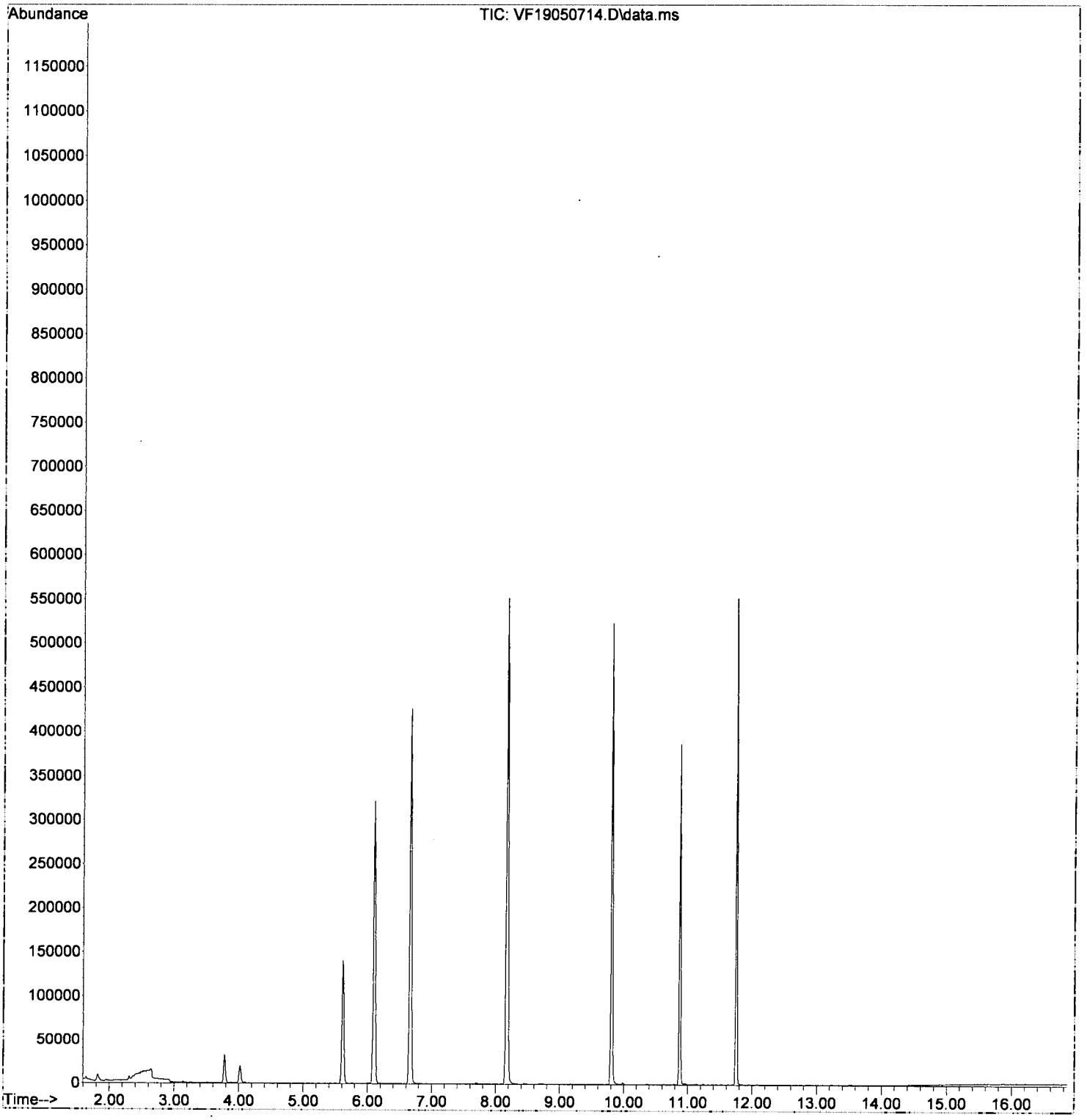
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050714.D
Acq On : 7 May 2019 8:15 pm
Operator : TB
Sample : 9E07048-CAL1
Misc : 1X 0.1ppb VOC MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:29:18 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050715.D
Acq On : 7 May 2019 8:42 pm
Operator : TB
Sample : 9E07048-CAL2
Misc : 1X 0.2ppb VOC MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:33 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19 pre

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.098	168	253997	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	315116	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.749	152	140978	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.605	111	93146	43.24	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.658	114	393610	50.01	ug/L		0.00
39) Toluene-d8 (S)	8.166	98	451605	46.79	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.867	174	110936	51.79	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.633	85	337	0.14	ug/L	#	50
3) Chloromethane	1.846	50	797	0.22	ug/L		87
4) Vinyl Chloride	1.937	62	686	0.20	ug/L		92
5) Bromomethane	2.296	96	1145	0.55	ug/L		96
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) 1,1-Dichloroethene	3.135	61	831	0.18	ug/L		76
9) Carbon Disulfide	3.147	76	1068	0.19	ug/L		77
10) Freon 113	3.184	101	458	0.16	ug/L	#	73
11) Iodomethane	0.000		0	N.D.			
12) Methylene Chloride	3.780	84	13830	3.78	ug/L		83
13) Acetone	3.871	43	1611	1.16	ug/L		90
14) t-1,2-Dichloroethene	3.938	61	852	0.19	ug/L		83
15) n-Hexane	4.023	86	1841	2.51	ug/L		95
16) Methyl-tert-butyl-ether	4.078	73	1746	0.20	ug/L		78
17) 1,1-Dichloroethane	4.583	63	1018	0.17	ug/L		85
18) Acrylonitrile	0.000		0	N.D.			
19) c-1,2-Dichloroethene	5.137	61	698	0.16	ug/L		94
20) 2,2-Dichloropropane	5.246	77	441	0.15	ug/L		73
21) Bromochloromethane	5.344	49	331	0.13	ug/L		85
22) Chloroform	5.423	83	893	0.17	ug/L		92
23) Carbon Tetrachloride	0.000		0	N.D.			
24) Tetrahydrofuran	5.599	42	254	0.17	ug/L	#	64
25) 1,1,1-Trichloroethane	5.623	97	551	0.15	ug/L		94
27) 1,1-Dichloropropene	5.757	75	683	0.16	ug/L		98
28) 2-Butanone (MEK)	5.769	43	890	0.43	ug/L		54
29) Benzene	6.013	78	2458	0.19	ug/L		98
30) 1,2-Dichloroethane (EDC)	6.226	62	837	0.19	ug/L		89
31) iso-Butyl Alcohol	0.000		0	N.D.			
33) Trichloroethene (TCE)	6.627	130	614	0.20	ug/L		88
34) Dibromomethane	7.083	93	206	0.12	ug/L	#	57
35) 1,2-Dichloropropane	7.187	63	588	0.19	ug/L		92
36) Bromodichloromethane	7.266	83	130	0.06	ug/L	#	26
38) c-1,3-Dichloropropene	7.966	75	335	0.10	ug/L	#	60
40) Toluene	8.227	91	2847	0.21	ug/L		95
41) Tetrachloroethene (PCE)	8.671	166	503	0.16	ug/L		93
42) 4-Methyl-2-Pentanone (...	8.683	43	941	0.24	ug/L		87
43) t-1,3-Dichloropropene	8.726	75	216	0.07	ug/L		47
44) 1,1,2-Trichloroethane	8.890	97	368	0.14	ug/L		96
45) Dibromochloromethane	0.000		0	N.D.			
46) 1,3-Dichloropropane	9.170	76	753	0.15	ug/L		89
47) 1,2-Dibromoethane (EDB)	9.310	107	186	0.08	ug/L		79
48) 2-Hexanone	9.553	43	512	0.19	ug/L		67

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050715.D
Acq On : 7 May 2019 8:42 pm
Operator : TB
Sample : 9E07048-CAL2
Misc : 1X 0.2ppb VOC MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:33 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

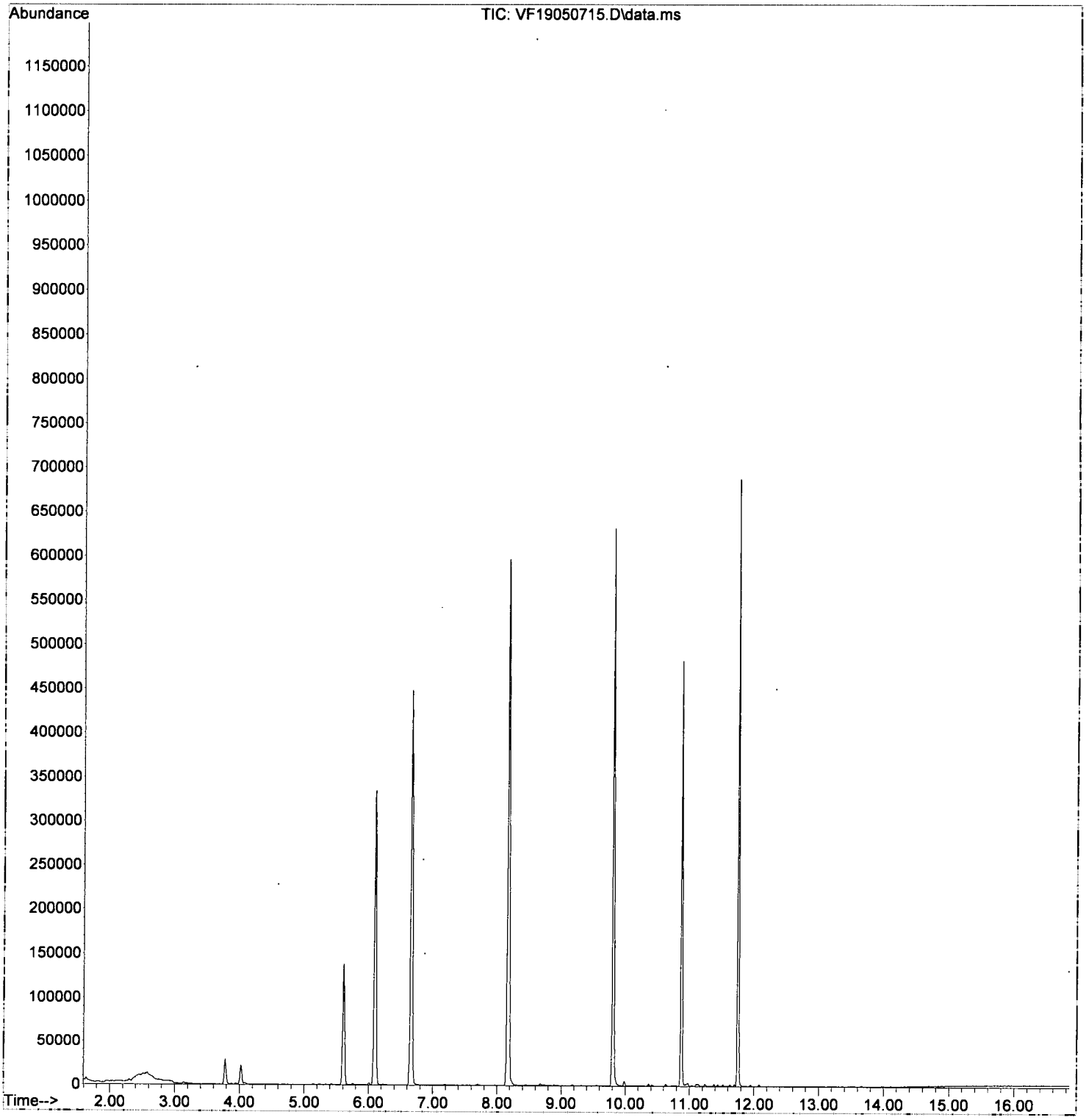
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
49) Chlorobenzene	9.821	112	1621	0.22 ug/L #	35
50) Ethylbenzene	9.845	91	2644	0.20 ug/L	90
51) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
52) m,p-Xylenes (2)	9.985	91	3375	0.35 ug/L	98
53) o-Xylene	10.362	91	1661	0.18 ug/L	97
54) Styrene	10.417	104	742	0.12 ug/L	77
55) Bromoform	0.000		0	N.D.	
56) Isopropylbenzene	10.630	105	1621	0.15 ug/L	96
59) Bromobenzene	10.959	156	538	0.20 ug/L	94
60) n-Propylbenzene	10.977	91	2125	0.18 ug/L	96
61) 1,1,2,2-Tetrachloroethane	11.038	83	440	0.14 ug/L	73
62) 2-Chlorotoluene	11.105	126	441	0.19 ug/L	85
63) 1,3,5-Trimethylbenzene	11.129	105	1238	0.15 ug/L	97
64) 1,2,3-Trichloropropane	11.147	110	135	0.12 ug/L	87
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.	
66) 4-Chlorotoluene	11.238	91	1253	0.17 ug/L	95
67) tert-Butylbenzene	11.378	91	778	0.17 ug/L #	66
68) 1,2,4-Trimethylbenzene	11.439	105	1251	0.15 ug/L	94
69) sec-Butylbenzene	11.518	105	1494	0.16 ug/L	91
70) 4-Isopropyltoluene	11.628	119	1097	0.14 ug/L	96
71) 1,3-Dichlorobenzene	11.695	146	822	0.18 ug/L	97
72) 1,4-Dichlorobenzene	11.762	146	932	0.20 ug/L #	30
73) n-Butylbenzene	11.950	91	1099	0.16 ug/L	97
74) 1,2-Dichlorobenzene	12.084	146	799	0.18 ug/L	92
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.	
76) Hexachlorobutadiene	0.000		0	N.D.	
77) 1,2,4-Trichlorobenzene	13.228	180	326	0.13 ug/L	84
78) Naphthalene	13.501	128	754	0.09 ug/L	78
79) 1,2,3-Trichlorobenzene	13.666	180	356	0.14 ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050715.D
Acq On : 7 May 2019 8:42 pm
Operator : TB
Sample : 9E07048-CAL2
Misc : 1X 0.2ppb VOC MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:33 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050715.D
Acq On : 7 May 2019 8:42 pm
Operator : TB
Sample : 9E07048-CAL2
Misc : 1X 0.2ppb VOC MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:30:57 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

post 5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.098	168	253997	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	315116	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.749	152	140978	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.605	111	93146	43.24	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.658	114	393610	50.01	ug/L		0.00
39) Toluene-d8 (S)	8.166	98	451605	46.79	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.867	174	110936	51.79	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	d		
3) Chloromethane	1.846	50	797	0.22	ug/L		87
4) Vinyl Chloride	1.937	62	686	0.20	ug/L		92
5) Bromomethane	2.296	96	1145	0.35	ug/L		96
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) 1,1-Dichloroethene	3.135	61	831	0.18	ug/L		76
9) Carbon Disulfide	0.000		0	N.D.	d		
10) Freon 113	3.184	101	458	0.16	ug/L	#	73
11) Iodomethane	0.000		0	N.D.			
12) Methylene Chloride	3.780	84	13830	3.78	ug/L		83
13) Acetone	3.871	43	1611	1.16	ug/L		90
14) t-1,2-Dichloroethene	3.938	61	852	0.19	ug/L		83
15) n-Hexane	4.023	86	1841	2.51	ug/L		95
16) Methyl-tert-butyl-ether	4.078	73	1746	0.20	ug/L		78
17) 1,1-Dichloroethane	4.583	63	1018	0.17	ug/L		85
18) Acrylonitrile	0.000		0	N.D.			
19) c-1,2-Dichloroethene	5.137	61	698	0.16	ug/L		94
20) 2,2-Dichloropropane	5.246	77	441	0.15	ug/L		73
21) Bromochloromethane	5.344	49	331	0.13	ug/L		85
22) Chloroform	5.423	83	893	0.17	ug/L		92
23) Carbon Tetrachloride	0.000		0	N.D.			
24) Tetrahydrofuran	0.000		0	N.D.	d		
25) 1,1,1-Trichloroethane	5.623	97	551	0.15	ug/L		94
27) 1,1-Dichloropropene	5.757	75	683	0.16	ug/L		98
28) 2-Butanone (MEK)	5.769	43	890	0.43	ug/L		54
29) Benzene	6.013	78	2458	0.19	ug/L		98
30) 1,2-Dichloroethane (EDC)	6.226	62	837	0.19	ug/L		89
31) iso-Butyl Alcohol	0.000		0	N.D.			
33) Trichloroethene (TCE)	6.627	130	614	0.20	ug/L		88
34) Dibromomethane	7.083	93	206	0.12	ug/L	#	57
35) 1,2-Dichloropropane	7.187	63	588	0.19	ug/L		92
36) Bromodichloromethane	7.266	83	130	0.06	ug/L	#	26
38) c-1,3-Dichloropropene	7.966	75	335	0.10	ug/L	#	60
40) Toluene	8.227	91	2847	0.21	ug/L		95
41) Tetrachloroethene (PCE)	8.671	166	503	0.16	ug/L		93
42) 4-Methyl-2-Pentanone (...	8.683	43	941	0.24	ug/L		87
43) t-1,3-Dichloropropene	0.000		0	N.D.	d		
44) 1,1,2-Trichloroethane	8.890	97	368	0.14	ug/L		96
45) Dibromochloromethane	0.000		0	N.D.			
46) 1,3-Dichloropropane	9.170	76	753	0.15	ug/L		89
47) 1,2-Dibromoethane (EDB)	9.310	107	186	0.08	ug/L		79
48) 2-Hexanone	9.553	43	512	0.19	ug/L		67

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050715.D
Acq On : 7 May 2019 8:42 pm
Operator : TB
Sample : 9E07048-CAL2
Misc : 1X 0.2ppb VOC MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:30:57 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.821	112	1621	0.22	ug/L	#	35
50) Ethylbenzene	9.845	91	2644	0.20	ug/L		90
51) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.			
52) m,p-Xylenes (2)	9.985	91	3375	0.35	ug/L		98
53) o-Xylene	10.362	91	1661	0.18	ug/L		97
54) Styrene	10.417	104	742	0.12	ug/L		77
55) Bromoform	0.000		0	N.D.			
56) Isopropylbenzene	10.630	105	1621	0.15	ug/L		96
59) Bromobenzene	10.959	156	538	0.20	ug/L		94
60) n-Propylbenzene	10.977	91	2125	0.18	ug/L		96
61) 1,1,2,2-Tetrachloroethane	11.038	83	440	0.14	ug/L		73
62) 2-Chlorotoluene	11.105	126	441	0.19	ug/L		85
63) 1,3,5-Trimethylbenzene	11.129	105	1238	0.15	ug/L		97
64) 1,2,3-Trichloropropane	11.147	110	135	0.12	ug/L		87
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
66) 4-Chlorotoluene	11.238	91	1253	0.17	ug/L		95
67) tert-Butylbenzene	11.378	91	778	0.17	ug/L	#	66
68) 1,2,4-Trimethylbenzene	11.439	105	1251	0.15	ug/L		94
69) sec-Butylbenzene	11.518	105	1494	0.16	ug/L		91
70) 4-Isopropyltoluene	11.628	119	1097	0.14	ug/L		96
71) 1,3-Dichlorobenzene	11.695	146	822	0.18	ug/L		97
72) 1,4-Dichlorobenzene	11.762	146	932	0.20	ug/L	#	30
73) n-Butylbenzene	11.950	91	1099	0.16	ug/L		97
74) 1,2-Dichlorobenzene	12.084	146	799	0.18	ug/L		92
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.			
76) Hexachlorobutadiene	0.000		0	N.D.			
77) 1,2,4-Trichlorobenzene	13.228	180	326	0.13	ug/L		84
78) Naphthalene	0.000		0	N.D.	d		
79) 1,2,3-Trichlorobenzene	13.666	180	356	0.14	ug/L		79

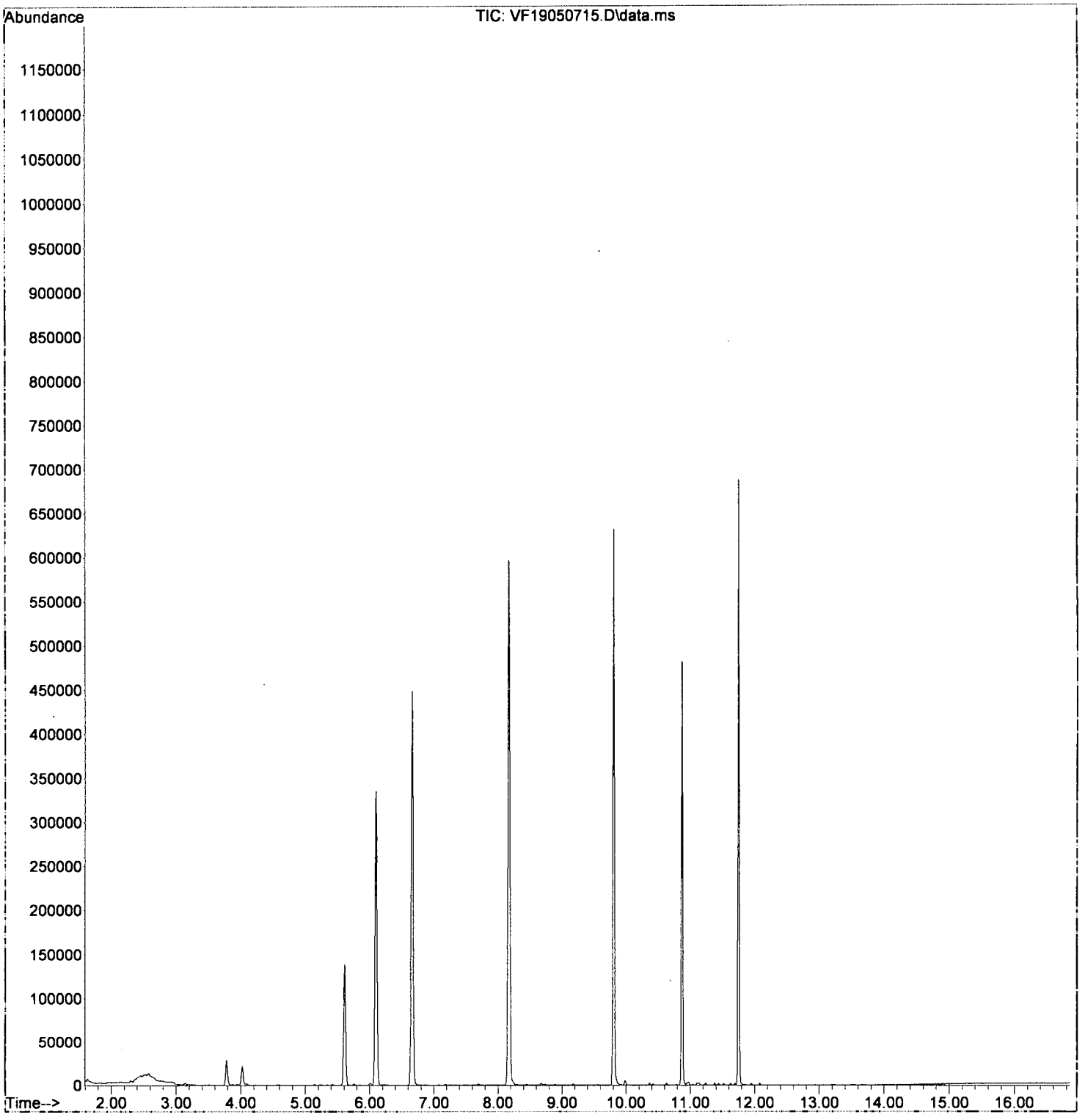
(#) = qualifier out of range (m) = manual integration (+) = signals summed

08/08/19 Hahn & Associates- Mult 802 Decommisioning - Level IV Data Package Page 804 of 1564

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050715.D
Acq On : 7 May 2019 8:42 pm
Operator : TB
Sample : 9E07048-CAL2
Misc : 1X 0.2ppb VOC MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:30:57 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050716.D
Acq On : 7 May 2019 9:09 pm
Operator : TB
Sample : 9E07048-CAL3
Misc : 1X 0.4ppb VOC MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:35 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19 pre

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.098	168	249504	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	282136	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.750	152	120378	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.612	111	95325	45.05	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.664	114	383811	49.64	ug/L		0.00
39) Toluene-d8 (S)	8.173	98	433301	50.14	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.874	174	94062	51.42	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.639	85	846	0.36	ug/L		87
3) Chloromethane	1.846	50	2048	0.59	ug/L		98
4) Vinyl Chloride	1.949	62	1253	0.36	ug/L		55
5) Bromomethane	2.308	96	2402	1.17	ug/L		97
6) Chloroethane	2.430	64	256	0.54	ug/L	#	1
7) Trichlorofluoromethane	2.558	101	222	0.36	ug/L	#	25
8) 1,1-Dichloroethene	3.136	61	1699	0.37	ug/L		92
9) Carbon Disulfide	3.142	76	1949	0.36	ug/L		87
10) Freon 113	3.178	101	1041	0.38	ug/L		78
11) Iodomethane	3.294	142	258	0.26	ug/L	#	47
12) Methylene Chloride	3.781	84	14007	3.90	ug/L		86
13) Acetone	3.878	43	2158	1.58	ug/L		84
14) t-1,2-Dichloroethene	3.945	61	1577	0.35	ug/L		99
15) n-Hexane	4.024	86	2024	2.81	ug/L	#	78
16) Methyl-tert-butyl-ether	4.097	73	3114	0.35	ug/L		94
17) 1,1-Dichloroethane	4.584	63	1998	0.35	ug/L		94
18) Acrylonitrile	4.669	53	256	0.17	ug/L	#	14
19) c-1,2-Dichloroethene	5.143	61	1447	0.34	ug/L		91
20) 2,2-Dichloropropane	5.241	77	917	0.32	ug/L	#	59
21) Bromochloromethane	5.350	49	924	0.37	ug/L		90
22) Chloroform	5.423	83	1699	0.34	ug/L		85
23) Carbon Tetrachloride	5.545	117	392	0.20	ug/L		71
24) Tetrahydrofuran	5.618	42	586	0.39	ug/L	#	57
25) 1,1,1-Trichloroethane	5.630	97	1217	0.33	ug/L		88
27) 1,1-Dichloropropene	5.752	75	1416	0.34	ug/L		87
28) 2-Butanone (MEK)	5.764	43	1499	0.74	ug/L		94
29) Benzene	6.013	78	4810	0.38	ug/L		85
30) 1,2-Dichloroethane (EDC)	6.226	62	1552	0.35	ug/L		92
31) iso-Butyl Alcohol	6.305	43	507	3.98	ug/L	#	64
33) Trichloroethene (TCE)	6.628	130	1091	0.36	ug/L		79
34) Dibromomethane	7.078	93	553	0.34	ug/L	#	64
35) 1,2-Dichloropropane	7.193	63	1034	0.34	ug/L		90
36) Bromodichloromethane	7.266	83	569	0.25	ug/L		91
38) c-1,3-Dichloropropene	7.972	75	723	0.23	ug/L		74
40) Toluene	8.228	91	4633	0.39	ug/L		98
41) Tetrachloroethene (PCE)	8.678	166	1054	0.36	ug/L		87
42) 4-Methyl-2-Pentanone (...	8.684	43	1734	0.49	ug/L		96
43) t-1,3-Dichloropropene	8.720	75	502	0.19	ug/L		47
44) 1,1,2-Trichloroethane	8.897	97	754	0.32	ug/L		76
45) Dibromochloromethane	9.067	129	215	0.18	ug/L	#	15
46) 1,3-Dichloropropane	9.183	76	1532	0.34	ug/L		90
47) 1,2-Dibromoethane (EDB)	9.316	107	457	0.21	ug/L		84
48) 2-Hexanone	9.554	43	1043	0.44	ug/L		82

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050716.D
Acq On : 7 May 2019 9:09 pm
Operator : TB
Sample : 9E07048-CAL3
Misc : 1X 0.4ppb VOC MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:35 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
49) Chlorobenzene	9.821	112	2707	0.40 ug/L #	67
50) Ethylbenzene	9.852	91	4382	0.38 ug/L	86
51) 1,1,1,2-Tetrachloroethane	9.894	131	292	0.21 ug/L #	74
52) m,p-Xylenes (2)	9.986	91	5409	0.63 ug/L	97
53) o-Xylene	10.363	91	2704	0.33 ug/L	96
54) Styrene	10.418	104	1408	0.25 ug/L	93
55) Bromoform	0.000		0	N.D.	
56) Isopropylbenzene	10.631	105	2804	0.29 ug/L	94
59) Bromobenzene	10.953	156	808	0.36 ug/L #	80
60) n-Propylbenzene	10.977	91	3524	0.35 ug/L	97
61) 1,1,2,2-Tetrachloroethane	11.038	83	771	0.29 ug/L	85
62) 2-Chlorotoluene	11.105	126	669	0.33 ug/L	88
63) 1,3,5-Trimethylbenzene	11.129	105	2172	0.31 ug/L	97
64) 1,2,3-Trichloropropane	11.148	110	303	0.31 ug/L	88
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.	
66) 4-Chlorotoluene	11.239	91	2028	0.33 ug/L	86
67) tert-Butylbenzene	11.379	91	1226	0.31 ug/L	84
68) 1,2,4-Trimethylbenzene	11.440	105	2171	0.31 ug/L	84
69) sec-Butylbenzene	11.519	105	2640	0.32 ug/L	93
70) 4-Isopropyltoluene	11.628	119	1855	0.28 ug/L	92
71) 1,3-Dichlorobenzene	11.701	146	1391	0.36 ug/L	90
72) 1,4-Dichlorobenzene	11.762	146	1636	0.40 ug/L	79
73) n-Butylbenzene	11.945	91	1917	0.33 ug/L	91
74) 1,2-Dichlorobenzene	12.078	146	1327	0.35 ug/L	91
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.	
76) Hexachlorobutadiene	13.186	223	127	0.24 ug/L #	80
77) 1,2,4-Trichlorobenzene	13.228	180	681	0.32 ug/L	94
78) Naphthalene	13.502	128	1578	0.22 ug/L	78
79) 1,2,3-Trichlorobenzene	13.666	180	600	0.28 ug/L	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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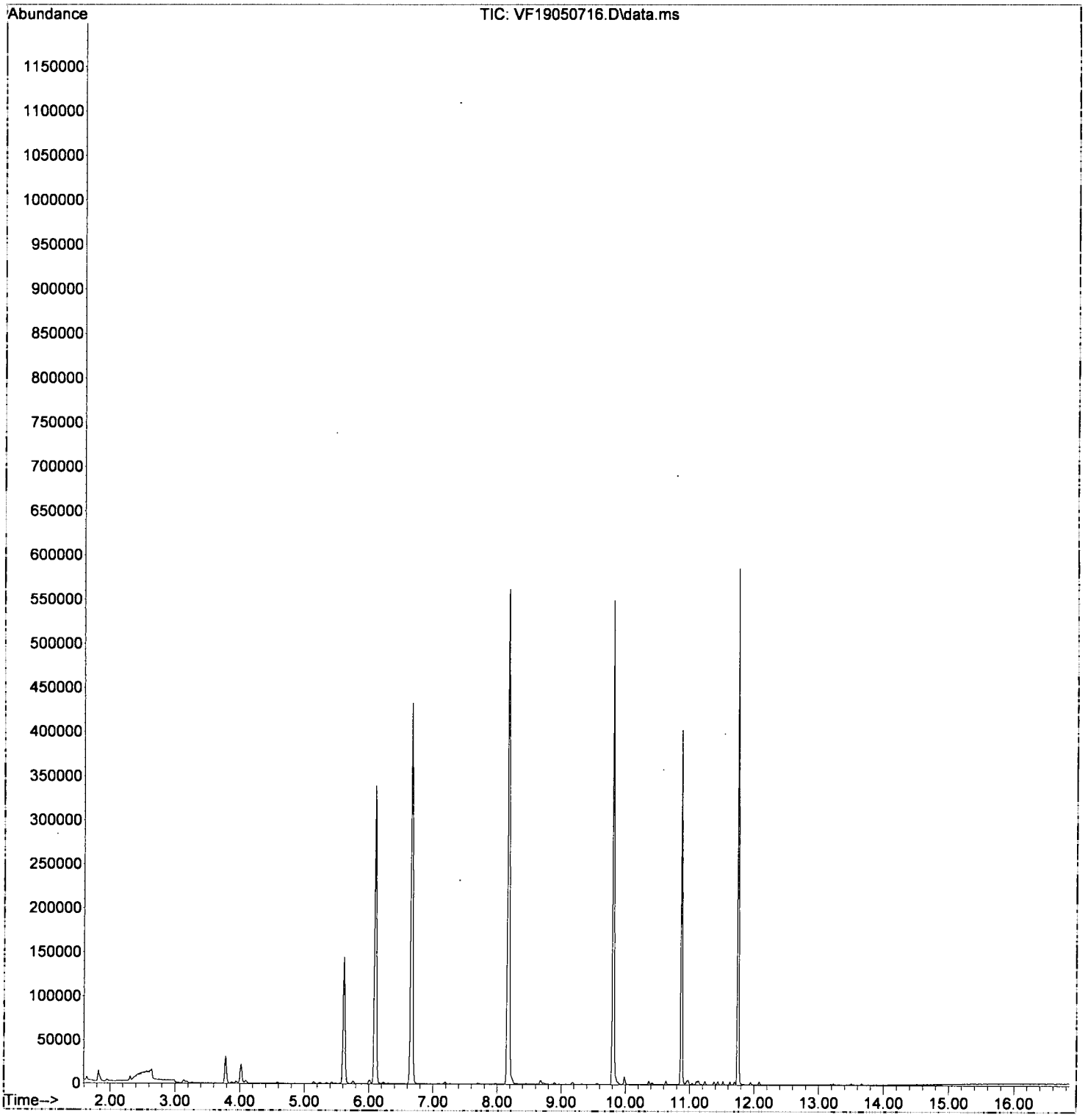
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050716.D
Acq On : 7 May 2019 9:09 pm
Operator : TB
Sample : 9E07048-CAL3
Misc : 1X 0.4ppb VOC MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:35 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050716.D
Acq On : 7 May 2019 9:09 pm
Operator : TB
Sample : 9E07048-CAL3
Misc : 1X 0.4ppb VOC MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:32:07 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

post 5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.098	168	249504	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	282136	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.750	152	120378	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.612	111	95325	45.05	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.664	114	383811	49.64	ug/L		0.00
39) Toluene-d8 (S)	8.173	98	433301	50.14	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.874	174	94062	51.42	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.639	85	846	0.36	ug/L		87
3) Chloromethane	1.846	50	2048	0.59	ug/L		98
4) Vinyl Chloride	1.949	62	1253	0.36	ug/L		55
5) Bromomethane	2.308	96	2402	1.17	ug/L		97
6) Chloroethane	0.000		0	N.D.	d		
7) Trichlorofluoromethane	2.558	101	222	0.36	ug/L	#	25
8) 1,1-Dichloroethene	3.136	61	1699	0.37	ug/L		92
9) Carbon Disulfide	3.142	76	1949	0.36	ug/L		87
10) Freon 113	3.178	101	1041	0.38	ug/L		78
11) Iodomethane	0.000		0	N.D.	d		
12) Methylene Chloride	3.781	84	14007	3.90	ug/L		86
13) Acetone	3.878	43	2158	1.58	ug/L		84
14) t-1,2-Dichloroethene	3.945	61	1577	0.35	ug/L		99
15) n-Hexane	4.024	86	2024	2.81	ug/L	#	78
16) Methyl-tert-butyl-ether	4.097	73	3114	0.35	ug/L		94
17) 1,1-Dichloroethane	4.584	63	1998	0.35	ug/L		94
18) Acrylonitrile	4.669	53	256	0.17	ug/L	#	14
19) c-1,2-Dichloroethene	5.143	61	1447	0.34	ug/L		91
20) 2,2-Dichloropropane	5.241	77	917	0.32	ug/L	#	59
21) Bromochloromethane	5.350	49	924	0.37	ug/L		90
22) Chloroform	5.423	83	1699	0.34	ug/L		85
23) Carbon Tetrachloride	5.545	117	392	0.20	ug/L		71
24) Tetrahydrofuran	5.618	42	586	0.39	ug/L	#	57
25) 1,1,1-Trichloroethane	5.630	97	1217	0.33	ug/L		88
27) 1,1-Dichloropropene	5.752	75	1416	0.34	ug/L		87
28) 2-Butanone (MEK)	5.764	43	1499	0.74	ug/L		94
29) Benzene	6.013	78	4810	0.38	ug/L		85
30) 1,2-Dichloroethane (EDC)	6.226	62	1552	0.35	ug/L		92
31) iso-Butyl Alcohol	6.305	43	507	3.98	ug/L	#	64
33) Trichloroethene (TCE)	6.628	130	1091	0.36	ug/L		79
34) Dibromomethane	7.078	93	553	0.34	ug/L	#	64
35) 1,2-Dichloropropane	7.193	63	1034	0.34	ug/L		90
36) Bromodichloromethane	7.266	83	569	0.25	ug/L		91
38) c-1,3-Dichloropropene	7.972	75	723	0.23	ug/L		74
40) Toluene	8.228	91	4633	0.39	ug/L		98
41) Tetrachloroethene (PCE)	8.678	166	1054	0.36	ug/L		87
42) 4-Methyl-2-Pentanone (...	8.684	43	1734	0.49	ug/L		96
43) t-1,3-Dichloropropene	8.720	75	502	0.19	ug/L		47
44) 1,1,2-Trichloroethane	8.897	97	754	0.32	ug/L		76
45) Dibromochloromethane	9.067	129	215	0.18	ug/L	#	15
46) 1,3-Dichloropropane	9.183	76	1532	0.34	ug/L		90
47) 1,2-Dibromoethane (EDB)	9.316	107	457	0.21	ug/L		84
48) 2-Hexanone	9.554	43	1043	0.44	ug/L		82

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050716.D
Acq On : 7 May 2019 9:09 pm
Operator : TB
Sample : 9E07048-CAL3
Misc : 1X 0.4ppb VOC MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:32:07 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

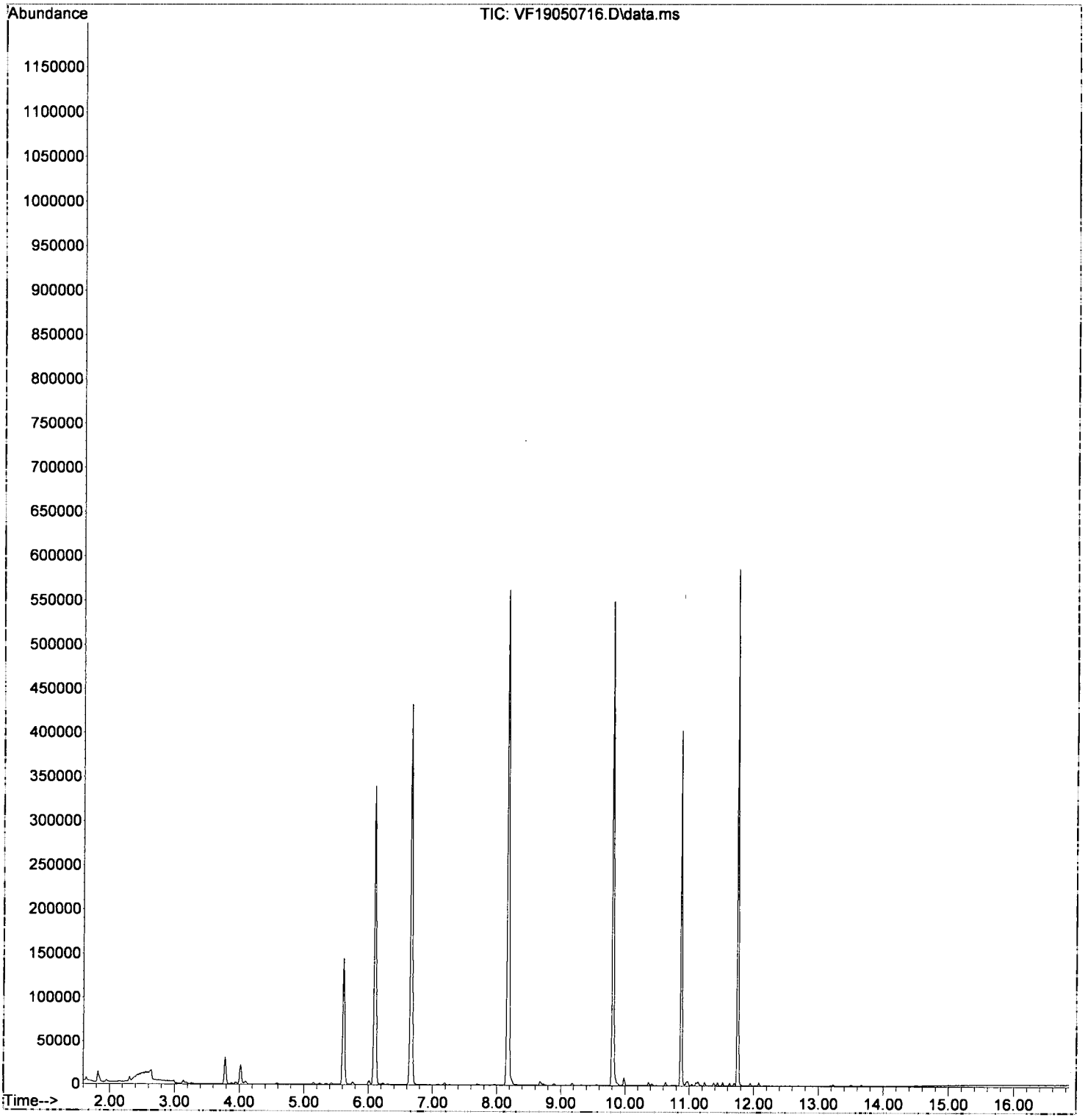
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.821	112	2707	0.40	ug/L	#	67
50) Ethylbenzene	9.852	91	4382	0.38	ug/L		86
51) 1,1,1,2-Tetrachloroethane	9.894	131	292	0.21	ug/L	#	74
52) m,p-Xylenes (2)	9.986	91	5409	0.63	ug/L		97
53) o-Xylene	10.363	91	2704	0.33	ug/L		96
54) Styrene	10.418	104	1408	0.25	ug/L		93
55) Bromoform	0.000		0	N.D.			
56) Isopropylbenzene	10.631	105	2804	0.29	ug/L		94
59) Bromobenzene	10.953	156	808	0.36	ug/L	#	80
60) n-Propylbenzene	10.977	91	3524	0.35	ug/L		97
61) 1,1,2,2-Tetrachloroethane	11.038	83	771	0.29	ug/L		85
62) 2-Chlorotoluene	11.105	126	669	0.33	ug/L		88
63) 1,3,5-Trimethylbenzene	11.129	105	2172	0.31	ug/L		97
64) 1,2,3-Trichloropropane	11.148	110	303	0.31	ug/L		88
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
66) 4-Chlorotoluene	11.239	91	2028	0.33	ug/L		86
67) tert-Butylbenzene	11.379	91	1226	0.31	ug/L		84
68) 1,2,4-Trimethylbenzene	11.440	105	2171	0.31	ug/L		84
69) sec-Butylbenzene	11.519	105	2640	0.32	ug/L		93
70) 4-Isopropyltoluene	11.628	119	1855	0.28	ug/L		92
71) 1,3-Dichlorobenzene	11.701	146	1391	0.36	ug/L		90
72) 1,4-Dichlorobenzene	11.762	146	1636	0.40	ug/L		79
73) n-Butylbenzene	11.945	91	1917	0.38	ug/L		91
74) 1,2-Dichlorobenzene	12.078	146	1327	0.35	ug/L		91
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.			
76) Hexachlorobutadiene	0.000		0	N.D.	d		
77) 1,2,4-Trichlorobenzene	13.228	180	681	0.32	ug/L		94
78) Naphthalene	13.502	128	1578	0.22	ug/L		78
79) 1,2,3-Trichlorobenzene	13.666	180	600	0.28	ug/L		90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050716.D
Acq On : 7 May 2019 9:09 pm
Operator : TB
Sample : 9E07048-CAL3
Misc : 1X 0.4ppb VOC MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:32:07 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:37 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19 pre

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.095	168	261850	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.806	117	321643	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.753	152	141519	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.609	111	96607	43.51	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.661	114	402099	49.56	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	463638	47.06	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.871	174	112797	52.45	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.630	85	1965	0.79	ug/L		84
3) Chloromethane	1.843	50	3374	0.92	ug/L		95
4) Vinyl Chloride	1.940	62	3308	0.91	ug/L		98
5) Bromomethane	2.299	96	3078	1.43	ug/L		97
6) Chloroethane	2.433	64	476	0.96	ug/L	#	1
7) Trichlorofluoromethane	2.555	101	616	0.94	ug/L		82
8) 1,1-Dichloroethene	3.133	61	4085	0.86	ug/L		80
9) Carbon Disulfide	3.145	76	4300	0.76	ug/L		98
10) Freon 113	3.181	101	2811	0.98	ug/L		80
11) Iodomethane	3.297	142	635	0.61	ug/L	#	47
12) Methylene Chloride	3.777	84	16647	4.42	ug/L		91
13) Acetone	3.881	43	3535	2.46	ug/L		87
14) t-1,2-Dichloroethene	3.942	61	4059	0.87	ug/L		95
15) n-Hexane	4.021	86	2150	2.85	ug/L		98
16) Methyl-tert-butyl-ether	4.094	73	8040	0.87	ug/L		96
17) 1,1-Dichloroethane	4.580	63	5157	0.85	ug/L		97
18) Acrylonitrile	4.672	53	1044	0.67	ug/L		87
19) c-1,2-Dichloroethene	5.140	61	3590	0.81	ug/L		99
20) 2,2-Dichloropropane	5.237	77	2310	0.78	ug/L		79
21) Bromochloromethane	5.347	49	2190	0.83	ug/L		83
22) Chloroform	5.420	83	4496	0.85	ug/L		92
23) Carbon Tetrachloride	5.554	117	1343	0.65	ug/L		90
24) Tetrahydrofuran	5.596	42	1298	0.83	ug/L		87
25) 1,1,1-Trichloroethane	5.621	97	2997	0.77	ug/L		88
27) 1,1-Dichloropropene	5.748	75	3517	0.80	ug/L		97
28) 2-Butanone (MEK)	5.761	43	3413	1.60	ug/L		86
29) Benzene	6.010	78	11954	0.89	ug/L		97
30) 1,2-Dichloroethane (EDC)	6.229	62	4287	0.93	ug/L		92
31) iso-Butyl Alcohol	6.302	43	1628	12.19	ug/L		87
33) Trichloroethene (TCE)	6.631	130	2819	0.88	ug/L		89
34) Dibromomethane	7.081	93	1342	0.78	ug/L		90
35) 1,2-Dichloropropane	7.184	63	2906	0.91	ug/L		89
36) Bromodichloromethane	7.263	83	1570	0.65	ug/L		94
38) c-1,3-Dichloropropene	7.969	75	2124	0.60	ug/L		82
40) Toluene	8.231	91	12595	0.92	ug/L		97
41) Tetrachloroethene (PCE)	8.681	166	2677	0.81	ug/L		90
42) 4-Methyl-2-Pentanone (...	8.681	43	5152	1.28	ug/L		92
43) t-1,3-Dichloropropene	8.723	75	1582	0.52	ug/L		95
44) 1,1,2-Trichloroethane	8.881	97	2096	0.77	ug/L		86
45) Dibromochloromethane	9.082	129	646	0.47	ug/L		95
46) 1,3-Dichloropropane	9.180	76	4160	0.80	ug/L		95
47) 1,2-Dibromoethane (EDB)	9.319	107	1418	0.57	ug/L		95
48) 2-Hexanone	9.551	43	3198	1.18	ug/L		93

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:37 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

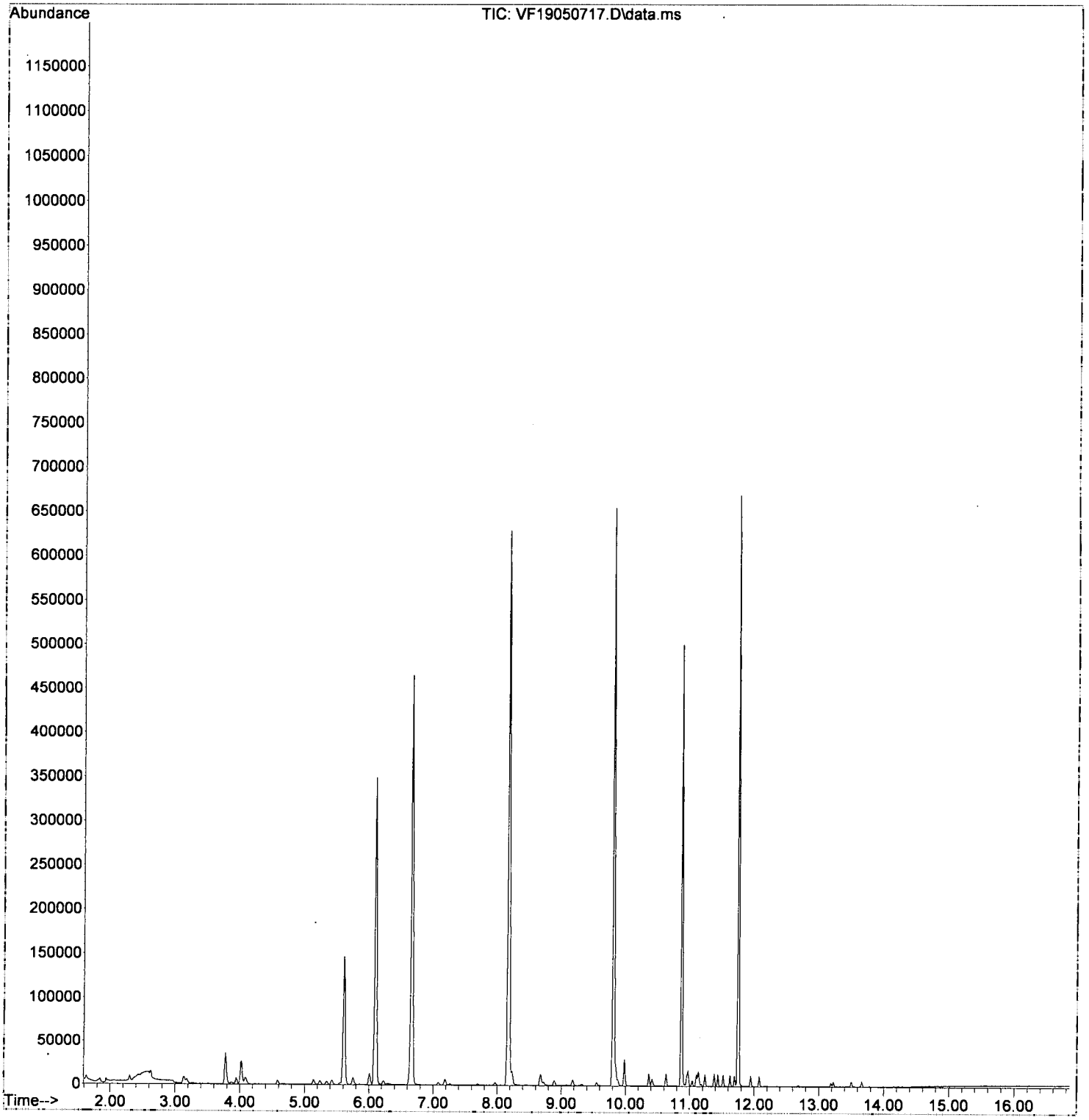
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.818	112	7684	1.01	ug/L		80
50) Ethylbenzene	9.849	91	12168	0.92	ug/L		95
51) 1,1,1,2-Tetrachloroethane	9.885	131	785	0.49	ug/L		91
52) m,p-Xylenes (2)	9.983	91	16601	1.69	ug/L		91
53) o-Xylene	10.366	91	7663	0.83	ug/L		98
54) Styrene	10.415	104	4261	0.66	ug/L		87
55) Bromoform	10.439	173	299	0.41	ug/L	#	36
56) Isopropylbenzene	10.634	105	8865	0.81	ug/L		94
59) Bromobenzene	10.956	156	2646	1.00	ug/L	#	81
60) n-Propylbenzene	10.974	91	10761	0.90	ug/L		96
61) 1,1,2,2-Tetrachloroethane	11.041	83	2364	0.76	ug/L		87
62) 2-Chlorotoluene	11.108	126	2215	0.93	ug/L		95
63) 1,3,5-Trimethylbenzene	11.132	105	6404	0.79	ug/L		96
64) 1,2,3-Trichloropropane	11.145	110	973	0.83	ug/L	#	68
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
66) 4-Chlorotoluene	11.236	91	6529	0.91	ug/L		99
67) tert-Butylbenzene	11.382	91	4016	0.88	ug/L		81
68) 1,2,4-Trimethylbenzene	11.437	105	6383	0.77	ug/L		98
69) sec-Butylbenzene	11.522	105	7874	0.82	ug/L		98
70) 4-Isopropyltoluene	11.625	119	5898	0.75	ug/L		95
71) 1,3-Dichlorobenzene	11.698	146	4151	0.90	ug/L		96
72) 1,4-Dichlorobenzene	11.759	146	4797	1.01	ug/L		82
73) n-Butylbenzene	11.948	91	5710	0.84	ug/L		94
74) 1,2-Dichlorobenzene	12.081	146	3856	0.87	ug/L		94
75) 1,2-Dibromo-3-Chloropr...	12.690	157	139	0.38	ug/L	#	42
76) Hexachlorobutadiene	13.182	223	548	0.89	ug/L		89
77) 1,2,4-Trichlorobenzene	13.225	180	1879	0.76	ug/L		97
78) Naphthalene	13.505	128	4612	0.56	ug/L		99
79) 1,2,3-Trichlorobenzene	13.663	180	1872	0.74	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:37 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

post 5/8/19

Quant Time: May 08 10:33:31 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.095	168	261850	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.806	117	321643	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.753	152	141519	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.609	111	96607	43.51	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.661	114	402099	49.56	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	463638	47.06	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.871	174	112797	52.45	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.630	85	1965	0.79	ug/L		84
3) Chloromethane	1.843	50	3374	0.92	ug/L		95
4) Vinyl Chloride	1.940	62	3308	0.91	ug/L		98
5) Bromomethane	2.299	96	3078	1.43	ug/L		97
6) Chloroethane	2.433	64	476	0.96	ug/L	#	1
7) Trichlorofluoromethane	2.555	101	616	0.94	ug/L		82
8) 1,1-Dichloroethene	3.133	61	4085	0.86	ug/L		80
9) Carbon Disulfide	3.145	76	4300	0.76	ug/L		98
10) Freon 113	3.181	101	2811	0.98	ug/L		80
11) Iodomethane	3.297	142	635	0.61	ug/L	#	47
12) Methylene Chloride	3.777	84	16647	4.42	ug/L		91
13) Acetone	3.881	43	3535	2.46	ug/L		87
14) t-1,2-Dichloroethene	3.942	61	4059	0.87	ug/L		95
15) n-Hexane	4.021	86	2150	2.85	ug/L		98
16) Methyl-tert-butyl-ether	4.094	73	8040	0.87	ug/L		96
17) 1,1-Dichloroethane	4.580	63	5157	0.85	ug/L		97
18) Acrylonitrile	4.672	53	1044	0.67	ug/L		87
19) c-1,2-Dichloroethene	5.140	61	3590	0.81	ug/L		99
20) 2,2-Dichloropropane	5.237	77	2310	0.78	ug/L		79
21) Bromochloromethane	5.347	49	2190	0.83	ug/L		83
22) Chloroform	5.420	83	4496	0.85	ug/L		92
23) Carbon Tetrachloride	5.554	117	1343	0.65	ug/L		90
24) Tetrahydrofuran	5.596	42	1298	0.83	ug/L		87
25) 1,1,1-Trichloroethane	5.621	97	2997	0.77	ug/L		88
27) 1,1-Dichloropropene	5.748	75	3517	0.80	ug/L		97
28) 2-Butanone (MEK)	5.761	43	3413	1.60	ug/L		86
29) Benzene	6.010	78	11954	0.89	ug/L		97
30) 1,2-Dichloroethane (EDC)	6.229	62	4287	0.93	ug/L		92
31) iso-Butyl Alcohol	6.302	43	1628	12.19	ug/L		87
33) Trichloroethene (TCE)	6.631	130	2819	0.88	ug/L		89
34) Dibromomethane	7.081	93	1342	0.78	ug/L		90
35) 1,2-Dichloropropane	7.184	63	2906	0.91	ug/L		89
36) Bromodichloromethane	7.263	83	1570	0.65	ug/L		94
38) c-1,3-Dichloropropene	7.969	75	2124	0.60	ug/L		82
40) Toluene	8.231	91	12595	0.92	ug/L		97
41) Tetrachloroethene (PCE)	8.681	166	2677	0.81	ug/L		90
42) 4-Methyl-2-Pentanone (...	8.681	43	5152	1.28	ug/L		92
43) t-1,3-Dichloropropene	8.723	75	1582	0.52	ug/L		95
44) 1,1,2-Trichloroethane	8.881	97	2096	0.77	ug/L		86
45) Dibromochloromethane	9.082	129	646	0.47	ug/L		95
46) 1,3-Dichloropropane	9.180	76	4160	0.80	ug/L		95
47) 1,2-Dibromoethane (EDB)	9.319	107	1418	0.57	ug/L		95
48) 2-Hexanone	9.551	43	3198	1.18	ug/L		93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:33:31 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.818	112	7684	1.01	ug/L		80
50) Ethylbenzene	9.849	91	12168	0.92	ug/L		95
51) 1,1,1,2-Tetrachloroethane	9.885	131	785	0.49	ug/L		91
52) m,p-Xylenes (2)	9.983	91	16601	1.69	ug/L		91
53) o-Xylene	10.366	91	7663	0.83	ug/L		98
54) Styrene	10.415	104	4261	0.66	ug/L		87
55) Bromoform	0.000		0	N.D.	d		
56) Isopropylbenzene	10.634	105	8865	0.81	ug/L		94
59) Bromobenzene	10.956	156	2646	1.00	ug/L	#	81
60) n-Propylbenzene	10.974	91	10761	0.90	ug/L		96
61) 1,1,2,2-Tetrachloroethane	11.041	83	2364	0.76	ug/L		87
62) 2-Chlorotoluene	11.108	126	2215	0.93	ug/L		95
63) 1,3,5-Trimethylbenzene	11.132	105	6404	0.79	ug/L		96
64) 1,2,3-Trichloropropane	11.145	110	973	0.83	ug/L	#	68
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
66) 4-Chlorotoluene	11.236	91	6529	0.91	ug/L		99
67) tert-Butylbenzene	11.382	91	4016	0.88	ug/L		81
68) 1,2,4-Trimethylbenzene	11.437	105	6383	0.77	ug/L		98
69) sec-Butylbenzene	11.522	105	7874	0.82	ug/L		98
70) 4-Isopropyltoluene	11.625	119	5898	0.75	ug/L		95
71) 1,3-Dichlorobenzene	11.698	146	4151	0.90	ug/L		96
72) 1,4-Dichlorobenzene	11.759	146	4797	1.01	ug/L		82
73) n-Butylbenzene	11.948	91	5710	0.84	ug/L		94
74) 1,2-Dichlorobenzene	12.081	146	3856	0.87	ug/L		94
75) 1,2-Dibromo-3-Chloropr...	12.690	157	139	0.38	ug/L	#	42
76) Hexachlorobutadiene	13.182	223	548	0.89	ug/L		89
77) 1,2,4-Trichlorobenzene	13.225	180	1879	0.76	ug/L		97
78) Naphthalene	13.505	128	4612	0.56	ug/L		99
79) 1,2,3-Trichlorobenzene	13.663	180	1872	0.74	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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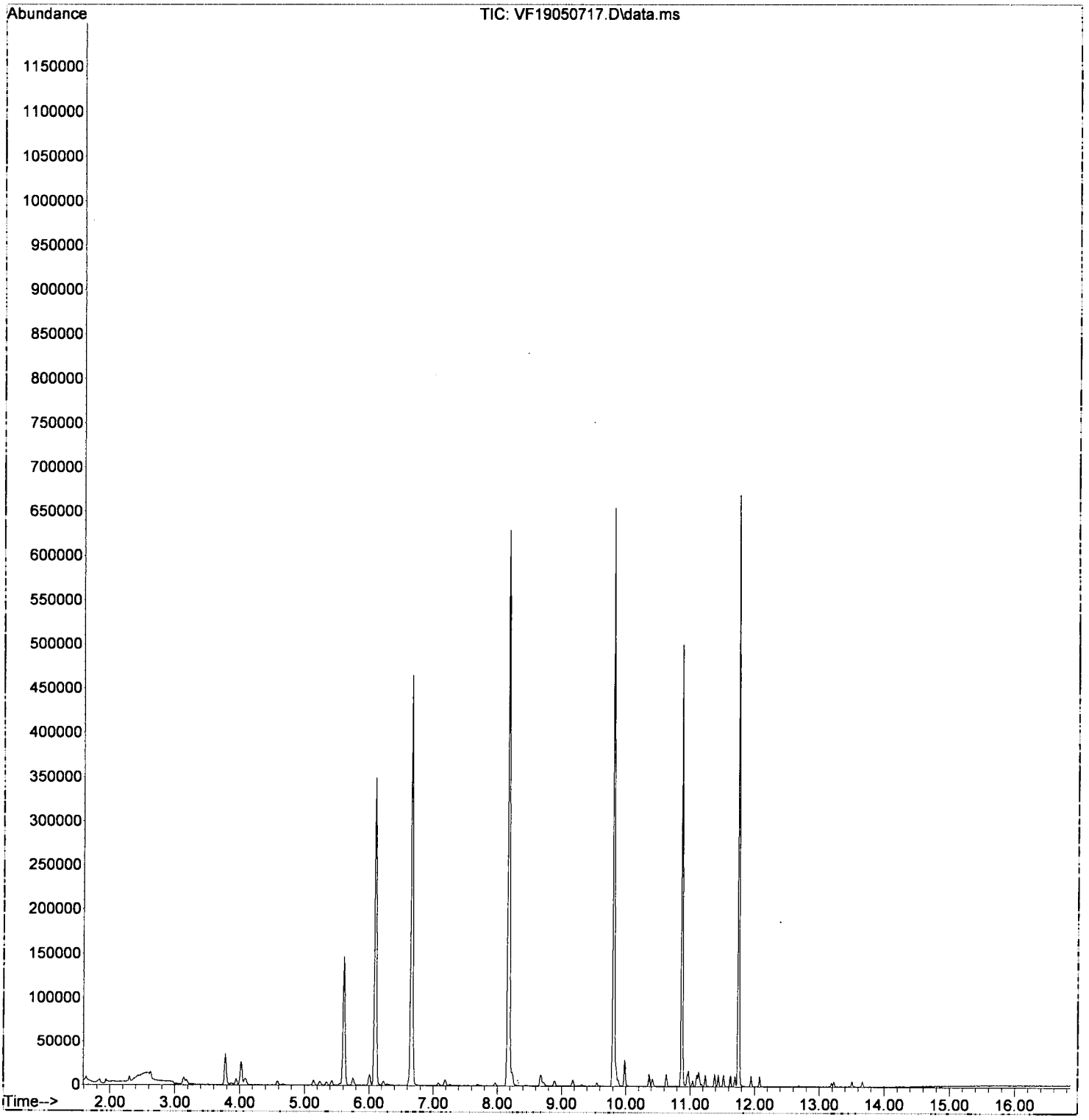
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050717.D
Acq On : 7 May 2019 9:36 pm
Operator : TB
Sample : 9E07048-CAL4
Misc : 1X 1ppb VOC MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:33:31 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050718.D
Acq On : 7 May 2019 10:04 pm
Operator : TB
Sample : 9E07048-CAL5
Misc : 1X 2ppb VOC MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.095	168	242998	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.806	117	271061	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.753	152	122406	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.609	111	94993	46.10	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.661	114	374305	49.71	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	417114	50.24	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.871	174	93757	50.41	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.630	85	4428	1.92	ug/L		93
3) Chloromethane	1.837	50	7222	2.13	ug/L		95
4) Vinyl Chloride	1.940	62	6417	1.91	ug/L		99
5) Bromomethane	2.305	96	5858	2.92	ug/L		94
6) Chloroethane	2.421	64	1082	2.35	ug/L	#	1
7) Trichlorofluoromethane	2.555	101	1256	2.07	ug/L		81
8) 1,1-Dichloroethene	3.127	61	8224	1.86	ug/L		78
9) Carbon Disulfide	3.139	76	8310	1.58	ug/L		96
10) Freon 113	3.175	101	5055	1.90	ug/L		83
11) Iodomethane	3.285	142	862	0.89	ug/L	#	65
12) Methylene Chloride	3.777	84	18649	5.33	ug/L		90
13) Acetone	3.875	43	6127	4.60	ug/L		90
14) t-1,2-Dichloroethene	3.936	61	7974	1.84	ug/L		90
15) n-Hexane	4.015	86	2796	3.99	ug/L		95
16) Methyl-tert-butyl-ether	4.094	73	15652	1.83	ug/L		96
17) 1,1-Dichloroethane	4.580	63	10371	1.85	ug/L		93
18) Acrylonitrile	4.660	53	2472	1.71	ug/L		98
19) c-1,2-Dichloroethene	5.134	61	7621	1.85	ug/L		82
20) 2,2-Dichloropropane	5.244	77	4599	1.66	ug/L		70
21) Bromochloromethane	5.341	49	4699	1.92	ug/L		82
22) Chloroform	5.420	83	8712	1.78	ug/L		92
23) Carbon Tetrachloride	5.548	117	2842	1.47	ug/L		100
24) Tetrahydrofuran	5.609	42	2709	1.86	ug/L		89
25) 1,1,1-Trichloroethane	5.621	97	5724	1.59	ug/L		94
27) 1,1-Dichloropropene	5.749	75	7332	1.80	ug/L		97
28) 2-Butanone (MEK)	5.755	43	7034	3.55	ug/L		95
29) Benzene	6.004	78	23365	1.88	ug/L		96
30) 1,2-Dichloroethane (EDC)	6.223	62	7997	1.88	ug/L		98
31) iso-Butyl Alcohol	6.290	43	3909	31.54	ug/L		99
33) Trichloroethene (TCE)	6.625	130	5247	1.76	ug/L		89
34) Dibromomethane	7.081	93	2709	1.71	ug/L	#	79
35) 1,2-Dichloropropane	7.184	63	5465	1.84	ug/L		95
36) Bromodichloromethane	7.257	83	3150	1.41	ug/L		89
38) c-1,3-Dichloropropene	7.963	75	4000	1.34	ug/L		85
40) Toluene	8.231	91	22780	1.97	ug/L		96
41) Tetrachloroethene (PCE)	8.675	166	5076	1.82	ug/L		90
42) 4-Methyl-2-Pentanone (...	8.681	43	10467	3.09	ug/L		91
43) t-1,3-Dichloropropene	8.723	75	3084	1.20	ug/L		85
44) 1,1,2-Trichloroethane	8.894	97	4156	1.82	ug/L		94
45) Dibromochloromethane	9.076	129	1529	1.32	ug/L		88
46) 1,3-Dichloropropane	9.174	76	7762	1.78	ug/L		82
47) 1,2-Dibromoethane (EDB)	9.313	107	2966	1.41	ug/L		83
48) 2-Hexanone	9.545	43	6383	2.81	ug/L		90

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050718.D
Acq On : 7 May 2019 10:04 pm
Operator : TB
Sample : 9E07048-CAL5
Misc : 1X 2ppb VOC MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

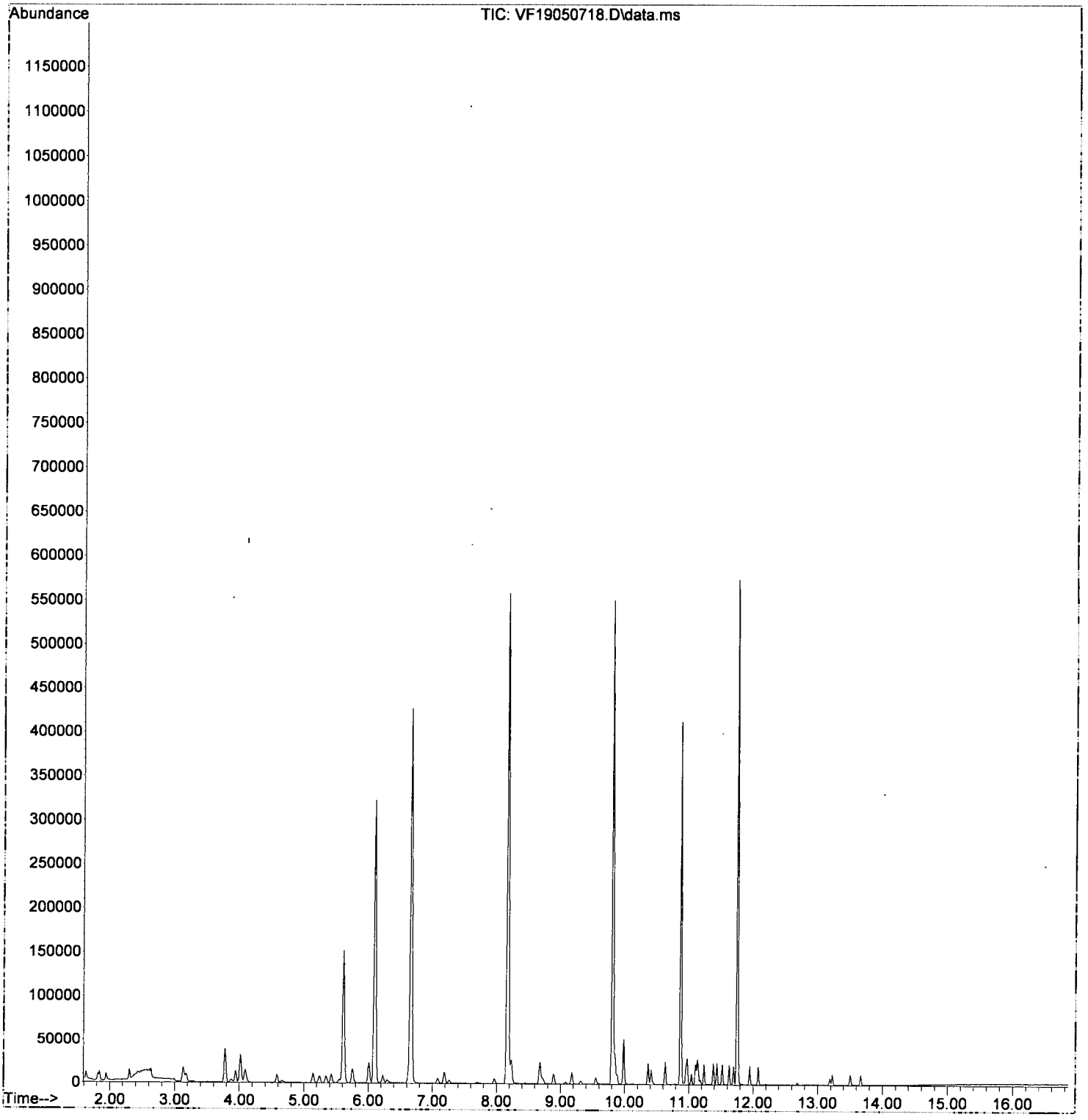
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.818	112	12836	1.99	ug/L		89
50) Ethylbenzene	9.849	91	20590	1.85	ug/L		96
51) 1,1,1,2-Tetrachloroethane	9.885	131	1701	1.26	ug/L		86
52) m,p-Xylenes (2)	9.983	91	28146	3.40	ug/L		94
53) o-Xylene	10.366	91	13306	1.71	ug/L		95
54) Styrene	10.415	104	7423	1.36	ug/L		93
55) Bromoform	10.439	173	793	1.29	ug/L		92
56) Isopropylbenzene	10.634	105	14839	1.60	ug/L		99
59) Bromobenzene	10.956	156	4463	1.94	ug/L		90
60) n-Propylbenzene	10.974	91	18352	1.78	ug/L		97
61) 1,1,2,2-Tetrachloroethane	11.041	83	4375	1.63	ug/L		97
62) 2-Chlorotoluene	11.108	126	3616	1.76	ug/L		95
63) 1,3,5-Trimethylbenzene	11.132	105	11485	1.63	ug/L		92
64) 1,2,3-Trichloropropane	11.145	110	1924	1.91	ug/L		88
65) t-1,4-Dichloro-2-butene	11.181	88	237	1.28	ug/L	#	62
66) 4-Chlorotoluene	11.236	91	11250	1.80	ug/L		97
67) tert-Butylbenzene	11.382	91	6886	1.73	ug/L		94
68) 1,2,4-Trimethylbenzene	11.437	105	11474	1.60	ug/L		92
69) sec-Butylbenzene	11.522	105	14030	1.70	ug/L		97
70) 4-Isopropyltoluene	11.625	119	10365	1.52	ug/L		93
71) 1,3-Dichlorobenzene	11.698	146	7501	1.89	ug/L		98
72) 1,4-Dichlorobenzene	11.759	146	8234	2.00	ug/L		88
73) n-Butylbenzene	11.948	91	9476	1.61	ug/L		97
74) 1,2-Dichlorobenzene	12.081	146	6890	1.80	ug/L		97
75) 1,2-Dibromo-3-Chloropr...	12.678	157	344	1.09	ug/L	#	22
76) Hexachlorobutadiene	13.189	223	977	1.83	ug/L		81
77) 1,2,4-Trichlorobenzene	13.225	180	3650	1.70	ug/L		96
78) Naphthalene	13.505	128	9150	1.28	ug/L		99
79) 1,2,3-Trichlorobenzene	13.663	180	3683	1.69	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050718.D
Acq On : 7 May 2019 10:04 pm
Operator : TB
Sample : 9E07048-CAL5
Misc : 1X 2ppb VOC MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:39 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050719.D
Acq On : 7 May 2019 10:31 pm
Operator : TB
Sample : 9E07048-CAL6
Misc : 1X 5ppb VOC MeOH
ALS Vial : 9 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:41 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.099	168	248863	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	279254	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.750	152	125861	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.606	111	99623	47.20	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.658	114	382252	49.57	ug/L		0.00
39) Toluene-d8 (S)	8.167	98	428207	50.06	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.868	174	96094	50.24	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.633	85	11506	4.87	ug/L		97
3) Chloromethane	1.840	50	16881	4.86	ug/L		97
4) Vinyl Chloride	1.944	62	16421	4.77	ug/L		99
5) Bromomethane	2.302	96	12080	5.89	ug/L		96
6) Chloroethane	2.430	64	2287	4.85	ug/L	#	1
7) Trichlorofluoromethane	2.558	101	3188	5.12	ug/L		97
8) 1,1-Dichloroethene	3.124	61	21211	4.69	ug/L		77
9) Carbon Disulfide	3.136	76	22193	4.12	ug/L		96
10) Freon 113	3.172	101	13365	4.91	ug/L		82
11) Iodomethane	3.282	142	2570	2.60	ug/L		92
12) Methylene Chloride	3.775	84	27821	7.77	ug/L		88
13) Acetone	3.872	43	14357	10.52	ug/L		94
14) t-1,2-Dichloroethene	3.939	61	21082	4.74	ug/L		96
15) n-Hexane	4.018	86	4468	6.23	ug/L	#	77
16) Methyl-tert-butyl-ether	4.091	73	40294	4.61	ug/L		97
17) 1,1-Dichloroethane	4.578	63	27022	4.71	ug/L		96
18) Acrylonitrile	4.663	53	6728	4.55	ug/L		99
19) c-1,2-Dichloroethene	5.137	61	19884	4.71	ug/L		98
20) 2,2-Dichloropropane	5.241	77	11848	4.18	ug/L		74
21) Bromochloromethane	5.344	49	11857	4.72	ug/L		89
22) Chloroform	5.423	83	23401	4.66	ug/L		93
23) Carbon Tetrachloride	5.551	117	7941	4.02	ug/L		97
24) Tetrahydrofuran	5.600	42	7275	4.88	ug/L		93
25) 1,1,1-Trichloroethane	5.624	97	15328	4.16	ug/L		93
27) 1,1-Dichloropropene	5.752	75	19265	4.63	ug/L		98
28) 2-Butanone (MEK)	5.752	43	19168	9.44	ug/L		95
29) Benzene	6.007	78	60741	4.78	ug/L		97
30) 1,2-Dichloroethane (EDC)	6.226	62	21115	4.84	ug/L		97
31) iso-Butyl Alcohol	6.299	43	10550	83.12	ug/L		100
33) Trichloroethene (TCE)	6.628	130	14302	4.67	ug/L		95
34) Dibromomethane	7.078	93	7109	4.37	ug/L		86
35) 1,2-Dichloropropane	7.188	63	14217	4.68	ug/L		98
36) Bromodichloromethane	7.261	83	8768	3.83	ug/L		98
38) c-1,3-Dichloropropene	7.966	75	11116	3.61	ug/L		91
40) Toluene	8.228	91	57774	4.85	ug/L		97
41) Tetrachloroethene (PCE)	8.678	166	13448	4.68	ug/L		96
42) 4-Methyl-2-Pentanone (...	8.678	43	28905	8.28	ug/L		93
43) t-1,3-Dichloropropene	8.721	75	8937	3.38	ug/L		92
44) 1,1,2-Trichloroethane	8.891	97	10585	4.51	ug/L		85
45) Dibromochloromethane	9.073	129	4290	3.59	ug/L		92
46) 1,3-Dichloropropane	9.177	76	20889	4.65	ug/L		89
47) 1,2-Dibromoethane (EDB)	9.317	107	8553	3.94	ug/L		97
48) 2-Hexanone	9.548	43	17782	7.59	ug/L		96

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050719.D
Acq On : 7 May 2019 10:31 pm
Operator : TB
Sample : 9E07048-CAL6
Misc : 1X 5ppb VOC MeOH
ALS Vial : 9 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:41 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

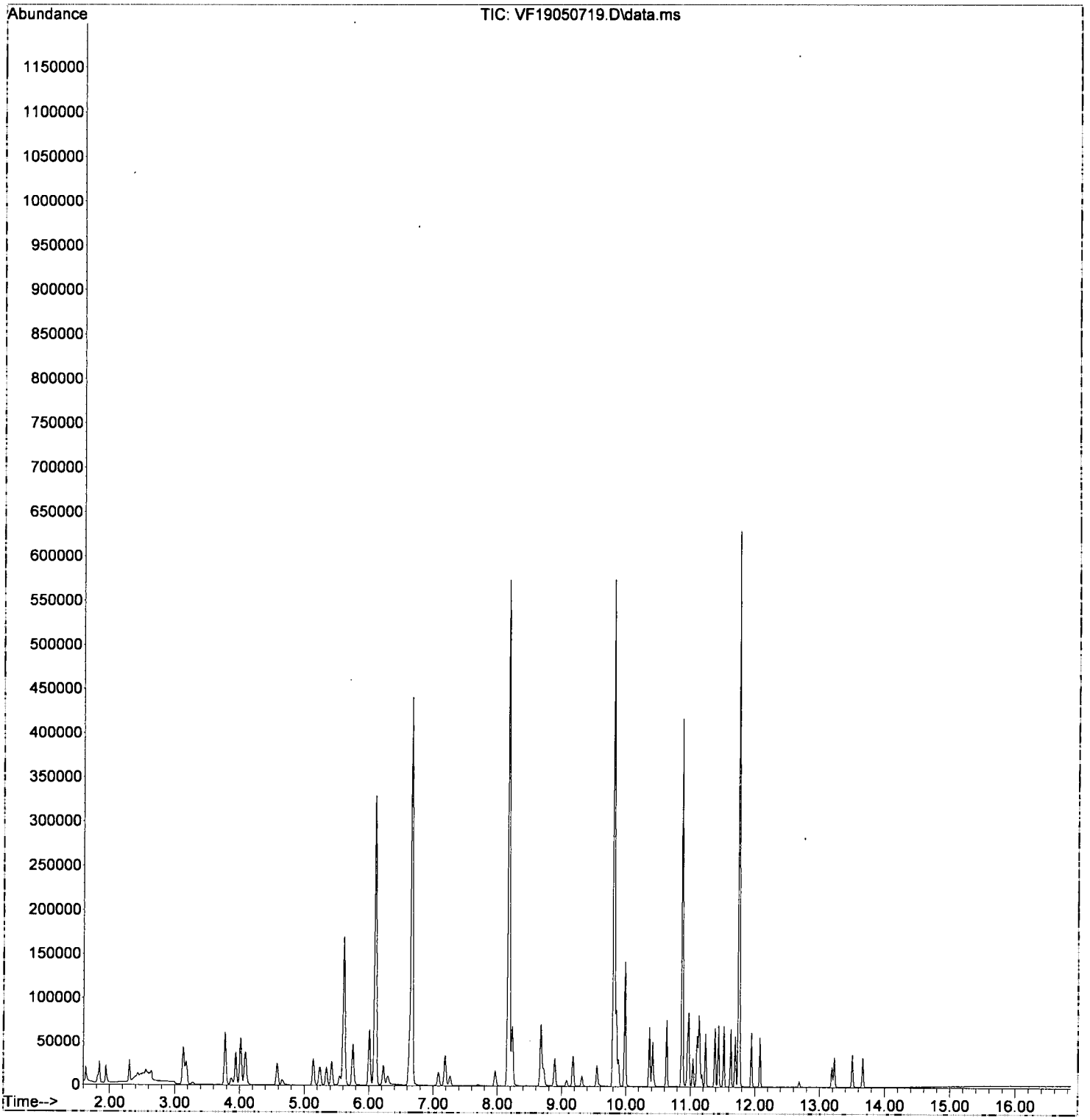
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49)	Chlorobenzene	9.822	112	32582	4.91	ug/L		94
50)	Ethylbenzene	9.846	91	53767	4.68	ug/L		97
51)	1,1,1,2-Tetrachloroethane	9.882	131	4779	3.43	ug/L		94
52)	m,p-Xylenes (2)	9.980	91	76311	8.96	ug/L		96
53)	o-Xylene	10.363	91	35546	4.44	ug/L		95
54)	Styrene	10.412	104	22451	3.98	ug/L		96
55)	Bromoform	10.436	173	2131	3.36	ug/L		98
56)	Isopropylbenzene	10.631	105	42773	4.49	ug/L		97
59)	Bromobenzene	10.953	156	11371	4.81	ug/L		86
60)	n-Propylbenzene	10.971	91	49128	4.63	ug/L		96
61)	1,1,2,2-Tetrachloroethane	11.038	83	11560	4.19	ug/L		98
62)	2-Chlorotoluene	11.105	126	9901	4.68	ug/L		84
63)	1,3,5-Trimethylbenzene	11.130	105	31608	4.36	ug/L		98
64)	1,2,3-Trichloropropane	11.142	110	4758	4.59	ug/L	#	69
65)	t-1,4-Dichloro-2-butene	11.178	88	580	3.06	ug/L	#	27
66)	4-Chlorotoluene	11.233	91	30163	4.70	ug/L		96
67)	tert-Butylbenzene	11.379	91	18826	4.61	ug/L		89
68)	1,2,4-Trimethylbenzene	11.434	105	32438	4.41	ug/L		100
69)	sec-Butylbenzene	11.519	105	39097	4.59	ug/L		96
70)	4-Isopropyltoluene	11.628	119	30161	4.29	ug/L		95
71)	1,3-Dichlorobenzene	11.695	146	19402	4.75	ug/L		97
72)	1,4-Dichlorobenzene	11.762	146	20284	4.78	ug/L		97
73)	n-Butylbenzene	11.945	91	27019	4.48	ug/L		93
74)	1,2-Dichlorobenzene	12.079	146	18432	4.69	ug/L		97
75)	1,2-Dibromo-3-Chloropr...	12.681	157	1033	3.17	ug/L	#	12
76)	Hexachlorobutadiene	13.192	223	2590	4.71	ug/L		91
77)	1,2,4-Trichlorobenzene	13.228	180	9487	4.30	ug/L		98
78)	Naphthalene	13.502	128	26502	3.61	ug/L		99
79)	1,2,3-Trichlorobenzene	13.660	180	9947	4.45	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050719.D
Acq On : 7 May 2019 10:31 pm
Operator : TB
Sample : 9E07048-CAL6
Misc : 1X 5ppb VOC MeOH
ALS Vial : 9 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:41 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050720.D
Acq On : 7 May 2019 10:58 pm
Operator : TB
Sample : 9E07048-CAL7
Misc : 1X 10ppb VOC MeOH
ALS Vial : 10 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:43 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.098	168	264477	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	318211	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.750	152	137625	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.611	111	104380	46.54	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.664	114	404994	49.42	ug/L		0.00
39) Toluene-d8 (S)	8.172	98	462102	47.41	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.874	174	109811	52.51	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.633	85	23615	9.41	ug/L		96
3) Chloromethane	1.846	50	33122	8.97	ug/L		97
4) Vinyl Chloride	1.943	62	34298	9.37	ug/L		93
5) Bromomethane	2.308	96	23602	10.82	ug/L		100
6) Chloroethane	2.436	64	4425	8.83	ug/L	#	38
7) Trichlorofluoromethane	2.563	101	5854	8.85	ug/L		96
8) 1,1-Dichloroethene	3.135	61	43446	9.04	ug/L		79
9) Carbon Disulfide	3.148	76	47292	8.26	ug/L		99
10) Freon 113	3.184	101	27267	9.42	ug/L		85
11) Iodomethane	3.287	142	8901	8.49	ug/L		93
12) Methylene Chloride	3.780	84	42775	11.24	ug/L		90
13) Acetone	3.871	43	25591	17.64	ug/L		91
14) t-1,2-Dichloroethene	3.944	61	43282	9.16	ug/L		97
15) n-Hexane	4.024	86	7751	10.16	ug/L	#	87
16) Methyl-tert-butyl-ether	4.090	73	82410	8.86	ug/L		99
17) 1,1-Dichloroethane	4.583	63	54444	8.93	ug/L		98
18) Acrylonitrile	4.656	53	13862	8.82	ug/L		94
19) c-1,2-Dichloroethene	5.137	61	40226	8.96	ug/L		91
20) 2,2-Dichloropropane	5.240	77	25977	8.63	ug/L		71
21) Bromochloromethane	5.344	49	24444	9.16	ug/L		88
22) Chloroform	5.423	83	48731	9.14	ug/L		96
23) Carbon Tetrachloride	5.550	117	17551	8.37	ug/L		98
24) Tetrahydrofuran	5.605	42	13580	8.56	ug/L		94
25) 1,1,1-Trichloroethane	5.623	97	34343	8.77	ug/L		95
27) 1,1-Dichloropropene	5.751	75	40206	9.09	ug/L		99
28) 2-Butanone (MEK)	5.757	43	37307	17.28	ug/L		95
29) Benzene	6.007	78	124874	9.26	ug/L		98
30) 1,2-Dichloroethane (EDC)	6.226	62	42029	9.06	ug/L		97
31) iso-Butyl Alcohol	6.293	43	23588	174.87	ug/L		96
33) Trichloroethene (TCE)	6.627	130	29569	9.09	ug/L		92
34) Dibromomethane	7.084	93	15288	8.84	ug/L		90
35) 1,2-Dichloropropane	7.187	63	30050	9.32	ug/L		98
36) Bromodichloromethane	7.260	83	19606	8.06	ug/L		99
38) c-1,3-Dichloropropene	7.966	75	26031	7.43	ug/L		85
40) Toluene	8.227	91	124435	9.17	ug/L		98
41) Tetrachloroethene (PCE)	8.677	166	29011	8.86	ug/L		95
42) 4-Methyl-2-Pentanone (...	8.677	43	65586	16.49	ug/L		91
43) t-1,3-Dichloropropene	8.714	75	22208	7.38	ug/L		94
44) 1,1,2-Trichloroethane	8.890	97	23330	8.72	ug/L		92
45) Dibromochloromethane	9.079	129	10099	7.42	ug/L		90
46) 1,3-Dichloropropane	9.176	76	45205	8.88	ug/L		91
47) 1,2-Dibromoethane (EDB)	9.310	107	19791	8.00	ug/L		98
48) 2-Hexanone	9.547	43	42844	16.04	ug/L		94

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050720.D
Acq On : 7 May 2019 10:58 pm
Operator : TB
Sample : 9E07048-CAL7
Misc : 1X 10ppb VOC MeOH
ALS Vial : 10 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:43 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.821	112	74844	9.90	ug/L		96
50) Ethylbenzene	9.845	91	123904	9.46	ug/L		96
51) 1,1,1,2-Tetrachloroethane	9.882	131	12247	7.72	ug/L		98
52) m,p-Xylenes (2)	9.979	91	180873	18.63	ug/L		96
53) o-Xylene	10.363	91	85079	9.33	ug/L		96
54) Styrene	10.411	104	56305	8.76	ug/L		95
55) Bromoform	10.435	173	5401	7.48	ug/L		98
56) Isopropylbenzene	10.630	105	101605	9.36	ug/L		97
59) Bromobenzene	10.959	156	26129	10.11	ug/L		95
60) n-Propylbenzene	10.971	91	115664	9.96	ug/L		97
61) 1,1,2,2-Tetrachloroethane	11.038	83	27257	9.04	ug/L		99
62) 2-Chlorotoluene	11.105	126	23610	10.21	ug/L		94
63) 1,3,5-Trimethylbenzene	11.129	105	77527	9.78	ug/L		97
64) 1,2,3-Trichloropropane	11.147	110	10739	9.47	ug/L	#	79
65) t-1,4-Dichloro-2-butene	11.178	88	1656	7.98	ug/L	#	47
66) 4-Chlorotoluene	11.232	91	71020	10.13	ug/L		97
67) tert-Butylbenzene	11.378	91	44486	9.97	ug/L		83
68) 1,2,4-Trimethylbenzene	11.439	105	78156	9.72	ug/L		100
69) sec-Butylbenzene	11.518	105	92413	9.93	ug/L		97
70) 4-Isopropyltoluene	11.628	119	73579	9.57	ug/L		98
71) 1,3-Dichlorobenzene	11.695	146	42681	9.56	ug/L		97
72) 1,4-Dichlorobenzene	11.762	146	44850	9.67	ug/L		98
73) n-Butylbenzene	11.944	91	65332	9.90	ug/L		93
74) 1,2-Dichlorobenzene	12.078	146	40089	9.33	ug/L		98
75) 1,2-Dibromo-3-Chloropr...	12.686	157	2666	7.48	ug/L	#	50
76) Hexachlorobutadiene	13.191	223	5590	9.29	ug/L		97
77) 1,2,4-Trichlorobenzene	13.228	180	21384	8.87	ug/L		98
78) Naphthalene	13.502	128	66084	8.22	ug/L		99
79) 1,2,3-Trichlorobenzene	13.666	180	21895	8.96	ug/L		98

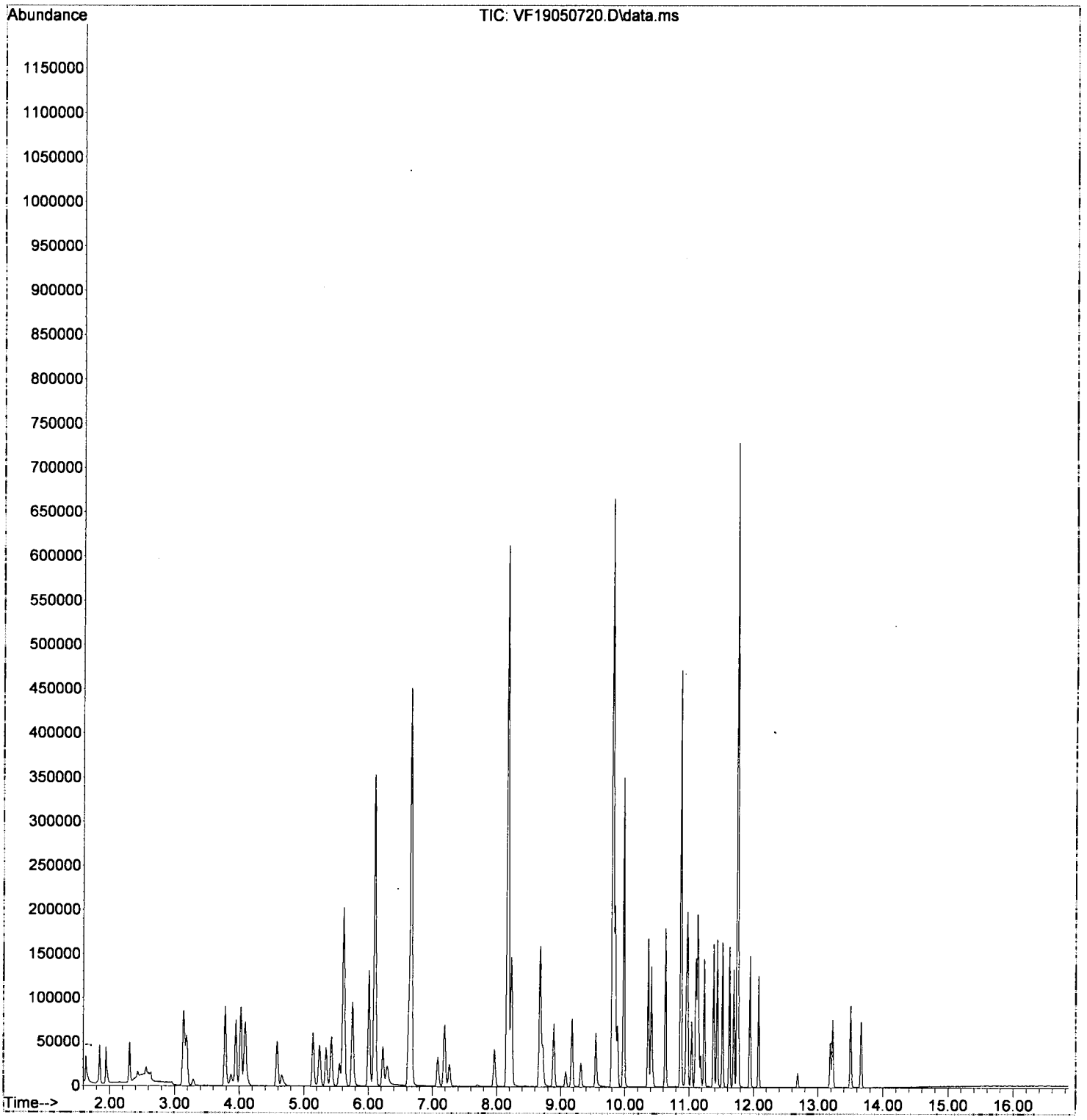
(#) = qualifier out of range (m) = manual integration (+) = signals summed

10/08/19 Haley & Aldrich, Inc. - Mult 802 Decommisioning - Level IV Data Package Page 825 of 1564

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050720.D
Acq On : 7 May 2019 10:58 pm
Operator : TB
Sample : 9E07048-CAL7
Misc : 1X 10ppb VOC MeOH
ALS Vial : 10 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:43 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050721.D
Acq On : 7 May 2019 11:25 pm
Operator : TB
Sample : 9E07048-CAL8
Misc : 1X 20ppb VOC MeOH
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:45 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.097	168	247283	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.802	117	274550	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.749	152	127087	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.605	111	104852	50.00	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.657	114	383139	50.00	ug/L		0.00
39) Toluene-d8 (S)	8.166	98	420491	50.00	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.873	174	96557	50.00	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.632	85	46922	20.00	ug/L		97
3) Chloromethane	1.839	50	69024	20.00	ug/L		97
4) Vinyl Chloride	1.942	62	68436	20.00	ug/L		96
5) Bromomethane	2.301	96	40782	20.00	ug/L		96
6) Chloroethane	2.423	64	9373	20.00	ug/L		76
7) Trichlorofluoromethane	2.557	101	12368	20.00	ug/L		96
8) 1,1-Dichloroethene	3.123	61	89848	20.00	ug/L		78
9) Carbon Disulfide	3.141	76	107117	20.00	ug/L		99
10) Freon 113	3.177	101	54116	20.00	ug/L		82
11) Iodomethane	3.281	142	19614	20.00	ug/L		97
12) Methylene Chloride	3.773	84	71195	20.00	ug/L		89
13) Acetone	3.865	43	54252	40.00	ug/L		93
14) t-1,2-Dichloroethene	3.938	61	88360	20.00	ug/L		95
15) n-Hexane	4.017	86	14259	20.00	ug/L	#	91
16) Methyl-tert-butyl-ether	4.084	73	173881	20.00	ug/L		97
17) 1,1-Dichloroethane	4.576	63	114004	20.00	ug/L		98
18) Acrylonitrile	4.649	53	29390	20.00	ug/L		100
19) c-1,2-Dichloroethene	5.136	61	83939	20.00	ug/L		92
20) 2,2-Dichloropropane	5.240	77	56267	20.00	ug/L		81
21) Bromochloromethane	5.337	49	49879	20.00	ug/L		87
22) Chloroform	5.422	83	99732	20.00	ug/L		96
23) Carbon Tetrachloride	5.544	117	39228	20.00	ug/L		96
24) Tetrahydrofuran	5.598	42	29649	20.00	ug/L		95
25) 1,1,1-Trichloroethane	5.617	97	73208	20.00	ug/L		94
27) 1,1-Dichloropropene	5.745	75	82690	20.00	ug/L		98
28) 2-Butanone (MEK)	5.751	43	80726	40.00	ug/L		97
29) Benzene	6.000	78	252305	20.00	ug/L		96
30) 1,2-Dichloroethane (EDC)	6.219	62	86737	20.00	ug/L		98
31) iso-Butyl Alcohol	6.286	43	63060	500.00	ug/L		98
33) Trichloroethene (TCE)	6.621	130	60828	20.00	ug/L		93
34) Dibromomethane	7.077	93	32324	20.00	ug/L		84
35) 1,2-Dichloropropane	7.180	63	60316	20.00	ug/L		98
36) Bromodichloromethane	7.259	83	45494	20.00	ug/L		98
38) c-1,3-Dichloropropene	7.965	75	60464	20.00	ug/L		89
40) Toluene	8.227	91	234051	20.00	ug/L		99
41) Tetrachloroethene (PCE)	8.671	166	56499	20.00	ug/L		92
42) 4-Methyl-2-Pentanone (...	8.677	43	137264	40.00	ug/L		93
43) t-1,3-Dichloropropene	8.713	75	51961	20.00	ug/L		95
44) 1,1,2-Trichloroethane	8.890	97	46171	20.00	ug/L		92
45) Dibromochloromethane	9.078	129	23476	20.00	ug/L		95
46) 1,3-Dichloropropane	9.169	76	88346	20.00	ug/L		90
47) 1,2-Dibromoethane (EDB)	9.309	107	42675	20.00	ug/L		99
48) 2-Hexanone	9.547	43	92169	40.00	ug/L		95

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050721.D
Acq On : 7 May 2019 11:25 pm
Operator : TB
Sample : 9E07048-CAL8
Misc : 1X 20ppb VOC MeOH
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:45 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19

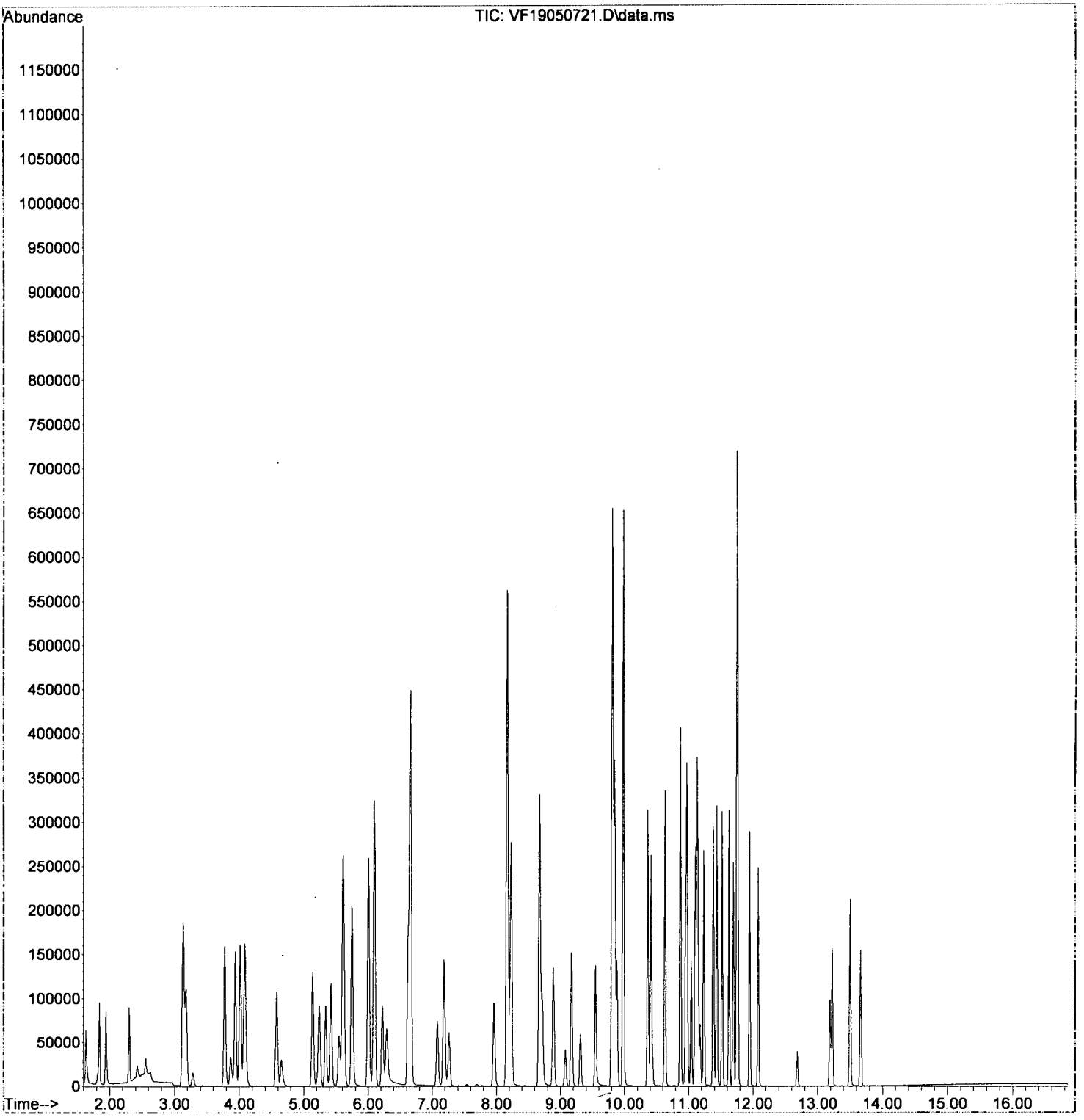
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.820	112	130501	20.00	ug/L		98
50) Ethylbenzene	9.845	91	225958	20.00	ug/L		97
51) 1,1,1,2-Tetrachloroethane	9.881	131	27384	20.00	ug/L		97
52) m,p-Xylenes (2)	9.979	91	334982	40.00	ug/L		94
53) o-Xylene	10.362	91	157388	20.00	ug/L		97
54) Styrene	10.411	104	110271	19.89	ug/L		93
55) Bromoform	10.435	173	12454	20.00	ug/L		96
56) Isopropylbenzene	10.630	105	187296	20.00	ug/L		97
59) Bromobenzene	10.952	156	47722	20.00	ug/L		86
60) n-Propylbenzene	10.970	91	214448	20.00	ug/L		96
61) 1,1,2,2-Tetrachloroethane	11.037	83	55658	20.00	ug/L		98
62) 2-Chlorotoluene	11.104	126	42696	20.00	ug/L		85
63) 1,3,5-Trimethylbenzene	11.128	105	146436	20.00	ug/L		97
64) 1,2,3-Trichloropropane	11.147	110	20933	20.00	ug/L	#	76
65) t-1,4-Dichloro-2-butene	11.177	88	3834	20.00	ug/L	#	63
66) 4-Chlorotoluene	11.232	91	129493	20.00	ug/L		95
67) tert-Butylbenzene	11.378	91	82417	20.00	ug/L		87
68) 1,2,4-Trimethylbenzene	11.439	105	148515	20.00	ug/L		100
69) sec-Butylbenzene	11.518	105	171858	20.00	ug/L		98
70) 4-Isopropyltoluene	11.627	119	141976	20.00	ug/L		97
71) 1,3-Dichlorobenzene	11.694	146	82474	20.00	ug/L		97
72) 1,4-Dichlorobenzene	11.761	146	85622	20.00	ug/L		98
73) n-Butylbenzene	11.944	91	121885	20.00	ug/L		96
74) 1,2-Dichlorobenzene	12.077	146	79323	20.00	ug/L		98
75) 1,2-Dibromo-3-Chloropr...	12.686	157	6583	20.00	ug/L	#	44
76) Hexachlorobutadiene	13.191	223	11108	20.00	ug/L		99
77) 1,2,4-Trichlorobenzene	13.227	180	44542	20.00	ug/L		99
78) Naphthalene	13.501	128	148411	20.00	ug/L		99
79) 1,2,3-Trichlorobenzene	13.665	180	45148	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\9E07048\
Data File : VF19050721.D
Acq On : 7 May 2019 11:25 pm
Operator : TB
Sample : 9E07048-CAL8
Misc : 1X 20ppb VOC MeOH
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:45 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050722.D
Acq On : 7 May 2019 11:52 pm
Operator : TB
Sample : 9E07048-CAL9
Misc : 1X 50ppb VOC MeOH
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:47 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.092	168	267251	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	329813	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.750	152	153580	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.605	111	111422	49.16	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.658	114	412030	49.75	ug/L		0.00
39) Toluene-d8 (S)	8.167	98	467669	46.29	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.868	174	117904	50.52	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.621	85	142427	56.17	ug/L		98
3) Chloromethane	1.834	50	191344	51.30	ug/L		98
4) Vinyl Chloride	1.931	62	198169	53.59	ug/L		96
5) Bromomethane	2.290	96	111651	50.66	ug/L		97
6) Chloroethane	2.418	64	25200	49.75	ug/L		89
7) Trichlorofluoromethane	2.545	101	32243	48.24	ug/L		98
8) 1,1-Dichloroethene	3.123	61	240834	49.60	ug/L		80
9) Carbon Disulfide	3.136	76	331432	57.26	ug/L		99
10) Freon 113	3.172	101	147538	50.45	ug/L		82
11) Iodomethane	3.282	142	85623	80.78	ug/L		91
12) Methylene Chloride	3.768	84	158529	41.21	ug/L		88
13) Acetone	3.853	43	131619	89.79	ug/L		93
14) t-1,2-Dichloroethene	3.932	61	234688	49.15	ug/L		96
15) n-Hexane	4.012	86	35578	46.17	ug/L	#	85
16) Methyl-tert-butyl-ether	4.072	73	465822	49.58	ug/L		98
17) 1,1-Dichloroethane	4.571	63	295880	48.03	ug/L		98
18) Acrylonitrile	4.644	53	77245	48.64	ug/L		97
19) c-1,2-Dichloroethene	5.131	61	219981	48.50	ug/L		92
20) 2,2-Dichloropropane	5.234	77	162582	53.47	ug/L		89
21) Bromochloromethane	5.332	49	126903	47.08	ug/L		89
22) Chloroform	5.417	83	264234	49.03	ug/L		96
23) Carbon Tetrachloride	5.545	117	126590	59.72	ug/L		96
24) Tetrahydrofuran	5.587	42	74940	46.77	ug/L		95
25) 1,1,1-Trichloroethane	5.618	97	215695	54.52	ug/L		96
27) 1,1-Dichloropropene	5.745	75	224805	50.31	ug/L		98
28) 2-Butanone (MEK)	5.739	43	207080	94.94	ug/L		97
29) Benzene	6.001	78	656370	48.14	ug/L		97
30) 1,2-Dichloroethane (EDC)	6.220	62	220556	47.06	ug/L		98
31) iso-Butyl Alcohol	6.275	43	199734	1465.36	ug/L		96
33) Trichloroethene (TCE)	6.621	130	163754	49.82	ug/L		95
34) Dibromomethane	7.078	93	86980	49.80	ug/L		89
35) 1,2-Dichloropropane	7.181	63	161209	49.46	ug/L		98
36) Bromodichloromethane	7.260	83	144826	58.91	ug/L		97
38) c-1,3-Dichloropropene	7.960	75	189721	52.24	ug/L		89
40) Toluene	8.221	91	652612	46.42	ug/L		99
41) Tetrachloroethene (PCE)	8.671	166	156090	46.00	ug/L		92
42) 4-Methyl-2-Pentanone (...	8.671	43	398605	96.69	ug/L		95
43) t-1,3-Dichloropropene	8.714	75	174126	55.79	ug/L		95
44) 1,1,2-Trichloroethane	8.884	97	128440	46.31	ug/L		95
45) Dibromochloromethane	9.073	129	86639	61.44	ug/L		96
46) 1,3-Dichloropropane	9.170	76	243237	45.84	ug/L		91
47) 1,2-Dibromoethane (EDB)	9.310	107	128621	50.18	ug/L		99
48) 2-Hexanone	9.541	43	280127	101.20	ug/L		94

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050722.D
Acq On : 7 May 2019 11:52 pm
Operator : TB
Sample : 9E07048-CAL9
Misc : 1X 50ppb VOC MeOH
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:47 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

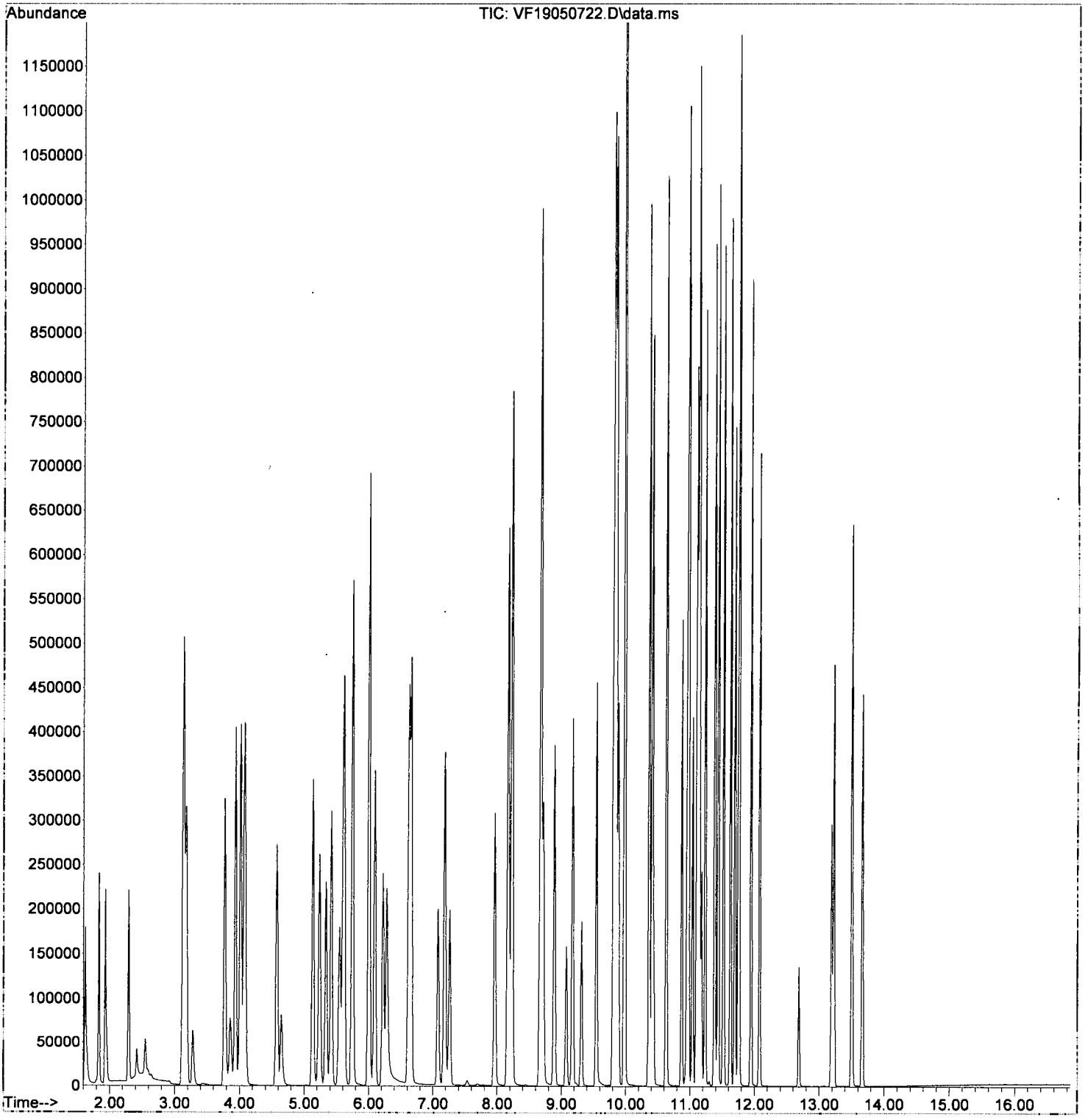
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.821	112	392199	50.04	ug/L		98
50) Ethylbenzene	9.846	91	684347	50.42	ug/L		97
51) 1,1,1,2-Tetrachloroethane	9.882	131	99762	60.65	ug/L		99
52) m,p-Xylenes (2)	9.979	91	1024139	101.80	ug/L		97
53) o-Xylene	10.363	91	494845	52.35	ug/L		97
54) Styrene	10.411	104	367293	55.14	ug/L		95
55) Bromoform	10.436	173	50592	67.63	ug/L		99
56) Isopropylbenzene	10.630	105	585625	52.06	ug/L		99
59) Bromobenzene	10.953	156	145102	50.32	ug/L		89
60) n-Propylbenzene	10.971	91	668617	51.60	ug/L		96
61) 1,1,2,2-Tetrachloroethane	11.038	83	165500	49.21	ug/L		99
62) 2-Chlorotoluene	11.099	126	133819	51.87	ug/L	#	80
63) 1,3,5-Trimethylbenzene	11.129	105	457542	51.71	ug/L		98
64) 1,2,3-Trichloropropane	11.147	110	60249	47.63	ug/L	#	81
65) t-1,4-Dichloro-2-butene	11.178	88	16499	71.22	ug/L		93
66) 4-Chlorotoluene	11.233	91	401605	51.33	ug/L		97
67) tert-Butylbenzene	11.379	91	255683	51.34	ug/L		87
68) 1,2,4-Trimethylbenzene	11.433	105	457137	50.94	ug/L		98
69) sec-Butylbenzene	11.519	105	532289	51.26	ug/L		98
70) 4-Isopropyltoluene	11.628	119	446740	52.08	ug/L		98
71) 1,3-Dichlorobenzene	11.695	146	248657	49.90	ug/L		98
72) 1,4-Dichlorobenzene	11.762	146	254182	49.13	ug/L		99
73) n-Butylbenzene	11.944	91	379675	51.55	ug/L		96
74) 1,2-Dichlorobenzene	12.078	146	232496	48.51	ug/L		99
75) 1,2-Dibromo-3-Chloropr...	12.687	157	26288	66.09	ug/L		77
76) Hexachlorobutadiene	13.191	223	33246	49.53	ug/L		98
77) 1,2,4-Trichlorobenzene	13.222	180	133873	49.74	ug/L		98
78) Naphthalene	13.502	128	456299	50.88	ug/L		99
79) 1,2,3-Trichlorobenzene	13.666	180	132079	48.42	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050722.D
Acq On : 7 May 2019 11:52 pm
Operator : TB
Sample : 9E07048-CAL9
Misc : 1X 50ppb VOC MeOH
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:47 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050723.D
Acq On : 8 May 2019 12:19 am
Operator : TB
Sample : 9E07048-IBL2
Misc : 1X 5mL DI+MeOH
ALS Vial : 13 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:18 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

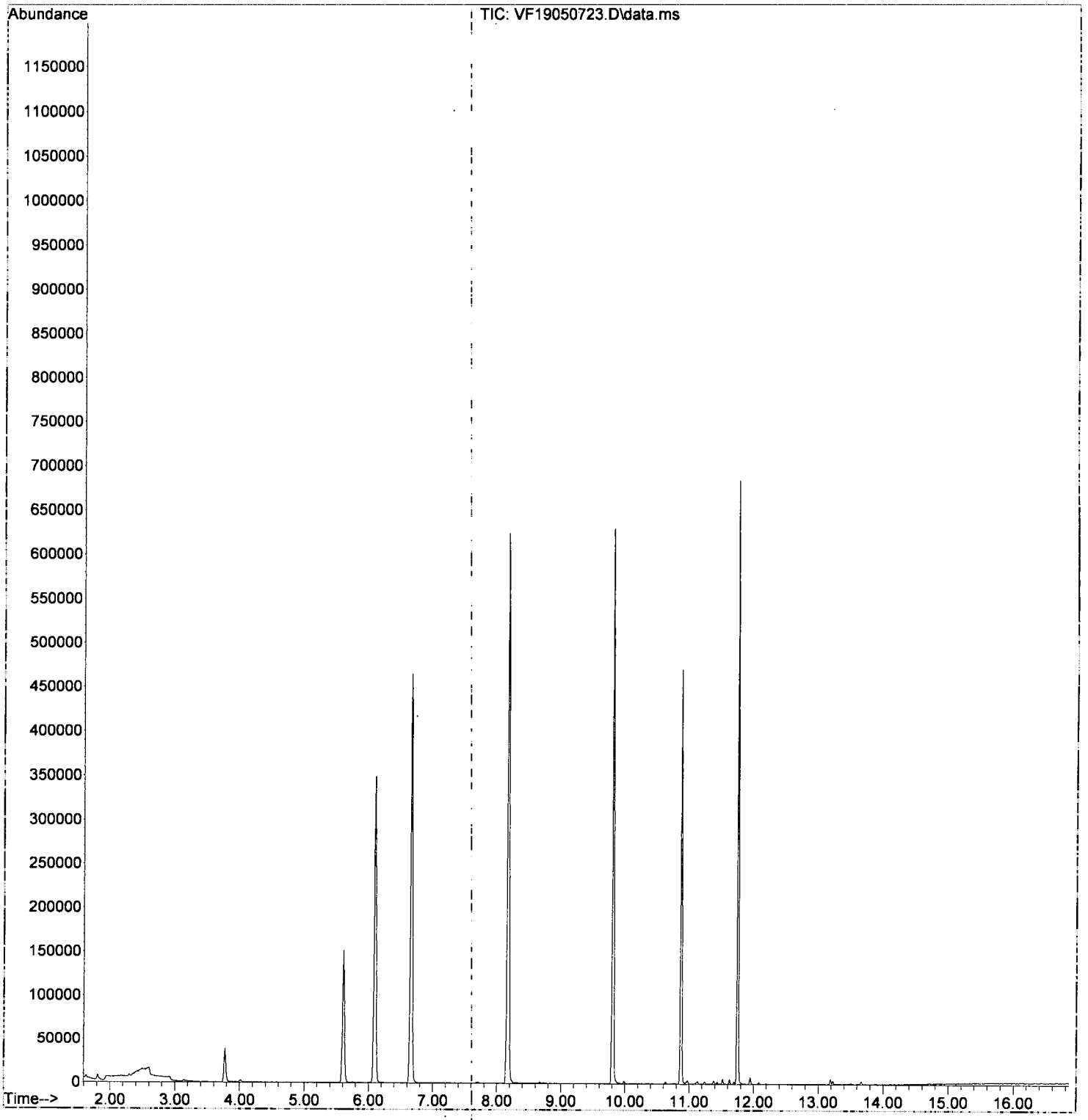
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.096	168	267959	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.807	117	327429	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.748	152	140340	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.604	111	101432	47.18	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.656	114	412382	49.81	ug/L		0.00
39) Toluene-d8 (S)	8.165	98	473267	48.89	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.872	174	113704	52.62	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.625	85	356	0.14	ug/L		82
3) Chloromethane	1.838	50	631	0.17	ug/L		86
5) Bromomethane	2.300	96	1170	0.52	ug/L		89
9) Carbon Disulfide	3.146	76	1804	0.53	ug/L		86
10) Freon 113	3.170	101	608	0.22	ug/L	#	69
11) Iodomethane	3.286	142	410	1.40	ug/L	#	83
12) Methylene Chloride	3.772	84	18030	1.33	ug/L		87
13) Acetone	3.864	43	1398	1.02	ug/L		80
14) t-1,2-Dichloroethene	3.937	61	613	0.14	ug/L		98
27) 1,1-Dichloropropene	5.743	75	565	0.14	ug/L	#	66
28) 2-Butanone (MEK)	5.756	43	215	0.10	ug/L		54
33) Trichloroethene (TCE)	6.620	130	345	0.11	ug/L	#	79
41) Tetrachloroethene (PCE)	8.676	166	632	0.21	ug/L		92
49) Chlorobenzene	9.819	112	921	0.12	ug/L	#	1
50) Ethylbenzene	9.850	91	1271	0.10	ug/L		84
52) m,p-Xylenes (2)	9.984	91	2009	0.22	ug/L		98
54) Styrene	10.416	104	346	0.24	ug/L	#	41
56) Isopropylbenzene	10.629	105	1471	0.15	ug/L		96
59) Bromobenzene	10.957	156	230	0.09	ug/L	#	78
60) n-Propylbenzene	10.975	91	2680	0.24	ug/L		99
62) 2-Chlorotoluene	11.109	126	287	0.13	ug/L	#	74
63) 1,3,5-Trimethylbenzene	11.133	105	1491	0.21	ug/L		96
66) 4-Chlorotoluene	11.237	91	1122	0.17	ug/L		91
67) tert-Butylbenzene	11.377	91	1260	0.30	ug/L		79
68) 1,2,4-Trimethylbenzene	11.438	105	1366	0.19	ug/L		91
69) sec-Butylbenzene	11.517	105	3620	0.42	ug/L		91
70) 4-Isopropyltoluene	11.626	119	2751	0.38	ug/L		94
71) 1,3-Dichlorobenzene	11.699	146	1117	0.26	ug/L		92
72) 1,4-Dichlorobenzene	11.760	146	1279	0.27	ug/L	#	75
73) n-Butylbenzene	11.949	91	3906	0.63	ug/L		94
74) 1,2-Dichlorobenzene	12.082	146	687	0.17	ug/L		92
76) Hexachlorobutadiene	13.190	223	621	1.08	ug/L		96
77) 1,2,4-Trichlorobenzene	13.226	180	1342	0.62	ug/L		86
78) Naphthalene	13.500	128	1186	0.55	ug/L		80
79) 1,2,3-Trichlorobenzene	13.664	180	1151	0.52	ug/L	#	68

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050723.D
Acq On : 8 May 2019 12:19 am
Operator : TB
Sample : 9E07048-IBL2
Misc : 1X 5mL DI+MeOH
ALS Vial : 13 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:18 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050724.D
Acq On : 8 May 2019 12:46 am
Operator : TB
Sample : 9E07048-CALA
Misc : 1X 100ppb VOC MeOH
ALS Vial : 14 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:49 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.096	168	283012	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.807	117	334077	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.747	152	156244	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.603	111	121970	50.82	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.655	114	434050	49.49	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	488712	47.76	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.871	174	115967	48.84	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.630	85	284874	106.10	ug/L		97
3) Chloromethane	1.843	50	382793	96.91	ug/L		98
4) Vinyl Chloride	1.941	62	379506	96.91	ug/L		97
5) Bromomethane	2.300	96	198553	85.08	ug/L		98
6) Chloroethane	2.427	64	44440	82.85	ug/L		92
7) Trichlorofluoromethane	2.555	101	61776	87.29	ug/L		99
8) 1,1-Dichloroethene	3.127	61	484753	94.28	ug/L		81
9) Carbon Disulfide	3.139	76	729573	119.02	ug/L		99
10) Freon 113	3.176	101	298770	96.48	ug/L		84
11) Iodomethane	3.279	142	183342	163.35	ug/L		92
12) Methylene Chloride	3.772	84	303916	74.60	ug/L		89
13) Acetone	3.863	43	275471	177.46	ug/L		95
14) t-1,2-Dichloroethene	3.936	61	486614	96.24	ug/L		98
15) n-Hexane	4.015	86	73671	90.29	ug/L	#	90
16) Methyl-tert-butyl-ether	4.082	73	966419	97.13	ug/L		98
17) 1,1-Dichloroethane	4.575	63	579727	88.86	ug/L		98
18) Acrylonitrile	4.648	53	161749	96.17	ug/L		98
19) c-1,2-Dichloroethene	5.135	61	453832	94.48	ug/L		94
20) 2,2-Dichloropropane	5.238	77	344765	107.08	ug/L		91
21) Bromochloromethane	5.335	49	257506	90.22	ug/L		91
22) Chloroform	5.420	83	548790	96.16	ug/L		96
23) Carbon Tetrachloride	5.548	117	296253	131.97	ug/L		96
24) Tetrahydrofuran	5.591	42	159679	94.11	ug/L		94
25) 1,1,1-Trichloroethane	5.615	97	465951	111.22	ug/L		96
27) 1,1-Dichloropropene	5.743	75	469859	99.30	ug/L		98
28) 2-Butanone (MEK)	5.743	43	437402	189.37	ug/L		95
29) Benzene	6.004	78	1353074	93.72	ug/L		97
30) 1,2-Dichloroethane (EDC)	6.223	62	450418	90.75	ug/L		98
31) iso-Butyl Alcohol	6.290	43	517270	3583.63	ug/L		93
33) Trichloroethene (TCE)	6.619	130	340985	97.96	ug/L		93
34) Dibromomethane	7.075	93	183362	99.13	ug/L		88
35) 1,2-Dichloropropane	7.179	63	333077	96.50	ug/L		100
36) Bromodichloromethane	7.258	83	330159	126.82	ug/L		99
38) c-1,3-Dichloropropene	7.963	75	428450	116.47	ug/L		91
40) Toluene	8.225	91	1331277	93.49	ug/L		99
41) Tetrachloroethene (PCE)	8.669	166	325857	94.80	ug/L		91
42) 4-Methyl-2-Pentanone (...	8.675	43	838408	200.79	ug/L		96
43) t-1,3-Dichloropropene	8.712	75	395344	125.06	ug/L		95
44) 1,1,2-Trichloroethane	8.888	97	262681	93.51	ug/L		94
45) Dibromochloromethane	9.077	129	209789	146.88	ug/L		96
46) 1,3-Dichloropropane	9.174	76	499607	92.95	ug/L		93
47) 1,2-Dibromoethane (EDB)	9.308	107	274641	105.78	ug/L		98
48) 2-Hexanone	9.545	43	591216	210.86	ug/L		95

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050724.D
Acq On : 8 May 2019 12:46 am
Operator : TB
Sample : 9E07048-CALA
Misc : 1X 100ppb VOC MeOH
ALS Vial : 14 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:49 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

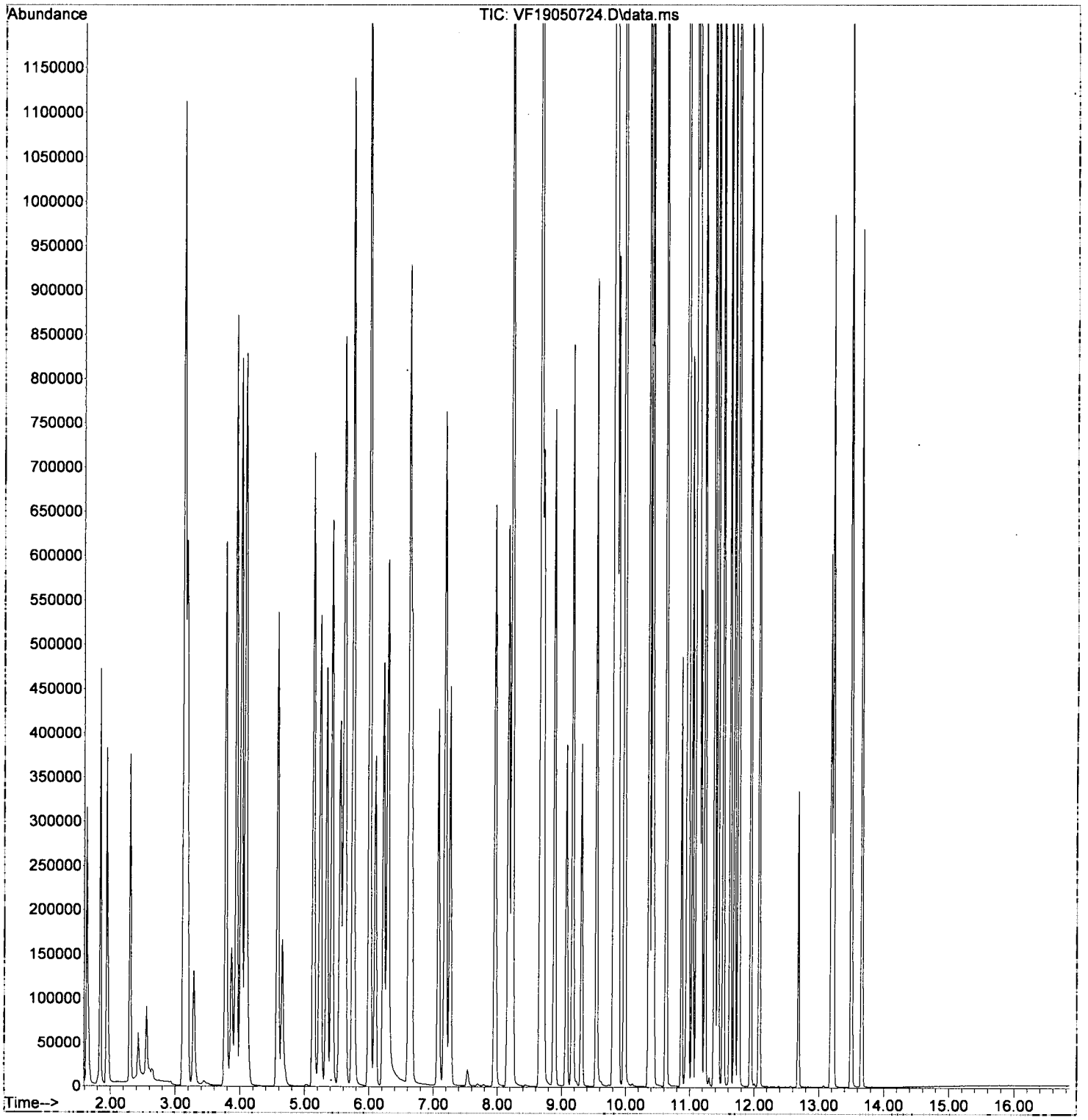
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) Chlorobenzene	9.819	112	775570	97.68	ug/L	98
50) Ethylbenzene	9.843	91	1355629	98.61	ug/L	97
51) 1,1,1,2-Tetrachloroethane	9.880	131	228768	137.31	ug/L	98
52) m,p-Xylenes (2)	9.977	91	2053605	201.53	ug/L	97
53) o-Xylene	10.360	91	977297	102.06	ug/L	97
54) Styrene	10.409	104	736185	109.11	ug/L	94
55) Bromoform	10.433	173	132822	175.29	ug/L	98
56) Isopropylbenzene	10.628	105	1158047	101.63	ug/L	98
59) Bromobenzene	10.956	156	284944	97.13	ug/L	94
60) n-Propylbenzene	10.975	91	1317712	99.96	ug/L	98
61) 1,1,2,2-Tetrachloroethane	11.036	83	342106	99.99	ug/L	97
62) 2-Chlorotoluene	11.102	126	259978	99.06	ug/L	86
63) 1,3,5-Trimethylbenzene	11.127	105	898558	99.82	ug/L	97
64) 1,2,3-Trichloropropane	11.145	110	123481	95.96	ug/L	82
65) t-1,4-Dichloro-2-butene	11.175	88	40002	169.73	ug/L	97
66) 4-Chlorotoluene	11.236	91	778535	97.80	ug/L	99
67) tert-Butylbenzene	11.382	91	498695	98.43	ug/L	92
68) 1,2,4-Trimethylbenzene	11.437	105	897125	98.27	ug/L	99
69) sec-Butylbenzene	11.516	105	1046840	99.09	ug/L	97
70) 4-Isopropyltoluene	11.626	119	875955	100.37	ug/L	97
71) 1,3-Dichlorobenzene	11.693	146	483440	95.36	ug/L	97
72) 1,4-Dichlorobenzene	11.759	146	493681	93.80	ug/L	98
73) n-Butylbenzene	11.942	91	753712	100.60	ug/L	95
74) 1,2-Dichlorobenzene	12.076	146	456101	93.54	ug/L	98
75) 1,2-Dibromo-3-Chloropr...	12.684	157	68037	168.13	ug/L	81
76) Hexachlorobutadiene	13.189	223	64806	94.91	ug/L	99
77) 1,2,4-Trichlorobenzene	13.226	180	280911	102.60	ug/L	98
78) Naphthalene	13.499	128	996167	109.19	ug/L	99
79) 1,2,3-Trichlorobenzene	13.664	180	277018	99.82	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050724.D
Acq On : 8 May 2019 12:46 am
Operator : TB
Sample : 9E07048-CALA
Misc : 1X 100ppb VOC MeOH
ALS Vial : 14 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:49 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050725.D
Acq On : 8 May 2019 1:13 am
Operator : TB
Sample : 9E07048-IBL3
Misc : 1X 5mL DI+MeOH
ALS Vial : 15 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:20 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.092	168	267819	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	300406	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.750	152	129798	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.606	111	103935	48.37	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.658	114	407507	49.25	ug/L		0.00
39) Toluene-d8 (S)	8.167	98	457064	51.46	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.868	174	103098	51.59	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.627	85	841	0.34	ug/L		95
3) Chloromethane	1.840	50	1886	0.52	ug/L		95
4) Vinyl Chloride	1.937	62	505	0.14	ug/L		72
5) Bromomethane	2.296	96	3276	1.47	ug/L		95
8) 1,1-Dichloroethene	3.124	61	596	0.13	ug/L		72
9) Carbon Disulfide	3.136	76	3483	0.81	ug/L		95
10) Freon 113	3.166	101	1261	0.45	ug/L	#	61
11) Iodomethane	3.282	142	1041	1.92	ug/L	#	86
12) Methylene Chloride	3.768	84	8317	Below Cal			96
13) Acetone	3.866	43	1199	0.87	ug/L		92
14) t-1,2-Dichloroethene	3.939	61	1053	0.24	ug/L		93
15) n-Hexane	4.012	86	287	0.37	ug/L		93
19) c-1,2-Dichloroethene	5.143	61	537	0.13	ug/L	#	67
22) Chloroform	5.423	83	664	0.13	ug/L		78
27) 1,1-Dichloropropene	5.752	75	946	0.23	ug/L		87
28) 2-Butanone (MEK)	5.764	43	528	0.26	ug/L		54
29) Benzene	6.013	78	1091	0.08	ug/L		80
33) Trichloroethene (TCE)	6.622	130	639	0.20	ug/L	#	73
40) Toluene	8.222	91	2295	0.18	ug/L		81
41) Tetrachloroethene (PCE)	8.672	166	986	0.35	ug/L	#	59
49) Chlorobenzene	9.815	112	1330	0.18	ug/L	#	1
50) Ethylbenzene	9.852	91	2251	0.19	ug/L		95
52) m,p-Xylenes (2)	9.986	91	3417	0.40	ug/L		95
53) o-Xylene	10.363	91	1103	0.14	ug/L		93
54) Styrene	10.412	104	460	0.26	ug/L		77
56) Isopropylbenzene	10.631	105	2232	0.24	ug/L		93
59) Bromobenzene	10.959	156	407	0.17	ug/L		89
60) n-Propylbenzene	10.977	91	4531	0.44	ug/L		99
62) 2-Chlorotoluene	11.099	126	549	0.26	ug/L		94
63) 1,3,5-Trimethylbenzene	11.129	105	2507	0.37	ug/L		94
66) 4-Chlorotoluene	11.239	91	2205	0.36	ug/L		96
67) tert-Butylbenzene	11.379	91	2213	0.57	ug/L	#	72
68) 1,2,4-Trimethylbenzene	11.440	105	2296	0.34	ug/L		92
69) sec-Butylbenzene	11.519	105	6114	0.76	ug/L		96
70) 4-Isopropyltoluene	11.628	119	4723	0.71	ug/L		94
71) 1,3-Dichlorobenzene	11.695	146	1746	0.44	ug/L		89
72) 1,4-Dichlorobenzene	11.762	146	2056	0.47	ug/L		83
73) n-Butylbenzene	11.945	91	6696	1.17	ug/L		97
74) 1,2-Dichlorobenzene	12.078	146	1157	0.31	ug/L		88
76) Hexachlorobutadiene	13.192	223	1162	2.18	ug/L		90
77) 1,2,4-Trichlorobenzene	13.228	180	2579	1.28	ug/L		96
78) Naphthalene	13.502	128	2246	0.69	ug/L		97
79) 1,2,3-Trichlorobenzene	13.660	180	2292	1.12	ug/L		82

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050725.D
Acq On : 8 May 2019 1:13 am
Operator : TB
Sample : 9E07048-IBL3
Misc : 1X 5mL DI+MeOH
ALS Vial : 15 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:20 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

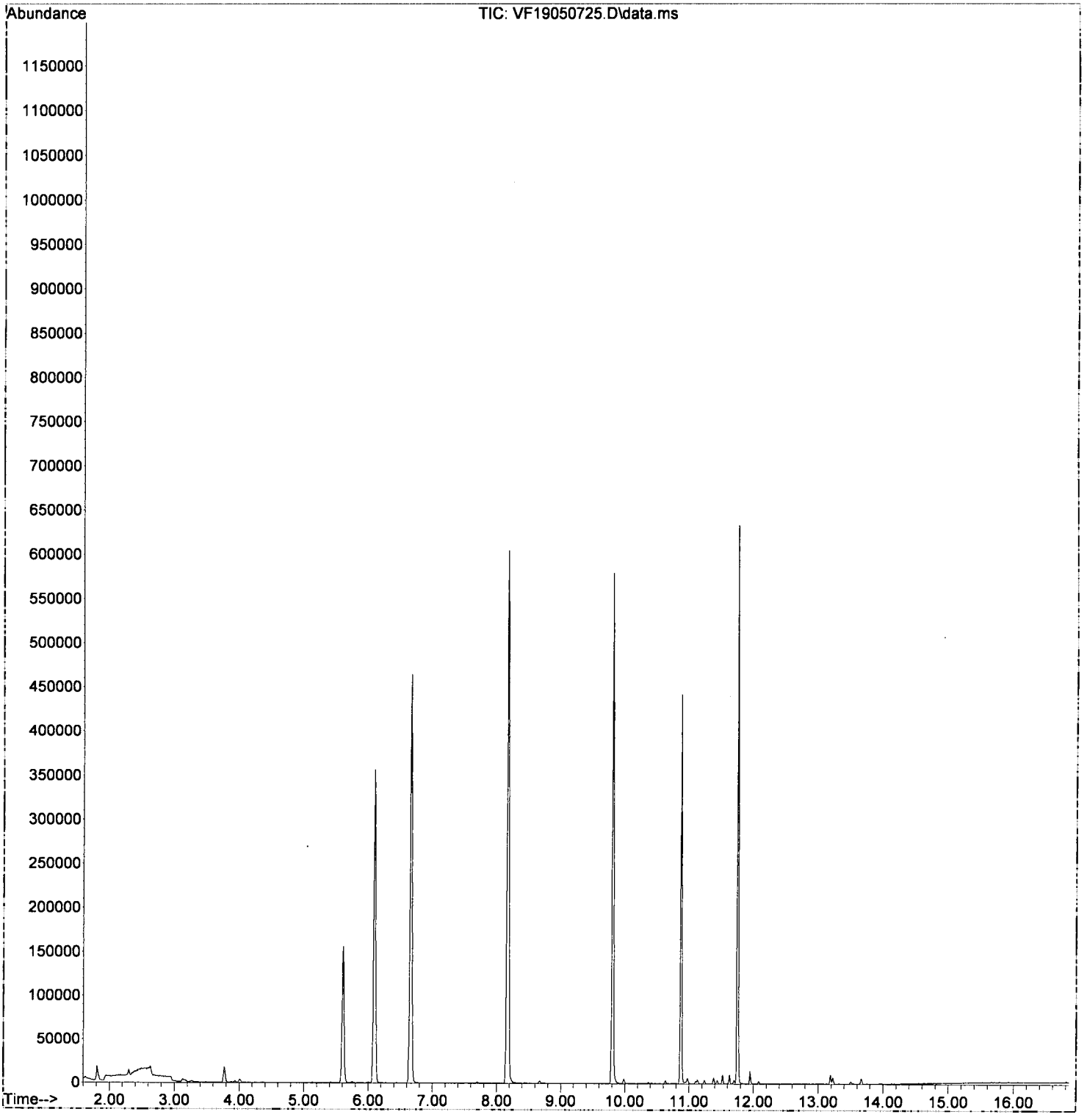
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050725.D
Acq On : 8 May 2019 1:13 am
Operator : TB
Sample : 9E07048-IBL3
Misc : 1X 5mL DI+MeOH
ALS Vial : 15 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:20 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050726.D
Acq On : 8 May 2019 1:40 am
Operator : TB
Sample : 9E07048-CALB
Misc : 1X 200ppb VOC MeOH
ALS Vial : 16 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:51 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.095	168	292078	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.806	117	382482	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.752	152	185657	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.602	111	133184	53.77	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.660	114	462700	51.12	ug/L		0.00
39) Toluene-d8 (S)	8.169	98	514201	43.89	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.870	174	136770	48.48	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.629	85	615567	222.14	ug/L		98
3) Chloromethane	1.842	50	771027	189.15	ug/L		97
4) Vinyl Chloride	1.934	62	840125	207.87	ug/L		96
5) Bromomethane	2.299	96	450898	187.21	ug/L		96
6) Chloroethane	2.426	64	99955	180.57	ug/L		96
7) Trichlorofluoromethane	2.554	101	134796	184.55	ug/L		97
8) 1,1-Dichloroethene	3.126	61	1060537	199.87	ug/L		81
9) Carbon Disulfide	3.144	76	1674733	264.74	ug/L		99
10) Freon 113	3.181	101	654791	204.88	ug/L		84
11) Iodomethane	3.284	142	519037	448.08	ug/L		91
12) Methylene Chloride	3.771	84	635093	151.05	ug/L		89
13) Acetone	3.856	43	571223	356.57	ug/L		96
14) t-1,2-Dichloroethene	3.935	61	1047640	200.76	ug/L		97
15) n-Hexane	4.014	86	154767	183.79	ug/L	#	92
16) Methyl-tert-butyl-ether	4.075	73	2232152	217.37	ug/L		97
17) 1,1-Dichloroethane	4.580	63	1166202	173.21	ug/L		97
18) Acrylonitrile	4.647	53	345965	199.32	ug/L		98
19) c-1,2-Dichloroethene	5.134	61	947367	191.11	ug/L		94
20) 2,2-Dichloropropane	5.237	77	789087	237.46	ug/L		96
21) Bromochloromethane	5.334	49	554716	188.31	ug/L		90
22) Chloroform	5.419	83	1199142	203.59	ug/L		97
23) Carbon Tetrachloride	5.547	117	741698	320.15	ug/L		96
24) Tetrahydrofuran	5.590	42	344689	196.85	ug/L		94
25) 1,1,1-Trichloroethane	5.620	97	1056735	244.42	ug/L		97
27) 1,1-Dichloropropene	5.748	75	1023128	209.51	ug/L		99
28) 2-Butanone (MEK)	5.742	43	960855	403.09	ug/L		97
29) Benzene	6.003	78	2947348	197.80	ug/L		97
30) 1,2-Dichloroethane (EDC)	6.222	62	981773	191.66	ug/L		98
31) iso-Butyl Alcohol	6.277	43	1148494	7709.75	ug/L		93
33) Trichloroethene (TCE)	6.624	130	754687	210.08	ug/L		95
34) Dibromomethane	7.074	93	413632	216.68	ug/L		87
35) 1,2-Dichloropropane	7.184	63	726418	203.93	ug/L		99
36) Bromodichloromethane	7.257	83	802244	298.59	ug/L		99
38) c-1,3-Dichloropropene	7.962	75	1015167	241.04	ug/L		92
40) Toluene	8.224	91	2874760	176.33	ug/L		100
41) Tetrachloroethene (PCE)	8.674	166	718860	182.66	ug/L		95
42) 4-Methyl-2-Pentanone (...	8.674	43	1832267	383.27	ug/L		98
43) t-1,3-Dichloropropene	8.711	75	955479	263.99	ug/L		96
44) 1,1,2-Trichloroethane	8.887	97	582929	181.25	ug/L		94
45) Dibromochloromethane	9.076	129	540275	330.39	ug/L		96
46) 1,3-Dichloropropane	9.173	76	1091475	177.36	ug/L		94
47) 1,2-Dibromoethane (EDB)	9.307	107	608559	204.72	ug/L		99
48) 2-Hexanone	9.538	43	1304670	406.43	ug/L		96

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050726.D
Acq On : 8 May 2019 1:40 am
Operator : TB
Sample : 9E07048-CALB
Misc : 1X 200ppb VOC MeOH
ALS Vial : 16 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:51 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49)	Chlorobenzene	9.818	112	1783488	196.20	ug/L		96
50)	Ethylbenzene	9.842	91	3128616	198.78	ug/L		98
51)	1,1,1,2-Tetrachloroethane	9.879	131	559200	293.16	ug/L		99
52)	m,p-Xylenes (2)	9.982	91	4916984	421.45	ug/L		100
53)	o-Xylene	10.359	91	2329915	212.52	ug/L		97
54)	Styrene	10.408	104	1826906	236.51	ug/L		94
55)	Bromoform	10.432	173	365594	421.44	ug/L		98
56)	Isopropylbenzene	10.627	105	2723392	208.75	ug/L		99
59)	Bromobenzene	10.955	156	686712	197.00	ug/L		92
60)	n-Propylbenzene	10.974	91	3112598	198.71	ug/L		99
61)	1,1,2,2-Tetrachloroethane	11.041	83	754067	185.48	ug/L		99
62)	2-Chlorotoluene	11.101	126	630374	202.13	ug/L		87
63)	1,3,5-Trimethylbenzene	11.132	105	2203355	205.99	ug/L		98
64)	1,2,3-Trichloropropane	11.144	110	276178	180.62	ug/L	#	80
65)	t-1,4-Dichloro-2-butene	11.174	88	106408	379.96	ug/L	#	89
66)	4-Chlorotoluene	11.235	91	1869203	197.62	ug/L		99
67)	tert-Butylbenzene	11.381	91	1185300	196.89	ug/L		93
68)	1,2,4-Trimethylbenzene	11.436	105	2164127	199.50	ug/L		99
69)	sec-Butylbenzene	11.515	105	2466612	196.49	ug/L		98
70)	4-Isopropyltoluene	11.625	119	2110691	203.53	ug/L		97
71)	1,3-Dichlorobenzene	11.692	146	1158673	192.34	ug/L		97
72)	1,4-Dichlorobenzene	11.758	146	1176777	188.16	ug/L		98
73)	n-Butylbenzene	11.947	91	1754778	197.10	ug/L		98
74)	1,2-Dichlorobenzene	12.075	146	1085241	187.30	ug/L		99
75)	1,2-Dibromo-3-Chloropr...	12.683	157	171676	357.03	ug/L		86
76)	Hexachlorobutadiene	13.188	223	148043	182.46	ug/L		98
77)	1,2,4-Trichlorobenzene	13.225	180	638432	196.23	ug/L		99
78)	Naphthalene	13.498	128	2228594	205.58	ug/L		99
79)	1,2,3-Trichlorobenzene	13.663	180	614270	186.27	ug/L		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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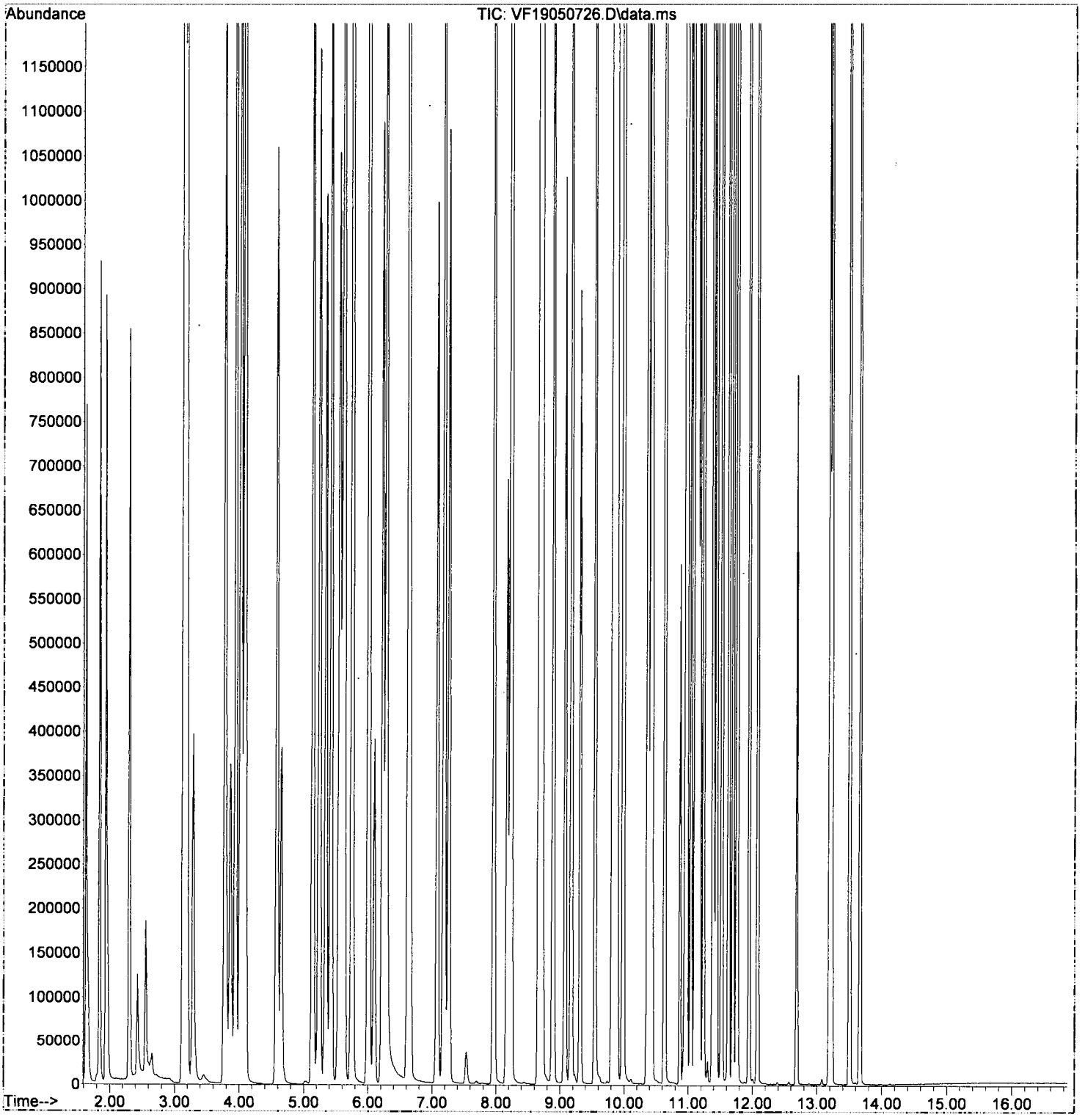
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050726.D
Acq On : 8 May 2019 1:40 am
Operator : TB
Sample : 9E07048-CALB
Misc : 1X 200ppb VOC MeOH
ALS Vial : 16 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 10:24:51 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 10:23:41 2019
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050727.D
Acq On : 8 May 2019 2:07 am
Operator : TB
Sample : 9E07048-IBL4
Misc : 1X 5mL DI+MeOH
ALS Vial : 17 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:22 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.090	168	283178	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.807	117	334560	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.748	152	142077	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.603	111	108613	47.81	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.656	114	429244	49.06	ug/L		0.00
39) Toluene-d8 (S)	8.165	98	491193	49.66	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.872	174	115248	52.68	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.625	85	1945	0.74	ug/L		91
3) Chloromethane	1.832	50	1775	0.46	ug/L		89
4) Vinyl Chloride	1.935	62	946	0.25	ug/L		91
5) Bromomethane	2.294	96	2439	1.03	ug/L		92
7) Trichlorofluoromethane	2.543	101	179	0.27	ug/L		86
8) 1,1-Dichloroethene	3.115	61	1322	0.27	ug/L		73
9) Carbon Disulfide	3.133	76	7486	1.42	ug/L		97
10) Freon 113	3.170	101	2435	0.82	ug/L		86
11) Iodomethane	3.279	142	783	1.67	ug/L	#	71
12) Methylene Chloride	3.772	84	17968	0.98	ug/L		95
13) Acetone	3.870	43	1608	1.11	ug/L	#	42
14) t-1,2-Dichloroethene	3.937	61	2185	0.47	ug/L		93
15) n-Hexane	4.010	86	564	0.69	ug/L	#	70
19) c-1,2-Dichloroethene	5.129	61	818	0.19	ug/L		92
21) Bromochloromethane	5.330	49	303	0.12	ug/L	#	15
22) Chloroform	5.421	83	603	0.11	ug/L		74
23) Carbon Tetrachloride	5.543	117	295	0.71	ug/L		77
24) Tetrahydrofuran	5.597	42	229	0.14	ug/L	#	37
25) 1,1,1-Trichloroethane	5.622	97	399	0.11	ug/L		78
27) 1,1-Dichloropropene	5.743	75	2134	0.49	ug/L		94
28) 2-Butanone (MEK)	5.755	43	762	0.35	ug/L		70
29) Benzene	6.005	78	2241	0.16	ug/L		90
30) 1,2-Dichloroethane (EDC)	6.218	62	597	0.13	ug/L		75
33) Trichloroethene (TCE)	6.631	130	1252	0.38	ug/L	#	83
34) Dibromomethane	7.082	93	307	0.19	ug/L	#	76
38) c-1,3-Dichloropropene	7.964	75	355	0.48	ug/L	#	27
40) Toluene	8.231	91	3293	0.23	ug/L		89
41) Tetrachloroethene (PCE)	8.676	166	2391	0.77	ug/L		97
43) t-1,3-Dichloropropene	8.736	75	360	0.59	ug/L		47
46) 1,3-Dichloropropane	9.174	76	460	0.10	ug/L	#	51
47) 1,2-Dibromoethane (EDB)	9.314	107	158	0.29	ug/L		99
49) Chlorobenzene	9.819	112	2838	0.35	ug/L	#	67
50) Ethylbenzene	9.850	91	4704	0.35	ug/L		96
52) m,p-Xylenes (2)	9.983	91	7426	0.79	ug/L		97
53) o-Xylene	10.367	91	2422	0.27	ug/L		86
54) Styrene	10.409	104	1330	0.38	ug/L		99
56) Isopropylbenzene	10.628	105	5234	0.51	ug/L		95
59) Bromobenzene	10.963	156	887	0.35	ug/L		85
60) n-Propylbenzene	10.975	91	10278	0.91	ug/L		95
62) 2-Chlorotoluene	11.103	126	1184	0.52	ug/L	#	61
63) 1,3,5-Trimethylbenzene	11.127	105	5906	0.80	ug/L		97
66) 4-Chlorotoluene	11.237	91	4684	0.69	ug/L		92
67) tert-Butylbenzene	11.377	91	4968	1.18	ug/L	#	70

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050727.D
Acq On : 8 May 2019 2:07 am
Operator : TB
Sample : 9E07048-IBL4
Misc : 1X 5mL DI+MeOH
ALS Vial : 17 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:22 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

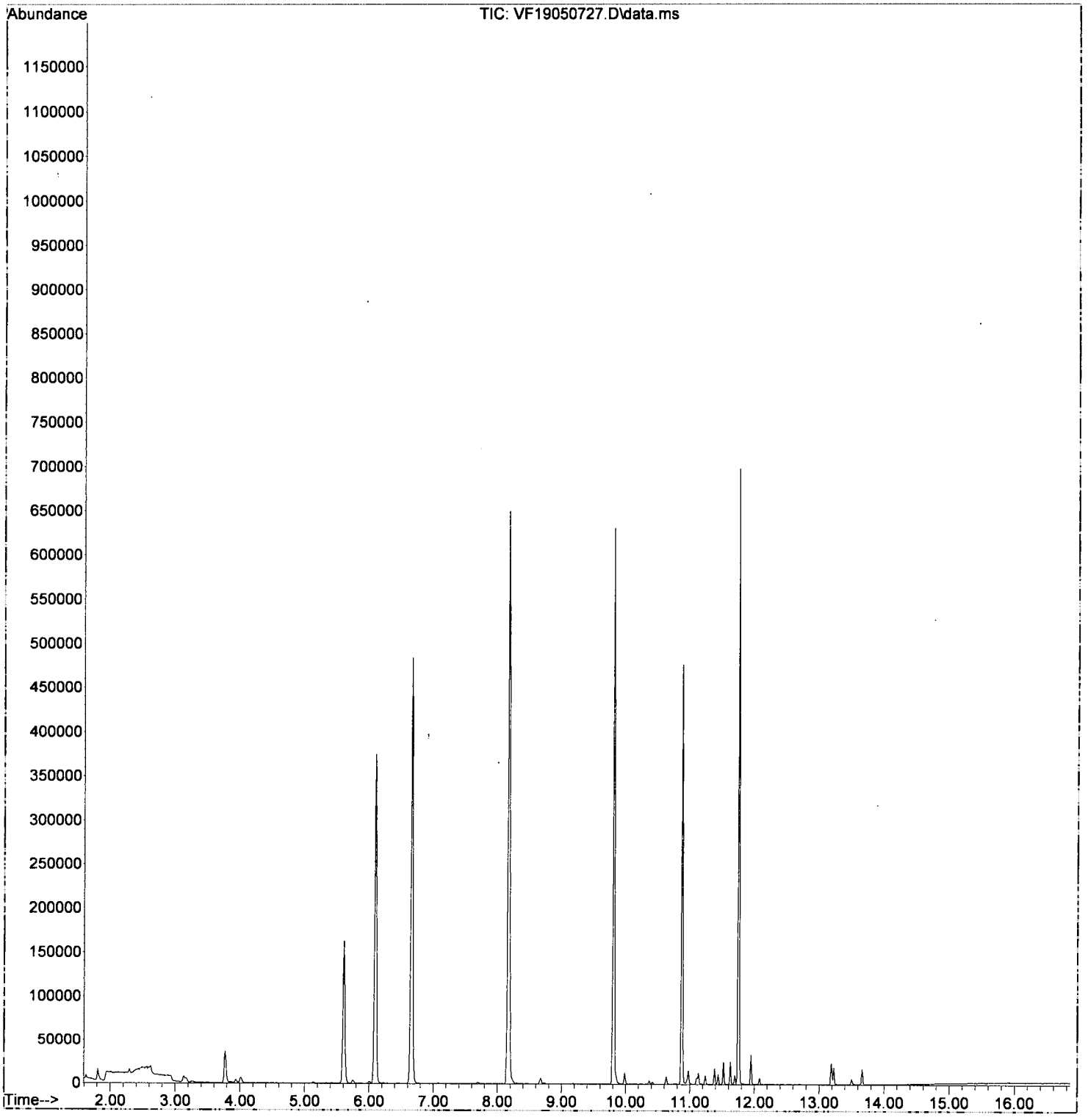
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
68) 1,2,4-Trimethylbenzene	11.437	105	5397	0.73	ug/L	96
69) sec-Butylbenzene	11.517	105	14769	1.68	ug/L	96
70) 4-Isopropyltoluene	11.626	119	11627	1.59	ug/L	95
71) 1,3-Dichlorobenzene	11.693	146	3751	0.86	ug/L	93
72) 1,4-Dichlorobenzene	11.760	146	4398	0.92	ug/L	91
73) n-Butylbenzene	11.942	91	15197	2.43	ug/L	97
74) 1,2-Dichlorobenzene	12.076	146	2583	0.63	ug/L	90
76) Hexachlorobutadiene	13.189	223	2652	4.54	ug/L	95
77) 1,2,4-Trichlorobenzene	13.226	180	5439	2.48	ug/L	95
78) Naphthalene	13.500	128	4569	0.94	ug/L	98
79) 1,2,3-Trichlorobenzene	13.664	180	5094	2.28	ug/L	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050727.D
Acq On : 8 May 2019 2:07 am
Operator : TB
Sample : 9E07048-IBL4
Misc : 1X 5mL DI+MeOH
ALS Vial : 17 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:22 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050728.D
Acq On : 8 May 2019 2:34 am
Operator : TB
Sample : 9E07048-IBL5
Misc : 1X 5mL DI+MeOH
ALS Vial : 18 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

NR

Quant Time: May 08 11:41:24 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.095	168	267878	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.806	117	295788	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.753	152	131412	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.608	111	106516	49.56	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.661	114	410042	49.54	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	458463	52.42	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.871	174	101675	50.25	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.630	85	723	0.29	ug/L		88
3) Chloromethane	1.837	50	2108	0.58	ug/L		93
5) Bromomethane	2.305	96	3673	1.65	ug/L		95
8) 1,1-Dichloroethene	3.126	61	550	0.12	ug/L		82
9) Carbon Disulfide	3.132	76	2990	0.73	ug/L		92
10) Freon 113	3.169	101	1153	0.41	ug/L	#	73
11) Iodomethane	3.278	142	737	1.67	ug/L	#	80
12) Methylene Chloride	3.771	84	17465	1.14	ug/L		87
13) Acetone	3.869	43	1671	1.22	ug/L		90
14) t-1,2-Dichloroethene	3.935	61	780	0.18	ug/L		95
15) n-Hexane	4.015	86	315	0.41	ug/L	#	89
27) 1,1-Dichloropropene	5.742	75	859	0.21	ug/L		81
28) 2-Butanone (MEK)	5.754	43	238	0.12	ug/L		54
33) Trichloroethene (TCE)	6.624	130	412	0.13	ug/L		87
40) Toluene	8.230	91	1316	0.11	ug/L		87
41) Tetrachloroethene (PCE)	8.674	166	829	0.30	ug/L		82
49) Chlorobenzene	9.818	112	1014	0.14	ug/L	#	15
50) Ethylbenzene	9.849	91	1458	0.12	ug/L		90
52) m,p-Xylenes (2)	9.982	91	2303	0.28	ug/L		97
53) o-Xylene	10.366	91	795	0.10	ug/L		84
54) Styrene	10.414	104	374	0.25	ug/L		83
56) Isopropylbenzene	10.633	105	1371	0.15	ug/L		91
59) Bromobenzene	10.956	156	244	0.10	ug/L	#	63
60) n-Propylbenzene	10.974	91	2568	0.24	ug/L		98
62) 2-Chlorotoluene	11.108	126	241	0.11	ug/L	#	79
63) 1,3,5-Trimethylbenzene	11.132	105	1233	0.18	ug/L		100
66) 4-Chlorotoluene	11.242	91	1302	0.21	ug/L		84
67) tert-Butylbenzene	11.382	91	869	0.22	ug/L		89
68) 1,2,4-Trimethylbenzene	11.442	105	1294	0.19	ug/L		92
69) sec-Butylbenzene	11.522	105	2821	0.35	ug/L		98
70) 4-Isopropyltoluene	11.625	119	2447	0.36	ug/L		92
71) 1,3-Dichlorobenzene	11.698	146	1165	0.29	ug/L		81
72) 1,4-Dichlorobenzene	11.759	146	1431	0.32	ug/L	#	55
73) n-Butylbenzene	11.947	91	3591	0.62	ug/L		99
74) 1,2-Dichlorobenzene	12.081	146	610	0.16	ug/L		93
76) Hexachlorobutadiene	13.188	223	1049	1.94	ug/L		93
77) 1,2,4-Trichlorobenzene	13.231	180	1374	0.68	ug/L		94
78) Naphthalene	13.505	128	1033	0.54	ug/L		78
79) 1,2,3-Trichlorobenzene	13.669	180	1019	0.49	ug/L		84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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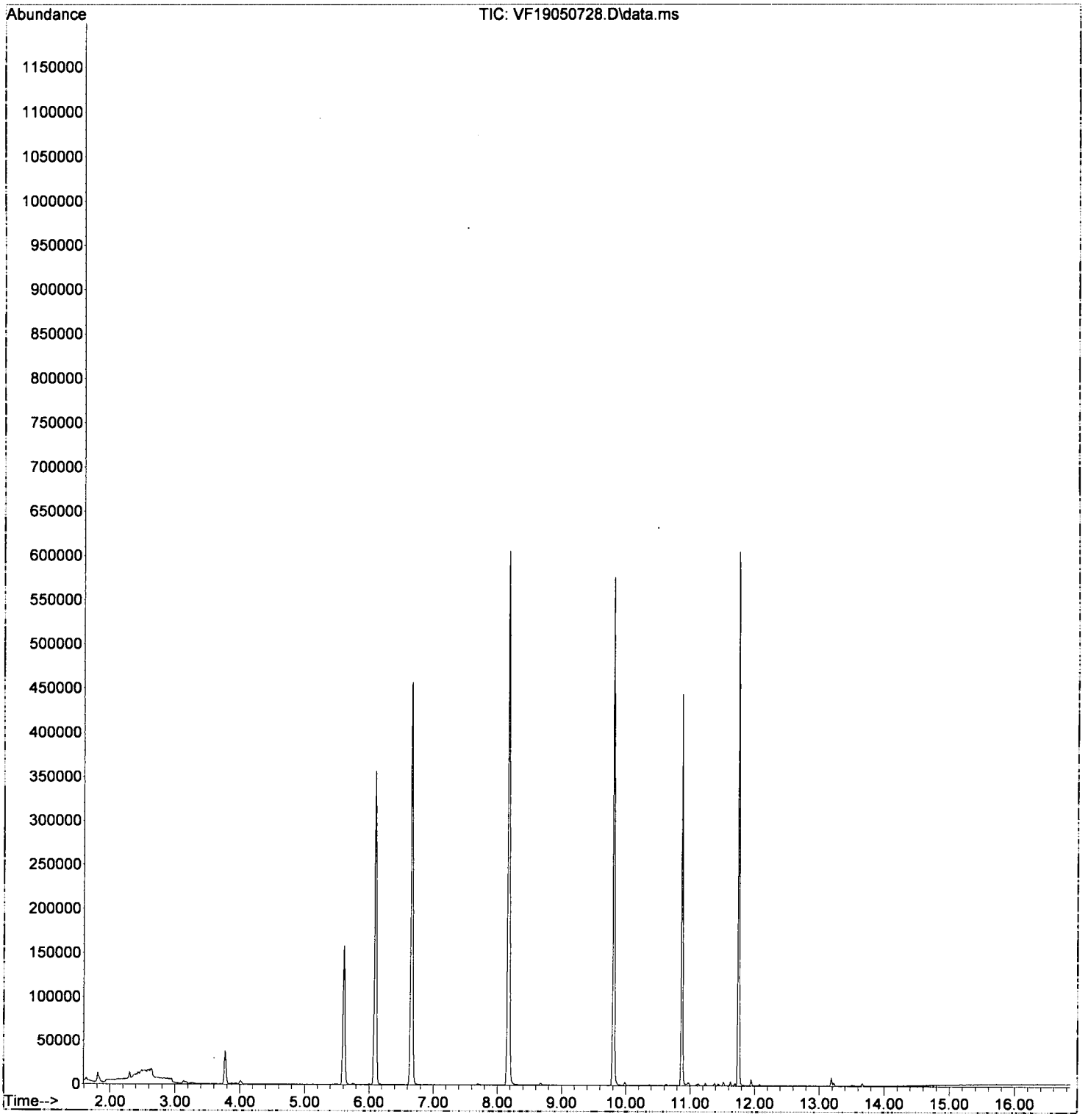
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050728.D
Acq On : 8 May 2019 2:34 am
Operator : TB
Sample : 9E07048-IBL5
Misc : 1X 5mL DI+MeOH
ALS Vial : 18 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:24 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050729.D
Acq On : 8 May 2019 3:01 am
Operator : TB
Sample : 9E07048-ICV1
Misc : 1X 50ppb VOC MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 13:55:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.095	168	262163	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.806	117	288159	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.753	152	135304	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.609	111	113942	54.17	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.661	114	403276	49.79	ug/L		0.00
39) Toluene-d8 (S)	8.170	98	440104	51.66	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.871	174	103653	49.75	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.636	85	59315	24.24	ug/L		97
3) Chloromethane	1.843	50	87194	24.45	ug/L		97
4) Vinyl Chloride	1.946	62	81114	23.00	ug/L		96
5) Bromomethane	2.305	96	44030	20.17	ug/L		97
6) Chloroethane	2.427	64	11583	24.18	ug/L		78
7) Trichlorofluoromethane	2.555	101	13859	22.29	ug/L		97
8) 1,1-Dichloroethene	3.127	61	94606	20.87	ug/L		77
9) Carbon Disulfide	3.145	76	105199	18.01	ug/L		98
10) Freon 113	3.175	101	58878	21.31	ug/L		82
11) Iodomethane	3.291	142	14908	12.96	ug/L		91
12) Methylene Chloride	3.778	84	75271	21.64	ug/L		88
13) Acetone	3.869	43	56244	41.83	ug/L		95
14) t-1,2-Dichloroethene	3.942	61	92558	21.38	ug/L		99
15) n-Hexane	4.015	86	15032	19.86	ug/L	#	85
16) Methyl-tert-butyl-ether	4.088	73	182160	20.82	ug/L		99
17) 1,1-Dichloroethane	4.581	63	118241	21.57	ug/L		98
18) Acrylonitrile	4.654	53	30892	21.88	ug/L		95
19) c-1,2-Dichloroethene	5.134	61	86855	21.78	ug/L		92
20) 2,2-Dichloropropane	5.244	77	58246	21.20	ug/L		87
21) Bromochloromethane	5.341	49	51635	21.70	ug/L		91
22) Chloroform	5.420	83	103118	21.16	ug/L		97
23) Carbon Tetrachloride	5.548	117	48737	22.27	ug/L		96
24) Tetrahydrofuran	5.597	42	29827	20.26	ug/L		96
25) 1,1,1-Trichloroethane	5.621	97	83146	24.22	ug/L		96
27) 1,1-Dichloropropene	5.749	75	87420	21.58	ug/L		98
28) 2-Butanone (MEK)	5.749	43	84619	42.12	ug/L		96
29) Benzene	6.004	78	258337	20.39	ug/L		98
30) 1,2-Dichloroethane (EDC)	6.223	62	89933	20.98	ug/L		99
31) iso-Butyl Alcohol	6.284	43	73266	504.30	ug/L		97
33) Trichloroethene (TCE)	6.625	130	62492	20.41	ug/L		94
34) Dibromomethane	7.075	93	33172	21.67	ug/L		86
35) 1,2-Dichloropropane	7.184	63	62422	20.61	ug/L		99
36) Bromodichloromethane	7.263	83	49951	20.01	ug/L		98
38) c-1,3-Dichloropropene	7.963	75	63748	20.14	ug/L		89
40) Toluene	8.225	91	234591	19.26	ug/L		99
41) Tetrachloroethene (PCE)	8.675	166	57363	21.51	ug/L		95
42) 4-Methyl-2-Pentanone (...	8.675	43	140033	44.47	ug/L		93
43) t-1,3-Dichloropropene	8.717	75	57159	20.28	ug/L		94
44) 1,1,2-Trichloroethane	8.888	97	47579	22.53	ug/L		95
45) Dibromochloromethane	9.076	129	27231	20.10	ug/L		97
46) 1,3-Dichloropropane	9.174	76	91385	22.36	ug/L		91
47) 1,2-Dibromoethane (EDB)	9.314	107	47230	21.40	ug/L		99
48) 2-Hexanone	9.545	43	97181	42.72	ug/L		94

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050729.D
Acq On : 8 May 2019 3:01 am
Operator : TB
Sample : 9E07048-ICV1
Misc : 1X 50ppb VOC MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 13:55:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration

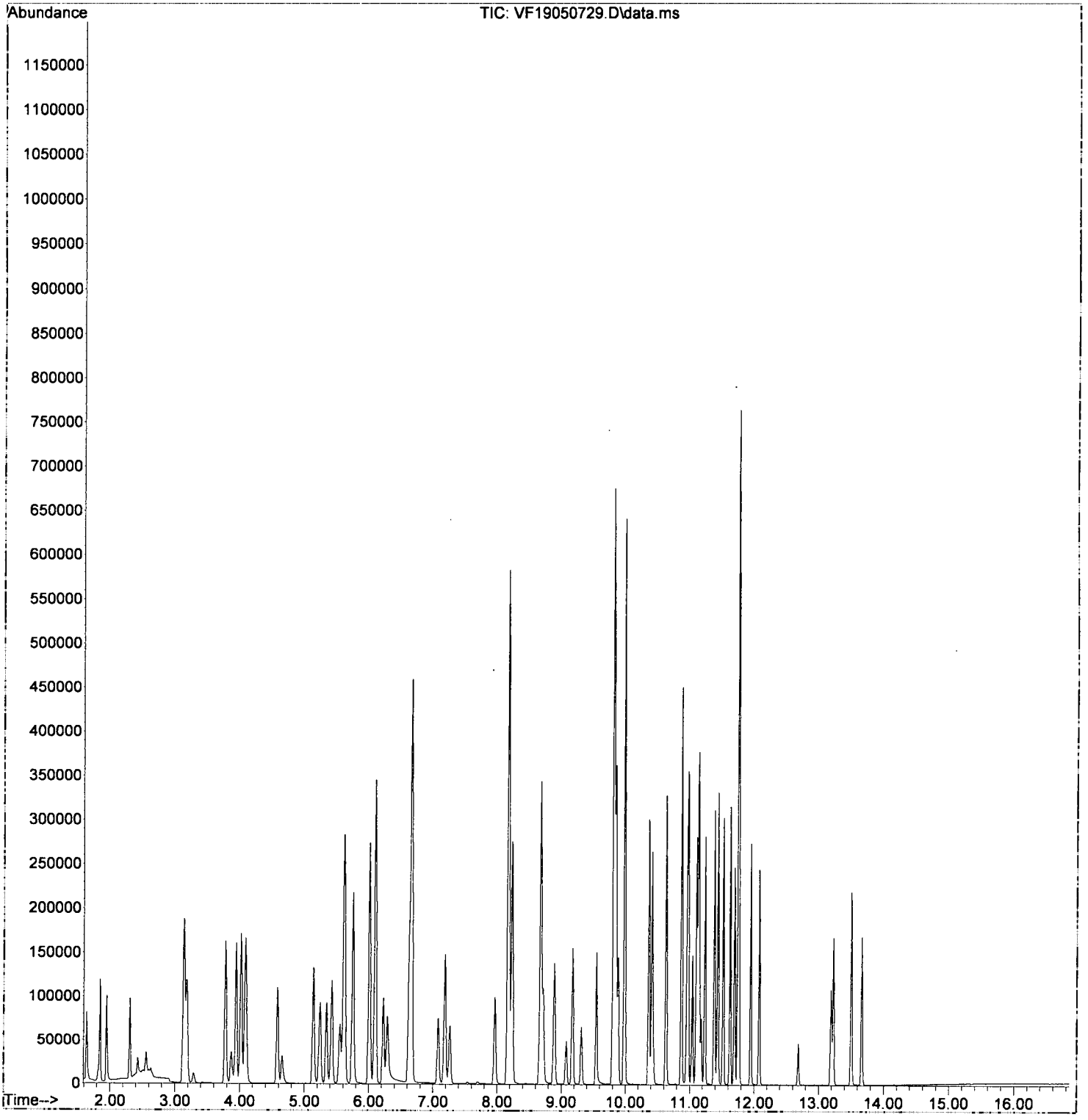
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.818	112	129383	18.63	ug/L		95
50) Ethylbenzene	9.849	91	229244	19.76	ug/L		97
51) 1,1,1,2-Tetrachloroethane	9.879	131	31999	20.27	ug/L		99
52) m,p-Xylenes (2)	9.983	91	335654	41.31	ug/L		97
53) o-Xylene	10.360	91	160147	20.48	ug/L		94
54) Styrene	10.409	104	112165	19.21	ug/L		91
55) Bromoform	10.439	173	14365	21.50	ug/L		95
56) Isopropylbenzene	10.628	105	191014	21.53	ug/L		97
59) Bromobenzene	10.956	156	48811	20.05	ug/L		90
60) n-Propylbenzene	10.974	91	217147	20.08	ug/L		97
61) 1,1,2,2-Tetrachloroethane	11.041	83	58914	22.91	ug/L		99
62) 2-Chlorotoluene	11.102	126	44168	20.32	ug/L	#	83
63) 1,3,5-Trimethylbenzene	11.126	105	147687	21.12	ug/L		97
64) 1,2,3-Trichloropropane	11.145	110	21340	20.93	ug/L	#	74
65) t-1,4-Dichloro-2-butene	11.175	88	4327	17.63	ug/L	#	72
66) 4-Chlorotoluene	11.236	91	135416	21.06	ug/L		97
67) tert-Butylbenzene	11.382	91	84335	21.01	ug/L		92
68) 1,2,4-Trimethylbenzene	11.437	105	148293	21.11	ug/L		98
69) sec-Butylbenzene	11.522	105	177076	21.13	ug/L		97
70) 4-Isopropyltoluene	11.625	119	145034	20.80	ug/L		96
71) 1,3-Dichlorobenzene	11.692	146	84684	20.39	ug/L		97
72) 1,4-Dichlorobenzene	11.759	146	88242	19.44	ug/L		97
73) n-Butylbenzene	11.948	91	124999	21.00	ug/L		97
74) 1,2-Dichlorobenzene	12.082	146	82320	21.13	ug/L		99
75) 1,2-Dibromo-3-Chloropr...	12.684	157	8264	19.59	ug/L	#	48
76) Hexachlorobutadiene	13.189	223	11787	21.20	ug/L		95
77) 1,2,4-Trichlorobenzene	13.225	180	46492	22.22	ug/L		99
78) Naphthalene	13.499	128	156730	19.72	ug/L		99
79) 1,2,3-Trichlorobenzene	13.663	180	47589	22.34	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050729.D
Acq On : 8 May 2019 3:01 am
Operator : TB
Sample : 9E07048-ICV1
Misc : 1X 50ppb VOC MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 13:55:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 13:32:58 2019
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050730.D
Acq On : 8 May 2019 3:28 am
Operator : TB
Sample : 9E07048-IBL6
Misc : 1X 5mL DI+MeOH
ALS Vial : 20 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:28 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration

NR

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.092	168	252291	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.803	117	281229	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.750	152	123851	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.606	111	98914	48.87	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.658	114	388439	49.83	ug/L		0.00
39) Toluene-d8 (S)	8.167	98	430453	51.77	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.868	174	95472	50.06	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.621	85	416	0.18	ug/L	#	50
3) Chloromethane	1.828	50	1703	0.50	ug/L		88
5) Bromomethane	2.296	96	3753	1.79	ug/L		96
9) Carbon Disulfide	3.130	76	1833	0.55	ug/L		94
10) Freon 113	3.166	101	648	0.24	ug/L	#	60
11) Iodomethane	3.276	142	782	1.75	ug/L	#	81
12) Methylene Chloride	3.768	84	16971	1.33	ug/L		89
13) Acetone	3.866	43	1481	1.14	ug/L		78
14) t-1,2-Dichloroethene	3.927	61	494	0.12	ug/L		84
15) n-Hexane	4.006	86	127	0.17	ug/L	#	77
27) 1,1-Dichloropropene	5.739	75	414	0.11	ug/L	#	56
28) 2-Butanone (MEK)	5.764	43	184	0.10	ug/L		54
41) Tetrachloroethene (PCE)	8.672	166	560	0.22	ug/L		97
49) Chlorobenzene	9.815	112	732	0.11	ug/L	#	1
50) Ethylbenzene	9.852	91	979	0.09	ug/L		89
52) m,p-Xylenes (2)	9.986	91	1479	0.19	ug/L		89
54) Styrene	10.424	104	105	0.21	ug/L	#	41
56) Isopropylbenzene	10.637	105	894	0.10	ug/L		90
59) Bromobenzene	10.959	156	211	0.09	ug/L		87
60) n-Propylbenzene	10.971	91	1841	0.19	ug/L		90
62) 2-Chlorotoluene	11.111	126	218	0.11	ug/L	#	45
63) 1,3,5-Trimethylbenzene	11.135	105	975	0.15	ug/L		88
66) 4-Chlorotoluene	11.239	91	923	0.16	ug/L		87
67) tert-Butylbenzene	11.379	91	687	0.19	ug/L		90
68) 1,2,4-Trimethylbenzene	11.440	105	848	0.13	ug/L		95
69) sec-Butylbenzene	11.519	105	1994	0.26	ug/L		95
70) 4-Isopropyltoluene	11.628	119	1636	0.26	ug/L		98
71) 1,3-Dichlorobenzene	11.695	146	822	0.22	ug/L		89
72) 1,4-Dichlorobenzene	11.762	146	995	0.24	ug/L	#	57
73) n-Butylbenzene	11.945	91	2355	0.43	ug/L		89
74) 1,2-Dichlorobenzene	12.078	146	553	0.16	ug/L	#	72
76) Hexachlorobutadiene	13.186	223	502	0.99	ug/L		93
77) 1,2,4-Trichlorobenzene	13.228	180	979	0.51	ug/L		96
78) Naphthalene	13.508	128	907	0.53	ug/L		78
79) 1,2,3-Trichlorobenzene	13.666	180	769	0.39	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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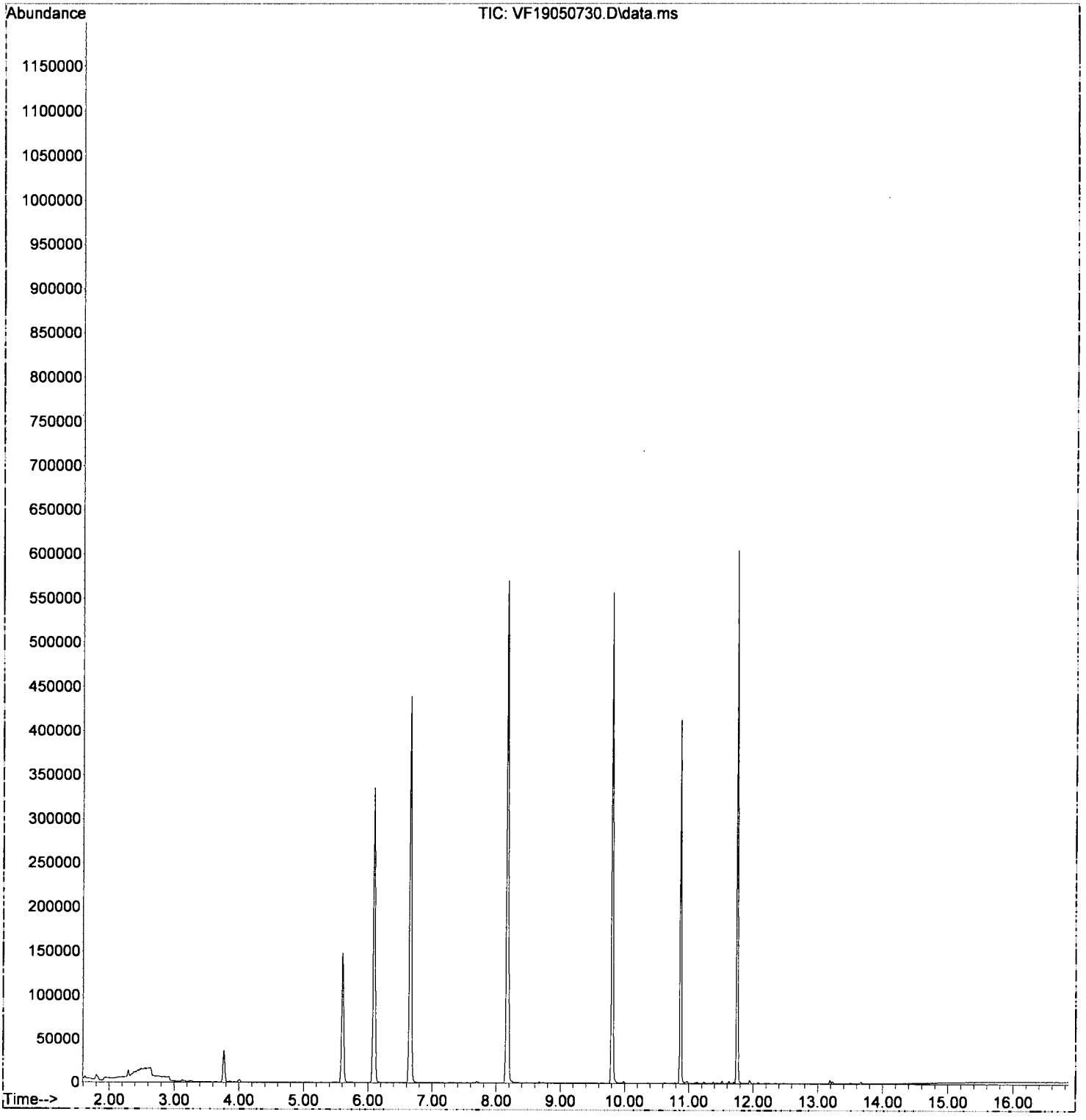
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050730.D
Acq On : 8 May 2019 3:28 am
Operator : TB
Sample : 9E07048-IBL6
Misc : 1X 5mL DI+MeOH
ALS Vial : 20 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:41:28 2019
Quant Method : C:\msdchem\1\METHODS\VF190507S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Wed May 08 11:09:13 2019
Response via : Initial Calibration



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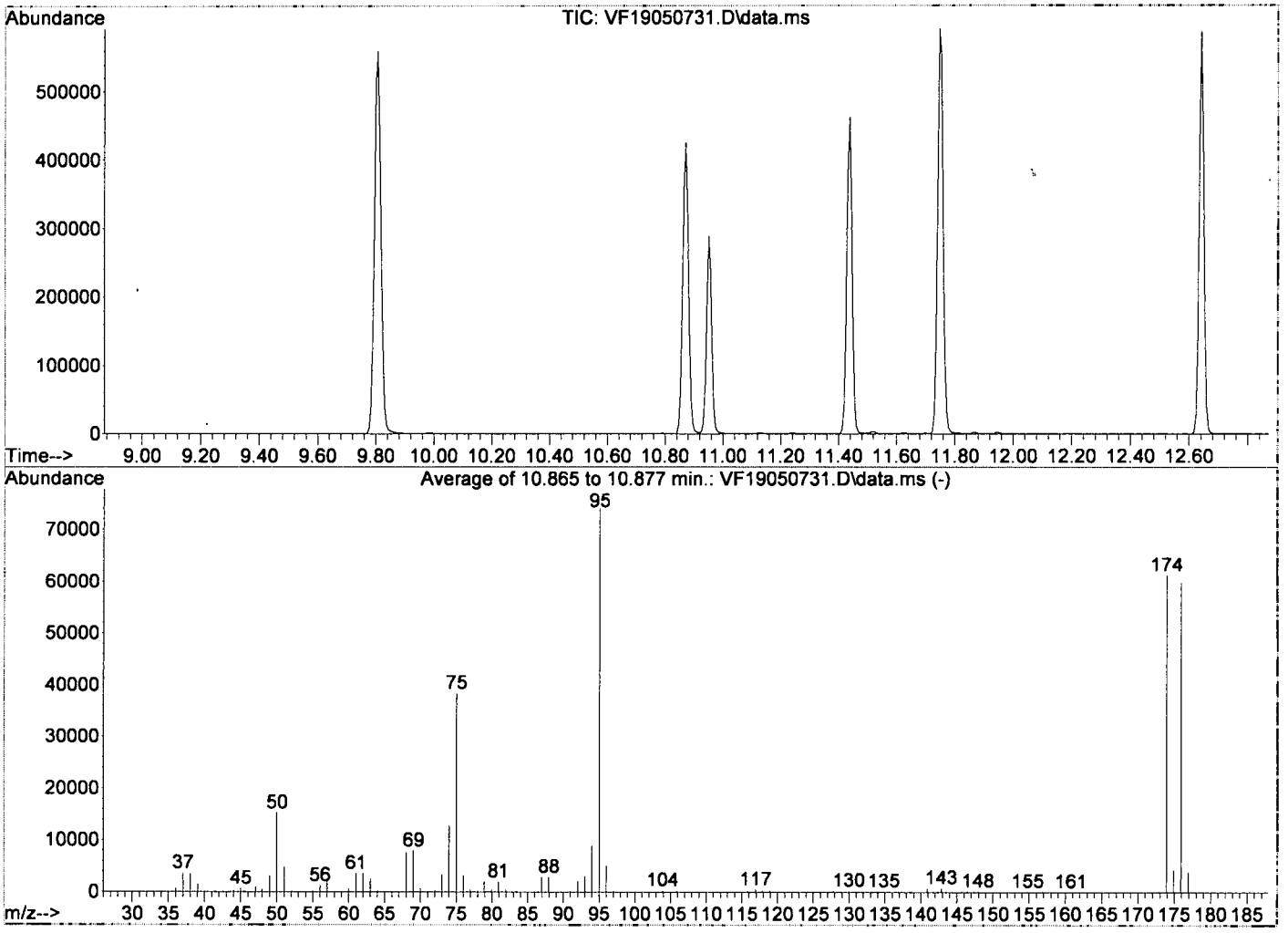
BFB

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050731.D
Acq On : 8 May 2019 3:55 am
Operator : TB
Sample : 9E07048-TUN2 RT
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\VF190507G.M
Title : NWTPH-Gx by GC/MS
Last Update : Wed May 08 11:36:04 2019

5/8/19



AutoFind: Scans 1525, 1526, 1527; Background Corrected with Scan 1518

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	12	40	20.7	15284	PASS
75	95	30	60	51.9	38373	PASS
95	95	100	100	100.0	73986	PASS
96	95	5	9	6.9	5106	PASS
173	174	0.00	2	0.3	211	PASS
174	95	50	100	82.8	61272	PASS
175	174	5	9	6.9	4253	PASS
176	174	95	101	97.6	59824	PASS
177	176	5	9	6.6	3953	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050731.D
Acq On : 8 May 2019 3:55 am
Operator : TB
Sample : 9E07048-TUN2 RT
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

5/8/19

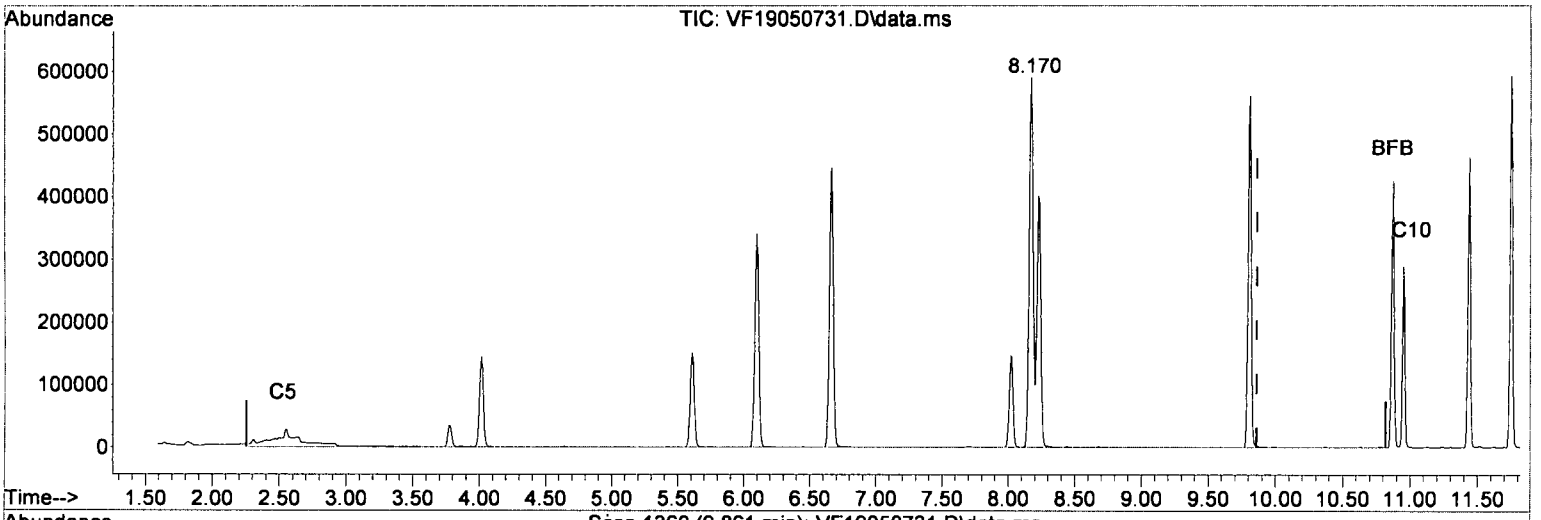
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.095	168	256053	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.661	TIC	927362	45.94	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	573331	46.12	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.806	TIC	876906	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1226539	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	781620	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	1843880m	142.13	ug/L	
6) TPHg (C6-C10)	9.860	TIC	1719873m	179.63	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	3432981m	256.69	ug/L	
8) NWTPH-Gx	9.870	TIC	3320447m	471.20	ug/L	

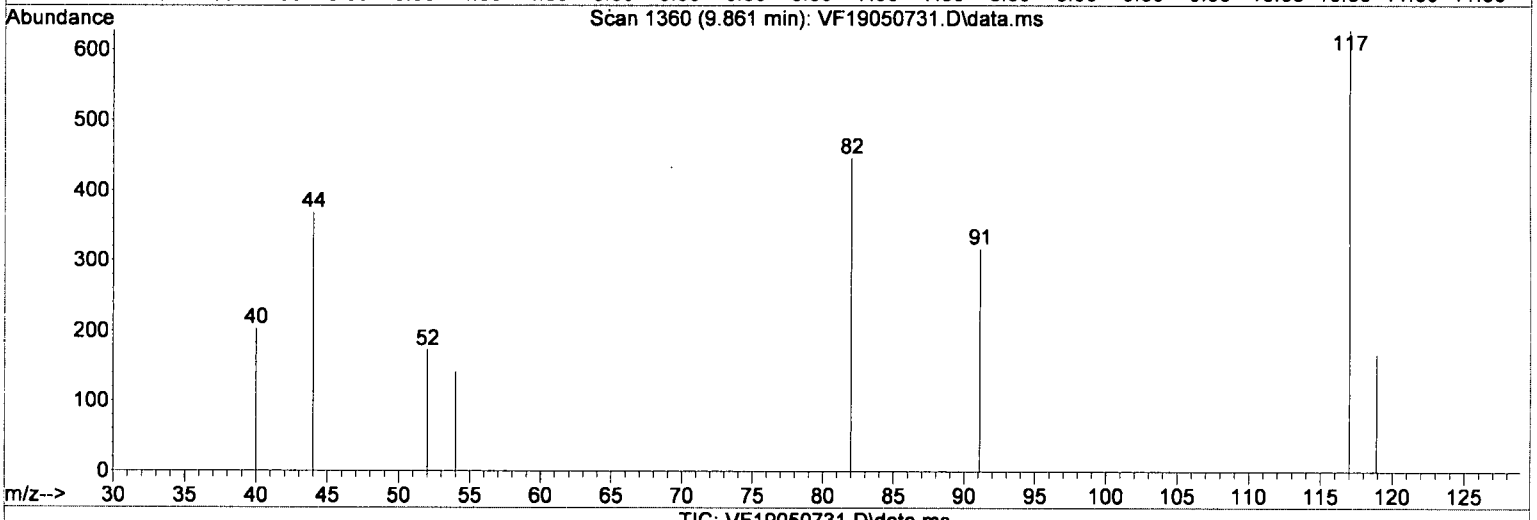
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050731.D
Acq On : 8 May 2019 3:55 am
Operator : TB
Sample : 9E07048-TUN2 RT
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





TIC: VF19050731.D\data.ms

(5) TPHg (C5-C9) (H)

9.860min (0.000) 142.13 ug/L m

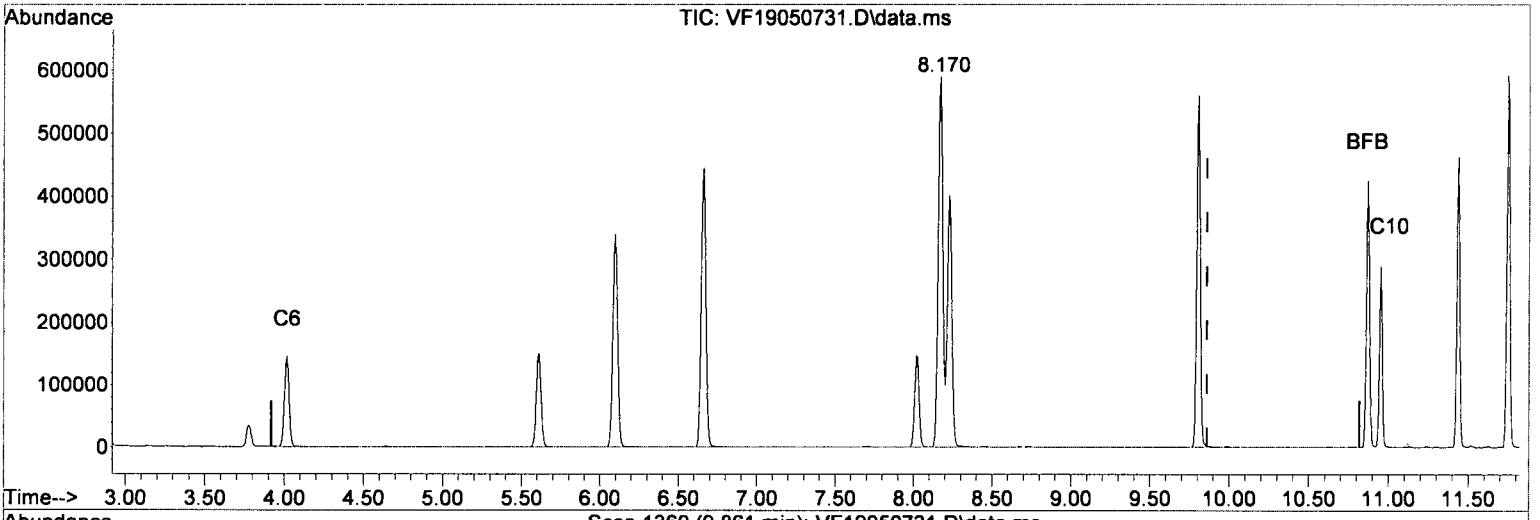
response 1843880

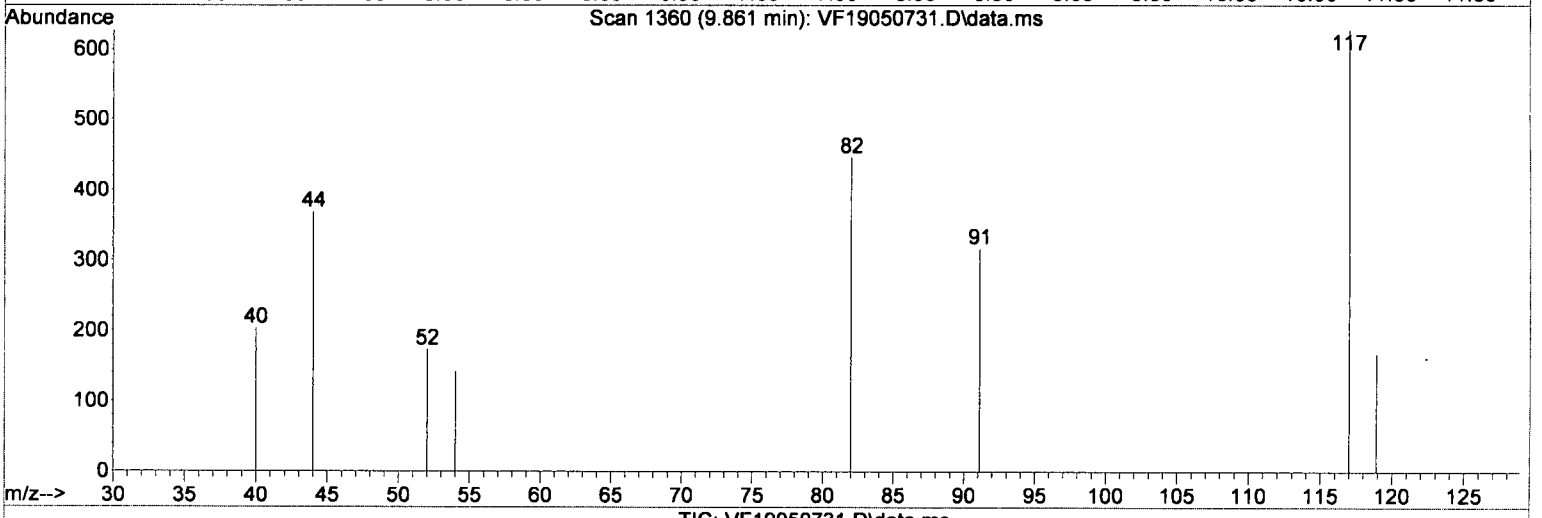
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	1.43#
0.00	0.00	1.05#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050731.D
Acq On : 8 May 2019 3:55 am
Operator : TB
Sample : 9E07048-TUN2 RT
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





TIC: VF19050731.D\data.ms

(6) TPHg (C6-C10) (H)

9.860min (0.000) 179.63 ug/L m

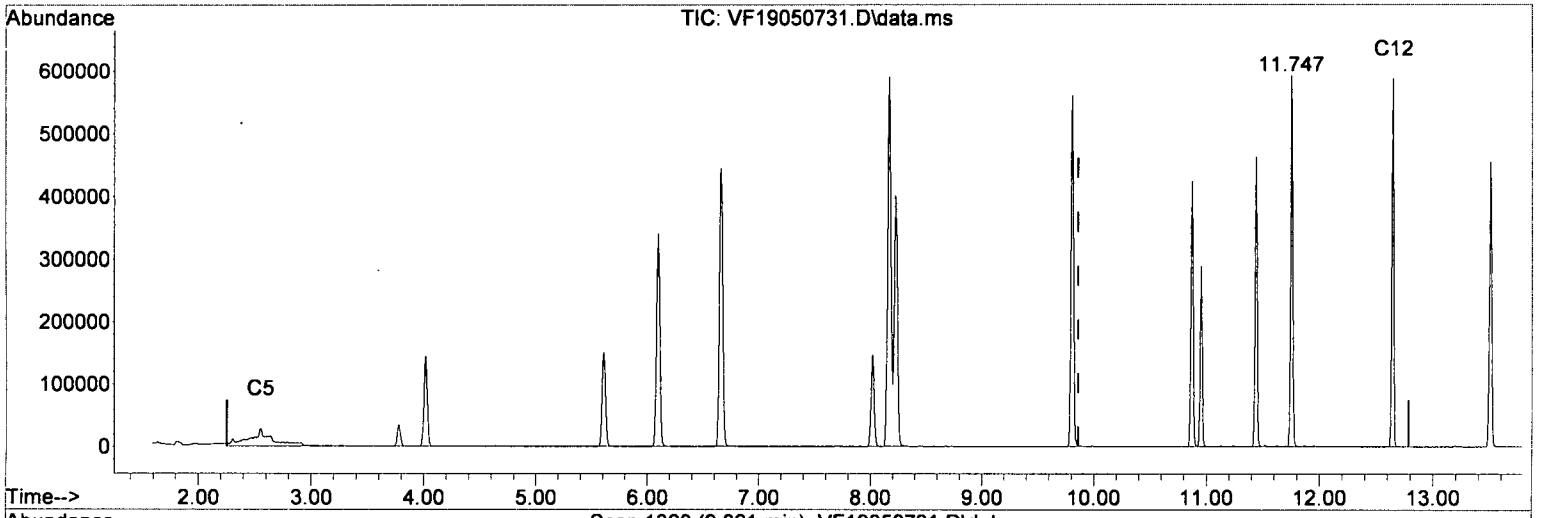
response 1719873

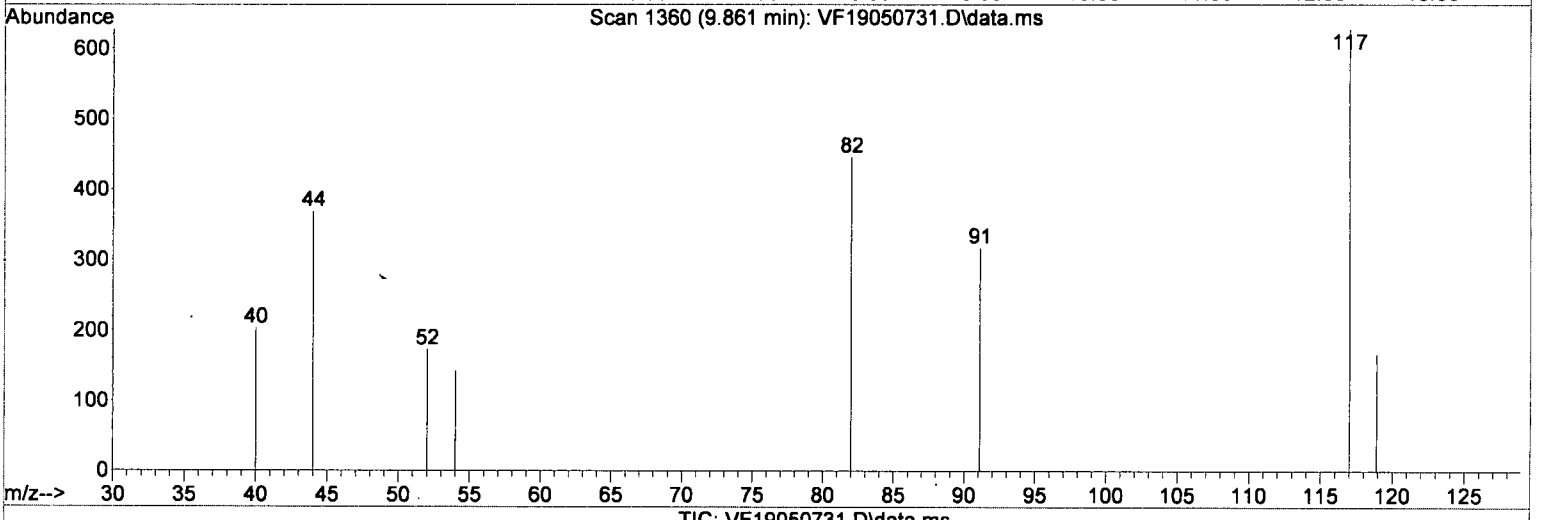
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	1.54#
0.00	0.00	1.13#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050731.D
Acq On : 8 May 2019 3:55 am
Operator : TB
Sample : 9E07048-TUN2 RT
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration





TIC: VF19050731.D\data.ms

(7) CA-LUFT (C5-C12) (H)

9.860min (0.000) 256.69 ug/L m

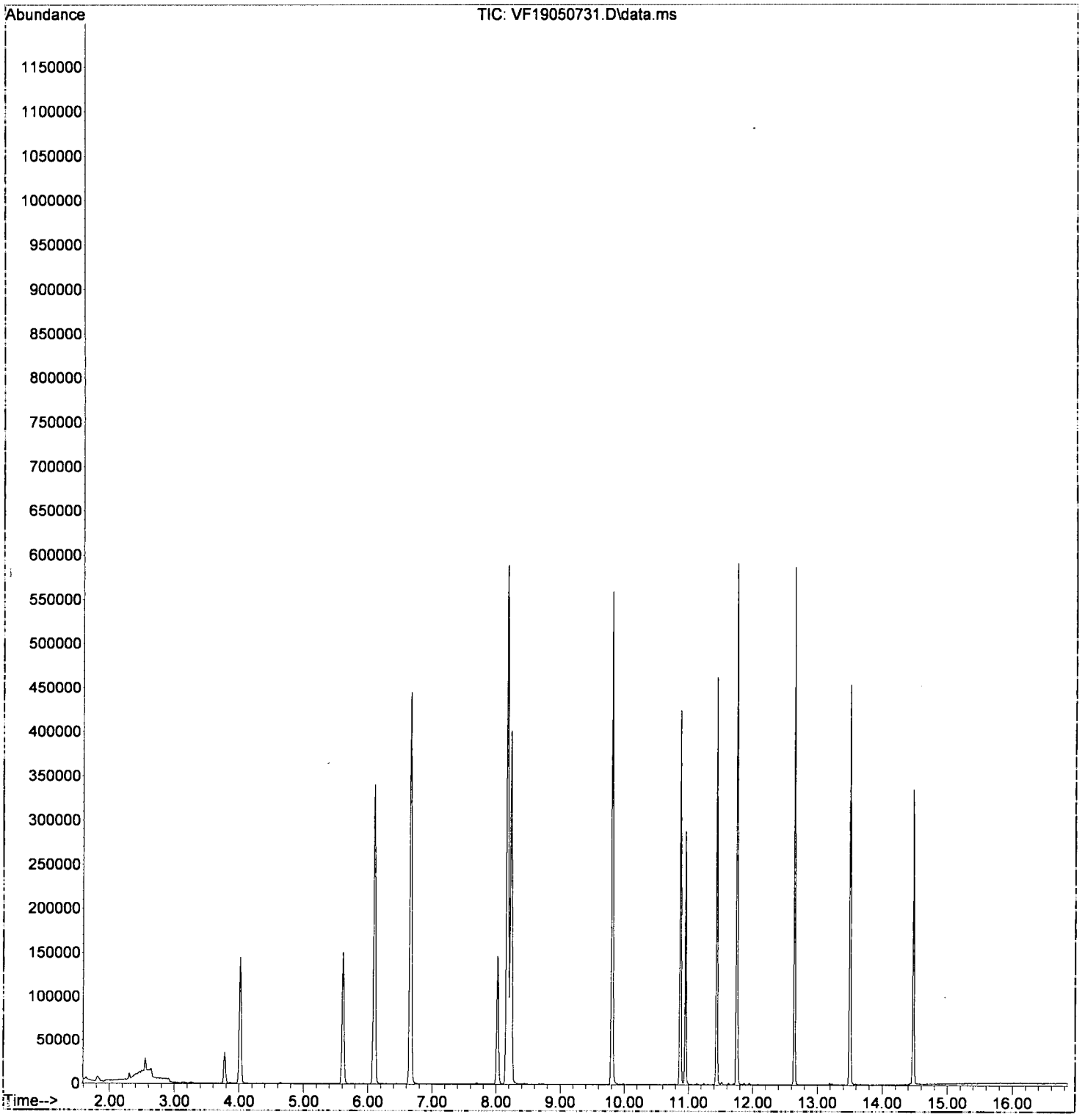
response 3432981

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.77#
0.00	0.00	0.56#
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050731.D
Acq On : 8 May 2019 3:55 am
Operator : TB
Sample : 9E07048-TUN2 RT
Misc : A19D196 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:08 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050732.D
Acq On : 8 May 2019 4:22 am
Operator : TB
Sample : 9E07048-IBL7
Misc : 1X 5mL DI+MeOH
ALS Vial : 22 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:11 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

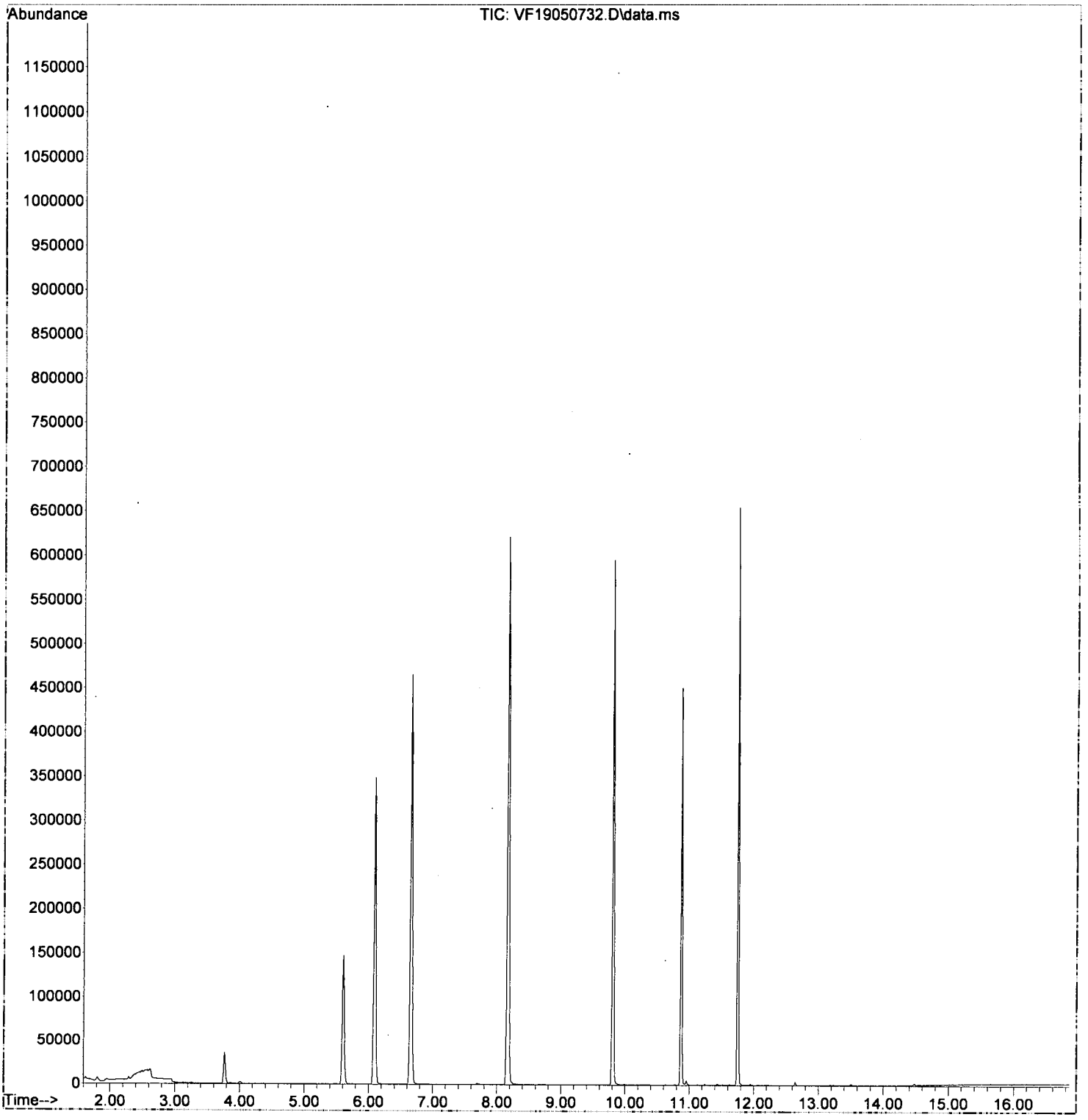
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.090	168	264063	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.656	TIC	949029	45.58	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.866	TIC	629967	49.14	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.801	TIC	966700	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.165	TIC	1246851	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.748	TIC	815701	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	435202m	7.19	ug/L	
6) TPHg (C6-C10)	9.860	TIC	326742m	14.39	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	449496m	10.92	ug/L	
8) NWTPH-Gx	9.870	TIC	14888m	25.50	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050732.D
Acq On : 8 May 2019 4:22 am
Operator : TB
Sample : 9E07048-IBL7
Misc : 1X 5mL DI+MeOH
ALS Vial : 22 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:11 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050733.D
Acq On : 8 May 2019 4:49 am
Operator : TB
Sample : 9E07048-ICB2
Misc : 1X DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:13 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

5/8/19

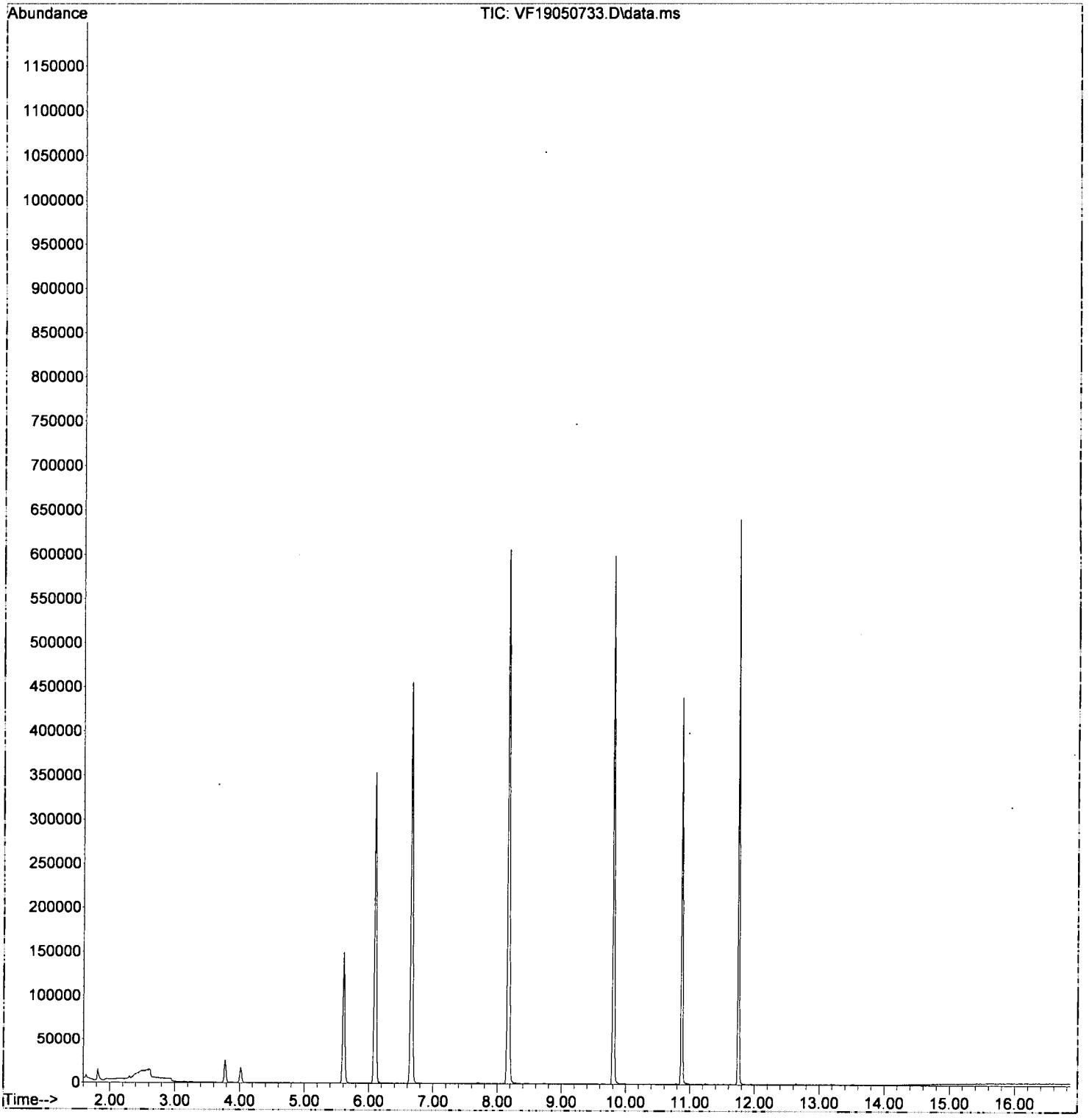
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.096	168	264736	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.656	TIC	955227	45.76	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.872	TIC	619863	48.23	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.807	TIC	959349	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.171	TIC	1248121	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.748	TIC	805712	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	429036m	6.52	ug/L	<MDL
6) TPHg (C6-C10)	9.860	TIC	367227m	18.93	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	429036m	9.20	ug/L	
8) NWTPH-Gx	9.870	TIC	5129m	24.20	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050733.D
Acq On : 8 May 2019 4:49 am
Operator : TB
Sample : 9E07048-ICB2
Misc : 1X DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:13 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050734.D
Acq On : 8 May 2019 5:16 am
Operator : TB
Sample : 9E07048-CALC
Misc : 1X 50ppb GX MeOH
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:22 2019
Quant Method : C:\msdchem\1\METHODS\~~VF190507G.M~~
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

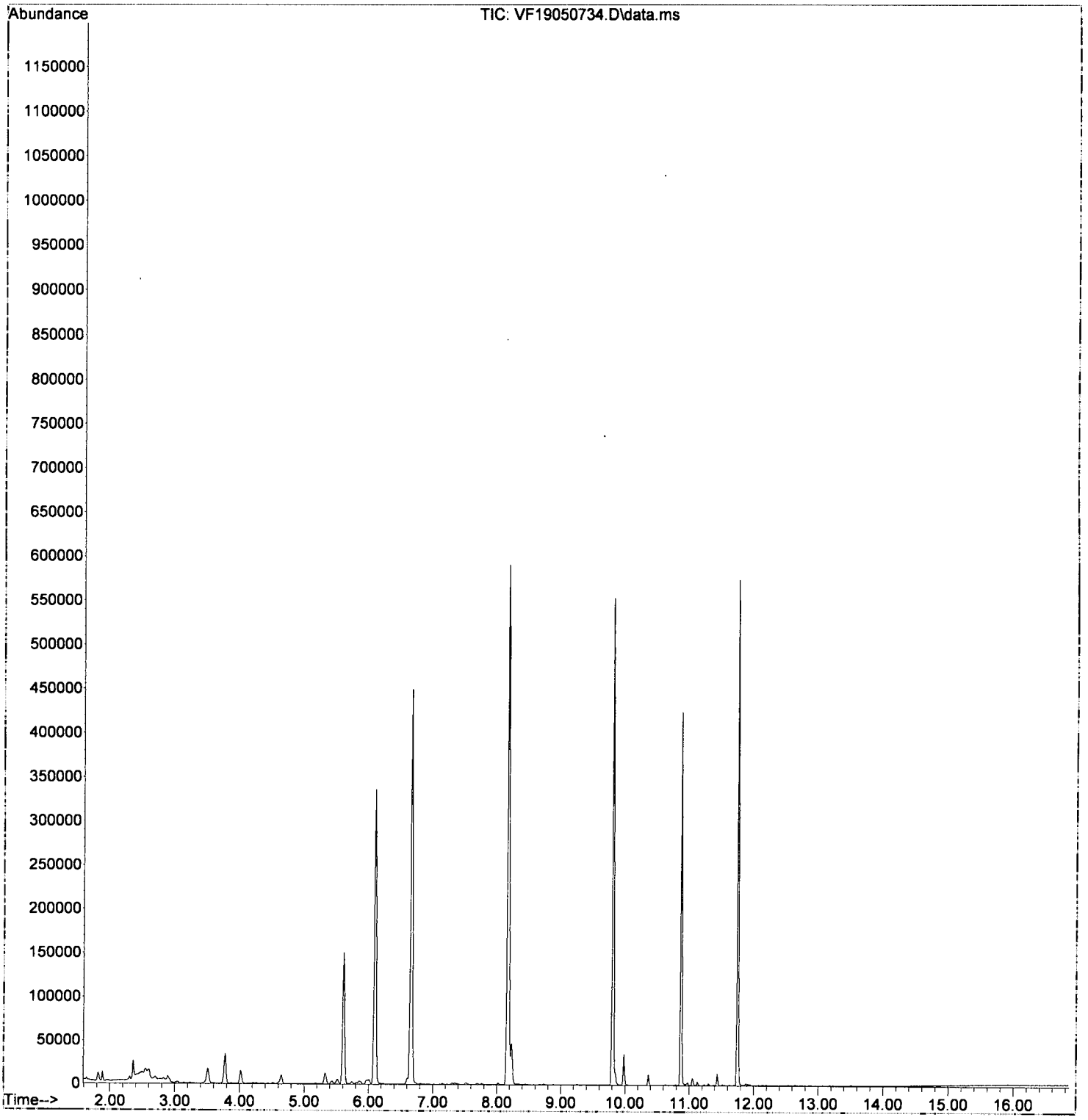
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.095	168	251815	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.661	TIC	944857	49.85	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	583068	47.82	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.806	TIC	910722	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1202713	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	768593	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	861461m	76.48	ug/L	
6) TPHg (C6-C10)	9.860	TIC	621653m	69.33	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	905552m	70.83	ug/L	
8) NWTPH-Gx	9.870	TIC	216743m	31.39	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050734.D
Acq On : 8 May 2019 5:16 am
Operator : TB
Sample : 9E07048-CALC
Misc : 1X 50ppb GX MeOH
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:22 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050735.D
Acq On : 8 May 2019 5:43 am
Operator : TB
Sample : 9E07048-CALD
Misc : 1X 100ppb GX MeOH
ALS Vial : 25 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:25 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

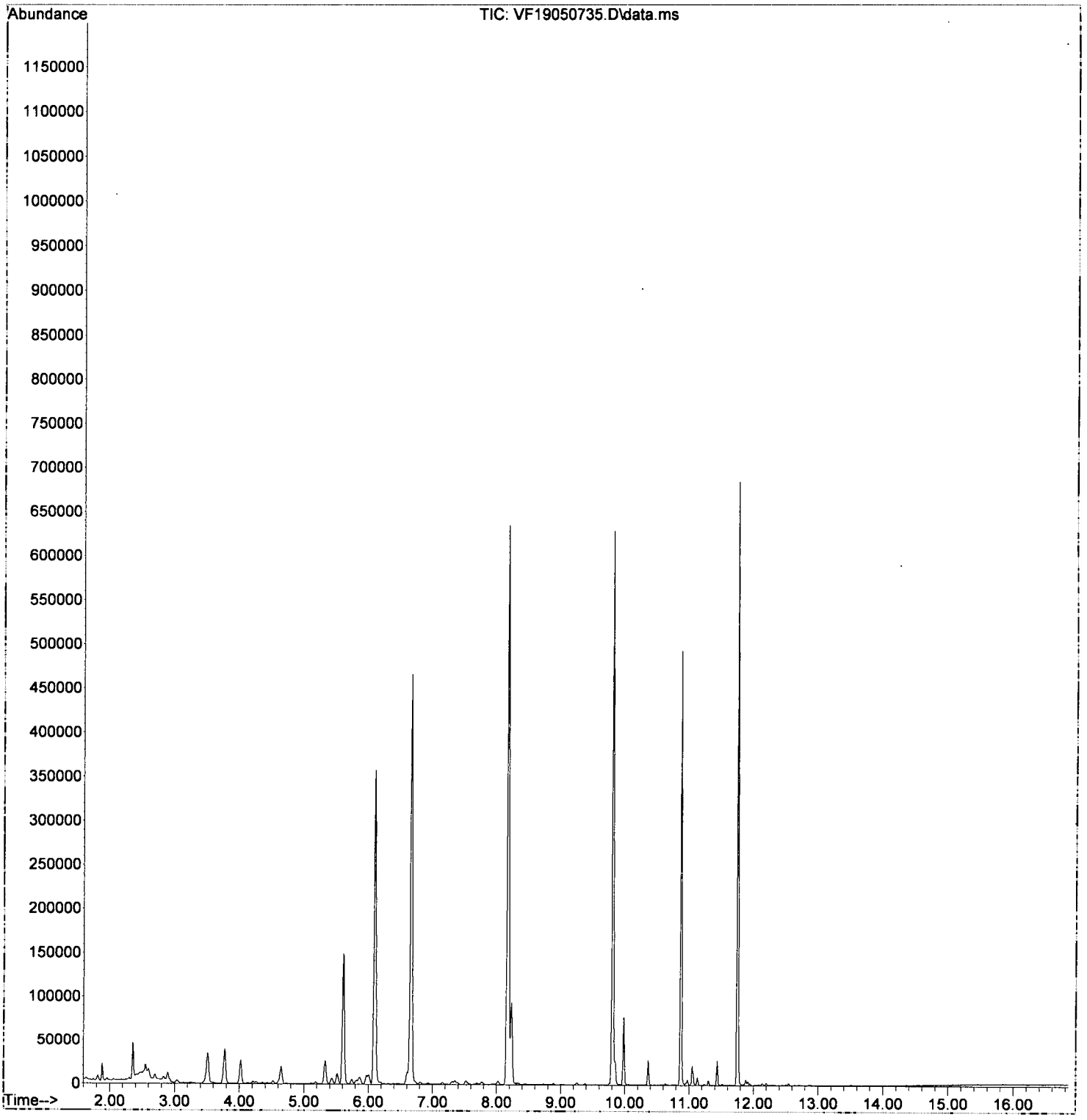
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.098	168	268659	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.658	TIC	1016126	50.25	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.868	TIC	665016	51.12	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.803	TIC	1040846	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.167	TIC	1310310	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.750	TIC	853569	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	1385857m	115.32	ug/L	
6) TPHg (C6-C10)	9.860	TIC	1022515m	106.88	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	1495406m	109.63	ug/L	
8) NWTPH-Gx	9.870	TIC	540113m	73.32	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050735.D
Acq On : 8 May 2019 5:43 am
Operator : TB
Sample : 9E07048-CALD
Misc : 1X 100ppb GX MeOH
ALS Vial : 25 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:25 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050736.D
Acq On : 8 May 2019 6:11 am
Operator : TB
Sample : 9E07048-CALE
Misc : 1X 250ppb GX MeOH
ALS Vial : 26 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:27 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

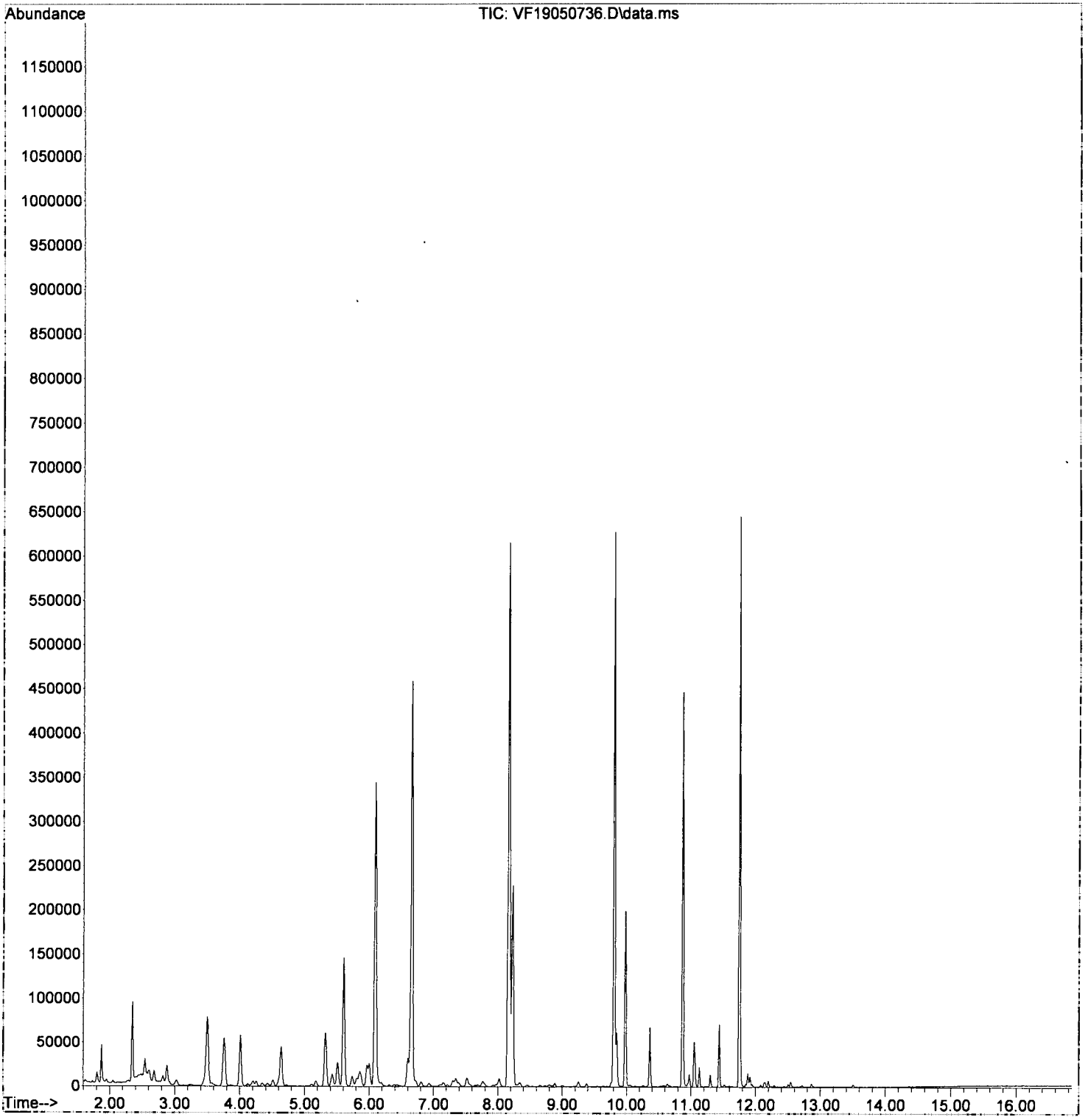
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.092	168	260344	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.657	TIC	976363	49.83	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.867	TIC	627727	49.80	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.803	TIC	970860	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.166	TIC	1270597	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.749	TIC	827127	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	2931259m	251.71	ug/L	
6) TPHg (C6-C10)	9.860	TIC	2228270m	240.36	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	3256728m	246.37	ug/L	
8) NWTPH-Gx	9.870	TIC	1533968m	214.89	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050736.D
Acq On : 8 May 2019 6:11 am
Operator : TB
Sample : 9E07048-CALE
Misc : 1X 250ppb GX MeOH
ALS Vial : 26 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:27 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050737.D
Acq On : 8 May 2019 6:38 am
Operator : TB
Sample : 9E07048-CALF
Misc : 1X 500ppb GX MeOH
ALS Vial : 27 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:29 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

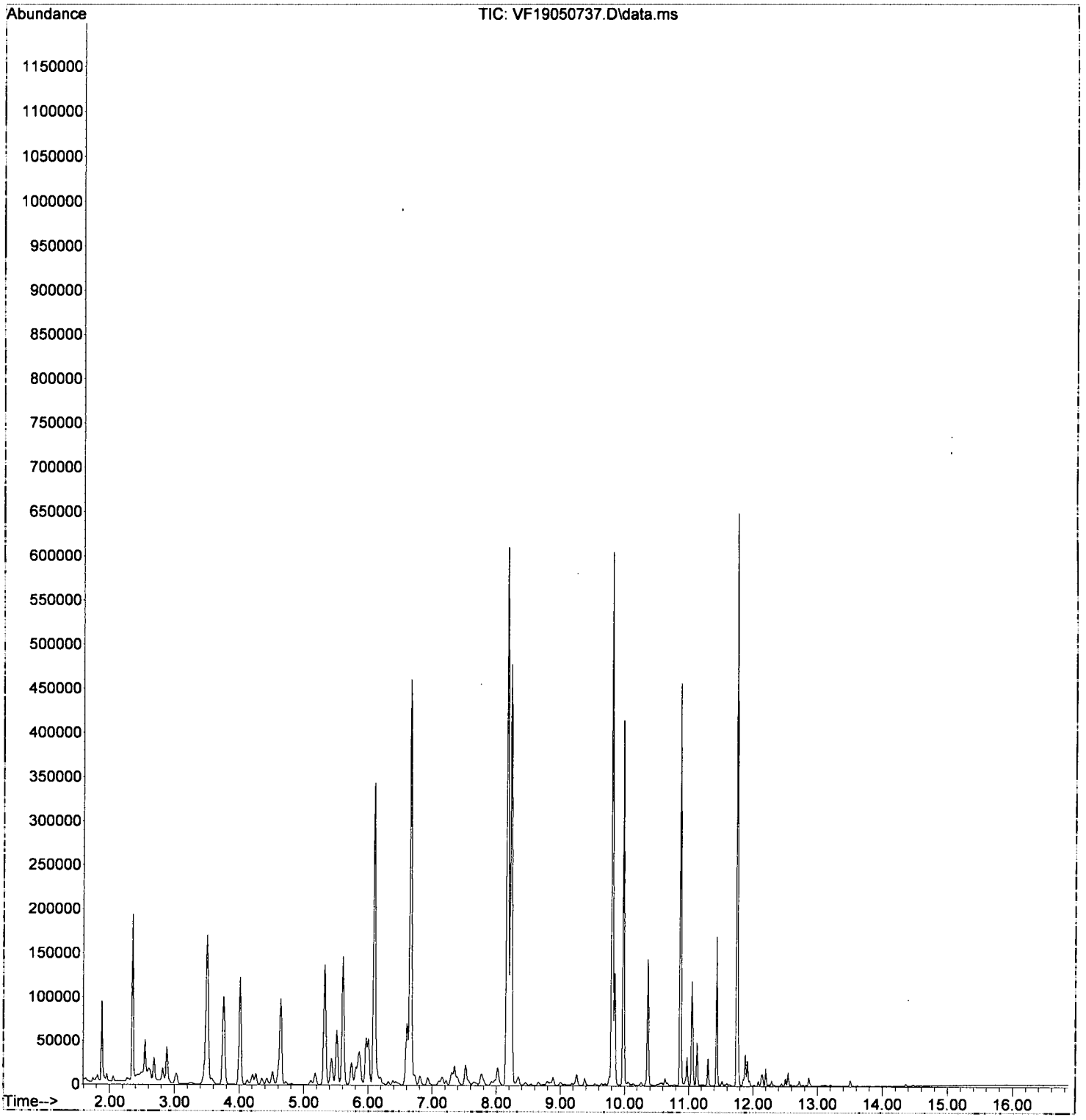
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.096	168	264609	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.655	TIC	998574	50.14	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	640403	49.98	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.807	TIC	999941	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1306294	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	871732	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	5892671m	497.85	ug/L	
6) TPHg (C6-C10)	9.860	TIC	4686857m	497.42	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	6691065m	498.02	ug/L	
8) NWTPH-Gx	9.870	TIC	3603975m	496.73	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050737.D
Acq On : 8 May 2019 6:38 am
Operator : TB
Sample : 9E07048-CALF
Misc : 1X 500ppb GX MeOH
ALS Vial : 27 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:29 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050738.D
Acq On : 8 May 2019 7:05 am
Operator : TB
Sample : 9E07048-CALG
Misc : 1X 1000ppb GX MeOH
ALS Vial : 28 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:31 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

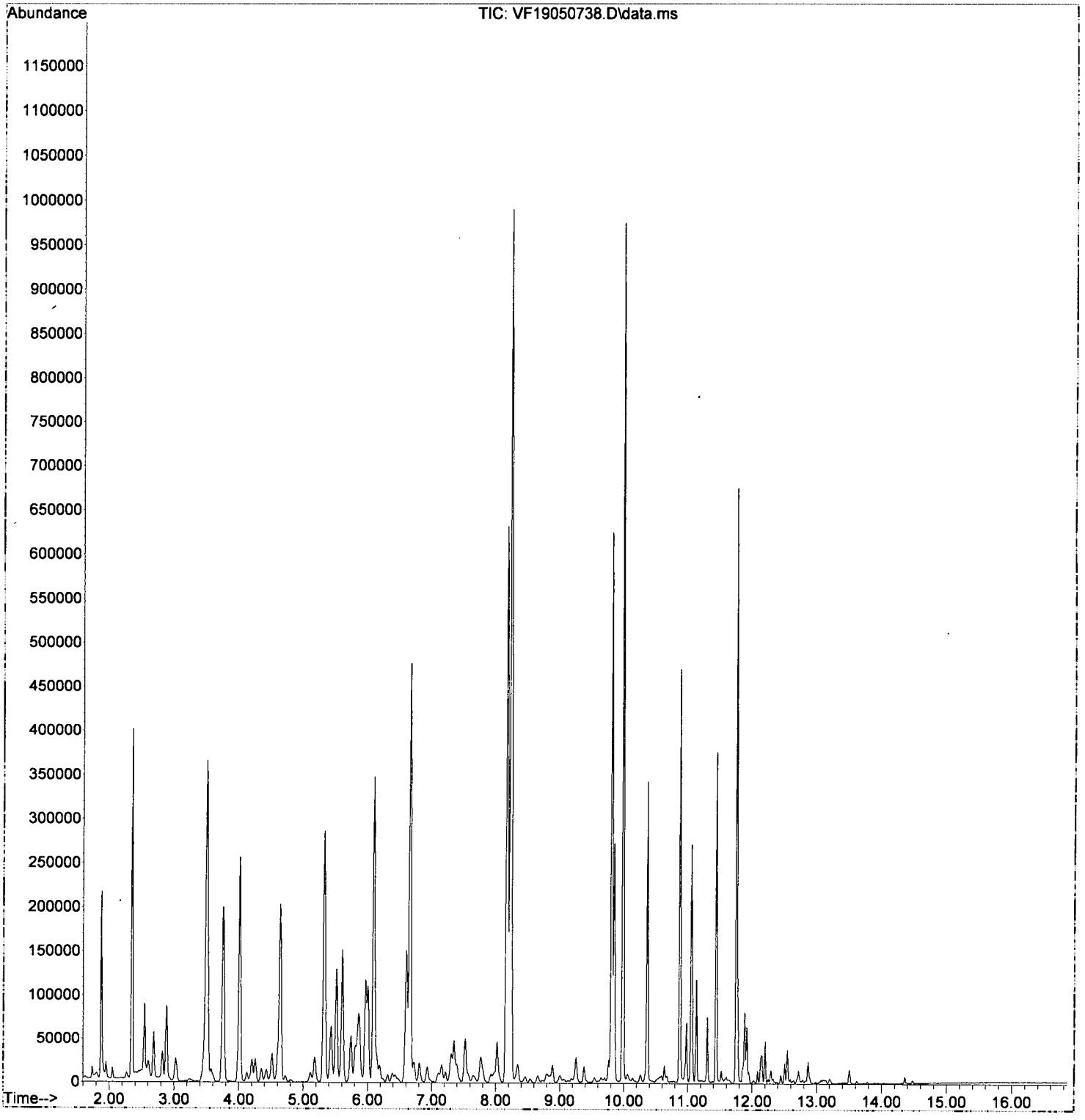
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.090	168	262223	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.656	TIC	994511	50.39	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.866	TIC	665155	52.39	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.801	TIC	994303	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.165	TIC	1316271	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.748	TIC	947602	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	12387853m	1056.13	ug/L	
6) TPHg (C6-C10)	9.860	TIC	9868759m	1056.91	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	14333454m	1076.56	ug/L	
8) NWTPH-Gx	9.870	TIC	8256018m	1148.27	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050738.D
Acq On : 8 May 2019 7:05 am
Operator : TB
Sample : 9E07048-CALG
Misc : 1X 1000ppb GX MeOH
ALS Vial : 28 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:31 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050739.D
Acq On : 8 May 2019 7:32 am
Operator : TB
Sample : 9E07048-CALH
Misc : 1X 2500ppb GX MeOH
ALS Vial : 29 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:33 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

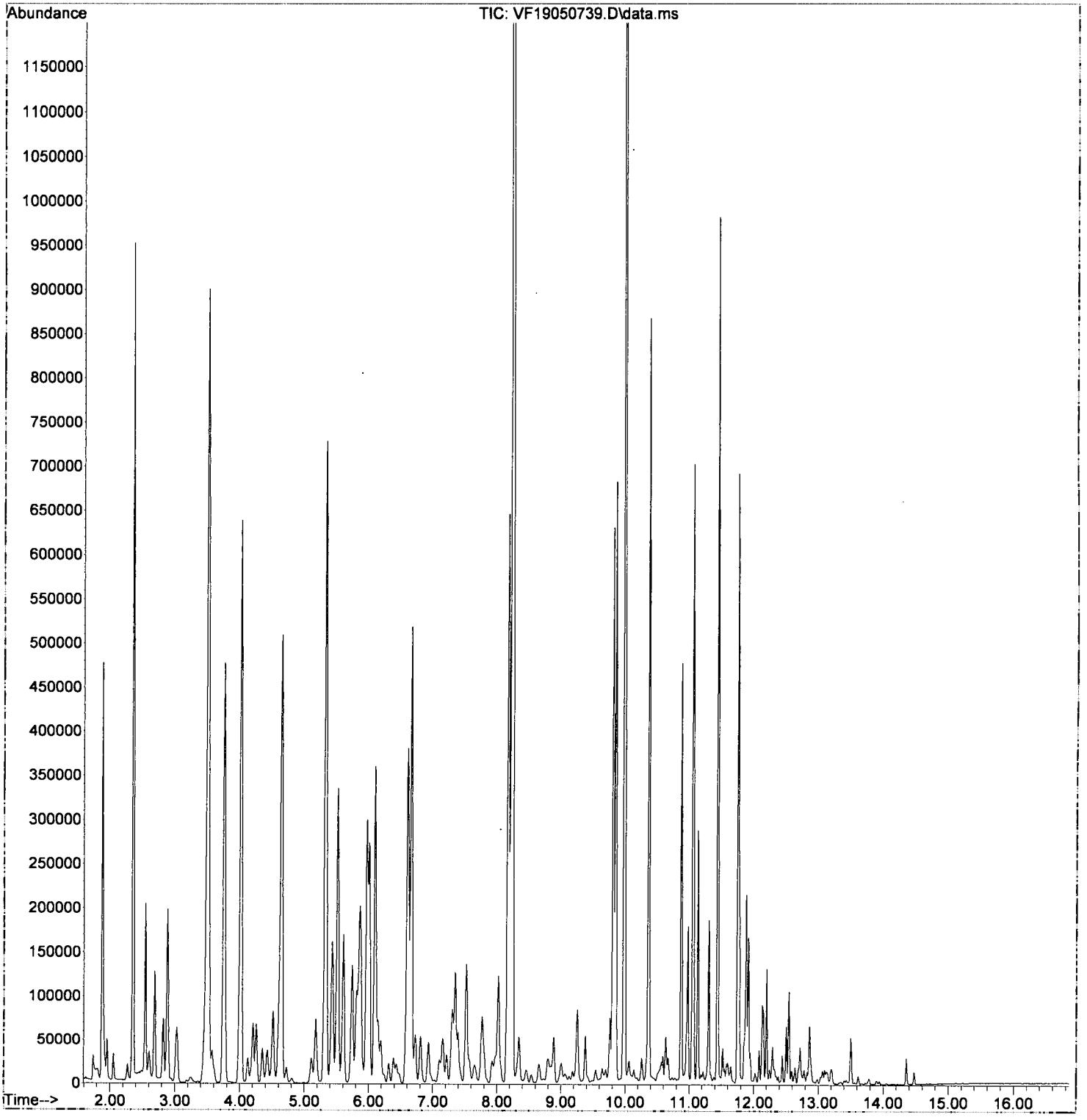
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.096	168	271709	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.655	TIC	1064809	52.07	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	671226	51.02	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.806	TIC	1029963	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1322775	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	1141336	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	31174102m	2564.97	ug/L	
6) TPHg (C6-C10)	9.860	TIC	25150758m	2599.53	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	36008736m	2610.13	ug/L	
8) NWTPH-Gx	9.870	TIC	21404654m	2873.09	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050739.D
Acq On : 8 May 2019 7:32 am
Operator : TB
Sample : 9E07048-CALH
Misc : 1X 2500ppb GX MeOH
ALS Vial : 29 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:33 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050740.D
Acq On : 8 May 2019 7:59 am
Operator : TB
Sample : 9E07048-CALI
Misc : 1X 5000ppb GX MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:28:59 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.096	168	287647	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.662	TIC	1135195	52.43	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	689679	49.52	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.807	TIC	1132386	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1419979	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	1091643m	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	60591403m	4709.17	ug/L	
6) TPHg (C6-C10)	9.860	TIC	49690540m	4851.33	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	71316473m	4883.02	ug/L	
8) NWTPH-Gx	9.870	TIC	45467241m	5764.80	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050740.D
Acq On : 8 May 2019 7:59 am
Operator : TB
Sample : 9E07048-CALI
Misc : 1X 5000ppb GX MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:35 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

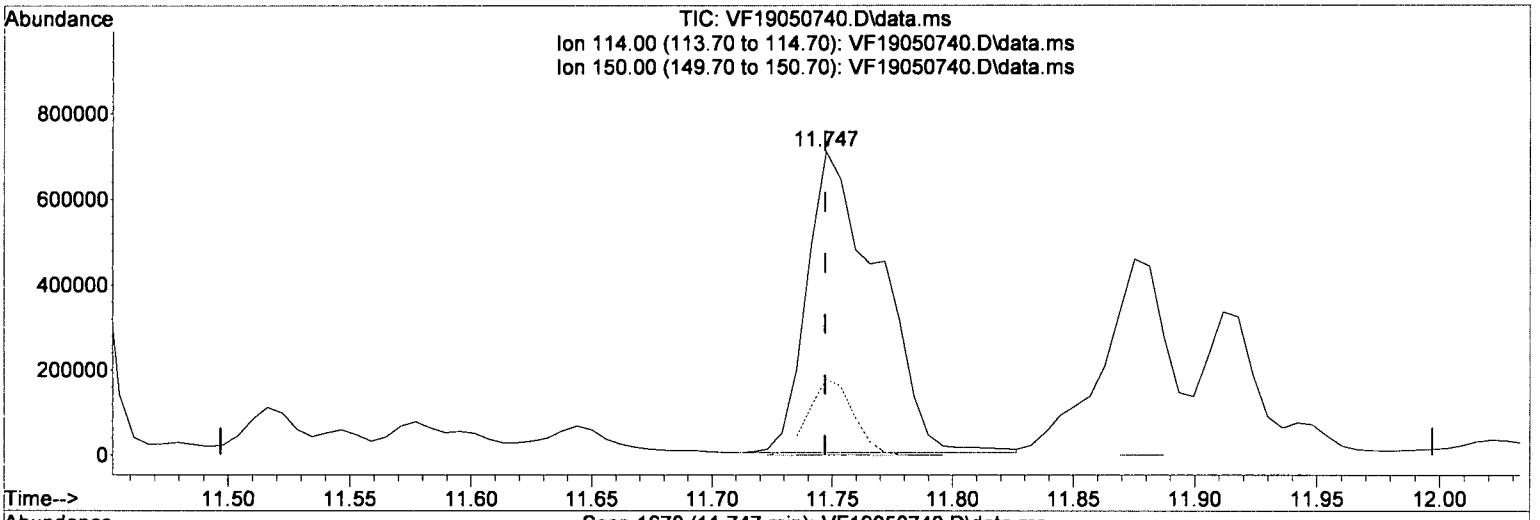
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.096	168	287647	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.662	TIC	1135195	52.43	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	689679	49.52	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.807	TIC	1132386	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1419979	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	1459749	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	60591403m	4709.17	ug/L	
6) TPHg (C6-C10)	9.860	TIC	49690540m	4851.33	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	70948367m	4857.81	ug/L	
8) NWTPH-Gx	9.870	TIC	45099135m	5718.13	ug/L	

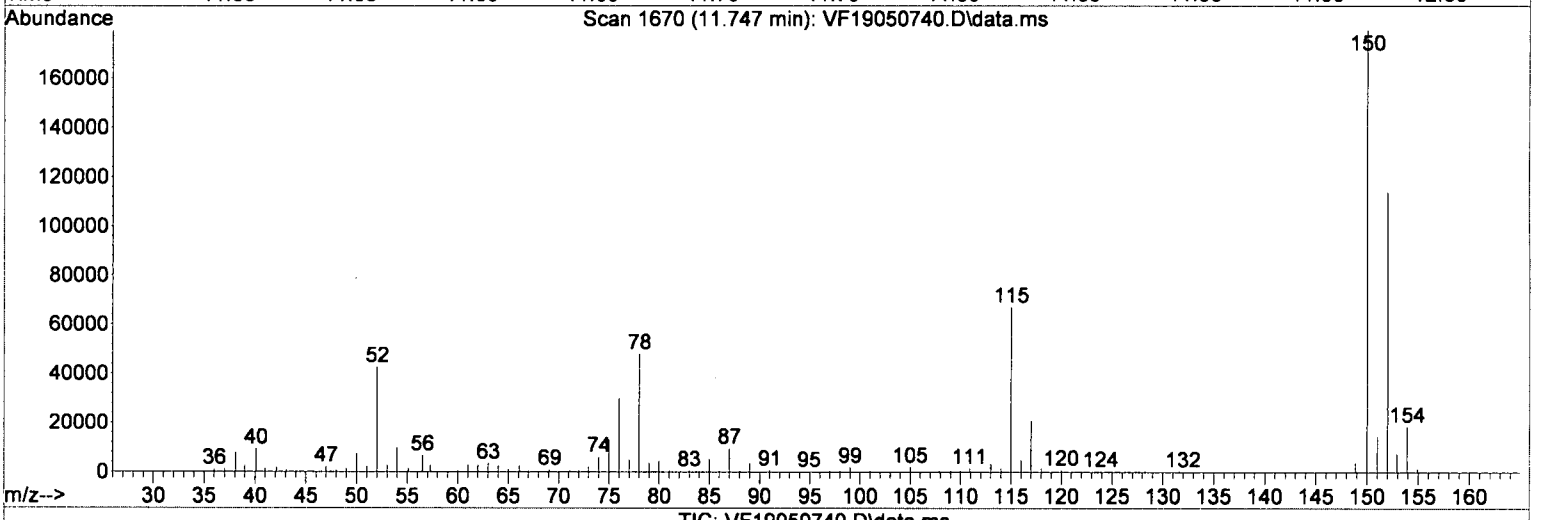
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050740.D
Acq On : 8 May 2019 7:59 am
Operator : TB
Sample : 9E07048-CALI
Misc : 1X 5000ppb GX MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:35 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration





TIC: VF19050740.D\data.ms

(12) 1,4-Dichlorobenzene-d4 (NR) (S)

11.747min (+0.000) 0.00 ug/L

response 1459749

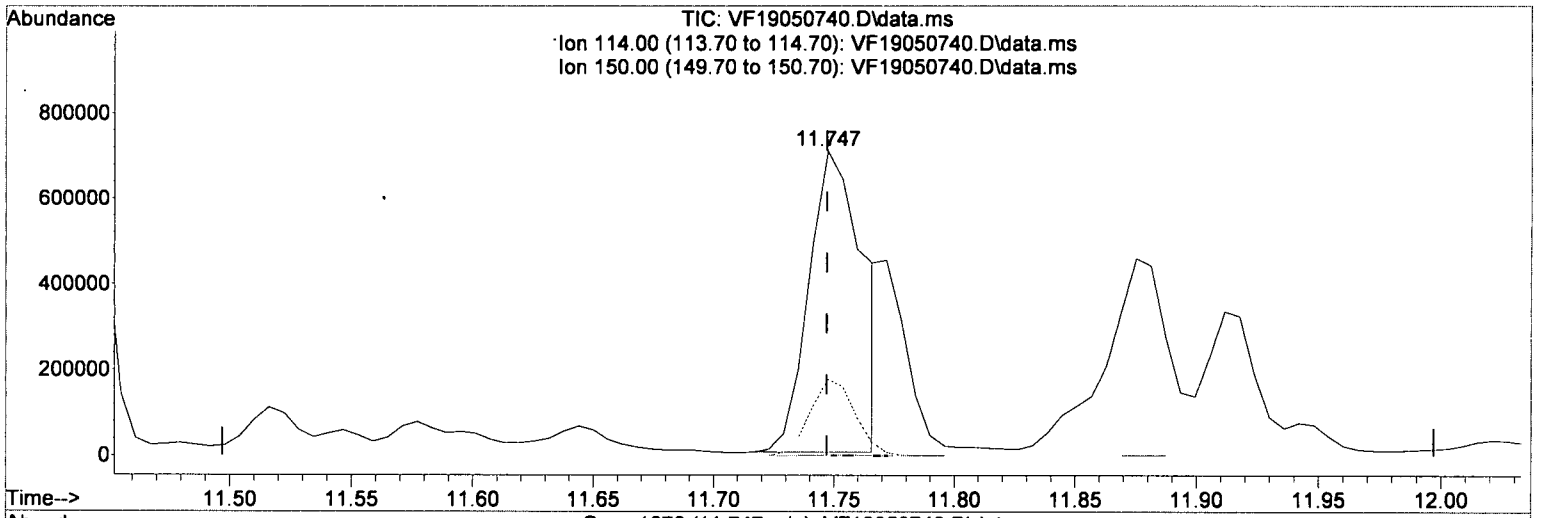
Signal	Exp%	Act%
TIC	100	100
114.00	0.20	0.00
150.00	24.00	16.09
0.00	0.00	0.00

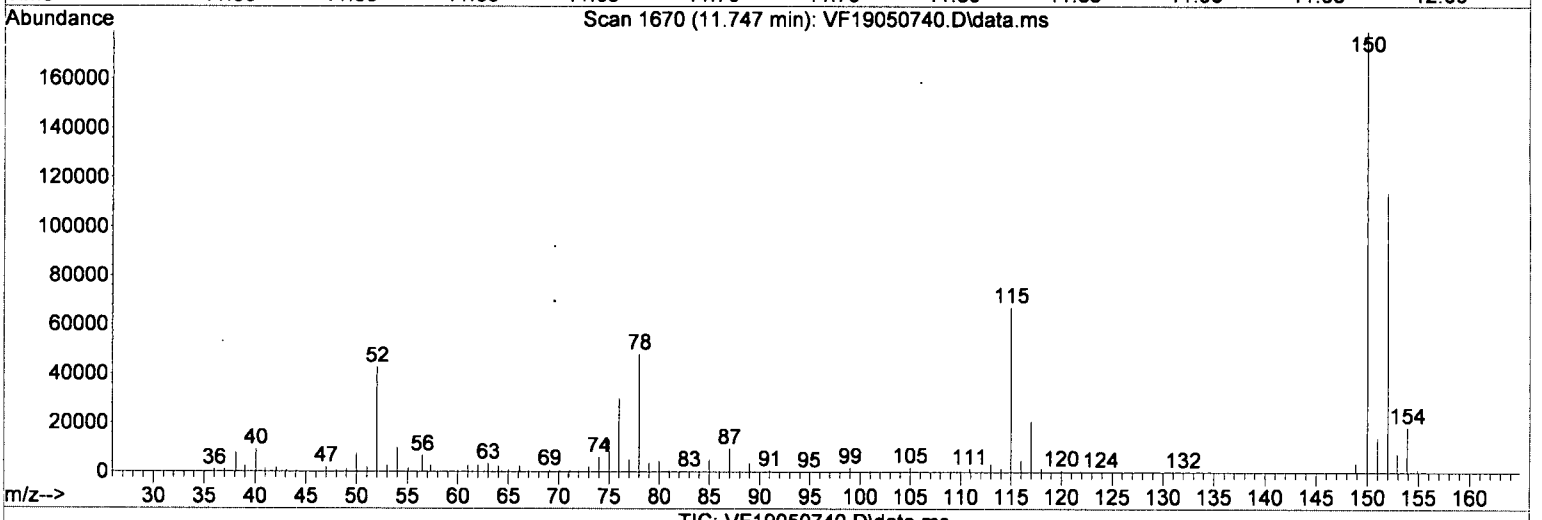
MT

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050740.D
Acq On : 8 May 2019 7:59 am
Operator : TB
Sample : 9E07048-CALI
Misc : 1X 5000ppb GX MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:35 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration





TIC: VF19050740.D\data.ms

(12) 1,4-Dichlorobenzene-d4 (NR) (S)

11.747min (+0.000) 0.00 ug/L m

response 1091643

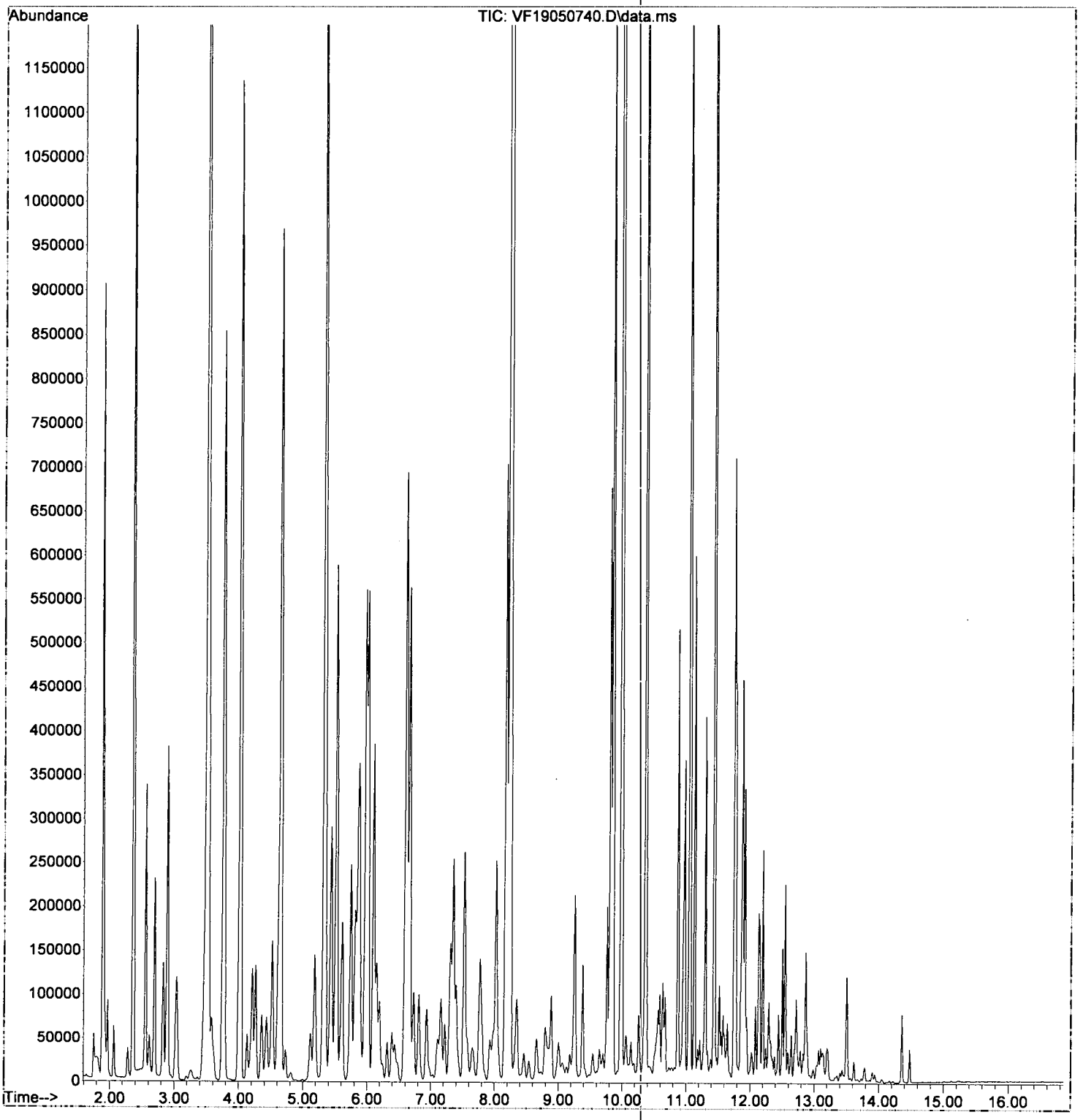
Signal	Exp%	Act%
TIC	100	100
114.00	0.20	0.64
150.00	24.00	0.47
0.00	0.00	0.00

5/8/19

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050740.D
Acq On : 8 May 2019 7:59 am
Operator : TB
Sample : 9E07048-CALI
Misc : 1X 5000ppb GX MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:35 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050741.D
Acq On : 8 May 2019 8:26 am
Operator : TB
Sample : 9E07048-CALK J 5/8/19
Misc : 1X 10000ppb GX MeOH
ALS Vial : 31 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:29:47 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.098	168	293025	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.658	TIC	1412610	64.05	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.868	TIC	701119	49.42	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.803	TIC	1179576	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.167	TIC	1494328	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.750	TIC	946889m	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	145061489m	11067.27	ug/L	
6) TPHg (C6-C10)	9.860	TIC	119967223m	11497.54	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	172661182m	11605.09	ug/L	
8) NWTPH-Gx	9.870	TIC	111038614m	13820.21	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050741.D
Acq On : 8 May 2019 8:26 am
Operator : TB
Sample : 9E07048-CALK J 5/8/19
Misc : 1X 10000ppb GX MeOH
ALS Vial : 31 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:37 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration

5/8/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.098	168	293025	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.658	TIC	1412610	64.05	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.868	TIC	701119	49.42	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.803	TIC	1179576	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.167	TIC	1494328	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.768	TIC	2214101	0.00	ug/L	0.02
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	145061489m	11067.27	ug/L	
6) TPHg (C6-C10)	9.860	TIC	119967223m	11497.54	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	171393970m	11519.91	ug/L	
8) NWTPH-Gx	9.870	TIC	109771402m	13662.49	ug/L	

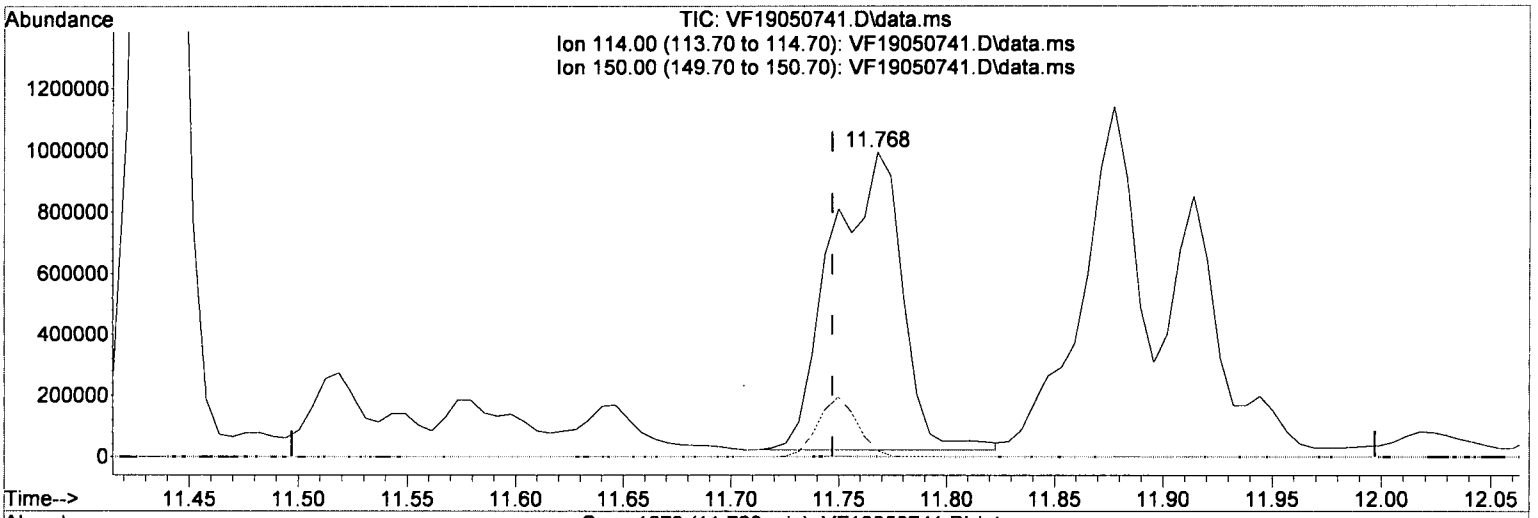
NF

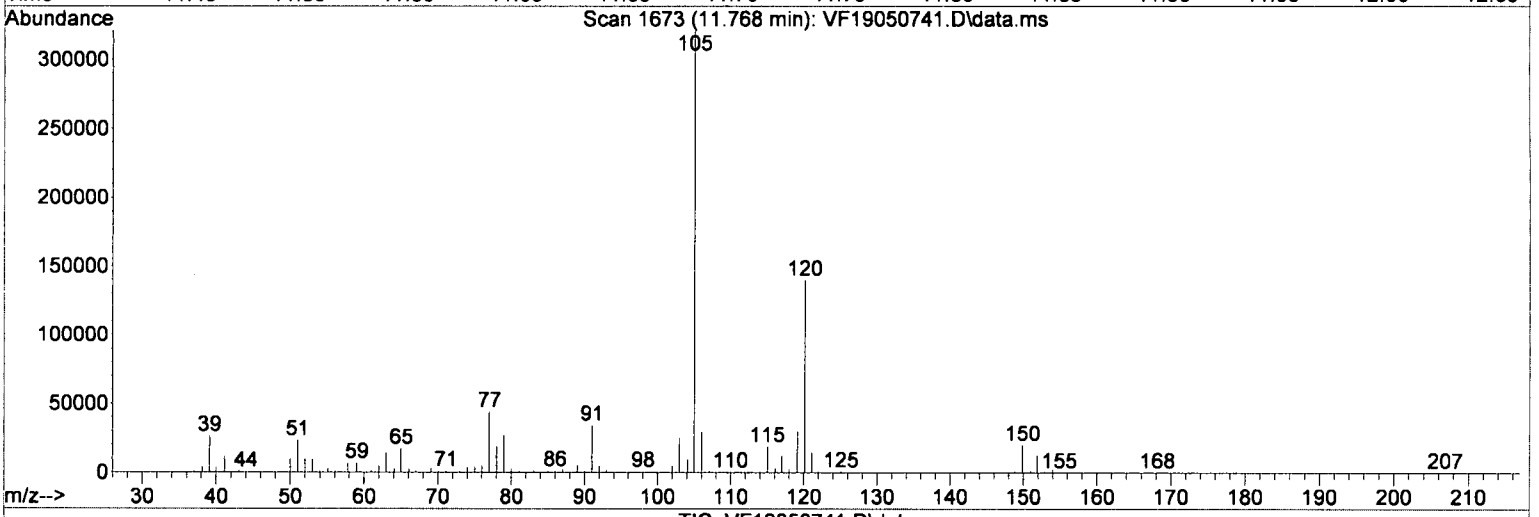
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050741.D
Acq On : 8 May 2019 8:26 am
Operator : TB
Sample : 9E07048-CALK J TB 5/8/19
Misc : 1X 10000ppb GX MeOH
ALS Vial : 31 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:37 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration





TIC: VF19050741.D\data.ms

(12) 1,4-Dichlorobenzene-d4 (NR) (S)

11.768min (+0.021) 0.00 ug/L

response 2214101

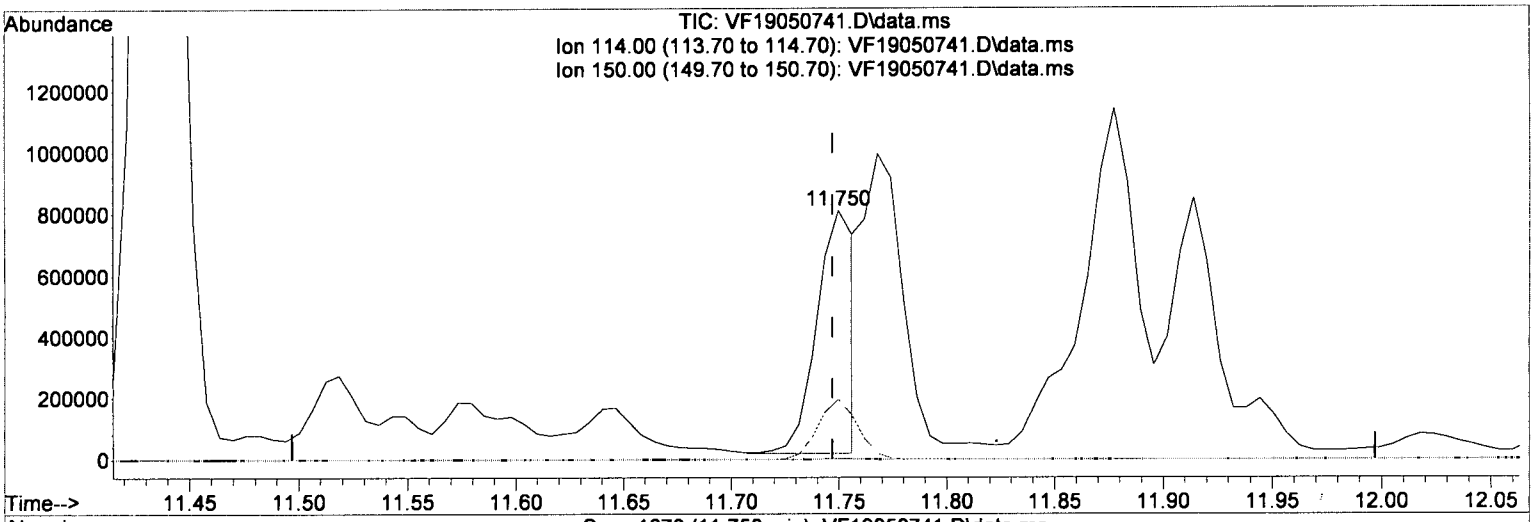
Signal	Exp%	Act%
TIC	100	100
114.00	0.20	0.00
150.00	24.00	11.23
0.00	0.00	0.00

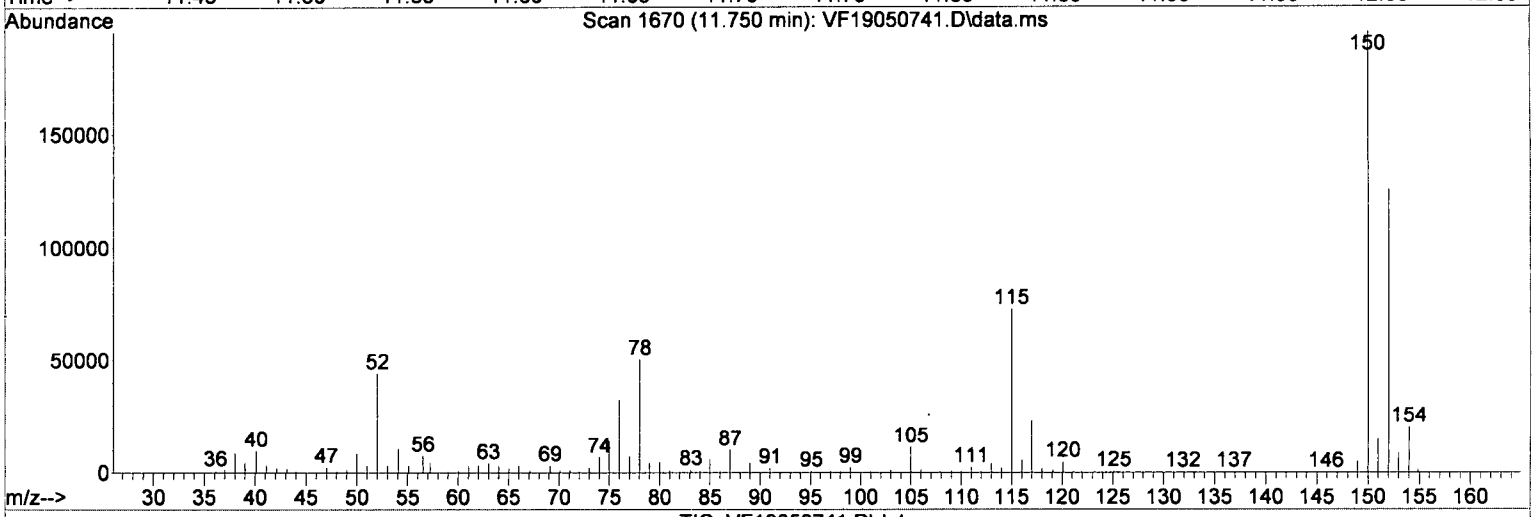
MI

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050741.D
Acq On : 8 May 2019 8:26 am
Operator : TB
Sample : 9E07048-CALK ~~J~~ TB 5/8/19
Misc : 1X 10000ppb GX MeOH
ALS Vial : 31 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:37 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration





TIC: VF19050741.D\data.ms

(12) 1,4-Dichlorobenzene-d4 (NR) (S)

11.750min (+0.003) 0.00 ug/L m

response 946889

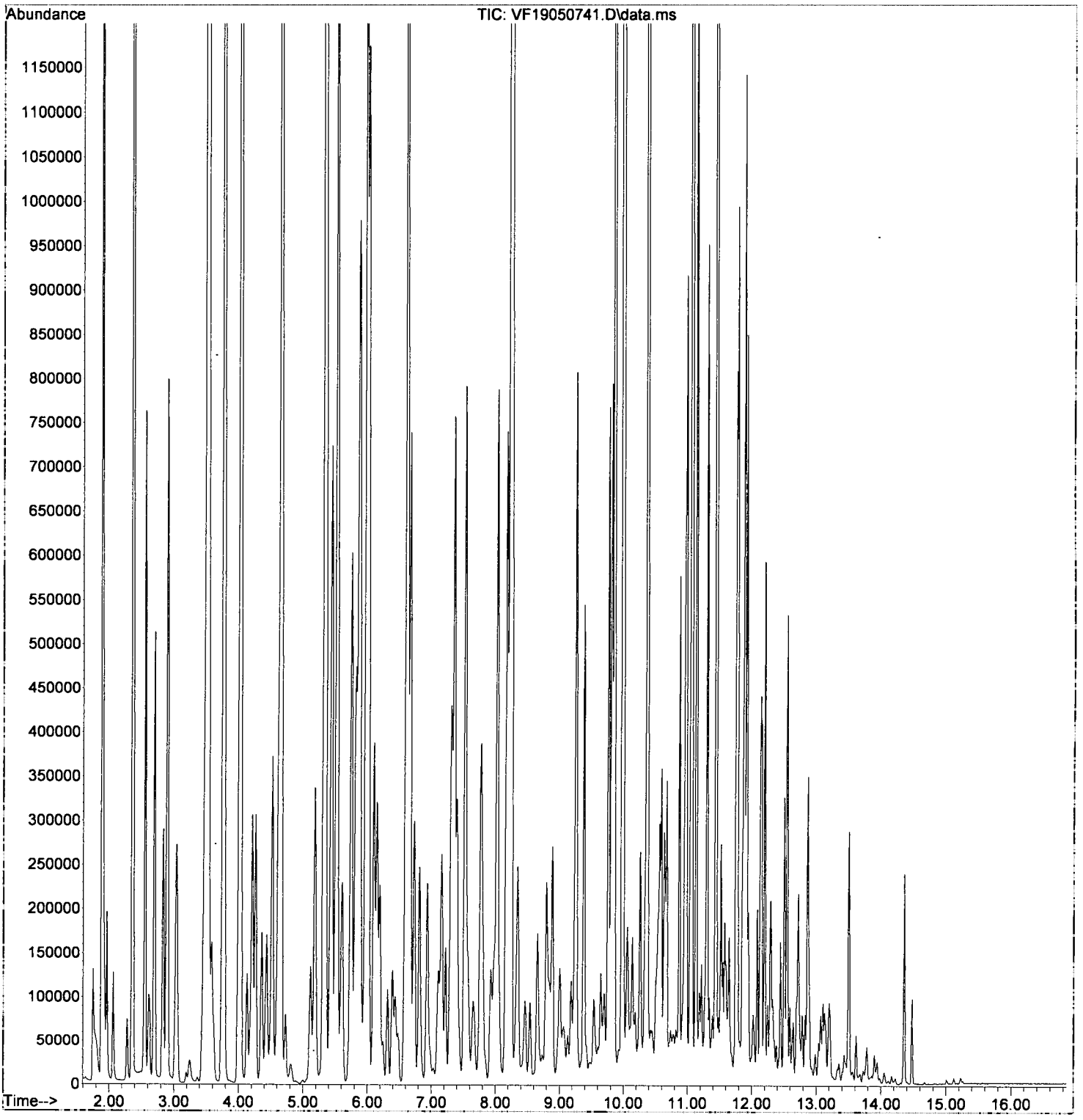
Signal	Exp%	Act%
TIC	100	100
114.00	0.20	0.00
150.00	24.00	26.25
0.00	0.00	0.00

TB 5/8/19

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050741.D
Acq On : 8 May 2019 8:26 am
Operator : TB
Sample : 9E07048-CALK J RK 5/8/19
Misc : 1X 10000ppb GX MeOH
ALS Vial : 31 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:26:37 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:17:02 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050742.D
Acq On : 8 May 2019 8:53 am
Operator : TB
Sample : 9E07048-IBL8
Misc : 1X 5mL DI+MeOH
ALS Vial : 32 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:15 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

NR

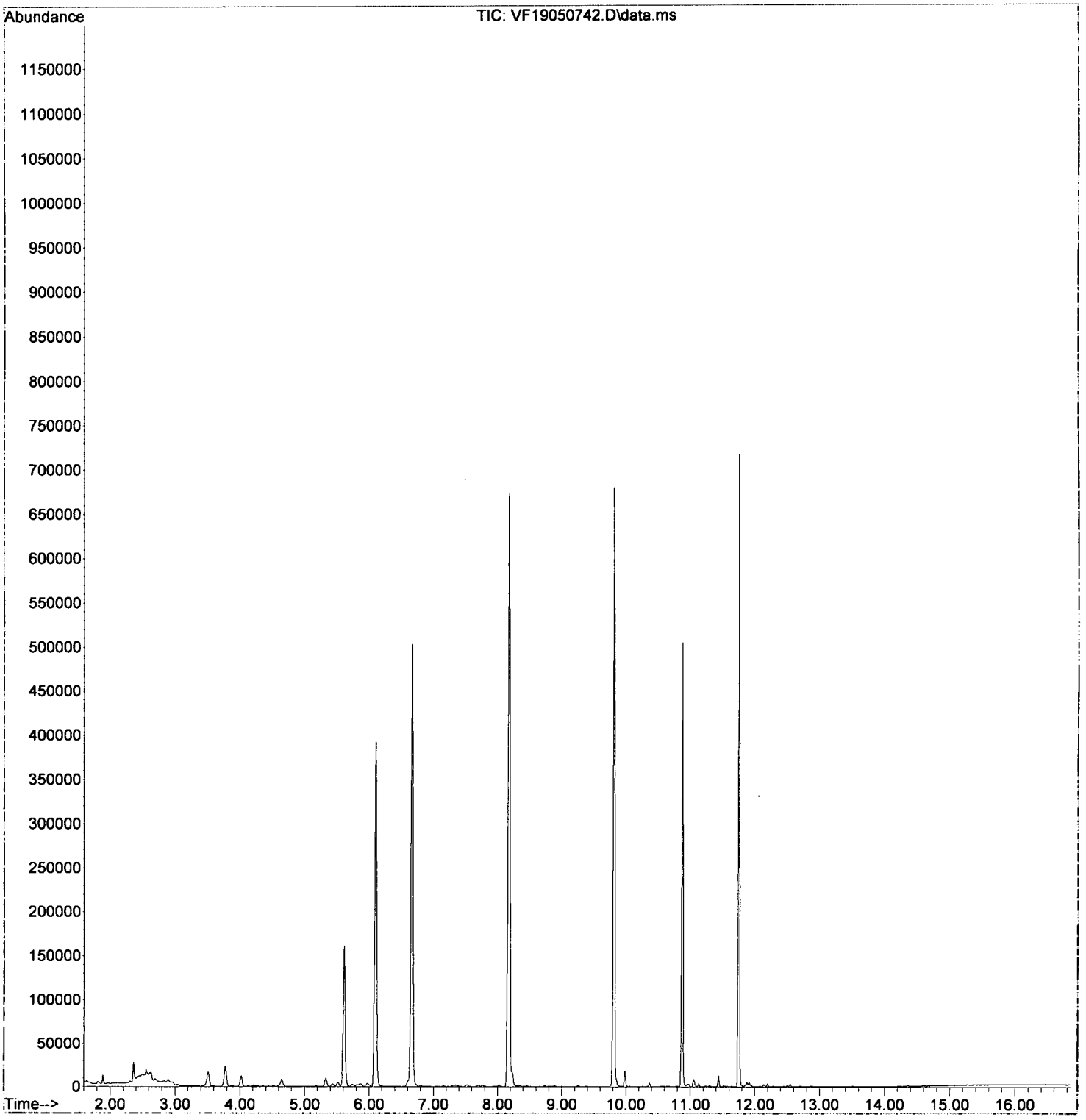
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.097	168	300299	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.657	TIC	1091415	46.10	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.867	TIC	718071	49.25	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.802	TIC	1100182	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.172	TIC	1429075	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.749	TIC	908097	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	718266m	25.30	ug/L	
6) TPHg (C6-C10)	9.860	TIC	531285m	30.49	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	783628m	30.07	ug/L	
8) NWTPH-Gx	9.870	TIC	130677m	38.75	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050742.D
Acq On : 8 May 2019 8:53 am
Operator : TB
Sample : 9E07048-IBL8
Misc : 1X 5mL DI+MeOH
ALS Vial : 32 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:15 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050743.D
Acq On : 8 May 2019 9:20 am
Operator : TB
Sample : 9E07048-IBL9
Misc : 1X 5mL DI+MeOH
ALS Vial : 33 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:17 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

NR

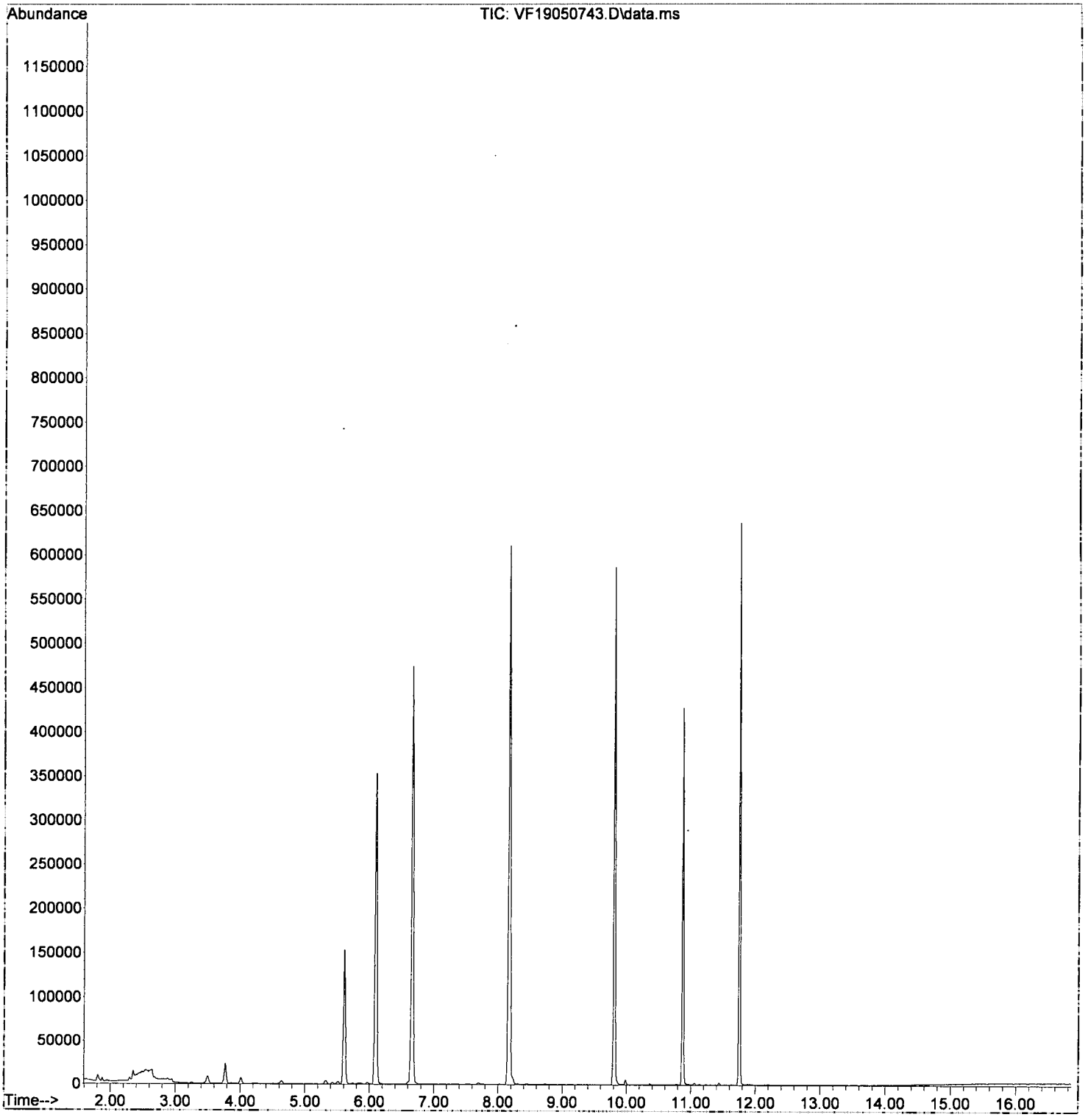
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.097	168	273596	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.657	TIC	987251	45.77	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.867	TIC	608879	45.84	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.802	TIC	925145	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.166	TIC	1264759	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.749	TIC	797642	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	502008m	11.74	ug/L	
6) TPHg (C6-C10)	9.860	TIC	398133m	20.99	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	502008m	13.72	ug/L	
8) NWTPH-Gx	9.870	TIC	19964m	26.08	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050743.D
Acq On : 8 May 2019 9:20 am
Operator : TB
Sample : 9E07048-IBL9
Misc : 1X 5mL DI+MeOH
ALS Vial : 33 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:17 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050744.D
Acq On : 8 May 2019 9:47 am
Operator : TB
Sample : 9E07048-ICV2
Misc : 1X 500ppb GX MeOH
ALS Vial : 34 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:19 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

5/8/19

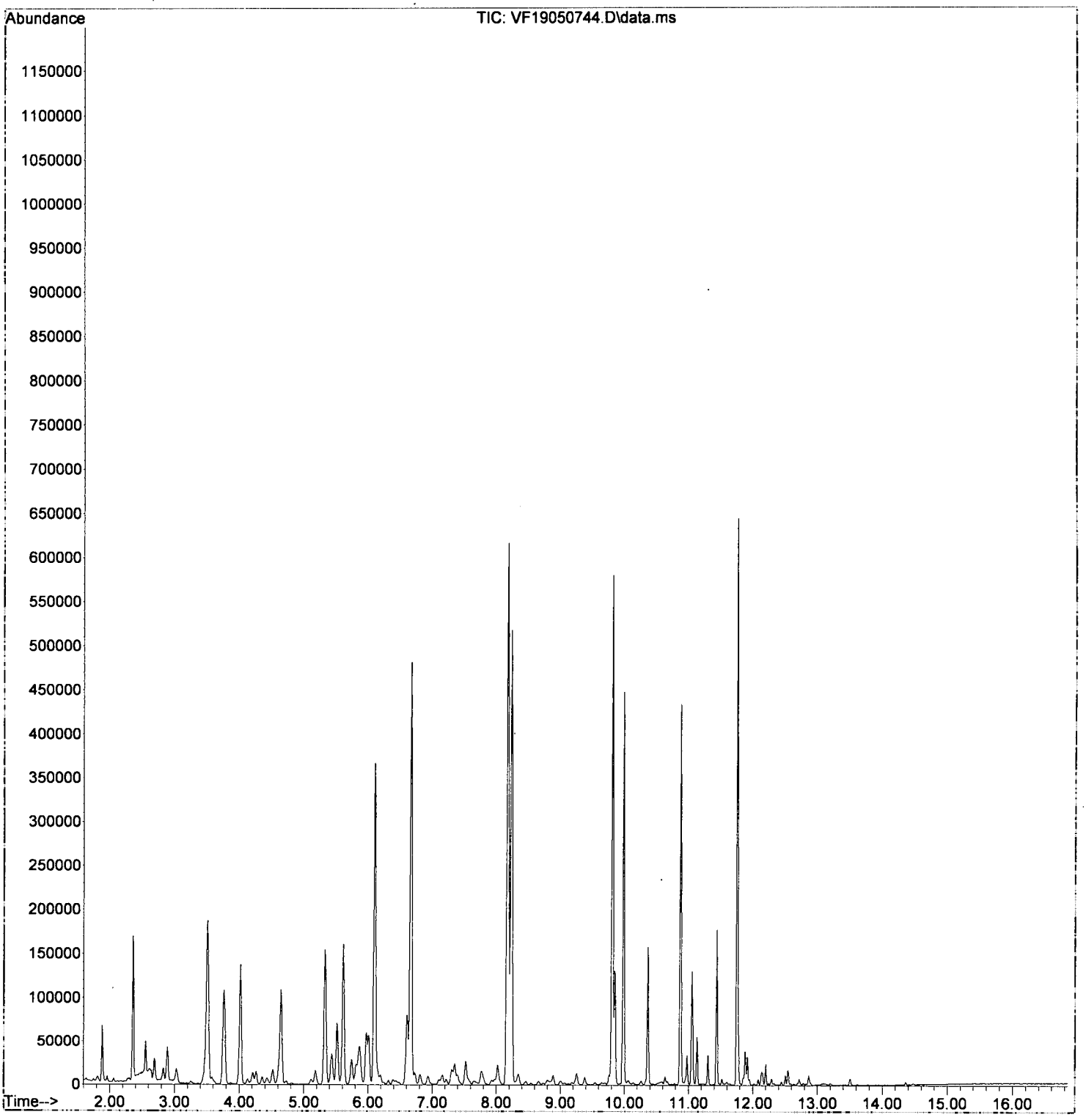
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.097	168	273841	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.663	TIC	1008883	46.73	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.873	TIC	617926	46.48	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.808	TIC	960704	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.172	TIC	1300790	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.749	TIC	861687	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	6428232m	533.69	ug/L	
6) TPHg (C6-C10)	9.860	TIC	5178782m	543.08	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	7312430m	532.59	ug/L	
8) NWTPH-Gx	9.870	TIC	4009491m	528.07	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050744.D
Acq On : 8 May 2019 9:47 am
Operator : TB
Sample : 9E07048-ICV2
Misc : 1X 500ppb GX MeOH
ALS Vial : 34 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:19 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050745.D
Acq On : 8 May 2019 10:14 am
Operator : TB
Sample : 9E07048-IBLA
Misc : 1X 5mL DI+MeOH
ALS Vial : 35 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:21 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration

NR

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.095	168	277007	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.661	TIC	1000763	45.82	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.871	TIC	640294	47.61	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.806	TIC	981084	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.170	TIC	1297377	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.747	TIC	828252	0.00	ug/L	0.00
Target Compounds						Qvalue
5) TPHg (C5-C9)	9.860	TIC	465462m	7.97	ug/L	
6) TPHg (C6-C10)	9.860	TIC	349743m	15.16	ug/L	
7) CA-LUFT (C5-C12)	9.860	TIC	465878m	10.49	ug/L	
8) NWTPH-Gx	9.870	TIC	-9851m	22.28	ug/L	

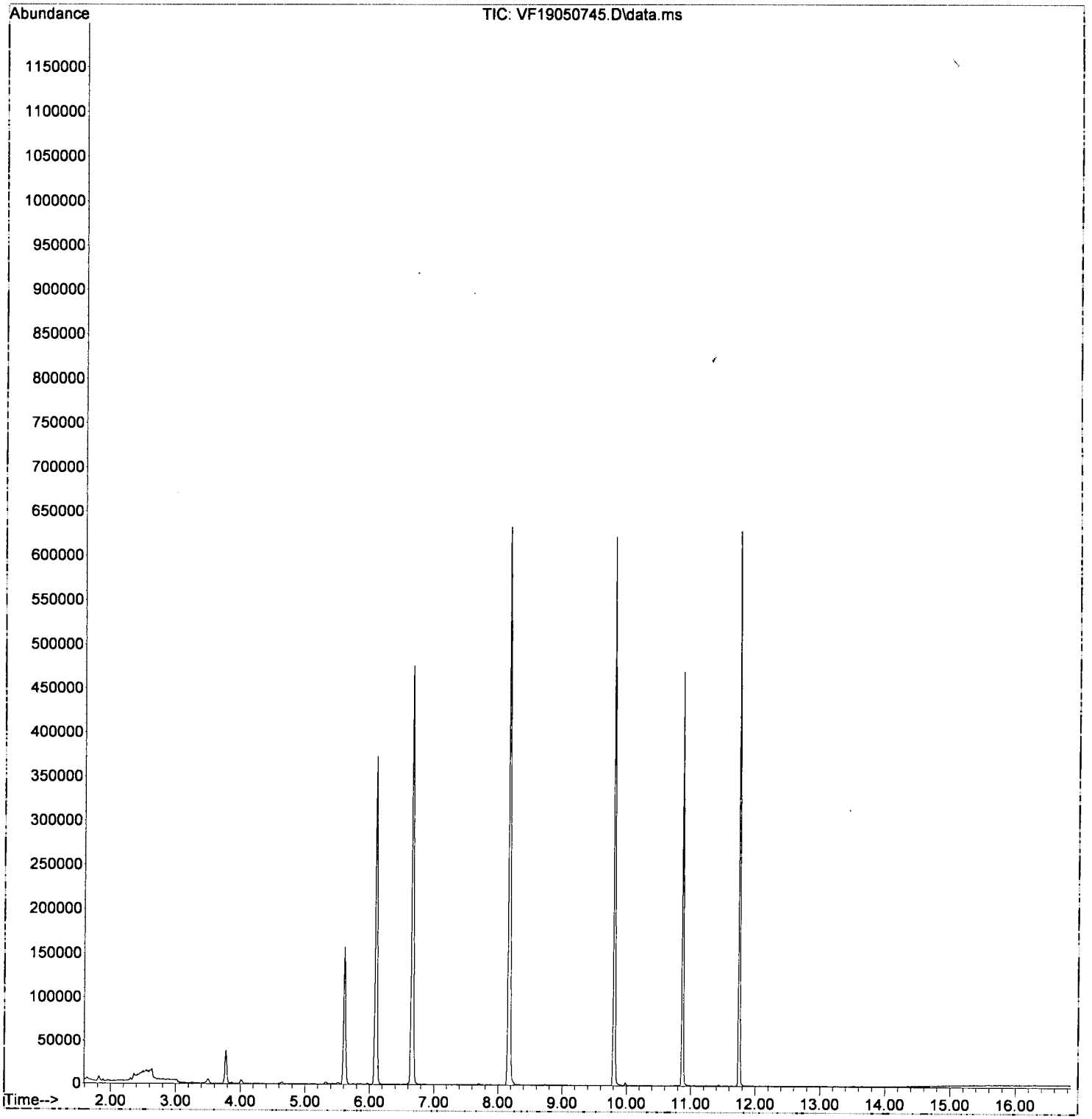
(#) = qualifier out of range (m) = manual integration (+) = signals summed

10/08/19 Hahn & Associates- Mult 802 Decommisioning - Level IV Data Package Page 892 of 1564

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E07048\
Data File : VF19050745.D
Acq On : 8 May 2019 10:14 am
Operator : TB
Sample : 9E07048-IBLA
Misc : 1X 5mL DI+MeOH
ALS Vial : 35 Sample Multiplier: 1
DataAcq Meth:VF1601RUN.M

Quant Time: May 08 11:37:21 2019
Quant Method : C:\msdchem\1\METHODS\VF190507G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed May 08 11:36:04 2019
Response via : Initial Calibration



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

TCLP Volatile Organic Compounds by EPA 8260C

Benchsheet & Analysis Sequence Data

Batch 9051246

Sequence 9E24013 (A9E05058-05)

PREPARATION BENCH SHEET

BATCH #: 9051246 (Water)

Apex Laboratories

JUN 14 2019

APEX LABORATORIES

Prep Method: EPA 1311/5030B TCLP Volatiles

Lab Number	Cont.	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surr.	ClientID / Sample	Extraction Comments	pH*
9051246-BLK1		QC	05/24/19 09:00	5	5						EXTRACTION BATCH 9051218	
9051246-BS1		QC	05/24/19 09:00	5	5	A19E227		250			@50X	
A9E0508-05	B	1311/8260C TCLP/ZHE Full	05/24/19 10:48	5	5					COMP1	Added 5/22	<2
9051246-DUP1		QC	05/24/19 10:48	5	5		A9E0508-05					<2
9051246-MS1		QC	05/24/19 10:48	5	5	A19E227	A9E0508-05	250			@50X	<2

*pH <2 verified N/A 5/28/19 bnl

Standards/Reagents

Reagent(s)			Analyte Spike(s)			Surrogate(s)		
Std ID	Exp. Date	Description	Std ID	Exp. Date	Description	Std ID	Exp. Date	Description
			A19E227	06/16/19	8260B Cal. Std. B VOCR Spike Mix (20-40ug/n			

GCMS1

5/28/19 bnl
Prepared By: Date

JM 5/28/19
Reviewed By: Date

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence:	**9E24013**	Instrument:	**VOA-GCMS1**
Date:	**05/24/19 08:25**	Calibration:	**A9C0602**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E24013-IBL1	Water	QC	QC			A19E148	
2	9E24013-IBL2	Water	QC	QC			A19E148	
3	9E24013-TUN1	Water	QC	QC			A19E148	
4	9E24013-CCV1	Water	QC	QC			A19E148	
5	9051246-BS1	Water	QC	QC		9051246	A19E148	
6	9051246-BLK1	Water	QC	QC		9051246	A19E148	
7	A9E0508-05	Water	1311/8260C TCLP/ZHE Full List VOA:	Hahn and Associates	05/29/19	9051246	A19E148	
8	9051246-DUP1	Water	QC	QC		9051246	A19E148	
9	9051246-MS1	Water	QC	QC		9051246	A19E148	
10	9E24013-IBL3	Water	QC	QC			A19E148	
11	9E24013-IBL4	Water	QC	QC			A19E148	

Data Entered By: 5/28/19

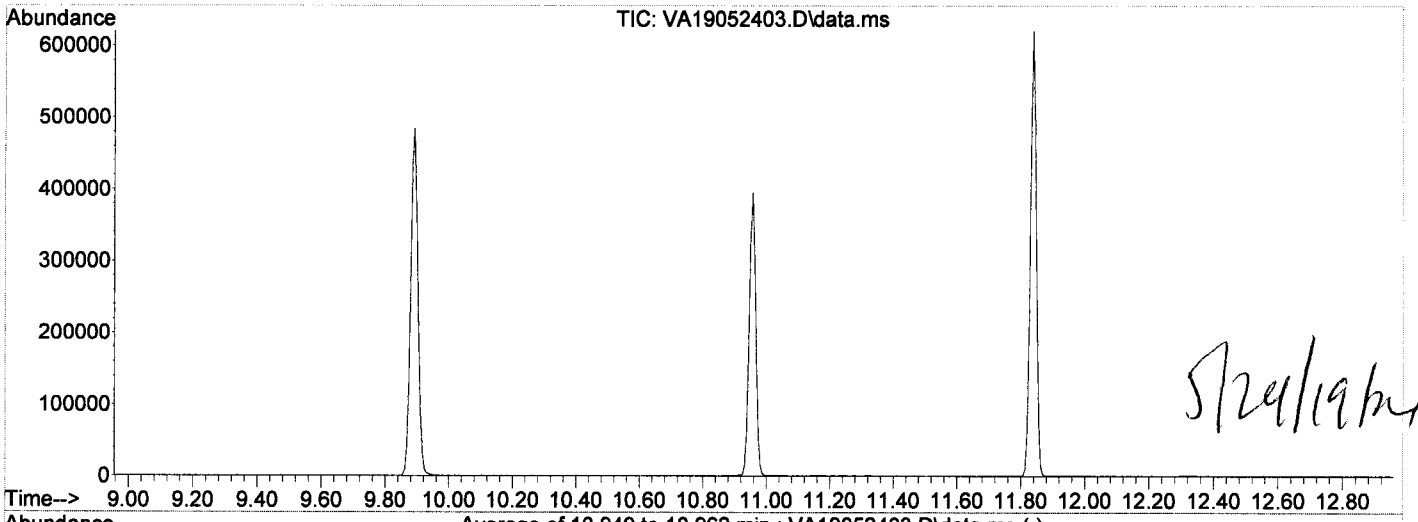
Data Reviewed By: 5/28/19

Comments: CH_2Br_2 EOS (RS1, RS1)
$MeCl_2$ B (Blk, BS1, MS1)

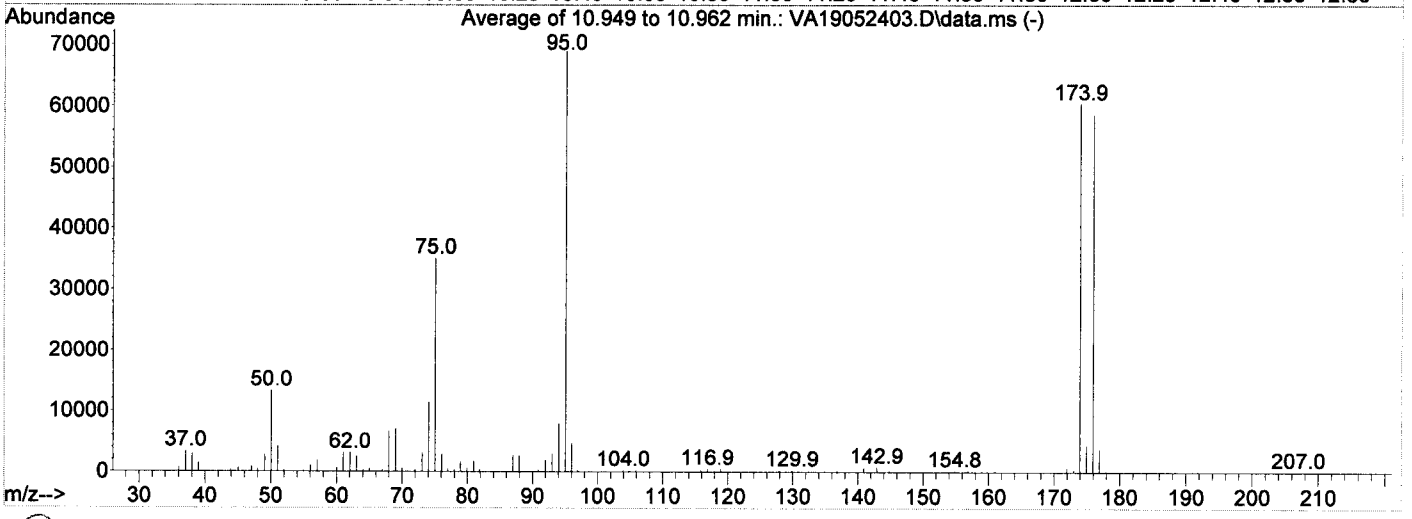
Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052403.D
Acq On : 24 May 2019 9:47 am
Operator : TNL
Sample : 9E24013-TUN1
Misc : A19E147 5mL BFB (IS/SURR)
ALS Vial : 38 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\VA190306W.M
Title : EPA 8260C: Volatile Organic Compounds
Last Update : Wed Mar 06 08:45:04 2019



5/24/19 hm



AutoFind: Scans 1521, 1522, 1523; Background Corrected with Scan 1514

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	12	40	19.3	13279	PASS
75	95	30	60	50.8	34997	PASS
95	95	100	100	100.0	68893	PASS
96	95	5	9	6.8	4696	PASS
173	174	0.00	2	0.5	315	PASS
174	95	50	200	87.7	60394	PASS
175	174	5	9	7.4	4452	PASS
176	174	95	101	96.9	58493	PASS
177	176	5	9	6.4	3758	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052403.D
Acq On : 24 May 2019 9:47 am
Operator : TNL
Sample : 9E24013-TUN1
Misc : A19E147 5mL BFB (IS/SURR)
ALS Vial : 38 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 10:42:22 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.194	168	180397	50.00	ug/L	0.00
39) Chlorobenzene-d5 (I)	9.891	117	258203	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4...	11.837	152	137632	50.00	ug/L	0.00
System Monitoring Compounds						
28) Dibromofluoromethane (S)	5.701	111	82970	55.06	ug/L	0.00
34) 1,4-Difluorobenzene (S)	6.759	114	281881	53.78	ug/L	0.00
42) Toluene-d8 (S)	8.274	98	323410	48.46	ug/L	0.00
61) 4-Bromofluorobenzene (S)	10.956	174	97640	46.06	ug/L	0.00
Target Compounds						Qvalue
13) Methylene Chloride	3.896	84	13955	7.30	ug/L	92
14) Acetone	3.950	43	1775	2.41	ug/L	80

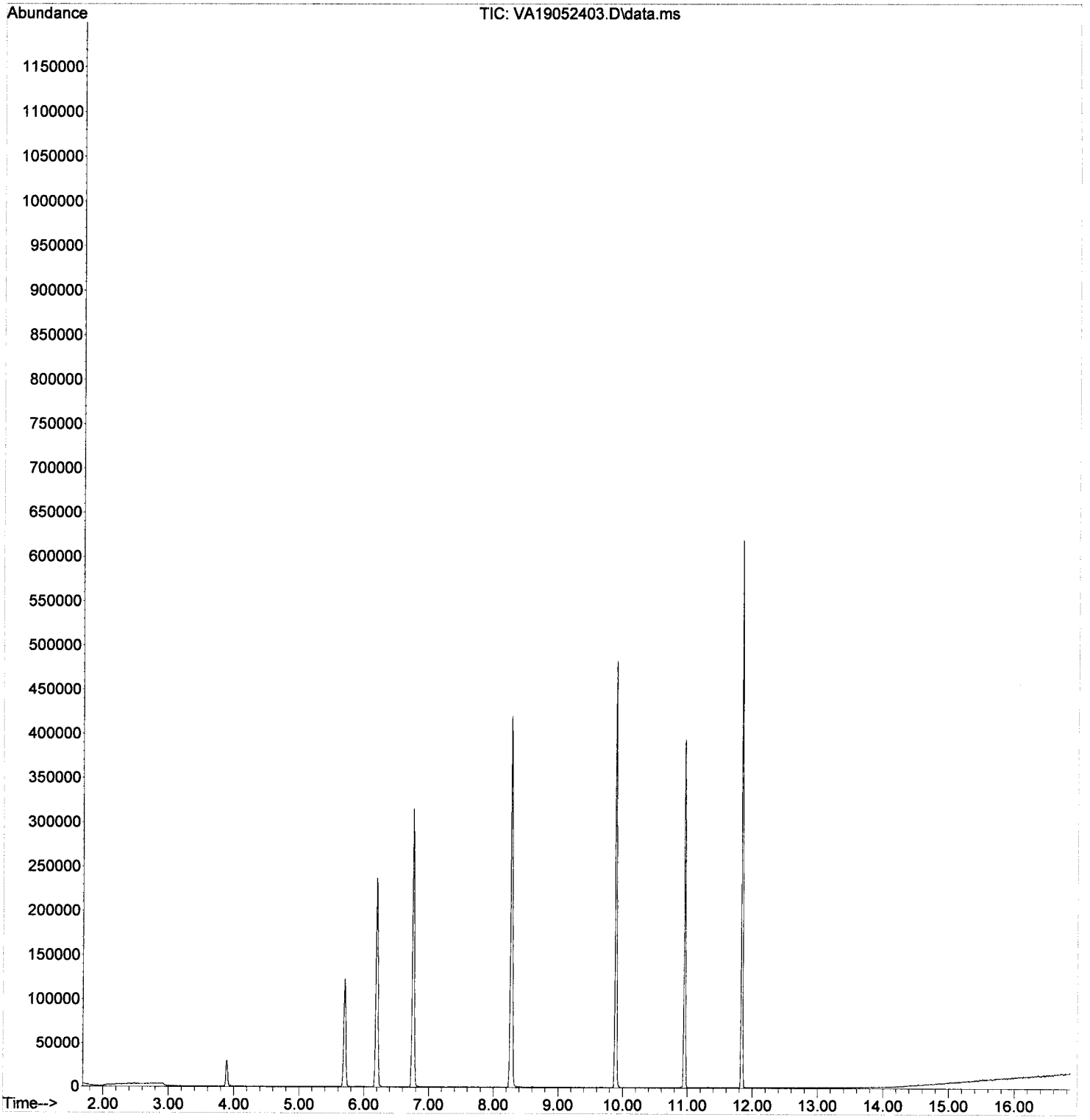
5/24/19 hy

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052403.D
Acq On : 24 May 2019 9:47 am
Operator : TNL
Sample : 9E24013-TUN1
Misc : A19E147 5mL BFB (IS/SURR)
ALS Vial : 38 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 10:42:22 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052404.D
Acq On : 24 May 2019 10:15 am
Operator : TNL
Sample : 9051246-BS1@50
Misc : 50X 1mL/50mL 20/40PPB VOCR A19E227 ZHE F
ALS Vial : 39 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 10:42:24 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

5/24/19 tnl

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 (I)	50.000	50.000	0.0	83	0.00	
2		Dichlorodifluoromethane	20.000	23.437	-17.2	95	0.00	
3	P	Chloromethane	20.000	19.132	4.3	76	0.00	
4	C	Vinyl Chloride	20.000	17.341	13.3	72	0.00	
5		Bromomethane	20.000	32.305	-61.5#	131	0.00	Dil'd
6		Chloroethane	20.000	17.648	11.8	73	0.00	
7		Trichlorofluoromethane	20.000	20.949	-4.7	87	0.00	
8	C	1,1-Dichloroethene	20.000	20.430	-2.1	86	0.00	
9		Carbon Disulfide	20.000	23.387	-16.9	97	0.00	
10		Freon 113	20.000	24.396	NR -22.0#	101	0.00	
11		Iodomethane	20.000	48.553	NR -142.8#	335	0.00	
12		Acrolein	20.000	20.744	-3.7	84	0.00	
13		Methylene Chloride	20.000	26.309	-31.5#	103	0.00	Dil'd
14		Acetone	40.000	40.408	-1.0	83	0.00	
15		t-1,2-Dichloroethene	20.000	21.668	-8.3	90	0.00	
16		n-Hexane	20.000	22.252	-11.3	91	0.00	
17		Methyl-tert-butyl-ether	20.000	20.610	-3.0	89	0.00	
18	P	1,1-Dichloroethane	20.000	21.878	-9.4	90	0.00	
19		Acrylonitrile	20.000	22.590	-13.0	90	0.00	
20		Vinyl Acetate	20.000	19.410	2.9	74	0.00	
21		c-1,2-Dichloroethene	20.000	23.556	-17.8	95	0.00	
22		2,2-Dichloropropane	20.000	22.578	-12.9	95	0.00	
23		Bromochloromethane	20.000	26.565	-32.8#	115	0.00	Dil'd
24	C	Chloroform	20.000	23.695	-18.5	99	0.00	
25		Carbon Tetrachloride	20.000	26.395	-32.0#	109	0.00	Dil'd
26		Tetrahydrofuran	20.000	19.313	3.4	79	-0.01	
27		1,1,1-Trichloroethane	20.000	23.601	-18.0	99	0.00	
28	S	Dibromofluoromethane (S)	50.000	53.179	-6.4	89	0.00	
29		1,1-Dichloropropene	20.000	23.201	-16.0	98	0.00	
30		2-Butanone (MEK)	40.000	42.826	-7.1	89	0.00	
31		Benzene	20.000	22.330	-11.6	97	0.00	
32		1,2-Dichloroethane (EDC)	20.000	23.468	-17.3	97	0.00	
33		iso-Butyl Alcohol	500.000	519.577	-3.9	82	0.00	
34	S	1,4-Difluorobenzene (S)	50.000	52.547	-5.1	87	0.00	
35		Trichloroethene (TCE)	20.000	22.675	-13.4	94	0.00	
36		Dibromomethane	20.000	23.674	-18.4	96	0.00	
37	C	1,2-Dichloropropane	20.000	22.947	-14.7	97	0.00	
38		Bromodichloromethane	20.000	25.569	-27.8#	102	0.00	Dil'd
39		Chlorobenzene-d5 (I)	50.000	50.000	0.0	89	0.00	
40		~~2-Chloroethyl Vinyl Ether~~	~~20.000~~	~~0.000~~	~~100.0#~~	~~0~~	~~0.00~~	
41		c-1,3-Dichloropropene	20.000	20.659	-3.3	91	0.00	
42	S	Toluene-d8 (S)	50.000	48.105	3.8	86	0.00	
43	C	Toluene	20.000	21.939	-9.7	99	0.00	
44		Tetrachloroethene (PCE)	20.000	22.276	-11.4	97	0.00	
45		4-Methyl-2-Pentanone (MIBK)	40.000	40.356	-0.9	87	0.00	
46		t-1,3-Dichloropropene	20.000	22.510	-12.6	98	0.00	
47		1,1,2-Trichloroethane	20.000	21.592	-8.0	95	0.00	
48		Dibromochloromethane	20.000	23.003	-15.0	103	0.00	
49		1,3-Dichloropropane	20.000	22.078	-10.4	96	0.00	
50		1,2-Dibromoethane (EDB)	20.000	22.030	-10.2	94	0.00	

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052404.D
Acq On : 24 May 2019 10:15 am
Operator : TNL
Sample : 9051246-BS1@50
Misc : 50X 1mL/50mL 20/40PPB VOCR A19E227 ZHE F
ALS Vial : 39 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 10:42:24 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

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)
51		2-Hexanone	40.000	39.117	2.2	82	0.00
52	P	Chlorobenzene	20.000	21.509	-7.5	96	0.00
53	C	Ethylbenzene	20.000	22.530	-12.7	100	0.00
54		1,1,1,2-Tetrachloroethane	20.000	23.664	-18.3	101	0.00
55		m,p-Xylenes (2)	40.000	45.043	-12.6	98	0.00
56		o-Xylene	20.000	21.179	-5.9	93	0.00
57		Styrene	20.000	22.924	-14.6	97	0.00
58	P	Bromoform	20.000	25.151	-25.8#	105	0.00
59		Isopropylbenzene	20.000	22.086	-10.4	97	0.00
60	I	1,4-Dichlorobenzene-d4 (I)	50.000	50.000	0.0	89	0.00
61	S	4-Bromofluorobenzene (S)	50.000	45.463	9.1	81	0.00
62		Bromobenzene	20.000	20.838	-4.2	92	0.00
63		n-Propylbenzene	20.000	22.518	-12.6	99	0.00
64	P	1,1,2,2-Tetrachloroethane	20.000	21.809	-9.0	97	0.00
65		2-Chlorotoluene	20.000	20.951	-4.8	94	0.00
66		1,3,5-Trimethylbenzene	20.000	21.879	-9.4	96	0.00
67		1,2,3-Trichloropropane	20.000	22.067	-10.3	100	0.00
68		t-1,4-Dichloro-2-butene	20.000	30.403	-52.0#	128	0.00
69		4-Chlorotoluene	20.000	21.785	-8.9	98	0.00
70		tert-Butylbenzene	20.000	21.148	-5.7	95	0.00
71		1,2,4-Trimethylbenzene	20.000	22.082	-10.4	95	0.00
72		sec-Butylbenzene	20.000	22.341	-11.7	97	0.00
73		4-Isopropyltoluene	20.000	21.758	-8.8	94	0.00
74		1,3-Dichlorobenzene	20.000	21.127	-5.6	93	0.00
75		1,4-Dichlorobenzene	20.000	20.580	-2.9	93	0.00
76		n-Butylbenzene	20.000	22.220	-11.1	94	0.00
77		1,2-Dichlorobenzene	20.000	20.624	-3.1	91	0.00
78		1,2-Dibromo-3-Chloropropane	20.000	18.797	6.0	82	0.00
79		Hexachlorobutadiene	20.000	20.868	-4.3	92	0.00
80		1,2,4-Trichlorobenzene	20.000	18.189	9.1	76	0.00
81		Naphthalene	20.000	17.259	13.7	71	0.00
82		1,2,3-Trichlorobenzene	20.000	18.319	8.4	78	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\9E24013\
Data File : VA19052404.D
Acq On : 24 May 2019 10:15 am
Operator : TNL
Sample : 9051246-BS1@50
Misc : 50X 1mL/50mL 20/40PPB VOCR A19E227 ZHE F
ALS Vial : 39 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 10:42:24 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

5/24/19 TNL

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)	
Internal Standards								
1) Pentafluorobenzene (I)	6.194	168	204108	50.00	ug/L		0.00	
39) Chlorobenzene-d5 (I)	9.891	117	291658	50.00	ug/L		0.00	
60) 1,4-Dichlorobenzene-d4...	11.837	152	164540	50.00	ug/L		0.00	
System Monitoring Compounds								
28) Dibromofluoromethane (S)	5.701	111	90663	53.18	ug/L		0.00	
34) 1,4-Difluorobenzene (S)	6.760	114	311613	52.55	ug/L		0.00	
42) Toluene-d8 (S)	8.274	98	362653	48.10	ug/L		0.00	
61) 4-Bromofluorobenzene (S)	10.956	174	115226	45.46	ug/L		0.00	
Target Compounds							Qvalue	
2) Dichlorodifluoromethane	1.769	85	55793	23.44	ug/L		100	
3) Chloromethane	1.970	50	83778	19.13	ug/L		100	
4) Vinyl Chloride	2.067	62	54049	17.34	ug/L		95	
5) Bromomethane	2.432	96	12905	32.31	ug/L		99	DSC
6) Chloroethane	2.578	64	31405	17.65	ug/L		99	
7) Trichlorofluoromethane	2.736	101	71351	20.95	ug/L		100	
8) 1,1-Dichloroethene	3.283	61	56753	20.43	ug/L		94	
9) Carbon Disulfide	3.308	76	127252	23.39	ug/L		99	
10) Freon 113	3.344	101	45411	24.40	ug/L		99	
11) Iodomethane	3.423	142	16777	48.55	ug/L		92	
12) Acrolein	3.630	56	9174	20.74	ug/L		98	
13) Methylene Chloride	3.891	84	53986	26.31	ug/L		96	DSC
14) Acetone	3.940	43	33609	40.41	ug/L		100	
15) t-1,2-Dichloroethene	4.068	61	57308	21.67	ug/L		99	
16) n-Hexane	4.165	86	11503	22.25	ug/L	#	58	
17) Methyl-tert-butyl-ether	4.189	73	136867	20.61	ug/L		83	
18) 1,1-Dichloroethane	4.688	63	75111	21.88	ug/L		98	
19) Acrylonitrile	4.724	53	21541	22.59	ug/L		97	
20) Vinyl Acetate	4.956	43	70473	19.41	ug/L		98	
21) c-1,2-Dichloroethene	5.233	61	60211	23.56	ug/L		100	
22) 2,2-Dichloropropane	5.349	77	61685	22.58	ug/L		97	
23) Bromochloromethane	5.434	49	38576	26.56	ug/L		92	DSC
24) Chloroform	5.519	83	79435	23.69	ug/L		96	
25) Carbon Tetrachloride	5.665	117	63356	26.39	ug/L		95	DSC
26) Tetrahydrofuran	5.683	42	17770	19.31	ug/L		97	
27) 1,1,1-Trichloroethane	5.732	97	69655	23.60	ug/L		98	
29) 1,1-Dichloropropene	5.859	75	62382	23.20	ug/L		97	
30) 2-Butanone (MEK)	5.823	43	55786	42.83	ug/L		93	
31) Benzene	6.109	78	183044	22.33	ug/L		98	
32) 1,2-Dichloroethane (EDC)	6.316	62	62510	23.47	ug/L		99	
33) iso-Butyl Alcohol	6.346	43	64967	519.58	ug/L		96	
35) Trichloroethene (TCE)	6.729	130	47511	22.67	ug/L		98	
36) Dibromomethane	7.167	93	27830	23.67	ug/L		95	
37) 1,2-Dichloropropane	7.276	63	45991	22.95	ug/L		95	
38) Bromodichloromethane	7.349	83	59293	25.57	ug/L		100	DSC
41) c-1,3-Dichloropropene	8.055	75	66510	20.66	ug/L		100	
43) Toluene	8.335	91	202223	21.94	ug/L		97	
44) Tetrachloroethene (PCE)	8.779	166	53953	22.28	ug/L		95	
45) 4-Methyl-2-Pentanone (...	8.760	43	106540	40.36	ug/L		98	
46) t-1,3-Dichloropropene	8.797	75	67310	22.51	ug/L		99	
47) 1,1,2-Trichloroethane	8.967	97	42871	21.59	ug/L		98	
48) Dibromochloromethane	9.156	129	45599	23.00	ug/L		99	
49) 1,3-Dichloropropane	9.253	76	77006	22.08	ug/L		95	

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052404.D
Acq On : 24 May 2019 10:15 am
Operator : TNL
Sample : 9051246-BS1@50
Misc : 50X 1mL/50mL 20/40PPB VOCR A19E227 ZHE F
ALS Vial : 39 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 10:42:24 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

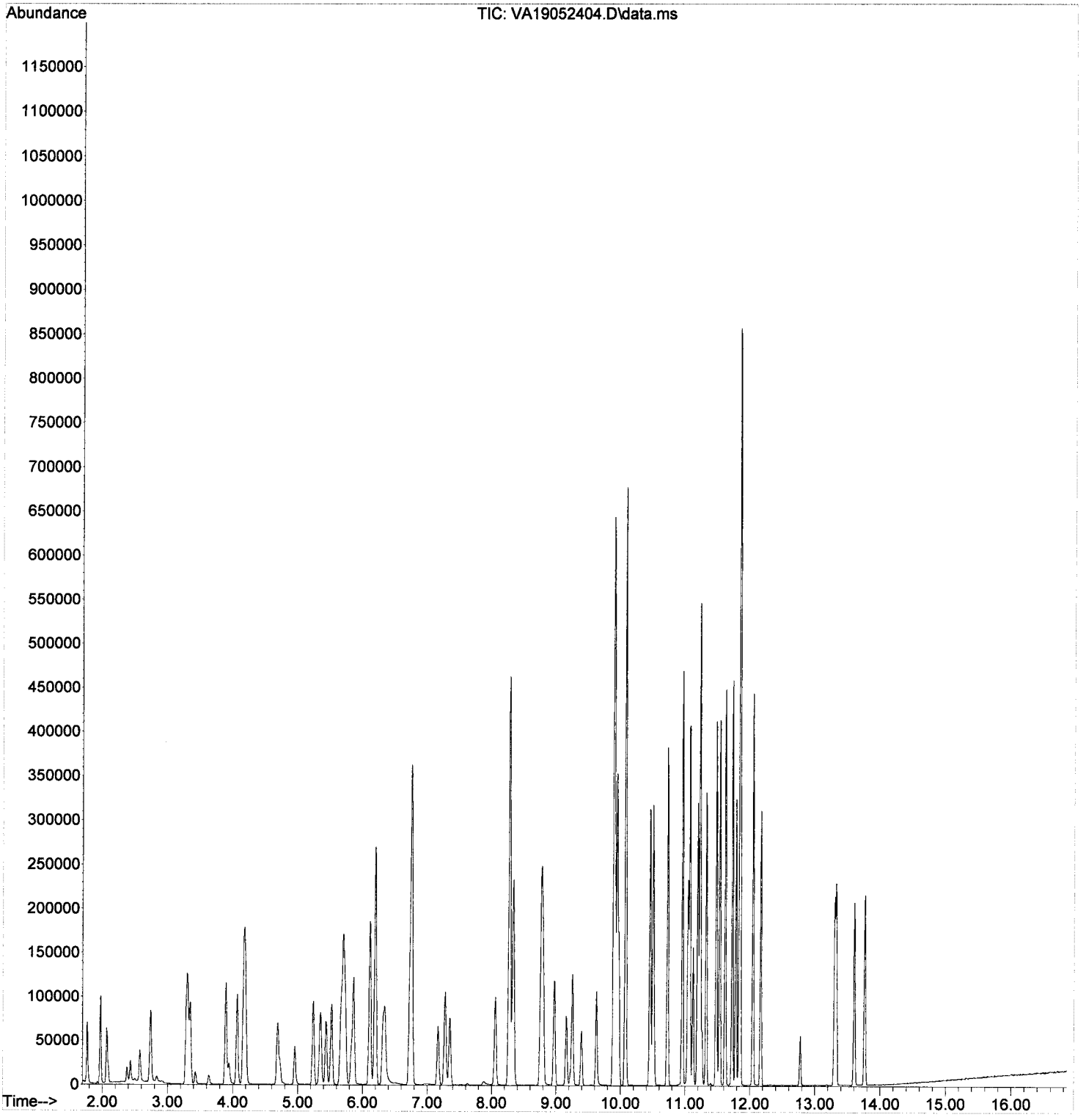
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)	
50) 1,2-Dibromoethane (EDB)	9.393	107	43643	22.03	ug/L	99	
51) 2-Hexanone	9.624	43	70082	39.12	ug/L	96	
52) Chlorobenzene	9.904	112	131503	21.51	ug/L	97	
53) Ethylbenzene	9.940	91	232911	22.53	ug/L	99	
54) 1,1,1,2-Tetrachloroethane	9.970	131	46024	23.66	ug/L	98	
55) m,p-Xylenes (2)	10.074	91	356619	45.04	ug/L	98	
56) o-Xylene	10.451	91	169671	21.18	ug/L	96	
57) Styrene	10.500	104	129385	22.92	ug/L	99	
58) Bromoform	10.518	173	34666	25.15	ug/L	99	25
59) Isopropylbenzene	10.725	105	228051	22.09	ug/L	98	
62) Bromobenzene	11.041	156	56662	20.84	ug/L	91	
63) n-Propylbenzene	11.071	91	283367	22.52	ug/L	98	
64) 1,1,2,2-Tetrachloroethane	11.120	83	67509	21.81	ug/L	99	
65) 2-Chlorotoluene	11.193	126	53451	20.95	ug/L	99	
66) 1,3,5-Trimethylbenzene	11.229	105	191785	21.88	ug/L	98	
67) 1,2,3-Trichloropropane	11.223	110	22622	22.07	ug/L	96	
68) t-1,4-Dichloro-2-butene	11.260	88	5425	30.40	ug/L	92	
69) 4-Chlorotoluene	11.320	91	166815	21.78	ug/L	94	
70) tert-Butylbenzene	11.479	91	111033	21.15	ug/L	99	
71) 1,2,4-Trimethylbenzene	11.533	105	194961	22.08	ug/L	98	
72) sec-Butylbenzene	11.618	105	264893	22.34	ug/L	99	
73) 4-Isopropyltoluene	11.728	119	218959	21.76	ug/L	99	
74) 1,3-Dichlorobenzene	11.783	146	113683	21.13	ug/L	98	
75) 1,4-Dichlorobenzene	11.850	146	114780	20.58	ug/L	96	
76) n-Butylbenzene	12.044	91	193939	22.22	ug/L	97	
77) 1,2-Dichlorobenzene	12.166	146	107709	20.62	ug/L	96	
78) 1,2-Dibromo-3-Chloropr...	12.774	157	13261	18.80	ug/L	77	
79) Hexachlorobutadiene	13.303	223	24883	20.87	ug/L	96	
80) 1,2,4-Trichlorobenzene	13.327	180	65134	18.19	ug/L	97	
81) Naphthalene	13.601	128	152229	17.26	ug/L	99	
82) 1,2,3-Trichlorobenzene	13.765	180	66629	18.32	ug/L	100	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052404.D
Acq On : 24 May 2019 10:15 am
Operator : TNL
Sample : 9051246-BS1@50
Misc : 50X 1mL/50mL 20/40PPB VOCR A19E227 ZHE F
ALS Vial : 39 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 10:42:24 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052405.D
Acq On : 24 May 2019 10:44 am
Operator : TNL
Sample : 9051246-BLK1@50
Misc : 50X 1mL/50mL ZHE FLUID 1
ALS Vial : 40 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:51 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.194	168	191921	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.891	117	278249	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.837	152	142479	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.701	111	88925	55.47	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.759	114	298793	53.58	ug/L		0.00
42) Toluene-d8 (S)	8.274	98	350085	48.68	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.955	174	104738	47.72	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.964	50	347	0.08	ug/L	#	50
5) Bromomethane	2.450	96	57	Below Cal		#	7
13) Methylene Chloride	3.898	84	11667	5.61	ug/L		99
14) Acetone	3.953	43	656	0.84	ug/L	#	42
33) iso-Butyl Alcohol	6.364	43	154	1.31	ug/L	#	93
43) Toluene	8.334	91	1107	0.13	ug/L		91
45) 4-Methyl-2-Pentanone (...	8.766	43	216	0.09	ug/L	#	43
51) 2-Hexanone	9.630	43	293	0.17	ug/L	#	32
55) m,p-Xylenes (2)	10.074	91	825	0.11	ug/L		96
75) 1,4-Dichlorobenzene	11.849	146	463	0.10	ug/L	#	33
76) n-Butylbenzene	12.044	91	610	0.08	ug/L		91
79) Hexachlorobutadiene	13.297	223	126	0.12	ug/L	#	82
80) 1,2,4-Trichlorobenzene	13.333	180	509	0.16	ug/L	#	57
81) Naphthalene	13.607	128	2709	0.35	ug/L		99
82) 1,2,3-Trichlorobenzene	13.759	180	456	0.14	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

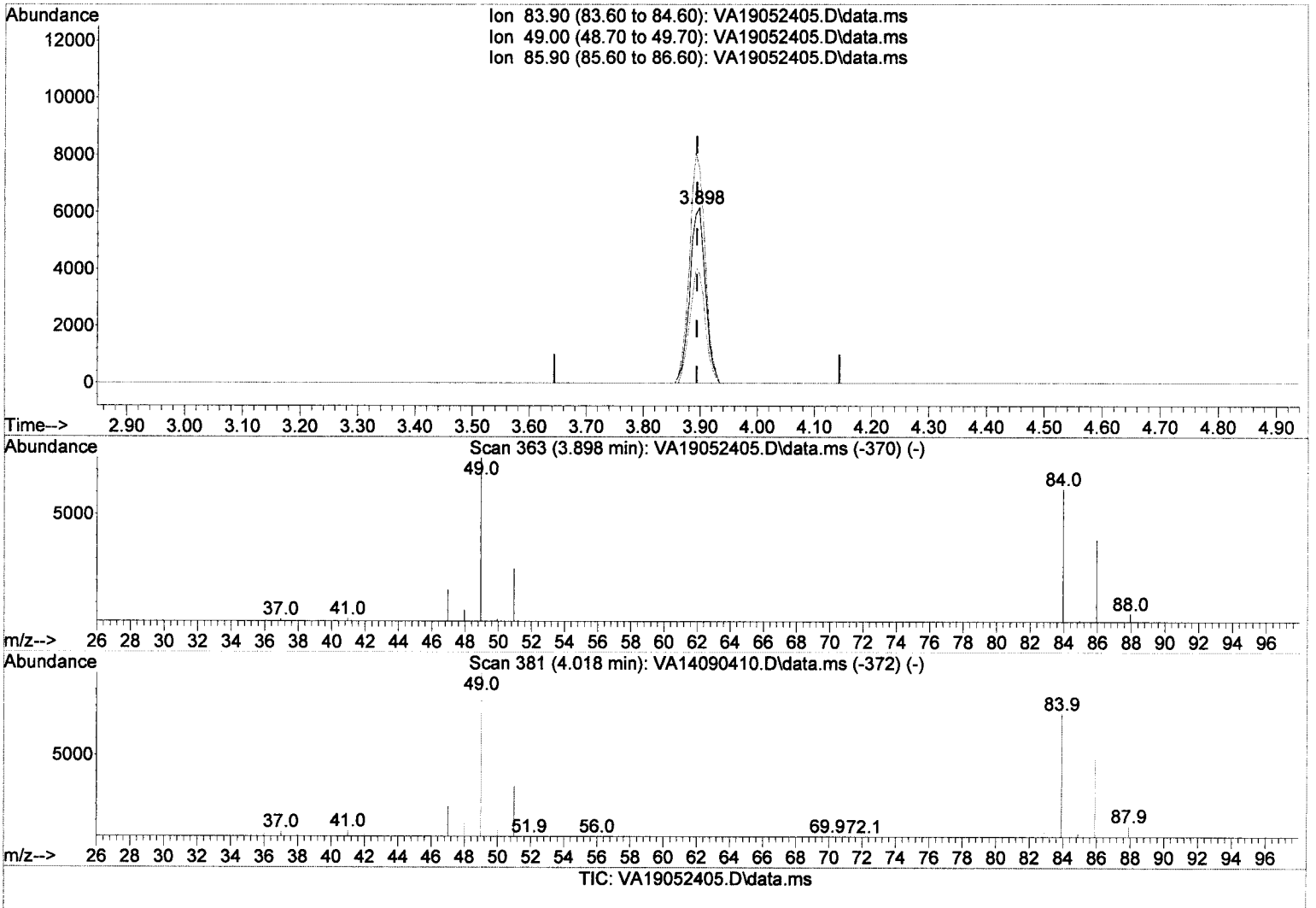
5/28/19 TM

MRL 1 for 802 B. TM

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052405.D
Acq On : 24 May 2019 10:44 am
Operator : TNL
Sample : 9051246-BLK1@50
Misc : 50X 1mL/50mL ZHE FLUID 1
ALS Vial : 40 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:51 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



TIC: VA19052405.D\data.ms

(13) Methylene Chloride

3.898min (+0.004) 5.61 ug/L

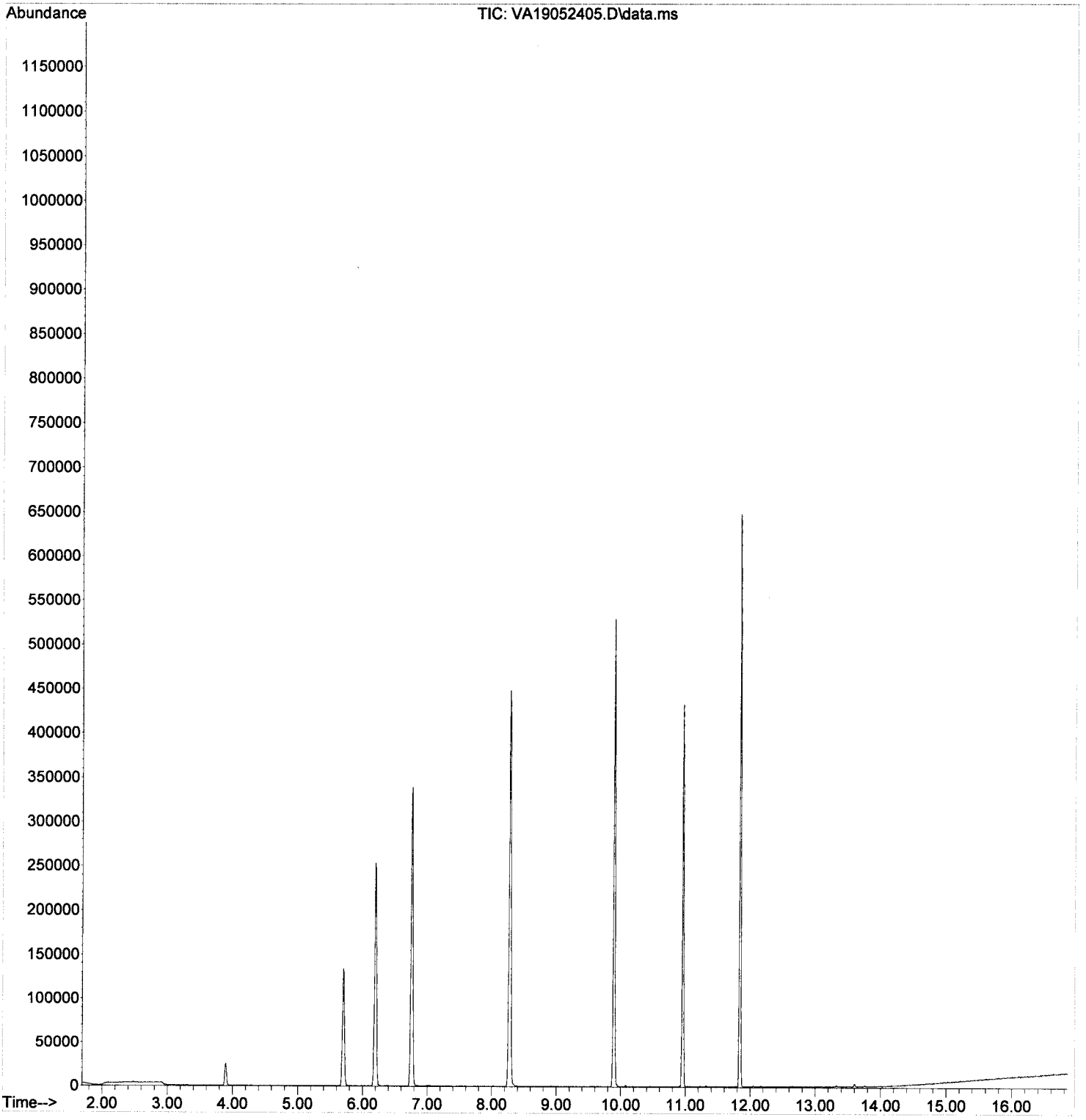
response 11667

Ion	Exp%	Act%
83.90	100	100
49.00	123.30	122.36
85.90	63.90	62.47
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052405.D
Acq On : 24 May 2019 10:44 am
Operator : TNL
Sample : 9051246-BLK1@50
Misc : 50X 1mL/50mL ZHE FLUID 1
ALS Vial : 40 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:51 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052406.D
Acq On : 24 May 2019 11:12 am
Operator : TNL
Sample : A9E0508-05@50
Misc : 50X 1mL/50mL ZHE FULL LIST
ALS Vial : 41 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:54 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.193	168	197198	50.00	ug/L	0.00
39) Chlorobenzene-d5 (I)	9.891	117	278924	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4...	11.837	152	150316	50.00	ug/L	0.00
System Monitoring Compounds						
28) Dibromofluoromethane (S)	5.701	111	89639	54.42	ug/L	0.00
34) 1,4-Difluorobenzene (S)	6.759	114	304315	53.11	ug/L	0.00
42) Toluene-d8 (S)	8.273	98	351821	48.80	ug/L	0.00
61) 4-Bromofluorobenzene (S)	10.955	174	107856	46.58	ug/L	0.00
Target Compounds						Qvalue
3) Chloromethane	1.967	50	377	0.09	ug/L	50
5) Bromomethane	2.496	96	59	Below Cal	#	7
9) Carbon Disulfide	3.305	76	493	0.09	ug/L	78
13) Methylene Chloride	3.895	84	11859	5.55	ug/L	99
14) Acetone	3.943	43	774	0.96	ug/L	42
31) Benzene	6.108	78	114013	14.40	ug/L	98
43) Toluene	8.334	91	46389	5.26	ug/L	98
51) 2-Hexanone	9.556	43	263	0.15	ug/L	32
53) Ethylbenzene	9.939	91	24878	2.52	ug/L	98
55) m,p-Xylenes (2)	10.073	91	17069	2.25	ug/L	98
56) o-Xylene	10.456	91	9726	1.27	ug/L	95
57) Styrene	10.499	104	1711	0.32	ug/L	94
59) Isopropylbenzene	10.730	105	1555	0.16	ug/L	92
63) n-Propylbenzene	11.071	91	1588	0.14	ug/L	92
66) 1,3,5-Trimethylbenzene	11.223	105	2237	0.28	ug/L	94
70) tert-Butylbenzene	11.533	91	723	0.15	ug/L	73
71) 1,2,4-Trimethylbenzene	11.533	105	6732	0.83	ug/L	98
81) Naphthalene	13.606	128	282893	35.11	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

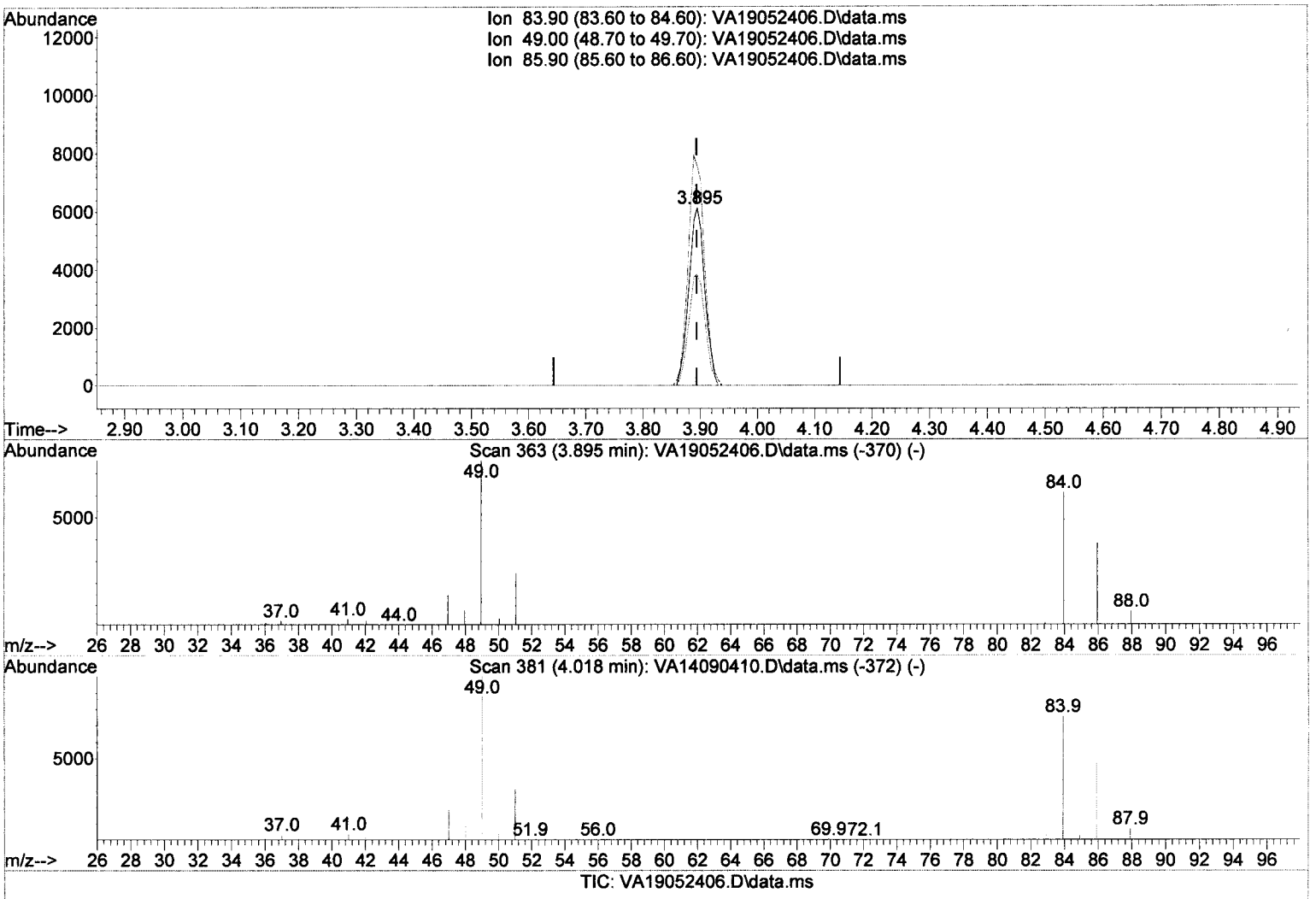
5/28/19 tnl

MRCT A01 ✓

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052406.D
Acq On : 24 May 2019 11:12 am
Operator : TNL
Sample : A9E0508-05@50
Misc : 50X 1mL/50mL ZHE FULL LIST
ALS Vial : 41 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:54 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



TIC: VA19052406.D\data.ms

(13) Methylene Chloride

3.895min (+0.001) 5.55 ug/L

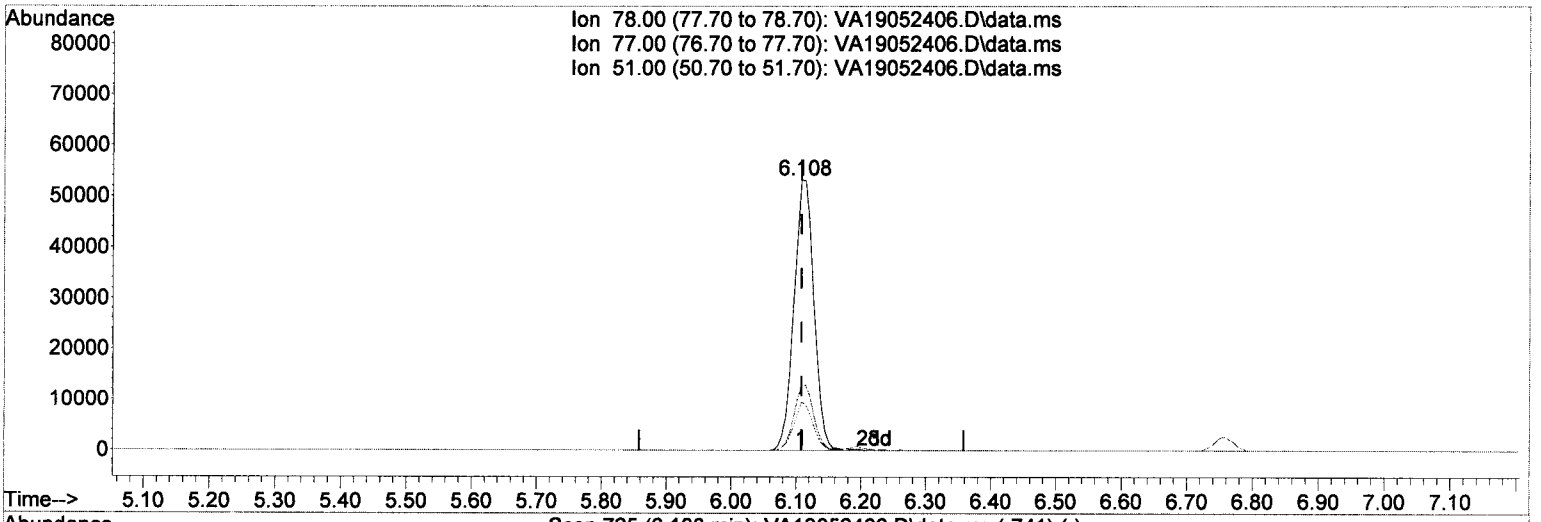
response 11859

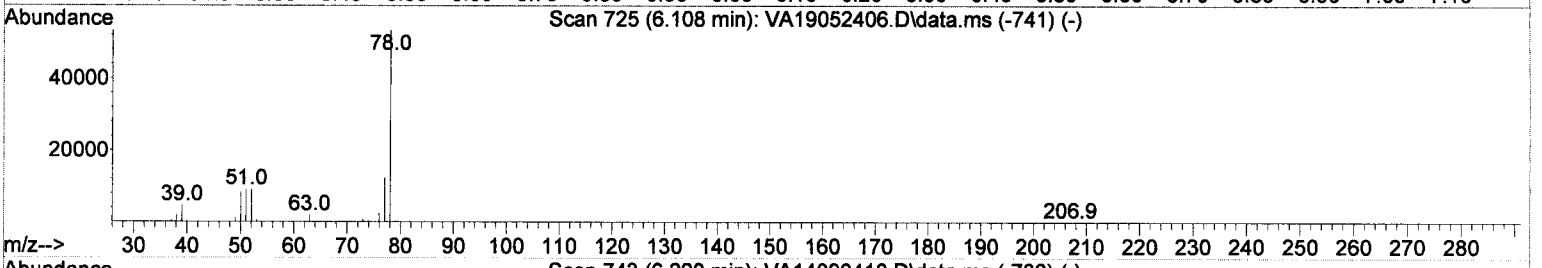
Ion	Exp%	Act%
83.90	100	100
49.00	123.30	123.78
85.90	63.90	62.62
0.00	0.00	0.00

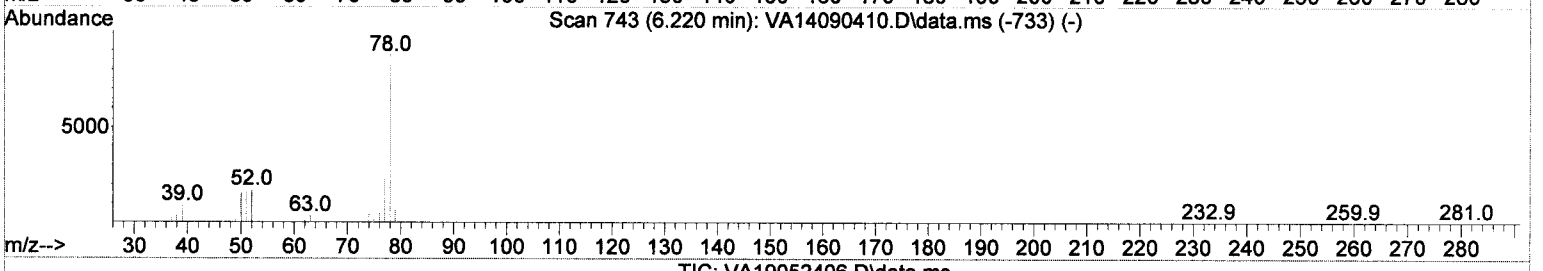
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052406.D
Acq On : 24 May 2019 11:12 am
Operator : TNL
Sample : A9E0508-05@50
Misc : 50X 1mL/50mL ZHE FULL LIST
ALS Vial : 41 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:54 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration







TIC: VA19052406.D\data.ms

(31) Benzene

6.108min (-0.000) 14.40 ug/L

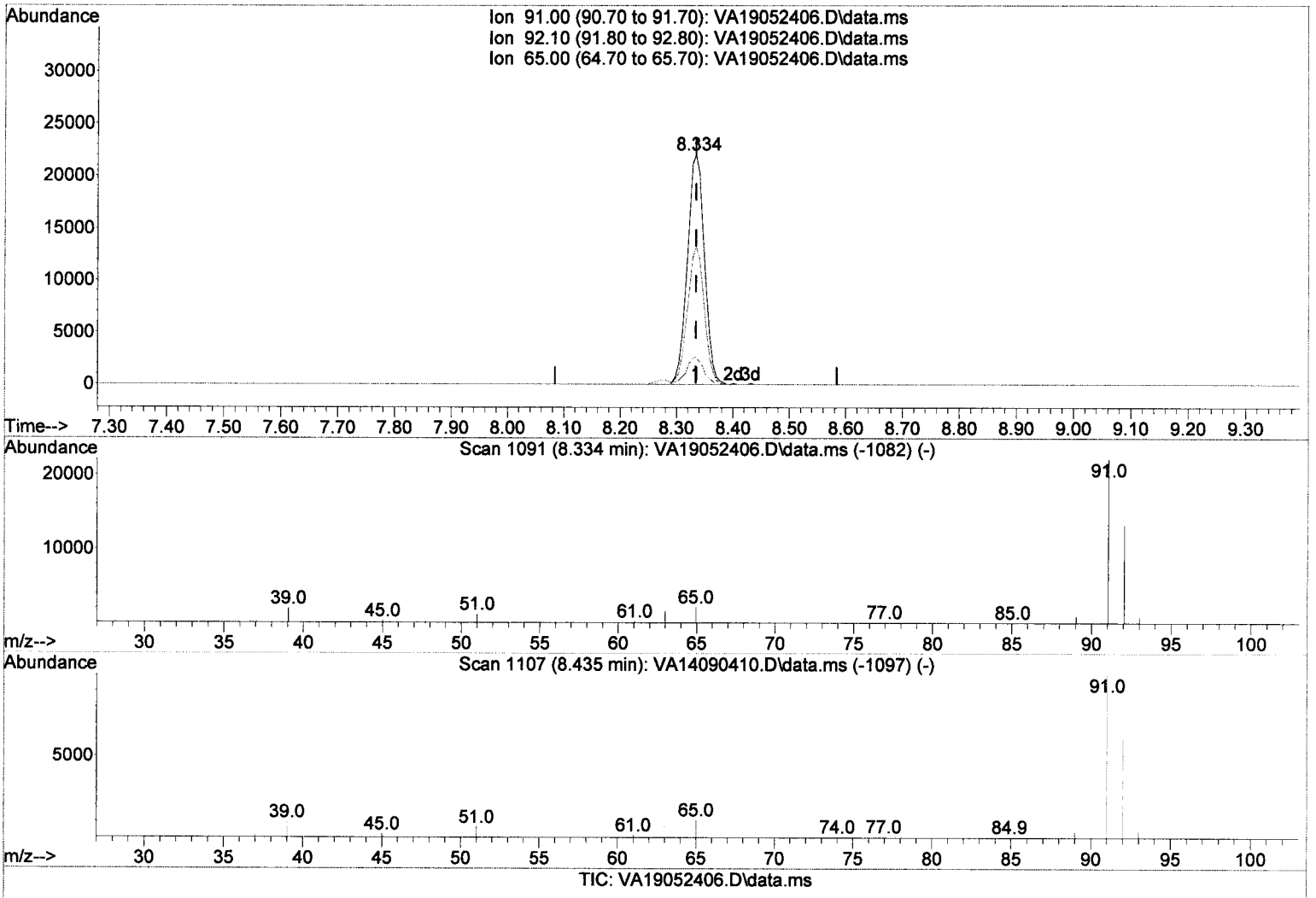
response 114013

Ion	Exp%	Act%
78.00	100	100
77.00	23.60	23.28
51.00	16.20	17.88
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052406.D
Acq On : 24 May 2019 11:12 am
Operator : TNL
Sample : A9E0508-05@50
Misc : 50X 1mL/50mL ZHE FULL LIST
ALS Vial : 41 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:54 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



TIC: VA19052406.D\data.ms

(43) Toluene (C)

8.334min (-0.000) 5.26 ug/L

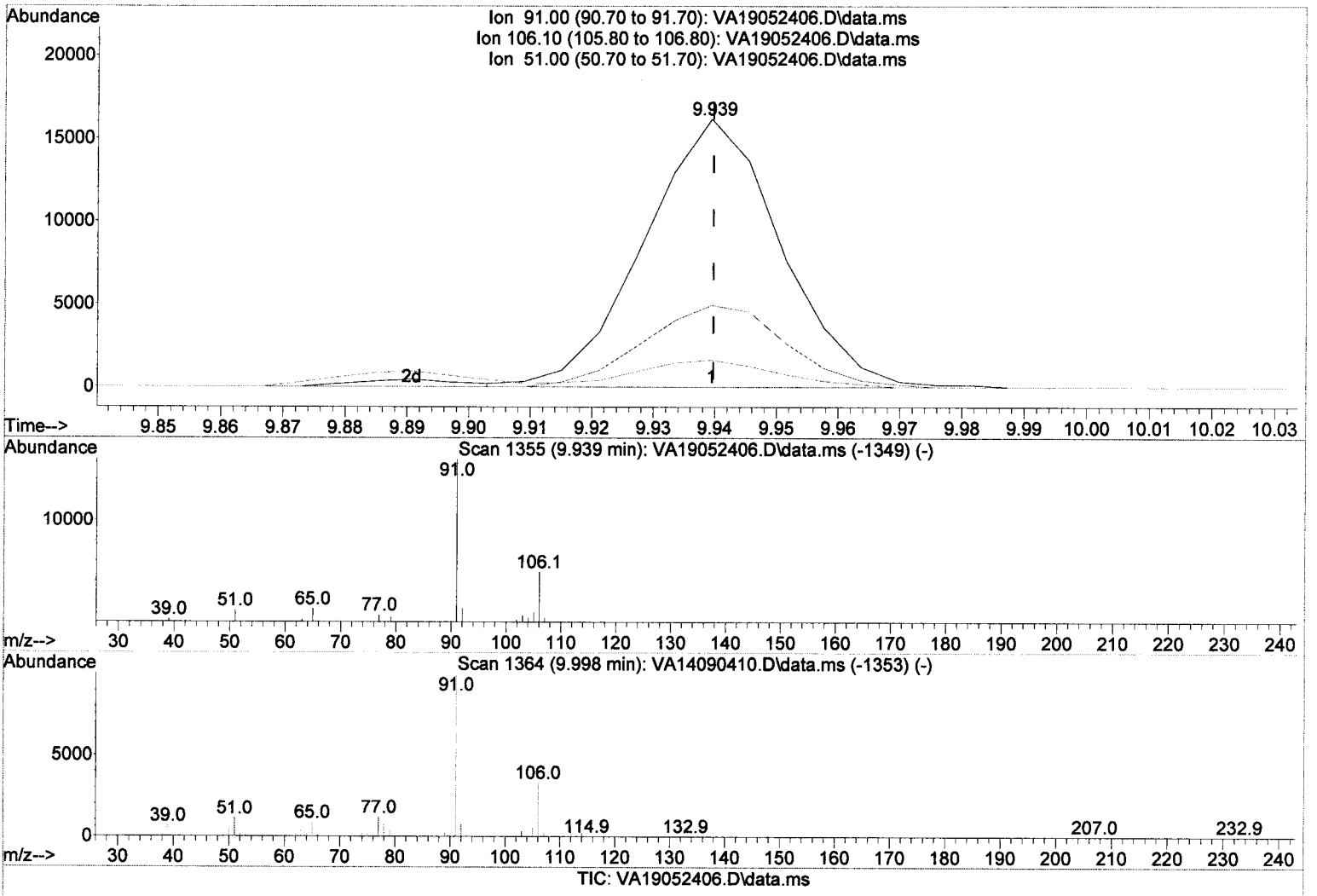
response 46389

Ion	Exp%	Act%
91.00	100	100
92.10	58.30	59.90
65.00	11.00	11.99
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052406.D
Acq On : 24 May 2019 11:12 am
Operator : TNL
Sample : A9E0508-05@50
Misc : 50X 1mL/50mL ZHE FULL LIST
ALS Vial : 41 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:54 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



TIC: VA19052406.D\data.ms

(53) Ethylbenzene (C)

9.939min (-0.000) 2.52 ug/L

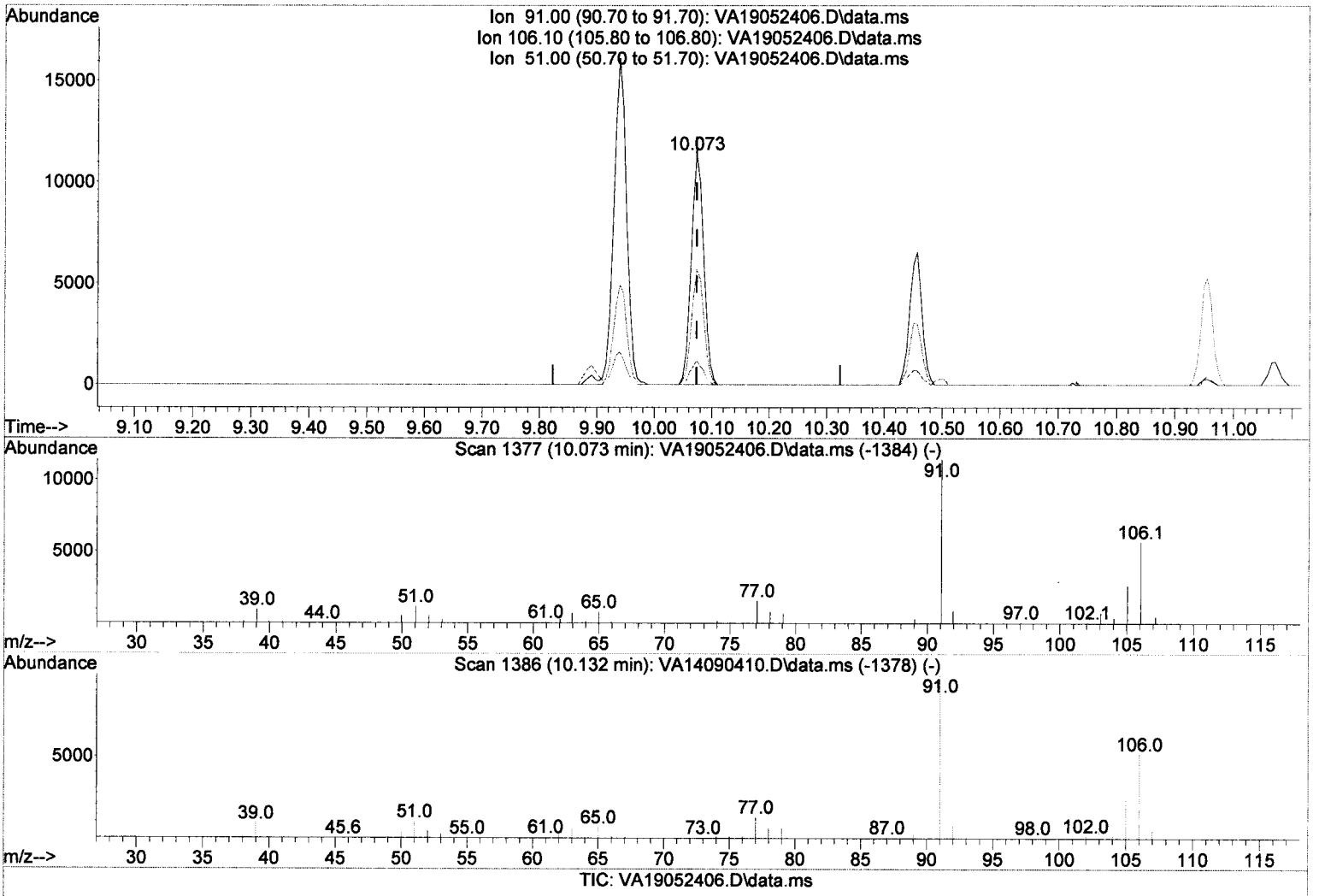
response 24878

Ion	Exp%	Act%
91.00	100	100
106.10	31.80	30.56
51.00	9.80	10.01
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052406.D
Acq On : 24 May 2019 11:12 am
Operator : TNL
Sample : A9E0508-05@50
Misc : 50X 1mL/50mL ZHE FULL LIST
ALS Vial : 41 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:54 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



(55) m,p-Xylenes (2)

10.073min (-0.000) 2.25 ug/L

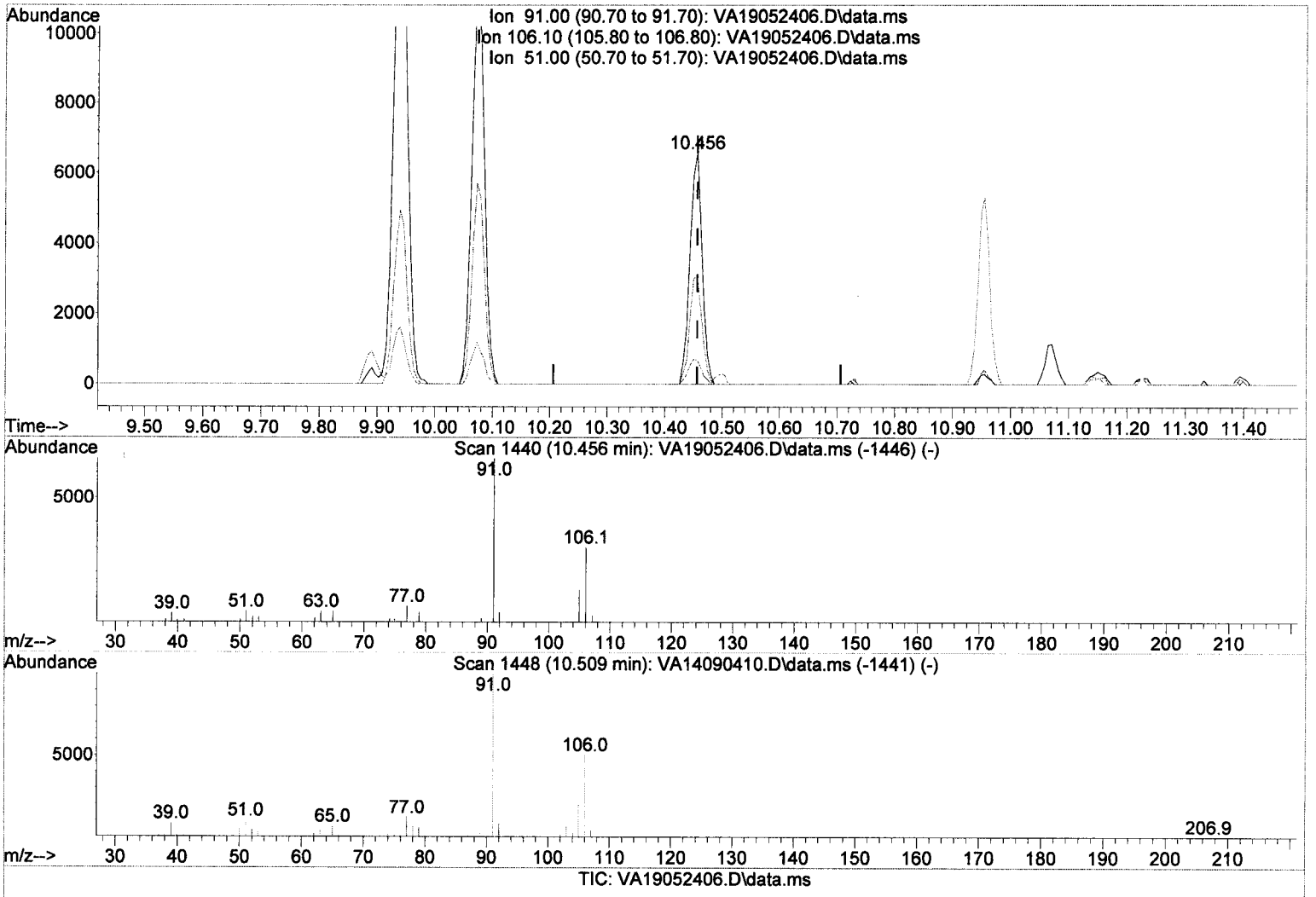
response 17069

Ion	Exp%	Act%
91.00	100	100
106.10	51.80	50.00
51.00	9.80	10.42
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052406.D
Acq On : 24 May 2019 11:12 am
Operator : TNL
Sample : A9E0508-05@50
Misc : 50X 1mL/50mL ZHE FULL LIST
ALS Vial : 41 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:54 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



TIC: VA19052406.D\data.ms

(56) o-Xylene

10.456min (-0.000) 1.27 ug/L

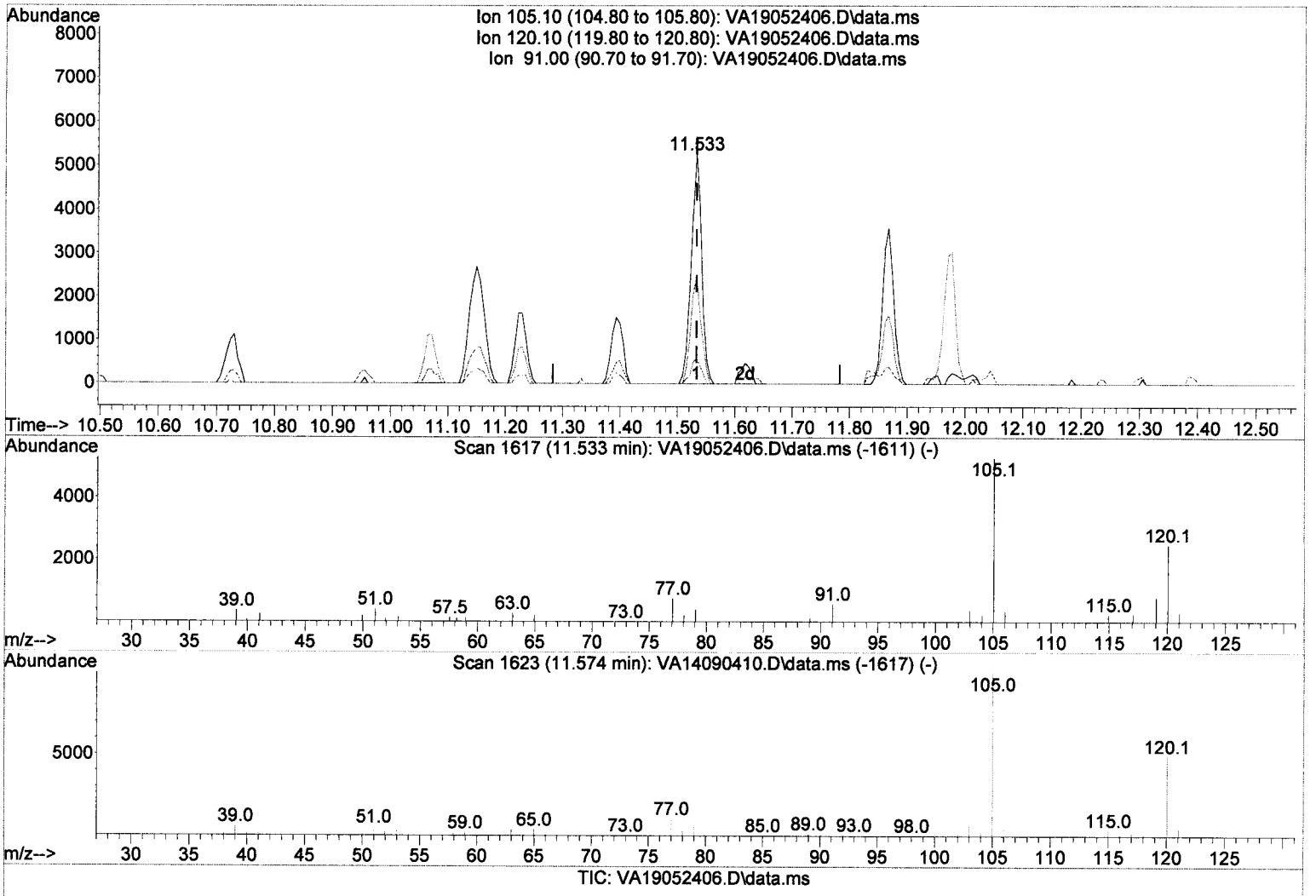
response 9726

Ion	Exp%	Act%
91.00	100	100
106.10	49.80	45.91
51.00	9.70	10.52
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052406.D
Acq On : 24 May 2019 11:12 am
Operator : TNL
Sample : A9E0508-05@50
Misc : 50X 1mL/50mL ZHE FULL LIST
ALS Vial : 41 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:54 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



TIC: VA19052406.D\data.ms

(71) 1,2,4-Trimethylbenzene

11.533min (-0.000) 0.83 ug/L

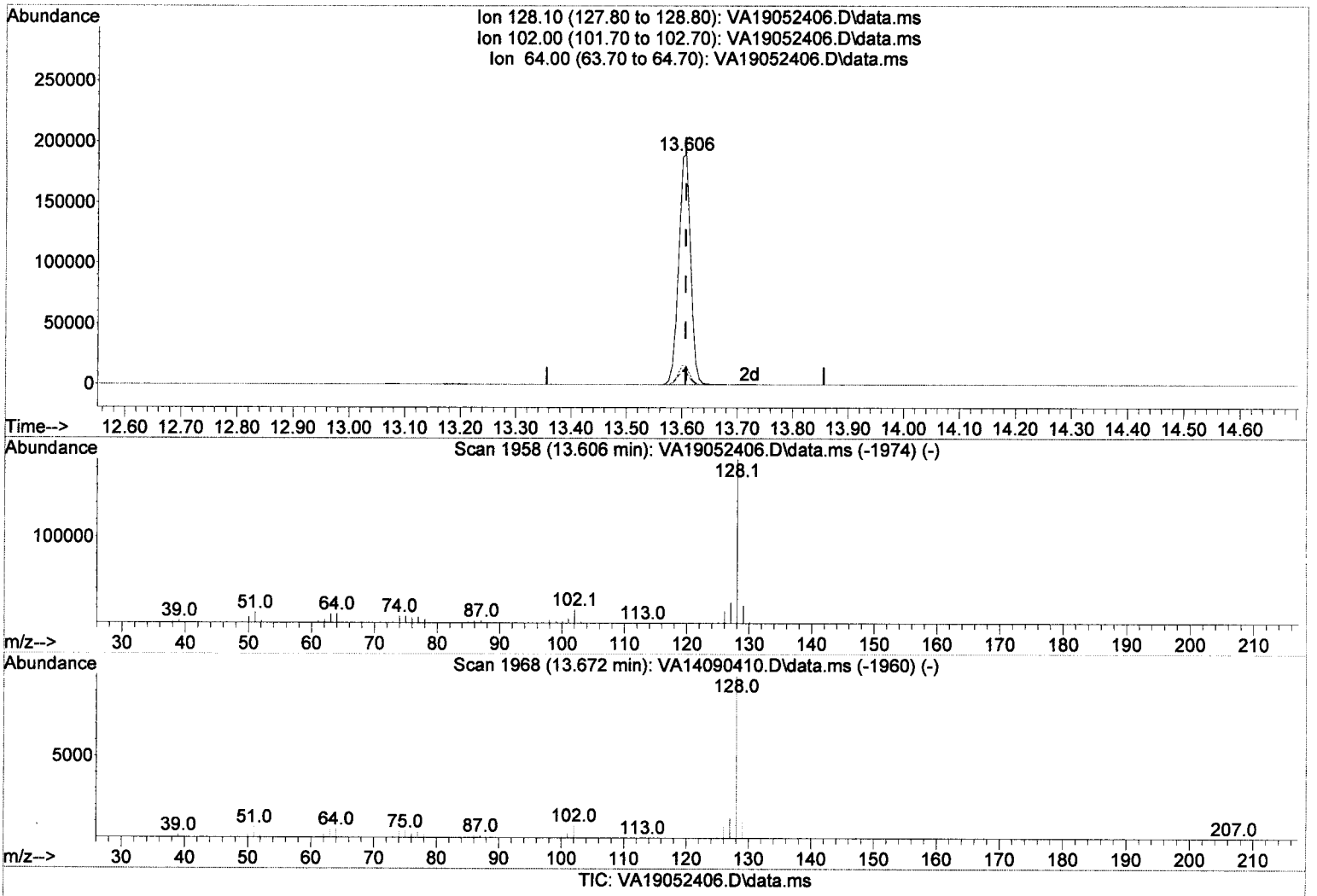
response 6732

Ion	Exp%	Act%
105.10	100	100
120.10	48.60	47.19
91.00	9.80	10.91
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052406.D
Acq On : 24 May 2019 11:12 am
Operator : TNL
Sample : A9E0508-05@50
Misc : 50X 1mL/50mL ZHE FULL LIST
ALS Vial : 41 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:54 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



TIC: VA19052406.D\data.ms

(81) Naphthalene

13.606min (+0.000) 35.11 ug/L

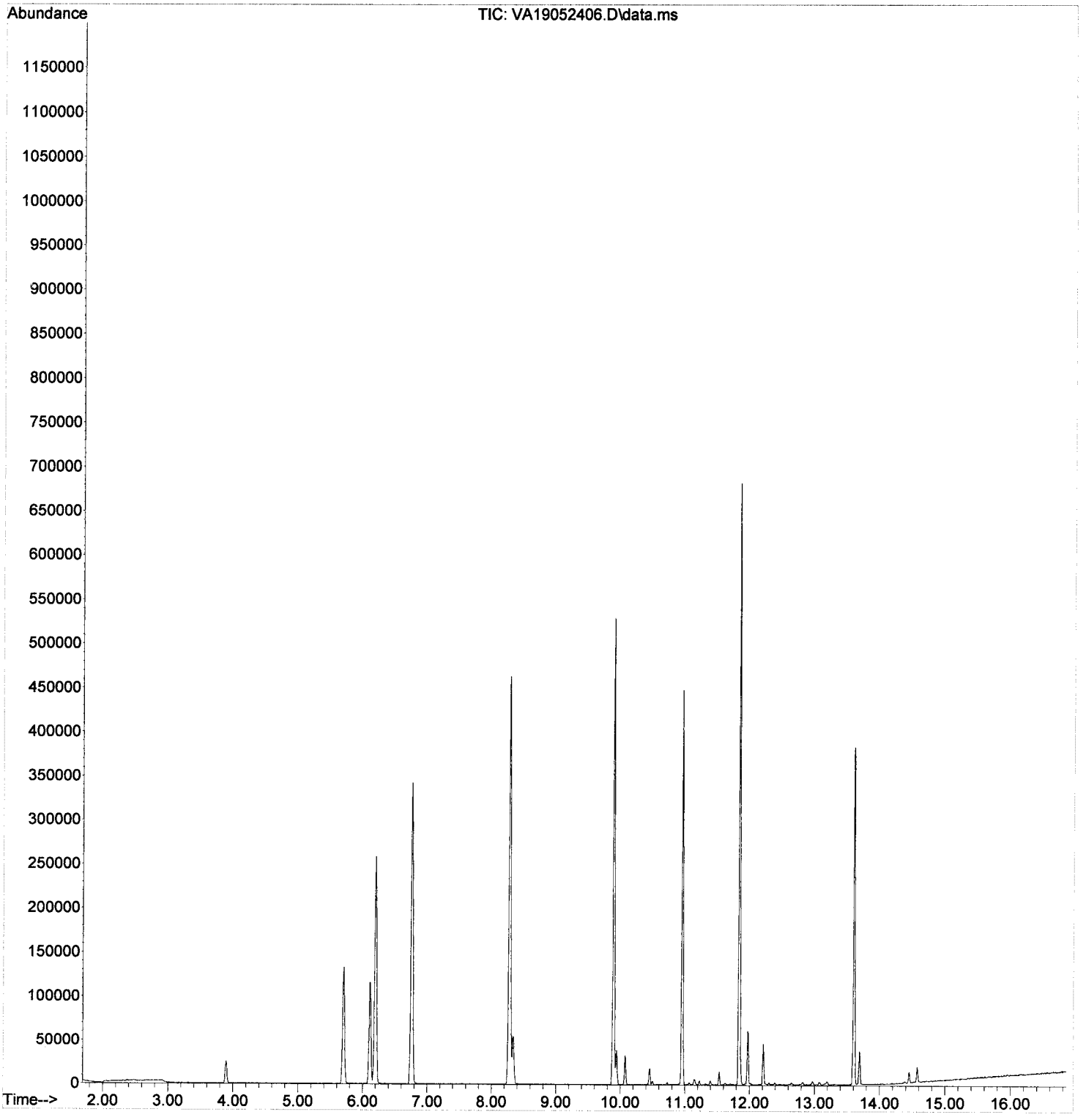
response 282893

Ion	Exp%	Act%
128.10	100	100
102.00	7.90	8.30
64.00	6.30	5.55
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052406.D
Acq On : 24 May 2019 11:12 am
Operator : TNL
Sample : A9E0508-05@50
Misc : 50X 1mL/50mL ZHE FULL LIST
ALS Vial : 41 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:54 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052407.D
Acq On : 24 May 2019 11:41 am
Operator : TNL
Sample : 9051246-DUP1@50
Misc : 50X 1mL/50mL A9E0508-05
ALS Vial : 42 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:56 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Pentafluorobenzene (I)	6.194	168	192573	50.00 ug/L	0.00
39) Chlorobenzene-d5 (I)	9.891	117	270807	50.00 ug/L	0.00
60) 1,4-Dichlorobenzene-d4...	11.837	152	142979	50.00 ug/L	0.00
System Monitoring Compounds					
28) Dibromofluoromethane (S)	5.701	111	87206	54.22 ug/L	0.00
34) 1,4-Difluorobenzene (S)	6.760	114	295294	52.78 ug/L	0.00
42) Toluene-d8 (S)	8.274	98	342860	48.98 ug/L	0.00
61) 4-Bromofluorobenzene (S)	10.956	174	103504	47.00 ug/L	0.00
Target Compounds					Qvalue
9) Carbon Disulfide	3.306	76	489	0.10 ug/L	78
13) Methylene Chloride	3.896	84	11777	5.65 ug/L	98
14) Acetone	3.945	43	707	0.90 ug/L	42
31) Benzene	6.115	78	114068	14.75 ug/L	98
43) Toluene	8.335	91	45522	5.32 ug/L	97
53) Ethylbenzene	9.940	91	24341	2.54 ug/L	99
55) m,p-Xylenes (2)	10.074	91	16488	2.24 ug/L	98
56) o-Xylene	10.451	91	9400	1.26 ug/L	97
57) Styrene	10.500	104	1654	0.32 ug/L	94
59) Isopropylbenzene	10.725	105	1287	0.13 ug/L	90
63) n-Propylbenzene	11.065	91	1521	0.14 ug/L	80
66) 1,3,5-Trimethylbenzene	11.229	105	2074	0.27 ug/L	99
70) tert-Butylbenzene	11.533	91	720	0.16 ug/L #	55
71) 1,2,4-Trimethylbenzene	11.533	105	6516	0.85 ug/L	94
81) Naphthalene	13.601	128	299018	39.01 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

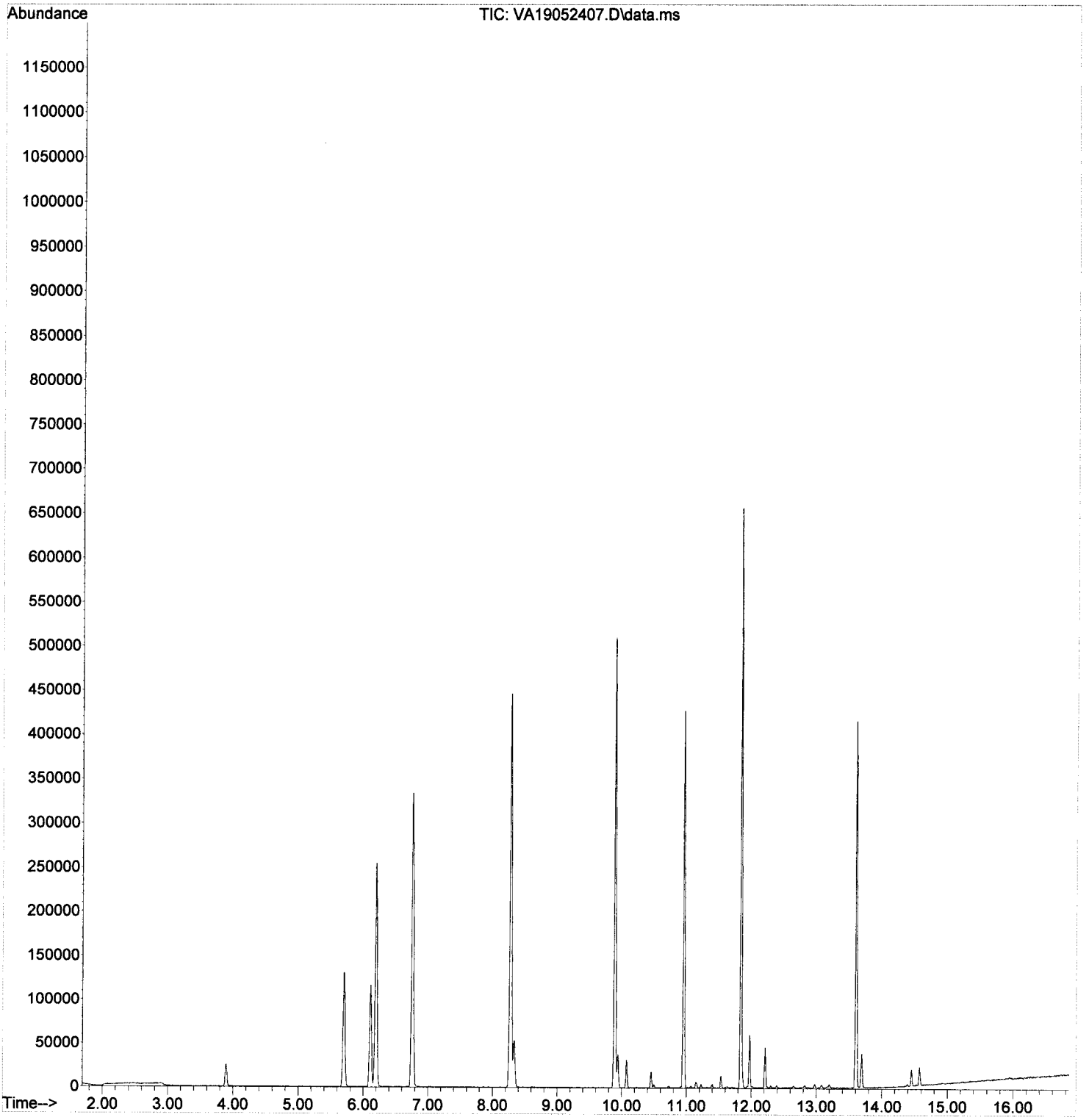
5/28/19 by

MRL Acet

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052407.D
Acq On : 24 May 2019 11:41 am
Operator : TNL
Sample : 9051246-DUP1@50
Misc : 50X 1mL/50mL A9E0508-05
ALS Vial : 42 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:56 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052408.D
Acq On : 24 May 2019 12:09 pm
Operator : TNL
Sample : 9051246-MS1@50
Misc : 50X 1mL/50mL A19E227 (A9E0508-05)
ALS Vial : 43 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:58 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.194	168	207025	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.891	117	296833	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.837	152	167337	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.701	111	92334	53.40	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.759	114	316600	52.64	ug/L		0.00
42) Toluene-d8 (S)	8.273	98	367566	47.91	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.955	174	116728	45.29	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.766	85	57176	23.68	ug/L		98
3) Chloromethane	1.967	50	89586	20.17	ug/L		99
4) Vinyl Chloride	2.070	62	56290	17.81	ug/L		95
5) Bromomethane	2.435	96	11410	28.29	ug/L		98
6) Chloroethane	2.575	64	31956	17.71	ug/L		96
7) Trichlorofluoromethane	2.739	101	71278	20.63	ug/L		97
8) 1,1-Dichloroethene	3.287	61	58276	20.68	ug/L		93
9) Carbon Disulfide	3.305	76	128741	23.33	ug/L		99
10) Freon 113	3.347	101	46583	24.67	ug/L		97
11) Iodomethane	3.426	142	13779	41.84	ug/L		88
12) Acrolein	3.633	56	9873	22.01	ug/L		97
13) Methylene Chloride	3.895	84	53910	25.89	ug/L		95
14) Acetone	3.943	43	35484	42.06	ug/L		98
15) t-1,2-Dichloroethene	4.065	61	57909	21.59	ug/L		99
16) n-Hexane	4.168	86	11704	22.32	ug/L	#	47
17) Methyl-tert-butyl-ether	4.193	73	140821	20.91	ug/L		87
18) 1,1-Dichloroethane	4.691	63	76987	22.11	ug/L		98
19) Acrylonitrile	4.728	53	22284	23.04	ug/L		97
20) Vinyl Acetate	4.953	43	83279	22.61	ug/L		98
21) c-1,2-Dichloroethene	5.239	61	61232	23.62	ug/L		98
22) 2,2-Dichloropropane	5.348	77	66588	24.03	ug/L		96
23) Bromochloromethane	5.433	49	38780	26.33	ug/L		90
24) Chloroform	5.519	83	81565	23.99	ug/L		95
25) Carbon Tetrachloride	5.664	117	63730	26.18	ug/L		95
26) Tetrahydrofuran	5.683	42	18308	19.62	ug/L		94
27) 1,1,1-Trichloroethane	5.731	97	69350	23.17	ug/L		95
29) 1,1-Dichloropropene	5.859	75	64225	23.55	ug/L		97
30) 2-Butanone (MEK)	5.823	43	56996	43.14	ug/L		92
31) Benzene	6.108	78	314189	37.79	ug/L		98
32) 1,2-Dichloroethane (EDC)	6.315	62	64297	23.80	ug/L		98
33) iso-Butyl Alcohol	6.346	43	67506	532.28	ug/L		96
35) Trichloroethene (TCE)	6.729	130	47567	22.38	ug/L		96
36) Dibromomethane	7.167	93	28860	24.20	ug/L		94
37) 1,2-Dichloropropane	7.276	63	47993	23.61	ug/L		98
38) Bromodichloromethane	7.355	83	60315	25.64	ug/L		97
41) c-1,3-Dichloropropene	8.054	75	66764	20.38	ug/L		96
43) Toluene	8.334	91	257637	27.46	ug/L		99
44) Tetrachloroethene (PCE)	8.778	166	54965	22.30	ug/L		96
45) 4-Methyl-2-Pentanone (...	8.760	43	107500	40.01	ug/L		98
46) t-1,3-Dichloropropene	8.796	75	69200	22.74	ug/L		97
47) 1,1,2-Trichloroethane	8.973	97	43316	21.44	ug/L		99
48) Dibromochloromethane	9.155	129	45923	22.76	ug/L		98
49) 1,3-Dichloropropane	9.252	76	78356	22.07	ug/L		96

5/28/19 KH

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052408.D
Acq On : 24 May 2019 12:09 pm
Operator : TNL
Sample : 9051246-MS1@50
Misc : 50X 1mL/50mL A19E227 (A9E0508-05)
ALS Vial : 43 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:58 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

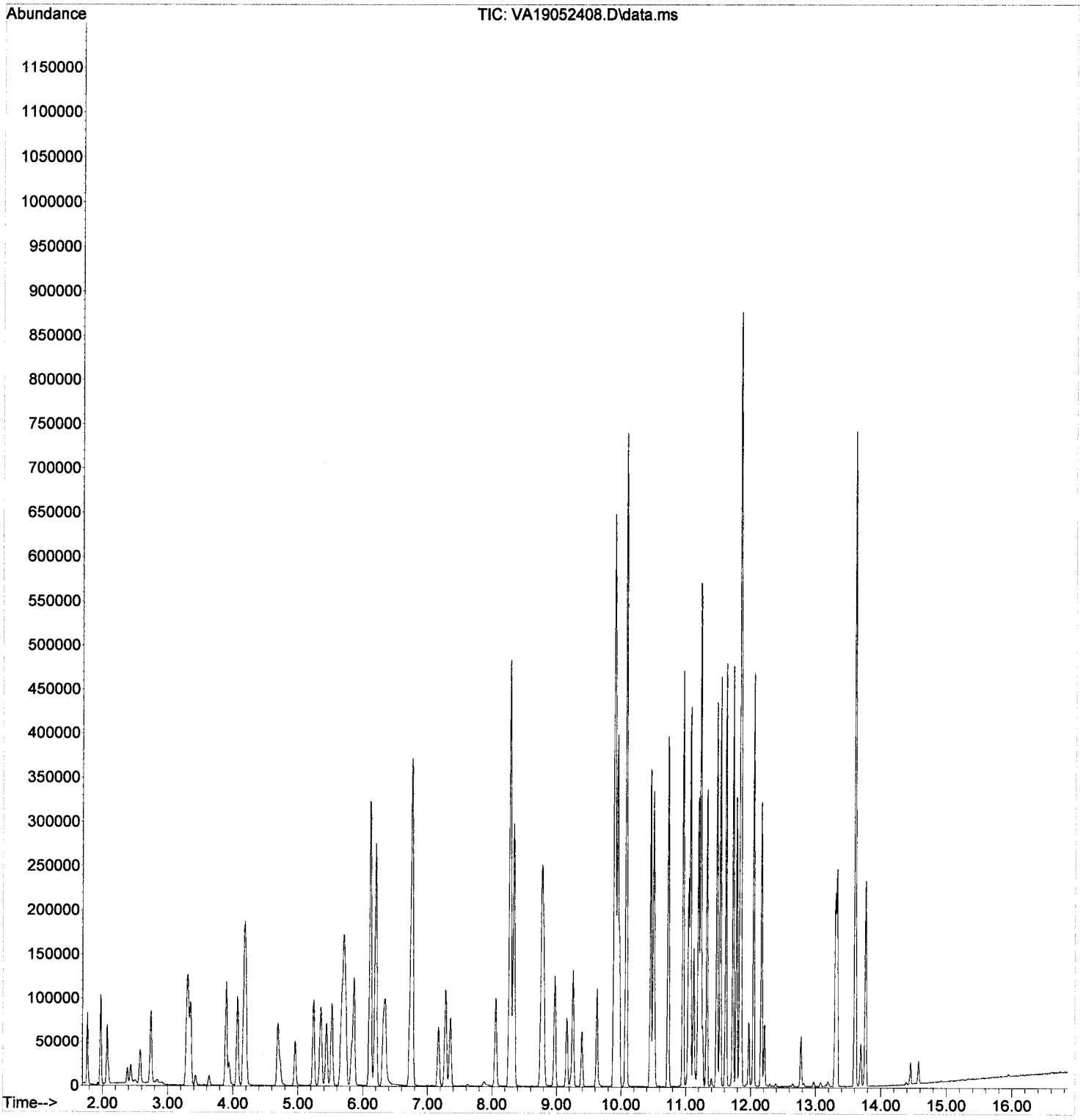
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane (EDB)	9.392	107	44348	22.00 ug/L	96
51) 2-Hexanone	9.623	43	71429	39.17 ug/L	98
52) Chlorobenzene	9.909	112	134690	21.65 ug/L	98
53) Ethylbenzene	9.940	91	267176	25.39 ug/L	99
54) 1,1,1,2-Tetrachloroethane	9.970	131	46095	23.29 ug/L	99
55) m,p-Xylenes (2)	10.073	91	388458	48.21 ug/L	97
56) o-Xylene	10.457	91	188244	23.09 ug/L	98
57) Styrene	10.499	104	136319	23.73 ug/L	99
58) Bromoform	10.517	173	35637	25.40 ug/L	99
59) Isopropylbenzene	10.724	105	232527	22.13 ug/L	98
62) Bromobenzene	11.040	156	58592	21.19 ug/L	88
63) n-Propylbenzene	11.071	91	293325	22.92 ug/L	98
64) 1,1,2,2-Tetrachloroethane	11.119	83	68922	21.89 ug/L	96
65) 2-Chlorotoluene	11.192	126	55010	21.20 ug/L	93
66) 1,3,5-Trimethylbenzene	11.229	105	201613	22.62 ug/L	96
67) 1,2,3-Trichloropropane	11.229	110	22920	21.98 ug/L	92
68) t-1,4-Dichloro-2-butene	11.259	88	6411	35.33 ug/L	92
69) 4-Chlorotoluene	11.326	91	170297	21.87 ug/L	98
70) tert-Butylbenzene	11.478	91	114547	21.45 ug/L	96
71) 1,2,4-Trimethylbenzene	11.533	105	211632	23.57 ug/L	99
72) sec-Butylbenzene	11.618	105	272956	22.64 ug/L	98
73) 4-Isopropyltoluene	11.728	119	225567	22.04 ug/L	99
74) 1,3-Dichlorobenzene	11.782	146	115953	21.19 ug/L	98
75) 1,4-Dichlorobenzene	11.849	146	118485	20.89 ug/L	95
76) n-Butylbenzene	12.044	91	206523	23.27 ug/L	96
77) 1,2-Dichlorobenzene	12.165	146	109098	20.54 ug/L	99
78) 1,2-Dibromo-3-Chloropr...	12.780	157	13358	18.62 ug/L	96
79) Hexachlorobutadiene	13.303	223	25331	20.89 ug/L	96
80) 1,2,4-Trichlorobenzene	13.327	180	69426	19.06 ug/L	97
81) Naphthalene	13.601	128	550243	61.34 ug/L	99
82) 1,2,3-Trichlorobenzene	13.765	180	71303	19.28 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E24013\
Data File : VA19052408.D
Acq On : 24 May 2019 12:09 pm
Operator : TNL
Sample : 9051246-MS1@50
Misc : 50X 1mL/50mL A19E227 (A9E0508-05)
ALS Vial : 43 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: May 24 13:54:58 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



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

TCLP Volatile Organic Compounds by EPA 8260C

Calibration Data

Sequence 9C05053 (Cal ID A9C0602) VOA-GCMS1

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence:	9C05053	Instrument:	VOA-GCMS1
Date:	03/05/19 14:58	Calibration:	A9C0602

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9C05053-IBL1	Water	QC	QC			A19C089	
2	9C05053-TUN1	Water	QC	QC			A19C089	
3	9C05053-ICB1	Water	QC	QC			A19C089	
4	9C05053-CAL1	Water	QC	QC			A19C089	A19C073
5	9C05053-CAL2	Water	QC	QC			A19C089	A19C074
6	9C05053-CAL3	Water	QC	QC			A19C089	A19C075
7	9C05053-CAL4	Water	QC	QC			A19C089	A19C076
8	9C05053-CAL5	Water	QC	QC			A19C089	A19C078
9	9C05053-CAL6	Water	QC	QC			A19C089	A19C079
10	9C05053-CAL7	Water	QC	QC			A19C089	A19C080
11	9C05053-CAL8	Water	QC	QC			A19C089	A19C081
12	9C05053-CAL9	Water	QC	QC			A19C089	A19C082
13	9C05053-IBL2	Water	QC	QC			A19C089	
14	9C05053-CALA	Water	QC	QC			A19C089	A19C083
15	9C05053-IBL3	Water	QC	QC			A19C089	
16	9C05053-CALB	Water	QC	QC			A19C089	A19C084
17	9C05053-IBL4	Water	QC	QC			A19C089	
18	9C05053-IBL5	Water	QC	QC			A19C089	
19	9C05053-ICV1	Water	QC	QC			A19C089	A19B195
20	9C05053-IBL6	Water	QC	QC			A19C089	
21	9C05053-TUN2	Water	QC	QC			A19C089	
22	9C05053-IBL7	Water	QC	QC			A19C089	
23	9C05053-ICB2	Water	QC	QC			A19C089	
24	9C05053-CALC	Water	QC	QC			A19C089	A19C085
25	9C05053-CALD	Water	QC	QC			A19C089	A19C086
26	9C05053-CALE	Water	QC	QC			A19C089	A19C087
27	9C05053-CALF	Water	QC	QC			A19C089	A19C088
28	9C05053-CALI	Water	QC	QC			A19C089	A19B202
29	9C05053-CALG	Water	QC	QC			A19C089	A19B200
30	9C05053-CALH	Water	QC	QC			A19C089	A19B201
31	9C05053-CALJ	Water	QC	QC			A19C089	A19B203
32	9C05053-IBL8	Water	QC	QC			A19C089	
33	9C05053-IBL9	Water	QC	QC			A19C089	
34	9C05053-ICV2	Water	QC	QC			A19C089	A19B262
35	9C05053-IBLA	Water	QC	QC			A19C089	

- 2CEVE is NR
- Bromomethane FE05
- Iodomethane FE05

Comments:

Data Entered By: 3/6/19

Data Reviewed By: 3/6/19

Calibration Status Report VOA-GCMS1

Method Path : C:\msdchem\1\METHODS\
Method File : VA190306W.M
Title : EPA 8260C: Volatile Organic Compounds
Last Update : Wed Mar 06 08:45:04 2019
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	-1	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030516.D
2	2	0	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030517.D
3	3	0	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030518.D
4	4	1	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030519.D
5	5	2	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030520.D
6	6	5	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030521.D
7	7	10	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030522.D
8	8	20	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030523.D
9	9	50	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030524.D
10	10	100	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030526.D
11	1a	200	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030528.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Mar 06 08:36 2019	Mar 06 08:20 2019	
2	2	Mar 06 08:36 2019	Mar 06 08:23 2019	
3	3	Mar 06 08:36 2019	Mar 06 08:25 2019	
4	4	Mar 06 08:36 2019	Mar 06 08:27 2019	
5	5	Mar 06 08:36 2019	Mar 06 08:28 2019	
6	6	Mar 06 08:36 2019	Mar 06 08:07 2019	
7	7	Mar 06 08:36 2019	Mar 06 08:30 2019	
8	8	Mar 06 08:36 2019	Mar 06 08:31 2019	
9	9	Mar 06 08:36 2019	Mar 06 08:32 2019	
10	10	Mar 06 08:36 2019	Mar 06 08:33 2019	
11	1a	Mar 06 08:36 2019	Mar 06 08:34 2019	

VA190306W.M Wed Mar 06 09:45:40 2019

Element ID AQC0602

NW DJ 3/7/19

Response Factor Report VOA-GCMS1

Method Path : C:\msdchem\1\METHODS\
Method File : VA190306W.M
Title : EPA 8260C: Volatile Organic Compounds
Last Update : Wed Mar 06 08:45:04 2019
Response Via : Initial Calibration

Calibration Files
1 =VA19030516.D 2 =VA19030517.D 3 =VA19030518.D 4 =VA19030519.D 5 =VA19030520.D 6 =VA19030521.D
7 =VA19030522.D 8 =VA19030523.D 9 =VA19030524.D 10 =VA19030526.D 1a =VA19030528.D

		Compound	1	2	3	4	5	6	7	8	9	10	1a	Avg	%RSD
1)	I	Pentafluorobenzene...	----------	ISTD	----------										
2)		Dichlorodifluo...	0.510	0.579	0.521	0.598	0.605	0.592	0.598	0.619	0.616	0.594	0.583	6.46	
3)	P	Chloromethane					1.249	1.183	1.119	1.000	0.976	0.909	1.073	12.29	
4)	C	Vinyl Chloride	0.812	0.769	0.740	0.739	0.761	0.752	0.769	0.766	0.774	0.753	0.764	2.75	
5)		Bromomethane					0.124	0.097	0.100	0.097	0.118	0.143	0.113	16.54	
6)		Chloroethane		0.498	0.485	0.467	0.446	0.442	0.441	0.424	0.403	0.318	0.436	12.14	
7)		Trichlorofluor...		0.840	0.867	0.859	0.838	0.825	0.834	0.824	0.819	0.803	0.834	2.39	
8)	C	1,1-Dichloroet...		0.688	0.671	0.696	0.693	0.673	0.677	0.632	0.700	0.694	0.681	3.08	
9)		Carbon Disulfide		1.315	1.301	1.359	1.329	1.314	1.345	1.260	1.402	1.372	1.333	3.15	
10)		Freon 113		0.440	0.432	0.470	0.482	0.458	0.461	0.431	0.471	0.458	0.456	3.96	
11)		Iodomethane					0.028	0.038	0.051	0.074	0.131	0.184	0.084	72.44	
12)		Acrolein				0.106	0.103	0.106	0.112	0.111	0.111	0.108	0.108	3.02	
13)		Methylene Chlo...	3.443	1.825	1.095	0.718	0.614	0.543	0.525	0.533	0.472	0.508	0.491	0.979	93.14
14)		Acetone				0.239	0.200	0.201	0.208	0.186	0.198	0.194	0.204	8.40	
15)		t-1,2-Dichloro...		0.646	0.637	0.679	0.652	0.636	0.651	0.606	0.667	0.657	0.648	3.20	
16)		n-Hexane				0.132	0.126	0.127	0.129	0.117	0.129	0.126	0.127	3.65	
17)		Methyl-tert-bu...		2.002	1.677	1.619	1.572	1.559	1.579	1.462	1.597	1.574	1.627	9.32	
18)	P	1,1-Dichloroet...		0.809	0.850	0.854	0.865	0.842	0.853	0.781	0.867	0.850	0.841	3.36	
19)		Acrylonitrile		0.222	0.221	0.224	0.233	0.233	0.245	0.226	0.251	0.248	0.234	4.97	
20)		Vinyl Acetate		0.877	0.927	0.753	0.828	0.891	0.968	0.941	0.942	0.878	0.889	7.51	
21)		c-1,2-Dichloro...	0.451	0.686	0.666	0.617	0.657	0.644	0.636	0.646	0.592	0.650	0.644	0.626	10.07
22)		2,2-Dichloropr...				0.729	0.697	0.688	0.643	0.664	0.621	0.669	0.644	0.669	5.14
23)		Bromochloromet...		0.380	0.378	0.371	0.400	0.377	0.346	0.341	0.316	0.334	0.314	0.356	8.30
24)	C	Chloroform		0.872	0.855	0.802	0.843	0.827	0.801	0.815	0.752	0.828	0.816	0.821	4.02
25)		Carbon Tetrach...			0.610	0.582	0.577	0.600	0.566	0.594	0.558	0.618	0.586	0.588	3.34
26)		Tetrahydrofuran					0.244	0.234	0.219	0.230	0.204	0.224	0.222	0.225	5.63
27)		1,1,1-Trichlor...		0.765	0.721	0.738	0.735	0.734	0.700	0.718	0.666	0.730	0.724	0.723	3.62
28)	S	Dibromofluorom...	0.417	0.417	0.415	0.412	0.414	0.418	0.417	0.418	0.421	0.420	0.425	0.418	0.81
29)		1,1-Dichloropr...			0.665	0.697	0.668	0.669	0.637	0.649	0.606	0.672	0.665	0.659	3.86
30)		2-Butanone (MEK)				0.364	0.329	0.298	0.310	0.320	0.291	0.322	0.318	0.319	6.98
31)		Benzene	2.327	2.272	2.100	1.982	1.972	1.943	1.890	1.920	1.787	1.960	1.936	2.008	8.10
32)		1,2-Dichloroet...		0.643	0.654	0.679	0.658	0.658	0.650	0.657	0.607	0.663	0.656	0.653	2.82
33)		iso-Butyl Alcohol				0.027	0.029	0.026	0.030	0.032	0.031	0.034	0.034	0.031	9.76
34)	S	1,4-Difluorobe...	1.459	1.461	1.444	1.438	1.458	1.439	1.458	1.459	1.452	1.456	1.456	1.453	0.58
35)		Trichloroethen...		0.497	0.498	0.528	0.529	0.510	0.510	0.518	0.480	0.532	0.531	0.513	3.45
36)		Dibromomethane			0.273	0.283	0.284	0.293	0.292	0.295	0.275	0.305	0.293	0.288	3.50
37)	C	1,2-Dichloropr...		0.561	0.493	0.492	0.484	0.489	0.472	0.486	0.450	0.494	0.489	0.491	5.70
38)		Bromodichlorom...		0.491	0.492	0.568	0.574	0.571	0.563	0.596	0.561	0.631	0.634	0.568	8.48
39)		Chlorobenzene-d5 (I)	----------	ISTD	----------										
40)		2-Chloroethyl ...											0.000	-1.00	

Method Path : C:\msdchem\1\METHODS\
Method File : VA190306W.M
Title : EPA 8260C: Volatile Organic Compounds

41)		c-1,3-Dichloro...			0.563	0.519	0.550	0.549	0.540	0.559	0.533	0.584	0.571	0.552	3.58
42)	S	Toluene-d8 (S)	1.314	1.304	1.303	1.307	1.306	1.307	1.294	1.289	1.289	1.270	1.232	1.292	1.82
43)	C	Toluene	1.621	1.759	1.605	1.613	1.591	1.578	1.532	1.555	1.444	1.565	1.519	1.580	4.94
44)		Tetrachloroeth...		0.376	0.427	0.426	0.428	0.431	0.412	0.423	0.394	0.425	0.412	0.415	4.27
45)		4-Methyl-2-Pen...			0.457	0.431	0.420	0.407	0.438	0.469	0.450	0.502	0.499	0.453	7.31
46)		t-1,3-Dichloro...			0.511	0.482	0.485	0.496	0.499	0.521	0.506	0.564	0.550	0.513	5.47
47)		1,1,2-Trichlor...		0.342	0.319	0.341	0.364	0.341	0.340	0.345	0.321	0.350	0.340	0.340	3.83
48)		Dibromochlorom...			0.322	0.320	0.330	0.333	0.328	0.339	0.332	0.375	0.379	0.340	6.43
49)		1,3-Dichloropr...			0.585	0.582	0.603	0.616	0.604	0.609	0.571	0.616	0.596	0.598	2.60
50)		1,2-Dibromoeth...		0.296	0.305	0.325	0.361	0.358	0.339	0.353	0.334	0.367	0.357	0.340	7.18
51)		2-Hexanone			0.307	0.270	0.288	0.277	0.297	0.326	0.312	0.348	0.340	0.307	8.82
52)	P	Chlorobenzene		1.060	1.086	1.089	1.049	1.059	1.026	1.045	0.977	1.057	1.034	1.048	3.06
53)	C	Ethylbenzene	1.832	1.839	1.719	1.810	1.750	1.772	1.739	1.774	1.659	1.825	1.776	1.772	3.06
54)		1,1,1,2-Tetrac...		0.335	0.312	0.310	0.321	0.339	0.330	0.346	0.329	0.363	0.349	0.333	5.02
55)		m,p-Xylenes (2)	1.382	1.282	1.327	1.356	1.330	1.340	1.345	1.384	1.310	1.448	1.427	1.357	3.64
56)		o-Xylene	1.333	1.449	1.363	1.319	1.359	1.361	1.338	1.396	1.319	1.445	1.426	1.373	3.52
57)		Styrene		0.840	0.835	0.888	0.860	0.903	0.954	1.021	1.019	1.170	1.186	0.968	13.35
58)	P	Bromoform			0.214	0.189	0.221	0.226	0.237	0.251	0.254	0.298		0.236	13.78
59)		Isopropylbenzene	1.778	1.741	1.685	1.757	1.746	1.778	1.760	1.800	1.705	1.880	1.841	1.770	3.16
60)	I	1,4-Dichlorobenzen...	----------					ISTD							
61)	S	4-Bromofluorob...	0.792	0.795	0.785	0.786	0.781	0.784	0.759	0.769	0.749	0.746	0.728	0.770	2.84
62)		Bromobenzene	0.778	0.802	0.869	0.843	0.876	0.860	0.804	0.840	0.772	0.832	0.813	0.826	4.27
63)		n-Propylbenzene	3.910	3.814	3.995	3.851	3.863	3.871	3.742	3.868	3.538	3.886	3.727	3.824	3.15
64)	P	1,1,2,2-Tetrac...	0.975	0.931	1.000	0.913	1.000	0.955	0.906	0.945	0.861	0.944	0.917	0.941	4.42
65)		2-Chlorotoluene		0.793	0.791	0.781	0.800	0.781	0.763	0.776	0.722	0.782	0.763	0.775	2.87
66)		1,3,5-Trimethy...	2.901	2.495	2.607	2.633	2.665	2.657	2.597	2.722	2.516	2.789	2.718	2.664	4.40
67)		1,2,3-Trichlor...			0.313	0.292	0.333	0.320	0.304	0.306	0.291	0.323	0.323	0.312	4.68
68)		t-1,4-Dichloro...					0.045	0.051	0.053	0.058	0.065			0.054	14.03
69)		4-Chlorotoluene	2.516	2.447	2.342	2.318	2.331	2.332	2.261	2.316	2.127	2.333	2.272	2.327	4.26
70)		tert-Butylbenzene	1.735	1.750	1.588	1.581	1.598	1.562	1.532	1.585	1.457	1.596	1.565	1.595	5.21
71)		1,2,4-Trimethy...	2.750	2.827	2.486	2.578	2.650	2.665	2.621	2.794	2.563	2.832	2.747	2.683	4.30
72)		sec-Butylbenzene	3.354	3.696	3.579	3.641	3.647	3.645	3.575	3.697	3.406	3.744	3.649	3.603	3.36
73)		4-Isopropyltol...	2.981	3.064	3.060	2.986	3.026	3.056	3.035	3.147	2.901	3.227	3.157	3.058	2.99
74)		1,3-Dichlorobe...	1.582	1.749	1.614	1.661	1.688	1.646	1.611	1.654	1.507	1.657	1.618	1.635	3.77
75)		1,4-Dichlorobe...	1.829	1.796	1.749	1.701	1.740	1.696	1.615	1.671	1.535	1.675	1.636	1.695	4.93
76)		n-Butylbenzene	2.399	2.638	2.589	2.579	2.672	2.657	2.665	2.789	2.592	2.827	2.767	2.652	4.46
77)		1,2-Dichlorobe...	1.656	1.595	1.610	1.589	1.662	1.591	1.553	1.601	1.462	1.593	1.545	1.587	3.44
78)		1,2-Dibromo-3-...				0.210	0.220	0.195	0.202	0.220	0.204	0.230	0.233	0.214	6.31
79)		Hexachlorobuta...		0.365	0.395	0.361	0.382	0.361	0.366	0.367	0.333	0.351	0.342	0.362	4.96
80)		1,2,4-Trichlor...	1.063	1.023	1.122	0.976	1.105	1.112	1.119	1.159	1.070	1.133	1.088	1.088	4.83
81)		Naphthalene				2.064	2.399	2.524	2.668	2.909	2.778	3.040	3.060	2.680	12.75
82)		1,2,3-Trichlor...		1.134	1.108	0.999	1.162	1.096	1.094	1.153	1.069	1.126	1.112	1.105	4.22

(#) = Out of Range

Compound List Report VOA-GCMS1

Method Path : C:\msdchem\1\METHODS\
Method File : VA190306W.M
Title : EPA 8260C: Volatile Organic Compounds
Last Update : Wed Mar 06 08:45:04 2019
Response Via : Initial Calibration

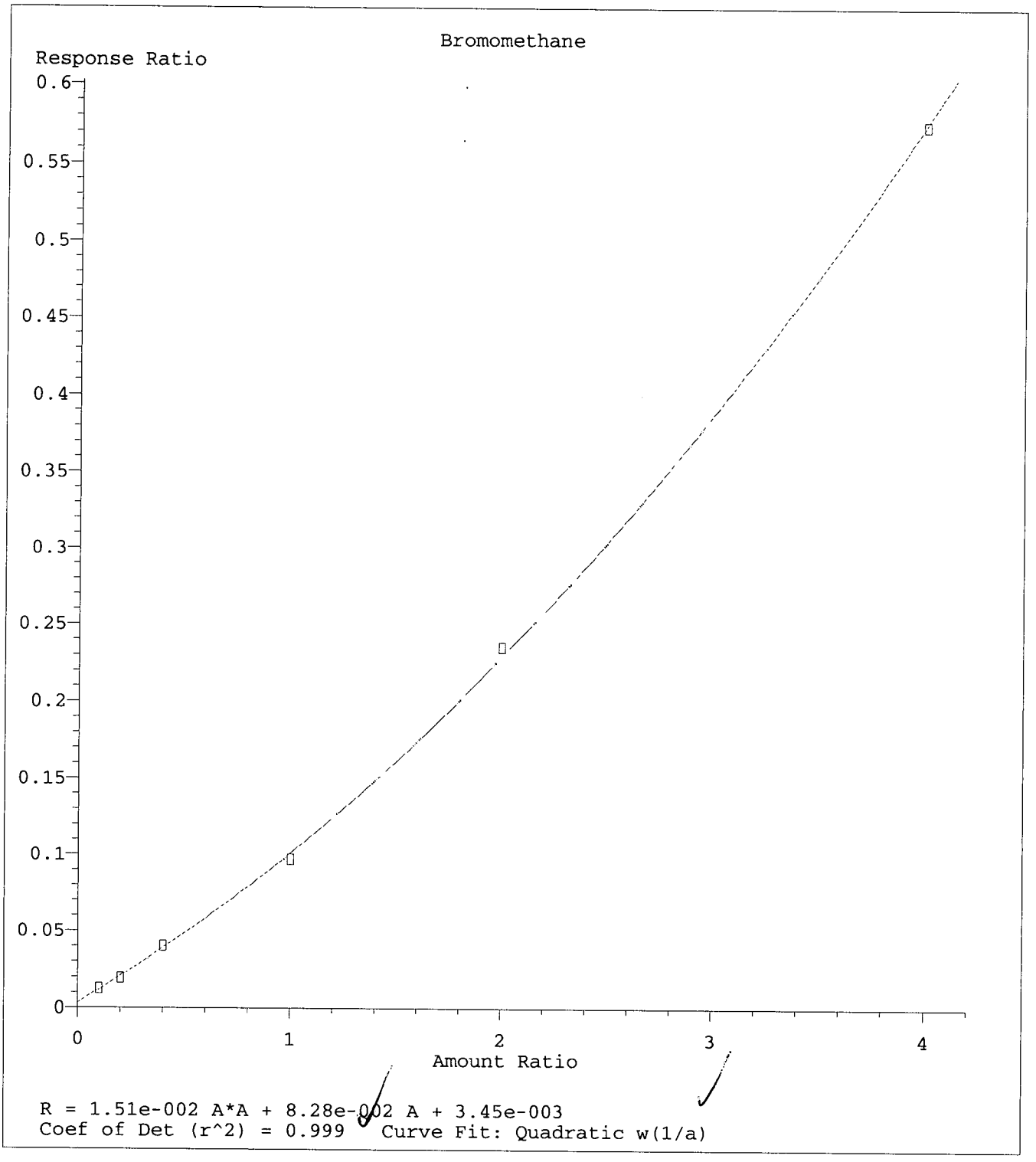
Total Cpnds : 82

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	Pentafluorobenzene (I)	168	6.194	1.000	A	2	A	R
2		Dichlorodifluoromethane	85	1.766	0.285	A	2	A	R
3	P	Chloromethane	50	1.966	0.317	A	2	A	R
4	C	Vinyl Chloride	62	2.070	0.334	A	2	A	R
5		Bromomethane	96	2.428	0.392	Q	2	A	R
6		Chloroethane	64	2.575	0.416	A	2	A	R
7		Trichlorofluoromethane	101	2.739	0.442	A	2	A	R
8	C	1,1-Dichloroethene	61	3.286	0.531	A	2	A	R
9		Carbon Disulfide	76	3.305	0.534	A	2	A	R
10		Freon 113	101	3.341	0.539	A	2	A	R
11		Iodomethane	142	3.432	0.554	Q	2	A	R
12		Acrolein	56	3.639	0.588	A	2	A	R
13		Methylene Chloride	84	3.894	0.629	L	2	A	R
14		Acetone	43	3.949	0.638	A	1	A	R
15		t-1,2-Dichloroethene	61	4.065	0.656	A	2	A	R
16		n-Hexane	86	4.168	0.673	A	3	A	R
17		Methyl-tert-butyl-ether	73	4.199	0.678	A	3	A	R
18	P	1,1-Dichloroethane	63	4.691	0.757	A	2	A	R
19		Acrylonitrile	53	4.728	0.763	A	2	A	R
20		Vinyl Acetate	43	4.952	0.800	A	2	A	R
21		c-1,2-Dichloroethene	61	5.238	0.846	A	2	A	R
22		2,2-Dichloropropane	77	5.348	0.864	A	2	A	R
23		Bromochloromethane	49	5.433	0.877	A	2	A	R
24	C	Chloroform	83	5.519	0.891	A	2	A	R
25		Carbon Tetrachloride	117	5.665	0.915	A	2	A	R
26		Tetrahydrofuran	42	5.695	0.919	A	2	A	R
27		1,1,1-Trichloroethane	97	5.731	0.925	A	2	A	R
28	S	Dibromofluoromethane (S)	111	5.701	0.920	A	2	A	R
29		1,1-Dichloropropene	75	5.859	0.946	A	2	A	R
30		2-Butanone (MEK)	43	5.829	0.941	A	2	A	R
31		Benzene	78	6.108	0.986	A	2	A	R
32		1,2-Dichloroethane (EDC)	62	6.315	1.020	A	2	A	R
33		iso-Butyl Alcohol	43	6.351	1.025	A	2	A	R
34	S	1,4-Difluorobenzene (S)	114	6.759	1.091	A	2	A	R
35		Trichloroethene (TCE)	130	6.729	1.086	A	2	A	R
36		Dibromomethane	93	7.166	1.157	A	2	A	R
37	C	1,2-Dichloropropane	63	7.282	1.176	A	2	A	R
38		Bromodichloromethane	83	7.355	1.188	A	2	A	R
39	I	Chlorobenzene-d5 (I)	117	9.891	1.000	A	2	A	R
40		2-Chloroethyl Vinyl Ether	63	8.061	0.815	A	2	A	R
41		c-1,3-Dichloropropene	75	8.055	0.814	A	2	A	R
42	S	Toluene-d8 (S)	98	8.273	0.836	A	2	A	R
43	C	Toluene	91	8.334	0.843	A	2	A	R
44		Tetrachloroethene (PCE)	166	8.778	0.887	A	2	A	R
45		4-Methyl-2-Pentanone (MIBK)	43	8.766	0.886	A	2	A	R
46		t-1,3-Dichloropropene	75	8.803	0.890	A	2	A	R
47		1,1,2-Trichloroethane	97	8.973	0.907	A	2	A	R
48		Dibromochloromethane	129	9.161	0.926	A	2	A	R
49		1,3-Dichloropropane	76	9.253	0.935	A	2	A	R
50		1,2-Dibromoethane (EDB)	107	9.392	0.950	A	2	A	R
51		2-Hexanone	43	9.629	0.974	A	2	A	R

52	P	Chlorobenzene	112	9.909	1.002	A	2	A	R
53	C	Ethylbenzene	91	9.940	1.005	A	2	A	R
54		1,1,1,2-Tetrachloroethane	131	9.970	1.008	A	2	A	R
55		m,p-Xylenes (2)	91	10.074	1.018	A	2	A	R
56		o-Xylene	91	10.457	1.057	A	2	A	R
57		Styrene	104	10.499	1.061	A	2	A	R
58	P	Bromoform	173	10.517	1.063	A	2	A	R
59		Isopropylbenzene	105	10.724	1.084	A	2	A	R
60	I	1,4-Dichlorobenzene-d4 (I)	152	11.837	1.000	A	2	A	R
61	S	4-Bromofluorobenzene (S)	174	10.955	0.926	A	2	A	R
62		Bromobenzene	156	11.040	0.933	A	2	A	R
63		n-Propylbenzene	91	11.071	0.935	A	2	A	R
64	P	1,1,2,2-Tetrachloroethane	83	11.120	0.939	A	2	A	R
65		2-Chlorotoluene	126	11.192	0.946	A	2	A	R
66		1,3,5-Trimethylbenzene	105	11.229	0.949	A	2	A	R
67		1,2,3-Trichloropropane	110	11.229	0.949	A	2	A	R
68		t-1,4-Dichloro-2-butene	88	11.259	0.951	A	3	A	R
69		4-Chlorotoluene	91	11.320	0.956	A	2	A	R
70		tert-Butylbenzene	91	11.478	0.970	A	2	A	R
71		1,2,4-Trimethylbenzene	105	11.533	0.974	A	2	A	R
72		sec-Butylbenzene	105	11.618	0.982	A	2	A	R
73		4-Isopropyltoluene	119	11.728	0.991	A	2	A	R
74		1,3-Dichlorobenzene	146	11.782	0.995	A	2	A	R
75		1,4-Dichlorobenzene	146	11.849	1.001	A	2	A	R
76		n-Butylbenzene	91	12.043	1.017	A	2	A	R
77		1,2-Dichlorobenzene	146	12.166	1.028	A	2	A	R
78		1,2-Dibromo-3-Chloropropane	157	12.773	1.079	A	2	A	R
79		Hexachlorobutadiene	223	13.303	1.124	A	3	A	R
80		1,2,4-Trichlorobenzene	180	13.327	1.126	A	2	A	R
81		Naphthalene	128	13.606	1.149	A	2	A	R
82		1,2,3-Trichlorobenzene	180	13.764	1.163	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

VA190306W.M Wed Mar 06 09:45:35 2019

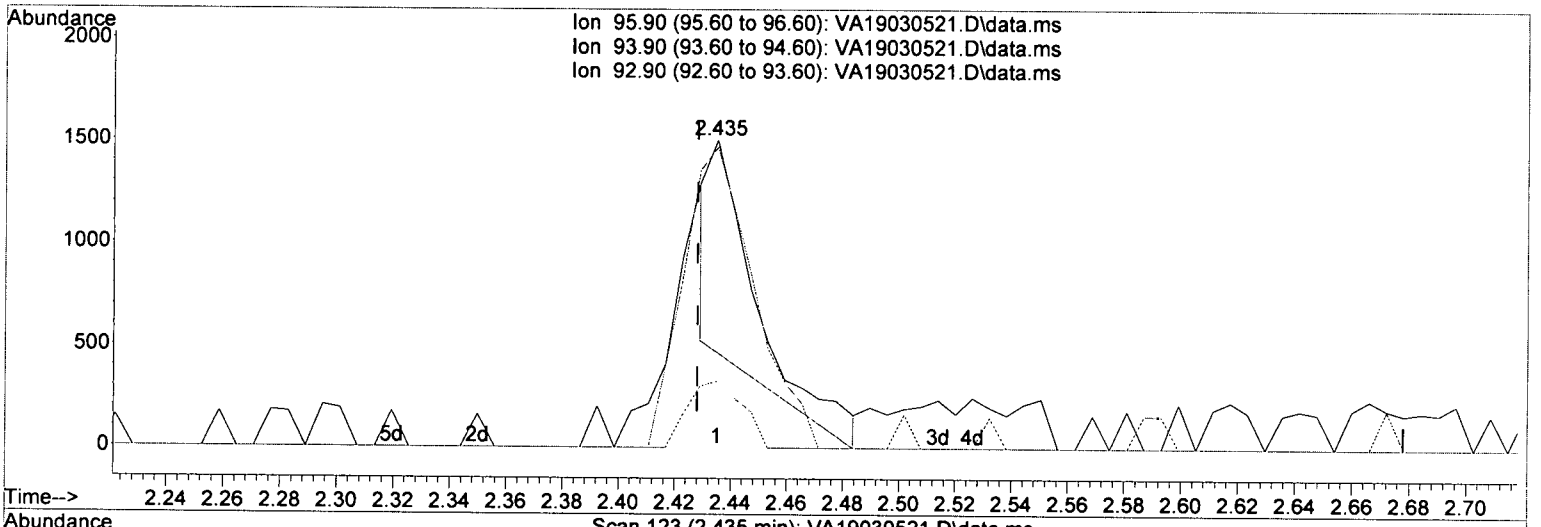


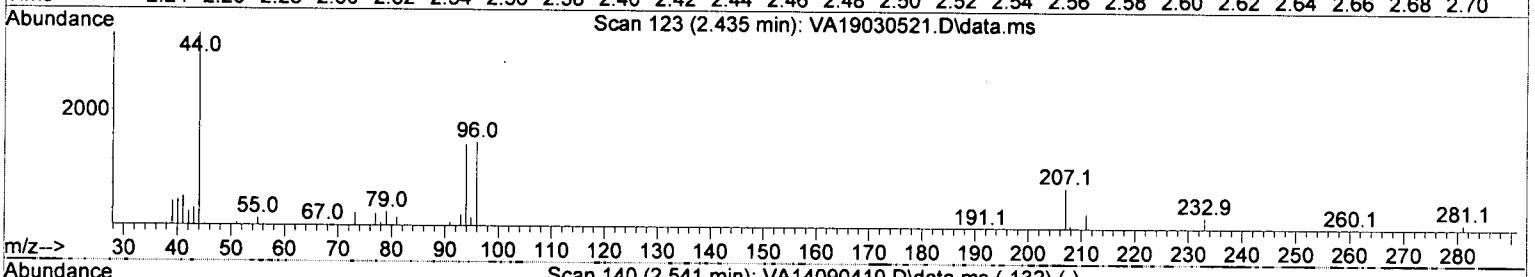
Method Name: C:\msdchem\1\METHODS\VA190306W.M
Calibration Table Last Updated: Wed Mar 06 08:37:39 2019

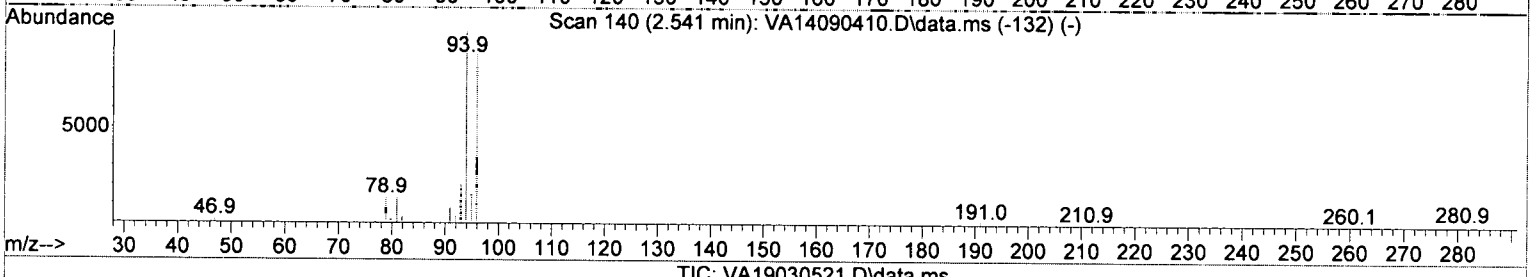
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\REQUANT\
Data File : VA19030521.D
Acq On : 5 Mar 2019 7:03 pm
Operator : MM
Sample : 9C05053-CAL6
Misc : 1X 5mL 5/10PPB VOCR
ALS Vial : 44 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:09:41 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration







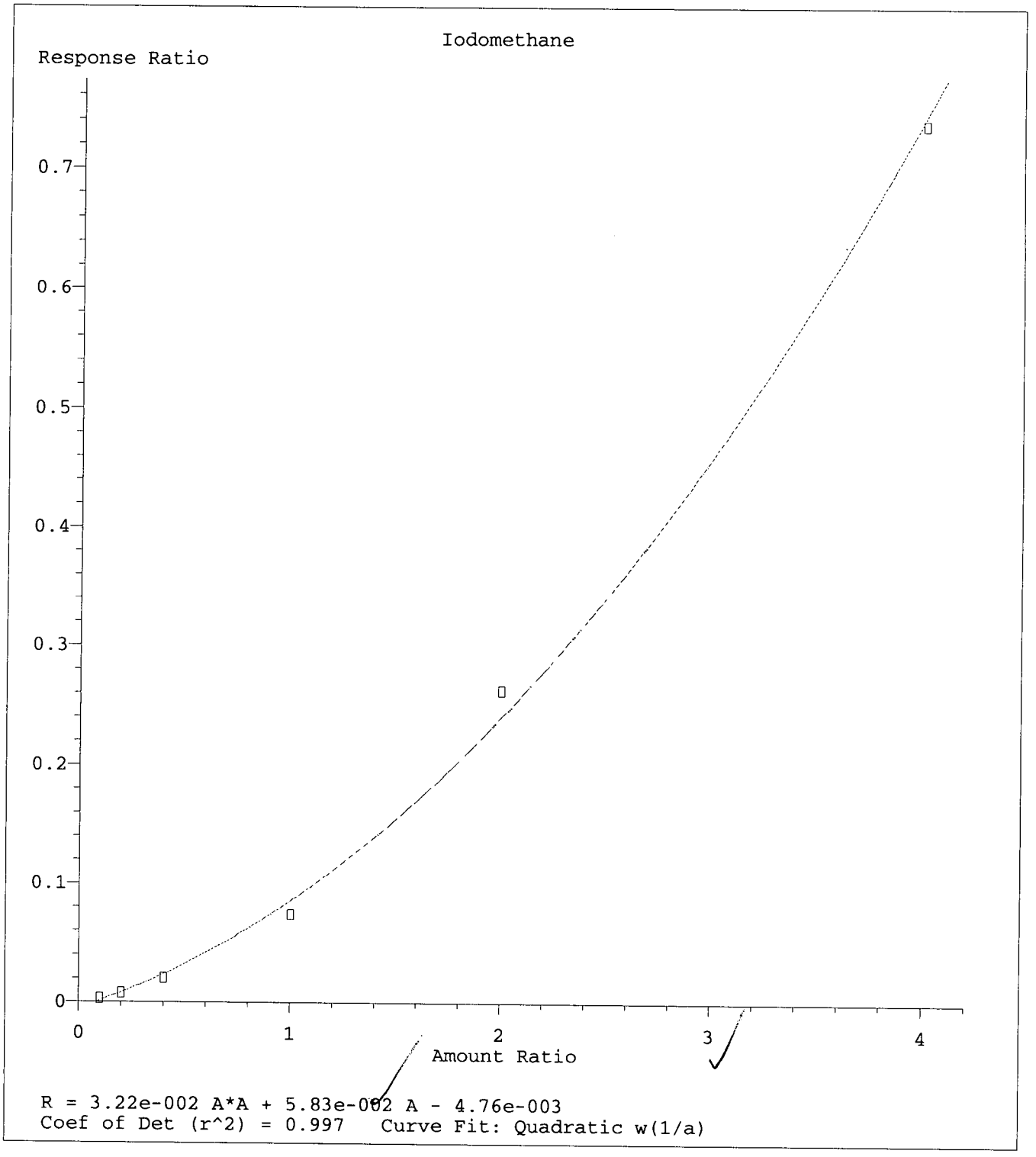
TIC: VA19030521.D\data.ms

(5) Bromomethane

2.435min (+0.007) 0.34 ug/L m

response 1041

Ion	Exp%	Act%
95.90	100	100
93.90	106.80	97.60
92.90	22.80	21.76
0.00	0.00	0.00

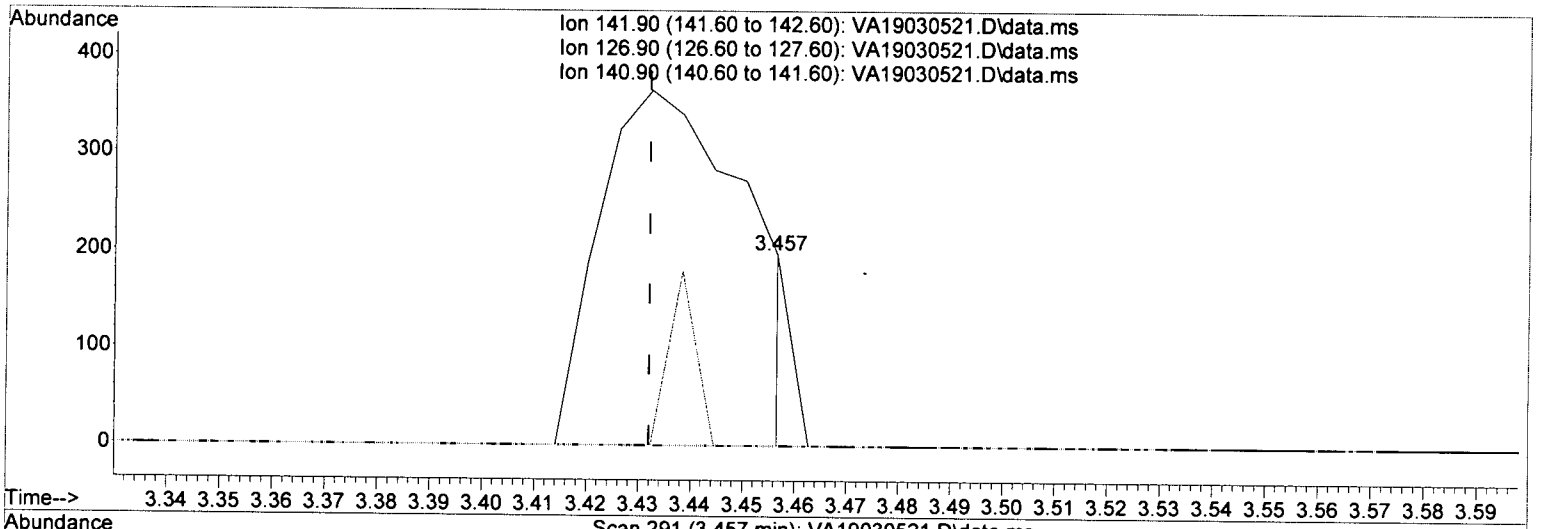


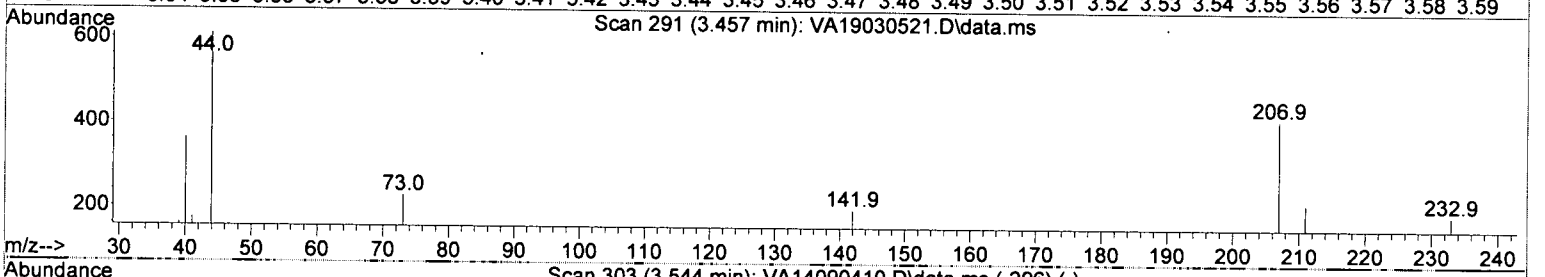
Method Name: C:\msdchem\1\METHODS\VA190306W.M
Calibration Table Last Updated: Wed Mar 06 08:38:10 2019

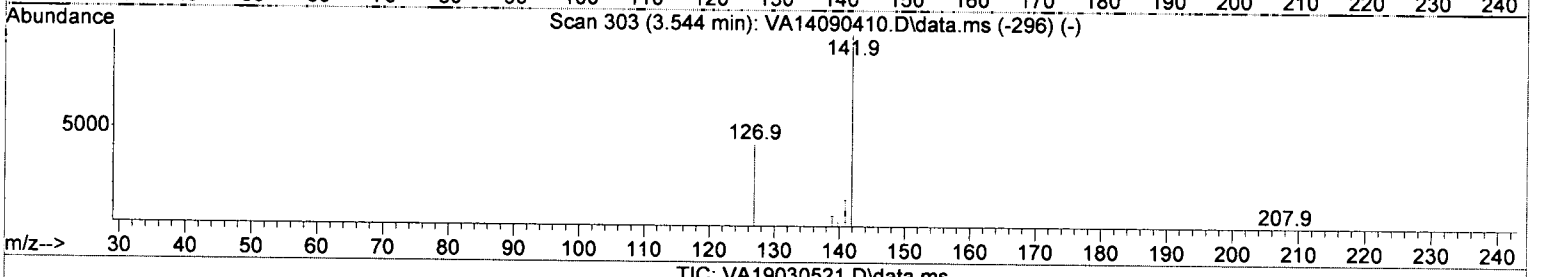
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\REQUANT\
Data File : VA19030521.D
Acq On : 5 Mar 2019 7:03 pm
Operator : MM
Sample : 9C05053-CAL6
Misc : 1X 5mL 5/10PPB VOCR
ALS Vial : 44 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:09:41 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration







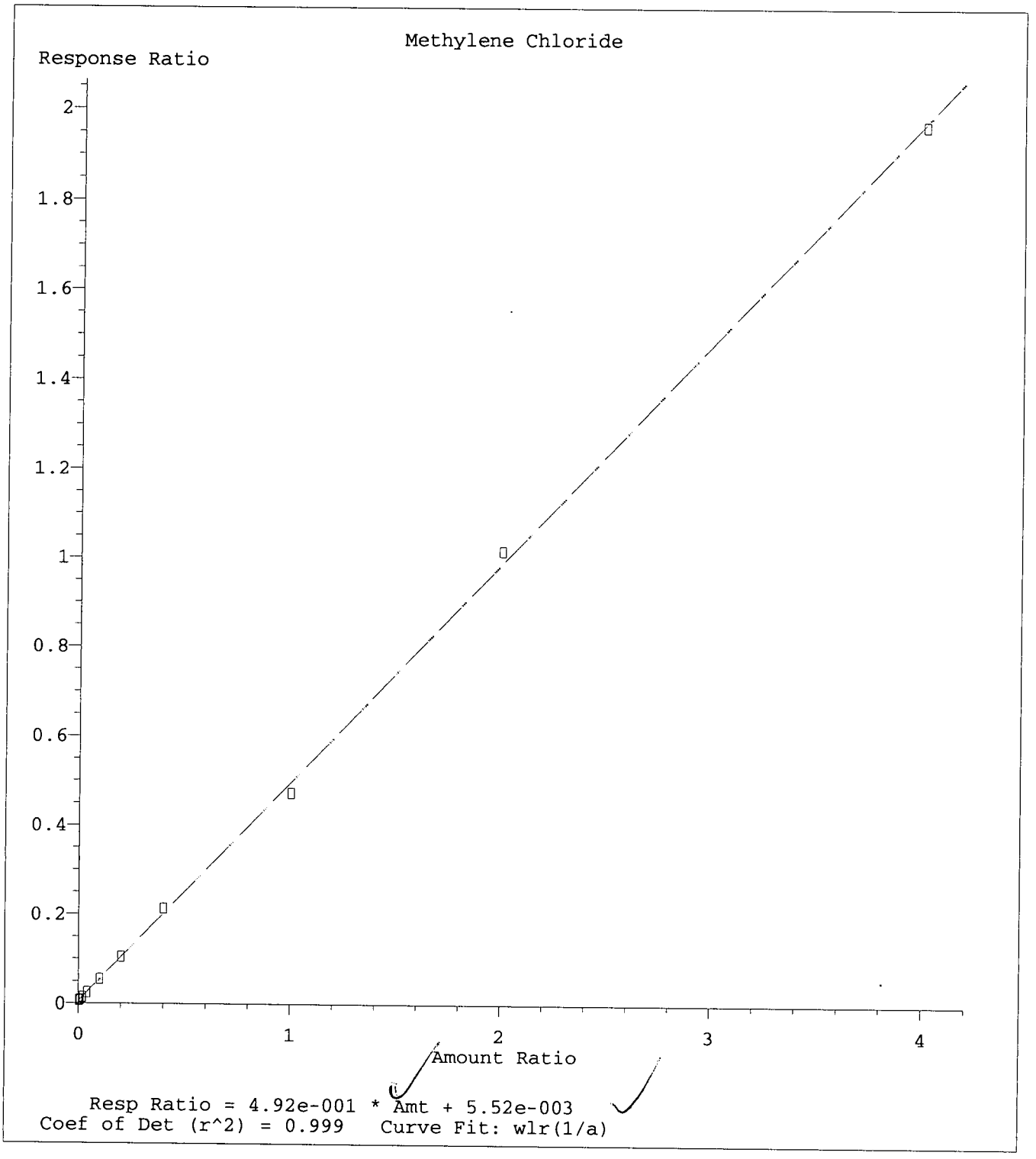
TIC: VA19030521.D\data.ms

(11) Iodomethane

3.457min (+0.025) 3.91 ug/L m

response 0

Ion	Exp%	Act%
141.90	100	0.00
126.90	34.80	0.00#
140.90	15.30	0.00
0.00	0.00	0.00

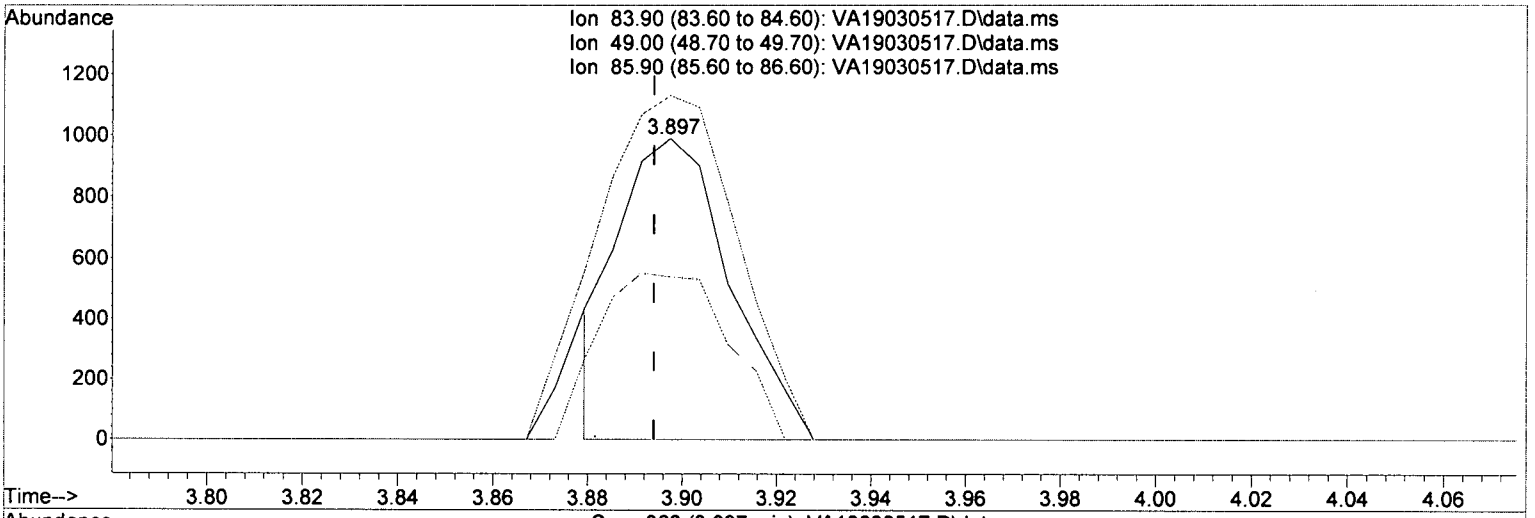


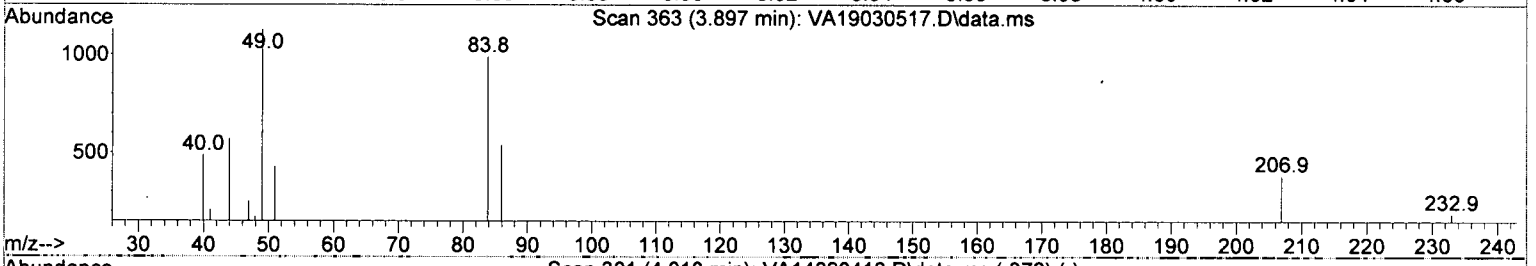
Method Name: C:\msdchem\1\METHODS\VA190306W.M
Calibration Table Last Updated: Wed Mar 06 08:38:57 2019

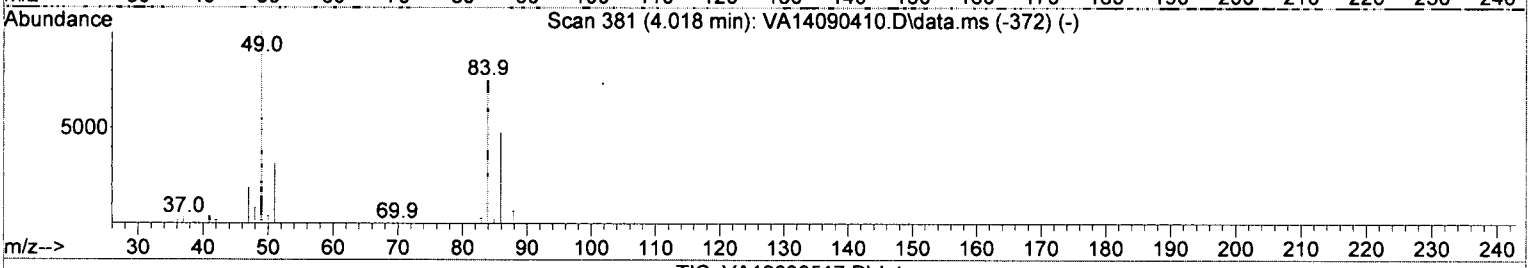
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\REQUANT\
Data File : VA19030517.D
Acq On : 5 Mar 2019 5:09 pm
Operator : MM
Sample : 9C05053-CAL2
Misc : 1X 5mL 0.2/0.4PPB VOCR
ALS Vial : 40 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:09:33 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration







TIC: VA19030517.D\data.ms

(13) Methylene Chloride

3.897min (+0.003) 0.09 ug/L m

response 1623

Ion	Exp%	Act%
83.90	100	100
49.00	123.30	114.16
85.90	63.90	54.50
0.00	0.00	0.00

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9C05053

Analysis Included
8260C Full List

INSTRUMENT SEQUENCE LOG

SampleID	SampleName	Matrix	STDID	ISTD_ID	Analyzed
9C05053-TUN1	MS Tune	Water		A19C089	3/5/2019 3:43:00PM
9C05053-ICB1	Initial Cal Blank	Water		A19C089	3/5/2019 4:12:00PM
9C05053-CAL1	Cal Standard	Water	A19C073	"	3/5/2019 4:40:00PM
9C05053-CAL2	Cal Standard	Water	A19C074	"	3/5/2019 5:09:00PM
9C05053-CAL3	Cal Standard	Water	A19C075	"	3/5/2019 5:37:00PM
9C05053-CAL4	Cal Standard	Water	A19C076	"	3/5/2019 6:06:00PM
9C05053-CAL5	Cal Standard	Water	A19C078	"	3/5/2019 6:34:00PM
9C05053-CAL6	Cal Standard	Water	A19C079	"	3/5/2019 7:03:00PM
9C05053-CAL7	Cal Standard	Water	A19C080	"	3/5/2019 7:31:00PM
9C05053-CAL8	Cal Standard	Water	A19C081	"	3/5/2019 8:03:00PM
9C05053-CAL9	Cal Standard	Water	A19C082	"	3/5/2019 8:31:00PM
9C05053-CALA	Cal Standard	Water	A19C083	"	3/5/2019 9:28:00PM
9C05053-CALB	Cal Standard	Water	A19C084	"	3/5/2019 10:25:00PM
9C05053-ICV1	Initial Cal Check	Water	A19B195	"	3/5/2019 11:51:00PM

CALIBRATION STANDARD RECOVERIES

Calibration: **A9C0602** Instrument: **VOA-GCMS1**

8260C Full List Sequence: **9C05053** Matrix: **Water**

9C05053-CAL1	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9C05053-CAL2	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9C05053-CAL3	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9C05053-CAL4	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9C05053-CAL5	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9C05053-CAL6	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9C05053-CAL7	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9C05053-CAL8	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9C05053-CAL9	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9C05053-CALA	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9C05053-CALB	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9C05053

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: **A9C0602** Instrument: **VOA-GCMS1**

8260C Full List Sequence: **9C05053** Matrix: **Water**

9C05053-ICV1	Inst. MRL	ICV Level	Result	%Rec.	Qual
Bromomethane	5	20.0	**30.67**	153	E-05

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\2019-03\9C05053\
Data File : VA19030531.D
Acq On : 5 Mar 2019 11:51 pm
Operator : MM
Sample : 9C05053-ICV1
Misc : 1X 5mL 20/40PPB VOCR
ALS Vial : 54 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

MM 3/6/19

Quant Time: Mar 06 09:15:18 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

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 (I)	50.000	50.000	0.0	105	0.00	
2		Dichlorodifluoromethane	20.000	19.188	4.1	99	0.00	
3	P	Chloromethane	20.000	18.019	9.9	91	0.00	
4	C	Vinyl Chloride	20.000	19.466	2.7	102	0.00	
5		Bromomethane	20.000	30.670	-53.4#	158	0.00	EOS
6		Chloroethane	20.000	20.934	-4.7	109	0.00	
7		Trichlorofluoromethane	20.000	19.467	2.7	103	0.00	
8	C	1,1-Dichloroethene	20.000	20.859	-4.3	111	0.00	
9		Carbon Disulfide	20.000	17.386	13.1	91	0.00	
10		Freon 113	20.000	19.722	1.4	103	0.00	
11		Iodomethane	20.000	42.351	-111.8#	349	0.00	EOS
12		Acrolein	20.000	19.694	1.5	100	0.00	
13		Methylene Chloride	20.000	20.888	-4.4	104	0.00	
14		Acetone	40.000	40.428	-1.1	104	0.00	
15		t-1,2-Dichloroethene	20.000	21.189	-5.9	111	0.00	
16		n-Hexane	20.000	18.873	5.6	98	0.00	
17		Methyl-tert-butyl-ether	20.000	18.934	5.3	103	0.00	
18	P	1,1-Dichloroethane	20.000	20.771	-3.9	108	0.00	
19		Acrylonitrile	20.000	20.551	-2.8	103	0.00	
20		Vinyl Acetate	20.000	18.485	7.6	90	0.00	
21		c-1,2-Dichloroethene	20.000	22.104	-10.5	113	0.00	
22		2,2-Dichloropropane	20.000	19.945	0.3	106	0.00	
23		Bromochloromethane	20.000	19.570	2.1	108	0.00	
24	C	Chloroform	20.000	20.541	-2.7	109	0.00	
25		Carbon Tetrachloride	20.000	21.327	-6.6	111	0.00	
26		Tetrahydrofuran	20.000	19.275	3.6	100	0.00	
27		1,1,1-Trichloroethane	20.000	20.774	-3.9	110	0.00	
28	S	Dibromofluoromethane (S)	50.000	49.806	0.4	105	0.00	
29		1,1-Dichloropropene	20.000	21.212	-6.1	113	0.00	
30		2-Butanone (MEK)	40.000	38.544	3.6	101	0.00	
31		Benzene	20.000	20.312	-1.6	112	0.00	
32		1,2-Dichloroethane (EDC)	20.000	21.349	-6.7	112	0.00	
33		iso-Butyl Alcohol	500.000	535.578	-7.1	107	0.00	
34	S	1,4-Difluorobenzene (S)	50.000	50.217	-0.4	105	0.00	
35		Trichloroethene (TCE)	20.000	21.643	-8.2	113	0.00	
36		Dibromomethane	20.000	22.123	-10.6	114	0.00	
37	C	1,2-Dichloropropane	20.000	20.469	-2.3	109	0.00	
38		Bromodichloromethane	20.000	21.952	-9.8	110	0.00	
39		Chlorobenzene-d5 (I)	50.000	50.000	0.0	105	0.00	
40		2-Chloroethyl Vinyl Ether	20.000	0.000	100.0#	0	-0.01	NR
41		c-1,3-Dichloropropene	20.000	20.856	-4.3	108	0.00	
42	S	Toluene-d8 (S)	50.000	50.185	-0.4	106	0.00	
43	C	Toluene	20.000	21.107	-5.5	113	0.00	
44		Tetrachloroethene (PCE)	20.000	21.661	-8.3	112	0.00	
45		4-Methyl-2-Pentanone (MIBK)	40.000	40.984	-2.5	104	0.00	
46		t-1,3-Dichloropropene	20.000	19.952	0.2	103	0.00	
47		1,1,2-Trichloroethane	20.000	21.114	-5.6	109	0.00	
48		Dibromochloromethane	20.000	20.808	-4.0	110	0.00	
49		1,3-Dichloropropane	20.000	21.595	-8.0	111	0.00	
50		1,2-Dibromoethane (EDB)	20.000	21.827	-9.1	110	0.00	

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030531.D
Acq On : 5 Mar 2019 11:51 pm
Operator : MM
Sample : 9C05053-ICV1
Misc : 1X 5mL 20/40PPB VOCR
ALS Vial : 54 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:15:18 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

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)
51		2-Hexanone	40.000	41.408	-3.5	102	0.00
52	P	Chlorobenzene	20.000	21.119	-5.6	111	0.00
53	C	Ethylbenzene	20.000	21.676	-8.4	114	0.00
54		1,1,1,2-Tetrachloroethane	20.000	22.094	-10.5	112	0.00
55		m,p-Xylenes (2)	40.000	43.705	-9.3	113	0.00
56		o-Xylene	20.000	21.782	-8.9	113	0.00
57		Styrene	20.000	22.674	-13.4	113	0.00
58	P	Bromoform	20.000	22.110	-10.5	109	0.00
59		Isopropylbenzene	20.000	22.036	-10.2	114	0.00
60	I	1,4-Dichlorobenzene-d4 (I)	50.000	50.000	0.0	105	0.00
61	S	4-Bromofluorobenzene (S)	50.000	49.929	0.1	105	0.00
62		Bromobenzene	20.000	21.754	-8.8	112	0.00
63		n-Propylbenzene	20.000	21.583	-7.9	112	0.00
64	P	1,1,2,2-Tetrachloroethane	20.000	20.628	-3.1	108	0.00
65		2-Chlorotoluene	20.000	21.695	-8.5	114	0.00
66		1,3,5-Trimethylbenzene	20.000	21.841	-9.2	112	0.00
67		1,2,3-Trichloropropane	20.000	21.247	-6.2	113	0.00
68		t-1,4-Dichloro-2-butene	20.000	22.300	-11.5	110	0.00
69		4-Chlorotoluene	20.000	21.520	-7.6	113	0.00
70		tert-Butylbenzene	20.000	21.323	-6.6	112	0.00
71		1,2,4-Trimethylbenzene	20.000	22.253	-11.3	112	0.00
72		sec-Butylbenzene	20.000	22.043	-10.2	113	0.00
73		4-Isopropyltoluene	20.000	21.897	-9.5	111	0.00
74		1,3-Dichlorobenzene	20.000	21.313	-6.6	110	0.00
75		1,4-Dichlorobenzene	20.000	20.908	-4.5	111	0.00
76		n-Butylbenzene	20.000	22.589	-12.9	113	0.00
77		1,2-Dichlorobenzene	20.000	21.099	-5.5	110	0.00
78		1,2-Dibromo-3-Chloropropane	20.000	20.840	-4.2	106	0.00
79		Hexachlorobutadiene	20.000	21.898	-9.5	113	0.00
80		1,2,4-Trichlorobenzene	20.000	23.467	-17.3	115	0.00
81		Naphthalene	20.000	23.236	-16.2	112	0.00
82		1,2,3-Trichlorobenzene	20.000	22.361	-11.8	112	0.00

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

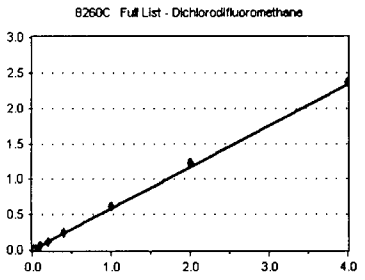
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

Dichlorodifluoromethane

Curve Fit: **AVERAGE RF**

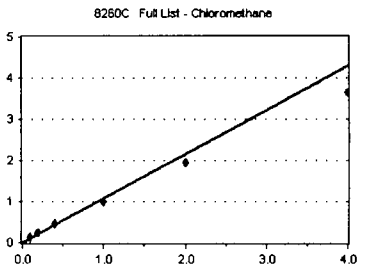


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	515	0.510	1.76
9C05053-CAL3	0.4	1114	0.579	1.77
9C05053-CAL4	1	2565	0.521	1.77
9C05053-CAL5	2	5935	0.598	1.76
9C05053-CAL6	5	15676	0.605	1.77
9C05053-CAL7	10	28559	0.592	1.77
9C05053-CAL8	20	58526	0.598	1.77
9C05053-CAL9	50	155578	0.619	1.77
9C05053-CALA	100	320185	0.616	1.77
9C05053-CALB	200	643762	0.594	1.76

AVE RF **0.583** RF RSD **6.46** AVE RT **1.77**

Chloromethane

Curve Fit: **AVERAGE RF**

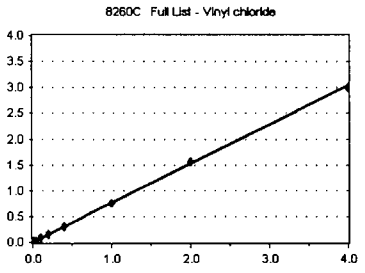


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~3782~~	~~7.580~~	~~1.97~~
~~9C05053-CAL2~~	~~0.2~~	~~4555~~	~~4.508~~	~~1.97~~
~~9C05053-CAL3~~	~~0.4~~	~~6903~~	~~3.590~~	~~1.97~~
~~9C05053-CAL4~~	~~1~~	~~12966~~	~~2.633~~	~~1.97~~
~~9C05053-CAL5~~	~~2~~	~~15645~~	~~1.577~~	~~1.97~~
9C05053-CAL6	5	32370	1.249	1.97
9C05053-CAL7	10	57094	1.183	1.97
9C05053-CAL8	20	109564	1.119	1.97
9C05053-CAL9	50	251301	1.000	1.97
9C05053-CALA	100	507272	0.976	1.97
9C05053-CALB	200	985713	0.909	1.97

AVE RF **1.073** RF RSD **12.29** AVE RT **1.97**

Vinyl chloride

Curve Fit: **AVERAGE RF**

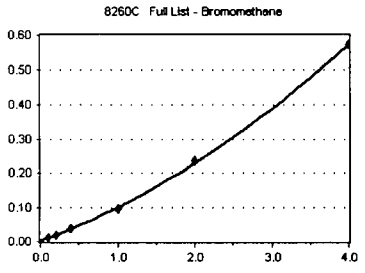


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	821	0.812	2.07
9C05053-CAL3	0.4	1479	0.769	2.07
9C05053-CAL4	1	3643	0.740	2.07
9C05053-CAL5	2	7336	0.739	2.07
9C05053-CAL6	5	19721	0.761	2.07
9C05053-CAL7	10	36278	0.752	2.07
9C05053-CAL8	20	75280	0.769	2.07
9C05053-CAL9	50	192410	0.766	2.07
9C05053-CALA	100	402360	0.774	2.07
9C05053-CALB	200	816312	0.753	2.07

AVE RF **0.764** RF RSD **2.75** AVE RT **2.07**

Bromomethane

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL4~~	~~1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL5~~	~~2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL6	5	3218	0.124	2.44
9C05053-CAL7	10	4672	0.097	2.44
9C05053-CAL8	20	9817	0.100	2.43
9C05053-CAL9	50	24343	9.688	2.43
9C05053-CALA	100	61123	0.118	2.43
9C05053-CALB	200	155450	0.143	2.43

AVE RF **0.113** RF RSD **16.54** AVE RT **2.43**

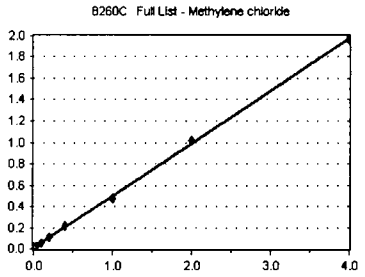
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

Methylene chloride

Curve Fit: **LINEAR: Weighting: (1/a), Origin: Ignore**

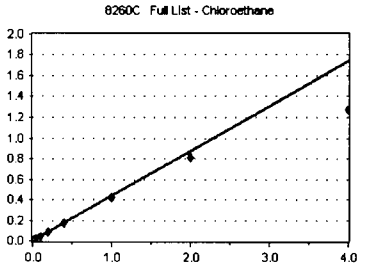


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	1718	3.443	0.00
9C05053-CAL2	0.2	1844	1.825	0.00
9C05053-CAL3	0.4	2106	1.095	0.00
9C05053-CAL4	1	3536	0.718	0.00
9C05053-CAL5	2	6092	0.614	3.90
9C05053-CAL6	5	14076	0.543	3.89
9C05053-CAL7	10	25325	0.525	3.90
9C05053-CAL8	20	52208	0.533	3.89
9C05053-CAL9	50	118707	0.472	3.90
9C05053-CALA	100	264206	0.508	3.90
9C05053-CALB	200	532217	0.491	3.90

AVE RF **0.979** RF RSD **93.14** AVE RT **2.48**

Chloroethane

Curve Fit: **AVERAGE RF**

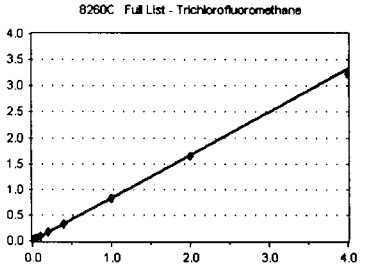


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	957	0.498	2.58
9C05053-CAL4	1	2389	0.485	2.58
9C05053-CAL5	2	4634	0.467	2.58
9C05053-CAL6	5	11561	0.446	2.58
9C05053-CAL7	10	21305	0.442	2.58
9C05053-CAL8	20	43150	0.441	2.58
9C05053-CAL9	50	106440	0.424	2.58
9C05053-CALA	100	209450	0.403	2.57
9C05053-CALB	200	345250	0.318	2.56

AVE RF **0.436** RF RSD **12.14** AVE RT **2.57**

Trichlorofluoromethane

Curve Fit: **AVERAGE RF**

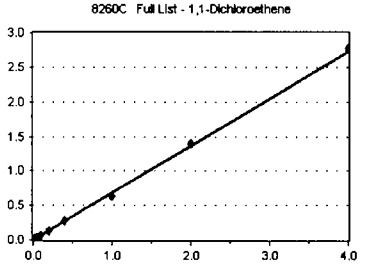


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	1616	0.840	2.74
9C05053-CAL4	1	4271	0.867	2.74
9C05053-CAL5	2	8520	0.859	2.74
9C05053-CAL6	5	21708	0.838	2.74
9C05053-CAL7	10	39807	0.825	2.74
9C05053-CAL8	20	81717	0.834	2.74
9C05053-CAL9	50	206945	0.824	2.74
9C05053-CALA	100	425823	0.819	2.74
9C05053-CALB	200	870253	0.803	2.74

AVE RF **0.834** RF RSD **2.39** AVE RT **2.74**

1,1-Dichloroethene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	1323	0.688	3.28
9C05053-CAL4	1	3305	0.671	3.28
9C05053-CAL5	2	6903	0.696	3.28
9C05053-CAL6	5	17957	0.693	3.29
9C05053-CAL7	10	32494	0.673	3.29
9C05053-CAL8	20	66326	0.677	3.29
9C05053-CAL9	50	158798	0.632	3.29
9C05053-CALA	100	364035	0.700	3.29
9C05053-CALB	200	751926	0.694	3.28

AVE RF **0.681** RF RSD **3.08** AVE RT **3.28**

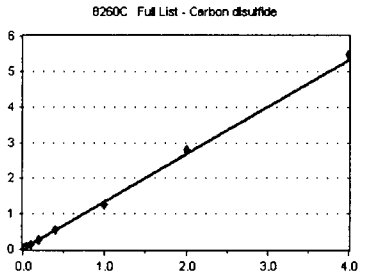
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

Carbon disulfide

Curve Fit: **AVERAGE RF**

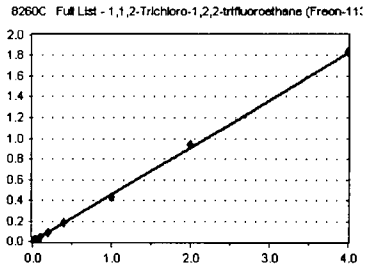


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	2528	1.315	3.31
9C05053-CAL4	1	6407	1.301	3.31
9C05053-CAL5	2	13481	1.359	3.31
9C05053-CAL6	5	34431	1.329	3.31
9C05053-CAL7	10	63404	1.314	3.31
9C05053-CAL8	20	131749	1.345	3.31
9C05053-CAL9	50	316540	1.260	3.31
9C05053-CALA	100	728587	1.402	3.31
9C05053-CALB	200	1487520	1.372	3.31

AVE RF **1.333** RF RSD **3.15** AVE RT **3.31**

1,1,2-Trichloro-1,2,2-trifluoroetha

Curve Fit: **AVERAGE RF**

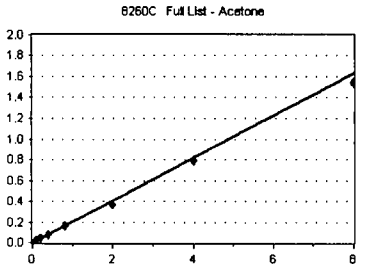


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	847	0.440	3.35
9C05053-CAL4	1	2127	0.432	3.35
9C05053-CAL5	2	4663	0.470	3.34
9C05053-CAL6	5	12493	0.482	3.34
9C05053-CAL7	10	22109	0.458	3.34
9C05053-CAL8	20	45171	0.461	3.34
9C05053-CAL9	50	108193	0.431	3.34
9C05053-CALA	100	244816	0.471	3.34
9C05053-CALB	200	496915	0.458	3.34

AVE RF **0.456** RF RSD **3.96** AVE RT **3.34**

Acetone

Curve Fit: **AVERAGE RF**

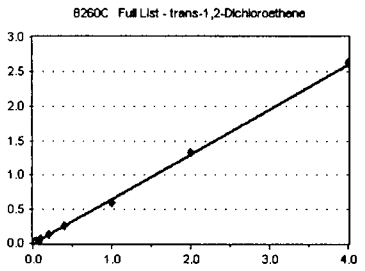


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL3~~	~~0.8~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL4~~	~~2~~	~~3546~~	~~0.360~~	~~3.95~~
9C05053-CAL5	4	4751	0.239	3.95
9C05053-CAL6	10	10382	0.200	3.95
9C05053-CAL7	20	19362	0.201	3.95
9C05053-CAL8	40	40705	0.208	3.95
9C05053-CAL9	100	93526	0.186	3.94
9C05053-CALA	200	206264	0.198	3.95
9C05053-CALB	400	419601	0.194	3.95

AVE RF **0.204** RF RSD **8.40** AVE RT **3.95**

trans-1,2-Dichloroethene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	1243	0.646	4.07
9C05053-CAL4	1	3135	0.637	4.07
9C05053-CAL5	2	6733	0.679	4.07
9C05053-CAL6	5	16902	0.652	4.07
9C05053-CAL7	10	30673	0.636	4.07
9C05053-CAL8	20	63777	0.651	4.07
9C05053-CAL9	50	152335	0.606	4.07
9C05053-CALA	100	346682	0.667	4.07
9C05053-CALB	200	712223	0.657	4.07

AVE RF **0.648** RF RSD **3.20** AVE RT **4.07**

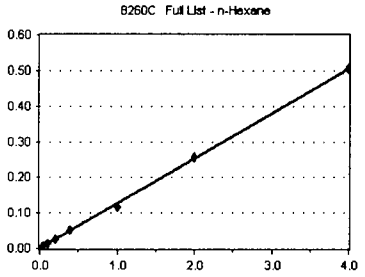
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

n-Hexane

Curve Fit: **AVERAGE RF**

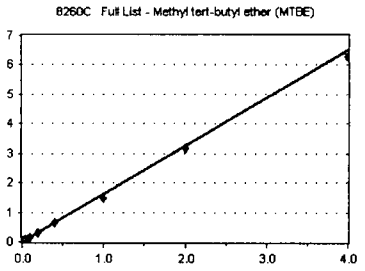


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL4~~	~~1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL5	2	1312	0.132	4.17
9C05053-CAL6	5	3274	0.126	4.17
9C05053-CAL7	10	6111	0.127	4.17
9C05053-CAL8	20	12638	0.129	4.17
9C05053-CAL9	50	29486	0.117	4.17
9C05053-CALA	100	66876	0.129	4.16
9C05053-CALB	200	136770	0.126	4.17

AVE RF **0.127** RF RSD **3.65** AVE RT **4.17**

Methyl tert-butyl ether (MTBE)

Curve Fit: **AVERAGE RF**

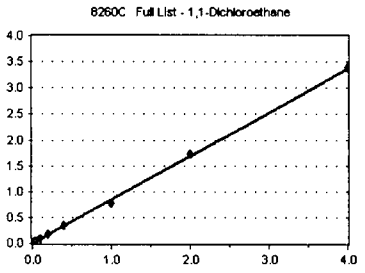


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	3850	2.002	4.21
9C05053-CAL4	1	8258	1.677	4.20
9C05053-CAL5	2	16064	1.619	4.20
9C05053-CAL6	5	40734	1.572	4.20
9C05053-CAL7	10	75237	1.559	4.20
9C05053-CAL8	20	154589	1.579	4.20
9C05053-CAL9	50	367427	1.462	4.19
9C05053-CALA	100	830057	1.597	4.19
9C05053-CALB	200	1706351	1.574	4.19

AVE RF **1.627** RF RSD **9.32** AVE RT **4.20**

1,1-Dichloroethane

Curve Fit: **AVERAGE RF**

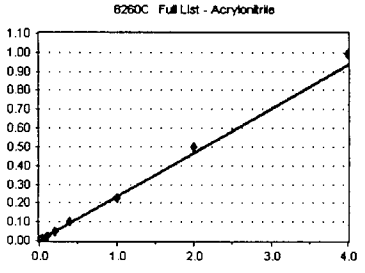


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	1555	0.809	4.69
9C05053-CAL4	1	4183	0.850	4.69
9C05053-CAL5	2	8471	0.854	4.70
9C05053-CAL6	5	22419	0.865	4.69
9C05053-CAL7	10	40606	0.842	4.69
9C05053-CAL8	20	83538	0.853	4.69
9C05053-CAL9	50	196180	0.781	4.69
9C05053-CALA	100	450504	0.867	4.69
9C05053-CALB	200	921609	0.850	4.69

AVE RF **0.841** RF RSD **3.36** AVE RT **4.69**

Acrylonitrile

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	427	0.222	4.73
9C05053-CAL4	1	1087	0.221	4.74
9C05053-CAL5	2	2221	0.224	4.73
9C05053-CAL6	5	6037	0.233	4.73
9C05053-CAL7	10	11250	0.233	4.73
9C05053-CAL8	20	24031	0.245	4.73
9C05053-CAL9	50	56763	0.226	4.73
9C05053-CALA	100	130312	0.251	4.73
9C05053-CALB	200	268384	0.248	4.73

AVE RF **0.234** RF RSD **4.97** AVE RT **4.73**

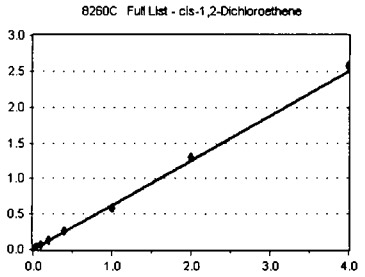
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

cis-1,2-Dichloroethene

Curve Fit: **AVERAGE RF**

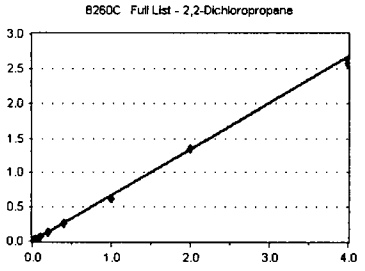


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	225	0.451	0.00
9C05053-CAL2	0.2	693	0.686	5.25
9C05053-CAL3	0.4	1281	0.666	5.24
9C05053-CAL4	1	3039	0.617	5.23
9C05053-CAL5	2	6518	0.657	5.24
9C05053-CAL6	5	16684	0.644	5.24
9C05053-CAL7	10	30669	0.636	5.24
9C05053-CAL8	20	63223	0.646	5.24
9C05053-CAL9	50	148648	0.592	5.24
9C05053-CALA	100	337745	0.650	5.24
9C05053-CALB	200	698561	0.644	5.24

AVE RF **0.626** RF RSD **10.07** AVE RT **4.76**

2,2-Dichloropropane

Curve Fit: **AVERAGE RF**

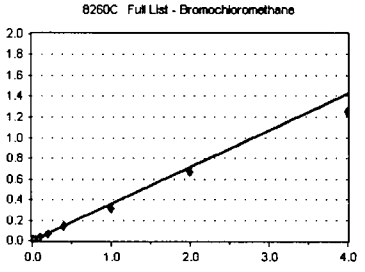


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL4	1	3587	0.729	5.35
9C05053-CAL5	2	6916	0.697	5.35
9C05053-CAL6	5	17819	0.688	5.35
9C05053-CAL7	10	31040	0.643	5.35
9C05053-CAL8	20	64985	0.664	5.35
9C05053-CAL9	50	156118	0.621	5.35
9C05053-CALA	100	347843	0.669	5.35
9C05053-CALB	200	697829	0.644	5.35

AVE RF **0.669** RF RSD **5.14** AVE RT **5.35**

Bromochloromethane

Curve Fit: **AVERAGE RF**

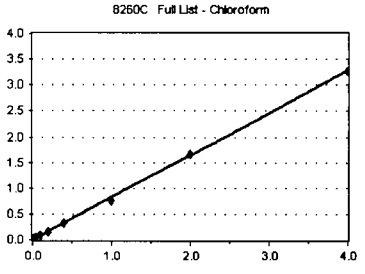


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	384	0.380	5.44
9C05053-CAL3	0.4	727	0.378	5.44
9C05053-CAL4	1	1829	0.371	5.44
9C05053-CAL5	2	3968	0.400	5.44
9C05053-CAL6	5	9758	0.377	5.44
9C05053-CAL7	10	16704	0.346	5.43
9C05053-CAL8	20	33434	0.341	5.43
9C05053-CAL9	50	79318	0.316	5.44
9C05053-CALA	100	173629	0.334	5.43
9C05053-CALB	200	340399	0.314	5.44

AVE RF **0.356** RF RSD **8.30** AVE RT **5.44**

Chloroform

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	881	0.872	5.53
9C05053-CAL3	0.4	1644	0.855	5.51
9C05053-CAL4	1	3950	0.802	5.52
9C05053-CAL5	2	8361	0.843	5.52
9C05053-CAL6	5	21442	0.827	5.52
9C05053-CAL7	10	38661	0.801	5.52
9C05053-CAL8	20	79850	0.815	5.52
9C05053-CAL9	50	189041	0.752	5.52
9C05053-CALA	100	430443	0.828	5.52
9C05053-CALB	200	884817	0.816	5.52

AVE RF **0.821** RF RSD **4.02** AVE RT **5.52**

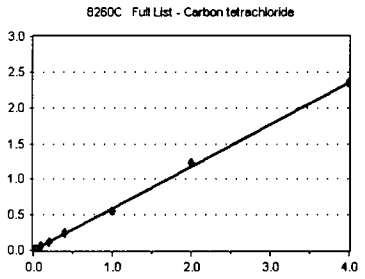
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

Carbon tetrachloride

Curve Fit: **AVERAGE RF**

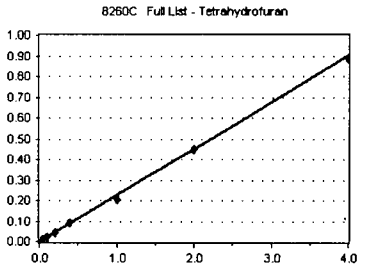


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	1174	0.610	5.66
9C05053-CAL4	1	2868	0.582	5.66
9C05053-CAL5	2	5725	0.577	5.67
9C05053-CAL6	5	15554	0.600	5.67
9C05053-CAL7	10	27305	0.566	5.67
9C05053-CAL8	20	58155	0.594	5.67
9C05053-CAL9	50	140309	0.558	5.66
9C05053-CALA	100	321030	0.618	5.67
9C05053-CALB	200	635405	0.586	5.67

AVE RF **0.588** RF RSD **3.34** AVE RT **5.67**

Tetrahydrofuran

Curve Fit: **AVERAGE RF**

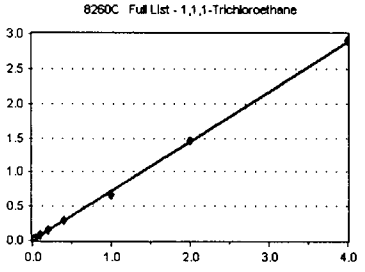


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL4~~	~~1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL5	2	2425	0.244	5.70
9C05053-CAL6	5	6071	0.234	5.70
9C05053-CAL7	10	10567	0.219	5.70
9C05053-CAL8	20	22483	0.230	5.70
9C05053-CAL9	50	51277	0.204	5.69
9C05053-CALA	100	116523	0.224	5.69
9C05053-CALB	200	240995	0.222	5.68

AVE RF **0.225** RF RSD **5.63** AVE RT **5.69**

1,1,1-Trichloroethane

Curve Fit: **AVERAGE RF**

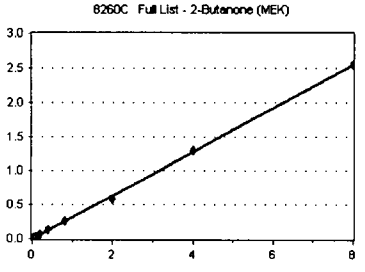


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	773	0.765	5.73
9C05053-CAL3	0.4	1386	0.721	5.72
9C05053-CAL4	1	3632	0.738	5.73
9C05053-CAL5	2	7296	0.735	5.74
9C05053-CAL6	5	19034	0.734	5.73
9C05053-CAL7	10	33755	0.700	5.73
9C05053-CAL8	20	70282	0.718	5.73
9C05053-CAL9	50	167296	0.666	5.73
9C05053-CALA	100	379261	0.730	5.73
9C05053-CALB	200	785008	0.724	5.73

AVE RF **0.723** RF RSD **3.62** AVE RT **5.73**

2-Butanone (MEK)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL3~~	~~0.8~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL4	2	3588	0.364	5.83
9C05053-CAL5	4	6522	0.329	5.84
9C05053-CAL6	10	15427	0.298	5.83
9C05053-CAL7	20	29921	0.310	5.83
9C05053-CAL8	40	62665	0.320	5.83
9C05053-CAL9	100	146370	0.291	5.83
9C05053-CALA	200	335120	0.322	5.82
9C05053-CALB	400	690506	0.318	5.82

AVE RF **0.319** RF RSD **6.98** AVE RT **5.83**

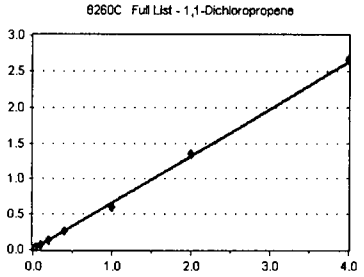
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

1,1-Dichloropropene

Curve Fit: **AVERAGE RF**

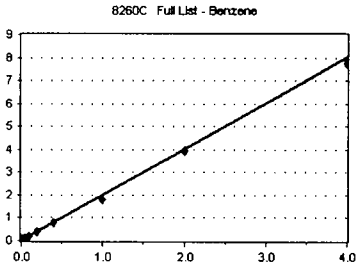


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	1279	0.665	5.87
9C05053-CAL4	1	3430	0.697	5.86
9C05053-CAL5	2	6625	0.668	5.86
9C05053-CAL6	5	17347	0.669	5.86
9C05053-CAL7	10	30730	0.637	5.86
9C05053-CAL8	20	63578	0.649	5.86
9C05053-CAL9	50	152382	0.606	5.86
9C05053-CALA	100	349094	0.672	5.86
9C05053-CALB	200	720940	0.665	5.86

AVE RF **0.659** RF RSD **3.86** AVE RT **5.86**

Benzene

Curve Fit: **AVERAGE RF**

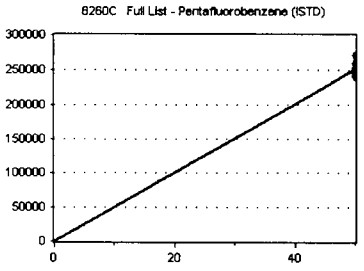


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	1161	2.327	6.12
9C05053-CAL2	0.2	2296	2.272	6.12
9C05053-CAL3	0.4	4039	2.100	6.11
9C05053-CAL4	1	9758	1.982	6.12
9C05053-CAL5	2	19565	1.972	6.12
9C05053-CAL6	5	50345	1.943	6.11
9C05053-CAL7	10	91211	1.890	6.11
9C05053-CAL8	20	188039	1.920	6.11
9C05053-CAL9	50	448890	1.787	6.11
9C05053-CALA	100	1018697	1.960	6.11
9C05053-CALB	200	2099164	1.936	6.11

AVE RF **2.008** RF RSD **8.10** AVE RT **6.11**

Pentafluorobenzene (ISTD)

Curve Fit: **AVERAGE RF**

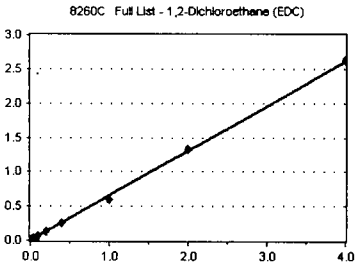


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	50	249476	4989.520	6.20
9C05053-CAL2	50	252622	5052.440	6.20
9C05053-CAL3	50	240382	4807.640	6.20
9C05053-CAL4	50	246187	4923.740	6.20
9C05053-CAL5	50	248010	4960.200	6.20
9C05053-CAL6	50	259150	5183.000	6.20
9C05053-CAL7	50	241261	4825.220	6.20
9C05053-CAL8	50	244815	4896.300	6.19
9C05053-CAL9	50	251267	5025.340	6.20
9C05053-CALA	50	259916	5198.320	6.20
9C05053-CALB	50	271036	5420.720	6.20

AVE RF **5025.676** RF RSD **3.62** AVE RT **6.20**

1,2-Dichloroethane (EDC)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	650	0.643	6.32
9C05053-CAL3	0.4	1258	0.654	6.32
9C05053-CAL4	1	3343	0.679	6.32
9C05053-CAL5	2	6532	0.658	6.32
9C05053-CAL6	5	17046	0.658	6.32
9C05053-CAL7	10	31354	0.650	6.32
9C05053-CAL8	20	64340	0.657	6.32
9C05053-CAL9	50	152558	0.607	6.32
9C05053-CALA	100	344414	0.663	6.32
9C05053-CALB	200	711176	0.656	6.32

AVE RF **0.653** RF RSD **2.82** AVE RT **6.32**

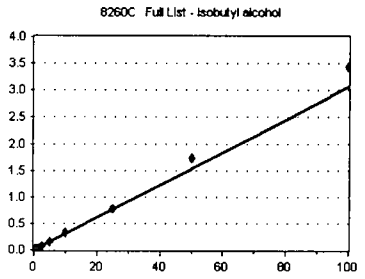
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

Isobutyl alcohol

Curve Fit: **AVERAGE RF**

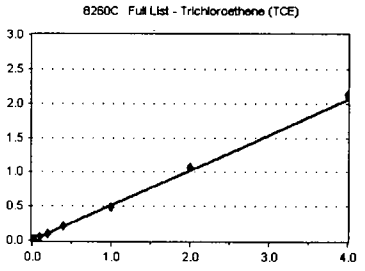


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~2.5~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~5~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL3~~	~~10~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL4	25	3368	2.736	6.35
9C05053-CAL5	50	7291	2.940	6.37
9C05053-CAL6	125	17036	0.026	6.36
9C05053-CAL7	250	36138	0.030	6.35
9C05053-CAL8	500	79057	3.229	6.35
9C05053-CAL9	1250	194451	3.096	6.35
9C05053-CALA	2500	446801	3.438	6.35
9C05053-CALB	5000	932443	3.440	6.35

AVE RF **3.063** RF RSD **9.76** AVE RT **6.35**

Trichloroethene (TCE)

Curve Fit: **AVERAGE RF**

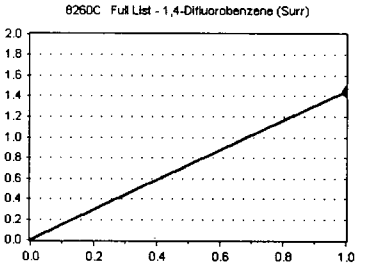


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	502	0.497	6.72
9C05053-CAL3	0.4	957	0.498	6.72
9C05053-CAL4	1	2600	0.528	6.73
9C05053-CAL5	2	5252	0.529	6.73
9C05053-CAL6	5	13205	0.510	6.73
9C05053-CAL7	10	24612	0.510	6.73
9C05053-CAL8	20	50719	0.518	6.73
9C05053-CAL9	50	120626	0.480	6.73
9C05053-CALA	100	276723	0.532	6.73
9C05053-CALB	200	575749	0.531	6.73

AVE RF **0.513** RF RSD **3.45** AVE RT **6.73**

1,4-Difluorobenzene (Surr)

Curve Fit: **AVERAGE RF**

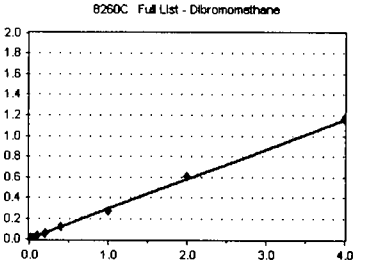


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	50	363888	1.459	6.76
9C05053-CAL2	50	369055	1.461	6.76
9C05053-CAL3	50	347177	1.444	6.76
9C05053-CAL4	50	353931	1.438	6.76
9C05053-CAL5	50	361508	1.458	6.76
9C05053-CAL6	50	372823	1.439	6.76
9C05053-CAL7	50	351849	1.458	6.76
9C05053-CAL8	50	357205	1.459	6.76
9C05053-CAL9	50	364956	1.452	6.76
9C05053-CALA	50	378367	1.456	6.76
9C05053-CALB	50	394717	1.456	6.76

AVE RF **1.453** RF RSD **0.58** AVE RT **6.76**

Dibromomethane

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~151~~	~~0.149~~	~~7.17~~
9C05053-CAL3	0.4	525	0.273	7.17
9C05053-CAL4	1	1393	0.283	7.17
9C05053-CAL5	2	2816	0.284	7.17
9C05053-CAL6	5	7586	0.293	7.17
9C05053-CAL7	10	14087	0.292	7.17
9C05053-CAL8	20	28868	0.295	7.17
9C05053-CAL9	50	69178	0.275	7.17
9C05053-CALA	100	158374	0.305	7.17
9C05053-CALB	200	317191	0.293	7.17

AVE RF **0.288** RF RSD **3.50** AVE RT **7.17**

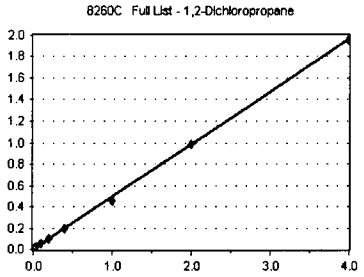
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

1,2-Dichloropropane

Curve Fit: **AVERAGE RF**

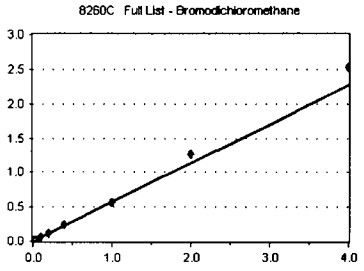


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	567	0.561	7.28
9C05053-CAL3	0.4	949	0.493	7.28
9C05053-CAL4	1	2422	0.492	7.28
9C05053-CAL5	2	4797	0.484	7.28
9C05053-CAL6	5	12663	0.489	7.28
9C05053-CAL7	10	22777	0.472	7.28
9C05053-CAL8	20	47589	0.486	7.28
9C05053-CAL9	50	113146	0.450	7.28
9C05053-CALA	100	256794	0.494	7.28
9C05053-CALB	200	529951	0.489	7.28

AVE RF **0.491** RF RSD **5.70** AVE RT **7.28**

Bromodichloromethane

Curve Fit: **AVERAGE RF**

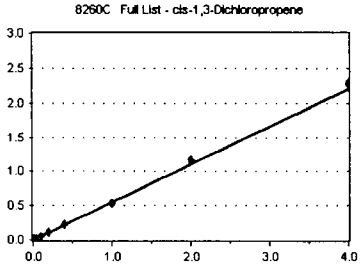


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	496	0.491	7.36
9C05053-CAL3	0.4	947	0.492	7.36
9C05053-CAL4	1	2795	0.568	7.35
9C05053-CAL5	2	5697	0.574	7.36
9C05053-CAL6	5	14792	0.571	7.36
9C05053-CAL7	10	27157	0.563	7.36
9C05053-CAL8	20	58351	0.596	7.36
9C05053-CAL9	50	140951	0.561	7.36
9C05053-CALA	100	327815	0.631	7.36
9C05053-CALB	200	687837	0.634	7.36

AVE RF **0.568** RF RSD **8.48** AVE RT **7.36**

cis-1,3-Dichloropropene

Curve Fit: **AVERAGE RF**

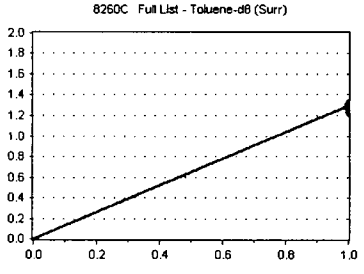


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	1418	0.563	8.06
9C05053-CAL4	1	3362	0.519	8.06
9C05053-CAL5	2	7144	0.550	8.06
9C05053-CAL6	5	18523	0.549	8.06
9C05053-CAL7	10	34731	0.540	8.05
9C05053-CAL8	20	73327	0.559	8.06
9C05053-CAL9	50	178828	0.533	8.05
9C05053-CALA	100	413934	0.584	8.06
9C05053-CALB	200	863436	0.571	8.06

AVE RF **0.552** RF RSD **3.58** AVE RT **8.06**

Toluene-d8 (Surr)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	50	430870	1.314	8.27
9C05053-CAL2	50	434208	1.304	8.27
9C05053-CAL3	50	410210	1.303	8.28
9C05053-CAL4	50	423430	1.307	8.27
9C05053-CAL5	50	424288	1.306	8.28
9C05053-CAL6	50	440795	1.307	8.27
9C05053-CAL7	50	416160	1.294	8.27
9C05053-CAL8	50	422957	1.289	8.27
9C05053-CAL9	50	432192	1.289	8.27
9C05053-CALA	50	450368	1.270	8.27
9C05053-CALB	50	466223	1.232	8.27

AVE RF **1.292** RF RSD **1.82** AVE RT **8.27**

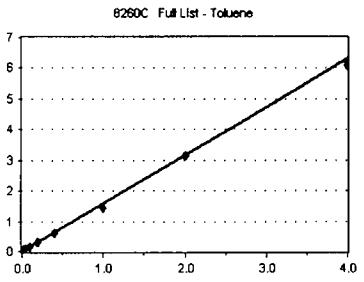
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

Toluene

Curve Fit: **AVERAGE RF**

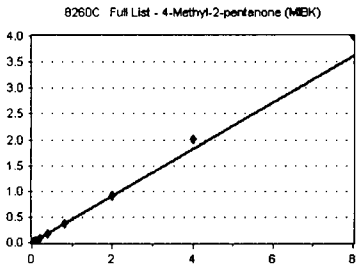


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	1063	1.621	8.34
9C05053-CAL2	0.2	2342	1.759	8.34
9C05053-CAL3	0.4	4041	1.605	8.33
9C05053-CAL4	1	10454	1.613	8.34
9C05053-CAL5	2	20671	1.591	8.34
9C05053-CAL6	5	53207	1.578	8.33
9C05053-CAL7	10	98512	1.532	8.33
9C05053-CAL8	20	204088	1.555	8.33
9C05053-CAL9	50	484351	1.444	8.33
9C05053-CALA	100	1110270	1.565	8.34
9C05053-CALB	200	2298286	1.519	8.34

AVE RF **1.580** RF RSD **4.94** AVE RT **8.33**

4-Methyl-2-pentanone (MiBK)

Curve Fit: **AVERAGE RF**

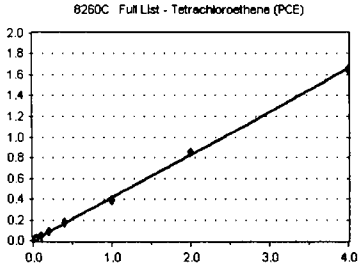


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.8	2303	0.457	8.77
9C05053-CAL4	2	5583	0.431	8.77
9C05053-CAL5	4	10923	0.420	8.77
9C05053-CAL6	10	27431	0.407	8.77
9C05053-CAL7	20	56321	0.438	8.77
9C05053-CAL8	40	123154	0.469	8.77
9C05053-CAL9	100	301728	0.450	8.77
9C05053-CALA	200	712801	0.502	8.76
9C05053-CALB	400	1509637	0.499	8.77

AVE RF **0.453** RF RSD **7.31** AVE RT **8.77**

Tetrachloroethene (PCE)

Curve Fit: **AVERAGE RF**

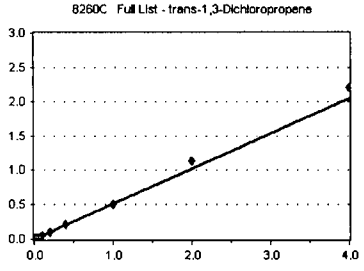


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	500	0.376	8.78
9C05053-CAL3	0.4	1076	0.427	8.78
9C05053-CAL4	1	2759	0.426	8.78
9C05053-CAL5	2	5554	0.428	8.78
9C05053-CAL6	5	14525	0.431	8.78
9C05053-CAL7	10	26468	0.412	8.78
9C05053-CAL8	20	55445	0.423	8.78
9C05053-CAL9	50	132260	0.394	8.78
9C05053-CALA	100	301258	0.425	8.78
9C05053-CALB	200	623965	0.412	8.78

AVE RF **0.415** RF RSD **4.27** AVE RT **8.78**

trans-1,3-Dichloropropene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	1286	0.511	8.80
9C05053-CAL4	1	3121	0.482	8.80
9C05053-CAL5	2	6302	0.485	8.80
9C05053-CAL6	5	16740	0.496	8.80
9C05053-CAL7	10	32076	0.499	8.80
9C05053-CAL8	20	68425	0.521	8.80
9C05053-CAL9	50	169788	0.506	8.80
9C05053-CALA	100	399938	0.564	8.80
9C05053-CALB	200	831612	0.550	8.80

AVE RF **0.513** RF RSD **5.47** AVE RT **8.80**

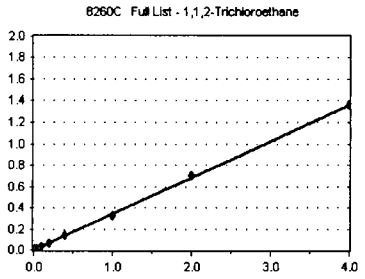
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

1,1,2-Trichloroethane

Curve Fit: **AVERAGE RF**

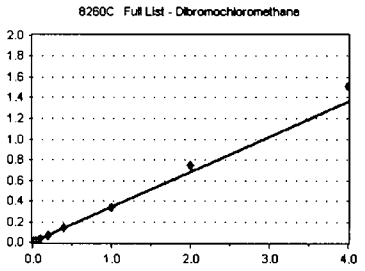


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	455	0.342	8.97
9C05053-CAL3	0.4	804	0.319	8.97
9C05053-CAL4	1	2210	0.341	8.97
9C05053-CAL5	2	4732	0.364	8.97
9C05053-CAL6	5	11497	0.341	8.97
9C05053-CAL7	10	21868	0.340	8.97
9C05053-CAL8	20	45316	0.345	8.97
9C05053-CAL9	50	107566	0.321	8.97
9C05053-CALA	100	248590	0.350	8.97
9C05053-CALB	200	514581	0.340	8.97

AVE RF **0.340** RF RSD **3.83** AVE RT **8.97**

Dibromochloromethane

Curve Fit: **AVERAGE RF**

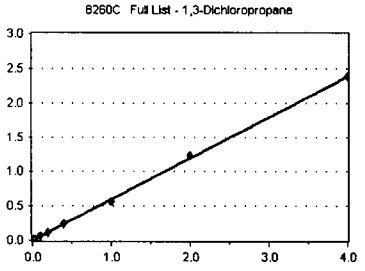


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	812	0.322	9.16
9C05053-CAL4	1	2071	0.320	9.16
9C05053-CAL5	2	4288	0.330	9.16
9C05053-CAL6	5	11232	0.333	9.16
9C05053-CAL7	10	21108	0.328	9.16
9C05053-CAL8	20	44439	0.339	9.16
9C05053-CAL9	50	111488	0.332	9.16
9C05053-CALA	100	266280	0.375	9.16
9C05053-CALB	200	573149	0.379	9.16

AVE RF **0.340** RF RSD **6.43** AVE RT **9.16**

1,3-Dichloropropane

Curve Fit: **AVERAGE RF**

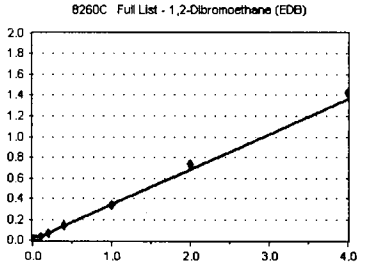


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	1474	0.585	9.25
9C05053-CAL4	1	3771	0.582	9.25
9C05053-CAL5	2	7837	0.603	9.25
9C05053-CAL6	5	20761	0.616	9.25
9C05053-CAL7	10	38837	0.604	9.25
9C05053-CAL8	20	79859	0.609	9.25
9C05053-CAL9	50	191597	0.571	9.25
9C05053-CALA	100	436634	0.616	9.25
9C05053-CALB	200	901987	0.596	9.25

AVE RF **0.598** RF RSD **2.60** AVE RT **9.25**

1,2-Dibromoethane (EDB)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	394	0.296	9.39
9C05053-CAL3	0.4	769	0.305	9.39
9C05053-CAL4	1	2109	0.325	9.39
9C05053-CAL5	2	4694	0.361	9.39
9C05053-CAL6	5	12058	0.358	9.39
9C05053-CAL7	10	21814	0.339	9.39
9C05053-CAL8	20	46358	0.353	9.39
9C05053-CAL9	50	111990	0.334	9.39
9C05053-CALA	100	260186	0.367	9.39
9C05053-CALB	200	540909	0.357	9.39

AVE RF **0.340** RF RSD **7.18** AVE RT **9.39**

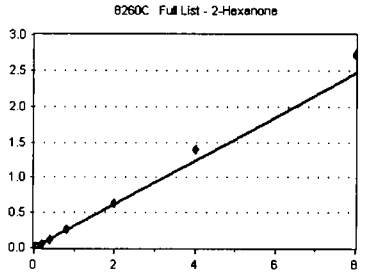
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

2-Hexanone

Curve Fit: **AVERAGE RF**

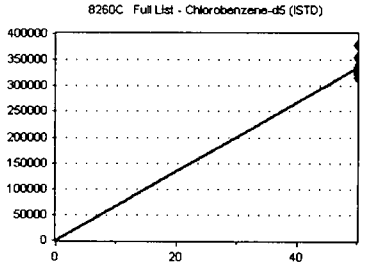


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.8	1546	0.307	9.64
9C05053-CAL4	2	3500	0.270	9.63
9C05053-CAL5	4	7470	0.288	9.64
9C05053-CAL6	10	18659	0.277	9.63
9C05053-CAL7	20	38246	0.297	9.63
9C05053-CAL8	40	85580	0.326	9.63
9C05053-CAL9	100	209607	0.312	9.63
9C05053-CALA	200	493054	0.348	9.62
9C05053-CALB	400	1028003	0.340	9.62

AVE RF **0.307** RF RSD **8.82** AVE RT **9.63**

Chlorobenzene-d5 (ISTD)

Curve Fit: **AVERAGE RF**

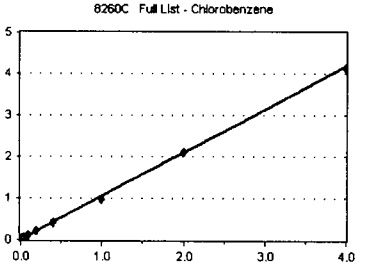


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	50	327828	6556.560	9.89
9C05053-CAL2	50	332859	6657.180	9.89
9C05053-CAL3	50	314755	6295.100	9.89
9C05053-CAL4	50	324088	6481.760	9.89
9C05053-CAL5	50	324771	6495.420	9.89
9C05053-CAL6	50	337211	6744.220	9.89
9C05053-CAL7	50	321524	6430.480	9.89
9C05053-CAL8	50	328052	6561.040	9.89
9C05053-CAL9	50	335403	6708.060	9.89
9C05053-CALA	50	354693	7093.860	9.89
9C05053-CALB	50	378328	7566.560	9.89

AVE RF **6690.022** RF RSD **5.34** AVE RT **9.89**

Chlorobenzene

Curve Fit: **AVERAGE RF**

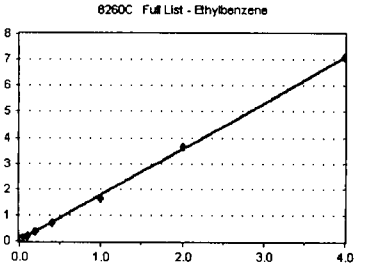


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	1411	1.060	9.90
9C05053-CAL3	0.4	2734	1.086	9.91
9C05053-CAL4	1	7059	1.089	9.91
9C05053-CAL5	2	13632	1.049	9.91
9C05053-CAL6	5	35719	1.059	9.91
9C05053-CAL7	10	65946	1.026	9.91
9C05053-CAL8	20	137100	1.045	9.91
9C05053-CAL9	50	327542	0.977	9.91
9C05053-CALA	100	749922	1.057	9.90
9C05053-CALB	200	1564733	1.034	9.91

AVE RF **1.048** RF RSD **3.06** AVE RT **9.91**

Ethylbenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	1201	1.832	9.94
9C05053-CAL2	0.2	2448	1.839	9.94
9C05053-CAL3	0.4	4329	1.719	9.94
9C05053-CAL4	1	11734	1.810	9.94
9C05053-CAL5	2	22739	1.750	9.94
9C05053-CAL6	5	59749	1.772	9.94
9C05053-CAL7	10	111845	1.739	9.94
9C05053-CAL8	20	232735	1.774	9.94
9C05053-CAL9	50	556471	1.659	9.94
9C05053-CALA	100	1294573	1.825	9.94
9C05053-CALB	200	2687146	1.776	9.94

AVE RF **1.772** RF RSD **3.06** AVE RT **9.94**

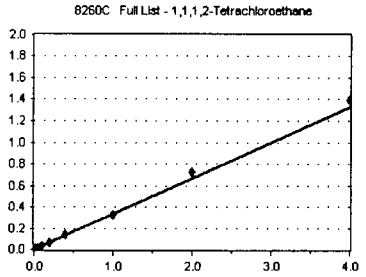
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

1,1,1,2-Tetrachloroethane

Curve Fit: **AVERAGE RF**

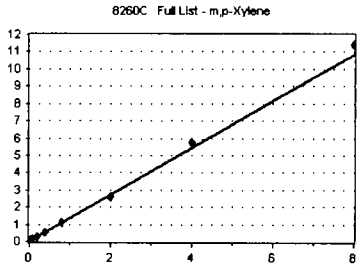


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	446	0.335	9.97
9C05053-CAL3	0.4	786	0.312	9.97
9C05053-CAL4	1	2009	0.310	9.97
9C05053-CAL5	2	4164	0.321	9.97
9C05053-CAL6	5	11423	0.339	9.97
9C05053-CAL7	10	21217	0.330	9.97
9C05053-CAL8	20	45434	0.346	9.97
9C05053-CAL9	50	110431	0.329	9.97
9C05053-CALA	100	257487	0.363	9.97
9C05053-CALB	200	528846	0.349	9.97

AVE RF **0.333** RF RSD **5.02** AVE RT **9.97**

m,p-Xylene

Curve Fit: **AVERAGE RF**

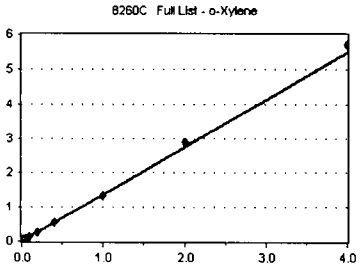


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.2	1812	1.382	10.07
9C05053-CAL2	0.4	3414	1.282	10.07
9C05053-CAL3	0.8	6682	1.327	10.08
9C05053-CAL4	2	17580	1.356	10.08
9C05053-CAL5	4	34555	1.330	10.08
9C05053-CAL6	10	90401	1.340	10.07
9C05053-CAL7	20	172966	1.345	10.07
9C05053-CAL8	40	363121	1.384	10.07
9C05053-CAL9	100	878688	1.310	10.07
9C05053-CALA	200	2054138	1.448	10.07
9C05053-CALB	400	4318687	1.427	10.07

AVE RF **1.357** RF RSD **3.64** AVE RT **10.07**

o-Xylene

Curve Fit: **AVERAGE RF**

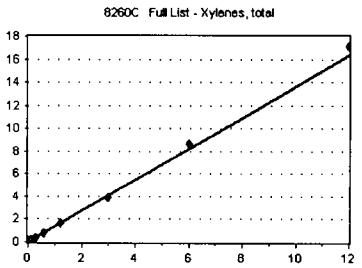


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	874	1.333	10.45
9C05053-CAL2	0.2	1929	1.449	10.45
9C05053-CAL3	0.4	3431	1.363	10.45
9C05053-CAL4	1	8547	1.319	10.46
9C05053-CAL5	2	17659	1.359	10.45
9C05053-CAL6	5	45910	1.361	10.46
9C05053-CAL7	10	86049	1.338	10.46
9C05053-CAL8	20	183174	1.396	10.46
9C05053-CAL9	50	442280	1.319	10.46
9C05053-CALA	100	1024986	1.445	10.45
9C05053-CALB	200	2158427	1.426	10.46

AVE RF **1.373** RF RSD **3.52** AVE RT **10.45**

Xylenes, total

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.3	2686	1.366	10.45
9C05053-CAL2	0.6	5343	1.338	10.45
9C05053-CAL3	1.2	10113	1.339	10.45
9C05053-CAL4	3	26127	1.344	10.46
9C05053-CAL5	6	52214	1.340	10.45
9C05053-CAL6	15	136311	1.347	10.46
9C05053-CAL7	30	259015	1.343	10.46
9C05053-CAL8	60	546295	1.388	10.46
9C05053-CAL9	150	1320968	1.313	10.46
9C05053-CALA	300	3079124	1.447	10.45
9C05053-CALB	600	6477114	1.427	10.46

AVE RF **1.363** RF RSD **3.03** AVE RT **10.45**

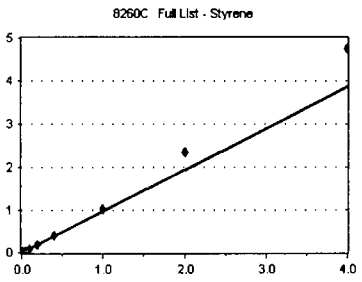
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

Styrene

Curve Fit: **AVERAGE RF**

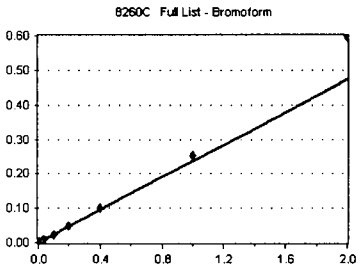


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	1118	0.840	10.50
9C05053-CAL3	0.4	2103	0.835	10.50
9C05053-CAL4	1	5758	0.888	10.50
9C05053-CAL5	2	11174	0.860	10.50
9C05053-CAL6	5	30440	0.903	10.50
9C05053-CAL7	10	61316	0.954	10.50
9C05053-CAL8	20	134003	1.021	10.50
9C05053-CAL9	50	341919	1.019	10.50
9C05053-CALA	100	829734	1.170	10.50
9C05053-CALB	200	1794588	1.186	10.50

AVE RF **0.968** RF RSD **13.35** AVE RT **10.50**

Bromoform

Curve Fit: **AVERAGE RF**

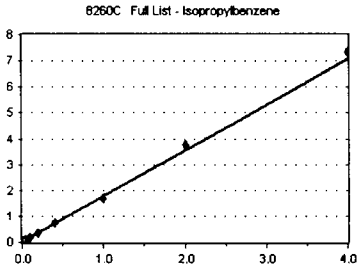


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	539	0.214	10.52
9C05053-CAL4	1	1227	0.189	10.51
9C05053-CAL5	2	2869	0.221	10.52
9C05053-CAL6	5	7615	0.226	10.52
9C05053-CAL7	10	15217	0.237	10.52
9C05053-CAL8	20	32981	0.251	10.52
9C05053-CAL9	50	85262	0.254	10.52
9C05053-CALA	100	211464	0.298	10.52
~~9C05053-CALB~~	~~200~~	~~473435~~	~~0.313~~	~~10.52~~

AVE RF **0.236** RF RSD **13.78** AVE RT **10.52**

Isopropylbenzene

Curve Fit: **AVERAGE RF**

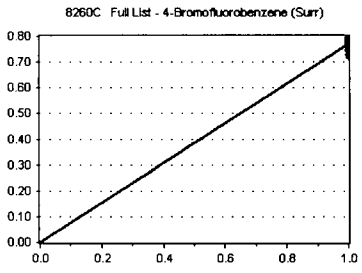


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	1166	1.778	10.73
9C05053-CAL2	0.2	2318	1.741	10.73
9C05053-CAL3	0.4	4244	1.685	10.73
9C05053-CAL4	1	11386	1.757	10.73
9C05053-CAL5	2	22687	1.746	10.73
9C05053-CAL6	5	59943	1.778	10.72
9C05053-CAL7	10	113194	1.760	10.72
9C05053-CAL8	20	236192	1.800	10.72
9C05053-CAL9	50	571925	1.705	10.72
9C05053-CALA	100	1333661	1.880	10.73
9C05053-CALB	200	2785971	1.841	10.73

AVE RF **1.770** RF RSD **3.16** AVE RT **10.72**

4-Bromofluorobenzene (Surr)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	50	138954	0.792	10.96
9C05053-CAL2	50	138238	0.795	10.96
9C05053-CAL3	50	134229	0.785	10.96
9C05053-CAL4	50	139604	0.786	10.96
9C05053-CAL5	50	136256	0.781	10.96
9C05053-CAL6	50	142556	0.784	10.96
9C05053-CAL7	50	137997	0.759	10.96
9C05053-CAL8	50	141615	0.769	10.96
9C05053-CAL9	50	145325	0.749	10.96
9C05053-CALA	50	153342	0.746	10.96
9C05053-CALB	50	161450	0.728	10.96

AVE RF **0.770** RF RSD **2.84** AVE RT **10.96**

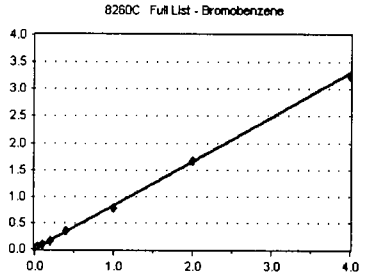
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

Bromobenzene

Curve Fit: **AVERAGE RF**

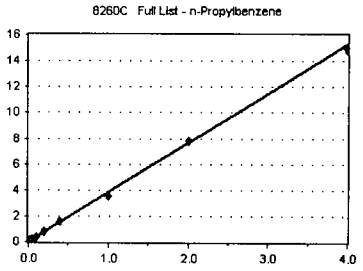


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	273	0.778	11.05
9C05053-CAL2	0.2	558	0.802	11.04
9C05053-CAL3	0.4	1190	0.869	11.04
9C05053-CAL4	1	2993	0.843	11.04
9C05053-CAL5	2	6115	0.876	11.04
9C05053-CAL6	5	15641	0.860	11.04
9C05053-CAL7	10	29262	0.804	11.04
9C05053-CAL8	20	61878	0.840	11.04
9C05053-CAL9	50	149731	0.772	11.04
9C05053-CALA	100	342130	0.832	11.04
9C05053-CALB	200	721594	0.813	11.04

AVE RF **0.826** RF RSD **4.27** AVE RT **11.04**

n-Propylbenzene

Curve Fit: **AVERAGE RF**

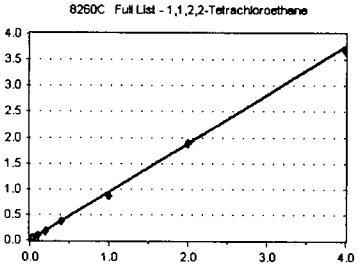


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	1372	3.910	11.07
9C05053-CAL2	0.2	2654	3.814	11.07
9C05053-CAL3	0.4	5468	3.995	11.07
9C05053-CAL4	1	13679	3.851	11.07
9C05053-CAL5	2	26973	3.863	11.07
9C05053-CAL6	5	70374	3.871	11.07
9C05053-CAL7	10	136126	3.742	11.07
9C05053-CAL8	20	285083	3.868	11.07
9C05053-CAL9	50	686039	3.538	11.07
9C05053-CALA	100	1598620	3.886	11.07
9C05053-CALB	200	3306055	3.727	11.07

AVE RF **3.824** RF RSD **3.15** AVE RT **11.07**

1,1,2,2-Tetrachloroethane

Curve Fit: **AVERAGE RF**

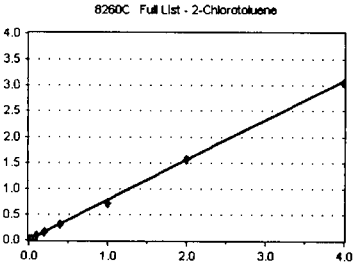


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	342	0.975	11.11
9C05053-CAL2	0.2	648	0.931	11.12
9C05053-CAL3	0.4	1368	1.000	11.12
9C05053-CAL4	1	3244	0.913	11.12
9C05053-CAL5	2	6984	1.000	11.12
9C05053-CAL6	5	17362	0.955	11.12
9C05053-CAL7	10	32962	0.906	11.12
9C05053-CAL8	20	69684	0.945	11.12
9C05053-CAL9	50	167014	0.861	11.12
9C05053-CALA	100	388242	0.944	11.12
9C05053-CALB	200	813168	0.917	11.12

AVE RF **0.941** RF RSD **4.42** AVE RT **11.12**

2-Chlorotoluene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	552	0.793	11.19
9C05053-CAL3	0.4	1083	0.791	11.19
9C05053-CAL4	1	2776	0.781	11.19
9C05053-CAL5	2	5588	0.800	11.19
9C05053-CAL6	5	14195	0.781	11.19
9C05053-CAL7	10	27761	0.763	11.19
9C05053-CAL8	20	57162	0.776	11.19
9C05053-CAL9	50	140002	0.722	11.19
9C05053-CALA	100	321548	0.782	11.19
9C05053-CALB	200	677048	0.763	11.19

AVE RF **0.775** RF RSD **2.87** AVE RT **11.19**

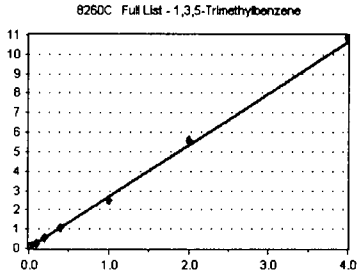
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

1,3,5-Trimethylbenzene

Curve Fit: **AVERAGE RF**

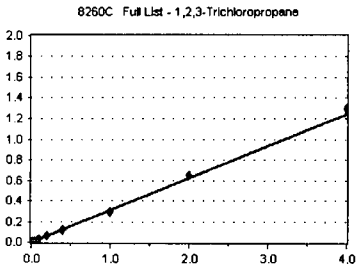


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	1018	2.901	11.23
9C05053-CAL2	0.2	1736	2.495	11.22
9C05053-CAL3	0.4	3568	2.607	11.22
9C05053-CAL4	1	9353	2.633	11.22
9C05053-CAL5	2	18611	2.665	11.23
9C05053-CAL6	5	48311	2.657	11.23
9C05053-CAL7	10	94476	2.597	11.23
9C05053-CAL8	20	200591	2.722	11.23
9C05053-CAL9	50	487941	2.516	11.23
9C05053-CALA	100	1147490	2.789	11.22
9C05053-CALB	200	2411075	2.718	11.22

AVE RF **2.664** RF RSD **4.40** AVE RT **11.23**

1,2,3-Trichloropropane

Curve Fit: **AVERAGE RF**

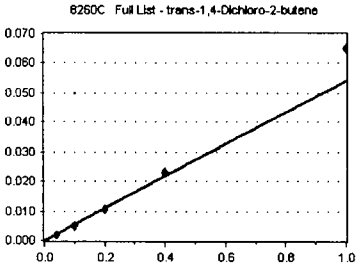


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	428	0.313	11.23
9C05053-CAL4	1	1036	0.292	11.22
9C05053-CAL5	2	2322	0.333	11.22
9C05053-CAL6	5	5813	0.320	11.23
9C05053-CAL7	10	11069	0.304	11.23
9C05053-CAL8	20	22551	0.306	11.23
9C05053-CAL9	50	56341	0.291	11.23
9C05053-CALA	100	132850	0.323	11.22
9C05053-CALB	200	286764	0.323	11.22

AVE RF **0.312** RF RSD **4.68** AVE RT **11.23**

trans-1,4-Dichloro-2-butene

Curve Fit: **AVERAGE RF**

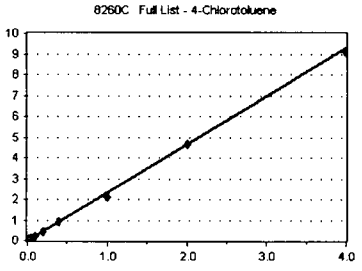


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL4~~	~~1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL5	2	312	4.468	11.26
9C05053-CAL6	5	924	5.083	11.26
9C05053-CAL7	10	1930	5.305	11.26
9C05053-CAL8	20	4240	5.753	11.26
9C05053-CAL9	50	12609	6.502	11.26
~~9C05053-CALA~~	~~100~~	~~31895~~	~~7.753~~	~~11.26~~
~~9C05053-CALB~~	~~200~~	~~77698~~	~~8.759~~	~~11.26~~

AVE RF **5.422** RF RSD **14.03** AVE RT **11.26**

4-Chlorotoluene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	883	2.516	11.32
9C05053-CAL2	0.2	1703	2.447	11.33
9C05053-CAL3	0.4	3206	2.342	11.32
9C05053-CAL4	1	8235	2.318	11.32
9C05053-CAL5	2	16278	2.331	11.32
9C05053-CAL6	5	42393	2.332	11.32
9C05053-CAL7	10	82236	2.261	11.33
9C05053-CAL8	20	170690	2.316	11.32
9C05053-CAL9	50	412511	2.127	11.33
9C05053-CALA	100	959692	2.333	11.32
9C05053-CALB	200	2015558	2.272	11.32

AVE RF **2.327** RF RSD **4.26** AVE RT **11.32**

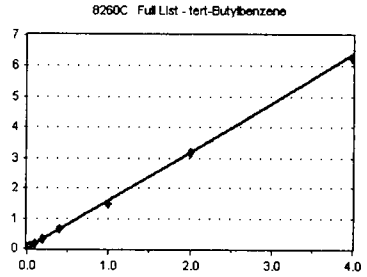
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

tert-Butylbenzene

Curve Fit: **AVERAGE RF**

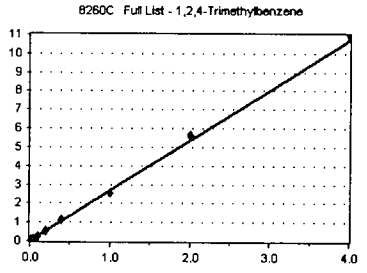


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	609	1.735	11.48
9C05053-CAL2	0.2	1218	1.750	11.48
9C05053-CAL3	0.4	2173	1.588	11.48
9C05053-CAL4	1	5615	1.581	11.48
9C05053-CAL5	2	11158	1.598	11.48
9C05053-CAL6	5	28404	1.562	11.48
9C05053-CAL7	10	55733	1.532	11.48
9C05053-CAL8	20	116827	1.585	11.48
9C05053-CAL9	50	282519	1.457	11.48
9C05053-CALA	100	656544	1.596	11.48
9C05053-CALB	200	1388459	1.565	11.48

AVE RF **1.595** RF RSD **5.21** AVE RT **11.48**

1,2,4-Trimethylbenzene

Curve Fit: **AVERAGE RF**

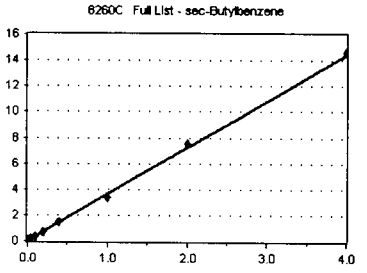


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	965	2.750	11.53
9C05053-CAL2	0.2	1967	2.827	11.53
9C05053-CAL3	0.4	3403	2.486	11.53
9C05053-CAL4	1	9159	2.578	11.53
9C05053-CAL5	2	18502	2.650	11.53
9C05053-CAL6	5	48440	2.665	11.53
9C05053-CAL7	10	95360	2.621	11.53
9C05053-CAL8	20	205941	2.794	11.53
9C05053-CAL9	50	496951	2.563	11.53
9C05053-CALA	100	1164983	2.832	11.53
9C05053-CALB	200	2436746	2.747	11.53

AVE RF **2.683** RF RSD **4.30** AVE RT **11.53**

sec-Butylbenzene

Curve Fit: **AVERAGE RF**

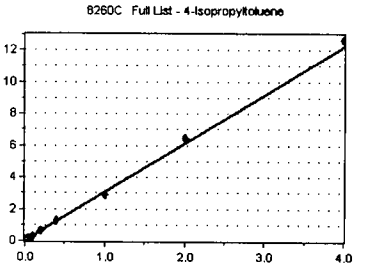


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	1177	3.354	11.62
9C05053-CAL2	0.2	2572	3.696	11.62
9C05053-CAL3	0.4	4899	3.579	11.62
9C05053-CAL4	1	12934	3.641	11.62
9C05053-CAL5	2	25465	3.647	11.62
9C05053-CAL6	5	66262	3.645	11.62
9C05053-CAL7	10	130044	3.575	11.62
9C05053-CAL8	20	272489	3.697	11.62
9C05053-CAL9	50	660432	3.406	11.62
9C05053-CALA	100	1540246	3.744	11.62
9C05053-CALB	200	3236597	3.649	11.62

AVE RF **3.603** RF RSD **3.36** AVE RT **11.62**

4-Isopropyltoluene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	1046	2.981	11.72
9C05053-CAL2	0.2	2132	3.064	11.73
9C05053-CAL3	0.4	4188	3.060	11.73
9C05053-CAL4	1	10606	2.986	11.73
9C05053-CAL5	2	21130	3.026	11.73
9C05053-CAL6	5	55560	3.056	11.73
9C05053-CAL7	10	110410	3.035	11.73
9C05053-CAL8	20	231967	3.147	11.73
9C05053-CAL9	50	562613	2.901	11.73
9C05053-CALA	100	1327299	3.227	11.73
9C05053-CALB	200	2800092	3.157	11.73

AVE RF **3.058** RF RSD **2.99** AVE RT **11.73**

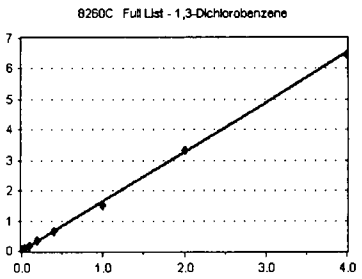
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

1,3-Dichlorobenzene

Curve Fit: **AVERAGE RF**

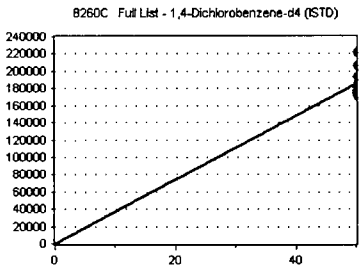


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	555	1.582	11.78
9C05053-CAL2	0.2	1217	1.749	11.78
9C05053-CAL3	0.4	2209	1.614	11.78
9C05053-CAL4	1	5899	1.661	11.78
9C05053-CAL5	2	11788	1.688	11.78
9C05053-CAL6	5	29932	1.646	11.78
9C05053-CAL7	10	58601	1.611	11.78
9C05053-CAL8	20	121895	1.654	11.78
9C05053-CAL9	50	292189	1.507	11.78
9C05053-CALA	100	681848	1.657	11.78
9C05053-CALB	200	1435219	1.618	11.78

AVE RF **1.635** RF RSD **3.77** AVE RT **11.78**

1,4-Dichlorobenzene-d4 (ISTD)

Curve Fit: **AVERAGE RF**

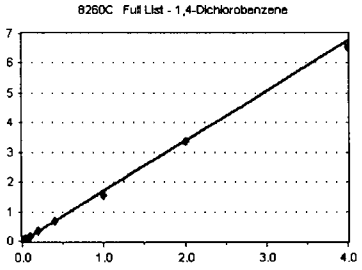


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	50	175458	3509.160	11.84
9C05053-CAL2	50	173974	3479.480	11.84
9C05053-CAL3	50	171084	3421.680	11.84
9C05053-CAL4	50	177619	3552.380	11.84
9C05053-CAL5	50	174574	3491.480	11.84
9C05053-CAL6	50	181797	3635.940	11.84
9C05053-CAL7	50	181890	3637.800	11.84
9C05053-CAL8	50	184257	3685.140	11.84
9C05053-CAL9	50	193915	3878.300	11.84
9C05053-CALA	50	205686	4113.720	11.84
9C05053-CALB	50	221763	4435.260	11.84

AVE RF **3712.758** RF RSD **8.42** AVE RT **11.84**

1,4-Dichlorobenzene

Curve Fit: **AVERAGE RF**

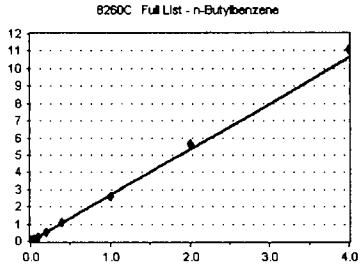


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	642	1.829	11.85
9C05053-CAL2	0.2	1250	1.796	11.85
9C05053-CAL3	0.4	2394	1.749	11.85
9C05053-CAL4	1	6044	1.701	11.85
9C05053-CAL5	2	12148	1.740	11.85
9C05053-CAL6	5	30835	1.696	11.85
9C05053-CAL7	10	58747	1.615	11.85
9C05053-CAL8	20	123126	1.671	11.85
9C05053-CAL9	50	297653	1.535	11.85
9C05053-CALA	100	689104	1.675	11.85
9C05053-CALB	200	1450789	1.636	11.85

AVE RF **1.695** RF RSD **4.93** AVE RT **11.85**

n-Butylbenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	842	2.399	12.04
9C05053-CAL2	0.2	1836	2.638	12.05
9C05053-CAL3	0.4	3544	2.589	12.05
9C05053-CAL4	1	9163	2.579	12.05
9C05053-CAL5	2	18660	2.672	12.05
9C05053-CAL6	5	48296	2.657	12.04
9C05053-CAL7	10	96961	2.665	12.04
9C05053-CAL8	20	205555	2.789	12.04
9C05053-CAL9	50	502611	2.592	12.04
9C05053-CALA	100	1162996	2.827	12.05
9C05053-CALB	200	2454286	2.767	12.05

AVE RF **2.652** RF RSD **4.46** AVE RT **12.04**

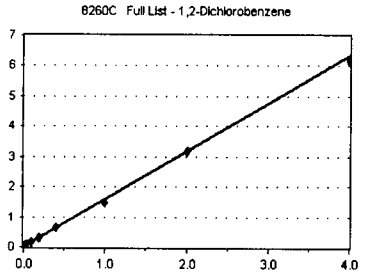
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

1,2-Dichlorobenzene

Curve Fit: **AVERAGE RF**

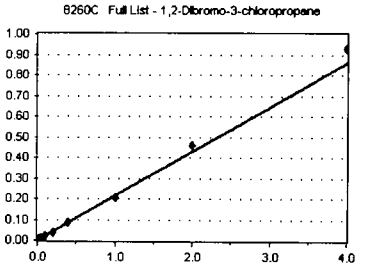


Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	581	1.656	12.17
9C05053-CAL2	0.2	1110	1.595	12.17
9C05053-CAL3	0.4	2204	1.610	12.17
9C05053-CAL4	1	5643	1.589	12.17
9C05053-CAL5	2	11607	1.662	12.17
9C05053-CAL6	5	28917	1.591	12.17
9C05053-CAL7	10	56508	1.553	12.17
9C05053-CAL8	20	118001	1.601	12.17
9C05053-CAL9	50	283526	1.462	12.17
9C05053-CALA	100	655475	1.593	12.17
9C05053-CALB	200	1370410	1.545	12.17

AVE RF **1.587** RF RSD **3.44** AVE RT **12.17**

1,2-Dibromo-3-chloropropane

Curve Fit: **AVERAGE RF**

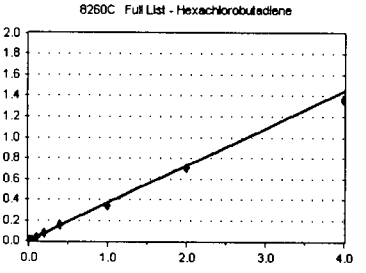


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL4	1	747	0.210	12.78
9C05053-CAL5	2	1537	0.220	12.78
9C05053-CAL6	5	3553	0.195	12.77
9C05053-CAL7	10	7356	0.202	12.77
9C05053-CAL8	20	16221	0.220	12.77
9C05053-CAL9	50	39554	0.204	12.77
9C05053-CALA	100	94764	0.230	12.78
9C05053-CALB	200	206284	0.233	12.78

AVE RF **0.214** RF RSD **6.31** AVE RT **12.77**

Hexachlorobutadiene

Curve Fit: **AVERAGE RF**

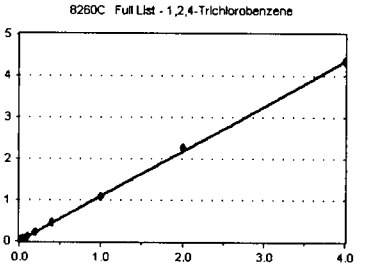


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	254	0.365	13.30
9C05053-CAL3	0.4	541	0.395	13.30
9C05053-CAL4	1	1281	0.361	13.30
9C05053-CAL5	2	2666	0.382	13.30
9C05053-CAL6	5	6571	0.361	13.30
9C05053-CAL7	10	13308	0.366	13.30
9C05053-CAL8	20	27070	0.367	13.30
9C05053-CAL9	50	64569	0.333	13.30
9C05053-CALA	100	144565	0.351	13.30
9C05053-CALB	200	303244	0.342	13.30

AVE RF **0.362** RF RSD **4.96** AVE RT **13.30**

1,2,4-Trichlorobenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	0.1	373	1.063	13.33
9C05053-CAL2	0.2	712	1.023	13.33
9C05053-CAL3	0.4	1536	1.122	13.33
9C05053-CAL4	1	3468	0.976	13.33
9C05053-CAL5	2	7713	1.105	13.33
9C05053-CAL6	5	20213	1.112	13.33
9C05053-CAL7	10	40695	1.119	13.33
9C05053-CAL8	20	85431	1.159	13.33
9C05053-CAL9	50	207538	1.070	13.33
9C05053-CALA	100	465896	1.133	13.33
9C05053-CALB	200	965140	1.088	13.33

AVE RF **1.088** RF RSD **4.83** AVE RT **13.33**

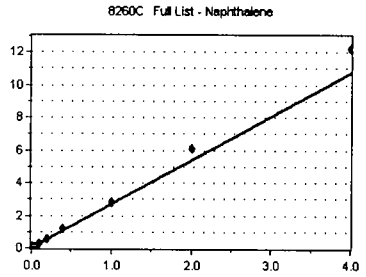
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VA190306W. VA190306G.M**

Naphthalene

Curve Fit: **AVERAGE RF**

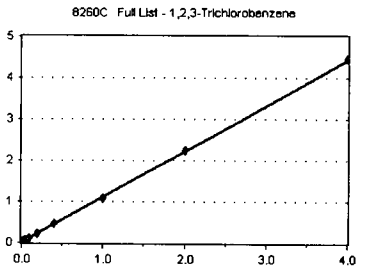


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL3~~	~~0.4~~	~~2661~~	~~1.844~~	~~13.60~~
9C05053-CAL4	1	7333	2.064	13.61
9C05053-CAL5	2	16755	2.399	13.60
9C05053-CAL6	5	45889	2.524	13.60
9C05053-CAL7	10	97060	2.668	13.61
9C05053-CAL8	20	214391	2.909	13.61
9C05053-CAL9	50	538706	2.778	13.61
9C05053-CALA	100	1250480	3.040	13.60
9C05053-CALB	200	2714283	3.060	13.60

AVE RF **2.680** RF RSD **12.75** AVE RT **13.60**

1,2,3-Trichlorobenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL2	0.2	789	1.134	13.77
9C05053-CAL3	0.4	1516	1.108	13.77
9C05053-CAL4	1	3550	0.999	13.77
9C05053-CAL5	2	8117	1.162	13.77
9C05053-CAL6	5	19925	1.096	13.77
9C05053-CAL7	10	39791	1.094	13.77
9C05053-CAL8	20	84962	1.153	13.77
9C05053-CAL9	50	207277	1.069	13.76
9C05053-CALA	100	463021	1.126	13.77
9C05053-CALB	200	986461	1.112	13.77

AVE RF **1.105** RF RSD **4.22** AVE RT **13.77**

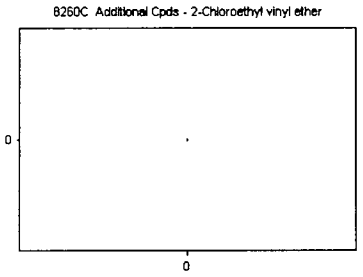
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Additional Cpds** Instrument Cal ID: **VA190306W. VA190306G.M**

2-Chloroethyl vinyl ether

Curve Fit: **AVERAGE RF**

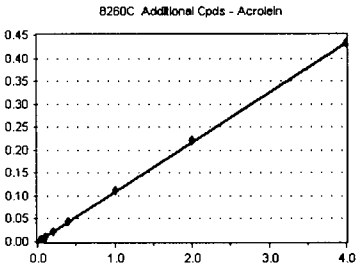


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL4~~	~~1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL5~~	~~2~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL6~~	~~5~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL7~~	~~10~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL8~~	~~20~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL9~~	~~50~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CALA~~	~~100~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CALB~~	~~200~~	~~0~~	~~0.000~~	~~0.00~~

AVE RF **0.000** RF RSD **0.00** AVE RT **0.00**

Acrolein

Curve Fit: **AVERAGE RF**

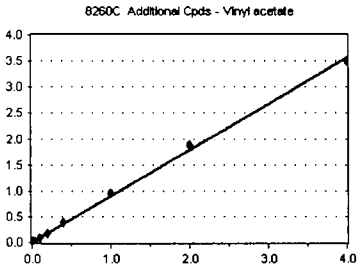


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL4~~	~~1~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL5	2	1053	0.106	3.64
9C05053-CAL6	5	2681	0.103	3.64
9C05053-CAL7	10	5123	0.106	3.64
9C05053-CAL8	20	10983	0.112	3.64
9C05053-CAL9	50	27949	0.111	3.63
9C05053-CALA	100	57769	0.111	3.64
9C05053-CALB	200	117156	0.108	3.64

AVE RF **0.108** RF RSD **3.02** AVE RT **3.64**

Vinyl acetate

Curve Fit: **AVERAGE RF**

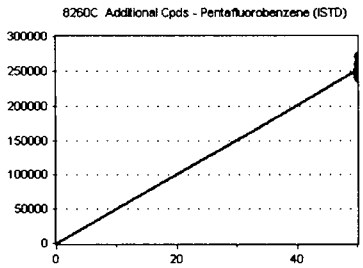


Standard	Concentration	Response	Response Factor	RT
~~9C05053-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9C05053-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9C05053-CAL3	0.4	1686	0.877	4.97
9C05053-CAL4	1	4564	0.927	4.96
9C05053-CAL5	2	7468	0.753	4.96
9C05053-CAL6	5	21465	0.828	4.96
9C05053-CAL7	10	43012	0.891	4.96
9C05053-CAL8	20	94804	0.968	4.95
9C05053-CAL9	50	236512	0.941	4.95
9C05053-CALA	100	489488	0.942	4.95
9C05053-CALB	200	951504	0.878	4.96

AVE RF **0.889** RF RSD **7.51** AVE RT **4.96**

Pentafluorobenzene (ISTD)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	50	249476	4989.520	6.20
9C05053-CAL2	50	252622	5052.440	6.20
9C05053-CAL3	50	240382	4807.640	6.20
9C05053-CAL4	50	246187	4923.740	6.20
9C05053-CAL5	50	248010	4960.200	6.20
9C05053-CAL6	50	259150	5183.000	6.20
9C05053-CAL7	50	241261	4825.220	6.20
9C05053-CAL8	50	244815	4896.300	6.19
9C05053-CAL9	50	251267	5025.340	6.20
9C05053-CALA	50	259916	5198.320	6.20
9C05053-CALB	50	271036	5420.720	6.20

AVE RF **5025.676** RF RSD **3.62** AVE RT **6.20**

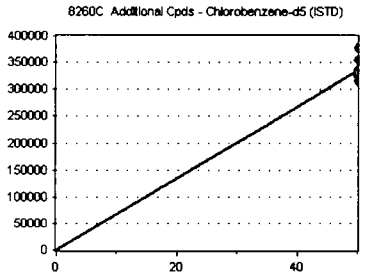
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **8260C Additional Cpds** Instrument Cal ID: **VA190306W. VA190306G.M**

Chlorobenzene-d5 (ISTD)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9C05053-CAL1	50	327828	6556.560	9.89
9C05053-CAL2	50	332859	6657.180	9.89
9C05053-CAL3	50	314755	6295.100	9.89
9C05053-CAL4	50	324088	6481.760	9.89
9C05053-CAL5	50	324771	6495.420	9.89
9C05053-CAL6	50	337211	6744.220	9.89
9C05053-CAL7	50	321524	6430.480	9.89
9C05053-CAL8	50	328052	6561.040	9.89
9C05053-CAL9	50	335403	6708.060	9.89
9C05053-CALA	50	354693	7093.860	9.89
9C05053-CALB	50	378328	7566.560	9.89

AVE RF **6690.022** RF RSD **5.34** AVE RT **9.89**

Calibration Status Report VOA-GCMS1

Method Path : C:\msdchem\1\METHODS\
Method File : VA190306G.M
Title : NWTPH-Gx by GC/MS
Last Update : Wed Mar 06 08:55:02 2019
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	50	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030537.D
2	2	100	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030538.D
3	3	250	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030539.D
4	4	500	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030540.D
5	5	1000	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030541.D
6	6	2500	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030542.D
7	7	5000	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030543.D
8	8	10000	50	C:\msdchem\1\DATA\2019-03\9C05053\VA19030544.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Mar 06 08:53 2019	Mar 06 08:50 2019	
2	2	Mar 06 08:53 2019	Mar 06 08:50 2019	
3	3	Mar 06 08:53 2019	Mar 06 08:50 2019	
4	4	Mar 06 08:53 2019	Mar 06 08:50 2019	
5	5	Mar 06 08:53 2019	Mar 06 08:50 2019	
6	6	Mar 06 08:53 2019	Mar 06 08:50 2019	
7	7	Mar 06 08:53 2019	Mar 06 08:50 2019	
8	8	Mar 06 08:53 2019	Mar 06 08:50 2019	

VA190306G.M Wed Mar 06 09:53:33 2019

Client ID A9C0602
NWTPH 3/6/19

Response Factor Report VOA-GCMS1

Method Path : C:\msdchem\1\METHODS\
Method File : VA190306G.M
Title : NWTPH-Gx by GC/MS
Last Update : Wed Mar 06 10:09:18 2019
Response Via : Initial Calibration

Calibration Files
1 =VA19030537.D 2 =VA19030538.D 3 =VA19030539.D 4 =VA19030540.D 5 =VA19030541.D 6 =VA19030542.D
7 =VA19030543.D 8 =VA19030544.D

		Compound	1	2	3	4	5	6	7	8	Avg	%RSD
1	I	Pentafluorobenzene...	ISTD									
2	S	1,4-Difluorobe...	3.401	3.481	3.767	4.182	5.070				3.980	17.12
3	S	4-Bromofluorob...	3.030	3.161	3.143	3.092	3.069	3.226	3.326	3.426	3.184	4.25
4	S	Chlorobenzene-...	3.915	4.033	4.074	4.084	4.181	4.747			4.172	7.06
5	H	CA-LUFT (C5-C12)	4.778	3.492	3.114	2.856	2.762	2.836	2.867	2.902	3.201	21.21
6	H	TPHg (C5-C9)	4.158	2.972	2.615	2.374	2.294	2.301	2.319	2.328	2.670	24.17
7	H	TPHg (C6-C10)	3.453	2.476	2.090	1.893	1.827	1.821	1.857	1.875	2.161	26.21
8	H	NWTPH-Gx	1.885	1.778	1.726	1.688	1.689	1.788	1.852	1.908	1.789	4.80
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

10/8/19 Batch Associated Samples: All Batch Samples - Level IV Data Package Page 963 of 1564

Compound List Report VOA-GCMS1

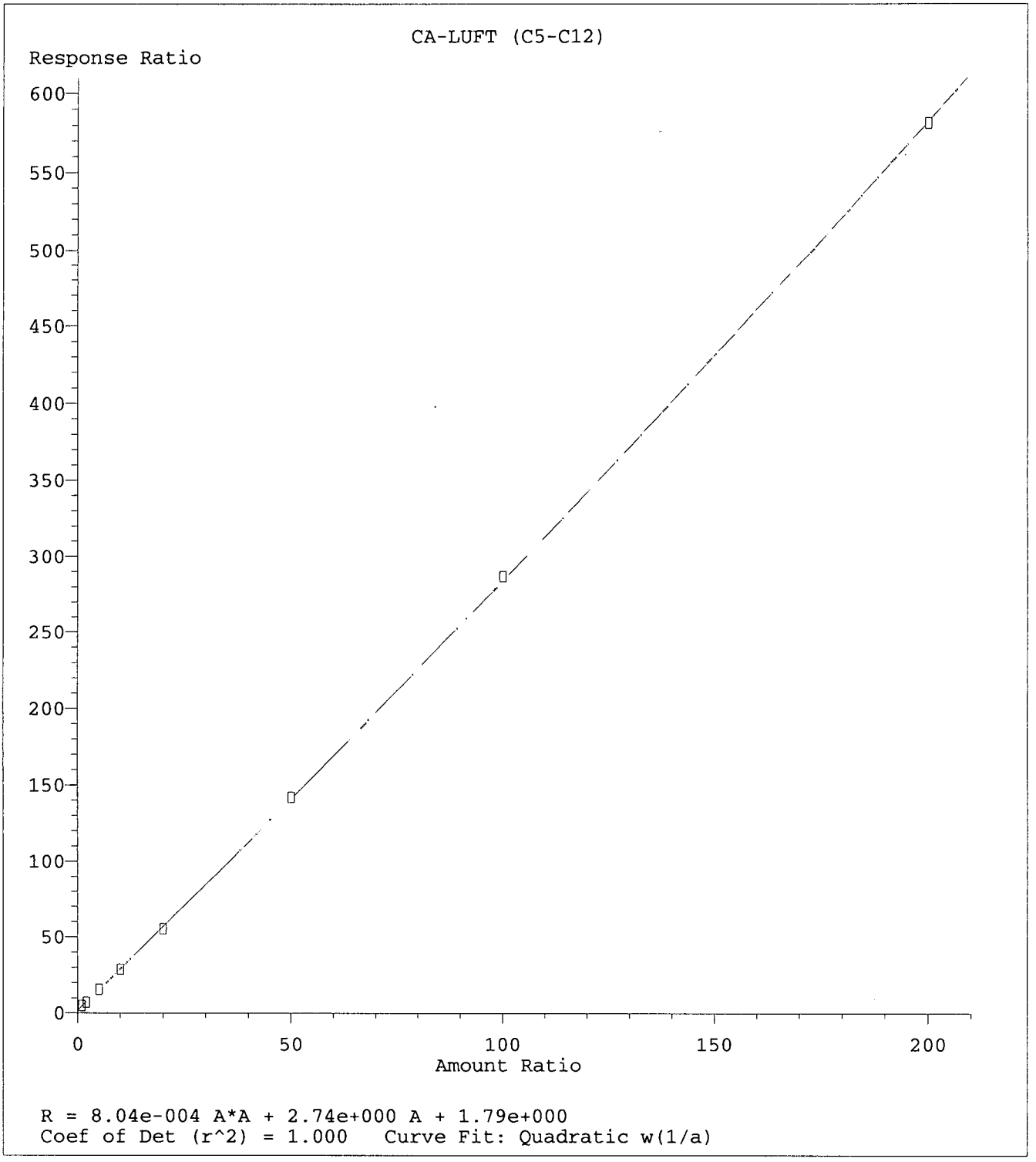
Method Path : C:\msdchem\1\METHODS\
Method File : VA190306G.M
Title : NWTPH-Gx by GC/MS
Last Update : Wed Mar 06 08:55:02 2019
Response Via : Initial Calibration

Total Cpnds : 13

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	Pentafluorobenzene (IS)	168	6.200	1.000	A	2	A	A
2	S	1,4-Difluorobenzene (Sur)	TIC	6.759	1.090	A	2	A	A
3	S	4-Bromofluorobenzene (Sur)	TIC	10.955	1.767	A	2	A	A
4	S	Chlorobenzene-d5 (NR)	TIC	9.890	1.595	A	2	A	A
5	H	CA-LUFT (C5-C12)	TIC	9.830	1.586	Q	0	A	A
6	H	TPHg (C5-C9)	TIC	9.830	1.586	Q	0	A	A
7	H	TPHg (C6-C10)	TIC	9.830	1.586	Q	0	A	A
8	H	NWTPH-Gx	TIC	9.830	1.586	Q	0	A	A
9		Benzene (NR)	78	6.114	0.986	A	2	A	A
10	S	Toluene-d8 (NR)	TIC	8.273	1.334	A	2	A	A
11	C	Toluene (NR)	91	8.334	1.344	A	2	A	A
12	S	1,4-Dichlorobenzene-d4 (NR)	TIC	11.837	1.909	A	2	A	A
13		Naphthalene (NR)	128	13.572	2.189	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

VA190306G.M Wed Mar 06 09:53:29 2019

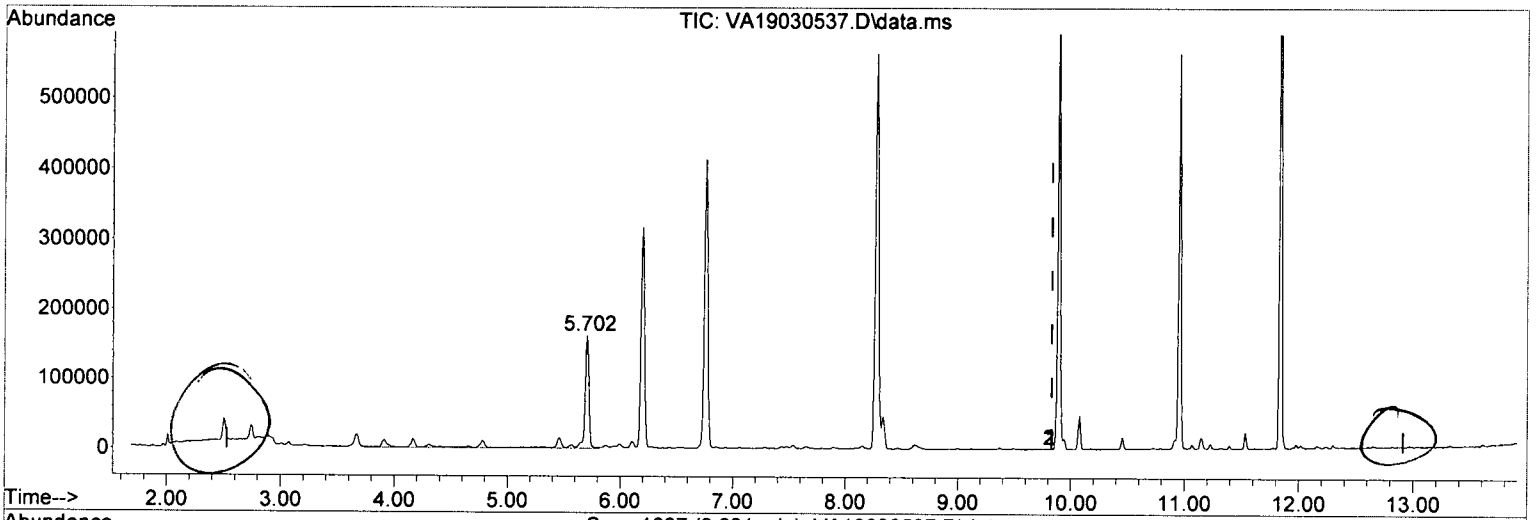


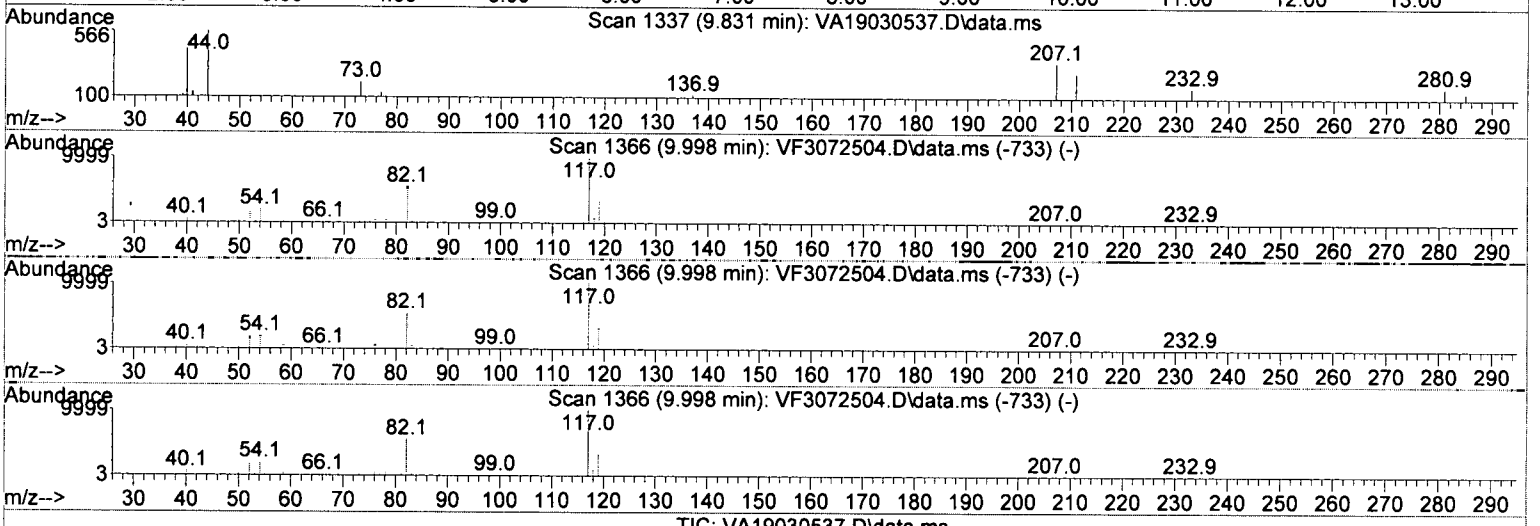
Method Name: C:\msdchem\1\METHODS\VA190306G.M
Calibration Table Last Updated: Wed Mar 06 10:09:18 2019

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\REQUANT\
Data File : VA19030537.D
Acq On : 6 Mar 2019 2:42 am
Operator : MM
Sample : 9C05053-CALC
Misc : 1X 5mL 50PPB GX
ALS Vial : 60 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:24:45 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:09:18 2019
Response via : Initial Calibration





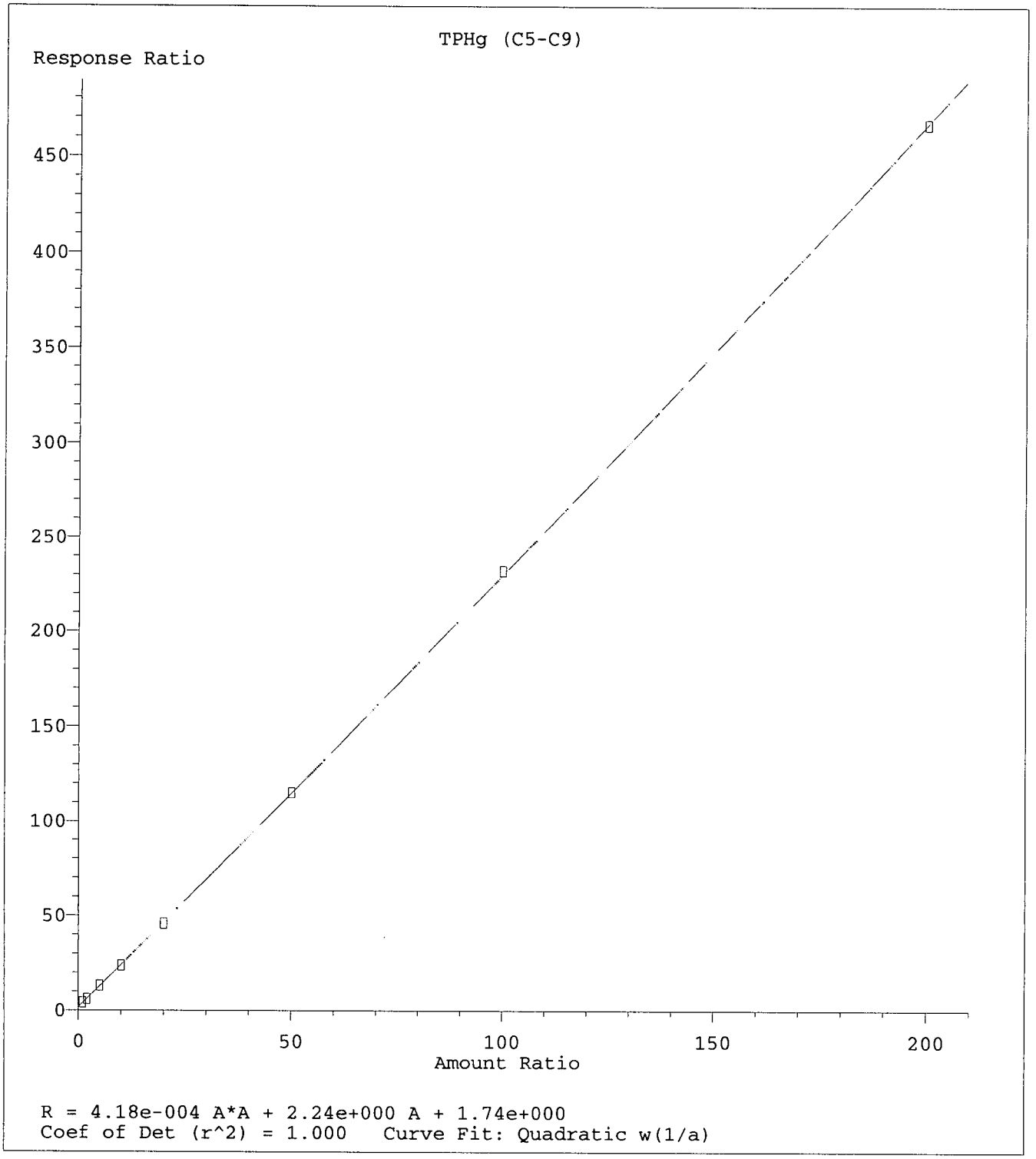
TIC: VA19030537.D\data.ms

(5) CA-LUFT (C5-C12) (H)

9.830min (0.000) 12.22 m

response 636124

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

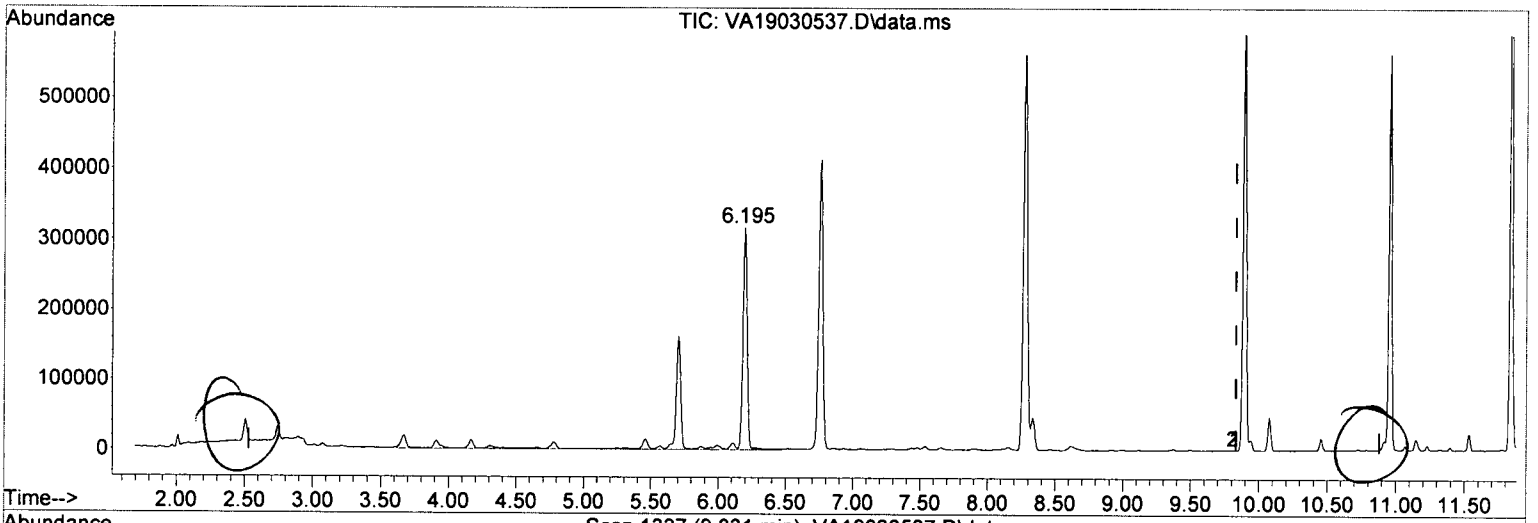


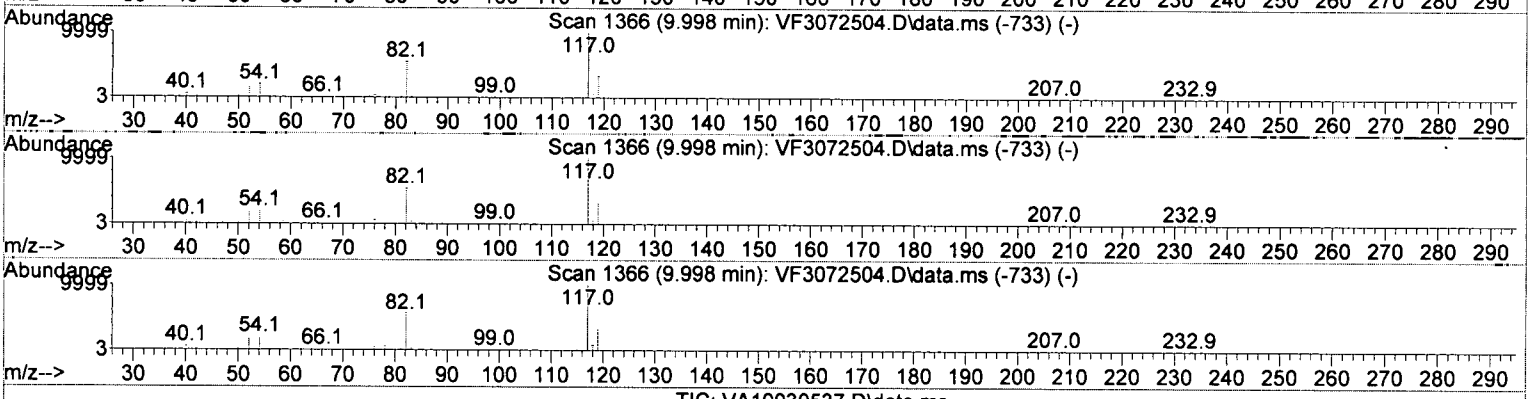
Method Name: C:\msdchem\1\METHODS\VA190306G.M
Calibration Table Last Updated: Wed Mar 06 10:09:18 2019

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\REQUANT\
Data File : VA19030537.D
Acq On : 6 Mar 2019 2:42 am
Operator : MM
Sample : 9C05053-CALC
Misc : 1X 5mL 50PPB GX
ALS Vial : 60 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:24:45 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:09:18 2019
Response via : Initial Calibration





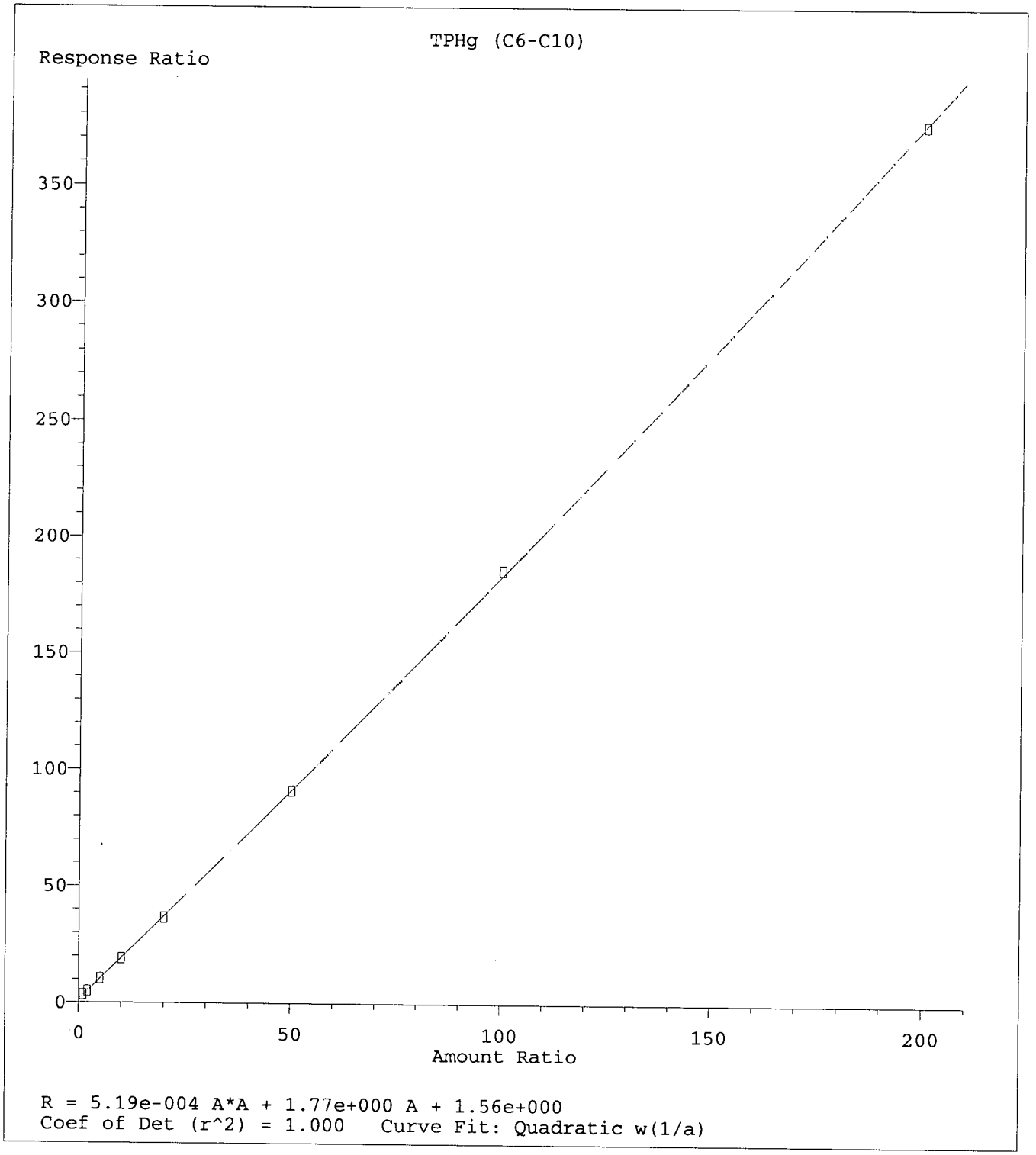
TIC: VA19030537.D\data.ms

(6) TPHg (C5-C9) (H)

9.830min (0.000) 27.77 m

response 770996

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

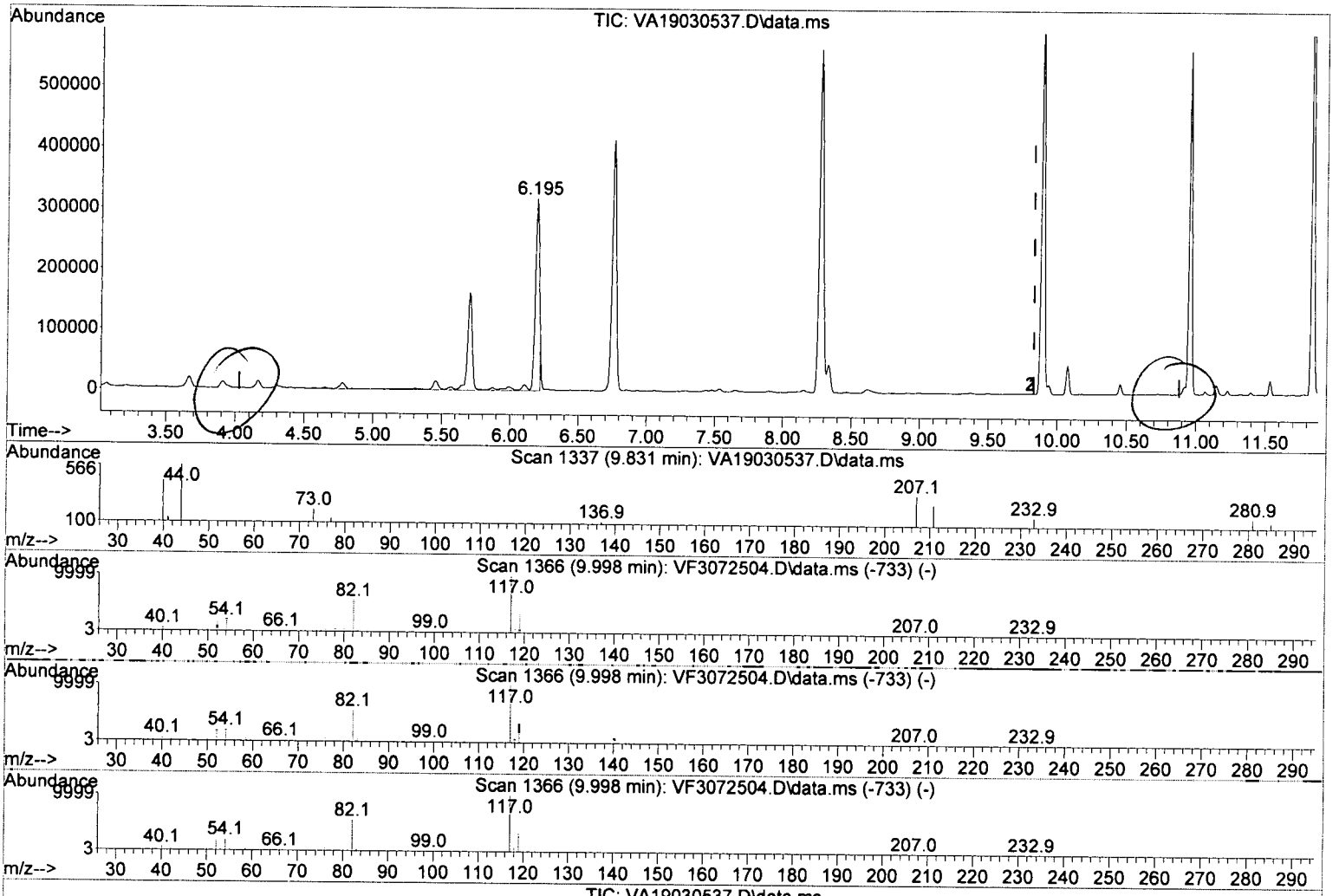


Method Name: C:\msdchem\1\METHODS\VA190306G.M
Calibration Table Last Updated: Wed Mar 06 10:09:18 2019

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\REQUANT\
Data File : VA19030537.D
Acq On : 6 Mar 2019 2:42 am
Operator : MM
Sample : 9C05053-CALC
Misc : 1X 5mL 50PPB GX
ALS Vial : 60 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:24:45 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:09:18 2019
Response via : Initial Calibration



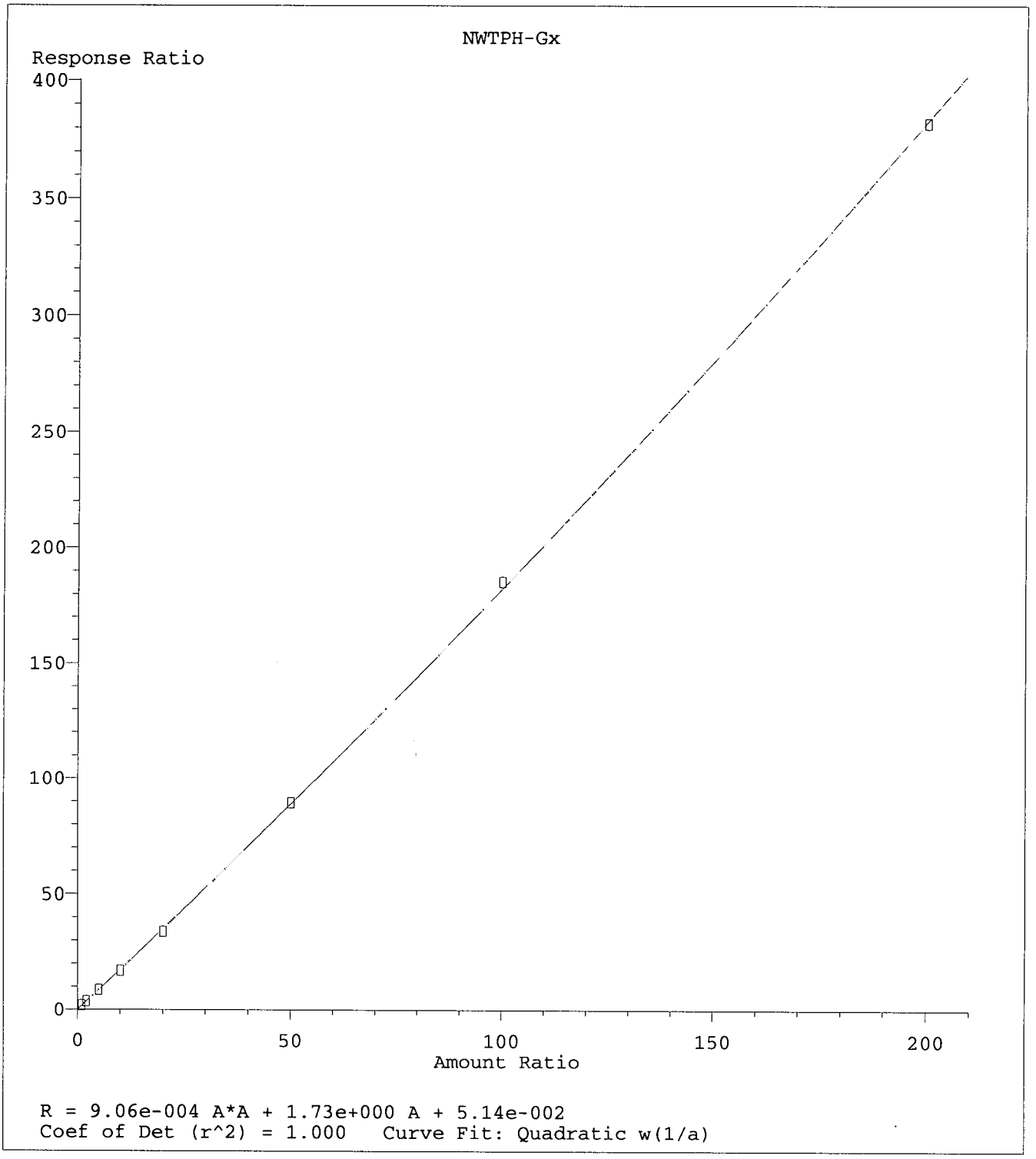
TIC: VA19030537.D\data.ms

(7) TPHg (C6-C10) (H)

9.830min (0.000) 16.04 m

response 550678

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

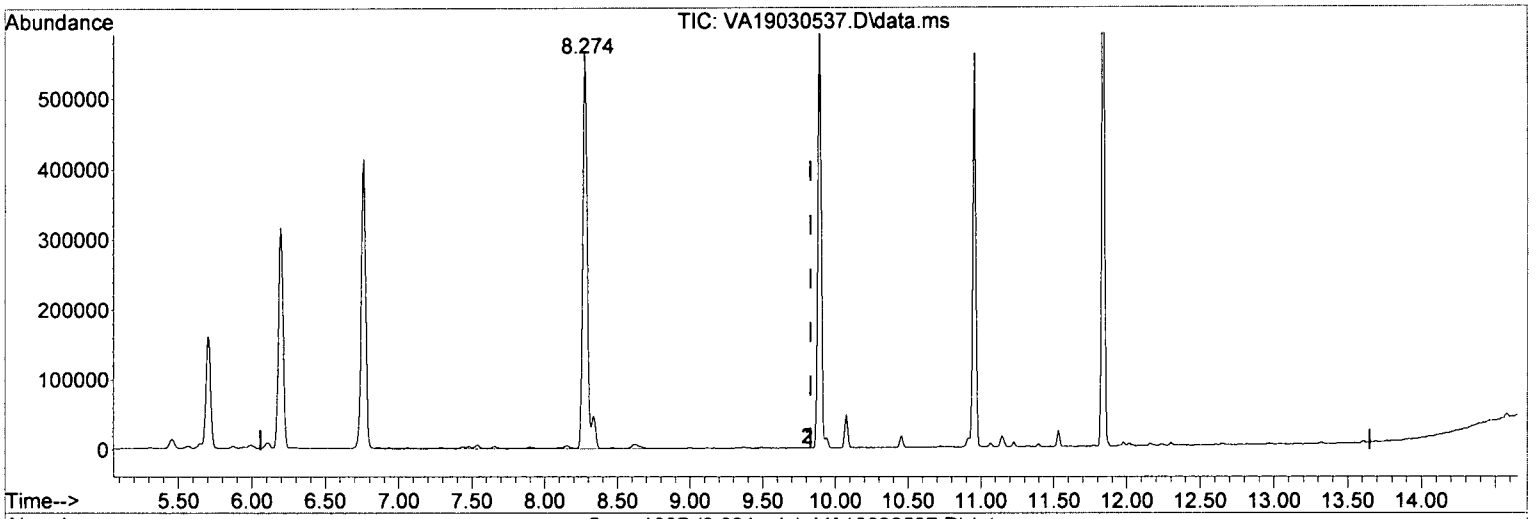


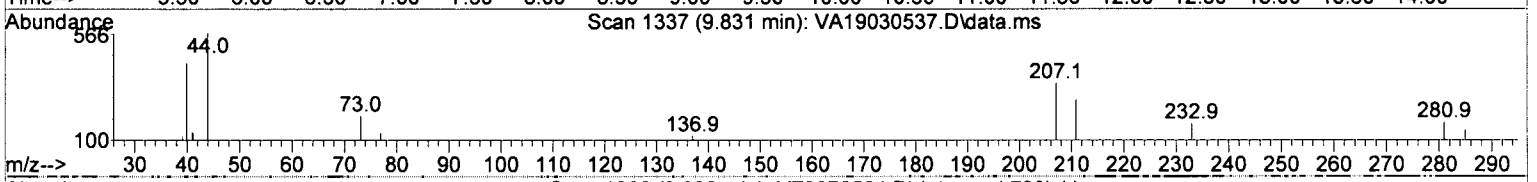
Method Name: C:\msdchem\1\METHODS\VA190306G.M
Calibration Table Last Updated: Wed Mar 06 10:09:18 2019

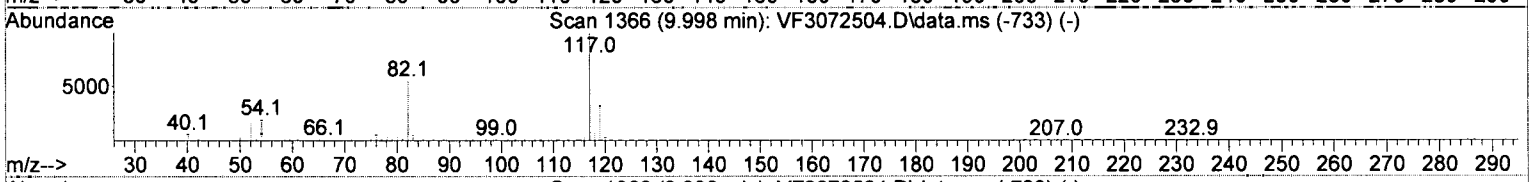
Quantitation Report (Qedit)

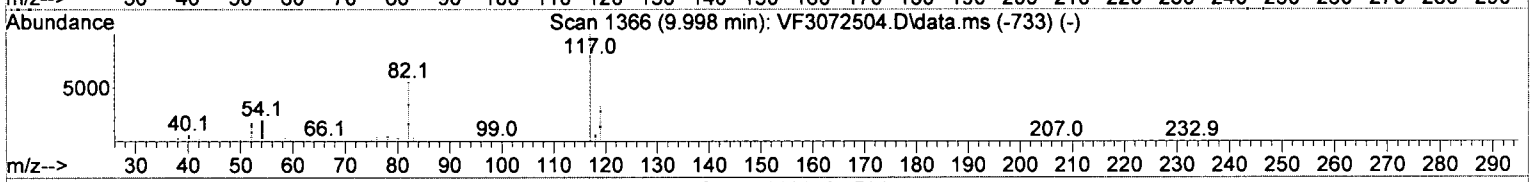
Data Path : C:\msdchem\1\DATA\2019-03\9C05053\REQUANT\
Data File : VA19030537.D
Acq On : 6 Mar 2019 2:42 am
Operator : MM
Sample : 9C05053-CALC
Misc : 1X 5mL 50PPB GX
ALS Vial : 60 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:24:45 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:09:18 2019
Response via : Initial Calibration









TIC: VA19030537.D\data.ms

(8) NWTPH-Gx (H)

9.830min (0.000) 25.87 ug/L m

response 245188

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: 9C05053

Analysis Included
NWTPH-Gx

INSTRUMENT SEQUENCE LOG

SampleID	SampleName	Matrix	STDID	ISTD ID	Analyzed
9C05053-TUN2	MS Tune	Water		A19C089	3/6/2019 12:48:00AM
9C05053-ICB2	Initial Cal Blank	Water		A19C089	3/6/2019 2:13:00AM
9C05053-CALC	Cal Standard	Water	A19C085	"	3/6/2019 2:42:00AM
9C05053-CALD	Cal Standard	Water	A19C086	"	3/6/2019 3:10:00AM
9C05053-CALE	Cal Standard	Water	A19C087	"	3/6/2019 3:39:00AM
9C05053-CALF	Cal Standard	Water	A19C088	"	3/6/2019 4:07:00AM
9C05053-CALI	Cal Standard	Water	A19B202	"	3/6/2019 5:33:00AM
9C05053-CALG	Cal Standard	Water	A19B200	"	3/6/2019 4:36:00AM
9C05053-CALH	Cal Standard	Water	A19B201	"	3/6/2019 5:04:00AM
9C05053-CALJ	Cal Standard	Water	A19B203	"	3/6/2019 6:01:00AM
9C05053-ICV2	Initial Cal Check	Water	A19B262	"	3/6/2019 7:27:00AM

CALIBRATION STANDARD RECOVERIES

Calibration: **A9C0602** Instrument: **VOA-GCMS1**

NWTPH-Gx Sequence: **9C05053** Matrix: **Water**

9C05053-CALC	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9C05053-CALD	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9C05053-CALE	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9C05053-CALF	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9C05053-CALG	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9C05053-CALH	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9C05053-CALI	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9C05053-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: 9C05053

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: **A9C0602** Instrument: **VOA-GCMS1**

NWTPH-Gx Sequence: **9C05053** Matrix: **Water**

9C05053-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\2019-03\9C05053\
Data File : VA19030547.D
Acq On : 6 Mar 2019 7:27 am
Operator : MM
Sample : 9C05053-ICV2
Misc : 1X 5mL 500PPB GX
ALS Vial : 70 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:10:40 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:09:18 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)
1	I	Pentafluorobenzene (IS)	50.000	50.000	0.0	105	0.00
2	S	1,4-Difluorobenzene (Sur)	50.000	52.582	-5.2	105	0.00
3	S	4-Bromofluorobenzene (Sur)	50.000	47.564	4.9	103	0.00
4	S	Chlorobenzene-d5 (NR)	50.000	48.401	3.2	104	0.00
5	H	CA-LUFT (C5-C12)	500.000	489.480	2.1	106	0.00
6	H	TPHg (C5-C9)	500.000	489.703	2.1	105	0.00
7	H	TPHg (C6-C10)	500.000	496.797	0.6	106	0.00
8	H	NWTPH-Gx	500.000	498.008	0.4	108	0.00
9		Benzene (NR)	-1.000	0.000	0.0	106	0.00
10	S	Toluene-d8 (NR)	-1.000	0.000	0.0	104	0.00
11	C	Toluene (NR)	-1.000	0.000	0.0	109	0.00
12	S	1,4-Dichlorobenzene-d4 (NR)	-1.000	0.000	0.0	104	0.00
13		Naphthalene (NR)	-1.000	0.000	0.0	121	0.00

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

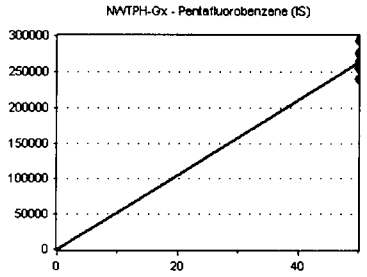
Element Calibration Review Sheet

Calibration ID: **A9C0602** Instrument: **VOA-GCMS1** Calibration Date: **03/06/2019**

Analysis: **NWTPH-Gx** Instrument Cal ID: **VA190306W. VA190306G.M**

Pentafluorobenzene (IS)

Curve Fit: **AVERAGE RF**

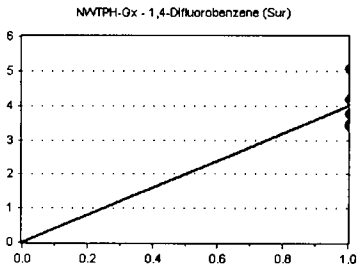


Standard	Concentration	Response	Response Factor	RT
9C05053-CALC	50	258573	5171.460	6.20
9C05053-CALD	50	240607	4812.140	6.20
9C05053-CALE	50	255217	5104.340	6.19
9C05053-CALF	50	258605	5172.100	6.20
9C05053-CALG	50	264692	5293.840	6.19
9C05053-CALH	50	253898	5077.960	6.20
9C05053-CALI	50	275551	5511.020	6.19
9C05053-CALJ	50	293665	5873.300	6.20

AVE RF **5252.020** RF RSD **6.08** AVE RT **6.20**

1,4-Difluorobenzene (Sur)

Curve Fit: **AVERAGE RF**

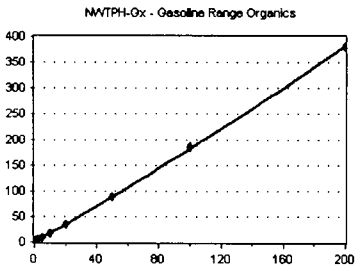


Standard	Concentration	Response	Response Factor	RT
9C05053-CALC	50	879494	3.401	6.76
9C05053-CALD	50	837629	3.481	6.76
9C05053-CALE	50	961480	3.767	6.76
9C05053-CALF	50	1081464	4.182	6.76
9C05053-CALG	50	1341889	5.070	6.75
~~9C05053-CALH~~	~~50~~	~~1972934~~	~~7.771~~	~~6.75~~
~~9C05053-CALI~~	~~50~~	~~3339864~~	~~12.121~~	~~6.73~~
~~9C05053-CALJ~~	~~50~~	~~6083504~~	~~20.716~~	~~6.73~~

AVE RF **3.980** RF RSD **17.12** AVE RT **6.76**

Gasoline Range Organics

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

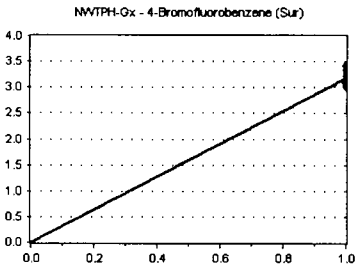


Standard	Concentration	Response	Response Factor	RT
9C05053-CALC	50	487357	1.885	9.83
9C05053-CALD	100	855613	1.778	9.83
9C05053-CALE	250	2202266	1.726	9.83
9C05053-CALF	500	4365636	1.688	9.83
9C05053-CALG	1000	8939781	1.689	9.83
9C05053-CALH	2500	2.269975E+07	1.788	9.83
9C05053-CALI	5000	5.102988E+07	1.852	9.83
9C05053-CALJ	10000	1.120592E+08	1.908	9.83

AVE RF **1.789** RF RSD **4.80** AVE RT **9.83**

4-Bromofluorobenzene (Sur)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9C05053-CALC	50	783549	3.030	10.96
9C05053-CALD	50	760482	3.161	10.96
9C05053-CALE	50	802124	3.143	10.96
9C05053-CALF	50	799731	3.092	10.96
9C05053-CALG	50	812221	3.069	10.96
9C05053-CALH	50	819186	3.226	10.96
9C05053-CALI	50	916612	3.326	10.96
9C05053-CALJ	50	1006021	3.426	10.96

AVE RF **3.184** RF RSD **4.25** AVE RT **10.96**

Injection Log

Directory: i:\DATA\2019-03\9C05053

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	36	Va19030513.d	1.	9C05053-IBL1	1X 5mL DI	5 Mar 2019 15:15
2	37	Va19030514.d	1.	9C05053-TUN1	A19C051 5mL BFB...	5 Mar 2019 15:43
3	38	Va19030515.d	1.	9C05053-ICB1	1X 5mL DI	5 Mar 2019 16:12
4	39	Va19030516.d	1.	9C05053-CAL1	1X 5mL 0.1/0.2P...	5 Mar 2019 16:40
5	40	Va19030517.d	1.	9C05053-CAL2	1X 5mL 0.2/0.4P...	5 Mar 2019 17:09
6	41	Va19030518.d	1.	9C05053-CAL3	1X 5mL 0.4/0.8P...	5 Mar 2019 17:37
7	42	Va19030519.d	1.	9C05053-CAL4	1X 5mL 1/2PPB VOCR	5 Mar 2019 18:06
8	43	Va19030520.d	1.	9C05053-CAL5	1X 5mL 2/4PPB VOCR	5 Mar 2019 18:34
9	44	Va19030521.d	1.	9C05053-CAL6	1X 5mL 5/10PPB ...	5 Mar 2019 19:03
10	45	Va19030522.d	1.	9C05053-CAL7	1X 5mL 10/20PPB...	5 Mar 2019 19:31
11	46	Va19030523.d	1.	9C05053-CAL8	1X 5mL 20/40PPB...	5 Mar 2019 20:03
12	47	Va19030524.d	1.	9C05053-CAL9	1X 5mL 50/100PP...	5 Mar 2019 20:31
13	48	Va19030525.d	1.	9C05053-IBL2	1X 5mL DI	5 Mar 2019 21:00
14	49	Va19030526.d	1.	9C05053-CALA	1X 5mL 100/200P...	5 Mar 2019 21:28
15	50	Va19030527.d	1.	9C05053-IBL3	1X 5mL DI	5 Mar 2019 21:57
16	51	Va19030528.d	1.	9C05053-CALB	1X 5mL 200/400P...	5 Mar 2019 22:25
17	52	Va19030529.d	1.	9C05053-IBL4	1X 5mL DI	5 Mar 2019 22:54
18	53	Va19030530.d	1.	9C05053-IBL5	1X 5mL DI	5 Mar 2019 23:22
19	54	Va19030531.d	1.	9C05053-ICV1	1X 5mL 20/40PPB...	5 Mar 2019 23:51
20	55	Va19030532.d	1.	9C05053-IBL6	1X 5mL DI	6 Mar 2019 00:19
21	56	Va19030533.d	1.	9C05053-TUN2	A19C051 5mL BFB...	6 Mar 2019 00:48
22	57	Va19030534.d	1.	9C05053-RT1	A18A167 VPH RT STD	6 Mar 2019 01:16
23	58	Va19030535.d	1.	9C05053-IBL7	1X 5mL DI	6 Mar 2019 01:45
24	59	Va19030536.d	1.	9C05053-ICB2	1X 5mL DI	6 Mar 2019 02:13
25	60	Va19030537.d	1.	9C05053-CALC	1X 5mL 50PPB GX	6 Mar 2019 02:42
26	61	Va19030538.d	1.	9C05053-CALD	1X 5mL 100PPB GX	6 Mar 2019 03:10
27	62	Va19030539.d	1.	9C05053-CALE	1X 5mL 250PPB GX	6 Mar 2019 03:39
28	63	Va19030540.d	1.	9C05053-CALF	1X 5mL 500PPB GX	6 Mar 2019 04:07
29	64	Va19030541.d	1.	9C05053-CALG	1X 5mL 1000PPB GX	6 Mar 2019 04:36
30	65	Va19030542.d	1.	9C05053-CALH	1X 5mL 2500PPB GX	6 Mar 2019 05:04
31	66	Va19030543.d	1.	9C05053-CALI	1X 5mL 5000PPB GX	6 Mar 2019 05:33
32	67	Va19030544.d	1.	9C05053-CALJ	1X 5mL 10000PPB GX	6 Mar 2019 06:01
33	68	Va19030545.d	1.	9C05053-IBL8	1X 5mL DI	6 Mar 2019 06:30
34	69	Va19030546.d	1.	9C05053-IBL9	1X 5mL DI	6 Mar 2019 06:58
35	70	Va19030547.d	1.	9C05053-ICV2	1X 5mL 500PPB GX	6 Mar 2019 07:27
36	36	Va19030548.d	1.	9C05053-IBLA	1X 5mL DI	6 Mar 2019 07:55

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030513.D
Acq On : 5 Mar 2019 3:15 pm
Operator : MM
Sample : 9C05053-IBL1
Misc : 1X 5mL DI
ALS Vial : 36 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:14:39 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

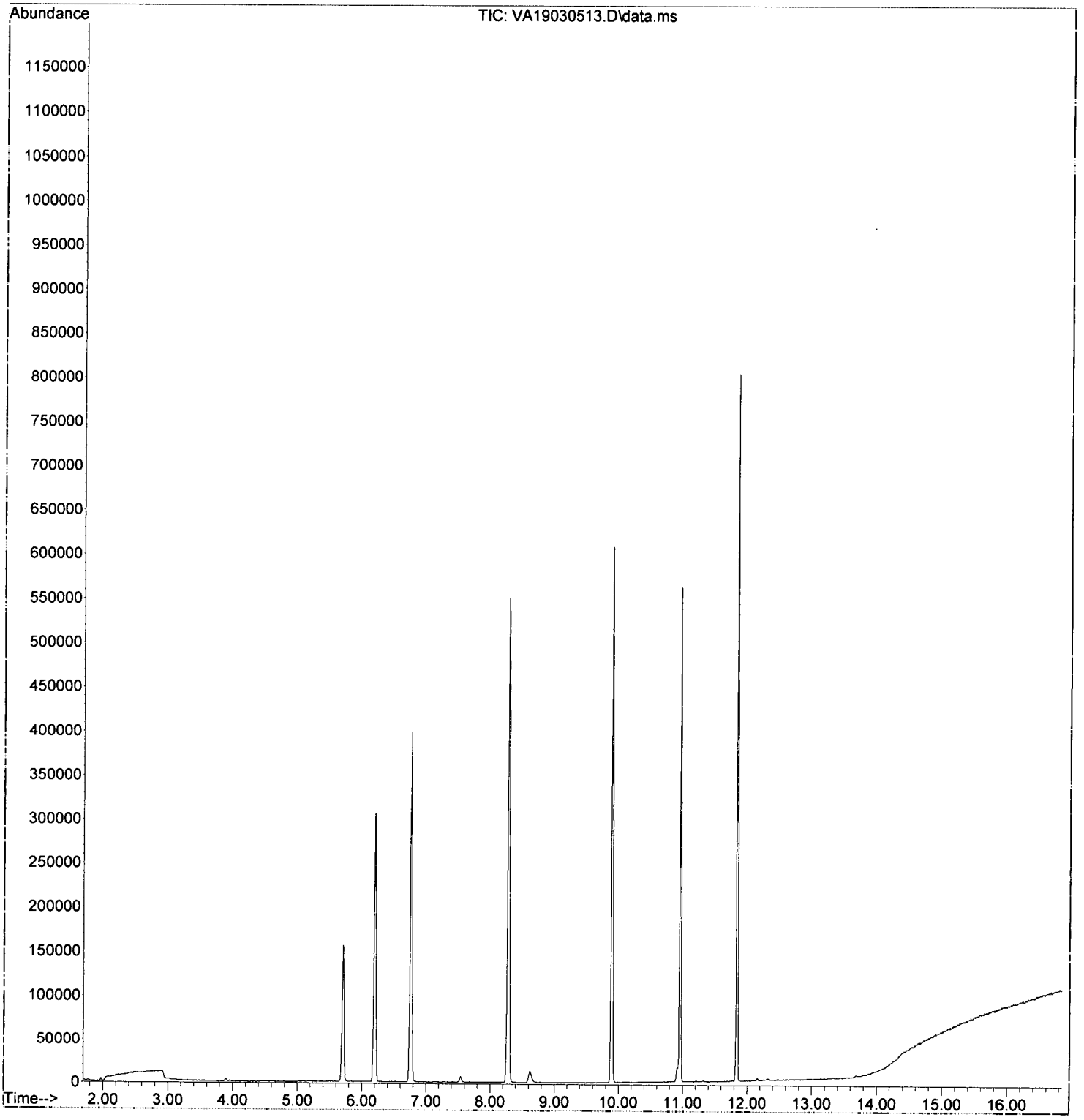
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.200	168	254103	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.891	117	331850	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.837	152	175915	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.701	111	104756	49.36	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.760	114	368141	49.87	ug/L		0.00
42) Toluene-d8 (S)	8.274	98	431735	50.33	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.956	174	139269	51.40	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.967	50	2904	0.53	ug/L		97
5) Bromomethane	2.435	96	959	0.19	ug/L		73
13) Methylene Chloride	3.895	84	1385	Below Cal			96
14) Acetone	3.956	43	1149	1.11	ug/L		92
30) 2-Butanone (MEK)	5.841	43	375	0.23	ug/L		52
33) iso-Butyl Alcohol	6.413	43	39	0.25	ug/L	#	22

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030513.D
Acq On : 5 Mar 2019 3:15 pm
Operator : MM
Sample : 9C05053-IBL1
Misc : 1X 5mL DI
ALS Vial : 36 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:14:39 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

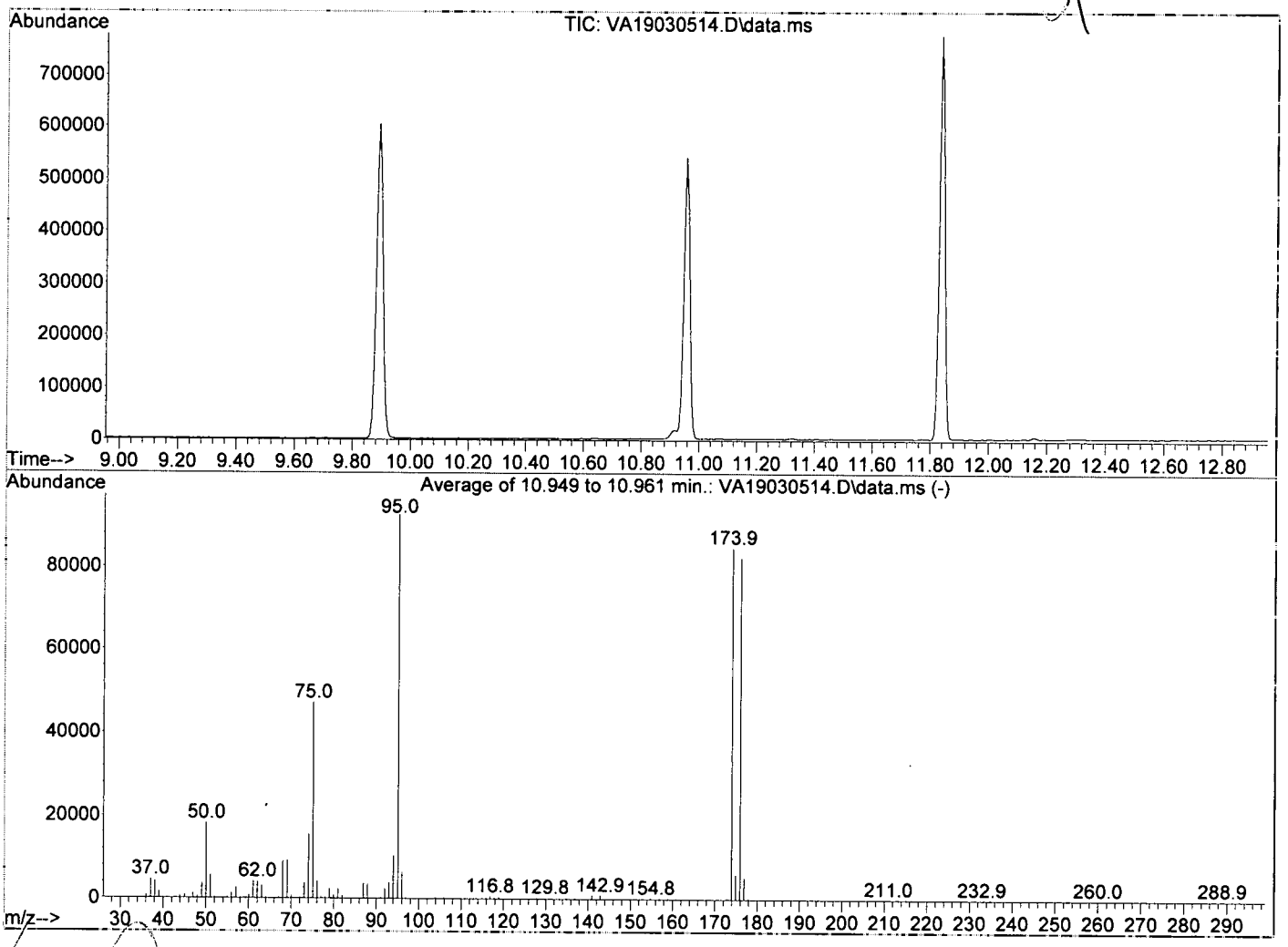


BFB

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030514.D
Acq On : 5 Mar 2019 3:43 pm
Operator : MM
Sample : 9C05053-TUN1
Misc : A19C051 5mL BFB (IS/SURR)
ALS Vial : 37 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\VA190306W.M
Title : EPA 8260C: Volatile Organic Compounds
Last Update : Wed Mar 06 08:45:04 2019



AutoFind: Scans 1521, 1522, 1523; Background Corrected with Scan 1513

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	12	40	19.7	18239	PASS
75	95	30	60	50.9	47160	PASS
95	95	100	100	100.0	92690	PASS
96	95	5	9	7.0	6456	PASS
173	174	0.00	2	0.3	263	PASS
174	95	50	200	91.5	84800	PASS
175	174	5	9	7.1	6049	PASS
176	174	95	101	97.1	82306	PASS
177	176	5	9	6.4	5252	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030514.D
Acq On : 5 Mar 2019 3:43 pm
Operator : MM
Sample : 9C05053-TUN1
Misc : A19C051 5mL BFB (IS/SURR)
ALS Vial : 37 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:14:47 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.199	168	247777	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.891	117	323581	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.837	152	173551	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.707	111	102917	49.73	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.759	114	358147	49.75	ug/L		0.00
42) Toluene-d8 (S)	8.279	98	423697	50.66	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.955	174	136917	51.22	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.968	50	2803	0.53	ug/L		93
5) Bromomethane	2.430	96	994	0.34	ug/L		69
13) Methylene Chloride	3.890	84	1042	Below Cal			89
14) Acetone	3.957	43	753	0.75	ug/L	#	42
30) 2-Butanone (MEK)	5.847	43	397	0.25	ug/L		52
33) iso-Butyl Alcohol	6.400	43	41	0.27	ug/L	#	22

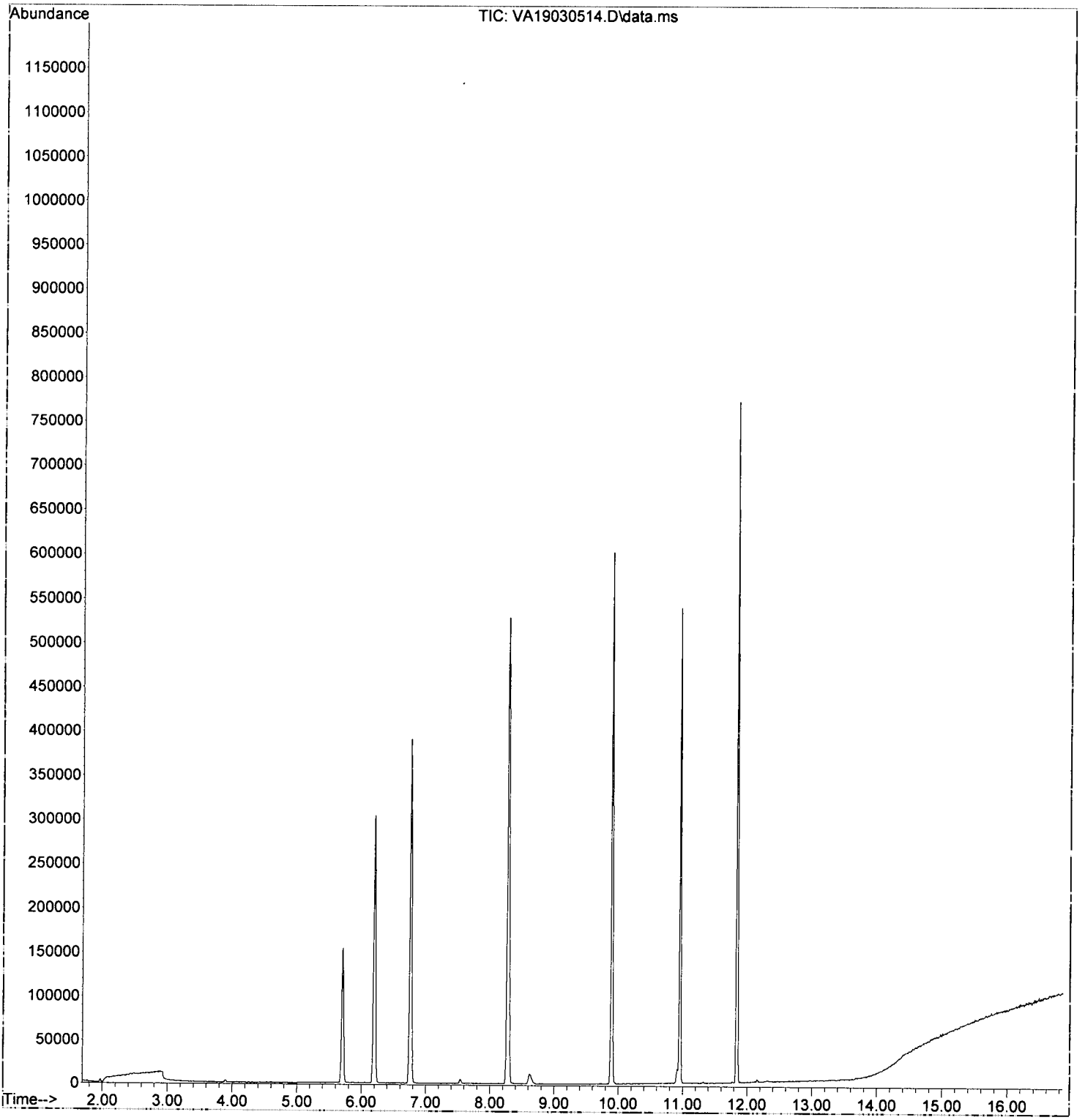
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Report Date: 06/06/19 14:47 Associates- Mult 802 Decommisioning - Level IV Data Package Page 981 of 1564

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030514.D
Acq On : 5 Mar 2019 3:43 pm
Operator : MM
Sample : 9C05053-TUN1
Misc : A19C051 5mL BFB (IS/SURR)
ALS Vial : 37 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:14:47 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030515.D
Acq On : 5 Mar 2019 4:12 pm
Operator : MM
Sample : 9C05053-ICB1
Misc : 1X 5mL DI
ALS Vial : 38 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

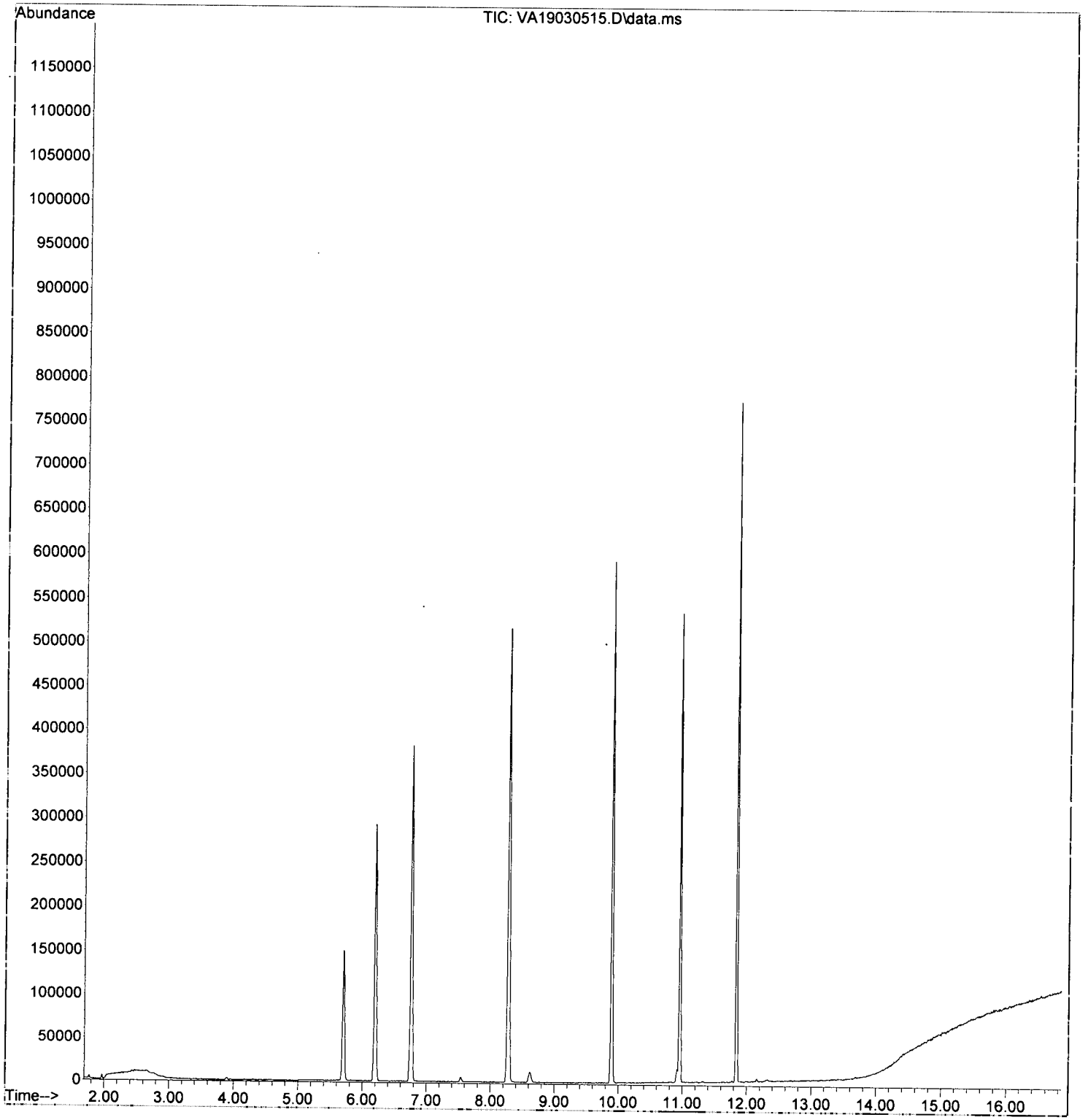
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.200	168	242822	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.891	117	318873	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.837	152	172948	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.707	111	99940	49.27	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.759	114	352257	49.93	ug/L		0.00
42) Toluene-d8 (S)	8.279	98	413096	50.12	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.955	174	135810	50.98	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.969	50	4161	0.80	ug/L		97
5) Bromomethane	2.431	96	1235	0.98	ug/L		74
13) Methylene Chloride	3.896	84	1195	Below Cal			96
14) Acetone	3.951	43	964	0.97	ug/L		99
30) 2-Butanone (MEK)	5.841	43	353	0.23	ug/L		52
33) iso-Butyl Alcohol	6.333	43	39	0.26	ug/L	#	37

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030515.D
Acq On : 5 Mar 2019 4:12 pm
Operator : MM
Sample : 9C05053-ICB1
Misc : 1X 5mL DI
ALS Vial : 38 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:14:59 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030516.D
Acq On : 5 Mar 2019 4:40 pm
Operator : MM
Sample : 9C05053-CAL1
Misc : 1X 5mL 0.1/0.2PPB VOCR
ALS Vial : 39 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:20:19 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Pentafluorobenzene (I)	6.200	168	249476	50.00 ug/L	0.00
39) Chlorobenzene-d5 (I)	9.892	117	327828	50.00 ug/L	0.00
60) 1,4-Dichlorobenzene-d4...	11.838	152	175458	50.00 ug/L	0.00
System Monitoring Compounds					
28) Dibromofluoromethane (S)	5.702	111	103928	49.06 ug/L	0.00
34) 1,4-Difluorobenzene (S)	6.760	114	363888	49.71 ug/L	0.00
42) Toluene-d8 (S)	8.274	98	430870	50.93 ug/L	0.00
61) 4-Bromofluorobenzene (S)	10.956	174	138954	48.72 ug/L	0.00
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D. d	
3) Chloromethane	1.969	50	3782	1.51 ug/L	96
4) Vinyl Chloride	0.000		0	N.D. d	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	0.000		0	N.D. 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.	
11) Iodomethane	0.000		0	N.D.	
12) Acrolein	0.000		0	N.D.	
13) Methylene Chloride	3.897	84	1718	Below Cal	88
14) Acetone	0.000		0	N.D. d	
15) t-1,2-Dichloroethene	0.000		0	N.D. d	
16) n-Hexane	0.000		0	N.D.	
17) Methyl-tert-butyl-ether	0.000		0	N.D. d	
18) 1,1-Dichloroethane	0.000		0	N.D. d	
19) Acrylonitrile	0.000		0	N.D.	
20) Vinyl Acetate	0.000		0	N.D. d	
21) c-1,2-Dichloroethene	5.245	61	225	0.07 ug/L	95
22) 2,2-Dichloropropane	0.000		0	N.D. d	
23) Bromochloromethane	0.000		0	N.D. d	
24) Chloroform	0.000		0	N.D. d	
25) Carbon Tetrachloride	0.000		0	N.D. d	
26) Tetrahydrofuran	0.000		0	N.D. d	
27) 1,1,1-Trichloroethane	0.000		0	N.D. d	
29) 1,1-Dichloropropene	0.000		0	N.D. d	
30) 2-Butanone (MEK)	0.000		0	N.D. d	
31) Benzene	6.115	78	1161	0.12 ug/L	81
32) 1,2-Dichloroethane (EDC)	0.000		0	N.D. d	
33) iso-Butyl Alcohol	0.000		0	N.D. d	
35) Trichloroethene (TCE)	0.000		0	N.D. d	
36) Dibromomethane	0.000		0	N.D. d	
37) 1,2-Dichloropropane	0.000		0	N.D. d	
38) Bromodichloromethane	0.000		0	N.D. d	
40) 2-Chloroethyl Vinyl Ether	0.000		0	N.D.	
41) c-1,3-Dichloropropene	0.000		0	N.D. d	
43) Toluene	8.335	91	1063	0.11 ug/L	95
44) Tetrachloroethene (PCE)	0.000		0	N.D. d	
45) 4-Methyl-2-Pentanone (...	0.000		0	N.D. d	
46) t-1,3-Dichloropropene	0.000		0	N.D. d	
47) 1,1,2-Trichloroethane	0.000		0	N.D. d	
48) Dibromochloromethane	0.000		0	N.D. d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030516.D
Acq On : 5 Mar 2019 4:40 pm
Operator : MM
Sample : 9C05053-CAL1
Misc : 1X 5mL 0.1/0.2PPB VOCR
ALS Vial : 39 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:20:19 2019
Quant Method : C:\msdchem\1\METHODS\~~VA190306W~~.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) 1,3-Dichloropropane	0.000		0	N.D.	d		
50) 1,2-Dibromoethane (EDB)	0.000		0	N.D.	d		
51) 2-Hexanone	0.000		0	N.D.	d		
52) Chlorobenzene	0.000		0	N.D.	d		
53) Ethylbenzene	9.940	91	1201	0.11	ug/L		97
54) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	d		
55) m,p-Xylenes (2)	10.074	91	1812	0.21	ug/L		98
56) o-Xylene	10.451	91	874	0.10	ug/L		86
57) Styrene	0.000		0	N.D.	d		
58) Bromoform	0.000		0	N.D.	d		
59) Isopropylbenzene	10.725	105	1166	0.11	ug/L		85
62) Bromobenzene	11.047	156	273	0.09	ug/L	#	77
63) n-Propylbenzene	11.071	91	1372	0.11	ug/L		89
64) 1,1,2,2-Tetrachloroethane	11.114	83	342	0.11	ug/L		81
65) 2-Chlorotoluene	0.000		0	N.D.	d		
66) 1,3,5-Trimethylbenzene	11.229	105	1018	0.12	ug/L		98
67) 1,2,3-Trichloropropane	0.000		0	N.D.	d		
68) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
69) 4-Chlorotoluene	11.321	91	883	0.11	ug/L		91
70) tert-Butylbenzene	11.479	91	609	0.12	ug/L	#	74
71) 1,2,4-Trimethylbenzene	11.534	105	965	0.11	ug/L		89
72) sec-Butylbenzene	11.619	105	1177	0.10	ug/L		95
73) 4-Isopropyltoluene	11.722	119	1046	0.11	ug/L		95
74) 1,3-Dichlorobenzene	11.783	146	555	0.10	ug/L		99
75) 1,4-Dichlorobenzene	11.850	146	642	0.11	ug/L	#	8
76) n-Butylbenzene	12.044	91	842	0.10	ug/L		88
77) 1,2-Dichlorobenzene	12.172	146	581	0.11	ug/L		88
78) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.			
79) Hexachlorobutadiene	0.000		0	N.D.	d		
80) 1,2,4-Trichlorobenzene	13.328	180	373	0.11	ug/L		90
81) Naphthalene	0.000		0	N.D.	d		
82) 1,2,3-Trichlorobenzene	0.000		0	N.D.	d		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030516.D
Acq On : 5 Mar 2019 4:40 pm
Operator : MM
Sample : 9C05053-CAL1
Misc : 1X 5mL 0.1/0.2PPB VOCR
ALS Vial : 39 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:04 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.200	168	249476	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.892	117	327828	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.838	152	175458	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.702	111	103928	49.06	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.760	114	363888	49.71	ug/L		0.00
42) Toluene-d8 (S)	8.274	98	430870	50.93	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.956	174	138954	48.72	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.763	85	242	0.09	ug/L	#	51
3) Chloromethane	1.969	50	3782	1.51	ug/L		96
4) Vinyl Chloride	2.067	62	349	0.10	ug/L	#	46
5) Bromomethane	2.432	96	899	0.68	ug/L		75
6) Chloroethane	2.578	64	288	0.15	ug/L	#	30
7) Trichlorofluoromethane	2.736	101	369	0.09	ug/L	#	60
8) 1,1-Dichloroethene	3.283	61	271	0.08	ug/L	#	59
9) Carbon Disulfide	3.301	76	733	0.12	ug/L		78
10) Freon 113	0.000		0	N.D.			
11) Iodomethane	0.000		0	N.D.			
12) Acrolein	0.000		0	N.D.			
13) Methylene Chloride	3.897	84	1718	Below Cal			88
14) Acetone	3.952	43	1525	1.46	ug/L		95
15) t-1,2-Dichloroethene	4.074	61	285	0.09	ug/L	#	61
16) n-Hexane	0.000		0	N.D.			
17) Methyl-tert-butyl-ether	4.207	73	1200	0.19	ug/L		57
18) 1,1-Dichloroethane	4.694	63	264	0.07	ug/L	#	50
19) Acrylonitrile	0.000		0	N.D.			
20) Vinyl Acetate	4.961	43	361	0.07	ug/L		74
21) c-1,2-Dichloroethene	5.245	61	225	0.07	ug/L		95
22) 2,2-Dichloropropane	5.361	77	578	0.22	ug/L	#	57
23) Bromochloromethane	5.446	49	143	0.08	ug/L	#	14
24) Chloroform	5.519	83	394	0.10	ug/L		70
25) Carbon Tetrachloride	5.671	117	286	0.12	ug/L	#	74
26) Tetrahydrofuran	5.702	42	125	0.12	ug/L	#	4
27) 1,1,1-Trichloroethane	5.726	97	300	0.09	ug/L	#	70
29) 1,1-Dichloropropene	5.860	75	426	0.13	ug/L	#	52
30) 2-Butanone (MEK)	5.847	43	682	0.44	ug/L		52
31) Benzene	6.115	78	1161	0.12	ug/L		81
32) 1,2-Dichloroethane (EDC)	6.322	62	261	0.08	ug/L	#	49
33) iso-Butyl Alcohol	6.346	43	39	0.27	ug/L	#	32
35) Trichloroethene (TCE)	6.723	130	205	0.08	ug/L	#	13
36) Dibromomethane	7.167	93	37	0.03	ug/L	#	1
37) 1,2-Dichloropropane	7.289	63	163	0.07	ug/L	#	40
38) Bromodichloromethane	7.350	83	266	0.10	ug/L		64
40) 2-Chloroethyl Vinyl Ether	0.000		0	N.D.			
41) c-1,3-Dichloropropene	8.061	75	366	0.12	ug/L	#	51
43) Toluene	8.335	91	1063	0.11	ug/L		95
44) Tetrachloroethene (PCE)	8.773	166	156	0.06	ug/L	#	24
45) 4-Methyl-2-Pentanone (...	8.773	43	600	0.20	ug/L	#	43
46) t-1,3-Dichloropropene	8.809	75	383	0.13	ug/L		57
47) 1,1,2-Trichloroethane	8.973	97	143	0.07	ug/L	#	57
48) Dibromochloromethane	9.156	129	170	0.23	ug/L	#	17

M 3/6/19

Dells

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030516.D
Acq On : 5 Mar 2019 4:40 pm
Operator : MM
Sample : 9C05053-CAL1
Misc : 1X 5mL 0.1/0.2PPB VOCR
ALS Vial : 39 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:04 2019
Quant Method : C:\msdchem\1\METHODS\~~VA190306W~~.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

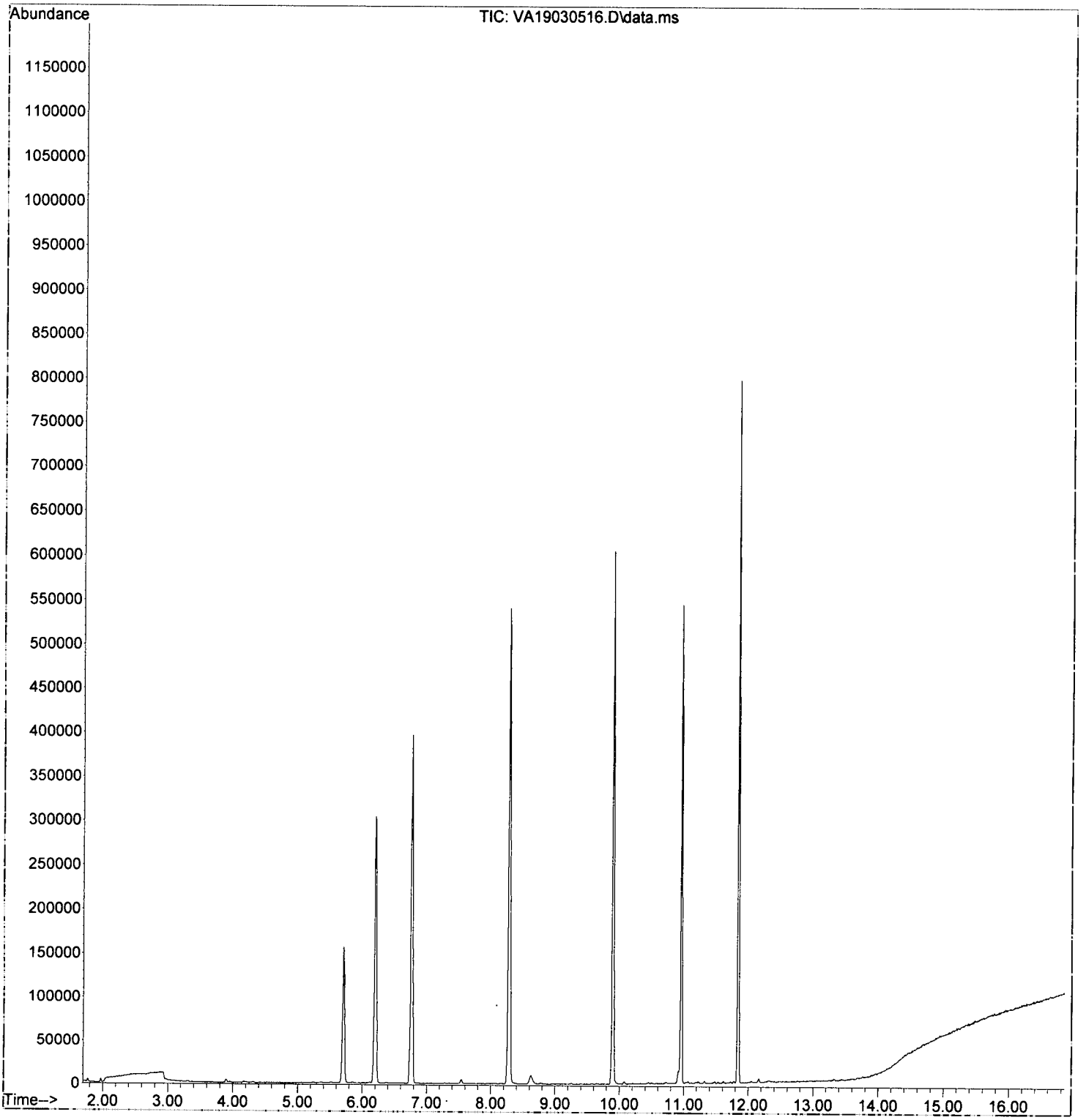
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) 1,3-Dichloropropane	9.253	76	359	0.10	ug/L		85
50) 1,2-Dibromoethane (EDB)	9.393	107	130	0.06	ug/L		87
51) 2-Hexanone	9.642	43	525	0.26	ug/L		77
52) Chlorobenzene	9.904	112	652	0.10	ug/L	#	1
53) Ethylbenzene	9.940	91	1201	0.11	ug/L		97
54) 1,1,1,2-Tetrachloroethane	9.958	131	82	0.05	ug/L	#	52
55) m,p-Xylenes (2)	10.074	91	1812	0.21	ug/L		98
56) o-Xylene	10.451	91	874	0.10	ug/L		86
57) Styrene	10.500	104	615	0.10	ug/L		91
58) Bromoform	10.512	173	80	0.38	ug/L	#	37
59) Isopropylbenzene	10.725	105	1166	0.11	ug/L		85
62) Bromobenzene	11.047	156	273	0.09	ug/L	#	77
63) n-Propylbenzene	11.071	91	1372	0.11	ug/L		89
64) 1,1,2,2-Tetrachloroethane	11.114	83	342	0.11	ug/L		81
65) 2-Chlorotoluene	11.193	126	290	0.11	ug/L	#	70
66) 1,3,5-Trimethylbenzene	11.229	105	1018	0.12	ug/L		98
67) 1,2,3-Trichloropropane	11.229	110	38	0.04	ug/L	#	27
68) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
69) 4-Chlorotoluene	11.321	91	883	0.11	ug/L		91
70) tert-Butylbenzene	11.479	91	609	0.12	ug/L	#	74
71) 1,2,4-Trimethylbenzene	11.534	105	965	0.11	ug/L		89
72) sec-Butylbenzene	11.619	105	1177	0.10	ug/L		95
73) 4-Isopropyltoluene	11.722	119	1046	0.11	ug/L		95
74) 1,3-Dichlorobenzene	11.783	146	555	0.10	ug/L		99
75) 1,4-Dichlorobenzene	11.850	146	642	0.11	ug/L	#	8
76) n-Butylbenzene	12.044	91	842	0.10	ug/L		88
77) 1,2-Dichlorobenzene	12.172	146	581	0.11	ug/L		88
78) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.			
79) Hexachlorobutadiene	13.297	223	81	0.06	ug/L	#	55
80) 1,2,4-Trichlorobenzene	13.328	180	373	0.11	ug/L		90
81) Naphthalene	13.607	128	678	0.52	ug/L		79
82) 1,2,3-Trichlorobenzene	13.765	180	397	0.12	ug/L		81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030516.D
Acq On : 5 Mar 2019 4:40 pm
Operator : MM
Sample : 9C05053-CAL1
Misc : 1X 5mL 0.1/0.2PPB VOCR
ALS Vial : 39 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:04 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030517.D
Acq On : 5 Mar 2019 5:09 pm
Operator : MM
Sample : 9C05053-CAL2
Misc : 1X 5mL 0.2/0.4PPB VOCR
ALS Vial : 40 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:23:16 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Pentafluorobenzene (I)	6.200	168	252622	50.00 ug/L	0.00
39) Chlorobenzene-d5 (I)	9.892	117	332859	50.00 ug/L	0.00
60) 1,4-Dichlorobenzene-d4...	11.838	152	173974	50.00 ug/L	0.00
System Monitoring Compounds					
28) Dibromofluoromethane (S)	5.702	111	105298	49.09 ug/L	0.00
34) 1,4-Difluorobenzene (S)	6.760	114	369055	49.79 ug/L	0.00
42) Toluene-d8 (S)	8.274	98	434208	50.55 ug/L	0.00
61) 4-Bromofluorobenzene (S)	10.956	174	138238	48.88 ug/L	0.00
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.763	85	515	0.18 ug/L	88
3) Chloromethane	1.970	50	4555	1.80 ug/L	98
4) Vinyl Chloride	2.067	62	821	0.24 ug/L	84
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	0.000		0	N.D. 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.	
12) Acrolein	0.000		0	N.D.	
13) Methylene Chloride	3.897	84	1844	Below Cal	91
14) Acetone	0.000		0	N.D. d	
15) t-1,2-Dichloroethene	0.000		0	N.D. d	
16) n-Hexane	0.000		0	N.D. d	
17) Methyl-tert-butyl-ether	0.000		0	N.D. d	
18) 1,1-Dichloroethane	0.000		0	N.D. d	
19) Acrylonitrile	0.000		0	N.D. d	
20) Vinyl Acetate	0.000		0	N.D. d	
21) c-1,2-Dichloroethene	5.246	61	693	0.22 ug/L	96
22) 2,2-Dichloropropane	0.000		0	N.D. d	
23) Bromochloromethane	5.440	49	384	0.21 ug/L	85
24) Chloroform	5.525	83	881	0.23 ug/L	88
25) Carbon Tetrachloride	0.000		0	N.D. d	
26) Tetrahydrofuran	0.000		0	N.D. d	
27) 1,1,1-Trichloroethane	5.726	97	773	0.23 ug/L	86
29) 1,1-Dichloropropene	0.000		0	N.D. d	
30) 2-Butanone (MEK)	0.000		0	N.D. d	
31) Benzene	6.115	78	2296	0.24 ug/L	92
32) 1,2-Dichloroethane (EDC)	6.316	62	650	0.19 ug/L	78
33) iso-Butyl Alcohol	0.000		0	N.D. d	
35) Trichloroethene (TCE)	6.723	130	502	0.20 ug/L	92
36) Dibromomethane	7.173	93	151	0.10 ug/L	87
37) 1,2-Dichloropropane	7.283	63	567	0.24 ug/L	92
38) Bromodichloromethane	7.356	83	496	0.19 ug/L	82
40) 2-Chloroethyl Vinyl Ether	0.000		0	N.D.	
41) c-1,3-Dichloropropene	0.000		0	N.D. d	
43) Toluene	8.335	91	2342	0.23 ug/L	99
44) Tetrachloroethene (PCE)	8.779	166	500	0.18 ug/L	93
45) 4-Methyl-2-Pentanone (...	0.000		0	N.D. d	
46) t-1,3-Dichloropropene	0.000		0	N.D. d	
47) 1,1,2-Trichloroethane	8.973	97	455	0.22 ug/L	79
48) Dibromochloromethane	0.000		0	N.D. d	

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Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030517.D
Acq On : 5 Mar 2019 5:09 pm
Operator : MM
Sample : 9C05053-CAL2
Misc : 1X 5mL 0.2/0.4PPB VOCR
ALS Vial : 40 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:23:16 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) 1,3-Dichloropropane	0.000		0	N.D.	d		
50) 1,2-Dibromoethane (EDB)	9.393	107	394	0.18	ug/L		92
51) 2-Hexanone	0.000		0	N.D.	d		
52) Chlorobenzene	9.904	112	1411	0.21	ug/L	#	41
53) Ethylbenzene	9.940	91	2448	0.22	ug/L		94
54) 1,1,1,2-Tetrachloroethane	9.971	131	446	0.25	ug/L		96
55) m,p-Xylenes (2)	10.074	91	3414	0.39	ug/L		99
56) o-Xylene	10.451	91	1929	0.22	ug/L		98
57) Styrene	10.500	104	1118	0.17	ug/L		88
58) Bromoform	0.000		0	N.D.	d		
59) Isopropylbenzene	10.725	105	2318	0.22	ug/L		96
62) Bromobenzene	11.041	156	558	0.19	ug/L		87
63) n-Propylbenzene	11.072	91	2654	0.21	ug/L		100
64) 1,1,2,2-Tetrachloroethane	11.120	83	648	0.21	ug/L		87
65) 2-Chlorotoluene	11.193	126	552	0.22	ug/L		86
66) 1,3,5-Trimethylbenzene	11.224	105	1736	0.20	ug/L		93
67) 1,2,3-Trichloropropane	0.000		0	N.D.	d		
68) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
69) 4-Chlorotoluene	11.327	91	1703	0.22	ug/L		97
70) tert-Butylbenzene	11.479	91	1218	0.24	ug/L	#	79
71) 1,2,4-Trimethylbenzene	11.528	105	1967	0.22	ug/L		95
72) sec-Butylbenzene	11.619	105	2572	0.22	ug/L		97
73) 4-Isopropyltoluene	11.728	119	2132	0.22	ug/L		96
74) 1,3-Dichlorobenzene	11.783	146	1217	0.22	ug/L		98
75) 1,4-Dichlorobenzene	11.850	146	1250	0.22	ug/L	#	60
76) n-Butylbenzene	12.045	91	1836	0.23	ug/L		92
77) 1,2-Dichlorobenzene	12.166	146	1110	0.22	ug/L		94
78) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.	d		
79) Hexachlorobutadiene	13.297	223	254	0.20	ug/L		80
80) 1,2,4-Trichlorobenzene	13.328	180	712	0.21	ug/L		73
81) Naphthalene	0.000		0	N.D.	d		
82) 1,2,3-Trichlorobenzene	13.766	180	789	0.24	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030517.D
Acq On : 5 Mar 2019 5:09 pm
Operator : MM
Sample : 9C05053-CAL2
Misc : 1X 5mL 0.2/0.4PPB VOCR
ALS Vial : 40 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:07 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.200	168	252622	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.892	117	332859	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.838	152	173974	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.702	111	105298	49.09	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.760	114	369055	49.79	ug/L		0.00
42) Toluene-d8 (S)	8.274	98	434208	50.55	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.956	174	138238	48.88	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.763	85	515	0.18	ug/L		88
3) Chloromethane	1.970	50	4555	1.80	ug/L		98
4) Vinyl Chloride	2.067	62	821	0.24	ug/L		84
5) Bromomethane	2.438	96	1204	0.90	ug/L		86
6) Chloroethane	2.584	64	544	0.28	ug/L		67
7) Trichlorofluoromethane	2.736	101	764	0.19	ug/L		93
8) 1,1-Dichloroethene	3.283	61	649	0.20	ug/L	#	71
9) Carbon Disulfide	3.308	76	1410	0.23	ug/L		71
10) Freon 113	3.350	101	355	0.16	ug/L	#	72
11) Iodomethane	0.000		0	N.D.			
12) Acrolein	0.000		0	N.D.			
13) Methylene Chloride	3.897	84	1844	Below Cal			91
14) Acetone	3.952	43	3156	2.99	ug/L		100
15) t-1,2-Dichloroethene	4.074	61	664	0.21	ug/L	#	70
16) n-Hexane	0.000		0	N.D.			
17) Methyl-tert-butyl-ether	4.195	73	2338	0.36	ug/L		94
18) 1,1-Dichloroethane	4.694	63	901	0.23	ug/L	#	50
19) Acrylonitrile	4.737	53	62	0.05	ug/L	#	14
20) Vinyl Acetate	4.956	43	879	0.18	ug/L		74
21) c-1,2-Dichloroethene	5.246	61	693	0.22	ug/L		96
22) 2,2-Dichloropropane	5.349	77	1298	0.48	ug/L		87
23) Bromochloromethane	5.440	49	384	0.21	ug/L		85
24) Chloroform	5.525	83	881	0.23	ug/L		88
25) Carbon Tetrachloride	5.671	117	607	0.24	ug/L		85
26) Tetrahydrofuran	5.708	42	416	0.39	ug/L	#	49
27) 1,1,1-Trichloroethane	5.726	97	773	0.23	ug/L		86
29) 1,1-Dichloropropene	5.866	75	760	0.23	ug/L		84
30) 2-Butanone (MEK)	5.842	43	895	0.56	ug/L		52
31) Benzene	6.115	78	2296	0.24	ug/L		92
32) 1,2-Dichloroethane (EDC)	6.316	62	650	0.19	ug/L		78
33) iso-Butyl Alcohol	6.383	43	988	6.67	ug/L	#	43
35) Trichloroethene (TCE)	6.723	130	502	0.20	ug/L		92
36) Dibromomethane	7.173	93	151	0.10	ug/L		87
37) 1,2-Dichloropropane	7.283	63	567	0.24	ug/L		92
38) Bromodichloromethane	7.356	83	496	0.19	ug/L		82
40) 2-Chloroethyl Vinyl Ether	0.000		0	N.D.			
41) c-1,3-Dichloropropene	8.061	75	732	0.23	ug/L		90
43) Toluene	8.335	91	2342	0.23	ug/L		99
44) Tetrachloroethene (PCE)	8.779	166	500	0.18	ug/L		93
45) 4-Methyl-2-Pentanone (...	8.767	43	1296	0.43	ug/L		84
46) t-1,3-Dichloropropene	8.797	75	612	0.21	ug/L		52
47) 1,1,2-Trichloroethane	8.973	97	455	0.22	ug/L		79
48) Dibromochloromethane	9.162	129	389	0.35	ug/L	#	85

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030517.D
Acq On : 5 Mar 2019 5:09 pm
Operator : MM
Sample : 9C05053-CAL2
Misc : 1X 5mL 0.2/0.4PPB VOCR
ALS Vial : 40 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:07 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

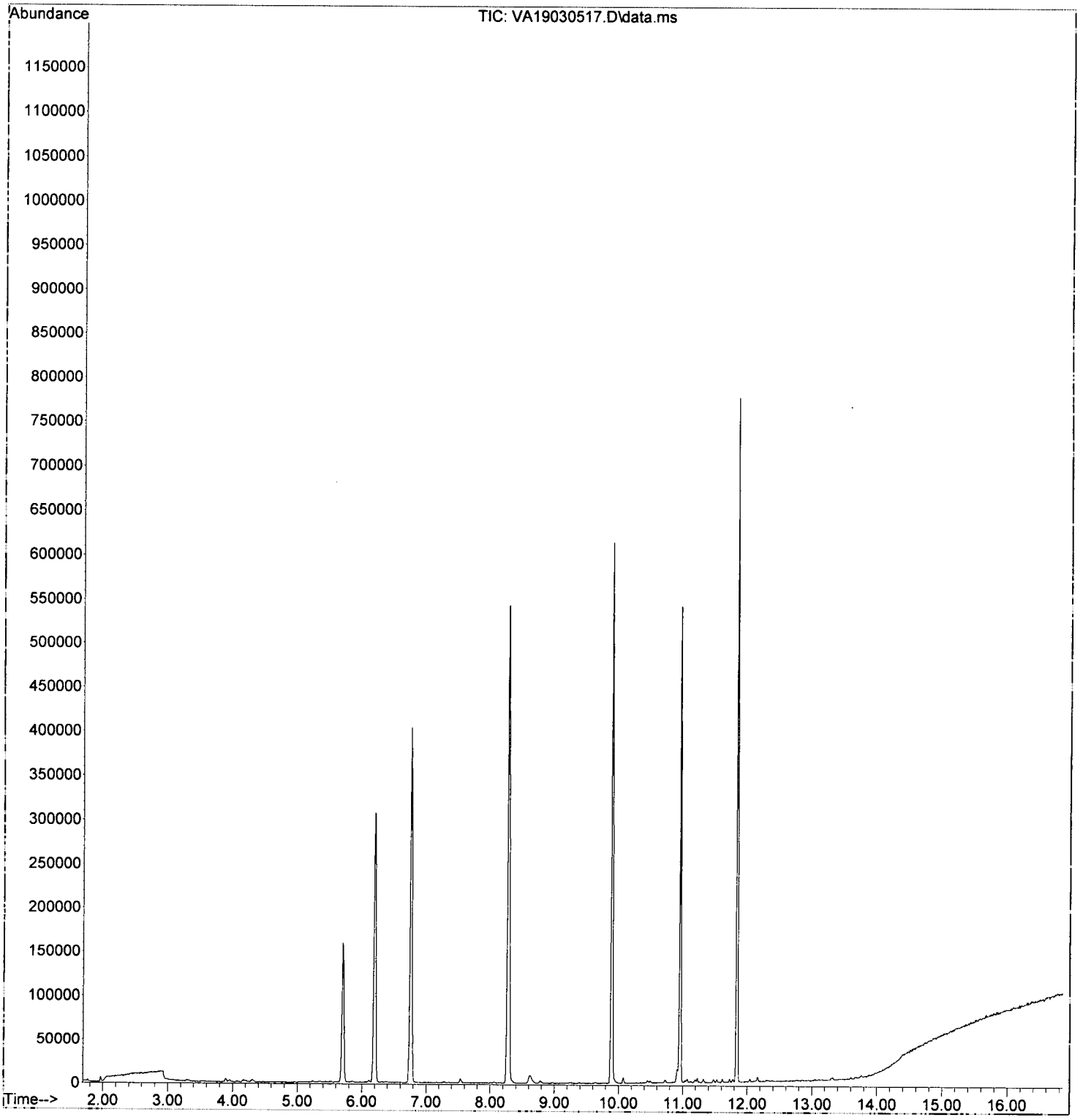
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) 1,3-Dichloropropane	9.259	76	829	0.22	ug/L	#	73
50) 1,2-Dibromoethane (EDB)	9.393	107	394	0.18	ug/L		92
51) 2-Hexanone	9.642	43	886	0.43	ug/L		74
52) Chlorobenzene	9.904	112	1411	0.21	ug/L	#	41
53) Ethylbenzene	9.940	91	2448	0.22	ug/L		94
54) 1,1,1,2-Tetrachloroethane	9.971	131	446	0.25	ug/L		96
55) m,p-Xylenes (2)	10.074	91	3414	0.39	ug/L		99
56) o-Xylene	10.451	91	1929	0.22	ug/L		98
57) Styrene	10.500	104	1118	0.17	ug/L		88
58) Bromoform	10.518	173	246	0.51	ug/L	#	37
59) Isopropylbenzene	10.725	105	2318	0.22	ug/L		96
62) Bromobenzene	11.041	156	558	0.19	ug/L		87
63) n-Propylbenzene	11.072	91	2654	0.21	ug/L		100
64) 1,1,2,2-Tetrachloroethane	11.120	83	648	0.21	ug/L		87
65) 2-Chlorotoluene	11.193	126	552	0.22	ug/L		86
66) 1,3,5-Trimethylbenzene	11.224	105	1736	0.20	ug/L		93
67) 1,2,3-Trichloropropane	11.230	110	207	0.20	ug/L	#	65
68) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
69) 4-Chlorotoluene	11.327	91	1703	0.22	ug/L		97
70) tert-Butylbenzene	11.479	91	1218	0.24	ug/L	#	79
71) 1,2,4-Trimethylbenzene	11.528	105	1967	0.22	ug/L		95
72) sec-Butylbenzene	11.619	105	2572	0.22	ug/L		97
73) 4-Isopropyltoluene	11.728	119	2132	0.22	ug/L		96
74) 1,3-Dichlorobenzene	11.783	146	1217	0.22	ug/L		98
75) 1,4-Dichlorobenzene	11.850	146	1250	0.22	ug/L	#	60
76) n-Butylbenzene	12.045	91	1836	0.23	ug/L		92
77) 1,2-Dichlorobenzene	12.166	146	1110	0.22	ug/L		94
78) 1,2-Dibromo-3-Chloropr...	12.780	157	40	0.06	ug/L	#	59
79) Hexachlorobutadiene	13.297	223	254	0.20	ug/L		80
80) 1,2,4-Trichlorobenzene	13.328	180	712	0.21	ug/L		73
81) Naphthalene	13.601	128	1332	0.59	ug/L		79
82) 1,2,3-Trichlorobenzene	13.766	180	789	0.24	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030517.D
Acq On : 5 Mar 2019 5:09 pm
Operator : MM
Sample : 9C05053-CAL2
Misc : 1X 5mL 0.2/0.4PPB VOCR
ALS Vial : 40 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:07 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030518.D
Acq On : 5 Mar 2019 5:37 pm
Operator : MM
Sample : 9C05053-CAL3
Misc : 1X 5mL 0.4/0.8PPB VOCR
ALS Vial : 41 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:25:46 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.195	168	240382	50.00	ug/L	0.00
39) Chlorobenzene-d5 (I)	9.892	117	314755	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4...	11.838	152	171084	50.00	ug/L	0.00
System Monitoring Compounds						
28) Dibromofluoromethane (S)	5.702	111	99858	48.92	ug/L	0.00
34) 1,4-Difluorobenzene (S)	6.760	114	347177	49.22	ug/L	0.00
42) Toluene-d8 (S)	8.275	98	410210	50.50	ug/L	0.00
61) 4-Bromofluorobenzene (S)	10.957	174	134229	48.27	ug/L	0.00
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.766	85	1114	0.42	ug/L	92
3) Chloromethane	1.967	50	6903	2.87	ug/L	96
4) Vinyl Chloride	2.071	62	1479	0.45	ug/L	90
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	2.575	64	957	0.51	ug/L	82
7) Trichlorofluoromethane	2.739	101	1616	0.43	ug/L	95
8) 1,1-Dichloroethene	3.281	61	1323	0.43	ug/L	94
9) Carbon Disulfide	3.305	76	2528	0.43	ug/L	83
10) Freon 113	3.348	101	847	0.41	ug/L	93
11) Iodomethane	0.000		0	N.D.		
12) Acrolein	0.000		0	N.D.	d	
13) Methylene Chloride	3.895	84	2106	Below Cal		86
14) Acetone	0.000		0	N.D.	d	
15) t-1,2-Dichloroethene	4.071	61	1243	0.42	ug/L	92
16) n-Hexane	0.000		0	N.D.	d	
17) Methyl-tert-butyl-ether	4.205	73	3850	0.63	ug/L	96
18) 1,1-Dichloroethane	4.692	63	1555	0.41	ug/L	74
19) Acrylonitrile	4.734	53	427	0.38	ug/L	95
20) Vinyl Acetate	4.965	43	1686	0.36	ug/L	68
21) c-1,2-Dichloroethene	5.240	61	1281	0.43	ug/L	87
22) 2,2-Dichloropropane	0.000		0	N.D.	d	
23) Bromochloromethane	5.435	49	727	0.43	ug/L	90
24) Chloroform	5.514	83	1644	0.45	ug/L	91
25) Carbon Tetrachloride	5.660	117	1174	0.49	ug/L	95
26) Tetrahydrofuran	0.000		0	N.D.	d	
27) 1,1,1-Trichloroethane	5.721	97	1386	0.44	ug/L	89
29) 1,1-Dichloropropene	5.867	75	1279	0.41	ug/L	83
30) 2-Butanone (MEK)	0.000		0	N.D.	d	
31) Benzene	6.110	78	4039	0.44	ug/L	94
32) 1,2-Dichloroethane (EDC)	6.317	62	1258	0.39	ug/L	88
33) iso-Butyl Alcohol	0.000		0	N.D.	d	
35) Trichloroethene (TCE)	6.724	130	957	0.39	ug/L	96
36) Dibromomethane	7.174	93	525	0.37	ug/L	96
37) 1,2-Dichloropropane	7.283	63	949	0.43	ug/L	89
38) Bromodichloromethane	7.356	83	947	0.37	ug/L	88
40) 2-Chloroethyl Vinyl Ether	0.000		0	N.D.		
41) c-1,3-Dichloropropene	8.062	75	1418	0.47	ug/L	76
43) Toluene	8.329	91	4041	0.42	ug/L	91
44) Tetrachloroethene (PCE)	8.779	166	1076	0.42	ug/L	88
45) 4-Methyl-2-Pentanone (...	8.773	43	2303	0.81	ug/L	90
46) t-1,3-Dichloropropene	8.798	75	1286	0.46	ug/L	94
47) 1,1,2-Trichloroethane	8.974	97	804	0.40	ug/L	86
48) Dibromochloromethane	9.156	129	812	0.61	ug/L	95

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Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030518.D
Acq On : 5 Mar 2019 5:37 pm
Operator : MM
Sample : 9C05053-CAL3
Misc : 1X 5mL 0.4/0.8PPB VOCR
ALS Vial : 41 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:25:46 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) 1,3-Dichloropropane	9.254	76	1474	0.42	ug/L		83
50) 1,2-Dibromoethane (EDB)	9.388	107	769	0.36	ug/L		89
51) 2-Hexanone	9.637	43	1546	0.79	ug/L		93
52) Chlorobenzene	9.905	112	2734	0.44	ug/L	#	68
53) Ethylbenzene	9.941	91	4329	0.41	ug/L		97
54) 1,1,1,2-Tetrachloroethane	9.965	131	786	0.46	ug/L		79
55) m,p-Xylenes (2)	10.075	91	6682	0.82	ug/L		98
56) o-Xylene	10.452	91	3431	0.42	ug/L		95
57) Styrene	10.500	104	2103	0.34	ug/L		89
58) Bromoform	10.519	173	539	0.77	ug/L		79
59) Isopropylbenzene	10.725	105	4244	0.42	ug/L		95
62) Bromobenzene	11.042	156	1190	0.42	ug/L		92
63) n-Propylbenzene	11.066	91	5468	0.44	ug/L		98
64) 1,1,2,2-Tetrachloroethane	11.115	83	1368	0.45	ug/L		79
65) 2-Chlorotoluene	11.194	126	1083	0.44	ug/L	#	78
66) 1,3,5-Trimethylbenzene	11.224	105	3568	0.42	ug/L		98
67) 1,2,3-Trichloropropane	11.230	110	428	0.41	ug/L	#	70
68) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
69) 4-Chlorotoluene	11.321	91	3206	0.43	ug/L		90
70) tert-Butylbenzene	11.480	91	2173	0.43	ug/L		98
71) 1,2,4-Trimethylbenzene	11.528	105	3403	0.40	ug/L		97
72) sec-Butylbenzene	11.619	105	4899	0.43	ug/L		98
73) 4-Isopropyltoluene	11.729	119	4188	0.44	ug/L		97
74) 1,3-Dichlorobenzene	11.784	146	2209	0.41	ug/L		92
75) 1,4-Dichlorobenzene	11.851	146	2394	0.43	ug/L		82
76) n-Butylbenzene	12.045	91	3544	0.44	ug/L		91
77) 1,2-Dichlorobenzene	12.167	146	2204	0.44	ug/L		93
78) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.	d		
79) Hexachlorobutadiene	13.298	223	541	0.44	ug/L		93
80) 1,2,4-Trichlorobenzene	13.328	180	1536	0.47	ug/L		95
81) Naphthalene	13.602	128	2661	0.75	ug/L		91
82) 1,2,3-Trichlorobenzene	13.766	180	1516	0.47	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030518.D
Acq On : 5 Mar 2019 5:37 pm
Operator : MM
Sample : 9C05053-CAL3
Misc : 1X 5mL 0.4/0.8PPB VOCR
ALS Vial : 41 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:09 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.195	168	240382	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.892	117	314755	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.838	152	171084	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.702	111	99858	48.92	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.760	114	347177	49.22	ug/L		0.00
42) Toluene-d8 (S)	8.275	98	410210	50.50	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.957	174	134229	48.27	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.766	85	1114	0.42	ug/L		92
3) Chloromethane	1.967	50	6903	2.87	ug/L		96
4) Vinyl Chloride	2.071	62	1479	0.45	ug/L		90
5) Bromomethane	2.442	96	1442	1.13	ug/L		69
6) Chloroethane	2.575	64	957	0.51	ug/L		82
7) Trichlorofluoromethane	2.739	101	1616	0.43	ug/L		95
8) 1,1-Dichloroethene	3.281	61	1323	0.43	ug/L		94
9) Carbon Disulfide	3.305	76	2528	0.43	ug/L		83
10) Freon 113	3.348	101	847	0.41	ug/L		93
11) Iodomethane	0.000		0	N.D.			
12) Acrolein	3.640	56	118	0.32	ug/L		68
13) Methylene Chloride	3.895	84	2106	Below Cal			86
14) Acetone	3.956	43	1813	1.80	ug/L		94
15) t-1,2-Dichloroethene	4.071	61	1243	0.42	ug/L		92
16) n-Hexane	4.163	86	55	0.10	ug/L	#	20
17) Methyl-tert-butyl-ether	4.205	73	3850	0.63	ug/L		96
18) 1,1-Dichloroethane	4.692	63	1555	0.41	ug/L		74
19) Acrylonitrile	4.734	53	427	0.38	ug/L		95
20) Vinyl Acetate	4.965	43	1686	0.36	ug/L		68
21) c-1,2-Dichloroethene	5.240	61	1281	0.43	ug/L		87
22) 2,2-Dichloropropane	5.343	77	1767	0.69	ug/L		79
23) Bromochloromethane	5.435	49	727	0.43	ug/L		90
24) Chloroform	5.514	83	1644	0.45	ug/L		91
25) Carbon Tetrachloride	5.660	117	1174	0.49	ug/L		95
26) Tetrahydrofuran	5.702	42	622	0.62	ug/L		77
27) 1,1,1-Trichloroethane	5.721	97	1386	0.44	ug/L		89
29) 1,1-Dichloropropene	5.867	75	1279	0.41	ug/L		83
30) 2-Butanone (MEK)	5.842	43	1613	1.07	ug/L		83
31) Benzene	6.110	78	4039	0.44	ug/L		94
32) 1,2-Dichloroethane (EDC)	6.317	62	1258	0.39	ug/L		88
33) iso-Butyl Alcohol	6.365	43	1509	10.70	ug/L		75
35) Trichloroethene (TCE)	6.724	130	957	0.39	ug/L		96
36) Dibromomethane	7.174	93	525	0.37	ug/L		96
37) 1,2-Dichloropropane	7.283	63	949	0.43	ug/L		89
38) Bromodichloromethane	7.356	83	947	0.37	ug/L		88
40) 2-Chloroethyl Vinyl Ether	0.000		0	N.D.			
41) c-1,3-Dichloropropene	8.062	75	1418	0.47	ug/L		76
43) Toluene	8.329	91	4041	0.42	ug/L		91
44) Tetrachloroethene (PCE)	8.779	166	1076	0.42	ug/L		88
45) 4-Methyl-2-Pentanone (...	8.773	43	2303	0.81	ug/L		90
46) t-1,3-Dichloropropene	8.798	75	1286	0.46	ug/L		94
47) 1,1,2-Trichloroethane	8.974	97	804	0.40	ug/L		86
48) Dibromochloromethane	9.156	129	812	0.61	ug/L		95

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030518.D
Acq On : 5 Mar 2019 5:37 pm
Operator : MM
Sample : 9C05053-CAL3
Misc : 1X 5mL 0.4/0.8PPB VOCR
ALS Vial : 41 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:09 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

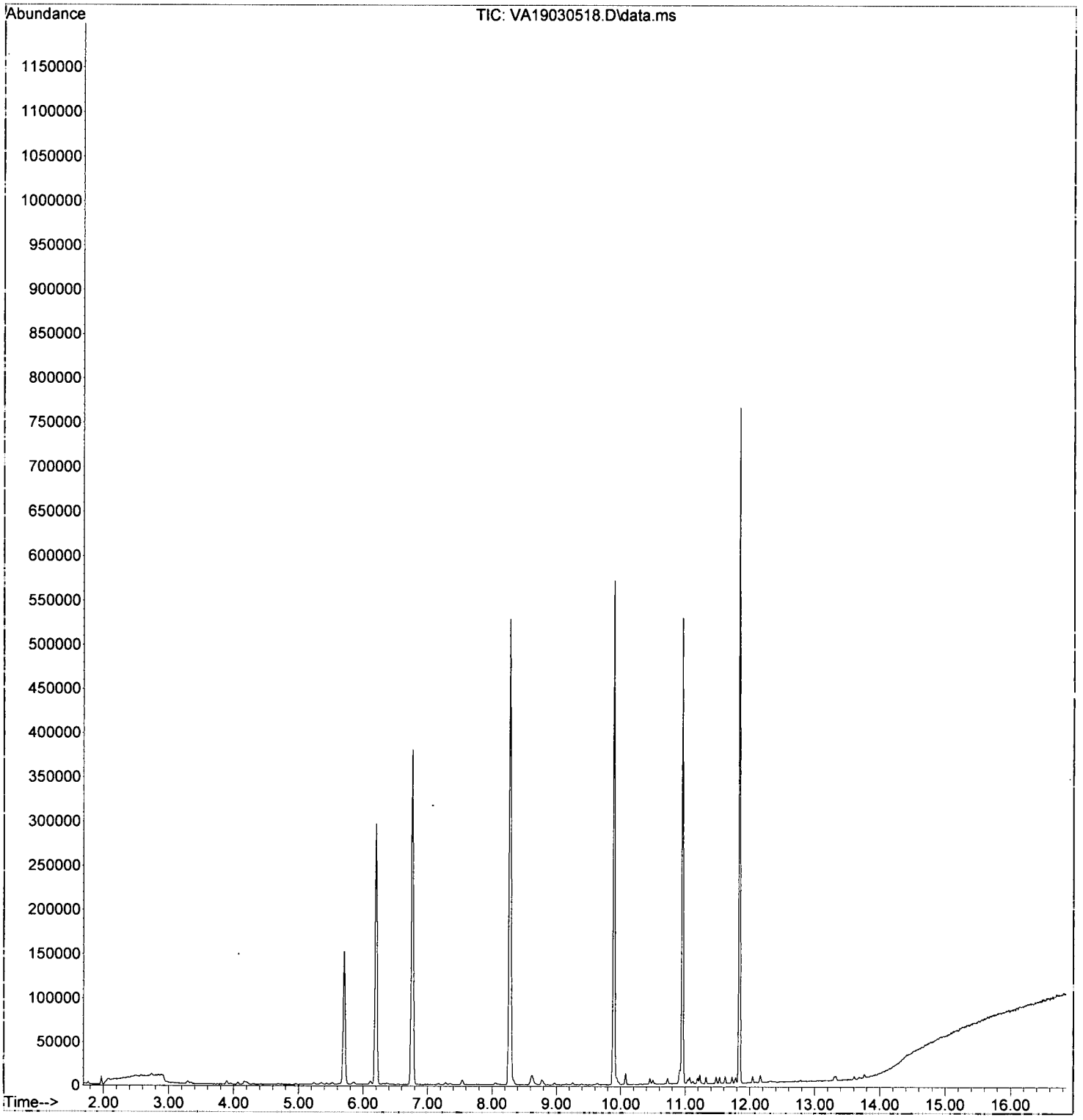
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) 1,3-Dichloropropane	9.254	76	1474	0.42	ug/L		83
50) 1,2-Dibromoethane (EDB)	9.388	107	769	0.36	ug/L		89
51) 2-Hexanone	9.637	43	1546	0.79	ug/L		93
52) Chlorobenzene	9.905	112	2734	0.44	ug/L	#	68
53) Ethylbenzene	9.941	91	4329	0.41	ug/L		97
54) 1,1,1,2-Tetrachloroethane	9.965	131	786	0.46	ug/L		79
55) m,p-Xylenes (2)	10.075	91	6682	0.82	ug/L		98
56) o-Xylene	10.452	91	3431	0.42	ug/L		95
57) Styrene	10.500	104	2103	0.34	ug/L		89
58) Bromoform	10.519	173	539	0.77	ug/L		79
59) Isopropylbenzene	10.725	105	4244	0.42	ug/L		95
62) Bromobenzene	11.042	156	1190	0.42	ug/L		92
63) n-Propylbenzene	11.066	91	5468	0.44	ug/L		98
64) 1,1,2,2-Tetrachloroethane	11.115	83	1368	0.45	ug/L		79
65) 2-Chlorotoluene	11.194	126	1083	0.44	ug/L	#	78
66) 1,3,5-Trimethylbenzene	11.224	105	3568	0.42	ug/L		98
67) 1,2,3-Trichloropropane	11.230	110	428	0.41	ug/L	#	70
68) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
69) 4-Chlorotoluene	11.321	91	3206	0.43	ug/L		90
70) tert-Butylbenzene	11.480	91	2173	0.43	ug/L		98
71) 1,2,4-Trimethylbenzene	11.528	105	3403	0.40	ug/L		97
72) sec-Butylbenzene	11.619	105	4899	0.43	ug/L		98
73) 4-Isopropyltoluene	11.729	119	4188	0.44	ug/L		97
74) 1,3-Dichlorobenzene	11.784	146	2209	0.41	ug/L		92
75) 1,4-Dichlorobenzene	11.851	146	2394	0.43	ug/L		82
76) n-Butylbenzene	12.045	91	3544	0.44	ug/L		91
77) 1,2-Dichlorobenzene	12.167	146	2204	0.44	ug/L		93
78) 1,2-Dibromo-3-Chloropr...	12.775	157	239	0.36	ug/L	#	50
79) Hexachlorobutadiene	13.298	223	541	0.44	ug/L		93
80) 1,2,4-Trichlorobenzene	13.328	180	1536	0.47	ug/L		95
81) Naphthalene	13.602	128	2661	0.75	ug/L		91
82) 1,2,3-Trichlorobenzene	13.766	180	1516	0.47	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030518.D
Acq On : 5 Mar 2019 5:37 pm
Operator : MM
Sample : 9C05053-CAL3
Misc : 1X 5mL 0.4/0.8PPB VOCR
ALS Vial : 41 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:09 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030519.D
Acq On : 5 Mar 2019 6:06 pm
Operator : MM
Sample : 9C05053-CAL4
Misc : 1X 5mL 1/2PPB VOCR
ALS Vial : 42 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:27:19 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.195	168	246187	50.00	ug/L	0.00
39) Chlorobenzene-d5 (I)	9.892	117	324088	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4...	11.838	152	177619	50.00	ug/L	0.00
System Monitoring Compounds						
28) Dibromofluoromethane (S)	5.702	111	101482	48.55	ug/L	0.00
34) 1,4-Difluorobenzene (S)	6.760	114	353931	49.00	ug/L	0.00
42) Toluene-d8 (S)	8.274	98	423430	50.63	ug/L	0.00
61) 4-Bromofluorobenzene (S)	10.956	174	139604	48.35	ug/L	0.00
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.767	85	2565	0.93	ug/L	99
3) Chloromethane	1.968	50	12966	5.26	ug/L	99
4) Vinyl Chloride	2.071	62	3643	1.07	ug/L	97
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	2.576	64	2389	1.25	ug/L	90
7) Trichlorofluoromethane	2.740	101	4271	1.10	ug/L	96
8) 1,1-Dichloroethene	3.281	61	3305	1.04	ug/L	98
9) Carbon Disulfide	3.306	76	6407	1.07	ug/L	98
10) Freon 113	3.348	101	2127	1.01	ug/L	91
11) Iodomethane	0.000		0	N.D.	d	
12) Acrolein	0.000		0	N.D.	d	
13) Methylene Chloride	3.896	84	3536	Below Cal		89
14) Acetone	3.950	43	3546	3.45	ug/L	93
15) t-1,2-Dichloroethene	4.066	61	3135	1.03	ug/L	95
16) n-Hexane	0.000		0	N.D.	d	
17) Methyl-tert-butyl-ether	4.200	73	8258	1.31	ug/L	99
18) 1,1-Dichloroethane	4.692	63	4183	1.08	ug/L	99
19) Acrylonitrile	4.735	53	1087	0.95	ug/L	83
20) Vinyl Acetate	4.960	43	4564	0.95	ug/L	90
21) c-1,2-Dichloroethene	5.234	61	3039	1.00	ug/L	93
22) 2,2-Dichloropropane	5.349	77	3587	1.36	ug/L	95
23) Bromochloromethane	5.435	49	1829	1.05	ug/L	89
24) Chloroform	5.520	83	3950	1.05	ug/L	93
25) Carbon Tetrachloride	5.660	117	2868	1.18	ug/L	99
26) Tetrahydrofuran	0.000		0	N.D.	d	
27) 1,1,1-Trichloroethane	5.726	97	3632	1.11	ug/L	95
29) 1,1-Dichloropropene	5.860	75	3430	1.06	ug/L	95
30) 2-Butanone (MEK)	5.830	43	3588	2.32	ug/L	89
31) Benzene	6.116	78	9758	1.03	ug/L	93
32) 1,2-Dichloroethane (EDC)	6.316	62	3343	1.02	ug/L	96
33) iso-Butyl Alcohol	6.353	43	3368	23.32	ug/L	94
35) Trichloroethene (TCE)	6.730	130	2600	1.04	ug/L	94
36) Dibromomethane	7.174	93	1393	0.96	ug/L	87
37) 1,2-Dichloropropane	7.277	63	2422	1.07	ug/L	94
38) Bromodichloromethane	7.350	83	2795	1.07	ug/L	93
40) 2-Chloroethyl Vinyl Ether	0.000		0	N.D.		
41) c-1,3-Dichloropropene	8.056	75	3362	1.08	ug/L	92
43) Toluene	8.335	91	10454	1.06	ug/L	97
44) Tetrachloroethene (PCE)	8.779	166	2759	1.04	ug/L	96
45) 4-Methyl-2-Pentanone (...	8.767	43	5583	1.92	ug/L	91
46) t-1,3-Dichloropropene	8.804	75	3121	1.09	ug/L	87
47) 1,1,2-Trichloroethane	8.974	97	2210	1.07	ug/L	97
48) Dibromochloromethane	9.156	129	2071	1.31	ug/L	95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030519.D
Acq On : 5 Mar 2019 6:06 pm
Operator : MM
Sample : 9C05053-CAL4
Misc : 1X 5mL 1/2PPB VOCR
ALS Vial : 42 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:27:19 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 1,3-Dichloropropane	9.254	76	3771	1.05	ug/L	83
50) 1,2-Dibromoethane (EDB)	9.393	107	2109	0.97	ug/L	90
51) 2-Hexanone	9.631	43	3500	1.73	ug/L	97
52) Chlorobenzene	9.910	112	7059	1.10	ug/L	97
53) Ethylbenzene	9.941	91	11734	1.07	ug/L	99
54) 1,1,1,2-Tetrachloroethane	9.971	131	2009	1.15	ug/L	88
55) m,p-Xylenes (2)	10.075	91	17580	2.09	ug/L	98
56) o-Xylene	10.458	91	8547	1.01	ug/L	97
57) Styrene	10.500	104	5758	0.91	ug/L	94
58) Bromoform	10.512	173	1227	1.32	ug/L	86
59) Isopropylbenzene	10.725	105	11386	1.09	ug/L	97
62) Bromobenzene	11.042	156	2993	1.02	ug/L	96
63) n-Propylbenzene	11.072	91	13679	1.06	ug/L	99
64) 1,1,2,2-Tetrachloroethane	11.121	83	3244	1.02	ug/L	91
65) 2-Chlorotoluene	11.194	126	2776	1.07	ug/L	93
66) 1,3,5-Trimethylbenzene	11.224	105	9353	1.05	ug/L	98
67) 1,2,3-Trichloropropane	11.224	110	1036	0.96	ug/L	93
68) t-1,4-Dichloro-2-butene	0.000		0	N.D.	d	
69) 4-Chlorotoluene	11.321	91	8235	1.05	ug/L	90
70) tert-Butylbenzene	11.479	91	5615	1.06	ug/L	96
71) 1,2,4-Trimethylbenzene	11.534	105	9159	1.03	ug/L	96
72) sec-Butylbenzene	11.619	105	12934	1.10	ug/L	98
73) 4-Isopropyltoluene	11.729	119	10606	1.08	ug/L	95
74) 1,3-Dichlorobenzene	11.783	146	5899	1.07	ug/L	98
75) 1,4-Dichlorobenzene	11.850	146	6044	1.04	ug/L	92
76) n-Butylbenzene	12.045	91	9163	1.11	ug/L	94
77) 1,2-Dichlorobenzene	12.167	146	5643	1.08	ug/L	97
78) 1,2-Dibromo-3-Chloropr...	12.775	157	747	1.08	ug/L	95
79) Hexachlorobutadiene	13.304	223	1281	1.00	ug/L	92
80) 1,2,4-Trichlorobenzene	13.328	180	3468	1.01	ug/L	95
81) Naphthalene	13.608	128	7333	1.27	ug/L	97
82) 1,2,3-Trichlorobenzene	13.766	180	3550	1.05	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030519.D
Acq On : 5 Mar 2019 6:06 pm
Operator : MM
Sample : 9C05053-CAL4
Misc : 1X 5mL 1/2PPB VOCR
ALS Vial : 42 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:11 2019
Quant Method : C:\msdchem\1\METHODS\~~VA190306~~W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.195	168	246187	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.892	117	324088	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.838	152	177619	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.702	111	101482	48.55	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.760	114	353931	49.00	ug/L		0.00
42) Toluene-d8 (S)	8.274	98	423430	50.63	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.956	174	139604	48.35	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.767	85	2565	0.93	ug/L		99
3) Chloromethane	1.968	50	12966	5.26	ug/L		99
4) Vinyl Chloride	2.071	62	3643	1.07	ug/L		97
5) Bromomethane	2.436	96	1843	1.41	ug/L		80
6) Chloroethane	2.576	64	2389	1.25	ug/L		90
7) Trichlorofluoromethane	2.740	101	4271	1.10	ug/L		96
8) 1,1-Dichloroethene	3.281	61	3305	1.04	ug/L		98
9) Carbon Disulfide	3.306	76	6407	1.07	ug/L		98
10) Freon 113	3.348	101	2127	1.01	ug/L		91
11) Iodomethane	3.427	142	189	0.79	ug/L	#	47
12) Acrolein	3.640	56	456	1.22	ug/L		93
13) Methylene Chloride	3.896	84	3536	Below Cal			89
14) Acetone	3.950	43	3546	3.45	ug/L		93
15) t-1,2-Dichloroethene	4.066	61	3135	1.03	ug/L		95
16) n-Hexane	4.169	86	562	0.97	ug/L	#	57
17) Methyl-tert-butyl-ether	4.200	73	8258	1.31	ug/L		99
18) 1,1-Dichloroethane	4.692	63	4183	1.08	ug/L		99
19) Acrylonitrile	4.735	53	1087	0.95	ug/L		83
20) Vinyl Acetate	4.960	43	4564	0.95	ug/L		90
21) c-1,2-Dichloroethene	5.234	61	3039	1.00	ug/L		93
22) 2,2-Dichloropropane	5.349	77	3587	1.36	ug/L		95
23) Bromochloromethane	5.435	49	1829	1.05	ug/L		89
24) Chloroform	5.520	83	3950	1.05	ug/L		93
25) Carbon Tetrachloride	5.660	117	2868	1.18	ug/L		99
26) Tetrahydrofuran	5.708	42	1476	1.44	ug/L		92
27) 1,1,1-Trichloroethane	5.726	97	3632	1.11	ug/L		95
29) 1,1-Dichloropropene	5.860	75	3430	1.06	ug/L		95
30) 2-Butanone (MEK)	5.830	43	3588	2.32	ug/L		89
31) Benzene	6.116	78	9758	1.03	ug/L		93
32) 1,2-Dichloroethane (EDC)	6.316	62	3343	1.02	ug/L		96
33) iso-Butyl Alcohol	6.353	43	3368	23.32	ug/L		94
35) Trichloroethene (TCE)	6.730	130	2600	1.04	ug/L		94
36) Dibromomethane	7.174	93	1393	0.96	ug/L		87
37) 1,2-Dichloropropane	7.277	63	2422	1.07	ug/L		94
38) Bromodichloromethane	7.350	83	2795	1.07	ug/L		93
40) 2-Chloroethyl Vinyl Ether	0.000		0	N.D.			
41) c-1,3-Dichloropropene	8.056	75	3362	1.08	ug/L		92
43) Toluene	8.335	91	10454	1.06	ug/L		97
44) Tetrachloroethene (PCE)	8.779	166	2759	1.04	ug/L		96
45) 4-Methyl-2-Pentanone (...	8.767	43	5583	1.92	ug/L		91
46) t-1,3-Dichloropropene	8.804	75	3121	1.09	ug/L		87
47) 1,1,2-Trichloroethane	8.974	97	2210	1.07	ug/L		97
48) Dibromochloromethane	9.156	129	2071	1.31	ug/L		95

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030519.D
Acq On : 5 Mar 2019 6:06 pm
Operator : MM
Sample : 9C05053-CAL4
Misc : 1X 5mL 1/2PPB VOCR
ALS Vial : 42 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:11 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

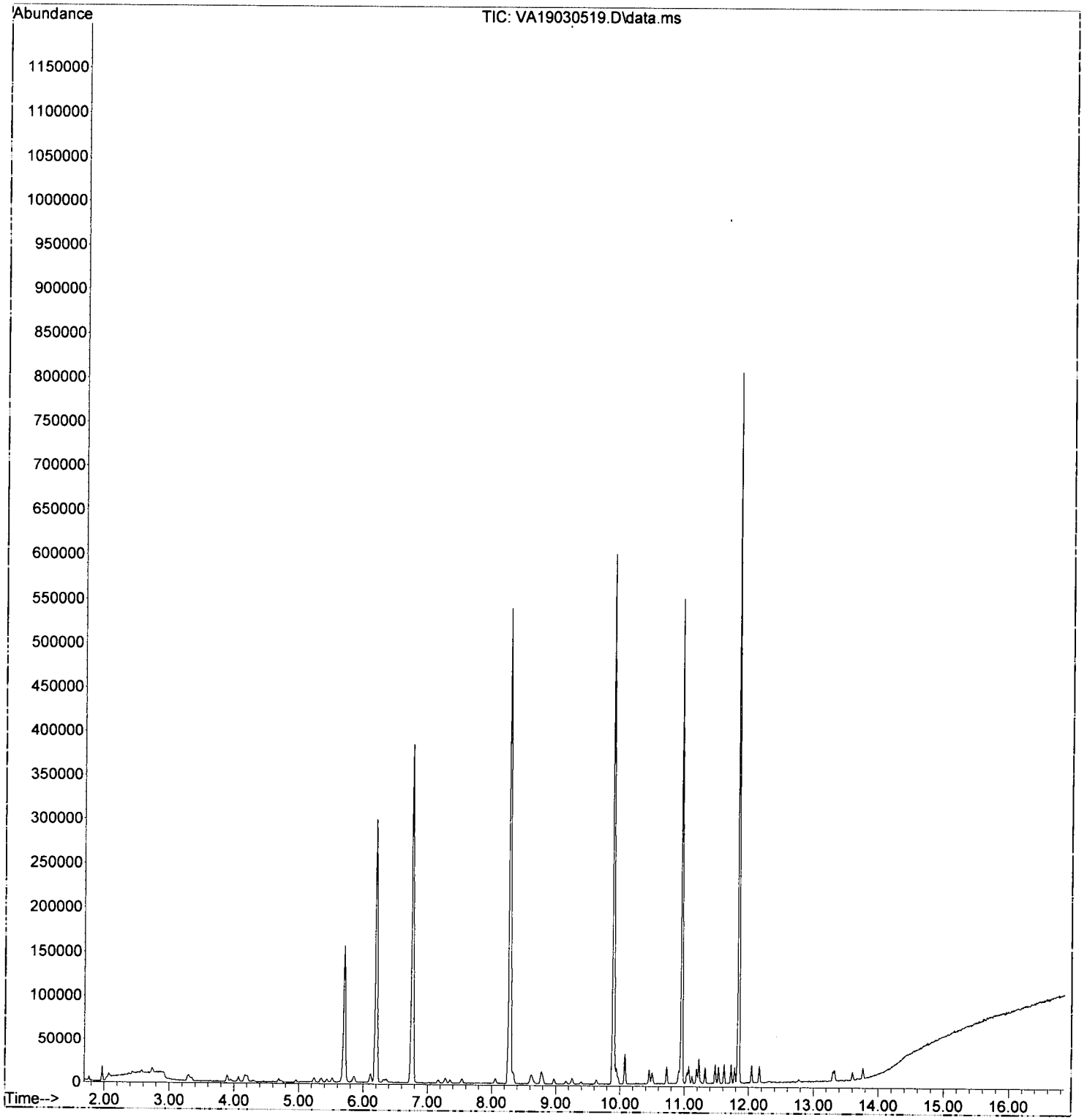
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) 1,3-Dichloropropane	9.254	76	3771	1.05	ug/L		83
50) 1,2-Dibromoethane (EDB)	9.393	107	2109	0.97	ug/L		90
51) 2-Hexanone	9.631	43	3500	1.73	ug/L		97
52) Chlorobenzene	9.910	112	7059	1.10	ug/L		97
53) Ethylbenzene	9.941	91	11734	1.07	ug/L		99
54) 1,1,1,2-Tetrachloroethane	9.971	131	2009	1.15	ug/L		88
55) m,p-Xylenes (2)	10.075	91	17580	2.09	ug/L		98
56) o-Xylene	10.458	91	8547	1.01	ug/L		97
57) Styrene	10.500	104	5758	0.91	ug/L		94
58) Bromoform	10.512	173	1227	1.32	ug/L		86
59) Isopropylbenzene	10.725	105	11386	1.09	ug/L		97
62) Bromobenzene	11.042	156	2993	1.02	ug/L		96
63) n-Propylbenzene	11.072	91	13679	1.06	ug/L		99
64) 1,1,2,2-Tetrachloroethane	11.121	83	3244	1.02	ug/L		91
65) 2-Chlorotoluene	11.194	126	2776	1.07	ug/L		93
66) 1,3,5-Trimethylbenzene	11.224	105	9353	1.05	ug/L		98
67) 1,2,3-Trichloropropane	11.224	110	1036	0.96	ug/L		93
68) t-1,4-Dichloro-2-butene	11.260	88	154	1.10	ug/L	#	45
69) 4-Chlorotoluene	11.321	91	8235	1.05	ug/L		90
70) tert-Butylbenzene	11.479	91	5615	1.06	ug/L		96
71) 1,2,4-Trimethylbenzene	11.534	105	9159	1.03	ug/L		96
72) sec-Butylbenzene	11.619	105	12934	1.10	ug/L		98
73) 4-Isopropyltoluene	11.729	119	10606	1.08	ug/L		95
74) 1,3-Dichlorobenzene	11.783	146	5899	1.07	ug/L		98
75) 1,4-Dichlorobenzene	11.850	146	6044	1.04	ug/L		92
76) n-Butylbenzene	12.045	91	9163	1.11	ug/L		94
77) 1,2-Dichlorobenzene	12.167	146	5643	1.08	ug/L		97
78) 1,2-Dibromo-3-Chloropr...	12.775	157	747	1.08	ug/L		95
79) Hexachlorobutadiene	13.304	223	1281	1.00	ug/L		92
80) 1,2,4-Trichlorobenzene	13.328	180	3468	1.01	ug/L		95
81) Naphthalene	13.608	128	7333	1.27	ug/L		97
82) 1,2,3-Trichlorobenzene	13.766	180	3550	1.05	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030519.D
Acq On : 5 Mar 2019 6:06 pm
Operator : MM
Sample : 9C05053-CAL4
Misc : 1X 5mL 1/2PPB VOCR
ALS Vial : 42 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:11 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030520.D
Acq On : 5 Mar 2019 6:34 pm
Operator : MM
Sample : 9C05053-CAL5
Misc : 1X 5mL 2/4PPB VOCR
ALS Vial : 43 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:28:05 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.195	168	248010	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.892	117	324771	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.838	152	174574	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.702	111	102685	48.76	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.760	114	361508	49.68	ug/L		0.00
42) Toluene-d8 (S)	8.275	98	424288	50.62	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.957	174	136256	48.02	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.764	85	5935	2.14	ug/L		92
3) Chloromethane	1.970	50	15645	6.30	ug/L		97
4) Vinyl Chloride	2.068	62	7336	2.14	ug/L		97
5) Bromomethane	0.000		0	N.D.	d		
6) Chloroethane	2.579	64	4634	2.40	ug/L		97
7) Trichlorofluoromethane	2.743	101	8520	2.18	ug/L		91
8) 1,1-Dichloroethene	3.284	61	6903	2.16	ug/L		97
9) Carbon Disulfide	3.308	76	13481	2.23	ug/L		99
10) Freon 113	3.339	101	4663	2.20	ug/L		91
11) Iodomethane	0.000		0	N.D.	d		
12) Acrolein	3.637	56	1053	2.79	ug/L		86
13) Methylene Chloride	3.898	84	6092	1.15	ug/L		94
14) Acetone	3.953	43	4751	4.58	ug/L		92
15) t-1,2-Dichloroethene	4.069	61	6733	2.19	ug/L		97
16) n-Hexane	4.166	86	1312	2.26	ug/L	#	80
17) Methyl-tert-butyl-ether	4.202	73	16064	2.53	ug/L		100
18) 1,1-Dichloroethane	4.695	63	8471	2.17	ug/L		98
19) Acrylonitrile	4.731	53	2221	1.93	ug/L		92
20) Vinyl Acetate	4.956	43	7468	1.55	ug/L		97
21) c-1,2-Dichloroethene	5.240	61	6518	2.12	ug/L		93
22) 2,2-Dichloropropane	5.350	77	6916	2.60	ug/L		91
23) Bromochloromethane	5.435	49	3968	2.26	ug/L		86
24) Chloroform	5.520	83	8361	2.20	ug/L		100
25) Carbon Tetrachloride	5.666	117	5725	2.34	ug/L		97
26) Tetrahydrofuran	5.702	42	2425	2.34	ug/L		94
27) 1,1,1-Trichloroethane	5.739	97	7296	2.22	ug/L		99
29) 1,1-Dichloropropene	5.860	75	6625	2.04	ug/L		97
30) 2-Butanone (MEK)	5.836	43	6522	4.19	ug/L		94
31) Benzene	6.116	78	19565	2.05	ug/L		98
32) 1,2-Dichloroethane (EDC)	6.316	62	6532	1.97	ug/L		100
33) iso-Butyl Alcohol	6.365	43	7291	50.11	ug/L		94
35) Trichloroethene (TCE)	6.730	130	5252	2.08	ug/L		85
36) Dibromomethane	7.174	93	2816	1.93	ug/L		97
37) 1,2-Dichloropropane	7.283	63	4797	2.11	ug/L		88
38) Bromodichloromethane	7.356	83	5697	2.17	ug/L		98
40) 2-Chloroethyl Vinyl Ether	0.000		0	N.D.			
41) c-1,3-Dichloropropene	8.056	75	7144	2.28	ug/L		90
43) Toluene	8.335	91	20671	2.09	ug/L		95
44) Tetrachloroethene (PCE)	8.779	166	5554	2.09	ug/L		97
45) 4-Methyl-2-Pentanone (...	8.773	43	10923	3.74	ug/L		95
46) t-1,3-Dichloropropene	8.798	75	6302	2.19	ug/L		98
47) 1,1,2-Trichloroethane	8.974	97	4732	2.30	ug/L		94
48) Dibromochloromethane	9.156	129	4288	2.55	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030520.D
Acq On : 5 Mar 2019 6:34 pm
Operator : MM
Sample : 9C05053-CAL5
Misc : 1X 5mL 2/4PPB VOCR
ALS Vial : 43 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:28:05 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) 1,3-Dichloropropane	9.254	76	7837	2.18	ug/L		91
50) 1,2-Dibromoethane (EDB)	9.394	107	4694	2.15	ug/L		96
51) 2-Hexanone	9.637	43	7470	3.69	ug/L		96
52) Chlorobenzene	9.911	112	13632	2.12	ug/L		96
53) Ethylbenzene	9.941	91	22739	2.07	ug/L		97
54) 1,1,1,2-Tetrachloroethane	9.971	131	4164	2.38	ug/L		99
55) m,p-Xylenes (2)	10.075	91	34555	4.09	ug/L		96
56) o-Xylene	10.452	91	17659	2.09	ug/L		96
57) Styrene	10.500	104	11174	1.76	ug/L		97
58) Bromoform	10.519	173	2869	2.66	ug/L		93
59) Isopropylbenzene	10.725	105	22687	2.16	ug/L		99
62) Bromobenzene	11.042	156	6115	2.11	ug/L		94
63) n-Propylbenzene	11.066	91	26973	2.12	ug/L		99
64) 1,1,2,2-Tetrachloroethane	11.121	83	6984	2.24	ug/L		96
65) 2-Chlorotoluene	11.194	126	5588	2.20	ug/L		93
66) 1,3,5-Trimethylbenzene	11.230	105	18611	2.12	ug/L		99
67) 1,2,3-Trichloropropane	11.224	110	2322	2.19	ug/L		97
68) t-1,4-Dichloro-2-butene	11.261	88	312	1.52	ug/L	#	75
69) 4-Chlorotoluene	11.321	91	16278	2.12	ug/L		94
70) tert-Butylbenzene	11.480	91	11158	2.15	ug/L		99
71) 1,2,4-Trimethylbenzene	11.534	105	18502	2.11	ug/L		98
72) sec-Butylbenzene	11.619	105	25465	2.19	ug/L		96
73) 4-Isopropyltoluene	11.729	119	21130	2.19	ug/L		97
74) 1,3-Dichlorobenzene	11.784	146	11788	2.17	ug/L		98
75) 1,4-Dichlorobenzene	11.850	146	12148	2.14	ug/L		97
76) n-Butylbenzene	12.045	91	18660	2.29	ug/L		97
77) 1,2-Dichlorobenzene	12.167	146	11607	2.27	ug/L		98
78) 1,2-Dibromo-3-Chloropr...	12.775	157	1537	2.27	ug/L		85
79) Hexachlorobutadiene	13.304	223	2666	2.11	ug/L		92
80) 1,2,4-Trichlorobenzene	13.328	180	7713	2.30	ug/L		96
81) Naphthalene	13.602	128	16755	2.37	ug/L		99
82) 1,2,3-Trichlorobenzene	13.766	180	8117	2.45	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030520.D
Acq On : 5 Mar 2019 6:34 pm
Operator : MM
Sample : 9C05053-CAL5
Misc : 1X 5mL 2/4PPB VOCR
ALS Vial : 43 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:13 2019
Quant Method : C:\msdchem\1\METHODS\~~VA190306~~W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.195	168	248010	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.892	117	324771	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.838	152	174574	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.702	111	102685	48.76	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.760	114	361508	49.68	ug/L		0.00
42) Toluene-d8 (S)	8.275	98	424288	50.62	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.957	174	136256	48.02	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.764	85	5935	2.14	ug/L		92
3) Chloromethane	1.970	50	15645	6.30	ug/L		97
4) Vinyl Chloride	2.068	62	7336	2.14	ug/L		97
5) Bromomethane	2.433	96	2208	1.68	ug/L		92
6) Chloroethane	2.579	64	4634	2.40	ug/L		97
7) Trichlorofluoromethane	2.743	101	8520	2.18	ug/L		91
8) 1,1-Dichloroethene	3.284	61	6903	2.16	ug/L		97
9) Carbon Disulfide	3.308	76	13481	2.23	ug/L		99
10) Freon 113	3.339	101	4663	2.20	ug/L		91
11) Iodomethane	3.436	142	348	0.98	ug/L	#	47
12) Acrolein	3.637	56	1053	2.79	ug/L		86
13) Methylene Chloride	3.898	84	6092	1.15	ug/L		94
14) Acetone	3.953	43	4751	4.58	ug/L		92
15) t-1,2-Dichloroethene	4.069	61	6733	2.19	ug/L		97
16) n-Hexane	4.166	86	1312	2.26	ug/L	#	80
17) Methyl-tert-butyl-ether	4.202	73	16064	2.53	ug/L		100
18) 1,1-Dichloroethane	4.695	63	8471	2.17	ug/L		98
19) Acrylonitrile	4.731	53	2221	1.93	ug/L		92
20) Vinyl Acetate	4.956	43	7468	1.55	ug/L		97
21) c-1,2-Dichloroethene	5.240	61	6518	2.12	ug/L		93
22) 2,2-Dichloropropane	5.350	77	6916	2.60	ug/L		91
23) Bromochloromethane	5.435	49	3968	2.26	ug/L		86
24) Chloroform	5.520	83	8361	2.20	ug/L		100
25) Carbon Tetrachloride	5.666	117	5725	2.34	ug/L		97
26) Tetrahydrofuran	5.702	42	2425	2.34	ug/L		94
27) 1,1,1-Trichloroethane	5.739	97	7296	2.22	ug/L		99
29) 1,1-Dichloropropene	5.860	75	6625	2.04	ug/L		97
30) 2-Butanone (MEK)	5.836	43	6522	4.19	ug/L		94
31) Benzene	6.116	78	19565	2.05	ug/L		98
32) 1,2-Dichloroethane (EDC)	6.316	62	6532	1.97	ug/L		100
33) iso-Butyl Alcohol	6.365	43	7291	50.11	ug/L		94
35) Trichloroethene (TCE)	6.730	130	5252	2.08	ug/L		85
36) Dibromomethane	7.174	93	2816	1.93	ug/L		97
37) 1,2-Dichloropropane	7.283	63	4797	2.11	ug/L		88
38) Bromodichloromethane	7.356	83	5697	2.17	ug/L		98
40) 2-Chloroethyl Vinyl Ether	0.000		0	N.D.			
41) c-1,3-Dichloropropene	8.056	75	7144	2.28	ug/L		90
43) Toluene	8.335	91	20671	2.09	ug/L		95
44) Tetrachloroethene (PCE)	8.779	166	5554	2.09	ug/L		97
45) 4-Methyl-2-Pentanone (...	8.773	43	10923	3.74	ug/L		95
46) t-1,3-Dichloropropene	8.798	75	6302	2.19	ug/L		98
47) 1,1,2-Trichloroethane	8.974	97	4732	2.30	ug/L		94
48) Dibromochloromethane	9.156	129	4288	2.55	ug/L		94

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030520.D
Acq On : 5 Mar 2019 6:34 pm
Operator : MM
Sample : 9C05053-CAL5
Misc : 1X 5mL 2/4PPB VOCR
ALS Vial : 43 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:13 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

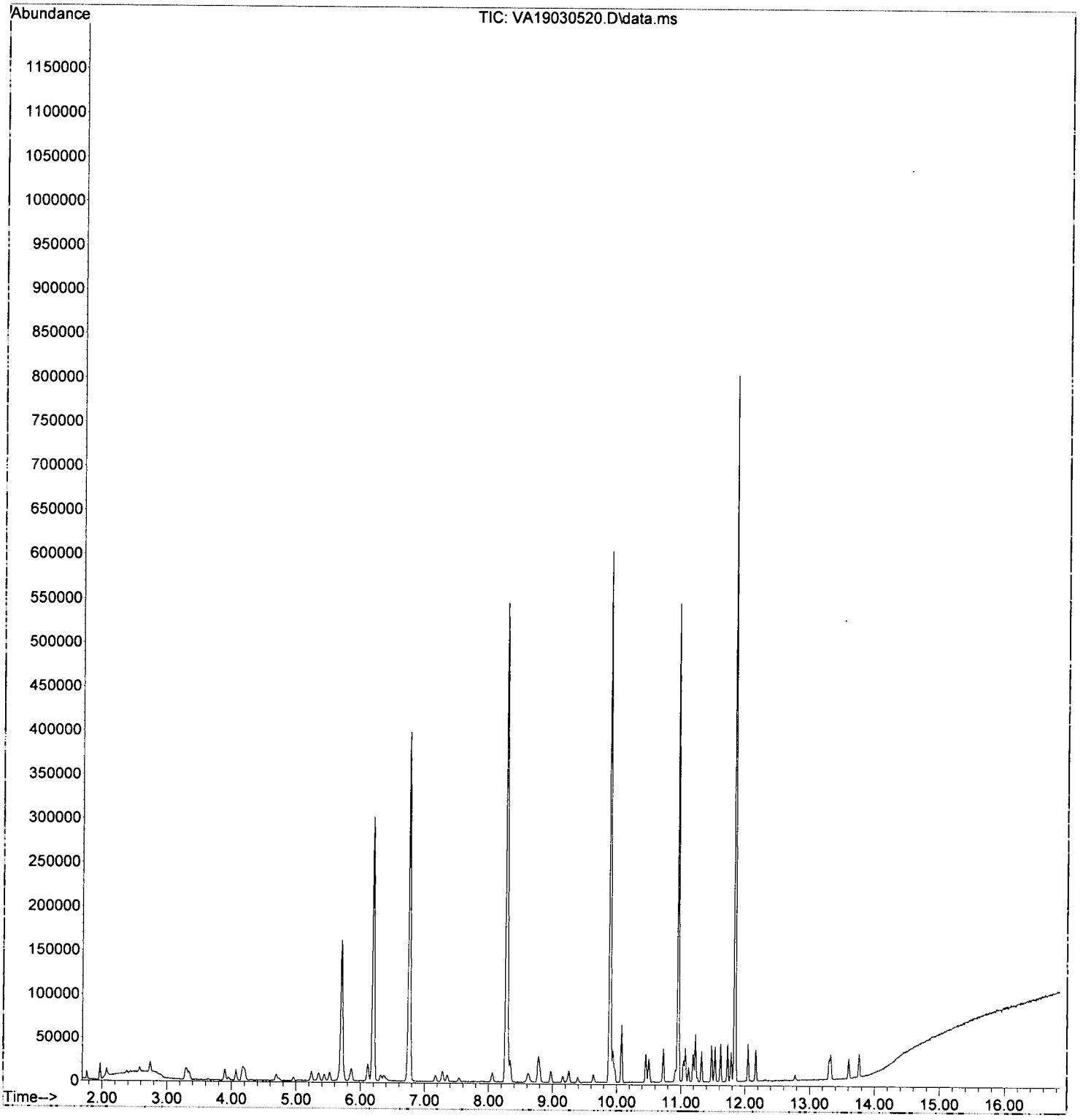
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) 1,3-Dichloropropane	9.254	76	7837	2.18	ug/L		91
50) 1,2-Dibromoethane (EDB)	9.394	107	4694	2.15	ug/L		96
51) 2-Hexanone	9.637	43	7470	3.69	ug/L		96
52) Chlorobenzene	9.911	112	13632	2.12	ug/L		96
53) Ethylbenzene	9.941	91	22739	2.07	ug/L		97
54) 1,1,1,2-Tetrachloroethane	9.971	131	4164	2.38	ug/L		99
55) m,p-Xylenes (2)	10.075	91	34555	4.09	ug/L		96
56) o-Xylene	10.452	91	17659	2.09	ug/L		96
57) Styrene	10.500	104	11174	1.76	ug/L		97
58) Bromoform	10.519	173	2869	2.66	ug/L		93
59) Isopropylbenzene	10.725	105	22687	2.16	ug/L		99
62) Bromobenzene	11.042	156	6115	2.11	ug/L		94
63) n-Propylbenzene	11.066	91	26973	2.12	ug/L		99
64) 1,1,2,2-Tetrachloroethane	11.121	83	6984	2.24	ug/L		96
65) 2-Chlorotoluene	11.194	126	5588	2.20	ug/L		93
66) 1,3,5-Trimethylbenzene	11.230	105	18611	2.12	ug/L		99
67) 1,2,3-Trichloropropane	11.224	110	2322	2.19	ug/L		97
68) t-1,4-Dichloro-2-butene	11.261	88	312	1.52	ug/L	#	75
69) 4-Chlorotoluene	11.321	91	16278	2.12	ug/L		94
70) tert-Butylbenzene	11.480	91	11158	2.15	ug/L		99
71) 1,2,4-Trimethylbenzene	11.534	105	18502	2.11	ug/L		98
72) sec-Butylbenzene	11.619	105	25465	2.19	ug/L		96
73) 4-Isopropyltoluene	11.729	119	21130	2.19	ug/L		97
74) 1,3-Dichlorobenzene	11.784	146	11788	2.17	ug/L		98
75) 1,4-Dichlorobenzene	11.850	146	12148	2.14	ug/L		97
76) n-Butylbenzene	12.045	91	18660	2.29	ug/L		97
77) 1,2-Dichlorobenzene	12.167	146	11607	2.27	ug/L		98
78) 1,2-Dibromo-3-Chloropr...	12.775	157	1537	2.27	ug/L		85
79) Hexachlorobutadiene	13.304	223	2666	2.11	ug/L		92
80) 1,2,4-Trichlorobenzene	13.328	180	7713	2.30	ug/L		96
81) Naphthalene	13.602	128	16755	2.37	ug/L		99
82) 1,2,3-Trichlorobenzene	13.766	180	8117	2.45	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030520.D
Acq On : 5 Mar 2019 6:34 pm
Operator : MM
Sample : 9C05053-CAL5
Misc : 1X 5mL 2/4PPB VOCR
ALS Vial : 43 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:13 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030521.D
Acq On : 5 Mar 2019 7:03 pm
Operator : MM
Sample : 9C05053-CAL6
Misc : 1X 5mL 5/10PPB VOCR
ALS Vial : 44 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:15 2019
Quant Method : C:\msdchem\1\METHODS\~~VA190306W.M~~
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.199	168	259150	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.891	117	337211	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.837	152	181797	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.701	111	108323	49.23	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.759	114	372823	49.03	ug/L		0.00
42) Toluene-d8 (S)	8.273	98	440795	50.65	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.955	174	142556	48.24	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.766	85	15676	5.42	ug/L		97
3) Chloromethane	1.967	50	32370	12.47	ug/L		99
4) Vinyl Chloride	2.070	62	19721	5.51	ug/L		95
5) Bromomethane	2.435	96	3218	2.34	ug/L		92
6) Chloroethane	2.581	64	11561	5.74	ug/L		98
7) Trichlorofluoromethane	2.739	101	21708	5.32	ug/L		97
8) 1,1-Dichloroethene	3.286	61	17957	5.38	ug/L		96
9) Carbon Disulfide	3.311	76	34431	5.45	ug/L		98
10) Freon 113	3.341	101	12493	5.63	ug/L		97
11) Iodomethane	3.432	142	718	1.37	ug/L	#	47
12) Acrolein	3.639	56	2681	6.81	ug/L		90
13) Methylene Chloride	3.894	84	14076	4.61	ug/L		95
14) Acetone	3.949	43	10382	9.59	ug/L		96
15) t-1,2-Dichloroethene	4.065	61	16902	5.25	ug/L		95
16) n-Hexane	4.168	86	3274	5.39	ug/L	#	91
17) Methyl-tert-butyl-ether	4.198	73	40734	6.15	ug/L		96
18) 1,1-Dichloroethane	4.691	63	22419	5.49	ug/L		98
19) Acrylonitrile	4.728	53	6037	5.01	ug/L		98
20) Vinyl Acetate	4.959	43	21465	4.26	ug/L		96
21) c-1,2-Dichloroethene	5.239	61	16684	5.20	ug/L		96
22) 2,2-Dichloropropane	5.348	77	17819	6.42	ug/L		96
23) Bromochloromethane	5.439	49	9758	5.31	ug/L		92
24) Chloroform	5.524	83	21442	5.40	ug/L		95
25) Carbon Tetrachloride	5.670	117	15554	6.08	ug/L		97
26) Tetrahydrofuran	5.695	42	6071	5.61	ug/L		95
27) 1,1,1-Trichloroethane	5.731	97	19034	5.54	ug/L		96
29) 1,1-Dichloropropene	5.859	75	17347	5.11	ug/L		100
30) 2-Butanone (MEK)	5.834	43	15427	9.48	ug/L		96
31) Benzene	6.114	78	50345	5.04	ug/L		99
32) 1,2-Dichloroethane (EDC)	6.315	62	17046	4.92	ug/L		100
33) iso-Butyl Alcohol	6.357	43	17036	112.06	ug/L		99
35) Trichloroethene (TCE)	6.728	130	13205	5.01	ug/L		93
36) Dibromomethane	7.166	93	7586	4.97	ug/L		91
37) 1,2-Dichloropropane	7.282	63	12663	5.32	ug/L		99
38) Bromodichloromethane	7.355	83	14792	5.39	ug/L		98
40) 2-Chloroethyl Vinyl Ether	0.000		0	N.D.			
41) c-1,3-Dichloropropene	8.060	75	18523	5.70	ug/L		94
43) Toluene	8.334	91	53207	5.18	ug/L		96
44) Tetrachloroethene (PCE)	8.778	166	14525	5.27	ug/L		95
45) 4-Methyl-2-Pentanone (...	8.772	43	27431	9.05	ug/L		97
46) t-1,3-Dichloropropene	8.802	75	16740	5.61	ug/L		98
47) 1,1,2-Trichloroethane	8.972	97	11497	5.37	ug/L		97
48) Dibromochloromethane	9.161	129	11232	6.19	ug/L		95

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030521.D
Acq On : 5 Mar 2019 7:03 pm
Operator : MM
Sample : 9C05053-CAL6
Misc : 1X 5mL 5/10PPB VOCR
ALS Vial : 44 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:15 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

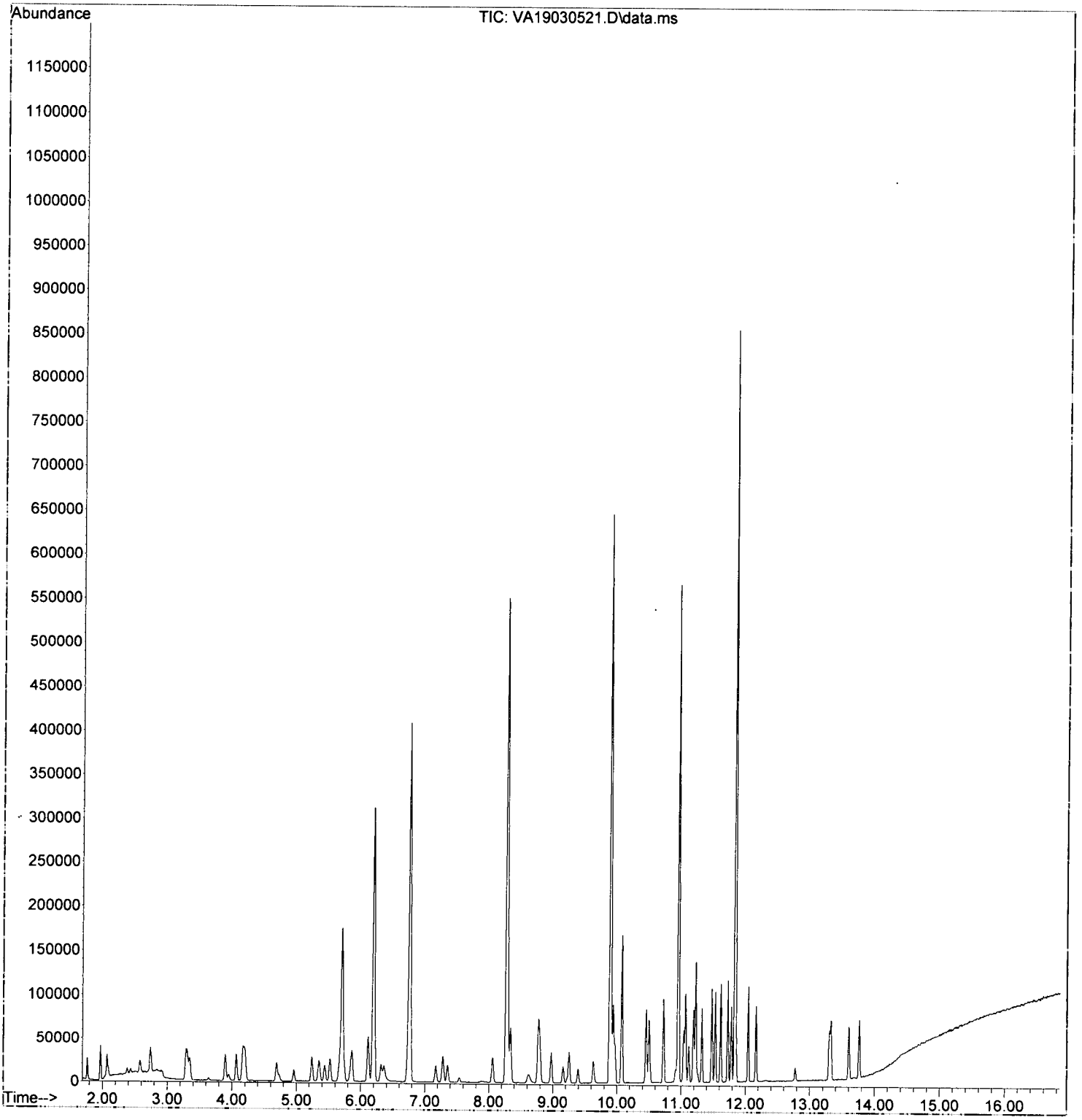
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 1,3-Dichloropropane	9.252	76	20761	5.55 ug/L	95
50) 1,2-Dibromoethane (EDB)	9.392	107	12058	5.32 ug/L	91
51) 2-Hexanone	9.629	43	18659	8.88 ug/L	96
52) Chlorobenzene	9.909	112	35719	5.34 ug/L	97
53) Ethylbenzene	9.939	91	59749	5.23 ug/L	99
54) 1,1,1,2-Tetrachloroethane	9.970	131	11423	6.29 ug/L	97
55) m,p-Xylenes (2)	10.073	91	90401	10.32 ug/L	99
56) o-Xylene	10.456	91	45910	5.23 ug/L	100
57) Styrene	10.499	104	30440	4.61 ug/L	98
58) Bromoform	10.517	173	7615	6.28 ug/L	97
59) Isopropylbenzene	10.724	105	59943	5.49 ug/L	98
62) Bromobenzene	11.040	156	15641	5.19 ug/L	97
63) n-Propylbenzene	11.070	91	70374	5.31 ug/L	97
64) 1,1,2,2-Tetrachloroethane	11.119	83	17362	5.35 ug/L	97
65) 2-Chlorotoluene	11.192	126	14195	5.37 ug/L	97
66) 1,3,5-Trimethylbenzene	11.229	105	48311	5.29 ug/L	99
67) 1,2,3-Trichloropropane	11.229	110	5813	5.27 ug/L #	80
68) t-1,4-Dichloro-2-butene	11.259	88	924	2.99 ug/L #	86
69) 4-Chlorotoluene	11.320	91	42393	5.29 ug/L	95
70) tert-Butylbenzene	11.478	91	28404	5.26 ug/L	99
71) 1,2,4-Trimethylbenzene	11.533	105	48440	5.30 ug/L	98
72) sec-Butylbenzene	11.618	105	66262	5.48 ug/L	100
73) 4-Isopropyltoluene	11.727	119	55560	5.53 ug/L	99
74) 1,3-Dichlorobenzene	11.782	146	29932	5.29 ug/L	97
75) 1,4-Dichlorobenzene	11.849	146	30835	5.20 ug/L	96
76) n-Butylbenzene	12.044	91	48296	5.70 ug/L	97
77) 1,2-Dichlorobenzene	12.165	146	28917	5.43 ug/L	99
78) 1,2-Dibromo-3-Chloropr...	12.773	157	3553	5.03 ug/L	80
79) Hexachlorobutadiene	13.296	223	6571	5.00 ug/L	96
80) 1,2,4-Trichlorobenzene	13.327	180	20213	5.78 ug/L	94
81) Naphthalene	13.600	128	45889	5.51 ug/L	98
82) 1,2,3-Trichlorobenzene	13.765	180	19925	5.78 ug/L	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030521.D
Acq On : 5 Mar 2019 7:03 pm
Operator : MM
Sample : 9C05053-CAL6
Misc : 1X 5mL 5/10PPB VOCR
ALS Vial : 44 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:15 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030522.D
Acq On : 5 Mar 2019 7:31 pm
Operator : MM
Sample : 9C05053-CAL7
Misc : 1X 5mL 10/20PPB VOCR
ALS Vial : 45 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:17 2019
Quant Method : C:\msdchem\1\METHODS\~~VA190306W~~.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.199	168	241261	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.891	117	321524	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.837	152	181890	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.707	111	100631	49.12	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.759	114	351849	49.70	ug/L		0.00
42) Toluene-d8 (S)	8.273	98	416160	50.15	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.955	174	137997	46.67	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.767	85	28559	10.61	ug/L		96
3) Chloromethane	1.968	50	57094	23.63	ug/L		99
4) Vinyl Chloride	2.071	62	36278	10.89	ug/L		94
5) Bromomethane	2.436	96	4672	3.65	ug/L		94
6) Chloroethane	2.576	64	21305	11.36	ug/L		97
7) Trichlorofluoromethane	2.740	101	39807	10.48	ug/L		98
8) 1,1-Dichloroethene	3.288	61	32494	10.45	ug/L		97
9) Carbon Disulfide	3.306	76	63404	10.79	ug/L		97
10) Freon 113	3.342	101	22109	10.71	ug/L		94
11) Iodomethane	3.440	142	1837	2.76	ug/L		88
12) Acrolein	3.640	56	5123	13.97	ug/L		92
13) Methylene Chloride	3.896	84	25325	10.50	ug/L		98
14) Acetone	3.950	43	19362	19.20	ug/L		98
15) t-1,2-Dichloroethene	4.066	61	30673	10.23	ug/L		95
16) n-Hexane	4.169	86	6111	10.80	ug/L	#	85
17) Methyl-tert-butyl-ether	4.200	73	75237	12.20	ug/L		100
18) 1,1-Dichloroethane	4.692	63	40606	10.68	ug/L		100
19) Acrylonitrile	4.729	53	11250	10.02	ug/L		95
20) Vinyl Acetate	4.960	43	43012	9.16	ug/L		98
21) c-1,2-Dichloroethene	5.239	61	30669	10.26	ug/L		96
22) 2,2-Dichloropropane	5.354	77	31040	12.00	ug/L		92
23) Bromochloromethane	5.433	49	16704	9.76	ug/L		90
24) Chloroform	5.518	83	38661	10.46	ug/L		96
25) Carbon Tetrachloride	5.670	117	27305	11.47	ug/L		97
26) Tetrahydrofuran	5.695	42	10567	10.49	ug/L		97
27) 1,1,1-Trichloroethane	5.731	97	33755	10.56	ug/L		94
29) 1,1-Dichloropropene	5.859	75	30730	9.73	ug/L		97
30) 2-Butanone (MEK)	5.834	43	29921	19.74	ug/L		92
31) Benzene	6.114	78	91211	9.80	ug/L		100
32) 1,2-Dichloroethane (EDC)	6.315	62	31354	9.73	ug/L		98
33) iso-Butyl Alcohol	6.351	43	36138	255.33	ug/L		98
35) Trichloroethene (TCE)	6.728	130	24612	10.02	ug/L		98
36) Dibromomethane	7.166	93	14087	9.91	ug/L		94
37) 1,2-Dichloropropane	7.282	63	22777	10.28	ug/L		98
38) Bromodichloromethane	7.355	83	27157	10.63	ug/L		92
40) 2-Chloroethyl Vinyl Ether	~~8.066~~	~~63~~	~~82~~	~~0.06~~	ug/L	#	~~1~~
41) c-1,3-Dichloropropene	8.054	75	34731	11.20	ug/L		94
43) Toluene	8.334	91	98512	10.06	ug/L		95
44) Tetrachloroethene (PCE)	8.778	166	26468	10.08	ug/L		99
45) 4-Methyl-2-Pentanone (...	8.766	43	56321	19.49	ug/L		98
46) t-1,3-Dichloropropene	8.802	75	32076	11.27	ug/L		97
47) 1,1,2-Trichloroethane	8.972	97	21868	10.72	ug/L		98
48) Dibromochloromethane	9.161	129	21108	11.95	ug/L		99

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030522.D
Acq On : 5 Mar 2019 7:31 pm
Operator : MM
Sample : 9C05053-CAL7
Misc : 1X 5mL 10/20PPB VOCR
ALS Vial : 45 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:17 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

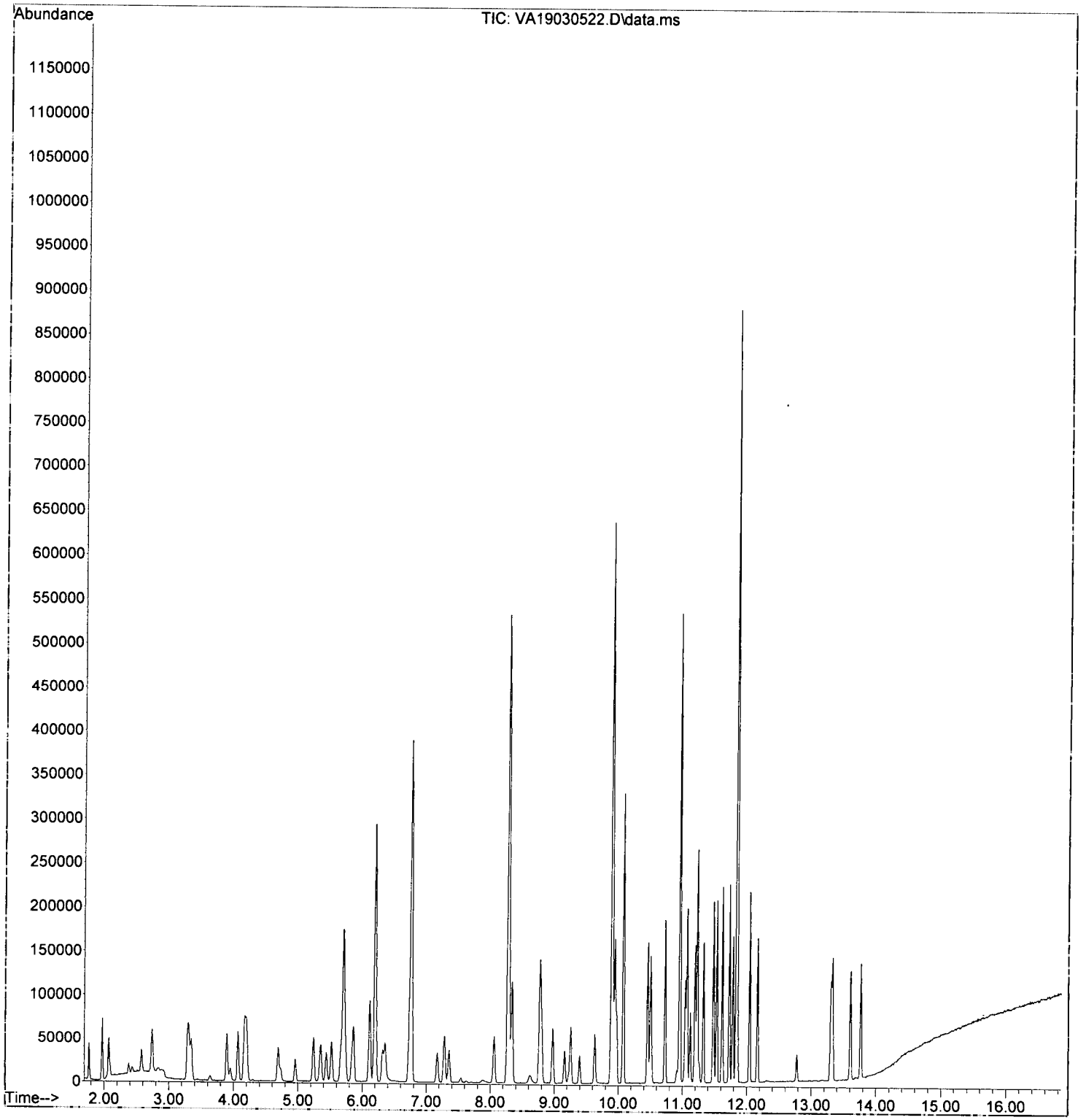
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) 1,3-Dichloropropane	9.252	76	38837	10.90	ug/L		95
50) 1,2-Dibromoethane (EDB)	9.392	107	21814	10.10	ug/L		98
51) 2-Hexanone	9.629	43	38246	19.08	ug/L		95
52) Chlorobenzene	9.909	112	65946	10.34	ug/L		99
53) Ethylbenzene	9.939	91	111845	10.27	ug/L		99
54) 1,1,1,2-Tetrachloroethane	9.970	131	21217	12.25	ug/L		98
55) m,p-Xylenes (2)	10.073	91	172966	20.70	ug/L		99
56) o-Xylene	10.456	91	86049	10.28	ug/L		99
57) Styrene	10.499	104	61316	9.74	ug/L		97
58) Bromoform	10.517	173	15217	12.63	ug/L		97
59) Isopropylbenzene	10.724	105	113194	10.88	ug/L		99
62) Bromobenzene	11.040	156	29262	9.71	ug/L		97
63) n-Propylbenzene	11.070	91	136126	10.27	ug/L		99
64) 1,1,2,2-Tetrachloroethane	11.119	83	32962	10.15	ug/L		99
65) 2-Chlorotoluene	11.192	126	27761	10.49	ug/L		96
66) 1,3,5-Trimethylbenzene	11.229	105	94476	10.34	ug/L		99
67) 1,2,3-Trichloropropane	11.229	110	11069	10.03	ug/L	#	83
68) t-1,4-Dichloro-2-butene	11.259	88	1930	5.46	ug/L		94
69) 4-Chlorotoluene	11.326	91	82236	10.26	ug/L		99
70) tert-Butylbenzene	11.478	91	55733	10.32	ug/L		99
71) 1,2,4-Trimethylbenzene	11.533	105	95360	10.43	ug/L		98
72) sec-Butylbenzene	11.618	105	130044	10.75	ug/L		99
73) 4-Isopropyltoluene	11.727	119	110410	10.98	ug/L		98
74) 1,3-Dichlorobenzene	11.782	146	58601	10.34	ug/L		98
75) 1,4-Dichlorobenzene	11.849	146	58747	9.91	ug/L		97
76) n-Butylbenzene	12.044	91	96961	11.45	ug/L		97
77) 1,2-Dichlorobenzene	12.165	146	56508	10.60	ug/L		99
78) 1,2-Dibromo-3-Chloropr...	12.773	157	7356	10.42	ug/L		80
79) Hexachlorobutadiene	13.302	223	13308	10.11	ug/L		94
80) 1,2,4-Trichlorobenzene	13.327	180	40695	11.63	ug/L		98
81) Naphthalene	13.606	128	97060	11.11	ug/L		98
82) 1,2,3-Trichlorobenzene	13.765	180	39791	11.55	ug/L		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030522.D
Acq On : 5 Mar 2019 7:31 pm
Operator : MM
Sample : 9C05053-CAL7
Misc : 1X 5mL 10/20PPB VOCR
ALS Vial : 45 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:17 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030523.D
Acq On : 5 Mar 2019 8:03 pm
Operator : MM
Sample : 9C05053-CAL8
Misc : 1X 5mL 20/40PPB VOCR
ALS Vial : 46 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:19 2019
Quant Method : C:\msdchem\1\METHODS\~~VA190306W~~.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

3/6/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.194	168	244815	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.891	117	328052	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.837	152	184257	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.701	111	102361	49.24	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.759	114	357205	49.73	ug/L		0.00
42) Toluene-d8 (S)	8.273	98	422957	49.96	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.955	174	141615	47.28	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.766	85	58526	21.43	ug/L		97
3) Chloromethane	1.967	50	109564	44.68	ug/L		100
4) Vinyl Chloride	2.070	62	75280	22.27	ug/L		95
5) Bromomethane	2.429	96	9817	7.56	ug/L		97
6) Chloroethane	2.575	64	43150	22.67	ug/L		98
7) Trichlorofluoromethane	2.739	101	81717	21.20	ug/L		98
8) 1,1-Dichloroethene	3.286	61	66326	21.08	ug/L		98
9) Carbon Disulfide	3.305	76	131749	22.09	ug/L		97
10) Freon 113	3.341	101	45171	21.56	ug/L		98
11) Iodomethane	3.432	142	5010	6.37	ug/L		96
12) Acrolein	3.639	56	10983	29.51	ug/L		99
13) Methylene Chloride	3.894	84	52208	23.09	ug/L		97
14) Acetone	3.949	43	40705	39.79	ug/L		95
15) t-1,2-Dichloroethene	4.065	61	63777	20.97	ug/L		98
16) n-Hexane	4.168	86	12638	22.02	ug/L	#	85
17) Methyl-tert-butyl-ether	4.199	73	154589	24.71	ug/L		99
18) 1,1-Dichloroethane	4.691	63	83538	21.65	ug/L		99
19) Acrylonitrile	4.728	53	24031	21.10	ug/L		92
20) Vinyl Acetate	4.953	43	94804	19.91	ug/L		99
21) c-1,2-Dichloroethene	5.239	61	63223	20.85	ug/L		99
22) 2,2-Dichloropropane	5.348	77	64985	24.77	ug/L		94
23) Bromochloromethane	5.433	49	33434	19.25	ug/L		96
24) Chloroform	5.519	83	79850	21.29	ug/L		96
25) Carbon Tetrachloride	5.665	117	58155	24.07	ug/L		92
26) Tetrahydrofuran	5.695	42	22483	22.00	ug/L		98
27) 1,1,1-Trichloroethane	5.731	97	70282	21.65	ug/L		97
29) 1,1-Dichloropropene	5.859	75	63578	19.84	ug/L		98
30) 2-Butanone (MEK)	5.829	43	62665	40.74	ug/L		93
31) Benzene	6.108	78	188039	19.92	ug/L		98
32) 1,2-Dichloroethane (EDC)	6.315	62	64340	19.68	ug/L		99
33) iso-Butyl Alcohol	6.352	43	79057	550.47	ug/L		97
35) Trichloroethene (TCE)	6.729	130	50719	20.35	ug/L		98
36) Dibromomethane	7.167	93	28868	20.02	ug/L		97
37) 1,2-Dichloropropane	7.282	63	47589	21.17	ug/L		99
38) Bromodichloromethane	7.355	83	58351	22.51	ug/L		99
40) 2-Chloroethyl Vinyl Ether	~~8.061~~	~~63~~	~~342~~	~~0.31~~	~~ug/L~~	~~#~~	~~1~~
41) c-1,3-Dichloropropene	8.055	75	73327	23.18	ug/L		96
43) Toluene	8.334	91	204088	20.42	ug/L		97
44) Tetrachloroethene (PCE)	8.778	166	55445	20.70	ug/L		96
45) 4-Methyl-2-Pentanone (...	8.766	43	123154	41.77	ug/L		99
46) t-1,3-Dichloropropene	8.803	75	68425	23.57	ug/L		97
47) 1,1,2-Trichloroethane	8.973	97	45316	21.77	ug/L		96
48) Dibromochloromethane	9.161	129	44439	24.08	ug/L		97

DAL

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030523.D
Acq On : 5 Mar 2019 8:03 pm
Operator : MM
Sample : 9C05053-CAL8
Misc : 1X 5mL 20/40PPB VOCR
ALS Vial : 46 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:19 2019
Quant Method : C:\msdchem\1\METHODS\~~VA190306W~~.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

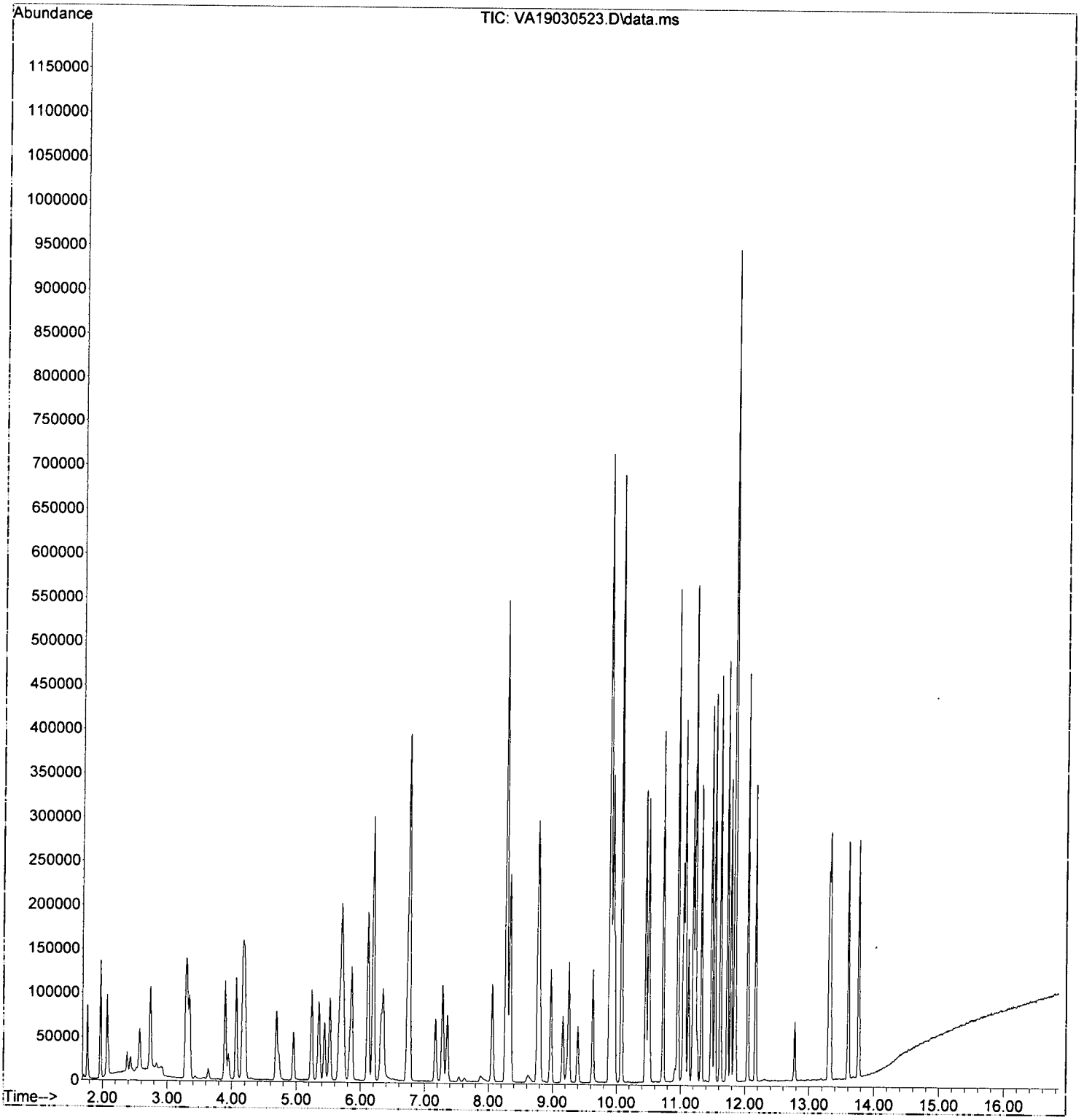
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 1,3-Dichloropropane	9.253	76	79859	21.96	ug/L	95
50) 1,2-Dibromoethane (EDB)	9.392	107	46358	21.04	ug/L	99
51) 2-Hexanone	9.630	43	85580	41.85	ug/L	98
52) Chlorobenzene	9.909	112	137100	21.07	ug/L	99
53) Ethylbenzene	9.940	91	232735	20.94	ug/L	98
54) 1,1,1,2-Tetrachloroethane	9.970	131	45434	25.72	ug/L	100
55) m,p-Xylenes (2)	10.074	91	363121	42.60	ug/L	99
56) o-Xylene	10.457	91	183174	21.45	ug/L	99
57) Styrene	10.499	104	134003	20.87	ug/L	98
58) Bromoform	10.517	173	32981	25.74	ug/L	98
59) Isopropylbenzene	10.724	105	236192	22.25	ug/L	100
62) Bromobenzene	11.040	156	61878	20.27	ug/L	95
63) n-Propylbenzene	11.071	91	285083	21.24	ug/L	100
64) 1,1,2,2-Tetrachloroethane	11.120	83	69684	21.18	ug/L	96
65) 2-Chlorotoluene	11.192	126	57162	21.33	ug/L	98
66) 1,3,5-Trimethylbenzene	11.229	105	200591	21.67	ug/L	99
67) 1,2,3-Trichloropropane	11.229	110	22551	20.17	ug/L	88
68) t-1,4-Dichloro-2-butene	11.259	88	4240	10.94	ug/L	90
69) 4-Chlorotoluene	11.320	91	170690	21.01	ug/L	96
70) tert-Butylbenzene	11.478	91	116827	21.35	ug/L	99
71) 1,2,4-Trimethylbenzene	11.533	105	205941	22.23	ug/L	98
72) sec-Butylbenzene	11.618	105	272489	22.24	ug/L	99
73) 4-Isopropyltoluene	11.728	119	231967	22.77	ug/L	98
74) 1,3-Dichlorobenzene	11.782	146	121895	21.24	ug/L	99
75) 1,4-Dichlorobenzene	11.849	146	123126	20.50	ug/L	97
76) n-Butylbenzene	12.044	91	205555	23.95	ug/L	97
77) 1,2-Dichlorobenzene	12.166	146	118001	21.85	ug/L	98
78) 1,2-Dibromo-3-Chloropr...	12.774	157	16221	22.67	ug/L	84
79) Hexachlorobutadiene	13.303	223	27070	20.30	ug/L	94
80) 1,2,4-Trichlorobenzene	13.327	180	85431	24.09	ug/L	98
81) Naphthalene	13.607	128	214391	23.48	ug/L	98
82) 1,2,3-Trichlorobenzene	13.765	180	84962	24.34	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030523.D
Acq On : 5 Mar 2019 8:03 pm
Operator : MM
Sample : 9C05053-CAL8
Misc : 1X 5mL 20/40PPB VOCR
ALS Vial : 46 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:19 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030524.D
Acq On : 5 Mar 2019 8:31 pm
Operator : MM
Sample : 9C05053-CAL9
Misc : 1X 5mL 50/100PPB VOCR
ALS Vial : 47 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:21 2019
Quant Method : C:\msdchem\1\METHODS\~~VA190306~~W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.199	168	251267	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.890	117	335403	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.837	152	193915	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.700	111	105717	49.55	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.759	114	364956	49.50	ug/L		0.00
42) Toluene-d8 (S)	8.273	98	432192	49.93	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.955	174	145325	46.11	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.767	85	155578	55.49	ug/L		98
3) Chloromethane	1.968	50	251301	99.85	ug/L		99
4) Vinyl Chloride	2.071	62	192410	55.45	ug/L		95
5) Bromomethane	2.430	96	24343	18.27	ug/L		99
6) Chloroethane	2.576	64	106440	54.50	ug/L		99
7) Trichlorofluoromethane	2.740	101	206945	52.31	ug/L		99
8) 1,1-Dichloroethene	3.287	61	158798	49.06	ug/L		99
9) Carbon Disulfide	3.306	76	316540	51.71	ug/L		99
10) Freon 113	3.342	101	108193	50.32	ug/L		98
11) Iodomethane	3.433	142	18581	20.31	ug/L		97
12) Acrolein	3.634	56	27949	73.18	ug/L		99
13) Methylene Chloride	3.896	84	118707	53.22	ug/L		98
14) Acetone	3.944	43	93526	89.07	ug/L		97
15) t-1,2-Dichloroethene	4.066	61	152335	48.81	ug/L		97
16) n-Hexane	4.169	86	29486	50.05	ug/L	#	70
17) Methyl-tert-butyl-ether	4.194	73	367427	57.22	ug/L		93
18) 1,1-Dichloroethane	4.692	63	196180	49.55	ug/L		99
19) Acrylonitrile	4.729	53	56763	48.57	ug/L		99
20) Vinyl Acetate	4.954	43	236512	48.38	ug/L		99
21) c-1,2-Dichloroethene	5.238	61	148648	47.76	ug/L		96
22) 2,2-Dichloropropane	5.348	77	156118	57.97	ug/L		94
23) Bromochloromethane	5.439	49	79318	44.52	ug/L		99
24) Chloroform	5.518	83	189041	49.11	ug/L		96
25) Carbon Tetrachloride	5.664	117	140309	56.59	ug/L		94
26) Tetrahydrofuran	5.688	42	51277	48.89	ug/L		96
27) 1,1,1-Trichloroethane	5.731	97	167296	50.24	ug/L		96
29) 1,1-Dichloropropene	5.859	75	152382	46.38	ug/L		98
30) 2-Butanone (MEK)	5.828	43	146370	92.73	ug/L		95
31) Benzene	6.114	78	448890	46.32	ug/L		99
32) 1,2-Dichloroethane (EDC)	6.315	62	152558	45.46	ug/L		99
33) iso-Butyl Alcohol	6.351	43	194451	1319.18	ug/L		98
35) Trichloroethene (TCE)	6.728	130	120626	47.16	ug/L		97
36) Dibromomethane	7.166	93	69178	46.75	ug/L		98
37) 1,2-Dichloropropane	7.282	63	113146	49.04	ug/L		97
38) Bromodichloromethane	7.355	83	140951	52.98	ug/L		98
40) 2-Chloroethyl Vinyl Ether	~~8.060~~	~~63~~	~~1063~~	~~0.94~~	~~ug/L~~	~~#~~	~~1~~
41) c-1,3-Dichloropropene	8.054	75	178828	55.28	ug/L		96
43) Toluene	8.334	91	484351	47.41	ug/L		97
44) Tetrachloroethene (PCE)	8.778	166	132260	48.29	ug/L		97
45) 4-Methyl-2-Pentanone (...	8.765	43	301728	100.10	ug/L		99
46) t-1,3-Dichloropropene	8.802	75	169788	57.19	ug/L		98
47) 1,1,2-Trichloroethane	8.972	97	107566	50.55	ug/L		98
48) Dibromochloromethane	9.161	129	111488	56.18	ug/L		99

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030524.D
Acq On : 5 Mar 2019 8:31 pm
Operator : MM
Sample : 9C05053-CAL9
Misc : 1X 5mL 50/100PPB VOCR
ALS Vial : 47 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:21 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 1,3-Dichloropropane	9.252	76	191597	51.53	ug/L	96
50) 1,2-Dibromoethane (EDB)	9.392	107	111990	49.71	ug/L	98
51) 2-Hexanone	9.629	43	209607	100.25	ug/L	99
52) Chlorobenzene	9.909	112	327542	49.23	ug/L	98
53) Ethylbenzene	9.939	91	556471	48.98	ug/L	98
54) 1,1,1,2-Tetrachloroethane	9.970	131	110431	61.14	ug/L	96
55) m,p-Xylenes (2)	10.073	91	878688	100.83	ug/L	100
56) o-Xylene	10.456	91	442280	50.65	ug/L	100
57) Styrene	10.499	104	341919	52.09	ug/L	98
58) Bromoform	10.517	173	85262	60.11	ug/L	97
59) Isopropylbenzene	10.724	105	571925	52.70	ug/L	99
62) Bromobenzene	11.040	156	149731	46.61	ug/L	95
63) n-Propylbenzene	11.070	91	686039	48.56	ug/L	99
64) 1,1,2,2-Tetrachloroethane	11.119	83	167014	48.24	ug/L	96
65) 2-Chlorotoluene	11.192	126	140002	49.64	ug/L	97
66) 1,3,5-Trimethylbenzene	11.228	105	487941	50.10	ug/L	99
67) 1,2,3-Trichloropropane	11.228	110	56341	47.88	ug/L	93
68) t-1,4-Dichloro-2-butene	11.259	88	12609	28.95	ug/L	93
69) 4-Chlorotoluene	11.326	91	412511	48.25	ug/L	99
70) tert-Butylbenzene	11.478	91	282519	49.07	ug/L	95
71) 1,2,4-Trimethylbenzene	11.532	105	496951	50.96	ug/L	99
72) sec-Butylbenzene	11.618	105	660432	51.22	ug/L	99
73) 4-Isopropyltoluene	11.727	119	562613	52.47	ug/L	98
74) 1,3-Dichlorobenzene	11.782	146	292189	48.37	ug/L	99
75) 1,4-Dichlorobenzene	11.849	146	297653	47.10	ug/L	98
76) n-Butylbenzene	12.043	91	502611	55.65	ug/L	97
77) 1,2-Dichlorobenzene	12.165	146	283526	49.88	ug/L	98
78) 1,2-Dibromo-3-Chloropr...	12.773	157	39554	52.53	ug/L	83
79) Hexachlorobutadiene	13.302	223	64569	46.02	ug/L	96
80) 1,2,4-Trichlorobenzene	13.326	180	207538	55.61	ug/L	98
81) Naphthalene	13.606	128	538706	54.17	ug/L	98
82) 1,2,3-Trichlorobenzene	13.764	180	207277	56.42	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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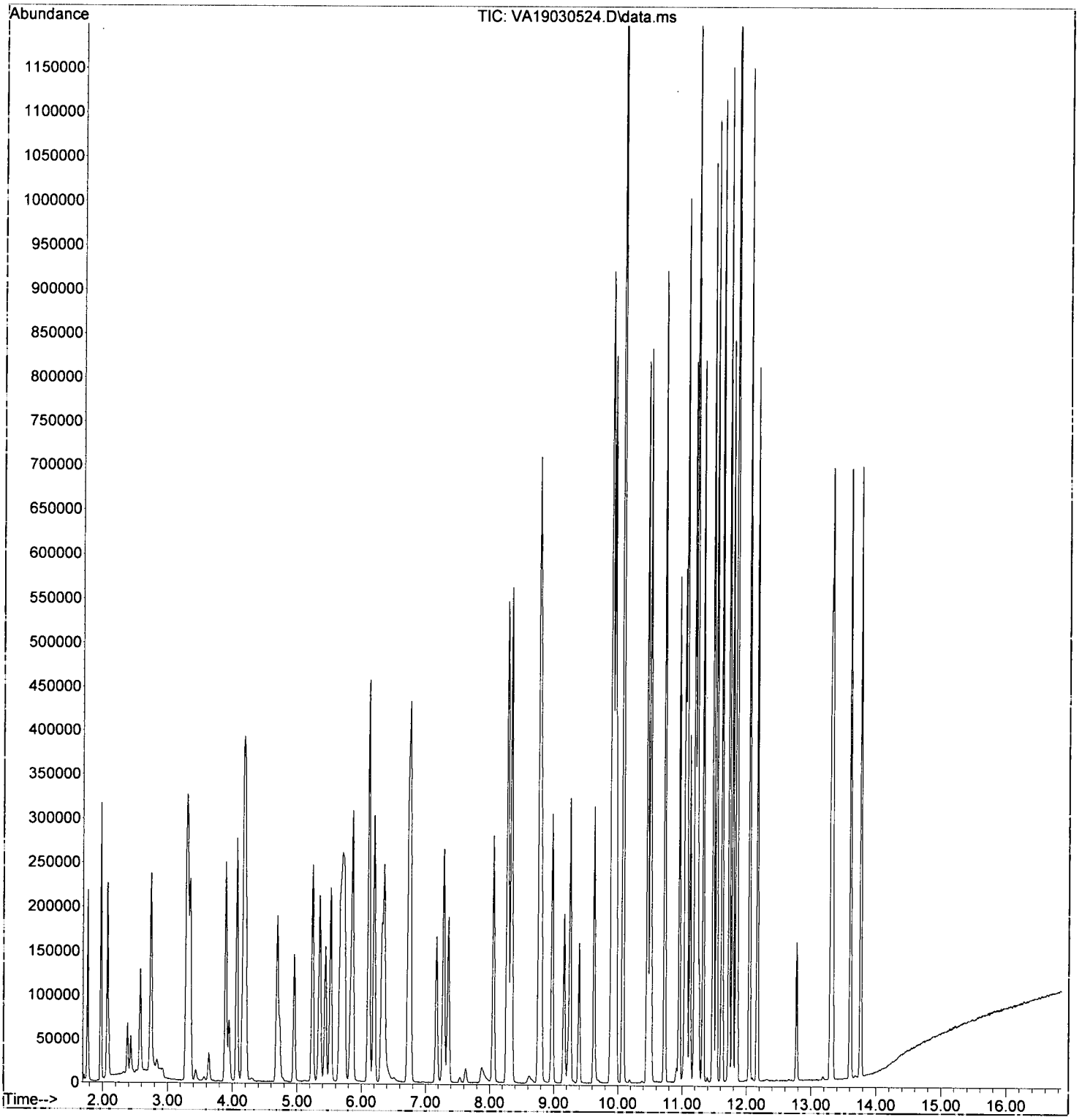
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030524.D
Acq On : 5 Mar 2019 8:31 pm
Operator : MM
Sample : 9C05053-CAL9
Misc : 1X 5mL 50/100PPB VOCR
ALS Vial : 47 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:21 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030525.D
Acq On : 5 Mar 2019 9:00 pm
Operator : MM
Sample : 9C05053-IBL2
Misc : 1X 5mL DI
ALS Vial : 48 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:15:10 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

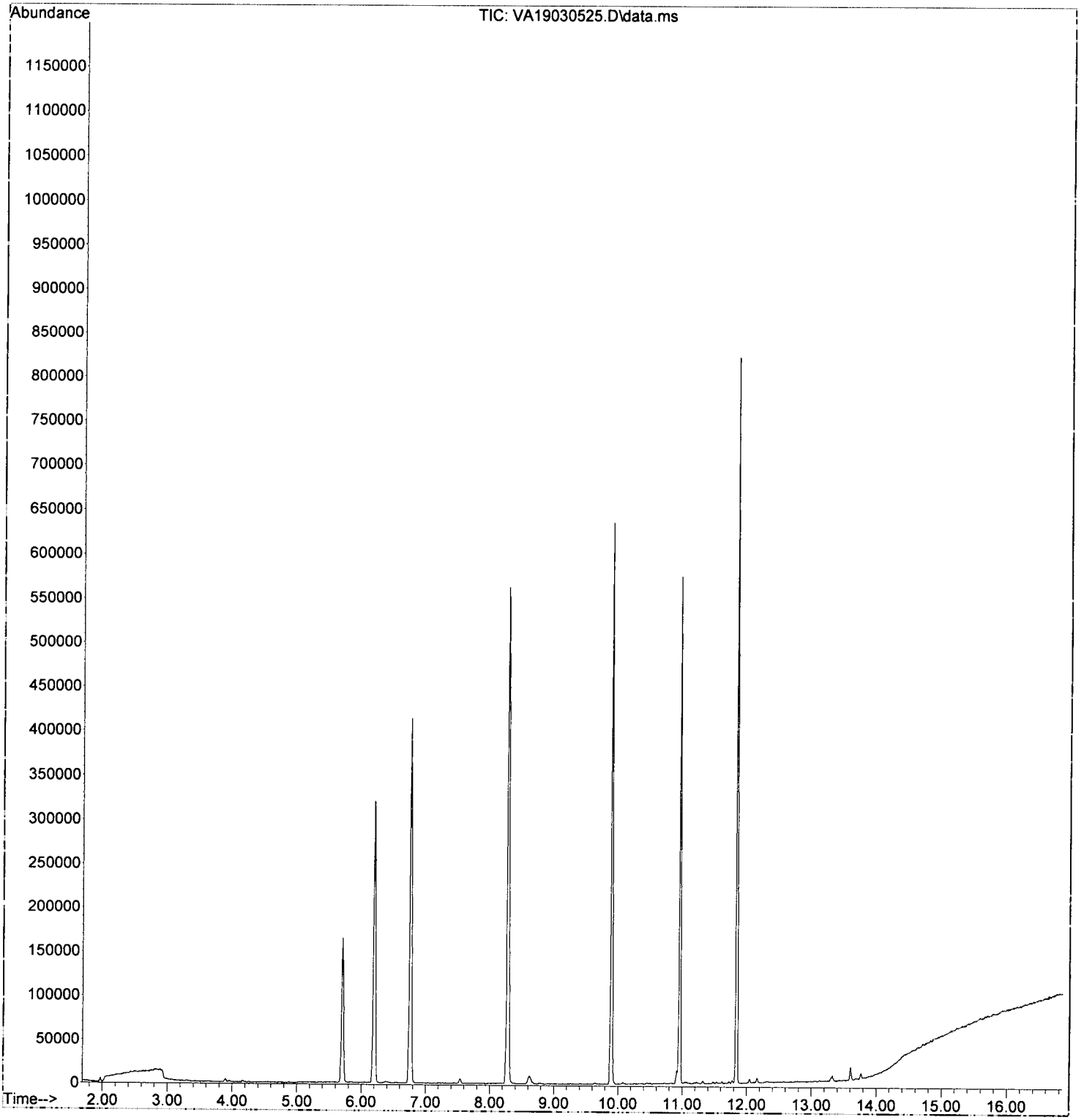
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.200	168	264208	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.892	117	343944	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.838	152	182061	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.701	111	108164	49.01	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.760	114	378486	49.31	ug/L		0.00
42) Toluene-d8 (S)	8.274	98	453550	51.02	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.956	174	145919	52.03	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.968	50	3908	0.69	ug/L		96
5) Bromomethane	2.436	96	1286	0.85	ug/L	#	71
9) Carbon Disulfide	3.306	76	568	0.08	ug/L		78
11) Iodomethane	3.427	142	353	4.95	ug/L	#	47
13) Methylene Chloride	3.902	84	1818	0.14	ug/L		92
14) Acetone	3.950	43	1511	1.40	ug/L		98
26) Tetrahydrofuran	5.708	42	408	0.34	ug/L	#	66
30) 2-Butanone (MEK)	5.835	43	905	0.54	ug/L		52
33) iso-Butyl Alcohol	6.377	43	1864	11.52	ug/L		78
45) 4-Methyl-2-Pentanone (...	8.773	43	998	0.32	ug/L		74
51) 2-Hexanone	9.636	43	969	0.46	ug/L		77
55) m,p-Xylenes (2)	10.080	91	1147	0.12	ug/L		90
57) Styrene	10.506	104	536	0.08	ug/L		84
62) Bromobenzene	11.041	156	279	0.09	ug/L		83
63) n-Propylbenzene	11.071	91	1309	0.09	ug/L		91
66) 1,3,5-Trimethylbenzene	11.223	105	820	0.08	ug/L		90
69) 4-Chlorotoluene	11.327	91	968	0.11	ug/L		86
71) 1,2,4-Trimethylbenzene	11.533	105	1156	0.12	ug/L		95
72) sec-Butylbenzene	11.619	105	1385	0.11	ug/L		94
73) 4-Isopropyltoluene	11.728	119	1502	0.13	ug/L		98
74) 1,3-Dichlorobenzene	11.783	146	961	0.16	ug/L		90
75) 1,4-Dichlorobenzene	11.850	146	990	0.16	ug/L	#	34
76) n-Butylbenzene	12.044	91	2509	0.26	ug/L		96
77) 1,2-Dichlorobenzene	12.166	146	811	0.14	ug/L		91
78) 1,2-Dibromo-3-Chloropr...	12.780	157	75	0.10	ug/L	#	48
79) Hexachlorobutadiene	13.303	223	431	0.33	ug/L		87
80) 1,2,4-Trichlorobenzene	13.327	180	1781	0.45	ug/L		97
81) Naphthalene	13.607	128	11866	1.22	ug/L		98
82) 1,2,3-Trichlorobenzene	13.765	180	1968	0.49	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030525.D
Acq On : 5 Mar 2019 9:00 pm
Operator : MM
Sample : 9C05053-IBL2
Misc : 1X 5mL DI
ALS Vial : 48 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:15:10 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030526.D
Acq On : 5 Mar 2019 9:28 pm
Operator : MM
Sample : 9C05053-CALA
Misc : 1X 5mL 100/200PPB VOCR
ALS Vial : 49 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:23 2019
Quant Method : C:\msdchem\1\METHODS\~~VA190306W~~.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.195	168	259916	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.892	117	354693	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.838	152	205686	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.702	111	109279	49.52	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.760	114	378367	49.61	ug/L		0.00
42) Toluene-d8 (S)	8.274	98	450368	49.20	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.956	174	153342	45.85	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.768	85	320185	110.41	ug/L		97
3) Chloromethane	1.968	50	507272	194.85	ug/L		99
4) Vinyl Chloride	2.066	62	402360	112.10	ug/L		95
5) Bromomethane	2.430	96	61123	44.35	ug/L		98
6) Chloroethane	2.570	64	209450	103.67	ug/L		97
7) Trichlorofluoromethane	2.741	101	425823	104.06	ug/L		98
8) 1,1-Dichloroethene	3.288	61	364035	108.72	ug/L		97
9) Carbon Disulfide	3.306	76	728587	115.05	ug/L		98
10) Freon 113	3.343	101	244816	110.07	ug/L		100
11) Iodomethane	3.434	142	68213	60.55	ug/L		94
12) Acrolein	3.635	56	57769	146.22	ug/L		99
13) Methylene Chloride	3.896	84	264206	116.48	ug/L		98
14) Acetone	3.945	43	206264	189.89	ug/L		97
15) t-1,2-Dichloroethene	4.066	61	346682	107.38	ug/L		96
16) n-Hexane	4.164	86	66876	109.73	ug/L	#	78
17) Methyl-tert-butyl-ether	4.194	73	830057	124.97	ug/L		95
18) 1,1-Dichloroethane	4.693	63	450504	109.99	ug/L		100
19) Acrylonitrile	4.729	53	130312	107.79	ug/L		98
20) Vinyl Acetate	4.954	43	489488	96.81	ug/L		99
21) c-1,2-Dichloroethene	5.240	61	337745	104.91	ug/L		97
22) 2,2-Dichloropropane	5.349	77	347843	124.87	ug/L		95
23) Bromochloromethane	5.434	49	173629	94.21	ug/L		99
24) Chloroform	5.520	83	430443	108.09	ug/L		97
25) Carbon Tetrachloride	5.665	117	321030	125.17	ug/L		95
26) Tetrahydrofuran	5.690	42	116523	107.40	ug/L		96
27) 1,1,1-Trichloroethane	5.732	97	379261	110.11	ug/L		97
29) 1,1-Dichloropropene	5.860	75	349094	102.60	ug/L		98
30) 2-Butanone (MEK)	5.824	43	335120	205.23	ug/L		94
31) Benzene	6.109	78	1018697	101.63	ug/L		99
32) 1,2-Dichloroethane (EDC)	6.316	62	344414	99.22	ug/L		99
33) iso-Butyl Alcohol	6.347	43	446801	2930.29	ug/L		100
35) Trichloroethene (TCE)	6.730	130	276723	104.58	ug/L		97
36) Dibromomethane	7.168	93	158374	103.46	ug/L		99
37) 1,2-Dichloropropane	7.277	63	256794	107.60	ug/L		96
38) Bromodichloromethane	7.356	83	327815	119.11	ug/L		98
40) 2-Chloroethyl Vinyl Ether	~~8.062~~	~~63~~	~~2284~~	~~1.92~~	~~ug/L~~	~~#~~	~~1~~
41) c-1,3-Dichloropropene	8.055	75	413934	121.01	ug/L		95
43) Toluene	8.335	91	1110270	102.76	ug/L		98
44) Tetrachloroethene (PCE)	8.779	166	301258	104.00	ug/L		98
45) 4-Methyl-2-Pentanone (...	8.761	43	712801	223.62	ug/L		98
46) t-1,3-Dichloropropene	8.797	75	399938	127.39	ug/L		97
47) 1,1,2-Trichloroethane	8.974	97	248590	110.47	ug/L		98
48) Dibromochloromethane	9.156	129	266280	116.62	ug/L		99

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030526.D
Acq On : 5 Mar 2019 9:28 pm
Operator : MM
Sample : 9C05053-CALA
Misc : 1X 5mL 100/200PPB VOCR
ALS Vial : 49 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:23 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

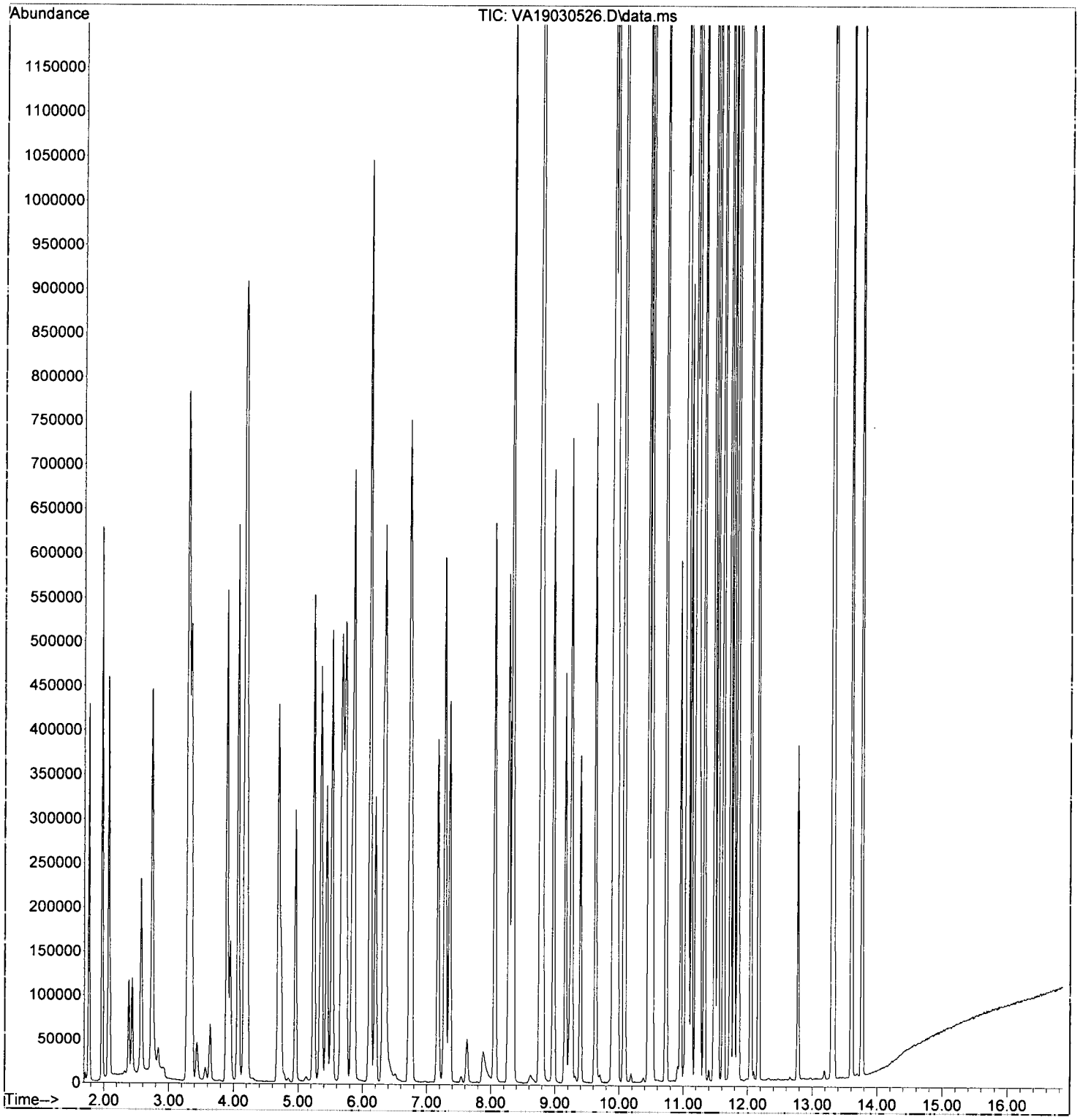
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
49) 1,3-Dichloropropane	9.253	76	436634	111.04 ug/L	96
50) 1,2-Dibromoethane (EDB)	9.393	107	260186	109.22 ug/L	99
51) 2-Hexanone	9.624	43	493054	222.99 ug/L	99
52) Chlorobenzene	9.904	112	749922	106.59 ug/L	99
53) Ethylbenzene	9.941	91	1294573	107.74 ug/L	98
54) 1,1,1,2-Tetrachloroethane	9.971	131	257487	134.80 ug/L	98
55) m,p-Xylenes (2)	10.074	91	2054138	222.89 ug/L	100
56) o-Xylene	10.451	91	1024986	111.00 ug/L	99
57) Styrene	10.500	104	829734	119.52 ug/L	98
58) Bromoform	10.518	173	211464	124.36 ug/L	99
59) Isopropylbenzene	10.725	105	1333661	116.22 ug/L	99
62) Bromobenzene	11.041	156	342130	100.40 ug/L	97
63) n-Propylbenzene	11.066	91	1598620	106.68 ug/L	97
64) 1,1,2,2-Tetrachloroethane	11.120	83	388242	105.73 ug/L	98
65) 2-Chlorotoluene	11.193	126	321548	107.49 ug/L	97
66) 1,3,5-Trimethylbenzene	11.224	105	1147490	111.07 ug/L	97
67) 1,2,3-Trichloropropane	11.224	110	132850	106.44 ug/L	97
68) t-1,4-Dichloro-2-butene	11.260	88	31895	65.14 ug/L	96
69) 4-Chlorotoluene	11.321	91	959692	105.83 ug/L	97
70) tert-Butylbenzene	11.479	91	656544	107.51 ug/L	99
71) 1,2,4-Trimethylbenzene	11.534	105	1164983	112.63 ug/L	100
72) sec-Butylbenzene	11.619	105	1540246	112.62 ug/L	98
73) 4-Isopropyltoluene	11.729	119	1327299	116.69 ug/L	98
74) 1,3-Dichlorobenzene	11.783	146	681848	106.42 ug/L	99
75) 1,4-Dichlorobenzene	11.850	146	689104	102.80 ug/L	98
76) n-Butylbenzene	12.045	91	1162996	121.40 ug/L	98
77) 1,2-Dichlorobenzene	12.166	146	655475	108.71 ug/L	99
78) 1,2-Dibromo-3-Chloropr...	12.775	157	94764	118.66 ug/L	90
79) Hexachlorobutadiene	13.304	223	144565	97.13 ug/L	98
80) 1,2,4-Trichlorobenzene	13.328	180	465896	117.70 ug/L	96
81) Naphthalene	13.602	128	1250480	113.01 ug/L	98
82) 1,2,3-Trichlorobenzene	13.766	180	463021	118.82 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030526.D
Acq On : 5 Mar 2019 9:28 pm
Operator : MM
Sample : 9C05053-CALA
Misc : 1X 5mL 100/200PPB VOCR
ALS Vial : 49 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:23 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration



Arcadis U.S., Inc. 1 Lincoln Street, Suite 2300 Boston, MA 02111 Tel 617 482 3400 Fax 617 482 3863 - Mult 802 Decommisioning - Level IV Data Package Page 1026 of 1564

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030527.D
Acq On : 5 Mar 2019 9:57 pm
Operator : MM
Sample : 9C05053-IBL3
Misc : 1X 5mL DI
ALS Vial : 50 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:15:12 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.200	168	265159	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.891	117	347929	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.837	152	188625	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.701	111	109301	49.35	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.759	114	383356	49.76	ug/L		0.00
42) Toluene-d8 (S)	8.273	98	452185	50.28	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.955	174	149262	51.37	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.967	50	3395	0.60	ug/L		90
5) Bromomethane	2.441	96	1686	1.74	ug/L		84
9) Carbon Disulfide	3.305	76	767	0.11	ug/L		78
11) Iodomethane	3.432	142	794	6.22	ug/L		89
13) Methylene Chloride	3.895	84	2427	0.37	ug/L		95
14) Acetone	3.955	43	2112	1.95	ug/L		99
17) Methyl-tert-butyl-ether	4.211	73	1197	0.14	ug/L		57
19) Acrylonitrile	4.734	53	397	0.32	ug/L	#	14
25) Carbon Tetrachloride	5.707	117	301	0.10	ug/L	#	1
26) Tetrahydrofuran	5.701	42	570	0.48	ug/L	#	53
30) 2-Butanone (MEK)	5.847	43	1675	0.99	ug/L		85
33) iso-Butyl Alcohol	6.376	43	3163	19.47	ug/L		79
36) Dibromomethane	7.173	93	128	0.08	ug/L	#	83
41) c-1,3-Dichloropropene	8.054	75	325	0.08	ug/L	#	35
43) Toluene	8.334	91	1001	0.09	ug/L		95
44) Tetrachloroethene (PCE)	8.772	166	387	0.13	ug/L	#	68
45) 4-Methyl-2-Pentanone (...	8.778	43	1846	0.59	ug/L		93
46) t-1,3-Dichloropropene	8.802	75	515	0.14	ug/L	#	37
49) 1,3-Dichloropropane	9.246	76	347	0.08	ug/L		70
50) 1,2-Dibromoethane (EDB)	9.386	107	282	0.12	ug/L		91
51) 2-Hexanone	9.642	43	1715	0.80	ug/L		91
52) Chlorobenzene	9.909	112	1034	0.14	ug/L	#	51
53) Ethylbenzene	9.940	91	1301	0.11	ug/L		90
55) m,p-Xylenes (2)	10.073	91	2451	0.26	ug/L		90
56) o-Xylene	10.457	91	1135	0.12	ug/L		95
57) Styrene	10.499	104	1132	0.17	ug/L		88
59) Isopropylbenzene	10.724	105	1463	0.12	ug/L		95
62) Bromobenzene	11.040	156	722	0.23	ug/L		88
63) n-Propylbenzene	11.071	91	2609	0.18	ug/L		98
64) 1,1,2,2-Tetrachloroethane	11.119	83	550	0.15	ug/L		85
65) 2-Chlorotoluene	11.192	126	504	0.17	ug/L	#	79
66) 1,3,5-Trimethylbenzene	11.229	105	1911	0.19	ug/L		94
67) 1,2,3-Trichloropropane	11.223	110	239	0.20	ug/L	#	50
69) 4-Chlorotoluene	11.326	91	2025	0.23	ug/L		97
70) tert-Butylbenzene	11.478	91	1202	0.20	ug/L		95
71) 1,2,4-Trimethylbenzene	11.533	105	2519	0.25	ug/L		97
72) sec-Butylbenzene	11.618	105	3248	0.24	ug/L		96
73) 4-Isopropyltoluene	11.727	119	3492	0.30	ug/L		97
74) 1,3-Dichlorobenzene	11.782	146	1938	0.31	ug/L		95
75) 1,4-Dichlorobenzene	11.849	146	2118	0.33	ug/L	#	73
76) n-Butylbenzene	12.044	91	5099	0.51	ug/L		94
77) 1,2-Dichlorobenzene	12.165	146	1789	0.30	ug/L		94
78) 1,2-Dibromo-3-Chloropr...	12.780	157	406	0.50	ug/L		95

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030527.D
Acq On : 5 Mar 2019 9:57 pm
Operator : MM
Sample : 9C05053-IBL3
Misc : 1X 5mL DI
ALS Vial : 50 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:15:12 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

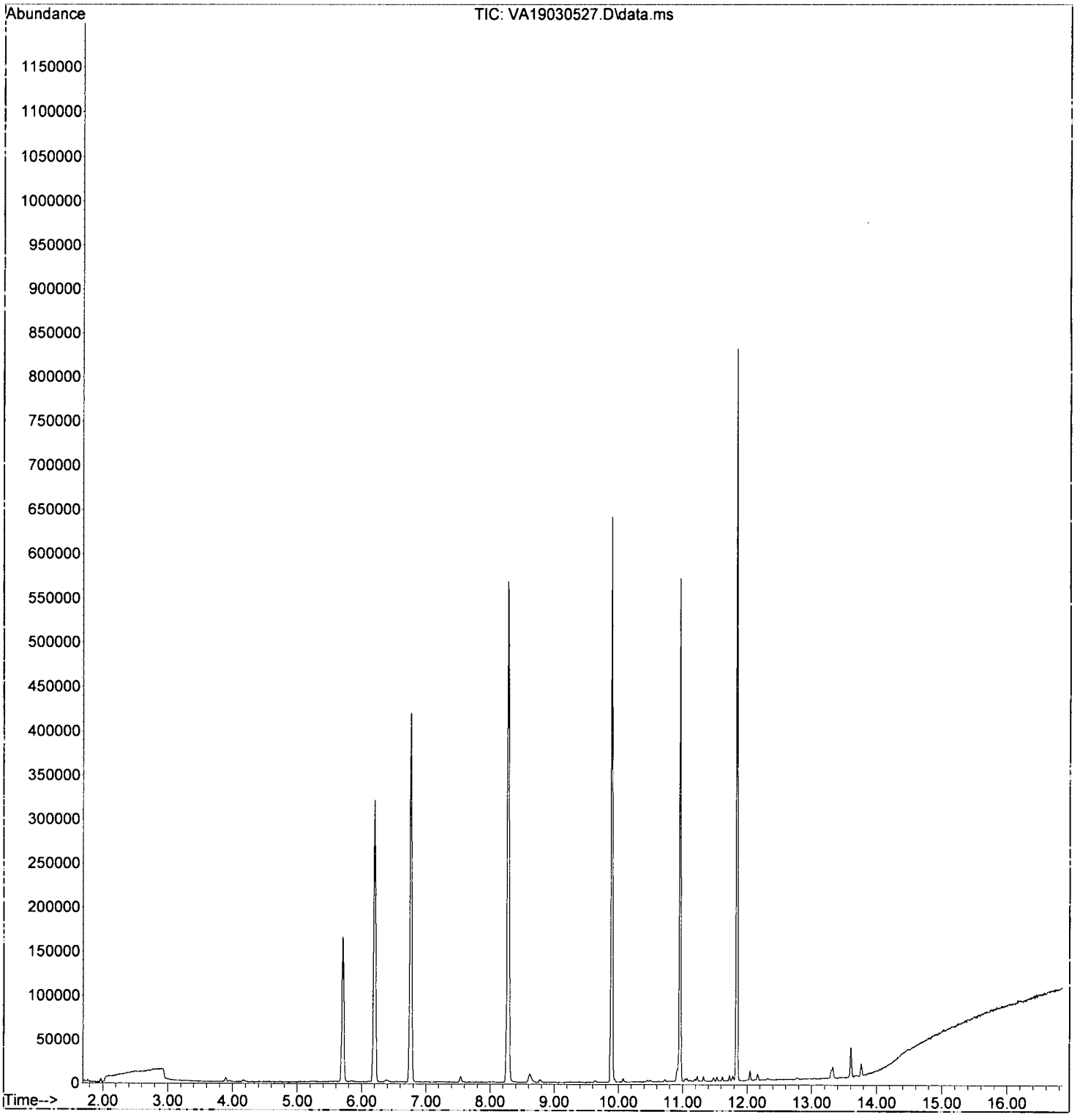
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
79) Hexachlorobutadiene	13.303	223	1228	0.90	ug/L	93
80) 1,2,4-Trichlorobenzene	13.327	180	3790	0.92	ug/L	95
81) Naphthalene	13.607	128	26231	2.59	ug/L	99
82) 1,2,3-Trichlorobenzene	13.765	180	4370	1.05	ug/L	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030527.D
Acq On : 5 Mar 2019 9:57 pm
Operator : MM
Sample : 9C05053-IBL3
Misc : 1X 5mL DI
ALS Vial : 50 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:15:12 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030528.D
Acq On : 5 Mar 2019 10:25 pm
Operator : MM
Sample : 9C05053-CALB
Misc : 1X 5mL 200/400PPB VOCR
ALS Vial : 51 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:25 2019
Quant Method : C:\msdchem\1\METHODS\~~VA190306W.M~~
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.195	168	271036	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.892	117	378328	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.838	152	221763	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.702	111	115067	50.00	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.760	114	394717	49.63	ug/L		0.00
42) Toluene-d8 (S)	8.274	98	466223	47.75	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.956	174	161450	44.79	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.763	85	643762	212.88	ug/L		98
3) Chloromethane	1.970	50	985713	363.09	ug/L		99
4) Vinyl Chloride	2.067	62	816312	218.10	ug/L		95
5) Bromomethane	2.432	96	155450	108.15	ug/L		99
6) Chloroethane	2.559	64	345250	163.87	ug/L		98
7) Trichlorofluoromethane	2.736	101	870253	203.95	ug/L		96
8) 1,1-Dichloroethene	3.283	61	751926	215.35	ug/L		97
9) Carbon Disulfide	3.307	76	1487520	225.26	ug/L		99
10) Freon 113	3.344	101	496915	214.24	ug/L		99
11) Iodomethane	3.435	142	199319	133.77	ug/L		94
12) Acrolein	3.636	56	117156	284.37	ug/L		98
13) Methylene Chloride	3.897	84	532217	226.60	ug/L		99
14) Acetone	3.946	43	419601	370.44	ug/L		98
15) t-1,2-Dichloroethene	4.068	61	712223	211.55	ug/L		97
16) n-Hexane	4.165	86	136770	215.20	ug/L	#	75
17) Methyl-tert-butyl-ether	4.189	73	1706351	246.36	ug/L		85
18) 1,1-Dichloroethane	4.694	63	921609	215.78	ug/L		100
19) Acrylonitrile	4.730	53	268384	212.88	ug/L		97
20) Vinyl Acetate	4.955	43	951504	180.46	ug/L		99
21) c-1,2-Dichloroethene	5.240	61	698561	208.09	ug/L		97
22) 2,2-Dichloropropane	5.349	77	697829	240.22	ug/L		94
23) Bromochloromethane	5.440	49	340399	177.13	ug/L		99
24) Chloroform	5.519	83	884817	213.08	ug/L		97
25) Carbon Tetrachloride	5.665	117	635405	237.59	ug/L		95
26) Tetrahydrofuran	5.684	42	240995	213.02	ug/L		96
27) 1,1,1-Trichloroethane	5.732	97	785008	218.56	ug/L		97
29) 1,1-Dichloropropene	5.860	75	720940	203.19	ug/L		97
30) 2-Butanone (MEK)	5.824	43	690506	405.53	ug/L		94
31) Benzene	6.109	78	2099164	200.82	ug/L		99
32) 1,2-Dichloroethane (EDC)	6.316	62	711176	196.46	ug/L		99
33) iso-Butyl Alcohol	6.347	43	932443	5864.42	ug/L		99
35) Trichloroethene (TCE)	6.730	130	575749	208.67	ug/L		98
36) Dibromomethane	7.168	93	317191	198.71	ug/L		99
37) 1,2-Dichloropropane	7.277	63	529951	212.94	ug/L		97
38) Bromodichloromethane	7.356	83	687837	239.67	ug/L		97
40) 2-Chloroethyl Vinyl Ether	8.055	63	4873	3.83	ug/L	#	1
41) c-1,3-Dichloropropene	8.055	75	863436	236.64	ug/L		95
43) Toluene	8.335	91	2298286	199.43	ug/L		98
44) Tetrachloroethene (PCE)	8.779	166	623965	201.95	ug/L		97
45) 4-Methyl-2-Pentanone (...	8.767	43	1509637	444.02	ug/L		98
46) t-1,3-Dichloropropene	8.803	75	831612	248.34	ug/L		99
47) 1,1,2-Trichloroethane	8.974	97	514581	214.39	ug/L		99
48) Dibromochloromethane	9.162	129	573149	209.54	ug/L		99

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030528.D
Acq On : 5 Mar 2019 10:25 pm
Operator : MM
Sample : 9C05053-CALB
Misc : 1X 5mL 200/400PPB VOCR
ALS Vial : 51 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:25 2019
Quant Method : C:\msdchem\1\METHODS\~~VA190306W.M~~
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration

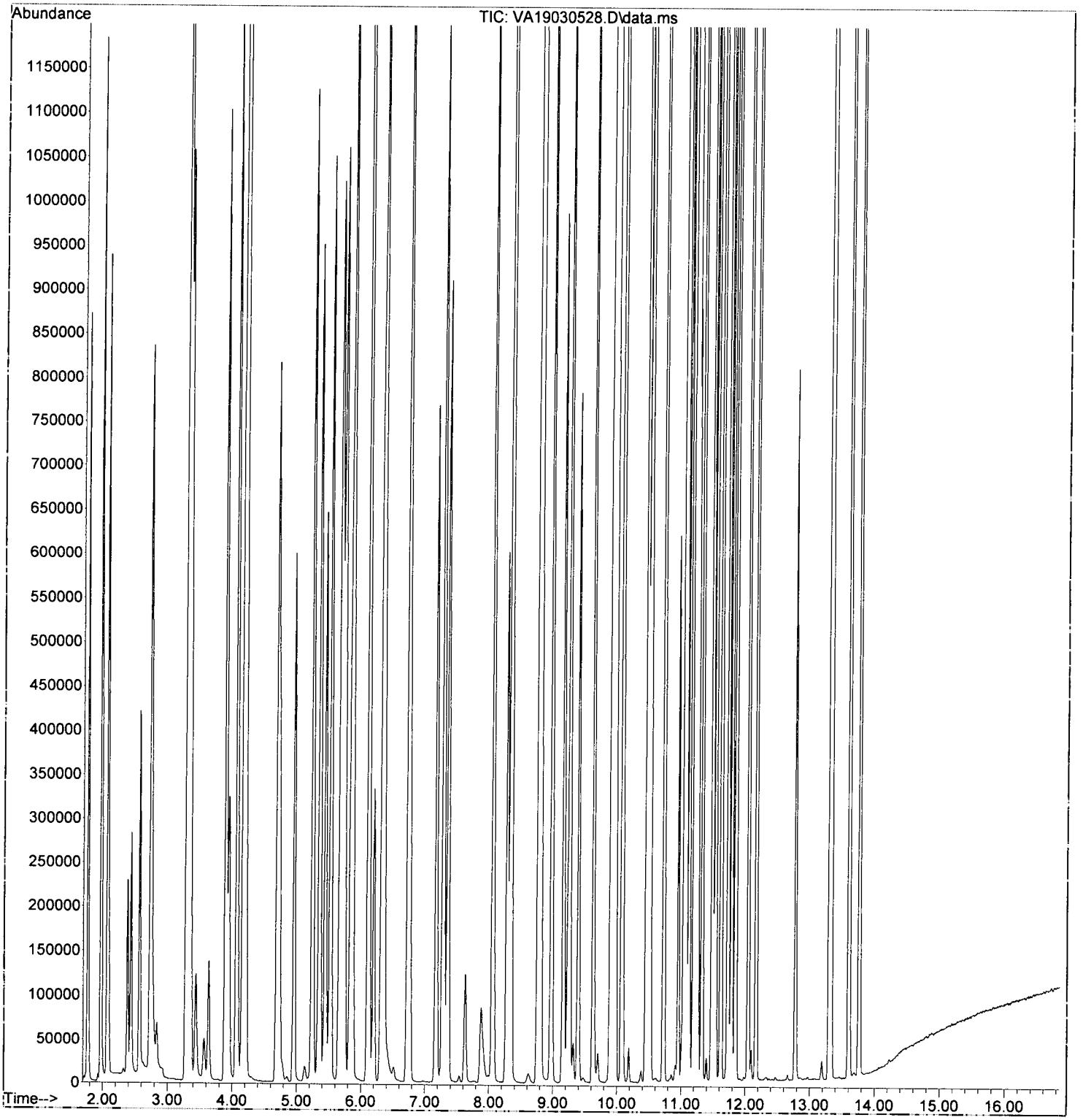
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) 1,3-Dichloropropane	9.253	76	901987	215.06	ug/L	96
50) 1,2-Dibromoethane (EDB)	9.393	107	540909	212.87	ug/L	100
51) 2-Hexanone	9.624	43	1028003	435.88	ug/L	99
52) Chlorobenzene	9.910	112	1564733	208.50	ug/L	98
53) Ethylbenzene	9.941	91	2687146	209.67	ug/L	98
54) 1,1,1,2-Tetrachloroethane	9.971	131	528846	259.57	ug/L	99
55) m,p-Xylenes (2)	10.074	91	4318687	439.34	ug/L	99
56) o-Xylene	10.458	91	2158427	219.14	ug/L	99
57) Styrene	10.500	104	1794588	242.36	ug/L	98
58) Bromoform	10.518	173	473435	221.84	ug/L	99
59) Isopropylbenzene	10.725	105	2785971	227.61	ug/L	98
62) Bromobenzene	11.041	156	721594	196.41	ug/L	97
63) n-Propylbenzene	11.072	91	3306055	204.64	ug/L	99
64) 1,1,2,2-Tetrachloroethane	11.120	83	813168	205.39	ug/L	98
65) 2-Chlorotoluene	11.193	126	677048	209.92	ug/L	98
66) 1,3,5-Trimethylbenzene	11.224	105	2411075	216.45	ug/L	97
67) 1,2,3-Trichloropropane	11.224	110	286764	213.11	ug/L	98
68) t-1,4-Dichloro-2-butene	11.260	88	77698	135.03	ug/L	96
69) 4-Chlorotoluene	11.321	91	2015558	206.16	ug/L	97
70) tert-Butylbenzene	11.479	91	1388459	210.87	ug/L	98
71) 1,2,4-Trimethylbenzene	11.534	105	2436746	218.51	ug/L	99
72) sec-Butylbenzene	11.619	105	3236597	219.49	ug/L	99
73) 4-Isopropyltoluene	11.729	119	2800092	228.33	ug/L	97
74) 1,3-Dichlorobenzene	11.783	146	1435219	207.76	ug/L	99
75) 1,4-Dichlorobenzene	11.850	146	1450789	200.74	ug/L	98
76) n-Butylbenzene	12.045	91	2454286	237.62	ug/L	97
77) 1,2-Dichlorobenzene	12.166	146	1370410	210.81	ug/L	98
78) 1,2-Dibromo-3-Chloropr...	12.775	157	206284	239.57	ug/L	91
79) Hexachlorobutadiene	13.298	223	303244	188.98	ug/L	97
80) 1,2,4-Trichlorobenzene	13.328	180	965140	226.14	ug/L	98
81) Naphthalene	13.602	128	2714283	211.90	ug/L	98
82) 1,2,3-Trichlorobenzene	13.766	180	986461	234.79	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030528.D
Acq On : 5 Mar 2019 10:25 pm
Operator : MM
Sample : 9C05053-CALB
Misc : 1X 5mL 200/400PPB VOCR
ALS Vial : 51 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 08:07:25 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:06:41 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030529.D
Acq On : 5 Mar 2019 10:54 pm
Operator : MM
Sample : 9C05053-IBL4
Misc : 1X 5mL DI
ALS Vial : 52 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:15:14 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.195	168	278410	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.892	117	358441	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.838	152	188052	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.702	111	113993	49.02	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.760	114	401877	49.68	ug/L		0.00
42) Toluene-d8 (S)	8.275	98	468646	50.58	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.957	174	149531	51.62	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.968	50	4277	0.72	ug/L		97
5) Bromomethane	2.430	96	1710	1.62	ug/L		94
9) Carbon Disulfide	3.306	76	1590	0.21	ug/L		75
10) Freon 113	3.342	101	213	0.08	ug/L	#	16
11) Iodomethane	3.440	142	1894	9.02	ug/L		84
12) Acrolein	3.646	56	67	0.11	ug/L	#	23
13) Methylene Chloride	3.896	84	2860	0.48	ug/L		97
14) Acetone	3.956	43	3147	2.77	ug/L		92
15) t-1,2-Dichloroethene	4.072	61	563	0.16	ug/L		85
16) n-Hexane	4.157	86	171	0.24	ug/L	#	5
17) Methyl-tert-butyl-ether	4.206	73	1313	0.14	ug/L		57
19) Acrylonitrile	4.735	53	528	0.41	ug/L		87
21) c-1,2-Dichloroethene	5.234	61	428	0.12	ug/L		83
22) 2,2-Dichloropropane	5.362	77	431	0.12	ug/L	#	32
23) Bromochloromethane	5.441	49	285	0.14	ug/L		75
26) Tetrahydrofuran	5.708	42	944	0.75	ug/L		96
29) 1,1-Dichloropropene	5.866	75	561	0.15	ug/L		91
30) 2-Butanone (MEK)	5.842	43	2270	1.28	ug/L		87
31) Benzene	6.104	78	1330	0.12	ug/L		73
32) 1,2-Dichloroethane (EDC)	6.323	62	347	0.10	ug/L	#	49
33) iso-Butyl Alcohol	6.377	43	6533	38.30	ug/L		99
35) Trichloroethene (TCE)	6.730	130	425	0.15	ug/L	#	68
41) c-1,3-Dichloropropene	8.062	75	610	0.15	ug/L	#	51
43) Toluene	8.335	91	1678	0.15	ug/L		92
44) Tetrachloroethene (PCE)	8.786	166	724	0.24	ug/L		87
45) 4-Methyl-2-Pentanone (...	8.779	43	3605	1.11	ug/L		95
46) t-1,3-Dichloropropene	8.798	75	792	0.22	ug/L		84
47) 1,1,2-Trichloroethane	8.974	97	368	0.15	ug/L		92
48) Dibromochloromethane	9.163	129	198	0.08	ug/L		88
49) 1,3-Dichloropropane	9.254	76	676	0.16	ug/L		88
50) 1,2-Dibromoethane (EDB)	9.388	107	480	0.20	ug/L		95
51) 2-Hexanone	9.637	43	3493	1.59	ug/L		92
52) Chlorobenzene	9.904	112	1739	0.23	ug/L	#	44
53) Ethylbenzene	9.941	91	2539	0.20	ug/L		97
55) m,p-Xylenes (2)	10.075	91	3987	0.41	ug/L		94
56) o-Xylene	10.452	91	1898	0.19	ug/L		96
57) Styrene	10.500	104	1732	0.25	ug/L		91
58) Bromoform	10.513	173	227	0.13	ug/L		91
59) Isopropylbenzene	10.725	105	2855	0.22	ug/L		97
62) Bromobenzene	11.042	156	1133	0.36	ug/L		90
63) n-Propylbenzene	11.066	91	4664	0.32	ug/L		97
64) 1,1,2,2-Tetrachloroethane	11.121	83	1087	0.31	ug/L		96
65) 2-Chlorotoluene	11.194	126	914	0.31	ug/L	#	78

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030529.D
Acq On : 5 Mar 2019 10:54 pm
Operator : MM
Sample : 9C05053-IBL4
Misc : 1X 5mL DI
ALS Vial : 52 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:15:14 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

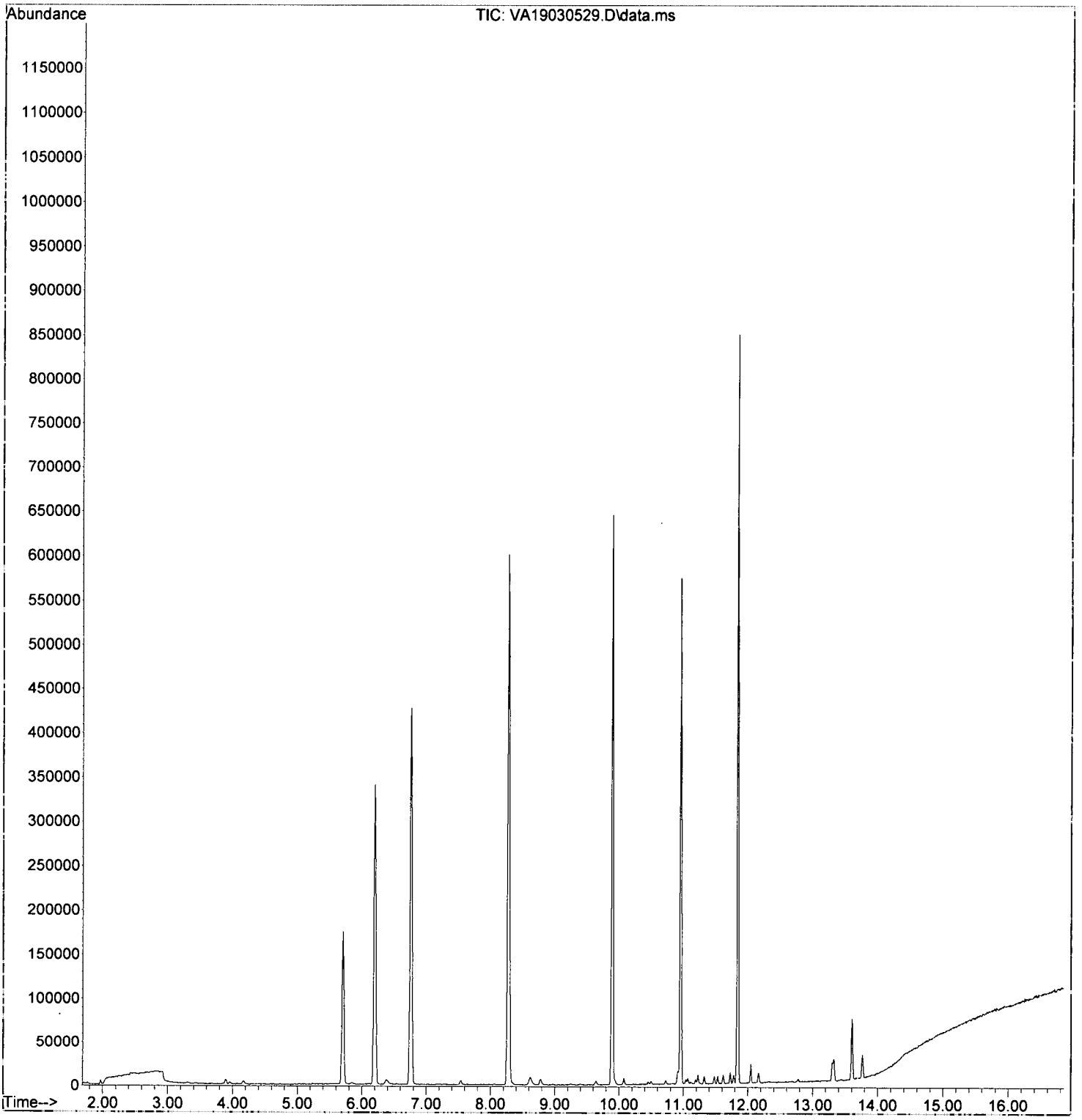
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
66) 1,3,5-Trimethylbenzene	11.224	105	3392	0.34	ug/L		94
67) 1,2,3-Trichloropropane	11.224	110	448	0.38	ug/L	#	79
68) t-1,4-Dichloro-2-butene	11.261	88	37	0.18	ug/L	#	2
69) 4-Chlorotoluene	11.321	91	3412	0.39	ug/L		98
70) tert-Butylbenzene	11.480	91	2222	0.37	ug/L		97
71) 1,2,4-Trimethylbenzene	11.534	105	4133	0.41	ug/L		95
72) sec-Butylbenzene	11.619	105	6088	0.45	ug/L		98
73) 4-Isopropyltoluene	11.729	119	6549	0.57	ug/L		98
74) 1,3-Dichlorobenzene	11.784	146	3291	0.54	ug/L		93
75) 1,4-Dichlorobenzene	11.851	146	3954	0.62	ug/L		90
76) n-Butylbenzene	12.045	91	9923	0.99	ug/L		96
77) 1,2-Dichlorobenzene	12.167	146	2881	0.48	ug/L		91
78) 1,2-Dibromo-3-Chloropr...	12.775	157	781	0.97	ug/L	#	77
79) Hexachlorobutadiene	13.304	223	2452	1.80	ug/L		87
80) 1,2,4-Trichlorobenzene	13.328	180	7178	1.75	ug/L		97
81) Naphthalene	13.602	128	53652	5.32	ug/L		98
82) 1,2,3-Trichlorobenzene	13.766	180	7976	1.92	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030529.D
Acq On : 5 Mar 2019 10:54 pm
Operator : MM
Sample : 9C05053-IBL4
Misc : 1X 5mL DI
ALS Vial : 52 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:15:14 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030530.D
Acq On : 5 Mar 2019 11:22 pm
Operator : MM
Sample : 9C05053-IBL5
Misc : 1X 5mL DI
ALS Vial : 53 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:15:16 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

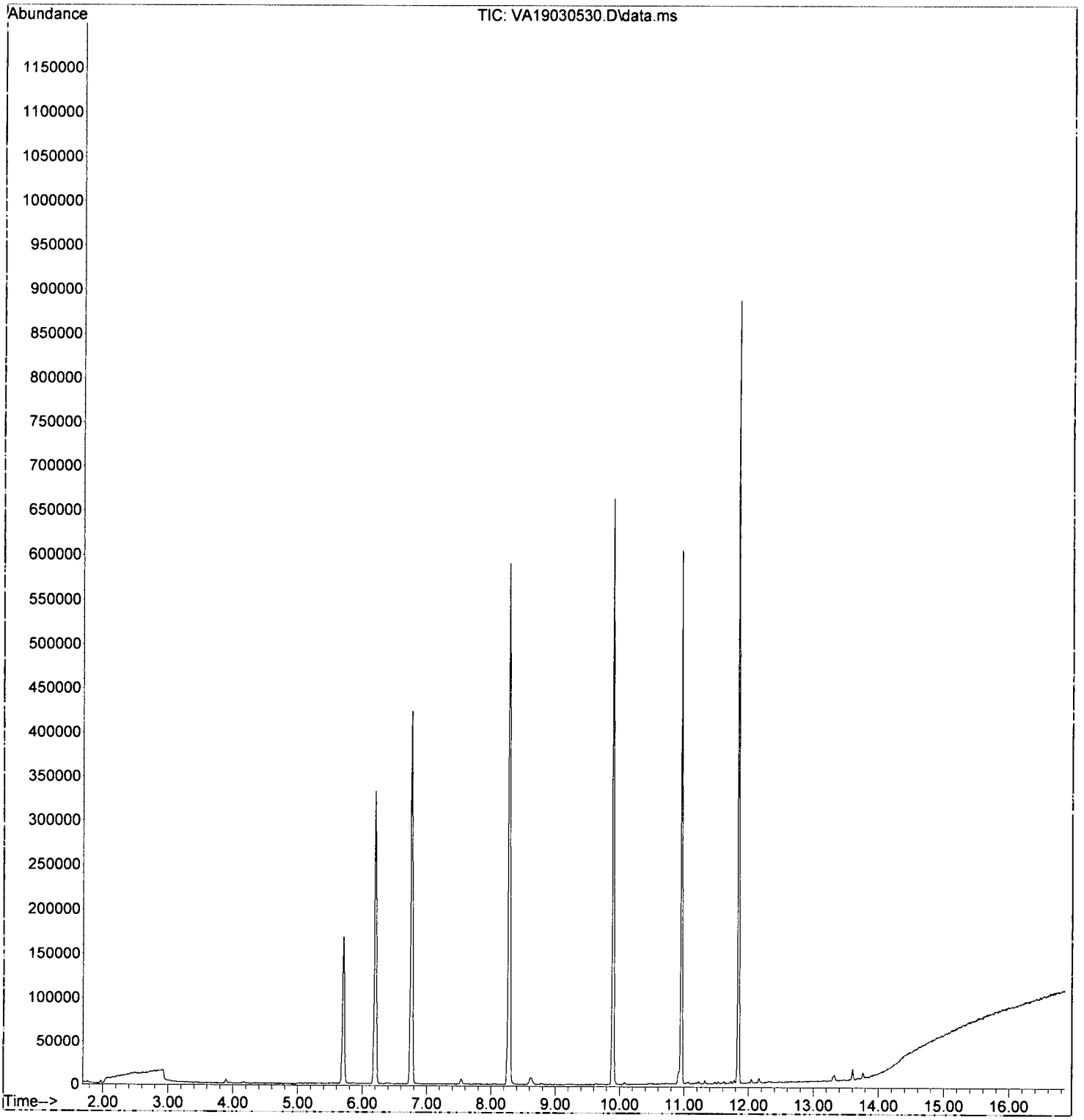
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.194	168	270508	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.892	117	358816	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.838	152	195654	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.702	111	110789	49.03	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.760	114	392845	49.98	ug/L		0.00
42) Toluene-d8 (S)	8.274	98	466344	50.28	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.956	174	154682	51.33	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.967	50	3007	0.52	ug/L		97
5) Bromomethane	2.435	96	1204	0.60	ug/L		88
9) Carbon Disulfide	3.305	76	673	0.09	ug/L		78
11) Iodomethane	3.433	142	1030	6.83	ug/L		67
13) Methylene Chloride	3.895	84	2115	0.23	ug/L		93
14) Acetone	3.950	43	1712	1.55	ug/L		93
19) Acrylonitrile	4.728	53	191	0.15	ug/L	#	14
26) Tetrahydrofuran	5.696	42	152	0.12	ug/L	#	36
30) 2-Butanone (MEK)	5.835	43	1167	0.68	ug/L		52
33) iso-Butyl Alcohol	6.377	43	1144	6.90	ug/L		78
45) 4-Methyl-2-Pentanone (...	8.779	43	964	0.30	ug/L		92
46) t-1,3-Dichloropropene	8.797	75	396	0.11	ug/L	#	31
51) 2-Hexanone	9.648	43	937	0.43	ug/L		64
55) m,p-Xylenes (2)	10.074	91	1341	0.14	ug/L		92
57) Styrene	10.500	104	643	0.09	ug/L		75
62) Bromobenzene	11.041	156	373	0.12	ug/L	#	69
63) n-Propylbenzene	11.065	91	1506	0.10	ug/L		97
65) 2-Chlorotoluene	11.187	126	272	0.09	ug/L	#	71
66) 1,3,5-Trimethylbenzene	11.230	105	1065	0.10	ug/L		91
69) 4-Chlorotoluene	11.327	91	1375	0.15	ug/L		96
70) tert-Butylbenzene	11.479	91	539	0.09	ug/L		91
71) 1,2,4-Trimethylbenzene	11.534	105	1385	0.13	ug/L		96
72) sec-Butylbenzene	11.619	105	1772	0.13	ug/L		91
73) 4-Isopropyltoluene	11.728	119	1829	0.15	ug/L		88
74) 1,3-Dichlorobenzene	11.783	146	1261	0.20	ug/L		97
75) 1,4-Dichlorobenzene	11.850	146	1544	0.23	ug/L	#	65
76) n-Butylbenzene	12.044	91	2381	0.23	ug/L		97
77) 1,2-Dichlorobenzene	12.166	146	1089	0.18	ug/L		89
78) 1,2-Dibromo-3-Chloropr...	12.774	157	156	0.19	ug/L	#	41
79) Hexachlorobutadiene	13.303	223	579	0.41	ug/L		91
80) 1,2,4-Trichlorobenzene	13.328	180	1990	0.47	ug/L		88
81) Naphthalene	13.607	128	9643	0.92	ug/L		98
82) 1,2,3-Trichlorobenzene	13.765	180	1992	0.46	ug/L		90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030530.D
Acq On : 5 Mar 2019 11:22 pm
Operator : MM
Sample : 9C05053-IBL5
Misc : 1X 5mL DI
ALS Vial : 53 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:15:16 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030531.D
Acq On : 5 Mar 2019 11:51 pm
Operator : MM
Sample : 9C05053-ICV1
Misc : 1X 5mL 20/40PPB VOCR
ALS Vial : 54 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:15:18 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.195	168	258187	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.892	117	344678	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.838	152	193112	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.702	111	107409	49.81	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.760	114	376693	50.22	ug/L		0.00
42) Toluene-d8 (S)	8.274	98	447114	50.19	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.956	174	148520	49.93	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.767	85	57779	19.19	ug/L		99
3) Chloromethane	1.968	50	99811	18.02	ug/L		100
4) Vinyl Chloride	2.065	62	76747	19.47	ug/L		94
5) Bromomethane	2.430	96	15465	30.67	ug/L		93
6) Chloroethane	2.570	64	47121	20.93	ug/L		95
7) Trichlorofluoromethane	2.740	101	83870	19.47	ug/L		98
8) 1,1-Dichloroethene	3.281	61	73298	20.86	ug/L		96
9) Carbon Disulfide	3.306	76	119661	17.39	ug/L		99
10) Freon 113	3.342	101	46438	19.72	ug/L		97
11) Iodomethane	3.434	142	17482	42.35	ug/L		92
12) Acrolein	3.634	56	11017	19.69	ug/L		96
13) Methylene Chloride	3.896	84	54514	20.89	ug/L		98
14) Acetone	3.950	43	42535	40.43	ug/L		97
15) t-1,2-Dichloroethene	4.066	61	70888	21.19	ug/L		98
16) n-Hexane	4.169	86	12341	18.87	ug/L	#	75
17) Methyl-tert-butyl-ether	4.194	73	159054	18.93	ug/L		93
18) 1,1-Dichloroethane	4.692	63	90206	20.77	ug/L		99
19) Acrylonitrile	4.729	53	24789	20.55	ug/L		96
20) Vinyl Acetate	4.954	43	84898	18.49	ug/L		99
21) c-1,2-Dichloroethene	5.240	61	71469	22.10	ug/L		95
22) 2,2-Dichloropropane	5.349	77	68930	19.94	ug/L		93
23) Bromochloromethane	5.434	49	35949	19.57	ug/L		95
24) Chloroform	5.519	83	87109	20.54	ug/L		97
25) Carbon Tetrachloride	5.665	117	64757	21.33	ug/L		95
26) Tetrahydrofuran	5.690	42	22435	19.28	ug/L		97
27) 1,1,1-Trichloroethane	5.732	97	77559	20.77	ug/L		96
29) 1,1-Dichloropropene	5.860	75	72146	21.21	ug/L		98
30) 2-Butanone (MEK)	5.830	43	63511	38.54	ug/L		92
31) Benzene	6.115	78	210621	20.31	ug/L		99
32) 1,2-Dichloroethane (EDC)	6.316	62	71933	21.35	ug/L		99
33) iso-Butyl Alcohol	6.347	43	84711	535.58	ug/L		98
35) Trichloroethene (TCE)	6.730	130	57366	21.64	ug/L		97
36) Dibromomethane	7.168	93	32898	22.12	ug/L		99
37) 1,2-Dichloropropane	7.277	63	51894	20.47	ug/L		96
38) Bromodichloromethane	7.356	83	64395	21.95	ug/L		98
41) c-1,3-Dichloropropene	8.055	75	79351	20.86	ug/L		94
43) Toluene	8.335	91	229925	21.11	ug/L		100
44) Tetrachloroethene (PCE)	8.779	166	62003	21.66	ug/L		97
45) 4-Methyl-2-Pentanone (...	8.767	43	127868	40.98	ug/L		98
46) t-1,3-Dichloropropene	8.803	75	70504	19.95	ug/L		99
47) 1,1,2-Trichloroethane	8.974	97	49541	21.11	ug/L		99
48) Dibromochloromethane	9.156	129	48746	20.81	ug/L		99
49) 1,3-Dichloropropane	9.253	76	89011	21.59	ug/L		96

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030531.D
Acq On : 5 Mar 2019 11:51 pm
Operator : MM
Sample : 9C05053-ICV1
Misc : 1X 5mL 20/40PPB VOCR
ALS Vial : 54 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:15:18 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

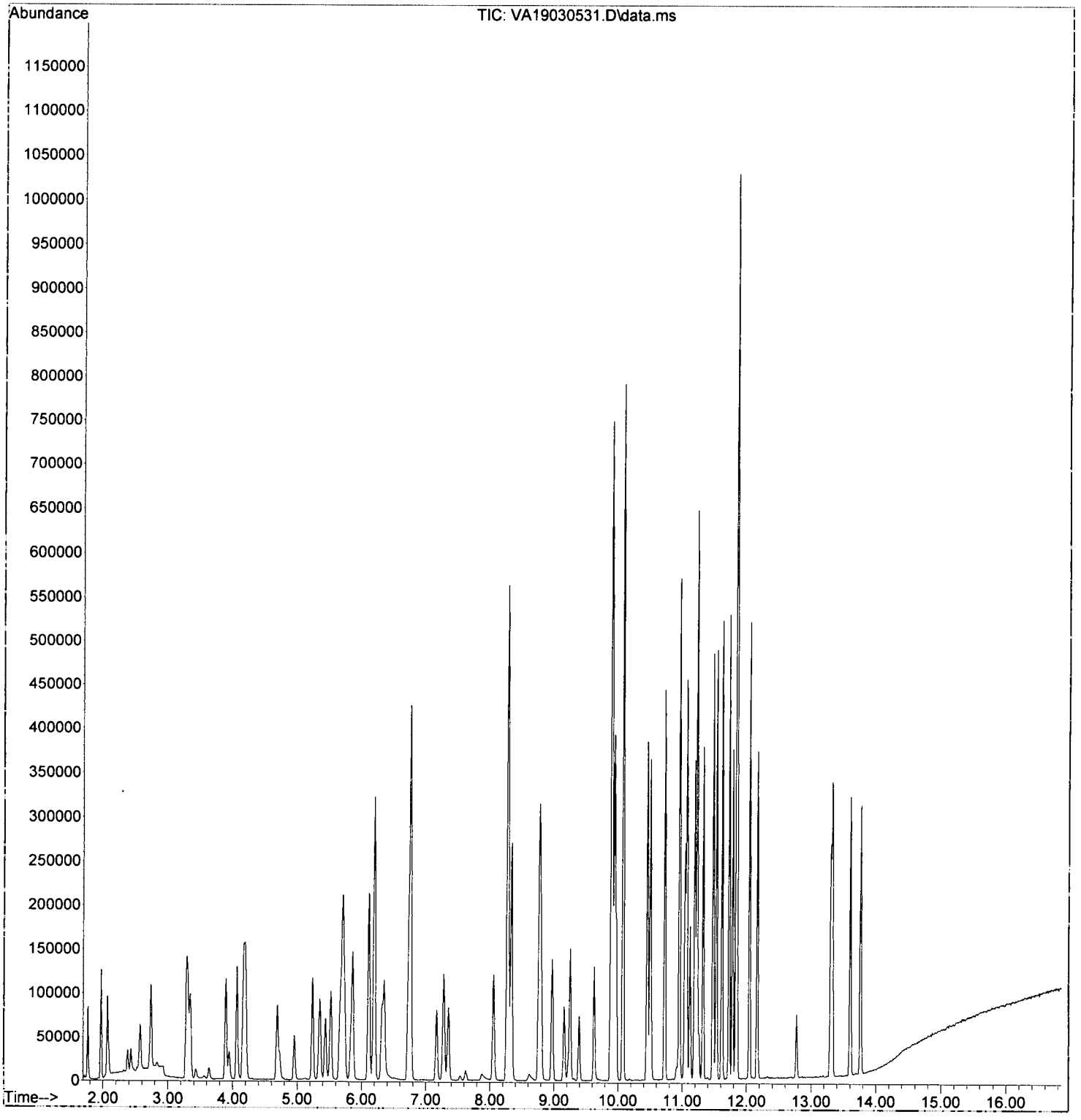
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane (EDB)	9.393	107	51101	21.83 ug/L	98
51) 2-Hexanone	9.624	43	87673	41.41 ug/L	97
52) Chlorobenzene	9.904	112	152589	21.12 ug/L	100
53) Ethylbenzene	9.941	91	264822	21.68 ug/L	98
54) 1,1,1,2-Tetrachloroethane	9.971	131	50783	22.09 ug/L	99
55) m,p-Xylenes (2)	10.074	91	408935	43.71 ug/L	99
56) o-Xylene	10.451	91	206229	21.78 ug/L	97
57) Styrene	10.500	104	151233	22.67 ug/L	97
58) Bromoform	10.518	173	36015	22.11 ug/L	98
59) Isopropylbenzene	10.725	105	268898	22.04 ug/L	99
62) Bromobenzene	11.041	156	69425	21.75 ug/L	97
63) n-Propylbenzene	11.066	91	318770	21.58 ug/L	98
64) 1,1,2,2-Tetrachloroethane	11.120	83	74940	20.63 ug/L	96
65) 2-Chlorotoluene	11.193	126	64960	21.70 ug/L	96
66) 1,3,5-Trimethylbenzene	11.224	105	224690	21.84 ug/L	97
67) 1,2,3-Trichloropropane	11.224	110	25563	21.25 ug/L	93
68) t-1,4-Dichloro-2-butene	11.260	88	4670	22.30 ug/L	93
69) 4-Chlorotoluene	11.321	91	193404	21.52 ug/L	98
70) tert-Butylbenzene	11.479	91	131389	21.32 ug/L	99
71) 1,2,4-Trimethylbenzene	11.534	105	230592	22.25 ug/L	99
72) sec-Butylbenzene	11.619	105	306743	22.04 ug/L	100
73) 4-Isopropyltoluene	11.729	119	258621	21.90 ug/L	97
74) 1,3-Dichlorobenzene	11.783	146	134599	21.31 ug/L	99
75) 1,4-Dichlorobenzene	11.850	146	136860	20.91 ug/L	98
76) n-Butylbenzene	12.045	91	231396	22.59 ug/L	98
77) 1,2-Dichlorobenzene	12.166	146	129327	21.10 ug/L	99
78) 1,2-Dibromo-3-Chloropr...	12.775	157	17255	20.84 ug/L	81
79) Hexachlorobutadiene	13.304	223	30645	21.90 ug/L	99
80) 1,2,4-Trichlorobenzene	13.328	180	98623	23.47 ug/L	97
81) Naphthalene	13.602	128	240536	23.24 ug/L	99
82) 1,2,3-Trichlorobenzene	13.766	180	95452	22.36 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030531.D
Acq On : 5 Mar 2019 11:51 pm
Operator : MM
Sample : 9C05053-ICV1
Misc : 1X 5mL 20/40PPB VOCR
ALS Vial : 54 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:15:18 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030532.D
Acq On : 6 Mar 2019 12:19 am
Operator : MM
Sample : 9C05053-IBL6
Misc : 1X 5mL DI
ALS Vial : 55 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:15:20 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration

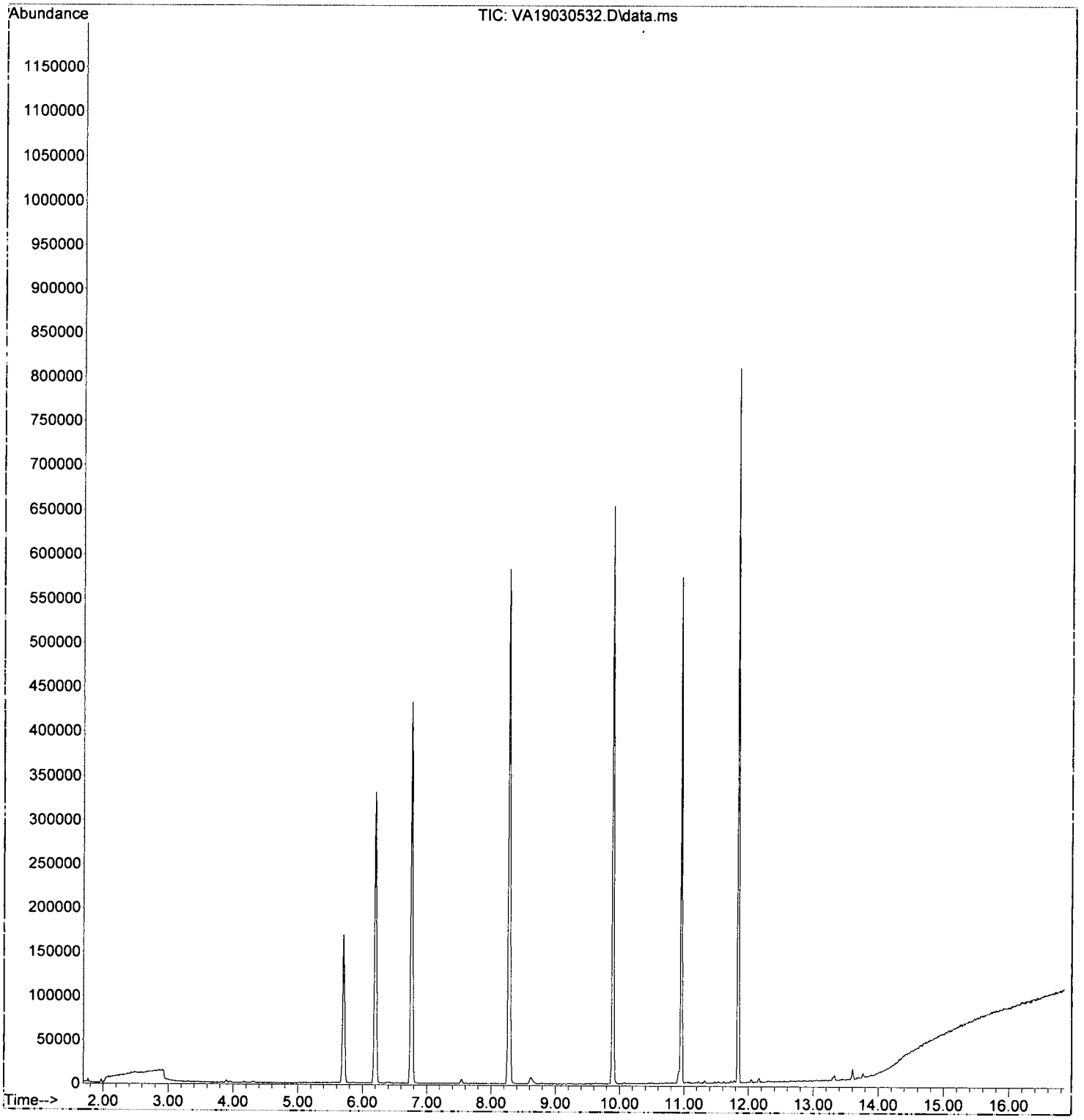
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.194	168	271275	50.00	ug/L		0.00
39) Chlorobenzene-d5 (I)	9.892	117	351056	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4...	11.838	152	179979	50.00	ug/L		0.00
System Monitoring Compounds							
28) Dibromofluoromethane (S)	5.702	111	112129	49.49	ug/L		0.00
34) 1,4-Difluorobenzene (S)	6.760	114	394058	50.00	ug/L		0.00
42) Toluene-d8 (S)	8.274	98	461544	50.86	ug/L		0.00
61) 4-Bromofluorobenzene (S)	10.956	174	143624	51.81	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.970	50	3164	0.54	ug/L		97
5) Bromomethane	2.438	96	1552	1.36	ug/L		90
11) Iodomethane	3.436	142	1155	7.16	ug/L		85
13) Methylene Chloride	3.892	84	1440	Below Cal			93
14) Acetone	3.946	43	1840	1.66	ug/L		85
26) Tetrahydrofuran	5.708	42	241	0.20	ug/L	#	30
30) 2-Butanone (MEK)	5.841	43	863	0.50	ug/L		52
33) iso-Butyl Alcohol	6.377	43	1212	7.29	ug/L	#	61
45) 4-Methyl-2-Pentanone (...	8.785	43	654	0.21	ug/L		83
51) 2-Hexanone	9.642	43	629	0.29	ug/L		76
55) m,p-Xylenes (2)	10.080	91	992	0.10	ug/L		75
63) n-Propylbenzene	11.065	91	1119	0.08	ug/L		90
69) 4-Chlorotoluene	11.327	91	920	0.11	ug/L		89
71) 1,2,4-Trimethylbenzene	11.534	105	1009	0.10	ug/L		92
72) sec-Butylbenzene	11.619	105	1224	0.09	ug/L		94
73) 4-Isopropyltoluene	11.728	119	1283	0.12	ug/L		95
74) 1,3-Dichlorobenzene	11.783	146	822	0.14	ug/L		87
75) 1,4-Dichlorobenzene	11.850	146	1064	0.17	ug/L	#	56
76) n-Butylbenzene	12.044	91	2042	0.21	ug/L		91
77) 1,2-Dichlorobenzene	12.172	146	710	0.12	ug/L		81
78) 1,2-Dibromo-3-Chloropr...	12.774	157	128	0.17	ug/L	#	61
79) Hexachlorobutadiene	13.297	223	378	0.29	ug/L		89
80) 1,2,4-Trichlorobenzene	13.328	180	1595	0.41	ug/L		90
81) Naphthalene	13.601	128	9394	0.97	ug/L		97
82) 1,2,3-Trichlorobenzene	13.759	180	1653	0.42	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030532.D
Acq On : 6 Mar 2019 12:19 am
Operator : MM
Sample : 9C05053-IBL6
Misc : 1X 5mL DI
ALS Vial : 55 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:15:20 2019
Quant Method : C:\msdchem\1\METHODS\VA190306W.M
Quant Title : EPA 8260C: Volatile Organic Compounds
QLast Update : Wed Mar 06 08:45:04 2019
Response via : Initial Calibration



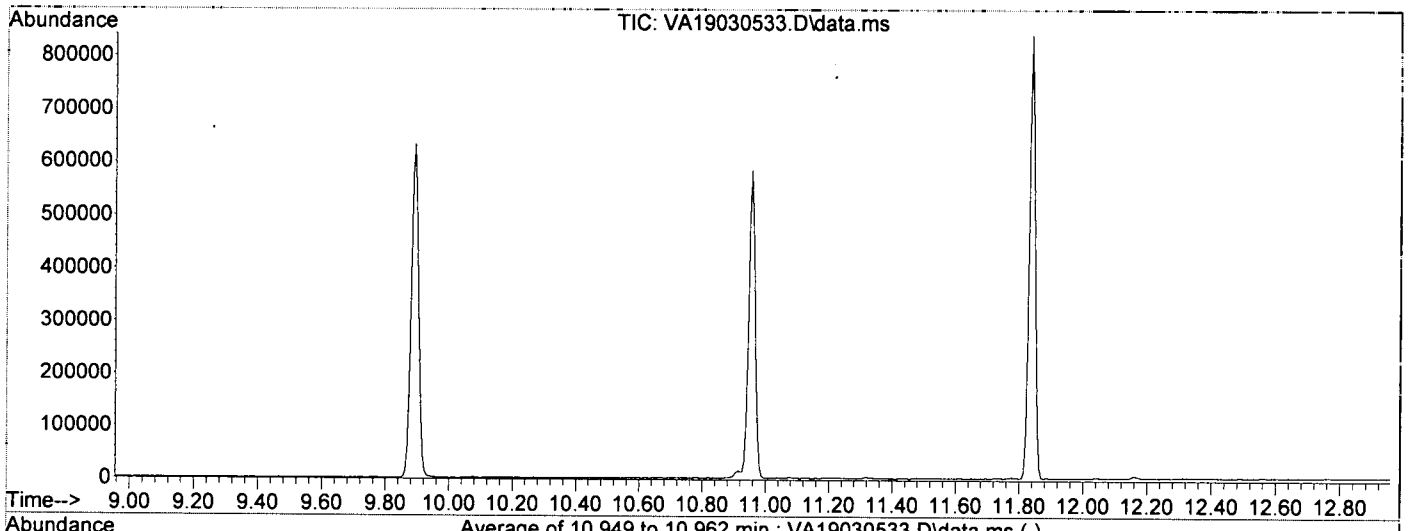
BFB

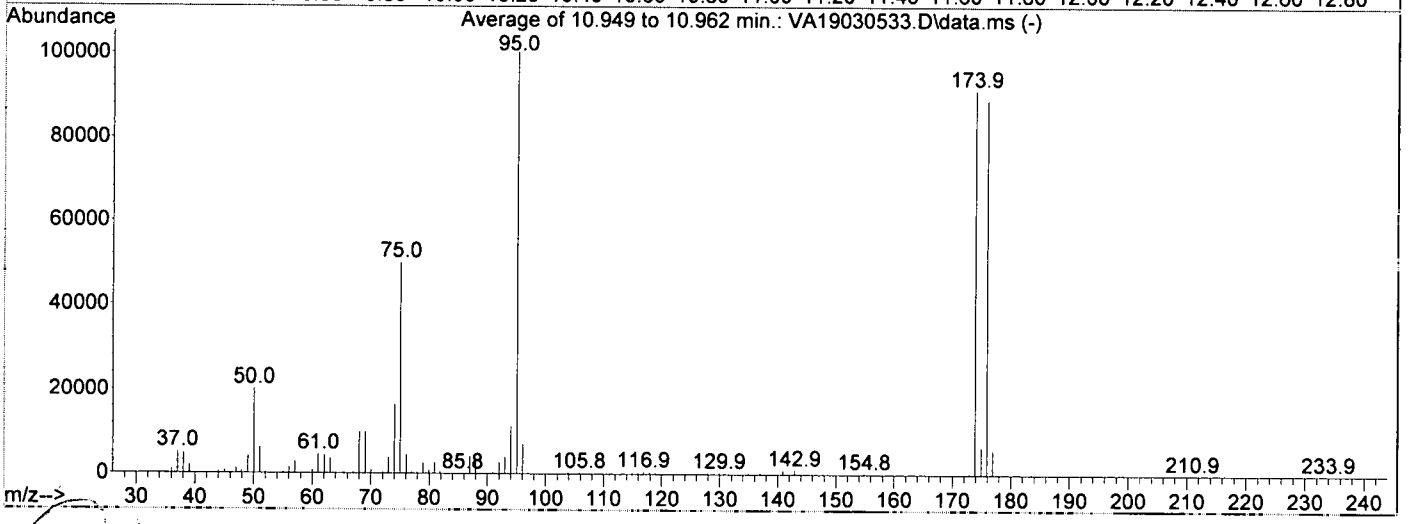
Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030533.D
Acq On : 6 Mar 2019 12:48 am
Operator : MM
Sample : 9C05053-TUN2
Misc : A19C051 5mL BFB (IS/SURR)
ALS Vial : 56 Sample Multiplier: 1

Integration File: APEXG2.P

Method : C:\msdchem\1\METHODS\VA190306G.M
Title : NWTPH-Gx by GC/MS
Last Update : Wed Mar 06 08:55:02 2019

MM 3/6/19





AutoFind: Scans 1521, 1522, 1523; Background Corrected with Scan 1515

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	12	40	20.1	20183	PASS
75	95	30	60	50.0	50114	PASS
95	95	100	100	100.0	100280	PASS
96	95	5	9	7.0	7013	PASS
173	174	0.00	2	0.5	485	PASS
174	95	50	200	91.2	91410	PASS
175	174	5	9	7.0	6373	PASS
176	174	95	101	97.6	89181	PASS
177	176	5	9	6.3	5648	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030533.D
Acq On : 6 Mar 2019 12:48 am
Operator : MM
Sample : 9C05053-TUN2
Misc : A19C051 5mL BFB (IS/SURR)
ALS Vial : 56 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:50:27 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 08:55:02 2019
Response via : Initial Calibration

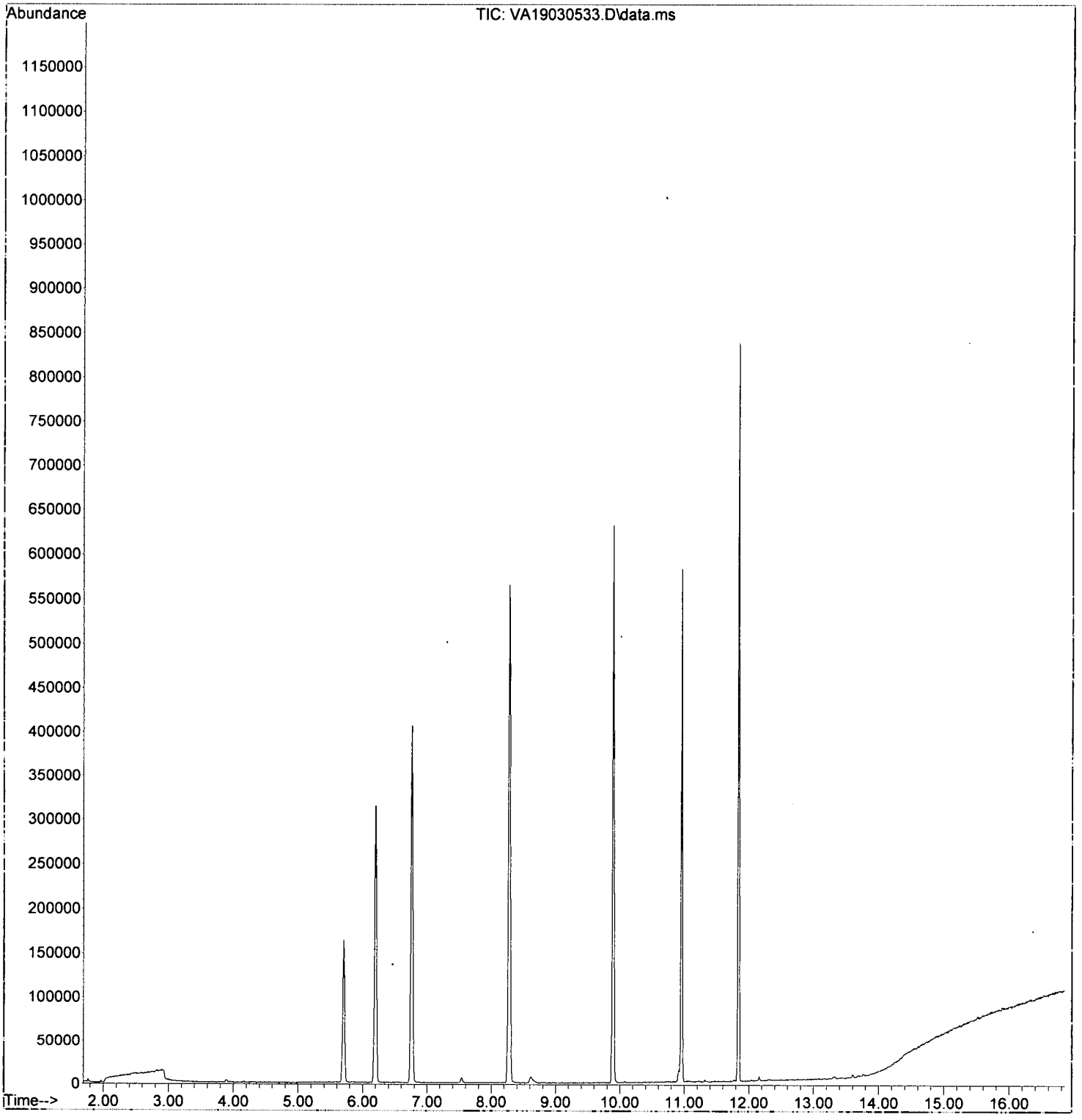
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.194	168	257494	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.759	TIC	847280	41.33	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.955	TIC	817463	49.85	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.891	TIC	1023683	47.64	ug/L	0.00
10) Toluene-d8 (NR)	8.274	TIC	1181838	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.837	TIC	1083808	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.830	TIC	521372m	4.27		
6) TPHg (C5-C9)	9.830	TIC	473211m	2.24		
7) TPHg (C6-C10)	9.830	TIC	453326m	5.60		
8) NWTPH-Gx	9.830	TIC	146422m	13.69	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030533.D
Acq On : 6 Mar 2019 12:48 am
Operator : MM
Sample : 9C05053-TUN2
Misc : A19C051 5mL BFB (IS/SURR)
ALS Vial : 56 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:50:27 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 08:55:02 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030535.D
Acq On : 6 Mar 2019 1:45 am
Operator : MM
Sample : 9C05053-IBL7
Misc : 1X 5mL DI
ALS Vial : 58 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:51:37 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 08:55:02 2019
Response via : Initial Calibration

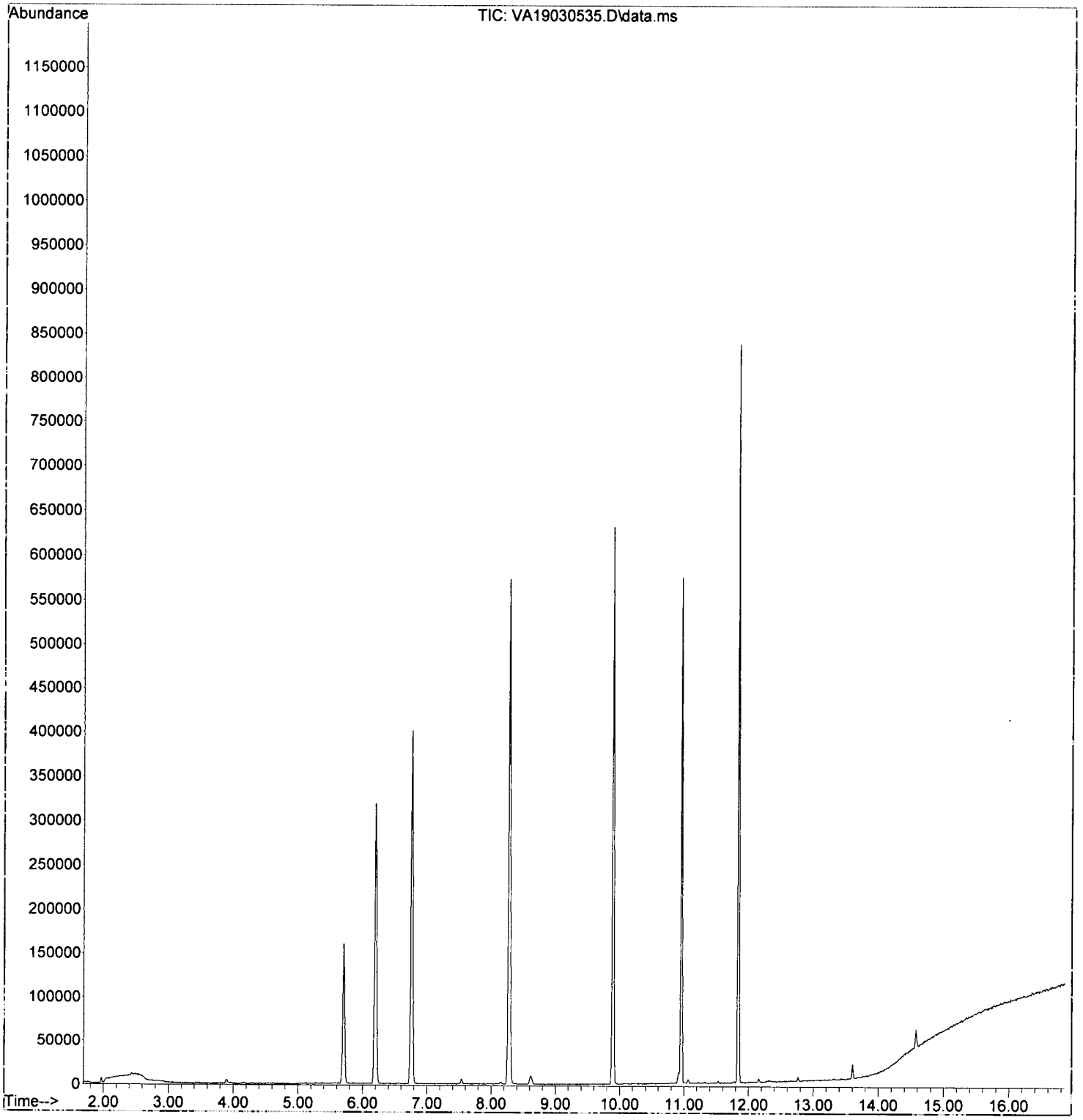
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.195	168	255705	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.760	TIC	841315	41.33	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.956	TIC	818812	50.28	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.892	TIC	1024107	47.99	ug/L	0.00
10) Toluene-d8 (NR)	8.275	TIC	1181500	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.838	TIC	1098857	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.830	TIC	536123m	5.58		
6) TPHg (C5-C9)	9.830	TIC	485242m	3.58		
7) TPHg (C6-C10)	9.830	TIC	454903m	6.13		
8) NWTPH-Gx	9.830	TIC	176406m	17.17	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030535.D
Acq On : 6 Mar 2019 1:45 am
Operator : MM
Sample : 9C05053-IBL7
Misc : 1X 5mL DI
ALS Vial : 58 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:51:37 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 08:55:02 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030536.D
Acq On : 6 Mar 2019 2:13 am
Operator : MM
Sample : 9C05053-ICB2
Misc : 1X 5mL DI
ALS Vial : 59 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:10:34 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:09:18 2019
Response via : Initial Calibration

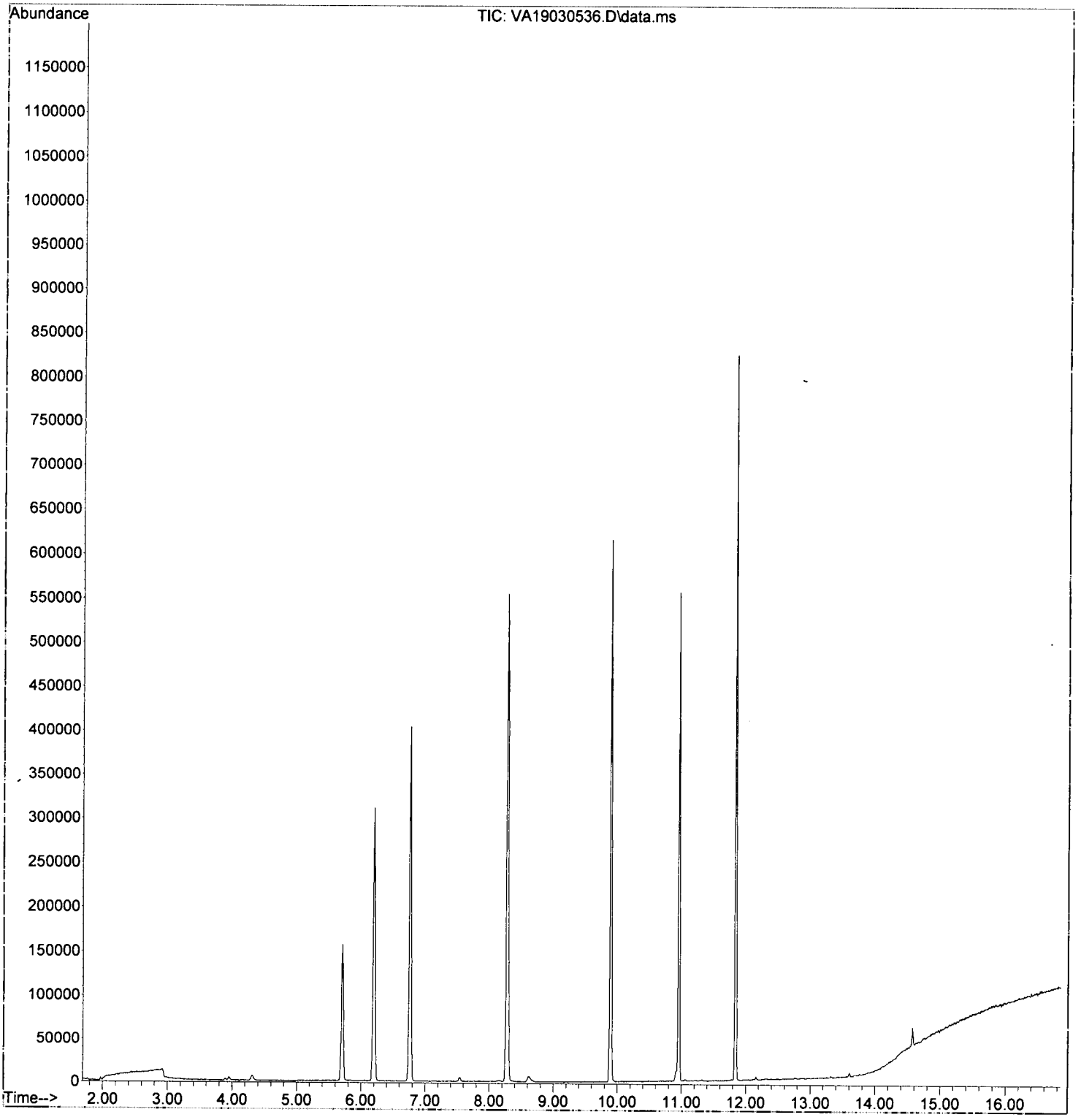
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.194	168	252225	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.760	TIC	832152	41.44	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.956	TIC	788468	49.09	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.892	TIC	996826	47.36	ug/L	0.00
10) Toluene-d8 (NR)	8.274	TIC	1156017	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.838	TIC	1048033	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.830	TIC	514481m	4.55		
6) TPHg (C5-C9)	9.830	TIC	474655m	3.23		
7) TPHg (C6-C10)	9.830	TIC	448500m	6.10		
8) NWTPH-Gx	9.830	TIC	127199m	13.06	ug/L	
9) Benzene (NR)	0.000		0	N.D.		
11) Toluene (NR)	0.000		0	N.D.		
13) Naphthalene (NR)	13.608	128	3400	No Calib	#	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030536.D
Acq On : 6 Mar 2019 2:13 am
Operator : MM
Sample : 9C05053-ICB2
Misc : 1X 5mL DI
ALS Vial : 59 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

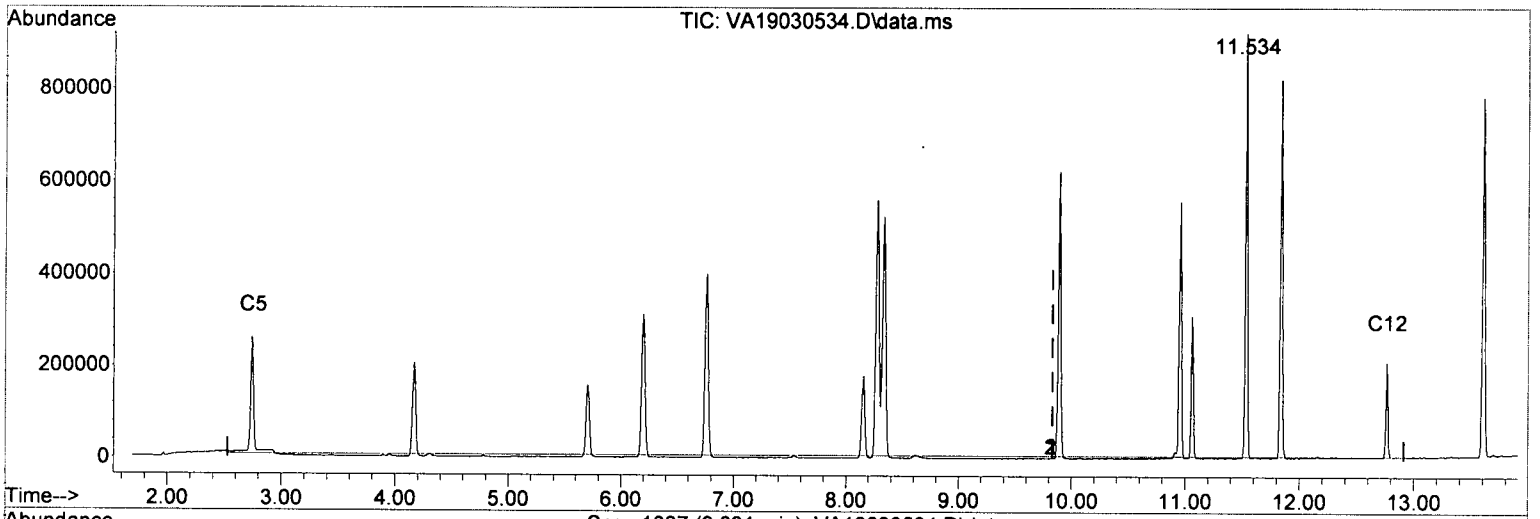
Quant Time: Mar 06 10:10:34 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:09:18 2019
Response via : Initial Calibration

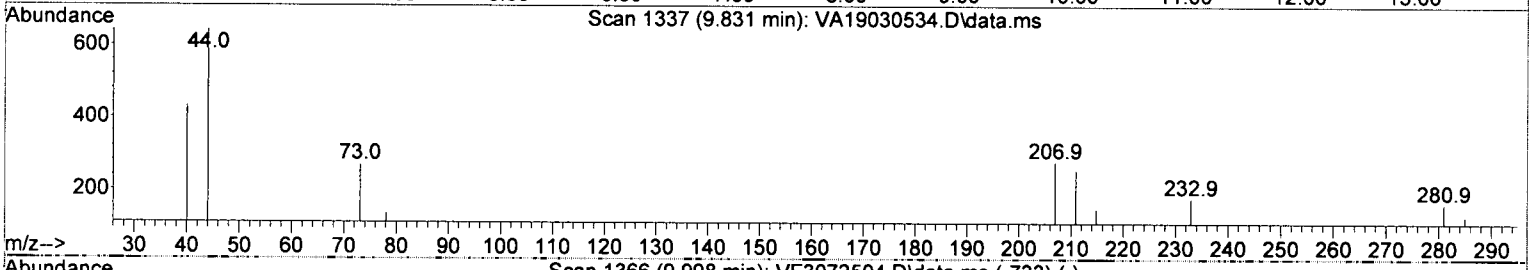


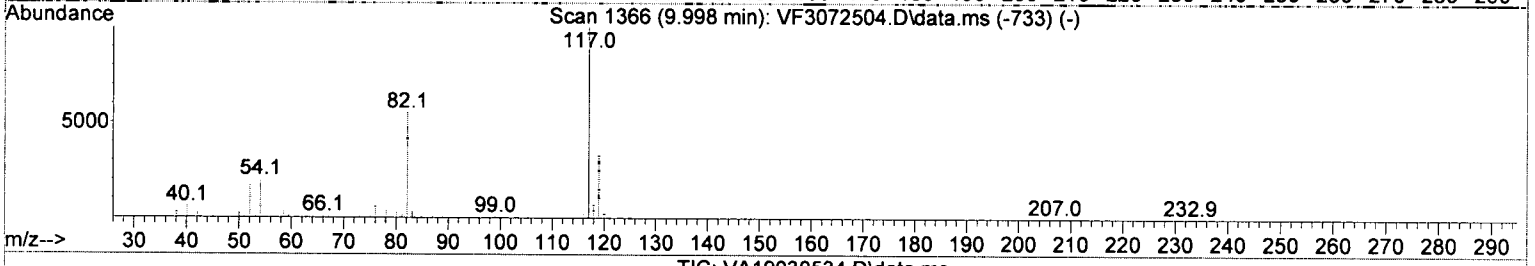
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030534.D
Acq On : 6 Mar 2019 1:16 am
Operator : MM
Sample : 9C05053-RT1
Misc : A18A167 VPH RT STD
ALS Vial : 57 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:17:39 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:09:18 2019
Response via : Initial Calibration







TIC: VA19030534.D\data.ms

(5) CA-LUFT (C5-C12) (H)

9.830min (0.000) 305.30 m

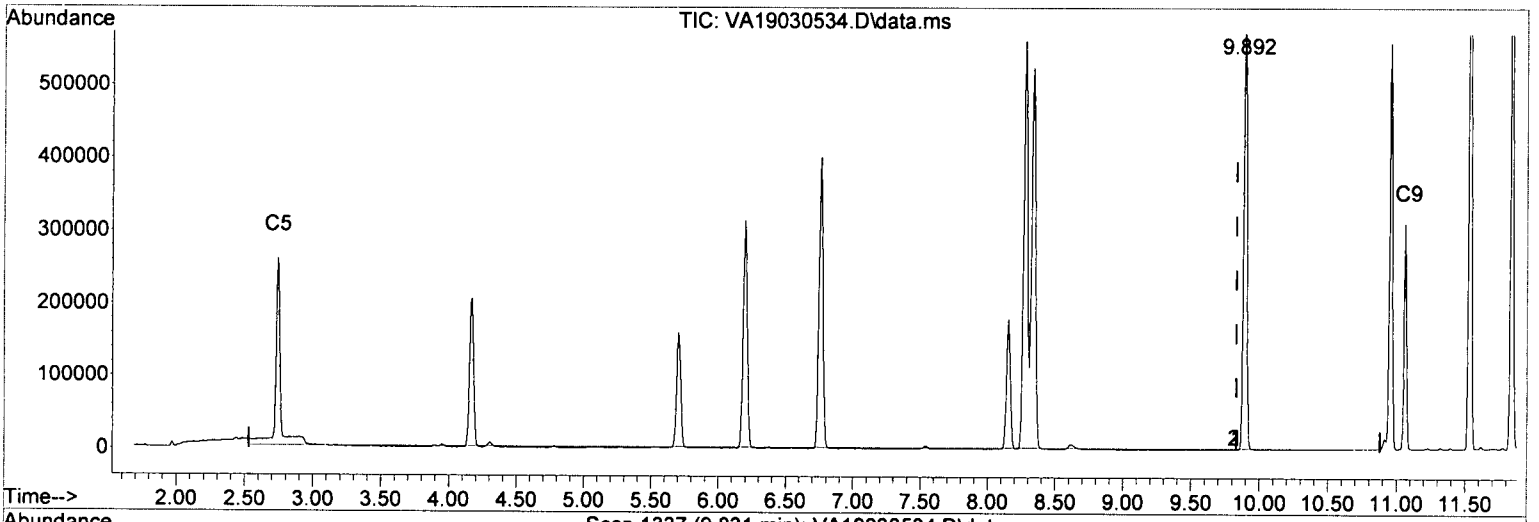
response 4720082

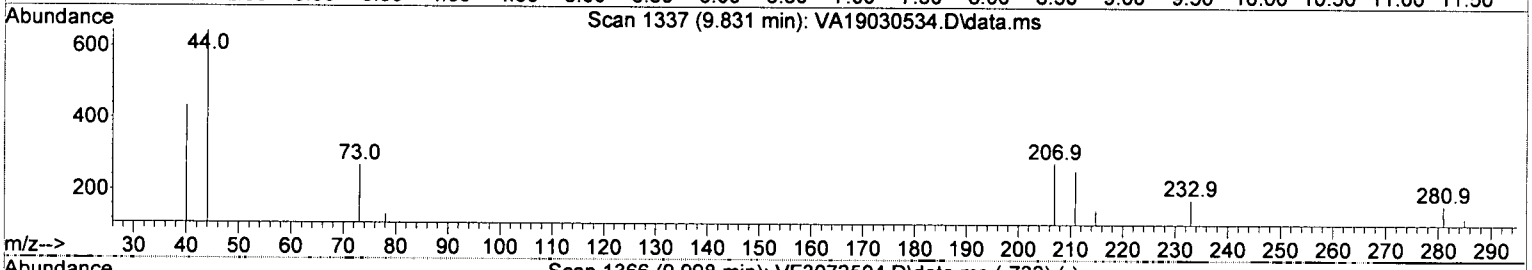
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	1.00#
0.00	0.00	0.68#
0.00	0.00	0.00

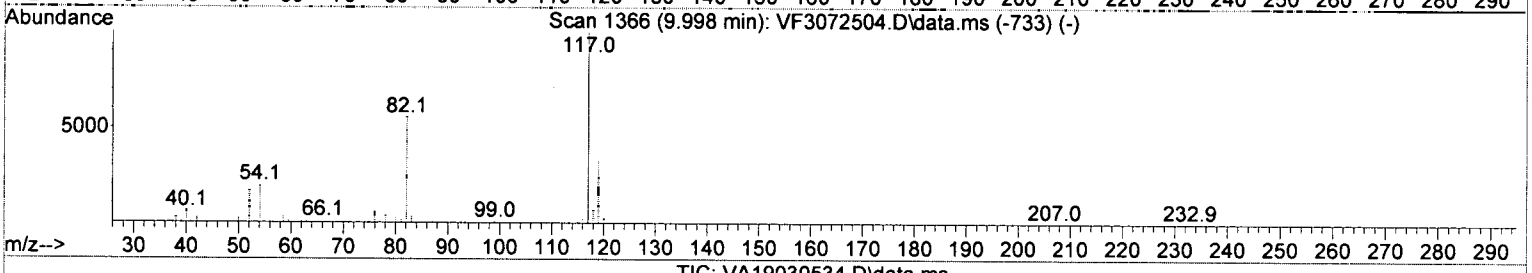
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030534.D
Acq On : 6 Mar 2019 1:16 am
Operator : MM
Sample : 9C05053-RT1
Misc : A18A167 VPH RT STD
ALS Vial : 57 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:17:39 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:09:18 2019
Response via : Initial Calibration







TIC: VA19030534.D\data.ms

(6) TPHg (C5-C9) (H)

9.830min (0.000) 205.88 m

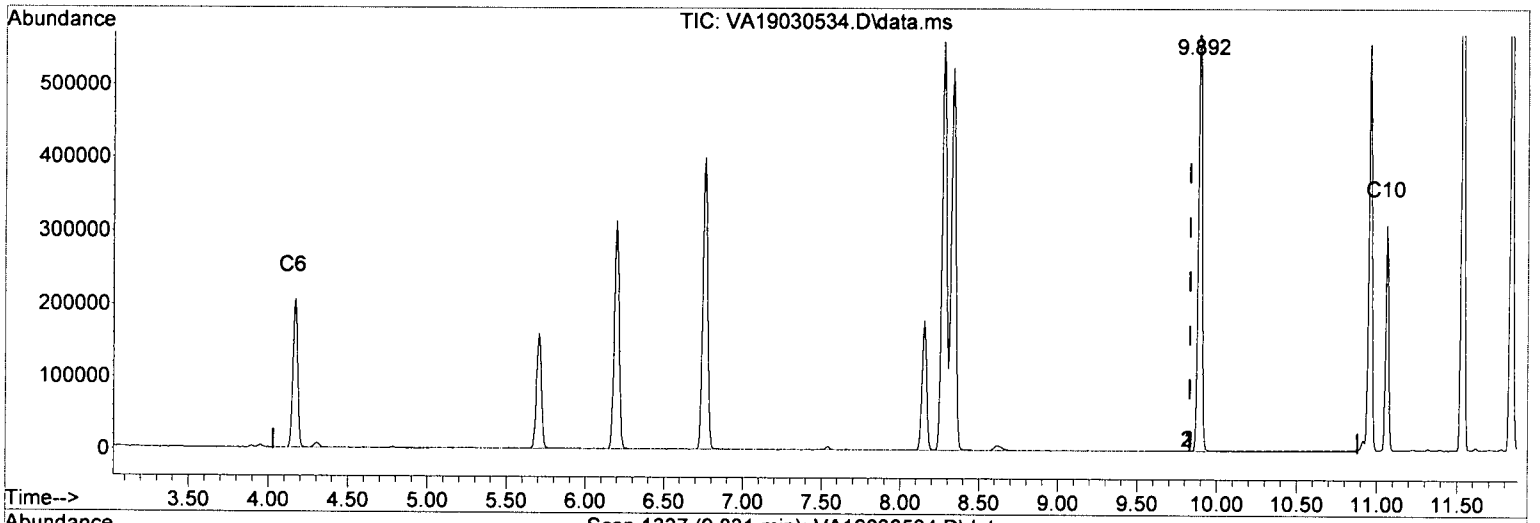
response 2791128

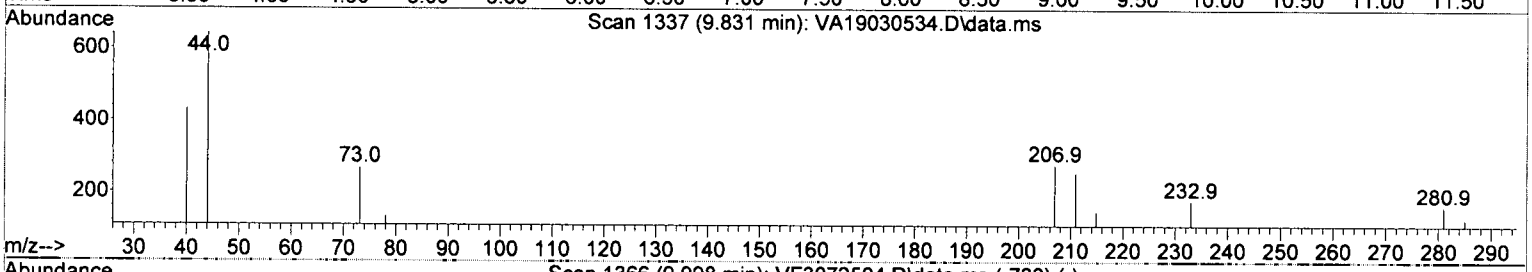
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	1.70#
0.00	0.00	1.16#
0.00	0.00	0.00

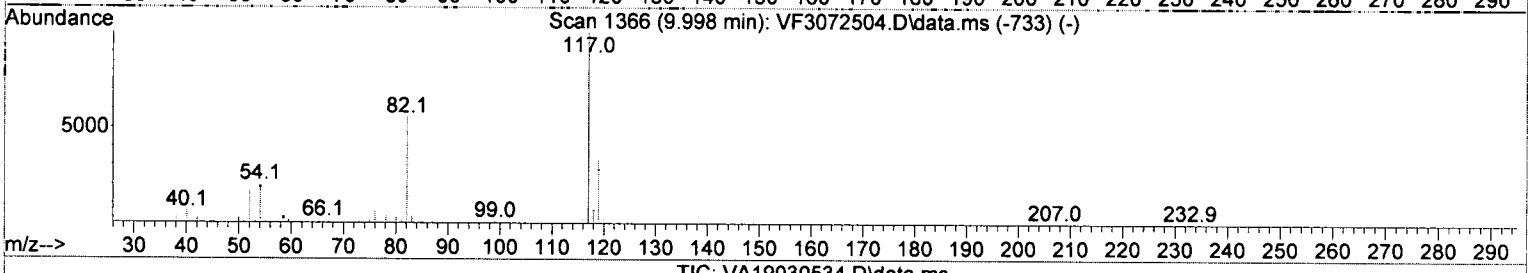
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030534.D
Acq On : 6 Mar 2019 1:16 am
Operator : MM
Sample : 9C05053-RT1
Misc : A18A167 VPH RT STD
ALS Vial : 57 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:17:39 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:09:18 2019
Response via : Initial Calibration







TIC: VA19030534.D\data.ms

(7) TPHg (C6-C10) (H)

9.830min (0.000) 215.09 m

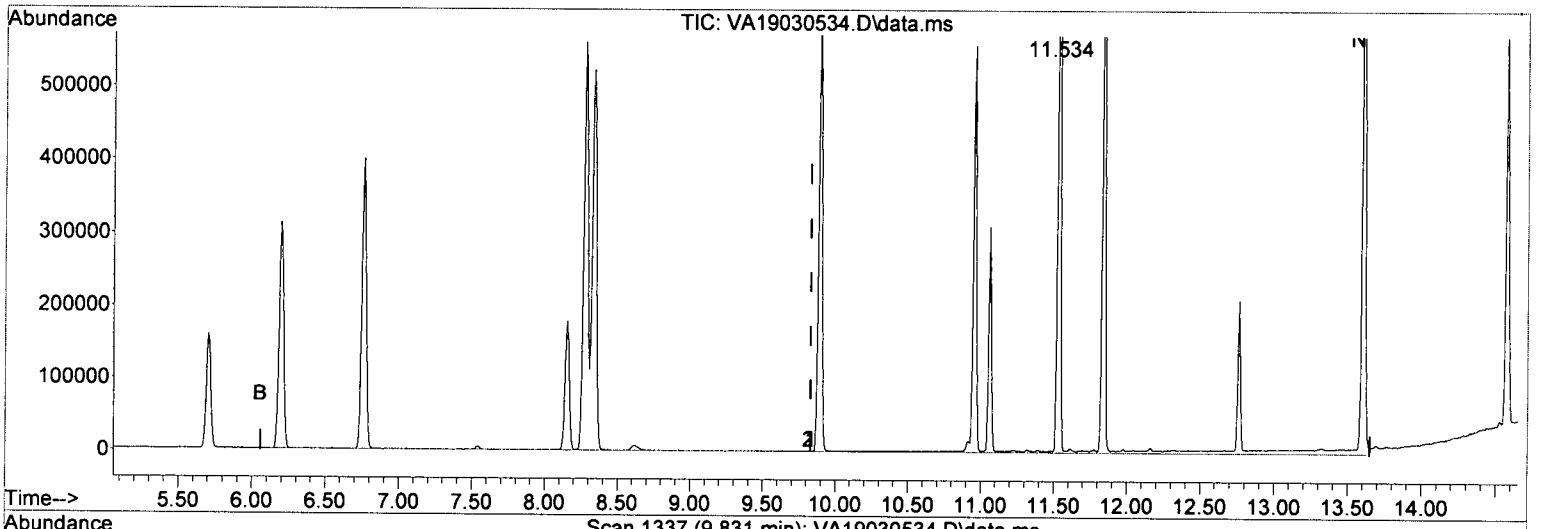
response 2335258

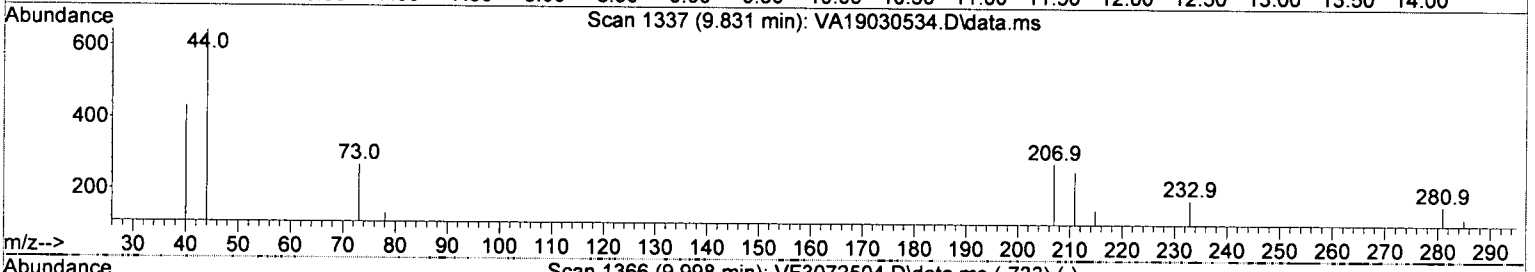
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	2.03#
0.00	0.00	1.38#
0.00	0.00	0.00

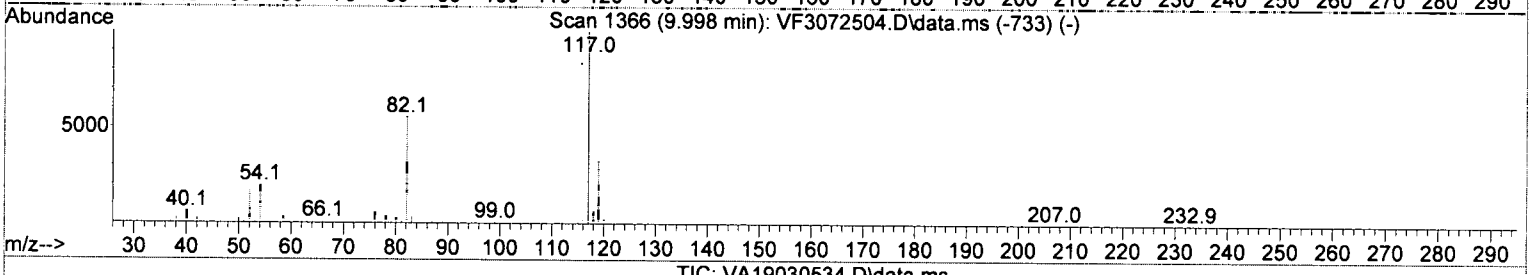
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030534.D
Acq On : 6 Mar 2019 1:16 am
Operator : MM
Sample : 9C05053-RT1
Misc : A18A167 VPH RT STD
ALS Vial : 57 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:17:39 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:09:18 2019
Response via : Initial Calibration







TIC: VA19030534.D\data.ms

(8) NWTPH-Gx (H)

9.830min (0.000) 518.87 ug/L m

response 4614225

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	1.03#
0.00	0.00	0.70#
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030534.D
Acq On : 6 Mar 2019 1:16 am
Operator : MM
Sample : 9C05053-RT1
Misc : A18A167 VPH RT STD
ALS Vial : 57 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:17:39 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:09:18 2019
Response via : Initial Calibration

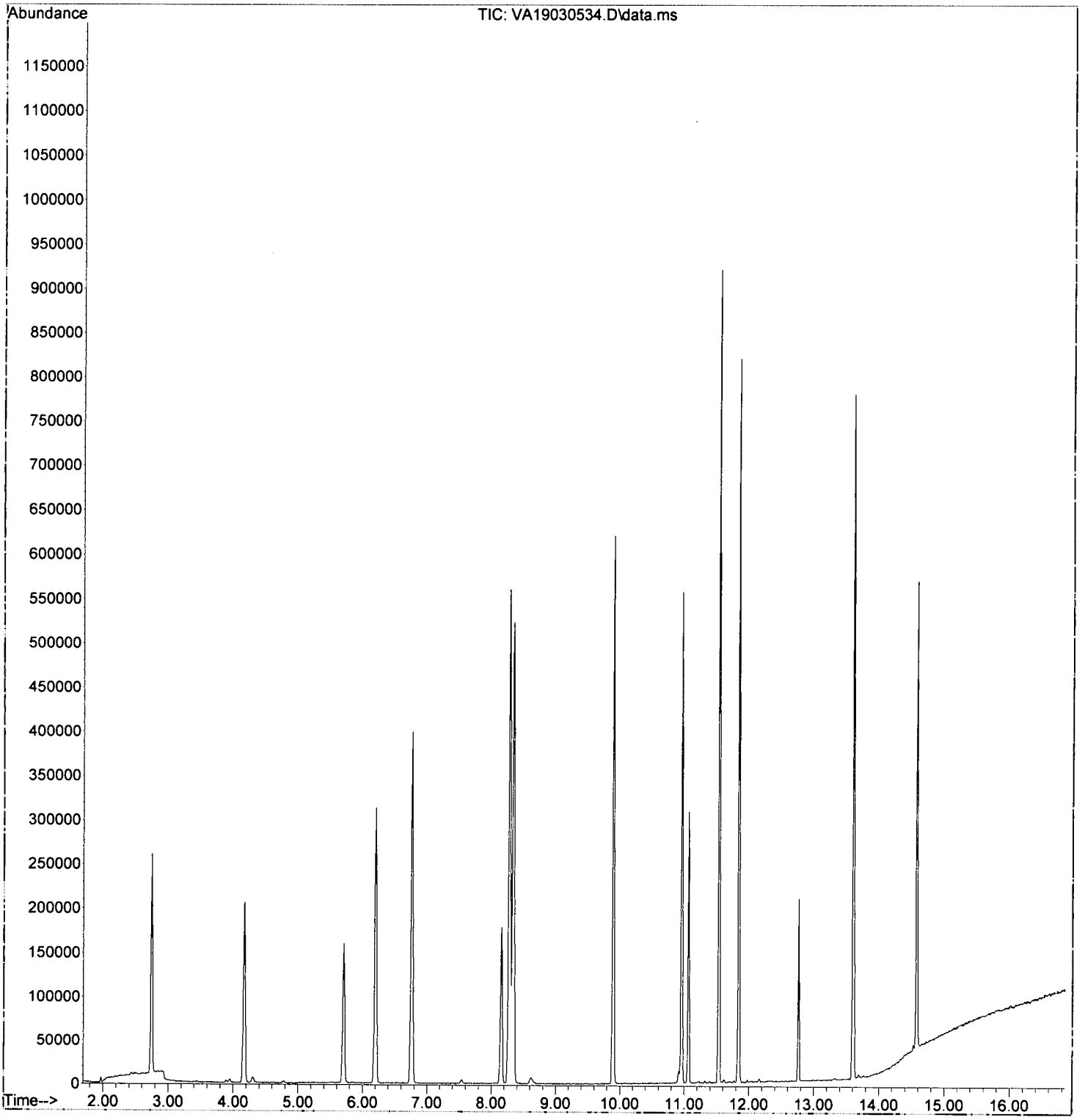
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.194	168	254449	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.760	TIC	832937	41.12	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.956	TIC	792248	48.89	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.892	TIC	995691	46.89	ug/L	0.00
10) Toluene-d8 (NR)	8.274	TIC	1169927	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.838	TIC	1082296	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.830	TIC	4720082m	305.30		
6) TPHg (C5-C9)	9.830	TIC	2791128m	205.88		
7) TPHg (C6-C10)	9.830	TIC	2335258m	215.09		
8) NWTPH-Gx	9.830	TIC	4614225m	518.87	ug/L	
9) Benzene (NR)	0.000		0	N.D.		
11) Toluene (NR)	8.335	91	456634	No Calib		
13) Naphthalene (NR)	13.601	128	589260	No Calib	#	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030534.D
Acq On : 6 Mar 2019 1:16 am
Operator : MM
Sample : 9C05053-RT1
Misc : A18A167 VPH RT STD
ALS Vial : 57 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:17:39 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:09:18 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030537.D
Acq On : 6 Mar 2019 2:42 am
Operator : MM
Sample : 9C05053-CALC
Misc : 1X 5mL 50PPB GX
ALS Vial : 60 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:05:51 2019
Quant Method : C:\msdchem\1\METHODS\~~VA190306G.M~~
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration

MM 3/10/19

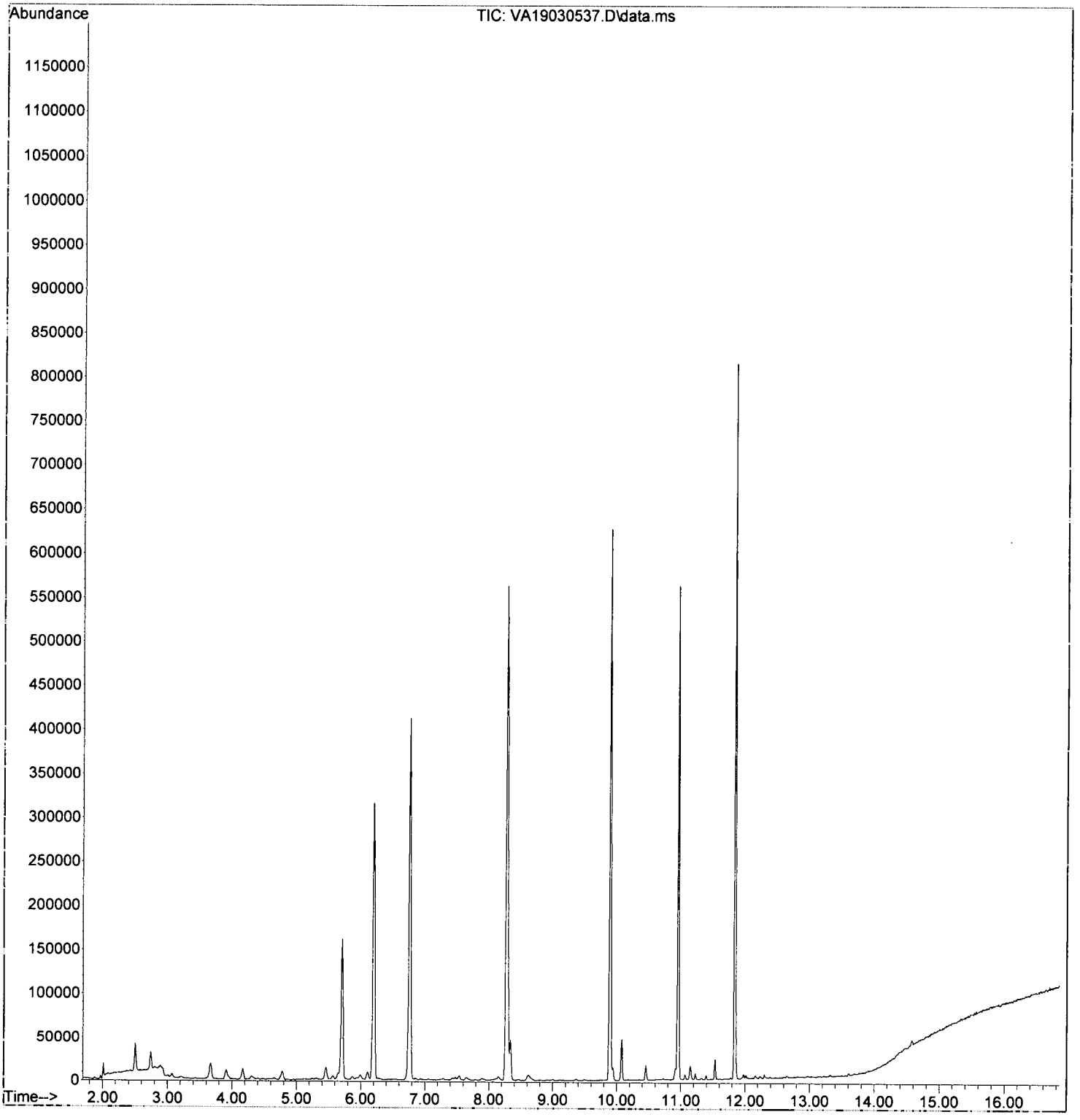
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.195	168	258573	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.760	TIC	879494	42.73	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.956	TIC	783549	47.58	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.892	TIC	1012280	46.91	ug/L	0.00
10) Toluene-d8 (NR)	8.274	TIC	1185907	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.838	TIC	1049371	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.830	TIC	1235403m	54.50		
6) TPHg (C5-C9)	9.830	TIC	1075160m	54.01		
7) TPHg (C6-C10)	9.830	TIC	892774m	53.44		
8) NWTPH-Gx	9.830	TIC	487357m	51.44	ug/L	
9) Benzene (NR)	6.115	78	4301	No Calib		
11) Toluene (NR)	8.335	91	37605	No Calib		
13) Naphthalene (NR)	13.608	128	2392	No Calib	#	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030537.D
Acq On : 6 Mar 2019 2:42 am
Operator : MM
Sample : 9C05053-CALC
Misc : 1X 5mL 50PPB GX
ALS Vial : 60 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:05:51 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030538.D
Acq On : 6 Mar 2019 3:10 am
Operator : MM
Sample : 9C05053-CALD
Misc : 1X 5mL 100PPB GX
ALS Vial : 61 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:05:54 2019
Quant Method : C:\msdchem\1\METHODS\~~VA190306~~G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration

MM 3/16/19

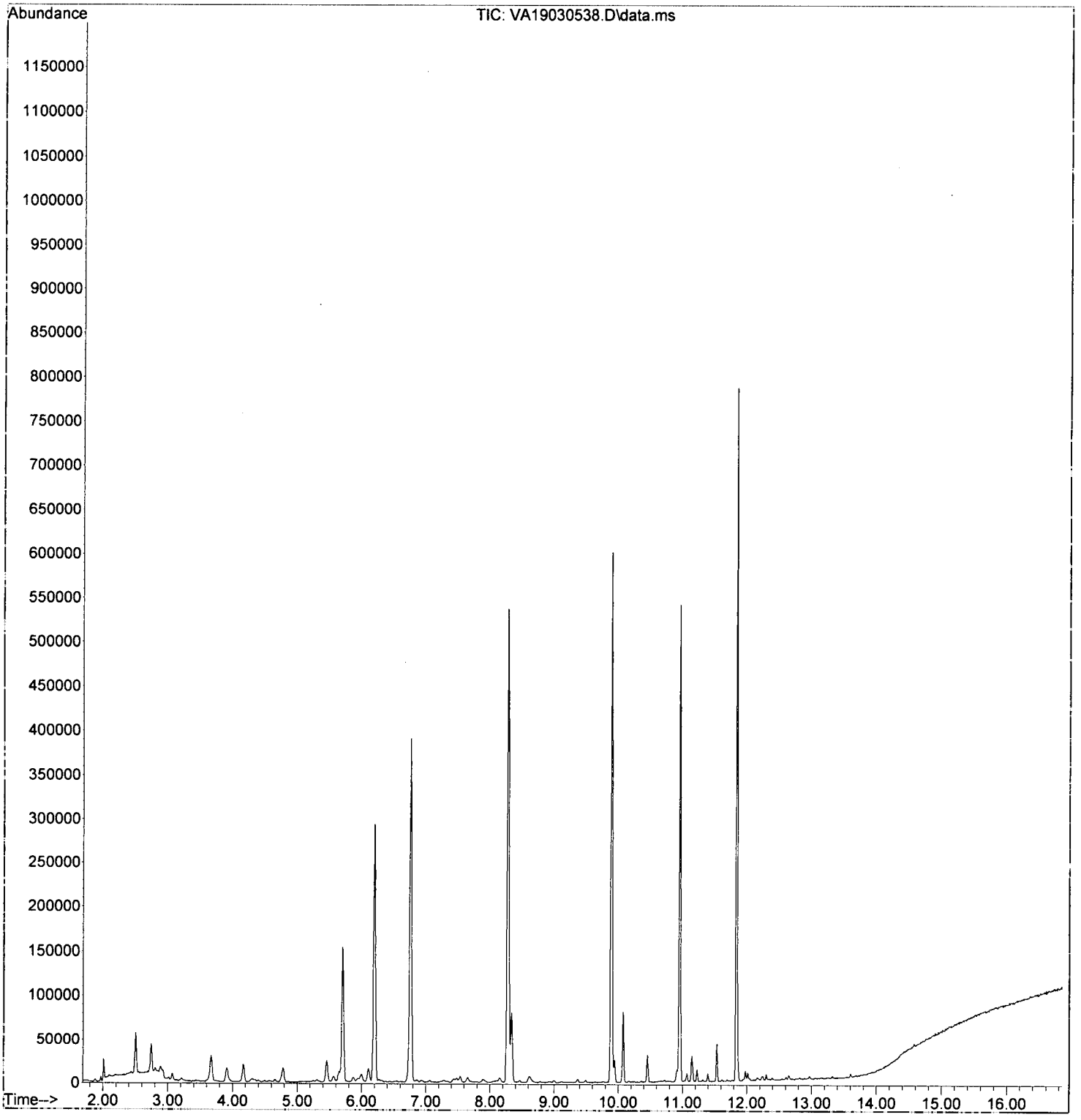
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.199	168	240607	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.759	TIC	837629	43.73	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.955	TIC	760482	49.63	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.891	TIC	970453	48.33	ug/L	0.00
10) Toluene-d8 (NR)	8.273	TIC	1128641	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.837	TIC	1045559	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.830	TIC	1680498m	94.73		
6) TPHg (C5-C9)	9.830	TIC	1430024m	93.84		
7) TPHg (C6-C10)	9.830	TIC	1191691m	95.83		
8) NWTPH-Gx	9.830	TIC	855613m	99.33	ug/L	
9) Benzene (NR)	6.114	78	7204	No Calib		
11) Toluene (NR)	8.334	91	65510	No Calib		
13) Naphthalene (NR)	13.607	128	2944	No Calib	#	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030538.D
Acq On : 6 Mar 2019 3:10 am
Operator : MM
Sample : 9C05053-CALD
Misc : 1X 5mL 100PPB GX
ALS Vial : 61 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:05:54 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030539.D
Acq On : 6 Mar 2019 3:39 am
Operator : MM
Sample : 9C05053-CALE
Misc : 1X 5mL 250PPB GX
ALS Vial : 62 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:05:56 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration

MM 3/16/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.194	168	255217	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.760	TIC	961480	47.32	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.956	TIC	802124	49.35	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.892	TIC	1039853	48.82	ug/L	0.00
10) Toluene-d8 (NR)	8.274	TIC	1200649	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.838	TIC	1112066	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.830	TIC	3973377m	251.06		
6) TPHg (C5-C9)	9.830	TIC	3336965m	252.79		
7) TPHg (C6-C10)	9.830	TIC	2666388m	250.90		
8) NWTPH-Gx	9.830	TIC	2202266m	244.42	ug/L	
9) Benzene (NR)	6.115	78	19489	No Calib		
11) Toluene (NR)	8.335	91	181377	No Calib		
13) Naphthalene (NR)	13.607	128	5504	No Calib	#	

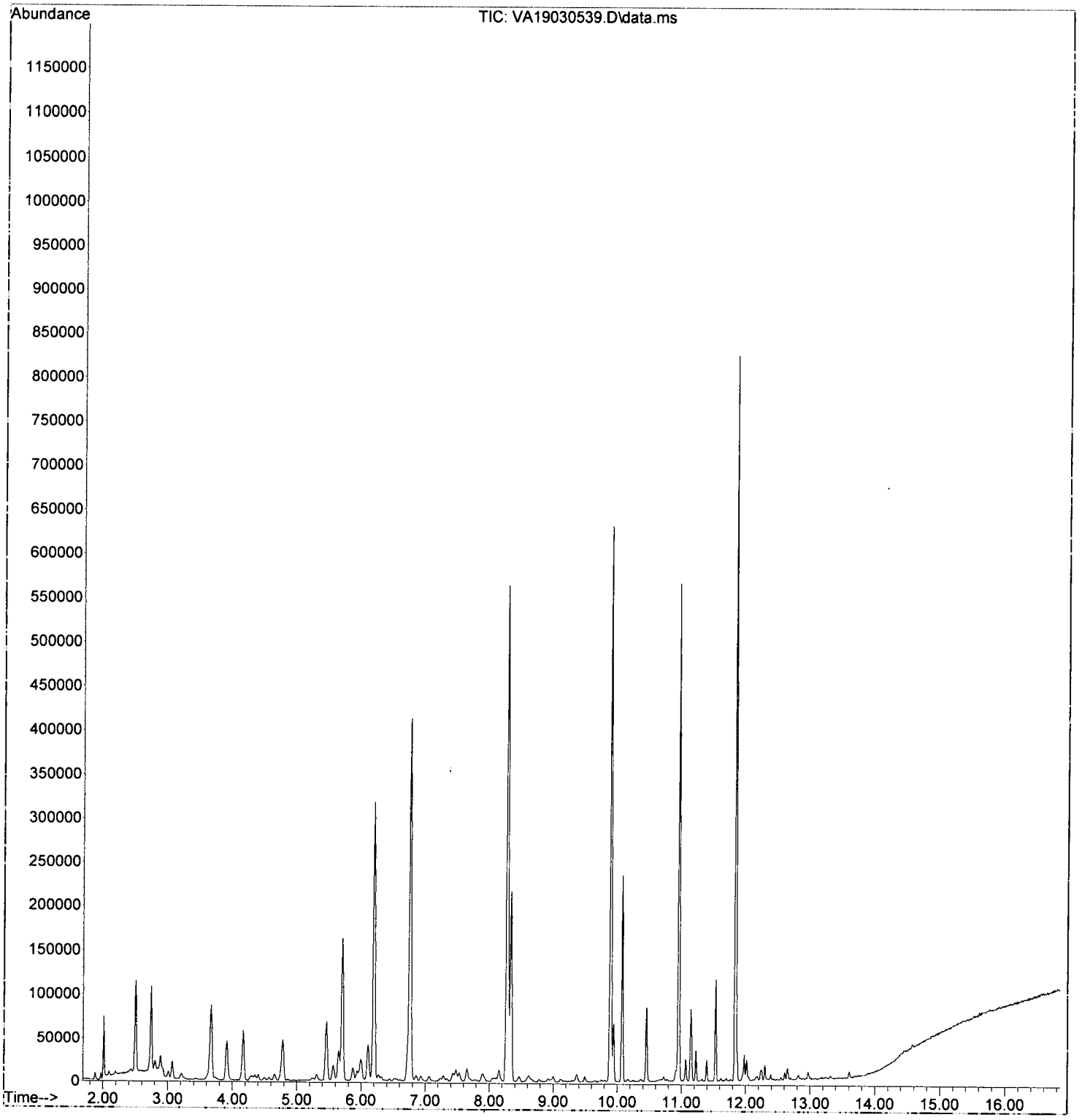
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Report Date: 08-Mar-19 14:36 Associates- Mult 802 Decommisioning - Level IV Data Package Page 1060 of 1564

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030539.D
Acq On : 6 Mar 2019 3:39 am
Operator : MM
Sample : 9C05053-CALE
Misc : 1X 5mL 250PPB GX
ALS Vial : 62 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:05:56 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030540.D
Acq On : 6 Mar 2019 4:07 am
Operator : MM
Sample : 9C05053-CALF
Misc : 1X 5mL 500PPB GX
ALS Vial : 63 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:05:58 2019
Quant Method : C:\msdchem\1\METHODS\VA~~190306G~~.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.200	168	258605	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.759	TIC	1081464	52.53	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.955	TIC	799731	48.56	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.891	TIC	1056107	48.94	ug/L	0.00
10) Toluene-d8 (NR)	8.273	TIC	1195880	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.837	TIC	1127300	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.830	TIC	7386665m	487.18		
6) TPHg (C5-C9)	9.830	TIC	6139446m	490.16		
7) TPHg (C6-C10)	9.830	TIC	4896490m	489.86		
8) NWTPH-Gx	9.830	TIC	4365636m	479.56	ug/L	
9) Benzene (NR)	6.114	78	37648	No Calib		
11) Toluene (NR)	8.334	91	357329	No Calib		
13) Naphthalene (NR)	13.601	128	9878	No Calib	#	

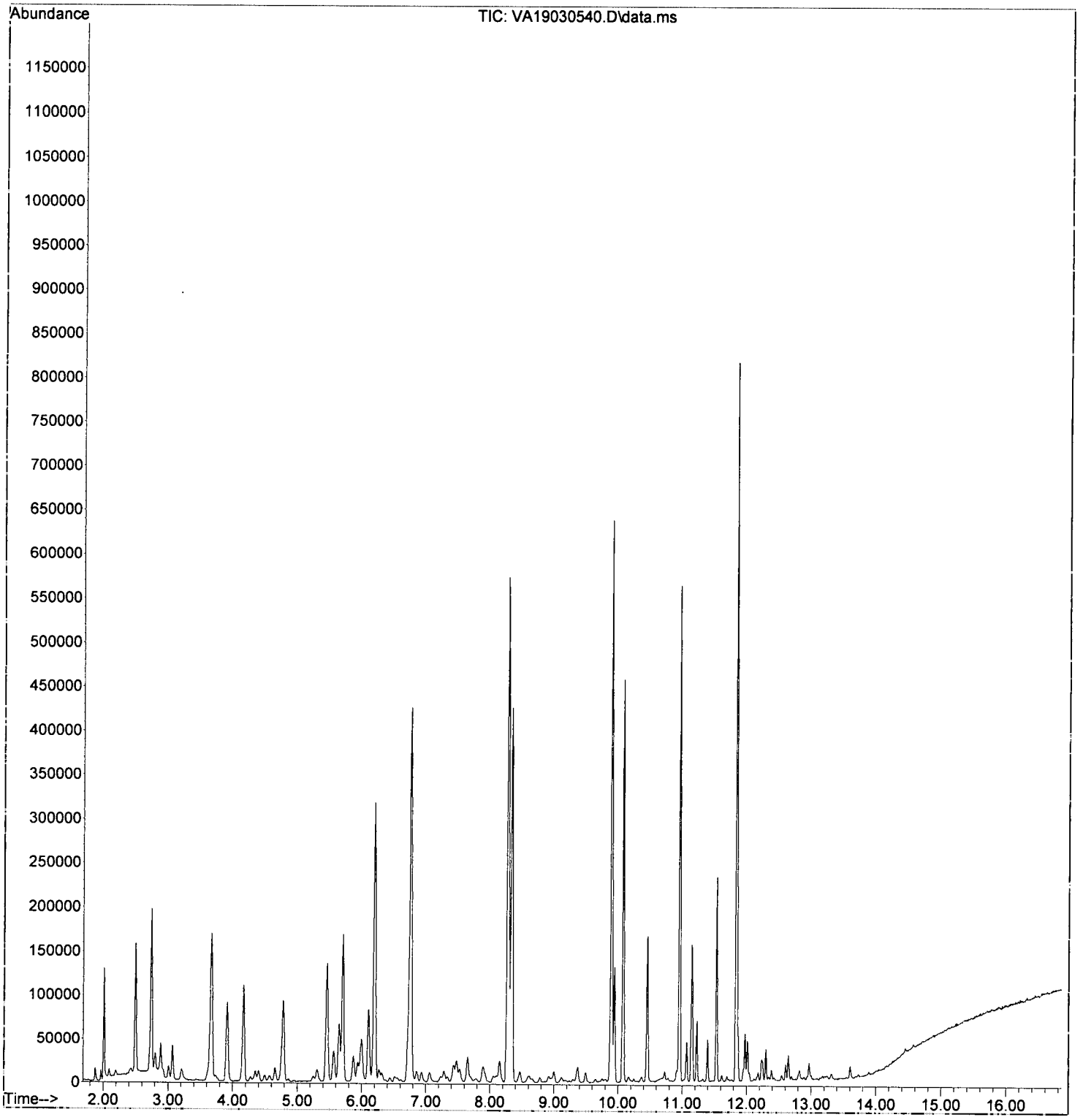
(#) = qualifier out of range (m) = manual integration (+) = signals summed

3/6/19

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030540.D
Acq On : 6 Mar 2019 4:07 am
Operator : MM
Sample : 9C05053-CALF
Misc : 1X 5mL 500PPB GX
ALS Vial : 63 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:05:58 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030541.D
Acq On : 6 Mar 2019 4:36 am
Operator : MM
Sample : 9C05053-CALG
Misc : 1X 5mL 1000PPB GX
ALS Vial : 64 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:06:00 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.194	168	264692	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.754	TIC	1341889	63.68	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.956	TIC	812221	48.18	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.892	TIC	1106664	50.10	ug/L	0.00
10) Toluene-d8 (NR)	8.274	TIC	1252255	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.838	TIC	1134624	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.830	TIC	14619806m	969.75		
6) TPHg (C5-C9)	9.830	TIC	12141989m	981.38		
7) TPHg (C6-C10)	9.830	TIC	9669506m	983.22		
8) NWTPH-Gx	9.830	TIC	8939781m	957.47	ug/L	
9) Benzene (NR)	6.109	78	77360	No Calib		
11) Toluene (NR)	8.335	91	735320	No Calib		
13) Naphthalene (NR)	13.601	128	20040	No Calib	#	

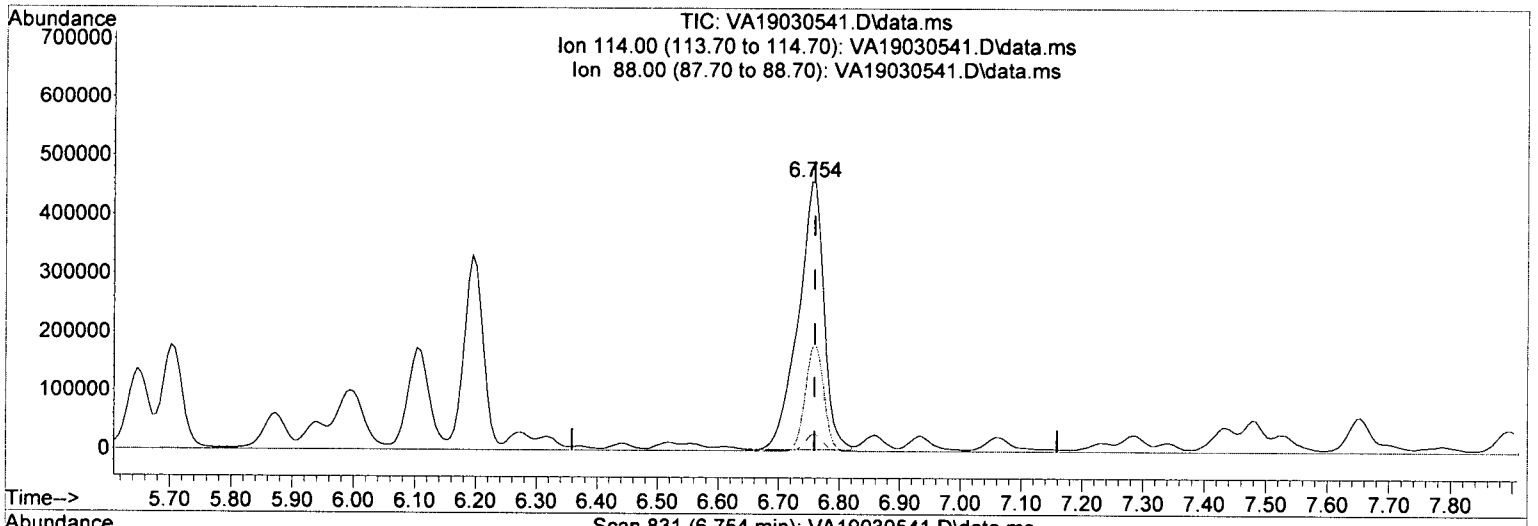
(#) = qualifier out of range (m) = manual integration (+) = signals summed

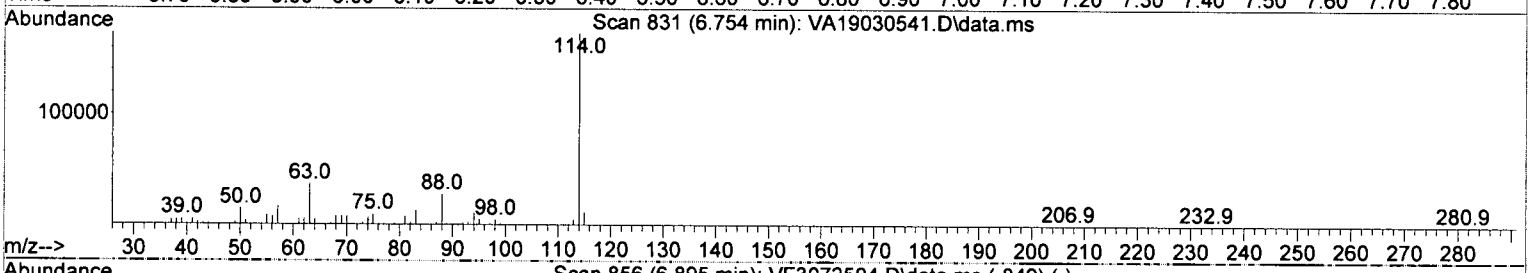
MM 3/7/19

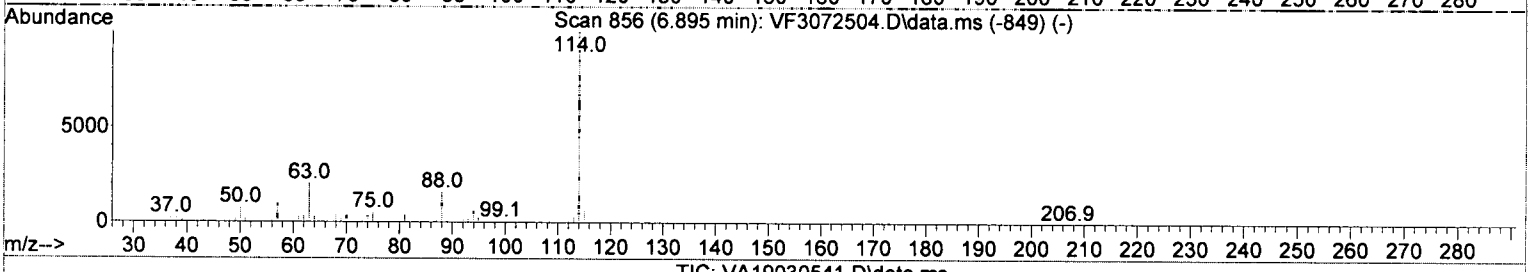
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030541.D
Acq On : 6 Mar 2019 4:36 am
Operator : MM
Sample : 9C05053-CALG
Misc : 1X 5mL 1000PPB GX
ALS Vial : 64 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:06:00 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration







TIC: VA19030541.D\data.ms

(2) 1,4-Difluorobenzene (Sur) (S)

6.754min (-0.005) 63.68 ug/L

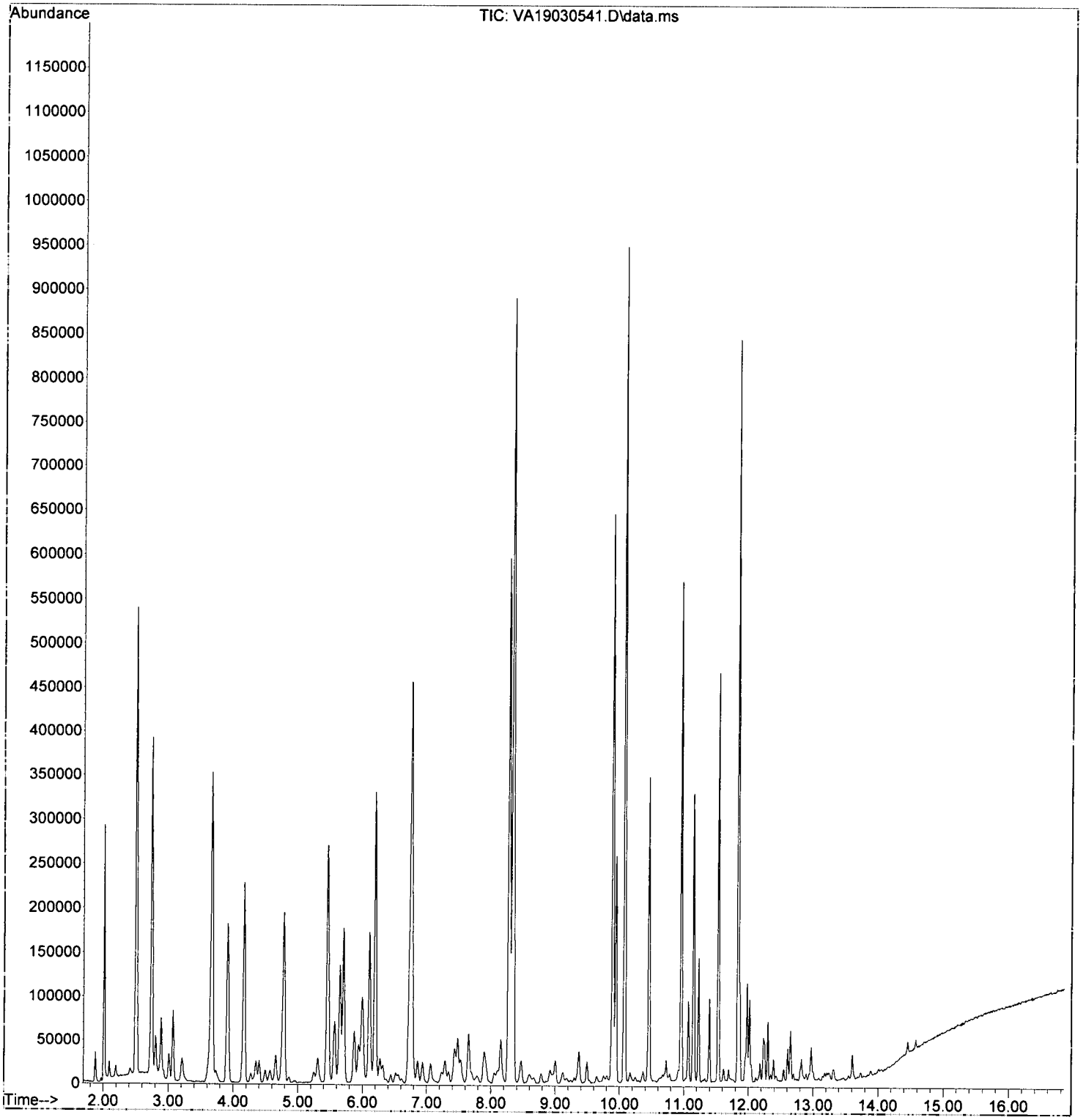
response 1341889

Signal	Exp%	Act%
TIC	100	100
114.00	38.70	28.80
88.00	6.00	4.45
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030541.D
Acq On : 6 Mar 2019 4:36 am
Operator : MM
Sample : 9C05053-CALG
Misc : 1X 5mL 1000PPB GX
ALS Vial : 64 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:06:00 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030542.D
Acq On : 6 Mar 2019 5:04 am
Operator : MM
Sample : 9C05053-CALH
Misc : 1X 5mL 2500PPB GX
ALS Vial : 65 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:06:02 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration

MM 3/6/19

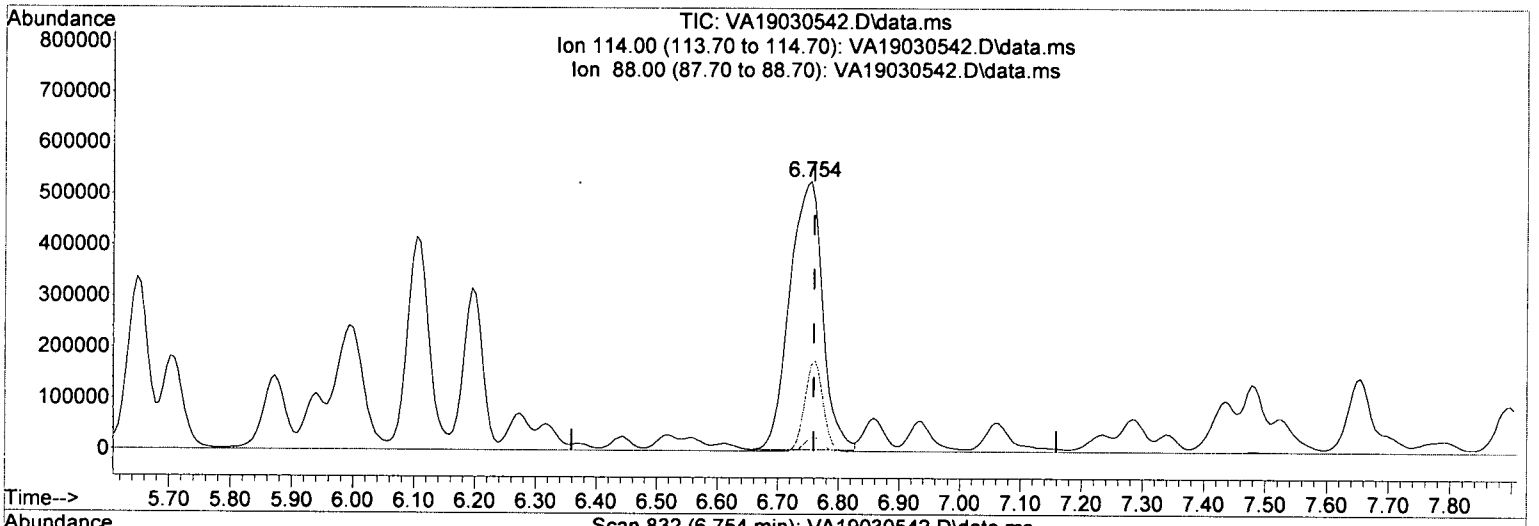
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.195	168	253898	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.754	TIC	1972934	97.61	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.956	TIC	819186	50.66	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.892	TIC	1205319	56.89	ug/L	0.00
10) Toluene-d8 (NR)	8.274	TIC	1195878	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.838	TIC	1159883	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.830	TIC	35998291m	2517.50		
6) TPHg (C5-C9)	9.830	TIC	29206442m	2505.04		
7) TPHg (C6-C10)	9.830	TIC	23111247m	2493.47		
8) NWTPH-Gx	9.830	TIC	22699751m	2500.38	ug/L	
9) Benzene (NR)	6.109	78	185332	No Calib		
11) Toluene (NR)	8.335	91	1787643	No Calib		
13) Naphthalene (NR)	13.602	128	52970	No Calib		#

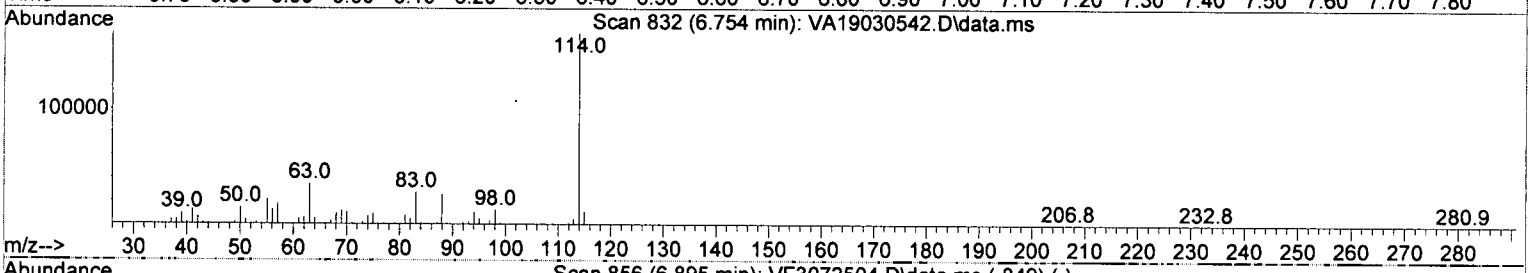
(#) = qualifier out of range (m) = manual integration (+) = signals summed

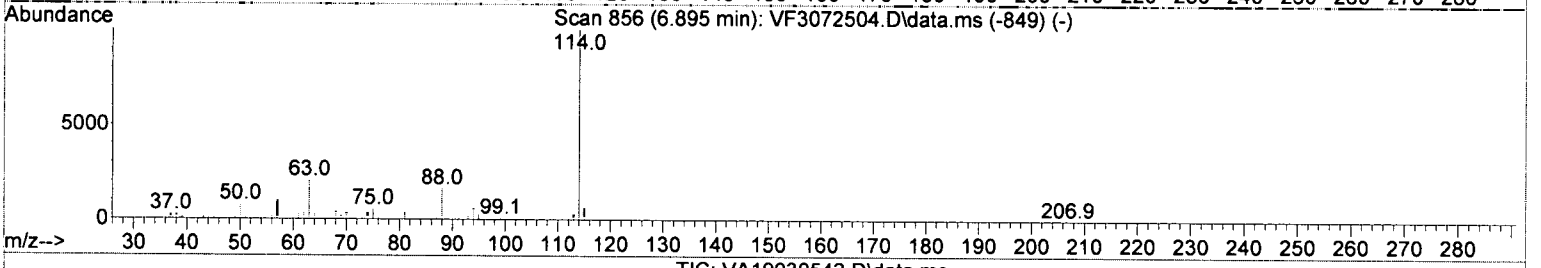
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030542.D
Acq On : 6 Mar 2019 5:04 am
Operator : MM
Sample : 9C05053-CALH
Misc : 1X 5mL 2500PPB GX
ALS Vial : 65 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:06:02 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration







TIC: VA19030542.D\data.ms

(2) 1,4-Difluorobenzene (Sur) (S)

6.754min (-0.005) 97.61 ug/L

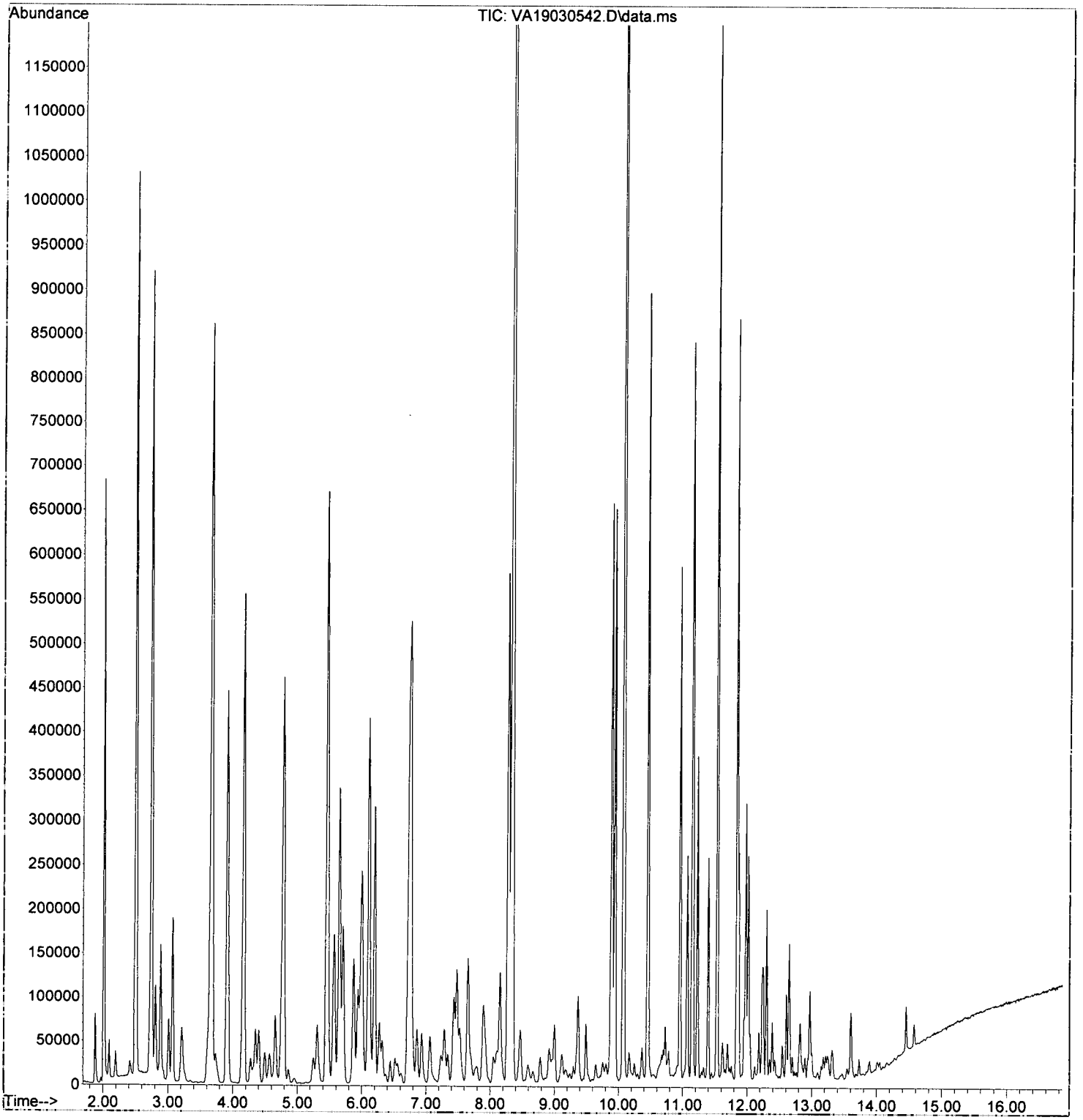
response 1972934

Signal	Exp%	Act%
TIC	100	100
114.00	38.70	18.90
88.00	6.00	2.89
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030542.D
Acq On : 6 Mar 2019 5:04 am
Operator : MM
Sample : 9C05053-CALH
Misc : 1X 5mL 2500PPB GX
ALS Vial : 65 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:06:02 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030543.D
Acq On : 6 Mar 2019 5:33 am
Operator : MM
Sample : 9C05053-CALI
Misc : 1X 5mL 5000PPB GX
ALS Vial : 66 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:06:04 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration

MM 3/10/19

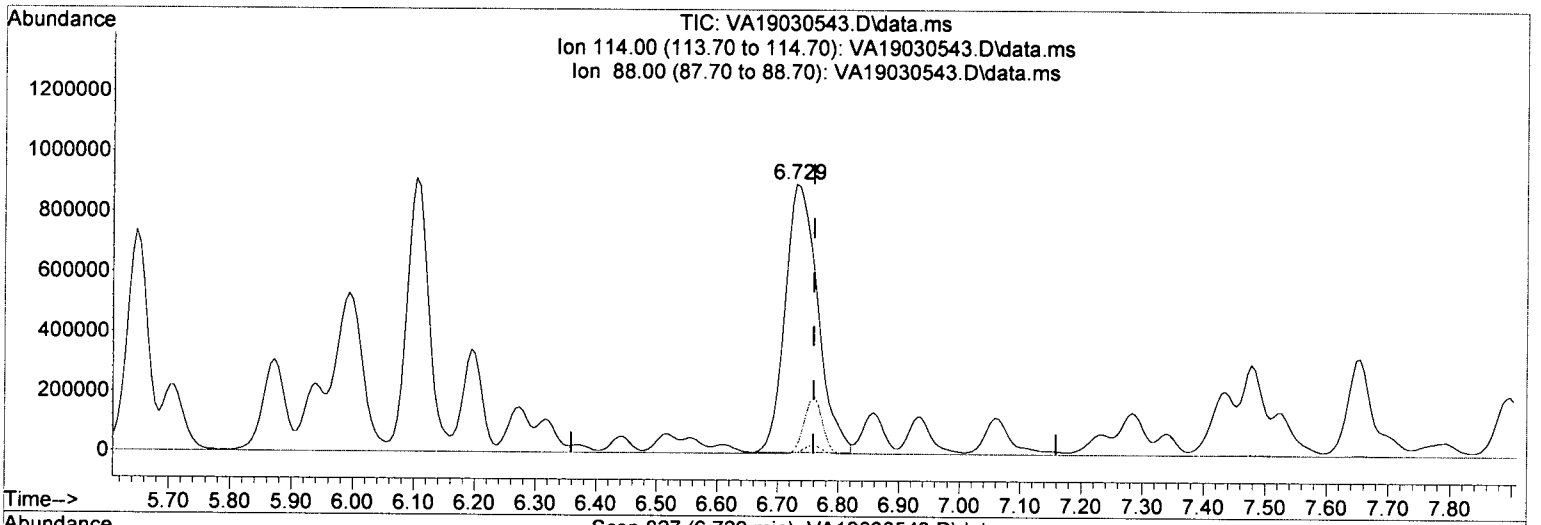
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.194	168	275551	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.729	TIC	3339864	152.26	ug/L	-0.03
3) 4-Bromofluorobenzene (...	10.956	TIC	916612	52.23	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.886	TIC	1584986	68.93	ug/L	0.00
10) Toluene-d8 (NR)	8.274	TIC	1364512	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.838	TIC	1319731	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.830	TIC	78991537m	5049.06		
6) TPHg (C5-C9)	9.830	TIC	63903040m	5042.03		
7) TPHg (C6-C10)	9.830	TIC	51161597m	5056.35		
8) NWTPH-Gx	9.830	TIC	51029885m	5055.22	ug/L	
9) Benzene (NR)	6.109	78	403591	No Calib		
11) Toluene (NR)	8.335	91	4025918	No Calib		
13) Naphthalene (NR)	13.601	128	118998	No Calib	#	

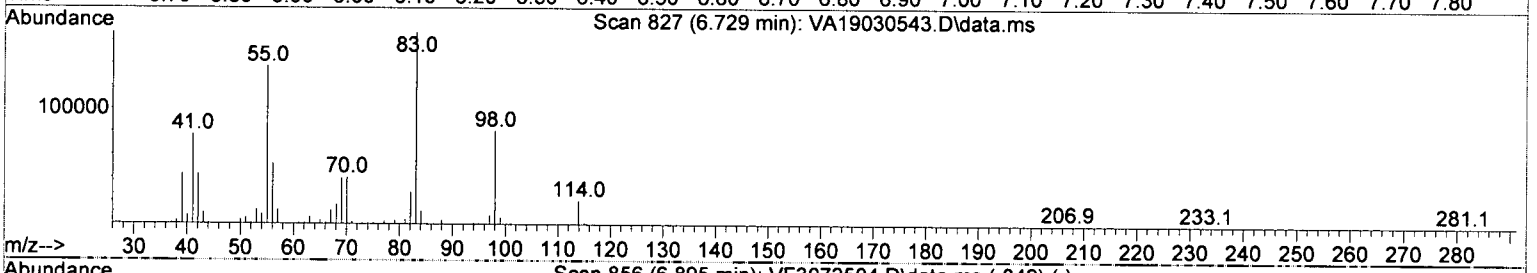
(#) = qualifier out of range (m) = manual integration (+) = signals summed

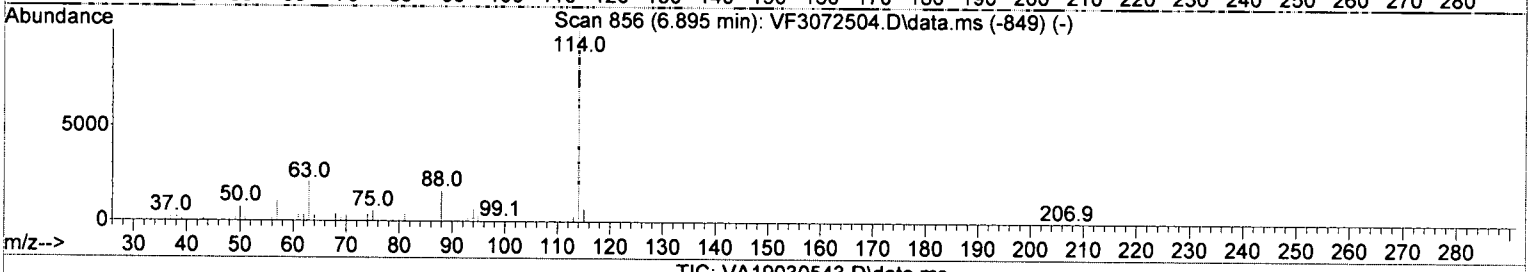
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030543.D
Acq On : 6 Mar 2019 5:33 am
Operator : MM
Sample : 9C05053-CALI
Misc : 1X 5mL 5000PPB GX
ALS Vial : 66 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:06:04 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration







TIC: VA19030543.D\data.ms

(2) 1,4-Difluorobenzene (Sur) (S)

6.729min (-0.030) 152.26 ug/L

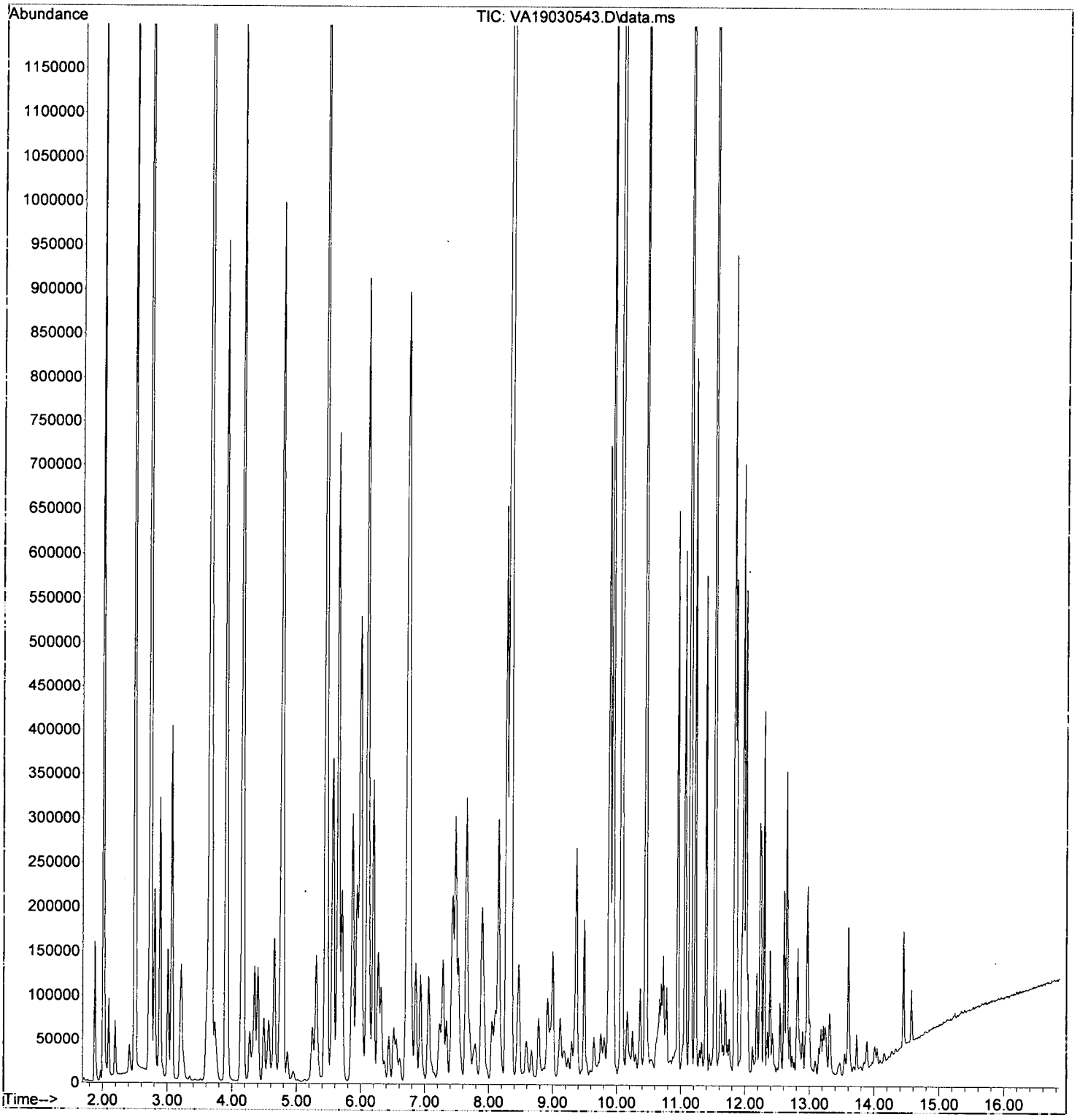
response 3339864

Signal	Exp%	Act%
TIC	100	100
114.00	38.70	12.09
88.00	6.00	1.83
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030543.D
Acq On : 6 Mar 2019 5:33 am
Operator : MM
Sample : 9C05053-CALI
Misc : 1X 5mL 5000PPB GX
ALS Vial : 66 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:06:04 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030544.D
Acq On : 6 Mar 2019 6:01 am
Operator : MM
Sample : 9C05053-CALJ
Misc : 1X 5mL 10000PPB GX
ALS Vial : 67 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:06:06 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration

MM 3/6/19

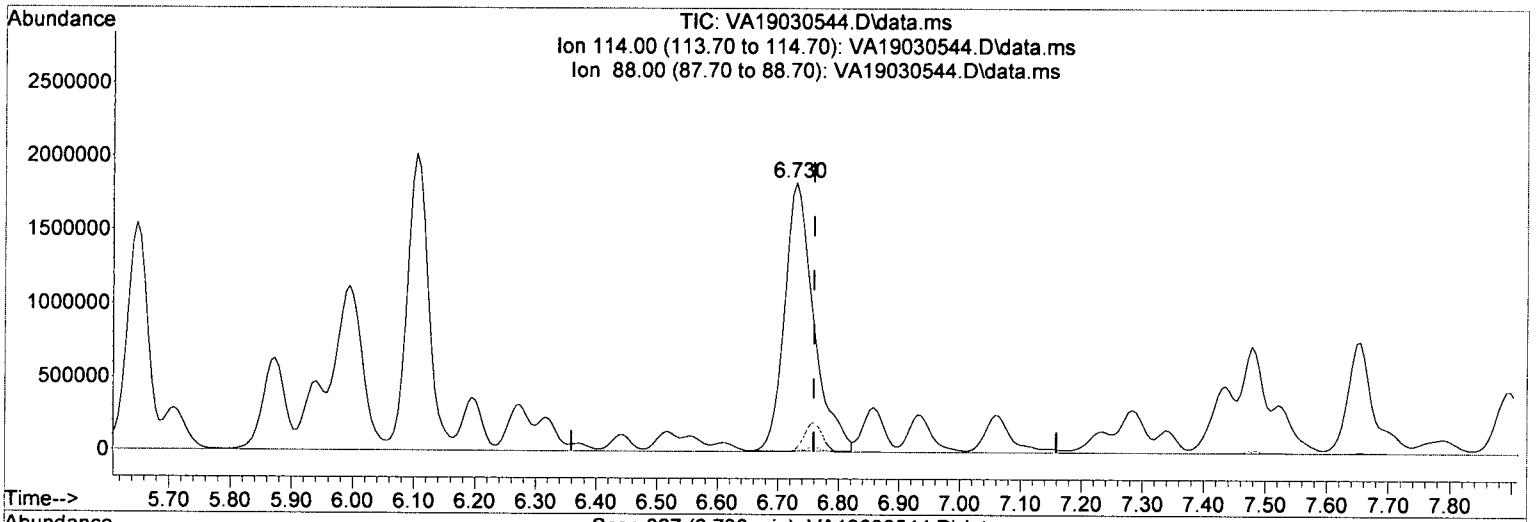
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.195	168	293665	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.730	TIC	6083504	260.23	ug/L	-0.03
3) 4-Bromofluorobenzene (...	10.956	TIC	1006021	53.79	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.886	TIC	2293081	93.57	ug/L	0.00
10) Toluene-d8 (NR)	8.274	TIC	1404074	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.838	TIC	1288703	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.830	TIC	170463416m	9976.04		
6) TPHg (C5-C9)	9.830	TIC	136730419m	9980.69		
7) TPHg (C6-C10)	9.830	TIC	110130805m	9976.78		
8) NWTPH-Gx	9.830	TIC	112059163m	9952.23	ug/L	
9) Benzene (NR)	6.109	78	861039	No Calib		
11) Toluene (NR)	8.335	91	8413585	No Calib		
13) Naphthalene (NR)	13.602	128	258239	No Calib	#	

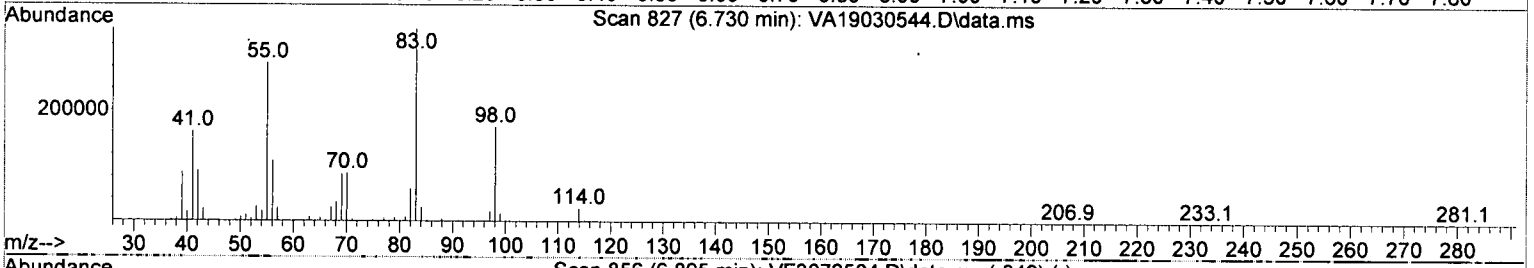
(#) = qualifier out of range (m) = manual integration (+) = signals summed

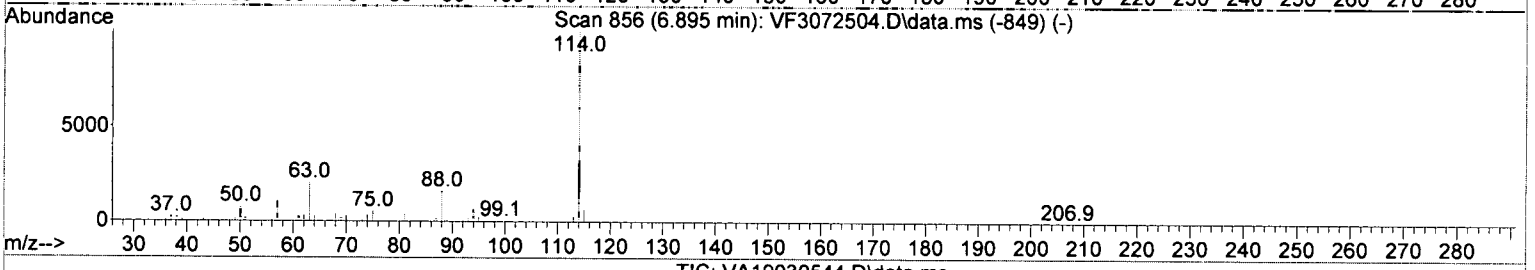
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030544.D
Acq On : 6 Mar 2019 6:01 am
Operator : MM
Sample : 9C05053-CALJ
Misc : 1X 5mL 10000PPB GX
ALS Vial : 67 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:06:06 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration







TIC: VA19030544.D\data.ms

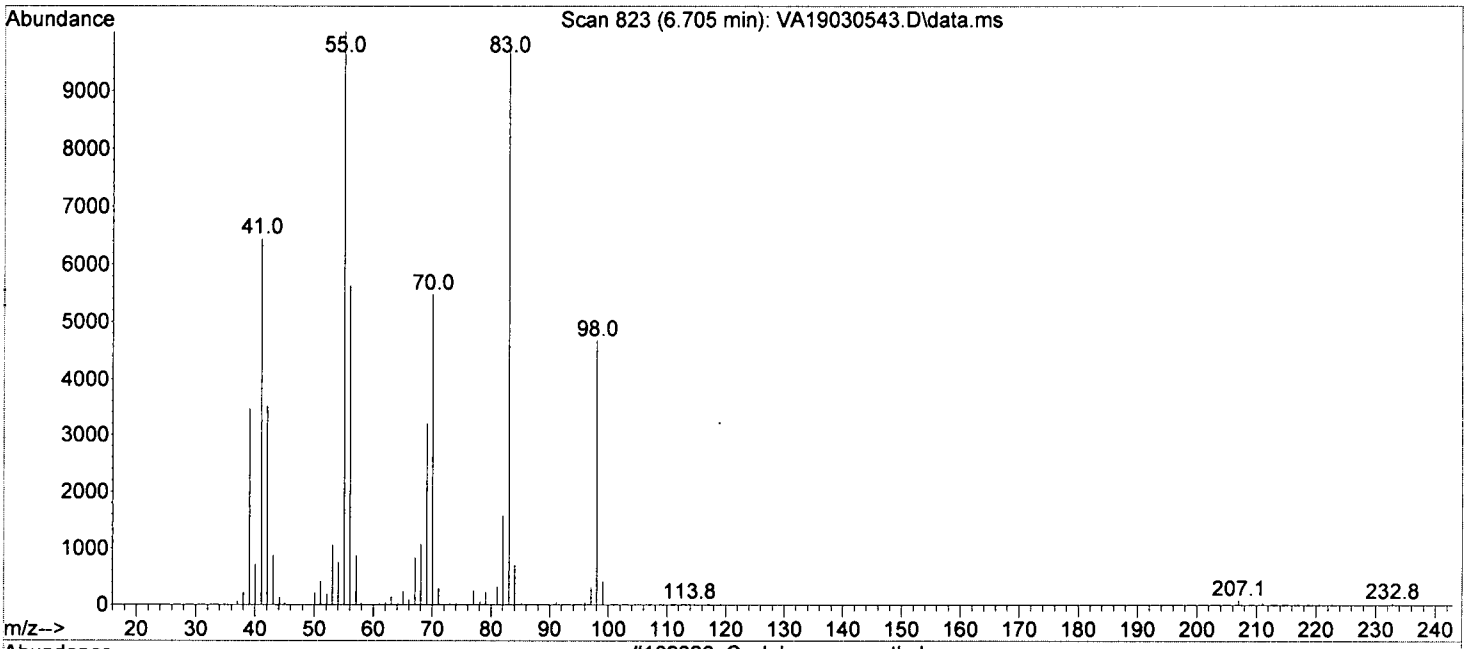
(2) 1,4-Difluorobenzene (Sur) (S)

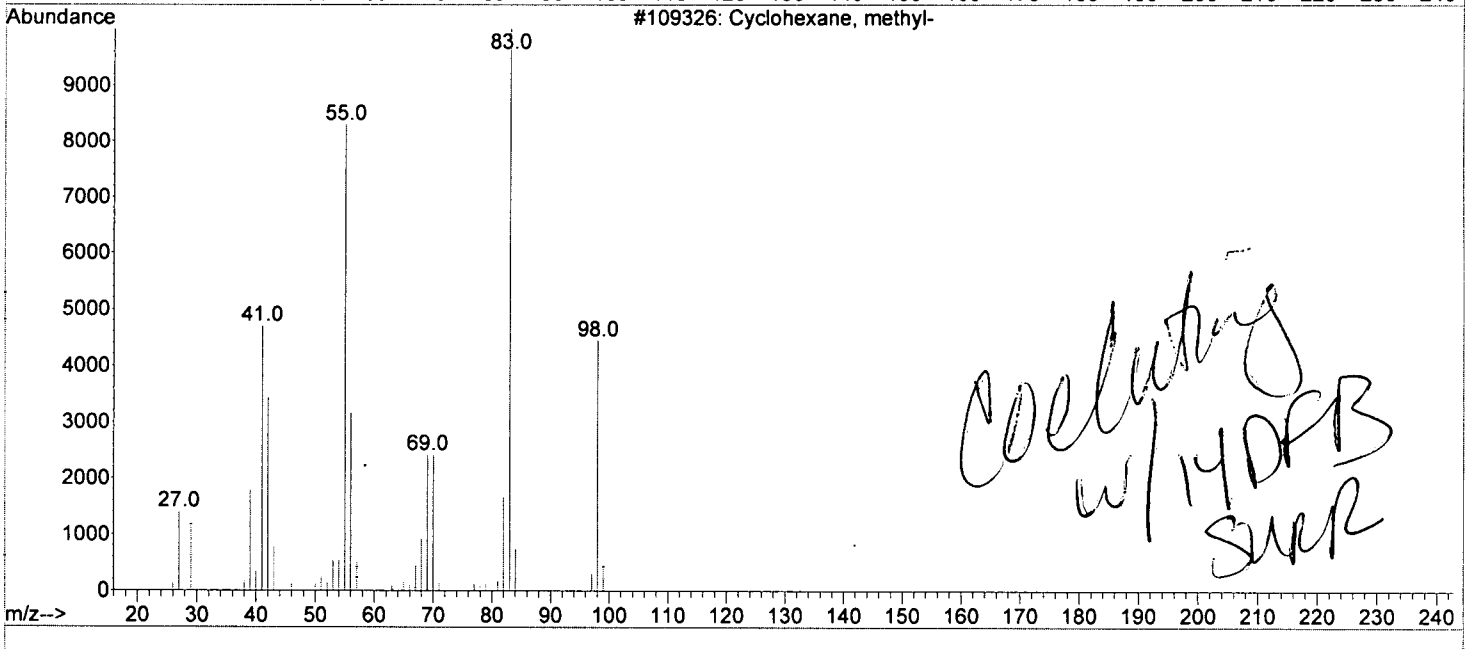
6.730min (-0.029) 260.23 ug/L

response 6083504

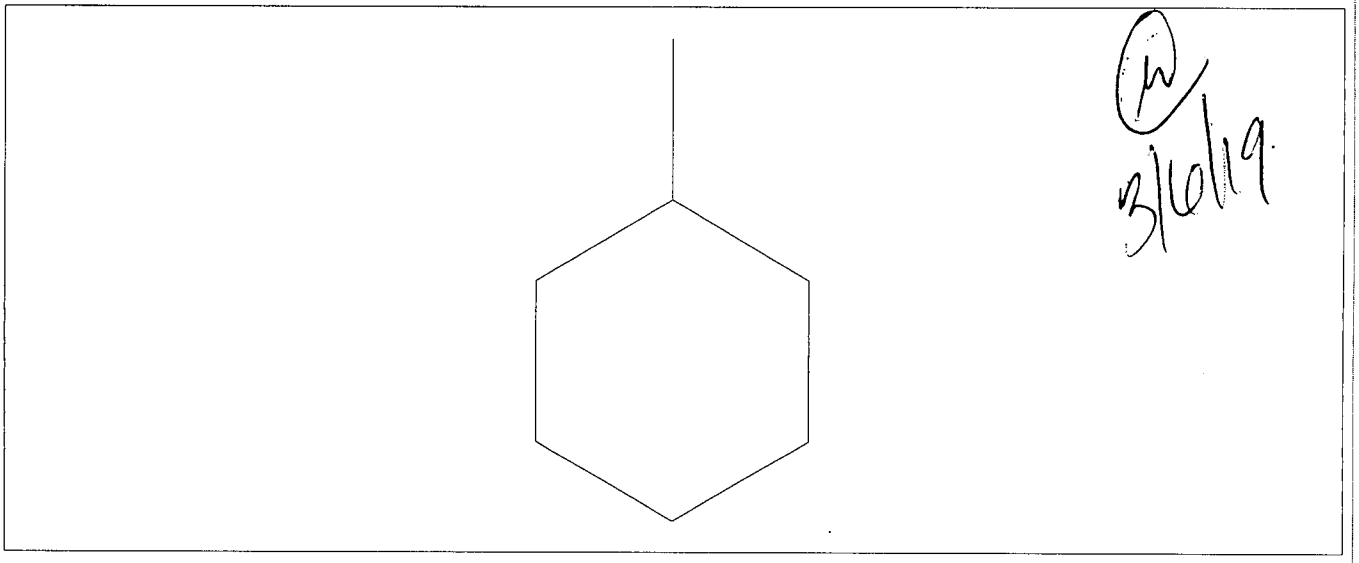
Signal	Exp%	Act%
TIC	100	100
114.00	38.70	7.01#
88.00	6.00	1.07
0.00	0.00	0.00

Library Searched : C:\DATABASE\NIST129K.L
Quality : 93
ID : Cyclohexane, methyl-





Coeluting w/ 14DFB SURR

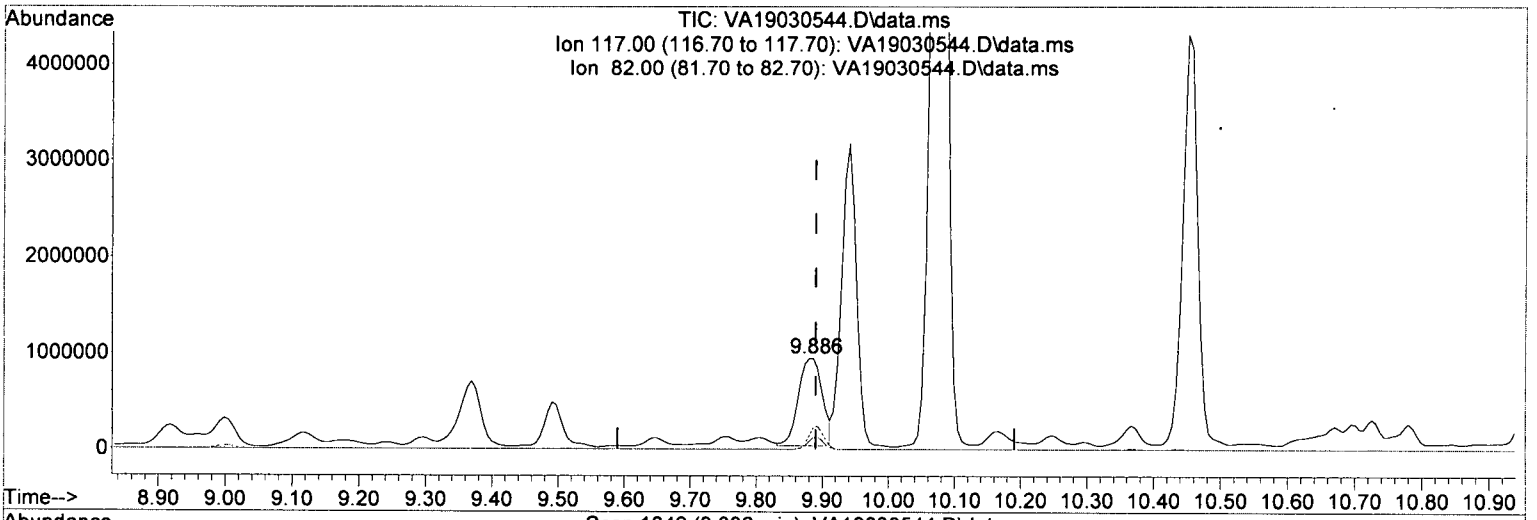


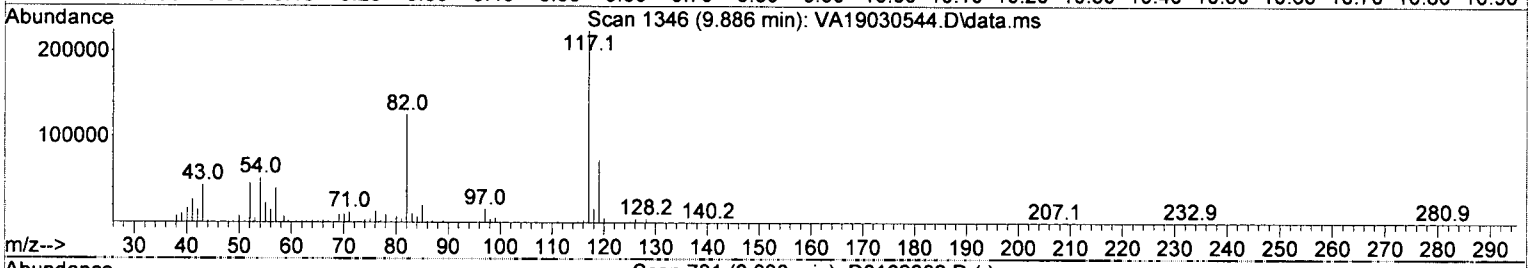
3/16/19

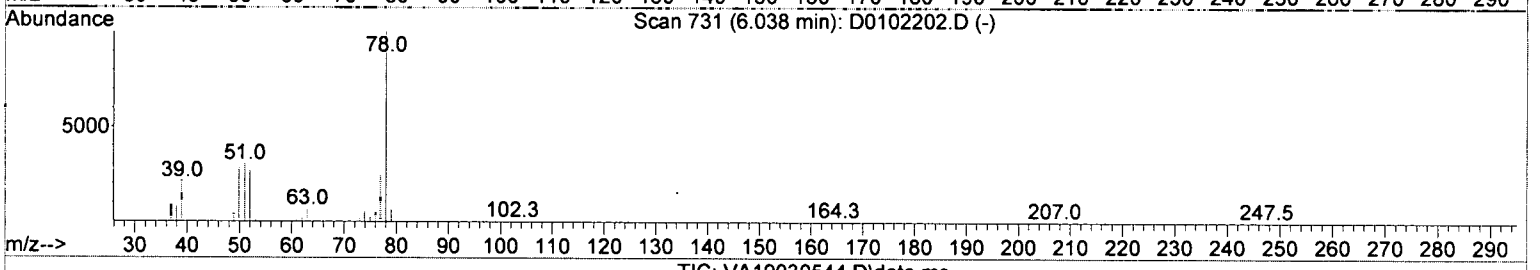
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030544.D
Acq On : 6 Mar 2019 6:01 am
Operator : MM
Sample : 9C05053-CALJ
Misc : 1X 5mL 10000PPB GX
ALS Vial : 67 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:06:06 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration







TIC: VA19030544.D\data.ms

(4) Chlorobenzene-d5 (NR) (S)

9.886min (-0.004) 93.57 ug/L

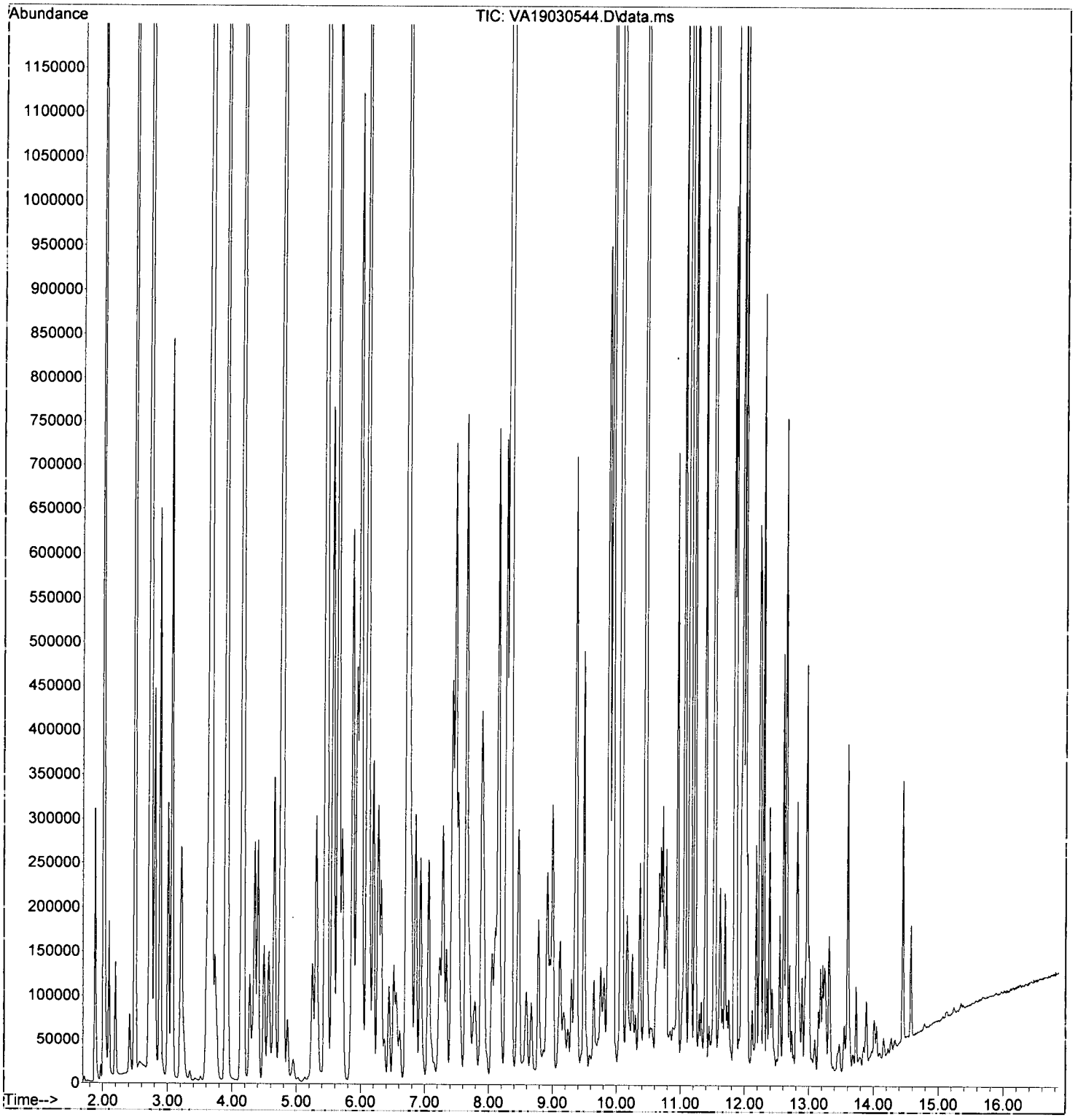
response 2293081

Signal	Exp%	Act%
TIC	100	100
117.00	0.00	17.04
82.00	0.00	9.41
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030544.D
Acq On : 6 Mar 2019 6:01 am
Operator : MM
Sample : 9C05053-CALJ
Misc : 1X 5mL 10000PPB GX
ALS Vial : 67 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:06:06 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:05:17 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030545.D
Acq On : 6 Mar 2019 6:30 am
Operator : MM
Sample : 9C05053-IBL8
Misc : 1X 5mL DI
ALS Vial : 68 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:51:55 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 08:55:02 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.195	168	292475	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.760	TIC	954116	40.98	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.956	TIC	888757	47.72	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.892	TIC	1137152	46.59	ug/L	0.00
10) Toluene-d8 (NR)	8.275	TIC	1310525	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.838	TIC	1173297	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.830	TIC	821097m	18.55		
6) TPHg (C5-C9)	9.830	TIC	686654m	13.62		
7) TPHg (C6-C10)	9.830	TIC	631408m	16.87		
8) NWTPH-Gx	9.830	TIC	347977m	31.51	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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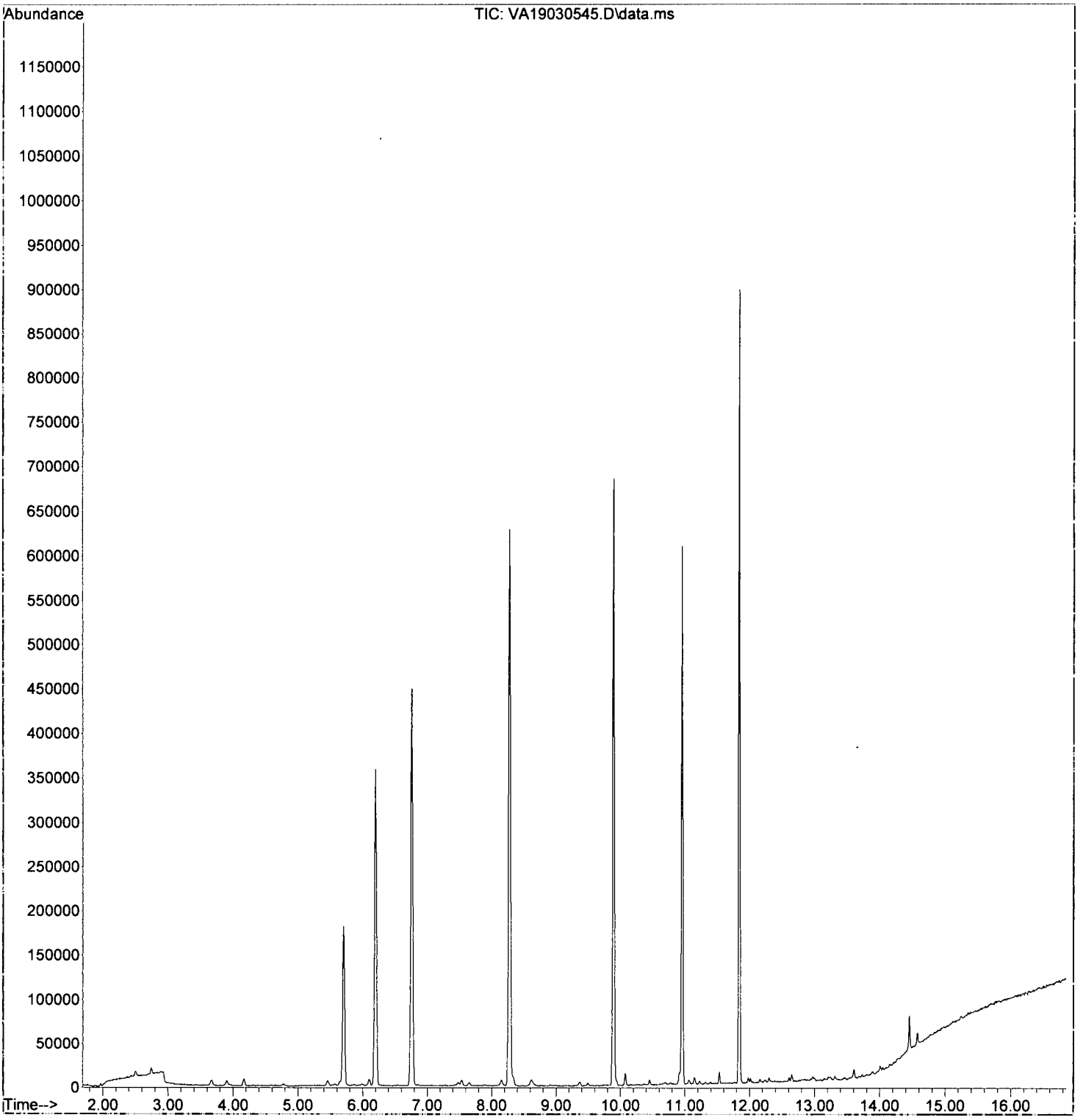
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030545.D
Acq On : 6 Mar 2019 6:30 am
Operator : MM
Sample : 9C05053-IBL8
Misc : 1X 5mL DI
ALS Vial : 68 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:51:55 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 08:55:02 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030546.D
Acq On : 6 Mar 2019 6:58 am
Operator : MM
Sample : 9C05053-IBL9
Misc : 1X 5mL DI
ALS Vial : 69 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:51:58 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 08:55:02 2019
Response via : Initial Calibration

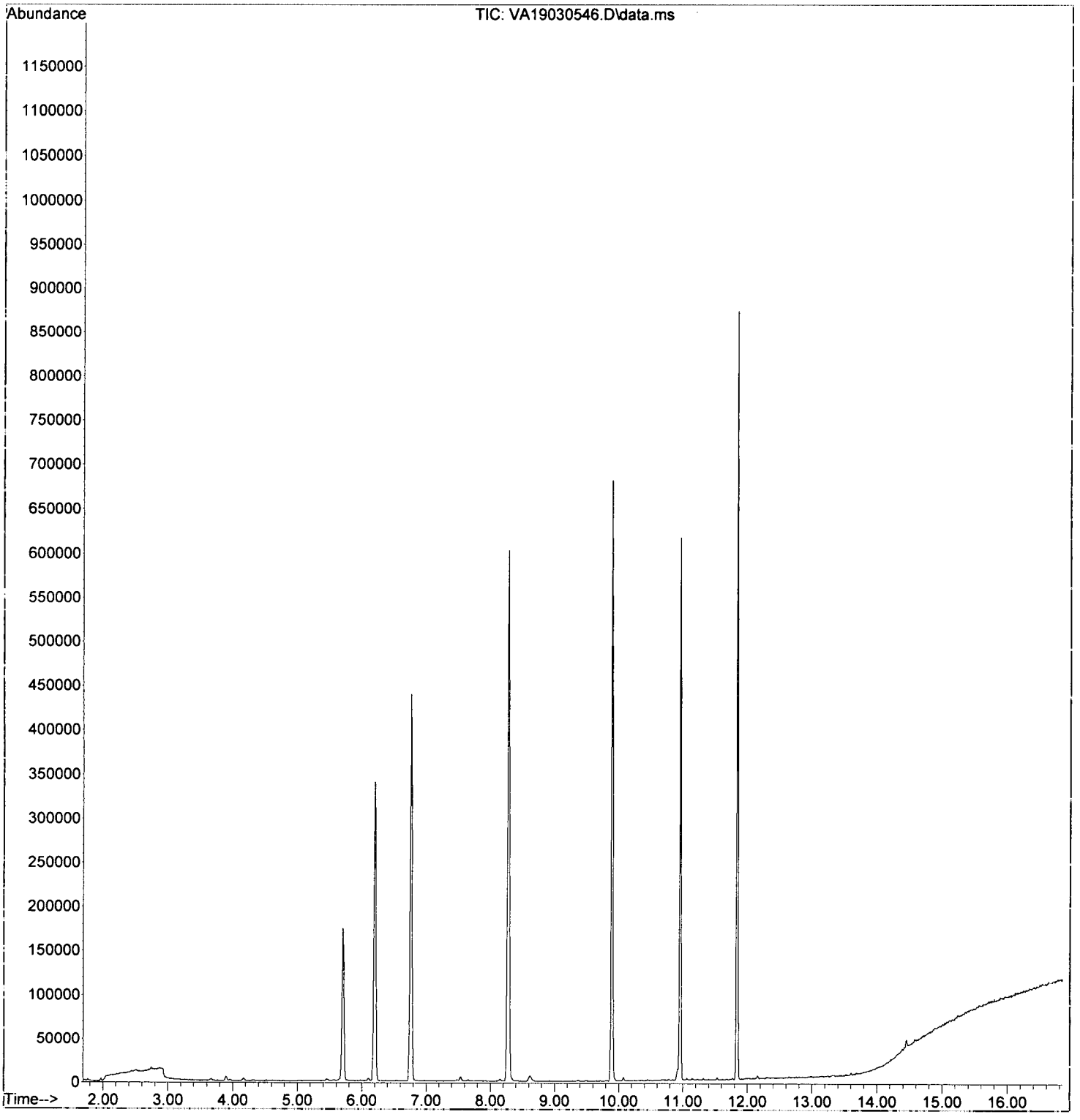
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.199	168	279745	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.759	TIC	912998	41.00	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.955	TIC	859931	48.27	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.891	TIC	1097167	47.00	ug/L	0.00
10) Toluene-d8 (NR)	8.273	TIC	1270716	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.837	TIC	1140133	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.830	TIC	613137m	7.32		
6) TPHg (C5-C9)	9.830	TIC	559208m	5.84		
7) TPHg (C6-C10)	9.830	TIC	531205m	9.52		
8) NWTPH-Gx	9.830	TIC	176610m	15.49	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030546.D
Acq On : 6 Mar 2019 6:58 am
Operator : MM
Sample : 9C05053-IBL9
Misc : 1X 5mL DI
ALS Vial : 69 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:51:58 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 08:55:02 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030547.D
Acq On : 6 Mar 2019 7:27 am
Operator : MM
Sample : 9C05053-ICV2
Misc : 1X 5mL 500PPB GX
ALS Vial : 70 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:10:40 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:09:18 2019
Response via : Initial Calibration

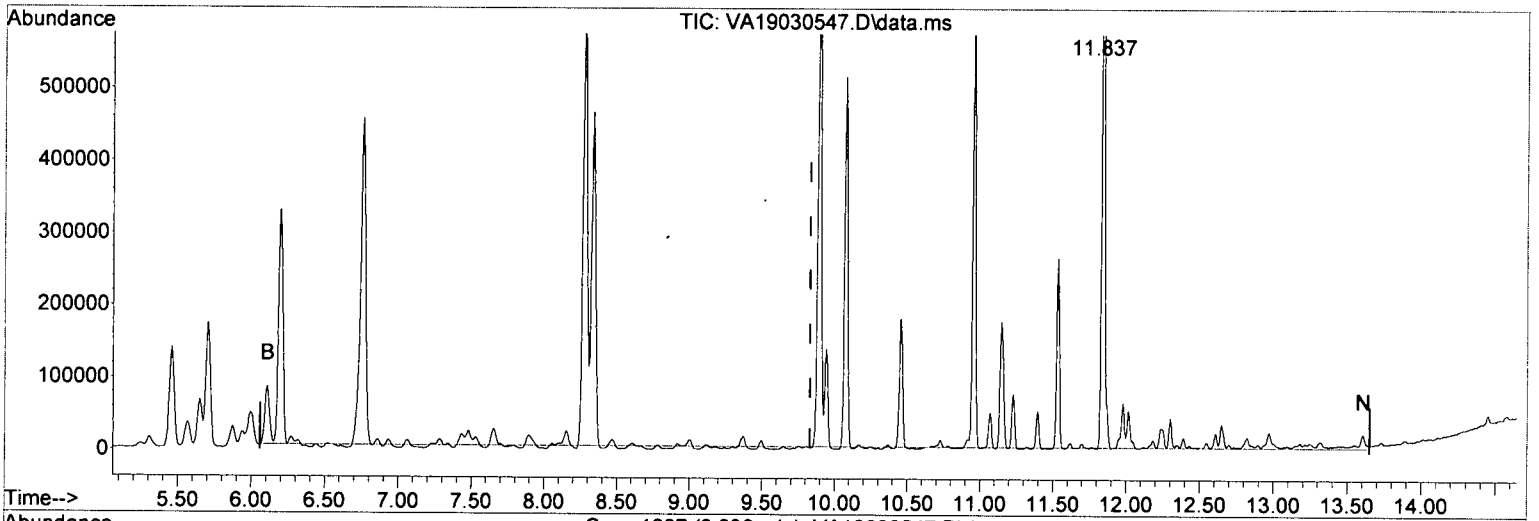
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.199	168	271810	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.759	TIC	1137752	52.58	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.955	TIC	823323	47.56	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.891	TIC	1097848	48.40	ug/L	0.00
10) Toluene-d8 (NR)	8.273	TIC	1241640	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.837	TIC	1172689	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.830	TIC	7798223m	489.48		
6) TPHg (C5-C9)	9.830	TIC	6447361m	489.70		
7) TPHg (C6-C10)	9.830	TIC	5213589m	496.80		
8) NWTPH-Gx	9.830	TIC	4730424m	498.01	ug/L	
9) Benzene (NR)	6.114	78	40047	No Calib		
11) Toluene (NR)	8.334	91	387827	No Calib		
13) Naphthalene (NR)	13.600	128	11918	No Calib	#	

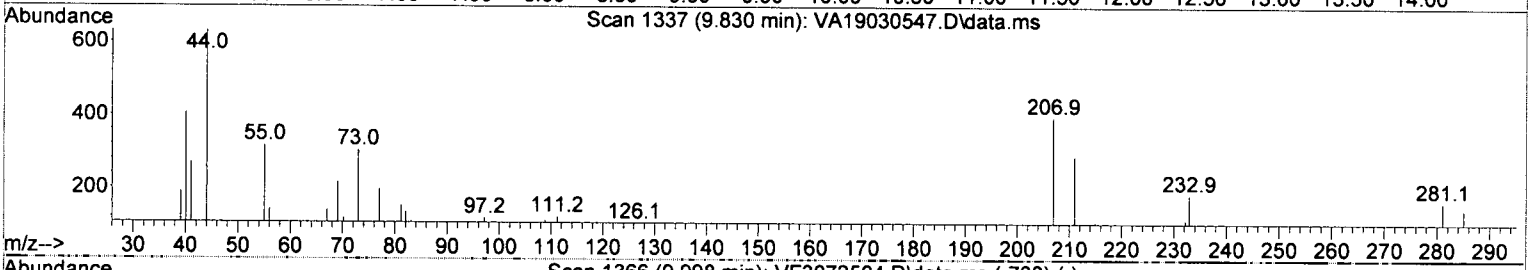
(#) = qualifier out of range (m) = manual integration (+) = signals summed

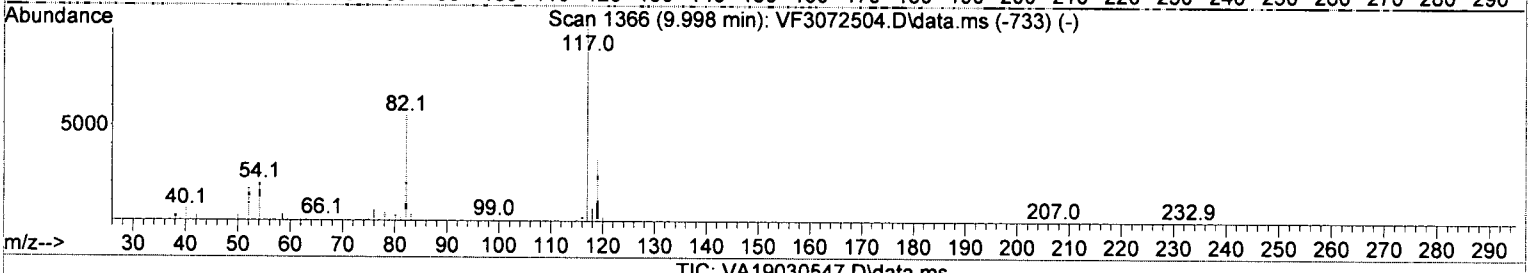
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030547.D
Acq On : 6 Mar 2019 7:27 am
Operator : MM
Sample : 9C05053-ICV2
Misc : 1X 5mL 500PPB GX
ALS Vial : 70 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:10:40 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:09:18 2019
Response via : Initial Calibration







TIC: VA19030547.D\data.ms

(8) NWTPH-Gx (H)

9.830min (0.000) 498.01 ug/L m

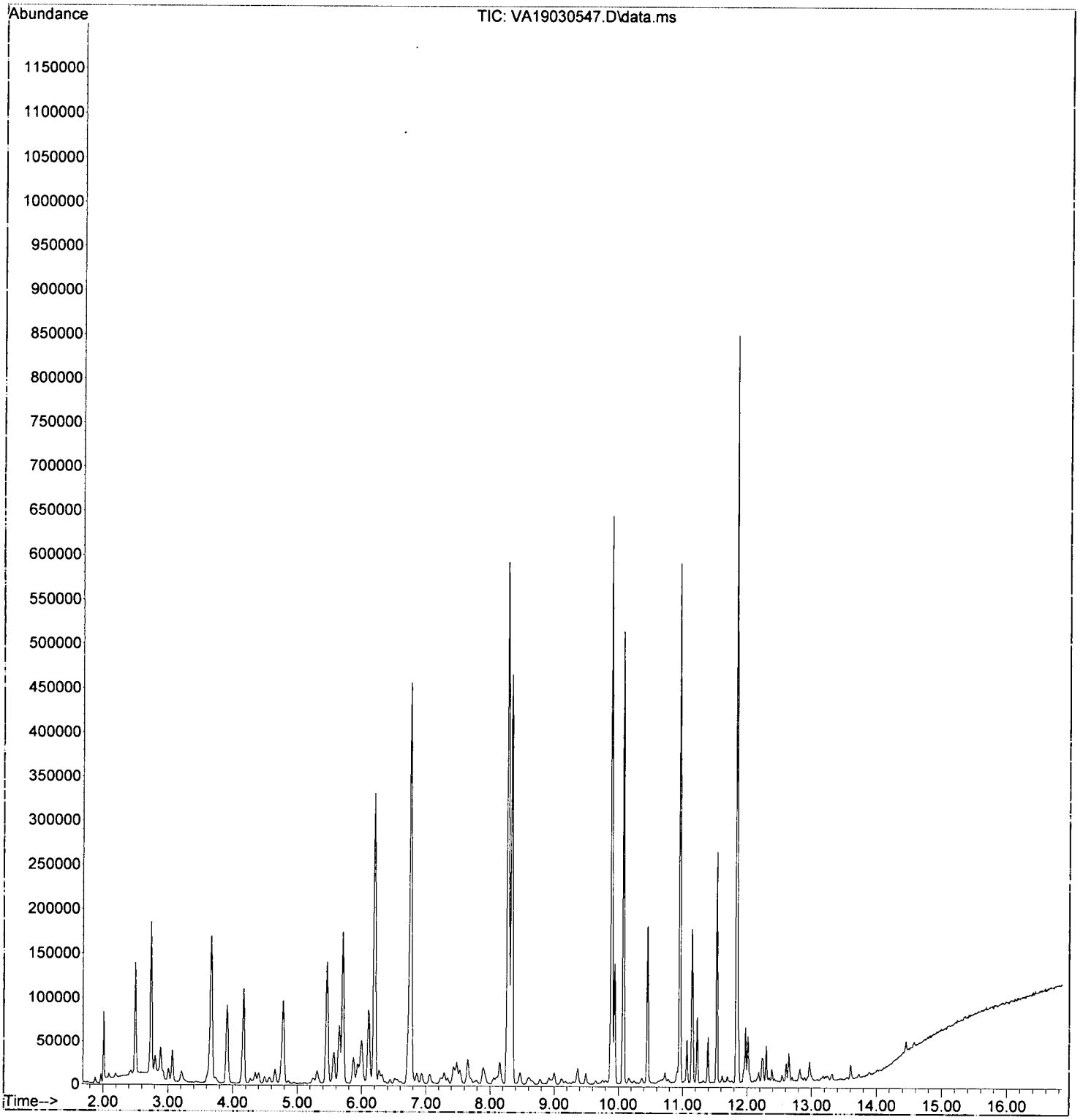
response 4730424

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.02#
0.00	0.00	0.02#
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030547.D
Acq On : 6 Mar 2019 7:27 am
Operator : MM
Sample : 9C05053-ICV2
Misc : 1X 5mL 500PPB GX
ALS Vial : 70 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 10:10:40 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 10:09:18 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030548.D
Acq On : 6 Mar 2019 7:55 am
Operator : MM
Sample : 9C05053-IBLA
Misc : 1X 5mL DI
ALS Vial : 36 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:52:02 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 08:55:02 2019
Response via : Initial Calibration

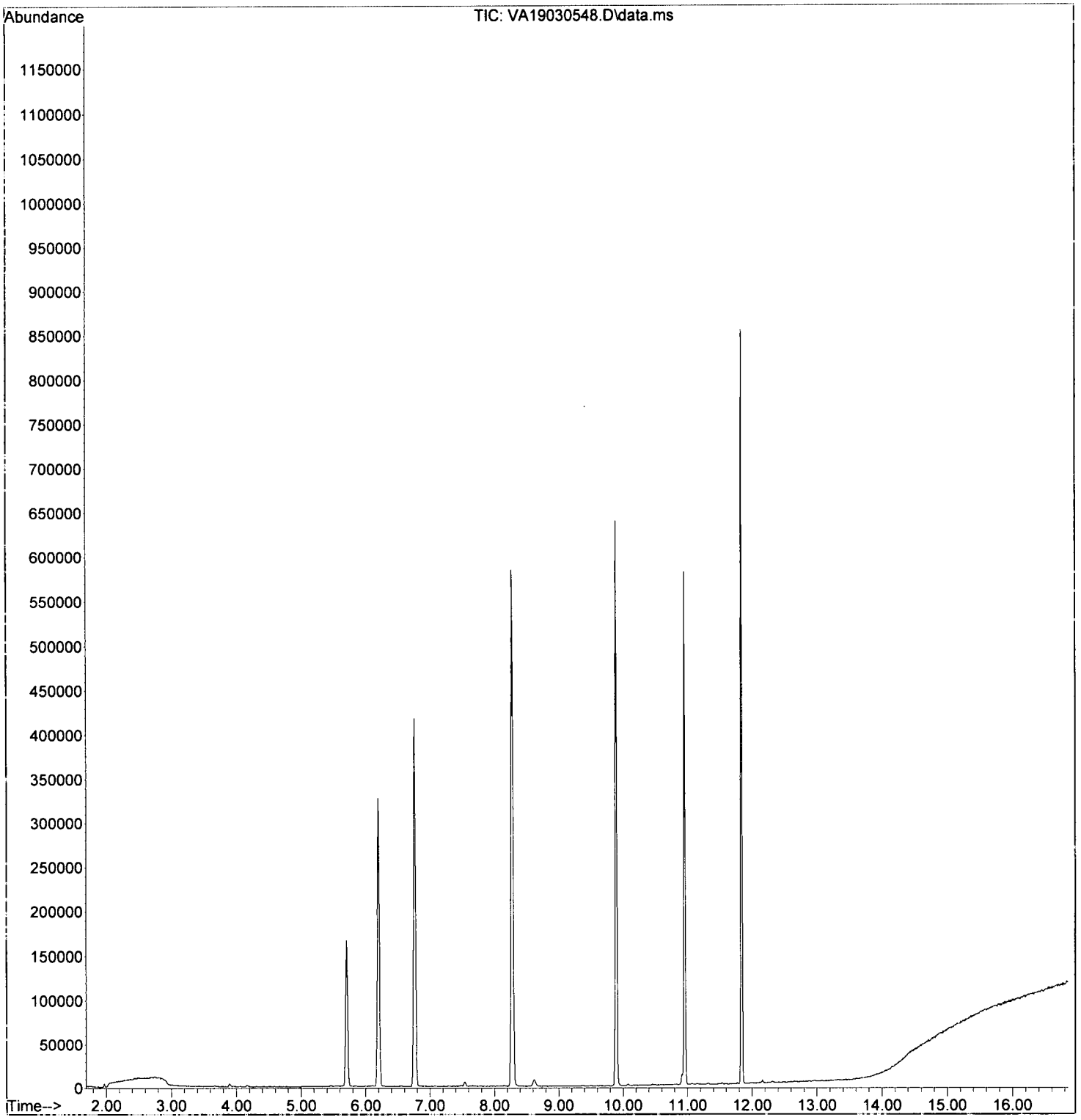
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.194	168	263861	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.760	TIC	870280	41.43	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.956	TIC	831523	49.48	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.892	TIC	1044211	47.42	ug/L	0.00
10) Toluene-d8 (NR)	8.274	TIC	1209631	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.838	TIC	1113135	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.830	TIC	551803m	5.49		
6) TPHg (C5-C9)	9.830	TIC	506623m	4.08		
7) TPHg (C6-C10)	9.830	TIC	479579m	7.22		
8) NWTPH-Gx	9.830	TIC	140993m	12.71	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-03\9C05053\
Data File : VA19030548.D
Acq On : 6 Mar 2019 7:55 am
Operator : MM
Sample : 9C05053-IBLA
Misc : 1X 5mL DI
ALS Vial : 36 Sample Multiplier: 1
DataAcq Meth:VA1604RUN.M

Quant Time: Mar 06 09:52:02 2019
Quant Method : C:\msdchem\1\METHODS\VA190306G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Wed Mar 06 08:55:02 2019
Response via : Initial Calibration



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

Semivolatile Organic Compunds By EPA 8270D

Benchsheet & Analysis Sequence Data

Batch 9051065

Sequence 9E21026 (A9E0508-05)

Apex Laboratories

PREPARATION BENCH SHEET

BATCH #: 9051065 (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
	9051065-BLK1		QC	05/20/19 16:13	15	5				100					
	9051065-BS1		QC	05/20/19 16:13	15	5	A19D326		100	100					
	A9E0508-05	A	8270D LL Full List	05/20/19 16:13	1.16	5				100	COMP1	expedited on 5/17 AM			
	9051065-DUP1		QC	05/20/19 16:13	1.24	5		A9E0508-05		100					
	9051065-DUP2		QC	05/20/19 16:13	1.24	5		A9E0508-05		100		Added 5/21/2019 by ams			
	A9E0582-01	A	8270D LL Full List	05/20/19 16:13	0.5	5				100	2708-190515-005	expedited 5/20			
	9051065-MS1		QC	05/20/19 16:13	0.49	5	A19D326	A9E0582-01	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)

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: AMS Date 5/21/19

Apex Laboratories

PREPARATION BENCH SHEET

BATCH #: 9051065 (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	9051065-BLK1		QC	05/20/19 16:13	~~15~~ 15	~~25~~ 25				100					
2	9051065-BS1		QC	05/20/19 16:13	15	~~25~~ 25	A19D326		100	100					
3	A9E0508-05	A	8270D LL Full List	05/20/19 16:13	~~15~~ 1.16	~~25~~ 25				100	COMP1	expedited on ~~5/17 AM~~ black bits strong odor			
4	9051065-DUP1		QC	05/20/19 16:13	~~15~~ 1.24	~~25~~ 25		A9E0508-05		100		black bits, strong odor			
5	A9E0582-01	A	8270D LL Full List	05/20/19 16:13	~~15~~ 0.50	~~25~~ 25				100	2708-190515-005	expedited 5/20 TAR			
6	9051065-MS1		QC	05/20/19 16:13	~~15~~ 0.49	~~25~~ 25	A19D326	A9E0582-01	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)

Std ID	Exp. Date	Description
A19D326	10/21/19	8270D PAH+/Phenols (JSCS) Spike @ 80 PPM

JC

Surrogate(s)

Std ID	Exp. Date	Description
A19E036	10/30/19	PAH Soil and Water Surr. (50ppm)

JC

Method 3546 digestion time and temperture achieved.

Initial: JC

Witness Cmt 5/20/19

JC 5-20-19
Prepared By: Date

Cm 5-20-19
Reviewed By: Date

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence:	**9E21026**	Instrument:	**SV-GCMS9**
Date:	**05/21/19 08:03**	Calibration:	**A9E1009**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E21026-TUN1	Solid	QC	QC			A19B027	A19E139
2	9E21026-CCV1	Solid	QC	QC			A19B027	A19C237
3	9E21026-CCB1	Solid	QC	QC			A19B027	
4	9051065-BLK1	Solid	QC	QC		9051065	A19B027	
5	9051065-BS1	Solid	QC	QC		9051065	A19B027	
6	A9E0508-05	Solid	8270D LL Full List	Hahn and Associates	05/21/19	9051065	A19B027	
7	9051065-DUP1	Solid	QC	QC		9051065	A19B027	
8	9051065-DUP2	Solid	QC	QC		9051065	A19B027	
9	A9E0582-01	Solid	8270D LL Full List	Hahn and Associates	05/23/19	9051065	A19B027	
10	9E21026-IBL1	Solid	QC	QC			A19B027	

Data Entered By: AMS 5/21/19

Comments:

Data Reviewed By: 5/21/19

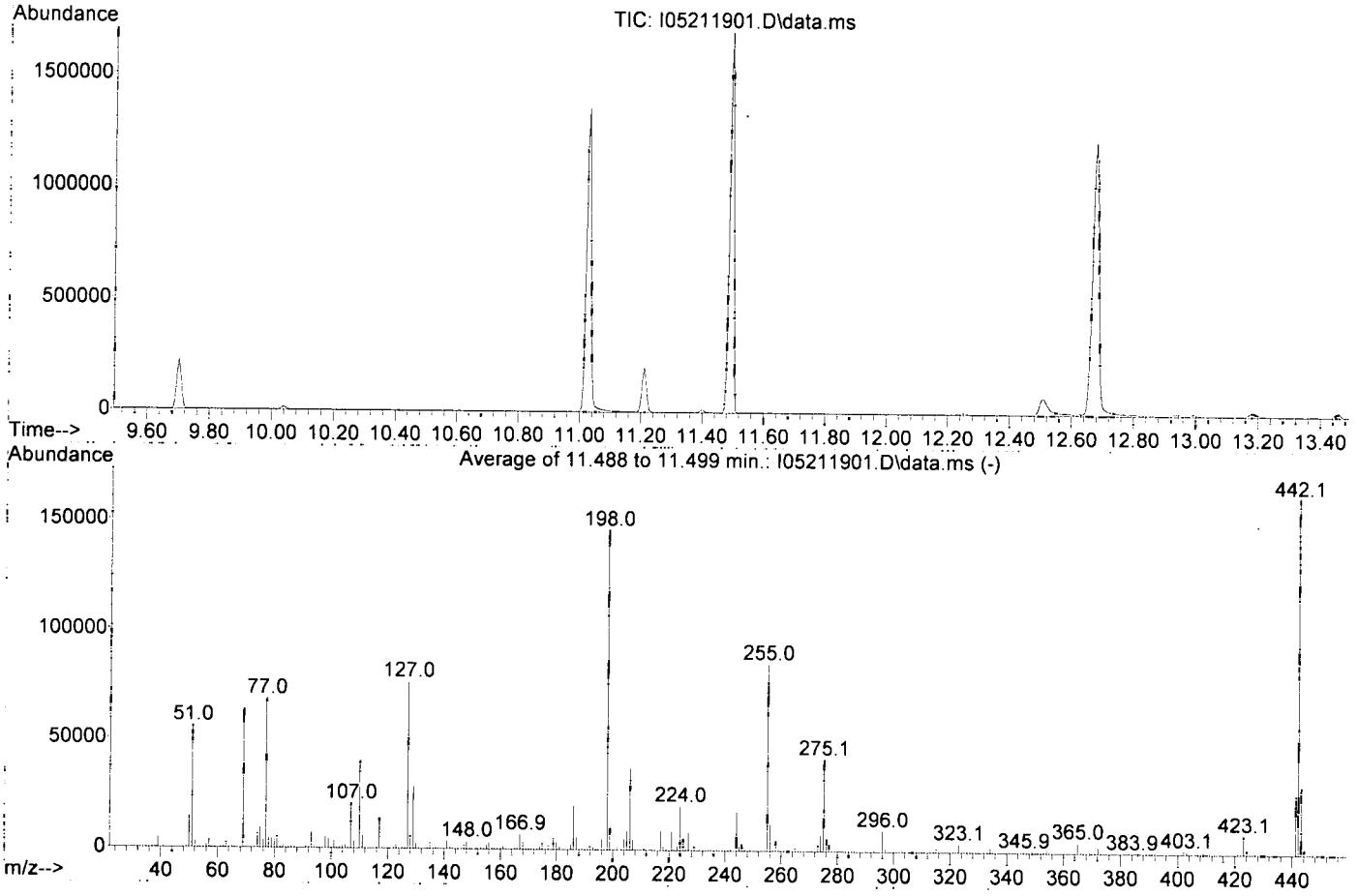
DFTPP

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211901.D
Acq On : 21 May 2019 8:10 am
Operator : JK /AMS /DTH
Sample : 9E21026-TUN1
Misc : 1x, A19E139 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPP-8270.M
Title : DFTPP Tune Methodug/mL
Last Update : Wed May 08 19:51:32 2019

AMS
5/21/19



AutoFind: Scans 1496, 1497, 1498; Background Corrected with Scan 1489

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	38.1	55640	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	43.3	63224	PASS
70	69	0.00	2	0.6	372	PASS
127	198	10	80	52.4	76485	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	145992	PASS
199	198	5	9	6.8	9917	PASS
275	198	10	60	28.8	42056	PASS
365	198	1	100	3.3	4859	PASS
441	442	0.01	24	16.5	27075	PASS
442	198	50	200	112.6	164408	PASS
443	442	15	24	19.6	32149	PASS

J

No Name Entered Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211901.D
Acq On : 21 May 2019 8:10 am
Operator : JK /AMS /DTH
Sample : 9E21026-TUN1
Misc : 1x, A19E139 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1
DataAcq Meth:DFTPP-8270.M

Quant Time: May 21 10:40:11 2019
Quant Method : C:\msdchem\1\methods\DFTPP-8270.M
Quant Title : DFTPP Tune Methodug/mL
QLast Update : Wed May 08 19:51:32 2019
Response via : Initial Calibration
InstName : SV-GCMS9

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	7.931	136	106680	2.00	ug/mL	-0.01
2) Acenaphthene-d10	9.702	162	51307	2.00	ug/mL	-0.01
4) Phenanthrene-d10	11.210	188	78169	2.00	ug/mL	-0.01
10) Chrysene-d12	14.933	240	62005	2.00	ug/mL	-0.01
11) Perylene-d12	16.933	264	55285	2.00	ug/mL	0.00
Target Compounds						Qvalue
3) Pentachlorophenol	11.028	266	186881	32.47	ug/mL	91
5) DFTPP	11.494	442	190149	28.94	ug/mL	97
6) Benzidine	12.676	184	734109	31.19	ug/mL	89
7) 4,4-DDE	12.938	TIC	9398	No Calib	#	
8) 4,4-DDD	13.457	TIC	20669	6.38	ug/mL#	1
9) 4,4-DDT	14.029	TIC	2364410	35.89	ug/mL#	1

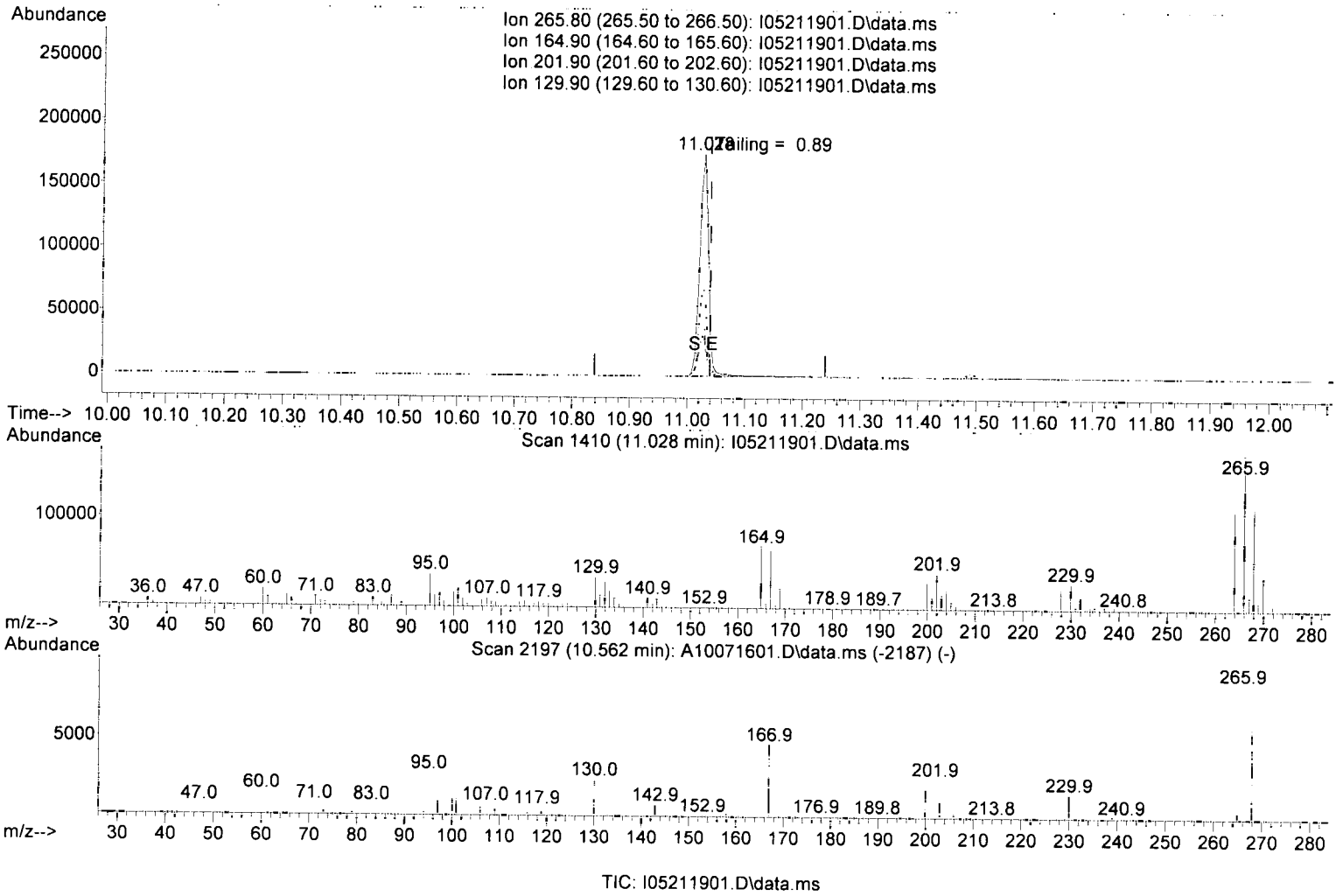
(#) = qualifier out of range (m) = manual integration (+) = signals summed

10/08/19 Haley & Aldrich, Inc. Mult 802 Decommisioning - Level IV Data Package Page 1092 of 1564

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211901.D
Acq On : 21 May 2019 8:10 am
Operator : JK /AMS /DTH
Sample : 9E21026-TUN1
Misc : 1x, A19E139 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1
DataAcq Meth:DFTPP-8270.M

Quant Time: May 21 10:40:11 2019
Quant Method : C:\msdchem\1\methods\DFTPP-8270.M
Quant Title : DFTPP Tune Methodug/mL
QLast Update : Wed May 08 19:51:32 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211901.D\data.ms

(3) Pentachlorophenol

11.028min (-0.011) 32.47 ug/mL

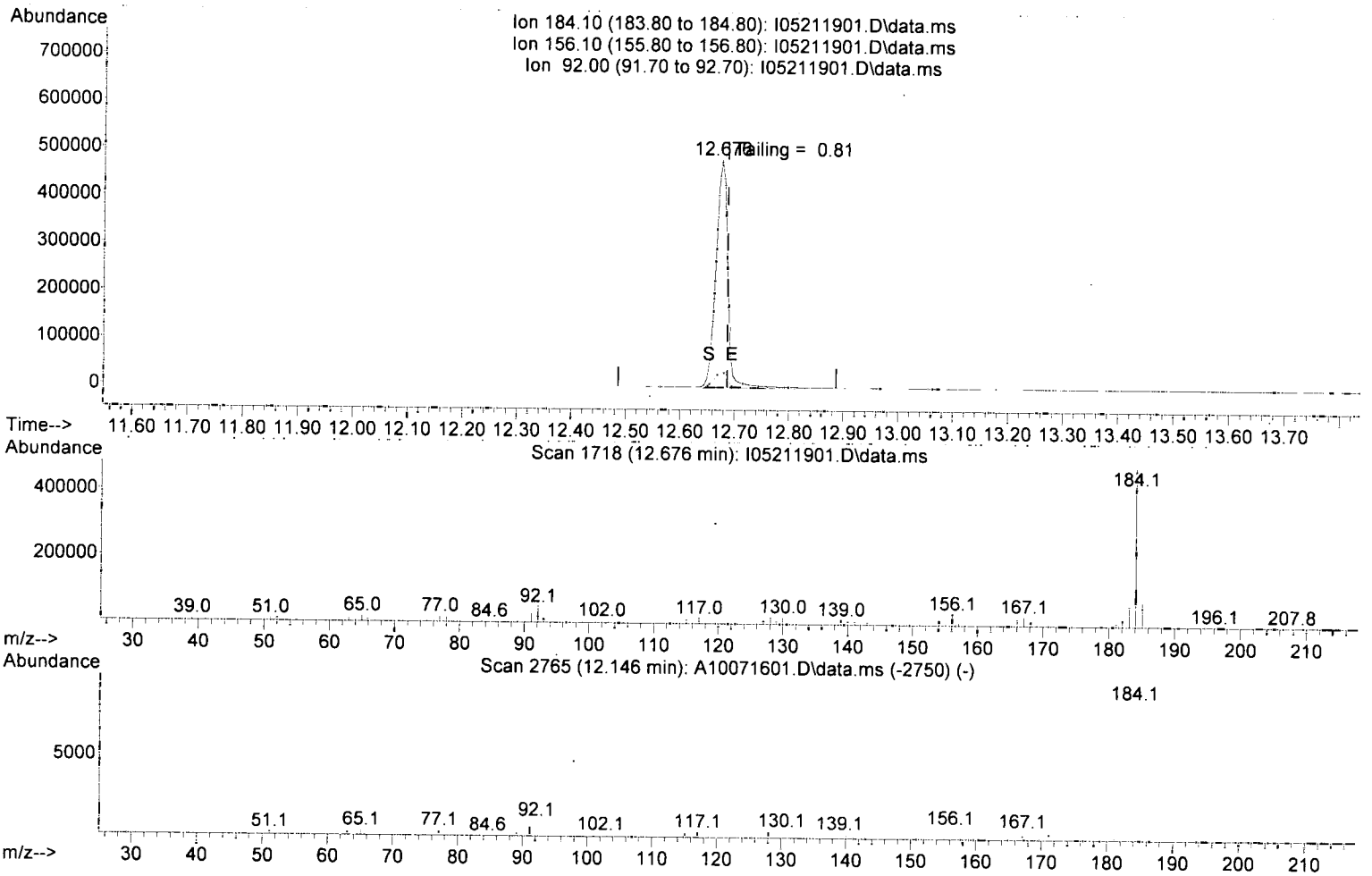
response 186881

Ion	Exp%	Act%
265.80	100.00	100.00
164.90	47.40	39.29
201.90	26.10	22.80
129.90	22.80	19.19

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211901.D
Acq On : 21 May 2019 8:10 am
Operator : JK /AMS /DTH
Sample : 9E21026-TUN1
Misc : 1x, A19E139 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1
DataAcq Meth:DFTPP-8270.M

Quant Time: May 21 10:40:11 2019
Quant Method : C:\msdchem\1\methods\DFTPP-8270.M
Quant Title : DFTPP Tune Methodug/mL
QLast Update : Wed May 08 19:51:32 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211901.D\data.ms

(6) Benzidine

12.676min (-0.011) 31.19 ug/mL

response 734109

Ion	Exp%	Act%
184.10	100.00	100.00
156.10	9.40	7.08
92.00	15.50	9.76
0.00	0.00	0.00

DDT Breakdown Check (Validated 5/1/2013)

From:
9E21026-TUN1
SV-GCMS9

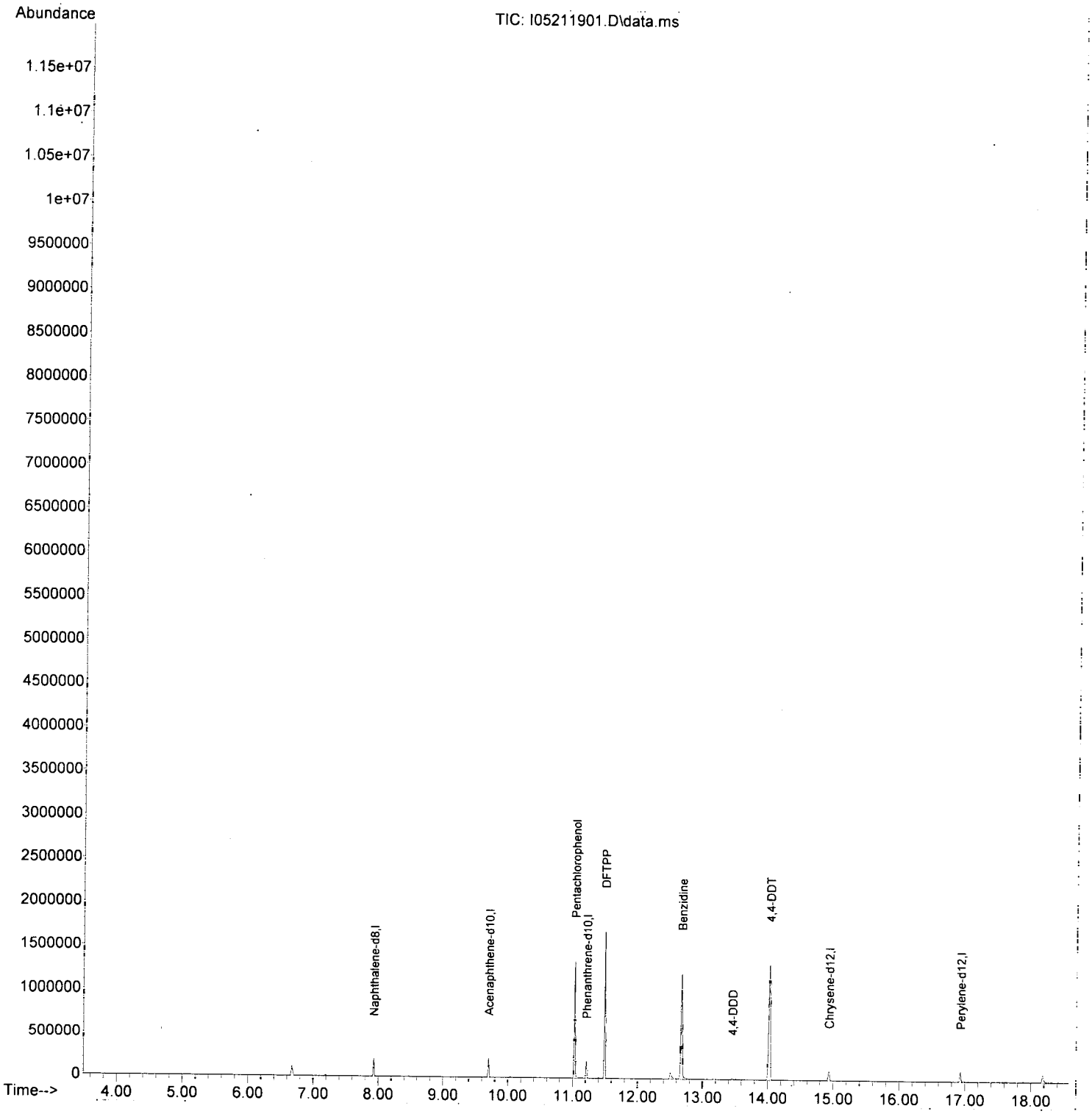
First Column	Area Counts	Percent Breakdown	
DDE	9398		
DDD	20669		
DDT	2364410	1.26	PASS

Breakdown must be less than 20% to accept sample data.

No Name Entered Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211901.D
Acq On : 21 May 2019 8:10 am
Operator : JK /AMS /DTH
Sample : 9E21026-TUN1
Misc : 1x, A19E139 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1
DataAcq Meth:DFTPP-8270.M

Quant Time: May 21 10:40:11 2019
Quant Method : C:\msdchem\1\methods\DFTPP-8270.M
Quant Title : DFTPP Tune Methodug/mL
QLast Update : Wed May 08 19:51:32 2019
Response via : Initial Calibration
InstName : SV-GCMS9



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211902.D
Acq On : 21 May 2019 8:38 am
Operator : JK /AMS /DTH
Sample : 9E21026-CCV1
Misc : 1x, A19C237@1000
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

AMS 5/21/19

Quant Time: May 21 10:41:18 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

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	1,4-Dichlorobenzene-d4 (IST	2000.000	2000.000	0.0	72	-0.01
2	T	N-Nitrosodimethylamine	1000.000	918.669	8.1	72	-0.01
3	T	Pyridine	1000.000	932.260	6.8	70	0.00
4	S	2-Fluorophenol (Surr)	1000.000	981.011	1.9	71	0.00
5	S	Phenol-d6 (Surr)	1000.000	982.891	1.7	71	0.00
6	T	Phenol	1000.000	972.607	2.7	69	0.00
7	T	Aniline	1000.000	692.508	30.7#	56	0.00
8	T	Bis(2-chloroethyl) ether	1000.000	979.063	2.1	69	-0.01
9	T	2-Chlorophenol	1000.000	1038.758	-3.9	73	0.00
10	T	1,3-Dichlorobenzene	1000.000	976.014	2.4	70	0.00
11	T	1,4-Dichlorobenzene	1000.000	996.662	0.3	70	-0.01
12	T	Benzyl alcohol	1000.000	923.095	7.7	65	0.00
13	T	1,2-Dichlorobenzene	1000.000	1040.936	-4.1	74	0.00
14	T	2-Methylphenol	1000.000	1054.965	-5.5	75	-0.01
15	T	2,2'-Oxybis(1-Chloropropane	1000.000	937.740	6.2	67	-0.01
16	T	N-Nitrosodi-n-propylamine	1000.000	986.372	1.4	70	0.00
17	T	3+4-Methylphenol	1000.000	1021.875	-2.2	71	0.00
18	T	Hexachloroethane	1000.000	984.178	1.6	71	-0.01
19	S	Nitrobenzene-d5 (Surr)	1000.000	1003.435	-0.3	74	-0.01
20	T	Nitrobenzene	1000.000	982.788	1.7	71	0.00
21	I	Naphthalene-d8 (ISTD)	2000.000	2000.000	0.0	73	-0.01
22	T	Isophorone	1000.000	972.569	2.7	68	-0.01
23	T	2-Nitrophenol	1000.000	1092.675	-9.3	75	0.00
24	T	2,4-Dimethylphenol	1000.000	1038.685	-3.9	70	0.00
25	T	Bis(2-chloroethoxy) methane	1000.000	967.463	3.3	68	-0.01
26	T	Benzoic acid	2000.000	1892.693	5.4	64	0.00
27	T	2,4-Dichlorophenol	1000.000	986.568	1.3	70	0.00
28	T	1,2,4-Trichlorobenzene	1000.000	999.763	0.0	70	0.00
29	T	Naphthalene	1000.000	1039.632	-4.0	73	-0.01
30	T	4-Chloroaniline	1000.000	770.615	22.9#	55	0.00
31	T	Hexachlorobutadiene	1000.000	1076.724	-7.7	77	-0.01
32	T	4-Chloro-3-methylphenol	1000.000	960.814	3.9	68	0.00
33	T	2-Methylnaphthalene	1000.000	1030.525	-3.1	70	-0.01
34	T	1-Methylnaphthalene	1000.000	1015.514	-1.6	69	-0.01
35	I	Acenaphthene-d10 (ISTD)	2000.000	2000.000	0.0	71	-0.01
36	T	Hexachlorocyclopentadiene	1000.000	1112.817	-11.3	75	0.00
37	T	2,4,6-Trichlorophenol	1000.000	1013.109	-1.3	68	0.00
38	T	2,4,5-Trichlorophenol	1000.000	1013.251	-1.3	67	0.00
39	T	1,1'-Biphenyl	1000.000	1074.436	-7.4	70	0.00
40	S	2-Fluorobiphenyl (Surr)	1000.000	1097.082	-9.7	72	0.00
41	T	2-Chloronaphthalene	1000.000	1073.213	-7.3	71	-0.01
42	T	2-Nitroaniline	1000.000	1077.279	-7.7	71	0.00
43	T	2,6-Dimethylnaphthalene	1000.000	1063.484	-6.3	69	0.00
44	T	1,4-Dinitrobenzene	1000.000	1067.501	-6.8	73	-0.01
45	T	Dimethyl phthalate	1000.000	1058.127	-5.8	71	0.00
46	T	1,3-Dinitrobenzene	1000.000	1068.032	-6.8	70	0.00
47	T	2,6-Dinitrotoluene	1000.000	1103.411	-10.3	70	0.00
48	T	1,2-Dinitrobenzene	1000.000	1067.850	-6.8	69	-0.01

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211902.D
Acq On : 21 May 2019 8:38 am
Operator : JK /AMS /DTH
Sample : 9E21026-CCV1
Misc : 1x, A19C237@1000
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:18 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

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)
49	T	Acenaphthylene	1000.000	1071.066	-7.1	70	-0.01
50	T	3-Nitroaniline	1000.000	1213.153	-21.3#	77	0.00
51	T	Acenaphthene	1000.000	1040.561	-4.1	70	-0.01
52	T	2,4-Dinitrophenol	1000.000	967.186	3.3	67	0.00
53	T	4-Nitrophenol	1000.000	883.703	11.6	59	0.00
54	T	2,4-Dinitrotoluene	1000.000	1016.341	-1.6	70	0.00
55	T	Dibenzofuran	1000.000	1075.872	-7.6	71	0.00
56	T	2,3,5,6-Tetrachlorophenol	1000.000	996.460	0.4	67	-0.01
57	T	2,3,4,6-Tetrachlorophenol	1000.000	1044.252	-4.4	68	0.00
58	T	Diethyl phthalate	1000.000	1038.936	-3.9	73	0.00
59	T	2,3,5-Trimethylnaphthalene	1000.000	992.330	0.8	71	0.00
60	T	Fluorene	1000.000	992.300	0.8	71	0.00
61	T	4-Chlorophenyl phenyl ether	1000.000	1023.699	-2.4	70	0.00
62	T	4-Nitroaniline	1000.000	955.585	4.4	62	0.00
63	T	4,6-Dinitro-2-methylphenol	1000.000	1039.084	-3.9	70	0.00
64	I	Phenanthrene-d10 (ISTD)	2000.000	2000.000	0.0	72	0.00
65	T	N-Nitrosodiphenylamine	1000.000	1053.578	-5.4	71	0.00
66	T	Azobenzene (1,2-DPH)	1000.000	1041.595	-4.2	70	0.00
67	S	2,4,6-Tribromophenol (Surr)	1000.000	1150.701	-15.1	73	0.00
68	T	4-Bromophenyl phenyl ether	1000.000	1024.914	-2.5	69	0.00
69	T	Hexachlorobenzene	1000.000	994.590	0.5	70	-0.01
70	T	Pentachlorophenol (PCP)	1000.000	1130.606	-13.1	80	0.00
71	T	Phenanthrene	1000.000	1015.599	-1.6	71	0.00
72	T	Anthracene	1000.000	1049.975	-5.0	73	0.00
73	T	Carbazole	1000.000	1015.626	-1.6	66	0.00
74	T	Di-n-butyl phthalate	1000.000	1060.829	-6.1	70	0.00
75	T	Fluoranthene	1000.000	1016.236	-1.6	67	-0.01
76	T	Benzidine	2000.000	772.171	61.4#	32	0.00
77	T	Pyrene	1000.000	1002.221	-0.2	68	0.00
78	I	Chrysene-d12 (ISTD)	2000.000	2000.000	0.0	70	-0.01
79	S	Terphenyl-d14 (Surr)	1000.000	1045.511	-4.6	70	0.00
80	T	Butyl benzyl phthalate	1000.000	1068.452	-6.8	69	-0.01
81	T	Bis(2-ethylhexyl) adipate	1000.000	989.769	1.0	68	-0.01
82	T	3,3-Dichlorobenzidine	2000.000	2510.595	-25.5#	79	0.00
83	T	Benz(a)anthracene	1000.000	1000.292	-0.0	67	-0.02
84	T	Chrysene	1000.000	1008.644	-0.9	70	-0.01
85	T	Bis(2-ethylhexyl) phthalate	1000.000	1085.093	-8.5	72	-0.01
86	I	Perylene-d12 (ISTD)	2000.000	2000.000	0.0	71	0.00
87	T	Di-n-octyl phthalate	1000.000	1019.099	-1.9	71	-0.01
88	T	Benzo(b)fluoranthene	1000.000	996.717	0.3	67	-0.01
89	T	Benzo(k)fluoranthene	1000.000	990.482	1.0	68	-0.02
90	T	Benzo(b+k)fluoranthene	2000.000	1978.647	1.1	68	-0.02
91	T	Benzo(e)pyrene	1000.000	1036.316	-3.6	68	-0.02
92	T	Benzo(a)pyrene	1000.000	1020.521	-2.1	68	-0.01
93	T	Perylene	1000.000	1132.977	-13.3	76	-0.01
94	I	Dibenz(a,h)Anthrcene-d14 (I	2000.000	2000.000	0.0	70	-0.01

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Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211902.D
Acq On : 21 May 2019 8:38 am
Operator : JK /AMS /DTH
Sample : 9E21026-CCV1
Misc : 1x, A19C237@1000
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:18 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

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)
95 T	Indeno(1,2,3-cd)pyrene	1000.000	991.733	0.8	70	-0.01
96 T	Dibenz(a,h)anthracene	1000.000	1033.563	-3.4	70	-0.01
97 T	Benzo(g,h,i)perylene	1000.000	1041.955	-4.2	69	-0.02

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

No Name Entered Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211902.D
Acq On : 21 May 2019 8:38 am
Operator : JK /AMS /DTH
Sample : 9E21026-CCV1
Misc : 1x, A19C237@1000
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:18 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4...	6.685	152	84488	2000.00	ng/ml	-0.01
21) Naphthalene-d8 (ISTD)	7.937	136	319520	2000.00	ng/ml	-0.01
35) Acenaphthene-d10 (ISTD)	9.707	162	159574	2000.00	ng/ml	-0.01
64) Phenanthrene-d10 (ISTD)	11.216	188	304901	2000.00	ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.045	240	298923	2000.00	ng/ml	-0.01
86) Perylene-d12 (ISTD)	18.533	264	286034	2000.00	ng/ml	0.00
94) Dibenz(a,h)Anthrcene-d...	20.913	292	278158	2000.00	ng/ml	-0.01
System Monitoring Compounds						
4) 2-Fluorophenol (Surr)	5.461	112	54160	981.01	ng/ml	0.00
5) Phenol-d6 (Surr)	6.332	99	70612	982.89	ng/ml	0.00
19) Nitrobenzene-d5 (Surr)	7.220	82	59949	1003.43	ng/ml	-0.01
40) 2-Fluorobiphenyl (Surr)	9.017	172	131262	1097.08	ng/ml	0.00
67) 2,4,6-Tribromophenol (...	10.510	330	16146	1150.70	ng/ml	0.00
79) Terphenyl-d14 (Surr)	13.018	244	153152	1045.51	ng/ml	0.00
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	4.161	74	38787	918.67	ng/ml	98
3) Pyridine	4.177	79	60081	932.26	ng/ml	99
6) Phenol	6.348	94	74312	972.61	ng/ml	98
7) Aniline	6.375	93	45024	692.51	ng/ml	99
8) Bis(2-chloroethyl) ether	6.423	93	62956	979.06	ng/ml	97
9) 2-Chlorophenol	6.493	128	59934	1038.76	ng/ml	91
10) 1,3-Dichlorobenzene	6.637	146	64410	976.01	ng/ml	96
11) 1,4-Dichlorobenzene	6.701	146	61436	996.66	ng/ml	97
12) Benzyl alcohol	6.819	108	29640	923.09	ng/ml	100
13) 1,2-Dichlorobenzene	6.857	146	61909	1040.94	ng/ml	97
14) 2-Methylphenol	6.921	107	46170	1054.96	ng/ml	95
15) 2,2'-Oxybis(1-Chloropr...	6.942	45	73441	937.74	ng/ml	93
16) N-Nitrosodi-n-propylamine	7.070	70	43266	986.37	ng/ml	93
17) 3+4-Methylphenol	7.070	107	55607	1021.88	ng/ml	97
18) Hexachloroethane	7.183	201	19545	984.18	ng/ml	95
20) Nitrobenzene	7.242	77	57755	982.79	ng/ml	90
22) Isophorone	7.472	82	115077	972.57	ng/ml	94
23) 2-Nitrophenol	7.557	139	33013	1092.68	ng/ml	98
24) 2,4-Dimethylphenol	7.595	122	47085	1038.69	ng/ml	96
25) Bis(2-chloroethoxy) me...	7.675	93	67188	967.46	ng/ml	99
26) Benzoic acid	7.696	105	36938	1892.69	ng/ml	96
27) 2,4-Dichlorophenol	7.798	162	41529	986.57	ng/ml	98
28) 1,2,4-Trichlorobenzene	7.883	180	51069	999.76	ng/ml	97
29) Naphthalene	7.958	128	165684	1039.63	ng/ml	97
30) 4-Chloroaniline	8.017	127	31472	770.62	ng/ml	94
31) Hexachlorobutadiene	8.087	225	28558	1076.72	ng/ml	96
32) 4-Chloro-3-methylphenol	8.488	107	45929	960.81	ng/ml	96
33) 2-Methylnaphthalene	8.648	142	123902	1030.52	ng/ml	98
34) 1-Methylnaphthalene	8.750	142	114996	1015.51	ng/ml	99
36) Hexachlorocyclopentadiene	8.819	237	25954	1112.82	ng/ml	98
37) 2,4,6-Trichlorophenol	8.937	196	30067	1013.11	ng/ml	99
38) 2,4,5-Trichlorophenol	8.980	198	28221	1013.25	ng/ml	96
39) 1,1'-Biphenyl	9.119	154	143268	1074.44	ng/ml	99
41) 2-Chloronaphthalene	9.140	162	103112	1073.21	ng/ml	98
42) 2-Nitroaniline	9.242	138	34729	1077.28	ng/ml	90
43) 2,6-Dimethylnaphthalene	9.279	156	104491	1063.48	ng/ml	97

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No Name Entered Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211902.D
Acq On : 21 May 2019 8:38 am
Operator : JK /AMS /DTH
Sample : 9E21026-CCV1
Misc : 1x, A19C237@1000
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

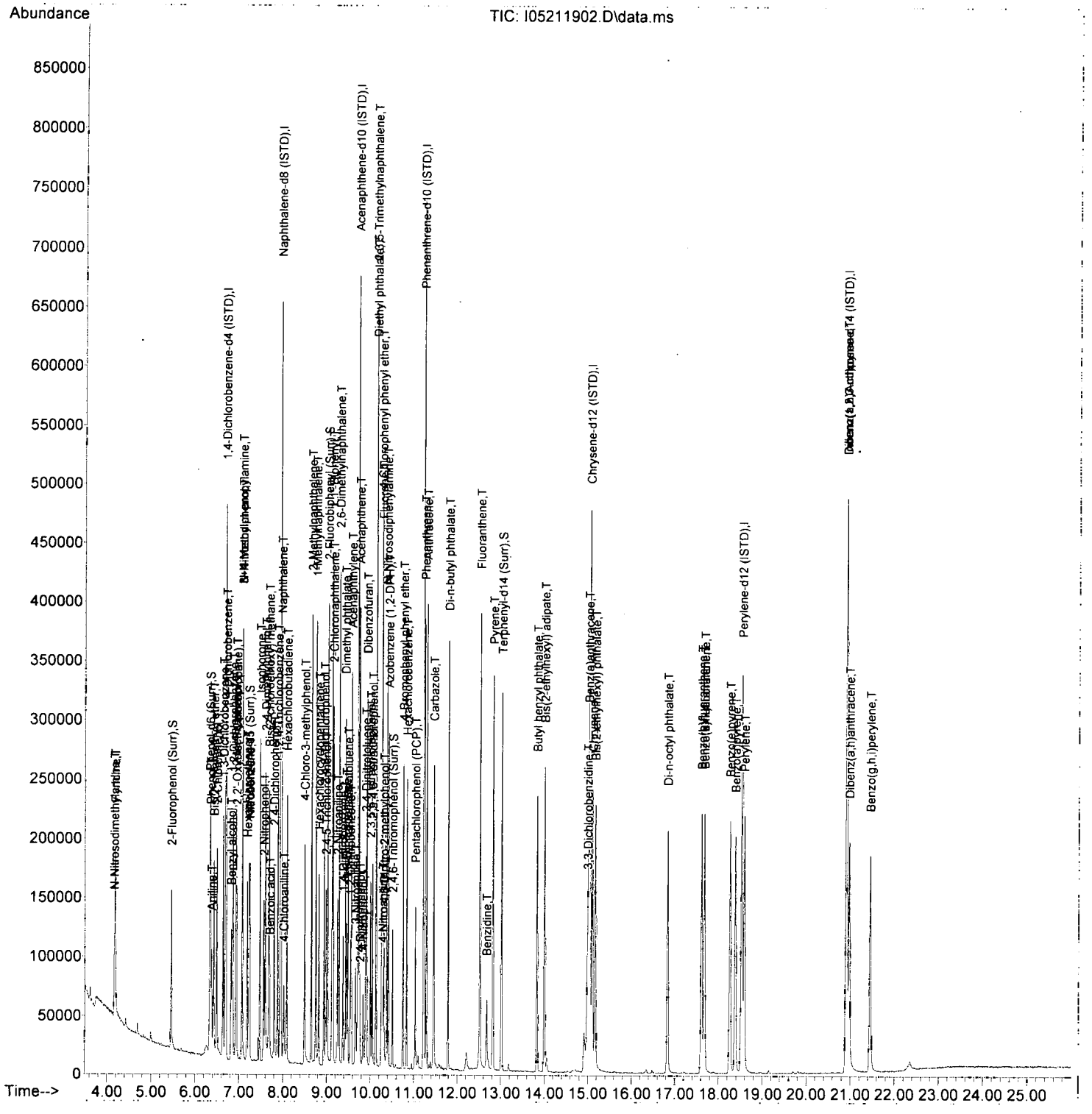
Quant Time: May 21 10:41:18 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 1,4-Dinitrobenzene	9.365	168	16801	1067.50	ng/ml	90
45) Dimethyl phthalate	9.419	163	118125	1058.13	ng/ml	100
46) 1,3-Dinitrobenzene	9.451	168	19147	1068.03	ng/ml	93
47) 2,6-Dinitrotoluene	9.483	165	27544	1103.41	ng/ml	80
48) 1,2-Dinitrobenzene	9.536	168	13221	1067.85	ng/ml	95
49) Acenaphthylene	9.563	152	169073	1071.07	ng/ml	99
50) 3-Nitroaniline	9.659	138	23815	1213.15	ng/ml	93
51) Acenaphthene	9.739	153	103477	1040.56	ng/ml	98
52) 2,4-Dinitrophenol	9.761	184	8109	967.19	ng/ml	87
53) 4-Nitrophenol	9.830	139	15675	883.70	ng/ml	93
54) 2,4-Dinitrotoluene	9.889	165	35030	1016.34	ng/ml	85
55) Dibenzofuran	9.916	168	145594	1075.87	ng/ml	96
56) 2,3,5,6-Tetrachlorophenol	9.996	232	23667	996.46	ng/ml	89
57) 2,3,4,6-Tetrachlorophenol	10.044	232	26013	1044.25	ng/ml	86
58) Diethyl phthalate	10.130	149	112385	1038.94	ng/ml	95
59) 2,3,5-Trimethylnaphtha...	10.125	170	96134	992.33	ng/ml	97
60) Fluorene	10.264	166	115727	992.30	ng/ml	100
61) 4-Chlorophenyl phenyl ...	10.253	204	55778	1023.70	ng/ml	90
62) 4-Nitroaniline	10.280	138	22835	955.58	ng/ml	97
63) 4,6-Dinitro-2-methylph...	10.306	198	14825	1039.08	ng/ml	77
65) N-Nitrosodiphenylamine	10.371	169	99220	1053.58	ng/ml	98
66) Azobenzene (1,2-DPH)	10.413	77	110092	1041.60	ng/ml	88
68) 4-Bromophenyl phenyl e...	10.750	248	34358	1024.91	ng/ml	86
69) Hexachlorobenzene	10.831	284	37036	994.59	ng/ml	94
70) Pentachlorophenol (PCP)	11.028	266	18617	1130.61	ng/ml	96
71) Phenanthrene	11.242	178	165415	1015.60	ng/ml	98
72) Anthracene	11.291	178	170994	1049.98	ng/ml	99
73) Carbazole	11.451	167	144955	1015.63	ng/ml	99
74) Di-n-butyl phthalate	11.788	149	196183	1060.83	ng/ml	99
75) Fluoranthene	12.515	202	193411	1016.24	ng/ml	97
76) Benzidine	12.671	184	38623	772.17	ng/ml	97
77) Pyrene	12.815	202	194116	1002.22	ng/ml	99
80) Butyl benzyl phthalate	13.831	149	88367	1068.45	ng/ml	91
81) Bis(2-ethylhexyl) adipate	14.002	129	77993	989.77	ng/ml	99
82) 3,3-Dichlorobenzidine	14.992	252	49332	2510.60	ng/ml	92
83) Benz(a)anthracene	15.013	228	173679	1000.29	ng/ml	98
84) Chrysene	15.104	228	161565	1008.64	ng/ml	99
85) Bis(2-ethylhexyl) phth...	15.168	149	114359	1085.09	ng/ml	95
87) Di-n-octyl phthalate	16.832	149	201893	1019.10	ng/ml	98
88) Benzo(b)fluoranthene	17.607	252	179976	996.72	ng/ml	94
89) Benzo(k)fluoranthene	17.671	252	177354	990.48	ng/ml	94
90) Benzo(b+k)fluoranthene	17.671	252	366688	1978.65	ng/ml	94
91) Benzo(e)pyrene	18.260	252	177233	1036.32	ng/ml	97
92) Benzo(a)pyrene	18.383	252	167064	1020.52	ng/ml	95
93) Perylene	18.586	252	164064	1132.98	ng/ml	98
95) Indeno(1,2,3-cd)pyrene	20.913	276	151480	991.73	ng/ml	87
96) Dibenz(a,h)anthracene	20.977	278	139373	1033.56	ng/ml	91
97) Benzo(g,h,i)perylene	21.448	276	155620	1041.96	ng/ml	87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211902.D
Acq On : 21 May 2019 8:38 am
Operator : JK /AMS /DTH
Sample : 9E21026-CCV1
Misc : 1x, A19C237@1000
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:18 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



No Name Entered Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211903.D
Acq On : 21 May 2019 9:15 am
Operator : JK /AMS /DTH
Sample : 9E21026-CCB1
Misc : 1x, DCM + ISTD
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

AMS 5/21/19

Quant Time: May 21 10:41:45 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4...	6.685	152	80937	2000.00	ng/ml	-0.01
21) Naphthalene-d8 (ISTD)	7.942	136	333025	2000.00	ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.707	162	157346	2000.00	ng/ml	-0.01
64) Phenanthrene-d10 (ISTD)	11.216	188	307390	2000.00	ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.045	240	305366	2000.00	ng/ml	-0.01
86) Perylene-d12 (ISTD)	18.527	264	281155	2000.00	ng/ml	-0.01
94) Dibenz(a,h)Anthrcene-d...	20.907	292	260638	2000.00	ng/ml	-0.02
System Monitoring Compounds						
4) 2-Fluorophenol (Surr)	0.000	112	0	0.00	ng/ml	
5) Phenol-d6 (Surr)	0.000	99	0	0.00	ng/ml	
19) Nitrobenzene-d5 (Surr)	7.167	82	63	1.10	ng/ml	-0.06
40) 2-Fluorobiphenyl (Surr)	0.000	172	0	0.00	ng/ml	
67) 2,4,6-Tribromophenol (...	0.000	330	0	0.00	ng/ml	
79) Terphenyl-d14 (Surr)	0.000	244	0	0.00	ng/ml	
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	0.000		0	N.D.		
3) Pyridine	0.000		0	N.D.		
6) Phenol	0.000		0	N.D.		
7) Aniline	0.000		0	N.D.		
8) Bis(2-chloroethyl) ether	0.000		0	N.D.		
9) 2-Chlorophenol	0.000		0	N.D.		
10) 1,3-Dichlorobenzene	0.000		0	N.D.		
11) 1,4-Dichlorobenzene	0.000		0	N.D.		
12) Benzyl alcohol	0.000		0	N.D.		
13) 1,2-Dichlorobenzene	0.000		0	N.D.		
14) 2-Methylphenol	0.000		0	N.D.		
15) 2,2'-Oxybis(1-Chloropr...	0.000		0	N.D.		
16) N-Nitrosodi-n-propylamine	0.000		0	N.D.		
17) 3+4-Methylphenol	0.000		0	N.D.		
18) Hexachloroethane	0.000		0	N.D.		
20) Nitrobenzene	0.000		0	N.D.		
22) Isophorone	0.000		0	N.D.		
23) 2-Nitrophenol	0.000		0	N.D.		
24) 2,4-Dimethylphenol	0.000		0	N.D.		
25) Bis(2-chloroethoxy) me...	0.000		0	N.D.		
26) Benzoic acid	0.000		0	N.D.		
27) 2,4-Dichlorophenol	0.000		0	N.D.		
28) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
29) Naphthalene	0.000		0	N.D.		
30) 4-Chloroaniline	0.000		0	N.D.		
31) Hexachlorobutadiene	0.000		0	N.D.		
32) 4-Chloro-3-methylphenol	0.000		0	N.D.		
33) 2-Methylnaphthalene	0.000		0	N.D.		
34) 1-Methylnaphthalene	0.000		0	N.D.		
36) Hexachlorocyclopentadiene	0.000		0	N.D.		
37) 2,4,6-Trichlorophenol	0.000		0	N.D.		
38) 2,4,5-Trichlorophenol	0.000		0	N.D.		
39) 1,1'-Biphenyl	0.000		0	N.D.		
41) 2-Chloronaphthalene	0.000		0	N.D.		
42) 2-Nitroaniline	0.000		0	N.D.		
43) 2,6-Dimethylnaphthalene	0.000		0	N.D.		

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211903.D
Acq On : 21 May 2019 9:15 am
Operator : JK /AMS /DTH
Sample : 9E21026-CCB1
Misc : 1x, DCM + ISTD
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

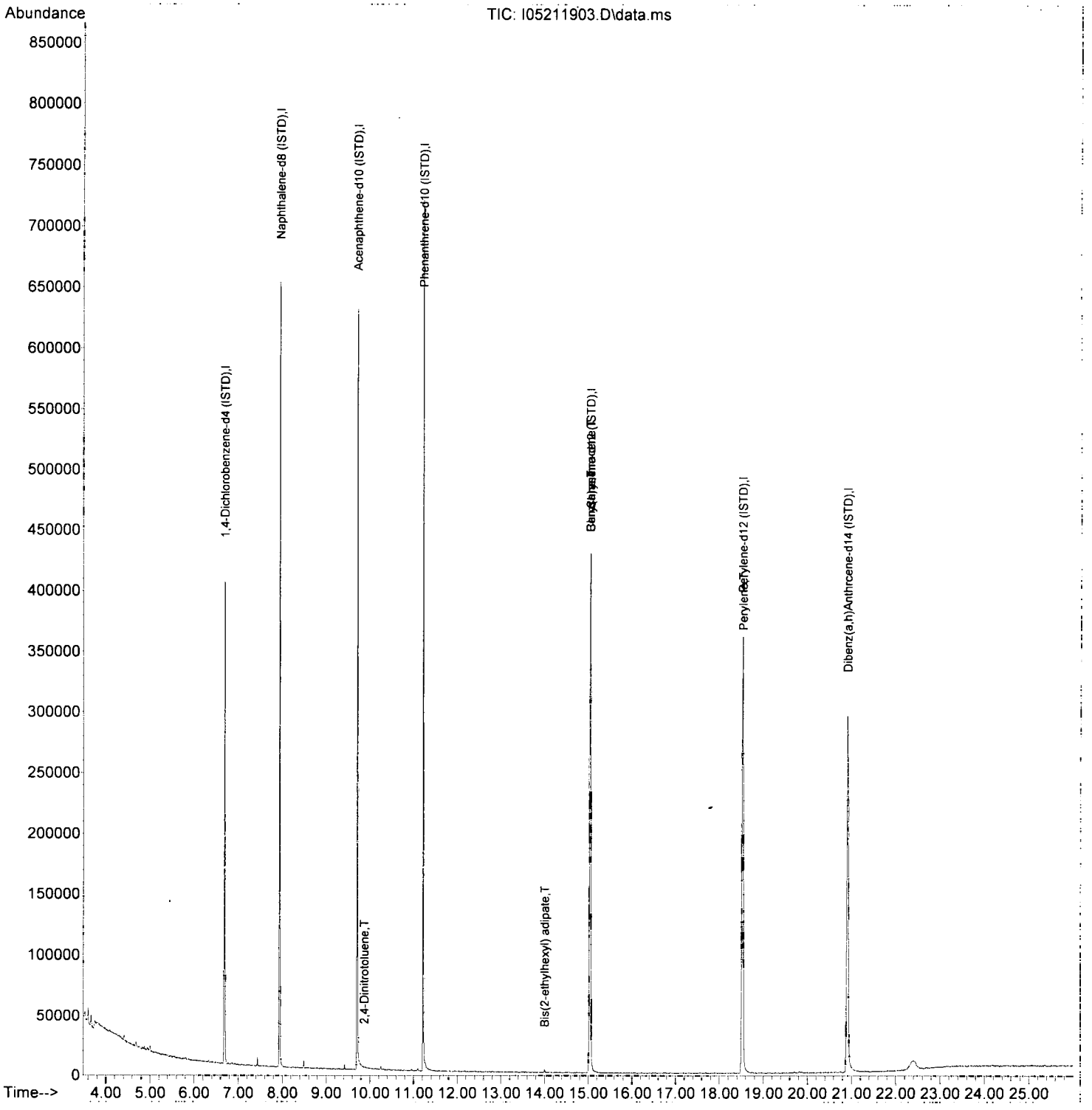
Quant Time: May 21 10:41:45 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
44)	1,4-Dinitrobenzene	0.000		0	N.D.	
45)	Dimethyl phthalate	0.000		0	N.D.	
46)	1,3-Dinitrobenzene	0.000		0	N.D.	
47)	2,6-Dinitrotoluene	0.000		0	N.D.	
48)	1,2-Dinitrobenzene	0.000		0	N.D.	
49)	Acenaphthylene	0.000		0	N.D.	
50)	3-Nitroaniline	0.000		0	N.D.	
51)	Acenaphthene	0.000		0	N.D.	
52)	2,4-Dinitrophenol	0.000		0	N.D.	
53)	4-Nitrophenol	0.000		0	N.D.	
54)	2,4-Dinitrotoluene	9.868	165	78	34.93 ng/ml#	17
55)	Dibenzofuran	0.000		0	N.D.	
56)	2,3,5,6-Tetrachlorophenol	0.000		0	N.D.	
57)	2,3,4,6-Tetrachlorophenol	0.000		0	N.D.	
58)	Diethyl phthalate	0.000		0	N.D.	
59)	2,3,5-Trimethylnaphtha...	0.000		0	N.D.	
60)	Fluorene	0.000		0	N.D.	
61)	4-Chlorophenyl phenyl ...	0.000		0	N.D.	
62)	4-Nitroaniline	0.000		0	N.D.	
63)	4,6-Dinitro-2-methylph...	0.000		0	N.D.	
65)	N-Nitrosodiphenylamine	0.000		0	N.D.	
66)	Azobenzene (1,2-DPH)	0.000		0	N.D.	
68)	4-Bromophenyl phenyl e...	0.000		0	N.D.	
69)	Hexachlorobenzene	0.000		0	N.D.	
70)	Pentachlorophenol (PCP)	0.000		0	N.D.	
71)	Phenanthrene	11.216	178	107	N.D.	
72)	Anthracene	11.216	178	107	N.D.	
73)	Carbazole	0.000		0	N.D.	
74)	Di-n-butyl phthalate	0.000		0	N.D.	
75)	Fluoranthene	0.000		0	N.D.	
76)	Benzidine	12.687	184	92	Below Cal	62
77)	Pyrene	0.000		0	N.D.	
80)	Butyl benzyl phthalate	0.000		0	N.D.	
81)	Bis(2-ethylhexyl) adipate	14.002	129	664	8.25 ng/ml	77
82)	3,3-Dichlorobenzidine	15.008	252	359	Below Cal	72
83)	Benz(a)anthracene	15.040	228	758	4.27 ng/ml	65
84)	Chrysene	15.040	228	719	4.39 ng/ml	62
85)	Bis(2-ethylhexyl) phth...	0.000		0	N.D.	
87)	Di-n-octyl phthalate	0.000		0	N.D.	
88)	Benzo(b)fluoranthene	0.000		0	N.D.	
89)	Benzo(k)fluoranthene	0.000		0	N.D.	
90)	Benzo(b+k)fluoranthene	0.000		0	N.D.	
91)	Benzo(e)pyrene	0.000		0	N.D.	
92)	Benzo(a)pyrene	0.000		0	N.D.	
93)	Perylene	18.533	252	969	6.81 ng/ml	76
95)	Indeno(1,2,3-cd)pyrene	0.000		0	N.D.	
96)	Dibenz(a,h)anthracene	0.000		0	N.D.	
97)	Benzo(g,h,i)perylene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211903.D
Acq On : 21 May 2019 9:15 am
Operator : JK /AMS /DTH
Sample : 9E21026-CCB1
Misc : 1x, DCM + ISTD
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:45 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



No Name Entered Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211904.D
Acq On : 21 May 2019 9:51 am
Operator : JK /AMS /DTH
Sample : 9051065-BLK1
Misc : 1x, 8270D LL Full List
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

B02
B
AMS 5/21/19

Quant Time: May 21 10:41:56 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4...	6.691	152	89774	2000.00 ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.942	136	348983	2000.00 ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.713	162	161332	2000.00 ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.221	188	315328	2000.00 ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.045	240	320540	2000.00 ng/ml	-0.01
86) Perylene-d12 (ISTD)	18.532	264	296996	2000.00 ng/ml	0.00
94) Dibenz(a,h)Anthrcene-d...	20.913	292	282864	2000.00 ng/ml	-0.01
System Monitoring Compounds					
4) 2-Fluorophenol (Surr)	5.466	112	47493	809.60 ng/ml	0.00
5) Phenol-d6 (Surr)	6.338	99	60392	791.14 ng/ml	0.00
19) Nitrobenzene-d5 (Surr)	7.225	82	55207	869.65 ng/ml	0.00
40) 2-Fluorobiphenyl (Surr)	9.017	172	107895	891.96 ng/ml	0.00
67) 2,4,6-Tribromophenol (...	10.510	330	12613	869.19 ng/ml	0.00
79) Terphenyl-d14 (Surr)	13.018	244	147533	939.23 ng/ml	0.00
Target Compounds					Qvalue
2) N-Nitrosodimethylamine	4.187	74	212	4.73 ng/ml#	1
3) Pyridine	4.236	79	1046	15.27 ng/ml#	13
6) Phenol	6.354	94	5688	(70.06) ng/ml	91 B02
7) Aniline	6.380	93	881	12.75 ng/ml	76
8) Bis(2-chloroethyl) ether	6.434	93	335	4.90 ng/ml	84
9) 2-Chlorophenol	6.498	128	151	N.D.	
10) 1,3-Dichlorobenzene	6.637	146	269	3.84 ng/ml	81
11) 1,4-Dichlorobenzene	6.701	146	295	4.50 ng/ml#	28
12) Benzyl alcohol	6.835	108	245	32.88 ng/ml#	60
13) 1,2-Dichlorobenzene	6.862	146	266	4.21 ng/ml	86
14) 2-Methylphenol	6.931	107	1289	(27.72) ng/ml	93 B02
15) 2,2'-Oxybis(1-Chloropr...	6.953	45	256	3.08 ng/ml	60
16) N-Nitrosodi-n-propylamine	7.065	70	206	4.42 ng/ml	59
17) 3+4-Methylphenol	7.081	107	2289	(39.59) ng/ml#	79 B02
18) Hexachloroethane	0.000		0	N.D.	
20) Nitrobenzene	7.242	77	989	15.84 ng/ml#	28
22) Isophorone	7.477	82	383	2.96 ng/ml#	30
23) 2-Nitrophenol	0.000		0	N.D.	
24) 2,4-Dimethylphenol	7.605	122	394	7.96 ng/ml	94
25) Bis(2-chloroethoxy) me...	7.685	93	178	N.D.	
26) Benzoic acid	7.685	105	127	708.46 ng/ml#	1
27) 2,4-Dichlorophenol	0.000		0	N.D.	
28) 1,2,4-Trichlorobenzene	7.883	180	145	2.60 ng/ml#	43
29) Naphthalene	7.964	128	557156	3200.88 ng/ml	98 B
30) 4-Chloroaniline	8.022	127	180	4.04 ng/ml	76
31) Hexachlorobutadiene	0.000		0	N.D.	
32) 4-Chloro-3-methylphenol	8.525	107	129	67.03 ng/ml#	1
33) 2-Methylnaphthalene	8.654	142	87893	669.31 ng/ml	98 B
34) 1-Methylnaphthalene	8.755	142	39919	322.76 ng/ml	96 B
36) Hexachlorocyclopentadiene	0.000		0	N.D.	
37) 2,4,6-Trichlorophenol	0.000		0	N.D.	
38) 2,4,5-Trichlorophenol	0.000		0	N.D.	
39) 1,1'-Biphenyl	9.124	154	19605	145.43 ng/ml	98
41) 2-Chloronaphthalene	9.151	162	107	N.D.	
42) 2-Nitroaniline	0.000		0	N.D.	
43) 2,6-Dimethylnaphthalene	9.290	156	4658	46.89 ng/ml	94

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211904.D
Acq On : 21 May 2019 9:51 am
Operator : JK /AMS /DTH
Sample : 9051065-BLK1
Misc : 1x, 8270D LL Full List
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:56 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

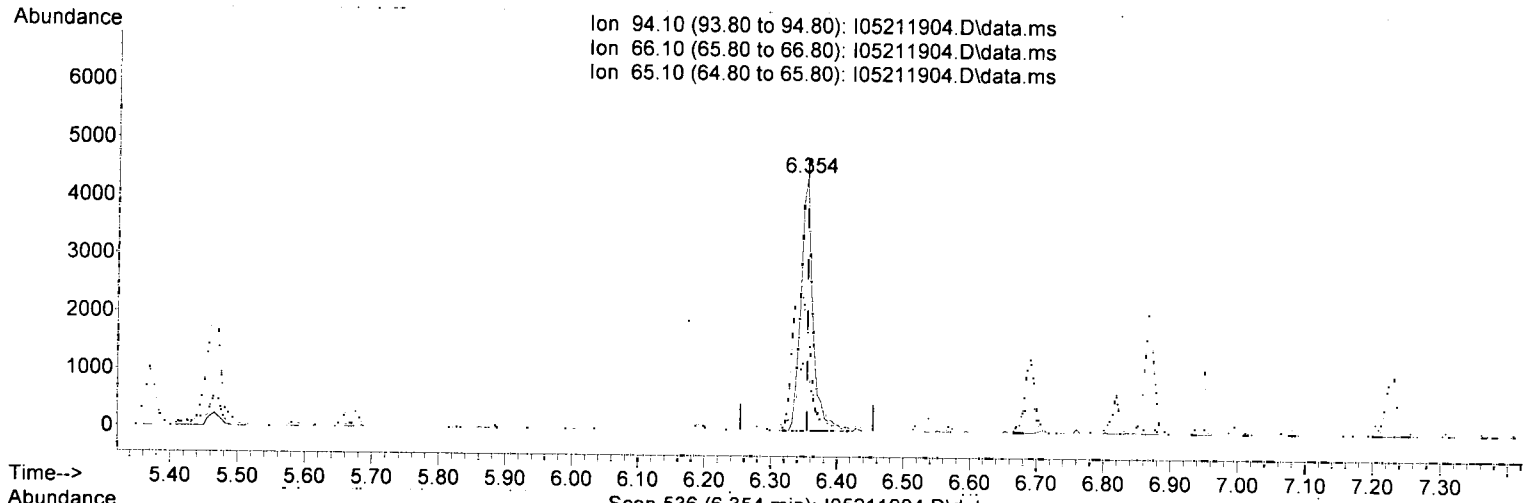
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)	
44) 1,4-Dinitrobenzene	9.397	168	206	77.61 ng/ml#	7	
45) Dimethyl phthalate	0.000		0	N.D.		
46) 1,3-Dinitrobenzene	9.397	168	206	11.37 ng/ml#	1	
47) 2,6-Dinitrotoluene	9.397	165	58	N.D.		
48) 1,2-Dinitrobenzene	0.000		0	N.D.		
49) Acenaphthylene	9.568	152	796	4.99 ng/ml	73	
50) 3-Nitroaniline	0.000		0	N.D.		
51) Acenaphthene	9.745	153	44544	443.05 ng/ml	96	B
52) 2,4-Dinitrophenol	0.000		0	N.D.		
53) 4-Nitrophenol	9.745	139	313	74.63 ng/ml#	58	
54) 2,4-Dinitrotoluene	9.873	165	528	47.10 ng/ml#	27	
55) Dibenzofuran	9.916	168	19140	139.89 ng/ml	94	B
56) 2,3,5,6-Tetrachlorophenol	0.000		0	N.D.		
57) 2,3,4,6-Tetrachlorophenol	0.000		0	N.D.		
58) Diethyl phthalate	10.135	149	134	N.D.		
59) 2,3,5-Trimethylnaphtha...	10.119	170	350	3.57 ng/ml	75	
60) Fluorene	10.263	166	9259	78.53 ng/ml	99	B
61) 4-Chlorophenyl phenyl ...	0.000		0	N.D.		
62) 4-Nitroaniline	10.263	138	76	3.15 ng/ml#	23	
63) 4,6-Dinitro-2-methylph...	0.000		0	N.D.		
65) N-Nitrosodiphenylamine	10.381	169	155	N.D.		
66) Azobenzene (1,2-DPH)	10.429	77	116	N.D.		
68) 4-Bromophenyl phenyl e...	0.000		0	N.D.		
69) Hexachlorobenzene	0.000		0	N.D.		
70) Pentachlorophenol (PCP)	0.000		0	N.D.		
71) Phenanthrene	11.242	178	13996	83.09 ng/ml	93	B
72) Anthracene	11.296	178	2680	15.91 ng/ml	95	B02
73) Carbazole	11.456	167	586	3.97 ng/ml	85	
74) Di-n-butyl phthalate	11.788	149	463	N.D.		
75) Fluoranthene	12.521	202	3101	15.75 ng/ml	86	B02
76) Benzidine	12.702	184	56	Below Cal	66	
77) Pyrene	12.815	202	2351	11.74 ng/ml	81	B02
80) Butyl benzyl phthalate	13.842	149	196	12.03 ng/ml#	40	
81) Bis(2-ethylhexyl) adipate	14.008	129	853	10.09 ng/ml	93	
82) 3,3-Dichlorobenzidine	14.992	252	188	Below Cal	79	
83) Benz(a)anthracene	15.040	228	756	4.06 ng/ml	61	
84) Chrysene	15.088	228	64	N.D.		
85) Bis(2-ethylhexyl) phth...	15.168	149	163	N.D.		
87) Di-n-octyl phthalate	0.000		0	N.D.		
88) Benzo(b)fluoranthene	0.000		0	N.D.		
89) Benzo(k)fluoranthene	0.000		0	N.D.		
90) Benzo(b+k)fluoranthene	0.000		0	N.D.		
91) Benzo(e)pyrene	0.000		0	N.D.		
92) Benzo(a)pyrene	0.000		0	N.D.		
93) Perylene	18.527	252	989	6.58 ng/ml#	64	
95) Indeno(1,2,3-cd)pyrene	0.000		0	N.D.		
96) Dibenz(a,h)anthracene	0.000		0	N.D.		
97) Benzo(g,h,i)perylene	0.000		0	N.D.		

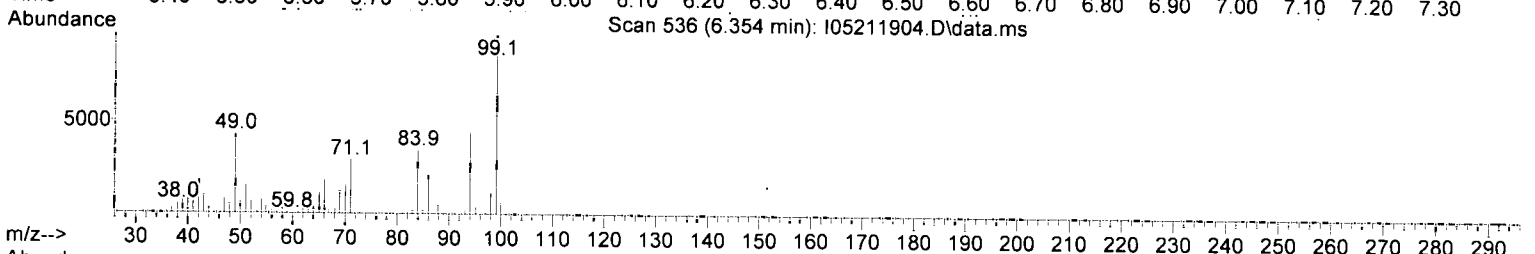
(#) = qualifier out of range (m) = manual integration (+) = signals summed

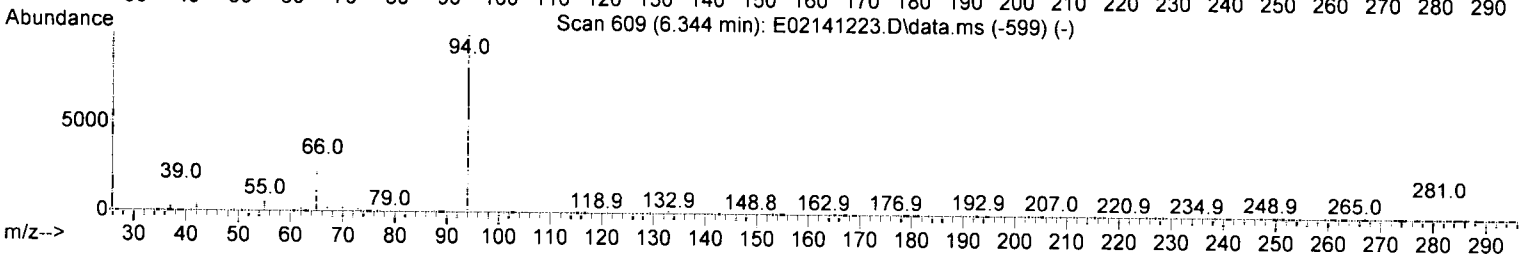
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211904.D
Acq On : 21 May 2019 9:51 am
Operator : JK /AMS /DTH
Sample : 9051065-BLK1
Misc : 1x, 8270D LL Full List
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:56 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9







TIC: I05211904.D\data.ms

(6) Phenol (T)

6.354min (-0.001) 70.06 ng/ml

response 5688

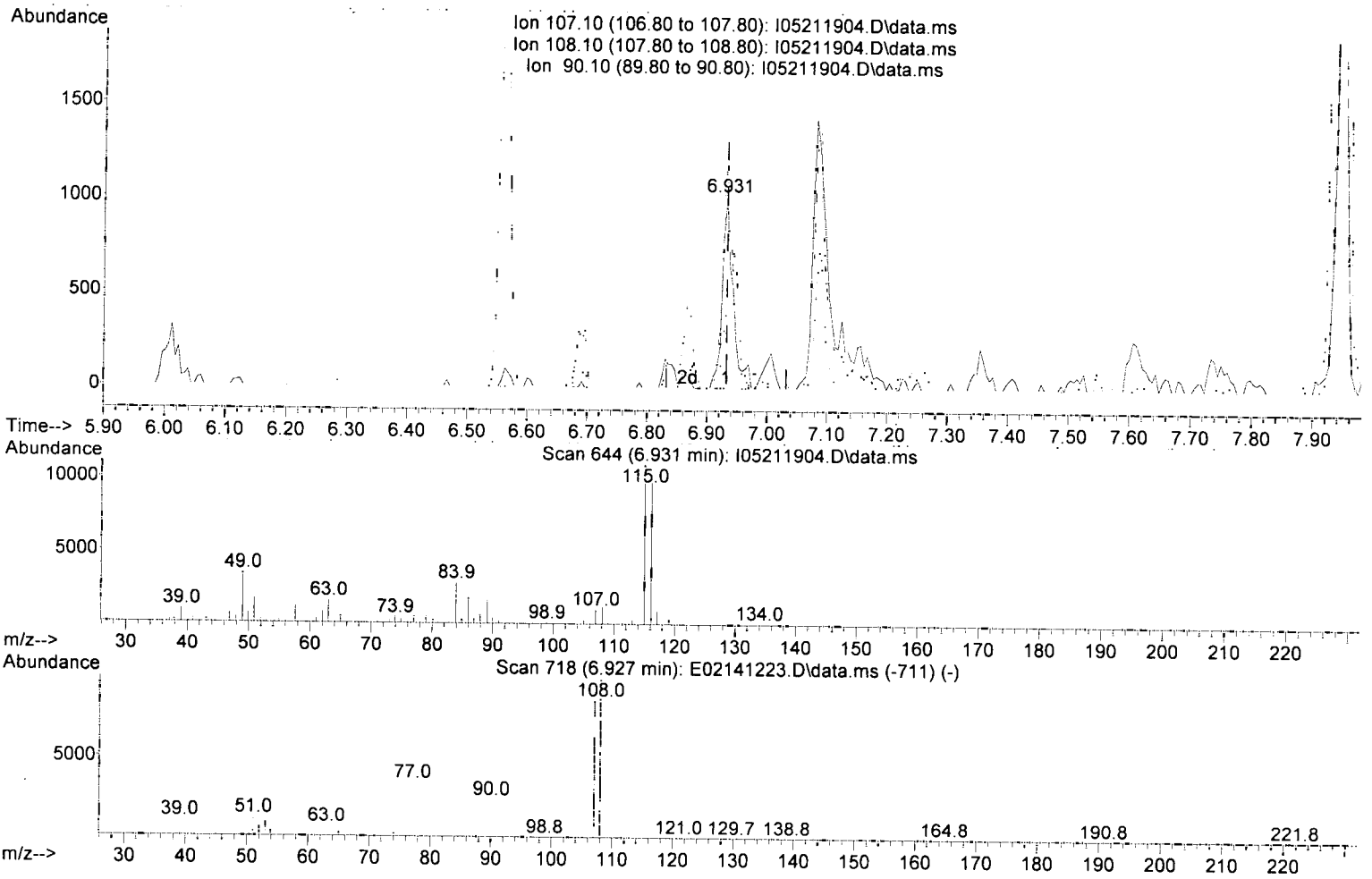
Ion	Exp%	Act%
94.10	100.00	100.00
66.10	34.30	42.21
65.10	26.20	25.32
0.00	0.00	0.00

5/21/19

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211904.D
Acq On : 21 May 2019 9:51 am
Operator : JK /AMS /DTH
Sample : 9051065-BLK1
Misc : 1x, 8270D LL Full List
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:56 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211904.D\data.ms

(14) 2-Methylphenol (T)

6.931min (-0.001) 27.72 ng/ml

response 1289

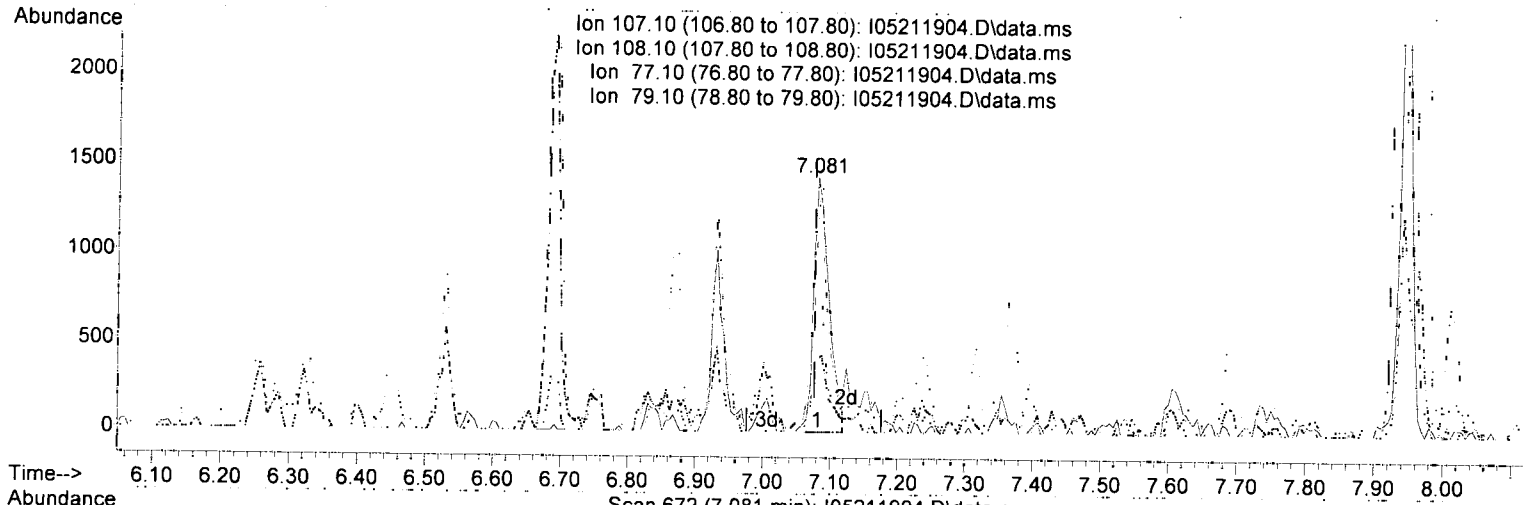
Ion	Exp%	Act%
107.10	100.00	100.00
108.10	115.50	118.96
90.10	27.70	39.69
0.00	0.00	0.00

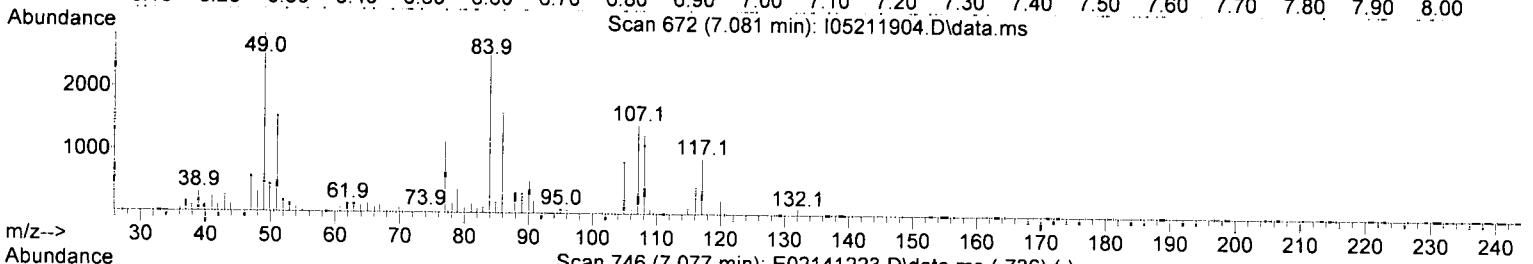
B02

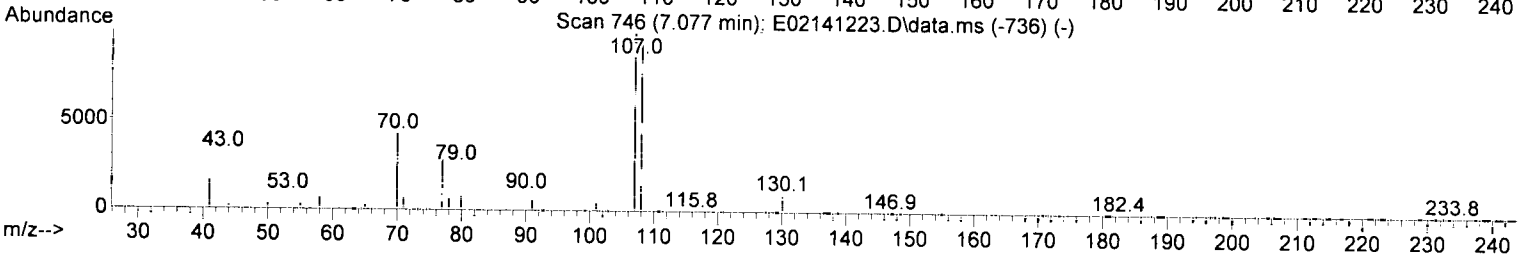
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211904.D
Acq On : 21 May 2019 9:51 am
Operator : JK /AMS /DTH
Sample : 9051065-BLK1
Misc : 1x, 8270D LL Full List
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:56 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9







TIC: I05211904.D\data.ms

(17) 3+4-Methylphenol (T)

7.081min (+ 0.005) 39.59 ng/ml

response 2289

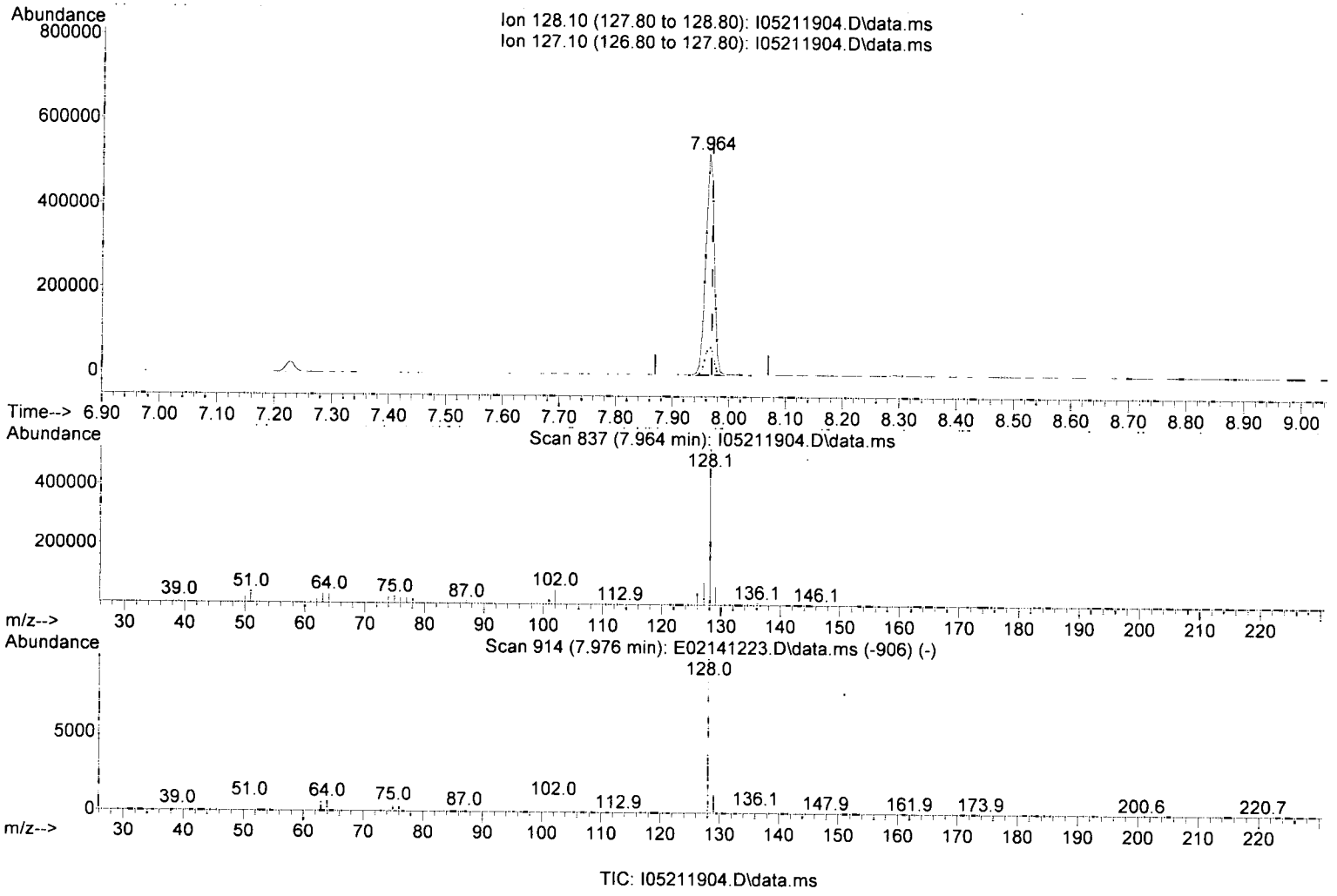
Ion	Exp%	Act%
107.10	100.00	100.00
108.10	91.10	87.59
77.10	32.60	80.93#
79.10	27.90	28.19

B02

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211904.D
Acq On : 21 May 2019 9:51 am
Operator : JK /AMS /DTH
Sample : 9051065-BLK1
Misc : 1x, 8270D LL Full List
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:56 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211904.D\data.ms

(29) Naphthalene (T)

7.964min (-0.006) 3200.88 ng/ml

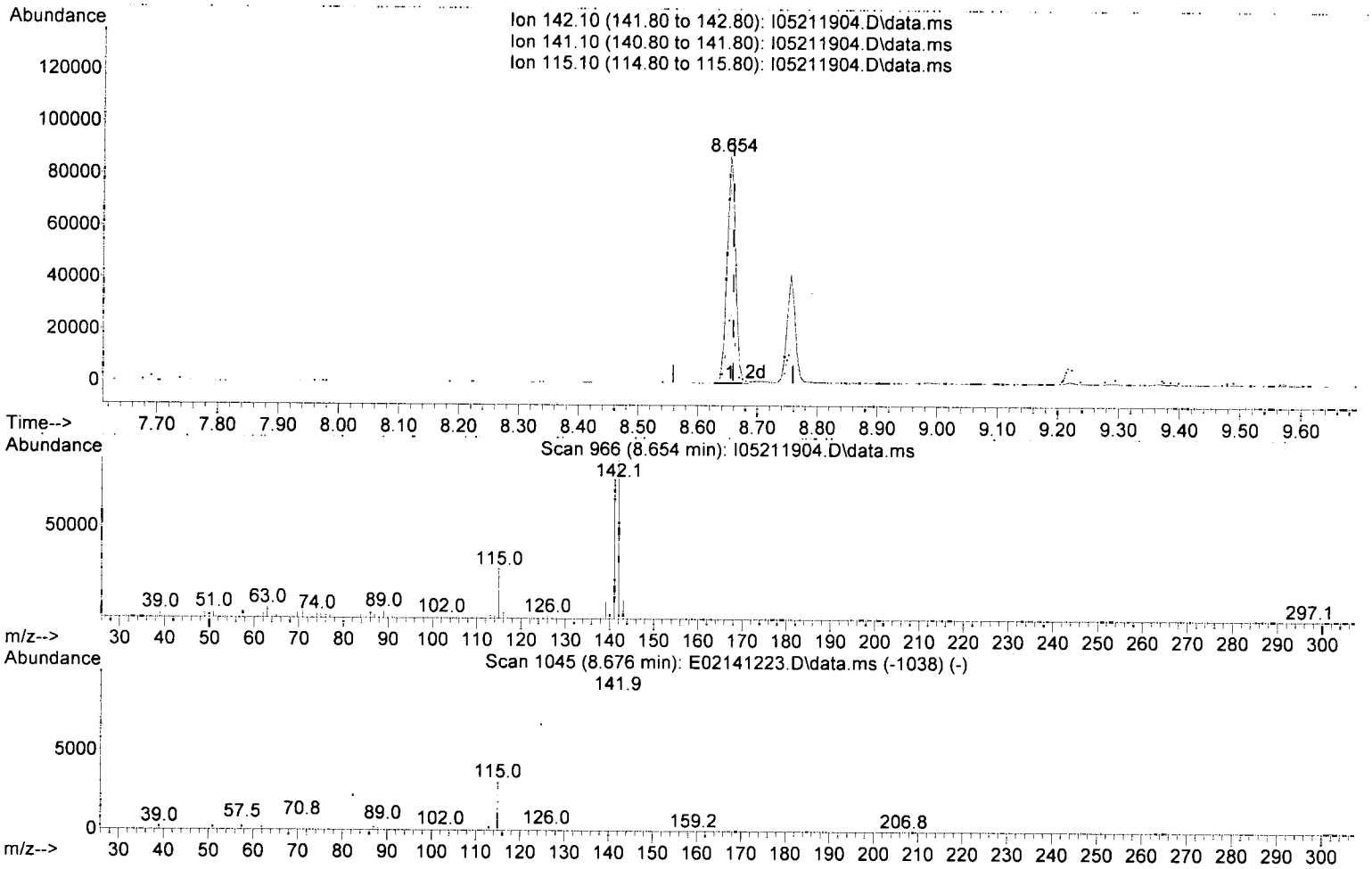
response 557156

Ion	Exp%	Act%
128.10	100.00	100.00
127.10	12.70	13.57
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211904.D
Acq On : 21 May 2019 9:51 am
Operator : JK /AMS /DTH
Sample : 9051065-BLK1
Misc : 1x, 8270D LL Full List
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:56 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211904.D\data.ms

(33) 2-Methylnaphthalene (T)

8.654min (-0.005) 669.31 ng/ml

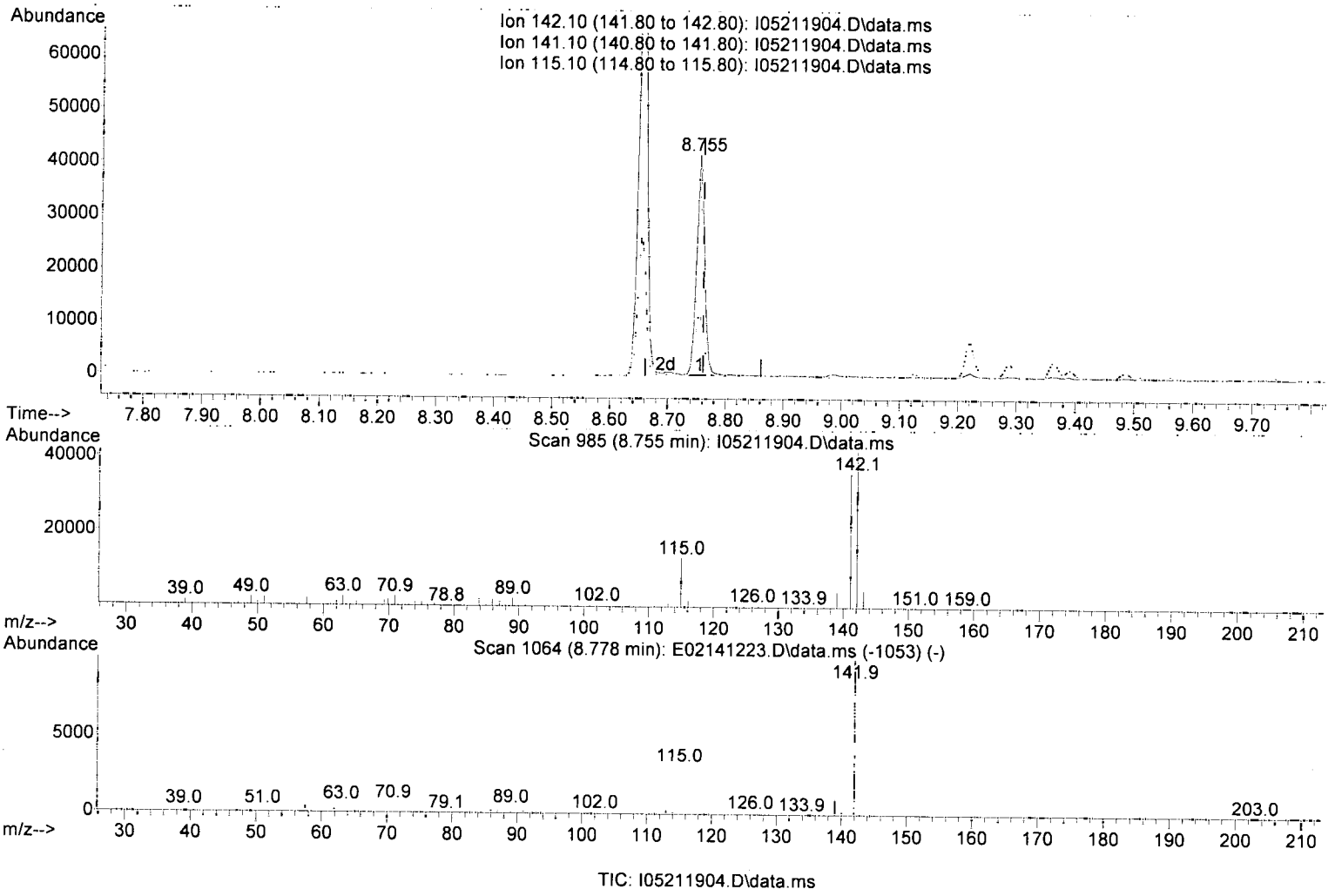
response 87893

Ion	Exp%	Act%
142.10	100.00	100.00
141.10	86.30	87.23
115.10	33.70	30.75
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211904.D
Acq On : 21 May 2019 9:51 am
Operator : JK /AMS /DTH
Sample : 9051065-BLK1
Misc : 1x, 8270D LL Full List
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:56 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211904.D\data.ms

(34) 1-Methylnaphthalene (T)

8.755min (-0.006) 322.76 ng/ml

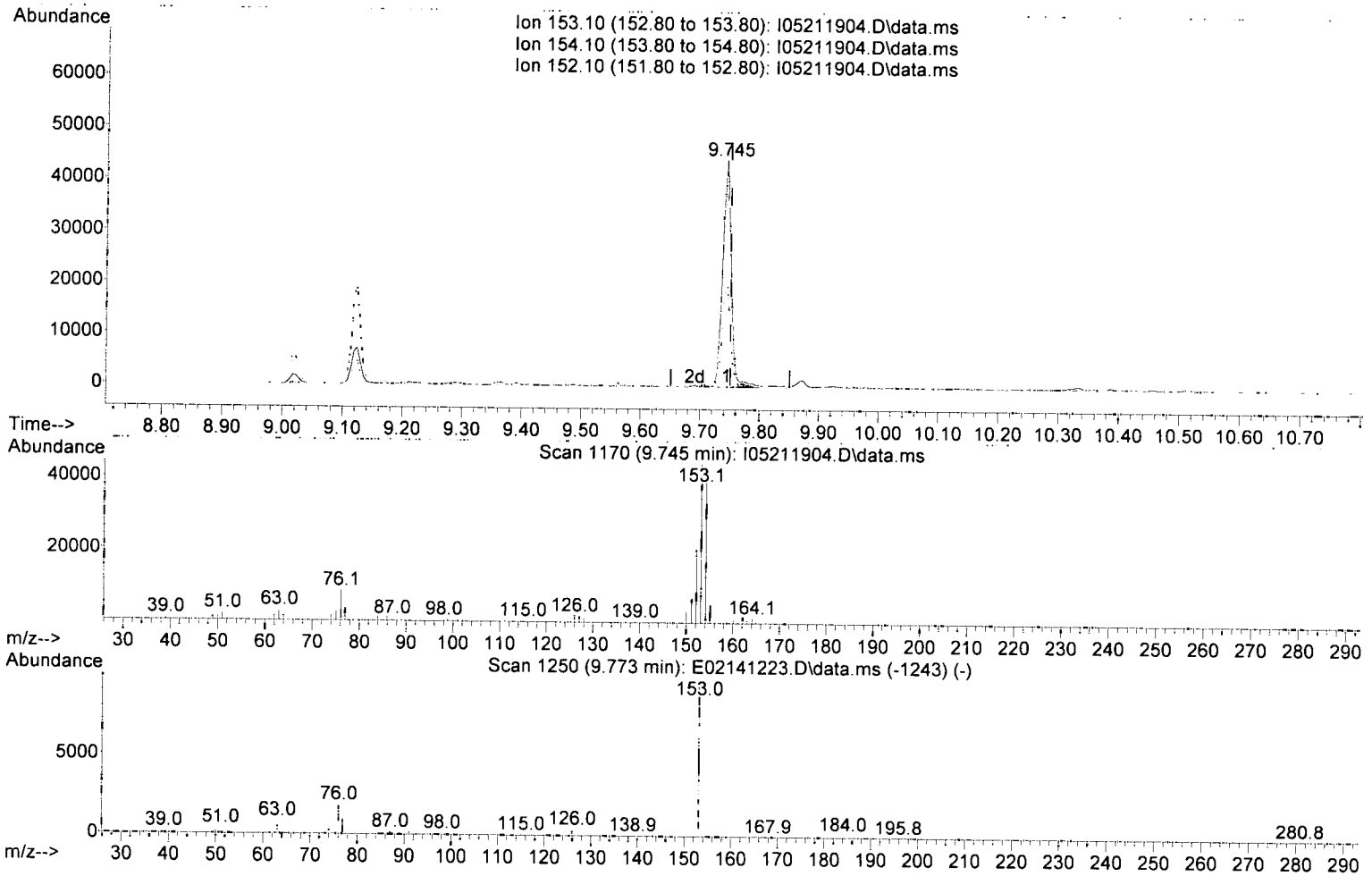
response 39919

Ion	Exp%	Act%
142.10	100.00	100.00
141.10	89.20	86.45
115.10	34.90	31.41
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211904.D
Acq On : 21 May 2019 9:51 am
Operator : JK /AMS /DTH
Sample : 9051065-BLK1
Misc : 1x, 8270D LL Full List
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:56 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211904.D\data.ms

(51) Acenaphthene (T)

9.745min (-0.006) 443.05 ng/ml

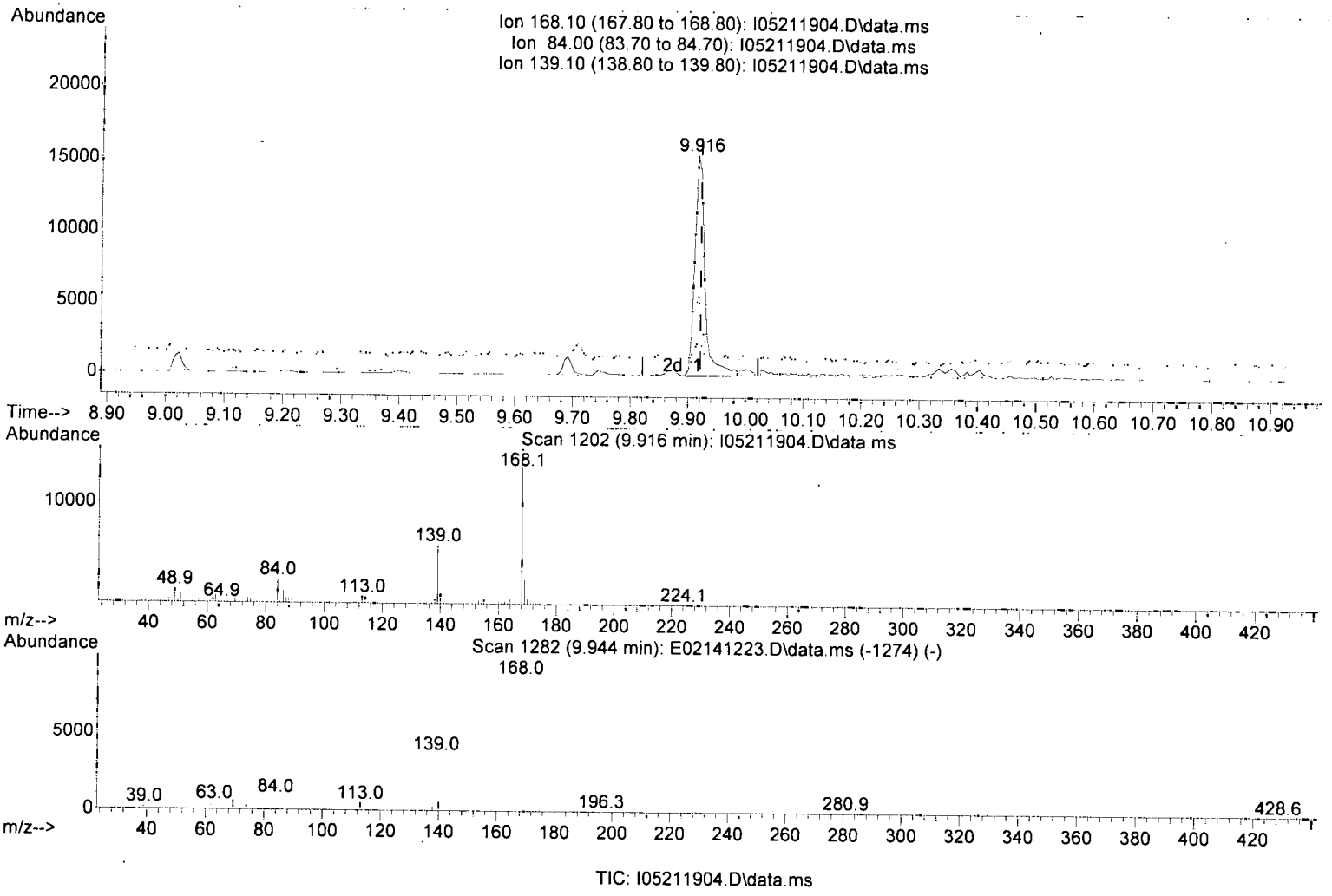
response 44544

Ion	Exp%	Act%
153.10	100.00	100.00
154.10	93.50	88.48
152.10	47.70	46.03
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211904.D
Acq On : 21 May 2019 9:51 am
Operator : JK /AMS /DTH
Sample : 9051065-BLK1
Misc : 1x, 8270D LL Full List
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:56 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211904.D\data.ms

(55) Dibenzofuran (T)

9.916min (-0.005) 139.89 ng/ml

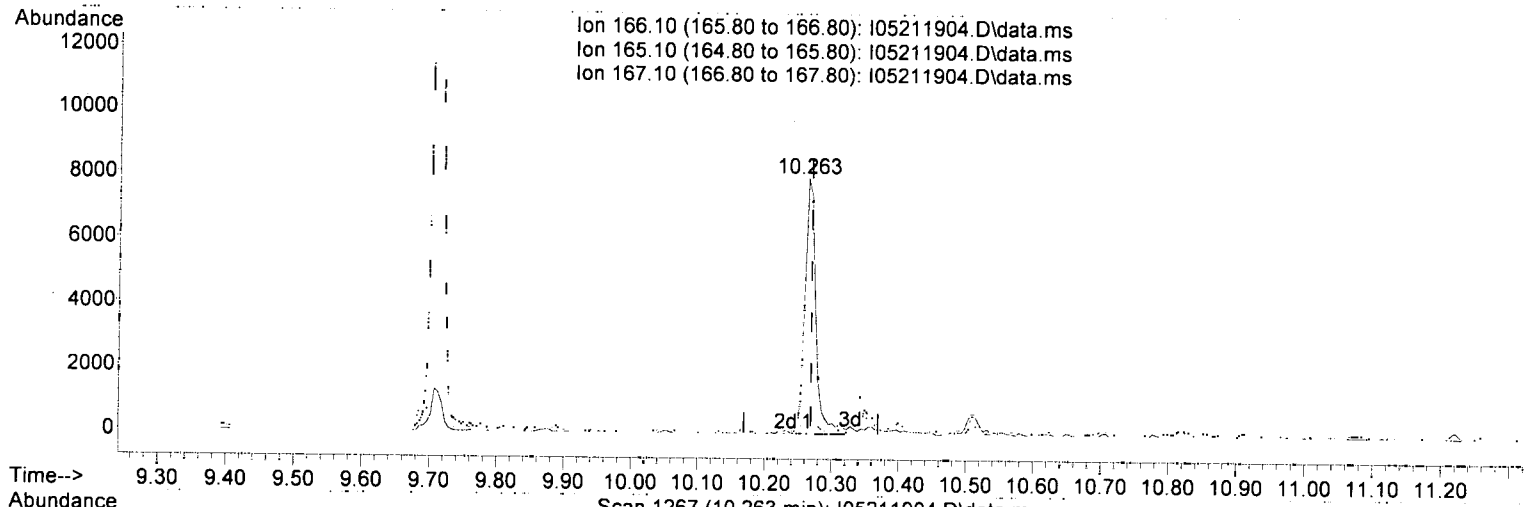
response 19140

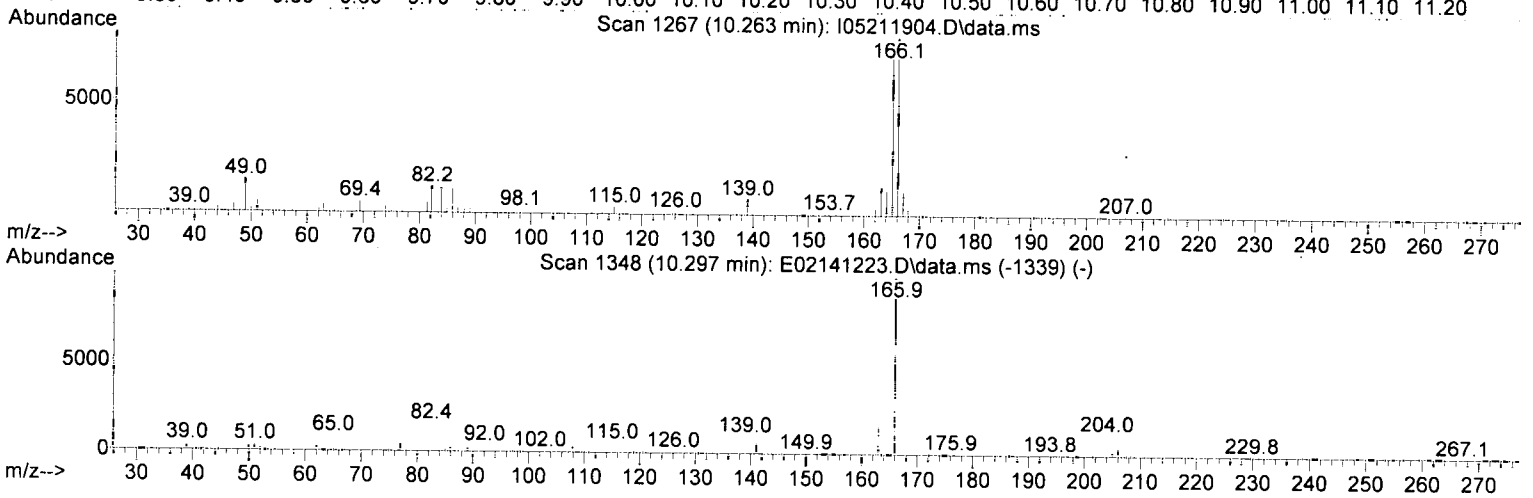
Ion	Exp%	Act%
168.10	100.00	100.00
84.00	8.70	17.03
139.10	39.00	37.50
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211904.D
Acq On : 21 May 2019 9:51 am
Operator : JK /AMS /DTH
Sample : 9051065-BLK1
Misc : 1x, 8270D LL Full List
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:56 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9





TIC: I05211904.D\data.ms

(60) Fluorene (T)

10.263min (-0.006) 78.53 ng/ml

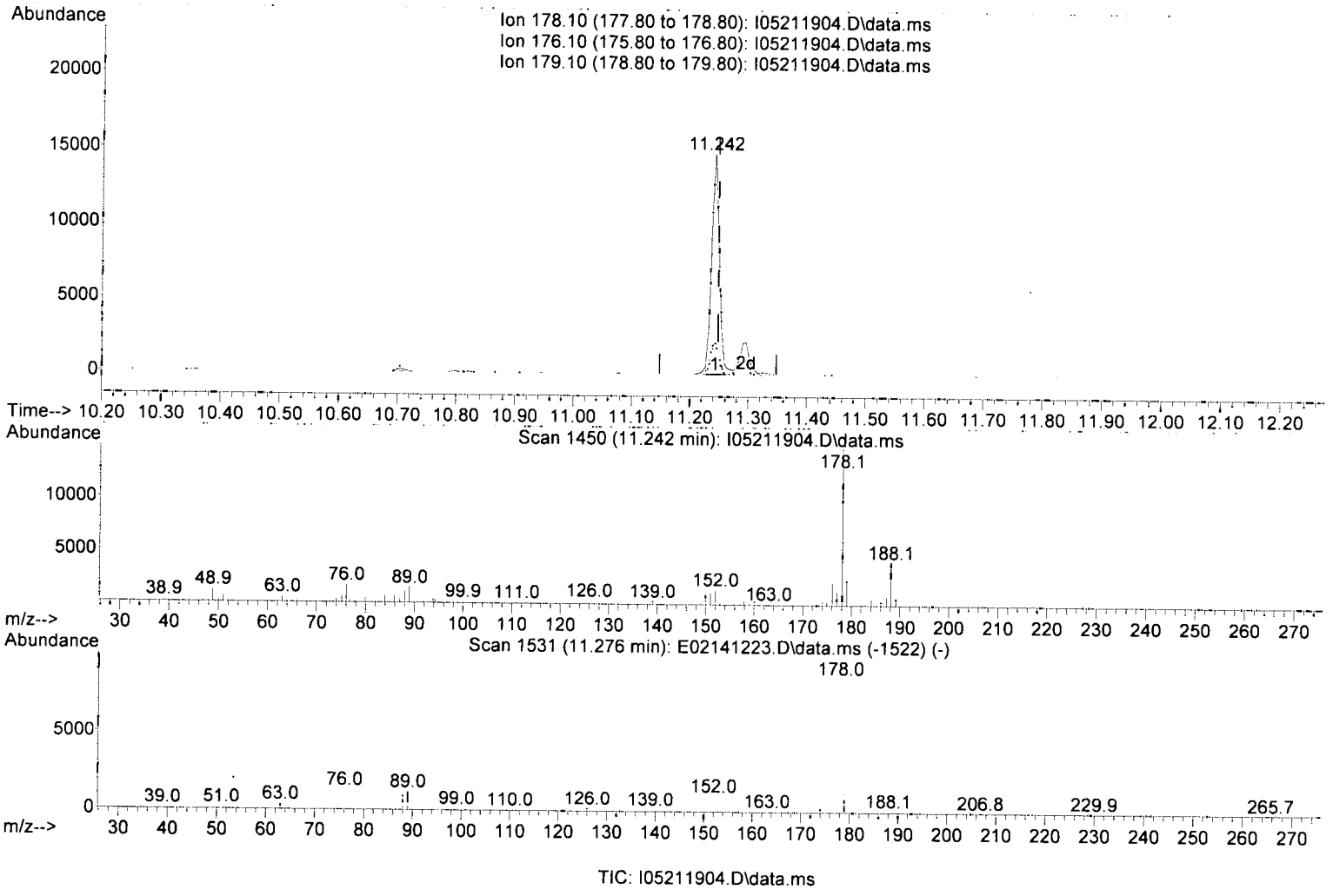
response 9259

Ion	Exp%	Act%
166.10	100.00	100.00
165.10	93.70	92.78
167.10	13.50	13.49
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211904.D
Acq On : 21 May 2019 9:51 am
Operator : JK /AMS /DTH
Sample : 9051065-BLK1
Misc : 1x, 8270D LL Full List
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:56 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211904.D\data.ms

(71) Phenanthrene (T)

11.242min (-0.006) 83.09 ng/ml

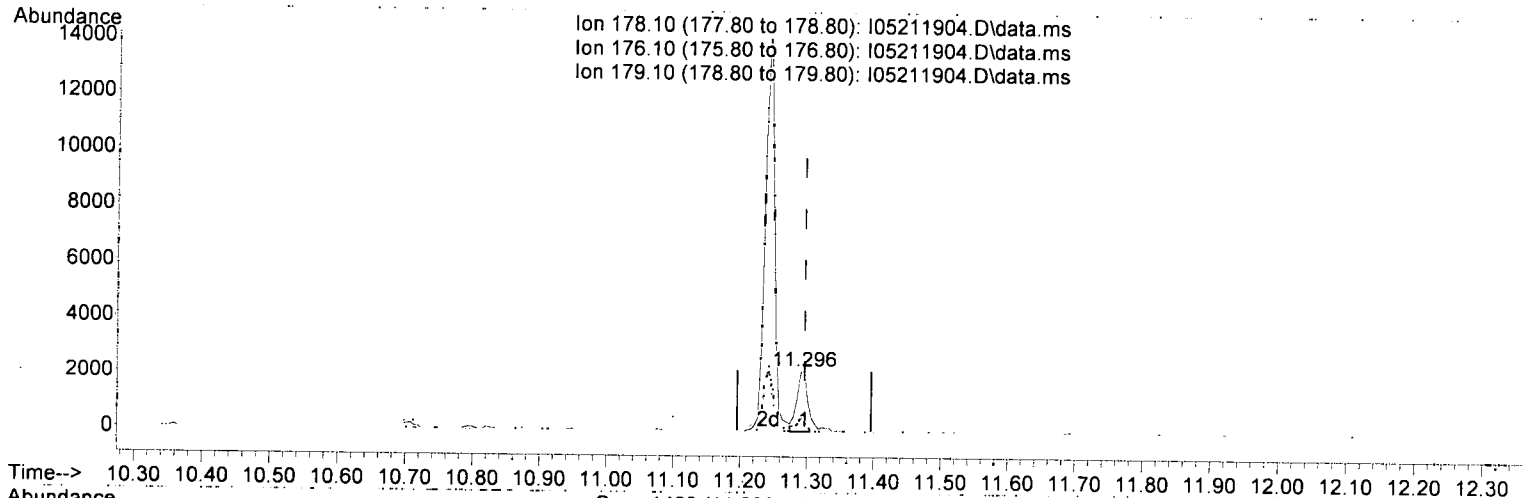
response 13996

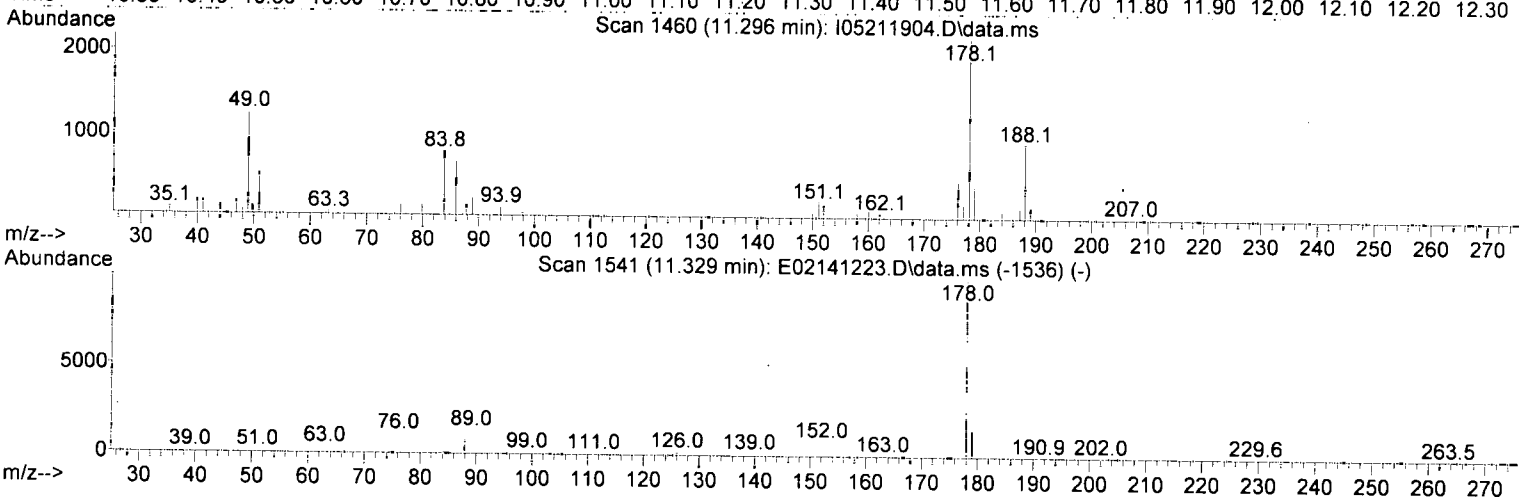
Ion	Exp%	Act%
178.10	100.00	100.00
176.10	19.40	14.51
179.10	15.20	16.07
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211904.D
Acq On : 21 May 2019 9:51 am
Operator : JK /AMS /DTH
Sample : 9051065-BLK1
Misc : 1x, 8270D LL Full List
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:56 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9





TIC: I05211904.D\data.ms

(72) Anthracene (T)

11.296min (-0.000) 15.91 ng/ml

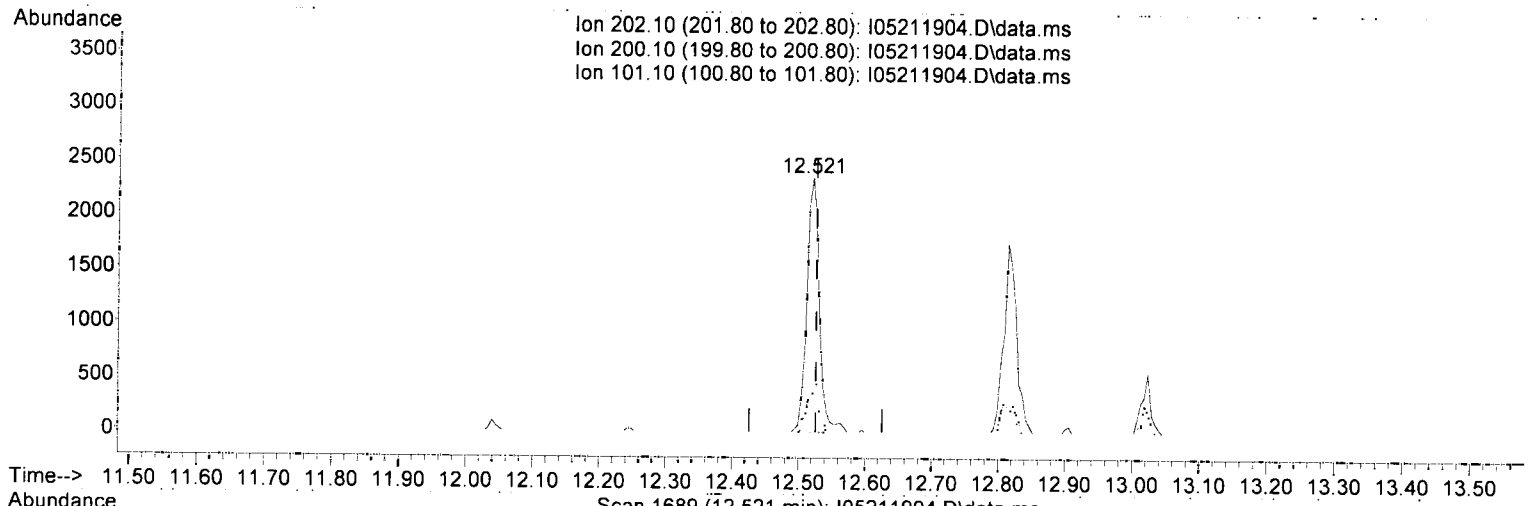
response 2680

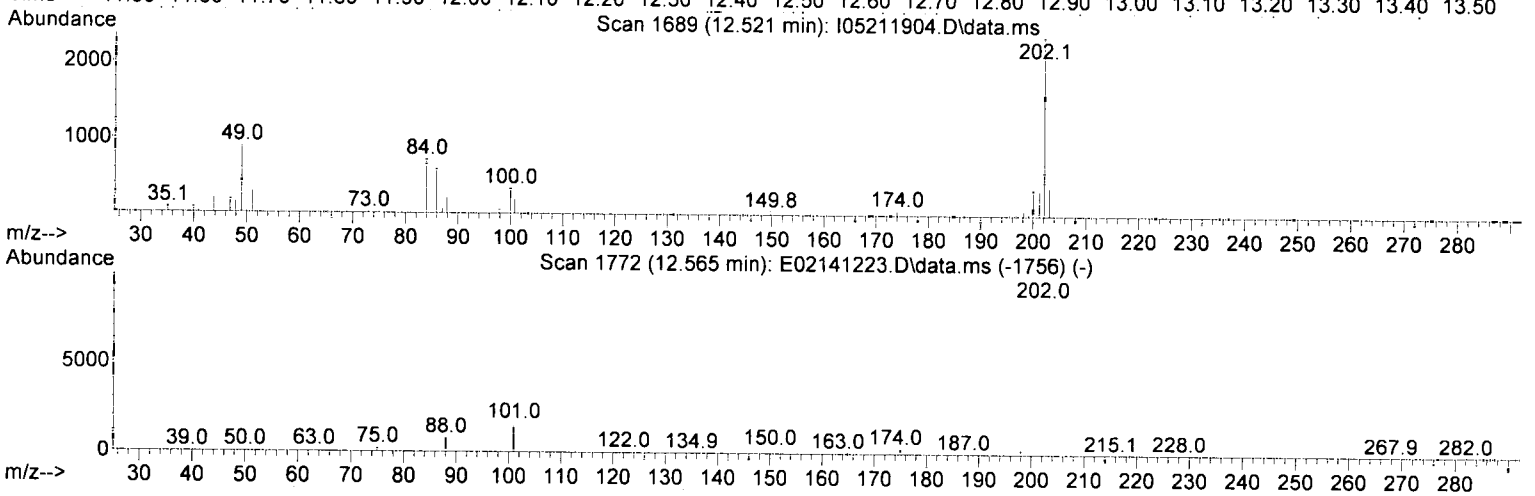
Ion	Exp%	Act%
178.10	100.00	100.00
176.10	18.70	21.22
179.10	15.90	17.68
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211904.D
Acq On : 21 May 2019 9:51 am
Operator : JK /AMS /DTH
Sample : 9051065-BLK1
Misc : 1x, 8270D LL Full List
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:56 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9





TIC: I05211904.D\data.ms

(75) Fluoranthene (T)

12.521min (-0.005) 15.75 ng/ml

response 3101

Ion	Exp%	Act%
202.10	100.00	100.00
200.10	20.20	15.15
101.10	17.00	9.42
0.00	0.00	0.00

B02

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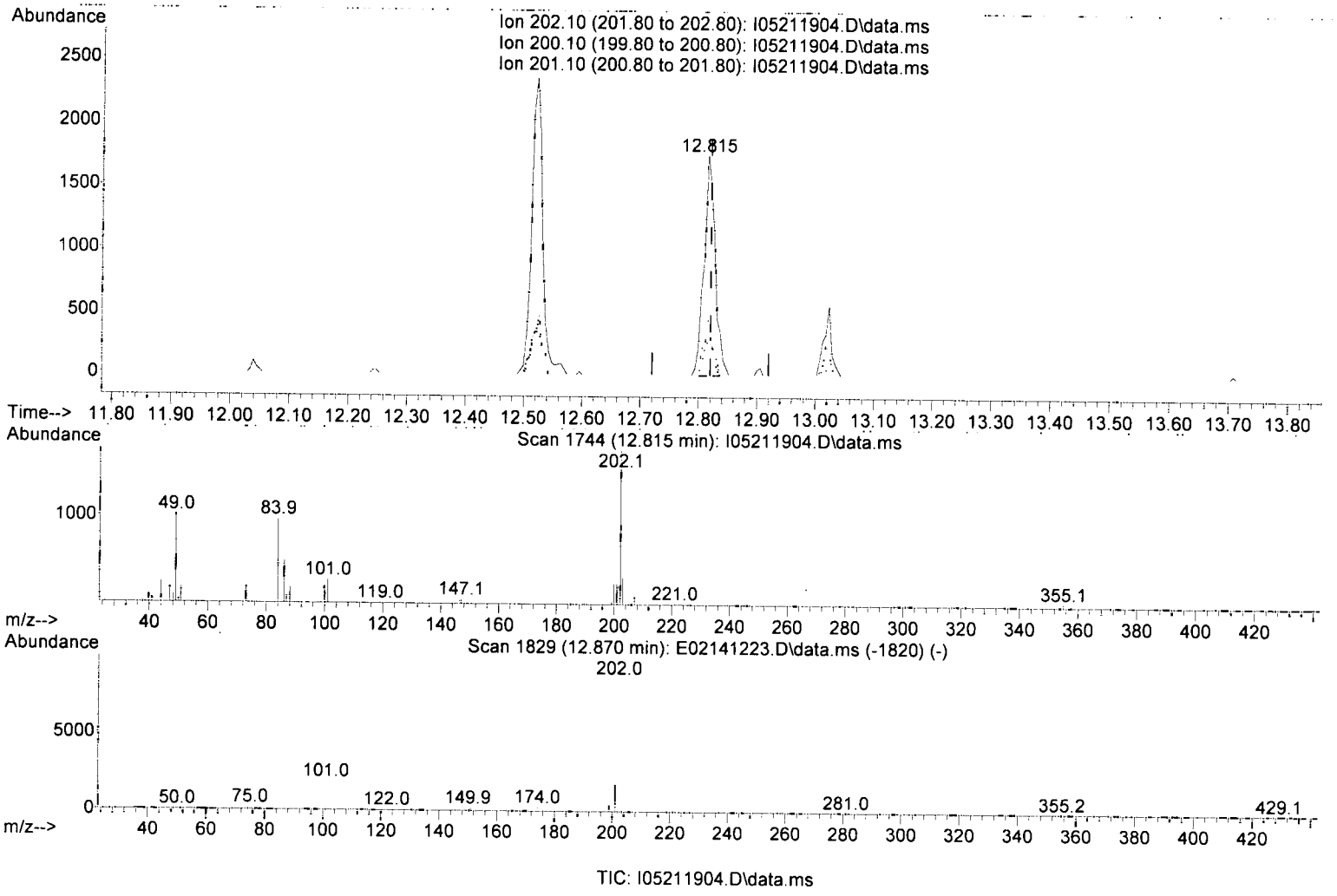
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211904.D
Acq On : 21 May 2019 9:51 am
Operator : JK /AMS /DTH
Sample : 9051065-BLK1
Misc : 1x, 8270D LL Full List
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:56 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211904.D\data.ms

(77) Pyrene (T)

12.815min (-0.005) 11.74 ng/ml

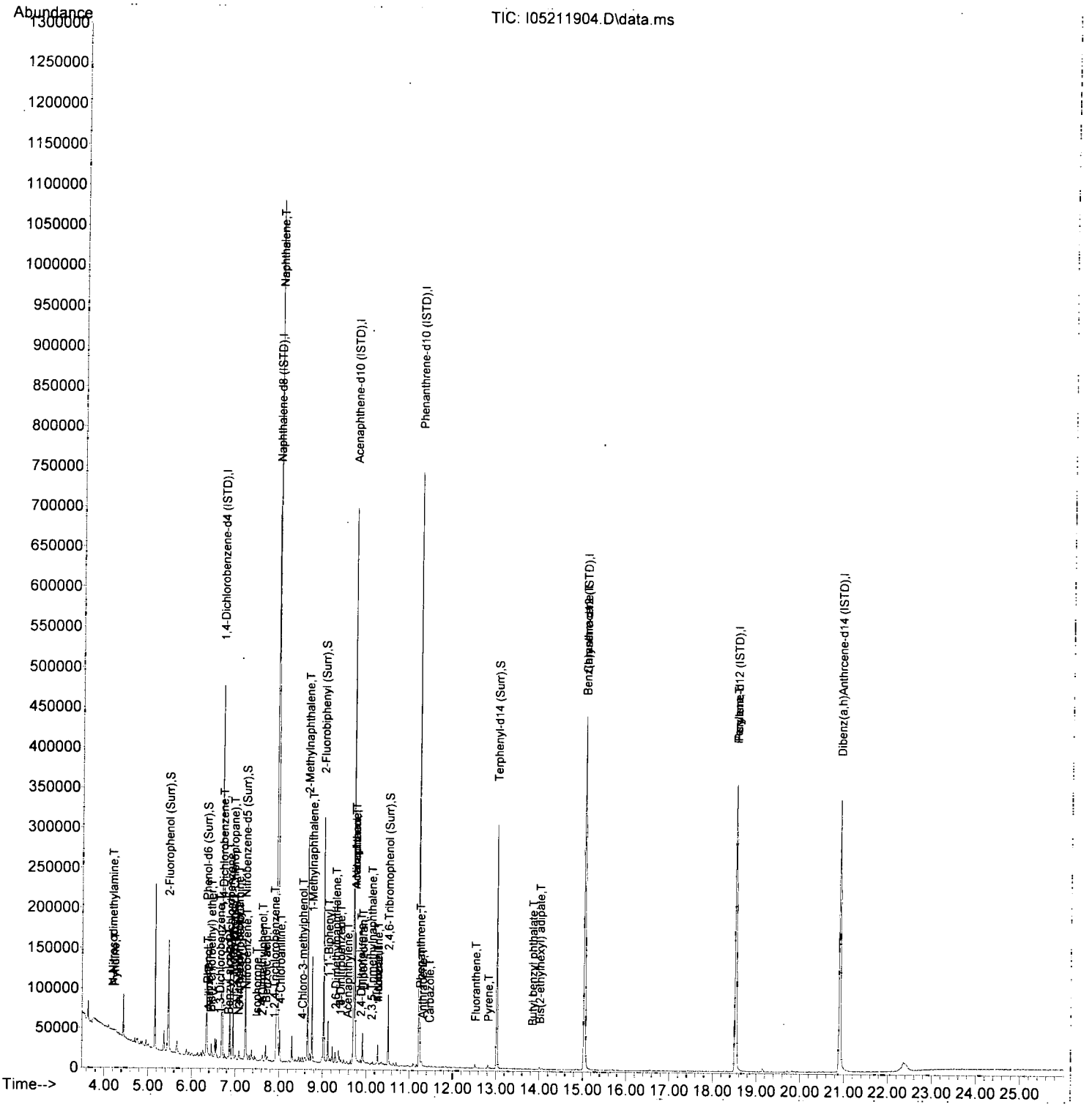
response 2351

Ion	Exp%	Act%
202.10	100.00	100.00
200.10	20.70	28.26
201.10	17.30	26.72
0.00	0.00	0.00

B02

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211904.D
Acq On : 21 May 2019 9:51 am
Operator : JK /AMS /DTH
Sample : 9051065-BLK1
Misc : 1x, 8270D LL Full List
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:41:56 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



No Name Entered Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211905.D
Acq On : 21 May 2019 10:28 am
Operator : JK /AMS /DTH
Sample : 9051065-BS1
Misc : 1x, 8270D LL Full List
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Q14
AMS 5/21/19

Quant Time: May 21 10:58:58 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4...	6.691	152	83244	2000.00 ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.942	136	312447	2000.00 ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.713	162	156647	2000.00 ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.221	188	299885	2000.00 ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.056	240	287291	2000.00 ng/ml	0.00
86) Perylene-d12 (ISTD)	18.532	264	276396	2000.00 ng/ml	0.00
94) Dibenz(a,h)Anthrcene-d...	20.923	292	279119	2000.00 ng/ml	0.00
System Monitoring Compounds					
4) 2-Fluorophenol (Surr)	5.471	112	48422	890.18 ng/ml	0.00
5) Phenol-d6 (Surr)	6.343	99	62725	886.16 ng/ml	0.00
19) Nitrobenzene-d5 (Surr)	7.225	82	49101	834.14 ng/ml	0.00
40) 2-Fluorobiphenyl (Surr)	9.023	172	109342	930.95 ng/ml	0.00
67) 2,4,6-Tribromophenol (...	10.515	330	14521	1052.20 ng/ml	0.00
79) Terphenyl-d14 (Surr)	13.018	244	136304	968.17 ng/ml	0.00
Target Compounds					Qvalue
2) N-Nitrosodimethylamine	4.161	74	58626	1409.31 ng/ml	91
3) Pyridine	4.187	79	71345	1123.58 ng/ml	98
6) Phenol	6.354	94	123558	1641.31 ng/ml	99
7) Aniline	6.380	93	72622	1133.68 ng/ml	96
8) Bis(2-chloroethyl) ether	6.428	93	92926	1466.74 ng/ml	99
9) 2-Chlorophenol	6.498	128	91548	1610.39 ng/ml	91
10) 1,3-Dichlorobenzene	6.637	146	96637	1486.24 ng/ml	98
11) 1,4-Dichlorobenzene	6.707	146	95273	1568.69 ng/ml	97
12) Benzyl alcohol	6.824	108	51429	1574.24 ng/ml	93
13) 1,2-Dichlorobenzene	6.862	146	91952	1569.18 ng/ml	96
14) 2-Methylphenol	6.931	107	71182	1650.78 ng/ml	97
15) 2,2'-Oxybis(1-Chloropr...	6.947	45	105581	1368.27 ng/ml	93
16) N-Nitrosodi-n-propylamine	7.076	70	65795	1522.40 ng/ml	94
17) 3+4-Methylphenol	7.081	107	92754	1729.99 ng/ml	99
18) Hexachloroethane	7.188	201	30557	1561.67 ng/ml	93
20) Nitrobenzene	7.247	77	88010	1520.00 ng/ml	93
22) Isophorone	7.477	82	179242	1549.15 ng/ml	95
23) 2-Nitrophenol	7.562	139	49916	1689.54 ng/ml	97
24) 2,4-Dimethylphenol	7.600	122	77601	1750.61 ng/ml	98
25) Bis(2-chloroethoxy) me...	7.685	93	103887	1529.77 ng/ml	99
26) Benzoic acid	7.701	105	34385	1836.99 ng/ml	98
27) 2,4-Dichlorophenol	7.803	162	69423	1681.06 ng/ml	99
28) 1,2,4-Trichlorobenzene	7.883	180	77534	1552.22 ng/ml	98
29) Naphthalene	7.969	128	679555	4360.59 ng/ml	97
30) 4-Chloroaniline	8.022	127	36762	920.52 ng/ml	95
31) Hexachlorobutadiene	8.092	225	40473	1560.50 ng/ml	98
32) 4-Chloro-3-methylphenol	8.493	107	75237	1563.29 ng/ml	99
33) 2-Methylnaphthalene	8.659	142	260835	2218.54 ng/ml	97
34) 1-Methylnaphthalene	8.755	142	205031	1851.59 ng/ml	98
36) Hexachlorocyclopentadiene	8.825	237	43450	1864.64 ng/ml	95
37) 2,4,6-Trichlorophenol	8.942	196	48354	1645.13 ng/ml	99
38) 2,4,5-Trichlorophenol	8.980	198	46882	1698.63 ng/ml	100
39) 1,1'-Biphenyl	9.124	154	21060	160.89 ng/ml	98
41) 2-Chloronaphthalene	9.146	162	164011	1738.96 ng/ml	98
42) 2-Nitroaniline	9.247	138	56126	1773.54 ng/ml	91
43) 2,6-Dimethylnaphthalene	9.290	156	4736	49.10 ng/ml	94

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211905.D
Acq On : 21 May 2019 10:28 am
Operator : JK /AMS /DTH
Sample : 9051065-BS1
Misc : 1x, 8270D LL Full List
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:58:58 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

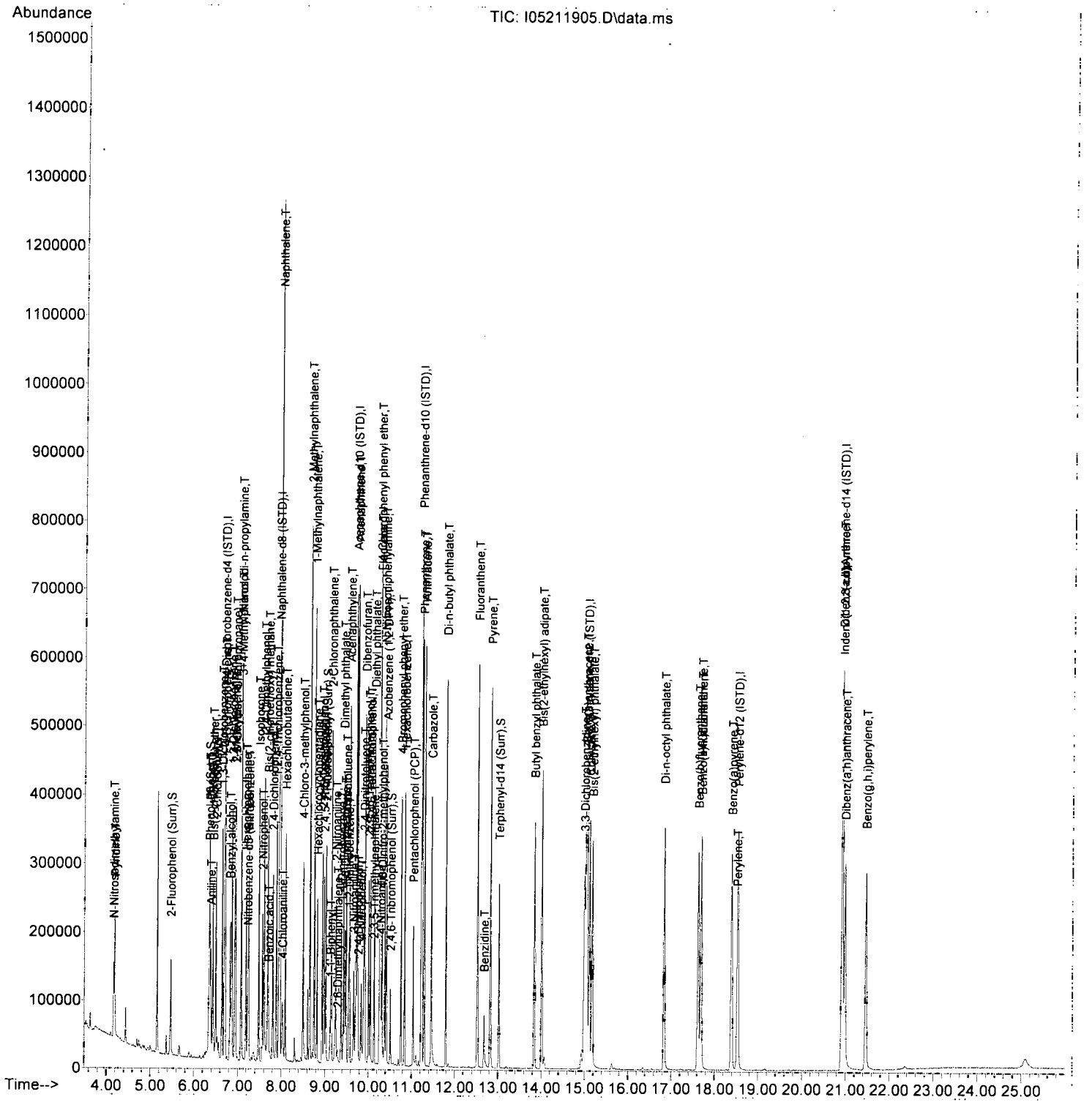
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 1,4-Dinitrobenzene	9.376	168	28482	1781.69	ng/ml	78
45) Dimethyl phthalate	9.424	163	187564	1711.53	ng/ml	99
46) 1,3-Dinitrobenzene	9.456	168	31201	1772.93	ng/ml	94
47) 2,6-Dinitrotoluene	9.488	165	44358	1810.18	ng/ml	81
48) 1,2-Dinitrobenzene	9.547	168	20397	1678.23	ng/ml	88
49) Acenaphthylene	9.568	152	263667	1701.52	ng/ml	99
50) 3-Nitroaniline	9.664	138	35370	1912.76	ng/ml	91
51) Acenaphthene	9.745	153	199858	2047.32	ng/ml	99
52) 2,4-Dinitrophenol	9.766	184	14901	1601.64	ng/ml	88
53) 4-Nitrophenol	9.836	139	28520	1559.65	ng/ml	92
54) 2,4-Dinitrotoluene	9.894	165	57829	1713.95	ng/ml	85
55) Dibenzofuran	9.921	168	241475	1817.73	ng/ml	94
56) 2,3,5,6-Tetrachlorophenol	10.001	232	39355	1666.37	ng/ml	90
57) 2,3,4,6-Tetrachlorophenol	10.044	232	40055	1636.07	ng/ml	90
58) Diethyl phthalate	10.135	149	182452	1718.18	ng/ml	96
59) 2,3,5-Trimethylnaphtha...	10.124	170	378	3.97	ng/ml#	66
60) Fluorene	10.269	166	187414	1637.01	ng/ml	99
61) 4-Chlorophenyl phenyl ...	10.258	204	87157	1629.49	ng/ml	89
62) 4-Nitroaniline	10.285	138	41467	1767.71	ng/ml	97
63) 4,6-Dinitro-2-methylph...	10.312	198	28615	1934.20	ng/ml	81
65) N-Nitrosodiphenylamine	10.376	169	152611	1647.62	ng/ml	98
66) Azobenzene (1,2-DPH)	10.419	77	170007	1635.36	ng/ml	90
68) 4-Bromophenyl phenyl e...	10.756	248	54635	1657.05	ng/ml	87
69) Hexachlorobenzene	10.836	284	59239	1617.45	ng/ml	94
70) Pentachlorophenol (PCP)	11.034	266	27985	1680.37	ng/ml	97
71) Phenanthrene	11.248	178	269567	1682.74	ng/ml	98
72) Anthracene	11.296	178	264262	1649.82	ng/ml	99
73) Carbazole	11.456	167	234593	1671.17	ng/ml	98
74) Di-n-butyl phthalate	11.793	149	314146	1727.11	ng/ml	99
75) Fluoranthene	12.521	202	311205	1662.51	ng/ml	97
76) Benzidine	12.676	184	46305	1039.51	ng/ml	95
77) Pyrene	12.820	202	312151	1638.59	ng/ml	99
80) Butyl benzyl phthalate	13.836	149	145387	1769.60	ng/ml	92
81) Bis(2-ethylhexyl) adipate	14.008	129	126949	1676.27	ng/ml	99
82) 3,3-Dichlorobenzidine	14.992	252	136088	8869.20	ng/ml	95
83) Benz(a)anthracene	15.029	228	278872	1671.17	ng/ml	98
84) Chrysene	15.115	228	250348	1626.19	ng/ml	98
85) Bis(2-ethylhexyl) phth...	15.179	149	181257	1789.49	ng/ml	96
87) Di-n-octyl phthalate	16.837	149	335457	1708.51	ng/ml	98
88) Benzo(b)fluoranthene	17.623	252	286249	1635.00	ng/ml	94
89) Benzo(k)fluoranthene	17.693	252	273390	1618.42	ng/ml	93
90) Benzo(b+k)fluoranthene	17.693	252	580631	3280.98	ng/ml	93
91) Benzo(e)pyrene	18.276	252	101	N.D.		
92) Benzo(a)pyrene	18.393	252	276971	1775.94	ng/ml	96
93) Perylene	18.516	252	5389	38.51	ng/ml	74
95) Indeno(1,2,3-cd)pyrene	20.929	276	247459	1614.52	ng/ml	92
96) Dibenz(a,h)anthracene	20.987	278	226351	1672.79	ng/ml	92
97) Benzo(g,h,i)perylene	21.464	276	254057	1695.18	ng/ml	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

No Name Entered Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211905.D
Acq On : 21 May 2019 10:28 am
Operator : JK /AMS /DTH
Sample : 9051065-BS1
Misc : 1x, 8270D LL Full List
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 10:58:58 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



No Name Entered Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH AMS 5/21/19
Sample : A9E0508-02@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

AMS 5/21/19 MOS

Quant Time: May 21 11:31:48 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4...	6.691	152	88237	2000.00 ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.942	136	344817	2000.00 ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.713	162	155307	2000.00 ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.221	188	313143	2000.00 ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.045	240	314073	2000.00 ng/ml	-0.01
86) Perylene-d12 (ISTD)	18.532	264	294829	2000.00 ng/ml	0.00
94) Dibenz(a,h)Anthrcene-d...	20.918	292	283053	2000.00 ng/ml	0.00
System Monitoring Compounds					
4) 2-Fluorophenol (Surr)	0.000	112	0	0.00 ng/ml	
5) Phenol-d6 (Surr)	0.000	99	0	0.00 ng/ml	
19) Nitrobenzene-d5 (Surr)	7.247	82	82	1.31 ng/ml	0.02
40) 2-Fluorobiphenyl (Surr)	0.000	172	0	0.00 ng/ml	
67) 2,4,6-Tribromophenol (...	0.000	330	0	0.00 ng/ml	
79) Terphenyl-d14 (Surr)	13.023	244	79	0.51 ng/ml	0.00
Target Compounds					Qvalue
2) N-Nitrosodimethylamine	0.000		0	N.D.	
3) Pyridine	0.000		0	N.D.	
6) Phenol	0.000		0	N.D.	
7) Aniline	0.000		0	N.D.	
8) Bis(2-chloroethyl) ether	0.000		0	N.D.	
9) 2-Chlorophenol	0.000		0	N.D.	
10) 1,3-Dichlorobenzene	0.000		0	N.D.	
11) 1,4-Dichlorobenzene	0.000		0	N.D.	
12) Benzyl alcohol	6.872	108	64	27.60 ng/ml#	26
13) 1,2-Dichlorobenzene	0.000		0	N.D.	
14) 2-Methylphenol	0.000		0	N.D.	
15) 2,2'-Oxybis(1-Chloropr...	0.000		0	N.D.	
16) N-Nitrosodi-n-propylamine	0.000		0	N.D.	
17) 3+4-Methylphenol	0.000		0	N.D.	
18) Hexachloroethane	0.000		0	N.D.	
20) Nitrobenzene	7.209	77	83	N.D.	
22) Isophorone	7.466	82	67	N.D.	
23) 2-Nitrophenol	0.000		0	N.D.	
24) 2,4-Dimethylphenol	0.000		0	N.D.	
25) Bis(2-chloroethoxy) me...	0.000		0	N.D.	
26) Benzoic acid	0.000		0	N.D.	
27) 2,4-Dichlorophenol	0.000		0	N.D.	
28) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
29) Naphthalene	7.964	128	3872	(22.51) ng/ml	99
30) 4-Chloroaniline	7.964	127	491	11.14 ng/ml#	44
31) Hexachlorobutadiene	0.000		0	N.D.	
32) 4-Chloro-3-methylphenol	0.000		0	N.D.	
33) 2-Methylnaphthalene	8.659	142	699	5.39 ng/ml#	70
34) 1-Methylnaphthalene	8.755	142	717	5.87 ng/ml#	62
36) Hexachlorocyclopentadiene	0.000		0	N.D.	
37) 2,4,6-Trichlorophenol	0.000		0	N.D.	
38) 2,4,5-Trichlorophenol	0.000		0	N.D.	
39) 1,1'-Biphenyl	9.124	154	96	N.D.	
41) 2-Chloronaphthalene	0.000		0	N.D.	
42) 2-Nitroaniline	0.000		0	N.D.	
43) 2,6-Dimethylnaphthalene	9.285	156	253	2.65 ng/ml	74

No Name Entered Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH AMS 5/21/19
Sample : A9E0508-01@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 11:31:48 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 1,4-Dinitrobenzene	0.000		0	N.D.		
45) Dimethyl phthalate	0.000		0	N.D.		
46) 1,3-Dinitrobenzene	0.000		0	N.D.		
47) 2,6-Dinitrotoluene	0.000		0	N.D.		
48) 1,2-Dinitrobenzene	0.000		0	N.D.		
49) Acenaphthylene	9.568	152	73	N.D.		
50) 3-Nitroaniline	0.000		0	N.D.		
51) Acenaphthene	9.745	153	1976	20.42	ng/ml	93
52) 2,4-Dinitrophenol	0.000		0	N.D.		
53) 4-Nitrophenol	0.000		0	N.D.		
54) 2,4-Dinitrotoluene	9.868	165	56	34.34	ng/ml#	17
55) Dibenzofuran	9.921	168	496	3.77	ng/ml#	1
56) 2,3,5,6-Tetrachlorophenol	0.000		0	N.D.		
57) 2,3,4,6-Tetrachlorophenol	0.000		0	N.D.		
58) Diethyl phthalate	0.000		0	N.D.		
59) 2,3,5-Trimethylnaphtha...	10.124	170	104	N.D.		
60) Fluorene	10.264	166	1172	10.33	ng/ml	88
61) 4-Chlorophenyl phenyl ...	0.000		0	N.D.		
62) 4-Nitroaniline	0.000		0	N.D.		
63) 4,6-Dinitro-2-methylph...	0.000		0	N.D.		
65) N-Nitrosodiphenylamine	10.376	169	76	N.D.		
66) Azobenzene (1,2-DPH)	0.000		0	N.D.		
68) 4-Bromophenyl phenyl e...	0.000		0	N.D.		
69) Hexachlorobenzene	0.000		0	N.D.		
70) Pentachlorophenol (PCP)	0.000		0	N.D.		
71) Phenanthrene	11.242	178	34226	204.61	ng/ml	98
72) Anthracene	11.296	178	7937	47.45	ng/ml	99
73) Carbazole	11.456	167	7761	52.95	ng/ml	99
74) Di-n-butyl phthalate	11.788	149	103	N.D.		
75) Fluoranthene	12.521	202	84618	432.90	ng/ml	96
76) Benzidine	12.670	184	277	Below Cal		66
77) Pyrene	12.815	202	85204	428.33	ng/ml	98
80) Butyl benzyl phthalate	0.000		0	N.D.		
81) Bis(2-ethylhexyl) adipate	14.002	129	800	9.66	ng/ml	95
82) 3,3-Dichlorobenzidine	14.981	252	488	Below Cal		88
83) Benz(a)anthracene	15.024	228	30581	167.63	ng/ml	100
84) Chrysene	15.099	228	30635	182.03	ng/ml	96
85) Bis(2-ethylhexyl) phth...	15.099	149	80	N.D.		
87) Di-n-octyl phthalate	0.000		0	N.D.		
88) Benzo(b)fluoranthene	17.613	252	43017	234.95	ng/ml	93
89) Benzo(k)fluoranthene	~~17.613~~	~~252~~	~~53401~~	~~284.85~~	~~ng/ml~~	~~91~~
90) Benzo(b+k)fluoranthene	17.613	252	61820	326.65	ng/ml	91
91) Benzo(e)pyrene	18.260	252	21736	123.30	ng/ml	95
92) Benzo(a)pyrene	18.377	252	35075	209.49	ng/ml	96
93) Perylene	18.581	252	10780	72.22	ng/ml	90
95) Indeno(1,2,3-cd)pyrene	20.913	276	23650	152.16	ng/ml	93
96) Dibenz(a,h)anthracene	20.966	278	3097	22.57	ng/ml#	68
97) Benzo(g,h,i)perylene	21.448	276	24637	162.10	ng/ml	84

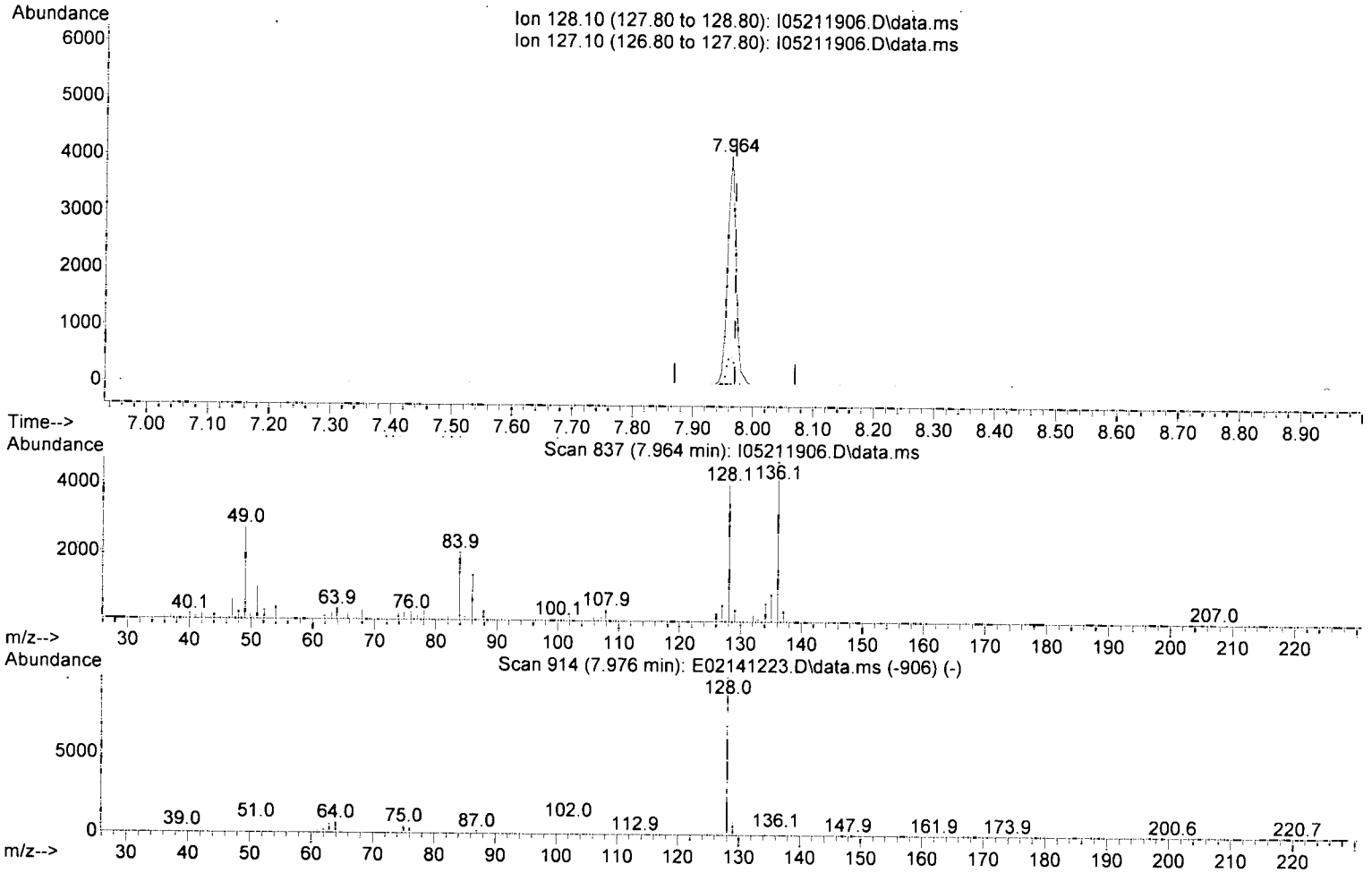
MOS
~~MI-MOS~~

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH AMS
Sample : A9E0508-01@10000 5/21/19
Misc : 10000x, 8270D LL Full List
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 11:31:48 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211906.D\data.ms

(29) Naphthalene (T)

7.964min (-0.006) 22.51 ng/ml

response 3872

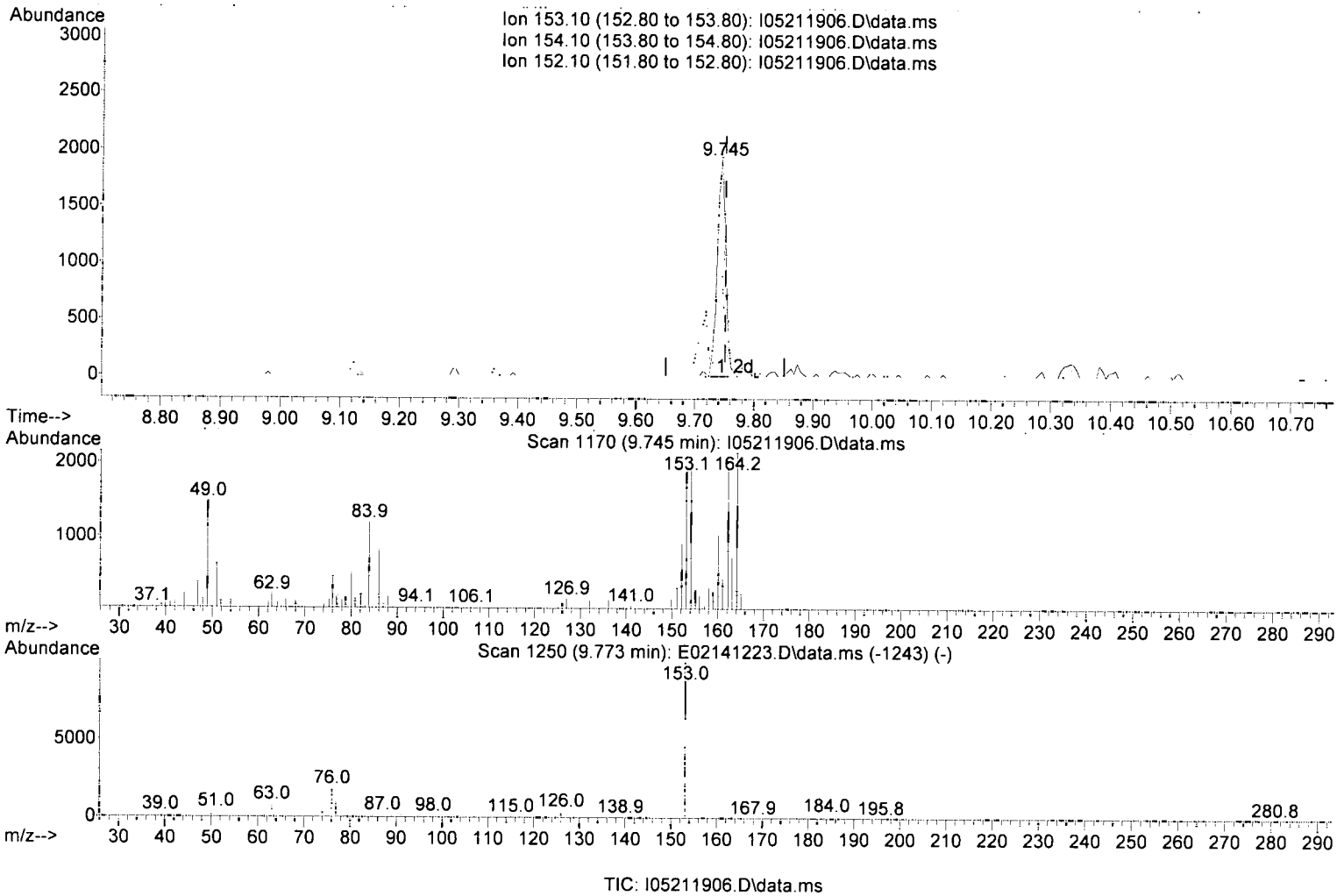
Ion	Exp%	Act%
128.10	100.00	100.00
127.10	12.70	12.45
0.00	0.00	0.00
0.00	0.00	0.00

J

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH AMS 5/24/19
Sample : A9E0508-01@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 11:31:48 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211906.D\data.ms

(51) Acenaphthene (T)

9.745min (-0.006) 20.42 ng/ml

response 1976

Ion	Exp%	Act%
153.10	100.00	100.00
154.10	93.50	102.86
152.10	47.70	47.35
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH
Sample : A9E0508-01@10000
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QLast Update : Thu May 09 12:25:58 2019
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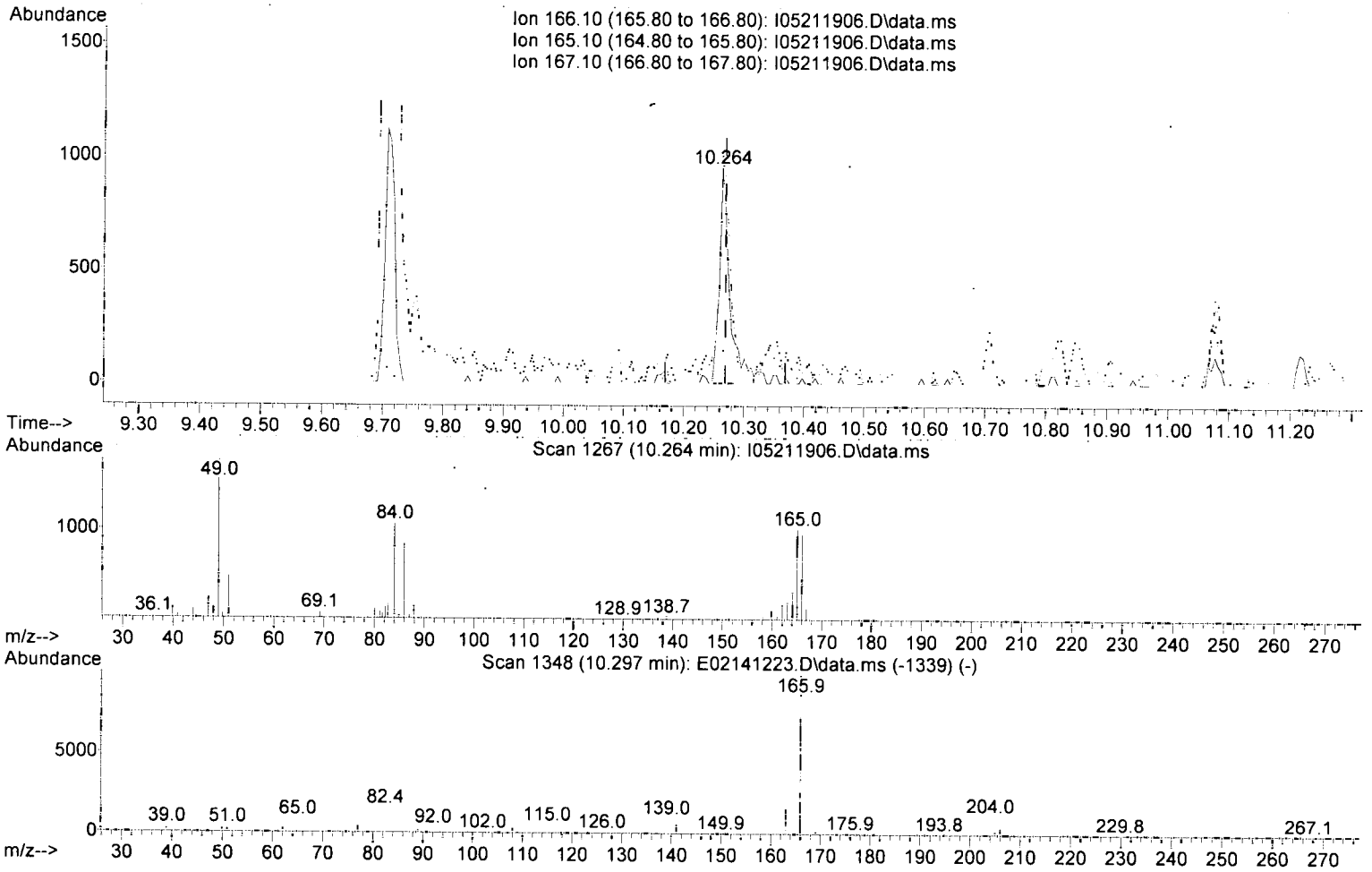

TIC: I05211906.D\data.ms

(60) Fluorene (T)

10.264min (-0.005) 10.33 ng/ml

response 1172

Ion	Exp%	Act%
166.10	100.00	100.00
165.10	93.70	105.76
167.10	13.50	15.81
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH
Sample : A9E0508-01@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 11:31:48 2019
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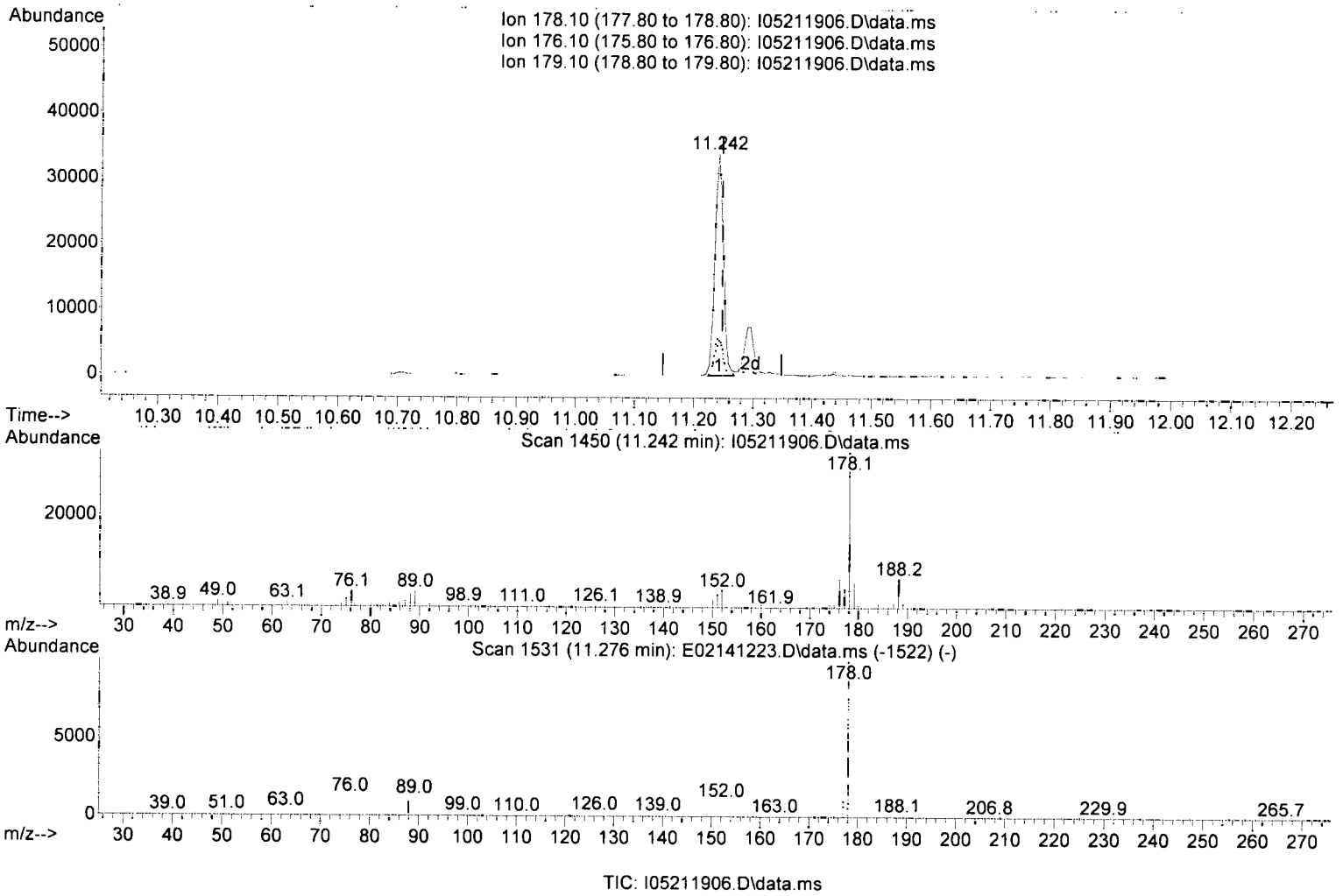
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211906.D\data.ms

(71) Phenanthrene (T)

11.242min (-0.006) 204.61 ng/ml

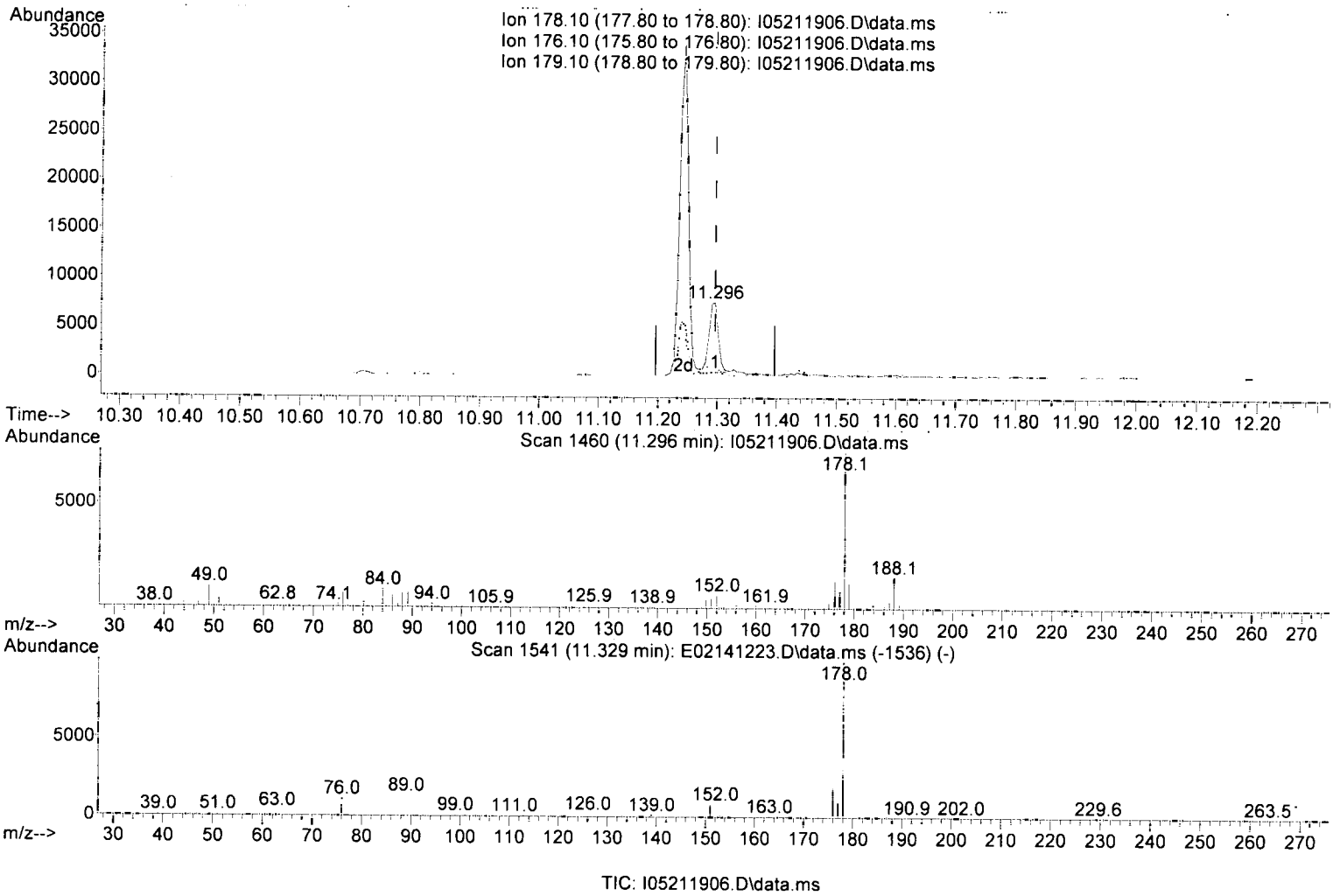
response 34226

Ion	Exp%	Act%
178.10	100.00	100.00
176.10	19.40	18.14
179.10	15.20	16.06
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH AMS 5/29/19
Sample : A9E0508-01@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 11:31:48 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211906.D\data.ms

(72) Anthracene (T)

11.296min (-0.000) 47.45 ng/ml

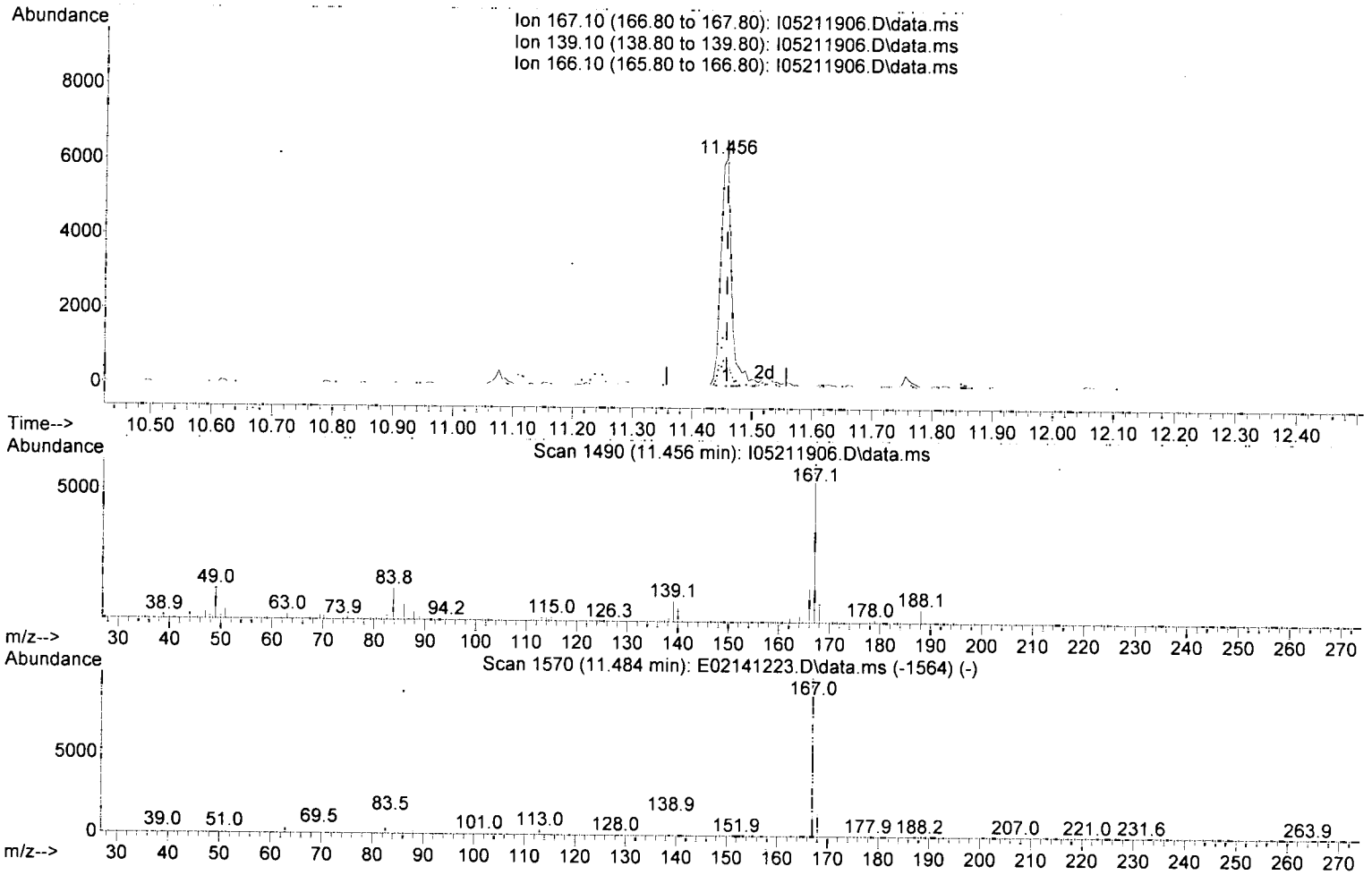
response 7937

Ion	Exp%	Act%
178.10	100.00	100.00
176.10	18.70	18.07
179.10	15.90	16.44
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH 5/24/19
Sample : A9E0508-01@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 11:31:48 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211906.D\data.ms

(73) Carbazole (T)

11.456min (-0.001) 52.95 ng/ml

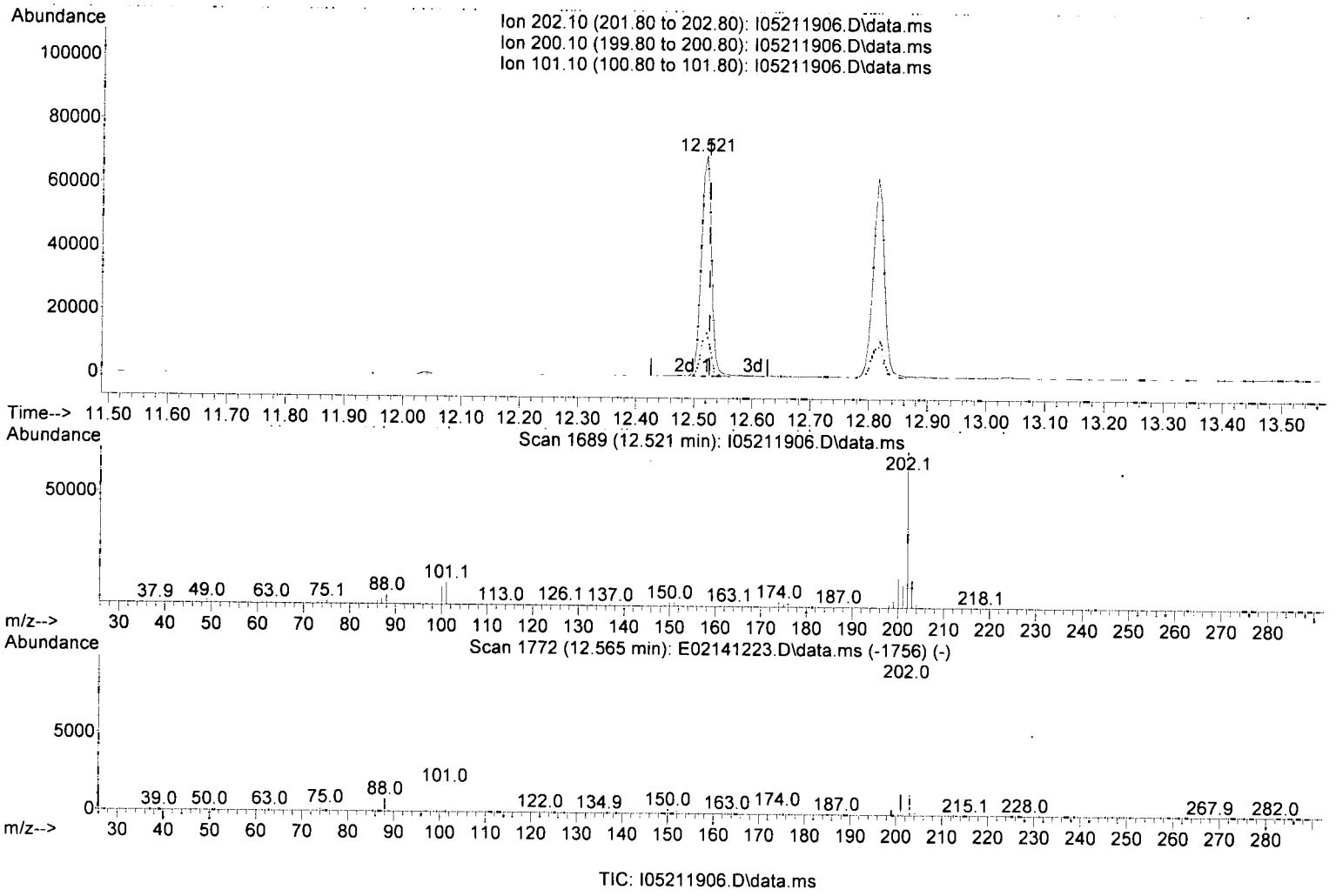
response 7761

Ion	Exp%	Act%
167.10	100.00	100.00
139.10	13.50	13.26
166.10	21.10	21.53
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH 5/21/19
Sample : A9E0508-01@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 11:31:48 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211906.D\data.ms

(75) Fluoranthene (T)

12.521min (-0.005) 432.90 ng/ml

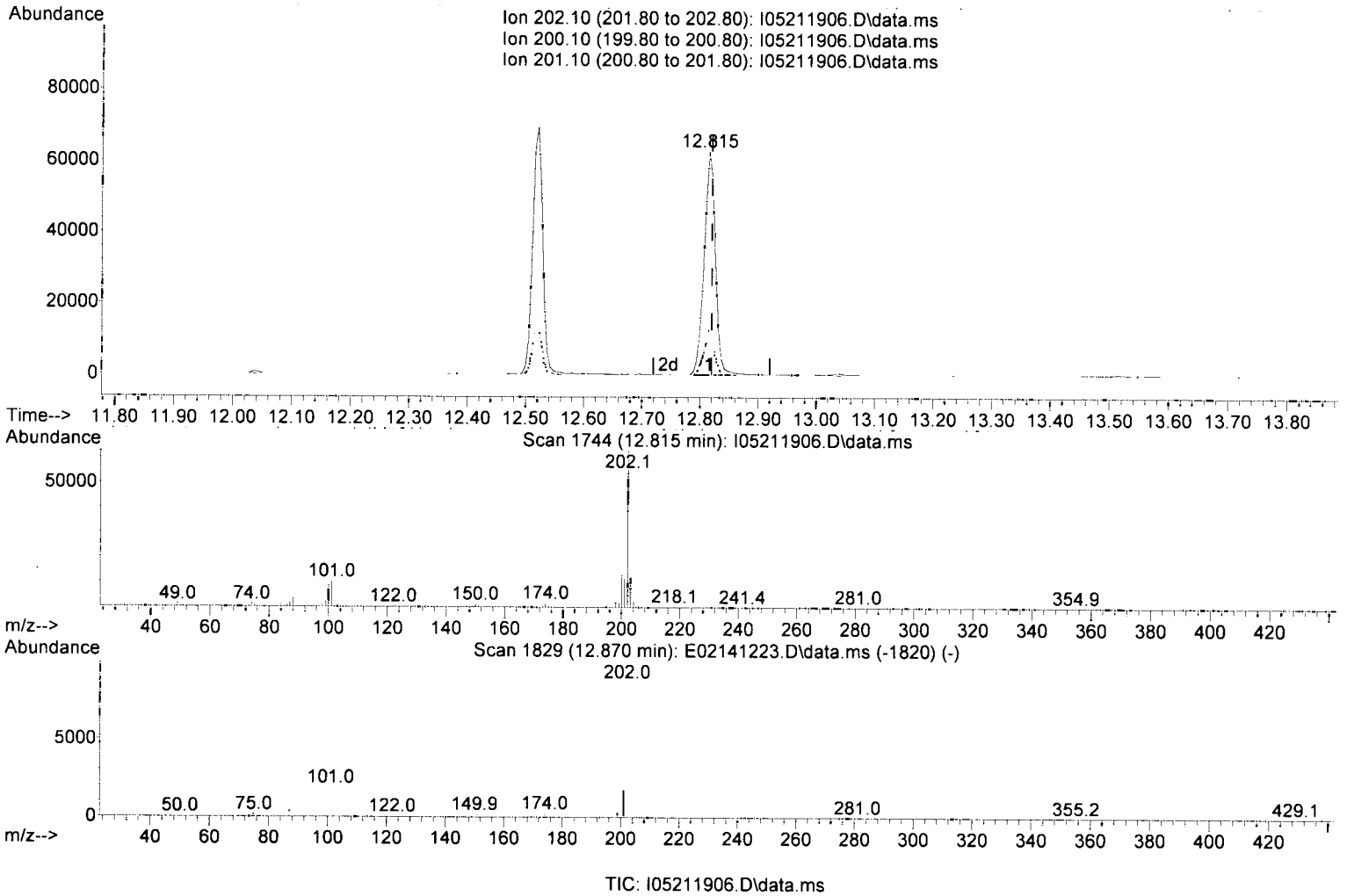
response 84618

Ion	Exp%	Act%
202.10	100.00	100.00
200.10	20.20	19.41
101.10	17.00	14.29
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH 5/21/19
Sample : A9E0508-01@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 11:31:48 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211906.D\data.ms

(77) Pyrene (T)

12.815min (-0.005) 428.33 ng/ml

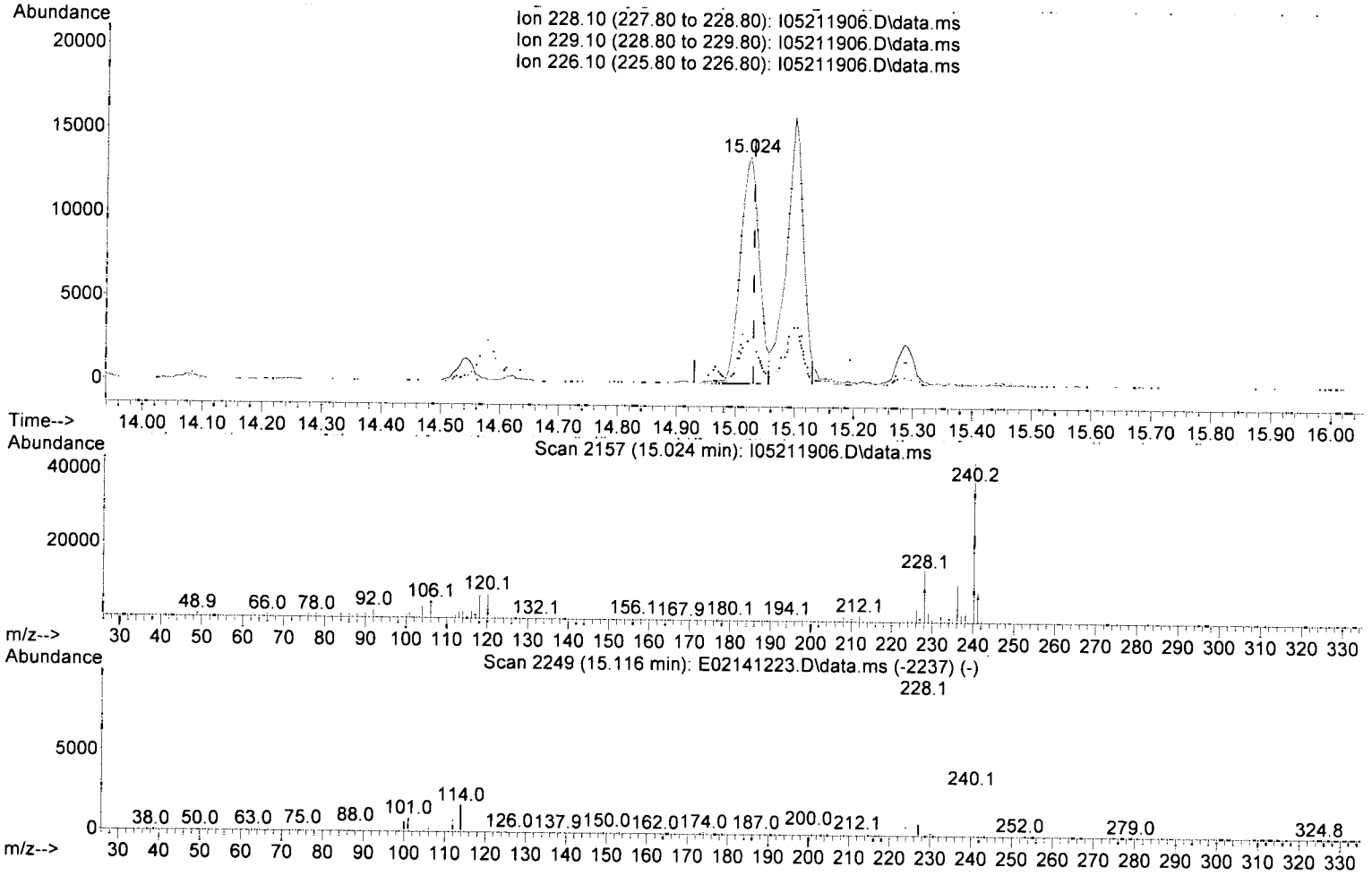
response 85204

Ion	Exp%	Act%
202.10	100.00	100.00
200.10	20.70	20.00
201.10	17.30	18.47
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH
Sample : A9E0508-01@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 11:31:48 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211906.D\data.ms

(83) Benz(a)anthracene (T)

15.024min (-0.006) 167.63 ng/ml

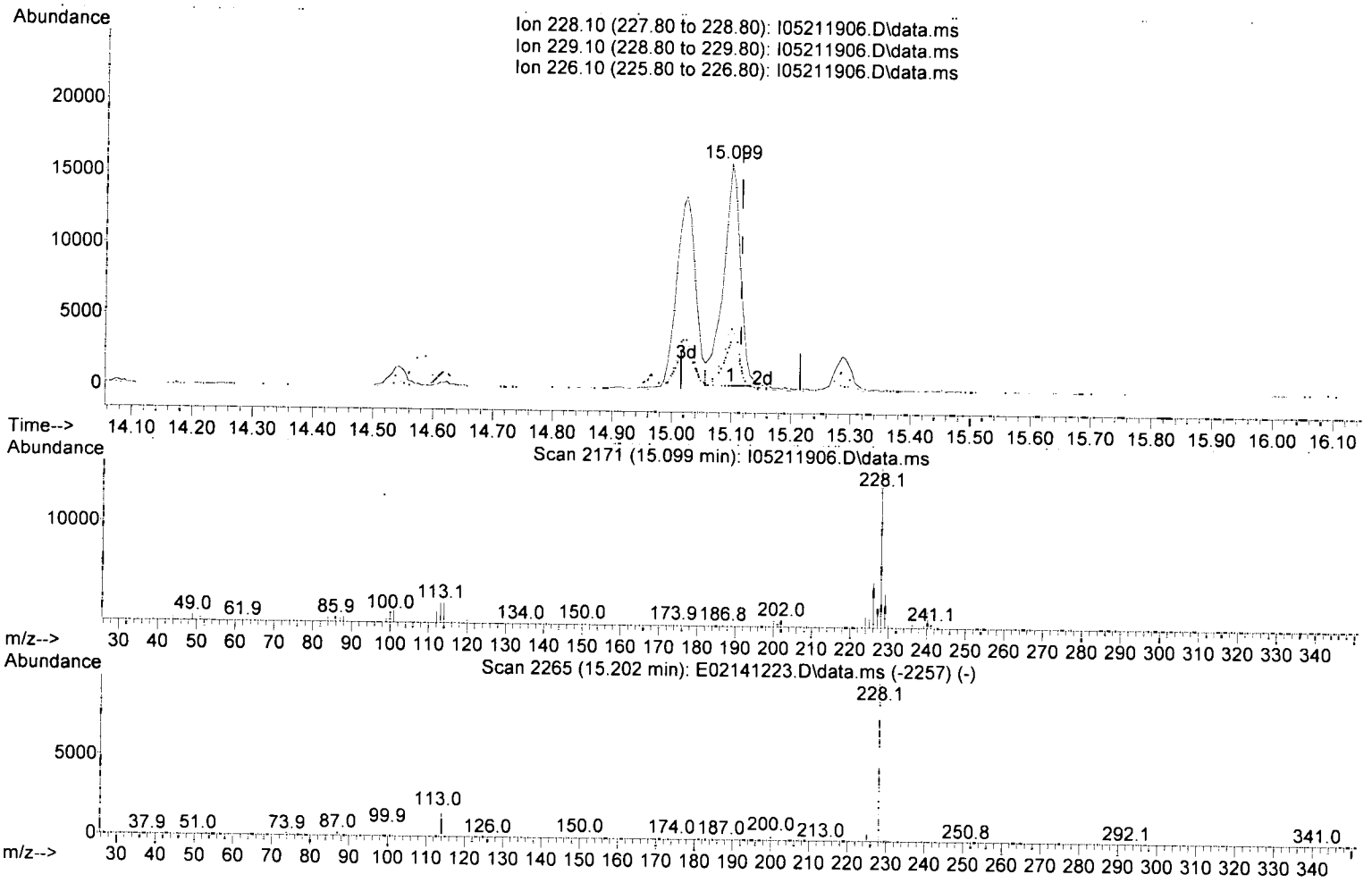
response 30581

Ion	Exp%	Act%
228.10	100.00	100.00
229.10	19.60	19.45
226.10	26.50	26.20
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH
Sample : A9E0508-0[illegible]@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 11:31:48 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211906.D\data.ms

(84) Chrysene (T)

15.099min (-0.017) 182.03 ng/ml

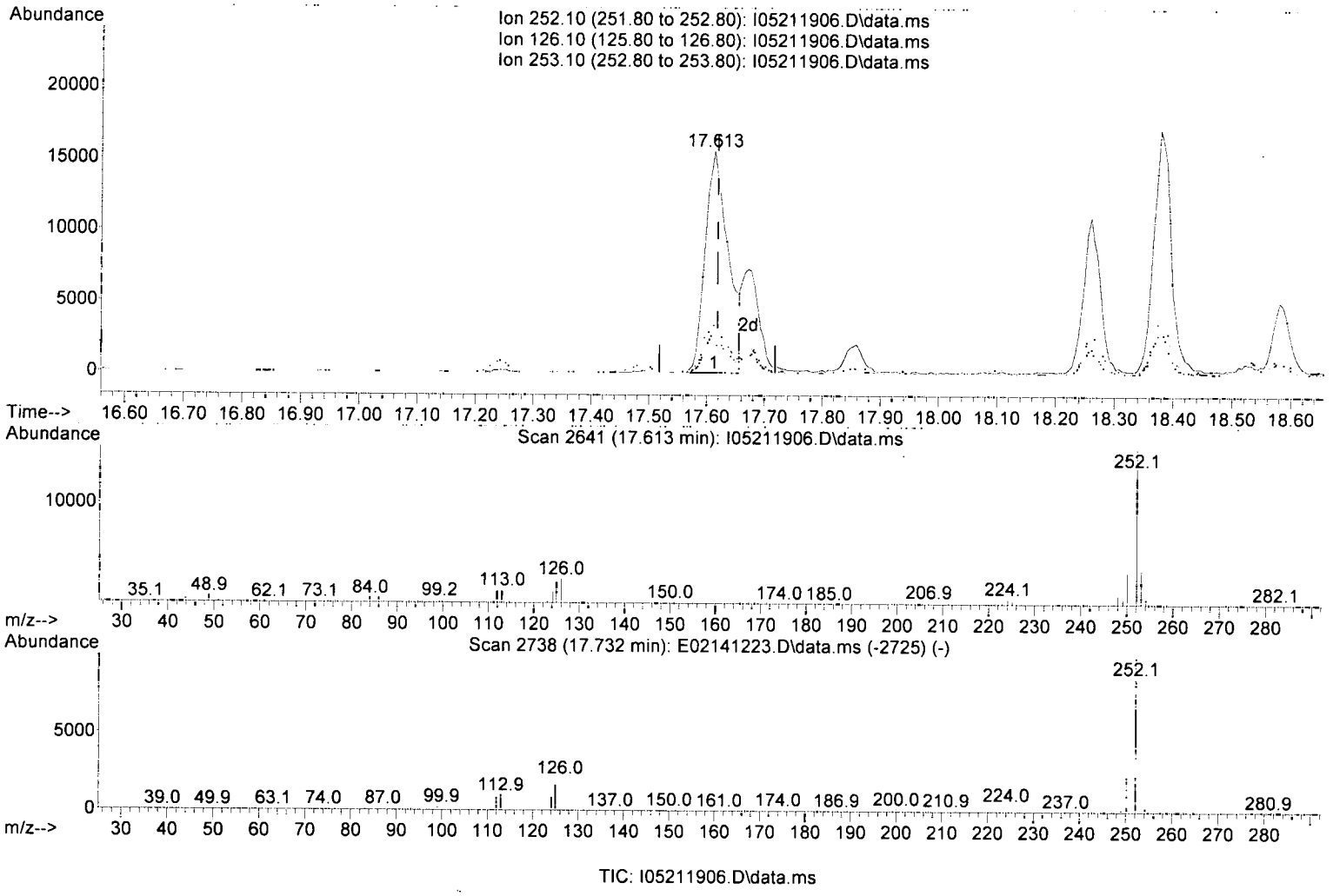
response 30635

Ion	Exp%	Act%
228.10	100.00	100.00
229.10	19.50	21.30
226.10	29.30	27.48
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH
Sample : A9E0508-01@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 11:31:48 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211906.D\data.ms

(88) Benzo(b)fluoranthene (T)

17.613min (-0.005) 234.95 ng/ml

response 43017

Ion	Exp%	Act%
252.10	100.00	100.00
126.10	21.90	15.73
253.10	22.00	21.15
0.00	0.00	0.00

MOS

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH SAS 5/21/19
Sample : A9E0508-01@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

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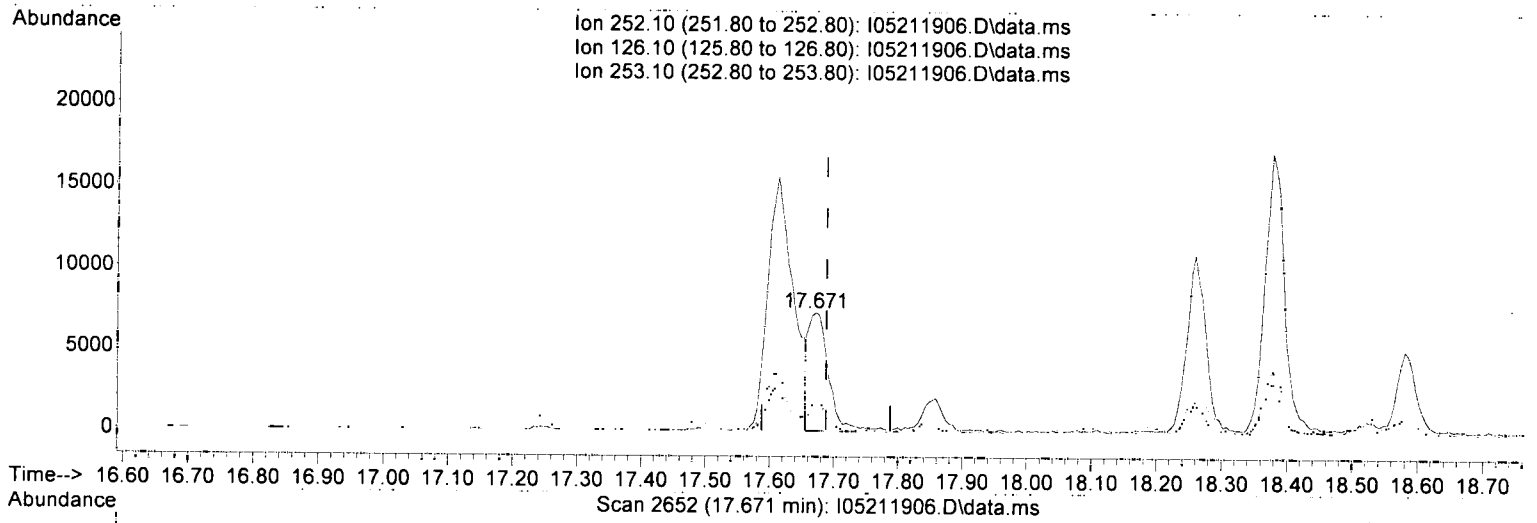
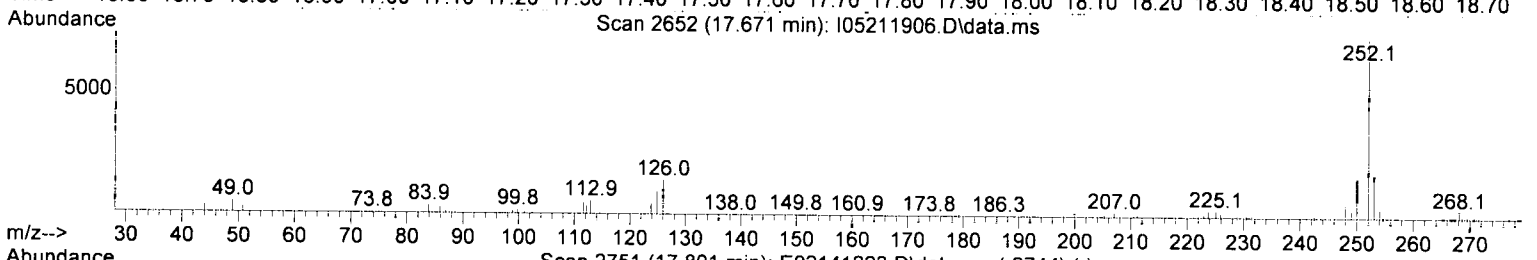
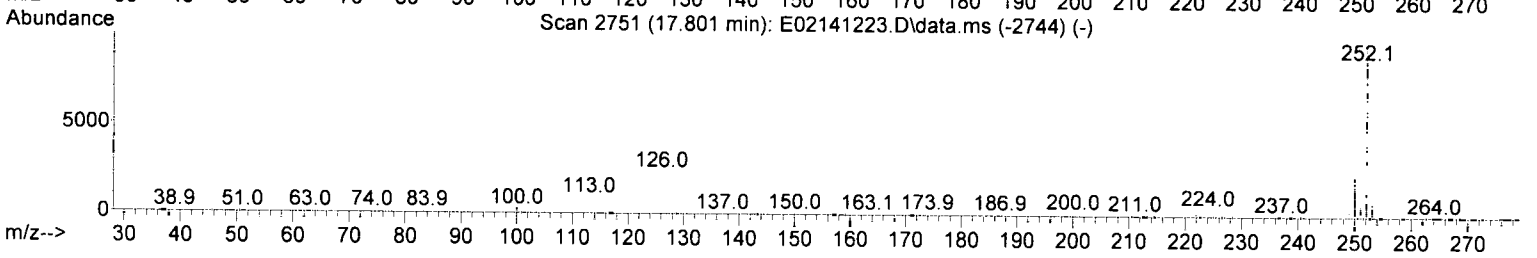
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9







TIC: I05211906.D\data.ms

(89) Benzo(k)fluoranthene (T)

17.671min (-0.017) 86.68 ng/ml m

response 15703

Ion	Exp%	Act%
252.10	100.00	100.00
126.10	23.30	19.21
253.10	21.70	23.91
0.00	0.00	0.00

AMS 5/21/19 MOS

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH
Sample : A9E0508-01@10000
Misc : 10000x, 8270D LL Full List
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DataAcq Meth:SV9_AQUISITION.M

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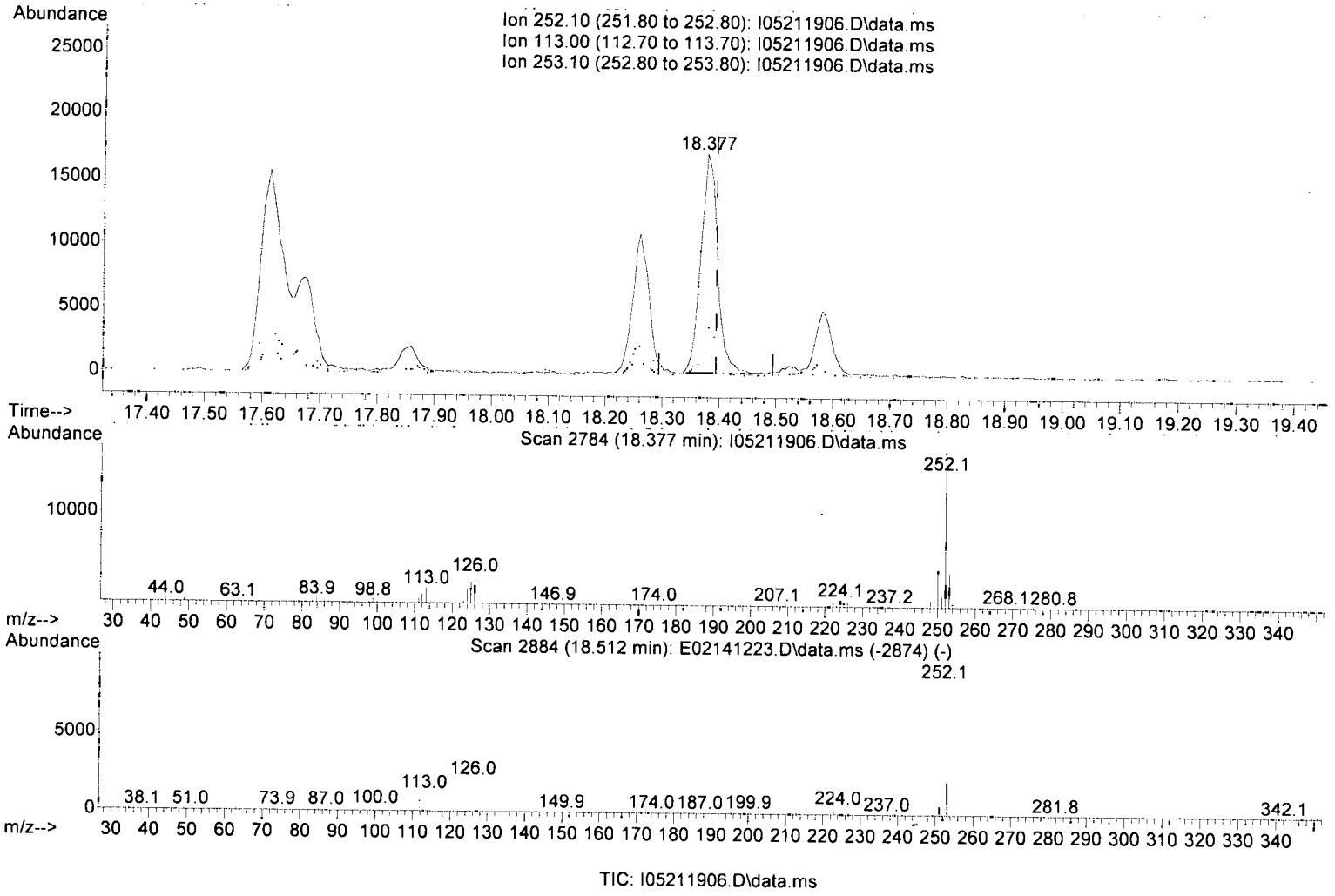
InstName : SV-GCMS9



TIC: I05211906.D\data.ms

(92) Benzo(a)pyrene (T)

18.377min (-0.017) 209.49 ng/ml

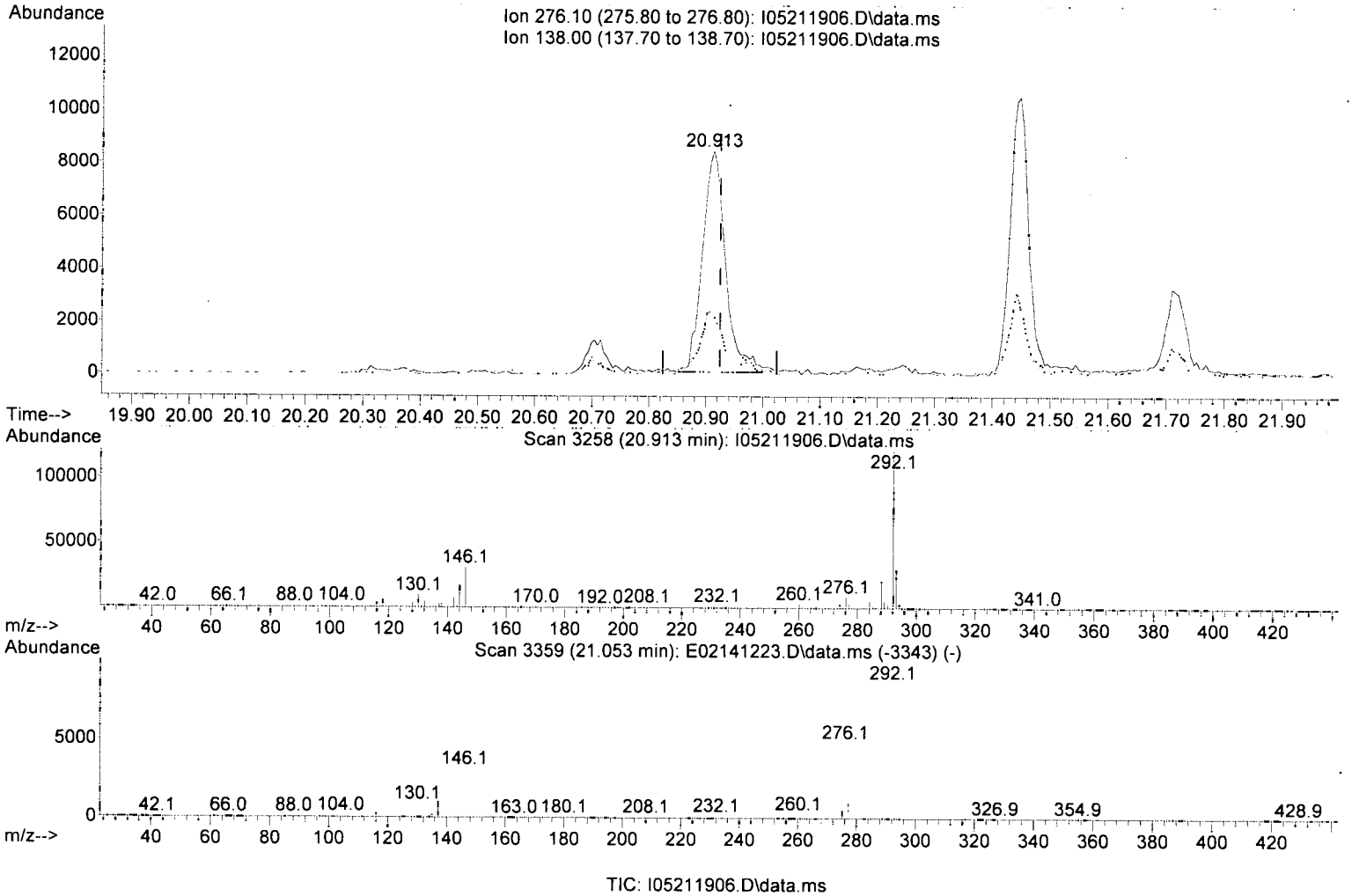
response 35075

Ion	Exp%	Act%
252.10	100.00	100.00
113.00	13.40	10.00
253.10	21.60	22.20
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH AM 5/24/19
Sample : A9E0508-01@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 11:31:48 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211906.D\data.ms

(95) Indeno(1,2,3-cd)pyrene (T)

20.913min (-0.011) 152.16 ng/ml

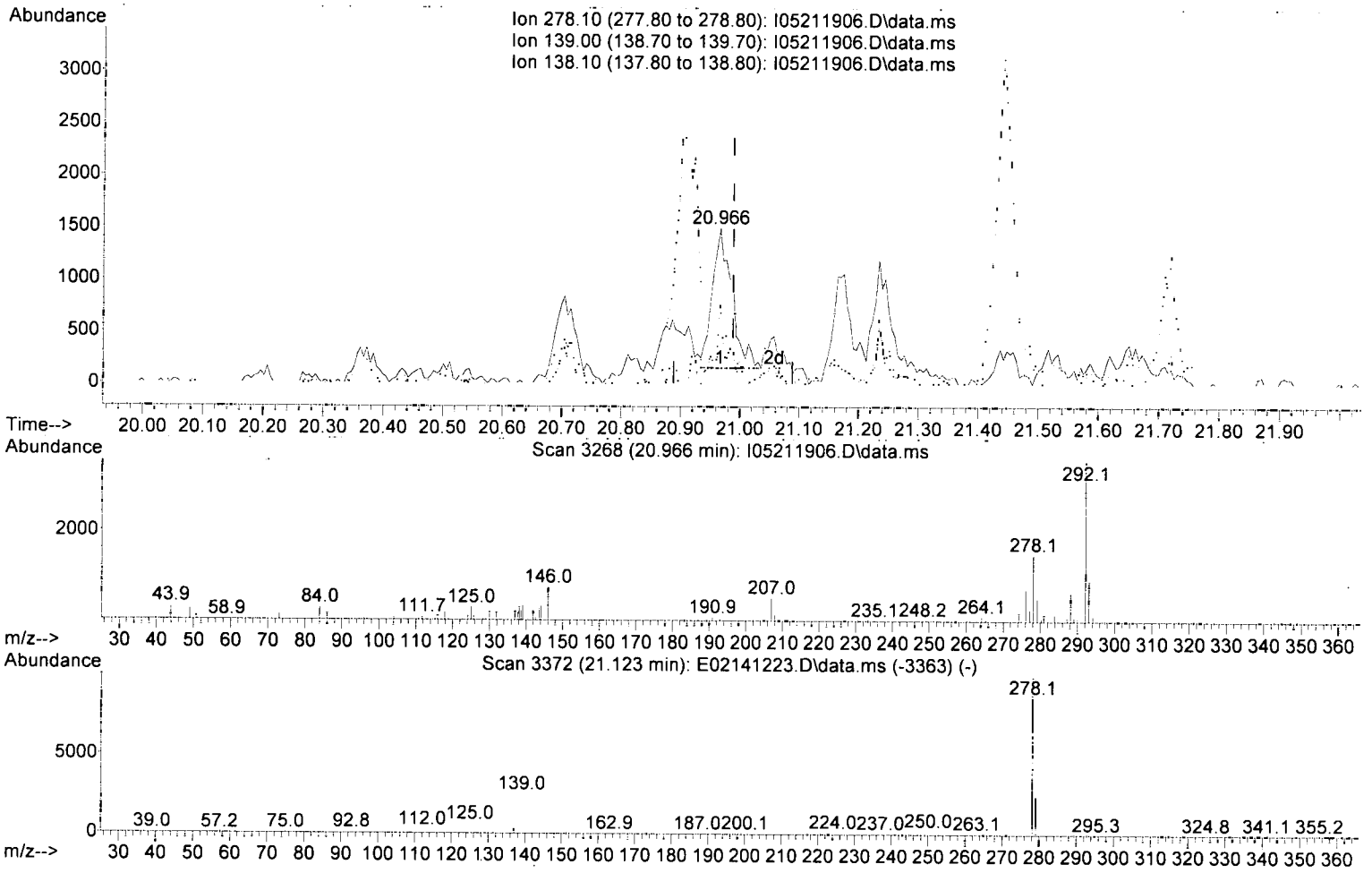
response 23650

Ion	Exp%	Act%
276.10	100.00	100.00
138.00	30.60	26.79
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH 5/16 AMS 5/21/19
Sample : A9E0508-01@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 11:31:48 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05211906.D\data.ms

(96) Dibenz(a,h)anthracene (T)

20.966min (-0.022) 22.57 ng/ml

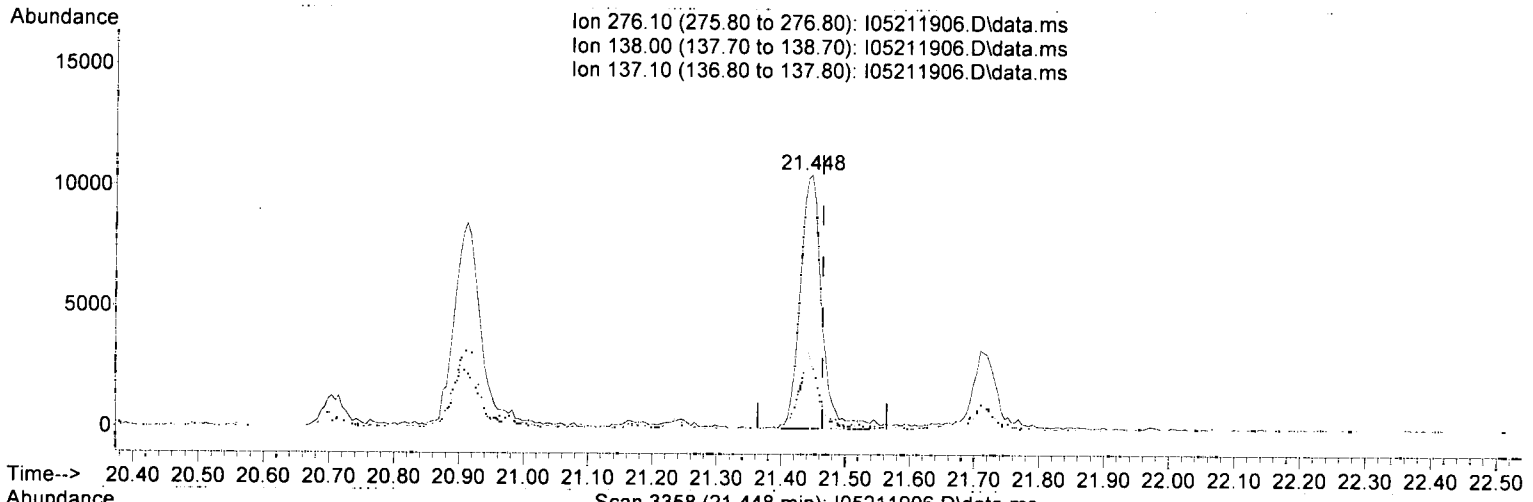
response 3097

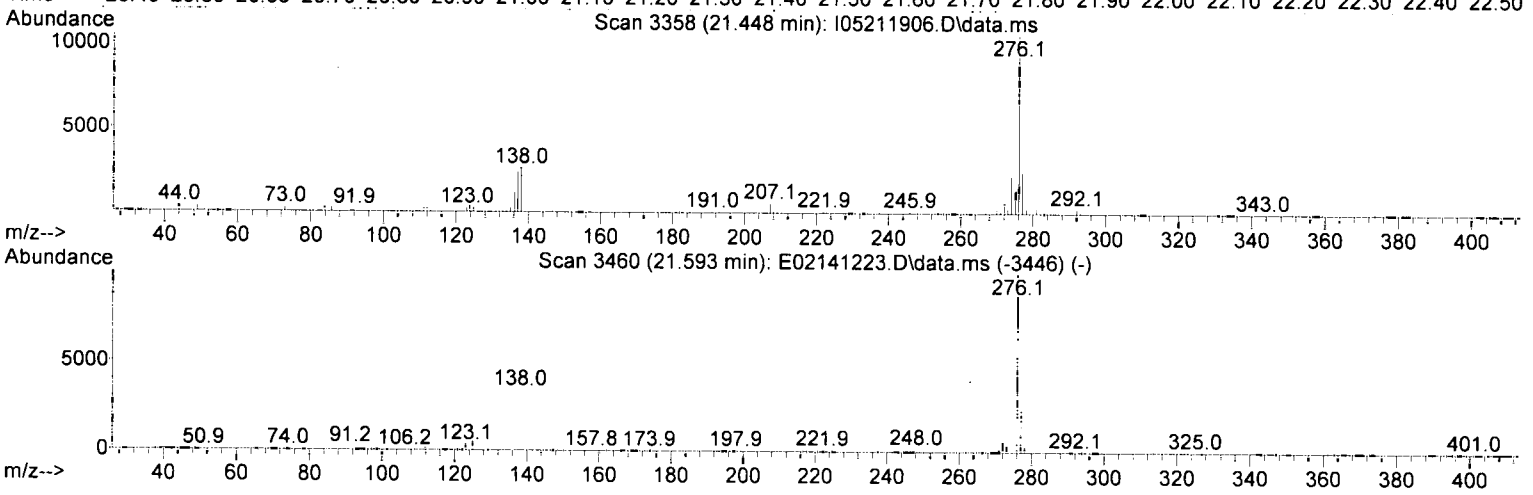
Ion	Exp%	Act%
278.10	100.00	100.00
139.00	25.20	23.65
138.10	18.50	50.84#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH 5/21/19
Sample : A9E0508-01@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 11:31:48 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9





TIC: I05211906.D\data.ms

(97) Benzo(g,h,i)perylene (T)

21.448min (-0.017) 162.10 ng/ml

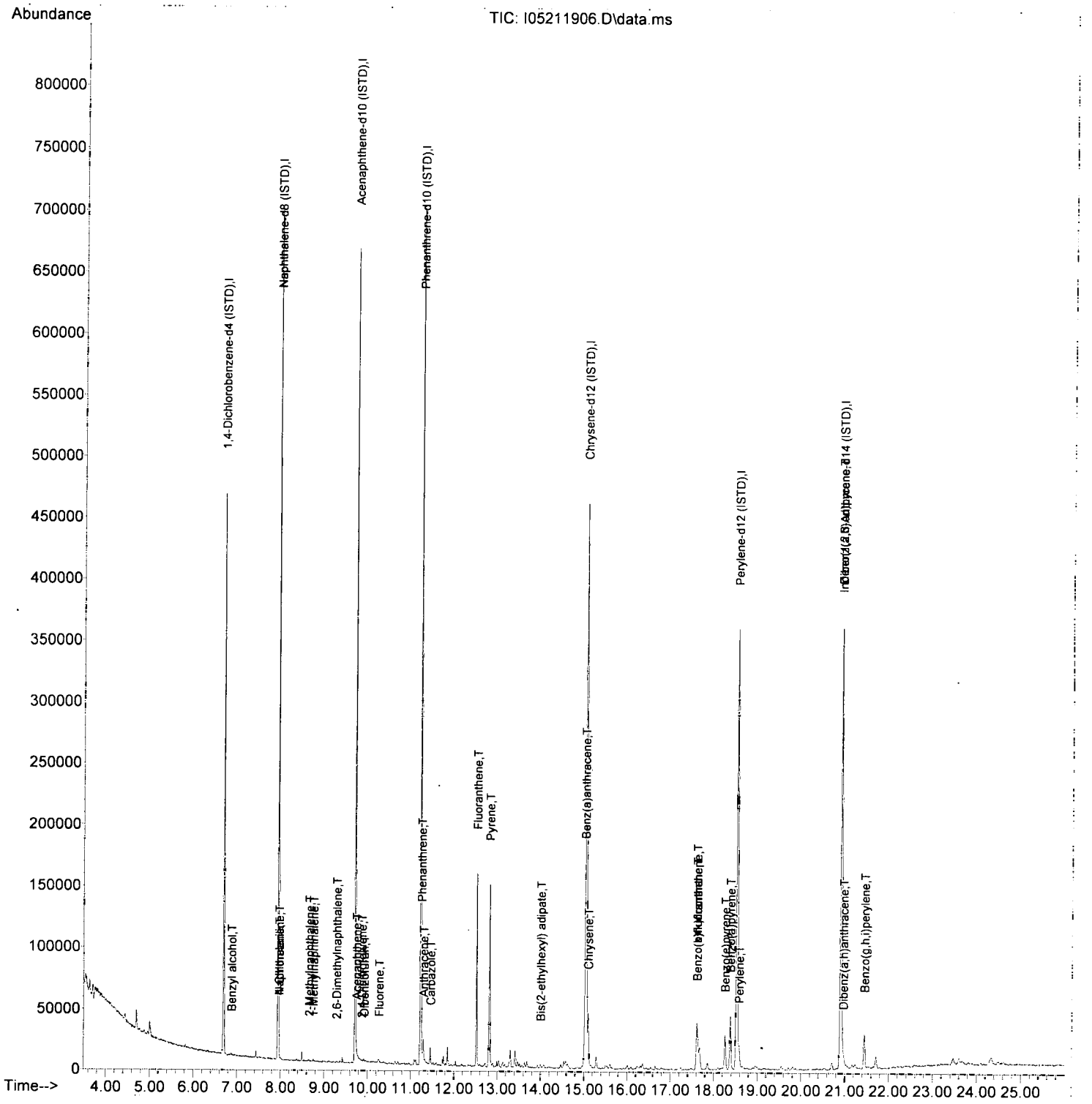
response 24637

Ion	Exp%	Act%
276.10	100.00	100.00
138.00	36.60	24.73
137.10	27.90	22.86
0.00	0.00	0.00

No Name Entered Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211906.D
Acq On : 21 May 2019 11:04 am
Operator : JK /AMS /DTH
Sample : A9E0508-01@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 11:31:48 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



No Name Entered Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211907.D
Acq On : 21 May 2019 11:40 am
Operator : JK /AMS /DTH
Sample : 9051065-DUP1@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

MOS

AMS 5/21/19

Quant Time: May 21 13:13:04 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4...	6.691	152	85029	2000.00	ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.942	136	343429	2000.00	ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.713	162	159071	2000.00	ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.221	188	305611	2000.00	ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.045	240	316097	2000.00	ng/ml	-0.01
86) Perylene-d12 (ISTD)	18.527	264	292045	2000.00	ng/ml	-0.01
94) Dibenz(a,h)Anthrcene-d...	20.913	292	278608	2000.00	ng/ml	-0.01
System Monitoring Compounds						
4) 2-Fluorophenol (Surr)	0.000	112	0	0.00	ng/ml	
5) Phenol-d6 (Surr)	0.000	99	0	0.00	ng/ml	
19) Nitrobenzene-d5 (Surr)	7.177	82	52	0.86	ng/ml	-0.05
40) 2-Fluorobiphenyl (Surr)	0.000	172	0	0.00	ng/ml	
67) 2,4,6-Tribromophenol (...	0.000	330	0	0.00	ng/ml	
79) Terphenyl-d14 (Surr)	0.000	244	0	0.00	ng/ml	
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	0.000		0	N.D.		
3) Pyridine	0.000		0	N.D.		
6) Phenol	0.000		0	N.D.		
7) Aniline	0.000		0	N.D.		
8) Bis(2-chloroethyl) ether	0.000		0	N.D.		
9) 2-Chlorophenol	0.000		0	N.D.		
10) 1,3-Dichlorobenzene	0.000		0	N.D.		
11) 1,4-Dichlorobenzene	0.000		0	N.D.		
12) Benzyl alcohol	0.000		0	N.D.		
13) 1,2-Dichlorobenzene	0.000		0	N.D.		
14) 2-Methylphenol	0.000		0	N.D.		
15) 2,2'-Oxybis(1-Chloropr...	0.000		0	N.D.		
16) N-Nitrosodi-n-propylamine	0.000		0	N.D.		
17) 3+4-Methylphenol	0.000		0	N.D.		
18) Hexachloroethane	0.000		0	N.D.		
20) Nitrobenzene	0.000		0	N.D.		
22) Isophorone	7.520	82	66	N.D.		
23) 2-Nitrophenol	0.000		0	N.D.		
24) 2,4-Dimethylphenol	0.000		0	N.D.		
25) Bis(2-chloroethoxy) me...	0.000		0	N.D.		
26) Benzoic acid	0.000		0	N.D.		
27) 2,4-Dichlorophenol	0.000		0	N.D.		
28) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
29) Naphthalene	7.964	128	2820	16.46	ng/ml	90
30) 4-Chloroaniline	7.964	127	408	9.29	ng/ml#	35
31) Hexachlorobutadiene	0.000		0	N.D.		
32) 4-Chloro-3-methylphenol	0.000		0	N.D.		
33) 2-Methylnaphthalene	8.664	142	484	3.75	ng/ml	92
34) 1-Methylnaphthalene	8.761	142	357	2.93	ng/ml	90
36) Hexachlorocyclopentadiene	0.000		0	N.D.		
37) 2,4,6-Trichlorophenol	0.000		0	N.D.		
38) 2,4,5-Trichlorophenol	0.000		0	N.D.		
39) 1,1'-Biphenyl	0.000		0	N.D.		
41) 2-Chloronaphthalene	0.000		0	N.D.		
42) 2-Nitroaniline	0.000		0	N.D.		
43) 2,6-Dimethylnaphthalene	9.290	156	138	N.D.		

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211907.D
Acq On : 21 May 2019 11:40 am
Operator : JK /AMS /DTH
Sample : 9051065-DUP1@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

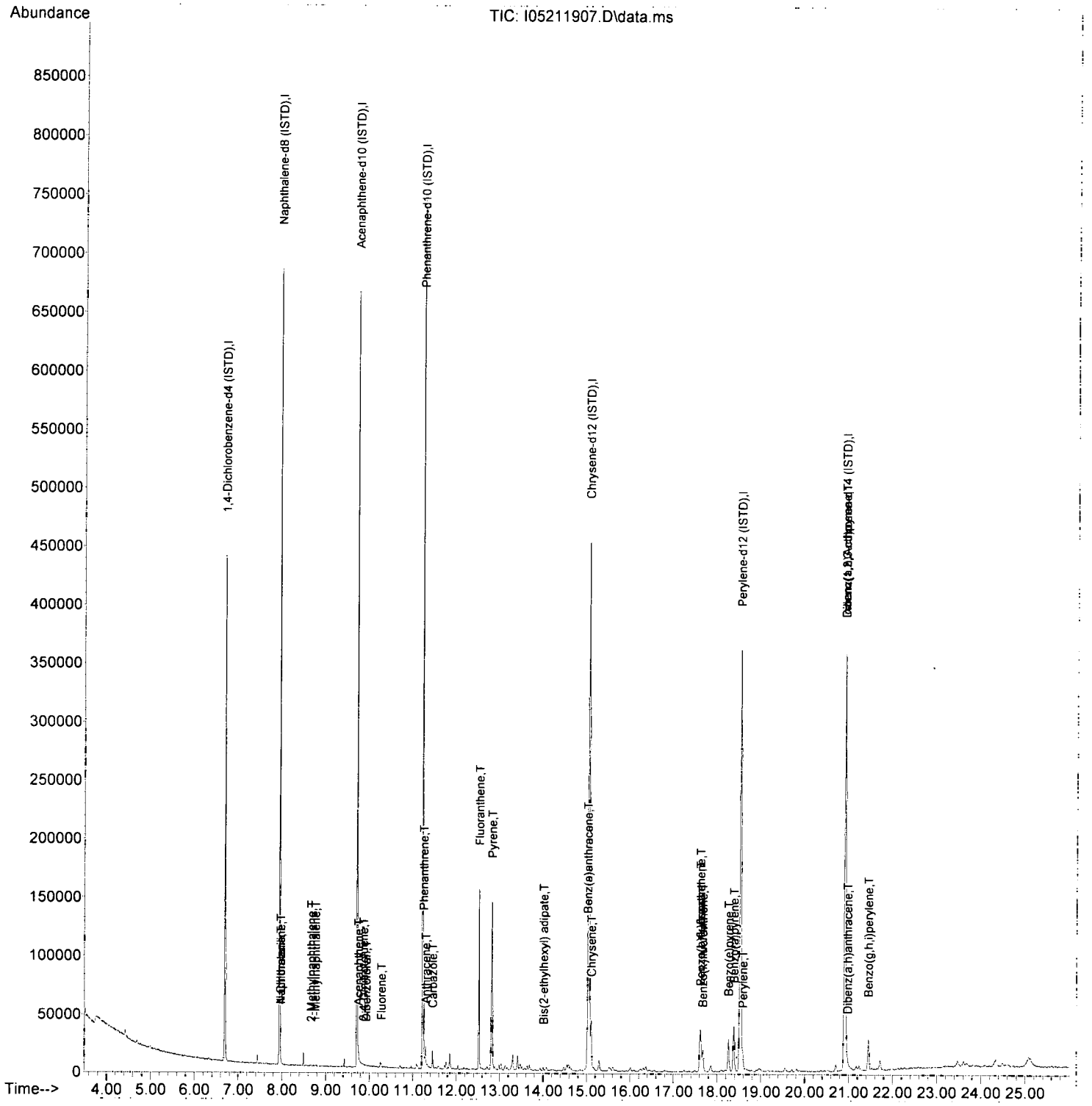
Quant Time: May 21 13:13:04 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 1,4-Dinitrobenzene	0.000		0	N.D.		
45) Dimethyl phthalate	0.000		0	N.D.		
46) 1,3-Dinitrobenzene	0.000		0	N.D.		
47) 2,6-Dinitrotoluene	0.000		0	N.D.		
48) 1,2-Dinitrobenzene	0.000		0	N.D.		
49) Acenaphthylene	0.000		0	N.D.		
50) 3-Nitroaniline	0.000		0	N.D.		
51) Acenaphthene	9.745	153	1886	19.03	ng/ml	88
52) 2,4-Dinitrophenol	0.000		0	N.D.		
53) 4-Nitrophenol	0.000		0	N.D.		
54) 2,4-Dinitrotoluene	9.862	165	149	36.86	ng/ml#	17
55) Dibenzofuran	9.921	168	515	3.82	ng/ml#	1
56) 2,3,5,6-Tetrachlorophenol	0.000		0	N.D.		
57) 2,3,4,6-Tetrachlorophenol	0.000		0	N.D.		
58) Diethyl phthalate	0.000		0	N.D.		
59) 2,3,5-Trimethylnaphtha...	0.000		0	N.D.		
60) Fluorene	10.269	166	1328	11.42	ng/ml	78
61) 4-Chlorophenyl phenyl ...	0.000		0	N.D.		
62) 4-Nitroaniline	0.000		0	N.D.		
63) 4,6-Dinitro-2-methylph...	0.000		0	N.D.		
65) N-Nitrosodiphenylamine	0.000		0	N.D.		
66) Azobenzene (1,2-DPH)	0.000		0	N.D.		
68) 4-Bromophenyl phenyl e...	0.000		0	N.D.		
69) Hexachlorobenzene	0.000		0	N.D.		
70) Pentachlorophenol (PCP)	0.000		0	N.D.		
71) Phenanthrene	11.242	178	35018	214.50	ng/ml	98
72) Anthracene	11.296	178	7988	48.94	ng/ml	93
73) Carbazole	11.451	167	7689	53.75	ng/ml	98
74) Di-n-butyl phthalate	0.000		0	N.D.		
75) Fluoranthene	12.521	202	83531	437.88	ng/ml	95
76) Benzidine	12.681	184	62	Below Cal		66
77) Pyrene	12.815	202	83999	432.68	ng/ml	99
80) Butyl benzyl phthalate	0.000		0	N.D.		
81) Bis(2-ethylhexyl) adipate	14.008	129	711	8.53	ng/ml	76
82) 3,3-Dichlorobenzidine	0.000		0	N.D.		
83) Benz(a)anthracene	15.018	228	28643	156.00	ng/ml	96
84) Chrysene	15.104	228	30941	182.67	ng/ml	92
85) Bis(2-ethylhexyl) phth...	15.109	149	161	N.D.		
87) Di-n-octyl phthalate	0.000		0	N.D.		
88) Benzo(b)fluoranthene	17.613	252	42273	233.13	ng/ml MOS	90
89) Benzo(k)fluoranthene	17.666	252	14172	79.40	ng/ml MOS	88
90) Benzo(b+k)fluoranthene	17.613	252	59932	319.89	ng/ml	89
91) Benzo(e)pyrene	18.260	252	20788	119.05	ng/ml	99
92) Benzo(a)pyrene	18.383	252	34008	205.17	ng/ml	94
93) Perylene	18.586	252	10019	67.76	ng/ml	96
95) Indeno(1,2,3-cd)pyrene	20.913	276	23295	152.26	ng/ml	93
96) Dibenz(a,h)anthracene	20.971	278	3220	23.84	ng/ml	91
97) Benzo(g,h,i)perylene	21.442	276	23451	156.76	ng/ml	85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211907.D
Acq On : 21 May 2019 11:40 am
Operator : JK /AMS /DTH
Sample : 9051065-DUP1@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 13:13:04 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



No Name Entered Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211908.D
Acq On : 21 May 2019 12:16 pm
Operator : JK /AMS /DTH
Sample : 9051065-DUP2@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Sequence error use DUP1

AMS 5/21/19

Quant Time: May 21 13:15:44 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4...	6.691	152	83657	2000.00 ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.942	136	339674	2000.00 ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.713	162	157660	2000.00 ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.221	188	305627	2000.00 ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.045	240	313384	2000.00 ng/ml	-0.01
86) Perylene-d12 (ISTD)	18.527	264	293484	2000.00 ng/ml	-0.01
94) Dibenz(a,h)Anthrcene-d...	20.913	292	280778	2000.00 ng/ml	-0.01
System Monitoring Compounds					
4) 2-Fluorophenol (Surr)	0.000	112	0	0.00 ng/ml	
5) Phenol-d6 (Surr)	0.000	99	0	0.00 ng/ml	
19) Nitrobenzene-d5 (Surr)	7.220	82	55	0.93 ng/ml	-0.01
40) 2-Fluorobiphenyl (Surr)	0.000	172	0	0.00 ng/ml	
67) 2,4,6-Tribromophenol (...	0.000	330	0	0.00 ng/ml	
79) Terphenyl-d14 (Surr)	0.000	244	0	0.00 ng/ml	
Target Compounds					Qvalue
2) N-Nitrosodimethylamine	0.000		0	N.D.	
3) Pyridine	0.000		0	N.D.	
6) Phenol	0.000		0	N.D.	
7) Aniline	0.000		0	N.D.	
8) Bis(2-chloroethyl) ether	0.000		0	N.D.	
9) 2-Chlorophenol	0.000		0	N.D.	
10) 1,3-Dichlorobenzene	0.000		0	N.D.	
11) 1,4-Dichlorobenzene	0.000		0	N.D.	
12) Benzyl alcohol	0.000		0	N.D.	
13) 1,2-Dichlorobenzene	0.000		0	N.D.	
14) 2-Methylphenol	0.000		0	N.D.	
15) 2,2'-Oxybis(1-Chloropr...	0.000		0	N.D.	
16) N-Nitrosodi-n-propylamine	0.000		0	N.D.	
17) 3+4-Methylphenol	0.000		0	N.D.	
18) Hexachloroethane	0.000		0	N.D.	
20) Nitrobenzene	0.000		0	N.D.	
22) Isophorone	0.000		0	N.D.	
23) 2-Nitrophenol	0.000		0	N.D.	
24) 2,4-Dimethylphenol	0.000		0	N.D.	
25) Bis(2-chloroethoxy) me...	0.000		0	N.D.	
26) Benzoic acid	0.000		0	N.D.	
27) 2,4-Dichlorophenol	0.000		0	N.D.	
28) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
29) Naphthalene	7.964	128	2519	14.87 ng/ml	88
30) 4-Chloroaniline	7.964	127	399	9.19 ng/ml#	33
31) Hexachlorobutadiene	0.000		0	N.D.	
32) 4-Chloro-3-methylphenol	0.000		0	N.D.	
33) 2-Methylnaphthalene	8.664	142	569	4.45 ng/ml	88
34) 1-Methylnaphthalene	8.761	142	400	3.32 ng/ml	77
36) Hexachlorocyclopentadiene	0.000		0	N.D.	
37) 2,4,6-Trichlorophenol	0.000		0	N.D.	
38) 2,4,5-Trichlorophenol	0.000		0	N.D.	
39) 1,1'-Biphenyl	9.135	154	54	N.D.	
41) 2-Chloronaphthalene	0.000		0	N.D.	
42) 2-Nitroaniline	0.000		0	N.D.	
43) 2,6-Dimethylnaphthalene	9.296	156	98	N.D.	

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211908.D
Acq On : 21 May 2019 12:16 pm
Operator : JK /AMS /DTH
Sample : 9051065-DUP2@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 13:15:44 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

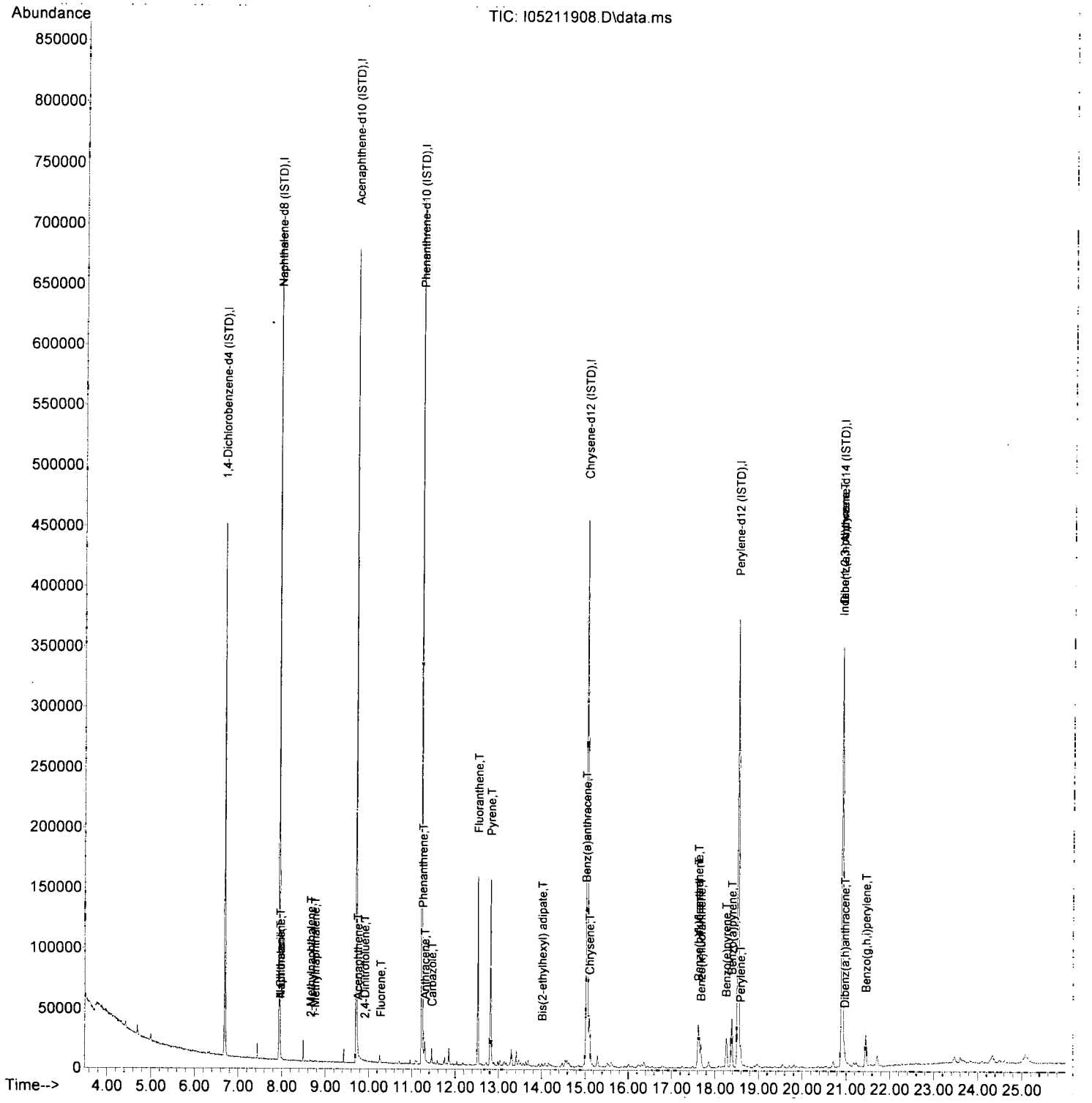
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
44) 1,4-Dinitrobenzene	0.000		0	N.D.	
45) Dimethyl phthalate	0.000		0	N.D.	
46) 1,3-Dinitrobenzene	0.000		0	N.D.	
47) 2,6-Dinitrotoluene	0.000		0	N.D.	
48) 1,2-Dinitrobenzene	0.000		0	N.D.	
49) Acenaphthylene	0.000		0	N.D.	
50) 3-Nitroaniline	0.000		0	N.D.	
51) Acenaphthene	9.745	153	1909	19.43 ng/ml	87
52) 2,4-Dinitrophenol	0.000		0	N.D.	
53) 4-Nitrophenol	0.000		0	N.D.	
54) 2,4-Dinitrotoluene	9.905	165	69	34.68 ng/ml#	17
55) Dibenzofuran	9.916	168	320	N.D.	
56) 2,3,5,6-Tetrachlorophenol	0.000		0	N.D.	
57) 2,3,4,6-Tetrachlorophenol	0.000		0	N.D.	
58) Diethyl phthalate	0.000		0	N.D.	
59) 2,3,5-Trimethylnaphtha...	0.000		0	N.D.	
60) Fluorene	10.269	166	1200	10.41 ng/ml	76
61) 4-Chlorophenyl phenyl ...	0.000		0	N.D.	
62) 4-Nitroaniline	0.000		0	N.D.	
63) 4,6-Dinitro-2-methylph...	0.000		0	N.D.	
65) N-Nitrosodiphenylamine	0.000		0	N.D.	
66) Azobenzene (1,2-DPH)	0.000		0	N.D.	
68) 4-Bromophenyl phenyl e...	0.000		0	N.D.	
69) Hexachlorobenzene	0.000		0	N.D.	
70) Pentachlorophenol (PCP)	0.000		0	N.D.	
71) Phenanthrene	11.243	178	33966	208.05 ng/ml	98
72) Anthracene	11.296	178	8264	50.62 ng/ml	96
73) Carbazole	11.456	167	7332	51.25 ng/ml	96
74) Di-n-butyl phthalate	0.000		0	N.D.	
75) Fluoranthene	12.521	202	83396	437.15 ng/ml	96
76) Benzidine	0.000		0	N.D.	
77) Pyrene	12.815	202	84640	435.96 ng/ml	97
80) Butyl benzyl phthalate	0.000		0	N.D.	
81) Bis(2-ethylhexyl) adipate	14.008	129	630	7.63 ng/ml	92
82) 3,3-Dichlorobenzidine	14.987	252	73	Below Cal #	26
83) Benz(a)anthracene	15.019	228	29099	159.86 ng/ml	96
84) Chrysene	15.099	228	31050	184.90 ng/ml	95
85) Bis(2-ethylhexyl) phth...	0.000		0	N.D.	
87) Di-n-octyl phthalate	0.000		0	N.D.	
88) Benzo(b)fluoranthene	17.613	252	40461	222.25 ng/ml	96
89) Benzo(k)fluoranthene	17.672	252	14483	80.66 ng/ml	93
90) Benzo(b+k)fluoranthene	17.613	252	59751	317.43 ng/ml	94
91) Benzo(e)pyrene	18.255	252	20915	119.19 ng/ml	99
92) Benzo(a)pyrene	18.383	252	33754	202.71 ng/ml	94
93) Perylene	18.581	252	10798	72.67 ng/ml	96
95) Indeno(1,2,3-cd)pyrene	20.908	276	22890	148.46 ng/ml	94
96) Dibenz(a,h)anthracene	20.966	278	3239	23.80 ng/ml	95
97) Benzo(g,h,i)perylene	21.448	276	23153	153.57 ng/ml	85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

No Name Entered Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\2019-05\9E21026\
Data File : I05211908.D
Acq On : 21 May 2019 12:16 pm
Operator : JK /AMS /DTH
Sample : 9051065-DUP2@10000
Misc : 10000x, 8270D LL Full List
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 21 13:15:44 2019
Quant Method : C:\msdchem\1\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



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

Semivolatile Organic Compunds By EPA 8270D

Calibration Data

Sequence 9E08056 (Cal ID A9E1009) SV-GCMS9

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence:	**9E08056**	Instrument:	**SV-GCMS9**
Date:	**05/08/19 18:26**	Calibration:	**A9E1009**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E08056-TUN1	Water	QC	QC			A19D031	A19D323
2	9E08056-ICB1	Water	QC	QC			A19D031	
3	9E08056-CAL1	Water	QC	QC			A19D031	A19D053
4	9E08056-CAL2	Water	QC	QC			A19D031	A19D054
5	9E08056-CAL3	Water	QC	QC			A19D031	A19D055
6	9E08056-CAL4	Water	QC	QC			A19D031	A19D056
7	9E08056-CAL5	Water	QC	QC			A19D031	A19D057
8	9E08056-CAL6	Water	QC	QC			A19D031	A19D058
9	9E08056-CAL7	Water	QC	QC			A19D031	A19D059
10	9E08056-CAL8	Water	QC	QC			A19D031	A19D060
11	9E08056-CAL9	Water	QC	QC			A19D031	A19D061
12	9E08056-CALA	Water	QC	QC			A19D031	A19D062
13	9E08056-IBL1	Water	QC	QC			A19D031	
14	9E08056-ICV1	Water	QC	QC			A19D031	A19C239
15	9E08056-IBL2	Water	QC	QC			A19D031	

Data Entered By: 5/10/19

Data Reviewed By: 5/14/19

Comments: Raise 3,3-Dichlorobenzidine to 200/400 for soils

Calibration Status Report SV-GCMS9

Method Path : T:\methods\
Method File : SV9_050819.M
Title : EPA 8270D: Semivolatile Organics
Last Update : Thu May 09 12:25:58 2019
Response Via : Initial Calibration

A9E1009

5/9/19

#	ID	Conc	ISTD Conc	Path\File
1	20	20	2000	T:\data\2019-05\9E08056\I05081919.D
2	50	50	2000	T:\data\2019-05\9E08056\I05081920.D
3	100	100	2000	T:\data\2019-05\9E08056\I05081921.D
4	200	200	2000	T:\data\2019-05\9E08056\I05081922.D
5	500	500	2000	T:\data\2019-05\9E08056\I05081923.D
6	1000	1000	2000	T:\data\2019-05\9E08056\I05081924.D
7	2000	2000	2000	T:\data\2019-05\9E08056\I05081925.D
8	4000	4000	2000	T:\data\2019-05\9E08056\I05081926.D
9	6000	6000	2000	T:\data\2019-05\9E08056\I05081927.D
10	8000	8000	2000	T:\data\2019-05\9E08056\I05081928.D

#	ID	Update Time	Quant Time	Acquisition Time
1	20	May 09 12:25 2019	May 09 11:27 2019	8 May 2019 8:12 pm
2	50	May 09 12:25 2019	May 09 11:31 2019	8 May 2019 8:48 pm
3	100	May 09 12:25 2019	May 09 11:34 2019	8 May 2019 9:25 pm
4	200	May 09 12:25 2019	May 09 11:48 2019	8 May 2019 10:01 pm
5	500	May 09 12:25 2019	May 09 11:02 2019	8 May 2019 10:38 pm
6	1000	May 09 12:25 2019	May 09 11:02 2019	8 May 2019 11:14 pm
7	2000	May 09 12:25 2019	May 09 11:03 2019	8 May 2019 11:50 pm
8	4000	May 09 12:25 2019	May 09 11:03 2019	9 May 2019 12:26 am
9	6000	May 09 12:25 2019	May 09 11:53 2019	9 May 2019 1:01 am
10	8000	May 09 12:25 2019	May 09 11:55 2019	9 May 2019 1:37 am

SV9_050819.M Thu May 09 17:08:41 2019

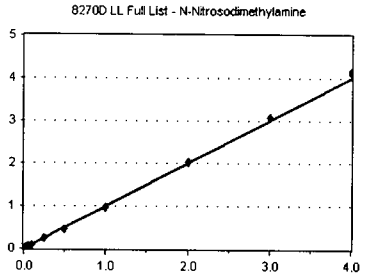
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

N-Nitrosodimethylamine

Curve Fit: **AVERAGE RF**

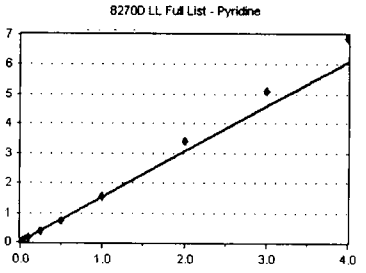


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1386	1.211	4.19
9E08056-CAL2	50	2851	0.973	4.18
9E08056-CAL3	100	5631	0.975	4.19
9E08056-CAL4	200	11200	0.931	4.17
9E08056-CAL5	500	27689	0.938	4.18
9E08056-CAL6	1000	53609	0.919	4.17
9E08056-CAL7	2000	104473	0.976	4.17
9E08056-CAL8	4000	199054	1.007	4.17
9E08056-CAL9	6000	300039	1.030	4.17
9E08056-CALA	8000	396249	1.035	4.16

AVE RF **0.999** RF RSD **8.42** AVE RT **4.17**

Pyridine

Curve Fit: **AVERAGE RF**

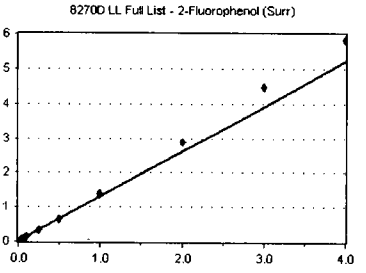


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1594	1.392	4.24
9E08056-CAL2	50	4118	1.406	4.22
9E08056-CAL3	100	7898	1.367	4.22
9E08056-CAL4	200	17242	1.433	4.19
9E08056-CAL5	500	44836	1.518	4.20
9E08056-CAL6	1000	85720	1.469	4.18
9E08056-CAL7	2000	164460	1.537	4.18
9E08056-CAL8	4000	337112	1.706	4.17
9E08056-CAL9	6000	496772	1.705	4.18
9E08056-CALA	8000	659225	1.722	4.16

AVE RF **1.526** RF RSD **9.08** AVE RT **4.19**

2-Fluorophenol (Surr)

Curve Fit: **AVERAGE RF**

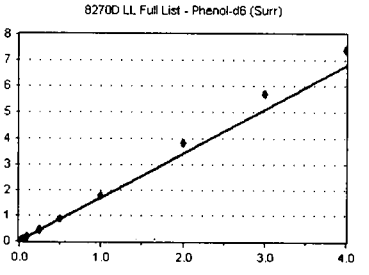


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1296	1.132	5.47
9E08056-CAL2	50	3106	1.060	5.47
9E08056-CAL3	100	7013	1.214	5.47
9E08056-CAL4	200	14997	1.247	5.47
9E08056-CAL5	500	39110	1.324	5.47
9E08056-CAL6	1000	76115	1.305	5.47
9E08056-CAL7	2000	148818	1.391	5.47
9E08056-CAL8	4000	284613	1.440	5.47
9E08056-CAL9	6000	435036	1.493	5.47
9E08056-CALA	8000	560056	1.463	5.47

AVE RF **1.307** RF RSD **11.06** AVE RT **5.47**

Phenol-d6 (Surr)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1675	1.463	6.35
9E08056-CAL2	50	4324	1.476	6.34
9E08056-CAL3	100	9148	1.583	6.34
9E08056-CAL4	200	19650	1.634	6.34
9E08056-CAL5	500	50799	1.720	6.34
9E08056-CAL6	1000	98894	1.695	6.34
9E08056-CAL7	2000	191806	1.792	6.34
9E08056-CAL8	4000	374178	1.894	6.35
9E08056-CAL9	6000	554225	1.902	6.35
9E08056-CALA	8000	706999	1.847	6.36

AVE RF **1.701** RF RSD **9.47** AVE RT **6.34**

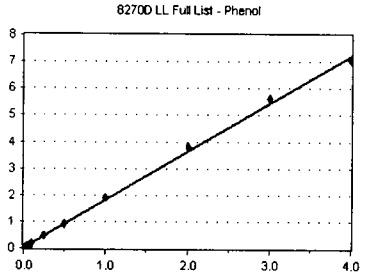
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

Phenol

Curve Fit: **AVERAGE RF**

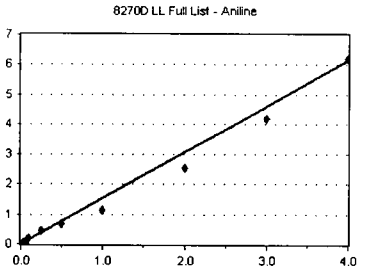


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1840	1.607	6.35
9E08056-CAL2	50	4928	1.682	6.35
9E08056-CAL3	100	10314	1.785	6.35
9E08056-CAL4	200	21991	1.828	6.35
9E08056-CAL5	500	56392	1.909	6.35
9E08056-CAL6	1000	107531	1.843	6.35
9E08056-CAL7	2000	203006	1.897	6.35
9E08056-CAL8	4000	375248	1.899	6.36
9E08056-CAL9	6000	546989	1.877	6.37
9E08056-CALA	8000	672921	1.758	6.38

AVE RF **1.809** RF RSD **5.59** AVE RT **6.36**

Aniline

Curve Fit: **AVERAGE RF**

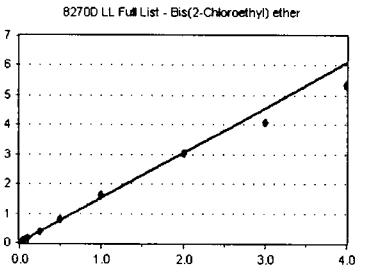


Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~2217~~	~~1.936~~	~~6.39~~
9E08056-CAL2	50	5080	1.734	6.38
9E08056-CAL3	100	10637	1.841	6.38
9E08056-CAL4	200	21214	1.764	6.38
9E08056-CAL5	500	52964	1.793	6.38
9E08056-CAL6	1000	81018	1.389	6.38
9E08056-CAL7	2000	119883	1.120	6.38
9E08056-CAL8	4000	249012	1.260	6.39
9E08056-CAL9	6000	406652	1.396	6.39
9E08056-CALA	8000	595081	1.555	6.39

AVE RF **1.539** RF RSD **16.90** AVE RT **6.38**

Bis(2-Chloroethyl) ether

Curve Fit: **AVERAGE RF**

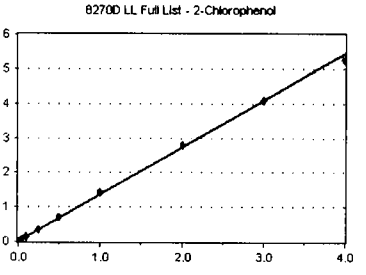


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1922	1.679	6.43
9E08056-CAL2	50	4474	1.527	6.43
9E08056-CAL3	100	8939	1.547	6.43
9E08056-CAL4	200	18736	1.558	6.43
9E08056-CAL5	500	45269	1.533	6.43
9E08056-CAL6	1000	91455	1.567	6.44
9E08056-CAL7	2000	172619	1.613	6.44
9E08056-CAL8	4000	297917	1.508	6.44
9E08056-CAL9	6000	395115	1.356	6.45
9E08056-CALA	8000	510517	1.334	6.45

AVE RF **1.522** RF RSD **6.93** AVE RT **6.44**

2-Chlorophenol

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1505	1.315	6.50
9E08056-CAL2	50	3771	1.287	6.50
9E08056-CAL3	100	7863	1.361	6.50
9E08056-CAL4	200	16450	1.368	6.50
9E08056-CAL5	500	42307	1.433	6.50
9E08056-CAL6	1000	81650	1.399	6.50
9E08056-CAL7	2000	152301	1.423	6.50
9E08056-CAL8	4000	275296	1.393	6.50
9E08056-CAL9	6000	397555	1.364	6.50
9E08056-CALA	8000	503387	1.315	6.50

AVE RF **1.366** RF RSD **3.54** AVE RT **6.50**

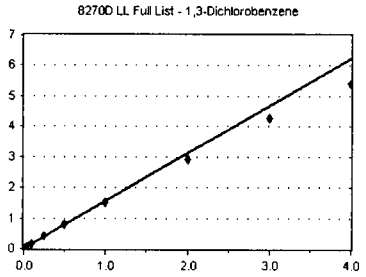
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

1,3-Dichlorobenzene

Curve Fit: **AVERAGE RF**

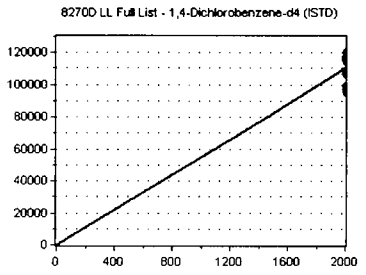


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	2020	1.764	6.64
9E08056-CAL2	50	4617	1.576	6.64
9E08056-CAL3	100	9757	1.689	6.64
9E08056-CAL4	200	19525	1.623	6.64
9E08056-CAL5	500	48498	1.642	6.64
9E08056-CAL6	1000	91509	1.568	6.64
9E08056-CAL7	2000	163909	1.532	6.64
9E08056-CAL8	4000	287179	1.453	6.65
9E08056-CAL9	6000	414202	1.421	6.65
9E08056-CALA	8000	517626	1.352	6.65

AVE RF **1.562** RF RSD **8.09** AVE RT **6.64**

1,4-Dichlorobenzene-d4 (ISTD)

Curve Fit: **AVERAGE RF**

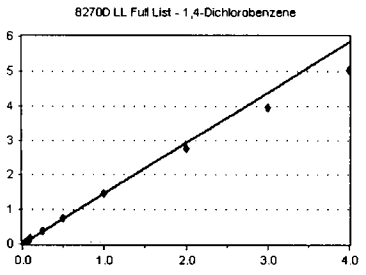


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	2000	114486	57.243	6.70
9E08056-CAL2	2000	117186	58.593	6.69
9E08056-CAL3	2000	115550	57.775	6.69
9E08056-CAL4	2000	120284	60.142	6.69
9E08056-CAL5	2000	118130	59.065	6.70
9E08056-CAL6	2000	116694	58.347	6.70
9E08056-CAL7	2000	107016	53.508	6.70
9E08056-CAL8	2000	98792	49.396	6.70
9E08056-CAL9	2000	97132	48.566	6.70
9E08056-CALA	2000	95689	47.844	6.70

AVE RF **55.048** RF RSD **8.69** AVE RT **6.70**

1,4-Dichlorobenzene

Curve Fit: **AVERAGE RF**

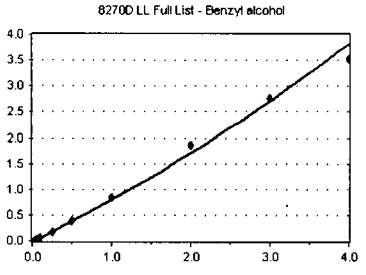


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1733	1.514	6.71
9E08056-CAL2	50	4532	1.547	6.71
9E08056-CAL3	100	8776	1.519	6.71
9E08056-CAL4	200	18751	1.559	6.71
9E08056-CAL5	500	45970	1.557	6.71
9E08056-CAL6	1000	87432	1.498	6.71
9E08056-CAL7	2000	154653	1.445	6.71
9E08056-CAL8	4000	272704	1.380	6.72
9E08056-CAL9	6000	384033	1.318	6.72
9E08056-CALA	8000	480345	1.255	6.72

AVE RF **1.459** RF RSD **7.34** AVE RT **6.71**

Benzyl alcohol

Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~394~~	~~0.344~~	~~6.83~~
9E08056-CAL2	50	1234	0.421	6.83
9E08056-CAL3	100	2898	0.502	6.83
9E08056-CAL4	200	6970	0.579	6.82
9E08056-CAL5	500	21295	0.721	6.83
9E08056-CAL6	1000	45805	0.785	6.83
9E08056-CAL7	2000	91265	0.853	6.83
9E08056-CAL8	4000	184713	0.935	6.84
9E08056-CAL9	6000	269444	0.925	6.84
9E08056-CALA	8000	337977	0.883	6.85

AVE RF **0.734** RF RSD **26.02** AVE RT **6.83**

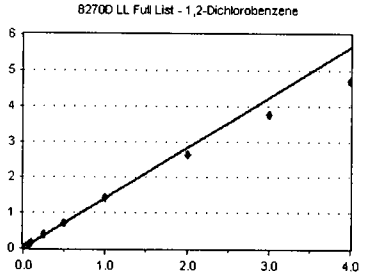
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

1,2-Dichlorobenzene

Curve Fit: **AVERAGE RF**

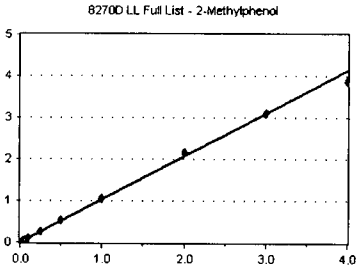


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1593	1.391	6.86
9E08056-CAL2	50	4338	1.481	6.86
9E08056-CAL3	100	8854	1.532	6.86
9E08056-CAL4	200	18424	1.532	6.86
9E08056-CAL5	500	45584	1.544	6.86
9E08056-CAL6	1000	84135	1.442	6.86
9E08056-CAL7	2000	151209	1.413	6.86
9E08056-CAL8	4000	259626	1.314	6.87
9E08056-CAL9	6000	366398	1.257	6.87
9E08056-CALA	8000	448803	1.173	6.87

AVE RF **1.408** RF RSD **8.95** AVE RT **6.86**

2-Methylphenol

Curve Fit: **AVERAGE RF**

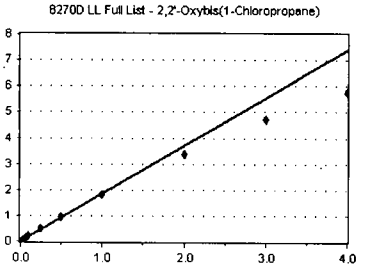


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1153	1.007	6.94
9E08056-CAL2	50	2679	0.914	6.93
9E08056-CAL3	100	6386	1.105	6.93
9E08056-CAL4	200	12165	1.011	6.93
9E08056-CAL5	500	33013	1.118	6.93
9E08056-CAL6	1000	61935	1.061	6.93
9E08056-CAL7	2000	113843	1.064	6.93
9E08056-CAL8	4000	213032	1.078	6.94
9E08056-CAL9	6000	301798	1.036	6.94
9E08056-CALA	8000	369236	0.965	6.94

AVE RF **1.036** RF RSD **6.11** AVE RT **6.93**

2,2'-Oxybis(1-Chloropropane)

Curve Fit: **AVERAGE RF**

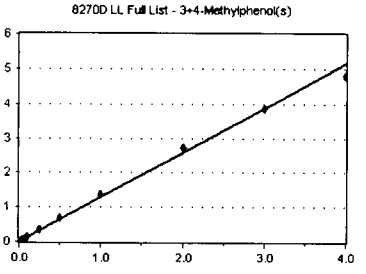


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	2282	1.993	6.95
9E08056-CAL2	50	5842	1.994	6.95
9E08056-CAL3	100	12268	2.123	6.95
9E08056-CAL4	200	24389	2.028	6.95
9E08056-CAL5	500	59332	2.009	6.95
9E08056-CAL6	1000	109743	1.881	6.95
9E08056-CAL7	2000	195754	1.829	6.95
9E08056-CAL8	4000	331551	1.678	6.96
9E08056-CAL9	6000	456599	1.567	6.96
9E08056-CALA	8000	549922	1.437	6.96

AVE RF **1.854** RF RSD **12.12** AVE RT **6.95**

3+4-Methylphenol(s)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1360	1.188	7.08
9E08056-CAL2	50	3346	1.142	7.08
9E08056-CAL3	100	7451	1.290	7.08
9E08056-CAL4	200	15823	1.315	7.08
9E08056-CAL5	500	41496	1.405	7.08
9E08056-CAL6	1000	78741	1.350	7.08
9E08056-CAL7	2000	144919	1.354	7.08
9E08056-CAL8	4000	268146	1.357	7.09
9E08056-CAL9	6000	373641	1.282	7.10
9E08056-CALA	8000	458606	1.198	7.10

AVE RF **1.288** RF RSD **6.69** AVE RT **7.08**

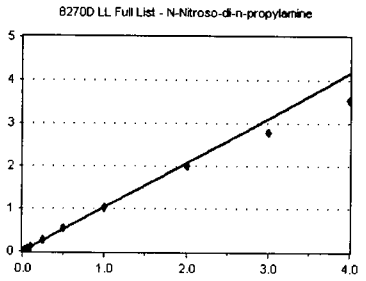
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

N-Nitroso-di-n-propylamine

Curve Fit: **AVERAGE RF**

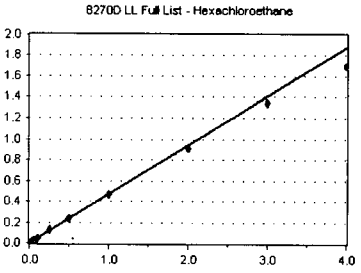


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1232	1.076	7.08
9E08056-CAL2	50	3144	1.073	7.08
9E08056-CAL3	100	6313	1.093	7.08
9E08056-CAL4	200	13250	1.102	7.08
9E08056-CAL5	500	33065	1.120	7.08
9E08056-CAL6	1000	62234	1.067	7.08
9E08056-CAL7	2000	111051	1.038	7.08
9E08056-CAL8	4000	197390	0.999	7.09
9E08056-CAL9	6000	270883	0.930	7.10
9E08056-CALA	8000	339637	0.887	7.11

AVE RF **1.038** RF RSD **7.40** AVE RT **7.09**

Hexachloroethane

Curve Fit: **AVERAGE RF**

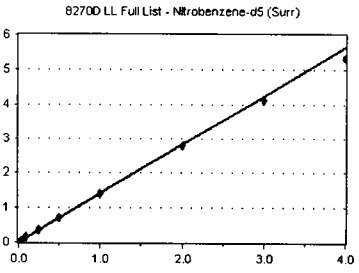


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	565	0.494	7.19
9E08056-CAL2	50	1408	0.481	7.19
9E08056-CAL3	100	2779	0.481	7.19
9E08056-CAL4	200	5764	0.479	7.19
9E08056-CAL5	500	14906	0.505	7.19
9E08056-CAL6	1000	27533	0.472	7.19
9E08056-CAL7	2000	49920	0.466	7.19
9E08056-CAL8	4000	89376	0.452	7.20
9E08056-CAL9	6000	130625	0.448	7.20
9E08056-CALA	8000	161926	0.423	7.20

AVE RF **0.470** RF RSD **5.05** AVE RT **7.20**

Nitrobenzene-d5 (Surr)

Curve Fit: **AVERAGE RF**

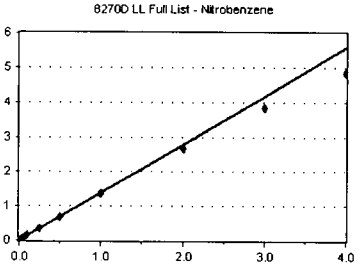


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1778	1.553	7.23
9E08056-CAL2	50	4032	1.376	7.23
9E08056-CAL3	100	8175	1.415	7.23
9E08056-CAL4	200	17627	1.465	7.23
9E08056-CAL5	500	42745	1.447	7.23
9E08056-CAL6	1000	81436	1.396	7.23
9E08056-CAL7	2000	149113	1.393	7.23
9E08056-CAL8	4000	275454	1.394	7.24
9E08056-CAL9	6000	400998	1.376	7.24
9E08056-CALA	8000	507577	1.326	7.25

AVE RF **1.414** RF RSD **4.40** AVE RT **7.23**

Nitrobenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1693	1.479	7.25
9E08056-CAL2	50	4129	1.409	7.25
9E08056-CAL3	100	8591	1.487	7.25
9E08056-CAL4	200	18273	1.519	7.25
9E08056-CAL5	500	43153	1.461	7.25
9E08056-CAL6	1000	81129	1.390	7.25
9E08056-CAL7	2000	144892	1.354	7.25
9E08056-CAL8	4000	262312	1.328	7.26
9E08056-CAL9	6000	371635	1.275	7.26
9E08056-CALA	8000	462505	1.208	7.27

AVE RF **1.391** RF RSD **7.22** AVE RT **7.25**

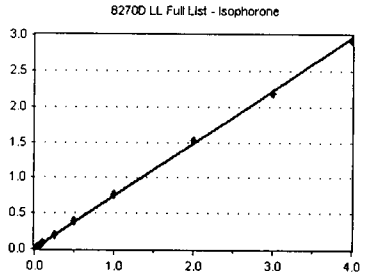
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

Isophorone

Curve Fit: **AVERAGE RF**

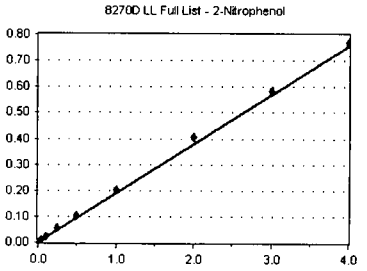


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	3108	0.673	7.48
9E08056-CAL2	50	8299	0.711	7.48
9E08056-CAL3	100	16536	0.716	7.48
9E08056-CAL4	200	35486	0.756	7.48
9E08056-CAL5	500	89488	0.796	7.48
9E08056-CAL6	1000	169224	0.778	7.48
9E08056-CAL7	2000	306230	0.757	7.48
9E08056-CAL8	4000	573921	0.759	7.49
9E08056-CAL9	6000	838709	0.728	7.50
9E08056-CALA	8000	1078748	0.732	7.51

AVE RF **0.741** RF RSD **4.84** AVE RT **7.49**

2-Nitrophenol

Curve Fit: **AVERAGE RF**

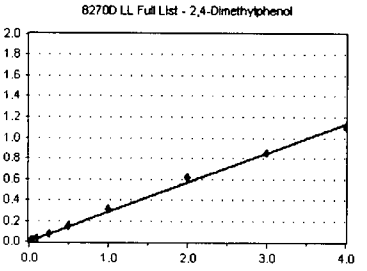


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	652	0.141	7.56
9E08056-CAL2	50	1851	0.159	7.56
9E08056-CAL3	100	3972	0.172	7.56
9E08056-CAL4	200	9275	0.198	7.56
9E08056-CAL5	500	25491	0.227	7.56
9E08056-CAL6	1000	44264	0.203	7.56
9E08056-CAL7	2000	81543	0.201	7.56
9E08056-CAL8	4000	153577	0.203	7.57
9E08056-CAL9	6000	224039	0.195	7.57
9E08056-CALA	8000	283482	0.192	7.57

AVE RF **0.189** RF RSD **13.19** AVE RT **7.57**

2,4-Dimethylphenol

Curve Fit: **AVERAGE RF**

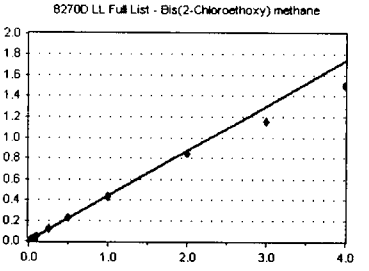


Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~1035~~	~~0.224~~	~~7.60~~
9E08056-CAL2	50	2552	0.219	7.60
9E08056-CAL3	100	6013	0.260	7.60
9E08056-CAL4	200	13165	0.280	7.60
9E08056-CAL5	500	33821	0.301	7.60
9E08056-CAL6	1000	67530	0.310	7.60
9E08056-CAL7	2000	125958	0.311	7.60
9E08056-CAL8	4000	231859	0.307	7.61
9E08056-CAL9	6000	328729	0.286	7.62
9E08056-CALA	8000	412108	0.280	7.62

AVE RF **0.284** RF RSD **10.49** AVE RT **7.60**

Bis(2-Chloroethoxy) methane

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1890	0.409	7.69
9E08056-CAL2	50	5405	0.463	7.68
9E08056-CAL3	100	11079	0.480	7.69
9E08056-CAL4	200	21622	0.460	7.68
9E08056-CAL5	500	53158	0.473	7.69
9E08056-CAL6	1000	98157	0.451	7.69
9E08056-CAL7	2000	173377	0.428	7.69
9E08056-CAL8	4000	317226	0.419	7.70
9E08056-CAL9	6000	444685	0.386	7.70
9E08056-CALA	8000	553975	0.376	7.70

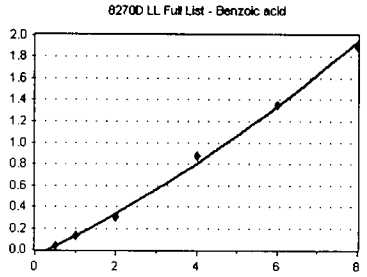
AVE RF **0.435** RF RSD **8.40** AVE RT **7.69**

Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

Benzoic acid

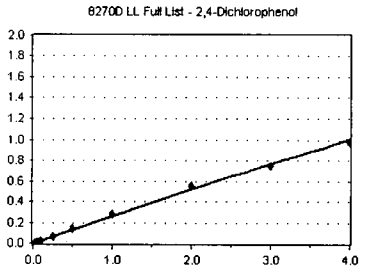


Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**

Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~40~~	~~0~~	~~0.000~~	~~0.00~~
~~9E08056-CAL2~~	~~100~~	~~157~~	~~6.729~~	~~7.68~~
~~9E08056-CAL3~~	~~200~~	~~570~~	~~1.234~~	~~7.65~~
~~9E08056-CAL4~~	~~400~~	~~1808~~	~~1.925~~	~~7.65~~
9E08056-CAL5	1000	12609	5.611	7.67
9E08056-CAL6	2000	57591	0.132	7.70
9E08056-CAL7	4000	120684	0.149	7.72
9E08056-CAL8	8000	329662	0.218	7.78
9E08056-CAL9	12000	520098	0.226	7.80
9E08056-CALA	16000	699436	0.237	7.85

AVE RF **0.170** RF RSD **41.46** AVE RT **7.76**

2,4-Dichlorophenol

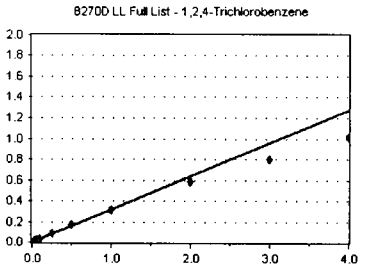


Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**

Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~685~~	~~0.148~~	~~7.81~~
9E08056-CAL2	50	1767	0.151	7.80
9E08056-CAL3	100	4504	0.195	7.80
9E08056-CAL4	200	10432	0.222	7.80
9E08056-CAL5	500	28435	0.253	7.80
9E08056-CAL6	1000	59077	0.272	7.80
9E08056-CAL7	2000	112156	0.277	7.81
9E08056-CAL8	4000	210069	0.278	7.82
9E08056-CAL9	6000	285851	0.248	7.82
9E08056-CALA	8000	358983	0.244	7.83

AVE RF **0.238** RF RSD **17.71** AVE RT **7.81**

1,2,4-Trichlorobenzene

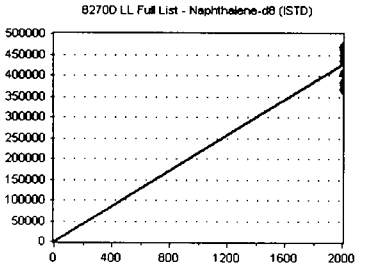


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1529	0.331	7.89
9E08056-CAL2	50	3994	0.342	7.89
9E08056-CAL3	100	8177	0.354	7.89
9E08056-CAL4	200	16423	0.350	7.89
9E08056-CAL5	500	39463	0.351	7.89
9E08056-CAL6	1000	73101	0.336	7.89
9E08056-CAL7	2000	127703	0.315	7.89
9E08056-CAL8	4000	222596	0.294	7.90
9E08056-CAL9	6000	308537	0.268	7.90
9E08056-CALA	8000	375837	0.255	7.90

AVE RF **0.320** RF RSD **11.19** AVE RT **7.89**

Naphthalene-d8 (ISTD)



Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	2000	461650	230.825	7.95
9E08056-CAL2	2000	466642	233.321	7.94
9E08056-CAL3	2000	461862	230.931	7.94
9E08056-CAL4	2000	469577	234.788	7.94
9E08056-CAL5	2000	449407	224.703	7.95
9E08056-CAL6	2000	435111	217.555	7.95
9E08056-CAL7	2000	404790	202.395	7.95
9E08056-CAL8	2000	378186	189.093	7.95
9E08056-CAL9	2000	383773	191.887	7.95
9E08056-CALA	2000	368532	184.266	7.95

AVE RF **213.977** RF RSD **9.39** AVE RT **7.95**

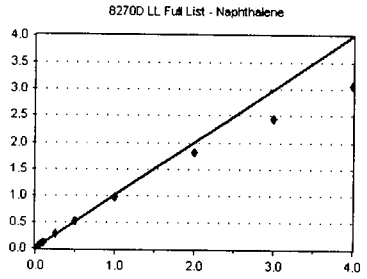
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

Naphthalene

Curve Fit: **AVERAGE RF**

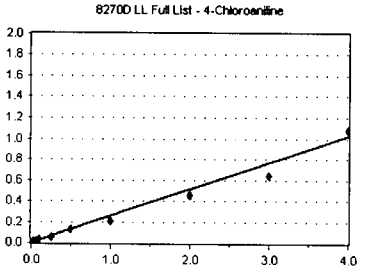


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	4931	1.068	7.97
9E08056-CAL2	50	12776	1.095	7.96
9E08056-CAL3	100	25557	1.107	7.96
9E08056-CAL4	200	51599	1.099	7.96
9E08056-CAL5	500	121753	1.084	7.96
9E08056-CAL6	1000	228023	1.048	7.97
9E08056-CAL7	2000	397624	0.982	7.97
9E08056-CAL8	4000	687088	0.908	7.98
9E08056-CAL9	6000	939298	0.816	7.98
9E08056-CALA	8000	1132611	0.768	7.98

AVE RF **0.998** RF RSD **12.52** AVE RT **7.97**

4-Chloroaniline

Curve Fit: **AVERAGE RF**

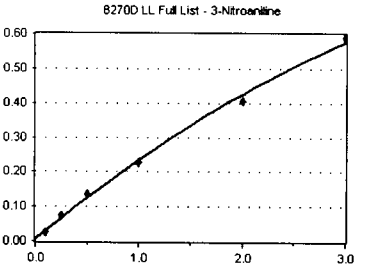


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1367	0.296	8.01
9E08056-CAL2	50	3426	0.294	8.01
9E08056-CAL3	100	6574	0.285	8.01
9E08056-CAL4	200	12811	0.273	8.01
9E08056-CAL5	500	25718	0.229	8.02
9E08056-CAL6	1000	57359	0.264	8.02
9E08056-CAL7	2000	84586	0.209	8.03
9E08056-CAL8	4000	170567	0.226	8.05
9E08056-CAL9	6000	243860	0.212	8.05
9E08056-CALA	8000	398347	0.270	8.04

AVE RF **0.256** RF RSD **13.18** AVE RT **8.03**

3-Nitroaniline

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

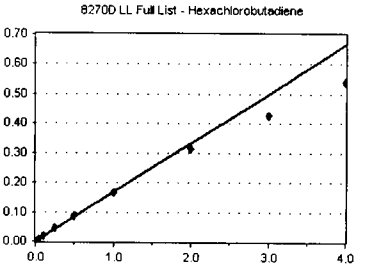


Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~279~~	~~0.121~~	~~9.67~~
~~9E08056-CAL2~~	~~50~~	~~912~~	~~0.155~~	~~9.66~~
~~9E08056-CAL3~~	~~100~~	~~2267~~	~~0.190~~	~~9.65~~
9E08056-CAL4	200	6297	0.257	9.66
9E08056-CAL5	500	17372	0.298	9.66
9E08056-CAL6	1000	30789	0.274	9.67
9E08056-CAL7	2000	46893	0.225	9.67
9E08056-CAL8	4000	82018	0.202	9.68
9E08056-CAL9	6000	118898	0.197	0.00
~~9E08056-CALA~~	~~8000~~	~~173485~~	~~0.223~~	~~0.00~~

AVE RF **0.242** RF RSD **16.76** AVE RT **8.05**

Hexachlorobutadiene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	856	0.185	8.09
9E08056-CAL2	50	2007	0.172	8.09
9E08056-CAL3	100	4053	0.176	8.09
9E08056-CAL4	200	8220	0.175	8.09
9E08056-CAL5	500	20186	0.180	8.09
9E08056-CAL6	1000	37131	0.171	8.10
9E08056-CAL7	2000	67587	0.167	8.10
9E08056-CAL8	4000	118434	0.157	8.10
9E08056-CAL9	6000	164363	0.143	8.10
9E08056-CALA	8000	199760	0.136	8.10

AVE RF **0.166** RF RSD **9.74** AVE RT **8.10**

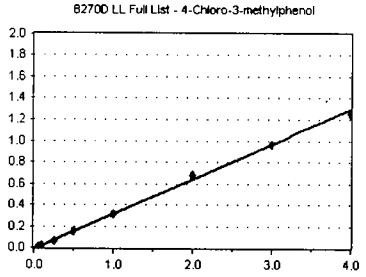
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

4-Chloro-3-methylphenol

Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**

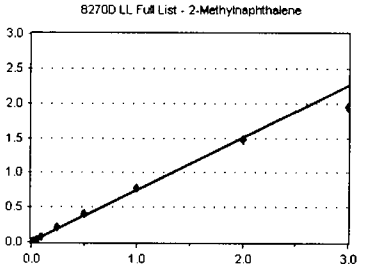


Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~518~~	~~0.112~~	~~8.50~~
~~9E08056-CAL2~~	~~50~~	~~1435~~	~~0.123~~	~~8.50~~
9E08056-CAL3	100	2916	0.126	8.50
9E08056-CAL4	200	9012	0.192	8.49
9E08056-CAL5	500	29879	0.266	8.49
9E08056-CAL6	1000	67094	0.308	8.49
9E08056-CAL7	2000	128769	0.318	8.50
9E08056-CAL8	4000	257664	0.341	8.51
9E08056-CAL9	6000	368355	0.320	8.51
9E08056-CALA	8000	462055	0.313	8.51

AVE RF **0.273** RF RSD **27.63** AVE RT **8.50**

2-Methylnaphthalene

Curve Fit: **AVERAGE RF**

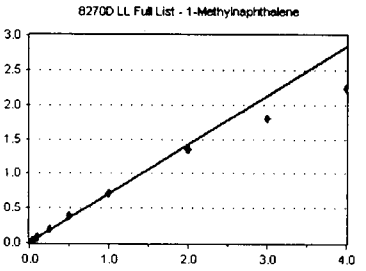


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	3206	0.694	8.66
9E08056-CAL2	50	8403	0.720	8.66
9E08056-CAL3	100	17636	0.764	8.66
9E08056-CAL4	200	36961	0.787	8.66
9E08056-CAL5	500	94207	0.839	8.66
9E08056-CAL6	1000	177224	0.815	8.66
9E08056-CAL7	2000	312815	0.773	8.66
9E08056-CAL8	4000	555825	0.735	8.67
9E08056-CAL9	6000	744774	0.647	8.67
~~9E08056-CALA~~	~~8000~~	~~907754~~	~~0.616~~	~~8.67~~

AVE RF **0.753** RF RSD **7.98** AVE RT **8.66**

1-Methylnaphthalene

Curve Fit: **AVERAGE RF**

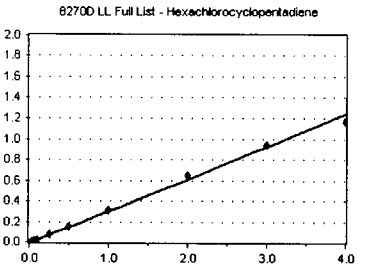


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	3306	0.716	8.76
9E08056-CAL2	50	8435	0.723	8.76
9E08056-CAL3	100	17565	0.761	8.76
9E08056-CAL4	200	36346	0.774	8.76
9E08056-CAL5	500	90038	0.801	8.76
9E08056-CAL6	1000	166590	0.766	8.76
9E08056-CAL7	2000	290157	0.717	8.76
9E08056-CAL8	4000	506152	0.669	8.77
9E08056-CAL9	6000	691750	0.601	8.77
9E08056-CALA	8000	826000	0.560	8.77

AVE RF **0.709** RF RSD **10.96** AVE RT **8.76**

Hexachlorocyclopentadiene

Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~56~~	~~2.429~~	~~8.83~~
9E08056-CAL2	50	592	0.101	8.83
9E08056-CAL3	100	1795	0.150	8.83
9E08056-CAL4	200	5324	0.217	8.83
9E08056-CAL5	500	16399	0.281	8.83
9E08056-CAL6	1000	34750	0.309	8.83
9E08056-CAL7	2000	65488	0.315	8.83
9E08056-CAL8	4000	130554	0.322	8.83
9E08056-CAL9	6000	188663	0.313	8.83
9E08056-CALA	8000	228123	0.293	8.83

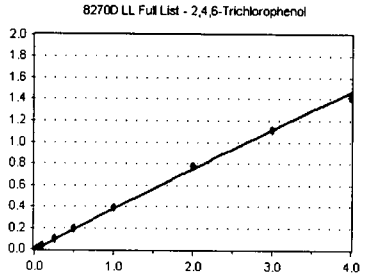
AVE RF **0.256** RF RSD **31.74** AVE RT **8.83**

Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

2,4,6-Trichlorophenol

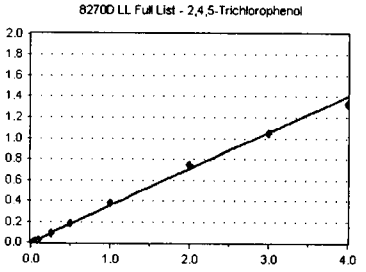


Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**

Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~344~~	~~0.149~~	~~8.95~~
9E08056-CAL2	50	987	0.168	8.94
9E08056-CAL3	100	2595	0.217	8.94
9E08056-CAL4	200	7125	0.291	8.94
9E08056-CAL5	500	21591	0.370	8.94
9E08056-CAL6	1000	44351	0.395	8.94
9E08056-CAL7	2000	81849	0.393	8.94
9E08056-CAL8	4000	157742	0.389	8.95
9E08056-CAL9	6000	223754	0.371	8.95
9E08056-CALA	8000	275262	0.354	8.95

AVE RF **0.327** RF RSD **25.56** AVE RT **8.95**

2,4,5-Trichlorophenol

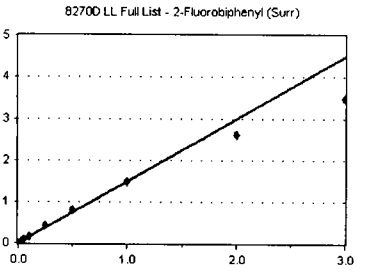


Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**

Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~415~~	~~0.180~~	~~8.99~~
9E08056-CAL2	50	1083	0.184	8.99
9E08056-CAL3	100	2692	0.225	8.99
9E08056-CAL4	200	6364	0.260	8.99
9E08056-CAL5	500	19810	0.340	8.98
9E08056-CAL6	1000	42377	0.377	8.98
9E08056-CAL7	2000	78891	0.379	8.98
9E08056-CAL8	4000	152327	0.375	8.99
9E08056-CAL9	6000	209851	0.348	8.99
9E08056-CALA	8000	259729	0.334	9.00

AVE RF **0.314** RF RSD **23.08** AVE RT **8.99**

2-Fluorobiphenyl (Surr)

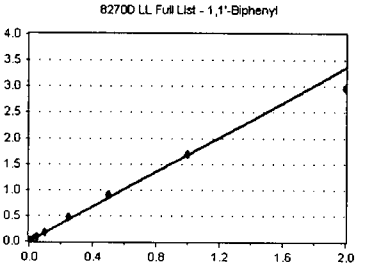


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	3096	1.343	9.02
9E08056-CAL2	50	8836	1.502	9.02
9E08056-CAL3	100	19505	1.633	9.02
9E08056-CAL4	200	41740	1.702	9.02
9E08056-CAL5	500	100779	1.729	9.02
9E08056-CAL6	1000	182200	1.621	9.02
9E08056-CAL7	2000	311047	1.495	9.02
9E08056-CAL8	4000	532909	1.313	9.03
9E08056-CAL9	6000	698194	1.158	9.03
~~9E08056-CALA~~	~~8000~~	~~835510~~	~~1.073~~	~~9.03~~

AVE RF **1.500** RF RSD **12.96** AVE RT **9.02**

1,1'-Biphenyl



Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	3301	1.432	9.13
9E08056-CAL2	50	9087	1.545	9.13
9E08056-CAL3	100	20138	1.686	9.13
9E08056-CAL4	200	44415	1.812	9.13
9E08056-CAL5	500	111947	1.920	9.13
9E08056-CAL6	1000	204461	1.819	9.13
9E08056-CAL7	2000	349335	1.679	9.13
9E08056-CAL8	4000	599715	1.478	9.14
~~9E08056-CAL9~~	~~6000~~	~~789288~~	~~1.309~~	~~9.14~~
~~9E08056-CALA~~	~~8000~~	~~939145~~	~~1.207~~	~~9.14~~

AVE RF **1.671** RF RSD **10.48** AVE RT **9.13**

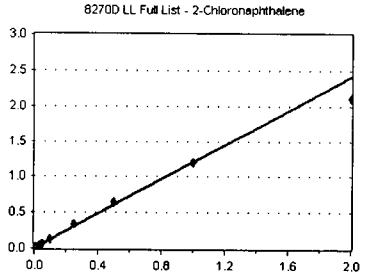
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

2-Chloronaphthalene

Curve Fit: **AVERAGE RF**

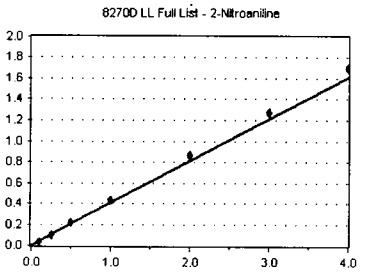


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	2457	1.066	9.15
9E08056-CAL2	50	6592	1.120	9.15
9E08056-CAL3	100	14570	1.220	9.15
9E08056-CAL4	200	32196	1.313	9.15
9E08056-CAL5	500	80038	1.373	9.15
9E08056-CAL6	1000	145871	1.298	9.15
9E08056-CAL7	2000	248276	1.193	9.15
9E08056-CAL8	4000	426263	1.050	9.16
~~9E08056-CAL9~~	~~6000~~	~~576153~~	~~0.956~~	~~9.16~~
~~9E08056-CALA~~	~~8000~~	~~683312~~	~~0.878~~	~~9.16~~

AVE RF **1.204** RF RSD **9.89** AVE RT **9.15**

2-Nitroaniline

Curve Fit: **AVERAGE RF**

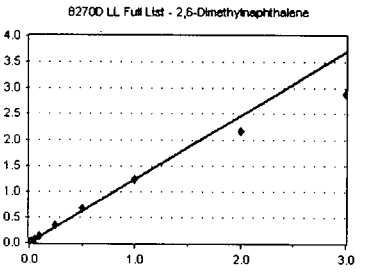


Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~198~~	~~8.587~~	~~9.25~~
~~9E08056-CAL2~~	~~50~~	~~759~~	~~0.129~~	~~9.25~~
~~9E08056-CAL3~~	~~100~~	~~1934~~	~~0.162~~	~~9.25~~
9E08056-CAL4	200	7039	0.287	9.25
9E08056-CAL5	500	22855	0.392	9.24
9E08056-CAL6	1000	48960	0.436	9.25
9E08056-CAL7	2000	89274	0.429	9.25
9E08056-CAL8	4000	175844	0.433	9.26
9E08056-CAL9	6000	257132	0.427	9.26
9E08056-CALA	8000	330555	0.425	9.27

AVE RF **0.404** RF RSD **13.26** AVE RT **9.25**

2,6-Dimethylnaphthalene

Curve Fit: **AVERAGE RF**

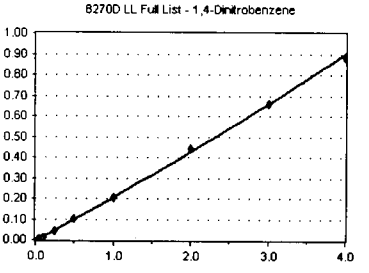


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	2570	1.115	9.29
9E08056-CAL2	50	7150	1.215	9.29
9E08056-CAL3	100	15688	1.314	9.29
9E08056-CAL4	200	34391	1.403	9.29
9E08056-CAL5	500	82179	1.410	9.29
9E08056-CAL6	1000	150715	1.341	9.29
9E08056-CAL7	2000	257201	1.236	9.29
9E08056-CAL8	4000	440208	1.085	9.30
9E08056-CAL9	6000	582020	0.966	9.30
~~9E08056-CALA~~	~~8000~~	~~693134~~	~~0.890~~	~~9.30~~

AVE RF **1.231** RF RSD **12.38** AVE RT **9.29**

1,4-Dinitrobenzene

Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~116~~	~~5.031~~	~~9.38~~
~~9E08056-CAL2~~	~~50~~	~~303~~	~~5.160~~	~~9.38~~
9E08056-CAL3	100	955	7.996	9.37
9E08056-CAL4	200	3037	0.124	9.37
9E08056-CAL5	500	10337	0.177	9.37
9E08056-CAL6	1000	23019	0.205	9.38
9E08056-CAL7	2000	42957	0.206	9.38
9E08056-CAL8	4000	89593	0.221	9.39
9E08056-CAL9	6000	132868	0.220	9.39
9E08056-CALA	8000	171694	0.221	9.40

AVE RF **0.182** RF RSD **28.96** AVE RT **9.38**

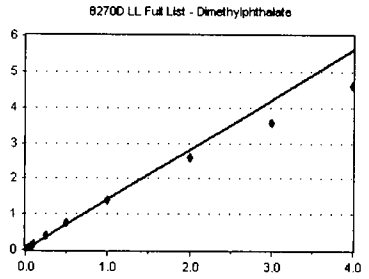
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

Dimethylphthalate

Curve Fit: **AVERAGE RF**

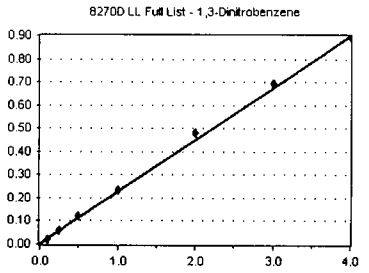


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	3008	1.305	9.42
9E08056-CAL2	50	8669	1.473	9.42
9E08056-CAL3	100	18418	1.542	9.42
9E08056-CAL4	200	38348	1.564	9.42
9E08056-CAL5	500	91807	1.575	9.42
9E08056-CAL6	1000	167550	1.490	9.43
9E08056-CAL7	2000	291628	1.402	9.43
9E08056-CAL8	4000	526270	1.297	9.44
9E08056-CAL9	6000	719060	1.193	9.45
9E08056-CALA	8000	895747	1.151	9.46

AVE RF **1.399** RF RSD **11.07** AVE RT **9.43**

1,3-Dinitrobenzene

Curve Fit: **AVERAGE RF**

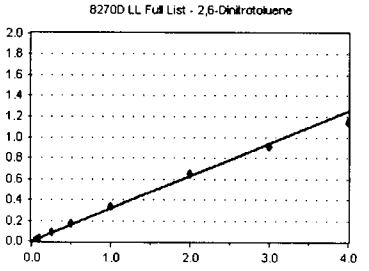


Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~110~~	~~0.048~~	~~9.46~~
~~9E08056-CAL2~~	~~50~~	~~617~~	~~0.105~~	~~9.45~~
~~9E08056-CAL3~~	~~100~~	~~1664~~	~~0.139~~	~~9.45~~
9E08056-CAL4	200	4229	0.172	9.45
9E08056-CAL5	500	13273	0.228	9.45
9E08056-CAL6	1000	27406	0.244	9.46
9E08056-CAL7	2000	48772	0.234	9.46
9E08056-CAL8	4000	97308	0.240	9.47
9E08056-CAL9	6000	139435	0.231	9.48
9E08056-CALA	8000	173847	0.223	9.49

AVE RF **0.225** RF RSD **10.70** AVE RT **9.47**

2,6-Dinitrotoluene

Curve Fit: **AVERAGE RF**

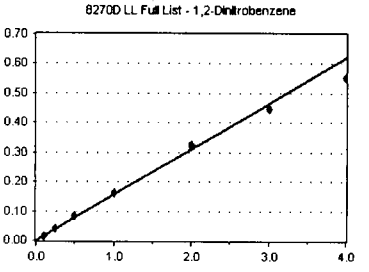


Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~309~~	~~0.134~~	~~9.48~~
~~9E08056-CAL2~~	~~50~~	~~1045~~	~~0.178~~	~~9.48~~
9E08056-CAL3	100	2837	0.238	9.48
9E08056-CAL4	200	7570	0.309	9.48
9E08056-CAL5	500	20865	0.358	9.48
9E08056-CAL6	1000	39367	0.350	9.49
9E08056-CAL7	2000	70090	0.337	9.49
9E08056-CAL8	4000	131486	0.324	9.50
9E08056-CAL9	6000	182024	0.302	9.51
9E08056-CALA	8000	222349	0.286	9.51

AVE RF **0.313** RF RSD **12.48** AVE RT **9.49**

1,2-Dinitrobenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~108~~	~~4.684~~	~~9.54~~
~~9E08056-CAL2~~	~~50~~	~~519~~	~~0.088~~	~~9.54~~
~~9E08056-CAL3~~	~~100~~	~~1261~~	~~0.106~~	~~9.54~~
9E08056-CAL4	200	3477	0.142	9.54
9E08056-CAL5	500	9375	0.161	9.54
9E08056-CAL6	1000	19142	0.170	9.55
9E08056-CAL7	2000	34100	0.164	9.55
9E08056-CAL8	4000	65816	0.162	9.56
9E08056-CAL9	6000	89987	0.149	9.57
9E08056-CALA	8000	107372	0.138	9.58

AVE RF **0.155** RF RSD **7.87** AVE RT **9.56**

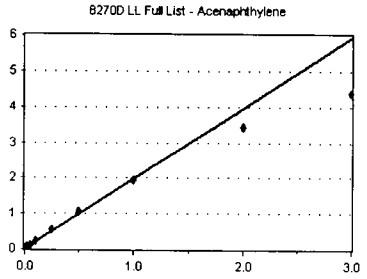
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

Acenaphthylene

Curve Fit: **AVERAGE RF**

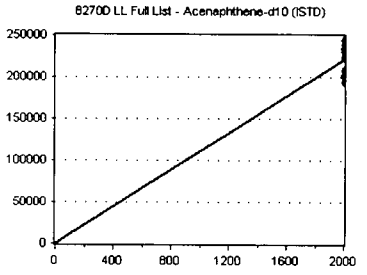


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	4296	1.863	9.57
9E08056-CAL2	50	11830	2.011	9.57
9E08056-CAL3	100	26148	2.189	9.57
9E08056-CAL4	200	54704	2.231	9.57
9E08056-CAL5	500	129518	2.222	9.57
9E08056-CAL6	1000	242796	2.160	9.57
9E08056-CAL7	2000	407881	1.961	9.57
9E08056-CAL8	4000	694303	1.711	9.58
9E08056-CAL9	6000	879320	1.459	9.59
~~9E08056-CALA~~	~~8000~~	~~984732~~	~~1.265~~	~~9.59~~

AVE RF **1.978** RF RSD **13.33** AVE RT **9.57**

Acenaphthene-d10 (ISTD)

Curve Fit: **AVERAGE RF**

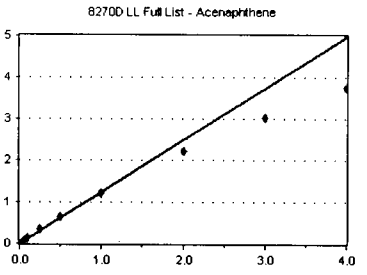


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	2000	230578	115.289	9.71
9E08056-CAL2	2000	235336	117.668	9.71
9E08056-CAL3	2000	238866	119.433	9.71
9E08056-CAL4	2000	245169	122.585	9.71
9E08056-CAL5	2000	233204	116.602	9.71
9E08056-CAL6	2000	224844	112.422	9.72
9E08056-CAL7	2000	208028	104.014	9.72
9E08056-CAL8	2000	202901	101.450	9.72
9E08056-CAL9	2000	200935	100.468	9.72
9E08056-CALA	2000	194593	97.296	9.72

AVE RF **110.723** RF RSD **8.19** AVE RT **9.72**

Acenaphthene

Curve Fit: **AVERAGE RF**

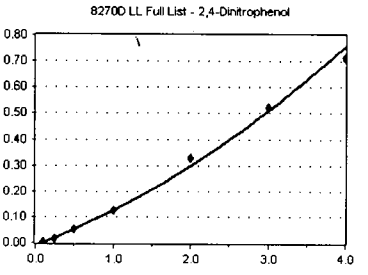


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	2971	1.289	9.75
9E08056-CAL2	50	8352	1.420	9.75
9E08056-CAL3	100	16799	1.407	9.75
9E08056-CAL4	200	34142	1.393	9.75
9E08056-CAL5	500	79978	1.372	9.75
9E08056-CAL6	1000	146889	1.307	9.75
9E08056-CAL7	2000	254388	1.223	9.75
9E08056-CAL8	4000	449192	1.107	9.76
9E08056-CAL9	6000	608926	1.010	9.76
9E08056-CALA	8000	730149	0.938	9.76

AVE RF **1.246** RF RSD **13.87** AVE RT **9.75**

2,4-Dinitrophenol

Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~0~~	~~0.000~~	~~0.00~~
~~9E08056-CAL2~~	~~50~~	~~0~~	~~0.000~~	~~0.00~~
~~9E08056-CAL3~~	~~100~~	~~124~~	~~1.038~~	~~9.77~~
9E08056-CAL4	200	725	2.957	9.77
9E08056-CAL5	500	3835	6.578	9.76
9E08056-CAL6	1000	12133	0.108	9.77
9E08056-CAL7	2000	25811	0.124	9.77
9E08056-CAL8	4000	66685	0.164	9.78
9E08056-CAL9	6000	105311	0.175	9.78
9E08056-CALA	8000	138854	0.178	9.79

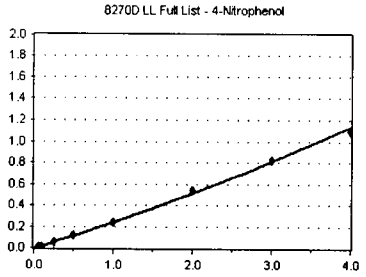
AVE RF **0.121** RF RSD **47.41** AVE RT **9.77**

Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

4-Nitrophenol

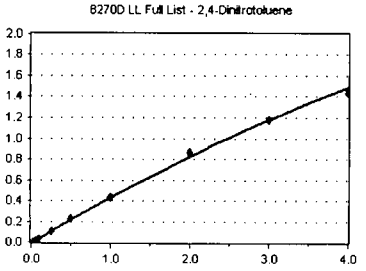


Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**

Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~173~~	~~7.503~~	~~9.85~~
~~9E08056-CAL2~~	~~50~~	~~405~~	~~6.884~~	~~9.84~~
9E08056-CAL3	100	1299	0.109	9.84
9E08056-CAL4	200	3537	0.144	9.84
9E08056-CAL5	500	11649	0.200	9.83
9E08056-CAL6	1000	26763	0.238	9.83
9E08056-CAL7	2000	48681	0.234	9.84
9E08056-CAL8	4000	110480	0.272	9.85
9E08056-CAL9	6000	165172	0.274	9.85
9E08056-CALA	8000	212171	0.273	9.86

AVE RF **0.218** RF RSD **28.71** AVE RT **9.84**

2,4-Dinitrotoluene

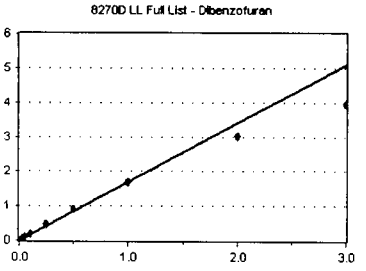


Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**

Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~414~~	~~0.180~~	~~9.90~~
9E08056-CAL2	50	1084	0.184	9.89
9E08056-CAL3	100	3069	0.257	9.89
9E08056-CAL4	200	8883	0.362	9.90
9E08056-CAL5	500	25345	0.435	9.90
9E08056-CAL6	1000	50363	0.448	9.90
9E08056-CAL7	2000	90563	0.435	9.90
9E08056-CAL8	4000	174398	0.430	9.91
9E08056-CAL9	6000	237610	0.394	9.92
9E08056-CALA	8000	279820	0.359	9.93

AVE RF **0.367** RF RSD **24.75** AVE RT **9.90**

Dibenzofuran

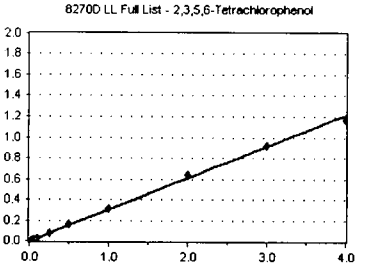


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	3412	1.480	9.92
9E08056-CAL2	50	10231	1.739	9.92
9E08056-CAL3	100	21911	1.835	9.92
9E08056-CAL4	200	47089	1.921	9.92
9E08056-CAL5	500	113330	1.944	9.92
9E08056-CAL6	1000	206307	1.835	9.92
9E08056-CAL7	2000	351544	1.690	9.92
9E08056-CAL8	4000	609207	1.501	9.93
9E08056-CAL9	6000	796168	1.321	9.93
~~9E08056-CALA~~	~~8000~~	~~933154~~	~~1.199~~	~~9.94~~

AVE RF **1.696** RF RSD **12.81** AVE RT **9.92**

2,3,5,6-Tetrachlorophenol



Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**

Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~213~~	~~9.238~~	~~10.01~~
9E08056-CAL2	50	720	0.122	10.01
9E08056-CAL3	100	1956	0.164	10.00
9E08056-CAL4	200	5912	0.241	10.00
9E08056-CAL5	500	17017	0.292	10.00
9E08056-CAL6	1000	35452	0.315	10.01
9E08056-CAL7	2000	64681	0.311	10.01
9E08056-CAL8	4000	128540	0.317	10.01
9E08056-CAL9	6000	183781	0.305	10.02
9E08056-CALA	8000	227276	0.292	10.02

AVE RF **0.262** RF RSD **27.46** AVE RT **10.01**

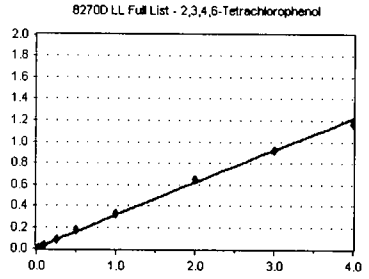
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

2,3,4,6-Tetrachlorophenol

Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**

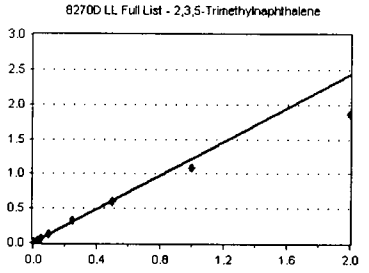


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	352	0.153	10.05
9E08056-CAL2	50	1085	0.184	10.05
9E08056-CAL3	100	3032	0.254	10.05
9E08056-CAL4	200	7180	0.293	10.05
9E08056-CAL5	500	19079	0.327	10.05
9E08056-CAL6	1000	38150	0.339	10.05
9E08056-CAL7	2000	68233	0.328	10.05
9E08056-CAL8	4000	131983	0.325	10.06
9E08056-CAL9	6000	183789	0.305	10.06
9E08056-CALA	8000	226177	0.291	10.07

AVE RF **0.280** RF RSD **22.92** AVE RT **10.05**

2,3,5-Trimethylnaphthalene

Curve Fit: **AVERAGE RF**

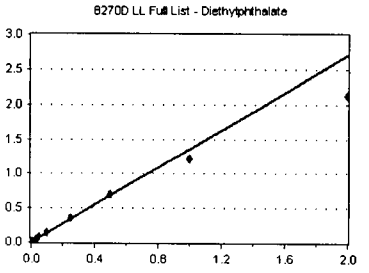


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	2925	1.269	10.13
9E08056-CAL2	50	7475	1.271	10.13
9E08056-CAL3	100	15984	1.338	10.13
9E08056-CAL4	200	31957	1.303	10.13
9E08056-CAL5	500	76253	1.308	10.13
9E08056-CAL6	1000	135724	1.207	10.13
9E08056-CAL7	2000	226222	1.087	10.14
9E08056-CAL8	4000	377414	0.930	10.14
~~9E08056-CAL9~~	~~6000~~	~~492303~~	~~0.817~~	~~10.15~~
~~9E08056-CALA~~	~~8000~~	~~595050~~	~~0.764~~	~~10.15~~

AVE RF **1.214** RF RSD **11.44** AVE RT **10.13**

Diethylphthalate

Curve Fit: **AVERAGE RF**

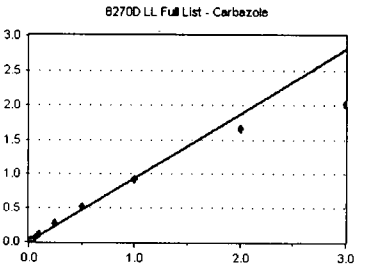


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	3091	1.341	10.13
9E08056-CAL2	50	8249	1.402	10.13
9E08056-CAL3	100	17729	1.484	10.13
9E08056-CAL4	200	36994	1.509	10.13
9E08056-CAL5	500	84929	1.457	10.14
9E08056-CAL6	1000	154986	1.379	10.14
9E08056-CAL7	2000	252775	1.215	10.14
9E08056-CAL8	4000	430062	1.060	10.15
~~9E08056-CAL9~~	~~6000~~	~~560826~~	~~0.930~~	~~10.16~~
~~9E08056-CALA~~	~~8000~~	~~666758~~	~~0.857~~	~~10.16~~

AVE RF **1.356** RF RSD **11.17** AVE RT **10.14**

Carbazole

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	3928	0.881	11.46
9E08056-CAL2	50	10615	0.949	11.45
9E08056-CAL3	100	22432	1.015	11.45
9E08056-CAL4	200	48320	1.061	11.45
9E08056-CAL5	500	116650	1.074	11.45
9E08056-CAL6	1000	218760	1.029	11.46
9E08056-CAL7	2000	364563	0.920	11.46
9E08056-CAL8	4000	666936	0.824	11.46
9E08056-CAL9	6000	822554	0.671	0.00
~~9E08056-CALA~~	~~8000~~	~~892838~~	~~0.563~~	~~0.00~~

AVE RF **0.936** RF RSD **13.91** AVE RT **10.18**

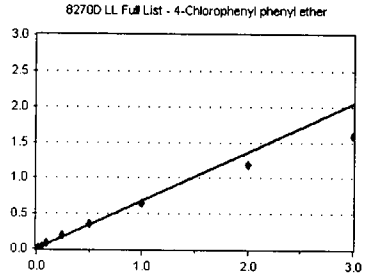
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

4-Chlorophenyl phenyl ether

Curve Fit: **AVERAGE RF**

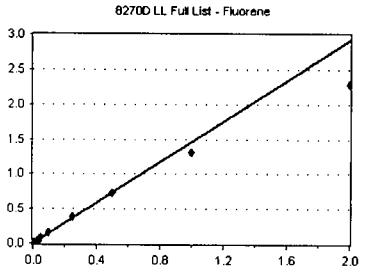


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1452	0.630	10.26
9E08056-CAL2	50	4291	0.729	10.26
9E08056-CAL3	100	9040	0.757	10.26
9E08056-CAL4	200	19218	0.784	10.26
9E08056-CAL5	500	44439	0.762	10.26
9E08056-CAL6	1000	79614	0.708	10.26
9E08056-CAL7	2000	136404	0.656	10.26
9E08056-CAL8	4000	239379	0.590	10.27
9E08056-CAL9	6000	319658	0.530	10.27
~~9E08056-CALA~~	~~8000~~	~~378804~~	~~0.487~~	~~10.28~~

AVE RF **0.683** RF RSD **12.71** AVE RT **10.26**

Fluorene

Curve Fit: **AVERAGE RF**

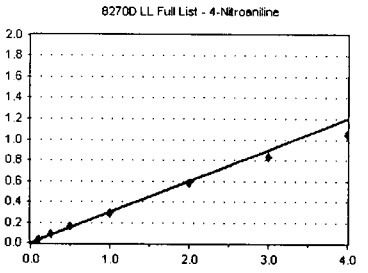


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	3504	1.520	10.27
9E08056-CAL2	50	8897	1.512	10.26
9E08056-CAL3	100	19156	1.604	10.26
9E08056-CAL4	200	38831	1.584	10.27
9E08056-CAL5	500	91858	1.576	10.27
9E08056-CAL6	1000	163031	1.450	10.27
9E08056-CAL7	2000	271787	1.306	10.28
9E08056-CAL8	4000	463326	1.142	10.28
~~9E08056-CAL9~~	~~6000~~	~~605832~~	~~1.005~~	~~10.29~~
~~9E08056-CALA~~	~~8000~~	~~722035~~	~~0.928~~	~~10.29~~

AVE RF **1.462** RF RSD **10.99** AVE RT **10.27**

4-Nitroaniline

Curve Fit: **AVERAGE RF**

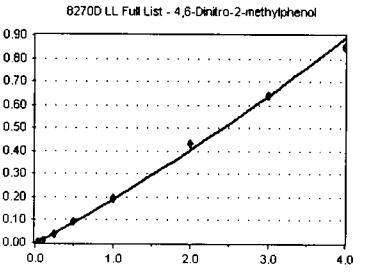


Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~396~~	~~0.172~~	~~10.28~~
~~9E08056-CAL2~~	~~50~~	~~1270~~	~~0.216~~	~~10.28~~
~~9E08056-CAL3~~	~~100~~	~~2732~~	~~0.229~~	~~10.28~~
9E08056-CAL4	200	7673	0.313	10.28
9E08056-CAL5	500	19675	0.337	10.28
9E08056-CAL6	1000	36743	0.327	10.28
9E08056-CAL7	2000	59807	0.287	10.29
9E08056-CAL8	4000	119176	0.294	10.30
9E08056-CAL9	6000	166859	0.277	10.31
9E08056-CALA	8000	203360	0.261	10.32

AVE RF **0.300** RF RSD **9.17** AVE RT **10.29**

4,6-Dinitro-2-methylphenol

Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~0~~	~~0.000~~	~~0.00~~
~~9E08056-CAL2~~	~~50~~	~~217~~	~~3.688~~	~~10.31~~
9E08056-CAL3	100	760	0.064	10.31
9E08056-CAL4	200	2514	0.103	10.31
9E08056-CAL5	500	8901	0.153	10.31
9E08056-CAL6	1000	21051	0.187	10.31
9E08056-CAL7	2000	40019	0.192	10.32
9E08056-CAL8	4000	87463	0.216	10.33
9E08056-CAL9	6000	129071	0.214	10.34
9E08056-CALA	8000	165731	0.213	10.35

AVE RF **0.168** RF RSD **34.03** AVE RT **10.32**

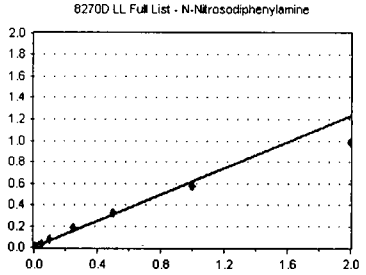
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

N-Nitrosodiphenylamine

Curve Fit: **AVERAGE RF**

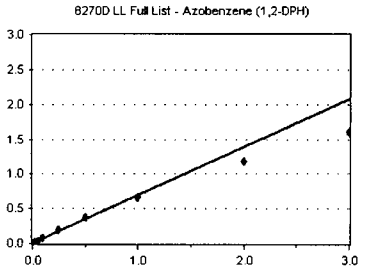


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	2436	0.546	10.38
9E08056-CAL2	50	6367	0.569	10.38
9E08056-CAL3	100	14816	0.671	10.38
9E08056-CAL4	200	32443	0.713	10.38
9E08056-CAL5	500	78301	0.721	10.38
9E08056-CAL6	1000	139124	0.654	10.38
9E08056-CAL7	2000	227824	0.575	10.38
9E08056-CAL8	4000	398485	0.493	10.39
~~9E08056-CAL9~~	~~6000~~	~~527740~~	~~0.431~~	~~10.40~~
~~9E08056-CALA~~	~~8000~~	~~645120~~	~~0.407~~	~~10.40~~

AVE RF **0.618** RF RSD **13.51** AVE RT **10.38**

Azobenzene (1,2-DPH)

Curve Fit: **AVERAGE RF**

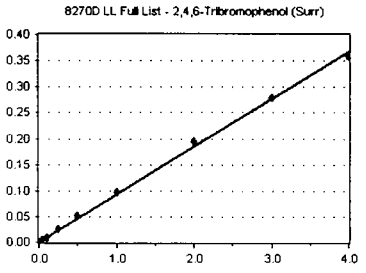


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	2808	0.630	10.42
9E08056-CAL2	50	7675	0.686	10.42
9E08056-CAL3	100	17330	0.784	10.42
9E08056-CAL4	200	36434	0.800	10.42
9E08056-CAL5	500	87002	0.801	10.42
9E08056-CAL6	1000	156991	0.738	10.42
9E08056-CAL7	2000	264872	0.668	10.43
9E08056-CAL8	4000	481159	0.595	10.43
9E08056-CAL9	6000	656969	0.536	10.44
~~9E08056-CALA~~	~~8000~~	~~801688~~	~~0.506~~	~~10.44~~

AVE RF **0.693** RF RSD **13.73** AVE RT **10.42**

2,4,6-Tribromophenol (Surr)

Curve Fit: **AVERAGE RF**

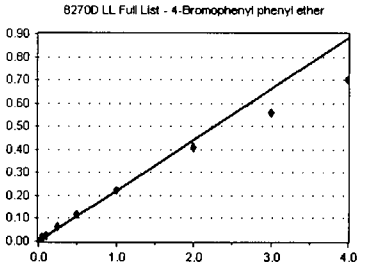


Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~296~~	~~6.639~~	~~10.52~~
9E08056-CAL2	50	790	7.066	10.52
9E08056-CAL3	100	1794	8.120	10.51
9E08056-CAL4	200	4189	9.201	10.51
9E08056-CAL5	500	11050	0.102	10.52
9E08056-CAL6	1000	22087	0.104	10.52
9E08056-CAL7	2000	38932	9.822	10.52
9E08056-CAL8	4000	78802	9.740	10.52
9E08056-CAL9	6000	114295	9.328	10.53
9E08056-CALA	8000	142560	8.992	10.53

AVE RF **9.204** RF RSD **11.41** AVE RT **10.52**

4-Bromophenyl phenyl ether

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	976	0.219	10.76
9E08056-CAL2	50	2481	0.222	10.76
9E08056-CAL3	100	5435	0.246	10.76
9E08056-CAL4	200	10934	0.240	10.76
9E08056-CAL5	500	27078	0.249	10.76
9E08056-CAL6	1000	49801	0.234	10.76
9E08056-CAL7	2000	88111	0.222	10.76
9E08056-CAL8	4000	164575	0.203	10.77
9E08056-CAL9	6000	229006	0.187	10.77
9E08056-CALA	8000	278562	0.176	10.77

AVE RF **0.220** RF RSD **11.23** AVE RT **10.76**

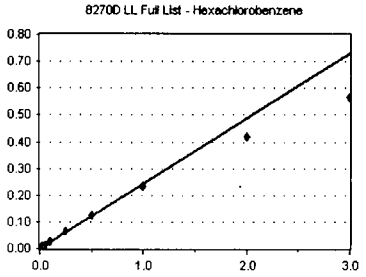
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

Hexachlorobenzene

Curve Fit: **AVERAGE RF**

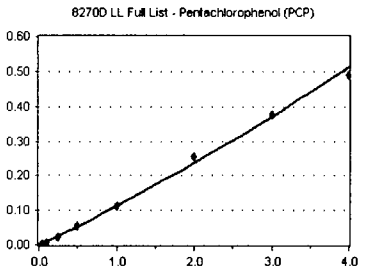


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1039	0.233	10.84
9E08056-CAL2	50	3112	0.278	10.84
9E08056-CAL3	100	6195	0.280	10.84
9E08056-CAL4	200	11859	0.260	10.84
9E08056-CAL5	500	28884	0.266	10.84
9E08056-CAL6	1000	52902	0.249	10.84
9E08056-CAL7	2000	92531	0.233	10.84
9E08056-CAL8	4000	169055	0.209	10.85
9E08056-CAL9	6000	231353	0.189	10.85
~~9E08056-CALA~~	~~8000~~	~~281208~~	~~0.177~~	~~10.85~~

AVE RF **0.244** RF RSD **12.77** AVE RT **10.84**

Pentachlorophenol (PCP)

Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**

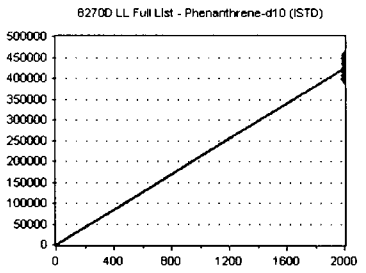


Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~515~~	~~0.116~~	~~11.03~~
~~9E08056-CAL2~~	~~50~~	~~782~~	~~6.994~~	~~11.04~~
9E08056-CAL3	100	1222	5.531	11.03
9E08056-CAL4	200	3055	6.710	11.04
9E08056-CAL5	500	10538	9.704	11.03
9E08056-CAL6	1000	23287	0.110	11.04
9E08056-CAL7	2000	45320	0.114	11.03
9E08056-CAL8	4000	103356	0.128	11.04
9E08056-CAL9	6000	153485	0.125	11.05
9E08056-CALA	8000	193595	0.122	11.05

AVE RF **0.102** RF RSD **26.74** AVE RT **11.04**

Phenanthrene-d10 (ISTD)

Curve Fit: **AVERAGE RF**

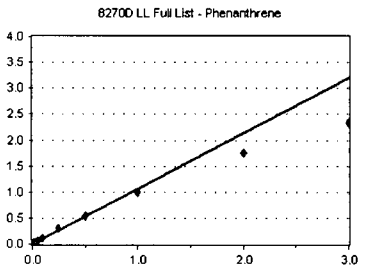


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	2000	445843	222.922	11.22
9E08056-CAL2	2000	447217	223.608	11.22
9E08056-CAL3	2000	441856	220.928	11.22
9E08056-CAL4	2000	455298	227.649	11.22
9E08056-CAL5	2000	434358	217.179	11.22
9E08056-CAL6	2000	425173	212.587	11.22
9E08056-CAL7	2000	396363	198.182	11.22
9E08056-CAL8	2000	404511	202.255	11.23
9E08056-CAL9	2000	408419	204.210	11.23
9E08056-CALA	2000	396349	198.175	11.23

AVE RF **212.769** RF RSD **5.28** AVE RT **11.22**

Phenanthrene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	5060	1.135	11.25
9E08056-CAL2	50	13230	1.183	11.24
9E08056-CAL3	100	26210	1.186	11.24
9E08056-CAL4	200	53865	1.183	11.24
9E08056-CAL5	500	127029	1.170	11.24
9E08056-CAL6	1000	232143	1.092	11.25
9E08056-CAL7	2000	398028	1.004	11.25
9E08056-CAL8	4000	712691	0.881	11.25
9E08056-CAL9	6000	956642	0.781	11.26
~~9E08056-CALA~~	~~8000~~	~~1153195~~	~~0.727~~	~~11.26~~

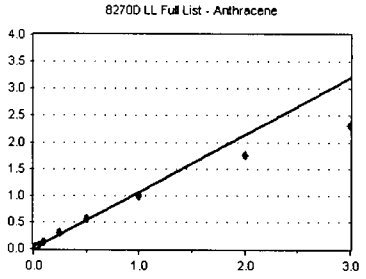
AVE RF **1.068** RF RSD **13.94** AVE RT **11.25**

Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

Anthracene

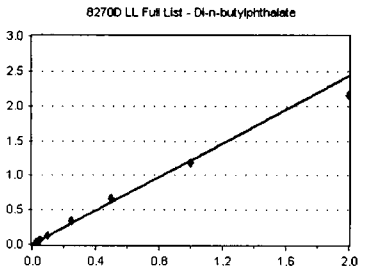


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	5028	1.128	11.30
9E08056-CAL2	50	12760	1.141	11.30
9E08056-CAL3	100	26491	1.199	11.30
9E08056-CAL4	200	54658	1.200	11.30
9E08056-CAL5	500	128961	1.188	11.30
9E08056-CAL6	1000	235356	1.107	11.30
9E08056-CAL7	2000	397681	1.003	11.30
9E08056-CAL8	4000	710857	0.879	11.31
9E08056-CAL9	6000	942171	0.769	11.31
~~9E08056-CALA~~	~~8000~~	~~1111218~~	~~0.701~~	~~11.31~~

AVE RF **1.068** RF RSD **14.39** AVE RT **11.30**

Di-n-butylphthalate

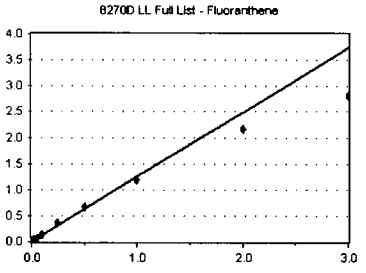


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~4702~~	~~1.055~~	~~11.79~~
9E08056-CAL2	50	11962	1.070	11.79
9E08056-CAL3	100	26562	1.202	11.79
9E08056-CAL4	200	58030	1.275	11.79
9E08056-CAL5	500	147202	1.356	11.79
9E08056-CAL6	1000	281730	1.325	11.79
9E08056-CAL7	2000	471443	1.189	11.79
9E08056-CAL8	4000	869303	1.075	11.80
~~9E08056-CAL9~~	~~6000~~	~~1162762~~	~~0.949~~	~~11.80~~
~~9E08056-CALA~~	~~8000~~	~~1386560~~	~~0.875~~	~~11.80~~

AVE RF **1.213** RF RSD **9.34** AVE RT **11.79**

Fluoranthene

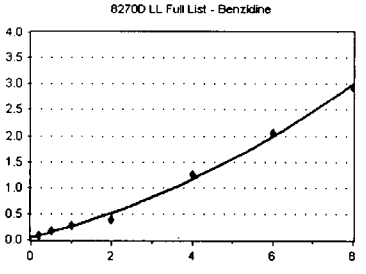


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	5484	1.230	12.52
9E08056-CAL2	50	14115	1.262	12.52
9E08056-CAL3	100	29669	1.343	12.52
9E08056-CAL4	200	63551	1.396	12.52
9E08056-CAL5	500	155537	1.432	12.52
9E08056-CAL6	1000	287574	1.353	12.53
9E08056-CAL7	2000	475094	1.199	12.53
9E08056-CAL8	4000	874011	1.080	12.53
9E08056-CAL9	6000	1152260	0.940	12.54
~~9E08056-CALA~~	~~8000~~	~~1406107~~	~~0.887~~	~~12.54~~

AVE RF **1.248** RF RSD **12.71** AVE RT **12.53**

Benzidine



Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~40~~	~~5337~~	~~0.599~~	~~12.68~~
~~9E08056-CAL2~~	~~100~~	~~6670~~	~~0.298~~	~~12.68~~
~~9E08056-CAL3~~	~~200~~	~~14400~~	~~0.326~~	~~12.68~~
9E08056-CAL4	400	37553	0.412	12.68
9E08056-CAL5	1000	76984	0.354	12.68
9E08056-CAL6	2000	119397	0.281	12.68
9E08056-CAL7	4000	153390	0.193	12.68
9E08056-CAL8	8000	507935	0.314	12.69
9E08056-CAL9	12000	835608	0.341	12.70
9E08056-CALA	16000	1165482	0.368	12.70

AVE RF **0.323** RF RSD **21.84** AVE RT **12.69**

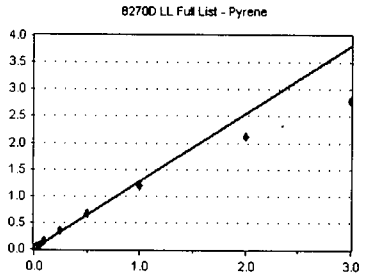
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

Pyrene

Curve Fit: **AVERAGE RF**

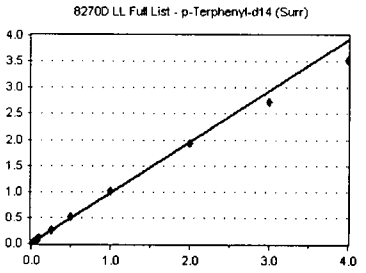


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	5874	1.318	12.82
9E08056-CAL2	50	14957	1.338	12.82
9E08056-CAL3	100	31027	1.404	12.82
9E08056-CAL4	200	65571	1.440	12.82
9E08056-CAL5	500	154311	1.421	12.82
9E08056-CAL6	1000	286850	1.349	12.82
9E08056-CAL7	2000	468721	1.183	12.82
9E08056-CAL8	4000	853568	1.055	12.83
9E08056-CAL9	6000	1135183	0.926	12.84
~~9E08056-CALA~~	~~8000~~	~~1376701~~	~~0.868~~	~~12.84~~

AVE RF **1.270** RF RSD **14.05** AVE RT **12.82**

p-Terphenyl-d14 (Surr)

Curve Fit: **AVERAGE RF**

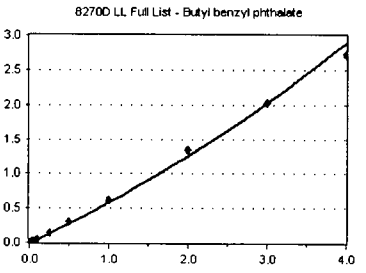


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	4571	0.975	13.02
9E08056-CAL2	50	10935	0.930	13.02
9E08056-CAL3	100	23610	1.015	13.02
9E08056-CAL4	200	49759	1.037	13.02
9E08056-CAL5	500	118955	1.060	13.02
9E08056-CAL6	1000	219562	1.024	13.02
9E08056-CAL7	2000	356113	1.008	13.02
9E08056-CAL8	4000	667601	0.965	13.03
9E08056-CAL9	6000	884802	0.906	13.04
9E08056-CALA	8000	1074072	0.880	13.04

AVE RF **0.980** RF RSD **6.07** AVE RT **13.03**

Butyl benzyl phthalate

Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**

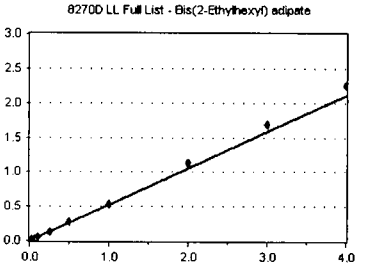


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	1472	0.314	13.84
9E08056-CAL2	50	4377	0.372	13.84
9E08056-CAL3	100	9184	0.395	13.84
9E08056-CAL4	200	23562	0.491	13.84
9E08056-CAL5	500	63002	0.562	13.84
9E08056-CAL6	1000	128733	0.600	13.84
9E08056-CAL7	2000	219372	0.621	13.85
9E08056-CAL8	4000	466198	0.674	13.85
9E08056-CAL9	6000	660330	0.676	13.86
9E08056-CALA	8000	830873	0.681	13.86

AVE RF **0.539** RF RSD **25.48** AVE RT **13.85**

Bis(2-Ethylhexyl) adipate

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	2977	0.635	14.01
9E08056-CAL2	50	5191	0.442	14.01
9E08056-CAL3	100	10197	0.439	14.01
9E08056-CAL4	200	22694	0.473	14.01
9E08056-CAL5	500	56949	0.508	14.01
9E08056-CAL6	1000	114896	0.536	14.01
9E08056-CAL7	2000	191848	0.543	14.01
9E08056-CAL8	4000	395039	0.571	14.02
9E08056-CAL9	6000	550853	0.564	14.03
9E08056-CALA	8000	686647	0.563	14.03

AVE RF **0.527** RF RSD **11.82** AVE RT **14.02**

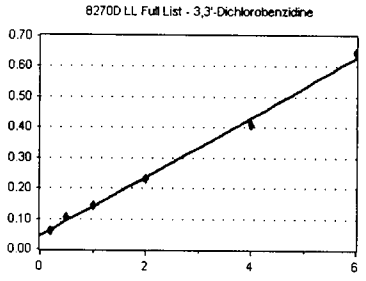
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

3,3'-Dichlorobenzidine

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

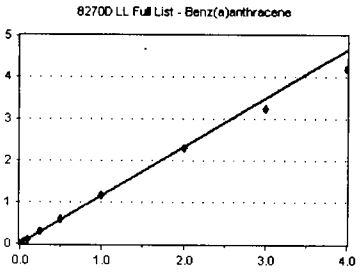


Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~40~~	~~2583~~	~~0.275~~	~~0.00~~
~~9E08056-CAL2~~	~~100~~	~~6262~~	~~0.266~~	~~0.00~~
~~9E08056-CAL3~~	~~200~~	~~13834~~	~~0.298~~	~~14.98~~
9E08056-CAL4	400	28902	0.301	14.99
9E08056-CAL5	1000	47477	0.212	14.99
9E08056-CAL6	2000	62412	0.145	14.99
9E08056-CAL7	4000	81995	0.116	15.00
9E08056-CAL8	8000	140872	0.102	15.01
9E08056-CAL9	12000	210131	0.108	15.02
~~9E08056-CALA~~	~~16000~~	~~287387~~	~~0.118~~	~~15.03~~

AVE RF **0.164** RF RSD **47.85** AVE RT **15.00**

Benz(a)anthracene

Curve Fit: **AVERAGE RF**

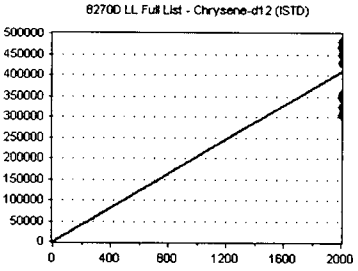


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	5805	1.238	15.03
9E08056-CAL2	50	13479	1.147	15.03
9E08056-CAL3	100	26892	1.157	15.02
9E08056-CAL4	200	58075	1.210	15.03
9E08056-CAL5	500	138304	1.233	15.02
9E08056-CAL6	1000	257723	1.202	15.03
9E08056-CAL7	2000	409861	1.161	15.03
9E08056-CAL8	4000	790890	1.143	15.05
9E08056-CAL9	6000	1056377	1.081	15.06
9E08056-CALA	8000	1276068	1.046	15.06

AVE RF **1.162** RF RSD **5.39** AVE RT **15.04**

Chrysene-d12 (ISTD)

Curve Fit: **AVERAGE RF**

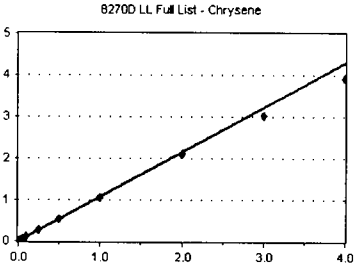


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	2000	468796	234.398	15.05
9E08056-CAL2	2000	470097	235.048	15.05
9E08056-CAL3	2000	464995	232.498	15.05
9E08056-CAL4	2000	479919	239.960	15.05
9E08056-CAL5	2000	448745	224.373	15.05
9E08056-CAL6	2000	428978	214.489	15.06
9E08056-CAL7	2000	353171	176.585	15.06
9E08056-CAL8	2000	346046	173.023	15.07
9E08056-CAL9	2000	325607	162.804	15.08
9E08056-CALA	2000	305019	152.510	15.09

AVE RF **204.569** RF RSD **16.76** AVE RT **15.06**

Chrysene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	5174	1.104	15.11
9E08056-CAL2	50	12647	1.076	15.11
9E08056-CAL3	100	25625	1.102	15.11
9E08056-CAL4	200	53969	1.125	15.11
9E08056-CAL5	500	126427	1.127	15.11
9E08056-CAL6	1000	231498	1.079	15.12
9E08056-CAL7	2000	375111	1.062	15.12
9E08056-CAL8	4000	726806	1.050	15.13
9E08056-CAL9	6000	987765	1.011	15.15
9E08056-CALA	8000	1196829	0.981	15.16

AVE RF **1.072** RF RSD **4.43** AVE RT **15.12**

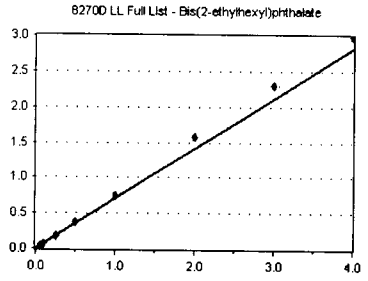
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

Bis(2-ethylhexyl)phthalate

Curve Fit: **AVERAGE RF**

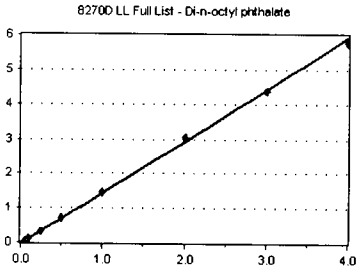


Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~1776~~	~~0.379~~	~~15.18~~
~~9E08056-CAL2~~	~~50~~	~~5059~~	~~0.430~~	~~15.18~~
9E08056-CAL3	100	11680	0.502	15.18
9E08056-CAL4	200	29512	0.615	15.18
9E08056-CAL5	500	81848	0.730	15.18
9E08056-CAL6	1000	159937	0.746	15.18
9E08056-CAL7	2000	265428	0.752	15.19
9E08056-CAL8	4000	541901	0.783	15.19
9E08056-CAL9	6000	749108	0.767	15.20
9E08056-CALA	8000	911551	0.747	15.20

AVE RF **0.705** RF RSD **13.70** AVE RT **15.19**

Di-n-octyl phthalate

Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**

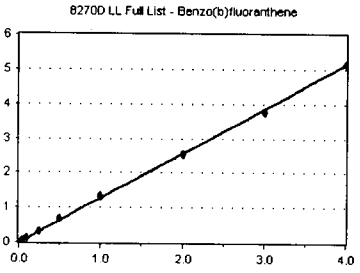


Standard	Concentration	Response	Response Factor	RT
~~9E08056-CAL1~~	~~20~~	~~2233~~	~~0.516~~	~~16.84~~
~~9E08056-CAL2~~	~~50~~	~~6475~~	~~0.593~~	~~16.84~~
9E08056-CAL3	100	14915	0.686	16.84
9E08056-CAL4	200	42140	0.939	16.84
9E08056-CAL5	500	132449	1.250	16.84
9E08056-CAL6	1000	284170	1.419	16.84
9E08056-CAL7	2000	490249	1.468	16.85
9E08056-CAL8	4000	1106017	1.530	16.86
9E08056-CAL9	6000	1544982	1.462	16.87
9E08056-CALA	8000	1949268	1.443	16.88

AVE RF **1.275** RF RSD **23.85** AVE RT **16.85**

Benzo(b)fluoranthene

Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**

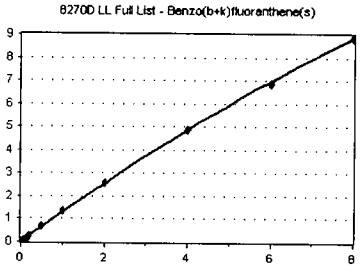


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	4502	1.041	17.61
9E08056-CAL2	50	11686	1.070	17.61
9E08056-CAL3	100	23806	1.095	17.61
9E08056-CAL4	200	54791	1.221	17.61
9E08056-CAL5	500	139653	1.318	17.61
9E08056-CAL6	1000	268390	1.340	17.62
9E08056-CAL7	2000	444019	1.330	17.62
9E08056-CAL8	4000	916793	1.268	17.65
9E08056-CAL9	6000	1322262	1.251	17.67
9E08056-CALA	8000	1745814	1.292	17.67

AVE RF **1.223** RF RSD **9.23** AVE RT **17.63**

Benzo(b+k)fluoranthene(s)

Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	40	8905	1.029	17.61
9E08056-CAL2	100	24677	1.130	17.68
9E08056-CAL3	200	50907	1.171	17.61
9E08056-CAL4	400	114689	1.278	17.61
9E08056-CAL5	1000	289741	1.367	17.68
9E08056-CAL6	2000	543058	1.356	17.69
9E08056-CAL7	4000	864585	1.294	17.69
9E08056-CAL8	8000	1749715	1.210	17.72
9E08056-CAL9	12000	2421312	1.146	17.74
9E08056-CALA	16000	2997124	1.109	17.75

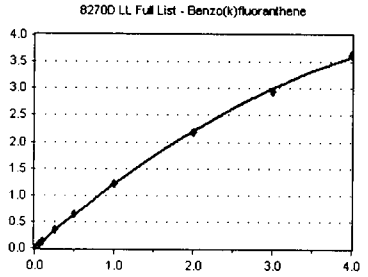
AVE RF **1.209** RF RSD **9.25** AVE RT **17.68**

Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

Benzo(k)fluoranthene

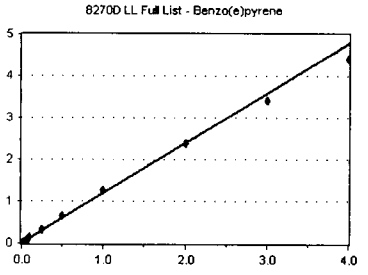


Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**

Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	4403	1.018	17.68
9E08056-CAL2	50	12101	1.108	17.68
9E08056-CAL3	100	25069	1.153	17.68
9E08056-CAL4	200	56932	1.268	17.68
9E08056-CAL5	500	142423	1.344	17.68
9E08056-CAL6	1000	262537	1.311	17.69
9E08056-CAL7	2000	401664	1.203	17.69
9E08056-CAL8	4000	788525	1.091	17.72
9E08056-CAL9	6000	1035740	0.980	17.74
9E08056-CALA	8000	1226693	0.908	17.75

AVE RF **1.138** RF RSD **12.73** AVE RT **17.70**

Benzo(e)pyrene

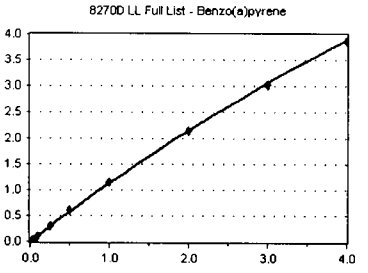


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	4695	1.085	18.27
9E08056-CAL2	50	12373	1.133	18.27
9E08056-CAL3	100	25730	1.184	18.27
9E08056-CAL4	200	55890	1.245	18.27
9E08056-CAL5	500	140018	1.321	18.27
9E08056-CAL6	1000	259798	1.297	18.28
9E08056-CAL7	2000	421328	1.262	18.28
9E08056-CAL8	4000	863719	1.195	18.30
9E08056-CAL9	6000	1199867	1.135	18.32
9E08056-CALA	8000	1487060	1.101	18.34

AVE RF **1.196** RF RSD **6.93** AVE RT **18.29**

Benzo(a)pyrene

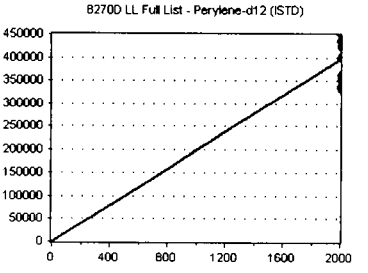


Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**

Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	3596	0.831	18.38
9E08056-CAL2	50	10371	0.950	18.39
9E08056-CAL3	100	21986	1.011	18.38
9E08056-CAL4	200	49339	1.099	18.38
9E08056-CAL5	500	129040	1.218	18.39
9E08056-CAL6	1000	245703	1.227	18.39
9E08056-CAL7	2000	383125	1.147	18.41
9E08056-CAL8	4000	770441	1.066	18.43
9E08056-CAL9	6000	1066798	1.009	18.45
9E08056-CALA	8000	1307681	0.968	18.46

AVE RF **1.053** RF RSD **11.81** AVE RT **18.41**

Perylene-d12 (ISTD)



Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	2000	432537	216.268	18.54
9E08056-CAL2	2000	436889	218.445	18.54
9E08056-CAL3	2000	434795	217.398	18.53
9E08056-CAL4	2000	448879	224.440	18.54
9E08056-CAL5	2000	423882	211.941	18.54
9E08056-CAL6	2000	400554	200.277	18.54
9E08056-CAL7	2000	333963	166.982	18.54
9E08056-CAL8	2000	361418	180.709	18.56
9E08056-CAL9	2000	352282	176.141	18.57
9E08056-CALA	2000	337687	168.843	18.57

AVE RF **198.144** RF RSD **11.43** AVE RT **18.55**

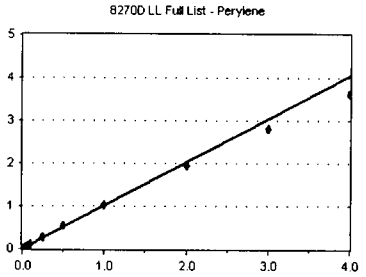
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

Perylene

Curve Fit: **AVERAGE RF**

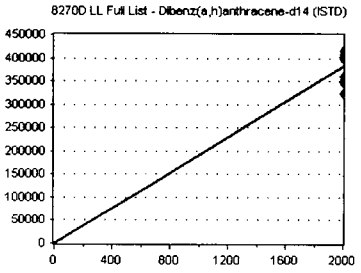


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	4452	1.029	18.59
9E08056-CAL2	50	10773	0.986	18.59
9E08056-CAL3	100	22641	1.041	18.59
9E08056-CAL4	200	46507	1.036	18.59
9E08056-CAL5	500	116376	1.098	18.59
9E08056-CAL6	1000	216265	1.080	18.60
9E08056-CAL7	2000	344990	1.033	18.61
9E08056-CAL8	4000	705720	0.976	18.63
9E08056-CAL9	6000	989986	0.937	18.65
9E08056-CALA	8000	1226461	0.908	18.66

AVE RF **1.013** RF RSD **5.95** AVE RT **18.61**

Dibenz(a,h)anthracene-d14 (ISTD

Curve Fit: **AVERAGE RF**

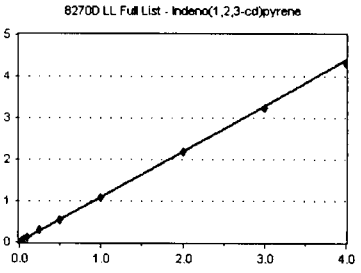


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	2000	400350	200.175	20.92
9E08056-CAL2	2000	403848	201.924	20.92
9E08056-CAL3	2000	409849	204.925	20.92
9E08056-CAL4	2000	416516	208.258	20.92
9E08056-CAL5	2000	408680	204.340	20.92
9E08056-CAL6	2000	399119	199.560	20.92
9E08056-CAL7	2000	322705	161.353	20.93
9E08056-CAL8	2000	360190	180.095	20.95
9E08056-CAL9	2000	359354	179.677	20.96
9E08056-CALA	2000	348077	174.038	20.96

AVE RF **191.434** RF RSD **8.46** AVE RT **20.93**

Indeno(1,2,3-cd)pyrene

Curve Fit: **AVERAGE RF**

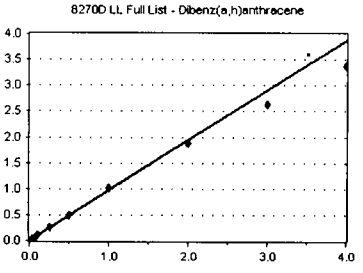


Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	4515	1.128	20.91
9E08056-CAL2	50	10988	1.088	20.91
9E08056-CAL3	100	22712	1.108	20.91
9E08056-CAL4	200	45199	1.085	20.91
9E08056-CAL5	500	116104	1.136	20.92
9E08056-CAL6	1000	217807	1.091	20.92
9E08056-CAL7	2000	348943	1.081	20.94
9E08056-CAL8	4000	792468	1.100	20.96
9E08056-CAL9	6000	1164266	1.080	20.98
9E08056-CALA	8000	1508870	1.084	21.00

AVE RF **1.098** RF RSD **1.82** AVE RT **20.94**

Dibenz(a,h)anthracene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	3890	0.972	20.97
9E08056-CAL2	50	9885	0.979	20.99
9E08056-CAL3	100	20562	1.003	20.98
9E08056-CAL4	200	43093	1.035	20.98
9E08056-CAL5	500	106785	1.045	20.98
9E08056-CAL6	1000	199329	0.999	20.99
9E08056-CAL7	2000	325096	1.007	20.99
9E08056-CAL8	4000	675316	0.937	21.02
9E08056-CAL9	6000	945959	0.877	21.04
9E08056-CALA	8000	1170463	0.841	21.06

AVE RF **0.970** RF RSD **6.84** AVE RT **21.00**

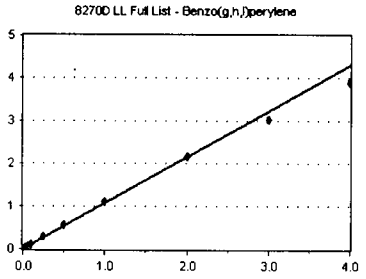
Element Calibration Review Sheet

Calibration ID: **A9E1009** Instrument: **SV-GCMS9** Calibration Date: **05/10/2019**

Analysis: **8270D LL Full List** Instrument Cal ID: **A9E1009**

Benzo(g,h,i)perylene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08056-CAL1	20	4035	1.008	21.45
9E08056-CAL2	50	10510	1.041	21.45
9E08056-CAL3	100	22018	1.074	21.45
9E08056-CAL4	200	46913	1.126	21.45
9E08056-CAL5	500	120043	1.175	21.45
9E08056-CAL6	1000	226164	1.133	21.46
9E08056-CAL7	2000	360991	1.119	21.47
9E08056-CAL8	4000	777615	1.079	21.50
9E08056-CAL9	6000	1089470	1.011	21.52
9E08056-CALA	8000	1353653	0.972	21.53

AVE RF **1.074** RF RSD **6.08** AVE RT **21.47**

Compound List Report SV-GCMS9

Method Path : T:\methods\
Method File : SV9_050819.M
Title : EPA 8270D: Semivolatile Organics
Last Update : Thu May 09 12:25:58 2019
Response Via : Initial Calibration

JR 5/9/19

Total Cpnds : 97

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-Dichlorobenzene-d4 (ISTD)	152	6.697	1.000	A	2	A	R
2	T	N-Nitrosodimethylamine	74	4.172	0.623	A	2	A	R
3	T	Pyridine	79	4.183	0.625	A	2	A	R
4	S	2-Fluorophenol (Surr)	112	5.467	0.816	A	1	A	R
5	S	Phenol-d6 (Surr)	99	6.338	0.946	A	2	A	R
6	T	Phenol	94	6.354	0.949	A	2	A	R
7	T	Aniline	93	6.381	0.953	A	2	A	R
8	T	Bis(2-chloroethyl) ether	93	6.435	0.961	A	2	A	R
9	T	2-Chlorophenol	128	6.499	0.970	A	2	A	R
10	T	1,3-Dichlorobenzene	146	6.643	0.992	A	2	A	R
11	T	1,4-Dichlorobenzene	146	6.713	1.002	A	2	A	R
12	T	Benzyl alcohol	108	6.825	1.019	Q	2	A	R
13	T	1,2-Dichlorobenzene	146	6.863	1.025	A	2	A	R
14	T	2-Methylphenol	107	6.932	1.035	A	2	A	R
15	T	2,2'-Oxybis(1-Chloropropane)	45	6.954	1.038	A	2	A	R
16	T	N-Nitrosodi-n-propylamine	70	7.077	1.057	A	2	A	R
17	T	3+4-Methylphenol	107	7.077	1.057	A	3	A	R
18	T	Hexachloroethane	201	7.194	1.074	A	2	A	R
19	S	Nitrobenzene-d5 (Surr)	82	7.232	1.080	A	2	A	R
20	T	Nitrobenzene	77	7.248	1.082	A	2	A	R
21	I	Naphthalene-d8 (ISTD)	136	7.948	1.000	A	1	A	R
22	T	Isophorone	82	7.483	0.941	A	2	A	R
23	T	2-Nitrophenol	139	7.563	0.952	A	2	A	R
24	T	2,4-Dimethylphenol	122	7.600	0.956	A	2	A	R
25	T	Bis(2-chloroethoxy) methane	93	7.686	0.967	A	2	A	R
26	T	Benzoic acid	105	7.696	0.968	Q	2	A	R
27	T	2,4-Dichlorophenol	162	7.803	0.982	Q	2	A	R
28	T	1,2,4-Trichlorobenzene	180	7.890	0.993	A	2	A	R
29	T	Naphthalene	128	7.970	1.003	A	1	A	R
30	T	4-Chloroaniline	127	8.023	1.009	A	2	A	R
31	T	Hexachlorobutadiene	225	8.098	1.019	A	2	A	R
32	T	4-Chloro-3-methylphenol	107	8.493	1.069	Q	2	A	R
33	T	2-Methylnaphthalene	142	8.659	1.089	A	2	A	R
34	T	1-Methylnaphthalene	142	8.761	1.102	A	2	A	R
35	I	Acenaphthene-d10 (ISTD)	162	9.719	1.000	A	2	A	R
36	T	Hexachlorocyclopentadiene	237	8.825	0.908	Q	2	A	R
37	T	2,4,6-Trichlorophenol	196	8.943	0.920	Q	2	A	R
38	T	2,4,5-Trichlorophenol	198	8.980	0.924	Q	2	A	R
39	T	1,1'-Biphenyl	154	9.125	0.939	A	2	A	R
40	S	2-Fluorobiphenyl (Surr)	172	9.023	0.928	A	2	A	R
41	T	2-Chloronaphthalene	162	9.151	0.942	A	2	A	R
42	T	2-Nitroaniline	138	9.248	0.952	A	2	A	R
43	T	2,6-Dimethylnaphthalene	156	9.285	0.955	A	2	A	R
44	T	1,4-Dinitrobenzene	168	9.376	0.965	Q	2	A	R
45	T	Dimethyl phthalate	163	9.425	0.970	A	2	A	R
46	T	1,3-Dinitrobenzene	168	9.456	0.973	A	2	A	R
47	T	2,6-Dinitrotoluene	165	9.488	0.976	A	2	A	R
48	T	1,2-Dinitrobenzene	168	9.547	0.982	A	2	A	R
49	T	Acenaphthylene	152	9.574	0.985	A	2	A	R
50	T	3-Nitroaniline	138	9.665	0.994	Q	2	A	R
51	T	Acenaphthene	153	9.751	1.003	A	2	A	R
52	T	2,4-Dinitrophenol	184	9.766	1.005	Q	2	A	R
53	T	4-Nitrophenol	139	9.831	1.012	Q	2	A	R
54	T	2,4-Dinitrotoluene	165	9.895	1.018	Q	2	A	R

55	T	Dibenzofuran	168	9.921	1.021	A		2	A	R
56	T	2,3,5,6-Tetrachlorophenol	232	10.007	1.030	Q		2	A	R
57	T	2,3,4,6-Tetrachlorophenol	232	10.050	1.034	Q		2	A	R
58	T	Diethyl phthalate	149	10.135	1.043	A		2	A	R
59	T	2,3,5-Trimethylnaphthalene	170	10.130	1.042	A		2	A	R
60	T	Fluorene	166	10.269	1.057	A		2	A	R
61	T	4-Chlorophenyl phenyl ether	204	10.258	1.055	A		2	A	R
62	T	4-Nitroaniline	138	10.280	1.058	A		2	A	R
63	T	4,6-Dinitro-2-methylphenol	198	10.312	1.061	Q		2	A	R
64	I	Phenanthrene-d10 (ISTD)	188	11.222	1.000	A		2	A	R
65	T	N-Nitrosodiphenylamine	169	10.376	0.925	A		2	A	R
66	T	Azobenzene (1,2-DPH)	77	10.419	0.928	A		2	A	R
67	S	2,4,6-Tribromophenol (Surr)	330	10.515	0.937	A		2	A	R
68	T	4-Bromophenyl phenyl ether	248	10.756	0.959	A		2	A	R
69	T	Hexachlorobenzene	284	10.841	0.966	A		2	A	R
70	T	Pentachlorophenol (PCP)	266	11.034	0.983	Q		2	A	R
71	T	Phenanthrene	178	11.248	1.002	A		2	A	R
72	T	Anthracene	178	11.296	1.007	A		2	A	R
73	T	Carbazole	167	11.457	1.021	A		2	A	R
74	T	Di-n-butyl phthalate	149	11.794	1.051	A		2	A	R
75	T	Fluoranthene	202	12.526	1.116	A		2	A	R
76	T	Benzidine	184	12.676	1.130	Q		2	A	R
77	T	Pyrene	202	12.820	1.142	A		2	A	R
78	I	Chrysene-d12 (ISTD)	240	15.057	1.000	A		2	A	R
79	S	Terphenyl-d14 (Surr)	244	13.024	0.865	A		2	A	R
80	T	Butyl benzyl phthalate	149	13.842	0.919	Q		2	A	R
81	T	Bis(2-ethylhexyl) adipate	129	14.014	0.931	A		2	A	R
82	T	3,3-Dichlorobenzidine	252	14.992	0.996	Q		2	A	R
83	T	Benz(a)anthracene	228	15.030	0.998	A		2	A	R
84	T	Chrysene	228	15.116	1.004	A		2	A	R
85	T	Bis(2-ethylhexyl) phthalate	149	15.179	1.008	A		2	A	R
86	I	Perylene-d12 (ISTD)	264	18.539	1.000	A		2	A	R
87	T	Di-n-octyl phthalate	149	16.843	0.909	Q		2	A	R
88	T	Benzo(b)fluoranthene	252	17.618	0.950	Q		2	A	R
89	T	Benzo(k)fluoranthene	252	17.688	0.954	Q		2	A	R
90	T	Benzo(b+k)fluoranthene	252	17.688	0.954	Q		2	A	R
91	T	Benzo(e)pyrene	252	18.277	0.986	A		2	A	R
92	T	Benzo(a)pyrene	252	18.394	0.992	Q		2	A	R
93	T	Perylene	252	18.597	1.003	A		2	A	B
94	I	Dibenz(a,h)Anthrcene-d14 (I...	292	20.924	1.000	A		1	A	B
95	T	Indeno(1,2,3-cd)pyrene	276	20.924	1.000	A		1	A	R
96	T	Dibenz(a,h)anthracene	278	20.988	1.003	A		2	A	R
97	T	Benzo(g,h,i)perylene	276	21.464	1.026	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

SV9_050819.M Thu May 09 13:09:14 2019

Response Factor Report SV-GCMS9

Method Path : T:\methods\
Method File : SV9_050819.M
Title : EPA 8270D: Semivolatile Organics
Last Update : Thu May 09 12:25:58 2019
Response Via : Initial Calibration

5/9/19

Calibration Files
20 =I05081919.D 50 =I05081920.D 100 =I05081921.D 200 =I05081922.D 500 =I05081923.D 1000=I05081924.D 2000=I05081925.D
4000=I05081926.D 6000=I05081927.D 8000=I05081928.D

		Compound	20	50	100	200	500	1000	2000	4000	6000	8000	Avg	%RSD
1)	I	1,4-Dichlorobenzen...	----------ISTD----------											8.69
2)	T	N-Nitrosodimet...	1.211	0.973	0.975	0.931	0.938	0.919	0.976	1.007	1.030	1.035	0.999	8.42
3)	T	Pyridine	1.392	1.406	1.367	1.433	1.518	1.469	1.537	1.706	1.705	1.722	1.526	9.08
4)	S	2-Fluorophenol...	1.132	1.060	1.214	1.247	1.324	1.305	1.391	1.440	1.493	1.463	1.307	11.06
5)	S	Phenol-d6 (Surr)	1.463	1.476	1.583	1.634	1.720	1.695	1.792	1.894	1.902	1.847	1.701	9.47
6)	T	Phenol	1.607	1.682	1.785	1.828	1.909	1.843	1.897	1.899	1.877	1.758	1.809	5.59
7)	T	Aniline		1.734	1.841	1.764	1.793	1.389	1.120	1.260	1.396	1.555	1.539	16.90
8)	T	Bis(2-chloroet...	1.679	1.527	1.547	1.558	1.533	1.567	1.613	1.508	1.356	1.334	1.522	6.93
9)	T	2-Chlorophenol	1.315	1.287	1.361	1.368	1.433	1.399	1.423	1.393	1.364	1.315	1.366	3.54
10)	T	1,3-Dichlorobe...	1.764	1.576	1.689	1.623	1.642	1.568	1.532	1.453	1.421	1.352	1.562	8.09
11)	T	1,4-Dichlorobe...	1.514	1.547	1.519	1.559	1.557	1.498	1.445	1.380	1.318	1.255	1.459	7.34
12)	T	Benzyl alcohol		0.421	0.502	0.579	0.721	0.785	0.853	0.935	0.925	0.883	0.734	26.02
13)	T	1,2-Dichlorobe...	1.391	1.481	1.532	1.532	1.544	1.442	1.413	1.314	1.257	1.173	1.408	8.95
14)	T	2-Methylphenol	1.007	0.914	1.105	1.011	1.118	1.061	1.064	1.078	1.036	0.965	1.036	6.11
15)	T	2,2'-Oxybis(1-...	1.993	1.994	2.123	2.028	2.009	1.881	1.829	1.678	1.567	1.437	1.854	12.12
16)	T	N-Nitrosodi-n-...	1.076	1.073	1.093	1.102	1.120	1.067	1.038	0.999	0.930	0.887	1.038	7.40
17)	T	3+4-Methylphenol	1.188	1.142	1.290	1.315	1.405	1.350	1.354	1.357	1.282	1.198	1.288	6.69
18)	T	Hexachloroethane	0.494	0.481	0.481	0.479	0.505	0.472	0.466	0.452	0.448	0.423	0.470	5.05
19)	S	Nitrobenzene-d...	1.553	1.376	1.415	1.465	1.447	1.396	1.393	1.394	1.376	1.326	1.414	4.40
20)	T	Nitrobenzene	1.479	1.409	1.487	1.519	1.461	1.390	1.354	1.328	1.275	1.208	1.391	7.22
21)	I	Naphthalene-d8 (ISTD)	----------ISTD----------											9.39
22)	T	Isophorone	0.673	0.711	0.716	0.756	0.796	0.778	0.757	0.759	0.728	0.732	0.741	4.84
23)	T	2-Nitrophenol	0.141	0.159	0.172	0.198	0.227	0.203	0.201	0.203	0.195	0.192	0.189	13.19
24)	T	2,4-Dimethylph...		0.219	0.260	0.280	0.301	0.310	0.311	0.307	0.286	0.280	0.284	10.49
25)	T	Bis(2-chloroet...	0.409	0.463	0.480	0.460	0.473	0.451	0.428	0.419	0.386	0.376	0.435	8.40
26)	T	Benzoic acid					0.056	0.132	0.149	0.218	0.226	0.237	0.170	41.46
27)	T	2,4-Dichloroph...		0.151	0.195	0.222	0.253	0.272	0.277	0.278	0.248	0.244	0.238	17.71
28)	T	1,2,4-Trichlor...	0.331	0.342	0.354	0.350	0.351	0.336	0.315	0.294	0.268	0.255	0.320	11.19
29)	T	Naphthalene	1.068	1.095	1.107	1.099	1.084	1.048	0.982	0.908	0.816	0.768	0.998	12.52
30)	T	4-Chloroaniline	0.296	0.294	0.285	0.273	0.229	0.264	0.209	0.226	0.212	0.270	0.256	13.18
31)	T	Hexachlorobuta...	0.185	0.172	0.176	0.175	0.180	0.171	0.167	0.157	0.143	0.136	0.166	9.74
32)	T	4-Chloro-3-met...			0.126	0.192	0.266	0.308	0.318	0.341	0.320	0.313	0.273	27.63
33)	T	2-Methylnaphth...	0.694	0.720	0.764	0.787	0.839	0.815	0.773	0.735	0.647		0.753	7.98
34)	T	1-Methylnaphth...	0.716	0.723	0.761	0.774	0.801	0.766	0.717	0.669	0.601	0.560	0.709	10.96
35)	I	Acenaphthene-d10 (...	----------ISTD----------											8.19
36)	T	Hexachlorocycl...		0.101	0.150	0.217	0.281	0.309	0.315	0.322	0.313	0.293	0.256	31.74
37)	T	2,4,6-Trichlor...		0.168	0.217	0.291	0.370	0.395	0.393	0.389	0.371	0.354	0.327	25.56
38)	T	2,4,5-Trichlor...		0.184	0.225	0.260	0.340	0.377	0.379	0.375	0.348	0.334	0.314	23.08
39)	T	1,1'-Biphenyl	1.432	1.545	1.686	1.812	1.920	1.819	1.679	1.478			1.671	10.48

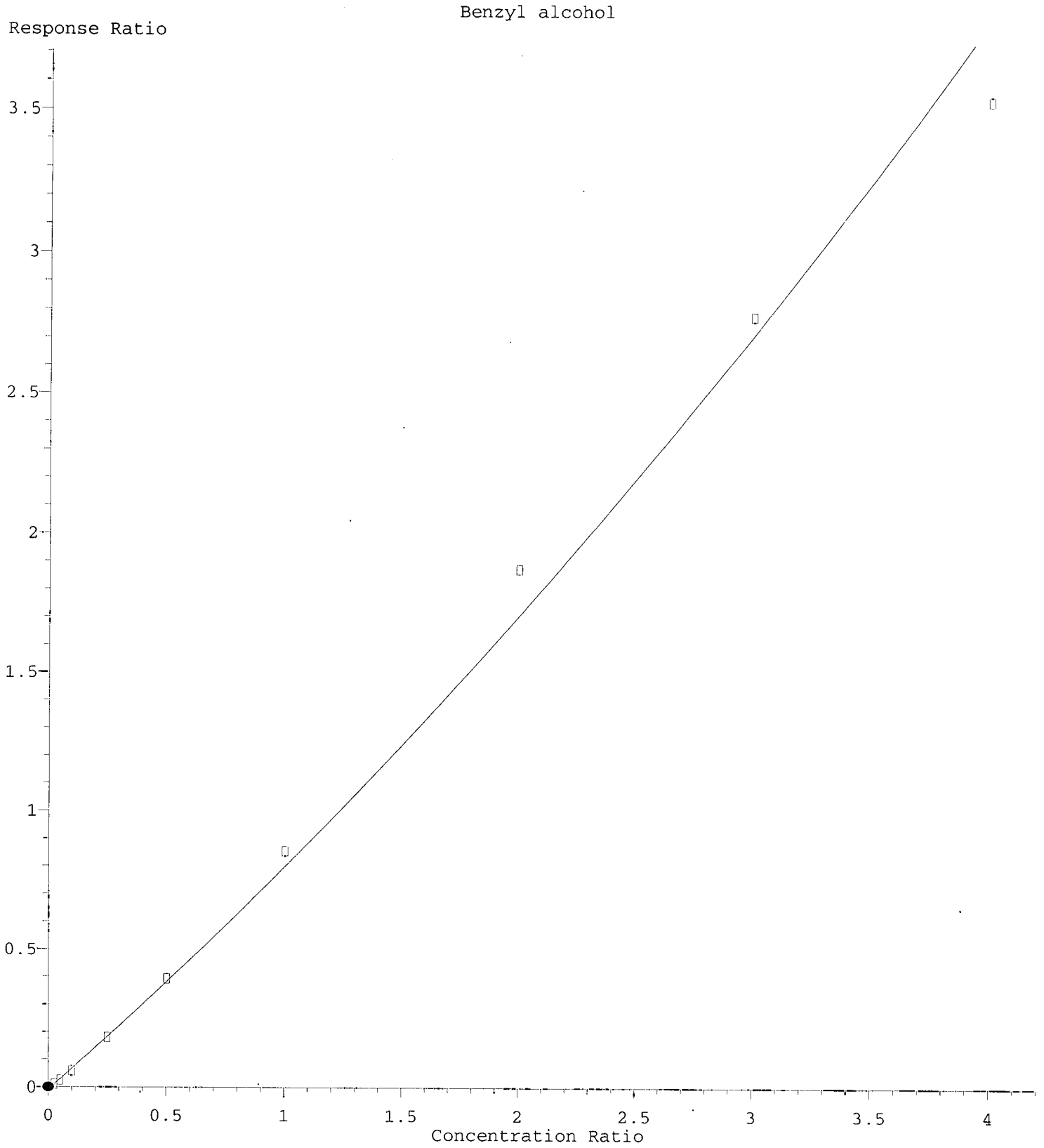
Method Path : T:\methods\
Method File : SV9_050819.M
Title : EPA 8270D: Semivolatile Organics

40)	S	2-Fluorobiphen...	1.343	1.502	1.633	1.702	1.729	1.621	1.495	1.313	1.158		1.500	12.96
41)	T	2-Chloronaphth...	1.066	1.120	1.220	1.313	1.373	1.298	1.193	1.050			1.204	9.89
42)	T	2-Nitroaniline				0.287	0.392	0.436	0.429	0.433	0.427	0.425	0.404	13.26
43)	T	2,6-Dimethylna...	1.115	1.215	1.314	1.403	1.410	1.341	1.236	1.085	0.966		1.231	12.38
44)	T	1,4-Dinitroben...			0.080	0.124	0.177	0.205	0.206	0.221	0.220	0.221	0.182	28.96
45)	T	Dimethyl phtha...	1.305	1.473	1.542	1.564	1.575	1.490	1.402	1.297	1.193	1.151	1.399	11.07
46)	T	1,3-Dinitroben...				0.172	0.228	0.244	0.234	0.240	0.231	0.223	0.225	10.70
47)	T	2,6-Dinitrotol...			0.238	0.309	0.358	0.350	0.337	0.324	0.302	0.286	0.313	12.48
48)	T	1,2-Dinitroben...				0.142	0.161	0.170	0.164	0.162	0.149	0.138	0.155	7.87
49)	T	Acenaphthylene	1.863	2.011	2.189	2.231	2.222	2.160	1.961	1.711	1.459		1.978	13.33
50)	T	3-Nitroaniline				0.257	0.298	0.274	0.225	0.202	0.197		0.242	16.76
51)	T	Acenaphthene	1.289	1.420	1.407	1.393	1.372	1.307	1.223	1.107	1.010	0.938	1.246	13.87
52)	T	2,4-Dinitrophenol				0.030	0.066	0.108	0.124	0.164	0.175	0.178	0.121	47.41
53)	T	4-Nitrophenol			0.109	0.144	0.200	0.238	0.234	0.272	0.274	0.273	0.218	28.71
54)	T	2,4-Dinitrotol...		0.184	0.257	0.362	0.435	0.448	0.435	0.430	0.394	0.359	0.367	24.75
55)	T	Dibenzofuran	1.480	1.739	1.835	1.921	1.944	1.835	1.690	1.501	1.321		1.696	12.81
56)	T	2,3,5,6-Tetrac...		0.122	0.164	0.241	0.292	0.315	0.311	0.317	0.305	0.292	0.262	27.46
57)	T	2,3,4,6-Tetrac...	0.153	0.184	0.254	0.293	0.327	0.339	0.328	0.325	0.305	0.291	0.280	22.92
58)	T	Diethyl phthalate	1.341	1.402	1.484	1.509	1.457	1.379	1.215	1.060			1.356	11.17
59)	T	2,3,5-Trimethy...	1.269	1.271	1.338	1.303	1.308	1.207	1.087	0.930			1.214	11.44
60)	T	Fluorene	1.520	1.512	1.604	1.584	1.576	1.450	1.306	1.142			1.462	10.99
61)	T	4-Chlorophenyl...	0.630	0.729	0.757	0.784	0.762	0.708	0.656	0.590	0.530		0.683	12.71
62)	T	4-Nitroaniline				0.313	0.337	0.327	0.287	0.294	0.277	0.261	0.300	9.17
63)	T	4,6-Dinitro-2-...			0.064	0.103	0.153	0.187	0.192	0.216	0.214	0.213	0.168	34.03
64)	I	Phenanthrene-d10 (...	----------ISTD----------											5.28
65)	T	N-Nitrosodiphe...	0.546	0.569	0.671	0.713	0.721	0.654	0.575	0.493			0.618	13.51
66)	T	Azobenzene (1,...	0.630	0.686	0.784	0.800	0.801	0.738	0.668	0.595	0.536		0.693	13.73
67)	S	2,4,6-Tribromo...		0.071	0.081	0.092	0.102	0.104	0.098	0.097	0.093	0.090	0.092	11.41
68)	T	4-Bromophenyl ...	0.219	0.222	0.246	0.240	0.249	0.234	0.222	0.203	0.187	0.176	0.220	11.23
69)	T	Hexachlorobenzene	0.233	0.278	0.280	0.260	0.266	0.249	0.233	0.209	0.189		0.244	12.77
70)	T	Pentachlorophe...			0.055	0.067	0.097	0.110	0.114	0.128	0.125	0.122	0.102	26.74
71)	T	Phenanthrene	1.135	1.183	1.186	1.183	1.170	1.092	1.004	0.881	0.781		1.068	13.94
72)	T	Anthracene	1.128	1.141	1.199	1.200	1.188	1.107	1.003	0.879	0.769		1.068	14.39
73)	T	Carbazole	0.881	0.949	1.015	1.061	1.074	1.029	0.920	0.824	0.671		0.936	13.91
74)	T	Di-n-butyl pht...		1.070	1.202	1.275	1.356	1.325	1.189	1.075			1.213	9.34
75)	T	Fluoranthene	1.230	1.262	1.343	1.396	1.432	1.353	1.199	1.080	0.940		1.248	12.71
76)	T	Benzidine				0.412	0.354	0.281	0.193	0.314	0.341	0.368	0.323	21.84
77)	T	Pyrene	1.318	1.338	1.404	1.440	1.421	1.349	1.183	1.055	0.926		1.270	14.05
78)	I	Chrysene-d12 (ISTD)	----------ISTD----------											16.76
79)	S	Terphenyl-d14 ...	0.975	0.930	1.015	1.037	1.060	1.024	1.008	0.965	0.906	0.880	0.980	6.07
80)	T	Butyl benzyl p...	0.314	0.372	0.395	0.491	0.562	0.600	0.621	0.674	0.676	0.681	0.539	25.48
81)	T	Bis(2-ethylhex...	0.635	0.442	0.439	0.473	0.508	0.536	0.543	0.571	0.564	0.563	0.527	11.82
82)	T	3,3-Dichlorobe...				0.301	0.212	0.145	0.116	0.102	0.108		0.164	47.85
83)	T	Benz(a)anthracene	1.238	1.147	1.157	1.210	1.233	1.202	1.161	1.143	1.081	1.046	1.162	5.39
84)	T	Chrysene	1.104	1.076	1.102	1.125	1.127	1.079	1.062	1.050	1.011	0.981	1.072	4.43
85)	T	Bis(2-ethylhex...			0.502	0.615	0.730	0.746	0.752	0.783	0.767	0.747	0.705	13.70
86)	I	Perylene-d12 (ISTD)	----------ISTD----------											11.43
87)	T	Di-n-octyl pht...			0.686	0.939	1.250	1.419	1.468	1.530	1.462	1.443	1.275	23.85

Method Path : T:\methods\
Method File : SV9_050819.M
Title : EPA 8270D: Semivolatile Organics

88)	T	Benzo(b)fluora...	1.041	1.070	1.095	1.221	1.318	1.340	1.330	1.268	1.251	1.292	1.223	9.23
89)	T	Benzo(k)fluora...	1.018	1.108	1.153	1.268	1.344	1.311	1.203	1.091	0.980	0.908	1.138	12.73
90)	T	Benzo(b+k)fluo...	1.029	1.130	1.171	1.278	1.367	1.356	1.294	1.210	1.146	1.109	1.209	9.25
91)	T	Benzo(e)pyrene	1.085	1.133	1.184	1.245	1.321	1.297	1.262	1.195	1.135	1.101	1.196	6.93
92)	T	Benzo(a)pyrene	0.831	0.950	1.011	1.099	1.218	1.227	1.147	1.066	1.009	0.968	1.053	11.81
93)	T	Perylene	1.029	0.986	1.041	1.036	1.098	1.080	1.033	0.976	0.937	0.908	1.013	5.95
94)	I	Dibenz(a,h)Anthrce...	----------ISTD----------											8.46
95)	T	Indeno(1,2,3-c...	1.128	1.088	1.108	1.085	1.136	1.091	1.081	1.100	1.080	1.084	1.098	1.82
96)	T	Dibenz(a,h)ant...	0.972	0.979	1.003	1.035	1.045	0.999	1.007	0.937	0.877	0.841	0.970	6.84
97)	T	Benzo(g,h,i)pe...	1.008	1.041	1.074	1.126	1.175	1.133	1.119	1.079	1.011	0.972	1.074	6.08

(#) = Out of Range

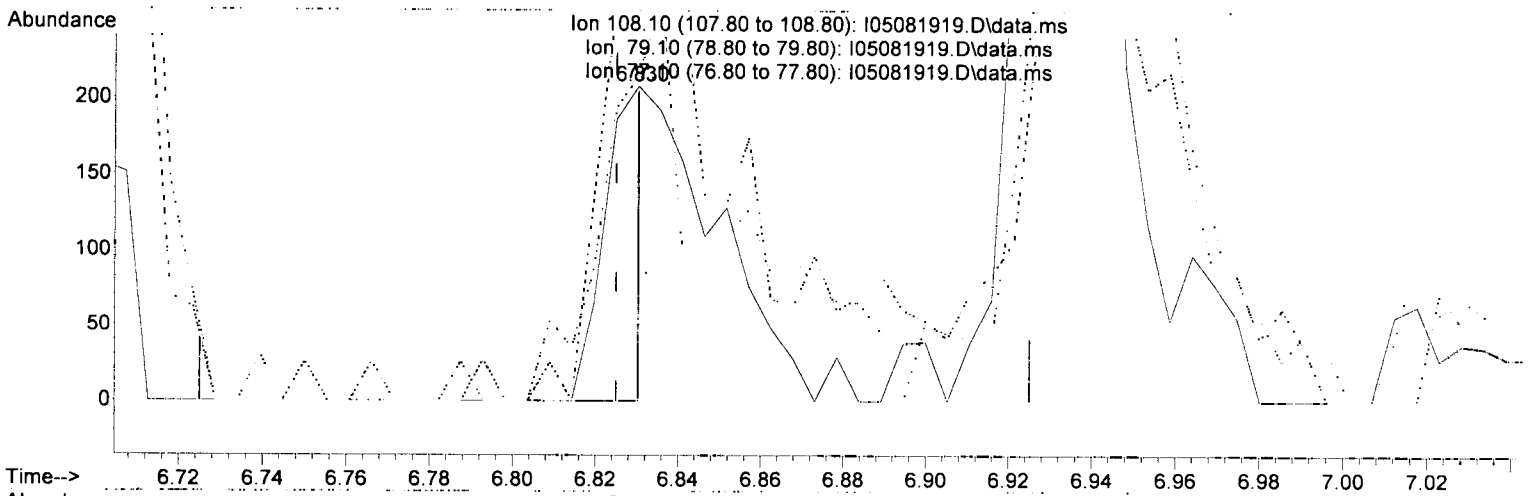


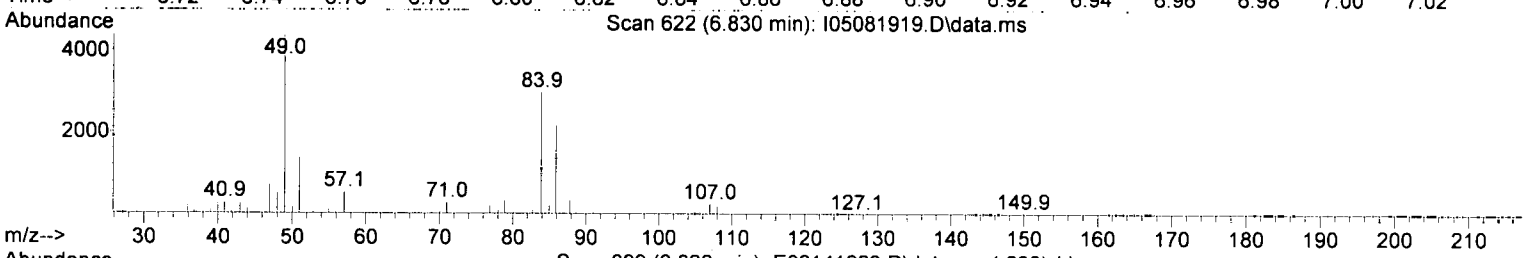
R = 4.94e-002 A*A + 7.58e-001 A - 9.75e-003
Coef of Det (r^2) = 0.993 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

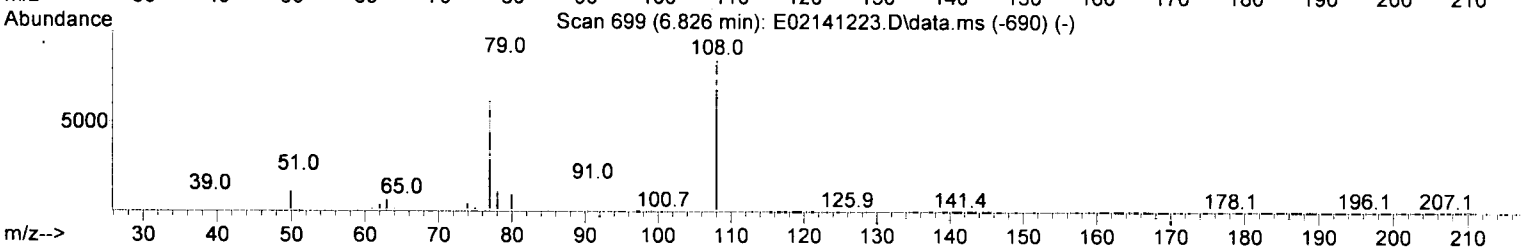
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9







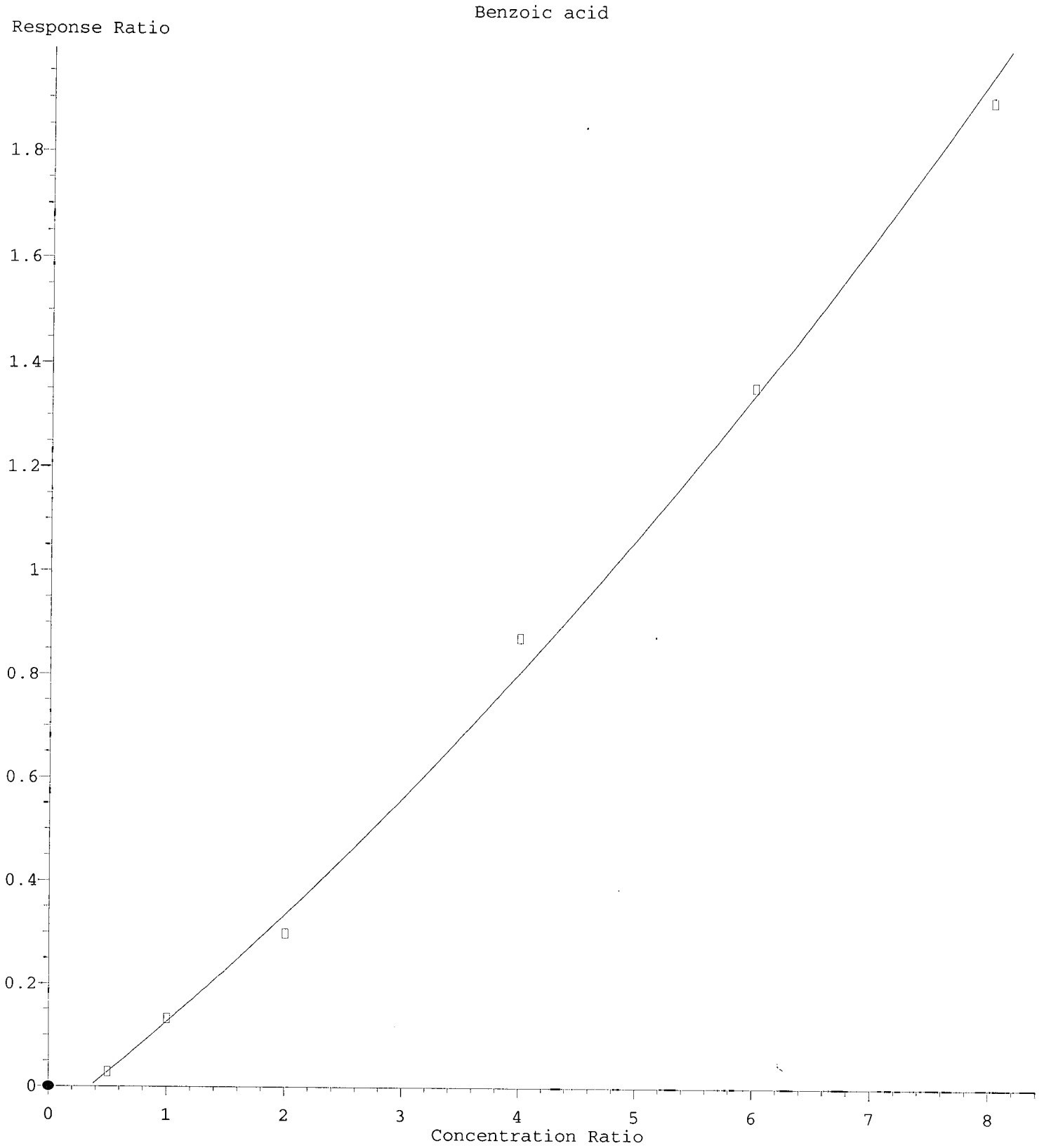
TIC: I05081919.D\data.ms

(12) Benzyl alcohol (T)

6.830min (+ 0.005) 29.07 ng/ml m

response 147

Ion	Exp%	Act%
108.10	100.00	100.00
79.10	130.20	173.56#
77.10	80.10	103.37
0.00	0.00	0.00

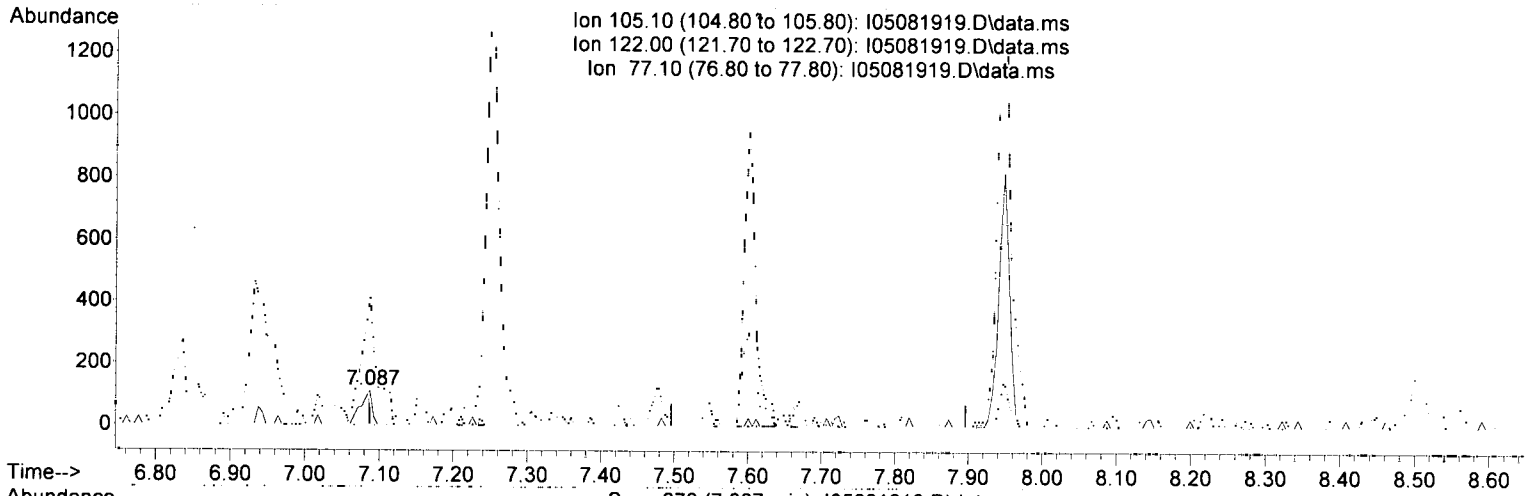


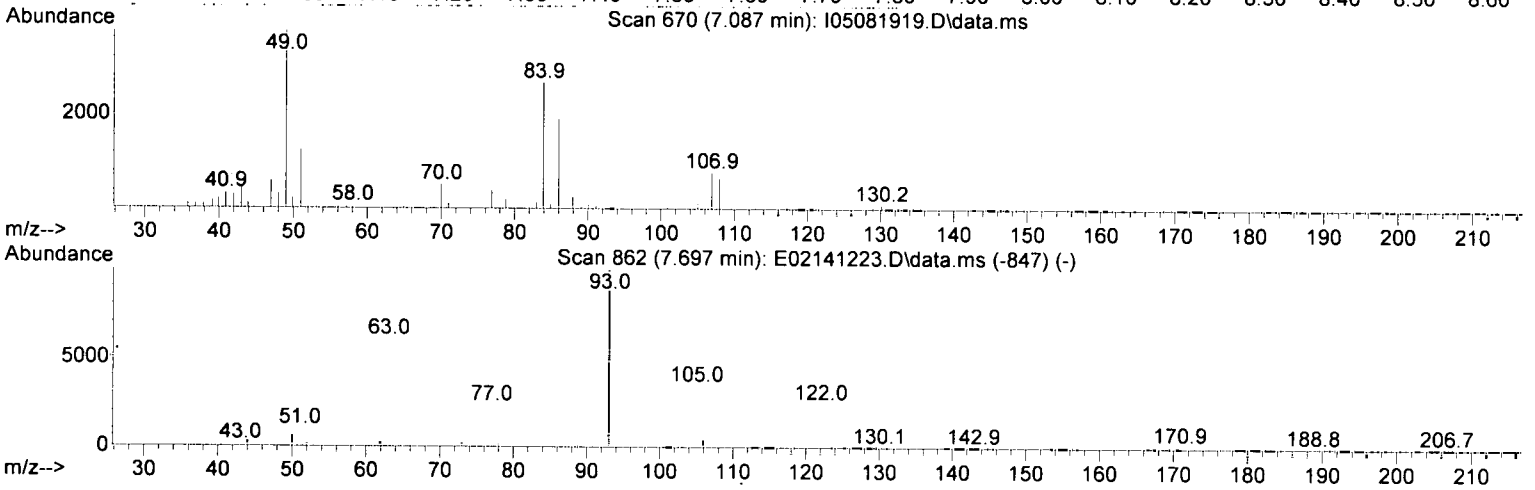
R = 8.50e-003 A*A + 1.84e-001 A - 6.57e-002
Coef of Det (r^2) = 0.996 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9





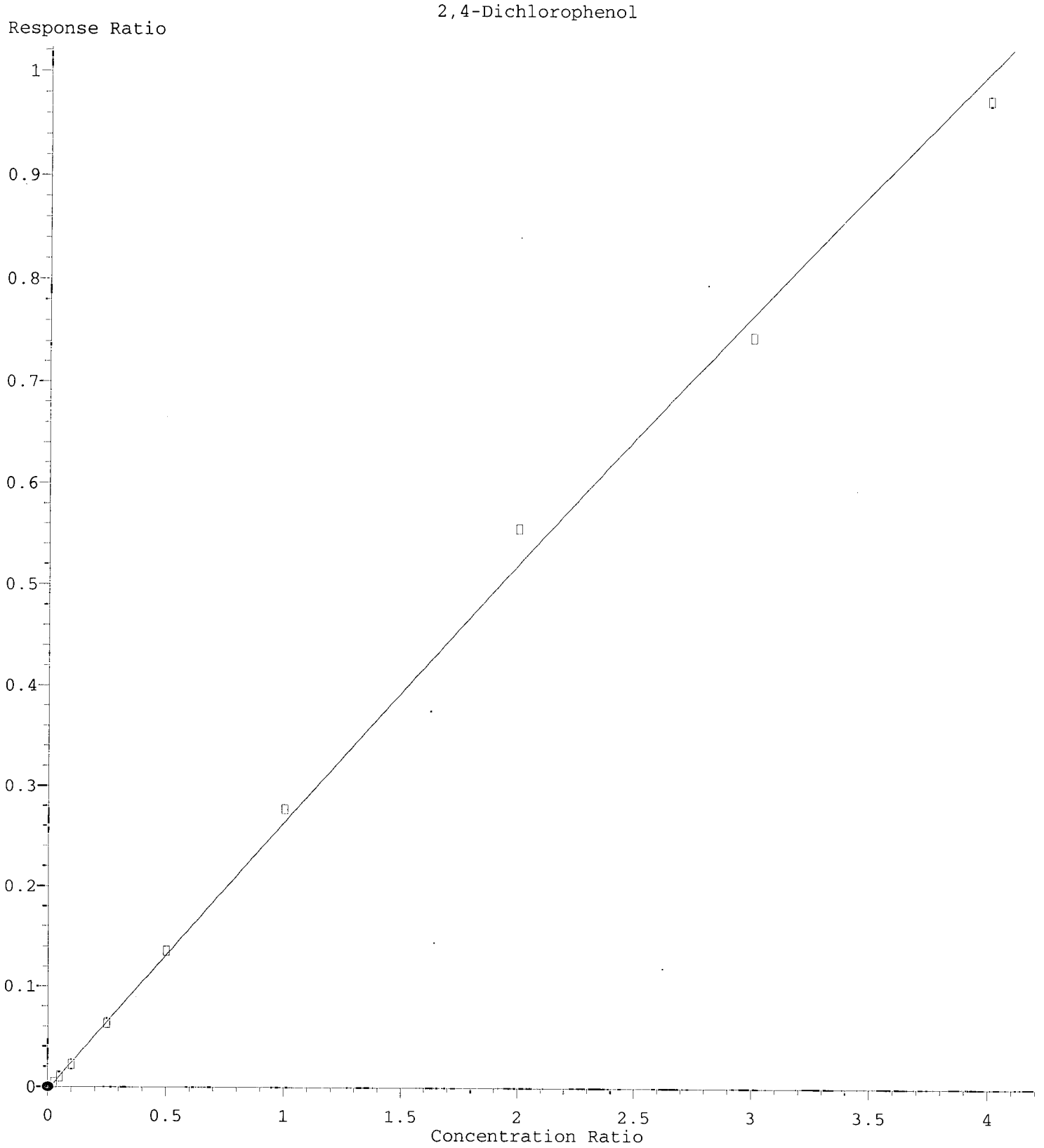
TIC: I05081919.D\data.ms

(26) Benzoic acid (T)

7.087min (-0.609) 707.06 ng/ml m

response 107

Ion	Exp%	Act%
105.10	100.00	100.00
122.00	80.70	0.00#
77.10	76.00	371.17#
0.00	0.00	0.00

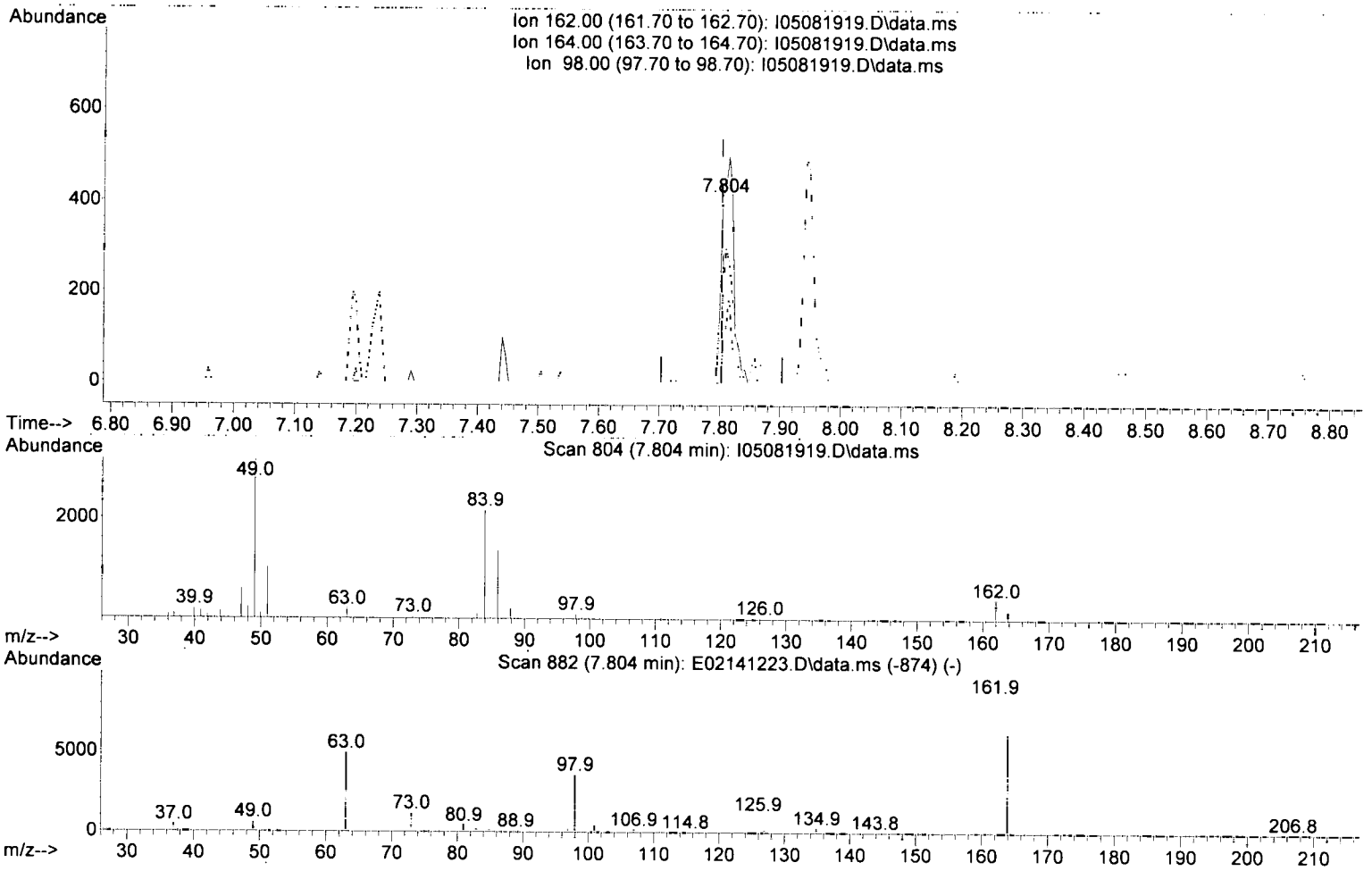


R = -5.43e-003 A*A + 2.73e-001 A - 3.28e-003
Coef of Det (r^2) = 0.997 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



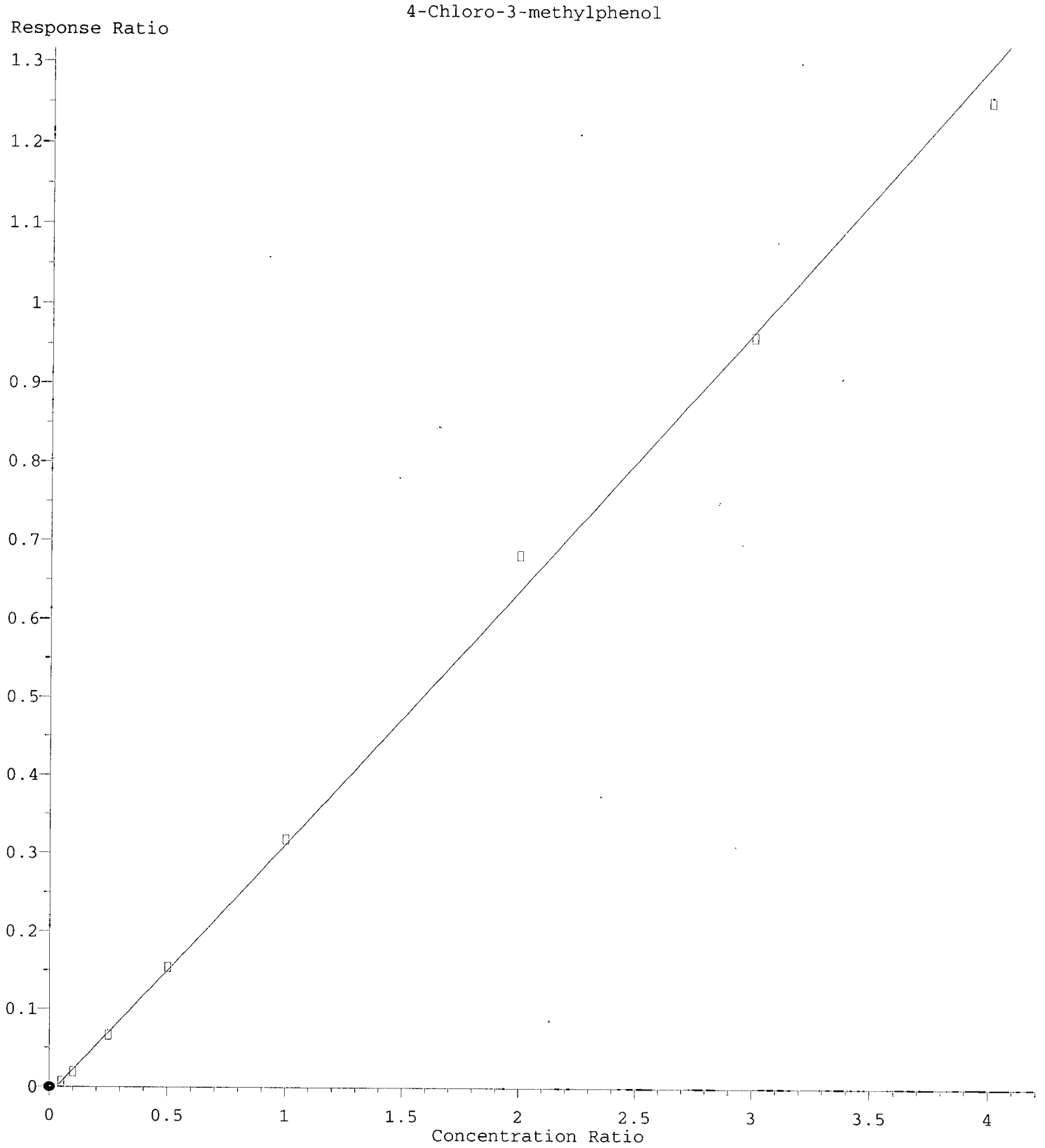
TIC: I05081919.D\data.ms

(27) 2,4-Dichlorophenol (T)

7.804min (+ 0.001) 26.83 ng/ml m

response 175

Ion	Exp%	Act%
162.00	100.00	100.00
164.00	63.60	43.20
98.00	37.40	28.40
0.00	0.00	0.00

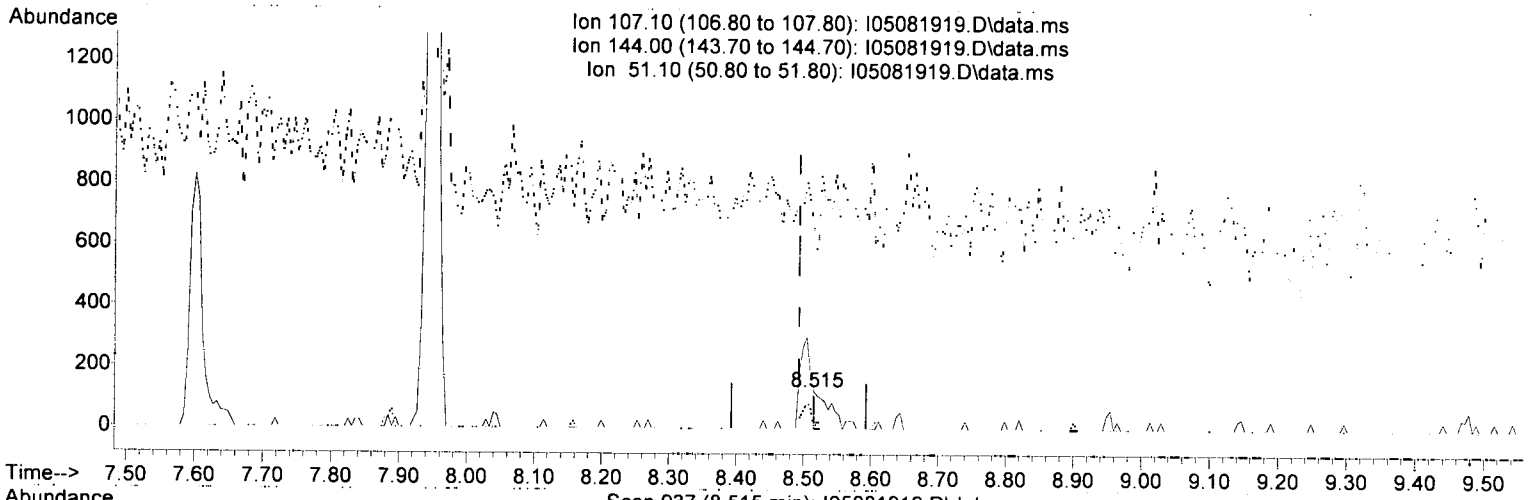


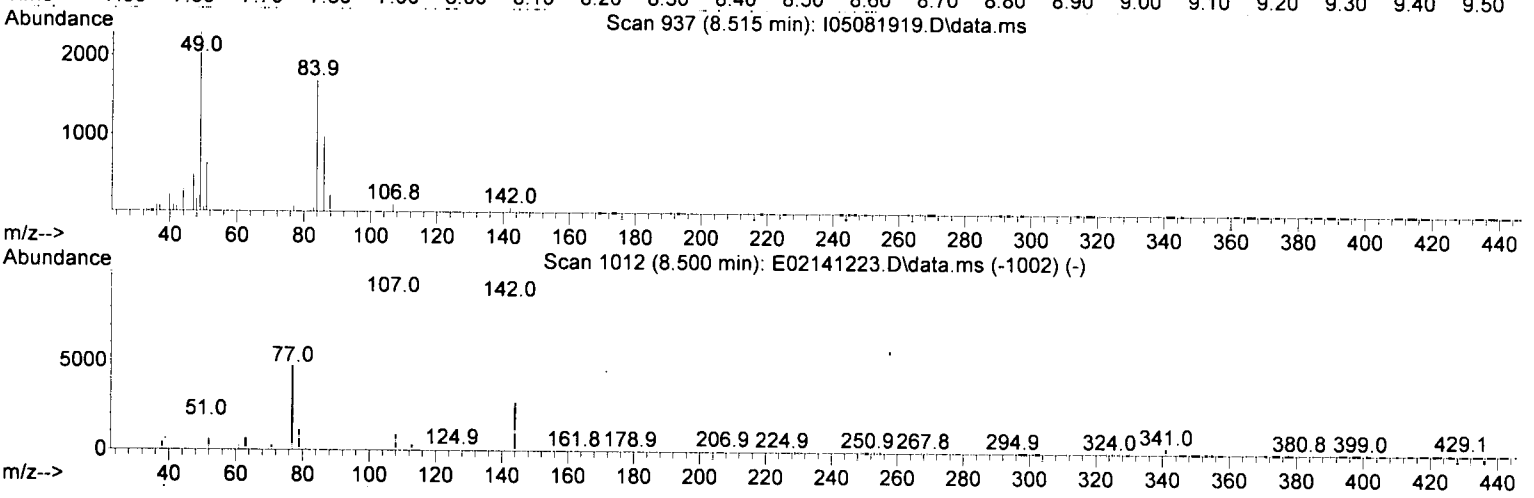
R = 1.82e-003 A*A + 3.20e-001 A - 1.04e-002
Coef of Det (r^2) = 0.997 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9





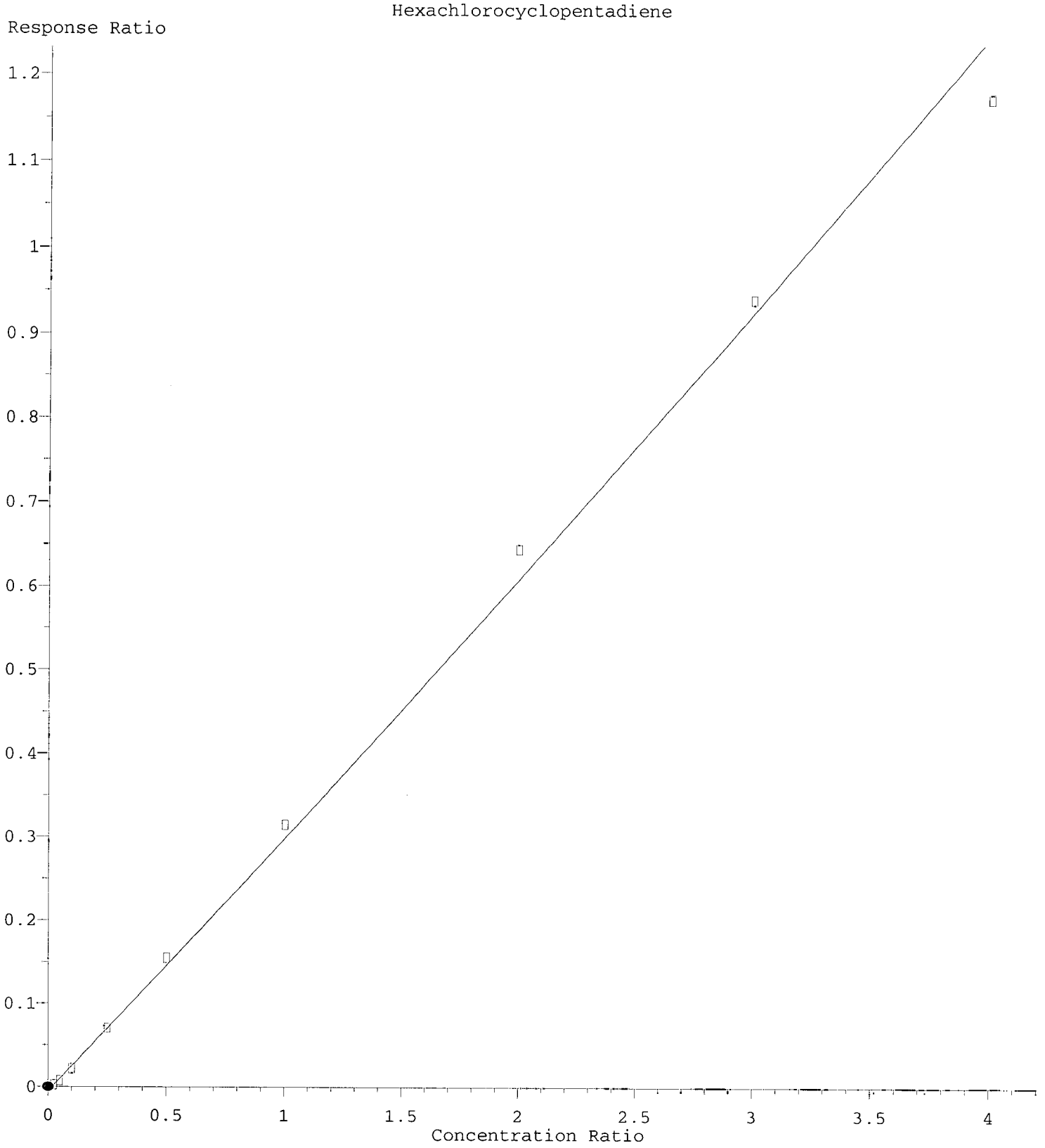
TIC: I05081919.D\data.ms

(32) 4-Chloro-3-methylphenol (T)

8.515min (+ 0.022) 67.07 ng/ml m

response 174

Ion	Exp%	Act%
107.10	100.00	100.00
144.00	26.00	0.00
51.10	19.80	529.75#
0.00	0.00	0.00

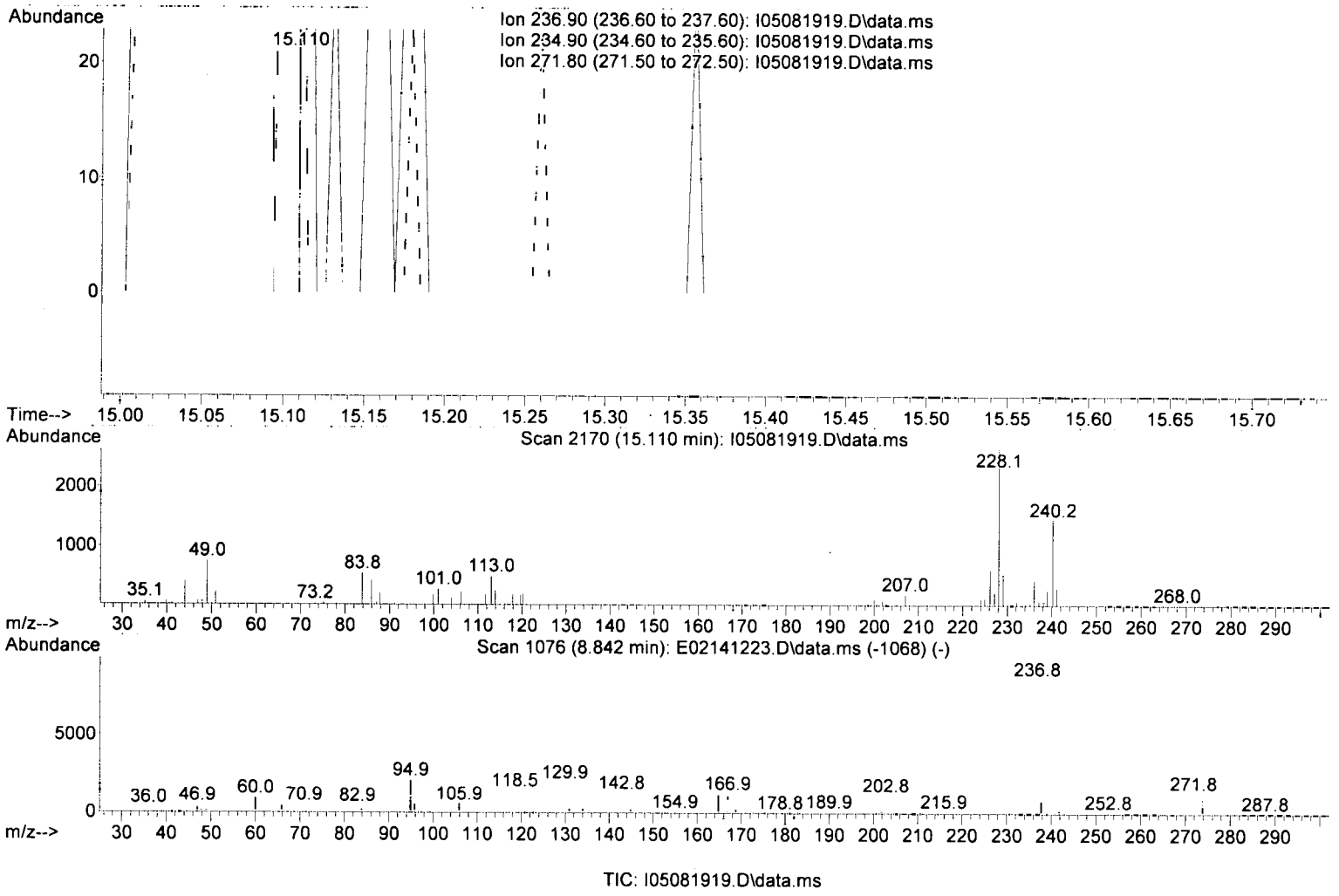


R = 3.01e-003 A*A + 3.01e-001 A - 5.61e-003
Coef of Det (r^2) = 0.993 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



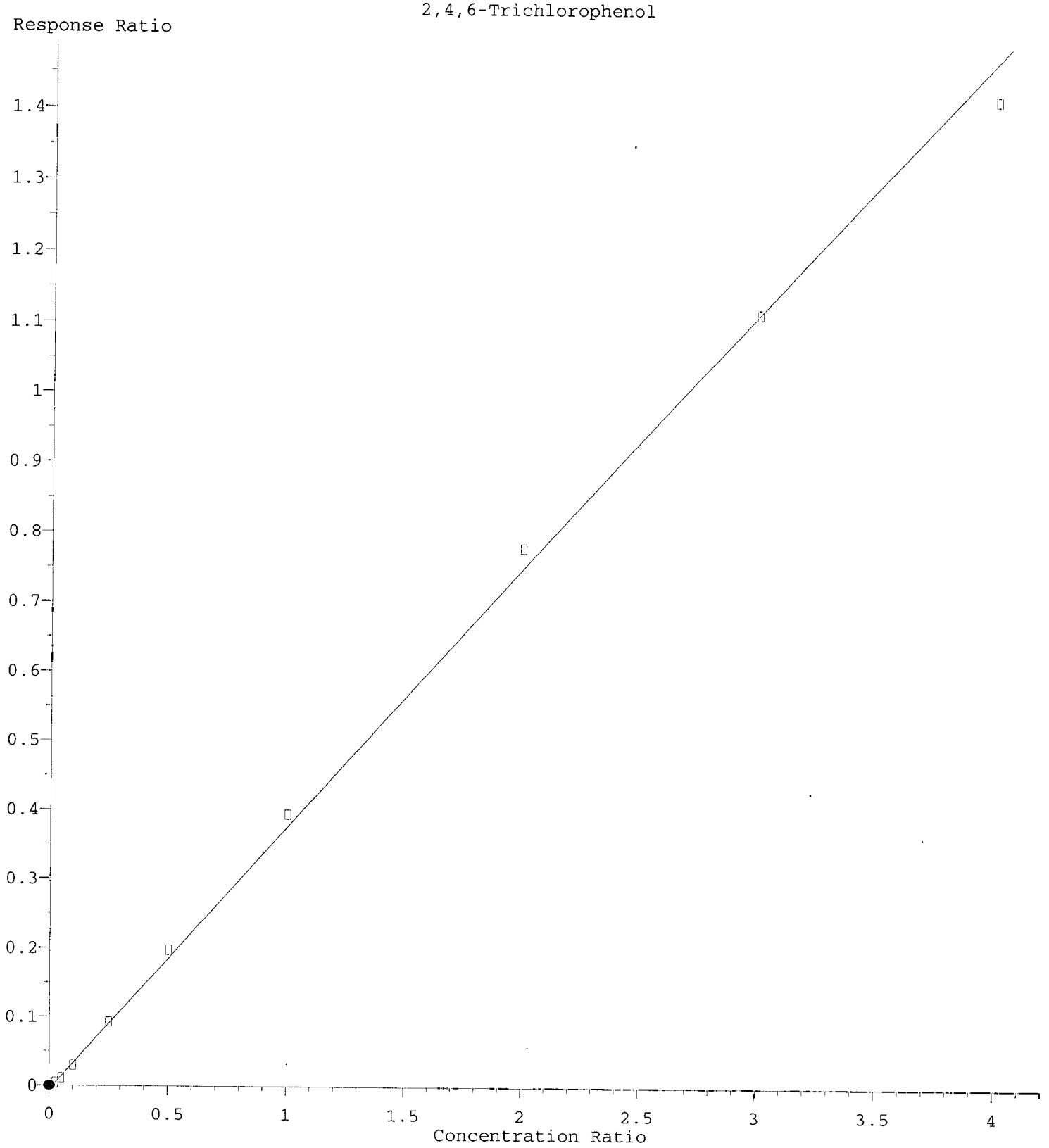
TIC: I05081919.D\data.ms

(36) Hexachlorocyclopentadiene (T)

15.110min (+ 6.285) 40.65 ng/ml m

response 115

Ion	Exp%	Act%
236.90	100.00	100.00
234.90	62.80	64.00
271.80	12.50	0.00
0.00	0.00	0.00

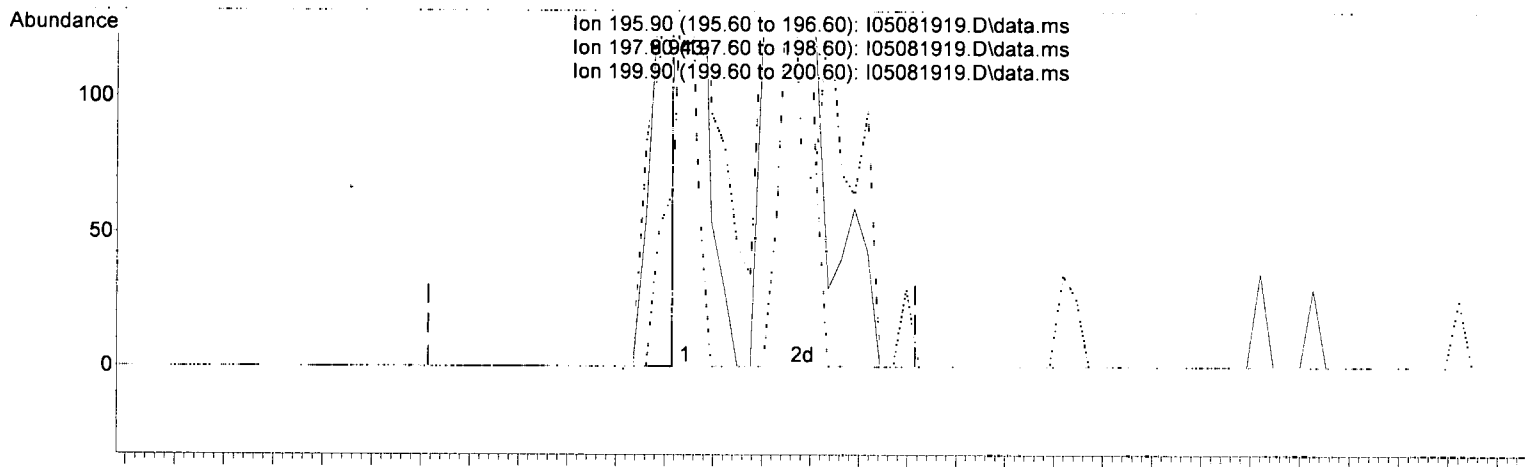


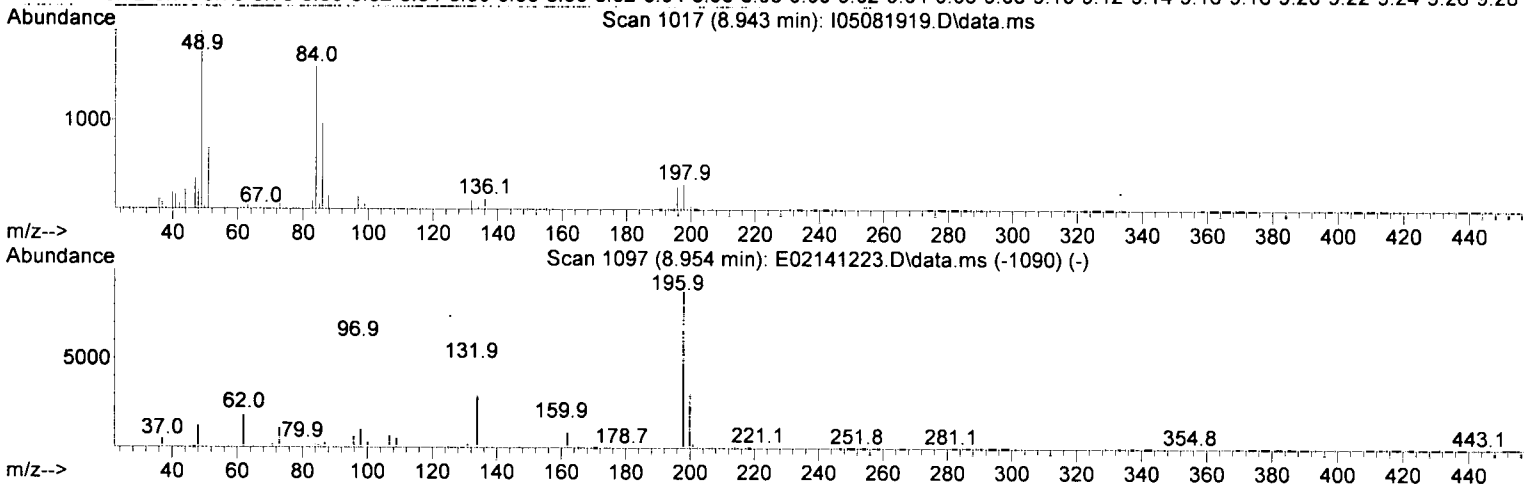
R = -4.37e-003 A*A + 3.86e-001 A - 6.17e-003
Coef of Det (r^2) = 0.994 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9





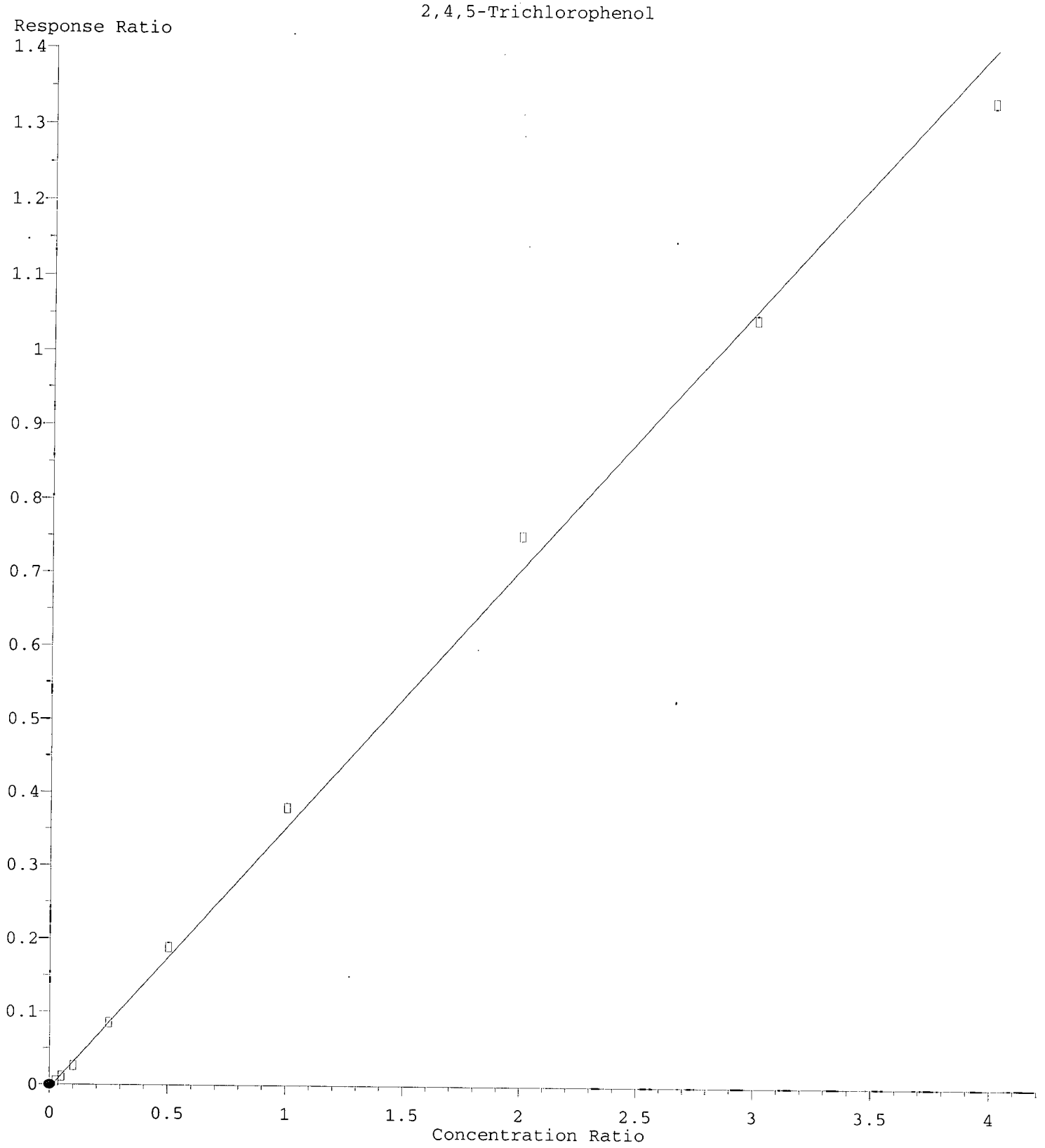
TIC: I05081919.D\data.ms

(37) 2,4,6-Trichlorophenol (T)

8.943min (+ 0.000) 35.47 ng/ml m

response 156

Ion	Exp%	Act%
195.90	100.00	100.00
197.90	97.50	110.11
199.90	30.40	23.47
0.00	0.00	0.00

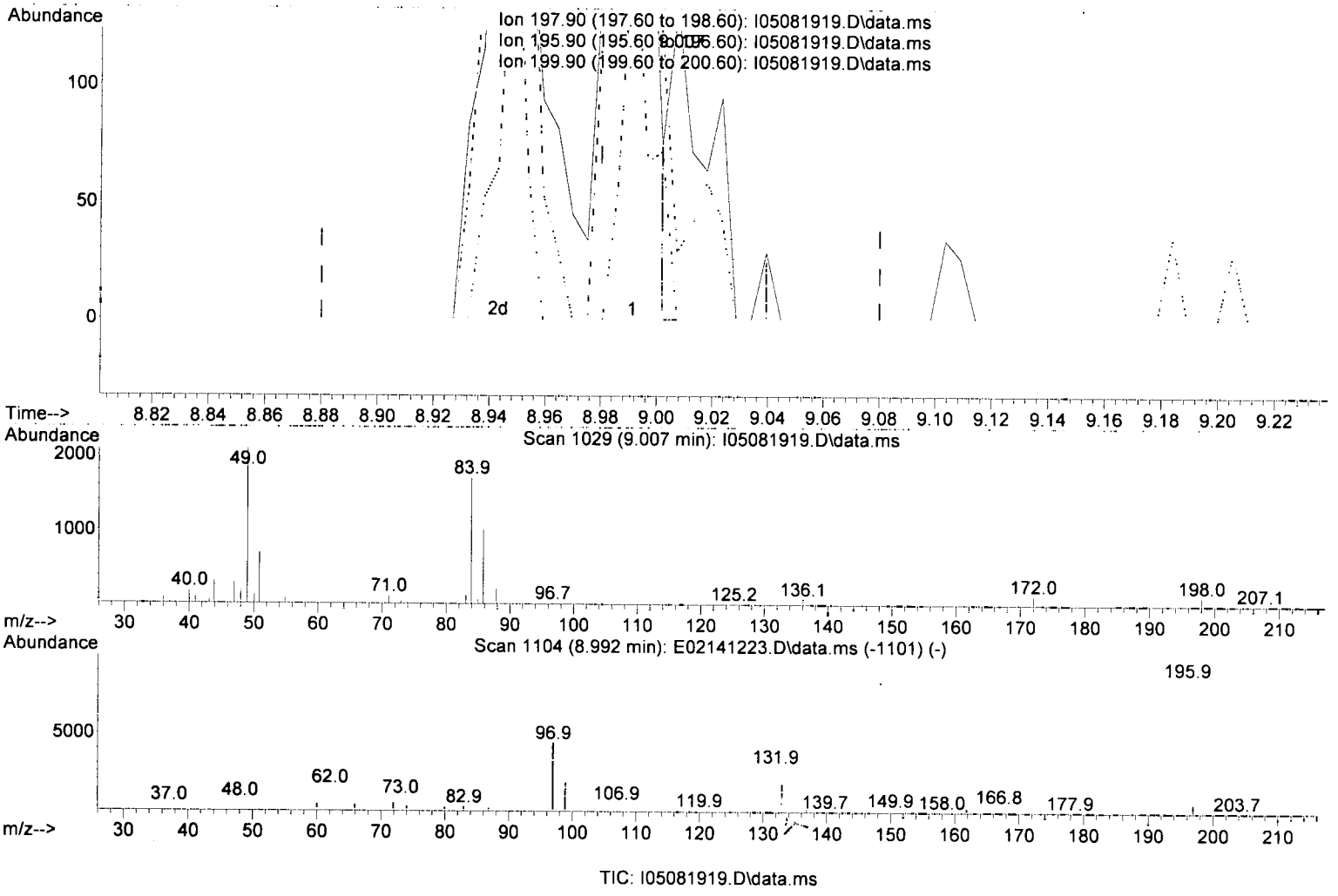


R = -2.14e-003 A*A + 3.60e-001 A - 5.07e-003
Coef of Det (r^2) = 0.992 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



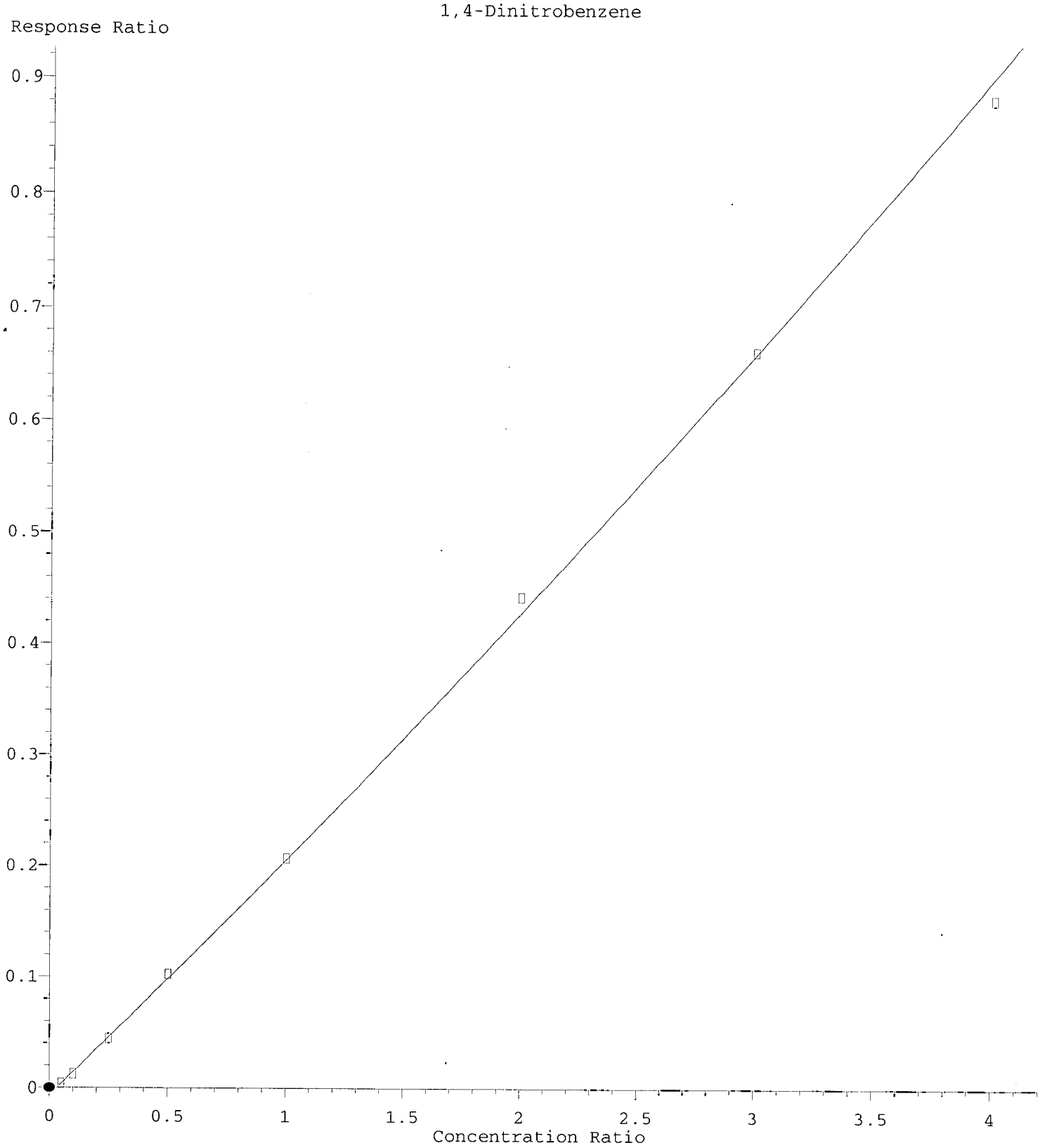
TIC: I05081919.D\data.ms

(38) 2,4,5-Trichlorophenol (T)

9.007min (+ 0.027) 31.20 ng/ml m

response 126

Ion	Exp%	Act%
197.90	100.00	100.00
195.90	105.00	21.64#
199.90	31.10	0.00#
0.00	0.00	0.00

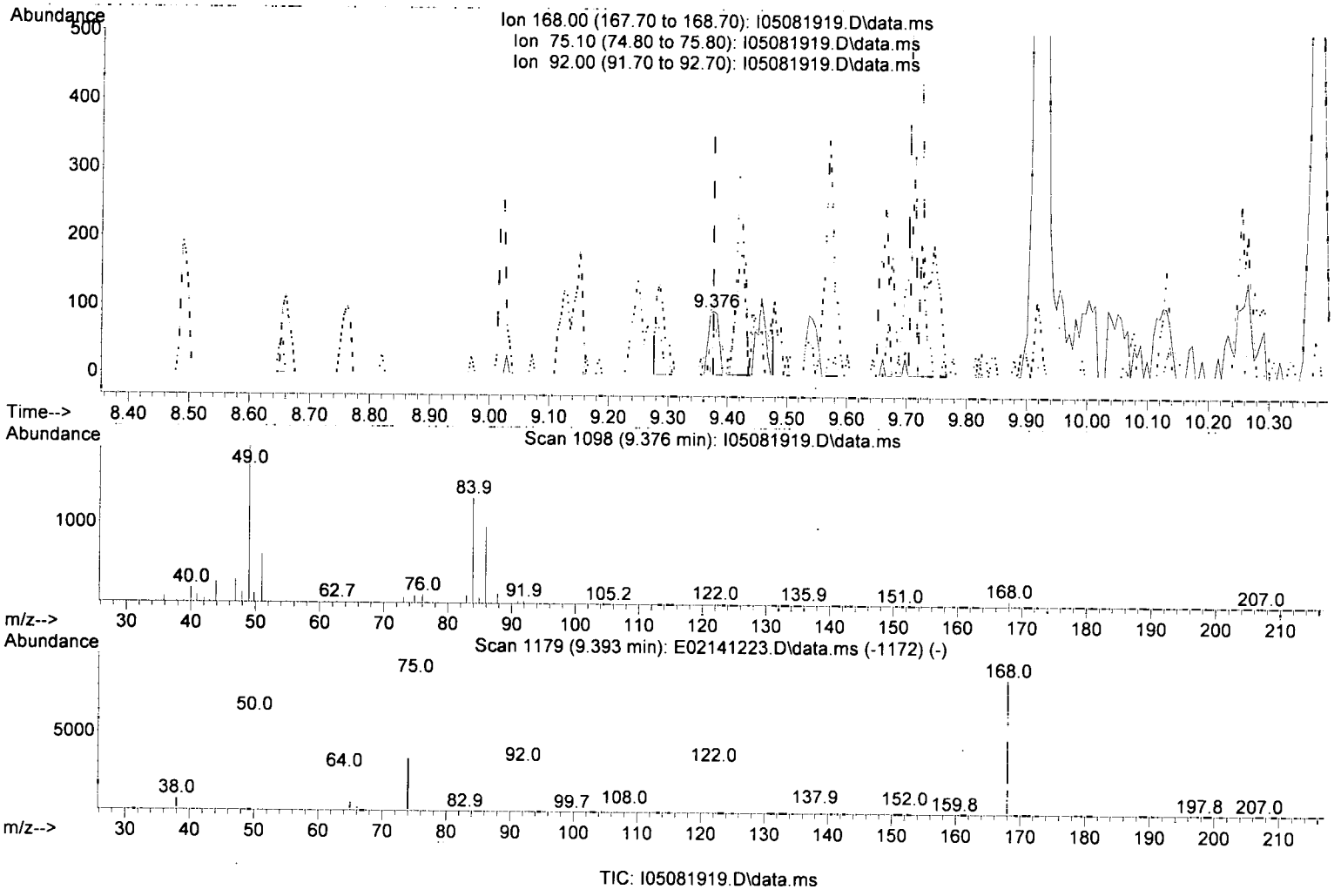


R = 4.91e-003 A*A + 2.07e-001 A - 6.78e-003
Coef of Det (r^2) = 0.998 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



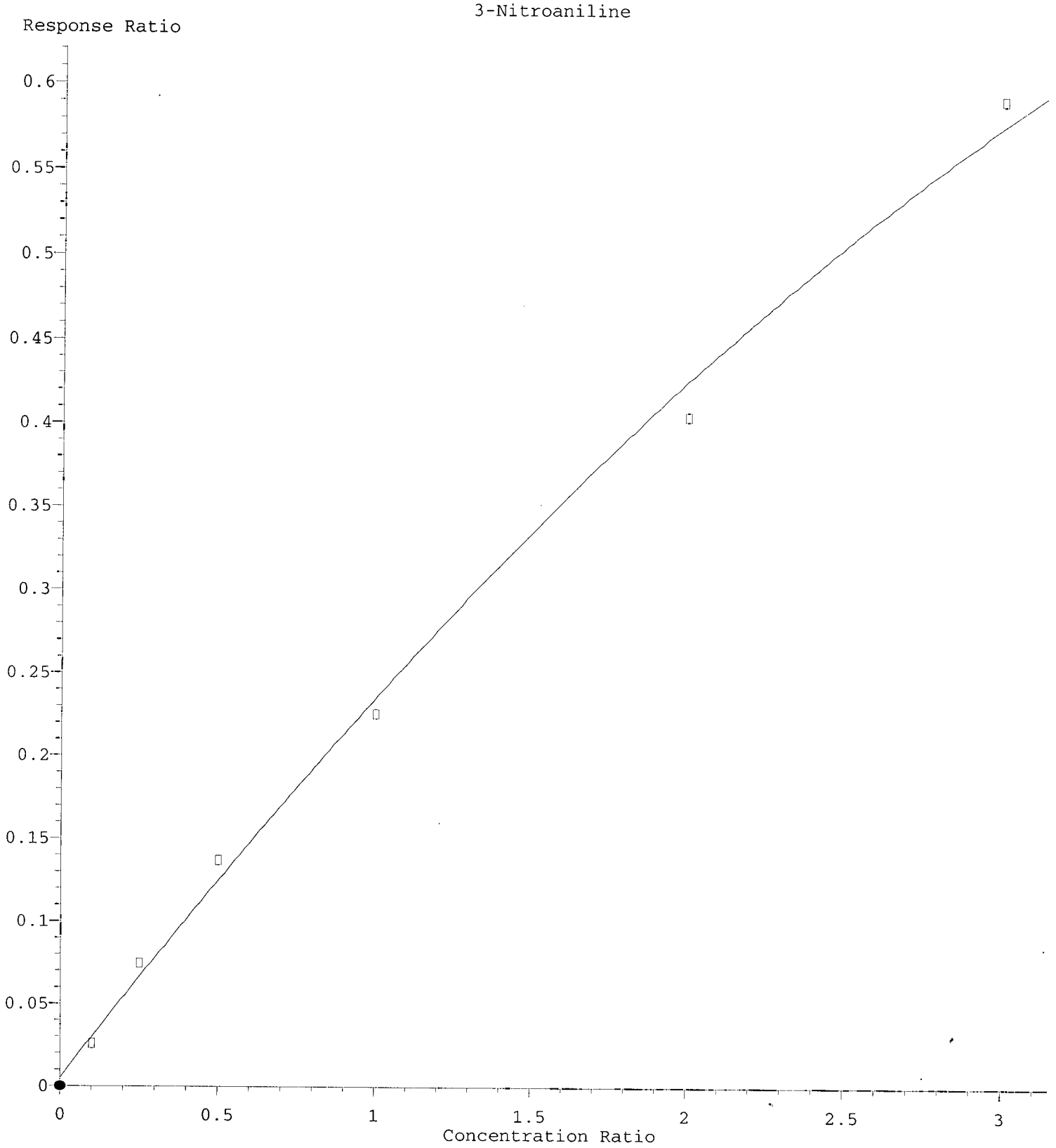
TIC: I05081919.D\data.ms

(44) 1,4-Dinitrobenzene (T)

9.376min (+ 0.000) 70.15 ng/ml

response 116

Ion	Exp%	Act%
168.00	100.00	100.00
75.10	134.30	124.73
92.00	43.50	65.59
0.00	0.00	0.00

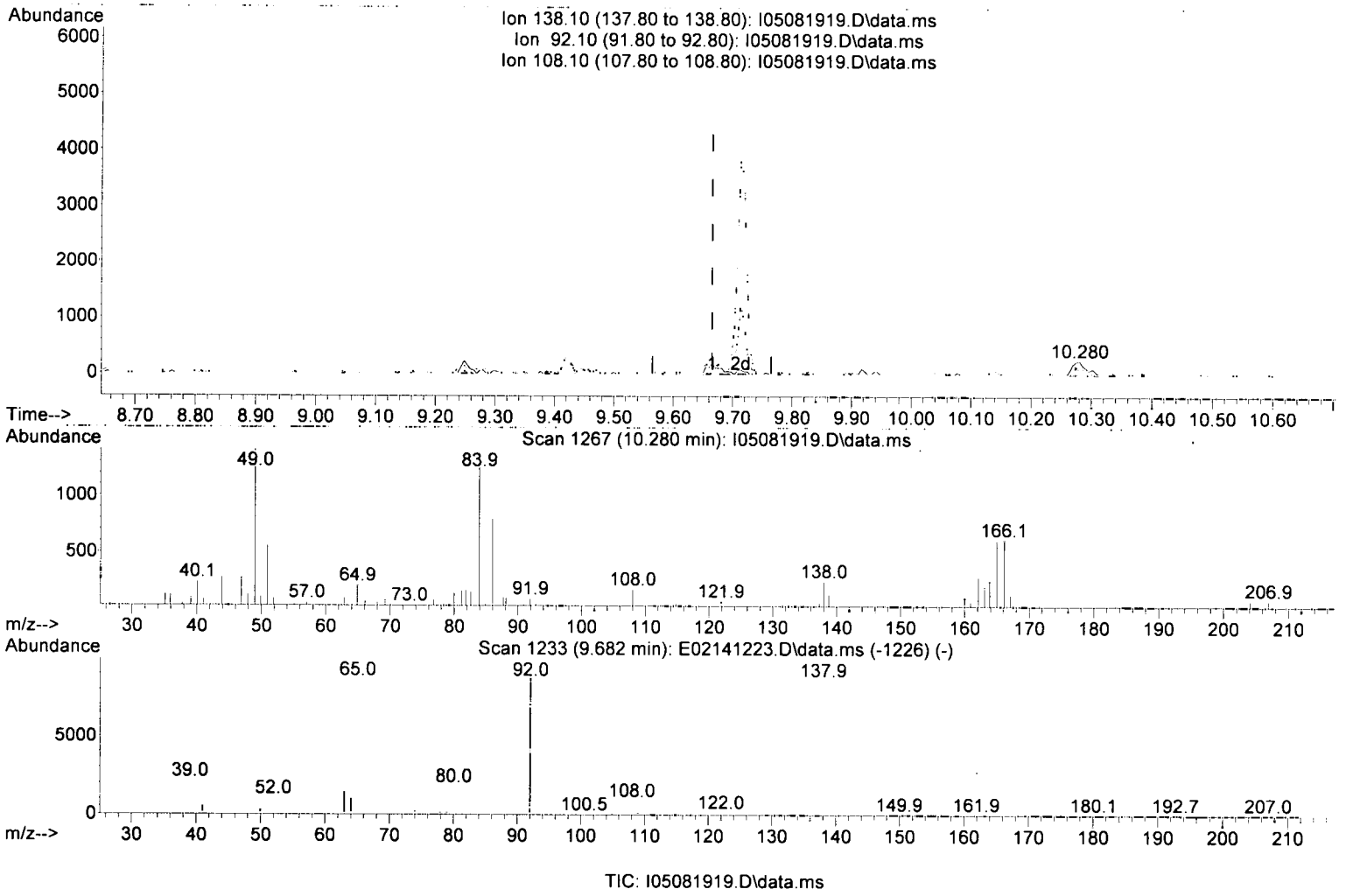


R = -1.97e-002 A*A + 2.50e-001 A + 5.08e-003
Coef of Det (r^2) = 0.994 Curve Fit: Quadratic w(1/a)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



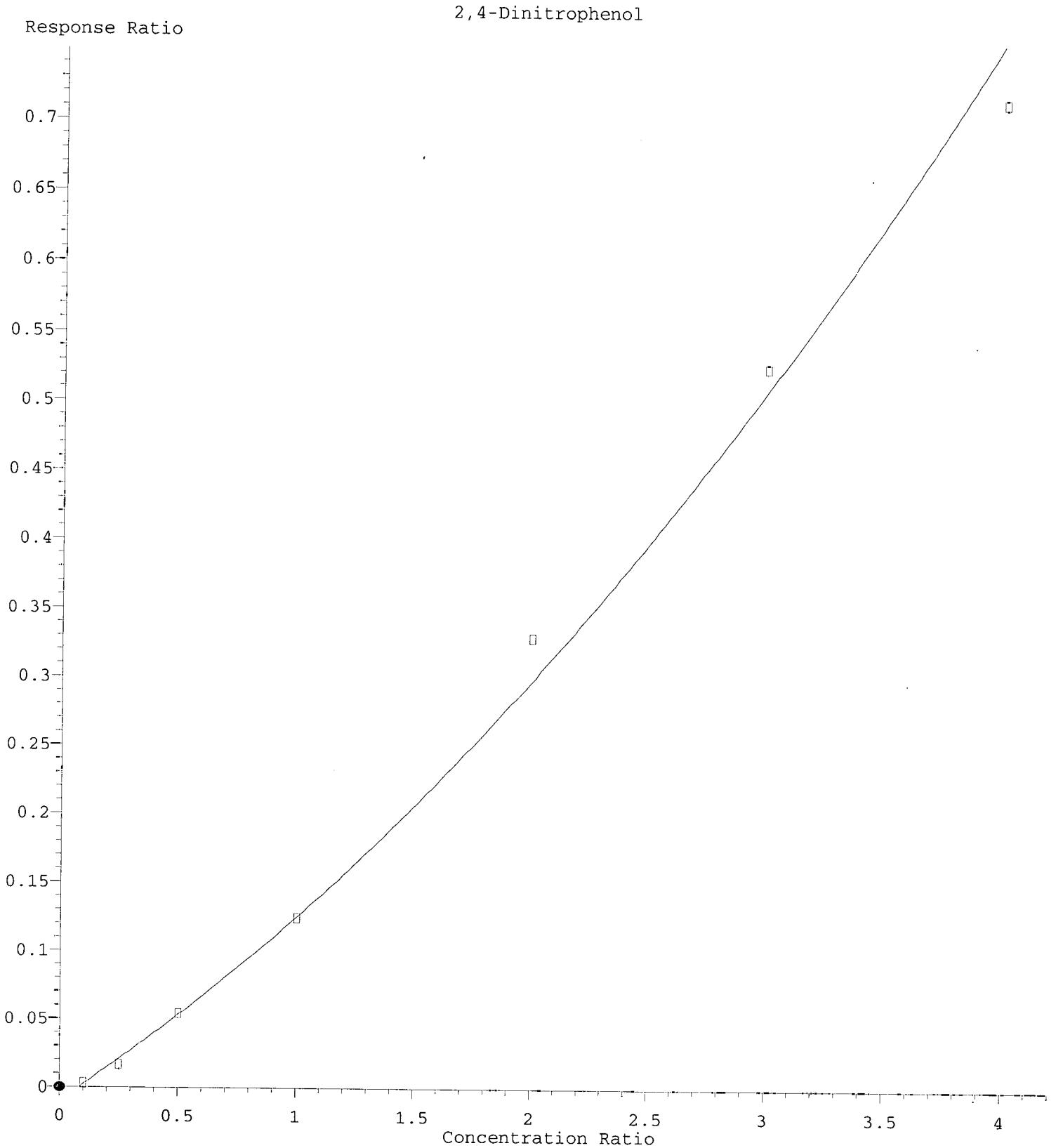
TIC: I05081919.D\data.ms

(50) 3-Nitroaniline (T)

10.280min (+ 0.615) -1.00 ng/ml m

response 1143

Ion	Exp%	Act%
138.10	100.00	100.00
92.10	114.60	35.66#
108.10	11.10	70.08#
0.00	0.00	0.00

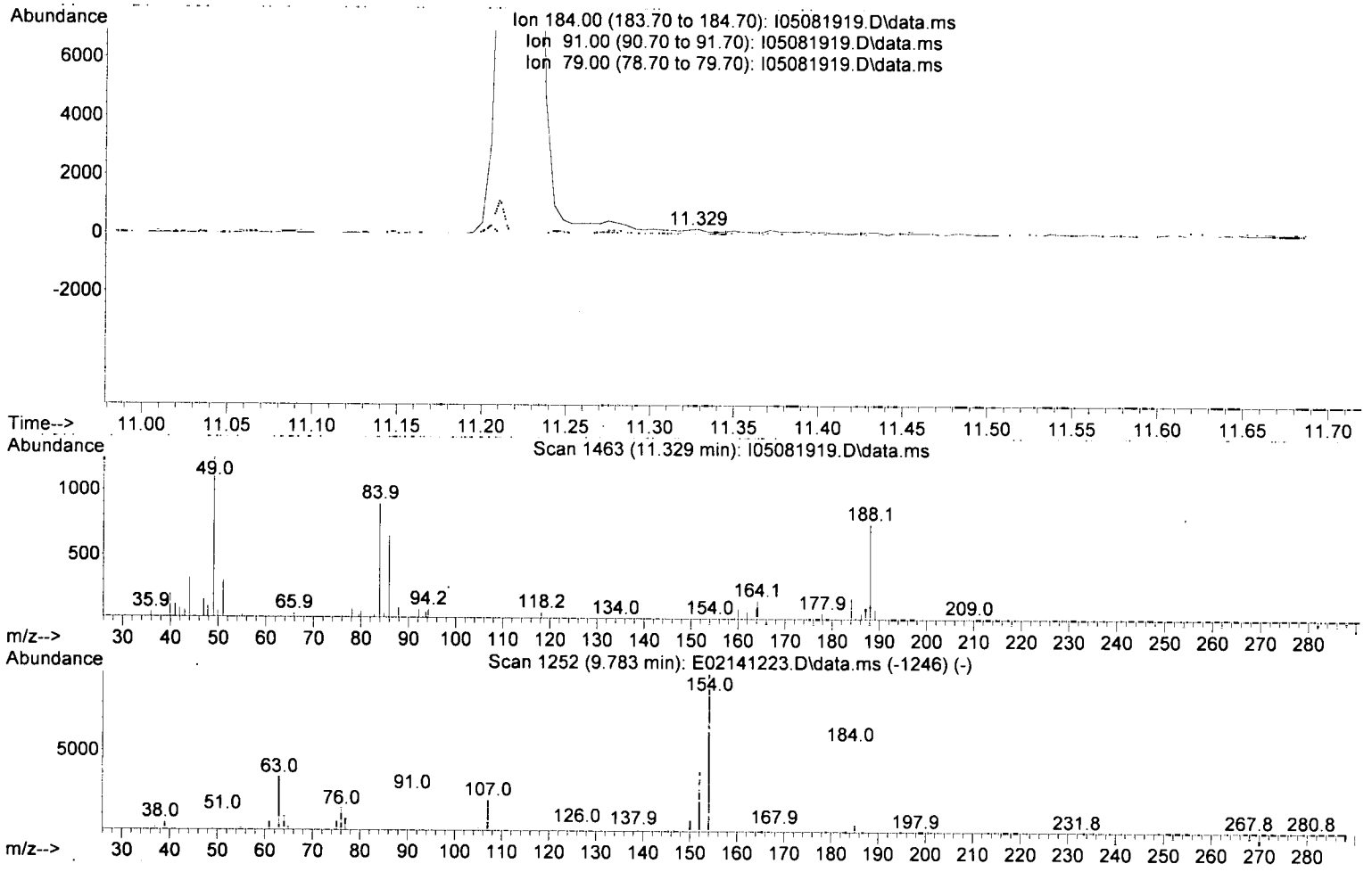


R = 1.91e-002 A*A + 1.15e-001 A - 9.32e-003
Coef of Det (r^2) = 0.994 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



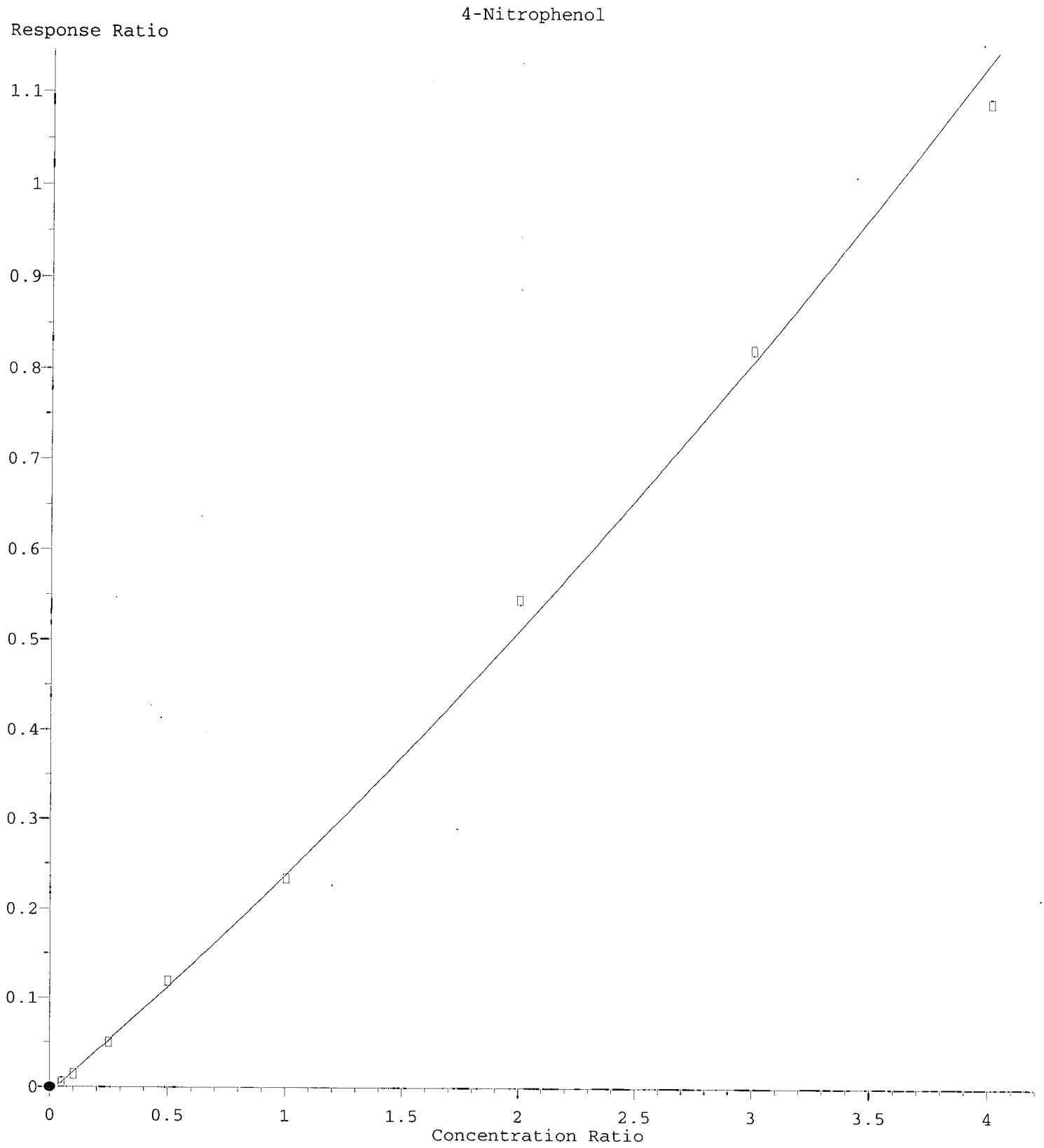
TIC: I05081919.D\data.ms

(52) 2,4-Dinitrophenol (T)

11.329min (+ 1.563) 173.74 ng/ml m

response 190

Ion	Exp%	Act%
184.00	100.00	100.00
91.00	53.50	0.00#
79.00	32.30	25.00
0.00	0.00	0.00

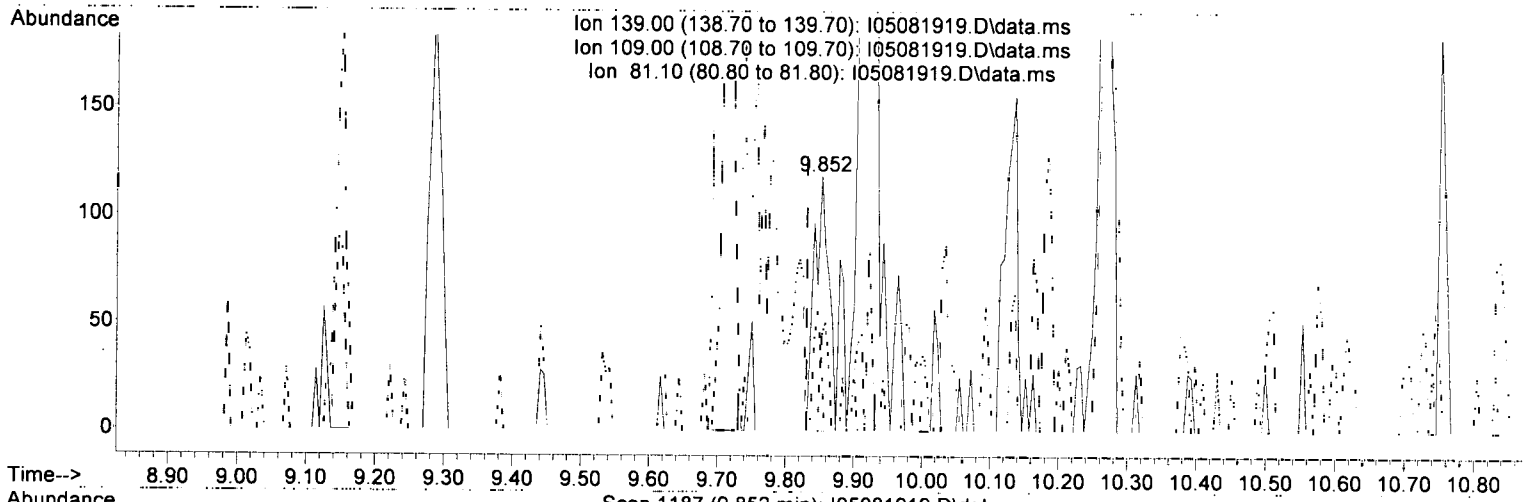


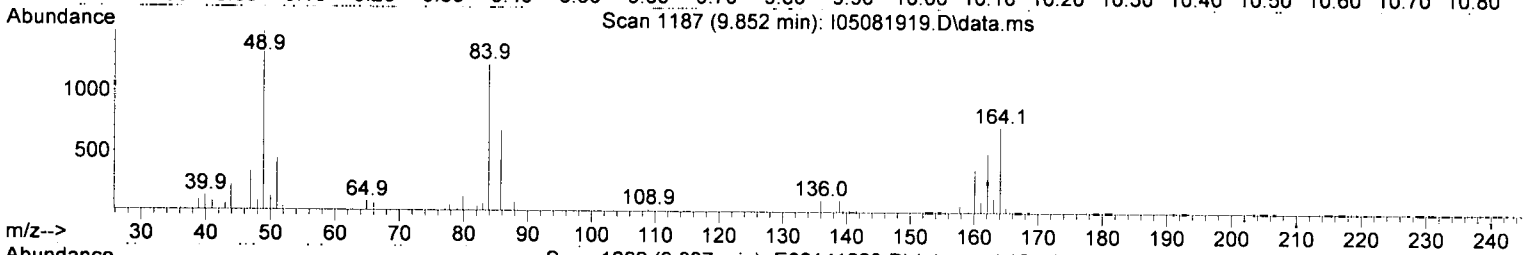
R = 1.35e-002 A*A + 2.32e-001 A - 6.72e-003
Coef of Det (r^2) = 0.996 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

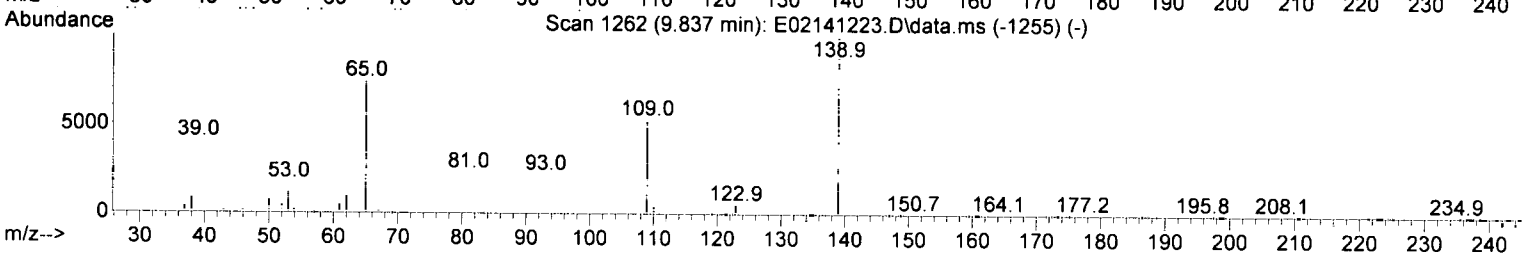
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9







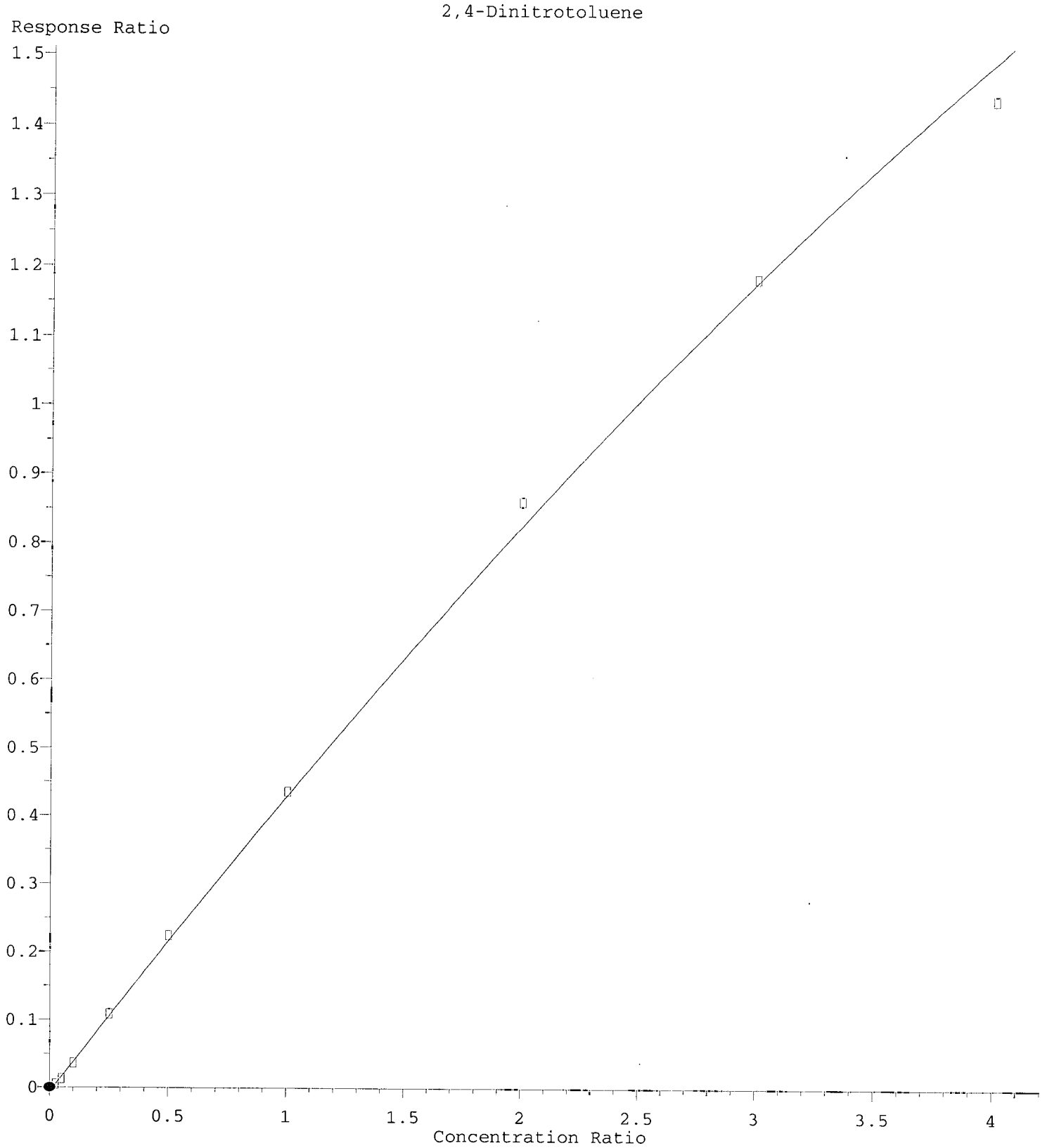
TIC: I05081919.D\data.ms

(53) 4-Nitrophenol (T)

9.852min (+ 0.021) 64.39 ng/ml

response 173

Ion	Exp%	Act%
139.00	100.00	100.00
109.00	64.20	36.97
81.10	30.90	26.89
0.00	0.00	0.00

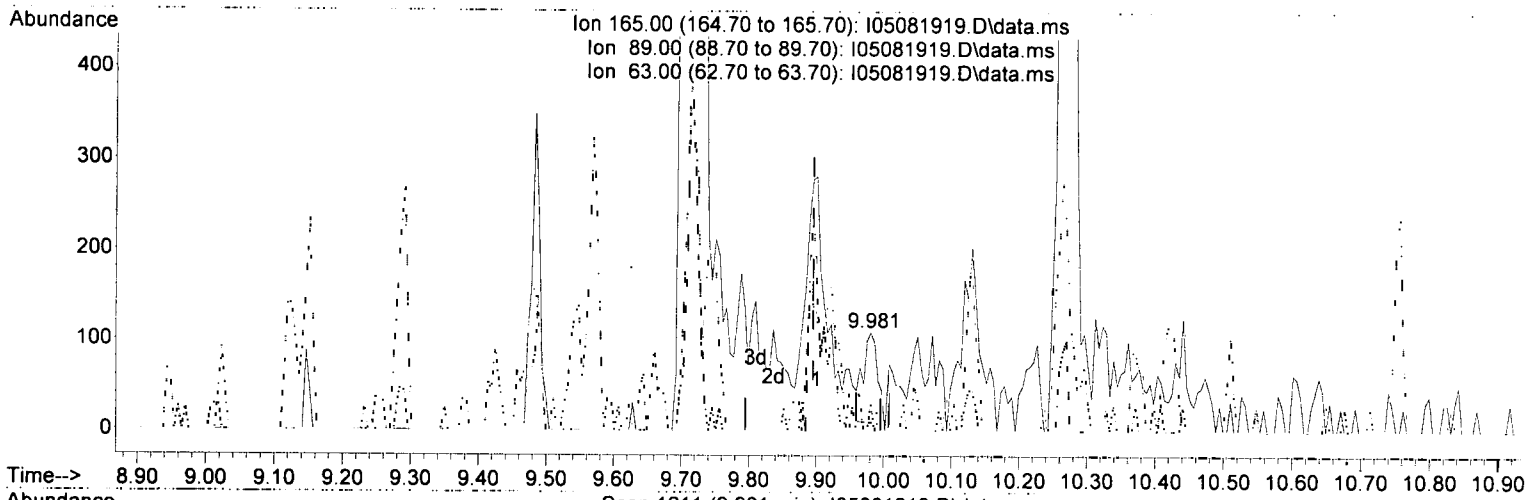


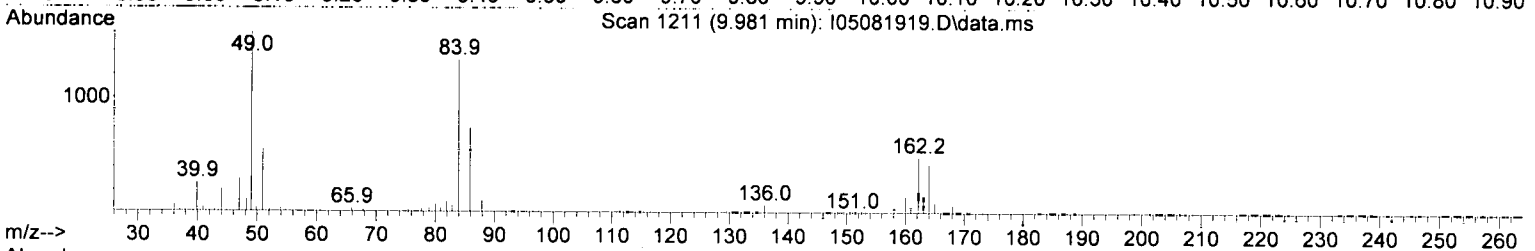
R = -2.06e-002 A*A + 4.57e-001 A - 7.48e-003
Coef of Det (r^2) = 0.996 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

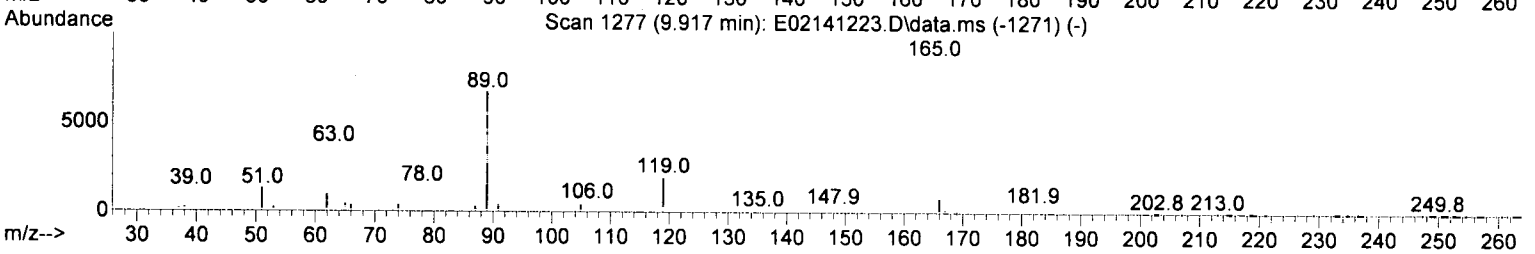
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9







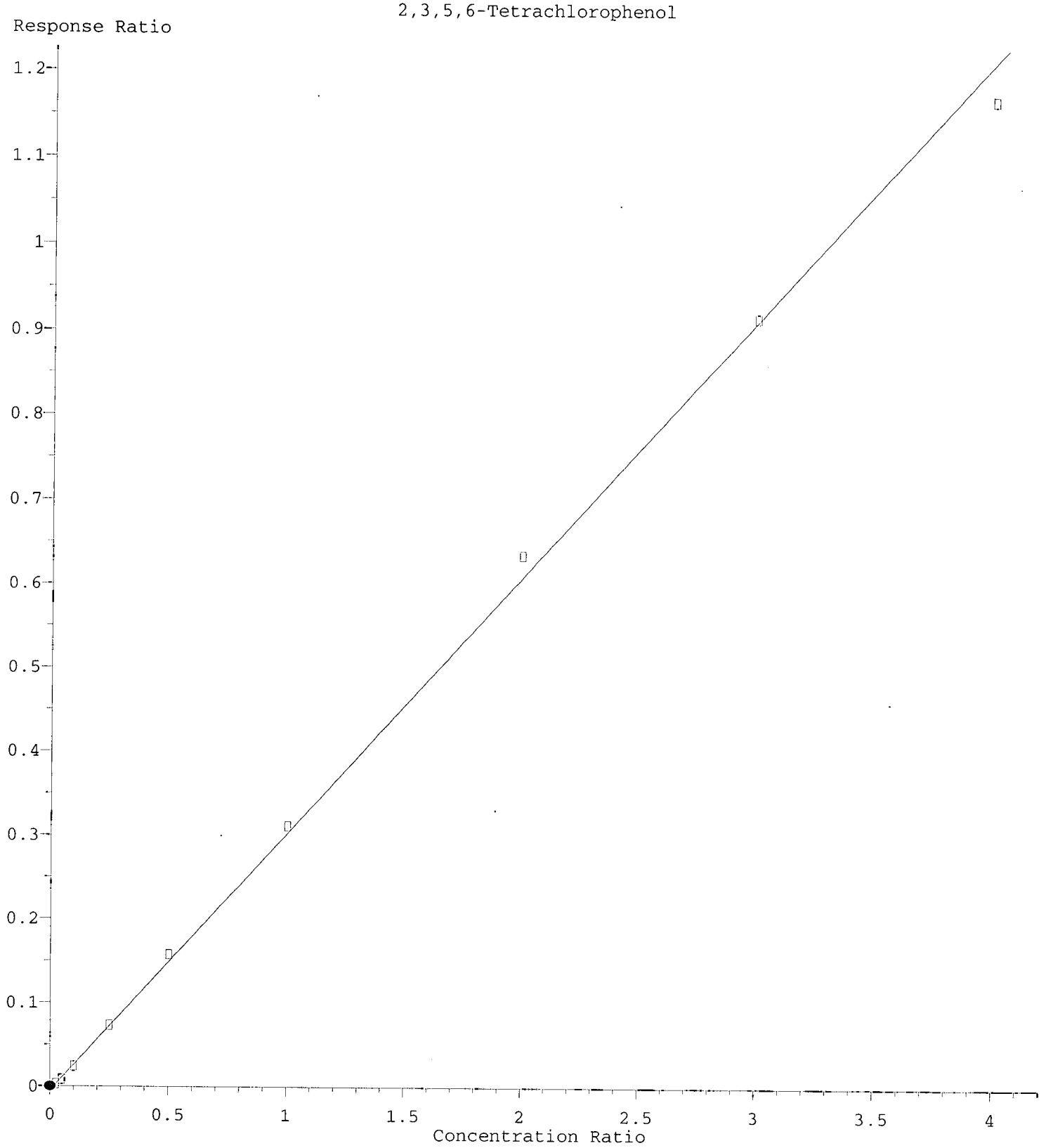
TIC: I05081919.D\data.ms

(54) 2,4-Dinitrotoluene (T)

9.981min (+ 0.086) 35.93 ng/ml m

response 167

Ion	Exp%	Act%
165.00	100.00	100.00
89.00	80.10	26.61#
63.00	47.20	0.00#
0.00	0.00	0.00

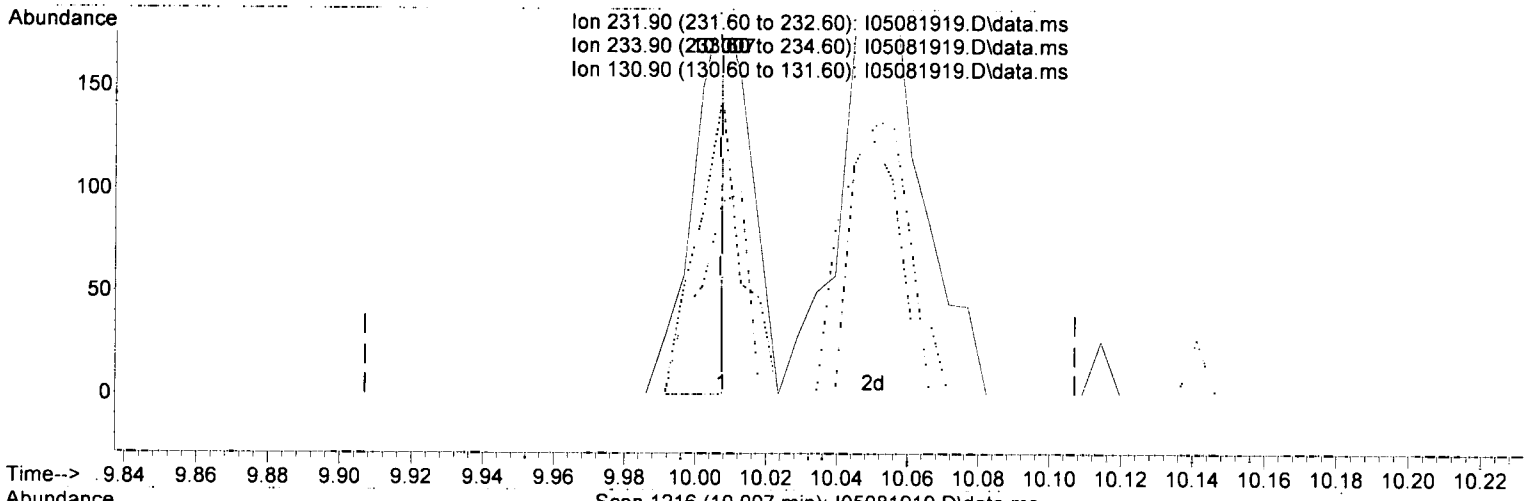


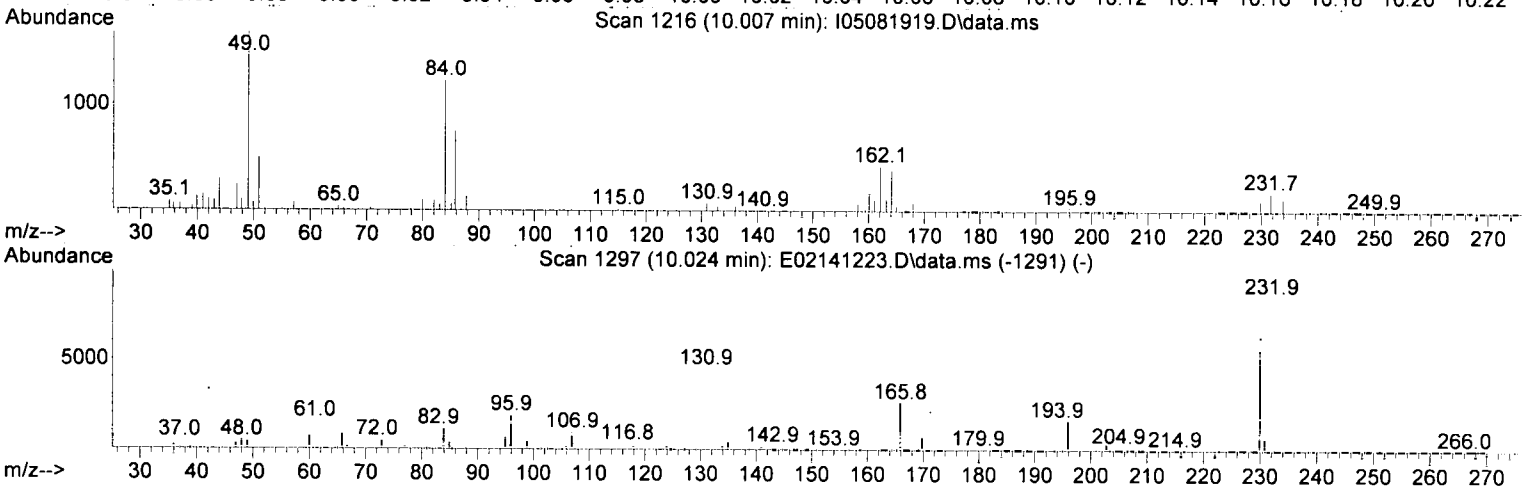
R = -1.07e-003 A*A + 3.09e-001 A - 5.22e-003
Coef of Det (r^2) = 0.995 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9





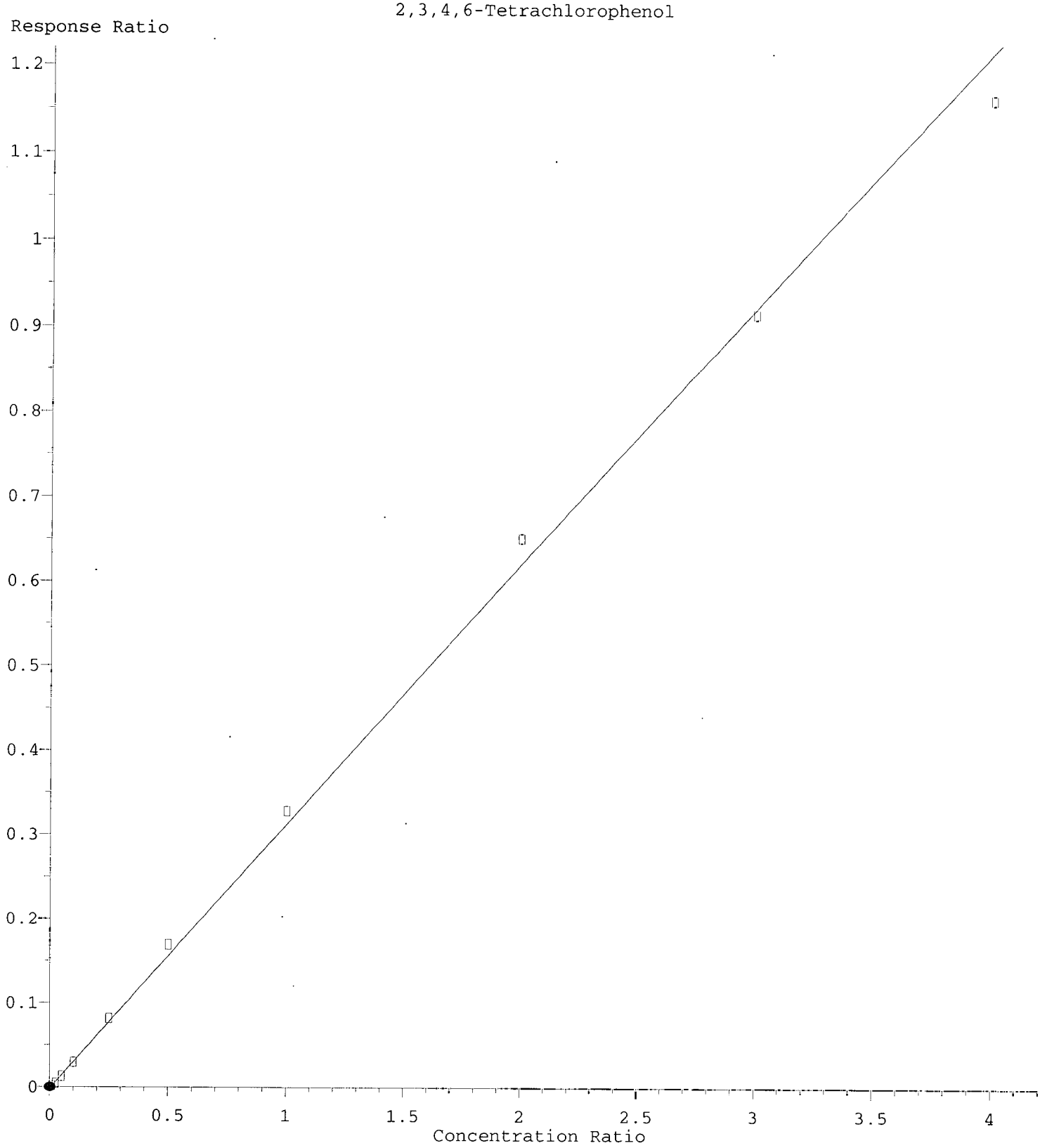
TIC: I05081919.D\data.ms

(56) 2,3,5,6-Tetrachlorophenol (T)

10.007min (+ 0.000) 37.74 ng/ml m

response 140

Ion	Exp%	Act%
231.90	100.00	100.00
233.90	49.20	72.86
130.90	53.00	47.24
0.00	0.00	0.00

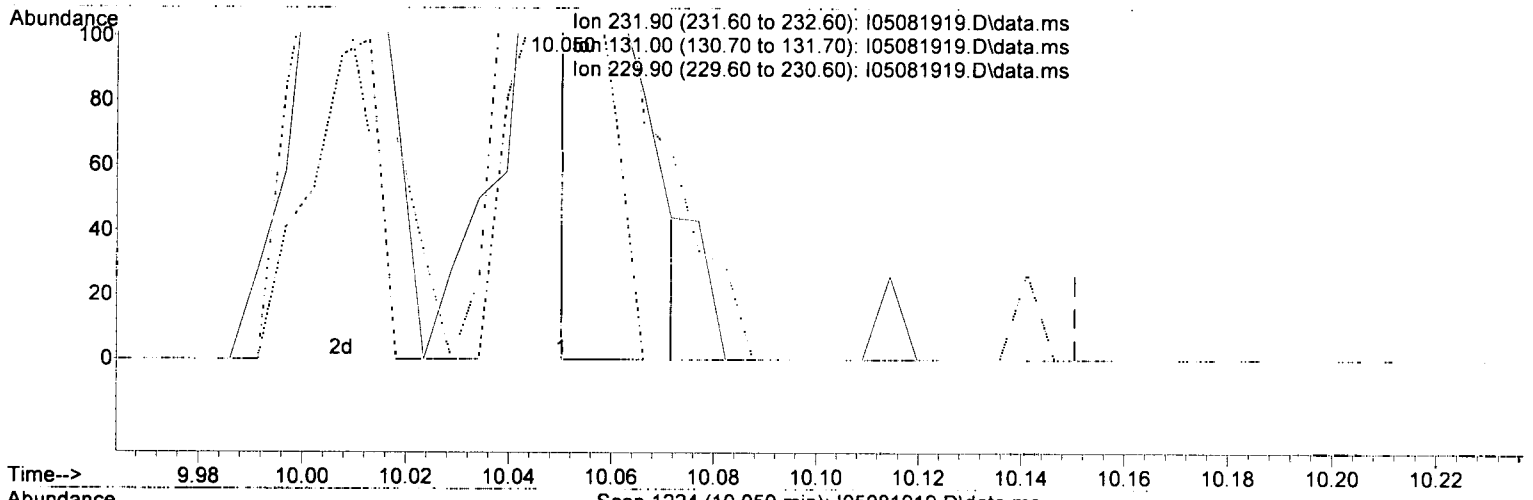


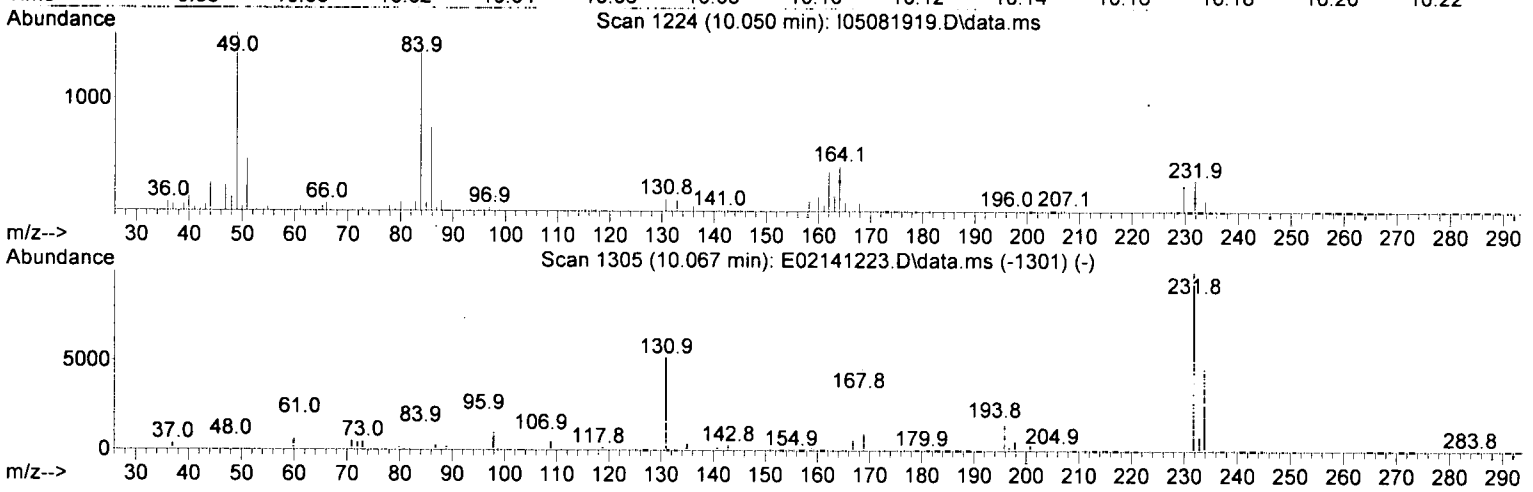
R = -3.25e-003 A*A + 3.18e-001 A - 1.92e-003
Coef of Det (r^2) = 0.991 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9





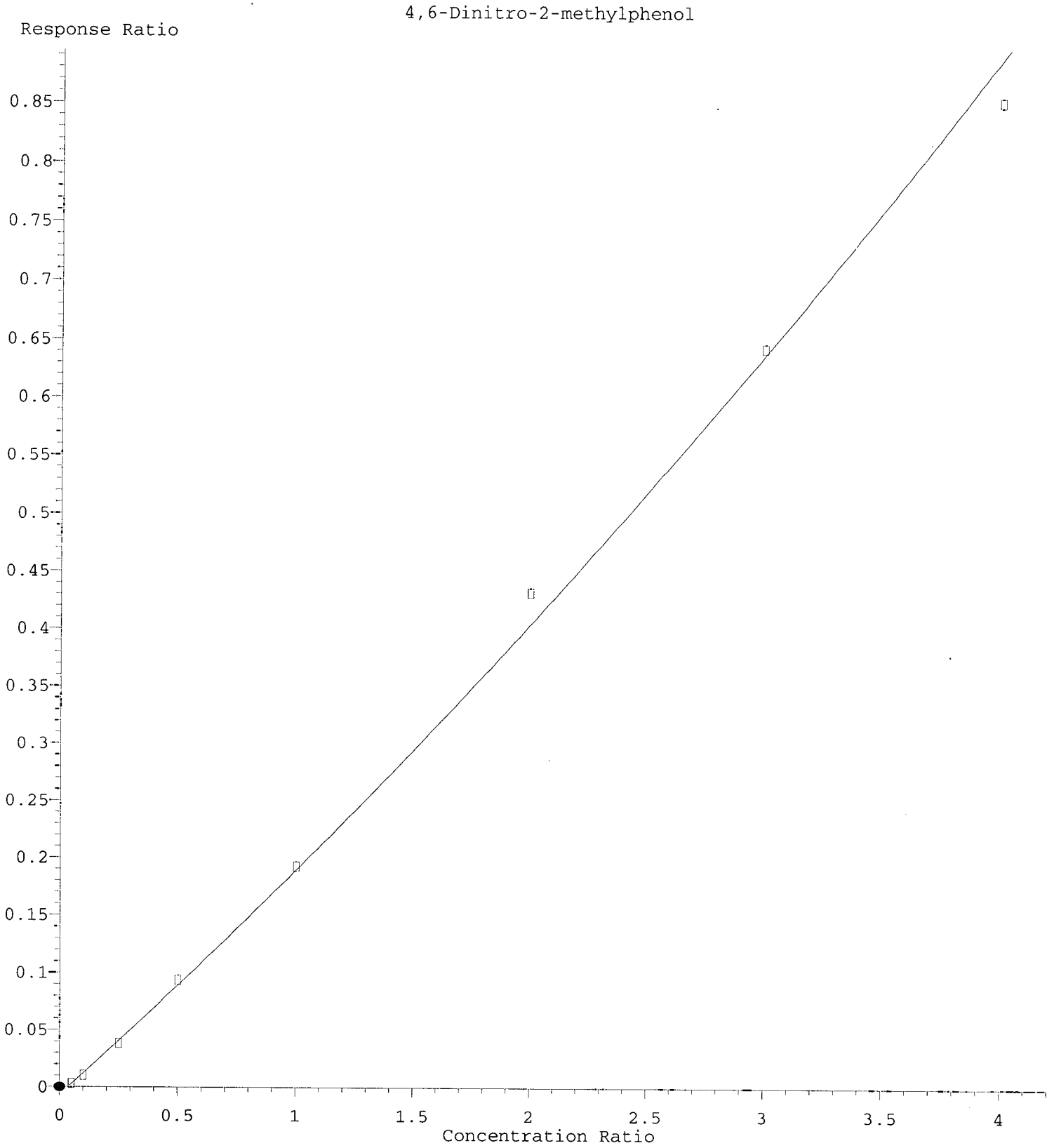
TIC: I05081919.D\data.ms

(57) 2,3,4,6-Tetrachlorophenol (T)

10.050min (-0.000) 16.03 ng/ml m

response 145

Ion	Exp%	Act%
231.90	100.00	100.00
131.00	63.10	45.33
229.90	78.40	85.47
0.00	0.00	0.00

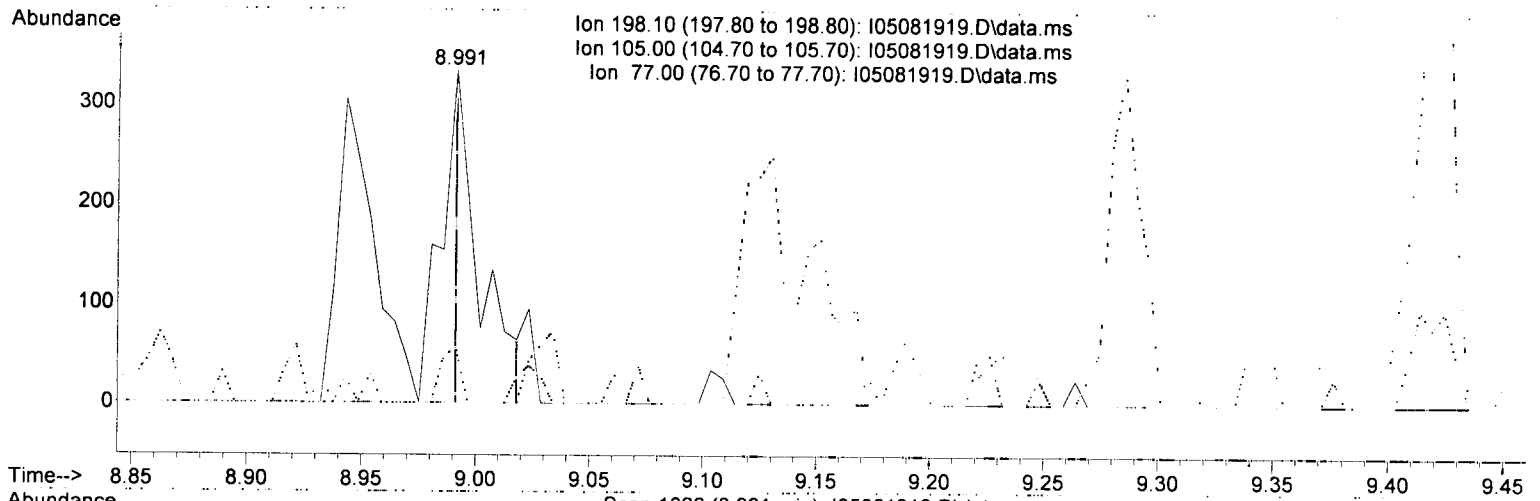


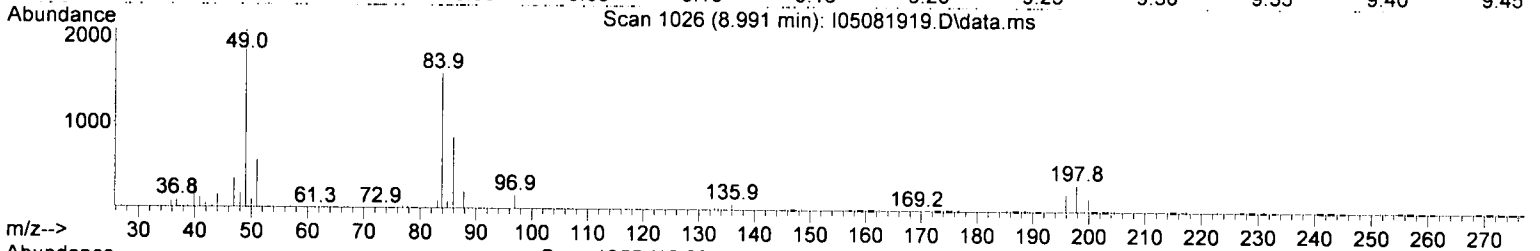
R = 9.20e-003 A*A + 1.87e-001 A - 6.68e-003
Coef of Det (r^2) = 0.996 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

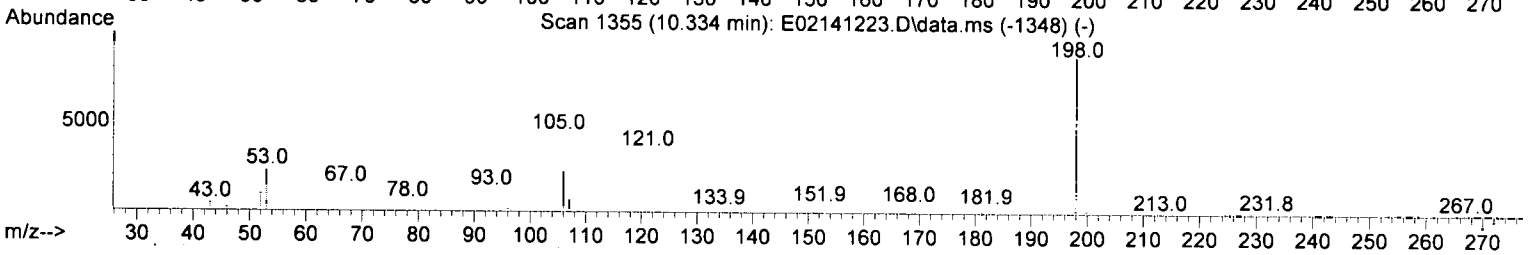
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9







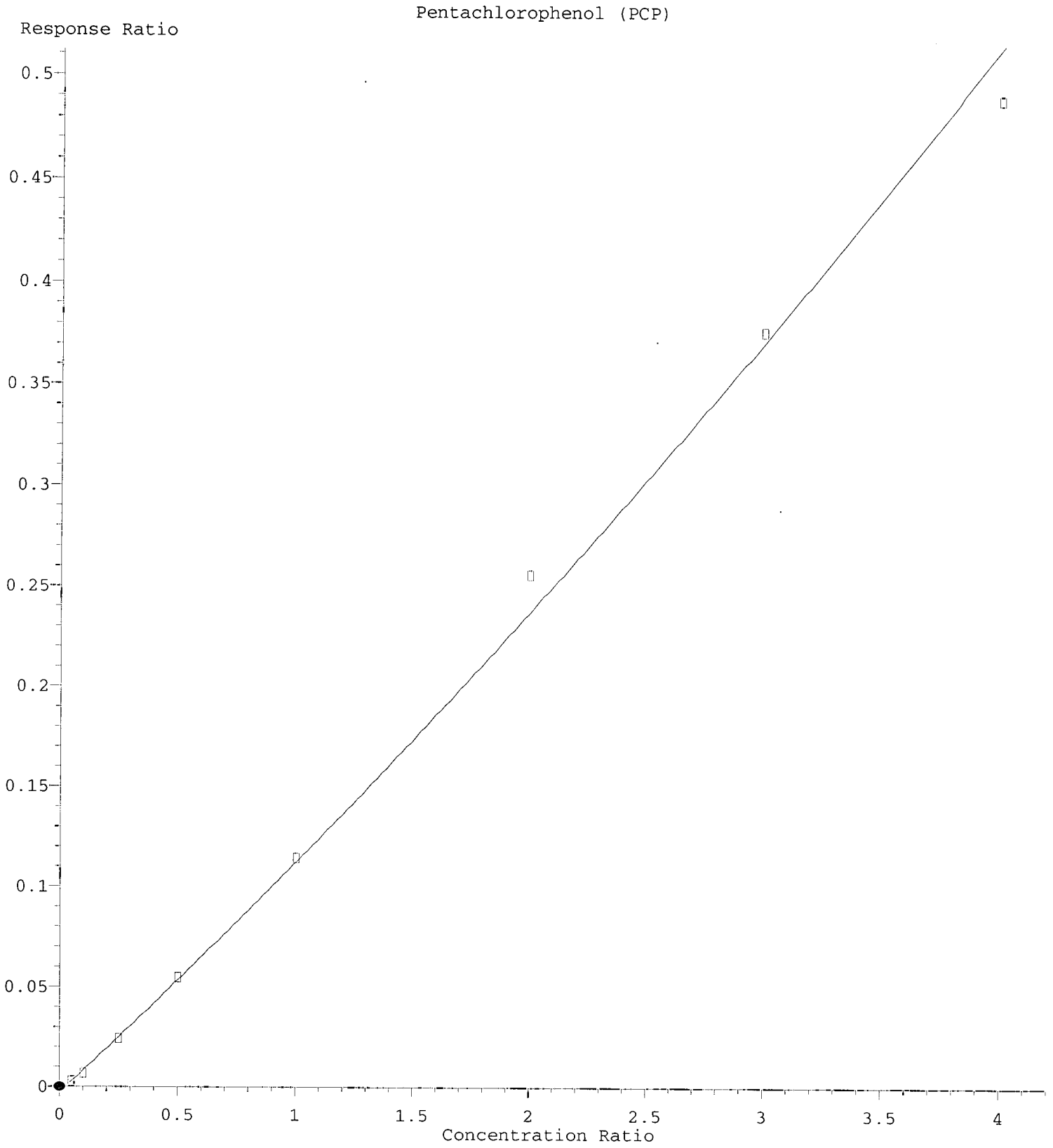
TIC: I05081919.D\data.ms

(63) 4,6-Dinitro-2-methylphenol (T)

8.991min (-1.321) 79.54 ng/ml m

response 177

Ion	Exp%	Act%
198.10	100.00	100.00
105.00	58.40	0.00#
77.00	31.80	16.77
0.00	0.00	0.00

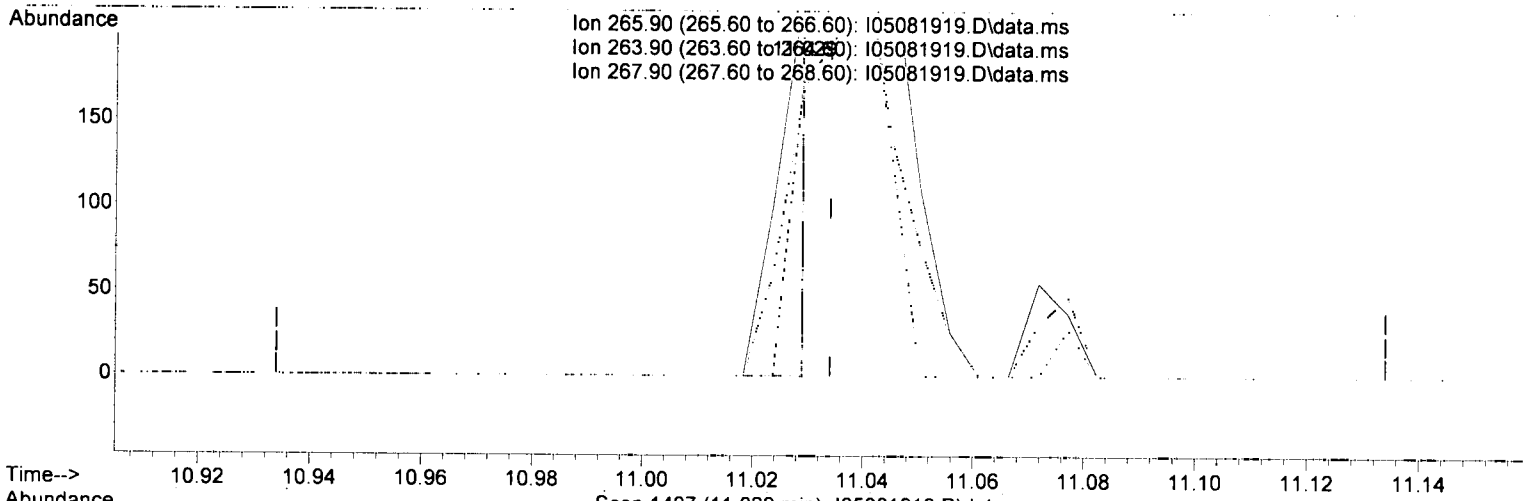


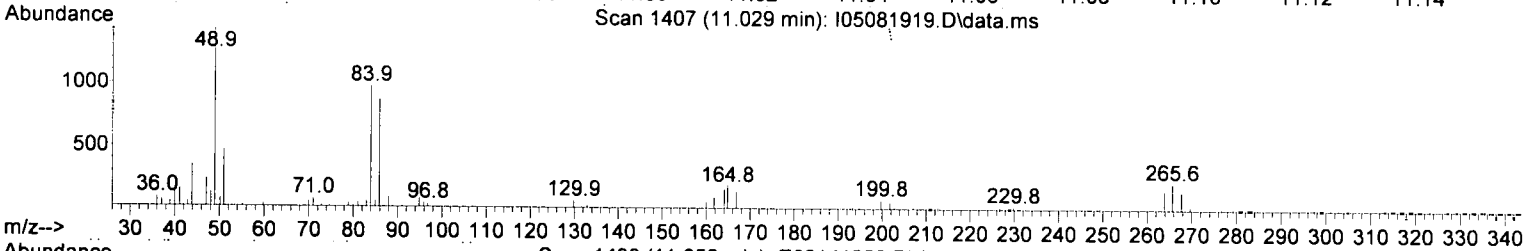
R = 4.56e-003 A*A + 1.11e-001 A - 3.12e-003
Coef of Det (r^2) = 0.995 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

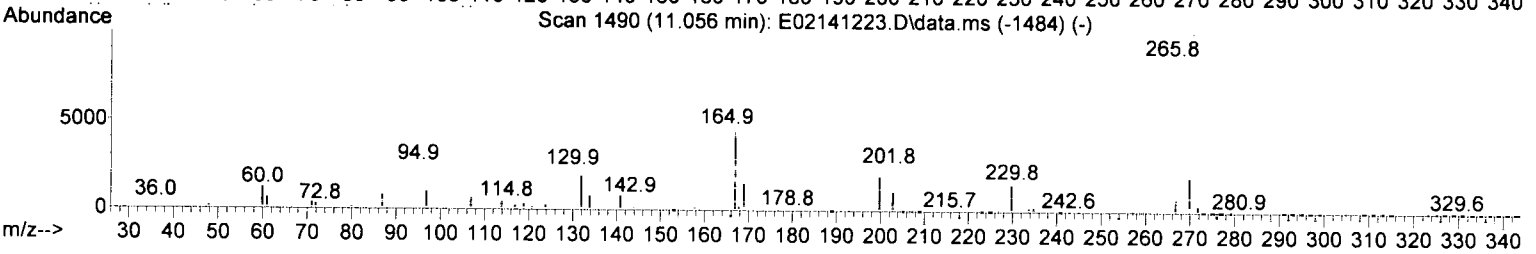
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9







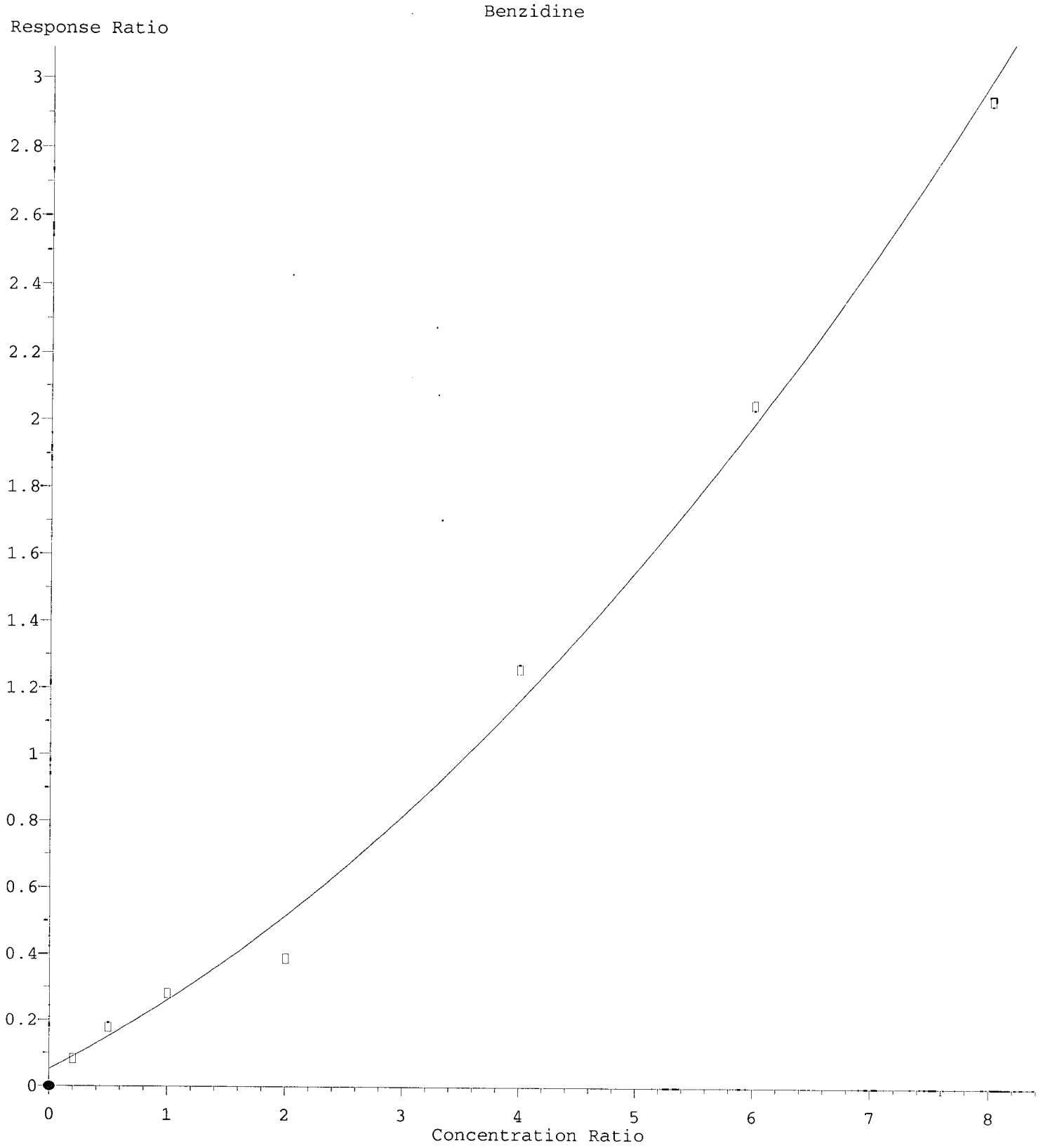
TIC: I05081919.D\data.ms

(70) Pentachlorophenol (PCP) (T)

11.029min (-0.005) 60.50 ng/ml m

response 107

Ion	Exp%	Act%
265.90	100.00	100.00
263.90	65.20	74.89
267.90	61.20	72.29
0.00	0.00	0.00

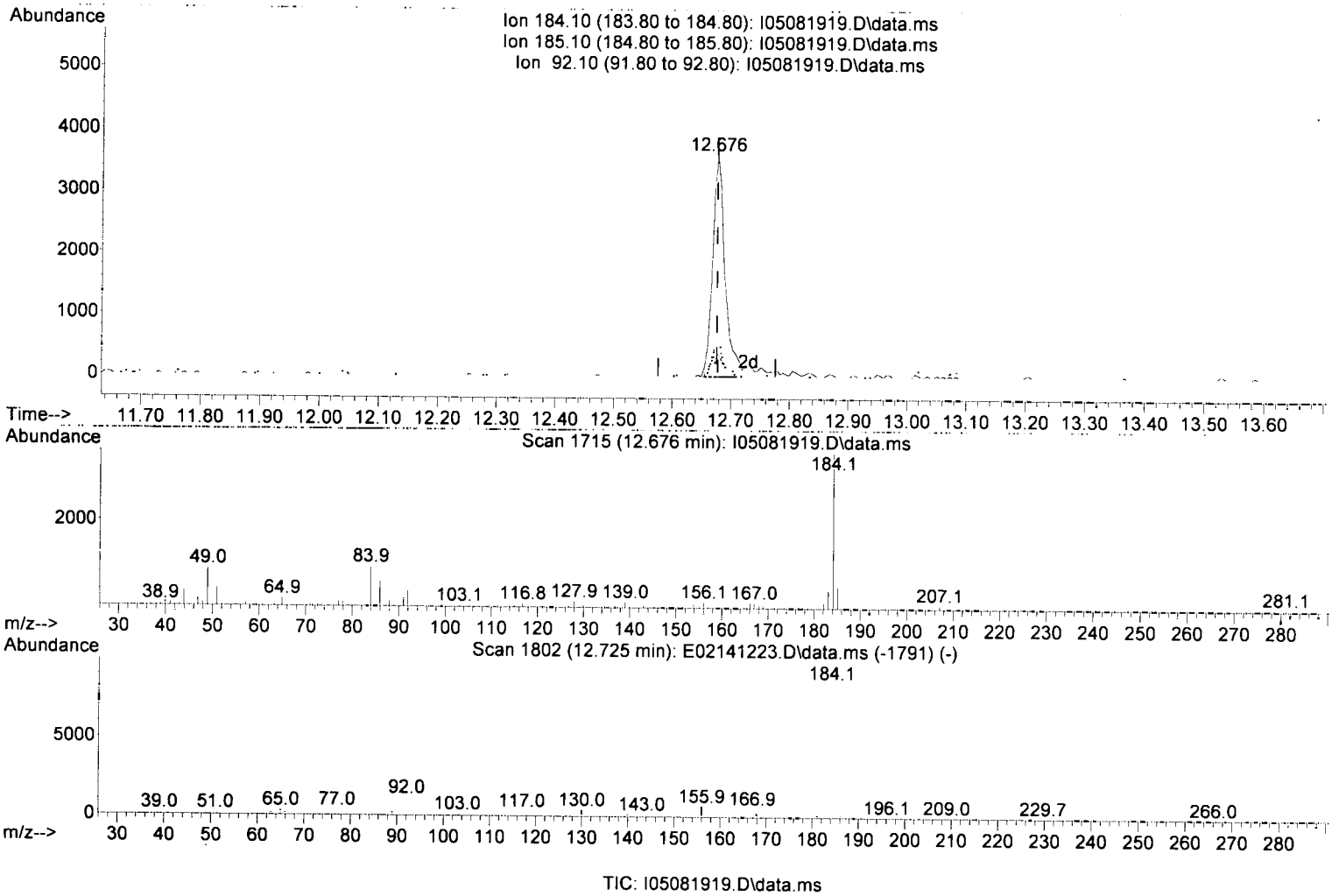


R = 2.27e-002 A*A + 1.87e-001 A + 5.11e-002
Coef of Det (r^2) = 0.993 Curve Fit: Quadratic w(1/a)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



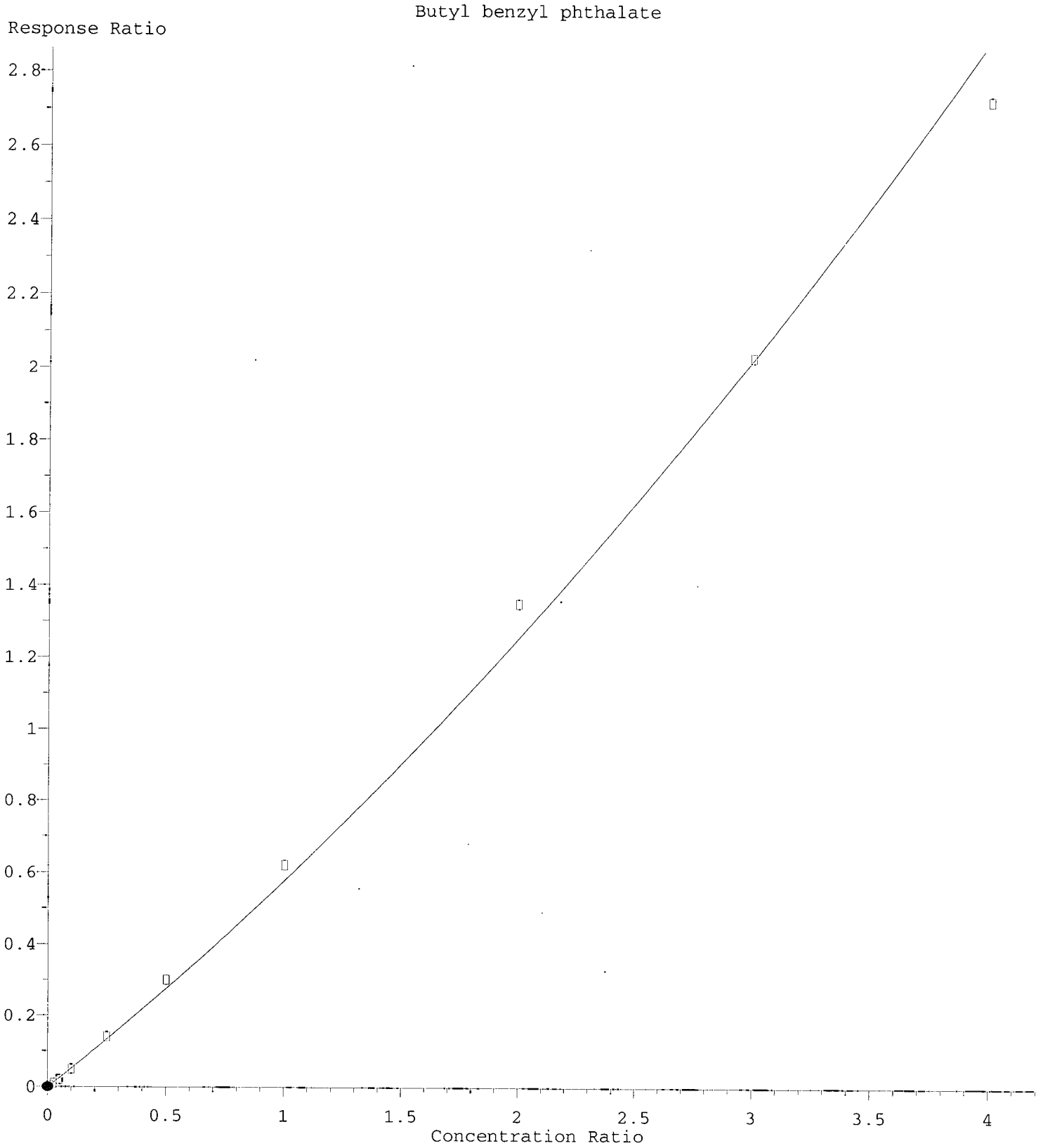
TIC: I05081919.D\data.ms

(76) Benzidine (T)

12.676min (+ 0.000) -1.00 ng/ml m

response 6349

Ion	Exp%	Act%
184.10	100.00	100.00
185.10	15.10	14.46
92.10	11.90	10.75
0.00	0.00	0.00

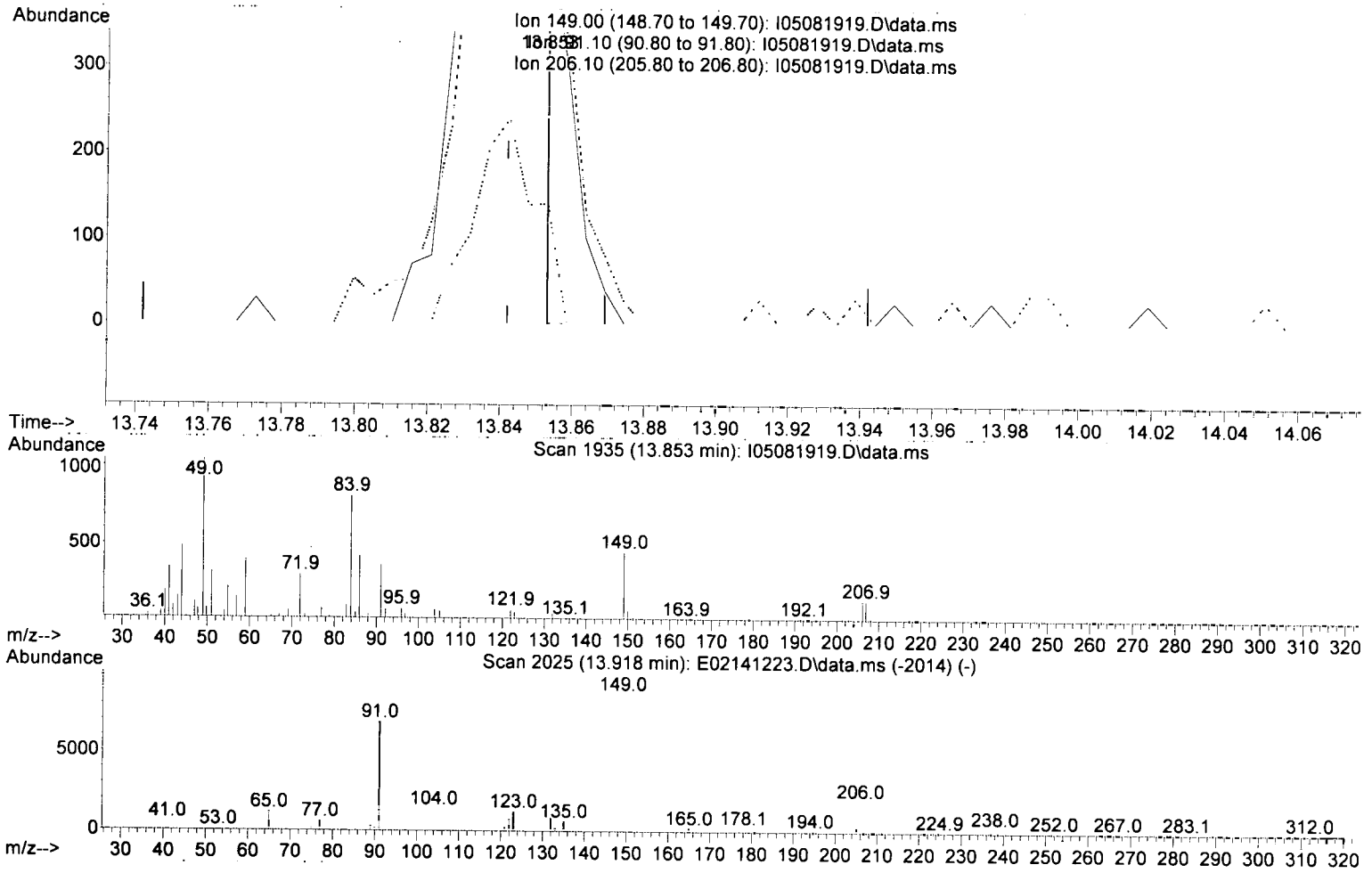


R = 4.75e-002 A*A + 5.33e-001 A - 2.59e-003
Coef of Det (r^2) = 0.992 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



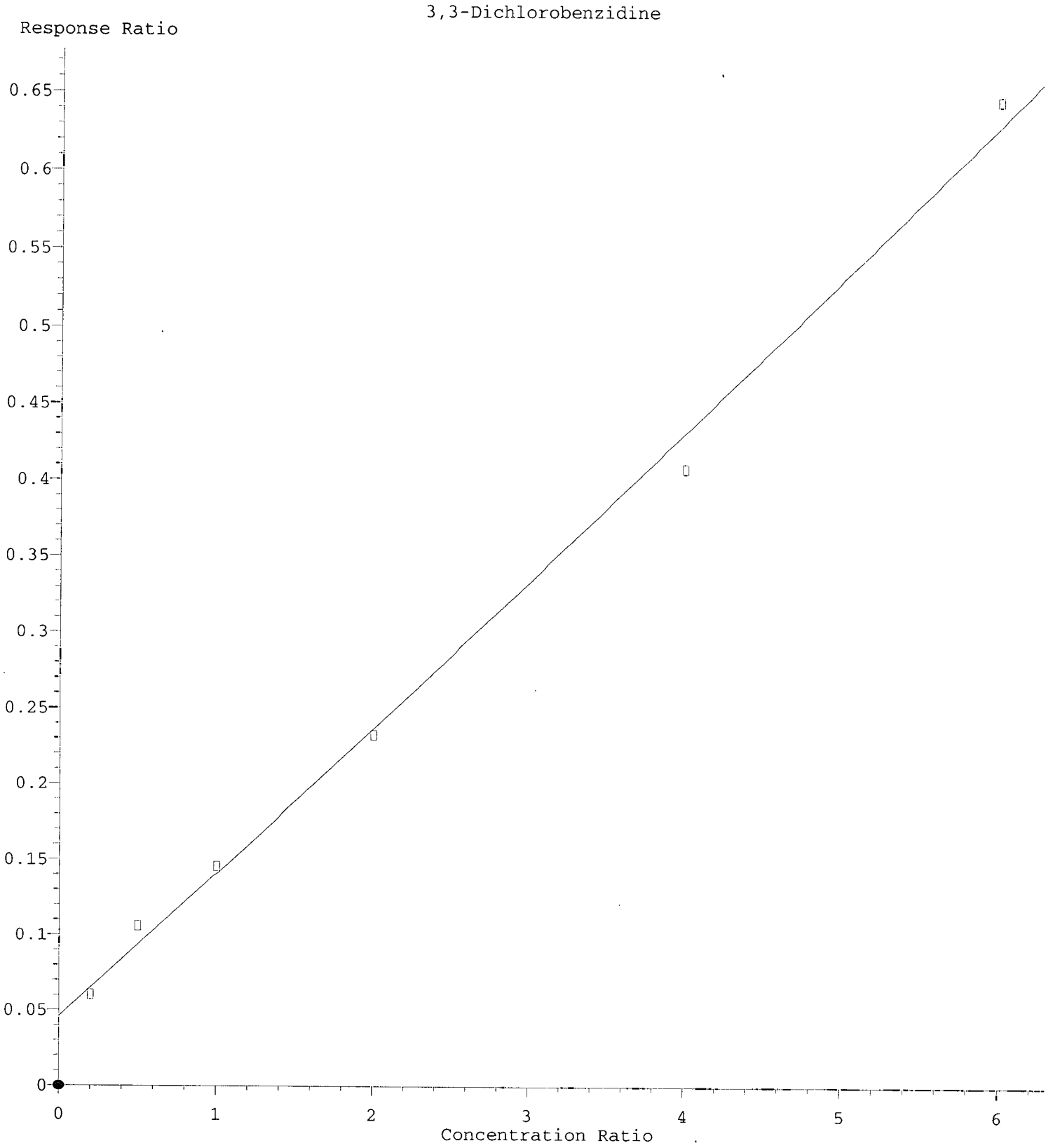
TIC: I05081919.D\data.ms

(80) Butyl benzyl phthalate (T)

13.853min (+ 0.011) 10.86 ng/ml m

response 141

Ion	Exp%	Act%
149.00	100.00	100.00
91.10	76.30	80.79
206.10	18.00	31.13
0.00	0.00	0.00

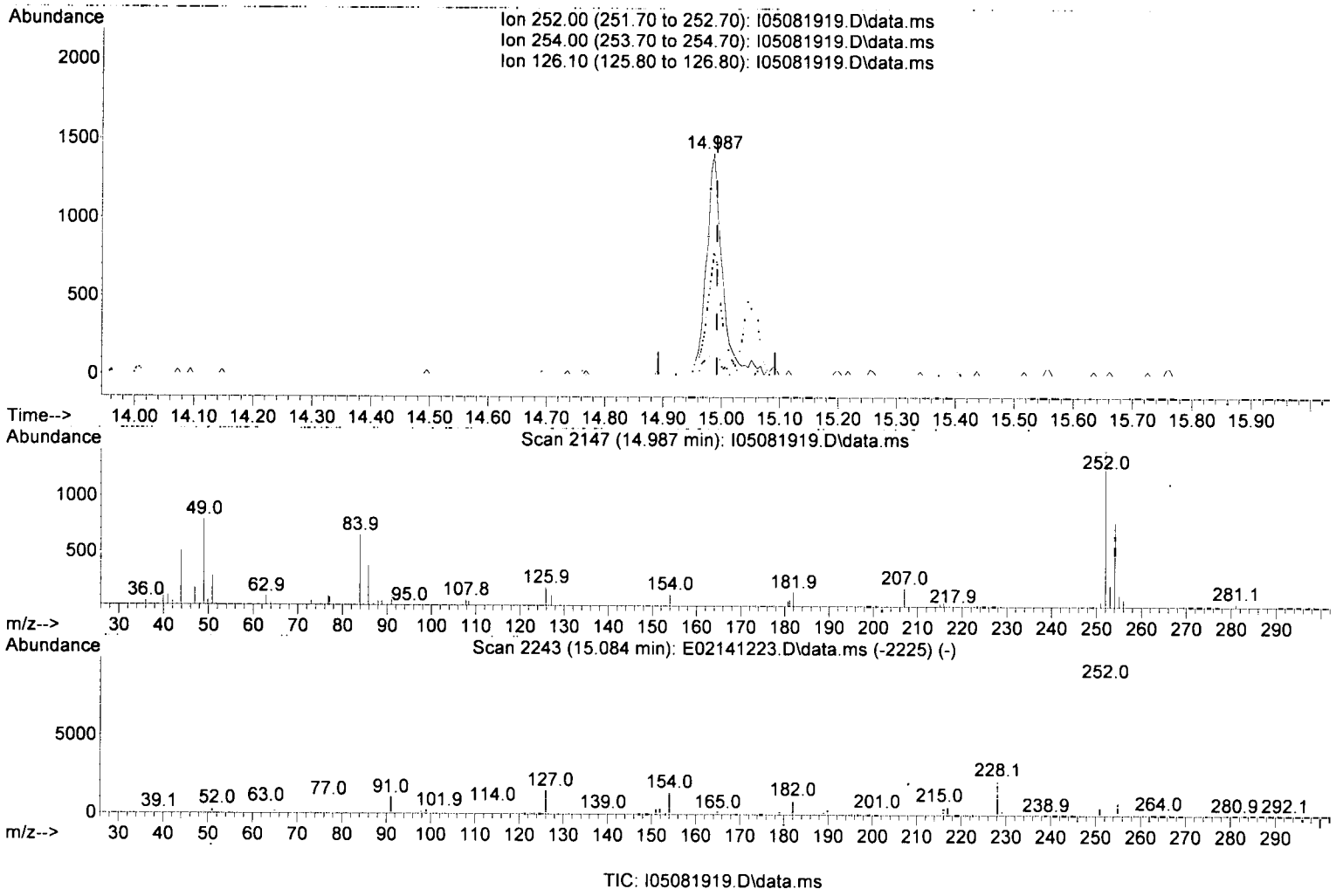


R = 5.56e-004 A*A + 9.39e-002 A + 4.63e-002
Coef of Det (r^2) = 0.993 Curve Fit: Quadratic w(1/a)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



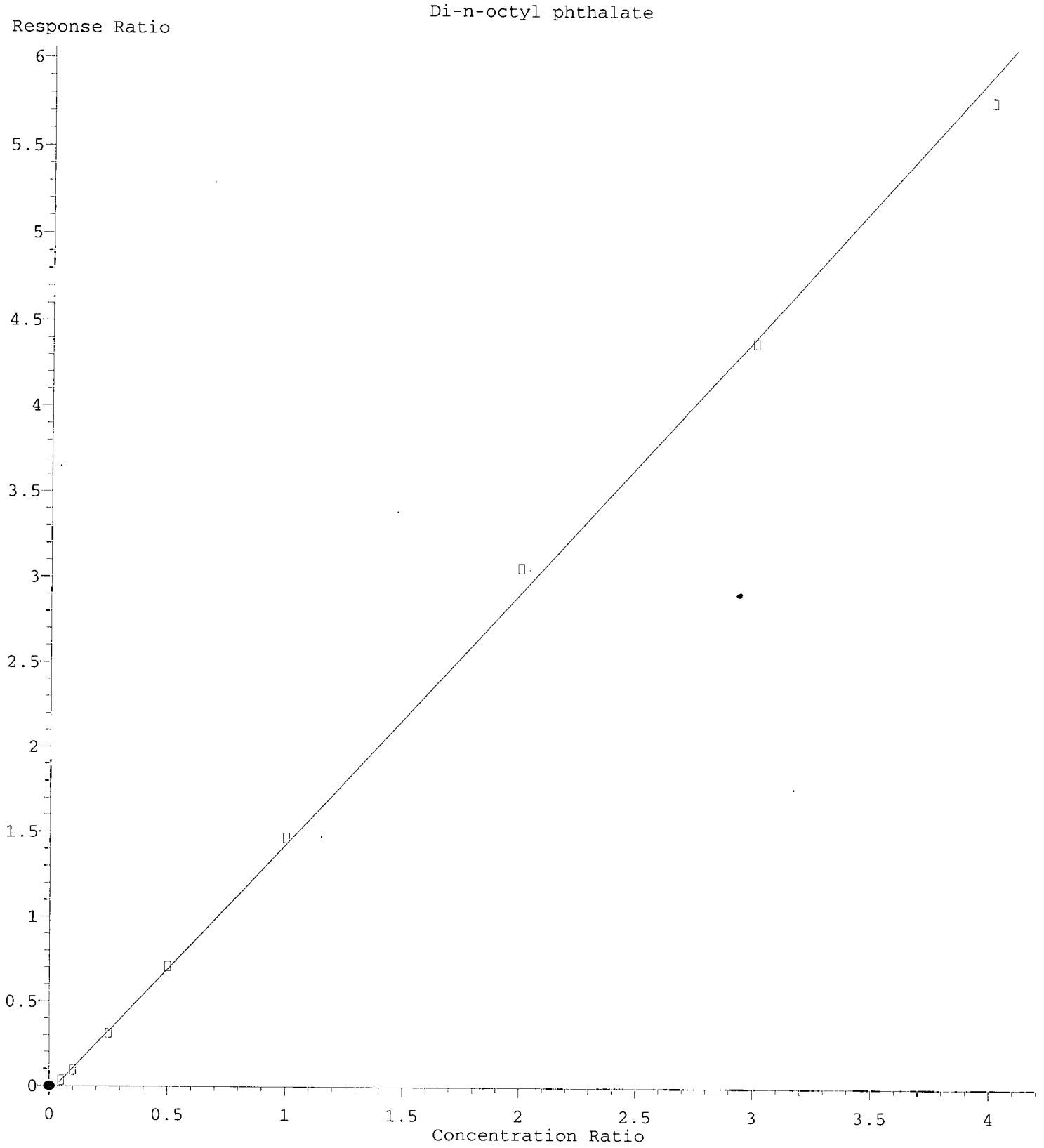
TIC: I05081919.D\data.ms

(82) 3,3-Dichlorobenzidine (T)

14.987min (-0.005) -1.00 ng/ml m

response 2973

Ion	Exp%	Act%
252.00	100.00	100.00
254.00	66.10	55.05
126.10	16.90	13.29
0.00	0.00	0.00

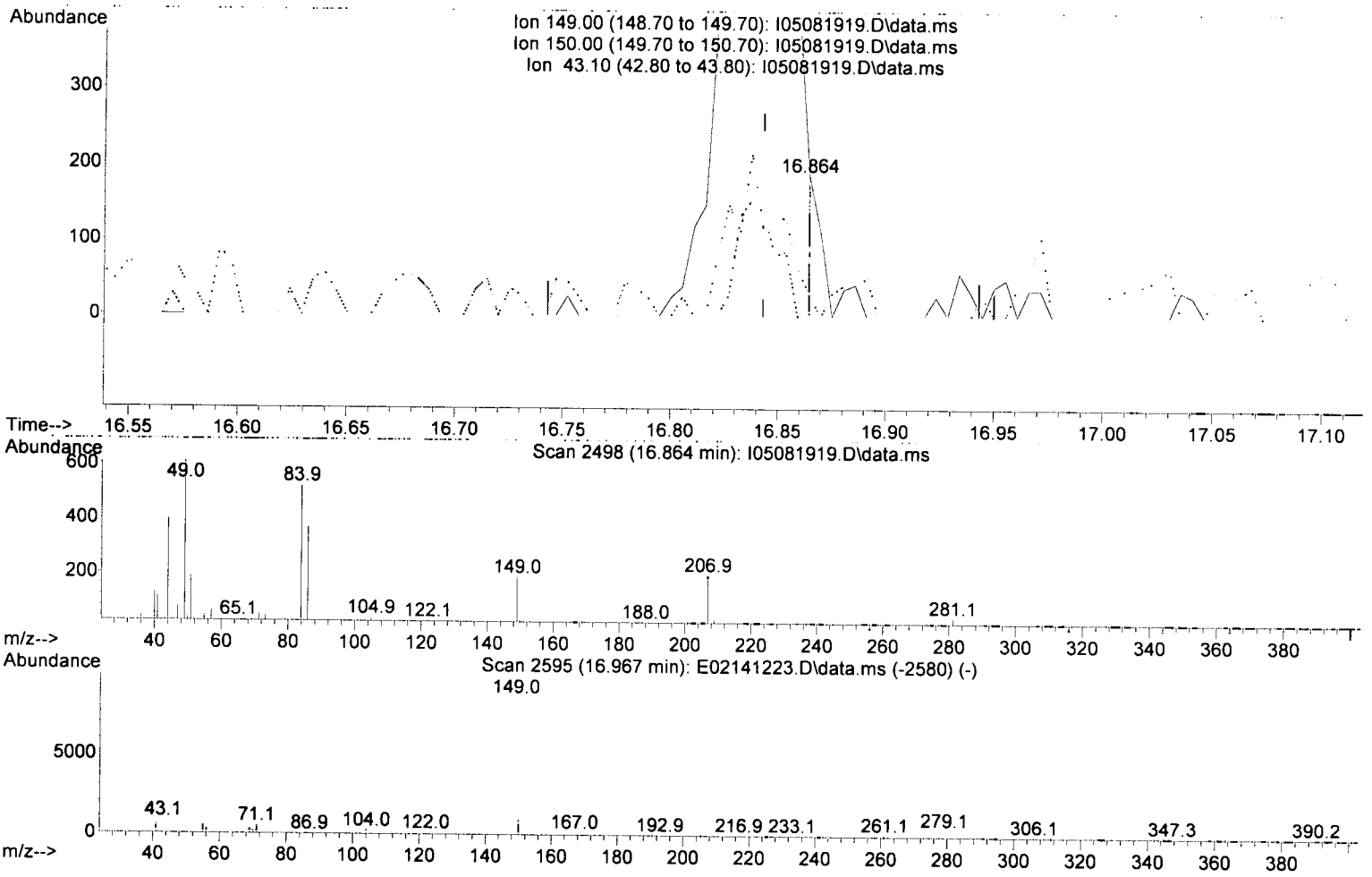


R = 7.21e-003 A*A + 1.46e+000 A - 4.17e-002
Coef of Det (r^2) = 0.998 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



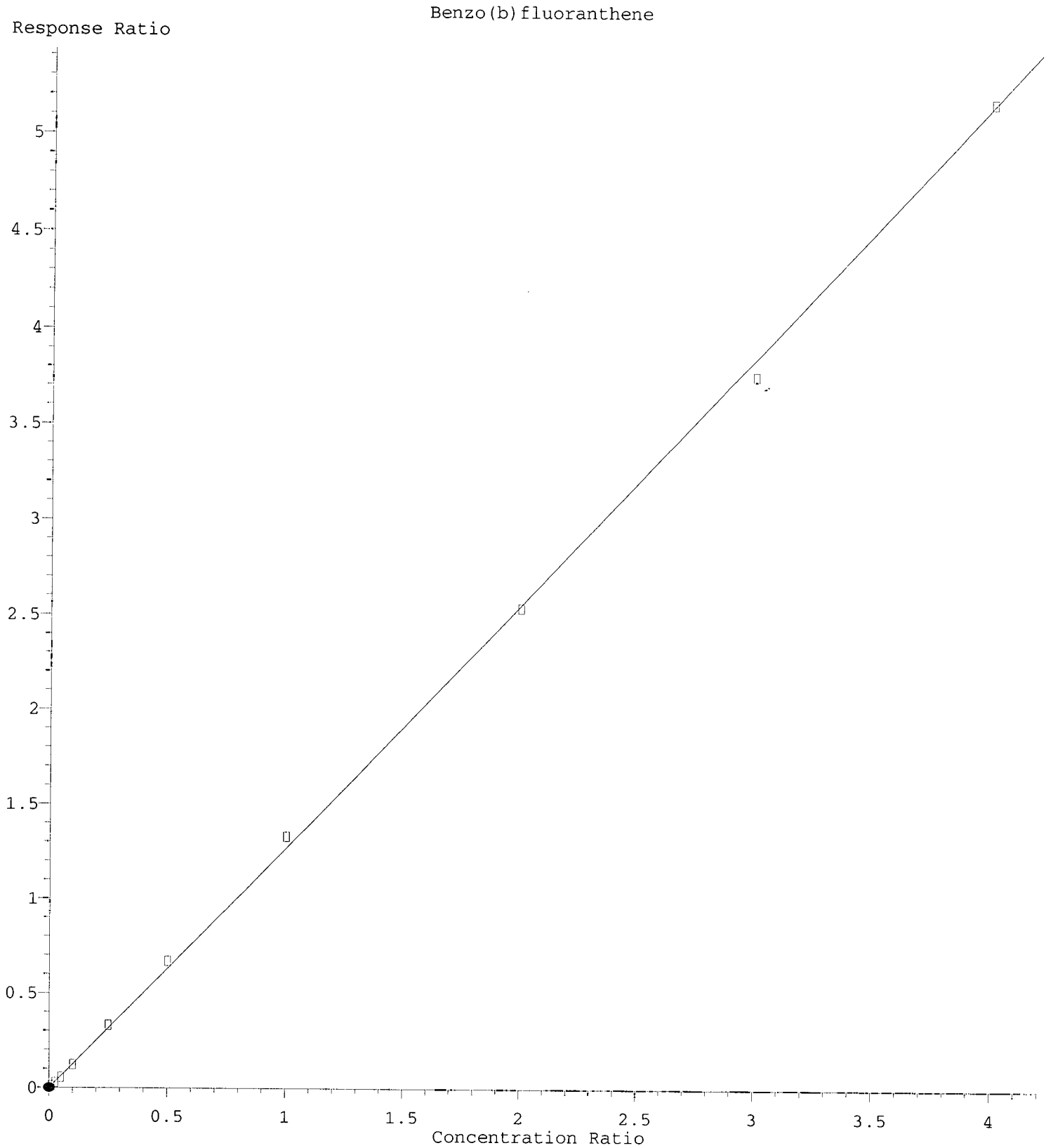
TIC: I05081919.D\data.ms

(87) Di-n-octyl phthalate (T)

16.864min (+ 0.021) 57.38 ng/ml m

response 110

Ion	Exp%	Act%
149.00	100.00	100.00
150.00	9.60	0.00
43.10	10.40	16.04
0.00	0.00	0.00

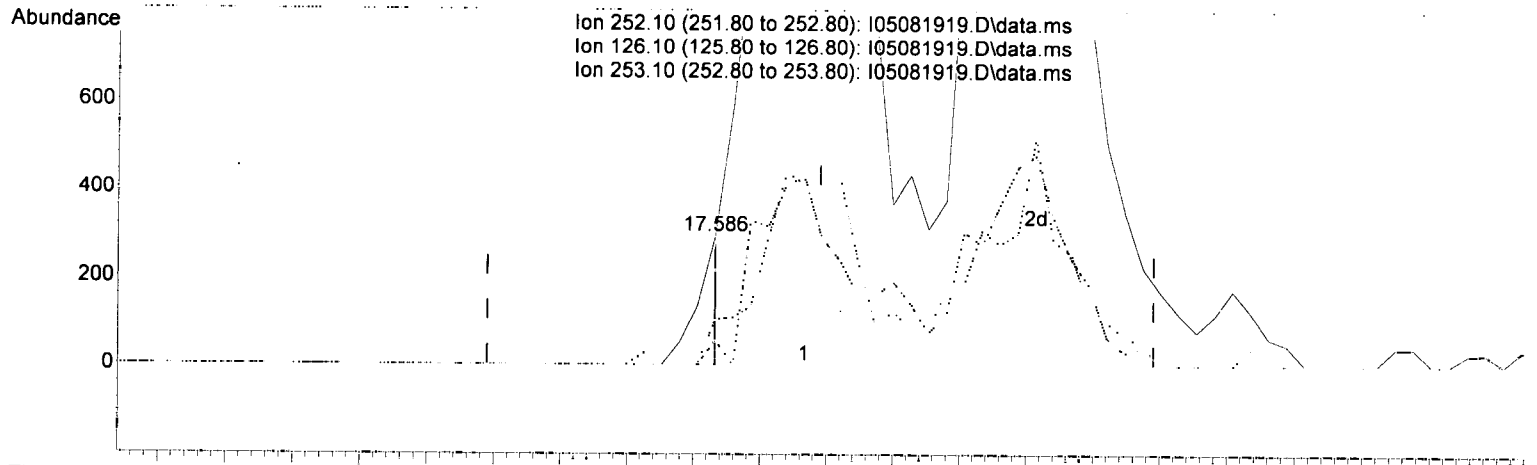


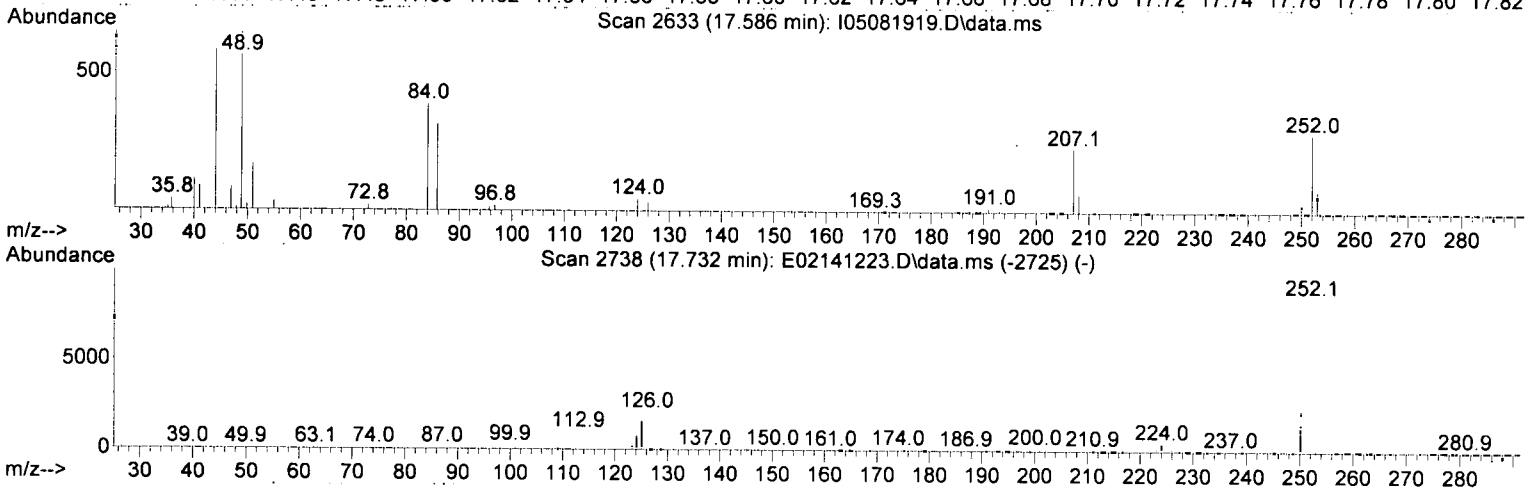
R = 6.58e-003 A*A + 1.26e+000 A - 2.78e-003
Coef of Det (r^2) = 0.997 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9





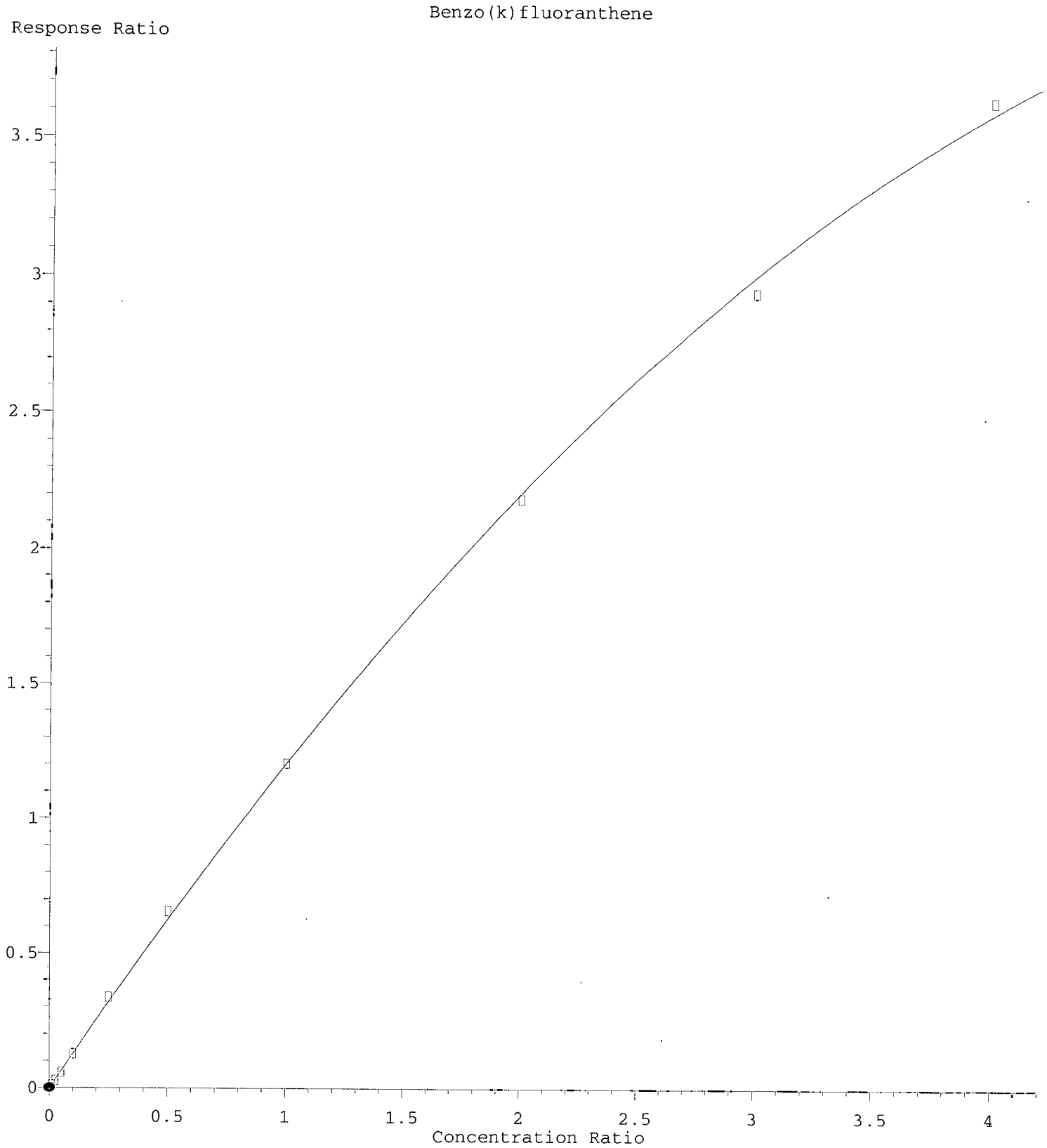
TIC: I05081919.D\data.ms

(88) Benzo(b)fluoranthene (T)

17.586min (-0.032) 4.95 ng/ml m

response 153

Ion	Exp%	Act%
252.10	100.00	100.00
126.10	21.90	18.71
253.10	22.00	35.03
0.00	0.00	0.00

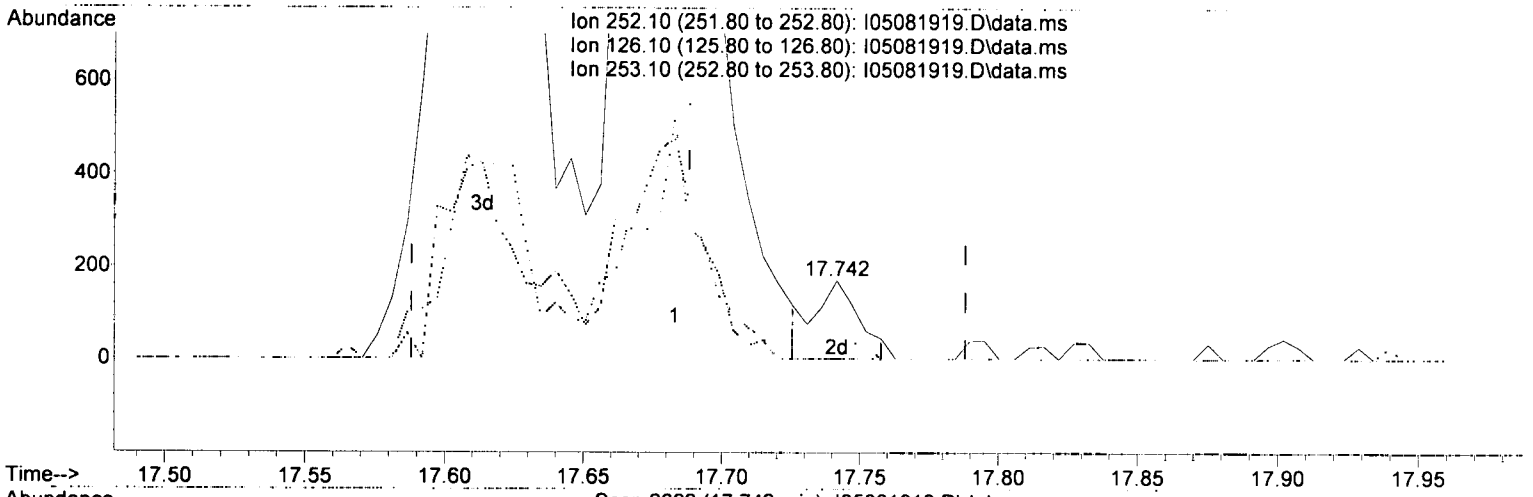


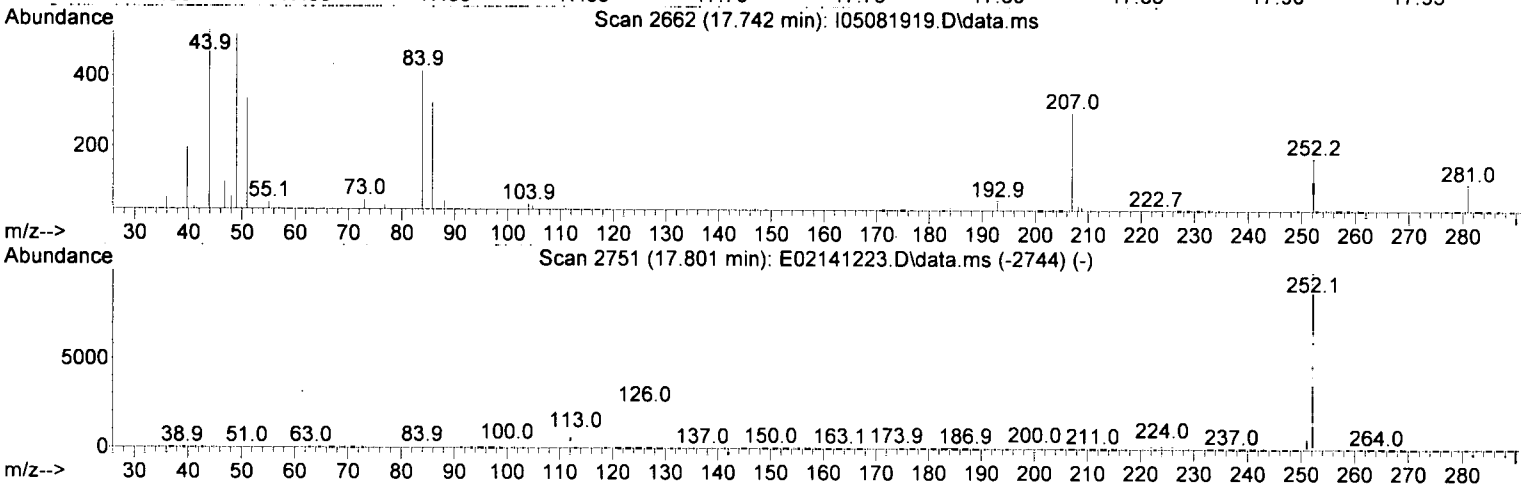
R = -1.03e-001 A*A + 1.31e+000 A - 3.30e-003
Coef of Det (r^2) = 0.998 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9





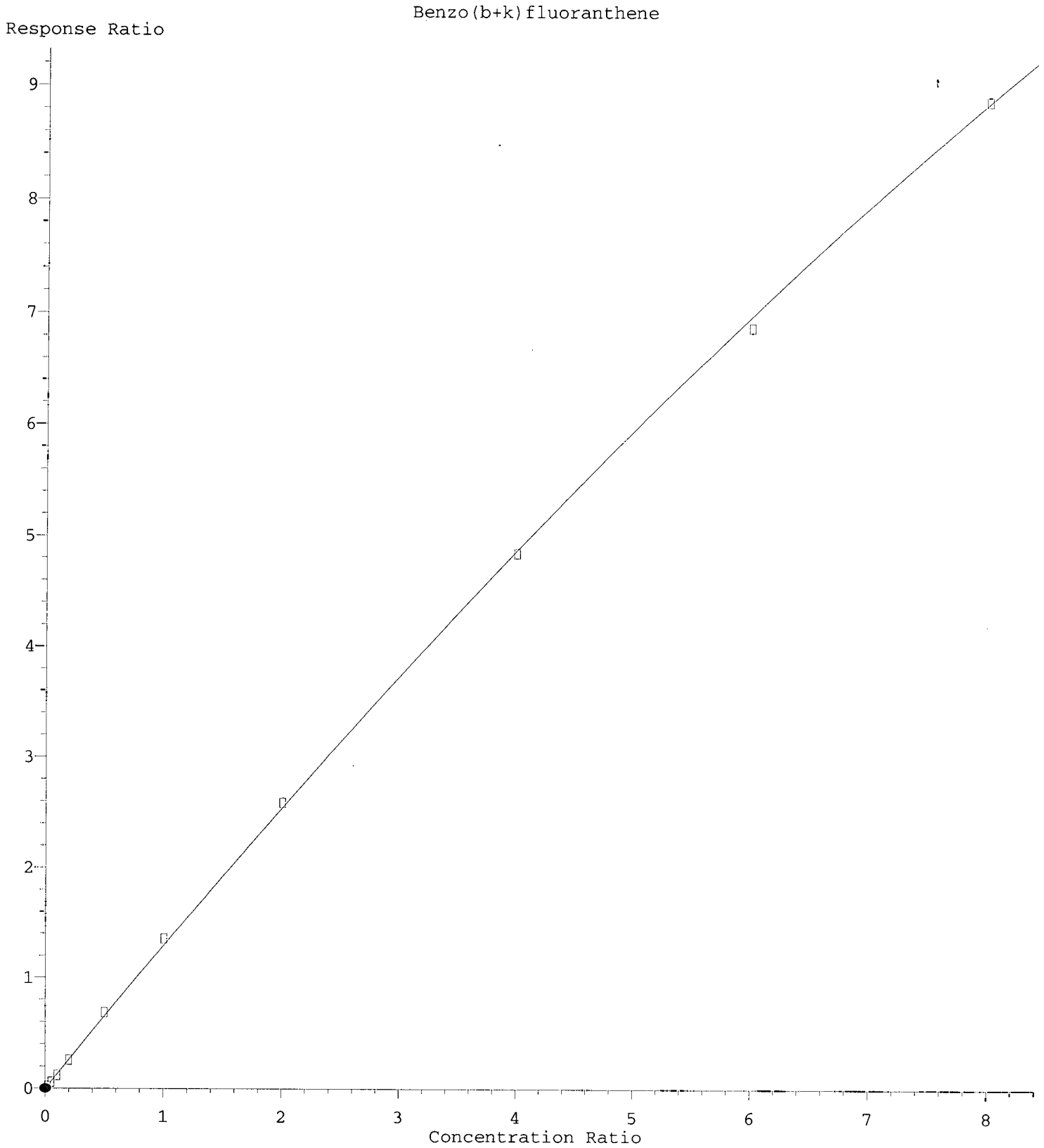
TIC: I05081919.D\data.ms

(89) Benzo(k)fluoranthene (T)

17.742min (+ 0.054) 5.70 ng/ml m

response 187

Ion	Exp%	Act%
252.10	100.00	100.00
126.10	23.30	0.00
253.10	21.70	0.00
0.00	0.00	0.00

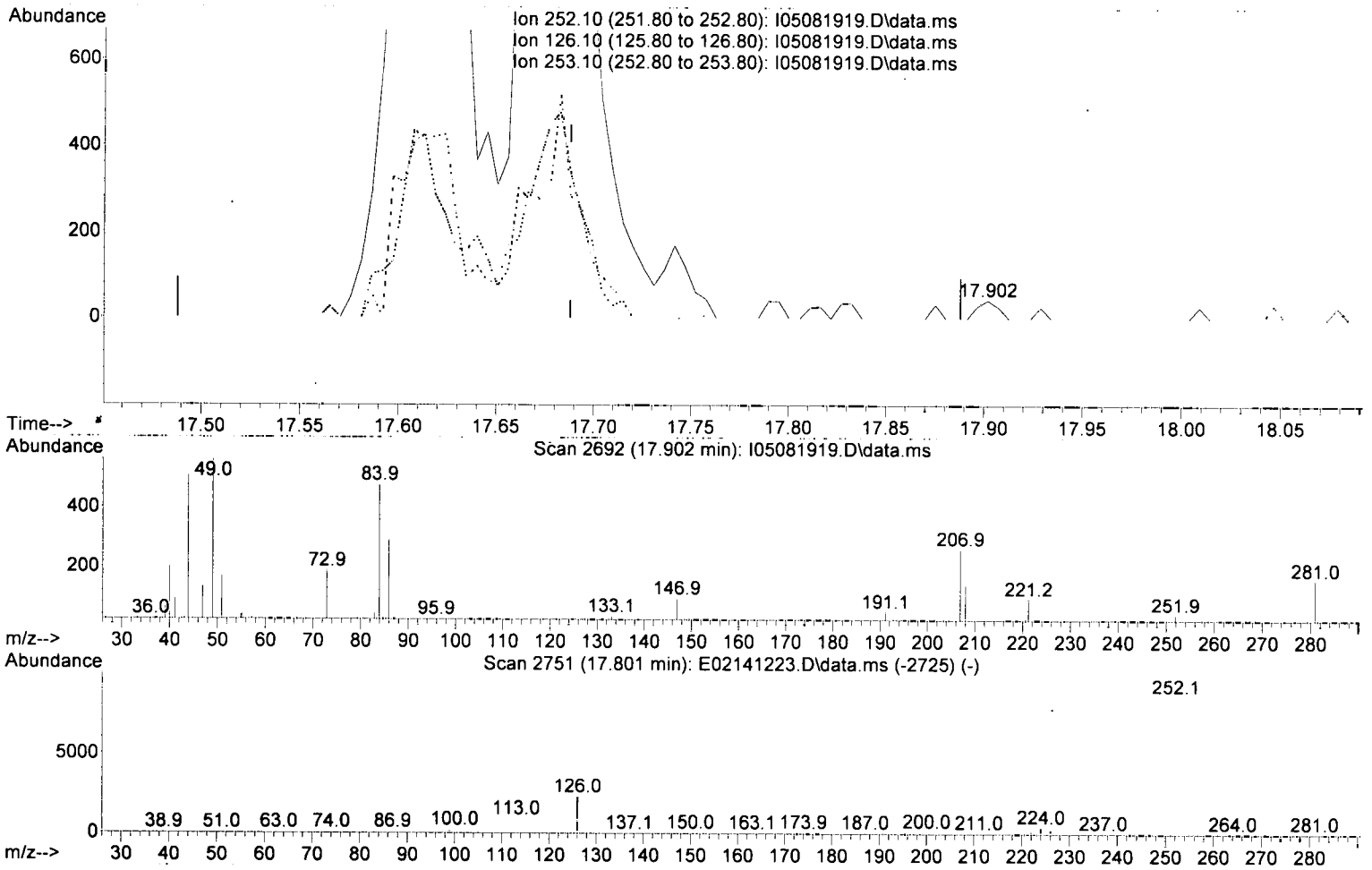


R = -2.76e-002 A*A + 1.33e+000 A - 6.81e-003
Coef of Det (r^2) = 0.998 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



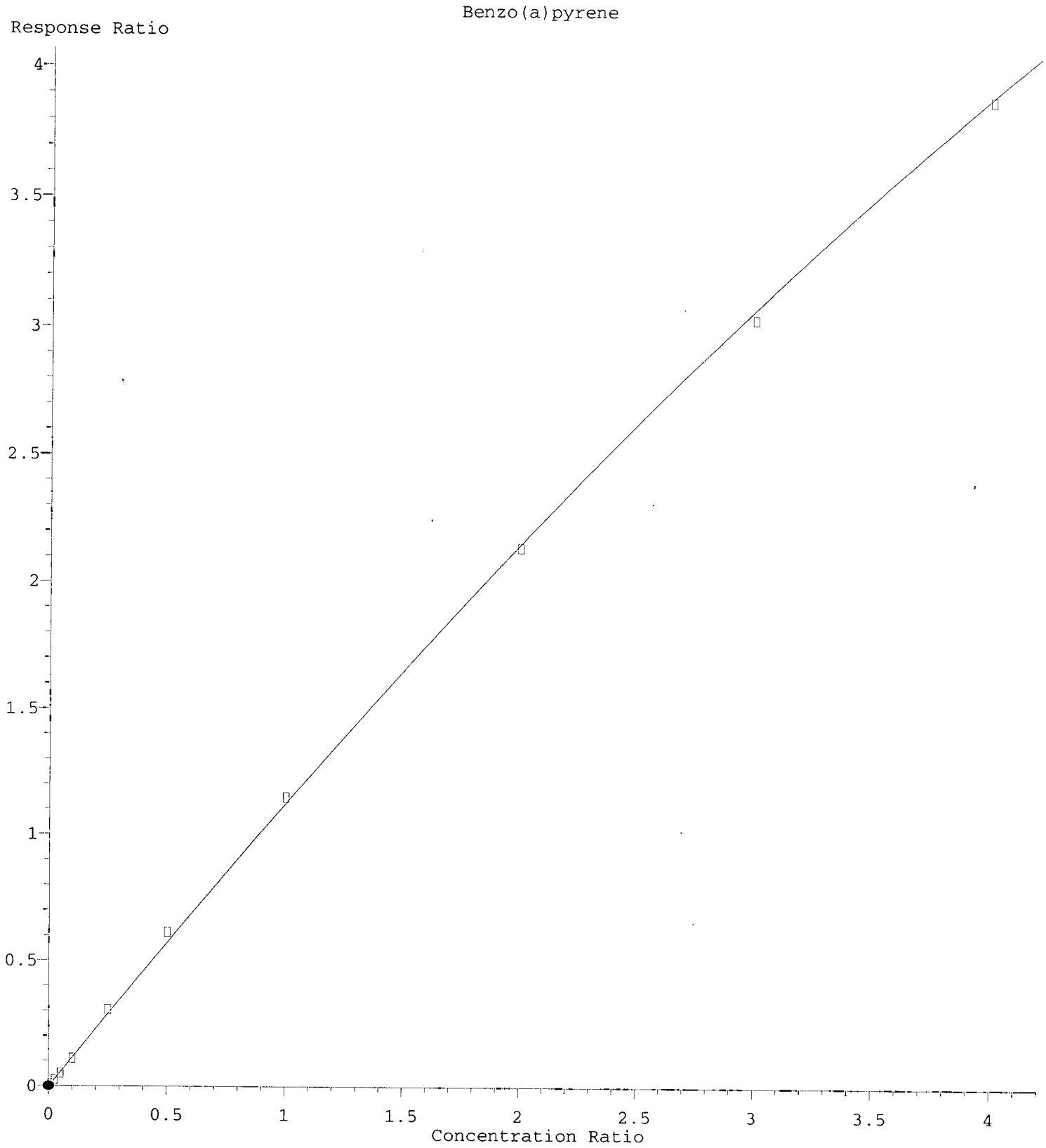
TIC: I05081919.D\data.ms

(90) Benzo(b+k)fluoranthene (T)

17.902min (+ 0.214) 10.63 ng/ml m

response 115

Ion	Exp%	Act%
252.10	100.00	100.00
126.10	23.30	0.00
253.10	21.70	0.00
0.00	0.00	0.00

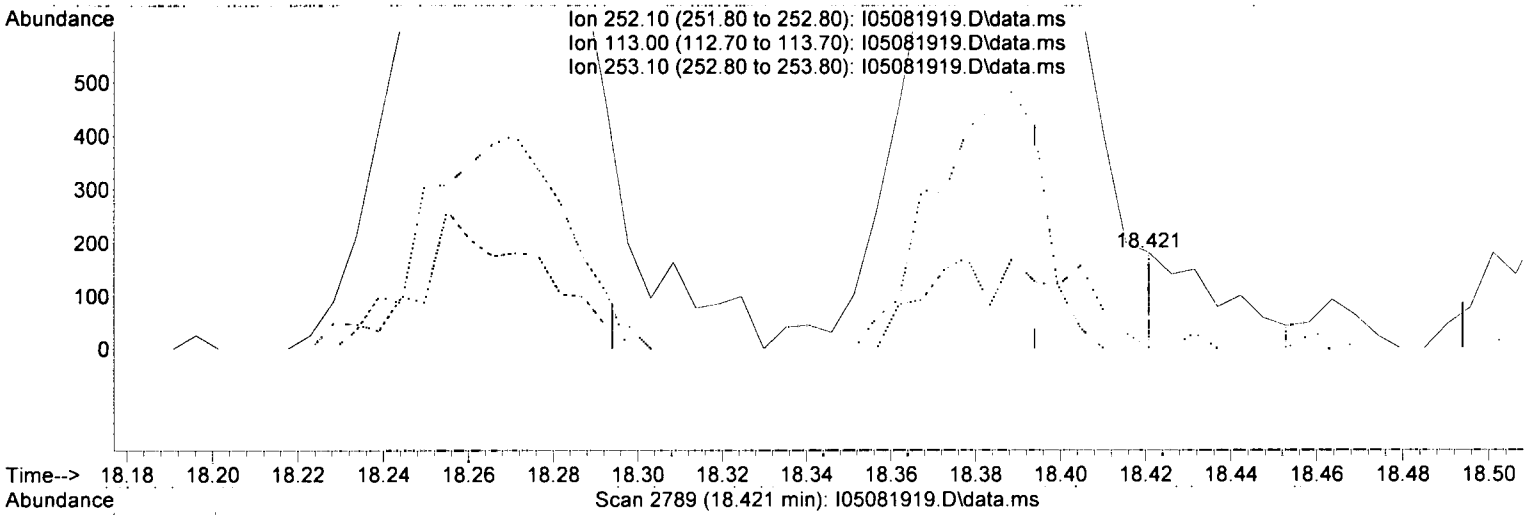


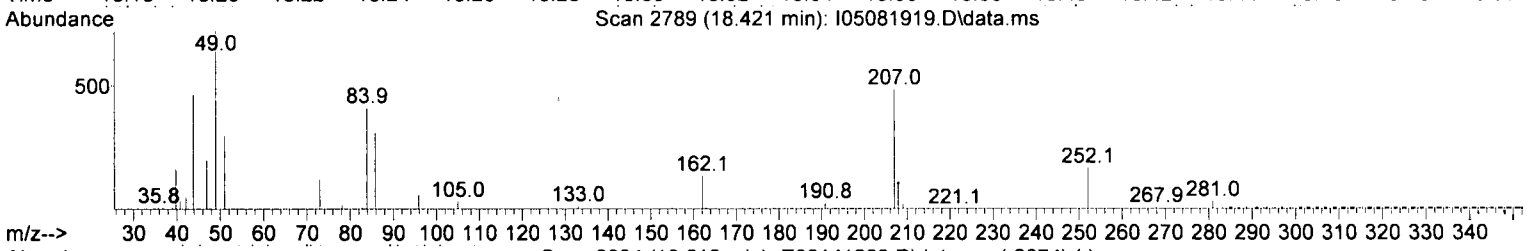
R = -5.14e-002 A*A + 1.18e+000 A - 3.91e-003
Coef of Det (r^2) = 0.997 Curve Fit: Quadratic w(1/a^2)
Method Name: T:\methods\SV9_050819.M
Calibration Table Last Updated: Thu May 09 13:06:21 2019

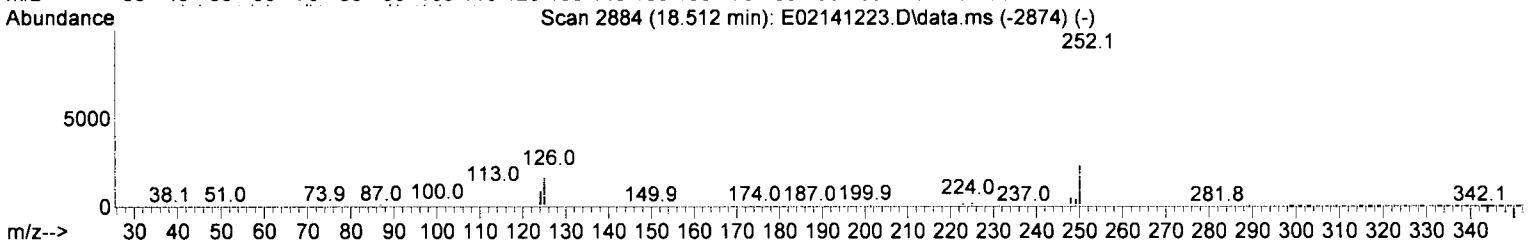
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\REQUANT\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 13:11:43 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9







TIC: I05081919.D\data.ms

(92) Benzo(a)pyrene (T)

18.421min (+ 0.027) 7.36 ng/ml m

response 183

Ion	Exp%	Act%
252.10	100.00	100.00
113.00	13.40	0.00
253.10	21.60	0.00
0.00	0.00	0.00

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9E08056

Analysis Included
8270D LL Full List

INSTRUMENT SEQUENCE LOG

SampleID	SampleName	Matrix	STDID	ISTD ID	Analyzed
9E08056-TUN1	MS Tune	Soil	A19D323	A19D031	5/8/2019 7:08:00PM
9E08056-ICB1	Initial Cal Blank	Soil		A19D031	5/8/2019 7:35:00PM
9E08056-CAL1	Cal Standard	Soil	A19D053	"	5/8/2019 8:12:00PM
9E08056-CAL2	Cal Standard	Soil	A19D054	"	5/8/2019 8:48:00PM
9E08056-CAL3	Cal Standard	Soil	A19D055	"	5/8/2019 9:25:00PM
9E08056-CAL4	Cal Standard	Soil	A19D056	"	5/8/2019 10:01:00PM
9E08056-CAL5	Cal Standard	Soil	A19D057	"	5/8/2019 10:38:00PM
9E08056-CAL6	Cal Standard	Soil	A19D058	"	5/8/2019 11:14:00PM
9E08056-CAL7	Cal Standard	Soil	A19D059	"	5/8/2019 11:50:00PM
9E08056-CAL8	Cal Standard	Soil	A19D060	"	5/9/2019 12:26:00AM
9E08056-CAL9	Cal Standard	Soil	A19D061	"	5/9/2019 1:01:00AM
9E08056-CALA	Cal Standard	Soil	A19D062	"	5/9/2019 1:37:00AM
9E08056-ICV1	Initial Cal Check	Soil	A19C239	"	5/9/2019 2:48:00AM

CALIBRATION STANDARD RECOVERIES

Calibration: **A9E1009** Instrument: **SV-GCMS9**

8270D LL Full List Sequence: **9E08056** Matrix: **Soil**

9E08056-CAL1	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-CAL2	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-CAL3	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-CAL4	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-CAL5	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-CAL6	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-CAL7	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-CAL8	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-CAL9	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-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: 9E08056

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: **A9E1009** Instrument: **SV-GCMS9**

8270D LL Full List Sequence: **9E08056** Matrix: **Soil**

9E08056-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 SEQUENCE REVIEW SHEET

SEQUENCE: 9E08056

Analysis Included
8270D LL Full List

INSTRUMENT SEQUENCE LOG

SampleID	SampleName	Matrix	STDID	ISTD ID	Analyzed
9E08056-TUN1	MS Tune	Water	A19D323	A19D031	5/8/2019 7:08:00PM
9E08056-ICB1	Initial Cal Blank	Water		A19D031	5/8/2019 7:35:00PM
9E08056-CAL1	Cal Standard	Water	A19D053	"	5/8/2019 8:12:00PM
9E08056-CAL2	Cal Standard	Water	A19D054	"	5/8/2019 8:48:00PM
9E08056-CAL3	Cal Standard	Water	A19D055	"	5/8/2019 9:25:00PM
9E08056-CAL4	Cal Standard	Water	A19D056	"	5/8/2019 10:01:00PM
9E08056-CAL5	Cal Standard	Water	A19D057	"	5/8/2019 10:38:00PM
9E08056-CAL6	Cal Standard	Water	A19D058	"	5/8/2019 11:14:00PM
9E08056-CAL7	Cal Standard	Water	A19D059	"	5/8/2019 11:50:00PM
9E08056-CAL8	Cal Standard	Water	A19D060	"	5/9/2019 12:26:00AM
9E08056-CAL9	Cal Standard	Water	A19D061	"	5/9/2019 1:01:00AM
9E08056-CALA	Cal Standard	Water	A19D062	"	5/9/2019 1:37:00AM
9E08056-ICV1	Initial Cal Check	Water	A19C239	"	5/9/2019 2:48:00AM

CALIBRATION STANDARD RECOVERIES

Calibration: **A9E1009** Instrument: **SV-GCMS9**

8270D LL Full List Sequence: **9E08056** Matrix: **Water**

9E08056-CAL1	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-CAL2	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-CAL3	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-CAL4	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-CAL5	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-CAL6	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-CAL7	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-CAL8	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-CAL9	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08056-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: 9E08056

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: **A9E1009** Instrument: **SV-GCMS9**

8270D LL Full List Sequence: **9E08056** Matrix: **Water**

9E08056-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 : T:\data\2019-05\9E08056\
Data File : I05081930.D
Acq On : 9 May 2019 2:48 am
Operator : JK /AMS /DTH
Sample : 9E08056-ICV1
Misc : 1x, A19C239 BNA@1000
ALS Vial : 13 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 17:11:47 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

JK 5/9/19

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	1,4-Dichlorobenzene-d4 (IST	2000.000	2000.000	0.0	100	0.00
2	T	N-Nitrosodimethylamine	1000.000	979.663	2.0	106	0.00
3	T	Pyridine	1000.000	944.023	5.6	98	0.00
4	S	2-Fluorophenol (Surr)	1000.000	1015.004	-1.5	102	0.00
5	S	Phenol-d6 (Surr)	1000.000	1003.193	-0.3	101	0.00
6	T	Phenol	1000.000	1055.456	-5.5	104	0.00
7	T	Aniline	1000.000	1016.543	-1.7	113	0.00
8	T	Bis(2-chloroethyl) ether	1000.000	1038.528	-3.9	101	0.00
9	T	2-Chlorophenol	1000.000	1028.048	-2.8	100	0.00
10	T	1,3-Dichlorobenzene	1000.000	988.801	1.1	98	0.00
11	T	1,4-Dichlorobenzene	1000.000	1008.149	-0.8	98	0.00
12	T	Benzyl alcohol	1000.000	966.033	3.4	94	0.00
13	T	1,2-Dichlorobenzene	1000.000	1021.899	-2.2	100	0.00
14	T	2-Methylphenol	1000.000	1042.888	-4.3	102	0.00
15	T	2,2'-Oxybis(1-Chloropropane	1000.000	986.011	1.4	97	0.00
16	T	N-Nitrosodi-n-propylamine	1000.000	1034.019	-3.4	101	0.00
17	T	3+4-Methylphenol	1000.000	1053.446	-5.3	100	0.00
18	T	Hexachloroethane	1000.000	1002.566	-0.3	100	0.00
19	S	Nitrobenzene-d5 (Surr)	1000.000	982.981	1.7	100	0.00
20	T	Nitrobenzene	1000.000	997.639	0.2	100	0.00
21	I	Naphthalene-d8 (ISTD)	2000.000	2000.000	0.0	102	0.00
22	T	Isophorone	1000.000	1041.611	-4.2	101	0.00
23	T	2-Nitrophenol	1000.000	1112.080	-11.2	106	0.00
24	T	2,4-Dimethylphenol	1000.000	1029.019	-2.9	96	0.00
25	T	Bis(2-chloroethoxy) methane	1000.000	1029.922	-3.0	101	0.00
26	T	Benzoic acid	2000.000	1883.744	5.8	88	0.00
27	T	2,4-Dichlorophenol	1000.000	1034.808	-3.5	103	0.00
28	T	1,2,4-Trichlorobenzene	1000.000	1012.195	-1.2	98	0.00
29	T	Naphthalene	1000.000	1009.997	-1.0	98	0.00
30	T	4-Chloroaniline	1000.000	967.402	3.3	96	0.00
31	T	Hexachlorobutadiene	1000.000	1022.646	-2.3	102	0.00
32	T	4-Chloro-3-methylphenol	1000.000	1007.280	-0.7	100	0.00
33	T	2-Methylnaphthalene	1000.000	1061.904	-6.2	100	0.00
34	T	1-Methylnaphthalene	1000.000	1041.615	-4.2	98	0.00
35	I	Acenaphthene-d10 (ISTD)	2000.000	2000.000	0.0	101	0.00
36	T	Hexachlorocyclopentadiene	1000.000	1071.823	-7.2	102	0.00
37	T	2,4,6-Trichlorophenol	1000.000	1042.933	-4.3	100	0.00
38	T	2,4,5-Trichlorophenol	1000.000	1087.056	-8.7	102	0.00
39	T	1,1'-Biphenyl	1000.000	1072.168	-7.2	100	0.00
40	S	2-Fluorobiphenyl (Surr)	1000.000	1079.788	-8.0	101	0.00
41	T	2-Chloronaphthalene	1000.000	1075.710	-7.6	101	0.00
42	T	2-Nitroaniline	1000.000	1099.892	-10.0	103	0.00
43	T	2,6-Dimethylnaphthalene	1000.000	1064.534	-6.5	99	0.00
44	T	1,4-Dinitrobenzene	1000.000	1073.010	-7.3	105	0.00
45	T	Dimethyl phthalate	1000.000	1061.689	-6.2	101	0.00
46	T	1,3-Dinitrobenzene	1000.000	1096.253	-9.6	102	0.00
47	T	2,6-Dinitrotoluene	1000.000	1126.253	-12.6	102	0.00
48	T	1,2-Dinitrobenzene	1000.000	1070.352	-7.0	99	0.00

Evaluate Continuing Calibration Report

Data Path : T:\data\2019-05\9E08056\
Data File : I05081930.D
Acq On : 9 May 2019 2:48 am
Operator : JK /AMS /DTH
Sample : 9E08056-ICV1
Misc : 1x, A19C239 BNA@1000
ALS Vial : 13 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 17:11:47 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

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)
49	T	Acenaphthylene	1000.000	1088.765	-8.9	101	0.00
50	T	3-Nitroaniline	1000.000	1148.365	-14.8	105	0.00
51	T	Acenaphthene	1000.000	1038.577	-3.9	100	0.00
52	T	2,4-Dinitrophenol	1000.000	946.801	5.3	93	0.00
53	T	4-Nitrophenol	1000.000	1034.680	-3.5	99	0.00
54	T	2,4-Dinitrotoluene	1000.000	1028.340	-2.8	100	0.00
55	T	Dibenzofuran	1000.000	1074.202	-7.4	101	0.00
56	T	2,3,5,6-Tetrachlorophenol	1000.000	1036.218	-3.6	99	0.00
57	T	2,3,4,6-Tetrachlorophenol	1000.000	1057.546	-5.8	99	0.00
58	T	Diethyl phthalate	1000.000	1008.933	-0.9	100	0.00
59	T	2,3,5-Trimethylnaphthalene	1000.000	979.815	2.0	100	0.00
60	T	Fluorene	1000.000	980.699	1.9	100	0.00
61	T	4-Chlorophenyl phenyl ether	1000.000	1021.183	-2.1	100	0.00
62	T	4-Nitroaniline	1000.000	1148.137	-14.8	107	0.00
63	T	4,6-Dinitro-2-methylphenol	1000.000	1164.436	-16.4	114	0.00
64	I	Phenanthrene-d10 (ISTD)	2000.000	2000.000	0.0	102	0.00
65	T	N-Nitrosodiphenylamine	1000.000	1041.336	-4.1	100	0.00
66	T	Azobenzene (1,2-DPH)	1000.000	1062.752	-6.3	101	0.00
67	S	2,4,6-Tribromophenol (Surr)	1000.000	1085.756	-8.6	98	0.00
68	T	4-Bromophenyl phenyl ether	1000.000	1067.925	-6.8	102	0.00
69	T	Hexachlorobenzene	1000.000	1008.788	-0.9	101	0.00
70	T	Pentachlorophenol (PCP)	1000.000	1037.903	-3.8	103	0.00
71	T	Phenanthrene	1000.000	1007.111	-0.7	100	0.00
72	T	Anthracene	1000.000	1026.924	-2.7	101	0.00
73	T	Carbazole	1000.000	1083.500	-8.3	100	0.00
74	T	Di-n-butyl phthalate	1000.000	1076.331	-7.6	100	0.00
75	T	Fluoranthene	1000.000	1068.458	-6.8	100	0.00
76	T	Benzidine	2000.000	1732.757	13.4	83	0.00
77	T	Pyrene	1000.000	1041.218	-4.1	100	0.00
78	I	Chrysene-d12 (ISTD)	2000.000	2000.000	0.0	101	0.00
79	S	Terphenyl-d14 (Surr)	1000.000	1043.187	-4.3	101	0.00
80	T	Butyl benzyl phthalate	1000.000	1062.300	-6.2	99	0.00
81	T	Bis(2-ethylhexyl) adipate	1000.000	995.630	0.4	99	0.00
82	T	3,3-Dichlorobenzidine	2000.000	2074.489	-3.7	100	0.00
83	T	Benz(a)anthracene	1000.000	1044.678	-4.5	102	0.00
84	T	Chrysene	1000.000	1000.048	-0.0	100	0.00
85	T	Bis(2-ethylhexyl) phthalate	1000.000	1060.069	-6.0	101	0.00
86	I	Perylene-d12 (ISTD)	2000.000	2000.000	0.0	102	0.00
87	T	Di-n-octyl phthalate	1000.000	1012.789	-1.3	101	0.00
88	T	Benzo(b)fluoranthene	1000.000	1035.108	-3.5	100	0.00
89	T	Benzo(k)fluoranthene	1000.000	1008.985	-0.9	98	0.00
90	T	Benzo(b+k)fluoranthene	2000.000	2026.947	-1.3	99	0.00
91	T	Benzo(e)pyrene	1000.000	1058.505	-5.9	100	0.00
92	T	Benzo(a)pyrene	1000.000	1026.248	-2.6	98	0.00
93	T	Perylene	1000.000	1159.571	-16.0	111	0.00
94	I	Dibenz(a,h)Anthrcene-d14 (I	2000.000	2000.000	0.0	100	0.00

Evaluate Continuing Calibration Report

Data Path : T:\data\2019-05\9E08056\
Data File : I05081930.D
Acq On : 9 May 2019 2:48 am
Operator : JK /AMS /DTH
Sample : 9E08056-ICV1
Misc : 1x, A19C239 BNA@1000
ALS Vial : 13 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 17:11:47 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

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)
95	T	Indeno(1,2,3-cd)pyrene	1000.000	987.220	1.3	99	0.00
96	T	Dibenz(a,h)anthracene	1000.000	1027.936	-2.8	99	0.00
97	T	Benzo(g,h,i)perylene	1000.000	1055.892	-5.6	100	0.00

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

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081917.D
Acq On : 8 May 2019 7:08 pm
Operator : JK /AMS /DTH
Sample : 9E08056-TUN1
Misc : 1x, A19D323 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1
DataAcq Meth:DFTPP-8270.M

Quant Time: May 09 10:13:18 2019
Quant Method : T:\methods\DFTPP-625.M
Quant Title : DFTPP Tune Methodug/mL
QLast Update : Thu May 09 10:12:54 2019
Response via : Initial Calibration
InstName : SV-GCMS9

9/9/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	7.942	136	177402	2.00	ug/mL	0.00
2) Acenaphthene-d10	9.713	162	79924	2.00	ug/mL	0.00
4) Phenanthrene-d10	11.221	188	119012	2.00	ug/mL	0.00
10) Chrysene-d12	14.944	240	104422	2.00	ug/mL	0.00
11) Perylene-d12	16.933	264	91182	2.00	ug/mL	0.00
Target Compounds						Qvalue
3) Pentachlorophenol	11.039	266	258730	28.85	ug/mL	98
5) DFTPP	11.504	442	233124	23.30	ug/mL#	68
6) Benzidine	12.687	184	1059560	29.57	ug/mL	96
7) 4,4-DDE	12.949	TIC	14865	No Calib	#	
8) 4,4-DDD	13.467	TIC	27182	5.51	ug/mL#	100
9) 4,4-DDT	14.045	TIC	3476962	34.67	ug/mL#	1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

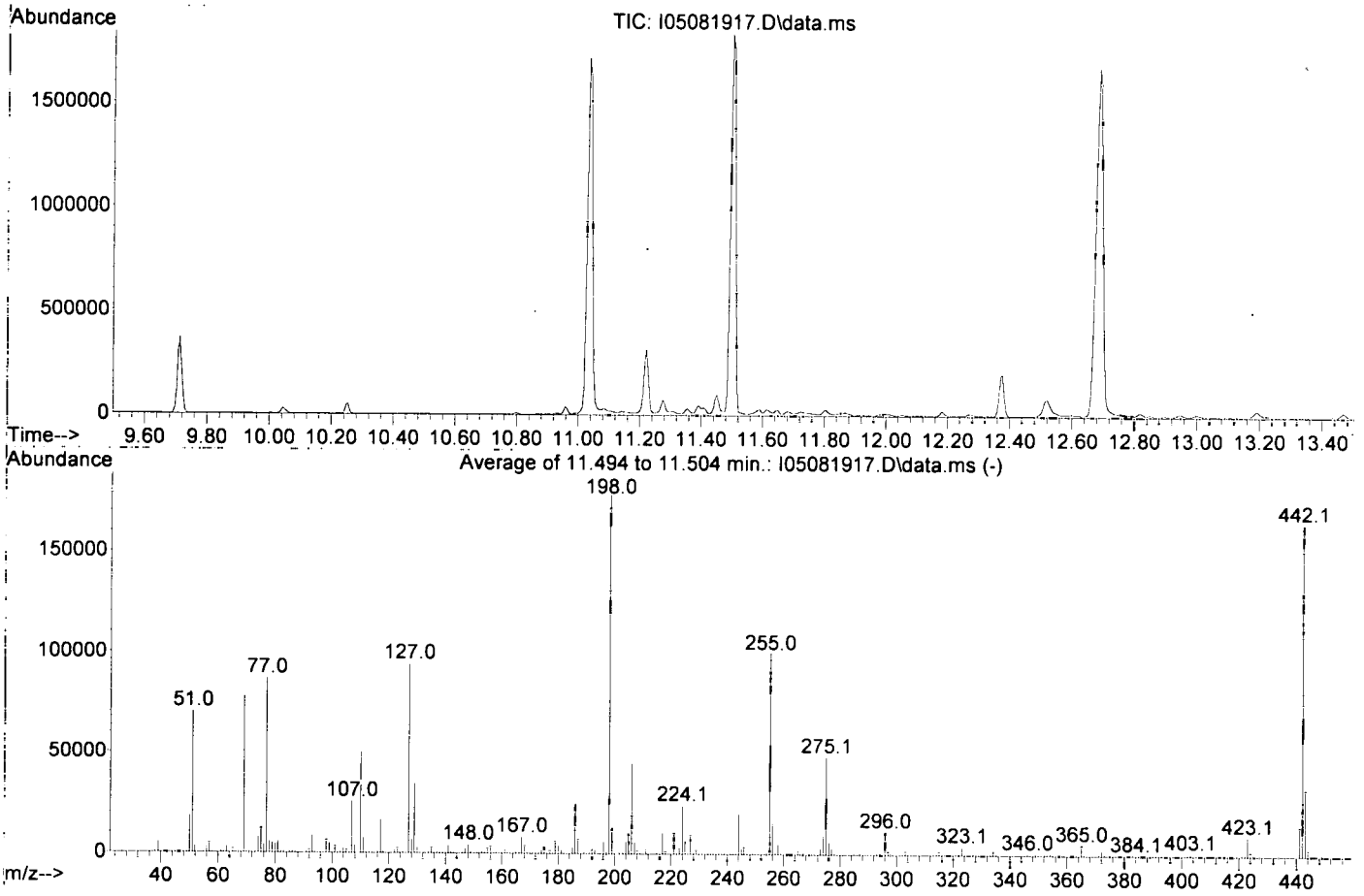
DFTPP

Data Path : T:\data\2019-05\9E08056\
Data File : I05081917.D
Acq On : 8 May 2019 7:08 pm
Operator : JK /AMS /DTH
Sample : 9E08056-TUN1
Misc : 1x, A19D323 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

JK 5/9/19

Method : T:\methods\DFTPP-625.M
Title : DFTPP Tune Methodug/mL
Last Update : Thu May 09 10:12:54 2019



AutoFind: Scans 1497, 1498, 1499; Background Corrected with Scan 1491

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.1	70134	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	43.5	78009	PASS
70	69	0.00	2	0.5	368	PASS
127	198	40	60	52.5	94209	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	179499	PASS
199	198	5	9	7.1	12762	PASS
275	198	10	30	27.0	48432	PASS
365	198	1	100	2.9	5249	PASS
441	443	0.01	100	43.2	14368	PASS
442	198	40	100	91.7	164629	PASS
443	442	17	23	20.2	33256	PASS

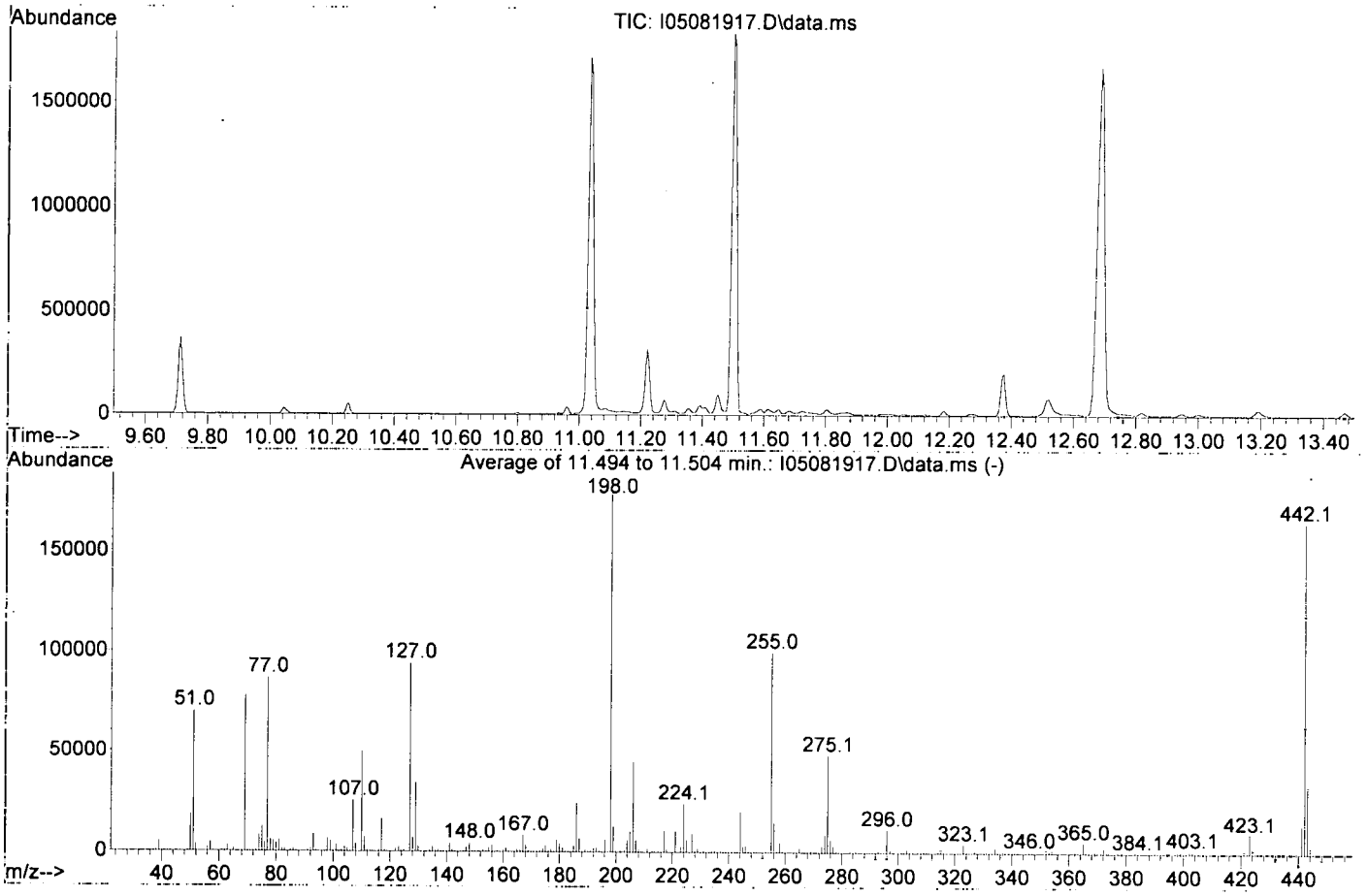
DFTPP

Data Path : T:\data\2019-05\9E08056\
Data File : I05081917.D
Acq On : 8 May 2019 7:08 pm
Operator : JK /AMS /DTH
Sample : 9E08056-TUN1
Misc : 1x, A19D323 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : T:\methods\DFTPP-8270.M
Title : DFTPP Tune Methodug/mL
Last Update : Wed May 08 19:51:32 2019

JK 5/10/19



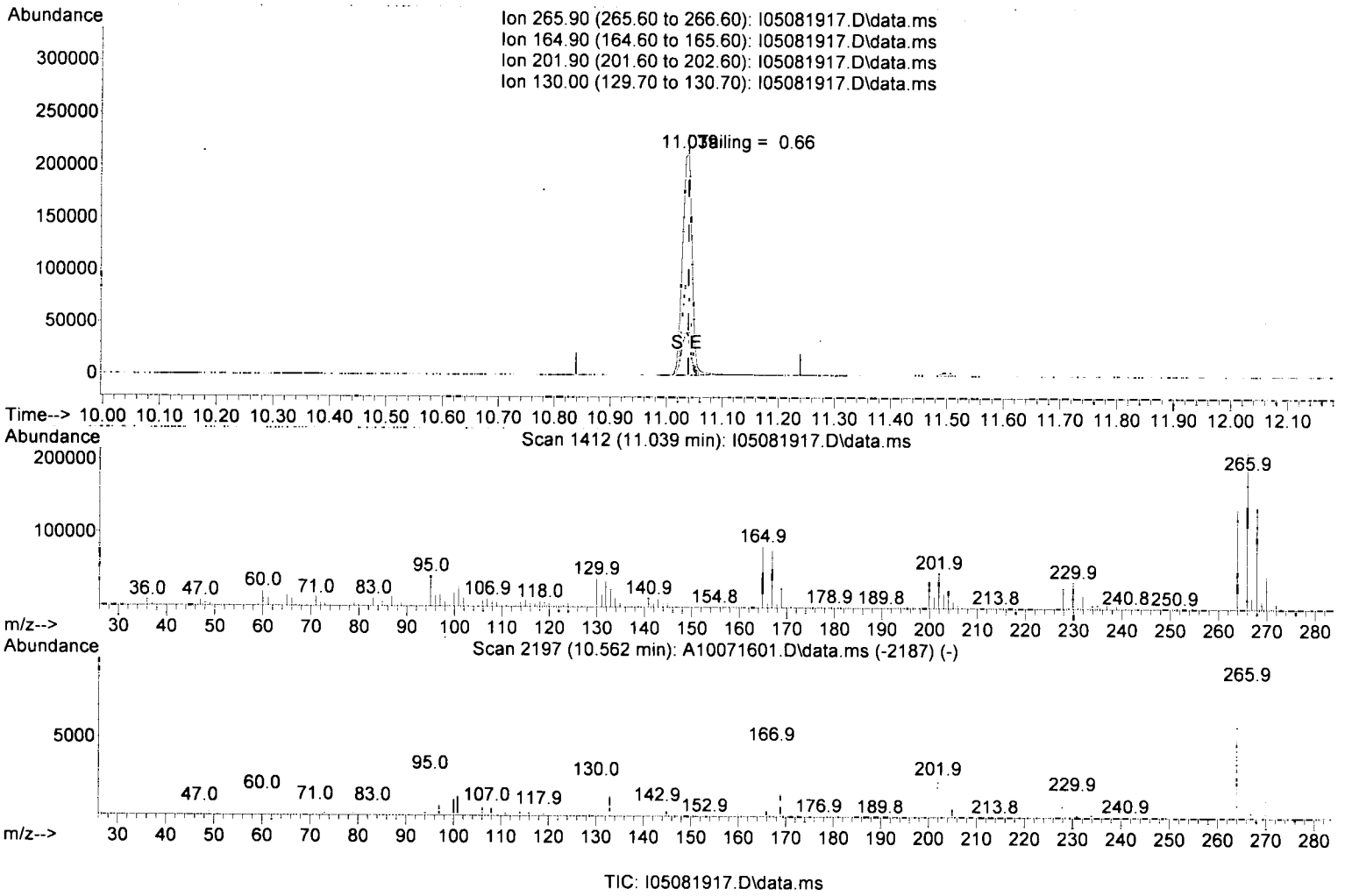
AutoFind: Scans 1497, 1498, 1499; Background Corrected with Scan 1491

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	39.1	70134	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	43.5	78009	PASS
70	69	0.00	2	0.5	368	PASS
127	198	10	80	52.5	94209	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	179499	PASS
199	198	5	9	7.1	12762	PASS
275	198	10	60	27.0	48432	PASS
365	198	1	100	2.9	5249	PASS
441	442	0.01	24	8.7	14368	PASS
442	198	50	200	91.7	164629	PASS
443	442	15	24	20.2	33256	PASS

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081917.D
Acq On : 8 May 2019 7:08 pm
Operator : JK /AMS /DTH
Sample : 9E08056-TUN1
Misc : 1x, A19D323 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1
DataAcq Meth:DFTPP-8270.M

Quant Time: May 09 10:13:18 2019
Quant Method : T:\methods\DFTPP-625.M
Quant Title : DFTPP Tune Methodug/mL
QLast Update : Thu May 09 10:12:54 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05081917.D\data.ms

(3) Pentachlorophenol

11.039min (0.000) 28.85 ug/mL

response 258730

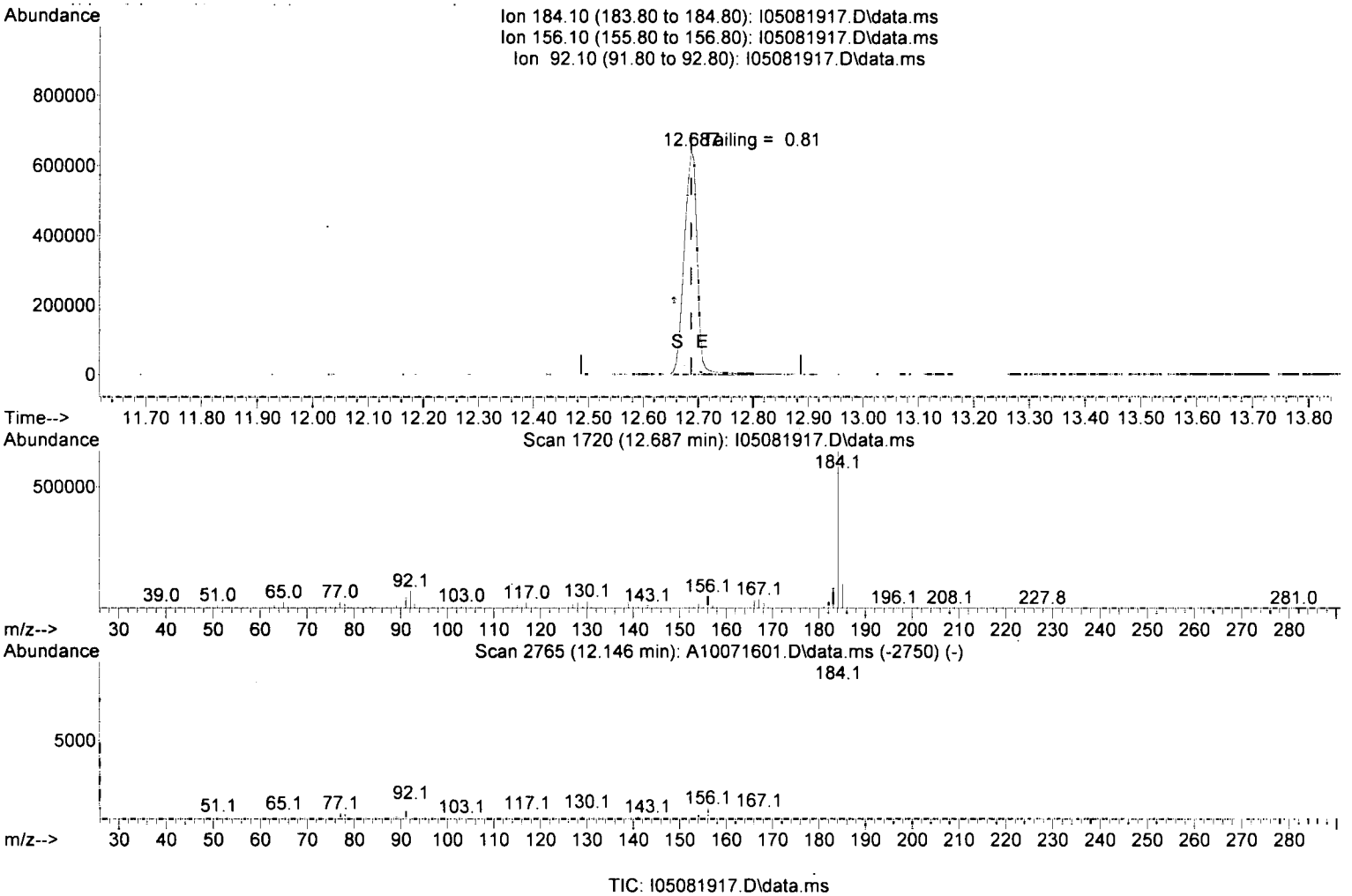
Ion	Exp%	Act%
265.90	100.00	100.00
164.90	40.70	38.94
201.90	21.80	22.28
130.00	18.60	17.95

JK 5/9/19

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081917.D
Acq On : 8 May 2019 7:08 pm
Operator : JK /AMS /DTH
Sample : 9E08056-TUN1
Misc : 1x, A19D323 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1
DataAcq Meth:DFTPP-8270.M

Quant Time: May 09 10:13:18 2019
Quant Method : T:\methods\DFTPP-625.M
Quant Title : DFTPP Tune Methodug/mL
QLast Update : Thu May 09 10:12:54 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05081917.D\data.ms

(6) Benzidine

12.687min (0.000) 29.57 ug/mL

response 1059560

Ion	Exp%	Act%
184.10	100.00	100.00
156.10	7.00	7.51
92.10	8.90	10.92
0.00	0.00	0.00

5/9/19

DDT Breakdown Check (Validated 5/1/2013)

From:
9E08056-TUN1
SV-GCMS9

First Column Area Counts		Percent Breakdown	
DDE	14865		
DDD	27182		
DDT	13476962	1.19	PASS

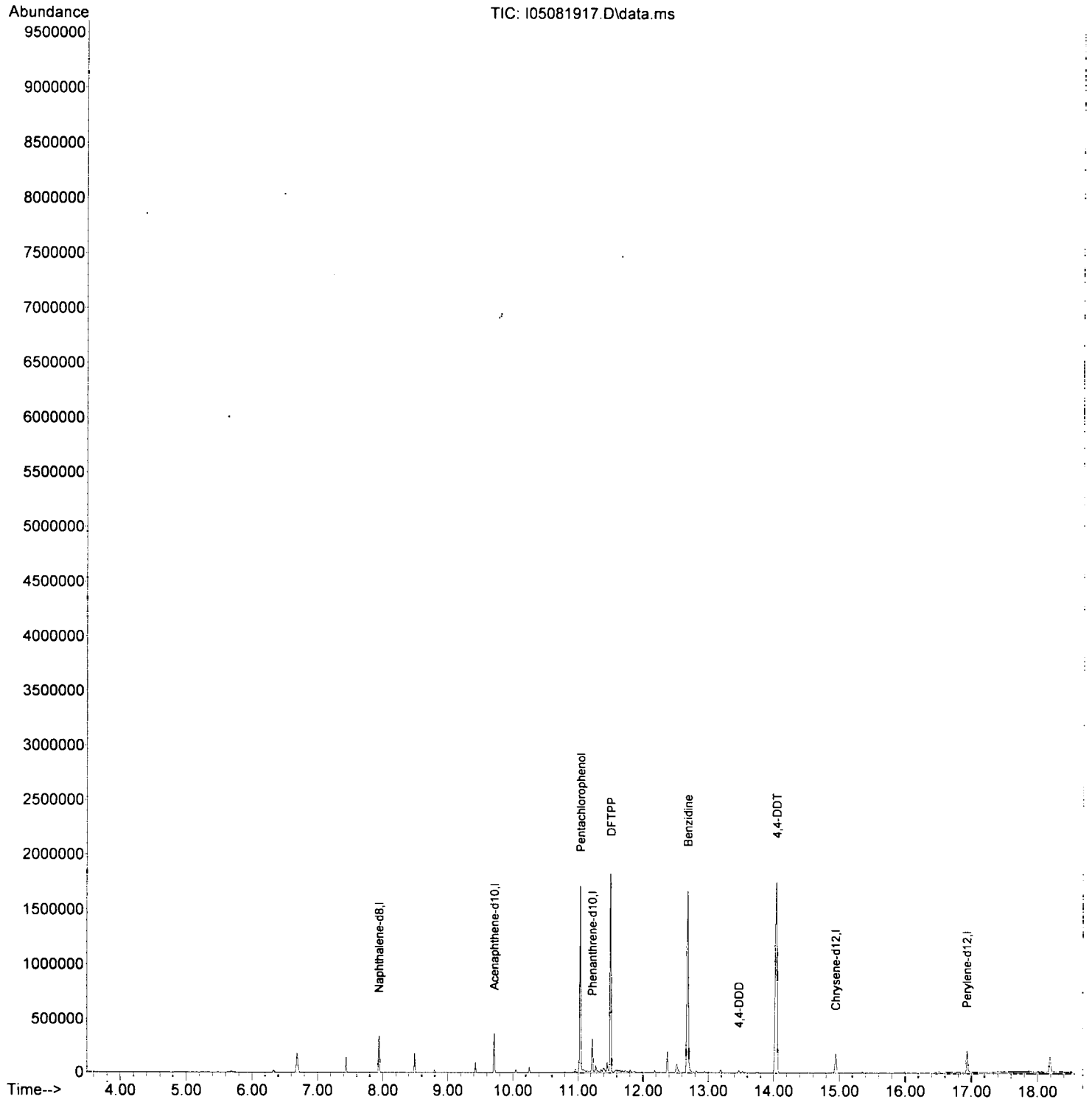
Breakdown must be less than 20% to accept sample data.

5/9/19

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081917.D
Acq On : 8 May 2019 7:08 pm
Operator : JK /AMS /DTH
Sample : 9E08056-TUN1
Misc : 1x, A19D323 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1
DataAcq Meth:DFTPP-8270.M

Quant Time: May 09 10:13:18 2019
Quant Method : T:\methods\DFTPP-625.M
Quant Title : DFTPP Tune Methodug/mL
QLast Update : Thu May 09 10:12:54 2019
Response via : Initial Calibration
InstName : SV-GCMS9



Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081918.D
Acq On : 8 May 2019 7:35 pm
Operator : JK /AMS /DTH
Sample : 9E08056-ICB1
Misc : 1x, DCM + ISTD
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:07 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

JK 5/9/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4...	6.697	152	127428	2000.00	ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.948	136	522440	2000.00	ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.713	162	251914	2000.00	ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.222	188	480361	2000.00	ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.051	240	512978	2000.00	ng/ml	0.00
86) Perylene-d12 (ISTD)	18.539	264	472385	2000.00	ng/ml	0.00
94) Dibenz(a,h)Anthrcene-d...	20.924	292	430097	2000.00	ng/ml	0.00
System Monitoring Compounds						
4) 2-Fluorophenol (Surr)	5.477	112	80	0.94	ng/ml	0.01
5) Phenol-d6 (Surr)	6.360	99	63	0.56	ng/ml	0.02
19) Nitrobenzene-d5 (Surr)	0.000	82	0	0.00	ng/ml	
40) 2-Fluorobiphenyl (Surr)	0.000	172	0	0.00	ng/ml	
67) 2,4,6-Tribromophenol (...	0.000	330	0	0.00	ng/ml	
79) Terphenyl-d14 (Surr)	0.000	244	0	0.00	ng/ml	
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	4.188	74	449	6.67	ng/ml#	1
3) Pyridine	4.279	79	159	N.D.		
6) Phenol	6.360	94	69	N.D.		
7) Aniline	6.387	93	176	N.D.		
8) Bis(2-chloroethyl) ether	6.435	93	248	N.D.		
9) 2-Chlorophenol	6.499	128	75	N.D.		
10) 1,3-Dichlorobenzene	0.000		0	N.D.		
11) 1,4-Dichlorobenzene	0.000		0	N.D.		
12) Benzyl alcohol	0.000		0	N.D.		
13) 1,2-Dichlorobenzene	0.000		0	N.D.		
14) 2-Methylphenol	0.000		0	N.D.		
15) 2,2'-Oxybis(1-Chloropr...	6.953	45	52	N.D.		
16) N-Nitrosodi-n-propylamine	0.000		0	N.D.		
17) 3+4-Methylphenol	0.000		0	N.D.		
18) Hexachloroethane	0.000		0	N.D.		
20) Nitrobenzene	7.210	77	113	N.D.		
22) Isophorone	7.478	82	59	N.D.		
23) 2-Nitrophenol	0.000		0	N.D.		
24) 2,4-Dimethylphenol	0.000		0	N.D.		
25) Bis(2-chloroethoxy) me...	0.000		0	N.D.		
26) Benzoic acid	0.000		0	N.D.		
27) 2,4-Dichlorophenol	0.000		0	N.D.		
28) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
29) Naphthalene	7.964	128	78	N.D.		
30) 4-Chloroaniline	0.000		0	N.D.		
31) Hexachlorobutadiene	0.000		0	N.D.		
32) 4-Chloro-3-methylphenol	0.000		0	N.D.		
33) 2-Methylnaphthalene	0.000		0	N.D.		
34) 1-Methylnaphthalene	0.000		0	N.D.		
36) Hexachlorocyclopentadiene	0.000		0	N.D.		
37) 2,4,6-Trichlorophenol	0.000		0	N.D.		
38) 2,4,5-Trichlorophenol	0.000		0	N.D.		
39) 1,1'-Biphenyl	0.000		0	N.D.		
41) 2-Chloronaphthalene	0.000		0	N.D.		
42) 2-Nitroaniline	0.000		0	N.D.		
43) 2,6-Dimethylnaphthalene	0.000		0	N.D.		

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081918.D
Acq On : 8 May 2019 7:35 pm
Operator : JK /AMS /DTH
Sample : 9E08056-ICB1
Misc : 1x, DCM + ISTD
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:07 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

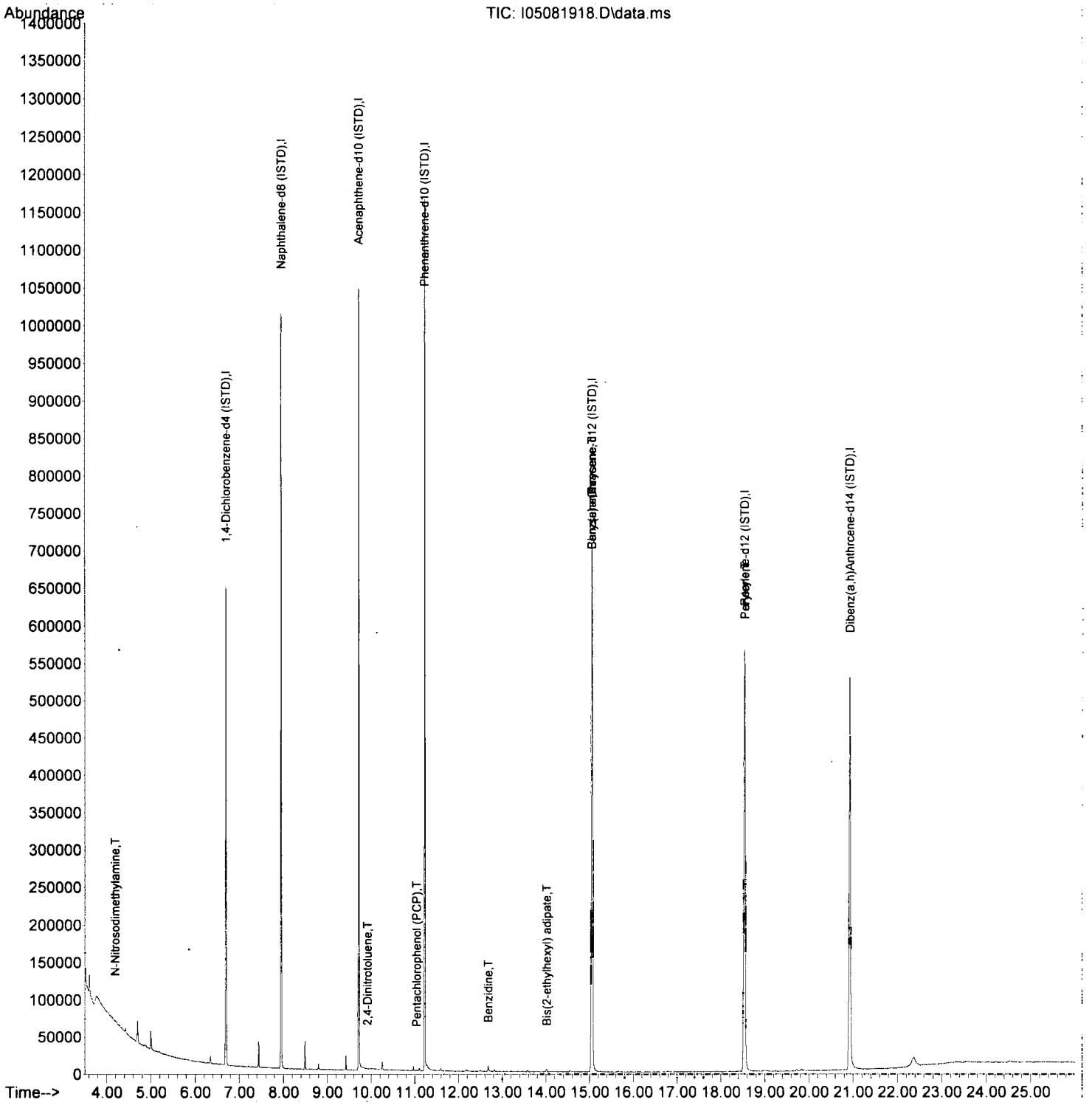
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 1,4-Dinitrobenzene	0.000		0	N.D.		
45) Dimethyl phthalate	0.000		0	N.D.		
46) 1,3-Dinitrobenzene	0.000		0	N.D.		
47) 2,6-Dinitrotoluene	0.000		0	N.D.		
48) 1,2-Dinitrobenzene	0.000		0	N.D.		
49) Acenaphthylene	0.000		0	N.D.		
50) 3-Nitroaniline	0.000		0	N.D.		
51) Acenaphthene	0.000		0	N.D.		
52) 2,4-Dinitrophenol	0.000		0	N.D.		
53) 4-Nitrophenol	0.000		0	N.D.		
54) 2,4-Dinitrotoluene	9.911	165	97	33.10	ng/ml#	17
55) Dibenzofuran	0.000		0	N.D.		
56) 2,3,5,6-Tetrachlorophenol	0.000		0	N.D.		
57) 2,3,4,6-Tetrachlorophenol	0.000		0	N.D.		
58) Diethyl phthalate	10.131	149	55	N.D.		
59) 2,3,5-Trimethylnaphtha...	10.238	170	50	N.D.		
60) Fluorene	0.000		0	N.D.		
61) 4-Chlorophenyl phenyl ...	0.000		0	N.D.		
62) 4-Nitroaniline	0.000		0	N.D.		
63) 4,6-Dinitro-2-methylph...	0.000		0	N.D.		
65) N-Nitrosodiphenylamine	0.000		0	N.D.		
66) Azobenzene (1,2-DPH)	0.000		0	N.D.		
68) 4-Bromophenyl phenyl e...	0.000		0	N.D.		
69) Hexachlorobenzene	0.000		0	N.D.		
70) Pentachlorophenol (PCP)	11.035	266	254	90.33	ng/ml	86
71) Phenanthrene	11.222	178	214	N.D.		
72) Anthracene	11.222	178	214	N.D.		
73) Carbazole	0.000		0	N.D.		
74) Di-n-butyl phthalate	0.000		0	N.D.		
75) Fluoranthene	0.000		0	N.D.		
76) Benzidine	12.677	184	5254	103.92	ng/ml	99
77) Pyrene	0.000		0	N.D.		
80) Butyl benzyl phthalate	0.000		0	N.D.		
81) Bis(2-ethylhexyl) adipate	14.014	129	1009	7.10	ng/ml	94
82) 3,3-Dichlorobenzidine	14.992	252	376	Below	Cal	91
83) Benz(a)anthracene	15.046	228	1291	4.40	ng/ml	68
84) Chrysene	15.046	228	1279	4.68	ng/ml	65
85) Bis(2-ethylhexyl) phth...	0.000		0	N.D.		
87) Di-n-octyl phthalate	0.000		0	N.D.		
88) Benzo(b)fluoranthene	0.000		0	N.D.		
89) Benzo(k)fluoranthene	0.000		0	N.D.		
90) Benzo(b+k)fluoranthene	0.000		0	N.D.		
91) Benzo(e)pyrene	0.000		0	N.D.		
92) Benzo(a)pyrene	0.000		0	N.D.		
93) Perylene	18.544	252	1717	7.10	ng/ml	74
95) Indeno(1,2,3-cd)pyrene	20.929	276	304	N.D.		
96) Dibenz(a,h)anthracene	20.924	278	137	N.D.		
97) Benzo(g,h,i)perylene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081918.D
Acq On : 8 May 2019 7:35 pm
Operator : JK /AMS /DTH
Sample : 9E08056-ICB1
Misc : 1x, DCM + ISTD
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:07 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9



Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081918.D
Acq On : 8 May 2019 7:35 pm
Operator : JK /AMS /DTH
Sample : 9E08056-ICB1
Misc : 1x, DCM + ISTD
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Final Reqmant

Quant Time: May 09 17:11:39 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

JK 5/9/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4...	6.697	152	127428	2000.00	ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.948	136	522440	2000.00	ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.713	162	251914	2000.00	ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.222	188	480361	2000.00	ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.051	240	512978	2000.00	ng/ml	0.00
86) Perylene-d12 (ISTD)	18.539	264	472385	2000.00	ng/ml	0.00
94) Dibenz(a,h)Anthrcene-d...	20.924	292	430097	2000.00	ng/ml	0.00
System Monitoring Compounds						
4) 2-Fluorophenol (Surr)	5.477	112	80	0.96	ng/ml	0.01
5) Phenol-d6 (Surr)	6.360	99	63	0.58	ng/ml	0.02
19) Nitrobenzene-d5 (Surr)	0.000	82	0	0.00	ng/ml	
40) 2-Fluorobiphenyl (Surr)	0.000	172	0	0.00	ng/ml	
67) 2,4,6-Tribromophenol (...	0.000	330	0	0.00	ng/ml	
79) Terphenyl-d14 (Surr)	0.000	244	0	0.00	ng/ml	
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	4.188	74	449	7.05	ng/ml#	1
3) Pyridine	4.279	79	159	N.D.		
6) Phenol	6.360	94	69	N.D.		
7) Aniline	6.387	93	176	N.D.		
8) Bis(2-chloroethyl) ether	6.435	93	248	2.56	ng/ml	93
9) 2-Chlorophenol	6.499	128	75	N.D.		
10) 1,3-Dichlorobenzene	0.000		0	N.D.		
11) 1,4-Dichlorobenzene	0.000		0	N.D.		
12) Benzyl alcohol	0.000		0	N.D.		
13) 1,2-Dichlorobenzene	0.000		0	N.D.		
14) 2-Methylphenol	0.000		0	N.D.		
15) 2,2'-Oxybis(1-Chloropr...	6.953	45	52	N.D.		
16) N-Nitrosodi-n-propylamine	0.000		0	N.D.		
17) 3+4-Methylphenol	0.000		0	N.D.		
18) Hexachloroethane	0.000		0	N.D.		
20) Nitrobenzene	7.210	77	113	N.D.		
22) Isophorone	7.478	82	59	N.D.		
23) 2-Nitrophenol	0.000		0	N.D.		
24) 2,4-Dimethylphenol	0.000		0	N.D.		
25) Bis(2-chloroethoxy) me...	0.000		0	N.D.		
26) Benzoic acid	0.000		0	N.D.		
27) 2,4-Dichlorophenol	0.000		0	N.D.		
28) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
29) Naphthalene	7.964	128	78	N.D.		
30) 4-Chloroaniline	0.000		0	N.D.		
31) Hexachlorobutadiene	0.000		0	N.D.		
32) 4-Chloro-3-methylphenol	0.000		0	N.D.		
33) 2-Methylnaphthalene	0.000		0	N.D.		
34) 1-Methylnaphthalene	0.000		0	N.D.		
36) Hexachlorocyclopentadiene	0.000		0	N.D.		
37) 2,4,6-Trichlorophenol	0.000		0	N.D.		
38) 2,4,5-Trichlorophenol	0.000		0	N.D.		
39) 1,1'-Biphenyl	0.000		0	N.D.		
41) 2-Chloronaphthalene	0.000		0	N.D.		
42) 2-Nitroaniline	0.000		0	N.D.		
43) 2,6-Dimethylnaphthalene	0.000		0	N.D.		

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081918.D
Acq On : 8 May 2019 7:35 pm
Operator : JK /AMS /DTH
Sample : 9E08056-ICB1
Misc : 1x, DCM + ISTD
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 17:11:39 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

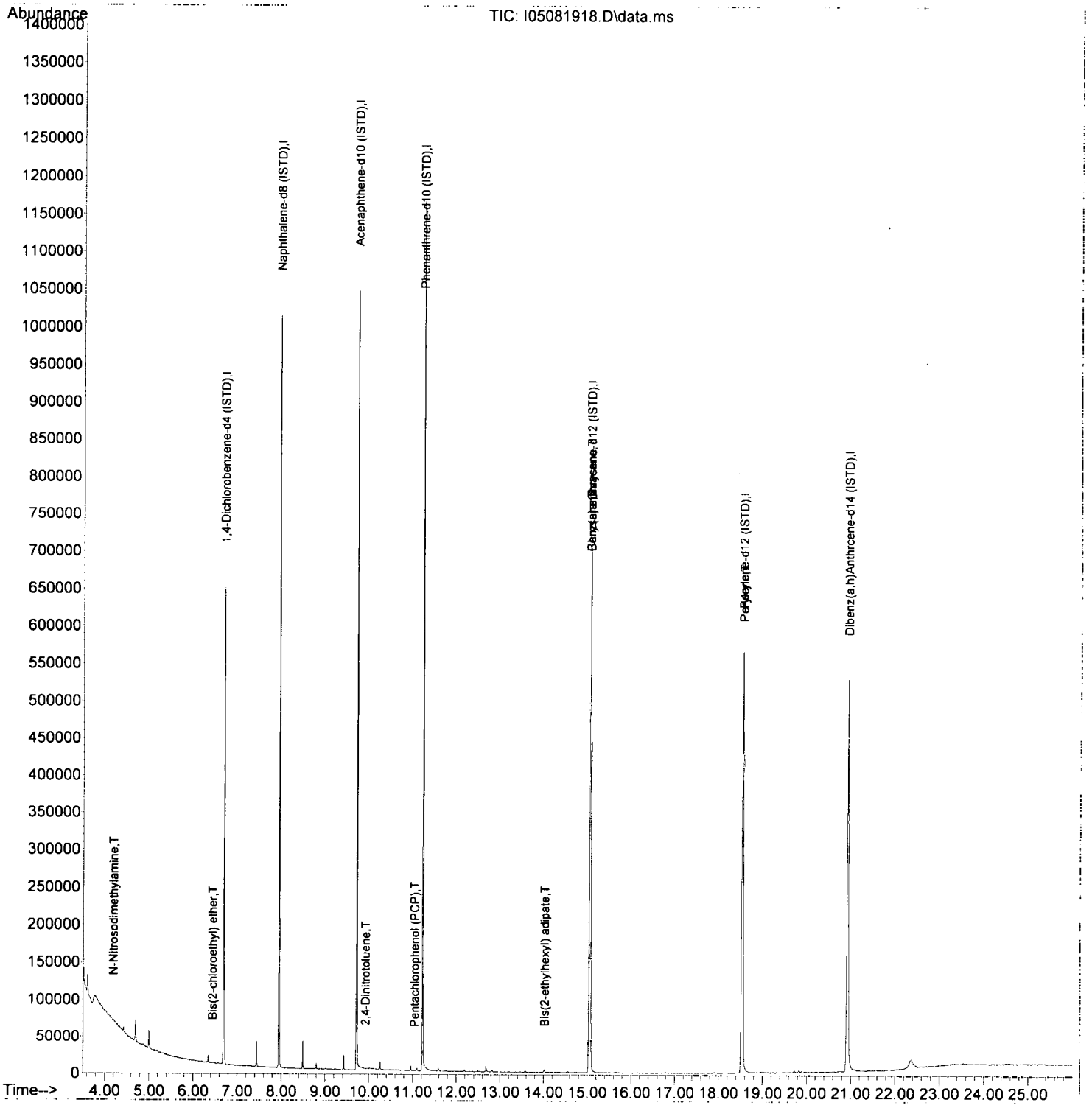
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
44) 1,4-Dinitrobenzene	0.000		0	N.D.	
45) Dimethyl phthalate	0.000		0	N.D.	
46) 1,3-Dinitrobenzene	0.000		0	N.D.	
47) 2,6-Dinitrotoluene	0.000		0	N.D.	
48) 1,2-Dinitrobenzene	0.000		0	N.D.	
49) Acenaphthylene	0.000		0	N.D.	
50) 3-Nitroaniline	0.000		0	N.D.	
51) Acenaphthene	0.000		0	N.D.	
52) 2,4-Dinitrophenol	0.000		0	N.D.	
53) 4-Nitrophenol	0.000		0	N.D.	
54) 2,4-Dinitrotoluene	9.911	165	97	34.45 ng/ml#	17
55) Dibenzofuran	0.000		0	N.D.	
56) 2,3,5,6-Tetrachlorophenol	0.000		0	N.D.	
57) 2,3,4,6-Tetrachlorophenol	0.000		0	N.D.	
58) Diethyl phthalate	10.131	149	55	N.D.	
59) 2,3,5-Trimethylnaphtha...	10.238	170	50	N.D.	
60) Fluorene	0.000		0	N.D.	
61) 4-Chlorophenyl phenyl ...	0.000		0	N.D.	
62) 4-Nitroaniline	0.000		0	N.D.	
63) 4,6-Dinitro-2-methylph...	0.000		0	N.D.	
65) N-Nitrosodiphenylamine	0.000		0	N.D.	
66) Azobenzene (1,2-DPH)	0.000		0	N.D.	
68) 4-Bromophenyl phenyl e...	0.000		0	N.D.	
69) Hexachlorobenzene	0.000		0	N.D.	
70) Pentachlorophenol (PCP)	11.035	266	254	65.69 ng/ml	86
71) Phenanthrene	11.222	178	214	N.D.	
72) Anthracene	11.222	178	214	N.D.	
73) Carbazole	0.000		0	N.D.	
74) Di-n-butyl phthalate	0.000		0	N.D.	
75) Fluoranthene	0.000		0	N.D.	
76) Benzidine	12.677	184	5254	Below Cal	99
77) Pyrene	0.000		0	N.D.	
80) Butyl benzyl phthalate	0.000		0	N.D.	
81) Bis(2-ethylhexyl) adipate	14.014	129	1009	7.46 ng/ml	94
82) 3,3-Dichlorobenzidine	14.992	252	376	Below Cal	91
83) Benz(a)anthracene	15.046	228	1291	4.33 ng/ml	68
84) Chrysene	15.046	228	1279	4.65 ng/ml	65
85) Bis(2-ethylhexyl) phth...	0.000		0	N.D.	
87) Di-n-octyl phthalate	0.000		0	N.D.	
88) Benzo(b)fluoranthene	0.000		0	N.D.	
89) Benzo(k)fluoranthene	0.000		0	N.D.	
90) Benzo(b+k)fluoranthene	0.000		0	N.D.	
91) Benzo(e)pyrene	0.000		0	N.D.	
92) Benzo(a)pyrene	0.000		0	N.D.	
93) Perylene	18.544	252	1717	7.18 ng/ml	74
95) Indeno(1,2,3-cd)pyrene	20.929	276	304	N.D.	
96) Dibenz(a,h)anthracene	20.924	278	137	N.D.	
97) Benzo(g,h,i)perylene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081918.D
Acq On : 8 May 2019 7:35 pm
Operator : JK /AMS /DTH
Sample : 9E08056-ICB1
Misc : 1x, DCM + ISTD
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 17:11:39 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9



Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:14 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

JK 5/9/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4...	6.697	152	114486	2000.00	ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.948	136	461650	2000.00	ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.713	162	230578	2000.00	ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.222	188	445843	2000.00	ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.051	240	468796	2000.00	ng/ml	0.00
86) Perylene-d12 (ISTD)	18.538	264	432537	2000.00	ng/ml	0.00
94) Dibenz(a,h)Anthrcene-d...	20.924	292	400350	2000.00	ng/ml	0.00
System Monitoring Compounds						
4) 2-Fluorophenol (Surr)	5.472	112	1296	16.93	ng/ml	0.00
5) Phenol-d6 (Surr)	6.349	99	1675	16.59	ng/ml	0.01
19) Nitrobenzene-d5 (Surr)	7.231	82	1778	21.02	ng/ml	0.00
40) 2-Fluorobiphenyl (Surr)	9.023	172	3096	18.40	ng/ml	0.00
67) 2,4,6-Tribromophenol (...	10.516	330	296	43.31	ng/ml	0.00
79) Terphenyl-d14 (Surr)	13.024	244	4571	20.48	ng/ml	0.00
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	4.193	74	1386	22.92	ng/ml#	36
3) Pyridine	4.236	79	1594	16.87	ng/ml#	49
6) Phenol	6.354	94	1840	16.72	ng/ml	97
7) Aniline	6.386	93	2217	22.05	ng/ml	98
8) Bis(2-chloroethyl) ether	6.434	93	1922	21.30	ng/ml	92
9) 2-Chlorophenol	6.504	128	1505	19.20	ng/ml	85
10) 1,3-Dichlorobenzene	6.643	146	2020	23.21	ng/ml	92
11) 1,4-Dichlorobenzene	6.713	146	1733	20.88	ng/ml	84
12) Benzyl alcohol	6.830	108	394	32.12	ng/ml#	67
13) 1,2-Dichlorobenzene	6.862	146	1593	19.64	ng/ml	94
14) 2-Methylphenol	6.937	107	1153	18.58	ng/ml	78
15) 2,2'-Oxybis(1-Chloropr...	6.953	45	2282	18.10	ng/ml	99
16) N-Nitrosodi-n-propylamine	7.082	70	1232	19.27	ng/ml	95
17) 3+4-Methylphenol	7.082	107	1360	17.39	ng/ml	87
18) Hexachloroethane	7.194	201	565	22.14	ng/ml	83
20) Nitrobenzene	7.253	77	1693	19.66	ng/ml	97
22) Isophorone	7.478	82	3108	18.23	ng/ml	95
23) 2-Nitrophenol	7.563	139	652	40.14	ng/ml	98
24) 2,4-Dimethylphenol	7.601	122	1035	15.16	ng/ml	84
25) Bis(2-chloroethoxy) me...	7.686	93	1890	18.62	ng/ml	96
26) Benzoic acid	0.000		0	N.D.		
27) 2,4-Dichlorophenol	7.814	162	685	21.81	ng/ml	91
28) 1,2,4-Trichlorobenzene	7.889	180	1529	21.22	ng/ml	95
29) Naphthalene	7.970	128	4931	21.54	ng/ml	95
30) 4-Chloroaniline	8.012	127	1367	22.10	ng/ml	95
31) Hexachlorobutadiene	8.093	225	856	23.61	ng/ml	89
32) 4-Chloro-3-methylphenol	8.504	107	518	37.77	ng/ml#	1
33) 2-Methylnaphthalene	8.660	142	3206	19.00	ng/ml	99
34) 1-Methylnaphthalene	8.761	142	3306	20.65	ng/ml	94
36) Hexachlorocyclopentadiene	8.825	237	56	33.22	ng/ml#	27
37) 2,4,6-Trichlorophenol	8.948	196	344	40.72	ng/ml#	74
38) 2,4,5-Trichlorophenol	8.991	198	415	38.85	ng/ml#	62
39) 1,1'-Biphenyl	9.125	154	3301	16.94	ng/ml	98
41) 2-Chloronaphthalene	9.152	162	2457	17.33	ng/ml	92
42) 2-Nitroaniline	9.248	138	198	4.26	ng/ml#	79
43) 2,6-Dimethylnaphthalene	9.285	156	2570	18.38	ng/ml	87

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:14 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 1,4-Dinitrobenzene	9.376	168	116	66.58	ng/ml	86
45) Dimethyl phthalate	9.419	163	3008	18.69	ng/ml	98
46) 1,3-Dinitrobenzene	9.456	168	110	4.44	ng/ml	48
47) 2,6-Dinitrotoluene	9.483	165	309	8.81	ng/ml#	66
48) 1,2-Dinitrobenzene	9.537	168	108	6.10	ng/ml#	1
49) Acenaphthylene	9.569	152	4296	19.09	ng/ml	98
50) 3-Nitroaniline	9.665	138	279	22.94	ng/ml	83
51) Acenaphthene	9.745	153	2971	20.99	ng/ml	98
52) 2,4-Dinitrophenol	0.000		0	N.D		
53) 4-Nitrophenol	9.852	139	173	78.89	ng/ml	74
54) 2,4-Dinitrotoluene	9.900	165	414	39.85	ng/ml	83
55) Dibenzofuran	9.922	168	3412	17.51	ng/ml#	82
56) 2,3,5,6-Tetrachlorophenol	10.007	232	213	55.74	ng/ml	79
57) 2,3,4,6-Tetrachlorophenol	10.050	232	352	45.87	ng/ml	85
58) Diethyl phthalate	10.130	149	3091	20.52	ng/ml	94
59) 2,3,5-Trimethylnaphtha...	10.130	170	2925	22.62	ng/ml	91
60) Fluorene	10.269	166	3504	22.08	ng/ml	90
61) 4-Chlorophenyl phenyl ...	10.259	204	1452	19.48	ng/ml	86
62) 4-Nitroaniline	10.280	138	396	11.51	ng/ml	79
63) 4,6-Dinitro-2-methylph...	0.000		0	N.D.		
65) N-Nitrosodiphenylamine	10.376	169	2436	17.88	ng/ml	89
66) Azobenzene (1,2-DPH)	10.419	77	2808	16.45	ng/ml	96
68) 4-Bromophenyl phenyl e...	10.756	248	976	21.64	ng/ml#	83
69) Hexachlorobenzene	10.836	284	1039	21.71	ng/ml	90
70) Pentachlorophenol (PCP)	11.034	266	515	103.76	ng/ml	75
71) Phenanthrene	11.248	178	5060	21.87	ng/ml	94
72) Anthracene	11.296	178	5028	22.51	ng/ml	95
73) Carbazole	11.457	167	3928	22.54	ng/ml	99
74) Di-n-butyl phthalate	11.794	149	4702	17.52	ng/ml	96
75) Fluoranthene	12.521	202	5484	21.36	ng/ml	96
76) Benzidine	12.676	184	5337	112.28	ng/ml	99
77) Pyrene	12.821	202	5874	22.60	ng/ml	96
80) Butyl benzyl phthalate	13.837	149	1472	44.58	ng/ml	83
81) Bis(2-ethylhexyl) adipate	14.014	129	2977	22.91	ng/ml	95
82) 3,3-Dichlorobenzidine	14.987	252	2583	Below	Cal	87
83) Benz(a)anthracene	15.030	228	5805	21.64	ng/ml	99
84) Chrysene	15.110	228	5174	20.70	ng/ml	93
85) Bis(2-ethylhexyl) phth...	15.180	149	1776	9.88	ng/ml	99
87) Di-n-octyl phthalate	16.838	149	2233	79.02	ng/ml	86
88) Benzo(b)fluoranthene	17.613	252	4502	27.10	ng/ml	97
89) Benzo(k)fluoranthene	~~17.683~~	~~252~~	~~3913~~	~~23.87~~	~~ng/ml~~	96
90) Benzo(b+k)fluoranthene	17.613	252	8905	50.62	ng/ml	96
91) Benzo(e)pyrene	18.266	252	4695	19.12	ng/ml	91
92) Benzo(a)pyrene	18.383	252	3596	26.47	ng/ml	90
93) Perylene	18.587	252	4452	20.10	ng/ml	96
95) Indeno(1,2,3-cd)pyrene	20.913	276	4515	19.92	ng/ml	73
96) Dibenz(a,h)anthracene	20.972	278	3890	20.39	ng/ml	98
97) Benzo(g,h,i)perylene	21.448	276	4035	19.00	ng/ml	72

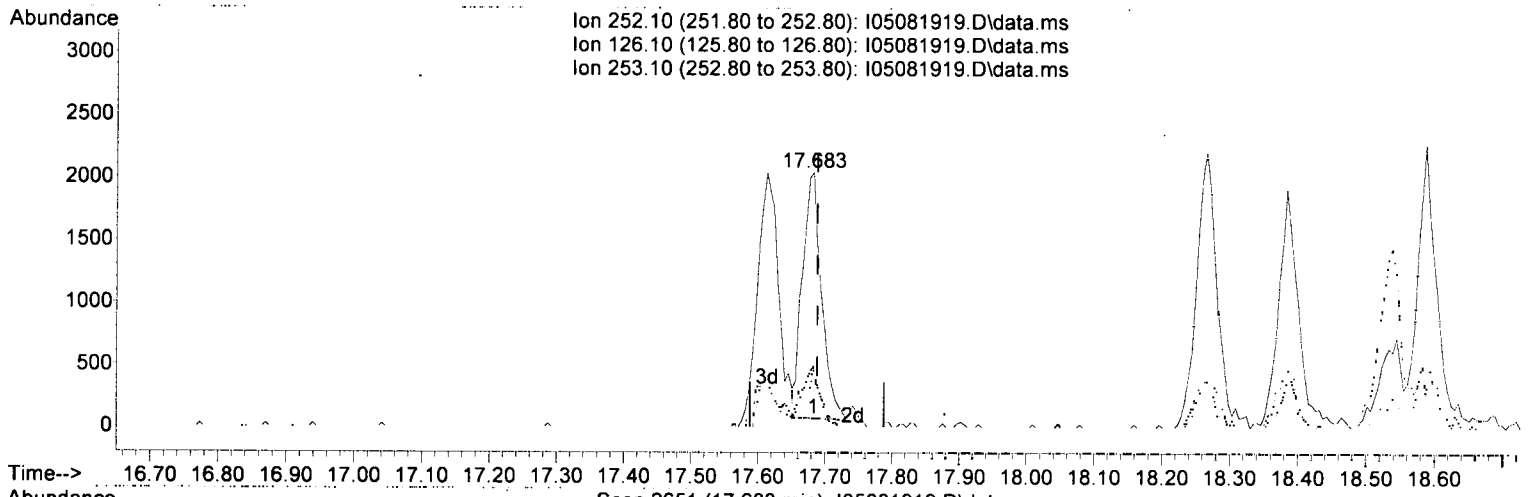
See ML

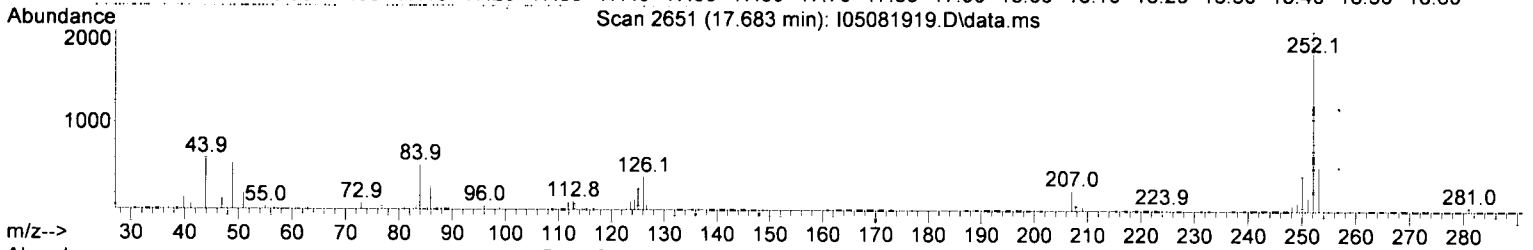
(#) = qualifier out of range (m) = manual integration (+) = signals summed

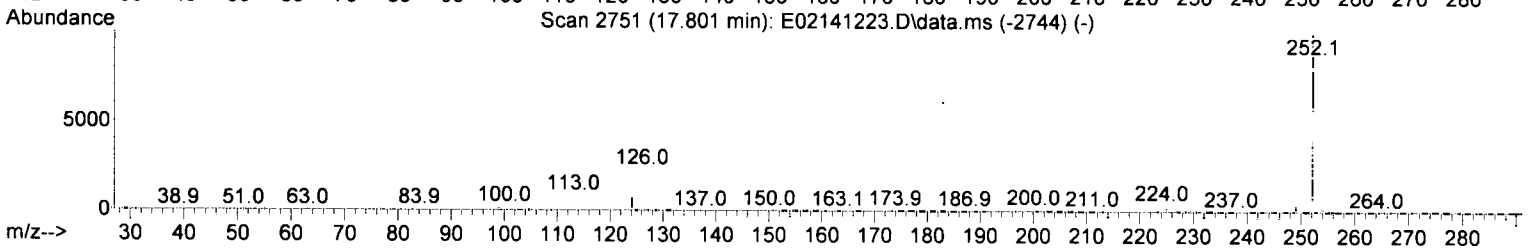
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:14 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9







TIC: I05081919.D\data.ms

(89) Benzo(k)fluoranthene (T)

17.683min (-0.006) 23.87 ng/ml

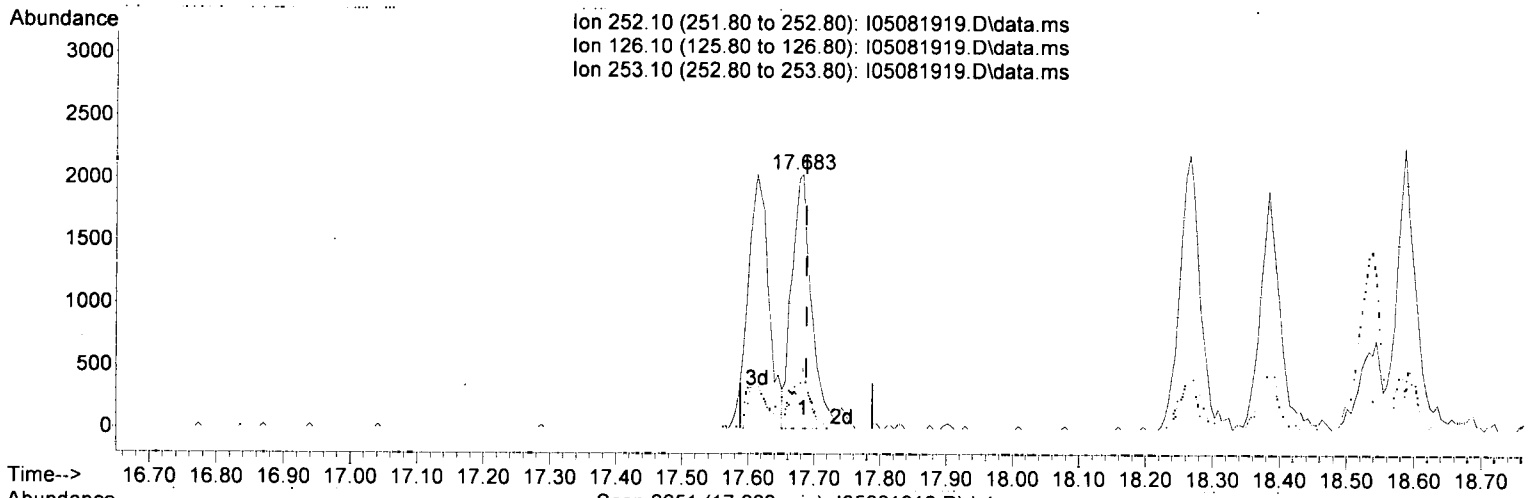
response 3913

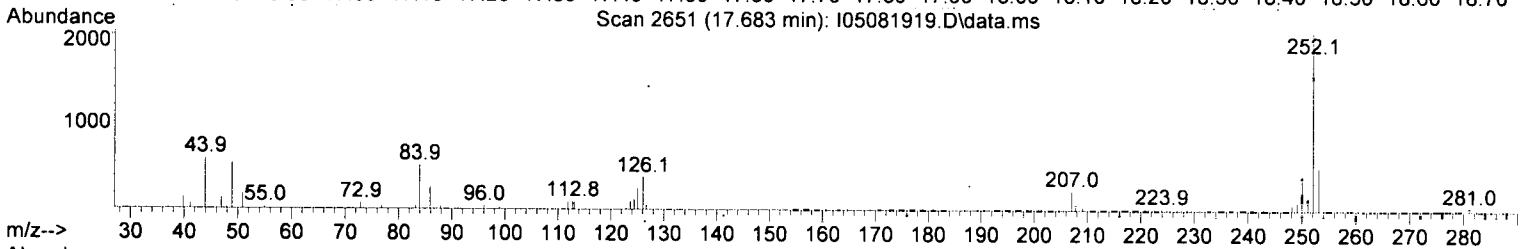
Ion	Exp%	Act%
252.10	100.00	100.00
126.10	23.30	23.46
253.10	21.70	25.42
0.00	0.00	0.00

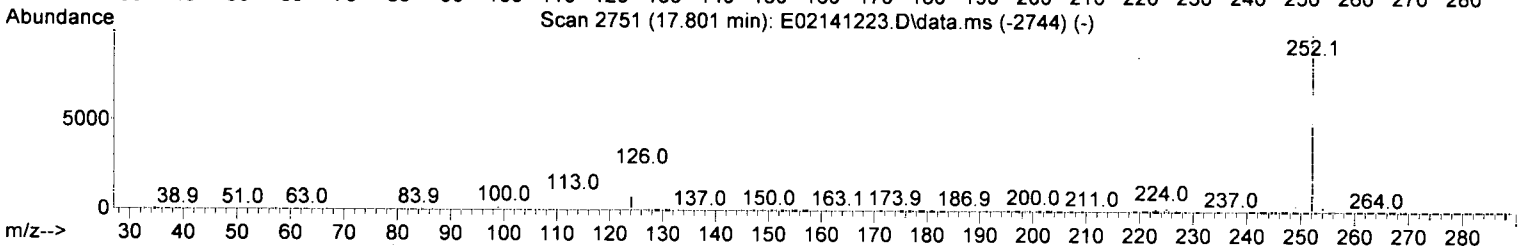
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:14 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9







TIC: I05081919.D\data.ms

(89) Benzo(k)fluoranthene (T)

17.683min (-0.006) 25.71 ng/ml m

response 4403

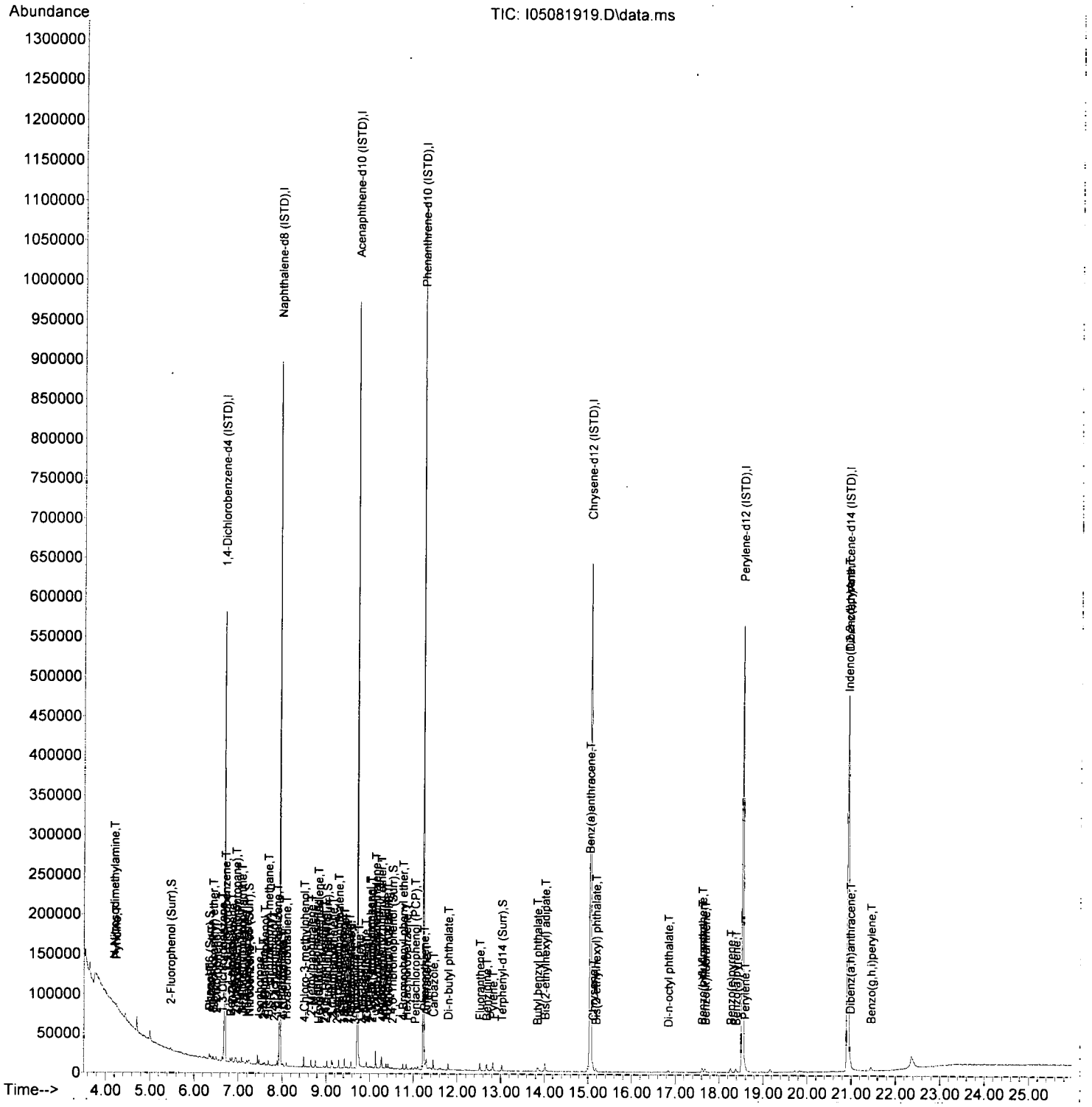
Ion	Exp%	Act%
252.10	100.00	100.00
126.10	23.30	19.44
253.10	21.70	25.42
0.00	0.00	0.00

5/9/19

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081919.D
Acq On : 8 May 2019 8:12 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL1
Misc : 1x, A19D053 BNA@20
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:14 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9



Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081920.D
Acq On : 8 May 2019 8:48 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL2
Misc : 1x, A19D054 BNA@50
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:23 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

5/9/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4...	6.691	152	117186	2000.00	ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.943	136	466642	2000.00	ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.713	162	235336	2000.00	ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.222	188	447217	2000.00	ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.051	240	470097	2000.00	ng/ml	0.00
86) Perylene-d12 (ISTD)	18.539	264	436889	2000.00	ng/ml	0.00
94) Dibenz(a,h)Anthrcene-d...	20.919	292	403848	2000.00	ng/ml	0.00
System Monitoring Compounds						
4) 2-Fluorophenol (Surr)	5.467	112	3106	39.64	ng/ml	0.00
5) Phenol-d6 (Surr)	6.338	99	4324	41.83	ng/ml	0.00
19) Nitrobenzene-d5 (Surr)	7.232	82	4032	46.57	ng/ml	0.00
40) 2-Fluorobiphenyl (Surr)	9.023	172	8836	51.45	ng/ml	0.00
67) 2,4,6-Tribromophenol (...	10.516	330	790	70.57	ng/ml	0.00
79) Terphenyl-d14 (Surr)	13.024	244	10935	48.86	ng/ml	0.00
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	4.178	74	2851	46.07	ng/ml#	70
3) Pyridine	4.215	79	4118	42.59	ng/ml#	61
6) Phenol	6.354	94	4928	43.76	ng/ml	93
7) Aniline	6.381	93	5080	49.37	ng/ml	94
8) Bis(2-chloroethyl) ether	6.429	93	4474	48.44	ng/ml	98
9) 2-Chlorophenol	6.499	128	3771	47.01	ng/ml	92
10) 1,3-Dichlorobenzene	6.643	146	4617	51.82	ng/ml	93
11) 1,4-Dichlorobenzene	6.707	146	4532	53.35	ng/ml	98
12) Benzyl alcohol	6.830	108	1234	49.30	ng/ml	89
13) 1,2-Dichlorobenzene	6.863	146	4338	52.25	ng/ml	97
14) 2-Methylphenol	6.932	107	2679	42.19	ng/ml	93
15) 2,2'-Oxybis(1-Chloropr...	6.948	45	5842	45.28	ng/ml	98
16) N-Nitrosodi-n-propylamine	7.077	70	3144	48.05	ng/ml	93
17) 3+4-Methylphenol	7.082	107	3346	41.79	ng/ml	97
18) Hexachloroethane	7.194	201	1408	53.91	ng/ml	85
20) Nitrobenzene	7.248	77	4129	46.85	ng/ml	98
22) Isophorone	7.478	82	8299	48.17	ng/ml	97
23) 2-Nitrophenol	7.563	139	1851	66.48	ng/ml	98
24) 2,4-Dimethylphenol	7.601	122	2552	36.98	ng/ml	95
25) Bis(2-chloroethoxy) me...	7.681	93	5405	52.67	ng/ml	97
26) Benzoic acid	7.681	105	157	795.44	ng/ml	94
27) 2,4-Dichlorophenol	7.804	162	1767	40.41	ng/ml	94
28) 1,2,4-Trichlorobenzene	7.890	180	3994	54.83	ng/ml	89
29) Naphthalene	7.964	128	12776	55.21	ng/ml	99
30) 4-Chloroaniline	8.013	127	3426	54.81	ng/ml	93
31) Hexachlorobutadiene	8.093	225	2007	54.77	ng/ml	85
32) 4-Chloro-3-methylphenol	8.499	107	1435	51.37	ng/ml#	1
33) 2-Methylnaphthalene	8.660	142	8403	49.27	ng/ml	98
34) 1-Methylnaphthalene	8.756	142	8435	52.12	ng/ml	99
36) Hexachlorocyclopentadiene	8.826	237	592	49.29	ng/ml	88
37) 2,4,6-Trichlorophenol	8.943	196	987	55.28	ng/ml	84
38) 2,4,5-Trichlorophenol	8.991	196	862	49.18	ng/ml	92
39) 1,1'-Biphenyl	9.125	154	9087	45.69	ng/ml	98
41) 2-Chloronaphthalene	9.152	162	6592	45.56	ng/ml	97
42) 2-Nitroaniline	9.248	138	759	16.01	ng/ml	94
43) 2,6-Dimethylnaphthalene	9.286	156	7150	50.10	ng/ml	98

See MS

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081920.D
Acq On : 8 May 2019 8:48 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL2
Misc : 1x, A19D054 BNA@50
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:23 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

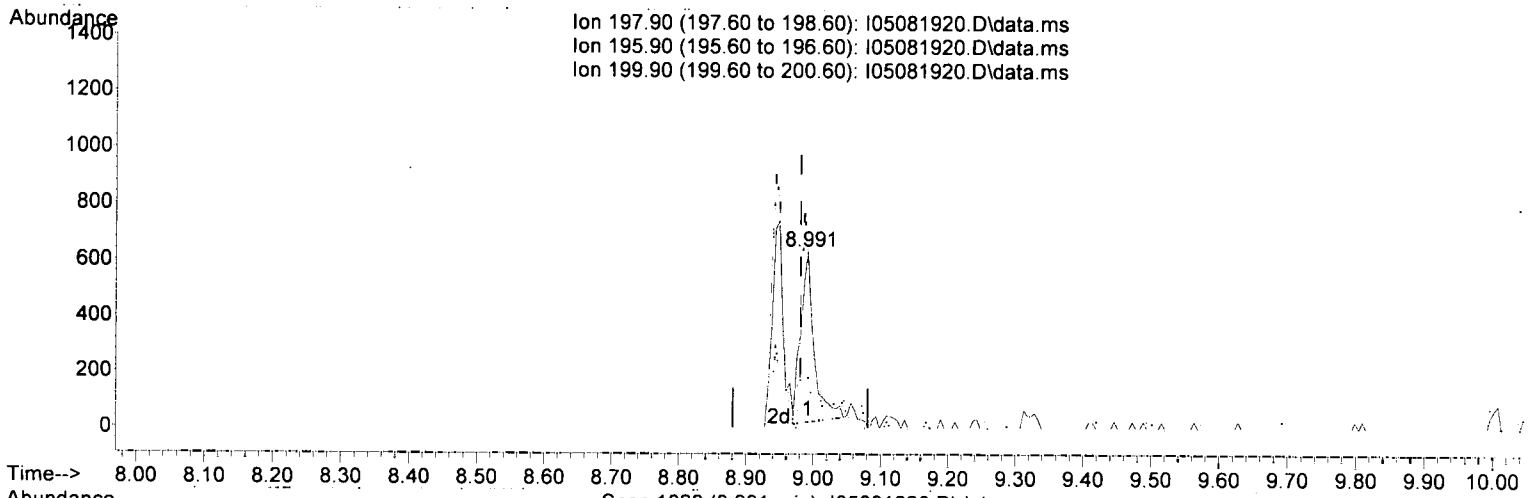
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 1,4-Dinitrobenzene	9.376	168	303	74.86	ng/ml#	70
45) Dimethyl phthalate	9.419	163	8669	52.79	ng/ml	98
46) 1,3-Dinitrobenzene	9.451	168	617	24.40	ng/ml	76
47) 2,6-Dinitrotoluene	9.483	165	1045	29.21	ng/ml	77
48) 1,2-Dinitrobenzene	9.542	168	519	28.72	ng/ml	93
49) Acenaphthylene	9.569	152	11830	51.50	ng/ml	98
50) 3-Nitroaniline	9.660	138	912	40.89	ng/ml	93
51) Acenaphthene	9.745	153	8352	57.80	ng/ml	96
52) 2,4-Dinitrophenol	0.000		0	N.D.		
53) 4-Nitrophenol	9.842	139	405	87.39	ng/ml	91
54) 2,4-Dinitrotoluene	9.890	165	1084	53.31	ng/ml	92
55) Dibenzofuran	9.917	168	10231	51.44	ng/ml	86
56) 2,3,5,6-Tetrachlorophenol	10.008	232	720	71.19	ng/ml	84
57) 2,3,4,6-Tetrachlorophenol	10.050	232	1085	66.47	ng/ml	86
58) Diethyl phthalate	10.131	149	8249	53.66	ng/ml	96
59) 2,3,5-Trimethylnaphtha...	10.131	170	7475	56.65	ng/ml	91
60) Fluorene	10.264	166	8897	54.93	ng/ml	96
61) 4-Chlorophenyl phenyl ...	10.259	204	4291	56.42	ng/ml	86
62) 4-Nitroaniline	10.275	138	1270	36.16	ng/ml	94
63) 4,6-Dinitro-2-methylph...	10.312	198	217	101.38	ng/ml	71
65) N-Nitrosodiphenylamine	10.377	169	6367	46.58	ng/ml	96
66) Azobenzene (1,2-DPH)	10.419	77	7675	44.83	ng/ml	93
68) 4-Bromophenyl phenyl e...	10.756	248	2481	54.83	ng/ml#	77
69) Hexachlorobenzene	10.837	284	3112	64.82	ng/ml	90
70) Pentachlorophenol (PCP)	11.035	266	782	116.47	ng/ml	75
71) Phenanthrene	11.243	178	13230	57.00	ng/ml	98
72) Anthracene	11.297	178	12760	56.96	ng/ml	98
73) Carbazole	11.452	167	10615	51.27	ng/ml	99
74) Di-n-butyl phthalate	11.794	149	11962	44.43	ng/ml	98
75) Fluoranthene	12.521	202	14115	54.81	ng/ml	98
76) Benzidine	12.677	184	6670	136.06	ng/ml	95
77) Pyrene	12.821	202	14957	57.38	ng/ml	97
80) Butyl benzyl phthalate	13.837	149	4377	64.96	ng/ml	93
81) Bis(2-ethylhexyl) adipate	14.008	129	5191	39.84	ng/ml	96
82) 3,3-Dichlorobenzidine	14.987	252	6262	Below Cal		92
83) Benz(a)anthracene	15.030	228	13479	50.10	ng/ml	97
84) Chrysene	15.105	228	12647	50.46	ng/ml	98
85) Bis(2-ethylhexyl) phth...	15.180	149	5059	28.08	ng/ml	88
87) Di-n-octyl phthalate	16.843	149	6475	93.63	ng/ml	96
88) Benzo(b)fluoranthene	17.613	252	11686	54.36	ng/ml	93
89) Benzo(k)fluoranthene	17.677	252	12101	54.18	ng/ml	97
90) Benzo(b+k)fluoranthene	17.677	252	24677	108.29	ng/ml	97
91) Benzo(e)pyrene	18.271	252	12373	49.90	ng/ml	96
92) Benzo(a)pyrene	18.389	252	10371	55.04	ng/ml	94
93) Perylene	18.587	252	10773	48.16	ng/ml	100
95) Indeno(1,2,3-cd)pyrene	20.913	276	10988	48.06	ng/ml	74
96) Dibenz(a,h)anthracene	20.988	278	9885	51.38	ng/ml	89
97) Benzo(g,h,i)perylene	21.454	276	10510	49.07	ng/ml	91

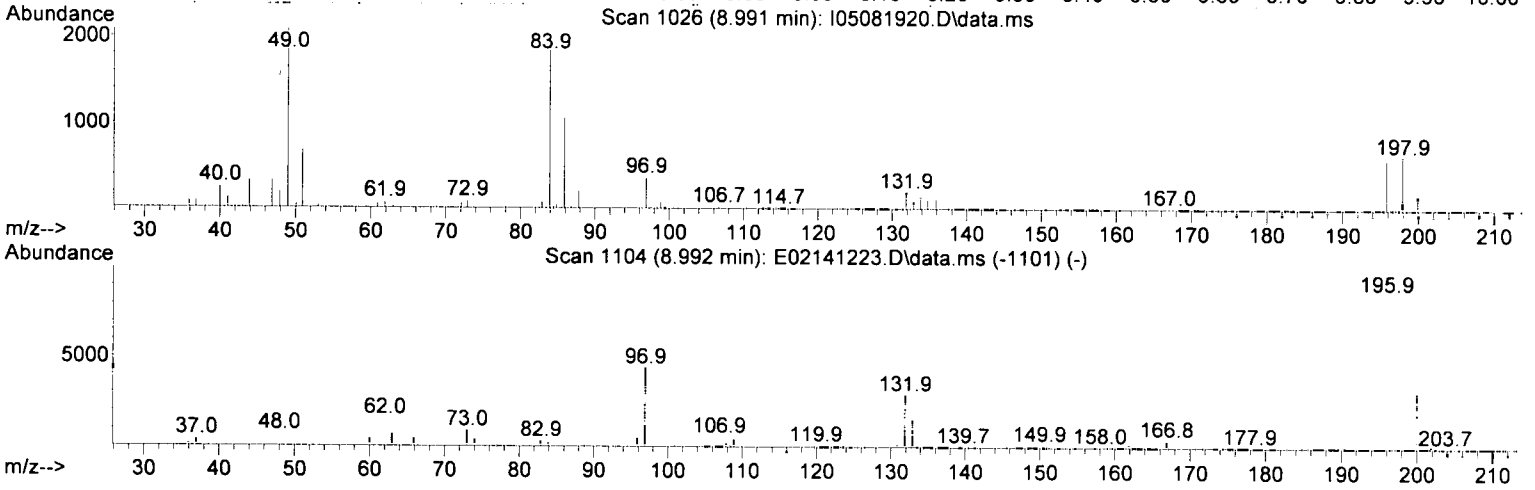
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081920.D
Acq On : 8 May 2019 8:48 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL2
Misc : 1x, A19D054 BNA@50
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:23 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9





TIC: I05081920.D\data.ms

(38) 2,4,5-Trichlorophenol (T)

8.991min (+0.011) 49.18 ng/ml

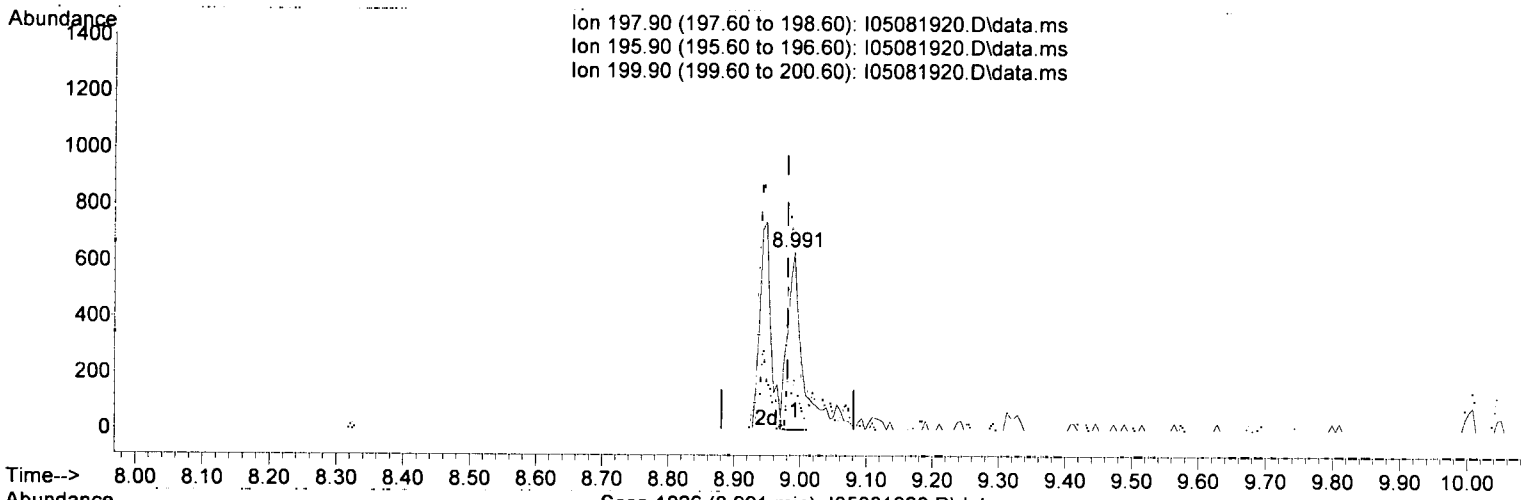
response 862

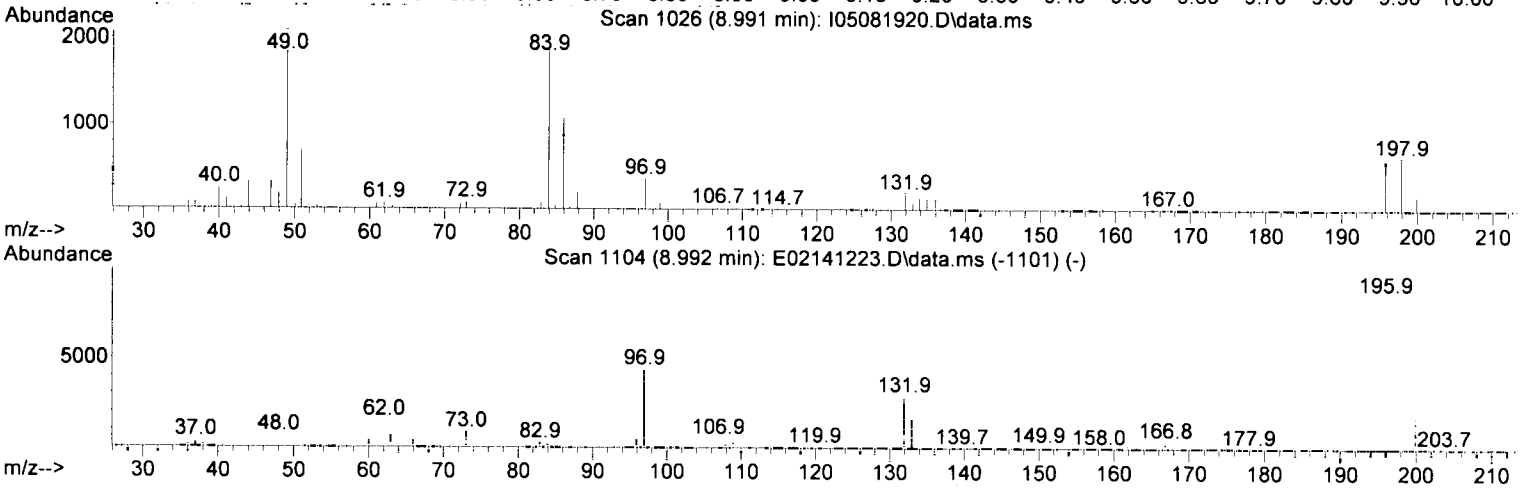
Ion	Exp%	Act%
197.90	100.00	100.00
195.90	105.00	95.28
199.90	31.10	29.13
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081920.D
Acq On : 8 May 2019 8:48 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL2
Misc : 1x, A19D054 BNA@50
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:23 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9





TIC: I05081920.D\data.ms

(38) 2,4,5-Trichlorophenol (T)

8.991min (+ 0.011) 54.39 ng/ml (m) JK 5/9/19

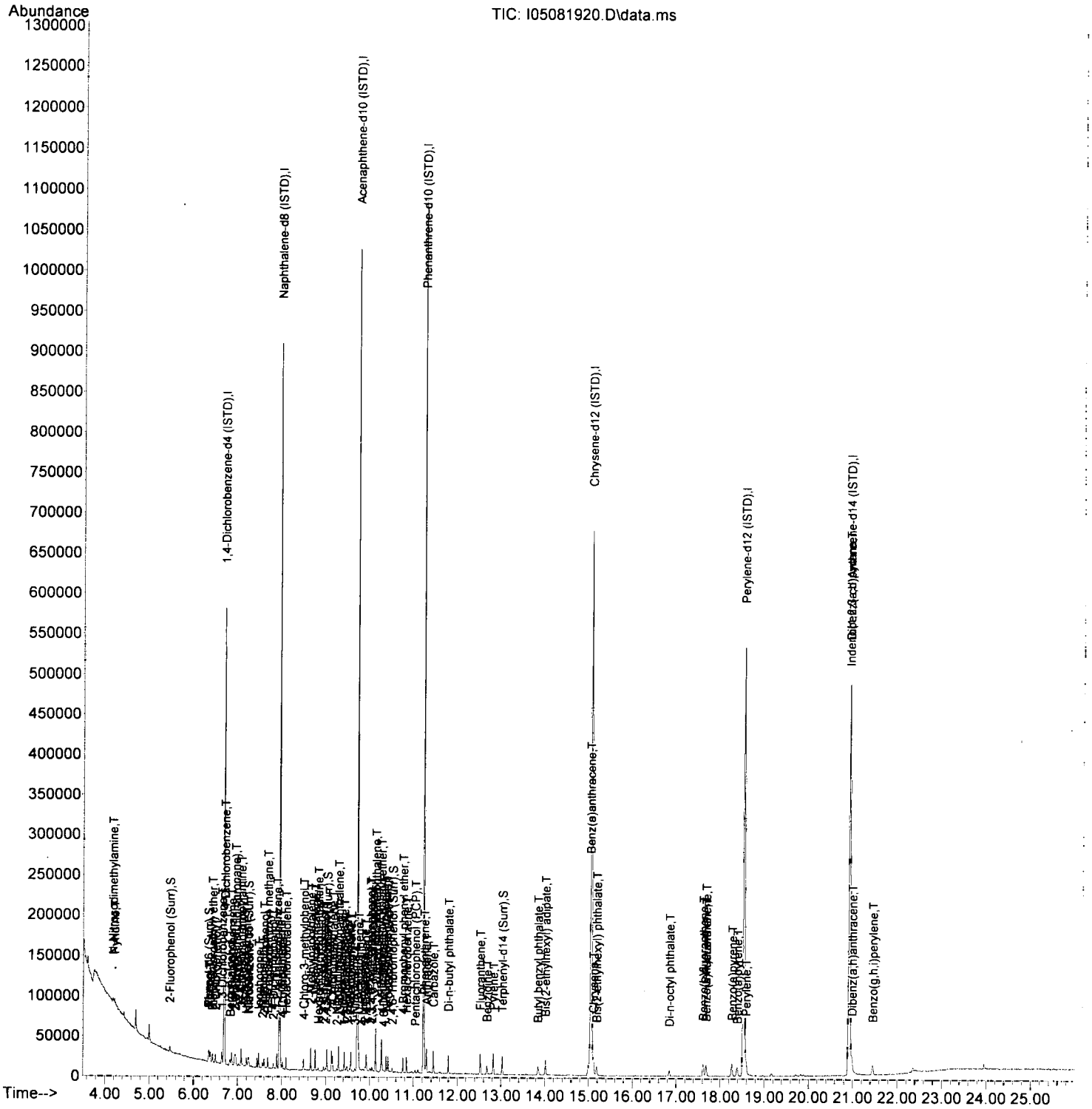
response 1083

Ion	Exp%	Act%
197.90	100.00	100.00
195.90	105.00	95.28
199.90	31.10	29.13
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081920.D
Acq On : 8 May 2019 8:48 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL2
Misc : 1x, A19D054 BNA@50
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:23 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9



Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081921.D
Acq On : 8 May 2019 9:25 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL3
Misc : 1x, A19D055 BNA@100
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:31 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

JK 5/9/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4...	6.691	152	115550	2000.00	ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.943	136	461862	2000.00	ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.713	162	238866	2000.00	ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.221	188	441856	2000.00	ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.051	240	464995	2000.00	ng/ml	0.00
86) Perylene-d12 (ISTD)	18.533	264	434795	2000.00	ng/ml	0.00
94) Dibenz(a,h)Anthrcene-d...	20.919	292	409849	2000.00	ng/ml	0.00
System Monitoring Compounds						
4) 2-Fluorophenol (Surr)	5.472	112	7013	90.77	ng/ml	0.00
5) Phenol-d6 (Surr)	6.338	99	9148	89.75	ng/ml	0.00
19) Nitrobenzene-d5 (Surr)	7.231	82	8175	95.75	ng/ml	0.00
40) 2-Fluorobiphenyl (Surr)	9.023	172	19505	111.89	ng/ml	0.00
67) 2,4,6-Tribromophenol (...	10.510	330	1794	127.24	ng/ml	0.00
79) Terphenyl-d14 (Surr)	13.019	244	23610	106.65	ng/ml	0.00
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	4.188	74	5631	92.28	ng/ml	76
3) Pyridine	4.215	79	7898	82.84	ng/ml	84
6) Phenol	6.354	94	10314	92.88	ng/ml	98
7) Aniline	6.381	93	10637	104.83	ng/ml	92
8) Bis(2-chloroethyl) ether	6.429	93	8939	98.15	ng/ml	95
9) 2-Chlorophenol	6.499	128	7863	99.40	ng/ml	91
10) 1,3-Dichlorobenzene	6.643	146	9757	111.06	ng/ml	97
11) 1,4-Dichlorobenzene	6.713	146	8776	104.78	ng/ml	95
12) Benzyl alcohol	6.825	108	2898	84.51	ng/ml	99
13) 1,2-Dichlorobenzene	6.862	146	8854	108.15	ng/ml	98
14) 2-Methylphenol	6.932	107	6386	101.99	ng/ml	89
15) 2,2'-Oxybis(1-Chloropr...	6.953	45	12268	96.43	ng/ml	97
16) N-Nitrosodi-n-propylamine	7.076	70	6313	97.85	ng/ml	91
17) 3+4-Methylphenol	7.076	107	7451	94.37	ng/ml	95
18) Hexachloroethane	7.194	201	2779	107.90	ng/ml	88
20) Nitrobenzene	7.247	77	8591	98.85	ng/ml	93
22) Isophorone	7.477	82	16536	96.96	ng/ml	97
23) 2-Nitrophenol	7.563	139	3972	114.25	ng/ml	89
24) 2,4-Dimethylphenol	7.595	122	6013	88.03	ng/ml	94
25) Bis(2-chloroethoxy) me...	7.686	93	11079	109.07	ng/ml	99
26) Benzoic acid	7.686	105	112	794.36	ng/ml#	27
27) 2,4-Dichlorophenol	7.804	162	4504	88.55	ng/ml	98
28) 1,2,4-Trichlorobenzene	7.889	180	8177	113.42	ng/ml	96
29) Naphthalene	7.964	128	25557	111.59	ng/ml	100
30) 4-Chloroaniline	8.012	127	6574	106.26	ng/ml	95
31) Hexachlorobutadiene	8.093	225	4053	111.76	ng/ml	98
32) 4-Chloro-3-methylphenol	8.499	107	2916	73.90	ng/ml#	53
33) 2-Methylnaphthalene	8.659	142	17636	104.47	ng/ml	96
34) 1-Methylnaphthalene	8.756	142	17565	109.66	ng/ml	96
36) Hexachlorocyclopentadiene	8.825	237	1795	84.61	ng/ml	92
37) 2,4,6-Trichlorophenol	8.943	196	2595	91.22	ng/ml	97
38) 2,4,5-Trichlorophenol	8.986	198	2233	80.70	ng/ml	98
39) 1,1'-Biphenyl	9.125	154	20138	99.75	ng/ml	99
41) 2-Chloronaphthalene	9.146	162	14570	99.21	ng/ml	98
42) 2-Nitroaniline	9.248	138	1934	40.20	ng/ml	91
43) 2,6-Dimethylnaphthalene	9.285	156	15688	108.29	ng/ml	93

See MI

See MI

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081921.D
Acq On : 8 May 2019 9:25 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL3
Misc : 1x, A19D055 BNA@100
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:31 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

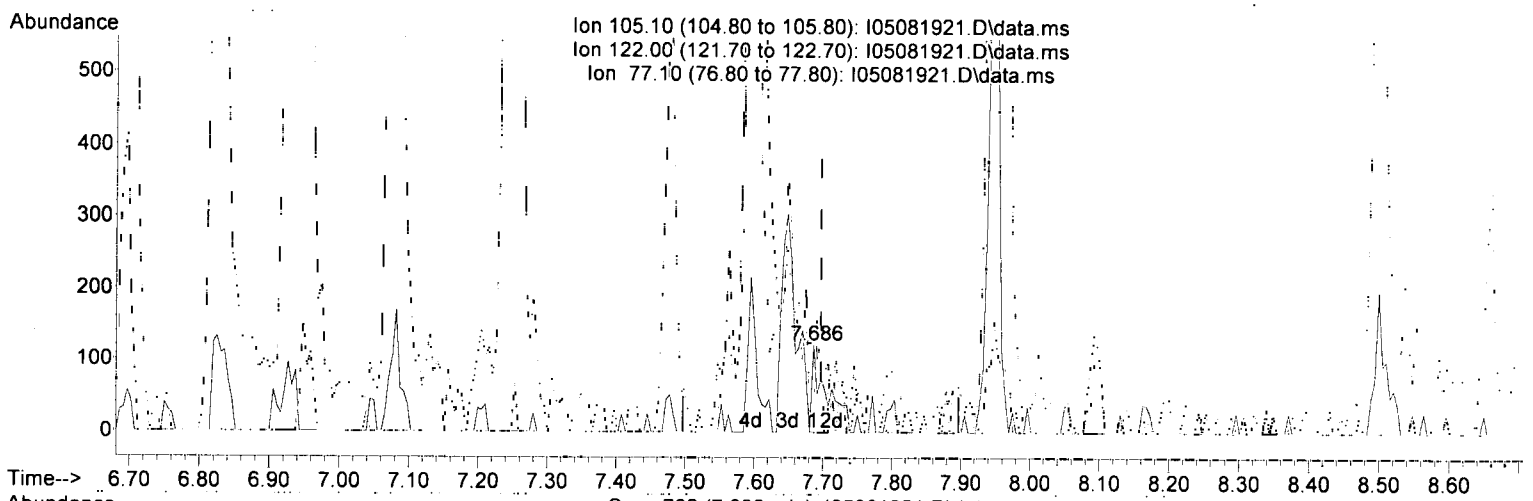
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 1,4-Dinitrobenzene	9.371	168	955	103.43	ng/ml	92
45) Dimethyl phthalate	9.419	163	18418	110.50	ng/ml	98
46) 1,3-Dinitrobenzene	9.451	168	1664	64.83	ng/ml	89
47) 2,6-Dinitrotoluene	9.483	165	2837	78.12	ng/ml	85
48) 1,2-Dinitrobenzene	9.537	168	1261	68.76	ng/ml	90
49) Acenaphthylene	9.569	152	26148	112.15	ng/ml	99
50) 3-Nitroaniline	9.654	138	2267	78.90	ng/ml	98
51) Acenaphthene	9.745	153	16799	114.54	ng/ml	99
52) 2,4-Dinitrophenol	9.767	184	124	187.96	ng/ml	80
53) 4-Nitrophenol	9.836	139	1299	119.92	ng/ml	95
54) 2,4-Dinitrotoluene	9.890	165	3069	92.76	ng/ml	97
55) Dibenzofuran	9.916	168	21911	108.53	ng/ml	90
56) 2,3,5,6-Tetrachlorophenol	10.002	232	1956	108.24	ng/ml	81
57) 2,3,4,6-Tetrachlorophenol	~~10.050~~	~~232~~	~~2718~~	~~111.52~~	~~ng/ml#~~	77 see MJ
58) Diethyl phthalate	10.130	149	17729	113.63	ng/ml	96
59) 2,3,5-Trimethylnaphtha...	10.130	170	15984	119.35	ng/ml	93
60) Fluorene	10.264	166	19156	116.53	ng/ml	97
61) 4-Chlorophenyl phenyl ...	10.259	204	9040	117.10	ng/ml	84
62) 4-Nitroaniline	10.275	138	2732	76.64	ng/ml	97
63) 4,6-Dinitro-2-methylph...	10.307	198	760	134.94	ng/ml	75
65) N-Nitrosodiphenylamine	10.376	169	14816	109.71	ng/ml	98
66) Azobenzene (1,2-DPH)	10.419	77	17330	102.46	ng/ml	88
68) 4-Bromophenyl phenyl e...	10.756	248	5435	121.58	ng/ml#	78
69) Hexachlorobenzene	10.836	284	6195	130.59	ng/ml	90
70) Pentachlorophenol (PCP)	11.034	266	1222	138.21	ng/ml	89
71) Phenanthrene	11.243	178	26210	114.29	ng/ml	99
72) Anthracene	11.296	178	26491	119.69	ng/ml	97
73) Carbazole	11.451	167	22432	103.59	ng/ml	100
74) Di-n-butyl phthalate	11.788	149	26562	99.86	ng/ml	99
75) Fluoranthene	12.521	202	29669	116.61	ng/ml	98
76) Benzidine	12.676	184	14400	277.95	ng/ml	99
77) Pyrene	12.815	202	31027	120.46	ng/ml	96
80) Butyl benzyl phthalate	13.837	149	9184	99.39	ng/ml	94
81) Bis(2-ethylhexyl) adipate	14.008	129	10197	79.13	ng/ml	100
82) 3,3-Dichlorobenzidine	14.982	252	13834	121.71	ng/ml	94
83) Benz(a)anthracene	15.024	228	26892	101.04	ng/ml	99
84) Chrysene	15.105	228	25625	103.37	ng/ml	97
85) Bis(2-ethylhexyl) phth...	15.179	149	11680	65.53	ng/ml	93
87) Di-n-octyl phthalate	16.838	149	14915	122.97	ng/ml	98
88) Benzo(b)fluoranthene	17.613	252	23806	101.01	ng/ml	93
89) Benzo(k)fluoranthene	17.677	252	25069	102.98	ng/ml	96
90) Benzo(b+k)fluoranthene	17.613	252	50907	205.68	ng/ml	91
91) Benzo(e)pyrene	18.266	252	25730	104.26	ng/ml	96
92) Benzo(a)pyrene	18.383	252	21986	104.74	ng/ml	97
93) Perylene	18.592	252	22641	101.71	ng/ml	98
95) Indeno(1,2,3-cd)pyrene	20.908	276	22712	97.88	ng/ml	100
96) Dibenz(a,h)anthracene	20.977	278	20562	105.30	ng/ml	90
97) Benzo(g,h,i)perylene	21.448	276	22018	101.29	ng/ml	86

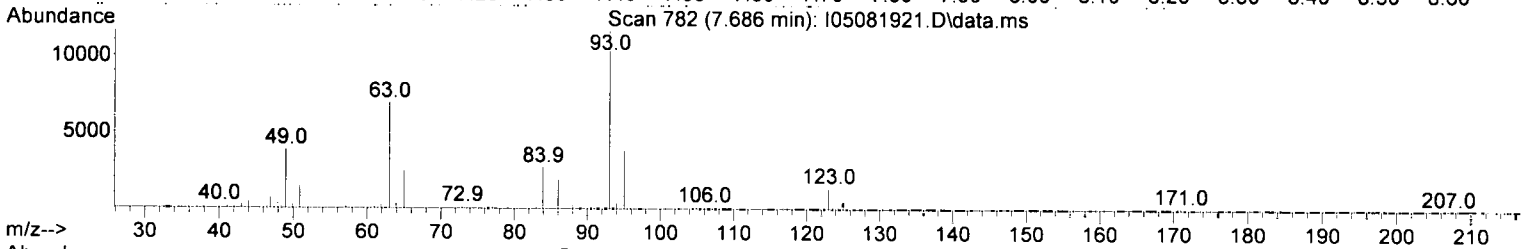
(#) = qualifier out of range (m) = manual integration (+) = signals summed

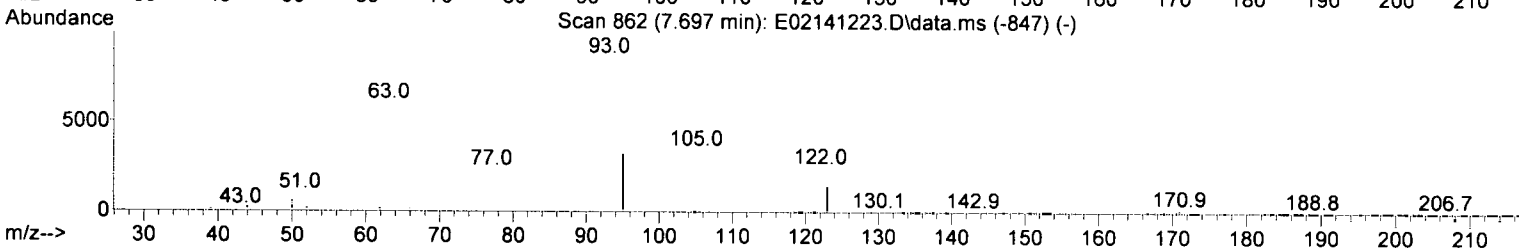
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081921.D
Acq On : 8 May 2019 9:25 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL3
Misc : 1x, A19D055 BNA@100
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:31 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9







TIC: I05081921.D\data.ms

(26) Benzoic acid (T)

7.686min (-0.011) 794.36 ng/ml

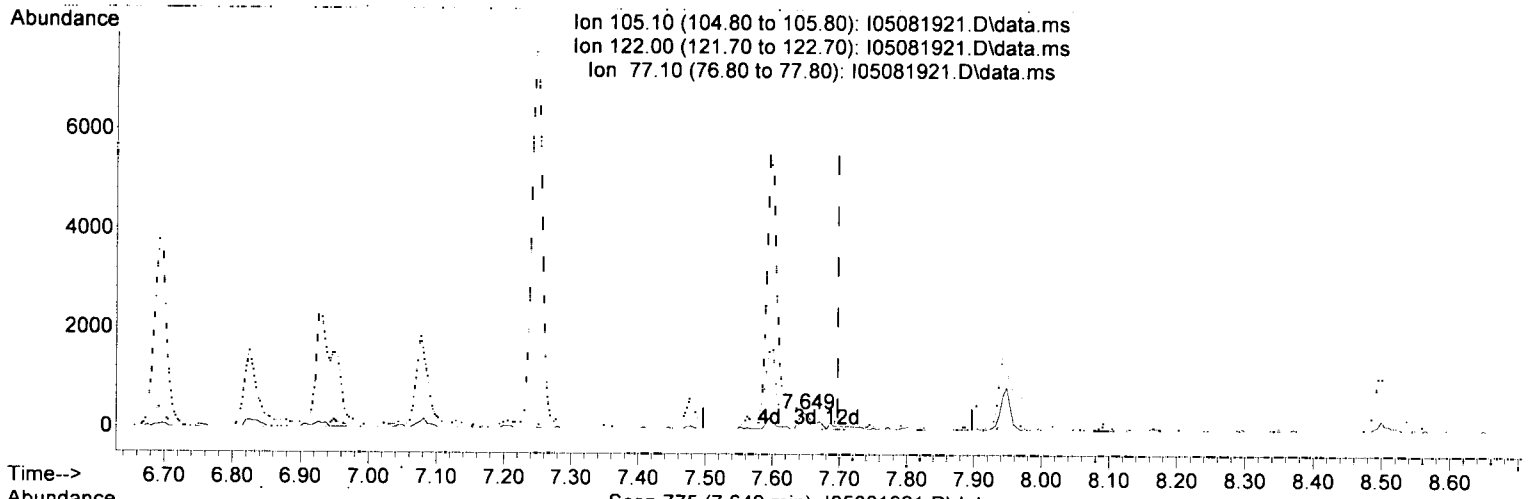
response 112

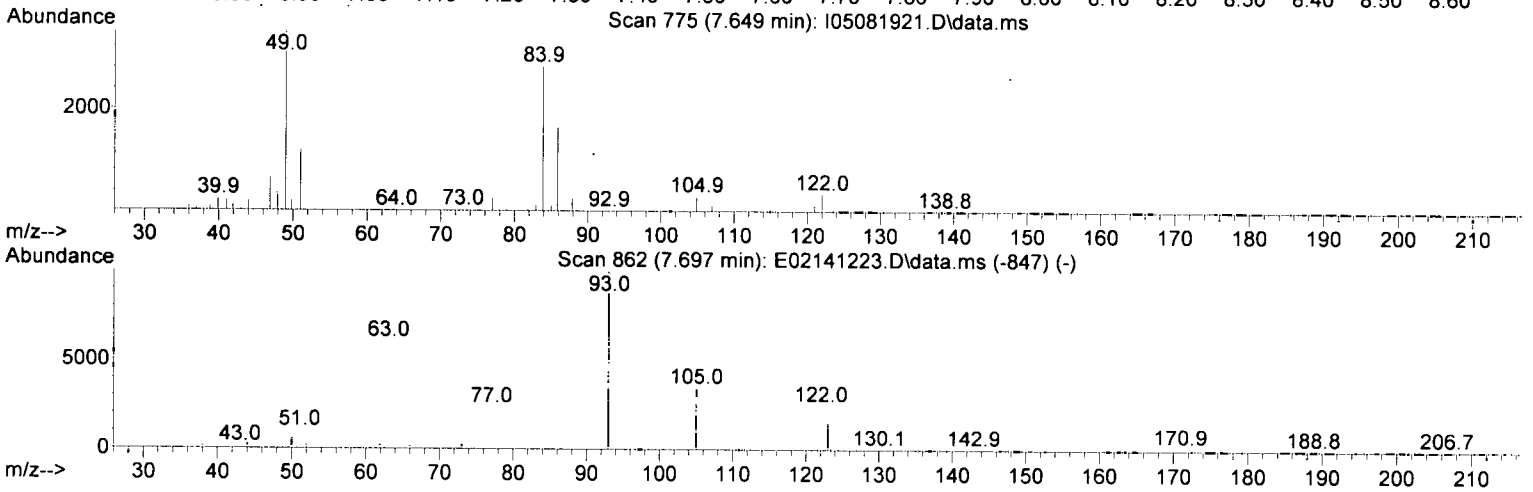
Ion	Exp%	Act%
105.10	100.00	100.00
122.00	80.70	0.00#
77.10	76.00	122.13#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081921.D
Acq On : 8 May 2019 9:25 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL3
Misc : 1x, A19D055 BNA@100
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:31 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9





TIC: I05081921.D\data.ms

(26) Benzoic acid (T)

7.649min (-0.048) 805.72 ng/ml (m)

response 570

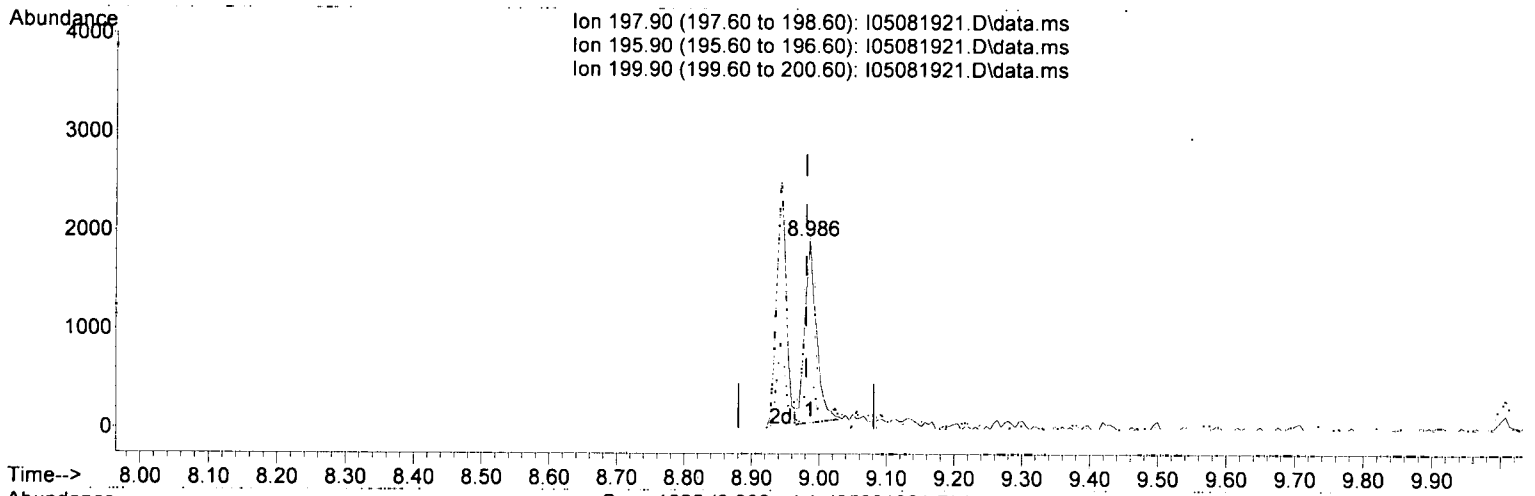
Ion	Exp%	Act%
105.10	100.00	100.00
122.00	80.70	116.39#
77.10	76.00	86.89
0.00	0.00	0.00

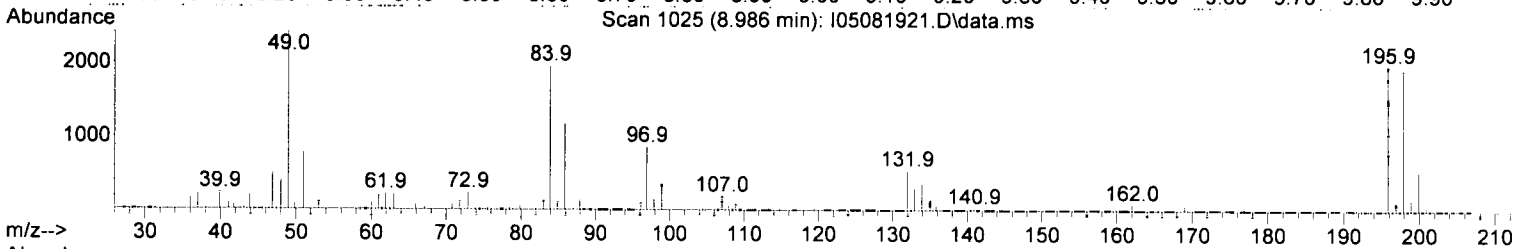
5/9/19

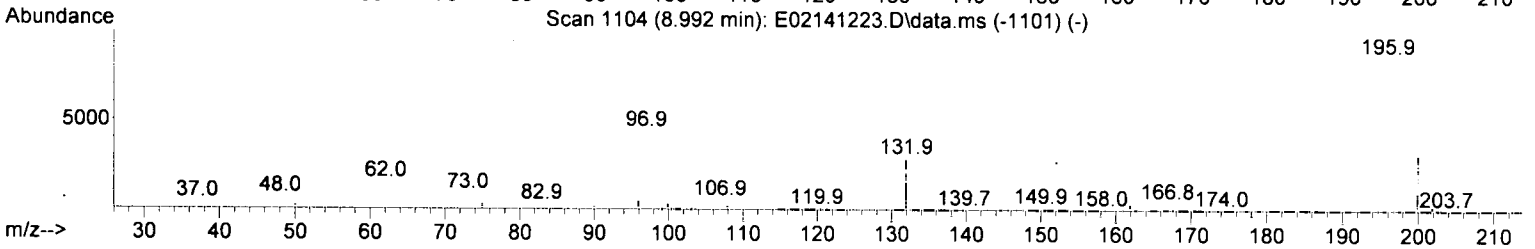
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081921.D
Acq On : 8 May 2019 9:25 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL3
Misc : 1x, A19D055 BNA@100
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:31 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9







TIC: I05081921.D\data.ms

(38) 2,4,5-Trichlorophenol (T)

8.986min (+ 0.005) 80.70 ng/ml

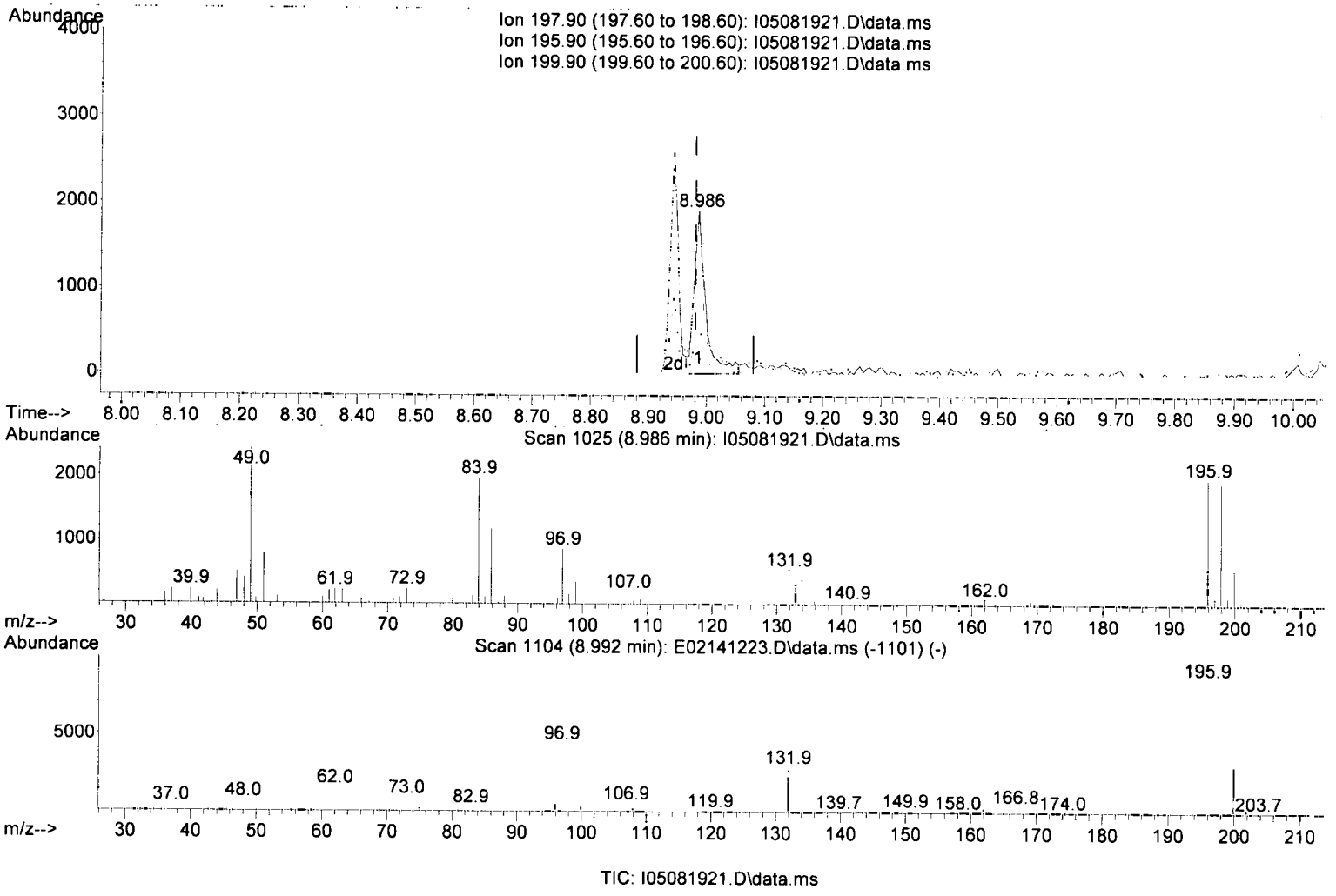
response 2233

Ion	Exp%	Act%
197.90	100.00	100.00
195.90	105.00	103.25
199.90	31.10	28.81
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081921.D
Acq On : 8 May 2019 9:25 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL3
Misc : 1x, A19D055 BNA@100
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:31 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05081921.D\data.ms

(38) 2,4,5-Trichlorophenol (T)

8.986min (+ 0.005) 91.36 ng/ml D

GK 5/9/19

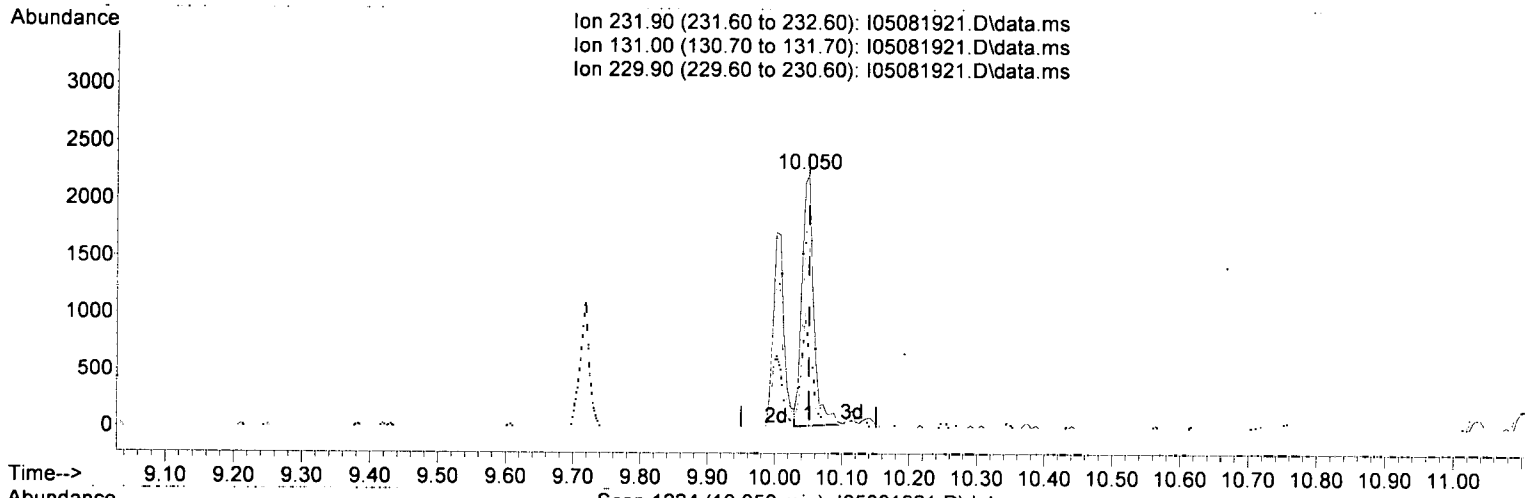
response 2692

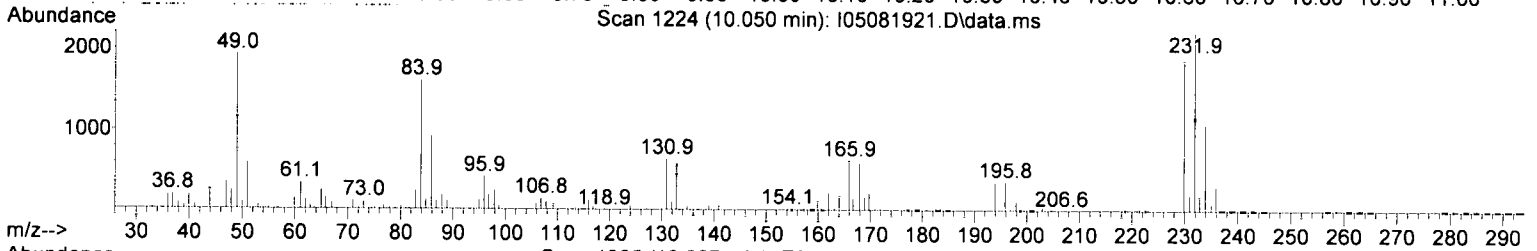
Ion	Exp%	Act%
197.90	100.00	100.00
195.90	105.00	103.25
199.90	31.10	28.81
0.00	0.00	0.00

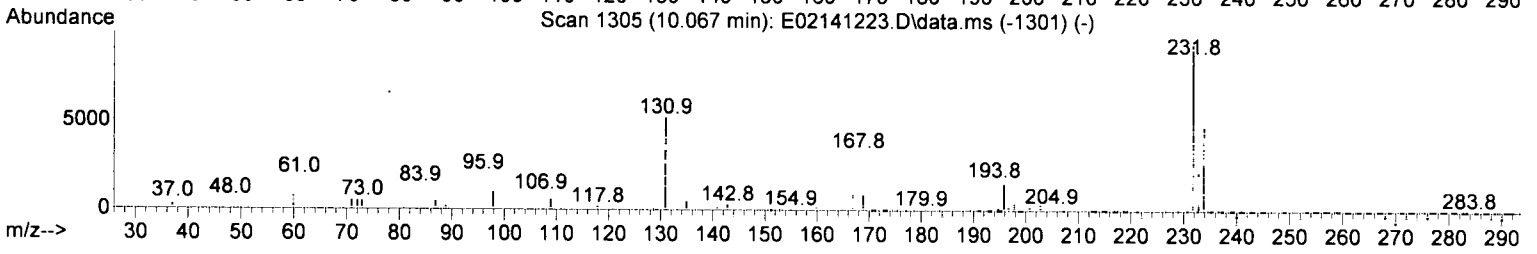
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081921.D
Acq On : 8 May 2019 9:25 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL3
Misc : 1x, A19D055 BNA@100
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:31 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9







TIC: I05081921.D\data.ms

(57) 2,3,4,6-Tetrachlorophenol (T)

10.050min (-0.000) 111.52 ng/ml

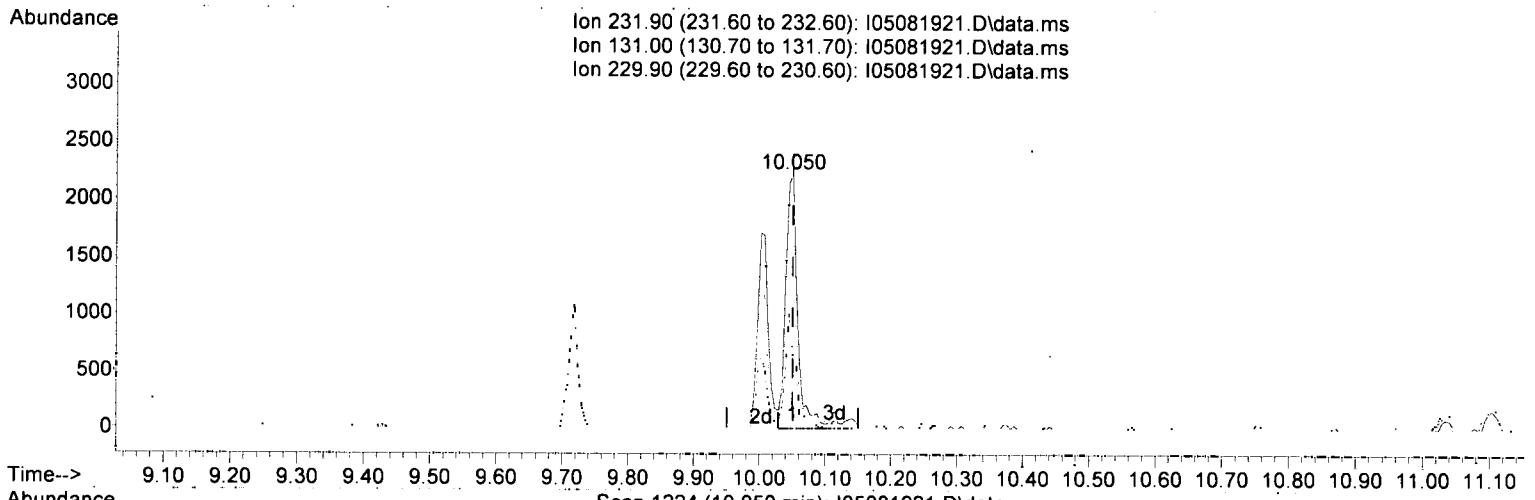
response 2712

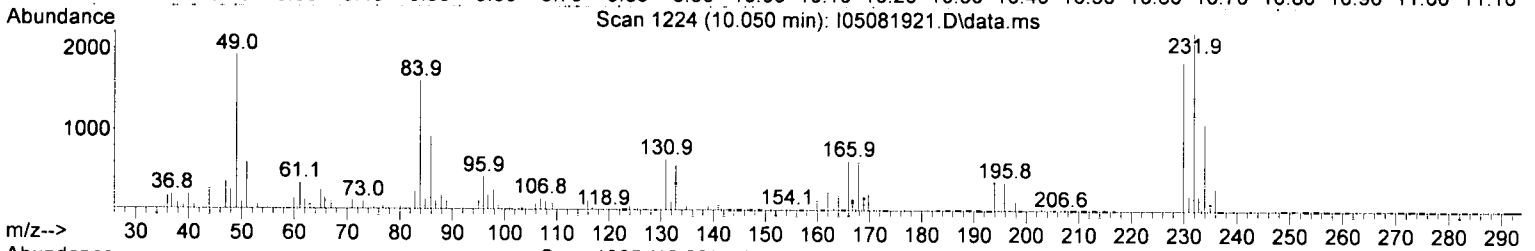
Ion	Exp%	Act%
231.90	100.00	100.00
131.00	63.10	29.25#
229.90	78.40	83.76
0.00	0.00	0.00

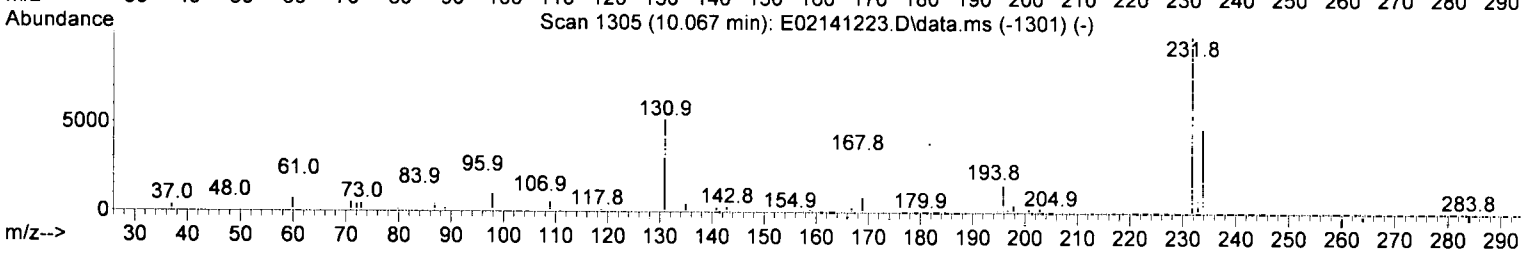
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081921.D
Acq On : 8 May 2019 9:25 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL3
Misc : 1x, A19D055 BNA@100
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:31 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9







TIC: I05081921.D\data.ms

(57) 2,3,4,6-Tetrachlorophenol (T)

10.050min (-0.000) 120.47 ng/ml m

5/9/19

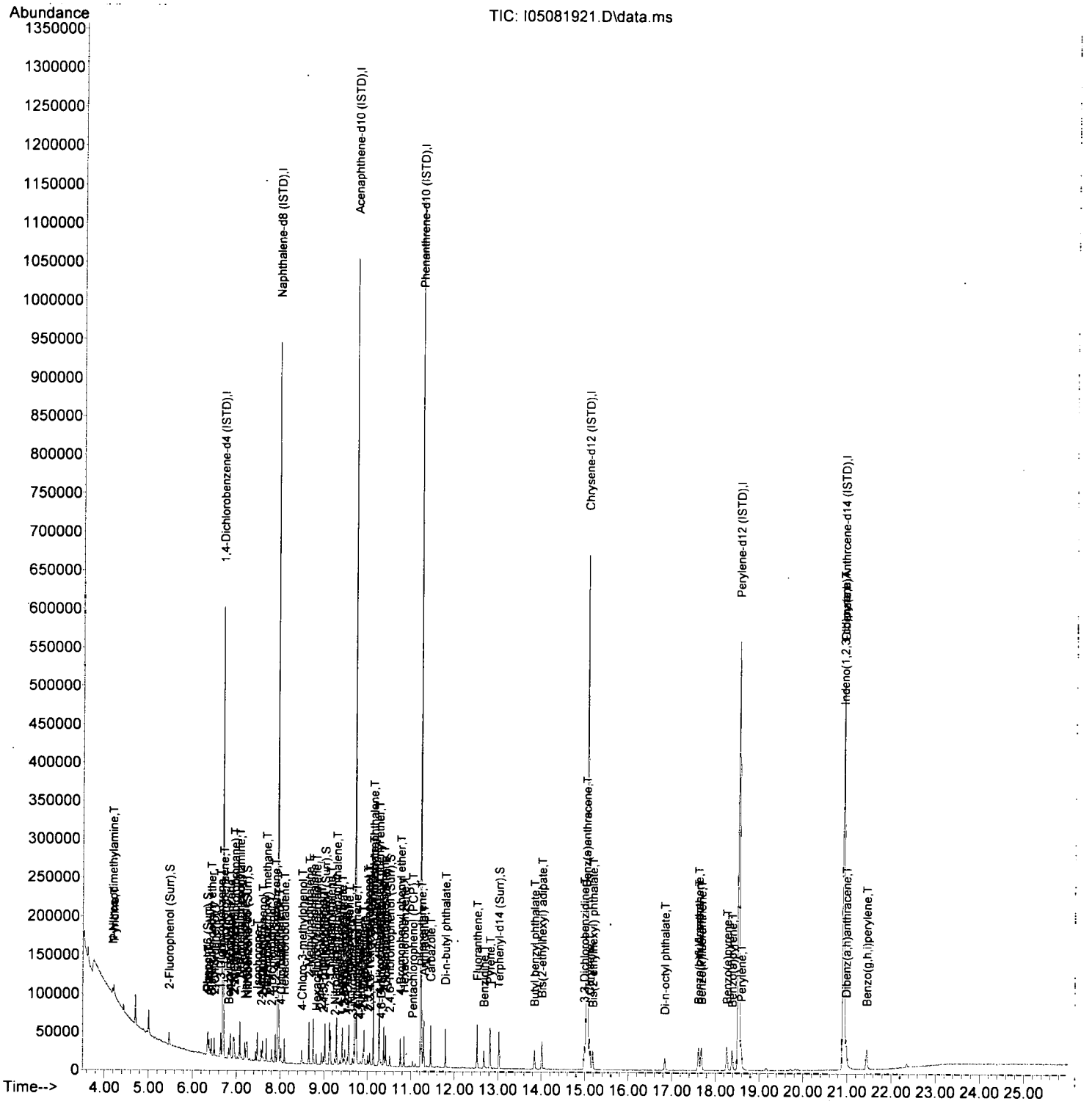
response 3032

Ion	Exp%	Act%
231.90	100.00	100.00
131.00	63.10	29.25#
229.90	78.40	83.76
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081921.D
Acq On : 8 May 2019 9:25 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL3
Misc : 1x, A19D055 BNA@100
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:31 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9



Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081922.D
Acq On : 8 May 2019 10:01 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL4
Misc : 1x, A19D056 BNA@200
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:38 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

JK 5/9/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4...	6.691	152	120284	2000.00	ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.943	136	469577	2000.00	ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.713	162	245169	2000.00	ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.222	188	455298	2000.00	ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.051	240	479919	2000.00	ng/ml	0.00
86) Perylene-d12 (ISTD)	18.539	264	448879	2000.00	ng/ml	0.00
94) Dibenz(a,h)Anthrcene-d...	20.919	292	416516	2000.00	ng/ml	0.00
System Monitoring Compounds						
4) 2-Fluorophenol (Surr)	5.467	112	14997	186.46	ng/ml	0.00
5) Phenol-d6 (Surr)	6.338	99	19650	185.20	ng/ml	0.00
19) Nitrobenzene-d5 (Surr)	7.226	82	17627	198.33	ng/ml	0.00
40) 2-Fluorobiphenyl (Surr)	9.023	172	41740	233.29	ng/ml	0.00
67) 2,4,6-Tribromophenol (...	10.510	330	4189	254.08	ng/ml	0.00
79) Terphenyl-d14 (Surr)	13.024	244	49759	217.77	ng/ml	0.00
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	4.167	74	11200	176.32	ng/ml	91
3) Pyridine	4.188	79	17242	173.73	ng/ml	95
6) Phenol	6.349	94	21991	190.24	ng/ml	99
7) Aniline	6.381	93	21214	200.85	ng/ml	98
8) Bis(2-chloroethyl) ether	6.429	93	18736	197.62	ng/ml	95
9) 2-Chlorophenol	6.499	128	16450	199.77	ng/ml	92
10) 1,3-Dichlorobenzene	6.643	146	19525	213.49	ng/ml	94
11) 1,4-Dichlorobenzene	6.707	146	18751	215.07	ng/ml	94
12) Benzyl alcohol	6.820	108	6970	163.75	ng/ml	98
13) 1,2-Dichlorobenzene	6.863	146	18424	216.20	ng/ml	96
14) 2-Methylphenol	6.927	107	12165	186.63	ng/ml	99
15) 2,2'-Oxybis(1-Chloropr...	6.948	45	24389	184.15	ng/ml	97
16) N-Nitrosodi-n-propylamine	7.077	70	13250	197.28	ng/ml	92
17) 3+4-Methylphenol	7.077	107	15823	192.53	ng/ml	97
18) Hexachloroethane	7.194	201	5764	214.99	ng/ml	84
20) Nitrobenzene	7.248	77	18273	201.98	ng/ml	96
22) Isophorone	7.478	82	35486	204.67	ng/ml	97
23) 2-Nitrophenol	7.563	139	9275	229.22	ng/ml	93
24) 2,4-Dimethylphenol	7.595	122	13165	189.57	ng/ml	95
25) Bis(2-chloroethoxy) me...	7.681	93	21622	209.37	ng/ml	99
26) Benzoic acid	~~7.697~~	~~105~~	~~180~~	~~795.98~~	~~ng/ml~~	98 see MI
27) 2,4-Dichlorophenol	7.804	162	10432	189.02	ng/ml	98
28) 1,2,4-Trichlorobenzene	7.890	180	16423	224.06	ng/ml	98
29) Naphthalene	7.964	128	51599	221.59	ng/ml	100
30) 4-Chloroaniline	8.013	127	12811	203.66	ng/ml	98
31) Hexachlorobutadiene	8.093	225	8220	222.93	ng/ml	98
32) 4-Chloro-3-methylphenol	8.494	107	9012	163.32	ng/ml	85
33) 2-Methylnaphthalene	8.660	142	36961	215.36	ng/ml	97
34) 1-Methylnaphthalene	8.756	142	36346	223.19	ng/ml	96
36) Hexachlorocyclopentadiene	8.826	237	5324	184.81	ng/ml	92
37) 2,4,6-Trichlorophenol	8.943	196	7125	189.25	ng/ml	94
38) 2,4,5-Trichlorophenol	8.986	198	6364	172.87	ng/ml	96
39) 1,1'-Biphenyl	9.125	154	44415	214.36	ng/ml	99
41) 2-Chloronaphthalene	9.146	162	32196	213.60	ng/ml	96
42) 2-Nitroaniline	9.248	138	7039	142.55	ng/ml	83
43) 2,6-Dimethylnaphthalene	9.286	156	34391	231.30	ng/ml	94

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081922.D
Acq On : 8 May 2019 10:01 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL4
Misc : 1x, A19D056 BNA@200
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:38 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

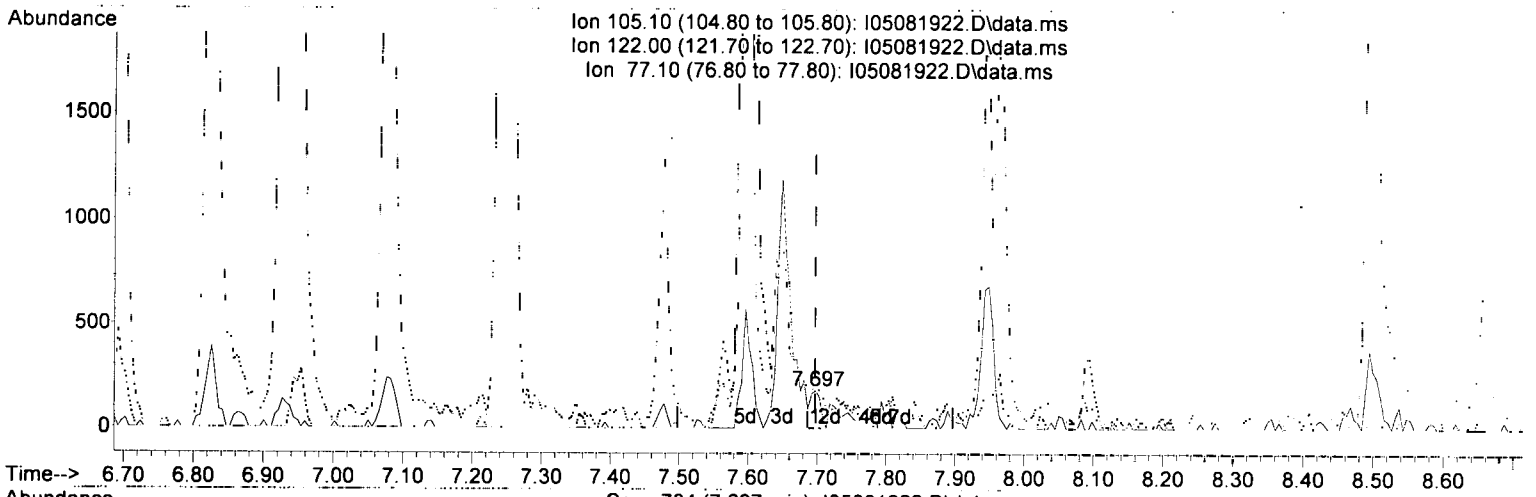
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 1,4-Dinitrobenzene	9.371	168	3037	191.61	ng/ml	97
45) Dimethyl phthalate	9.419	163	38348	224.15	ng/ml	100
46) 1,3-Dinitrobenzene	9.451	168	4229	160.53	ng/ml	91
47) 2,6-Dinitrotoluene	9.483	165	7570	203.08	ng/ml	88
48) 1,2-Dinitrobenzene	9.537	168	3477	184.71	ng/ml	85
49) Acenaphthylene	9.569	152	54704	228.60	ng/ml	99
50) 3-Nitroaniline	9.660	138	6297	189.89	ng/ml	91
51) Acenaphthene	9.745	153	34142	226.81	ng/ml	97
52) 2,4-Dinitrophenol	9.767	184	725	248.66	ng/ml	76
53) 4-Nitrophenol	9.836	139	3537	198.32	ng/ml	89
54) 2,4-Dinitrotoluene	9.895	165	8883	204.75	ng/ml	82
55) Dibenzofuran	9.922	168	47089	227.25	ng/ml	93
56) 2,3,5,6-Tetrachlorophenol	10.002	232	5912	222.82	ng/ml	89
57) 2,3,4,6-Tetrachlorophenol	10.045	232	7180	231.35	ng/ml	85
58) Diethyl phthalate	10.131	149	36994	231.01	ng/ml	95
59) 2,3,5-Trimethylnaphtha...	10.131	170	31957	232.47	ng/ml	98
60) Fluorene	10.270	166	38831	230.14	ng/ml	99
61) 4-Chlorophenyl phenyl ...	10.259	204	19218	242.54	ng/ml	86
62) 4-Nitroaniline	10.275	138	7673	209.71	ng/ml	93
63) 4,6-Dinitro-2-methylph...	10.307	198	2514	238.84	ng/ml	83
65) N-Nitrosodiphenylamine	10.377	169	32443	233.15	ng/ml	97
66) Azobenzene (1,2-DPH)	10.419	77	36434	209.04	ng/ml	90
68) 4-Bromophenyl phenyl e...	10.756	248	10934	237.37	ng/ml	83
69) Hexachlorobenzene	10.837	284	11859	242.61	ng/ml	94
70) Pentachlorophenol (PCP)	11.035	266	3055	222.18	ng/ml	97
71) Phenanthrene	11.243	178	53865	227.94	ng/ml	97
72) Anthracene	11.297	178	54658	239.66	ng/ml	97
73) Carbazole	11.452	167	48320	211.98	ng/ml	97
74) Di-n-butyl phthalate	11.794	149	58030	211.72	ng/ml	99
75) Fluoranthene	12.521	202	63551	242.40	ng/ml	97
76) Benzidine	12.677	184	37553	670.44	ng/ml	99
77) Pyrene	12.816	202	65571	247.07	ng/ml	99
80) Butyl benzyl phthalate	13.843	149	23562	195.74	ng/ml	87
81) Bis(2-ethylhexyl) adipate	14.014	129	22694	170.62	ng/ml	93
82) 3,3-Dichlorobenzidine	14.987	252	28902	759.23	ng/ml	90
83) Benz(a)anthracene	15.025	228	58075	211.43	ng/ml	98
84) Chrysene	15.105	228	53969	210.93	ng/ml	98
85) Bis(2-ethylhexyl) phth...	15.180	149	29512	160.43	ng/ml	94
87) Di-n-octyl phthalate	16.843	149	42140	211.67	ng/ml	98
88) Benzo(b)fluoranthene	17.613	252	54791	212.85	ng/ml	95
89) Benzo(k)fluoranthene	17.678	252	56932	216.15	ng/ml	94
90) Benzo(b+k)fluoranthene	17.613	252	114689	428.28	ng/ml	94
91) Benzo(e)pyrene	18.266	252	55890	219.38	ng/ml	94
92) Benzo(a)pyrene	18.384	252	49339	214.68	ng/ml	98
93) Perylene	18.592	252	46507	202.37	ng/ml	99
95) Indeno(1,2,3-cd)pyrene	20.913	276	45199	191.67	ng/ml	96
96) Dibenz(a,h)anthracene	20.983	278	43093	217.16	ng/ml	94
97) Benzo(g,h,i)perylene	21.448	276	46913	212.36	ng/ml	89

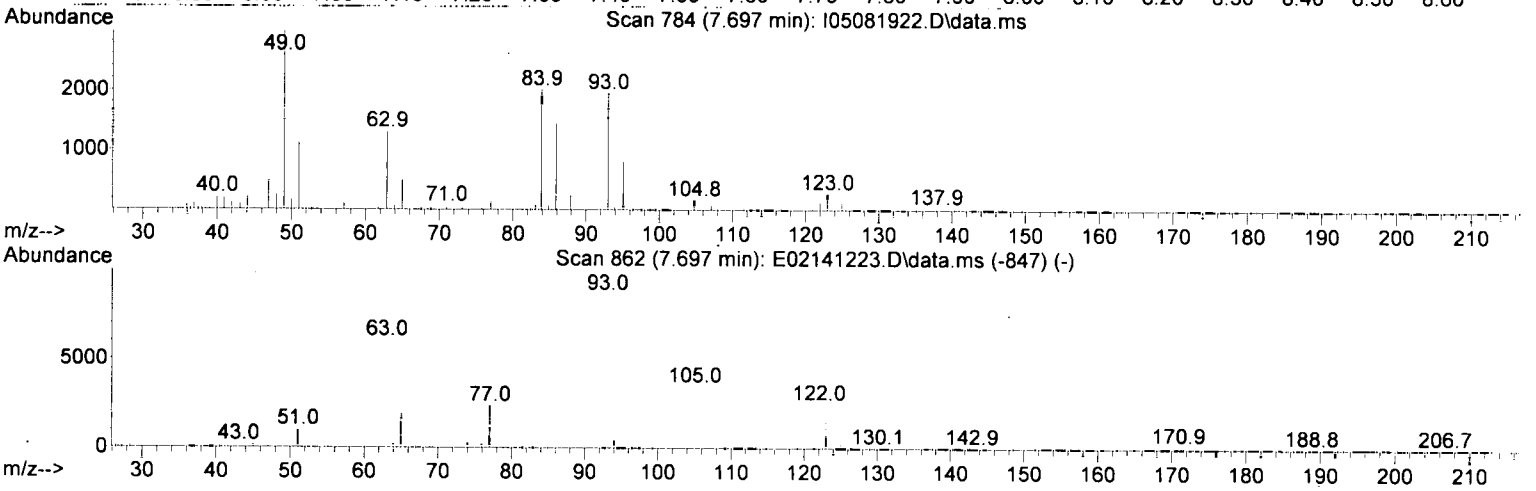
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081922.D
Acq On : 8 May 2019 10:01 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL4
Misc : 1x, A19D056 BNA@200
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:38 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9





TIC: I05081922.D\data.ms

(26) Benzoic acid (T)

7.697min (+ 0.000) 795.98 ng/ml

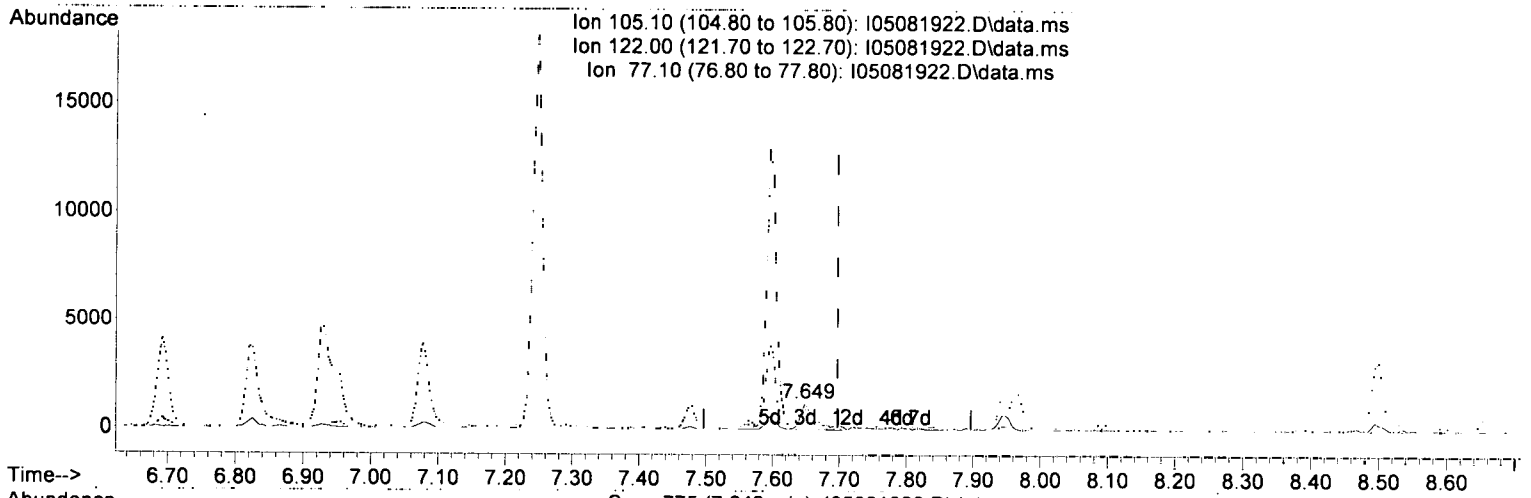
response 180

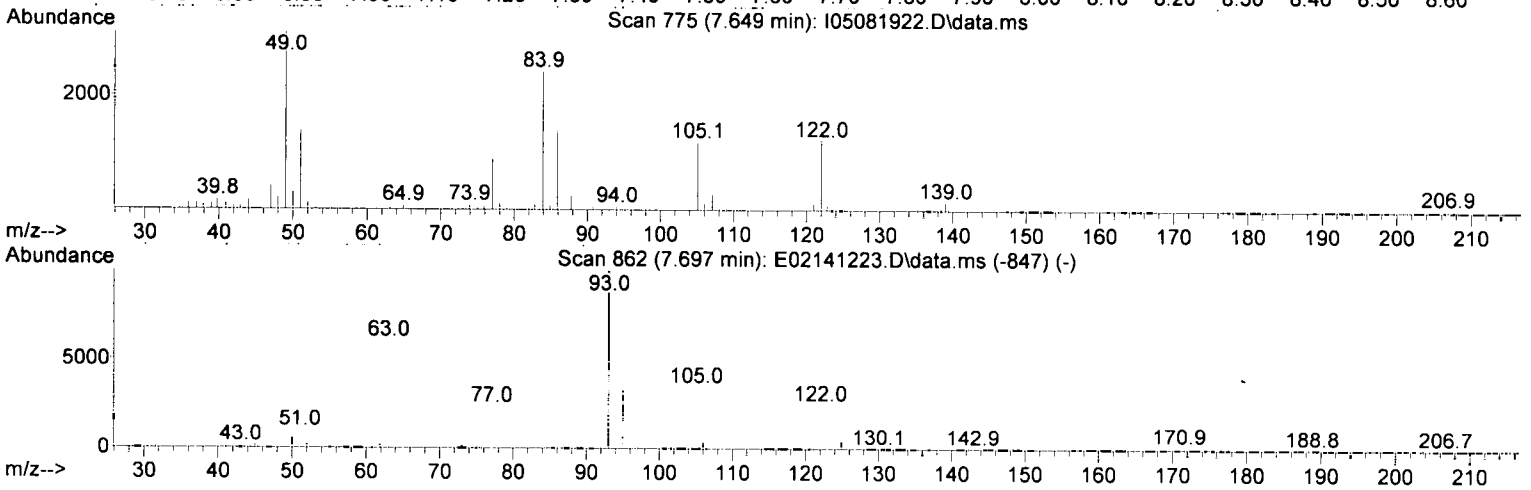
Ion	Exp%	Act%
105.10	100.00	100.00
122.00	80.70	82.68
77.10	76.00	77.65
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081922.D
Acq On : 8 May 2019 10:01 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL4
Misc : 1x, A19D056 BNA@200
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:38 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9





TIC: I05081922.D\data.ms

(26) Benzoic acid (T)

7.649min (-0.048) 835.63 ng/ml m

5/9/19

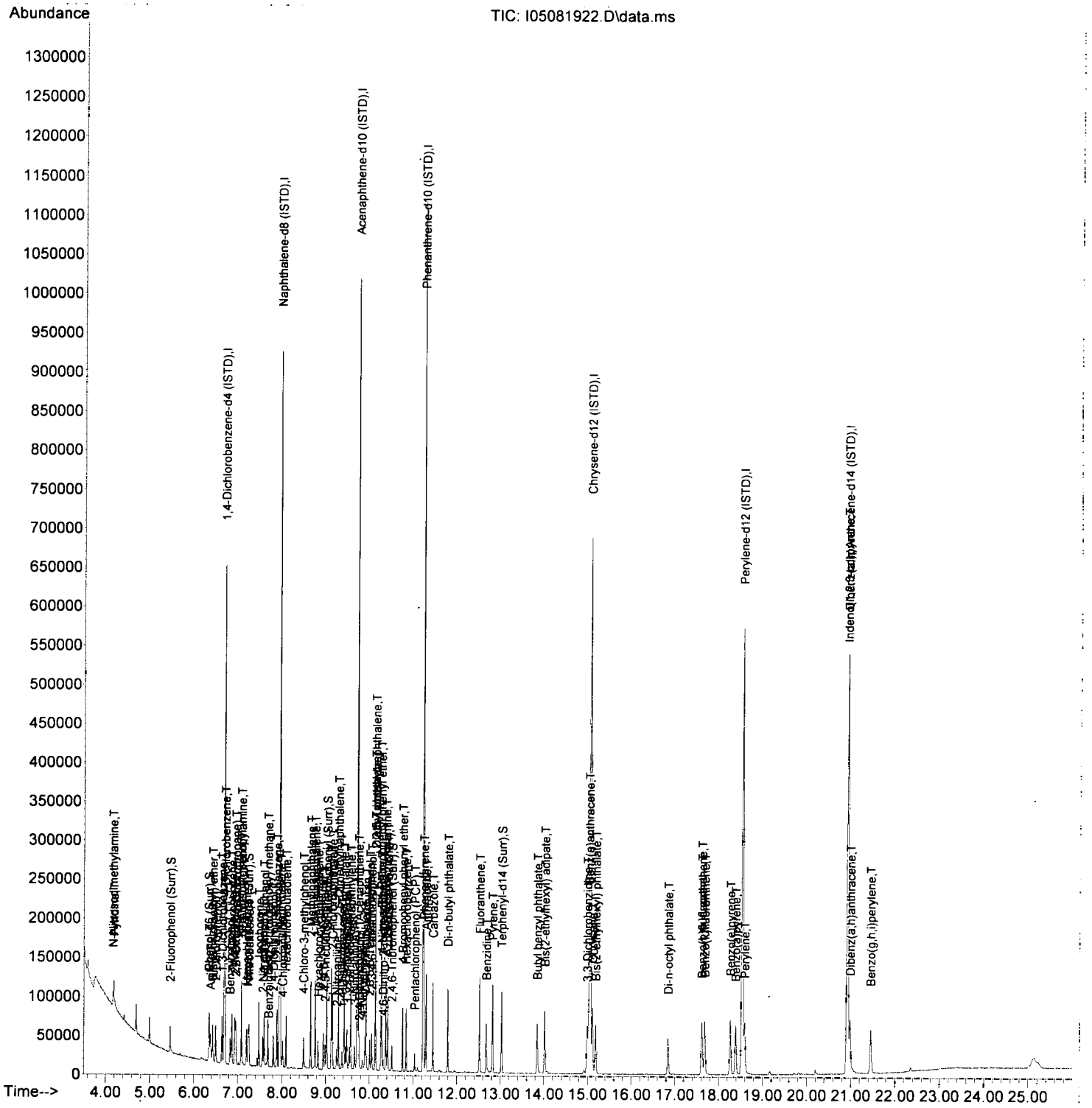
response 1808

Ion	Exp%	Act%
105.10	100.00	100.00
122.00	80.70	101.76
77.10	76.00	76.19
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081922.D
Acq On : 8 May 2019 10:01 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL4
Misc : 1x, A19D056 BNA@200
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:38 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9



Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081923.D
Acq On : 8 May 2019 10:38 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL5
Misc : 1x, A19D057 BNA@500
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:45 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

JK 5/9/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4...	6.697	152	118130	2000.00	ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.948	136	449407	2000.00	ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.713	162	233204	2000.00	ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.222	188	434358	2000.00	ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.051	240	448745	2000.00	ng/ml	0.00
86) Perylene-d12 (ISTD)	18.538	264	423882	2000.00	ng/ml	0.00
94) Dibenz(a,h)Anthrcene-d...	20.924	292	408680	2000.00	ng/ml	0.00
System Monitoring Compounds						
4) 2-Fluorophenol (Surr)	5.472	112	39110	495.14	ng/ml	0.00
5) Phenol-d6 (Surr)	6.338	99	50799	487.51	ng/ml	0.00
19) Nitrobenzene-d5 (Surr)	7.231	82	42745	489.72	ng/ml	0.00
40) 2-Fluorobiphenyl (Surr)	9.023	172	100779	592.16	ng/ml	0.00
67) 2,4,6-Tribromophenol (...	10.515	330	11050	653.33	ng/ml	0.00
79) Terphenyl-d14 (Surr)	13.024	244	118955	556.78	ng/ml	0.00
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	4.183	74	27689	443.85	ng/ml	94
3) Pyridine	4.199	79	44836	460.01	ng/ml	96
6) Phenol	6.349	94	56392	496.73	ng/ml	97
7) Aniline	6.381	93	52964	510.59	ng/ml	99
8) Bis(2-chloroethyl) ether	6.429	93	45269	486.19	ng/ml	98
9) 2-Chlorophenol	6.499	128	42307	523.15	ng/ml	93
10) 1,3-Dichlorobenzene	6.643	146	48498	539.96	ng/ml	96
11) 1,4-Dichlorobenzene	6.713	146	45970	536.88	ng/ml	96
12) Benzyl alcohol	6.825	108	21295	455.40	ng/ml	94
13) 1,2-Dichlorobenzene	6.862	146	45584	544.66	ng/ml	95
14) 2-Methylphenol	6.932	107	33013	515.71	ng/ml	96
15) 2,2'-Oxybis(1-Chloropr...	6.948	45	59332	456.16	ng/ml	97
16) N-Nitrosodi-n-propylamine	7.076	70	33065	501.29	ng/ml	97
17) 3+4-Methylphenol	7.076	107	41496	514.11	ng/ml	95
18) Hexachloroethane	7.194	201	14906	566.11	ng/ml	86
20) Nitrobenzene	7.247	77	43153	485.69	ng/ml	94
22) Isophorone	7.477	82	89488	539.19	ng/ml	96
23) 2-Nitrophenol	7.563	139	25491	610.26	ng/ml	96
24) 2,4-Dimethylphenol	7.595	122	33821	508.87	ng/ml	97
25) Bis(2-chloroethoxy) me...	7.686	93	53158	537.84	ng/ml	99
26) Benzoic acid	7.670	105	12609	1109.66	ng/ml	96
27) 2,4-Dichlorophenol	7.804	162	28435	518.94	ng/ml	95
28) 1,2,4-Trichlorobenzene	7.889	180	39463	562.55	ng/ml	97
29) Naphthalene	7.964	128	121753	546.34	ng/ml	99
30) 4-Chloroaniline	8.018	127	25718	427.20	ng/ml	95
31) Hexachlorobutadiene	8.093	225	20186	572.03	ng/ml	97
32) 4-Chloro-3-methylphenol	8.494	107	29879	489.21	ng/ml	97
33) 2-Methylnaphthalene	8.660	142	94207	573.54	ng/ml	97
34) 1-Methylnaphthalene	8.756	142	90038	577.72	ng/ml	97
36) Hexachlorocyclopentadiene	8.825	237	16399	526.00	ng/ml	98
37) 2,4,6-Trichlorophenol	8.943	196	21591	531.23	ng/ml	100
38) 2,4,5-Trichlorophenol	8.980	198	19810	501.07	ng/ml	99
39) 1,1'-Biphenyl	9.125	154	111947	568.00	ng/ml	99
41) 2-Chloronaphthalene	9.152	162	80038	558.24	ng/ml	93
42) 2-Nitroaniline	9.243	138	22855	486.58	ng/ml	95
43) 2,6-Dimethylnaphthalene	9.285	156	82179	581.06	ng/ml	96

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081923.D
Acq On : 8 May 2019 10:38 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL5
Misc : 1x, A19D057 BNA@500
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:45 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

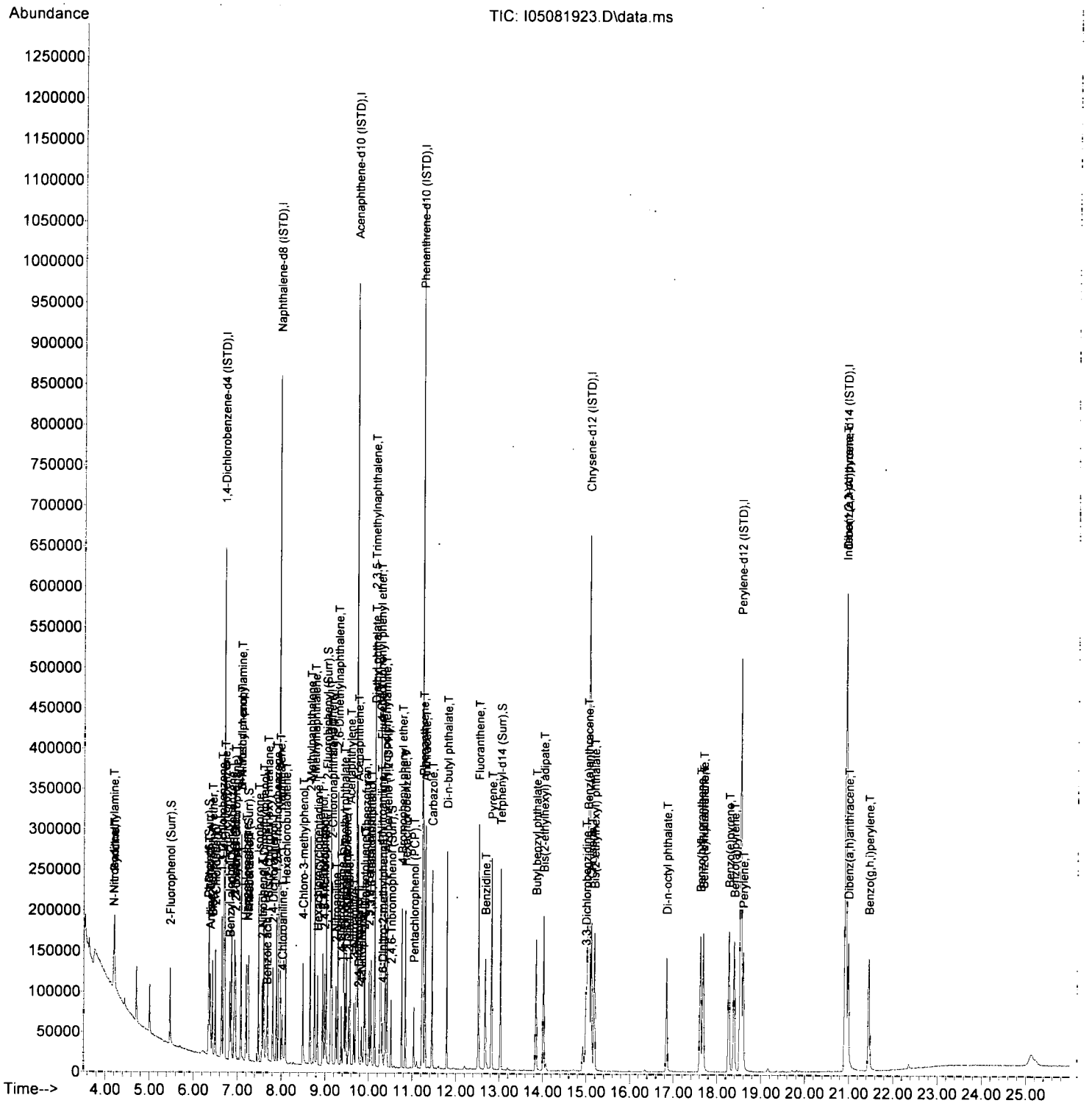
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 1,4-Dinitrobenzene	9.371	168	10337	524.07	ng/ml	84
45) Dimethyl phthalate	9.424	163	91807	564.16	ng/ml	99
46) 1,3-Dinitrobenzene	9.451	168	13273	529.67	ng/ml	97
47) 2,6-Dinitrotoluene	9.483	165	20865	588.48	ng/ml	86
48) 1,2-Dinitrobenzene	9.537	168	9375	523.58	ng/ml	85
49) Acenaphthylene	9.569	152	129518	569.00	ng/ml	99
50) 3-Nitroaniline	9.660	138	17372	538.16	ng/ml	89
51) Acenaphthene	9.745	153	79978	558.57	ng/ml	99
52) 2,4-Dinitrophenol	9.761	184	3835	566.86	ng/ml	99
53) 4-Nitrophenol	9.831	139	11649	504.51	ng/ml	84
54) 2,4-Dinitrotoluene	9.895	165	25345	552.15	ng/ml	82
55) Dibenzofuran	9.922	168	113330	574.99	ng/ml	93
56) 2,3,5,6-Tetrachlorophenol	10.002	232	17017	570.18	ng/ml	90
57) 2,3,4,6-Tetrachlorophenol	10.045	232	19079	582.63	ng/ml	88
58) Diethyl phthalate	10.136	149	84929	557.56	ng/ml	97
59) 2,3,5-Trimethylnaphtha...	10.130	170	76253	583.17	ng/ml	94
60) Fluorene	10.269	166	91858	572.35	ng/ml	97
61) 4-Chlorophenyl phenyl ...	10.259	204	44439	589.61	ng/ml	88
62) 4-Nitroaniline	10.275	138	19675	565.32	ng/ml	94
63) 4,6-Dinitro-2-methylph...	10.312	198	8901	633.37	ng/ml	77
65) N-Nitrosodiphenylamine	10.376	169	78301	589.83	ng/ml	96
66) Azobenzene (1,2-DPH)	10.419	77	87002	523.24	ng/ml	90
68) 4-Bromophenyl phenyl e...	10.756	248	27078	616.17	ng/ml	86
69) Hexachlorobenzene	10.836	284	28884	619.40	ng/ml	93
70) Pentachlorophenol (PCP)	11.034	266	10538	588.98	ng/ml	94
71) Phenanthrene	11.243	178	127029	563.47	ng/ml	98
72) Anthracene	11.296	178	128961	592.72	ng/ml	98
73) Carbazole	11.452	167	116650	540.21	ng/ml	98
74) Di-n-butyl phthalate	11.794	149	147202	562.95	ng/ml	99
75) Fluoranthene	12.521	202	155537	621.85	ng/ml	96
76) Benzidine	12.676	184	76984	1386.28	ng/ml	97
77) Pyrene	12.821	202	154311	609.46	ng/ml	99
80) Butyl benzyl phthalate	13.842	149	63002	491.75	ng/ml	91
81) Bis(2-ethylhexyl) adipate	14.014	129	56949	457.91	ng/ml	98
82) 3,3-Dichlorobenzidine	14.987	252	47477	1694.22	ng/ml	97
83) Benz(a)anthracene	15.024	228	138304	538.49	ng/ml	97
84) Chrysene	15.110	228	126427	528.46	ng/ml	99
85) Bis(2-ethylhexyl) phth...	15.180	149	81848	475.85	ng/ml	96
87) Di-n-octyl phthalate	16.843	149	132449	524.88	ng/ml	99
88) Benzo(b)fluoranthene	17.613	252	139653	554.84	ng/ml	95
89) Benzo(k)fluoranthene	17.677	252	142423	562.67	ng/ml	94
90) Benzo(b+k)fluoranthene	17.677	252	289741	1117.93	ng/ml	94
91) Benzo(e)pyrene	18.271	252	140018	582.00	ng/ml	98
92) Benzo(a)pyrene	18.389	252	129040	575.04	ng/ml	97
93) Perylene	18.592	252	116376	536.26	ng/ml	99
95) Indeno(1,2,3-cd)pyrene	20.919	276	116104	501.79	ng/ml	95
96) Dibenz(a,h)anthracene	20.983	278	106785	548.44	ng/ml	96
97) Benzo(g,h,i)perylene	21.453	276	120043	553.82	ng/ml	89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081923.D
Acq On : 8 May 2019 10:38 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL5
Misc : 1x, A19D057 BNA@500
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:45 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9



Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081924.D
Acq On : 8 May 2019 11:14 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL6
Misc : 1x, A19D058 BNA@1000
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:52 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

JK 5/9/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4...	6.697	152	116694	2000.00	ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.948	136	435111	2000.00	ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.719	162	224844	2000.00	ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.222	188	425173	2000.00	ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.057	240	428978	2000.00	ng/ml	0.00
86) Perylene-d12 (ISTD)	18.539	264	400554	2000.00	ng/ml	0.00
94) Dibenz(a,h)Anthrcene-d...	20.924	292	399119	2000.00	ng/ml	0.00
System Monitoring Compounds						
4) 2-Fluorophenol (Surr)	5.467	112	76115	975.49	ng/ml	0.00
5) Phenol-d6 (Surr)	6.338	99	98894	960.76	ng/ml	0.00
19) Nitrobenzene-d5 (Surr)	7.232	82	81436	944.48	ng/ml	0.00
40) 2-Fluorobiphenyl (Surr)	9.023	172	182200	1110.38	ng/ml	0.00
67) 2,4,6-Tribromophenol (...	10.516	330	22087	1300.38	ng/ml	0.00
79) Terphenyl-d14 (Surr)	13.024	244	219562	1075.04	ng/ml	0.00
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	4.172	74	53609	869.93	ng/ml	100
3) Pyridine	4.183	79	85720	890.30	ng/ml	99
6) Phenol	6.354	94	107531	958.84	ng/ml	97
7) Aniline	6.381	93	81018	790.65	ng/ml	97
8) Bis(2-chloroethyl) ether	6.435	93	91455	994.32	ng/ml	98
9) 2-Chlorophenol	6.499	128	81650	1022.08	ng/ml	95
10) 1,3-Dichlorobenzene	6.643	146	91509	1031.37	ng/ml	98
11) 1,4-Dichlorobenzene	6.713	146	87432	1033.67	ng/ml	97
12) Benzyl alcohol	6.825	108	45805	949.75	ng/ml	91
13) 1,2-Dichlorobenzene	6.863	146	84135	1017.65	ng/ml	97
14) 2-Methylphenol	6.932	107	61935	979.41	ng/ml	98
15) 2,2'-Oxybis(1-Chloropr...	6.954	45	109743	854.12	ng/ml	95
16) N-Nitrosodi-n-propylamine	7.077	70	62234	955.13	ng/ml	96
17) 3+4-Methylphenol	7.077	107	78741	987.56	ng/ml	98
18) Hexachloroethane	7.194	201	27533	1058.54	ng/ml	94
20) Nitrobenzene	7.248	77	81129	924.35	ng/ml	95
22) Isophorone	7.483	82	169224	1053.31	ng/ml	95
23) 2-Nitrophenol	7.563	139	44264	1073.97	ng/ml	99
24) 2,4-Dimethylphenol	7.601	122	67530	1049.45	ng/ml	96
25) Bis(2-chloroethoxy) me...	7.686	93	98157	1025.75	ng/ml	99
26) Benzoic acid	7.697	105	57591	2238.59	ng/ml	98
27) 2,4-Dichlorophenol	7.804	162	59077	1097.68	ng/ml	99
28) 1,2,4-Trichlorobenzene	7.890	180	73101	1076.31	ng/ml	97
29) Naphthalene	7.970	128	228023	1056.83	ng/ml	99
30) 4-Chloroaniline	8.023	127	57359	984.09	ng/ml	96
31) Hexachlorobutadiene	8.098	225	37131	1086.79	ng/ml	99
32) 4-Chloro-3-methylphenol	8.494	107	67094	1083.65	ng/ml	98
33) 2-Methylnaphthalene	8.660	142	177224	1114.40	ng/ml	97
34) 1-Methylnaphthalene	8.761	142	166590	1104.02	ng/ml	98
36) Hexachlorocyclopentadiene	8.826	237	34750	1111.10	ng/ml	96
37) 2,4,6-Trichlorophenol	8.943	196	44351	1093.91	ng/ml	99
38) 2,4,5-Trichlorophenol	8.981	198	42377	1080.38	ng/ml	99
39) 1,1'-Biphenyl	9.125	154	204461	1075.97	ng/ml	99
41) 2-Chloronaphthalene	9.152	162	145871	1055.23	ng/ml	96
42) 2-Nitroaniline	9.248	138	48960	1081.11	ng/ml	91
43) 2,6-Dimethylnaphthalene	9.286	156	150715	1105.27	ng/ml	96

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081924.D
Acq On : 8 May 2019 11:14 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL6
Misc : 1x, A19D058 BNA@1000
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:52 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

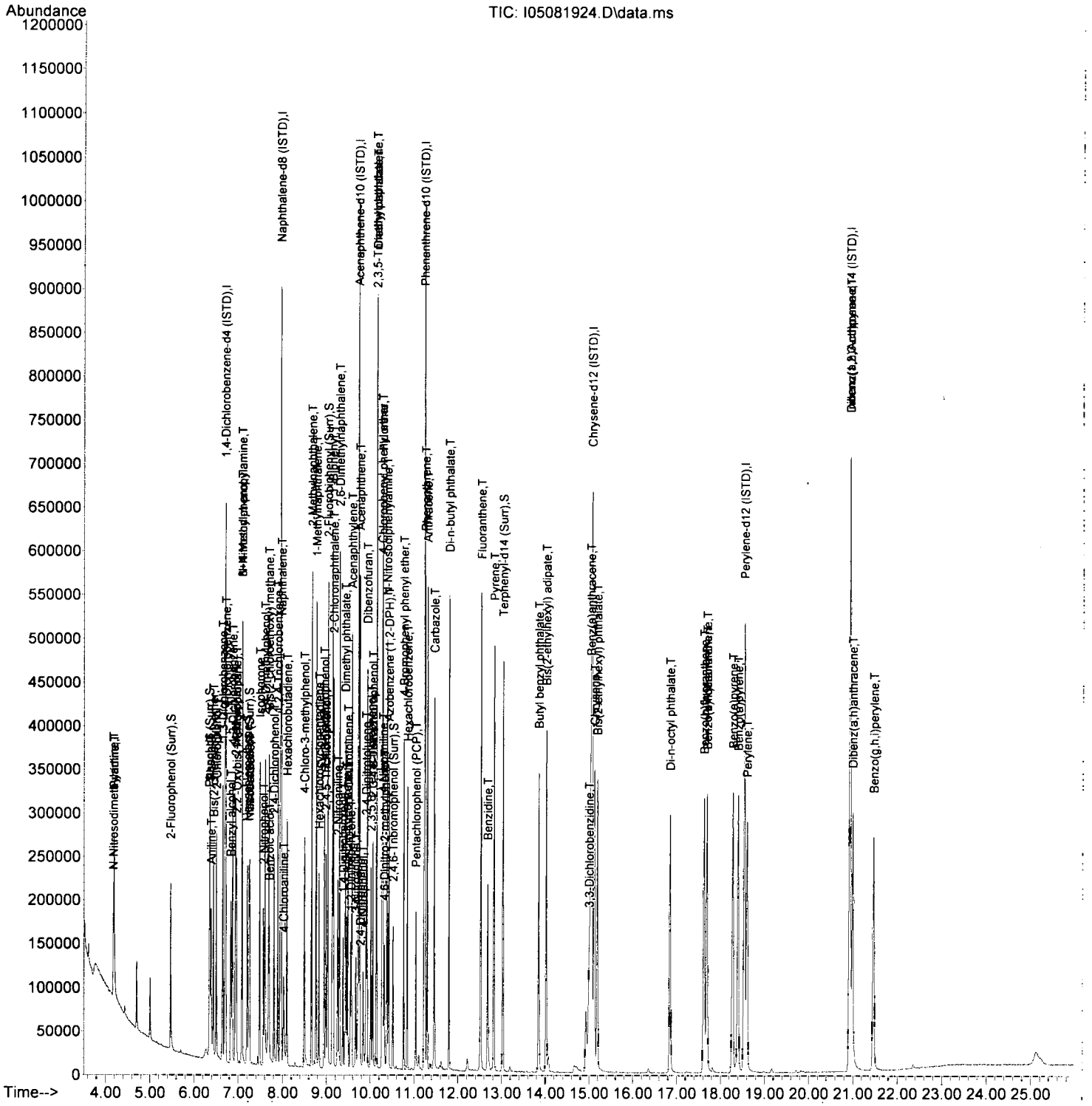
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 1,4-Dinitrobenzene	9.376	168	23019	1115.72	ng/ml	81
45) Dimethyl phthalate	9.425	163	167550	1067.88	ng/ml	99
46) 1,3-Dinitrobenzene	9.457	168	27406	1134.32	ng/ml	91
47) 2,6-Dinitrotoluene	9.489	165	39367	1151.59	ng/ml	78
48) 1,2-Dinitrobenzene	9.548	168	19142	1108.80	ng/ml#	72
49) Acenaphthylene	9.574	152	242796	1106.31	ng/ml	99
50) 3-Nitroaniline	9.665	138	30789	1019.40	ng/ml	92
51) Acenaphthene	9.751	153	146889	1064.01	ng/ml	99
52) 2,4-Dinitrophenol	9.767	184	12133	1336.11	ng/ml	87
53) 4-Nitrophenol	9.831	139	26763	1084.22	ng/ml	89
54) 2,4-Dinitrotoluene	9.895	165	50363	1106.48	ng/ml	85
55) Dibenzofuran	9.922	168	206307	1085.63	ng/ml	94
56) 2,3,5,6-Tetrachlorophenol	10.008	232	35452	1158.39	ng/ml	87
57) 2,3,4,6-Tetrachlorophenol	10.050	232	38150	1171.11	ng/ml	87
58) Diethyl phthalate	10.136	149	154986	1055.31	ng/ml	96
59) 2,3,5-Trimethylnaphtha...	10.131	170	135724	1076.59	ng/ml	96
60) Fluorene	10.270	166	163031	1053.59	ng/ml	99
61) 4-Chlorophenyl phenyl ...	10.259	204	79614	1095.58	ng/ml	88
62) 4-Nitroaniline	10.280	138	36743	1094.98	ng/ml	91
63) 4,6-Dinitro-2-methylph...	10.312	198	21051	1355.86	ng/ml	82
65) N-Nitrosodiphenylamine	10.377	169	139124	1070.63	ng/ml	98
66) Azobenzene (1,2-DPH)	10.419	77	156991	964.57	ng/ml	91
68) 4-Bromophenyl phenyl e...	10.756	248	49801	1157.73	ng/ml	87
69) Hexachlorobenzene	10.842	284	52902	1158.97	ng/ml	91
70) Pentachlorophenol (PCP)	11.035	266	23287	1202.11	ng/ml	98
71) Phenanthrene	11.248	178	232143	1051.98	ng/ml	100
72) Anthracene	11.297	178	235356	1105.09	ng/ml	99
73) Carbazole	11.457	167	218760	1070.75	ng/ml	98
74) Di-n-butyl phthalate	11.794	149	281730	1100.70	ng/ml	99
75) Fluoranthene	12.527	202	287574	1174.59	ng/ml	97
76) Benzidine	12.677	184	119397	2129.89	ng/ml	97
77) Pyrene	12.821	202	286850	1157.41	ng/ml	100
80) Butyl benzyl phthalate	13.843	149	128733	996.48	ng/ml	90
81) Bis(2-ethylhexyl) adipate	14.014	129	114896	966.42	ng/ml	98
82) 3,3-Dichlorobenzidine	14.993	252	62412	2491.37	ng/ml	94
83) Benz(a)anthracene	15.030	228	257723	1049.68	ng/ml	99
84) Chrysene	15.116	228	231498	1012.24	ng/ml	99
85) Bis(2-ethylhexyl) phth...	15.180	149	159937	972.69	ng/ml	96
87) Di-n-octyl phthalate	16.843	149	284170	1052.31	ng/ml	98
88) Benzo(b)fluoranthene	17.619	252	268390	1108.16	ng/ml	96
89) Benzo(k)fluoranthene	17.688	252	262537	1105.11	ng/ml	95
90) Benzo(b+k)fluoranthene	17.688	252	543058	2204.99	ng/ml	95
91) Benzo(e)pyrene	18.277	252	259798	1142.77	ng/ml	98
92) Benzo(a)pyrene	18.394	252	245703	1147.61	ng/ml	97
93) Perylene	18.597	252	216265	1054.59	ng/ml	98
95) Indeno(1,2,3-cd)pyrene	20.924	276	217807	963.89	ng/ml	94
96) Dibenz(a,h)anthracene	20.988	278	199329	1048.27	ng/ml	94
97) Benzo(g,h,i)perylene	21.464	276	226164	1068.40	ng/ml	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081924.D
Acq On : 8 May 2019 11:14 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL6
Misc : 1x, A19D058 BNA@1000
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:02:52 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9



Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081925.D
Acq On : 8 May 2019 11:50 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL7
Misc : 1x, A19D059 BNA@2000
ALS Vial : 9 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:00 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

5/9/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4...	6.697	152	107016	2000.00	ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.948	136	404790	2000.00	ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.719	162	208028	2000.00	ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.222	188	396363	2000.00	ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.062	240	353171	2000.00	ng/ml	0.00
86) Perylene-d12 (ISTD)	18.544	264	333963	2000.00	ng/ml	0.00
94) Dibenz(a,h)Anthrcene-d...	20.929	292	322705	2000.00	ng/ml	0.00
System Monitoring Compounds						
4) 2-Fluorophenol (Surr)	5.467	112	148818	2079.73	ng/ml	0.00
5) Phenol-d6 (Surr)	6.338	99	191806	2031.91	ng/ml	0.00
19) Nitrobenzene-d5 (Surr)	7.232	82	149113	1885.78	ng/ml	0.00
40) 2-Fluorobiphenyl (Surr)	9.023	172	311047	2048.84	ng/ml	0.00
67) 2,4,6-Tribromophenol (...	10.516	330	38932	2416.44	ng/ml	0.00
79) Terphenyl-d14 (Surr)	13.024	244	356113	2117.90	ng/ml	0.00
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	4.167	74	104473	1848.62	ng/ml	97
3) Pyridine	4.183	79	164460	1862.57	ng/ml	99
6) Phenol	6.354	94	203006	1973.89	ng/ml	97
7) Aniline	6.381	93	119883	1275.74	ng/ml	97
8) Bis(2-chloroethyl) ether	6.435	93	172619	2046.48	ng/ml	98
9) 2-Chlorophenol	6.499	128	152301	2078.88	ng/ml	94
10) 1,3-Dichlorobenzene	6.643	146	163909	2014.44	ng/ml	95
11) 1,4-Dichlorobenzene	6.713	146	154653	1993.74	ng/ml	97
12) Benzyl alcohol	6.825	108	91265	1975.88	ng/ml	93
13) 1,2-Dichlorobenzene	6.863	146	151209	1994.34	ng/ml	98
14) 2-Methylphenol	6.932	107	113843	1963.07	ng/ml	99
15) 2,2'-Oxybis(1-Chloropr...	6.953	45	195754	1661.32	ng/ml	94
16) N-Nitrosodi-n-propylamine	7.082	70	111051	1858.47	ng/ml	94
17) 3+4-Methylphenol	7.082	107	144919	1981.92	ng/ml	98
18) Hexachloroethane	7.194	201	49920	2092.81	ng/ml	90
20) Nitrobenzene	7.253	77	144892	1800.13	ng/ml	91
22) Isophorone	7.483	82	306230	2048.86	ng/ml	95
23) 2-Nitrophenol	7.563	139	81543	2100.52	ng/ml	99
24) 2,4-Dimethylphenol	7.601	122	125958	2104.07	ng/ml	96
25) Bis(2-chloroethoxy) me...	7.686	93	173377	1947.52	ng/ml	99
26) Benzoic acid	7.724	105	120684	3889.47	ng/ml	98
27) 2,4-Dichlorophenol	7.809	162	112156	2211.77	ng/ml	98
28) 1,2,4-Trichlorobenzene	7.889	180	127703	2021.09	ng/ml	96
29) Naphthalene	7.970	128	397624	1980.92	ng/ml	98
30) 4-Chloroaniline	8.034	127	84586	1559.92	ng/ml	96
31) Hexachlorobutadiene	8.098	225	67587	2126.39	ng/ml	100
32) 4-Chloro-3-methylphenol	8.499	107	128769	2162.11	ng/ml	95
33) 2-Methylnaphthalene	8.660	142	312815	2114.36	ng/ml	98
34) 1-Methylnaphthalene	8.761	142	290157	2066.96	ng/ml	98
36) Hexachlorocyclopentadiene	8.825	237	65488	2203.54	ng/ml	98
37) 2,4,6-Trichlorophenol	8.943	196	81849	2145.98	ng/ml	98
38) 2,4,5-Trichlorophenol	8.981	198	78891	2159.17	ng/ml	97
39) 1,1'-Biphenyl	9.130	154	349335	1986.97	ng/ml	98
41) 2-Chloronaphthalene	9.152	162	248276	1941.20	ng/ml	97
42) 2-Nitroaniline	9.253	138	89274	2130.66	ng/ml	86
43) 2,6-Dimethylnaphthalene	9.291	156	257201	2038.65	ng/ml	95

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081925.D
Acq On : 8 May 2019 11:50 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL7
Misc : 1x, A19D059 BNA@2000
ALS Vial : 9 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:00 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

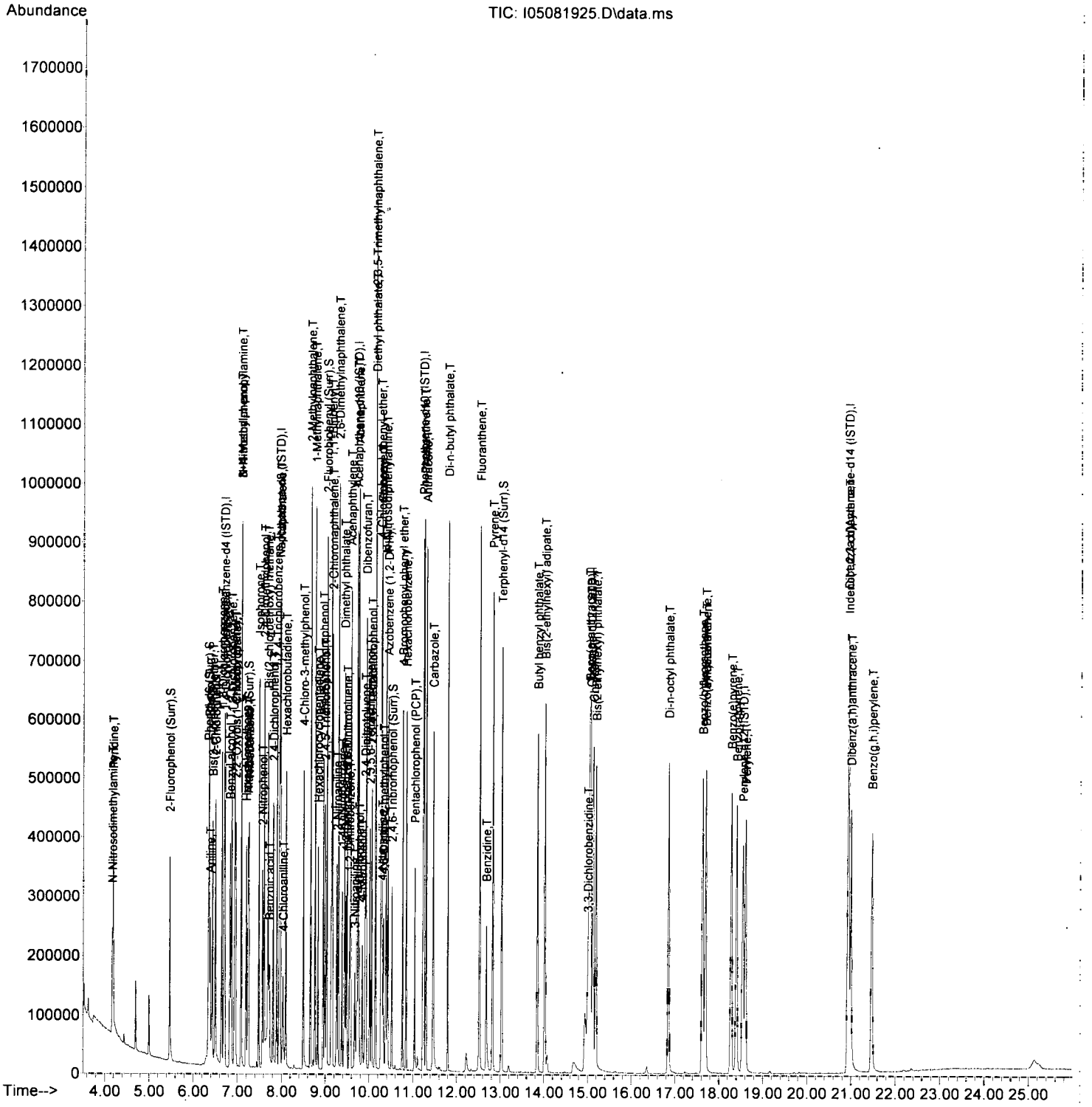
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 1,4-Dinitrobenzene	9.376	168	42957	2139.47	ng/ml	82
45) Dimethyl phthalate	9.430	163	291628	2008.94	ng/ml	98
46) 1,3-Dinitrobenzene	9.462	168	48772	2181.83	ng/ml	90
47) 2,6-Dinitrotoluene	9.489	165	70090	2216.06	ng/ml	85
48) 1,2-Dinitrobenzene	9.548	168	34100	2134.92	ng/ml	88
49) Acenaphthylene	9.574	152	407881	2008.76	ng/ml	99
50) 3-Nitroaniline	9.665	138	46893	1795.57	ng/ml	95
51) Acenaphthene	9.751	153	254388	1991.66	ng/ml	100
52) 2,4-Dinitrophenol	9.767	184	25811	2502.10	ng/ml	88
53) 4-Nitrophenol	9.836	139	48681	2007.95	ng/ml	86
54) 2,4-Dinitrotoluene	9.901	165	90563	2127.03	ng/ml	81
55) Dibenzofuran	9.922	168	351544	1999.43	ng/ml	95
56) 2,3,5,6-Tetrachlorophenol	10.008	232	64681	2181.55	ng/ml	88
57) 2,3,4,6-Tetrachlorophenol	10.050	232	68233	2234.46	ng/ml	88
58) Diethyl phthalate	10.141	149	252775	1860.29	ng/ml	95
59) 2,3,5-Trimethylnaphtha...	10.136	170	226222	1939.49	ng/ml	98
60) Fluorene	10.275	166	271787	1898.41	ng/ml	99
61) 4-Chlorophenyl phenyl ...	10.259	204	136404	2028.81	ng/ml	90
62) 4-Nitroaniline	10.286	138	59807	1926.38	ng/ml	97
63) 4,6-Dinitro-2-methylph...	10.318	198	40019	2494.03	ng/ml	75
65) N-Nitrosodiphenylamine	10.382	169	227824	1880.66	ng/ml	98
66) Azobenzene (1,2-DPH)	10.425	77	264872	1745.69	ng/ml	87
68) 4-Bromophenyl phenyl e...	10.756	248	88111	2197.21	ng/ml	89
69) Hexachlorobenzene	10.842	284	92531	2174.50	ng/ml	91
70) Pentachlorophenol (PCP)	11.034	266	45320	2323.06	ng/ml	97
71) Phenanthrene	11.248	178	398028	1934.81	ng/ml	98
72) Anthracene	11.302	178	397681	2003.00	ng/ml	100
73) Carbazole	11.457	167	364563	2063.64	ng/ml	98
74) Di-n-butyl phthalate	11.794	149	471443	1975.77	ng/ml	98
75) Fluoranthene	12.527	202	475094	2081.55	ng/ml	97
76) Benzidine	12.677	184	153390	2855.74	ng/ml	99
77) Pyrene	12.821	202	468721	2028.71	ng/ml	99
80) Butyl benzyl phthalate	13.848	149	219372	1966.35	ng/ml	91
81) Bis(2-ethylhexyl) adipate	14.014	129	191848	1960.05	ng/ml	97
82) 3,3-Dichlorobenzidine	14.998	252	81995	4181.32	ng/ml	98
83) Benz(a)anthracene	15.030	228	409861	2027.64	ng/ml	99
84) Chrysene	15.121	228	375111	1992.25	ng/ml	98
85) Bis(2-ethylhexyl) phth...	15.185	149	265428	1960.75	ng/ml	95
87) Di-n-octyl phthalate	16.848	149	490249	1949.45	ng/ml	98
88) Benzo(b)fluoranthene	17.624	252	444019	2152.11	ng/ml	96
89) Benzo(k)fluoranthene	17.694	252	401664	2075.77	ng/ml	96
90) Benzo(b+k)fluoranthene	17.694	252	864585	4211.83	ng/ml	96
91) Benzo(e)pyrene	18.282	252	421328	2222.82	ng/ml	98
92) Benzo(a)pyrene	18.405	252	383125	2137.17	ng/ml	97
93) Perylene	18.608	252	344990	2017.74	ng/ml	99
95) Indeno(1,2,3-cd)pyrene	20.935	276	348943	1909.89	ng/ml	93
96) Dibenz(a,h)anthracene	20.994	278	325096	2114.51	ng/ml	96
97) Benzo(g,h,i)perylene	21.470	276	360991	2109.13	ng/ml	91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081925.D
Acq On : 8 May 2019 11:50 pm
Operator : JK /AMS /DTH
Sample : 9E08056-CAL7
Misc : 1x, A19D059 BNA@2000
ALS Vial : 9 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:00 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9



Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081926.D
Acq On : 9 May 2019 12:26 am
Operator : JK /AMS /DTH
Sample : 9E08056-CAL8
Misc : 1x, A19D060 BNA@4000
ALS Vial : 10 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:08 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

JK 5/9/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4...	6.697	152	98792	2000.00	ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.954	136	378186	2000.00	ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.724	162	202901	2000.00	ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.227	188	404511	2000.00	ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.073	240	346046	2000.00	ng/ml	0.02
86) Perylene-d12 (ISTD)	18.555	264	361418	2000.00	ng/ml	0.02
94) Dibenz(a,h)Anthrcene-d...	20.951	292	360190	2000.00	ng/ml	0.03
System Monitoring Compounds						
4) 2-Fluorophenol (Surr)	5.467	112	284613	4308.58	ng/ml	0.00
5) Phenol-d6 (Surr)	6.349	99	374178	4293.86	ng/ml	0.01
19) Nitrobenzene-d5 (Surr)	7.237	82	275454	3773.57	ng/ml	0.00
40) 2-Fluorobiphenyl (Surr)	9.029	172	532909	3598.93	ng/ml	0.00
67) 2,4,6-Tribromophenol (...	10.521	330	78802	4693.62	ng/ml	0.00
79) Terphenyl-d14 (Surr)	13.030	244	667601	4052.16	ng/ml	0.00
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	4.167	74	199054	3815.42	ng/ml	99
3) Pyridine	4.172	79	337112	4135.74	ng/ml	99
6) Phenol	6.360	94	375248	3952.38	ng/ml	100
7) Aniline	6.387	93	249012	2870.46	ng/ml	96
8) Bis(2-chloroethyl) ether	6.440	93	297917	3825.96	ng/ml	99
9) 2-Chlorophenol	6.504	128	275296	4070.56	ng/ml	94
10) 1,3-Dichlorobenzene	6.649	146	287179	3823.24	ng/ml	97
11) 1,4-Dichlorobenzene	6.718	146	272704	3808.28	ng/ml	97
12) Benzyl alcohol	6.836	108	184713	4060.15	ng/ml	92
13) 1,2-Dichlorobenzene	6.868	146	259626	3709.35	ng/ml	98
14) 2-Methylphenol	6.937	107	213032	3979.25	ng/ml	99
15) 2,2'-Oxybis(1-Chloropr...	6.959	45	331551	3048.03	ng/ml	92
16) N-Nitrosodi-n-propylamine	7.093	70	197390	3578.37	ng/ml	93
17) 3+4-Methylphenol	7.087	107	268146	3972.46	ng/ml	99
18) Hexachloroethane	7.200	201	89376	4058.84	ng/ml	87
20) Nitrobenzene	7.258	77	262312	3530.24	ng/ml	93
22) Isophorone	7.494	82	573921	4110.00	ng/ml	94
23) 2-Nitrophenol	7.574	139	153577	4204.01	ng/ml	96
24) 2,4-Dimethylphenol	7.611	122	231859	4145.56	ng/ml	96
25) Bis(2-chloroethoxy) me...	7.697	93	317226	3814.03	ng/ml	98
26) Benzoic acid	7.783	105	329662	8705.24	ng/ml	97
27) 2,4-Dichlorophenol	7.815	162	210069	4356.34	ng/ml	99
28) 1,2,4-Trichlorobenzene	7.895	180	222596	3770.73	ng/ml	98
29) Naphthalene	7.975	128	687088	3663.80	ng/ml	97
30) 4-Chloroaniline	8.045	127	170567	3366.84	ng/ml	95
31) Hexachlorobutadiene	8.098	225	118434	3988.23	ng/ml	99
32) 4-Chloro-3-methylphenol	8.505	107	257664	4420.43	ng/ml	96
33) 2-Methylnaphthalene	8.665	142	555825	4021.18	ng/ml	98
34) 1-Methylnaphthalene	8.767	142	506152	3859.27	ng/ml	98
36) Hexachlorocyclopentadiene	8.831	237	130554	4365.71	ng/ml	100
37) 2,4,6-Trichlorophenol	8.949	196	157742	4195.02	ng/ml	98
38) 2,4,5-Trichlorophenol	8.986	198	152327	4304.48	ng/ml	99
39) 1,1'-Biphenyl	9.136	154	599715	3497.29	ng/ml	98
41) 2-Chloronaphthalene	9.157	162	426263	3417.05	ng/ml	98
42) 2-Nitroaniline	9.259	138	175844	4302.84	ng/ml	93
43) 2,6-Dimethylnaphthalene	9.296	156	440208	3577.39	ng/ml	97

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081926.D
Acq On : 9 May 2019 12:26 am
Operator : JK /AMS /DTH
Sample : 9E08056-CAL8
Misc : 1x, A19D060 BNA@4000
ALS Vial : 10 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:08 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

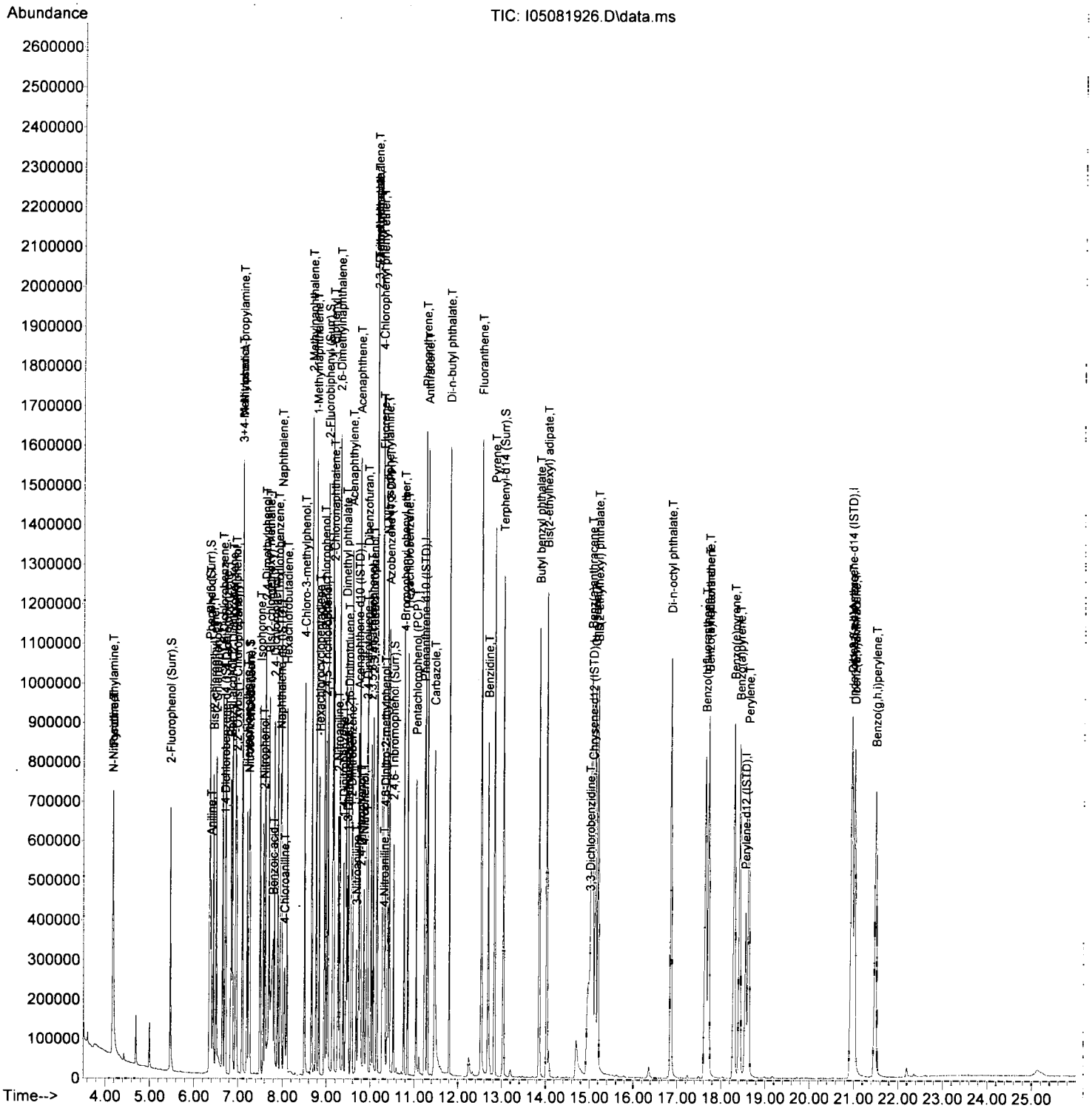
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 1,4-Dinitrobenzene	9.387	168	89593	4300.59	ng/ml	80
45) Dimethyl phthalate	9.441	163	526270	3716.92	ng/ml	97
46) 1,3-Dinitrobenzene	9.473	168	97308	4463.09	ng/ml	90
47) 2,6-Dinitrotoluene	9.499	165	131486	4262.28	ng/ml	83
48) 1,2-Dinitrobenzene	9.564	168	65816	4224.70	ng/ml	80
49) Acenaphthylene	9.580	152	694303	3505.74	ng/ml	97
50) 3-Nitroaniline	9.676	138	82018	4212.09	ng/ml	94
51) Acenaphthene	9.756	153	449192	3605.68	ng/ml	99
52) 2,4-Dinitrophenol	9.778	184	66685	5006.82	ng/ml	88
53) 4-Nitrophenol	9.847	139	110480	4293.76	ng/ml	87
54) 2,4-Dinitrotoluene	9.911	165	174398	4193.29	ng/ml	85
55) Dibenzofuran	9.927	168	609207	3552.47	ng/ml	98
56) 2,3,5,6-Tetrachlorophenol	10.013	232	128540	4189.58	ng/ml	90
57) 2,3,4,6-Tetrachlorophenol	10.056	232	131983	4411.97	ng/ml	91
58) Diethyl phthalate	10.147	149	430062	3245.01	ng/ml	95
59) 2,3,5-Trimethylnaphtha...	10.141	170	377414	3317.49	ng/ml	98
60) Fluorene	10.280	166	463326	3318.07	ng/ml	99
61) 4-Chlorophenyl phenyl ...	10.270	204	239379	3650.38	ng/ml	89
62) 4-Nitroaniline	10.302	138	119176	3935.66	ng/ml	94
63) 4,6-Dinitro-2-methylph...	10.329	198	87463	4765.28	ng/ml	78
65) N-Nitrosodiphenylamine	10.393	169	398485	3223.19	ng/ml	99
66) Azobenzene (1,2-DPH)	10.430	77	481159	3107.29	ng/ml	86
68) 4-Bromophenyl phenyl e...	10.767	248	164575	4021.31	ng/ml	86
69) Hexachlorobenzene	10.847	284	169055	3892.80	ng/ml	94
70) Pentachlorophenol (PCP)	11.040	266	103356	4679.02	ng/ml	97
71) Phenanthrene	11.254	178	712691	3394.59	ng/ml	98
72) Anthracene	11.307	178	710857	3508.25	ng/ml	98
73) Carbazole	11.462	167	666936	4706.84	ng/ml	99
74) Di-n-butyl phthalate	11.799	149	869303	3569.78	ng/ml	98
75) Fluoranthene	12.532	202	874011	3752.21	ng/ml	98
76) Benzidine	12.687	184	507935	7862.86	ng/ml	98
77) Pyrene	12.832	202	853568	3619.97	ng/ml	98
80) Butyl benzyl phthalate	13.853	149	466198	3979.59	ng/ml	91
81) Bis(2-ethylhexyl) adipate	14.024	129	395039	4119.09	ng/ml	97
82) 3,3-Dichlorobenzidine	15.009	252	140872	7405.50	ng/ml	95
83) Benz(a)anthracene	15.046	228	790890	3993.20	ng/ml	99
84) Chrysene	15.132	228	726806	3939.62	ng/ml	99
85) Bis(2-ethylhexyl) phth...	15.190	149	541901	4085.51	ng/ml	94
87) Di-n-octyl phthalate	16.859	149	1106017	3530.60	ng/ml	97
88) Benzo(b)fluoranthene	17.651	252	916793	3978.72	ng/ml	96
89) Benzo(k)fluoranthene	17.720	252	788525	3971.90	ng/ml	96
90) Benzo(b+k)fluoranthene	17.720	252	1749715	7921.59	ng/ml	96
91) Benzo(e)pyrene	18.303	252	863719	4210.62	ng/ml	99
92) Benzo(a)pyrene	18.426	252	770441	3963.51	ng/ml	97
93) Perylene	18.630	252	705720	3813.99	ng/ml	99
95) Indeno(1,2,3-cd)pyrene	20.962	276	792468	3886.05	ng/ml	95
96) Dibenz(a,h)anthracene	21.020	278	675316	3935.31	ng/ml	96
97) Benzo(g,h,i)perylene	21.496	276	777615	4070.47	ng/ml	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081926.D
Acq On : 9 May 2019 12:26 am
Operator : JK /AMS /DTH
Sample : 9E08056-CAL8
Misc : 1x, A19D060 BNA@4000
ALS Vial : 10 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:08 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9



Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081927.D
Acq On : 9 May 2019 1:01 am
Operator : JK /AMS /DTH
Sample : 9E08056-CAL9
Misc : 1x, A19D061 BNA@6000
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:16 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

5/9/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4...	6.702	152	97132	2000.00	ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.954	136	383773	2000.00	ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.724	162	200935	2000.00	ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.232	188	408419	2000.00	ng/ml	0.01
78) Chrysene-d12 (ISTD)	15.083	240	325607	2000.00	ng/ml	0.03
86) Perylene-d12 (ISTD)	18.565	264	352282	2000.00	ng/ml	0.03
94) Dibenz(a,h)Anthrcene-d...	20.956	292	359354	2000.00	ng/ml	0.03
System Monitoring Compounds						
4) 2-Fluorophenol (Surr)	5.472	112	435036	6698.29	ng/ml	0.00
5) Phenol-d6 (Surr)	6.354	99	554225	6468.67	ng/ml	0.02
19) Nitrobenzene-d5 (Surr)	7.242	82	400998	5587.34	ng/ml	0.01
40) 2-Fluorobiphenyl (Surr)	9.034	172	698194	4761.29	ng/ml	0.01
67) 2,4,6-Tribromophenol (...	10.526	330	114295	6644.05	ng/ml	0.01
79) Terphenyl-d14 (Surr)	13.040	244	884802	5707.63	ng/ml	0.02
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	4.172	74	300039	5849.36	ng/ml	98
3) Pyridine	4.178	79	496772	6198.63	ng/ml	98
6) Phenol	6.370	94	546989	5859.74	ng/ml	98
7) Aniline	6.392	93	406652	4767.74	ng/ml	97
8) Bis(2-chloroethyl) ether	6.445	93	395115	5160.94	ng/ml	96
9) 2-Chlorophenol	6.504	128	397555	5978.76	ng/ml	95
10) 1,3-Dichlorobenzene	6.649	146	414202	5608.54	ng/ml	97
11) 1,4-Dichlorobenzene	6.718	146	384033	5454.63	ng/ml	98
12) Benzyl alcohol	6.841	108	269444	5748.55	ng/ml	93
13) 1,2-Dichlorobenzene	6.868	146	366398	5324.29	ng/ml	99
14) 2-Methylphenol	6.943	107	301798	5733.66	ng/ml	99
15) 2,2'-Oxybis(1-Chloropr...	6.959	45	456599	4269.37	ng/ml	93
16) N-Nitrosodi-n-propylamine	7.103	70	270883	4994.60	ng/ml	92
17) 3+4-Methylphenol	7.098	107	373641	5629.91	ng/ml	97
18) Hexachloroethane	7.200	201	130625	6033.47	ng/ml	90
20) Nitrobenzene	7.264	77	371635	5087.01	ng/ml	92
22) Isophorone	7.504	82	838709	5918.77	ng/ml	94
23) 2-Nitrophenol	7.574	139	224039	6026.89	ng/ml	98
24) 2,4-Dimethylphenol	7.617	122	328729	5791.99	ng/ml	96
25) Bis(2-chloroethoxy) me...	7.702	93	444685	5268.64	ng/ml	96
26) Benzoic acid	~~7.617~~	~~105~~	~~12038~~	~~1146.75~~	~~ng/ml#~~	1 See MI
27) 2,4-Dichlorophenol	7.820	162	285851	5779.38	ng/ml	100
28) 1,2,4-Trichlorobenzene	7.895	180	308537	5150.47	ng/ml	100
29) Naphthalene	7.980	128	939298	4935.76	ng/ml	95
30) 4-Chloroaniline	8.045	127	243860	4743.50	ng/ml	95
31) Hexachlorobutadiene	8.103	225	164363	5454.30	ng/ml	99
32) 4-Chloro-3-methylphenol	8.505	107	368355	6047.98	ng/ml	97
33) 2-Methylnaphthalene	8.665	142	744774	5309.71	ng/ml	100
34) 1-Methylnaphthalene	8.767	142	691750	5197.62	ng/ml	100
36) Hexachlorocyclopentadiene	8.831	237	188663	6229.45	ng/ml	99
37) 2,4,6-Trichlorophenol	8.954	196	223754	5978.05	ng/ml	98
38) 2,4,5-Trichlorophenol	8.991	198	209851	6044.28	ng/ml	99
39) 1,1'-Biphenyl	9.136	154	789288	4647.84	ng/ml	97
41) 2-Chloronaphthalene	9.162	162	576153	4663.80	ng/ml	98
42) 2-Nitroaniline	9.264	138	257132	6353.49	ng/ml	91
43) 2,6-Dimethylnaphthalene	9.296	156	582020	4776.12	ng/ml	98

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081927.D
Acq On : 9 May 2019 1:01 am
Operator : JK /AMS /DTH
Sample : 9E08056-CAL9
Misc : 1x, A19D061 BNA@6000
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:16 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

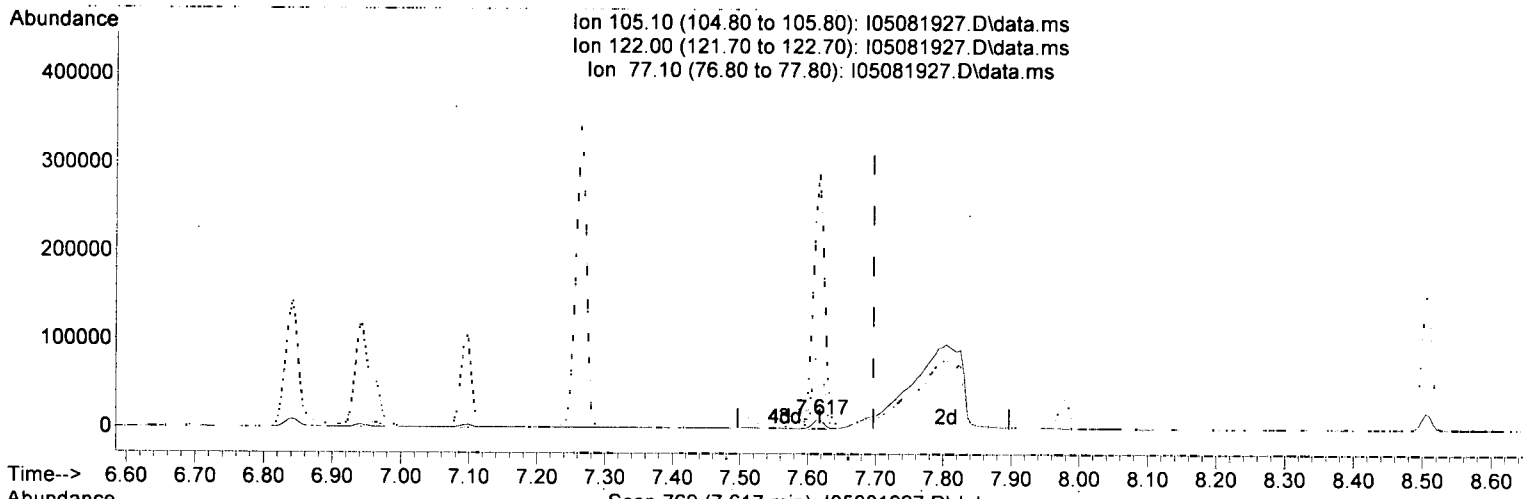
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 1,4-Dinitrobenzene	9.392	168	132868	6167.00	ng/ml	80
45) Dimethyl phthalate	9.451	163	719060	5128.25	ng/ml	97
46) 1,3-Dinitrobenzene	9.483	168	139435	6457.85	ng/ml	92
47) 2,6-Dinitrotoluene	9.505	165	182024	5958.26	ng/ml	87
48) 1,2-Dinitrobenzene	9.574	168	89987	5832.75	ng/ml	85
49) Acenaphthylene	9.585	152	879320	4483.39	ng/ml	96
50) 3-Nitroaniline	9.681	138	118898	Below Cal		95
51) Acenaphthene	9.762	153	608926	4935.69	ng/ml	99
52) 2,4-Dinitrophenol	9.783	184	105311	6831.80	ng/ml	90
53) 4-Nitrophenol	9.852	139	165172	6138.35	ng/ml	91
54) 2,4-Dinitrotoluene	9.922	165	237610	5783.24	ng/ml	89
55) Dibenzofuran	9.933	168	796168	4688.12	ng/ml	100
56) 2,3,5,6-Tetrachlorophenol	10.018	232	183781	5808.43	ng/ml	88
57) 2,3,4,6-Tetrachlorophenol	10.061	232	183789	6207.71	ng/ml	91
58) Diethyl phthalate	10.157	149	560826	4273.09	ng/ml	93
59) 2,3,5-Trimethylnaphtha...	10.147	170	492303	4369.71	ng/ml	98
60) Fluorene	10.286	166	605832	4381.07	ng/ml	100
61) 4-Chlorophenyl phenyl ...	10.270	204	319658	4922.28	ng/ml	93
62) 4-Nitroaniline	10.307	138	166859	5564.25	ng/ml	94
63) 4,6-Dinitro-2-methylph...	10.339	198	129071	6438.23	ng/ml	77
65) N-Nitrosodiphenylamine	10.398	169	527740	4227.84	ng/ml	100
66) Azobenzene (1,2-DPH)	10.435	77	656969	4202.06	ng/ml	84
68) 4-Bromophenyl phenyl e...	10.767	248	229006	5542.11	ng/ml	91
69) Hexachlorobenzene	10.853	284	231353	5276.35	ng/ml	92
70) Pentachlorophenol (PCP)	11.045	266	153485	6449.00	ng/ml	97
71) Phenanthrene	11.259	178	956642	4512.95	ng/ml	96
72) Anthracene	11.313	178	942171	4605.35	ng/ml	96
73) Carbazole	11.462	167	822554	Below Cal		99
74) Di-n-butyl phthalate	11.799	149	1162762	4729.17	ng/ml	96
75) Fluoranthene	12.537	202	1152260	4899.43	ng/ml	98
76) Benzidine	12.698	184	835608	11543.22	ng/ml	98
77) Pyrene	12.837	202	1135183	4768.23	ng/ml	97
80) Butyl benzyl phthalate	13.859	149	660330	5691.70	ng/ml	92
81) Bis(2-ethylhexyl) adipate	14.030	129	550853	6104.32	ng/ml	97
82) 3,3-Dichlorobenzidine	~~15.019~~	~~252~~	~~133256~~	~~7443.98~~	~~ng/ml~~	98 See MI
83) Benz(a)anthracene	15.057	228	1056377	5668.45	ng/ml	98
84) Chrysene	15.148	228	987765	5690.22	ng/ml	97
85) Bis(2-ethylhexyl) phth...	15.196	149	749108	6002.20	ng/ml	94
87) Di-n-octyl phthalate	16.870	149	1544982	4650.93	ng/ml	98
88) Benzo(b)fluoranthene	17.667	252	1322262	5724.25	ng/ml	96
89) Benzo(k)fluoranthene	17.736	252	1035740	5629.61	ng/ml	96
90) Benzo(b+k)fluoranthene	17.736	252	2421312	11319.06	ng/ml	96
91) Benzo(e)pyrene	18.319	252	1199867	6001.03	ng/ml	99
92) Benzo(a)pyrene	18.448	252	1066798	5628.06	ng/ml	97
93) Perylene	18.651	252	989986	5489.03	ng/ml	99
95) Indeno(1,2,3-cd)pyrene	20.983	276	1164266	5722.54	ng/ml	95
96) Dibenz(a,h)anthracene	21.042	278	945959	5525.27	ng/ml	96
97) Benzo(g,h,i)perylene	21.518	276	1089470	5716.16	ng/ml	94

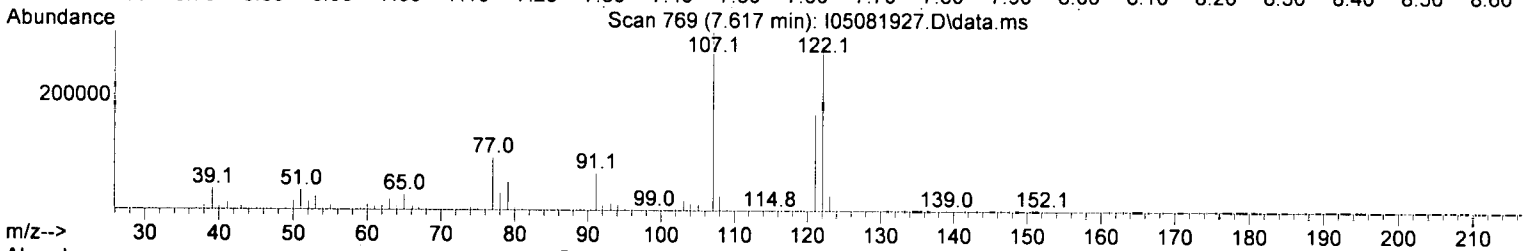
(#) = qualifier out of range (m) = manual integration (+) = signals summed

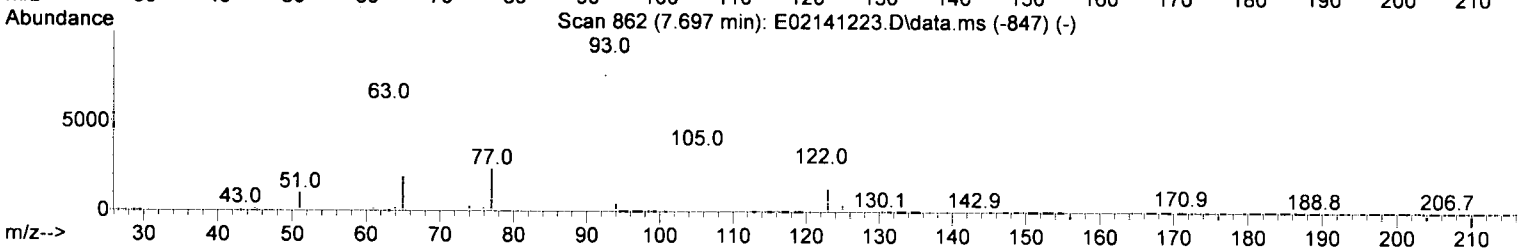
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081927.D
Acq On : 9 May 2019 1:01 am
Operator : JK /AMS /DTH
Sample : 9E08056-CAL9
Misc : 1x, A19D061 BNA@6000
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:16 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9







TIC: I05081927.D\data.ms

(26) Benzoic acid (T)

7.617min (-0.080) 1146.75 ng/ml

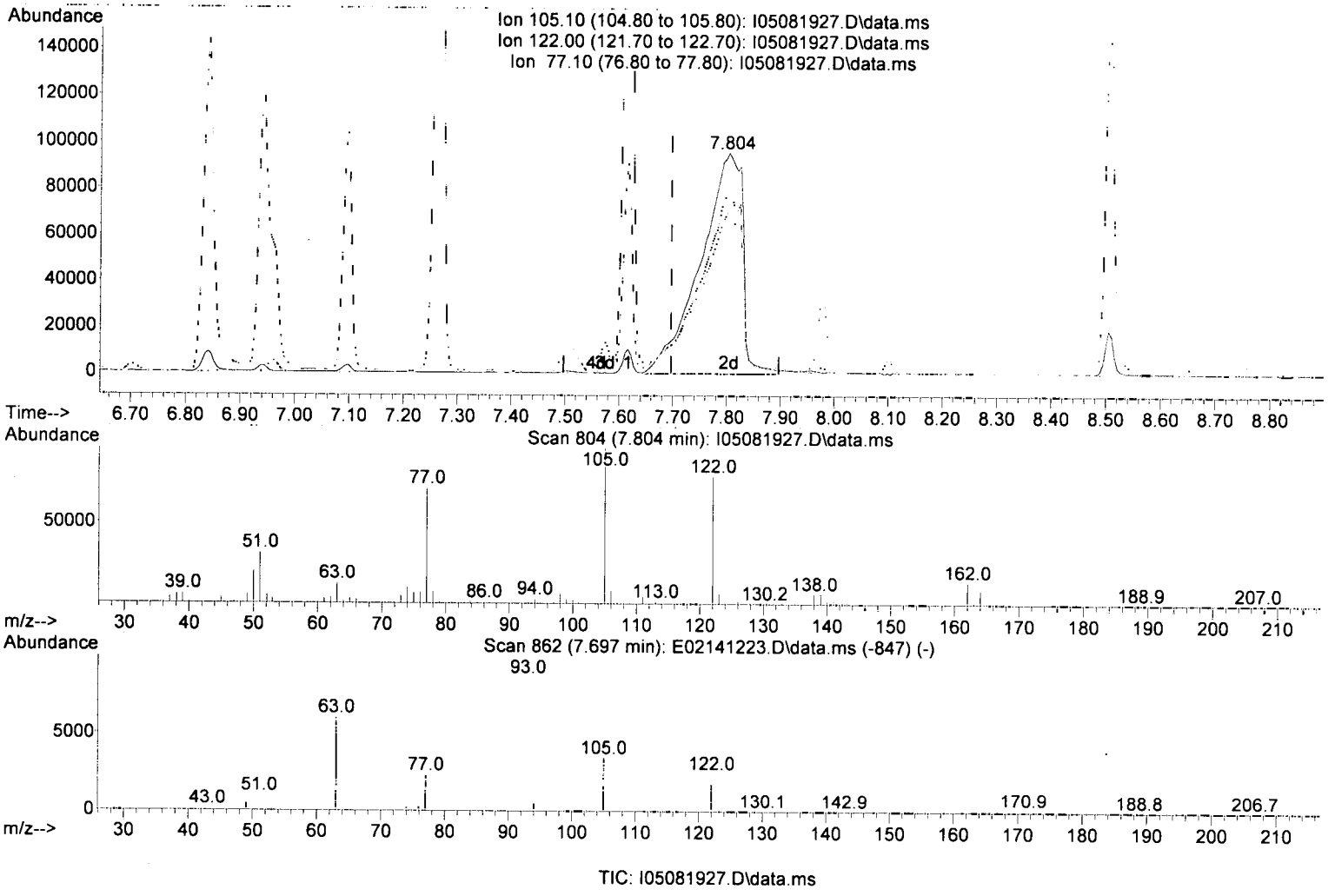
response 12038

Ion	Exp%	Act%
105.10	100.00	100.00
122.00	80.70	2757.81#
77.10	76.00	872.30#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081927.D
Acq On : 9 May 2019 1:01 am
Operator : JK /AMS /DTH
Sample : 9E08056-CAL9
Misc : 1x, A19D061 BNA@6000
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:16 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05081927.D\data.ms

(26) Benzoic acid (T)

7.804min (+ 0.107) 12091.52 ng/ml (m)

response 520098

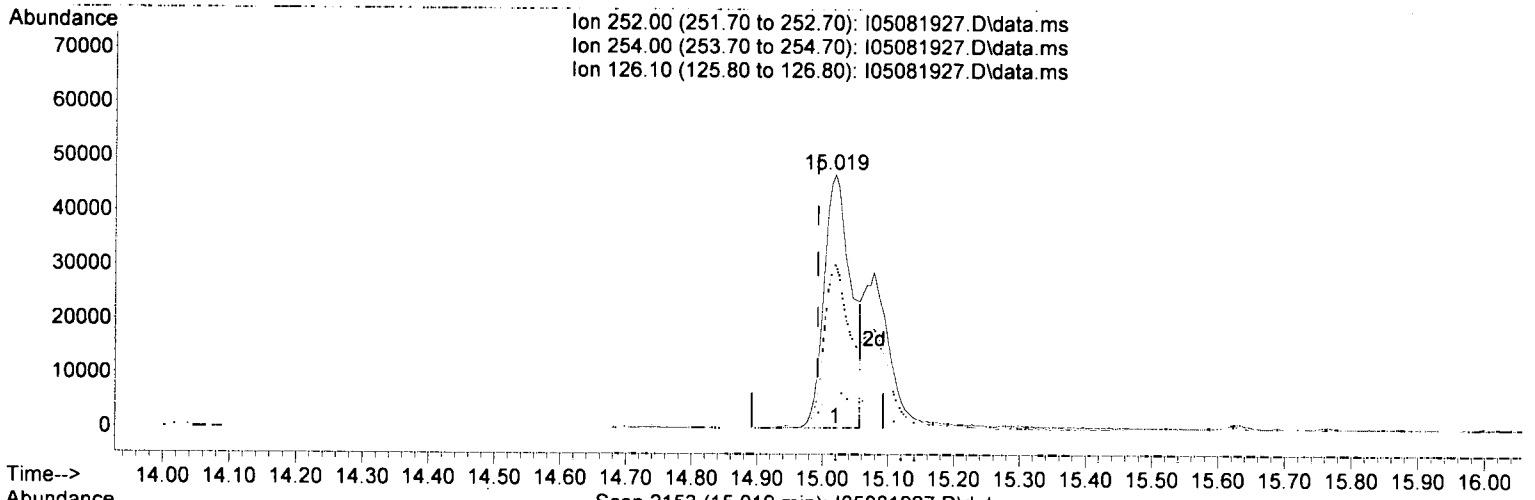
Ion	Exp%	Act%
105.10	100.00	100.00
122.00	80.70	82.17
77.10	76.00	74.36
0.00	0.00	0.00

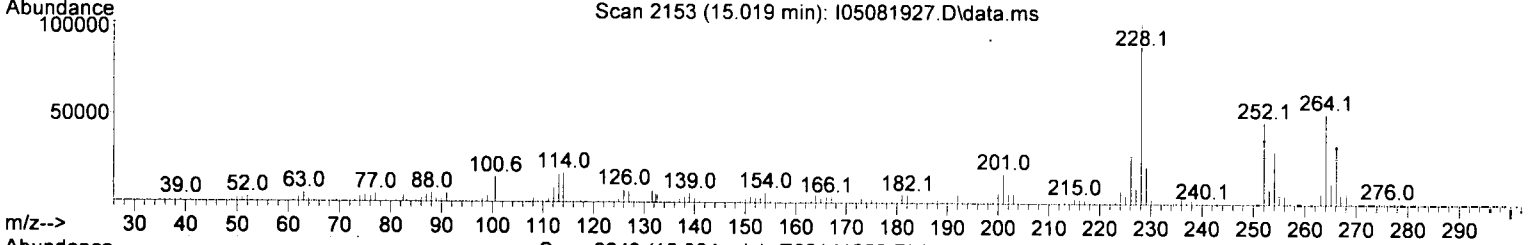
JK 5/9/19

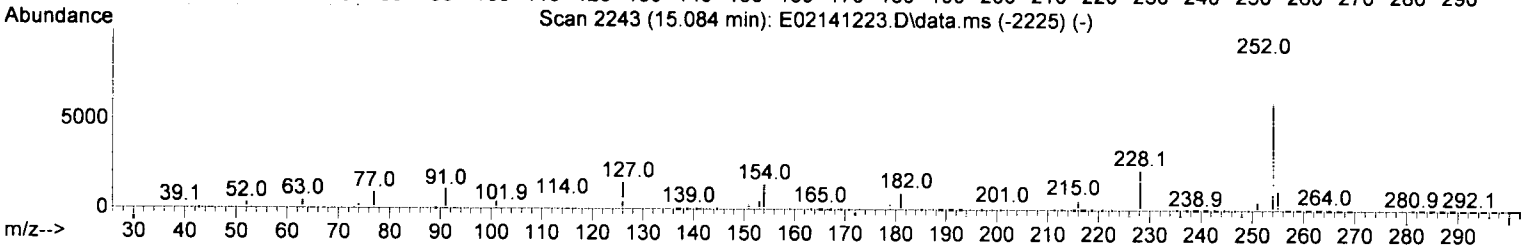
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081927.D
Acq On : 9 May 2019 1:01 am
Operator : JK /AMS /DTH
Sample : 9E08056-CAL9
Misc : 1x, A19D061 BNA@6000
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:16 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9







TIC: I05081927.D\data.ms

(82) 3,3-Dichlorobenzidine (T)

15.019min (+ 0.027) 7443.98 ng/ml

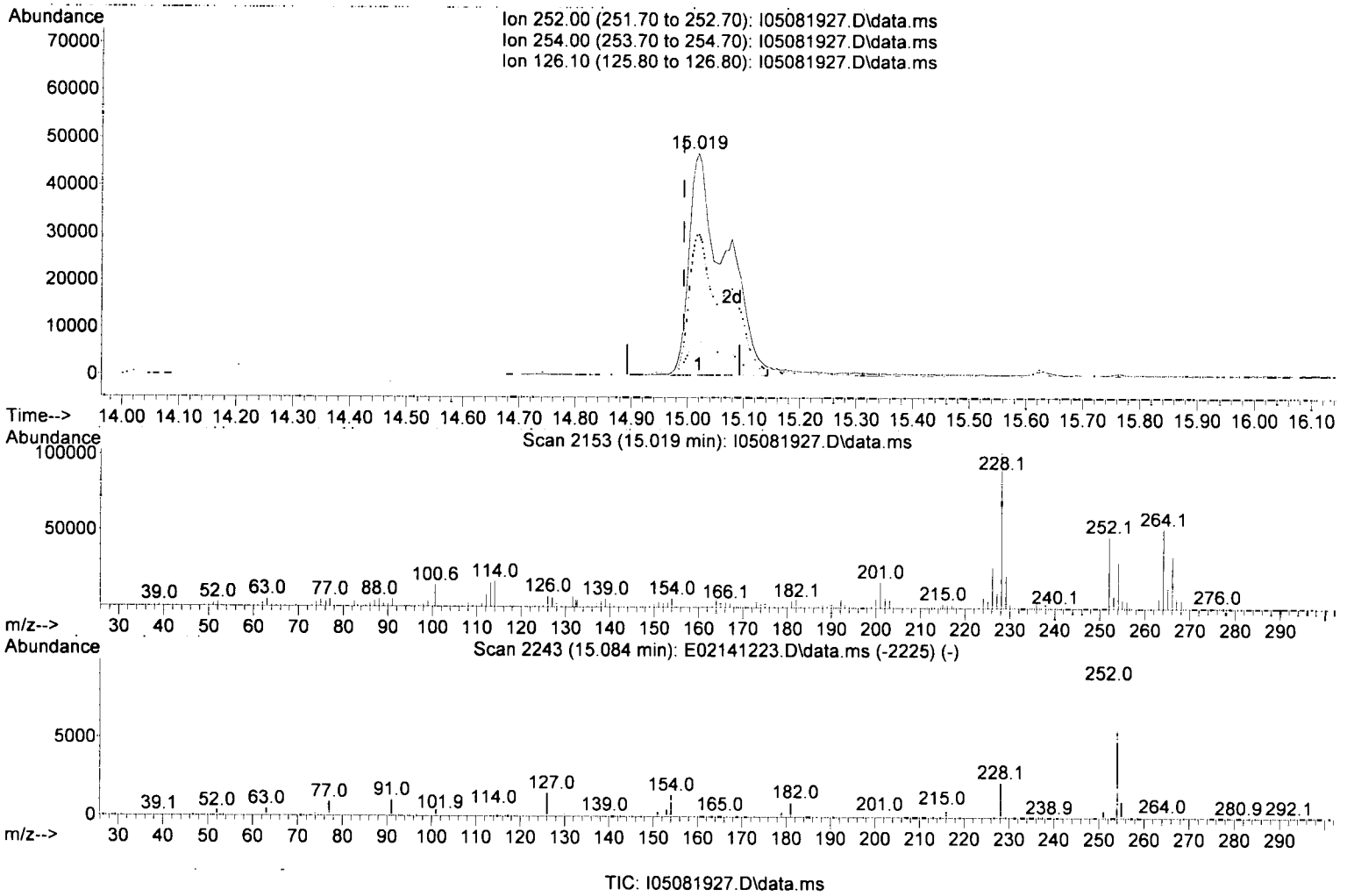
response 133256

Ion	Exp%	Act%
252.00	100.00	100.00
254.00	66.10	64.54
126.10	16.90	15.63
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081927.D
Acq On : 9 May 2019 1:01 am
Operator : JK /AMS /DTH
Sample : 9E08056-CAL9
Misc : 1x, A19D061 BNA@6000
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:16 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9



TIC: I05081927.D\data.ms

(82) 3,3-Dichlorobenzidine (T)

15.019min (+ 0.027) 11468.11 ng/ml m

5/9/19

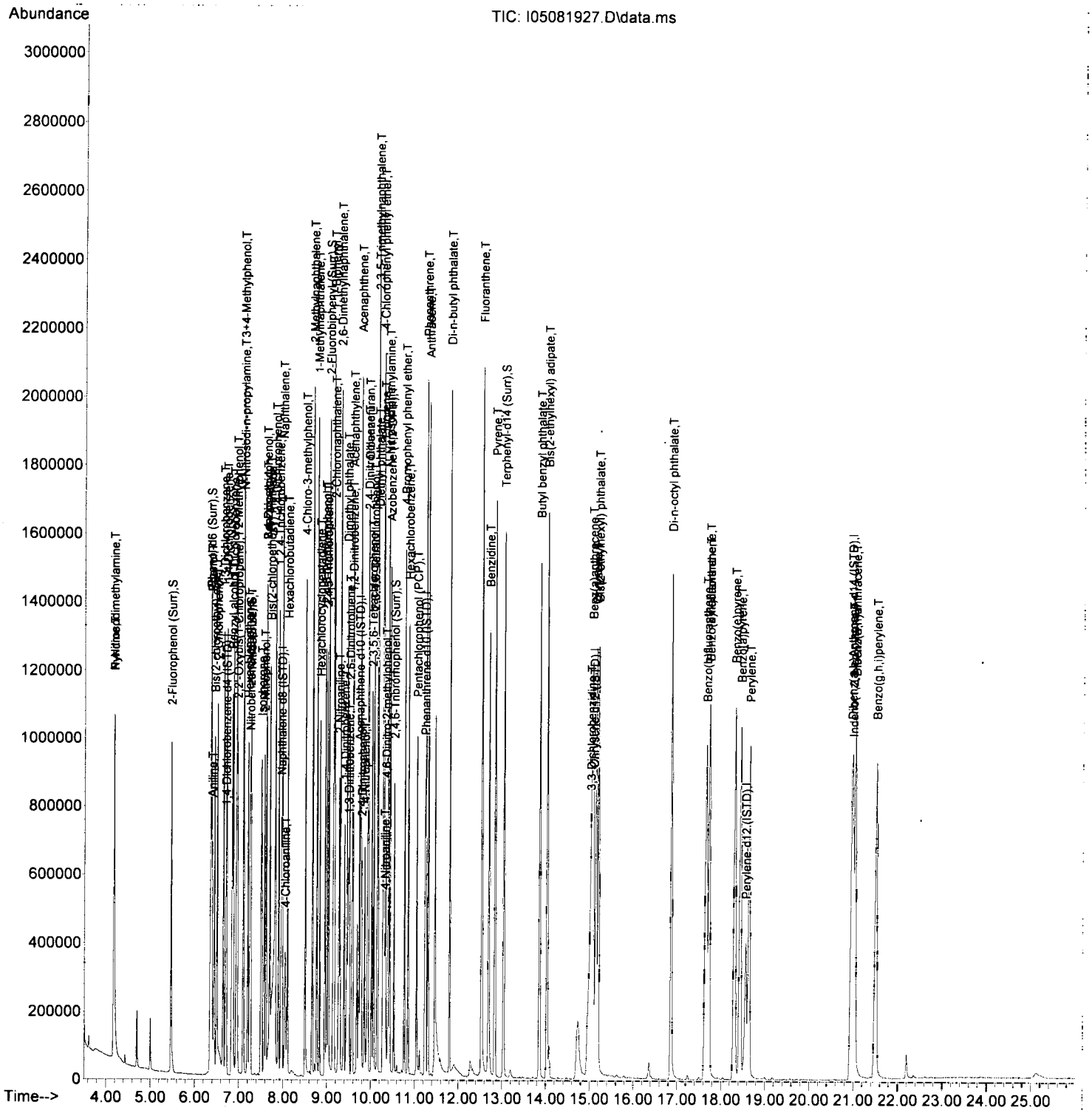
response 210131

Ion	Exp%	Act%
252.00	100.00	100.00
254.00	66.10	64.54
126.10	16.90	15.63
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081927.D
Acq On : 9 May 2019 1:01 am
Operator : JK /AMS /DTH
Sample : 9E08056-CAL9
Misc : 1x, A19D061 BNA@6000
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:16 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9



Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081928.D
Acq On : 9 May 2019 1:37 am
Operator : JK /AMS /DTH
Sample : 9E08056-CALA
Misc : 1x, A19D062 BNA@8000
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:23 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

JK 5/9/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4...	6.697	152	95689	2000.00	ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.954	136	368532	2000.00	ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.724	162	194593	2000.00	ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.232	188	396349	2000.00	ng/ml	0.01
78) Chrysene-d12 (ISTD)	15.089	240	305019	2000.00	ng/ml	0.03
86) Perylene-d12 (ISTD)	18.571	264	337687	2000.00	ng/ml	0.03
94) Dibenz(a,h)Anthrcene-d...	20.962	292	348077	2000.00	ng/ml	0.04
System Monitoring Compounds						
4) 2-Fluorophenol (Surr)	5.467	112	560056	8753.27	ng/ml	0.00
5) Phenol-d6 (Surr)	6.360	99	706999	8376.22	ng/ml	0.02
19) Nitrobenzene-d5 (Surr)	7.248	82	507577	7179.02	ng/ml	0.02
40) 2-Fluorobiphenyl (Surr)	9.034	172	835510	5883.40	ng/ml	0.01
67) 2,4,6-Tribromophenol (...	10.532	330	142560	8432.13	ng/ml	0.02
79) Terphenyl-d14 (Surr)	13.040	244	1074072	7396.22	ng/ml	0.02
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	4.162	74	396249	7841.50	ng/ml	99
3) Pyridine	4.162	79	659225	8349.73	ng/ml	98
6) Phenol	6.376	94	672921	7317.52	ng/ml	90
7) Aniline	6.392	93	595081	7082.17	ng/ml	95
8) Bis(2-chloroethyl) ether	6.445	93	510517	6768.86	ng/ml	96
9) 2-Chlorophenol	6.504	128	503387	7684.51	ng/ml	95
10) 1,3-Dichlorobenzene	6.649	146	517626	7114.66	ng/ml	96
11) 1,4-Dichlorobenzene	6.718	146	480345	6925.49	ng/ml	97
12) Benzyl alcohol	6.847	108	337977	7070.03	ng/ml	93
13) 1,2-Dichlorobenzene	6.868	146	448803	6620.11	ng/ml	99
14) 2-Methylphenol	6.943	107	369236	7120.66	ng/ml	98
15) 2,2'-Oxybis(1-Chloropr...	6.959	45	549922	5219.51	ng/ml	90
16) N-Nitrosodi-n-propylamine	7.109	70	339637	6356.74	ng/ml	94
17) 3+4-Methylphenol	7.098	107	458606	7014.35	ng/ml	100
18) Hexachloroethane	7.200	201	161926	7592.02	ng/ml	89
20) Nitrobenzene	7.269	77	462505	6426.32	ng/ml	89
22) Isophorone	7.510	82	1078748	7927.56	ng/ml	93
23) 2-Nitrophenol	7.574	139	283482	7925.73	ng/ml	97
24) 2,4-Dimethylphenol	7.622	122	412108	7561.36	ng/ml	97
25) Bis(2-chloroethoxy) me...	7.702	93	553975	6834.95	ng/ml	96
26) Benzoic acid	7.622	105	15549	1267.44	ng/ml#	1
27) 2,4-Dichlorophenol	7.825	162	358983	7465.88	ng/ml	99
28) 1,2,4-Trichlorobenzene	7.900	180	375837	6533.38	ng/ml	99
29) Naphthalene	7.980	128	1132611	6197.70	ng/ml	94
30) 4-Chloroaniline	8.039	127	398347	8068.99	ng/ml	95
31) Hexachlorobutadiene	8.103	225	199760	6903.08	ng/ml	99
32) 4-Chloro-3-methylphenol	8.510	107	462055	7683.16	ng/ml	96
33) 2-Methylnaphthalene	8.670	142	907754	6739.28	ng/ml	99
34) 1-Methylnaphthalene	8.772	142	826000	6463.00	ng/ml	99
36) Hexachlorocyclopentadiene	8.831	237	228123	7653.38	ng/ml	97
37) 2,4,6-Trichlorophenol	8.954	196	275262	7566.36	ng/ml	97
38) 2,4,5-Trichlorophenol	8.997	198	259729	7806.13	ng/ml	98
39) 1,1'-Biphenyl	9.141	154	939145	5710.53	ng/ml	94
41) 2-Chloronaphthalene	9.162	162	683312	5711.49	ng/ml	97
42) 2-Nitroaniline	9.269	138	330555	8433.89	ng/ml	91
43) 2,6-Dimethylnaphthalene	9.302	156	693134	5873.31	ng/ml	97

See ML

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081928.D
Acq On : 9 May 2019 1:37 am
Operator : JK /AMS /DTH
Sample : 9E08056-CALA
Misc : 1x, A19D062 BNA@8000
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:23 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
44) 1,4-Dinitrobenzene	9.398	168	171694	7925.07 ng/ml	81
45) Dimethyl phthalate	9.462	163	895747	6596.56 ng/ml	97
46) 1,3-Dinitrobenzene	9.489	168	173847	8314.03 ng/ml	95
47) 2,6-Dinitrotoluene	9.510	165	222349	7515.44 ng/ml	89
48) 1,2-Dinitrobenzene	9.580	168	107372	7186.42 ng/ml	96
49) Acenaphthylene	9.585	152	984732	5184.49 ng/ml	96
50) 3-Nitroaniline	9.692	138	173485	Below Cal	90
51) Acenaphthene	9.762	153	730149	6111.16 ng/ml	99
52) 2,4-Dinitrophenol	9.794	184	138854	8328.38 ng/ml	85
53) 4-Nitrophenol	9.863	139	212171	7786.41 ng/ml	91
54) 2,4-Dinitrotoluene	9.927	165	279820	7051.12 ng/ml	93
55) Dibenzofuran	9.938	168	933154	5673.82 ng/ml	97
56) 2,3,5,6-Tetrachlorophenol	10.018	232	227276	7182.34 ng/ml	91
57) 2,3,4,6-Tetrachlorophenol	10.066	232	226177	7900.84 ng/ml	90
58) Diethyl phthalate	10.163	149	666758	5245.78 ng/ml	93
59) 2,3,5-Trimethylnaphtha...	10.147	170	595050	5453.83 ng/ml	98
60) Fluorene	10.286	166	722035	5391.56 ng/ml	100
61) 4-Chlorophenyl phenyl ...	10.275	204	378804	6023.15 ng/ml	92
62) 4-Nitroaniline	10.318	138	203360	7002.47 ng/ml	94
63) 4,6-Dinitro-2-methylph...	10.345	198	165731	7900.50 ng/ml	79
65) N-Nitrosodiphenylamine	10.398	169	645120	5325.58 ng/ml	100
66) Azobenzene (1,2-DPH)	10.435	77	801688	5283.85 ng/ml	86
68) 4-Bromophenyl phenyl e...	10.772	248	278562	6946.70 ng/ml	90
69) Hexachlorobenzene	10.853	284	281208	6608.67 ng/ml	93
70) Pentachlorophenol (PCP)	11.045	266	193595	7963.68 ng/ml	97
71) Phenanthrene	11.259	178	1153195	5605.85 ng/ml	96
72) Anthracene	11.313	178	1111218	5597.06 ng/ml	95
73) Carbazole	11.462	167	892838	Below Cal	100
74) Di-n-butyl phthalate	11.799	149	1386560	5811.14 ng/ml	95
75) Fluoranthene	12.543	202	1406107	6160.86 ng/ml	98
76) Benzidine	12.703	184	1165482	15132.51 ng/ml	98
77) Pyrene	12.842	202	1376701	5958.81 ng/ml	96
80) Butyl benzyl phthalate	13.864	149	830873	7307.82 ng/ml	92
81) Bis(2-ethylhexyl) adipate	14.030	129	686647	8122.73 ng/ml	96
82) 3,3-Dichlorobenzidine	15.025	252	162347	9581.85 ng/ml	98
83) Benz(a)anthracene	15.062	228	1276068	7309.47 ng/ml	98
84) Chrysene	15.158	228	1196829	7359.94 ng/ml	97
85) Bis(2-ethylhexyl) phth...	15.201	149	911551	7796.76 ng/ml	94
87) Di-n-octyl phthalate	16.875	149	1949268	5698.09 ng/ml	98
88) Benzo(b)fluoranthene	17.672	252	1745814	7653.17 ng/ml	96
89) Benzo(k)fluoranthene	17.747	252	1092068	6332.06 ng/ml	97
90) Benzo(b+k)fluoranthene	17.747	252	2997124	14716.03 ng/ml	97
91) Benzo(e)pyrene	18.335	252	1487060	7758.85 ng/ml	98
92) Benzo(a)pyrene	18.464	252	1307681	7196.72 ng/ml	97
93) Perylene	18.662	252	1226461	7094.08 ng/ml	99
95) Indeno(1,2,3-cd)pyrene	20.999	276	1508870	7656.59 ng/ml	98
96) Dibenz(a,h)anthracene	21.058	278	1170463	7058.07 ng/ml	94
97) Benzo(g,h,i)perylene	21.534	276	1353653	7332.36 ng/ml	94

See NI

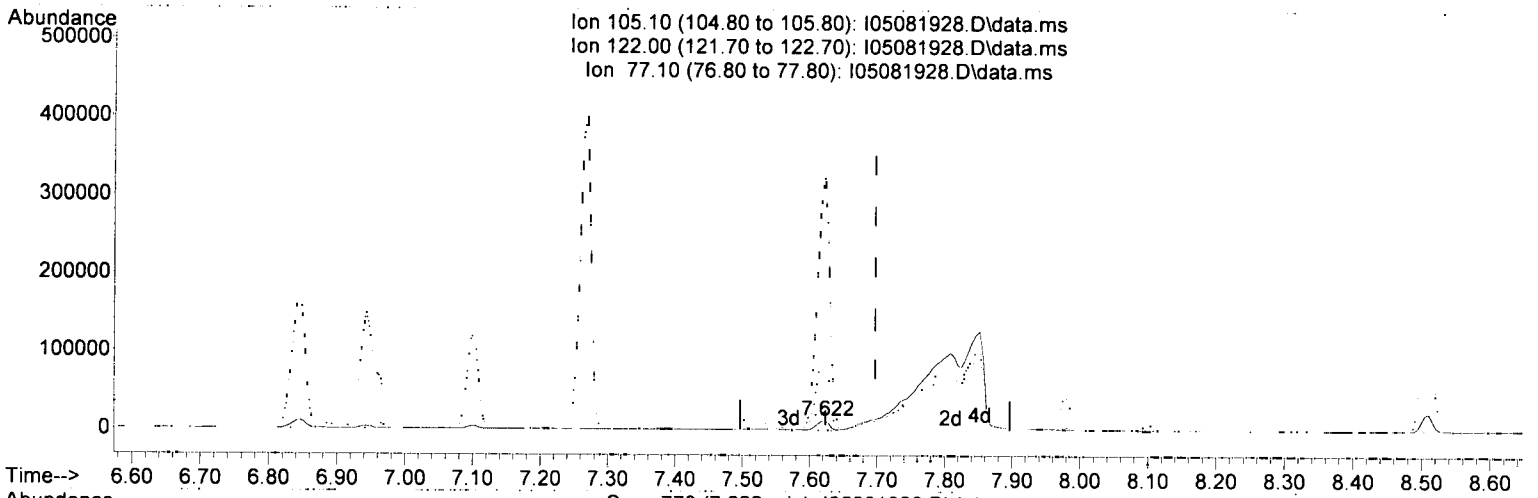
See NI

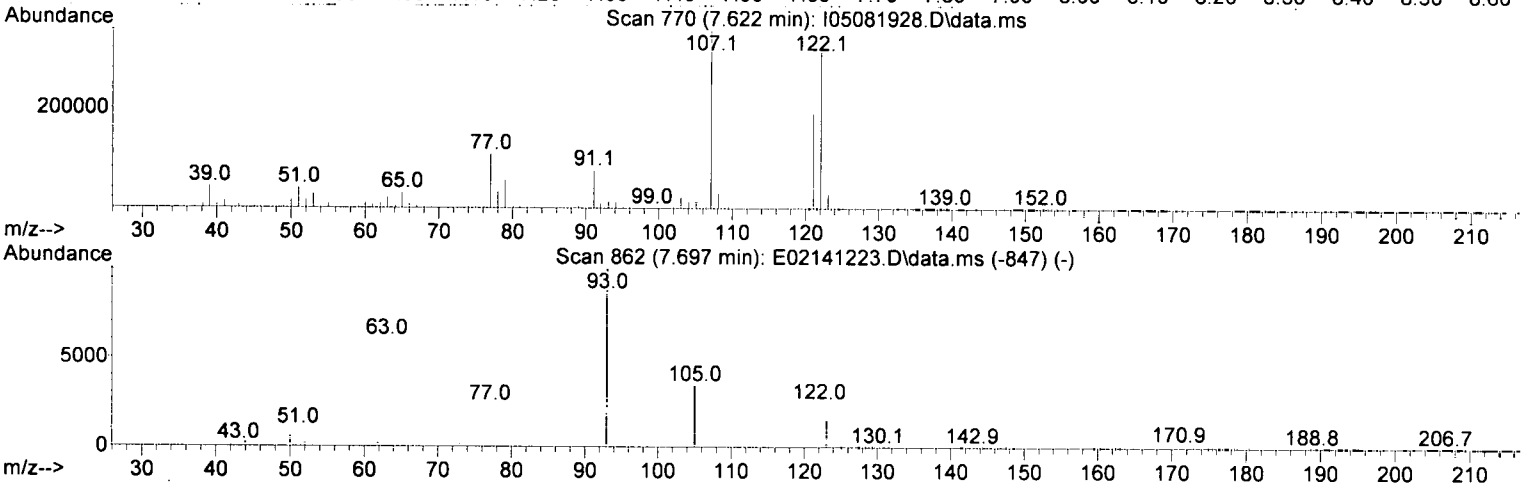
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081928.D
Acq On : 9 May 2019 1:37 am
Operator : JK /AMS /DTH
Sample : 9E08056-CALA
Misc : 1x, A19D062 BNA@8000
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:23 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9





TIC: I05081928.D\data.ms

(26) Benzoic acid (T)

7.622min (-0.075) 1267.44 ng/ml

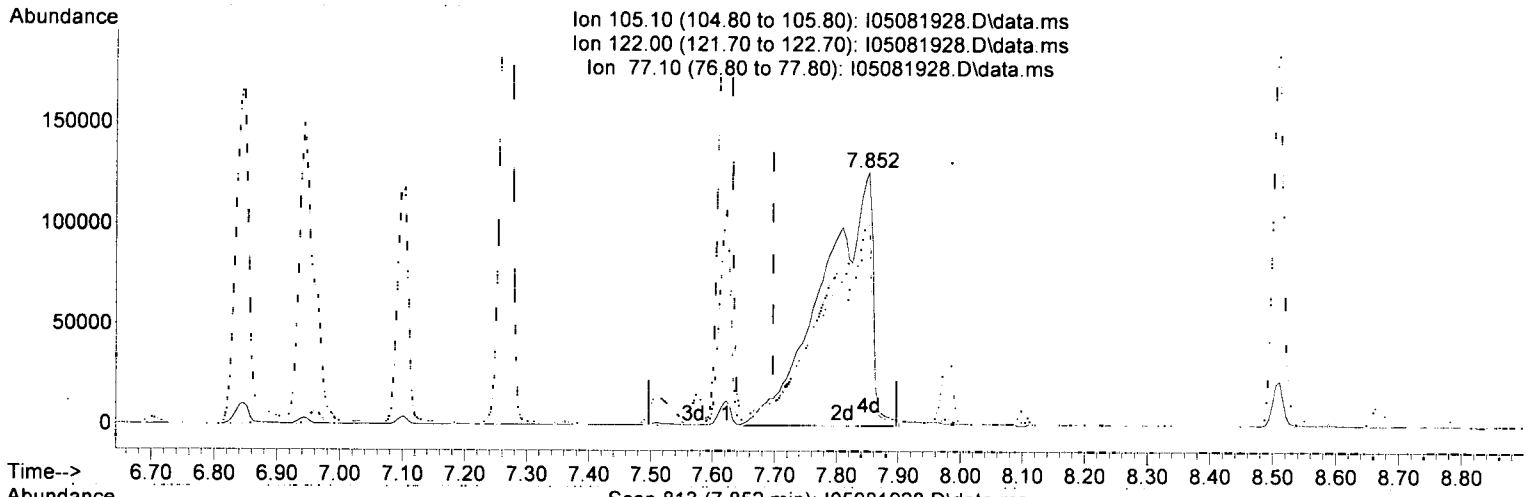
response 15549

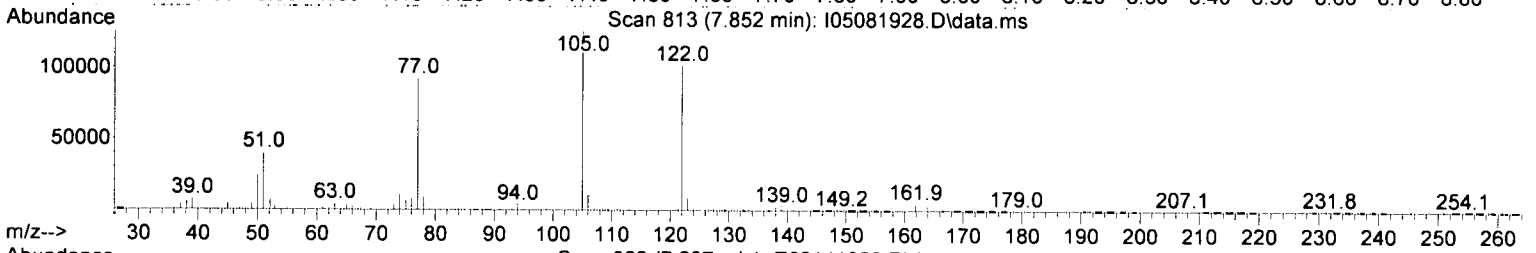
Ion	Exp%	Act%
105.10	100.00	100.00
122.00	80.70	2689.53#
77.10	76.00	883.46#
0.00	0.00	0.00

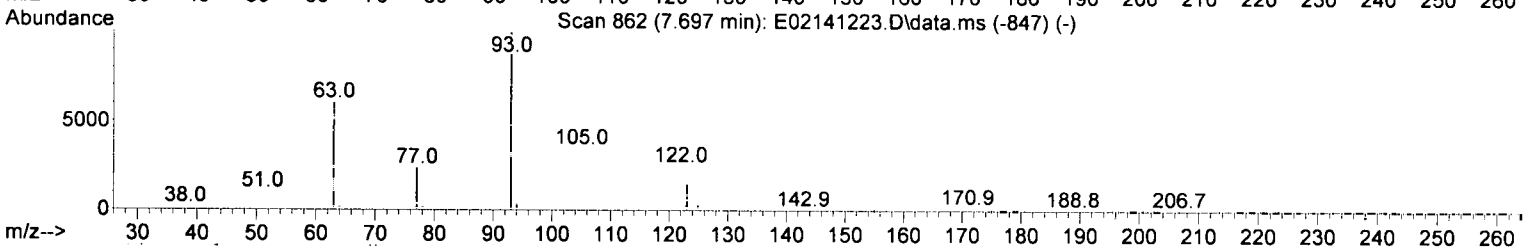
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081928.D
Acq On : 9 May 2019 1:37 am
Operator : JK /AMS /DTH
Sample : 9E08056-CALA
Misc : 1x, A19D062 BNA@8000
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:23 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9







TIC: I05081928.D\data.ms

(26) Benzoic acid (T)

7.852min (+ 0.155) 15436.52 ng/ml (m)

response 699436

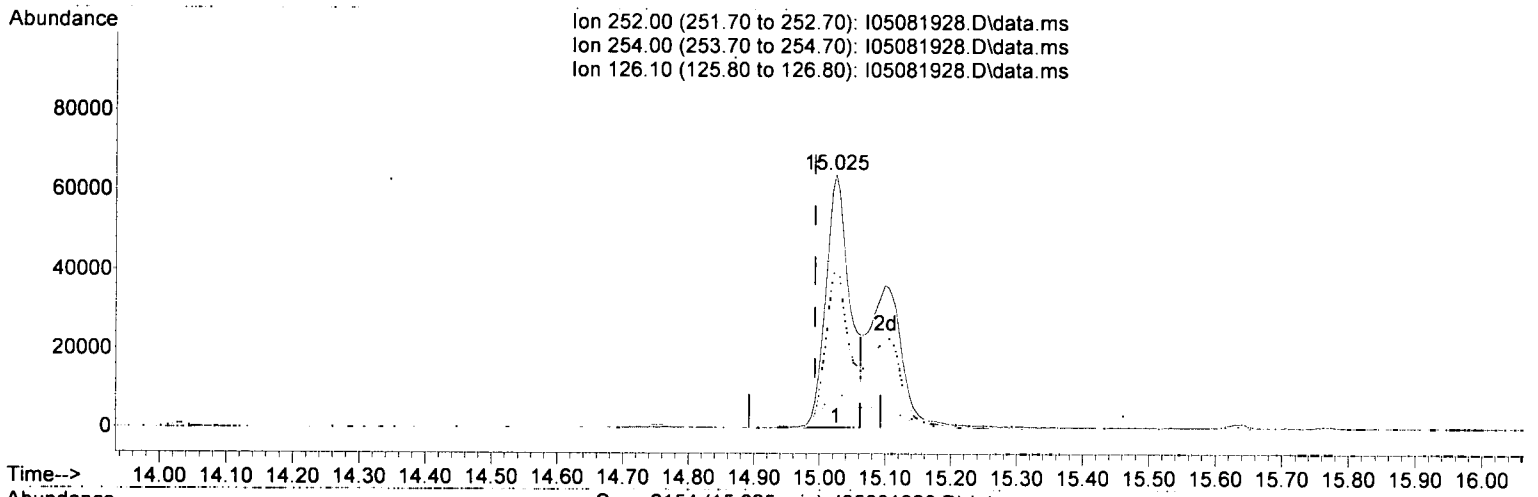
Ion	Exp%	Act%
105.10	100.00	100.00
122.00	80.70	80.97
77.10	76.00	73.43
0.00	0.00	0.00

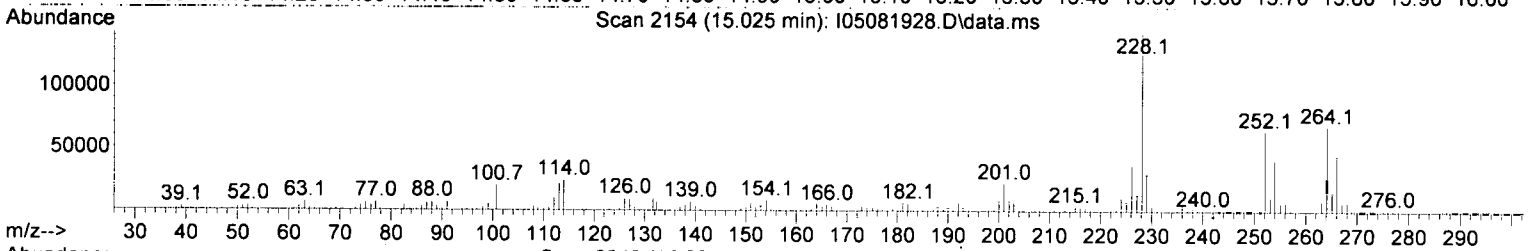
5/9/19

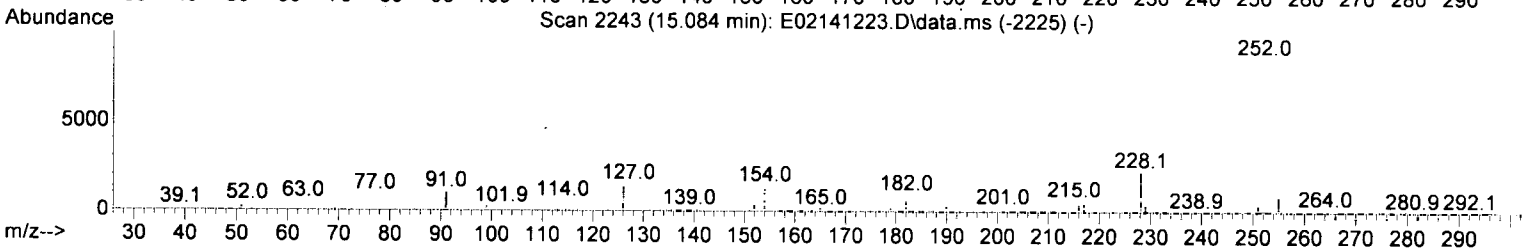
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081928.D
Acq On : 9 May 2019 1:37 am
Operator : JK /AMS /DTH
Sample : 9E08056-CALA
Misc : 1x, A19D062 BNA@8000
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:23 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9







TIC: I05081928.D\data.ms

(82) 3,3-Dichlorobenzidine (T)

15.025min (+ 0.032) 9581.85 ng/ml

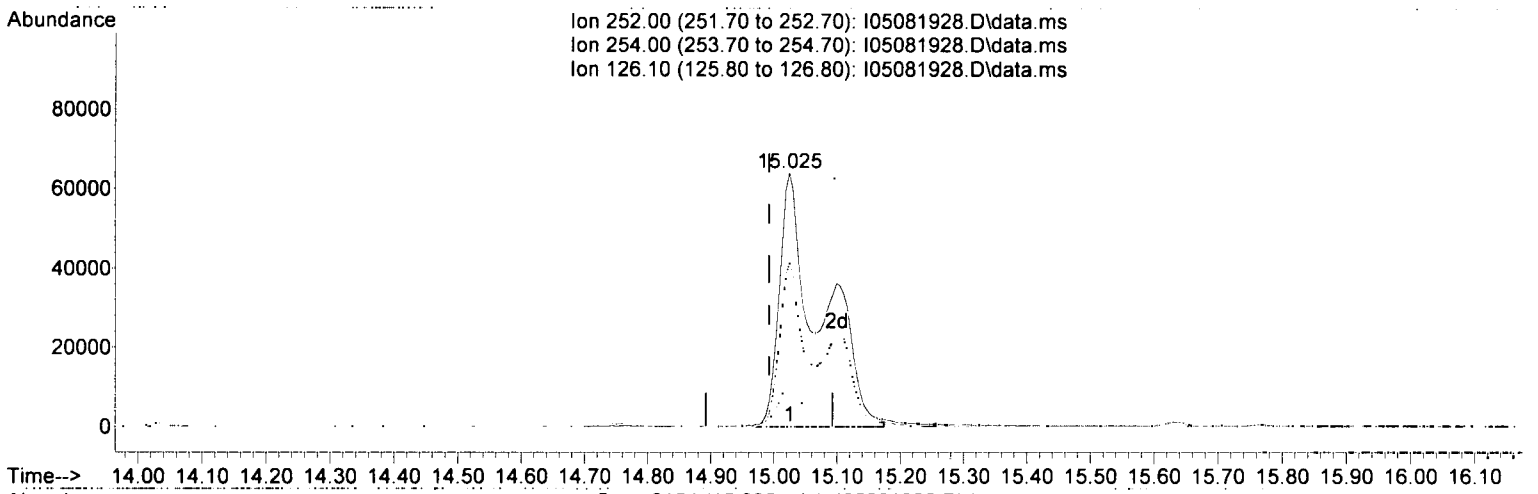
response 162347

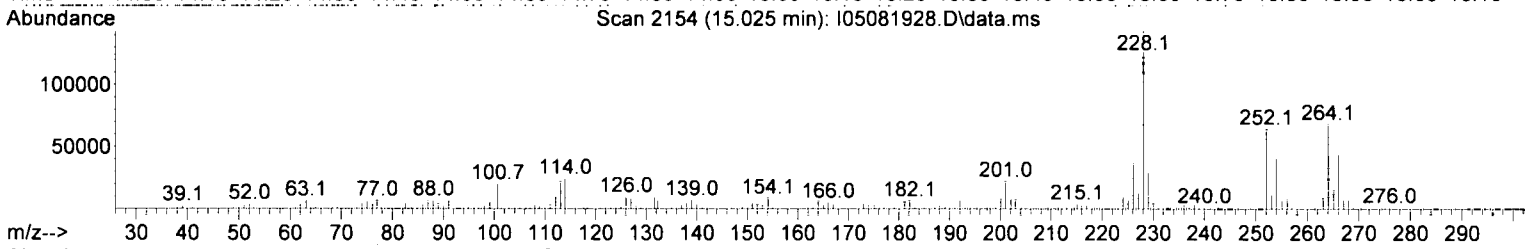
Ion	Exp%	Act%
252.00	100.00	100.00
254.00	66.10	64.49
126.10	16.90	15.19
0.00	0.00	0.00

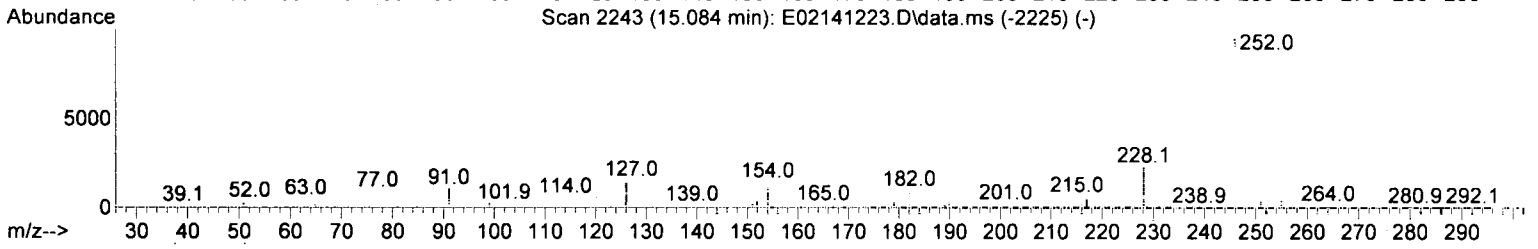
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081928.D
Acq On : 9 May 2019 1:37 am
Operator : JK /AMS /DTH
Sample : 9E08056-CALA
Misc : 1x, A19D062 BNA@8000
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:23 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9







TIC: I05081928.D\data.ms

(82) 3,3-Dichlorobenzidine (T)

15.025min (+ 0.032) 16113.65 ng/ml m

5/9/19

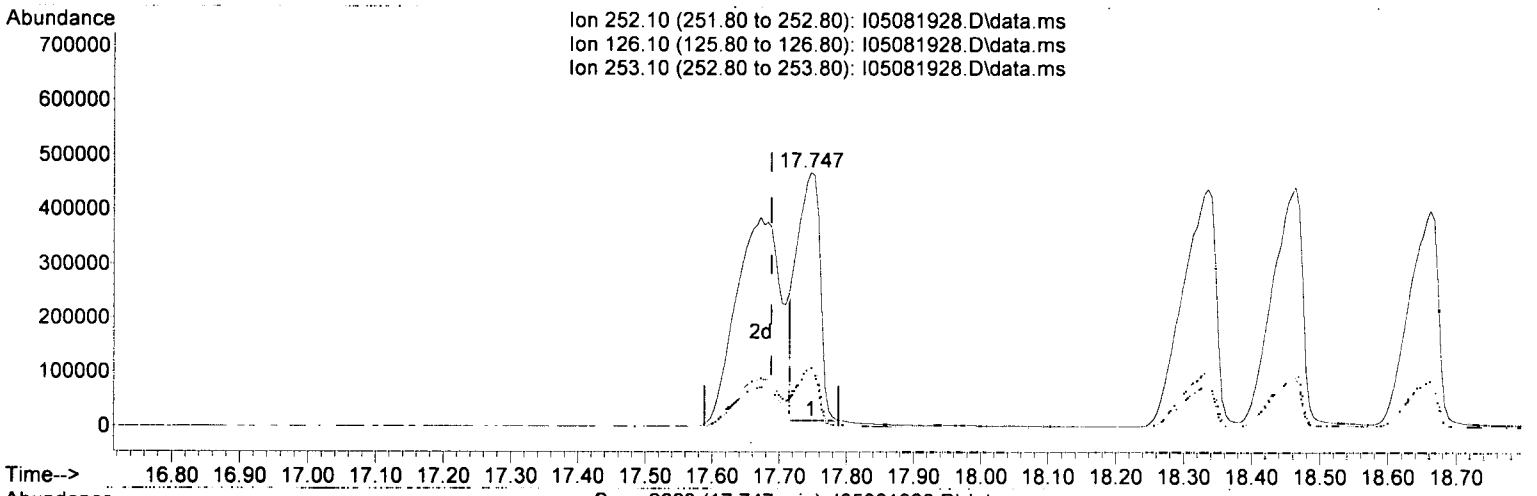
response 287387

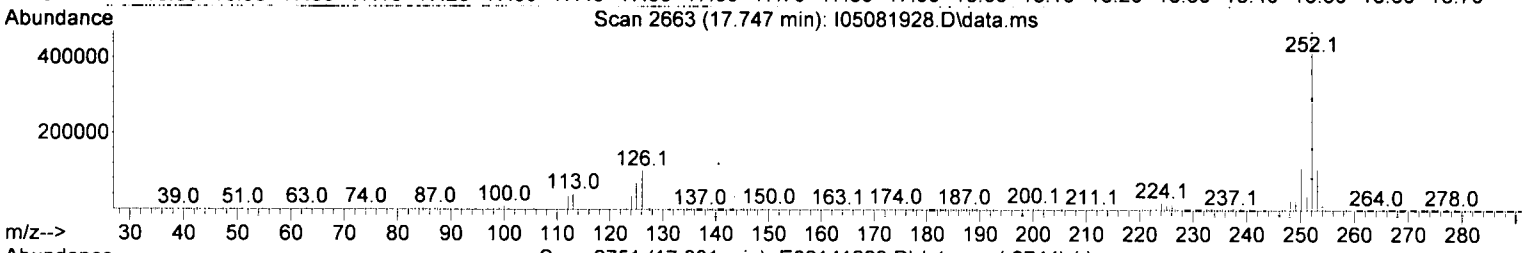
Ion	Exp%	Act%
252.00	100.00	100.00
254.00	66.10	64.49
126.10	16.90	15.19
0.00	0.00	0.00

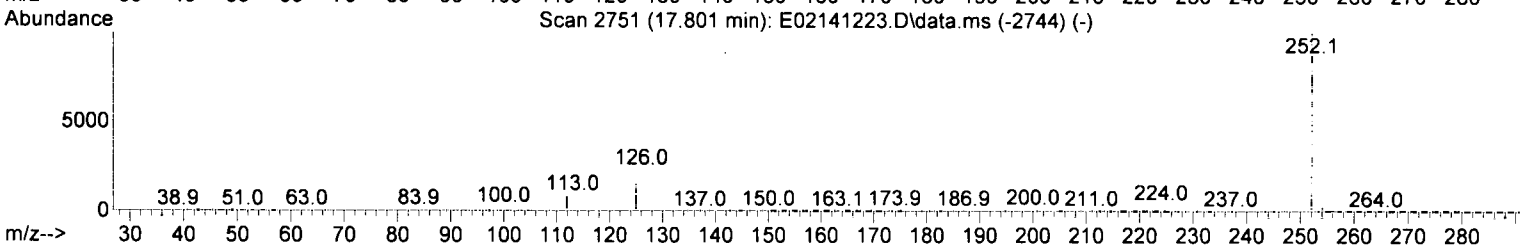
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081928.D
Acq On : 9 May 2019 1:37 am
Operator : JK /AMS /DTH
Sample : 9E08056-CALA
Misc : 1x, A19D062 BNA@8000
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:23 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9







TIC: I05081928.D\data.ms

(89) Benzo(k)fluoranthene (T)

17.747min (+ 0.059) 6332.06 ng/ml

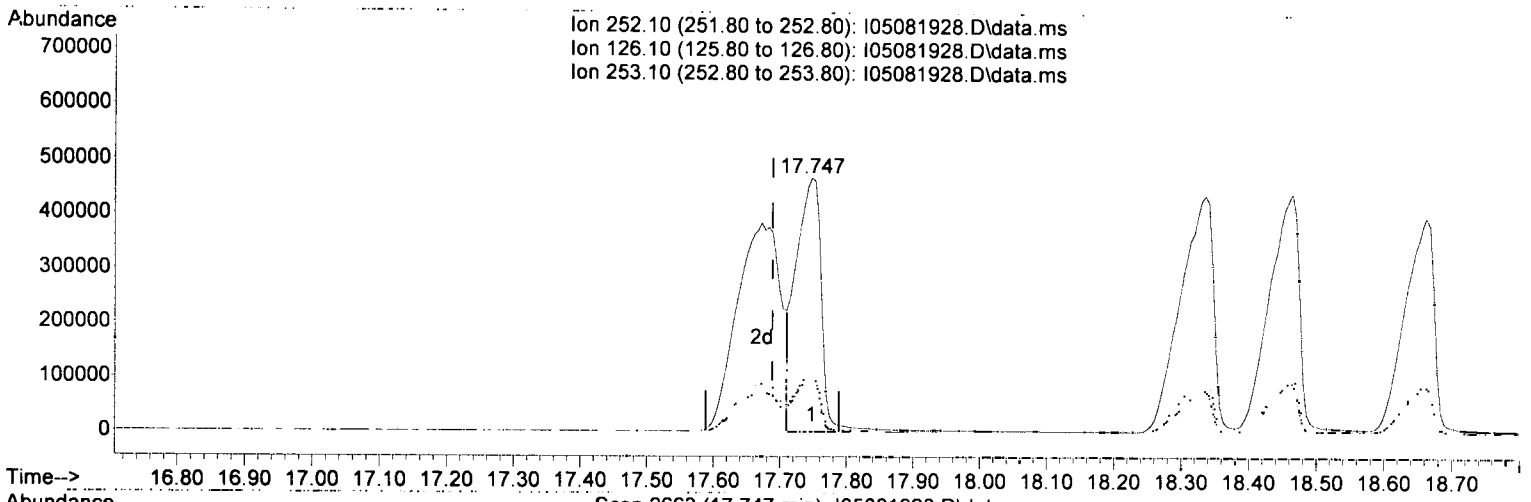
response 1092068

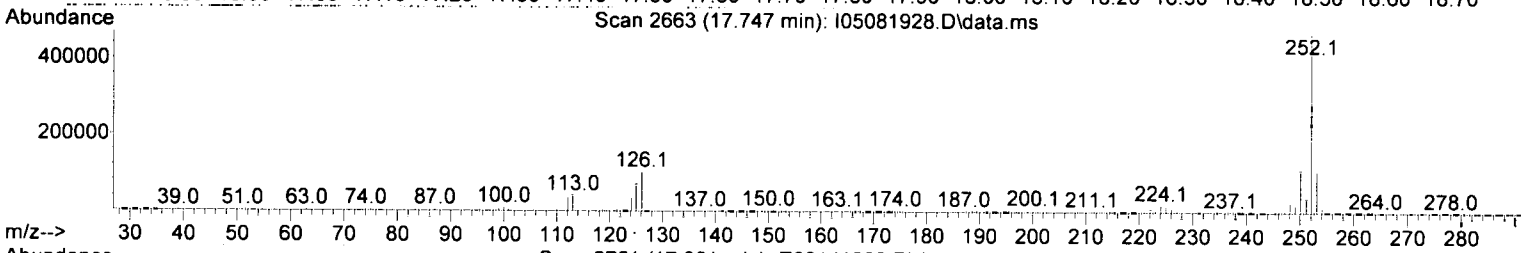
Ion	Exp%	Act%
252.10	100.00	100.00
126.10	23.30	21.87
253.10	21.70	23.14
0.00	0.00	0.00

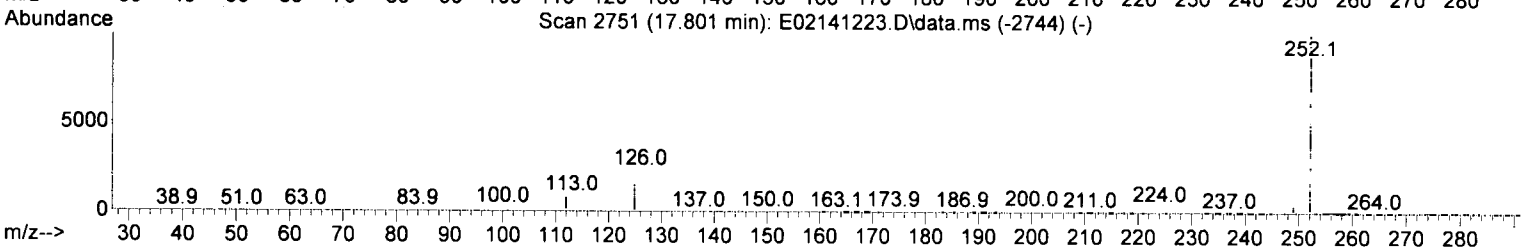
Quantitation Report (Qedit)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081928.D
Acq On : 9 May 2019 1:37 am
Operator : JK /AMS /DTH
Sample : 9E08056-CALA
Misc : 1x, A19D062 BNA@8000
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:23 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9







TIC: I05081928.D\data.ms

(89) Benzo(k)fluoranthene (T)

17.747min (+ 0.059) 7354.87 ng/ml m GJ 5/9/19

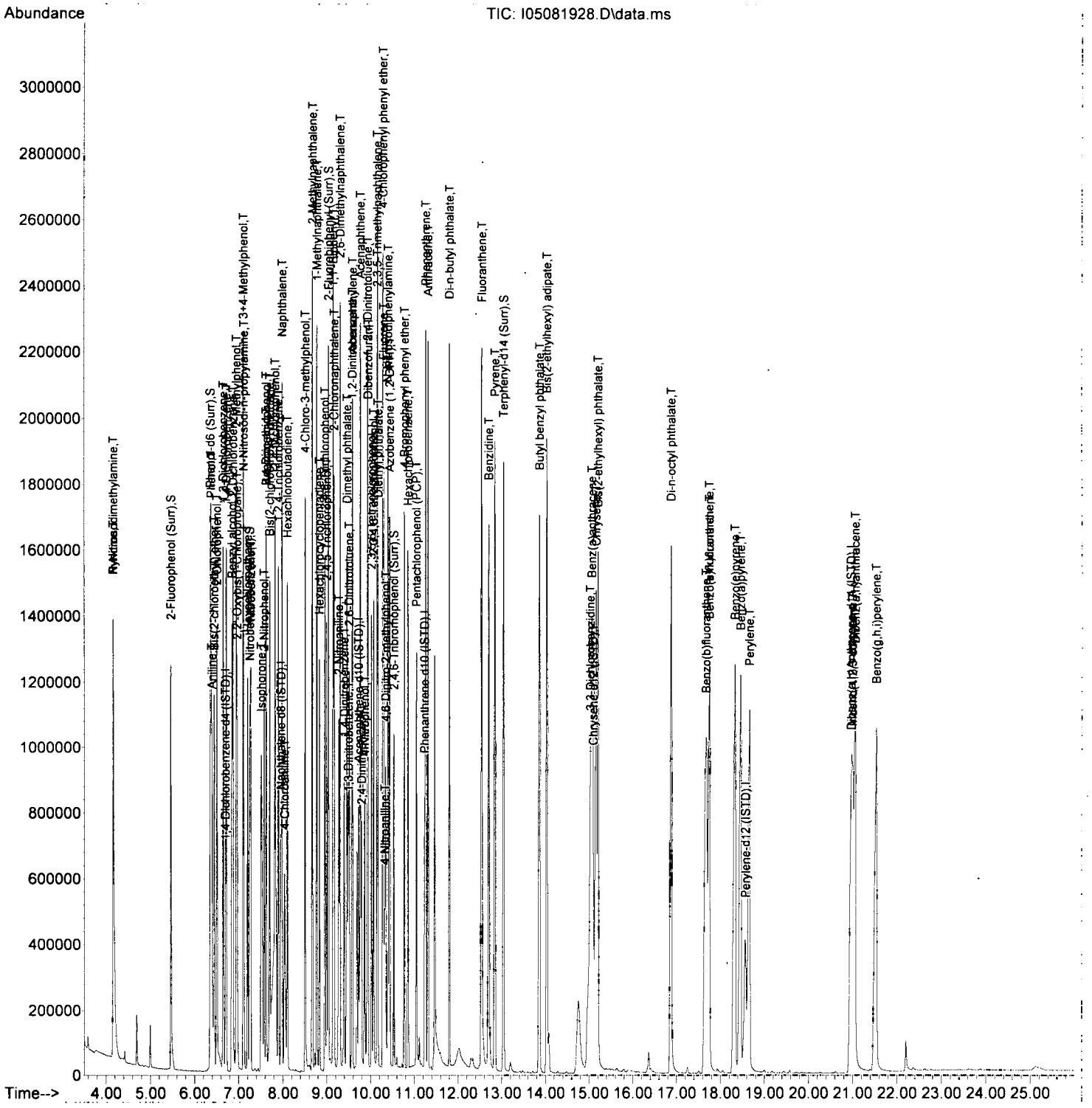
response 1226693

Ion	Exp%	Act%
252.10	100.00	100.00
126.10	23.30	21.87
253.10	21.70	23.14
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081928.D
Acq On : 9 May 2019 1:37 am
Operator : JK /AMS /DTH
Sample : 9E08056-CALA
Misc : 1x, A19D062 BNA@8000
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:23 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9



Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081930.D
Acq On : 9 May 2019 2:48 am
Operator : JK /AMS /DTH
Sample : 9E08056-ICV1
Misc : 1x, A19C239 BNA@1000
ALS Vial : 13 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:38 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

JK 5/9/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4...	6.697	152	116606	2000.00	ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.948	136	444228	2000.00	ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.719	162	227633	2000.00	ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.227	188	432433	2000.00	ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.057	240	431821	2000.00	ng/ml	0.00
86) Perylene-d12 (ISTD)	18.544	264	409331	2000.00	ng/ml	0.00
94) Dibenz(a,h)Anthrcene-d...	20.924	292	397711	2000.00	ng/ml	0.00
System Monitoring Compounds						
4) 2-Fluorophenol (Surr)	5.466	112	77339	991.92	ng/ml	0.00
5) Phenol-d6 (Surr)	6.338	99	99468	967.06	ng/ml	0.00
19) Nitrobenzene-d5 (Surr)	7.231	82	81052	940.74	ng/ml	0.00
40) 2-Fluorobiphenyl (Surr)	9.023	172	184294	1109.38	ng/ml	0.00
67) 2,4,6-Tribromophenol (...	10.516	330	21607	1252.19	ng/ml	0.00
79) Terphenyl-d14 (Surr)	13.024	244	220750	1073.74	ng/ml	0.00
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	4.167	74	57086	927.05	ng/ml	98
3) Pyridine	4.183	79	83967	872.75	ng/ml	97
6) Phenol	6.354	94	111298	993.18	ng/ml	98
7) Aniline	6.381	93	91216	890.85	ng/ml	94
8) Bis(2-chloroethyl) ether	6.434	93	92166	1002.81	ng/ml	98
9) 2-Chlorophenol	6.499	128	81865	1025.54	ng/ml	95
10) 1,3-Dichlorobenzene	6.643	146	90060	1015.81	ng/ml	96
11) 1,4-Dichlorobenzene	6.713	146	85768	1014.76	ng/ml	97
12) Benzyl alcohol	6.825	108	42923	893.60	ng/ml	95
13) 1,2-Dichlorobenzene	6.862	146	83881	1015.35	ng/ml	97
14) 2-Methylphenol	6.932	107	62992	996.88	ng/ml	97
15) 2,2'-Oxybis(1-Chloropr...	6.953	45	106577	830.11	ng/ml	94
16) N-Nitrosodi-n-propylamine	7.082	70	62598	961.44	ng/ml	94
17) 3+4-Methylphenol	7.082	107	79117	993.02	ng/ml	98
18) Hexachloroethane	7.194	201	27479	1057.26	ng/ml	93
20) Nitrobenzene	7.247	77	80915	922.61	ng/ml	94
22) Isophorone	7.483	82	171349	1044.65	ng/ml	95
23) 2-Nitrophenol	7.568	139	46713	1109.25	ng/ml	93
24) 2,4-Dimethylphenol	7.601	122	64853	987.16	ng/ml	95
25) Bis(2-chloroethoxy) me...	7.686	93	99442	1017.85	ng/ml	98
26) Benzoic acid	7.702	105	50958	2053.05	ng/ml	96
27) 2,4-Dichlorophenol	7.809	162	60602	1102.81	ng/ml	97
28) 1,2,4-Trichlorobenzene	7.889	180	71884	1036.67	ng/ml	99
29) Naphthalene	7.970	128	223784	1015.89	ng/ml	98
30) 4-Chloroaniline	8.023	127	54929	923.06	ng/ml	95
31) Hexachlorobutadiene	8.098	225	37710	1081.09	ng/ml	99
32) 4-Chloro-3-methylphenol	8.499	107	67175	1063.65	ng/ml	97
33) 2-Methylnaphthalene	8.660	142	177506	1093.27	ng/ml	98
34) 1-Methylnaphthalene	8.761	142	163988	1064.48	ng/ml	98
36) Hexachlorocyclopentadiene	8.831	237	35605	1123.95	ng/ml	97
37) 2,4,6-Trichlorophenol	8.943	196	44187	1077.06	ng/ml	98
38) 2,4,5-Trichlorophenol	8.986	198	43264	1089.29	ng/ml	98
39) 1,1'-Biphenyl	9.125	154	203941	1060.08	ng/ml	99
41) 2-Chloronaphthalene	9.152	162	147432	1053.45	ng/ml	96
42) 2-Nitroaniline	9.248	138	50581	1103.22	ng/ml	90
43) 2,6-Dimethylnaphthalene	9.285	156	149204	1080.78	ng/ml	95

Quantitation Report (Not Reviewed)

Data Path : T:\data\2019-05\9E08056\
Data File : I05081930.D
Acq On : 9 May 2019 2:48 am
Operator : JK /AMS /DTH
Sample : 9E08056-ICV1
Misc : 1x, A19C239 BNA@1000
ALS Vial : 13 Sample Multiplier: 1
DataAcq Meth:SV9_AQUISITION.M

Quant Time: May 09 11:03:38 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 11:01:22 2019
Response via : Initial Calibration
InstName : SV-GCMS9

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 1,4-Dinitrobenzene	9.376	168	24100	1150.84	ng/ml	79
45) Dimethyl phthalate	9.430	163	169073	1064.38	ng/ml	100
46) 1,3-Dinitrobenzene	9.456	168	28035	1146.14	ng/ml	91
47) 2,6-Dinitrotoluene	9.489	165	40105	1158.80	ng/ml	80
48) 1,2-Dinitrobenzene	9.547	168	18904	1081.60	ng/ml	77
49) Acenaphthylene	9.574	152	245169	1108.43	ng/ml	99
50) 3-Nitroaniline	9.665	138	32303	1059.76	ng/ml	95
51) Acenaphthene	9.751	153	147329	1054.13	ng/ml	99
52) 2,4-Dinitrophenol	9.767	184	11258	1250.76	ng/ml	90
53) 4-Nitrophenol	9.836	139	26562	1064.89	ng/ml	86
54) 2,4-Dinitrotoluene	9.895	165	50566	1097.56	ng/ml	87
55) Dibenzofuran	9.922	168	207368	1077.84	ng/ml	94
56) 2,3,5,6-Tetrachlorophenol	10.007	232	35153	1136.16	ng/ml	87
57) 2,3,4,6-Tetrachlorophenol	10.050	232	37583	1140.48	ng/ml	86
58) Diethyl phthalate	10.136	149	155688	1047.10	ng/ml	96
59) 2,3,5-Trimethylnaphtha...	10.130	170	135406	1060.91	ng/ml	99
60) Fluorene	10.269	166	163155	1041.47	ng/ml	99
61) 4-Chlorophenyl phenyl ...	10.264	204	79372	1078.87	ng/ml	84
62) 4-Nitroaniline	10.286	138	39138	1152.06	ng/ml	90
63) 4,6-Dinitro-2-methylph...	10.312	198	23959	1498.70	ng/ml	81
65) N-Nitrosodiphenylamine	10.382	169	139086	1052.37	ng/ml	98
66) Azobenzene (1,2-DPH)	10.425	77	159312	962.39	ng/ml	85
68) 4-Bromophenyl phenyl e...	10.756	248	50774	1160.53	ng/ml	89
69) Hexachlorobenzene	10.842	284	53277	1147.59	ng/ml	91
70) Pentachlorophenol (PCP)	11.034	266	24081	1220.08	ng/ml	95
71) Phenanthrene	11.248	178	232643	1036.54	ng/ml	99
72) Anthracene	11.296	178	237192	1095.01	ng/ml	98
73) Carbazole	11.457	167	219325	1054.27	ng/ml	98
74) Di-n-butyl phthalate	11.794	149	282307	1084.43	ng/ml	99
75) Fluoranthene	12.527	202	288406	1158.21	ng/ml	96
76) Benzidine	12.676	184	99508	1770.57	ng/ml	98
77) Pyrene	12.821	202	286022	1134.69	ng/ml	100
80) Butyl benzyl phthalate	13.842	149	126879	976.97	ng/ml	90
81) Bis(2-ethylhexyl) adipate	14.014	129	113335	947.01	ng/ml	98
82) 3,3-Dichlorobenzidine	14.992	252	62301	2467.19	ng/ml	97
83) Benz(a)anthracene	15.030	228	262028	1060.19	ng/ml	99
84) Chrysene	15.115	228	231406	1005.17	ng/ml	99
85) Bis(2-ethylhexyl) phth...	15.180	149	161392	975.08	ng/ml	95
87) Di-n-octyl phthalate	16.843	149	287021	1041.82	ng/ml	98
88) Benzo(b)fluoranthene	17.619	252	267547	1081.70	ng/ml	96
89) Benzo(k)fluoranthene	17.688	252	258374	1063.39	ng/ml	96
90) Benzo(b+k)fluoranthene	17.688	252	537352	2135.29	ng/ml	96
91) Benzo(e)pyrene	18.276	252	259061	1115.09	ng/ml	97
92) Benzo(a)pyrene	18.394	252	240398	1099.22	ng/ml	96
93) Perylene	18.597	252	240296	1146.64	ng/ml	99
95) Indeno(1,2,3-cd)pyrene	20.924	276	215601	957.51	ng/ml	96
96) Dibenz(a,h)anthracene	20.988	278	198191	1045.97	ng/ml	93
97) Benzo(g,h,i)perylene	21.464	276	225482	1068.95	ng/ml	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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Quant Time: May 09 11:03:38 2019
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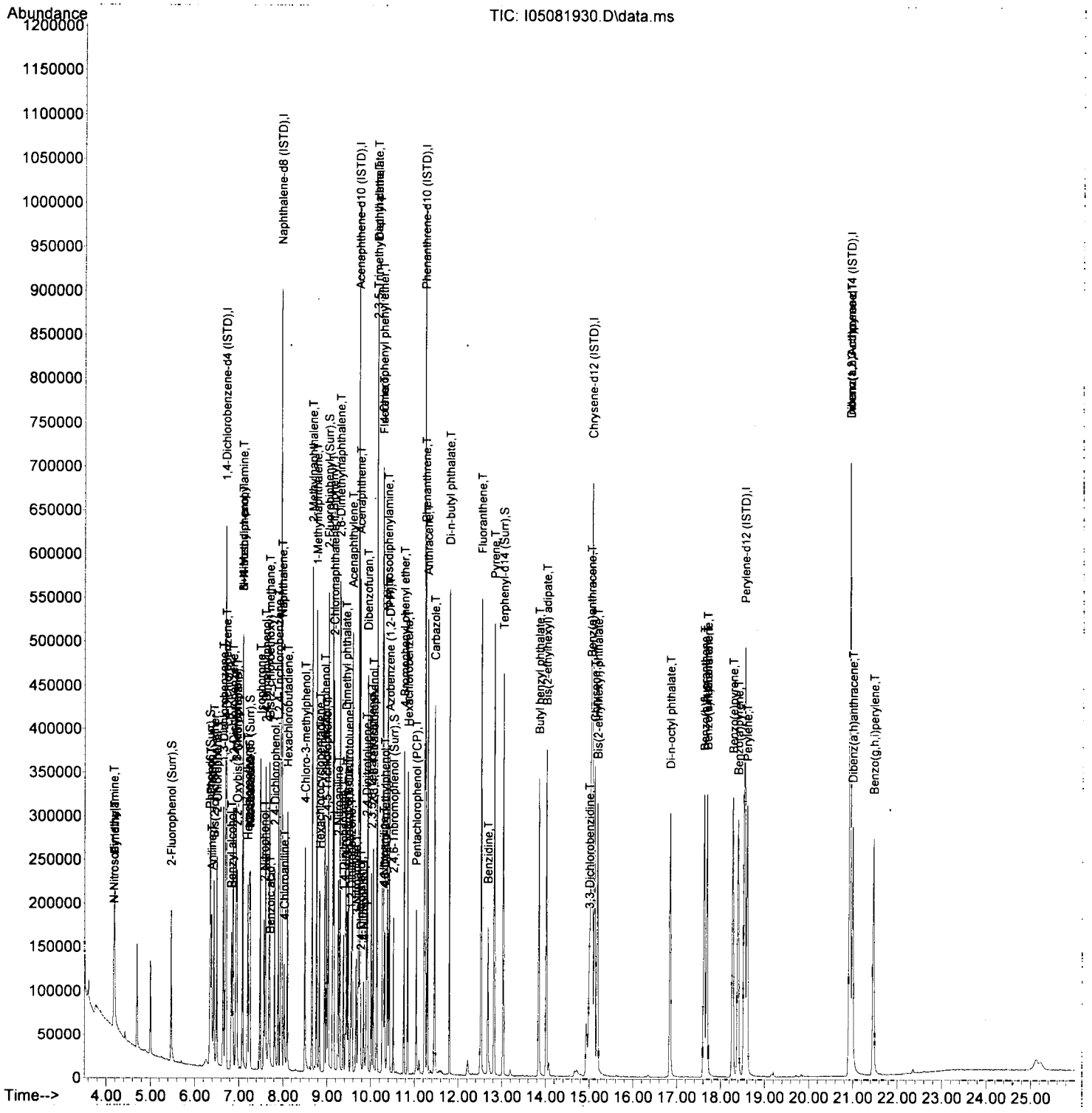
InstName : SV-GCMS9



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Final Reqmant

JK 5/9/19

Quant Time: May 09 17:11:47 2019
Quant Method : T:\methods\SV9_050819.M
Quant Title : EPA 8270D: Semivolatile Organics
QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
InstName : SV-GCMS9

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4...	6.697	152	116606	2000.00	ng/ml	0.00
21) Naphthalene-d8 (ISTD)	7.948	136	444228	2000.00	ng/ml	0.00
35) Acenaphthene-d10 (ISTD)	9.719	162	227633	2000.00	ng/ml	0.00
64) Phenanthrene-d10 (ISTD)	11.227	188	432433	2000.00	ng/ml	0.00
78) Chrysene-d12 (ISTD)	15.057	240	431821	2000.00	ng/ml	0.00
86) Perylene-d12 (ISTD)	18.544	264	409331	2000.00	ng/ml	0.00
94) Dibenz(a,h)Anthrcene-d...	20.924	292	397711	2000.00	ng/ml	0.00
System Monitoring Compounds						
4) 2-Fluorophenol (Surr)	5.466	112	77339	1015.00	ng/ml	0.00
5) Phenol-d6 (Surr)	6.338	99	99468	1003.19	ng/ml	0.00
19) Nitrobenzene-d5 (Surr)	7.231	82	81052	982.98	ng/ml	0.00
40) 2-Fluorobiphenyl (Surr)	9.023	172	184294	1079.79	ng/ml	0.00
67) 2,4,6-Tribromophenol (...	10.516	330	21607	1085.76	ng/ml	0.00
79) Terphenyl-d14 (Surr)	13.024	244	220750	1043.19	ng/ml	0.00
Target Compounds						Qvalue
2) N-Nitrosodimethylamine	4.167	74	57086	979.66	ng/ml	98
3) Pyridine	4.183	79	83967	944.02	ng/ml	97
6) Phenol	6.354	94	111298	1055.46	ng/ml	98
7) Aniline	6.381	93	91216	1016.54	ng/ml	94
8) Bis(2-chloroethyl) ether	6.434	93	92166	1038.53	ng/ml	98
9) 2-Chlorophenol	6.499	128	81865	1028.05	ng/ml	95
10) 1,3-Dichlorobenzene	6.643	146	90060	988.80	ng/ml	96
11) 1,4-Dichlorobenzene	6.713	146	85768	1008.15	ng/ml	97
12) Benzyl alcohol	6.825	108	42923	966.03	ng/ml	95
13) 1,2-Dichlorobenzene	6.862	146	83881	1021.90	ng/ml	97
14) 2-Methylphenol	6.932	107	62992	1042.89	ng/ml	97
15) 2,2'-Oxybis(1-Chloropr...	6.953	45	106577	986.01	ng/ml	94
16) N-Nitrosodi-n-propylamine	7.082	70	62598	1034.02	ng/ml	94
17) 3+4-Methylphenol	7.082	107	79117	1053.45	ng/ml	98
18) Hexachloroethane	7.194	201	27479	1002.57	ng/ml	93
20) Nitrobenzene	7.247	77	80915	997.64	ng/ml	94
22) Isophorone	7.483	82	171349	1041.61	ng/ml	95
23) 2-Nitrophenol	7.568	139	46713	1112.08	ng/ml	93
24) 2,4-Dimethylphenol	7.601	122	64853	1029.02	ng/ml	95
25) Bis(2-chloroethoxy) me...	7.686	93	99442	1029.92	ng/ml	98
26) Benzoic acid	7.702	105	50958	1883.74	ng/ml	96
27) 2,4-Dichlorophenol	7.809	162	60602	1034.81	ng/ml	97
28) 1,2,4-Trichlorobenzene	7.889	180	71884	1012.20	ng/ml	99
29) Naphthalene	7.970	128	223784	1010.00	ng/ml	98
30) 4-Chloroaniline	8.023	127	54929	967.40	ng/ml	95
31) Hexachlorobutadiene	8.098	225	37710	1022.65	ng/ml	99
32) 4-Chloro-3-methylphenol	8.499	107	67175	1007.28	ng/ml	97
33) 2-Methylnaphthalene	8.660	142	177506	1061.90	ng/ml	98
34) 1-Methylnaphthalene	8.761	142	163988	1041.62	ng/ml	98
36) Hexachlorocyclopentadiene	8.831	237	35605	1071.82	ng/ml	97
37) 2,4,6-Trichlorophenol	8.943	196	44187	1042.93	ng/ml	98
38) 2,4,5-Trichlorophenol	8.986	198	43264	1087.06	ng/ml	98
39) 1,1'-Biphenyl	9.125	154	203941	1072.17	ng/ml	99
41) 2-Chloronaphthalene	9.152	162	147432	1075.71	ng/ml	96
42) 2-Nitroaniline	9.248	138	50581	1099.89	ng/ml	90
43) 2,6-Dimethylnaphthalene	9.285	156	149204	1064.53	ng/ml	95

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QLast Update : Thu May 09 12:25:58 2019
Response via : Initial Calibration
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Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 1,4-Dinitrobenzene	9.376	168	24100	1073.01	ng/ml	79
45) Dimethyl phthalate	9.430	163	169073	1061.69	ng/ml	100
46) 1,3-Dinitrobenzene	9.456	168	28035	1096.25	ng/ml	91
47) 2,6-Dinitrotoluene	9.489	165	40105	1126.25	ng/ml	80
48) 1,2-Dinitrobenzene	9.547	168	18904	1070.35	ng/ml	77
49) Acenaphthylene	9.574	152	245169	1088.77	ng/ml	99
50) 3-Nitroaniline	9.665	138	32303	1148.36	ng/ml	95
51) Acenaphthene	9.751	153	147329	1038.58	ng/ml	99
52) 2,4-Dinitrophenol	9.767	184	11258	946.80	ng/ml	90
53) 4-Nitrophenol	9.836	139	26562	1034.68	ng/ml	86
54) 2,4-Dinitrotoluene	9.895	165	50566	1028.34	ng/ml	87
55) Dibenzofuran	9.922	168	207368	1074.20	ng/ml	94
56) 2,3,5,6-Tetrachlorophenol	10.007	232	35153	1036.22	ng/ml	87
57) 2,3,4,6-Tetrachlorophenol	10.050	232	37583	1057.55	ng/ml	86
58) Diethyl phthalate	10.136	149	155688	1008.93	ng/ml	96
59) 2,3,5-Trimethylnaphtha...	10.130	170	135406	979.82	ng/ml	99
60) Fluorene	10.269	166	163155	980.70	ng/ml	99
61) 4-Chlorophenyl phenyl ...	10.264	204	79372	1021.18	ng/ml	84
62) 4-Nitroaniline	10.286	138	39138	1148.14	ng/ml	90
63) 4,6-Dinitro-2-methylph...	10.312	198	23959	1164.44	ng/ml	81
65) N-Nitrosodiphenylamine	10.382	169	139086	1041.34	ng/ml	98
66) Azobenzene (1,2-DPH)	10.425	77	159312	1062.75	ng/ml	85
68) 4-Bromophenyl phenyl e...	10.756	248	50774	1067.93	ng/ml	89
69) Hexachlorobenzene	10.842	284	53277	1008.79	ng/ml	91
70) Pentachlorophenol (PCP)	11.034	266	24081	1037.90	ng/ml	95
71) Phenanthrene	11.248	178	232643	1007.11	ng/ml	99
72) Anthracene	11.296	178	237192	1026.92	ng/ml	98
73) Carbazole	11.457	167	219325	1083.50	ng/ml	98
74) Di-n-butyl phthalate	11.794	149	282307	1076.33	ng/ml	99
75) Fluoranthene	12.527	202	288406	1068.46	ng/ml	96
76) Benzidine	12.676	184	99508	1732.76	ng/ml	98
77) Pyrene	12.821	202	286022	1041.22	ng/ml	100
80) Butyl benzyl phthalate	13.842	149	126879	1062.30	ng/ml	90
81) Bis(2-ethylhexyl) adipate	14.014	129	113335	995.63	ng/ml	98
82) 3,3-Dichlorobenzidine	14.992	252	62301	2074.49	ng/ml	97
83) Benz(a)anthracene	15.030	228	262028	1044.68	ng/ml	99
84) Chrysene	15.115	228	231406	1000.05	ng/ml	99
85) Bis(2-ethylhexyl) phth...	15.180	149	161392	1060.07	ng/ml	95
87) Di-n-octyl phthalate	16.843	149	287021	1012.79	ng/ml	98
88) Benzo(b)fluoranthene	17.619	252	267547	1035.11	ng/ml	96
89) Benzo(k)fluoranthene	17.688	252	258374	1008.99	ng/ml	96
90) Benzo(b+k)fluoranthene	17.688	252	537352	2026.95	ng/ml	96
91) Benzo(e)pyrene	18.276	252	259061	1058.50	ng/ml	97
92) Benzo(a)pyrene	18.394	252	240398	1026.25	ng/ml	96
93) Perylene	18.597	252	240296	1159.57	ng/ml	99
95) Indeno(1,2,3-cd)pyrene	20.924	276	215601	987.22	ng/ml	96
96) Dibenz(a,h)anthracene	20.988	278	198191	1027.94	ng/ml	93
97) Benzo(g,h,i)perylene	21.464	276	225482	1055.89	ng/ml	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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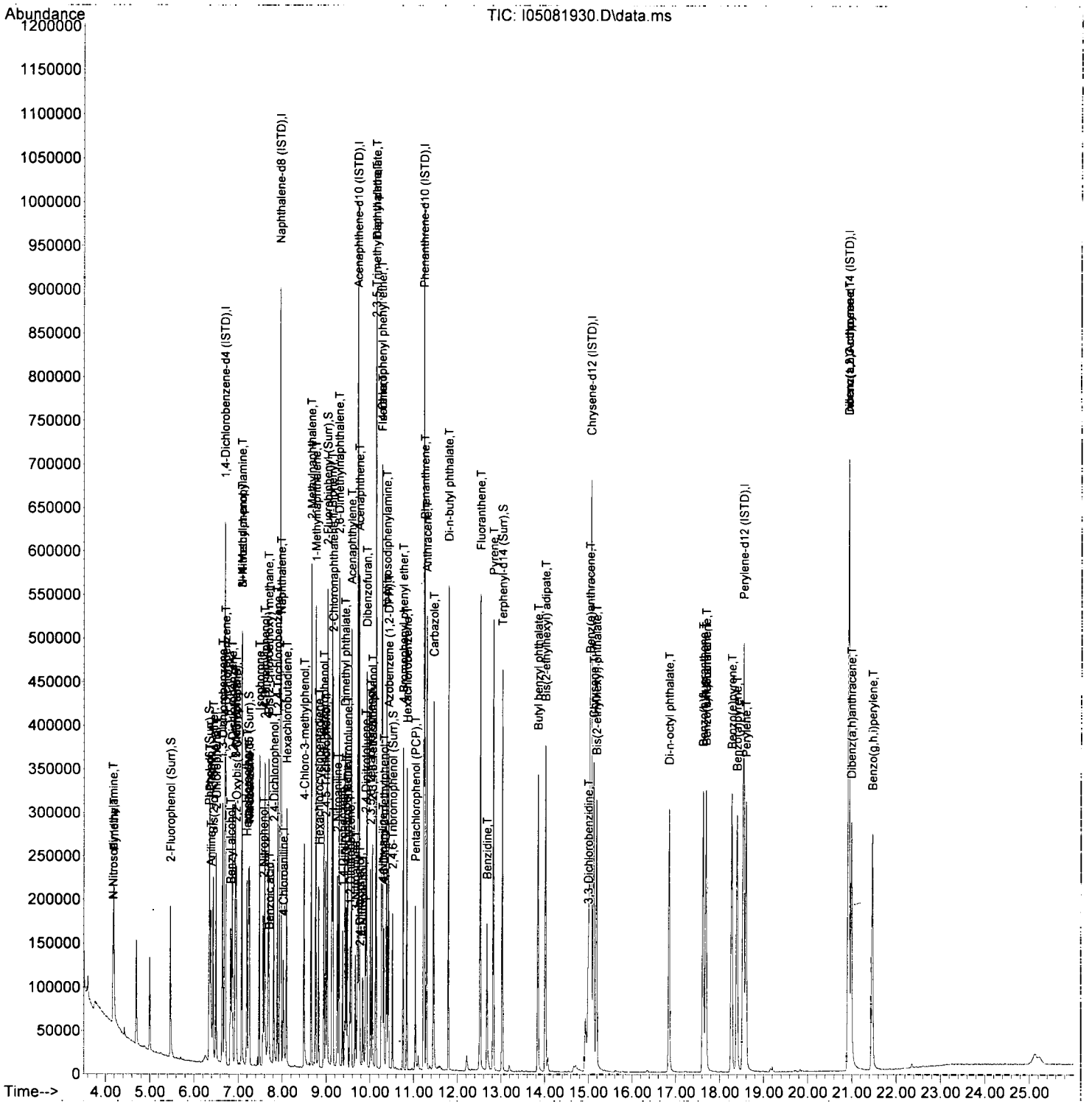


APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Total Metals by EPA 6020 A (ICPMS)

Benchsheet & Analysis Sequence Data (including calibration)

Batch 9051011

Sequence 9E20033

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

9051011

Apex Laboratories

BATCH #: 9051011 (Solid)

Prep Method: EPA 3051A

Lab Number	Due	Prepared	Initial (g)	Final (mL)	Client	ClientID / Sample	Extraction Comments
9051011-BLK1	---	05/17/19 12:15	0.5	50	QC Sample		
9051011-BS1	---	05/17/19 12:15	0.5	50	QC Sample		
Spike 1: 5000 uL of A19E038 Spike 2: 500 uL of A19D229							
A9E0254-01	05/21/19	05/17/19 12:15	0.5	50		Biosolids (Cake)	BIOSOLID caution, dry wt report in mg/kg - dry wt.
☐ As (Arsenic) - 6020 - Total ☐ Cd (Cadmium) - 6020 - Total ☐ Cu (Copper) - 6020 - Total ☐ Hg (Mercury) - 6020 - Total ☐ K (Potassium) - 6020 - Total ☐ Mo (Molybdenum) - 6020 - Tot ☐ Ni (Nickel) - 6020 - Total ☐ Pb (Lead) - 6020 - Total ☐ Se (Selenium) - 6020 - Total ☐ Zn (Zinc) - 6020 - Total							
A9E0508-05	05/21/19	05/17/19 12:15	0.5	50	Hahn and Associates	COMP1	Added for BatchQC in 9051011 expedited on 5/17 AM
☐ 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							
Batch QC: ☐ Mo (Molybdenum) - 6020 - Tot							
9051011-DUP1	---	05/17/19 12:15	0.5	50	QC Sample		
Source: A9E0508-05							
9051011-MS1	---	05/17/19 12:15	0.5	50	QC Sample		
Source: A9E0508-05 Spike 1: 5000 uL of A19E038 Spike 2: 500 uL of A19D229							

Standards/Reagents

Reagent(s)

Std ID	Exp. Date	Description
A13L213	11/30/23	Metals Prep Balance 2
A15E001	05/01/20	Mars-1 Microwave
A19C191	03/04/22	Conc. HCl - Omnitrace
A19D287	04/22/20	Conc. HNO3 - Omnitrace
A19E112	11/05/21	30% hydrogen peroxide

Analyte Spike(s)

Std ID	Exp. Date	Description
A19D229	10/13/19	Hg Spiking Standard
A19E038	05/31/19	**Combo Spike** A+B+C

IP 5/17/19

A.) A19E033, 2500uL

B.) A19D335, 1250uL

C.) A19D334, 1250uL

Digestion time and temperature achieved? Yes

Initials: IP 5/17/19

Prepared By: 5/17/19 Date

Reviewed By: 5/22/19 Date

Batch #: 9051011

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: 05/17/19 Prepared by: KT

#	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	S09H	9051011-BLK1	184.30	184.30	n/a
2	S11	9051011-BS1	187.86	187.53	n/a
3	S77A	A9E0254-01	184.92	184.92	n/a
4	S17	A9E0508-05	185.88	185.86	n/a
5	S92	9051011-DUP1	184.74	184.77	n/a
6	S21	9051011-MS1	184.01	188.99	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: **9E20033** Instrument: **ICPMS5**

Date: **05/20/19 13:15** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E20033-CAL1	Water	QC	QC			A19C136	A19D348
2	9E20033-CAL2	Water	QC	QC			A19C136	A19D349
3	9E20033-CAL3	Water	QC	QC			A19C136	A19D350
4	9E20033-CAL4	Water	QC	QC			A19C136	A19D351
5	9E20033-CAL5	Water	QC	QC			A19C136	A19E083
6	9E20033-CAL6	Water	QC	QC			A19C136	A19D352
7	9E20033-CAL7	Water	QC	QC			A19C136	A19E082
8	9E20033-CAL8	Water	QC	QC			A19C136	A19D321
9	9E20033-CAL9	Water	QC	QC			A19C136	A19E164
10	9E20033-ICV1	Water	QC	QC			A19C136	A19E109
11	9E20033-ICB1	Water	QC	QC			A19C136	
12	9E20033-CRL1	Water	QC	QC			A19C136	A19D348
13	9E20033-CRL2	Water	QC	QC			A19C136	A19D349
14	9E20033-CRL3	Water	QC	QC			A19C136	A19D350
15	9E20033-IFA1	Water	QC	QC			A19C136	A19E234
16	9E20033-IFB1	Water	QC	QC			A19C136	A19E235
17	9051008-BLK2	Water	QC	QC		9051008	A19C136	
18	9051008-BS2	Water	QC	QC		9051008	A19C136	
19	A9E0202-01RE1	Water	Ca (Calcium) - 6020 - Total		05/20/19	9051008	A19C136	
20	"	Water	Mg (Magnesium) - 6020 - Total	"	05/20/19	9051008	A19C136	
21	"	Water	Se (Selenium) - 6020 - Total	"	05/20/19	9051008	A19C136	
22	A9E0245-01RE1	Water	Ca (Calcium) - 6020 - Total	(QC Source)		9051008	A19C136	
23	"	Water	Ca (Calcium) - 200.8 - Total	(QC Source)		9051008	A19C136	
24	"	Water	Mg (Magnesium) - 6020 - Total	(QC Source)		9051008	A19C136	
25	"	Water	Mg (Magnesium) - 200.8 - Total	(QC Source)		9051008	A19C136	
26	"	Water	Na (Sodium) - 200.8 - Total	(QC Source)		9051008	A19C136	
27	"	Water	Se (Selenium) - 6020 - Total	(QC Source)		9051008	A19C136	
28	"	Water	Se (Selenium) - 200.8 - Total	(QC Source)		9051008	A19C136	
29	9051008-DUP2	Water	QC	QC		9051008	A19C136	
30	9051008-MS3	Water	QC	QC		9051008	A19C136	
31	A9E0271-01RE1	Water	Ca (Calcium) - 200.8 - Total	Anchor QEA, LLC	05/21/19	9051008	A19C136	
32	"	Water	Mg (Magnesium) - 200.8 - Total	"	05/21/19	9051008	A19C136	
33	"	Water	Na (Sodium) - 200.8 - Total	"	05/21/19	9051008	A19C136	
34	A9E0271-02RE1	Water	Ca (Calcium) - 200.8 - Total	Anchor QEA, LLC	05/21/19	9051008	A19C136	
35	"	Water	Mg (Magnesium) - 200.8 - Total	"	05/21/19	9051008	A19C136	
36	"	Water	Na (Sodium) - 200.8 - Total	"	05/21/19	9051008	A19C136	
37	A9E0277-04RE1	Water	Ag (Silver) - 200.8 - Total		05/21/19	9051008	A19C136	
38	"	Water	Cd (Cadmium) - 200.8 - Total	"	05/21/19	9051008	A19C136	
39	"	Water	Cr (Chromium) - 200.8 - Total	"	05/21/19	9051008	A19C136	
40	"	Water	Cu (Copper) - 200.8 - Total	"	05/21/19	9051008	A19C136	
41	"	Water	Ni (Nickel) - 200.8 - Total	"	05/21/19	9051008	A19C136	
42	"	Water	Pb (Lead) - 200.8 - Total	"	05/21/19	9051008	A19C136	
43	"	Water	Zn (Zinc) - 200.8 - Total	"	05/21/19	9051008	A19C136	
44	A9E0534-01RE1	Water	Na (Sodium) - 200.8 - Total	(QC Source)		9051008	A19C136	
45	9E20033-CCV1	Water	QC	QC			A19C136	A19E109
46	9E20033-CCB1	Water	QC	QC			A19C136	
47	9051008-MS4	Water	QC	QC		9051008	A19C136	
48	A9E0245-01RE2	Water	Na (Sodium) - 200.8 - Total	(QC Source)		9051008	A19C136	
49	9051008-DUP3	Water	QC	QC		9051008	A19C136	
50	9051008-MS5	Water	QC	QC		9051008	A19C136	
51	9051043-BLK1	Water	QC	QC		9051043	A19C136	

Sequence: **9E20033** Instrument: **ICPMS5**

Date: **05/20/19 13:15** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
52	9051043-BS1	Water	QC	QC		9051043	A19C136	
53	A9E0282-01	Water	Ag (Silver) - 200.8 - Total		05/22/19	9051043	A19C136	
54	"	Water	Al (Aluminum) - 200.8 - Total	"	05/22/19	9051043	A19C136	
55	"	Water	As (Arsenic) - 200.8 - Total	"	05/22/19	9051043	A19C136	
56	"	Water	Ba (Barium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
57	"	Water	Be (Beryllium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
58	"	Water	Ca (Calcium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
59	"	Water	Cd (Cadmium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
60	"	Water	Hg (Mercury) - 200.8 - Total	"	05/22/19	9051043	A19C136	
61	"	Water	K (Potassium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
62	"	Water	Mg (Magnesium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
63	"	Water	Mn (Manganese) - 200.8 - Total	"	05/22/19	9051043	A19C136	
64	"	Water	Na (Sodium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
65	"	Water	Ni (Nickel) - 200.8 - Total	"	05/22/19	9051043	A19C136	
66	"	Water	Cr (Chromium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
67	"	Water	Cu (Copper) - 200.8 - Total	"	05/22/19	9051043	A19C136	
68	"	Water	Fe (Iron) - 200.8 - Total	"	05/22/19	9051043	A19C136	
69	"	Water	Sb (Antimony) - 200.8 - Total	"	05/22/19	9051043	A19C136	
70	"	Water	Se (Selenium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
71	"	Water	Pb (Lead) - 200.8 - Total	"	05/22/19	9051043	A19C136	
72	"	Water	Tl (Thallium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
73	"	Water	V (Vanadium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
74	"	Water	Zn (Zinc) - 200.8 - Total	"	05/22/19	9051043	A19C136	
75	A9E0283-01	Water	As (Arsenic) - 200.8 - Total		05/22/19	9051043	A19C136	
76	"	Water	Cd (Cadmium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
77	"	Water	Hg (Mercury) - 200.8 - Total	"	05/22/19	9051043	A19C136	
78	"	Water	Cr (Chromium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
79	A9E0283-02	Water	As (Arsenic) - 200.8 - Total		05/22/19	9051043	A19C136	
80	"	Water	Cd (Cadmium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
81	"	Water	Hg (Mercury) - 200.8 - Total	"	05/22/19	9051043	A19C136	
82	"	Water	Cr (Chromium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
83	A9E0289-01	Water	Ag (Silver) - 6020 - Total	(QC Source)		9051043	A19C136	
84	"	Water	As (Arsenic) - 6020 - Total	(QC Source)		9051043	A19C136	
85	"	Water	Cd (Cadmium) - 6020 - Total	(QC Source)		9051043	A19C136	
86	"	Water	Cr (Chromium) - 6020 - Total	(QC Source)		9051043	A19C136	
87	"	Water	Hg (Mercury) - 6020 - Total	(QC Source)		9051043	A19C136	
88	"	Water	Pb (Lead) - 6020 - Total	(QC Source)		9051043	A19C136	
89	"	Water	Se (Selenium) - 6020 - Total	(QC Source)		9051043	A19C136	
90	"	Water	Cu (Copper) - 6020 - Total	(QC Source)		9051043	A19C136	
91	"	Water	Mo (Molybdenum) - 6020 - Total	(QC Source)		9051043	A19C136	
92	"	Water	Zn (Zinc) - 6020 - Total	(QC Source)		9051043	A19C136	
93	"	Water	Ag (Silver) - 200.8 - Total	(QC Source)		9051043	A19C136	
94	"	Water	Al (Aluminum) - 200.8 - Total	(QC Source)		9051043	A19C136	
95	"	Water	As (Arsenic) - 200.8 - Total	(QC Source)		9051043	A19C136	
96	"	Water	Ba (Barium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
97	"	Water	Be (Beryllium) - 200.8 - Total	(QC Source)		9051043	A19C136	
98	"	Water	Ca (Calcium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
99	"	Water	Cd (Cadmium) - 200.8 - Total	(QC Source)		9051043	A19C136	
100	"	Water	Hg (Mercury) - 200.8 - Total	(QC Source)		9051043	A19C136	
101	"	Water	K (Potassium) - 200.8 - Total	(QC Source)		9051043	A19C136	
102	"	Water	Mg (Magnesium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
103	"	Water	Mn (Manganese) - 200.8 - Total	(QC Source)		9051043	A19C136	
104	"	Water	Na (Sodium) - 200.8 - Total	(QC Source)		9051043	A19C136	
105	"	Water	Ni (Nickel) - 200.8 - Total	(QC Source)		9051043	A19C136	
106	"	Water	Cr (Chromium) - 200.8 - Total	(QC Source)		9051043	A19C136	

Sequence: **9E20033** Instrument: **ICPMS5**

Date: **05/20/19 13:15** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
107	"	Water	Cu (Copper) - 200.8 - Total	(QC Source)		9051043	A19C136	
108	"	Water	Fe (Iron) - 200.8 - Total	(QC Source)		9051043	A19C136	
109	"	Water	Sb (Antimony) - 200.8 - Total	(QC Source)		9051043	A19C136	
110	"	Water	Se (Selenium) - 200.8 - Total	(QC Source)		9051043	A19C136	
111	"	Water	Pb (Lead) - 200.8 - Total	(QC Source)		9051043	A19C136	
112	"	Water	Tl (Thallium) - 200.8 - Total	(QC Source)		9051043	A19C136	
113	"	Water	V (Vanadium) - 200.8 - Total	(QC Source)		9051043	A19C136	
114	"	Water	Zn (Zinc) - 200.8 - Total	(QC Source)		9051043	A19C136	
115	"	Water	Co (Cobalt) - 200.8 - Total	"	05/22/19	9051043	A19C136	
116	9E20033-CCV2	Water	QC	QC			A19C136	A19E109
117	9E20033-CCV3	Water	QC	QC			A19C136	A19E109
118	9E20033-CCB2	Water	QC	QC			A19C136	
119	9E20033-CCB3	Water	QC	QC			A19C136	
120	9051043-DUP1	Water	QC	QC		9051043	A19C136	
121	9051043-MS1	Water	QC	QC		9051043	A19C136	
122	A9E0289-02	Water	Ba (Barium) - 200.8 - Total		05/22/19	9051043	A19C136	
123	"	Water	Ca (Calcium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
124	"	Water	Mg (Magnesium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
125	"	Water	Co (Cobalt) - 200.8 - Total	"	05/22/19	9051043	A19C136	
126	A9E0289-03	Water	Ba (Barium) - 200.8 - Total		05/22/19	9051043	A19C136	
127	"	Water	Ca (Calcium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
128	"	Water	Mg (Magnesium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
129	"	Water	Co (Cobalt) - 200.8 - Total	"	05/22/19	9051043	A19C136	
130	A9E0289-04	Water	Ba (Barium) - 200.8 - Total		05/22/19	9051043	A19C136	
131	"	Water	Ca (Calcium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
132	"	Water	Mg (Magnesium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
133	"	Water	Co (Cobalt) - 200.8 - Total	"	05/22/19	9051043	A19C136	
134	A9E0289-05	Water	Ba (Barium) - 200.8 - Total		05/22/19	9051043	A19C136	
135	"	Water	Ca (Calcium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
136	"	Water	Mg (Magnesium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
137	"	Water	Co (Cobalt) - 200.8 - Total	"	05/22/19	9051043	A19C136	
138	A9E0305-01	Water	Pb (Lead) - 200.8 - Total		05/22/19	9051043	A19C136	
139	A9E0305-05	Water	Pb (Lead) - 200.8 - Total		05/22/19	9051043	A19C136	
140	A9E0315-01	Water	Ag (Silver) - 200.8 - Total		05/22/19	9051043	A19C136	
141	"	Water	Cd (Cadmium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
142	"	Water	Ni (Nickel) - 200.8 - Total	"	05/22/19	9051043	A19C136	
143	"	Water	Cr (Chromium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
144	"	Water	Cu (Copper) - 200.8 - Total	"	05/22/19	9051043	A19C136	
145	"	Water	Pb (Lead) - 200.8 - Total	"	05/22/19	9051043	A19C136	
146	"	Water	Zn (Zinc) - 200.8 - Total	"	05/22/19	9051043	A19C136	
147	A9E0331-02	Water	As (Arsenic) - 200.8 - Total		05/23/19	9051043	A19C136	
148	"	Water	Ni (Nickel) - 200.8 - Total	"	05/23/19	9051043	A19C136	
149	"	Water	Cr (Chromium) - 200.8 - Total	"	05/23/19	9051043	A19C136	
150	"	Water	Cu (Copper) - 200.8 - Total	"	05/23/19	9051043	A19C136	
151	"	Water	Fe (Iron) - 200.8 - Total	"	05/23/19	9051043	A19C136	
152	"	Water	Sb (Antimony) - 200.8 - Total	"	05/23/19	9051043	A19C136	
153	"	Water	Pb (Lead) - 200.8 - Total	"	05/23/19	9051043	A19C136	
154	"	Water	Zn (Zinc) - 200.8 - Total	"	05/23/19	9051043	A19C136	
155	9E20033-CCV4	Water	QC	QC			A19C136	A19E109
156	9E20033-CCB4	Water	QC	QC			A19C136	
157	A9E0331-03	Water	Fe (Iron) - 200.8 - Total		05/23/19	9051043	A19C136	
158	A9E0335-01	Water	As (Arsenic) - 200.8 - Total		05/23/19	9051043	A19C136	
159	A9E0335-02	Water	As (Arsenic) - 200.8 - Total		05/23/19	9051043	A19C136	
160	A9E0335-03	Water	As (Arsenic) - 200.8 - Total		05/23/19	9051043	A19C136	
161	A9E0482-01	Water	Cu (Copper) - 200.8 - Total		05/22/19	9051043	A19C136	

Sequence: **9E20033** Instrument: **ICPMS5**

Date: **05/20/19 13:15** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
162	A9E0570-01	Water	Ag (Silver) - 6020 - Total		05/22/19	9051043	A19C136	
163	"	Water	As (Arsenic) - 6020 - Total	"	05/22/19	9051043	A19C136	
164	"	Water	Cd (Cadmium) - 6020 - Total	"	05/22/19	9051043	A19C136	
165	"	Water	Cr (Chromium) - 6020 - Total	"	05/22/19	9051043	A19C136	
166	"	Water	Hg (Mercury) - 6020 - Total	"	05/22/19	9051043	A19C136	
167	"	Water	Pb (Lead) - 6020 - Total	"	05/22/19	9051043	A19C136	
168	"	Water	Se (Selenium) - 6020 - Total	"	05/22/19	9051043	A19C136	
169	"	Water	Cu (Copper) - 6020 - Total	"	05/22/19	9051043	A19C136	
170	"	Water	Mo (Molybdenum) - 6020 - Total	"	05/22/19	9051043	A19C136	
171	"	Water	Zn (Zinc) - 6020 - Total	"	05/22/19	9051043	A19C136	
172	A9E0610-01	Water	Ag (Silver) - 6020 - Total	(QC Source)		9051043	A19C136	
173	"	Water	As (Arsenic) - 6020 - Total	(QC Source)		9051043	A19C136	
174	"	Water	Cd (Cadmium) - 6020 - Total	(QC Source)		9051043	A19C136	
175	"	Water	Cr (Chromium) - 6020 - Total	(QC Source)		9051043	A19C136	
176	"	Water	Hg (Mercury) - 6020 - Total	(QC Source)		9051043	A19C136	
177	"	Water	Pb (Lead) - 6020 - Total	(QC Source)		9051043	A19C136	
178	"	Water	Se (Selenium) - 6020 - Total	(QC Source)		9051043	A19C136	
179	"	Water	Cu (Copper) - 6020 - Total	(QC Source)		9051043	A19C136	
180	"	Water	Mo (Molybdenum) - 6020 - Total	(QC Source)		9051043	A19C136	
181	"	Water	Zn (Zinc) - 6020 - Total	(QC Source)		9051043	A19C136	
182	"	Water	Ag (Silver) - 200.8 - Total	(QC Source)		9051043	A19C136	
183	"	Water	Al (Aluminum) - 200.8 - Total	"	05/22/19	9051043	A19C136	
184	"	Water	As (Arsenic) - 200.8 - Total	(QC Source)		9051043	A19C136	
185	"	Water	Ba (Barium) - 200.8 - Total	(QC Source)		9051043	A19C136	
186	"	Water	Be (Beryllium) - 200.8 - Total	(QC Source)		9051043	A19C136	
187	"	Water	Ca (Calcium) - 200.8 - Total	(QC Source)		9051043	A19C136	
188	"	Water	Cd (Cadmium) - 200.8 - Total	(QC Source)		9051043	A19C136	
189	"	Water	Hg (Mercury) - 200.8 - Total	(QC Source)		9051043	A19C136	
190	"	Water	K (Potassium) - 200.8 - Total	(QC Source)		9051043	A19C136	
191	"	Water	Mg (Magnesium) - 200.8 - Total	(QC Source)		9051043	A19C136	
192	"	Water	Mn (Manganese) - 200.8 - Total	(QC Source)		9051043	A19C136	
193	"	Water	Na (Sodium) - 200.8 - Total	(QC Source)		9051043	A19C136	
194	"	Water	Ni (Nickel) - 200.8 - Total	(QC Source)		9051043	A19C136	
195	"	Water	Cr (Chromium) - 200.8 - Total	(QC Source)		9051043	A19C136	
196	"	Water	Cu (Copper) - 200.8 - Total	(QC Source)		9051043	A19C136	
197	"	Water	Fe (Iron) - 200.8 - Total	"	05/22/19	9051043	A19C136	
198	"	Water	Sb (Antimony) - 200.8 - Total	(QC Source)		9051043	A19C136	
199	"	Water	Se (Selenium) - 200.8 - Total	(QC Source)		9051043	A19C136	
200	"	Water	Pb (Lead) - 200.8 - Total	(QC Source)		9051043	A19C136	
201	"	Water	Tl (Thallium) - 200.8 - Total	(QC Source)		9051043	A19C136	
202	"	Water	V (Vanadium) - 200.8 - Total	(QC Source)		9051043	A19C136	
203	"	Water	Zn (Zinc) - 200.8 - Total	(QC Source)		9051043	A19C136	
204	"	Water	Co (Cobalt) - 200.8 - Total	(QC Source)		9051043	A19C136	
205	9051043-MS2	Water	QC	QC		9051043	A19C136	
206	9051011-BLK1	Solid	QC	QC		9051011	A19C136	
207	9051011-BS1	Solid	QC	QC		9051011	A19C136	
208	9E20033-CCV5	Water	QC	QC			A19C136	A19E109
209	9E20033-CCB5	Water	QC	QC			A19C136	
210	A9E0254-01	Solid	As (Arsenic) - 6020 - Total		05/21/19	9051011	A19C136	
211	"	Solid	Cd (Cadmium) - 6020 - Total	"	05/21/19	9051011	A19C136	
212	"	Solid	Hg (Mercury) - 6020 - Total	"	05/21/19	9051011	A19C136	
213	"	Solid	Pb (Lead) - 6020 - Total	"	05/21/19	9051011	A19C136	
214	"	Solid	Se (Selenium) - 6020 - Total	"	05/21/19	9051011	A19C136	
215	"	Solid	Cu (Copper) - 6020 - Total	"	05/21/19	9051011	A19C136	
216	"	Solid	K (Potassium) - 6020 - Total	"	05/21/19	9051011	A19C136	

Sequence: **9E20033** Instrument: **ICPMS5**

Date: **05/20/19 13:15** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
217	"	Solid	Mo (Molybdenum) - 6020 - Total	"	05/21/19	9051011	A19C136	
218	"	Solid	Ni (Nickel) - 6020 - Total	"	05/21/19	9051011	A19C136	
219	"	Solid	Zn (Zinc) - 6020 - Total	"	05/21/19	9051011	A19C136	
220	A9E0508-05	Solid	Ag (Silver) - 6020 - Total	Hahn and Associates	05/21/19	9051011	A19C136	
221	"	Solid	As (Arsenic) - 6020 - Total	"	05/21/19	9051011	A19C136	
222	"	Solid	Ba (Barium) - 6020 - Total	"	05/21/19	9051011	A19C136	
223	"	Solid	Cd (Cadmium) - 6020 - Total	"	05/21/19	9051011	A19C136	
224	"	Solid	Cr (Chromium) - 6020 - Total	"	05/21/19	9051011	A19C136	
225	"	Solid	Hg (Mercury) - 6020 - Total	"	05/21/19	9051011	A19C136	
226	"	Solid	Pb (Lead) - 6020 - Total	"	05/21/19	9051011	A19C136	
227	"	Solid	Se (Selenium) - 6020 - Total	"	05/21/19	9051011	A19C136	
228	"	Solid	Cu (Copper) - 6020 - Total	"	05/21/19	9051011	A19C136	
229	"	Solid	K (Potassium) - 6020 - Total	"	05/21/19	9051011	A19C136	
230	"	Solid	Mo (Molybdenum) - 6020 - Total	(QC Source)		9051011	A19C136	
231	"	Solid	Ni (Nickel) - 6020 - Total	"	05/21/19	9051011	A19C136	
232	"	Solid	Zn (Zinc) - 6020 - Total	"	05/21/19	9051011	A19C136	
233	"	Solid	Al (Aluminum) - 6020 - Total	"	05/21/19	9051011	A19C136	
234	"	Solid	Be (Beryllium) - 6020 - Total	"	05/21/19	9051011	A19C136	
235	"	Solid	Ca (Calcium) - 6020 - Total	"	05/21/19	9051011	A19C136	
236	"	Solid	Fe (Iron) - 6020 - Total	"	05/21/19	9051011	A19C136	
237	"	Solid	Na (Sodium) - 6020 - Total	"	05/21/19	9051011	A19C136	
238	"	Solid	Mg (Magnesium) - 6020 - Total	"	05/21/19	9051011	A19C136	
239	"	Solid	Mn (Manganese) - 6020 - Total	"	05/21/19	9051011	A19C136	
240	"	Solid	Sb (Antimony) - 6020 - Total	"	05/21/19	9051011	A19C136	
241	"	Solid	Tl (Thallium) - 6020 - Total	"	05/21/19	9051011	A19C136	
242	"	Solid	V (Vanadium) - 6020 - Total	"	05/21/19	9051011	A19C136	
243	9051011-DUP1	Solid	QC	QC		9051011	A19C136	
244	9051011-MS1	Solid	QC	QC		9051011	A19C136	
245	9051011-MSD1	Solid	QC	QC		9051011	A19C136	
246	9051012-BLK1	Soil	QC	QC		9051012	A19C136	
247	9051012-BLK2	Soil	QC	QC		9051012	A19C136	
248	9051012-BS1	Soil	QC	QC		9051012	A19C136	
249	A9E0235-03	Soil	Ag (Silver) - 6020 - Total		05/23/19	9051012	A19C136	
250	"	Soil	As (Arsenic) - 6020 - Total	"	05/23/19	9051012	A19C136	
251	"	Soil	Ba (Barium) - 6020 - Total	"	05/23/19	9051012	A19C136	
252	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/23/19	9051012	A19C136	
253	"	Soil	Cr (Chromium) - 6020 - Total	"	05/23/19	9051012	A19C136	
254	"	Soil	Hg (Mercury) - 6020 - Total	"	05/23/19	9051012	A19C136	
255	"	Soil	Pb (Lead) - 6020 - Total	"	05/23/19	9051012	A19C136	
256	"	Soil	Se (Selenium) - 6020 - Total	"	05/23/19	9051012	A19C136	
257	A9E0235-05	Soil	Ag (Silver) - 6020 - Total		05/23/19	9051012	A19C136	
258	"	Soil	As (Arsenic) - 6020 - Total	"	05/23/19	9051012	A19C136	
259	"	Soil	Ba (Barium) - 6020 - Total	"	05/23/19	9051012	A19C136	
260	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/23/19	9051012	A19C136	
261	"	Soil	Cr (Chromium) - 6020 - Total	"	05/23/19	9051012	A19C136	
262	"	Soil	Hg (Mercury) - 6020 - Total	"	05/23/19	9051012	A19C136	
263	"	Soil	Pb (Lead) - 6020 - Total	"	05/23/19	9051012	A19C136	
264	"	Soil	Se (Selenium) - 6020 - Total	"	05/23/19	9051012	A19C136	
265	9E20033-CCV6	Water	QC	QC			A19C136	A19E109
266	9E20033-CCB6	Water	QC	QC			A19C136	
267	A9E0574-01	Soil	Ag (Silver) - 6020 - Total	(QC Source)		9051012	A19C136	
268	"	Soil	As (Arsenic) - 6020 - Total	(QC Source)		9051012	A19C136	
269	"	Soil	Ba (Barium) - 6020 - Total	(QC Source)		9051012	A19C136	
270	"	Soil	Cd (Cadmium) - 6020 - Total	(QC Source)		9051012	A19C136	
271	"	Soil	Cr (Chromium) - 6020 - Total	(QC Source)		9051012	A19C136	

Sequence: **9E20033** Instrument: **ICPMS5**

Date: **05/20/19 13:15** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
272	"	Soil	Hg (Mercury) - 6020 - Total	(QC Source)		9051012	A19C136	
273	"	Soil	Pb (Lead) - 6020 - Total	"	05/22/19	9051012	A19C136	
274	"	Soil	Se (Selenium) - 6020 - Total	(QC Source)		9051012	A19C136	
275	9051012-DUP1	Soil	QC	QC		9051012	A19C136	
276	9051012-MS1	Soil	QC	QC		9051012	A19C136	
277	9051012-MSD1	Soil	QC	QC		9051012	A19C136	
278	9E20033-CCV7	Water	QC	QC			A19C136	A19E109
279	9E20033-CCB7	Water	QC	QC			A19C136	
280	9E20033-CRL4	Water	QC	QC			A19C136	A19D348
281	9E20033-CRL5	Water	QC	QC			A19C136	A19D349
282	9E20033-CRL6	Water	QC	QC			A19C136	A19D350
283	9E20033-CRL7	Water	QC	QC			A19C136	A19D351

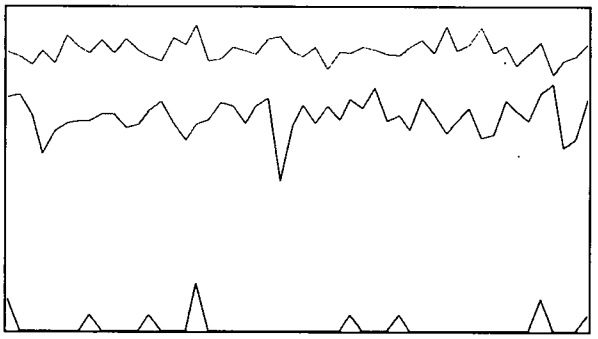
Data Entered By: 05/21/19 Comments:

Data Reviewed By: 5/23/19

Tune Report

Batch Folder	C:\Agilent\ICPMH\1\DATA\9E20033.b
Acq. Date-Time	5/20/2019 14:18
Report Comment	9E20033 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	500	333	3325.91	1000.00	
89	2000	1742	17421.53	1000.00	
78	20	0			

Mass	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
59		-	
89		-	
78		-	

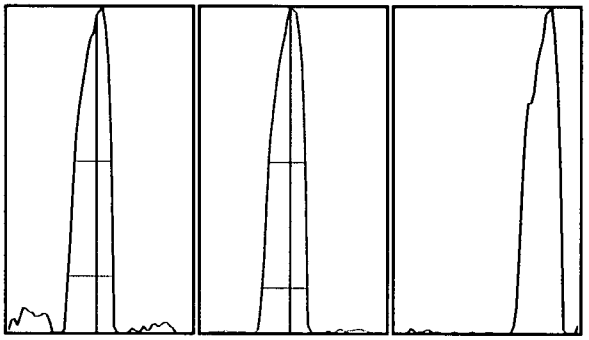
Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
59	8.37	5.00	~~[F]~~
89	3.60	5.00	
78	260.28		

See EPA Tune for RSP
JB 05/21/19

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	342.05	59.00	58.9 - 59.1		0.58	0.726	0.900	
89	1786.50	89.00	88.9 - 89.1		0.57	0.721	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	1.90 V	S/C Temp	2 °C
Smpl Depth	8.0 mm	Gas Switch	Makeup Gas
Carrier Gas	1.05 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	-185.0 V	Cell Exit	-60 V
Omega Bias	-105 V	Deflect	2.0 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	170 V
H2 Flow	3.1 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	330	3296.01	1000.00	
89	500	327	3272.31	1000.00	
205	2000	904	9042.97	1000.00	
75	20	1			

Mass	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
59		-	

Tune Report

89		-
205		-
75		-

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
59	6.90	5.00	[F]
89	7.51	5.00	[F]
205	4.73	5.00	
75	140.98		

See EPA Tune for RSD
JB 05/21/19

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	352.05	59.00	58.9 - 59.1		0.57	0.728	0.900	
89	314.29	89.05	88.9 - 89.1		0.58	0.719	0.900	
205	915.81	205.00	204.9 - 205.1		0.53	0.719	0.900	
75			-					

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	1.90 V	S/C Temp	2 °C
Smpl Depth	8.0 mm	Gas Switch	Makeup Gas
Carrier Gas	1.05 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	-185.0 V	Cell Exit	-60 V
Omega Bias	-105 V	Deflect	2.0 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	170 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	708	7076.55	1000.00	
89	2000	1915	19147.13	1000.00	
205	2000	1377	13770.96	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	4.82	5.00	
89	2.53	5.00	
205	3.55	5.00	
102	286.21		

Mass	Background (Actual)	Background (Required)	Background (Flag)
7	0.80	10	
89	1.10	10	
205	4.40	30	
102	1.50		

Ratio (oxide)	156/140	1.557 %
Ratio (2+)	69/138	2.810 %

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	698.41	6.90	6.9 - 7.1		0.63	0.770	0.900	
89	1938.42	89.05	88.9 - 89.1		0.57	0.719	0.900	
205	1399.93	205.00	204.9 - 205.1		0.55	0.723	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	1.90 V	S/C Temp	2 °C
Smpl Depth	8.0 mm	Gas Switch	Makeup Gas
Carrier Gas	1.05 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	-185.0 V	Cell Exit	-60 V
Omega Bias	-105 V	Deflect	8.8 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	170 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\9E20033.b
Acq. Date-Time	5/20/2019 14:30
Report Comment	9E20033 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		1932	19324.05	1000.00	
89		10206	102059.70	1000.00	
78		13			

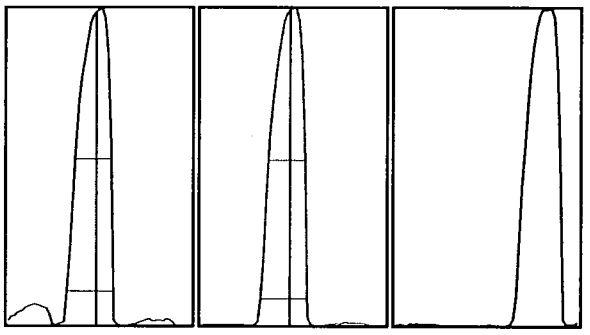
Mass	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
59		-	
89		-	
78		-	

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
59	2.05 ✓	5.00	
89	0.70 ✓	5.00	
78	48.83		

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	1866	1940	1957	1932	1967 ✓
89	10167	10196	10169	10166	10331
78	17	12	5	9	20

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	348.14	59.00 ✓	58.9 - 59.1		0.57	0.747 ✓	0.900	

Tune Report

89	1847.98	89.00	88.9 - 89.1	0.57	0.745	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	1.90 V	S/C Temp	2 °C
Smpl Depth	8.0 mm	Gas Switch	Makeup Gas
Carrier Gas	1.05 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	-185.0 V	Cell Exit	-60 V
Omega Bias	-105 V	Deflect	2.0 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	170 V
H2 Flow	3.1 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		1894	18936.97	1000.00	
89		1872	18723.02	1000.00	
205		4882	48820.35	1000.00	
75		6			

Mass	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
59		-	
89		-	
205		-	
75		-	

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
59	1.74	5.00	
89	2.94	5.00	
205	2.14	5.00	
75	32.06		

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	1917	1869	1849	1913	1921
89	1891	1933	1888	1784	1866
205	5027	4951	4796	4852	4784
75	5	9	5	6	8

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	352.74	59.00	58.9 - 59.1		0.56	0.745	0.900	
89	351.34	89.05	88.9 - 89.1		0.56	0.741	0.900	
205	927.04	205.00	204.9 - 205.1		0.53	0.748	0.900	
75			-					

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	1.90 V	S/C Temp	2 °C
Smpl Depth	8.0 mm	Gas Switch	Makeup Gas
Carrier Gas	1.05 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	-185.0 V	Cell Exit	-60 V
Omega Bias	-105 V	Deflect	2.0 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	170 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		4093	40932.32	1000.00	
89		10521	105210.03	1000.00	
205		7558	75578.68	1000.00	
102		2			

Mass	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
7		-	

Tune Report

89		-
205		-
102		-

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
7	0.88	5.00	
89	0.63	5.00	
205	1.18	5.00	
102	61.63		

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	4061	4115	4113	4048	4129
89	10428	10502	10523	10544	10609
205	7440	7494	7626	7651	7579
102	4	0	3	3	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	672.59	6.90	6.9 - 7.1		0.63	0.785	0.900	
89	1913.19	89.00	88.9 - 89.1		0.57	0.743	0.900	
205	1437.14	205.00	204.9 - 205.1		0.54	0.748	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	1.90 V	S/C Temp	2 °C
Smpl Depth	8.0 mm	Gas Switch	Makeup Gas
Carrier Gas	1.05 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	-185.0 V	Cell Exit	-60 V
Omega Bias	-105 V	Deflect	8.8 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	170 V
H2 Flow	0.0 mL/min	Energy Discrimination	5.0 V
3rd Gas Flow	0 %		

Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
6	Li	Signal too low	☑
7	Li	Signal too low	☑
9	Be	Signal too low	☑
23	Na	0.113104	☑
24	Mg	0.117174	☑
27	Al	0.121749	☑
39	K	0.125726	☑
44	Ca	0.127760	☑
45	Sc	0.127316	☑
47	Ti	Signal too low	☑
51	V	0.129292	☑
52	Cr	0.133375	☑
55	Mn	0.131902	☑
57	Fe	0.135599	☑
59	Co	0.136692	☑
60	Ni	0.139446	☑
65	Cu	0.141629	☑
66	Zn	0.142264	☑
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	☑

Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
108	[Cd]	Signal too low	☑
111	Cd	0.147874	☑
121	Sb	Signal too low	☑
138	Ba	0.144126	☑
159	Tb	0.148145	☑
182	W	Signal too low	☑
201	Hg	Signal too low	☑
205	Tl	0.151756	☑
206	[Pb]	0.151733	☑
207	[Pb]	0.152143	☑
208	Pb	0.152835	☑

Quantitation Report ICPMS5

File Name	001RINS.d		
File Path	C:\Agilent\ICPMH\1\DATA\9E20033.b		
Acq Time	5/20/2019 15:03:50	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	535468	1.0	0	Pulse		
Sc	45	H2	850227	0.6	0	Pulse		
Sc	45	He	115225	1.8	0	Pulse		
Sc	45	NoGas	1440909	1.0	0	Analog		
Ge	74	H2	327598	0.6	0	Pulse		
Ge	74	He	77307	0.7	0	Pulse		
Ge	74	NoGas	420525	0.4	0	Pulse		
Rh	103	He	260969	0.9	0	Pulse		
Rh	103	NoGas	513520	0.8	0	Pulse		
Tb	159	He	427969	0.2	0	Pulse		
Tb	159	NoGas	946506	0.5	0	Pulse		
Bi	209	He	316184	0.5	0	Pulse		
Bi	209	NoGas	574579	0.2	0	Pulse		

Quantitation Report ICPMS5

File Name	002RINS.d		
File Path	C:\Agilent\ICPMH\1\DATA\9E20033.b		
Acq Time	5/20/2019 15:08:05	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	530489	1.1	0	Pulse		
Sc	45	H2	938586	0.6	0	Pulse		
Sc	45	He	122964	0.4	0	Pulse		
Sc	45	NoGas	1515286	1.4	0	Analog		
Ge	74	H2	351995	0.7	0	Pulse		
Ge	74	He	80802	0.6	0	Pulse		
Ge	74	NoGas	427733	0.4	0	Pulse		
Rh	103	He	267521	0.6	0	Pulse		
Rh	103	NoGas	518968	0.4	0	Pulse		
Tb	159	He	441320	0.8	0	Pulse		
Tb	159	NoGas	962074	0.3	0	Pulse		
Bi	209	He	325540	1.0	0	Pulse		
Bi	209	NoGas	579491	0.0	0	Pulse		

Quantitation Report ICPMS5

File Name	003RINS.d		
File Path	C:\Agilent\ICPMH\1\DATA\9E20033.b		
Acq Time	5/20/2019 15:12:20	Sample Type	
Sample Name	**cal blk**	Rinse	
Comment	**cal blk check**	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	527141	1.7	0	Pulse		
Sc	45	H2	953887	0.3	0	Pulse		
Sc	45	He	124265	0.8	0	Pulse		
Sc	45	NoGas	1562250	1.4	0	Analog		
Ge	74	H2	357903	0.6	0	Pulse		
Ge	74	He	81929	0.7	0	Pulse		
Ge	74	NoGas	435833	0.5	0	Pulse		
Rh	103	He	271008	0.7	0	Pulse		
Rh	103	NoGas	526382	0.5	0	Pulse		
Tb	159	He	446089	0.9	0	Pulse		
Tb	159	NoGas	963419	0.5	0	Pulse		
Bi	209	He	327828	0.9	0	Pulse		
Bi	209	NoGas	581924	0.2	0	Pulse		

Sample Name	9E20033-CAL0	Vial	1
File Name	004CALB.d		
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b		
Acq Time	5/20/2019 15:16:35		
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	16261	1.8	0.017	0.2001	3
Ca	44	45	1	H2		ppb	Pulse	960	11.5	0.001	0.2001	3
Fe	56	74	1	H2		ppb	Pulse	9396	4.2	0.026	0.3000	3
Fe	57	74	1	H2		ppb	Pulse	599	4.2	0.002	0.3000	3
Se	78	74	1	H2		ppb	Pulse	1	100.0	0.000	0.9999	3
Mg	24	45	2	He		ppb	Pulse	204	49.3	0.002	0.0999	3
Al	27	45	2	He		ppb	Pulse	90	19.2	0.001	0.0999	3
K	39	45	2	He		ppb	Pulse	8842	1.3	0.071	0.0999	3
V	51	74	2	He		ppb	Pulse	461	4.0	0.006	0.3000	3
Cr	52	74	2	He		ppb	Pulse	114	4.4	0.001	0.3000	3
Mn	55	74	2	He		ppb	Pulse	62	21.6	0.001	0.3000	3
Ni	60	74	2	He		ppb	Pulse	88	45.0	0.001	0.3000	3
Cu	65	74	2	He		ppb	Pulse	254	9.2	0.003	0.3000	3
Zn	66	74	2	He		ppb	Pulse	149	13.1	0.002	0.3000	3
As	75	74	2	He		ppb	Pulse	13	11.5	0.000	0.9999	3
Mo	95	103	2	He		ppb	Pulse	4	43.4	0.000	0.3000	3
Ag	107	103	2	He		ppb	Pulse	7	50.0	0.000	0.3000	3
Sb	121	103	2	He		ppb	Pulse	2	86.6	0.000	0.3000	3
Ba	138	159	2	He		ppb	Pulse	131	5.3	0.000	0.3000	3
Tl	205	159	2	He		ppb	Pulse	97	24.1	0.000	0.3000	3
Be	9	6	3	NoGas		ppb	Pulse	4	173.2	0.000	0.3000	3
Ti	47	45	3	NoGas		ppb	Pulse	48	41.8	0.000	0.2001	3
Co	59	74	3	NoGas		ppb	Pulse	277	10.0	0.001	0.2001	3
Cu	65	74	3	NoGas		ppb	Pulse	570	14.4	0.001	0.2001	3
Cd	111	103	3	NoGas		ppb	Pulse	8	60.5	0.000	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	46	11.2	0.000	0.3000	3
Hg	201	159	3	NoGas		ppt	Pulse	4	62.5	0.000	2.0001	3
Pb	208	159	3	NoGas		ppb	Pulse	670	16.1	0.001	0.2001	3

QC ISTD Table

Name	Mass	Det.	Tune Mode	CPS	CPS RSD
Sc	45	Pulse	H2	957795	0.1
Ge	74	Pulse	H2	365864	0.1
Sc	45	Pulse	He	124730	0.9
Ge	74	Pulse	He	82867	1.2
Rh	103	Pulse	He	269557	1.2
Tb	159	Pulse	He	443840	1.3
Bi	209	Pulse	He	326731	1.0
Li	6	Pulse	NoGas	522968	1.2
Sc	45	Analog	NoGas	1581446	1.4
Ge	74	Pulse	NoGas	435836	0.4
Rh	103	Pulse	NoGas	523947	0.3
Tb	159	Pulse	NoGas	965727	1.1
Bi	209	Pulse	NoGas	579849	0.2

Calibration Standard Report ICPMS5

Sample Name	9E20033-CAL1	1102
File Name	005CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b	
Acq Time	5/20/2019 15:20:50	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19D348 JPB 05/20	
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	32749	1.0	0.034	0.2001	3
Ca	44	45	1	H2	9.000	ppb	Pulse	1513	10.5	0.002	0.2001	3
Fe	56	74	1	H2	9.000	ppb	Pulse	59859	0.8	0.165	0.3000	3
Fe	57	74	1	H2	9.000	ppb	Pulse	1793	4.2	0.005	0.3000	3
Se	78	74	1	H2	0.180	ppb	Pulse	45	3.4	0.000	0.9999	3
Mg	24	45	2	He	9.000	ppb	Pulse	1942	10.5	0.015	0.0999	3
Al	27	45	2	He	9.000	ppb	Pulse	988	16.5	0.008	0.0999	3
K	39	45	2	He	9.000	ppb	Pulse	11025	1.7	0.088	0.0999	3
V	51	74	2	He	0.180	ppb	Pulse	701	11.9	0.009	0.3000	3
Cr	52	74	2	He	0.180	ppb	Pulse	404	10.9	0.005	0.3000	3
Mn	55	74	2	He	0.180	ppb	Pulse	276	13.3	0.003	0.3000	3
Ni	60	74	2	He	0.180	ppb	Pulse	201	20.5	0.002	0.3000	3
Cu	65	74	2	He	0.180	ppb	Pulse	453	10.4	0.006	0.3000	3
Zn	66	74	2	He	0.180	ppb	Pulse	141	13.4	0.002	0.3000	3
As	75	74	2	He	0.180	ppb	Pulse	28	2.0	0.000	0.9999	3
Mo	95	103	2	He	0.180	ppb	Pulse	140	23.4	0.001	0.3000	3
Ag	107	103	2	He	0.180	ppb	Pulse	584	3.1	0.002	0.3000	3
Sb	121	103	2	He	0.180	ppb	Pulse	193	9.1	0.001	0.3000	3
Ba	138	159	2	He	0.180	ppb	Pulse	524	12.6	0.001	0.3000	3
Tl	205	159	2	He	0.180	ppb	Pulse	1345	2.4	0.003	0.3000	3
Be	9	6	3	NoGas	0.180	ppb	Pulse	250	17.0	0.000	0.3000	3
Ti	47	45	3	NoGas	0.180	ppb	Pulse	143	22.4	0.000	0.2001	3
Co	59	74	3	NoGas	0.180	ppb	Pulse	1778	5.6	0.004	0.2001	3
Cu	65	74	3	NoGas	0.180	ppb	Pulse	955	13.3	0.002	0.2001	3
Cd	111	103	3	NoGas	0.180	ppb	Pulse	211	9.8	0.000	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	51	7.5	0.000	0.3000	3
Hg	201	159	3	NoGas		ppt	Pulse	8	18.8	0.000	2.0001	3
Pb	208	159	3	NoGas	0.180	ppb	Pulse	3252	2.1	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	957795.216666667	964468	0.6	Pulse	100.7	
Ge	74	H2	365863.58	361690	0.1	Pulse	98.9	
Sc	45	He	124730.113333333	125889	0.9	Pulse	100.9	
Ge	74	He	82867.31	82284	0.6	Pulse	99.3	
Rh	103	He	269557.44	269249	0.6	Pulse	99.9	
Tb	159	He	443839.81	443392	0.4	Pulse	99.9	
Bi	209	He	326730.87	324903	0.1	Pulse	99.4	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	522967.65	518800	6.5	Pulse	99.2	
Sc	45	NoGas	1581446.20333333	1677863	6.1	Analog	106.1	
Ge	74	NoGas	435835.62	435982	6.2	Pulse	100.0	
Rh	103	NoGas	523946.536666667	526405	6.4	Pulse	100.5	
Tb	159	NoGas	965727.01	972670	6.5	Pulse	100.7	
Bi	209	NoGas	579848.77	576441	6.6	Pulse	99.4	

Calibration Standard Report ICPMS5

Sample Name	9E20033-CAL2	1103
File Name	006CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b	
Acq Time	5/20/2019 15:25:23	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19D349 JPB 05/20	
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	44.972	ppb	Pulse	99510	0.6	0.101	0.2001	3
Ca	44	45	1	H2	45.435	ppb	Pulse	4722	5.6	0.005	0.2001	3
Fe	56	74	1	H2	44.902	ppb	Pulse	252668	0.7	0.687	0.3000	3
Fe	57	74	1	H2	44.950	ppb	Pulse	6538	1.6	0.018	0.3000	3
Se	78	74	1	H2	0.889	ppb	Pulse	170	2.6	0.000	0.9999	3
Mg	24	45	2	He	44.897	ppb	Pulse	8408	2.5	0.067	0.0999	3
Al	27	45	2	He	44.964	ppb	Pulse	4482	5.0	0.036	0.0999	3
K	39	45	2	He	44.732	ppb	Pulse	18035	1.5	0.143	0.0999	3
V	51	74	2	He	0.900	ppb	Pulse	1718	6.4	0.021	0.3000	3
Cr	52	74	2	He	0.898	ppb	Pulse	1518	14.8	0.018	0.3000	3
Mn	55	74	2	He	0.897	ppb	Pulse	1065	4.3	0.013	0.3000	3
Ni	60	74	2	He	0.897	ppb	Pulse	618	6.4	0.007	0.3000	3
Cu	65	74	2	He	0.889	ppb	Pulse	1031	6.4	0.012	0.3000	3
Zn	66	74	2	He	0.944	ppb	Pulse	309	5.1	0.004	0.3000	3
As	75	74	2	He	0.915	ppb	Pulse	145	12.8	0.002	0.9999	3
Mo	95	103	2	He	0.904	ppb	Pulse	774	21.5	0.003	0.3000	3
Ag	107	103	2	He	0.900	ppb	Pulse	2931	2.1	0.011	0.3000	3
Sb	121	103	2	He	0.894	ppb	Pulse	822	4.5	0.003	0.3000	3
Ba	138	159	2	He	0.903	ppb	Pulse	2287	6.7	0.005	0.3000	3
Tl	205	159	2	He	0.900	ppb	Pulse	6340	2.3	0.014	0.3000	3
Be	9	6	3	NoGas	0.902	ppb	Pulse	1330	10.1	0.003	0.3000	3
Ti	47	45	3	NoGas	0.901	ppb	Pulse	523	5.3	0.000	0.2001	3
Co	59	74	3	NoGas	0.897	ppb	Pulse	7336	0.6	0.017	0.2001	3
Cu	65	74	3	NoGas	0.895	ppb	Pulse	2282	11.1	0.005	0.2001	3
Cd	111	103	3	NoGas	0.901	ppb	Pulse	1060	3.3	0.002	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	33	43.6	0.000	0.3000	3
Hg	201	159	3	NoGas	36.000	ppt	Pulse	25	7.1	0.000	2.0001	3
Pb	208	159	3	NoGas	0.901	ppb	Pulse	14089	2.1	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	957795.216666667	990126	0.9	Pulse	103.4	
Ge	74	H2	365863.58	367739	0.4	Pulse	100.5	
Sc	45	He	124730.113333333	125977	0.5	Pulse	101.0	
Ge	74	He	82867.31	83523	0.6	Pulse	100.8	
Rh	103	He	269557.44	271163	0.4	Pulse	100.6	
Tb	159	He	443839.81	443218	0.5	Pulse	99.9	
Bi	209	He	326730.87	327944	0.3	Pulse	100.4	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	522967.65	524393	0.9	Pulse	100.3	
Sc	45	NoGas	1581446.20333333	1660108	0.9	Analog	105.0	
Ge	74	NoGas	435835.62	440680	0.5	Pulse	101.1	
Rh	103	NoGas	523946.536666667	529604	0.3	Pulse	101.1	
Tb	159	NoGas	965727.01	974201	0.3	Pulse	100.9	
Bi	209	NoGas	579848.77	581819	0.6	Pulse	100.3	

Calibration Standard Report ICPMS5

Sample Name	9E20033-CAL3	1104
File Name	007CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b	
Acq Time	5/20/2019 15:41:24	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19D350 JPB 05/20	
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	90.090	ppb	Pulse	192306	0.1	0.185	0.2001	3
Ca	44	45	1	H2	92.522	ppb	Pulse	9986	1.3	0.010	0.2001	3
Fe	56	74	1	H2	90.074	ppb	Pulse	519374	0.5	1.357	0.3000	3
Fe	57	74	1	H2	90.176	ppb	Pulse	13117	0.9	0.034	0.3000	3
Se	78	74	1	H2	1.774	ppb	Pulse	333	11.0	0.001	0.9999	3
Mg	24	45	2	He	90.541	ppb	Pulse	18135	3.0	0.136	0.0999	3
Al	27	45	2	He	90.072	ppb	Pulse	9432	0.9	0.071	0.0999	3
K	39	45	2	He	88.632	ppb	Pulse	27487	2.1	0.206	0.0999	3
V	51	74	2	He	1.773	ppb	Pulse	2928	9.1	0.033	0.3000	3
Cr	52	74	2	He	1.804	ppb	Pulse	3100	2.9	0.035	0.3000	3
Mn	55	74	2	He	1.804	ppb	Pulse	2192	4.1	0.025	0.3000	3
Ni	60	74	2	He	1.809	ppb	Pulse	1231	2.8	0.014	0.3000	3
Cu	65	74	2	He	1.777	ppb	Pulse	1811	4.9	0.021	0.3000	3
Zn	66	74	2	He	1.886	ppb	Pulse	563	8.4	0.006	0.3000	3
As	75	74	2	He	1.830	ppb	Pulse	308	6.3	0.004	0.9999	3
Mo	95	103	2	He	1.813	ppb	Pulse	1638	3.8	0.006	0.3000	3
Ag	107	103	2	He	1.779	ppb	Pulse	5691	4.8	0.020	0.3000	3
Sb	121	103	2	He	1.806	ppb	Pulse	1726	7.3	0.006	0.3000	3
Ba	138	159	2	He	1.791	ppb	Pulse	4440	6.4	0.010	0.3000	3
Tl	205	159	2	He	1.786	ppb	Pulse	12450	1.5	0.027	0.3000	3
Be	9	6	3	NoGas	1.793	ppb	Pulse	2631	3.0	0.005	0.3000	3
Ti	47	45	3	NoGas	1.839	ppb	Pulse	1133	5.9	0.001	0.2001	3
Co	59	74	3	NoGas	1.806	ppb	Pulse	15074	2.5	0.033	0.2001	3
Cu	65	74	3	NoGas	1.794	ppb	Pulse	4062	4.2	0.009	0.2001	3
Cd	111	103	3	NoGas	1.797	ppb	Pulse	2134	11.5	0.004	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	50	13.3	0.000	0.3000	3
Hg	201	159	3	NoGas	70.833	ppt	Pulse	43	20.1	0.000	2.0001	3
Pb	208	159	3	NoGas	1.799	ppb	Pulse	27767	1.9	0.028	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	957795.216666667	1039791	0.5	Pulse	108.6	
Ge	74	H2	365863.58	382812	0.2	Pulse	104.6	
Sc	45	He	124730.113333333	133314	0.5	Pulse	106.9	
Ge	74	He	82867.31	87451	0.2	Pulse	105.5	
Rh	103	He	269557.44	278838	0.6	Pulse	103.4	
Tb	159	He	443839.81	455173	0.8	Pulse	102.6	
Bi	209	He	326730.87	331510	0.9	Pulse	101.5	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	522967.65	530763	0.4	Pulse	101.5	
Sc	45	NoGas	1581446.20333333	1707226	1.2	Analog	108.0	
Ge	74	NoGas	435835.62	452995	0.4	Pulse	103.9	
Rh	103	NoGas	523946.536666667	540335	0.2	Pulse	103.1	
Tb	159	NoGas	965727.01	987609	0.3	Pulse	102.3	
Bi	209	NoGas	579848.77	588913	0.3	Pulse	101.6	

Calibration Standard Report ICPMS5

Sample Name	9E20033-CAL4	1105
File Name	008CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b	
Acq Time	5/20/2019 15:45:55	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19D351 JPB 05/20	
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	180.061	ppb	Pulse	363591	1.2	0.353	0.2001	3
Ca	44	45	1	H2	179.762	ppb	Pulse	18169	3.7	0.018	0.2001	3
Fe	56	74	1	H2	180.092	ppb	Pulse	1021358	0.2	2.691	0.3000	3
Fe	57	74	1	H2	180.165	ppb	Pulse	25433	1.3	0.067	0.3000	3
Se	78	74	1	H2	3.516	ppb	Pulse	609	4.5	0.002	0.9999	3
Mg	24	45	2	He	180.294	ppb	Pulse	35515	2.0	0.271	0.0999	3
Al	27	45	2	He	181.188	ppb	Pulse	18973	2.1	0.145	0.0999	3
K	39	45	2	He	179.401	ppb	Pulse	44860	2.2	0.342	0.0999	3
V	51	74	2	He	3.611	ppb	Pulse	5435	6.4	0.063	0.3000	3
Cr	52	74	2	He	3.586	ppb	Pulse	5894	1.5	0.068	0.3000	3
Mn	55	74	2	He	3.610	ppb	Pulse	4304	2.6	0.050	0.3000	3
Ni	60	74	2	He	3.633	ppb	Pulse	2417	1.7	0.028	0.3000	3
Cu	65	74	2	He	3.645	ppb	Pulse	3517	2.2	0.041	0.3000	3
Zn	66	74	2	He	3.751	ppb	Pulse	1076	3.9	0.012	0.3000	3
As	75	74	2	He	3.572	ppb	Pulse	566	6.0	0.007	0.9999	3
Mo	95	103	2	He	3.551	ppb	Pulse	3050	6.2	0.011	0.3000	3
Ag	107	103	2	He	3.586	ppb	Pulse	11252	1.5	0.041	0.3000	3
Sb	121	103	2	He	3.614	ppb	Pulse	3474	2.3	0.013	0.3000	3
Ba	138	159	2	He	3.600	ppb	Pulse	8776	2.4	0.019	0.3000	3
Tl	205	159	2	He	3.607	ppb	Pulse	25161	2.3	0.055	0.3000	3
Be	9	6	3	NoGas	3.582	ppb	Pulse	5298	6.0	0.010	0.3000	3
Ti	47	45	3	NoGas	3.526	ppb	Pulse	2062	3.3	0.001	0.2001	3
Co	59	74	3	NoGas	3.559	ppb	Pulse	29162	1.6	0.063	0.2001	3
Cu	65	74	3	NoGas	3.546	ppb	Pulse	7325	0.4	0.016	0.2001	3
Cd	111	103	3	NoGas	3.573	ppb	Pulse	4224	3.5	0.008	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	53	41.0	0.000	0.3000	3
Hg	201	159	3	NoGas	145.973	ppt	Pulse	91	7.5	0.000	2.0001	3
Pb	208	159	3	NoGas	3.579	ppb	Pulse	55120	1.2	0.054	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	957795.216666667	1029929	0.8	Pulse	107.5	
Ge	74	H2	365863.58	379506	0.1	Pulse	103.7	
Sc	45	He	124730.113333333	131219	0.6	Pulse	105.2	
Ge	74	He	82867.31	86318	0.3	Pulse	104.2	
Rh	103	He	269557.44	276973	0.5	Pulse	102.8	
Tb	159	He	443839.81	454721	0.6	Pulse	102.5	
Bi	209	He	326730.87	327671	1.1	Pulse	100.3	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	522967.65	544377	1.8	Pulse	104.1	
Sc	45	NoGas	1581446.20333333	1763571	1.3	Analog	111.5	
Ge	74	NoGas	435835.62	464921	1.4	Pulse	106.7	
Rh	103	NoGas	523946.536666667	551990	2.4	Pulse	105.4	
Tb	159	NoGas	965727.01	1016056	2.1	Pulse	105.2	
Bi	209	NoGas	579848.77	599290	1.8	Pulse	103.4	

Calibration Standard Report ICPMS5

Sample Name	9E20033-CAL5	1106
File Name	009CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b	
Acq Time	5/20/2019 15:50:26	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19E083 JPB 05/20	
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	400.930	ppb	Pulse	785185	0.3	0.772	0.2001	3
Ca	44	45	1	H2	400.543	ppb	Pulse	38936	0.5	0.038	0.2001	3
Fe	56	74	1	H2	400.109	ppb	Analog	2236630	1.8	5.954	0.3000	3
Fe	57	74	1	H2	399.252	ppb	Pulse	54664	1.0	0.146	0.3000	3
Se	78	74	1	H2	9.985	ppb	Pulse	1696	5.2	0.005	0.9999	3
Mg	24	45	2	He	400.025	ppb	Pulse	77756	0.7	0.599	0.0999	3
Al	27	45	2	He	396.380	ppb	Pulse	39635	1.3	0.305	0.0999	3
K	39	45	2	He	397.685	ppb	Pulse	85565	0.7	0.659	0.0999	3
V	51	74	2	He	19.996	ppb	Pulse	27447	1.5	0.322	0.3000	3
Cr	52	74	2	He	20.016	ppb	Pulse	32588	1.9	0.382	0.3000	3
Mn	55	74	2	He	19.988	ppb	Pulse	22920	0.4	0.269	0.3000	3
Ni	60	74	2	He	20.006	ppb	Pulse	12830	1.4	0.150	0.3000	3
Cu	65	74	2	He	19.990	ppb	Pulse	17669	1.2	0.207	0.3000	3
Zn	66	74	2	He	20.067	ppb	Pulse	5432	2.9	0.064	0.3000	3
As	75	74	2	He	20.018	ppb	Pulse	3137	2.8	0.037	0.9999	3
Mo	95	103	2	He	10.037	ppb	Pulse	8717	5.1	0.032	0.3000	3
Ag	107	103	2	He	10.024	ppb	Pulse	31578	1.4	0.115	0.3000	3
Sb	121	103	2	He	9.958	ppb	Pulse	9240	3.0	0.034	0.3000	3
Ba	138	159	2	He	20.014	ppb	Pulse	48810	1.3	0.108	0.3000	3
Tl	205	159	2	He	10.009	ppb	Pulse	69783	0.5	0.154	0.3000	3
Be	9	6	3	NoGas	10.058	ppb	Pulse	14986	2.1	0.028	0.3000	3
Ti	47	45	3	NoGas	20.024	ppb	Pulse	11352	1.2	0.007	0.2001	3
Co	59	74	3	NoGas	20.020	ppb	Pulse	160928	0.5	0.359	0.2001	3
Cu	65	74	3	NoGas	20.018	ppb	Pulse	37996	0.9	0.085	0.2001	3
Cd	111	103	3	NoGas	20.035	ppb	Pulse	23778	0.6	0.045	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	51	37.7	0.000	0.3000	3
Hg	201	159	3	NoGas	394.622	ppt	Pulse	206	1.6	0.000	2.0001	3
Pb	208	159	3	NoGas	20.036	ppb	Pulse	311123	0.4	0.314	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	957795.216666667	1017229	0.6	Pulse	106.2	
Ge	74	H2	365863.58	375672	0.4	Pulse	102.7	
Sc	45	He	124730.113333333	129887	1.0	Pulse	104.1	
Ge	74	He	82867.31	85266	0.6	Pulse	102.9	
Rh	103	He	269557.44	274195	0.3	Pulse	101.7	
Tb	159	He	443839.81	453191	0.6	Pulse	102.1	
Bi	209	He	326730.87	329921	1.0	Pulse	101.0	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	522967.65	529526	0.8	Pulse	101.3	
Sc	45	NoGas	1581446.20333333	1697973	1.6	Analog	107.4	
Ge	74	NoGas	435835.62	448894	0.7	Pulse	103.0	
Rh	103	NoGas	523946.536666667	532336	0.8	Pulse	101.6	
Tb	159	NoGas	965727.01	990849	0.5	Pulse	102.6	
Bi	209	NoGas	579848.77	592220	0.6	Pulse	102.1	

Calibration Standard Report ICPMS5

Sample Name	9E20033-CAL6
File Name	010CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b
Acq Time	5/20/2019 15:54:56
Sample Type	CalStd
Total Dilution	1.0000
Comment	A19D352
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**ICPMS Analyst**

1107

QC Analyte Table

Name	Mass	ISTD	T #	Tune	Conc.	Units	Det.	CPS	CPS RSD	Ratio	Integ Time	Reps
Na	23	45	1	H2	2498.817	ppb	Analog	4714681	0.9	4.654	0.2001	3
Ca	44	45	1	H2	2499.339	ppb	Pulse	234720	0.4	0.232	0.2001	3
Fe	56	74	1	H2	2497.197	ppb	Analog	13322527	0.8	35.789	0.3000	3
Fe	57	74	1	H2	2499.517	ppb	Pulse	333916	0.6	0.897	0.3000	3
Se	78	74	1	H2	50.002	ppb	Pulse	8417	0.8	0.023	0.9999	3
Mg	24	45	2	He	2498.302	ppb	Pulse	469406	0.9	3.654	0.0999	3
Al	27	45	2	He	2499.180	ppb	Pulse	244210	0.9	1.901	0.0999	3
K	39	45	2	He	2499.644	ppb	Pulse	481768	0.2	3.750	0.0999	3
V	51	74	2	He	49.849	ppb	Pulse	65470	1.0	0.780	0.3000	3
Cr	52	74	2	He	49.844	ppb	Pulse	78223	0.7	0.932	0.3000	3
Mn	55	74	2	He	49.801	ppb	Pulse	54801	0.5	0.653	0.3000	3
Ni	60	74	2	He	49.855	ppb	Pulse	30799	0.5	0.367	0.3000	3
Cu	65	74	2	He	49.803	ppb	Pulse	41955	0.7	0.500	0.3000	3
Zn	66	74	2	He	49.647	ppb	Pulse	12481	1.7	0.149	0.3000	3
As	75	74	2	He	49.742	ppb	Pulse	7422	0.7	0.088	0.9999	3
Mo	95	103	2	He	49.990	ppb	Pulse	42312	1.3	0.158	0.3000	3
Ag	107	103	2	He	49.953	ppb	Pulse	151007	0.9	0.562	0.3000	3
Sb	121	103	2	He	50.064	ppb	Pulse	46761	1.4	0.174	0.3000	3
Ba	138	159	2	He	49.877	ppb	Pulse	118937	0.6	0.264	0.3000	3
Tl	205	159	2	He	49.970	ppb	Pulse	341517	1.0	0.758	0.3000	3
Be	9	6	3	NoGas	49.993	ppb	Pulse	74139	0.4	0.140	0.3000	3
Ti	47	45	3	NoGas	49.784	ppb	Pulse	27583	1.4	0.016	0.2001	3
Co	59	74	3	NoGas	49.829	ppb	Pulse	389166	0.4	0.873	0.2001	3
Cu	65	74	3	NoGas	49.784	ppb	Pulse	90603	0.1	0.203	0.2001	3
Cd	111	103	3	NoGas	50.036	ppb	Pulse	58503	0.4	0.112	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	69	15.6	0.000	0.3000	3
Hg	201	159	3	NoGas	2004.341	ppt	Pulse	1088	2.8	0.001	2.0001	3
Pb	208	159	3	NoGas	49.820	ppb	Pulse	750065	0.1	0.763	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	957795.216666667	1013068	1.0	Pulse	105.8	
Ge	74	H2	365863.58	372288	1.0	Pulse	101.8	
Sc	45	He	124730.113333333	128480	1.4	Pulse	103.0	
Ge	74	He	82867.31	83916	0.6	Pulse	101.3	
Rh	103	He	269557.44	268492	0.1	Pulse	99.6	
Tb	159	He	443839.81	450375	0.1	Pulse	101.5	
Bi	209	He	326730.87	323732	1.2	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	522967.65	528844	1.0	Pulse	101.1	
Sc	45	NoGas	1581446.20333333	1707038	1.5	Analog	107.9	
Ge	74	NoGas	435835.62	445550	0.3	Pulse	102.2	
Rh	103	NoGas	523946.536666667	522286	0.7	Pulse	99.7	
Tb	159	NoGas	965727.01	982671	0.2	Pulse	101.8	
Bi	209	NoGas	579848.77	579634	0.7	Pulse	100.0	

Calibration Standard Report ICPMS5

Sample Name	9E20033-CAL7	1108
File Name	011CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b	
Acq Time	5/20/2019 15:59:26	
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	3999.728	ppb	Analog	7244366	0.5	7.439	0.2001	3
Ca	44	45	1	H2	4009.065	ppb	Pulse	363428	0.5	0.373	0.2001	3
Fe	56	74	1	H2	4007.684	ppb	Analog	20697018	0.3	57.696	0.3000	3
Fe	57	74	1	H2	4001.011	ppb	Pulse	515057	0.5	1.436	0.3000	3
Se	78	74	1	H2	100.307	ppb	Pulse	16463	0.9	0.046	0.9999	3
Mg	24	45	2	He	3956.297	ppb	Pulse	728612	0.7	5.633	0.0999	3
Al	27	45	2	He	3949.671	ppb	Pulse	376814	0.5	2.913	0.0999	3
K	39	45	2	He	3953.370	ppb	Pulse	740640	1.3	5.727	0.0999	3
V	51	74	2	He	199.701	ppb	Pulse	254251	0.1	3.046	0.3000	3
Cr	52	74	2	He	199.720	ppb	Pulse	305467	1.1	3.661	0.3000	3
Mn	55	74	2	He	199.820	ppb	Pulse	215806	0.6	2.586	0.3000	3
Ni	60	74	2	He	199.715	ppb	Pulse	120092	1.0	1.439	0.3000	3
Cu	65	74	2	He	199.384	ppb	Pulse	159535	0.8	1.912	0.3000	3
Zn	66	74	2	He	199.734	ppb	Pulse	48604	0.3	0.582	0.3000	3
As	75	74	2	He	199.671	ppb	Pulse	28940	0.9	0.347	0.9999	3
Mo	95	103	2	He	99.465	ppb	Pulse	82062	0.3	0.307	0.3000	3
Ag	107	103	2	He	99.459	ppb	Pulse	292990	0.2	1.097	0.3000	3
Sb	121	103	2	He	99.474	ppb	Pulse	90576	1.0	0.339	0.3000	3
Ba	138	159	2	He	199.510	ppb	Pulse	463972	0.6	1.021	0.3000	3
Tl	205	159	2	He	99.401	ppb	Pulse	670136	0.4	1.474	0.3000	3
Be	9	6	3	NoGas	100.122	ppb	Pulse	147516	1.2	0.282	0.3000	3
Ti	47	45	3	NoGas	200.502	ppb	Pulse	111467	0.9	0.067	0.2001	3
Co	59	74	3	NoGas	200.278	ppb	Analog	1556216	1.9	3.577	0.2001	3
Cu	65	74	3	NoGas	199.664	ppb	Pulse	345179	0.5	0.793	0.2001	3
Cd	111	103	3	NoGas	200.046	ppb	Pulse	229398	1.2	0.449	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	148	22.8	0.000	0.3000	3
Hg	201	159	3	NoGas	4006.977	ppt	Pulse	2159	2.1	0.002	2.0001	3
Pb	208	159	3	NoGas	200.147	ppb	Analog	3000078	0.4	3.096	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	957795.216666667	973941	0.7	Pulse	101.7	
Ge	74	H2	365863.58	358730	0.3	Pulse	98.1	
Sc	45	He	124730.113333333	129497	3.8	Pulse	103.8	
Ge	74	He	82867.31	83499	2.7	Pulse	100.8	
Rh	103	He	269557.44	267378	4.2	Pulse	99.2	
Tb	159	He	443839.81	455169	4.9	Pulse	102.6	
Bi	209	He	326730.87	322563	4.2	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	522967.65	522948	0.8	Pulse	100.0	
Sc	45	NoGas	1581446.20333333	1656214	0.8	Analog	104.7	
Ge	74	NoGas	435835.62	435086	0.8	Pulse	99.8	
Rh	103	NoGas	523946.536666667	510643	0.9	Pulse	97.5	
Tb	159	NoGas	965727.01	969165	0.3	Pulse	100.4	
Bi	209	NoGas	579848.77	562919	0.6	Pulse	97.1	

Calibration Standard Report ICPMS5

Sample Name	9E20033-CAL8	1109
File Name	012CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b	
Acq Time	5/20/2019 16:03:55	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19D321	
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	10008.173	ppb	Analog	17862312	0.5	18.655	0.2001	3
Ca	44	45	1	H2	9977.751	ppb	Pulse	879099	0.4	0.918	0.2001	3
Fe	56	74	1	H2	10020.306	ppb	Analog	50100215	0.2	145.532	0.3000	3
Fe	57	74	1	H2	10011.708	ppb	Pulse	1242448	0.2	3.609	0.3000	3
Se	78	74	1	H2	0.144	ppb	Pulse	24	23.3	0.000	0.9999	3
Mg	24	45	2	He	10132.840	ppb	Analog	1875431	0.5	15.331	0.0999	3
Al	27	45	2	He	10048.832	ppb	Pulse	926652	0.5	7.575	0.0999	3
K	39	45	2	He	10096.074	ppb	Analog	1854476	0.8	15.160	0.0999	3
V	51	74	2	He	502.800	ppb	Pulse	631780	0.7	7.920	0.3000	3
Cr	52	74	2	He	502.562	ppb	Pulse	757291	0.4	9.493	0.3000	3
Mn	55	74	2	He	502.014	ppb	Pulse	530649	0.3	6.652	0.3000	3
Ni	60	74	2	He	501.358	ppb	Pulse	292689	0.5	3.669	0.3000	3
Cu	65	74	2	He	499.935	ppb	Pulse	381741	0.1	4.785	0.3000	3
Zn	66	74	2	He	500.464	ppb	Pulse	116829	0.8	1.464	0.3000	3
As	75	74	2	He	501.463	ppb	Pulse	70651	0.3	0.886	0.9999	3
Mo	95	103	2	He	0.123	ppb	Pulse	100	13.3	0.000	0.3000	3
Ag	107	103	2	He	0.036	ppb	Pulse	107	11.3	0.000	0.3000	3
Sb	121	103	2	He	0.145	ppb	Pulse	127	14.7	0.001	0.3000	3
Ba	138	159	2	He	501.076	ppb	Pulse	1137101	0.5	2.597	0.3000	3
Tl	205	159	2	He	0.040	ppb	Pulse	352	10.2	0.001	0.3000	3
Be	9	6	3	NoGas	0.017	ppb	Pulse	30	22.2	0.000	0.3000	3
Ti	47	45	3	NoGas	501.419	ppb	Pulse	280604	0.2	0.171	0.2001	3
Co	59	74	3	NoGas	500.333	ppb	Analog	3813564	0.8	8.970	0.2001	3
Cu	65	74	3	NoGas	499.684	ppb	Pulse	840183	0.3	1.976	0.2001	3
Cd	111	103	3	NoGas	501.374	ppb	Pulse	564511	0.4	1.144	0.3000	3
W	182	159	3	NoGas	100.000	ppb	Pulse	457401	0.2	0.476	0.3000	3
Hg	201	159	3	NoGas	141.832	ppt	Pulse	77	2.8	0.000	2.0001	3
Pb	208	159	3	NoGas	500.105	ppb	Analog	7447355	0.3	7.743	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	957795.216666667	957486	0.4	Pulse	100.0	
Ge	74	H2	365863.58	344258	0.4	Pulse	94.1	
Sc	45	He	124730.113333333	122336	0.7	Pulse	98.1	
Ge	74	He	82867.31	79775	0.5	Pulse	96.3	
Rh	103	He	269557.44	251995	0.3	Pulse	93.5	
Tb	159	He	443839.81	437903	0.8	Pulse	98.7	
Bi	209	He	326730.87	306934	0.2	Pulse	93.9	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	522967.65	528520	1.1	Pulse	101.1	
Sc	45	NoGas	1581446.20333333	1640164	0.9	Analog	103.7	
Ge	74	NoGas	435835.62	425155	0.9	Pulse	97.5	
Rh	103	NoGas	523946.536666667	493386	0.7	Pulse	94.2	
Tb	159	NoGas	965727.01	961846	0.8	Pulse	99.6	
Bi	209	NoGas	579848.77	542820	0.9	Pulse	93.6	

Calibration Standard Report ICPMS5

Sample Name	9E20033-CAL9	1110
File Name	013CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b	
Acq Time	5/20/2019 16:08:20	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19E166	
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	50021.587	ppb	Analog	89391405	0.2	94.001	0.2001	3
Ca	44	45	1	H2	50032.086	ppb	Analog	4432480	0.8	4.661	0.2001	3
Fe	56	74	1	H2	50055.507	ppb	Analog	244936190	0.6	743.746	0.3000	3
Fe	57	74	1	H2	50038.736	ppb	Analog	6033814	0.9	18.322	0.3000	3
Se	78	74	1	H2	0.085	ppb	Pulse	14	25.7	0.000	0.9999	3
Mg	24	45	2	He	49951.574	ppb	Analog	9564080	0.4	74.103	0.0999	3
Al	27	45	2	He	50096.502	ppb	Analog	5073396	0.9	39.308	0.0999	3
K	39	45	2	He	49972.687	ppb	Analog	9542246	0.6	73.933	0.0999	3
V	51	74	2	He	0.102	ppb	Pulse	567	5.9	0.007	0.3000	3
Cr	52	74	2	He	1021.534	ppb	Analog	1646730	0.5	20.825	0.3000	3
Mn	55	74	2	He	2504.192	ppb	Analog	2720908	0.3	34.410	0.3000	3
Ni	60	74	2	He	994.248	ppb	Pulse	564184	0.4	7.135	0.3000	3
Cu	65	74	2	He	986.252	ppb	Pulse	712791	0.6	9.014	0.3000	3
Zn	66	74	2	He	2494.511	ppb	Pulse	550840	0.2	6.966	0.3000	3
As	75	74	2	He	0.143	ppb	Pulse	33	38.8	0.000	0.9999	3
Mo	95	103	2	He	0.222	ppb	Pulse	170	5.9	0.001	0.3000	3
Ag	107	103	2	He	0.096	ppb	Pulse	263	12.5	0.001	0.3000	3
Sb	121	103	2	He	0.077	ppb	Pulse	66	24.0	0.000	0.3000	3
Ba	138	159	2	He	2501.464	ppb	Analog	5716057	0.8	13.126	0.3000	3
Tl	205	159	2	He	0.010	ppb	Pulse	161	4.3	0.000	0.3000	3
Be	9	6	3	NoGas	0.010	ppb	Pulse	22	62.4	0.000	0.3000	3
Ti	47	45	3	NoGas	2498.833	ppb	Analog	1531347	1.3	0.844	0.2001	3
Co	59	74	3	NoGas	0.364	ppb	Pulse	3129	1.5	0.007	0.2001	3
Cu	65	74	3	NoGas	989.116	ppb	Analog	1648678	0.8	3.771	0.2001	3
Cd	111	103	3	NoGas	993.195	ppb	Pulse	1084169	0.1	2.215	0.3000	3
W	182	159	3	NoGas	0.191	ppb	Pulse	947	7.5	0.001	0.3000	3
Hg	201	159	3	NoGas	48.377	ppt	Pulse	28	13.7	0.000	2.0001	3
Pb	208	159	3	NoGas	0.196	ppb	Pulse	3678	9.2	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	957795.216666667	951037	1.1	Pulse	99.3	
Ge	74	H2	365863.58	329347	0.7	Pulse	90.0	
Sc	45	He	124730.113333333	129065	0.4	Pulse	103.5	
Ge	74	He	82867.31	79074	0.2	Pulse	95.4	
Rh	103	He	269557.44	241869	0.6	Pulse	89.7	
Tb	159	He	443839.81	435467	0.3	Pulse	98.1	
Bi	209	He	326730.87	284865	0.3	Pulse	87.2	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	522967.65	593499	0.5	Pulse	113.5	
Sc	45	NoGas	1581446.20333333	1814283	1.9	Analog	114.7	
Ge	74	NoGas	435835.62	437289	1.0	Pulse	100.3	
Rh	103	NoGas	523946.536666667	489463	0.8	Pulse	93.4	
Tb	159	NoGas	965727.01	989034	0.8	Pulse	102.4	
Bi	209	NoGas	579848.77	532471	1.1	Pulse	91.8	

P/A Factor Tuning Report

Current Sample

Sample Name: 9E20033-ICV1
Data File: 014_ICV.d
Acquired: 5/20/2019 16:56:26

Detector Parameters and P/A Factors

Discriminator: 4.5 mV
AnalogHV: 1887 V
PulseHV: 1559 V

Acquired: 5/20/2019 14:48:08

Mass[u]	Element	P/A Factor
23	Na	0.113104
24	Mg	0.117174
27	Al	0.121749
39	K	0.125726
44	Ca	0.127760
45	Sc	0.127316
51	V	0.129292
52	Cr	0.133375
55	Mn	0.131902
57	Fe	0.135599
59	Co	0.136692
60	Ni	0.139446
65	Cu	0.141629
66	Zn	0.142264
111	Cd	0.147874
138	Ba	0.144126
159	Tb	0.148145
205	Tl	0.151756
206	[Pb]	0.151733
207	[Pb]	0.152143
208	Pb	0.152835
6	Li	Signal too low
7	Li	Signal too low
9	Be	Signal too low
47	Ti	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
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: 1887 V
PulseHV: 1559 V

Acquired: 5/17/2019 12:04:15

Mass[u]	Element	P/A Factor
23	Na	0.111315
44	Ca	0.123639
45	Sc	0.122431
56	Fe	0.128858
57	Fe	0.127837
74	Ge	Signal too low
78	Se	Signal too low

Tune Mode Name: He
Discriminator: 4.5 mV
AnalogHV: 1887 V
PulseHV: 1559 V

Acquired: 5/20/2019 16:09:13

Mass[u]	Element	P/A Factor
24	Mg	0.119179
27	Al	0.123221
39	K	0.127277
51	V	0.130638
52	Cr	0.131724
55	Mn	0.131741
65	Cu	0.140164
138	Ba	0.146008
205	Tl	0.149185
45	Sc	Signal too low
60	Ni	Signal too low
66	Zn	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
209	Bi	Signal too low

Tune Mode Name: NoGas
Discriminator: 4.5 mV
AnalogHV: 1887 V
PulseHV: 1559 V

Acquired: 5/20/2019 16:10:20

Mass[u]	Element	P/A Factor
6	Li	0.087363
45	Sc	0.125648
47	Ti	0.125177
59	Co	0.135853
65	Cu	0.139630
111	Cd	0.143851
159	Tb	0.147546
206	Pb	0.150867
207	Pb	0.151018
208	Pb	0.151714
209	Bi	0.151575
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

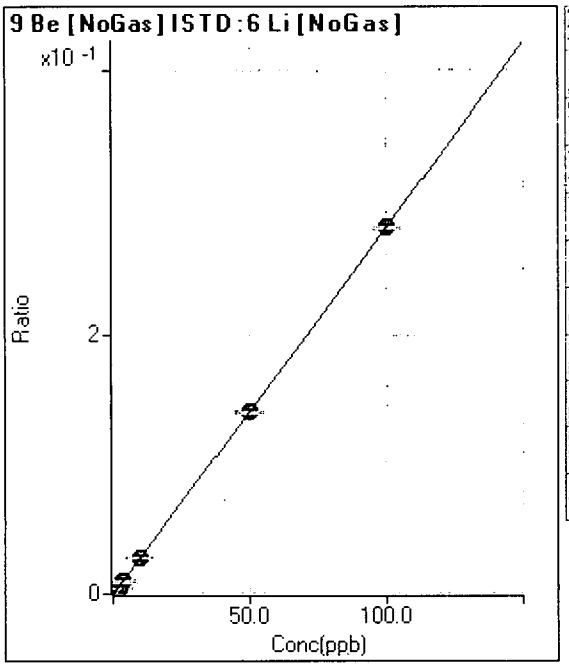
Created: 5/21/2019 14:02:16

Calibration for 014_ICV.d

Batch Folder: C:\Agilent\ICPMH\1\DATA\9E20033.b\
Analysis File: 9E20033.batch.bin
DA Date-Time: 5/20/2019 16:58:49
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	004CALB.d	9E20033-CAL0	5/20/2019 15:16:35
2	005CALS.d	9E20033-CAL1	5/20/2019 15:20:50
3	006CALS.d	9E20033-CAL2	5/20/2019 15:25:23
4	007CALS.d	9E20033-CAL3	5/20/2019 15:41:24
5	008CALS.d	9E20033-CAL4	5/20/2019 15:45:55
6	009CALS.d	9E20033-CAL5	5/20/2019 15:50:26
7	010CALS.d	9E20033-CAL6	5/20/2019 15:54:56
8	011CALS.d	9E20033-CAL7	5/20/2019 15:59:26
9	012CALS.d	9E20033-CAL8	5/20/2019 16:03:55
10	013CALS.d	9E20033-CAL9	5/20/2019 16:08:20

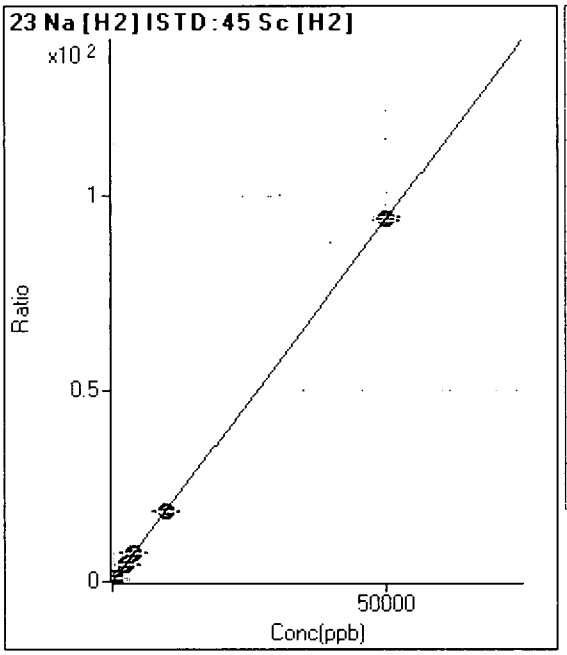
Calibration for 014_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		0.000	0.000	4	0.000	P	173.2
2		0.180	0.170	250	0.000	P	24.0
3		0.900	0.898	1330	0.003	P	10.9
4		1.800	1.757	2631	0.005	P	3.0
5		3.600	3.454	5298	0.010	P	7.3
6		10.000	10.043	14986	0.028	P	2.0
7		50.000	49.760	74139	0.140	P	0.7
8		100.000	100.122	147516	0.282	P	0.4
9				30	0.000	P	21.1
10				22	0.000	P	62.2

y = 0.0028 * x + 8.6005E-006
R = 1.0000
DL = 0.01586
BEC = 0.003053

Weight: <None>
Min Conc: <None>

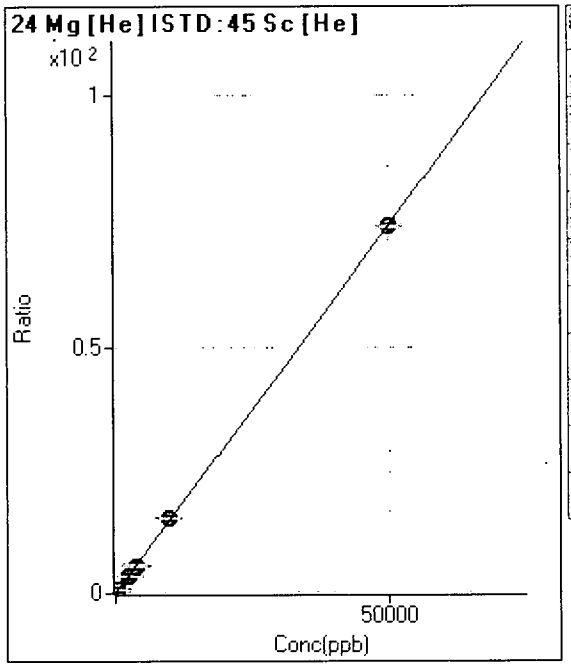


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		0.000	0.000	16261	0.017	P	1.8
2		9.000	9.036	32749	0.034	P	0.4
3		45.000	44.456	99510	0.101	P	0.5
4		90.000	89.400	192306	0.185	P	0.5
5		180.000	178.875	363591	0.353	P	1.9
6		400.000	401.798	785185	0.772	P	0.7
7		2500.000	2468.191	4714681	4.654	A	1.8
8		4000.000	3950.040	7244366	7.439	A	1.2
9		10000.000	9919.956	17862312	18.655	A	0.2
10		50000.000	50021.587	89391405	94.001	A	1.2

y = 0.0019 * x + 0.0170
R = 1.0000
DL = 0.4982
BEC = 9.036

Weight: <None>
Min Conc: <None>

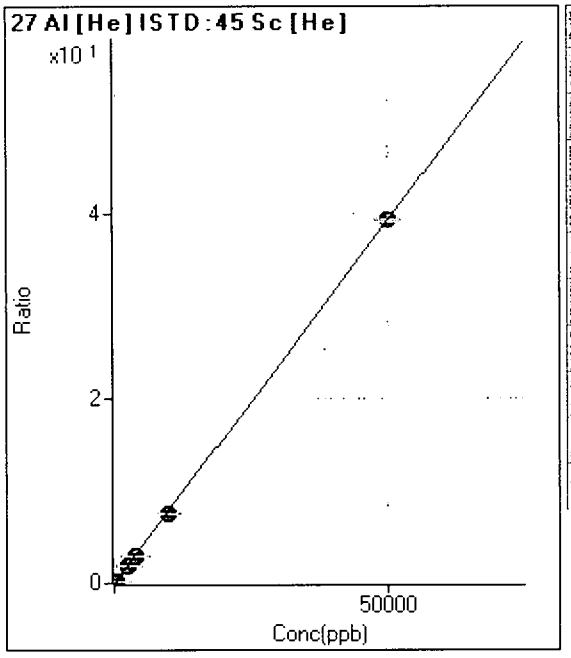
Calibration for 014_ICV.d



	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1		0.000	0.000	204	0.002	P	49.4
2		9.000	9.300	1942	0.015	P	10.8
3		45.000	43.887	8408	0.067	P	2.4
4		90.000	90.597	18135	0.136	P	3.0
5		180.000	181.347	35515	0.271	P	1.9
6		400.000	402.456	77756	0.599	P	0.6
7		2500.000	2461.907	469406	3.654	P	0.8
8		4000.000	3795.826	728612	5.633	P	4.3
9		10000.000	10333.200	1875431	15.331	A	0.8
10		50000.000	49951.574	9564080	74.103	A	0.2

y = 0.0015 * x + 0.0016
R = 1.0000
DL = 1.631
BEC = 1.102

Weight: <None>
Min Conc: <None>

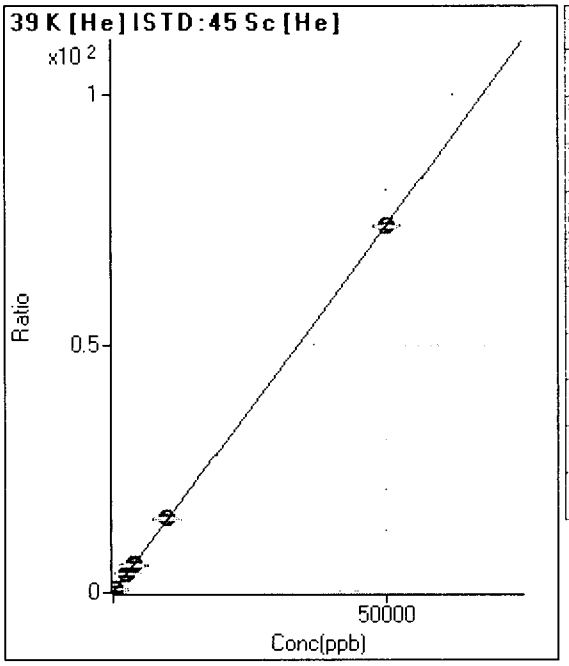


	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1		0.000	0.000	90	0.001	P	19.9
2		9.000	9.069	988	0.008	P	15.5
3		45.000	44.417	4482	0.036	P	4.7
4		90.000	89.251	9432	0.071	P	0.5
5		180.000	183.378	18973	0.145	P	2.7
6		400.000	387.987	39635	0.305	P	1.0
7		2500.000	2421.761	244210	1.901	P	1.2
8		4000.000	3711.523	376814	2.913	P	4.2
9		10000.000	9652.868	926652	7.575	P	0.3
10		50000.000	50096.502	5073396	39.308	A	0.6

y = 7.8463E-004 * x + 7.2299E-004
R = 1.0000
DL = 0.5489
BEC = 0.9214

Weight: <None>
Min Conc: <None>

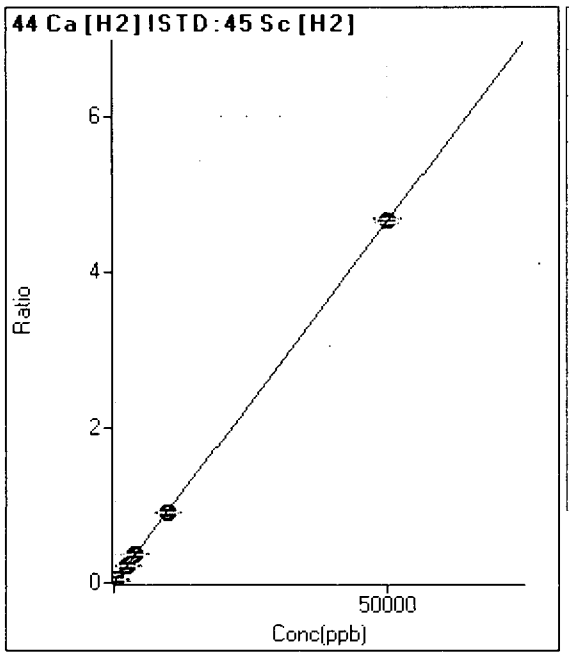
Calibration for 014_ICV.d



	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	8842	0.071	P	0.6
2	☐	9.000	11.301	11025	0.088	P	2.3
3	☐	45.000	48.899	18035	0.143	P	1.3
4	☐	90.000	91.536	27487	0.206	P	2.0
5	☐	180.000	183.343	44860	0.342	P	2.2
6	☐	400.000	397.779	85565	0.659	P	1.6
7	☐	2500.000	2489.304	481768	3.750	P	1.3
8	☐	4000.000	3826.408	740640	5.727	P	5.0
9	☐	10000.000	10208.670	1854476	15.160	A	1.5
10	☐	50000.000	49972.687	9542246	73.933	A	0.2

y = 0.0015 * x + 0.0709
R = 1.0000
DL = 0.9298
BEC = 47.96

Weight: <None>
Min Conc: <None>

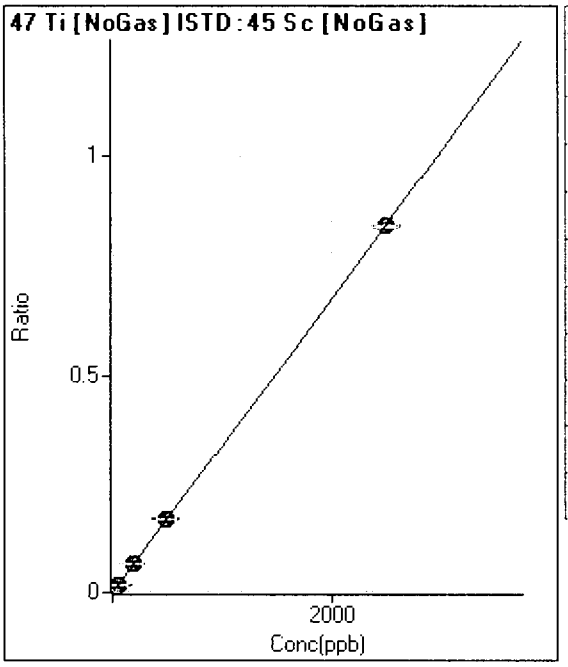


	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	960	0.001	P	11.4
2	☑	9.000		1513	0.002	P	10.2
3	☐	45.000	40.466	4722	0.005	P	6.5
4	☐	90.000	92.359	9986	0.010	P	0.9
5	☐	180.000	178.695	18169	0.018	P	4.6
6	☐	400.000	400.205	38936	0.038	P	0.5
7	☐	2500.000	2477.039	234720	0.232	P	1.3
8	☐	4000.000	3995.747	363428	0.373	P	0.8
9	☐	10000.000	9847.029	879099	0.918	P	0.7
10	☐	50000.000	50032.085	4432480	4.661	A	1.1

y = 9.3139E-005 * x + 0.0010
R = 1.0000
DL = 3.681
BEC = 10.76

Weight: <None>
Min Conc: <None>

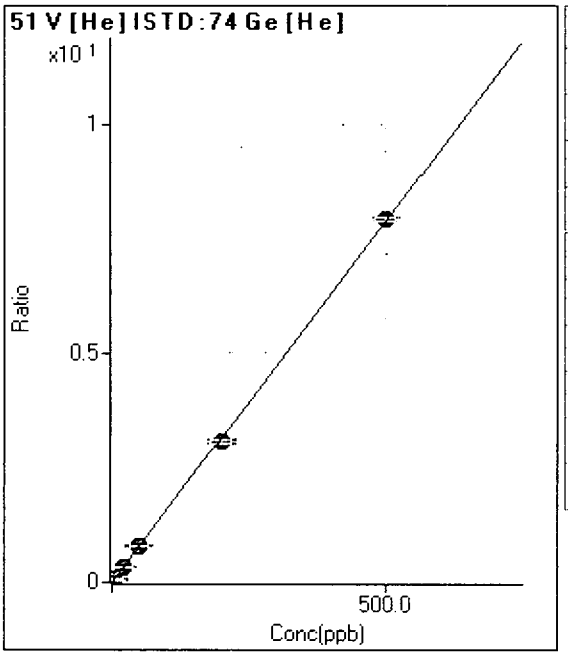
Calibration for 014_ICV.d



	Rjct	Conc	Calc Conc	CPS	Ratio	Det.	RSD
1		0.000	0.000	48	0.000	P	42.4
2		0.180	0.162	143	0.000	P	19.6
3		0.900	0.842	523	0.000	P	5.8
4		1.800	1.873	1133	0.001	P	5.0
5		3.600	3.372	2062	0.001	P	3.1
6		20.000	19.703	11352	0.007	P	1.4
7		50.000	47.748	27583	0.016	P	1.2
8		200.000	199.150	111467	0.067	P	0.3
9		500.000	506.414	280604	0.171	P	1.1
10		2500.000	2498.833	1531347	0.844	A	0.7

y = 3.3779E-004 * x + 3.0634E-005
R = 1.0000
DL = 0.1155
BEC = 0.09069

Weight: <None>
Min Conc: <None>

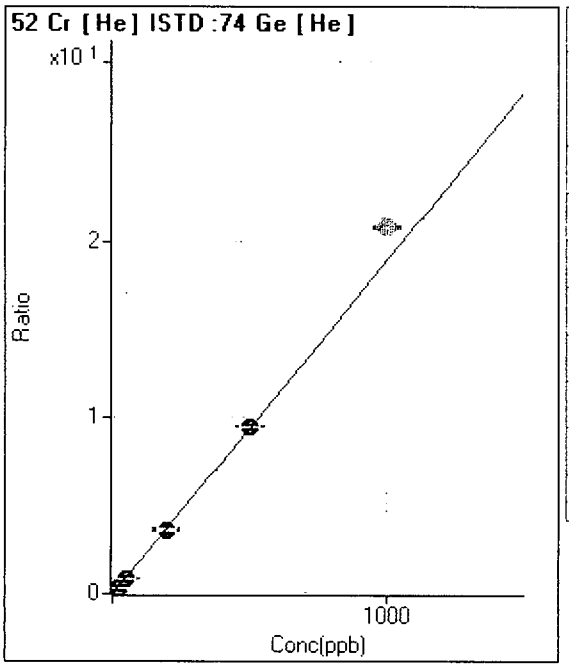


	Rjct	Conc	Calc Conc	CPS	Ratio	Det.	RSD
1		0.000	0.000	461	0.006	P	4.8
2		0.180	0.188	701	0.009	P	12.1
3		0.900	0.953	1718	0.021	P	5.9
4		1.800	1.774	2928	0.033	P	9.2
5		3.600	3.647	5435	0.063	P	6.6
6		20.000	20.097	27447	0.322	P	1.3
7		50.000	49.212	65470	0.780	P	0.6
8		200.000	193.187	254251	3.046	P	2.6
9		500.000	502.800	631780	7.920	P	1.0
10				567	0.007	P	6.1

y = 0.0157 * x + 0.0056
R = 0.9999
DL = 0.05117
BEC = 0.3536

Weight: <None>
Min Conc: <None>

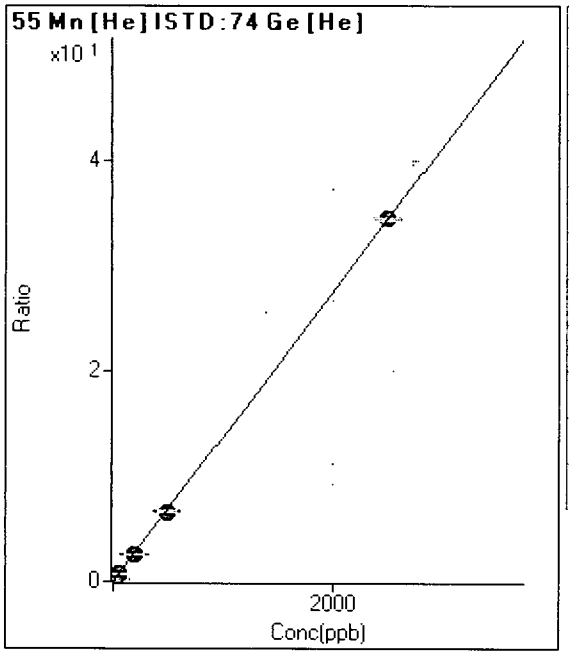
Calibration for 014_ICV.d



	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	114	0.001	P	3.7
2	☐	0.180	0.187	404	0.005	P	10.3
3	☐	0.900	0.890	1518	0.018	P	15.5
4	☐	1.800	1.804	3100	0.035	P	3.1
5	☐	3.600	3.542	5894	0.068	P	1.3
6	☐	20.000	20.162	32588	0.382	P	1.4
7	☐	50.000	49.283	78223	0.932	P	0.3
8	☐	200.000	193.759	305467	3.661	P	3.8
9	☐	500.000	502.562	757291	9.493	P	0.7
10	☑	1000.000		1646730	20.825	A	0.7

y = 0.0189 * x + 0.0014
R = 0.9999
DL = 0.008221
BEC = 0.07311

Weight: <None>
Min Conc: <None>

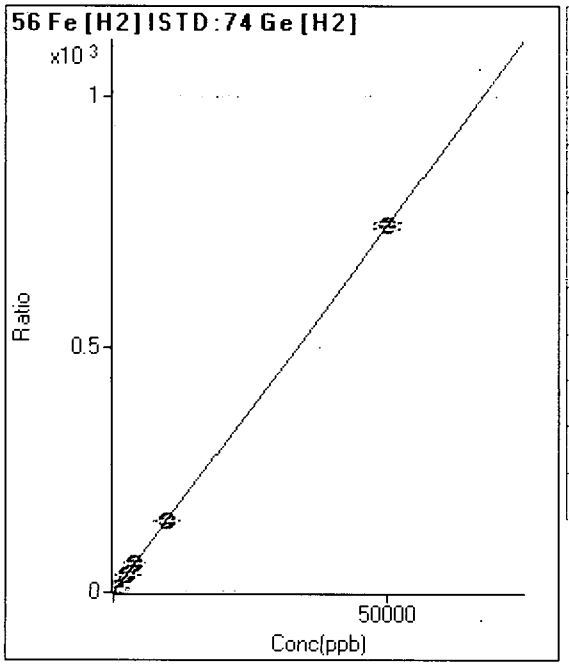


	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	62	0.001	P	20.7
2	☐	0.180	0.189	276	0.003	P	13.7
3	☐	0.900	0.873	1065	0.013	P	4.1
4	☐	1.800	1.770	2192	0.025	P	3.9
5	☐	3.600	3.574	4304	0.050	P	2.8
6	☐	20.000	19.509	22920	0.269	P	1.0
7	☐	50.000	47.472	54801	0.653	P	0.7
8	☐	200.000	188.150	215806	2.586	P	3.3
9	☐	500.000	484.054	530649	6.652	P	0.8
10	☐	2500.000	2504.192	2720908	34.410	A	0.5

y = 0.0137 * x + 7.4969E-004
R = 1.0000
DL = 0.03383
BEC = 0.05456

Weight: <None>
Min Conc: <None>

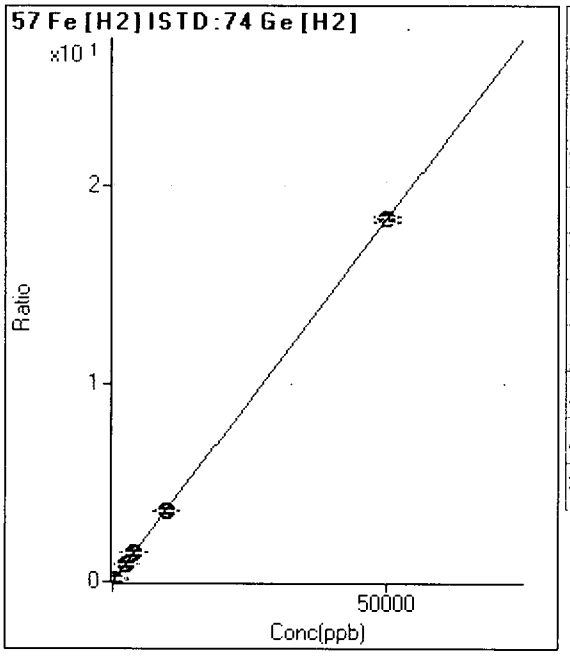
Calibration for 014_ICV.d



	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1		0.000	0.000	9396	0.026	P	4.2
2		9.000	9.410	59859	0.165	P	0.9
3		45.000	44.516	252668	0.687	P	0.8
4		90.000	89.586	519374	1.357	P	0.6
5		180.000	179.407	1021358	2.691	P	0.3
6		400.000	398.996	2236630	5.954	A	2.1
7		2500.000	2407.006	13322527	35.789	A	1.5
8		4000.000	3881.427	20697018	57.696	A	0.3
9		10000.000	9793.198	50100215	145.532	A	0.3
10		50000.000	50055.507	244936190	743.746	A	1.3

y = 0.0149 * x + 0.0257
R = 1.0000
DL = 0.2157
BEC = 1.728

Weight: <None>
Min Conc: <None>

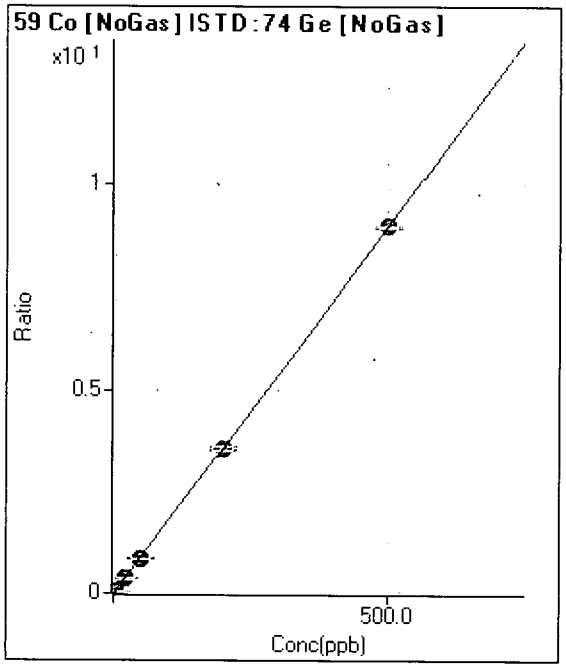


	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1		0.000	0.000	599	0.002	P	4.2
2		9.000	9.072	1793	0.005	P	4.1
3		45.000	44.091	6538	0.018	P	1.8
4		90.000	89.121	13117	0.034	P	0.9
5		180.000	178.575	25433	0.067	P	1.3
6		400.000	392.969	54664	0.146	P	1.0
7		2500.000	2445.623	333916	0.897	P	1.5
8		4000.000	3917.195	515057	1.436	P	0.5
9		10000.000	9853.357	1242448	3.609	P	0.5
10		50000.000	50038.736	6033814	18.322	A	1.5

y = 3.6612E-004 * x + 0.0016
R = 1.0000
DL = 0.563
BEC = 4.471

Weight: <None>
Min Conc: <None>

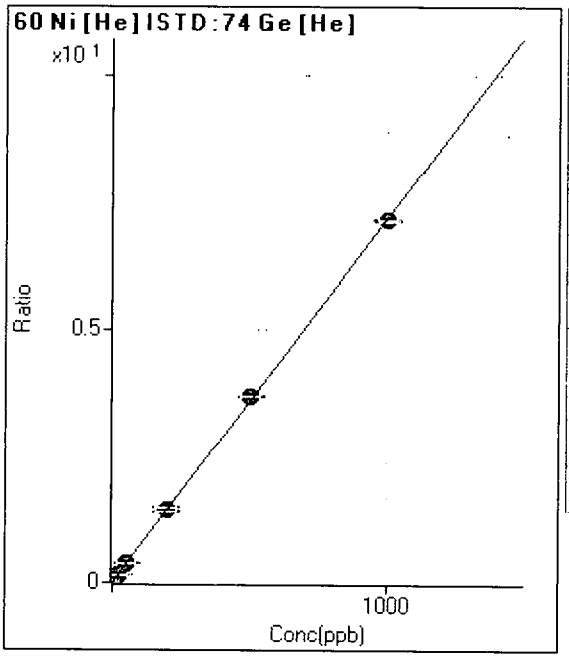
Calibration for 014_ICV.d



	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1		0.000	0.000	277	0.001	P	9.7
2		0.180	0.193	1778	0.004	P	11.3
3		0.900	0.893	7336	0.017	P	1.1
4		1.800	1.821	15074	0.033	P	2.9
5		3.600	3.464	29162	0.063	P	2.7
6		20.000	19.963	160928	0.359	P	1.1
7		50.000	48.688	389166	0.873	P	0.5
8		200.000	199.501	1556216	3.577	A	2.2
9		500.000	500.333	3813564	8.970	A	0.8
10				3129	0.007	P	1.8

y = 0.0179 * x + 6.3441E-004
R = 1.0000
DL = 0.01035
BEC = 0.03539

Weight: <None>
Min Conc: <None>

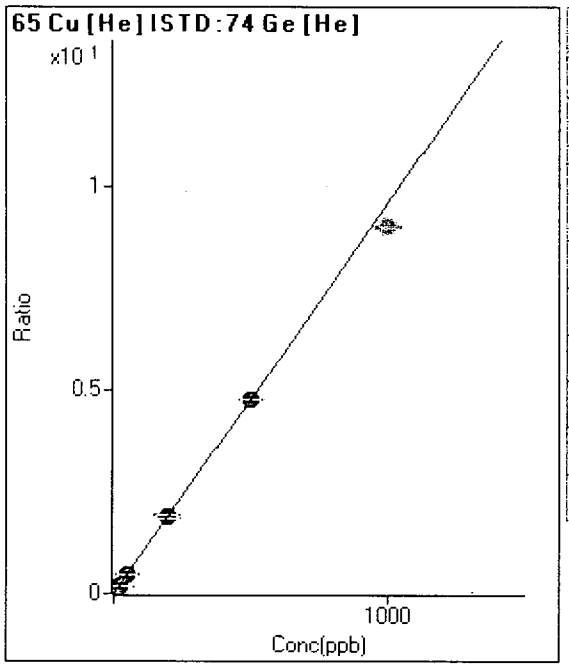


	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1		0.000	0.000	88	0.001	P	44.4
2		0.180	0.193	201	0.002	P	20.5
3		0.900	0.883	618	0.007	P	5.8
4		1.800	1.815	1231	0.014	P	3.0
5		3.600	3.755	2417	0.028	P	1.8
6		20.000	20.824	12830	0.150	P	1.1
7		50.000	51.007	30799	0.367	P	1.0
8		200.000	200.415	120092	1.439	P	3.3
9		500.000	511.203	292689	3.669	P	1.0
10		1000.000	994.248	564184	7.135	P	0.6

y = 0.0072 * x + 0.0011
R = 0.9999
DL = 0.1965
BEC = 0.1474

Weight: <None>
Min Conc: <None>

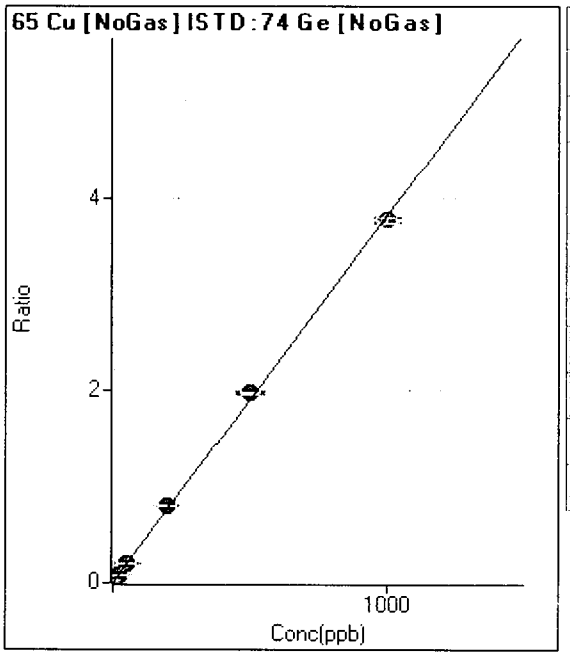
Calibration for 014_ICV.d



	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	254	0.003	P	9.4
2	☑	0.180		453	0.006	P	10.9
3	☐	0.900	0.969	1031	0.012	P	5.8
4	☐	1.800	1.844	1811	0.021	P	5.0
5	☐	3.600	3.938	3517	0.041	P	2.0
6	☐	20.000	21.342	17669	0.207	P	0.6
7	☐	50.000	51.945	41955	0.500	P	0.1
8	☐	200.000	199.534	159535	1.912	P	3.4
9	☐	500.000	499.935	381741	4.785	P	0.6
10	☑	1000.000		712791	9.014	P	0.7

y = 0.0096 * x + 0.0031
R = 1.0000
DL = 0.09078
BEC = 0.3211

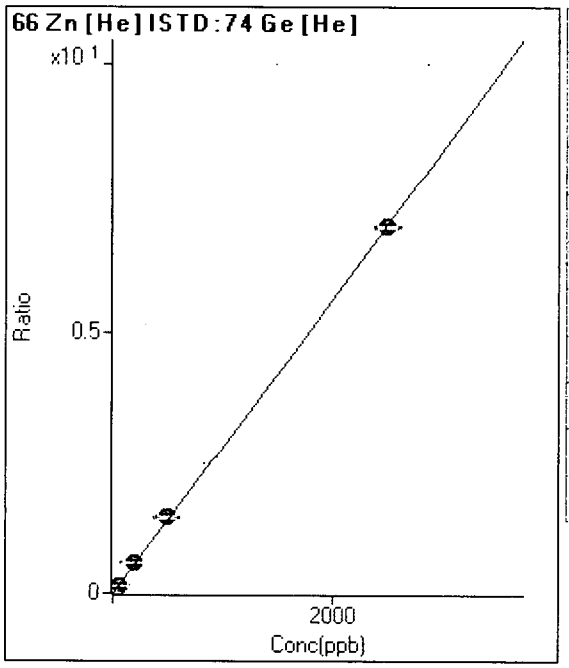
Weight: <None>
Min Conc: <None>



	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	570	0.001	P	14.8
2	☐	0.180	0.232	955	0.002	P	11.8
3	☐	0.900	1.016	2282	0.005	P	11.5
4	☐	1.800	2.010	4062	0.009	P	4.5
5	☐	3.600	3.792	7325	0.016	P	1.8
6	☐	20.000	21.870	37996	0.085	P	1.6
7	☐	50.000	53.018	90603	0.203	P	0.3
8	☐	200.000	207.845	345179	0.793	P	0.6
9	☐	500.000	518.252	840183	1.976	P	1.0
10	☐	1000.000	989.116	1648678	3.771	A	1.8

y = 0.0038 * x + 0.0013
R = 0.9998
DL = 0.1526
BEC = 0.3432

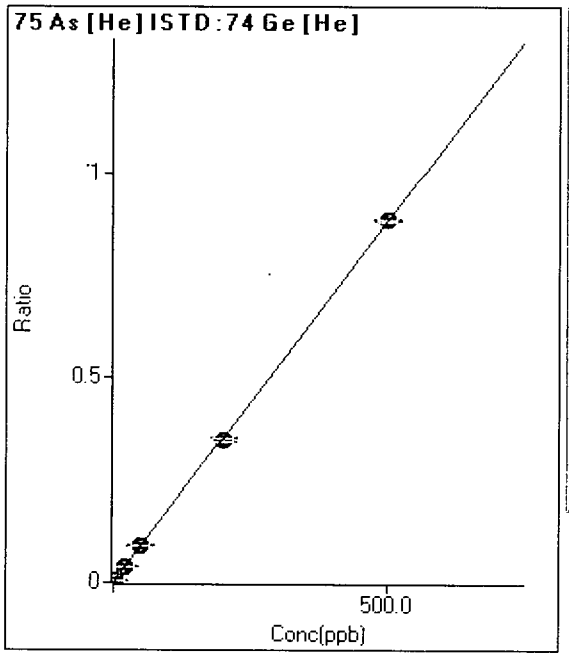
Weight: <None>
Min Conc: <None>



	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	149	0.002	P	13.9
2	☑	0.180		141	0.002	P	13.4
3	☐	0.900	0.680	309	0.004	P	4.6
4	☐	1.800	1.663	563	0.006	P	8.4
5	☐	3.600	3.819	1076	0.012	P	3.8
6	☐	20.000	22.174	5432	0.064	P	2.6
7	☐	50.000	52.635	12481	0.149	P	2.3
8	☐	200.000	207.960	48604	0.582	P	2.9
9	☐	500.000	523.909	116829	1.464	P	0.9
10	☐	2500.000	2494.511	550840	6.966	P	0.4

y = 0.0028 * x + 0.0018
R = 0.9999
DL = 0.2695
BEC = 0.6441

Weight: <None>
Min Conc: <None>

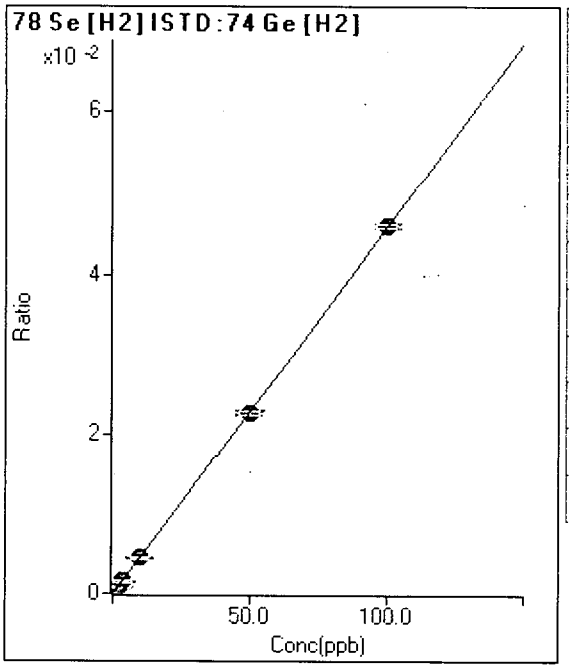


	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	13	0.000	P	10.7
2	☑	0.180		28	0.000	P	2.6
3	☐	0.900	0.890	145	0.002	P	13.4
4	☐	1.800	1.904	308	0.004	P	6.3
5	☐	3.600	3.625	566	0.007	P	5.9
6	☐	20.000	20.743	3137	0.037	P	3.2
7	☐	50.000	49.996	7422	0.088	P	0.1
8	☐	200.000	196.269	28940	0.347	P	2.5
9	☐	500.000	501.463	70651	0.886	P	0.7
10	☐			33	0.000	P	38.7

y = 0.0018 * x + 1.6082E-004
R = 1.0000
DL = 0.02926
BEC = 0.09107

Weight: <None>
Min Conc: <None>

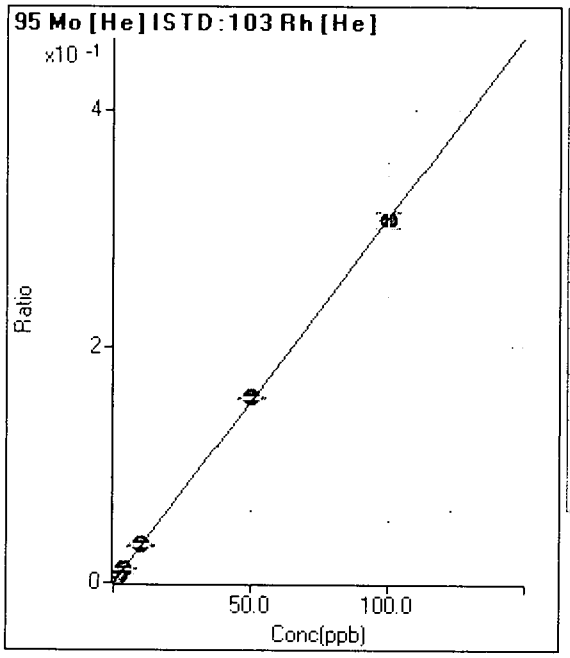
Calibration for 014_ICV.d



	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	1	0.000	P	100.0
2	☑	0.180		45	0.000	P	3.4
3	☐	0.900	1.005	170	0.000	P	2.5
4	☐	1.800	1.898	333	0.001	P	11.2
5	☐	3.600	3.504	609	0.002	P	4.4
6	☐	10.000	9.860	1696	0.005	P	5.4
7	☐	50.000	49.415	8417	0.023	P	1.7
8	☐	100.000	100.307	16463	0.046	P	1.2
9	☐			24	0.000	P	23.1
10	☐			14	0.000	P	26.3

y = 4.5752E-004 * x + 2.7347E-006
R = 1.0000
DL = 0.01793
BEC = 0.005977

Weight: <None>
Min Conc: <None>

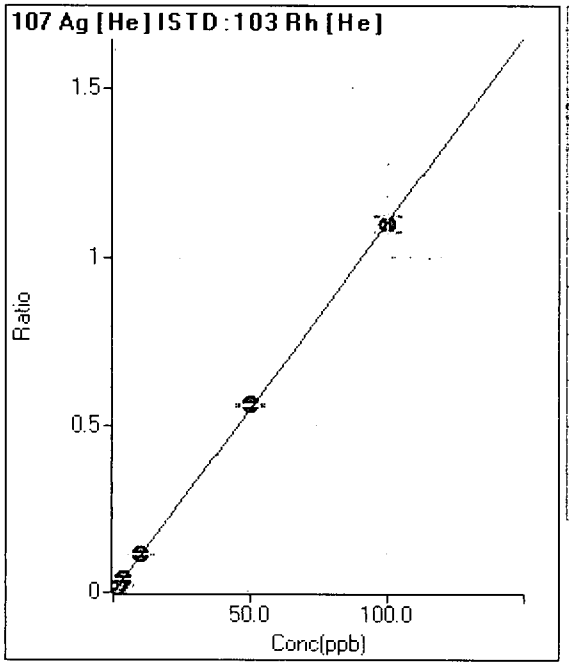


	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	4	0.000	P	42.2
2	☐	0.180	0.163	140	0.001	P	23.6
3	☐	0.900	0.919	774	0.003	P	21.2
4	☐	1.800	1.896	1638	0.006	P	3.7
5	☐	3.600	3.561	3050	0.011	P	6.6
6	☐	10.000	10.286	8717	0.032	P	5.1
7	☐	50.000	51.012	42312	0.158	P	1.2
8	☐	100.000	99.465	82062	0.307	P	4.1
9	☐			100	0.000	P	13.5
10	☐			170	0.001	P	5.3

y = 0.0031 * x + 1.6433E-005
R = 0.9999
DL = 0.006728
BEC = 0.00532

Weight: <None>
Min Conc: <None>

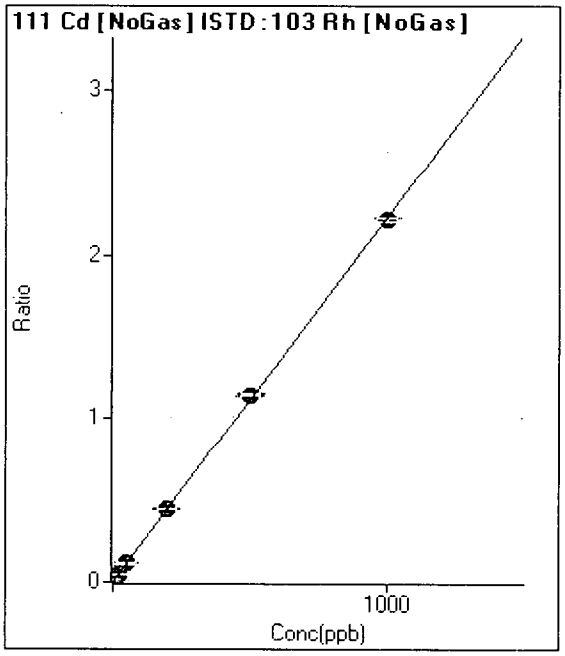
Calibration for 014_ICV.d



	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1		0.000	0.000	7	0.000	P	51.0
2		0.180	0.195	584	0.002	P	2.8
3		0.900	0.978	2931	0.011	P	2.4
4		1.800	1.848	5691	0.020	P	4.7
5		3.600	3.681	11252	0.041	P	1.4
6		10.000	10.438	31578	0.115	P	1.2
7		50.000	50.986	151007	0.562	P	0.9
8		100.000	99.459	292990	1.097	P	4.3
9				107	0.000	P	11.1
10				263	0.001	P	12.1

y = 0.0110 * x + 2.4834E-005
R = 0.9999
DL = 0.003444
BEC = 0.002251

Weight: <None>
Min Conc: <None>

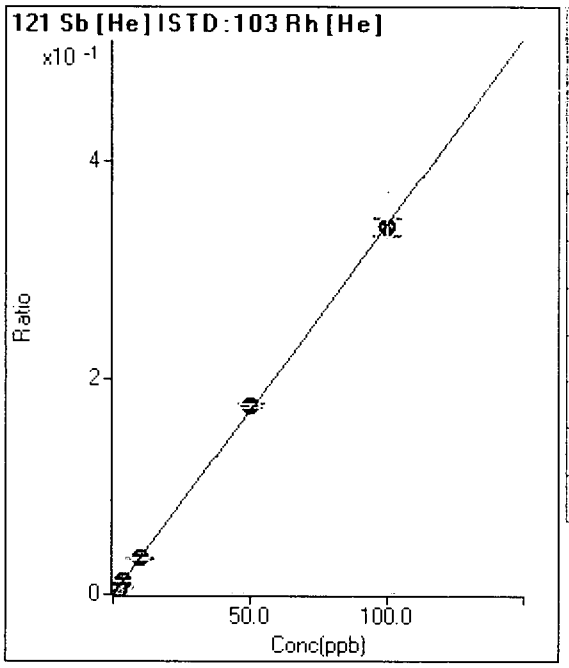


	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1		0.000	0.000	8	0.000	P	60.4
2		0.180	0.174	211	0.000	P	16.3
3		0.900	0.891	1060	0.002	P	3.5
4		1.800	1.764	2134	0.004	P	11.4
5		3.600	3.424	4224	0.008	P	2.1
6		20.000	20.021	23778	0.045	P	0.2
7		50.000	50.220	58503	0.112	P	1.1
8		200.000	201.417	229398	0.449	P	0.7
9		500.000	513.023	564511	1.144	P	0.9
10		1000.000	993.195	1084169	2.215	P	0.9

y = 0.0022 * x + 1.5149E-005
R = 0.9999
DL = 0.0123
BEC = 0.006793

Weight: <None>
Min Conc: <None>

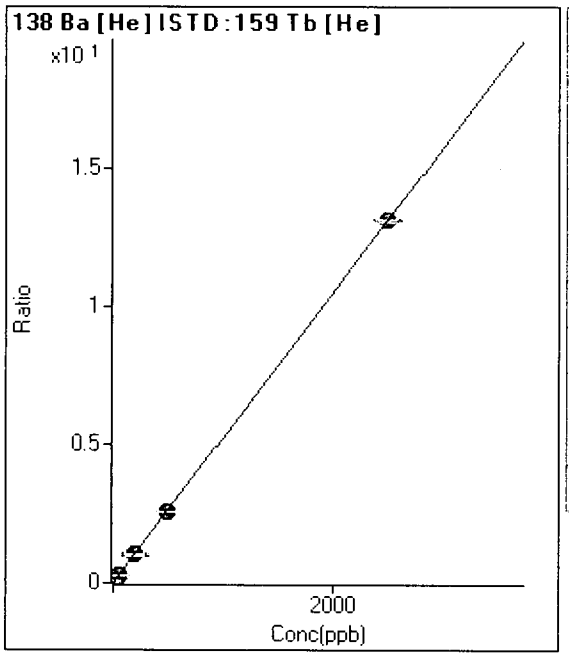
Calibration for 014_ICV.d



	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	2	0.000	P	86.6
2	☐	0.180	0.208	193	0.001	P	9.2
3	☐	0.900	0.887	822	0.003	P	4.4
4	☐	1.800	1.813	1726	0.006	P	8.0
5	☐	3.600	3.675	3474	0.013	P	1.9
6	☐	10.000	9.880	9240	0.034	P	3.1
7	☐	50.000	51.069	46761	0.174	P	1.4
8	☐	100.000	99.474	90576	0.339	P	5.0
9	☐			127	0.001	P	14.6
10	☐			66	0.000	P	24.7

y = 0.0034 * x + 8.2889E-006
R = 0.9999
DL = 0.006315
BEC = 0.002431

Weight: <None>
Min Conc: <None>

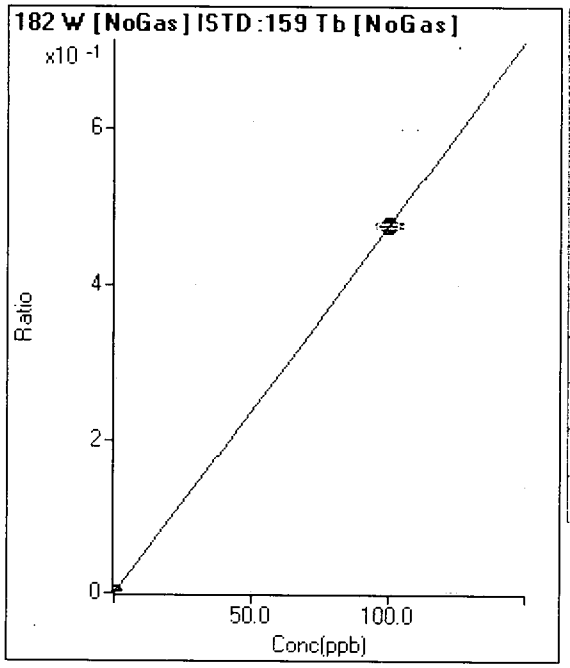


	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	131	0.000	P	4.1
2	☐	0.180	0.169	524	0.001	P	12.8
3	☐	0.900	0.927	2287	0.005	P	6.4
4	☐	1.800	1.802	4440	0.010	P	5.7
5	☐	3.600	3.622	8776	0.019	P	2.6
6	☐	20.000	20.469	48810	0.108	P	1.1
7	☐	50.000	50.272	118937	0.264	P	0.5
8	☐	200.000	194.547	463972	1.021	P	5.4
9	☐	500.000	494.816	1137101	2.597	P	0.4
10	☐	2500.000	2501.464	5716057	13.126	A	0.5

y = 0.0052 * x + 2.9532E-004
R = 1.0000
DL = 0.006927
BEC = 0.05628

Weight: <None>
Min Conc: <None>

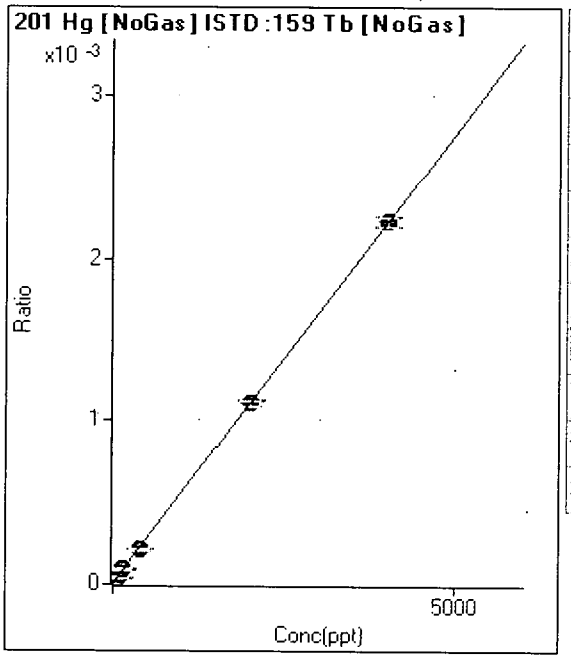
Calibration for 014_ICV.d



	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1		0.000	0.000	46	0.000	P	10.9
2				51	0.000	P	1.0
3				33	0.000	P	43.6
4				50	0.000	P	13.6
5				53	0.000	P	39.4
6				51	0.000	P	38.0
7				69	0.000	P	15.4
8				148	0.000	P	23.1
9		100.000	100.000	457401	0.476	P	0.9
10				947	0.001	P	7.4

y = 0.0048 * x + 4.7165E-005
R = 1.0000
DL = 0.003229
BEC = 0.009919

Weight: <None>
Min Conc: <None>

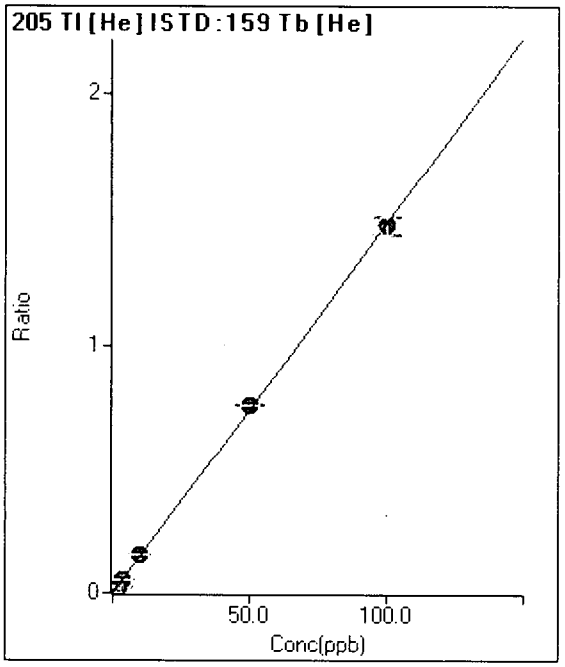


	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1		0.000	0.000	4	0.000	P	63.3
2				8	0.000	P	12.9
3		36.000	38.457	25	0.000	P	7.2
4		72.000	70.095	43	0.000	P	20.2
5		144.000	153.538	91	0.000	P	5.5
6		400.000	367.588	206	0.000	P	1.8
7		2000.000	1988.513	1088	0.001	P	2.9
8		4000.000	4008.653	2159	0.002	P	2.3
9				77	0.000	P	3.6
10				28	0.000	P	13.7

y = 5.5471E-007 * x + 4.1606E-006
R = 1.0000
DL = 14.24
BEC = 7.5

Weight: <None>
Min Conc: <None>

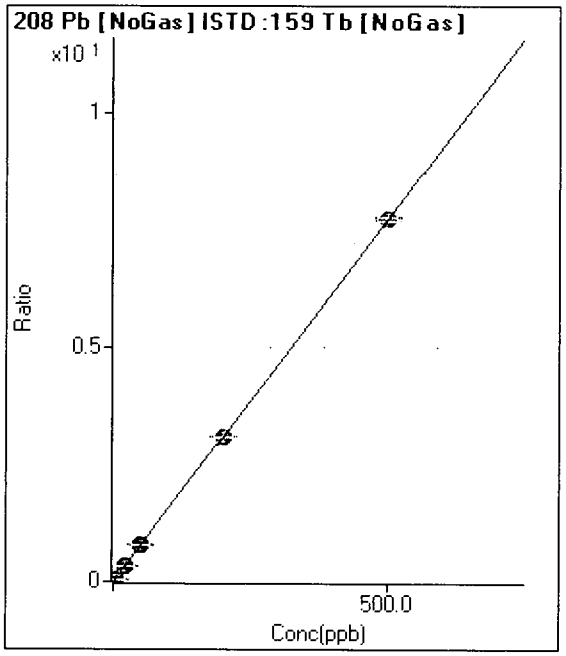
Calibration for 014_ICV.d



	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1		0.000	0.000	97	0.000	P	23.1
2		0.180	0.190	1345	0.003	P	2.7
3		0.900	0.950	6340	0.014	P	2.7
4		1.800	1.830	12450	0.027	P	1.2
5		3.600	3.716	25161	0.055	P	2.2
6		10.000	10.368	69783	0.154	P	0.9
7		50.000	51.114	341517	0.758	P	0.9
8		100.000	99.401	670136	1.474	P	4.5
9				352	0.001	P	11.0
10				161	0.000	P	4.6

y = 0.0148 * x + 2.1738E-004
R = 0.9999
DL = 0.01016
BEC = 0.01466

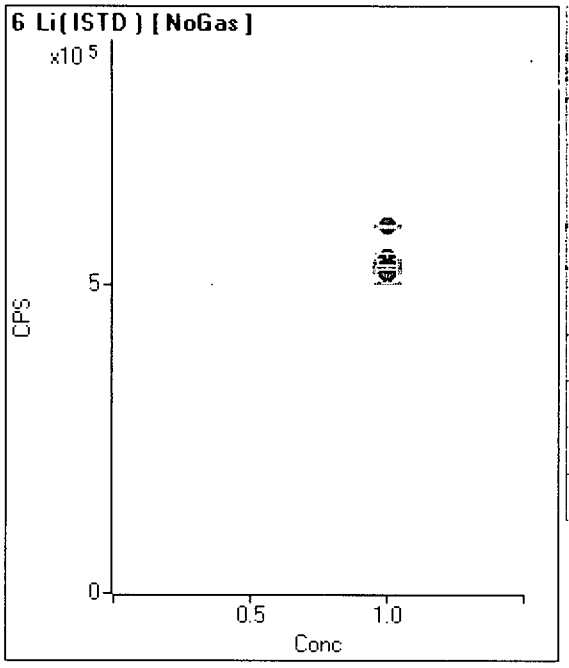
Weight: <None>
Min Conc: <None>



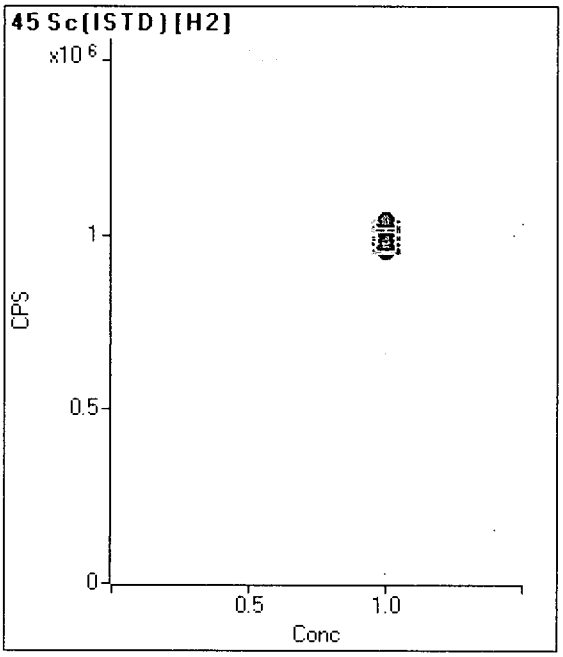
	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1		0.000	0.000	670	0.001	P	15.9
2		0.180	0.172	3252	0.003	P	5.0
3		0.900	0.889	14089	0.014	P	1.9
4		1.800	1.771	27767	0.028	P	1.6
5		3.600	3.461	55120	0.054	P	3.2
6		20.000	20.237	311123	0.314	P	0.6
7		50.000	49.258	750065	0.763	P	0.3
8		200.000	199.901	3000078	3.096	A	0.2
9		500.000	500.105	7447355	7.743	A	1.1
10				3678	0.004	P	9.6

y = 0.0155 * x + 6.9330E-004
R = 1.0000
DL = 0.02129
BEC = 0.04478

Weight: <None>
Min Conc: <None>

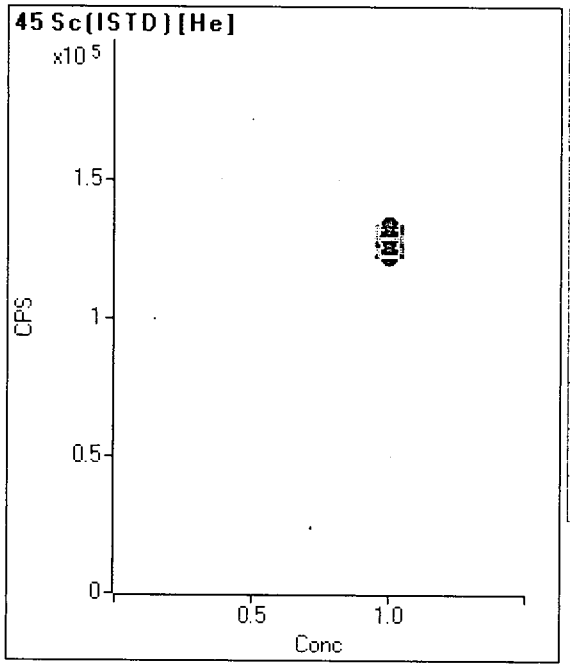


	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	1.000		522968		P	1.2
2	☐	1.000		518800		P	6.5
3	☐	1.000		524393		P	0.9
4	☐	1.000		530763		P	0.4
5	☐	1.000		544377		P	1.8
6	☐	1.000		529526		P	0.8
7	☐	1.000		528844		P	1.0
8	☐	1.000		522948		P	0.8
9	☐	1.000		528520		P	1.1
10	☐	1.000		593499		P	0.5

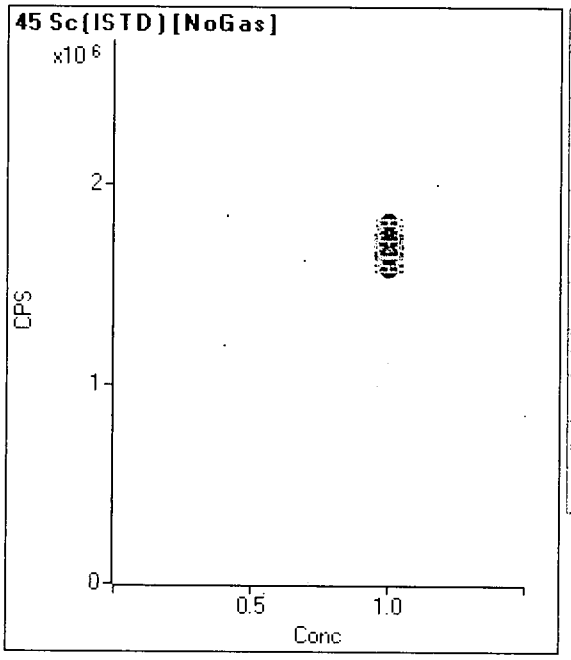


	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	1.000		957795		P	0.1
2	☐	1.000		964468		P	0.6
3	☐	1.000		990126		P	0.9
4	☐	1.000		1039791		P	0.5
5	☐	1.000		1029929		P	0.8
6	☐	1.000		1017229		P	0.6
7	☐	1.000		1013068		P	1.0
8	☐	1.000		973941		P	0.7
9	☐	1.000		957486		P	0.4
10	☐	1.000		951037		P	1.1

Calibration for 014_ICV.d

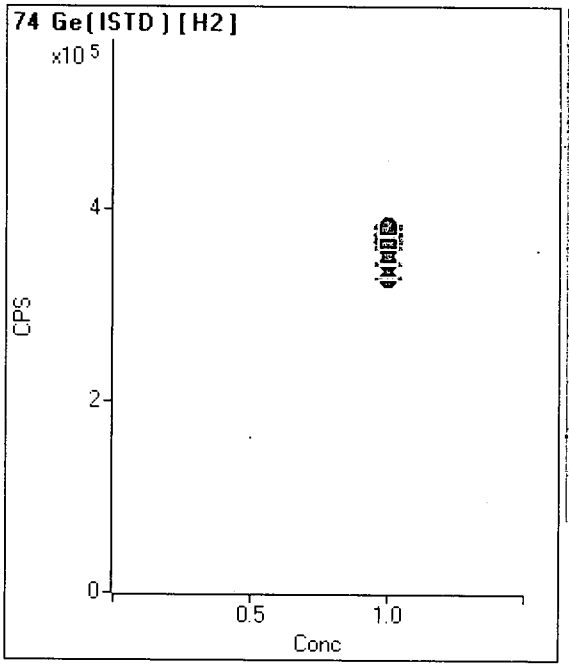


	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	1.000		124730		P	0.9
2	☐	1.000		125889		P	0.9
3	☐	1.000		125977		P	0.5
4	☐	1.000		133314		P	0.5
5	☐	1.000		131219		P	0.6
6	☐	1.000		129887		P	1.0
7	☐	1.000		128480		P	1.4
8	☐	1.000		129497		P	3.8
9	☐	1.000		122336		P	0.7
10	☐	1.000		129065		P	0.4

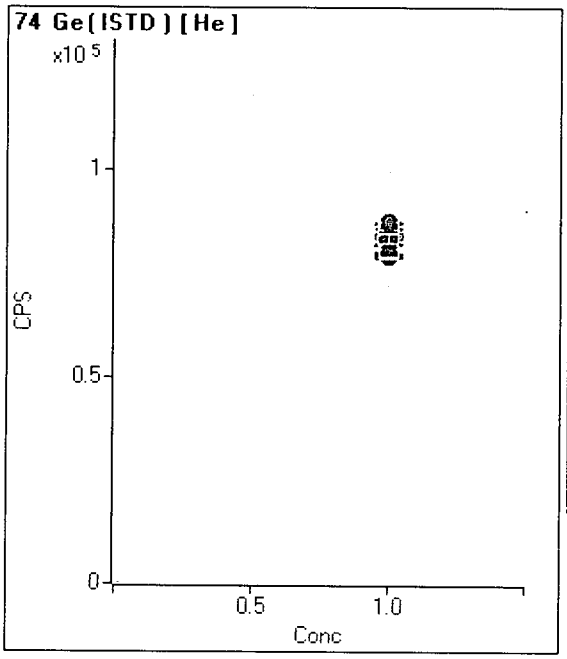


	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	1.000		1581446		A	1.4
2	☐	1.000		1677863		A	6.1
3	☐	1.000		1660108		A	0.9
4	☐	1.000		1707226		A	1.2
5	☐	1.000		1763571		A	1.3
6	☐	1.000		1697973		A	1.6
7	☐	1.000		1707038		A	1.5
8	☐	1.000		1656214		A	0.8
9	☐	1.000		1640164		A	0.9
10	☐	1.000		1814283		A	1.9

Calibration for 014_ICV.d

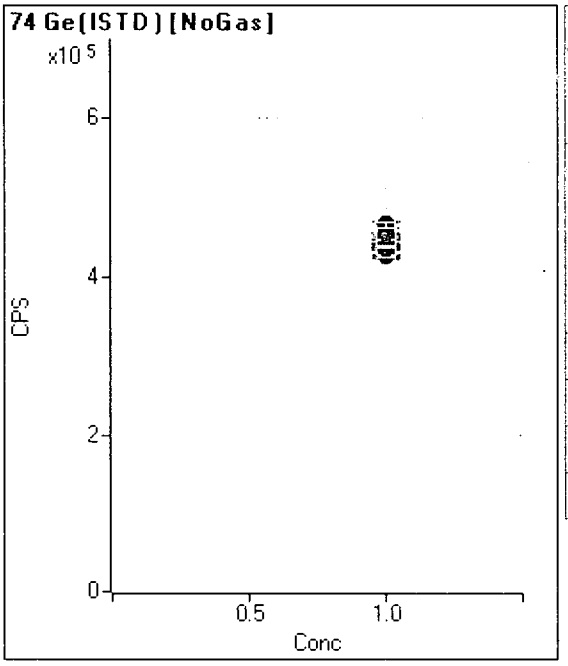


	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1		1.000		365864		P	0.1
2		1.000		361690		P	0.1
3		1.000		367739		P	0.4
4		1.000		382812		P	0.2
5		1.000		379506		P	0.1
6		1.000		375672		P	0.4
7		1.000		372288		P	1.0
8		1.000		358730		P	0.3
9		1.000		344258		P	0.4
10		1.000		329347		P	0.7

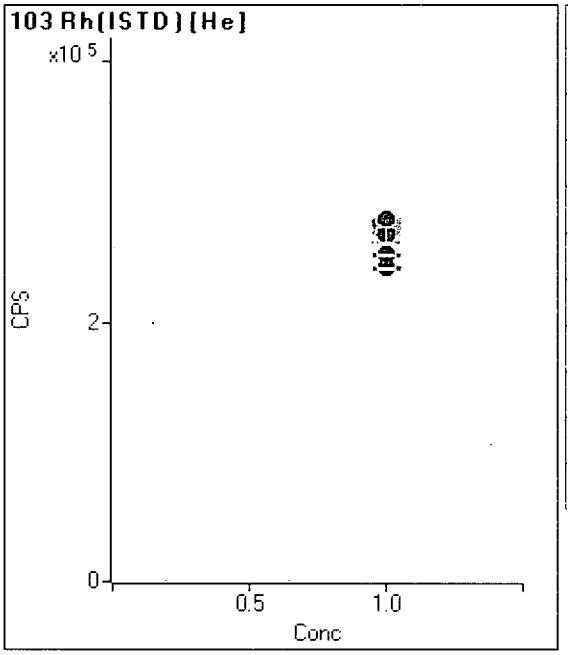


	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1		1.000		82867		P	1.2
2		1.000		82284		P	0.6
3		1.000		83523		P	0.6
4		1.000		87451		P	0.2
5		1.000		86318		P	0.3
6		1.000		85266		P	0.6
7		1.000		83916		P	0.6
8		1.000		83499		P	2.7
9		1.000		79775		P	0.5
10		1.000		79074		P	0.2

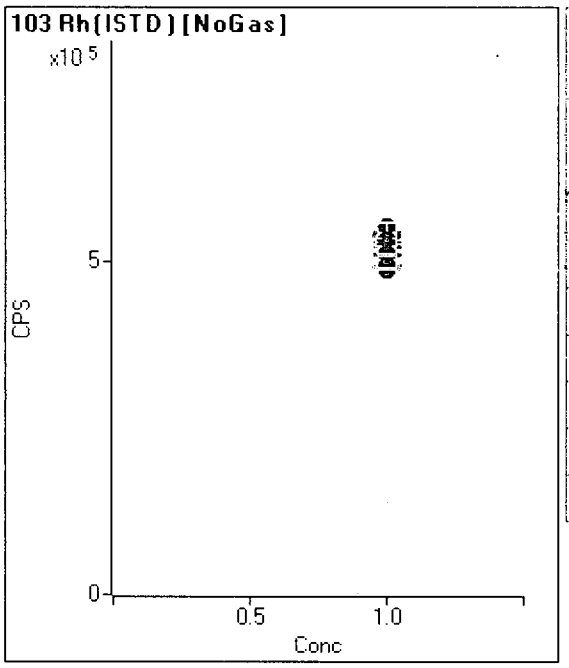
Calibration for 014_ICV.d



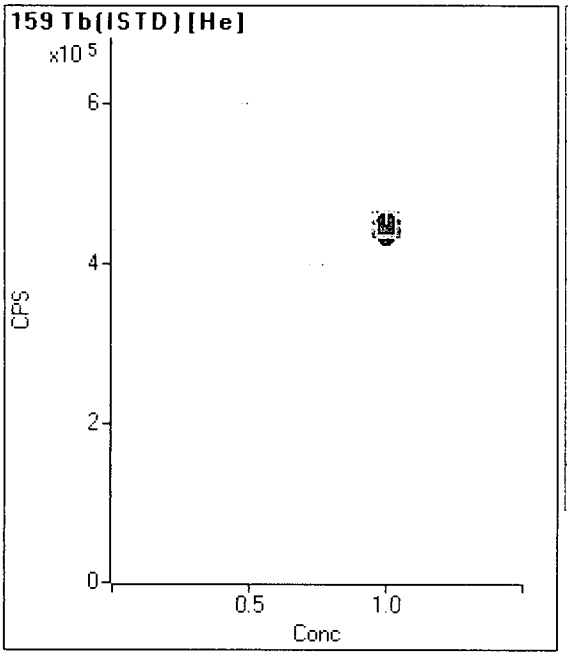
	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	1.000		435836		P	0.4
2	☐	1.000		435982		P	6.2
3	☐	1.000		440680		P	0.5
4	☐	1.000		452995		P	0.4
5	☐	1.000		464921		P	1.4
6	☐	1.000		448894		P	0.7
7	☐	1.000		445550		P	0.3
8	☐	1.000		435086		P	0.8
9	☐	1.000		425155		P	0.9
10	☐	1.000		437289		P	1.0



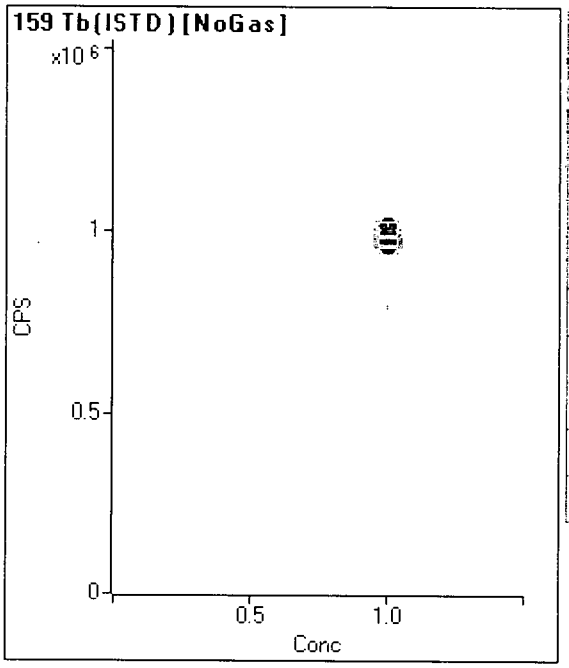
	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	1.000		269557		P	1.2
2	☐	1.000		269249		P	0.6
3	☐	1.000		271163		P	0.4
4	☐	1.000		278838		P	0.6
5	☐	1.000		276973		P	0.5
6	☐	1.000		274195		P	0.3
7	☐	1.000		268492		P	0.1
8	☐	1.000		267378		P	4.2
9	☐	1.000		251995		P	0.3
10	☐	1.000		241869		P	0.6



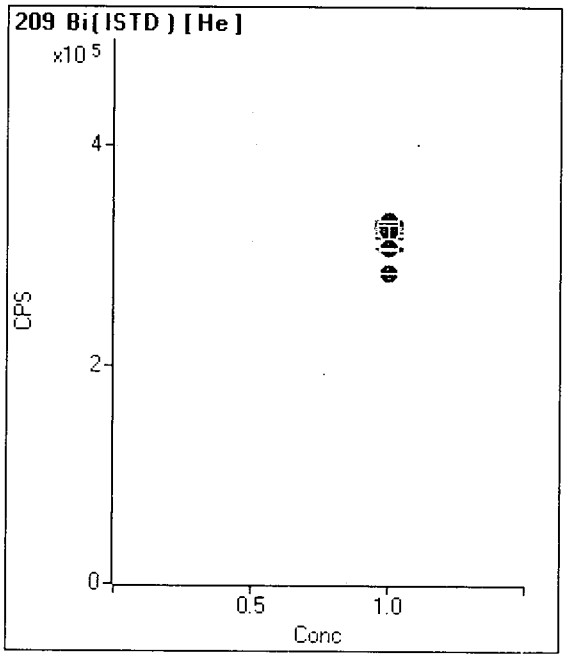
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD.
1	☐	1.000		523947		P	0.3
2	☐	1.000		526405		P	6.4
3	☐	1.000		529604		P	0.3
4	☐	1.000		540335		P	0.2
5	☐	1.000		551990		P	2.4
6	☐	1.000		532336		P	0.8
7	☐	1.000		522286		P	0.7
8	☐	1.000		510643		P	0.9
9	☐	1.000		493386		P	0.7
10	☐	1.000		489463		P	0.8



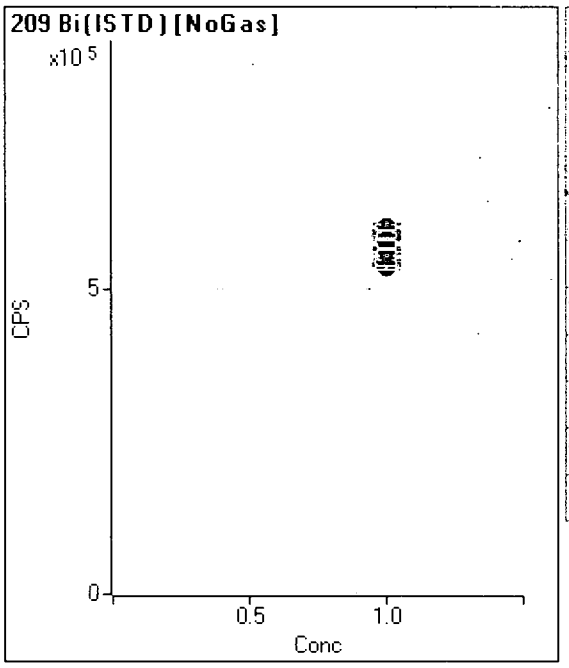
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD.
1	☐	1.000		443840		P	1.3
2	☐	1.000		443392		P	0.4
3	☐	1.000		443218		P	0.5
4	☐	1.000		455173		P	0.8
5	☐	1.000		454721		P	0.6
6	☐	1.000		453191		P	0.6
7	☐	1.000		450375		P	0.1
8	☐	1.000		455169		P	4.9
9	☐	1.000		437903		P	0.8
10	☐	1.000		435467		P	0.3



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD.
1	☐	1.000		965727		P	1.1
2	☐	1.000		972670		P	6.5
3	☐	1.000		974201		P	0.3
4	☐	1.000		987609		P	0.3
5	☐	1.000		1016056		P	2.1
6	☐	1.000		990849		P	0.5
7	☐	1.000		982671		P	0.2
8	☐	1.000		969165		P	0.3
9	☐	1.000		961846		P	0.8
10	☐	1.000		989034		P	0.8



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD.
1	☐	1.000		326731		P	1.0
2	☐	1.000		324903		P	0.1
3	☐	1.000		327944		P	0.3
4	☐	1.000		331510		P	0.9
5	☐	1.000		327671		P	1.1
6	☐	1.000		329921		P	1.0
7	☐	1.000		323732		P	1.2
8	☐	1.000		322563		P	4.2
9	☐	1.000		306934		P	0.2
10	☐	1.000		284865		P	0.3



	Rjct	Conc	Calc Conc	CPS	Ratio	Det	RSD
1	☐	1.000		579849		P	0.2
2	☐	1.000		576441		P	6.6
3	☐	1.000		581819		P	0.6
4	☐	1.000		588913		P	0.3
5	☐	1.000		599290		P	1.8
6	☐	1.000		592220		P	0.6
7	☐	1.000		579634		P	0.7
8	☐	1.000		562919		P	0.6
9	☐	1.000		542820		P	0.9
10	☐	1.000		532471		P	1.1

Initial Calibration Verification (ICV) Report ICPMS5

Sample Name	9E20033-ICV1
File Name	014_ICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b
Acq Time	5/20/2019 16:56:26
Sample Type	ICV
Total Dilution	1.0000
Comment	A19E109 ~~ESS 05/17~~ JB 05/20 JB
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	4023.676	ppb	Analog	8096567	7.577	0.2001	
Ca	44	45	1	H2	4148.275	ppb	Pulse	413924	0.387	0.2001	
Fe	56	74	1	H2	3988.720	ppb	Analog	22905351	59.290	0.3000	
Fe	57	74	1	H2	4044.142	ppb	Pulse	572663	1.482	0.3000	
Se	78	74	1	H2	39.312	ppb	Pulse	6950	0.018	0.9999	
Mg	24	45	2	He	4092.612	ppb	Pulse	830000	6.073	0.0999	
Al	27	45	2	He	3996.140	ppb	Pulse	428645	3.136	0.0999	
K	39	45	2	He	4093.062	ppb	Pulse	836579	6.121	0.0999	
V	51	74	2	He	98.244	ppb	Pulse	137956	1.552	0.3000	
Cr	52	74	2	He	99.797	ppb	Pulse	167664	1.886	0.3000	
Mn	55	74	2	He	97.114	ppb	Pulse	118678	1.335	0.3000	
Ni	60	74	2	He	103.521	ppb	Pulse	66121	0.744	0.3000	
Cu	65	74	2	He	100.122	ppb	Pulse	85408	0.961	0.3000	
Zn	66	74	2	He	104.449	ppb	Pulse	26081	0.293	0.3000	
As	75	74	2	He	97.645	ppb	Pulse	15341	0.173	0.9999	
Mo	95	103	2	He	40.947	ppb	Pulse	34710	0.127	0.3000	
Ag	107	103	2	He	40.749	ppb	Pulse	123338	0.450	0.3000	
Sb	121	103	2	He	43.387	ppb	Pulse	40600	0.148	0.3000	
Ba	138	159	2	He	102.945	ppb	Pulse	248250	0.540	0.3000	
Tl	205	159	2	He	39.676	ppb	Pulse	270380	0.589	0.3000	
Be	9	6	3	NoGas	39.621	ppb	Pulse	61262	0.112	0.3000	
Ti	47	45	3	NoGas	100.100	ppb	Pulse	57841	0.034	0.2001	
Co	59	74	3	NoGas	102.404	ppb	Pulse	816584	1.836	0.2001	
Cu	65	74	3	NoGas	106.396	ppb	Pulse	180874	0.407	0.2001	
Cd	111	103	3	NoGas	96.694	ppb	Pulse	113682	0.216	0.3000	
W	182	159	3	NoGas	0.036	ppb	Pulse	213	0.000	0.3000	
Hg	201	159	3	NoGas	780.286	ppt	Pulse	431	0.000	2.0001	
Pb	208	159	3	NoGas	93.417	ppb	Pulse	1427060	1.447	0.2001	

QC ISTD Table

Name	Mass	Det.	Tune Mode	CPS RSD	ISTD Ref CPS	CPS	ISTD Recovery %	QC flag
Sc	45	Pulse	H2	0.9	957795.216666667	1068636	111.6	
Ge	74	Pulse	H2	0.6	365863.58	386348	105.6	
Sc	45	Pulse	He	1.6	124730.113333333	136703	109.6	
Ge	74	Pulse	He	0.7	82867.31	88891	107.3	
Rh	103	Pulse	He	0.7	269557.44	274395	101.8	
Tb	159	Pulse	He	0.2	443839.81	459311	103.5	
Bi	209	Pulse	He	0.7	326730.87	319500	97.8	
Li	6	Pulse	NoGas	0.9	522967.65	548768	104.9	

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	1.1	1581446.20333333	1708965	108.1	
Ge	74	Pulse	NoGas	0.6	435835.62	444676	102.0	
Rh	103	Pulse	NoGas	0.9	523946.536666667	527124	100.6	
Tb	159	Pulse	NoGas	0.2	965727.01	986261	102.1	
Bi	209	Pulse	NoGas	0.8	579848.77	573352	98.9	

Initial Calibration Blank (ICB) Report ICPMS5

Sample Name	9E20033-ICB1
File Name	015_ICB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b
Acq Time	5/20/2019 17:00:39
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	-0.576	ppb	Pulse	16146	0.016	0.2001	
Ca	44	45	1	H2	-2.707	ppb	Pulse	761	0.001	0.2001	
Fe	56	74	1	H2	0.480	ppb	Pulse	12230	0.033	0.3000	
Fe	57	74	1	H2	0.465	ppb	Pulse	673	0.002	0.3000	
Se	78	74	1	H2	0.070	ppb	Pulse	13	0.000	0.9999	
Mg	24	45	2	He	-0.059	ppb	Pulse	204	0.002	0.0999	
Al	27	45	2	He	0.492	ppb	Pulse	147	0.001	0.0999	
K	39	45	2	He	0.712	ppb	Pulse	9493	0.072	0.0999	
V	51	74	2	He	0.048	ppb	Pulse	550	0.006	0.3000	
Cr	52	74	2	He	0.013	ppb	Pulse	141	0.002	0.3000	
Mn	55	74	2	He	-0.001	ppb	Pulse	64	0.001	0.3000	
Ni	60	74	2	He	0.013	ppb	Pulse	100	0.001	0.3000	
Cu	65	74	2	He	0.012	ppb	Pulse	277	0.003	0.3000	
Zn	66	74	2	He	-0.159	ppb	Pulse	118	0.001	0.3000	
As	75	74	2	He	-0.024	ppb	Pulse	10	0.000	0.9999	
Mo	95	103	2	He	0.026	ppb	Pulse	27	0.000	0.3000	
Ag	107	103	2	He	0.005	ppb	Pulse	23	0.000	0.3000	
Sb	121	103	2	He	0.016	ppb	Pulse	18	0.000	0.3000	
Ba	138	159	2	He	0.000	ppb	Pulse	133	0.000	0.3000	
Tl	205	159	2	He	0.004	ppb	Pulse	128	0.000	0.3000	
Be	9	6	3	NoGas	0.011	ppb	Pulse	21	0.000	0.3000	
Ti	47	45	3	NoGas	-0.001	ppb	Pulse	52	0.000	0.2001	
Co	59	74	3	NoGas	0.014	ppb	Pulse	396	0.001	0.2001	
Cu	65	74	3	NoGas	0.019	ppb	Pulse	620	0.001	0.2001	
Cd	111	103	3	NoGas	0.019	ppb	Pulse	31	0.000	0.3000	
W	182	159	3	NoGas	0.009	ppb	Pulse	88	0.000	0.3000	
Hg	201	159	3	NoGas	5.524	ppt	Pulse	7	0.000	2.0001	
Pb	208	159	3	NoGas	0.019	ppb	Pulse	973	0.001	0.2001	

QC ISTD Table

Name	Mass	Det.	Tune Mode	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	Pulse	H2	0.8	1015774	957795.216666667	106.1	
Ge	74	Pulse	H2	0.4	372658	365863.58	101.9	
Sc	45	Pulse	He	1.4	132002	124730.113333333	105.8	
Ge	74	Pulse	He	0.4	86962	82867.31	104.9	
Rh	103	Pulse	He	1.2	277406	269557.44	102.9	
Tb	159	Pulse	He	1.6	454853	443839.81	102.5	
Bi	209	Pulse	He	1.2	325315	326730.87	99.6	

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	0.9	543065	522967.65	103.8	
Sc	45	Analog	NoGas	1.6	1707092	1581446.20333333	107.9	
Ge	74	Pulse	NoGas	0.9	449152	435835.62	103.1	
Rh	103	Pulse	NoGas	0.9	540550	523946.536666667	103.2	
Tb	159	Pulse	NoGas	0.8	991212	965727.01	102.6	
Bi	209	Pulse	NoGas	0.6	587788	579848.77	101.4	

CRL Verification ICPMS5

Sample Name	9E20033-CRL1 1102
File Name	016CRL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b
Acq Time	5/20/2019 17:04:54
Sample Type	CRL1
Total Dilution	1.0000
Comment	A19D348 ESS 05/17 JPB 05/20 JB 05/21/19
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	7.810	ppb	1.1	32846	86.78	70	130	
Ca	44	45	H2	5.648	ppb	23.4	1584	62.76	70	130	<>CRL1 NR<MRL<R-11
Fe	56	74	H2	9.106	ppb	2.0	61247	101.18	70	130	
Fe	57	74	H2	9.798	ppb	9.5	1988	108.87	70	130	
Se	78	74	H2	0.176	ppb	16.6	32	97.78	70	130	
Mg	24	45	He	8.315	ppb	3.6	1839	92.39	70	130	
Al	27	45	He	8.997	ppb	9.0	1024	99.97	70	130	
K	39	45	He	9.034	ppb	25.7	11085	100.38	70	130	
V	51	74	He	0.143	ppb	21.5	680	79.44	70	130	
Cr	52	74	He	0.176	ppb	16.0	410	97.78	70	130	
Mn	55	74	He	0.156	ppb	8.6	252	86.67	70	130	
Ni	60	74	He	0.198	ppb	32.5	216	110	70	130	
Cu	65	74	He	0.198	ppb	46.8	432	110	70	130	
Zn	66	74	He	-0.031	ppb	N/A	149	-17.22	70	130	<>CRL1 NR<MRL<R-11
As	75	74	He	0.180	ppb	15.8	42	100	70	130	
Mo	95	103	He	0.175	ppb	14.9	156	97.22	70	130	
Ag	107	103	He	0.196	ppb	8.5	612	108.89	70	130	
Sb	121	103	He	0.195	ppb	3.7	188	108.33	70	130	
Ba	138	159	He	0.171	ppb	11.9	543	95	70	130	
Tl	205	159	He	0.193	ppb	3.2	1405	107.22	70	130	
Be	9	6	NoGas	0.192	ppb	13.2	299	106.67	70	130	
Ti	47	45	NoGas	0.246	ppb	11.6	195	136.67	70	130	<>CRL1 NR<MRL<R-11
Co	59	74	NoGas	0.173	ppb	1.8	1701	96.11	70	130	
Cu	65	74	NoGas	0.229	ppb	12.1	991	127.22	70	130	
Cd	111	103	NoGas	0.212	ppb	20.9	266	117.78	70	130	
Hg	201	159	NoGas	7.512	ppt	54.0	8	104.33	70	130	
Pb	208	159	NoGas	0.188	ppb	2.4	3612	104.44	70	130	

JB 05/21/19

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	2.1	1037690	957795.216666667	108.3	
Ge	74	H2	Pulse	1.3	380534	365863.58	104.0	
Sc	45	He	Pulse	0.6	131615	124730.113333333	105.5	
Ge	74	He	Pulse	0.9	87050	82867.31	105.0	
Rh	103	He	Pulse	0.6	279614	269557.44	103.7	

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Tb	159	He	Pulse	0.5	456426	443839.81	102.8	
Bi	209	He	Pulse	0.9	329672	326730.87	100.9	
Li	6	NoGas	Pulse	0.9	544727	522967.65	104.2	
Sc	45	NoGas	Analog	1.2	1713709	1581446.20333333	108.4	
Ge	74	NoGas	Pulse	0.6	454757	435835.62	104.3	
Rh	103	NoGas	Pulse	0.3	544791	523946.536666667	104.0	
Tb	159	NoGas	Pulse	0.2	1000645	965727.01	103.6	
Bi	209	NoGas	Pulse	0.3	592782	579848.77	102.2	

CRL Verification ICPMS5

Sample Name	9E20033-CRL2	1103
File Name	017_CRL.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b	
Acq Time	5/20/2019 17:09:09	
Sample Type	CRL2	
Total Dilution	1.0000	
Comment	A19D349 EBS 05/17 JPB 05/20 JB 05/21/19	
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	43.387	ppb	0.7	101741	96.42	70	130	
Ca	44	45	H2	45.636	ppb	3.0	5425	101.41	70	130	
Fe	57	74	H2	44.525	ppb	1.4	6813	98.94	70	130	
Se	78	74	H2	0.946	ppb	3.2	165	105.11	70	130	
Mg	24	45	He	45.359	ppb	1.4	9059	100.8	70	130	
Al	27	45	He	44.600	ppb	6.5	4696	99.11	70	130	
K	39	45	He	46.976	ppb	5.2	18442	104.39	70	130	
V	51	74	He	0.924	ppb	9.9	1746	102.67	70	130	
Cr	52	74	He	0.868	ppb	14.8	1541	96.44	70	130	
Mn	55	74	He	0.900	ppb	4.4	1138	100	70	130	
Ni	60	74	He	1.002	ppb	7.2	716	111.33	70	130	
Cu	65	74	He	0.933	ppb	9.9	1041	103.67	70	130	
Zn	66	74	He	0.718	ppb	8.3	330	79.78	70	130	
As	75	74	He	0.884	ppb	6.3	149	98.22	70	130	
Mo	95	103	He	0.895	ppb	5.5	778	99.44	70	130	
Ag	107	103	He	0.939	ppb	6.4	2904	104.33	70	130	
Sb	121	103	He	0.880	ppb	6.6	841	97.78	70	130	
Ba	138	159	He	0.904	ppb	3.4	2301	100.44	70	130	
Tl	205	159	He	0.927	ppb	2.8	6377	103	70	130	
Be	9	6	NoGas	0.846	ppb	2.6	1306	94	70	130	
Ti	47	45	NoGas	0.833	ppb	9.0	540	92.56	70	130	
Co	59	74	NoGas	0.936	ppb	2.8	7955	104	70	130	
Cu	65	74	NoGas	0.978	ppb	4.0	2299	108.67	70	130	
Cd	111	103	NoGas	0.946	ppb	6.5	1151	105.11	70	130	
Hg	201	159	NoGas	43.523	ppt	12.4	28	120.9	70	130	
Pb	208	159	NoGas	0.894	ppb	4.5	14471	99.33	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.5	1032959	957795.216666667	107.8	
Ge	74	H2	Pulse	0.7	379798	365863.58	103.8	
Sc	45	He	Pulse	0.5	131437	124730.113333333	105.4	
Ge	74	He	Pulse	0.6	86787	82867.31	104.7	
Rh	103	He	Pulse	0.9	279464	269557.44	103.7	
Tb	159	He	Pulse	1.1	456866	443839.81	102.9	

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Bi	209	He	Pulse	1.3	329537	326730.87	100.9	
Li	6	NoGas	Pulse	0.6	545892	522967.65	104.4	
Sc	45	NoGas	Analog	2.4	1732487	1581446.20333333	109.6	
Ge	74	NoGas	Pulse	0.4	456593	435835.62	104.8	
Rh	103	NoGas	Pulse	0.7	541889	523946.536666667	103.4	
Tb	159	NoGas	Pulse	0.5	995560	965727.01	103.1	
Bi	209	NoGas	Pulse	0.3	592309	579848.77	102.1	

CRL Verification ICPMS5

Sample Name	9E20033-CRL3
File Name	018CRL_.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b
Acq Time	5/20/2019 17:13:24
Sample Type	CRL3
Total Dilution	1.0000
Comment	A19D350 ESS 05/17 05/20 05/21/19
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	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Na	23	45	H2	87.565	ppb	2.8	190221	97.29	70	130	
Ca	44	45	H2	87.518	ppb	3.0	9600	97.24	70	130	
Fe	57	74	H2	88.619	ppb	4.2	13160	98.47	70	130	
Se	78	74	H2	1.821	ppb	8.3	323	101.17	70	130	
Mg	24	45	He	88.466	ppb	3.4	17797	98.3	70	130	
Al	27	45	He	91.170	ppb	1.3	9683	101.3	70	130	
K	39	45	He	89.195	ppb	3.4	27162	99.11	70	130	
V	51	74	He	1.842	ppb	4.8	3037	102.33	70	130	
Cr	52	74	He	1.739	ppb	12.9	3006	96.61	70	130	
Mn	55	74	He	1.656	ppb	1.8	2066	92	70	130	
Ni	60	74	He	1.822	ppb	17.6	1241	101.22	70	130	
Cu	65	74	He	1.864	ppb	6.1	1837	103.56	70	130	
Zn	66	74	He	1.832	ppb	12.7	608	101.78	70	130	
As	75	74	He	1.715	ppb	2.7	280	95.28	70	130	
Mo	95	103	He	1.795	ppb	7.0	1578	99.72	70	130	
Ag	107	103	He	1.806	ppb	2.5	5657	100.33	70	130	
Sb	121	103	He	1.719	ppb	1.9	1665	95.5	70	130	
Ba	138	159	He	1.819	ppb	2.2	4572	101.06	70	130	
Tl	205	159	He	1.858	ppb	2.8	12898	103.22	70	130	
Be	9	6	NoGas	1.827	ppb	6.4	2839	101.5	70	130	
Ti	47	45	NoGas	1.885	ppb	14.1	1169	104.72	70	130	
Co	59	74	NoGas	1.782	ppb	0.1	14988	99	70	130	
Cu	65	74	NoGas	1.966	ppb	3.7	4049	109.22	70	130	
Cd	111	103	NoGas	1.830	ppb	0.9	2247	101.67	70	130	
Hg	201	159	NoGas	89.097	ppt	16.5	54	123.75	70	130	
Pb	208	159	NoGas	1.777	ppb	2.6	28327	98.72	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	2.3	1048448	957795.216666667	109.5	
Ge	74	H2	Pulse	1.6	386245	365863.58	105.6	
Sc	45	He	Pulse	1.4	133987	124730.113333333	107.4	
Ge	74	He	Pulse	0.9	87879	82867.31	106.0	
Rh	103	He	Pulse	1.1	283582	269557.44	105.2	
Tb	159	He	Pulse	0.5	464522	443839.81	104.7	

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Bi	209	He	Pulse	1.0	335090	326730.87	102.6	
Li	6	NoGas	Pulse	1.2	550776	522967.65	105.3	
Sc	45	NoGas	Analog	1.1	1753642	1581446.20333333	110.9	
Ge	74	NoGas	Pulse	0.3	460094	435835.62	105.6	
Rh	103	NoGas	Pulse	0.7	548555	523946.536666667	104.7	
Tb	159	NoGas	Pulse	0.6	1004326	965727.01	104.0	
Bi	209	NoGas	Pulse	0.2	598133	579848.77	103.2	

Quantitation Report ICPMS5

File Name	019ICSA.d		
File Path	C:\Agilent\ICPMH\1\DATA\9E20033.b		
Acq Time	5/20/2019 17:18:59	Sample Type	
Sample Name	**9E20033-IFA1**	ICSA	
Comment	**A19E234**	Last Calib	05/20/2019 16:58:46
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	0.008	0.008	ppb	100.2		
Na	23	45	H2	248307.825	248307.825	ppb	0.8		
Mg	24	45	He	100128.229	100128.229	ppb	0.1	100000	
Al	27	45	He	101432.609	101432.609	ppb	0.6	100000	
K	39	45	He	100824.937	100824.937	ppb	0.5	100000	
Ca	44	45	H2	300358.727	300358.727	ppb	1.1		
Ti	47	45	NoGas	2166.873	2166.873	ppb	1.4		
V	51	74	He	0.412	0.412	ppb	12.5	2	
Cr	52	74	He	2.037	2.037	ppb	6.3	2	> CRI
Mn	55	74	He	12.822	12.822	ppb	1.6	2	> CRI
Fe	56	74	H2	251270.296	251270.296	ppb	0.3		
Fe	57	74	H2	250732.185	250732.185	ppb	0.1		
Co	59	74	NoGas	1.512	1.512	ppb	3.1		
Ni	60	74	He	0.955	0.955	ppb	10.2	2	
Cu	65	74	He	0.577	0.577	ppb	13.5	2	
Cu	65	74	NoGas	2.652	2.652	ppb	4.9		
Zn	66	74	He	2.457	2.457	ppb	19.8	2	> CRI
As	75	74	He	0.307	0.307	ppb	52.2	0.9	
Se	78	74	H2	0.222	0.222	ppb	52.5	0.9	
Mo	95	103	He	2441.199	2441.199	ppb	0.9	2000	> CRI
Ag	107	103	He	0.267	0.267	ppb	23.3		
Cd	111	103	NoGas	0.375	0.375	ppb	86.5		
Sb	121	103	He	0.137	0.137	ppb	15.1	0.9	
Ba	138	159	He	1.648	1.648	ppb	5.1	2	
W	182	159	NoGas	65.19	65.190	ppb	1.1		
Hg	201	159	NoGas	98.445	98.445	ppt	7.7		
Tl	205	159	He	-0.002	-0.002	ppb	N/A	0.9	
Pb	208	159	NoGas	0.707	0.707	ppb	4.0		

Caution if low Mn in High matrix sample

Mo > 120% Caution in High Matrix samples Mo LDR = 100ppb Out of Linear Range as well JB05/21/19

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD Recovery %	QC Flag
Li	6	NoGas	631740	0.2	522967.65	Pulse	120.8	IS Q-06
Sc	45	H2	889912	1.0	957795.216666667	Pulse	92.9	
Sc	45	He	127686	1.1	124730.113333333	Pulse	102.4	
Sc	45	NoGas	1875985	2.8	1581446.20333333	Analog	118.6	
Ge	74	H2	294447	0.2	365863.58	Pulse	80.5	
Ge	74	He	74472	0.5	82867.31	Pulse	89.9	
Ge	74	NoGas	431178	1.0	435835.62	Pulse	98.9	
Rh	103	He	214951	0.4	269557.44	Pulse	79.7	
Rh	103	NoGas	446209	0.6	523946.536666667	Pulse	85.2	
Tb	159	He	402325	0.3	443839.81	Pulse	90.6	
Tb	159	NoGas	967710	1.5	965727.01	Pulse	100.2	
Bi	209	He	240373	0.3	326730.87	Pulse	73.6	
Bi	209	NoGas	477809	0.3	579848.77	Pulse	82.4	

ok IFA JB05/21/19

Quantitation Report ICPMS5

File Name	020ICSB.d		
File Path	C:\Agilent\ICPMH\1\DATA\9E20033.b		
Acq Time	5/20/2019 17:24:48	Sample Type	
Sample Name	**9E20033-IFB1**		ICSB
Comment	**A19E235**	Last Calib	05/20/2019 16:58:46
Prep Dilution			
Total Dilution	1.0000	Vial:	1112
	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	0.004	0.004	ppb	114.0		
Na	23	45	H2	253173.052	253173.052	ppb	1.8		
Mg	24	45	He	102464.666	102464.666	ppb	0.8	100000	
Al	27	45	He	102932.669	102932.669	ppb	0.2	100000	
K	39	45	He	99915.366	99915.366	ppb	1.1	100000	
Ca	44	45	H2	300590.344	300590.344	ppb	1.7		
Ti	47	45	NoGas	2170.621	2170.621	ppb	0.9		
V	51	74	He	227.598	227.598	ppb	0.7	200	
Cr	52	74	He	218.701	218.701	ppb	0.8	200	
Mn	55	74	He	218.488	218.488	ppb	0.6	200	
Fe	56	74	H2	255090.175	255090.175	ppb	1.5		
Fe	57	74	H2	253689.322	253689.322	ppb	1.4		
Co	59	74	NoGas	212.58	212.580	ppb	0.8		
Ni	60	74	He	197.725	197.725	ppb	0.3	200	
Cu	65	74	He	183.206	183.206	ppb	0.9	200	
Cu	65	74	NoGas	188.743	188.743	ppb	1.1		
Zn	66	74	He	92.909	92.909	ppb	0.6	100	
As	75	74	He	100.076	100.076	ppb	0.9	100	
Se	78	74	H2	94.466	94.466	ppb	1.5	100	
Mo	95	103	He	2455.23	2455.230	ppb	0.2	2000	> +/- 10%
Ag	107	103	He	46.584	46.584	ppb	0.7	50	
Cd	111	103	NoGas	96.183	96.183	ppb	0.1		
Sb	121	103	He	0.147	0.147	ppb	38.7	0.9	
Ba	138	159	He	2.135	2.135	ppb	1.2	2	> +/- 10%
W	182	159	NoGas	64.823	64.823	ppb	0.6		
Hg	201	159	NoGas	1860.991	1860.991	ppt	1.0		
Tl	205	159	He	-0.004	-0.004	ppb	N/A	0.9	
Pb	208	159	NoGas	0.71	0.710	ppb	2.7		

Mo > 120% see note on IFA JB 05/21/19

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD Recovery %	QC Flag
Li	6	NoGas	636419	0.9	522967.65	Pulse	121.7	IS Q-06
Sc	45	H2	978290	1.5	957795.216666667	Pulse	102.1	
Sc	45	He	134514	0.3	124730.113333333	Pulse	107.8	
Sc	45	NoGas	1888167	0.5	1581446.20333333	Analog	119.4	
Ge	74	H2	319536	1.2	365863.58	Pulse	87.3	
Ge	74	He	76736	0.2	82867.31	Pulse	92.6	
Ge	74	NoGas	434442	0.7	435835.62	Pulse	99.7	
Rh	103	He	221178	0.4	269557.44	Pulse	82.1	
Rh	103	NoGas	450097	0.3	523946.536666667	Pulse	85.9	
Tb	159	He	407593	0.5	443839.81	Pulse	91.8	
Tb	159	NoGas	971389	0.3	965727.01	Pulse	100.6	
Bi	209	He	241157	0.7	326730.87	Pulse	73.8	
Bi	209	NoGas	477350	0.8	579848.77	Pulse	82.3	

ok IFB JB 05/21/19

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E20033-CCV	**Total Dilution**	1.0000
File Name	032_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b	**ISTD Ref FileName**	004CALB.d
Acq Time	5/20/2019 18:20:26	**Comment**	A19E109 JPB 05/20

05/21/19

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	4098.910	ppb	4.3	8067192	4000	90	110	102.47	
Ca	44	45	H2	4132.465	ppb	3.9	403385	4000	90	110	103.31	
Fe	56	74	H2	4119.813	ppb	4.5	23193680	4000	90	110	103	
Fe	57	74	H2	4052.014	ppb	3.6	562608	4000	90	110	101.3	
Se	78	74	H2	39.634	ppb	2.1	6873	40	90	110	99.08	
Mg	24	45	He	4099.839	ppb	0.6	789205	4000	90	110	102.5	
Al	27	45	He	3957.157	ppb	0.9	402891	4000	90	110	98.93	
K	39	45	He	4049.044	ppb	0.3	785575	4000	90	110	101.23	
V	51	74	He	98.004	ppb	0.7	131314	100	90	110	98	
Cr	52	74	He	100.239	ppb	0.5	160689	100	90	110	100.24	
Mn	55	74	He	95.508	ppb	1.1	111373	100	90	110	95.51	
Ni	60	74	He	103.813	ppb	0.7	63268	100	90	110	103.81	
Cu	65	74	He	101.255	ppb	1.3	82416	100	90	110	101.26	
Zn	66	74	He	103.236	ppb	1.7	24598	100	90	110	103.24	
As	75	74	He	98.651	ppb	0.8	14788	100	90	110	98.65	
Mo	95	103	He	41.201	ppb	0.9	34247	40	90	110	103	
Ag	107	103	He	41.073	ppb	0.8	121909	40	90	110	102.68	
Sb	121	103	He	43.330	ppb	0.9	39759	40	90	110	108.32	
Ba	138	159	He	101.702	ppb	0.7	244569	100	90	110	101.7	
Tl	205	159	He	40.379	ppb	0.3	274399	40	90	110	100.95	
Be	9	6	NoGas	39.773	ppb	0.7	59173	40	90	110	99.43	
Ti	47	45	NoGas	96.560	ppb	1.6	56800	100	90	110	96.56	
Co	59	74	NoGas	100.319	ppb	1.1	803278	100	90	110	100.32	
Cu	65	74	NoGas	104.604	ppb	1.0	178576	100	90	110	104.6	
Cd	111	103	NoGas	99.262	ppb	0.4	115079	100	90	110	99.26	
Hg	201	159	NoGas	825.861	ppt	2.9	459	800	90	110	103.23	
Pb	208	159	NoGas	94.209	ppb	0.4	1449922	100	90	110	94.21	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	3.7	1046311	957795.216666667	109.2	
Ge	74	H2	Pulse	3.3	379124	365863.58	103.6	
Sc	45	He	Pulse	0.2	129728	124730.113333333	104.0	
Ge	74	He	Pulse	0.5	84818	82867.31	102.4	
Rh	103	He	Pulse	1.1	269071	269557.44	99.8	
Tb	159	He	Pulse	0.8	458035	443839.81	103.2	
Bi	209	He	Pulse	1.1	321622	326730.87	98.4	
Li	6	NoGas	Pulse	0.7	528047	522967.65	101.0	
Sc	45	NoGas	Analog	2.3	1740186	1581446.20333333	110.0	
Ge	74	NoGas	Pulse	0.7	446524	435835.62	102.5	
Rh	103	NoGas	Pulse	0.2	519785	523946.536666667	99.2	
Tb	159	NoGas	Pulse	0.2	993629	965727.01	102.9	
Bi	209	NoGas	Pulse	0.4	579523	579848.77	99.9	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E20033-CCB
File Name	033_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b
Acq Time	5/20/2019 18:24:40
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**

05/21/19

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Na	23	45	H2	7.571	ppb	9.9	31840	45	
Ca	44	45	H2	0.901	ppb	26.4	1108	45	
Fe	56	74	H2	2.267	ppb	10.9	22203	22.5	
Fe	57	74	H2	2.394	ppb	14.5	940	22.5	
Se	78	74	H2	0.062	ppb	32.9	12	0.45	
Mg	24	45	He	1.017	ppb	42.5	407	45	
Al	27	45	He	0.654	ppb	68.0	160	22.5	
K	39	45	He	0.221	ppb	689.3	9214	45	
V	51	74	He	0.078	ppb	39.4	579	0.45	
Cr	52	74	He	0.012	ppb	175.0	137	0.45	
Mn	55	74	He	0.006	ppb	375.0	71	0.45	
Ni	60	74	He	0.034	ppb	185.5	111	0.45	
Cu	65	74	He	0.054	ppb	50.9	306	0.45	
Zn	66	74	He	-0.154	ppb	N/A	117	1.8	
As	75	74	He	0.008	ppb	640.7	15	0.45	
Mo	95	103	He	0.053	ppb	51.1	50	0.45	
Ag	107	103	He	0.005	ppb	105.2	21	0.09	
Sb	121	103	He	0.014	ppb	94.9	16	0.45	
Ba	138	159	He	0.006	ppb	152.2	150	0.45	
Tl	205	159	He	0.003	ppb	123.4	123	0.09	
Be	9	6	NoGas	0.006	ppb	100.1	13	0.09	
Ti	47	45	NoGas	0.011	ppb	262.5	60	0.45	
Co	59	74	NoGas	0.012	ppb	16.7	386	0.09	
Cu	65	74	NoGas	0.027	ppb	130.7	636	0.45	
Cd	111	103	NoGas	0.022	ppb	7.7	35	0.09	
Hg	201	159	NoGas	8.428	ppt	32.4	9	36	
Pb	208	159	NoGas	0.017	ppb	37.7	956	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Pulse	0.3	1020457	957795.216666667	106.5	
Ge	74	H2	Pulse	0.2	374057	365863.58	102.2	
Sc	45	He	Pulse	0.8	129407	124730.113333333	103.7	
Ge	74	He	Pulse	0.3	85277	82867.31	102.9	
Rh	103	He	Pulse	0.2	275568	269557.44	102.2	

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	1.1	458656	443839.81	103.3	
Bi	209	He	Pulse	0.5	330082	326730.87	101.0	
Li	6	NoGas	Pulse	0.9	528891	522967.65	101.1	
Sc	45	NoGas	Analog	1.3	1741920	1581446.20333333	110.1	
Ge	74	NoGas	Pulse	0.5	451111	435835.62	103.5	
Rh	103	NoGas	Pulse	0.5	540277	523946.536666667	103.1	
Tb	159	NoGas	Pulse	0.2	999590	965727.01	103.5	
Bi	209	NoGas	Pulse	0.3	595010	579848.77	102.6	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E20033-CCV 3	**Total Dilution**	1.0000
File Name	045_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b	**ISTD Ref FileName**	004CALB.d
Acq Time	5/20/2019 19:16:58	**Comment**	A19E109 JPB 05/20

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	4425.661	ppb	7.5	10015799	4000	90	110	110.64	> +/- 10%
Ca	44	45	H2	4215.594	ppb	9.2	472752	4000	90	110	105.39	
Fe	56	74	H2	4467.687	ppb	6.0	27409641	4000	90	110	111.69	> +/- 10%
Fe	57	74	H2	4362.566	ppb	6.0	659929	4000	90	110	109.06	
Se	78	74	H2	40.763	ppb	5.5	7701	40	90	110	101.91	
Mg	24	45	He	4234.486	ppb	0.8	977706	4000	90	110	105.86	
Al	27	45	He	4090.838	ppb	1.3	499547	4000	90	110	102.27	
K	39	45	He	4021.092	ppb	0.8	935821	4000	90	110	100.53	
V	51	74	He	103.490	ppb	1.1	157175	100	90	110	103.49	
Cr	52	74	He	103.971	ppb	1.4	188959	100	90	110	103.97	
Mn	55	74	He	100.138	ppb	0.5	132386	100	90	110	100.14	
Ni	60	74	He	105.765	ppb	0.4	73078	100	90	110	105.76	
Cu	65	74	He	101.409	ppb	1.5	93574	100	90	110	101.41	
Zn	66	74	He	104.188	ppb	0.5	28145	100	90	110	104.19	
As	75	74	He	97.458	ppb	0.5	16564	100	90	110	97.46	
Mo	95	103	He	41.603	ppb	0.9	37825	40	90	110	104.01	
Ag	107	103	He	40.857	ppb	1.2	132636	40	90	110	102.14	
Sb	121	103	He	42.979	ppb	1.4	43134	40	90	110	107.45	
Ba	138	159	He	103.921	ppb	0.7	260613	100	90	110	103.92	
Tl	205	159	He	39.513	ppb	1.1	280006	40	90	110	98.78	
Be	9	6	NoGas	38.448	ppb	0.3	71563	40	90	110	96.12	
Ti	47	45	NoGas	95.764	ppb	1.4	64823	100	90	110	95.76	
Co	59	74	NoGas	103.974	ppb	0.2	920416	100	90	110	103.97	
Cu	65	74	NoGas	106.882	ppb	1.6	201707	100	90	110	106.88	
Cd	111	103	NoGas	98.047	ppb	1.5	124261	100	90	110	98.05	
Hg	201	159	NoGas	793.893	ppt	1.6	463	800	90	110	99.24	
Pb	208	159	NoGas	92.451	ppb	0.8	1491903	100	90	110	92.45	

Q-06 — ok 200.8 — Q-06 — Na Q-41 + Q-14 — Fe reports in 57

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Mix	7.7	1206665	957795.216666667	126.0	IS Q-06
Ge	74	H2	Pulse	5.0	413585	365863.58	113.0	
Sc	45	He	Pulse	1.1	155609	124730.113333333	124.8	IS Q-06
Ge	74	He	Pulse	0.5	96163	82867.31	116.0	
Rh	103	He	Pulse	1.8	294328	269557.44	109.2	
Tb	159	He	Pulse	1.2	477685	443839.81	107.6	
Bi	209	He	Pulse	1.4	327421	326730.87	100.2	
Li	6	NoGas	Pulse	1.1	660624	522967.65	126.3	IS Q-06
Sc	45	NoGas	Analog	1.2	2002198	1581446.20333333	126.6	IS Q-06
Ge	74	NoGas	Pulse	0.4	493638	435835.62	113.3	
Rh	103	NoGas	Pulse	1.1	568258	523946.536666667	108.5	
Tb	159	NoGas	Pulse	0.8	1041870	965727.01	107.9	
Bi	209	NoGas	Pulse	1.0	598621	579848.77	103.2	

Q-14 all Q-06s

ok 200.8

JB 05/21/19

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E20033-CCB 3
File Name	047_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b
Acq Time	5/20/2019 19:26:29
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	37.651	ppb	1.2	98653	45	
Ca	44	45	H2	1.792	ppb	20.2	1314	45	
Fe	56	74	H2	2.487	ppb	2.7	25288	22.5	
Fe	57	74	H2	2.277	ppb	38.0	998	22.5	
Se	78	74	H2	0.055	ppb	54.1	11	0.45	
Mg	24	45	He	1.853	ppb	13.8	624	45	
Al	27	45	He	2.098	ppb	18.0	337	22.5	
K	39	45	He	3.803	ppb	80.2	10883	45	
V	51	74	He	0.077	ppb	42.7	622	0.45	
Cr	52	74	He	0.013	ppb	168.8	149	0.45	
Mn	55	74	He	0.008	ppb	295.0	79	0.45	
Ni	60	74	He	0.008	ppb	450.2	102	0.45	
Cu	65	74	He	0.041	ppb	56.1	318	0.45	
Zn	66	74	He	0.016	ppb	492.5	169	1.8	
As	75	74	He	-0.021	ppb	N/A	11	0.45	
Mo	95	103	He	0.016	ppb	95.2	19	0.45	
Ag	107	103	He	0.006	ppb	45.3	26	0.09	
Sb	121	103	He	0.012	ppb	88.8	14	0.45	
Ba	138	159	He	0.016	ppb	161.6	176	0.45	
Tl	205	159	He	0.004	ppb	54.6	126	0.09	
Be	9	6	NoGas	0.008	ppb	112.6	19	0.09	
Ti	47	45	NoGas	0.031	ppb	113.5	75	0.45	
Co	59	74	NoGas	0.018	ppb	15.6	446	0.09	
Cu	65	74	NoGas	0.018	ppb	165.2	643	0.45	
Cd	111	103	NoGas	0.020	ppb	16.1	33	0.09	
Hg	201	159	NoGas	5.324	ppt	101.7	7	36	
Pb	208	159	NoGas	0.012	ppb	86.2	890	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Pulse	0.6	1124608	957795.216666667	117.4	
Ge	74	H2	Pulse	0.7	403775	365863.58	110.4	
Sc	45	He	Pulse	0.8	142295	124730.113333333	114.1	
Ge	74	He	Pulse	0.7	91678	82867.31	110.6	
Rh	103	He	Pulse	0.3	289030	269557.44	107.2	

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	0.4	464881	443839.81	104.7	
Bi	209	He	Pulse	0.6	329752	326730.87	100.9	
Li	6	NoGas	Pulse	0.8	595015	522967.65	113.8	
Sc	45	NoGas	Analog	0.3	1817024	1581446.20333333	114.9	
Ge	74	NoGas	Pulse	0.3	467247	435835.62	107.2	
Rh	103	NoGas	Pulse	0.9	555477	523946.536666667	106.0	
Tb	159	NoGas	Pulse	0.5	1006152	965727.01	104.2	
Bi	209	NoGas	Pulse	0.9	596911	579848.77	102.9	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E20033-CCV 4	**Total Dilution**	1.0000
File Name	058_CCV.d 05/21/19	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b	**ISTD Ref FileName**	004CALB.d
Acq Time	5/20/2019 20:13:28	**Comment**	A19E109 JPB 05/20

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	4222.502	ppb	0.4	9877466	4000	90	110	105.56	
Ca	44	45	H2	4009.095	ppb	0.3	465148	4000	90	110	100.23	
Fe	56	74	H2	4333.398	ppb	0.4	27224764	4000	90	110	108.33	
Fe	57	74	H2	4197.919	ppb	0.4	650311	4000	90	110	104.95	
Se	78	74	H2	39.959	ppb	1.3	7729	40	90	110	99.9	
Mg	24	45	He	4098.481	ppb	4.9	932614	4000	90	110	102.46	
Al	27	45	He	3922.832	ppb	4.9	472134	4000	90	110	98.07	
K	39	45	He	3911.278	ppb	4.9	897411	4000	90	110	97.78	
V	51	74	He	100.821	ppb	4.6	151043	100	90	110	100.82	
Cr	52	74	He	101.041	ppb	4.9	181112	100	90	110	101.04	
Mn	55	74	He	97.408	ppb	4.4	127021	100	90	110	97.41	
Ni	60	74	He	104.385	ppb	4.6	71137	100	90	110	104.38	
Cu	65	74	He	100.280	ppb	4.8	91269	100	90	110	100.28	
Zn	66	74	He	103.332	ppb	3.0	27542	100	90	110	103.33	
As	75	74	He	96.433	ppb	5.1	16163	100	90	110	96.43	
Mo	95	103	He	40.376	ppb	4.6	36879	40	90	110	100.94	
Ag	107	103	He	39.726	ppb	4.7	129560	40	90	110	99.32	
Sb	121	103	He	41.914	ppb	3.4	42289	40	90	110	104.78	
Ba	138	159	He	100.783	ppb	4.3	255867	100	90	110	100.78	
Tl	205	159	He	38.385	ppb	5.1	275330	40	90	110	95.96	
Be	9	6	NoGas	38.769	ppb	1.1	68124	40	90	110	96.92	
Tl	47	45	NoGas	97.649	ppb	2.0	63309	100	90	110	97.65	
Co	59	74	NoGas	102.229	ppb	0.8	889394	100	90	110	102.23	
Cu	65	74	NoGas	105.221	ppb	0.7	195166	100	90	110	105.22	
Cd	111	103	NoGas	97.889	ppb	0.1	121746	100	90	110	97.89	
Hg	201	159	NoGas	771.498	ppt	1.8	445	800	90	110	96.44	
Pb	208	159	NoGas	92.760	ppb	0.6	1479589	100	90	110	92.76	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD.Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Analog	0.2	1242368	957795.216666667	129.7	IS Q-06
Ge	74	H2	Pulse	0.1	422674	365863.58	115.5	
Sc	45	He	Pulse	4.6	153582	124730.113333333	123.1	IS Q-06
Ge	74	He	Pulse	3.6	94947	82867.31	114.6	
Rh	103	He	Pulse	4.4	296048	269557.44	109.8	
Tb	159	He	Pulse	4.2	484132	443839.81	109.1	
Bi	209	He	Pulse	3.4	332822	326730.87	101.9	
Li	6	NoGas	Pulse	1.3	623598.	522967.65	119.2	
Sc	45	NoGas	Analog	1.5	1917905	1581446.20333333	121.3	IS Q-06
Ge	74	NoGas	Pulse	0.6	485149	435835.62	111.3	
Rh	103	NoGas	Pulse	0.5	557607	523946.536666667	106.4	
Tb	159	NoGas	Pulse	0.2	1029800	965727.01	106.6	
Bi	209	NoGas	Pulse	0.5	592670	579848.77	102.2	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E20033-CCB 4
File Name	059_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b
Acq Time	5/20/2019 20:17:41
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**

05/21/19

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Na	23	45	H2	32.615	ppb	1.9	84910	45	
Ca	44	45	H2	-0.386	ppb	N/A	1048	45	
Fe	56	74	H2	1.461	ppb	0.5	18622	22.5	
Fe	57	74	H2	1.655	ppb	15.2	881	22.5	
Se	78	74	H2	0.066	ppb	22.1	13	0.45	
Mg	24	45	He	0.937	ppb	18.5	414	45	
Al	27	45	He	1.037	ppb	39.4	210	22.5	
K	39	45	He	2.317	ppb	100.2	10167	45	
V	51	74	He	0.025	ppb	194.2	526	0.45	
Cr	52	74	He	0.016	ppb	97.5	148	0.45	
Mn	55	74	He	0.076	ppb	39.8	158	0.45	
Ni	60	74	He	-0.017	ppb	N/A	82	0.45	
Cu	65	74	He	0.071	ppb	44.0	330	0.45	
Zn	66	74	He	-0.129	ppb	N/A	127	1.8	
As	75	74	He	0.025	ppb	265.5	18	0.45	
Mo	95	103	He	0.037	ppb	0.5	37	0.45	
Ag	107	103	He	0.010	ppb	33.9	39	0.09	
Sb	121	103	He	0.029	ppb	31.9	30	0.45	
Ba	138	159	He	0.017	ppb	64.6	178	0.45	
Tl	205	159	He	0.004	ppb	121.1	126	0.09	
Be	9	6	NoGas	0.011	ppb	48.8	22	0.09	
Ti	47	45	NoGas	0.113	ppb	25.1	123	0.45	
Co	59	74	NoGas	0.008	ppb	17.2	355	0.09	
Cu	65	74	NoGas	0.031	ppb	101.8	655	0.45	
Cd	111	103	NoGas	0.015	ppb	30.8	26	0.09	
Hg	201	159	NoGas	7.226	ppt	52.2	8	36	
Pb	208	159	NoGas	0.019	ppb	12.5	990	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Pulse	0.4	1085016	957795.216666667	113.3	
Ge	74	H2	Pulse	0.2	392916	365863.58	107.4	
Sc	45	He	Pulse	0.1	136821	124730.113333333	109.7	
Ge	74	He	Pulse	0.8	88129	82867.31	106.3	
Rh	103	He	Pulse	0.4	281177	269557.44	104.3	

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	0.6	459260	443839.81	103.5	
Bi	209	He	Pulse	0.9	326310	326730.87	99.9	
Li	6	NoGas	Pulse	0.9	562183	522967.65	107.5	
Sc	45	NoGas	Analog	1.0	1796269	1581446.20333333	113.6	
Ge	74	NoGas	Pulse	0.7	458918	435835.62	105.3	
Rh	103	NoGas	Pulse	0.4	544436	523946.536666667	103.9	
Tb	159	NoGas	Pulse	0.2	999936	965727.01	103.5	
Bi	209	NoGas	Pulse	0.3	592542	579848.77	102.2	

Quantitation Report - ICPMS5

Sample Name:	**9051011-BLK1**	Total Dilution:	**10.0000**
File Name:	068SMPL.d	Vial:	3306
File Path:	C:\Agilent\ICPMH\1\DATA\9E20033.b	Sample Type:	Sample
Acq Time:	5/20/2019 20:55:42	Last Calib:	05/20/2019 16:58:46
Comment:	**9051011 Solid Biglist-Co**		

FullQuant Table:

Element	Mass	ISTD	Tune Mode	Raw Conc	Units	RSD(%)	CPS	LDR	QC Flag
Be	9	6	NoGas	0.007	ppb	70.5	14	100	
Na	23	45	H2	73.368	ppb	1.9	155519	50000	
Mg	24	45	He	3.679	ppb	6.9	904	50000	
Al	27	45	He	1.841	ppb	55.8	277	50000	
K	39	45	He	1.779	ppb	212.4	9372	50000	
Ca	44	45	H2	45.382	ppb	5.0	5252	50000	
Ti	47	45	NoGas	0.067	ppb	46.8	90	2500	
V	51	74	He	0.065	ppb	81.3	539	500	
Cr	52	74	He	0.029	ppb	64.8	158	500	
Mn	55	74	He	0.116	ppb	17.1	192	2500	
Fe	56	74	H2	2.712	ppb	7.0	23774	50000	
Fe	57	74	H2	2.529	ppb	12.7	923	50000	
Co	59	74	NoGas	0.036	ppb	12.9	550	500	
Ni	60	74	He	-0.051	ppb	N/A	57	1000	
Cu	65	74	He	0.04	ppb	257.3	282	500	
Cu	65	74	NoGas	0.065	ppb	59.3	670	1000	
Zn	66	74	He	-0.172	ppb	N/A	108	2500	
As	75	74	He	0.001	ppb	2372.3	13	500	
Se	78	74	H2	0.037	ppb	72.8	7	100	
Mo	95	103	He	0.016	ppb	78.3	18	100	
Ag	107	103	He	0.009	ppb	38.3	32	100	
Cd	111	103	NoGas	0.012	ppb	95.1	22	1000	
Sb	121	103	He	0.006	ppb	138.3	8	100	
Ba	138	159	He	0.045	ppb	25.7	236	2500	
W	182	159	NoGas	0.038	ppb	1.9	220	40	
Hg	201	159	NoGas	9.268	ppt	17.5	9	4000	
Tl	205	159	He	-0.001	ppb	N/A	88	100	
Pb	208	159	NoGas	0.015	ppb	54.6	901	500	

Na B-02

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD %	QC Flag
Li	6	NoGas	533105	0.4	522967.65	Pulse	101.9	
Sc	45	H2	1004491	0.3	957795.216666667	Pulse	104.9	
Sc	45	He	127494	0.9	124730.113333333	Pulse	102.2	
Sc	45	NoGas	1684522	2.2	1581446.20333333	Analog	106.5	
Ge	74	H2	360260	0.4	365863.58	Pulse	98.5	
Ge	74	He	81750	0.5	82867.31	Pulse	98.7	
Ge	74	NoGas	430302	0.2	435835.62	Pulse	98.7	
Rh	103	He	263958	1.1	269557.44	Pulse	97.9	
Rh	103	NoGas	516130	0.7	523946.536666667	Pulse	98.5	
Tb	159	He	444823	0.5	443839.81	Pulse	100.2	
Tb	159	NoGas	967610	0.1	965727.01	Pulse	100.2	
Bi	209	He	314887	1.1	326730.87	Pulse	96.4	
Bi	209	NoGas	567192	0.4	579848.77	Pulse	97.8	

Quantitation Report - ICPMS5

Sample Name:	**9051011-BS1**	Total Dilution:	**10.0000**
File Name:	069SMPL.d	Vial:	3307
File Path:	C:\Agilent\ICPMH\1\DATA\9E20033.b	Sample Type:	Sample
Acq Time:	5/20/2019 20:59:57	Last Calib:	05/20/2019 16:58:46
Comment:	**9051011 Solid Biglist-Co**		

FullQuant Table:

Element	Mass	ISTD	Tune Mode	Raw Conc	Units	RSD(%)	CPS	LDR	QC Flag
Be	9	6	NoGas	23.939	ppb	2.1	35418	100	
Na	23	45	H2	2721.208	ppb	1.5	4995743	50000	
Mg	24	45	He	2532.849	ppb	0.9	474223	50000	
Al	27	45	He	2478.051	ppb	0.8	245388	50000	
K	39	45	He	2514.671	ppb	0.3	477861	50000	
Ca	44	45	H2	2565.697	ppb	0.8	233700	50000	
Ti	47	45	NoGas	50.259	ppb	0.8	28574	2500	
V	51	74	He	50.468	ppb	0.6	64560	500	
Cr	52	74	He	51.679	ppb	1.2	78884	500	
Mn	55	74	He	51.654	ppb	0.7	57342	2500	
Fe	56	74	H2	2628.926	ppb	0.2	13707563	50000	
Fe	57	74	H2	2550.935	ppb	0.5	328104	50000	
Co	59	74	NoGas	52	ppb	1.7	398817	500	
Ni	60	74	He	52.325	ppb	1.1	30385	1000	
Cu	65	74	He	50.614	ppb	1.4	39322	500	
Cu	65	74	NoGas	53.554	ppb	0.2	87812	1000	
Zn	66	74	He	52.795	ppb	3.6	12041	2500	
As	75	74	He	50.517	ppb	0.9	7212	500	
Se	78	74	H2	22.43	ppb	1.6	3600	100	
Mo	95	103	He	25.092	ppb	0.6	19975	100	
Ag	107	103	He	24.837	ppb	0.9	70599	100	
Cd	111	103	NoGas	50.212	ppb	1.0	56557	1000	
Sb	121	103	He	24.23	ppb	0.6	21292	100	
Ba	138	159	He	51.897	ppb	0.8	120131	2500	
W	182	159	NoGas	0.039	ppb	22.4	224	40	
Hg	201	159	NoGas	969.304	ppt	4.9	521	4000	
Tl	205	159	He	24.627	ppb	0.3	161048	100	
Pb	208	159	NoGas	48.621	ppb	0.8	724639	500	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD %	QC Flag
Li	6	NoGas	524979	2.0	522967.65	Pulse	100.4	
Sc	45	H2	973913	0.7	957795.216666667	Pulse	101.7	
Sc	45	He	126164	1.0	124730.113333333	Pulse	101.1	
Sc	45	NoGas	1680088	0.9	1581446.20333333	Analog	106.2	
Ge	74	H2	350702	0.4	365863.58	Pulse	95.9	
Ge	74	He	80705	0.1	82867.31	Pulse	97.4	
Ge	74	NoGas	427529	0.7	435835.62	Pulse	98.1	
Rh	103	He	257665	0.3	269557.44	Pulse	95.6	
Rh	103	NoGas	504999	1.1	523946.536666667	Pulse	96.4	
Tb	159	He	440676	0.5	443839.81	Pulse	99.3	
Tb	159	NoGas	961827	1.0	965727.01	Pulse	99.6	
Bi	209	He	308631	0.7	326730.87	Pulse	94.5	
Bi	209	NoGas	556929	0.7	579848.77	Pulse	96.0	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E20033-CCV 5	**Total Dilution**	1.0000
File Name	070_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b	**ISTD Ref FileName**	004CALB.d
Acq Time	5/20/2019 21:04:10	**Comment**	A19E109 JPB 05/20

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	4239.290	ppb	0.5	7804104	4000	90	110	105.98	
Ca	44	45	H2	4171.843	ppb	0.9	380874	4000	90	110	104.3	
Fe	56	74	H2	4225.130	ppb	0.4	22278641	4000	90	110	105.63	
Fe	57	74	H2	4093.919	ppb	0.9	532279	4000	90	110	102.35	
Se	78	74	H2	39.009	ppb	1.5	6332	40	90	110	97.52	
Mg	24	45	He	4108.192	ppb	1.2	769522	4000	90	110	102.7	
Al	27	45	He	3959.020	ppb	2.1	392195	4000	90	110	98.98	
K	39	45	He	3972.817	ppb	1.4	750192	4000	90	110	99.32	
V	51	74	He	98.358	ppb	0.4	126819	100	90	110	98.36	
Cr	52	74	He	99.819	ppb	1.2	153984	100	90	110	99.82	
Mn	55	74	He	96.699	ppb	1.2	108510	100	90	110	96.7	
Ni	60	74	He	102.503	ppb	0.5	60117	100	90	110	102.5	
Cu	65	74	He	99.215	ppb	0.9	77718	100	90	110	99.22	
Zn	66	74	He	103.073	ppb	1.7	23634	100	90	110	103.07	
As	75	74	He	96.213	ppb	2.4	13879	100	90	110	96.21	
Mo	95	103	He	40.774	ppb	2.5	32528	40	90	110	101.94	
Ag	107	103	He	40.417	ppb	0.8	115130	40	90	110	101.04	
Sb	121	103	He	44.071	ppb	1.8	38810	40	90	110	110.18	> +/- ~~10%~~
Ba	138	159	He	101.517	ppb	1.0	235855	100	90	110	101.52	
Tl	205	159	He	40.258	ppb	0.8	264306	40	90	110	100.65	
Be	9	6	NoGas	39.409	ppb	1.0	58396	40	90	110	98.52	
Ti	47	45	NoGas	95.766	ppb	1.3	54564	100	90	110	95.77	
Co	59	74	NoGas	100.220	ppb	1.4	780133	100	90	110	100.22	
Cu	65	74	NoGas	104.119	ppb	1.4	172798	100	90	110	104.12	
Cd	111	103	NoGas	98.178	ppb	1.7	111139	100	90	110	98.18	
Hg	201	159	NoGas	785.546	ppt	3.5	423	800	90	110	98.19	
Pb	208	159	NoGas	93.697	ppb	0.8	1395537	100	90	110	93.7	

OK
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down to pass
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QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.7	977723	957795.216666667	102.1	
Ge	74	H2	Pulse	0.4	354744	365863.58	97.0	
Sc	45	He	Pulse	1.6	126250	124730.113333333	101.2	
Ge	74	He	Pulse	0.5	81623	82867.31	98.5	
Rh	103	He	Pulse	0.9	258241	269557.44	95.8	
Tb	159	He	Pulse	0.6	442532	443839.81	99.7	
Bi	209	He	Pulse	0.6	310600	326730.87	95.1	
Li	6	NoGas	Pulse	1.1	525961	522967.65	100.6	
Sc	45	NoGas	Analog	1.5	1685089	1581446.20333333	106.6	
Ge	74	NoGas	Pulse	0.6	434090	435835.62	99.6	
Rh	103	NoGas	Pulse	0.7	507562	523946.536666667	96.9	
Tb	159	NoGas	Pulse	0.5	961607	965727.01	99.6	
Bi	209	NoGas	Pulse	0.4	558730	579848.77	96.4	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E20033-CCB
File Name	071_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b
Acq Time	5/20/2019 21:08:24
Sample Type	CCB
Total Dilution	1.0000
Comment	Cal Blk 3%HNO3 0.4%HCl
ISTD Ref FileName	004CALB.d
Sample QC Pass/Flal	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	43.764	ppb	2.5	96671	45	
Ca	44	45	H2	12.152	ppb	8.6	2079	45	
Fe	56	74	H2	1.400	ppb	6.1	16531	22.5	
Fe	57	74	H2	1.374	ppb	27.0	761	22.5	
Se	78	74	H2	0.082	ppb	23.9	14	0.45	
Mg	24	45	He	0.951	ppb	3.6	377	45	
Al	27	45	He	1.207	ppb	17.5	207	22.5	
K	39	45	He	2.096	ppb	65.4	9162	45	
V	51	74	He	0.037	ppb	24.5	499	0.45	
Cr	52	74	He	-0.005	ppb	N/A	104	0.45	
Mn	55	74	He	0.063	ppb	57.2	131	0.45	
Ni	60	74	He	0.009	ppb	425.8	91	0.45	
Cu	65	74	He	0.025	ppb	116.0	269	0.45	
Zn	66	74	He	-0.154	ppb	N/A	111	1.8	
As	75	74	He	0.004	ppb	185.4	14	0.45	
Mo	95	103	He	0.036	ppb	40.8	33	0.45	
Ag	107	103	He	0.005	ppb	33.4	22	0.09	
Sb	121	103	He	0.034	ppb	56.3	32	0.45	
Ba	138	159	He	0.004	ppb	103.3	139	0.45	
Tl	205	159	He	0.006	ppb	45.0	137	0.09	
Be	9	6	NoGas	0.011	ppb	93.8	20	0.09	
Ti	47	45	NoGas	-0.008	ppb	N/A	47	0.45	
Co	59	74	NoGas	0.025	ppb	20.1	463	0.09	
Cu	65	74	NoGas	0.061	ppb	58.3	663	0.45	
Cd	111	103	NoGas	0.016	ppb	50.6	26	0.09	
Hg	201	159	NoGas	10.723	ppt	12.7	10	36	
Pb	208	159	NoGas	0.021	ppb	34.5	968	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Pulse	0.2	974462	957795.216666667	101.7	
Ge	74	H2	Pulse	0.2	355683	365863.58	97.2	
Sc	45	He	Pulse	0.2	123846	124730.113333333	99.3	
Ge	74	He	Pulse	0.9	81177	82867.31	98.0	
Rh	103	He	Pulse	0.9	261832	269557.44	97.1	

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	0.6	440426	443839.81	99.2	
Bi	209	He	Pulse	0.7	315744	326730.87	96.6	
Li	6	NoGas	Pulse	0.9	520342	522967.65	99.5	
Sc	45	NoGas	Analog	1.5	1662509	1581446.20333333	105.1	
Ge	74	NoGas	Pulse	0.6	430937	435835.62	98.9	
Rh	103	NoGas	Pulse	0.3	512294	523946.536666667	97.8	
Tb	159	NoGas	Pulse	0.7	956073	965727.01	99.0	
Bi	209	NoGas	Pulse	0.2	568237	579848.77	98.0	

Quantitation Report - ICPMS5

Sample Name:	**A9E0508-05**	Total Dilution:	**10.0000**
File Name:	073SMPL.d	Vial:	3309
File Path:	C:\Agilent\ICPMH\1\DATA\9E20033.b	Sample Type:	Sample
Acq Time:	5/20/2019 21:16:53	Last Calib:	05/20/2019 16:58:46
Comment:	**9051011 Solid Biglist-CoMo+QC**		

FullQuant Table:

Element	Mass	ISTD	Tune Mode	Raw Conc	Units	RSD(%)	CPS	LDR	QC Flag
Be	9	6	NoGas	0.203	ppb	13.6	308	100	
Na	23	45	H2	122.491	ppb	0.4	240084	50000	
Mg	24	45	He	79.213	ppb	3.8	15009	50000	
Al	27	45	He	1630.327	ppb	1.6	161228	50000	
K	39	45	He	11.163	ppb	10.8	11008	50000	
Ca	44	45	H2	539.176	ppb	2.3	49759	50000	
Ti	47	45	NoGas	23.533	ppb	1.0	13786	2500	
V	51	74	He	15.743	ppb	2.9	20590	500	
Cr	52	74	He	2.732	ppb	2.1	4306	500	
Mn	55	74	He	349.616	ppb	0.8	390472	2500	
Fe	56	74	H2	29611.105	ppb	0.2	154444071	50000	
Fe	57	74	H2	29651.557	ppb	1.2	3811104	50000	
Co	59	74	NoGas	6.608	ppb	1.9	52922	500	
Ni	60	74	He	7.575	ppb	3.7	4503	1000	
Cu	65	74	He	10.483	ppb	1.9	8400	500	
Cu	65	74	NoGas	11.165	ppb	2.2	19487	1000	
Zn	66	74	He	68.706	ppb	1.6	15736	2500	
As	75	74	He	1.602	ppb	5.2	243	500	
Se	78	74	H2	0.409	ppb	3.0	67	100	
Mo	95	103	He	0.733	ppb	3.7	597	100	
Ag	107	103	He	0.022	ppb	23.9	71	100	
Cd	111	103	NoGas	0.336	ppb	4.5	402	1000	
Sb	121	103	He	0.167	ppb	22.9	151	100	
Ba	138	159	He	19.783	ppb	0.6	46543	2500	
W	182	159	NoGas	0.078	ppb	6.8	413	40	
Hg	201	159	NoGas	31.493	ppt	31.1	21	4000	
Tl	205	159	He	0.026	ppb	15.2	272	100	
Pb	208	159	NoGas	25.804	ppb	1.2	394578	500	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD %	QC Flag
Li	6	NoGas	530018	0.7	522967.65	Pulse	101.3	
Sc	45	H2	971516	0.3	957795.216666667	Pulse	101.4	
Sc	45	He	125984	1.4	124730.113333333	Pulse	101.0	
Sc	45	NoGas	1727489	1.3	1581446.20333333	Analog	109.2	
Ge	74	H2	351023	0.5	365863.58	Pulse	95.9	
Ge	74	He	81270	0.4	82867.31	Pulse	98.1	
Ge	74	NoGas	444338	0.1	435835.62	Pulse	102.0	
Rh	103	He	261811	0.9	269557.44	Pulse	97.1	
Rh	103	NoGas	525504	1.1	523946.536666667	Pulse	100.3	
Tb	159	He	447090	0.3	443839.81	Pulse	100.7	
Tb	159	NoGas	985994	0.2	965727.01	Pulse	102.1	
Bi	209	He	326520	1.1	326730.87	Pulse	99.9	
Bi	209	NoGas	591265	0.3	579848.77	Pulse	102.0	

Quantitation Report - ICPMS5

Sample Name:	**9051011-DUP1**	Total Dilution:	**10.0000**
File Name:	074SMPL.d	Vial:	3310
File Path:	C:\Agilent\ICPMH\1\DATA\9E20033.b	Sample Type:	Sample
Acq Time:	5/20/2019 21:21:06	Last Calib:	05/20/2019 16:58:46
Comment:	**9051011 Solid Biglist-Co**		

FullQuant Table:

Element	Mass	ISTD	Tune Mode	Raw Conc	Units	RSD(%)	CPS	LDR	QC Flag
Be	9	6	NoGas	0.195	ppb	18.1	298	100	
Na	23	45	H2	113.517	ppb	1.0	226190	50000	
Mg	24	45	He	106.041	ppb	4.2	20117	50000	
Al	27	45	He	1708.611	ppb	1.3	169738	50000	
K	39	45	He	15.238	ppb	16.6	11823	50000	
Ca	44	45	H2	510.402	ppb	1.9	47681	50000	
Ti	47	45	NoGas	34.735	ppb	2.6	20736	2500	
V	51	74	He	11.891	ppb	2.6	15835	500	
Cr	52	74	He	2.383	ppb	5.4	3810	500	
Mn	55	74	He	362.241	ppb	0.5	409003	2500	
Fe	56	74	H2	33702.861	ppb	0.8	178049164	50000	
Fe	57	74	H2	33843.904	ppb	0.7	4406134	50000	
Co	59	74	NoGas	7.464	ppb	1.2	60525	500	
Ni	60	74	He	9.192	ppb	3.1	5505	1000	
Cu	65	74	He	7.847	ppb	5.4	6419	500	
Cu	65	74	NoGas	8.382	ppb	1.5	14971	1000	
Zn	66	74	He	74.196	ppb	1.7	17166	2500	
As	75	74	He	1.331	ppb	8.9	206	500	
Se	78	74	H2	0.322	ppb	5.0	53	100	
Mo	95	103	He	0.581	ppb	5.4	483	100	
Ag	107	103	He	0.016	ppb	37.7	53	100	
Cd	111	103	NoGas	0.558	ppb	9.2	669	1000	
Sb	121	103	He	0.17	ppb	27.6	157	100	
Ba	138	159	He	15.646	ppb	1.0	37325	2500	
W	182	159	NoGas	0.066	ppb	8.5	359	40	
Hg	201	159	NoGas	29.801	ppt	1.1	21	4000	
Tl	205	159	He	0.024	ppb	28.9	259	100	
Pb	208	159	NoGas	22.869	ppb	0.7	354307	500	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD %	QC Flag
Li	6	NoGas	533866	1.2	522967.65	Pulse	102.1	
Sc	45	H2	982300	0.3	957795.216666667	Pulse	102.6	
Sc	45	He	126550	0.8	124730.113333333	Pulse	101.5	
Sc	45	NoGas	1762427	1.3	1581446.20333333	Analog	111.4	
Ge	74	H2	355548	0.6	365863.58	Pulse	97.2	
Ge	74	He	82160	0.4	82867.31	Pulse	99.1	
Ge	74	NoGas	450212	0.6	435835.62	Pulse	103.3	
Rh	103	He	266795	0.5	269557.44	Pulse	99.0	
Rh	103	NoGas	530662	0.8	523946.536666667	Pulse	101.3	
Tb	159	He	453001	0.5	443839.81	Pulse	102.1	
Tb	159	NoGas	998765	0.6	965727.01	Pulse	103.4	
Bi	209	He	329771	0.9	326730.87	Pulse	100.9	
Bi	209	NoGas	593239	0.3	579848.77	Pulse	102.3	

Quantitation Report - ICPMS5

Sample Name:	**9051011-MS1**	Total Dilution:	**10.0000**
File Name:	075SMPL.d	Vial:	3311
File Path:	C:\Agilent\ICPMH\1\DATA\9E20033.b	Sample Type:	Sample
Acq Time:	5/20/2019 21:25:19	Last Calib:	05/20/2019 16:58:46
Comment:	**9051011 Solid Biglist-Co**		

FullQuant Table:

Element	Mass	ISTD	Tune Mode	Raw Conc	Units	RSD(%)	CPS	LDR	QC Flag
Be	9	6	NoGas	22.313	ppb	1.4	32881	100	
Na	23	45	H2	2600.103	ppb	0.7	4634007	50000	
Mg	24	45	He	2415.845	ppb	0.3	441938	50000	
Al	27	45	He	3473.364	ppb	0.8	336006	50000	
K	39	45	He	2425.067	ppb	0.6	450539	50000	
Ca	44	45	H2	2683.92	ppb	0.6	237242	50000	
Ti	47	45	NoGas	66.469	ppb	1.9	39161	2500	
V	51	74	He	57.729	ppb	0.6	73027	500	
Cr	52	74	He	58.739	ppb	0.8	88722	500	
Mn	55	74	He	173.141	ppb	0.7	190093	2500	
Fe	56	74	H2	30572.05	ppb	0.1	156256401	50000	
Fe	57	74	H2	30508.494	ppb	0.2	3842674	50000	
Co	59	74	NoGas	54.73	ppb	0.6	432902	500	
Ni	60	74	He	72.948	ppb	0.6	41893	1000	
Cu	65	74	He	73.447	ppb	0.4	56364	500	
Cu	65	74	NoGas	75.351	ppb	0.5	127195	1000	
Zn	66	74	He	93.273	ppb	1.4	20944	2500	
As	75	74	He	48.051	ppb	0.0	6790	500	
Se	78	74	H2	20.711	ppb	1.6	3260	100	
Mo	95	103	He	26.633	ppb	3.5	21098	100	
Ag	107	103	He	23.996	ppb	0.8	67882	100	
Cd	111	103	NoGas	48.026	ppb	1.1	55022	1000	
Sb	121	103	He	22.617	ppb	0.5	19780	100	
Ba	138	159	He	61.07	ppb	0.3	141594	2500	
W	182	159	NoGas	0.158	ppb	10.2	779	40	
Hg	201	159	NoGas	915.463	ppt	1.6	500	4000	
Tl	205	159	He	22.125	ppb	0.6	144955	100	
Pb	208	159	NoGas	63.809	ppb	0.2	966377	500	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD %	QC Flag
Li	6	NoGas	523000	0.6	522967.65	Pulse	100.0	
Sc	45	H2	945269	0.3	957795.216666667	Pulse	98.7	
Sc	45	He	123260	0.5	124730.113333333	Pulse	98.8	
Sc	45	NoGas	1741916	0.9	1581446.20333333	Analog	110.1	
Ge	74	H2	343979	0.4	365863.58	Pulse	94.0	
Ge	74	He	79877	0.2	82867.31	Pulse	96.4	
Ge	74	NoGas	440950	0.7	435835.62	Pulse	101.2	
Rh	103	He	256436	0.7	269557.44	Pulse	95.1	
Rh	103	NoGas	513643	0.6	523946.536666667	Pulse	98.0	
Tb	159	He	441453	0.4	443839.81	Pulse	99.5	
Tb	159	NoGas	977560	0.3	965727.01	Pulse	101.2	
Bi	209	He	316017	0.5	326730.87	Pulse	96.7	
Bi	209	NoGas	572900	0.1	579848.77	Pulse	98.8	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E20033-CCV 6 JPB 05/21/19	**Total Dilution**	1.0000
File Name	082_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b	**ISTD Ref FileName**	004CALB.d
Acq Time	5/20/2019 21:54:50	**Comment**	A19E109 JPB 05/20

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	4042.711	ppb	1.8	7740817	4000	90	110	101.07	
Ca	44	45	H2	4095.628	ppb	1.5	388900	4000	90	110	102.39	
Fe	56	74	H2	4128.282	ppb	1.0	22655487	4000	90	110	103.21	
Fe	57	74	H2	3987.038	ppb	1.3	539528	4000	90	110	99.68	
Se	78	74	H2	38.841	ppb	1.2	6562	40	90	110	97.1	
Mg	24	45	He	4087.154	ppb	0.9	761040	4000	90	110	102.18	
Al	27	45	He	3923.020	ppb	0.9	386352	4000	90	110	98.08	
K	39	45	He	4042.481	ppb	0.7	758681	4000	90	110	101.06	
V	51	74	He	98.614	ppb	0.2	127516	100	90	110	98.61	
Cr	52	74	He	99.818	ppb	1.0	154429	100	90	110	99.82	
Mn	55	74	He	96.068	ppb	0.4	108118	100	90	110	96.07	
Ni	60	74	He	103.668	ppb	0.6	60977	100	90	110	103.67	
Cu	65	74	He	101.494	ppb	0.3	79725	100	90	110	101.49	
Zn	66	74	He	105.628	ppb	0.6	24287	100	90	110	105.63	
As	75	74	He	98.634	ppb	2.1	14270	100	90	110	98.63	
Mo	95	103	He	41.243	ppb	0.8	33276	40	90	110	103.11	
Ag	107	103	He	40.888	ppb	1.1	117794	40	90	110	102.22	
Sb	121	103	He	43.521	ppb	1.2	38761	40	90	110	108.8	
Ba	138	159	He	102.666	ppb	0.4	238570	100	90	110	102.67	
Tl	205	159	He	40.407	ppb	0.3	265349	40	90	110	101.02	
Be	9	6	NoGas	39.924	ppb	2.0	58214	40	90	110	99.81	
Ti	47	45	NoGas	97.346	ppb	2.9	55996	100	90	110	97.35	
Co	59	74	NoGas	99.745	ppb	0.7	778526	100	90	110	99.74	
Cu	65	74	NoGas	103.958	ppb	0.7	172997	100	90	110	103.96	
Cd	111	103	NoGas	98.434	ppb	0.3	110777	100	90	110	98.43	
Hg	201	159	NoGas	784.910	ppt	3.4	422	800	90	110	98.11	
Pb	208	159	NoGas	93.584	ppb	0.6	1392212	100	90	110	93.58	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	1.5	1016977	957795.216666667	106.2	
Ge	74	H2	Pulse	0.8	369220	365863.58	100.9	
Sc	45	He	Pulse	0.8	125492	124730.113333333	100.6	
Ge	74	He	Pulse	0.6	81858	82867.31	98.8	
Rh	103	He	Pulse	0.9	261170	269557.44	96.9	
Tb	159	He	Pulse	0.9	442619	443839.81	99.7	
Bi	209	He	Pulse	1.0	311161	326730.87	95.2	
Li	6	NoGas	Pulse	1.0	517476	522967.65	98.9	
Sc	45	NoGas	Analog	1.4	1701680	1581446.20333333	107.6	
Ge	74	NoGas	Pulse	0.1	435237	435835.62	99.9	
Rh	103	NoGas	Pulse	0.5	504562	523946.536666667	96.3	
Tb	159	NoGas	Pulse	0.3	960464	965727.01	99.5	
Bi	209	NoGas	Pulse	0.2	554781	579848.77	95.7	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E20033-CCB 6 05/21/19
File Name	083_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b
Acq Time	5/20/2019 21:59:03
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	7.500	ppb	1.3	30726	45	
Ca	44	45	H2	-1.426	ppb	N/A	860	45	
Fe	56	74	H2	1.770	ppb	9.1	18858	22.5	
Fe	57	74	H2	0.940	ppb	44.5	719	22.5	
Se	78	74	H2	0.078	ppb	27.3	14	0.45	
Mg	24	45	He	0.280	ppb	44.2	260	45	
Al	27	45	He	0.861	ppb	56.2	177	22.5	
K	39	45	He	0.339	ppb	263.2	9055	45	
V	51	74	He	0.018	ppb	279.0	484	0.45	
Cr	52	74	He	-0.013	ppb	N/A	93	0.45	
Mn	55	74	He	-0.001	ppb	N/A	61	0.45	
Ni	60	74	He	-0.043	ppb	N/A	62	0.45	
Cu	65	74	He	0.033	ppb	167.2	280	0.45	
Zn	66	74	He	-0.245	ppb	N/A	92	1.8	
As	75	74	He	-0.020	ppb	N/A	10	0.45	
Mo	95	103	He	0.009	ppb	128.9	12	0.45	
Ag	107	103	He	0.010	ppb	47.1	36	0.09	
Sb	121	103	He	0.029	ppb	24.5	29	0.45	
Ba	138	159	He	0.015	ppb	40.6	167	0.45	
Tl	205	159	He	-0.004	ppb	N/A	73	0.09	
Be	9	6	NoGas	0.013	ppb	47.5	23	0.09	
Ti	47	45	NoGas	0.056	ppb	47.3	87	0.45	
Co	59	74	NoGas	0.011	ppb	28.6	366	0.09	
Cu	65	74	NoGas	0.025	ppb	166.2	620	0.45	
Cd	111	103	NoGas	0.002	ppb	309.0	11	0.09	
Hg	201	159	NoGas	10.147	ppt	57.4	10	36	
Pb	208	159	NoGas	0.015	ppb	22.0	905	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Pulse	0.6	988944	957795.216666667	103.3	
Ge	74	H2	Pulse	0.6	362863	365863.58	99.2	
Sc	45	He	Pulse	1.7	126856	124730.113333333	101.7	
Ge	74	He	Pulse	0.2	82751	82867.31	99.9	
Rh	103	He	Pulse	1.4	267983	269557.44	99.4	

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	1.7	444359	443839.81	100.1	
Bi	209	He	Pulse	1.1	319722	326730.87	97.9	
Li	6	NoGas	Pulse	0.8	521905	522967.65	99.8	
Sc	45	NoGas	Analog	0.5	1749553	1581446.20333333	110.6	
Ge	74	NoGas	Pulse	0.6	442471	435835.62	101.5	
Rh	103	NoGas	Pulse	0.2	525297	523946.536666667	100.3	
Tb	159	NoGas	Pulse	0.2	970724	965727.01	100.5	
Bi	209	NoGas	Pulse	0.2	568631	579848.77	98.1	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E20033-CCV7 05/21/19	**Total Dilution**	1.0000
File Name	088_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b	**ISTD Ref FileName**	004CALB.d
Acq Time	5/20/2019 22:20:10	**Comment**	A19E109JPB 05/20

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	4108.749	ppb	0.7	7533905	4000	90	110	102.72	
Ca	44	45	H2	4160.217	ppb	0.8	378292	4000	90	110	104.01	
Fe	56	74	H2	4146.662	ppb	0.7	21958692	4000	90	110	103.67	
Fe	57	74	H2	4020.728	ppb	0.6	525007	4000	90	110	100.52	
Se	78	74	H2	39.835	ppb	1.8	6494	40	90	110	99.59	
Mg	24	45	He	4064.525	ppb	0.4	740163	4000	90	110	101.61	
Al	27	45	He	3911.160	ppb	0.5	376711	4000	90	110	97.78	
K	39	45	He	4045.664	ppb	0.7	742555	4000	90	110	101.14	
V	51	74	He	99.002	ppb	0.8	124114	100	90	110	99	
Cr	52	74	He	100.411	ppb	0.2	150613	100	90	110	100.41	
Mn	55	74	He	97.165	ppb	0.2	106016	100	90	110	97.16	
Ni	60	74	He	104.582	ppb	0.4	59637	100	90	110	104.58	
Cu	65	74	He	101.440	ppb	0.8	77253	100	90	110	101.44	
Zn	66	74	He	105.470	ppb	0.4	23512	100	90	110	105.47	
As	75	74	He	100.128	ppb	0.8	14044	100	90	110	100.13	
Mo	95	103	He	41.565	ppb	1.3	32606	40	90	110	103.91	
Ag	107	103	He	41.167	ppb	0.5	115319	40	90	110	102.92	
Sb	121	103	He	43.547	ppb	0.3	37713	40	90	110	108.87	
Ba	138	159	He	102.422	ppb	0.4	234192	100	90	110	102.42	
Tl	205	159	He	40.512	ppb	0.6	261767	40	90	110	101.28	
Be	9	6	NoGas	39.515	ppb	1.2	56253	40	90	110	98.79	
Ti	47	45	NoGas	95.332	ppb	2.2	55154	100	90	110	95.33	
Co	59	74	NoGas	100.131	ppb	0.9	770660	100	90	110	100.13	
Cu	65	74	NoGas	104.119	ppb	1.7	170853	100	90	110	104.12	
Cd	111	103	NoGas	99.116	ppb	0.2	110512	100	90	110	99.12	
Hg	201	159	NoGas	796.223	ppt	5.3	425	800	90	110	99.53	
Pb	208	159	NoGas	93.577	ppb	0.4	1381249	100	90	110	93.58	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD.Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.4	973789	957795.216666667	101.7	
Ge	74	H2	Pulse	0.3	356257	365863.58	97.4	
Sc	45	He	Pulse	0.4	122724	124730.113333333	98.4	
Ge	74	He	Pulse	0.2	79362	82867.31	95.8	
Rh	103	He	Pulse	1.1	253934	269557.44	94.2	
Tb	159	He	Pulse	0.9	435510	443839.81	98.1	
Bi	209	He	Pulse	1.6	305038	326730.87	93.4	
Li	6	NoGas	Pulse	1.3	505218	522967.65	96.6	
Sc	45	NoGas	Analog	2.1	1711462	1581446.20333333	108.2	
Ge	74	NoGas	Pulse	0.2	429179	435835.62	98.5	
Rh	103	NoGas	Pulse	0.4	499891	523946.536666667	95.4	
Tb	159	NoGas	Pulse	0.3	952962	965727.01	98.7	
Bi	209	NoGas	Pulse	0.3	548429	579848.77	94.6	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E20033-CCB6 7 5/21/19
File Name	089_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b
Acq Time	5/20/2019 22:24:22
Sample Type	CCB
Total Dilution	1.0000
Comment	Cal Blk 3%HNO3 0.4%HCl
ISTD Ref FileName	004CALB.d
Sample QC Pass/Flal	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	5.791	ppb	2.0	27539	45	
Ca	44	45	H2	-1.929	ppb	N/A	815	45	
Fe	56	74	H2	0.908	ppb	21.1	14146	22.5	
Fe	57	74	H2	0.768	ppb	106.6	692	22.5	
Se	78	74	H2	0.070	ppb	20.3	13	0.45	
Mg	24	45	He	-0.254	ppb	N/A	157	45	
Al	27	45	He	0.338	ppb	74.0	123	22.5	
K	39	45	He	1.351	ppb	125.3	9099	45	
V	51	74	He	-0.009	ppb	N/A	443	0.45	
Cr	52	74	He	-0.008	ppb	N/A	101	0.45	
Mn	55	74	He	0.002	ppb	335.6	63	0.45	
Ni	60	74	He	-0.028	ppb	N/A	70	0.45	
Cu	65	74	He	0.072	ppb	68.0	308	0.45	
Zn	66	74	He	-0.177	ppb	N/A	107	1.8	
As	75	74	He	0.015	ppb	233.0	15	0.45	
Mo	95	103	He	0.028	ppb	57.3	28	0.45	
Ag	107	103	He	0.007	ppb	59.3	28	0.09	
Sb	121	103	He	0.021	ppb	37.1	21	0.45	
Ba	138	159	He	0.000	ppb	N/A	129	0.45	
Tl	205	159	He	0.003	ppb	164.5	112	0.09	
Be	9	6	NoGas	0.015	ppb	51.7	27	0.09	
Ti	47	45	NoGas	0.036	ppb	46.5	75	0.45	
Co	59	74	NoGas	0.009	ppb	52.3	352	0.09	
Cu	65	74	NoGas	-0.003	ppb	N/A	575	0.45	
Cd	111	103	NoGas	0.004	ppb	193.5	13	0.09	
Hg	201	159	NoGas	9.476	ppt	59.0	9	36	
Pb	208	159	NoGas	0.026	ppb	15.4	1060	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Pulse	1.8	988567	957795.216666667	103.2	
Ge	74	H2	Pulse	1.6	361463	365863.58	98.8	
Sc	45	He	Pulse	0.5	124851	124730.113333333	100.1	
Ge	74	He	Pulse	0.6	81782	82867.31	98.7	
Rh	103	He	Pulse	0.5	265731	269557.44	98.6	

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	0.8	440263	443839.81	99.2	
Bi	209	He	Pulse	1.0	315741	326730.87	96.6	
Li	6	NoGas	Pulse	1.1	523572	522967.65	100.1	
Sc	45	NoGas	Analog	1.3	1756904	1581446.20333333	111.1	
Ge	74	NoGas	Pulse	0.3	443846	435835.62	101.8	
Rh	103	NoGas	Pulse	0.2	525292	523946.536666667	100.3	
Tb	159	NoGas	Pulse	0.2	973512	965727.01	100.8	
Bi	209	NoGas	Pulse	0.5	570323	579848.77	98.4	

CRL Verification ICPMS5

Sample Name	9E20033-CRL4
File Name	090CRL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b
Acq Time	5/20/2019 22:28:38
Sample Type	CRL1
Total Dilution	1.0000
Comment	A19D348 JPB 05/20
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	13.567	ppb	3.1	42211	150.74	70	130	<>CRL1 NR<MRL<R-11
Ca	44	45	H2	6.401	ppb	27.0	1588	71.12	70	130	
Fe	56	74	H2	9.304	ppb	0.5	59564	103.38	70	130	
Fe	57	74	H2	8.777	ppb	10.9	1762	97.52	70	130	
Se	78	74	H2	0.203	ppb	15.2	35	112.78	70	130	
Mg	24	45	He	8.496	ppb	8.2	1802	94.4	70	130	
Al	27	45	He	8.590	ppb	29.7	944	95.44	70	130	
K	39	45	He	9.927	ppb	28.7	10828	110.3	70	130	
V	51	74	He	0.151	ppb	24.9	656	83.89	70	130	
Cr	52	74	He	0.154	ppb	25.3	353	85.56	70	130	
Mn	55	74	He	0.196	ppb	27.9	284	108.89	70	130	
Ni	60	74	He	0.151	ppb	27.8	177	83.89	70	130	
Cu	65	74	He	0.211	ppb	21.6	420	117.22	70	130	
Zn	66	74	He	-0.079	ppb	N/A	130	-43.89	70	130	<>CRL1 NR<MRL<R-11
As	75	74	He	0.172	ppb	8.5	38	95.56	70	130	
Mo	95	103	He	0.188	ppb	16.9	159	104.44	70	130	
Ag	107	103	He	0.192	ppb	2.6	570	106.67	70	130	
Sb	121	103	He	0.213	ppb	3.7	196	118.33	70	130	
Ba	138	159	He	0.178	ppb	4.1	541	98.89	70	130	
Tl	205	159	He	0.181	ppb	4.6	1280	100.56	70	130	
Be	9	6	NoGas	0.176	ppb	4.9	261	97.78	70	130	
Ti	47	45	NoGas	0.174	ppb	15.8	157	96.67	70	130	
Co	59	74	NoGas	0.189	ppb	7.3	1788	105	70	130	
Cu	65	74	NoGas	0.233	ppb	14.0	973	129.44	70	130	
Cd	111	103	NoGas	0.187	ppb	5.2	228	103.89	70	130	
Hg	201	159	NoGas	14.495	ppt	64.2	12	201.32	70	130	<>CRL1 NR<MRL<R-11
Pb	208	159	NoGas	0.191	ppb	5.7	3537	106.11	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.6	993950	957795.216666667	103.8	
Ge	74	H2	Pulse	0.3	363388	365863.58	99.3	
Sc	45	He	Pulse	0.2	126569	124730.113333333	101.5	
Ge	74	He	Pulse	0.5	82463	82867.31	99.5	
Rh	103	He	Pulse	0.2	266350	269557.44	98.8	

JB 05/21/19

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Tb	159	He	Pulse	0.6	440539	443839.81	99.3	
Bi	209	He	Pulse	0.9	316105	326730.87	96.7	
Li	6	NoGas	Pulse	1.0	518453	522967.65	99.1	
Sc	45	NoGas	Analog	1.6	1755718	1581446.20333333	111.0	
Ge	74	NoGas	Pulse	0.3	443419	435835.62	101.7	
Rh	103	NoGas	Pulse	0.2	526597	523946.536666667	100.5	
Tb	159	NoGas	Pulse	0.4	969685	965727.01	100.4	
Bi	209	NoGas	Pulse	0.1	567884	579848.77	97.9	

CRL Verification ICPMS5

Sample Name	9E20033-CRL5	1103
File Name	091_CRL.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b	
Acq Time	5/20/2019 22:32:53	
Sample Type	CRL2	
Total Dilution	1.0000	
Comment	A19D349 JPB 05/20	
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	49.380	ppb	1.0	107942	109.73	70	130	
Ca	44	45	H2	46.122	ppb	1.7	5210	102.49	70	130	
Fe	57	74	H2	44.544	ppb	1.3	6519	98.99	70	130	
Se	78	74	H2	1.021	ppb	6.5	171	113.44	70	130	
Mg	24	45	He	46.456	ppb	5.8	8798	103.24	70	130	
Al	27	45	He	44.597	ppb	5.3	4452	99.1	70	130	
K	39	45	He	47.213	ppb	2.9	17541	104.92	70	130	
V	51	74	He	0.887	ppb	5.2	1608	98.56	70	130	
Cr	52	74	He	0.907	ppb	3.0	1525	100.78	70	130	
Mn	55	74	He	0.820	ppb	3.6	989	91.11	70	130	
Ni	60	74	He	0.929	ppb	6.6	636	103.22	70	130	
Cu	65	74	He	0.890	ppb	1.9	953	98.89	70	130	
Zn	66	74	He	0.681	ppb	24.4	304	75.67	70	130	
As	75	74	He	0.861	ppb	1.0	138	95.67	70	130	
Mo	95	103	He	0.873	ppb	11.9	722	97	70	130	
Ag	107	103	He	0.922	ppb	4.5	2710	102.44	70	130	
Sb	121	103	He	0.921	ppb	13.8	837	102.33	70	130	
Ba	138	159	He	0.957	ppb	4.3	2346	106.33	70	130	
Tl	205	159	He	0.916	ppb	2.1	6091	101.78	70	130	
Be	9	6	NoGas	0.840	ppb	3.2	1225	93.33	70	130	
Ti	47	45	NoGas	0.886	ppb	13.5	570	98.44	70	130	
Co	59	74	NoGas	0.890	ppb	5.0	7346	98.89	70	130	
Cu	65	74	NoGas	0.918	ppb	19.6	2127	102	70	130	
Cd	111	103	NoGas	0.873	ppb	2.4	1026	97	70	130	
Hg	201	159	NoGas	37.829	ppt	15.1	24	105.08	70	130	
Pb	208	159	NoGas	0.884	ppb	1.0	13918	98.22	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.1	983467	957795.216666667	102.7	
Ge	74	H2	Pulse	0.2	363271	365863.58	99.3	
Sc	45	He	Pulse	1.5	124711	124730.113333333	100.0	
Ge	74	He	Pulse	0.5	82326	82867.31	99.3	
Rh	103	He	Pulse	0.7	265979	269557.44	98.7	
Tb	159	He	Pulse	0.6	441136	443839.81	99.4	

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Bi	209	He	Pulse	0.2	316968	326730.87	97.0	
Li	6	NoGas	Pulse	0.2	515787	522967.65	98.6	
Sc	45	NoGas	Analog	0.3	1726835	1581446.20333333	109.2	
Ge	74	NoGas	Pulse	0.2	442729	435835.62	101.6	
Rh	103	NoGas	Pulse	0.6	522778	523946.536666667	99.8	
Tb	159	NoGas	Pulse	0.6	967975	965727.01	100.2	
Bi	209	NoGas	Pulse	0.7	565796	579848.77	97.6	

CRL Verification ICPMS5

Sample Name	9E20033-CRL6
File Name	092CRL_.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b
Acq Time	5/20/2019 22:37:07
Sample Type	CRL3
Total Dilution	1.0000
Comment	A19D350 JPB 05/20
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	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Na	23	45	H2	97.218	ppb	0.5	198768	108.02	70	130	
Ca	44	45	H2	91.918	ppb	1.7	9521	102.13	70	130	
Fe	57	74	H2	93.354	ppb	2.4	13090	103.73	70	130	
Se	78	74	H2	1.743	ppb	2.8	292	96.83	70	130	
Mg	24	45	He	90.671	ppb	0.7	16852	100.75	70	130	
Al	27	45	He	88.326	ppb	8.5	8661	98.14	70	130	
K	39	45	He	96.678	ppb	6.3	26454	107.42	70	130	
V	51	74	He	1.792	ppb	9.4	2769	99.56	70	130	
Cr	52	74	He	1.792	ppb	5.3	2891	99.56	70	130	
Mn	55	74	He	1.818	ppb	2.7	2111	101	70	130	
Ni	60	74	He	1.818	ppb	7.2	1158	101	70	130	
Cu	65	74	He	1.870	ppb	8.5	1720	103.89	70	130	
Zn	66	74	He	1.596	ppb	14.2	513	88.67	70	130	
As	75	74	He	1.804	ppb	3.6	275	100.22	70	130	
Mo	95	103	He	1.832	ppb	3.4	1488	101.78	70	130	
Ag	107	103	He	1.912	ppb	3.6	5533	106.22	70	130	
Sb	121	103	He	1.956	ppb	2.3	1750	108.67	70	130	
Ba	138	159	He	1.826	ppb	5.9	4318	101.44	70	130	
Tl	205	159	He	1.897	ppb	3.9	12400	105.39	70	130	
Be	9	6	NoGas	1.781	ppb	0.3	2605	98.94	70	130	
Ti	47	45	NoGas	1.936	ppb	9.1	1184	107.56	70	130	
Co	59	74	NoGas	1.763	ppb	3.3	14342	97.94	70	130	
Cu	65	74	NoGas	2.068	ppb	4.5	4087	114.89	70	130	
Cd	111	103	NoGas	1.808	ppb	7.8	2129	100.44	70	130	
Hg	201	159	NoGas	75.011	ppt	22.8	44	104.18	70	130	
Pb	208	159	NoGas	1.805	ppb	2.1	27733	100.28	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.2	995639	957795.216666667	104.0	
Ge	74	H2	Pulse	0.3	365466	365863.58	99.9	
Sc	45	He	Pulse	1.6	123794	124730.113333333	99.2	
Ge	74	He	Pulse	1.6	82070	82867.31	99.0	
Rh	103	He	Pulse	1.9	262119	269557.44	97.2	
Tb	159	He	Pulse	1.7	437508	443839.81	98.6	

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Bi	209	He	Pulse	1.7	313585	326730.87	96.0	
Li	6	NoGas	Pulse	0.7	518142	522967.65	99.1	
Sc	45	NoGas	Analog	1.8	1729453	1581446.20333333	109.4	
Ge	74	NoGas	Pulse	0.7	444859	435835.62	102.1	
Rh	103	NoGas	Pulse	0.2	525939	523946.536666667	100.4	
Tb	159	NoGas	Pulse	0.4	968270	965727.01	100.3	
Bi	209	NoGas	Pulse	0.7	567523	579848.77	97.9	

CRL Verification ICPMS5

Sample Name	9E20033-CRL7
File Name	093CRL4.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E20033.b
Acq Time	5/20/2019 22:41:23
Sample Type	CRL4
Total Dilution	1.0000
Comment	A19D351 JPB 05/20
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	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Na	23	45	H2	186.414	ppb	0.5	366385	103.56	70	130	
Ca	44	45	H2	189.032	ppb	2.9	18564	105.02	70	130	
Fe	56	74	H2	183.193	ppb	0.4	1003426	101.77	70	130	
Fe	57	74	H2	182.444	ppb	1.0	24992	101.36	70	130	
Se	78	74	H2	3.569	ppb	2.9	597	99.14	70	130	
Mg	24	45	He	174.378	ppb	2.9	32784	96.88	70	130	
Al	27	45	He	174.298	ppb	3.5	17313	96.83	70	130	
K	39	45	He	181.089	ppb	2.8	42645	100.6	70	130	
V	51	74	He	3.370	ppb	2.7	4854	93.61	70	130	
Cr	52	74	He	3.538	ppb	3.8	5649	98.28	70	130	
Mn	55	74	He	3.643	ppb	1.3	4208	101.19	70	130	
Ni	60	74	He	3.696	ppb	6.1	2285	102.67	70	130	
Cu	65	74	He	3.786	ppb	5.3	3254	105.17	70	130	
Zn	66	74	He	3.475	ppb	8.3	952	96.53	70	130	
As	75	74	He	3.596	ppb	7.8	539	99.89	70	130	
Mo	95	103	He	3.590	ppb	1.7	2964	99.72	70	130	
Ag	107	103	He	3.751	ppb	2.1	11048	104.19	70	130	
Sb	121	103	He	3.691	ppb	3.8	3362	102.53	70	130	
Ba	138	159	He	3.731	ppb	1.1	8771	103.64	70	130	
Tl	205	159	He	3.803	ppb	2.8	24992	105.64	70	130	
Be	9	6	NoGas	3.697	ppb	6.6	5388	102.69	70	130	
Ti	47	45	NoGas	3.585	ppb	4.4	2169	99.58	70	130	
Co	59	74	NoGas	3.582	ppb	1.7	28760	99.5	70	130	
Cu	65	74	NoGas	3.877	ppb	5.9	7132	107.69	70	130	
Cd	111	103	NoGas	3.687	ppb	6.9	4328	102.42	70	130	
Hg	201	159	NoGas	158.821	ppt	9.0	89	110.29	70	130	
Pb	208	159	NoGas	3.640	ppb	0.3	55134	101.11	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.4	997694	957795.216666667	104.2	
Ge	74	H2	Pulse	0.8	365214	365863.58	99.8	
Sc	45	He	Pulse	1.8	125982	124730.113333333	101.0	
Ge	74	He	Pulse	0.9	82818	82867.31	99.9	
Rh	103	He	Pulse	0.2	266874	269557.44	99.0	

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Tb	159	He	Pulse	1.1	441331	443839.81	99.4	
Bi	209	He	Pulse	1.2	316744	326730.87	96.9	
Li	6	NoGas	Pulse	0.8	516994	522967.65	98.9	
Sc	45	NoGas	Analog	0.9	1746936	1581446.20333333	110.5	
Ge	74	NoGas	Pulse	0.3	443444	435835.62	101.7	
Rh	103	NoGas	Pulse	0.2	525420	523946.536666667	100.3	
Tb	159	NoGas	Pulse	0.4	966329	965727.01	100.1	
Bi	209	NoGas	Pulse	0.3	565526	579848.77	97.5	

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)

Sequence 9E21039

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence: **9E21039** Instrument: **ICPMS5**

Date: **05/21/19 11:54** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E21039-CAL1	Water	QC	QC			A19C136	A19D348
2	9E21039-CAL2	Water	QC	QC			A19C136	A19D349
3	9E21039-CAL3	Water	QC	QC			A19C136	A19D350
4	9E21039-CAL4	Water	QC	QC			A19C136	A19D351
5	9E21039-CAL5	Water	QC	QC			A19C136	A19E083
6	9E21039-CAL6	Water	QC	QC			A19C136	A19D352
7	9E21039-CAL7	Water	QC	QC			A19C136	A19E082
8	9E21039-CAL8	Water	QC	QC			A19C136	A19D321
9	9E21039-CAL9	Water	QC	QC			A19C136	A19E164
10	9E21039-ICV1	Water	QC	QC			A19C136	A19E109
11	9E21039-ICB1	Water	QC	QC			A19C136	
12	9E21039-CRL1	Water	QC	QC			A19C136	A19D348
13	9E21039-CRL2	Water	QC	QC			A19C136	A19D349
14	9E21039-CRL3	Water	QC	QC			A19C136	A19D350
15	9E21039-IFA1	Water	QC	QC			A19C136	A19E234
16	9E21039-IFB1	Water	QC	QC			A19C136	A19E235
17	9051008-MS6	Water	QC	QC		9051008	A19C136	
18	A9E0245-01RE3	Water	Na (Sodium) - 200.8 - Total	(QC Source)		9051008	A19C136	
19	9051008-DUP4	Water	QC	QC		9051008	A19C136	
20	9051008-MS7	Water	QC	QC		9051008	A19C136	
21	9051043-BLK2	Water	QC	QC		9051043	A19C136	
22	9051043-BS2	Water	QC	QC		9051043	A19C136	
23	A9E0282-01RE1	Water	Be (Beryllium) - 200.8 - Total		05/22/19	9051043	A19C136	
24	"	Water	Ca (Calcium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
25	"	Water	Na (Sodium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
26	A9E0289-01RE1	Water	Al (Aluminum) - 200.8 - Total	(QC Source)		9051043	A19C136	
27	"	Water	As (Arsenic) - 6020 - Total	(QC Source)		9051043	A19C136	
28	"	Water	As (Arsenic) - 200.8 - Total	(QC Source)		9051043	A19C136	
29	"	Water	Be (Beryllium) - 200.8 - Total	(QC Source)		9051043	A19C136	
30	"	Water	Ca (Calcium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
31	"	Water	Cr (Chromium) - 6020 - Total	(QC Source)		9051043	A19C136	
32	"	Water	Cr (Chromium) - 200.8 - Total	(QC Source)		9051043	A19C136	
33	"	Water	Cu (Copper) - 6020 - Total	(QC Source)		9051043	A19C136	
34	"	Water	Cu (Copper) - 200.8 - Total	(QC Source)		9051043	A19C136	
35	"	Water	K (Potassium) - 200.8 - Total	(QC Source)		9051043	A19C136	
36	"	Water	Mg (Magnesium) - 200.8 - Total	"	05/22/19	9051043	A19C136	
37	"	Water	Na (Sodium) - 200.8 - Total	(QC Source)		9051043	A19C136	
38	"	Water	Se (Selenium) - 6020 - Total	(QC Source)		9051043	A19C136	
39	"	Water	Se (Selenium) - 200.8 - Total	(QC Source)		9051043	A19C136	
40	"	Water	Zn (Zinc) - 6020 - Total	(QC Source)		9051043	A19C136	
41	"	Water	Zn (Zinc) - 200.8 - Total	(QC Source)		9051043	A19C136	
42	9051043-DUP2	Water	QC	QC		9051043	A19C136	
43	9051043-MS3	Water	QC	QC		9051043	A19C136	
44	9E21039-CCV1	Water	QC	QC			A19C136	A19E109
45	9E21039-CCB1	Water	QC	QC			A19C136	
46	A9E0289-02RE1	Water	Ca (Calcium) - 200.8 - Total		05/22/19	9051043	A19C136	
47	A9E0289-03RE1	Water	Ca (Calcium) - 200.8 - Total		05/22/19	9051043	A19C136	
48	A9E0289-04RE1	Water	Ca (Calcium) - 200.8 - Total		05/22/19	9051043	A19C136	
49	A9E0289-05RE1	Water	Ca (Calcium) - 200.8 - Total		05/22/19	9051043	A19C136	
50	A9E0610-01RE1	Water	Ca (Calcium) - 200.8 - Total	(QC Source)		9051043	A19C136	
51	"	Water	Na (Sodium) - 200.8 - Total	(QC Source)		9051043	A19C136	

Sequence: **9E21039** Instrument: **ICPMS5**

Date: **05/21/19 11:54** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
52	9051043-MS4	Water	QC	QC		9051043	A19C136	
53	9051011-BLK2	Solid	QC	QC		9051011	A19C136	
54	9051011-BS2	Solid	QC	QC		9051011	A19C136	
55	A9E0508-05RE1	Solid	Na (Sodium) - 6020 - Total	Hahn and Associates	05/21/19	9051011	A19C136	
56	9051011-DUP2	Solid	QC	QC		9051011	A19C136	
57	9E21039-CCV2	Water	QC	QC			A19C136	A19E109
58	9E21039-CCB2	Water	QC	QC			A19C136	
59	9051011-MS2	Solid	QC	QC		9051011	A19C136	
60	9E21039-CCV3	Water	QC	QC			A19C136	A19E109
61	9E21039-CCB3	Water	QC	QC			A19C136	
62	9E21039-CRL4	Water	QC	QC			A19C136	A19D348
63	9E21039-CRL5	Water	QC	QC			A19C136	A19D349
64	9E21039-CRL6	Water	QC	QC			A19C136	A19D350
65	9051090-BLK1	Soil	QC	QC		9051090	A19C136	
66	9051090-BS1	Soil	QC	QC		9051090	A19C136	
67	A9E0389-01	Soil	Ag (Silver) - 6020 - Total	Bonneville Power Administration -	05/24/19	9051090	A19C136	
68	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
69	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
70	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
71	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	
72	"	Soil	Cu (Copper) - 6020 - Total	"	05/24/19	9051090	A19C136	
73	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
74	"	Soil	Ni (Nickel) - 6020 - Total	"	05/24/19	9051090	A19C136	
75	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	
76	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
77	"	Soil	Zn (Zinc) - 6020 - Total	"	05/24/19	9051090	A19C136	
78	A9E0389-02	Soil	Ag (Silver) - 6020 - Total		05/24/19	9051090	A19C136	
79	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
80	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
81	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
82	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	
83	"	Soil	Cu (Copper) - 6020 - Total	"	05/24/19	9051090	A19C136	
84	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
85	"	Soil	Ni (Nickel) - 6020 - Total	"	05/24/19	9051090	A19C136	
86	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	
87	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
88	"	Soil	Zn (Zinc) - 6020 - Total	"	05/24/19	9051090	A19C136	
89	A9E0389-03	Soil	Ag (Silver) - 6020 - Total		05/24/19	9051090	A19C136	
90	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
91	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
92	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
93	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	
94	"	Soil	Cu (Copper) - 6020 - Total	"	05/24/19	9051090	A19C136	
95	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
96	"	Soil	Ni (Nickel) - 6020 - Total	"	05/24/19	9051090	A19C136	
97	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	
98	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
99	"	Soil	Zn (Zinc) - 6020 - Total	"	05/24/19	9051090	A19C136	
100	A9E0389-04	Soil	Ag (Silver) - 6020 - Total		05/24/19	9051090	A19C136	
101	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
102	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
103	"	Soil	Be (Beryllium) - 6020 - Total	(QC Source)		9051090	A19C136	
104	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
105	"	Soil	Co (Cobalt) - 6020 - Total	(QC Source)		9051090	A19C136	
106	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	

Sequence: **9E21039** Instrument: **ICPMS5**

Date: **05/21/19 11:54** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
107	"	Soil	Cu (Copper) - 6020 - Total	"	05/24/19	9051090	A19C136	
108	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
109	"	Soil	Ni (Nickel) - 6020 - Total	"	05/24/19	9051090	A19C136	
110	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	
111	"	Soil	Sb (Antimony) - 6020 - Total	(QC Source)		9051090	A19C136	
112	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
113	"	Soil	Tl (Thallium) - 6020 - Total	(QC Source)		9051090	A19C136	
114	"	Soil	Zn (Zinc) - 6020 - Total	"	05/24/19	9051090	A19C136	
115	9051090-DUP1	Soil	QC	QC		9051090	A19C136	
116	9051090-MS1	Soil	QC	QC		9051090	A19C136	
117	A9E0389-05	Soil	Ag (Silver) - 6020 - Total		05/24/19	9051090	A19C136	
118	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
119	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
120	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
121	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	
122	"	Soil	Cu (Copper) - 6020 - Total	"	05/24/19	9051090	A19C136	
123	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
124	"	Soil	Ni (Nickel) - 6020 - Total	"	05/24/19	9051090	A19C136	
125	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	
126	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
127	"	Soil	Zn (Zinc) - 6020 - Total	"	05/24/19	9051090	A19C136	
128	A9E0389-06	Soil	Ag (Silver) - 6020 - Total		05/24/19	9051090	A19C136	
129	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
130	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
131	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
132	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	
133	"	Soil	Cu (Copper) - 6020 - Total	"	05/24/19	9051090	A19C136	
134	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
135	"	Soil	Ni (Nickel) - 6020 - Total	"	05/24/19	9051090	A19C136	
136	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	
137	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
138	"	Soil	Zn (Zinc) - 6020 - Total	"	05/24/19	9051090	A19C136	
139	9E21039-CCV4	Water	QC	QC			A19C136	A19E109
140	9E21039-CCV5	Water	QC	QC			A19C136	A19E109
141	9E21039-CCB4	Water	QC	QC			A19C136	
142	A9E0389-07	Soil	Ag (Silver) - 6020 - Total		05/24/19	9051090	A19C136	
143	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
144	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
145	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
146	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	
147	"	Soil	Cu (Copper) - 6020 - Total	"	05/24/19	9051090	A19C136	
148	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
149	"	Soil	Ni (Nickel) - 6020 - Total	"	05/24/19	9051090	A19C136	
150	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	
151	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
152	"	Soil	Zn (Zinc) - 6020 - Total	"	05/24/19	9051090	A19C136	
153	A9E0389-08	Soil	Ag (Silver) - 6020 - Total		05/24/19	9051090	A19C136	
154	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
155	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
156	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
157	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	
158	"	Soil	Cu (Copper) - 6020 - Total	"	05/24/19	9051090	A19C136	
159	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
160	"	Soil	Ni (Nickel) - 6020 - Total	"	05/24/19	9051090	A19C136	
161	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	

Sequence: **9E21039** Instrument: **ICPMS5**

Date: **05/21/19 11:54** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
162	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
163	"	Soil	Zn (Zinc) - 6020 - Total	"	05/24/19	9051090	A19C136	
164	A9E0389-09	Soil	Ag (Silver) - 6020 - Total		05/24/19	9051090	A19C136	
165	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
166	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
167	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
168	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	
169	"	Soil	Cu (Copper) - 6020 - Total	"	05/24/19	9051090	A19C136	
170	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
171	"	Soil	Ni (Nickel) - 6020 - Total	"	05/24/19	9051090	A19C136	
172	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	
173	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
174	"	Soil	Zn (Zinc) - 6020 - Total	"	05/24/19	9051090	A19C136	
175	A9E0389-10	Soil	Ag (Silver) - 6020 - Total		05/24/19	9051090	A19C136	
176	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
177	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
178	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
179	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	
180	"	Soil	Cu (Copper) - 6020 - Total	"	05/24/19	9051090	A19C136	
181	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
182	"	Soil	Ni (Nickel) - 6020 - Total	"	05/24/19	9051090	A19C136	
183	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	
184	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
185	"	Soil	Zn (Zinc) - 6020 - Total	"	05/24/19	9051090	A19C136	
186	A9E0401-01	Soil	Ag (Silver) - 6020 - Total		05/24/19	9051090	A19C136	
187	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
188	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
189	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
190	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	
191	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
192	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	
193	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
194	A9E0401-03	Soil	Ag (Silver) - 6020 - Total		05/24/19	9051090	A19C136	
195	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
196	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
197	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
198	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	
199	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
200	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	
201	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
202	A9E0401-04	Soil	Ag (Silver) - 6020 - Total		05/24/19	9051090	A19C136	
203	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
204	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
205	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
206	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	
207	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
208	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	
209	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
210	A9E0401-06	Soil	Ag (Silver) - 6020 - Total		05/24/19	9051090	A19C136	
211	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
212	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
213	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
214	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	
215	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
216	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	

Sequence: **9E21039** Instrument: **ICPMS5**

Date: **05/21/19 11:54** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
217	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
218	A9E0401-07	Soil	Ag (Silver) - 6020 - Total		05/24/19	9051090	A19C136	
219	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
220	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
221	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
222	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	
223	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
224	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	
225	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
226	A9E0401-09	Soil	Ag (Silver) - 6020 - Total		05/24/19	9051090	A19C136	
227	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
228	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
229	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
230	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	
231	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
232	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	
233	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
234	9E21039-CCV6	Water	QC	QC			A19C136	A19E109
235	9E21039-CCB5	Water	QC	QC			A19C136	
236	A9E0401-10	Soil	Ag (Silver) - 6020 - Total		05/24/19	9051090	A19C136	
237	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
238	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
239	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
240	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	
241	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
242	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	
243	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
244	A9E0401-11	Soil	Ag (Silver) - 6020 - Total		05/24/19	9051090	A19C136	
245	"	Soil	As (Arsenic) - 6020 - Total	"	05/24/19	9051090	A19C136	
246	"	Soil	Ba (Barium) - 6020 - Total	"	05/24/19	9051090	A19C136	
247	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/24/19	9051090	A19C136	
248	"	Soil	Cr (Chromium) - 6020 - Total	"	05/24/19	9051090	A19C136	
249	"	Soil	Hg (Mercury) - 6020 - Total	"	05/24/19	9051090	A19C136	
250	"	Soil	Pb (Lead) - 6020 - Total	"	05/24/19	9051090	A19C136	
251	"	Soil	Se (Selenium) - 6020 - Total	"	05/24/19	9051090	A19C136	
252	A9E0595-01	Soil	Ag (Silver) - 6020 - Total		05/23/19	9051090	A19C136	
253	"	Soil	As (Arsenic) - 6020 - Total	"	05/23/19	9051090	A19C136	
254	"	Soil	Ba (Barium) - 6020 - Total	(QC Source)		9051090	A19C136	
255	"	Soil	Be (Beryllium) - 6020 - Total	"	05/23/19	9051090	A19C136	
256	"	Soil	Cd (Cadmium) - 6020 - Total	"	05/23/19	9051090	A19C136	
257	"	Soil	Co (Cobalt) - 6020 - Total	"	05/23/19	9051090	A19C136	
258	"	Soil	Cr (Chromium) - 6020 - Total	"	05/23/19	9051090	A19C136	
259	"	Soil	Cu (Copper) - 6020 - Total	"	05/23/19	9051090	A19C136	
260	"	Soil	Hg (Mercury) - 6020 - Total	"	05/23/19	9051090	A19C136	
261	"	Soil	Ni (Nickel) - 6020 - Total	"	05/23/19	9051090	A19C136	
262	"	Soil	Pb (Lead) - 6020 - Total	"	05/23/19	9051090	A19C136	
263	"	Soil	Sb (Antimony) - 6020 - Total	"	05/23/19	9051090	A19C136	
264	"	Soil	Se (Selenium) - 6020 - Total	"	05/23/19	9051090	A19C136	
265	"	Soil	Tl (Thallium) - 6020 - Total	"	05/23/19	9051090	A19C136	
266	"	Soil	Zn (Zinc) - 6020 - Total	"	05/23/19	9051090	A19C136	
267	9051090-MS2	Soil	QC	QC		9051090	A19C136	
268	9051090-MSD1	Soil	QC	QC		9051090	A19C136	
269	9051090-MSD2	Soil	QC	QC		9051090	A19C136	
270	9E21039-CCV7	Water	QC	QC			A19C136	A19E109
271	9E21039-CCB6	Water	QC	QC			A19C136	

Sequence: **9E21039** Instrument: **ICPMS5**

Date: **05/21/19 11:54** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
272	9E21039-CRL7	Water	QC	QC			A19C136	A19D348
273	9E21039-CRL8	Water	QC	QC			A19C136	A19D349
274	9E21039-CRL9	Water	QC	QC			A19C136	A19D350
275	9E21039-CRLA	Water	QC	QC			A19C136	A19D351
276	9051099-BLK1	Water	QC	QC		9051099	A19C136	
277	9051099-BS1	Water	QC	QC		9051099	A19C136	
278	A9E0513-22	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
279	9051099-DUP1	Water	QC	QC		9051099	A19C136	
280	A9E0513-22	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
281	A9E0513-23	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
282	"	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
283	9051099-MS1	Water	QC	QC		9051099	A19C136	
284	A9E0513-24	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
285	"	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
286	9051099-MS2	Water	QC	QC		9051099	A19C136	
287	A9E0513-25	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
288	"	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
289	A9E0513-26	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
290	"	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
291	9E21039-CCV8	Water	QC	QC			A19C136	A19E109
292	9E21039-CCV9	Water	QC	QC			A19C136	A19E109
293	9E21039-CCB7	Water	QC	QC			A19C136	
294	9E21039-CCB8	Water	QC	QC			A19C136	
295	A9E0513-27	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
296	"	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
297	A9E0513-28	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
298	"	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
299	A9E0513-29	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
300	"	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
301	A9E0513-30	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
302	"	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
303	A9E0513-31	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
304	"	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
305	A9E0513-32	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
306	"	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
307	A9E0513-33	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
308	"	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
309	A9E0513-35	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
310	"	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
311	A9E0513-37	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
312	"	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
313	A9E0513-38	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
314	"	Water	Fe (Iron) - 200.8 - Dissolved	"	05/24/19	9051099	A19C136	
315	9E21039-CCVA	Water	QC	QC			A19C136	A19E109
316	9E21039-CCB9	Water	QC	QC			A19C136	
317	A9E0513-39	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
318	"	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
319	A9E0513-40	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
320	"	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
321	A9E0513-41	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
322	"	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
323	A9E0513-43	Water	As (Arsenic) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
324	"	Water	Fe (Iron) - 200.8 - Dissolved		05/24/19	9051099	A19C136	
325	9E21039-CCVB	Water	QC	QC			A19C136	A19E109
326	9E21039-CCBA	Water	QC	QC			A19C136	

Sequence:	9E21039	Instrument:	ICPMS5
Date:	05/21/19 11:54	Calibration:	UNASSIGNED

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
327	9E21039-CRLB	Water	QC	QC			A19C136	A19D348
328	9E21039-CRLC	Water	QC	QC			A19C136	A19D349
329	9E21039-CRLD	Water	QC	QC			A19C136	A19D350
330	9E21039-CRLE	Water	QC	QC			A19C136	A19D351

Data Entered By: JB 05/22/19

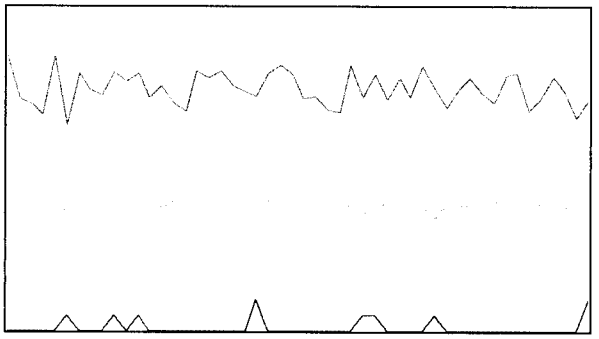
Comments:

Data Reviewed By: MLF 5/28/19

Tune Report

Batch Folder	C:\Agilent\ICPMH\1\DATA\9E21039.b
Acq. Date-Time	5/21/2019 14:04
Report Comment	9E21039 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	500	375	3753.10	1000.00	
89	5000	1934	19338.15	1000.00	
78	20	0			

Mass	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
59		-	
89		-	
78		-	

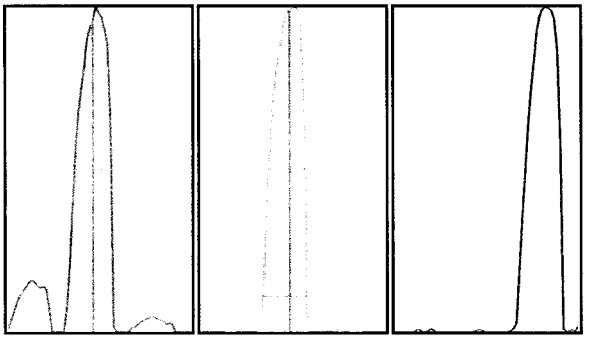
Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
59	6.81	5.00	[F]
89	3.17	5.00	
78	247.44		

See EPA Tune for RSP
JP 05/22/19

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	373.56	58.95	58.9 - 59.1		0.58	0.723	0.900	
89	1937.16	89.00	88.9 - 89.1		0.57	0.707	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	1.90 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	2.0 V
Omega Lens	6.5 V	Plate Bias	-70 V

Cell Parameters

Use Gas	true	OctP Bias	-18.0 V
He Flow	0.0 mL/min	OctP RF	170 V
H2 Flow	3.1 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	345	3445.53	1000.00	
89	500	309	3085.07	1000.00	
205	1000	794	7937.78	1000.00	
75	20	1			

Mass	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
59		-	

Tune Report

89		-
205		-
75		-

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
59	5.78	5.00	[F]
89	6.84	5.00	[F]
205	4.54	5.00	
75	152.19		

See CAA Tune for RSD
5/05/19

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	343.05	59.00	58.9 - 59.1		0.57	0.727	0.900	
89	317.80	89.05	88.9 - 89.1		0.56	0.720	0.900	
205	773.97	205.00	204.9 - 205.1		0.53	0.726	0.900	
75	0.00	75.00	-		0.13	0.125		

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	1.90 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	6.5 V	Plate Bias	-70 V

Cell Parameters

Use Gas	true	OctP Bias	-18.0 V
He Flow	3.4 mL/min	OctP RF	170 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	768	7679.99	1000.00	
89	2000	1608	16076.63	1000.00	
205	2000	1253	12533.94	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	4.89	5.00	
89	2.92	5.00	
205	3.74	5.00	
102	260.28		

Mass	Background (Actual)	Background (Required)	Background (Flag)
7	0.90	10	
89	2.50	10	
205	6.90	30	
102	3.20		

Ratio (oxide)	156/140	1.490 %
Ratio (2+)	69/138	2.726 %

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	760.69	7.00	6.9 - 7.1		0.64	0.771	0.900	
89	1638.58	89.05	88.9 - 89.1		0.57	0.720	0.900	
205	1252.06	205.00	204.9 - 205.1		0.55	0.729	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	1.90 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

Tune Report

Extract 2	-175.0 V	Cell Exit	-60 V
Omega Bias	-110 V	Deflect	8.0 V
Omega Lens	6.5 V	Plate Bias	-70 V

Cell Parameters

Use Gas	false	OctP Bias	-8.0 V
He Flow	0.0 mL/min	OctP RF	170 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\9E21039.b
Acq. Date-Time	5/21/2019 14:15
Report Comment	9E21039 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		2093	20927.86	1000.00	
89		10756	107562.66	1000.00	
78		8			

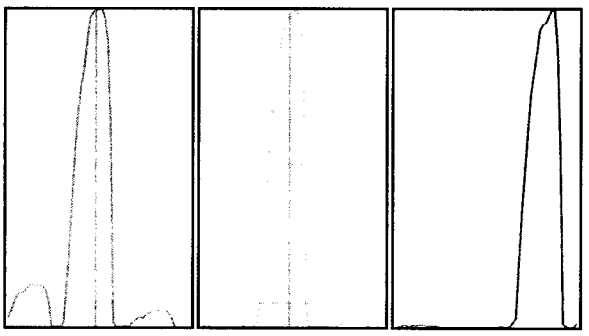
Mass	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
59		-	
89		-	
78		-	

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
59	1.36	5.00	
89	1.73	5.00	
78	12.47		

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	2051	2117	2121	2090	2084
89	10512	10634	10847	10799	10989
78	7	9	8	8	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	376.35	59.00	58.9 - 59.1		0.57	0.752	0.900	

Tune Report

89	1965.71	89.00	88.9 - 89.1	0.57	0.742	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	1.90 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	2.0 V
Omega Lens	6.5 V	Plate Bias	-70 V

Cell Parameters

Use Gas	true	OctP Bias	-18.0 V
He Flow	0.0 mL/min	OctP RF	170 V
H2 Flow	3.1 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		1939	19388.06	1000.00	
89		1687	16871.68	1000.00	
205		4050	40502.26	1000.00	
75		5			

Mass	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
59		-	
89		-	
205		-	
75		-	

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
59	2.03	5.00	
89	1.84	5.00	
205	1.03	5.00	
75	25.38		

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	1949	1890	1913	1950	1993
89	1730	1683	1696	1643	1685
205	4069	4108	3998	4028	4047
75	4	7	6	6	4

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	358.49	59.00	58.9 - 59.1		0.56	0.748	0.900	
89	317.19	89.05	88.9 - 89.1		0.55	0.740	0.900	
205	780.16	205.00	204.9 - 205.1		0.53	0.742	0.900	
75			-					

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	1.90 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	6.5 V	Plate Bias	-70 V

Cell Parameters

Use Gas	true	OctP Bias	-18.0 V
He Flow	3.4 mL/min	OctP RF	170 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		4579	45787.94	1000.00	
89		9013	90131.58	1000.00	
205		6726	67257.01	1000.00	
102		2			

Mass	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
7		-	

Tune Report

89		-
205		-
102		-

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
7	0.75	5.00	
89	1.04	5.00	
205	1.35	5.00	
102	25.91		

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	4558	4528	4597	4599	4610
89	8861	9043	9119	9023	9020
205	6666	6743	6877	6668	6674
102	2	2	2	3	3

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	743.86	6.95	6.9 - 7.1		0.64	0.786	0.900	
89	1671.79	89.05	88.9 - 89.1		0.57	0.742	0.900	
205	1252.23	205.00	204.9 - 205.1		0.55	0.756	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	1.90 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	8.0 V
Omega Lens	6.5 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	170 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\9E21039.b		
Acq Time	5/21/2019 14:31:50	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	267114	94.5	0	Pulse		Note RSD; OK < 20%
Sc	45	H2	631	13.3	0	Pulse		
Sc	45	He	43	46.6	0	Pulse		Note RSD; OK < 20%
Sc	45	NoGas	762644	96.2	0	Mix		Note RSD; OK < 20%
Ge	74	H2	546	2.9	0	Pulse		
Ge	74	He	114	9.4	0	Pulse		
Ge	74	NoGas	219831	95.2	0	Pulse		Note RSD; OK < 20%
Rh	103	He	157	5.6	0	Pulse		
Rh	103	NoGas	248927	95.2	0	Pulse		Note RSD; OK < 20%
Tb	159	He	7	50.0	0	Pulse		Note RSD; OK < 20%
Tb	159	NoGas	443597	95.5	0	Pulse		Note RSD; OK < 20%
Bi	209	He	3993	2.7	0	Pulse		
Bi	209	NoGas	274957	92.0	0	Pulse		Note RSD; OK < 20%

Quantitation Report ICPMS5

File Name	002RINS.d		
File Path	C:\Agilent\ICPMH\1\DATA\9E21039.b		
Acq Time	5/21/2019 14:36:05	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	524706	3.0	0	Pulse		
Sc	45	H2	1001320	0.4	0	Pulse		
Sc	45	He	122158	1.2	0	Pulse		
Sc	45	NoGas	1548455	2.8	0	Analog		
Ge	74	H2	400605	0.5	0	Pulse		
Ge	74	He	82276	0.7	0	Pulse		
Ge	74	NoGas	440911	2.6	0	Pulse		
Rh	103	He	257129	0.6	0	Pulse		
Rh	103	NoGas	501504	4.4	0	Pulse		
Tb	159	He	399108	0.5	0	Pulse		
Tb	159	NoGas	863484	3.1	0	Pulse		
Bi	209	He	293306	0.5	0	Pulse		
Bi	209	NoGas	520665	3.8	0	Pulse		

Quantitation Report ICPMS5

File Name	003RINS.d		
File Path	C:\Agilent\ICPMH\1\DATA\9E21039.b		
Acq Time	5/21/2019 14:40:20	Sample Type	
Sample Name	**cal blk**	Rinse	
Comment	**cal blk check**	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	526054	0.4	0	Pulse		
Sc	45	H2	1038392	2.7	0	Pulse		
Sc	45	He	121143	2.6	0	Pulse		
Sc	45	NoGas	1574313	3.2	0	Analog		
Ge	74	H2	405665	3.3	0	Pulse		
Ge	74	He	81949	2.4	0	Pulse		
Ge	74	NoGas	440114	0.4	0	Pulse		
Rh	103	He	253450	3.6	0	Pulse		
Rh	103	NoGas	494437	0.5	0	Pulse		
Tb	159	He	391614	4.0	0	Pulse		
Tb	159	NoGas	848796	0.9	0	Pulse		
Bi	209	He	284980	4.1	0	Pulse		
Bi	209	NoGas	511991	0.7	0	Pulse		

Sample Name	9E21039-CAL0	Vial	1
File Name	004CALB.d		
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b		
Acq Time	5/21/2019 14:44:34		
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**		

NR Lvls per VA
See file #009
05/22/19

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	27229	1.1	0.026	0.2001	3
Ca	44	45	1	H2		ppb	Pulse	1276	4.2	0.001	0.2001	3
Fe	56	74	1	H2		ppb	Pulse	17175	1.6	0.042	0.3000	3
Fe	57	74	1	H2		ppb	Pulse	891	5.6	0.002	0.3000	3
Se	78	74	1	H2		ppb	Pulse	2	50.0	0.000	0.9999	3
Mg	24	45	2	He		ppb	Pulse	317	15.9	0.002	0.0999	3
Al	27	45	2	He		ppb	Pulse	117	38.7	0.001	0.0999	3
K	39	45	2	He		ppb	Pulse	15483	3.2	0.122	0.0999	3
V	51	74	2	He		ppb	Pulse	571	7.8	0.007	0.3000	3
Cr	52	74	2	He		ppb	Pulse	158	12.4	0.002	0.3000	3
Mn	55	74	2	He		ppb	Pulse	89	22.0	0.001	0.3000	3
Ni	60	74	2	He		ppb	Pulse	354	3.9	0.004	0.3000	3
Cu	65	74	2	He		ppb	Pulse	319	8.4	0.004	0.3000	3
Zn	66	74	2	He		ppb	Pulse	267	9.9	0.003	0.3000	3
As	75	74	2	He		ppb	Pulse	10	39.2	0.000	0.9999	3
Mo	95	103	2	He		ppb	Pulse	2	173.2	0.000	0.3000	3
Ag	107	103	2	He		ppb	Pulse	6	69.3	0.000	0.3000	3
Sb	121	103	2	He		ppb	Pulse	4	43.4	0.000	0.3000	3
Ba	138	159	2	He		ppb	Pulse	107	24.8	0.000	0.3000	3
Tl	205	159	2	He		ppb	Pulse	113	15.6	0.000	0.3000	3
Be	9	6	3	NoGas		ppb	Pulse	18	21.7	0.000	0.3000	3
Ti	47	45	3	NoGas		ppb	Pulse	58	9.9	0.000	0.2001	3
Co	59	74	3	NoGas		ppb	Pulse	371	10.1	0.001	0.2001	3
Cu	65	74	3	NoGas		ppb	Pulse	805	2.2	0.002	0.2001	3
Cd	111	103	3	NoGas		ppb	Pulse	17	40.0	0.000	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	58	26.6	0.000	0.3000	3
Hg	201	159	3	NoGas		ppt	Pulse	12	17.1	0.000	2.0001	3
Pb	208	159	3	NoGas		ppb	Pulse	831	12.3	0.001	0.2001	3

QC ISTD Table

Name	Mass	Det.	Tune Mode	CPS	CPS RSD
Sc	45	Pulse	H2	1045312	1.4
Ge	74	Pulse	H2	412585	1.1
Sc	45	Pulse	He	126819	1.2
Ge	74	Pulse	He	84890	0.3
Rh	103	Pulse	He	262883	1.2
Tb	159	Pulse	He	403149	0.9
Bi	209	Pulse	He	294135	1.3
Li	6	Pulse	NoGas	536119	3.0
Sc	45	Analog	NoGas	1629248	4.0
Ge	74	Pulse	NoGas	455226	3.0
Rh	103	Pulse	NoGas	515003	4.8
Tb	159	Pulse	NoGas	888712	4.0
Bi	209	Pulse	NoGas	533815	3.5

Calibration Standard Report ICPMS5

Sample Name	9E21039-CAL1	1102
File Name	005CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 14:48:48	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19D348 JPB 05/21	
ISTD Ref FileName	004CALB.d	
Sample QC Pass/Fial	Pass	
ISTD QC Pass/Fail	Pass	
Operator	**ICPMS Analyst**	

See reprocessed for I.S. Recovery JPB 5/22/19

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	35538	0.6	0.033	0.2001	3
Ca	44	45	1	H2	9.000	ppb	Pulse	1688	4.2	0.002	0.2001	3
Fe	56	74	1	H2	9.000	ppb	Pulse	63610	0.3	0.153	0.3000	3
Fe	57	74	1	H2	9.000	ppb	Pulse	1990	4.0	0.005	0.3000	3
Se	78	74	1	H2	0.180	ppb	Pulse	32	7.3	0.000	0.9999	3
Mg	24	45	2	He	9.000	ppb	Pulse	1992	3.9	0.016	0.0999	3
Al	27	45	2	He	9.000	ppb	Pulse	871	12.4	0.007	0.0999	3
K	39	45	2	He	9.000	ppb	Pulse	17574	0.6	0.139	0.0999	3
V	51	74	2	He	0.180	ppb	Pulse	850	6.1	0.010	0.3000	3
Cr	52	74	2	He	0.180	ppb	Pulse	382	10.2	0.005	0.3000	3
Mn	55	74	2	He	0.180	ppb	Pulse	254	5.9	0.003	0.3000	3
Ni	60	74	2	He	0.180	ppb	Pulse	426	9.3	0.005	0.3000	3
Cu	65	74	2	He	0.180	ppb	Pulse	458	4.8	0.005	0.3000	3
Zn	66	74	2	He	0.180	ppb	Pulse	149	6.8	0.002	0.3000	3
As	75	74	2	He	0.180	ppb	Pulse	42	21.2	0.000	0.9999	3
Mo	95	103	2	He	0.180	ppb	Pulse	140	18.9	0.001	0.3000	3
Ag	107	103	2	He	0.180	ppb	Pulse	524	15.5	0.002	0.3000	3
Sb	121	103	2	He	0.180	ppb	Pulse	207	1.6	0.001	0.3000	3
Ba	138	159	2	He	0.180	ppb	Pulse	526	4.5	0.001	0.3000	3
Tl	205	159	2	He	0.180	ppb	Pulse	1213	7.6	0.003	0.3000	3
Be	9	6	3	NoGas	0.180	ppb	Pulse	277	9.1	0.001	0.3000	3
Ti	47	45	3	NoGas	0.180	ppb	Pulse	215	30.2	0.000	0.2001	3
Co	59	74	3	NoGas	0.180	ppb	Pulse	1883	3.4	0.004	0.2001	3
Cu	65	74	3	NoGas	0.180	ppb	Pulse	918	8.2	0.002	0.2001	3
Cd	111	103	3	NoGas	0.180	ppb	Pulse	218	8.0	0.000	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	64	7.9	0.000	0.3000	3
Hg	201	159	3	NoGas		ppt	Pulse	14	32.0	0.000	2.0001	3
Pb	208	159	3	NoGas	0.180	ppb	Pulse	3089	5.9	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	1045312.00666667	1063421	0.5	Pulse	101.7	
Ge	74	H2	412584.53	416897	0.5	Pulse	101.0	
Sc	45	He	126818.996666667	126089	0.7	Pulse	99.4	
Ge	74	He	84889.7566666667	84870	0.6	Pulse	100.0	
Rh	103	He	262882.733333333	261717	0.5	Pulse	99.6	
Tb	159	He	403149.27	401757	0.8	Pulse	99.7	
Bi	209	He	294134.63	291005	0.7	Pulse	98.9	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	536119.4	541870	2.5	Pulse	101.1	
Sc	45	NoGas	1629247.90666667	1690921	3.5	Analog	103.8	
Ge	74	NoGas	455226.376666667	461973	3.1	Pulse	101.5	
Rh	103	NoGas	515003.206666667	515342	2.9	Pulse	100.1	
Tb	159	NoGas	888712.12	882952	3.2	Pulse	99.4	
Bi	209	NoGas	533815.006666667	527560	2.9	Pulse	98.8	

Calibration Standard Report ICPMS5

1102

Sample Name	9E21039-CAL1
File Name	005CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b
Acq Time	5/21/2019 14:48:48
Sample Type	CalStd
Total Dilution	1.0000
Comment	A19D348 JPB 05/21
ISTD Ref FileName	[redacted]
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	8.054	ppb	Pulse	35538	0.6	0.033	0.2001	3
Ca	44	45	1	H2	6.527	ppb	Pulse	1688	4.2	0.002	0.2001	3
Fe	56	74	1	H2	8.566	ppb	Pulse	63610	0.3	0.153	0.3000	3
Fe	57	74	1	H2	8.401	ppb	Pulse	1990	4.0	0.005	0.3000	3
Se	78	74	1	H2	0.178	ppb	Pulse	32	7.3	0.000	0.9999	3
Mg	24	45	2	He	9.339	ppb	Pulse	1992	3.9	0.016	0.0999	3
Al	27	45	2	He	7.920	ppb	Pulse	871	12.4	0.007	0.0999	3
K	39	45	2	He	12.803	ppb	Pulse	17574	0.6	0.139	0.0999	3
V	51	74	2	He	0.177	ppb	Pulse	850	6.1	0.010	0.3000	3
Cr	52	74	2	He	0.142	ppb	Pulse	382	10.2	0.005	0.3000	3
Mn	55	74	2	He	0.193	ppb	Pulse	254	5.9	0.003	0.3000	3
Ni	60	74	2	He	0.149	ppb	Pulse	426	9.3	0.005	0.3000	3
Cu	65	74	2	He	0.185	ppb	Pulse	458	4.8	0.005	0.3000	3
Zn	66	74	2	He	0.059	ppb	Pulse	149	6.8	0.002	0.3000	3
As	75	74	2	He	0.181	ppb	Pulse	42	21.2	0.000	0.9999	3
Mo	95	103	2	He	0.158	ppb	Pulse	140	18.9	0.001	0.3000	3
Ag	107	103	2	He	0.174	ppb	Pulse	524	15.5	0.002	0.3000	3
Sb	121	103	2	He	0.206	ppb	Pulse	207	1.6	0.001	0.3000	3
Ba	138	159	2	He	0.189	ppb	Pulse	526	4.5	0.001	0.3000	3
Tl	205	159	2	He	0.180	ppb	Pulse	1213	7.6	0.003	0.3000	3
Be	9	6	3	NoGas	0.162	ppb	Pulse	277	9.1	0.001	0.3000	3
Ti	47	45	3	NoGas	0.265	ppb	Pulse	215	30.2	0.000	0.2001	3
Co	59	74	3	NoGas	0.183	ppb	Pulse	1883	3.4	0.004	0.2001	3
Cu	65	74	3	NoGas	0.097	ppb	Pulse	918	8.2	0.002	0.2001	3
Cd	111	103	3	NoGas	0.190	ppb	Pulse	218	8.0	0.000	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	64	7.9	0.000	0.3000	3
Hg	201	159	3	NoGas	7.266	ppt	Pulse	14	32.0	0.000	2.0001	3
Pb	208	159	3	NoGas	0.173	ppb	Pulse	3089	5.9	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	1082352.87666667	1063421	0.5	Pulse	98.3	
Ge	74	H2	421500.543333333	416897	0.5	Pulse	98.9	
Sc	45	He	129889.27	126089	0.7	Pulse	97.1	
Ge	74	He	86195.52	84870	0.6	Pulse	98.5	
Rh	103	He	265590.413333333	261717	0.5	Pulse	98.5	
Tb	159	He	406398.456666667	401757	0.8	Pulse	98.9	
Bi	209	He	291291.056666667	291005	0.7	Pulse	99.9	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	523074.786666667	541870	2.5	Pulse	103.6	
Sc	45	NoGas	1670086.30666667	1690921	3.5	Analog	101.2	
Ge	74	NoGas	450235.19	461973	3.1	Pulse	102.6	
Rh	103	NoGas	498498.73	515342	2.9	Pulse	103.4	
Tb	159	NoGas	853315.386666667	882952	3.2	Pulse	103.5	
Bi	209	NoGas	509112.503333333	527560	2.9	Pulse	103.6	

Calibration Standard Report ICPMS5

Sample Name	9E21039-CAL2	1103
File Name	006CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 14:53:21	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19D349 JPB 05/21	
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	45.938	ppb	Pulse	107079	0.9	0.105	0.2001	3
Ca	44	45	1	H2	45.952	ppb	Pulse	5322	5.5	0.005	0.2001	3
Fe	56	74	1	H2	45.290	ppb	Pulse	285401	0.7	0.707	0.3000	3
Fe	57	74	1	H2	45.368	ppb	Pulse	7537	6.3	0.019	0.3000	3
Se	78	74	1	H2	0.904	ppb	Pulse	163	4.4	0.000	0.9999	3
Mg	24	45	2	He	44.975	ppb	Pulse	8688	5.1	0.068	0.0999	3
Al	27	45	2	He	45.215	ppb	Pulse	4475	6.9	0.035	0.0999	3
K	39	45	2	He	44.366	ppb	Pulse	23634	1.8	0.185	0.0999	3
V	51	74	2	He	0.896	ppb	Pulse	1831	2.5	0.021	0.3000	3
Cr	52	74	2	He	0.908	ppb	Pulse	1643	5.7	0.019	0.3000	3
Mn	55	74	2	He	0.906	ppb	Pulse	1106	8.0	0.013	0.3000	3
Ni	60	74	2	He	0.908	ppb	Pulse	818	5.7	0.010	0.3000	3
Cu	65	74	2	He	0.903	ppb	Pulse	1093	3.8	0.013	0.3000	3
Zn	66	74	2	He	1.325	ppb	Pulse	350	14.0	0.004	0.3000	3
As	75	74	2	He	0.900	ppb	Pulse	175	9.4	0.002	0.9999	3
Mo	95	103	2	He	0.902	ppb	Pulse	727	13.1	0.003	0.3000	3
Ag	107	103	2	He	0.900	ppb	Pulse	2640	5.8	0.010	0.3000	3
Sb	121	103	2	He	0.895	ppb	Pulse	890	4.6	0.003	0.3000	3
Ba	138	159	2	He	0.901	ppb	Pulse	2272	1.5	0.006	0.3000	3
Tl	205	159	2	He	0.900	ppb	Pulse	5606	3.7	0.014	0.3000	3
Be	9	6	3	NoGas	0.902	ppb	Pulse	1356	1.1	0.003	0.3000	3
Ti	47	45	3	NoGas	0.883	ppb	Pulse	565	17.7	0.000	0.2001	3
Co	59	74	3	NoGas	0.899	ppb	Pulse	7473	0.4	0.017	0.2001	3
Cu	65	74	3	NoGas	0.926	ppb	Pulse	2554	4.1	0.006	0.2001	3
Cd	111	103	3	NoGas	0.898	ppb	Pulse	955	6.3	0.002	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	44	8.7	0.000	0.3000	3
Hg	201	159	3	NoGas	36.000	ppt	Pulse	29	24.4	0.000	2.0001	3
Pb	208	159	3	NoGas	0.902	ppb	Pulse	12678	1.5	0.015	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1045312.00666667	1025763	4.3	Pulse	98.1	
Ge	74	H2	412584.53	404016	4.3	Pulse	97.9	
Sc	45	He	126818.996666667	127639	0.6	Pulse	100.6	
Ge	74	He	84889.7566666667	85679	0.5	Pulse	100.9	
Rh	103	He	262882.733333333	262919	0.3	Pulse	100.0	
Tb	159	He	403149.27	405610	0.7	Pulse	100.6	
Bi	209	He	294134.63	291414	0.7	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	536119.4	525526	0.4	Pulse	98.0	
Sc	45	NoGas	1629247.90666667	1654015	1.8	Analog	101.5	
Ge	74	NoGas	455226.376666667	450309	0.2	Pulse	98.9	
Rh	103	NoGas	515003.206666667	502433	0.4	Pulse	97.6	
Tb	159	NoGas	888712.12	860959	0.4	Pulse	96.9	
Bi	209	NoGas	533815.006666667	512643	0.4	Pulse	96.0	

Calibration Standard Report ICPMS5

1103

Sample Name	9E21039-CAL2
File Name	006CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b
Acq Time	5/21/2019 14:53:21
Sample Type	CalStd
Total Dilution	1.0000
Comment	A19D349 JPB 05/21
ISTD Ref FileName	[redacted]
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	46.138	ppb	Pulse	107079	0.9	0.105	0.2001	3
Ca	44	45	1	H2	46.335	ppb	Pulse	5322	5.5	0.005	0.2001	3
Fe	56	74	1	H2	46.210	ppb	Pulse	285401	0.7	0.707	0.3000	3
Fe	57	74	1	H2	47.097	ppb	Pulse	7537	6.3	0.019	0.3000	3
Se	78	74	1	H2	1.009	ppb	Pulse	163	4.4	0.000	0.9999	3
Mg	24	45	2	He	44.202	ppb	Pulse	8688	5.1	0.068	0.0999	3
Al	27	45	2	He	45.052	ppb	Pulse	4475	6.9	0.035	0.0999	3
K	39	45	2	He	44.392	ppb	Pulse	23634	1.8	0.185	0.0999	3
V	51	74	2	He	0.880	ppb	Pulse	1831	2.5	0.021	0.3000	3
Cr	52	74	2	He	0.867	ppb	Pulse	1643	5.7	0.019	0.3000	3
Mn	55	74	2	He	0.943	ppb	Pulse	1106	8.0	0.013	0.3000	3
Ni	60	74	2	He	0.803	ppb	Pulse	818	5.7	0.010	0.3000	3
Cu	65	74	2	He	0.892	ppb	Pulse	1093	3.8	0.013	0.3000	3
Zn	66	74	2	He	0.823	ppb	Pulse	350	14.0	0.004	0.3000	3
As	75	74	2	He	0.967	ppb	Pulse	175	9.4	0.002	0.9999	3
Mo	95	103	2	He	0.848	ppb	Pulse	727	13.1	0.003	0.3000	3
Ag	107	103	2	He	0.881	ppb	Pulse	2640	5.8	0.010	0.3000	3
Sb	121	103	2	He	0.889	ppb	Pulse	890	4.6	0.003	0.3000	3
Ba	138	159	2	He	0.937	ppb	Pulse	2272	1.5	0.006	0.3000	3
Tl	205	159	2	He	0.881	ppb	Pulse	5606	3.7	0.014	0.3000	3
Be	9	6	3	NoGas	0.854	ppb	Pulse	1356	1.1	0.003	0.3000	3
Ti	47	45	3	NoGas	0.853	ppb	Pulse	565	17.7	0.000	0.2001	3
Co	59	74	3	NoGas	0.872	ppb	Pulse	7473	0.4	0.017	0.2001	3
Cu	65	74	3	NoGas	0.947	ppb	Pulse	2554	4.1	0.006	0.2001	3
Cd	111	103	3	NoGas	0.868	ppb	Pulse	955	6.3	0.002	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	44	8.7	0.000	0.3000	3
Hg	201	159	3	NoGas	33.692	ppt	Pulse	29	24.4	0.000	2.0001	3
Pb	208	159	3	NoGas	0.894	ppb	Pulse	12678	1.5	0.015	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1082352.87666667	1025763	4.3	Pulse	94.8	
Ge	74	H2	421500.543333333	404016	4.3	Pulse	95.9	
Sc	45	He	129889.27	127639	0.6	Pulse	98.3	
Ge	74	He	86195.52	85679	0.5	Pulse	99.4	
Rh	103	He	265590.413333333	262919	0.3	Pulse	99.0	
Tb	159	He	406398.456666667	405610	0.7	Pulse	99.8	
Bi	209	He	291291.056666667	291414	0.7	Pulse	100.0	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	523074.786666667	525526	0.4	Pulse	100.5	
Sc	45	NoGas	1670086.30666667	1654015	1.8	Analog	99.0	
Ge	74	NoGas	450235.19	450309	0.2	Pulse	100.0	
Rh	103	NoGas	498498.73	502433	0.4	Pulse	100.8	
Tb	159	NoGas	853315.386666667	860959	0.4	Pulse	100.9	
Bi	209	NoGas	509112.503333333	512643	0.4	Pulse	100.7	

Calibration Standard Report ICPMS5

Sample Name	9E21039-CAL3	1104
File Name	007CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 14:58:02	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19D350 JPB 05/21	
ISTD Ref FileName	004CALB.d	
Sample QC Pass/Fial	Pass	
ISTD QC Pass/Fail	Pass	
Operator	**ICPMS**	

QC Analyte Table

Name	Mass	ISTD	T #	Tune	Conc.	Units	Det.	CPS	CPS RSD	Ratio	Integ Time	Reps
Na	23	45	1	H2	90.673	ppb	Pulse	199129	0.7	0.186	0.2001	3
Ca	44	45	1	H2	90.206	ppb	Pulse	9738	2.3	0.009	0.2001	3
Fe	56	74	1	H2	89.714	ppb	Pulse	561600	0.5	1.344	0.3000	3
Fe	57	74	1	H2	89.310	ppb	Pulse	14126	3.9	0.034	0.3000	3
Se	78	74	1	H2	1.745	ppb	Pulse	291	9.0	0.001	0.9999	3
Mg	24	45	2	He	90.494	ppb	Pulse	17717	3.4	0.137	0.0999	3
Al	27	45	2	He	90.090	ppb	Pulse	8928	2.8	0.069	0.0999	3
K	39	45	2	He	90.237	ppb	Pulse	32484	2.9	0.252	0.0999	3
V	51	74	2	He	1.803	ppb	Pulse	3127	3.1	0.036	0.3000	3
Cr	52	74	2	He	1.823	ppb	Pulse	3305	3.1	0.038	0.3000	3
Mn	55	74	2	He	1.789	ppb	Pulse	2056	8.6	0.024	0.3000	3
Ni	60	74	2	He	1.860	ppb	Pulse	1443	5.2	0.017	0.3000	3
Cu	65	74	2	He	1.811	ppb	Pulse	1912	1.7	0.022	0.3000	3
Zn	66	74	2	He	2.097	ppb	Pulse	620	4.6	0.007	0.3000	3
As	75	74	2	He	1.763	ppb	Pulse	311	6.3	0.004	0.9999	3
Mo	95	103	2	He	1.827	ppb	Pulse	1557	2.5	0.006	0.3000	3
Ag	107	103	2	He	1.810	ppb	Pulse	5412	2.8	0.021	0.3000	3
Sb	121	103	2	He	1.803	ppb	Pulse	1800	1.5	0.007	0.3000	3
Ba	138	159	2	He	1.782	ppb	Pulse	4201	3.5	0.010	0.3000	3
Tl	205	159	2	He	1.810	ppb	Pulse	11330	0.5	0.028	0.3000	3
Be	9	6	3	NoGas	1.825	ppb	Pulse	2865	5.1	0.005	0.3000	3
Ti	47	45	3	NoGas	1.822	ppb	Pulse	1158	4.6	0.001	0.2001	3
Co	59	74	3	NoGas	1.815	ppb	Pulse	15216	0.5	0.034	0.2001	3
Cu	65	74	3	NoGas	1.797	ppb	Pulse	4204	1.1	0.009	0.2001	3
Cd	111	103	3	NoGas	1.818	ppb	Pulse	1977	1.4	0.004	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	67	13.2	0.000	0.3000	3
Hg	201	159	3	NoGas	73.661	ppt	Pulse	51	8.8	0.000	2.0001	3
Pb	208	159	3	NoGas	1.806	ppb	Pulse	24683	2.2	0.029	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1045312.00666667	1073139	0.5	Pulse	102.7	
Ge	74	H2	412584.53	417744	0.3	Pulse	101.3	
Sc	45	He	126818.996666667	129038	1.8	Pulse	101.8	
Ge	74	He	84889.7566666667	85899	0.4	Pulse	101.2	
Rh	103	He	262882.733333333	262608	0.5	Pulse	99.9	
Tb	159	He	403149.27	402474	0.3	Pulse	99.8	
Bi	209	He	294134.63	290441	0.1	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	536119.4	522727	0.1	Pulse	97.5	
Sc	45	NoGas	1629247.90666667	1666199	0.9	Analog	102.3	
Ge	74	NoGas	455226.376666667	451677	0.6	Pulse	99.2	
Rh	103	NoGas	515003.206666667	498853	0.3	Pulse	96.9	
Tb	159	NoGas	888712.12	854591	0.1	Pulse	96.2	
Bi	209	NoGas	533815.006666667	509501	0.6	Pulse	95.4	

Calibration Standard Report ICPMS5

Sample Name	9E21039-CAL3	1104
File Name	007CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 14:58:02	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19D350 JPB 05/21	
ISTD Ref FileName	[redacted]	
Sample QC Pass/Fial	Pass	
ISTD QC Pass/Fail	Pass	
Operator	ICPMS	

QC Analyte Table

Name	Mass	ISTD	T #	Tune	Conc.	Units	Det.	CPS	CPS RSD	Ratio	Integ Time	Reps
Na	23	45	1	H2	89.525	ppb	Pulse	199129	0.7	0.186	0.2001	3
Ca	44	45	1	H2	89.332	ppb	Pulse	9738	2.3	0.009	0.2001	3
Fe	56	74	1	H2	89.438	ppb	Pulse	561600	0.5	1.344	0.3000	3
Fe	57	74	1	H2	89.011	ppb	Pulse	14126	3.9	0.034	0.3000	3
Se	78	74	1	H2	1.746	ppb	Pulse	291	9.0	0.001	0.9999	3
Mg	24	45	2	He	90.365	ppb	Pulse	17717	3.4	0.137	0.0999	3
Al	27	45	2	He	90.082	ppb	Pulse	8928	2.8	0.069	0.0999	3
K	39	45	2	He	90.304	ppb	Pulse	32484	2.9	0.252	0.0999	3
V	51	74	2	He	1.810	ppb	Pulse	3127	3.1	0.036	0.3000	3
Cr	52	74	2	He	1.820	ppb	Pulse	3305	3.1	0.038	0.3000	3
Mn	55	74	2	He	1.777	ppb	Pulse	2056	8.6	0.024	0.3000	3
Ni	60	74	2	He	1.852	ppb	Pulse	1443	5.2	0.017	0.3000	3
Cu	65	74	2	He	1.804	ppb	Pulse	1912	1.7	0.022	0.3000	3
Zn	66	74	2	He	1.850	ppb	Pulse	620	4.6	0.007	0.3000	3
As	75	74	2	He	1.767	ppb	Pulse	311	6.3	0.004	0.9999	3
Mo	95	103	2	He	1.828	ppb	Pulse	1557	2.5	0.006	0.3000	3
Ag	107	103	2	He	1.810	ppb	Pulse	5412	2.8	0.021	0.3000	3
Sb	121	103	2	He	1.803	ppb	Pulse	1800	1.5	0.007	0.3000	3
Ba	138	159	2	He	1.780	ppb	Pulse	4201	3.5	0.010	0.3000	3
Tl	205	159	2	He	1.810	ppb	Pulse	11330	0.5	0.028	0.3000	3
Be	9	6	3	NoGas	1.825	ppb	Pulse	2865	5.1	0.005	0.3000	3
Ti	47	45	3	NoGas	1.824	ppb	Pulse	1158	4.6	0.001	0.2001	3
Co	59	74	3	NoGas	1.814	ppb	Pulse	15216	0.5	0.034	0.2001	3
Cu	65	74	3	NoGas	1.785	ppb	Pulse	4204	1.1	0.009	0.2001	3
Cd	111	103	3	NoGas	1.815	ppb	Pulse	1977	1.4	0.004	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	67	13.2	0.000	0.3000	3
Hg	201	159	3	NoGas	73.154	ppt	Pulse	51	8.8	0.000	2.0001	3
Pb	208	159	3	NoGas	1.804	ppb	Pulse	24683	2.2	0.029	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1082352.87666667	1073139	0.5	Pulse	99.1	
Ge	74	H2	421500.543333333	417744	0.3	Pulse	99.1	
Sc	45	He	129889.27	129038	1.8	Pulse	99.3	
Ge	74	He	86195.52	85899	0.4	Pulse	99.7	
Rh	103	He	265590.413333333	262608	0.5	Pulse	98.9	
Tb	159	He	406398.456666667	402474	0.3	Pulse	99.0	
Bi	209	He	291291.056666667	290441	0.1	Pulse	99.7	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	523074.786666667	522727	0.1	Pulse	99.9	
Sc	45	NoGas	1670086.30666667	1666199	0.9	Analog	99.8	
Ge	74	NoGas	450235.19	451677	0.6	Pulse	100.3	
Rh	103	NoGas	498498.73	498853	0.3	Pulse	100.1	
Tb	159	NoGas	853315.386666667	854591	0.1	Pulse	100.1	
Bi	209	NoGas	509112.503333333	509501	0.6	Pulse	100.1	

Quantitation Report ICPMS5

File Name	008RINS.d		
File Path	C:\Agilent\ICPMH\1\DATA\9E21039.b		
Acq Time	5/21/2019 15:02:35	Sample Type	
Sample Name	**rinse**		
Comment	**rinse blank**	Rinse Last Calib	05/21/2019 15:00:42
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	0	0.000	ppb	N/A		
Na	23	45	H2	-0.429	-0.429	ppb	N/A		
Mg	24	45	He	-0.038	-0.038	ppb	N/A	22.5	
Al	27	45	He	0.02	0.020	ppb	1462.9	22.5	
K	39	45	He	-0.115	-0.115	ppb	N/A		
Ca	44	45	H2	-1.053	-1.053	ppb	N/A		
Ti	47	45	NoGas	0.045	0.045	ppb	27.0		
V	51	74	He	0.046	0.046	ppb	67.1		
Cr	52	74	He	-0.019	-0.019	ppb	N/A		
Mn	55	74	He	0.029	0.029	ppb	50.0	1	
Fe	56	74	H2	0.306	0.306	ppb	29.2		
Fe	57	74	H2	0.437	0.437	ppb	18.8		
Co	59	74	NoGas	-0.004	-0.004	ppb	N/A		
Ni	60	74	He	-0.082	-0.082	ppb	N/A		
Cu	65	74	He	-0.005	-0.005	ppb	N/A	1	
Cu	65	74	NoGas	-0.05	-0.050	ppb	N/A		
Zn	66	74	He	-0.542	-0.542	ppb	N/A		
As	75	74	He	-0.003	-0.003	ppb	N/A		
Se	78	74	H2	0.008	0.008	ppb	230.3		
Mo	95	103	He	0.013	0.013	ppb	79.4		
Ag	107	103	He	0	0.000	ppb	621.1		
Cd	111	103	NoGas	-0.004	-0.004	ppb	N/A		
Sb	121	103	He	0.002	0.002	ppb	263.8		
Ba	138	159	He	0.017	0.017	ppb	49.1		
W	182	159	NoGas			ppb			
Hg	201	159	NoGas	-4.179	-4.179	ppt	N/A		
Tl	205	159	He	-0.003	-0.003	ppb	N/A	1	
Pb	208	159	NoGas	-0.001	-0.001	ppb	N/A		

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD Recovery %	QC Flag
Li	6	NoGas	521616	0.3	536119.4	Pulse	97.3	
Sc	45	H2	1065002	0.6	1045312.00666667	Pulse	101.9	
Sc	45	He	128316	1.9	126818.996666667	Pulse	101.2	
Sc	45	NoGas	1667338	2.2	1629247.90666667	Analog	102.3	
Ge	74	H2	415083	0.5	412584.53	Pulse	100.6	
Ge	74	He	85727	0.1	84889.7566666667	Pulse	101.0	
Ge	74	NoGas	447103	0.5	455226.376666667	Pulse	98.2	
Rh	103	He	264098	0.3	262882.733333333	Pulse	100.5	
Rh	103	NoGas	498802	0.2	515003.206666667	Pulse	96.9	
Tb	159	He	403811	0.7	403149.27	Pulse	100.2	
Tb	159	NoGas	854696	0.6	888712.12	Pulse	96.2	
Bi	209	He	290153	1.0	294134.63	Pulse	98.6	
Bi	209	NoGas	508416	0.7	533815.006666667	Pulse	95.2	

Sample Name	9E21039-CAL0	Vial	1
File Name	009CALB.d		
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b		
Acq Time	5/21/2019 15:06:50		
Sample Type	CalBlk		
Total Dilution	1.0000		
Comment	3.5%HNO3+0.4%HCl		
ISTD Ref FileName	009CALB.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	0.000	ppb	Pulse	19890	1.0	0.018	0.2001	3
Ca	44	45	1	H2	0.000	ppb	Pulse	1080	11.8	0.001	0.2001	3
Fe	56	74	1	H2	0.000	ppb	Pulse	11107	0.6	0.026	0.3000	3
Fe	57	74	1	H2	0.000	ppb	Pulse	737	10.2	0.002	0.3000	3
Se	78	74	1	H2	0.000	ppb	Pulse	2	24.7	0.000	0.9999	3
Mg	24	45	2	He	0.000	ppb	Pulse	234	16.2	0.002	0.0999	3
Al	27	45	2	He	0.000	ppb	Pulse	117	43.1	0.001	0.0999	3
K	39	45	2	He	0.000	ppb	Pulse	15694	1.7	0.121	0.0999	3
V	51	74	2	He	0.000	ppb	Pulse	617	1.1	0.007	0.3000	3
Cr	52	74	2	He	0.000	ppb	Pulse	140	12.6	0.002	0.3000	3
Mn	55	74	2	He	0.000	ppb	Pulse	39	24.7	0.000	0.3000	3
Ni	60	74	2	He	0.000	ppb	Pulse	343	10.8	0.004	0.3000	3
Cu	65	74	2	He	0.000	ppb	Pulse	299	6.1	0.003	0.3000	3
Zn	66	74	2	He	0.000	ppb	Pulse	136	17.3	0.002	0.3000	3
As	75	74	2	He	0.000	ppb	Pulse	12	37.4	0.000	0.9999	3
Mo	95	103	2	He	0.000	ppb	Pulse	7	100.0	0.000	0.3000	3
Ag	107	103	2	He	0.000	ppb	Pulse	7	86.6	0.000	0.3000	3
Sb	121	103	2	He	0.000	ppb	Pulse	2	86.6	0.000	0.3000	3
Ba	138	159	2	He	0.000	ppb	Pulse	92	30.3	0.000	0.3000	3
Tl	205	159	2	He	0.000	ppb	Pulse	97	6.0	0.000	0.3000	3
Be	9	6	3	NoGas	0.000	ppb	Pulse	13	0.0	0.000	0.3000	3
Ti	47	45	3	NoGas	0.000	ppb	Pulse	50	34.6	0.000	0.2001	3
Co	59	74	3	NoGas	0.000	ppb	Pulse	342	3.0	0.001	0.2001	3
Cu	65	74	3	NoGas	0.000	ppb	Pulse	705	14.0	0.002	0.2001	3
Cd	111	103	3	NoGas	0.000	ppb	Pulse	5	68.1	0.000	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	62	8.2	0.000	0.3000	3
Hg	201	159	3	NoGas	1.154	ppt	Pulse	10	38.2	0.000	2.0001	3
Pb	208	159	3	NoGas	0.000	ppb	Pulse	685	6.4	0.001	0.2001	3

QC ISTD Table

Name	Mass	Det.	Tune Mode	CPS	CPS RSD
Sc	45	Pulse	H2	1082353	0.6
Ge	74	Pulse	H2	421501	0.5
Sc	45	Pulse	He	129889	0.4
Ge	74	Pulse	He	86196	0.3
Rh	103	Pulse	He	265590	0.3
Tb	159	Pulse	He	406398	0.2
Bi	209	Pulse	He	291291	0.7
Li	6	Pulse	NoGas	523075	0.7
Sc	45	Analog	NoGas	1670086	0.9
Ge	74	Pulse	NoGas	450235	0.6
Rh	103	Pulse	NoGas	498499	0.3
Tb	159	Pulse	NoGas	853315	0.6
Bi	209	Pulse	NoGas	509113	0.4

Calibration Standard Report ICPMS5

Sample Name	9E21039-CAL4	1105
File Name	010CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 15:11:06	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19D351 JPB 05/21	
ISTD Ref FileName	009CALB.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	179.533	ppb	Pulse	379506	0.7	0.351	0.2001	3
Ca	44	45	1	H2	181.074	ppb	Pulse	19090	1.5	0.018	0.2001	3
Fe	56	74	1	H2	179.379	ppb	Pulse	1107730	0.1	2.641	0.3000	3
Fe	57	74	1	H2	179.912	ppb	Pulse	27873	0.5	0.066	0.3000	3
Se	78	74	1	H2	3.670	ppb	Pulse	652	2.8	0.002	0.9999	3
Mg	24	45	2	He	180.012	ppb	Pulse	35351	1.7	0.272	0.0999	3
Al	27	45	2	He	179.673	ppb	Pulse	17734	6.5	0.136	0.0999	3
K	39	45	2	He	179.886	ppb	Pulse	49677	1.2	0.382	0.0999	3
V	51	74	2	He	3.576	ppb	Pulse	5520	3.3	0.064	0.3000	3
Cr	52	74	2	He	3.545	ppb	Pulse	6071	1.9	0.070	0.3000	3
Mn	55	74	2	He	3.601	ppb	Pulse	4164	3.0	0.048	0.3000	3
Ni	60	74	2	He	3.668	ppb	Pulse	2687	2.8	0.031	0.3000	3
Cu	65	74	2	He	3.626	ppb	Pulse	3652	3.9	0.042	0.3000	3
Zn	66	74	2	He	3.443	ppb	Pulse	936	7.3	0.011	0.3000	3
As	75	74	2	He	3.569	ppb	Pulse	605	9.0	0.007	0.9999	3
Mo	95	103	2	He	3.639	ppb	Pulse	3226	3.2	0.012	0.3000	3
Ag	107	103	2	He	3.590	ppb	Pulse	10700	0.9	0.040	0.3000	3
Sb	121	103	2	He	3.578	ppb	Pulse	3526	2.9	0.013	0.3000	3
Ba	138	159	2	He	3.624	ppb	Pulse	8722	1.3	0.021	0.3000	3
Tl	205	159	2	He	3.588	ppb	Pulse	22365	0.3	0.055	0.3000	3
Be	9	6	3	NoGas	3.617	ppb	Pulse	5781	5.0	0.011	0.3000	3
Ti	47	45	3	NoGas	3.581	ppb	Pulse	2214	0.6	0.001	0.2001	3
Co	59	74	3	NoGas	3.592	ppb	Pulse	29681	2.7	0.066	0.2001	3
Cu	65	74	3	NoGas	3.585	ppb	Pulse	7653	4.5	0.017	0.2001	3
Cd	111	103	3	NoGas	3.591	ppb	Pulse	3933	4.7	0.008	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	56	3.5	0.000	0.3000	3
Hg	201	159	3	NoGas	141.120	ppt	Pulse	83	9.4	0.000	2.0001	3
Pb	208	159	3	NoGas	3.600	ppb	Pulse	48769	1.6	0.057	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1082352.87666667	1081525	0.4	Pulse	99.9	
Ge	74	H2	421500.543333333	419420	0.4	Pulse	99.5	
Sc	45	He	129889.27	130087	0.7	Pulse	100.2	
Ge	74	He	86195.52	86644	0.5	Pulse	100.5	
Rh	103	He	265590.413333333	264363	0.9	Pulse	99.5	
Tb	159	He	406398.456666667	406475	0.8	Pulse	100.0	
Bi	209	He	291291.056666667	291627	0.7	Pulse	100.1	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	523074.786666667	525449	0.3	Pulse	100.5	
Sc	45	NoGas	1670086.30666667	1678640	2.4	Analog	100.5	
Ge	74	NoGas	450235.19	452782	0.2	Pulse	100.6	
Rh	103	NoGas	498498.73	505742	0.3	Pulse	101.5	
Tb	159	NoGas	853315.386666667	857900	0.2	Pulse	100.5	
Bi	209	NoGas	509112.503333333	515363	0.3	Pulse	101.2	

Calibration Standard Report ICPMS5

Sample Name	9E21039-CAL5	1106
File Name	011CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 15:15:39	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19E083 JPB 05/21	
ISTD Ref FileName	009CALB.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	398.977	ppb	Pulse	806951	0.5	0.750	0.2001	3
Ca	44	45	1	H2	400.739	ppb	Pulse	40988	0.8	0.038	0.2001	3
Fe	56	74	1	H2	400.446	ppb	Analog	2466497	0.3	5.888	0.3000	3
Fe	57	74	1	H2	397.910	ppb	Pulse	59529	0.7	0.142	0.3000	3
Se	78	74	1	H2	9.985	ppb	Pulse	1751	6.5	0.004	0.9999	3
Mg	24	45	2	He	394.554	ppb	Pulse	74818	3.9	0.565	0.0999	3
Al	27	45	2	He	394.439	ppb	Pulse	37555	4.0	0.283	0.0999	3
K	39	45	2	He	392.063	ppb	Pulse	86223	1.7	0.650	0.0999	3
V	51	74	2	He	19.977	ppb	Pulse	27761	3.4	0.315	0.3000	3
Cr	52	74	2	He	19.975	ppb	Pulse	33177	4.8	0.376	0.3000	3
Mn	55	74	2	He	19.942	ppb	Pulse	21802	4.0	0.247	0.3000	3
Ni	60	74	2	He	19.992	ppb	Pulse	13216	2.6	0.150	0.3000	3
Cu	65	74	2	He	19.923	ppb	Pulse	17496	1.0	0.198	0.3000	3
Zn	66	74	2	He	20.070	ppb	Pulse	5306	1.4	0.060	0.3000	3
As	75	74	2	He	19.967	ppb	Pulse	3266	1.0	0.037	0.9999	3
Mo	95	103	2	He	9.831	ppb	Pulse	8093	4.5	0.030	0.3000	3
Ag	107	103	2	He	9.876	ppb	Pulse	28063	2.4	0.104	0.3000	3
Sb	121	103	2	He	9.920	ppb	Pulse	9536	5.1	0.035	0.3000	3
Ba	138	159	2	He	19.948	ppb	Pulse	45517	3.8	0.110	0.3000	3
Tl	205	159	2	He	9.920	ppb	Pulse	59784	2.6	0.145	0.3000	3
Be	9	6	3	NoGas	9.976	ppb	Pulse	15620	2.1	0.030	0.3000	3
Ti	47	45	3	NoGas	19.962	ppb	Pulse	11522	4.1	0.007	0.2001	3
Co	59	74	3	NoGas	19.986	ppb	Pulse	160457	1.3	0.355	0.2001	3
Cu	65	74	3	NoGas	19.990	ppb	Pulse	38890	0.9	0.086	0.2001	3
Cd	111	103	3	NoGas	20.016	ppb	Pulse	21981	2.2	0.044	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	58	37.1	0.000	0.3000	3
Hg	201	159	3	NoGas	400.389	ppt	Pulse	216	4.2	0.000	2.0001	3
Pb	208	159	3	NoGas	19.991	ppb	Pulse	263934	0.4	0.309	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1082352.87666667	1075464	0.2	Pulse	99.4	
Ge	74	H2	421500.543333333	418894	0.4	Pulse	99.4	
Sc	45	He	129889.27	132864	5.0	Pulse	102 3	
Ge	74	He	86195.52	88409	5.3	Pulse	102.6	
Rh	103	He	265590.413333333	271076	5.3	Pulse	102.1	
Tb	159	He	406398.456666667	413632	5.0	Pulse	101.8	
Bi	209	He	291291.056666667	299670	4.1	Pulse	102.9	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	523074.786666667	522694	0.6	Pulse	99.9	
Sc	45	NoGas	1670086.30666667	1667883	2.9	Analog	99.9	
Ge	74	NoGas	450235.19	451683	0.8	Pulse	100.3	
Rh	103	NoGas	498498.73	497956	0.3	Pulse	99.9	
Tb	159	NoGas	853315.386666667	854804	0.7	Pulse	100.2	
Bi	209	NoGas	509112.503333333	511823	0.6	Pulse	100.5	

Calibration Standard Report ICPMS5

Sample Name	9E21039-CAL6	1107
File Name	012CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 15:20:11	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19D352	
ISTD Ref FileName	009CALB.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	2501.719	ppb	Analog	4994852	1.2	4.707	0.2001	3
Ca	44	45	1	H2	2499.342	ppb	Pulse	244694	0.2	0.231	0.2001	3
Fe	56	74	1	H2	2499.551	ppb	Analog	15023306	0.5	36.414	0.3000	3
Fe	57	74	1	H2	2498.922	ppb	Pulse	359637	0.1	0.872	0.3000	3
Se	78	74	1	H2	50.050	ppb	Pulse	8824	1.5	0.021	0.9999	3
Mg	24	45	2	He	2503.378	ppb	Pulse	475548	0.3	3.729	0.0999	3
Al	27	45	2	He	2504.205	ppb	Pulse	241422	0.2	1.893	0.0999	3
K	39	45	2	He	2503.401	ppb	Pulse	465488	0.6	3.650	0.0999	3
V	51	74	2	He	50.397	ppb	Pulse	69582	1.4	0.822	0.3000	3
Cr	52	74	2	He	50.263	ppb	Pulse	82530	0.8	0.975	0.3000	3
Mn	55	74	2	He	50.319	ppb	Pulse	54849	0.6	0.648	0.3000	3
Ni	60	74	2	He	50.276	ppb	Pulse	32443	1.2	0.383	0.3000	3
Cu	65	74	2	He	50.170	ppb	Pulse	42670	0.6	0.504	0.3000	3
Zn	66	74	2	He	50.136	ppb	Pulse	12720	1.4	0.150	0.3000	3
As	75	74	2	He	50.170	ppb	Pulse	8009	0.7	0.095	0.9999	3
Mo	95	103	2	He	50.169	ppb	Pulse	41606	1.3	0.165	0.3000	3
Ag	107	103	2	He	50.120	ppb	Pulse	140308	0.7	0.555	0.3000	3
Sb	121	103	2	He	50.135	ppb	Pulse	47860	3.1	0.189	0.3000	3
Ba	138	159	2	He	50.222	ppb	Pulse	113315	0.3	0.285	0.3000	3
Tl	205	159	2	He	50.080	ppb	Pulse	300617	0.8	0.756	0.3000	3
Be	9	6	3	NoGas	50.037	ppb	Pulse	78910	1.2	0.152	0.3000	3
Ti	47	45	3	NoGas	50.026	ppb	Pulse	28681	3.5	0.017	0.2001	3
Co	59	74	3	NoGas	49.965	ppb	Pulse	391462	0.9	0.883	0.2001	3
Cu	65	74	3	NoGas	49.913	ppb	Pulse	93267	1.0	0.210	0.2001	3
Cd	111	103	3	NoGas	50.004	ppb	Pulse	53434	0.8	0.110	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	68	52.6	0.000	0.3000	3
Hg	201	159	3	NoGas	2001.019	ppt	Pulse	1049	1.1	0.001	2.0001	3
Pb	208	159	3	NoGas	49.877	ppb	Pulse	645157	0.5	0.758	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1082352.87666667	1061089	0.5	Pulse	98.0	
Ge	74	H2	421500.543333333	412574	0.2	Pulse	97.9	
Sc	45	He	129889.27	127539	0.7	Pulse	98.2	
Ge	74	He	86195.52	84608	0.2	Pulse	98.2	
Rh	103	He	265590.413333333	252794	1.6	Pulse	95.2	
Tb	159	He	406398.456666667	397516	1.0	Pulse	97.8	
Bi	209	He	291291.056666667	282613	1.2	Pulse	97.0	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	523074.786666667	518519	0.6	Pulse	99.1	
Sc	45	NoGas	1670086.30666667	1655456	1.8	Analog	99.1	
Ge	74	NoGas	450235.19	443159	0.6	Pulse	98.4	
Rh	103	NoGas	498498.73	484379	0.5	Pulse	97.2	
Tb	159	NoGas	853315.386666667	851088	0.3	Pulse	99.7	
Bi	209	NoGas	509112.503333333	500254	0.5	Pulse	98.3	

Calibration Standard Report ICPMS5

Sample Name	9E21039-CAL7	1108
File Name	013CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 15:24:41	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19E082	
ISTD Ref FileName	009CALB.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	4002.905	ppb	Analog	7758405	0.3	7.535	0.2001	3
Ca	44	45	1	H2	3996.541	ppb	Pulse	378279	0.6	0.367	0.2001	3
Fe	56	74	1	H2	3985.888	ppb	Analog	22996743	1.2	57.548	0.3000	3
Fe	57	74	1	H2	4005.512	ppb	Pulse	559893	0.6	1.401	0.3000	3
Se	78	74	1	H2	99.995	ppb	Pulse	17073	0.6	0.043	0.9999	3
Mg	24	45	2	He	4002.130	ppb	Pulse	734164	0.2	5.968	0.0999	3
Al	27	45	2	He	4012.596	ppb	Pulse	376017	0.7	3.057	0.0999	3
K	39	45	2	He	4008.591	ppb	Pulse	713755	0.9	5.802	0.0999	3
V	51	74	2	He	200.255	ppb	Pulse	270632	0.6	3.304	0.3000	3
Cr	52	74	2	He	200.081	ppb	Pulse	319409	0.8	3.900	0.3000	3
Mn	55	74	2	He	200.138	ppb	Pulse	213103	0.4	2.602	0.3000	3
Ni	60	74	2	He	199.949	ppb	Pulse	123503	0.6	1.508	0.3000	3
Cu	65	74	2	He	199.977	ppb	Pulse	163554	1.0	1.997	0.3000	3
Zn	66	74	2	He	200.303	ppb	Pulse	49845	0.3	0.609	0.3000	3
As	75	74	2	He	200.328	ppb	Pulse	31635	0.8	0.386	0.9999	3
Mo	95	103	2	He	100.045	ppb	Pulse	81556	1.0	0.329	0.3000	3
Ag	107	103	2	He	99.897	ppb	Pulse	273352	0.6	1.102	0.3000	3
Sb	121	103	2	He	100.077	ppb	Pulse	94010	0.5	0.379	0.3000	3
Ba	138	159	2	He	200.042	ppb	Pulse	446633	0.7	1.138	0.3000	3
Tl	205	159	2	He	100.058	ppb	Pulse	594149	0.8	1.514	0.3000	3
Be	9	6	3	NoGas	99.919	ppb	Pulse	153828	0.7	0.303	0.3000	3
Ti	47	45	3	NoGas	200.090	ppb	Pulse	112101	0.1	0.070	0.2001	3
Co	59	74	3	NoGas	200.110	ppb	Analog	1542091	1.4	3.562	0.2001	3
Cu	65	74	3	NoGas	199.638	ppb	Pulse	353585	1.0	0.817	0.2001	3
Cd	111	103	3	NoGas	200.075	ppb	Pulse	210067	0.4	0.444	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	93	9.4	0.000	0.3000	3
Hg	201	159	3	NoGas	4003.556	ppt	Pulse	2072	1.2	0.002	2.0001	3
Pb	208	159	3	NoGas	200.100	ppb	Pulse	2571258	0.2	3.060	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1082352.87666667	1030033	2.3	Pulse	95.2	
Ge	74	H2	421500.543333333	399748	2.0	Pulse	94.8	
Sc	45	He	129889.27	123019	0.3	Pulse	94.7	
Ge	74	He	86195.52	81908	0.3	Pulse	95.0	
Rh	103	He	265590.413333333	248059	0.7	Pulse	93.4	
Tb	159	He	406398.456666667	392431	0.5	Pulse	96.6	
Bi	209	He	291291.056666667	278587	0.6	Pulse	95.6	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	523074.786666667	507773	0.4	Pulse	97.1	
Sc	45	NoGas	1670086.30666667	1610369	1.9	Analog	96.4	
Ge	74	NoGas	450235.19	432868	0.3	Pulse	96.1	
Rh	103	NoGas	498498.73	473530	0.5	Pulse	95.0	
Tb	159	NoGas	853315.386666667	840392	0.4	Pulse	98.5	
Bi	209	NoGas	509112.503333333	492975	0.9	Pulse	96.8	

Calibration Standard Report ICPMS5

Sample Name	9E21039-CAL8	1109
File Name	014CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 15:29:10	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19D321	
ISTD Ref FileName	009CALB.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	10005.885	ppb	Analog	18697394	0.4	18.856	0.2001	3
Ca	44	45	1	H2	10009.830	ppb	Pulse	914912	0.3	0.923	0.2001	3
Fe	56	74	1	H2	10027.758	ppb	Analog	55944643	0.3	146.552	0.3000	3
Fe	57	74	1	H2	10106.536	ppb	Analog	1415439	0.8	3.708	0.3000	3
Se	78	74	1	H2	0.202	ppb	Pulse	35	17.4	0.000	0.9999	3
Mg	24	45	2	He	10065.117	ppb	Analog	1850809	0.4	15.454	0.0999	3
Al	27	45	2	He	10004.287	ppb	Pulse	914218	0.6	7.634	0.0999	3
K	39	45	2	He	10074.935	ppb	Analog	1783490	1.1	14.893	0.0999	3
V	51	74	2	He	500.011	ppb	Pulse	662304	0.3	8.240	0.3000	3
Cr	52	74	2	He	499.919	ppb	Pulse	782192	0.5	9.732	0.3000	3
Mn	55	74	2	He	499.346	ppb	Pulse	517740	0.5	6.442	0.3000	3
Ni	60	74	2	He	499.361	ppb	Pulse	299963	0.6	3.732	0.3000	3
Cu	65	74	2	He	498.338	ppb	Pulse	391953	0.8	4.876	0.3000	3
Zn	66	74	2	He	499.144	ppb	Pulse	120505	1.1	1.499	0.3000	3
As	75	74	2	He	499.705	ppb	Pulse	77149	0.2	0.960	0.9999	3
Mo	95	103	2	He	0.113	ppb	Pulse	96	38.4	0.000	0.3000	3
Ag	107	103	2	He	0.046	ppb	Pulse	128	22.8	0.001	0.3000	3
Sb	121	103	2	He	0.111	ppb	Pulse	103	34.0	0.000	0.3000	3
Ba	138	159	2	He	498.818	ppb	Pulse	1087091	0.2	2.799	0.3000	3
Tl	205	159	2	He	0.036	ppb	Pulse	302	19.0	0.001	0.3000	3
Be	9	6	3	NoGas	0.021	ppb	Pulse	46	40.3	0.000	0.3000	3
Ti	47	45	3	NoGas	499.733	ppb	Pulse	279346	0.9	0.173	0.2001	3
Co	59	74	3	NoGas	500.770	ppb	Analog	3802266	0.3	8.995	0.2001	3
Cu	65	74	3	NoGas	499.154	ppb	Pulse	853946	0.5	2.020	0.2001	3
Cd	111	103	3	NoGas	501.085	ppb	Pulse	515882	0.3	1.125	0.3000	3
W	182	159	3	NoGas	100.000	ppb	Pulse	401421	0.5	0.480	0.3000	3
Hg	201	159	3	NoGas	100.339	ppt	Pulse	60	0.0	0.000	2.0001	3
Pb	208	159	3	NoGas	499.725	ppb	Analog	6366610	0.5	7.615	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1082352.87666667	991826	1.9	Pulse	91.6	
Ge	74	H2	421500.543333333	381789	1.4	Pulse	90.6	
Sc	45	He	129889.27	119765	0.7	Pulse	92.2	
Ge	74	He	86195.52	80380	1.2	Pulse	93.3	
Rh	103	He	265590.413333333	240290	0.9	Pulse	90.5	
Tb	159	He	406398.456666667	388383	0.9	Pulse	95.6	
Bi	209	He	291291.056666667	271398	1.2	Pulse	93.2	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	523074.786666667	507829	0.6	Pulse	97.1	
Sc	45	NoGas	1670086.30666667	1611762	0.6	Analog	96.5	
Ge	74	NoGas	450235.19	422727	0.0	Pulse	93.9	
Rh	103	NoGas	498498 73	458454	0.3	Pulse	92.0	
Tb	159	NoGas	853315.386666667	836021	0.3	Pulse	98.0	
Bi	209	NoGas	509112.503333333	478818	0.6	Pulse	94.0	

Calibration Standard Report ICPMS5

Sample Name	9E21039-CAL9	1110
File Name	015CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 15:33:36	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19E166	
ISTD Ref FileName	009CALB.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	50015.443	ppb	Analog	90405052	0.2	94.777	0.2001	3
Ca	44	45	1	H2	50090.858	ppb	Analog	4570008	0.5	4.791	0.2001	3
Fe	56	74	1	H2	50035.293	ppb	Analog	264452861	0.3	741.830	0.3000	3
Fe	57	74	1	H2	49985.624	ppb	Analog	6497158	0.7	18.226	0.3000	3
Se	78	74	1	H2	0.075	ppb	Pulse	13	31.2	0.000	0.9999	3
Mg	24	45	2	He	49987.198	ppb	Analog	9114196	0.7	76.346	0.0999	3
Al	27	45	2	He	50081.897	ppb	Analog	4719635	0.6	39.534	0.0999	3
K	39	45	2	He	49962.004	ppb	Analog	8625832	1.1	72.257	0.0999	3
V	51	74	2	He	-0.033	ppb	Pulse	511	9.0	0.007	0.3000	3
Cr	52	74	2	He	1018.943	ppb	Analog	1638677	1.6	21.205	0.3000	3
Mn	55	74	2	He	2503.310	ppb	Analog	2567835	1.1	33.230	0.3000	3
Ni	60	74	2	He	995.006	ppb	Pulse	564710	0.5	7.308	0.3000	3
Cu	65	74	2	He	987.511	ppb	Pulse	715952	0.2	9.265	0.3000	3
Zn	66	74	2	He	2495.465	ppb	Pulse	557154	0.2	7.210	0.3000	3
As	75	74	2	He	0.186	ppb	Pulse	39	25.1	0.001	0.9999	3
Mo	95	103	2	He	0.195	ppb	Pulse	149	2.6	0.001	0.3000	3
Ag	107	103	2	He	0.107	ppb	Pulse	270	26.9	0.001	0.3000	3
Sb	121	103	2	He	0.049	ppb	Pulse	43	42.8	0.000	0.3000	3
Ba	138	159	2	He	2498.802	ppb	Analog	5261765	0.4	13.879	0.3000	3
Tl	205	159	2	He	0.011	ppb	Pulse	152	14.9	0.000	0.3000	3
Be	9	6	3	NoGas	0.018	ppb	Pulse	41	41.6	0.000	0.3000	3
Ti	47	45	3	NoGas	2504.460	ppb	Analog	1439016	1.9	0.903	0.2001	3
Co	59	74	3	NoGas	0.351	ppb	Pulse	2849	8.2	0.007	0.2001	3
Cu	65	74	3	NoGas	995.998	ppb	Analog	1598797	0.6	3.975	0.2001	3
Cd	111	103	3	NoGas	1000.962	ppb	Pulse	956878	1.2	2.255	0.3000	3
W	182	159	3	NoGas	0.191	ppb	Pulse	803	2.9	0.001	0.3000	3
Hg	201	159	3	NoGas	41.603	ppt	Pulse	29	26.9	0.000	2.0001	3
Pb	208	159	3	NoGas	0.217	ppb	Pulse	3324	6.9	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	1082352.87666667	953898	0.6	Pulse	88.1	
Ge	74	H2	421500.543333333	356494	0.7	Pulse	84.6	
Sc	45	He	129889.27	119381	0.4	Pulse	91.9	
Ge	74	He	86195.52	77276	0.3	Pulse	89.7	
Rh	103	He	265590.413333333	224060	0.6	Pulse	84.4	
Tb	159	He	406398.456666667	379110	0.5	Pulse	93.3	
Bi	209	He	291291.056666667	253022	0.6	Pulse	86.9	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	523074.786666667	511243	3.0	Pulse	97.7	
Sc	45	NoGas	1670086.30666667	1594970	4.2	Analog	95.5	
Ge	74	NoGas	450235.19	402534	3.6	Pulse	89.4	
Rh	103	NoGas	498498.73	424401	2.6	Pulse	85.1	
Tb	159	NoGas	853315.386666667	811233	3.5	Pulse	95.1	
Bi	209	NoGas	509112.503333333	442867	3.5	Pulse	87.0	

P/A Factor Tuning Report

Current Sample

Sample Name: 9E21039-ICV1
Data File: 016_ICV.d
Acquired: 5/21/2019 16:24:06

Detector Parameters and P/A Factors

Discriminator: 4.5 mV
AnalogHV: 1884 V
PulseHV: 1575 V

Acquired: 5/21/2019 14:24:34

Mass[u]	Element	P/A Factor
23	Na	0.113759
24	Mg	0.119191
27	Al	0.123348
39	K	0.127668
44	Ca	0.127084
47	Ti	0.129919
51	V	0.131591
52	Cr	0.132402
55	Mn	0.134133
57	Fe	0.136008
59	Co	0.139349
60	Ni	0.143191
65	Cu	0.145672
66	Zn	0.145364
111	Cd	0.152173
138	Ba	0.147806
205	Tl	0.157129
206	[Pb]	0.157109
207	[Pb]	0.157472
208	Pb	0.157975
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: 5/21/2019 15:29:12

Mass[u]	Element	P/A Factor
23	Na	0.113674
44	Ca	0.129470
45	Sc	0.128641
56	Fe	0.135838
57	Fe	0.135297
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: 5/21/2019 15:34:29

Mass[u]	Element	P/A Factor
24	Mg	0.119680
27	Al	0.123846
39	K	0.128299
51	V	0.129773
52	Cr	0.133641
55	Mn	0.133372
65	Cu	0.141165
138	Ba	0.148348
205	Tl	0.152408
45	Sc	Signal too low
60	Ni	Signal too low
66	Zn	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
209	Bi	Signal too low

Tune Mode Name: NoGas
Discriminator: 4.5 mV
AnalogHV: 1884 V
PulseHV: 1575 V

Acquired: 5/21/2019 15:35:36

Mass[u]	Element	P/A Factor
45	Sc	0.127593
47	Ti	0.126151
59	Co	0.138430
65	Cu	0.141241
111	Cd	0.145848
159	Tb	0.151304
206	Pb	0.153665
207	Pb	0.154295
208	Pb	0.154927
6	Li	Signal too low
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: 5/22/2019 12:51:25

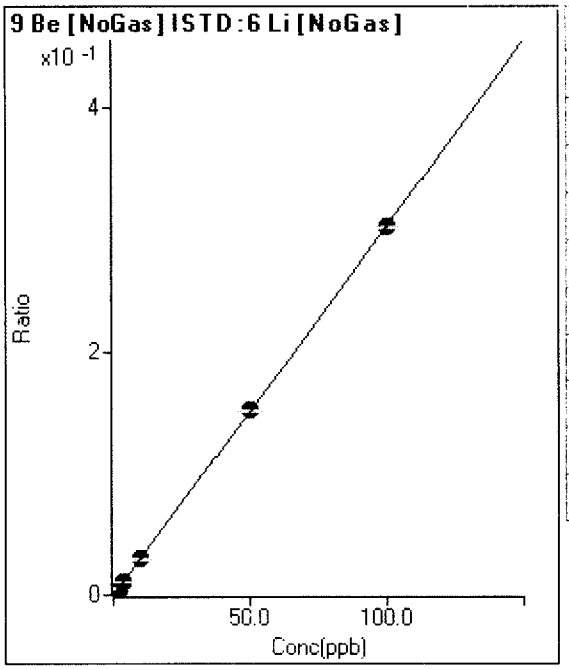
Calibration for 016_ICV.d

Batch Folder: C:\Agilent\ICPMH\1\DATA\9E21039.b\
Analysis File: 9E21039.batch.bin
DA Date-Time: 5/22/2019 12:49:19
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	009CALB.d	9E21039-CAL0	5/21/2019 15:06:50
2	005CALS.d	9E21039-CAL1	5/21/2019 14:48:48
3	006CALS.d	9E21039-CAL2	5/21/2019 14:53:21
4	007CALS.d	9E21039-CAL3	5/21/2019 14:58:02
5	010CALS.d	9E21039-CAL4	5/21/2019 15:11:06
6	011CALS.d	9E21039-CAL5	5/21/2019 15:15:39
7	012CALS.d	9E21039-CAL6	5/21/2019 15:20:11
8	013CALS.d	9E21039-CAL7	5/21/2019 15:24:41
9	014CALS.d	9E21039-CAL8	5/21/2019 15:29:10
10	015CALS.d	9E21039-CAL9	5/21/2019 15:33:36

Cr LDR @ 500 ppb this seq
90% = 450 ppb
AB 05/22/19

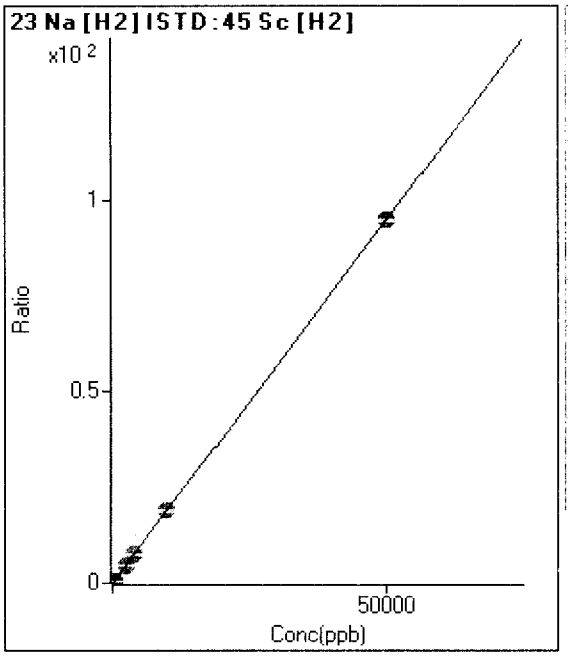
Calibration for 016_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		0.000	0.000	13	0.000	P	0.6
2		0.180	0.160	277	0.001	P	10.8
3		0.900	0.843	1356	0.003	P	1.5
4		1.800	1.799	2865	0.005	P	5.2
5		3.600	3.621	5781	0.011	P	5.3
6		10.000	9.848	15620	0.030	P	1.5
7		50.000	50.191	78910	0.152	P	1.4
8		100.000	99.919	153828	0.303	P	0.6
9				46	0.000	P	40.2
10				41	0.000	P	40.8

y = 0.0030 * x + 2.5485E-005
R = 1.0000
DL = 0.0001636
BEC = 0.008406

Weight: <None>
Min Conc: <None>

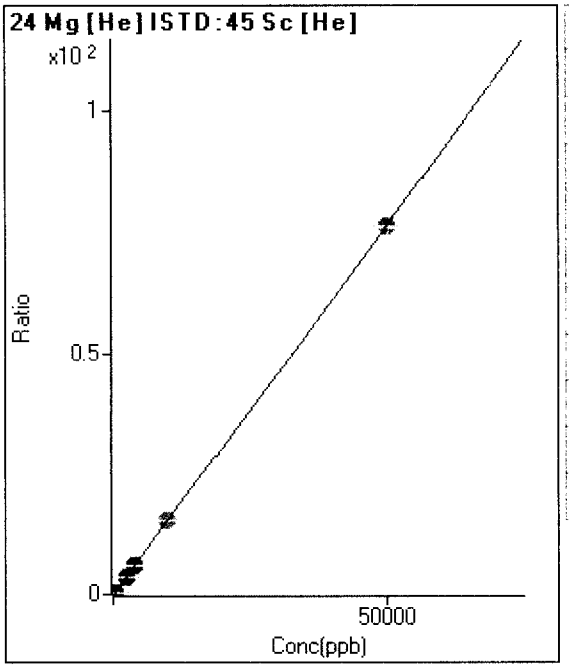


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		0.000	0.000	19890	0.018	P	1.6
2		9.000	7.939	35538	0.033	P	0.3
3		45.000	45.478	107079	0.105	P	5.0
4		90.000	88.243	199129	0.186	P	1.0
5		180.000	175.516	379506	0.351	P	1.1
6		400.000	386.339	806951	0.750	P	0.4
7		2500.000	2474.963	4994852	4.707	A	1.4
8		4000.000	3967.240	7758405	7.535	A	2.2
9		10000.000	9942.792	18697394	18.856	A	1.9
10		50000.000	50015.443	90405052	94.777	A	0.7

y = 0.0019 * x + 0.0184
R = 1.0000
DL = 0.4547
BEC = 9.7

Weight: <None>
Min Conc: <None>

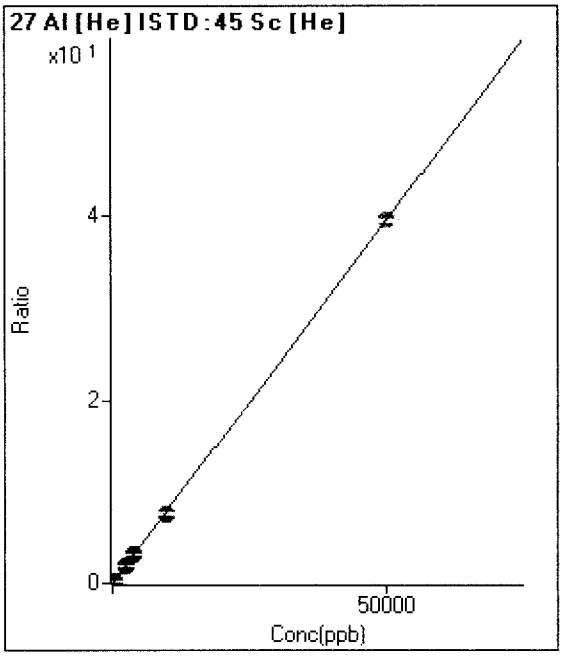
Calibration for 016_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		0.000	0.000	234	0.002	P	16.4
2		9.000	9.168	1992	0.016	P	4.2
3		45.000	43.394	8688	0.068	P	5.4
4		90.000	88.713	17717	0.137	P	2.3
5		180.000	176.758	35351	0.272	P	1.8
6		400.000	368.576	74818	0.565	P	8.6
7		2500.000	2440.254	475548	3.729	P	0.5
8		4000.000	3906.374	734164	5.968	P	0.5
9		10000.000	10117.732	1850809	15.454	A	1.1
10		50000.000	49987.198	9114196	76.346	A	0.9

y = 0.0015 * x + 0.0018
R = 1.0000
DL = 0.58
BEC = 1.178

Weight: <None>
Min Conc: <None>

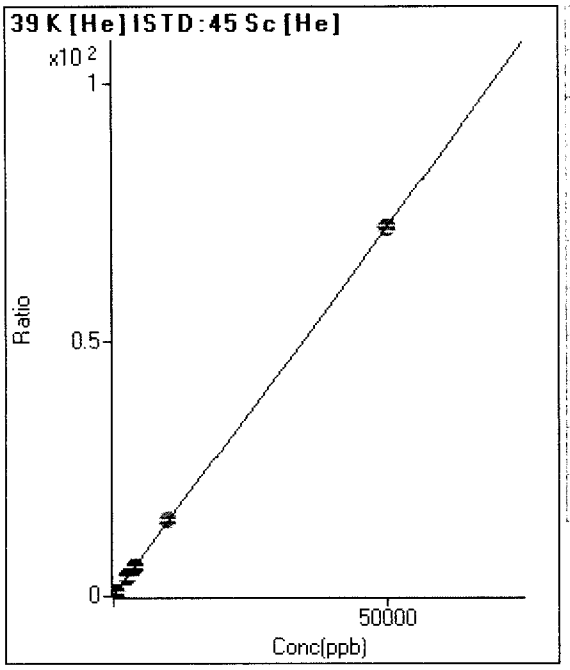


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		0.000	0.000	117	0.001	P	43.5
2		9.000	7.606	871	0.007	P	11.8
3		45.000	43.268	4475	0.035	P	6.4
4		90.000	86.514	8928	0.069	P	2.2
5		180.000	171.568	17734	0.136	P	6.6
6		400.000	357.959	37555	0.283	P	8.7
7		2500.000	2396.979	241422	1.893	P	0.8
8		4000.000	3871.008	376017	3.057	P	0.5
9		10000.000	9669.740	914218	7.634	P	1.4
10		50000.000	50081.897	4719635	39.534	A	0.5

y = 7.8937E-004 * x + 9.0012E-004
R = 1.0000
DL = 1.489
BEC = 1.14

Weight: <None>
Min Conc: <None>

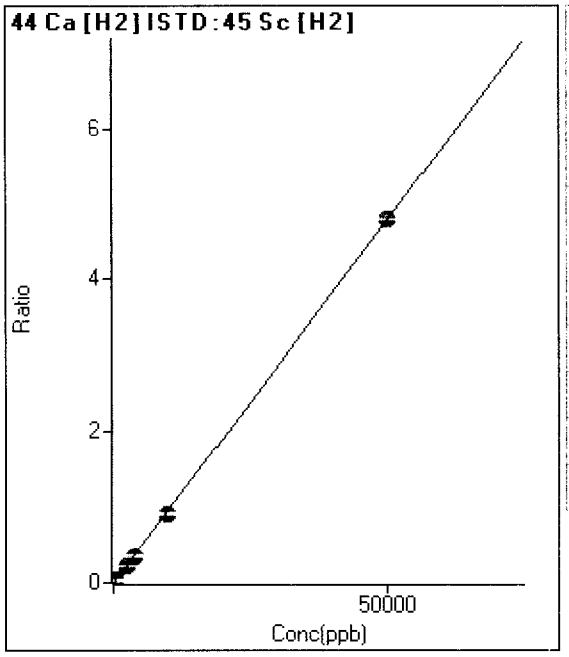
Calibration for 016_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	15694	0.121	P	1.9
2	☑	9.000		17574	0.139	P	0.6
3	☐	45.000	44.560	23634	0.185	P	1.7
4	☐	90.000	90.646	32484	0.252	P	1.2
5	☐	180.000	180.808	49677	0.382	P	1.1
6	☐	400.000	366.745	86223	0.650	P	6.4
7	☐	2500.000	2444.305	465488	3.650	P	1.1
8	☐	4000.000	3934.920	713755	5.802	P	1.2
9	☐	10000.000	10231.242	1783490	14.893	A	1.8
10	☐	50000.000	49962.005	8625832	72.257	A	1.4

y = 0.0014 * x + 0.1208
R = 1.0000
DL = 4.761
BEC = 83.69

Weight: <None>
Min Conc: <None>

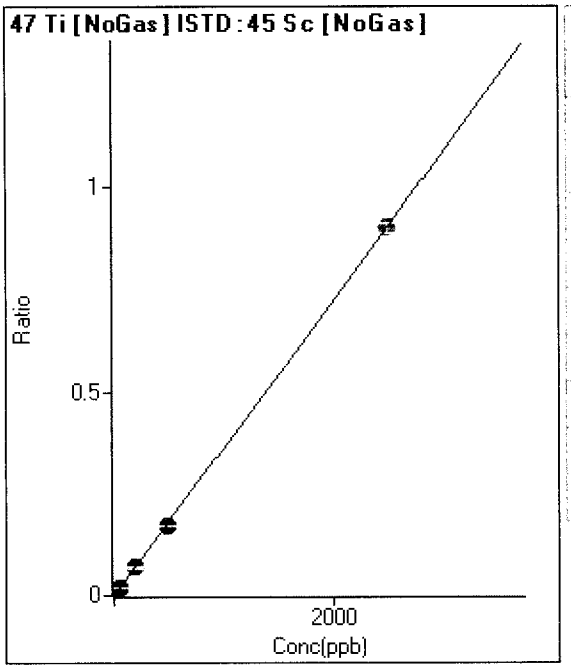


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1080	0.001	P	11.2
2	☑	9.000		1688	0.002	P	4.7
3	☐	45.000	43.818	5322	0.005	P	2.5
4	☐	90.000	84.479	9738	0.009	P	2.7
5	☐	180.000	174.160	19090	0.018	P	1.6
6	☐	400.000	388.130	40988	0.038	P	0.7
7	☐	2500.000	2401.220	244694	0.231	P	0.6
8	☐	4000.000	3831.424	378279	0.367	P	2.3
9	☐	10000.000	9638.471	914912	0.923	P	1.9
10	☐	50000.000	50090.858	4570008	4.791	A	0.1

y = 9.5624E-005 * x + 9.9694E-004
R = 1.0000
DL = 3.496
BEC = 10.43

Weight: <None>
Min Conc: <None>

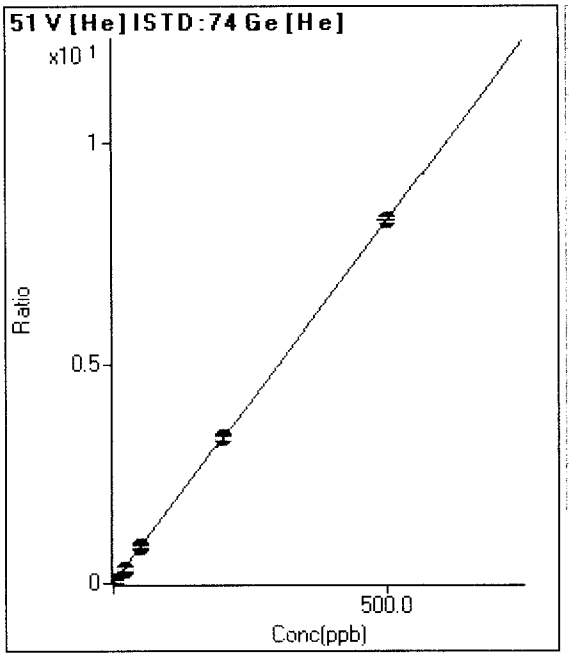
Calibration for 016_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	50	0.000	P	34.9
2	☑	0.180		215	0.000	P	27.7
3	☐	0.900	0.863	565	0.000	P	16.3
4	☐	1.800	1.845	1158	0.001	P	5.5
5	☐	3.600	3.577	2214	0.001	P	2.0
6	☐	20.000	19.083	11522	0.007	P	3.6
7	☐	50.000	47.974	28681	0.017	P	2.5
8	☐	200.000	193.072	112101	0.070	P	1.8
9	☐	500.000	480.712	279346	0.173	P	0.3
10	☐	2500.000	2504.460	1439016	0.903	A	2.4

y = 3.6048E-004 * x + 2.9943E-005
R = 1.0000
DL = 0.08702
BEC = 0.08306

Weight: <None>
Min Conc: <None>

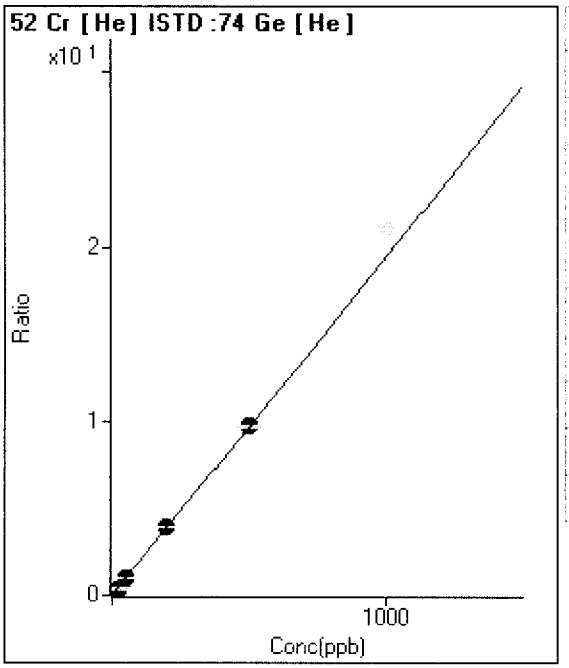


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	617	0.007	P	0.8
2	☐	0.180	0.174	850	0.010	P	5.8
3	☐	0.900	0.864	1831	0.021	P	2.8
4	☐	1.800	1.776	3127	0.036	P	3.2
5	☐	3.600	3.434	5520	0.064	P	3.2
6	☐	20.000	18.691	27761	0.315	P	8.4
7	☐	50.000	49.511	69582	0.822	P	1.5
8	☐	200.000	200.228	270632	3.304	P	0.7
9	☐	500.000	500.011	662304	8.240	P	1.2
10	☐			511	0.007	P	8.9

y = 0.0165 * x + 0.0072
R = 1.0000
DL = 0.01095
BEC = 0.4345

Weight: <None>
Min Conc: <None>

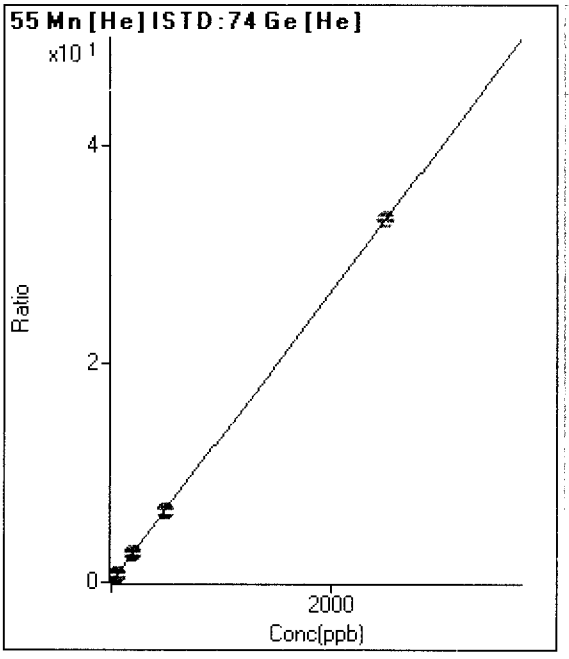
Calibration for 016_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	140	0.002	P	12.7
2	☐	0.180	0.148	382	0.005	P	10.3
3	☐	0.900	0.902	1643	0.019	P	5.6
4	☐	1.800	1.893	3305	0.038	P	2.8
5	☐	3.600	3.517	6071	0.070	P	2.0
6	☐	20.000	19.257	33177	0.376	P	9.3
7	☐	50.000	50.032	82530	0.975	P	0.9
8	☐	200.000	200.269	319409	3.900	P	0.8
9	☐	500.000	499.919	782192	9.732	P	1.1
10	☑	1000.000		1638677	21.205	A	1.5

y = 0.0195 * x + 0.0016
R = 1.0000
DL = 0.03168
BEC = 0.08345

Weight: <None>
Min Conc: <None>

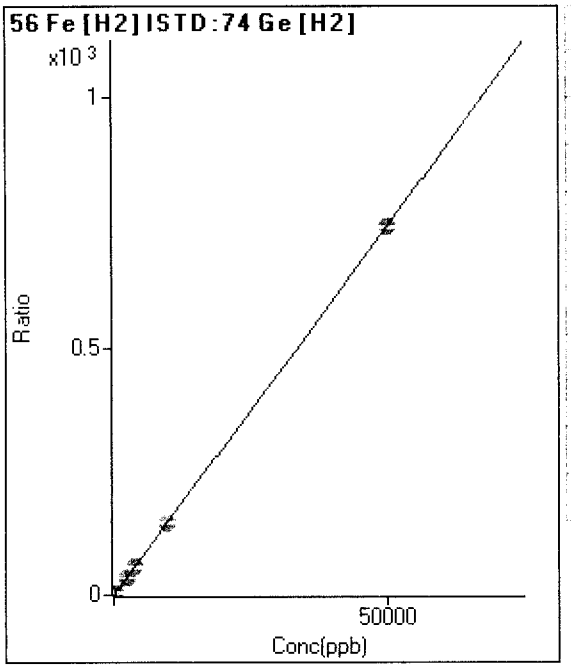


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	39	0.000	P	24.6
2	☐	0.180	0.192	254	0.003	P	5.4
3	☐	0.900	0.938	1106	0.013	P	8.1
4	☐	1.800	1.769	2056	0.024	P	8.3
5	☐	3.600	3.586	4164	0.048	P	3.1
6	☐	20.000	18.601	21802	0.247	P	9.0
7	☐	50.000	48.802	54849	0.648	P	0.4
8	☐	200.000	195.966	213103	2.602	P	0.2
9	☐	500.000	485.238	517740	6.442	P	0.9
10	☐	2500.000	2503.310	2567835	33.230	A	1.3

y = 0.0133 * x + 4.5105E-004
R = 1.0000
DL = 0.02509
BEC = 0.03398

Weight: <None>
Min Conc: <None>

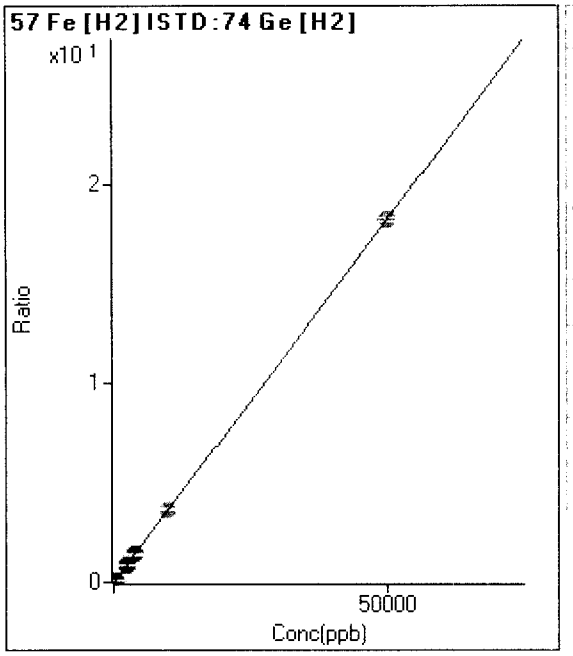
Calibration for 016_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	11107	0.026	P	1.1
2	☐	9.000	8.514	63610	0.153	P	0.8
3	☐	45.000	45.933	285401	0.707	P	4.6
4	☐	90.000	88.901	561600	1.344	P	0.6
5	☐	180.000	176.369	1107730	2.641	P	0.5
6	☐	400.000	395.383	2466497	5.888	A	0.3
7	☐	2500.000	2454.359	15023306	36.414	A	0.5
8	☐	4000.000	3879.881	22996743	57.548	A	2.8
9	☐	10000.000	9883.248	55944643	146.552	A	1.4
10	☐	50000.000	50035.293	264452861	741.830	A	0.4

y = 0.0148 * x + 0.0264
R = 1.0000
DL = 0.05704
BEC = 1.777

Weight: <None>
Min Conc: <None>

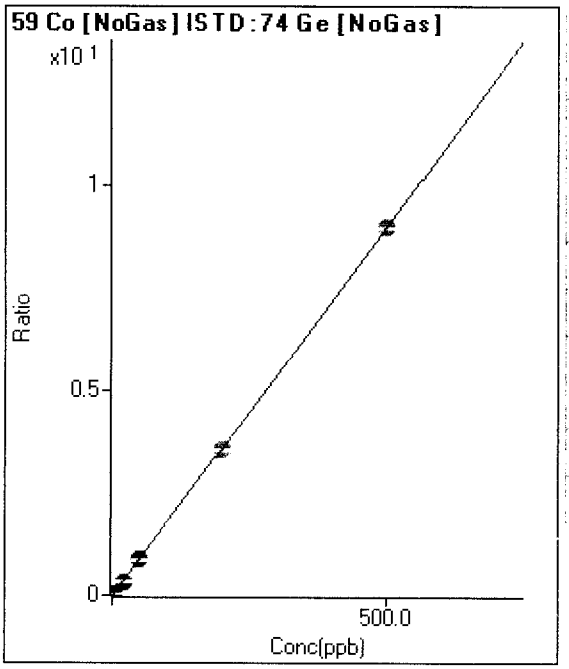


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	737	0.002	P	9.7
2	☐	9.000	8.301	1990	0.005	P	3.9
3	☐	45.000	46.536	7537	0.019	P	10.8
4	☐	90.000	87.951	14126	0.034	P	3.6
5	☐	180.000	177.494	27873	0.066	P	0.8
6	☐	400.000	385.006	59529	0.142	P	1.0
7	☐	2500.000	2386.140	359637	0.872	P	0.2
8	☐	4000.000	3837.849	559893	1.401	P	2.0
9	☐	10000.000	10165.861	1415439	3.708	A	2.0
10	☐	50000.000	49985.624	6497158	18.226	A	0.9

y = 3.6458E-004 * x + 0.0017
R = 1.0000
DL = 1.399
BEC = 4.792

Weight: <None>
Min Conc: <None>

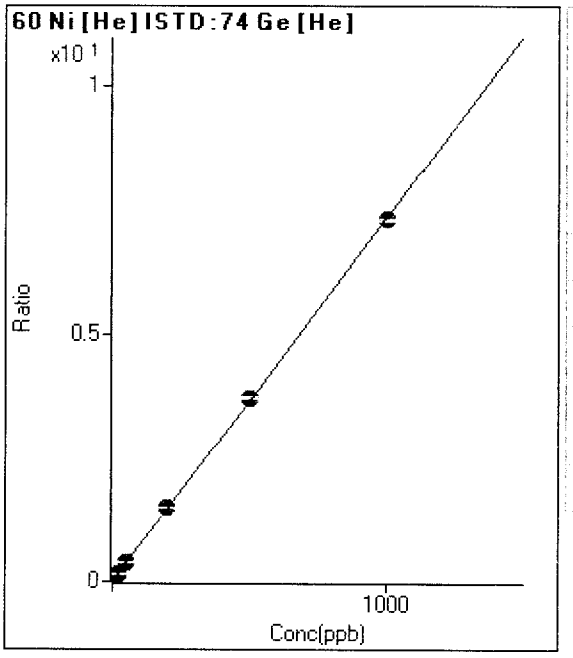
Calibration for 016_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	342	0.001	P	3.2
2	☐	0.180	0.185	1883	0.004	P	5.5
3	☐	0.900	0.882	7473	0.017	P	0.5
4	☐	1.800	1.833	15216	0.034	P	0.2
5	☐	3.600	3.608	29681	0.066	P	2.7
6	☐	20.000	19.739	160457	0.355	P	2.1
7	☐	50.000	49.144	391462	0.883	P	1.3
8	☐	200.000	198.314	1542091	3.562	A	1.3
9	☐	500.000	500.770	3802266	8.995	A	0.3
10	☐			2849	0.007	P	4.8

y = 0.0180 * x + 7.5855E-004
R = 1.0000
DL = 0.004032
BEC = 0.04224

Weight: <None>
Min Conc: <None>

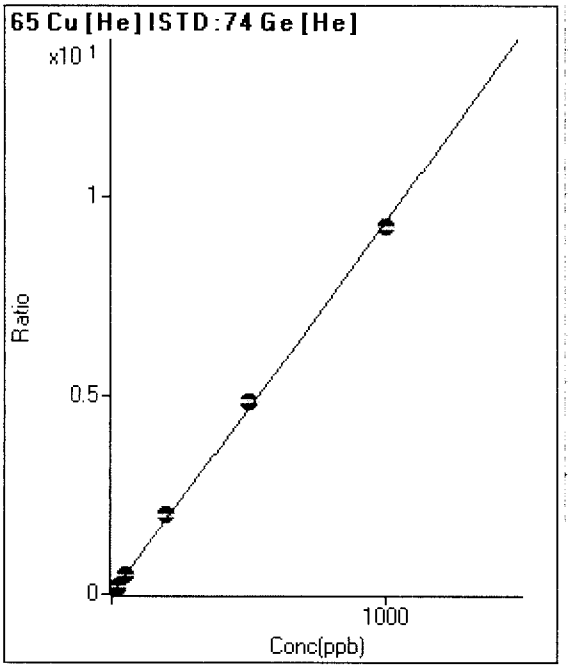


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	343	0.004	P	10.5
2	☐	0.180	0.141	426	0.005	P	9.5
3	☐	0.900	0.758	818	0.010	P	5.5
4	☐	1.800	1.747	1443	0.017	P	5.3
5	☐	3.600	3.682	2687	0.031	P	2.6
6	☐	20.000	19.874	13216	0.150	P	7.3
7	☐	50.000	51.694	32443	0.383	P	1.1
8	☐	200.000	204.873	123503	1.508	P	0.8
9	☐	500.000	507.875	299963	3.732	P	0.6
10	☐	1000.000	995.006	564710	7.308	P	0.7

y = 0.0073 * x + 0.0040
R = 0.9999
DL = 0.1713
BEC = 0.5425

Weight: <None>
Min Conc: <None>

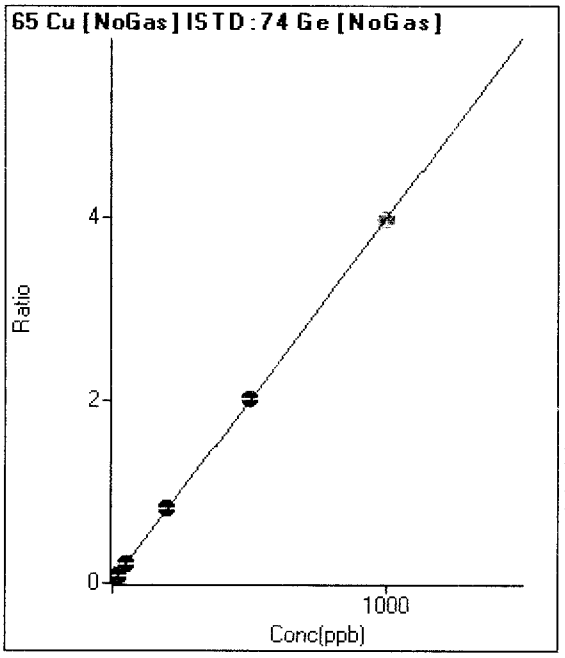
Calibration for 016_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	299	0.003	P	6.4
2	☐	0.180	0.205	458	0.005	P	4.6
3	☐	0.900	0.991	1093	0.013	P	4.0
4	☐	1.800	2.004	1912	0.022	P	1.4
5	☐	3.600	4.124	3652	0.042	P	3.7
6	☐	20.000	20.775	17496	0.198	P	5.9
7	☐	50.000	53.405	42670	0.504	P	0.7
8	☐	200.000	212.541	163554	1.997	P	0.9
9	☐	500.000	519.585	391953	4.876	P	0.4
10	☐	1000.000	987.511	715952	9.265	P	0.4

y = 0.0094 * x + 0.0035
R = 0.9997
DL = 0.07112
BEC = 0.3698

Weight: <None>
Min Conc: <None>

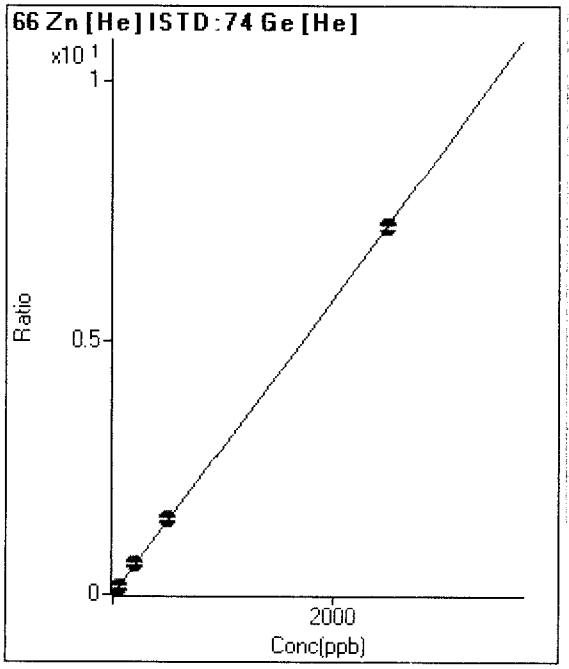


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	705	0.002	P	14.5
2	☐	0.180	0.106	918	0.002	P	8.1
3	☐	0.900	1.029	2554	0.006	P	4.1
4	☐	1.800	1.940	4204	0.009	P	1.5
5	☐	3.600	3.845	7653	0.017	P	4.7
6	☐	20.000	21.190	38890	0.086	P	0.5
7	☐	50.000	52.363	93267	0.210	P	1.1
8	☐	200.000	204.359	353585	0.817	P	0.7
9	☐	500.000	505.973	853946	2.020	P	0.5
10	☐	1000.000	995.998	1598797	3.975	A	3.3

y = 0.0040 * x + 0.0016
R = 1.0000
DL = 0.1705
BEC = 0.3925

Weight: <None>
Min Conc: <None>

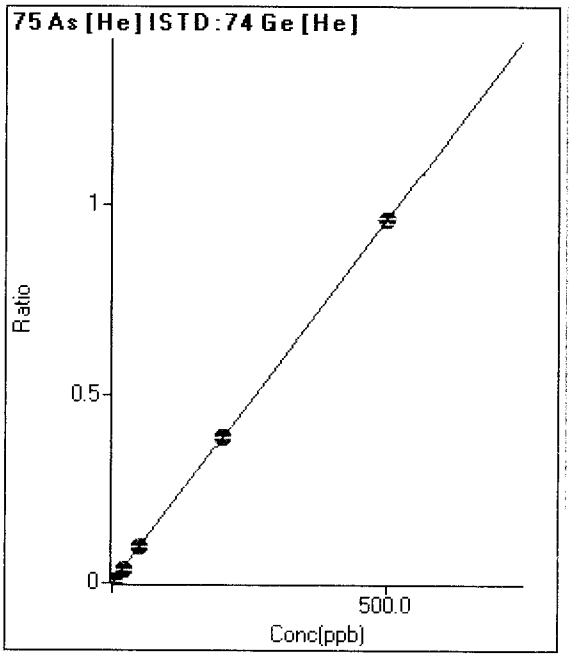
Calibration for 016_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	136	0.002	P	17.6
2	☐	0.180	0.063	149	0.002	P	7.4
3	☐	0.900	0.870	350	0.004	P	14.1
4	☐	1.800	1.954	620	0.007	P	5.0
5	☐	3.600	3.194	936	0.011	P	7.8
6	☐	20.000	20.281	5306	0.060	P	6.4
7	☐	50.000	51.503	12720	0.150	P	1.5
8	☐	200.000	210.129	49845	0.609	P	0.6
9	☐	500.000	518.462	120505	1.499	P	0.1
10	☐	2500.000	2495.465	557154	7.210	P	0.5

y = 0.0029 * x + 0.0016
R = 1.0000
DL = 0.2877
BEC = 0.5447

Weight: <None>
Min Conc: <None>

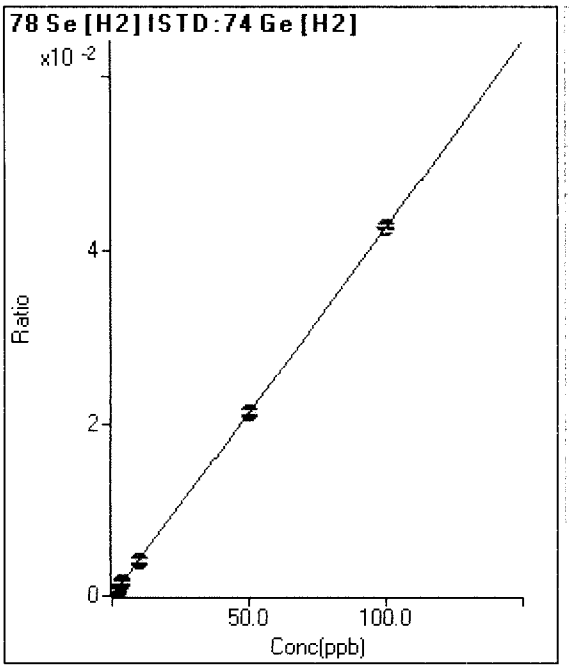


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	12	0.000	P	37.2
2	☐	0.180	0.185	42	0.000	P	20.7
3	☐	0.900	0.991	175	0.002	P	8.9
4	☐	1.800	1.811	311	0.004	P	6.5
5	☐	3.600	3.563	605	0.007	P	8.5
6	☐	20.000	19.186	3266	0.037	P	4.3
7	☐	50.000	49.212	8009	0.095	P	0.6
8	☐	200.000	201.017	31635	0.386	P	0.8
9	☐	500.000	499.705	77149	0.960	P	1.4
10	☐			39	0.001	P	25.3

y = 0.0019 * x + 1.4297E-004
R = 1.0000
DL = 0.0831
BEC = 0.07443

Weight: <None>
Min Conc: <None>

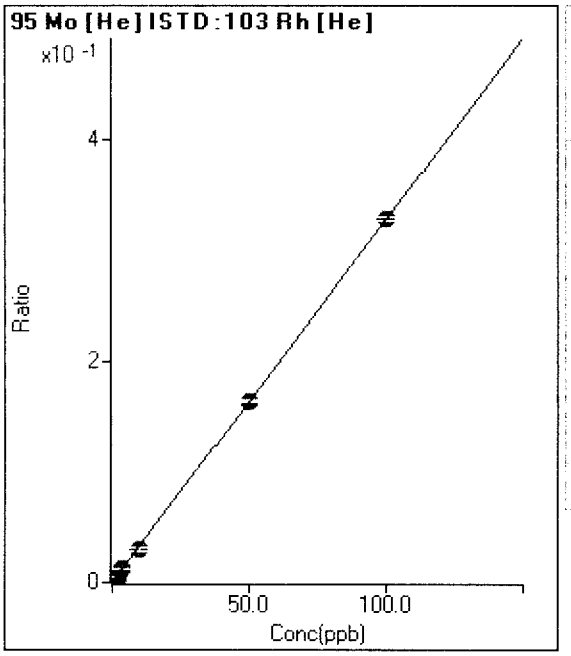
Calibration for 016_ICV.d



	Rjct	Conc	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2	0.000	P	24.2
2	☐	0.180	0.165	32	0.000	P	6.9
3	☐	0.900	0.935	163	0.000	P	7.7
4	☐	1.800	1.618	291	0.001	P	9.1
5	☐	3.600	3.625	652	0.002	P	2.7
6	☐	10.000	9.775	1751	0.004	P	6.7
7	☐	50.000	50.058	8824	0.021	P	1.5
8	☐	100.000	99.995	17073	0.043	P	1.8
9	☐			35	0.000	P	17.6
10	☐			13	0.000	P	31.3

y = 4.2715E-004 * x + 5.5315E-006
R = 1.0000
DL = 0.009406
BEC = 0.01295

Weight: <None>
Min Conc: <None>

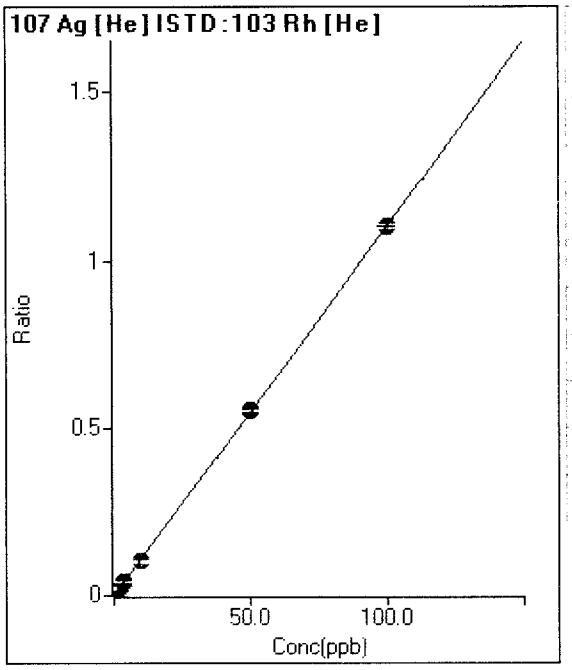


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7	0.000	P	100.2
2	☐	0.180	0.155	140	0.001	P	18.4
3	☐	0.900	0.834	727	0.003	P	13.3
4	☐	1.800	1.797	1557	0.006	P	3.0
5	☐	3.600	3.706	3226	0.012	P	2.8
6	☐	10.000	9.107	8093	0.030	P	9.3
7	☐	50.000	50.083	41606	0.165	P	1.3
8	☐	100.000	100.045	81556	0.329	P	0.9
9	☐			96	0.000	P	38.0
10	☐			149	0.001	P	3.1

y = 0.0033 * x + 2.5118E-005
R = 1.0000
DL = 0.02297
BEC = 0.007644

Weight: <None>
Min Conc: <None>

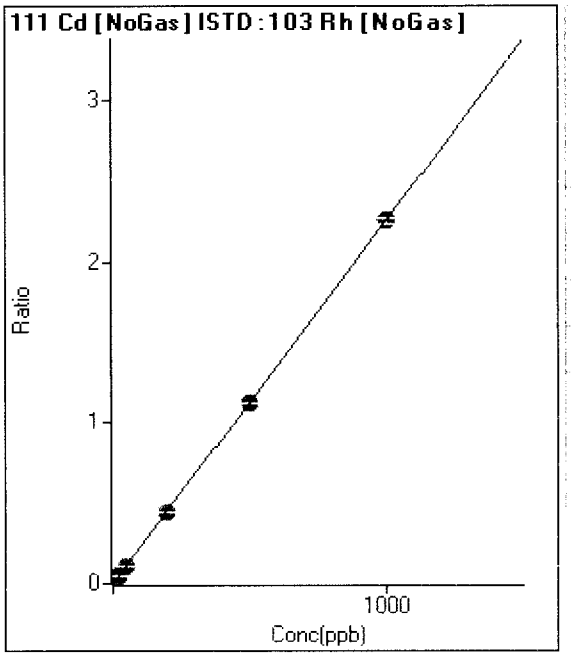
Calibration for 016_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7	0.000	P	86.7
2	☐	0.180	0.179	524	0.002	P	15.9
3	☐	0.900	0.908	2640	0.010	P	5.6
4	☐	1.800	1.866	5412	0.021	P	3.3
5	☐	3.600	3.667	10700	0.040	P	1.7
6	☐	10.000	9.407	28063	0.104	P	7.5
7	☐	50.000	50.317	140308	0.555	P	0.9
8	☐	100.000	99.897	273352	1.102	P	1.1
9	☐			128	0.001	P	21.9
10	☐			270	0.001	P	26.3

y = 0.0110 * x + 2.5096E-005
R = 1.0000
DL = 0.005917
BEC = 0.002275

Weight: <None>
Min Conc: <None>

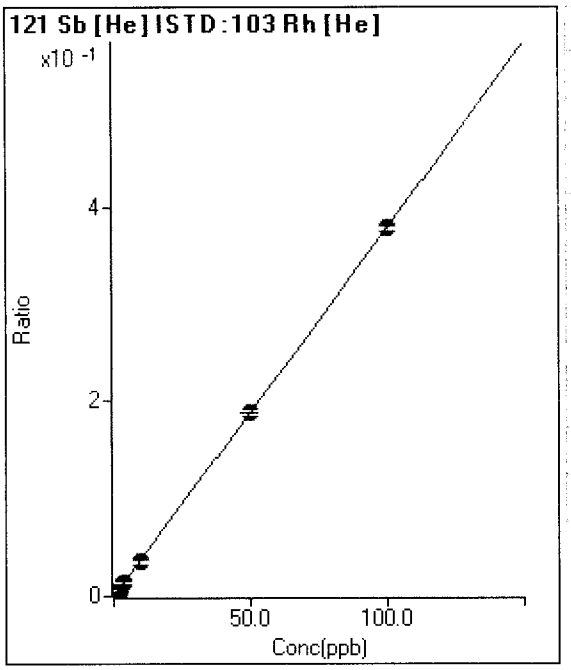


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5	0.000	P	68.2
2	☐	0.180	0.184	218	0.000	P	10.5
3	☐	0.900	0.839	955	0.002	P	6.7
4	☐	1.800	1.755	1977	0.004	P	1.6
5	☐	3.600	3.447	3933	0.008	P	4.4
6	☐	20.000	19.588	21981	0.044	P	2.3
7	☐	50.000	48.957	53434	0.110	P	0.6
8	☐	200.000	196.895	210067	0.444	P	0.6
9	☐	500.000	499.439	515882	1.125	P	0.5
10	☐	1000.000	1000.962	956878	2.255	P	1.5

y = 0.0023 * x + 9.4542E-006
R = 1.0000
DL = 0.008582
BEC = 0.004196

Weight: <None>
Min Conc: <None>

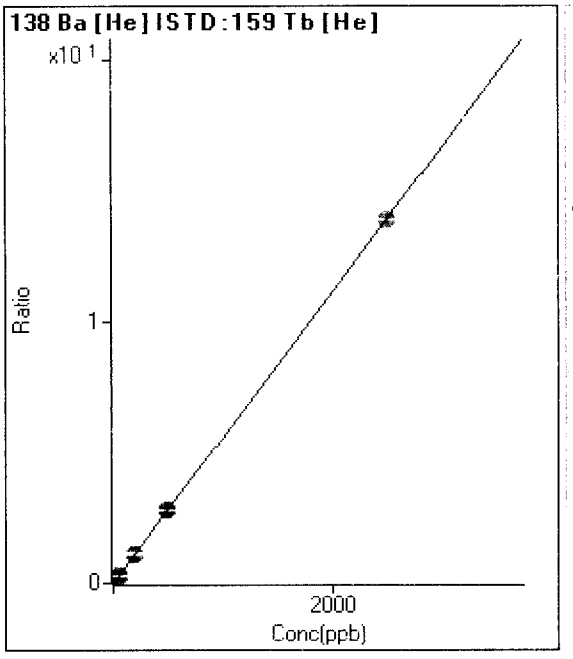
Calibration for 016_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2	0.000	P	86.6
2	☐	0.180	0.206	207	0.001	P	1.3
3	☐	0.900	0.892	890	0.003	P	4.7
4	☐	1.800	1.808	1800	0.007	P	1.0
5	☐	3.600	3.520	3526	0.013	P	2.9
6	☐	10.000	9.321	9536	0.035	P	10.1
7	☐	50.000	49.987	47860	0.189	P	2.0
8	☐	100.000	100.077	94010	0.379	P	0.8
9	☐			103	0.000	P	33.1
10	☐			43	0.000	P	43.4

y = 0.0038 * x + 8.3481E-006
R = 1.0000
DL = 0.005727
BEC = 0.002204

Weight: <None>
Min Conc: <None>

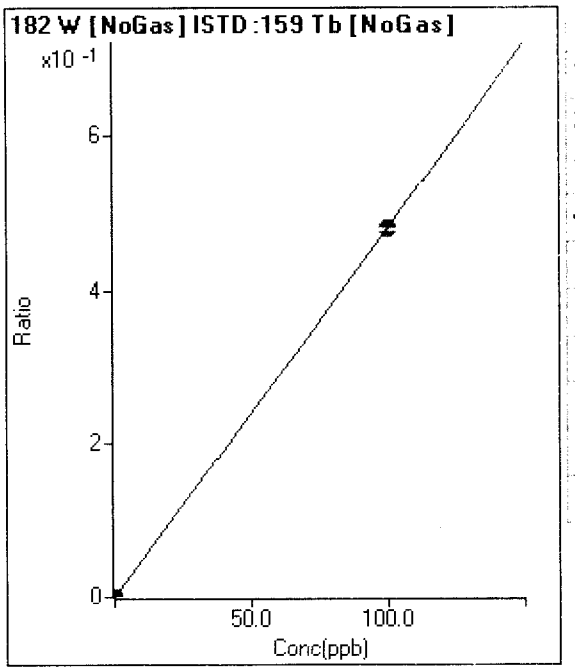


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	92	0.000	P	30.4
2	☐	0.180	0.195	526	0.001	P	4.5
3	☐	0.900	0.968	2272	0.006	P	1.6
4	☐	1.800	1.838	4201	0.010	P	3.2
5	☐	3.600	3.823	8722	0.021	P	2.0
6	☐	20.000	19.828	45517	0.110	P	8.5
7	☐	50.000	51.284	113315	0.285	P	0.9
8	☐	200.000	204.871	446633	1.138	P	0.8
9	☐	500.000	503.916	1087091	2.799	P	0.7
10	☐	2500.000	2498.802	5261765	13.879	A	0.1

y = 0.0056 * x + 2.2698E-004
R = 1.0000
DL = 0.03727
BEC = 0.04087

Weight: <None>
Min Conc: <None>

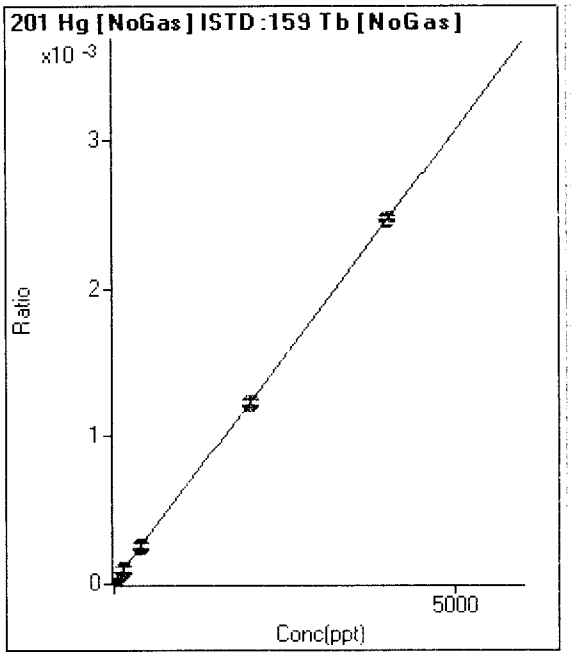
Calibration for 016_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	62	0.000	P	8.2
2	☐			64	0.000	P	8.9
3	☐			44	0.000	P	8.6
4	☐			67	0.000	P	13.2
5	☐			56	0.000	P	3.4
6	☐			58	0.000	P	37.5
7	☐			68	0.000	P	52.7
8	☐			93	0.000	P	9.2
9	☐	100.000	100.000	401421	0.480	P	0.6
10	☐			803	0.001	P	5.0

y = 0.0048 * x + 7.2923E-005
R = 1.0000
DL = 0.003727
BEC = 0.01519

Weight: <None>
Min Conc: <None>

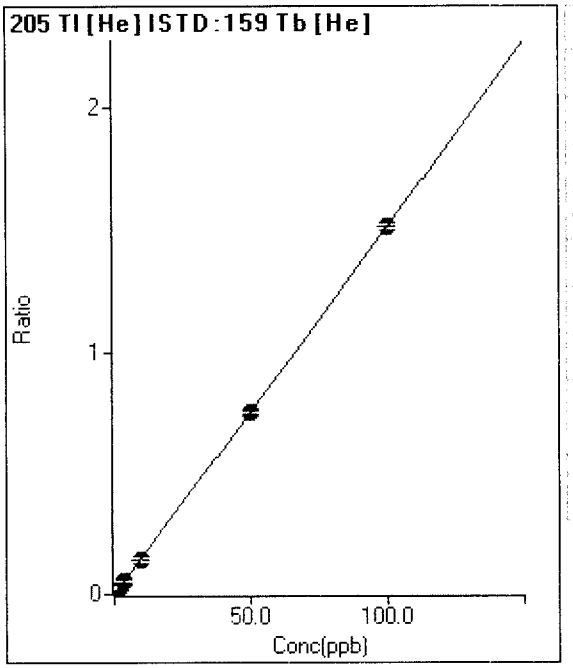


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	2.099	10	0.000	P	38.0
2	☐			14	0.000	P	35.0
3	☐	36.000	37.301	29	0.000	P	24.5
4	☐	72.000	79.993	51	0.000	P	8.9
5	☐	144.000	140.410	83	0.000	P	9.1
6	☐	400.000	394.758	216	0.000	P	4.8
7	☐	2000.000	1993.884	1049	0.001	P	0.9
8	☐	4000.000	4003.556	2072	0.002	P	1.6
9	☐			60	0.000	P	0.3
10	☐			29	0.000	P	29.9

y = 6.133112E-007 * x + 1.023011E-005
R = 1.0000
DL = 21.42
BEC = 16.68

Weight: <None>
Min Conc: <None>

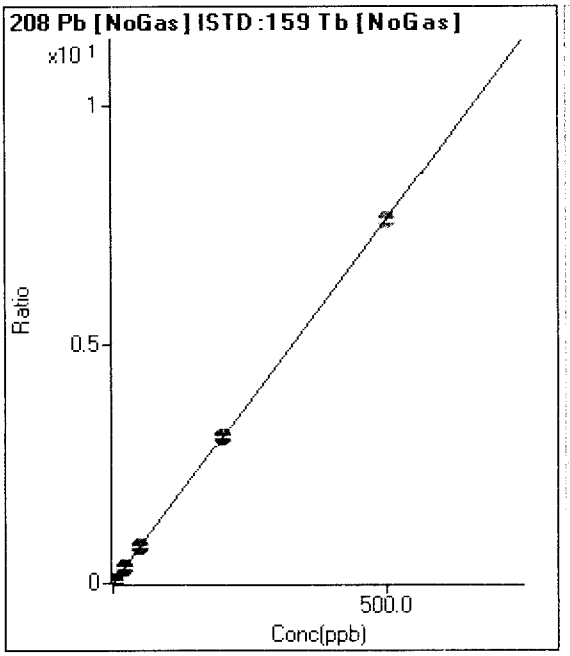
Calibration for 016_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	97	0.000	P	5.9
2	☐	0.180	0.184 ✓	1213	0.003	P	6.9
3	☐	0.900	0.898 ✓	5606	0.014	P	4.3
4	☐	1.800	1.845 ✓	11330	0.028	P	0.8
5	☐	3.600	3.621 ✓	22365	0.055	P	0.5
6	☐	10.000	9.560 ✓	59784	0.145	P	7.3
7	☐	50.000	49.970 ✓	300617	0.756	P	0.4
8	☐	100.000	100.058 ✓	594149	1.514	P	1.0
9	☐			302	0.001	P	19.8
10	☐			152	0.000	P	15.3

y = 0.0151 * x + 2.3787E-004
R = 1.0000 ✓
DL = 0.00277
BEC = 0.01572

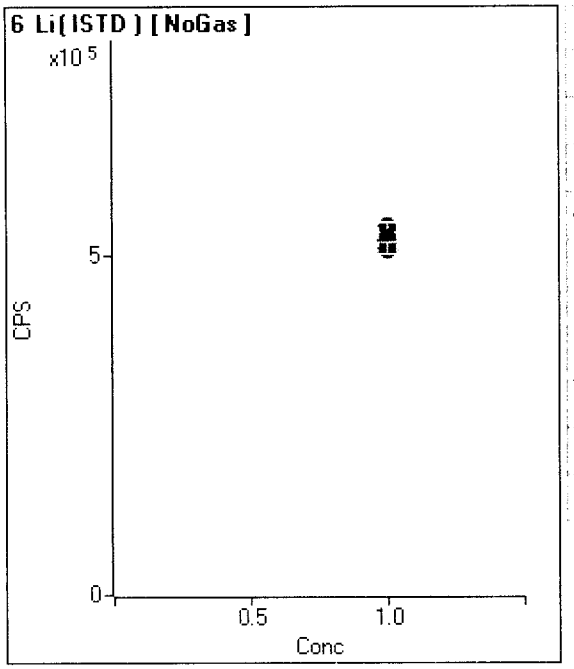
Weight: <None>
Min Conc: <None>



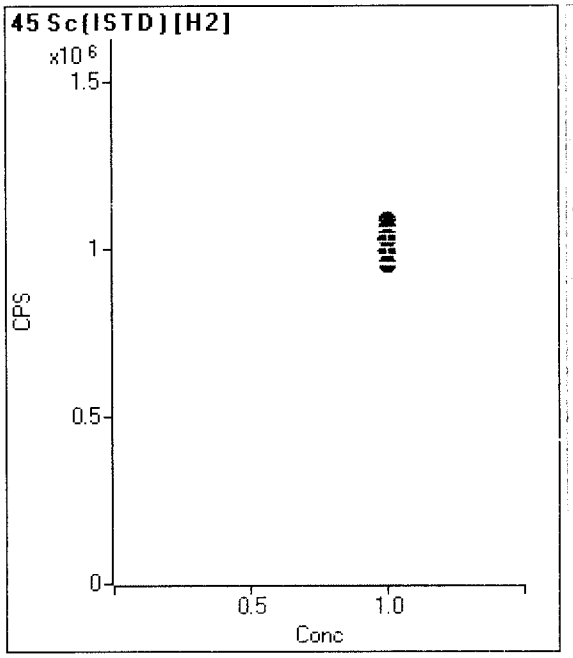
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	685	0.001	P	6.7
2	☐	0.180	0.177 ✓	3089	0.004	P	7.3
3	☐	0.900	0.914 ✓	12678	0.015	P	1.7
4	☐	1.800	1.843 ✓	24683	0.029	P	2.1
5	☐	3.600	3.678 ✓	48769	0.057	P	1.8
6	☐	20.000	20.211 ✓	263934	0.309	P	0.4
7	☐	50.000	49.695 ✓	645157	0.758	P	0.5
8	☐	200.000	200.740 ✓	2571258	3.060	P	0.4
9	☐	500.000	499.725 ✓	6366610	7.615	A	0.7
10	☐			3324	0.004	P	10.0

y = 0.0152 * x + 8.0250E-004
R = 1.0000 ✓
DL = 0.01054
BEC = 0.05267

Weight: <None>
Min Conc: <None>

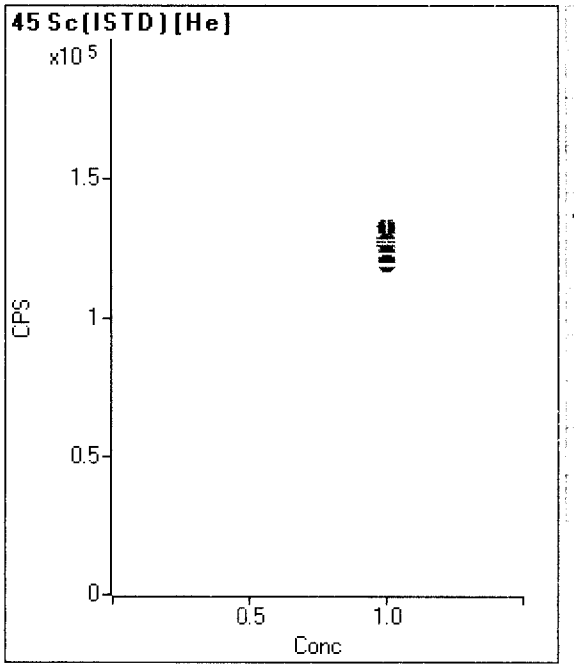


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		523075		P	0.7
2	☐	1.000		541870		P	2.5
3	☐	1.000		525526		P	0.4
4	☐	1.000		522727		P	0.1
5	☐	1.000		525449		P	0.3
6	☐	1.000		522694		P	0.6
7	☐	1.000		518519		P	0.6
8	☐	1.000		507773		P	0.4
9	☐	1.000		507829		P	0.6
10	☐	1.000		511243		P	3.0

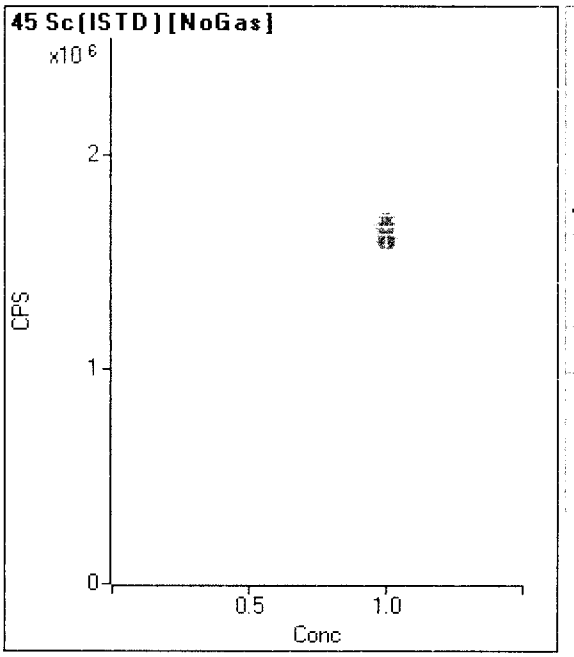


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1082353		P	0.6
2	☐	1.000		1063421		P	0.5
3	☐	1.000		1025763		P	4.3
4	☐	1.000		1073139		P	0.5
5	☐	1.000		1081525		P	0.4
6	☐	1.000		1075464		P	0.2
7	☐	1.000		1061089		P	0.5
8	☐	1.000		1030033		P	2.3
9	☐	1.000		991826		P	1.9
10	☐	1.000		953898		P	0.6

Calibration for 016_ICV.d

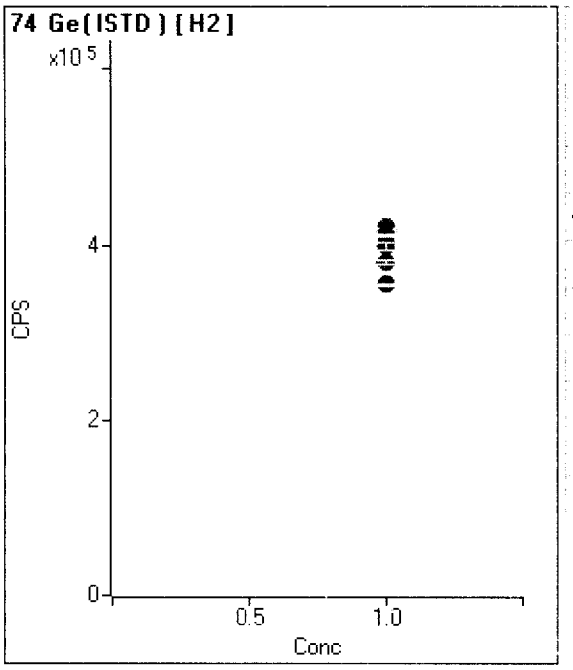


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		129889		P	0.4
2	☐	1.000		126089		P	0.7
3	☐	1.000		127639		P	0.6
4	☐	1.000		129038		P	1.8
5	☐	1.000		130087		P	0.7
6	☐	1.000		132864		P	5.0
7	☐	1.000		127539		P	0.7
8	☐	1.000		123019		P	0.3
9	☐	1.000		119765		P	0.7
10	☐	1.000		119381		P	0.4

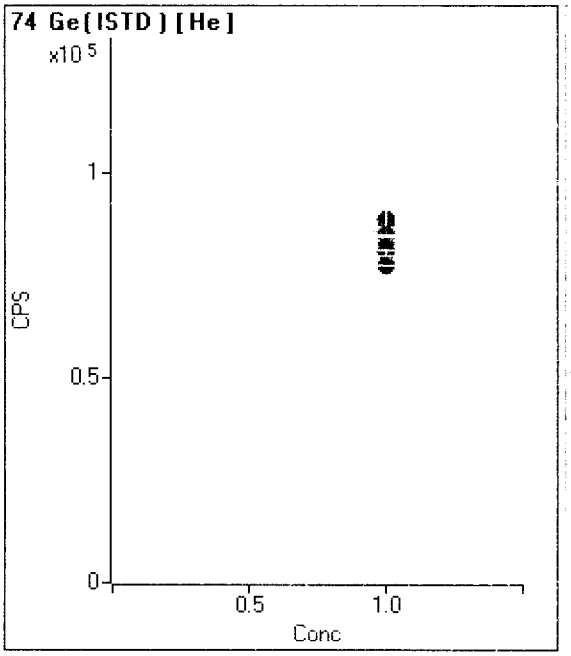


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1670086		A	0.9
2	☐	1.000		1690921		A	3.5
3	☐	1.000		1654015		A	1.8
4	☐	1.000		1666199		A	0.9
5	☐	1.000		1678640		A	2.4
6	☐	1.000		1667883		A	2.9
7	☐	1.000		1655456		A	1.8
8	☐	1.000		1610369		A	1.9
9	☐	1.000		1611762		A	0.6
10	☐	1.000		1594970		A	4.2

Calibration for 016_ICV.d

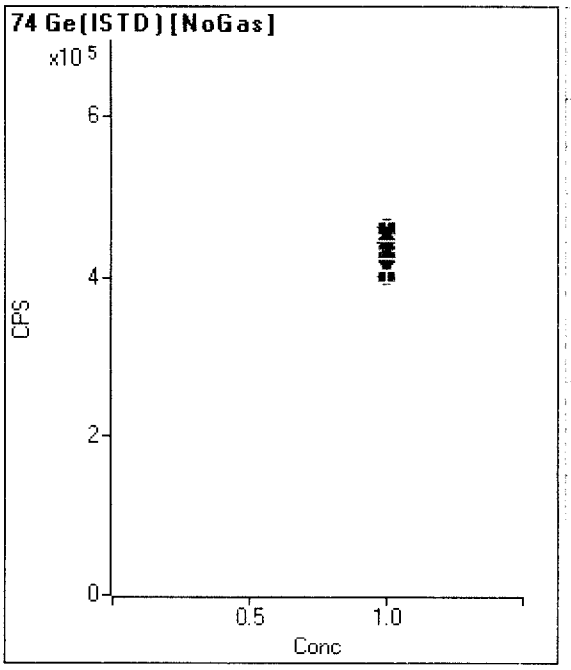


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		1.000		421501		P	0.5
2		1.000		416897		P	0.5
3		1.000		404016		P	4.3
4		1.000		417744		P	0.3
5		1.000		419420		P	0.4
6		1.000		418894		P	0.4
7		1.000		412574		P	0.2
8		1.000		399748		P	2.0
9		1.000		381789		P	1.4
10		1.000		356494		P	0.7

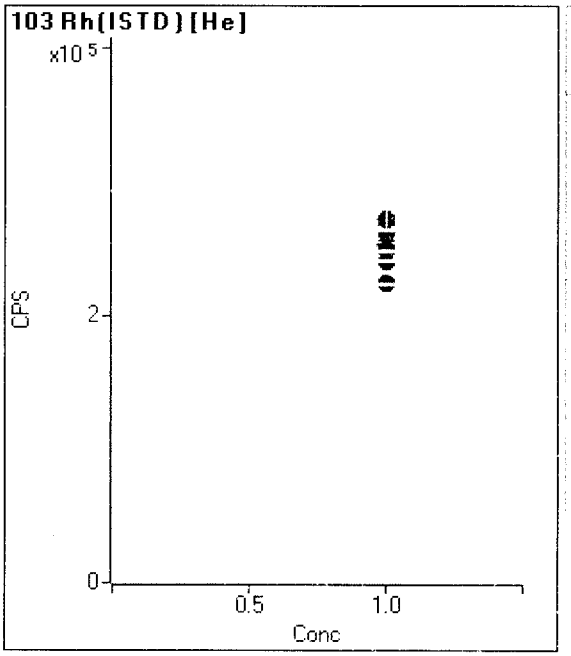


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		1.000		86196		P	0.3
2		1.000		84870		P	0.6
3		1.000		85679		P	0.5
4		1.000		85899		P	0.4
5		1.000		86644		P	0.5
6		1.000		88409		P	5.3
7		1.000		84608		P	0.2
8		1.000		81908		P	0.3
9		1.000		80380		P	1.2
10		1.000		77276		P	0.3

Calibration for 016_ICV.d

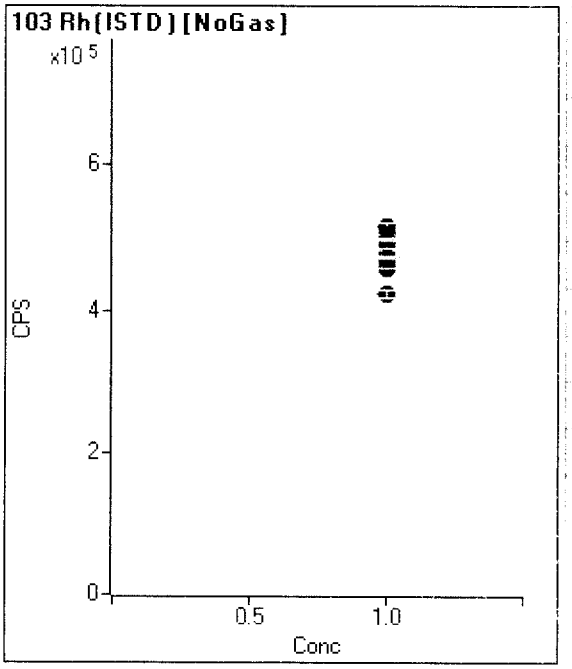


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		450235		P	0.6
2	☐	1.000		461973		P	3.1
3	☐	1.000		450309		P	0.2
4	☐	1.000		451677		P	0.6
5	☐	1.000		452782		P	0.2
6	☐	1.000		451683		P	0.8
7	☐	1.000		443159		P	0.6
8	☐	1.000		432868		P	0.3
9	☐	1.000		422727		P	0.0
10	☐	1.000		402534		P	3.6

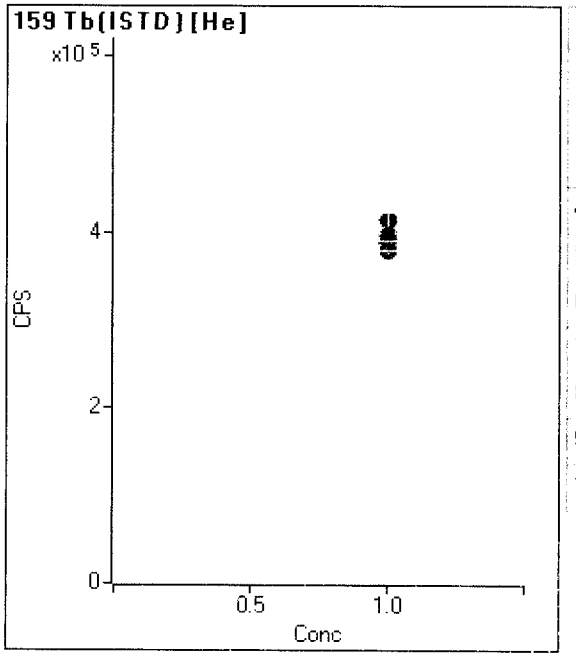


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		265590		P	0.3
2	☐	1.000		261717		P	0.5
3	☐	1.000		262919		P	0.3
4	☐	1.000		262608		P	0.5
5	☐	1.000		264363		P	0.9
6	☐	1.000		271076		P	5.3
7	☐	1.000		252794		P	1.6
8	☐	1.000		248059		P	0.7
9	☐	1.000		240290		P	0.9
10	☐	1.000		224060		P	0.6

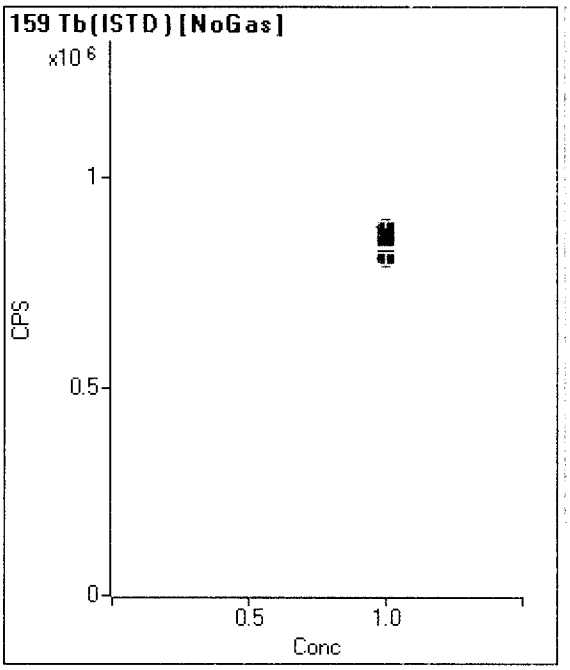
Calibration for 016_ICV.d



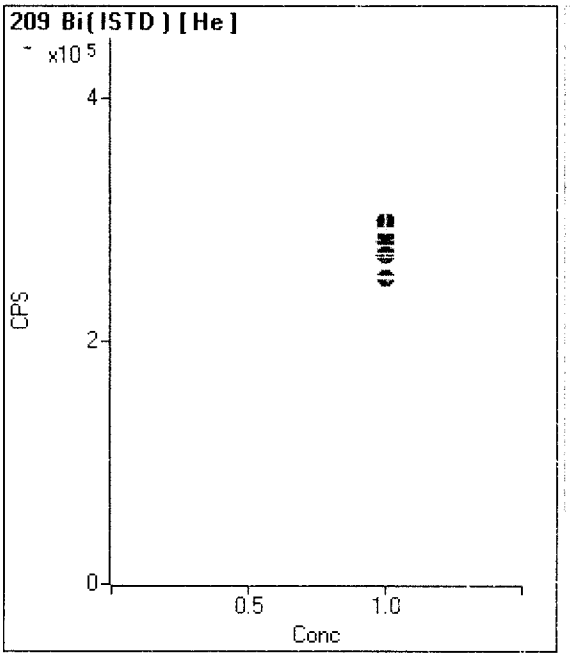
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		498499		P	0.3
2	☐	1.000		515342		P	2.9
3	☐	1.000		502433		P	0.4
4	☐	1.000		498853		P	0.3
5	☐	1.000		505742		P	0.3
6	☐	1.000		497956		P	0.3
7	☐	1.000		484379		P	0.5
8	☐	1.000		473530		P	0.5
9	☐	1.000		458454		P	0.3
10	☐	1.000		424401		P	2.6



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		406398		P	0.2
2	☐	1.000		401757		P	0.8
3	☐	1.000		405610		P	0.7
4	☐	1.000		402474		P	0.3
5	☐	1.000		406475		P	0.8
6	☐	1.000		413632		P	5.0
7	☐	1.000		397516		P	1.0
8	☐	1.000		392431		P	0.5
9	☐	1.000		388383		P	0.9
10	☐	1.000		379110		P	0.5

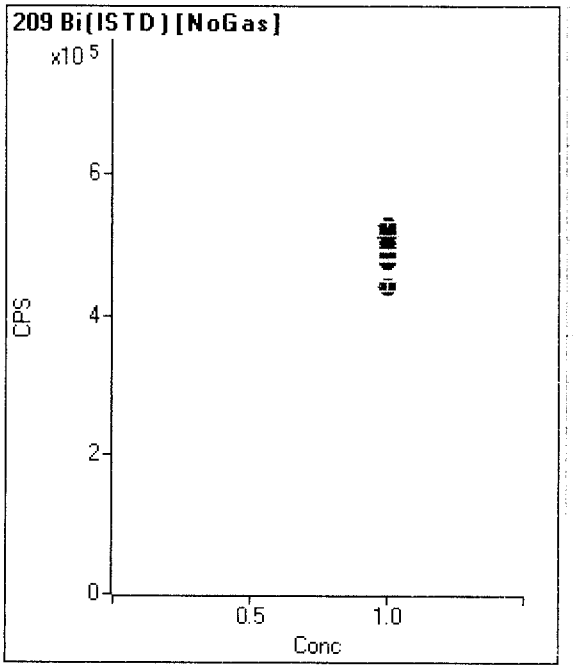


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		853315		P	0.6
2	☐	1.000		882952		P	3.2
3	☐	1.000		860959		P	0.4
4	☐	1.000		854591		P	0.1
5	☐	1.000		857900		P	0.2
6	☐	1.000		854804		P	0.7
7	☐	1.000		851088		P	0.3
8	☐	1.000		840392		P	0.4
9	☐	1.000		836021		P	0.3
10	☐	1.000		811233		P	3.5



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		291291		P	0.7
2	☐	1.000		291005		P	0.7
3	☐	1.000		291414		P	0.7
4	☐	1.000		290441		P	0.1
5	☐	1.000		291627		P	0.7
6	☐	1.000		299670		P	4.1
7	☐	1.000		282613		P	1.2
8	☐	1.000		278587		P	0.6
9	☐	1.000		271398		P	1.2
10	☐	1.000		253022		P	0.6

Calibration for 016_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		509113		P	0.4
2	☐	1.000		527560		P	2.9
3	☐	1.000		512643		P	0.4
4	☐	1.000		509501		P	0.6
5	☐	1.000		515363		P	0.3
6	☐	1.000		511823		P	0.6
7	☐	1.000		500254		P	0.5
8	☐	1.000		492975		P	0.9
9	☐	1.000		478818		P	0.6
10	☐	1.000		442867		P	3.5

Initial Calibration Verification (ICV) Report ICPMS5

Sample Name	9E21039-ICV1
File Name	016_ICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b
Acq Time	5/21/2019 16:24:06
Sample Type	ICV
Total Dilution	1.0000
Comment	A19E109 JPB 05/21
ISTD Ref FileName	009CALB.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	3961.813	ppb	Analog	8352867	7.524	0.2001	
Ca	44	45	1	H2	3956.215	ppb	Pulse	421078	0.379	0.2001	
Fe	56	74	1	H2	4020.806	ppb	Analog	25009579	59.637	0.3000	
Fe	57	74	1	H2	3896.386	ppb	Pulse	596485	1.422	0.3000	
Se	78	74	1	H2	38.881	ppb	Pulse	6966	0.017	0.9999	
Mg	24	45	2	He	3971.488	ppb	Pulse	806404	6.067	0.0999	
Al	27	45	2	He	3921.686	ppb	Pulse	411561	3.097	0.0999	
K	39	45	2	He	4141.499	ppb	Pulse	810779	6.100	0.0999	
V	51	74	2	He	99.933	ppb	Pulse	145200	1.653	0.3000	
Cr	52	74	2	He	100.962	ppb	Pulse	172796	1.967	0.3000	
Mn	55	74	2	He	99.273	ppb	Pulse	115825	1.318	0.3000	
Ni	60	74	2	He	104.271	ppb	Pulse	67596	0.769	0.3000	
Cu	65	74	2	He	105.139	ppb	Pulse	86950	0.990	0.3000	
Zn	66	74	2	He	104.528	ppb	Pulse	26668	0.304	0.3000	
As	75	74	2	He	98.700	ppb	Pulse	16668	0.190	0.9999	
Mo	95	103	2	He	40.377	ppb	Pulse	33976	0.133	0.3000	
Ag	107	103	2	He	39.789	ppb	Pulse	112398	0.439	0.3000	
Sb	121	103	2	He	42.755	ppb	Pulse	41458	0.162	0.3000	
Ba	138	159	2	He	106.610	ppb	Pulse	234734	0.592	0.3000	
Tl	205	159	2	He	38.451	ppb	Pulse	230624	0.582	0.3000	
Be	9	6	3	NoGas	39.265	ppb	Pulse	62560	0.119	0.3000	
Ti	47	45	3	NoGas	96.200	ppb	Pulse	56651	0.035	0.2001	
Co	59	74	3	NoGas	102.280	ppb	Pulse	806688	1.838	0.2001	
Cu	65	74	3	NoGas	104.413	ppb	Pulse	183536	0.418	0.2001	
Cd	111	103	3	NoGas	95.728	ppb	Pulse	103841	0.216	0.3000	
W	182	159	3	NoGas	0.029	ppb	Pulse	176	0.000	0.3000	
Hg	201	159	3	NoGas	778.504	ppt	Pulse	406	0.000	2.0001	
Pb	208	159	3	NoGas	95.411	ppb	Pulse	1209753	1.455	0.2001	

QC ISTD Table

Name	Mass	Det.	Tune Mode	CPS RSD	ISTD Ref CPS	CPS	ISTD Recovery %	QC flag
Sc	45	Pulse	H2	0.7	1082352.87666667	1110141	102.6	
Ge	74	Pulse	H2	0.7	421500.543333333	419376	99.5	
Sc	45	Pulse	He	1.9	129889.27	132939	102.3	
Ge	74	Pulse	He	1.9	86195.52	87896	102.0	
Rh	103	Pulse	He	1.6	265590.413333333	256131	96.4	
Tb	159	Pulse	He	1.7	406398.456666667	396381	97.5	
Bi	209	Pulse	He	1.2	291291.056666667	273823	94.0	
Li	6	Pulse	NoGas	0.7	523074.786666667	525441	100.5	

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	2.6	1670086.30666667	1632486	97.7	
Ge	74	Pulse	NoGas	0.2	450235.19	438966	97.5	
Rh	103	Pulse	NoGas	0.4	498498.73	481439	96.6	
Tb	159	Pulse	NoGas	0.4	853315.386666667	831655	97.5	
Bi	209	Pulse	NoGas	0.2	509112.503333333	485215	95.3	

Initial Calibration Blank (ICB) Report ICPMS5

Sample Name	9E21039-ICB1
File Name	017_ICB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b
Acq Time	5/21/2019 16:28:19
Sample Type	ICB
Total Dilution	1.0000
Comment	Cal Blk 3%HNO3 0.4%HCl
ISTD Ref FileName	009CALB.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	0.885	ppb	Pulse	21374	0.020	0.2001	
Ca	44	45	1	H2	0.313	ppb	Pulse	1095	0.001	0.2001	
Fe	56	74	1	H2	0.884	ppb	Pulse	16207	0.039	0.3000	
Fe	57	74	1	H2	1.017	ppb	Pulse	870	0.002	0.3000	
Se	78	74	1	H2	0.090	ppb	Pulse	18	0.000	0.9999	
Mg	24	45	2	He	0.298	ppb	Pulse	294	0.002	0.0999	
Al	27	45	2	He	-0.296	ppb	Pulse	87	0.001	0.0999	
K	39	45	2	He	1.460	ppb	Pulse	16007	0.123	0.0999	
V	51	74	2	He	-0.035	ppb	Pulse	574	0.007	0.3000	
Cr	52	74	2	He	0.006	ppb	Pulse	152	0.002	0.3000	
Mn	55	74	2	He	0.013	ppb	Pulse	54	0.001	0.3000	
Ni	60	74	2	He	-0.082	ppb	Pulse	296	0.003	0.3000	
Cu	65	74	2	He	0.003	ppb	Pulse	306	0.003	0.3000	
Zn	66	74	2	He	0.080	ppb	Pulse	158	0.002	0.3000	
As	75	74	2	He	0.007	ppb	Pulse	14	0.000	0.9999	
Mo	95	103	2	He	0.038	ppb	Pulse	40	0.000	0.3000	
Ag	107	103	2	He	0.013	ppb	Pulse	46	0.000	0.3000	
Sb	121	103	2	He	0.029	ppb	Pulse	31	0.000	0.3000	
Ba	138	159	2	He	0.022	ppb	Pulse	142	0.000	0.3000	
Tl	205	159	2	He	0.009	ppb	Pulse	151	0.000	0.3000	
Be	9	6	3	NoGas	0.000	ppb	Pulse	13	0.000	0.3000	
Ti	47	45	3	NoGas	0.005	ppb	Pulse	53	0.000	0.2001	
Co	59	74	3	NoGas	0.004	ppb	Pulse	373	0.001	0.2001	
Cu	65	74	3	NoGas	-0.028	ppb	Pulse	656	0.001	0.2001	
Cd	111	103	3	NoGas	0.021	ppb	Pulse	28	0.000	0.3000	
W	182	159	3	NoGas	0.002	ppb	Pulse	70	0.000	0.3000	
Hg	201	159	3	NoGas	6.266	ppt	Pulse	12	0.000	2.0001	
Pb	208	159	3	NoGas	0.022	ppb	Pulse	973	0.001	0.2001	

QC ISTD Table

Name	Mass	Det.	Tune Mode	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	Pulse	H2	0.4	1065806	1082352.87666667	98.5	
Ge	74	Pulse	H2	0.4	410790	421500.543333333	97.5	
Sc	45	Pulse	He	1.3	130260	129889.27	100.3	
Ge	74	Pulse	He	0.5	87419	86195.52	101.4	
Rh	103	Pulse	He	1.4	266204	265590.413333333	100.2	
Tb	159	Pulse	He	1.5	405795	406398.456666667	99.9	
Bi	209	Pulse	He	1.5	287967	291291.056666667	98.9	

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	0.7	527409	523074.786666667	100.8	
Sc	45	Analog	NoGas	1.1	1672846	1670086.30666667	100.2	
Ge	74	Pulse	NoGas	0.9	450828	450235.19	100.1	
Rh	103	Pulse	NoGas	0.2	499435	498498.73	100.2	
Tb	159	Pulse	NoGas	0.8	852792	853315.386666667	99.9	
Bi	209	Pulse	NoGas	0.4	503547	509112.503333333	98.9	

CRL Verification ICPMS5

Sample Name	9E21039-CRL1	1102
File Name	018CRL.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 16:32:34	
Sample Type	CRL1	
Total Dilution	1.0000	
Comment	A19D348 JPB 05/21	
ISTD Ref FileName	009CALB.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	7.028	ppb	5.1	34112	78.09	70	130	
Ca	44	45	H2	7.859	ppb	30.6	1883	87.32	70	130	
Fe	56	74	H2	8.412	ppb	2.2	62738	93.47	70	130	
Fe	57	74	H2	8.799	ppb	7.2	2058	97.77	70	130	
Se	78	74	H2	0.231	ppb	8.3	43	128.33	70	130	
Mg	24	45	He	8.856	ppb	12.0	1986	98.4	70	130	
Al	27	45	He	7.737	ppb	7.6	908	85.97	70	130	
K	39	45	He	5.191	ppb	56.2	16625	57.68	70	130	<>CRL1 NR<MRL<R-11
V	51	74	He	0.108	ppb	39.5	777	60	70	130	<>CRL1 NR<MRL<R-11
Cr	52	74	He	0.200	ppb	8.6	480	111.11	70	130	
Mn	55	74	He	0.148	ppb	10.5	210	82.22	70	130	
Ni	60	74	He	-0.006	ppb	N/A	342	-3.33	70	130	<>CRL1 NR<MRL<R-11
Cu	65	74	He	0.234	ppb	35.0	492	130	70	130	
Zn	66	74	He	0.021	ppb	356.7	142	11.67	70	130	<>CRL1 NR<MRL<R-11
As	75	74	He	0.209	ppb	25.7	47	116.11	70	130	
Mo	95	103	He	0.162	ppb	17.2	148	90	70	130	
Ag	107	103	He	0.180	ppb	15.3	532	100	70	130	
Sb	121	103	He	0.156	ppb	28.5	159	86.67	70	130	
Ba	138	159	He	0.189	ppb	9.7	517	105	70	130	
Tl	205	159	He	0.184	ppb	4.2	1222	102.22	70	130	
Be	9	6	NoGas	0.201	ppb	13.8	329	111.67	70	130	
Ti	47	45	NoGas	0.196	ppb	15.4	168	108.89	70	130	
Co	59	74	NoGas	0.174	ppb	6.2	1736	96.67	70	130	
Cu	65	74	NoGas	0.131	ppb	17.8	935	72.78	70	130	
Cd	111	103	NoGas	0.177	ppb	10.7	202	98.33	70	130	
Hg	201	159	NoGas	5.841	ppt	38.9	12	81.12	70	130	
Pb	208	159	NoGas	0.188	ppb	2.6	3092	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	Pulse	0.4	1076362	1082352.87666667	99.4	
Ge	74	H2	Pulse	0.4	415312	421500.543333333	98.5	
Sc	45	He	Pulse	0.7	129540	129889.27	99.7	
Ge	74	He	Pulse	0.3	86961	86195.52	100.9	
Rh	103	He	Pulse	0.6	265307	265590.413333333	99.9	

JB 05/22/19

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Tb	159	He	Pulse	1.0	404921	406398.456666667	99.6	
Bi	209	He	Pulse	1.0	289097	291291.056666667	99.2	
Li	6	NoGas	Pulse	1.5	519613	523074.786666667	99.3	
Sc	45	NoGas	Analog	3.4	1668716	1670086.30666667	99.9	
Ge	74	NoGas	Pulse	1.4	447413	450235.19	99.4	
Rh	103	NoGas	Pulse	0.9	494021	498498.73	99.1	
Tb	159	NoGas	Pulse	0.8	844237	853315.386666667	98.9	
Bi	209	NoGas	Pulse	0.5	496718	509112.503333333	97.6	

CRL Verification ICPMS5

Sample Name	9E21039-CRL2	1103
File Name	019_CRL.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 16:36:48	
Sample Type	CRL2	
Total Dilution	1.0000	
Comment	A19D349 JPB 05/21	
ISTD Ref FileName	009CALB.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	43.123	ppb	1.7	109177	95.83	70	130	
Ca	44	45	H2	43.609	ppb	3.4	5637	96.91	70	130	
Fe	57	74	H2	43.422	ppb	6.7	7387	96.49	70	130	
Se	78	74	H2	0.942	ppb	2.1	171	104.67	70	130	
Mg	24	45	He	44.389	ppb	2.0	9139	98.64	70	130	
Al	27	45	He	42.944	ppb	11.0	4569	95.43	70	130	
K	39	45	He	44.185	ppb	8.3	24245	98.19	70	130	
V	51	74	He	0.878	ppb	4.0	1888	97.56	70	130	
Cr	52	74	He	0.965	ppb	4.5	1783	107.22	70	130	
Mn	55	74	He	0.948	ppb	10.4	1139	105.33	70	130	
Ni	60	74	He	0.811	ppb	15.0	868	90.11	70	130	
Cu	65	74	He	1.068	ppb	5.6	1178	118.67	70	130	
Zn	66	74	He	0.768	ppb	32.6	331	85.33	70	130	
As	75	74	He	0.981	ppb	7.9	177	109	70	130	
Mo	95	103	He	0.887	ppb	9.9	782	98.56	70	130	
Ag	107	103	He	0.890	ppb	4.3	2618	98.89	70	130	
Sb	121	103	He	0.838	ppb	4.0	847	93.11	70	130	
Ba	138	159	He	1.009	ppb	3.6	2378	112.11	70	130	
Tl	205	159	He	0.888	ppb	5.3	5577	98.67	70	130	
Be	9	6	NoGas	0.892	ppb	5.9	1453	99.11	70	130	
Ti	47	45	NoGas	0.950	ppb	16.6	636	105.56	70	130	
Co	59	74	NoGas	0.921	ppb	2.4	7938	102.33	70	130	
Cu	65	74	NoGas	0.999	ppb	12.7	2547	111	70	130	
Cd	111	103	NoGas	0.897	ppb	4.6	1023	99.67	70	130	
Hg	201	159	NoGas	37.451	ppt	18.5	29	104.03	70	130	
Pb	208	159	NoGas	0.958	ppb	1.2	13232	106.44	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.8	1090974	1082352.87666667	100.8	
Ge	74	H2	Pulse	0.5	420262	421500.543333333	99.7	
Sc	45	He	Pulse	0.3	131317	129889.27	101.1	
Ge	74	He	Pulse	0.2	87367	86195.52	101.4	
Rh	103	He	Pulse	1.1	266124	265590.413333333	100.2	
Tb	159	He	Pulse	0.7	407665	406398.456666667	100.3	

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Bi	209	He	Pulse	1.1	290530	291291.056666667	99.7	
Li	6	NoGas	Pulse	0.1	532434	523074.786666667	101.8	
Sc	45	NoGas	Analog	2.2	1712447	1670086.30666667	102.5	
Ge	74	NoGas	Pulse	0.6	459091	450235.19	102.0	
Rh	103	NoGas	Pulse	0.0	503497	498498.73	101.0	
Tb	159	NoGas	Pulse	0.6	858877	853315.386666667	100.7	
Bi	209	NoGas	Pulse	0.1	506613	509112.503333333	99.5	

CRL Verification ICPMS5

Sample Name	9E21039-CRL3
File Name	020CRL_.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b
Acq Time	5/21/2019 16:41:02
Sample Type	CRL3
Total Dilution	1.0000
Comment	A19D350 JPB 05/21
ISTD Ref FileName	009CALB.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	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Na	23	45	H2	87.056	ppb	0.4	201220	96.73	70	130	
Ca	44	45	H2	87.194	ppb	4.7	10246	96.88	70	130	
Fe	57	74	H2	86.997	ppb	2.2	14170	96.66	70	130	
Se	78	74	H2	1.754	ppb	15.6	320	97.44	70	130	
Mg	24	45	He	88.790	ppb	3.0	18038	98.66	70	130	
Al	27	45	He	86.542	ppb	5.8	9087	96.16	70	130	
K	39	45	He	93.705	ppb	6.0	33620	104.12	70	130	
V	51	74	He	1.755	ppb	5.5	3168	97.5	70	130	
Cr	52	74	He	1.821	ppb	4.7	3258	101.17	70	130	
Mn	55	74	He	1.840	ppb	6.9	2187	102.22	70	130	
Ni	60	74	He	1.755	ppb	0.8	1482	97.5	70	130	
Cu	65	74	He	1.907	ppb	4.8	1877	105.94	70	130	
Zn	66	74	He	2.012	ppb	9.9	649	111.78	70	130	
As	75	74	He	1.758	ppb	11.9	309	97.67	70	130	
Mo	95	103	He	1.841	ppb	2.6	1613	102.28	70	130	
Ag	107	103	He	1.855	ppb	1.7	5443	103.06	70	130	
Sb	121	103	He	1.780	ppb	2.3	1793	98.89	70	130	
Ba	138	159	He	1.903	ppb	1.5	4383	105.72	70	130	
Tl	205	159	He	1.819	ppb	1.4	11264	101.06	70	130	
Be	9	6	NoGas	1.808	ppb	1.9	2935	100.44	70	130	
Ti	47	45	NoGas	1.677	ppb	8.8	1093	93.17	70	130	
Co	59	74	NoGas	1.787	ppb	1.4	14999	99.28	70	130	
Cu	65	74	NoGas	1.910	ppb	10.1	4194	106.11	70	130	
Cd	111	103	NoGas	1.750	ppb	4.7	1979	97.22	70	130	
Hg	201	159	NoGas	70.250	ppt	23.7	46	97.57	70	130	
Pb	208	159	NoGas	1.868	ppb	3.4	25090	103.78	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.1	1097686	1082352.87666667	101.4	
Ge	74	H2	Pulse	0.3	423459	421500.543333333	100.5	
Sc	45	He	Pulse	0.6	131281	129889.27	101.1	
Ge	74	He	Pulse	0.5	87888	86195.52	102.0	
Rh	103	He	Pulse	0.9	265655	265590.413333333	100.0	
Tb	159	He	Pulse	0.9	405877	406398.456666667	99.9	

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Bi	209	He	Pulse	1.9	291653	291291.056666667	100.1	
Li	6	NoGas	Pulse	0.2	532861	523074.786666667	101.9	
Sc	45	NoGas	Analog	2.7	1724885	1670086.30666667	103.3	
Ge	74	NoGas	Pulse	0.4	456527	450235.19	101.4	
Rh	103	NoGas	Pulse	0.4	500579	498498.73	100.4	
Tb	159	NoGas	Pulse	0.7	857120	853315.386666667	100.4	
Bi	209	NoGas	Pulse	0.3	504221	509112.503333333	99.0	

Quantitation Report ICPMS5

File Name	021ICSA.d		
File Path	C:\Agilent\ICPMH\1\DATA\9E21039.b		
Acq Time	5/21/2019 16:48:45	Sample Type	
Sample Name	**9E21039-IFA1**		
Comment	**A19E234**	ICSA Last Calib	05/21/2019 16:21:55
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	0.002	0.002	ppb	227.1		
Na	23	45	H2	245142.074	245142.074	ppb	0.4		
Mg	24	45	He	97825.806	97825.806	ppb	0.4	100000	
Al	27	45	He	99323.978	99323.978	ppb	0.8	100000	
K	39	45	He	100590.913	100590.913	ppb	1.7	100000	
Ca	44	45	H2	300753.794	300753.794	ppb	0.1		
Ti	47	45	NoGas	2039.142	2039.142	ppb	0.9		
V	51	74	He	0.19	0.190	ppb	22.4	2	
Cr	52	74	He	1.859	1.859	ppb	3.5	2	
Mn	55	74	He	13.335	13.335	ppb	1.3	2	> CRI
Fe	56	74	H2	248725.5	248725.500	ppb	0.2		
Fe	57	74	H2	250295.338	250295.338	ppb	0.4		
Co	59	74	NoGas	1.453	1.453	ppb	3.3		
Ni	60	74	He	0.71	0.710	ppb	6.5	2	
Cu	65	74	He	0.641	0.641	ppb	16.4	2	
Cu	65	74	NoGas	2.322	2.322	ppb	7.3		
Zn	66	74	He	2.502	2.502	ppb	18.8	2	> CRI
As	75	74	He	0.273	0.273	ppb	10.0	0.9	
Se	78	74	H2	0.185	0.185	ppb	8.9	0.9	
Mo	95	103	He	2348.448	2348.448	ppb	0.2	2000	
Ag	107	103	He	0.305	0.305	ppb	9.8		
Cd	111	103	NoGas	0.497	0.497	ppb	57.9		
Sb	121	103	He	0.133	0.133	ppb	24.3	0.9	
Ba	138	159	He	1.736	1.736	ppb	3.5	2	
W	182	159	NoGas	65.229	65.229	ppb	0.4		
Hg	201	159	NoGas	79.011	79.011	ppt	33.0		
Tl	205	159	He	0	0.000	ppb	N/A	0.9	
Pb	208	159	NoGas	0.768	0.768	ppb	2.1		

Catch for low Mn Samples in High Matrix KO?

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD Recovery %	QC Flag
Li	6	NoGas	552149	0.4	523074.786666667	Pulse	105.6	
Sc	45	H2	913751	0.6	1082352.87666667	Pulse	84.4	
Sc	45	He	121034	0.4	129889.27	Pulse	93.2	
Sc	45	NoGas	1667806	2.9	1670086.30666667	Analog	99.9	
Ge	74	H2	326485	0.5	421500.543333333	Pulse	77.5	
Ge	74	He	75425	0.6	86195.52	Pulse	87.5	
Ge	74	NoGas	414029	0.5	450235.19	Pulse	92.0	
Rh	103	He	206380	0.7	265590.413333333	Pulse	77.7	
Rh	103	NoGas	406921	0.0	498498.73	Pulse	81.6	
Tb	159	He	362909	0.9	406398.456666667	Pulse	89.3	
Tb	159	NoGas	809929	0.4	853315.386666667	Pulse	94.9	
Bi	209	He	223692	1.8	291291.056666667	Pulse	76.8	
Bi	209	NoGas	411015	0.3	509112.503333333	Pulse	80.7	

Quantitation Report ICPMS5

File Name	022ICSB.d		
File Path	C:\Agilent\ICPMH\1\DATA\9E21039.b		
Acq Time	5/21/2019 16:52:54	Sample Type	
Sample Name	**9E21039-IFB1**		
Comment	**A19E235**	ICSB Last Calib	05/21/2019 16:21:55
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	0.012	0.012	ppb	40.1		
Na	23	45	H2	254909.288	254909.288	ppb	0.6		
Mg	24	45	He	100793.805	100793.805	ppb	0.5	100000	
Al	27	45	He	102814.025	102814.025	ppb	1.2	100000	
K	39	45	He	98510.474	98510.474	ppb	1.3	100000	
Ca	44	45	H2	297259.642	297259.642	ppb	0.5		
Ti	47	45	NoGas	2027.496	2027.496	ppb	2.8		
V	51	74	He	220.916	220.916	ppb	0.5	200	
Cr	52	74	He	212.076	212.076	ppb	0.7	200	
Mn	55	74	He	217.6	217.600	ppb	0.2	200	
Fe	56	74	H2	256146.191	256146.191	ppb	0.3		
Fe	57	74	H2	256434.618	256434.618	ppb	0.3		
Co	59	74	NoGas	208.318	208.318	ppb	0.6		
Ni	60	74	He	196.727	196.727	ppb	0.9	200	
Cu	65	74	He	193.264	193.264	ppb	0.5	200	
Cu	65	74	NoGas	187.951	187.951	ppb	0.6		
Zn	66	74	He	96.279	96.279	ppb	0.8	100	
As	75	74	He	101.537	101.537	ppb	1.2	100	
Se	78	74	H2	97.371	97.371	ppb	1.1	100	
Mo	95	103	He	2310.447	2310.447	ppb	1.6	2000	
Ag	107	103	He	47.523	47.523	ppb	0.4	50	
Cd	111	103	NoGas	97.503	97.503	ppb	1.8		
Sb	121	103	He	0.115	0.115	ppb	27.7	0.9	
Ba	138	159	He	2.163	2.163	ppb	6.1	2	> +/- 10%
W	182	159	NoGas	65.535	65.535	ppb	0.4		
Hg	201	159	NoGas	1934.584	1934.584	ppt	2.8		
Tl	205	159	He	0	0.000	ppb	757.0	0.9	
Pb	208	159	NoGas	0.733	0.733	ppb	2.3		

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD Recovery %	QC Flag
Li	6	NoGas	566707	0.4	523074.786666667	Pulse	108.3	
Sc	45	H2	960904	0.5	1082352.87666667	Pulse	88.8	
Sc	45	He	125540	0.9	129889.27	Pulse	96.7	
Sc	45	NoGas	1687357	0.7	1670086.30666667	Analog	101.0	
Ge	74	H2	342462	0.3	421500.543333333	Pulse	81.2	
Ge	74	He	76845	0.2	86195.52	Pulse	89.2	
Ge	74	NoGas	417197	0.8	450235.19	Pulse	92.7	
Rh	103	He	211120	0.5	265590.413333333	Pulse	79.5	
Rh	103	NoGas	408240	0.6	498498.73	Pulse	81.9	
Tb	159	He	367241	0.4	406398.456666667	Pulse	90.4	
Tb	159	NoGas	804463	0.5	853315.386666667	Pulse	94.3	
Bi	209	He	224557	1.0	291291.056666667	Pulse	77.1	
Bi	209	NoGas	406841	0.7	509112.503333333	Pulse	79.9	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	~~9E20033~~-CCV 9E21039-CCV1	**Total Dilution**	1.0000
File Name	034_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b JH 05/22/19	**ISTD Ref FileName**	009CALB.d
Acq Time	5/21/2019 18:04:13	**Comment**	A19E109 JPB 05/21

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	3825.360	ppb	0.5	7629479	4000	90	110	95.63	
Ca	44	45	H2	3933.231	ppb	0.2	395986	4000	90	110	98.33	
Fe	56	74	H2	3904.163	ppb	0.1	23321299	4000	90	110	97.6	
Fe	57	74	H2	3798.513	ppb	0.5	558433	4000	90	110	94.96	
Se	78	74	H2	38.861	ppb	2.1	6688	40	90	110	97.15	
Mg	24	45	He	3913.297	ppb	1.9	753314	4000	90	110	97.83	
Al	27	45	He	3788.846	ppb	1.9	376964	4000	90	110	94.72	
K	39	45	He	4027.111	ppb	2.2	747841	4000	90	110	100.68	
V	51	74	He	96.574	ppb	0.9	134812	100	90	110	96.57	
Cr	52	74	He	97.127	ppb	0.8	159687	100	90	110	97.13	
Mn	55	74	He	95.444	ppb	0.6	106967	100	90	110	95.44	
Ni	60	74	He	101.149	ppb	1.6	62997	100	90	110	101.15	
Cu	65	74	He	103.950	ppb	1.5	82569	100	90	110	103.95	
Zn	66	74	He	101.906	ppb	1.4	24978	100	90	110	101.91	
As	75	74	He	97.413	ppb	1.9	15802	100	90	110	97.41	
Mo	95	103	He	39.890	ppb	1.2	32941	40	90	110	99.72	
Ag	107	103	He	39.200	ppb	1.9	108655	40	90	110	98	
Sb	121	103	He	41.890	ppb	0.5	39860	40	90	110	104.72	
Ba	138	159	He	104.461	ppb	0.5	232932	100	90	110	104.46	
Tl	205	159	He	38.713	ppb	0.6	235149	40	90	110	96.78	
Be	9	6	NoGas	38.844	ppb	1.0	59147	40	90	110	97.11	
Ti	47	45	NoGas	95.950	ppb	1.1	57841	100	90	110	95.95	
Co	59	74	NoGas	99.569	ppb	0.4	786613	100	90	110	99.57	
Cu	65	74	NoGas	102.130	ppb	1.3	179832	100	90	110	102.13	
Cd	111	103	NoGas	95.779	ppb	0.2	101928	100	90	110	95.78	
Hg	201	159	NoGas	789.185	ppt	3.5	415	800	90	110	98.65	
Pb	208	159	NoGas	94.542	ppb	0.2	1209647	100	90	110	94.54	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.3	1050056	1082352.87666667	97.0	
Ge	74	H2	Pulse	0.3	402731	421500.543333333	95.5	
Sc	45	He	Pulse	1.2	126021	129889.27	97.0	
Ge	74	He	Pulse	0.6	84399	86195.52	97.9	
Rh	103	He	Pulse	0.1	251256	265590.413333333	94.6	
Tb	159	He	Pulse	0.7	401314	406398.456666667	98.7	
Bi	209	He	Pulse	0.8	284199	291291.056666667	97.6	
Li	6	NoGas	Pulse	0.7	502159	523074.786666667	96.0	
Sc	45	NoGas	Analog	1.8	1671061	1670086.30666667	100.1	
Ge	74	NoGas	Pulse	0.1	439688	450235.19	97.7	
Rh	103	NoGas	Pulse	0.5	472320	498498.73	94.7	
Tb	159	NoGas	Pulse	0.5	839220	853315.386666667	98.3	
Bi	209	NoGas	Pulse	0.2	485681	509112.503333333	95.4	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E21033-CCB 9E21039-CCB1
File Name	035_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b
Acq Time	5/21/2019 18:08:27
Sample Type	CCB
Total Dilution	1.0000
Comment	Cal Blk 3%HNO3 0.4%HCl
ISTD Ref FileName	009CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**ICPMS Analyst**

05/22/19

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Na	23	45	H2	3.419	ppb	9.2	26662	45	
Ca	44	45	H2	-0.787	ppb	N/A	988	45	
Fe	56	74	H2	0.761	ppb	3.3	15543	22.5	
Fe	57	74	H2	1.272	ppb	37.6	913	22.5	
Se	78	74	H2	0.055	ppb	31.5	12	0.45	
Mg	24	45	He	0.196	ppb	114.8	270	45	
Al	27	45	He	0.106	ppb	192.6	127	22.5	
K	39	45	He	1.534	ppb	78.5	15857	45	
V	51	74	He	-0.036	ppb	N/A	567	0.45	
Cr	52	74	He	-0.016	ppb	N/A	113	0.45	
Mn	55	74	He	0.016	ppb	69.0	58	0.45	
Ni	60	74	He	-0.036	ppb	N/A	321	0.45	
Cu	65	74	He	0.017	ppb	169.5	313	0.45	
Zn	66	74	He	0.167	ppb	93.8	178	1.8	
As	75	74	He	0.060	ppb	86.5	22	0.45	
Mo	95	103	He	0.020	ppb	52.1	23	0.45	
Ag	107	103	He	0.004	ppb	34.2	18	0.09	
Sb	121	103	He	0.038	ppb	40.4	40	0.45	
Ba	138	159	He	0.017	ppb	54.7	130	0.45	
Tl	205	159	He	0.002	ppb	184.7	111	0.09	
Be	9	6	NoGas	0.014	ppb	39.3	34	0.09	
Ti	47	45	NoGas	0.007	ppb	97.6	55	0.45	
Co	59	74	NoGas	0.006	ppb	156.0	390	0.09	
Cu	65	74	NoGas	-0.024	ppb	N/A	658	0.45	
Cd	111	103	NoGas	0.006	ppb	248.9	12	0.09	
Hg	201	159	NoGas	5.115	ppt	27.9	11	36	
Pb	208	159	NoGas	0.016	ppb	30.7	885	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Pulse	0.9	1072742	1082352.87666667	99.1	
Ge	74	H2	Pulse	0.6	413027	421500.543333333	98.0	
Sc	45	He	Pulse	0.2	128873	129889.27	99.2	
Ge	74	He	Pulse	0.9	86393	86195.52	100.2	
Rh	103	He	Pulse	0.3	259593	265590.413333333	97.7	

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	1.0	403166	406398.456666667	99.2	
Bi	209	He	Pulse	1.1	287465	291291.056666667	98.7	
Li	6	NoGas	Pulse	0.2	514629	523074.786666667	98.4	
Sc	45	NoGas	Analog	1.8	1694516	1670086.30666667	101.5	
Ge	74	NoGas	Pulse	0.7	448283	450235.19	99.6	
Rh	103	NoGas	Pulse	0.8	493032	498498.73	98.9	
Tb	159	NoGas	Pulse	0.2	847779	853315.386666667	99.4	
Bi	209	NoGas	Pulse	0.5	496932	509112.503333333	97.6	

Quantitation Report - ICPMS5

Sample Name:	**9051011-BLK2**	Total Dilution:	**10.0000**
File Name:	042SMPL.d	Vial:	3412
File Path:	C:\Agilent\ICPMH\1\DATA\9E21039.b	Sample Type:	Sample
Acq Time:	5/21/2019 19:25:12		
Comment:	**9051011 Solid AlCaKMgNa(Q-14)Na confirm Possible RR-3**	Last Calib:	05/21/2019 16:21:55

FullQuant Table:

Element	Mass	ISTD	Tune Mode	Raw Conc	Units	RSD(%)	CPS	LDR	QC Flag
Be	9	6	NoGas	0.002	ppb	299.1	17	100	
Na	23	45	H2	6.545	ppb	3.4	32722	50000	
Mg	24	45	He	2.541	ppb	42.6	717	50000	
Al	27	45	He	1.034	ppb	23.7	217	50000	
K	39	45	He	3.713	ppb	109.0	15944	50000	
Ca	44	45	H2	15.057	ppb	13.5	2591	50000	
Ti	47	45	NoGas	0.084	ppb	33.1	100	2500	
V	51	74	He	0.372	ppb	12.9	1116	500	
Cr	52	74	He	-0.005	ppb	N/A	129	1000	
Mn	55	74	He	0.031	ppb	107.3	72	2500	
Fe	56	74	H2	1.654	ppb	10.8	20539	50000	
Fe	57	74	H2	1.962	ppb	37.2	994	50000	
Co	59	74	NoGas	0.016	ppb	61.3	463	500	
Ni	60	74	He	-0.171	ppb	N/A	229	1000	
Cu	65	74	He	0.018	ppb	48.9	306	1000	
Cu	65	74	NoGas	-0.007	ppb	N/A	676	1000	
Zn	66	74	He	-0.027	ppb	N/A	126	2500	
As	75	74	He	0.043	ppb	49.4	19	500	
Se	78	74	H2	0.018	ppb	18.5	5	100	
Mo	95	103	He	0.012	ppb	97.9	17	100	
Ag	107	103	He	0.002	ppb	1.3	13	100	
Cd	111	103	NoGas	-0.007	ppb	N/A	-3	1000	
Sb	121	103	He	0.009	ppb	55.8	11	100	
Ba	138	159	He	0.029	ppb	35.0	152	2500	
W	182	159	NoGas	-0.006	ppb	N/A	37	40	
Hg	201	159	NoGas	5.314	ppt	46.4	11	4000	
Tl	205	159	He	-0.005	ppb	N/A	66	100	
Pb	208	159	NoGas	0.007	ppb	7.6	746	500	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD %	QC Flag
Li	6	NoGas	522325	0.7	523074.786666667	Pulse	99.9	
Sc	45	H2	1063201	0.1	1082352.87666667	Pulse	98.2	
Sc	45	He	126311	1.0	129889.27	Pulse	97.2	
Sc	45	NoGas	1660867	1.6	1670086.30666667	Analog	99.4	
Ge	74	H2	403793	0.3	421500.543333333	Pulse	95.8	
Ge	74	He	84016	0.5	86195.52	Pulse	97.5	
Ge	74	NoGas	440200	0.0	450235.19	Pulse	97.8	
Rh	103	He	254646	0.7	265590.413333333	Pulse	95.9	
Rh	103	NoGas	479477	0.4	498498.73	Pulse	96.2	
Tb	159	He	389818	1.0	406398.456666667	Pulse	95.9	
Tb	159	NoGas	827767	0.1	853315.386666667	Pulse	97.0	
Bi	209	He	275450	0.9	291291.056666667	Pulse	94.6	
Bi	209	NoGas	477787	0.4	509112.503333333	Pulse	93.8	

Quantitation Report - ICPMS5

Sample Name:	**9051011-BS2**	Total Dilution:	**10.0000**
File Name:	043SMPL.d	Vial:	3413
File Path:	C:\Agilent\ICPMH\1\DATA\9E21039.b	Sample Type:	Sample
Acq Time:	5/21/2019 19:29:26		
Comment:	**9051011 Solid AlCaKMgNa(Q-14)**	Last Calib:	05/21/2019 16:21:55

FullQuant Table:

Element	Mass	ISTD	Tune Mode	Raw Conc	Units	RSD(%)	CPS	LDR	QC Flag
Be	9	6	NoGas	23.438	ppb	1.4	36863	100	
Na	23	45	H2	2575.684	ppb	6.6	4919959	50000	
Mg	24	45	He	2407.407	ppb	1.3	461930	50000	
Al	27	45	He	2421.993	ppb	0.9	240192	50000	
K	39	45	He	2603.241	ppb	2.1	487131	50000	
Ca	44	45	H2	2554.882	ppb	6.1	246438	50000	
Ti	47	45	NoGas	50.069	ppb	2.3	29988	2500	
V	51	74	He	49.43	ppb	0.6	68520	500	
Cr	52	74	He	50.098	ppb	0.6	81509	1000	
Mn	55	74	He	50.065	ppb	0.6	55497	2500	
Fe	56	74	H2	2543.853	ppb	6.9	14438123	50000	
Fe	57	74	H2	2473.599	ppb	6.6	345699	50000	
Co	59	74	NoGas	49.629	ppb	0.8	392789	500	
Ni	60	74	He	52.551	ppb	1.0	32524	1000	
Cu	65	74	He	52.773	ppb	1.3	41592	1000	
Cu	65	74	NoGas	50.905	ppb	0.6	90107	1000	
Zn	66	74	He	53.129	ppb	0.3	12938	2500	
As	75	74	He	49.187	ppb	1.9	7896	500	
Se	78	74	H2	24.249	ppb	7.0	3965	100	
Mo	95	103	He	24.231	ppb	1.5	19949	100	
Ag	107	103	He	23.862	ppb	0.7	65925	100	
Cd	111	103	NoGas	49.096	ppb	1.2	52732	1000	
Sb	121	103	He	23.34	ppb	2.0	22134	100	
Ba	138	159	He	52.635	ppb	0.4	114848	2500	
W	182	159	NoGas	0.008	ppb	33.0	94	40	
Hg	201	159	NoGas	930.45	ppt	4.7	484	4000	
Tl	205	159	He	23.664	ppb	1.0	140621	100	
Pb	208	159	NoGas	48.463	ppb	0.8	615624	500	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD %	QC Flag
Li	6	NoGas	518568	0.6	523074.786666667	Pulse	99.1	
Sc	45	H2	1006729	5.2	1082352.87666667	Pulse	93.0	
Sc	45	He	125579	0.7	129889.27	Pulse	96.7	
Sc	45	NoGas	1659382	2.5	1670086.30666667	Analog	99.4	
Ge	74	H2	383484	5.4	421500.543333333	Pulse	91.0	
Ge	74	He	83452	0.2	86195.52	Pulse	96.8	
Ge	74	NoGas	440305	0.3	450235.19	Pulse	97.8	
Rh	103	He	250427	1.0	265590.413333333	Pulse	94.3	
Rh	103	NoGas	476675	0.3	498498.73	Pulse	95.6	
Tb	159	He	392530	1.0	406398.456666667	Pulse	96.6	
Tb	159	NoGas	832776	0.7	853315.386666667	Pulse	97.6	
Bi	209	He	273947	0.8	291291.056666667	Pulse	94.0	
Bi	209	NoGas	479326	0.1	509112.503333333	Pulse	94.1	

Quantitation Report - ICPMS5

Sample Name:	**A9E0508-05RE1**	Total Dilution:	**10.0000**
File Name:	044SMPL.d	Vial:	3414
File Path:	C:\Agilent\ICPMH\1\DATA\9E21039.b	Sample Type:	Sample
Acq Time:	5/21/2019 19:33:39		
Comment:	**9051011 Na rerun with reprepped Blank**	Last Calib:	05/21/2019 16:21:55

FullQuant Table:

Element	Mass	ISTD	Tune Mode	Raw Conc	Units	RSD(%)	CPS	LDR	QC Flag
Be	9	6	NoGas	0.195	ppb	12.1	318	100	
Na	23	45	H2	92.12	ppb	1.5	202940	50000	
Mg	24	45	He	74.799	ppb	5.2	14561	50000	
Al	27	45	He	1548.172	ppb	1.0	153460	50000	
K	39	45	He	12.812	ppb	47.6	17480	50000	
Ca	44	45	H2	502.182	ppb	1.0	51568	50000	
Ti	47	45	NoGas	22.245	ppb	1.4	13562	2500	
V	51	74	He	14.659	ppb	1.0	20834	500	
Cr	52	74	He	2.478	ppb	3.1	4179	1000	
Mn	55	74	He	335.438	ppb	0.3	373271	2500	
Fe	56	74	H2	27256.23	ppb	0.1	162516415	50000	
Fe	57	74	H2	27292.607	ppb	1.3	4002293	50000	
Co	59	74	NoGas	6.439	ppb	2.3	51810	500	
Ni	60	74	He	7.129	ppb	2.3	4721	1000	
Cu	65	74	He	11.086	ppb	2.0	9006	1000	
Cu	65	74	NoGas	10.33	ppb	1.3	19040	1000	
Zn	66	74	He	66.8	ppb	1.4	16306	2500	
As	75	74	He	1.514	ppb	8.8	256	500	
Se	78	74	H2	0.34	ppb	16.8	61	100	
Mo	95	103	He	0.737	ppb	17.7	621	100	
Ag	107	103	He	0.021	ppb	43.0	67	100	
Cd	111	103	NoGas	0.354	ppb	8.5	391	1000	
Sb	121	103	He	0.197	ppb	14.2	191	100	
Ba	138	159	He	19.804	ppb	0.9	44001	2500	
W	182	159	NoGas	0.063	ppb	19.1	316	40	
Hg	201	159	NoGas	35.494	ppt	25.1	27	4000	
Tl	205	159	He	0.03	ppb	12.1	277	100	
Pb	208	159	NoGas	25.512	ppb	0.3	328735	500	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD %	QC Flag
Li	6	NoGas	515480	0.4	523074.786666667	Pulse	98.5	
Sc	45	H2	1052039	0.4	1082352.87666667	Pulse	97.2	
Sc	45	He	125483	0.4	129889.27	Pulse	96.6	
Sc	45	NoGas	1685005	1.4	1670086.30666667	Analog	100.9	
Ge	74	H2	402152	0.2	421500.543333333	Pulse	95.4	
Ge	74	He	83823	0.3	86195.52	Pulse	97.2	
Ge	74	NoGas	445111	0.6	450235.19	Pulse	98.9	
Rh	103	He	253789	0.9	265590.413333333	Pulse	95.6	
Rh	103	NoGas	484378	0.0	498498.73	Pulse	97.2	
Tb	159	He	399179	0.6	406398.456666667	Pulse	98.2	
Tb	159	NoGas	843906	0.3	853315.386666667	Pulse	98.9	
Bi	209	He	291853	0.9	291291.056666667	Pulse	100.2	
Bi	209	NoGas	504419	0.2	509112.503333333	Pulse	99.1	

Quantitation Report - ICPMS5

Sample Name:	**9051011-DUP1** 2	Total Dilution:	**10.0000**
File Name:	045SMPL.d	Vial:	3415
File Path:	C:\Agilent\ICPMH\1\DATA\9E21039.b	Sample Type:	Sample
Acq Time:	5/21/2019 19:37:52		
Comment:	**9051011 Na rerun with reprepped Blank to match QC source**	Last Calib:	05/21/2019 16:21:55

FullQuant Table:

Element	Mass	ISTD	Tune Mode	Raw Conc	Units	RSD(%)	CPS	LDR	QC Flag
Be	9	6	NoGas	0.215	ppb	10.8	357	100	
Na	23	45	H2	96.039	ppb	0.5	212817	50000	
Mg	24	45	He	106.444	ppb	2.1	21034	50000	
Al	27	45	He	1763.802	ppb	1.3	178295	50000	
K	39	45	He	21.343	ppb	10.4	19408	50000	
Ca	44	45	H2	499.974	ppb	2.3	51847	50000	
Ti	47	45	NoGas	36.241	ppb	1.8	22861	2500	
V	51	74	He	11.929	ppb	0.8	17418	500	
Cr	52	74	He	2.396	ppb	0.3	4129	1000	
Mn	55	74	He	371.389	ppb	0.6	421843	2500	
Fe	56	74	H2	32742.742	ppb	0.6	196732746	50000	
Fe	57	74	H2	32806.209	ppb	0.3	4847570	50000	
Co	59	74	NoGas	7.729	ppb	0.7	64121	500	
Ni	60	74	He	9.278	ppb	0.8	6168	1000	
Cu	65	74	He	8.459	ppb	4.3	7084	1000	
Cu	65	74	NoGas	8.292	ppb	3.1	15920	1000	
Zn	66	74	He	78.651	ppb	1.7	19572	2500	
As	75	74	He	1.585	ppb	5.6	273	500	
Se	78	74	H2	0.351	ppb	12.4	63	100	
Mo	95	103	He	0.535	ppb	4.4	461	100	
Ag	107	103	He	0.014	ppb	9.6	48	100	
Cd	111	103	NoGas	0.56	ppb	2.7	630	1000	
Sb	121	103	He	0.121	ppb	6.7	121	100	
Ba	138	159	He	16.519	ppb	0.5	36718	2500	
W	182	159	NoGas	0.041	ppb	28.2	229	40	
Hg	201	159	NoGas	27.934	ppt	48.6	23	4000	
Tl	205	159	He	0.021	ppb	32.1	221	100	
Pb	208	159	NoGas	24.355	ppb	0.0	315272	500	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD %	QC Flag
Li	6	NoGas	526579	0.3	523074.786666667	Pulse	100.7	
Sc	45	H2	1062334	1.0	1082352.87666667	Pulse	98.2	
Sc	45	He	127983	0.9	129889.27	Pulse	98.5	
Sc	45	NoGas	1746381	2.5	1670086.30666667	Analog	104.6	
Ge	74	H2	405241	0.9	421500.543333333	Pulse	96.1	
Ge	74	He	85563	0.6	86195.52	Pulse	99.3	
Ge	74	NoGas	459422	1.0	450235.19	Pulse	102.0	
Rh	103	He	258543	0.5	265590.413333333	Pulse	97.3	
Rh	103	NoGas	495697	0.4	498498.73	Pulse	99.4	
Tb	159	He	399207	0.5	406398.456666667	Pulse	98.2	
Tb	159	NoGas	847698	0.6	853315.386666667	Pulse	99.3	
Bi	209	He	290534	1.1	291291.056666667	Pulse	99.7	
Bi	209	NoGas	504436	0.5	509112.503333333	Pulse	99.1	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E20033-CCV 2	**Total Dilution**	1.0000
File Name	046_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	**ISTD Ref FileName**	009CALB.d
Acq Time	5/21/2019 19:42:06	**Comment**	A19E109 JPB 05/21

JPB 5/22/19

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	3875.806	ppb	0.5	8111402	4000	90	110	96.9	
Ca	44	45	H2	3928.499	ppb	0.6	415030	4000	90	110	98.21	
Fe	56	74	H2	3911.312	ppb	0.6	24466540	4000	90	110	97.78	
Fe	57	74	H2	3796.021	ppb	0.5	584407	4000	90	110	94.9	
Se	78	74	H2	39.302	ppb	0.4	7083	40	90	110	98.26	
Mg	24	45	He	3980.298	ppb	3.4	773441	4000	90	110	99.51	
Al	27	45	He	3803.560	ppb	3.0	382031	4000	90	110	95.09	
K	39	45	He	4108.962	ppb	2.9	770035	4000	90	110	102.72	
V	51	74	He	98.810	ppb	1.7	138225	100	90	110	98.81	
Cr	52	74	He	101.151	ppb	1.4	166667	100	90	110	101.15	
Mn	55	74	He	97.774	ppb	0.9	109825	100	90	110	97.77	
Ni	60	74	He	104.326	ppb	2.3	65109	100	90	110	104.33	
Cu	65	74	He	107.994	ppb	1.0	85966	100	90	110	107.99	
Zn	66	74	He	105.818	ppb	2.2	25988	100	90	110	105.82	
As	75	74	He	98.292	ppb	2.0	15980	100	90	110	98.29	
Mo	95	103	He	40.136	ppb	2.0	33250	40	90	110	100.34	
Ag	107	103	He	39.908	ppb	2.4	110969	40	90	110	99.77	
Sb	121	103	He	42.238	ppb	2.4	40318	40	90	110	105.6	
Ba	138	159	He	105.209	ppb	2.7	229202	100	90	110	105.21	
Tl	205	159	He	39.693	ppb	1.7	235586	40	90	110	99.23	
Be	9	6	NoGas	39.047	ppb	0.4	61712	40	90	110	97.62	
Ti	47	45	NoGas	95.203	ppb	0.5	58368	100	90	110	95.2	
Co	59	74	NoGas	98.838	ppb	0.9	796369	100	90	110	98.84	
Cu	65	74	NoGas	101.718	ppb	1.1	182670	100	90	110	101.72	
Cd	111	103	NoGas	95.958	ppb	0.5	103671	100	90	110	95.96	
Hg	201	159	NoGas	749.336	ppt	6.3	392	800	90	110	93.67	
Pb	208	159	NoGas	95.253	ppb	0.6	1211560	100	90	110	95.25	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.3	1101894	1082352.87666667	101.8	
Ge	74	H2	Pulse	0.6	421745	421500.543333333	100.1	
Sc	45	He	Pulse	2.8	127273	129889.27	98.0	
Ge	74	He	Pulse	1.3	84595	86195.52	98.1	
Rh	103	He	Pulse	2.5	252147	265590.413333333	94.9	
Tb	159	He	Pulse	2.5	392253	406398.456666667	96.5	
Bi	209	He	Pulse	2.9	277726	291291.056666667	95.3	
Li	6	NoGas	Pulse	1.1	521227	523074.786666667	99.6	
Sc	45	NoGas	Analog	0.8	1699264	1670086.30666667	101.7	
Ge	74	NoGas	Pulse	0.6	448447	450235.19	99.6	
Rh	103	NoGas	Pulse	0.2	479494	498498.73	96.2	
Tb	159	NoGas	Pulse	0.3	834277	853315.386666667	97.8	
Bi	209	NoGas	Pulse	0.4	482231	509112.503333333	94.7	

Continuing Calibration Blank (CCB) Report ICPMS6

2 05/22/19

Sample Name	9E20033-CCB
File Name	047_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b
Acq Time	5/21/2019 19:46:20
Sample Type	CCB
Total Dilution	1.0000
Comment	Cal Blk 3%HNO3 0.4%HCl
ISTD Ref FileName	009CALB.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	1.272	ppb	16.7	22758	45	
Ca	44	45	H2	0.763	ppb	157.7	1171	45	
Fe	56	74	H2	1.831	ppb	9.6	22402	22.5	
Fe	57	74	H2	2.007	ppb	34.5	1038	22.5	
Se	78	74	H2	0.035	ppb	32.5	9	0.45	
Mg	24	45	He	0.242	ppb	144.0	280	45	
Al	27	45	He	0.236	ppb	194.4	140	22.5	
K	39	45	He	5.086	ppb	26.0	16562	45	
V	51	74	He	-0.074	ppb	N/A	514	0.45	
Cr	52	74	He	-0.020	ppb	N/A	107	0.45	
Mn	55	74	He	0.036	ppb	29.3	80	0.45	
Ni	60	74	He	-0.151	ppb	N/A	249	0.45	
Cu	65	74	He	-0.028	ppb	N/A	278	0.45	
Zn	66	74	He	0.121	ppb	111.0	167	1.8	
As	75	74	He	0.018	ppb	85.3	15	0.45	
Mo	95	103	He	0.037	ppb	59.5	39	0.45	
Ag	107	103	He	0.002	ppb	122.7	12	0.09	
Sb	121	103	He	0.009	ppb	43.0	11	0.45	
Ba	138	159	He	0.018	ppb	89.7	131	0.45	
Tl	205	159	He	0.002	ppb	59.6	110	0.09	
Be	9	6	NoGas	0.008	ppb	67.1	27	0.09	
Ti	47	45	NoGas	0.009	ppb	294.4	57	0.45	
Co	59	74	NoGas	-0.003	ppb	N/A	320	0.09	
Cu	65	74	NoGas	-0.030	ppb	N/A	658	0.45	
Cd	111	103	NoGas	0.009	ppb	45.1	15	0.09	
Hg	201	159	NoGas	3.977	ppt	89.9	11	36	
Pb	208	159	NoGas	0.004	ppb	80.7	726	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Pulse	0.6	1094926	1082352.87666667	101.2	
Ge	74	H2	Pulse	0.8	418847	421500.543333333	99.4	
Sc	45	He	Pulse	0.8	129210	129889.27	99.5	
Ge	74	He	Pulse	0.1	86650	86195.52	100.5	
Rh	103	He	Pulse	0.3	262867	265590.413333333	99.0	

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	0.6	399612	406398.456666667	98.3	
Bi	209	He	Pulse	1.0	284342	291291.056666667	97.6	
Li	6	NoGas	Pulse	0.3	528052	523074.786666667	101.0	
Sc	45	NoGas	Analog	1.3	1715055	1670086.30666667	102.7	
Ge	74	NoGas	Pulse	0.7	455576	450235.19	101.2	
Rh	103	NoGas	Pulse	0.7	496357	498498.73	99.6	
Tb	159	NoGas	Pulse	0.6	841472	853315.386666667	98.6	
Bi	209	NoGas	Pulse	0.5	491664	509112.503333333	96.6	

Quantitation Report - ICPMS5

Sample Name:	**9051011-MS** 2 JB 05/22/19	Total Dilution:	**10.0000**
File Name:	048SMPL.d	Vial:	3501
File Path:	C:\Agilent\ICPMH\1\DATA\9E21039.b	Sample Type:	Sample
Acq Time:	5/21/2019 19:50:36		
Comment:	**9051011 Na rerun with reprepped Blank to match QC source**	Last Calib:	05/21/2019 16:21:55

FullQuant Table:

Element	Mass	ISTD	Tune Mode	Raw Conc	Units	RSD(%)	CPS	LDR	QC Flag
Be	9	6	NoGas	23.552	ppb	0.7	37054	100	
Na	23	45	H2	2500.587	ppb	1.0	5040851	50000	
Mg	24	45	He	2454.867	ppb	2.5	468440	50000	
Al	27	45	He	3550.451	ppb	2.4	350110	50000	
K	39	45	He	2591.945	ppb	3.6	482362	50000	
Ca	44	45	H2	2621.13	ppb	0.7	266718	50000	
Ti	47	45	NoGas	68.862	ppb	1.4	41921	2500	
V	51	74	He	58.354	ppb	1.5	80794	500	
Cr	52	74	He	59.986	ppb	1.5	97590	1000	
Mn	55	74	He	175.843	ppb	0.7	194872	2500	
Fe	56	74	H2	29592.909	ppb	1.0	177275142	50000	
Fe	57	74	H2	29580.952	ppb	1.8	4357979	50000	
Co	59	74	NoGas	55.363	ppb	0.8	444689	500	
Ni	60	74	He	74.012	ppb	1.3	45677	1000	
Cu	65	74	He	78.584	ppb	1.8	61805	1000	
Cu	65	74	NoGas	75.606	ppb	0.9	135489	1000	
Zn	66	74	He	98.24	ppb	1.9	23815	2500	
As	75	74	He	50.58	ppb	2.3	8120	500	
Se	78	74	H2	21.081	ppb	2.1	3640	100	
Mo	95	103	He	26.205	ppb	3.2	21477	100	
Ag	107	103	He	23.987	ppb	0.7	65996	100	
Cd	111	103	NoGas	48.613	ppb	0.9	52336	1000	
Sb	121	103	He	22.617	ppb	2.6	21358	100	
Ba	138	159	He	64.469	ppb	1.4	140738	2500	
W	182	159	NoGas	0.167	ppb	11.5	732	40	
Hg	201	159	NoGas	962.963	ppt	2.8	502	4000	
Tl	205	159	He	22.297	ppb	0.8	132603	100	
Pb	208	159	NoGas	67.305	ppb	0.1	857479	500	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD %	QC Flag
Li	6	NoGas	518788	0.2	523074.786666667	Pulse	99.2	
Sc	45	H2	1059948	0.6	1082352.87666667	Pulse	97.9	
Sc	45	He	124923	2.1	129889.27	Pulse	96.2	
Sc	45	NoGas	1687110	2.3	1670086.30666667	Analog	101.0	
Ge	74	H2	404058	0.7	421500.543333333	Pulse	95.9	
Ge	74	He	83474	1.2	86195.52	Pulse	96.8	
Ge	74	NoGas	446904	0.8	450235.19	Pulse	99.3	
Rh	103	He	249402	1.2	265590.413333333	Pulse	93.9	
Rh	103	NoGas	477807	0.6	498498.73	Pulse	95.8	
Tb	159	He	392841	1.7	406398.456666667	Pulse	96.7	
Tb	159	NoGas	835447	0.3	853315.386666667	Pulse	97.9	
Bi	209	He	282698	1.3	291291.056666667	Pulse	97.0	
Bi	209	NoGas	489855	0.5	509112.503333333	Pulse	96.2	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E21039-CCV3	**Total Dilution**	1.0000
File Name	049_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	**ISTD Ref FileName**	009CALB.d
Acq Time	5/21/2019 20:12:24	**Comment**	A19E109JPB 05/21

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	3944.988	ppb	0.6	8734402	4000	90	110	98.62	
Ca	44	45	H2	3989.525	ppb	0.7	445907	4000	90	110	99.74	
Fe	56	74	H2	3980.083	ppb	0.6	25713189	4000	90	110	99.5	
Fe	57	74	H2	3880.272	ppb	0.5	616957	4000	90	110	97.01	
Se	78	74	H2	38.864	ppb	0.2	7233	40	90	110	97.16	
Mg	24	45	He	3933.091	ppb	1.3	826108	4000	90	110	98.33	
Al	27	45	He	3866.830	ppb	1.9	419770	4000	90	110	96.67	
K	39	45	He	4141.785	ppb	1.0	838763	4000	90	110	103.54	
V	51	74	He	99.104	ppb	0.7	147759	100	90	110	99.1	
Cr	52	74	He	100.199	ppb	0.6	175959	100	90	110	100.2	
Mn	55	74	He	97.757	ppb	0.2	117021	100	90	110	97.76	
Ni	60	74	He	102.932	ppb	0.8	68471	100	90	110	102.93	
Cu	65	74	He	104.125	ppb	0.5	88346	100	90	110	104.12	
Zn	66	74	He	102.388	ppb	0.5	26804	100	90	110	102.39	
As	75	74	He	98.473	ppb	1.1	17063	100	90	110	98.47	
Mo	95	103	He	39.959	ppb	0.6	34231	40	90	110	99.9	
Ag	107	103	He	39.260	ppb	0.2	112888	40	90	110	98.15	
Sb	121	103	He	41.534	ppb	1.1	40995	40	90	110	103.84	
Ba	138	159	He	106.953	ppb	0.4	235852	100	90	110	106.95	
Tl	205	159	He	38.003	ppb	1.0	228295	40	90	110	95.01	
Be	9	6	NoGas	39.116	ppb	0.6	64192	40	90	110	97.79	
Ti	47	45	NoGas	95.661	ppb	0.5	59070	100	90	110	95.66	
Co	59	74	NoGas	100.692	ppb	0.6	819779	100	90	110	100.69	
Cu	65	74	NoGas	102.915	ppb	0.5	186744	100	90	110	102.92	
Cd	111	103	NoGas	95.099	ppb	0.3	104307	100	90	110	95.1	
Hg	201	159	NoGas	742.598	ppt	3.2	390	800	90	110	92.82	
Pb	208	159	NoGas	93.657	ppb	0.3	1195769	100	90	110	93.66	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.4	1165774	1082352.87666667	107.7	
Ge	74	H2	Pulse	0.1	435571	421500.543333333	103.3	
Sc	45	He	Pulse	0.5	137488	129889.27	105.9	
Ge	74	He	Pulse	1.1	90147	86195.52	104.6	
Rh	103	He	Pulse	1.2	260644	265590.413333333	98.1	
Tb	159	He	Pulse	1.1	396870	406398.456666667	97.7	
Bi	209	He	Pulse	0.7	272156	291291.056666667	93.4	
Li	6	NoGas	Pulse	1.1	541201	523074.786666667	103.5	
Sc	45	NoGas	Analog	1.2	1711482	1670086.30666667	102.5	
Ge	74	NoGas	Pulse	0.1	453118	450235.19	100.6	
Rh	103	NoGas	Pulse	0.7	486800	498498.73	97.7	
Tb	159	NoGas	Pulse	0.5	837428	853315.386666667	98.1	
Bi	209	NoGas	Pulse	0.4	477220	509112.503333333	93.7	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E21039-CCB3
File Name	050_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b
Acq Time	5/21/2019 20:16:38
Sample Type	CCB
Total Dilution	1.0000
Comment	Cal Blk 3%HNO3 0.4%HCl
ISTD Ref FileName	009CALB.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	5.640	ppb	6.2	32626	45	
Ca	44	45	H2	3.978	ppb	20.1	1546	45	
Fe	56	74	H2	3.851	ppb	4.4	35457	22.5	
Fe	57	74	H2	4.058	ppb	2.1	1371	22.5	
Se	78	74	H2	0.053	ppb	27.3	12	0.45	
Mg	24	45	He	1.509	ppb	8.7	547	45	
Al	27	45	He	1.208	ppb	78.7	247	22.5	
K	39	45	He	5.564	ppb	110.9	17183	45	
V	51	74	He	-0.022	ppb	N/A	599	0.45	
Cr	52	74	He	-0.009	ppb	N/A	128	0.45	
Mn	55	74	He	0.071	ppb	18.4	122	0.45	
Ni	60	74	He	-0.233	ppb	N/A	200	0.45	
Cu	65	74	He	-0.012	ppb	N/A	296	0.45	
Zn	66	74	He	0.005	ppb	2700.5	140	1.8	
As	75	74	He	0.040	ppb	70.3	19	0.45	
Mo	95	103	He	0.026	ppb	35.6	29	0.45	
Ag	107	103	He	0.007	ppb	46.4	28	0.09	
Sb	121	103	He	0.024	ppb	49.5	27	0.45	
Ba	138	159	He	0.051	ppb	44.9	203	0.45	
Tl	205	159	He	0.001	ppb	213.8	102	0.09	
Be	9	6	NoGas	0.010	ppb	48.0	31	0.09	
Ti	47	45	NoGas	0.047	ppb	62.0	82	0.45	
Co	59	74	NoGas	0.011	ppb	122.6	445	0.09	
Cu	65	74	NoGas	-0.011	ppb	N/A	705	0.45	
Cd	111	103	NoGas	0.019	ppb	76.6	27	0.09	
Hg	201	159	NoGas	6.730	ppt	68.2	12	36	
Pb	208	159	NoGas	0.016	ppb	37.8	891	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Pulse	0.4	1122632	1082352.87666667	103.7	
Ge	74	H2	Pulse	0.1	424929	421500.543333333	100.8	
Sc	45	He	Pulse	0.5	133363	129889.27	102.7	
Ge	74	He	Pulse	0.7	88129	86195.52	102.2	
Rh	103	He	Pulse	1.0	265628	265590.413333333	100.0	

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	1.3	398915	406398.456666667	98.2	
Bi	209	He	Pulse	1.6	279782	291291.056666667	96.0	
Li	6	NoGas	Pulse	0.4	546327	523074.786666667	104.4	
Sc	45	NoGas	Analog	2.4	1752090	1670086.30666667	104.9	
Ge	74	NoGas	Pulse	1.0	463354	450235.19	102.9	
Rh	103	NoGas	Pulse	0.4	503626	498498.73	101.0	
Tb	159	NoGas	Pulse	1.0	846690	853315.386666667	99.2	
Bi	209	NoGas	Pulse	0.5	488188	509112.503333333	95.9	

CRL Verification ICPMS5

Sample Name	9E21039-CRL4	1102
File Name	051CRL.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 20:20:53	
Sample Type	CRL1	
Total Dilution	1.0000	
Comment	A19D348 JPB 05/21	
ISTD Ref FileName	009CALB.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	12.200	ppb	5.3	47097	135.56	70	130	<>CRL1 NR<MRL<R-11
Ca	44	45	H2	10.065	ppb	6.4	2224	111.83	70	130	
Fe	56	74	H2	11.587	ppb	1.0	85497	128.74	70	130	
Fe	57	74	H2	11.862	ppb	11.9	2620	131.8	70	130	<>CRL1 NR<MRL<R-11
Se	78	74	H2	0.204	ppb	6.9	40	113.33	70	130	
Mg	24	45	He	10.156	ppb	7.0	2303	112.84	70	130	
Al	27	45	He	8.616	ppb	1.1	1024	95.73	70	130	
K	39	45	He	12.734	ppb	15.1	18519	141.49	70	130	<>CRL1 NR<MRL<R-11
V	51	74	He	0.117	ppb	43.1	806	65	70	130	<>CRL1 NR<MRL<R-11
Cr	52	74	He	0.179	ppb	9.6	453	99.44	70	130	
Mn	55	74	He	0.258	ppb	13.9	343	143.33	70	130	<>CRL1 NR<MRL<R-11
Ni	60	74	He	-0.005	ppb	N/A	350	-2.78	70	130	<>CRL1 NR<MRL<R-11
Cu	65	74	He	0.165	ppb	24.7	444	91.67	70	130	
Zn	66	74	He	0.193	ppb	59.1	189	107.22	70	130	
As	75	74	He	0.200	ppb	23.8	47	111.11	70	130	
Mo	95	103	He	0.220	ppb	22.4	199	122.22	70	130	
Ag	107	103	He	0.175	ppb	7.1	522	97.22	70	130	
Sb	121	103	He	0.169	ppb	8.9	172	93.89	70	130	
Ba	138	159	He	0.220	ppb	8.1	582	122.22	70	130	
Tl	205	159	He	0.167	ppb	4.9	1112	92.78	70	130	
Be	9	6	NoGas	0.193	ppb	8.1	337	107.22	70	130	
Ti	47	45	NoGas	0.231	ppb	38.0	203	128.33	70	130	
Co	59	74	NoGas	0.188	ppb	18.3	1928	104.44	70	130	
Cu	65	74	NoGas	0.153	ppb	32.7	1015	85	70	130	
Cd	111	103	NoGas	0.202	ppb	22.8	235	112.22	70	130	
Hg	201	159	NoGas	11.260	ppt	55.0	15	156.39	70	130	<>CRL1 NR<MRL<R-11
Pb	208	159	NoGas	0.181	ppb	3.8	3050	100.56	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.6	1135207	1082352.87666667	104.9	
Ge	74	H2	Pulse	0.4	431519	421500.543333333	102.4	
Sc	45	He	Pulse	0.1	133027	129889.27	102.4	
Ge	74	He	Pulse	0.1	88666	86195.52	102.9	
Rh	103	He	Pulse	0.8	266277	265590.413333333	100.3	

JM 05/22/19

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Tb	159	He	Pulse	1.1	402417	406398.456666667	99.0	
Bi	209	He	Pulse	1.3	281187	291291.056666667	96.5	
Li	6	NoGas	Pulse	0.8	551530	523074.786666667	105.4	
Sc	45	NoGas	Analog	1.0	1793816	1670086.30666667	107.4	
Ge	74	NoGas	Pulse	0.8	465991	450235.19	103.5	
Rh	103	NoGas	Pulse	0.3	505095	498498.73	101.3	
Tb	159	NoGas	Pulse	0.3	856267	853315.386666667	100.3	
Bi	209	NoGas	Pulse	0.5	495839	509112.503333333	97.4	

CRL Verification ICPMS5

Sample Name	9E21039-CRL5	1103
File Name	052_CRL.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 20:25:08	
Sample Type	CRL2	
Total Dilution	1.0000	
Comment	A19D349 JPB 05/21	
ISTD Ref FileName	009CALB.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	45.620	ppb	0.7	118901	101.38	70	130	
Ca	44	45	H2	45.710	ppb	2.8	6090	101.58	70	130	
Fe	57	74	H2	46.012	ppb	1.6	8035	102.25	70	130	
Se	78	74	H2	0.881	ppb	3.7	166	97.89	70	130	
Mg	24	45	He	46.708	ppb	5.8	9820	103.8	70	130	
Al	27	45	He	42.833	ppb	7.4	4662	95.18	70	130	
K	39	45	He	55.449	ppb	4.7	26979	123.22	70	130	
V	51	74	He	0.836	ppb	8.2	1865	92.89	70	130	
Cr	52	74	He	0.890	ppb	4.3	1689	98.89	70	130	
Mn	55	74	He	0.925	ppb	9.0	1135	102.78	70	130	
Ni	60	74	He	0.676	ppb	11.4	798	75.11	70	130	
Cu	65	74	He	0.921	ppb	4.6	1079	102.33	70	130	
Zn	66	74	He	0.699	ppb	31.4	320	77.67	70	130	
As	75	74	He	0.803	ppb	8.5	150	89.22	70	130	
Mo	95	103	He	0.911	ppb	8.8	808	101.22	70	130	
Ag	107	103	He	0.876	ppb	2.5	2595	97.33	70	130	
Sb	121	103	He	0.824	ppb	4.8	838	91.56	70	130	
Ba	138	159	He	1.009	ppb	2.8	2349	112.11	70	130	
Tl	205	159	He	0.893	ppb	2.8	5538	99.22	70	130	
Be	9	6	NoGas	0.947	ppb	4.5	1573	105.22	70	130	
Ti	47	45	NoGas	0.915	ppb	9.3	628	101.67	70	130	
Co	59	74	NoGas	0.903	ppb	3.4	7856	100.33	70	130	
Cu	65	74	NoGas	0.872	ppb	10.9	2332	96.89	70	130	
Cd	111	103	NoGas	0.915	ppb	13.2	1039	101.67	70	130	
Hg	201	159	NoGas	39.989	ppt	23.2	30	111.08	70	130	
Pb	208	159	NoGas	0.919	ppb	5.3	12546	102.11	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.4	1134466	1082352.87666667	104.8	
Ge	74	H2	Pulse	0.1	433821	421500.543333333	102.9	
Sc	45	He	Pulse	0.5	134291	129889.27	103.4	
Ge	74	He	Pulse	0.7	89168	86195.52	103.4	
Rh	103	He	Pulse	0.6	267660	265590.413333333	100.8	
Tb	159	He	Pulse	0.7	402879	406398.456666667	99.1	

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Bi	209	He	Pulse	0.5	286266	291291.056666667	98.3	
Li	6	NoGas	Pulse	1.1	543572	523074.786666667	103.9	
Sc	45	NoGas	Analog	3.2	1745251	1670086.30666667	104.5	
Ge	74	NoGas	Pulse	2.2	462757	450235.19	102.8	
Rh	103	NoGas	Pulse	2.0	502694	498498.73	100.8	
Tb	159	NoGas	Pulse	2.4	847710	853315.386666667	99.3	
Bi	209	NoGas	Pulse	2.1	493647	509112.503333333	97.0	

CRL Verification ICPMS5

Sample Name	9E21039-CRL6	1104
File Name	053CRL_.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 20:29:42	
Sample Type	CRL3	
Total Dilution	1.0000	
Comment	A19D350 JPB 05/21	
ISTD Ref FileName	009CALB.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	89.422	ppb	1.0	214241	99.36	70	130	
Ca	44	45	H2	90.465	ppb	2.4	11007	100.52	70	130	
Fe	57	74	H2	86.775	ppb	2.4	14507	96.42	70	130	
Se	78	74	H2	1.828	ppb	8.9	342	101.56	70	130	
Mg	24	45	He	88.053	ppb	3.2	18349	97.84	70	130	
Al	27	45	He	86.990	ppb	3.4	9369	96.66	70	130	
K	39	45	He	93.153	ppb	3.3	34379	103.5	70	130	
V	51	74	He	1.674	ppb	7.6	3099	93	70	130	
Cr	52	74	He	1.791	ppb	4.2	3257	99.5	70	130	
Mn	55	74	He	1.835	ppb	3.2	2216	101.94	70	130	
Ni	60	74	He	1.571	ppb	12.8	1386	87.28	70	130	
Cu	65	74	He	1.962	ppb	4.0	1952	109	70	130	
Zn	66	74	He	1.800	ppb	20.1	604	100	70	130	
As	75	74	He	1.778	ppb	2.2	318	98.78	70	130	
Mo	95	103	He	1.811	ppb	2.5	1599	100.61	70	130	
Ag	107	103	He	1.785	ppb	4.7	5274	99.17	70	130	
Sb	121	103	He	1.782	ppb	5.9	1808	99	70	130	
Ba	138	159	He	1.924	ppb	6.8	4414	106.89	70	130	
Tl	205	159	He	1.819	ppb	1.6	11221	101.06	70	130	
Be	9	6	NoGas	1.715	ppb	2.0	2870	95.28	70	130	
Ti	47	45	NoGas	1.705	ppb	10.4	1159	94.72	70	130	
Co	59	74	NoGas	1.750	ppb	4.0	15034	97.22	70	130	
Cu	65	74	NoGas	1.923	ppb	5.4	4315	106.83	70	130	
Cd	111	103	NoGas	1.846	ppb	1.7	2118	102.56	70	130	
Hg	201	159	NoGas	68.062	ppt	19.7	45	94.53	70	130	
Pb	208	159	NoGas	1.853	ppb	1.7	24949	102.94	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.3	1140838	1082352.87666667	105.4	
Ge	74	H2	Pulse	0.4	434535	421500.543333333	103.1	
Sc	45	He	Pulse	0.9	134664	129889.27	103.7	
Ge	74	He	Pulse	0.5	89295	86195.52	103.6	
Rh	103	He	Pulse	0.6	267545	265590.413333333	100.7	
Tb	159	He	Pulse	0.9	404327	406398.456666667	99.5	

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Bi	209	He	Pulse	0.4	285261	291291.056666667	97.9	
Li	6	NoGas	Pulse	0.3	549478	523074.786666667	105.0	
Sc	45	NoGas	Analog	1.5	1799575	1670086.30666667	107.8	
Ge	74	NoGas	Pulse	0.5	467123	450235.19	103.8	
Rh	103	NoGas	Pulse	0.1	508147	498498.73	101.9	
Tb	159	NoGas	Pulse	0.4	859111	853315.386666667	100.7	
Bi	209	NoGas	Pulse	0.5	500654	509112.503333333	98.3	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E21039-CCV 4 5 JB 05/22/19	**Total Dilution**	1.0000
File Name	065_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	**ISTD Ref FileName**	009CALB.d
Acq Time	5/21/2019 21:23:42	**Comment**	A19E109 JPB 05/21

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	3902.464	ppb	0.3	8205907	4000	90	110	97.56	
Ca	44	45	H2	3929.681	ppb	0.5	417120	4000	90	110	98.24	
Fe	56	74	H2	3962.375	ppb	0.3	24828025	4000	90	110	99.06	
Fe	57	74	H2	3800.569	ppb	0.6	586102	4000	90	110	95.01	
Se	78	74	H2	39.583	ppb	1.9	7145	40	90	110	98.96	
Mg	24	45	He	3958.825	ppb	0.6	786655	4000	90	110	98.97	
Al	27	45	He	3783.716	ppb	1.8	388570	4000	90	110	94.59	
K	39	45	He	4059.209	ppb	1.0	777989	4000	90	110	101.48	
V	51	74	He	98.829	ppb	0.6	140638	100	90	110	98.83	
Cr	52	74	He	99.410	ppb	0.1	166627	100	90	110	99.41	
Mn	55	74	He	97.083	ppb	0.8	110922	100	90	110	97.08	
Ni	60	74	He	103.806	ppb	0.8	65908	100	90	110	103.81	
Cu	65	74	He	107.049	ppb	0.7	86684	100	90	110	107.05	
Zn	66	74	He	104.034	ppb	2.6	25992	100	90	110	104.03	
As	75	74	He	99.427	ppb	0.9	16444	100	90	110	99.43	
Mo	95	103	He	39.322	ppb	0.9	33055	40	90	110	98.3	
Ag	107	103	He	39.452	ppb	0.4	111318	40	90	110	98.63	
Sb	121	103	He	41.218	ppb	1.1	39925	40	90	110	103.05	
Ba	138	159	He	104.857	ppb	1.3	230898	100	90	110	104.86	
Tl	205	159	He	39.099	ppb	0.5	234536	40	90	110	97.75	
Be	9	6	NoGas	38.371	ppb	6.7	62889	40	90	110	95.93	
Ti	47	45	NoGas	91.583	ppb	8.6	59225	100	90	110	91.58	
Co	59	74	NoGas	96.379	ppb	6.7	804091	100	90	110	96.38	
Cu	65	74	NoGas	98.479	ppb	7.3	183111	100	90	110	98.48	
Cd	111	103	NoGas	93.119	ppb	7.2	104544	100	90	110	93.12	
Hg	201	159	NoGas	737.054	ppt	3.7	401	800	90	110	92.13	
Pb	208	159	NoGas	91.890	ppb	7.3	1212974	100	90	110	91.89	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.6	1107121	1082352.87666667	102.3	
Ge	74	H2	Pulse	0.6	422457	421500.543333333	100.2	
Sc	45	He	Pulse	0.9	130072	129889.27	100.1	
Ge	74	He	Pulse	0.2	86044	86195.52	99.8	
Rh	103	He	Pulse	0.3	255765	265590.413333333	96.3	
Tb	159	He	Pulse	0.8	396324	406398.456666667	97.5	
Bi	209	He	Pulse	1.7	277802	291291.056666667	95.4	
Li	6	NoGas	Pulse	4.9	541655	523074.786666667	103.6	
Sc	45	NoGas	Analog	8.2	1800767	1670086.30666667	107.8	
Ge	74	NoGas	Pulse	5.7	465516	450235.19	103.4	
Rh	103	NoGas	Pulse	6.1	499736	498498.73	100.2	
Tb	159	NoGas	Pulse	6.1	868354	853315.386666667	101.8	
Bi	209	NoGas	Pulse	5.7	501544	509112.503333333	98.5	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E21039-CCB 4 05/22/19
File Name	066_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b
Acq Time	5/21/2019 21:27:56
Sample Type	CCB
Total Dilution	1.0000
Comment	Cal Blk 3%HNO3 0.4%HCl
ISTD Ref FileName	009CALB.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	0.773	ppb	95.3	19678	45	
Ca	44	45	H2	0.668	ppb	143.1	1058	45	
Fe	56	74	H2	1.254	ppb	22.0	17366	22.5	
Fe	57	74	H2	1.588	ppb	20.1	902	22.5	
Se	78	74	H2	0.082	ppb	68.2	16	0.45	
Mg	24	45	He	-0.093	ppb	N/A	217	45	
Al	27	45	He	-0.045	ppb	N/A	113	22.5	
K	39	45	He	2.701	ppb	140.1	16335	45	
V	51	74	He	-0.031	ppb	N/A	579	0.45	
Cr	52	74	He	-0.011	ppb	N/A	123	0.45	
Mn	55	74	He	0.005	ppb	354.3	46	0.45	
Ni	60	74	He	-0.185	ppb	N/A	229	0.45	
Cu	65	74	He	0.010	ppb	500.9	310	0.45	
Zn	66	74	He	-0.010	ppb	N/A	134	1.8	
As	75	74	He	0.011	ppb	81.1	14	0.45	
Mo	95	103	He	0.056	ppb	28.4	56	0.45	
Ag	107	103	He	0.006	ppb	40.0	23	0.09	
Sb	121	103	He	0.011	ppb	90.1	13	0.45	
Ba	138	159	He	0.016	ppb	73.6	127	0.45	
Tl	205	159	He	0.004	ppb	70.8	122	0.09	
Be	9	6	NoGas	0.008	ppb	155.8	27	0.09	
Ti	47	45	NoGas	0.023	ppb	90.7	68	0.45	
Co	59	74	NoGas	0.007	ppb	148.0	410	0.09	
Cu	65	74	NoGas	-0.056	ppb	N/A	621	0.45	
Cd	111	103	NoGas	0.016	ppb	82.9	22	0.09	
Hg	201	159	NoGas	10.032	ppt	19.4	14	36	
Pb	208	159	NoGas	0.018	ppb	18.4	926	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Pulse	9.0	995927	1082352.87666667	92.0	
Ge	74	H2	Pulse	8.1	388221	421500.543333333	92.1	
Sc	45	He	Pulse	0.7	130949	129889.27	100.8	
Ge	74	He	Pulse	0.5	87146	86195.52	101.1	
Rh	103	He	Pulse	0.4	265842	265590.413333333	100.1	

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	0.8	399994	406398.456666667	98.4	
Bi	209	He	Pulse	0.9	282660	291291.056666667	97.0	
Li	6	NoGas	Pulse	0.5	537920	523074.786666667	102.8	
Sc	45	NoGas	Analog	3.5	1774477	1670086.30666667	106.3	
Ge	74	NoGas	Pulse	0.5	463424	450235.19	102.9	
Rh	103	NoGas	Pulse	0.6	504110	498498.73	101.1	
Tb	159	NoGas	Pulse	1.1	854995	853315.386666667	100.2	
Bi	209	NoGas	Pulse	0.5	498772	509112.503333333	98.0	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E21039-CCV 6 JPB 05/22/19	**Total Dilution**	1.0000
File Name	077_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	**ISTD Ref FileName**	009CALB.d
Acq Time	5/21/2019 22:14:23	**Comment**	A19E109 JPB 05/21

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	3961.593	ppb	0.6	8644287	4000	90	110	99.04	
Ca	44	45	H2	3929.151	ppb	0.7	432817	4000	90	110	98.23	
Fe	56	74	H2	4034.270	ppb	0.1	26030183	4000	90	110	100.86	
Fe	57	74	H2	3839.033	ppb	0.7	609630	4000	90	110	95.98	
Se	78	74	H2	39.569	ppb	2.4	7355	40	90	110	98.92	
Mg	24	45	He	3977.623	ppb	0.7	808013	4000	90	110	99.44	
Al	27	45	He	3847.811	ppb	0.6	403996	4000	90	110	96.2	
K	39	45	He	4067.843	ppb	0.6	797016	4000	90	110	101.7	
V	51	74	He	100.485	ppb	1.0	145318	100	90	110	100.48	
Cr	52	74	He	101.128	ppb	0.6	172273	100	90	110	101.13	
Mn	55	74	He	97.104	ppb	0.7	112761	100	90	110	97.1	
Ni	60	74	He	105.317	ppb	0.8	67953	100	90	110	105.32	
Cu	65	74	He	107.676	ppb	0.7	88614	100	90	110	107.68	
Zn	66	74	He	104.317	ppb	1.7	26489	100	90	110	104.32	
As	75	74	He	100.939	ppb	1.2	16966	100	90	110	100.94	
Mo	95	103	He	40.343	ppb	1.2	34481	40	90	110	100.86	
Ag	107	103	He	39.588	ppb	0.5	113570	40	90	110	98.97	
Sb	121	103	He	41.461	ppb	0.4	40831	40	90	110	103.65	
Ba	138	159	He	105.414	ppb	0.6	234127	100	90	110	105.41	
Tl	205	159	He	38.247	ppb	0.9	231409	40	90	110	95.62	
Be	9	6	NoGas	39.483	ppb	0.9	64747	40	90	110	98.71	
Ti	47	45	NoGas	95.787	ppb	2.3	61612	100	90	110	95.79	
Co	59	74	NoGas	100.550	ppb	1.3	825030	100	90	110	100.55	
Cu	65	74	NoGas	102.616	ppb	0.7	187670	100	90	110	102.62	
Cd	111	103	NoGas	97.237	ppb	0.6	105998	100	90	110	97.24	
Hg	201	159	NoGas	772.879	ppt	8.7	408	800	90	110	96.61	
Pb	208	159	NoGas	95.112	ppb	0.4	1221961	100	90	110	95.11	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.5	1148929	1082352.87666667	106.2	
Ge	74	H2	Pulse	0.1	435019	421500.543333333	103.2	
Sc	45	He	Pulse	0.2	132969	129889.27	102.4	
Ge	74	He	Pulse	0.2	87450	86195.52	101.5	
Rh	103	He	Pulse	0.2	260041	265590.413333333	97.9	
Tb	159	He	Pulse	1.1	399720	406398.456666667	98.4	
Bi	209	He	Pulse	1.0	279208	291291.056666667	95.9	
Li	6	NoGas	Pulse	0.8	540792	523074.786666667	103.4	
Sc	45	NoGas	Analog	3.0	1783637	1670086.30666667	106.8	
Ge	74	NoGas	Pulse	0.8	456697	450235.19	101.4	
Rh	103	NoGas	Pulse	0.4	483819	498498.73	97.1	
Tb	159	NoGas	Pulse	0.4	842690	853315.386666667	98.8	
Bi	209	NoGas	Pulse	0.6	485235	509112.503333333	95.3	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E21039-CCB S
File Name	078_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b
Acq Time	5/21/2019 22:18:38
Sample Type	CCB
Total Dilution	1.0000
Comment	Cal Blk 3%HNO3 0.4%HCl
ISTD Ref FileName	009CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**ICPMS Analyst**

V 5306 05/22/19

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Na	23	45	H2	-0.811	ppb	N/A	18954	45	
Ca	44	45	H2	-0.704	ppb	N/A	1046	45	
Fe	56	74	H2	2.858	ppb	5.9	29541	22.5	
Fe	57	74	H2	2.879	ppb	5.3	1202	22.5	
Se	78	74	H2	0.051	ppb	48.9	12	0.45	
Mg	24	45	He	0.484	ppb	68.7	334	45	
Al	27	45	He	0.885	ppb	93.2	210	22.5	
K	39	45	He	7.439	ppb	21.9	17293	45	
V	51	74	He	-0.051	ppb	N/A	550	0.45	
Cr	52	74	He	-0.010	ppb	N/A	124	0.45	
Mn	55	74	He	0.040	ppb	23.0	86	0.45	
Ni	60	74	He	-0.177	ppb	N/A	233	0.45	
Cu	65	74	He	0.010	ppb	502.4	310	0.45	
Zn	66	74	He	0.029	ppb	349.7	144	1.8	
As	75	74	He	0.025	ppb	179.2	17	0.45	
Mo	95	103	He	0.044	ppb	5.2	44	0.45	
Ag	107	103	He	0.003	ppb	87.6	17	0.09	
Sb	121	103	He	0.019	ppb	106.3	21	0.45	
Ba	138	159	He	0.026	ppb	55.4	146	0.45	
Tl	205	159	He	0.005	ppb	182.9	121	0.09	
Be	9	6	NoGas	0.011	ppb	58.1	31	0.09	
Ti	47	45	NoGas	0.240	ppb	20.6	207	0.45	
Co	59	74	NoGas	0.003	ppb	65.3	376	0.09	
Cu	65	74	NoGas	-0.002	ppb	N/A	715	0.45	
Cd	111	103	NoGas	0.027	ppb	43.6	34	0.09	
Hg	201	159	NoGas	3.317	ppt	139.3	10	36	
Pb	208	159	NoGas	0.026	ppb	18.2	993	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Pulse	0.0	1125428	1082352.87666667	104.0	
Ge	74	H2	Pulse	0.4	429854	421500.543333333	102.0	
Sc	45	He	Pulse	0.9	131439	129889.27	101.2	
Ge	74	He	Pulse	0.7	87050	86195.52	101.0	
Rh	103	He	Pulse	0.2	261908	265590.413333333	98.6	

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	0.2	394006	406398.456666667	97.0	
Bi	209	He	Pulse	0.9	279295	291291.056666667	95.9	
Li	6	NoGas	Pulse	0.2	535313	523074.786666667	102.3	
Sc	45	NoGas	Analog	2.4	1777409	1670086.30666667	106.4	
Ge	74	NoGas	Pulse	1.4	458307	450235.19	101.8	
Rh	103	NoGas	Pulse	0.7	495055	498498.73	99.3	
Tb	159	NoGas	Pulse	0.9	829544	853315.386666667	97.2	
Bi	209	NoGas	Pulse	0.6	483785	509112.503333333	95.0	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E21039-CCV 7 05/22/19	**Total Dilution**	1.0000
File Name	085_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	**ISTD Ref FileName**	009CALB.d
Acq Time	5/21/2019 22:48:13	**Comment**	A19E109JPB 05/21

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	4034.630	ppb	2.2	8434862	4000	90	110	100.87	
Ca	44	45	H2	4032.757	ppb	2.5	425586	4000	90	110	100.82	
Fe	56	74	H2	4076.652	ppb	1.6	25415322	4000	90	110	101.92	
Fe	57	74	H2	3875.405	ppb	2.2	594591	4000	90	110	96.89	
Se	78	74	H2	39.306	ppb	2.9	7059	40	90	110	98.26	
Mg	24	45	He	3972.141	ppb	1.1	786383	4000	90	110	99.3	
Al	27	45	He	3808.367	ppb	1.8	389666	4000	90	110	95.21	
K	39	45	He	4059.837	ppb	1.4	775242	4000	90	110	101.5	
V	51	74	He	99.947	ppb	0.2	140627	100	90	110	99.95	
Cr	52	74	He	101.469	ppb	0.7	168166	100	90	110	101.47	
Mn	55	74	He	97.160	ppb	0.7	109766	100	90	110	97.16	
Ni	60	74	He	104.066	ppb	0.5	65329	100	90	110	104.07	
Cu	65	74	He	106.662	ppb	0.9	85401	100	90	110	106.66	
Zn	66	74	He	105.580	ppb	0.8	26081	100	90	110	105.58	
As	75	74	He	100.747	ppb	2.5	16474	100	90	110	100.75	
Mo	95	103	He	40.426	ppb	1.6	33419	40	90	110	101.06	
Ag	107	103	He	39.382	ppb	1.3	109259	40	90	110	98.46	
Sb	121	103	He	41.175	ppb	0.7	39216	40	90	110	102.94	
Ba	138	159	He	105.224	ppb	0.3	226441	100	90	110	105.22	
Tl	205	159	He	39.008	ppb	0.4	228668	40	90	110	97.52	
Be	9	6	NoGas	39.272	ppb	0.3	63283	40	90	110	98.18	
Ti	47	45	NoGas	96.589	ppb	2.0	61649	100	90	110	96.59	
Co	59	74	NoGas	100.489	ppb	0.9	808635	100	90	110	100.49	
Cu	65	74	NoGas	102.884	ppb	1.5	184517	100	90	110	102.88	
Cd	111	103	NoGas	95.964	ppb	0.8	103476	100	90	110	95.96	
Hg	201	159	NoGas	789.538	ppt	1.3	408	800	90	110	98.69	
Pb	208	159	NoGas	95.250	ppb	0.6	1198721	100	90	110	95.25	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	2.3	1101195	1082352.87666667	101.7	
Ge	74	H2	Pulse	1.5	420395	421500.543333333	99.7	
Sc	45	He	Pulse	1.0	129596	129889.27	99.8	
Ge	74	He	Pulse	0.4	85079	86195.52	98.7	
Rh	103	He	Pulse	0.8	251499	265590.413333333	94.7	
Tb	159	He	Pulse	0.7	387300	406398.456666667	95.3	
Bi	209	He	Pulse	1.1	269821	291291.056666667	92.6	
Li	6	NoGas	Pulse	0.5	531419	523074.786666667	101.6	
Sc	45	NoGas	Analog	2.0	1769428	1670086.30666667	105.9	
Ge	74	NoGas	Pulse	0.8	447884	450235.19	99.5	
Rh	103	NoGas	Pulse	0.4	478571	498498.73	96.0	
Tb	159	NoGas	Pulse	0.1	825459	853315.386666667	96.7	
Bi	209	NoGas	Pulse	0.5	473181	509112.503333333	92.9	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E21039-CCB
File Name	086_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b
Acq Time	5/21/2019 22:52:28
Sample Type	CCB
Total Dilution	1.0000
Comment	Cal Blk 3%HNO3 0.4%HCl
ISTD Ref FileName	009CALB.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 Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Na	23	45	H2	-0.984	ppb	N/A	18497	45	
Ca	44	45	H2	-0.154	ppb	N/A	1100	45	
Fe	56	74	H2	0.789	ppb	2.1	16160	22.5	
Fe	57	74	H2	1.027	ppb	24.8	901	22.5	
Se	78	74	H2	0.037	ppb	50.7	9	0.45	
Mg	24	45	He	0.385	ppb	92.8	310	45	
Al	27	45	He	0.517	ppb	69.2	170	22.5	
K	39	45	He	5.532	ppb	101.4	16766	45	
V	51	74	He	-0.066	ppb	N/A	522	0.45	
Cr	52	74	He	-0.023	ppb	N/A	101	0.45	
Mn	55	74	He	0.012	ppb	74.1	52	0.45	
Ni	60	74	He	-0.195	ppb	N/A	220	0.45	
Cu	65	74	He	-0.032	ppb	N/A	273	0.45	
Zn	66	74	He	0.107	ppb	146.1	162	1.8	
As	75	74	He	0.030	ppb	110.2	17	0.45	
Mo	95	103	He	0.033	ppb	27.8	34	0.45	
Ag	107	103	He	0.005	ppb	33.9	21	0.09	
Sb	121	103	He	0.014	ppb	57.2	16	0.45	
Ba	138	159	He	0.021	ppb	20.8	133	0.45	
Tl	205	159	He	0.000	ppb	338.9	94	0.09	
Be	9	6	NoGas	0.014	ppb	66.6	37	0.09	
Ti	47	45	NoGas	0.088	ppb	55.3	110	0.45	
Co	59	74	NoGas	0.002	ppb	568.8	360	0.09	
Cu	65	74	NoGas	-0.019	ppb	N/A	676	0.45	
Cd	111	103	NoGas	0.014	ppb	52.0	21	0.09	
Hg	201	159	NoGas	17.261	ppt	26.2	17	36	
Pb	208	159	NoGas	0.015	ppb	20.9	860	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Pulse	1.1	1120138	1082352.87666667	103.5	
Ge	74	H2	Pulse	1.0	424675	421500.543333333	100.8	
Sc	45	He	Pulse	0.7	130135	129889.27	100.2	
Ge	74	He	Pulse	0.6	86150	86195.52	99.9	
Rh	103	He	Pulse	0.6	257274	265590.413333333	96.9	

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	388183	406398.456666667	95.5	
Bi	209	He	Pulse	1.2	273714	291291.056666667	94.0	
Li	6	NoGas	Pulse	0.2	538496	523074.786666667	102.9	
Sc	45	NoGas	Analog	1.1	1790386	1670086.30666667	107.2	
Ge	74	NoGas	Pulse	0.9	453878	450235.19	100.8	
Rh	103	NoGas	Pulse	0.2	492563	498498.73	98.8	
Tb	159	NoGas	Pulse	0.4	832434	853315.386666667	97.6	
Bi	209	NoGas	Pulse	0.7	479854	509112.503333333	94.3	

CRL Verification ICPMS5

Sample Name	9E21039-CRL7	1102
File Name	087CRL.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 22:56:43	
Sample Type	CRL1	
Total Dilution	1.0000	
Comment	A19D348 JPB 05/21	
ISTD Ref FileName	009CALB.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	5.702	ppb	1.7	33328	63.36	70	130	<>CRL1 NR<MRL<R-11
Ca	44	45	H2	6.129	ppb	19.1	1808	68.1	70	130	<>CRL1 NR<MRL<R-11
Fe	56	74	H2	10.180	ppb	0.7	76626	113.11	70	130	
Fe	57	74	H2	10.298	ppb	8.7	2378	114.42	70	130	
Se	78	74	H2	0.254	ppb	12.8	49	141.11	70	130	<>CRL1 NR<MRL<R-11
Mg	24	45	He	8.938	ppb	11.9	2036	99.31	70	130	
Al	27	45	He	8.737	ppb	6.7	1028	97.08	70	130	
K	39	45	He	16.394	ppb	12.0	19044	182.16	70	130	<>CRL1 NR<MRL<R-11
V	51	74	He	0.155	ppb	12.6	847	86.11	70	130	
Cr	52	74	He	0.170	ppb	7.5	430	94.44	70	130	
Mn	55	74	He	0.220	ppb	7.9	294	122.22	70	130	
Ni	60	74	He	-0.105	ppb	N/A	280	-58.33	70	130	<>CRL1 NR<MRL<R-11
Cu	65	74	He	0.182	ppb	51.7	451	101.11	70	130	
Zn	66	74	He	0.073	ppb	208.1	156	40.56	70	130	<>CRL1 NR<MRL<R-11
As	75	74	He	0.157	ppb	38.9	39	87.22	70	130	
Mo	95	103	He	0.191	ppb	10.0	171	106.11	70	130	
Ag	107	103	He	0.180	ppb	17.5	526	100	70	130	
Sb	121	103	He	0.214	ppb	17.7	214	118.89	70	130	
Ba	138	159	He	0.191	ppb	9.6	504	106.11	70	130	
Tl	205	159	He	0.183	ppb	4.9	1179	101.67	70	130	
Be	9	6	NoGas	0.188	ppb	13.6	320	104.44	70	130	
Ti	47	45	NoGas	0.209	ppb	20.1	190	116.11	70	130	
Co	59	74	NoGas	0.171	ppb	10.8	1751	95	70	130	
Cu	65	74	NoGas	0.125	ppb	37.5	943	69.44	70	130	<>CRL1 NR<MRL<R-11
Cd	111	103	NoGas	0.205	ppb	12.6	234	113.89	70	130	
Hg	201	159	NoGas	17.155	ppt	74.6	17	238.26	70	130	<>CRL1 NR<MRL<R-11
Pb	208	159	NoGas	0.175	ppb	17.4	2895	97.22	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.5	1142129	1082352.87666667	105.5	
Ge	74	H2	Pulse	0.3	432239	421500.543333333	102.5	
Sc	45	He	Pulse	0.6	131800	129889.27	101.5	
Ge	74	He	Pulse	0.5	87189	86195.52	101.2	
Rh	103	He	Pulse	0.5	261546	265590.413333333	98.5	

JB 05/22/19

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Tb	159	He	Pulse	1.1	391747	406398.456666667	96.4	
Bi	209	He	Pulse	1.2	276712	291291.056666667	95.0	
Li	6	NoGas	Pulse	0.6	538762	523074.786666667	103.0	
Sc	45	NoGas	Analog	0.6	1802531	1670086.30666667	107.9	
Ge	74	NoGas	Pulse	0.5	456933	450235.19	101.5	
Rh	103	NoGas	Pulse	0.9	496061	498498.73	99.5	
Tb	159	NoGas	Pulse	0.5	836076	853315.386666667	98.0	
Bi	209	NoGas	Pulse	0.3	484677	509112.503333333	95.2	

CRL Verification ICPMS5

Sample Name	9E21039-CRL8	1103
File Name	088_CRL.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 23:00:59	
Sample Type	CRL2	
Total Dilution	1.0000	
Comment	A19D349 JPB 05/21	
ISTD Ref FileName	009CALB.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	41.118	ppb	1.5	109038	91.37	70	130	
Ca	44	45	H2	41.567	ppb	6.7	5630	92.37	70	130	
Fe	57	74	H2	43.613	ppb	1.1	7603	96.92	70	130	
Se	78	74	H2	0.882	ppb	13.0	165	98	70	130	
Mg	24	45	He	44.246	ppb	2.7	9185	98.32	70	130	
Al	27	45	He	44.807	ppb	5.4	4802	99.57	70	130	
K	39	45	He	53.523	ppb	7.0	26224	118.94	70	130	
V	51	74	He	0.814	ppb	5.2	1795	90.44	70	130	
Cr	52	74	He	0.871	ppb	4.6	1622	96.78	70	130	
Mn	55	74	He	0.833	ppb	10.7	1004	92.56	70	130	
Ni	60	74	He	0.645	ppb	26.0	761	71.67	70	130	
Cu	65	74	He	0.853	ppb	12.3	1001	94.78	70	130	
Zn	66	74	He	0.830	ppb	6.1	347	92.22	70	130	
As	75	74	He	0.914	ppb	3.4	166	101.56	70	130	
Mo	95	103	He	0.871	ppb	3.5	757	96.78	70	130	
Ag	107	103	He	0.899	ppb	7.2	2605	99.89	70	130	
Sb	121	103	He	0.891	ppb	12.1	886	99	70	130	
Ba	138	159	He	0.939	ppb	7.6	2144	104.33	70	130	
Tl	205	159	He	0.910	ppb	3.0	5508	101.11	70	130	
Be	9	6	NoGas	0.992	ppb	11.3	1571	110.22	70	130	
Ti	47	45	NoGas	0.980	ppb	8.8	651	108.89	70	130	
Co	59	74	NoGas	0.937	ppb	11.1	7750	104.11	70	130	
Cu	65	74	NoGas	0.912	ppb	13.6	2292	101.33	70	130	
Cd	111	103	NoGas	0.920	ppb	5.0	997	102.22	70	130	
Hg	201	159	NoGas	35.281	ppt	24.1	26	98	70	130	
Pb	208	159	NoGas	0.964	ppb	12.6	12388	107.11	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.3	1132503	1082352.87666667	104.6	
Ge	74	H2	Pulse	0.2	430817	421500.543333333	102.2	
Sc	45	He	Pulse	0.8	132384	129889.27	101.9	
Ge	74	He	Pulse	0.5	87304	86195.52	101.3	
Rh	103	He	Pulse	0.6	261940	265590.413333333	98.6	
Tb	159	He	Pulse	1.3	393511	406398.456666667	96.8	

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Bi	209	He	Pulse	0.4	275991	291291.056666667	94.7	
Li	6	NoGas	Pulse	5.9	520117	523074.786666667	99.4	
Sc	45	NoGas	Analog	8.5	1707372	1670086.30666667	102.2	
Ge	74	NoGas	Pulse	6.2	442138	450235.19	98.2	
Rh	103	NoGas	Pulse	6.1	478629	498498.73	96.0	
Tb	159	NoGas	Pulse	6.7	803752	853315.386666667	94.2	
Bi	209	NoGas	Pulse	6.4	466978	509112.503333333	91.7	

CRL Verification ICPMS5

Sample Name	9E21039-CRL9
File Name	089CRL_.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b
Acq Time	5/21/2019 23:05:13
Sample Type	CRL3
Total Dilution	1.0000
Comment	A19D350 JPB 05/21
ISTD Ref FileName	009CALB.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	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Na	23	45	H2	85.295	ppb	0.9	204650	94.77	70	130	
Ca	44	45	H2	86.887	ppb	2.5	10582	96.54	70	130	
Fe	57	74	H2	87.275	ppb	0.8	14502	96.97	70	130	
Se	78	74	H2	1.868	ppb	12.6	347	103.78	70	130	
Mg	24	45	He	89.142	ppb	2.3	18205	99.05	70	130	
Al	27	45	He	86.037	ppb	6.7	9079	95.6	70	130	
K	39	45	He	100.818	ppb	6.0	35145	112.02	70	130	
V	51	74	He	1.729	ppb	2.7	3091	96.06	70	130	
Cr	52	74	He	1.812	ppb	3.0	3201	100.67	70	130	
Mn	55	74	He	1.710	ppb	7.9	2009	95	70	130	
Ni	60	74	He	1.607	ppb	3.2	1369	89.28	70	130	
Cu	65	74	He	1.970	ppb	3.2	1903	109.44	70	130	
Zn	66	74	He	2.046	ppb	19.3	649	113.67	70	130	
As	75	74	He	1.945	ppb	6.9	336	108.06	70	130	
Mo	95	103	He	1.823	ppb	3.7	1568	101.28	70	130	
Ag	107	103	He	1.817	ppb	3.0	5232	100.94	70	130	
Sb	121	103	He	1.786	ppb	6.9	1766	99.22	70	130	
Ba	138	159	He	1.994	ppb	0.8	4404	110.78	70	130	
Tl	205	159	He	1.822	ppb	0.7	10834	101.22	70	130	
Be	9	6	NoGas	1.808	ppb	3.8	2986	100.44	70	130	
Ti	47	45	NoGas	1.667	ppb	1.3	1145	92.61	70	130	
Co	59	74	NoGas	1.779	ppb	1.0	14939	98.83	70	130	
Cu	65	74	NoGas	1.939	ppb	12.2	4249	107.72	70	130	
Cd	111	103	NoGas	1.853	ppb	4.2	2068	102.94	70	130	
Hg	201	159	NoGas	78.030	ppt	5.7	48	108.38	70	130	
Pb	208	159	NoGas	1.835	ppb	0.5	23858	101.94	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.5	1137103	1082352.87666667	105.1	
Ge	74	H2	Pulse	0.6	432041	421500.543333333	102.5	
Sc	45	He	Pulse	1.4	131970	129889.27	101.6	
Ge	74	He	Pulse	0.7	86758	86195.52	100.7	
Rh	103	He	Pulse	1.0	260699	265590.413333333	98.2	
Tb	159	He	Pulse	1.0	389645	406398.456666667	95.9	

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Bi	209	He	Pulse	0.8	275037	291291.056666667	94.4	
Li	6	NoGas	Pulse	0.6	542339	523074.786666667	103.7	
Sc	45	NoGas	Analog	1.8	1814343	1670086.30666667	108.6	
Ge	74	NoGas	Pulse	1.0	456766	450235.19	101.5	
Rh	103	NoGas	Pulse	0.3	494244	498498.73	99.1	
Tb	159	NoGas	Pulse	0.6	829320	853315.386666667	97.2	
Bi	209	NoGas	Pulse	0.5	483519	509112.503333333	95.0	

CRL Verification ICPMS5

Sample Name	9E21039-CRLA	1105
File Name	090CRL4.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E21039.b	
Acq Time	5/21/2019 23:09:29	
Sample Type	CRL4	
Total Dilution	1.0000	
Comment	A19D351 JPB 05/21	
ISTD Ref FileName	009CALB.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	174.634	ppb	0.5	396305	97.02	70	130	
Ca	44	45	H2	171.273	ppb	1.0	19717	95.15	70	130	
Fe	56	74	H2	174.332	ppb	0.2	1126625	96.85	70	130	
Fe	57	74	H2	173.333	ppb	0.9	28024	96.3	70	130	
Se	78	74	H2	3.538	ppb	2.5	654	98.28	70	130	
Mg	24	45	He	176.030	ppb	4.3	35896	97.79	70	130	
Al	27	45	He	177.435	ppb	2.2	18699	98.58	70	130	
K	39	45	He	193.689	ppb	2.5	53127	107.6	70	130	
V	51	74	He	3.526	ppb	3.5	5687	97.94	70	130	
Cr	52	74	He	3.647	ppb	1.9	6330	101.31	70	130	
Mn	55	74	He	3.474	ppb	1.2	4061	96.5	70	130	
Ni	60	74	He	3.463	ppb	1.8	2564	96.19	70	130	
Cu	65	74	He	3.974	ppb	2.3	3552	110.39	70	130	
Zn	66	74	He	3.434	ppb	9.1	1002	95.39	70	130	
As	75	74	He	3.652	ppb	1.1	624	101.44	70	130	
Mo	95	103	He	3.551	ppb	2.5	3055	98.64	70	130	
Ag	107	103	He	3.617	ppb	3.9	10429	100.47	70	130	
Sb	121	103	He	3.561	ppb	3.4	3525	98.92	70	130	
Ba	138	159	He	3.820	ppb	1.5	8425	106.11	70	130	
Tl	205	159	He	3.637	ppb	0.8	21706	101.03	70	130	
Be	9	6	NoGas	3.560	ppb	4.4	5863	98.89	70	130	
Ti	47	45	NoGas	3.565	ppb	5.4	2372	99.03	70	130	
Co	59	74	NoGas	3.512	ppb	1.4	29351	97.56	70	130	
Cu	65	74	NoGas	3.729	ppb	4.4	7560	103.58	70	130	
Cd	111	103	NoGas	3.511	ppb	3.3	3911	97.53	70	130	
Hg	201	159	NoGas	151.195	ppt	7.1	86	105	70	130	
Pb	208	159	NoGas	3.602	ppb	1.4	46254	100.06	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Pulse	0.1	1134783	1082352.87666667	104.8	
Ge	74	H2	Pulse	0.6	431507	421500.543333333	102.4	
Sc	45	He	Pulse	1.2	132669	129889.27	102.1	
Ge	74	He	Pulse	0.5	87190	86195.52	101.2	
Rh	103	He	Pulse	0.5	261220	265590.413333333	98.4	

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Tb	159	He	Pulse	0.3	392823	406398.456666667	96.7	
Bi	209	He	Pulse	0.5	276475	291291.056666667	94.9	
Li	6	NoGas	Pulse	1.1	542101	523074.786666667	103.6	
Sc	45	NoGas	Analog	2.1	1802484	1670086.30666667	107.9	
Ge	74	NoGas	Pulse	0.7	459783	450235.19	102.1	
Rh	103	NoGas	Pulse	0.3	493834	498498.73	99.1	
Tb	159	NoGas	Pulse	0.3	830527	853315.386666667	97.3	
Bi	209	NoGas	Pulse	1.2	483096	509112.503333333	94.9	

APEX LABORATORIES, LLC
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Metals IFA/IFB Metals Internal Standards Recovery Summary

A19E234 IFA

A19E235 IFB

A9E0508 (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
05/21/2019 14:31	rinse													
05/21/2019 14:36	rinse													
05/21/2019 14:40	cal blk													
05/21/2019 14:44	9E21039-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
05/21/2019 15:06	9E21039-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
05/21/2019 14:48	9E21039-CAL1	103.59	98.25	97.07	101.25	98.91	98.46	102.61	98.54	103.38	98.86	103.47	99.90	103.62
05/21/2019 14:53	9E21039-CAL2	100.47	94.77	98.27	99.04	95.85	99.40	100.02	98.99	100.79	99.81	100.90	100.04	100.69
05/21/2019 14:58	9E21039-CAL3	99.93	99.15	99.34	99.77	99.11	99.66	100.32	98.88	100.07	99.03	100.15	99.71	100.08
05/21/2019 15:02	rinse	99.72	98.40	98.79	99.84	98.48	99.46	99.30	99.44	100.06	99.36	100.16	99.61	99.86
05/21/2019 15:11	9E21039-CAL4	100.45	99.92	100.15	100.51	99.51	100.52	100.57	99.54	101.45	100.02	100.54	100.12	101.23
05/21/2019 15:15	9E21039-CAL5	99.93	99.36	102.29	99.87	99.38	102.57	100.32	102.07	99.89	101.78	100.17	102.88	100.53
05/21/2019 15:20	9E21039-CAL6	99.13	98.04	98.19	99.12	97.88	98.16	98.43	95.18	97.17	97.81	99.74	97.02	98.26
05/21/2019 15:24	9E21039-CAL7	97.07	95.17	94.71	96.42	94.84	95.03	96.14	93.40	94.99	96.56	98.49	95.64	96.83
05/21/2019 15:29	9E21039-CAL8	97.09	91.64	92.21	96.51	90.58	93.25	93.89	90.47	91.97	95.57	97.97	93.17	94.05
05/21/2019 15:33	9E21039-CAL9	97.74	88.13	91.91	95.50	84.58	89.65	89.41	84.36	85.14	93.29	95.07	86.86	86.99
05/21/2019 16:24	9E21039-ICV1	100.45	102.57	102.35	97.75	99.50	101.97	97.50	96.44	96.58	97.54	97.46	94.00	95.31
05/21/2019 16:28	9E21039-ICB1	100.83	98.47	100.29	100.17	97.46	101.42	100.13	100.23	100.19	99.85	99.94	98.86	98.91
05/21/2019 16:32	9E21039-CRL1	99.34	99.45	99.73	99.92	98.53	100.89	99.37	99.89	99.10	99.64	98.94	99.25	97.57
05/21/2019 16:36	9E21039-CRL2	101.79	100.80	101.10	102.54	99.71	101.36	101.97	100.20	101.00	100.31	100.65	99.74	99.51
05/21/2019 16:41	9E21039-CRL3	101.87	101.42	101.07	103.28	100.46	101.96	101.40	100.02	100.42	99.87	100.45	100.12	99.04
05/21/2019 16:48	9E21039-IFA1	105.56	84.42	93.18	99.86	77.46	87.51	91.96	77.71	81.63	89.30	94.92	76.79	80.73
05/21/2019 16:52	9E21039-IFB1	108.34	88.78	96.65	101.03	81.25	89.15	92.66	79.49	81.89	90.36	94.27	77.09	79.91
05/21/2019 17:09	rinse	91.43	103.42	95.95	92.84	97.27	97.54	93.45	95.53	94.60	97.81	95.92	97.58	95.28
05/21/2019 17:13	9051008-MS6	90.72	92.02	93.02	92.74	91.75	95.29	93.73	91.10	91.47	96.66	95.10	95.18	93.22
05/21/2019 17:18	A9E0245-01RE3	91.73	93.87	94.17	95.02	93.81	96.43	95.17	94.14	93.86	97.25	96.65	99.10	96.69
05/21/2019 17:22	9051008-DUP4	91.31	93.42	93.23	94.14	93.39	95.85	94.39	93.20	93.30	97.37	96.54	99.73	96.53
05/21/2019 17:26	9051008-MS7	91.29	97.89	93.17	92.93	97.90	95.65	94.67	93.13	93.40	97.25	96.08	98.64	95.98
05/21/2019 17:30	9051043-BLK2	89.87	92.15	86.30	92.98	91.32	88.09	92.72	87.72	93.05	91.00	95.81	90.90	95.41
05/21/2019 17:35	9051043-BS2	93.67	92.60	94.23	97.28	91.88	96.17	96.53	93.82	95.55	97.81	98.06	97.23	96.15
05/21/2019 17:39	A9E0282-01RE1	101.91	96.87	99.58	103.96	95.03	100.32	101.39	93.86	96.42	100.13	100.43	95.15	94.12
05/21/2019 17:50	A9E0289-01RE1	95.33	96.62	95.73	97.99	93.44	95.73	95.35	92.33	94.38	96.07	97.40	94.89	94.87
05/21/2019 17:54	9051043-DUP2	96.05	95.05	96.15	99.99	93.04	96.43	97.61	92.99	95.63	97.13	98.14	95.76	94.84
05/21/2019 17:59	9051043-MS3	94.65	97.35	96.87	98.92	95.04	96.78	96.26	92.91	93.72	98.15	97.76	95.18	93.40
05/21/2019 18:04	9E21039-CCV1	96.00	97.02	97.02	100.06	95.55	97.92	97.66	94.60	94.75	98.75	98.35	97.57	95.40
05/21/2019 18:08	9E21039-CCB1	98.39	99.11	99.22	101.46	97.99	100.23	99.57	97.74	98.90	99.20	99.35	98.69	97.61
05/21/2019 18:12	A9E0289-02RE1	97.28	99.21	96.66	99.73	97.70	97.24	98.29	96.23	97.36	97.78	98.27	98.29	97.86
05/21/2019 18:39	A9E0289-03RE1	91.53	98.66	100.05	92.82	94.65	99.27	90.83	93.32	88.78	96.88	91.55	92.50	87.93
05/21/2019 18:44	A9E0289-04RE1	95.61	97.39	97.14	96.35	96.15	97.62	96.17	94.39	93.96	97.76	96.72	96.03	94.02
05/21/2019 19:12	A9E0289-05RE1	98.52	96.94	98.53	95.83	94.05	99.09	95.87	93.35	93.42	95.80	95.75	92.86	92.44
05/21/2019 19:16	A9E0610-01RE1	97.87	94.48	94.87	97.59	91.71	95.39	96.30	91.19	92.91	94.40	95.69	91.39	92.15
05/21/2019 19:20	9051043-MS4	97.85	94.92	94.14	98.56	91.85	94.93	95.80	90.43	91.71	94.74	96.20	90.59	90.71
05/21/2019 19:25	9051011-BLK2	99.86	98.23	97.24	99.45	95.80	97.47	97.77	95.88	96.18	95.92	97.01	94.56	93.85
05/21/2019 19:29	9051011-BS2	99.14	93.01	96.68	99.36	90.98	96.82	97.79	94.29	95.62	96.59	97.59	94.05	94.15
05/21/2019 19:33	A9E0508-05RE1	98.55	97.20	96.61	100.89	95.41	97.25	98.86	95.56	97.17	98.22	98.90	100.19	99.08
05/21/2019 19:37	9051011-DUP2	100.67	98.15	98.53	104.57	96.14	99.27	102.04	97.35	99.44	98.23	99.34	99.74	99.08
05/21/2019 19:42	9E21039-CCV2	99.65	101.81	97.99	101.75	100.06	98.14	99.60	94.94	96.19	96.52	97.77	95.34	94.72
05/21/2019 19:46	9E21039-CCB2	100.95	101.16	99.48	102.69	99.37	100.53	101.19	98.97	99.57	98.33	98.61	97.61	96.57
05/21/2019 19:50	9051011-MS2	99.18	97.93	96.18	101.02	95.86	96.84	99.26	93.90	95.85	96.66	97.91	97.05	96.22
05/21/2019 20:12	9E21039-CCV3	103.47	107.71	105.85	102.48	103.34	104.58	100.64	98.14	97.65	97.66	98.14	93.43	93.74
05/21/2019 20:16	9E21039-CCB3	104.45	103.72	102.67	104.91	100.81	102.24	102.91	100.01	101.03	98.16	99.22	96.05	95.89
05/21/2019 20:20	9E21039-CRL4	105.44	104.88	102.42	107.41	102.38	102.87	103.50	100.26	101.32	99.02	100.35	96.53	97.39
05/21/2019 20:25	9E21039-CRL5	103.92	104.81	103.39	104.50	102.92	103.45	102.78	100.78	100.84	99.13	99.34	98.27	96.96
05/21/2019 20:29	9E21039-CRL6	105.05	105.40	103.68	107.75	103.09	103.60	103.75	100.74	101.94	99.49	100.68	97.93	98.34
05/21/2019 20:34	9051090-BLK1	104.04	104.22	102.84	107.25	101.36	102.61	102.98	100.48	102.41	99.47	100.90	97.45	97.95
05/21/2019 20:39	9051090-BS1	101.38	102.19	99.87	103.76	99.28	99.27	100.53	97.00	98.49	97.96	99.56	96.11	96.68
05/21/2019 20:43	A9E0389-01	99.83	100.89	100.13	105.20	96.44	98.33	98.07	96.03	96.25	98.00	98.51	95.36	94.29
05/21/2019 20:47	A9E0389-02	100.93	102.78	100.36	107.32	97.70	98.60	100.31	96.66	98.03	98.29	100.48	96.05	96.10
05/21/2019 20:51	A9E0389-03	101.27	103.49	100.43	106.30	99.84	99.83	101.77	97.41	100.07	99.01	100.65	97.19	97.19
05/21/2019 20:56	A9E0389-04	99.91	102.54	99.16	106.08	99.33	98.72	99.71	96.02	98.19	96.80	99.73	96.30	96.72
05/21/2019 21:02	9051090-DUP1	100.35	103.48	98.44	105.96	99.82	97.20	100.64	95.08	99.08	95.85	99.54	94.57	96.98
05/21/2019 21:06	9051090-MS1	101.44	101.90	100.13	104.82	99.00	99.88	101.23	96.66	97.75	98.48	99.76	96.11	96.01
05/21/2019 21:10	A9E0389-05	100.24	101.59	100.16	105.21	98.68	99.61	100.79	97.14	97.70	98.90	99.65	98.14	98.15
05/21/2019 21:15	A9E0389-06	102.57	103.56	100.33	109.25	100.12	100.96	102.98	98.35	100.81	98.67	101.62	96.74	97.79
05/21/2019 21:19	9E21039-CCV4	101.31	94.42	101.62	105.97	93.62	101.41	101.11	97.70	97.87	98.91	99.14	96.71	95.45
05/21/2019 21:23	9E21039-CCV5	103.55	102.29	100.14	107.82	100.23	99.82	103.39	96.30	100.25	97.52	101.76	95.37	98.51
05/21/2019 21:27	9E21039-CCB4	102.84	92.01	100.82	106.25	92.10	101.10	102.93	100.09	101.13	98.42	100.20	97.04	97.97
05/21/2019 21:32	A9E0389-07	100.11	100.56	97.58	106.44	96.67	96.74	99.52	94.80	97.62	97.02	100.27	94.67	95.67
05/21/2019 21:36	A9E0389-08	103.10	104.59	101.83	108.55	100.84	101.56	103.28	99.04	100.72	99.12	101.63	96.77	97.25
05/21/2019 21:40	A9E0389-09	101.98	103.34	100.66	107.49	99.64	101.34	102.87	98.33	99.95	98.83	100.85	97.46	97.14
05/21/2019 21:44	A9E0389-10	102.84	105.47	102.57	108.76	101.31	101.23	103.34	99.06	100.45	99.05	100.82	97.48	97.34
05/21/2019 21:49	A9E0401-01	101.01	103.80	102.18	108.37	98.05	98.66	100.43	96.72	98.66	98.94	100.51	95.91	96.40
05/21/2019 21:53	A9E0401-03	102.08	105.36	104.49	111.59	98.66	99.81	101.75	97.26	98.75	99.14	101.25	96.10	96.39
05/21/2019 21:57	A9E0401-04	101.93	106.48	104.65	111.60	98.85	100.25	101.00	96.30	98.14	99.56	101.06	96.04	95.72
05/21/2019 22:01	A9E0401-06	100.90	105.70	103.97	111.22	98.18	98.51	101.08	96.37	98.05	98.83	100.20	95.76	95.19
05/21/2019 22:05	A9E0401-07	101.34	104.53	103.42	110.60	97.10	98.18	100.39	95.69	97.20	98.42	100.15	95.43	95.06
05/21/2019 22:10	A9E0401-09	100.89	104.20	103.01	109.99	97.78	98.63	100.24	96.41	96.82	98.62	99.85	95.42	94.83
05/21/2019 22:14	9E21039-CCV6	103.39	106.15	102.37	106.80	103.21	101.46	101.44	97.91	97.06	98.36	98.75	95.85	95.31
05/21/2019 22:18	9E21039-CCB5	102.34	103.98	101.19	106.43	101.98	100.99	101.79	98.61	99.31	96.95	97.21	95.88	95.03
05/21/2019 22:22	A9E0401-10	99.56	99.51	99.05	106.05	95.21	96.75	98.40	94.06	95.03	95.55	97.46	93.60	93.98
05/21/2019 22:27	A9E0401-11	102.37	105.89	104.39	112.98	97.17	97.88	100.87	95.38	97.31	97.63	100.13	93.93	94.18
05/21/2019 22:31	A9E0595-01	97.37	102.00	98.91	103.12	97.68	95.92	96.17	93.99	93.77	95.73	96.69	92.56	92.65
05/21/2019 22:35	9051090-MS2	98.06	99.68	97.63	104.68	95.50	95.40	96.00	92.92	94.15	95.57	96.92	92.49	92.33
05/21/2019 22:39	9051090-MSD1	94.59	102.48	101.26	98.96	100.01	100.06	93.85	97.42	91.42	97.29	91.04	96.62	88.56
05/21/2019 22:43	9051090-MSD2	101.34	103.81	101.68	106.75	101.37	100.29	100.42	97.54	97.65	96.93	97.49	95.61	94.98
05/21/2019 22:48	9E21039-CCV7	101.60	101.74	99.77	105.95	99.74	98.70	99.48	94.69	96.00	95.30	96.74	92.63	92.94
05/21/2019 22:52	9E21039-CCB6	102.95	103.49	100.19	107.20	100.75	99.95	100.81	96.87	98.81	95.52	97.55	93.97	94.25
05/21/2019 22:56	9E21039-CRL7	103.00	105.52	101.47	107.93	102.55	101.15	101.49	98.48	99.51	96.39	97.98	95.00	95.20
05/21/2019 23:00	9E21039-CRL8	99.43	104.63	101.92	102.23	102.21	101.29	98.20	98.63	96.01	96.83	94.19	94.75	91.72
05/21/2019 23:05	9E21039-CRL9	103.68	105.06	101.60	108.64	102.50	100.65	101.45	98.16	99.15	95.88	97.19	94.42	94.97
05/21/2019 23:09	9E21039-CRLA	103.64	104.84	102.14	107.93	102.37	101.15	102.12	98.35	99.06	96.66	97.33	94.91	94.89
05/21/2019 23:13	9051099-BLK1	103.11	102.40	99.87	108.85	98.52	98.93	101.63	97.94	101.15	95.65	99.34	93.39	95.56
05/21/2019 23:18	9051099-BS1	100.57	99.52	98.94	106.14	95.95	97.05	99.44	95.26	98.28	95.38	99.42	92.63	94.50
05/21/2019 23:22	A9E0513-22	129.19	94.18	107.10	101.41	74.89	83.62	88.54	70.28	74.76	70.87	73.35	54.38	56.32
05/21/2019 23:26	9051099-DUP1	134.49	90.38	106.41	102.31	74.75	84.61	91.30	71.09	72.72	70.32	72.89	54.35	56.16
05/21/2019 23:30	A9E0513-23	195.10	153.91	141.83	133.32	125.92	123.36	120.05	108.74	105.94	102.88	100.12	86.66	87.67
05/21/2019 23:34	9051099-MS1	200.82	148.66	137.90	136.31	119.97	119.65	121.09	105.59	106.62	100.33	100.78	86.04	88.22
05/21/2019 23:39	A9E0513-24	193.75	152.84	140.67	137.24	127.62	124.24	123.05	111.86	111.45	104.11	104.19	91.97	94.28
05/21/2019 23:43	9051099-MS2	191.08	151.28	139.90	137.68	126.38	123.89	122.46	110.76	109.56	103.30	103.36	91.65	93.69
05/21/2019 23:47	A9E0513-25	178.97	140.57	133.21	133.08	112.00	114.59	113.86	99.11	99.63	102.40	102.89	81.44	83.13
05/21/2019 23:51	A9E0513-26	151.57	146.61	133.53	128.48	123.46	119.59	116.80	107.19	105.58	100.66	101.03	89.76	91.74
05/21/2019 23:55	9E21039-CCV8	151.27	145.62	137.07	134.79	125.88	124.20	122.31	111.87	112.39	103.85	104.51	94.64	96.08
05/22/2019 00:00	9E21039-CCV9	146.48	146.62	132.90	131.17	126.37	121.81	118.94	110.66	109.19	103.13	103.29	93.55	95.39
05/22/2019 00:04	9E21039-CCB7	144.64	147.29	133.78	129.96	126.42	122.63	120.35	113.78	112.54	103.64	104.05	95.42	97.84
05/22/2019 00:08	9E21039-CCB8	151.50	145.51	131.10	132.98	124.84	121.41	121.21	111.73	113.73	102.93	104.92	95.95	99.14
05/22/2019 00:12	A9E0513-27	134.17	136.25	124.32	122.11	116.38	114.40	111.76	105.97	104.28	100.03	100.49	93.04	95.44
05/22/2019 00:16	A9E0513-28	126.95	128.43	117.31	117.40	111.02	109.34	107.70	100.77	101.25	98.11	99.82	90.97	93.56
05/22/2019 00:21	A9E0513-29	121.50	121.72	114.45	114.08	105.06	105.99	104.72	96.85	97.31	97.17	98.52	87.82	90.01
05/22/2019 00:25	A9E0513-30	129.93	103.40	109.70	119.89	95.64	101.76	107.01	91.72	93.98	92.24	95.71	81.34	83.56
05/22/2019 00:29	A9E0513-31	117.57	127.87	115.46	110.92	108.09	105.77	98.92	96.26	89.19	99.41	94.51	86.03	81.96
05/22/2019 00:33	A9E0513-32	120.15	122.56	113.25	114.98	107.12	105.91	105.53	98.80	99.47	97.52	98.79	90.21	91.56
05/22/2019 00:37	A9E0513-33	121.21	128.48	115.13	117.37	113.83	111.05	110.21	103.78	104.35	98.99	99.44	95.52	96.28
05/22/2019 00:42	A9E0513-35	117.81	122.04	115.38	120.23	105.31	107.66	108.66	106.79	108.57	101.54	103.54	95.28	96.53
05/22/2019 00:46	A9E0513-37	108.86	92.94	100.86	111.41	85.70	92.53	98.25	90.55	92.26	91.11	96.70	81.92	85.10
05/22/2019 00:50	A9E0513-38	113.82	119.79	109.81	115.01	105.52	103.16	104.41	101.89	103.85	98.09	101.58	93.70	96.43
05/22/2019 00:54	9E21039-CCVA	113.15	125.05	110.72	113.16	110.57	105.36	104.48	99.65	100.21	96.54	97.49	91.83	93.50
05/22/2019 00:59	9E21039-CCB9	112.48	121.60	109.21	113.49	108.39	106.09	105.23	101.58	100.98	96.50	97.11	92.95	93.96
05/22/2019 01:03	A9E0513-39	105.42	106.40	104.83	109.81	99.05	99.36	100.36	98.94	100.33	96.14	97.84	91.29	92.27
05/22/2019 01:07	A9E0513-40	108.80	108.25	109.92	112.98	101.22	103.85	104.46	102.12	103.39	100.30	102.35	95.57	96.09
05/22/2019 01:11	A9E0513-41	102.93	97.70	97.86	107.25	90.90	92.96	97.45	92.41	95.08	95.08	97.42	89.28	90.80
05/22/2019 01:16	A9E0513-43	98.95	88.68	93.62	105.14	82.75	88.12	94.10	85.78	88.96	90.28	95.60	83.23	86.02
05/22/2019 01:20	rinse	105.21	116.02	104.06	109.48	107.57	101.95	102.12	100.03	99.08	97.23	97.28	94.81	94.29
05/22/2019 01:24	rinse	100.33	104.87	101.06	104.86	101.60	99.20	98.11	96.24	96.66	94.20	94.69	92.08	91.74
05/22/2019 01:28	9E21039-CCVB	98.35	101.75	98.54	102.83	98.58	97.15	96.56	92.55	92.71	92.79	93.66	89.61	89.55
05/22/2019 01:33	9E21039-CCBA	99.31	103.03	99.07	105.57	99.62	97.63	97.62	94.84	95.38	92.75	94.07	90.45	90.86
05/22/2019 01:38	9E21039-CRLB	96.53	105.47	99.01	102.63	101.46	98.61	95.56	95.22	93.24	93.27	91.27	91.02	88.28
05/22/2019 01:42	9E21039-CRLC	99.00	102.85	99.77	104.26	99.68	98.48	97.22	95.48	95.64	93.56	93.51	91.09	90.43
05/22/2019 01:47	9E21039-CRLD	97.98	102.71	99.63	104.30	99.64	97.94	97.00	95.61	94.64	93.31	92.58	91.17	89.88
05/22/2019 01:51	9E21039-CRLE	98.55	102.53	98.52	104.16	99.44	97.44	97.94	94.19	95.24	92.70	93.91	91.42	90.96
05/22/2019 01:55	rinse	97.49	102.02	98.80	103.24	98.59	97.57	96.77	94.21	94.51	92.98	92.42	90.94	89.81
05/22/2019 02:00	rinse	97.88	101.70	99.55	103.84	98.47	97.62	97.56	95.06	95.14	94.03	92.86	91.61	89.97

		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
05/20/2019 15:03	rinse													
05/20/2019 15:08	rinse													
05/20/2019 15:12	cal blk													
05/20/2019 15:16	9E20033-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
05/20/2019 15:20	9E20033-CAL1	99.20	100.70	100.93	106.10	98.86	99.30	100.03	99.89	100.47	99.90	100.72	99.44	99.41
05/20/2019 15:25	9E20033-CAL2	100.27	103.38	101.00	104.97	100.51	100.79	101.11	100.60	101.08	99.86	100.88	100.37	100.34
05/20/2019 15:41	9E20033-CAL3	101.49	108.56	106.88	107.95	104.63	105.53	103.94	103.44	103.13	102.55	102.27	101.46	101.56
05/20/2019 15:45	9E20033-CAL4	104.09	107.53	105.20	111.52	103.73	104.16	106.67	102.75	105.35	102.45	105.21	100.29	103.35
05/20/2019 15:50	9E20033-CAL5	101.25	106.21	104.13	107.37	102.68	102.89	103.00	101.72	101.60	102.11	102.60	100.98	102.13
05/20/2019 15:54	9E20033-CAL6	101.12	105.77	103.01	107.94	101.76	101.27	102.23	99.60	99.68	101.47	101.75	99.08	99.96
05/20/2019 15:59	9E20033-CAL7	100.00	101.69	103.82	104.73	98.05	100.76	99.83	99.19	97.46	102.55	100.36	98.72	97.08
05/20/2019 16:03	9E20033-CAL8	101.06	99.97	98.08	103.71	94.09	96.27	97.55	93.48	94.17	98.66	99.60	93.94	93.61
05/20/2019 16:08	9E20033-CAL9	113.49	99.29	103.48	114.72	90.02	95.42	100.33	89.73	93.42	98.11	102.41	87.19	91.83
05/20/2019 16:56	9E20033-ICV1	104.93	111.57	109.60	108.06	105.60	107.27	102.03	101.79	100.61	103.49	102.13	97.79	98.88
05/20/2019 17:00	9E20033-ICB1	103.84	106.05	105.83	107.95	101.86	104.94	103.06	102.91	103.17	102.48	102.64	99.57	101.37
05/20/2019 17:04	9E20033-CRL1	104.16	108.34	105.52	108.36	104.01	105.05	104.34	103.73	103.98	102.84	103.62	100.90	102.23
05/20/2019 17:09	9E20033-CRL2	104.38	107.85	105.38	109.55	103.81	104.73	104.76	103.68	103.42	102.93	103.09	100.86	102.15
05/20/2019 17:13	9E20033-CRL3	105.32	109.46	107.42	110.89	105.57	106.05	105.57	105.20	104.70	104.66	104.00	102.56	103.15
05/20/2019 17:18	9E20033-IFA1	120.80	92.91	102.37	118.62	80.48	89.87	98.93	79.74	85.16	90.65	100.21	73.57	82.40
05/20/2019 17:24	9E20033-IFB1	121.69	102.14	107.84	119.39	87.34	92.60	99.68	82.05	85.91	91.83	100.59	73.81	82.32
05/20/2019 17:30	rinse	97.33	111.29	103.39	105.29	106.12	102.18	100.02	101.28	98.95	102.39	100.80	100.60	101.08
05/20/2019 17:35	9051008-BLK2	92.18	96.56	97.68	102.07	93.48	97.03	96.48	97.84	97.19	99.59	99.16	98.09	98.87
05/20/2019 17:39	9051008-BS2	94.25	100.18	100.46	104.64	96.09	98.19	98.69	97.47	97.74	101.33	100.38	98.01	98.33
05/20/2019 17:45	A9E0202-01RE1	99.30	108.28	104.45	113.78	101.11	102.08	103.61	99.16	102.28	103.39	105.55	99.81	102.95
05/20/2019 17:49	A9E0245-01RE1	103.42	108.58	108.30	112.73	103.04	105.18	104.59	99.72	99.43	105.25	103.76	98.51	98.14
05/20/2019 17:53	9051008-DUP2	105.64	111.86	109.06	112.88	104.82	105.81	104.64	100.09	98.94	104.93	102.98	98.03	96.64
05/20/2019 17:58	9051008-MS3	107.30	110.72	109.43	114.82	104.34	106.12	105.83	99.07	100.59	104.20	105.34	97.17	98.59
05/20/2019 18:02	A9E0271-01RE1	105.77	111.64	109.34	114.08	105.79	106.08	105.96	101.60	102.00	104.95	104.73	100.44	101.39
05/20/2019 18:06	A9E0271-02RE1	104.32	105.41	105.08	115.43	97.76	101.27	102.27	96.30	97.57	102.21	102.65	94.11	95.92
05/20/2019 18:11	A9E0277-04RE1	99.69	107.10	103.49	110.97	99.96	100.52	100.03	97.14	97.56	101.26	100.99	97.00	98.86
05/20/2019 18:16	A9E0534-01RE1	104.79	108.70	106.50	113.31	104.75	104.79	105.84	100.27	101.05	103.71	104.33	98.86	100.79
05/20/2019 18:20	9E20033-CCV1	100.97	109.24	104.01	110.04	103.62	102.35	102.45	99.82	99.21	103.20	102.89	98.44	99.94
05/20/2019 18:24	9E20033-CCB1	101.13	106.54	103.75	110.15	102.24	102.91	103.50	102.23	103.12	103.34	103.51	101.03	102.61
05/20/2019 18:28	9051008-MS4	101.64	105.91	103.06	110.78	101.73	100.71	101.60	96.69	98.61	101.39	103.13	96.93	99.78
05/20/2019 18:33	A9E0245-01RE2	101.35	106.31	102.75	110.54	101.90	101.98	102.59	99.72	99.67	101.40	103.05	100.29	101.90
05/20/2019 18:37	9051008-DUP3	99.67	103.97	100.88	108.34	99.92	101.16	101.45	99.26	99.01	101.01	101.70	100.01	101.01
05/20/2019 18:41	9051008-MS5	99.18	103.98	101.65	106.98	100.79	100.82	101.73	98.67	99.17	100.87	101.60	99.20	100.88
05/20/2019 18:45	9051043-BLK1	97.50	102.35	98.57	105.80	97.52	97.80	99.54	97.43	98.78	98.73	100.78	97.43	100.49
05/20/2019 18:50	9051043-BS1	97.71	102.02	99.54	106.59	97.39	98.22	99.77	96.92	97.85	99.98	101.78	96.70	98.97
05/20/2019 18:54	A9E0282-01	104.23	101.38	104.92	113.90	94.82	99.63	102.91	96.47	96.91	102.53	104.25	93.43	95.77
05/20/2019 18:58	A9E0283-01	133.56	111.35	121.10	132.04	98.68	106.79	111.02	96.51	100.02	101.63	104.11	85.72	89.67
05/20/2019 19:02	A9E0283-02	146.38	132.98	127.10	128.61	100.90	104.22	105.55	90.29	92.16	92.05	95.82	72.39	79.23
05/20/2019 19:07	A9E0289-01	140.78	142.37	133.43	134.97	123.50	121.03	119.83	114.08	114.46	110.31	110.98	102.36	106.00
05/20/2019 19:12	9E20033-CCV2	134.07	135.87	130.42	131.95	120.90	120.28	118.56	112.63	111.72	110.67	110.10	102.52	104.48
05/20/2019 19:16	9E20033-CCV3	126.32	125.98	124.76	126.61	113.04	116.04	113.26	109.19	108.46	107.63	107.88	100.21	103.24
05/20/2019 19:21	9E20033-CCB2	118.98	120.75	119.79	120.36	112.97	113.35	110.66	110.12	108.59	107.17	106.08	102.67	104.29
05/20/2019 19:26	9E20033-CCB3	113.78	117.42	114.08	114.90	110.36	110.63	107.21	107.22	106.02	104.74	104.19	100.92	102.94
05/20/2019 19:31	9051043-DUP1	109.23	115.79	112.05	113.76	106.76	106.41	104.33	102.63	101.40	103.46	102.91	98.19	100.14
05/20/2019 19:35	9051043-MS1	106.49	111.64	106.10	113.74	102.66	101.66	101.66	98.17	97.87	100.83	102.74	94.04	97.00
05/20/2019 19:39	A9E0289-02	104.01	108.62	105.84	111.23	102.26	101.64	101.26	100.56	100.56	101.25	101.57	98.19	100.56
05/20/2019 19:44	A9E0289-03	102.71	104.90	103.97	110.08	98.00	100.04	100.60	96.67	97.36	100.45	101.45	94.66	96.90
05/20/2019 19:48	A9E0289-04	103.40	98.86	97.77	110.85	89.51	92.47	95.48	87.34	90.18	99.65	104.73	85.55	90.11
05/20/2019 19:52	A9E0289-05	102.34	97.40	97.68	108.01	89.14	91.29	95.61	86.89	89.69	99.11	103.90	85.27	90.00
05/20/2019 19:56	A9E0305-01	107.16	104.49	104.30	116.13	98.57	100.36	103.87	95.68	97.77	100.68	104.62	93.50	98.65
05/20/2019 20:00	A9E0305-05	100.53	104.44	100.56	111.41	92.88	93.66	94.45	89.31	90.33	96.61	99.14	86.10	89.99
05/20/2019 20:05	A9E0315-01	106.03	104.91	103.82	114.57	98.26	99.26	103.13	96.45	98.72	101.55	103.99	97.27	100.37
05/20/2019 20:09	A9E0331-02	130.69	111.37	119.33	127.67	99.98	108.01	111.05	94.44	97.21	99.20	101.19	82.60	85.59
05/20/2019 20:13	9E20033-CCV4	119.24	129.71	123.13	121.28	115.53	114.58	111.31	109.83	106.42	109.08	106.63	101.86	102.21
05/20/2019 20:17	9E20033-CCB4	107.50	113.28	109.69	113.58	107.39	106.35	105.30	104.31	103.91	103.47	103.54	99.87	102.19
05/20/2019 20:21	A9E0331-03	105.33	108.27	105.04	110.38	100.82	101.12	101.52	98.68	98.61	100.90	101.05	95.91	97.92
05/20/2019 20:26	A9E0335-01	106.65	102.49	106.04	113.21	94.89	100.94	102.41	94.65	96.09	99.11	100.41	90.43	92.79
05/20/2019 20:30	A9E0335-02	104.50	108.59	105.71	111.42	102.49	102.17	102.47	99.16	99.23	100.73	101.57	97.00	98.47
05/20/2019 20:34	A9E0335-03	137.17	109.37	120.23	122.71	90.39	98.67	101.25	85.57	88.37	90.05	91.83	70.30	75.00
05/20/2019 20:38	A9E0482-01	128.80	114.09	113.58	120.42	83.45	86.94	91.35	75.98	79.84	81.33	91.33	59.84	70.99
05/20/2019 20:43	A9E0570-01	121.88	128.12	119.21	121.75	111.72	108.75	108.20	102.10	101.91	104.22	104.41	95.49	99.02
05/20/2019 20:47	A9E0610-01	112.51	113.43	109.20	114.38	103.95	102.77	103.62	98.45	98.97	101.52	102.96	94.68	97.66
05/20/2019 20:51	9051043-MS2	106.07	106.08	103.65	110.87	97.42	98.40	99.08	94.37	94.43	99.11	99.50	91.47	93.09
05/20/2019 20:55	9051011-BLK1	101.94	104.88	102.22	106.52	98.47	98.65	98.73	97.92	98.51	100.22	100.20	96.38	97.82
05/20/2019 20:59	9051011-BS1	100.38	101.68	101.15	106.24	95.86	97.39	98.09	95.59	96.38	99.29	99.60	94.46	96.05
05/20/2019 21:04	9E20033-CCV5	100.57	102.08	101.22	106.55	96.96	98.50	99.60	95.80	96.87	99.71	99.57	95.06	96.36
05/20/2019 21:08	9E20033-CCB5	99.50	101.74	99.29	105.13	97.22	97.96	98.88	97.13	97.78	99.23	99.00	96.64	98.00
05/20/2019 21:12	A9E0254-01	97.45	98.61	96.21	104.23	92.82	93.94	95.29	94.42	95.58	97.67	98.37	105.93	108.15
05/20/2019 21:16	A9E0508-05	101.35	101.43	101.01	109.23	95.94	98.07	101.95	97.13	100.30	100.73	102.10	99.94	101.97
05/20/2019 21:21	9051011-DUP1	102.08	102.56	101.46	111.44	97.18	99.15	103.30	98.98	101.28	102.06	103.42	100.93	102.31
05/20/2019 21:25	9051011-MS1	100.01	98.69	98.82	110.15	94.02	96.39	101.17	95.13	98.03	99.46	101.23	96.72	98.80
05/20/2019 21:29	9051011-MSD1	103.55	108.19	105.17	113.98	103.76	104.07	106.67	102.63	103.75	104.00	103.66	100.96	101.44
05/20/2019 21:33	9051012-BLK1	102.19	107.47	104.38	113.05	101.94	102.23	104.74	103.06	105.21	103.29	103.59	99.14	99.86
05/20/2019 21:37	9051012-BLK2	99.39	104.07	102.06	109.72	98.69	99.02	100.82	99.30	100.86	100.83	100.98	97.78	98.94
05/20/2019 21:42	9051012-BS1	100.57	104.78	101.71	111.56	99.15	99.23	101.22	98.08	98.99	100.78	101.96	95.31	96.97
05/20/2019 21:46	A9E0235-03	100.78	108.40	105.45	116.57	96.47	96.59	99.81	94.99	97.66	100.74	101.71	93.49	94.80
05/20/2019 21:50	A9E0235-05	101.82	107.46	104.10	116.48	96.09	96.80	101.09	95.92	98.26	101.54	102.82	94.01	95.73
05/20/2019 21:54	9E20033-CCV6	98.95	106.18	100.61	107.60	100.92	98.78	99.86	96.89	96.30	99.72	99.46	95.23	95.68
05/20/2019 21:59	9E20033-CCB6	99.80	103.25	101.70	110.63	99.18	99.86	101.52	99.42	100.26	100.12	100.52	97.85	98.07
05/20/2019 22:03	A9E0574-01	99.22	102.22	100.53	112.48	93.90	94.15	99.39	93.30	97.51	98.14	100.82	92.99	95.07
05/20/2019 22:07	9051012-DUP1	98.84	103.39	101.03	112.83	93.96	94.76	98.99	93.98	96.79	99.58	100.71	93.75	94.59
05/20/2019 22:11	9051012-MS1	97.83	101.51	98.94	111.28	92.88	93.28	96.53	92.30	94.48	98.18	99.30	91.80	92.20
05/20/2019 22:15	9051012-MSD1	101.82	105.56	103.14	113.42	99.98	99.92	102.78	98.28	100.68	101.05	101.99	97.68	98.50
05/20/2019 22:20	9E20033-CCV7	96.61	101.67	98.39	108.22	97.37	95.77	98.47	94.20	95.41	98.12	98.68	93.36	94.58
05/20/2019 22:24	9E20033-CCB7	100.12	103.21	100.10	111.09	98.80	98.69	101.84	98.58	100.26	99.19	100.81	96.64	98.36
05/20/2019 22:28	9E20033-CRL4	99.14	103.77	101.47	111.02	99.32	99.51	101.74	98.81	100.51	99.26	100.41	96.75	97.94
05/20/2019 22:32	9E20033-CRL5	98.63	102.68	99.99	109.19	99.29	99.35	101.58	98.67	98.78	99.39	100.23	97.01	97.58
05/20/2019 22:37	9E20033-CRL6	99.08	103.95	99.25	109.36	99.89	99.04	102.07	97.24	100.38	98.57	100.26	95.98	97.87
05/20/2019 22:41	9E20033-CRL7	98.86	104.17	101.00	110.46	99.82	99.94	101.75	99.00	100.28	99.43	100.06	96.94	97.53

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

Cyanide – Total (aqueous) by EPA 335.4

Benchsheet & Analysis Sequence Data (Includes Calibration unless noted)

Batch 9051027

Sequence 9E20027 (A9E0508-05)

Apex Laboratories

PREPARATION BENCH SHEET

BATCH #: 9051027 (Solid)

Prep Method: ASTM D7511-12mod (S)

#	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
	9051027-BLK1		QC	05/20/19 07:51	2.5	50									
	9051027-BS1		QC	05/20/19 07:51	2.5	50	A19B182		100						
	9051027-BS2		QC	05/20/19 07:51	2.5	50	A19C272		1000						
	A9E0508-05	B	Cyanide, Total (ASTM D7511, OIA)	05/20/19 07:51	2.5342	50					COMP1	expedited on 5/17 AM			
	9051027-MS1		QC	05/20/19 07:51	2.504	50	A19A242	A9E0508-05	4000	200					
	9051027-MS2		QC	05/20/19 07:51	2.504	50	A19A242	A9E0508-05	10000			Added 5/20/2019 by wvo			
	9051027-MSD1		QC	05/20/19 07:51	2.5327	50	A19A242	A9E0508-05	4000						
	9051027-MSD2		QC	05/20/19 07:51	2.5327	50	A19A242	A9E0508-05	10000			Added 5/20/2019 by wvo			
	A9E0582-01	A	Cyanide, Total (ASTM D7511, OIA)	05/20/19 07:51	2.5537	50					2708-190515-005				

CMK 5/21/19

Standards/Reagents

Reagent(s)

Std ID	Exp. Date	Description
A19C175	09/09/19	0.1 N NaOH
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

Analyte Spike(s)

Std ID	Exp. Date	Description
A19A242	07/14/19	Cyanide working -1-
A19B182	07/07/19	Cyanide working -2- TOTAL
A19C272	09/25/19	Total CN Challenge Mtx. Stock Solution

Surrogate(s)

Std ID	Exp. Date	Description

WVO 5/20/19
Prepared By: Date

CMK 5/21/19
Reviewed By: Date

Apex Laboratories

PREPARATION BENCH SHEET

BATCH #: 9051027 (Solid)

Prep Method: ASTM D7511-12mod (S)

#	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
	9051027-BLK1		QC	05/20/19 07:51	2.5	50									
	9051027-BS1		QC	05/20/19 07:51	2.5	50	A19B182		100						
	9051027-BS2		QC	05/20/19 07:51	2.5	50	A19C272		1000						
	A9E0508-05	B	Cyanide, Total (ASTM D7511, OIA)	05/20/19 07:51	2.5342	50					COMP1	expedited on 5/17 AM			
	9051027-MS1		QC	05/20/19 07:51	2.5040	50	A19A242	A9E0508-05	200						
	9051027-MSD1		QC	05/20/19 07:51	2.5327	50	A19A242	A9E0508-05	200						
	A9E0582-01	A	Cyanide, Total (ASTM D7511, OIA)	05/20/19 07:51	2.5537	50					2708-190515-005				

Standards/Reagents

Reagent(s)

Std ID	Exp. Date	Description
A19C175	09/09/19	0.1 N NaOH
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

Analyte Spike(s)

Std ID	Exp. Date	Description
A19A242	07/14/19	Cyanide working -1-
A19B182	07/07/19	Cyanide working -2- TOTAL
A19C272	09/25/19	Total CN Challenge Mtx. Stock Solution

Surrogate(s)

Std ID	Exp. Date	Description

JVO — Prepared By: 5/20/19 — Date

Reviewed By: — Date

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence: **9E20027** Instrument: **OIA FS3000-2** ✓

Date: **05/20/19 08:52** Calibration: **A9E2001** ✓

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E20027-CAL1	Solid	QC	QC				
2	9E20027-CAL2	Solid	QC	QC				A19A244 ✓
3	9E20027-CAL3	Solid	QC	QC				A19A245 ✓
4	9E20027-CAL4	Solid	QC	QC				A19A246 ✓
5	9E20027-CAL5	Solid	QC	QC				A19A247 ✓
6	9E20027-CAL6	Solid	QC	QC				A19A248 ✓
7	9E20027-CAL7	Solid	QC	QC				A19A249 ✓
8	9E20027-ICV1	Solid	QC	QC				A19C273 ✓
9	9E20027-ICB1	Solid	QC	QC				
10	9051027-BS2	Solid	QC	QC		9051027		
11	9051027-BLK1	Solid	QC	QC		9051027		
12	9051027-BS1	Solid	QC	QC		9051027		
13	A9E0508-05	Solid	Cyanide, Total (ASTM D7511, OIA)	Hahn and Associates	05/21/19	9051027		
14	9051027-MS1 } 20X	Solid	QC	QC		9051027		
15	9051027-MSD1 }	Solid	QC	QC		9051027		
16	A9E0582-01	Solid	Cyanide, Total (ASTM D7511, OIA)	Hahn and Associates	05/23/19	9051027		
17	9E20027-CCV1	Solid	QC	QC				A19C273 ✓
18	9E20027-CCB1	Solid	QC	QC				
19	9E20027-CCV2	Solid	QC	QC				A19C273 ✓
20	9E20027-CCB2	Solid	QC	QC				
21	9051027-MS2 } 50X	Solid	QC	QC		9051027		
22	9051027-MSD2 }	Solid	QC	QC		9051027		
23	9E20027-CCV3	Solid	QC	QC				A19C273 ✓
24	9E20027-CCB3	Solid	QC	QC				

Data Entered By: NVD 5/20/19

Data Reviewed By: CWL 5/21/19

Comments: Dilution acct on Seq. NVD 5/20/19

Run Results Report

Apex Laboratories OIA FS3000-2

Operator Name	wvo
Operator ID	wvo
Platform	FS 3000
Software Rev Code	234
Data system ID	57
Result path	C:\FLOW_4\9E20027.RST
Sample table path	C:\FLOW_4\totcn50.tbl
Method path	C:\FLOW_4\totcn50.mth
Date acquired	20-May-19
Time acquired	14:34

	TOTAL CN 50ppb					
Name	Response	Calc [ppb]	Flags	Mean Response	Mean Calc [ppb]	RSD
Sync 25 ppb	953267	25.367	OL			
Sync 25 ppb	999943	26.517				
Sync 25 ppb	1000088	26.521				
(Statistics)				1000015	26.519	2.7%
Carryover	204	0.996				
Baseline	-13637	0.630	BL			
Cal 0.0 ppb	-48551	-0.296	LO			
Cal 1.0 ppb	1241	1.024				
Cal 2.0 ppb	26643	1.695				
Cal 5.0 ppb	159757	5.194				
Cal 10.0 ppb	307374	9.036				
Cal 25.0 ppb	955960	25.434				
Cal 50.0 ppb	1988471	49.922				
Blank	7053	1.178				
Read Baseline	-23107	0.379	BL			
9E20027-ICV1	968254	25.737				
9E20027-ICB1	-38025	-0.016	LO			
Read Baseline	-23890	0.358	BL			
9051027-BS2	168354	5.419				
9051027-BLK1	-23055	0.381				
9051027-BS1	781319	21.095				
Read Baseline	-18941	0.490	BL			
A9E0508-05@20	1423731	36.774				
Read Baseline	-56829	-0.516	BL			
9051027-MS1@20	1365510	35.385				
Read Baseline	-75447	-1.011	BL			
9051027-MSD1@20	1311769	34.097				

2.7% dam 5/21/19

dm 5/21/19

NR. Possible matrix interference See SOX results. wvo 5/20/19

Result path	C:\FLOW_4\9E20027.RST
Sample table path	C:\FLOW_4\totcn50.tbl
Method path	C:\FLOW_4\totcn50.mth
Date acquired	20-May-19
Time acquired	14:34

	TOTAL CN 50ppb					
Name	Response	Calc [ppb]	Flags	Mean Response	Mean Calc [ppb]	RSD
Read Baseline	-42005	-0.122	BL			
Read Baseline	-89272	-1.378	BL			
A9E0582-01@10	1415877	36.587				
Read Baseline	-34488	0.077	BL			
Read Baseline	-79611	-1.121	BL			
9E20027-CCV1	932573	24.856				
9E20027-CCB1	-51908	-0.385	LO			
Read Baseline	-25210	0.323	BL			

Run Results Report

Apex Laboratories OIA FS3000-2

Operator Name	wvo
Operator ID	wvo
Platform	FS 3000
Software Rev Code	234
Data system ID	57
Result path	C:\FLOW_4\9E20027.RST
Sample table path	C:\FLOW_4\totcn50.tbl
Method path	C:\FLOW_4\totcn50.mth
Date acquired	20-May-19
Time acquired	14:34

Date	Time	Cup	Name
20-May-19	13:14	106	Sync 25 ppb
20-May-19	13:16	106	Sync 25 ppb
20-May-19	13:18	106	Sync 25 ppb (Statistics)
20-May-19	13:20	0	Carryover
20-May-19	13:22	0	Baseline
20-May-19	13:24	101	Cal 0.0 ppb
20-May-19	13:26	102	Cal 1.0 ppb
20-May-19	13:28	103	Cal 2.0 ppb
20-May-19	13:30	104	Cal 5.0 ppb
20-May-19	13:32	105	Cal 10.0 ppb
20-May-19	13:34	106	Cal 25.0 ppb
20-May-19	13:36	107	Cal 50.0 ppb
20-May-19	13:38	0	Blank
20-May-19	13:40	0	Read Baseline
20-May-19	13:42	108	9E20027-ICV1
20-May-19	13:44	0	9E20027-ICB1
20-May-19	13:46	0	Read Baseline
20-May-19	13:48	109	9051027-BS2
20-May-19	13:50	110	9051027-BLK1
20-May-19	13:52	111	9051027-BS1
20-May-19	13:54	0	Read Baseline
20-May-19	13:56	112	A9E0508-05@20
20-May-19	13:58	0	Read Baseline
20-May-19	14:00	113	9051027-MS1@20
20-May-19	14:02	0	Read Baseline
20-May-19	14:04	114	9051027-MSD1@20

Result path	C:\FLOW_4\9E20027.RST
Sample table path	C:\FLOW_4\totcn50.tbl
Method path	C:\FLOW_4\totcn50.mth
Date acquired	20-May-19
Time acquired	14:34

Date	Time	Cup	Name
20-May-19	14:06	0	Read Baseline
20-May-19	14:08	0	Read Baseline
20-May-19	14:10	115	A9E0582-01@10
20-May-19	14:12	0	Read Baseline
20-May-19	14:14	0	Read Baseline
20-May-19	14:16	108	9E20027-CCV1
20-May-19	14:18	0	9E20027-CCB1
20-May-19	14:20	0	Read Baseline

TOTAL CN 50ppb:Calibration 1: Peak 6-34

File name: C:\FLOW_4\9E20027.RST
Date: 20-May-19
Operator: wvo

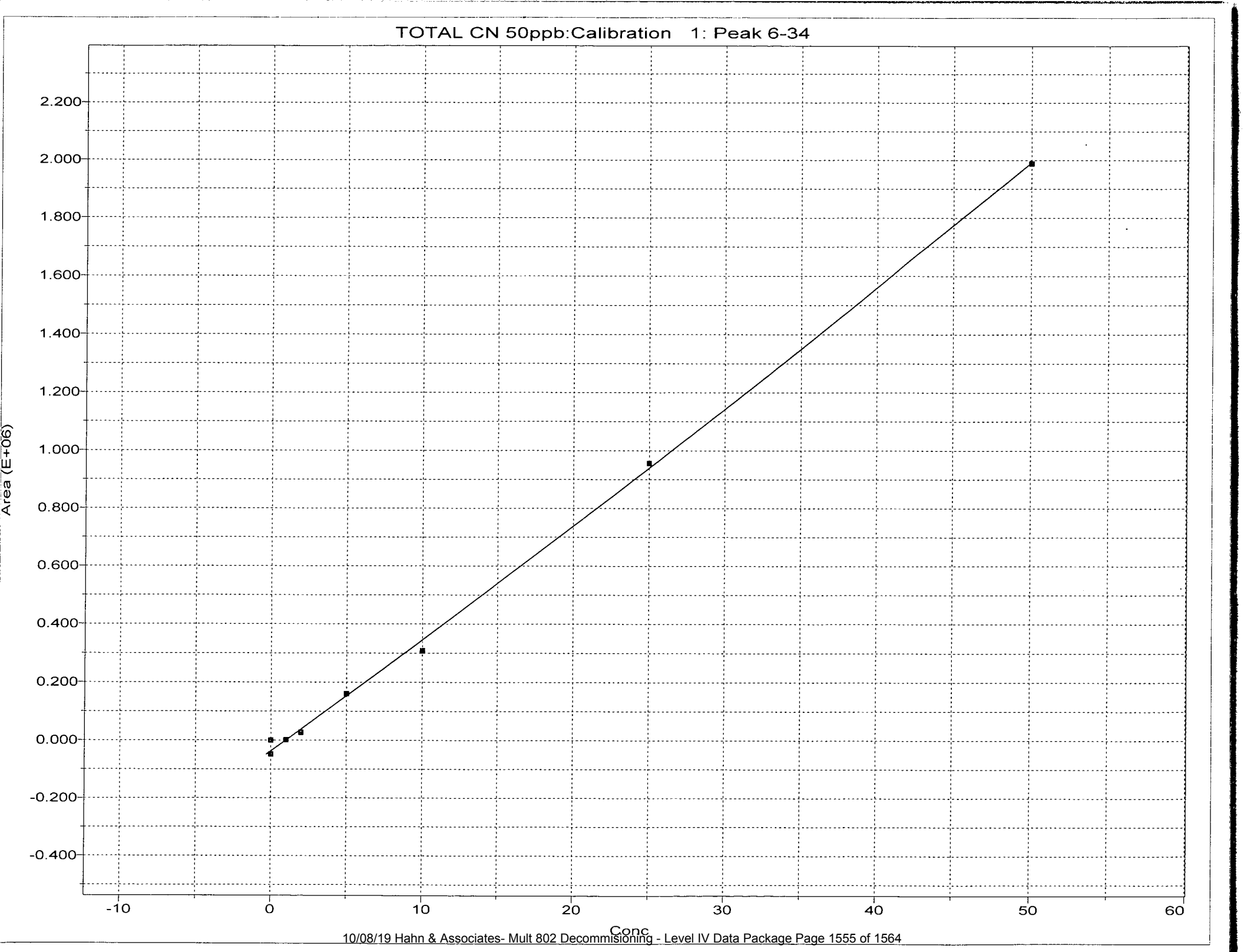
*	Name	Conc	Area
*	Cal 0.0 ppb	0.000000	-48551.023438
*	Cal 1.0 ppb	1.000000	1241.448730
*	Cal 2.0 ppb	2.000000	26642.796875
*	Cal 5.0 ppb	5.000000	159756.968750
*	Cal 10.0 ppb	10.000000	307373.687500
*	Cal 25.0 ppb	25.000000	955960.312500
*	Cal 50.0 ppb	50.000000	1988471.000000

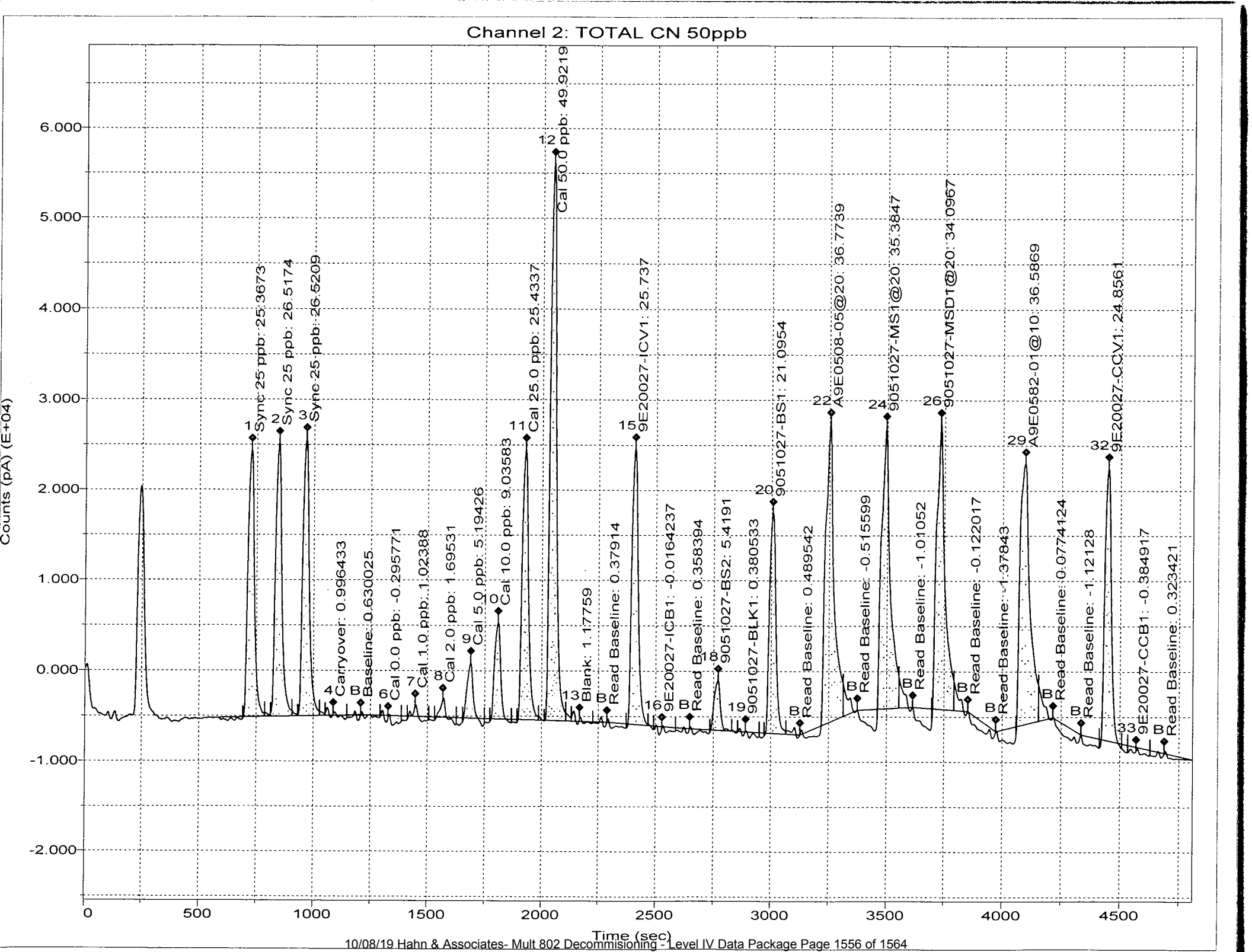
Calib Coef:
x=cyy+by+a
a: (intercept) 9.9103e-01
b: 2.6459e-05
c: -9.3118e-13

Corr Coef: 0.999465

Carryover: n/a

No Drift Peaks


TOTAL CN 50ppb:Calibration 1: Peak 6-34
Area (E+06)
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


Channel 2: TOTAL CN 50ppb
Counts (pA) (E+04)
Time (sec)
1 Sync 25 ppb: 25.3673
2 Sync 25 ppb: 26.5174
3 Sync 25 ppb: 26.5209
4 Carryover: 0.996433
B Baseline: 0.630025
6 Cal 0.0 ppb: -0.295771
7 Cal 1.0 ppb: 1.02388
8 Cal 2.0 ppb: 1.69531
9 Cal 5.0 ppb: 5.19426
10 Cal 10.0 ppb: 9.03583
11 Cal 25.0 ppb: 25.4337
12 Cal 50.0 ppb: 49.9219
13 Blank: 1.17759
B Read Baseline: 0.37914
15 9E20027-ICV1: 25.737
16 9E20027-ICB1: -0.0164237
B Read Baseline: 0.358394
18 9051027-BS2: 5.41191
19 9051027-BLK1: 0.380533
20 9051027-BS1: 21.0954
B Read Baseline: 0.489542
22 A9E0508-05@20: 36.7739
B Read Baseline: -0.515599
24 9051027-MS1@20: 35.3847
B Read Baseline: -1.01052
26 9051027-MSD1@20: 34.0967
B Read Baseline: -0.122017
B Read Baseline: -1.37843
29 A9E0582-01@10: 36.5869
B Read Baseline: 0.0774124
B Read Baseline: -1.12128
32 9E20027-CCV1: 24.8561
33 9E20027-CCB1: -0.384917
B Read Baseline: 0.323421

Run Results Report

Apex Laboratories OIA FS3000-2

Operator Name	WVO
Operator ID	WVO
Platform	FS 3000
Software Rev Code	234
Data system ID	57
Result path	C:\FLOW_4\9E20027B.RST
Sample table path	C:\FLOW_4\totcn50.tbl
Method path	C:\FLOW_4\totcn50.mth
Date acquired	20-May-19
Time acquired	16:18

	TOTAL CN 50ppb					
Name	Response	Calc [ppb]	Flags	Mean Response	Mean Calc [ppb]	RSD
Sync 25 ppb	923150	24.623				
Sync 25 ppb	934517	24.904				
Sync 25 ppb	913197	24.377				
(Statistics)				923622	24.635	1.16%
Carryover	1925	1.042				
Baseline	-10361	0.717	BL			
Blank	-3951	0.886				
Read Baseline	-20036	0.461	BL			
9E20027-CCV2	905683	24.191				
9E20027-CCB2	-27569	0.261				
Read Baseline	-37102	0.008	BL			
9051027-MS2@50	1204530	31.511				
Read Baseline	-51796	-0.382	BL			
9051027-MSD2@50	1490189	38.352				
Read Baseline	-13858	0.624	BL			
9E20027-CCV3	869735	23.299				
9E20027-CCB3	-44115	-0.178	LO			
Read Baseline	-15826	0.572	BL			

dam 5/21/19

nt dam 5/21/19

Run Results Report

Apex Laboratories OIA FS3000-2

Operator Name	WVO
Operator ID	WVO
Platform	FS 3000
Software Rev Code	234
Data system ID	57
Result path	C:\FLOW_4\9E20027B.RST
Sample table path	C:\FLOW_4\totcn50.tbl
Method path	C:\FLOW_4\totcn50.mth
Date acquired	20-May-19
Time acquired	16:18

Date	Time	Cup	Name
20-May-19	15:31	106	Sync 25 ppb
20-May-19	15:33	106	Sync 25 ppb
20-May-19	15:35	106	Sync 25 ppb (Statistics)
20-May-19	15:37	0	Carryover
20-May-19	15:39	0	Baseline
20-May-19	15:41	0	Blank
20-May-19	15:43	0	Read Baseline
20-May-19	15:45	108	9E20027-CCV2
20-May-19	15:47	0	9E20027-CCB2
20-May-19	15:49	0	Read Baseline
20-May-19	15:51	113	9051027-MS2@50
20-May-19	15:53	0	Read Baseline
20-May-19	15:55	114	9051027-MSD2@50
20-May-19	15:57	0	Read Baseline
20-May-19	15:59	108	9E20027-CCV3
20-May-19	16:01	0	9E20027-CCB3
20-May-19	16:03	0	Read Baseline

TOTAL CN 50ppb:Calibration None

File name: C:\FLOW_4\9E20027B.RST
Date: 20-May-19
Operator: WVO

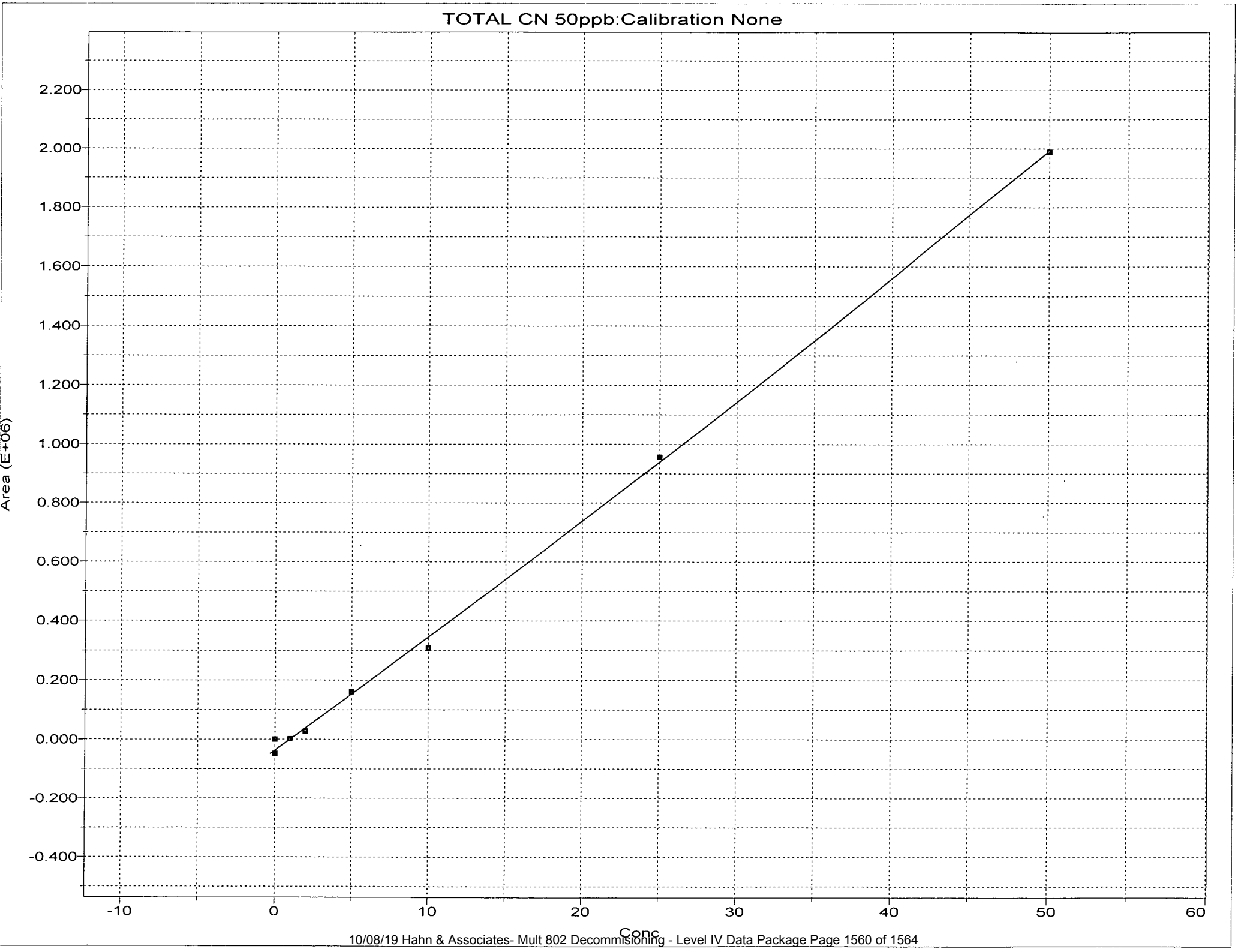
*	Name	Conc	Area
*	<Loaded>	0.000000	-48551.000000
*	<Loaded>	1.000000	1241.449951
*	<Loaded>	2.000000	26642.800781
*	<Loaded>	5.000000	159757.000000
*	<Loaded>	10.000000	307374.000000
*	<Loaded>	25.000000	955960.000000
*	<Loaded>	50.000000	1988470.000000

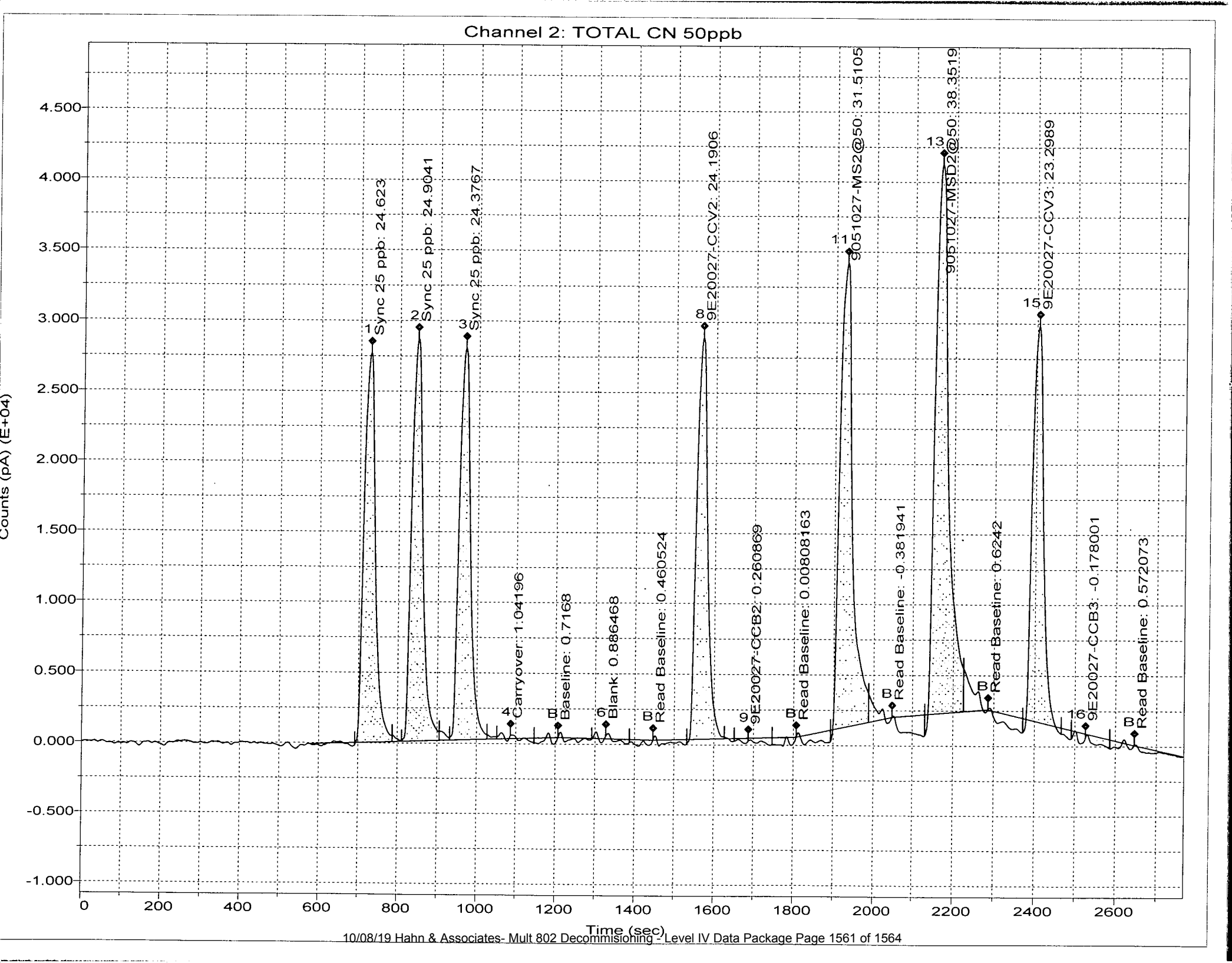
Calib Coef:
x=cyy+by+a
a: (intercept) 9.9103e-01
b: 2.6459e-05
c: -9.3119e-13

Corr Coef: 0.999465

Carryover: n/a

No Drift Peaks


TOTAL CN 50ppb:Calibration None
Area (E+06)
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


Channel 2: TOTAL CN 50ppb
Counts (pA) (E+04)
Time (sec)
1 Sync 25 ppb: 24.623
2 Sync 25 ppb: 24.9041
3 Sync 25 ppb: 24.3767
4 Carryover: 1.04196
B Baseline: 0.7168
6 Blank: 0.886468
B Read Baseline: 0.460524
8 9E20027-CCV2: 24.1906
9 9E20027-CCB2: 0.260869
B Read Baseline: 0.00808163
11 9051027-MS2@50: 31.5105
B Read Baseline: -0.381941
13 9051027-MSD2@50: 38.3519
B Read Baseline: 0.6242
15 9E20027-CCV3: 23.2989
16 9E20027-CCB3: -0.178001
B Read Baseline: 0.572073

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

TCLP Extraction by EPA 1311 (ZHE)

Benchsheet Data

Batch 9051218 (A9E0508-05)

PREPARATION BENCH SHEET

BATCH #: 9051218 (Solid)

Apex Laboratories

JUN 14 2019

Prep Method: EPA 1311 TCLP/ZHE

Lab Number	Cont.	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surr.	ClientID / Sample	Extraction Comments	pH*
A9E0508-05	B	TCLP/ZHE Extraction	05/23/19 15:35	25.06	500					COMP1	Added 5/22	

*pH <2 verified NA

Standards/Reagents

Reagent(s)			Analyte Spike(s)			Surrogate(s)		
Std ID	Exp. Date	Description	Std ID	Exp. Date	Description	Std ID	Exp. Date	Description

TCLP Fluid #1
Fluid ID: A19E240
Start: 5/23/19 1535
Stop: 5/24/19 0815
Temp: 22.6 to 22.9 C
A13L213 Metals Balance

Prepared By: 5/24/19 Date

Reviewed By: 5/28/19 Date

APEX LABS ZHE WORKSHEET

Batch # 905 1218 **Analyst** TB

Sample ID	ZHE #	Matrix	Weight of Sample in Pan (g)	Weight of Sample Remaining in Pan (g)	Weight of Sample Added (g)	TCLP Fluid #1 (ml)	Initial PSI (5-10)	Final PSI *	Comments
A9E0508-05	1	Soil	~~2~~	NA	25.06	500	10	5	Solid n

*Re-extract if pressure reads 0 PSI

Start

Date/Initals 5/23/19

Time (18+/- 2h) 1535

RPM (30) 30

Stop

Date/Initials 5/24/19

Time 0815

Temp (23+/- 2°C) Min: 22.6 **Max:** 22.9 **(For thermometer SN** EU6200919 **C.F.** 0

Comments: TCLP Fluid # 1 Lot # A19E240 **Temp before C.F.** NA