

Appendix Q

Analytical Data, Supporting Figures, and Communications Related to MGP-Related DNAPL

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1. Figure 5-10 from PSE&G's 2007 Remedial Investigation Report – Former Halladay Street Gas Works, Jersey City, New Jersey.
2. Figure 5 from PSE&G's 2012 Remedial Action Work Plan Addendum – Former Halladay Street Gas Works, Jersey City, New Jersey.
3. December 3, 2020 letter of transmittal from AECOM (Carey Letts) transmitting groundwater investigation locations at PPG's Garfield Avenue Group Site 114 and to the northeast/south/southeast of GA Group Site 114 where DNAPL have been observed.
4. September 12, 2016 email from PSE&G (Lou Hahn) to PPG (Richard Feinberg) re DNAPL Fingerprint Analysis from Site 137N, 45 Halladay Street
5. June 21, 2016 Laboratory Analytical Report from SGS Accutest for DNAPL sample collected from Site 137N, 45 Halladay Street



- LEGEND**
- LOT BOUNDARY LINE
 - FENCE
 - MANHOLE
 - EXISTING CURB
 - CONRAIL
 - FIREHYDRANT
 - UNDERGROUND UTILITY LINE (TELECOMMUNICATIONS)
 - UNDERGROUND UTILITY LINE (WATER)
 - UNDERGROUND UTILITY LINE (GAS)
 - UNDERGROUND UTILITY LINE (ELECTRIC)
 - UNDERGROUND UTILITY LINE (SANITARY)
 - EXISTING BUILDINGS
 - STORM INLET
 - EXISTING WALLS
 - GAS VALVE
 - WATER VALVE
 - MONITORING WELL
 - SOIL BORING LOCATION
 - TEST TRENCH LOCATION
 - HORIZONTAL LIMIT OF OM NOT DELINEATED
 - MGP SITE BOUNDARY
 - BOUNDARY OF OM/TM DELINEATION

KEY

TOP OF OM/TM	NE - NOT ENCOUNTERED
THICKNESS OF ZONE CONTAINING LENSES OF OM AND/OR TM	OSB-20* - BORING DATA BASED ON INFORMATION PROVIDED BY ENSR
TOTAL DEPTH OF BORING LOGGED	

SOURCES: BASEMAP INCLUDING UTILITIES, BUILDINGS, AND LOT BOUNDARIES ADAPTED FROM "NON RESIDENTIAL SITES CHROMIUM REMEDIATION PROJECT HUDSON COUNTY, NEW JERSEY. REVISED DRAFT REMEDIAL INVESTIGATION WORK PLAN GROUP 7 SITE 114-GARFIELD AVENUE SITE" PREPARED BY IT CORPORATION OCTOBER 1991.

- LOCATIONS OF MONITORING WELLS PPG114-MW1A THROUGH PPG114-MW8B PROVIDED BY ENSR CORPORATION FOR PPG. NOT ALL WELLS INCLUDED ON THIS DRAWING.

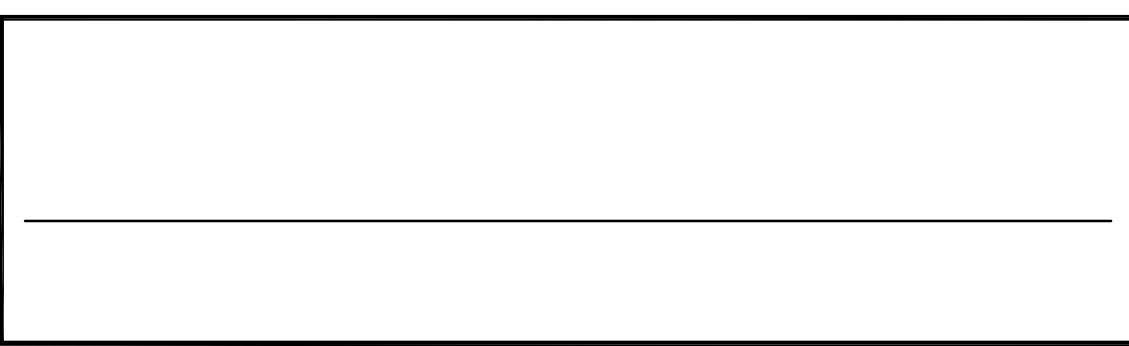
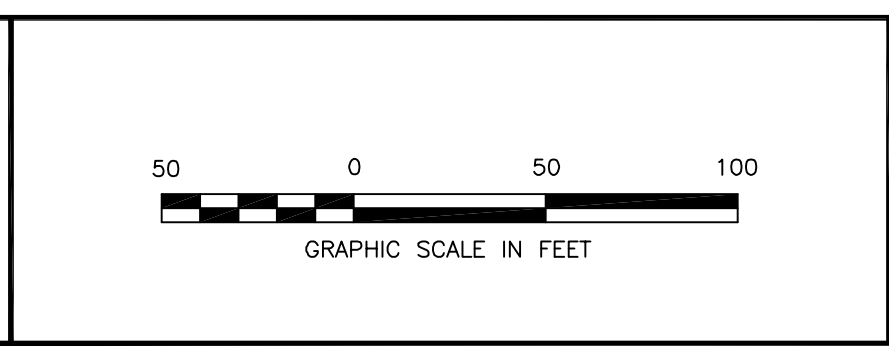
- LOCATIONS OF MONITORING WELLS MW-10/MW-15 THROUGH MW-90 AND LOCATION OF PACIFIC AVENUE SURVEYED BY SCHOOR DEPALMA.

- LOCATIONS OF BORINGS WITH "OSB" PREFIX AND MONITORING WELLS WITH "PPG114" -PREFIX HAVE BEEN SURVEYED BY PPG.

11/27/2007 10:00:00 AM P:\SUBMIT\2
11/27/2007 10:00:00 AM P:\SUBMIT\2
11/27/2007 10:00:00 AM P:\SUBMIT\2

REVISION	DATE	REVISION

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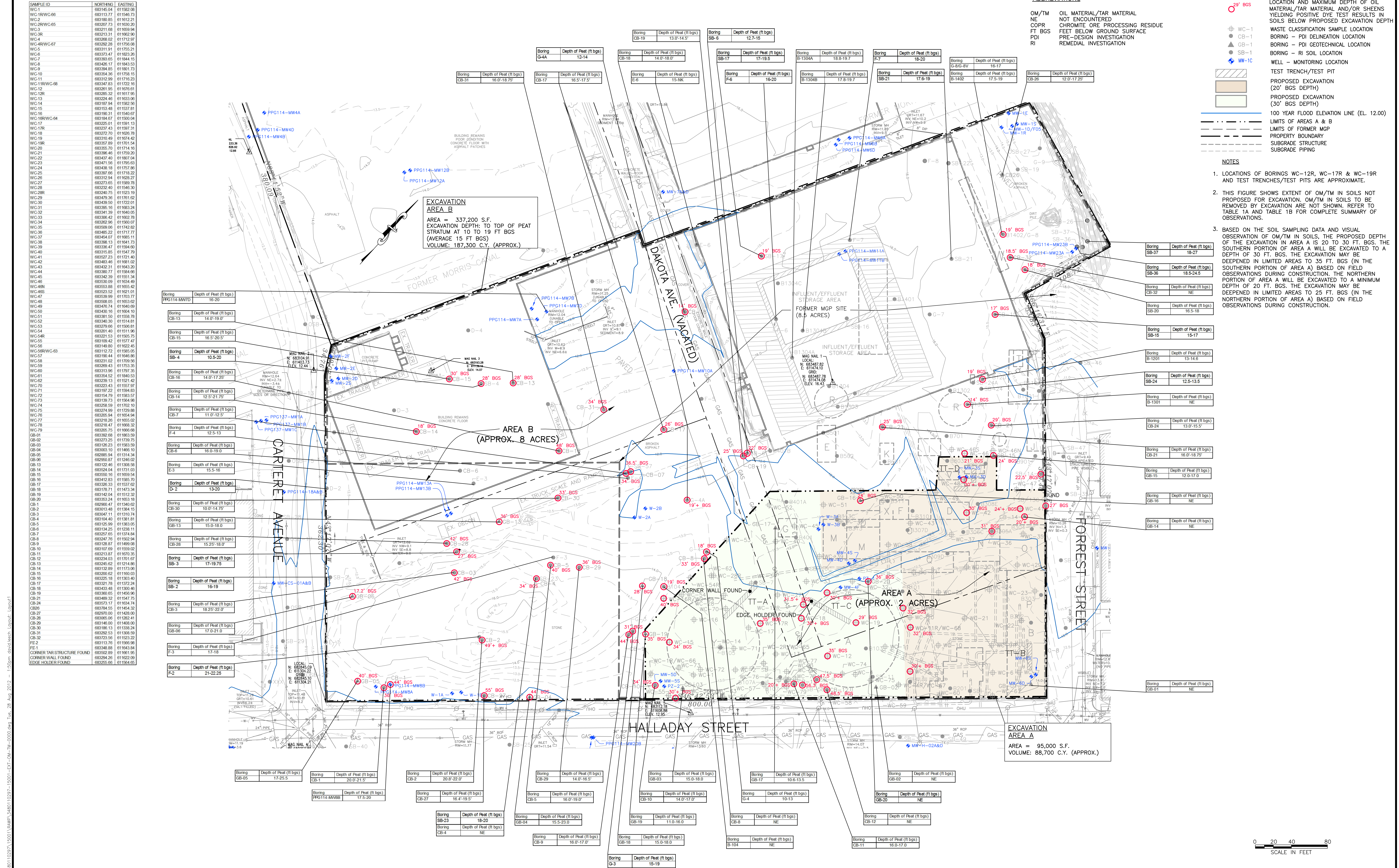


200 STATE HIGHWAY NINE
P.O. BOX 900
MANALAPAN, NJ 07726
TEL (732) 577-9000
FAX (732) 577-9888

FIGURE 5-10
OIL MATERIAL/TAR MATERIAL DELINEATION
FORMER HALLADAY STREET GAS WORKS

PROJECT NO. 020667601	DATE 11/27/2007
DRAWN BY JCC	DESIGNED BY JMS
CHECKED BY JMS	CHECKED BY JMS
SCALE 1" = 50'	
CMX	
SHEET NO. 1	of 1

NOT FOR BID
OR
CONSTRUCTION



Letter of Transmittal

To: Dave Doyle, NJDEP
Cc: Dave VanEck, NJDEP
Mark Terril, PPG
Jody Overmyer, PPG
Richard Feinberg, PPG
Dorothy Laguzza, PPG Counsel – K&L Gates
Joe Lagrotteria, PPG Counsel – K&L Gates
Chris Daggett, Hampshire Counsel
Peter Sorge, JM Sorge
Dave Spader, Jersey City Consultant – ERFS
Nick Strasser, Jersey City Counsel
Chris Fiore, Jersey City Redevelopment Agency
Jim Ray, Site Administrator
Nancy Colson, Site Administrator
Ronald Riccio, Site Administrator
Prabal Amin, Site Administrator Consultant – WESTON Solutions, Inc.
Ralph Costa, Site Administrator Consultant – WESTON Solutions, Inc.
Laura Amend-Babcock, Site Administrator Consultant – WESTON Solutions, Inc.
Trevor King, AECOM
Bill Spronz, AECOM
Matthew Schnobrich, Arcadis

From: Carey Letts, AECOM

Date: December 3, 2020 **Project Number:** 60624321

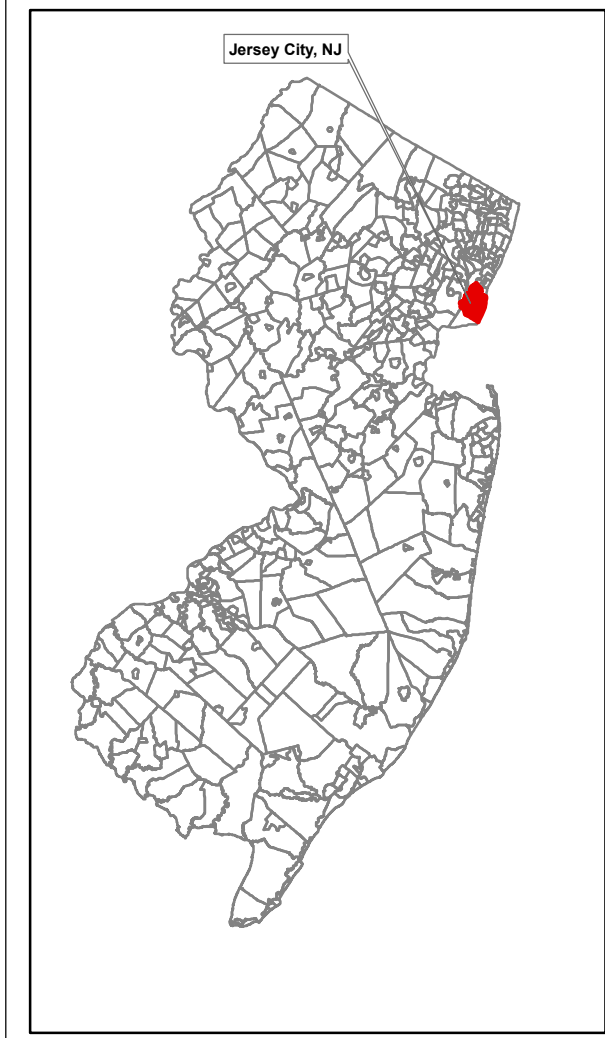
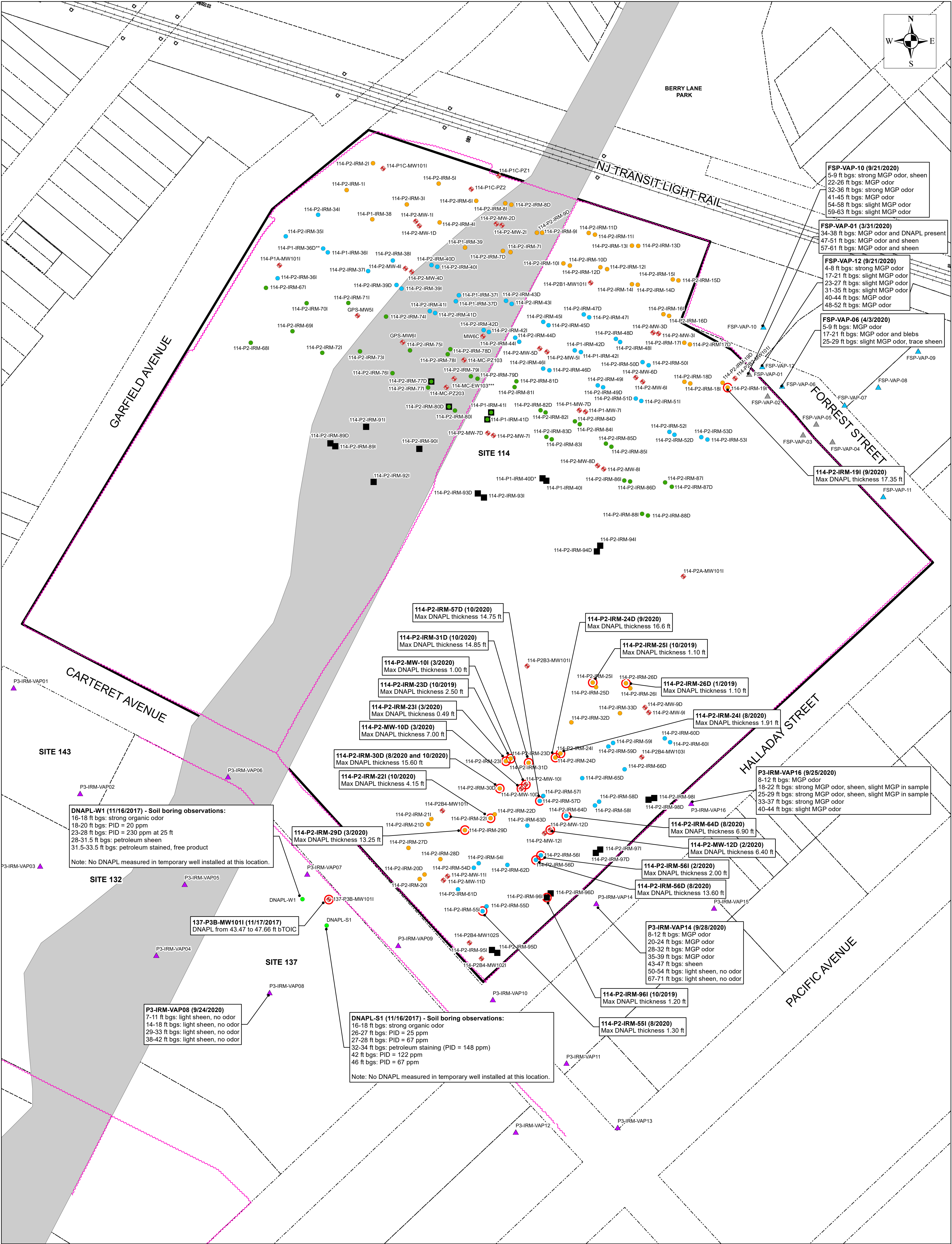
Project Reference: PPG Phase II GW IRM

Attached for your information is a figure that identifies groundwater investigation locations at PPG's Garfield Avenue (GA) Group Site 114 and to the northeast/south/southeast of GA Group Site 114 where dense non-aqueous phase liquids (DNAPL) have been observed and documented by PPG.

The attached table provides a summary of DNAPL measurements taken on select dates at GA Group Site 114 for the Phase II Interim Remedial Measure (IRM):

- DNAPL gauging was conducted in October 2019 for a subset (56) of the Phase II IRM wells and DNAPL was observed in 12 injection wells and 2 monitoring wells.

- DNAPL gauging was conducted in March 2020 during the baseline monitoring event for the Phase II IRM and DNAPL was observed in 11 injection wells and 3 monitoring wells.
- A DNAPL removal event was conducted in August 2020 to assess the feasibility of DNAPL removal in select Phase II IRM wells and conduct follow-up gauging to observe the amount of DNAPL recovery; the approximate volume of DNAPL removed from each Phase II IRM well is provided on the attached table.



LEGEND

- SITE 114 BOUNDARY
- HUDSON COUNTY
- FORMER MORRIS
- RAILROAD
- IN-PLACE SHEETPILE

- MEASURABLE DNAPL IDENTIFIED
- MONITORING WELLS
- DNAPL INVESTIGATION - COMPLETED NOVEMBER 2017
- PHASE II GW IRM INJECTION
 - STEP 1
 - STEP 2
 - STEP 3
- EXTRACTION WELLS

HPT/VAP LOCATIONS

- FORREST ST. - COMPLETED IN MARCH-APRIL 2020
- FORREST ST. - COMPLETED IN SEPTEMBER 2020
- PHASE III IRM - COMPLETED IN SEPTEMBER 2020

Map Notes:
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.
Abbreviations:
bgs = below ground surface
bTOC = below top of inner casing
DNAPL = dense non-aqueous phase liquid
ft = feet
GW = Groundwater
HPT = hydraulic profiling tool
IRM = interim remedial measures
MGP = manufactured gas plant
PID = Photoionization Detector
ppm = parts per million
VAP = vertical aquifer profile
*** Well 114-MC-EW103 was reportedly damaged during site activities after the completion of the groundwater RI

0 30 60 Feet

PPG
GARFIELD AVENUE GROUP SITE 114
JERSEY CITY, NEW JERSEY
60624321

SUMMARY OF DNAPL OBSERVATIONS

DATE: 12/2/2020

DRAWN BY: JM

CHECKED BY: SR

AECOM

DNAPL Observations

Phase II Interim Remedial Measure Garfield Avenue Group PPG, Jersey City, New Jersey

Location ID	Date	Well Depth (ft bgs)	Screened Interval (ft bgs)	Depth to Water (ft bTOR)	Depth to DNAPL (ft bTOR)	Estimated DNAPL Thickness (ft)	DNAPL Recovered (gallons)
114-P2-IRM-19I	3/18/20	42	22-42	7.97	38.61	6.14	--
	8/18/20			6.10	38.45	6.30	4.0
	9/16/20			--	--	5.80	--
	9/25/20			--	--	17.35	--
	10/13/20			--	--	15.05	--
114-P2-IRM-22I	10/22/19	42	22-42	6.22	42.00	2.00	--
	3/17/20			5.20	42.22	1.53	--
	8/17/20			5.70	40.85	2.90	2.0
	9/17/20			--	--	2.50	--
	9/25/20			--	--	3.05	--
	10/13/20			--	--	4.15	--
114-P2-IRM-23I	3/17/20	41	21-41	6.50	43.10	0.49	--
	8/17/20			7.00	--	0	0.0
	9/17/20			--	--	0	--
	9/25/20			--	--	0.20	--
	10/13/20			--	--	0.20	--
114-P2-IRM-23D	10/22/19	62	42-62	7.71	60.00	2.50	--
	3/17/20			6.35	--	0.00	--
114-P2-IRM-24D	10/22/19	65	45-65	6.31	53.00	13.00	--
	3/17/20			5.02	61.59	4.00	--
	8/17/20			5.40	49.49	16.10	9.5
	9/16/20			--	--	16.60	--
	9/25/20			--	--	15.80	--
	10/13/20			--	--	16.45	--
114-P2-IRM-24I	3/17/20	45	25-45	4.75	45.85	0	--
	8/17/20			5.15	43.94	1.91	1.0
	9/17/20			--	--	1.13	--
	9/25/20			--	--	1.05	--
	10/13/20			--	--	1.15	--
114-P2-IRM-25I	10/22/19	37	17-37	6.39	38.50	1.10	--
	3/17/20			5.79	--	0.00	--
114-P2-IRM-26D	10/22/19	57	37-57	7.53	58.00	1.10	--
	3/17/20			6.32	--	0.00	--

DNAPL Observations

Phase II Interim Remedial Measure Garfield Avenue Group PPG, Jersey City, New Jersey

Location ID	Date	Well Depth (ft bgs)	Screened Interval (ft bgs)	Depth to Water (ft bTOR)	Depth to DNAPL (ft bTOR)	Estimated DNAPL Thickness (ft)	DNAPL Recovered (gallons)
114-P2-IRM-29D	10/22/19	55	35-55	6.18	53.50	3.00	--
	3/18/20			4.71	43.86	13.25	--
	8/17/20			5.20	49.31	7.80	10.5
	9/17/20			--	--	7.75	--
	9/25/20			--	--	7.79	--
	10/13/20			--	--	8.50	--
114-P2-IRM-30D	10/22/19	63	43-63	6.37	60.00	4.90	--
	3/17/20			5.31	62.02	2.00	--
	8/17/20			5.40	48.42	15.60	10.0
	9/18/20			--	--	14.60	--
	9/25/20			--	--	15.15	--
	10/13/20			--	--	15.60	--
114-P2-IRM-31D	10/22/19	62	42-62	6.12	58.00	6.10	--
	3/17/20			4.78	63.55	2.00	--
	8/17/20			5.10	62.15	3.40	2.0
	9/18/20			--	--	14.15	--
	9/25/20			--	--	14.80	--
	10/13/20			--	--	14.85	--
114-P2-IRM-55I	3/17/20	42	22-42	5.16	44.69	0.60	--
	8/17/20			5.50	43.99	1.30	1.0
	9/17/20			--	--	0.53	--
	9/25/20			--	--	0.80	--
	10/13/20			--	--	0.95	--
114-P2-IRM-56D	10/22/19	63	43-63	6.38	51.00	12.90	--
	3/17/20			5.19	51.34	10.50	--
	8/17/20			5.50	48.24	13.60	8.0
	9/16/20			--	--	5.00	--
	9/25/20			--	--	12.85	--
	10/13/20			--	--	13.10	--
114-P2-IRM-56I	10/22/19	42	22-42	6.32	42.00	1.90	--
	3/17/20			5.17	42.43	2.00	--
	8/17/20			5.34	42.62	1.81	2.0
	9/16/20			--	--	1.30	--
	9/25/20			--	--	1.30	--
	10/13/20			--	--	1.90	--
114-P2-IRM-57D	10/22/19	63	43-63	6.00	57.00	7.80	--
	3/17/20			4.89	63.33	1.00	--
	8/17/20			5.20	51.23	13.10	12.0
	9/16/20			--	--	13.45	--
	9/25/20			--	--	13.80	--
	10/13/20			--	--	14.75	--

DNAPL Observations

Phase II Interim Remedial Measure Garfield Avenue Group PPG, Jersey City, New Jersey

Location ID	Date	Well Depth (ft bgs)	Screened Interval (ft bgs)	Depth to Water (ft bTOR)	Depth to DNAPL (ft bTOR)	Estimated DNAPL Thickness (ft)	DNAPL Recovered (gallons)
114-P2-IRM-64D	10/22/19	62	42-62	6.36	62.00	2.00	--
	3/17/20			5.31	64.30	-0.40 ^a	--
	8/17/20			5.55	57.00	6.90	3.5
	9/16/20			--	--	3.32	--
	9/25/20			--	--	5.05	--
	10/13/20			--	--	6.40	--
114-P2-IRM-96I	10/22/19	41	21-41	5.91	41.00	1.20	--
	3/17/20			4.18	--	0.00	--
114-P2-MW-10D	10/22/19	55	50-55	6.05	52.00	4.80	--
	3/17/20			5.09	47.84	7.00	--
	8/17/20			5.30	49.44	5.40	--
	9/16/20			--	--	0.20	--
	9/25/20			--	--	3.55	--
	10/13/20			--	--	5.45	--
114-P2-MW-10I	3/17/20	35	30-35	4.94	35.48	1.00	--
	8/17/20			5.34	35.98	0.50	--
	9/16/20			--	--	0	--
	9/25/20			--	--	0.20	--
	10/13/20			--	--	0.20	--
114-P2-MW-12D	10/22/19	56	51-56	6.27	52.50	5.60	--
	3/17/20			5.15	53.02	4.00	--
	8/17/20			5.50	50.62	6.40	--
	9/16/20			--	--	4.80	--
	9/25/20			--	--	4.70	--
	10/13/20			--	--	5.65	--

Notes:

a. Determined to be a gauging error. DNAPL presence confirmed during subsequent gauging events.

-- : no data recorded

DNAPL : dense non-aqueous phase liquids

ft : feet

ft bgs : feet below ground surface

ID : identification

ft bTOR : feet below top of PVC rim

Schuele, Frederik

From: LoPilato, Alfred
Sent: Monday, September 12, 2016 1:01 PM
To: Hunt, Claire; Whooley, Kathy
Subject: FW: Site 137N 45 Halladay - DNAPL Fingerprint Analysis

FYI

From: Mikaelian, Scott
Sent: Monday, September 12, 2016 12:56 PM
To: Spronz, Bill; Gleason, Shannon
Cc: Conrey, Nanette; Hellerich, Lucas; Ruiter, Aimee; LoPilato, Alfred
Subject: FW: Site 137N 45 Halladay - DNAPL Fingerprint Analysis

fyi

From: Feinberg, Richard [C] [<mailto:feinberg@ppg.com>]
Sent: Monday, September 12, 2016 12:51 PM
To: Conrey, Nanette; Hellerich, Lucas
Cc: Mikaelian, Scott; Overmyer, Jody
Subject: FW: Site 137N 45 Halladay - DNAPL Fingerprint Analysis

FYI

From: Hahn, Louis [<mailto:Louis.Hahn@pseg.com>]
Sent: Monday, September 12, 2016 12:02 PM
To: Feinberg, Richard [C]
Cc: Overmyer, Jody
Subject: RE: Site 137N 45 Halladay - DNAPL Fingerprint Analysis

Rich:

Our team reviewed the results of the fingerprint sample collected from PPG MW 137-P3B-MW101I and concur that the subject DNAPL appears to be MGP-related, which is consistent with our observations of OM/TM at 34.5 to 38 feet bgs in our soil boring SB-28 in the same general area along Carteret Avenue.

Thanks,

Lou Hahn



From: Feinberg, Richard [C] [<mailto:feinberg@ppg.com>]
Sent: Sunday, September 11, 2016 6:14 PM
To: Hahn, Louis

Cc: Overmyer, Jody
Subject: RE: Site 137N 45 Halladay - DNAPL Fingerprint Analysis

Email sent from outside of PSEG. Use caution before using links/attachments.

Lou,

Did your folks have any thoughts on this?

Would you like to have a call to discuss?

Rich

From: Feinberg, Richard [C]
Sent: Wednesday, August 10, 2016 3:31 PM
To: Louis.Hahn@pseg.com
Subject: FW: Site 137N 45 Halladay - DNAPL Fingerprint Analysis

Lou,

Per our conversation, here is the analysis on the DNAPL sample. I think the best thing to do is have a call with our technical folks and yours (after they review) and to discuss our thoughts.

Rich

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Technical Report for

AECOM, INC.

PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

60506516.GA.LSRP.DNAPL.LAB-DV

SGS Accutest Job Number: MC46549

Sampling Date: 06/21/16

Report to:

AECOM, Inc.
30 Knightsbridge Road Suite 520
Piscataway, NJ 08854
NJlabdata@aecom.com

ATTN: Mary O'Connell Kozik

Total number of pages in report: 315



Test results contained within this data package meet the requirements
of the National Environmental Laboratory Accreditation Program
and/or state specific certification programs as applicable.

H. Madadian
H. (Brad) Madadian
Lab Director

Client Service contact: Jeremy Vienneau 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579)
NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) WI (399080220)
DoD ELAP (L-A-B L2235)

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Test results relate only to samples analyzed.

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9.7: Prep Logs	315



Sample Summary

AECOM, INC.

Job No: MC46549

PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Project No: 60506516.GA.LSRP.DNAPL.LAB-DV

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
MC46549-1	06/21/16	07:45	06/23/16	SO	Oil	137-P3B-MW101I-20160621

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No MC46549

Site: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue,

Report Date 7/15/2016 1:27:45 PM

1 Sample was collected on 06/21/2016 and were received at SGS Accutest New England on 06/23/2016 properly preserved, at 0.5 Deg. C and intact. These Samples received a job number of MC46549. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Extractables by GCMS By Method D5739-06/8270M SIM

Matrix: SO

Batch ID: OP47956

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC46549-1DUP were used as the QC samples indicated.

Extractables by GC By Method ASTM D3328-06

Matrix: SO

Batch ID: OP47955

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC46549-1DUP were used as the QC samples indicated.
- Calibration standard GGR206-CC173 not associate with this job.

SGS Accutest New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety. The Laboratory Director for SGS Accutest New England or assignee as verified by the signature on the cover page has authorized the release of this report(MC46549).

Friday, July 15, 2016

Page 1 of 1

Summary of Hits

Job Number: MC46549

Account: AECOM, INC.

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Collected: 06/21/16



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC46549-1	137-P3B-MW101I-20160621					
Benzene		846000	1300	660	ug/kg	D5739-06/8270M SIM
C1-Benzene		873000	1300	660	ug/kg	D5739-06/8270M SIM
C2-Benzenes		4660000	1300	660	ug/kg	D5739-06/8270M SIM
C3-Benzenes		4880000	1300	660	ug/kg	D5739-06/8270M SIM
C4-Benzenes		2480000	1300	660	ug/kg	D5739-06/8270M SIM
C5-Benzenes		691000	1300	660	ug/kg	D5739-06/8270M SIM
Toluene		1190000	1300	660	ug/kg	D5739-06/8270M SIM
Ethylbenzene		4840000	66000	33000	ug/kg	D5739-06/8270M SIM
m,p-Xylene		3830000	66000	33000	ug/kg	D5739-06/8270M SIM
Styrene		190000	1300	660	ug/kg	D5739-06/8270M SIM
o-Xylene		2020000	66000	33000	ug/kg	D5739-06/8270M SIM
Isopropylbenzene		512000	1300	660	ug/kg	D5739-06/8270M SIM
n-Propylbenzene		221000	1300	660	ug/kg	D5739-06/8270M SIM
1,3,5-Trimethylbenzene		940000	66000	33000	ug/kg	D5739-06/8270M SIM
1,2,3-Trimethylbenzene		887000	66000	33000	ug/kg	D5739-06/8270M SIM
1,2,4-Trimethylbenzene		2760000	66000	33000	ug/kg	D5739-06/8270M SIM
sec-Butylbenzene		17400	1300	660	ug/kg	D5739-06/8270M SIM
p-Isopropyltoluene		345000	1300	660	ug/kg	D5739-06/8270M SIM
n-Butylbenzene		174000	1300	660	ug/kg	D5739-06/8270M SIM
trans-Decalin		27700	1300	660	ug/kg	D5739-06/8270M SIM
cis-Decalin		11300	1300	660	ug/kg	D5739-06/8270M SIM
Benzo(b)thiophene		777000	1300	660	ug/kg	D5739-06/8270M SIM
Naphthalene		63200000	66000	33000	ug/kg	D5739-06/8270M SIM
2-Methylnaphthalene		33300000	66000	33000	ug/kg	D5739-06/8270M SIM
1-Methylnaphthalene		24700000	66000	33000	ug/kg	D5739-06/8270M SIM
C1-Naphthalenes		36000000	66000	33000	ug/kg	D5739-06/8270M SIM
C2-Naphthalenes		20600000	66000	33000	ug/kg	D5739-06/8270M SIM
C3-Naphthalenes		6250000	1300	660	ug/kg	D5739-06/8270M SIM
C4-Naphthalenes		1790000	1300	660	ug/kg	D5739-06/8270M SIM
Biphenyl		3530000	66000	33000	ug/kg	D5739-06/8270M SIM
Acenaphthylene		5520000	66000	33000	ug/kg	D5739-06/8270M SIM
Acenaphthene		17200000	66000	33000	ug/kg	D5739-06/8270M SIM
Dibenzofuran		653000	1300	660	ug/kg	D5739-06/8270M SIM
Fluorene		7690000	66000	33000	ug/kg	D5739-06/8270M SIM
C1-Fluorenes		5080000	1300	660	ug/kg	D5739-06/8270M SIM
C2-Fluorenes		2990000	1300	660	ug/kg	D5739-06/8270M SIM
C3-Fluorenes		1060000	1300	660	ug/kg	D5739-06/8270M SIM
Dibenzothiophene		1180000	1300	660	ug/kg	D5739-06/8270M SIM
C1-Dibenzothiophenes		1420000	1300	660	ug/kg	D5739-06/8270M SIM
C2-Dibenzothiophenes		1000000	1300	660	ug/kg	D5739-06/8270M SIM
C3-Dibenzothiophenes		455000	1300	660	ug/kg	D5739-06/8270M SIM
C4-Dibenzothiophenes		138000	1300	660	ug/kg	D5739-06/8270M SIM
Phenanthrene		26000000	66000	33000	ug/kg	D5739-06/8270M SIM

Summary of Hits

Job Number: MC46549

Account: AECOM, INC.

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Collected: 06/21/16

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Anthracene		8820000	66000	33000	ug/kg	D5739-06/8270M SIM
C1-Phenanthrenes/Anthracenes		16600000	66000	33000	ug/kg	D5739-06/8270M SIM
C2-Phenanthrenes/Anthracenes		6270000	1300	660	ug/kg	D5739-06/8270M SIM
C3-Phenanthrenes/Anthracenes		1640000	1300	660	ug/kg	D5739-06/8270M SIM
C4-Phenanthrenes/Anthracenes		401000	1300	660	ug/kg	D5739-06/8270M SIM
Benzo(b)naphtho(2,1-d)thiophene		434000	1300	660	ug/kg	D5739-06/8270M SIM
Fluoranthene		6580000	66000	33000	ug/kg	D5739-06/8270M SIM
Pyrene		10800000	66000	33000	ug/kg	D5739-06/8270M SIM
C1-Fluoranthenes/Pyrenes		9750000	1300	660	ug/kg	D5739-06/8270M SIM
C2-Fluoranthenes/Pyrenes		3210000	1300	660	ug/kg	D5739-06/8270M SIM
C3-Fluoranthenes/Pyrenes		991000	1300	660	ug/kg	D5739-06/8270M SIM
Benzo(b)fluorene		981000	1300	660	ug/kg	D5739-06/8270M SIM
Benzo(c)fluorene		430000	1300	660	ug/kg	D5739-06/8270M SIM
2-Methylpyrene		1200000	1300	660	ug/kg	D5739-06/8270M SIM
4-Methylpyrene		1070000	1300	660	ug/kg	D5739-06/8270M SIM
1-Methylpyrene		1500000	1300	660	ug/kg	D5739-06/8270M SIM
Benz(a)anthracene		2380000	66000	33000	ug/kg	D5739-06/8270M SIM
Chrysene/triphenylene		3540000	66000	33000	ug/kg	D5739-06/8270M SIM
C1-Benzo(a)anthracenes/Chrysenes		3120000	1300	660	ug/kg	D5739-06/8270M SIM
C2-Benzo(a)anthracenes/Chrysenes		1180000	1300	660	ug/kg	D5739-06/8270M SIM
C3-Benzo(a)anthracenes/Chrysenes		414000	1300	660	ug/kg	D5739-06/8270M SIM
C4-Benzo(a)anthracenes/Chrysenes		103000	1300	660	ug/kg	D5739-06/8270M SIM
Benzo(b)fluoranthene		1140000	1300	660	ug/kg	D5739-06/8270M SIM
Benzo(j/k)fluoranthene		1390000	1300	660	ug/kg	D5739-06/8270M SIM
Benzo(e)pyrene		1310000	1300	660	ug/kg	D5739-06/8270M SIM
Benzo(a)pyrene		2560000	1300	660	ug/kg	D5739-06/8270M SIM
Perylene		355000	1300	660	ug/kg	D5739-06/8270M SIM
Indeno(1,2,3-cd)pyrene		715000	1300	660	ug/kg	D5739-06/8270M SIM
Dibenzo(a,h)anthracene		304000	1300	660	ug/kg	D5739-06/8270M SIM
Benzo(g,h,i)perylene		834000	1300	660	ug/kg	D5739-06/8270M SIM
Coronene		177000	1300	660	ug/kg	D5739-06/8270M SIM
TPH (C8-C40)		857000	66000	33000	mg/kg	ASTM D3328-06

Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

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Client Sample ID:	137-P3B-MW101I-20160621	Date Sampled:	06/21/16
Lab Sample ID:	MC46549-1	Date Received:	06/23/16
Matrix:	SO - Oil	Percent Solids:	n/a
Method:	D5739-06/8270M SIM SW846 3580A		
Project:	PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S39591.D	1	07/05/16	SZ	06/23/16	OP47956	MSS1964
Run #2	S39592.D	50	07/05/16	SZ	06/23/16	OP47956	MSS1964

	Initial Weight	Final Volume
Run #1	0.015 g	2.0 ml
Run #2	0.015 g	2.0 ml

Alkylated PAHs

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	846000	1300	660	ug/kg	
	C1-Benzene	873000	1300	660	ug/kg	
	C2-Benzenes	4660000	1300	660	ug/kg	
	C3-Benzenes	4880000	1300	660	ug/kg	
	C4-Benzenes	2480000	1300	660	ug/kg	
	C5-Benzenes	691000	1300	660	ug/kg	
108-88-3	Toluene	1190000	1300	660	ug/kg	
100-41-4	Ethylbenzene	4840000 ^a	66000	33000	ug/kg	
	m,p-Xylene	3830000 ^a	66000	33000	ug/kg	
100-42-5	Styrene	190000	1300	660	ug/kg	
95-47-6	o-Xylene	2020000 ^a	66000	33000	ug/kg	
98-82-8	Isopropylbenzene	512000	1300	660	ug/kg	
103-65-1	n-Propylbenzene	221000	1300	660	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	940000 ^a	66000	33000	ug/kg	
526-73-8	1,2,3-Trimethylbenzene	887000 ^a	66000	33000	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	2760000 ^a	66000	33000	ug/kg	
98-06-6	t-Butylbenzene	ND	1300	660	ug/kg	
135-98-8	sec-Butylbenzene	17400	1300	660	ug/kg	
99-87-6	p-Isopropyltoluene	345000	1300	660	ug/kg	
104-51-8	n-Butylbenzene	174000	1300	660	ug/kg	
493-02-7	trans-Decalin	27700	1300	660	ug/kg	
493-01-6	cis-Decalin	11300	1300	660	ug/kg	
11095-43-5	Benzo(b)thiophene	777000	1300	660	ug/kg	
91-20-3	Naphthalene	63200000 ^a	66000	33000	ug/kg	
91-57-6	2-Methylnaphthalene	33300000 ^a	66000	33000	ug/kg	
90-12-0	1-Methylnaphthalene	24700000 ^a	66000	33000	ug/kg	
	C1-Naphthalenes	36000000 ^a	66000	33000	ug/kg	
	C2-Naphthalenes	20600000 ^a	66000	33000	ug/kg	
	C3-Naphthalenes	6250000	1300	660	ug/kg	
	C4-Naphthalenes	1790000	1300	660	ug/kg	
92-52-4	Biphenyl	3530000 ^a	66000	33000	ug/kg	
208-96-8	Acenaphthylene	5520000 ^a	66000	33000	ug/kg	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	137-P3B-MW1011-20160621	Date Sampled:	06/21/16
Lab Sample ID:	MC46549-1	Date Received:	06/23/16
Matrix:	SO - Oil	Percent Solids:	n/a
Method:	D5739-06/8270M SIM SW846 3580A		
Project:	PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ		

Alkylated PAHs

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	17200000 ^a	66000	33000	ug/kg	
132-64-9	Dibenzofuran	653000	1300	660	ug/kg	
86-73-7	Fluorene	7690000 ^a	66000	33000	ug/kg	
	C1-Fluorenes	5080000	1300	660	ug/kg	
	C2-Fluorenes	2990000	1300	660	ug/kg	
	C3-Fluorenes	1060000	1300	660	ug/kg	
132-65-0	Dibenzothiophene	1180000	1300	660	ug/kg	
	C1-Dibenzothiophenes	1420000	1300	660	ug/kg	
	C2-Dibenzothiophenes	1000000	1300	660	ug/kg	
	C3-Dibenzothiophenes	455000	1300	660	ug/kg	
	C4-Dibenzothiophenes	138000	1300	660	ug/kg	
85-01-8	Phenanthrene	26000000 ^a	66000	33000	ug/kg	
120-12-7	Anthracene	8820000 ^a	66000	33000	ug/kg	
	C1-Phenanthrenes/Anthracene	16600000 ^a	66000	33000	ug/kg	
	C2-Phenanthrenes/Anthracene	6270000	1300	660	ug/kg	
	C3-Phenanthrenes/Anthracene	1640000	1300	660	ug/kg	
	C4-Phenanthrenes/Anthracene	401000	1300	660	ug/kg	
483-65-8	Retene	ND	1300	660	ug/kg	
239-35-0	Benzo(b)naphtho(2,1-d)thioph	434000	1300	660	ug/kg	
206-44-0	Fluoranthene	6580000 ^a	66000	33000	ug/kg	
129-00-0	Pyrene	10800000 ^a	66000	33000	ug/kg	
	C1-Fluoranthenes/Pyrenes	9750000	1300	660	ug/kg	
	C2-Fluoranthenes/Pyrenes	3210000	1300	660	ug/kg	
	C3-Fluoranthenes/Pyrenes	991000	1300	660	ug/kg	
243-17-4	Benzo(b)fluorene	981000	1300	660	ug/kg	
205-12-9	Benzo(c)fluorene	430000	1300	660	ug/kg	
3442-78-2	2-Methylpyrene	1200000	1300	660	ug/kg	
3353-12-6	4-Methylpyrene	1070000	1300	660	ug/kg	
2381-21-7	1-Methylpyrene	1500000	1300	660	ug/kg	
56-55-3	Benz(a)anthracene	2380000 ^a	66000	33000	ug/kg	
	Chrysene/triphenylene	3540000 ^a	66000	33000	ug/kg	
	C1-Benzo(a)anthracenes/Chrys	3120000	1300	660	ug/kg	
	C2-Benzo(a)anthracenes/Chrys	1180000	1300	660	ug/kg	
	C3-Benzo(a)anthracenes/Chrys	414000	1300	660	ug/kg	
	C4-Benzo(a)anthracenes/Chrys	103000	1300	660	ug/kg	
205-99-2	Benzo(b)fluoranthene	1140000	1300	660	ug/kg	
	Benzo(j/k)fluoranthene	1390000	1300	660	ug/kg	
192-97-2	Benzo(e)pyrene	1310000	1300	660	ug/kg	
50-32-8	Benzo(a)pyrene	2560000	1300	660	ug/kg	
198-55-0	Perylene	355000	1300	660	ug/kg	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	137-P3B-MW101I-20160621	Date Sampled:	06/21/16
Lab Sample ID:	MC46549-1	Date Received:	06/23/16
Matrix:	SO - Oil	Percent Solids:	n/a
Method:	D5739-06/8270M SIM SW846 3580A		
Project:	PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ		

Alkylated PAHs

CAS No.	Compound	Result	RL	MDL	Units	Q
193-39-5	Indeno(1,2,3-cd)pyrene	715000	1300	660	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	304000	1300	660	ug/kg	
191-24-2	Benzo(g,h,i)perylene	834000	1300	660	ug/kg	
191-07-1	Coronene	177000	1300	660	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	93%	107%	40-140%
1146-65-2	Naphthalene-d8	94%	99%	40-140%
1517-22-2	Phenanthrene-d10	93%	96%	40-140%
	Perylene-d12	96%	93%	40-140%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Page 1 of 2

Client Sample ID:	137-P3B-MW1011-20160621	Date Sampled:	06/21/16
Lab Sample ID:	MC46549-1	Date Received:	06/23/16
Matrix:	SO - Oil	Percent Solids:	n/a
Method:	ASTM D3328-06 SW846 3580A		
Project:	PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GR6347.D	5	07/01/16	MEW	06/23/16	OP47955	GGR207
Run #2							

Run #	Initial Weight	Final Volume
Run #1	0.015 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	C-8	ND	660	330	mg/kg	
	C-9	ND	660	330	mg/kg	
	C-10	ND	660	330	mg/kg	
	C-11	ND	660	330	mg/kg	
	C-12	ND	660	330	mg/kg	
	C-13	ND	660	330	mg/kg	
3891-98-3	2,6,10-trimethyldodecane (138	ND	660	330	mg/kg	
	C-14	ND	660	330	mg/kg	
3891-99-4	2,6,10-trimethyltridecane (147	ND	660	330	mg/kg	
	C-15	ND	660	330	mg/kg	
	C-16	ND	660	330	mg/kg	
3892-00-0	2,6,10-trimethylpentadecane (1	ND	660	330	mg/kg	
	C-17	ND	660	330	mg/kg	
1921-70-6	Pristane	ND	660	330	mg/kg	
	C-18	ND	660	330	mg/kg	
638-36-8	Phytane	ND	660	330	mg/kg	
	C-19	ND	660	330	mg/kg	
	C-20	ND	660	330	mg/kg	
	C-21	ND	660	330	mg/kg	
	C-22	ND	660	330	mg/kg	
	C-23	ND	660	330	mg/kg	
	C-24	ND	660	330	mg/kg	
	C-25	ND	660	330	mg/kg	
	C-26	ND	660	330	mg/kg	
	C-27	ND	660	330	mg/kg	
	C-28	ND	660	330	mg/kg	
	C-29	ND	660	330	mg/kg	
	C-30	ND	660	330	mg/kg	
	C-31	ND	660	330	mg/kg	
	C-32	ND	660	330	mg/kg	
	C-33	ND	660	330	mg/kg	
	C-34	ND	660	330	mg/kg	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	137-P3B-MW101I-20160621	Date Sampled:	06/21/16
Lab Sample ID:	MC46549-1	Date Received:	06/23/16
Matrix:	SO - Oil	Percent Solids:	n/a
Method:	ASTM D3328-06 SW846 3580A		
Project:	PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ		

CAS No.	Compound	Result	RL	MDL	Units	Q
	C-35	ND	660	330	mg/kg	
	C-36	ND	660	330	mg/kg	
	C-37	ND	660	330	mg/kg	
	C-38	ND	660	330	mg/kg	
	C-39	ND	660	330	mg/kg	
	C-40	ND	660	330	mg/kg	
	TPH (C8-C40)	857000	66000	33000	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	103%		40-140%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- FDI Form: Forensic Data Interpretation
- Sample Tracking Chronicle
- Internal Chain of Custody

oil

[illegible]

INITIAL ASSESSMENT *22000* *Jr*

LABEL VERIFICATION OK

04.4 ~~EP~~ C.F.

S3	I
SUB	

21A

REC-TEMP

0.5C

MC46549: Chain of Custody

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SGS Accutest Sample Receipt Summary

Job Number: MC46549

Client: AECOM

Project: 60506516GA.LSRP.DNAPL.LAB-DV

Date / Time Received: 6/23/2016 9:30:00 AM

Delivery Method: FedEx

Airbill #'s: 5633 9349 2749

Cooler Temps (Initial/Adjusted): #1: (0.5/0.5):

Cooler Security

	Y	or	N		Y	or	N
1. Custody Seals Present:	☒		☐	3. COC Present:	☒		☐
2. Custody Seals Intact:	☒		☐	4. Smpl Dates/Time OK	☒		☐

Cooler Temperature

	Y	or	N
1. Temp criteria achieved:	☒		☐
2. Thermometer ID:	IRGUN1;		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation

	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	☒
2. Trip Blank listed on COC:	☐		☐	☒
3. Samples preserved properly:	☒		☐	
4. VOCs headspace free:	☐		☐	☒

Sample Integrity - Documentation

	Y	or	N
1. Sample labels present on bottles:	☒		☐
2. Container labeling complete:	☒		☐
3. Sample container label / COC agree:	☒		☐

Sample Integrity - Condition

	Y	or	N
1. Sample recvd within HT:	☒		☐
2. All containers accounted for:	☒		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions

	Y	or	N	N/A
1. Analysis requested is clear:	☒		☐	
2. Bottles received for unspecified tests	☐		☒	
3. Sufficient volume recvd for analysis:	☒		☐	
4. Compositing instructions clear:	☐		☐	☒
5. Filtering instructions clear:	☐		☐	☒

Comments

MC46549: Chain of Custody

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Forensic Data Interpretation

Scope

One (1) sample of non-aqueous phase liquid (NAPL) was provided to SGS Accutest by AECOM from the PPG Garfield Ave site located at 70 Carteret Ave, in Jersey City, NJ on June 23rd, 2016 for hydrocarbon characterization. The sample was analyzed to determine, if possible, the types of hydrocarbon impacts present and the level of degradation of any identified material(s).

Methods

The sample was processed in duplicate by solvent dilution (EPA 3580) using dichloromethane. The sample extracts were analyzed by gas chromatography with flame ionization detection (GC/FID; EPA 8015M) for normal alkanes, isoprenoid hydrocarbons, total petroleum hydrocarbons (TPH), and a qualitative hydrocarbon fingerprint; and by gas chromatography with mass spectrometric detection in the selective ion monitoring and full scan mode (GC/MS/SIM/SCAN; EPA 8270M) for mono- and polycyclic aromatic hydrocarbons, MAH and PAH homologues, heterocyclic aromatics, and other selected compounds.

This narrative describes the results.

Sample Specific Comments

137-P3B-MW101I-20160621 – (MC46549-1)

Sample 137-P3B-MW101I-20160621 primarily contained a pyrogenic material.

The pyrogenic material was indicated by a high concentration, wide range distribution of primarily unsubstituted polycyclic aromatic hydrocarbons (PAHs) visible in the GC/FID chromatogram (Appendix A). Naphthalene appeared as the most abundant resolved aromatic hydrocarbons with other 2-, 3-, and 4-ring PAHs also present at high concentrations. Alkylated PAH homologues were present but at decreasing relative concentrations with increasing alkylation; a pyrogenic characteristic visible in the histograms presented in Appendix B (See Figure 1 for example). The high relative abundance of naphthalene to the higher molecular weight parent PAHs indicates this material had not been subjected to a substantial level of environmentally induced degradation or weathering.

The ratio of fluoranthene to pyrene of about 0.61 (Table 1) in conjunction with the sample clustering in Chart 1 and a very high total priority pollutant PAH (PAH16) concentration of about 159,000 mg/kg indicates that this material is consistent with tars or tarry residues in Accutest's reference library produced from MGPs utilizing the carbureted water gas (CWG) process.

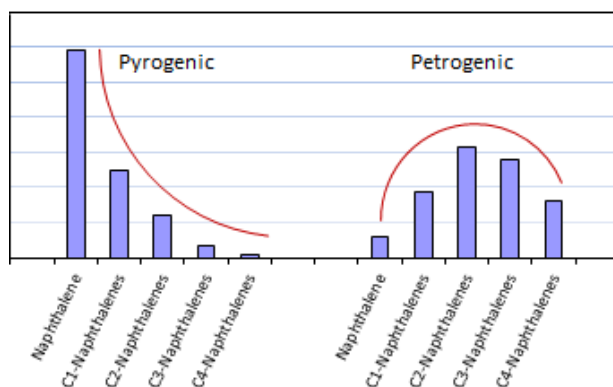
In addition to the above characteristics a regular distribution of normal alkanes (paraffins) present in a Gaussian distribution was noted and visible from about 14 minutes to about 45 minutes in the GC/MS Extracted Ion Current Profiles (EICPs; Appendix C). This corresponds to a paraffin range of n-nonadecane

(n-C9) to n-pentacosane (n-C25). Alkyl-cyclohexanes and sesquiterpane petroleum biomarkers were also present in this range and confirm the petrogenic nature of this portion of the material.

Materials with these characteristics are consistent with middle petroleum distillates including diesel fuels and No. 2 fuel oils. The identification could not differentiate between those two fuel types. Furthermore, the presence of petroleum distillates in this range, are not uncommon in samples of coal tar as petroleum distillates were used as feedstock during manufacturing gas plant operations; however, this could not be confirmed with the available data.

The laboratory duplicate analysis displayed similar characteristics.

Figure 1. Example of Pyrogenic vs. Petrogenic Histograms of Naphthalene Series



Disclaimer: SGS Accutest was not provided with any site specific information by the investigative parties and no site specific documents (boring logs, site maps, historical site usage documents, etc.) were provided for review by SGS Accutest staff. As such, this information could not be considered in the interpretive report. Sample data interpretation, weathering information, and source assignment, among other details, was only based on chemical data derived from the field samples as received at the laboratory.

Please contact me at 508-481-6200 or rubenp@accutest.com if you have any questions regarding the results.

Sincerely,

Ruben Parrilla, Technical Supervisor

Attachments

Appendix A – GC/FID Fingerprints

Appendix B – MAH/PAH Histograms

Appendix C – GC/MS Extracted Ion Current Profiles (EICPs)

References

1. Mauro, D.M., and Roush, J.A., "Examination of the sources of Polycyclic Aromatic Hydrocarbon (PAH) in Urban Background Soil," EPRI Report 1015888, December 2008.
2. Douglas G.S., Emsbo-Mattingly S.D., Stout S.A., Uhler A.D., McCarthy K.J. (2015), Hydrocarbon Fingerprinting Methods. In: B.L. Murphy & R.D Morrison (Eds.), Introduction to *Environmental Forensics*. (3rd Edition, pp. 201-309). San Diego, CA: Academic Press.
3. Douglas, G.S., Emsbo-Mattingly, S.D., Stout, S.A., Uhler, A.D., & McCarthy, K.J., (2007), Chemical Fingerprinting Methods. In B.L. Murphy & R.D. Morrison (Eds.), Introduction to *Environmental Forensics*. (2nd Edition, pp. 312-454). San Diego, CA: Academic Press.

Definitions

Pyrogenic – Pyrogenic materials are produced from organic matter subjected to intense heat but with insufficient oxygen for complete combustion. Pyrogenic materials are produced by fires, internal combustion engines, and furnaces. They also are formed when coke or gas are produced from coal or petroleum. Coal-tar based products, such as some roofing materials, pavement sealers, waterproofing materials, pesticides, and some shampoos contain pyrogenic materials.

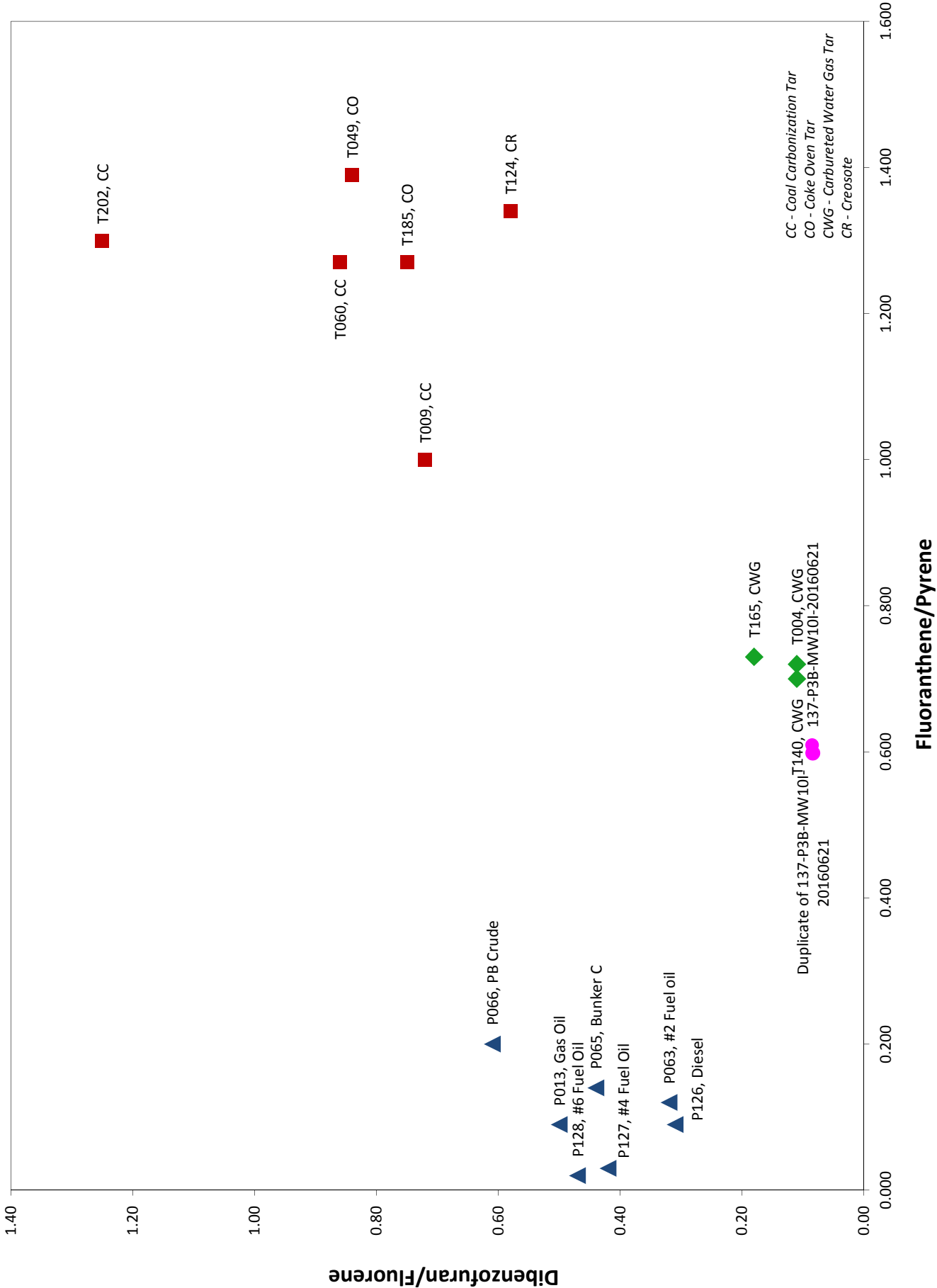
Petrogenic – Petrogenic materials are produced from within rock formations under high pressure and low temperature. Crude oil, coal, and kerogen are some examples of raw petrogenic materials. Petrogenic materials also include refined or processed materials derived from raw products including gasoline, diesel fuel, motor oil, and asphalt, among many others.

Table 1. Diagnostic Ratios

Lab ID	OP47956-DUP1	MC46549-1
Field ID	Duplicate of 137-P3B-MW10I-20160621	137-P3B-MW10I-20160621
Analyte Pairs		
FI/Py	0.60	0.61
D/F	0.08	0.08
C3D/C3PA	0.29	0.28
C2D/C2PA	0.16	0.16
BF/MP	0.37	0.37
BaA/Chr	0.71	0.67
BaA/BaP	1.12	0.93
BbF/BkF	0.84	0.82
C/BaP	1.59	1.38
P/BaP	0.14	0.14
BeP/BaP	0.51	0.51
Total PP PAH	158670.00	158673.00
Total 2-,3-ringPAH	127750.00	128430.00
Total 4-,5-,6-ringPAH	30920.00	30243.00
2-,3-ringPAH/TPAH	0.81	0.81
4-,5-,6-ring PAH/TPAH	0.19	0.19
Total PAH41	277760000.00	281980000.00

FI – Fluoranthene
 Py – Pyrene
 D – Dibenzofuran
 F – Fluorene
 C2D – C2-Dibenzothiophenes
 C3D – C3-Dibenzothiophenes
 C2D – C2-Phenanthrene & Anthracenes
 C3D – C3-Phenanthrene & Anthracenes
 BF – Benzofluorenes
 MP – Methylpyrenes
 BaA – Benzo(a)Anthracene
 BaP – Benzo(a)Pyrene
 BbF – Benzo(b)Fluorene
 BkF – Benzo(k)Fluorene
 BeP – Benzo(e)Pyrene
 BaP – Benzo(a)Pyrene
 C/Cry – Chrysene
 P - Perylene

Chart 1. Double Ratio Plot: Fluoranthene/Pyrene vs. Dibenzofuran/Fluorene



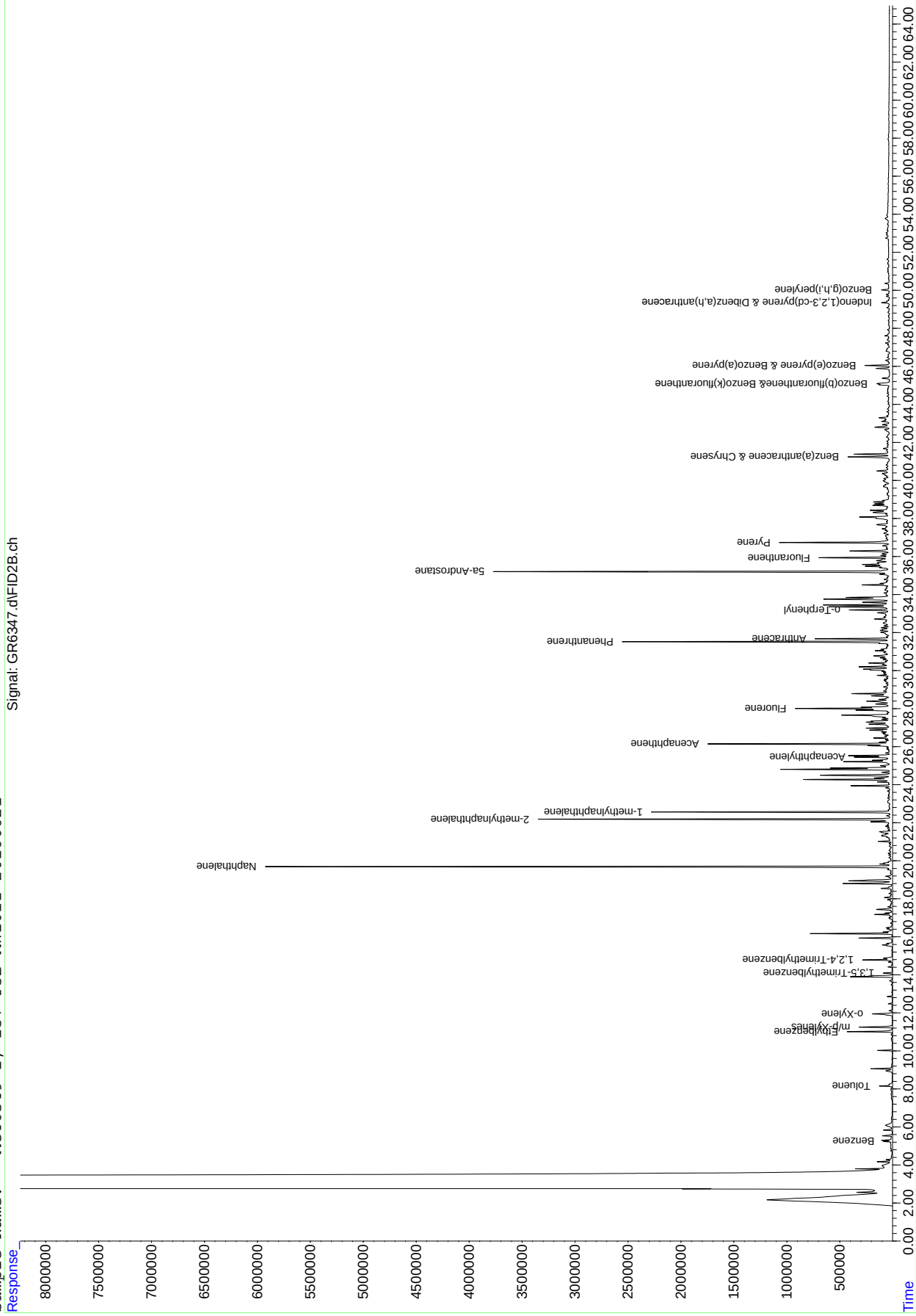
APPENDIX A

GC/FID FINGERPRINTS

GC/FID CHROMATOGRAM

File: X:\data\G160630\GR6347.d
Date Acquired: 1 Jul 2016 2:11 am
Sample Name: MC46549-1, 137-P3B-MW1011-20160621

Signal: GR6347.d\FID2B.ch



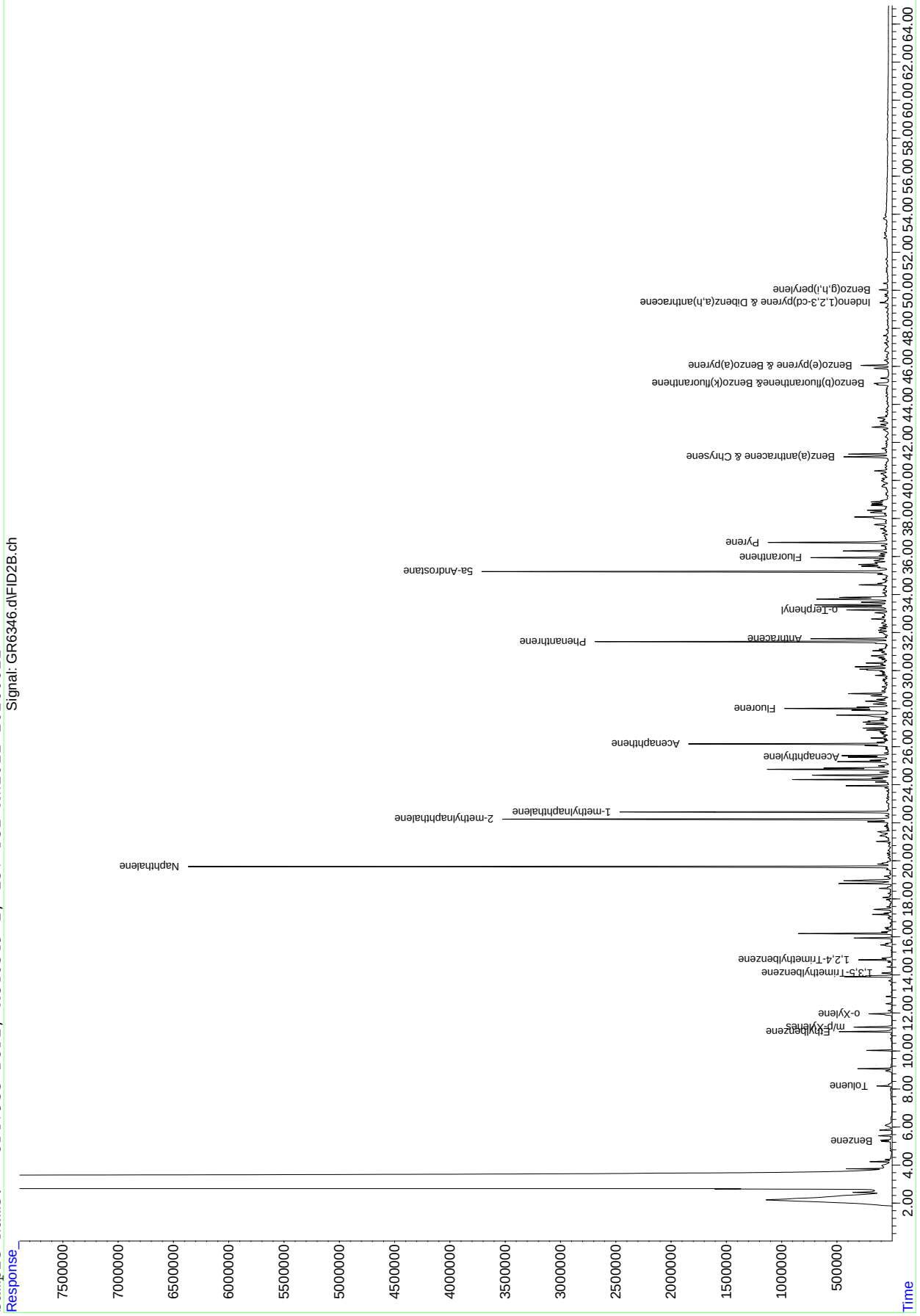
GC/FID CHROMATOGRAM

File: X:\data\G160630\GR6346.d

Date Acquired: 1 Jul 2016 12:52 am

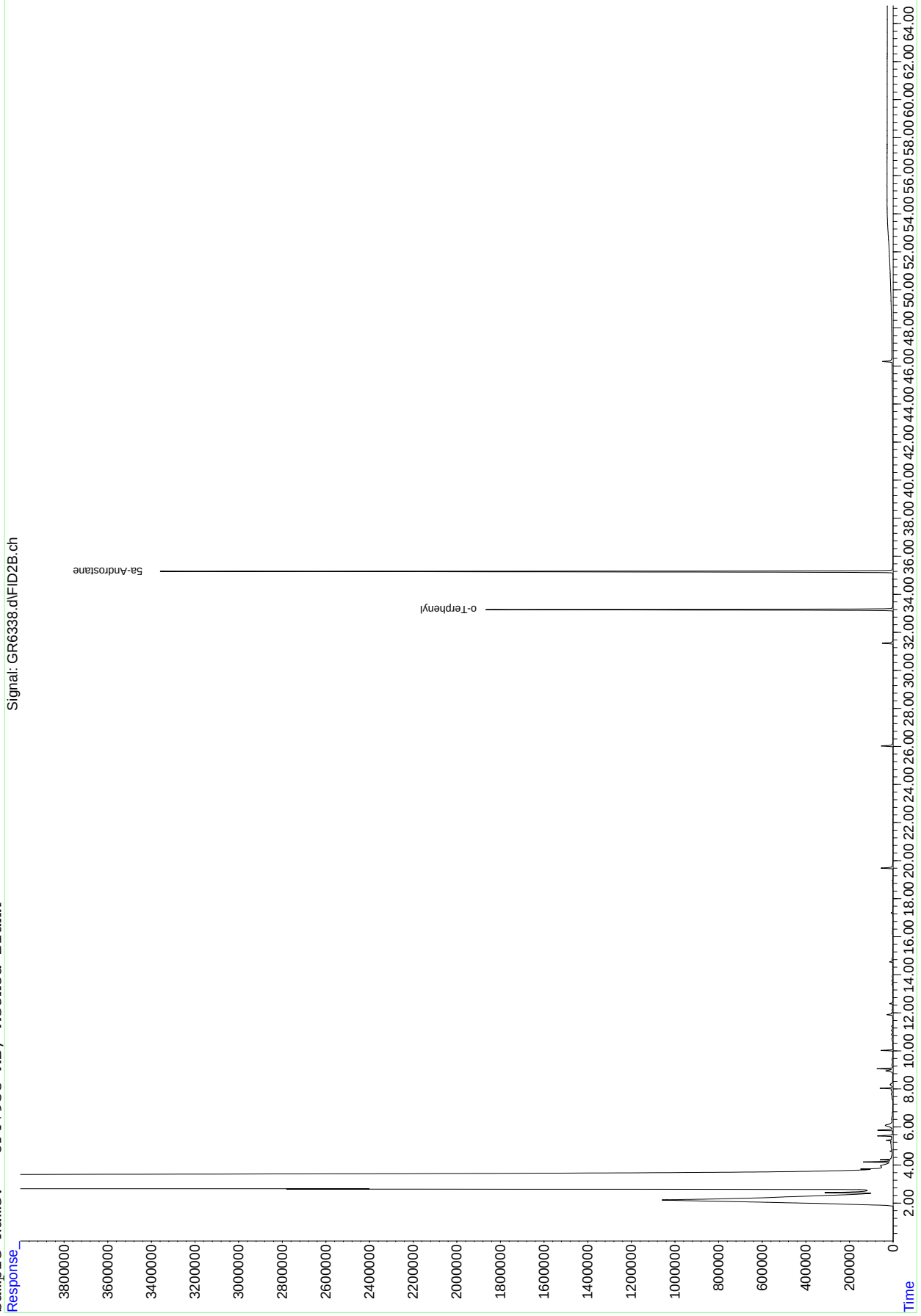
Sample Name: OP47955-DUP1, MC46549-1, 137-P3B-MW101I-20160621

Signal: GR6346.d\FID2B.ch



File: X:\1\data\G160630\GR6338.d
 Date Acquired: 30 Jun 2016 2:27 pm
 Sample Name: OP47955-MB, Method Blank

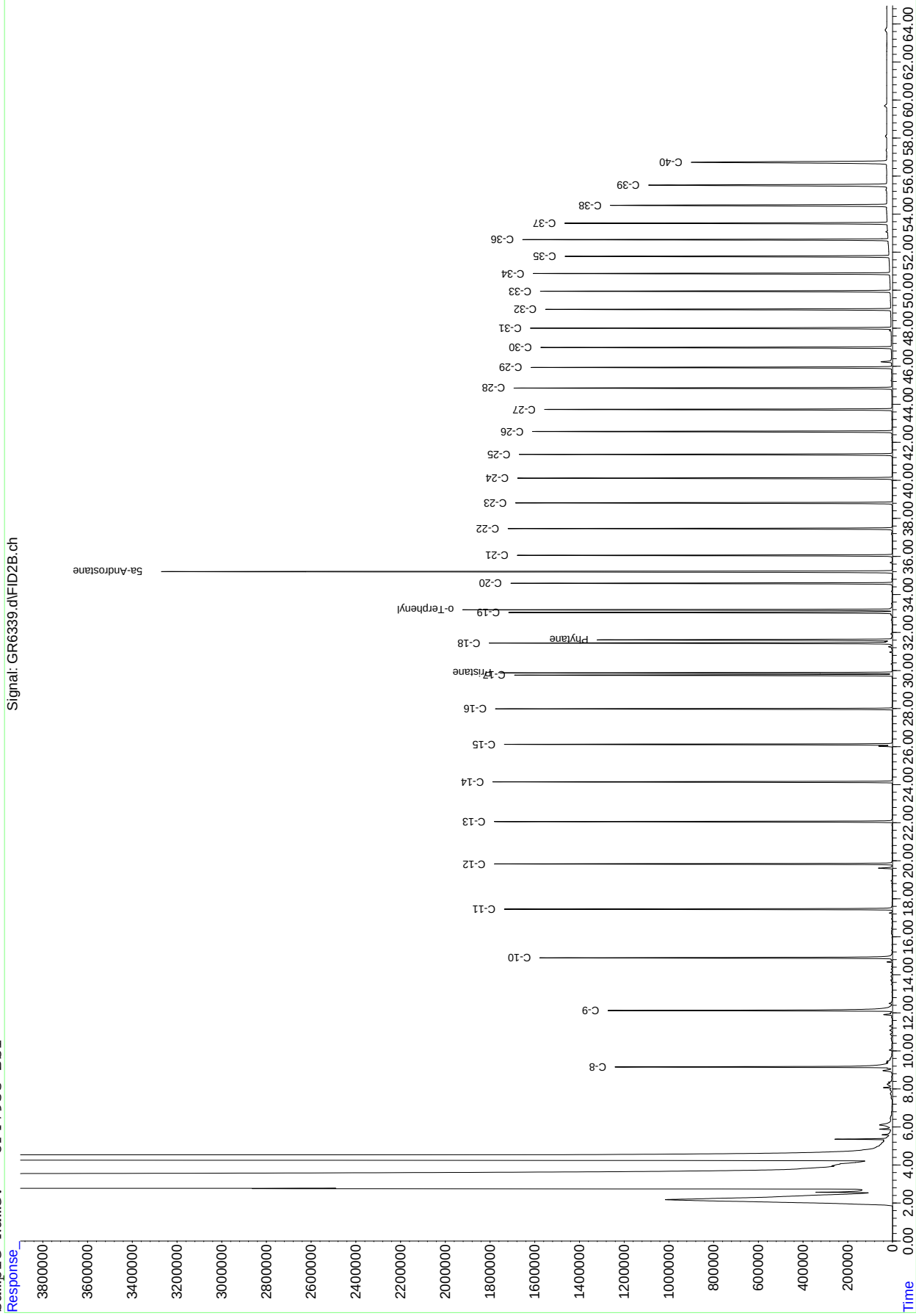
Signal: GR6338.d\FID2B.ch



GC/FID CHROMATOGRAM

File: X:\1\data\G160630\GR6339.d
Date Acquired: 30 Jun 2016 3:45 pm
Sample Name: OP47955-BS1

Signal: GR6339.d\FID2B.ch



APPENDIX B

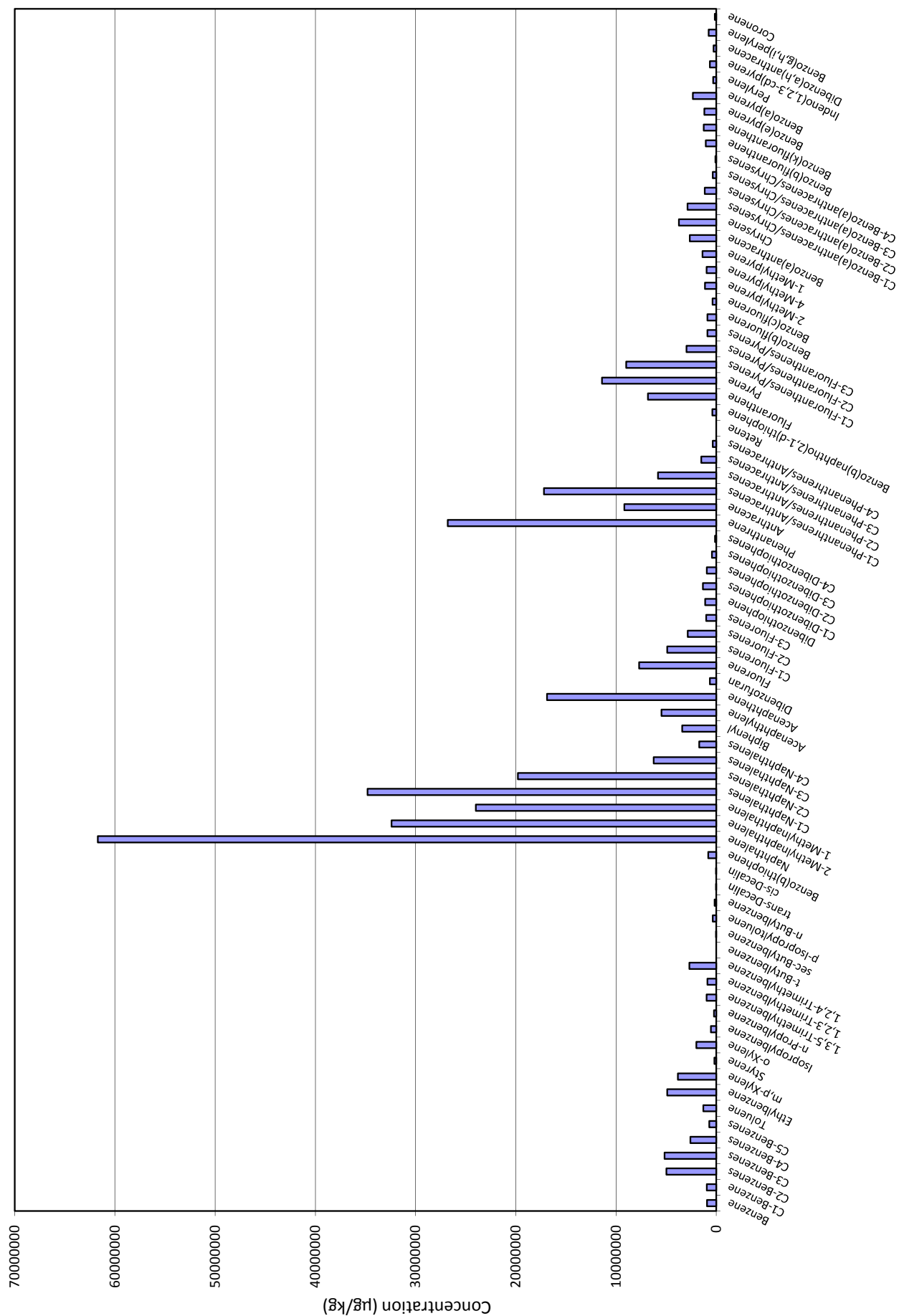
MAH AND PAH HISTOGRAMS

MC46549-1



Duplicate of 137-P3B-MW10I-20160621

OP47956-DUP1

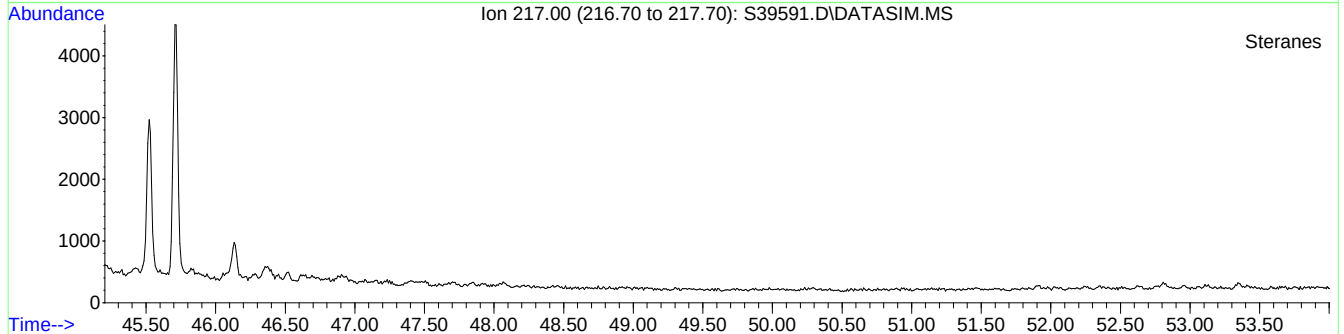
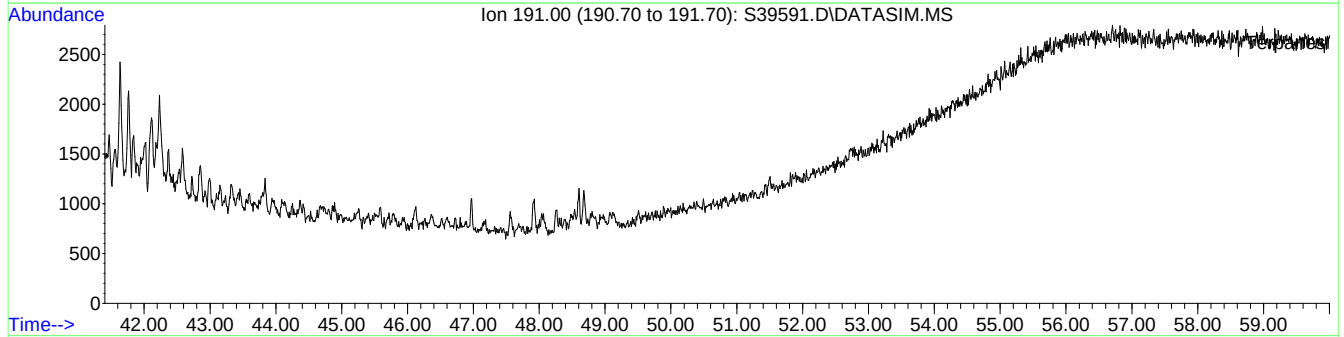
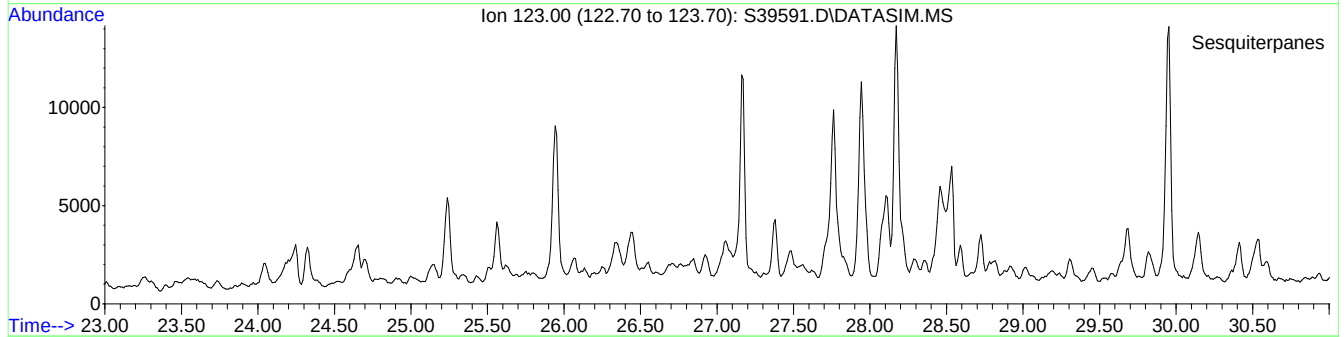
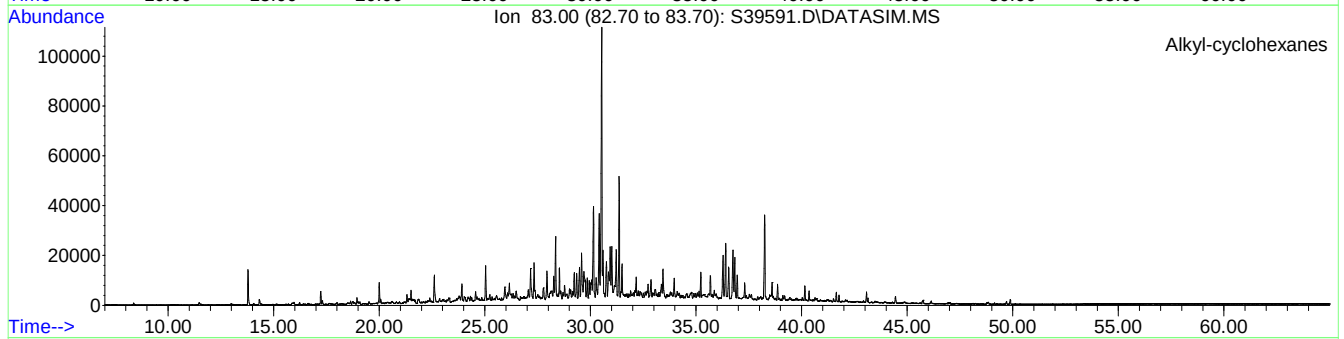
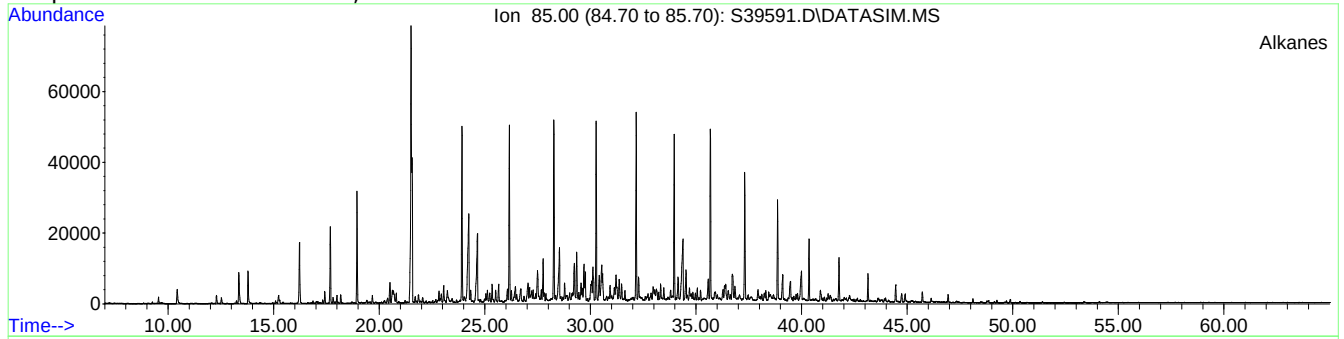


APPENDIX C

EXTRACTED ION CURRENT PROFILES (EICPs)

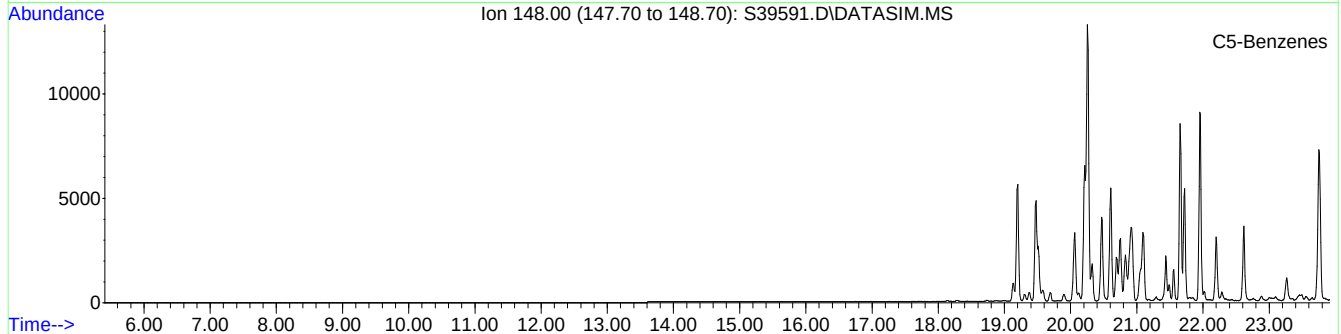
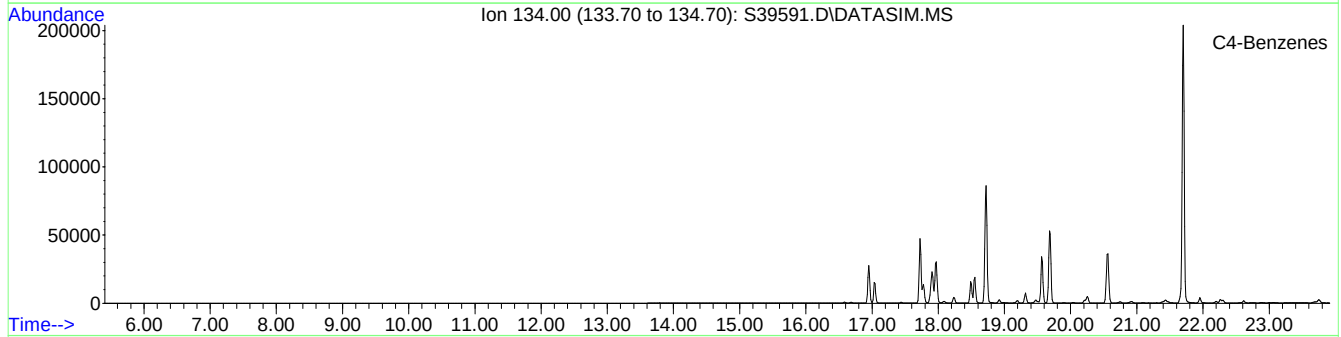
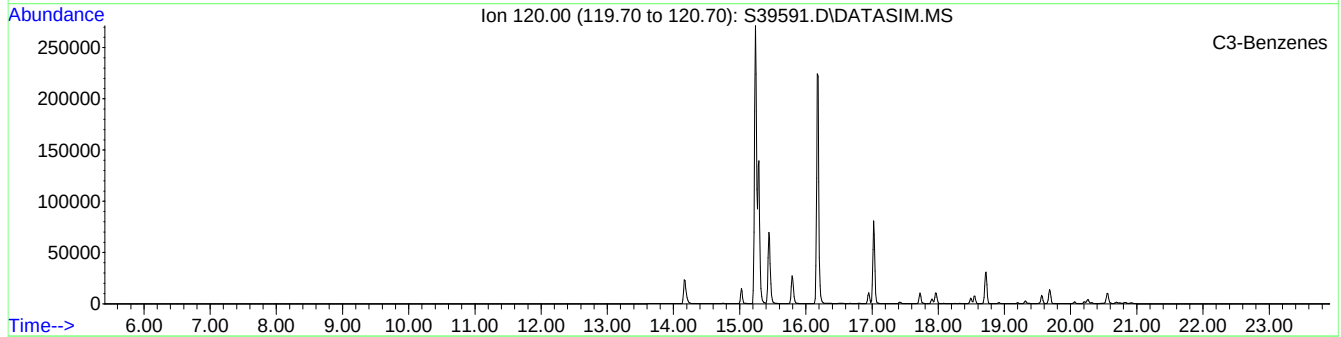
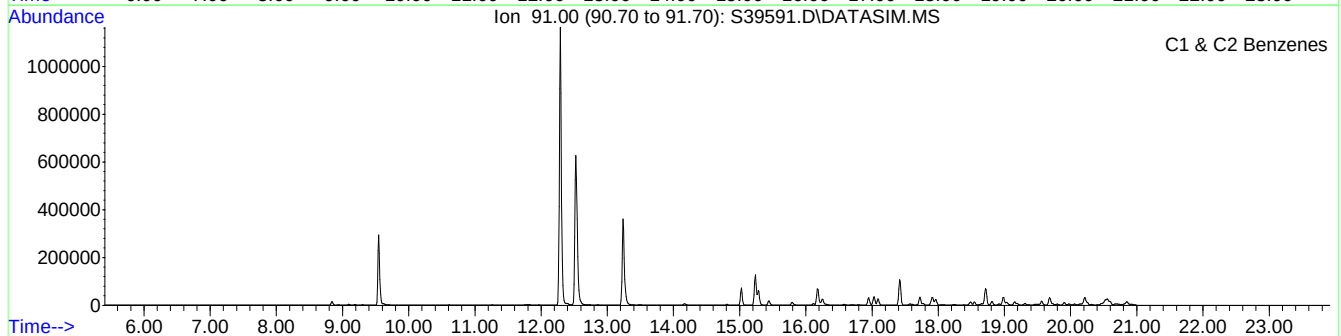
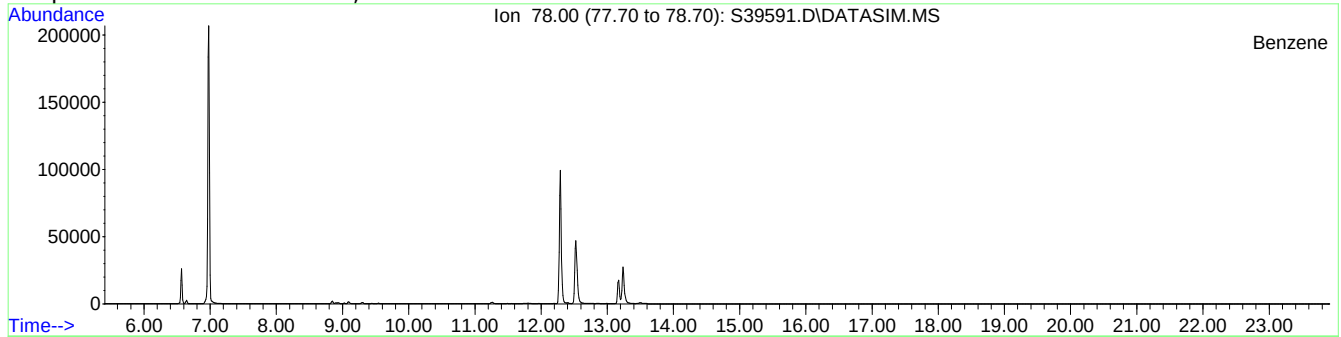
GC/MS EXTRACTED ION CHROMATOGRAM

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Sample Name: mc46549-1,137-P3B-MW101I-2016062



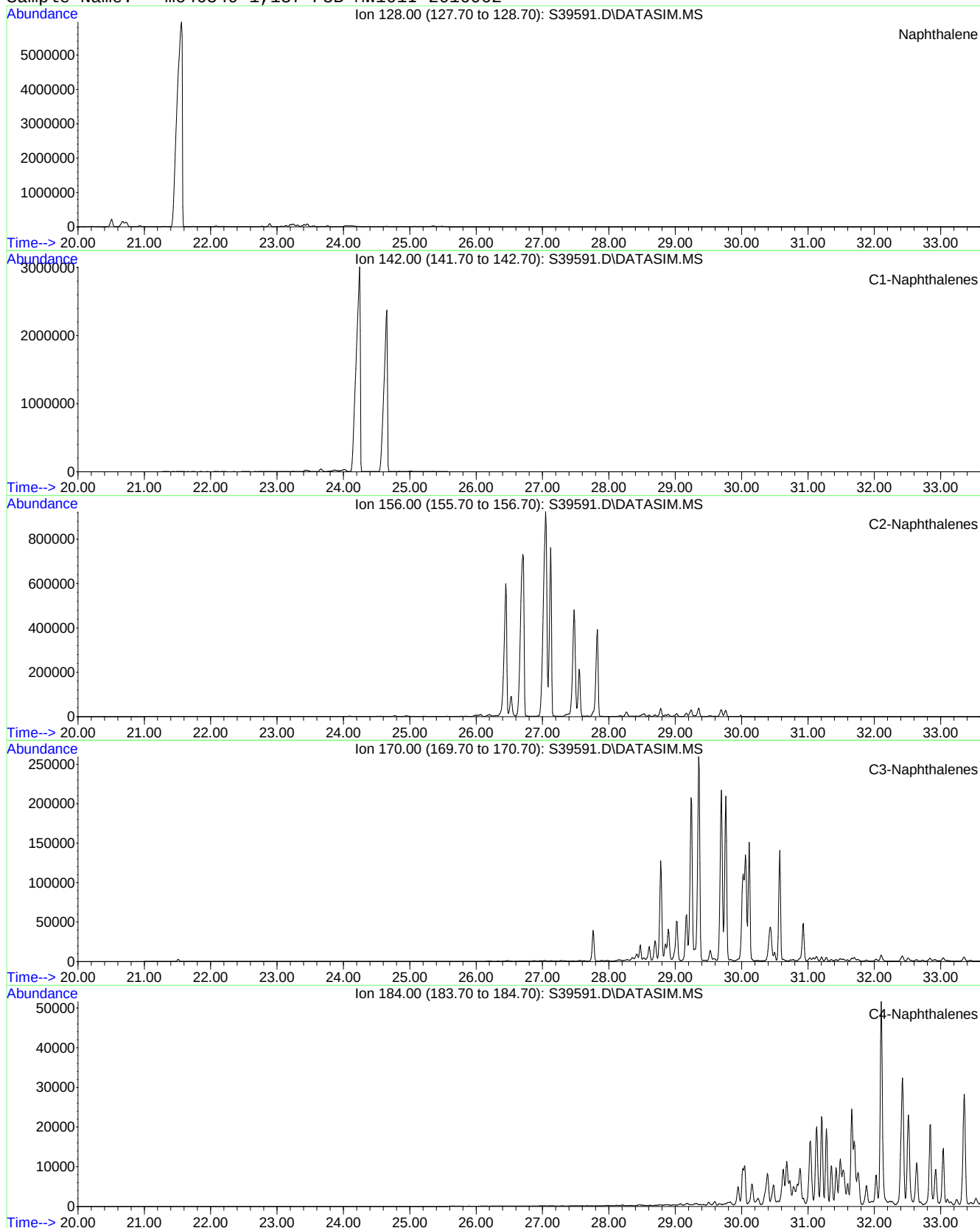
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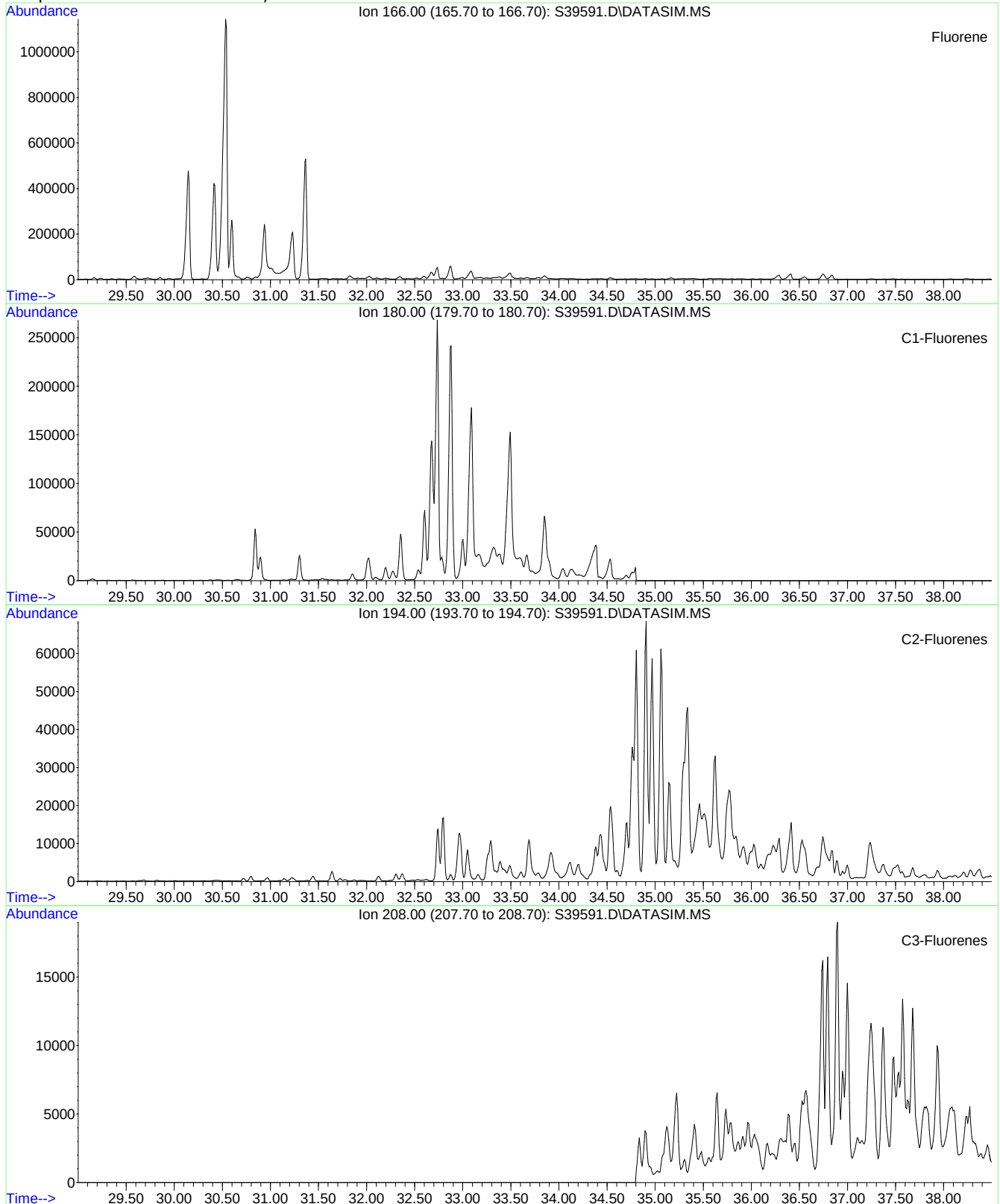
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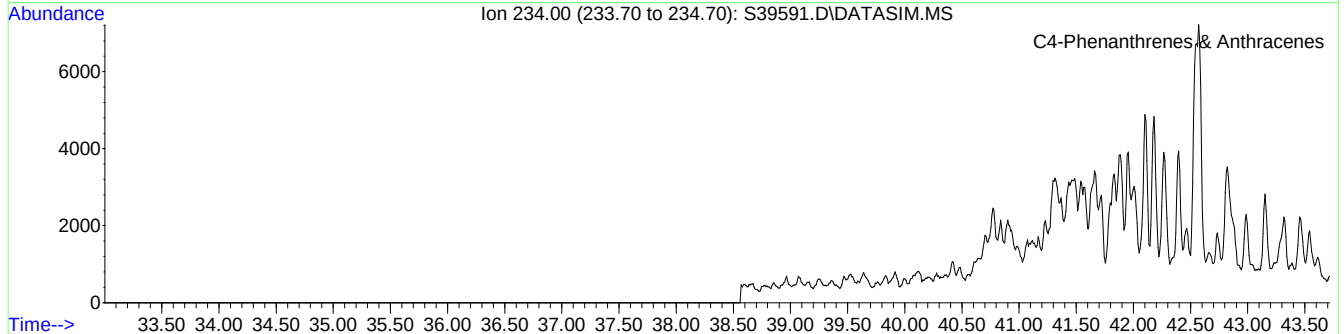
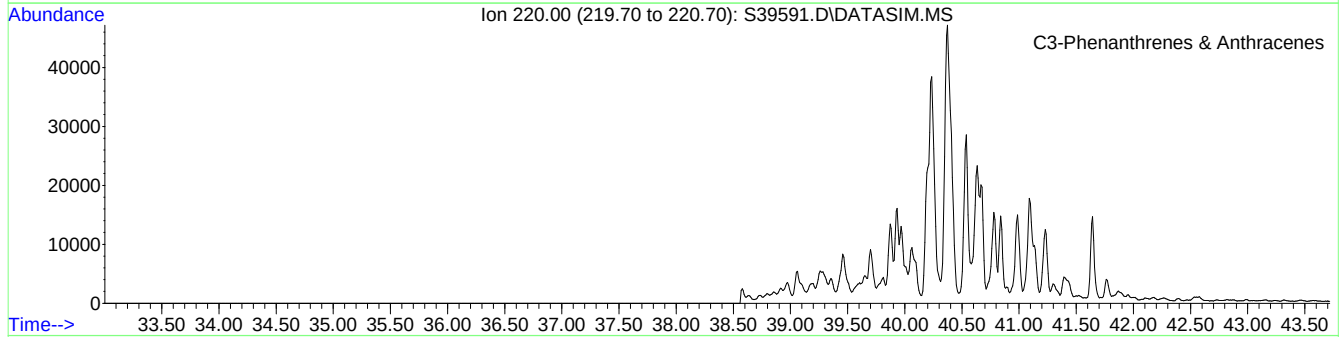
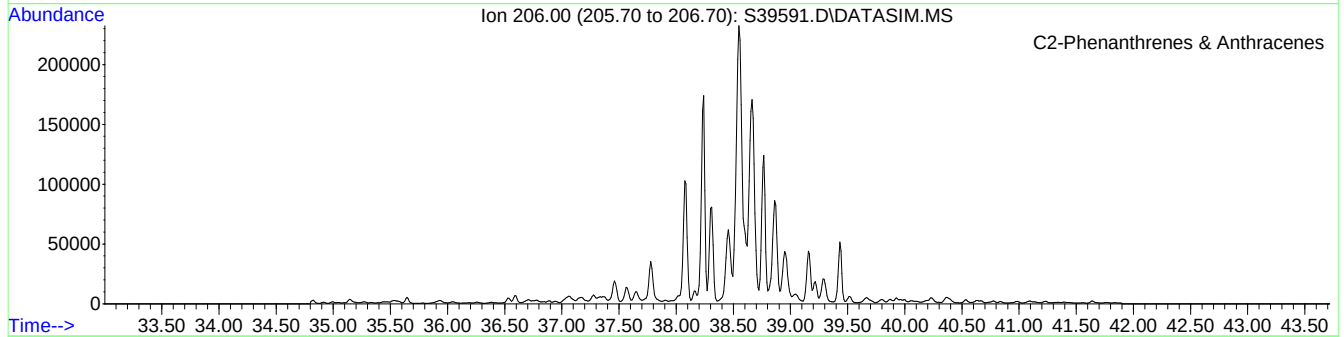
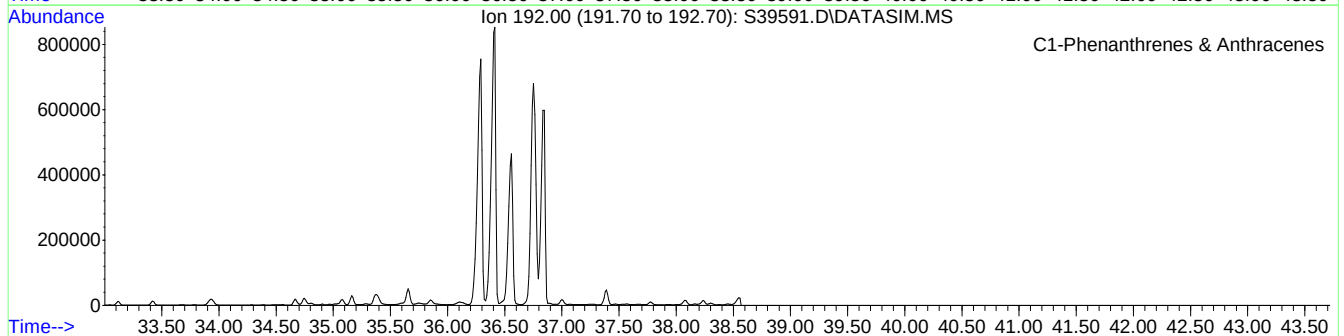
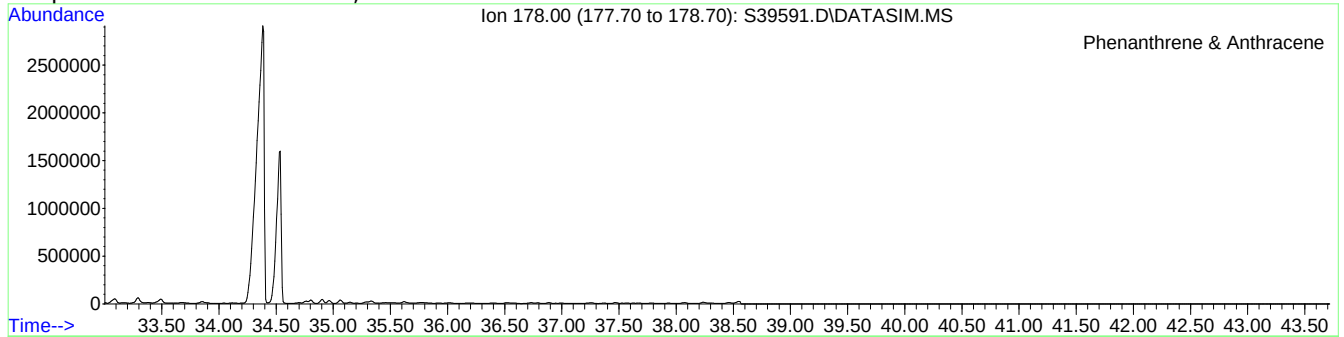
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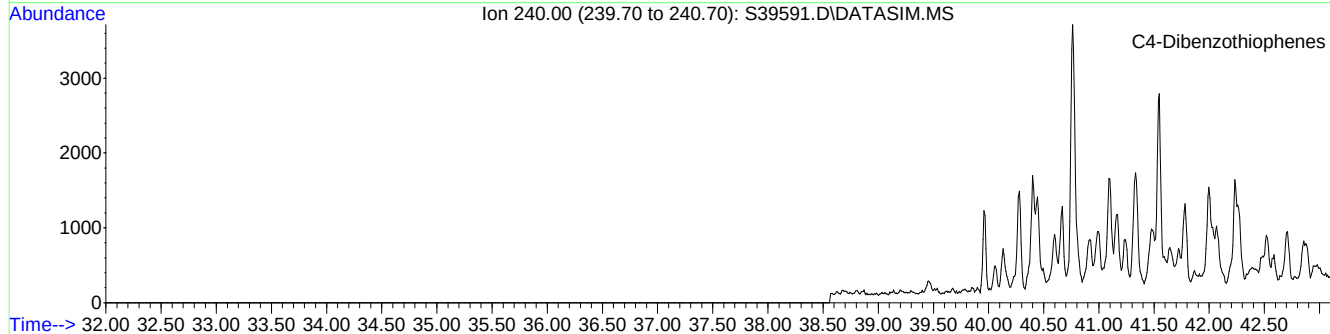
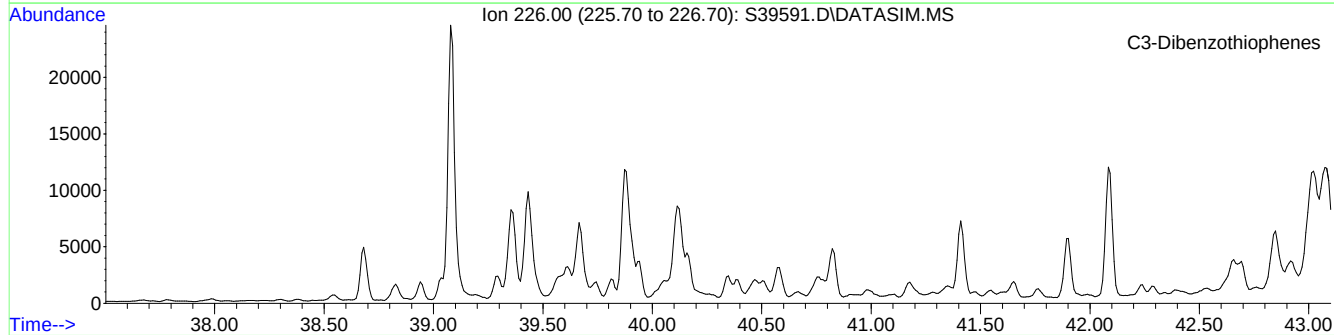
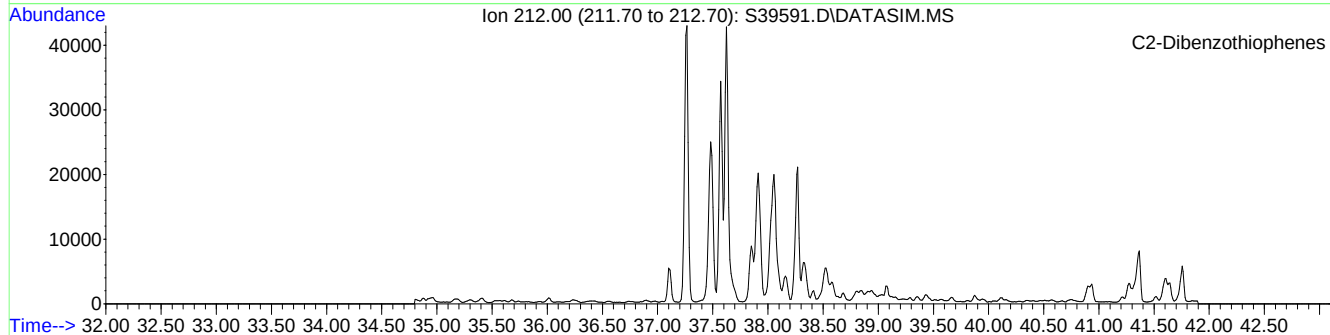
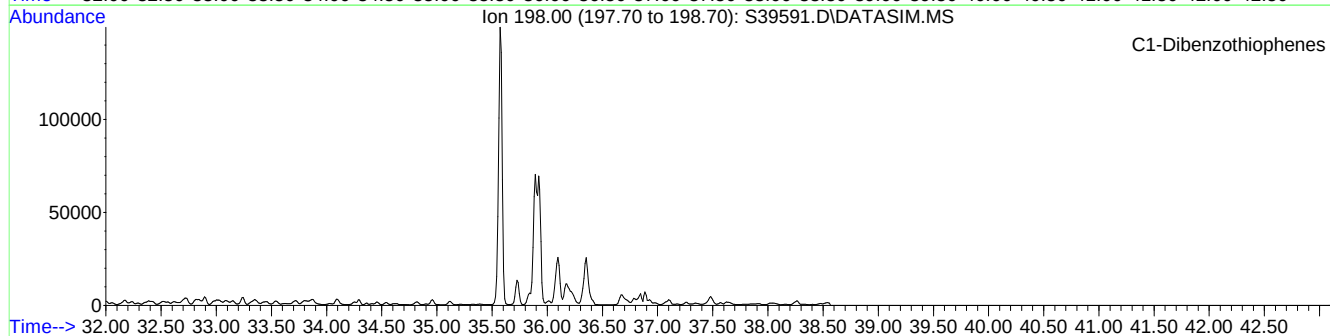
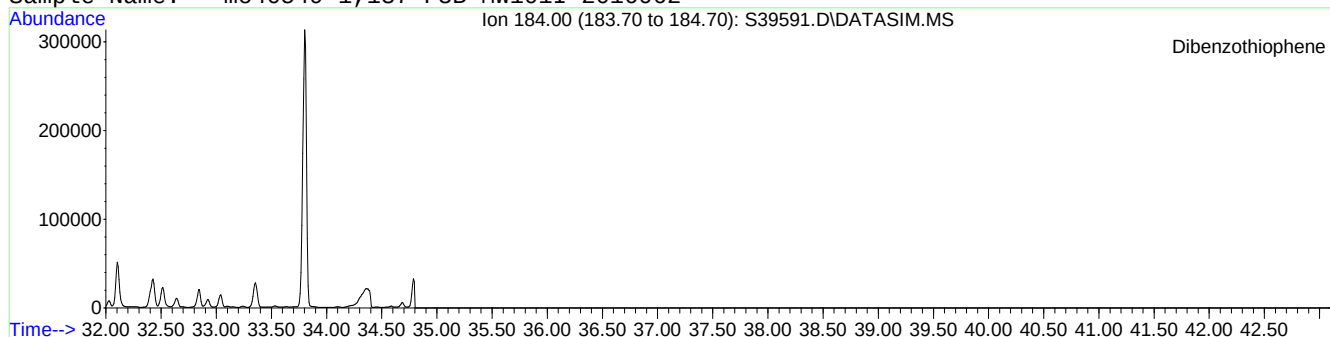
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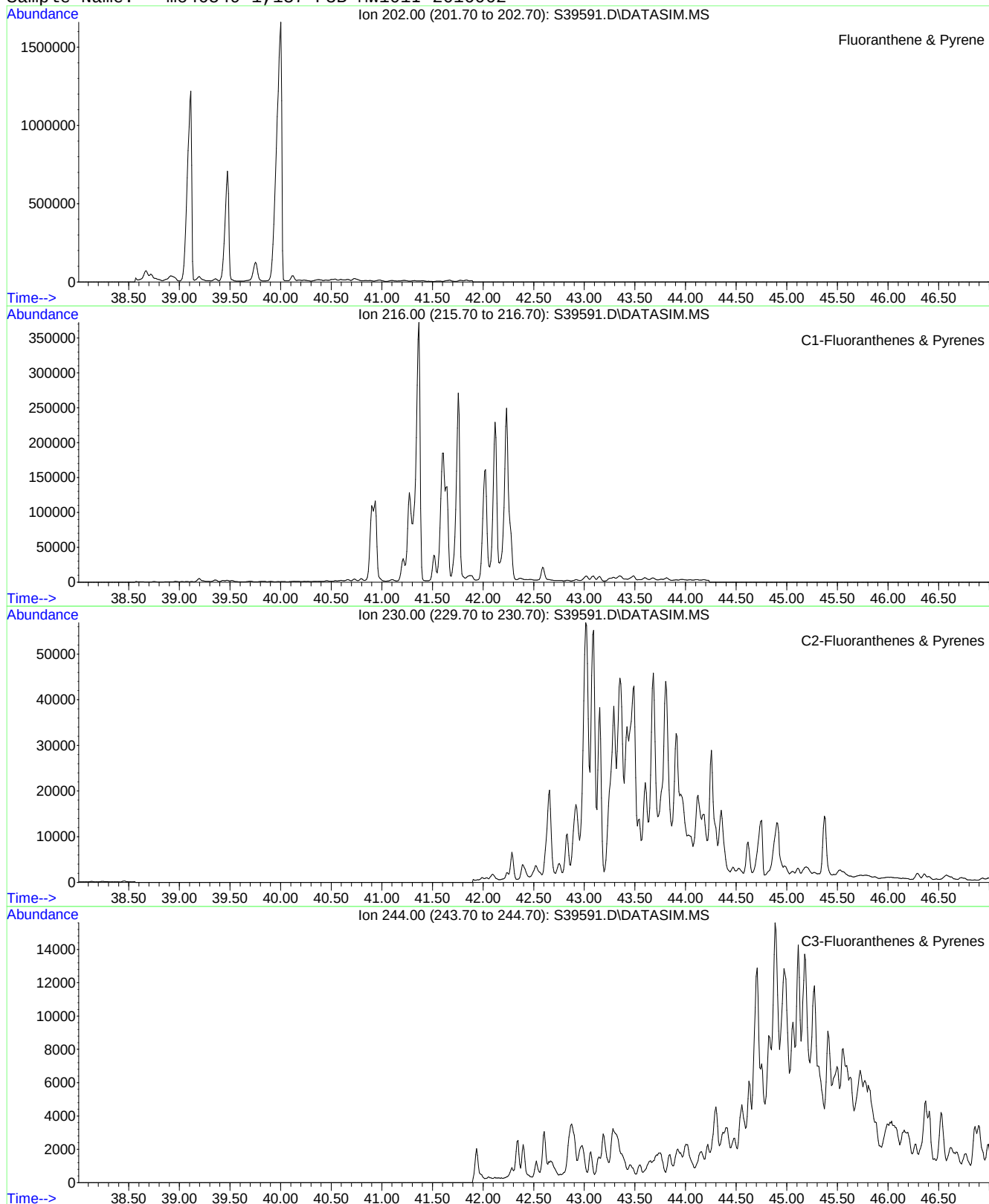
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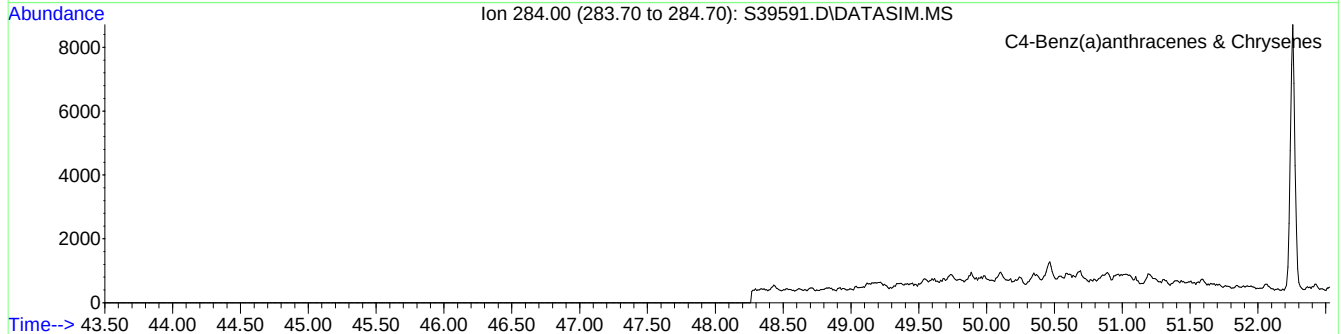
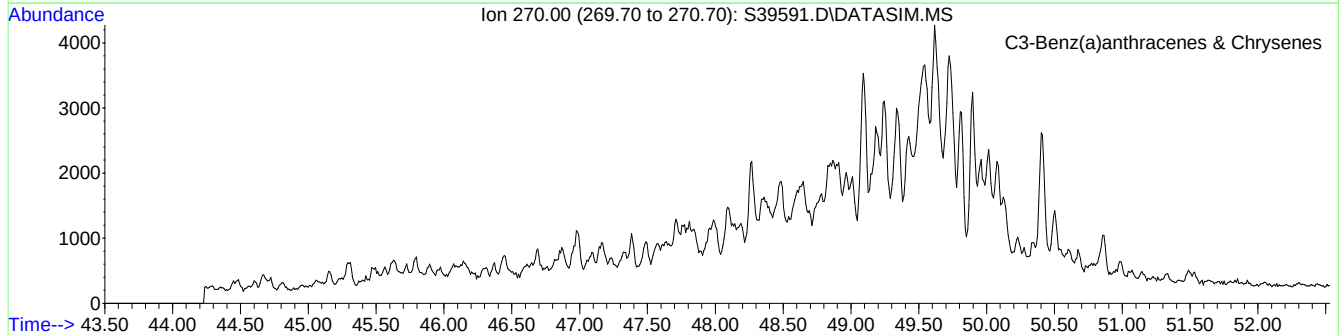
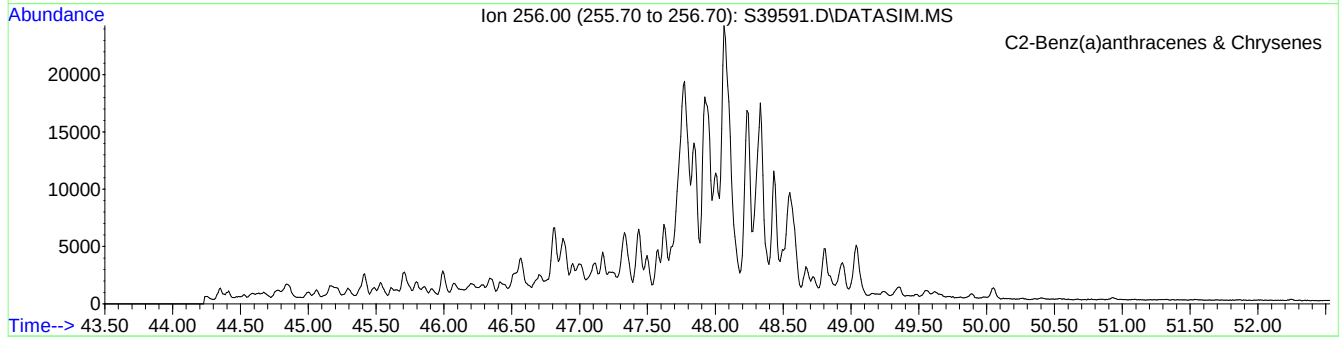
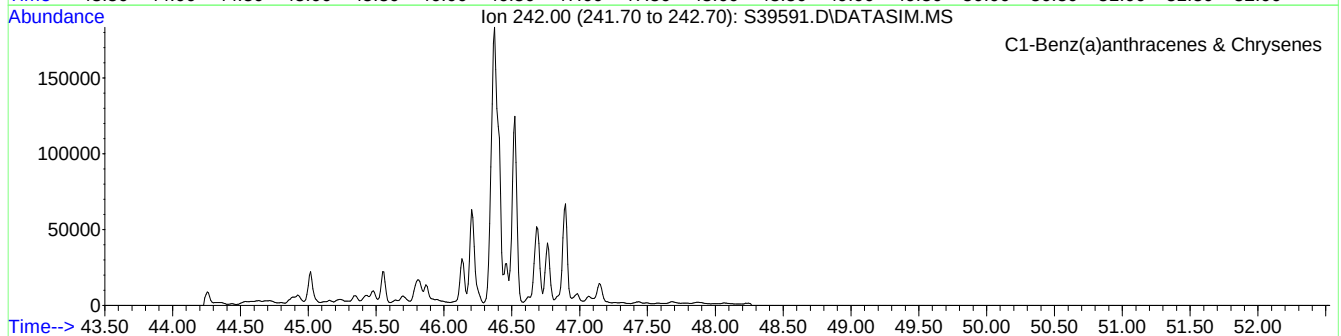
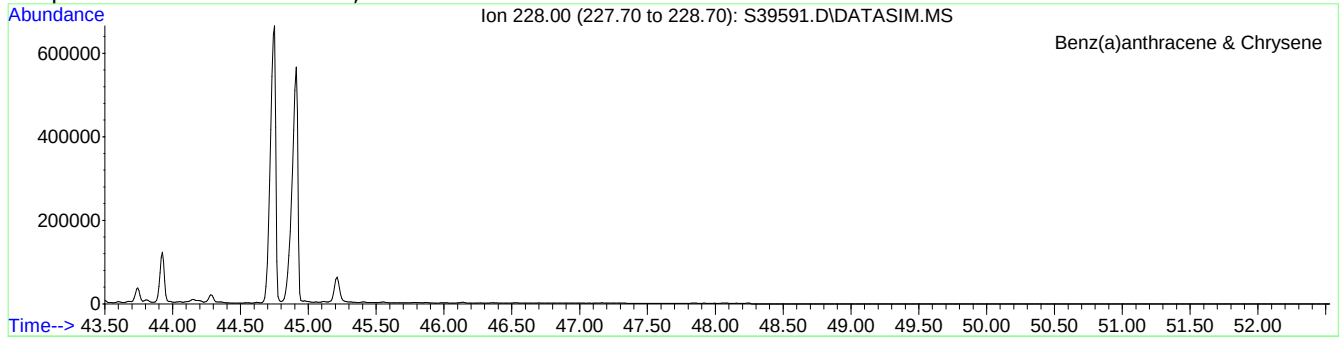
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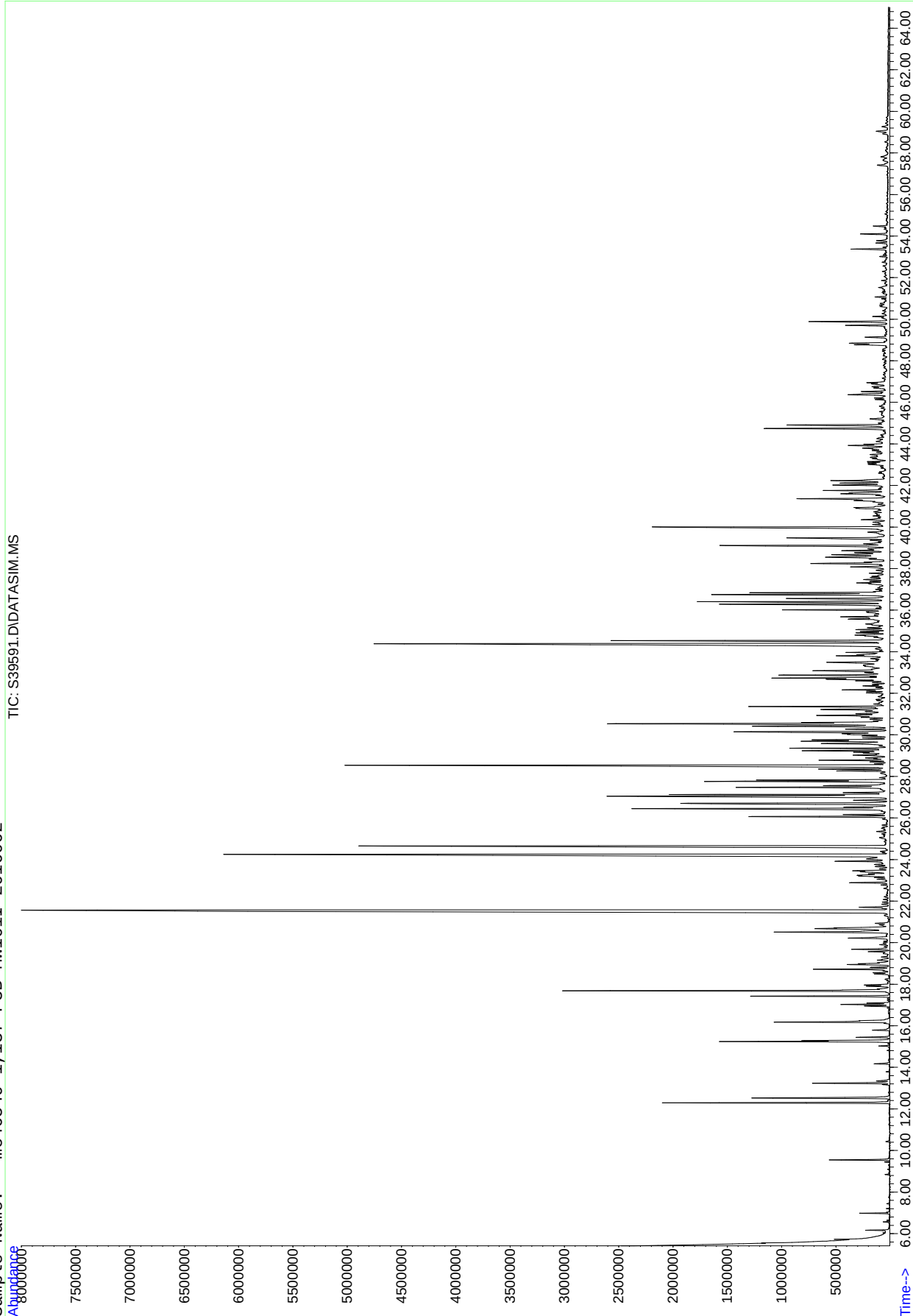
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Sample Name: mc46549-1,137-P3B-MW101I-2016062



GC/MS TOTAL ION CHROMATOGRAM

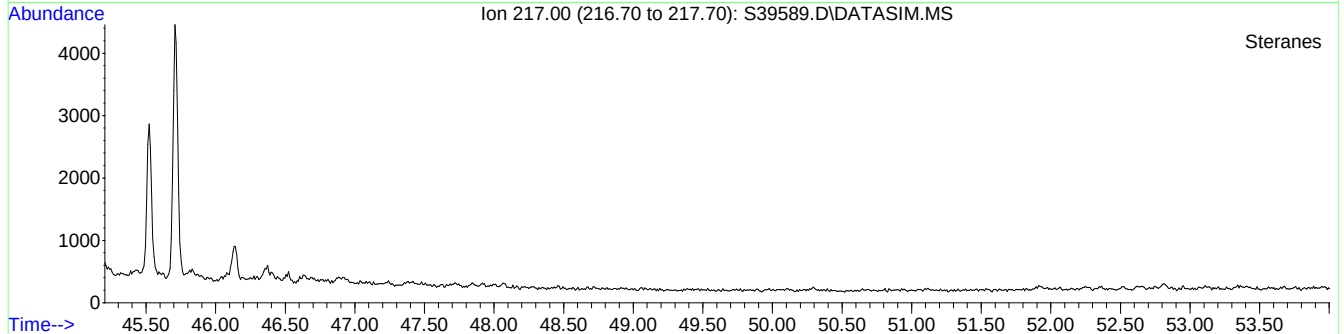
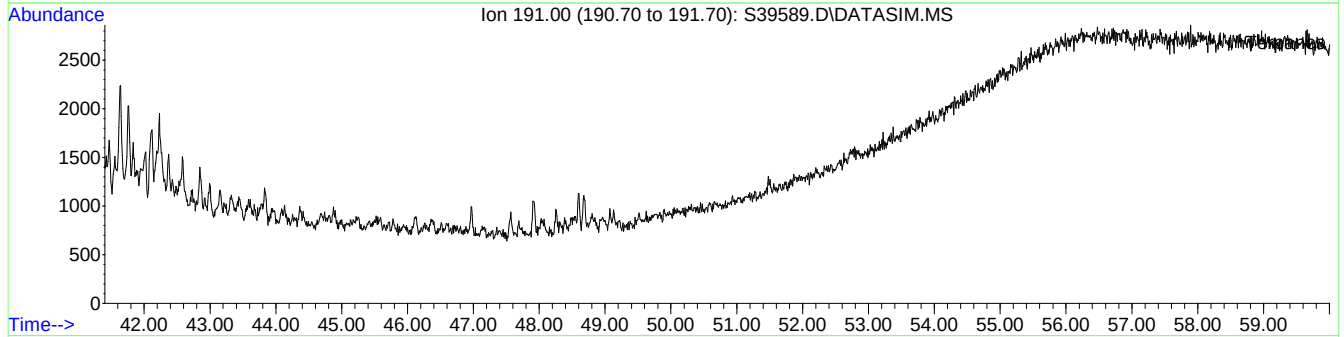
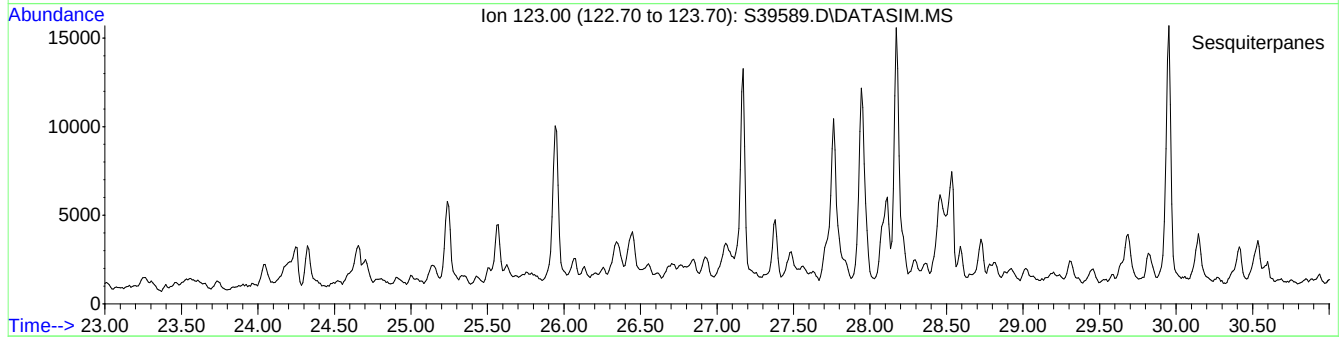
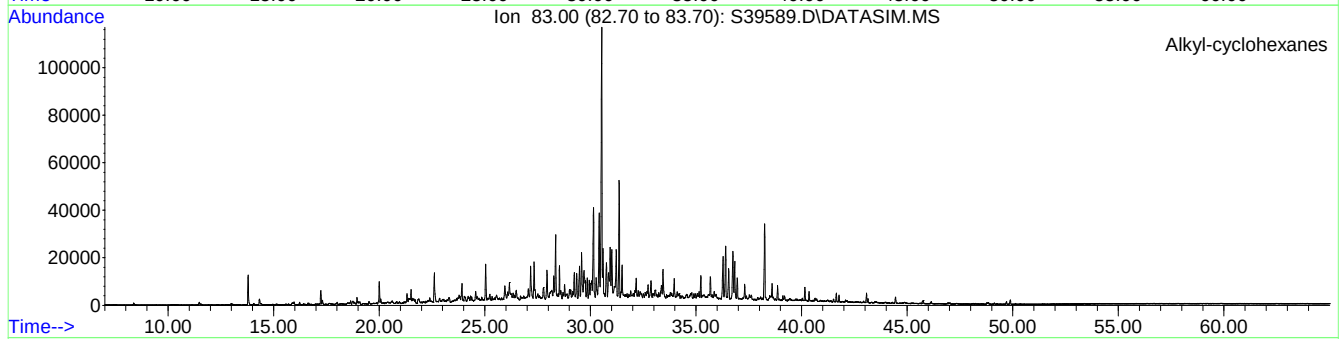
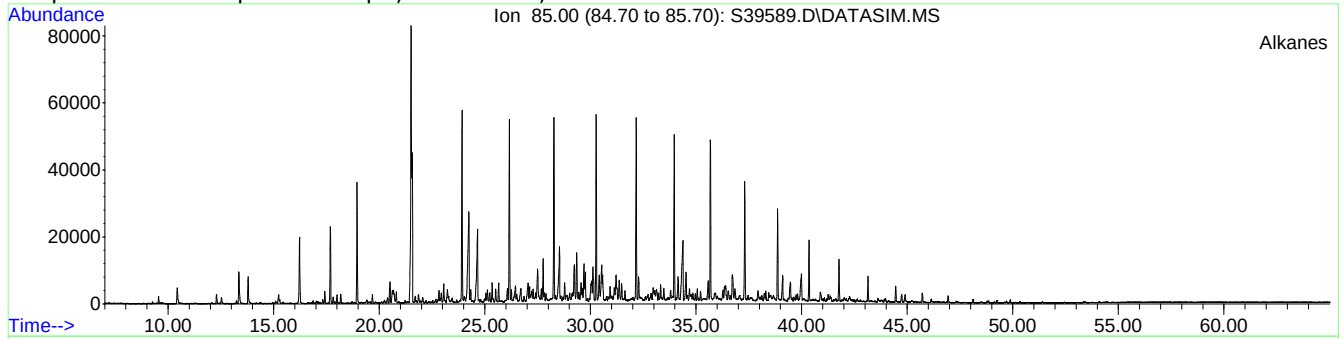
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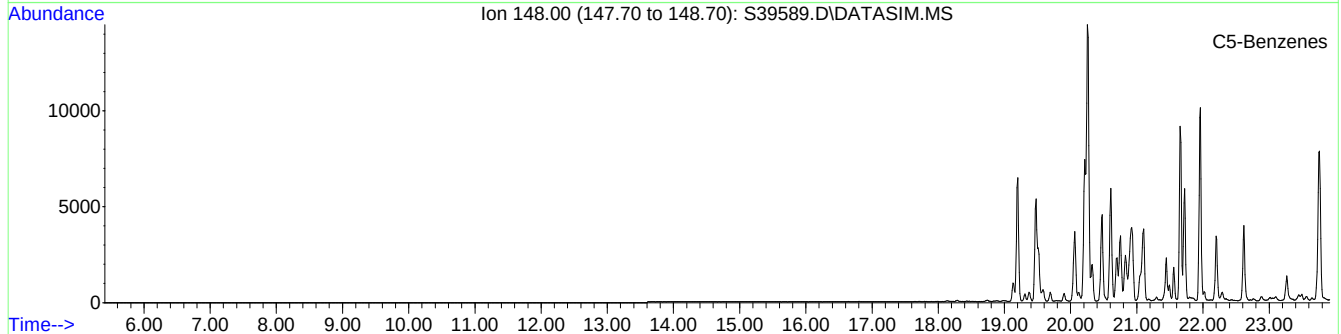
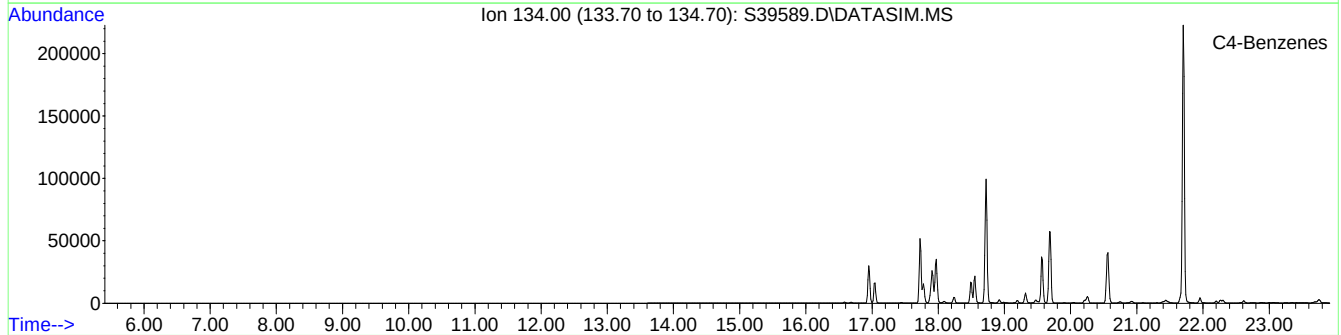
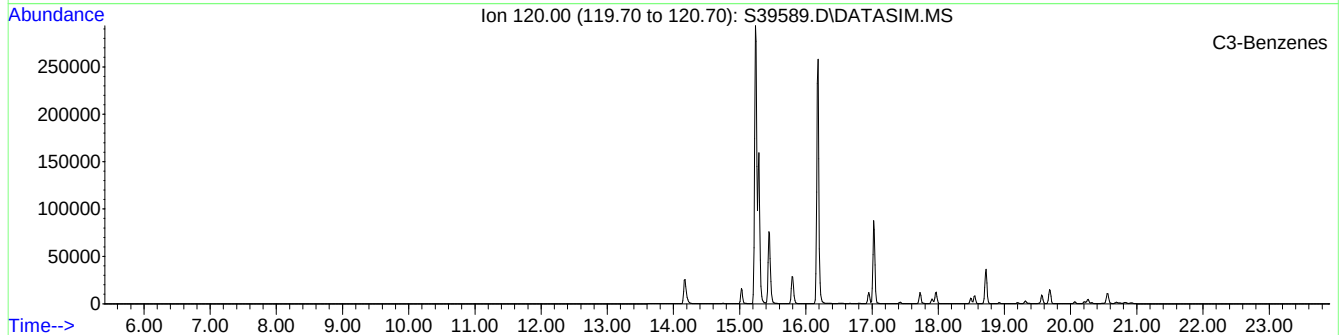
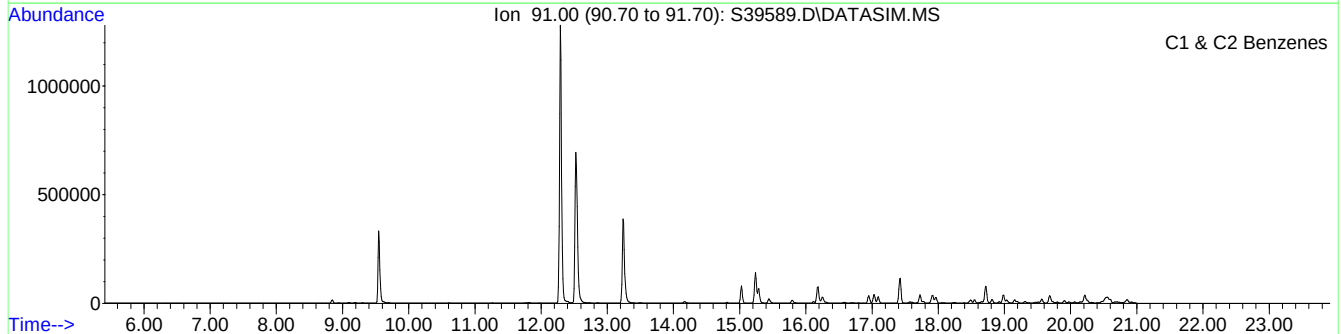
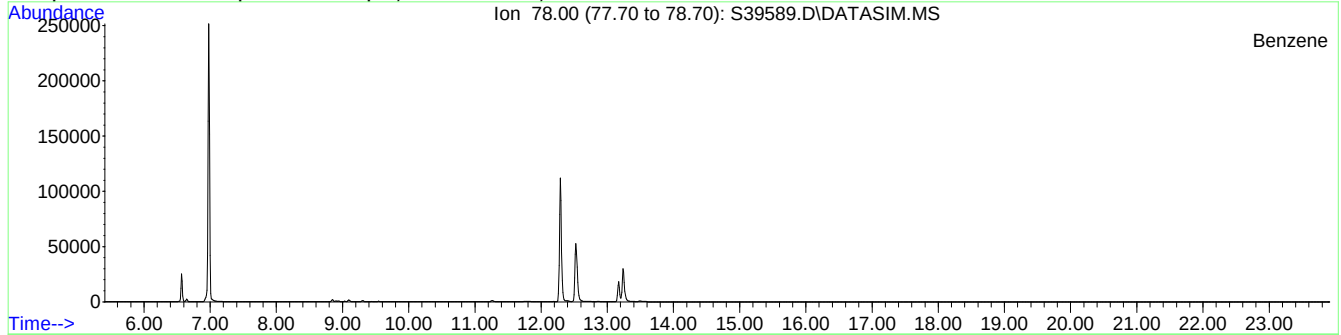
GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160705\S39589.D
Date Acquired: 5 Jul 2016 4:38 pm
Sample Name: op47956-dup1,mc46549-1,137-P3B-MW101I-2016062



GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160705\S39589.D
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Sample Name: op47956-dup1,mc46549-1,137-P3B-MW101I-2016062

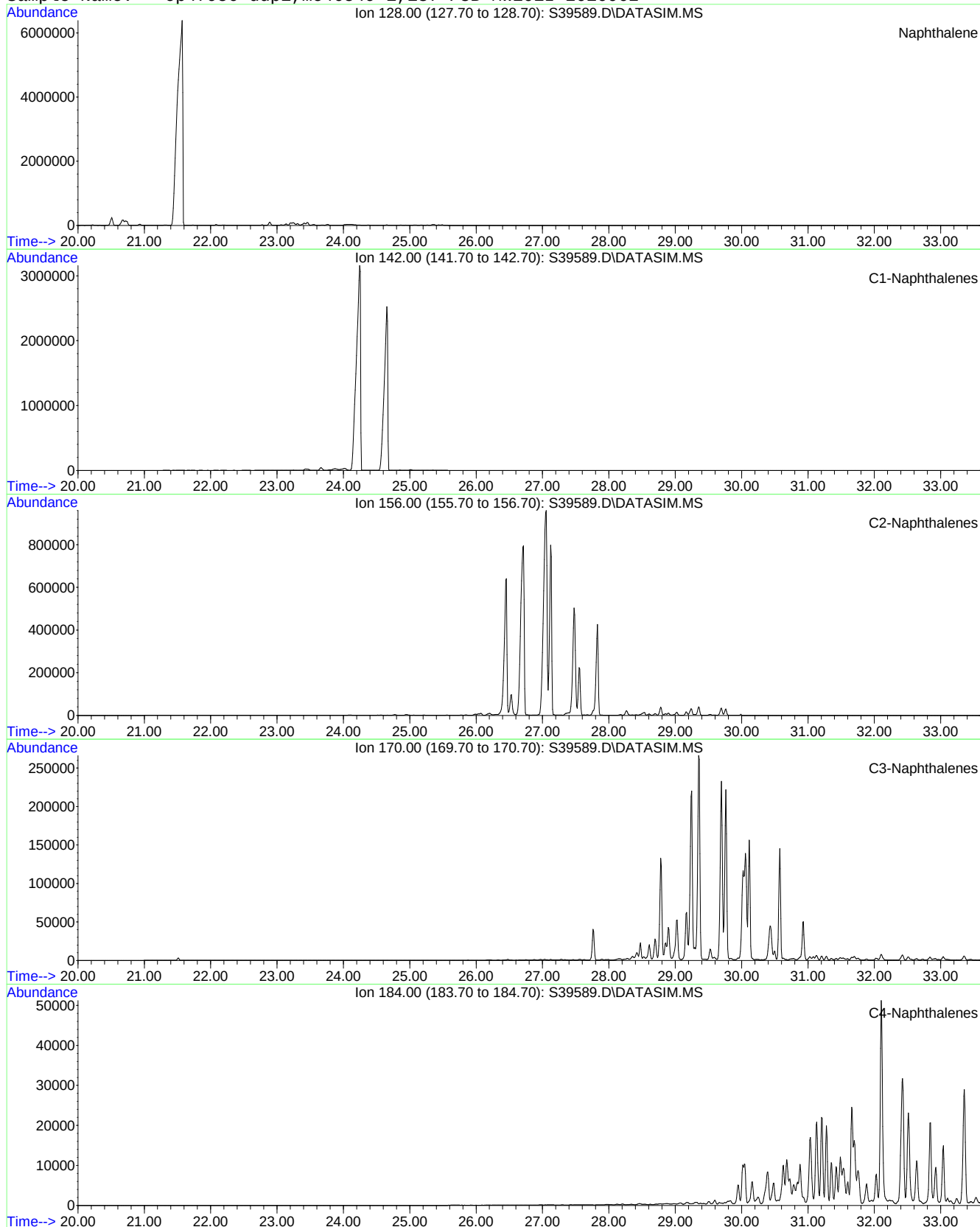


GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160705\S39589.D

Date Acquired: 5 Jul 2016 4:38 pm

Sample Name: op47956-dup1,mc46549-1,137-P3B-MW101I-2016062



GC/MS EXTRACTED ION CHROMATOGRAM

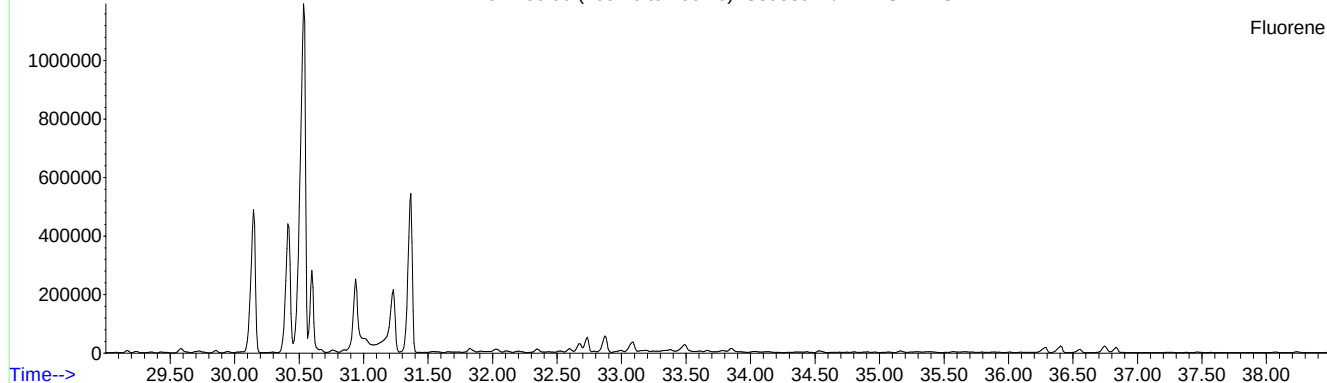
File: S:\1\data\S160705\S39589.D

Date Acquired: 5 Jul 2016 4:38 pm

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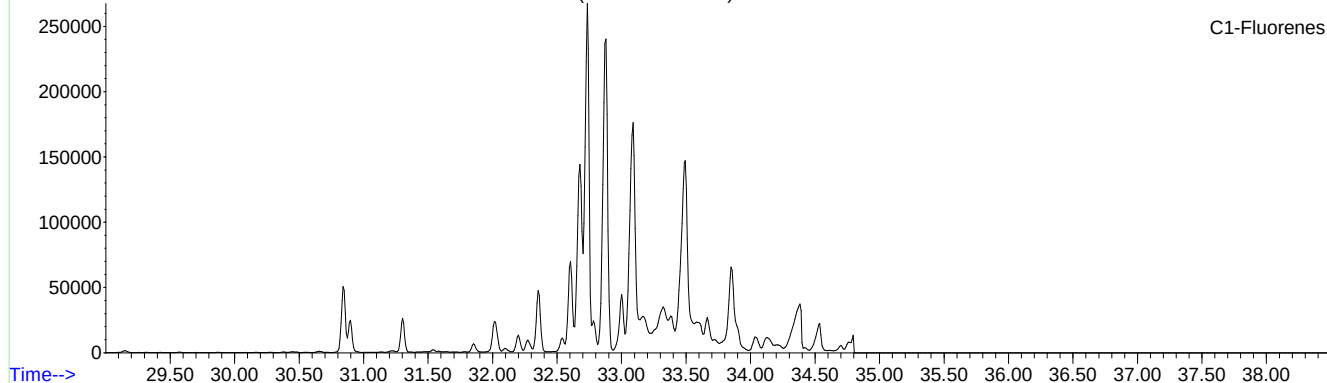
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Fluorene



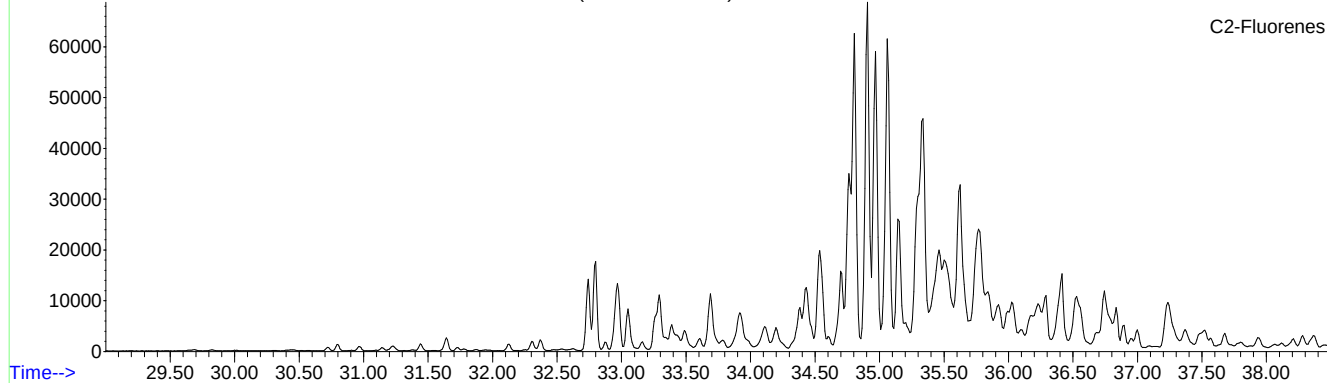
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C1-Fluorenes



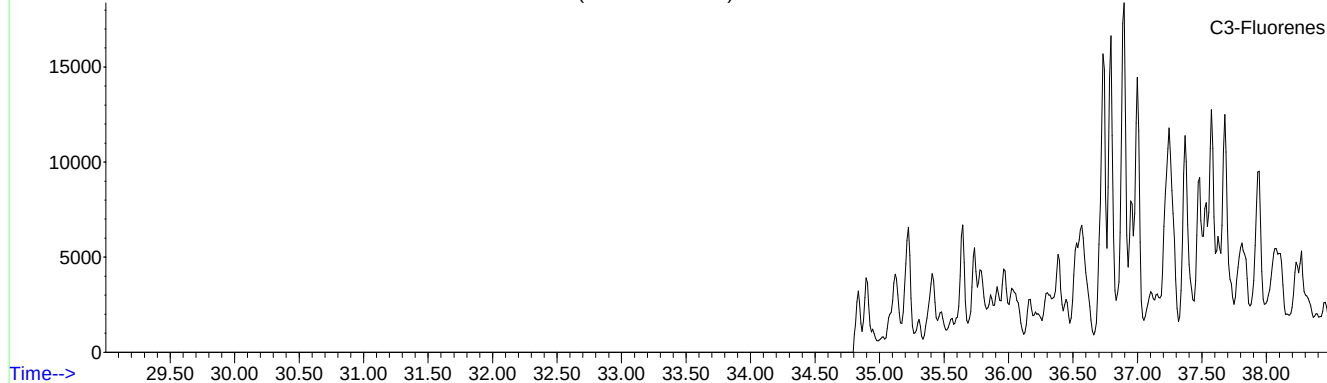
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C2-Fluorenes



Time--> Abundance Ion 208.00 (207.70 to 208.70): S39589.D\DATASIM.MS

C3-Fluorenes



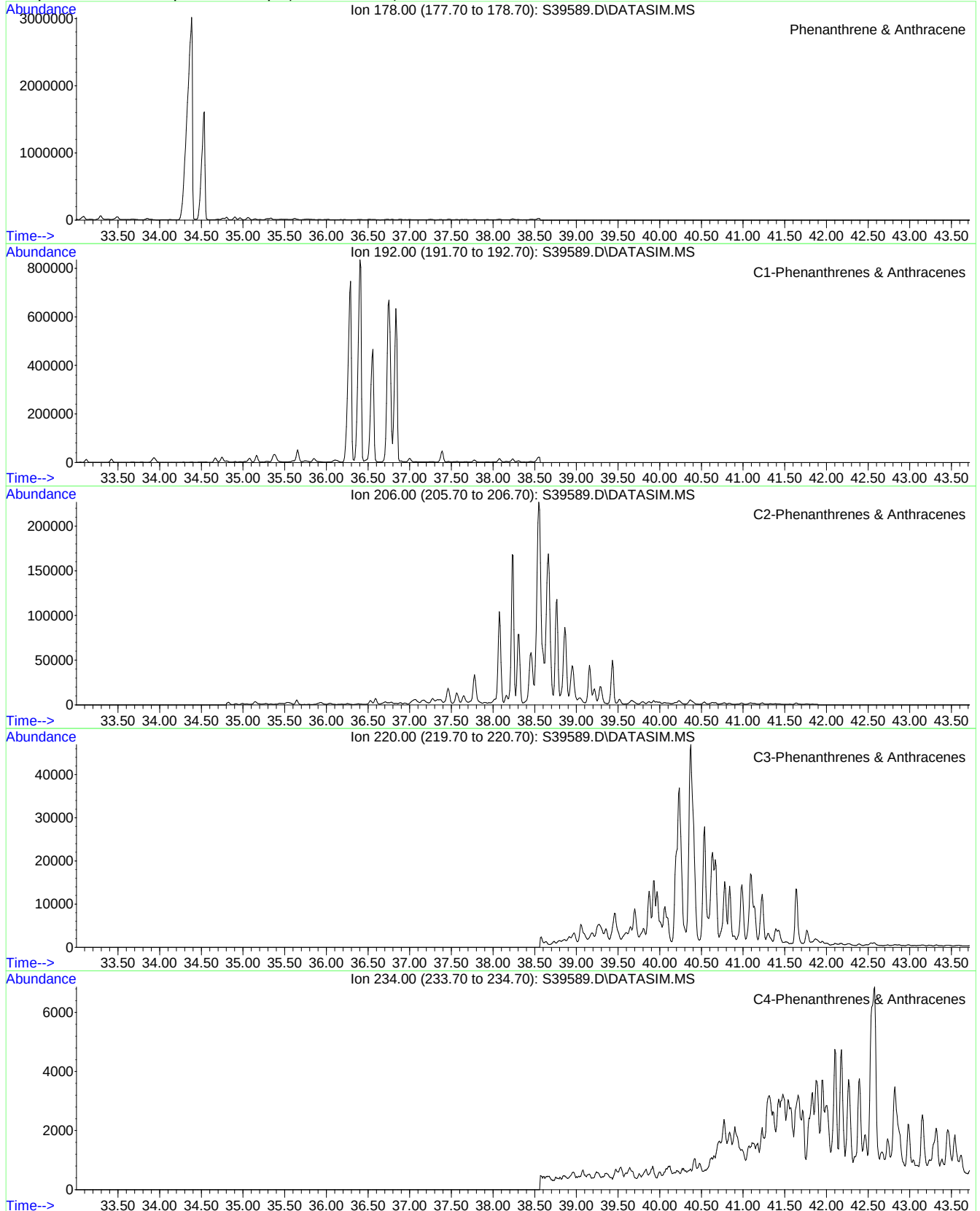
Time-->

GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160705\S39589.D

Date Acquired: 5 Jul 2016 4:38 pm

Sample Name: op47956-dup1,mc46549-1,137-P3B-MW101I-2016062

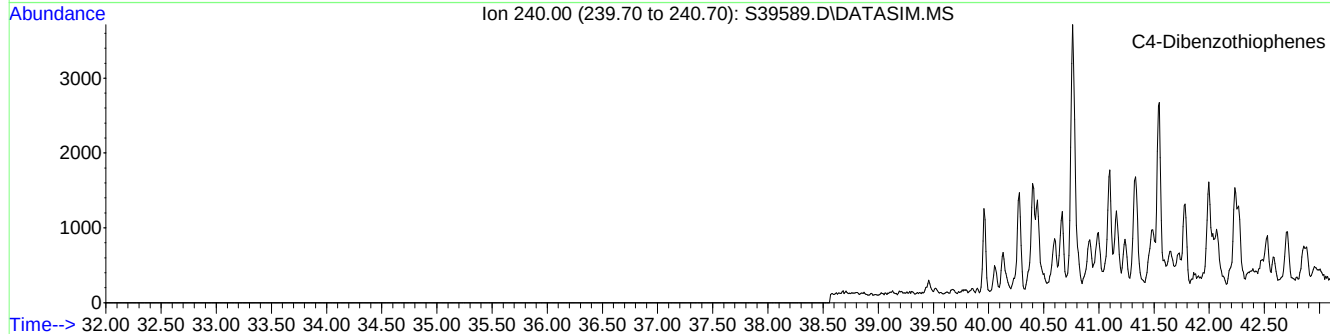
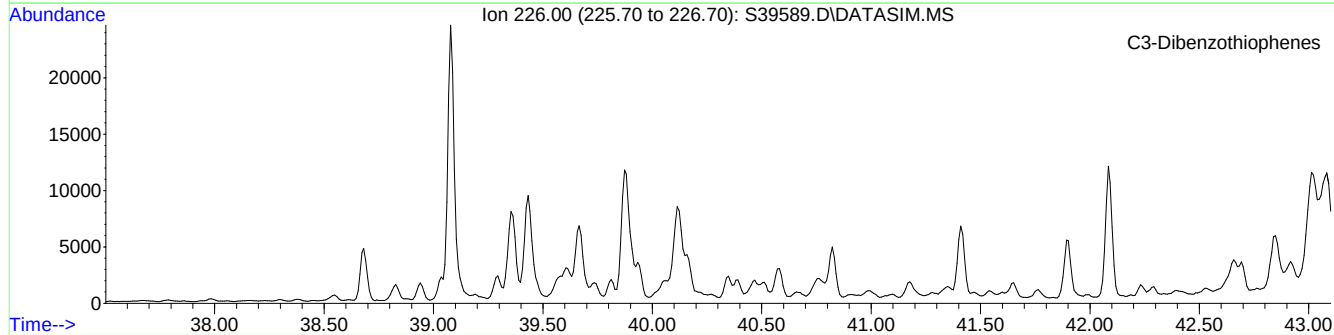
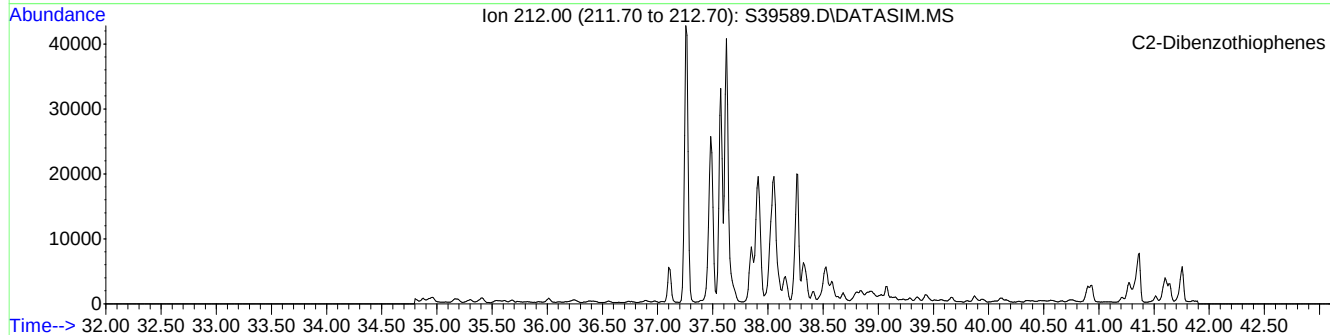
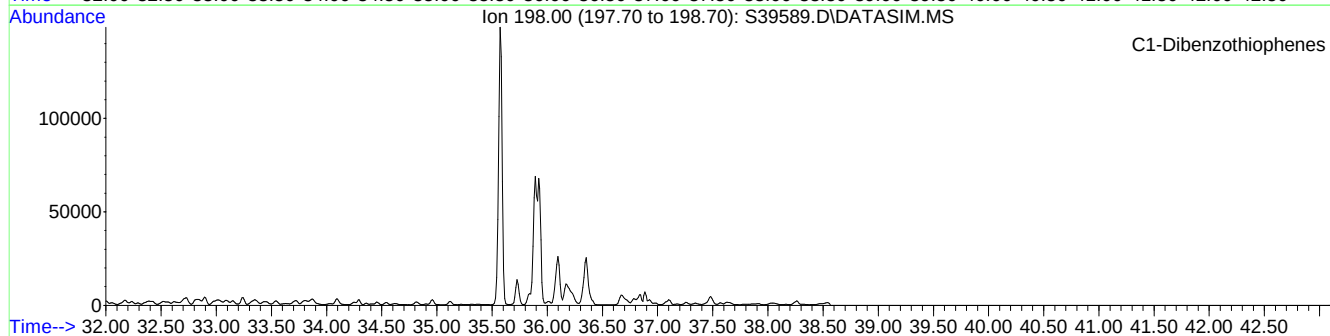
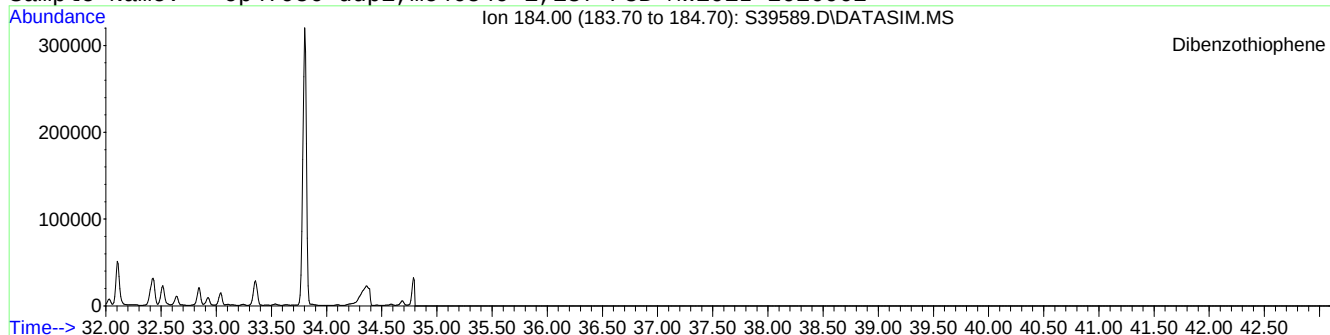


GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160705\S39589.D

Date Acquired: 5 Jul 2016 4:38 pm

Sample Name: op47956-dup1,mc46549-1,137-P3B-MW101I-2016062



GC/MS EXTRACTED ION CHROMATOGRAM

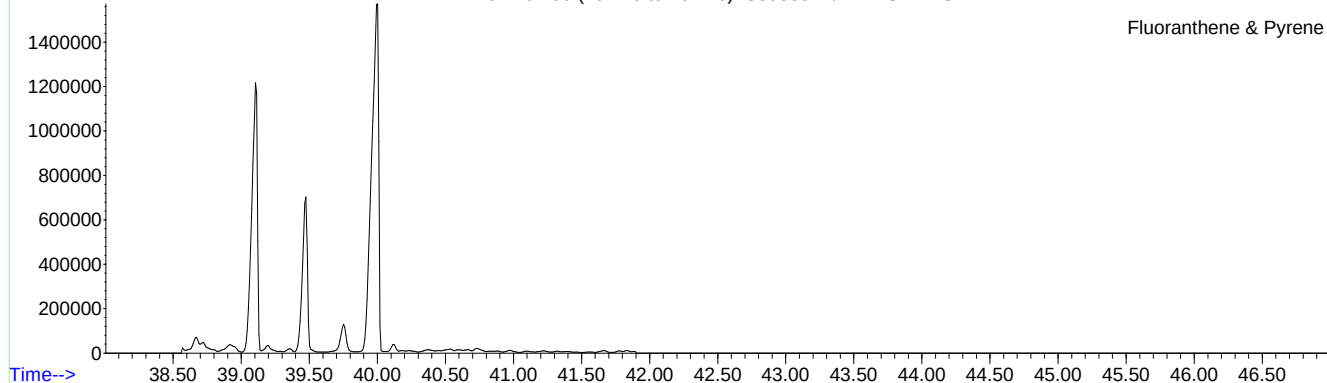
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Date Acquired: 5 Jul 2016 4:38 pm

Sample Name: op47956-dup1,mc46549-1,137-P3B-MW101I-2016062

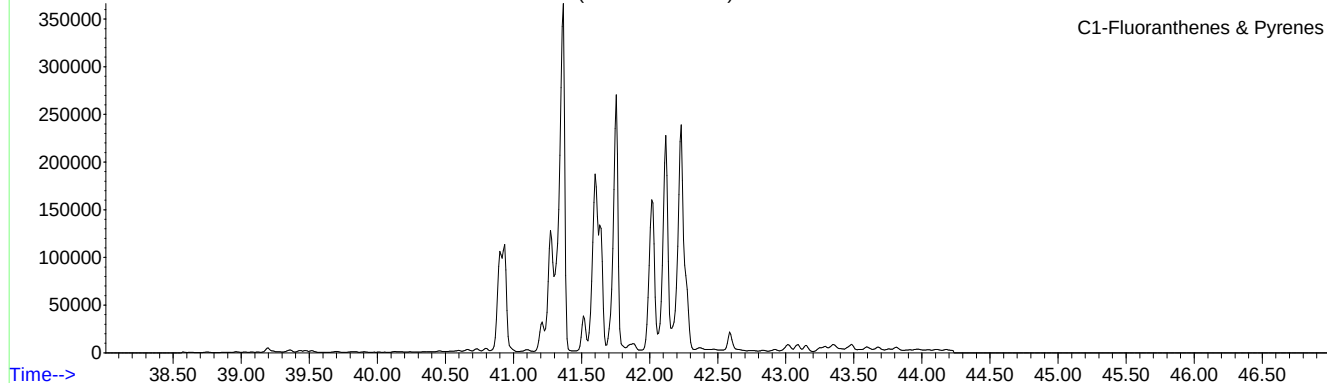
Abundance Ion 202.00 (201.70 to 202.70): S39589.D\DATASIM.MS

Fluoranthene & Pyrene



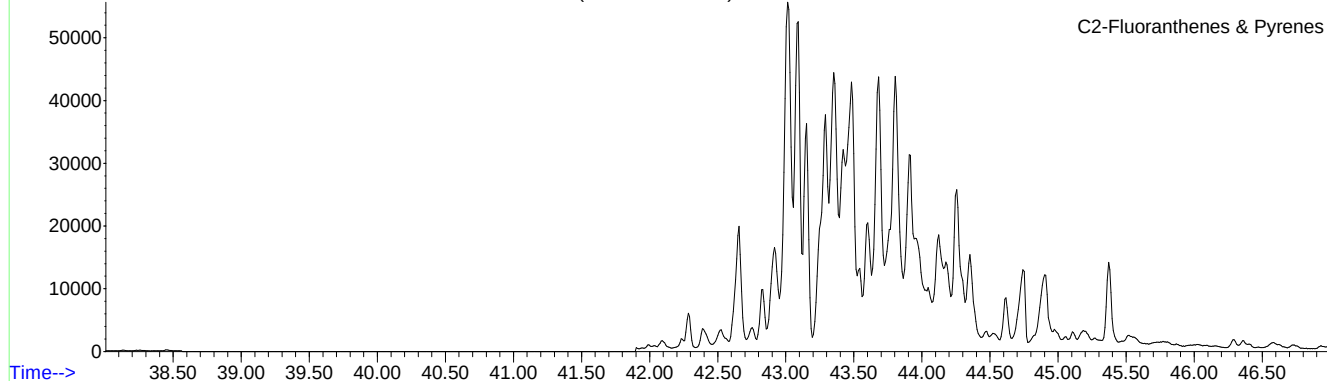
Time--> Abundance Ion 216.00 (215.70 to 216.70): S39589.D\DATASIM.MS

C1-Fluoranthenes & Pyrenes



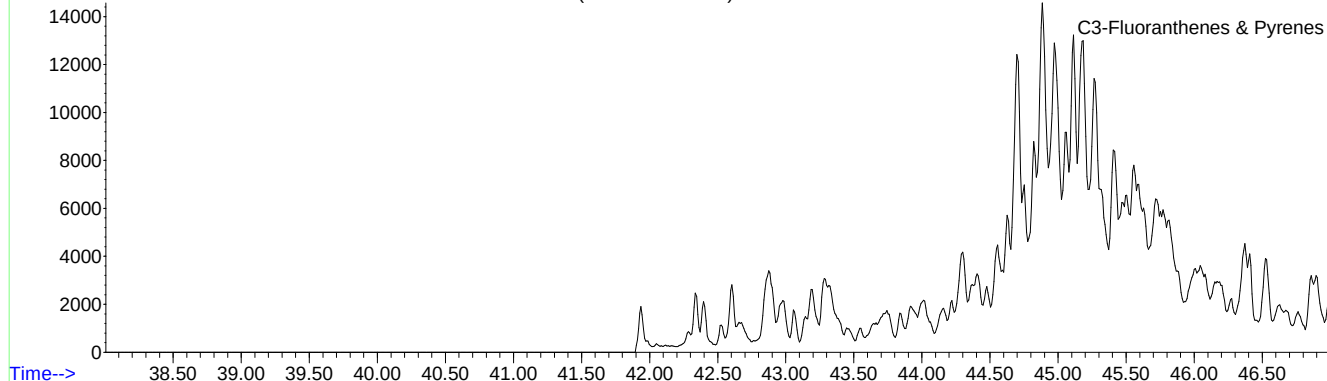
Time--> Abundance Ion 230.00 (229.70 to 230.70): S39589.D\DATASIM.MS

C2-Fluoranthenes & Pyrenes



Time--> Abundance Ion 244.00 (243.70 to 244.70): S39589.D\DATASIM.MS

C3-Fluoranthenes & Pyrenes



GC/MS EXTRACTED ION CHROMATOGRAM

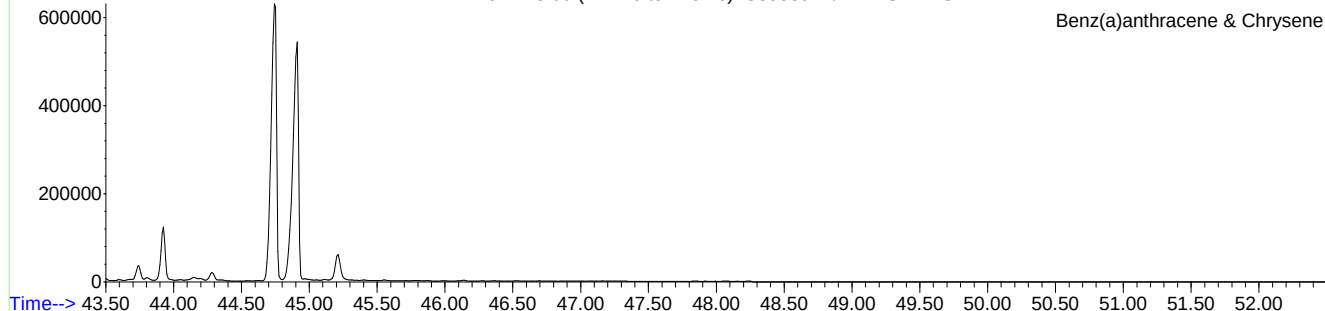
File: S:\1\data\S160705\S39589.D

Date Acquired: 5 Jul 2016 4:38 pm

Sample Name: op47956-dup1,mc46549-1,137-P3B-MW101I-2016062

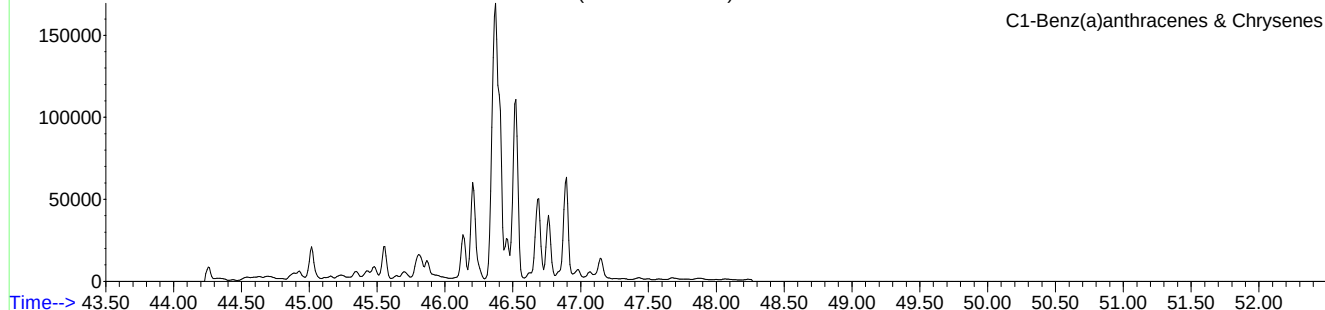
Abundance Ion 228.00 (227.70 to 228.70): S39589.D\DATASIM.MS

Benz(a)anthracene & Chrysene



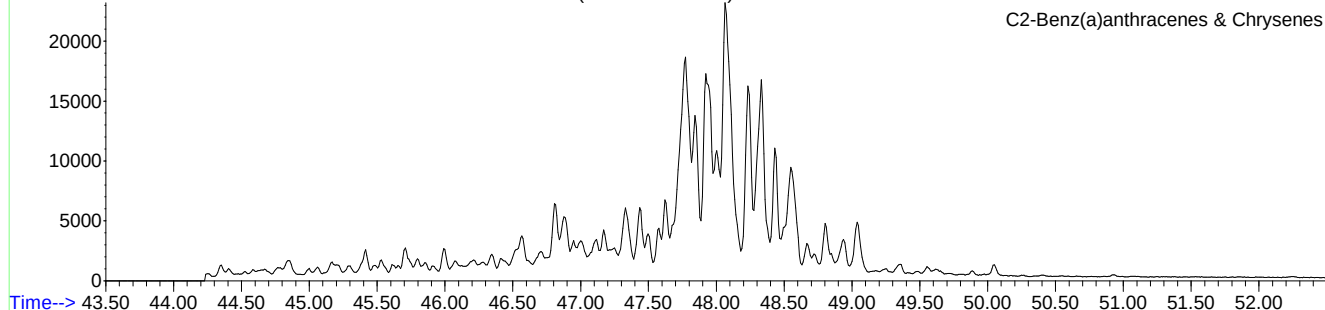
Abundance Ion 242.00 (241.70 to 242.70): S39589.D\DATASIM.MS

C1-Benz(a)anthracenes & Chrysenes



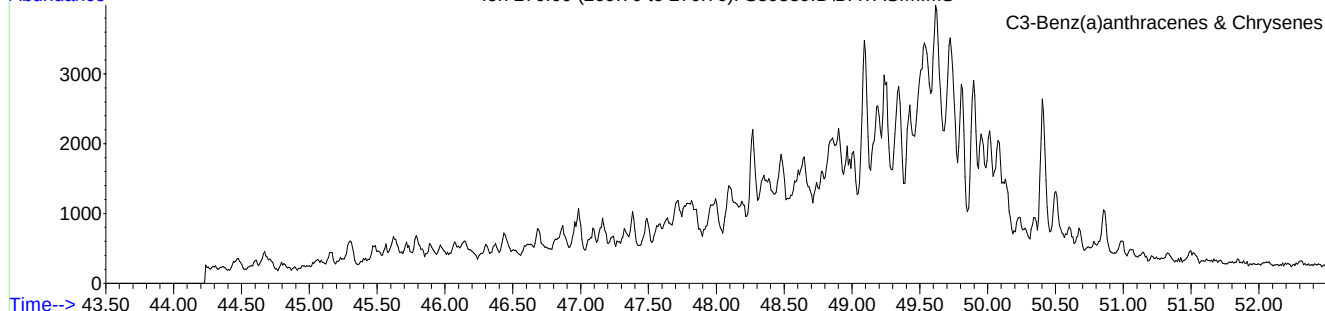
Abundance Ion 256.00 (255.70 to 256.70): S39589.D\DATASIM.MS

C2-Benz(a)anthracenes & Chrysenes



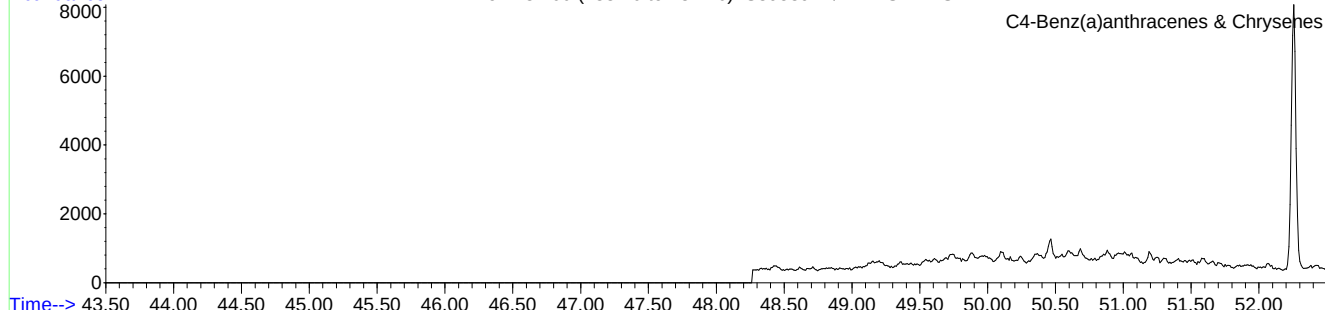
Abundance Ion 270.00 (269.70 to 270.70): S39589.D\DATASIM.MS

C3-Benz(a)anthracenes & Chrysenes



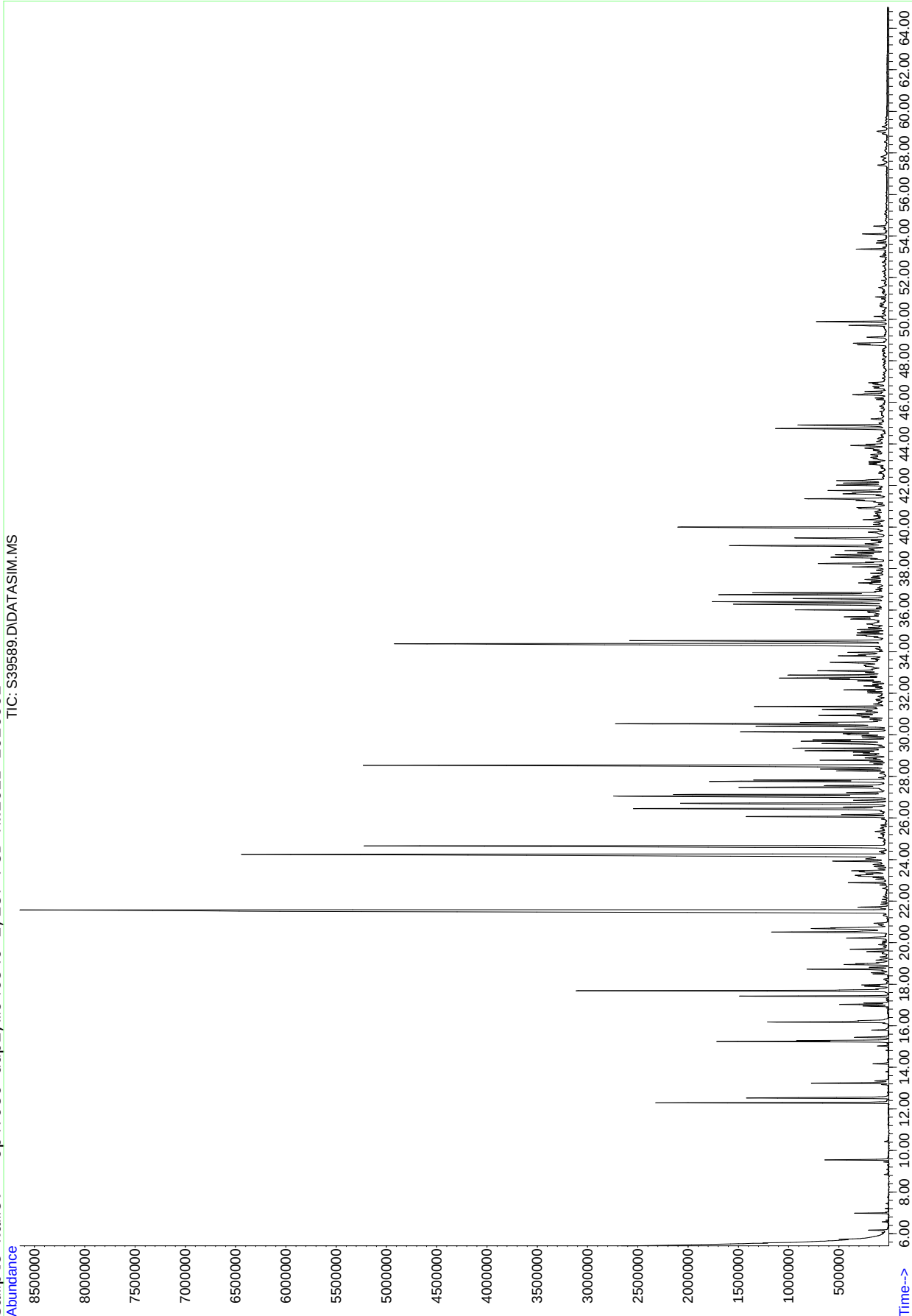
Abundance Ion 284.00 (283.70 to 284.70): S39589.D\DATASIM.MS

C4-Benz(a)anthracenes & Chrysenes



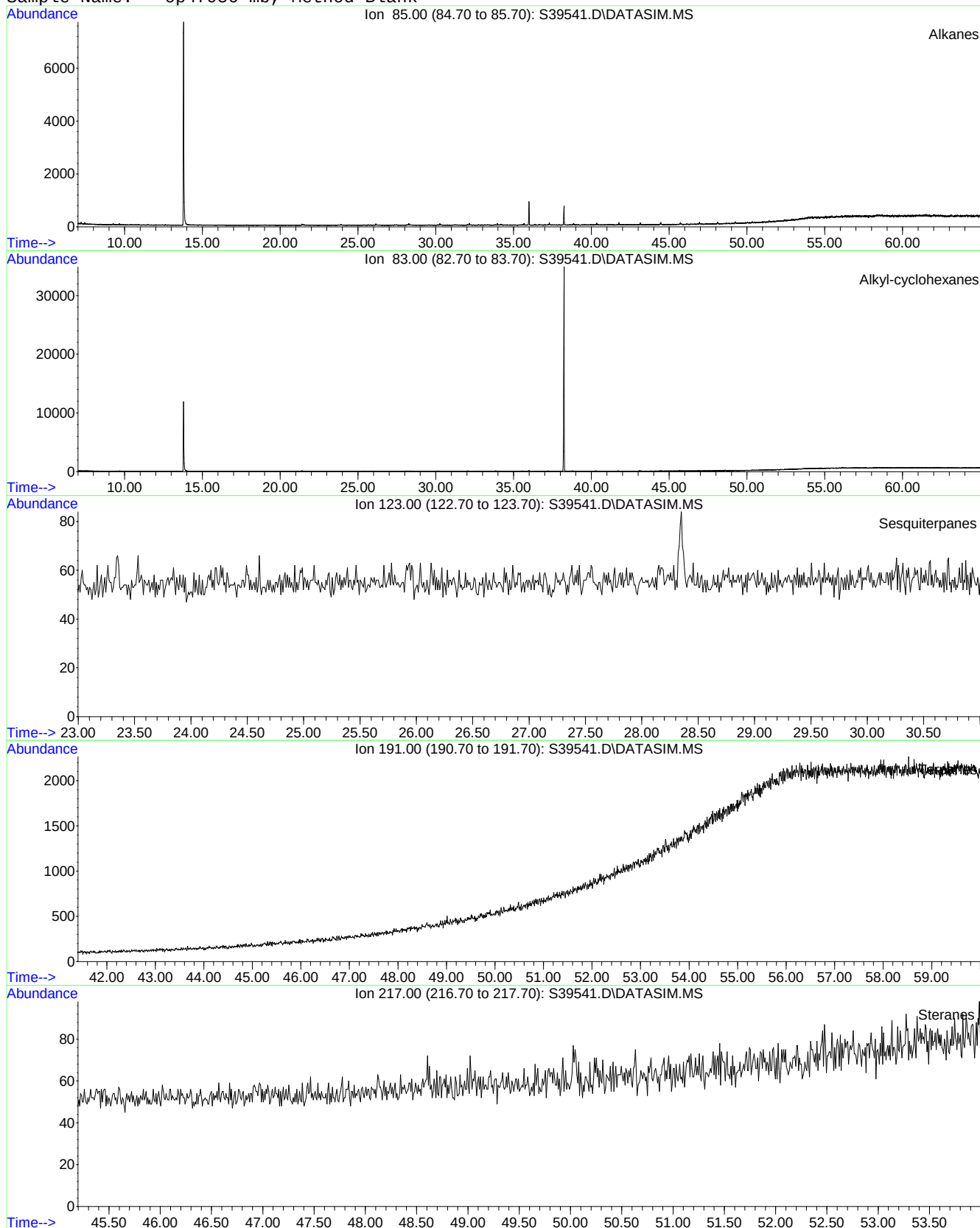
GC/MS TOTAL ION CHROMATOGRAM

File: S:\data\S160705\S39589.D
 Date Acquired: 5 Jul 2016 4:38 pm
 Sample Name: op47956-dup1,mc46549-1,137-P3B-MW101I-2016062
 TIC: S39589.D\DATASIM.MS



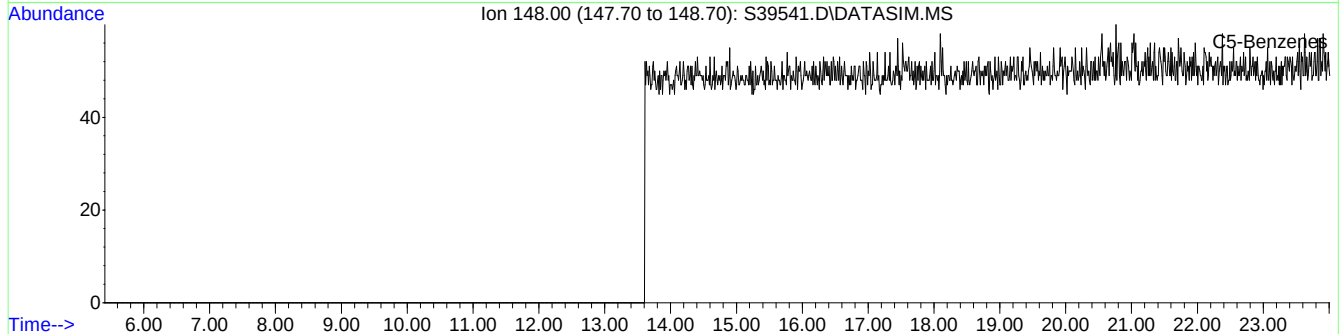
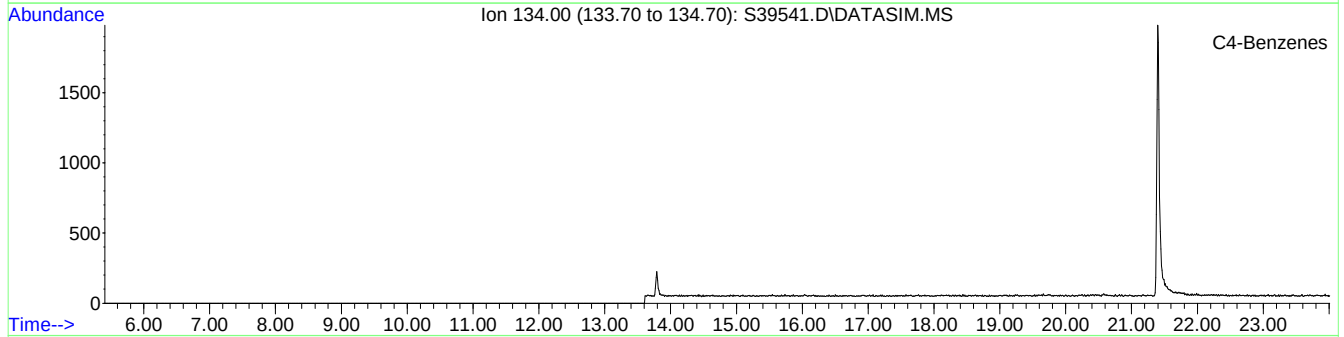
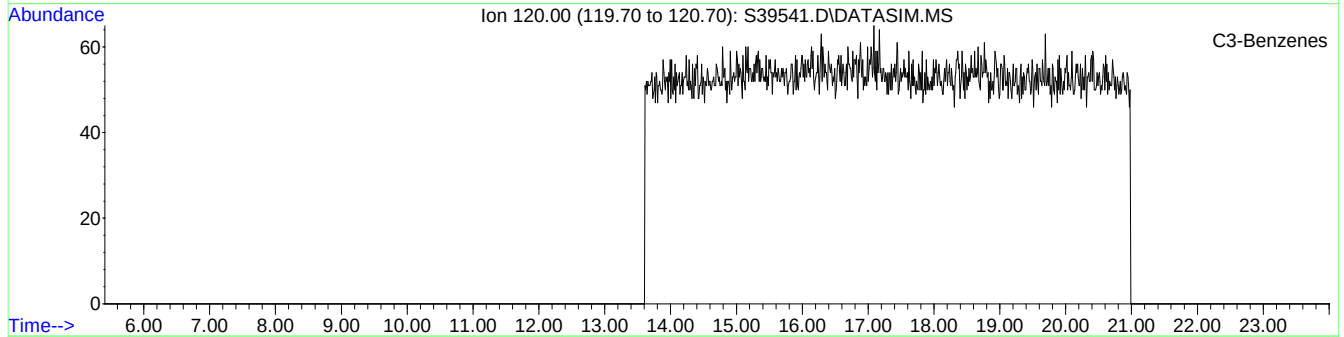
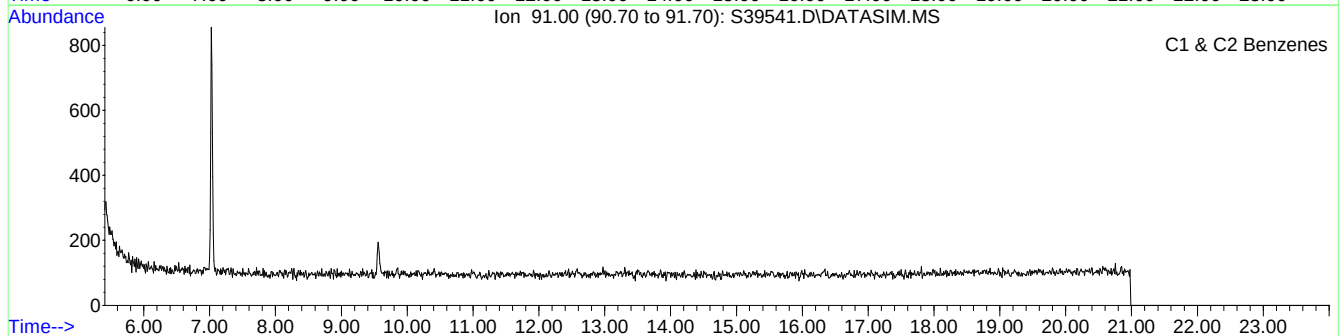
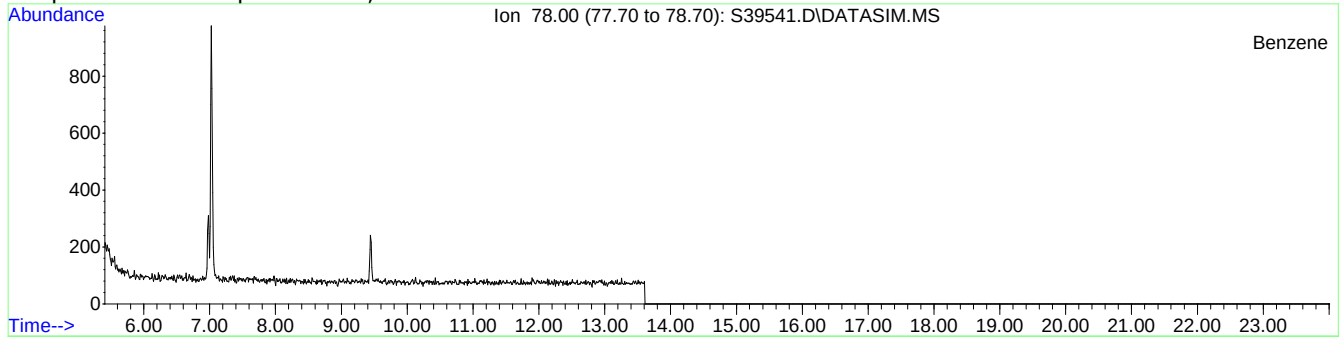
GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160623\S39541.D
Date Acquired: 24 Jun 2016 8:13 am
Sample Name: op47956-mb, Method Blank



GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160623\S39541.D
Date Acquired: 24 Jun 2016 8:13 am
Sample Name: op47956-mb, Method Blank

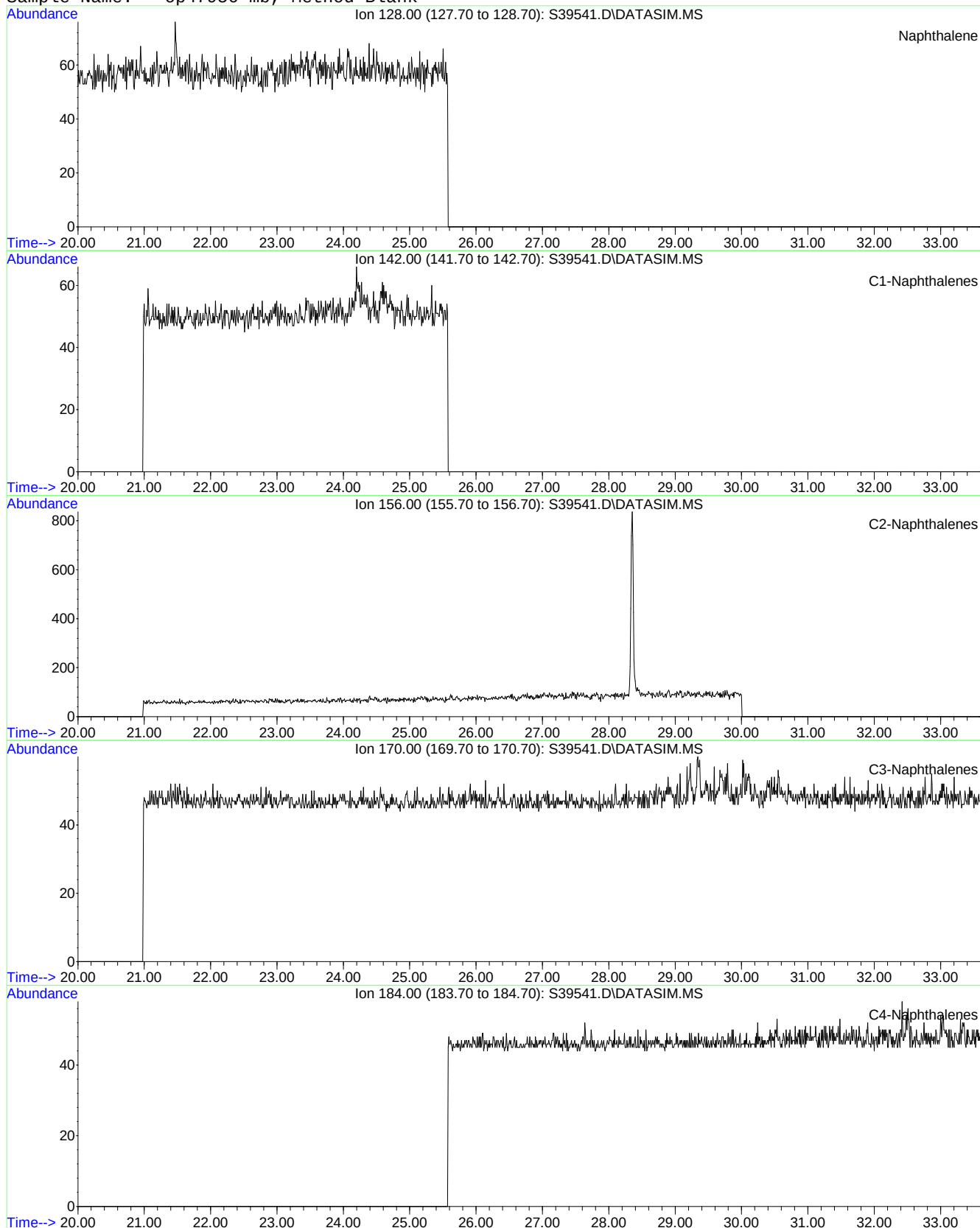


GC/MS EXTRACTED ION CHROMATOGRAM

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Date Acquired: 24 Jun 2016 8:13 am

Sample Name: op47956-mb, Method Blank

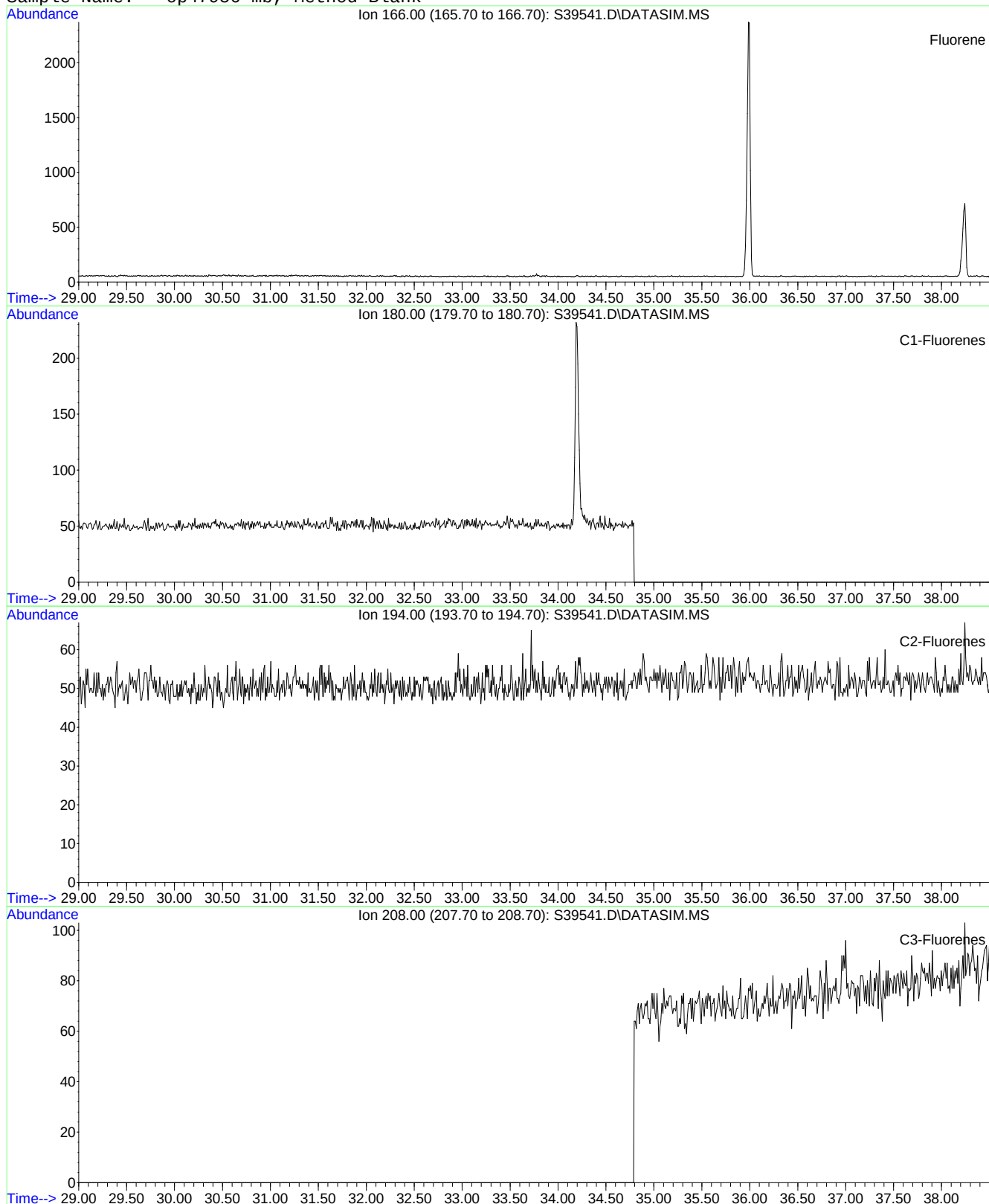


GC/MS EXTRACTED ION CHROMATOGRAM

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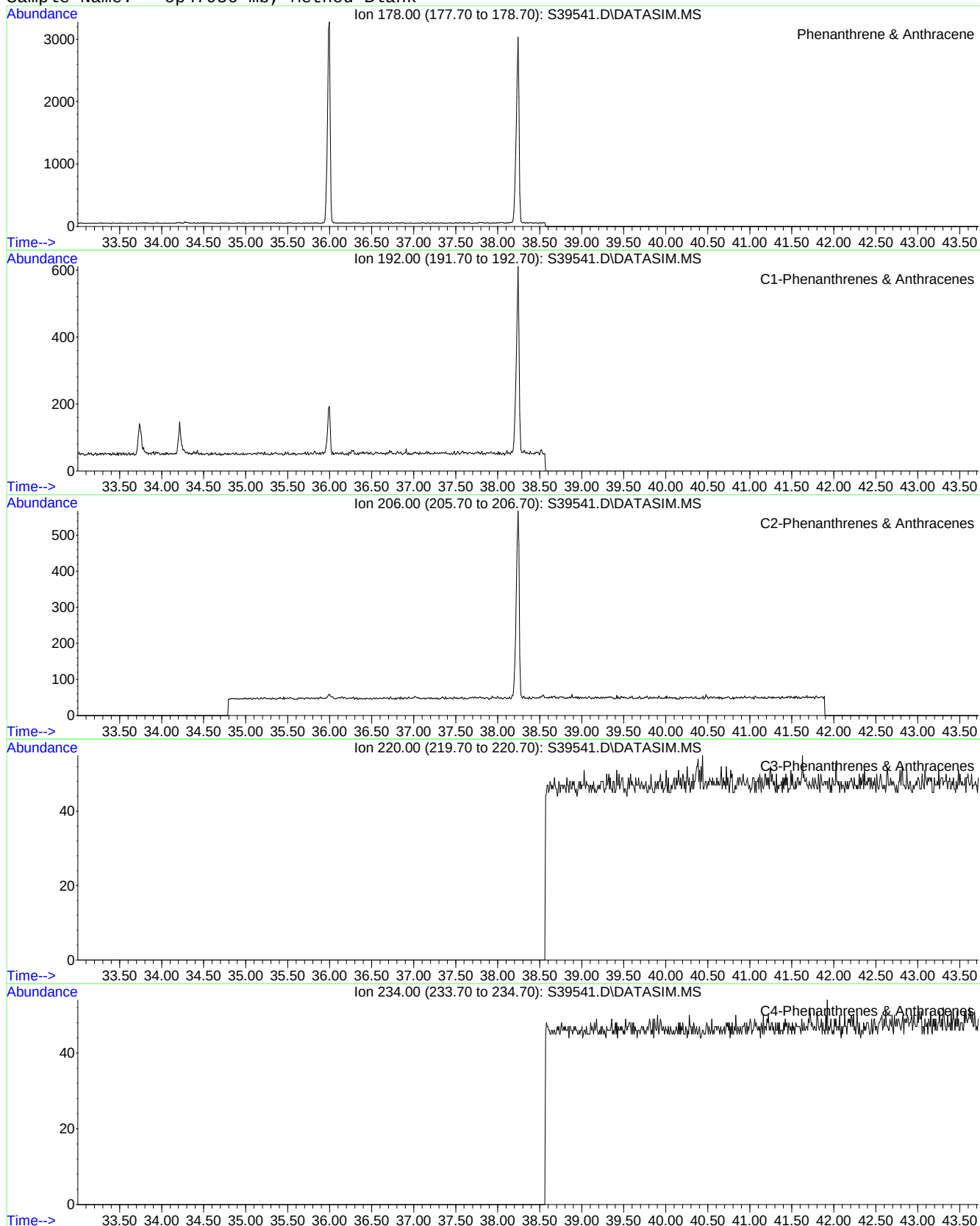
Date Acquired: 24 Jun 2016 8:13 am

Sample Name: op47956-mb, Method Blank



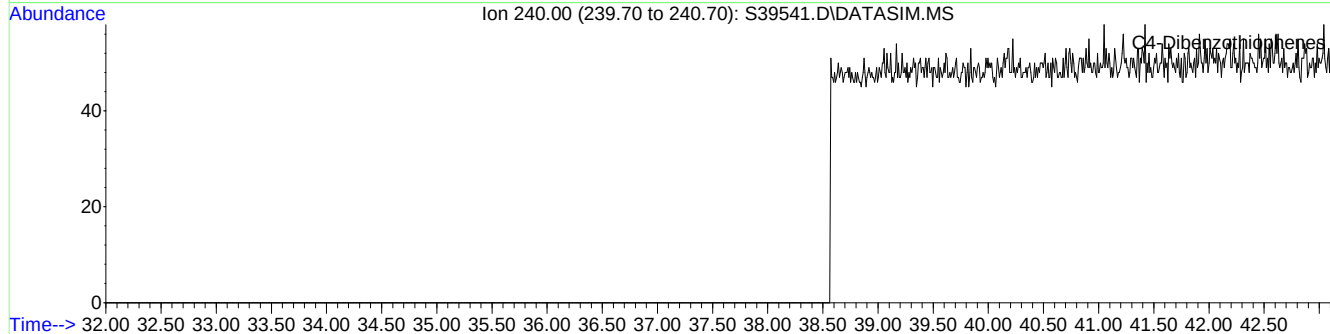
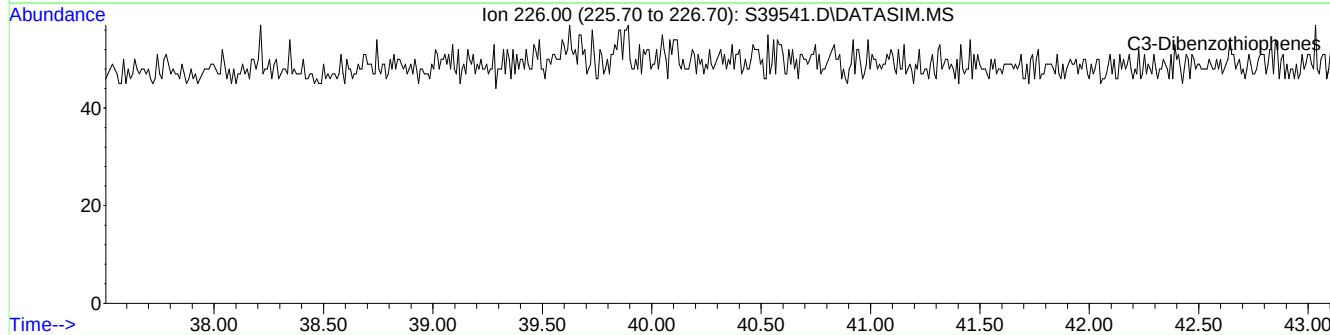
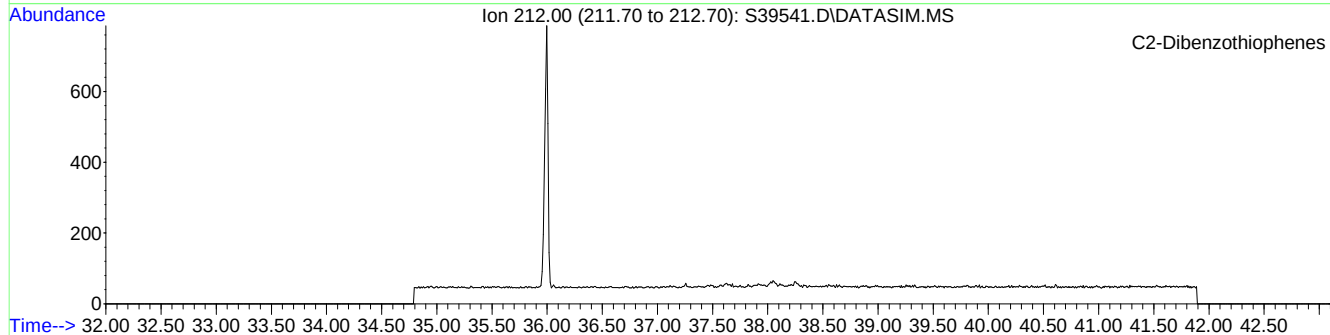
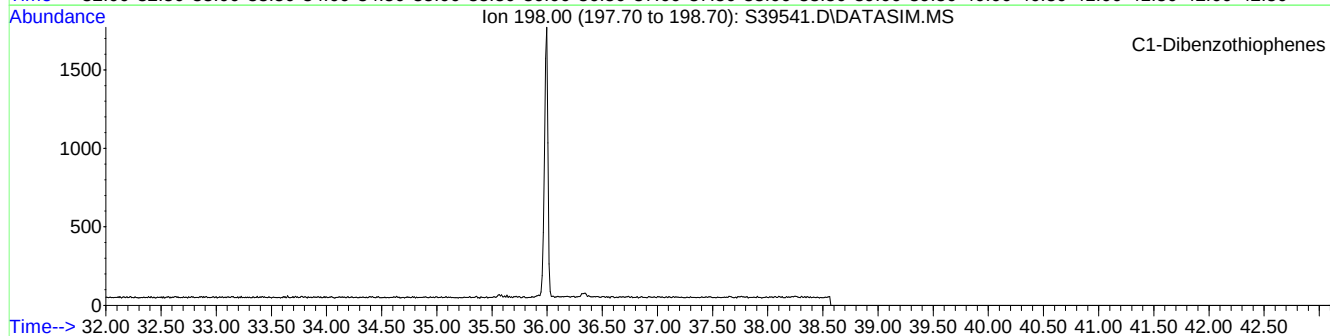
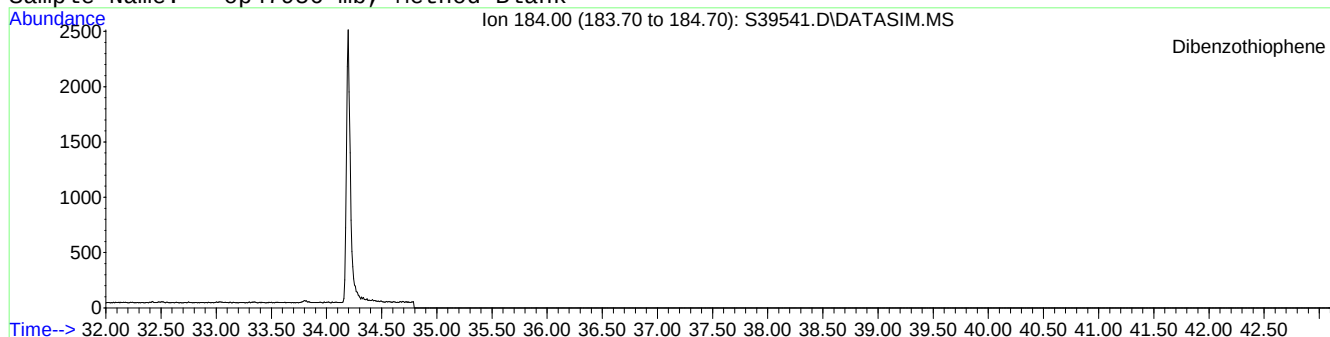
GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160623\S39541.D
Date Acquired: 24 Jun 2016 8:13 am
Sample Name: op47956-mb, Method Blank



GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160623\S39541.D
Date Acquired: 24 Jun 2016 8:13 am
Sample Name: op47956-mb, Method Blank

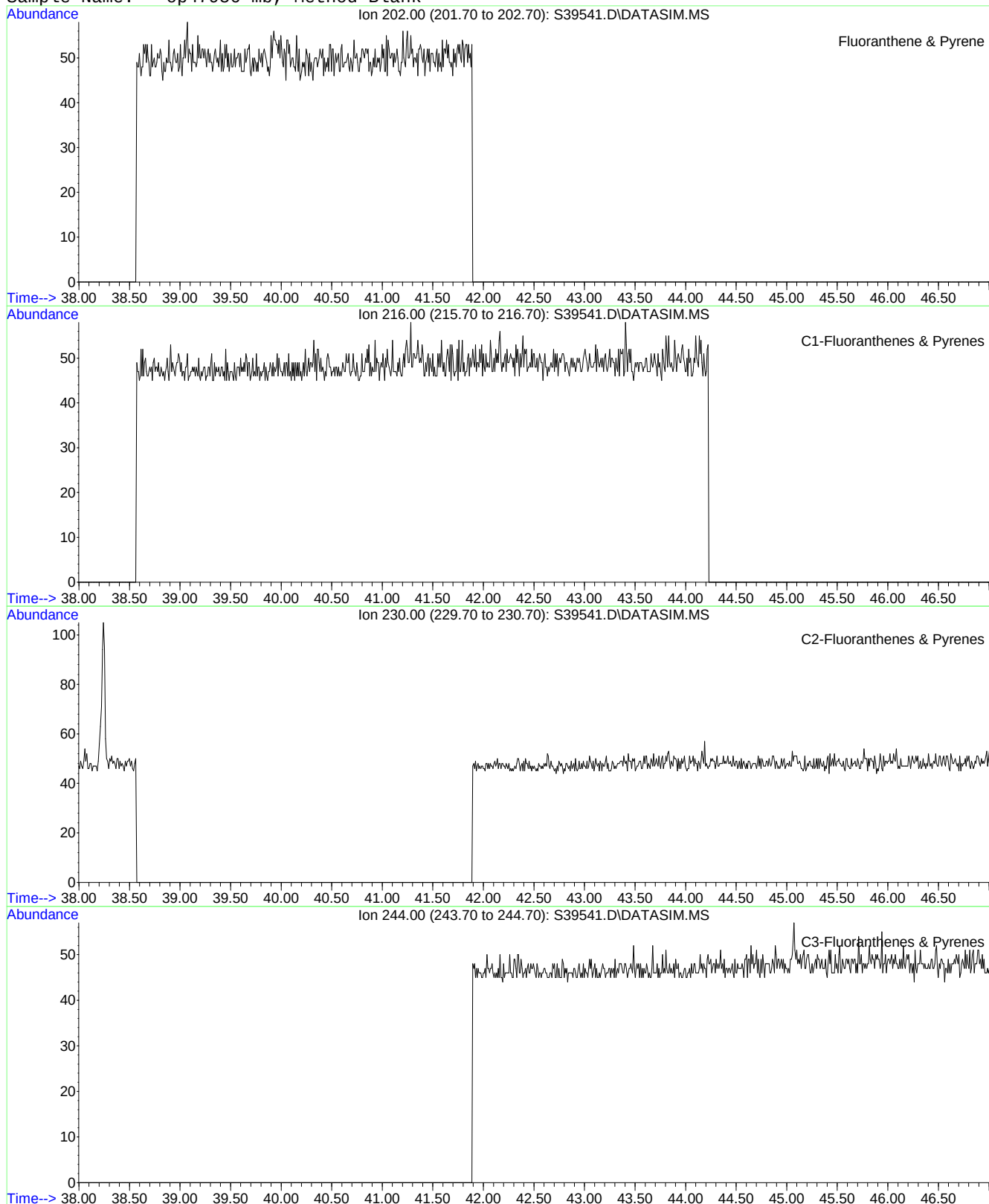


GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160623\S39541.D

Date Acquired: 24 Jun 2016 8:13 am

Sample Name: op47956-mb, Method Blank

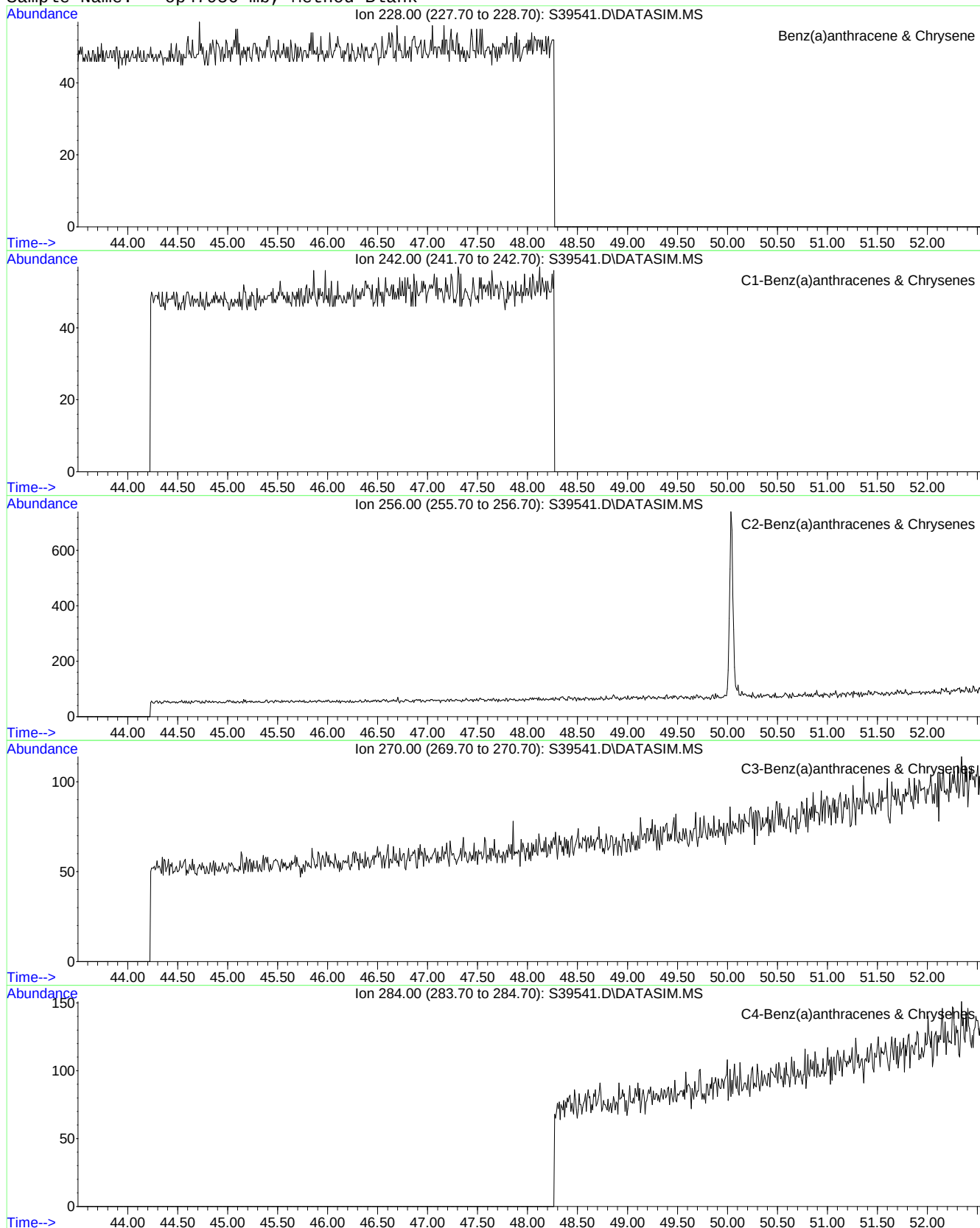


GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160623\S39541.D

Date Acquired: 24 Jun 2016 8:13 am

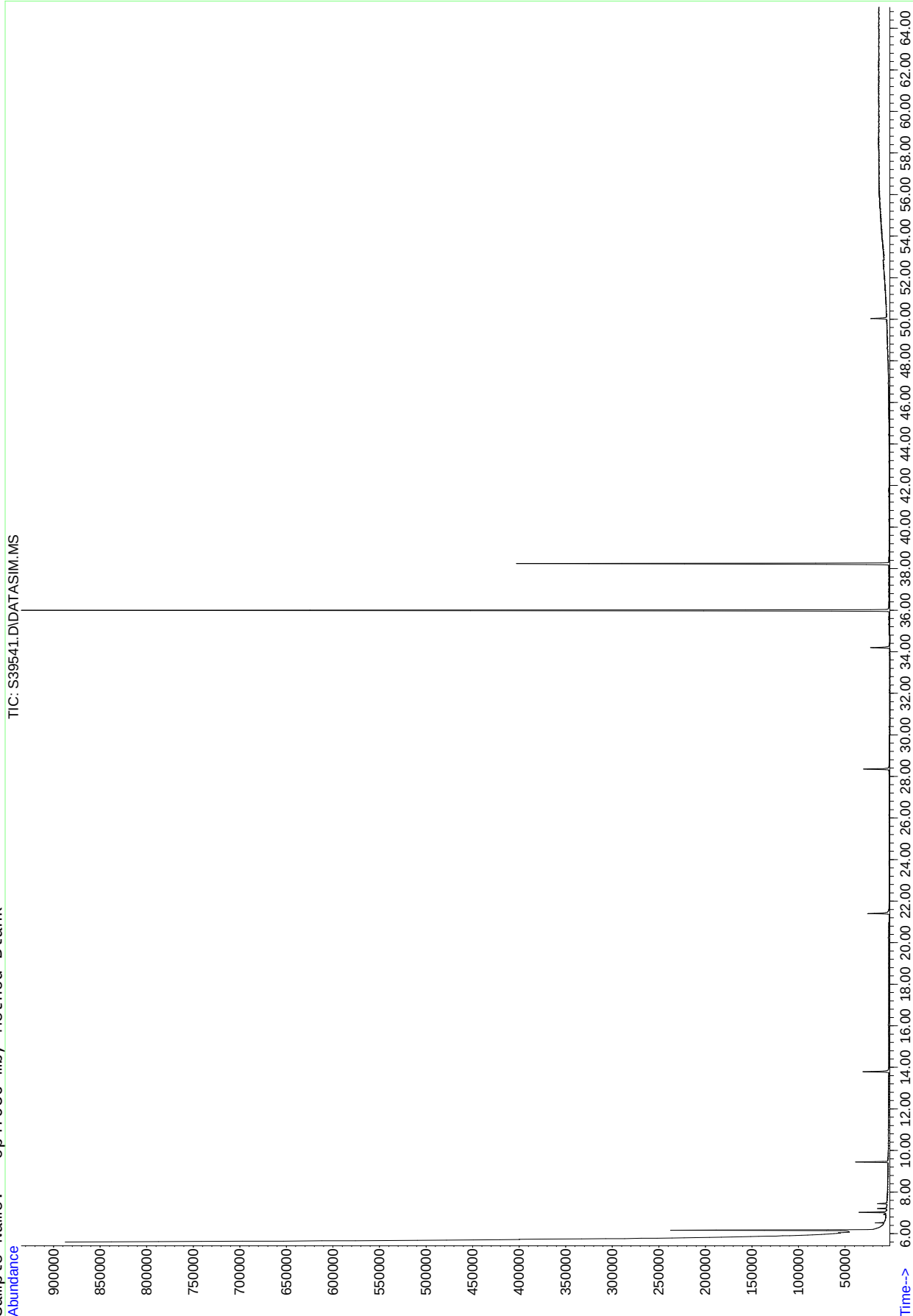
Sample Name: op47956-mb, Method Blank



GC/MS TOTAL ION CHROMATOGRAM

File: S:\data\S160623\S39541.D
 Date Acquired: 24 Jun 2016 8:13 am
 Sample Name: op47956-mb, Method Blank

TIC: S39541.D\DATA\SIM.MS



Internal Sample Tracking Chronicle

AECOM, INC.

Job No: MC46549

PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Project No: 60506516.GA.LSRP.DNAPL.LAB-DV

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC46549-1 Collected: 21-JUN-16 07:45 By: Received: 23-JUN-16 By: NT 137-P3B-MW101I-20160621						
MC46549-1	ASTM D3328-06	01-JUL-16 02:11	MEW	23-JUN-16	MEW	B3328FINGHR
MC46549-1	D5739-06/8270M SIM	05-JUL-16 19:07	SZ	23-JUN-16	MEW	B5739ALKPAH
MC46549-1	D5739-06/8270M SIM	05-JUL-16 20:21	SZ	23-JUN-16	MEW	B5739ALKPAH

SGS Accutest Internal Chain of Custody

Job Number: MC46549
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ
Received: 06/23/16

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
MC46549-1.1	Walk In Ref #22	Michael Widuta	06/23/16 14:01	Retrieve from Storage
MC46549-1.1	Michael Widuta	Walk In Ref #22	06/23/16 16:50	Return to Storage

5.4
5

GC/MS Semi-volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Page 1 of 3

Job Number: MC46549

Account: ENSRNJ AECOM, INC.

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47956-MB	S39541.D	1	06/24/16	SZ	06/23/16	OP47956	MSS1961

The QC reported here applies to the following samples:

Method: D5739-06/8270M SIM

MC46549-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1790	2000	1000	ug/kg	J
	C1-Benzene	ND	2000	1000	ug/kg	
	C2-Benzenes	ND	2000	1000	ug/kg	
	C3-Benzenes	ND	2000	1000	ug/kg	
	C4-Benzenes	ND	2000	1000	ug/kg	
	C5-Benzenes	ND	2000	1000	ug/kg	
108-88-3	Toluene	1180	2000	1000	ug/kg	J
100-41-4	Ethylbenzene	ND	2000	1000	ug/kg	
	m,p-Xylene	ND	2000	1000	ug/kg	
100-42-5	Styrene	ND	2000	1000	ug/kg	
95-47-6	o-Xylene	ND	2000	1000	ug/kg	
98-82-8	Isopropylbenzene	ND	2000	1000	ug/kg	
103-65-1	n-Propylbenzene	ND	2000	1000	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2000	1000	ug/kg	
526-73-8	1,2,3-Trimethylbenzene	ND	2000	1000	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2000	1000	ug/kg	
98-06-6	t-Butylbenzene	ND	2000	1000	ug/kg	
135-98-8	sec-Butylbenzene	ND	2000	1000	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2000	1000	ug/kg	
104-51-8	n-Butylbenzene	ND	2000	1000	ug/kg	
493-02-7	trans-Decalin	ND	2000	1000	ug/kg	
493-01-6	cis-Decalin	ND	2000	1000	ug/kg	
11095-43-5	Benzo(b)thiophene	ND	2000	1000	ug/kg	
91-20-3	Naphthalene	ND	2000	1000	ug/kg	
91-57-6	2-Methylnaphthalene	ND	2000	1000	ug/kg	
90-12-0	1-Methylnaphthalene	ND	2000	1000	ug/kg	
	C1-Naphthalenes	ND	2000	1000	ug/kg	
	C2-Naphthalenes	ND	2000	1000	ug/kg	
	C3-Naphthalenes	ND	2000	1000	ug/kg	
	C4-Naphthalenes	ND	2000	1000	ug/kg	
92-52-4	Biphenyl	ND	2000	1000	ug/kg	
208-96-8	Acenaphthylene	ND	2000	1000	ug/kg	
83-32-9	Acenaphthene	ND	2000	1000	ug/kg	
132-64-9	Dibenzofuran	ND	2000	1000	ug/kg	
86-73-7	Fluorene	ND	2000	1000	ug/kg	
	C1-Fluorenes	ND	2000	1000	ug/kg	

Method Blank Summary

Page 2 of 3

Job Number: MC46549

Account: ENSRNJ AECOM, INC.

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47956-MB	S39541.D	1	06/24/16	SZ	06/23/16	OP47956	MSS1961

The QC reported here applies to the following samples:

Method: D5739-06/8270M SIM

MC46549-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	C2-Fluorenes	ND	2000	1000	ug/kg	
	C3-Fluorenes	ND	2000	1000	ug/kg	
132-65-0	Dibenzothiophene	ND	2000	1000	ug/kg	
	C1-Dibenzothiophenes	ND	2000	1000	ug/kg	
	C2-Dibenzothiophenes	ND	2000	1000	ug/kg	
	C3-Dibenzothiophenes	ND	2000	1000	ug/kg	
	C4-Dibenzothiophenes	ND	2000	1000	ug/kg	
85-01-8	Phenanthrene	ND	2000	1000	ug/kg	
120-12-7	Anthracene	ND	2000	1000	ug/kg	
	C1-Phenanthrenes/Anthracene	ND	2000	1000	ug/kg	
	C2-Phenanthrenes/Anthracene	ND	2000	1000	ug/kg	
	C3-Phenanthrenes/Anthracene	ND	2000	1000	ug/kg	
	C4-Phenanthrenes/Anthracene	ND	2000	1000	ug/kg	
483-65-8	Retene	ND	2000	1000	ug/kg	
239-35-0	Benzo(b)naphtho(2,1-d)thioph	ND	2000	1000	ug/kg	
206-44-0	Fluoranthene	ND	2000	1000	ug/kg	
129-00-0	Pyrene	ND	2000	1000	ug/kg	
	C1-Fluoranthenes/Pyrenes	ND	2000	1000	ug/kg	
	C2-Fluoranthenes/Pyrenes	ND	2000	1000	ug/kg	
	C3-Fluoranthenes/Pyrenes	ND	2000	1000	ug/kg	
243-17-4	Benzo(b)fluorene	ND	2000	1000	ug/kg	
205-12-9	Benzo(c)fluorene	ND	2000	1000	ug/kg	
3442-78-2	2-Methylpyrene	ND	2000	1000	ug/kg	
3353-12-6	4-Methylpyrene	ND	2000	1000	ug/kg	
2381-21-7	1-Methylpyrene	ND	2000	1000	ug/kg	
56-55-3	Benz(a)anthracene	ND	2000	1000	ug/kg	
	Chrysene/triphenylene	ND	2000	1000	ug/kg	
	C1-Benzo(a)anthracenes/Chrys	ND	2000	1000	ug/kg	
	C2-Benzo(a)anthracenes/Chrys	ND	2000	1000	ug/kg	
	C3-Benzo(a)anthracenes/Chrys	ND	2000	1000	ug/kg	
	C4-Benzo(a)anthracenes/Chrys	ND	2000	1000	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	2000	1000	ug/kg	
	Benzo(j/k)fluoranthene	ND	2000	1000	ug/kg	
192-97-2	Benzo(e)pyrene	ND	2000	1000	ug/kg	
50-32-8	Benzo(a)pyrene	ND	2000	1000	ug/kg	
198-55-0	Perylene	ND	2000	1000	ug/kg	

Method Blank Summary

Page 3 of 3

Job Number: MC46549

Account: ENSRNJ AECOM, INC.

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47956-MB	S39541.D	1	06/24/16	SZ	06/23/16	OP47956	MSS1961

The QC reported here applies to the following samples:

Method: D5739-06/8270M SIM

MC46549-1

CAS No.	Compound	Result	RL	MDL	Units	Q
193-39-5	Indeno(1,2,3-cd)pyrene	ND	2000	1000	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	2000	1000	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	2000	1000	ug/kg	
191-07-1	Coronene	ND	2000	1000	ug/kg	

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	105% 40-140%
1146-65-2	Naphthalene-d8	91% 40-140%
1517-22-2	Phenanthrene-d10	90% 40-140%
	Perylene-d12	80% 40-140%

Blank Spike Summary**Job Number:** MC46549**Account:** ENSRNJ AECOM, INC.**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47956-BS2	S39542.D	1	06/24/16	SZ	06/23/16	OP47956	MSS1961

The QC reported here applies to the following samples:**Method:** D5739-06/8270M SIM

MC46549-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	1000000	1110000	111	50-150
	C1-Benzene		ND		50-150 ^a
	C2-Benzenes		ND		50-150 ^a
	C3-Benzenes		ND		50-150 ^a
	C4-Benzenes		ND		50-150 ^a
	C5-Benzenes		ND		50-150 ^a
108-88-3	Toluene	1000000	967000	97	50-150
100-41-4	Ethylbenzene	1000000	1020000	102	50-150
	m,p-Xylene	1000000	1010000	101	50-150
100-42-5	Styrene	1000000	874000	87	50-150
95-47-6	o-Xylene	1000000	989000	99	50-150
98-82-8	Isopropylbenzene	1000000	1060000	106	50-150
103-65-1	n-Propylbenzene	1000000	1040000	104	50-150
108-67-8	1,3,5-Trimethylbenzene	1000000	1030000	103	50-150
526-73-8	1,2,3-Trimethylbenzene	1000000	1020000	102	50-150
95-63-6	1,2,4-Trimethylbenzene	1000000	1000000	100	50-150
98-06-6	t-Butylbenzene	1000000	1060000	106	50-150
135-98-8	sec-Butylbenzene	1000000	1040000	104	50-150
99-87-6	p-Isopropyltoluene	1000000	1090000	109	50-150
104-51-8	n-Butylbenzene	1000000	1020000	102	50-150
493-02-7	trans-Decalin	1000000	923000	92	50-150
493-01-6	cis-Decalin	1000000	896000	90	50-150
11095-43-5	Benzo(b)thiophene	1000000	972000	97	50-150
91-20-3	Naphthalene	1000000	985000	99	50-150
91-57-6	2-Methylnaphthalene	1000000	917000	92	50-150
90-12-0	1-Methylnaphthalene	1000000	1010000	101	50-150
	C1-Naphthalenes		ND		50-150 ^a
	C2-Naphthalenes		ND		50-150 ^a
	C3-Naphthalenes		ND		50-150 ^a
	C4-Naphthalenes		ND		50-150 ^a
92-52-4	Biphenyl	1000000	953000	95	50-150
208-96-8	Acenaphthylene	1000000	968000	97	50-150
83-32-9	Acenaphthene	1000000	999000	100	50-150
132-64-9	Dibenzofuran	1000000	1020000	102	50-150
86-73-7	Fluorene	1000000	969000	97	50-150
	C1-Fluorenes		ND		50-150 ^a

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC46549

Account: ENSRNJ AECOM, INC.

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47956-BS2	S39542.D	1	06/24/16	SZ	06/23/16	OP47956	MSS1961

The QC reported here applies to the following samples:

Method: D5739-06/8270M SIM

MC46549-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
	C2-Fluorenes		ND		50-150 ^a
	C3-Fluorenes		ND		50-150 ^a
132-65-0	Dibenzothiophene	1000000	915000	92	50-150
	C1-Dibenzothiophenes		ND		50-150 ^a
	C2-Dibenzothiophenes		ND		50-150 ^a
	C3-Dibenzothiophenes		ND		50-150 ^a
	C4-Dibenzothiophenes		ND		50-150 ^a
85-01-8	Phenanthrene	1000000	984000	98	50-150
120-12-7	Anthracene	1000000	1020000	102	50-150
	C1-Phenanthrenes/Anthracene		ND		50-150 ^a
	C2-Phenanthrenes/Anthracene		ND		50-150 ^a
	C3-Phenanthrenes/Anthracene		ND		50-150 ^a
	C4-Phenanthrenes/Anthracene		ND		50-150 ^a
483-65-8	Retene	1000000	794000	79	50-150
239-35-0	Benzo(b)naphtho(2,1-d)thioph	1000000	979000	98	50-150
206-44-0	Fluoranthene	1000000	1000000	100	50-150
129-00-0	Pyrene	1000000	1030000	103	50-150
	C1-Fluoranthenes/Pyrenes		ND		50-150 ^a
	C2-Fluoranthenes/Pyrenes		ND		50-150 ^a
	C3-Fluoranthenes/Pyrenes		ND		50-150 ^a
243-17-4	Benzo(b)fluorene		ND		50-150 ^a
205-12-9	Benzo(c)fluorene		ND		50-150 ^a
3442-78-2	2-Methylpyrene		ND		50-150 ^a
3353-12-6	4-Methylpyrene		ND		50-150 ^a
2381-21-7	1-Methylpyrene		ND		50-150 ^a
56-55-3	Benz(a)anthracene	1000000	959000	96	50-150
	Chrysene/triphenylene	1000000	965000	97	50-150
	C1-Benzo(a)anthracenes/Chrys		ND		50-150 ^a
	C2-Benzo(a)anthracenes/Chrys		ND		50-150 ^a
	C3-Benzo(a)anthracenes/Chrys		ND		50-150 ^a
	C4-Benzo(a)anthracenes/Chrys		ND		50-150 ^a
205-99-2	Benzo(b)fluoranthene	1000000	935000	94	50-150
	Benzo(j/k)fluoranthene	1000000	913000	91	50-150
192-97-2	Benzo(e)pyrene	1000000	907000	91	50-150
50-32-8	Benzo(a)pyrene	1000000	928000	93	50-150
198-55-0	Perylene	1000000	849000	85	50-150

* = Outside of Control Limits.

Blank Spike Summary

Page 3 of 3

Job Number: MC46549

Account: ENSRNJ AECOM, INC.

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47956-BS2	S39542.D	1	06/24/16	SZ	06/23/16	OP47956	MSS1961

The QC reported here applies to the following samples:

Method: D5739-06/8270M SIM

MC46549-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
193-39-5	Indeno(1,2,3-cd)pyrene	1000000	912000	91	50-150
53-70-3	Dibenzo(a,h)anthracene	1000000	917000	92	50-150
191-24-2	Benzo(g,h,i)perylene	1000000	873000	87	50-150
191-07-1	Coronene	1000000	829000	83	50-150 ^a

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	97%	40-140%
1146-65-2	Naphthalene-d8	97%	40-140%
1517-22-2	Phenanthrene-d10	97%	40-140%
	Perylene-d12	86%	40-140%

(a) Advisory control limits.

* = Outside of Control Limits.

Duplicate Summary

Page 1 of 2

Job Number: MC46549**Account:** ENSRNJ AECOM, INC.**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47956-DUP1	S39589.D	1	07/05/16	SZ	06/23/16	OP47956	MSS1964
MC46549-1	S39591.D	1	07/05/16	SZ	06/23/16	OP47956	MSS1964

The QC reported here applies to the following samples:**Method:** D5739-06/8270M SIM

MC46549-1

CAS No.	Compound	MC46549-1 ug/kg	DUP Q ug/kg	Q	RPD	Limits
71-43-2	Benzene	846000	922000	9		30
	C1-Benzene	873000	954000	9		30 ^a
	C2-Benzenes	4660000	4990000	7		30 ^a
	C3-Benzenes	4880000	5170000	6		30 ^a
	C4-Benzenes	2480000	2580000	4		30 ^a
	C5-Benzenes	691000	705000	2		30 ^a
108-88-3	Toluene	1190000	1290000	8		30
100-42-5	Styrene	190000	191000	1		30
98-82-8	Isopropylbenzene	512000	546000	6		30
103-65-1	n-Propylbenzene	221000	234000	6		30
98-06-6	t-Butylbenzene	ND	ND	nc		30
135-98-8	sec-Butylbenzene	17400	18300	5		30
99-87-6	p-Isopropyltoluene	345000	364000	5		30
104-51-8	n-Butylbenzene	174000	182000	4		30
493-02-7	trans-Decalin	27700	30000	8		30
493-01-6	cis-Decalin	11300	14100	22		30
11095-43-5	Benzo(b)thiophene	777000	808000	4		30
	C3-Naphthalenes	6250000	6260000	0		30 ^a
	C4-Naphthalenes	1790000	1710000	5		30 ^a
132-64-9	Dibenzofuran	653000	648000	1		30
	C1-Fluorenes	5080000	4900000	4		30 ^a
	C2-Fluorenes	2990000	2850000	5		30 ^a
	C3-Fluorenes	1060000	1020000	4		30 ^a
132-65-0	Dibenzothiophene	1180000	1110000	6		30
	C1-Dibenzothiophenes	1420000	1340000	6		30 ^a
	C2-Dibenzothiophenes	1000000	949000	5		30 ^a
	C3-Dibenzothiophenes	455000	437000	4		30 ^a
	C4-Dibenzothiophenes	138000	131000	5		30 ^a
	C2-Phenanthrenes/Anthracene	6270000	5830000	7		30 ^a
	C3-Phenanthrenes/Anthracene	1640000	1510000	8		30 ^a
	C4-Phenanthrenes/Anthracene	401000	357000	12		30 ^a
483-65-8	Retene	ND	ND	nc		30
239-35-0	Benzo(b)naphtho(2,1-d)thioph	434000	396000	9		30
	C1-Fluoranthenes/Pyrenes	9750000	9000000	8		30 ^a
	C2-Fluoranthenes/Pyrenes	3210000	2970000	8		30 ^a
	C3-Fluoranthenes/Pyrenes	991000	897000	10		30 ^a

* = Outside of Control Limits.

Duplicate Summary

Job Number: MC46549

Account: ENSRNJ AECOM, INC.

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47956-DUP1	S39589.D	1	07/05/16	SZ	06/23/16	OP47956	MSS1964
MC46549-1	S39591.D	1	07/05/16	SZ	06/23/16	OP47956	MSS1964

The QC reported here applies to the following samples:

Method: D5739-06/8270M SIM

MC46549-1

CAS No.	Compound	MC46549-1 ug/kg	DUP Q ug/kg	Q	RPD	Limits
243-17-4	Benzo(b)fluorene	981000	898000	9		30 ^a
205-12-9	Benzo(c)fluorene	430000	369000	15		30 ^a
3442-78-2	2-Methylpyrene	1200000	1130000	6		30 ^a
3353-12-6	4-Methylpyrene	1070000	968000	10		30 ^a
2381-21-7	1-Methylpyrene	1500000	1370000	9		30 ^a
	C1-Benzo(a)anthracenes/Chrys	3120000	2880000	8		30 ^a
	C2-Benzo(a)anthracenes/Chrys	1180000	1160000	2		30 ^a
	C3-Benzo(a)anthracenes/Chrys	414000	362000	13		30 ^a
	C4-Benzo(a)anthracenes/Chrys	103000	94000	9		30 ^a
205-99-2	Benzo(b)fluoranthene	1140000	1050000	8		30
	Benzo(j/k)fluoranthene	1390000	1250000	11		30
192-97-2	Benzo(e)pyrene	1310000	1200000	9		30
50-32-8	Benzo(a)pyrene	2560000	2350000	9		30
198-55-0	Perylene	355000	323000	9		30
193-39-5	Indeno(1,2,3-cd)pyrene	715000	640000	11		30
53-70-3	Dibenzo(a,h)anthracene	304000	277000	9		30
191-24-2	Benzo(g,h,i)perylene	834000	763000	9		30
191-07-1	Coronene	177000	159000	11		30 ^a

CAS No.	Surrogate Recoveries	DUP	MC46549-1	Limits
2037-26-5	Toluene-D8	99%	93%	40-140%
1146-65-2	Naphthalene-d8	99%	94%	40-140%
1517-22-2	Phenanthrene-d10	89%	93%	40-140%
	Perylene-d12	89%	96%	40-140%

(a) Advisory control limits.

* = Outside of Control Limits.

Duplicate Summary

Page 1 of 1

Job Number: MC46549

Account: ENSRNJ AECOM, INC.

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47956-DUP1	S39590.D	50	07/05/16	SZ	06/23/16	OP47956	MSS1964
MC46549-1	S39592.D	50	07/05/16	SZ	06/23/16	OP47956	MSS1964

The QC reported here applies to the following samples:

Method: D5739-06/8270M SIM

MC46549-1

CAS No.	Compound	MC46549-1 ug/kg	DUP Q ug/kg	RPD	Limits
100-41-4	Ethylbenzene	4840000	4900000	1	30
	m,p-Xylene	3830000	3840000	0	30
95-47-6	o-Xylene	2020000	1990000	1	30
108-67-8	1,3,5-Trimethylbenzene	940000	979000	4	30
526-73-8	1,2,3-Trimethylbenzene	887000	896000	1	30
95-63-6	1,2,4-Trimethylbenzene	2760000	2700000	2	30
91-20-3	Naphthalene	63200000	61700000	2	30
91-57-6	2-Methylnaphthalene	33300000	32400000	3	30
90-12-0	1-Methylnaphthalene	24700000	24000000	3	30
	C1-Naphthalenes	36000000	34800000	3	30 ^a
	C2-Naphthalenes	20600000	19800000	4	30 ^a
92-52-4	Biphenyl	3530000	3410000	3	30
208-96-8	Acenaphthylene	5520000	5480000	1	30
83-32-9	Acenaphthene	17200000	16900000	2	30
86-73-7	Fluorene	7690000	7700000	0	30
85-01-8	Phenanthrene	26000000	26800000	3	30
120-12-7	Anthracene	8820000	9170000	4	30
	C1-Phenanthrenes/Anthracene	16600000	17200000	4	30 ^a
206-44-0	Fluoranthene	6580000	6820000	4	30
129-00-0	Pyrene	10800000	11400000	5	30
56-55-3	Benz(a)anthracene	2380000	2640000	10	30
	Chrysene/triphenylene	3540000	3730000	5	30

CAS No.	Surrogate Recoveries	DUP	MC46549-1	Limits
2037-26-5	Toluene-D8	107%	107%	40-140%
1146-65-2	Naphthalene-d8	103%	99%	40-140%
1517-22-2	Phenanthrene-d10	97%	96%	40-140%
	Perylene-d12	103%	93%	40-140%

(a) Advisory control limits.

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: MC46549
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Check Std:	MSS1961-CC1950	Injection Date:	06/24/16
Lab File ID:	S39537.D	Injection Time:	03:03
Instrument ID:	GCMSS	Method:	D5739-06/8270M SIM

IS 1
AREA RT

Check Std	32278	28.35
Upper Limit ^a	64556	28.85
Lower Limit ^b	16139	27.85

Lab Sample ID	IS 1 AREA	RT
OP47956-MB	29481	28.35
OP47956-BS2	27941	28.35
OP47956-DUP2	31773	28.36
MC46563-1	30198	28.36
MSS1961-ECC1950	28398	28.34

IS 1 = Acenaphthene-d10

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.4.1
6

Semivolatile Internal Standard Area Summary

Page 1 of 1

Job Number: MC46549

Account: ENSRNJ AECOM, INC.

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Check Std: MSS1964-CC1950

Injection Date: 07/05/16

Lab File ID: S39583.D

Injection Time: 09:14

Instrument ID: GCMSS

Method: D5739-06/8270M SIM

IS 1
AREA RT

Check Std	28535	28.34
Upper Limit ^a	57070	28.84
Lower Limit ^b	14268	27.84

Lab Sample ID	IS 1 AREA	RT
OP48022-DUP1	25985	28.35
MC46305-1A	26153	28.35
OP48022-DUP2	29272	28.35
MC46305-2A	27624	28.35
OP47956-DUP1	33557	28.35
OP47956-DUP1	29843	28.34
MC46549-1	34024	28.35
MC46549-1	29890	28.34
MSS1964-ECC1950	612	28.34

IS 1 = Acenaphthene-d10

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.

(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.4.2

6

Semivolatile Surrogate Recovery Summary

Job Number: MC46549
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Method: D5739-06/8270M SIM	Matrix: SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
MC46549-1	S39592.D	107	99	96	93
MC46549-1	S39591.D	93	94	93	96
OP47956-BS2	S39542.D	97	97	97	86
OP47956-DUP1	S39590.D	107	103	97	103
OP47956-DUP1	S39589.D	99	99	89	89
OP47956-MB	S39541.D	105	91	90	80

Surrogate Compounds	Recovery Limits
S1 = Toluene-D8	40-140%
S2 = Naphthalene-d8	40-140%
S3 = Phenanthrene-d10	40-140%
S4 = Perylene-d12	40-140%

Initial Calibration Summary

Page 1 of 3

Job Number: MC46549

Sample: MSS1950-ICC1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39335.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Response Factor Report MSS

Method : S:\1\methods\S160601-MAHPAH-A.M (RTE Integrator)
 Title : PAHs & Alkylated PAHs by GC/MS/SIM
 Last Update : Thu Jun 02 12:08:50 2016
 Response via : Initial Calibration

Calibration Files

0.01=S39332.D 0.05=S39333.D 0.25=S39334.D 1.00=S39335.D
 5.00 =S39336.D 20.0 =S39337.D

Compound	0.01	0.05	0.25	1.00	5.00	20.0	Avg	%RSD
1) I Acenaphthene-d10	-----ISTD-----							
2) S Toluene-d8	1.718	1.405	1.512	1.487	1.431	1.414	1.495	7.86
3) S Naphthalene-d8	2.209	2.103	2.122	2.086	2.129	2.037	2.114	2.69
4) S Phenanthrene-d10	1.534	1.449	1.582	1.509	1.520	1.445	1.506	3.47
5) S Perylene-d12	1.326	1.195	1.267	1.219	1.205	1.152	1.227	4.96
6) MTBE	1.030	1.052	1.646	1.185	0.881	0.850	1.107	26.25
---- Linear regr., Force(0,0) ---- Coefficient = 0.9996								
Response Ratio = 0.00000 + 0.85243 *A								
7) J1 Benzene	2.946	1.786	1.721	1.686	1.603	1.545	1.881	28.09
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999								
Response Ratio = 0.00000 + 1.54882 *A								
8) J2 C1-Benzene	2.946	1.786	1.721	1.686	1.603	1.545	1.881	28.09
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999								
Response Ratio = 0.00000 + 1.54882 *A								
9) J2 C2-Benzenes	2.946	1.786	1.721	1.686	1.603	1.545	1.881	28.09
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999								
Response Ratio = 0.00000 + 1.54882 *A								
10) J2 C3-Benzenes	2.946	1.786	1.721	1.686	1.603	1.545	1.881	28.09
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999								
Response Ratio = 0.00000 + 1.54882 *A								
11) J2 C4-Benzenes	2.946	1.786	1.721	1.686	1.603	1.545	1.881	28.09
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999								
Response Ratio = 0.00000 + 1.54882 *A								
12) J2 C5-Benzenes	2.946	1.786	1.721	1.686	1.603	1.545	1.881	28.09
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999								
Response Ratio = 0.00000 + 1.54882 *A								
13) 2,2,4-trimethylpent	3.366	5.878	1.808	1.750	1.641	1.564	2.668	64.15
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999								
Response Ratio = 0.00000 + 1.56942 *A								
14) n-Heptane	0.914	0.879	0.914	0.860	0.838	0.802	0.868	5.06
15) Methylcyclohexane	0.919	0.648	0.738	0.713	0.698	0.679	0.733	13.12
16) Toluene	2.374	2.008	1.895	1.826	1.753	1.728	1.931	12.41
17) n-Octane	1.531	1.097	1.137	1.076	1.043	1.033	1.153	16.40
18) Ethylbenzene	2.594	2.092	2.135	2.074	2.018	1.966	2.146	10.57
19) m,p-xylene	1.936	1.749	1.780	1.718	1.675	1.638	1.749	5.98
20) Styrene	2.062	1.728	1.260	1.236	1.237	1.212	1.456	24.49
21) o-Xylene	2.229	1.733	1.784	1.704	1.672	1.623	1.791	12.38
22) Isopropylbenzene	2.237	1.972	2.027	1.971	1.971	1.887	2.011	5.94

Initial Calibration Summary

Page 2 of 3

Job Number: MC46549

Sample: MSS1950-ICC1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39335.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

23)	n-Propylbenzene	2.910	2.490	2.535	2.475	2.487	2.348	2.541	7.54
24)	1,3,5-Trimethylbenz	1.906	1.755	1.844	1.803	1.847	1.743	1.816	3.38
25)	Phenol	1.511	0.951	0.919	0.963	1.069	1.085	1.083	20.32
26)	t-Butylbenzene	1.832	1.552	1.613	1.553	1.609	1.534	1.616	6.87
27)	1,2,4-Trimethylbenz	2.166	1.811	1.868	1.818	1.882	1.784	1.888	7.47
28)	sec-Butylbenzene	2.647	2.217	2.183	2.140	2.200	2.082	2.245	9.04
29)	1,2,3-Trimethylbenz	2.189	1.826	1.850	1.795	1.903	1.806	1.895	7.87
30)	p-Isopropyltoluene	2.113	1.883	1.929	1.886	1.996	1.892	1.950	4.65
31)	Indane	1.827	1.668	1.692	1.665	1.745	1.634	1.705	4.12
32)	Indene	1.703	1.625	1.674	1.647	1.740	1.623	1.669	2.78
33)	n-Butylbenzene	2.389	1.852	1.839	1.851	1.969	1.849	1.958	11.07
34)	J1 trans-Decalin	0.445	0.338	0.360	0.352	0.368	0.354	0.370	10.40
35)	cis-Decalin	0.663	0.488	0.484	0.466	0.486	0.464	0.509	15.01
36)	J2 C1-Decalins	0.445	0.338	0.360	0.352	0.368	0.354	0.370	10.40
37)	J2 C2-Decalins	0.445	0.338	0.360	0.352	0.368	0.354	0.370	10.40
38)	J2 C3-Decalins	0.445	0.338	0.360	0.352	0.368	0.354	0.370	10.40
39)	J2 C4-Decalins	0.445	0.338	0.360	0.352	0.368	0.354	0.370	10.40
40)	J1 Benzo(b)thiophene	2.351	2.120	2.125	2.088	2.153	2.050	2.148	4.91
41)	J2 C1-Benzo(b)thiophen	2.351	2.120	2.125	2.088	2.153	2.050	2.148	4.91
42)	J2 C2-Benzo(b)thiophen	2.351	2.120	2.125	2.088	2.153	2.050	2.148	4.91
43)	J2 C3-Benzo(b)thiophen	2.351	2.120	2.125	2.088	2.153	2.050	2.148	4.91
44)	J2 C4-Benzo(b)thiophen	2.351	2.120	2.125	2.088	2.153	2.050	2.148	4.91
45)	J1 Tetraethyl lead	0.180	0.181	0.159	0.150	0.154	0.155	0.163	8.42
46)	J2 Tetramethyl lead	0.180	0.181	0.159	0.150	0.154	0.155	0.163	8.42
47)	J2 Trimethylethyl lead	0.180	0.181	0.159	0.150	0.154	0.155	0.163	8.42
48)	J2 Dimethyldiethyl lea	0.180	0.181	0.159	0.150	0.154	0.155	0.163	8.42
49)	J2 Methyltriethyl lead	0.180	0.181	0.159	0.150	0.154	0.155	0.163	8.42
50)	MMT	0.908	0.810	0.800	0.757	0.774	0.765	0.803	6.94
51)	J1 Naphthalene	2.806	2.656	2.616	2.560	2.605	2.486	2.622	4.10
52)	2-Methylnaphthalene	1.951	1.647	1.642	1.618	1.674	1.629	1.693	7.54
53)	1-Methylnaphthalene	1.668	1.495	1.480	1.438	1.482	1.431	1.499	5.77
54)	J2 C1-Naphthalenes	2.806	2.656	2.616	2.560	2.605	2.486	2.622	4.10
55)	J2 C2-Naphthalenes	2.806	2.656	2.616	2.560	2.605	2.486	2.622	4.10
56)	J2 C3-Naphthalenes	2.806	2.656	2.616	2.560	2.605	2.486	2.622	4.10
57)	J2 C4-Naphthalenes	2.806	2.656	2.616	2.560	2.605	2.486	2.622	4.10
58)	Biphenyl	2.356	1.896	1.930	1.892	1.884	1.888	1.974	9.51
59)	Acenaphthylene	2.533	2.487	2.531	2.515	2.470	2.494	2.505	1.01
60)	Acenaphthene	1.511	1.412	1.434	1.410	1.409	1.408	1.431	2.83
61)	Dibenzofuran	2.065	2.015	2.111	2.049	2.039	2.032	2.052	1.64
62)	J1 Fluorene	1.817	1.653	1.733	1.656	1.729	1.673	1.710	3.69
63)	J2 C1-Fluorenes	1.817	1.653	1.733	1.656	1.729	1.673	1.710	3.69
64)	J2 C2-Fluorenes	1.817	1.653	1.733	1.656	1.729	1.673	1.710	3.69
65)	J2 C3-Fluorenes	1.817	1.653	1.733	1.656	1.729	1.673	1.710	3.69
66)	J1 Dibenzothiophene	2.450	2.315	2.482	2.357	2.449	2.286	2.390	3.40
67)	J2 C1-Dibenzothiophene	2.450	2.315	2.482	2.357	2.449	2.286	2.390	3.40
68)	J2 C1-Dibenzothiophene	2.450	2.315	2.482	2.357	2.449	2.286	2.390	3.40
69)	J2 C2-Dibenzothiophene	2.450	2.315	2.482	2.357	2.449	2.286	2.390	3.40
70)	J2 C3-Dibenzothiophene	2.450	2.315	2.482	2.357	2.449	2.286	2.390	3.40
71)	J2 C4-Dibenzothiophene	2.450	2.315	2.482	2.357	2.449	2.286	2.390	3.40
72)	J1 Phenanthrene	2.389	2.154	2.287	2.185	2.190	2.106	2.218	4.62
73)	Anthracene	1.987	1.969	2.174	2.115	2.152	2.068	2.077	4.11
74)	J2 C1-Phenanthrenes/an	2.389	2.154	2.287	2.185	2.190	2.106	2.218	4.62
75)	J2 C2-Phenanthrenes/an	2.389	2.154	2.287	2.185	2.190	2.106	2.218	4.62
76)	J2 C2-Phenanthrenes/an	2.389	2.154	2.287	2.185	2.190	2.106	2.218	4.62
77)	J2 C3-Phenanthrenes/an	2.389	2.154	2.287	2.185	2.190	2.106	2.218	4.62
78)	J2 C4-Phenanthrenes/an	2.389	2.154	2.287	2.185	2.190	2.106	2.218	4.62
79)	Carbazole	2.285	1.979	2.240	2.171	2.182	2.168	2.171	4.82
80)	Retene	0.633	0.484	0.518	0.503	0.516	0.507	0.527	10.12
81)	J1 Benzo(b)naphtho(2,1	2.131	1.943	2.161	2.083	2.083	1.998	2.066	3.96
82)	J2 C1-Benzonaphthothio	2.131	1.943	2.161	2.083	2.083	1.998	2.066	3.96

6.6.1
6

Initial Calibration Summary

Page 3 of 3

Job Number: MC46549

Sample: MSS1950-ICC1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39335.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

83)	J2	C2-Benzophenanthrothio	2.131	1.943	2.161	2.083	2.083	1.998	2.066	3.96
84)	J2	C3-Benzophenanthrothio	2.131	1.943	2.161	2.083	2.083	1.998	2.066	3.96
85)	J2	C4-Benzophenanthrothio	2.131	1.943	2.161	2.083	2.083	1.998	2.066	3.96
86)		Fluoranthene	2.283	2.089	2.304	2.199	2.227	2.133	2.206	3.80
87)	J1	Pyrene	2.293	2.093	2.283	2.189	2.194	2.108	2.193	3.82
88)	J2	C1-Fluoranthenes/py	2.293	2.093	2.283	2.189	2.194	2.108	2.193	3.82
89)	J2	Benzo(b)fluorene	2.293	2.093	2.283	2.189	2.194	2.108	2.193	3.82
90)	J2	Benzo(c)fluorene	2.293	2.093	2.283	2.189	2.194	2.108	2.193	3.82
91)	J2	2-Methylpyrene	2.293	2.093	2.283	2.189	2.194	2.108	2.193	3.82
92)	J2	4-Methylpyrene	2.293	2.093	2.283	2.189	2.194	2.108	2.193	3.82
93)	J2	1-Methylpyrene	2.293	2.093	2.283	2.189	2.194	2.108	2.193	3.82
94)	J2	C2-Fluoranthenes/py	2.293	2.093	2.283	2.189	2.194	2.108	2.193	3.82
95)	J2	C3-Fluoranthenes/py	2.293	2.093	2.283	2.189	2.194	2.108	2.193	3.82
96)	J2	C4-Fluoranthenes/py	2.293	2.093	2.283	2.189	2.194	2.108	2.193	3.82
97)		Benz(a)anthracene	2.035	1.768	1.934	1.882	1.909	1.824	1.892	4.87
98)	J1	Chrysene/triphenyle	1.809	1.743	1.899	1.839	1.850	1.723	1.811	3.70
99)	J2	C1-Benz(a)anthracen	1.809	1.743	1.899	1.839	1.850	1.723	1.811	3.70
100)	J2	C2-Benz(a)anthracen	1.809	1.743	1.899	1.839	1.850	1.723	1.811	3.70
101)	J2	C3-Benz(a)anthracen	1.809	1.743	1.899	1.839	1.850	1.723	1.811	3.70
102)	J2	C4-Benz(a)anthracen	1.809	1.743	1.899	1.839	1.850	1.723	1.811	3.70
103)		Benzo(b)fluoranthene	2.245	1.975	2.139	2.108	2.009	2.035	2.085	4.77
104)		Benzo(j,k)fluoranth	2.293	2.058	2.211	2.122	2.077	1.917	2.113	6.15
105)		Benzo(e)pyrene	2.136	1.991	2.075	2.026	1.912	1.868	2.001	5.00
106)		Benzo(a)pyrene	2.192	1.891	2.011	1.970	1.926	1.851	1.973	6.13
107)		Perylene	2.280	1.993	2.110	2.069	2.016	1.911	2.063	6.12
108)		Indeno(1,2,3-cd)pyr	2.827	2.410	2.627	2.542	2.443	2.469	2.553	6.07
109)		Dibenz(a,h)anthracene	2.116	2.029	2.179	2.138	2.058	2.012	2.089	3.16
110)		Benzo(g,h,i)perylene	2.450	2.293	2.404	2.328	2.259	2.157	2.315	4.52
111)		Coronene	2.667	2.442	2.523	2.432	2.346	2.300	2.452	5.35
112)		C-17	1.076	0.549	0.535	0.525	0.558	0.543	0.631	34.56
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999										
Response Ratio = 0.00000 + 0.54386 *A										
113)		Pristane	0.486	0.411	0.417	0.408	0.431	0.415	0.428	6.92
114)		C-18	1.007	0.557	0.544	0.539	0.565	0.552	0.627	29.70
---- Linear regr., Force(0,0) ---- Coefficient = 1.0000										
Response Ratio = 0.00000 + 0.55238 *A										
115)	J1	Phytane	0.706	0.540	0.581	0.564	0.589	0.576	0.593	9.80
116)	J2	TPH (C8-C40)	0.706	0.540	0.581	0.564	0.589	0.576	0.593	9.80
117)	J2	2,6,10-Trimethyldod	0.706	0.540	0.581	0.564	0.589	0.576	0.593	9.80
118)	J2	2,6,10-Trimethyltri	0.706	0.540	0.581	0.564	0.589	0.576	0.593	9.80
119)	J2	2,6,10-Trimethylpen	0.706	0.540	0.581	0.564	0.589	0.576	0.593	9.80

(#) = Out of Range

S160601-MAHPAH-A.M

Mon Jun 06 09:27:20 2016

Initial Calibration Verification

Page 1 of 3

Job Number: MC46549

Sample: MSS1950-ICV1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39345.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File : S:\1\data\S160601\S39345.D Vial: 10
 Acq On : 2 Jun 2016 9:49 am Operator: sofyaz
 Sample : icv1950-1.0,fs238 Inst : MSS
 Misc : OP47644,MSS1950,,,1,1 Multiplr: 1.00
 MS Integration Params: rteint.p GC Integration Params: rteint2.p

Method : S:\1\methods\S160601-MAHPAH-A.M (RTE Integrator)
 Title : PAHs & Alkylated PAHs by GC/MS/SIM
 Last Update : Thu Jun 02 12:08:50 2016
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 25% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Acenaphthene-d10	1.000	1.000	0.0	103	0.05	28.72
2 S	Toluene-d8	1.495	1.464	2.1	102	0.04	9.75
3 S	Naphthalene-d8	2.114	2.132	-0.9	106	0.06	21.76
4 S	Phenanthrene-d10	1.506	1.585	-5.2	109	0.05	34.58
5 S	Perylene-d12	1.227	1.291	-5.2	109	0.05	50.41
----- Amount Calc. %Drift -----							
6	MTBE	1000.000	1783.755	-78.4#	133	0.03	5.80
7 J1	Benzene	1000.000	1111.472	-11.1	106	0.03	7.26
8 J2	C1-Benzene			-----NA-----			
9 J2	C2-Benzenes			-----NA-----			
10 J2	C3-Benzenes			-----NA-----			
11 J2	C4-Benzenes			-----NA-----			
12 J2	C5-Benzenes			-----NA-----			
13	2,2,4-trimethylpentane	1000.000	1149.090	-14.9	107	0.03	7.76
----- AvgRF CCRF %Dev -----							
14	n-Heptane	0.868	0.820	5.5	99	0.03	8.03
15	Methylcyclohexane	0.733	0.770	-5.0	112	0.04	8.67
16	Toluene	1.931	1.930	0.1	109	0.03	9.85
17	n-Octane	1.153	1.075	6.8	103	0.04	10.72
18	Ethylbenzene	2.146	2.313	-7.8	115	0.04	12.63
19	m,p-xylene	1.749	1.884	-7.7	113	0.04	12.86
20	Styrene	1.456	1.322	9.2	111	0.04	13.51
21	o-Xylene	1.791	1.902	-6.2	115	0.04	13.58
22	Isopropylbenzene	2.011	2.202	-9.5	116	0.03	14.50
23	n-Propylbenzene	2.541	2.759	-8.6	115	0.04	15.36
24	1,3,5-Trimethylbenzene	1.816	1.913	-5.3	110	0.04	15.78
25	Phenol	1.083	0.919	15.1	99	0.04	15.97
26	t-Butylbenzene	1.616	1.698	-5.1	113	0.04	16.50
27	1,2,4-Trimethylbenzene	1.888	1.923	-1.9	109	0.03	16.52
28	sec-Butylbenzene	2.245	2.357	-5.0	114	0.04	17.02
29	1,2,3-Trimethylbenzene	1.895	1.962	-3.5	113	0.06	17.38
30	p-Isopropyltoluene	1.950	2.073	-6.3	114	0.06	17.39
31	Indane	1.705	1.639	3.9	102	0.06	17.78
32	Indene	1.669	1.630	2.3	102	0.04	18.03
33	n-Butylbenzene	1.958	2.088	-6.6	117	0.06	18.27
34 J1	trans-Decalin	0.370	0.335	9.5	98	0.04	18.36
35	cis-Decalin	0.509	0.467	8.3	103	0.04	19.59
36 J2	C1-Decalins			-----NA-----			
37 J2	C2-Decalins			-----NA-----			
38 J2	C3-Decalins			-----NA-----			

Initial Calibration Verification

Page 2 of 3

Job Number: MC46549

Sample: MSS1950-ICV1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39345.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

39	J2	C4-Decalins			-----NA-----			
40	J1	Benzo(b)thiophene	2.148	2.172	-1.1 108	0.06	22.06	
41	J2	C1-Benzo(b)thiophenes			-----NA-----			
42	J2	C2-Benzo(b)thiophenes			-----NA-----			
43	J2	C3-Benzo(b)thiophenes			-----NA-----			
44	J2	C4-Benzo(b)thiophenes			-----NA-----			
45	J1	Tetraethyl lead	0.163	0.144	11.7 100	0.06	20.89	
46	J2	Tetramethyl lead			-----NA-----			
47	J2	Trimethylethyl lead			-----NA-----			
48	J2	Dimethyldiethyl lead			-----NA-----			
49	J2	Methyltriethyl lead			-----NA-----			
50		MMT	0.803	0.844	-5.1 115	0.05	23.64	
51	J1	Naphthalene	2.622	2.761	-5.3 112	0.06	21.84	
52		2-Methylnaphthalene	1.693	1.667	1.5 107	0.06	24.54	
53		1-Methylnaphthalene	1.499	1.629	-8.7 117	0.05	24.96	
54	J2	C1-Naphthalenes			-----NA-----			
55	J2	C2-Naphthalenes			-----NA-----			
56	J2	C3-Naphthalenes			-----NA-----			
57	J2	C4-Naphthalenes			-----NA-----			
58		Biphenyl	1.974	2.010	-1.8 110	0.06	26.44	
59		Acenaphthylene	2.505	2.660	-6.2 109	0.06	28.11	
60		Acenaphthene	1.431	1.530	-6.9 112	0.05	28.85	
61		Dibenzofuran	2.052	2.216	-8.0 112	0.06	29.50	
62	J1	Fluorene	1.710	1.778	-4.0 111	0.06	30.87	
63	J2	C1-Fluorenes			-----NA-----			
64	J2	C2-Fluorenes			-----NA-----			
65	J2	C3-Fluorenes			-----NA-----			
66	J1	Dibenzothiophene	2.390	2.323	2.8 102	0.06	34.17	
67	J2	C1-Dibenzothiophenes (una			-----NA-----			
68	J2	C1-Dibenzothiophenes (OTP			-----NA-----			
69	J2	C2-Dibenzothiophenes			-----NA-----			
70	J2	C3-Dibenzothiophenes			-----NA-----			
71	J2	C4-Dibenzothiophenes			-----NA-----			
72	J1	Phenanthrene	2.218	2.382	-7.4 113	0.06	34.66	
73		Anthracene	2.077	2.397	-15.4 117	0.06	34.85	
74	J2	C1-Phenanthrenes/anthrace			-----NA-----			
75	J2	C2-Phenanthrenes/anthrace			-----NA-----			
76	J2	C2-Phenanthrenes/anthrace			-----NA-----			
77	J2	C3-Phenanthrenes/anthrace			-----NA-----			
78	J2	C4-Phenanthrenes/anthrace			-----NA-----			
79		Carbazole	2.171	2.271	-4.6 108	0.06	35.54	
80		Retene	0.527	0.269	49.0# 55	0.05	41.65	
81	J1	Benzo(b)naphtho(2,1-d)thi	2.066	2.265	-9.6 112	0.04	44.15	
82	J2	C1-Benzonaphthothiophenes			-----NA-----			
83	J2	C2-Benzonaphthothiophenes			-----NA-----			
84	J2	C3-Benzonaphthothiophenes			-----NA-----			
85	J2	C4-Benzonaphthothiophenes			-----NA-----			
86		Fluoranthene	2.206	2.445	-10.8 115	0.05	39.43	
87	J1	Pyrene	2.193	2.514	-14.6 119	0.05	40.31	
88	J2	C1-Fluoranthenes/pyrenes			-----NA-----			
89	J2	Benzo(b)fluorene			-----NA-----			
90	J2	Benzo(c)fluorene			-----NA-----			
91	J2	2-Methylpyrene			-----NA-----			
92	J2	4-Methylpyrene			-----NA-----			
93	J2	1-Methylpyrene			-----NA-----			
94	J2	C2-Fluoranthenes/pyrenes			-----NA-----			
95	J2	C3-Fluoranthenes/pyrenes			-----NA-----			
96	J2	C4-Fluoranthenes/pyrenes			-----NA-----			
97		Benz(a)anthracene	1.892	2.090	-10.5 115	0.04	45.08	
98	J1	Chrysene/triphenylene	1.811	2.007	-10.8 113	0.04	45.24	

6.6.2
6

Initial Calibration Verification

Page 3 of 3

Job Number: MC46549

Sample: MSS1950-ICV1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39345.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

99	J2	C1-Benz(a)anthracenes/chr	-----NA-----					
100	J2	C2-Benz(a)anthracenes/chr	-----NA-----					
101	J2	C3-Benz(a)anthracenes/chr	-----NA-----					
102	J2	C4-Benz(a)anthracenes/chr	-----NA-----					
103		Benzo(b)fluoranthene	2.085	2.306	-10.6	113	0.04	49.12
104		Benzo(j/k)fluoranthene	2.113	2.291	-8.4	112	0.04	49.20
105		Benzo(e)pyrene	2.001	2.146	-7.2	110	0.04	50.05
106		Benzo(a)pyrene	1.973	2.221	-12.6	117	0.04	50.22
107		Perylene	2.063	2.123	-2.9	106	0.04	50.49
108		Indeno(1,2,3-cd)pyrene	2.553	2.673	-4.7	109	0.04	53.71
109		Dibenz(a,h)anthracene	2.089	2.293	-9.8	111	0.04	53.74
110		Benzo(g,h,i)perylene	2.315	2.425	-4.8	108	0.04	54.45
111		Coronene	2.452	2.431	0.9	103	0.06	59.57

		Amount	Calc.	%Drift				
112		C-17	1000.000	1033.332	-3.3	111	0.05	32.51

		AvgRF	CCRF	%Dev				
113		Pristane	0.428	0.441	-3.0	112	0.04	32.64

		Amount	Calc.	%Drift				
114		C-18	1000.000	1030.520	-3.1	109	0.04	34.31

		AvgRF	CCRF	%Dev				
115	J1	Phytane	0.593	0.544	8.3	100	0.05	34.50
116	J2	TPH (C8-C40)	-----NA-----					
117	J2	2,6,10-Trimethyldodecane	-----NA-----					
118	J2	2,6,10-Trimethyltridecane	-----NA-----					
119	J2	2,6,10-Trimethylpentadeca	-----NA-----					

(#) = Out of Range

S39335.D S160601-MAHPAH-A.M

SPCC's out = 0 CCC's out = 0

Mon Jun 06 09:27:18 2016

6.6.2
6

Initial Calibration Verification

Page 1 of 3

Job Number: MC46549

Sample: MSS1955-ICV1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39397A.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File : S:\1\data\S160607\S39397A.D Vial: 94
 Acq On : 7 Jun 2016 11:06 am Operator: sofyaz
 Sample : ICV1950-1.0, FS247 Inst : MSS
 Misc : OP47644,MSS1955,,,1,1 Multiplr: 1.00
 MS Integration Params: rteint.p GC Integration Params: rteint2.p

Method : S:\1\methods\S160601-MAHPAH-A.M (RTE Integrator)
 Title : PAHs & Alkylated PAHs by GC/MS/SIM
 Last Update : Thu Jun 02 12:08:50 2016
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 25% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Acenaphthene-d10	1.000	1.000	0.0	71	0.31	28.61
2 S	Toluene-d8	1.495	1.478	1.1	71	0.23	9.65
3 S	Naphthalene-d8	2.114	2.115	-0.0	72	0.30	21.65
4 S	Phenanthrene-d10	1.506	1.531	-1.7	72	0.32	34.46
5 S	Perylene-d12	1.227	1.199	2.3	70	0.31	50.30
----- Amount Calc. %Drift -----							
6	MTBE	1000.000	1722.570	-72.3#	88	0.18	5.71
7 J1	Benzene	1000.000	1193.987	-19.4	78	0.22	7.16
8 J2	C1-Benzene			-----NA-----			
9 J2	C2-Benzenes			-----NA-----			
10 J2	C3-Benzenes			-----NA-----			
11 J2	C4-Benzenes			-----NA-----			
12 J2	C5-Benzenes			-----NA-----			
13	2,2,4-trimethylpentane	1000.000	1148.410	-14.8	73	0.22	7.67
----- AvgRF CCRF %Dev -----							
14	n-Heptane	0.868	0.825	5.0	68	0.22	7.94
15	Methylcyclohexane	0.733	0.780	-6.4	78	0.24	8.58
16	Toluene	1.931	1.991	-3.1	78	0.23	9.76
17	n-Octane	1.153	1.051	8.8	69	0.23	10.63
18	Ethylbenzene	2.146	2.350	-9.5	81	0.24	12.53
19	m,p-xylene	1.749	1.899	-8.6	79	0.24	12.76
20	Styrene	1.456	1.377	5.4	79	0.25	13.41
21	o-Xylene	1.791	1.916	-7.0	80	0.25	13.48
22	Isopropylbenzene	2.011	2.327	-15.7	84	0.25	14.40
23	n-Propylbenzene	2.541	2.910	-14.5	84	0.25	15.26
24	1,3,5-Trimethylbenzene	1.816	2.026	-11.6	80	0.25	15.68
25	Phenol	1.083	0.883	18.5	65	0.23	15.88
26	t-Butylbenzene	1.616	1.830	-13.2	84	0.28	16.39
27	1,2,4-Trimethylbenzene	1.888	2.051	-8.6	80	0.26	16.42
28	sec-Butylbenzene	2.245	2.567	-14.3	85	0.28	16.91
29	1,2,3-Trimethylbenzene	1.895	2.116	-11.7	84	0.29	17.27
30	p-Isopropyltoluene	1.950	2.294	-17.6	87	0.28	17.28
31	Indane	1.705	1.744	-2.3	74	0.29	17.68
32	Indene	1.669	1.705	-2.2	74	0.29	17.93
33	n-Butylbenzene	1.958	2.140	-9.3	82	0.26	18.17
34 J1	trans-Decalin	0.370	0.371	-0.3	75	0.30	18.25
35	cis-Decalin	0.509	0.498	2.2	76	0.30	19.48
36 J2	C1-Decalins			-----NA-----			
37 J2	C2-Decalins			-----NA-----			
38 J2	C3-Decalins			-----NA-----			

Initial Calibration Verification

Page 2 of 3

Job Number: MC46549

Sample: MSS1955-ICV1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39397A.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

39	J2	C4-Decalins		-----NA-----				
40	J1	Benzo(b)thiophene	2.148	2.210	-2.9	75	0.30	21.94
41	J2	C1-Benzo(b)thiophenes		-----NA-----				
42	J2	C2-Benzo(b)thiophenes		-----NA-----				
43	J2	C3-Benzo(b)thiophenes		-----NA-----				
44	J2	C4-Benzo(b)thiophenes		-----NA-----				
45	J1	Tetraethyl lead	0.163	0.146	10.4	69	0.31	20.78
46	J2	Tetramethyl lead		-----NA-----				
47	J2	Trimethylethyl lead		-----NA-----				
48	J2	Dimethyldiethyl lead		-----NA-----				
49	J2	Methyltriethyl lead		-----NA-----				
50		MMT	0.803	0.706	12.1	66	0.30	23.52
51	J1	Naphthalene	2.622	2.770	-5.6	77	0.30	21.72
52		2-Methylnaphthalene	1.693	1.593	5.9	70	0.31	24.43
53		1-Methylnaphthalene	1.499	1.553	-3.6	77	0.31	24.85
54	J2	C1-Naphthalenes		-----NA-----				
55	J2	C2-Naphthalenes		-----NA-----				
56	J2	C3-Naphthalenes		-----NA-----				
57	J2	C4-Naphthalenes		-----NA-----				
58		Biphenyl	1.974	1.965	0.5	74	0.30	26.31
59		Acenaphthylene	2.505	2.514	-0.4	71	0.31	28.00
60		Acenaphthene	1.431	1.470	-2.7	74	0.31	28.73
61		Dibenzofuran	2.052	2.185	-6.5	76	0.31	29.38
62	J1	Fluorene	1.710	1.753	-2.5	75	0.31	30.75
63	J2	C1-Fluorenes		-----NA-----				
64	J2	C2-Fluorenes		-----NA-----				
65	J2	C3-Fluorenes		-----NA-----				
66	J1	Dibenzothiophene	2.390	2.313	3.2	70	0.32	34.06
67	J2	C1-Dibenzothiophenes (una		-----NA-----				
68	J2	C1-Dibenzothiophenes (OTP		-----NA-----				
69	J2	C2-Dibenzothiophenes		-----NA-----				
70	J2	C3-Dibenzothiophenes		-----NA-----				
71	J2	C4-Dibenzothiophenes		-----NA-----				
72	J1	Phenanthrene	2.218	2.365	-6.6	77	0.32	34.55
73		Anthracene	2.077	2.346	-13.0	79	0.31	34.73
74	J2	C1-Phenanthrenes/anthrace		-----NA-----				
75	J2	C2-Phenanthrenes/anthrace		-----NA-----				
76	J2	C2-Phenanthrenes/anthrace		-----NA-----				
77	J2	C3-Phenanthrenes/anthrace		-----NA-----				
78	J2	C4-Phenanthrenes/anthrace		-----NA-----				
79		Carbazole	2.171	2.270	-4.6	74	0.31	35.43
80		Retene	0.527	0.480	8.9	68	0.33	41.55
81	J1	Benzo(b)naphtho(2,1-d)thi	2.066	2.202	-6.6	75	0.31	44.04
82	J2	C1-Benzonaphthothiophenes		-----NA-----				
83	J2	C2-Benzonaphthothiophenes		-----NA-----				
84	J2	C3-Benzonaphthothiophenes		-----NA-----				
85	J2	C4-Benzonaphthothiophenes		-----NA-----				
86		Fluoranthene	2.206	2.388	-8.3	77	0.31	39.31
87	J1	Pyrene	2.193	2.459	-12.1	80	0.32	40.19
88	J2	C1-Fluoranthenes/pyrenes		-----NA-----				
89	J2	Benzo(b)fluorene		-----NA-----				
90	J2	Benzo(c)fluorene		-----NA-----				
91	J2	2-Methylpyrene		-----NA-----				
92	J2	4-Methylpyrene		-----NA-----				
93	J2	1-Methylpyrene		-----NA-----				
94	J2	C2-Fluoranthenes/pyrenes		-----NA-----				
95	J2	C3-Fluoranthenes/pyrenes		-----NA-----				
96	J2	C4-Fluoranthenes/pyrenes		-----NA-----				
97		Benz(a)anthracene	1.892	2.033	-7.5	77	0.32	44.97
98	J1	Chrysene/triphenylene	1.811	1.975	-9.1	76	0.31	45.13

6.6.3

6

Initial Calibration Verification

Page 3 of 3

Job Number: MC46549

Sample: MSS1955-ICV1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39397A.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

99	J2	C1-Benz(a)anthracenes/chr			-----NA-----			
100	J2	C2-Benz(a)anthracenes/chr			-----NA-----			
101	J2	C3-Benz(a)anthracenes/chr			-----NA-----			
102	J2	C4-Benz(a)anthracenes/chr			-----NA-----			
103		Benzo(b)fluoranthene	2.085	2.218	-6.4	75	0.31	49.01
104		Benzo(j/k)fluoranthene	2.113	2.215	-4.8	74	0.31	49.10
105		Benzo(e)pyrene	2.001	2.082	-4.0	73	0.32	49.95
106		Benzo(a)pyrene	1.973	2.136	-8.3	77	0.31	50.11
107		Perylene	2.063	2.080	-0.8	71	0.32	50.39
108		Indeno(1,2,3-cd)pyrene	2.553	2.656	-4.0	74	0.30	53.61
109		Dibenz(a,h)anthracene	2.089	2.229	-6.7	74	0.30	53.63
110		Benzo(g,h,i)perylene	2.315	2.365	-2.2	72	0.31	54.35
111		Coronene	2.452	2.441	0.4	71	0.43	59.41

112		C-17	Amount 1000.000	Calc. 1016.960	%Drift -1.7	75	0.31	32.40

113		Pristane	AvgRF 0.428	CCRF 0.418	%Dev 2.3	73	0.31	32.53

114		C-18	Amount 1000.000	Calc. 1023.142	%Drift -2.3	75	0.31	34.21

115	J1	Phytane	AvgRF 0.593	CCRF 0.545	%Dev 8.1	69	0.31	34.39
116	J2	TPH (C8-C40)			-----NA-----			
117	J2	2,6,10-Trimethyldodecane			-----NA-----			
118	J2	2,6,10-Trimethyltridecane			-----NA-----			
119	J2	2,6,10-Trimethylpentadeca			-----NA-----			

(#)= Out of Range

S39335.D S160601-MAHPAH-A.M

SPCC's out = 0 CCC's out = 0

Thu Jul 14 15:45:30 2016

6.6.3

6

Continuing Calibration Summary

Page 1 of 3

Job Number: MC46549

Sample: MSS1961-CC1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39537.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File : S:\1\data\S160623\S39537.D Vial: 96
 Acq On : 24 Jun 2016 3:03 am Operator: sofyz
 Sample : cc1950-1.0,fs231 Inst : MSS
 Misc : OP47644,MSS1961,,,1,1 Multiplr: 1.00
 MS Integration Params: rteint.p GC Integration Params: rteint2.p

Method : S:\1\methods\S160601-MAHPAH-A.M (RTE Integrator)
 Title : PAHs & Alkylated PAHs by GC/MS/SIM
 Last Update : Thu Jun 02 12:08:50 2016
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 25% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Acenaphthene-d10	1.000	1.000	0.0	73	0.00	28.35
2 S	Toluene-d8	1.495	1.526	-2.1	75	-0.03	9.42
3 S	Naphthalene-d8	2.114	2.065	2.3	73	0.00	21.40
4 S	Phenanthrene-d10	1.506	1.464	2.8	71	0.00	34.20
5 S	Perylene-d12	1.227	1.105	9.9	67	0.00	50.03
----- Amount Calc. %Drift -----							
6	MTBE	1000.000	1904.838	-90.5#	101	-0.06	5.51
7 J1	Benzene	1000.000	1074.776	-7.5	72	-0.05	6.94
8 J2	C1-Benzene			-----NA-----			
9 J2	C2-Benzenes			-----NA-----			
10 J2	C3-Benzenes			-----NA-----			
11 J2	C4-Benzenes			-----NA-----			
12 J2	C5-Benzenes			-----NA-----			
13	2,2,4-trimethylpentane	1000.000	1006.893	-0.7	66	-0.05	7.44
----- AvgRF CCRF %Dev -----							
14	n-Heptane	0.868	0.799	7.9	68	-0.05	7.71
15	Methylcyclohexane	0.733	0.718	2.0	74	-0.05	8.34
16	Toluene	1.931	1.850	4.2	74	-0.03	9.54
17	n-Octane	1.153	0.999	13.4	68	-0.03	10.40
18	Ethylbenzene	2.146	2.066	3.7	73	0.00	12.31
19	m,p-xylene	1.749	1.700	2.8	73	-0.02	12.54
20	Styrene	1.456	1.177	19.2	70	0.00	13.18
21	o-Xylene	1.791	1.682	6.1	72	0.00	13.25
22	Isopropylbenzene	2.011	2.007	0.2	75	-0.01	14.17
23	n-Propylbenzene	2.541	2.411	5.1	71	0.00	15.04
24	1,3,5-Trimethylbenzene	1.816	1.821	-0.3	74	0.00	15.46
25	Phenol	1.083	0.852	21.3	65	0.00	15.67
26	t-Butylbenzene	1.616	1.613	0.2	76	0.00	16.16
27	1,2,4-Trimethylbenzene	1.888	1.842	2.4	74	0.00	16.19
28	sec-Butylbenzene	2.245	2.211	1.5	76	0.00	16.68
29	1,2,3-Trimethylbenzene	1.895	1.839	3.0	75	0.00	17.03
30	p-Isopropyltoluene	1.950	1.966	-0.8	76	0.00	17.06
31	Indane	1.705	1.719	-0.8	76	0.00	17.44
32	Indene	1.669	1.657	0.7	74	-0.01	17.68
33	n-Butylbenzene	1.958	1.904	2.8	75	-0.01	17.93
34 J1	trans-Decalin	0.370	0.363	1.9	76	0.00	18.01
35	cis-Decalin	0.509	0.476	6.5	75	0.00	19.23
36 J2	C1-Decalins			-----NA-----			
37 J2	C2-Decalins			-----NA-----			
38 J2	C3-Decalins			-----NA-----			

Continuing Calibration Summary

Page 2 of 3

Job Number: MC46549

Sample: MSS1961-CC1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39537.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

39	J2	C4-Decalins		-----NA-----				
40	J1	Benzo(b)thiophene	2.148	2.089	2.7	73	0.00	21.69
41	J2	C1-Benzo(b)thiophenes		-----NA-----				
42	J2	C2-Benzo(b)thiophenes		-----NA-----				
43	J2	C3-Benzo(b)thiophenes		-----NA-----				
44	J2	C4-Benzo(b)thiophenes		-----NA-----				
45	J1	Tetraethyl lead	0.163	0.133	18.4	65	0.00	20.53
46	J2	Tetramethyl lead		-----NA-----				
47	J2	Trimethylethyl lead		-----NA-----				
48	J2	Dimethyldiethyl lead		-----NA-----				
49	J2	Methyltriethyl lead		-----NA-----				
50		MMT	0.803	0.701	12.7	68	0.00	23.28
51	J1	Naphthalene	2.622	2.570	2.0	74	0.00	21.47
52		2-Methylnaphthalene	1.693	1.626	4.0	74	0.00	24.17
53		1-Methylnaphthalene	1.499	1.444	3.7	74	0.00	24.59
54	J2	C1-Naphthalenes		-----NA-----				
55	J2	C2-Naphthalenes		-----NA-----				
56	J2	C3-Naphthalenes		-----NA-----				
57	J2	C4-Naphthalenes		-----NA-----				
58		Biphenyl	1.974	1.893	4.1	73	0.00	26.06
59		Acenaphthylene	2.505	2.568	-2.5	75	0.00	27.73
60		Acenaphthene	1.431	1.437	-0.4	75	0.00	28.47
61		Dibenzofuran	2.052	2.080	-1.4	74	0.00	29.12
62	J1	Fluorene	1.710	1.706	0.2	76	0.00	30.49
63	J2	C1-Fluorenes		-----NA-----				
64	J2	C2-Fluorenes		-----NA-----				
65	J2	C3-Fluorenes		-----NA-----				
66	J1	Dibenzothiophene	2.390	2.440	-2.1	76	0.00	33.78
67	J2	C1-Dibenzothiophenes (una		-----NA-----				
68	J2	C1-Dibenzothiophenes (OTP		-----NA-----				
69	J2	C2-Dibenzothiophenes		-----NA-----				
70	J2	C3-Dibenzothiophenes		-----NA-----				
71	J2	C4-Dibenzothiophenes		-----NA-----				
72	J1	Phenanthrene	2.218	2.245	-1.2	75	0.00	34.28
73		Anthracene	2.077	2.144	-3.2	74	0.00	34.46
74	J2	C1-Phenanthrenes/anthrace		-----NA-----				
75	J2	C2-Phenanthrenes/anthrace		-----NA-----				
76	J2	C2-Phenanthrenes/anthrace		-----NA-----				
77	J2	C3-Phenanthrenes/anthrace		-----NA-----				
78	J2	C4-Phenanthrenes/anthrace		-----NA-----				
79		Carbazole	2.171	2.197	-1.2	74	0.00	35.16
80		Retene	0.527	0.500	5.1	73	0.00	41.27
81	J1	Benzo(b)naphtho(2,1-d)thi	2.066	2.080	-0.7	73	0.00	43.77
82	J2	C1-Benzonaphthothiophenes		-----NA-----				
83	J2	C2-Benzonaphthothiophenes		-----NA-----				
84	J2	C3-Benzonaphthothiophenes		-----NA-----				
85	J2	C4-Benzonaphthothiophenes		-----NA-----				
86		Fluoranthene	2.206	2.237	-1.4	75	0.00	39.05
87	J1	Pyrene	2.193	2.215	-1.0	74	0.00	39.92
88	J2	C1-Fluoranthenes/pyrenes		-----NA-----				
89	J2	Benzo(b)fluorene		-----NA-----				
90	J2	Benzo(c)fluorene		-----NA-----				
91	J2	2-Methylpyrene		-----NA-----				
92	J2	4-Methylpyrene		-----NA-----				
93	J2	1-Methylpyrene		-----NA-----				
94	J2	C2-Fluoranthenes/pyrenes		-----NA-----				
95	J2	C3-Fluoranthenes/pyrenes		-----NA-----				
96	J2	C4-Fluoranthenes/pyrenes		-----NA-----				
97		Benz(a)anthracene	1.892	1.865	1.4	73	0.00	44.70
98	J1	Chrysene/triphenylene	1.811	1.765	2.5	70	0.00	44.87

6.6.4
6

Continuing Calibration Summary

Page 3 of 3

Job Number: MC46549

Sample: MSS1961-CC1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39537.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

99	J2	C1-Benz(a)anthracenes/chr	-----NA-----					
100	J2	C2-Benz(a)anthracenes/chr	-----NA-----					
101	J2	C3-Benz(a)anthracenes/chr	-----NA-----					
102	J2	C4-Benz(a)anthracenes/chr	-----NA-----					
103		Benzo(b)fluoranthene	2.085	1.980	5.0	69	0.00	48.75
104		Benzo(j/k)fluoranthene	2.113	2.058	2.6	71	0.00	48.82
105		Benzo(e)pyrene	2.001	1.906	4.7	69	0.00	49.68
106		Benzo(a)pyrene	1.973	1.870	5.2	70	0.00	49.84
107		Perylene	2.063	1.955	5.2	69	0.00	50.12
108		Indeno(1,2,3-cd)pyrene	2.553	2.403	5.9	69	0.00	53.35
109		Dibenz(a,h)anthracene	2.089	1.969	5.7	68	0.00	53.38
110		Benzo(g,h,i)perylene	2.315	2.164	6.5	68	0.00	54.08
111		Coronene	2.452	2.239	8.7	68	0.00	59.03

		Amount	Calc.	%Drift	-----			
112		C-17	1000.000	962.876	3.7	73	0.00	32.16

		AvgRF	CCRF	%Dev	-----			
113		Pristane	0.428	0.403	5.8	73	0.00	32.29

		Amount	Calc.	%Drift	-----			
114		C-18	1000.000	971.909	2.8	73	0.00	33.96

		AvgRF	CCRF	%Dev	-----			
115	J1	Phytane	0.593	0.560	5.6	73	0.00	34.15
116	J2	TPH (C8-C40)	-----NA-----					
117	J2	2,6,10-Trimethyldodecane	-----NA-----					
118	J2	2,6,10-Trimethyltridecane	-----NA-----					
119	J2	2,6,10-Trimethylpentadeca	-----NA-----					

(#) = Out of Range

S39335.D S160601-MAHPAH-A.M

SPCC's out = 0 CCC's out = 0

Wed Jun 29 15:00:23 2016

6.6.4
6

Continuing Calibration Summary

Page 1 of 3

Job Number: MC46549

Sample: MSS1961-ECC1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39552.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File : S:\1\data\S160623\S39552.D Vial: 96
 Acq On : 24 Jun 2016 9:42 pm Operator: sofyaz
 Sample : cc1950-1.0,fs231 Inst : MSS
 Misc : OP47644,MSS1961,,,1,1 Multiplr: 1.00
 MS Integration Params: rteint.p GC Integration Params: rteint2.p

Method : S:\1\methods\S160601-MAHPAH-A.M (RTE Integrator)
 Title : PAHs & Alkylated PAHs by GC/MS/SIM
 Last Update : Thu Jun 02 12:08:50 2016
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 25% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Acenaphthene-d10	1.000	1.000	0.0	65	0.00	28.34
2 S	Toluene-d8	1.495	1.479	1.1	64	-0.03	9.42
3 S	Naphthalene-d8	2.114	2.069	2.1	64	0.00	21.40
4 S	Phenanthrene-d10	1.506	1.477	1.9	63	0.00	34.19
5 S	Perylene-d12	1.227	1.106	9.9	59	0.00	50.03
----- Amount Calc. %Drift -----							
6	MTBE	1000.000	1749.475	-74.9#	81	-0.06	5.51
7 J1	Benzene	1000.000	995.650	0.4	59	-0.05	6.94
8 J2	C1-Benzene		-----NA-----				
9 J2	C2-Benzenes		-----NA-----				
10 J2	C3-Benzenes		-----NA-----				
11 J2	C4-Benzenes		-----NA-----				
12 J2	C5-Benzenes		-----NA-----				
13	2,2,4-trimethylpentane	1000.000	925.520	7.4	54	-0.05	7.44
----- AvgRF CCRF %Dev -----							
14	n-Heptane	0.868	0.715	17.6	54	-0.05	7.71
15	Methylcyclohexane	0.733	0.657	10.4	59	-0.05	8.34
16	Toluene	1.931	1.821	5.7	64	-0.03	9.54
17	n-Octane	1.153	0.955	17.2	57	-0.02	10.41
18	Ethylbenzene	2.146	2.067	3.7	64	0.00	12.31
19	m,p-xylene	1.749	1.686	3.6	63	-0.02	12.54
20	Styrene	1.456	1.192	18.1	62	0.00	13.18
21	o-Xylene	1.791	1.705	4.8	65	0.00	13.25
22	Isopropylbenzene	2.011	1.997	0.7	65	-0.01	14.17
23	n-Propylbenzene	2.541	2.433	4.3	63	0.00	15.04
24	1,3,5-Trimethylbenzene	1.816	1.828	-0.7	65	-0.01	15.45
25	Phenol	1.083	0.831	23.3	56	0.00	15.67
26	t-Butylbenzene	1.616	1.621	-0.3	67	0.00	16.16
27	1,2,4-Trimethylbenzene	1.888	1.854	1.8	66	0.00	16.19
28	sec-Butylbenzene	2.245	2.216	1.3	67	0.00	16.68
29	1,2,3-Trimethylbenzene	1.895	1.843	2.7	66	0.00	17.03
30	p-Isopropyltoluene	1.950	1.936	0.7	66	-0.01	17.04
31	Indane	1.705	1.724	-1.1	67	-0.01	17.43
32	Indene	1.669	1.667	0.1	65	-0.01	17.68
33	n-Butylbenzene	1.958	1.884	3.8	66	-0.01	17.93
34 J1	trans-Decalin	0.370	0.365	1.4	67	-0.01	18.00
35	cis-Decalin	0.509	0.476	6.5	66	0.00	19.23
36 J2	C1-Decalins		-----NA-----				
37 J2	C2-Decalins		-----NA-----				
38 J2	C3-Decalins		-----NA-----				

Continuing Calibration Summary

Page 2 of 3

Job Number: MC46549

Sample: MSS1961-ECC1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39552.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

39	J2	C4-Decalins		-----NA-----				
40	J1	Benzo(b)thiophene	2.148	2.092	2.6	65	0.00	21.69
41	J2	C1-Benzo(b)thiophenes		-----NA-----				
42	J2	C2-Benzo(b)thiophenes		-----NA-----				
43	J2	C3-Benzo(b)thiophenes		-----NA-----				
44	J2	C4-Benzo(b)thiophenes		-----NA-----				
45	J1	Tetraethyl lead	0.163	0.132	19.0	57	0.00	20.53
46	J2	Tetramethyl lead		-----NA-----				
47	J2	Trimethylethyl lead		-----NA-----				
48	J2	Dimethyldiethyl lead		-----NA-----				
49	J2	Methyltriethyl lead		-----NA-----				
50		MMT	0.803	0.682	15.1	58	0.00	23.28
51	J1	Naphthalene	2.622	2.562	2.3	65	0.00	21.47
52		2-Methylnaphthalene	1.693	1.639	3.2	65	0.00	24.17
53		1-Methylnaphthalene	1.499	1.474	1.7	66	0.00	24.59
54	J2	C1-Naphthalenes		-----NA-----				
55	J2	C2-Naphthalenes		-----NA-----				
56	J2	C3-Naphthalenes		-----NA-----				
57	J2	C4-Naphthalenes		-----NA-----				
58		Biphenyl	1.974	1.911	3.2	65	0.00	26.07
59		Acenaphthylene	2.505	2.618	-4.5	67	0.00	27.73
60		Acenaphthene	1.431	1.471	-2.8	67	0.00	28.47
61		Dibenzofuran	2.052	2.105	-2.6	66	0.00	29.12
62	J1	Fluorene	1.710	1.708	0.1	67	0.00	30.49
63	J2	C1-Fluorenes		-----NA-----				
64	J2	C2-Fluorenes		-----NA-----				
65	J2	C3-Fluorenes		-----NA-----				
66	J1	Dibenzothiophene	2.390	2.493	-4.3	68	0.00	33.78
67	J2	C1-Dibenzothiophenes (una		-----NA-----				
68	J2	C1-Dibenzothiophenes (OTP		-----NA-----				
69	J2	C2-Dibenzothiophenes		-----NA-----				
70	J2	C3-Dibenzothiophenes		-----NA-----				
71	J2	C4-Dibenzothiophenes		-----NA-----				
72	J1	Phenanthrene	2.218	2.281	-2.8	67	0.00	34.28
73		Anthracene	2.077	2.139	-3.0	65	0.00	34.46
74	J2	C1-Phenanthrenes/anthrace		-----NA-----				
75	J2	C2-Phenanthrenes/anthrace		-----NA-----				
76	J2	C2-Phenanthrenes/anthrace		-----NA-----				
77	J2	C3-Phenanthrenes/anthrace		-----NA-----				
78	J2	C4-Phenanthrenes/anthrace		-----NA-----				
79		Carbazole	2.171	2.248	-3.5	67	0.00	35.16
80		Retene	0.527	0.500	5.1	64	0.00	41.27
81	J1	Benzo(b)naphtho(2,1-d)thi	2.066	2.146	-3.9	66	0.00	43.77
82	J2	C1-Benzonaphthothiophenes		-----NA-----				
83	J2	C2-Benzonaphthothiophenes		-----NA-----				
84	J2	C3-Benzonaphthothiophenes		-----NA-----				
85	J2	C4-Benzonaphthothiophenes		-----NA-----				
86		Fluoranthene	2.206	2.299	-4.2	67	0.00	39.04
87	J1	Pyrene	2.193	2.289	-4.4	67	0.00	39.92
88	J2	C1-Fluoranthenes/pyrenes		-----NA-----				
89	J2	Benzo(b)fluorene		-----NA-----				
90	J2	Benzo(c)fluorene		-----NA-----				
91	J2	2-Methylpyrene		-----NA-----				
92	J2	4-Methylpyrene		-----NA-----				
93	J2	1-Methylpyrene		-----NA-----				
94	J2	C2-Fluoranthenes/pyrenes		-----NA-----				
95	J2	C3-Fluoranthenes/pyrenes		-----NA-----				
96	J2	C4-Fluoranthenes/pyrenes		-----NA-----				
97		Benz(a)anthracene	1.892	1.922	-1.6	66	-0.01	44.70
98	J1	Chrysene/triphenylene	1.811	1.818	-0.4	64	0.00	44.87

6.6.5

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Continuing Calibration Summary

Page 3 of 3

Job Number: MC46549

Sample: MSS1961-ECC1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39552.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

99	J2	C1-Benz(a)anthracenes/chr	-----NA-----					
100	J2	C2-Benz(a)anthracenes/chr	-----NA-----					
101	J2	C3-Benz(a)anthracenes/chr	-----NA-----					
102	J2	C4-Benz(a)anthracenes/chr	-----NA-----					
103		Benzo(b)fluoranthene	2.085	2.028	2.7	62	-0.01	48.74
104		Benzo(j/k)fluoranthene	2.113	2.091	1.0	64	-0.01	48.82
105		Benzo(e)pyrene	2.001	1.947	2.7	62	-0.01	49.67
106		Benzo(a)pyrene	1.973	1.890	4.2	62	0.00	49.84
107		Perylene	2.063	1.979	4.1	62	0.00	50.11
108		Indeno(1,2,3-cd)pyrene	2.553	2.430	4.8	62	0.00	53.34
109		Dibenz(a,h)anthracene	2.089	1.998	4.4	60	0.00	53.38
110		Benzo(g,h,i)perylene	2.315	2.177	6.0	60	0.00	54.08
111		Coronene	2.452	2.204	10.1	58	0.00	59.02

		Amount	Calc.	%Drift	-----			
112		C-17	1000.000	974.844	2.5	65	0.00	32.16

		AvgRF	CCRF	%Dev	-----			
113		Pristane	0.428	0.407	4.9	64	0.00	32.29

		Amount	Calc.	%Drift	-----			
114		C-18	1000.000	990.527	0.9	65	0.00	33.95

		AvgRF	CCRF	%Dev	-----			
115	J1	Phytane	0.593	0.561	5.4	64	0.00	34.14
116	J2	TPH (C8-C40)	-----NA-----					
117	J2	2,6,10-Trimethyldodecane	-----NA-----					
118	J2	2,6,10-Trimethyltridecane	-----NA-----					
119	J2	2,6,10-Trimethylpentadeca	-----NA-----					

(#) = Out of Range

S39335.D S160601-MAHPAH-A.M

SPCC's out = 0 CCC's out = 0

Wed Jun 29 16:33:37 2016

Continuing Calibration Summary

Page 1 of 3

Job Number: MC46549

Sample: MSS1964-CC1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39583.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File : S:\1\data\S160705\S39583.D Vial: 96
 Acq On : 5 Jul 2016 9:14 am Operator: sofyaz
 Sample : cc1950-1.0,fs231 Inst : MSS
 Misc : OP47644,MSS1964,,,1,1 Multiplr: 1.00
 MS Integration Params: rteint.p GC Integration Params: rteint2.p

Method : S:\1\methods\S160601-MAHPAH-A.M (RTE Integrator)
 Title : PAHs & Alkylated PAHs by GC/MS/SIM
 Last Update : Thu Jun 02 12:08:50 2016
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 25% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Acenaphthene-d10	1.000	1.000	0.0	65	0.00	28.34
2 S	Toluene-d8	1.495	1.549	-3.6	68	0.00	9.44
3 S	Naphthalene-d8	2.114	2.019	4.5	63	0.00	21.40
4 S	Phenanthrene-d10	1.506	1.425	5.4	61	0.00	34.20
5 S	Perylene-d12	1.227	1.065	13.2	57	0.00	50.04
----- Amount Calc. %Drift -----							
6	MTBE	1000.000	1934.506	-93.5#	90	-0.04	5.52
7 J1	Benzene	1000.000	1120.792	-12.1	67	-0.02	6.96
8 J2	C1-Benzene			-----NA-----			
9 J2	C2-Benzenes			-----NA-----			
10 J2	C3-Benzenes			-----NA-----			
11 J2	C4-Benzenes			-----NA-----			
12 J2	C5-Benzenes			-----NA-----			
13	2,2,4-trimethylpentane	1000.000	1054.608	-5.5	61	-0.03	7.45
----- AvgRF CCRF %Dev -----							
14	n-Heptane	0.868	0.835	3.8	63	-0.02	7.73
15	Methylcyclohexane	0.733	0.747	-1.9	68	-0.03	8.35
16	Toluene	1.931	1.915	0.8	68	0.00	9.56
17	n-Octane	1.153	1.021	11.4	62	0.00	10.42
18	Ethylbenzene	2.146	2.084	2.9	65	0.00	12.32
19	m,p-xylene	1.749	1.671	4.5	63	0.00	12.55
20	Styrene	1.456	1.151	20.9	60	0.00	13.19
21	o-Xylene	1.791	1.698	5.2	65	0.00	13.26
22	Isopropylbenzene	2.011	2.007	0.2	66	0.01	14.19
23	n-Propylbenzene	2.541	2.395	5.7	63	0.01	15.05
24	1,3,5-Trimethylbenzene	1.816	1.807	0.5	65	0.01	15.46
25	Phenol	1.083	0.749	30.8#	50	0.02	15.69
26	t-Butylbenzene	1.616	1.597	1.2	67	0.00	16.16
27	1,2,4-Trimethylbenzene	1.888	1.814	3.9	65	0.00	16.19
28	sec-Butylbenzene	2.245	2.168	3.4	66	0.01	16.68
29	1,2,3-Trimethylbenzene	1.895	1.800	5.0	65	0.00	17.03
30	p-Isopropyltoluene	1.950	1.893	2.9	65	0.01	17.06
31	Indane	1.705	1.697	0.5	66	0.00	17.43
32	Indene	1.669	1.606	3.8	63	0.01	17.69
33	n-Butylbenzene	1.958	1.792	8.5	63	0.01	17.94
34 J1	trans-Decalin	0.370	0.361	2.4	67	0.00	18.00
35	cis-Decalin	0.509	0.483	5.1	67	0.00	19.23
36 J2	C1-Decalins			-----NA-----			
37 J2	C2-Decalins			-----NA-----			
38 J2	C3-Decalins			-----NA-----			

Continuing Calibration Summary

Page 2 of 3

Job Number: MC46549

Sample: MSS1964-CC1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39583.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

39	J2	C4-Decalins		-----NA-----				
40	J1	Benzo(b)thiophene	2.148	2.020	6.0	63	0.00	21.69
41	J2	C1-Benzo(b)thiophenes		-----NA-----				
42	J2	C2-Benzo(b)thiophenes		-----NA-----				
43	J2	C3-Benzo(b)thiophenes		-----NA-----				
44	J2	C4-Benzo(b)thiophenes		-----NA-----				
45	J1	Tetraethyl lead	0.163	0.133	18.4	57	0.00	20.53
46	J2	Tetramethyl lead		-----NA-----				
47	J2	Trimethylethyl lead		-----NA-----				
48	J2	Dimethyldiethyl lead		-----NA-----				
49	J2	Methyltriethyl lead		-----NA-----				
50		MMT	0.803	0.729	9.2	62	0.00	23.27
51	J1	Naphthalene	2.622	2.500	4.7	63	0.00	21.47
52		2-Methylnaphthalene	1.693	1.586	6.3	64	0.00	24.18
53		1-Methylnaphthalene	1.499	1.430	4.6	64	0.00	24.59
54	J2	C1-Naphthalenes		-----NA-----				
55	J2	C2-Naphthalenes		-----NA-----				
56	J2	C3-Naphthalenes		-----NA-----				
57	J2	C4-Naphthalenes		-----NA-----				
58		Biphenyl	1.974	1.846	6.5	63	0.00	26.07
59		Acenaphthylene	2.505	2.544	-1.6	66	0.00	27.73
60		Acenaphthene	1.431	1.430	0.1	66	0.00	28.47
61		Dibenzofuran	2.052	2.017	1.7	64	0.00	29.12
62	J1	Fluorene	1.710	1.645	3.8	64	0.00	30.49
63	J2	C1-Fluorenes		-----NA-----				
64	J2	C2-Fluorenes		-----NA-----				
65	J2	C3-Fluorenes		-----NA-----				
66	J1	Dibenzothiophene	2.390	2.387	0.1	66	0.00	33.78
67	J2	C1-Dibenzothiophenes (una		-----NA-----				
68	J2	C1-Dibenzothiophenes (OTP		-----NA-----				
69	J2	C2-Dibenzothiophenes		-----NA-----				
70	J2	C3-Dibenzothiophenes		-----NA-----				
71	J2	C4-Dibenzothiophenes		-----NA-----				
72	J1	Phenanthrene	2.218	2.172	2.1	64	0.00	34.29
73		Anthracene	2.077	2.087	-0.5	64	0.00	34.47
74	J2	C1-Phenanthrenes/anthrace		-----NA-----				
75	J2	C2-Phenanthrenes/anthrace		-----NA-----				
76	J2	C2-Phenanthrenes/anthrace		-----NA-----				
77	J2	C3-Phenanthrenes/anthrace		-----NA-----				
78	J2	C4-Phenanthrenes/anthrace		-----NA-----				
79		Carbazole	2.171	1.918	11.7	57	0.01	35.17
80		Retene	0.527	0.481	8.7	62	0.00	41.27
81	J1	Benzo(b)naphtho(2,1-d)thi	2.066	1.992	3.6	62	0.00	43.78
82	J2	C1-Benzonaphthothiophenes		-----NA-----				
83	J2	C2-Benzonaphthothiophenes		-----NA-----				
84	J2	C3-Benzonaphthothiophenes		-----NA-----				
85	J2	C4-Benzonaphthothiophenes		-----NA-----				
86		Fluoranthene	2.206	2.185	1.0	64	0.00	39.05
87	J1	Pyrene	2.193	2.184	0.4	65	0.00	39.92
88	J2	C1-Fluoranthenes/pyrenes		-----NA-----				
89	J2	Benzo(b)fluorene		-----NA-----				
90	J2	Benzo(c)fluorene		-----NA-----				
91	J2	2-Methylpyrene		-----NA-----				
92	J2	4-Methylpyrene		-----NA-----				
93	J2	1-Methylpyrene		-----NA-----				
94	J2	C2-Fluoranthenes/pyrenes		-----NA-----				
95	J2	C3-Fluoranthenes/pyrenes		-----NA-----				
96	J2	C4-Fluoranthenes/pyrenes		-----NA-----				
97		Benz(a)anthracene	1.892	1.764	6.8	61	0.00	44.71
98	J1	Chrysene/triphenylene	1.811	1.681	7.2	59	0.00	44.87

6.6.6

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Continuing Calibration Summary

Page 3 of 3

Job Number: MC46549

Sample: MSS1964-CC1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39583.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

99	J2	C1-Benz(a)anthracenes/chr	-----NA-----				
100	J2	C2-Benz(a)anthracenes/chr	-----NA-----				
101	J2	C3-Benz(a)anthracenes/chr	-----NA-----				
102	J2	C4-Benz(a)anthracenes/chr	-----NA-----				
103		Benzo(b)fluoranthene	2.085	1.914	8.2	59	0.00 48.75
104		Benzo(j/k)fluoranthene	2.113	1.963	7.1	60	0.00 48.83
105		Benzo(e)pyrene	2.001	1.886	5.7	60	0.00 49.68
106		Benzo(a)pyrene	1.973	1.754	11.1	58	0.00 49.85
107		Perylene	2.063	1.867	9.5	59	0.00 50.12
108		Indeno(1,2,3-cd)pyrene	2.553	2.235	12.5	57	0.00 53.36
109		Dibenz(a,h)anthracene	2.089	1.740	16.7	53	0.00 53.38
110		Benzo(g,h,i)perylene	2.315	2.108	8.9	59	0.00 54.09
111		Coronene	2.452	2.237	8.8	60	0.00 59.05

		Amount	Calc.	%Drift	-----		
112		C-17	1000.000	979.507	2.0	66	0.00 32.15

		AvgRF	CCRF	%Dev	-----		
113		Pristane	0.428	0.409	4.4	65	0.00 32.28

		Amount	Calc.	%Drift	-----		
114		C-18	1000.000	982.282	1.8	65	0.00 33.95

		AvgRF	CCRF	%Dev	-----		
115	J1	Phytane	0.593	0.568	4.2	65	0.00 34.14
116	J2	TPH (C8-C40)	-----NA-----				
117	J2	2,6,10-Trimethyldodecane	-----NA-----				
118	J2	2,6,10-Trimethyltridecane	-----NA-----				
119	J2	2,6,10-Trimethylpentadeca	-----NA-----				

(#) = Out of Range

S39335.D S160601-MAHPAH-A.M

SPCC's out = 0 CCC's out = 0

Wed Jul 06 10:56:31 2016

Continuing Calibration Summary

Page 1 of 3

Job Number: MC46549

Sample: MSS1964-ECC1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39594.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File : S:\1\data\S160705\S39594.D Vial: 96
 Acq On : 5 Jul 2016 10:49 pm Operator: sofyz
 Sample : cc1950-1.0,fs231 Inst : MSS
 Misc : OP47644,MSS1964,,,1,1 Multiplr: 1.00
 MS Integration Params: rteint.p GC Integration Params: rteint2.p

Method : S:\1\methods\S160601-MAHPAH-A.M (RTE Integrator)
 Title : PAHs & Alkylated PAHs by GC/MS/SIM
 Last Update : Thu Jun 02 12:08:50 2016
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 25% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Acenaphthene-d10	1.000	1.000	0.0	70	0.00	28.34
2 S	Toluene-d8	1.495	1.508	-0.9	71	-0.02	9.43
3 S	Naphthalene-d8	2.114	2.035	3.7	68	0.00	21.40
4 S	Phenanthrene-d10	1.506	1.447	3.9	67	0.00	34.20
5 S	Perylene-d12	1.227	1.127	8.1	64	0.00	50.04
----- Amount Calc. %Drift -----							
6	MTBE	1000.000	1781.752	-78.2#	89	-0.05	5.51
7 J1	Benzene	1000.000	1017.919	-1.8	65	-0.03	6.95
8 J2	C1-Benzene			-----NA-----			
9 J2	C2-Benzenes			-----NA-----			
10 J2	C3-Benzenes			-----NA-----			
11 J2	C4-Benzenes			-----NA-----			
12 J2	C5-Benzenes			-----NA-----			
13	2,2,4-trimethylpentane	1000.000	927.270	7.3	58	-0.04	7.44
----- AvgRF CCRF %Dev -----							
14	n-Heptane	0.868	0.718	17.3	58	-0.03	7.72
15	Methylcyclohexane	0.733	0.654	10.8	64	-0.04	8.34
16	Toluene	1.931	1.848	4.3	70	0.00	9.55
17	n-Octane	1.153	0.953	17.3	62	0.00	10.42
18	Ethylbenzene	2.146	2.066	3.7	69	0.00	12.31
19	m,p-xylene	1.749	1.663	4.9	67	0.00	12.55
20	Styrene	1.456	1.148	21.2	65	0.00	13.19
21	o-Xylene	1.791	1.697	5.2	69	0.00	13.26
22	Isopropylbenzene	2.011	2.004	0.3	71	0.01	14.19
23	n-Propylbenzene	2.541	2.397	5.7	67	0.00	15.04
24	1,3,5-Trimethylbenzene	1.816	1.804	0.7	70	0.01	15.46
25	Phenol	1.083	0.617	43.0#	45#	0.02	15.69
26	t-Butylbenzene	1.616	1.603	0.8	72	-0.01	16.15
27	1,2,4-Trimethylbenzene	1.888	1.809	4.2	69	0.00	16.19
28	sec-Butylbenzene	2.245	2.162	3.7	70	0.01	16.68
29	1,2,3-Trimethylbenzene	1.895	1.817	4.1	70	0.00	17.03
30	p-Isopropyltoluene	1.950	1.885	3.3	70	0.00	17.04
31	Indane	1.705	1.709	-0.2	71	0.00	17.43
32	Indene	1.669	1.616	3.2	68	0.00	17.68
33	n-Butylbenzene	1.958	1.764	9.9	66	0.01	17.94
34 J1	trans-Decalin	0.370	0.359	3.0	71	0.00	18.00
35	cis-Decalin	0.509	0.477	6.3	71	0.00	19.23
36 J2	C1-Decalins			-----NA-----			
37 J2	C2-Decalins			-----NA-----			
38 J2	C3-Decalins			-----NA-----			

Continuing Calibration Summary

Page 2 of 3

Job Number: MC46549

Sample: MSS1964-ECC1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39594.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

39	J2	C4-Decalins		-----NA-----				
40	J1	Benzo(b)thiophene	2.148	2.023	5.8	67	0.00	21.69
41	J2	C1-Benzo(b)thiophenes		-----NA-----				
42	J2	C2-Benzo(b)thiophenes		-----NA-----				
43	J2	C3-Benzo(b)thiophenes		-----NA-----				
44	J2	C4-Benzo(b)thiophenes		-----NA-----				
45	J1	Tetraethyl lead	0.163	0.133	18.4	62	-0.01	20.52
46	J2	Tetramethyl lead		-----NA-----				
47	J2	Trimethylethyl lead		-----NA-----				
48	J2	Dimethyldiethyl lead		-----NA-----				
49	J2	Methyltriethyl lead		-----NA-----				
50		MMT	0.803	0.672	16.3	62	0.00	23.27
51	J1	Naphthalene	2.622	2.506	4.4	68	0.00	21.47
52		2-Methylnaphthalene	1.693	1.609	5.0	69	0.00	24.18
53		1-Methylnaphthalene	1.499	1.440	3.9	70	0.00	24.59
54	J2	C1-Naphthalenes		-----NA-----				
55	J2	C2-Naphthalenes		-----NA-----				
56	J2	C3-Naphthalenes		-----NA-----				
57	J2	C4-Naphthalenes		-----NA-----				
58		Biphenyl	1.974	1.842	6.7	68	0.00	26.07
59		Acenaphthylene	2.505	2.652	-5.9	73	0.00	27.73
60		Acenaphthene	1.431	1.459	-2.0	72	0.00	28.47
61		Dibenzofuran	2.052	2.028	1.2	69	0.00	29.12
62	J1	Fluorene	1.710	1.663	2.7	70	0.00	30.49
63	J2	C1-Fluorenes		-----NA-----				
64	J2	C2-Fluorenes		-----NA-----				
65	J2	C3-Fluorenes		-----NA-----				
66	J1	Dibenzothiophene	2.390	2.401	-0.5	71	0.00	33.79
67	J2	C1-Dibenzothiophenes (una		-----NA-----				
68	J2	C1-Dibenzothiophenes (OTP		-----NA-----				
69	J2	C2-Dibenzothiophenes		-----NA-----				
70	J2	C3-Dibenzothiophenes		-----NA-----				
71	J2	C4-Dibenzothiophenes		-----NA-----				
72	J1	Phenanthrene	2.218	2.196	1.0	70	0.00	34.29
73		Anthracene	2.077	2.025	2.5	67	0.00	34.47
74	J2	C1-Phenanthrenes/anthrace		-----NA-----				
75	J2	C2-Phenanthrenes/anthrace		-----NA-----				
76	J2	C2-Phenanthrenes/anthrace		-----NA-----				
77	J2	C3-Phenanthrenes/anthrace		-----NA-----				
78	J2	C4-Phenanthrenes/anthrace		-----NA-----				
79		Carbazole	2.171	2.111	2.8	68	0.01	35.17
80		Retene	0.527	0.499	5.3	69	0.00	41.27
81	J1	Benzo(b)naphtho(2,1-d)thi	2.066	2.070	-0.2	69	0.00	43.78
82	J2	C1-Benzonaphthothiophenes		-----NA-----				
83	J2	C2-Benzonaphthothiophenes		-----NA-----				
84	J2	C3-Benzonaphthothiophenes		-----NA-----				
85	J2	C4-Benzonaphthothiophenes		-----NA-----				
86		Fluoranthene	2.206	2.247	-1.9	71	0.00	39.05
87	J1	Pyrene	2.193	2.242	-2.2	71	0.00	39.92
88	J2	C1-Fluoranthenes/pyrenes		-----NA-----				
89	J2	Benzo(b)fluorene		-----NA-----				
90	J2	Benzo(c)fluorene		-----NA-----				
91	J2	2-Methylpyrene		-----NA-----				
92	J2	4-Methylpyrene		-----NA-----				
93	J2	1-Methylpyrene		-----NA-----				
94	J2	C2-Fluoranthenes/pyrenes		-----NA-----				
95	J2	C3-Fluoranthenes/pyrenes		-----NA-----				
96	J2	C4-Fluoranthenes/pyrenes		-----NA-----				
97		Benz(a)anthracene	1.892	1.876	0.8	69	0.00	44.71
98	J1	Chrysene/triphenylene	1.811	1.788	1.3	68	0.00	44.87

6.6.7
6

Continuing Calibration Summary

Page 3 of 3

Job Number: MC46549

Sample: MSS1964-ECC1950

Account: ENSRNJ AECOM, INC.

Lab FileID: S39594.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

99	J2	C1-Benz(a)anthracenes/chr	-----NA-----					
100	J2	C2-Benz(a)anthracenes/chr	-----NA-----					
101	J2	C3-Benz(a)anthracenes/chr	-----NA-----					
102	J2	C4-Benz(a)anthracenes/chr	-----NA-----					
103		Benzo(b)fluoranthene	2.085	1.993	4.4	66	0.00	48.76
104		Benzo(j/k)fluoranthene	2.113	2.110	0.1	69	0.00	48.83
105		Benzo(e)pyrene	2.001	1.966	1.7	68	0.00	49.69
106		Benzo(a)pyrene	1.973	1.859	5.8	66	0.00	49.85
107		Perylene	2.063	1.971	4.5	66	0.00	50.13
108		Indeno(1,2,3-cd)pyrene	2.553	2.441	4.4	67	0.00	53.36
109		Dibenz(a,h)anthracene	2.089	2.005	4.0	65	0.00	53.38
110		Benzo(g,h,i)perylene	2.315	2.212	4.4	66	0.00	54.09
111		Coronene	2.452	2.320	5.4	66	0.02	59.06

			Amount	Calc.	%Drift			
112		C-17	1000.000	962.061	3.8	69	0.00	32.15

			AvgRF	CCRF	%Dev			
113		Pristane	0.428	0.409	4.4	70	0.00	32.28

			Amount	Calc.	%Drift			
114		C-18	1000.000	981.101	1.9	70	0.00	33.95

			AvgRF	CCRF	%Dev			
115	J1	Phytane	0.593	0.564	4.9	70	0.00	34.14
116	J2	TPH (C8-C40)	-----NA-----					
117	J2	2,6,10-Trimethyldodecane	-----NA-----					
118	J2	2,6,10-Trimethyltridecane	-----NA-----					
119	J2	2,6,10-Trimethylpentadeca	-----NA-----					

(#) = Out of Range

S39335.D S160601-MAHPAH-A.M

SPCC's out = 0 CCC's out = 0

Wed Jul 06 10:56:44 2016



GC/MS Semi-volatiles

Raw Data

7

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39591.D
 Sample : mc46549-1,137-P3B-MW101I-2016062
 Misc : OP47956,MSS1964,0.0152,,,2,1
 ALS Vial : 7 Sample Multiplier: 1
 Acq On : 5 Jul 2016 7:07 pm

Operator: sofyz

Quant Time: Jul 06 11:55:09 2016
 Quant Method : S:\1\methods\S160601-MAHPAH-A.M
 Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Acenaphthene-d10	28.352	162	34024	1000.00	ng/mL	0.00
System Monitoring Compounds						
2) Toluene-d8	9.443	98	47470	933.45	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	93.34%	
3) Naphthalene-d8	21.418	136	67548	938.94	ng/mL	0.02
Spiked Amount 1000.000			Recovery	=	93.89%	
4) Phenanthrene-d10	34.213	188	47740	931.41	ng/mL	0.02
Spiked Amount 1000.000			Recovery	=	93.14%	
5) Perylene-d12	50.050	264	40258	963.93	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	96.39%	
Target Compounds						
					Qvalue	
7] Benzene	6.980	78	338923m	6431.543	ng/mL	
8] C1-Benzene	9.546	92	349436	6631.042	ng/mL	100
9] C2-Benzenes	12.291	106	1864846m	35388.090	ng/mL	
10] C3-Benzenes	15.238	120	1954372m	37086.972	ng/mL	
11] C4-Benzenes	18.724	134	991948m	18823.616	ng/mL	
12] C5-Benzenes	20.255	148	276660m	5250.015	ng/mL	
16] Toluene	9.546	91	592267	9015.871	ng/mL	99
18] Ethylbenzene	12.291	91	2428355	33250.429	ng/mL	96
19] m,p-xylene	12.525	91	1627474	27344.055	ng/mL	98
20] Styrene	13.171	104	71441	1442.160	ng/mL	97
21] o-Xylene	13.237	91	853994	14015.649	ng/mL	99
22] Isopropylbenzene	14.164	105	266157	3890.048	ng/mL	100
23] n-Propylbenzene	15.025	91	145063	1678.033	ng/mL	100
24] 1,3,5-Trimethylbenzene	15.440	105	393396	6365.468	ng/mL	97
27] 1,2,4-Trimethylbenzene	16.173	105	1242644	19342.269	ng/mL	96
28] sec-Butylbenzene	16.683	105	10091	132.122	ng/mL	98
29] 1,2,3-Trimethylbenzene	17.023	105	415431	6443.692	ng/mL	96
30] p-Isopropyltoluene	17.034	119	174085m	2624.090	ng/mL	
33] n-Butylbenzene	17.906	91	88291	1325.318	ng/mL#	1
34] trans-Decalin	18.001	96	2650m	210.780	ng/mL	
35] cis-Decalin	19.234	96	1490m	86.107	ng/mL	
40] Benzo(b)thiophene	21.703	134	431541	5905.112	ng/mL	98
51] Naphthalene	21.560	128	32598143	365440.592	ng/mL#	92
52] 2-Methylnaphthalene	24.246	142	12744878	221198.516	ng/mL	99
53] 1-Methylnaphthalene	24.656	142	8428662	165265.162	ng/mL	100
54] C1-Naphthalenes	24.246	142	21191500m	237566.732	ng/mL	
55] C2-Naphthalenes	27.047	156	12393963m	138942.184	ng/mL	
56] C3-Naphthalenes	29.353	170	4235239m	47479.031	ng/mL	
57] C4-Naphthalenes	32.103	184	1211361m	13579.929	ng/mL	
58] Biphenyl	26.066	154	1627974	24236.129	ng/mL	98
59] Acenaphthylene	27.761	152	2741911	32169.482	ng/mL#	86
60] Acenaphthene	28.533	154	5716131	117427.278	ng/mL	99
61] Dibenzofuran	29.124	168	346348m	4961.586	ng/mL	
62] Fluorene	30.534	166	3284076	56437.377	ng/mL	98
63] C1-Fluorenes	32.733	180	2248655m	38643.499	ng/mL	
64] C2-Fluorenes	34.906	194	1320632m	22695.274	ng/mL	
65] C3-Fluorenes	36.896	208	467095m	8027.103	ng/mL	
66] Dibenzothiophene	33.801	184	726212	8932.127	ng/mL#	94
67] C1-Dibenzothiophenes (...)	35.573	198	878399m	10803.968	ng/mL	
68] C1-Dibenzothiophenes (...)	36.014	198	2181m	26.825	ng/mL	
69] C2-Dibenzothiophenes	37.266	212	620290m	7629.327	ng/mL	
70] C3-Dibenzothiophenes	39.078	226	280979m	3455.933	ng/mL	
71] C4-Dibenzothiophenes	40.762	240	85187m	1047.767	ng/mL	
72] Phenanthrene	34.383	178	13164049	174402.352	ng/mL	96
73] Anthracene	34.537	178	4524364	64011.959	ng/mL	95
74] C1-Phenanthrenes/anthr...	36.414	192	9091542m	120448.223	ng/mL	
75] C2-Phenanthrenes/anthr...	38.548	206	3599105m	47682.319	ng/mL	
77] C3-Phenanthrenes/anthr...	40.373	220	938805m	12437.647	ng/mL	

7.1.1
7

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39591.D
 Sample : mc46549-1,137-P3B-MW101I-2016062
 Misc : OP47956,MSS1964,0.0152,,,2,1
 ALS Vial : 7 Sample Multiplier: 1
 Acq On : 5 Jul 2016 7:07 pm

Operator: sofyaz

Quant Time: Jul 06 11:55:09 2016
 Quant Method : S:\1\methods\S160601-MAHPAH-A.M
 Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
78]	C4-Phenanthrenes/anthr...	42.570	234	229832m	3044.902	ng/mL	
81]	Benzo(b)naphtho(2,1-d)...	43.785	234	231674	3295.013	ng/mL	96
86]	Fluoranthene	39.113	202	3557668	47401.623	ng/mL	97
87]	Pyrene	40.002	202	5788109	77557.098	ng/mL#	91
88]	C1-Fluoranthenes/pyrenes	41.366	216	5531638m	74120.545	ng/mL	
89]	Benzo(b)fluorene	41.600	216	556617m	7458.325	ng/mL	
90]	Benzo(c)fluorene	41.643	216	243692m	3265.323	ng/mL	
91]	2-Methylpyrene	41.755	216	682754m	9148.483	ng/mL	
92]	4-Methylpyrene	42.119	216	605516m	8113.542	ng/mL	
93]	1-Methylpyrene	42.232	216	851215m	11405.757	ng/mL	
94]	C2-Fluoranthenes/pyrenes	43.013	230	1820255m	24390.297	ng/mL	
95]	C3-Fluoranthenes/pyrenes	44.884	244	562275m	7534.139	ng/mL	
97]	Benz(a)anthracene	44.751	228	1827839	28395.732	ng/mL#	48
98]	Chrysene/triphenylene	44.910	228	1636759	26569.843	ng/mL	98
99]	C1-Benz(a)anthracenes/...	46.372	242	1459513m	23692.573	ng/mL	
100]	C2-Benz(a)anthracenes/...	48.065	256	551405m	8951.070	ng/mL	
101]	C3-Benz(a)anthracenes/...	49.616	270	193817m	3146.271	ng/mL	
102]	C4-Benz(a)anthracenes/...	50.466	284	48083m	780.541	ng/mL	
103]	Benzo(b)fluoranthene	48.775	252	613235	8643.741	ng/mL	99
104]	Benzo(j/k)fluoranthene	48.847	252	757501	10536.364	ng/mL	98
105]	Benzo(e)pyrene	49.706	252	679107	9973.641	ng/mL	98
106]	Benzo(a)pyrene	49.887	252	1307224	19469.835	ng/mL	96
107]	Perylene	50.131	252	189649	2701.720	ng/mL	95
108]	Indeno(1,2,3-cd)pyrene	53.376	276	471945m	5433.145	ng/mL	
109]	Dibenz(a,h)anthracene	53.376	278	164393m	2313.430	ng/mL	
110]	Benzo(g,h,i)perylene	54.100	276	499430	6340.100	ng/mL	99
111]	Coronene	59.049	300	112282	1346.066	ng/mL	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.1.1
7

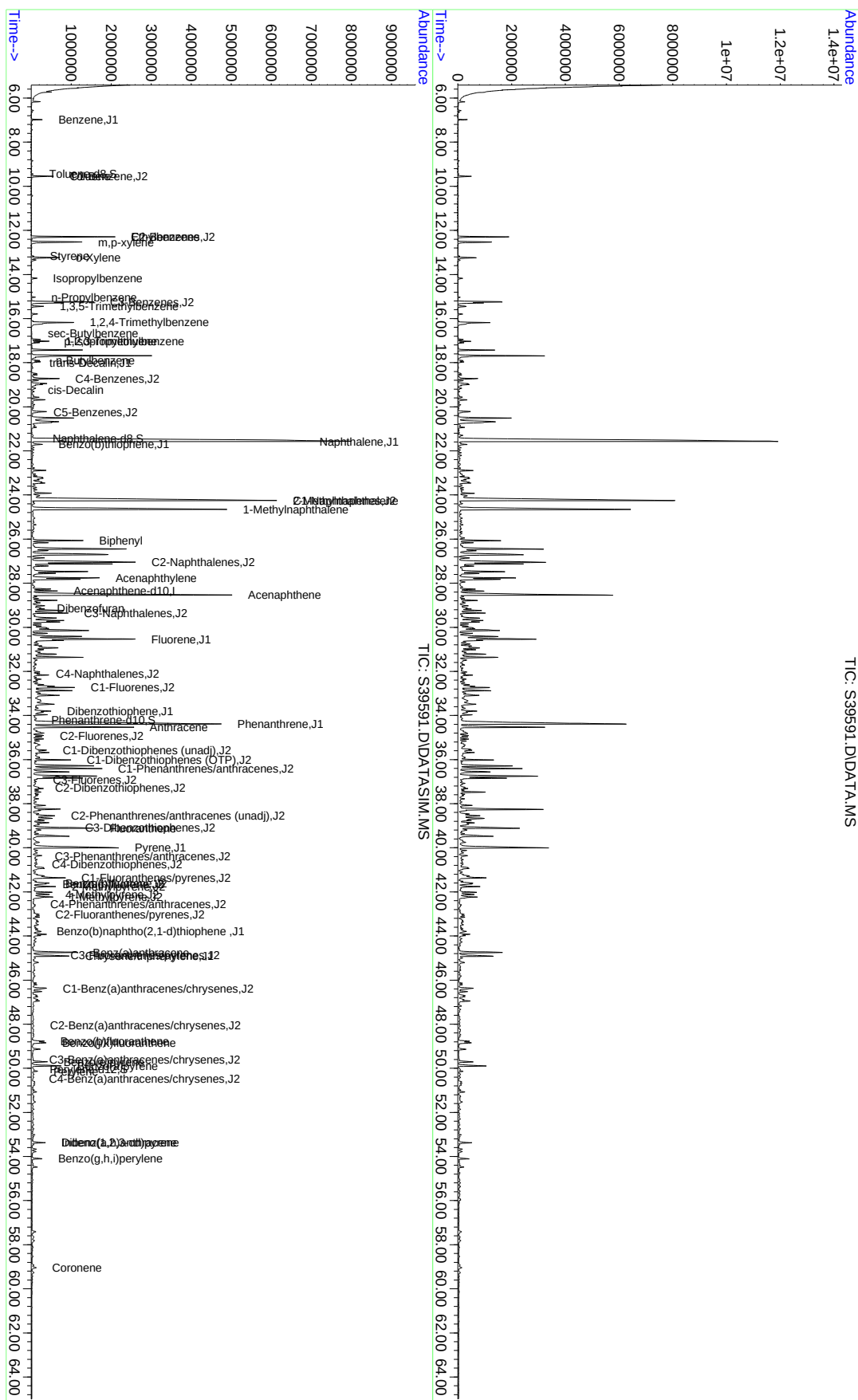
Data File: S:\1\data\S160705\S39591.D
Sample : MC46549-1,137-P3B-MW101I-2016062
Misc : OP47956,MSS1964,0.0152,,,2,1
ALS Vial : 7 Sample Multiplier: 1
Acq On : 5 Jul 2016 7:07 pm

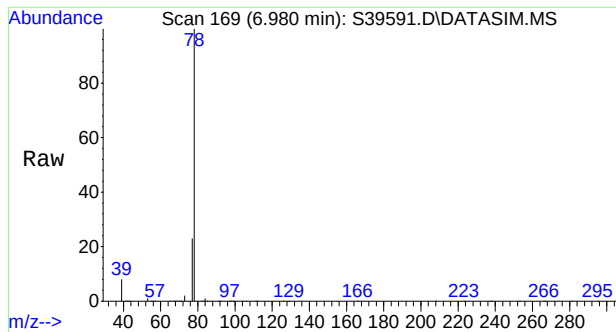
Operator: sofyaz

Quant Time: Jul 06 11:55:09 2016

Quant Method : S:\1\methods\S160601-MAHRAH-A.M

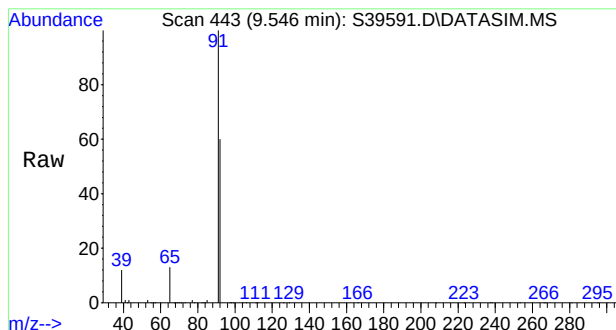
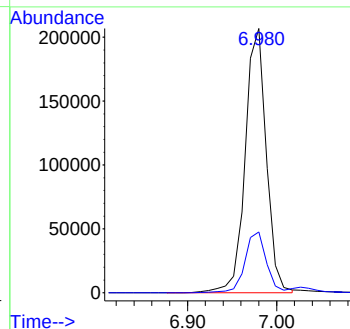
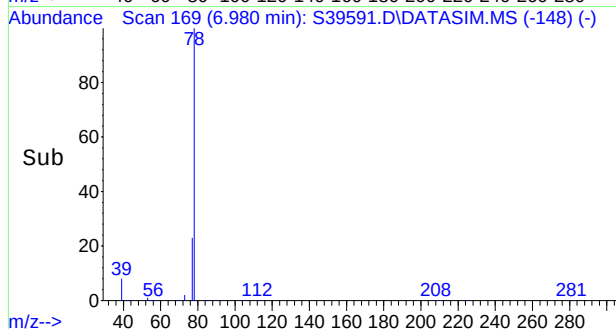
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM





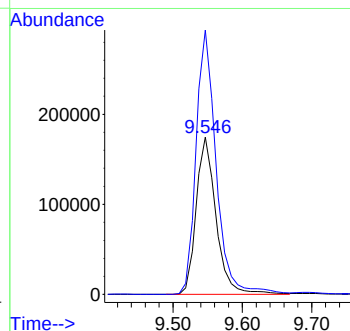
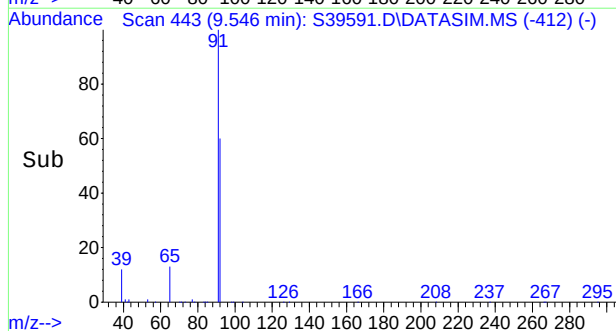
#7
Benzene
Concen: 6431.543 ng/mL m
RT: 6.980 min Scan# 169
Delta R.T. -0.000 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

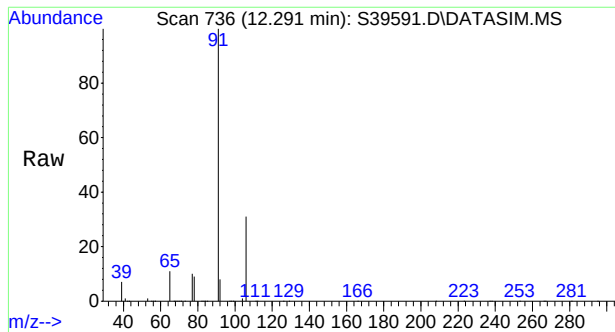
Tgt Ion: 78 Resp: 338923
Ion Ratio Lower Upper
78 100
77 23.2 18.4 27.6



#8
C1-Benzene
Concen: 6631.042 ng/mL
RT: 9.546 min Scan# 443
Delta R.T. -0.006 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

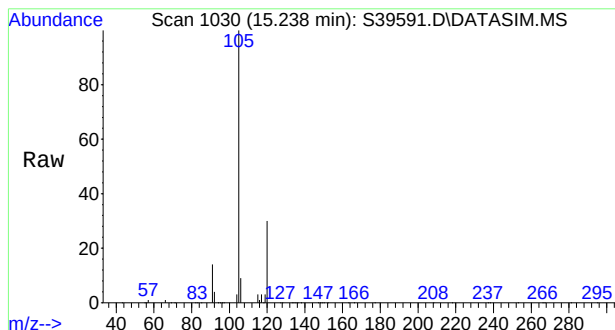
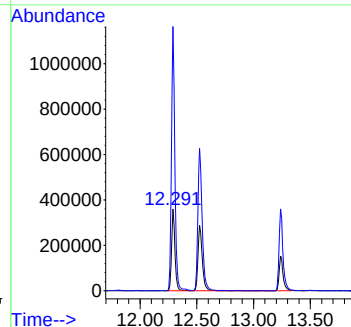
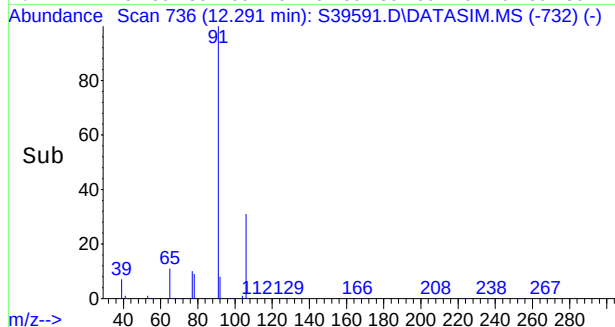
Tgt Ion: 92 Resp: 349436
Ion Ratio Lower Upper
92 100
91 169.5 135.2 202.8





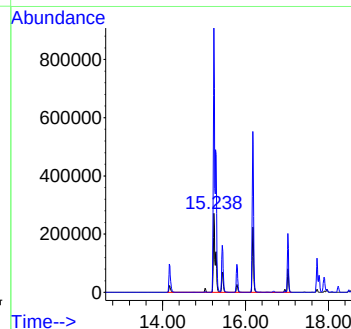
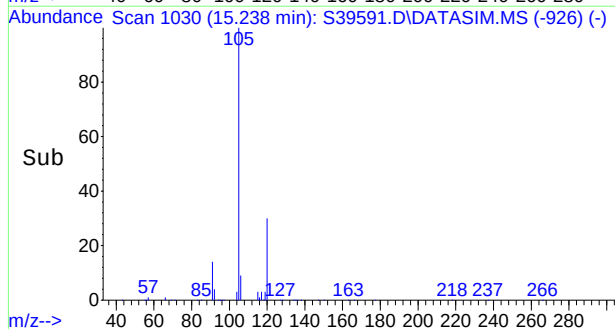
#9
C2-Benzenes
Concen: 35388.090 ng/mL m
RT: 12.291 min Scan# 736
Delta R.T. -0.240 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

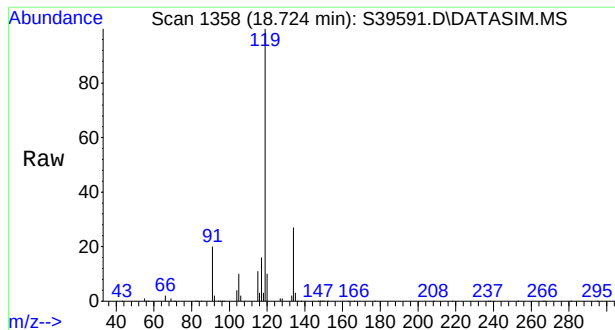
Tgt Ion:106 Resp: 1864846
Ion Ratio Lower Upper
106 100
91 264.9 173.4 260.0#



#10
C3-Benzenes
Concen: 37086.972 ng/mL m
RT: 15.238 min Scan# 1030
Delta R.T. -0.941 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

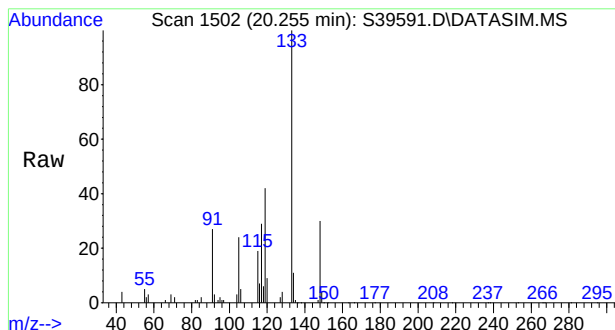
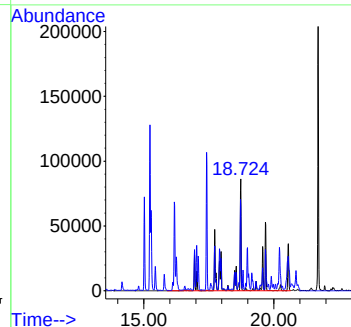
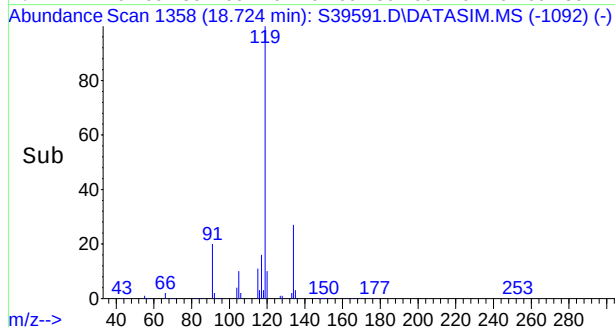
Tgt Ion:120 Resp: 1954372
Ion Ratio Lower Upper
120 100
105 289.9 197.2 295.8





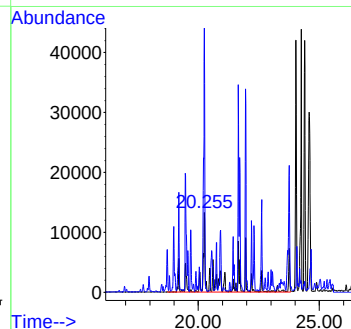
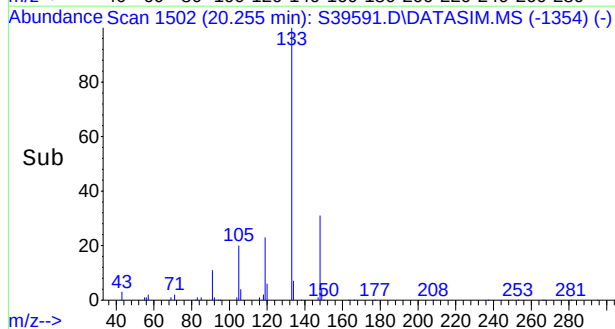
#11
C4-Benzenes
Concen: 18823.616 ng/mL m
RT: 18.724 min Scan# 1358
Delta R.T. -1.833 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

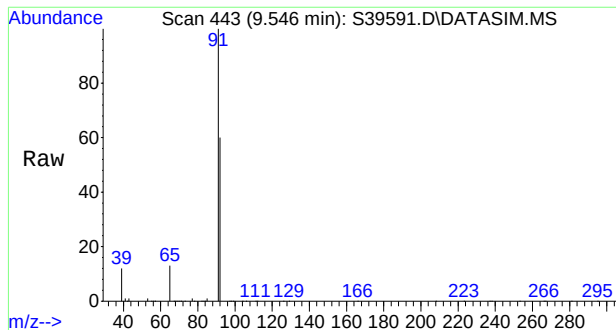
Tgt Ion:134 Resp: 991948
Ion Ratio Lower Upper
134 100
91 213.9 42.2 63.4#



#12
C5-Benzenes
Concen: 5250.015 ng/mL m
RT: 20.255 min Scan# 1502
Delta R.T. -0.004 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

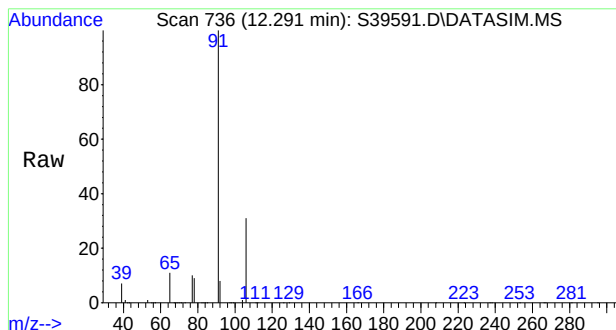
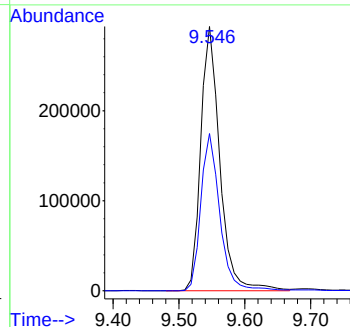
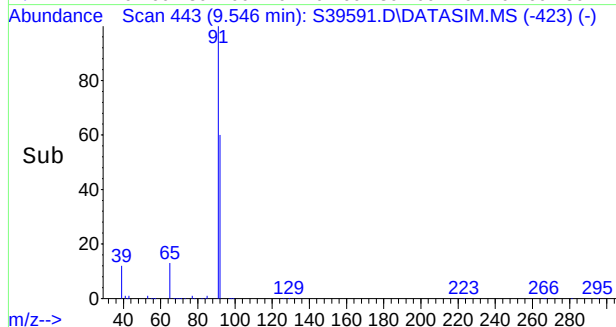
Tgt Ion:148 Resp: 276660
Ion Ratio Lower Upper
148 100
133 357.2 139.4 209.2#





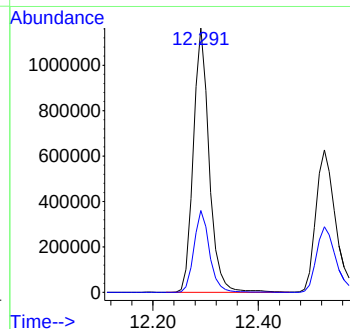
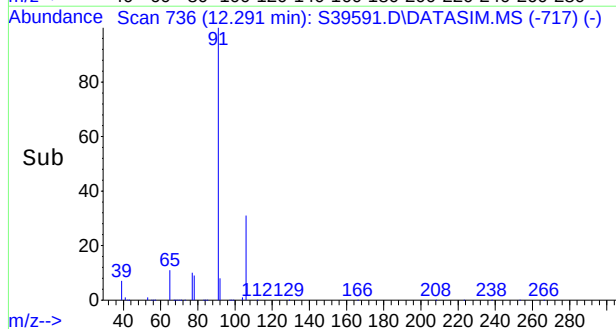
#16
Toluene
Concen: 9015.871 ng/mL
RT: 9.546 min Scan# 443
Delta R.T. -0.009 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

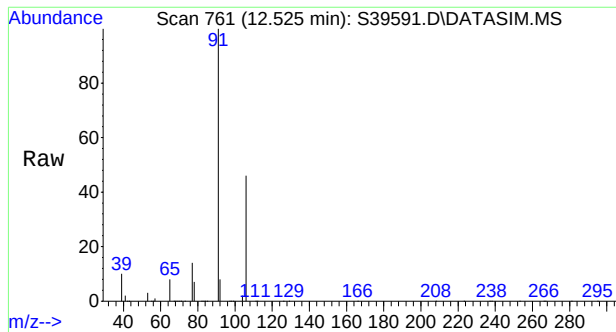
Tgt Ion	Ratio	Lower	Upper
91	100		
92	59.0	46.6	70.0



#18
Ethylbenzene
Concen: 33250.429 ng/mL
RT: 12.291 min Scan# 736
Delta R.T. -0.019 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

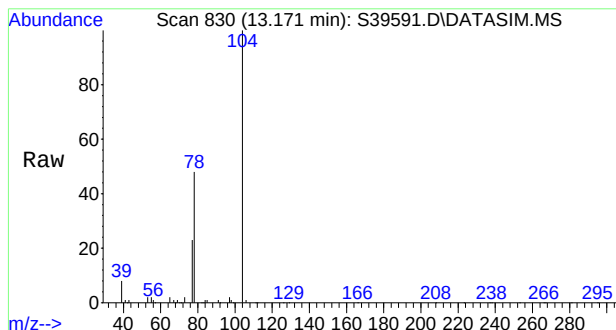
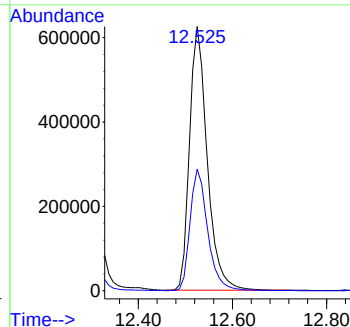
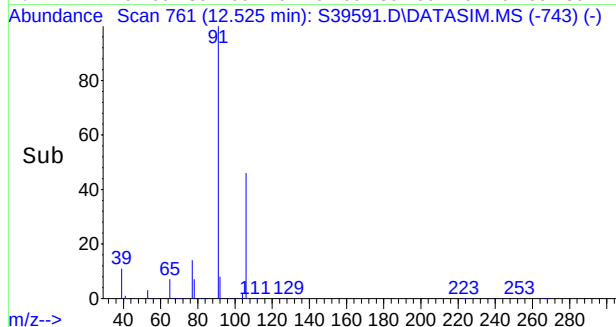
Tgt Ion	Ratio	Lower	Upper
91	100		
106	30.6	23.0	34.4





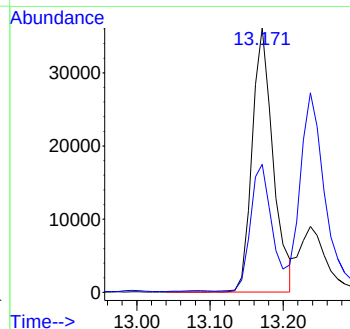
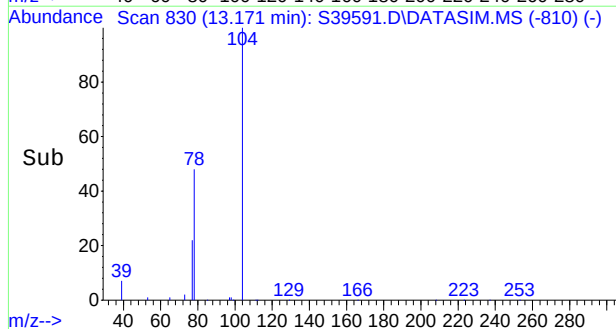
#19
m,p-xylene
Concen: 27344.055 ng/mL
RT: 12.525 min Scan# 761
Delta R.T. -0.028 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

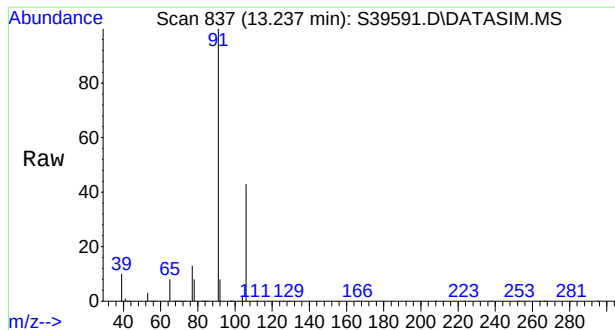
Tgt Ion: 91 Resp: 1627474
Ion Ratio Lower Upper
91 100
106 46.0 35.8 53.6



#20
Styrene
Concen: 1442.160 ng/mL
RT: 13.171 min Scan# 830
Delta R.T. -0.009 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

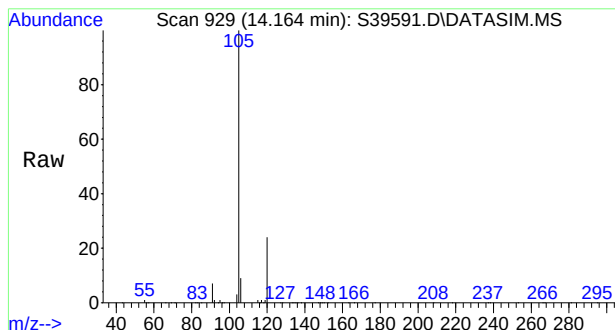
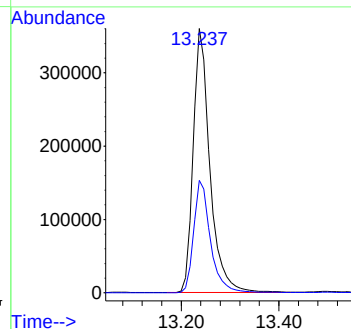
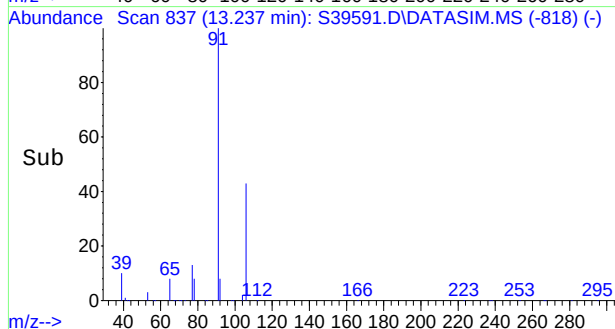
Tgt Ion: 104 Resp: 71441
Ion Ratio Lower Upper
104 100
78 48.6 40.3 60.5





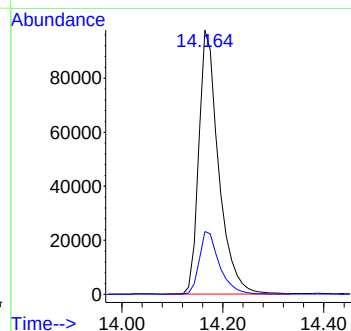
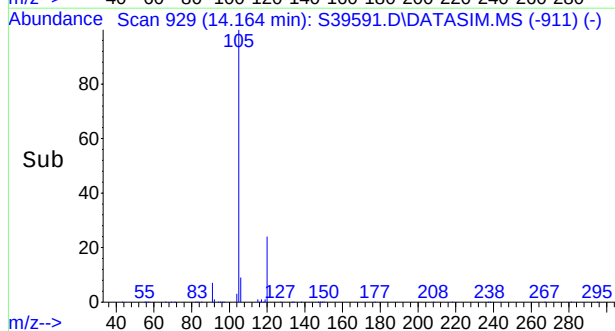
#21
o-Xylene
Concen: 14015.649 ng/mL
RT: 13.237 min Scan# 837
Delta R.T. -0.019 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

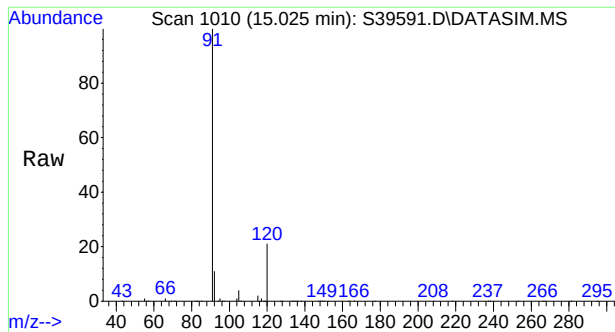
Tgt Ion	Ratio	Lower	Upper
91	100		
106	42.8	34.5	51.7



#22
Isopropylbenzene
Concen: 3890.048 ng/mL
RT: 14.164 min Scan# 929
Delta R.T. -0.011 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

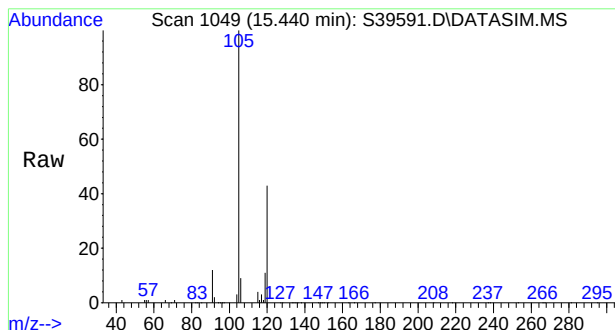
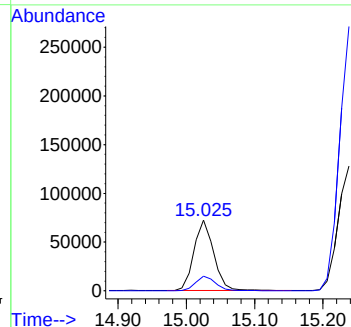
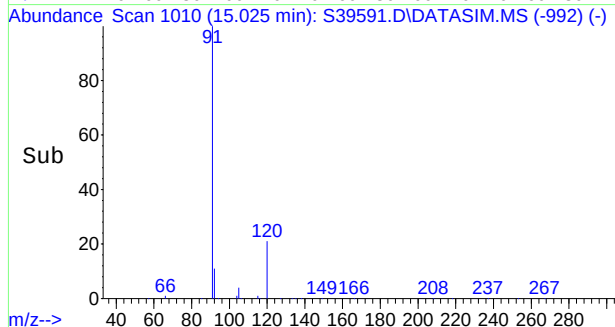
Tgt Ion	Ratio	Lower	Upper
105	100		
120	24.1	19.2	28.8





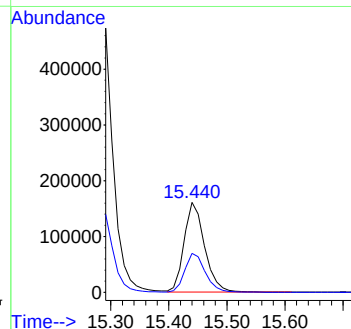
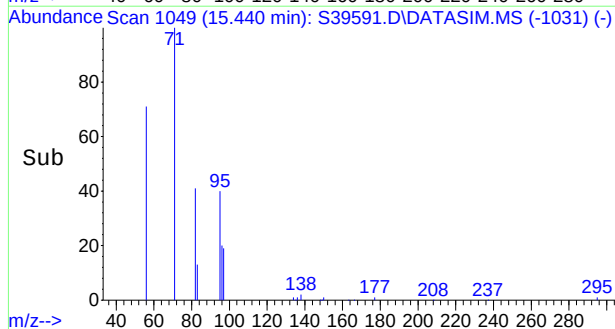
#23
n-Propylbenzene
Concen: 1678.033 ng/mL
RT: 15.025 min Scan# 1010
Delta R.T. -0.011 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

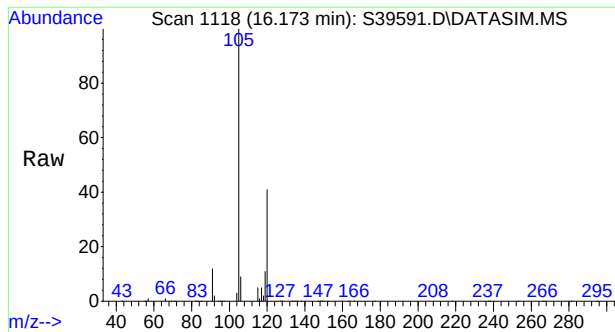
Tgt Ion: 91 Resp: 145063
Ion Ratio Lower Upper
91 100
120 20.9 16.8 25.2



#24
1,3,5-Trimethylbenzene
Concen: 6365.468 ng/mL
RT: 15.440 min Scan# 1049
Delta R.T. -0.011 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

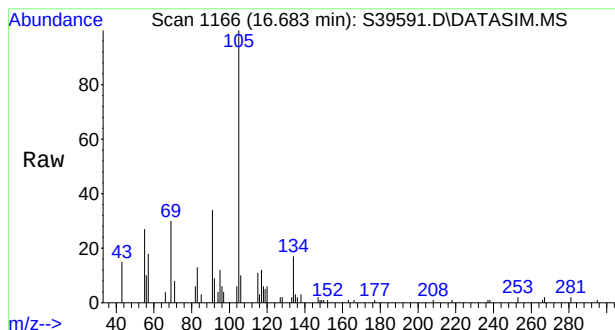
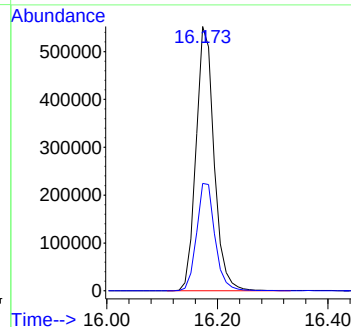
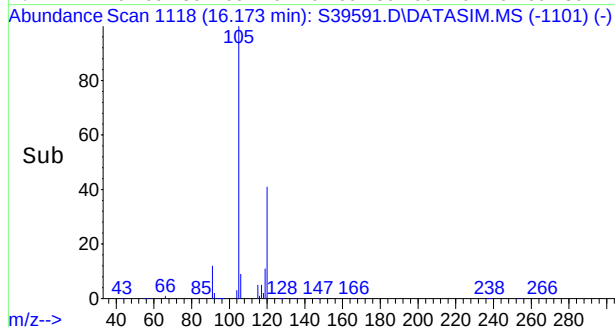
Tgt Ion: 105 Resp: 393396
Ion Ratio Lower Upper
105 100
120 43.7 33.5 50.3





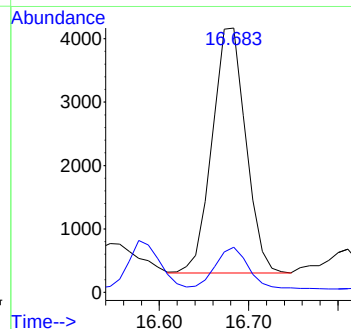
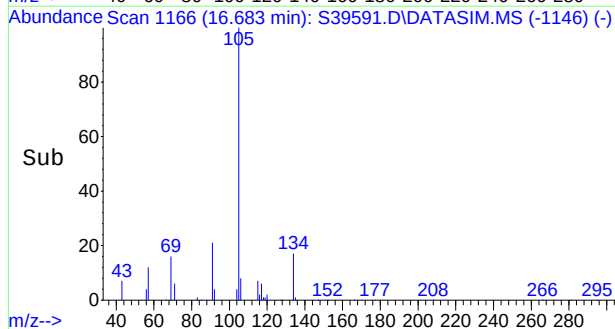
#27
 1,2,4-Trimethylbenzene
 Concen: 19342.269 ng/mL
 RT: 16.173 min Scan# 1118
 Delta R.T. -0.021 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

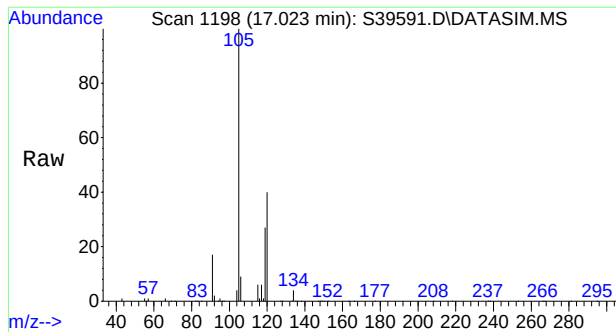
Tgt Ion:105 Resp: 1242644
 Ion Ratio Lower Upper
 105 100
 120 41.5 35.3 52.9



#28
 sec-Butylbenzene
 Concen: 132.122 ng/mL
 RT: 16.683 min Scan# 1166
 Delta R.T. 0.011 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

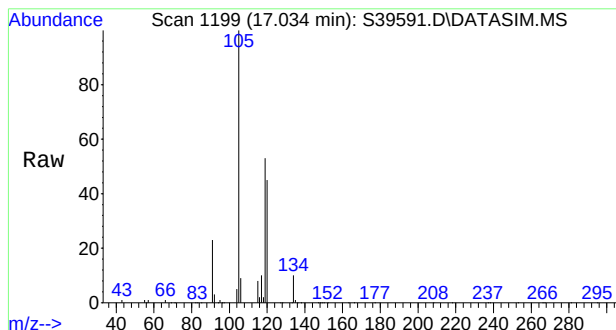
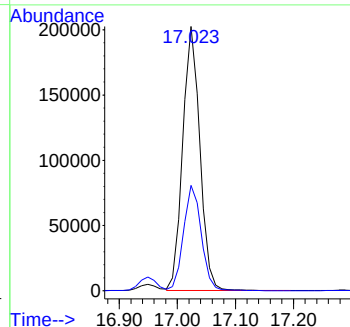
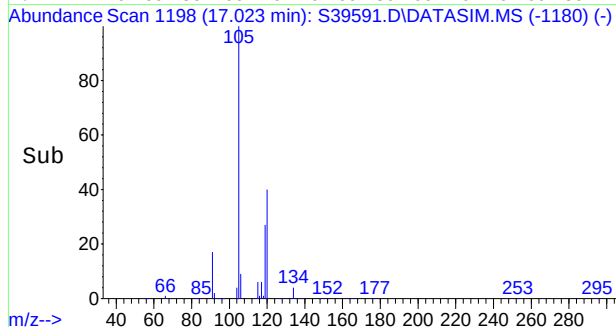
Tgt Ion:105 Resp: 10091
 Ion Ratio Lower Upper
 105 100
 134 16.9 13.0 19.4





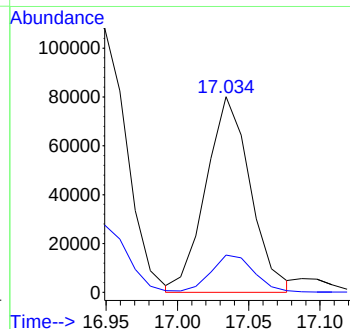
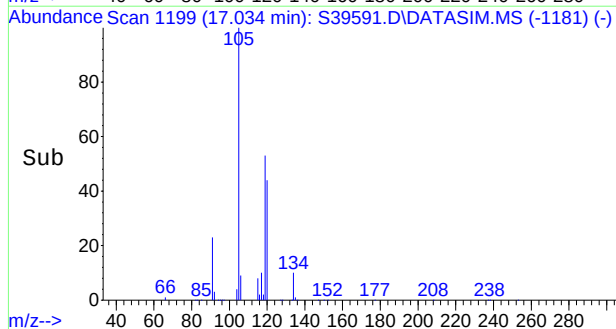
#29
 1,2,3-Trimethylbenzene
 Concen: 6443.692 ng/mL
 RT: 17.023 min Scan# 1198
 Delta R.T. -0.011 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

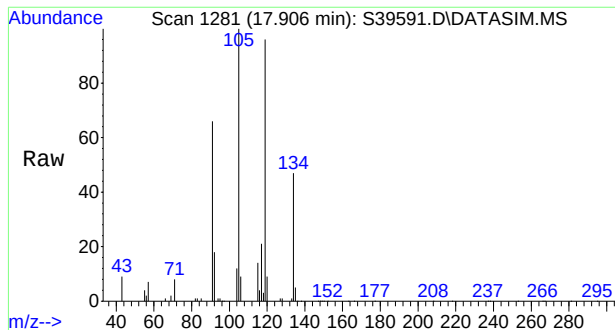
Tgt Ion	Ratio	Lower	Upper
105	100		
120	41.2	34.8	52.2



#30
 p-Isopropyltoluene
 Concen: 2624.090 ng/mL m
 RT: 17.034 min Scan# 1199
 Delta R.T. -0.011 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

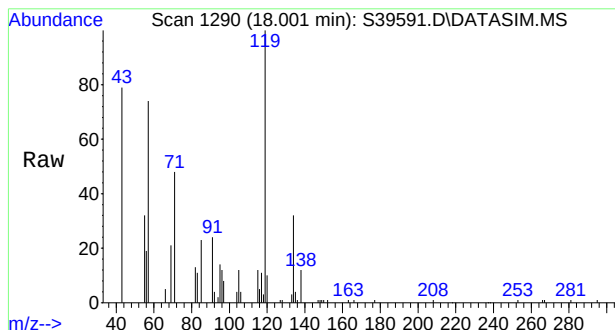
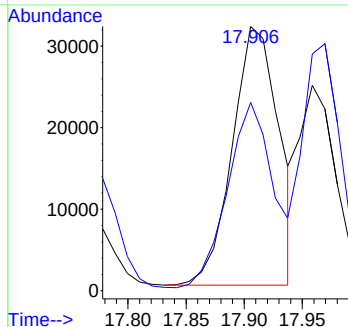
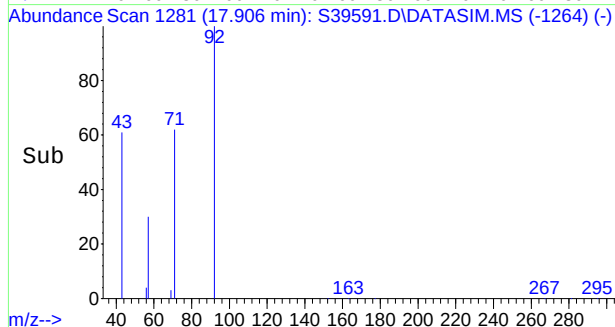
Tgt Ion	Ratio	Lower	Upper
119	100		
134	18.4	17.4	26.0





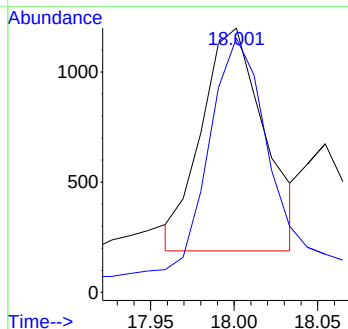
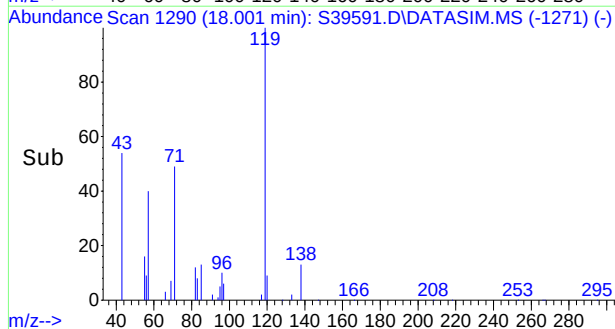
#33
n-Butylbenzene
Concen: 1325.318 ng/mL
RT: 17.906 min Scan# 1281
Delta R.T. -0.021 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

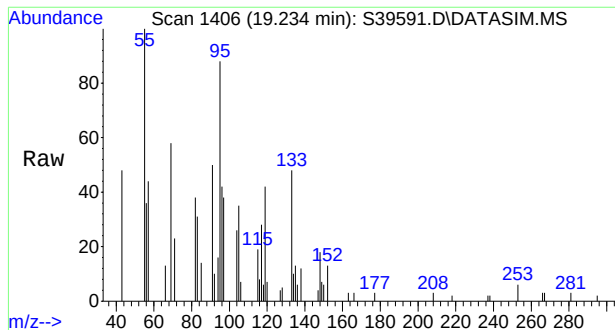
Tgt Ion	Ratio	Lower	Upper
91	100		
134	71.4	16.7	25.1#



#34
trans-Decalin
Concen: 210.780 ng/mL m
RT: 18.001 min Scan# 1290
Delta R.T. -0.000 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

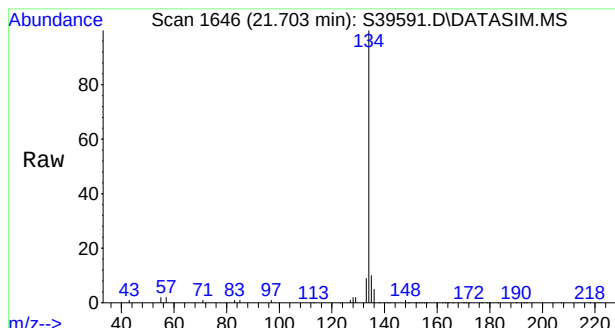
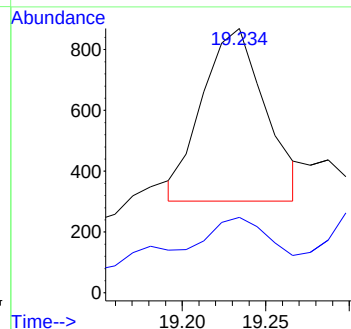
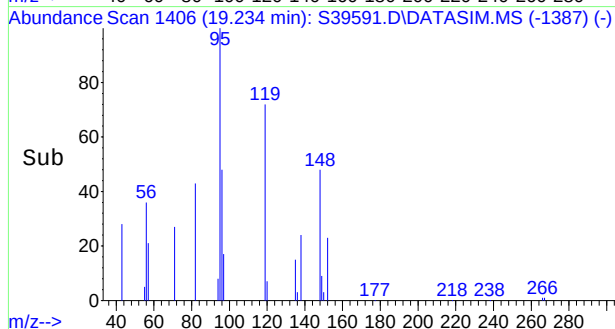
Tgt Ion	Ratio	Lower	Upper
96	100		
138	110.9	91.8	137.6





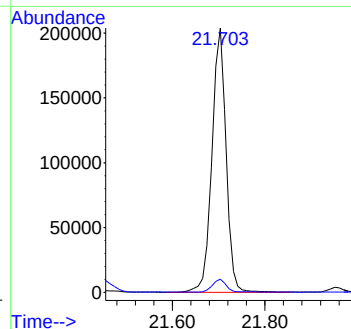
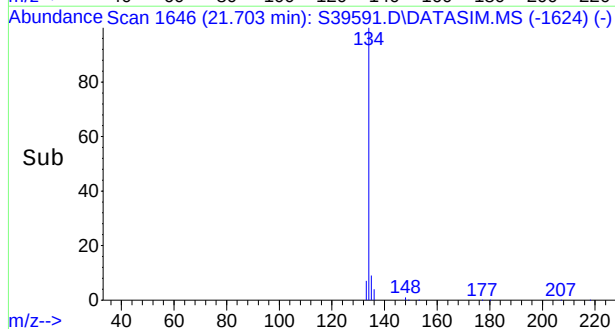
#35
cis-Decalin
Concen: 86.107 ng/mL m
RT: 19.234 min Scan# 1406
Delta R.T. -0.000 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

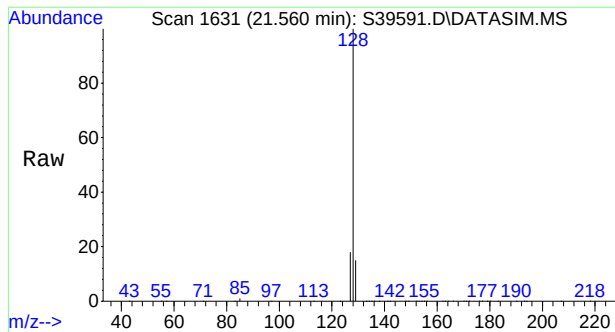
Tgt Ion	Ratio	Lower	Upper
96	100		
138	30.7	54.1	81.1#



#40
Benzo(b)thiophene
Concen: 5905.112 ng/mL
RT: 21.703 min Scan# 1646
Delta R.T. 0.009 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

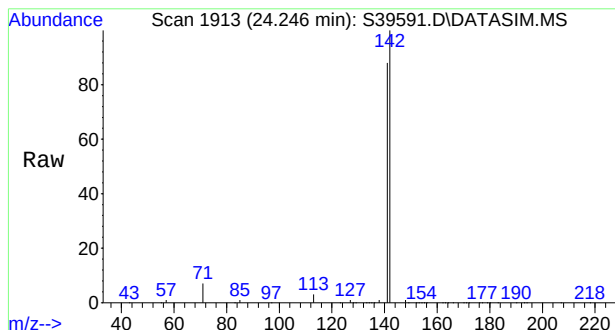
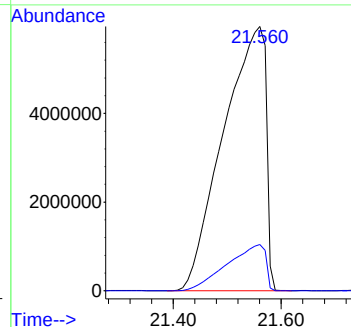
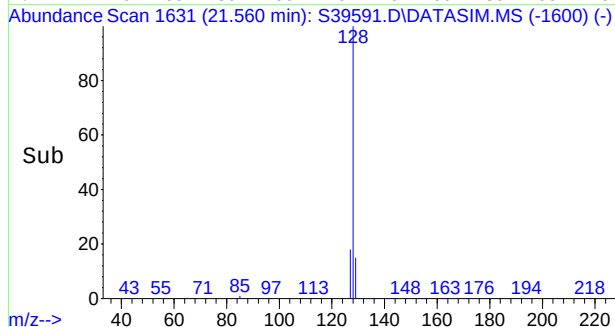
Tgt Ion	Ratio	Lower	Upper
134	100		
136	4.7	4.4	6.6





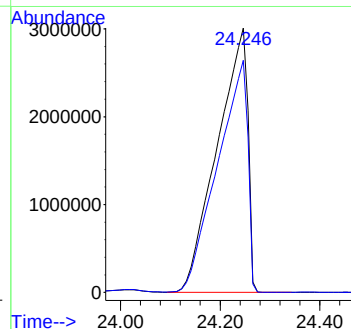
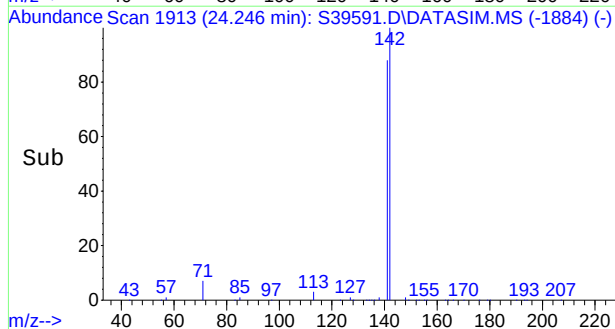
#51
Naphthalene
Concen: 365440.592 ng/mL
RT: 21.560 min Scan# 1631
Delta R.T. 0.095 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

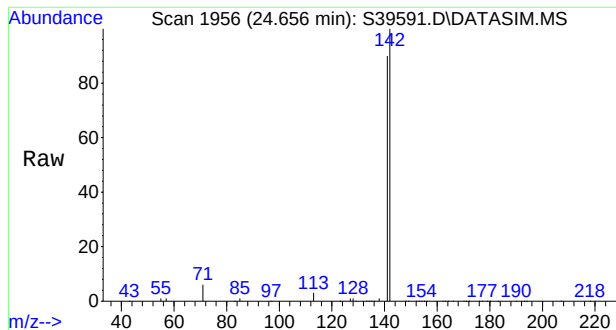
Tgt Ion:128 Resp:32598143
Ion Ratio Lower Upper
128 100
127 15.9 10.2 15.2#



#52
2-Methylnaphthalene
Concen: 221198.516 ng/mL
RT: 24.246 min Scan# 1913
Delta R.T. 0.076 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

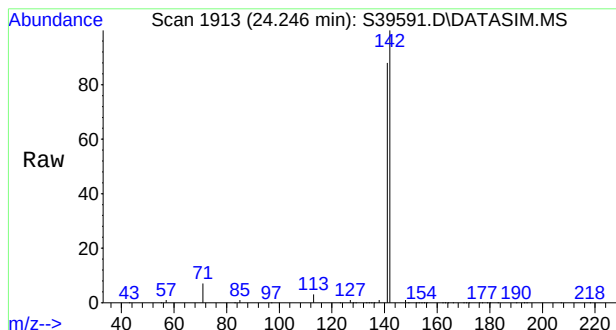
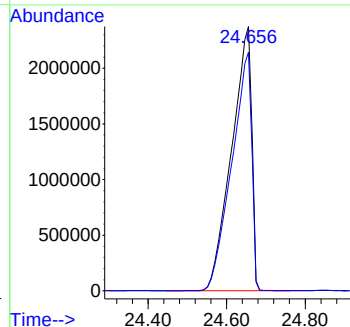
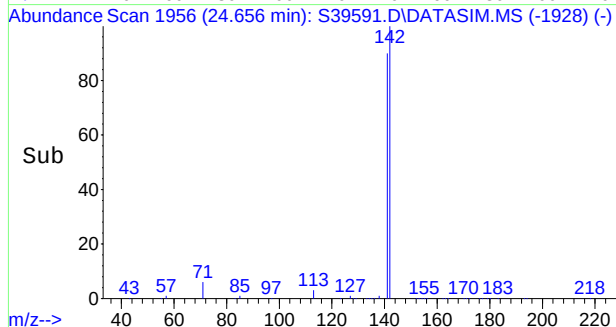
Tgt Ion:142 Resp:12744878
Ion Ratio Lower Upper
142 100
141 86.7 68.6 102.8





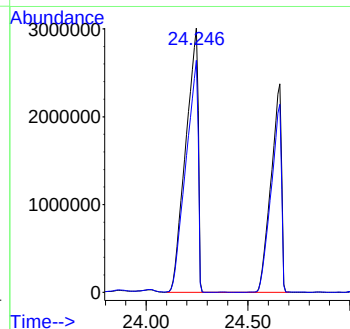
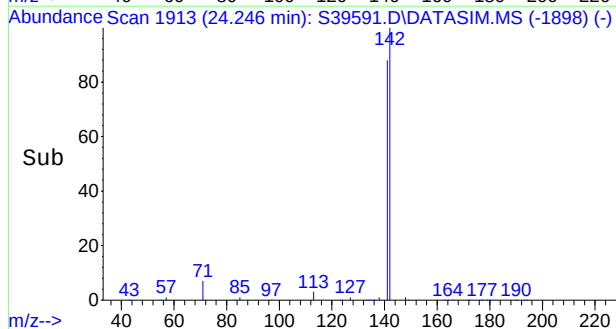
#53
 1-Methylnaphthalene
 Concen: 165265.162 ng/mL
 RT: 24.656 min Scan# 1956
 Delta R.T. 0.067 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

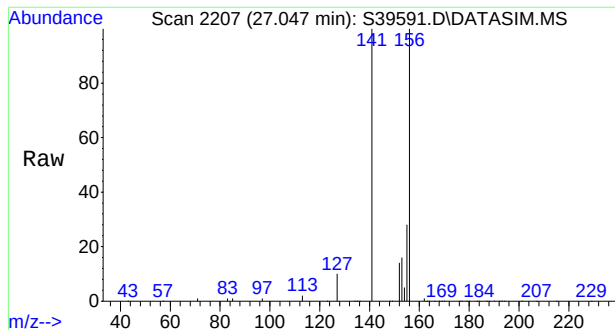
Tgt Ion:142 Resp: 8428662
 Ion Ratio Lower Upper
 142 100
 141 89.5 71.6 107.4



#54
 C1-Naphthalenes
 Concen: 237566.732 ng/mL m
 RT: 24.246 min Scan# 1913
 Delta R.T. 0.083 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

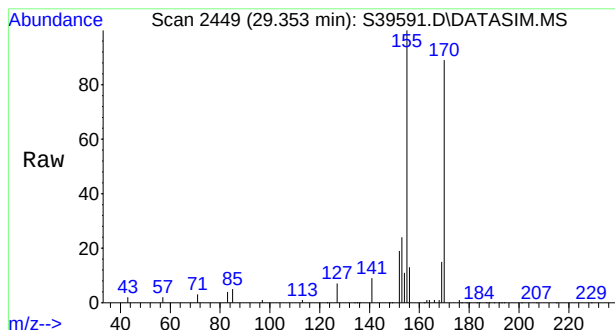
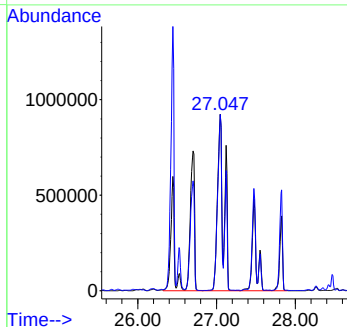
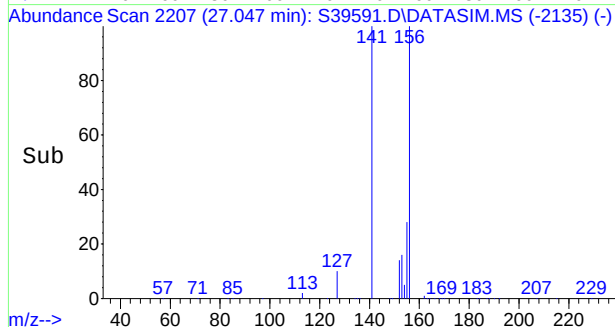
Tgt Ion:142 Resp:21191500
 Ion Ratio Lower Upper
 142 100
 141 87.8 68.8 103.2





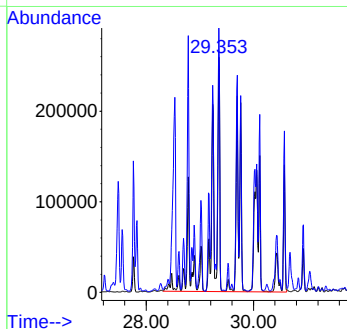
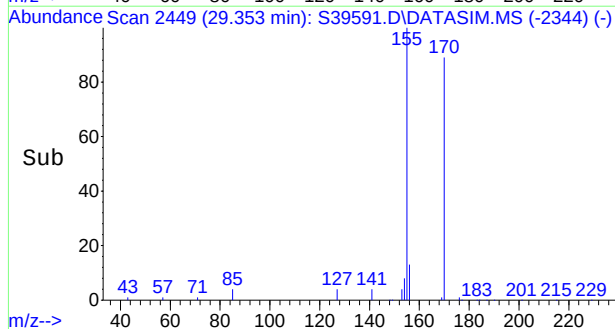
#55
C2-Naphthalenes
Concen: 138942.184 ng/mL m
RT: 27.047 min Scan# 2207
Delta R.T. -0.039 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

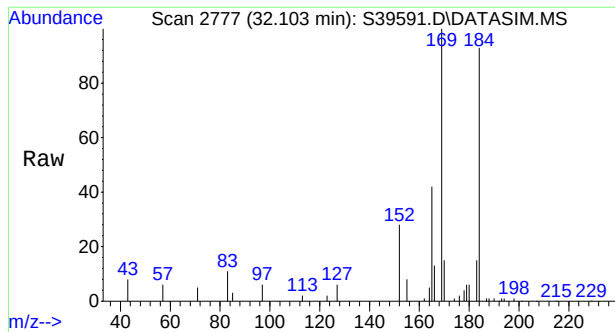
Tgt Ion:156 Resp:12393963
Ion Ratio Lower Upper
156 100
141 114.5 65.8 98.8#



#56
C3-Naphthalenes
Concen: 47479.031 ng/mL m
RT: 29.353 min Scan# 2449
Delta R.T. 0.009 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

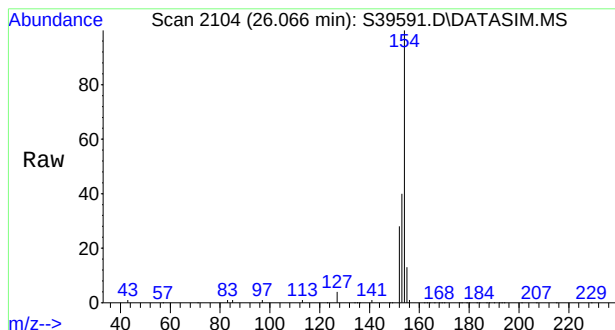
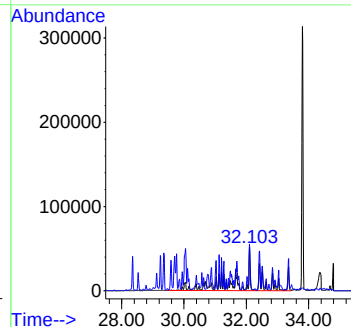
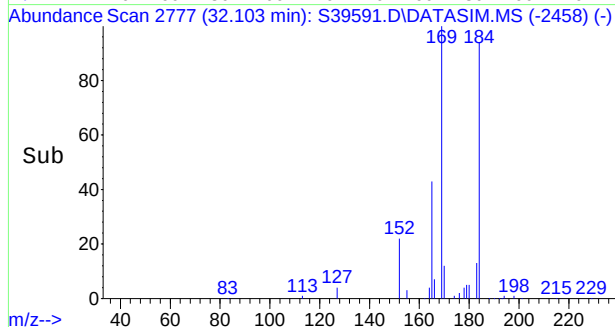
Tgt Ion:170 Resp: 4235239
Ion Ratio Lower Upper
170 100
155 151.9 87.4 131.0#





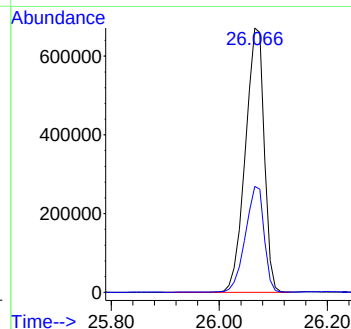
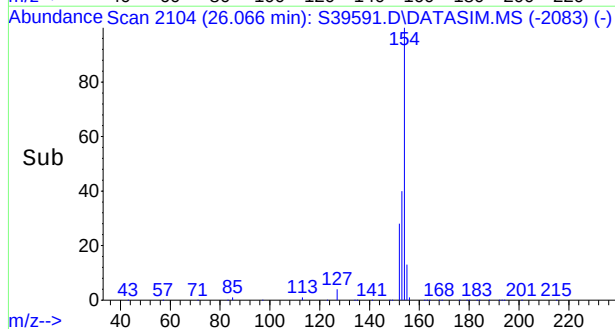
#57
C4-Naphthalenes
Concen: 13579.929 ng/mL m
RT: 32.103 min Scan# 2777
Delta R.T. 0.023 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

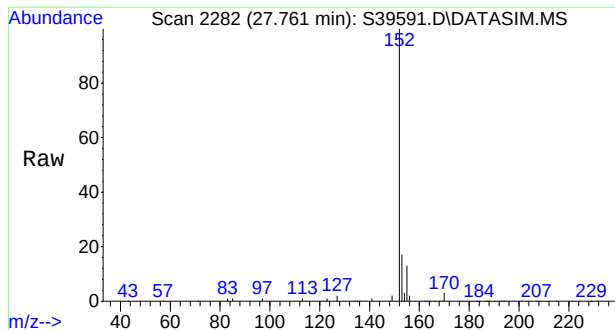
Tgt Ion:184 Resp: 1211361
Ion Ratio Lower Upper
184 100
169 213.9 85.9 128.9#



#58
Biphenyl
Concen: 24236.129 ng/mL
RT: 26.066 min Scan# 2104
Delta R.T. -0.000 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

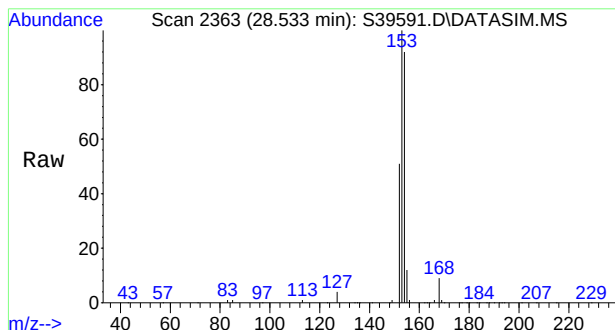
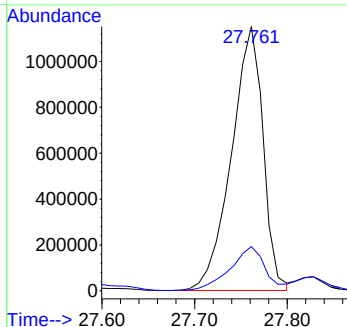
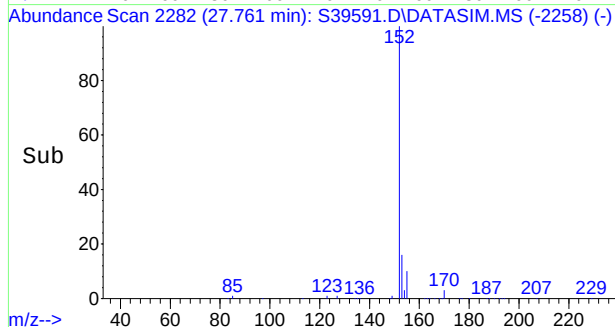
Tgt Ion:154 Resp: 1627974
Ion Ratio Lower Upper
154 100
153 39.9 31.0 46.6





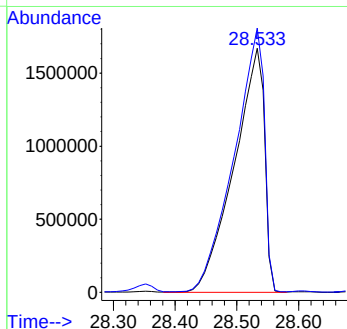
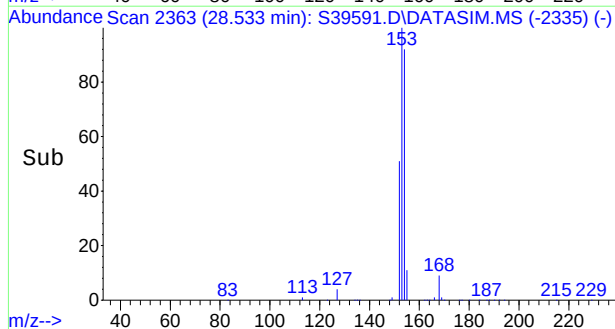
#59
 Acenaphthylene
 Concen: 32169.482 ng/mL
 RT: 27.761 min Scan# 2282
 Delta R.T. 0.029 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

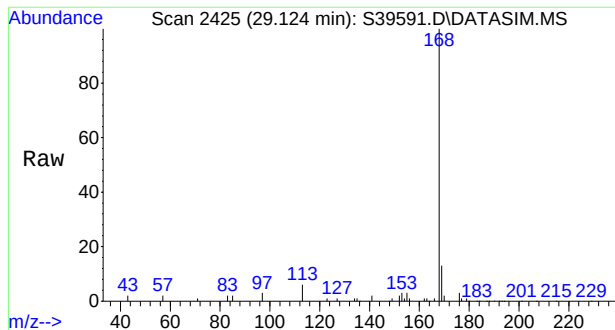
Tgt Ion	Ratio	Lower	Upper
152	100		
153	18.3	10.3	15.5#



#60
 Acenaphthene
 Concen: 117427.278 ng/mL
 RT: 28.533 min Scan# 2363
 Delta R.T. 0.067 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

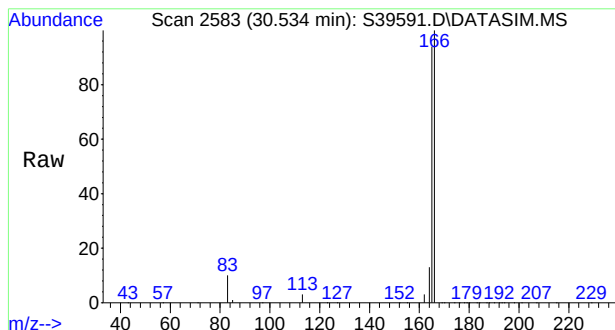
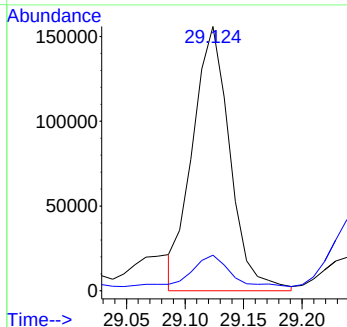
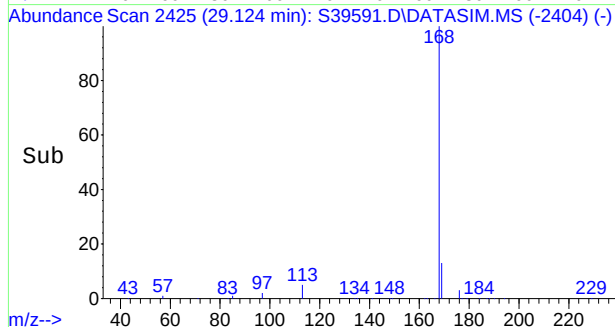
Tgt Ion	Ratio	Lower	Upper
154	100		
153	107.6	86.6	129.8





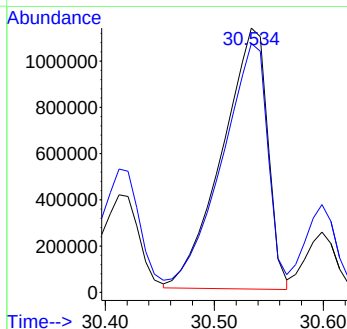
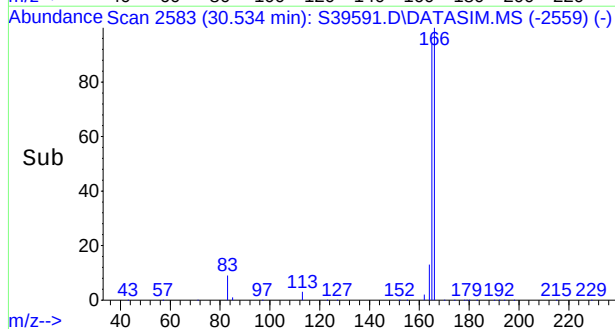
#61
 Dibenzofuran
 Concen: 4961.586 ng/mL m
 RT: 29.124 min Scan# 2425
 Delta R.T. -0.000 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

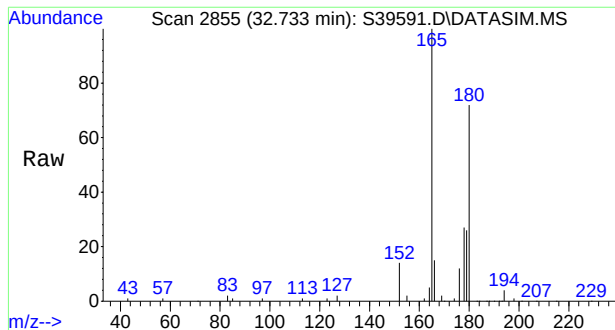
Tgt Ion:168 Resp: 346348
 Ion Ratio Lower Upper
 168 100
 169 15.0 10.4 15.6



#62
 Fluorene
 Concen: 56437.377 ng/mL
 RT: 30.534 min Scan# 2583
 Delta R.T. 0.040 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

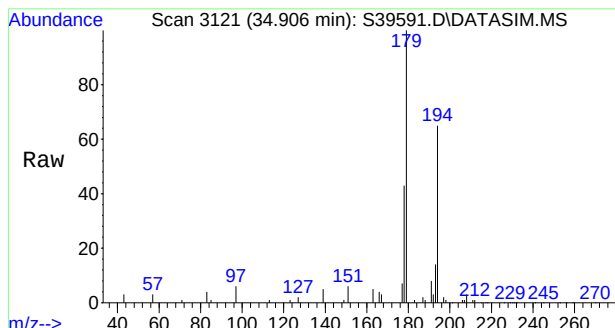
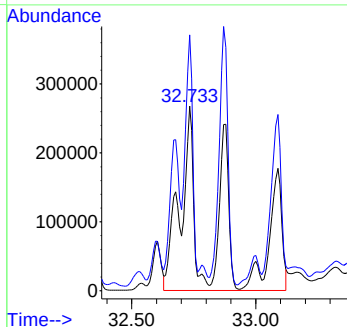
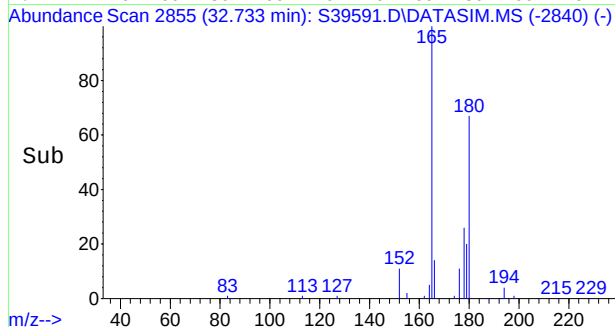
Tgt Ion:166 Resp: 3284076
 Ion Ratio Lower Upper
 166 100
 165 92.7 75.8 113.6





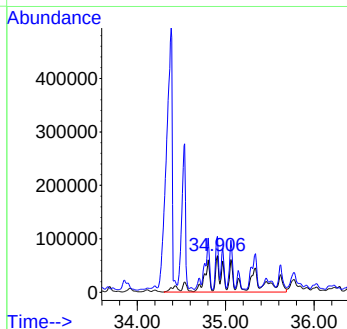
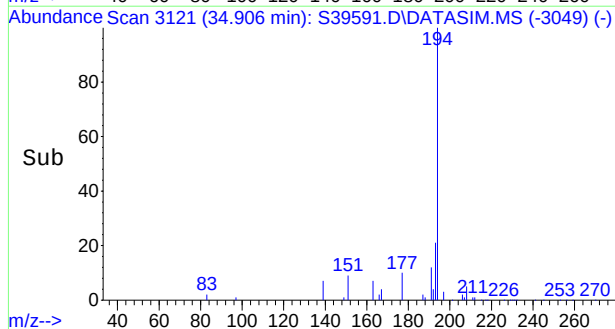
#63
C1-Fluorenes
Concen: 38643.499 ng/mL m
RT: 32.733 min Scan# 2855
Delta R.T. -0.120 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

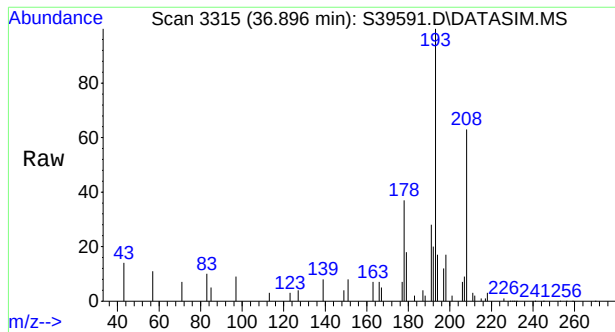
Tgt Ion:180 Resp: 2248655
Ion Ratio Lower Upper
180 100
165 143.7 139.8 209.6



#64
C2-Fluorenes
Concen: 22695.274 ng/mL m
RT: 34.906 min Scan# 3121
Delta R.T. -0.143 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

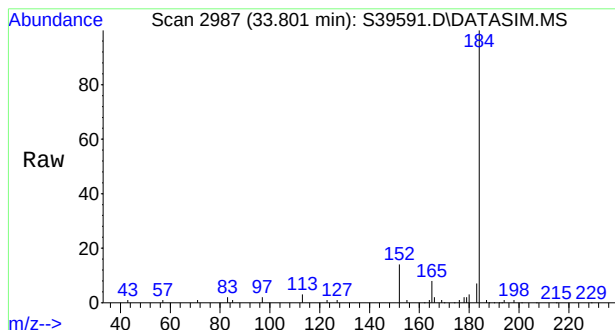
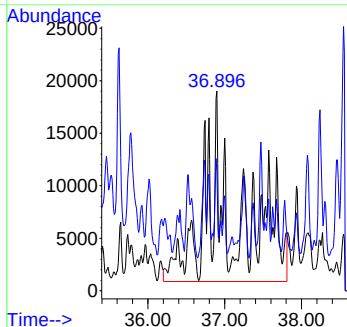
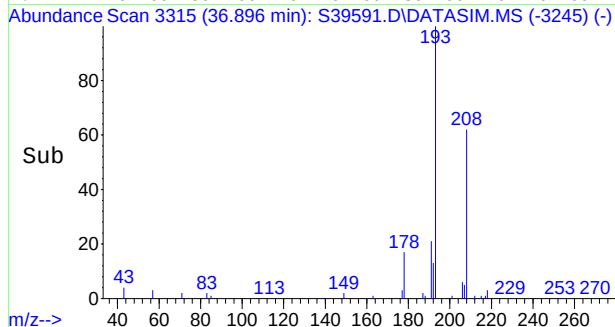
Tgt Ion:194 Resp: 1320632
Ion Ratio Lower Upper
194 100
179 386.2 127.9 191.9#





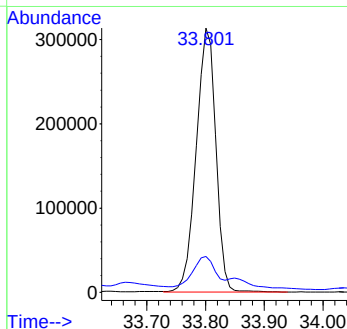
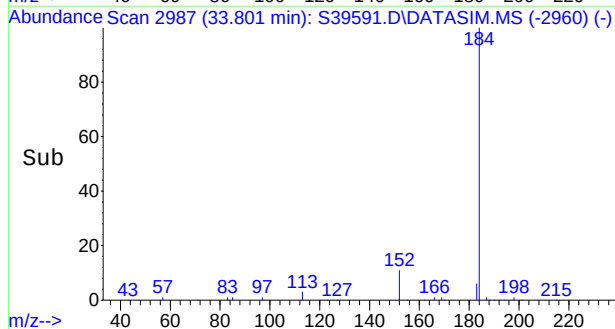
#65
C3-Fluorenes
Concen: 8027.103 ng/mL m
RT: 36.896 min Scan# 3315
Delta R.T. 0.011 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

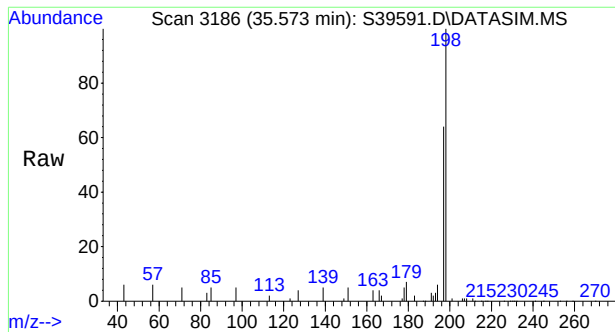
Tgt Ion:208 Resp: 467095
Ion Ratio Lower Upper
208 100
178 72.4 59.4 89.2



#66
Dibenzothiophene
Concen: 8932.127 ng/mL
RT: 33.801 min Scan# 2987
Delta R.T. 0.016 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

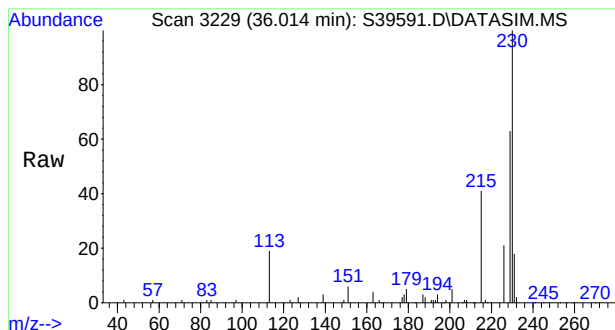
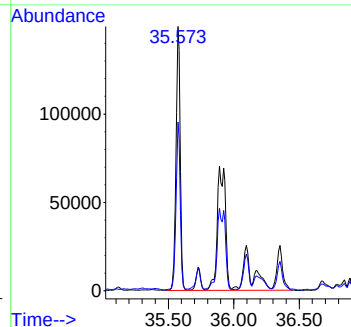
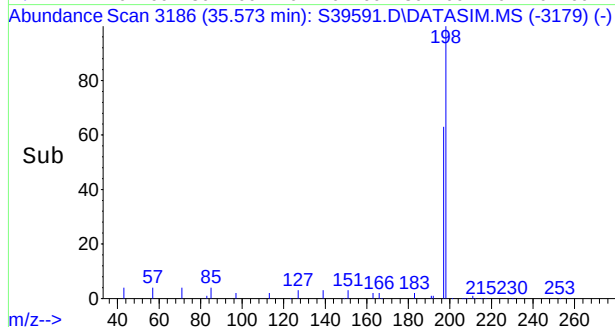
Tgt Ion:184 Resp: 726212
Ion Ratio Lower Upper
184 100
152 12.8 8.4 12.6#





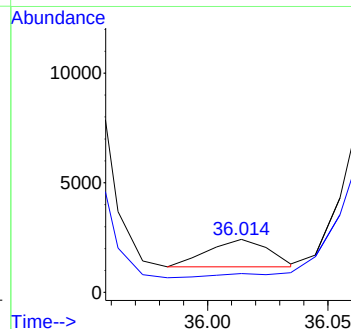
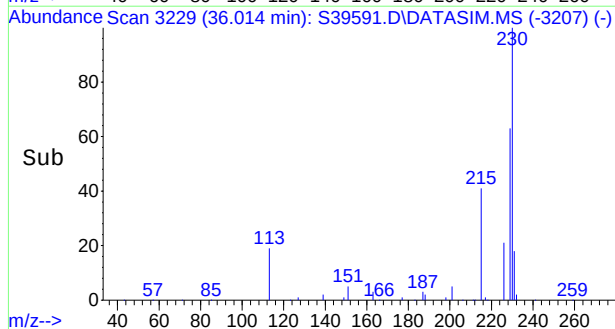
#67
 C1-Dibenzothiophenes (unadj)
 Concen: 10803.968 ng/mL m
 RT: 35.573 min Scan# 3186
 Delta R.T. 0.011 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

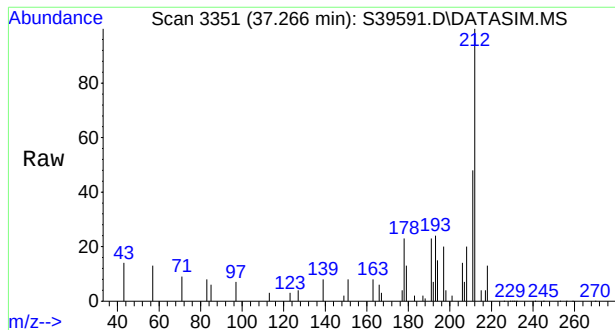
Tgt Ion	Ratio	Lower	Upper
198	100		
197	70.3	51.9	77.9



#68
 C1-Dibenzothiophenes (OTP)
 Concen: 26.825 ng/mL m
 RT: 36.014 min Scan# 3229
 Delta R.T. 0.029 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

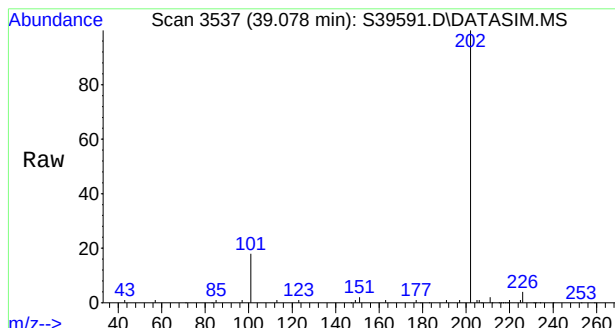
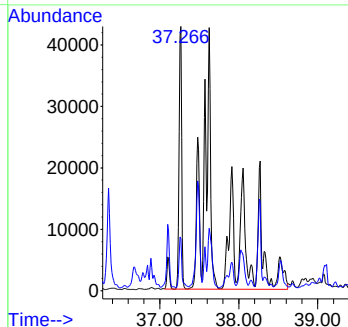
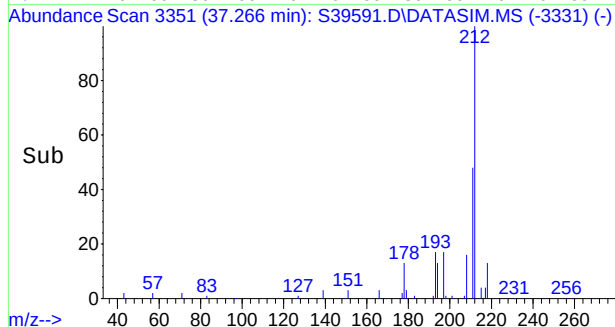
Tgt Ion	Ratio	Lower	Upper
198	100		
197	11.7	10.6	15.8





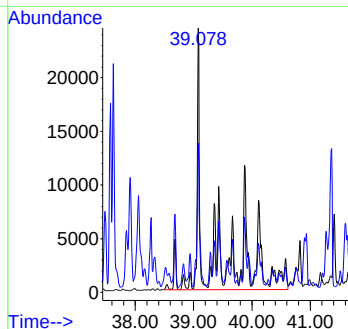
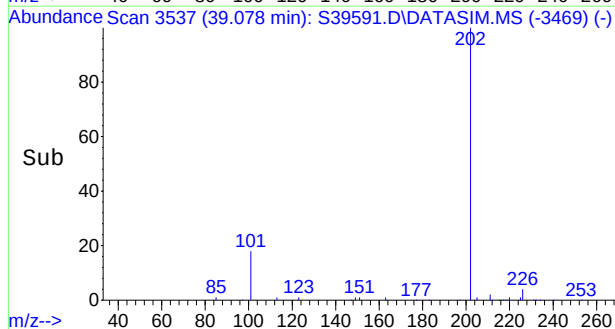
#69
 C2-Dibenzothiophenes
 Concen: 7629.327 ng/mL m
 RT: 37.266 min Scan# 3351
 Delta R.T. -0.348 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

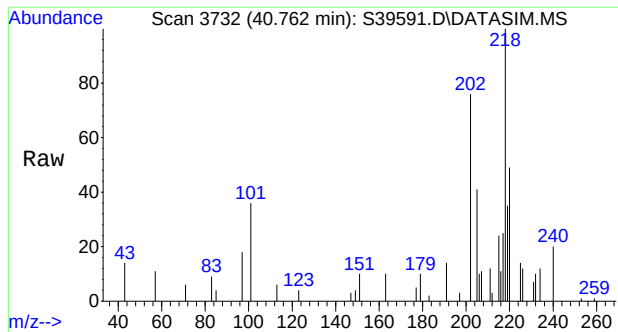
Tgt Ion:212 Resp: 620290
 Ion Ratio Lower Upper
 212 100
 197 42.6 20.1 30.1#



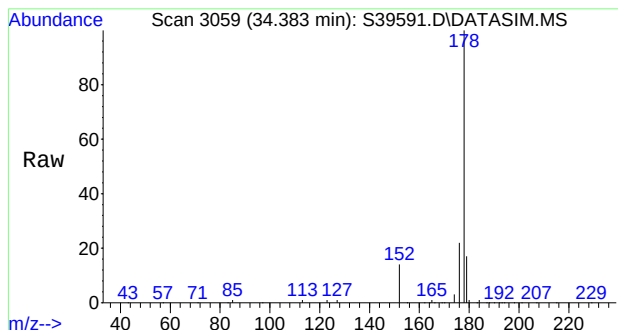
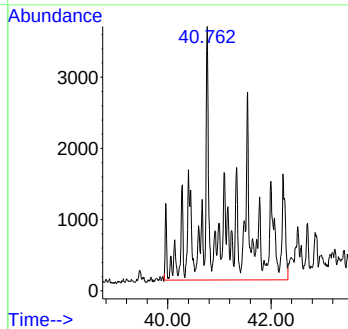
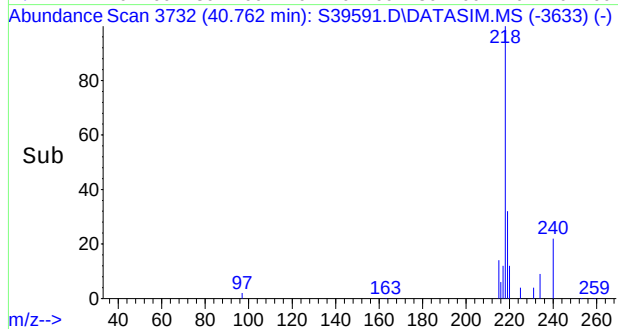
#70
 C3-Dibenzothiophenes
 Concen: 3455.933 ng/mL m
 RT: 39.078 min Scan# 3537
 Delta R.T. 0.020 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

Tgt Ion:226 Resp: 280979
 Ion Ratio Lower Upper
 226 100
 211 77.6 51.8 77.6

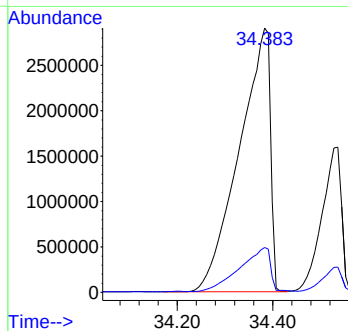
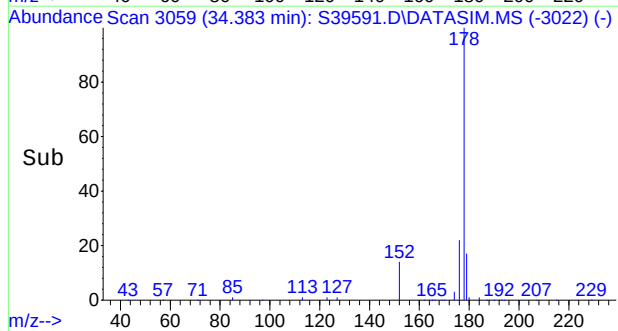


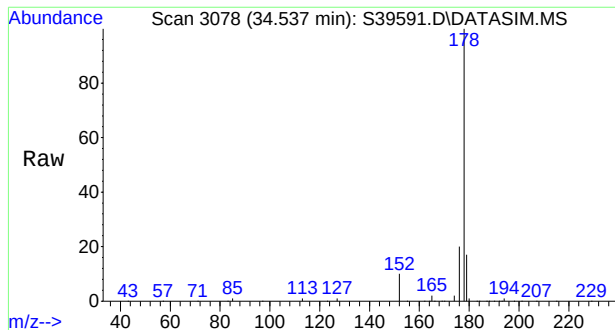


#71
C4-Dibenzothiophenes
Concen: 1047.767 ng/mL m
RT: 40.762 min Scan# 3732
Delta R.T. 0.004 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm
Tgt Ion:240 Resp: 85187



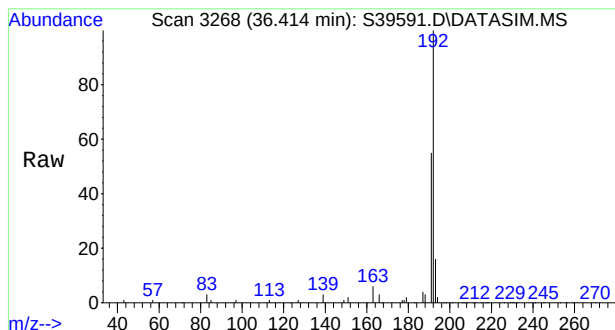
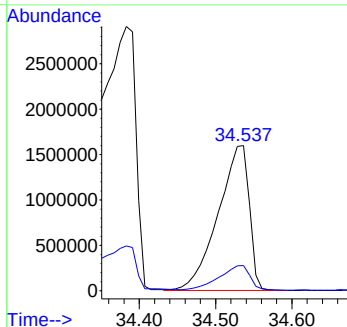
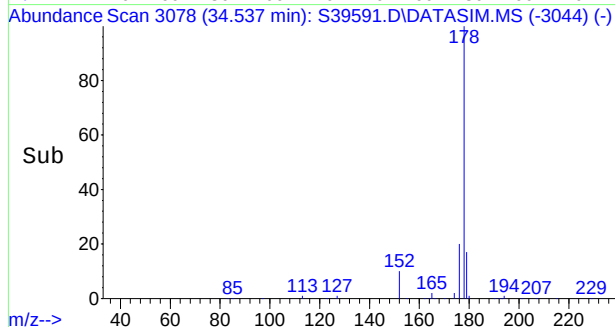
#72
Phenanthrene
Concen: 174402.352 ng/mL
RT: 34.383 min Scan# 3059
Delta R.T. 0.097 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm
Tgt Ion:178 Resp:13164049
Ion Ratio Lower Upper
178 100
179 16.5 11.9 17.9





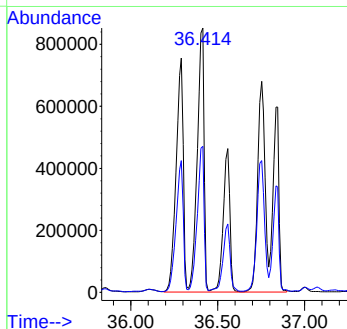
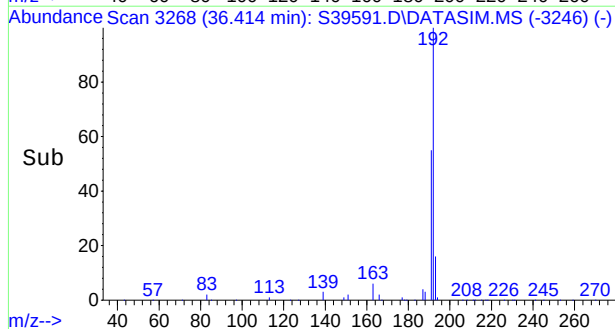
#73
 Anthracene
 Concen: 64011.959 ng/mL
 RT: 34.537 min Scan# 3078
 Delta R.T. 0.073 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

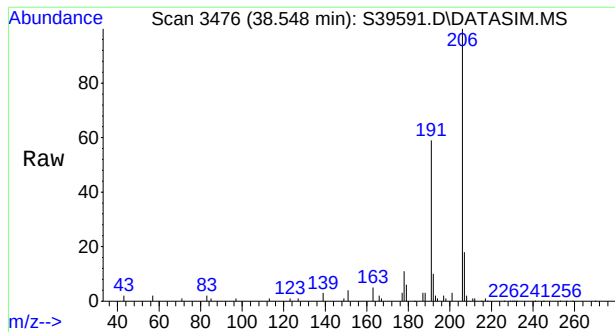
Tgt Ion:178 Resp: 4524364
 Ion Ratio Lower Upper
 178 100
 179 16.9 12.0 18.0



#74
 C1-Phenanthrenes/anthracenes
 Concen: 120448.223 ng/mL m
 RT: 36.414 min Scan# 3268
 Delta R.T. -0.287 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

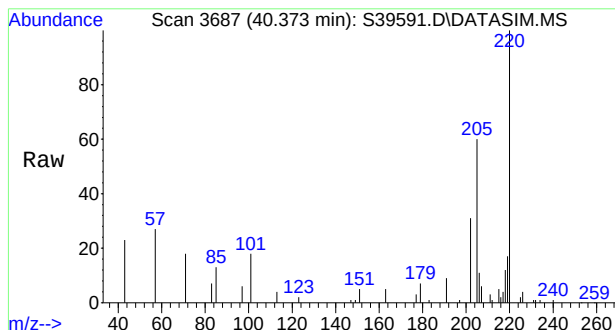
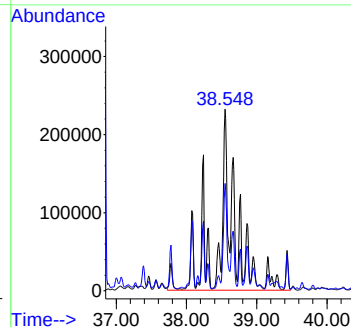
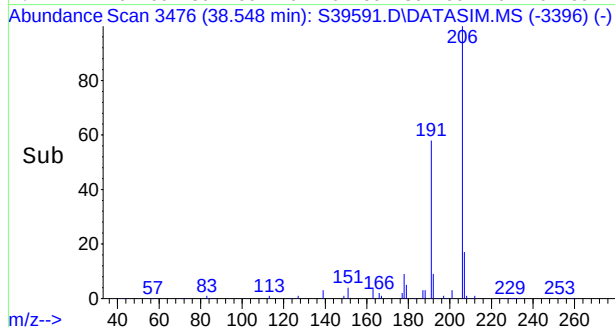
Tgt Ion:192 Resp: 9091542
 Ion Ratio Lower Upper
 192 100
 191 57.0 45.0 67.4





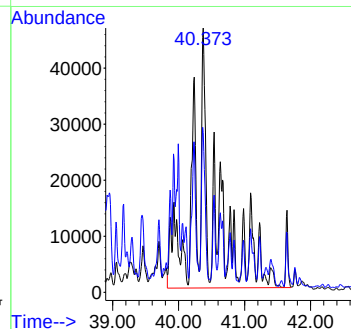
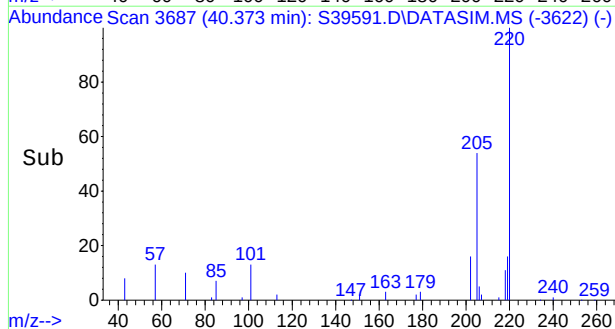
#75
C2-Phenanthrenes/anthracenes (unadj)
Concen: 47682.319 ng/mL m
RT: 38.548 min Scan# 3476
Delta R.T. 0.022 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

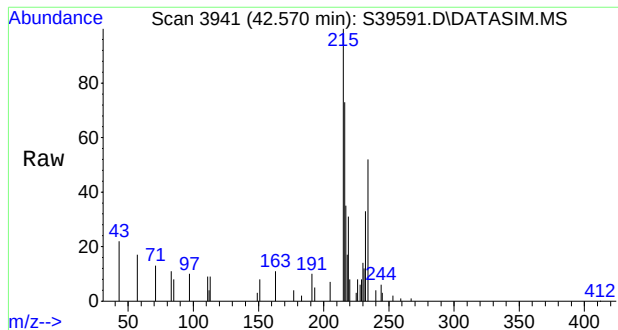
Tgt Ion:206 Resp: 3599105
Ion Ratio Lower Upper
206 100
191 59.6 47.0 70.4



#77
C3-Phenanthrenes/anthracenes
Concen: 12437.647 ng/mL m
RT: 40.373 min Scan# 3687
Delta R.T. 0.012 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

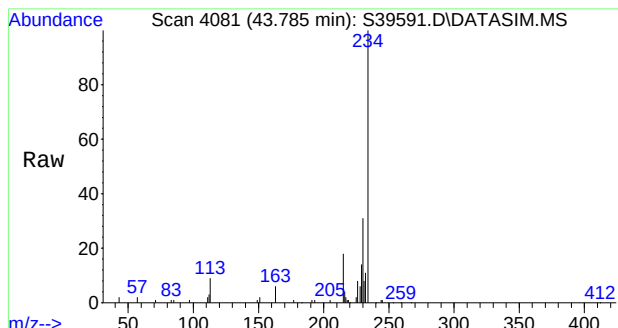
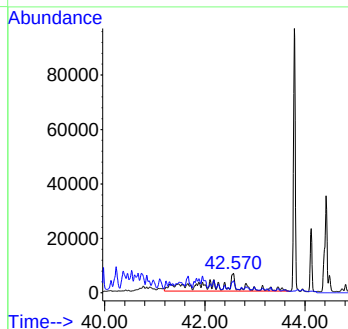
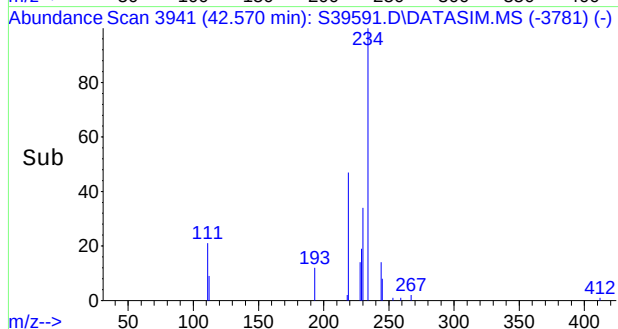
Tgt Ion:220 Resp: 938805
Ion Ratio Lower Upper
220 100
205 85.4 49.8 74.6#





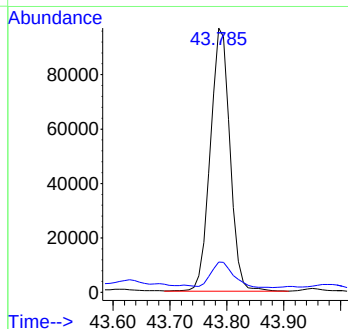
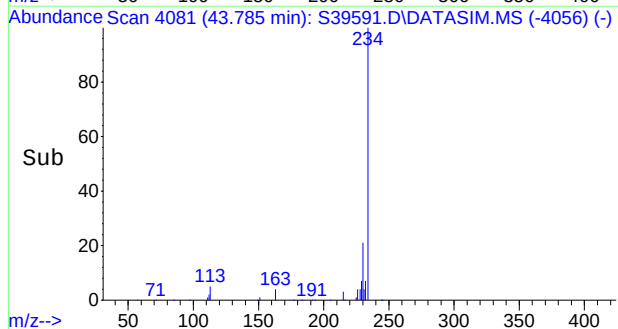
#78
C4-Phenanthrenes/anthracenes
Concen: 3044.902 ng/mL m
RT: 42.570 min Scan# 3941
Delta R.T. 0.030 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

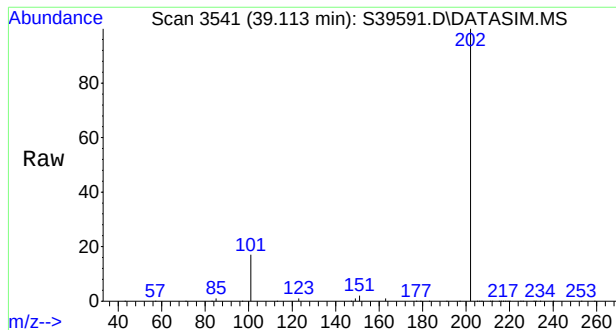
Tgt Ion	Ratio	Lower	Upper
234	100		
219	105.5	52.1	78.1#



#81
Benzo(b)naphtho(2,1-d)thiophene
Concen: 3295.013 ng/mL
RT: 43.785 min Scan# 4081
Delta R.T. 0.017 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

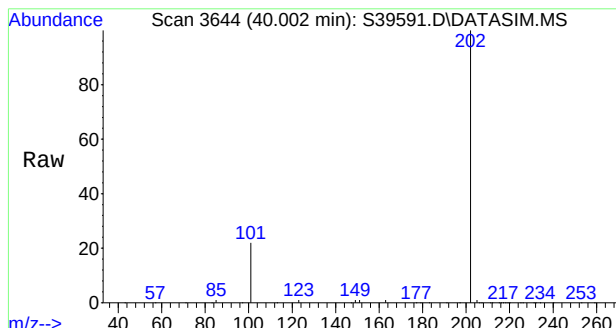
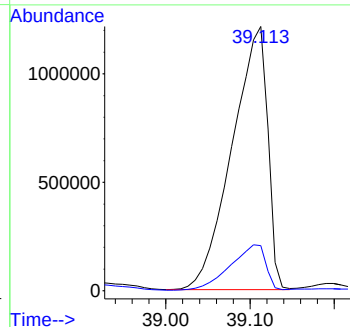
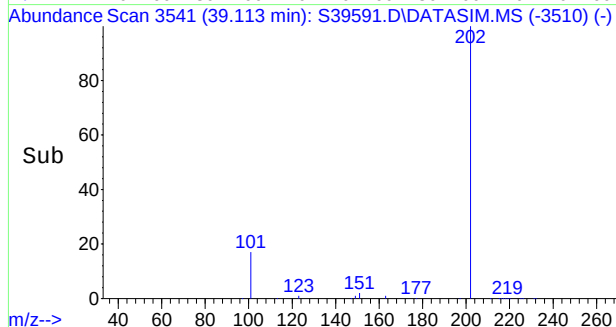
Tgt Ion	Ratio	Lower	Upper
234	100		
232	11.0	7.6	11.4





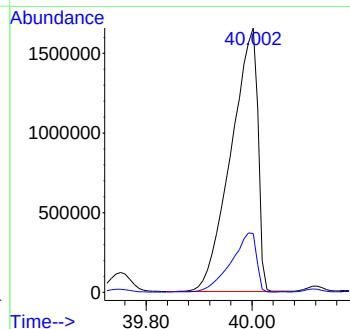
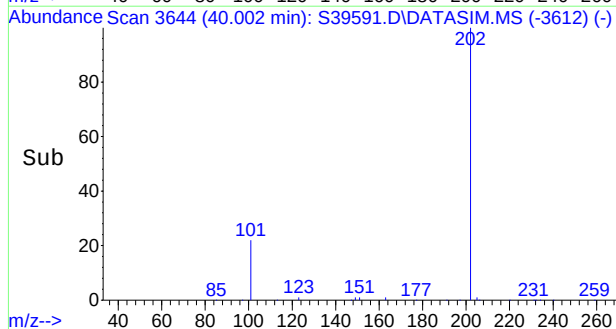
#86
 Fluoranthene
 Concen: 47401.623 ng/mL
 RT: 39.113 min Scan# 3541
 Delta R.T. 0.069 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

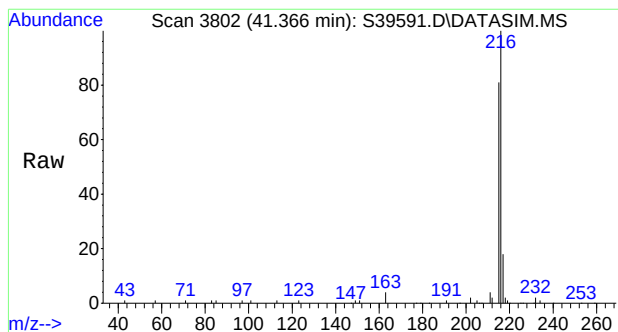
Tgt Ion:202 Resp: 3557668
 Ion Ratio Lower Upper
 202 100
 101 17.1 12.6 19.0



#87
 Pyrene
 Concen: 77557.098 ng/mL
 RT: 40.002 min Scan# 3644
 Delta R.T. 0.078 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

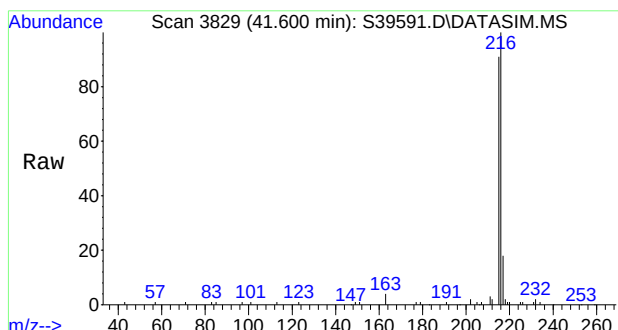
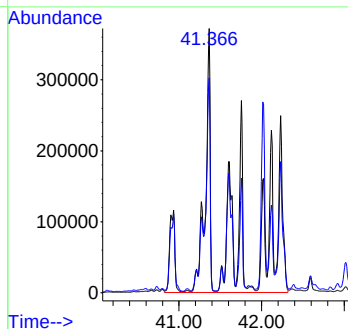
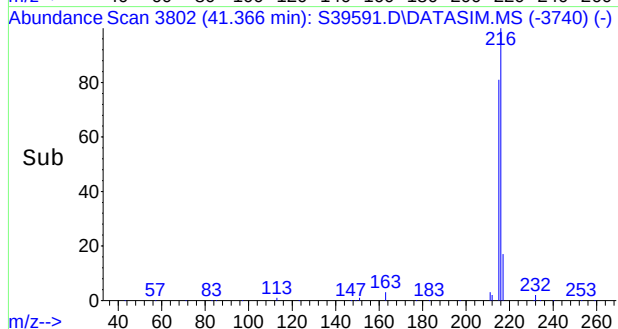
Tgt Ion:202 Resp: 5788109
 Ion Ratio Lower Upper
 202 100
 101 21.3 13.8 20.8#





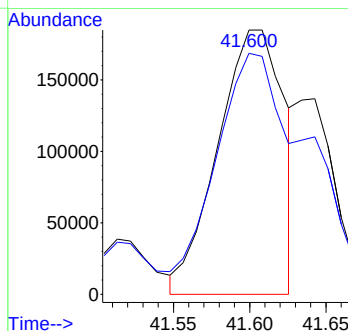
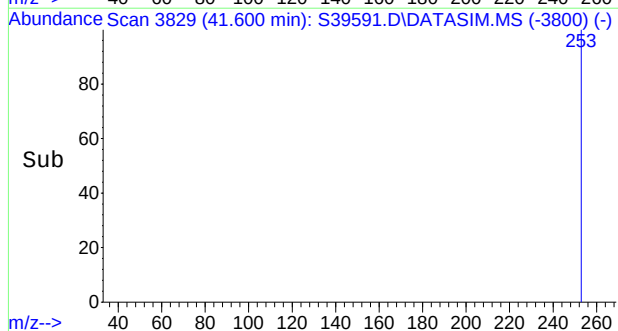
#88
C1-Fluoranthenes/pyrenes
Concen: 74120.545 ng/mL m
RT: 41.366 min Scan# 3802
Delta R.T. 0.038 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

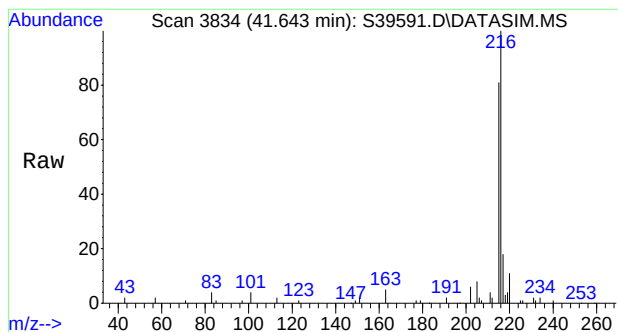
Tgt Ion:216 Resp: 5531638
Ion Ratio Lower Upper
216 100
215 87.6 74.9 112.3



#89
Benzo(b)fluorene
Concen: 7458.325 ng/mL m
RT: 41.600 min Scan# 3829
Delta R.T. 0.030 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

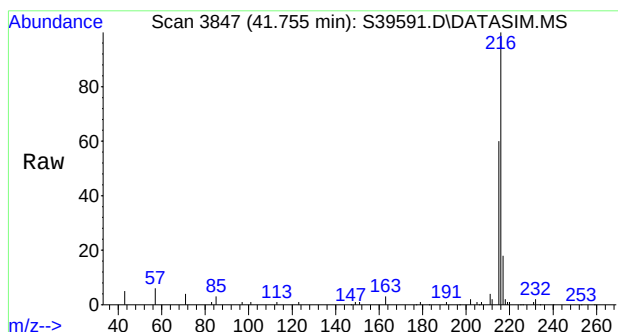
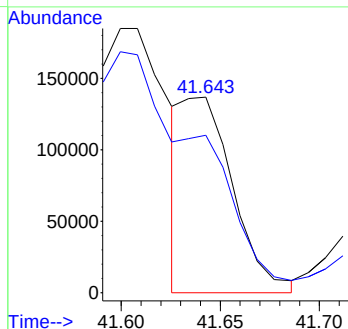
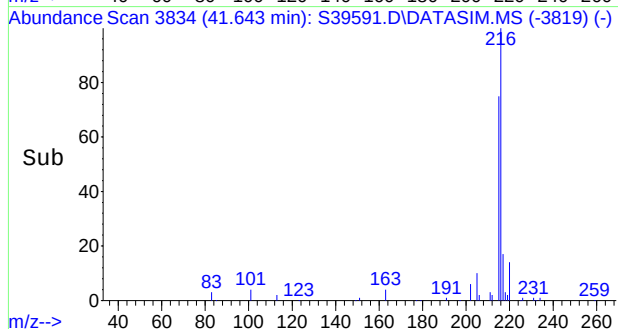
Tgt Ion:216 Resp: 556617
Ion Ratio Lower Upper
216 100
215 90.8 106.9 160.3#





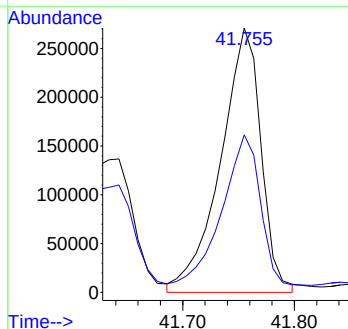
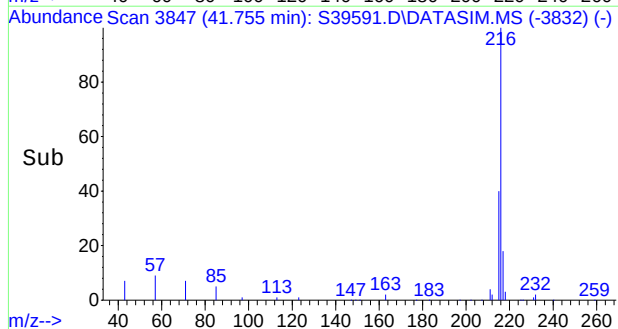
#90
Benzo(c)fluorene
Concen: 3265.323 ng/mL m
RT: 41.643 min Scan# 3834
Delta R.T. 0.030 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

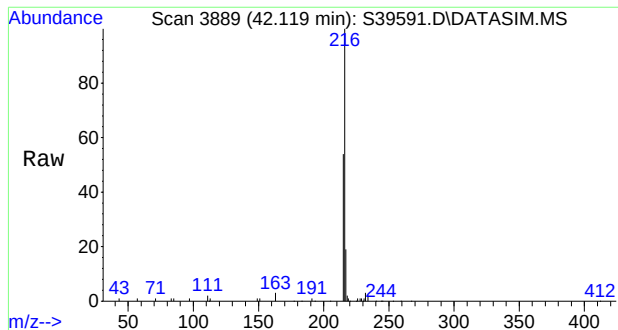
Tgt Ion:216 Resp: 243692
Ion Ratio Lower Upper
216 100
215 80.0 123.7 185.5#



#91
2-Methylpyrene
Concen: 9148.483 ng/mL m
RT: 41.755 min Scan# 3847
Delta R.T. 0.030 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

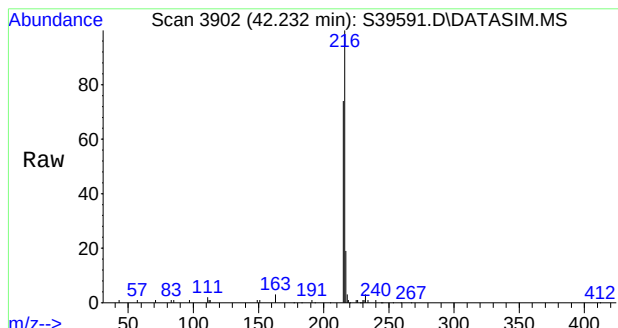
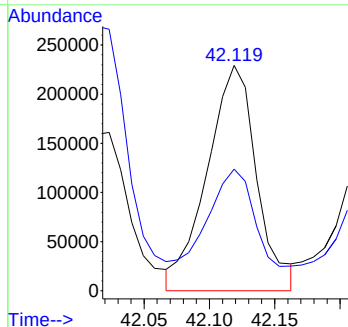
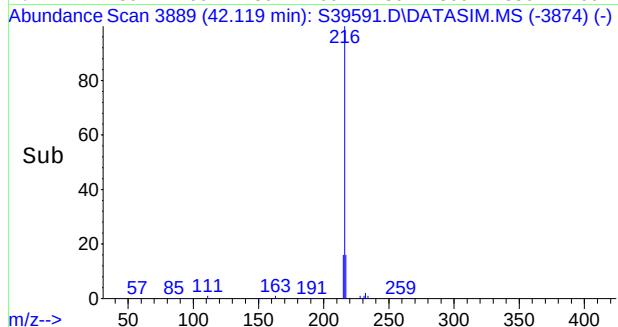
Tgt Ion:216 Resp: 682754
Ion Ratio Lower Upper
216 100
215 53.1 84.5 126.7#





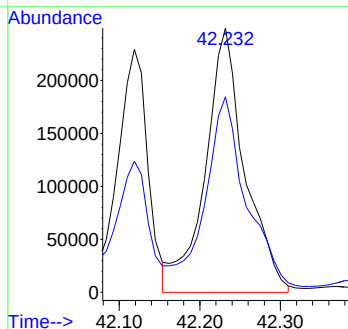
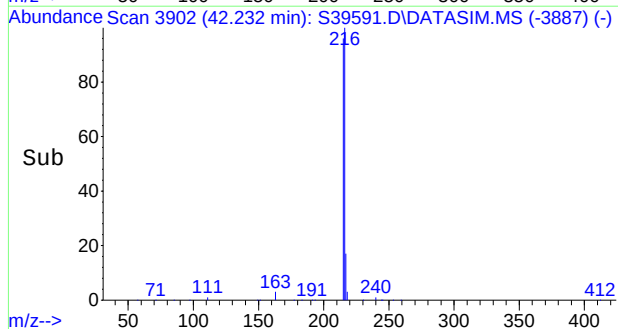
#92
 4-Methylpyrene
 Concen: 8113.542 ng/mL m
 RT: 42.119 min Scan# 3889
 Delta R.T. 0.030 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

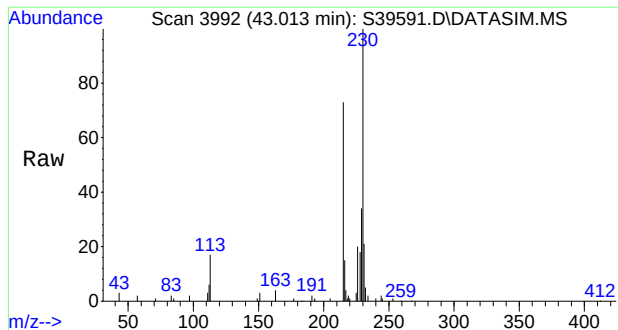
Tgt Ion:216 Resp: 605516
 Ion Ratio Lower Upper
 216 100
 215 54.1 57.4 86.0#



#93
 1-Methylpyrene
 Concen: 11405.757 ng/mL m
 RT: 42.232 min Scan# 3902
 Delta R.T. 0.030 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

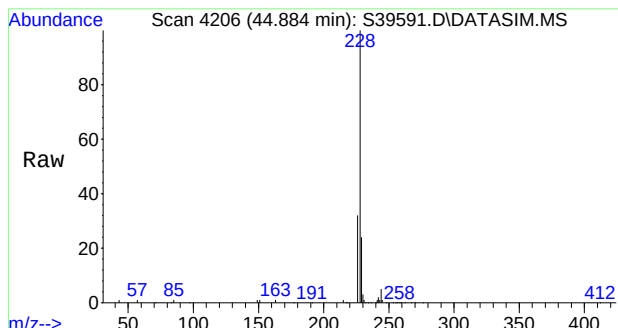
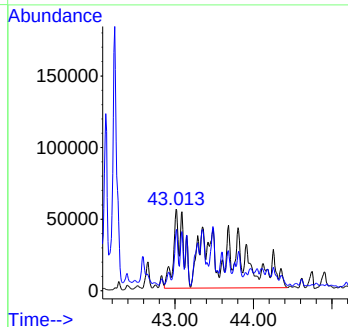
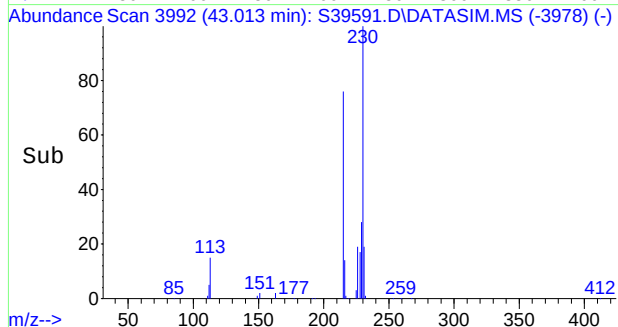
Tgt Ion:216 Resp: 851215
 Ion Ratio Lower Upper
 216 100
 215 72.3 76.0 114.0#





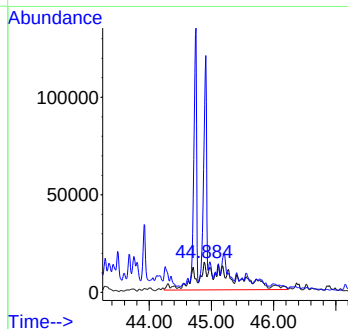
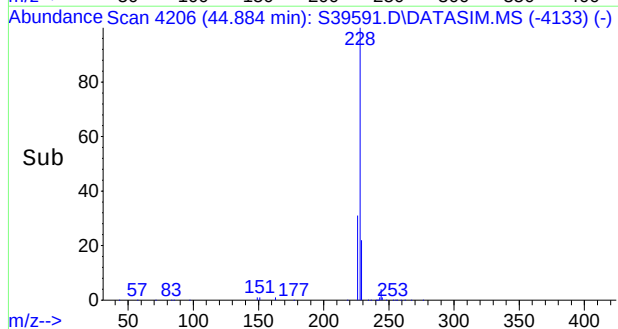
#94
 C2-Fluoranthenes/pyrenes
 Concen: 24390.297 ng/mL m
 RT: 43.013 min Scan# 3992
 Delta R.T. -0.126 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

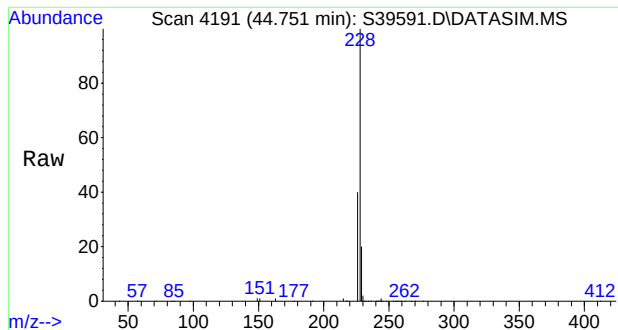
Tgt Ion:230 Resp: 1820255
 Ion Ratio Lower Upper
 230 100
 215 79.8 103.6 155.4#



#95
 C3-Fluoranthenes/pyrenes
 Concen: 7534.139 ng/mL m
 RT: 44.884 min Scan# 4206
 Delta R.T. -0.270 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

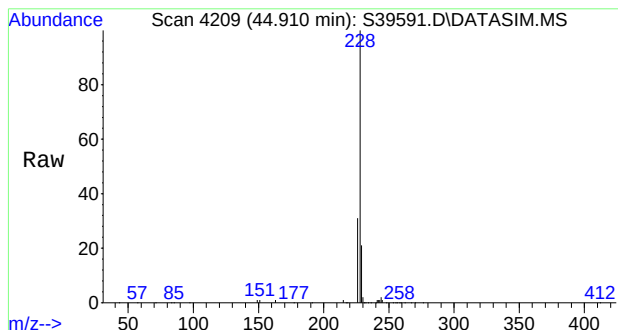
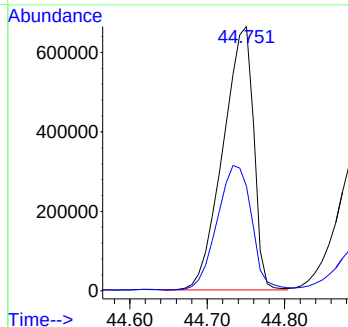
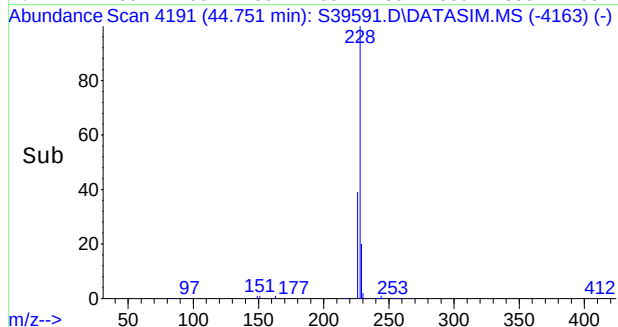
Tgt Ion:244 Resp: 562275
 Ion Ratio Lower Upper
 244 100
 229 251.2 85.9 128.9#





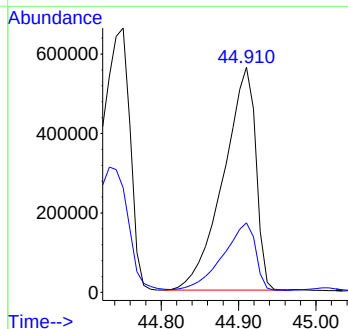
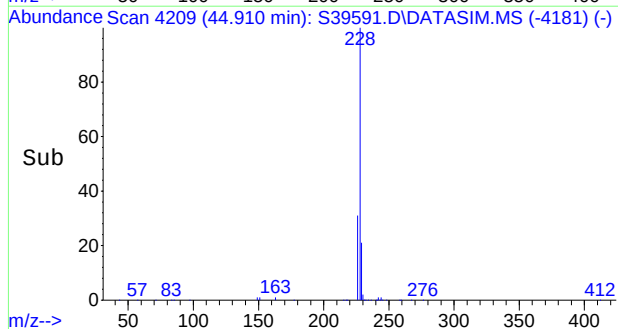
#97
Benz(a)anthracene
Concen: 28395.732 ng/mL
RT: 44.751 min Scan# 4191
Delta R.T. 0.044 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

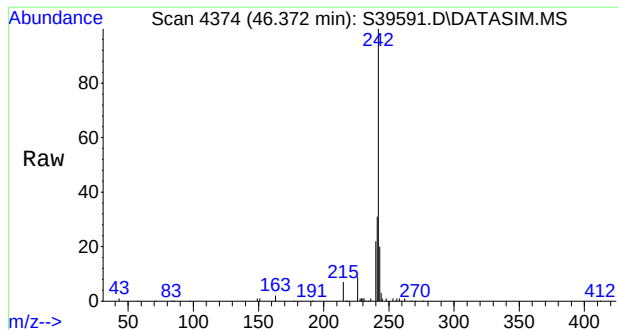
Tgt Ion:228 Resp: 1827839
Ion Ratio Lower Upper
228 100
226 53.2 21.1 31.7#



#98
Chrysene/triphenylene
Concen: 26569.843 ng/mL
RT: 44.910 min Scan# 4209
Delta R.T. 0.044 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

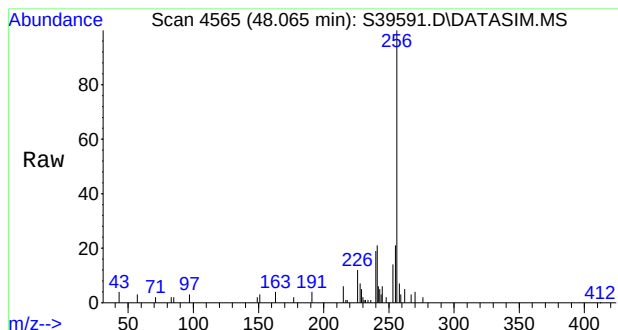
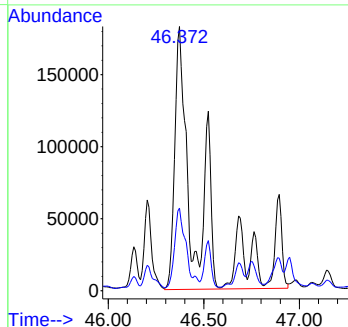
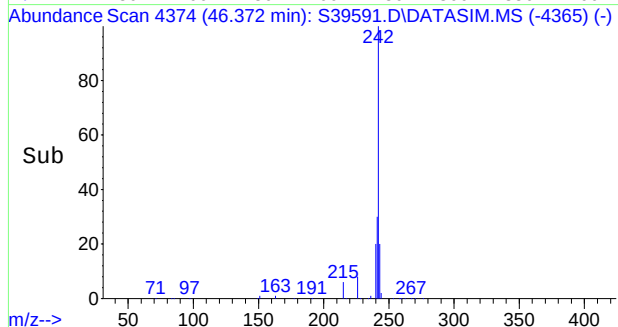
Tgt Ion:228 Resp: 1636759
Ion Ratio Lower Upper
228 100
226 30.4 23.4 35.0





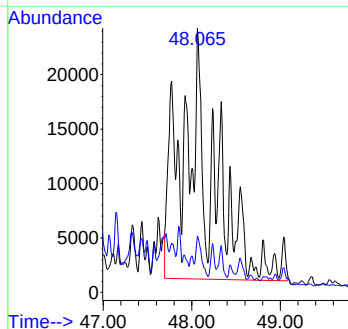
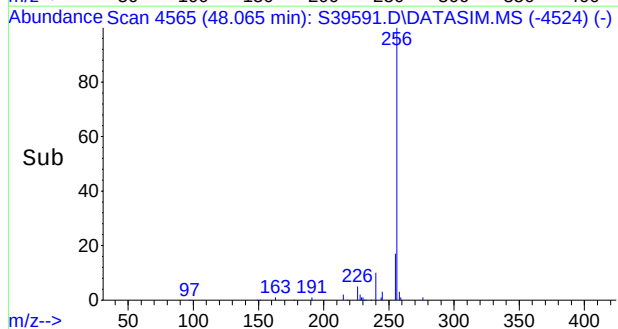
#99
 C1-Benz(a)anthracenes/chrysenes
 Concen: 23692.573 ng/mL m
 RT: 46.372 min Scan# 4374
 Delta R.T. 0.023 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

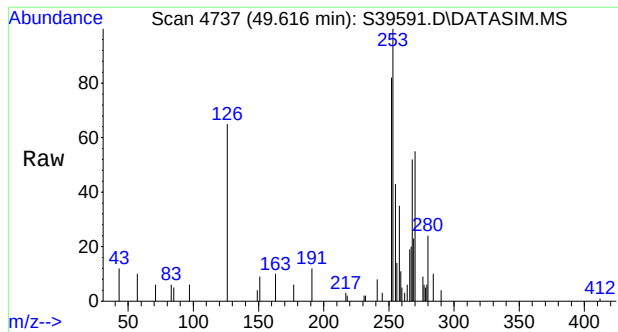
Tgt Ion:242 Resp: 1459513
 Ion Ratio Lower Upper
 242 100
 241 39.0 34.2 51.2



#100
 C2-Benz(a)anthracenes/chrysenes
 Concen: 8951.070 ng/mL m
 RT: 48.065 min Scan# 4565
 Delta R.T. -0.361 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

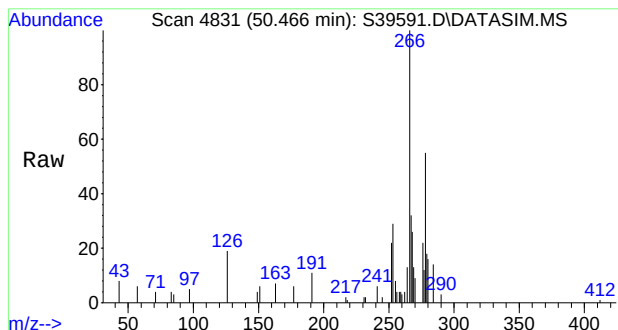
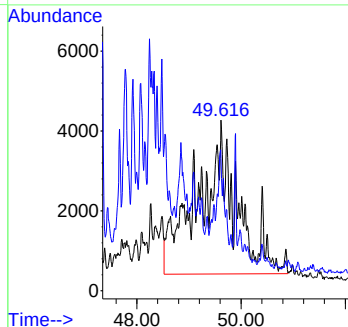
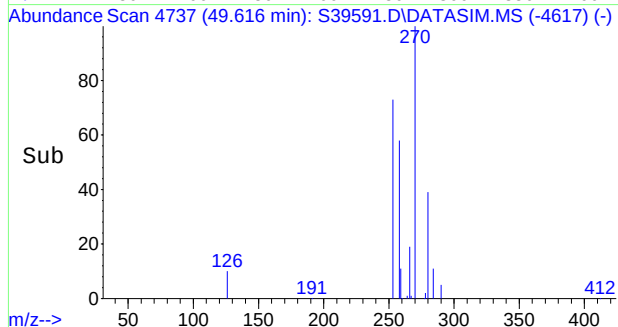
Tgt Ion:256 Resp: 551405
 Ion Ratio Lower Upper
 256 100
 241 34.5 27.4 41.2





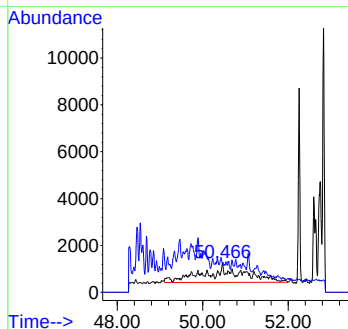
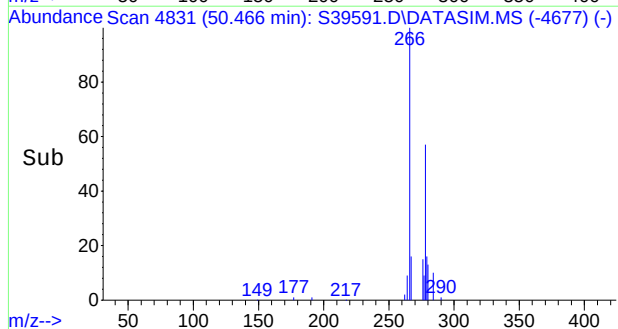
#101
 C3-Benz(a)anthracenes/chrysenes
 Concen: 3146.271 ng/mL m
 RT: 49.616 min Scan# 4737
 Delta R.T. -1.242 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

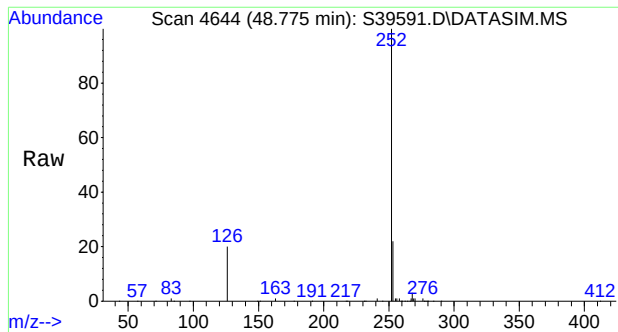
Tgt Ion	Ratio	Lower	Upper
270	100		
255	77.8	37.6	56.4#



#102
 C4-Benz(a)anthracenes/chrysenes
 Concen: 780.541 ng/mL m
 RT: 50.466 min Scan# 4831
 Delta R.T. -0.482 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

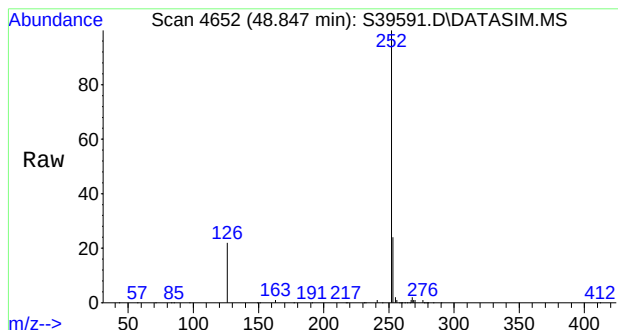
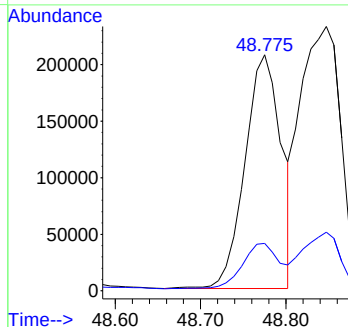
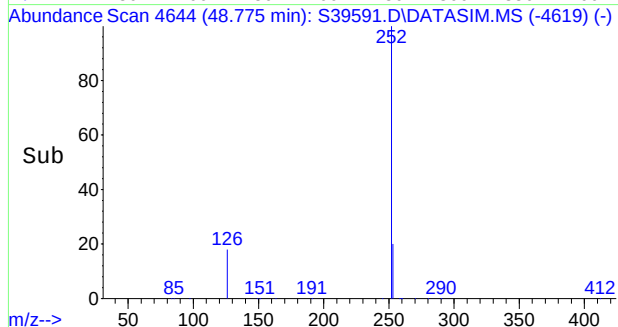
Tgt Ion	Ratio	Lower	Upper
284	100		
269	227.9	66.3	99.5#





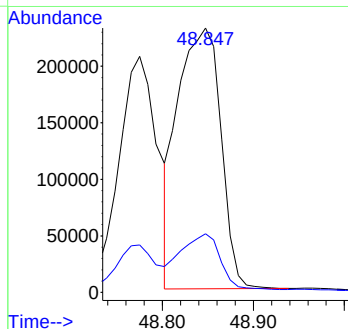
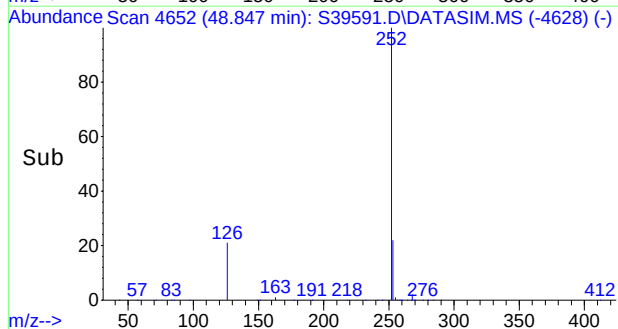
#103
 Benzo(b)fluoranthene
 Concen: 8643.741 ng/mL
 RT: 48.775 min Scan# 4644
 Delta R.T. 0.027 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

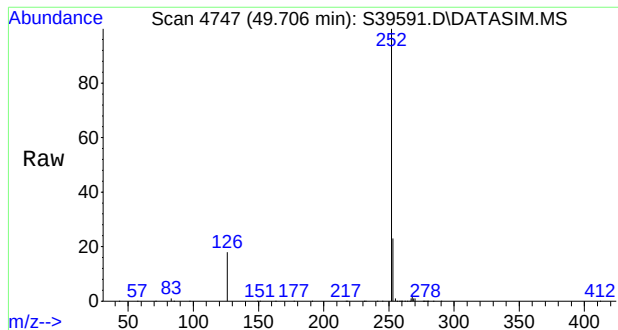
Tgt Ion:252 Resp: 613235
 Ion Ratio Lower Upper
 252 100
 126 20.0 15.5 23.3



#104
 Benzo(j/k)fluoranthene
 Concen: 10536.364 ng/mL
 RT: 48.847 min Scan# 4652
 Delta R.T. 0.018 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

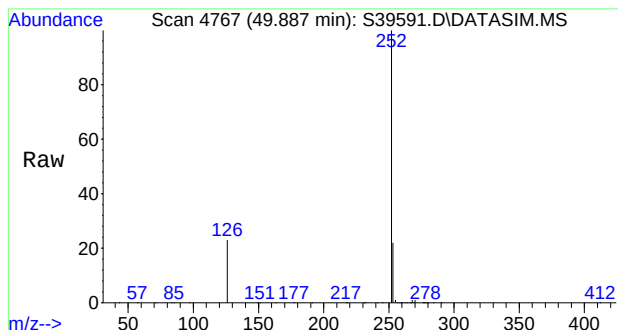
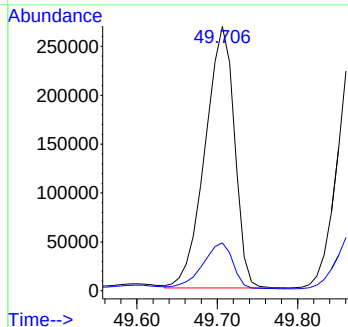
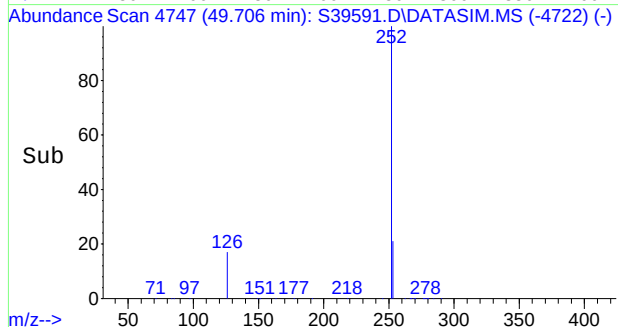
Tgt Ion:252 Resp: 757501
 Ion Ratio Lower Upper
 252 100
 126 20.0 16.6 25.0





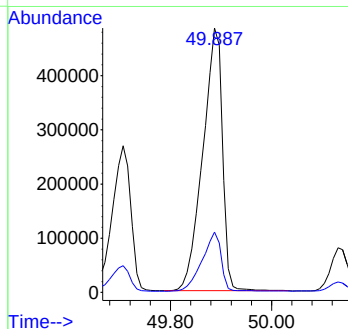
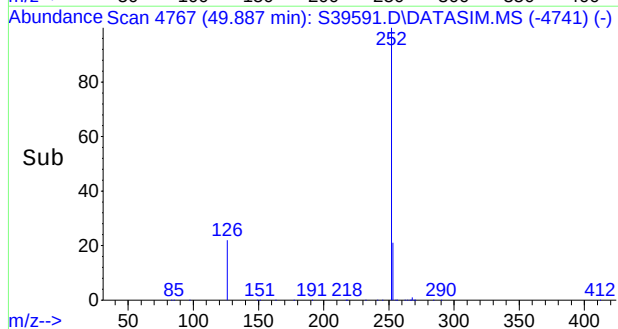
#105
Benzo(e)pyrene
Concen: 9973.641 ng/mL
RT: 49.706 min Scan# 4747
Delta R.T. 0.027 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

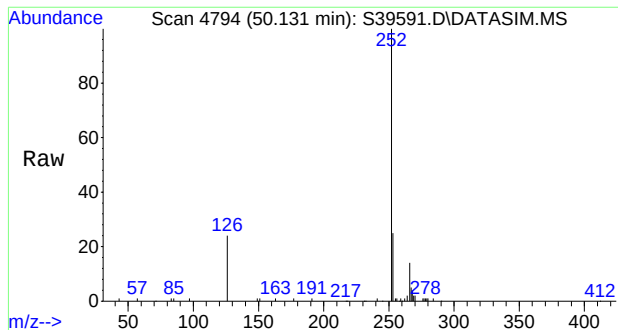
Tgt Ion:252 Resp: 679107
Ion Ratio Lower Upper
252 100
126 18.3 14.0 21.0



#106
Benzo(a)pyrene
Concen: 19469.835 ng/mL
RT: 49.887 min Scan# 4767
Delta R.T. 0.036 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

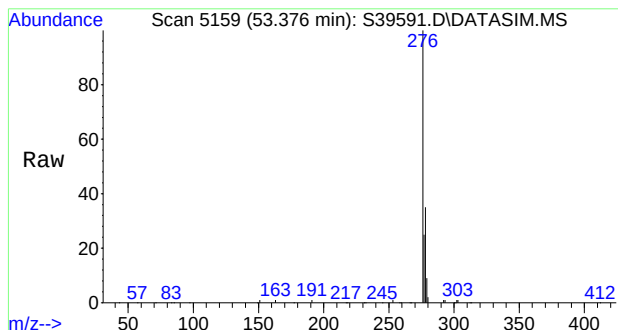
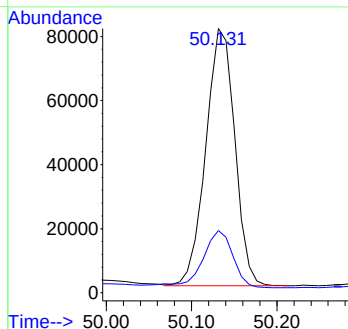
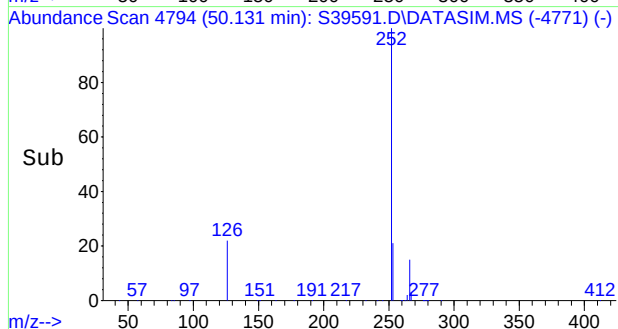
Tgt Ion:252 Resp: 1307224
Ion Ratio Lower Upper
252 100
126 21.8 16.0 24.0





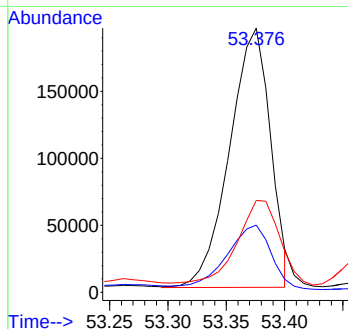
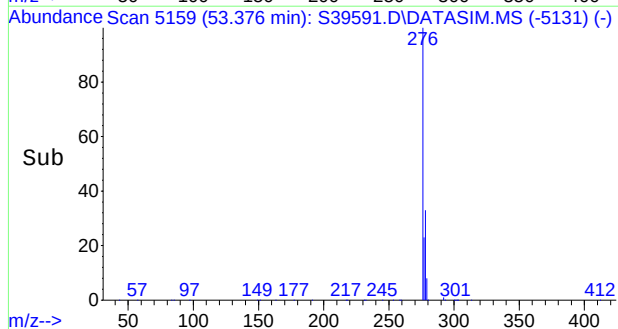
#107
Perylene
Concen: 2701.720 ng/mL
RT: 50.131 min Scan# 4794
Delta R.T. 0.009 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

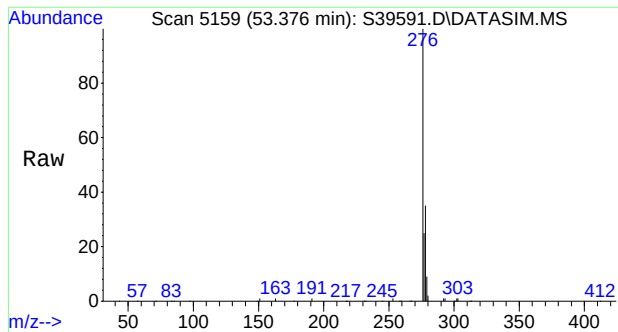
Tgt Ion	Ratio	Lower	Upper
252	100		
126	23.3	16.6	25.0



#108
Indeno(1,2,3-cd)pyrene
Concen: 5433.145 ng/mL m
RT: 53.376 min Scan# 5159
Delta R.T. 0.024 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

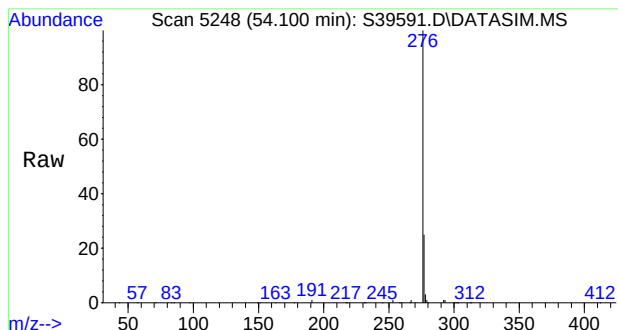
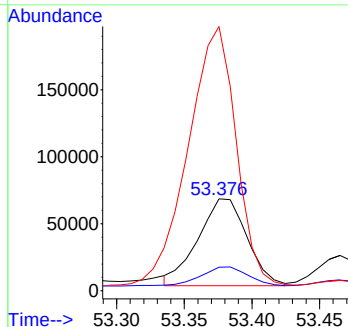
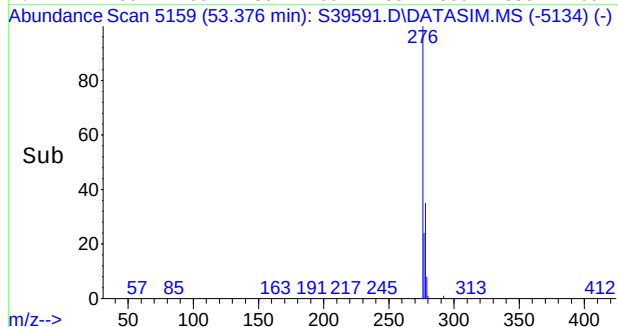
Tgt Ion	Ratio	Lower	Upper
276	100		
277	27.3	19.7	29.5
278	37.3	17.5	26.3#





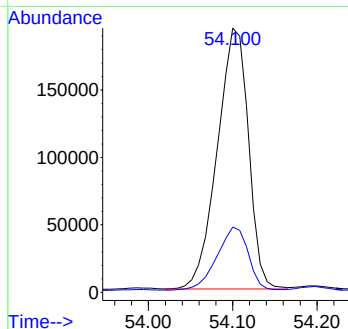
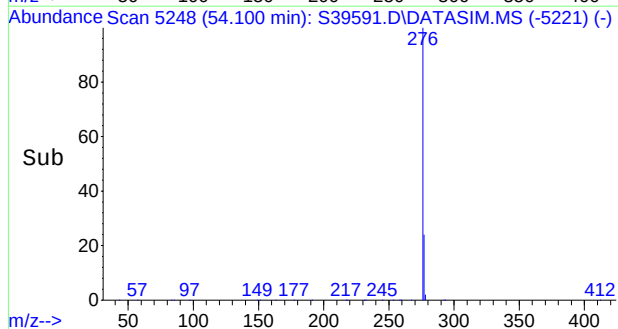
#109
 Dibenz(a,h)anthracene
 Concen: 2313.430 ng/mL m
 RT: 53.376 min Scan# 5159
 Delta R.T. -0.000 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

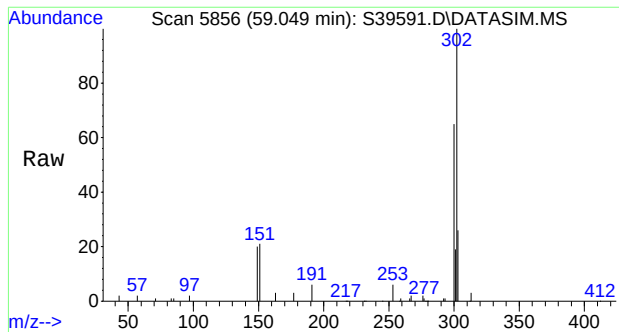
Tgt Ion	Ratio	Lower	Upper
278	100		
279	24.9	19.8	29.8
276	294.1	50.6	76.0#



#110
 Benzo(g,h,i)perylene
 Concen: 6340.100 ng/mL
 RT: 54.100 min Scan# 5248
 Delta R.T. 0.016 min
 Lab File: S39591.D
 Acq: 5 Jul 2016 7:07 pm

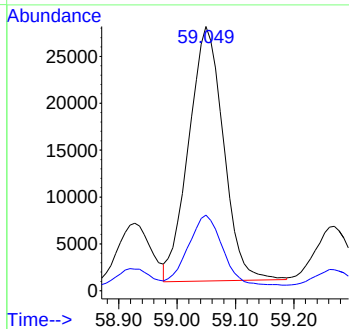
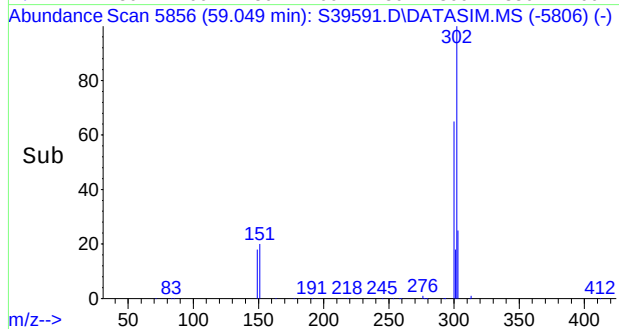
Tgt Ion	Ratio	Lower	Upper
276	100		
277	24.3	19.3	28.9





#111
Coronene
Concen: 1346.066 ng/mL
RT: 59.049 min Scan# 5856
Delta R.T. 0.008 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:300 Resp: 112282
Ion Ratio Lower Upper
300 100
301 26.9 21.0 31.4



Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39592.D
 Sample : mc46549-1,50x,137-P3B-MW101I-2016062
 Misc : OP47956,MSS1964,0.0152,,,2,50
 ALS Vial : 8 Sample Multiplier: 1
 Acq On : 5 Jul 2016 8:21 pm

Operator: sofyz

Quant Time: Jul 06 14:43:54 2016
 Quant Method : S:\1\methods\S160601-MAHPAH-A.M
 Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Acenaphthene-d10	28.342	162	29890	1020.00	ng/mL	0.00
System Monitoring Compounds						
2) Toluene-d8	9.462	98	936	21.37	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	2.14%	
3) Naphthalene-d8	21.389	136	1230	19.85	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	1.99%	
4) Phenanthrene-d10	34.189	188	845	19.14	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	1.91%	
5) Perylene-d12	50.050	264	667	18.54	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	1.85%	
Target Compounds						
						Qvalue
18] Ethylbenzene	12.319	91	46303	736.129	ng/mL	99
19] m,p-xylene	12.553	91	29861	582.523	ng/mL	99
21] o-Xylene	13.274	91	16150	307.745	ng/mL	98
24] 1,3,5-Trimethylbenzene	15.461	105	7607	142.914	ng/mL	97
27] 1,2,4-Trimethylbenzene	16.205	105	23208	419.429	ng/mL	94
29] 1,2,3-Trimethylbenzene	17.045	105	7488	134.853	ng/mL	98
51] Naphthalene	21.465	128	737944	9605.212	ng/mL	100
52] 2-Methylnaphthalene	24.160	142	251485	5067.786	ng/mL	100
53] 1-Methylnaphthalene	24.589	142	164637	3748.088	ng/mL	100
54] C1-Naphthalenes	24.160	142	419948m	5466.119	ng/mL	
55] C2-Naphthalenes	26.999	156	240082m	3124.951	ng/mL	
58] Biphenyl	26.056	154	31002	535.877	ng/mL	99
59] Acenaphthylene	27.733	152	61635	839.610	ng/mL	94
60] Acenaphthene	28.466	154	109684	2616.193	ng/mL	99
62] Fluorene	30.485	166	58594	1169.140	ng/mL	96
72] Phenanthrene	34.278	178	256843	3950.847	ng/mL	99
73] Anthracene	34.464	178	81620	1340.787	ng/mL	96
74] C1-Phenanthrenes/anthr...	36.352	192	164116m	2524.489	ng/mL	
86] Fluoranthene	39.043	202	64677	1000.547	ng/mL	100
87] Pyrene	39.916	202	105690	1644.290	ng/mL	95
97] Benz(a)anthracene	44.866	228	20061	361.849	ng/mL	96
98] Chrysene/triphenylene	44.866	228	28541	537.939	ng/mL	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

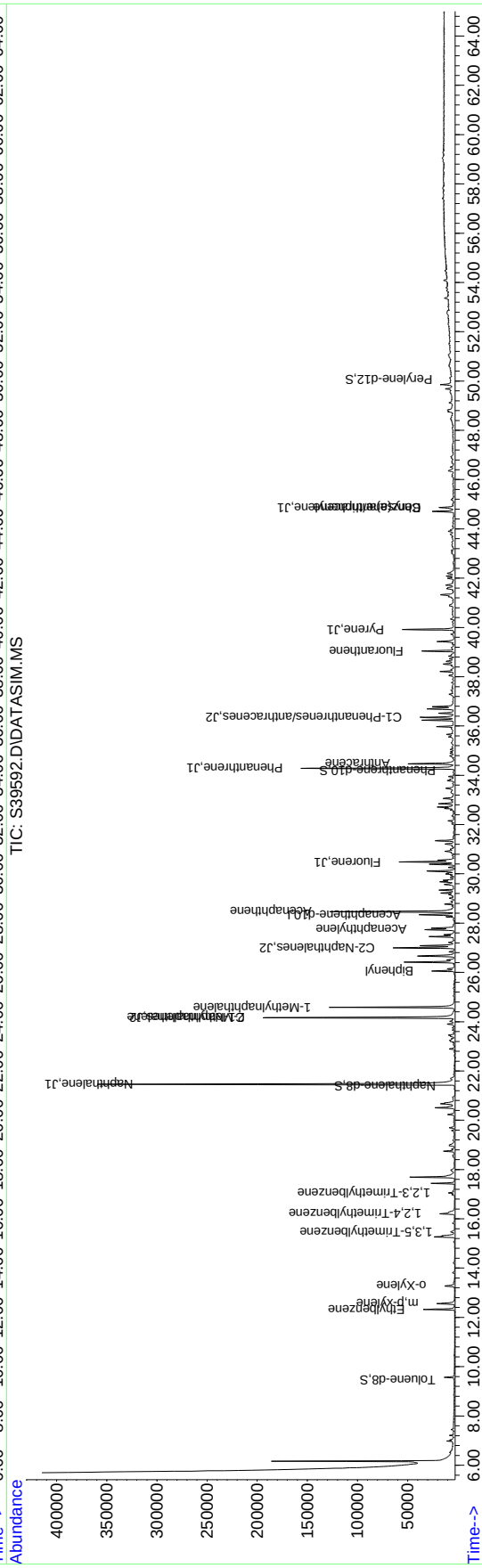
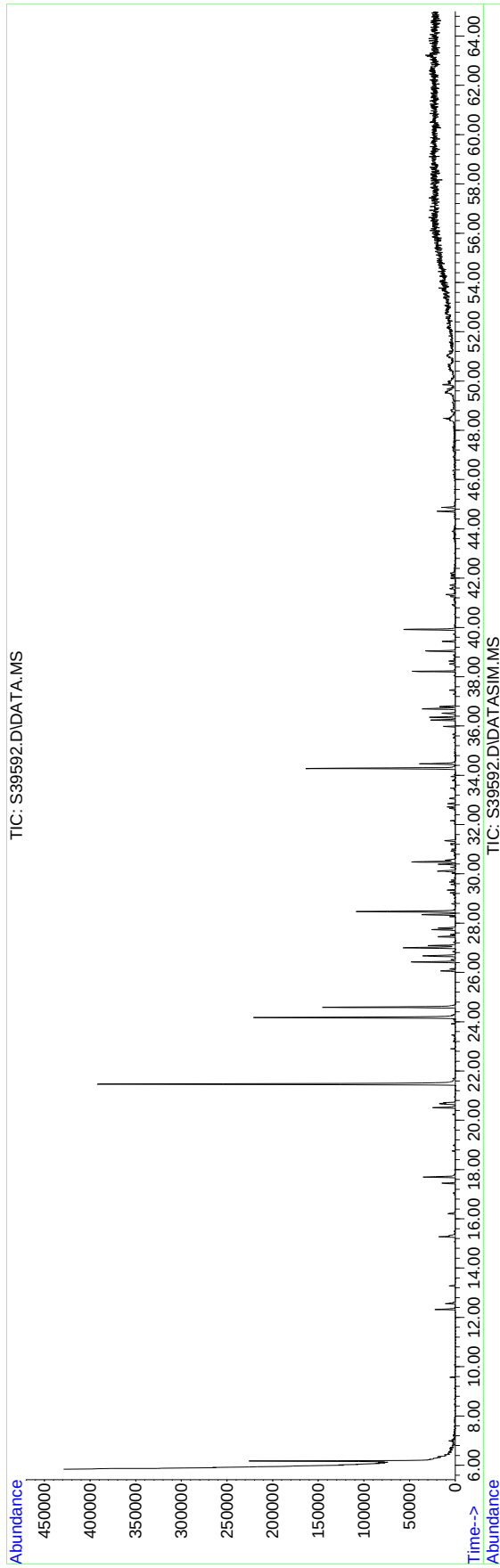
7.1.2

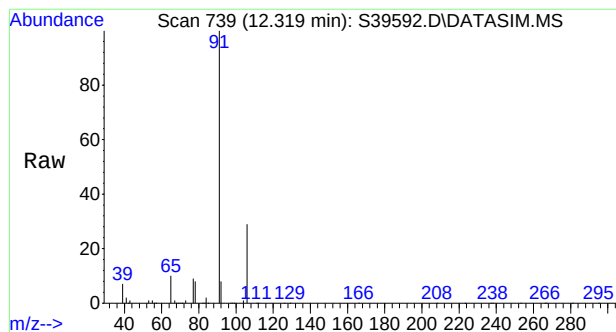
7

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39592.D
Sample : mc46549-1,50x,137-P3B-MW101I-2016062
Misc : OP47956,MSS1964,0.0152,,,2,50
ALS Vial : 8 Sample Multiplier: 1
Acq On : 5 Jul 2016 8:21 pm
Operator: sofyaz

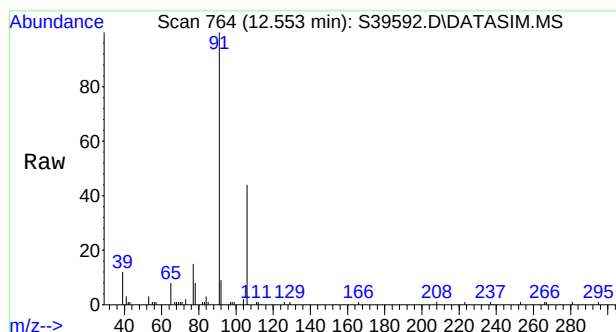
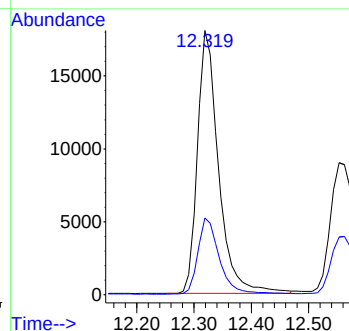
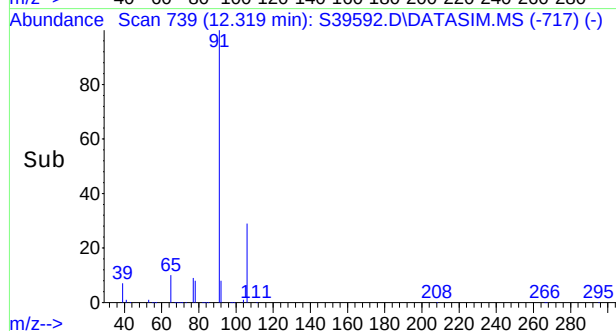
Quant Time: Jul 06 14:43:54 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM





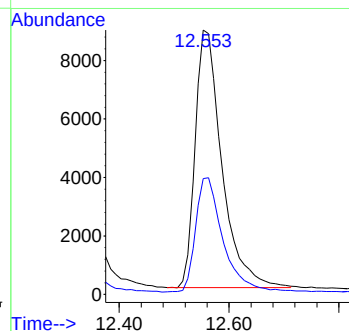
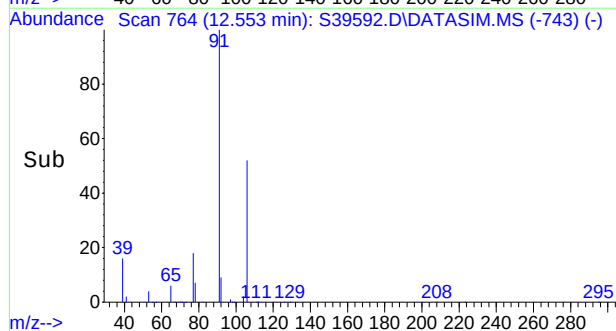
#18
Ethylbenzene
Concen: 736.129 ng/mL
RT: 12.319 min Scan# 739
Delta R.T. 0.009 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

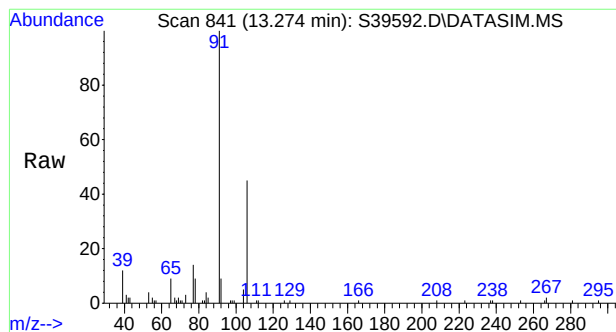
Tgt Ion: 91 Resp: 46303
Ion Ratio Lower Upper
91 100
106 29.4 23.0 34.4



#19
m,p-xylene
Concen: 582.523 ng/mL
RT: 12.553 min Scan# 764
Delta R.T. -0.000 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

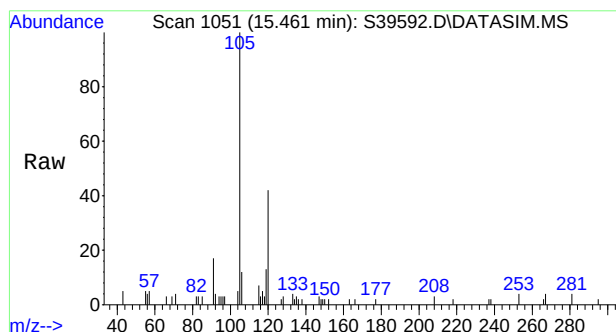
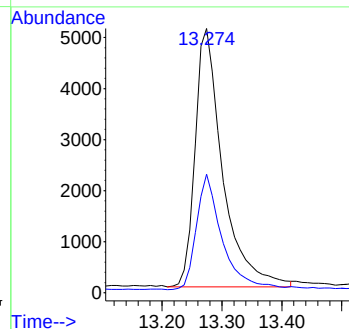
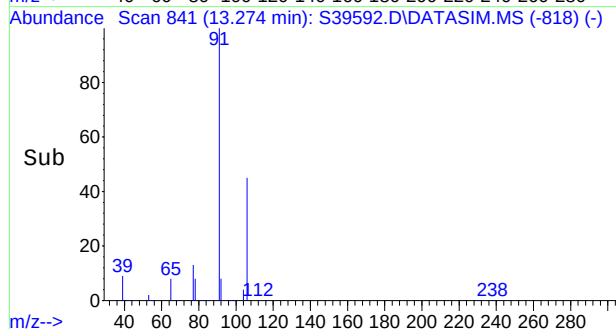
Tgt Ion: 91 Resp: 29861
Ion Ratio Lower Upper
91 100
106 45.1 35.8 53.6





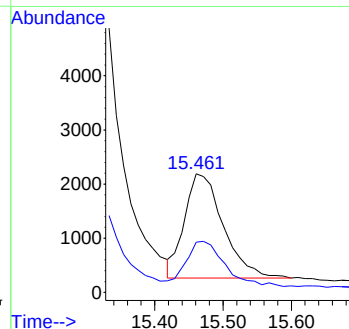
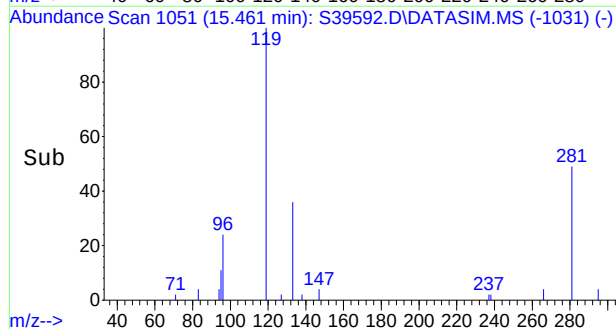
#21
o-Xylene
Concen: 307.745 ng/mL
RT: 13.274 min Scan# 841
Delta R.T. 0.019 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

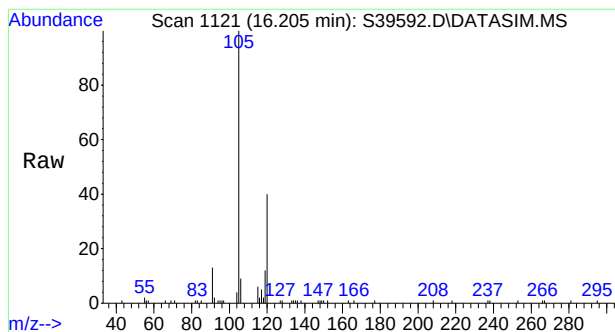
Tgt Ion: 91 Resp: 16150
Ion Ratio Lower Upper
91 100
106 41.7 34.5 51.7



#24
1,3,5-Trimethylbenzene
Concen: 142.914 ng/mL
RT: 15.461 min Scan# 1051
Delta R.T. 0.010 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

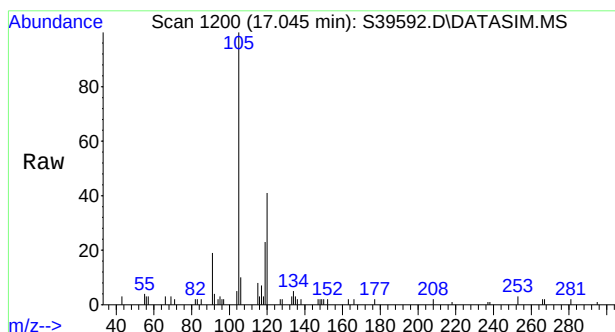
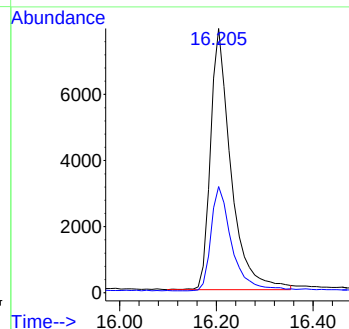
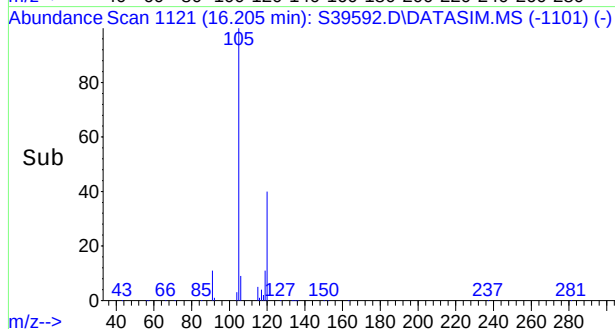
Tgt Ion: 105 Resp: 7607
Ion Ratio Lower Upper
105 100
120 43.6 33.5 50.3





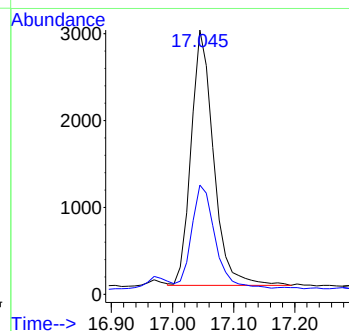
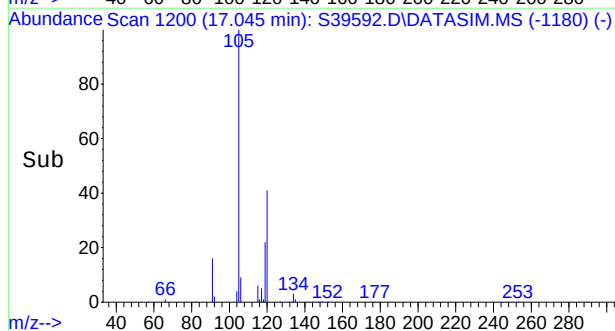
#27
1,2,4-Trimethylbenzene
Concen: 419.429 ng/mL
RT: 16.205 min Scan# 1121
Delta R.T. 0.010 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

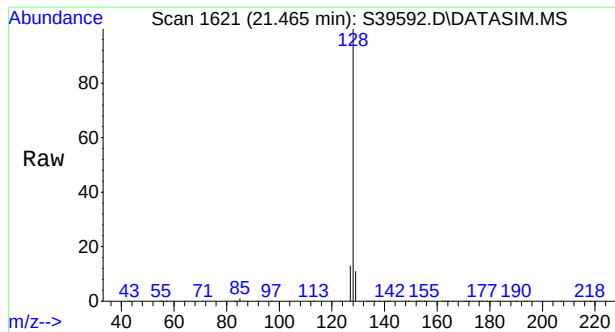
Tgt Ion:	105	Resp:	23208
Ion Ratio	Lower	Upper	
105	100		
120	40.5	35.3	52.9



#29
1,2,3-Trimethylbenzene
Concen: 134.853 ng/mL
RT: 17.045 min Scan# 1200
Delta R.T. 0.010 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

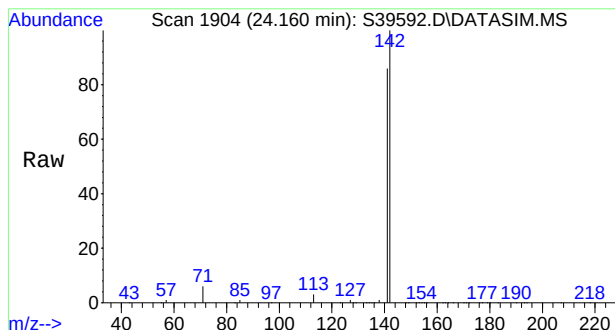
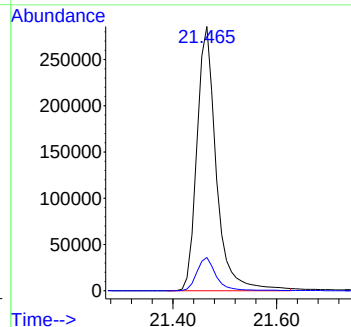
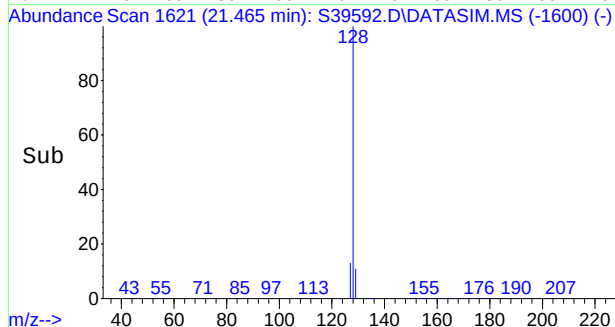
Tgt Ion:	105	Resp:	7488
Ion Ratio	Lower	Upper	
105	100		
120	42.3	34.8	52.2





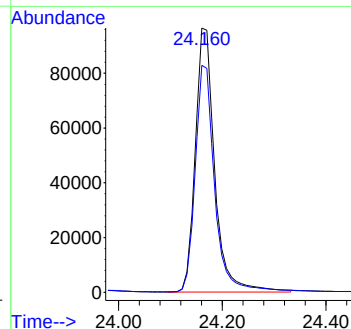
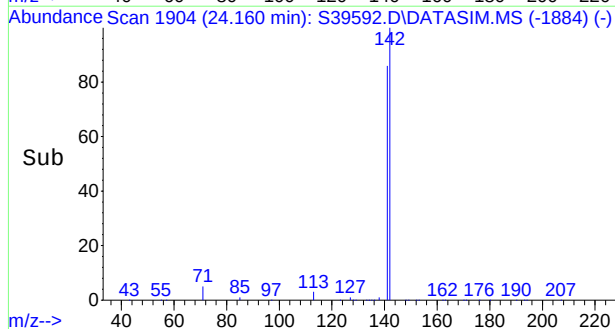
#51
Naphthalene
Concen: 9605.212 ng/mL
RT: 21.465 min Scan# 1621
Delta R.T. -0.000 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

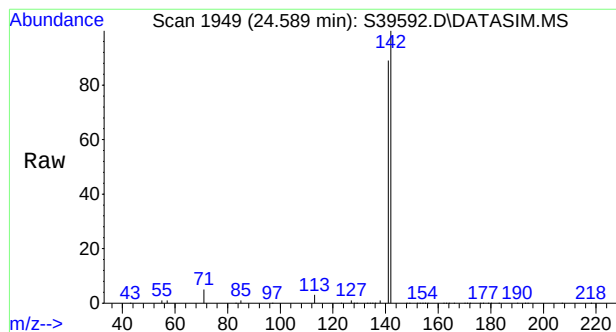
Tgt Ion:128 Resp: 737944
Ion Ratio Lower Upper
128 100
127 12.6 10.2 15.2



#52
2-Methylnaphthalene
Concen: 5067.786 ng/mL
RT: 24.160 min Scan# 1904
Delta R.T. -0.010 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

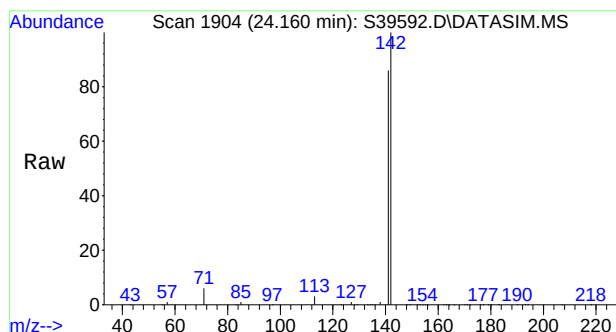
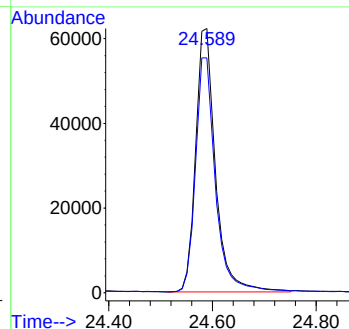
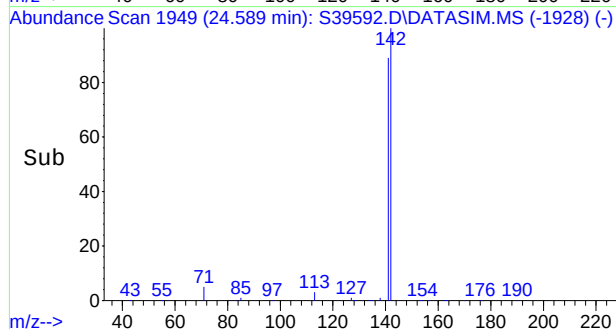
Tgt Ion:142 Resp: 251485
Ion Ratio Lower Upper
142 100
141 85.6 68.6 102.8





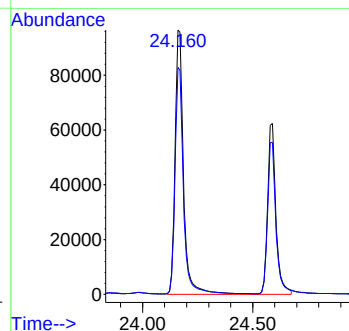
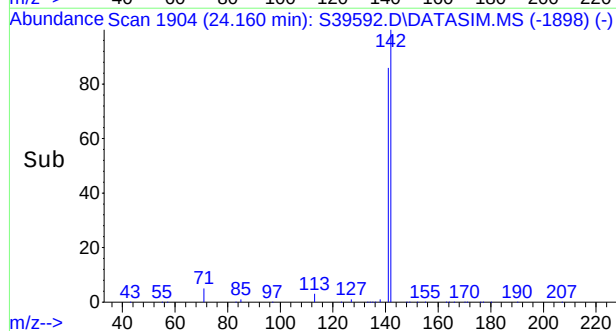
#53
1-Methylnaphthalene
Concen: 3748.088 ng/mL
RT: 24.589 min Scan# 1949
Delta R.T. -0.000 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

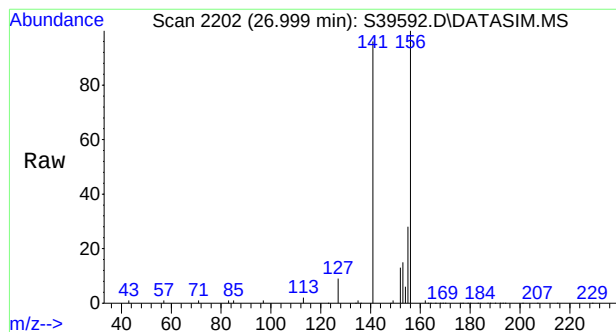
Tgt Ion:142 Resp: 164637
Ion Ratio Lower Upper
142 100
141 89.2 71.6 107.4



#54
C1-Naphthalenes
Concen: 5466.119 ng/mL m
RT: 24.160 min Scan# 1904
Delta R.T. -0.002 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

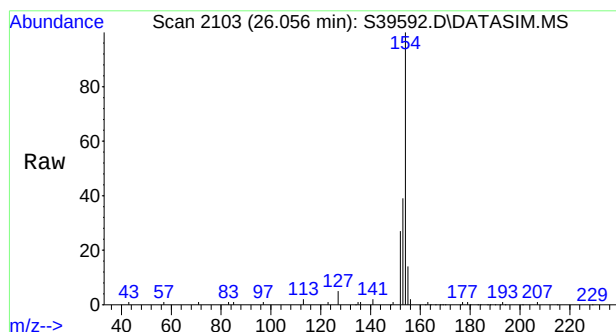
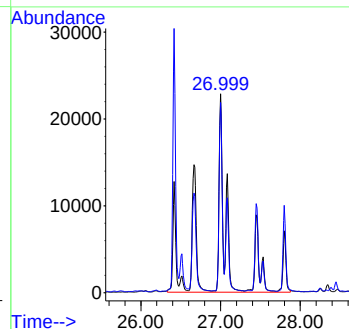
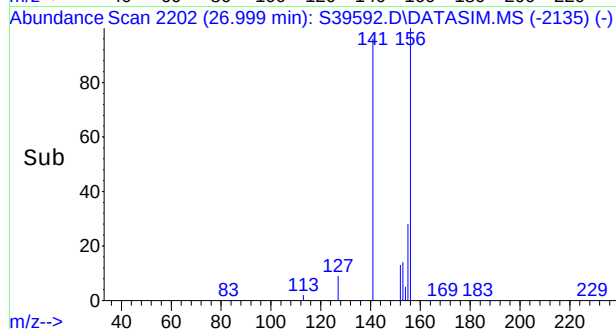
Tgt Ion:142 Resp: 419948
Ion Ratio Lower Upper
142 100
141 87.4 68.8 103.2





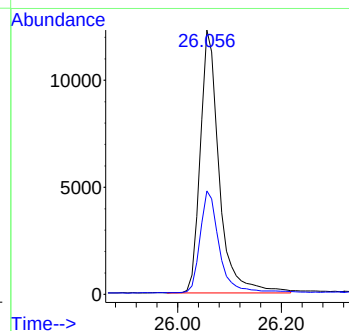
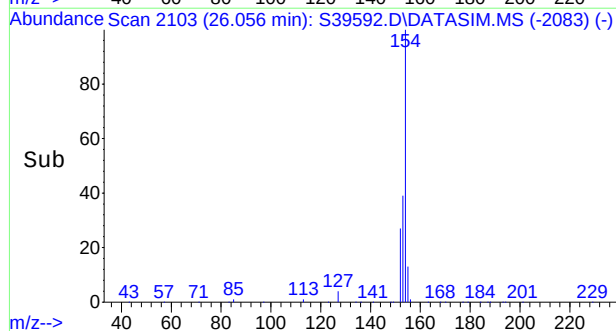
#55
C2-Naphthalenes
Concen: 3124.951 ng/mL m
RT: 26.999 min Scan# 2202
Delta R.T. -0.087 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

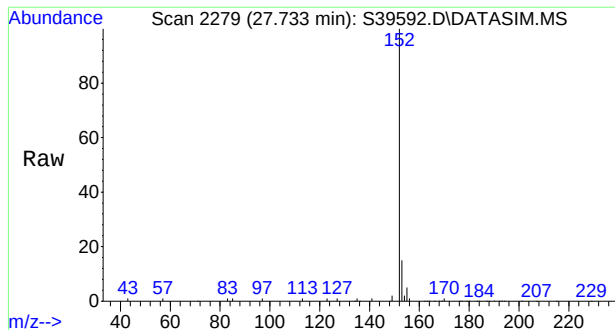
Tgt Ion:156 Resp: 240082
Ion Ratio Lower Upper
156 100
141 113.9 65.8 98.8#



#58
Biphenyl
Concen: 535.877 ng/mL
RT: 26.056 min Scan# 2103
Delta R.T. -0.010 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

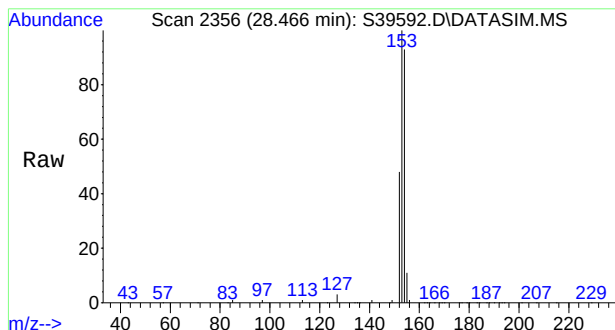
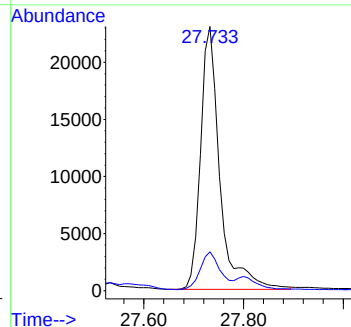
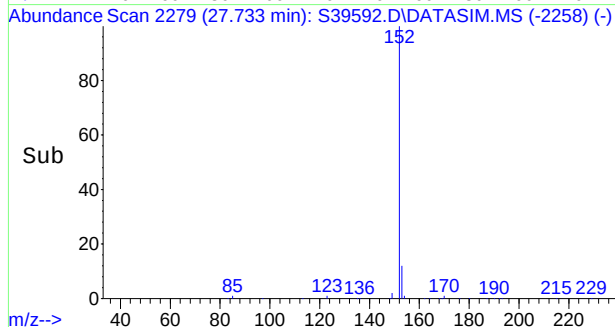
Tgt Ion:154 Resp: 31002
Ion Ratio Lower Upper
154 100
153 39.7 31.0 46.6





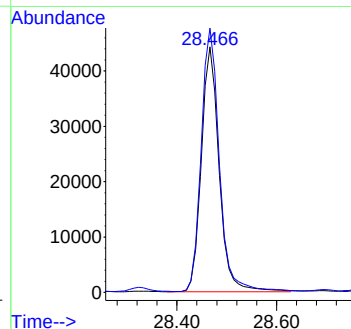
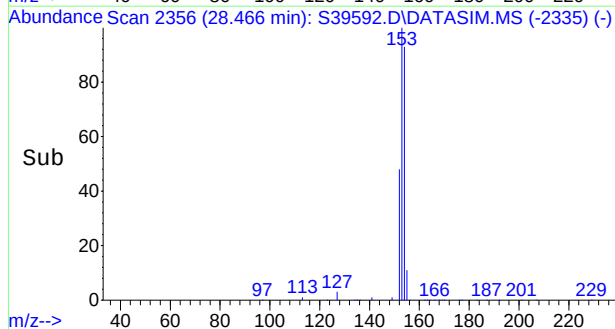
#59
 Acenaphthylene
 Concen: 839.610 ng/mL
 RT: 27.733 min Scan# 2279
 Delta R.T. -0.000 min
 Lab File: S39592.D
 Acq: 5 Jul 2016 8:21 pm

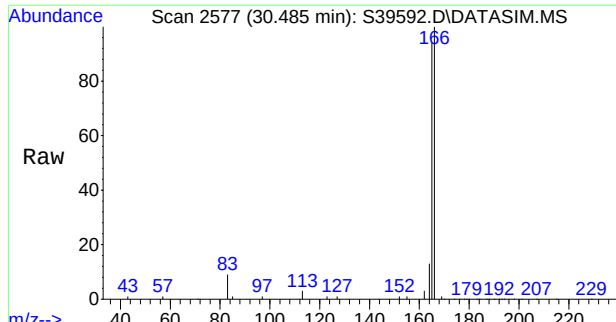
Tgt Ion	Ratio	Lower	Upper
152	100		
153	15.2	10.3	15.5



#60
 Acenaphthene
 Concen: 2616.193 ng/mL
 RT: 28.466 min Scan# 2356
 Delta R.T. -0.000 min
 Lab File: S39592.D
 Acq: 5 Jul 2016 8:21 pm

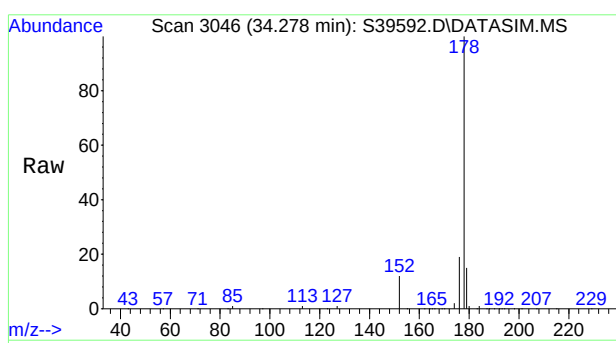
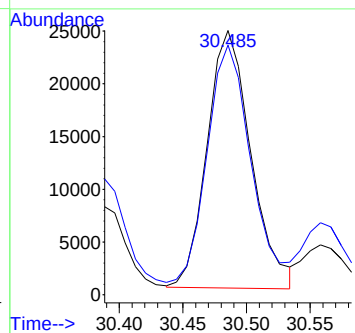
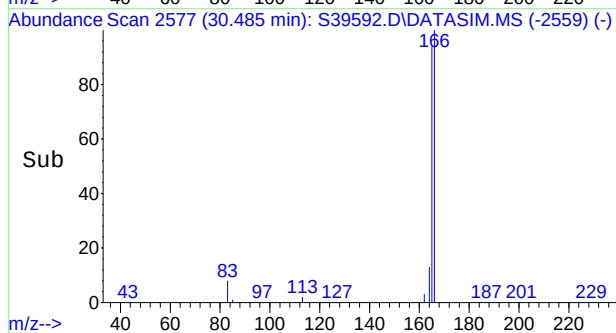
Tgt Ion	Ratio	Lower	Upper
154	100		
153	109.0	86.6	129.8





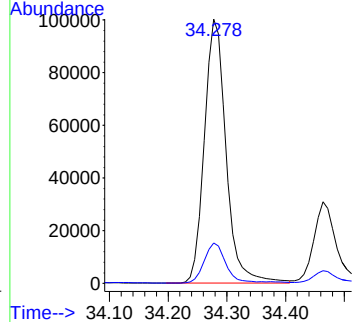
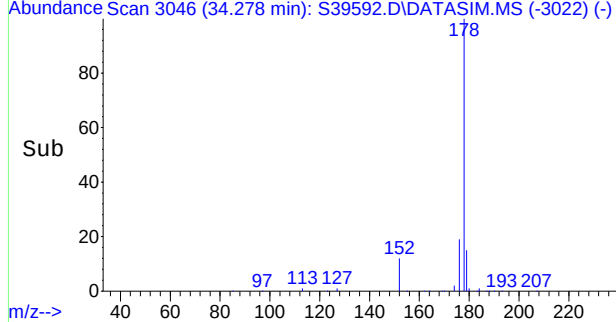
#62
Fluorene
Concen: 1169.140 ng/mL
RT: 30.485 min Scan# 2577
Delta R.T. -0.008 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

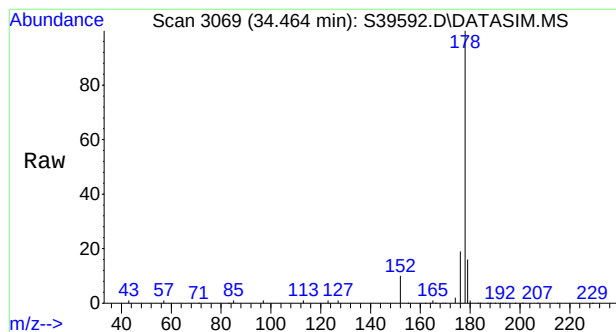
Tgt Ion:166 Resp: 58594
Ion Ratio Lower Upper
166 100
165 90.9 75.8 113.6



#72
Phenanthrene
Concen: 3950.847 ng/mL
RT: 34.278 min Scan# 3046
Delta R.T. -0.008 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

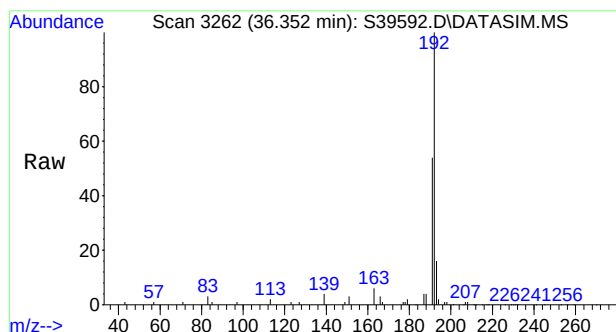
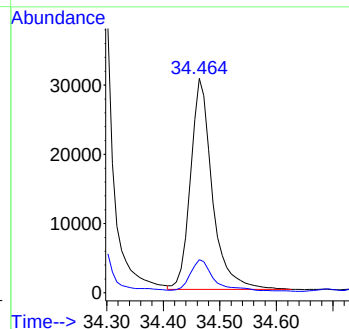
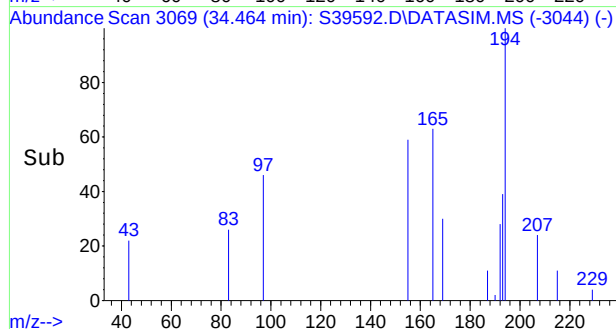
Tgt Ion:178 Resp: 256843
Ion Ratio Lower Upper
178 100
179 15.4 11.9 17.9





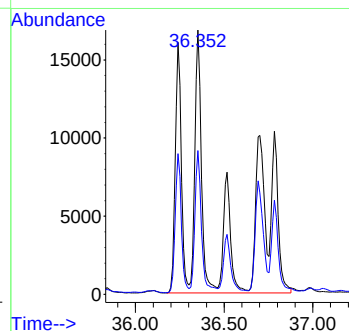
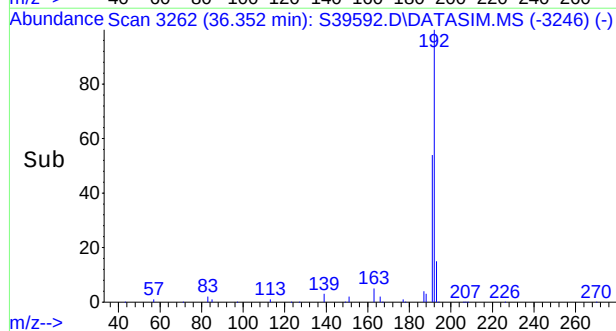
#73
Anthracene
Concen: 1340.787 ng/mL
RT: 34.464 min Scan# 3069
Delta R.T. -0.000 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

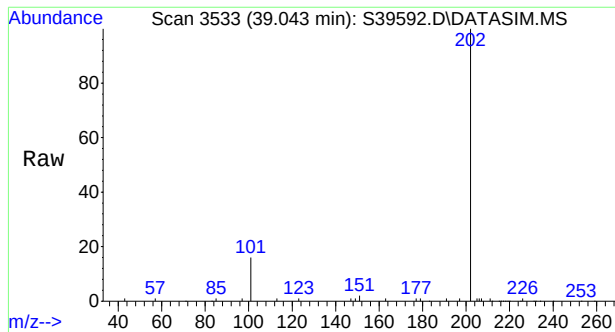
Tgt Ion:178 Resp: 81620
Ion Ratio Lower Upper
178 100
179 16.5 12.0 18.0



#74
C1-Phenanthrenes/anthracenes
Concen: 2524.489 ng/mL m
RT: 36.352 min Scan# 3262
Delta R.T. -0.348 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

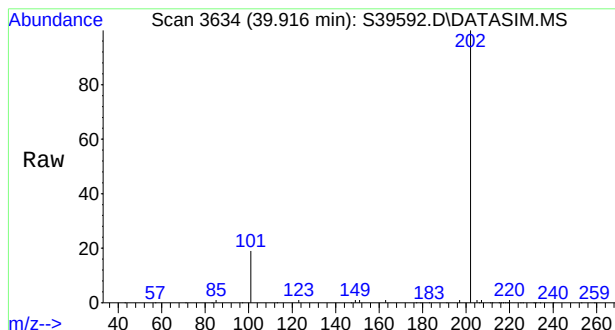
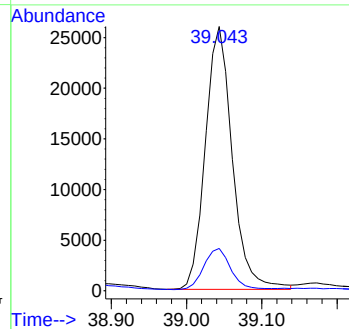
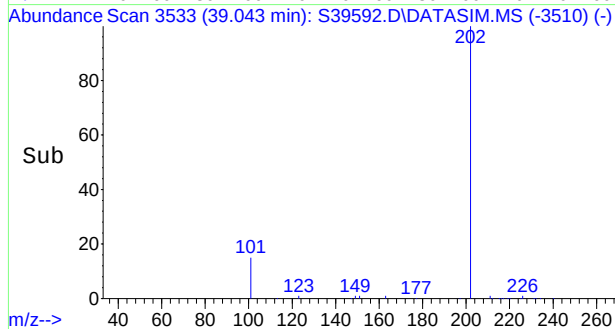
Tgt Ion:192 Resp: 164116
Ion Ratio Lower Upper
192 100
191 56.9 45.0 67.4





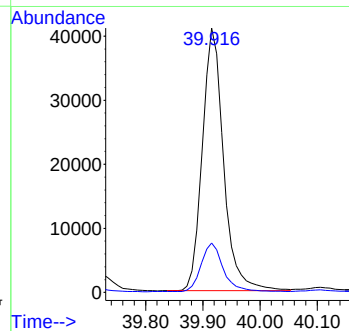
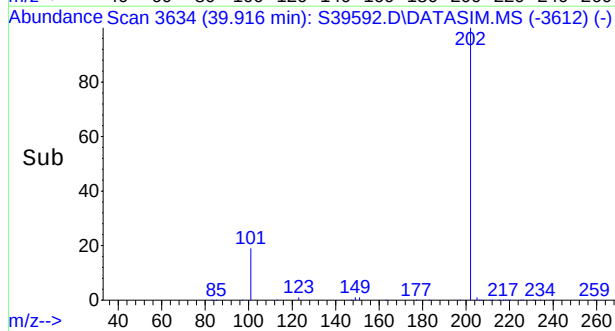
#86
 Fluoranthene
 Concen: 1000.547 ng/mL
 RT: 39.043 min Scan# 3533
 Delta R.T. -0.000 min
 Lab File: S39592.D
 Acq: 5 Jul 2016 8:21 pm

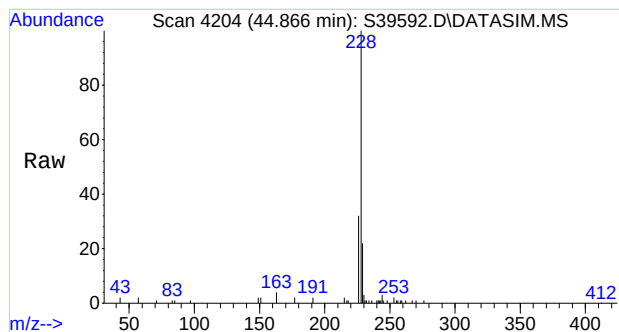
Tgt Ion	Ratio	Lower	Upper
202	100		
101	15.7	12.6	19.0



#87
 Pyrene
 Concen: 1644.290 ng/mL
 RT: 39.916 min Scan# 3634
 Delta R.T. -0.009 min
 Lab File: S39592.D
 Acq: 5 Jul 2016 8:21 pm

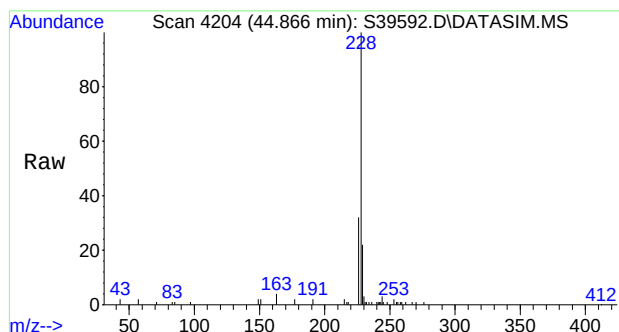
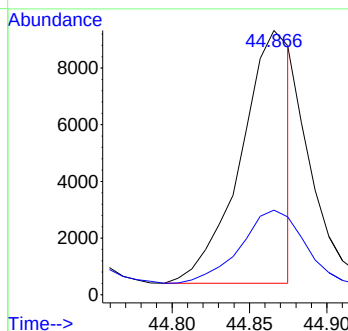
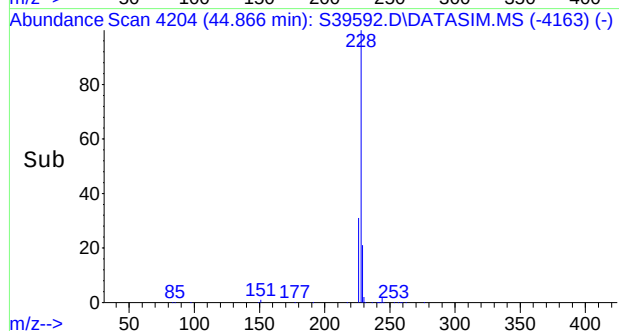
Tgt Ion	Ratio	Lower	Upper
202	100		
101	19.4	13.8	20.8





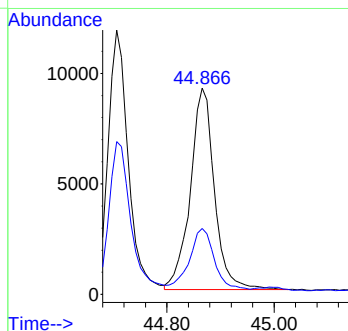
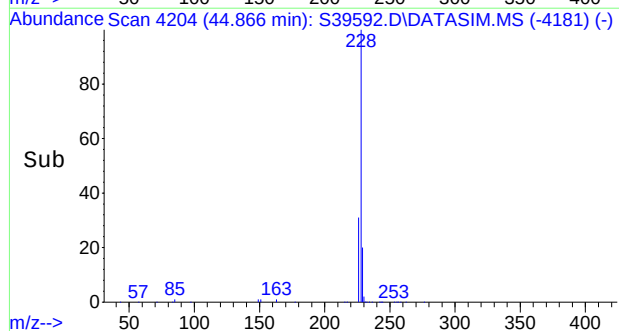
#97
Benz(a)anthracene
Concen: 361.849 ng/mL
RT: 44.866 min Scan# 4204
Delta R.T. 0.159 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:228 Resp: 20061
Ion Ratio Lower Upper
228 100
226 28.6 21.1 31.7



#98
Chrysene/triphenylene
Concen: 537.939 ng/mL
RT: 44.866 min Scan# 4204
Delta R.T. -0.000 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:228 Resp: 28541
Ion Ratio Lower Upper
228 100
226 30.6 23.4 35.0



Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39541.D
Sample : op47956-mb, Method Blank
Misc : OP47956,MSS1961,0.0100,,,2,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 24 Jun 2016 8:13 am

Operator: sofyaz

Quant Time: Jun 29 16:36:00 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Acenaphthene-d10	28.351	162	29481	1000.00	ng/mL	0.00
System Monitoring Compounds						
2) Toluene-d8	9.444	98	46222	1048.97	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	104.90%	
3) Naphthalene-d8	21.398	136	56989	914.24	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	91.42%	
4) Phenanthrene-d10	34.197	188	39952	899.58	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	89.96%	
5) Perylene-d12	50.035	264	28830	796.68	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	79.67%	
Target Compounds						
7] Benzene	6.980	78	409m	8.957	ng/mL	Qvalue
16] Toluene	9.556	91	337	5.921	ng/mL#	22

(#)= qualifier out of range (m) = manual integration (+) = signals summed

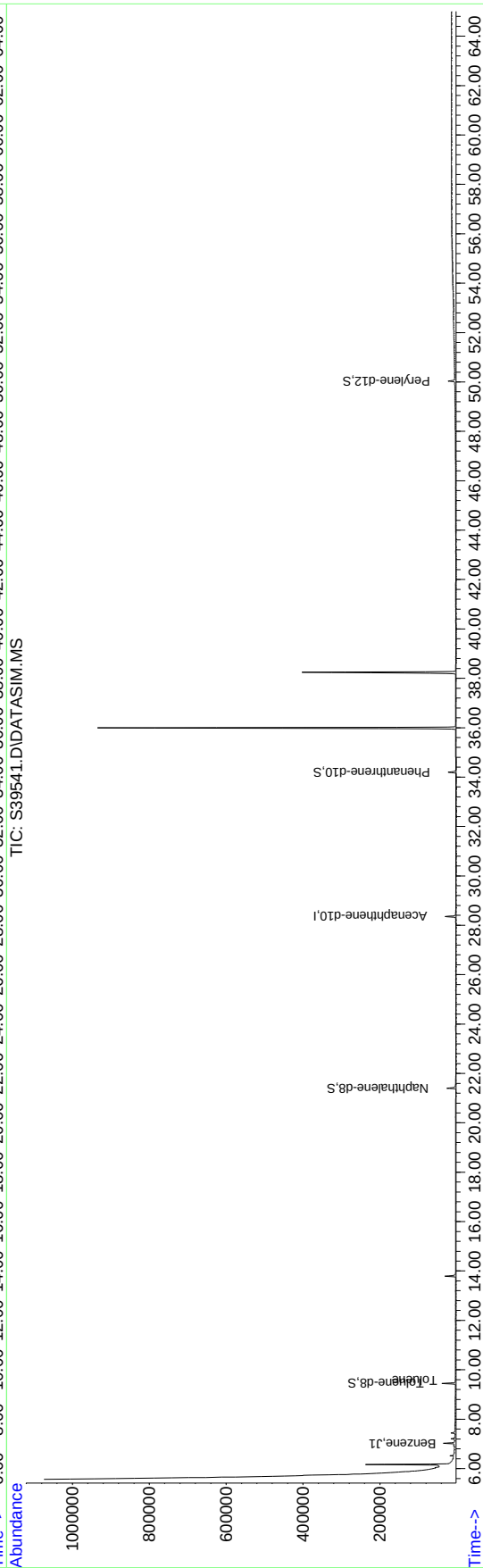
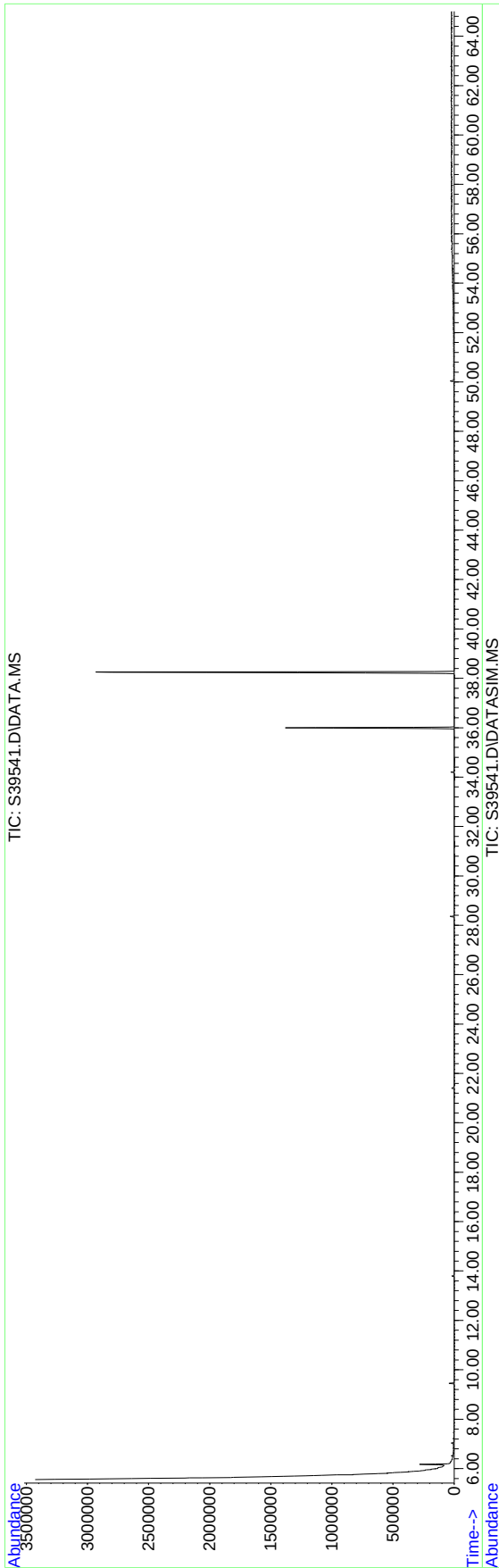
7.2.1

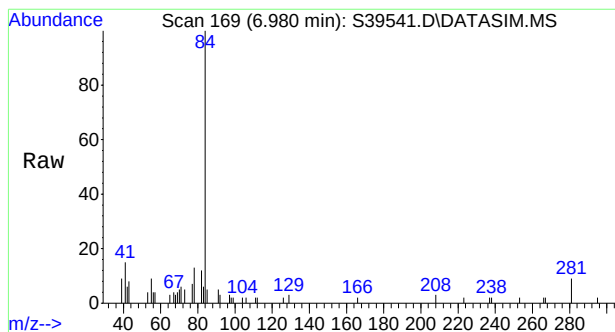
7

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39541.D
Sample : op47956-mb, Method Blank
Misc : OP47956,MSS1961,0.0100,,,2,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 24 Jun 2016 8:13 am
Operator: sofyaz

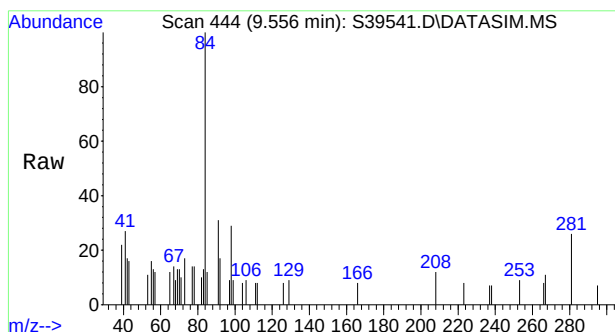
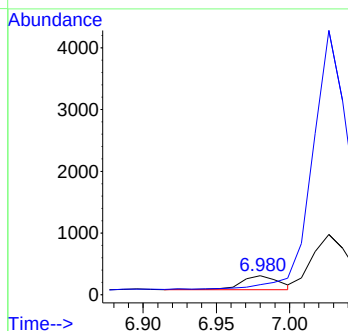
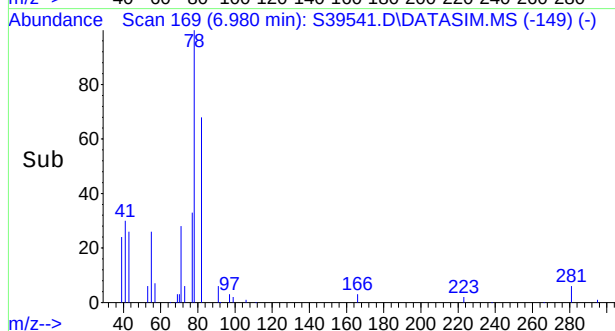
Quant Time: Jun 29 16:36:00 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM





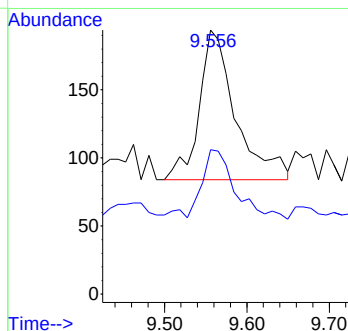
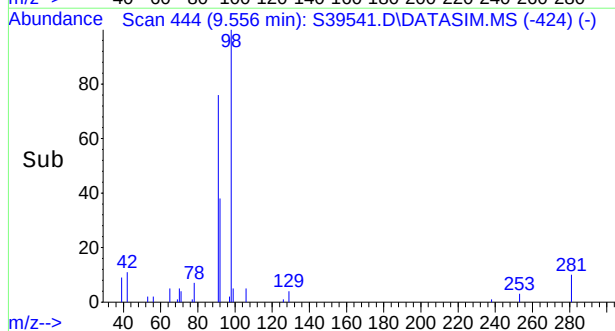
#7
Benzene
Concen: 8.957 ng/mL m
RT: 6.980 min Scan# 169
Delta R.T. -0.009 min
Lab File: S39541.D
Acq: 24 Jun 2016 8:13 am

Tgt Ion: 78 Resp: 409
Ion Ratio Lower Upper
78 100
77 72.4 18.4 27.6#



#16
Toluene
Concen: 5.921 ng/mL
RT: 9.556 min Scan# 444
Delta R.T. -0.009 min
Lab File: S39541.D
Acq: 24 Jun 2016 8:13 am

Tgt Ion: 91 Resp: 337
Ion Ratio Lower Upper
91 100
92 0.0 46.6 69.8#



Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39542.D

Sample : op47956-bs2

Misc : OP47956, MSS1961, 0.0100, , , 2, 1

ALS Vial : 6 Sample Multiplier: 1

Acq On : 24 Jun 2016 9:27 am

Operator: sofyz

Quant Time: Jun 30 16:10:08 2016

Quant Method : S:\1\methods\S160601-MAHPAH-A.M

Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Acenaphthene-d10	28.351	162	27941	1000.00	ng/mL	0.00
System Monitoring Compounds						
2) Toluene-d8	9.425	98	40481	969.32	ng/mL	-0.03
Spiked Amount 1000.000			Recovery	=	96.93%	
3) Naphthalene-d8	21.388	136	57203	968.25	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	96.83%	
4) Phenanthrene-d10	34.189	188	40826	969.93	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	96.99%	
5) Perylene-d12	50.034	264	29348	855.69	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	85.57%	
Target Compounds						
					Qvalue	
6] MTBE	5.490	73	208737m	8763.945	ng/mL	
7] Benzene	6.933	78	241007m	5569.128	ng/mL	
13] 2,2,4-trimethylpentane	7.429	57	230714	5261.289	µg/mL	98
14] n-Heptane	7.701	43	106083	4376.376	µg/mL	96
15] Methylcyclohexane	8.329	83	105324	5146.041	ng/mL	96
16] Toluene	9.528	91	260755	4833.550	ng/mL	99
17] n-Octane	10.389	43	131520	4083.056	µg/mL	99
18] Ethylbenzene	12.291	91	304698	5080.402	ng/mL	100
19] m,p-xylene	12.534	91	246688	5047.081	ng/mL	99
20] Styrene	13.171	104	177748m	4369.322	ng/mL	
21] o-Xylene	13.237	91	247424	4944.742	ng/mL	98
22] Isopropylbenzene	14.164	105	298986	5321.222	ng/mL	99
23] n-Propylbenzene	15.025	91	369380	5203.081	ng/mL	96
24] 1,3,5-Trimethylbenzene	15.450	105	260301	5128.846	ng/mL	100
25] Phenol	15.652	94	138225	4568.298	µg/mL#	98
26] t-Butylbenzene	16.152	119	238114	5275.002	ng/mL	94
27] 1,2,4-Trimethylbenzene	16.184	105	264052	5004.879	ng/mL	91
28] sec-Butylbenzene	16.673	105	326876	5211.556	ng/mL	99
29] 1,2,3-Trimethylbenzene	17.023	105	270928	5117.209	ng/mL	90
30] p-Isopropyltoluene	17.045	119	295746	5428.497	ng/mL	98
31] Indane	17.427	117	223348	4687.859	µg/mL	99
32] Indene	17.682	115	217635	4667.570	µg/mL	99
33] n-Butylbenzene	17.927	91	280262	5122.848	ng/mL	100
34] trans-Decalin	18.001	96	47638	4614.035	ng/mL	97
35] cis-Decalin	19.234	96	63691	4482.019	ng/mL	95
40] Benzo(b)thiophene	21.683	134	291576	4858.490	ng/mL	99
45] Tetraethyl lead	20.531	208	17487	3839.930	ng/mL	93
50] MMT	23.274	134	86715	3866.966	µg/mL	98
51] Naphthalene	21.464	128	360910	4926.815	ng/mL	100
52] 2-Methylnaphthalene	24.169	142	216991	4585.975	ng/mL	99
53] 1-Methylnaphthalene	24.588	142	210708	5030.917	ng/mL	99
58] Biphenyl	26.055	154	262932	4766.534	ng/mL	100
59] Acenaphthylene	27.732	152	338914	4841.987	ng/mL	100
60] Acenaphthene	28.465	154	199666	4994.757	ng/mL	99
61] Dibenzofuran	29.113	168	292052	5094.616	ng/mL	100
62] Fluorene	30.486	166	231564	4845.829	ng/mL	99
66] Dibenzothiophene	33.785	184	305566	4576.568	ng/mL	99
72] Phenanthrene	34.278	178	304970	4919.981	ng/mL	100
73] Anthracene	34.464	178	294683	5076.941	ng/mL	99
79] Carbazole	35.155	167	293520	4839.402	µg/mL	99
80] Retene	41.274	234	58448	3970.958	ng/mL	98
81] Benzo(b)naphtho(2,1-d)...	43.771	234	282629	4894.856	ng/mL	100
86] Fluoranthene	39.046	202	309466	5020.930	ng/mL	99
87] Pyrene	39.918	202	314592	5133.055	ng/mL	99
97] Benz(a)anthracene	44.700	228	253361	4792.900	ng/mL	99
98] Chrysene/triphenylene	44.860	228	244200	4827.178	ng/mL	99
103] Benzo(b)fluoranthene	48.750	252	272340	4674.441	ng/mL	99
104] Benzo(j/k)fluoranthene	48.832	252	269507	4564.792	ng/mL	99

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39542.D

Sample : op47956-bs2

Misc : OP47956,MSS1961,0.0100,,,2,1

ALS Vial : 6 Sample Multiplier: 1

Acq On : 24 Jun 2016 9:27 am

Operator: sofyaz

Quant Time: Jun 30 16:10:08 2016

Quant Method : S:\1\methods\S160601-MAHPAH-A.M

Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
105]	Benzo(e)pyrene	49.673	252	253643	4536.092	ng/mL	98
106]	Benzo(a)pyrene	49.845	252	255893	4641.027	ng/mL	98
107]	Perylene	50.116	252	244806	4246.736	ng/mL	97
108]	Indeno(1,2,3-cd)pyrene	53.345	276	325403m	4561.680	ng/mL	
109]	Dibenz(a,h)anthracene	53.377	278	267567m	4585.102	ng/mL	
110]	Benzo(g,h,i)perylene	54.077	276	282227	4362.782	ng/mL	100
111]	Coronene	59.035	300	284074	4146.972	ng/mL	100
112]	C-17	32.160	85	71431	4700.650	ng/mL	99
113]	Pristane	32.289	85	54104	4526.358	ng/mL	100
114]	C-18	33.955	85	73816	4782.637	ng/mL	99
115]	Phytane	34.141	85	70453	4254.195	ng/mL	100

(#)= qualifier out of range (m)= manual integration (+)= signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39589.D
 Sample : op47956-dup1,mc46549-1,137-P3B-MW101I-2016062
 Misc : OP47956,MSS1964,0.0161,,,2,1
 ALS Vial : 5 Sample Multiplier: 1
 Acq On : 5 Jul 2016 4:38 pm

Operator: sofyaz

Quant Time: Jul 06 11:16:19 2016
 Quant Method : S:\1\methods\S160601-MAHPAH-A.M
 Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Acenaphthene-d10	28.352	162	33557	1000.00	ng/mL	0.00
System Monitoring Compounds						
2) Toluene-d8	9.443	98	49524	987.40	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	98.74%	
3) Naphthalene-d8	21.418	136	70427	992.58	ng/mL	0.02
Spiked Amount 1000.000			Recovery	=	99.26%	
4) Phenanthrene-d10	34.213	188	44972	889.62	ng/mL	0.02
Spiked Amount 1000.000			Recovery	=	88.96%	
5) Perylene-d12	50.050	264	36835	894.25	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	89.42%	
Target Compounds						
					Qvalue	
7] Benzene	6.980	78	385762m	7422.254	ng/mL	
8] C1-Benzene	9.546	92	398932	7675.652	ng/mL	100
9] C2-Benzenes	12.291	106	2087873m	40171.724	ng/mL	
10] C3-Benzenes	15.238	120	2163124m	41619.591	ng/mL	
11] C4-Benzenes	18.724	134	1080942m	20797.866	ng/mL	
12] C5-Benzenes	20.255	148	294872m	5673.485	ng/mL	
16] Toluene	9.546	91	674295	10407.402	ng/mL	99
18] Ethylbenzene	12.291	91	2716016	37706.797	ng/mL	96
19] m,p-xylene	12.525	91	1821576	31031.188	ng/mL	98
20] Styrene	13.171	104	75002	1535.115	ng/mL	99
21] o-Xylene	13.237	91	953493	15866.391	ng/mL	99
22] Isopropylbenzene	14.164	105	296388	4392.178	ng/mL	99
23] n-Propylbenzene	15.025	91	160793	1885.876	ng/mL	100
24] 1,3,5-Trimethylbenzene	15.440	105	434476	7128.013	ng/mL	97
27] 1,2,4-Trimethylbenzene	16.184	105	1366366	21564.033	ng/mL	97
28] sec-Butylbenzene	16.683	105	11096	147.302	ng/mL	99
29] 1,2,3-Trimethylbenzene	17.023	105	458840	7216.047	ng/mL	97
30] p-Isopropyltoluene	17.034	119	191618m	2928.572	ng/mL	
33] n-Butylbenzene	17.916	91	96330	1466.114	ng/mL#	1
34] trans-Decalin	18.001	96	2995m	241.537	ng/mL	
35] cis-Decalin	19.234	96	1935m	113.380	ng/mL	
40] Benzo(b)thiophene	21.703	134	469021	6507.297	ng/mL	98
51] Naphthalene	21.570	128	35232307	400467.474	ng/mL#	92
52] 2-Methylnaphthalene	24.246	142	13620909	239692.728	ng/mL	99
53] 1-Methylnaphthalene	24.656	142	9054777	180012.505	ng/mL	100
54] C1-Naphthalenes	24.246	142	22692126m	257929.700	ng/mL	
55] C2-Naphthalenes	27.056	156	13083596m	148714.492	ng/mL	
56] C3-Naphthalenes	29.353	170	4430928m	50364.075	ng/mL	
57] C4-Naphthalenes	32.103	184	1213940m	13798.230	ng/mL	
58] Biphenyl	26.066	154	1732006	26143.722	ng/mL	98
59] Acenaphthylene	27.761	152	2765813	32901.505	ng/mL#	86
60] Acenaphthene	28.533	154	5933529	123589.659	ng/mL	99
61] Dibenzofuran	29.124	168	359117m	5216.102	ng/mL	
62] Fluorene	30.534	166	3352114	58408.310	ng/mL	98
63] C1-Fluorenes	32.733	180	2263146m	39433.782	ng/mL	
64] C2-Fluorenes	34.906	194	1317761m	22961.091	ng/mL	
65] C3-Fluorenes	36.896	208	473282m	8246.617	ng/mL	
66] Dibenzothiophene	33.801	184	718334	8958.187	ng/mL#	94
67] C1-Dibenzothiophenes (...)	35.573	198	864817m	10784.945	ng/mL	
68] C1-Dibenzothiophenes (...)	36.014	198	1786m	22.273	ng/mL	
69] C2-Dibenzothiophenes	37.255	212	612541m	7638.866	ng/mL	
70] C3-Dibenzothiophenes	39.078	226	281789m	3514.129	ng/mL	
71] C4-Dibenzothiophenes	40.762	240	84768m	1057.123	ng/mL	
72] Phenanthrene	34.383	178	13024428	174953.949	ng/mL	96
73] Anthracene	34.537	178	4454378	63898.828	ng/mL	95
74] C1-Phenanthrenes/anthr...	36.404	192	8902079m	119579.445	ng/mL	
75] C2-Phenanthrenes/anthr...	38.548	206	3492743m	46917.161	ng/mL	
77] C3-Phenanthrenes/anthr...	40.373	220	905909m	12168.854	ng/mL	

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39589.D

Sample : op47956-dup1,mc46549-1,137-P3B-MW101I-2016062

Misc : OP47956,MSS1964,0.0161,,,2,1

ALS Vial : 5 Sample Multiplier: 1

Acq On : 5 Jul 2016 4:38 pm

Operator: sofyaz

Quant Time: Jul 06 11:16:19 2016

Quant Method : S:\1\methods\S160601-MAHPAH-A.M

Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
78]	C4-Phenanthrenes/anthr...	42.579	234	213739m	2871.104	ng/mL	
81]	Benzo(b)naphtho(2,1-d)...	43.785	234	221217	3190.072	ng/mL	96
86]	Fluoranthene	39.104	202	3445673	46548.329	ng/mL	97
87]	Pyrene	40.002	202	5634466	76549.059	ng/mL#	91
88]	C1-Fluoranthenes/pyrenes	41.366	216	5332585m	72447.746	ng/mL	
89]	Benzo(b)fluorene	41.600	216	531803m	7225.000	ng/mL	
90]	Benzo(c)fluorene	41.634	216	218937m	2974.447	ng/mL	
91]	2-Methylpyrene	41.755	216	667688m	9071.115	ng/mL	
92]	4-Methylpyrene	42.119	216	573342m	7789.343	ng/mL	
93]	1-Methylpyrene	42.232	216	811860m	11029.815	ng/mL	
94]	C2-Fluoranthenes/pyrenes	43.013	230	1760785m	23921.776	ng/mL	
95]	C3-Fluoranthenes/pyrenes	44.884	244	531733m	7224.049	ng/mL	
97]	Benz(a)anthracene	44.742	228	1751120	27582.478	ng/mL#	47
98]	Chrysene/triphenylene	44.910	228	1561611	25702.736	ng/mL	97
99]	C1-Benz(a)anthracenes/...	46.372	242	1409722m	23202.778	ng/mL	
100]	C2-Benz(a)anthracenes/...	48.065	256	565247m	9303.466	ng/mL	
101]	C3-Benz(a)anthracenes/...	49.616	270	177156m	2915.831	ng/mL	
102]	C4-Benz(a)anthracenes/...	50.466	284	45960m	756.461	ng/mL	
103]	Benzo(b)fluoranthene	48.775	252	590727	8442.360	ng/mL	97
104]	Benzo(j/k)fluoranthene	48.847	252	714797	10080.742	ng/mL	98
105]	Benzo(e)pyrene	49.706	252	650678	9689.110	ng/mL	98
106]	Benzo(a)pyrene	49.887	252	1251323	18896.611	ng/mL	97
107]	Perylene	50.131	252	179967	2599.471	ng/mL	95
108]	Indeno(1,2,3-cd)pyrene	53.376	276	441697m	5155.687	ng/mL	
109]	Dibenz(a,h)anthracene	53.376	278	156324m	2230.493	ng/mL	
110]	Benzo(g,h,i)perylene	54.100	276	477407	6144.868	ng/mL	100
111]	Coronene	59.049	300	105194	1278.643	ng/mL	99

(#)=qualifier out of range (m)=manual integration (+)=signals summed

7.4.1

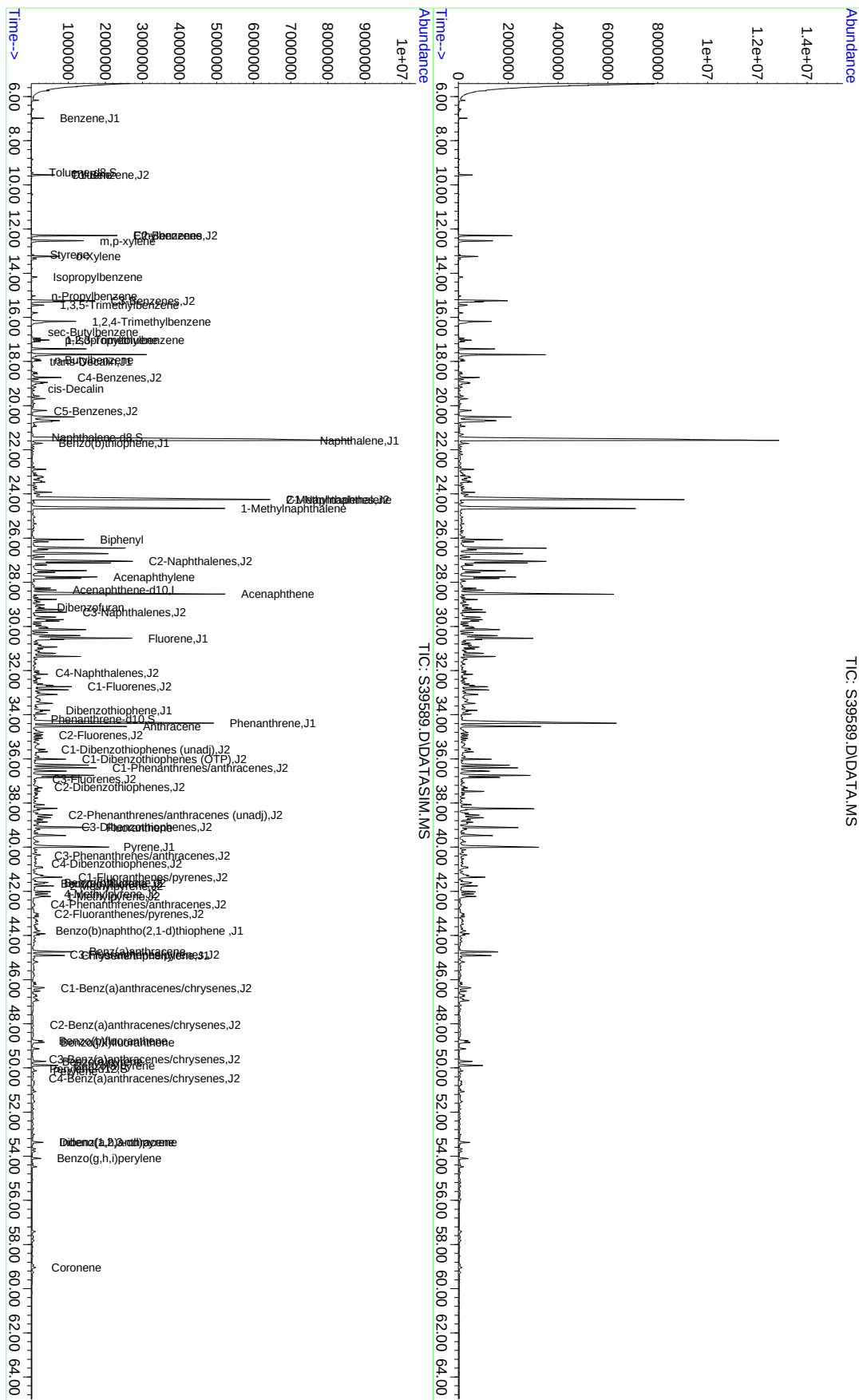
7

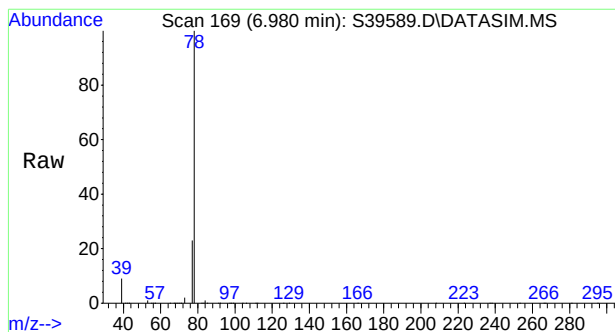
Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39589.D
Sample : 0P47956-dup1,mc46549-1,137-P3B-MW101I-2016062
Misc : 0P47956,MS1964,0.0161,,2,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 5 Jul 2016 4:38 pm Oper

Quant Time: Jul 06 11:16:19 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHS & Alkylated PAHS by GC/MS/SIM

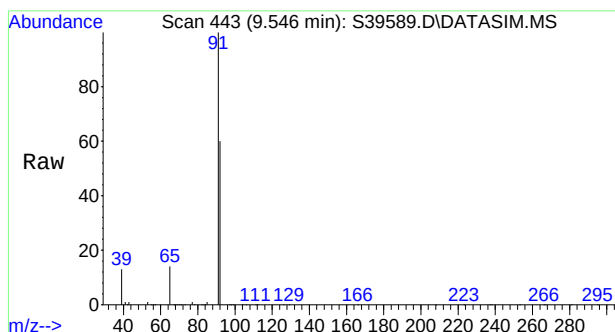
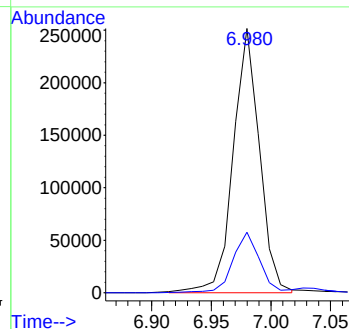
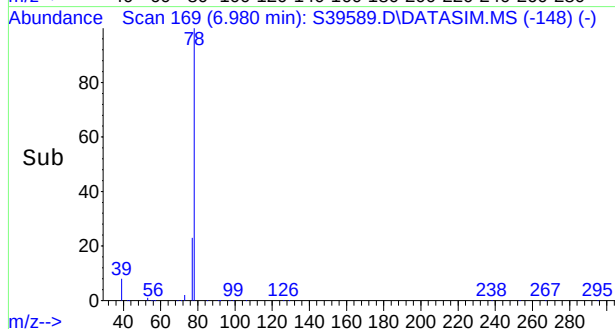
Operator: sofyaz





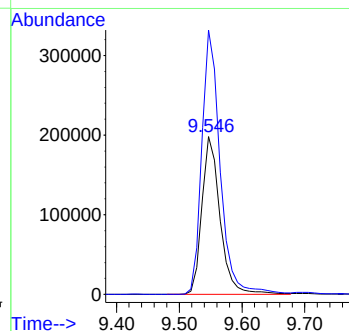
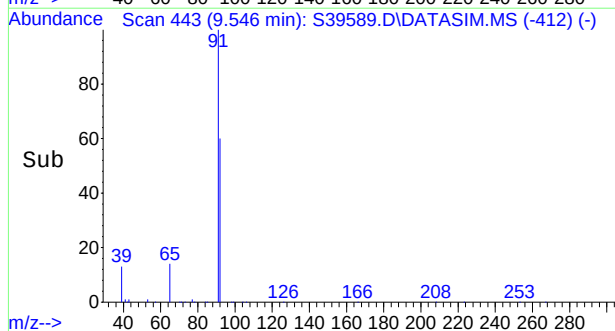
#7
Benzene
Concen: 7422.254 ng/mL m
RT: 6.980 min Scan# 169
Delta R.T. -0.000 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

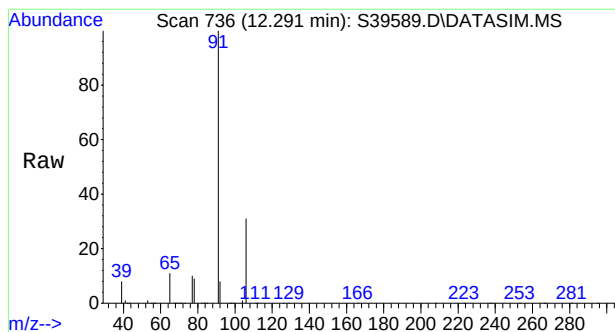
Tgt Ion: 78	Resp: 385762
Ion Ratio	Lower Upper
78 100	
77 23.5	18.4 27.6



#8
C1-Benzene
Concen: 7675.652 ng/mL
RT: 9.546 min Scan# 443
Delta R.T. -0.006 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

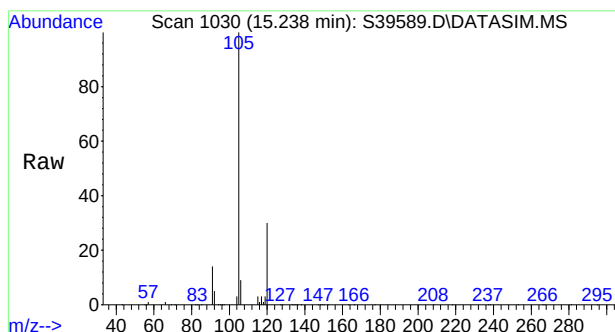
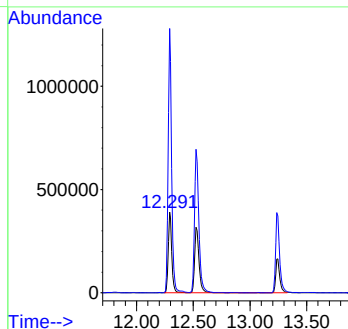
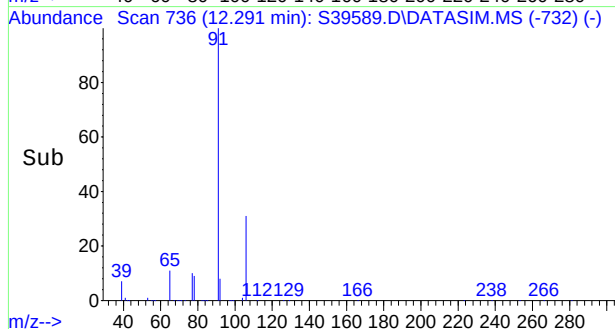
Tgt Ion: 92	Resp: 398932
Ion Ratio	Lower Upper
92 100	
91 169.0	135.2 202.8





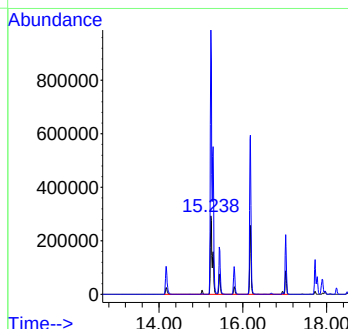
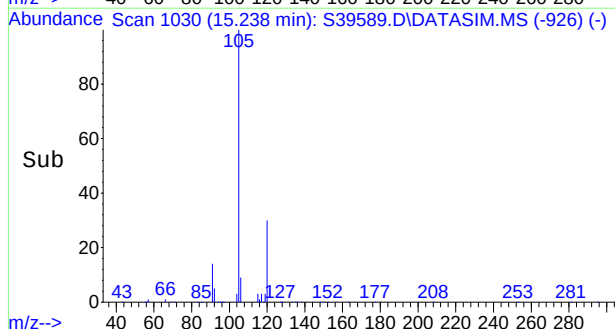
#9
C2-Benzenes
Concen: 40171.724 ng/mL m
RT: 12.291 min Scan# 736
Delta R.T. -0.240 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

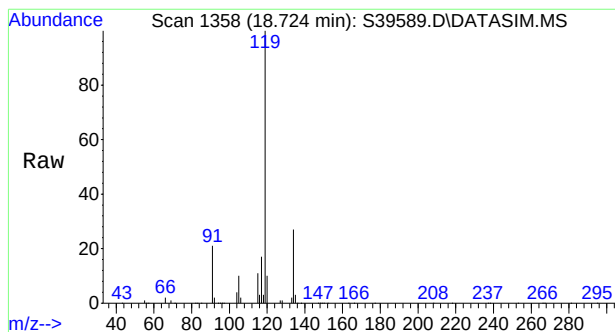
Tgt Ion:106 Resp: 2087873
Ion Ratio Lower Upper
106 100
91 264.4 173.4 260.0#



#10
C3-Benzenes
Concen: 41619.591 ng/mL m
RT: 15.238 min Scan# 1030
Delta R.T. -0.941 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

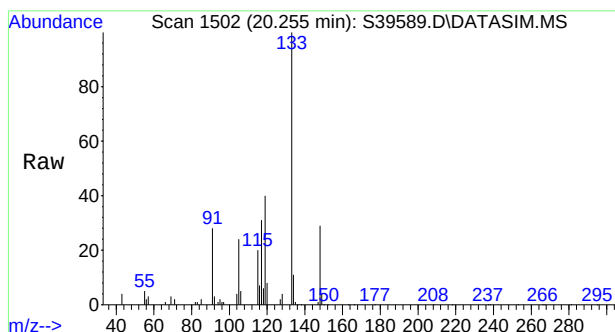
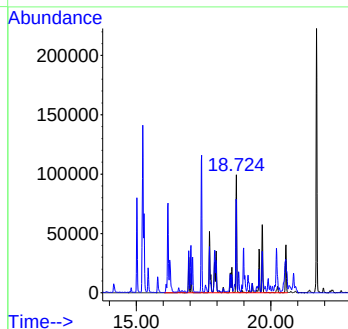
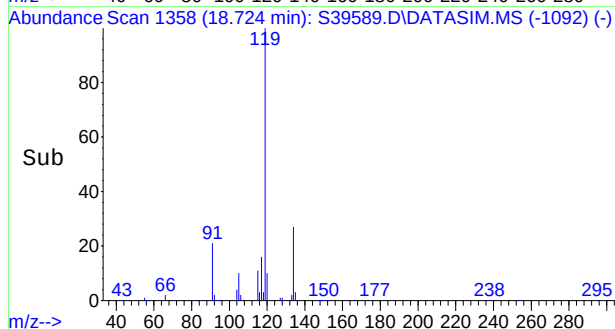
Tgt Ion:120 Resp: 2163124
Ion Ratio Lower Upper
120 100
105 288.5 197.2 295.8





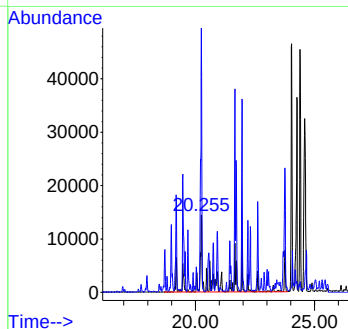
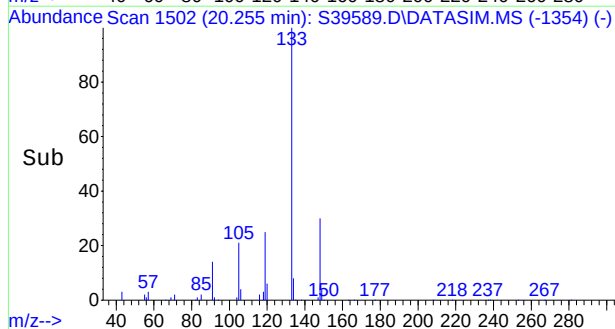
#11
C4-Benzenes
Concen: 20797.866 ng/mL m
RT: 18.724 min Scan# 1358
Delta R.T. -1.833 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

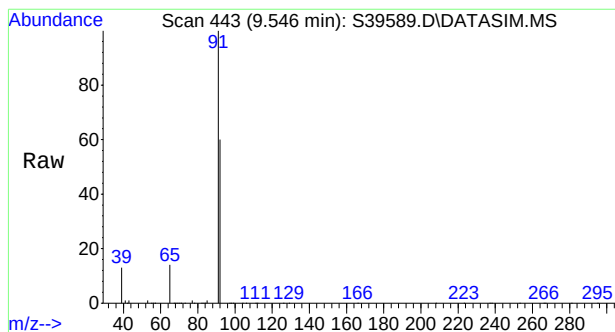
Tgt Ion:134 Resp: 1080942
Ion Ratio Lower Upper
134 100
91 214.9 42.2 63.4#



#12
C5-Benzenes
Concen: 5673.485 ng/mL m
RT: 20.255 min Scan# 1502
Delta R.T. -0.004 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

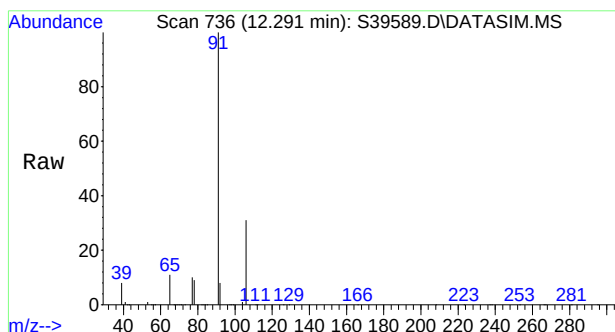
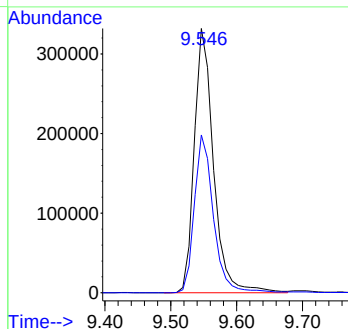
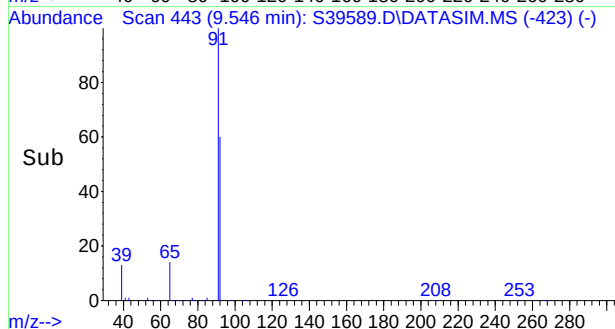
Tgt Ion:148 Resp: 294872
Ion Ratio Lower Upper
148 100
133 366.3 139.4 209.2#





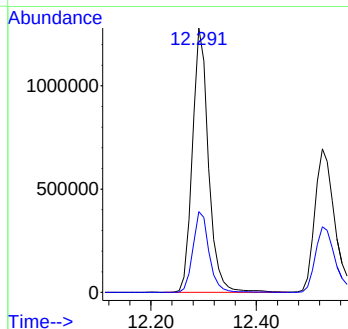
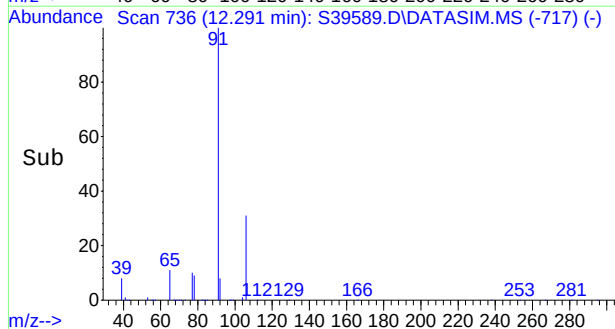
#16
Toluene
Concen: 10407.402 ng/mL
RT: 9.546 min Scan# 443
Delta R.T. -0.009 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

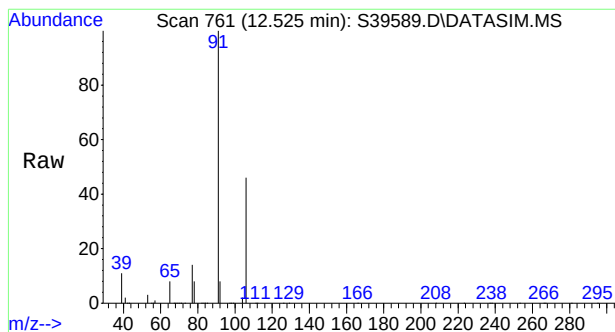
Tgt Ion:	91	Resp:	674295
Ion Ratio	Lower	Upper	
91	100		
92	59.2	46.6	70.0



#18
Ethylbenzene
Concen: 37706.797 ng/mL
RT: 12.291 min Scan# 736
Delta R.T. -0.019 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

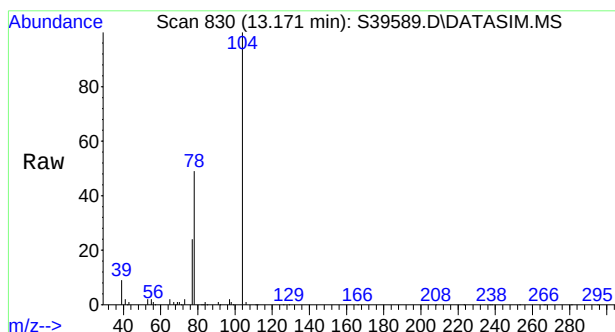
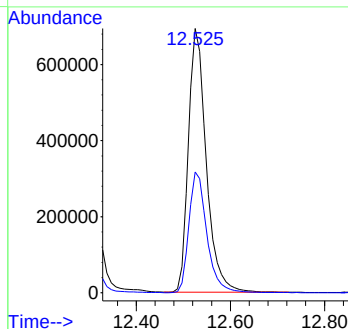
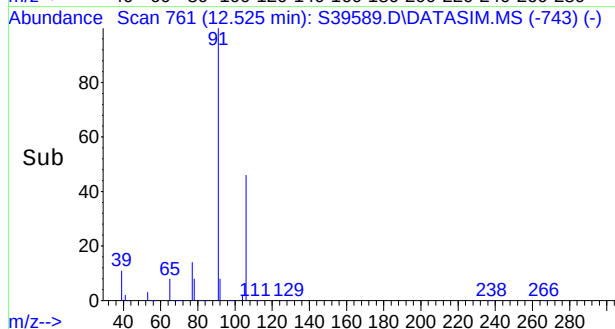
Tgt Ion:	91	Resp:	2716016
Ion Ratio	Lower	Upper	
91	100		
106	30.7	23.0	34.4





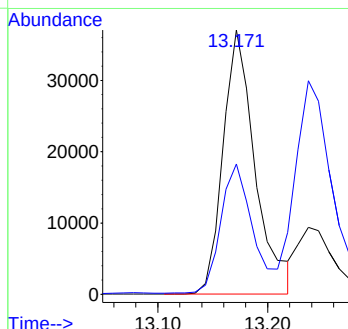
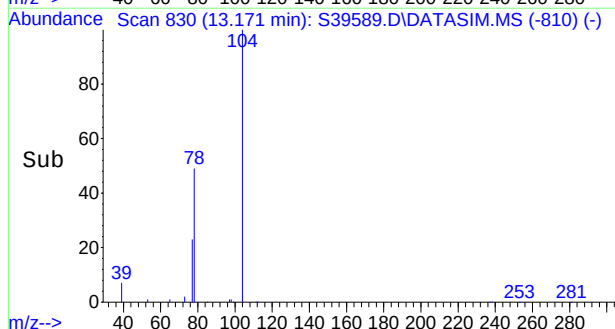
#19
m,p-xylene
Concen: 31031.188 ng/mL
RT: 12.525 min Scan# 761
Delta R.T. -0.028 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

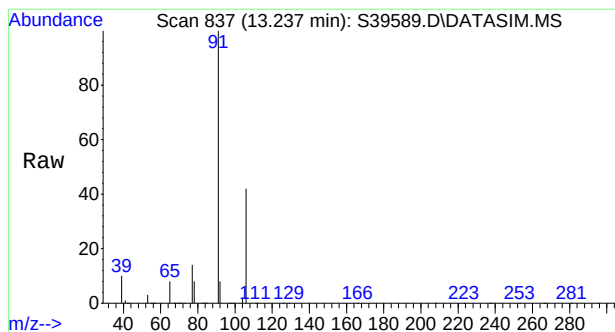
Tgt Ion: 91 Resp: 1821576
Ion Ratio Lower Upper
91 100
106 45.9 35.8 53.6



#20
Styrene
Concen: 1535.115 ng/mL
RT: 13.171 min Scan# 830
Delta R.T. -0.009 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

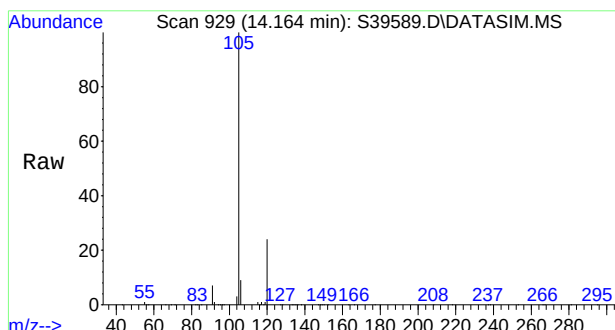
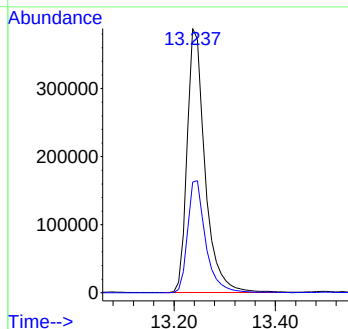
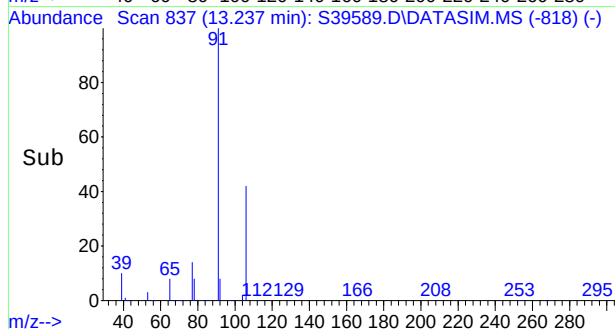
Tgt Ion: 104 Resp: 75002
Ion Ratio Lower Upper
104 100
78 49.5 40.3 60.5





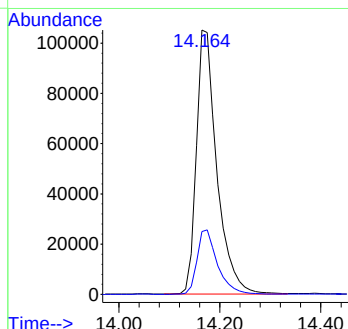
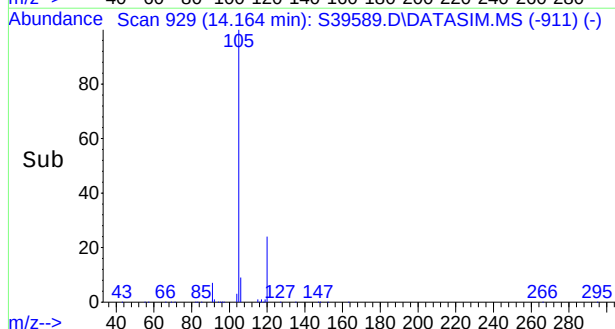
#21
o-Xylene
Concen: 15866.391 ng/mL
RT: 13.237 min Scan# 837
Delta R.T. -0.019 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

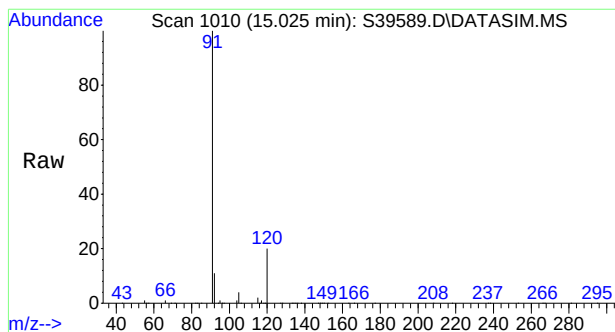
Tgt Ion:	91	Resp:	953493
Ion Ratio	Lower	Upper	
91	100		
106	42.7	34.5	51.7



#22
Isopropylbenzene
Concen: 4392.178 ng/mL
RT: 14.164 min Scan# 929
Delta R.T. -0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

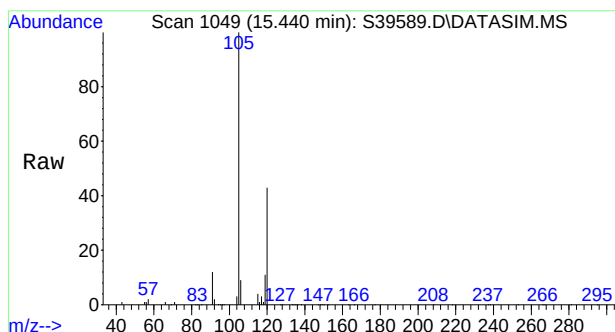
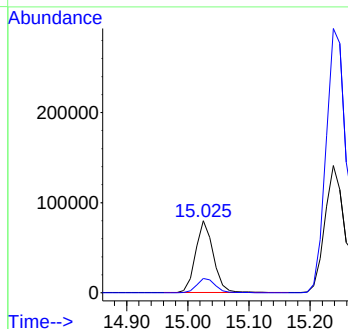
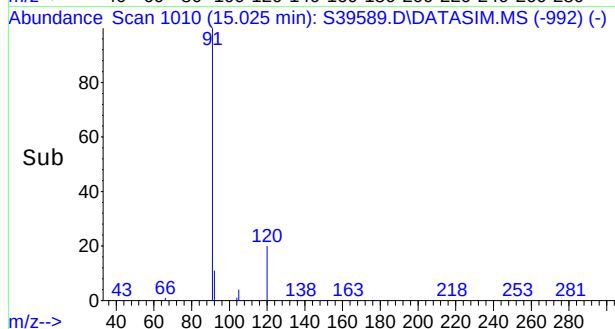
Tgt Ion:	105	Resp:	296388
Ion Ratio	Lower	Upper	
105	100		
120	24.3	19.2	28.8





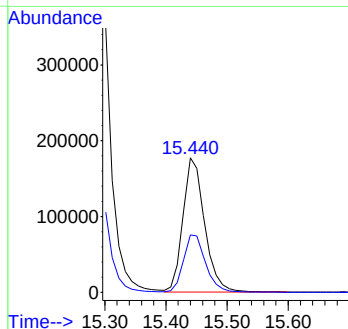
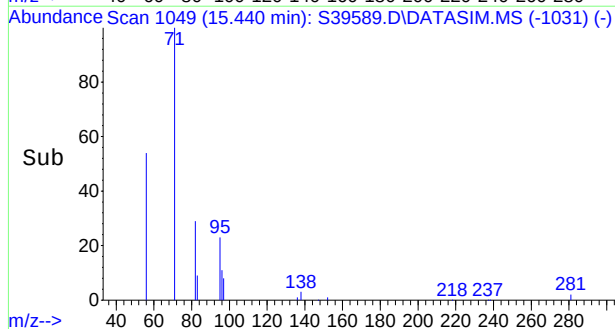
#23
n-Propylbenzene
Concen: 1885.876 ng/mL
RT: 15.025 min Scan# 1010
Delta R.T. -0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

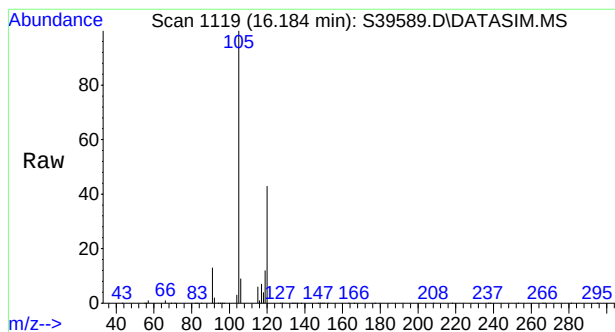
Tgt Ion: 91 Resp: 160793
Ion Ratio Lower Upper
91 100
120 21.0 16.8 25.2



#24
1,3,5-Trimethylbenzene
Concen: 7128.013 ng/mL
RT: 15.440 min Scan# 1049
Delta R.T. -0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

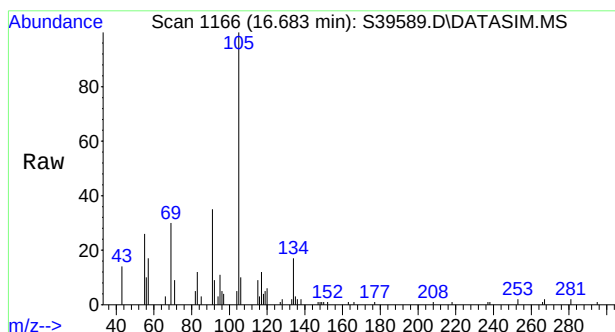
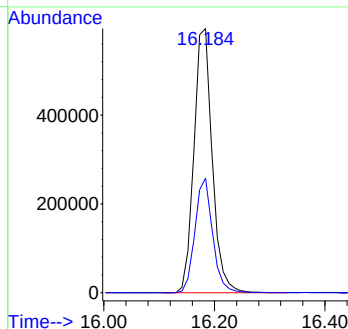
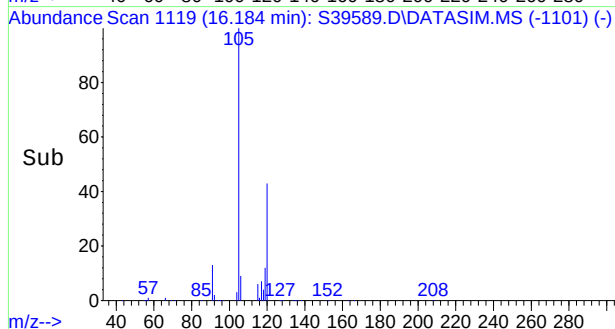
Tgt Ion: 105 Resp: 434476
Ion Ratio Lower Upper
105 100
120 43.7 33.5 50.3





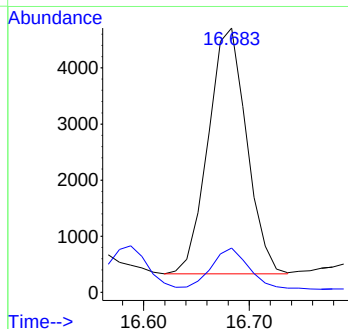
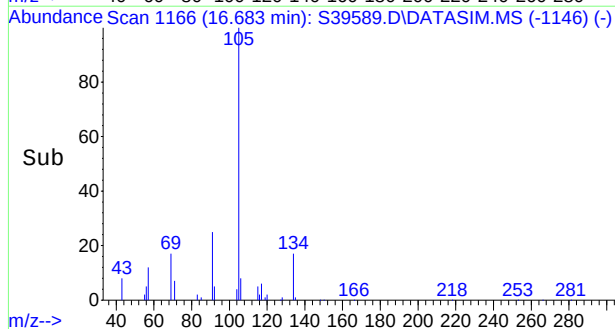
#27
1,2,4-Trimethylbenzene
Concen: 21564.033 ng/mL
RT: 16.184 min Scan# 1119
Delta R.T. -0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

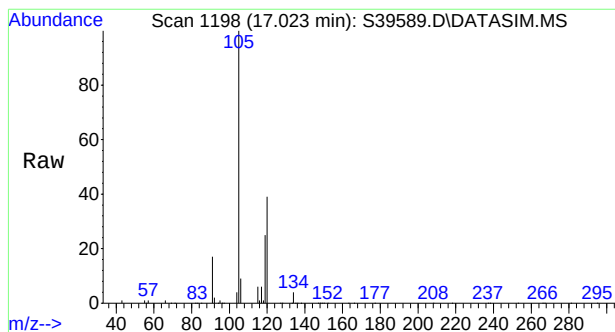
Tgt Ion:105 Resp: 1366366
Ion Ratio Lower Upper
105 100
120 41.9 35.3 52.9



#28
sec-Butylbenzene
Concen: 147.302 ng/mL
RT: 16.683 min Scan# 1166
Delta R.T. 0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

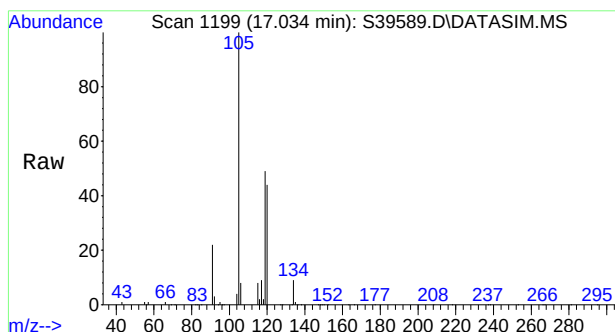
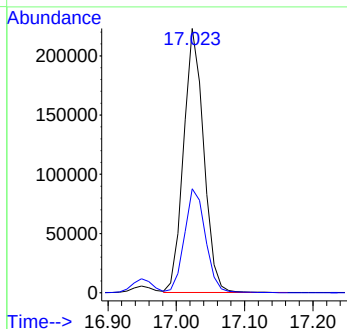
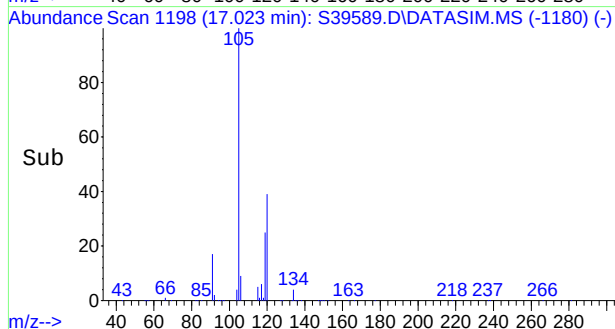
Tgt Ion:105 Resp: 11096
Ion Ratio Lower Upper
105 100
134 16.6 13.0 19.4





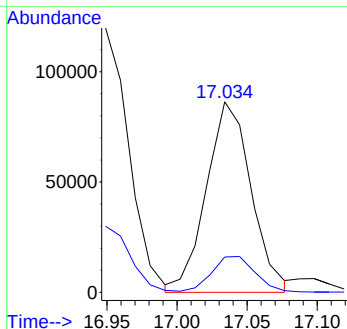
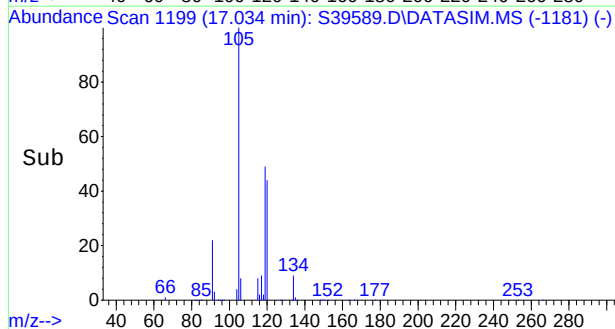
#29
1,2,3-Trimethylbenzene
Concen: 7216.047 ng/mL
RT: 17.023 min Scan# 1198
Delta R.T. -0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

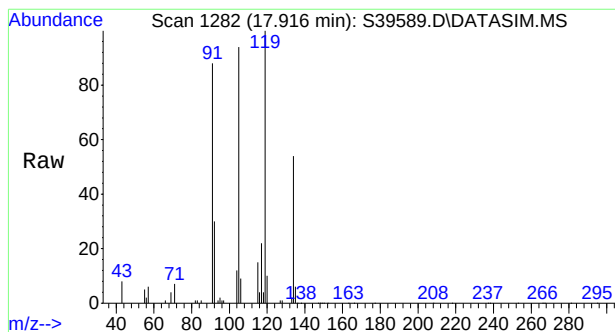
Tgt Ion:	105	Resp:	458840
Ion Ratio	Lower	Upper	
105	100		
120	41.3	34.8	52.2



#30
p-Isopropyltoluene
Concen: 2928.572 ng/mL m
RT: 17.034 min Scan# 1199
Delta R.T. -0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

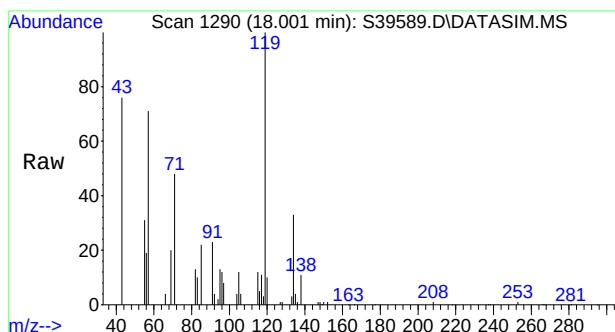
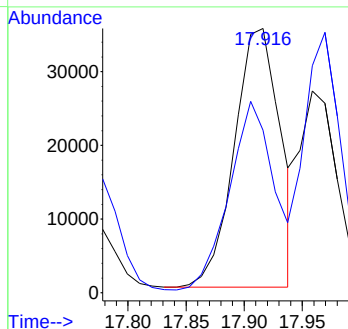
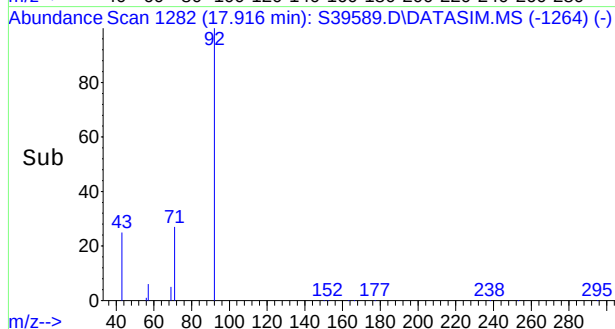
Tgt Ion:	119	Resp:	191618
Ion Ratio	Lower	Upper	
119	100		
134	18.4	17.4	26.0





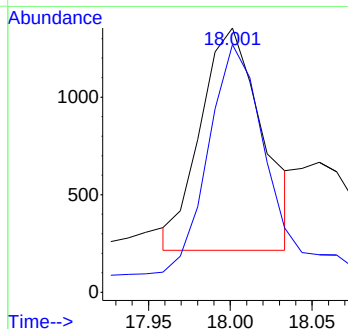
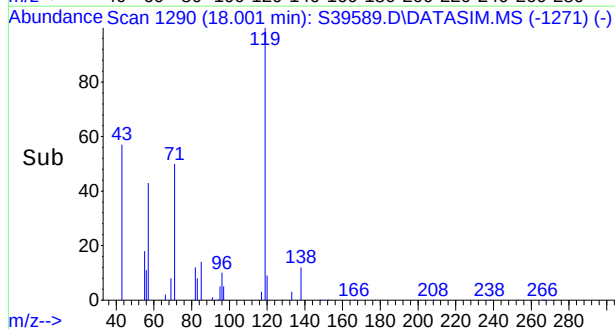
#33
n-Butylbenzene
Concen: 1466.114 ng/mL
RT: 17.916 min Scan# 1282
Delta R.T. -0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

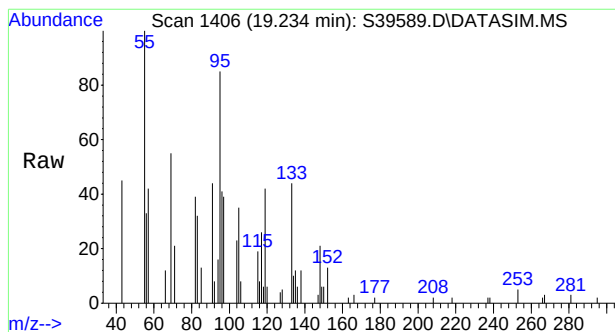
Tgt Ion: 91 Resp: 96330
Ion Ratio Lower Upper
91 100
134 71.8 16.7 25.1#



#34
trans-Decalin
Concen: 241.537 ng/mL m
RT: 18.001 min Scan# 1290
Delta R.T. -0.000 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

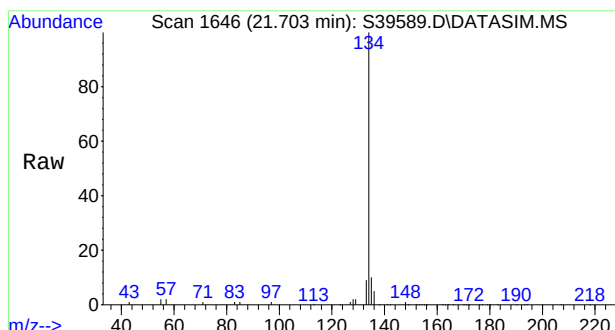
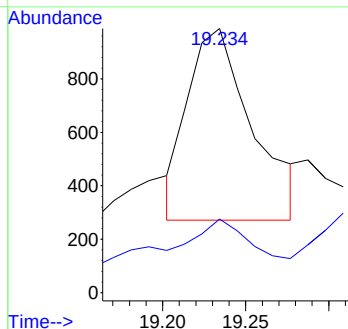
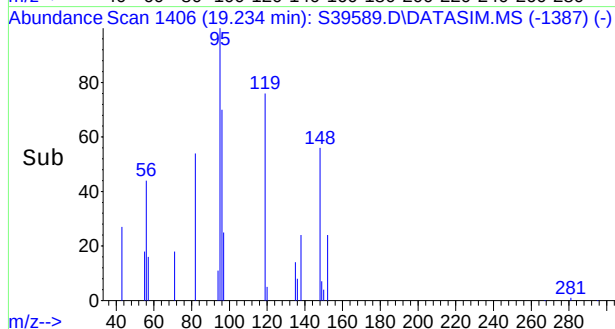
Tgt Ion: 96 Resp: 2995
Ion Ratio Lower Upper
96 100
138 106.9 91.8 137.6





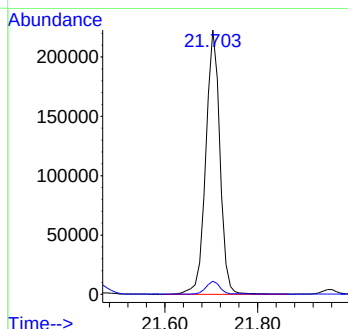
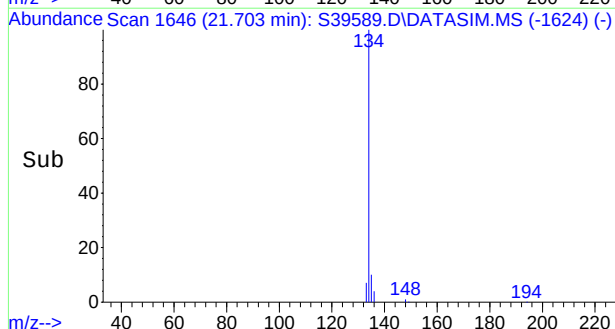
#35
cis-Decalin
Concen: 113.380 ng/mL m
RT: 19.234 min Scan# 1406
Delta R.T. -0.000 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

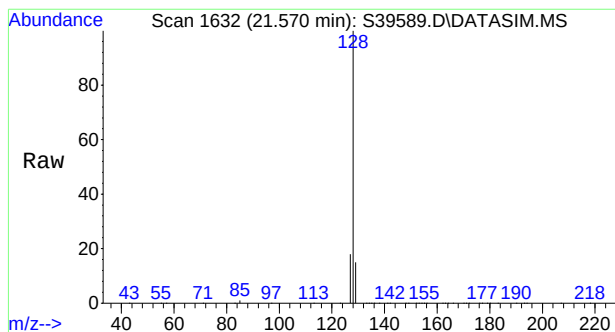
Tgt Ion:	96	Resp:	1935
Ion Ratio	Lower	Upper	
96	100		
138	29.2	54.1	81.1#



#40
Benzo(b)thiophene
Concen: 6507.297 ng/mL
RT: 21.703 min Scan# 1646
Delta R.T. 0.009 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

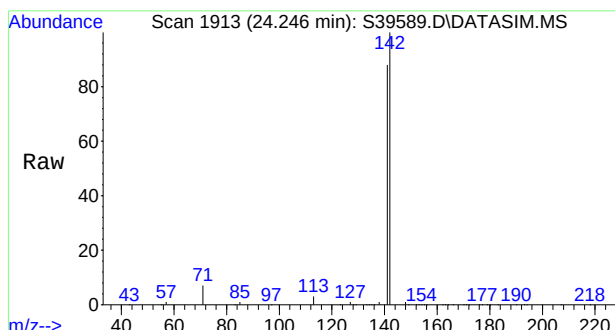
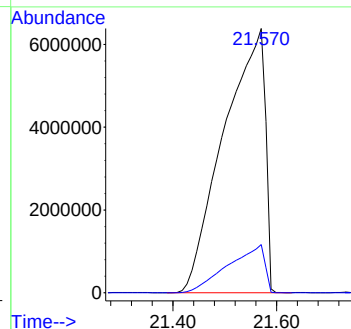
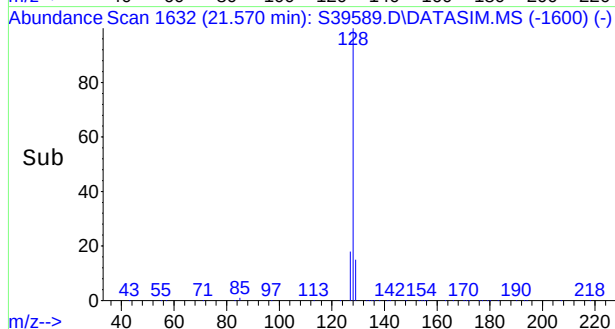
Tgt Ion:	134	Resp:	469021
Ion Ratio	Lower	Upper	
134	100		
136	4.8	4.4	6.6





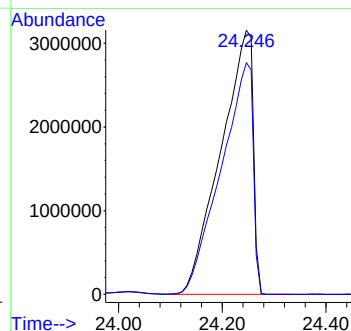
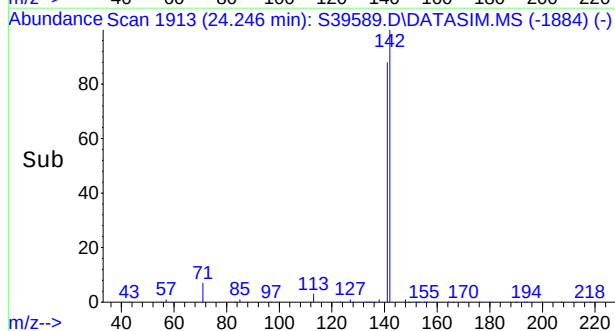
#51
Naphthalene
Concen: 400467.474 ng/mL
RT: 21.570 min Scan# 1632
Delta R.T. 0.105 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

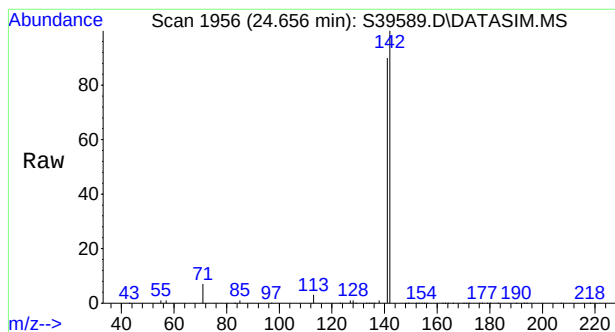
Tgt Ion:128 Resp:35232307
Ion Ratio Lower Upper
128 100
127 16.0 10.2 15.2#



#52
2-Methylnaphthalene
Concen: 239692.728 ng/mL
RT: 24.246 min Scan# 1913
Delta R.T. 0.076 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

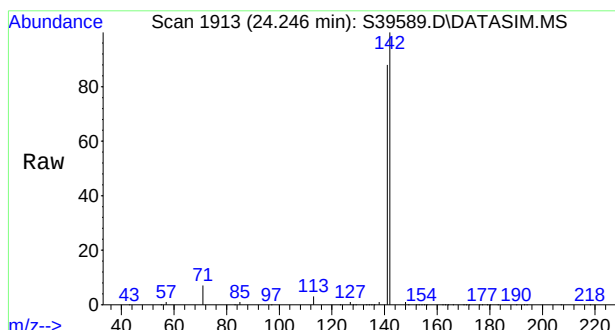
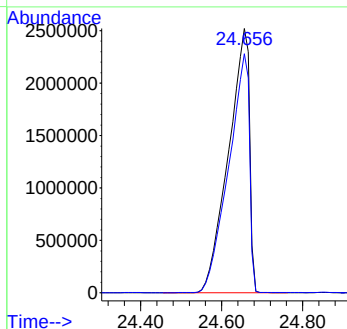
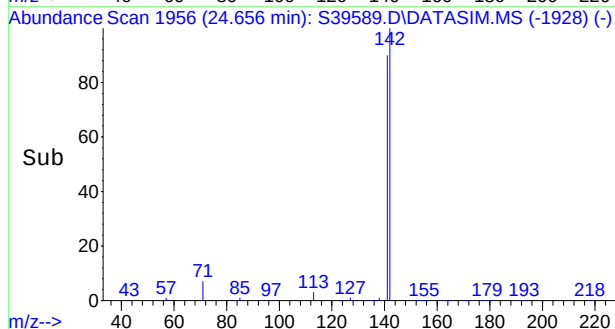
Tgt Ion:142 Resp:13620909
Ion Ratio Lower Upper
142 100
141 86.9 68.6 102.8





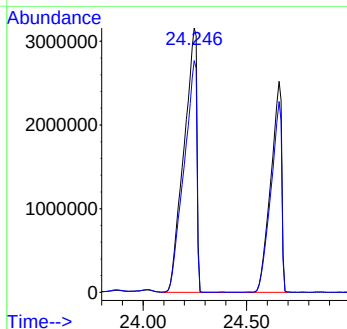
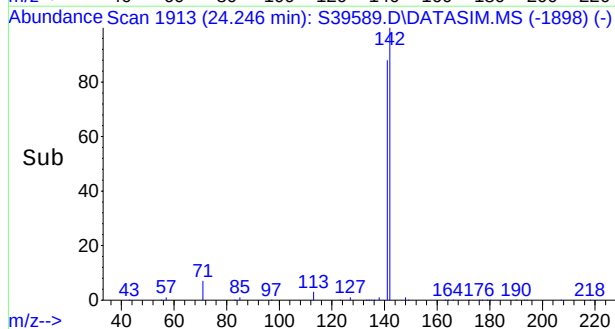
#53
1-Methylnaphthalene
Concen: 180012.505 ng/mL
RT: 24.656 min Scan# 1956
Delta R.T. 0.067 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

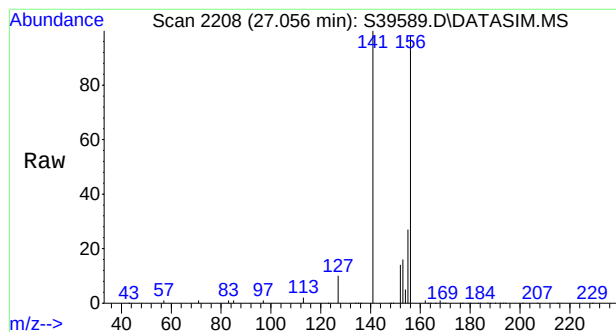
Tgt Ion:142 Resp: 9054777
Ion Ratio Lower Upper
142 100
141 89.6 71.6 107.4



#54
C1-Naphthalenes
Concen: 257929.700 ng/mL m
RT: 24.246 min Scan# 1913
Delta R.T. 0.084 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

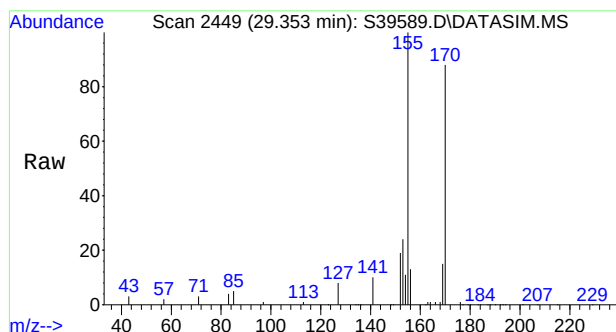
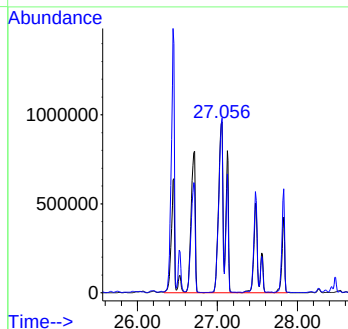
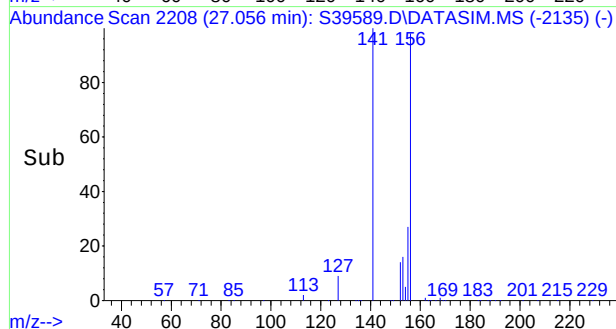
Tgt Ion:142 Resp:22692126
Ion Ratio Lower Upper
142 100
141 88.0 68.8 103.2





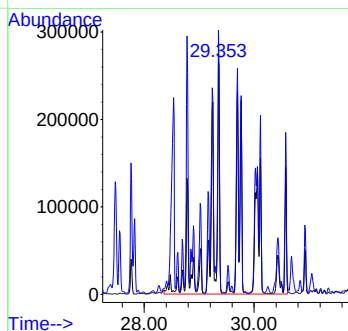
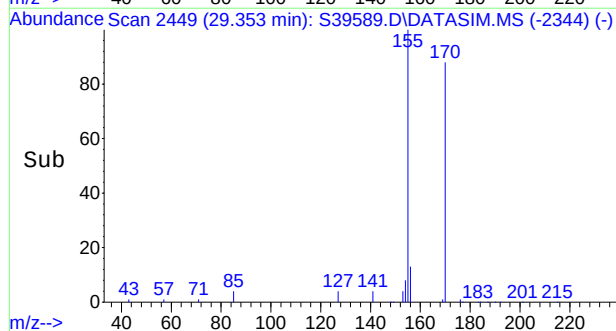
#55
C2-Naphthalenes
Concen: 148714.492 ng/mL m
RT: 27.056 min Scan# 2208
Delta R.T. -0.030 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

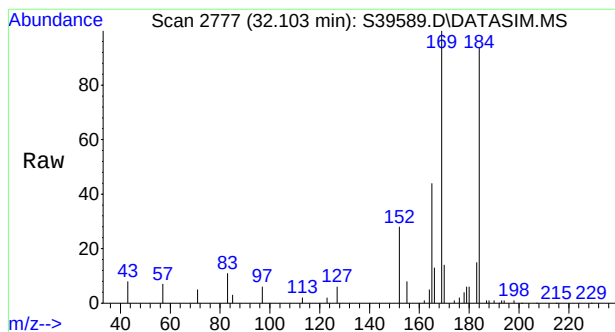
Tgt Ion:156 Resp:13083596
Ion Ratio Lower Upper
156 100
141 114.8 65.8 98.8#



#56
C3-Naphthalenes
Concen: 50364.075 ng/mL m
RT: 29.353 min Scan# 2449
Delta R.T. 0.009 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

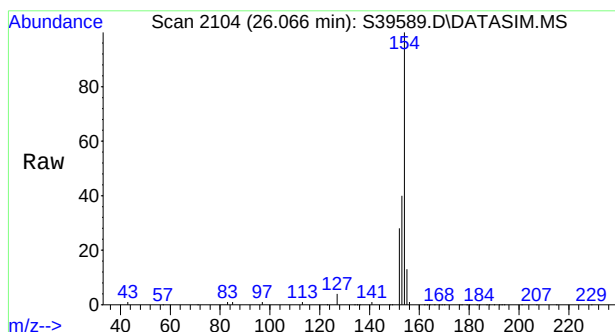
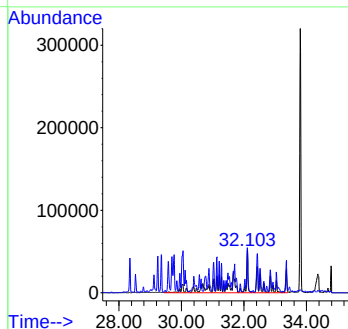
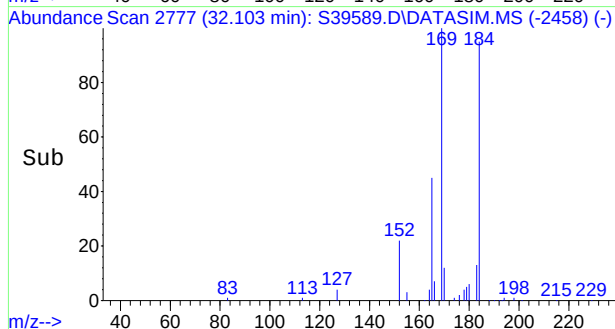
Tgt Ion:170 Resp: 4430928
Ion Ratio Lower Upper
170 100
155 149.9 87.4 131.0#





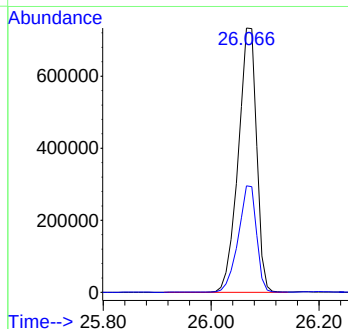
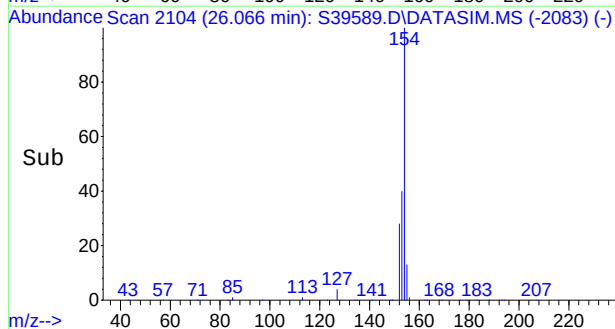
#57
C4-Naphthalenes
Concen: 13798.230 ng/mL m
RT: 32.103 min Scan# 2777
Delta R.T. 0.023 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

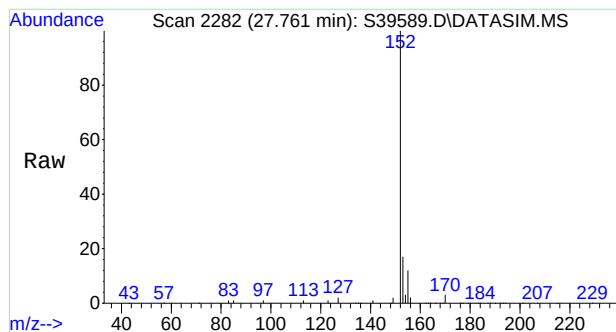
Tgt Ion:184 Resp: 1213940
Ion Ratio Lower Upper
184 100
169 217.6 85.9 128.9#



#58
Biphenyl
Concen: 26143.722 ng/mL
RT: 26.066 min Scan# 2104
Delta R.T. -0.000 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

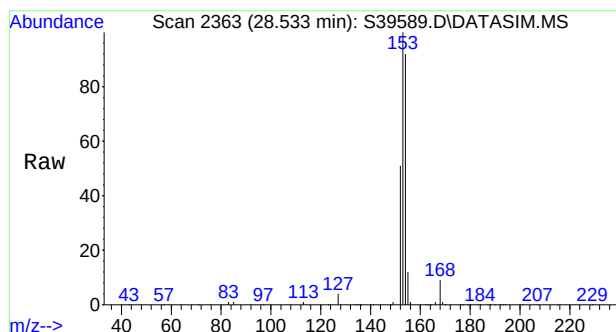
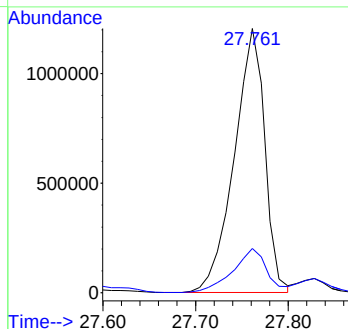
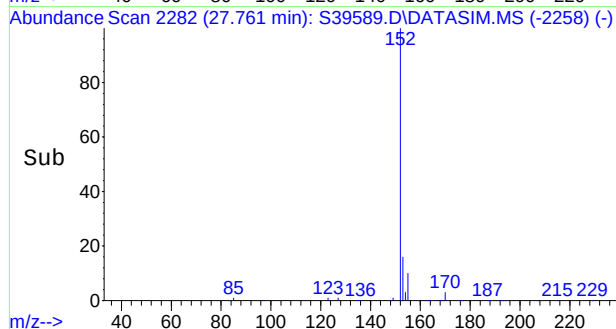
Tgt Ion:154 Resp: 1732006
Ion Ratio Lower Upper
154 100
153 40.1 31.0 46.6





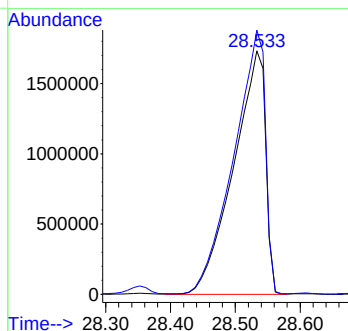
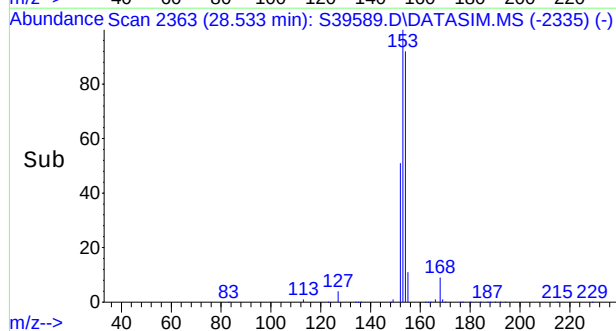
#59
Acenaphthylene
Concen: 32901.505 ng/mL
RT: 27.761 min Scan# 2282
Delta R.T. 0.029 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

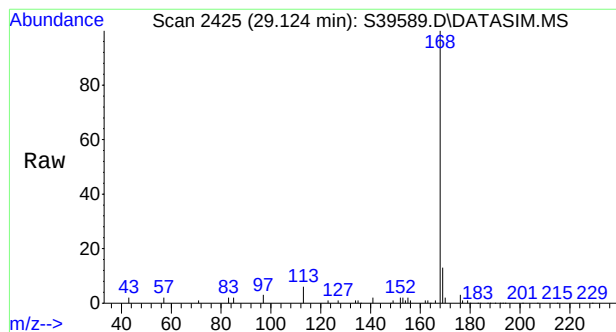
Tgt Ion:152 Resp: 2765813
Ion Ratio Lower Upper
152 100
153 18.5 10.3 15.5#



#60
Acenaphthene
Concen: 123589.659 ng/mL
RT: 28.533 min Scan# 2363
Delta R.T. 0.067 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

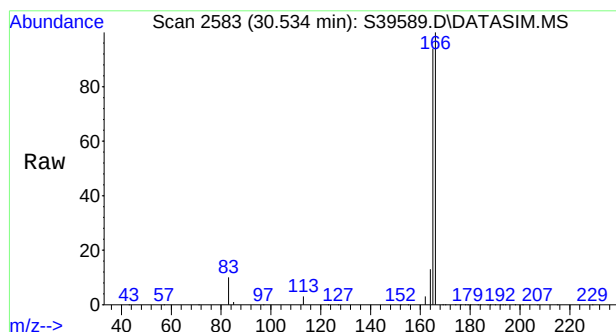
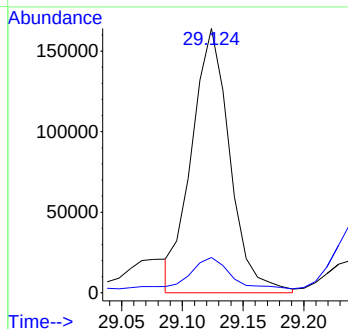
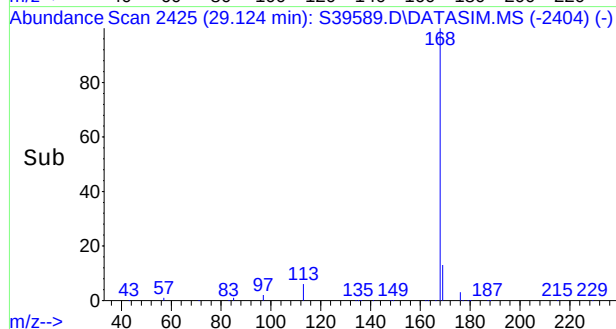
Tgt Ion:154 Resp: 5933529
Ion Ratio Lower Upper
154 100
153 107.6 86.6 129.8





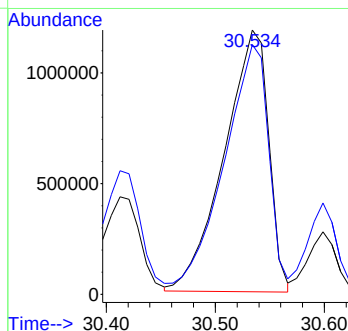
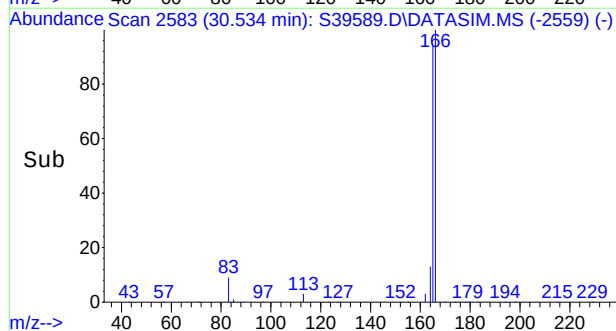
#61
Dibenzofuran
Concen: 5216.102 ng/mL m
RT: 29.124 min Scan# 2425
Delta R.T. -0.000 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

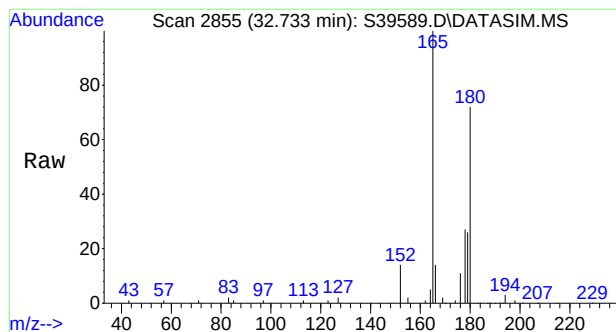
Tgt Ion:168 Resp: 359117
Ion Ratio Lower Upper
168 100
169 15.1 10.4 15.6



#62
Fluorene
Concen: 58408.310 ng/mL
RT: 30.534 min Scan# 2583
Delta R.T. 0.040 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

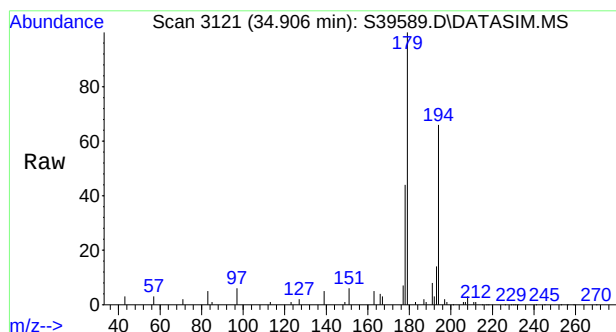
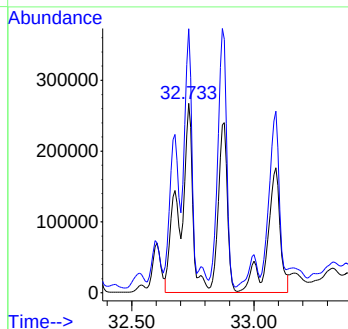
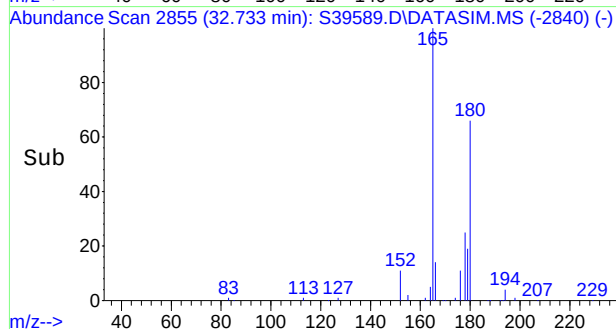
Tgt Ion:166 Resp: 3352114
Ion Ratio Lower Upper
166 100
165 92.9 75.8 113.6





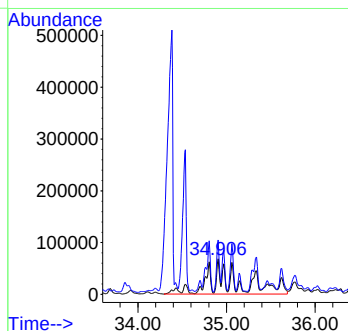
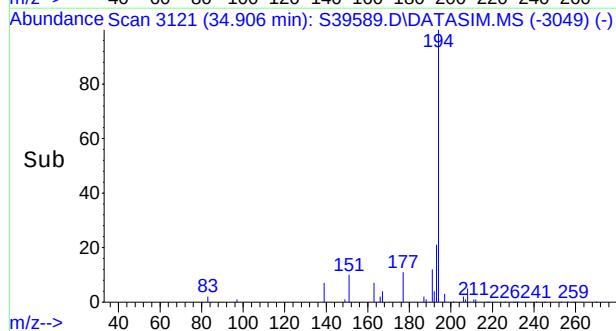
#63
C1-Fluorenes
Concen: 39433.782 ng/mL m
RT: 32.733 min Scan# 2855
Delta R.T. -0.120 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

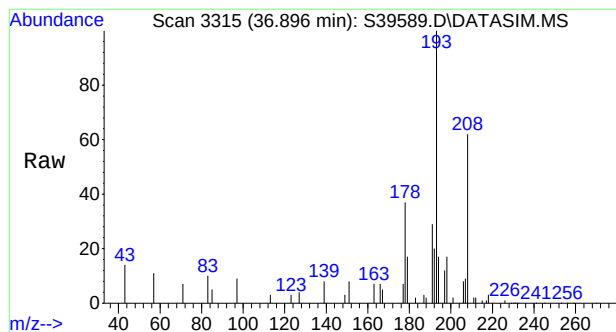
Tgt Ion:180 Resp: 2263146
Ion Ratio Lower Upper
180 100
165 142.7 139.8 209.6



#64
C2-Fluorenes
Concen: 22961.091 ng/mL m
RT: 34.906 min Scan# 3121
Delta R.T. -0.143 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

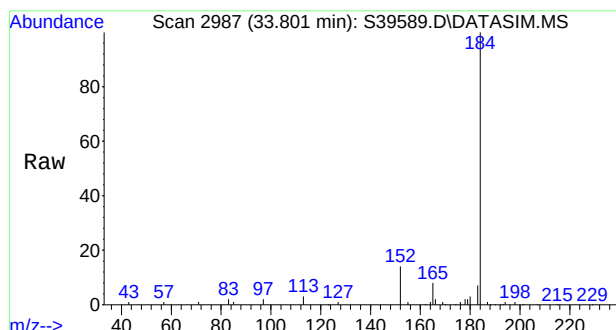
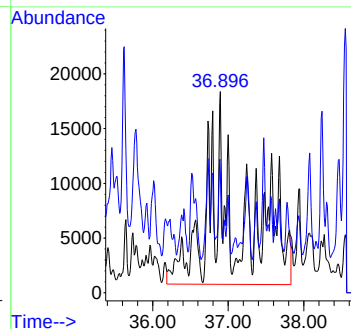
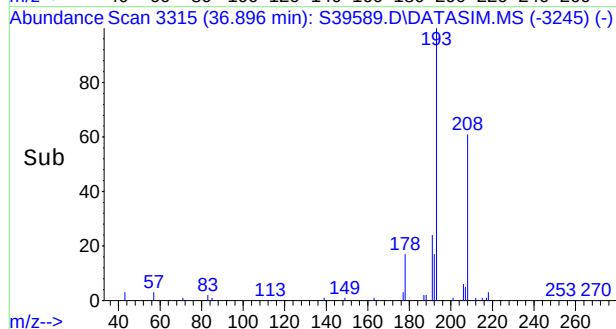
Tgt Ion:194 Resp: 1317761
Ion Ratio Lower Upper
194 100
179 383.4 127.9 191.9#





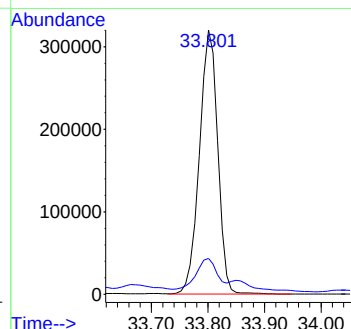
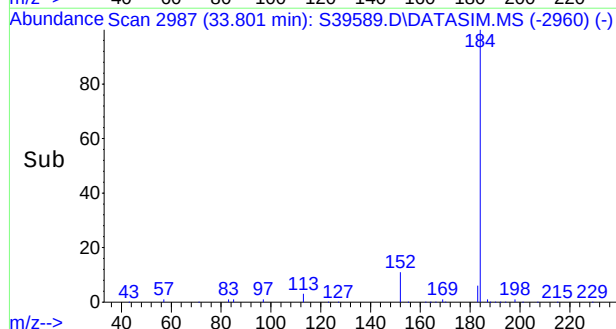
#65
C3-Fluorenes
Concen: 8246.617 ng/mL m
RT: 36.896 min Scan# 3315
Delta R.T. 0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

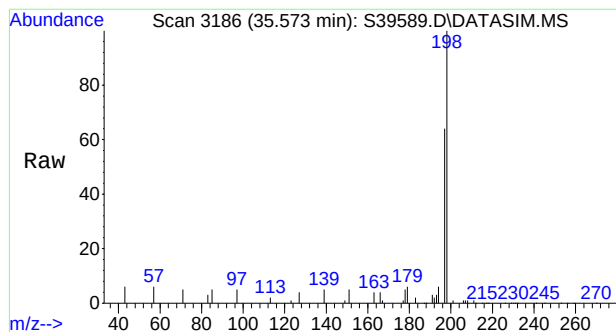
Tgt Ion:208 Resp: 473282
Ion Ratio Lower Upper
208 100
178 72.9 59.4 89.2



#66
Dibenzothiophene
Concen: 8958.187 ng/mL
RT: 33.801 min Scan# 2987
Delta R.T. 0.016 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

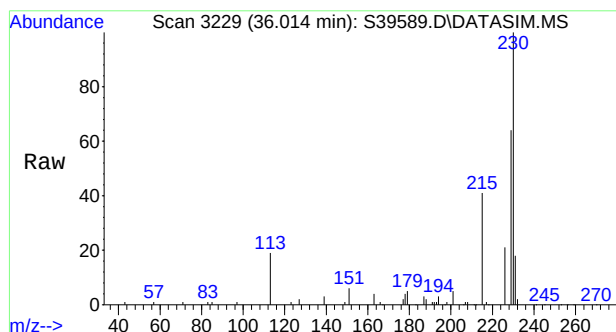
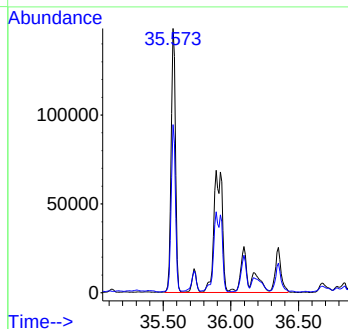
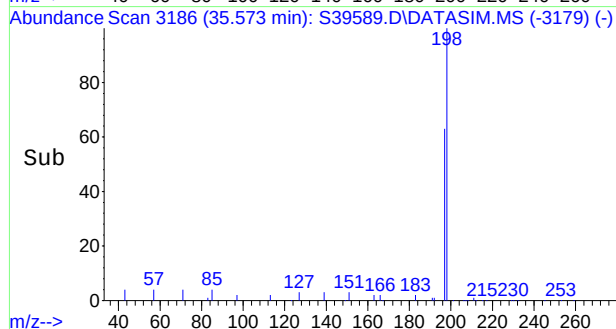
Tgt Ion:184 Resp: 718334
Ion Ratio Lower Upper
184 100
152 12.9 8.4 12.6#





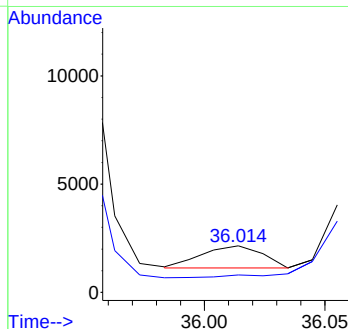
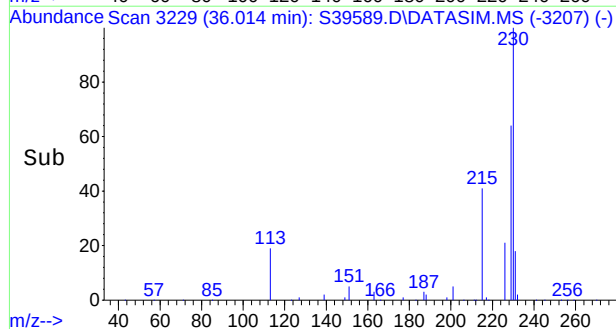
#67
C1-Dibenzothiophenes (unadj)
Concen: 10784.945 ng/mL m
RT: 35.573 min Scan# 3186
Delta R.T. 0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

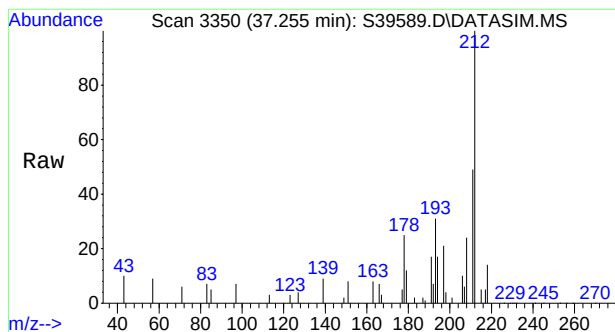
Tgt Ion:198 Resp: 864817
Ion Ratio Lower Upper
198 100
197 70.0 51.9 77.9



#68
C1-Dibenzothiophenes (OTP)
Concen: 22.273 ng/mL m
RT: 36.014 min Scan# 3229
Delta R.T. 0.029 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

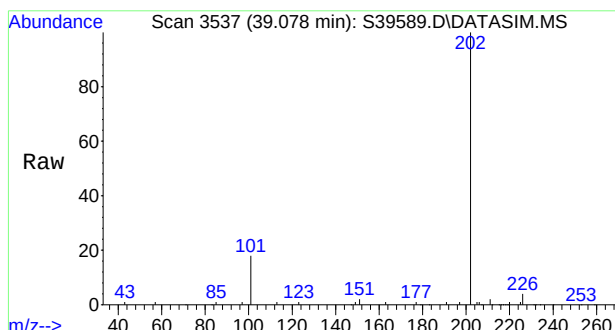
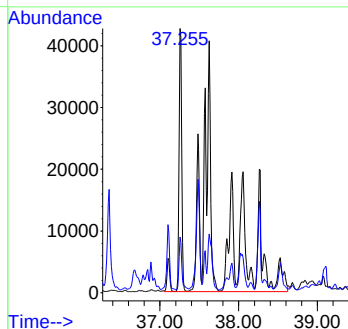
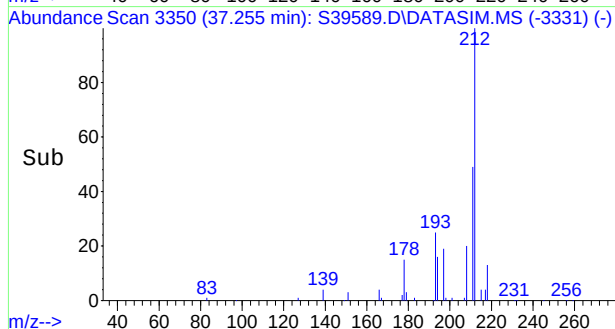
Tgt Ion:198 Resp: 1786
Ion Ratio Lower Upper
198 100
197 12.3 10.6 15.8





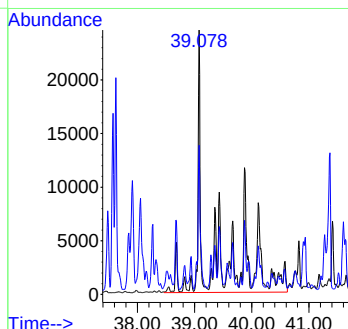
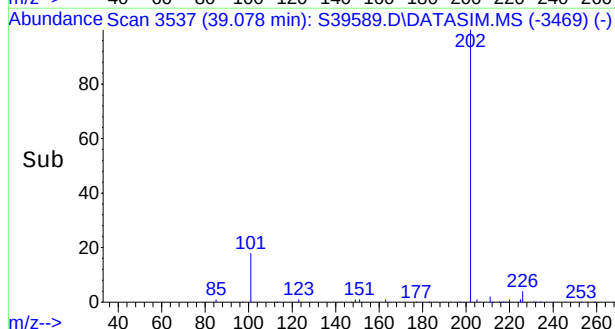
#69
C2-Dibenzothiophenes
Concen: 7638.866 ng/mL m
RT: 37.255 min Scan# 3350
Delta R.T. -0.358 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

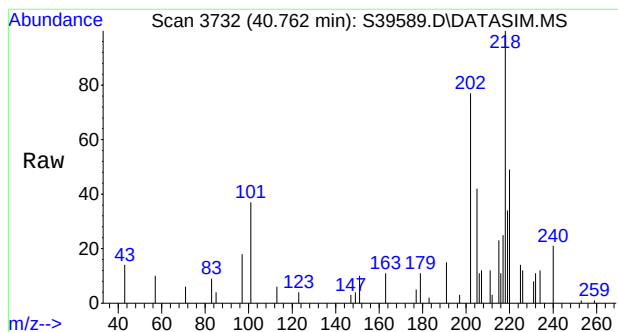
Tgt Ion:212 Resp: 612541
Ion Ratio Lower Upper
212 100
197 42.0 20.1 30.1#



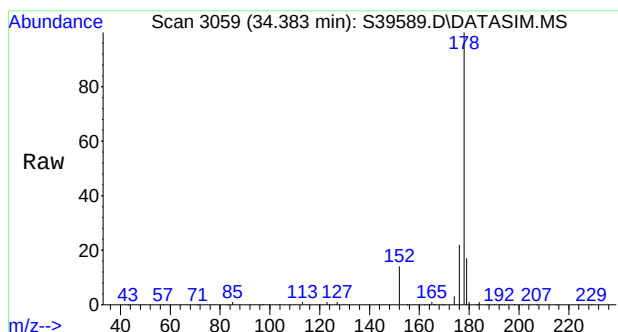
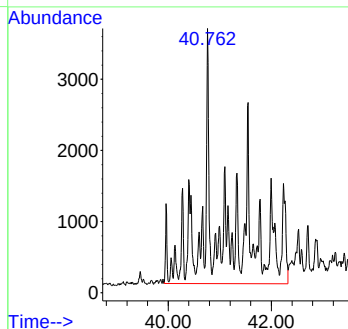
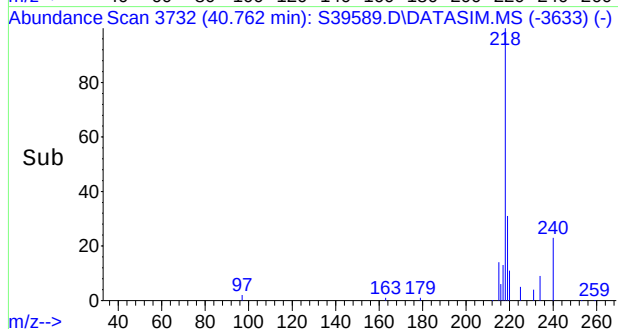
#70
C3-Dibenzothiophenes
Concen: 3514.129 ng/mL m
RT: 39.078 min Scan# 3537
Delta R.T. 0.020 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:226 Resp: 281789
Ion Ratio Lower Upper
226 100
211 75.6 51.8 77.6

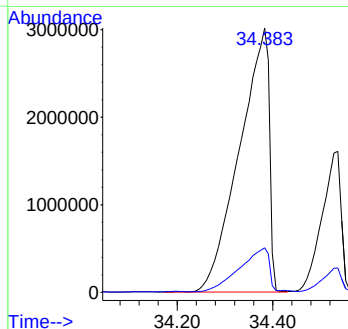
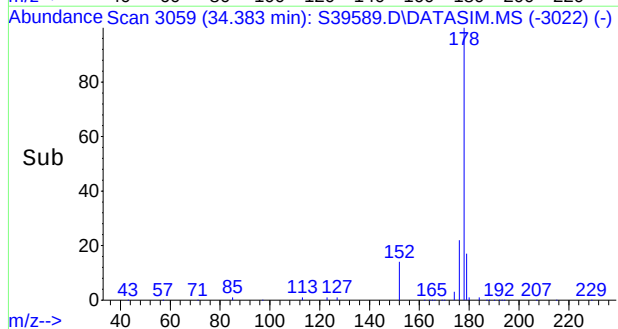


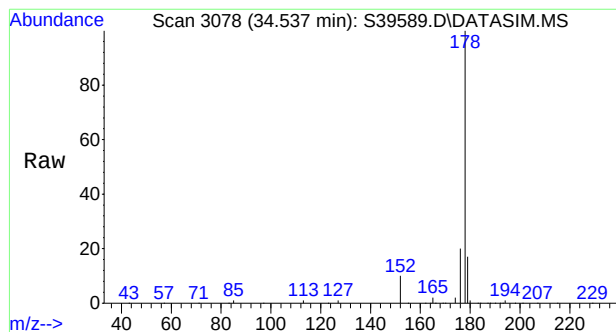


#71
C4-Dibenzothiophenes
Concen: 1057.123 ng/mL m
RT: 40.762 min Scan# 3732
Delta R.T. 0.004 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm
Tgt Ion:240 Resp: 84768



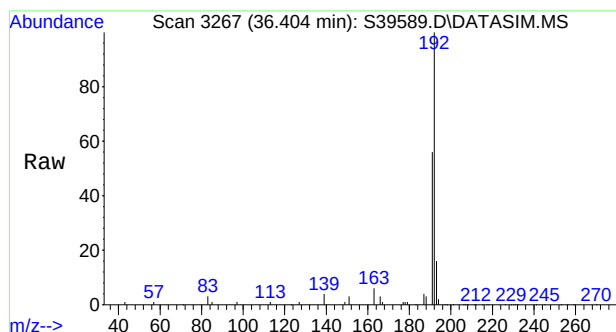
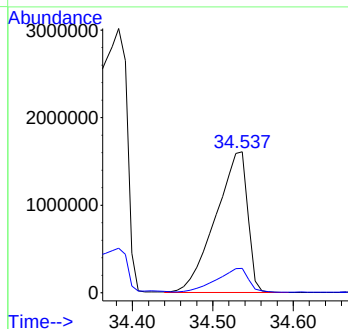
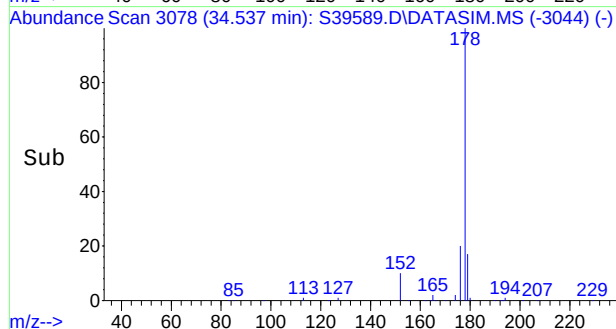
#72
Phenanthrene
Concen: 174953.949 ng/mL
RT: 34.383 min Scan# 3059
Delta R.T. 0.097 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm
Tgt Ion:178 Resp:13024428
Ion Ratio Lower Upper
178 100
179 16.4 11.9 17.9





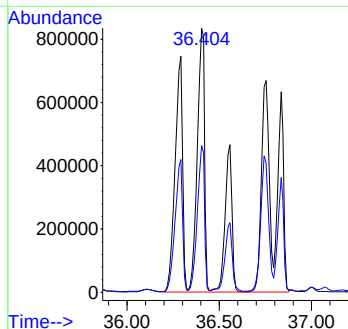
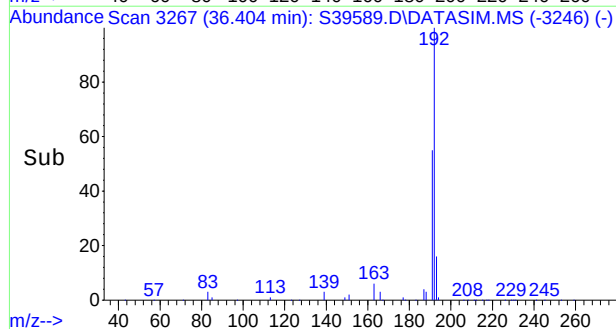
#73
Anthracene
Concen: 63898.828 ng/mL
RT: 34.537 min Scan# 3078
Delta R.T. 0.073 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

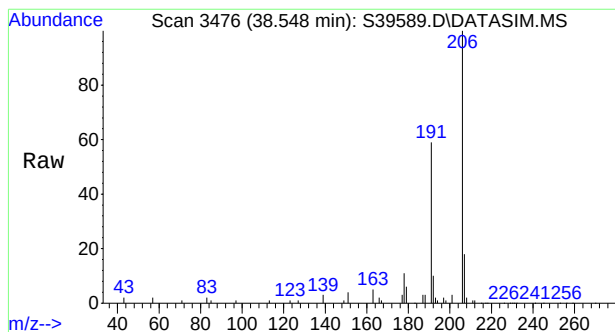
Tgt Ion:178 Resp: 4454378
Ion Ratio Lower Upper
178 100
179 16.9 12.0 18.0



#74
C1-Phenanthrenes/anthracenes
Concen: 119579.445 ng/mL m
RT: 36.404 min Scan# 3267
Delta R.T. -0.297 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

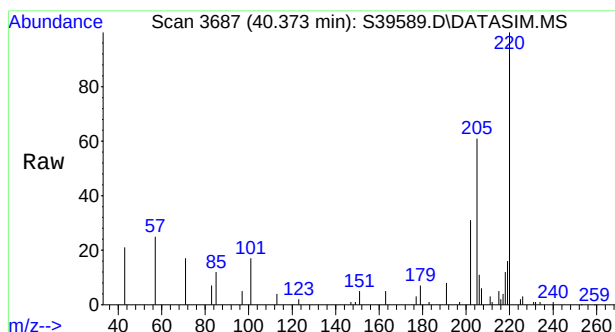
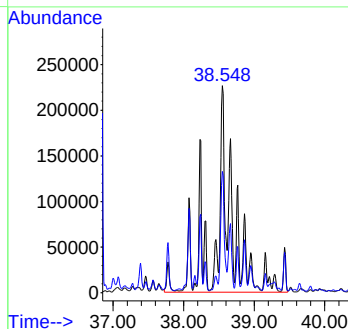
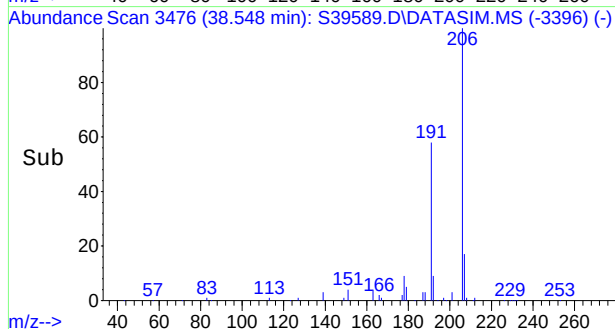
Tgt Ion:192 Resp: 8902079
Ion Ratio Lower Upper
192 100
191 57.0 45.0 67.4





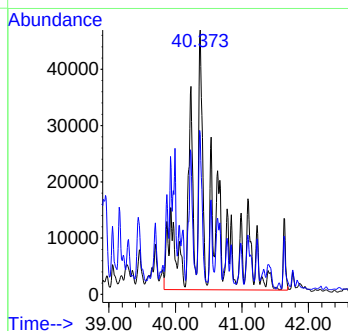
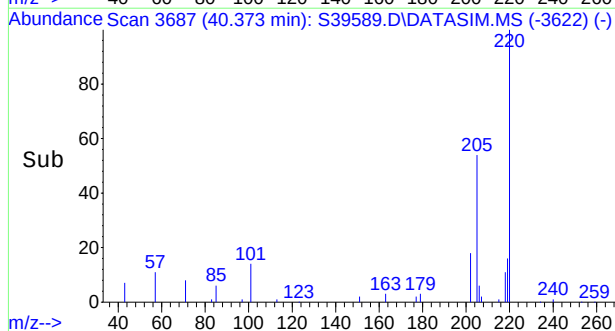
#75
C2-Phenanthrenes/anthracenes (unadj)
Concen: 46917.161 ng/mL m
RT: 38.548 min Scan# 3476
Delta R.T. 0.022 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

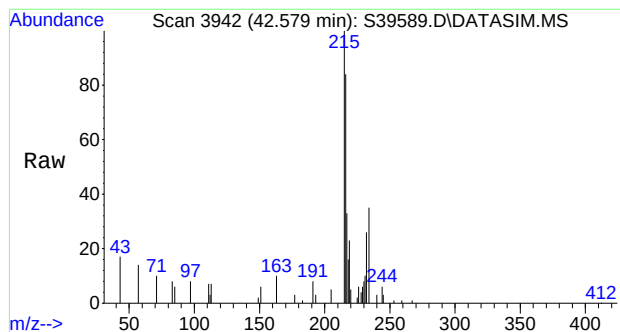
Tgt Ion:206 Resp: 3492743
Ion Ratio Lower Upper
206 100
191 59.6 47.0 70.4



#77
C3-Phenanthrenes/anthracenes
Concen: 12168.854 ng/mL m
RT: 40.373 min Scan# 3687
Delta R.T. 0.012 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

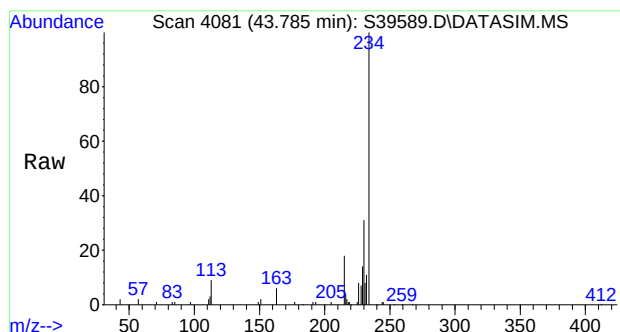
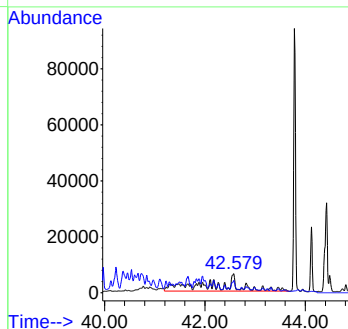
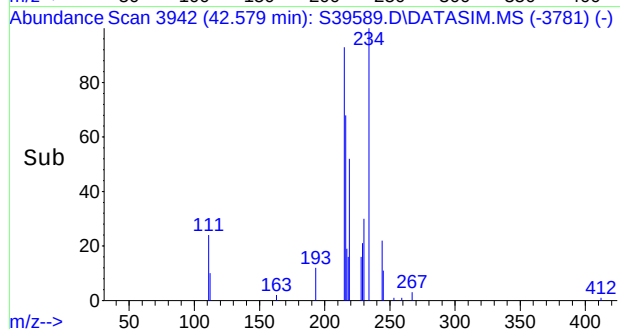
Tgt Ion:220 Resp: 905909
Ion Ratio Lower Upper
220 100
205 85.6 49.8 74.6#





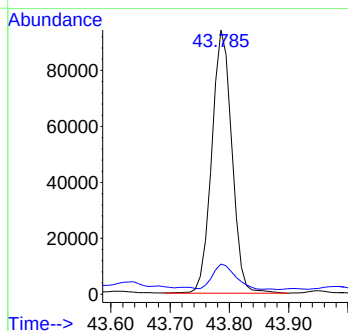
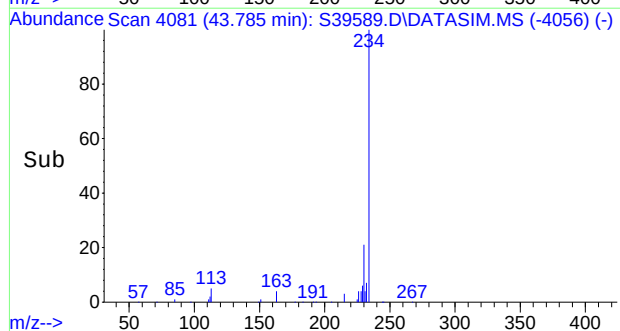
#78
C4-Phenanthrenes/anthracenes
Concen: 2871.104 ng/mL m
RT: 42.579 min Scan# 3942
Delta R.T. 0.039 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

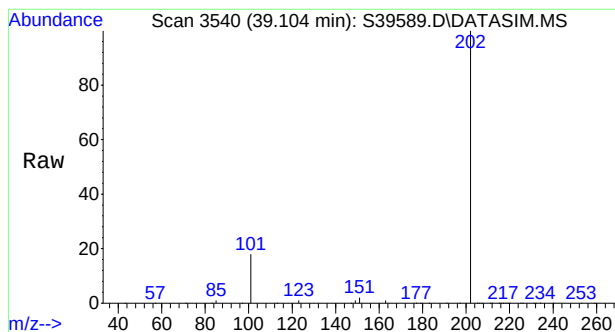
Tgt Ion:234 Resp: 213739
Ion Ratio Lower Upper
234 100
219 120.8 52.1 78.1#



#81
Benzo(b)naphtho(2,1-d)thiophene
Concen: 3190.072 ng/mL
RT: 43.785 min Scan# 4081
Delta R.T. 0.017 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

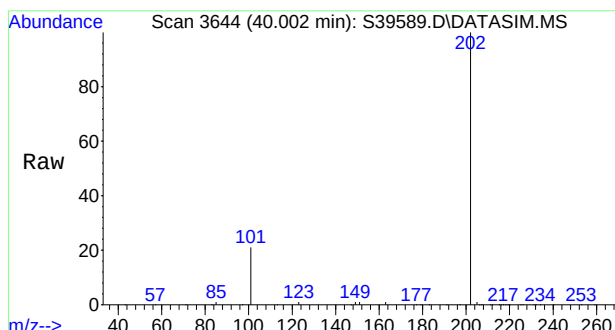
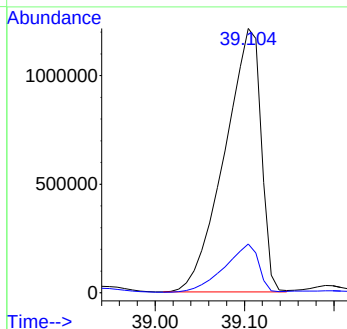
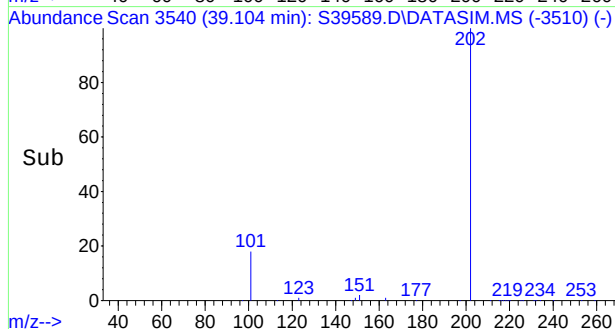
Tgt Ion:234 Resp: 221217
Ion Ratio Lower Upper
234 100
232 11.0 7.6 11.4





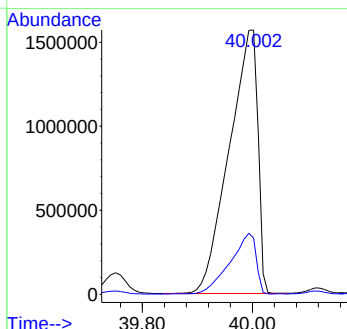
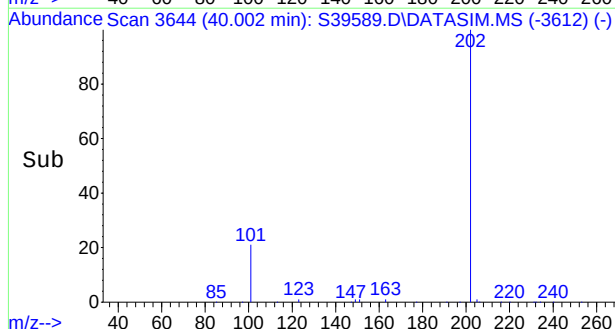
#86
Fluoranthene
Concen: 46548.329 ng/mL
RT: 39.104 min Scan# 3540
Delta R.T. 0.060 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

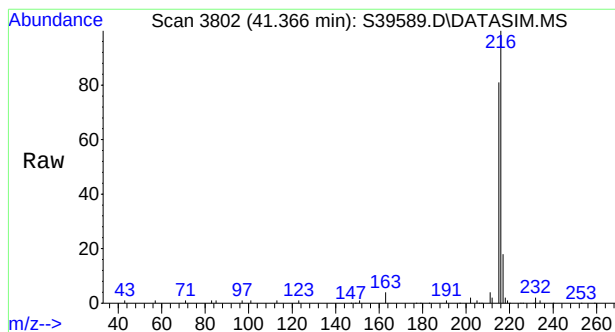
Tgt Ion:202 Resp: 3445673
Ion Ratio Lower Upper
202 100
101 17.1 12.6 19.0



#87
Pyrene
Concen: 76549.059 ng/mL
RT: 40.002 min Scan# 3644
Delta R.T. 0.078 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

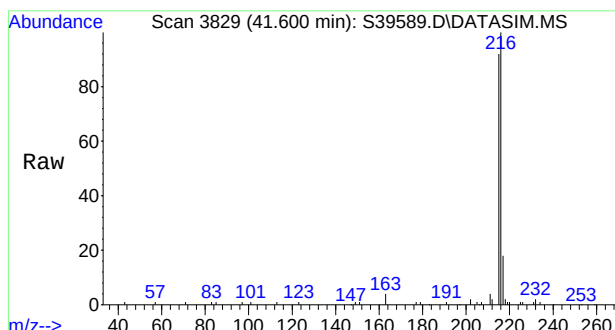
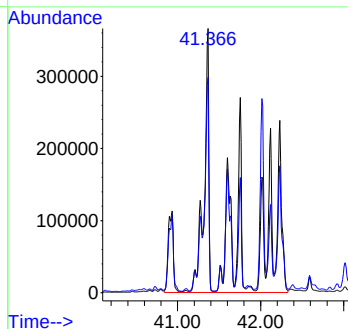
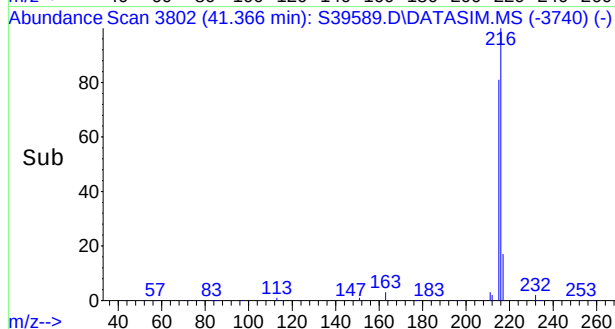
Tgt Ion:202 Resp: 5634466
Ion Ratio Lower Upper
202 100
101 21.1 13.8 20.8#





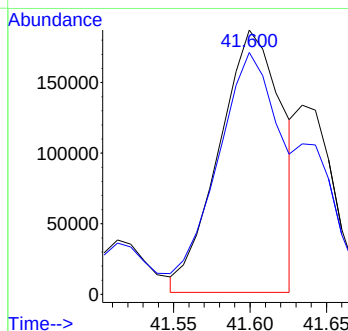
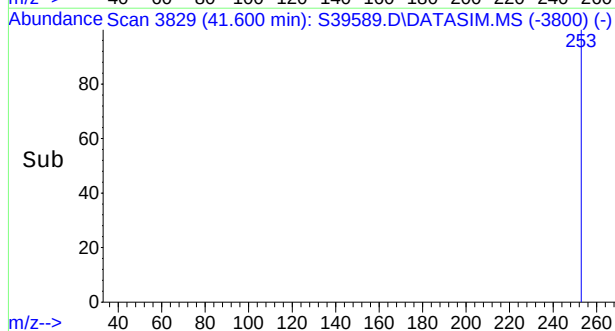
#88
C1-Fluoranthenes/pyrenes
Concen: 72447.746 ng/mL m
RT: 41.366 min Scan# 3802
Delta R.T. 0.038 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

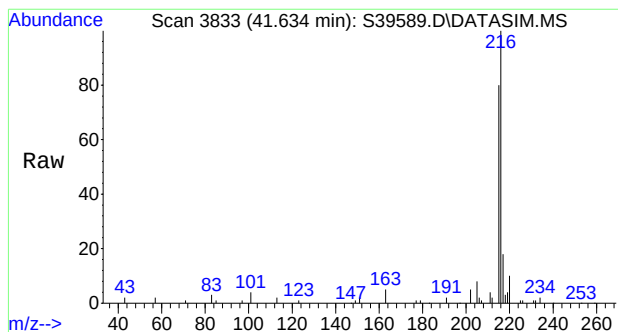
Tgt Ion:216 Resp: 5332585
Ion Ratio Lower Upper
216 100
215 87.5 74.9 112.3



#89
Benzo(b)fluorene
Concen: 7225.000 ng/mL m
RT: 41.600 min Scan# 3829
Delta R.T. 0.030 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

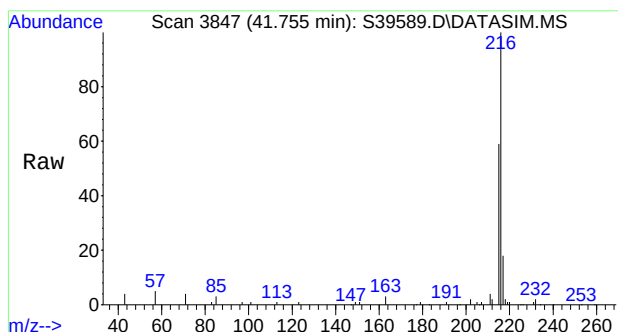
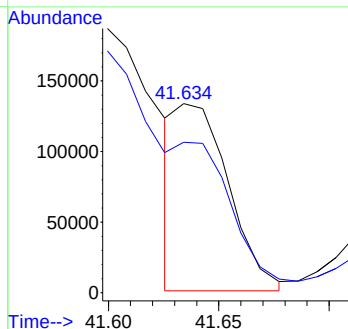
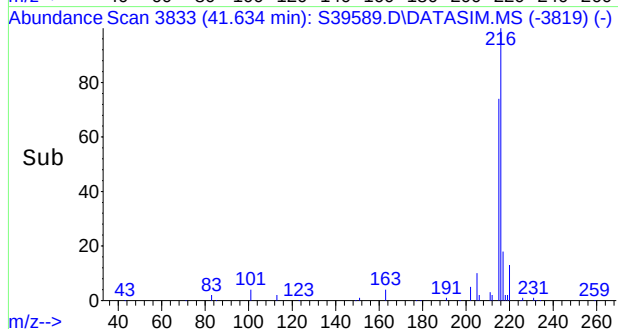
Tgt Ion:216 Resp: 531803
Ion Ratio Lower Upper
216 100
215 90.2 106.9 160.3#





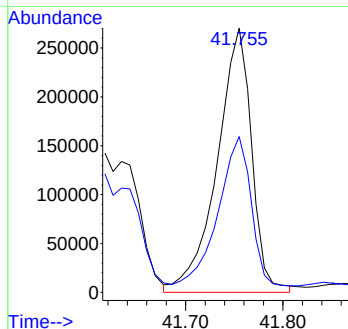
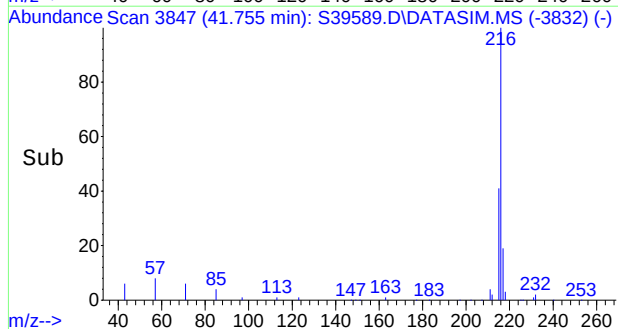
#90
Benzo(c)fluorene
Concen: 2974.447 ng/mL m
RT: 41.634 min Scan# 3833
Delta R.T. 0.021 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

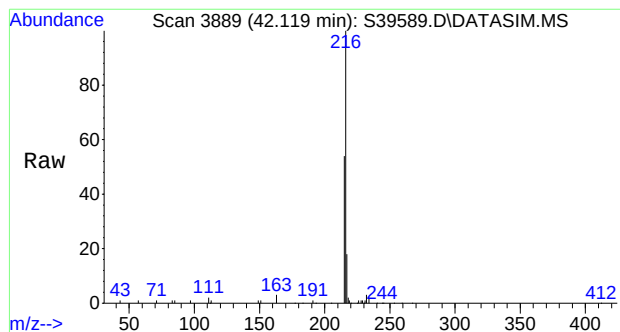
Tgt Ion:216 Resp: 218937
Ion Ratio Lower Upper
216 100
215 84.7 123.7 185.5#



#91
2-Methylpyrene
Concen: 9071.115 ng/mL m
RT: 41.755 min Scan# 3847
Delta R.T. 0.030 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

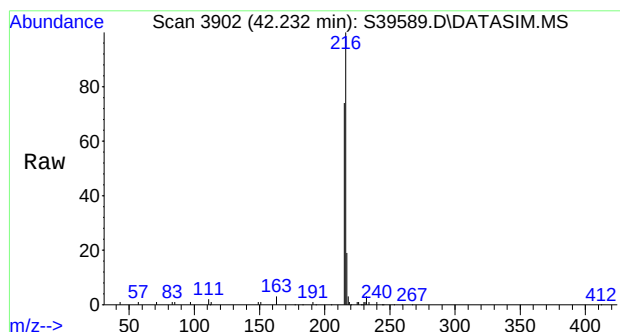
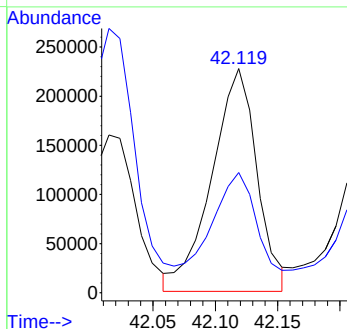
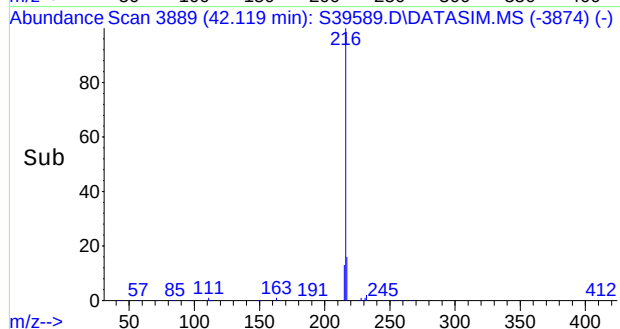
Tgt Ion:216 Resp: 667688
Ion Ratio Lower Upper
216 100
215 52.9 84.5 126.7#





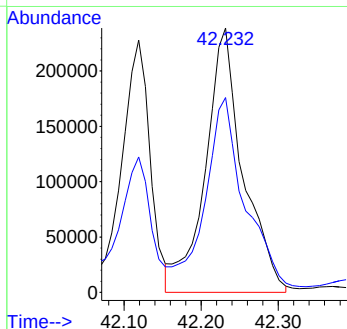
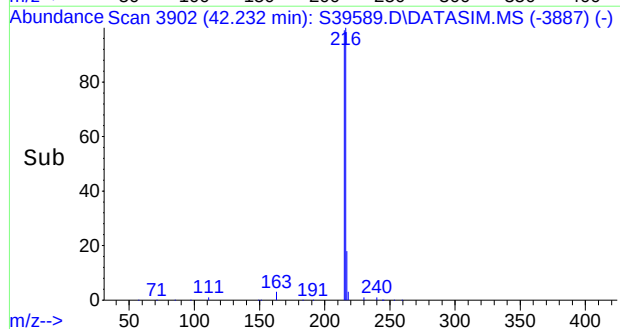
#92
4-Methylpyrene
Concen: 7789.343 ng/mL m
RT: 42.119 min Scan# 3889
Delta R.T. 0.030 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

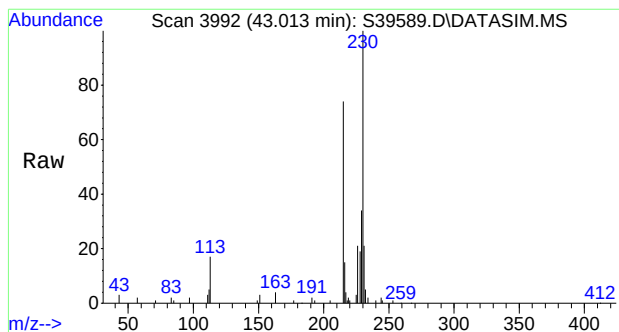
Tgt Ion:216 Resp: 573342
Ion Ratio Lower Upper
216 100
215 59.2 57.4 86.0



#93
1-Methylpyrene
Concen: 11029.815 ng/mL m
RT: 42.232 min Scan# 3902
Delta R.T. 0.030 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

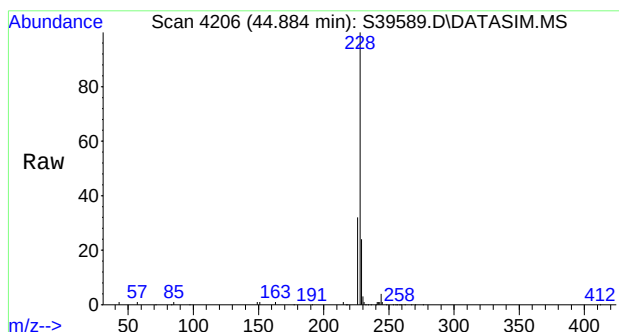
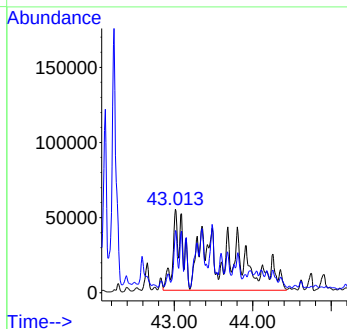
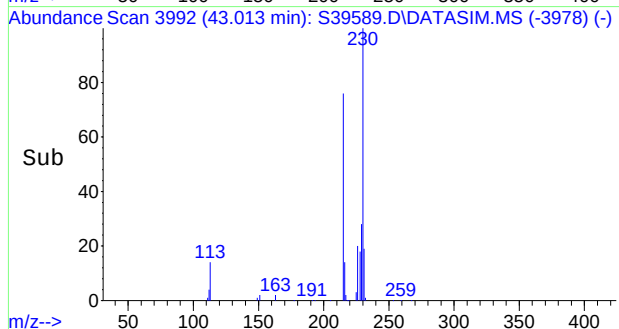
Tgt Ion:216 Resp: 811860
Ion Ratio Lower Upper
216 100
215 53.9 76.0 114.0#





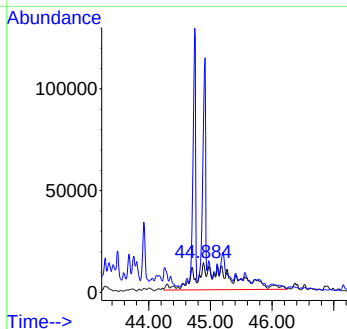
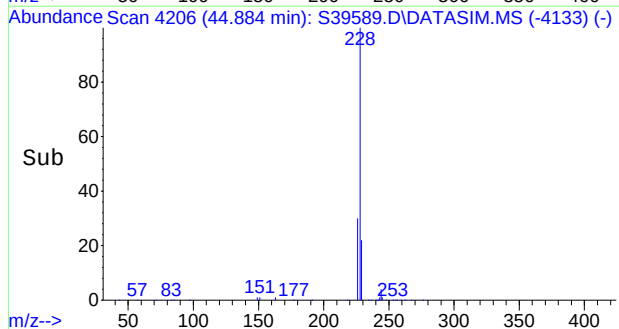
#94
C2-Fluoranthenes/pyrenes
Concen: 23921.776 ng/mL m
RT: 43.013 min Scan# 3992
Delta R.T. -0.126 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

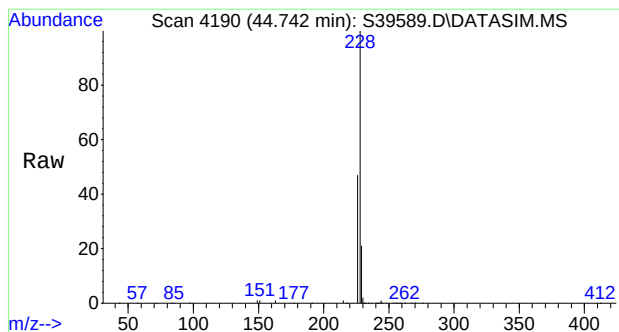
Tgt Ion:230 Resp: 1760785
Ion Ratio Lower Upper
230 100
215 79.4 103.6 155.4#



#95
C3-Fluoranthenes/pyrenes
Concen: 7224.049 ng/mL m
RT: 44.884 min Scan# 4206
Delta R.T. -0.270 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

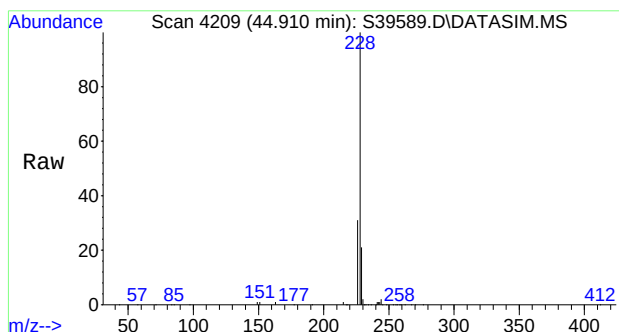
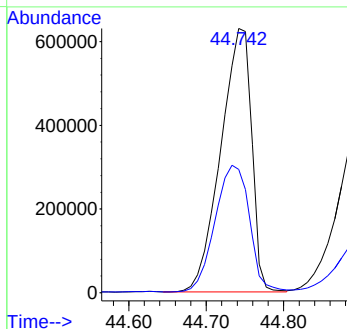
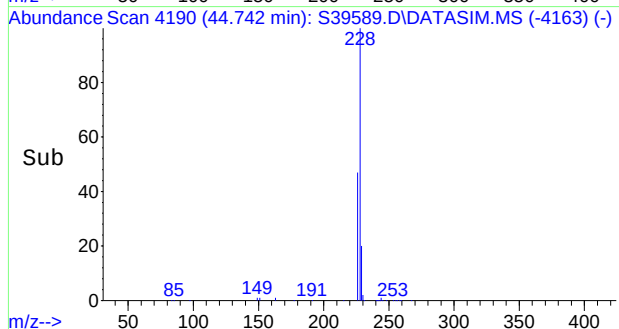
Tgt Ion:244 Resp: 531733
Ion Ratio Lower Upper
244 100
229 253.5 85.9 128.9#





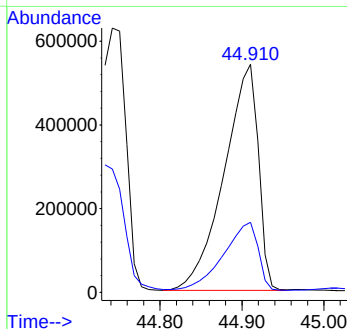
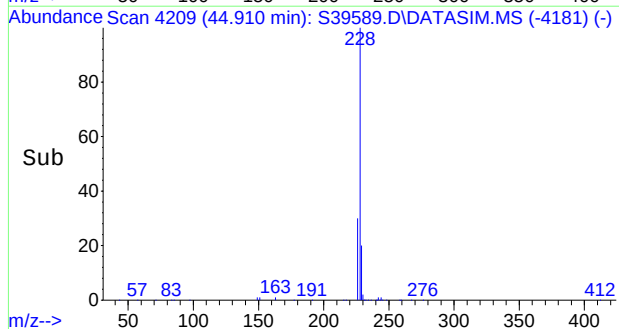
#97
Benz(a)anthracene
Concen: 27582.478 ng/mL
RT: 44.742 min Scan# 4190
Delta R.T. 0.035 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

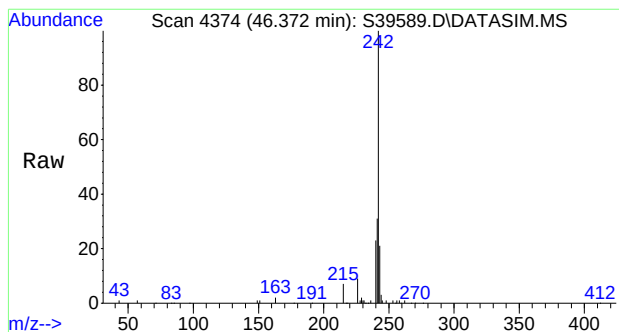
Tgt Ion:228 Resp: 1751120
Ion Ratio Lower Upper
228 100
226 53.5 21.1 31.7#



#98
Chrysene/triphenylene
Concen: 25702.736 ng/mL
RT: 44.910 min Scan# 4209
Delta R.T. 0.044 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

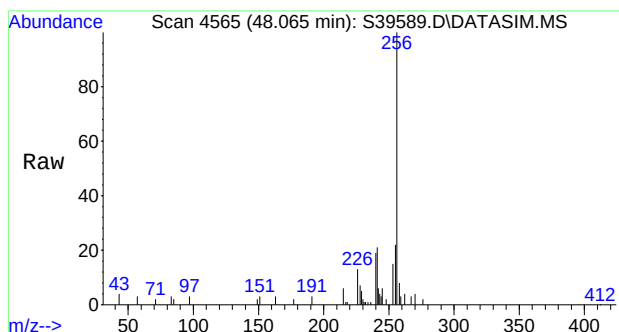
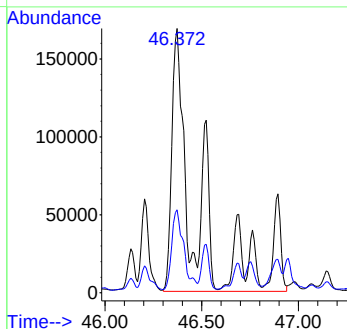
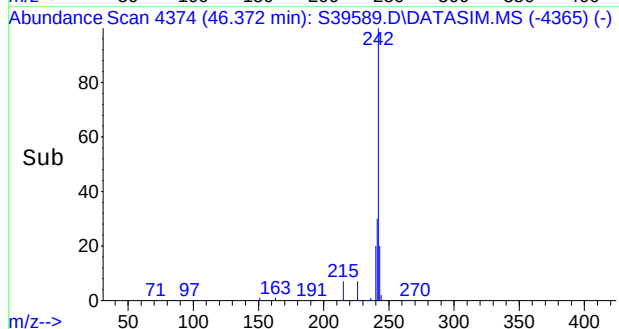
Tgt Ion:228 Resp: 1561611
Ion Ratio Lower Upper
228 100
226 30.5 23.4 35.0





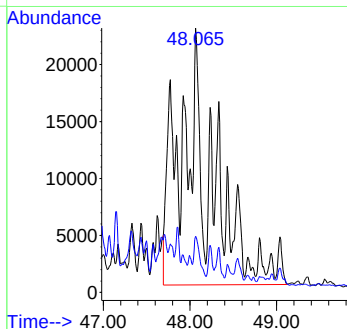
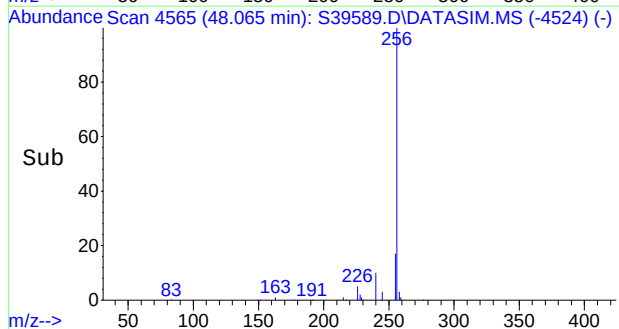
#99
C1-Benz(a)anthracenes/chrysenes
Concen: 23202.778 ng/mL m
RT: 46.372 min Scan# 4374
Delta R.T. 0.023 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

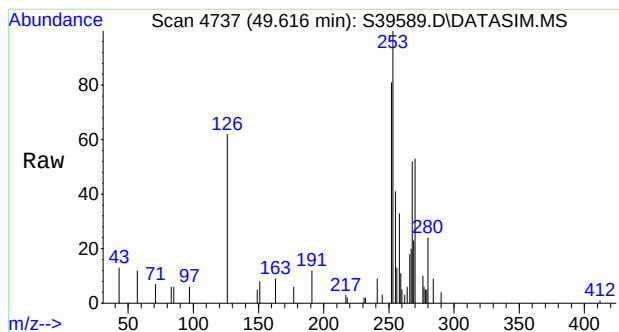
Tgt Ion:242 Resp: 1409722
Ion Ratio Lower Upper
242 100
241 40.7 34.2 51.2



#100
C2-Benz(a)anthracenes/chrysenes
Concen: 9303.466 ng/mL m
RT: 48.065 min Scan# 4565
Delta R.T. -0.361 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

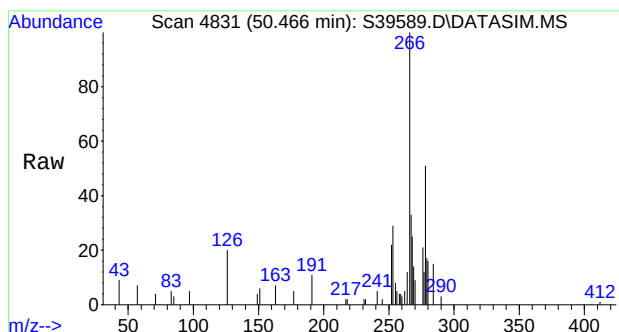
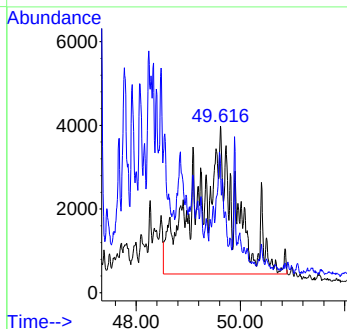
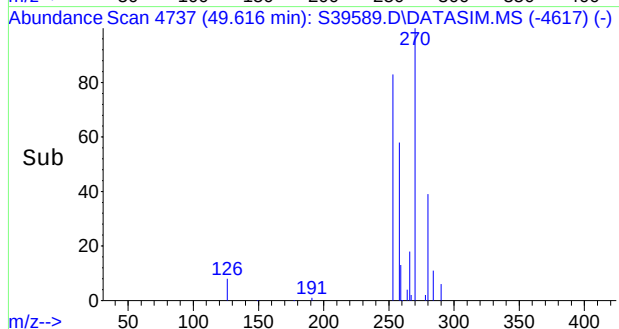
Tgt Ion:256 Resp: 565247
Ion Ratio Lower Upper
256 100
241 29.5 27.4 41.2





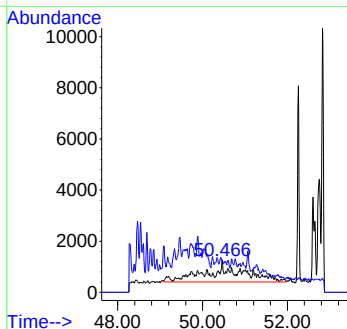
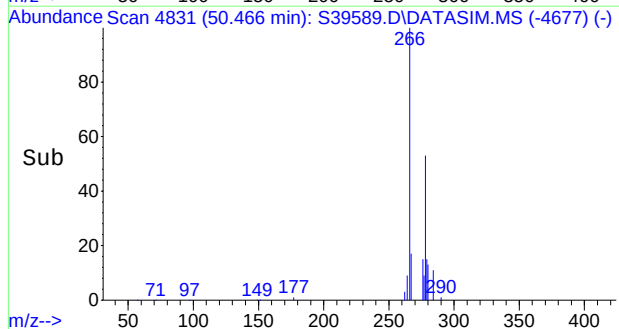
#101
C3-Benz(a)anthracenes/chrysenes
Concen: 2915.831 ng/mL m
RT: 49.616 min Scan# 4737
Delta R.T. -1.242 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

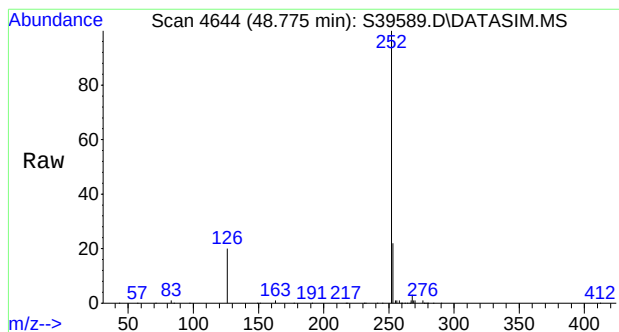
Tgt Ion:270 Resp: 177156
Ion Ratio Lower Upper
270 100
255 65.3 37.6 56.4#



#102
C4-Benz(a)anthracenes/chrysenes
Concen: 756.461 ng/mL m
RT: 50.466 min Scan# 4831
Delta R.T. -0.482 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

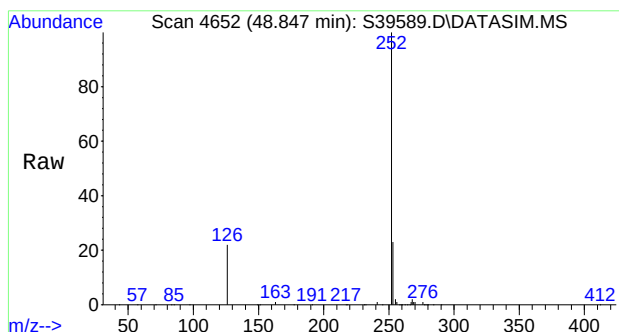
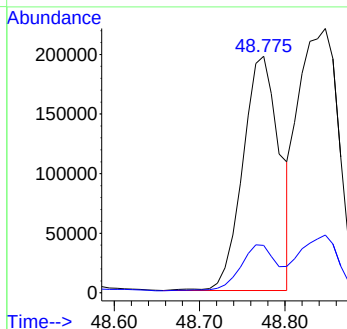
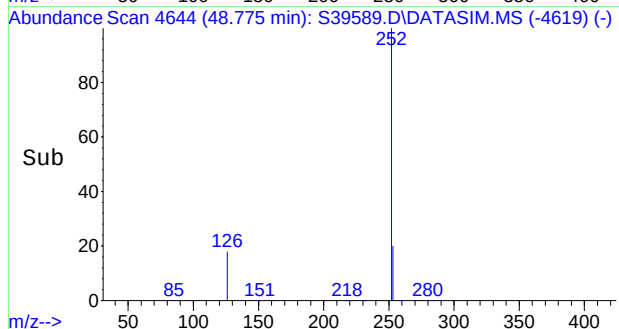
Tgt Ion:284 Resp: 45960
Ion Ratio Lower Upper
284 100
269 243.8 66.3 99.5#





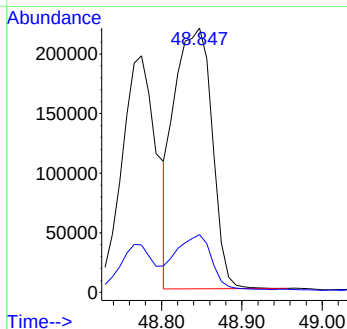
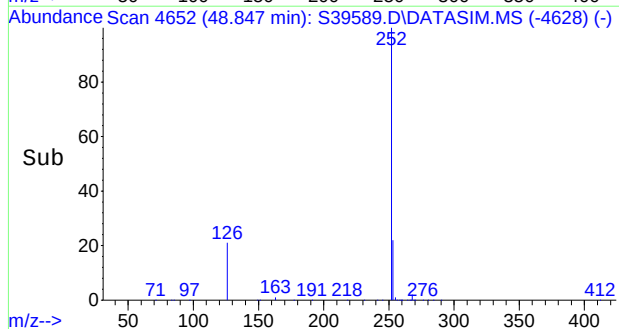
#103
Benzo(b)fluoranthene
Concen: 8442.360 ng/mL
RT: 48.775 min Scan# 4644
Delta R.T. 0.027 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

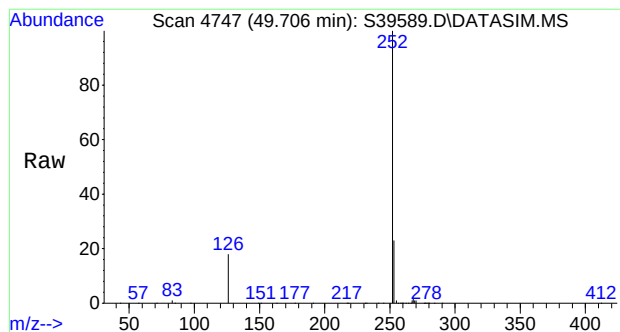
Tgt Ion:252 Resp: 590727
Ion Ratio Lower Upper
252 100
126 18.2 15.5 23.3



#104
Benzo(j/k)fluoranthene
Concen: 10080.742 ng/mL
RT: 48.847 min Scan# 4652
Delta R.T. 0.018 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

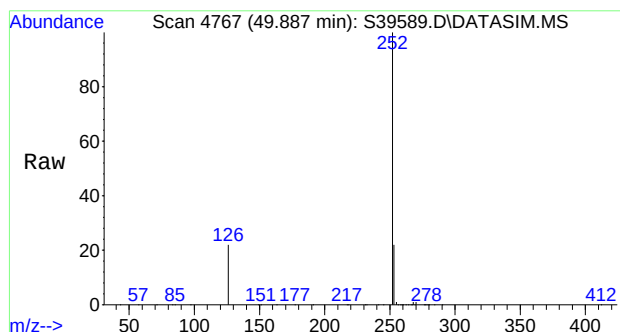
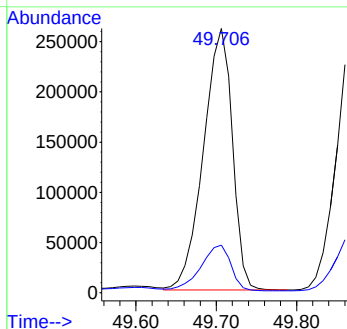
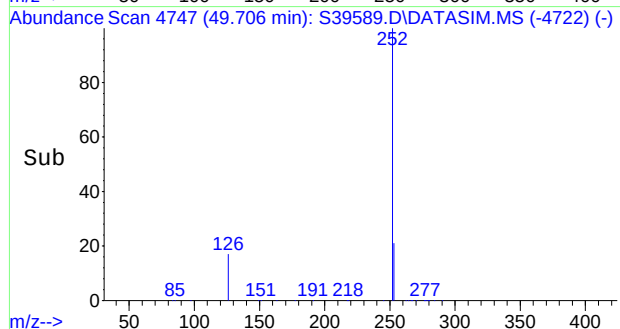
Tgt Ion:252 Resp: 714797
Ion Ratio Lower Upper
252 100
126 19.8 16.6 25.0





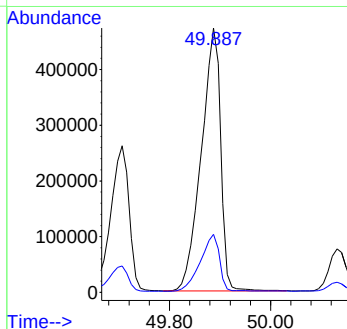
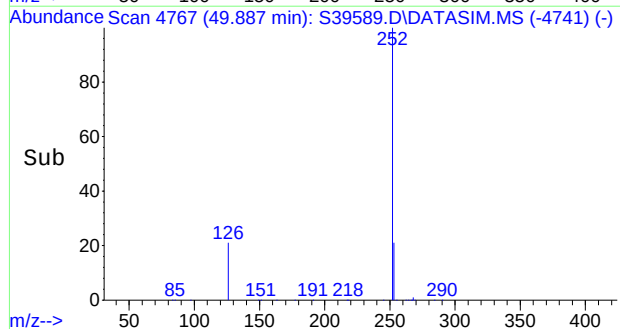
#105
Benzo(e)pyrene
Concen: 9689.110 ng/mL
RT: 49.706 min Scan# 4747
Delta R.T. 0.027 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

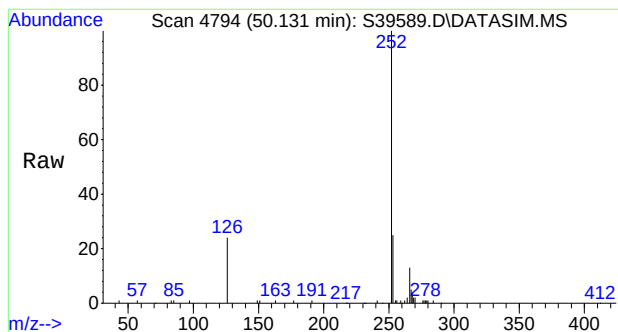
Tgt Ion:252 Resp: 650678
Ion Ratio Lower Upper
252 100
126 18.3 14.0 21.0



#106
Benzo(a)pyrene
Concen: 18896.611 ng/mL
RT: 49.887 min Scan# 4767
Delta R.T. 0.036 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

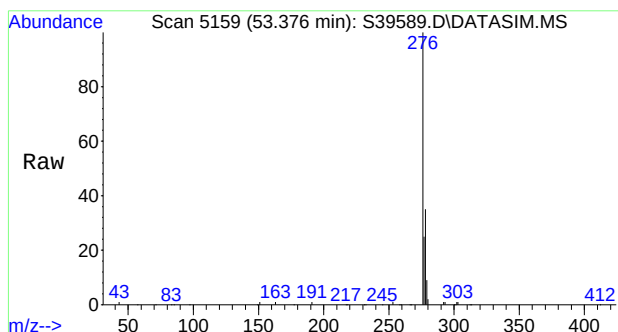
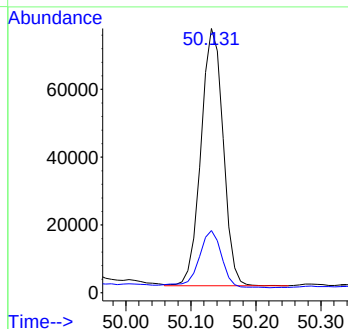
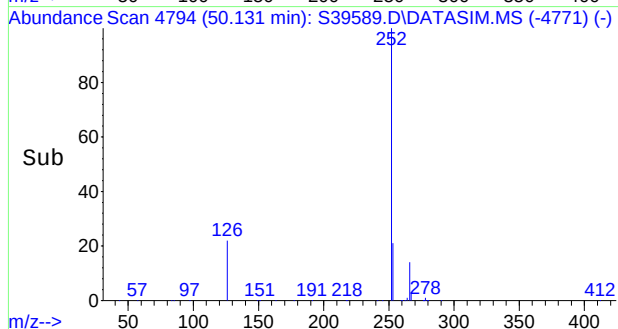
Tgt Ion:252 Resp: 1251323
Ion Ratio Lower Upper
252 100
126 21.5 16.0 24.0





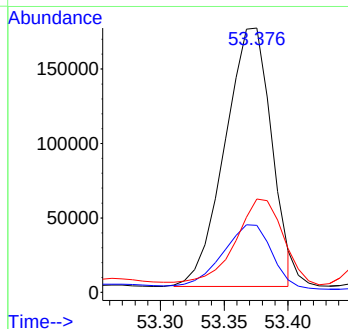
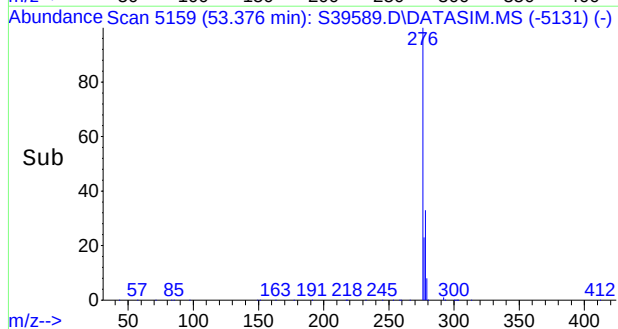
#107
Perylene
Concen: 2599.471 ng/mL
RT: 50.131 min Scan# 4794
Delta R.T. 0.009 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

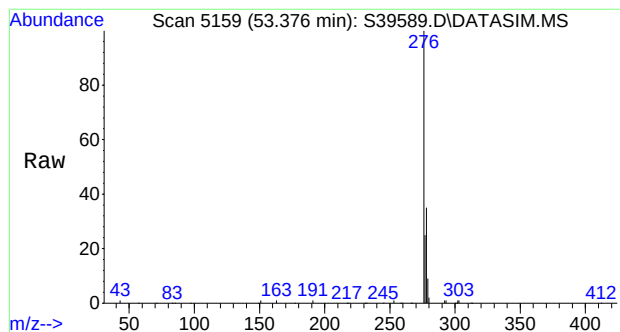
Tgt Ion: 252	Resp: 179967
Ion Ratio	Lower Upper
252 100	
126 23.2	16.6 25.0



#108
Indeno(1,2,3-cd)pyrene
Concen: 5155.687 ng/mL m
RT: 53.376 min Scan# 5159
Delta R.T. 0.024 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

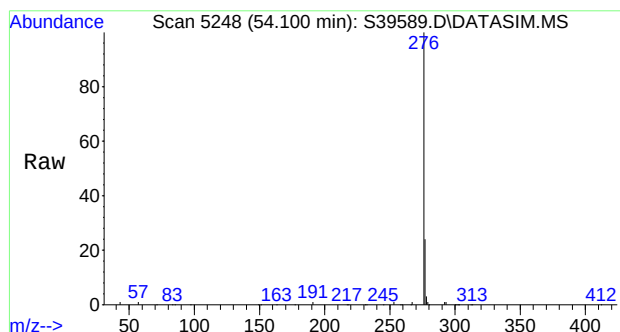
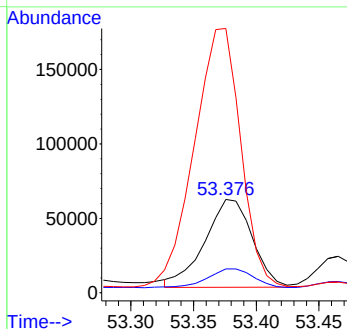
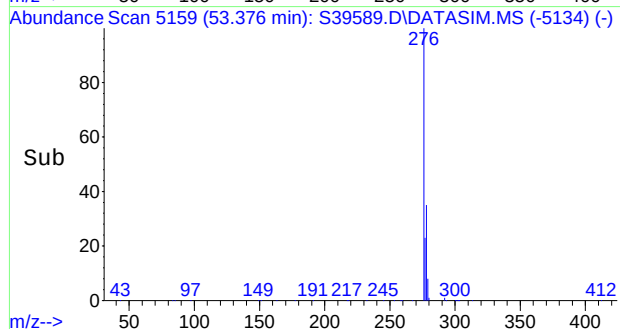
Tgt Ion: 276	Resp: 441697
Ion Ratio	Lower Upper
276 100	
277 27.4	19.7 29.5
278 36.9	17.5 26.3#





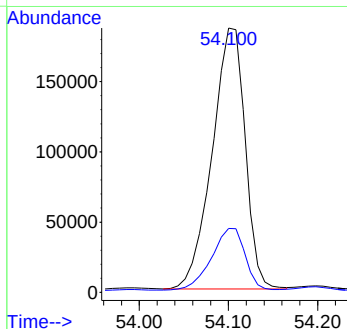
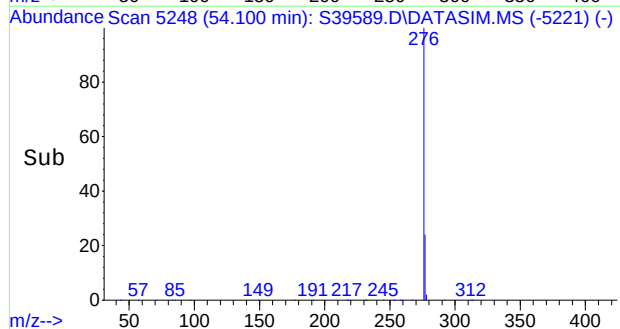
#109
Dibenz(a,h)anthracene
Concen: 2230.493 ng/mL m
RT: 53.376 min Scan# 5159
Delta R.T. -0.000 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

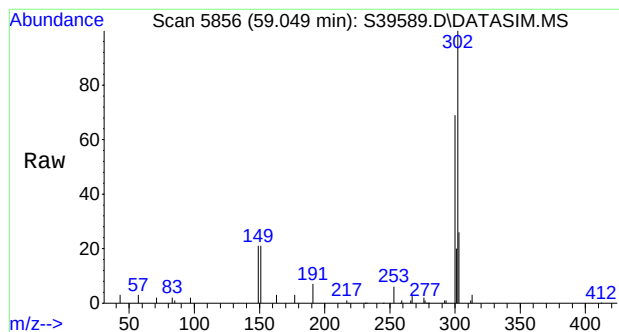
Tgt Ion:	278	Resp:	156324
Ion Ratio	Lower	Upper	
278	100		
279	23.9	19.8	29.8
276	291.1	50.6	76.0#



#110
Benzo(g,h,i)perylene
Concen: 6144.868 ng/mL
RT: 54.100 min Scan# 5248
Delta R.T. 0.016 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

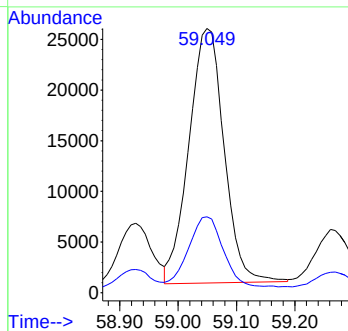
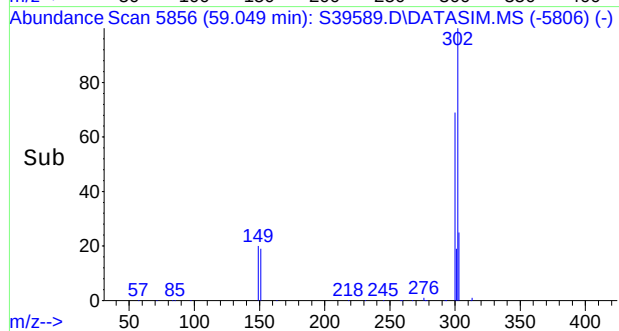
Tgt Ion:	276	Resp:	477407
Ion Ratio	Lower	Upper	
276	100		
277	24.3	19.3	28.9





#111
Coronene
Concen: 1278.643 ng/mL
RT: 59.049 min Scan# 5856
Delta R.T. 0.008 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion	Ratio	Resp	Lower	Upper
300	100	105194		
301	26.7	21.0	31.4	



Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39590.D
Sample : op47956-dup1,50x,mc46549-1,137-P3B-MW101I-201
Misc : OP47956,MSS1964,0.0161,,,2,50
ALS Vial : 6 Sample Multiplier: 1
Acq On : 5 Jul 2016 5:53 pm

Operator: sofyz

Quant Time: Jul 06 14:32:57 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Acenaphthene-d10	28.343	162	29843	1020.00	ng/mL	0.00
System Monitoring Compounds						
2) Toluene-d8	9.462	98	933	21.34	ng/mL	0.00
Spiked Amount	1000.000		Recovery	=	2.13%	
3) Naphthalene-d8	21.389	136	1273	20.58	ng/mL	0.00
Spiked Amount	1000.000		Recovery	=	2.06%	
4) Phenanthrene-d10	34.189	188	852	19.33	ng/mL	0.00
Spiked Amount	1000.000		Recovery	=	1.93%	
5) Perylene-d12	50.050	264	740	20.60	ng/mL	0.00
Spiked Amount	1000.000		Recovery	=	2.06%	
Target Compounds						
						Qvalue
18] Ethylbenzene	12.319	91	49580	789.468	ng/mL	98
19] m,p-xylene	12.553	91	31615	617.711	ng/mL	98
21] o-Xylene	13.274	91	16815	320.921	ng/mL	100
24] 1,3,5-Trimethylbenzene	15.472	105	8373	157.552	ng/mL	96
27] 1,2,4-Trimethylbenzene	16.205	105	24035	435.059	ng/mL	95
29] 1,2,3-Trimethylbenzene	17.045	105	7995	144.211	ng/mL	96
51] Naphthalene	21.465	128	761480	9927.171	ng/mL	100
52] 2-Methylnaphthalene	24.160	142	258375	5214.829	ng/mL	100
53] 1-Methylnaphthalene	24.580	142	169583	3866.767	ng/mL	100
54] C1-Naphthalenes	24.160	142	429574m	5600.219	ng/mL	
55] C2-Naphthalenes	26.999	156	245031m	3194.391	ng/mL	
58] Biphenyl	26.056	154	31706	548.909	ng/mL	99
59] Acenaphthylene	27.733	152	64608	881.495	ng/mL	94
60] Acenaphthene	28.466	154	114016	2723.803	ng/mL	100
62] Fluorene	30.485	166	62066	1240.368	ng/mL	95
72] Phenanthrene	34.278	178	280578	4322.744	ng/mL	100
73] Anthracene	34.464	178	89732	1476.366	ng/mL	97
74] C1-Phenanthrenes/anthr...	36.353	192	179246m	2761.566	ng/mL	
86] Fluoranthene	39.044	202	70874	1098.140	ng/mL	100
87] Pyrene	39.916	202	117943	1837.808	ng/mL	97
97] Benz(a)anthracene	44.866	228	23533	425.143	ng/mL	98
98] Chrysene/triphenylene	44.866	228	31826	600.799	ng/mL	99

(#)=qualifier out of range (m)=manual integration (+)=signals summed

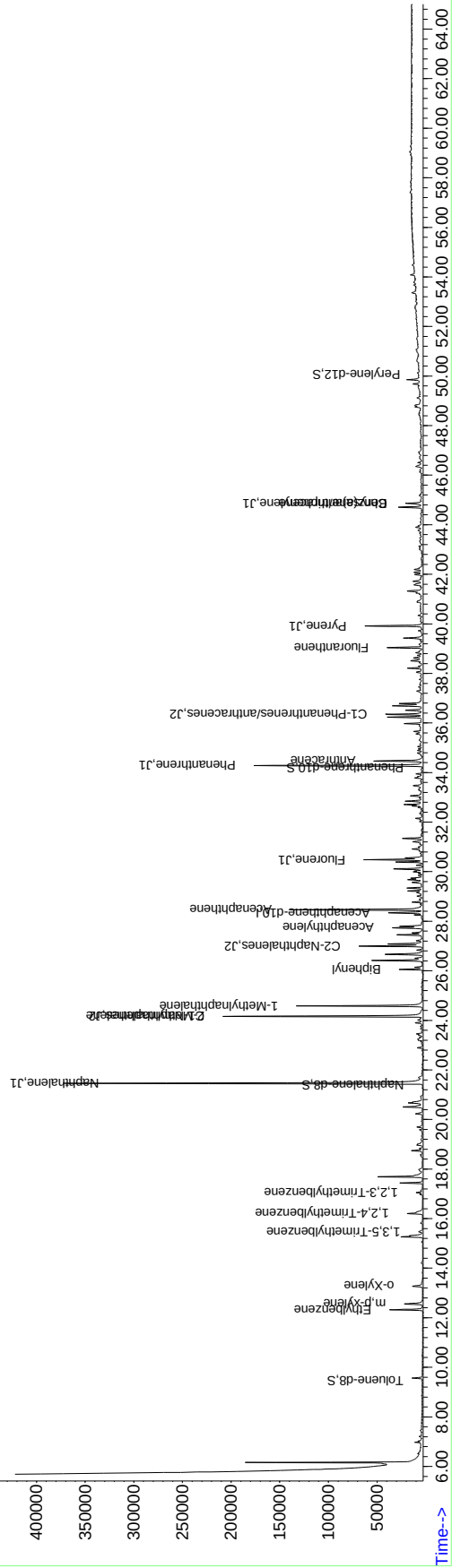
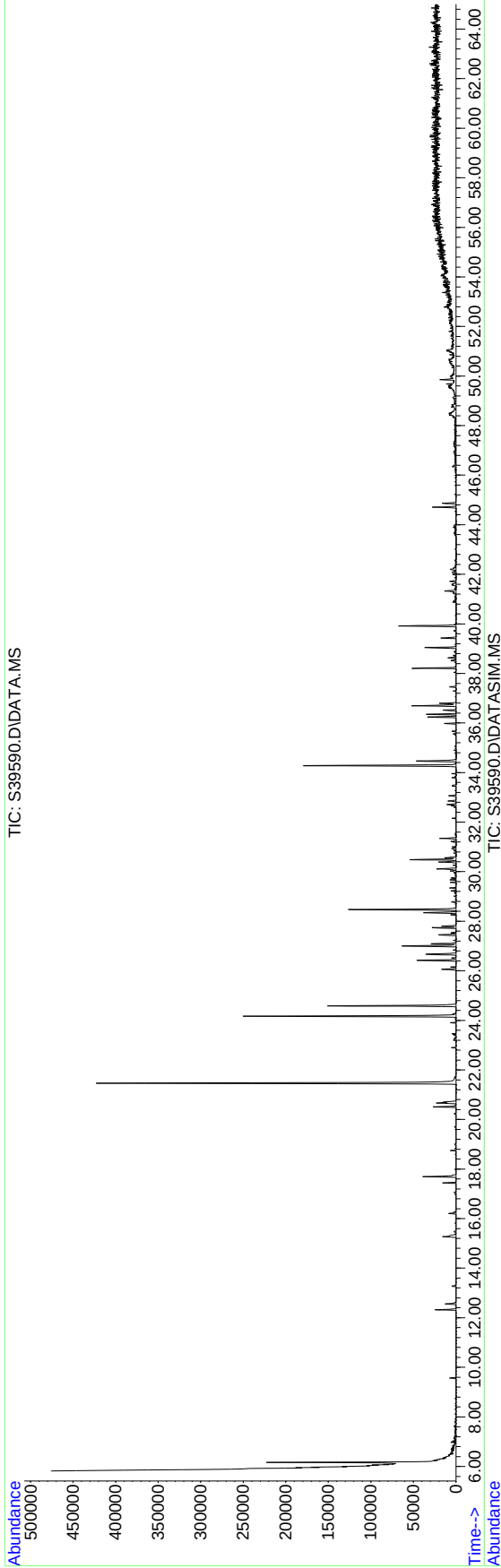
7.4.2

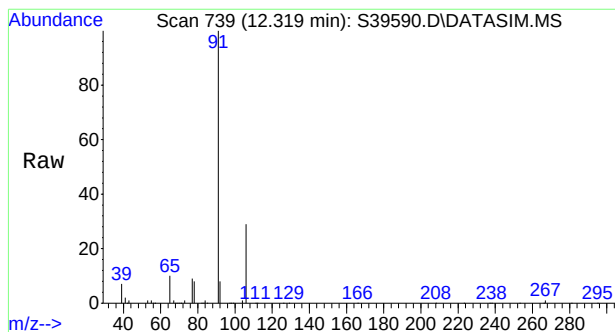
7

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39590.D
Sample : OP47956-dup1,50x,mc46549-1,137-P3B-MW101I-201
Misc : OP47956,MSS1964,0.0161,,,2,50
ALS Vial : 6 Sample Multiplier: 1
Acq On : 5 Jul 2016 5:53 pm Operator: sofyaz

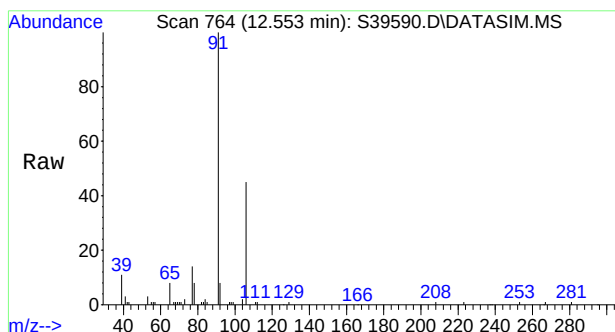
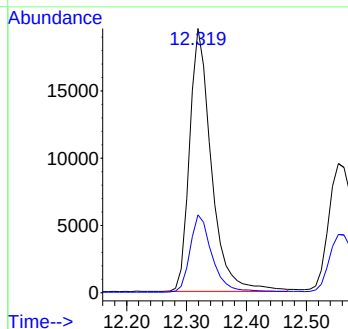
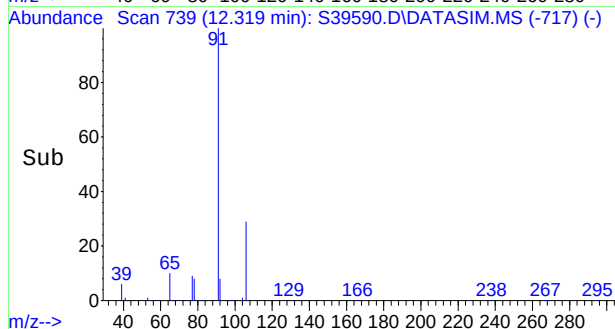
Quant Time: Jul 06 14:32:57 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM





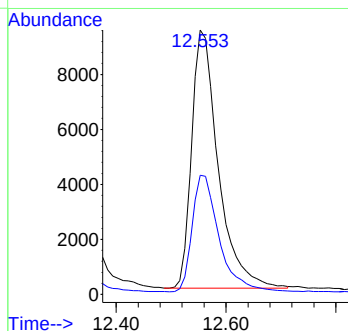
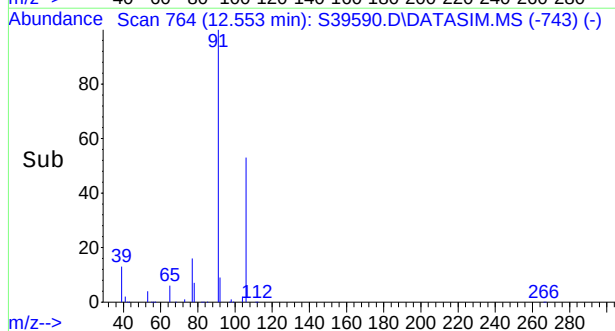
#18
Ethylbenzene
Concen: 789.468 ng/mL
RT: 12.319 min Scan# 739
Delta R.T. 0.009 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

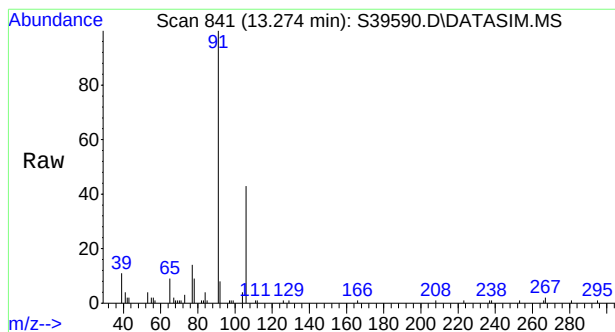
Tgt Ion: 91 Resp: 49580
Ion Ratio Lower Upper
91 100
106 29.5 23.0 34.4



#19
m,p-xylene
Concen: 617.711 ng/mL
RT: 12.553 min Scan# 764
Delta R.T. -0.000 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

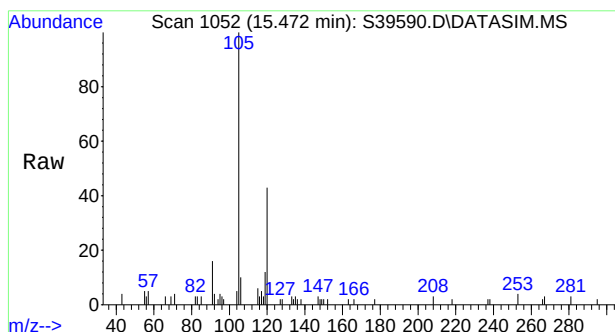
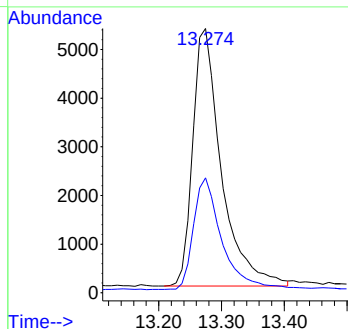
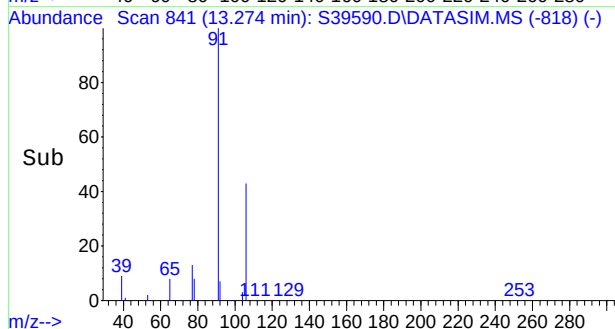
Tgt Ion: 91 Resp: 31615
Ion Ratio Lower Upper
91 100
106 45.8 35.8 53.6





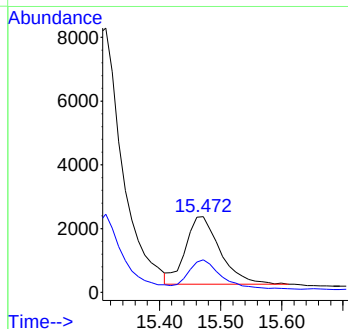
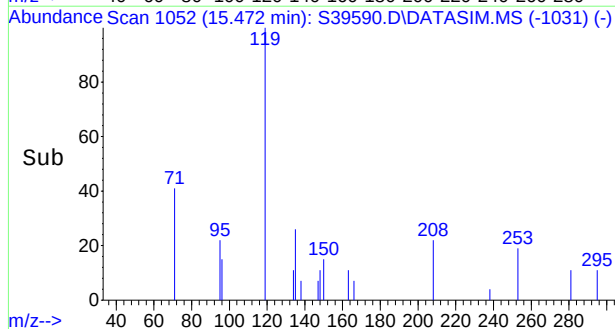
#21
o-Xylene
Concen: 320.921 ng/mL
RT: 13.274 min Scan# 841
Delta R.T. 0.019 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

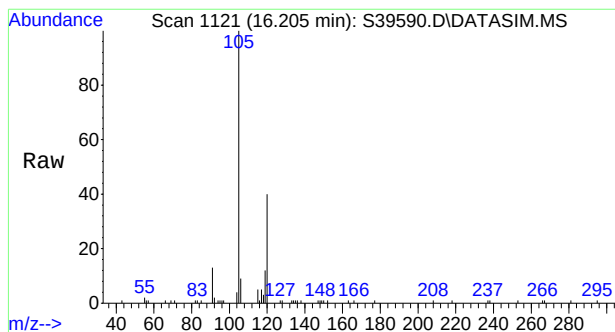
Tgt Ion: 91 Resp: 16815
Ion Ratio Lower Upper
91 100
106 42.9 34.5 51.7



#24
1,3,5-Trimethylbenzene
Concen: 157.552 ng/mL
RT: 15.472 min Scan# 1052
Delta R.T. 0.021 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

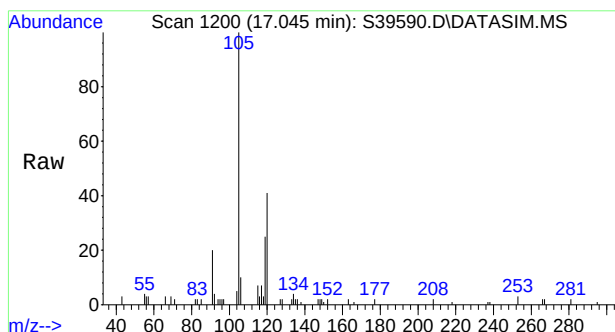
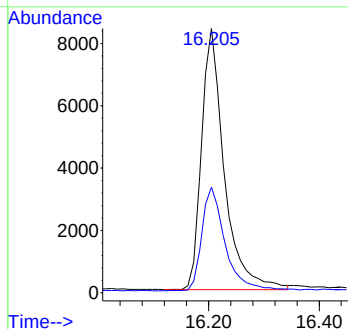
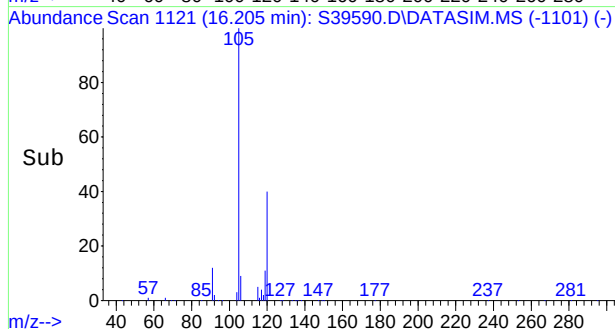
Tgt Ion: 105 Resp: 8373
Ion Ratio Lower Upper
105 100
120 39.4 33.5 50.3





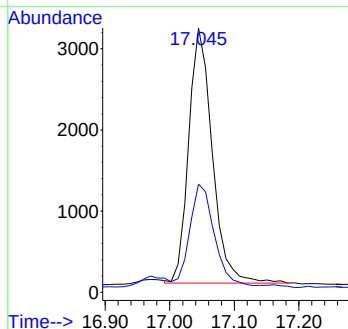
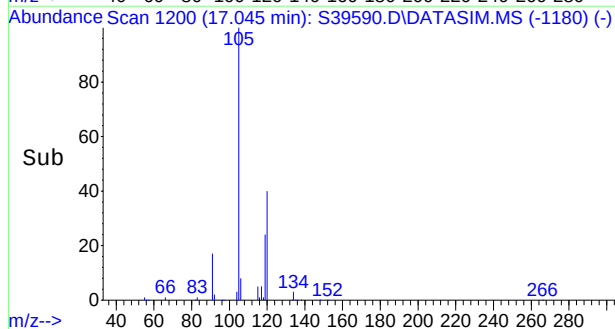
#27
1,2,4-Trimethylbenzene
Concen: 435.059 ng/mL
RT: 16.205 min Scan# 1121
Delta R.T. 0.011 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

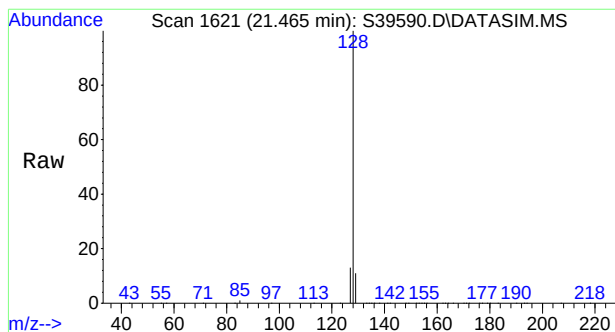
Tgt Ion:	105	Resp:	24035
Ion Ratio	Lower	Upper	
105	100		
120	40.6	35.3	52.9



#29
1,2,3-Trimethylbenzene
Concen: 144.211 ng/mL
RT: 17.045 min Scan# 1200
Delta R.T. 0.011 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

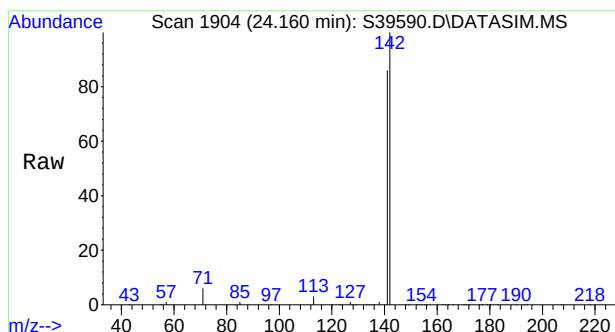
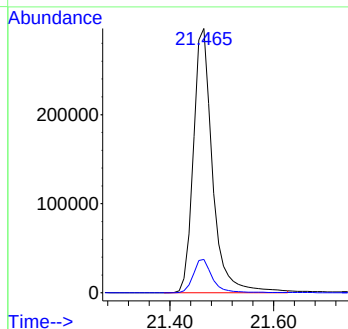
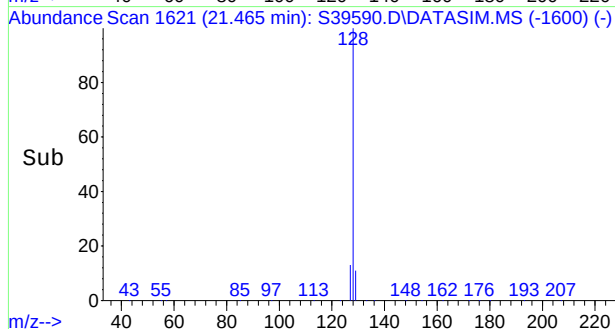
Tgt Ion:	105	Resp:	7995
Ion Ratio	Lower	Upper	
105	100		
120	41.0	34.8	52.2





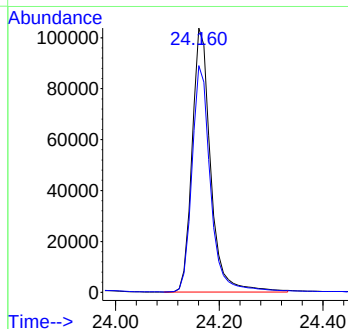
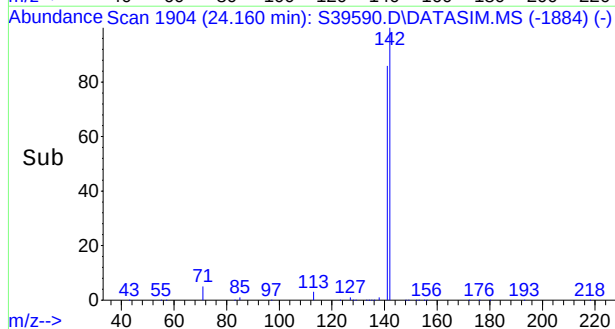
#51
Naphthalene
Concen: 9927.171 ng/mL
RT: 21.465 min Scan# 1621
Delta R.T. -0.000 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

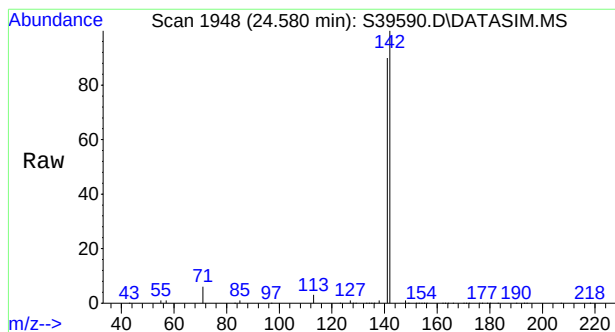
Tgt Ion:128 Resp: 761480
Ion Ratio Lower Upper
128 100
127 12.6 10.2 15.2



#52
2-Methylnaphthalene
Concen: 5214.829 ng/mL
RT: 24.160 min Scan# 1904
Delta R.T. -0.010 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

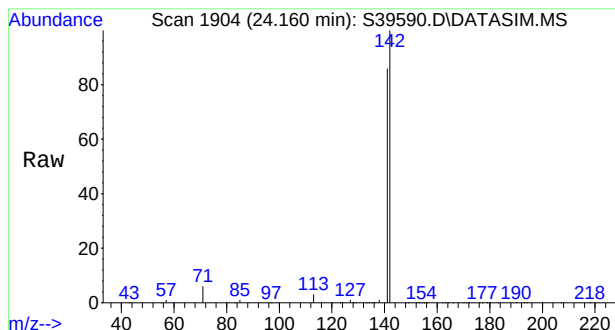
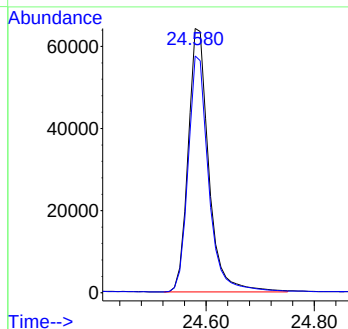
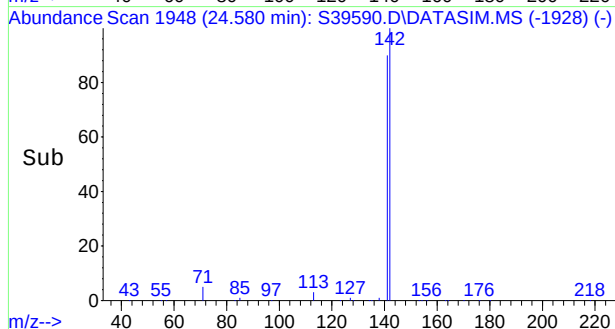
Tgt Ion:142 Resp: 258375
Ion Ratio Lower Upper
142 100
141 85.5 68.6 102.8





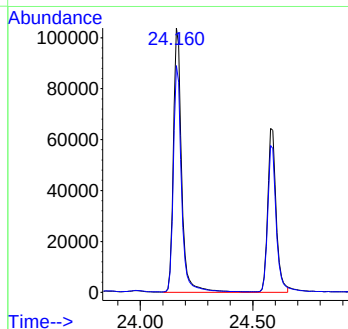
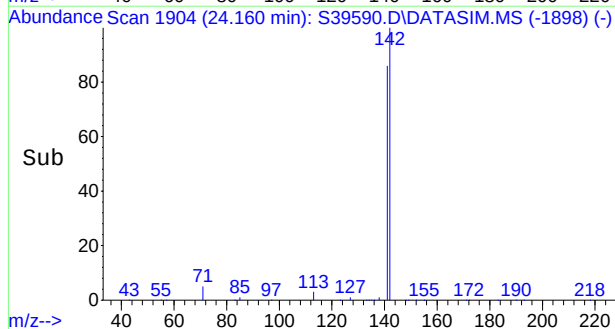
#53
1-Methylnaphthalene
Concen: 3866.767 ng/mL
RT: 24.580 min Scan# 1948
Delta R.T. -0.010 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

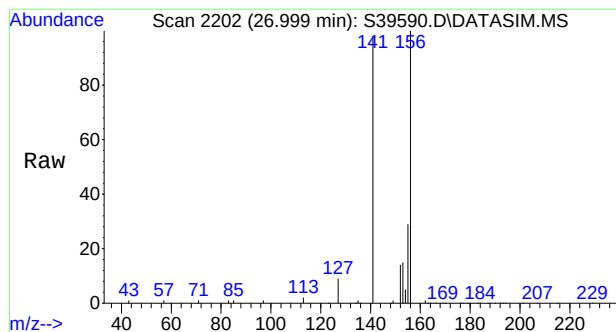
Tgt Ion:142 Resp: 169583
Ion Ratio Lower Upper
142 100
141 89.1 71.6 107.4



#54
C1-Naphthalenes
Concen: 5600.219 ng/mL m
RT: 24.160 min Scan# 1904
Delta R.T. -0.002 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

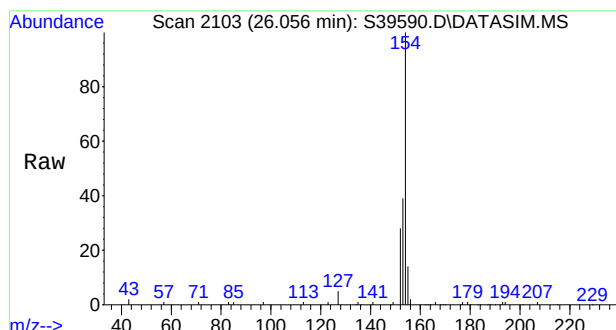
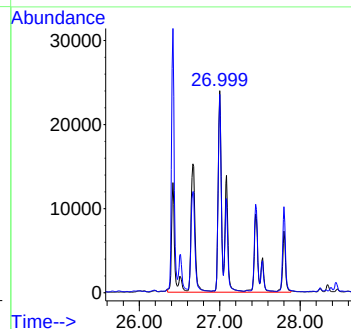
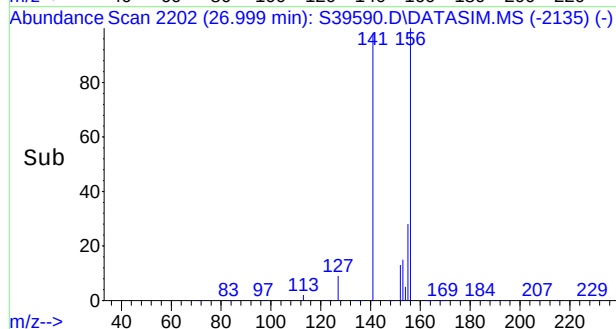
Tgt Ion:142 Resp: 429574
Ion Ratio Lower Upper
142 100
141 87.2 68.8 103.2





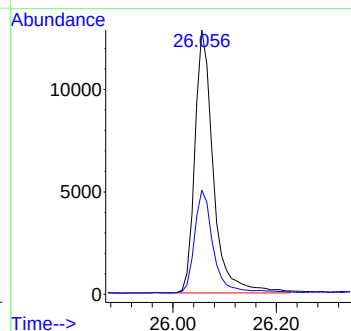
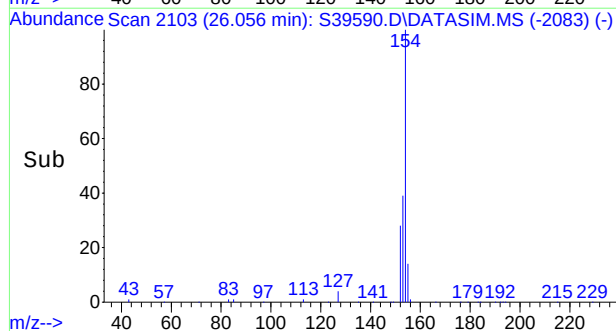
#55
C2-Naphthalenes
Concen: 3194.391 ng/mL m
RT: 26.999 min Scan# 2202
Delta R.T. -0.087 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

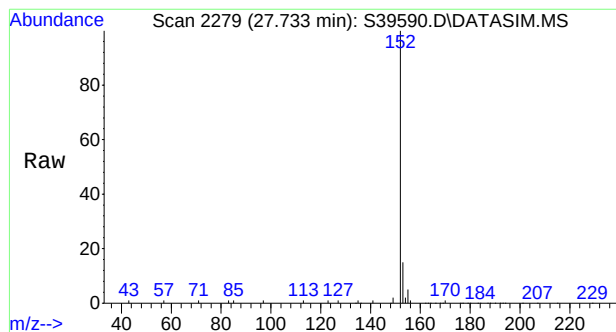
Tgt Ion:156 Resp: 245031
Ion Ratio Lower Upper
156 100
141 115.5 65.8 98.8#



#58
Biphenyl
Concen: 548.909 ng/mL
RT: 26.056 min Scan# 2103
Delta R.T. -0.010 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

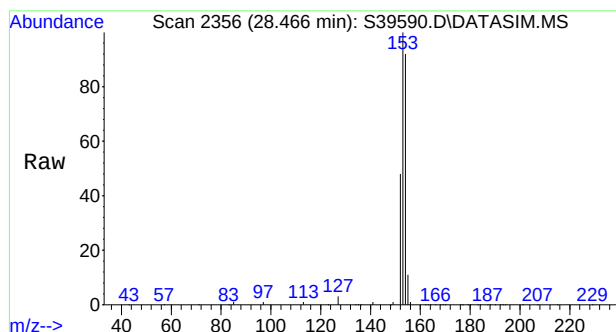
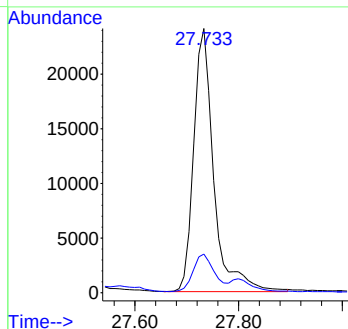
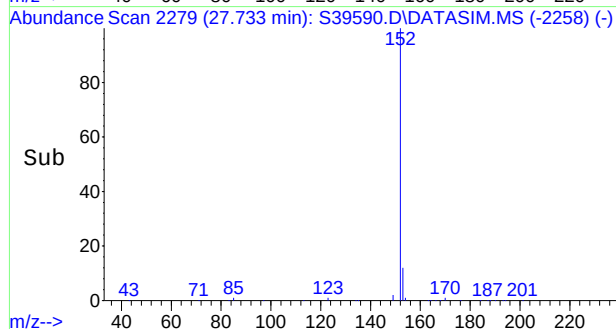
Tgt Ion:154 Resp: 31706
Ion Ratio Lower Upper
154 100
153 39.4 31.0 46.6





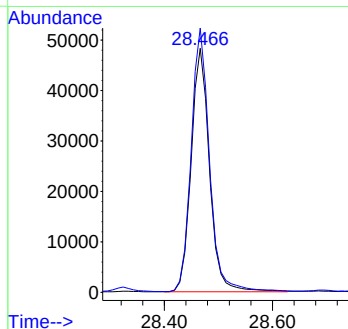
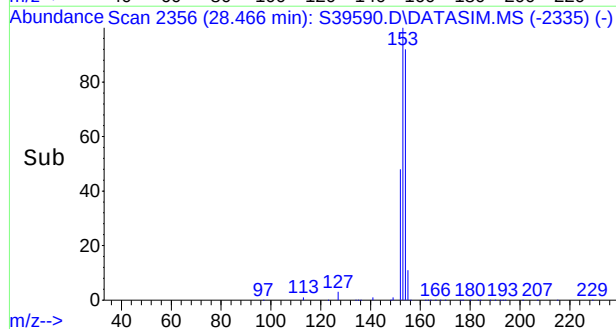
#59
Acenaphthylene
Concen: 881.495 ng/mL
RT: 27.733 min Scan# 2279
Delta R.T. -0.000 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

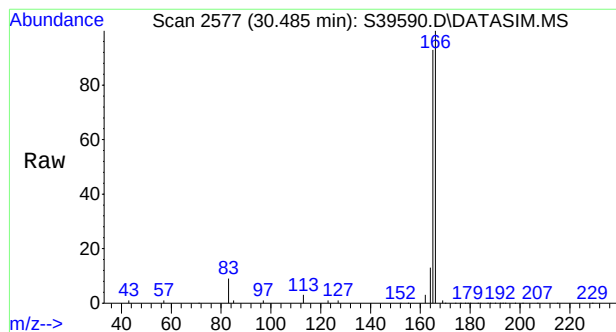
Tgt Ion:152 Resp: 64608
Ion Ratio Lower Upper
152 100
153 15.4 10.3 15.5



#60
Acenaphthene
Concen: 2723.803 ng/mL
RT: 28.466 min Scan# 2356
Delta R.T. -0.000 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

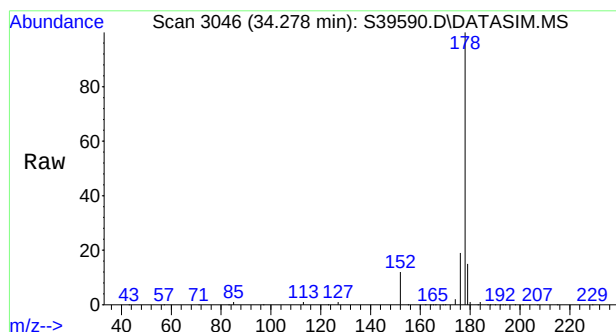
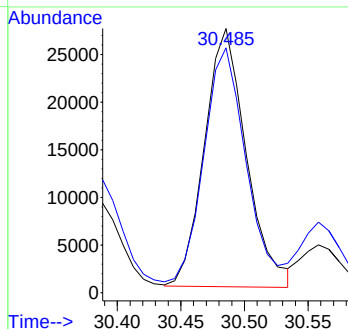
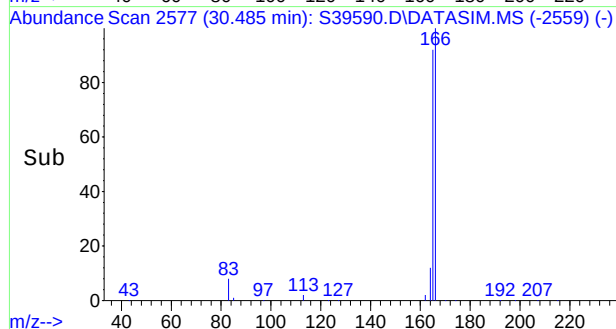
Tgt Ion:154 Resp: 114016
Ion Ratio Lower Upper
154 100
153 107.9 86.6 129.8





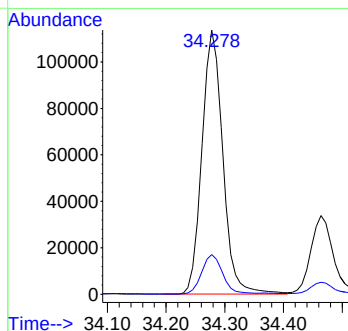
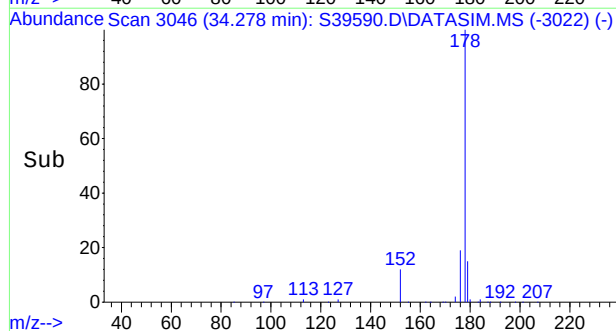
#62
Fluorene
Concen: 1240.368 ng/mL
RT: 30.485 min Scan# 2577
Delta R.T. -0.008 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

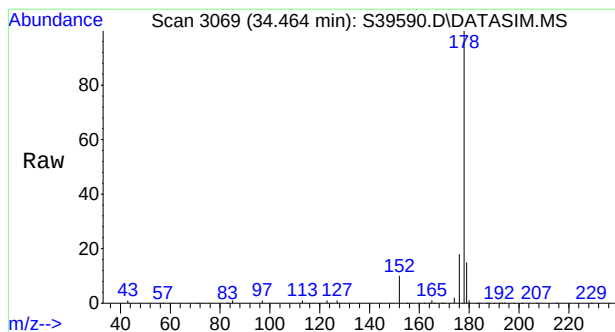
Tgt Ion:166 Resp: 62066
Ion Ratio Lower Upper
166 100
165 90.3 75.8 113.6



#72
Phenanthrene
Concen: 4322.744 ng/mL
RT: 34.278 min Scan# 3046
Delta R.T. -0.008 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

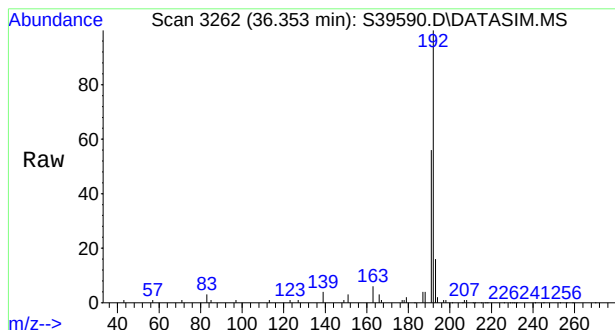
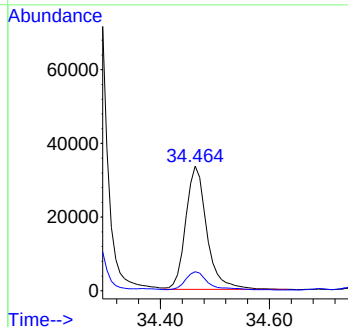
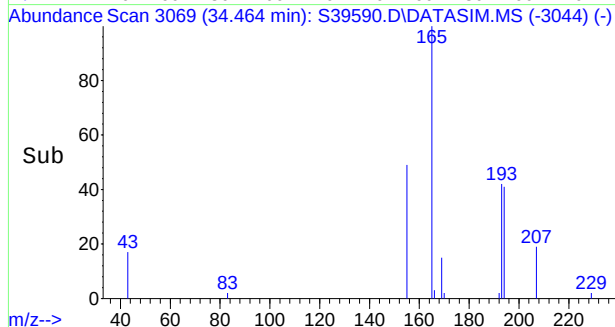
Tgt Ion:178 Resp: 280578
Ion Ratio Lower Upper
178 100
179 15.0 11.9 17.9





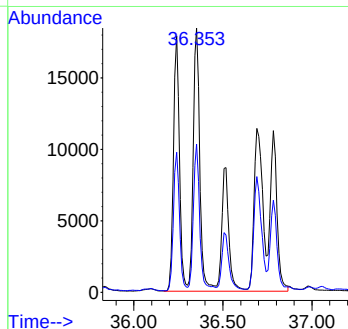
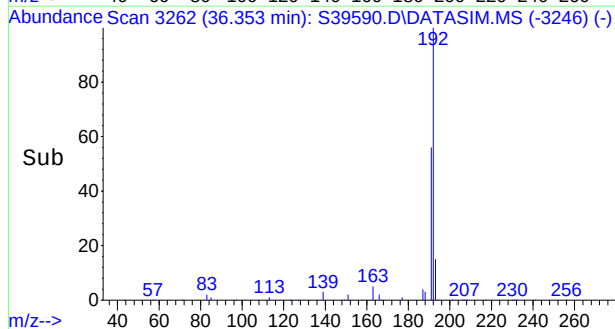
#73
Anthracene
Concen: 1476.366 ng/mL
RT: 34.464 min Scan# 3069
Delta R.T. -0.000 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

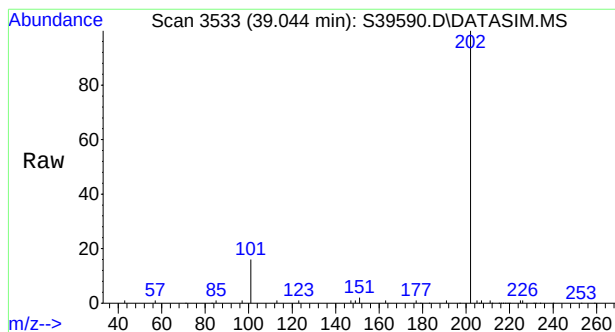
Tgt Ion:178 Resp: 89732
Ion Ratio Lower Upper
178 100
179 16.2 12.0 18.0



#74
C1-Phenanthrenes/anthracenes
Concen: 2761.566 ng/mL m
RT: 36.353 min Scan# 3262
Delta R.T. -0.348 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

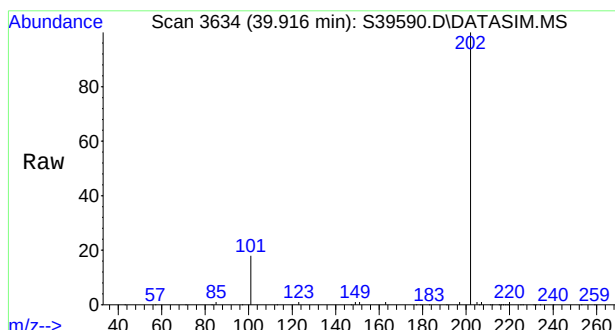
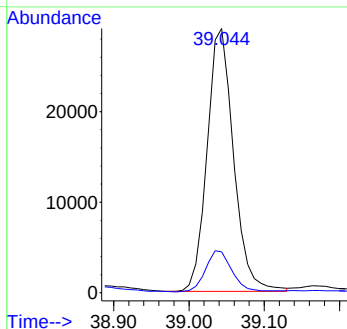
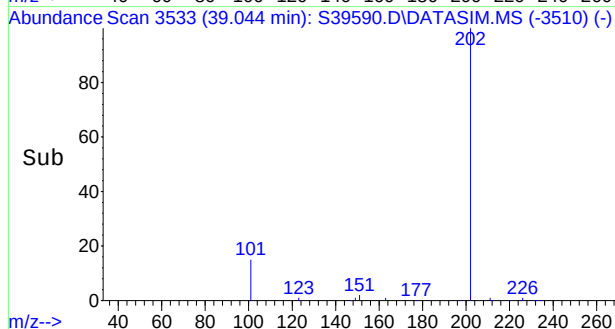
Tgt Ion:192 Resp: 179246
Ion Ratio Lower Upper
192 100
191 56.8 45.0 67.4





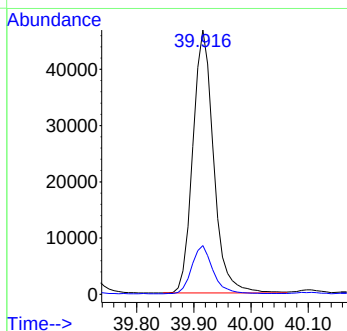
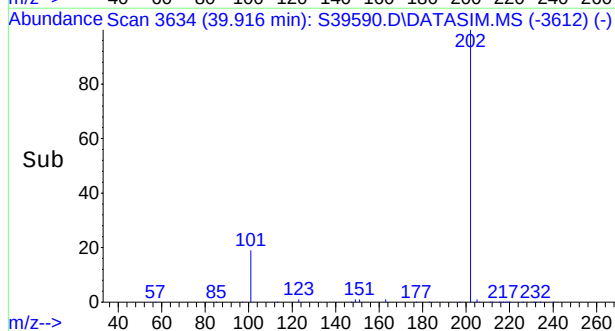
#86
Fluoranthene
Concen: 1098.140 ng/mL
RT: 39.044 min Scan# 3533
Delta R.T. -0.000 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

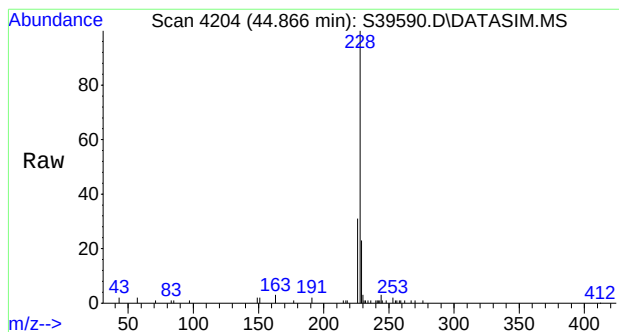
Tgt Ion:202 Resp: 70874
Ion Ratio Lower Upper
202 100
101 15.6 12.6 19.0



#87
Pyrene
Concen: 1837.808 ng/mL
RT: 39.916 min Scan# 3634
Delta R.T. -0.009 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

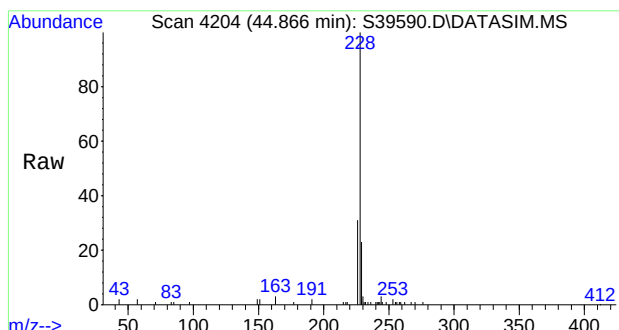
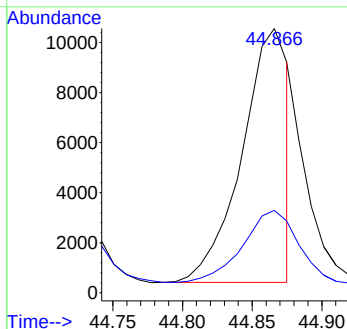
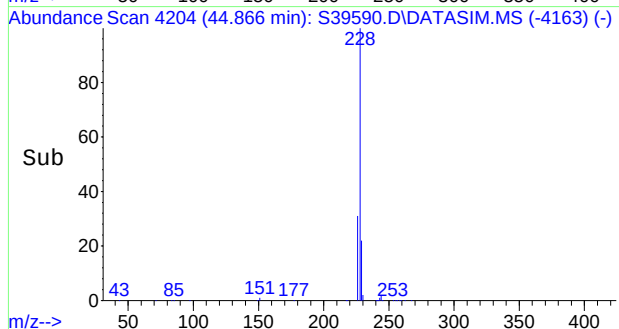
Tgt Ion:202 Resp: 117943
Ion Ratio Lower Upper
202 100
101 18.7 13.8 20.8





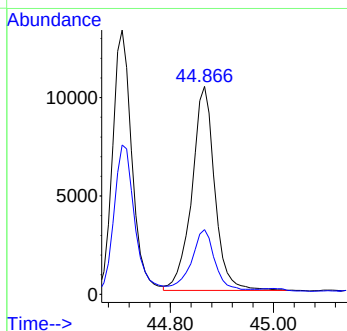
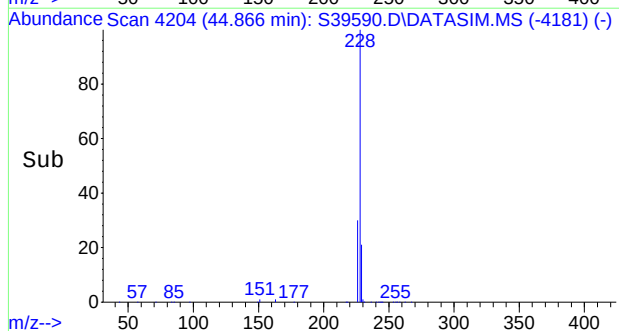
#97
Benz(a)anthracene
Concen: 425.143 ng/mL
RT: 44.866 min Scan# 4204
Delta R.T. 0.159 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:	228	Resp:	23533
Ion Ratio	Lower	Upper	
228	100		
226	27.7	21.1	31.7



#98
Chrysene/triphenylene
Concen: 600.799 ng/mL
RT: 44.866 min Scan# 4204
Delta R.T. -0.000 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:	228	Resp:	31826
Ion Ratio	Lower	Upper	
228	100		
226	28.8	23.4	35.0



Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39332.D
 Sample : ic1950-0.01
 Misc : OP47644,MSS1950,,,1,1
 ALS Vial : 1 Sample Multiplier: 1
 Acq On : 1 Jun 2016 5:23 pm

Operator: sofyz

Quant Time: Jun 02 12:08:31 2016
 Quant Method : S:\1\methods\S160601-MAHPAH-A.M
 Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Acenaphthene-d10	28.724	162	39516	1000.00	ng/mL	0.00
System Monitoring Compounds						
2) Toluene-d8	9.760	98	679	11.50	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	1.15%	
3) Naphthalene-d8	21.761	136	873	10.45	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	1.04%	
4) Phenanthrene-d10	34.576	188	606	10.18	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	1.02%	
5) Perylene-d12	50.406	264	524	10.80	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	1.08%	
Target Compounds						
					Qvalue	
6] MTBE	5.807	73	407m	12.083	ng/mL	
7] Benzene	7.278	78	1164m	19.019	ng/mL	
13] 2,2,4-trimethylpentane	7.784	57	1330	21.446	µg/mL#	92
14] n-Heptane	8.046	43	361	10.530	µg/mL#	40
15] Methylcyclohexane	8.683	83	363	12.541	ng/mL#	35
16] Toluene	9.872	91	938	12.294	ng/mL	99
17] n-Octane	10.734	43	605	13.281	µg/mL#	70
18] Ethylbenzene	12.636	91	1025	12.084	ng/mL	92
19] m,p-xylene	12.870	91	765	11.067	ng/mL	89
20] Styrene	13.507	104	815	14.374	ng/mL	97
21] o-Xylene	13.582	91	881	12.449	ng/mL	93
22] Isopropylbenzene	14.498	105	884	11.125	ng/mL	91
23] n-Propylbenzene	15.359	91	1150	11.454	ng/mL	96
24] 1,3,5-Trimethylbenzene	15.784	105	753m	10.323	ng/mL	
25] Phenol	15.976	94	597	14.446	µg/mL#	100
26] t-Butylbenzene	16.497	119	724	11.341	ng/mL#	56
27] 1,2,4-Trimethylbenzene	16.528	105	856	11.472	ng/mL	90
28] sec-Butylbenzene	17.017	105	1046	11.792	ng/mL#	63
29] 1,2,3-Trimethylbenzene	17.379	105	865	11.552	ng/mL	90
30] p-Isopropyltoluene	17.389	119	835	10.837	ng/mL#	55
31] Indane	17.783	117	722	10.715	µg/mL	92
32] Indene	18.038	115	673	10.206	µg/mL#	94
33] n-Butylbenzene	18.272	91	944	12.201	ng/mL#	57
34] trans-Decalin	18.367	96	176m	12.437	ng/mL	
35] cis-Decalin	19.600	96	262	13.037	ng/mL#	20
40] Benzo(b)thiophene	22.056	134	929	10.945	ng/mL#	85
45] Tetraethyl lead	20.876	208	71m	11.024	ng/mL	
50] MMT	23.637	134	359	11.320	µg/mL#	75
51] Naphthalene	21.837	128	1109	10.705	ng/mL#	69
52] 2-Methylnaphthalene	24.542	142	771	11.522	ng/mL	96
53] 1-Methylnaphthalene	24.961	142	659	11.126	ng/mL#	80
58] Biphenyl	26.438	154	931	11.934	ng/mL	89
59] Acenaphthylene	28.115	152	1001	10.112	ng/mL#	67
60] Acenaphthene	28.848	154	597	10.560	ng/mL	91
61] Dibenzofuran	29.496	168	816	10.065	ng/mL#	67
62] Fluorene	30.872	166	718	10.624	ng/mL	98
66] Dibenzothiophene	34.171	184	968	10.251	ng/mL#	56
72] Phenanthrene	34.665	178	944	10.768	ng/mL#	64
73] Anthracene	34.851	178	785	9.563	ng/mL#	64
79] Carbazole	35.535	167	903	10.527	µg/mL#	59
80] Retene	41.653	234	250	12.010	ng/mL	81
81] Benzo(b)naphtho(2,1-d)...	44.150	234	842	10.311	ng/mL	100
86] Fluoranthene	39.425	202	902	10.348	ng/mL#	64
87] Pyrene	40.306	202	906	10.453	ng/mL#	87
97] Benz(a)anthracene	45.080	228	804	10.754	ng/mL	94
98] Chrysene/triphenylene	45.240	228	715	9.994	ng/mL	96
103] Benzo(b)fluoranthene	49.113	252	887	10.765	ng/mL#	76
104] Benzo(j/k)fluoranthene	49.203	252	906	10.850	ng/mL#	66

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39332.D
Sample : ic1950-0.01
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 1 Sample Multiplier: 1
Acq On : 1 Jun 2016 5:23 pm

Operator: sofyaz

Quant Time: Jun 02 12:08:31 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
105]	Benzo(e)pyrene	50.053	252	844	10.673	ng/mL#	64
106]	Benzo(a)pyrene	50.216	252	866	11.106	ng/mL#	59
107]	Perylene	50.487	252	901	11.052	ng/mL	92
108]	Indeno(1,2,3-cd)pyrene	53.706	276	1117	11.072	ng/mL#	67
109]	Dibenz(a,h)anthracene	53.747	278	836	10.130	ng/mL#	42
110]	Benzo(g,h,i)perylene	54.447	276	968	10.581	ng/mL#	79
111]	Coronene	59.551	300	1054	10.880	ng/mL	92
112]	C-17	32.522	85	425	19.776	ng/mL#	64
113]	Pristane	32.643	85	192m	11.302	ng/mL	
114]	C-18	34.309	85	398	18.233	ng/mL#	60
115]	Phytane	34.503	85	279	11.912	ng/mL#	66

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.5.1

7

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39333.D
 Sample : ic1950-0.05
 Misc : OP47644,MSS1950,,,1,1
 ALS Vial : 2 Sample Multiplier: 1
 Acq On : 1 Jun 2016 6:38 pm

Operator: sofyz

Quant Time: Jun 02 08:25:26 2016
 Quant Method : S:\1\methods\S160601-MAHPAH-A.M
 Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Acenaphthene-d10	28.724	162	55962	1000.00	ng/mL	0.00
System Monitoring Compounds						
2) Toluene-d8	9.760	98	3931	48.07	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	4.81%	
3) Naphthalene-d8	21.761	136	5885	50.23	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	5.02%	
4) Phenanthrene-d10	34.576	188	4055	47.86	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	4.79%	
5) Perylene-d12	50.406	264	3345	49.36	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	4.94%	
Target Compounds						
					Qvalue	
6] MTBE	5.817	73	2945	46.152	ng/mL#	21
7] Benzene	7.278	78	4997m	54.486	ng/mL	
13] 2,2,4-trimethylpentane	7.784	57	16446	173.826	µg/mL	98
14] n-Heptane	8.055	43	2459	51.500	µg/mL	98
15] Methylcyclohexane	8.692	83	1814	45.846	ng/mL	94
16] Toluene	9.873	91	5619	55.762	ng/mL	96
17] n-Octane	10.734	43	3070	51.165	µg/mL	99
18] Ethylbenzene	12.636	91	5853	51.061	ng/mL	100
19] m,p-xylene	12.870	91	4893	51.347	ng/mL	99
20] Styrene	13.507	104	4834	69.863	ng/mL	98
21] o-Xylene	13.582	91	4849	51.100	ng/mL	97
22] Isopropylbenzene	14.499	105	5518	50.202	ng/mL	98
23] n-Propylbenzene	15.359	91	6968	50.593	ng/mL	96
24] 1,3,5-Trimethylbenzene	15.785	105	4912	48.511	ng/mL	97
25] Phenol	15.965	94	2661	47.130	µg/mL#	100
26] t-Butylbenzene	16.497	119	4343	49.203	ng/mL	94
27] 1,2,4-Trimethylbenzene	16.529	105	5067	49.260	ng/mL	87
28] sec-Butylbenzene	17.018	105	6202	51.516	ng/mL	98
29] 1,2,3-Trimethylbenzene	17.379	105	5109	49.655	ng/mL	93
30] p-Isopropyltoluene	17.390	119	5269	48.893	ng/mL	98
31] Indane	17.783	117	4667	49.523	µg/mL	99
32] Indene	18.027	115	4548	48.634	µg/mL	97
33] n-Butylbenzene	18.272	91	5181	49.327	ng/mL	95
34] trans-Decalin	18.357	96	946	47.166	ng/mL	92
35] cis-Decalin	19.590	96	1365	51.333	ng/mL	92
40] Benzo(b)thiophene	22.057	134	5932	50.379	ng/mL	98
45] Tetraethyl lead	20.886	208	506	58.580	ng/mL	83
50] MMT	23.638	134	2266	52.297	µg/mL	96
51] Naphthalene	21.837	128	7433	51.744	ng/mL	100
52] 2-Methylnaphthalene	24.542	142	4609	50.202	ng/mL	99
53] 1-Methylnaphthalene	24.961	142	4184	51.290	ng/mL	96
58] Biphenyl	26.428	154	5305	49.936	ng/mL	97
59] Acenaphthylene	28.105	152	6960	49.698	ng/mL	99
60] Acenaphthene	28.848	154	3951	49.883	ng/mL	98
61] Dibenzofuran	29.496	168	5637	48.954	ng/mL	99
62] Fluorene	30.865	166	4625	48.675	ng/mL	99
66] Dibenzothiophene	34.172	184	6478	48.369	ng/mL	96
72] Phenanthrene	34.665	178	6028	49.143	ng/mL	97
73] Anthracene	34.843	178	5509	46.278	ng/mL	99
79] Carbazole	35.536	167	5537	45.177	µg/mL	99
80] Retene	41.653	234	1354	47.345	ng/mL	100
81] Benzo(b)naphtho(2,1-d)...	44.150	234	5437	46.681	ng/mL	100
86] Fluoranthene	39.425	202	5846	47.143	ng/mL	98
87] Pyrene	40.306	202	5857	47.709	ng/mL	99
97] Benz(a)anthracene	45.080	228	4948	46.853	ng/mL	100
98] Chrysene/triphenylene	45.240	228	4878	47.693	ng/mL	99
103] Benzo(b)fluoranthene	49.113	252	5525	47.627	ng/mL	100
104] Benzo(j/k)fluoranthene	49.194	252	5759	49.432	ng/mL	99

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39333.D

Sample : ic1950-0.05

Misc : OP47644,MSS1950,,,1,1

ALS Vial : 2 Sample Multiplier: 1

Acq On : 1 Jun 2016 6:38 pm

Operator: sofyaz

Quant Time: Jun 02 08:25:26 2016

Quant Method : S:\1\methods\S160601-MAHPAH-A.M

Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
105]	Benzo(e)pyrene	50.053	252	5571	50.529	ng/mL	96
106]	Benzo(a)pyrene	50.216	252	5290	48.739	ng/mL	98
107]	Perylene	50.487	252	5577	49.180	ng/mL	98
108]	Indeno(1,2,3-cd)pyrene	53.706	276	6744m	47.816	ng/mL	
109]	Dibenz(a,h)anthracene	53.739	278	5677m	48.383	ng/mL	
110]	Benzo(g,h,i)perylene	54.447	276	6417	50.137	ng/mL	100
111]	Coronene	59.543	300	6832	50.863	ng/mL	95
112]	C-17	32.514	85	1537	50.830	ng/mL	93
113]	Pristane	32.635	85	1149m	49.170	ng/mL	
114]	C-18	34.309	85	1559	50.658	ng/mL#	90
115]	Phytane	34.495	85	1511	46.750	ng/mL#	91

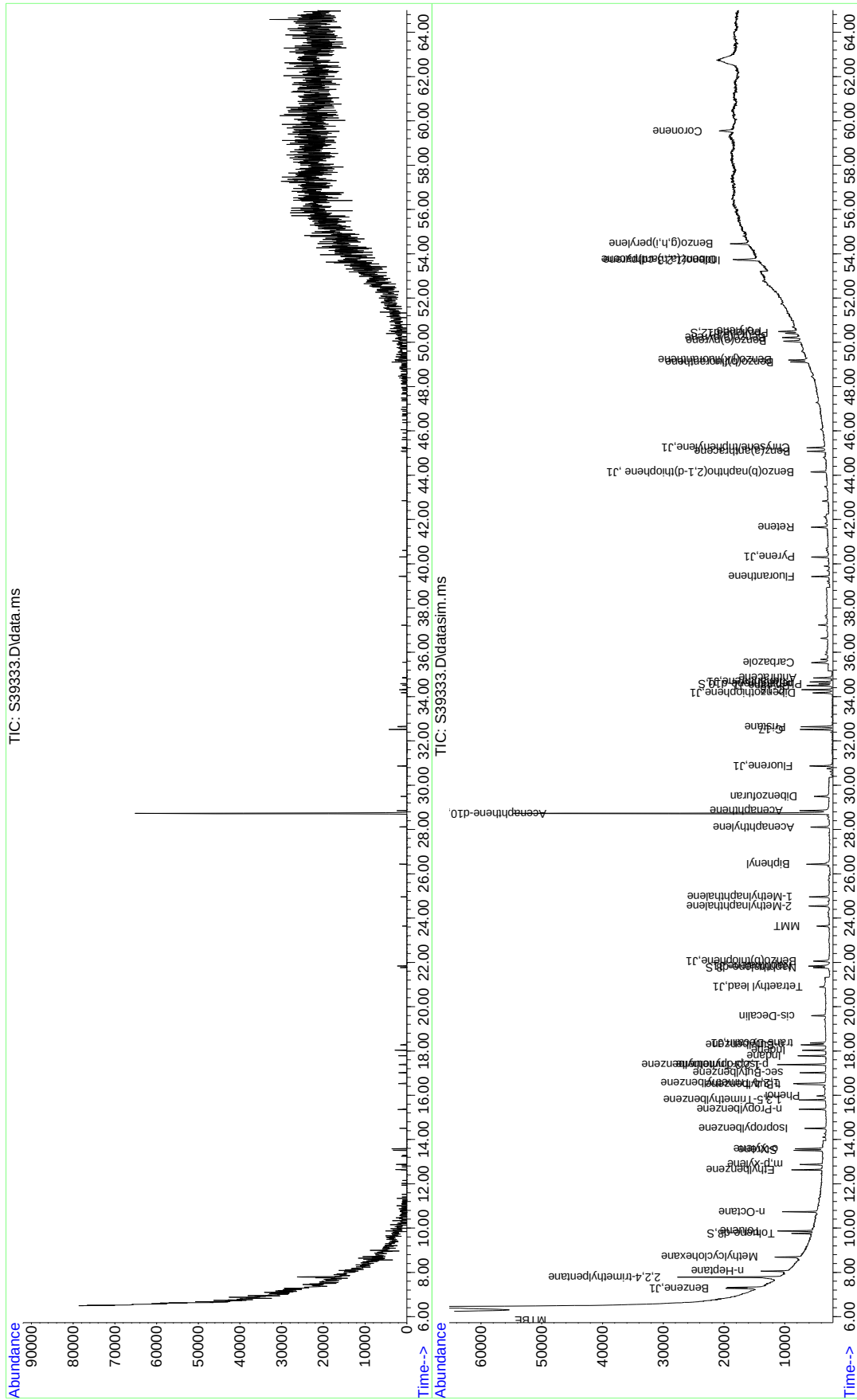
(#)= qualifier out of range (m)= manual integration (+)= signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39333.D
Sample : ic1950-0.05
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 2 Sample Multiplier: 1
Acq On : 1 Jun 2016 6:38 pm

Operator: sofyaz

Quant Time: Jun 02 08:25:26 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHS & Alkylated PAHS by GC/MS/SIM



Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39334.D
 Sample : ic1950-0.25
 Misc : OP47644,MSS1950,,,1,1
 ALS Vial : 3 Sample Multiplier: 1
 Acq On : 1 Jun 2016 7:53 pm

Operator: sofyz

Quant Time: Jun 02 08:22:30 2016
 Quant Method : S:\1\methods\S160601-MAHPAH-A.M
 Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Acenaphthene-d10	28.725	162	40740	1000.00	ng/mL	0.00
System Monitoring Compounds						
2) Toluene-d8	9.741	98	15400	261.73	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	26.17%	
3) Naphthalene-d8	21.753	136	21611	254.53	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	25.45%	
4) Phenanthrene-d10	34.570	188	16114	265.23	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	26.52%	
5) Perylene-d12	50.409	264	12905	265.71	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	26.57%	
Target Compounds						
					Qvalue	
6] MTBE	5.788	73	16761	423.352	ng/mL	96
7] Benzene	7.250	78	17528m	266.992	ng/mL	
13] 2,2,4-trimethylpentane	7.755	57	18412	273.637	µg/mL	98
14] n-Heptane	8.027	43	9304	274.119	µg/mL	100
15] Methylcyclohexane	8.664	83	7521	265.029	ng/mL	99
16] Toluene	9.854	91	19304	267.841	ng/mL	98
17] n-Octane	10.715	43	11576	270.424	µg/mL	99
18] Ethylbenzene	12.626	91	21741	264.242	ng/mL	99
19] m,p-xylene	12.860	91	18133	265.416	ng/mL	98
20] Styrene	13.507	104	12830	256.314	ng/mL	99
21] o-Xylene	13.582	91	18167	267.615	ng/mL	99
22] Isopropylbenzene	14.498	105	20650	260.872	ng/mL	100
23] n-Propylbenzene	15.359	91	25815	260.059	ng/mL	98
24] 1,3,5-Trimethylbenzene	15.774	105	18785	256.494	ng/mL	97
25] Phenol	15.954	94	9356	221.028	µg/mL#	98
26] t-Butylbenzene	16.497	119	16429	257.625	ng/mL	95
27] 1,2,4-Trimethylbenzene	16.518	105	19021	255.375	ng/mL	87
28] sec-Butylbenzene	17.007	105	22229	254.864	ng/mL	98
29] 1,2,3-Trimethylbenzene	17.368	105	18847	252.159	ng/mL	94
30] p-Isopropyltoluene	17.379	119	19650	250.622	ng/mL	100
31] Indane	17.772	117	17228	251.491	µg/mL	99
32] Indene	18.027	115	17048	250.560	µg/mL	100
33] n-Butylbenzene	18.261	91	18730m	243.318	ng/mL	
34] trans-Decalin	18.357	96	3664	251.251	ng/mL	97
35] cis-Decalin	19.589	96	4931	256.340	ng/mL	94
40] Benzo(b)thiophene	22.048	134	21641	253.294	ng/mL	99
45] Tetraethyl lead	20.886	208	1620	260.268	ng/mL	98
50] MMT	23.629	134	8152	261.374	µg/mL	98
51] Naphthalene	21.829	128	26645	256.431	ng/mL	99
52] 2-Methylnaphthalene	24.534	142	16721	250.234	ng/mL	100
53] 1-Methylnaphthalene	24.953	142	15069	255.015	ng/mL	100
58] Biphenyl	26.429	154	19653	255.515	ng/mL	100
59] Acenaphthylene	28.106	152	25775	253.768	ng/mL	100
60] Acenaphthene	28.849	154	14608	254.476	ng/mL	99
61] Dibenzofuran	29.497	168	21503	258.765	ng/mL	99
62] Fluorene	30.867	166	17653	256.983	ng/mL	100
66] Dibenzothiophene	34.166	184	25279	262.523	ng/mL	99
72] Phenanthrene	34.659	178	23296	264.722	ng/mL	99
73] Anthracene	34.837	178	22142	257.386	ng/mL	99
79] Carbazole	35.530	167	22812	257.619	µg/mL	99
80] Retene	41.647	234	5277	254.638	ng/mL	99
81] Benzo(b)naphtho(2,1-d)...	44.144	234	22006	262.873	ng/mL	100
86] Fluoranthene	39.420	202	23470	263.490	ng/mL	100
87] Pyrene	40.300	202	23253	263.765	ng/mL	100
97] Benz(a)anthracene	45.074	228	19701	258.407	ng/mL	100
98] Chrysene/triphenylene	45.234	228	19344	263.235	ng/mL	99
103] Benzo(b)fluoranthene	49.116	252	21790	260.806	ng/mL	100
104] Benzo(j/k)fluoranthene	49.197	252	22515	271.054	ng/mL	99

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39334.D

Sample : ic1950-0.25

Misc : OP47644,MSS1950,,,1,1

ALS Vial : 3 Sample Multiplier: 1

Acq On : 1 Jun 2016 7:53 pm

Operator: sofyaz

Quant Time: Jun 02 08:22:30 2016

Quant Method : S:\1\methods\S160601-MAHPAH-A.M

Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
105]	Benzo(e)pyrene	50.047	252	21135	268.079	ng/mL	98
106]	Benzo(a)pyrene	50.210	252	20479	262.390	ng/mL	99
107]	Perylene	50.481	252	21492	263.975	ng/mL	99
108]	Indeno(1,2,3-cd)pyrene	53.709	276	26753m	264.273	ng/mL	
109]	Dibenz(a,h)anthracene	53.741	278	22197m	263.323	ng/mL	
110]	Benzo(g,h,i)perylene	54.449	276	24482	267.294	ng/mL	99
111]	Coronene	59.545	300	25695	267.319	ng/mL	99
112]	C-17	32.508	85	5451	246.844	ng/mL	96
113]	Pristane	32.638	85	4245	249.379	ng/mL	100
114]	C-18	34.311	85	5542	246.501	ng/mL	96
115]	Phytane	34.497	85	5916	251.912	ng/mL	100

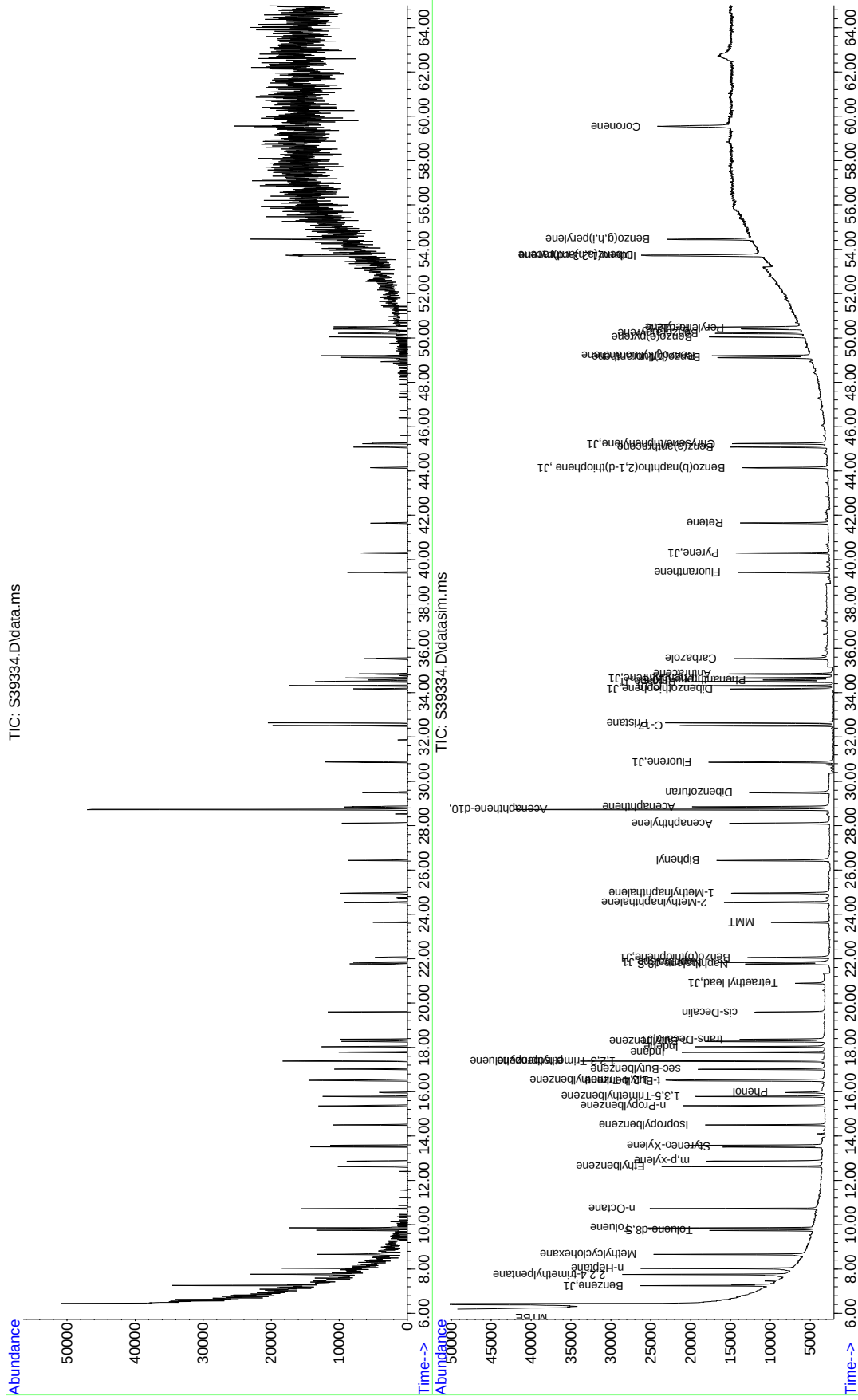
(#)= qualifier out of range (m)= manual integration (+)= signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39334.D
Sample : IC1950-0.25
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 3 Sample Multiplier: 1
Acq On : 1 Jun 2016 7:53 pm

Operator: sofyaz

Quant Time: Jun 02 08:22:30 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM



Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39335.D

Sample : icc1950-1.0

Misc : OP47644,MSS1950,,,1,1

ALS Vial : 4 Sample Multiplier: 1

Acq On : 1 Jun 2016 9:12 pm

Operator: sofyz

Quant Time: Jun 02 08:14:59 2016

Quant Method : S:\1\methods\S160601-MAHPAH-A.M

Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Acenaphthene-d10	28.725	162	43996	1000.00	ng/mL	0.00
System Monitoring Compounds						
2) Toluene-d8	9.751	98	65441	1000.00	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	100.00%	
3) Naphthalene-d8	21.753	136	91757	1000.00	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	100.00%	
4) Phenanthrene-d10	34.570	188	66375	1000.00	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	100.00%	
5) Perylene-d12	50.400	264	53629	1000.00	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	100.00%	
Target Compounds						
					Qvalue	
6] MTBE	5.807	73	52124	1000.000	ng/mL	95
7] Benzene	7.259	78	74175	1000.000	ng/mL	99
13] 2,2,4-trimethylpentane	7.765	57	76974	1000.000	µg/mL	98
14] n-Heptane	8.037	43	37820	1000.000	µg/mL	98
15] Methylcyclohexane	8.673	83	31363	1000.000	ng/mL	98
16] Toluene	9.863	91	80339	1000.000	ng/mL	99
17] n-Octane	10.725	43	47349	1000.000	µg/mL	99
18] Ethylbenzene	12.626	91	91245	1000.000	ng/mL	99
19] m,p-xylene	12.860	91	75590	1000.000	ng/mL	98
20] Styrene	13.497	104	54389	1000.000	ng/mL	97
21] o-Xylene	13.572	91	74966	1000.000	ng/mL	98
22] Isopropylbenzene	14.498	105	86697	1000.000	ng/mL	100
23] n-Propylbenzene	15.359	91	108882	1000.000	ng/mL	98
24] 1,3,5-Trimethylbenzene	15.774	105	79309	1000.000	ng/mL	98
25] Phenol	15.955	94	42359	1000.000	µg/mL#	97
26] t-Butylbenzene	16.497	119	68334	1000.000	ng/mL	94
27] 1,2,4-Trimethylbenzene	16.518	105	80005	1000.000	ng/mL	88
28] sec-Butylbenzene	17.007	105	94167	1000.000	ng/mL	98
29] 1,2,3-Trimethylbenzene	17.368	105	78954	1000.000	ng/mL	94
30] p-Isopropyltoluene	17.379	119	82969	1000.000	ng/mL	100
31] Indane	17.772	117	73262	1000.000	µg/mL	100
32] Indene	18.027	115	72477	1000.000	µg/mL	100
33] n-Butylbenzene	18.261	91	81433	1000.000	ng/mL	97
34] trans-Decalin	18.357	96	15491	1000.000	ng/mL	97
35] cis-Decalin	19.590	96	20519	1000.000	ng/mL	95
40] Benzo(b)thiophene	22.048	134	91873	1000.000	ng/mL	100
45] Tetraethyl lead	20.886	208	6580	1000.000	ng/mL	100
50] MMT	23.629	134	33321	1000.000	µg/mL	98
51] Naphthalene	21.829	128	112614	1000.000	ng/mL	99
52] 2-Methylnaphthalene	24.534	142	71177	1000.000	ng/mL	100
53] 1-Methylnaphthalene	24.953	142	63271	1000.000	ng/mL	100
58] Biphenyl	26.420	154	83231	1000.000	ng/mL	100
59] Acenaphthylene	28.106	152	110636	1000.000	ng/mL	100
60] Acenaphthene	28.840	154	62036	1000.000	ng/mL	100
61] Dibenzofuran	29.488	168	90139	1000.000	ng/mL	100
62] Fluorene	30.859	166	72846	1000.000	ng/mL	100
66] Dibenzothiophene	34.166	184	103679	1000.000	ng/mL	99
72] Phenanthrene	34.659	178	96110	1000.000	ng/mL	100
73] Anthracene	34.837	178	93046	1000.000	ng/mL	100
79] Carbazole	35.520	167	95524	1000.000	µg/mL	99
80] Retene	41.647	234	22132	1000.000	ng/mL	100
81] Benzo(b)naphtho(2,1-d)...	44.144	234	91662	1000.000	ng/mL	100
86] Fluoranthene	39.420	202	96769	1000.000	ng/mL	100
87] Pyrene	40.292	202	96303	1000.000	ng/mL	99
97] Benz(a)anthracene	45.075	228	82782	1000.000	ng/mL	99
98] Chrysene/triphenylene	45.234	228	80912	1000.000	ng/mL	100
103] Benzo(b)fluoranthene	49.107	252	92758	1000.000	ng/mL	98
104] Benzo(j/k)fluoranthene	49.188	252	93363	1000.000	ng/mL	100

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39335.D

Sample : icc1950-1.0

Misc : OP47644,MSS1950,,,1,1

ALS Vial : 4 Sample Multiplier: 1

Acq On : 1 Jun 2016 9:12 pm

Operator: sofyaz

Quant Time: Jun 02 08:14:59 2016

Quant Method : S:\1\methods\S160601-MAHPAH-A.M

Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
105]	Benzo(e)pyrene	50.047	252	89124	1000.000	ng/mL	99
106]	Benzo(a)pyrene	50.210	252	86680	1000.000	ng/mL	99
107]	Perylene	50.481	252	91019	1000.000	ng/mL	98
108]	Indeno(1,2,3-cd)pyrene	53.700	276	111844m	1000.528	ng/mL	
109]	Dibenz(a,h)anthracene	53.733	278	94046m	1010.845	ng/mL	
110]	Benzo(g,h,i)perylene	54.449	276	102441	1000.000	ng/mL	99
111]	Coronene	59.545	300	106996	1000.000	ng/mL	99
112]	C-17	32.508	85	23082	1000.000	ng/mL	98
113]	Pristane	32.638	85	17943	1000.000	ng/mL	100
114]	C-18	34.312	85	23729	1000.000	ng/mL	98
115]	Phytane	34.497	85	24804	1000.000	ng/mL	100

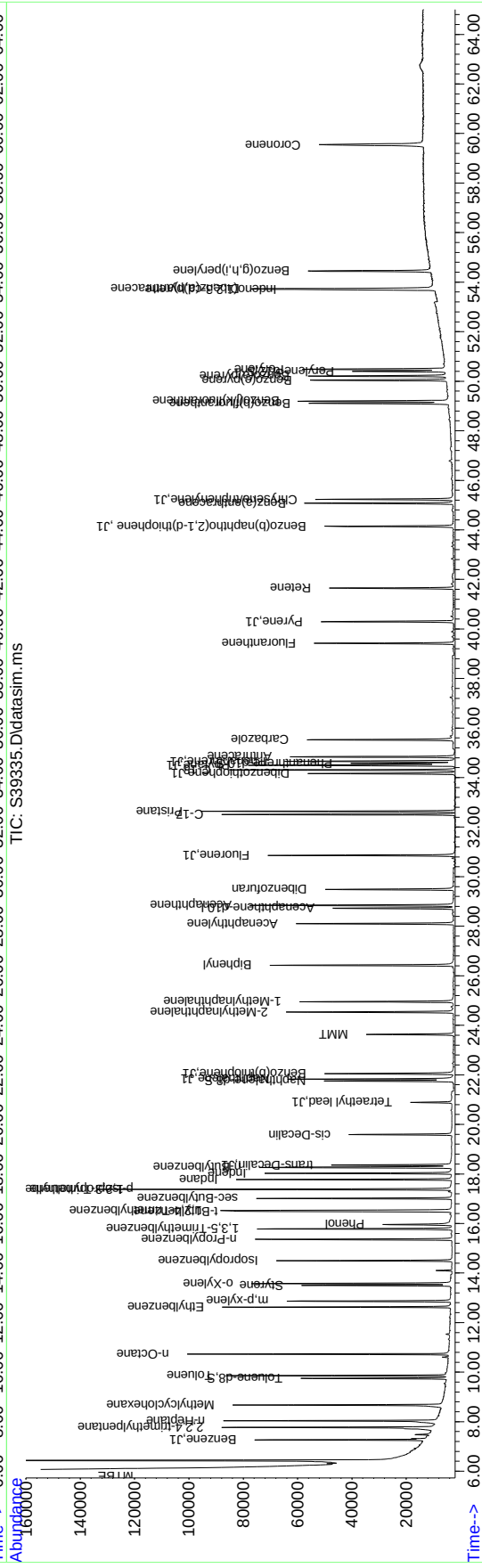
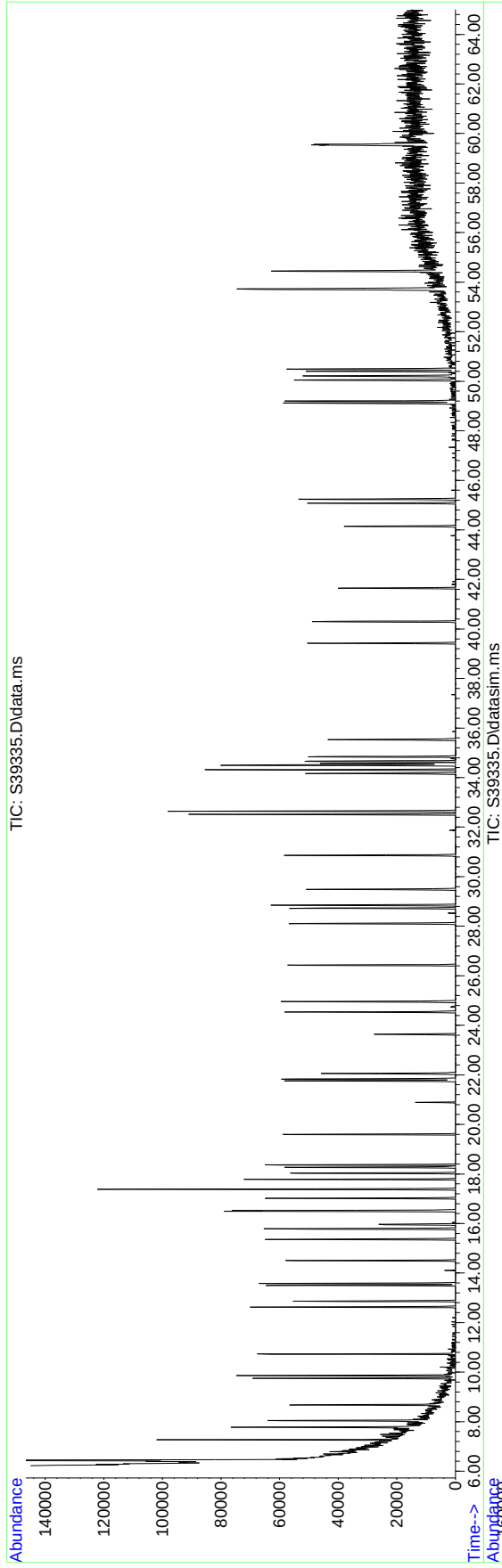
(#)= qualifier out of range (m)= manual integration (+)= signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39335.D
Sample : icc1950-1.0
Misc : OP47644, MSS1950,,,1,1
ALS Vial : 4 Sample Multiplier: 1
Acq On : 1 Jun 2016 9:12 pm

Operator: sofyaz

Quant Time: Jun 02 08:14:59 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM



Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39336.D
 Sample : ic1950-5.0
 Misc : OP47644,MSS1950,,,1,1
 ALS Vial : 5 Sample Multiplier: 1
 Acq On : 1 Jun 2016 10:32 pm

Operator: sofyz

Quant Time: Jun 02 08:17:13 2016
 Quant Method : S:\1\methods\S160601-MAHPAH-A.M
 Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Acenaphthene-d10	28.716	162	45617	1000.00	ng/mL	0.00
System Monitoring Compounds						
2) Toluene-d8	9.751	98	326443	4811.09	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	481.11%	
3) Naphthalene-d8	21.753	136	485622	5104.41	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	510.44%	
4) Phenanthrene-d10	34.570	188	346650	5037.01	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	503.70%	
5) Perylene-d12	50.409	264	274838	4942.69	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	494.27%	
Target Compounds						
					Qvalue	
6] MTBE	5.816	73	200936	3717.975	ng/mL	96
7] Benzene	7.268	78	365693	4754.946	ng/mL	99
13] 2,2,4-trimethylpentane	7.774	57	374239	4689.121	µg/mL	98
14] n-Heptane	8.046	43	191164	4874.960	µg/mL	97
15] Methylcyclohexane	8.683	83	159122	4893.269	ng/mL	98
16] Toluene	9.863	91	399862	4800.320	ng/mL	100
17] n-Octane	10.725	43	237878	4845.403	µg/mL	99
18] Ethylbenzene	12.626	91	460371	4866.148	ng/mL	100
19] m,p-xylene	12.860	91	382073	4874.931	ng/mL	97
20] Styrene	13.497	104	282249	5005.043	ng/mL	97
21] o-Xylene	13.572	91	381264	4905.101	ng/mL	97
22] Isopropylbenzene	14.498	105	449617	5001.786	ng/mL	100
23] n-Propylbenzene	15.349	91	567189	5024.099	ng/mL	100
24] 1,3,5-Trimethylbenzene	15.774	105	421257	5122.844	ng/mL	97
25] Phenol	15.944	94	243930	5554.001	µg/mL#	98
26] t-Butylbenzene	16.496	119	366948	5179.098	ng/mL	94
27] 1,2,4-Trimethylbenzene	16.518	105	429256	5174.706	ng/mL	88
28] sec-Butylbenzene	17.007	105	501884	5140.331	ng/mL	97
29] 1,2,3-Trimethylbenzene	17.368	105	434135	5303.189	ng/mL	94
30] p-Isopropyltoluene	17.379	119	455253	5292.044	ng/mL	99
31] Indane	17.772	117	397981	5239.261	µg/mL	99
32] Indene	18.027	115	396934	5282.075	µg/mL	99
33] n-Butylbenzene	18.261	91	449058	5318.492	ng/mL	97
34] trans-Decalin	18.356	96	83862	5221.223	ng/mL	95
35] cis-Decalin	19.589	96	110767	5206.438	ng/mL	93
40] Benzo(b)thiophene	22.048	134	491119	5155.672	ng/mL	100
45] Tetraethyl lead	20.886	208	35051	5137.608	ng/mL	99
50] MMT	23.629	134	176545	5110.035	µg/mL	97
51] Naphthalene	21.829	128	594249	5089.353	ng/mL	99
52] 2-Methylnaphthalene	24.534	142	381745	5172.734	ng/mL	100
53] 1-Methylnaphthalene	24.953	142	337955	5151.582	ng/mL	100
58] Biphenyl	26.420	154	429823	4980.707	ng/mL	100
59] Acenaphthylene	28.106	152	563419	4911.583	ng/mL	100
60] Acenaphthene	28.849	154	321417	4997.025	ng/mL	99
61] Dibenzofuran	29.488	168	464977	4975.139	ng/mL	100
62] Fluorene	30.859	166	394424	5222.087	ng/mL	99
66] Dibenzothiophene	34.166	184	558504	5195.436	ng/mL	99
72] Phenanthrene	34.659	178	499442	5011.906	ng/mL	99
73] Anthracene	34.837	178	490782	5087.183	ng/mL	100
79] Carbazole	35.519	167	497597	5024.024	µg/mL	99
80] Retene	41.647	234	117785	5132.817	ng/mL	99
81] Benzo(b)naphtho(2,1-d)...	44.153	234	475033	4998.284	ng/mL	100
86] Fluoranthene	39.419	202	507965	5062.721	ng/mL	99
87] Pyrene	40.300	202	500513	5012.588	ng/mL	99
97] Benz(a)anthracene	45.074	228	435370	5072.348	ng/mL	100
98] Chrysene/triphenylene	45.243	228	421869	5028.647	ng/mL	100
103] Benzo(b)fluoranthene	49.116	252	458309	4765.336	ng/mL	99
104] Benzo(j/k)fluoranthene	49.197	252	473825	4894.740	ng/mL	100

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39336.D

Sample : ic1950-5.0

Misc : OP47644,MSS1950,,,1,1

ALS Vial : 5 Sample Multiplier: 1

Acq On : 1 Jun 2016 10:32 pm

Operator: sofyaz

Quant Time: Jun 02 08:17:13 2016

Quant Method : S:\1\methods\S160601-MAHPAH-A.M

Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
105]	Benzo(e)pyrene	50.056	252	436095	4719.249	ng/mL	98
106]	Benzo(a)pyrene	50.219	252	439392	4888.996	ng/mL	99
107]	Perylene	50.490	252	459774	4871.905	ng/mL	99
108]	Indeno(1,2,3-cd)pyrene	53.717	276	557280m	4805.596	ng/mL	
109]	Dibenz(a,h)anthracene	53.741	278	469431m	4814.131	ng/mL	
110]	Benzo(g,h,i)perylene	54.457	276	515354	4851.972	ng/mL	99
111]	Coronene	59.569	300	535062	4823.064	ng/mL	99
112]	C-17	32.516	85	127383	5322.608	ng/mL	99
113]	Pristane	32.638	85	98337	5285.771	ng/mL	97
114]	C-18	34.311	85	128770	5233.856	ng/mL	98
115]	Phytane	34.497	85	134413	5226.441	ng/mL	99

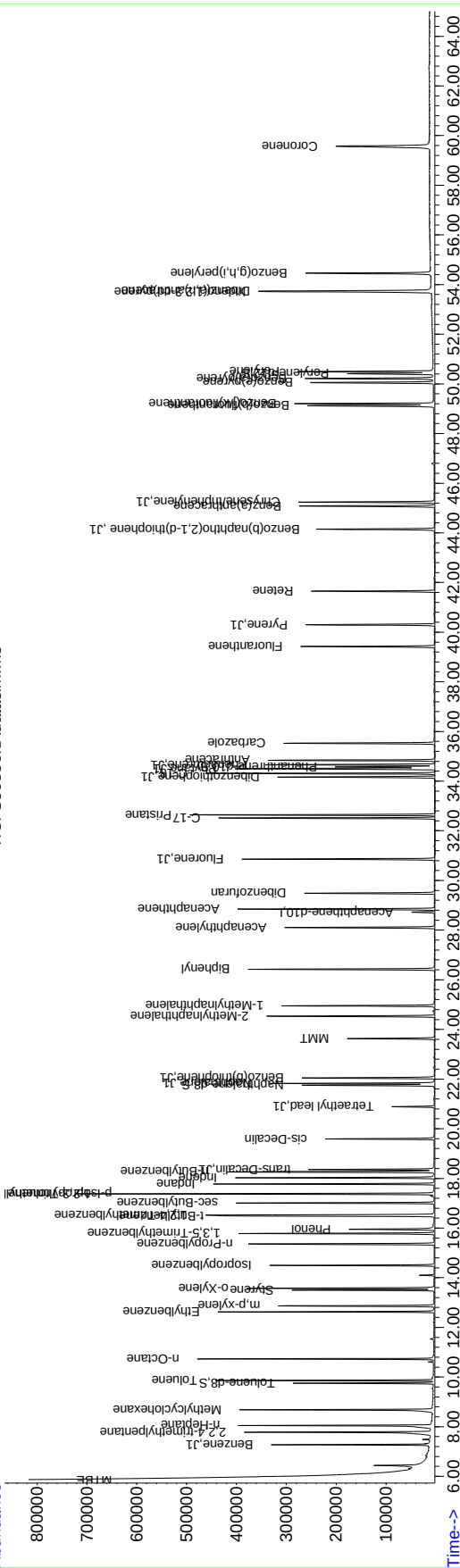
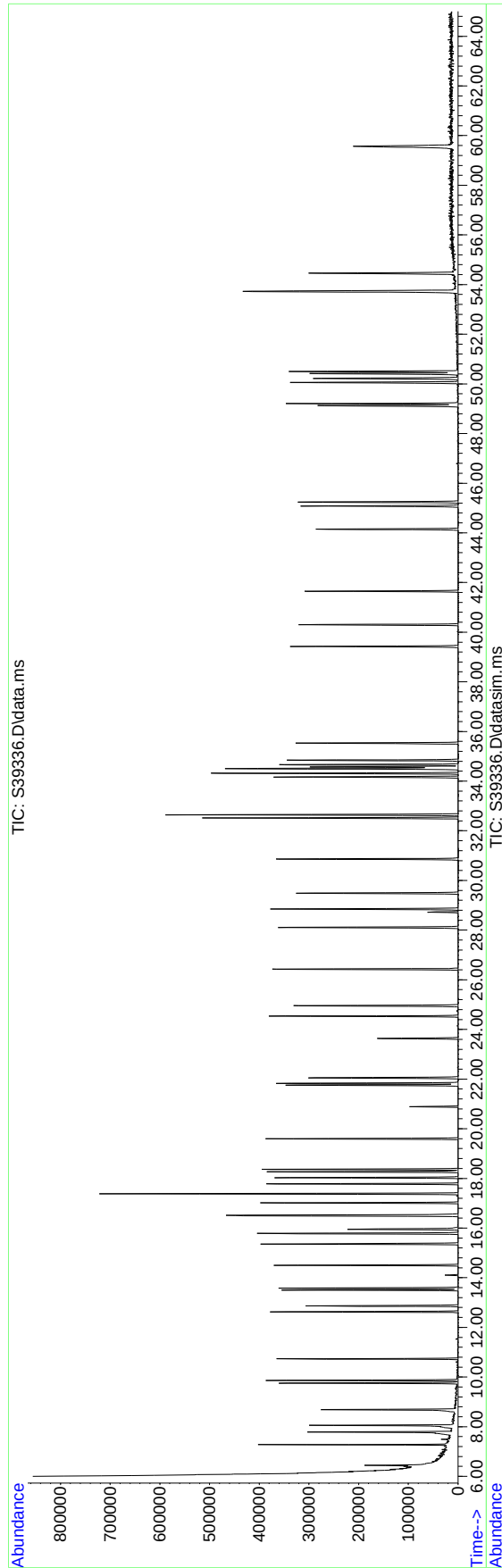
(#)= qualifier out of range (m)= manual integration (+)= signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39336.D
Sample : IC1950-5.0
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 1 Jun 2016 10:32 pm

Operator: sofyaz

Quant Time: Jun 02 08:17:13 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM



Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39337.D
 Sample : ic1950-20.0
 Misc : OP47644,MSS1950,,,1,1
 ALS Vial : 6 Sample Multiplier: 1
 Acq On : 1 Jun 2016 11:49 pm

Operator: sofyz

Quant Time: Jun 02 08:20:09 2016
 Quant Method : S:\1\methods\S160601-MAHPAH-A.M
 Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Acenaphthene-d10	28.715	162	49269	1000.00	ng/mL	-0.01
System Monitoring Compounds						
2) Toluene-d8	9.751	98	1393404	19379.79	ng/mL	0.00
Spiked Amount 1000.000			Recovery	= 1937.98%		
3) Naphthalene-d8	21.752	136	2007663	19336.60	ng/mL	0.00
Spiked Amount 1000.000			Recovery	= 1933.66%		
4) Phenanthrene-d10	34.584	188	1424189	19089.65	ng/mL	0.01
Spiked Amount 1000.000			Recovery	= 1908.97%		
5) Perylene-d12	50.442	264	1135646	19018.61	ng/mL	0.04
Spiked Amount 1000.000			Recovery	= 1901.86%		
Target Compounds						
					Qvalue	
6] MTBE	5.807	73	837266	16453.168	ng/mL	95
7] Benzene	7.268	78	1522452	18788.869	ng/mL	99
13] 2,2,4-trimethylpentane	7.774	57	1541575	18457.618	µg/mL	98
14] n-Heptane	8.046	43	789902	18886.687	µg/mL	96
15] Methylcyclohexane	8.683	83	669261	19260.943	ng/mL	97
16] Toluene	9.863	91	1702808	19312.498	ng/mL	100
17] n-Octane	10.725	43	1017945	19499.318	µg/mL	99
18] Ethylbenzene	12.626	91	1937583	19219.542	ng/mL	98
19] m,p-xylene	12.860	91	1613674	19304.423	ng/mL	96
20] Styrene	13.507	104	1194570	19602.931	ng/mL	97
21] o-Xylene	13.582	91	1599638	19237.026	ng/mL	96
22] Isopropylbenzene	14.498	105	1859558	19149.945	ng/mL	99
23] n-Propylbenzene	15.359	91	2313837	18930.879	ng/mL	99
24] 1,3,5-Trimethylbenzene	15.785	105	1717994	19108.917	ng/mL	96
25] Phenol	15.955	94	1068918	21351.136	µg/mL#	98
26] t-Butylbenzene	16.497	119	1511513	19404.622	ng/mL	95
27] 1,2,4-Trimethylbenzene	16.529	105	1758175	19286.904	ng/mL#	86
28] sec-Butylbenzene	17.007	105	2051406	19184.046	ng/mL	96
29] 1,2,3-Trimethylbenzene	17.379	105	1779502	19534.042	ng/mL	92
30] p-Isopropyltoluene	17.389	119	1864089	19493.445	ng/mL	97
31] Indane	17.783	117	1610466	19170.949	µg/mL	99
32] Indene	18.027	115	1598910	19159.426	µg/mL	99
33] n-Butylbenzene	18.261	91	1821686	19359.597	ng/mL	95
34] trans-Decalin	18.357	96	348907	19677.359	ng/mL	97
35] cis-Decalin	19.600	96	457692	19515.622	ng/mL	93
40] Benzo(b)thiophene	22.047	134	2020076	19333.504	ng/mL	100
45] Tetraethyl lead	20.886	208	152845	20461.114	ng/mL	99
50] MMT	23.628	134	754104	19989.411	µg/mL	97
51] Naphthalene	21.828	128	2450096	19256.035	ng/mL	98
52] 2-Methylnaphthalene	24.533	142	1605255	19797.306	ng/mL	99
53] 1-Methylnaphthalene	24.961	142	1410549	19610.523	ng/mL	100
58] Biphenyl	26.428	154	1860002	19994.310	ng/mL	99
59] Acenaphthylene	28.115	152	2457958	20015.867	ng/mL	99
60] Acenaphthene	28.848	154	1387290	19975.246	ng/mL	99
61] Dibenzofuran	29.496	168	2002072	19883.254	ng/mL	99
62] Fluorene	30.864	166	1648914	19773.893	ng/mL	99
66] Dibenzothiophene	34.180	184	2252130	19025.510	ng/mL	98
72] Phenanthrene	34.673	178	2075230	19258.405	ng/mL	98
73] Anthracene	34.851	178	2037924	19389.196	ng/mL	99
79] Carbazole	35.535	167	2136051	19920.327	µg/mL	100
80] Retene	41.662	234	499173	19876.489	ng/mL	99
81] Benzo(b)naphtho(2,1-d)...	44.167	234	1969134	19186.684	ng/mL	100
86] Fluoranthene	39.434	202	2101407	19270.719	ng/mL	98
87] Pyrene	40.315	202	2077607	19240.514	ng/mL	98
97] Benz(a)anthracene	45.098	228	1797108	19246.288	ng/mL	100
98] Chrysene/triphenylene	45.257	228	1697439	18680.063	ng/mL	99
103] Benzo(b)fluoranthene	49.140	252	2004885	19764.706	ng/mL	100
104] Benzo(j/k)fluoranthene	49.230	252	1889179m	18261.370	ng/mL	

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39337.D
Sample : ic1950-20.0
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 6 Sample Multiplier: 1
Acq On : 1 Jun 2016 11:49 pm

Operator: sofyaz

Quant Time: Jun 02 08:20:09 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
105]	Benzo(e)pyrene	50.080	252	1840469	18973.199	ng/mL	96
106]	Benzo(a)pyrene	50.243	252	1823589	18997.449	ng/mL	97
107]	Perylene	50.523	252	1882803	18711.616	ng/mL	96
108]	Indeno(1,2,3-cd)pyrene	53.747	276	2432985m	19810.352	ng/mL	
109]	Dibenz(a,h)anthracene	53.771	278	1982194m	19177.563	ng/mL	
110]	Benzo(g,h,i)perylene	54.496	276	2125204	18803.690	ng/mL	98
111]	Coronene	59.640	300	2266673	19258.116	ng/mL	100
112]	C-17	32.522	85	535056	20052.836	ng/mL	99
113]	Pristane	32.651	85	408448	19762.610	ng/mL	97
114]	C-18	34.325	85	543591	19989.088	ng/mL	98
115]	Phytane	34.511	85	567822	19989.661	ng/mL	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.5.6

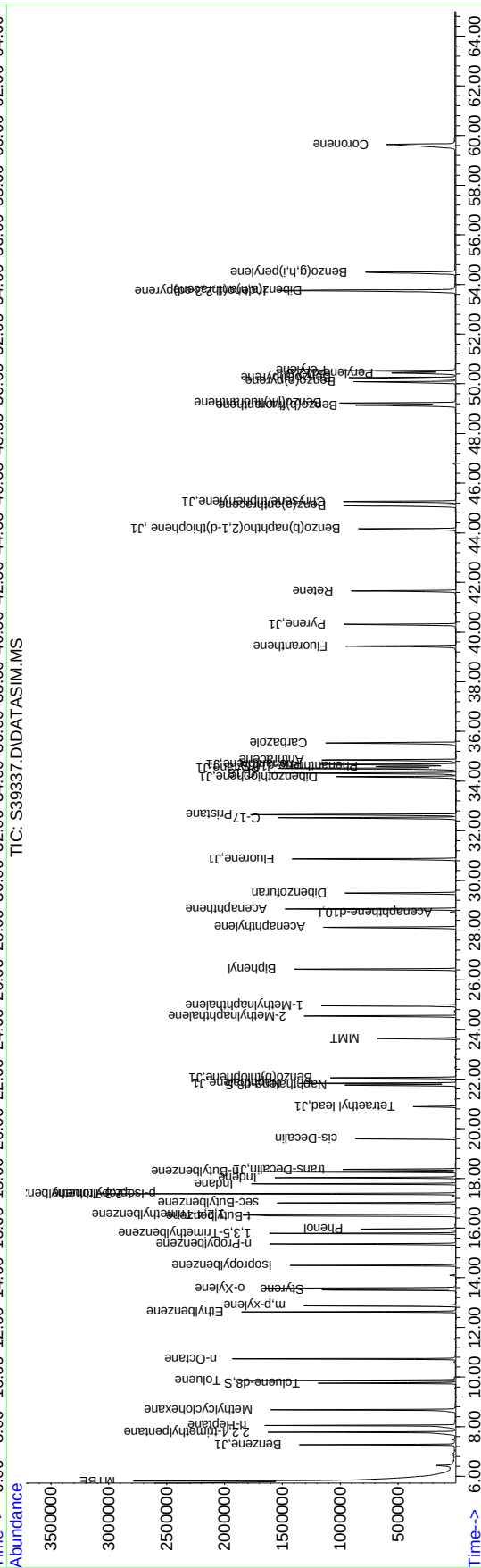
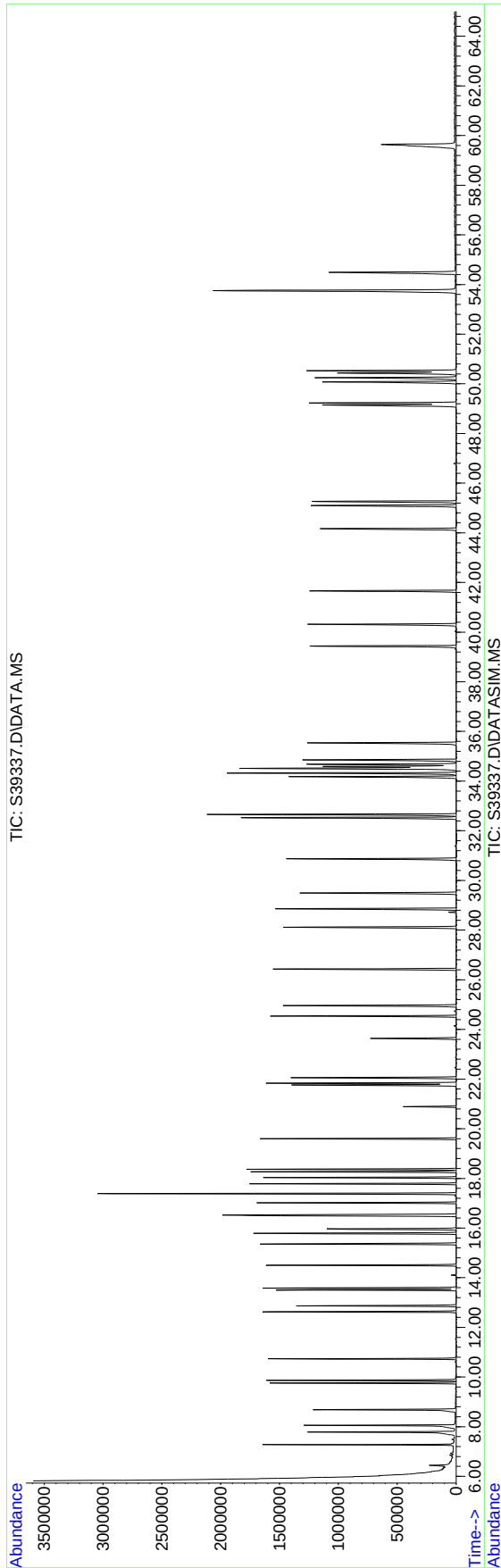
7

Quantitation Report (QT Reviewed)

Data File: S:\data\S160601\S39337.D
Sample : ic1950-20.0
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 6 Sample Multiplier: 1
Acq On : 1 Jun 2016 11:49 pm

Operator: sofyaz

Quant Time: Jun 02 08:20:09 2016
Quant Method : S:\methods\S160601-MAHPAH-A.M
Quant Title : PAHS & Alkylated PAHS by GC/MS/SIM



Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39345.D
 Sample : icv1950-1.0,fs238
 Misc : OP47644,MSS1950,,,1,1
 ALS Vial : 10 Sample Multiplier: 1
 Acq On : 2 Jun 2016 9:49 am

Operator: sofyz

Quant Time: Jun 02 16:47:55 2016
 Quant Method : S:\1\methods\S160601-MAHPAH-A.M
 Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Acenaphthene-d10	28.724	162	45485	1000.00	ng/mL	0.00
System Monitoring Compounds						
2) Toluene-d8	9.751	98	66601	979.65	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	97.97%	
3) Naphthalene-d8	21.761	136	96967	1008.25	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	100.83%	
4) Phenanthrene-d10	34.576	188	72096	1052.18	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	105.22%	
5) Perylene-d12	50.415	264	58703	1051.41	ng/mL	0.01
Spiked Amount 1000.000			Recovery	=	105.14%	
Target Compounds						
					Qvalue	
6] MTBE	5.798	73	69161	1783.755	ng/mL	96
7] Benzene	7.259	78	78301m	1111.472	ng/mL	
13] 2,2,4-trimethylpentane	7.765	57	82028	1149.090	µg/mL	100
14] n-Heptane	8.027	43	37285	944.880	µg/mL	96
15] Methylcyclohexane	8.673	83	35014	1050.900	ng/mL	99
16] Toluene	9.854	91	87772	999.455	ng/mL	99
17] n-Octane	10.725	43	48909	932.730	µg/mL	99
18] Ethylbenzene	12.626	91	105215	1077.655	ng/mL	99
19] m,p-xylene	12.860	91	85671	1076.713	ng/mL	98
20] Styrene	13.507	104	60140	908.127	ng/mL	97
21] o-Xylene	13.582	91	86513	1062.079	ng/mL	98
22] Isopropylbenzene	14.498	105	100152	1094.949	ng/mL	99
23] n-Propylbenzene	15.359	91	125504	1085.972	ng/mL	98
24] 1,3,5-Trimethylbenzene	15.784	105	86994	1052.948	ng/mL	98
25] Phenol	15.965	94	41797	848.568	µg/mL#	98
26] t-Butylbenzene	16.497	119	77211	1050.729	ng/mL	94
27] 1,2,4-Trimethylbenzene	16.518	105	87474	1018.490	ng/mL	88
28] sec-Butylbenzene	17.017	105	107206	1049.971	ng/mL	98
29] 1,2,3-Trimethylbenzene	17.379	105	89263	1035.677	ng/mL	94
30] p-Isopropyltoluene	17.389	119	94275	1062.994	ng/mL	99
31] Indane	17.783	117	74539	961.058	µg/mL	100
32] Indene	18.027	115	74149	976.880	µg/mL	99
33] n-Butylbenzene	18.271	91	94967	1066.335	ng/mL	98
34] trans-Decalin	18.357	96	15256	907.699	ng/mL	98
35] cis-Decalin	19.589	96	21229	917.696	ng/mL	93
40] Benzo(b)thiophene	22.056	134	98777	1011.065	ng/mL	100
45] Tetraethyl lead	20.886	208	6555	884.208	ng/mL	96
50] MMT	23.637	134	38412	1052.245	µg/mL	97
51] Naphthalene	21.837	128	125575	1053.039	ng/mL	99
52] 2-Methylnaphthalene	24.542	142	75818	984.319	ng/mL	99
53] 1-Methylnaphthalene	24.961	142	74102	1086.850	ng/mL	100
58] Biphenyl	26.438	154	91446	1018.351	ng/mL	100
59] Acenaphthylene	28.114	152	120971	1061.669	ng/mL	100
60] Acenaphthene	28.848	154	69572	1069.100	ng/mL	100
61] Dibenzofuran	29.496	168	100790	1080.047	ng/mL	100
62] Fluorene	30.872	166	80855	1039.388	ng/mL	100
66] Dibenzothiophene	34.171	184	105639	971.925	ng/mL	99
72] Phenanthrene	34.665	178	108361	1073.873	ng/mL	100
73] Anthracene	34.851	178	109018	1153.769	ng/mL	100
79] Carbazole	35.535	167	103291	1046.141	µg/mL	99
80] Retene	41.653	234	12229	510.376	ng/mL	100
81] Benzo(b)naphtho(2,1-d)...	44.150	234	103020	1096.020	ng/mL	100
86] Fluoranthene	39.425	202	111217	1108.450	ng/mL	100
87] Pyrene	40.306	202	114341	1146.051	ng/mL	99
97] Benz(a)anthracene	45.080	228	95050	1104.548	ng/mL	99
98] Chrysene/triphenylene	45.240	228	91283	1108.438	ng/mL	99
103] Benzo(b)fluoranthene	49.122	252	104869	1105.705	ng/mL	99
104] Benzo(j/k)fluoranthene	49.203	252	104223	1084.397	ng/mL	99

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39345.D
Sample : icv1950-1.0,fs238
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 10 Sample Multiplier: 1
Acq On : 2 Jun 2016 9:49 am

Operator: sofyaz

Quant Time: Jun 02 16:47:55 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
105]	Benzo(e)pyrene	50.053	252	97624	1072.480	ng/mL	99
106]	Benzo(a)pyrene	50.216	252	101004	1125.299	ng/mL	99
107]	Perylene	50.487	252	96561	1028.984	ng/mL	98
108]	Indeno(1,2,3-cd)pyrene	53.714	276	121560m	1046.810	ng/mL	
109]	Dibenz(a,h)anthracene	53.739	278	104306m	1097.993	ng/mL	
110]	Benzo(g,h,i)perylene	54.455	276	110316	1047.556	ng/mL	99
111]	Coronene	59.567	300	110563	991.478	ng/mL	99
112]	C-17	32.514	85	25562	1033.332	ng/mL	98
113]	Pristane	32.635	85	20070	1031.432	ng/mL	98
114]	C-18	34.309	85	25892	1030.520	ng/mL	97
115]	Phytane	34.503	85	24740	917.680	ng/mL	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.5.7

7

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160607\S39397A.D

Sample : ICV1950-1.0, FS247

Misc : OP47644,MSS1955,,,1,1

ALS Vial : 94 Sample Multiplier: 1

Acq On : 7 Jun 2016 11:06 am

Operator: sofyz

Quant Time: Jun 07 14:48:01 2016

Quant Method : S:\1\methods\S160601-MAHPAH-A.M

Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Acenaphthene-d10	28.610	162	31281	1000.00	ng/mL	0.00
System Monitoring Compounds						
2) Toluene-d8	9.654	98	46236	988.91	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	98.89%	
3) Naphthalene-d8	21.647	136	66172	1000.47	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	100.05%	
4) Phenanthrene-d10	34.464	188	47891	1016.29	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	101.63%	
5) Perylene-d12	50.300	264	37499	976.60	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	97.66%	
Target Compounds						
					Qvalue	
6] MTBE	5.710	73	45932	1722.570	ng/mL	97
7] Benzene	7.162	78	57847m	1193.987	ng/mL	
13] 2,2,4-trimethylpentane	7.668	57	56379	1148.410	µg/mL	99
14] n-Heptane	7.940	43	25802	950.788	µg/mL	98
15] Methylcyclohexane	8.577	83	24394	1064.609	ng/mL	98
16] Toluene	9.757	91	62275	1031.119	ng/mL	100
17] n-Octane	10.628	43	32862	911.274	µg/mL	99
18] Ethylbenzene	12.529	91	73500	1094.655	ng/mL	100
19] m,p-xylene	12.764	91	59393	1085.398	ng/mL	99
20] Styrene	13.410	104	43089m	946.100	ng/mL	
21] o-Xylene	13.475	91	59945	1070.080	ng/mL	98
22] Isopropylbenzene	14.403	105	72793	1157.208	ng/mL	100
23] n-Propylbenzene	15.264	91	91034	1145.387	ng/mL	99
24] 1,3,5-Trimethylbenzene	15.678	105	63381	1115.486	ng/mL	96
25] Phenol	15.880	94	27622	815.425	µg/mL#	99
26] t-Butylbenzene	16.390	119	57237	1132.598	ng/mL	96
27] 1,2,4-Trimethylbenzene	16.422	105	64149	1086.064	ng/mL	89
28] sec-Butylbenzene	16.911	105	80287	1143.381	ng/mL	100
29] 1,2,3-Trimethylbenzene	17.273	105	66182	1116.556	ng/mL	96
30] p-Isopropyltoluene	17.283	119	71770	1176.698	ng/mL	99
31] Indane	17.676	117	54554	1022.776	µg/mL	100
32] Indene	17.932	115	53341	1021.844	µg/mL	100
33] n-Butylbenzene	18.165	91	66938m	1092.902	ng/mL	
34] trans-Decalin	18.250	96	11601	1003.654	ng/mL	90
35] cis-Decalin	19.483	96	15593	980.137	ng/mL	94
40] Benzo(b)thiophene	21.942	134	69134	1028.970	ng/mL	99
45] Tetraethyl lead	20.780	208	4555	893.424	ng/mL	99
50] MMT	23.523	134	22100	880.298	µg/mL	96
51] Naphthalene	21.723	128	86660	1056.689	ng/mL	100
52] 2-Methylnaphthalene	24.428	142	49836	940.794	ng/mL	100
53] 1-Methylnaphthalene	24.847	142	48594	1036.359	ng/mL	100
58] Biphenyl	26.314	154	61464	995.271	ng/mL	99
59] Acenaphthylene	28.000	152	78628	1003.397	ng/mL	100
60] Acenaphthene	28.734	154	45986	1027.536	ng/mL	99
61] Dibenzofuran	29.381	168	68357	1065.113	ng/mL	100
62] Fluorene	30.753	166	54851	1025.281	ng/mL	99
66] Dibenzothiophene	34.060	184	72352	967.936	ng/mL	98
72] Phenanthrene	34.553	178	73973	1065.960	ng/mL	100
73] Anthracene	34.731	178	73386	1129.332	ng/mL	100
79] Carbazole	35.430	167	71017	1045.870	µg/mL	99
80] Retene	41.547	234	15018	911.379	ng/mL	97
81] Benzo(b)naphtho(2,1-d)...	44.035	234	68880	1065.559	ng/mL	100
86] Fluoranthene	39.311	202	74690	1082.418	ng/mL	98
87] Pyrene	40.191	202	76914	1120.973	ng/mL	99
97] Benz(a)anthracene	44.974	228	63594	1074.573	ng/mL	99
98] Chrysene/triphenylene	45.134	228	61767	1090.600	ng/mL	99
103] Benzo(b)fluoranthene	49.007	252	69384	1063.748	ng/mL	98
104] Benzo(j/k)fluoranthene	49.097	252	69291	1048.309	ng/mL	96

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160607\S39397A.D
Sample : ICV1950-1.0, FS247
Misc : OP47644,MSS1955,,,1,1
ALS Vial : 94 Sample Multiplier: 1
Acq On : 7 Jun 2016 11:06 am

Operator: sofyaz

Quant Time: Jun 07 14:48:01 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
105]	Benzo(e)pyrene	49.947	252	65113	1040.131	ng/mL	98
106]	Benzo(a)pyrene	50.110	252	66817	1082.440	ng/mL	100
107]	Perylene	50.390	252	65052	1007.988	ng/mL	97
108]	Indeno(1,2,3-cd)pyrene	53.610	276	83093m	1040.469	ng/mL	
109]	Dibenz(a,h)anthracene	53.635	278	69713m	1067.067	ng/mL	
110]	Benzo(g,h,i)perylene	54.351	276	73965	1021.298	ng/mL	99
111]	Coronene	59.414	300	76348	995.540	ng/mL	99
112]	C-17	32.402	85	17301	1016.960	ng/mL	99
113]	Pristane	32.532	85	13086	977.885	ng/mL	96
114]	C-18	34.205	85	17679	1023.142	ng/mL	98
115]	Phytane	34.391	85	17053	919.772	ng/mL	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.5.8

7

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39537.D
 Sample : cc1950-1.0,fs231
 Misc : OP47644,MSS1961,,,1,1
 ALS Vial : 96 Sample Multiplier: 1
 Acq On : 24 Jun 2016 3:03 am

Operator: sofyz

Quant Time: Jun 24 08:41:33 2016
 Quant Method : S:\1\methods\S160601-MAHPAH-A.M
 Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Acenaphthene-d10	28.351	162	32278	1000.00	ng/mL	0.00
System Monitoring Compounds						
2) Toluene-d8	9.425	98	49257	1020.99	ng/mL	-0.03
Spiked Amount 1000.000			Recovery	=	102.10%	
3) Naphthalene-d8	21.397	136	66669	976.85	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	97.69%	
4) Phenanthrene-d10	34.197	188	47266	972.05	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	97.20%	
5) Perylene-d12	50.035	264	35679	900.50	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	90.05%	
Target Compounds						
					Qvalue	
6] MTBE	5.509	73	52411	1904.838	ng/mL	96
7] Benzene	6.942	78	53731m	1074.776	ng/mL	
13] 2,2,4-trimethylpentane	7.439	57	51007	1006.893	µg/mL	98
14] n-Heptane	7.711	43	25801	921.384	µg/mL	96
15] Methylcyclohexane	8.338	83	23191	980.846	ng/mL	97
16] Toluene	9.537	91	59723	958.320	ng/mL	99
17] n-Octane	10.399	43	32252	866.733	µg/mL	99
18] Ethylbenzene	12.310	91	66671	962.279	ng/mL	99
19] m,p-xylene	12.544	91	54888	972.087	ng/mL	99
20] Styrene	13.181	104	37982m	808.207	ng/mL	
21] o-Xylene	13.246	91	54296	939.301	ng/mL	98
22] Isopropylbenzene	14.175	105	64774	997.922	ng/mL	99
23] n-Propylbenzene	15.036	91	77809	948.751	ng/mL	96
24] 1,3,5-Trimethylbenzene	15.461	105	58771	1002.403	ng/mL	99
25] Phenol	15.674	94	27489	786.434	µg/mL#	100
26] t-Butylbenzene	16.163	119	52058	998.299	ng/mL	95
27] 1,2,4-Trimethylbenzene	16.194	105	59466	975.682	ng/mL	91
28] sec-Butylbenzene	16.683	105	71356	984.805	ng/mL	99
29] 1,2,3-Trimethylbenzene	17.034	105	59369	970.676	ng/mL	91
30] p-Isopropyltoluene	17.055	119	63470	1008.474	ng/mL	97
31] Indane	17.438	117	55495	1008.281	µg/mL	100
32] Indene	17.682	115	53493	993.103	µg/mL	100
33] n-Butylbenzene	17.927	91	61446	972.246	ng/mL	100
34] trans-Decalin	18.012	96	11732	983.637	ng/mL	98
35] cis-Decalin	19.234	96	15359	935.608	ng/mL	94
40] Benzo(b)thiophene	21.693	134	67432	972.637	ng/mL	100
45] Tetraethyl lead	20.531	208	4303	817.927	ng/mL	94
50] MMT	23.283	134	22632	873.644	µg/mL	97
51] Naphthalene	21.474	128	82939	980.080	ng/mL	100
52] 2-Methylnaphthalene	24.169	142	52472	959.959	ng/mL	97
53] 1-Methylnaphthalene	24.588	142	46600	963.135	ng/mL	100
58] Biphenyl	26.064	154	61097	958.770	ng/mL	100
59] Acenaphthylene	27.732	152	82905	1025.298	ng/mL	100
60] Acenaphthene	28.475	154	46380	1004.330	ng/mL	100
61] Dibenzofuran	29.123	168	67142	1013.867	ng/mL	99
62] Fluorene	30.486	166	55052	997.253	ng/mL	98
66] Dibenzothiophene	33.785	184	78756	1021.066	ng/mL	98
72] Phenanthrene	34.278	178	72449	1011.752	ng/mL	100
73] Anthracene	34.464	178	69220	1032.319	ng/mL	99
79] Carbazole	35.165	167	70903	1011.938	µg/mL	99
80] Retene	41.274	234	16132	948.744	ng/mL	96
81] Benzo(b)naphtho(2,1-d)...	43.771	234	67147	1006.665	ng/mL	100
86] Fluoranthene	39.046	202	72217	1014.252	ng/mL	99
87] Pyrene	39.918	202	71482	1009.625	ng/mL	99
97] Benz(a)anthracene	44.700	228	60209	985.951	ng/mL	100
98] Chrysene/triphenylene	44.869	228	56974	974.899	ng/mL	99
103] Benzo(b)fluoranthene	48.751	252	63925	949.783	ng/mL	98
104] Benzo(j/k)fluoranthene	48.823	252	66418	973.805	ng/mL	98

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39537.D
Sample : cc1950-1.0,fs231
Misc : OP47644,MSS1961,,,1,1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 24 Jun 2016 3:03 am

Operator: sofyaz

Quant Time: Jun 24 08:41:33 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

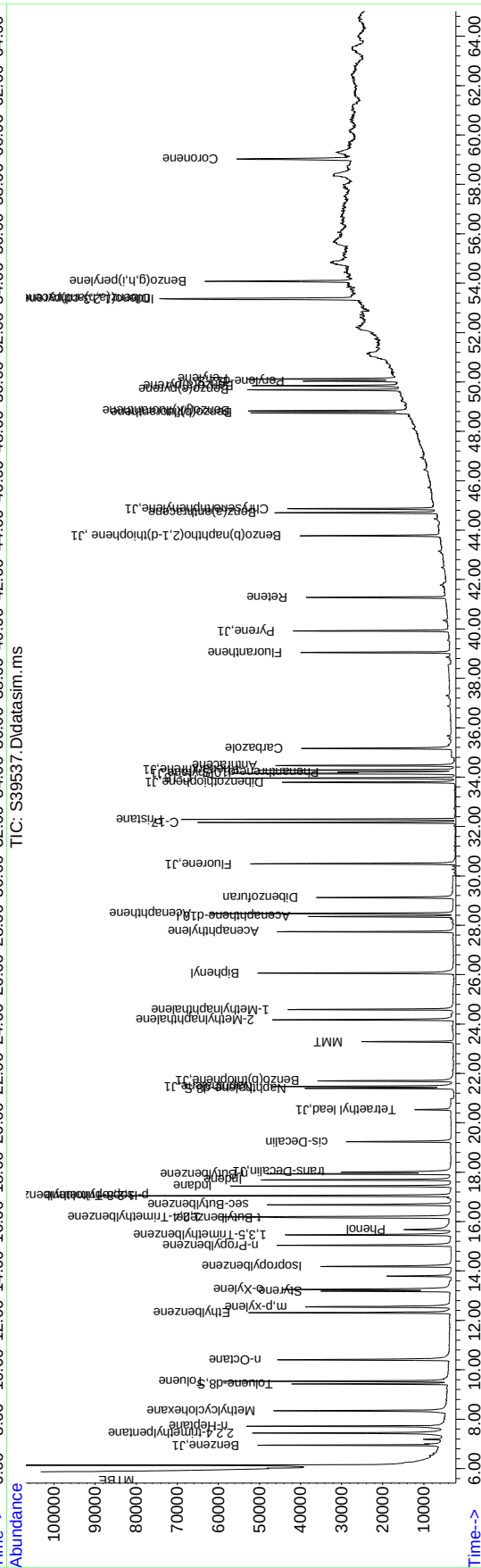
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
105]	Benzo(e)pyrene	49.682	252	61524	952.443	ng/mL	99
106]	Benzo(a)pyrene	49.845	252	60367	947.743	ng/mL	97
107]	Perylene	50.125	252	63097	947.496	ng/mL	94
108]	Indeno(1,2,3-cd)pyrene	53.353	276	77580m	941.431	ng/mL	
109]	Dibenz(a,h)anthracene	53.377	278	63561m	942.850	ng/mL	
110]	Benzo(g,h,i)perylene	54.078	276	69847	934.648	ng/mL	99
111]	Coronene	59.027	300	72265	913.194	ng/mL	100
112]	C-17	32.160	85	16903	962.876	ng/mL	100
113]	Pristane	32.289	85	13021	942.973	ng/mL	98
114]	C-18	33.963	85	17329	971.909	ng/mL	100
115]	Phytane	34.149	85	18089	945.514	ng/mL	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.5.9

7

Operator: sofyaz



Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39552.D
 Sample : cc1950-1.0,fs231
 Misc : OP47644,MSS1961,,,1,1
 ALS Vial : 96 Sample Multiplier: 1
 Acq On : 24 Jun 2016 9:42 pm

Operator: sofyz

Quant Time: Jun 27 09:16:07 2016
 Quant Method : S:\1\methods\S160601-MAHPAH-A.M
 Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Acenaphthene-d10	28.342	162	28398	1000.00	ng/mL	0.00
System Monitoring Compounds						
2) Toluene-d8	9.425	98	41990	989.27	ng/mL	-0.03
Spiked Amount 1000.000			Recovery	=	98.93%	
3) Naphthalene-d8	21.398	136	58765	978.68	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	97.87%	
4) Phenanthrene-d10	34.189	188	41955	980.71	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	98.07%	
5) Perylene-d12	50.032	264	31414	901.19	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	90.12%	
Target Compounds						
					Qvalue	
6] MTBE	5.509	73	42350	1749.475	ng/mL	96
7] Benzene	6.942	78	43792m	995.650	ng/mL	
13] 2,2,4-trimethylpentane	7.439	57	41249	925.520	µg/mL	97
14] n-Heptane	7.710	43	20305	824.188	µg/mL	95
15] Methylcyclohexane	8.338	83	18648	896.463	ng/mL	96
16] Toluene	9.537	91	51714	943.183	ng/mL	99
17] n-Octane	10.408	43	27116	828.273	µg/mL	98
18] Ethylbenzene	12.310	91	58694	962.889	ng/mL	99
19] m,p-xylene	12.544	91	47890	964.032	ng/mL	99
20] Styrene	13.181	104	33859m	818.913	ng/mL	
21] o-Xylene	13.246	91	48423	952.155	ng/mL	99
22] Isopropylbenzene	14.175	105	56700	992.882	ng/mL	100
23] n-Propylbenzene	15.036	91	69088	957.512	ng/mL	96
24] 1,3,5-Trimethylbenzene	15.450	105	51902	1006.195	ng/mL	100
25] Phenol	15.673	94	23606	767.617	µg/mL#	99
26] t-Butylbenzene	16.162	119	46046	1003.653	ng/mL	94
27] 1,2,4-Trimethylbenzene	16.194	105	52642	981.727	ng/mL	92
28] sec-Butylbenzene	16.683	105	62930	987.180	ng/mL	100
29] 1,2,3-Trimethylbenzene	17.034	105	52349	972.841	ng/mL	91
30] p-Isopropyltoluene	17.045	119	54983	992.986	ng/mL	97
31] Indane	17.427	117	48958	1011.045	µg/mL	100
32] Indene	17.682	115	47341	998.973	µg/mL	99
33] n-Butylbenzene	17.927	91	53514	962.429	ng/mL	99
34] trans-Decalin	18.001	96	10356	986.901	ng/mL	98
35] cis-Decalin	19.234	96	13526	936.525	ng/mL	95
40] Benzo(b)thiophene	21.694	134	59415	974.092	ng/mL	100
45] Tetraethyl lead	20.531	208	3756	811.499	ng/mL	95
50] MMT	23.284	134	19359	849.402	µg/mL	98
51] Naphthalene	21.465	128	72760	977.269	ng/mL	100
52] 2-Methylnaphthalene	24.170	142	46557	968.120	ng/mL	98
53] 1-Methylnaphthalene	24.589	142	41861	983.399	ng/mL	100
58] Biphenyl	26.065	154	54261	967.835	ng/mL	100
59] Acenaphthylene	27.733	152	74334	1044.903	ng/mL	100
60] Acenaphthene	28.466	154	41785	1028.454	ng/mL	99
61] Dibenzofuran	29.124	168	59777	1025.982	ng/mL	100
62] Fluorene	30.485	166	48493	998.459	ng/mL	99
66] Dibenzothiophene	33.784	184	70803	1043.376	ng/mL	98
72] Phenanthrene	34.278	178	64775	1028.177	ng/mL	100
73] Anthracene	34.464	178	60750	1029.787	ng/mL	99
79] Carbazole	35.162	167	63838	1035.589	µg/mL	99
80] Retene	41.271	234	14213	950.092	ng/mL	98
81] Benzo(b)naphtho(2,1-d)...	43.768	234	60940	1038.436	ng/mL	99
86] Fluoranthene	39.043	202	65288	1042.218	ng/mL	99
87] Pyrene	39.916	202	64990	1043.348	ng/mL	100
97] Benz(a)anthracene	44.697	228	54583	1015.945	ng/mL	98
98] Chrysene/triphenylene	44.866	228	51625	1004.065	ng/mL	99
103] Benzo(b)fluoranthene	48.739	252	57592	972.601	ng/mL	99
104] Benzo(j/k)fluoranthene	48.820	252	59393	989.784	ng/mL	99

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39552.D
Sample : cc1950-1.0,fs231
Misc : OP47644,MSS1961,,,1,1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 24 Jun 2016 9:42 pm

Operator: sofyaz

Quant Time: Jun 27 09:16:07 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
105]	Benzo(e)pyrene	49.670	252	55298	973.022	ng/mL	100
106]	Benzo(a)pyrene	49.842	252	53682	957.941	ng/mL	96
107]	Perylene	50.113	252	56194	959.130	ng/mL	96
108]	Indeno(1,2,3-cd)pyrene	53.343	276	69013m	951.894	ng/mL	
109]	Dibenz(a,h)anthracene	53.376	278	56739m	956.648	ng/mL	
110]	Benzo(g,h,i)perylene	54.076	276	61832	940.443	ng/mL	100
111]	Coronene	59.025	300	62590	898.998	ng/mL	100
112]	C-17	32.159	85	15056	974.844	ng/mL	98
113]	Pristane	32.289	85	11561	951.632	ng/mL	99
114]	C-18	33.954	85	15538	990.527	ng/mL	98
115]	Phytane	34.140	85	15921	945.894	ng/mL	99

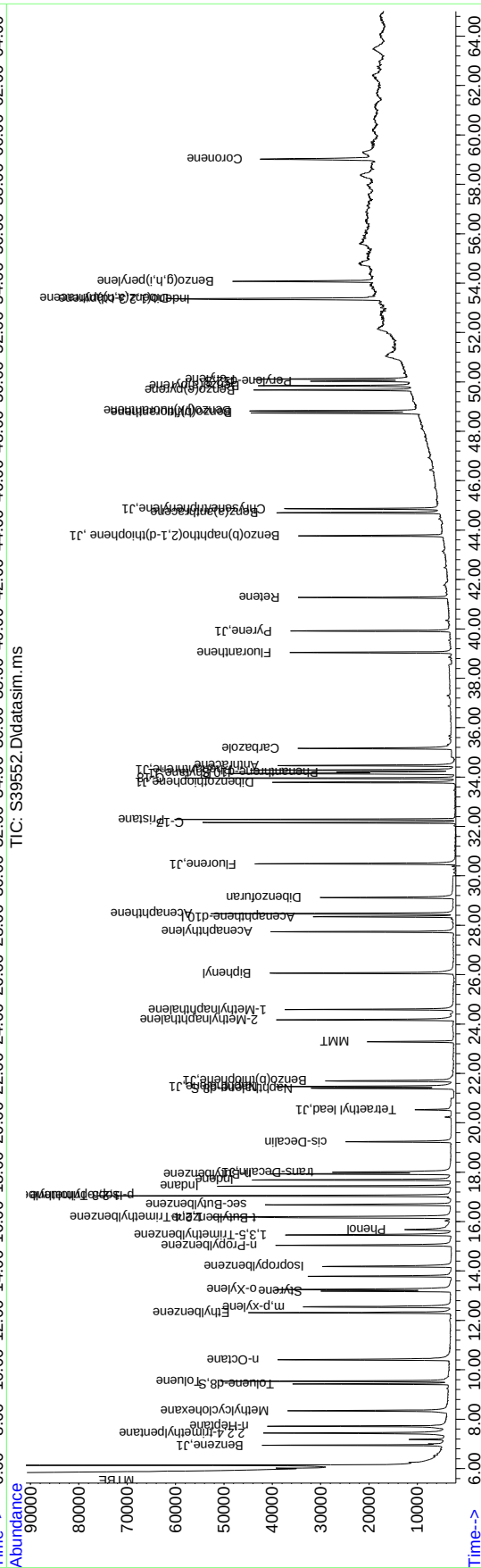
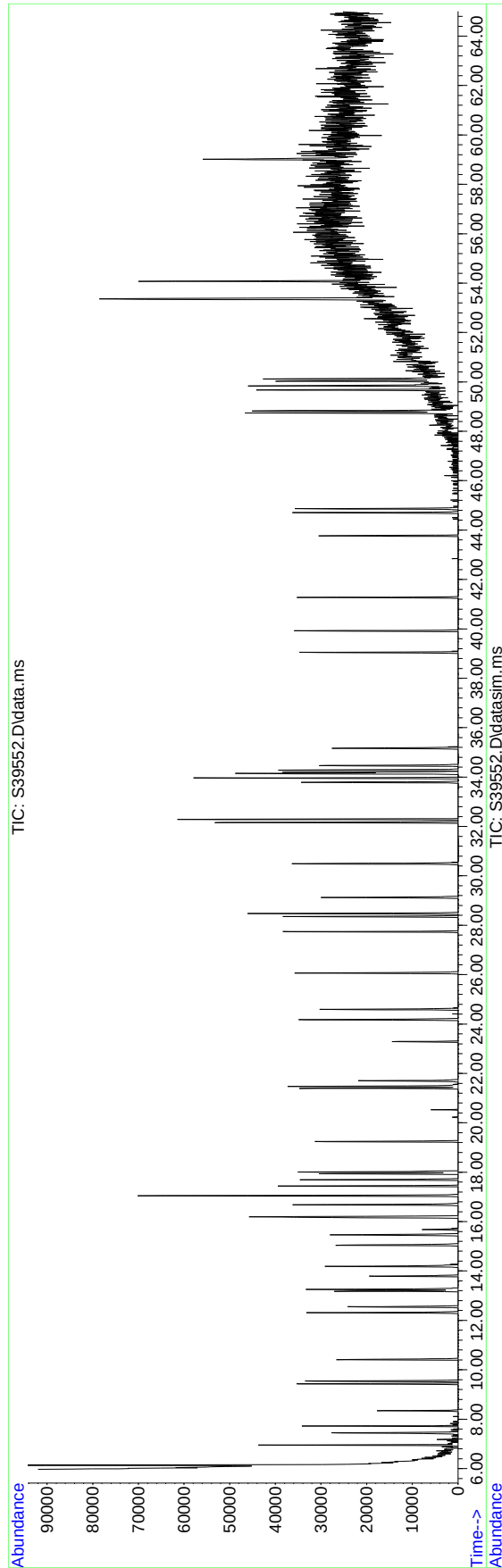
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39552.D
Sample : cc1950-1.0,fs231
Misc : OP47644,MSS1961,1,1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 24 Jun 2016 9:42 pm

Operator: sofyaz

Quant Time: Jun 27 09:16:07 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM



Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39583.D
 Sample : cc1950-1.0,fs231
 Misc : OP47644,MSS1964,,,1,1
 ALS Vial : 96 Sample Multiplier: 1
 Acq On : 5 Jul 2016 9:14 am

Operator: sofyaz

Quant Time: Jul 06 09:56:58 2016
 Quant Method : S:\1\methods\S160601-MAHPAH-A.M
 Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Acenaphthene-d10	28.342	162	28535	1000.00	ng/mL	0.00
System Monitoring Compounds						
2) Toluene-d8	9.443	98	44196	1036.25	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	103.62%	
3) Naphthalene-d8	21.398	136	57611	954.86	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	95.49%	
4) Phenanthrene-d10	34.197	188	40654	945.74	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	94.57%	
5) Perylene-d12	50.041	264	30403	868.00	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	86.80%	
Target Compounds						
					Qvalue	
6] MTBE	5.519	73	47055	1934.506	ng/mL	94
7] Benzene	6.961	78	49534m	1120.792	ng/mL	
13] 2,2,4-trimethylpentane	7.448	57	47229	1054.608	µg/mL	99
14] n-Heptane	7.729	43	23836	962.867	µg/mL	95
15] Methylcyclohexane	8.347	83	21316	1019.802	ng/mL	99
16] Toluene	9.556	91	54656	992.054	ng/mL	99
17] n-Octane	10.417	43	29135	885.672	µg/mL	98
18] Ethylbenzene	12.319	91	59471	970.952	ng/mL	99
19] m,p-xylene	12.553	91	47683	955.256	ng/mL	100
20] Styrene	13.190	104	32835m	790.334	ng/mL	
21] o-Xylene	13.256	91	48456	948.229	ng/mL	98
22] Isopropylbenzene	14.185	105	57283	998.275	ng/mL	100
23] n-Propylbenzene	15.046	91	68354	942.791	ng/mL	100
24] 1,3,5-Trimethylbenzene	15.461	105	51551	994.592	ng/mL	98
25] Phenol	15.695	94	21380m	691.894	µg/mL	
26] t-Butylbenzene	16.162	119	45568	988.466	ng/mL	94
27] 1,2,4-Trimethylbenzene	16.194	105	51750	960.458	ng/mL	95
28] sec-Butylbenzene	16.683	105	61876	965.986	ng/mL	99
29] 1,2,3-Trimethylbenzene	17.034	105	51363	949.935	ng/mL	96
30] p-Isopropyltoluene	17.055	119	54017	970.857	ng/mL	99
31] Indane	17.427	117	48417	995.072	µg/mL	99
32] Indene	17.693	115	45822	962.277	µg/mL	99
33] n-Butylbenzene	17.937	91	51136	915.246	ng/mL	99
34] trans-Decalin	18.001	96	10304	977.231	ng/mL	99
35] cis-Decalin	19.234	96	13777	949.324	ng/mL	95
40] Benzo(b)thiophene	21.694	134	57632	940.323	ng/mL	98
45] Tetraethyl lead	20.531	208	3782	813.193	ng/mL	98
50] MMT	23.275	134	20801	908.290	µg/mL	98
51] Naphthalene	21.475	128	71340	953.596	ng/mL	100
52] 2-Methylnaphthalene	24.179	142	45243	936.279	ng/mL	100
53] 1-Methylnaphthalene	24.589	142	40805	953.989	ng/mL	100
58] Biphenyl	26.065	154	52682	935.159	ng/mL	99
59] Acenaphthylene	27.733	152	72603	1015.670	ng/mL	99
60] Acenaphthene	28.466	154	40799	999.364	ng/mL	99
61] Dibenzofuran	29.124	168	57563	983.238	ng/mL	100
62] Fluorene	30.493	166	46932	961.679	ng/mL	99
66] Dibenzothiophene	33.784	184	68104	998.784	ng/mL	100
72] Phenanthrene	34.286	178	61969	978.915	ng/mL	100
73] Anthracene	34.472	178	59553m	1004.650	ng/mL	
79] Carbazole	35.173	167	54717	883.365	µg/mL	100
80] Retene	41.271	234	13720	912.733	ng/mL	98
81] Benzo(b)naphtho(2,1-d)...	43.777	234	56830	963.751	ng/mL	100
86] Fluoranthene	39.052	202	62347	990.492	ng/mL	100
87] Pyrene	39.924	202	62313	995.568	ng/mL	99
97] Benz(a)anthracene	44.706	228	50347	932.602	ng/mL	100
98] Chrysene/triphenylene	44.866	228	47955	928.209	ng/mL	99
103] Benzo(b)fluoranthene	48.748	252	54613	917.864	ng/mL	97
104] Benzo(j/k)fluoranthene	48.829	252	56025	929.174	ng/mL	98

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39583.D
Sample : cc1950-1.0,fs231
Misc : OP47644,MSS1964,,,1,1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 5 Jul 2016 9:14 am

Operator: sofyaz

Quant Time: Jul 06 09:56:58 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

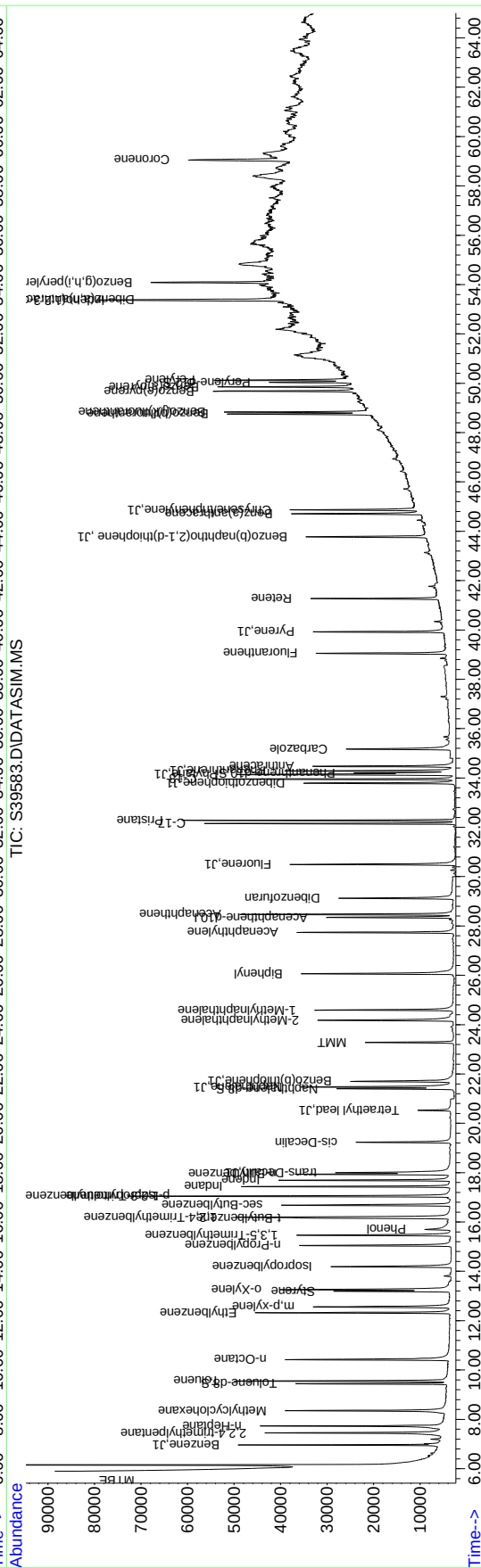
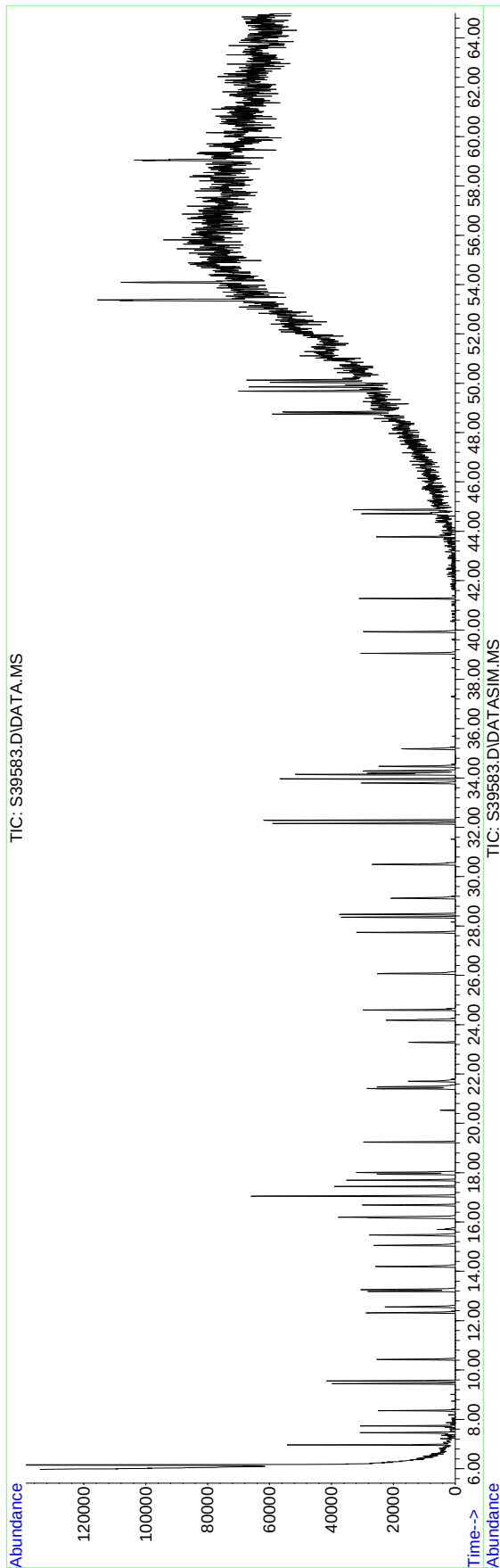
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
105]	Benzo(e)pyrene	49.679	252	53804	942.188	ng/mL	97
106]	Benzo(a)pyrene	49.851	252	50056	888.947	ng/mL	99
107]	Perylene	50.122	252	53287	905.146	ng/mL	98
108]	Indeno(1,2,3-cd)pyrene	53.359	276	63774m	875.409	ng/mL	
109]	Dibenz(a,h)anthracene	53.384	278	49660m	833.273	ng/mL	
110]	Benzo(g,h,i)perylene	54.092	276	60144	910.377	ng/mL	98
111]	Coronene	59.049	300	63842	912.578	ng/mL	99
112]	C-17	32.151	85	15201	979.507	ng/mL	99
113]	Pristane	32.280	85	11670	955.992	ng/mL	100
114]	C-18	33.954	85	15483	982.282	ng/mL	97
115]	Phytane	34.140	85	16214	958.677	ng/mL	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File: S:\data\S160705\S39583.D
Sample : cc1950-1.0, fs231
Misc : OP47644, MSS1964,, 1, 1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 5 Jul 2016 9:14 am

Operator: sofyaz

Quant Time: Jul 06 09:56:58 2016
Quant Method : S:\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM



Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39594.D
 Sample : cc1950-1.0,fs231
 Misc : OP47644,MSS1964,,,1,1
 ALS Vial : 96 Sample Multiplier: 1
 Acq On : 5 Jul 2016 10:49 pm

Operator: sofyz

Quant Time: Jul 06 07:38:33 2016
 Quant Method : S:\1\methods\S160601-MAHPAH-A.M
 Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Acenaphthene-d10	28.343	162	30612	1000.00	ng/mL	0.00
System Monitoring Compounds						
2) Toluene-d8	9.434	98	46174	1009.17	ng/mL	-0.02
Spiked Amount 1000.000			Recovery	=	100.92%	
3) Naphthalene-d8	21.399	136	62294	962.42	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	96.24%	
4) Phenanthrene-d10	34.197	188	44291	960.44	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	96.04%	
5) Perylene-d12	50.041	264	34497	918.06	ng/mL	0.00
Spiked Amount 1000.000			Recovery	=	91.81%	
Target Compounds						
					Qvalue	
6] MTBE	5.509	73	46494	1781.752	ng/mL	94
7] Benzene	6.952	78	48262m	1017.919	ng/mL	
13] 2,2,4-trimethylpentane	7.439	57	44549	927.270	µg/mL	95
14] n-Heptane	7.720	43	21982	827.725	µg/mL	94
15] Methylcyclohexane	8.338	83	20027	893.125	ng/mL	98
16] Toluene	9.547	91	56580	957.297	ng/mL	100
17] n-Octane	10.418	43	29173	826.656	µg/mL	98
18] Ethylbenzene	12.310	91	63258	962.707	ng/mL	99
19] m,p-xylene	12.553	91	50894	950.406	ng/mL	99
20] Styrene	13.190	104	35136m	788.337	ng/mL	
21] o-Xylene	13.256	91	51953	947.682	ng/mL	100
22] Isopropylbenzene	14.186	105	61356	996.708	ng/mL	99
23] n-Propylbenzene	15.036	91	73384	943.493	ng/mL	99
24] 1,3,5-Trimethylbenzene	15.461	105	55212	992.950	ng/mL	97
25] Phenol	15.695	94	18874	569.354	µg/mL#	99
26] t-Butylbenzene	16.152	119	49073	992.272	ng/mL	93
27] 1,2,4-Trimethylbenzene	16.194	105	55367	957.867	ng/mL	94
28] sec-Butylbenzene	16.683	105	66182	963.107	ng/mL	99
29] 1,2,3-Trimethylbenzene	17.034	105	55634	959.113	ng/mL	97
30] p-Isopropyltoluene	17.045	119	57695	966.605	ng/mL	99
31] Indane	17.427	117	52308	1002.100	µg/mL	99
32] Indene	17.682	115	49466	968.321	µg/mL	100
33] n-Butylbenzene	17.938	91	54010	901.097	ng/mL	100
34] trans-Decalin	18.001	96	10996	972.103	ng/mL	100
35] cis-Decalin	19.234	96	14606	938.161	ng/mL	96
40] Benzo(b)thiophene	21.694	134	61936	941.983	ng/mL	99
45] Tetraethyl lead	20.520	208	4067	815.140	ng/mL	98
50] MMT	23.275	134	20583	837.790	µg/mL	98
51] Naphthalene	21.475	128	76715	955.868	ng/mL	100
52] 2-Methylnaphthalene	24.180	142	49267	950.378	ng/mL	100
53] 1-Methylnaphthalene	24.589	142	44076	960.547	ng/mL	100
58] Biphenyl	26.066	154	56380	932.899	ng/mL	99
59] Acenaphthylene	27.733	152	81191	1058.747	ng/mL	99
60] Acenaphthene	28.467	154	44657	1019.647	ng/mL	100
61] Dibenzofuran	29.124	168	62066	988.224	ng/mL	100
62] Fluorene	30.494	166	50911	972.431	ng/mL	99
66] Dibenzothiophene	33.793	184	73505	1004.852	ng/mL	99
72] Phenanthrene	34.286	178	67211	989.685	ng/mL	100
73] Anthracene	34.472	178	61993	974.855	ng/mL	99
79] Carbazole	35.173	167	64628	972.579	µg/mL	100
80] Retene	41.271	234	15268	946.799	ng/mL	100
81] Benzo(b)naphtho(2,1-d)...	43.777	234	63369	1001.729	ng/mL	99
86] Fluoranthene	39.052	202	68779	1018.538	ng/mL	100
87] Pyrene	39.924	202	68618	1021.919	ng/mL	98
97] Benz(a)anthracene	44.707	228	57431	991.643	ng/mL	95
98] Chrysene/triphenylene	44.875	228	54736	987.577	ng/mL	99
103] Benzo(b)fluoranthene	48.757	252	61025	956.040	ng/mL	98
104] Benzo(j/k)fluoranthene	48.829	252	64603	998.743	ng/mL	99

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39594.D
Sample : cc1950-1.0,fs231
Misc : OP47644,MSS1964,,,1,1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 5 Jul 2016 10:49 pm

Operator: sofyaz

Quant Time: Jul 06 07:38:33 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
105]	Benzo(e)pyrene	49.688	252	60181	982.355	ng/mL	99
106]	Benzo(a)pyrene	49.851	252	56902	941.962	ng/mL	100
107]	Perylene	50.131	252	60333	955.297	ng/mL	100
108]	Indeno(1,2,3-cd)pyrene	53.359	276	74733m	956.238	ng/mL	
109]	Dibenz(a,h)anthracene	53.384	278	61392m	960.237	ng/mL	
110]	Benzo(g,h,i)perylene	54.092	276	67720	955.503	ng/mL	99
111]	Coronene	59.058	300	71013	946.210	ng/mL	99
112]	C-17	32.151	85	16017	962.061	ng/mL	99
113]	Pristane	32.281	85	12514	955.577	ng/mL	97
114]	C-18	33.954	85	16590	981.101	ng/mL	96
115]	Phytane	34.140	85	17255	951.006	ng/mL	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

GCMS Analysis Log - Extractables

Run Date: 6/01/16

Analyst Signature: SZ

Standard Data

Lot #	Description	Conc
FS189	Lemon Grade Oil	8.76 mg/ml
FS231	Forensic OIL	1.02 mg/ml
~~SZ 6/02/16~~		

Column Information: Front
Rear

Sequence File: S1606 01. JLR

Quantitation Methods: SIG0601 - MANDRAH

Instrument Run Batches: NSS 1450

Ini. Vol:

Data Acquisition Methods: SIDMS - SIMS CHN

Inj. Vol: 1 pint

ICAL verified:

Sequence verified:

Vial #	Data File ID	Sample ID	Ext. Batch	Analysis	Matrix	Dilution	Mult.	Comments
96	S39328	CC1947-1.0 (ppm)	NA	MAH/PAH-ext	NA	NA	—	after M
96	S39329	CC-1.0						adj. RI
97	-30	Learn Guide C.6						
98	-31	DCM						
1	-32	IC1950-CC1						FS 228
2	-33	-0.05						-229
3	-34	-0.25						-230
4	-35	ICP -1.0						-231
5	-36	-5.0						-232
6	-37	IC950-20.0						FS 233
7	-38	ICV						-RI- Run not used
98	-39-41	DCM						
97	-42	Learn Guide C.6						
8	-43	CC1950-1.0						
9	-44	CC1880-1.0						
10	S39345	ICV1950-10	NA	MAH/PAH-SR	NA	NA	—	EX FS232 Ultra-class

MS002-04

Date: 8/29/06 Dilution Solvent: NA

Lot: 113

Review:

49

Run Date: 6/07/16Analyst Signature: SZ

Standard Data

Lot #	Description	Conc.
FS184	Leona Grade DiC	8.76mg/ml
FS231	Forensic cel	1.0mg/ml
FS247	Forensic cel 120	1.0mg/ml
FS202	Pb ref sol 2	5.47mg/ml
<u>SZ 6/8/16</u>		

Column Information: Front
RearSequence File: S160607.SRQQuantitation Methods: S160601 - MAH PAH. A. MInstrument Run Batches: MSS 1955 SHData Acquisition Methods: S10RS - SIRSCAN Inj. Vol: 1 µlICAL verified: ✓ Sequence loaded initial: SZ Sequence verified initial: SZ

Vial #	Data File ID	Sample ID	Ext. Batch	Analysis	Matrix	Dilution	Multi pplier	Data Process Initials	Comments
96	S39396	CE1950-1.0	NA	MAH PAH	MA	MA	—	SZ	off for H
96	97	CE1950-1.0	↓		↓				FSM7, OK, NDBA MB=100.P6
98	98	DCM	NA		MA				
1	S39399	OP47693-NB	47693	Pbcont	S				Bem P PL, OK
2	S39400	L-BS2	↓		↓				✓
3	-01	OP47693-dup3	↓		↓				P6 NC 46126-1A (Total 3A)
4	-02	MC 46126-1A	↓		S				↓
98	-03	DCM	MA		MA				
5	-04	MC 46126-2A	47693		S				P6 ↓ ↓
6	-05	↓ -4A	↓		S				P6
98	-06	DCM	MA		MA				
7	-07	MC 46126-3A	47693	↓	S				P6
98	-08	DCM	MA		MA				
94	-09	Pb ref	↓		↓				wrong vol → 20-200
97	-10	Leona Grade DiC	↓		↓				
96	↓ -11	CE1950-1.0	↓		↓				P6OK, Pb 25% OK
95	S39412	Pb ref sol 2	MA	MAH PAH	MA	MA	↓	SZ	
<u>SZ 6/8/16</u>									

MS002-05

Date: 4/7/16 Dilution Solvent: NALot: MAReview: 3

Run Date: 06/23/2016

Analyst Signature: 82

Standard Data

Standard Data		
Lot #	Description	Conc
FS 184	Leona Grade Oil	8.76 mg/gal
FS 231	Forensic OIL	1.04 mg/gal
FS 202	Pb ref sol 2	5.47 mg/gal
SE 6/27/16		

Column Information: ☒ Front
☐ Rear

Sequence File: S160623 SQR

Quantitation Methods: S160601 - NAHPA.H. A.M

Instrument Run Batches: MSS 1961 5th

Instrument Run Dates: _____ Inj. Vol: _____
Data Acquisition Methods: SIMS - SIMSCAN Inj. Vol: 1400

ICAL verified:	✓	Sequence loaded initial:	92	Sequence verified initial:	92

Vial #		Data File ID	Sample ID	Ext. Batch	Analysis	Matrix	Dilution	Multiplier	Data Process Initials	Comments
96	S 39524	CC-1.0	NA	MAHDAH	NA	NA	—	SZ		
97	-25	Leona Grade Oil								
96	-26	redo								
96	-28	CC1950-1.0								all in, MB=91.3%
97	-29	Leona Grade Oil								
98	-30	DCM	↓			↓				
98	-31	DCM	NA			NA				
1	-32	OP47922-MB	47922			S				ben, Tol & RL (30%)
2	-33	↓ -BS2				↓				3nand M/p-ok
3	-34	↓ -deep2				↓				MC 46486-1
4	-35	MC 46486-1	47922			S				perch2 ↓ -ok (1st)
97	-36	Leona Grade Oil	NA			NA				
96	-37	CC1950-1.0	↓			↓				MTBE↑, M/p-ok 100%
95	-38	Pb ref sol 2	↓			↓				
98	-39	DCM	NA			NA				
5	-41	OP47956-MB	47956			Oil				ben, Tol-J, M/p-ok
6	-42	↓ -BS2								MTBE↑
7	-43	↓ -deep2								MC 46563-1 M/p-ok Isop2
8	-44	MC 46563-1								only 9 used
9	-45	OP47956-deep1					NA			need BL
10	-46	deep1					50X			need Re-run
11	-47	MC 46544-1					NA			need BL
12	-48	↓ -1					50X			need re-run
13	-49	OP47956-deep2	↓			↓	10X			not needed Isop rep only
14	-50	MC 46563-1	47956			Oil	10X			
97	-51	Leona Grade Oil	NA			NA	MT			
96	✓ -52	CC1950-1.0	↓		↓	↓	↓	↓	MTBE↑, M/p, Pb OK	
98	S 39553	DCM	NA	MAHDAH	NA	NA	—	SZ		
SZ 6/27/16										

MS002-05

Date: 4/7/16 Dilution Solvent: DCM

Lot: 162272

Review:

9

Run Date: 7/05/2016

Analyst Signature: SZ

Standard Data

Lot #	Description	Conc
13184	Long Bridge oil	8.76 mg/ml
FS231	forensic oil	1.04 mg/ml
SE 7/6/16		

Column Information: Front
Rear

Sequence File: S170605-82R

Quantitation Methods: SIG0601 - NAKPAH, A.M.

Instrument Run Batches: NSS 1964 S^{II}

Data Acquisition Methods: SIOBS-SINSCAN Inj. Vol: 1ml

ICAL verified: ✓ Sequence loaded initial: SZ Sequence verified initial: SZ

Vial #	Data File ID	Sample ID	Ext. Batch	Analysis	Matrix	Dilution	Multi plier	Data Process Initials	Comments
97	S39582	Leona Grade 01C	NA	MAH PAH	NA	NA	-	SZ	
96	-83	CC195D-1.0	↓	↓	↓	↓	↓		MS=97.6%, M/p-OK
98	-84	DCM	NA		NA	↓	↓		MTBE, PAH
1	-85	OP48022-bup1	48022		W	20X	7/6/16		MC46305-1A
2	-86	MC46305-1A	↓		↓	20X			
3	-87	OP48022-bup2	↓		↓	20X			MC46305-2A
4	-88	MC46305-2A	48022		W	20X			
5	-89	OP47956-bup1	47956		NA PL	NA			MC46549-1 need
6	-90	OP47956-bup1	↓		↓	50X			↓ V
7	-91	MC46549-1	↓		↓	NA			need BL
8	-92	-1	47956		↓	50X			V
97	↓ -93	Leona Grade 01C	NA	↓	NA	NA	↓	N	
96	S39594	CC195D-1.0	NA	MAH PAH	NA	NA	↓	SZ	M/p-OK, MTBE, PAH

MS002-05

Date: 4/7/16 Dilution Solvent: DCM

Lot: 162272

Review:

12

SGS ACCUTEST, Inc.

[illegible]

MOP016-01 (2/19/15)

GC Semi-volatiles

QC Data Summaries



Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: MC46549
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47955-MB	GR6338.D	1	06/30/16	MEW	06/23/16	OP47955	GGR207

The QC reported here applies to the following samples: Method: ASTM D3328-06

MC46549-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	C-8	ND	200	100	mg/kg	
	C-9	ND	200	100	mg/kg	
	C-10	ND	200	100	mg/kg	
	C-11	ND	200	100	mg/kg	
	C-12	ND	200	100	mg/kg	
	C-13	ND	200	100	mg/kg	
3891-98-3	2,6,10-trimethyldodecane (138	ND	200	100	mg/kg	
	C-14	ND	200	100	mg/kg	
3891-99-4	2,6,10-trimethyltridecane (147	ND	200	100	mg/kg	
	C-15	ND	200	100	mg/kg	
	C-16	ND	200	100	mg/kg	
3892-00-0	2,6,10-trimethylpentadecane (1	ND	200	100	mg/kg	
	C-17	ND	200	100	mg/kg	
1921-70-6	Pristane	ND	200	100	mg/kg	
	C-18	ND	200	100	mg/kg	
638-36-8	Phytane	ND	200	100	mg/kg	
	C-19	ND	200	100	mg/kg	
	C-20	ND	200	100	mg/kg	
	C-21	ND	200	100	mg/kg	
	C-22	ND	200	100	mg/kg	
	C-23	ND	200	100	mg/kg	
	C-24	ND	200	100	mg/kg	
	C-25	ND	200	100	mg/kg	
	C-26	ND	200	100	mg/kg	
	C-27	ND	200	100	mg/kg	
	C-28	ND	200	100	mg/kg	
	C-29	ND	200	100	mg/kg	
	C-30	ND	200	100	mg/kg	
	C-31	ND	200	100	mg/kg	
	C-32	ND	200	100	mg/kg	
	C-33	ND	200	100	mg/kg	
	C-34	ND	200	100	mg/kg	
	C-35	ND	200	100	mg/kg	
	C-36	ND	200	100	mg/kg	
	C-37	ND	200	100	mg/kg	
	C-38	ND	200	100	mg/kg	

8.1.1
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Method Blank Summary

Job Number: MC46549
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47955-MB	GR6338.D	1	06/30/16	MEW	06/23/16	OP47955	GGR207

The QC reported here applies to the following samples: Method: ASTM D3328-06

MC46549-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	C-39	ND	200	100	mg/kg	
	C-40	ND	200	100	mg/kg	
	TPH (C8-C40)	ND	20000	10000	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	100% 40-140%

Blank Spike Summary

Job Number: MC46549
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47955-BS1	GR6339.D	1	06/30/16	MEW	06/23/16	OP47955	GGR207

The QC reported here applies to the following samples: Method: ASTM D3328-06

MC46549-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	C-8	5000	4490	90	40-140
	C-9	5000	4450	89	40-140
	C-10	5000	4660	93	40-140
	C-11	5000	4820	96	40-140
	C-12	5000	4820	96	40-140
	C-13	5000	4850	97	40-140
3891-98-3	2,6,10-trimethyldodecane (138		ND		40-140
	C-14	5000	4750	95	40-140
3891-99-4	2,6,10-trimethyltridecane (147		ND		40-140
	C-15	5000	4750	95	40-140
	C-16	5000	4770	95	40-140
3892-00-0	2,6,10-trimethylpentadecane (1		ND		40-140
	C-17	5000	4660	93	40-140
1921-70-6	Pristane	5000	4750	95	40-140
	C-18	5000	4800	96	40-140
638-36-8	Phytane	5000	4780	96	40-140
	C-19	5000	4560	91	40-140
	C-20	5000	4720	94	40-140
	C-21	5000	4700	94	40-140
	C-22	5000	4650	93	40-140
	C-23	5000	4620	92	40-140
	C-24	5000	4650	93	40-140
	C-25	5000	4610	92	40-140
	C-26	5000	4600	92	40-140
	C-27	5000	4570	91	40-140
	C-28	5000	4720	94	40-140
	C-29	5000	4480	90	40-140
	C-30	5000	4710	94	40-140
	C-31	5000	4550	91	40-140
	C-32	5000	4490	90	40-140
	C-33	5000	4480	90	40-140
	C-34	5000	4320	86	40-140
	C-35	5000	4310	86	40-140
	C-36	5000	4170	83	40-140
	C-37	5000	4320	86	40-140
	C-38	5000	4420	88	40-140

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC46549
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47955-BS1	GR6339.D	1	06/30/16	MEW	06/23/16	OP47955	GGR207

The QC reported here applies to the following samples: Method: ASTM D3328-06

MC46549-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	C-39	5000	4440	89	40-140
	C-40	5000	4260	85	40-140
	TPH (C8-C40)		ND		40-140

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	101%	40-140%

* = Outside of Control Limits.

Duplicate Summary

Job Number: MC46549
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47955-DUP1	GR6346.D	5	07/01/16	MEW	06/23/16	OP47955	GGR207
MC46549-1	GR6347.D	5	07/01/16	MEW	06/23/16	OP47955	GGR207

The QC reported here applies to the following samples: Method: ASTM D3328-06

MC46549-1

CAS No.	Compound	MC46549-1 mg/kg	DUP Q	mg/kg	Q	RPD	Limits
	C-8	ND		ND		nc	30
	C-9	ND		ND		nc	30
	C-10	ND		ND		nc	30
	C-11	ND		ND		nc	30
	C-12	ND		ND		nc	30
	C-13	ND		ND		nc	30
3891-98-3	2,6,10-trimethyldodecane (138	ND		ND		nc	30
	C-14	ND		ND		nc	30
3891-99-4	2,6,10-trimethyltridecane (147	ND		ND		nc	30
	C-15	ND		ND		nc	30
	C-16	ND		ND		nc	30
3892-00-0	2,6,10-trimethylpentadecane (1	ND		ND		nc	30
	C-17	ND		ND		nc	30
1921-70-6	Pristane	ND		ND		nc	30
	C-18	ND		ND		nc	30
638-36-8	Phytane	ND		ND		nc	30
	C-19	ND		ND		nc	30
	C-20	ND		ND		nc	30
	C-21	ND		ND		nc	30
	C-22	ND		ND		nc	30
	C-23	ND		ND		nc	30
	C-24	ND		ND		nc	30
	C-25	ND		ND		nc	30
	C-26	ND		ND		nc	30
	C-27	ND		ND		nc	30
	C-28	ND		ND		nc	30
	C-29	ND		ND		nc	30
	C-30	ND		ND		nc	30
	C-31	ND		ND		nc	30
	C-32	ND		ND		nc	30
	C-33	ND		ND		nc	30
	C-34	ND		ND		nc	30
	C-35	ND		ND		nc	30
	C-36	ND		ND		nc	30
	C-37	ND		ND		nc	30
	C-38	ND		ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: MC46549
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP47955-DUP1	GR6346.D	5	07/01/16	MEW	06/23/16	OP47955	GGR207
MC46549-1	GR6347.D	5	07/01/16	MEW	06/23/16	OP47955	GGR207

The QC reported here applies to the following samples: Method: ASTM D3328-06

MC46549-1

CAS No.	Compound	MC46549-1 mg/kg	DUP Q	mg/kg	Q	RPD	Limits
	C-39	ND		ND		nc	30
	C-40	ND		ND		nc	30
	TPH (C8-C40)	857000		882000		3	30

CAS No.	Surrogate Recoveries	DUP	MC46549-1	Limits
84-15-1	o-Terphenyl	107%	103%	40-140%

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Page 1 of 1

Job Number: MC46549

Account: ENSRNJ AECOM, INC.

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Check Std: GGR206-CC173

Injection Date: 06/30/16

Lab File ID: GR6333.D

Injection Time: 06:40

Instrument ID: GCGR

Method: ASTM D3328-06

IS 1
AREA RT

Check Std	123245706	35.21
Upper Limit ^a	246491412	35.71
Lower Limit ^b	61622853	34.71

Lab Sample ID	IS 1 AREA	RT
OP47955-MB	92339577	35.20
OP47955-BS1	94371287	35.20
OP47955-DUP2	104374323	35.22
MC46563-1	112083520	35.22
OP47955-DUP1	105337501	35.21
MC46549-1	106211071	35.21

IS 1 = 5a-Androstane (Signal #1)

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.

(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

8.4.1

8

Semivolatile Surrogate Recovery Summary

Job Number: MC46549
Account: ENSRNJ AECOM, INC.
Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Method: ASTM D3328-06	Matrix: SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 ^a
MC46549-1	GR6347.D	103
OP47955-BS1	GR6339.D	101
OP47955-DUP1	GR6346.D	107
OP47955-MB	GR6338.D	100

Surrogate Compounds	Recovery Limits
S1 = o-Terphenyl	40-140%

(a) Recovery from GC signal #1

8.5.1
8

GC Surrogate Retention Time Summary

Page 1 of 1

Job Number: MC46549

Account: ENSRNJ AECOM, INC.

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Check Std: GGR206-CC173

Injection Date: 06/30/16

Lab File ID: GR6333.D

Injection Time: 06:40

Instrument ID: GCGR

Method: ASTM D3328-06

S1^a

RT

Check Std

33.20

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT
OP47955-MB	GR6338.D	06/30/16	14:27	33.19
OP47955-BS1	GR6339.D	06/30/16	15:45	33.19
OP47955-DUP2	GR6340.D	06/30/16	17:03	33.20
MC46563-1	GR6341.D	06/30/16	18:20	33.21
OP47955-DUP1	GR6346.D	07/01/16	00:52	33.19
MC46549-1	GR6347.D	07/01/16	02:11	33.19

Surrogate Compounds

S1 = o-Terphenyl

(a) Retention time from GC signal #1

8.6.1

8

Initial Calibration Summary

Page 1 of 2

Job Number: MC46549

Sample: GGR173-ICC173

Account: ENSRNJ AECOM, INC.

Lab FileID: GR5507.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Response Factor Report GCG

Method : X:\1\methods\GCGR160401ALK-Rear.m (ChemStation Integrator)
 Title : n-C8 - n-C40 normal alkanes w/ isoprenoids
 Last Update : Mon Apr 11 10:47:49 2016
 Response via : Initial Calibration

Calibration Files

1.0 =GR5505.D 5.0 =GR5506.D 25 =GR5507.D 50 =GR5508.D
 100 =GR5509.D 200 =GR5510.D

Compound		1.0	5.0	25	50	100	200	Avg	%RSD

1) I	5a-Androstane	-----ISTD-----							
2) S	o-Terphenyl	1.169	1.071	1.044	1.024	1.022	1.026	1.059	5.35
3) S	1-chlorooctadecane	0.889	0.826	0.834	0.815	0.828	0.863	0.843	3.33
4)	C-8	1.015	0.852	0.952	0.815	0.773	0.828	0.873	10.54
5)	C-9	1.092	0.907	0.995	0.862	0.862	0.878	0.933	9.91
6)	C-10	1.061	0.914	0.975	0.884	0.902	0.915	0.942	6.99
7)	C-11	1.038	0.907	0.939	0.894	0.913	0.936	0.938	5.55
8)	C-12	1.016	0.923	0.936	0.911	0.929	0.953	0.945	4.01
9) J1	C-13	1.015	0.926	0.929	0.911	0.930	0.965	0.946	4.03
10) J2	2,6,10-trimethyldod	1.015	0.926	0.929	0.911	0.930	0.965	0.946	4.03
11) J1	C-14	1.018	0.937	0.943	0.928	0.946	0.982	0.959	3.58
12) J2	2,6,10-trimethyltri	1.018	0.937	0.943	0.928	0.946	0.982	0.959	3.58
13)	C-15	1.022	0.947	0.944	0.927	0.945	0.981	0.961	3.59
14) J1	C-16	1.037	0.956	0.955	0.933	0.951	0.987	0.970	3.85
15) J2	2,6,10-trimethylpen	1.037	0.956	0.955	0.933	0.951	0.987	0.970	3.85
16)	C-17	1.020	0.944	0.953	0.929	0.963	1.004	0.969	3.66
17)	Pristane	1.061	0.975	0.954	0.944	0.944	0.977	0.976	4.54
18)	C-18	1.048	0.971	0.987	0.957	0.977	1.016	0.993	3.39
19)	Phytane	0.926	0.851	0.841	0.835	0.845	0.877	0.862	3.97
20)	C-19	1.057	0.982	1.012	0.987	1.007	1.092	1.023	4.21
21)	C-20	1.046	0.968	0.972	0.939	0.954	0.989	0.978	3.83
22)	C-21	1.057	0.975	0.978	0.942	0.953	0.993	0.983	4.13
23)	C-22	1.070	0.990	0.993	0.957	0.971	1.017	1.000	3.99
24)	C-23	1.112	0.997	1.011	0.952	0.966	1.008	1.008	5.58
25)	C-24	1.068	0.986	1.032	0.949	0.963	1.012	1.002	4.46
26)	C-25	1.076	0.993	1.067	0.959	0.972	1.017	1.014	4.81
27)	C-26	1.077	0.996	1.094	0.962	0.973	1.020	1.020	5.35
28)	C-27	1.046	0.964	1.079	0.932	0.944	0.988	0.992	5.91
29)	C-28	1.050	0.971	1.092	0.936	0.947	0.993	0.998	6.12
30)	C-29	1.069	0.989	1.117	0.954	0.964	1.012	1.018	6.27
31)	C-30	1.038	0.962	1.092	0.930	0.941	0.986	0.991	6.30
32)	C-31	1.089	1.008	1.146	0.973	0.984	1.029	1.038	6.44
33)	C-32	1.077	0.995	1.136	0.961	0.971	1.016	1.026	6.62
34)	C-33	1.057	0.979	1.118	0.946	0.955	0.999	1.009	6.61
35)	C-34	1.097	1.016	1.165	0.983	0.991	1.037	1.048	6.70
36)	C-35	1.065	0.989	1.131	0.955	0.964	1.009	1.019	6.61
37)	C-36	1.182	1.090	1.256	1.062	1.069	1.120	1.130	6.70
38)	C-37	1.057	0.980	1.125	0.951	0.956	1.002	1.012	6.66
39)	C-38	1.096	1.009	1.153	0.977	0.982	1.032	1.041	6.70
40)	C-39	1.033	0.969	1.111	0.939	0.948	0.995	0.999	6.46
41)	C-40	1.038	0.975	1.134	0.959	0.967	1.018	1.015	6.48
42) H	TPH (C8-C40)	1.059	0.969	1.046	0.941	0.953	0.995	0.994	4.94
43) H	Total aliphatics	1.059	0.969	1.046	0.941	0.953	0.995	0.994	4.94
44) H	Total aromatics	1.059	0.969	1.046	0.941	0.953	0.995	0.994	4.94
45) H	TPH-DRO (C10-C28)	1.049	0.960	0.994	0.936	0.953	0.993	0.981	4.12
46) H	TPH-ORO (>C28-C40)	1.073	0.995	1.137	0.963	0.972	1.019	1.027	6.50

87.1

8

Initial Calibration Summary

Job Number: MC46549

Account: ENSRNJ AECOM, INC.

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Sample: GGR173-ICC173

Lab FileID: GR5507.D

(#) = Out of Range

GCGR160401ALK-Rear.m Mon Apr 11 12:08:09 2016

8.7.1
8

Initial Calibration Verification

Page 1 of 2

Job Number: MC46549

Sample: GGR173-ICV173

Account: ENSRNJ AECOM, INC.

Lab FileID: GR5511.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File: X:\1\data\G160401.SEC\GR5511.D

Sample : ICV173-25.0, FS-185

Misc : OP46636,GGR173,,,2,1

ALS Vial : 8 Sample Multiplier: 1

Acq On : 2 Apr 2016 1:40 am

Operator: MIKEW

Quant Time: Apr 11 12:22:03 2016

Quant Method : G:\1\methods\GCGR160401ALK-Rear.m

Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

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

Max. RRF Dev : 25% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1 I	5a-Androstane	1.000	1.000	0.0	124	0.02
2 S	o-Terphenyl	1.059	1.000	5.6	119	0.01
3 S	1-chlorooctadecane	0.843	0.791	6.2	118	0.00
4	C-8	0.873	0.802	8.1	105	0.04
5	C-9	0.933	0.855	8.4	107	0.03
6	C-10	0.942	0.876	7.0	112	0.03
7	C-11	0.938	0.884	5.8	117	0.02
8	C-12	0.945	0.899	4.9	119	0.02
9 J1	C-13	0.946	0.906	4.2	121	0.02
11 J1	C-14	0.959	0.914	4.7	121	0.01
13	C-15	0.961	0.914	4.9	121	0.01
14 J1	C-16	0.970	0.926	4.5	121	0.01
16	C-17	0.969	0.936	3.4	122	0.01
17	Pristane	0.976	0.910	6.8	119	0.01
18	C-18	0.993	0.954	3.9	120	0.01
19	Phytane	0.862	0.935	-8.5	138	0.01
20	C-19	1.023	0.964	5.8	119	0.01
21	C-20	0.978	0.944	3.5	121	0.02
22	C-21	0.983	0.952	3.2	121	0.00
23	C-22	1.000	0.945	5.5	118	0.00
24	C-23	1.008	0.945	6.3	116	0.00
25	C-24	1.002	0.950	5.2	114	0.00
26	C-25	1.014	0.894	11.8	104	0.00
27	C-26	1.020	0.970	4.9	110	0.00
28	C-27	0.992	0.980	1.2	113	0.00
29	C-28	0.998	0.962	3.6	110	0.00
30	C-29	1.018	0.952	6.5	106	0.00
31	C-30	0.991	0.969	2.2	110	0.00
32	C-31	1.038	0.939	9.5	102	0.00
33	C-32	1.026	0.945	7.9	104	0.00
34	C-33	1.009	0.943	6.5	105	0.00
35	C-34	1.048	0.993	5.2	106	0.00
36	C-35	1.019	0.961	5.7	106	0.00
37	C-36	1.130	1.007	10.9	100	0.00
38	C-37	1.012	0.976	3.6	108	0.00
39	C-38	1.041	0.952	8.5	103	0.00
40	C-39	0.999	0.935	6.4	105	0.00
41	C-40	1.015	0.873	14.0	96	0.00

Evaluate Continuing Calibration Report - Not Found

10 J2 2,6,10-trimethyldodecane (1 0.019 0.000 100.0# 0# -23.68#

Initial Calibration Verification

Page 2 of 2

Job Number: MC46549

Sample: GGR173-ICV173

Account: ENSRNJ AECOM, INC.

Lab FileID: GR5511.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

12	J2	2,6,10-trimethyltridecane (	0.019	0.000	100.0#	0#	-25.38#
15	J2	2,6,10-trimethylpentadecane	0.019	0.000	100.0#	0#	-28.84#
42	H	TPH (C8-C40)	0.020	0.000	100.0#	0#	-5.59#
43	H	Total aliphatics	0.020	0.000	100.0#	0#	-5.59#
44	H	Total aromatics	0.020	0.000	100.0#	0#	-5.59#
45	H	TPH-DRO (C10-C28)	0.020	0.000	100.0#	0#	-38.87#
46	H	TPH-ORO (>C28-C40)	0.021	0.000	100.0#	0#	-22.58#

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

GCGR160401ALK-Rear.m Mon Apr 11 12:22:45 2016

8.7.2

8

Continuing Calibration Summary

Page 1 of 2

Job Number: MC46549

Sample: GGR206-CC173

Account: ENSRNJ AECOM, INC.

Lab FileID: GR6333.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File: X:\1\data\G160629\GR6333.d

Sample : CC173-25, FS-209

Misc : OP47904,GGR206,,,2,1

ALS Vial : 2 Sample Multiplier: 1

Acq On : 30 Jun 2016 6:40 am

Operator: MIKEW

Quant Time: Jun 30 08:03:17 2016

Quant Method : X:\1\methods\GCGR160401ALK-Rear.m

Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

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

Max. RRF Dev : 25% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1 I	5a-Androstane	1.000	1.000	0.0	163	0.00
2 S	o-Terphenyl	1.059	1.045	1.3	163	0.00
4	C-8	0.873	0.751	14.0	128	0.02
5	C-9	0.933	0.847	9.2	138	0.00
6	C-10	0.942	0.900	4.5	150	0.00
7	C-11	0.938	0.928	1.1	161	0.00
8	C-12	0.945	0.940	0.5	163	0.00
9 J1	C-13	0.946	0.950	-0.4	166	0.00
11 J1	C-14	0.959	0.945	1.5	163	0.00
13	C-15	0.961	0.946	1.6	163	0.00
14 J1	C-16	0.970	0.963	0.7	164	0.00
16	C-17	0.969	0.947	2.3	162	0.00
17	Pristane	0.976	0.959	1.7	163	0.00
18	C-18	0.993	0.947	4.6	156	0.01
19	Phytane	0.862	0.851	1.3	165	0.01
20	C-19	1.023	0.968	5.4	156	0.01
21	C-20	0.978	0.949	3.0	159	0.00
22	C-21	0.983	0.968	1.5	161	0.00
23	C-22	1.000	0.963	3.7	158	0.00
24	C-23	1.008	0.970	3.8	156	0.00
25	C-24	1.002	1.007	-0.5	159	0.00
26	C-25	1.014	0.967	4.6	147	0.00
27	C-26	1.020	0.976	4.3	145	0.00
28	C-27	0.992	0.952	4.0	144	0.00
29	C-28	0.998	0.990	0.8	147	0.00
30	C-29	1.018	0.956	6.1	139	0.00
31	C-30	0.991	0.981	1.0	146	0.00
32	C-31	1.038	0.995	4.1	141	0.00
33	C-32	1.026	0.978	4.7	140	0.00
34	C-33	1.009	0.962	4.7	140	0.00
35	C-34	1.048	0.972	7.3	136	0.00
36	C-35	1.019	0.960	5.8	138	0.00
37	C-36	1.130	1.037	8.2	134	0.00
38	C-37	1.012	0.976	3.6	141	0.00
39	C-38	1.041	1.037	0.4	146	0.00
40	C-39	0.999	1.008	-0.9	148	0.01
41	C-40	1.015	1.004	1.1	144	0.00

Evaluate Continuing Calibration Report - Not Found

3 S	1-chlorooctadecane	0.017	0.000	100.0#	0#	-35.93#
10 J2	2,6,10-trimethyldodecane (1	0.019	0.000	100.0#	0#	-23.67#

Continuing Calibration Summary

Page 2 of 2

Job Number: MC46549

Sample: GGR206-CC173

Account: ENSRNJ AECOM, INC.

Lab FileID: GR6333.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

12	J2	2,6,10-trimethyltridecane (	0.019	0.000	100.0#	0#	-25.39#
15	J2	2,6,10-trimethylpentadecane	0.019	0.000	100.0#	0#	-28.87#
42	H	TPH (C8-C40)	0.020	0.000	100.0#	0#	-5.62#
43	H	Total aliphatics	0.020	0.000	100.0#	0#	-5.62#
44	H	Total aromatics	0.020	0.000	100.0#	0#	-5.62#
45	H	TPH-DRO (C10-C28)	0.020	0.000	100.0#	0#	-39.09#
46	H	TPH-ORO (>C28-C40)	0.021	0.000	100.0#	0#	-22.72#

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

GCGR160401ALK-Rear.m Thu Jun 30 08:34:40 2016

8.7.3

8

Continuing Calibration Summary

Page 1 of 2

Job Number: MC46549

Sample: GGR207-CC173

Account: ENSRNJ AECOM, INC.

Lab FileID: GR6335.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File: X:\1\data\G160630\GR6335.d

Sample : CC173-25, FS-209

Misc : OP47904,GGR207,,,2,1

ALS Vial : 2 Sample Multiplier: 1

Acq On : 30 Jun 2016 10:33 am

Operator: MIKEW

Quant Time: Jun 30 15:12:07 2016

Quant Method : X:\1\methods\GCGR160401ALK-Rear.m

Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

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

Max. RRF Dev : 25% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1 I	5a-Androstane	1.000	1.000	0.0	150	0.00
2 S	o-Terphenyl	1.059	1.050	0.8	151	0.00
4	C-8	0.873	0.732	16.2	115	0.00
5	C-9	0.933	0.841	9.9	127	0.00
6	C-10	0.942	0.893	5.2	137	0.00
7	C-11	0.938	0.926	1.3	148	0.00
8	C-12	0.945	0.939	0.6	150	0.00
9 J1	C-13	0.946	0.949	-0.3	153	0.00
11 J1	C-14	0.959	0.944	1.6	150	0.00
13	C-15	0.961	0.946	1.6	150	0.00
14 J1	C-16	0.970	0.963	0.7	151	0.00
16	C-17	0.969	0.947	2.3	149	0.00
17	Pristane	0.976	0.964	1.2	151	0.00
18	C-18	0.993	0.947	4.6	144	0.01
19	Phytane	0.862	0.852	1.2	152	0.01
20	C-19	1.023	0.963	5.9	143	0.01
21	C-20	0.978	0.957	2.1	148	0.00
22	C-21	0.983	0.971	1.2	149	0.00
23	C-22	1.000	0.964	3.6	145	0.00
24	C-23	1.008	0.971	3.7	144	0.00
25	C-24	1.002	1.012	-1.0	147	0.00
26	C-25	1.014	0.972	4.1	137	0.00
27	C-26	1.020	0.976	4.3	134	0.00
28	C-27	0.992	0.946	4.6	131	0.00
29	C-28	0.998	0.984	1.4	135	0.00
30	C-29	1.018	0.955	6.2	128	0.00
31	C-30	0.991	0.979	1.2	134	0.00
32	C-31	1.038	0.995	4.1	130	0.00
33	C-32	1.026	0.976	4.9	129	0.00
34	C-33	1.009	0.959	5.0	129	0.00
35	C-34	1.048	0.971	7.3	125	0.00
36	C-35	1.019	0.958	6.0	127	0.00
37	C-36	1.130	1.034	8.5	123	0.00
38	C-37	1.012	0.972	4.0	130	0.00
39	C-38	1.041	1.034	0.7	134	0.00
40	C-39	0.999	1.001	-0.2	135	0.00
41	C-40	1.015	0.999	1.6	132	0.00

Evaluate Continuing Calibration Report - Not Found

3 S	1-chlorooctadecane	0.017	0.000	100.0#	0#	-35.93#
10 J2	2,6,10-trimethyldodecane (1	0.019	0.000	100.0#	0#	-23.67#

Continuing Calibration Summary

Page 2 of 2

Job Number: MC46549

Sample: GGR207-CC173

Account: ENSRNJ AECOM, INC.

Lab FileID: GR6335.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

12	J2	2,6,10-trimethyltridecane (	0.019	0.000	100.0#	0#	-25.39#
15	J2	2,6,10-trimethylpentadecane	0.019	0.000	100.0#	0#	-28.86#
42	H	TPH (C8-C40)	0.020	0.000	100.0#	0#	-5.62#
43	H	Total aliphatics	0.020	0.000	100.0#	0#	-5.62#
44	H	Total aromatics	0.020	0.000	100.0#	0#	-5.62#
45	H	TPH-DRO (C10-C28)	0.020	0.000	100.0#	0#	-39.09#
46	H	TPH-ORO (>C28-C40)	0.021	0.000	100.0#	0#	-22.72#

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

GCGR160401ALK-Rear.m Fri Jul 01 07:55:40 2016

8.7.4

8

Continuing Calibration Summary

Page 1 of 2

Job Number: MC46549

Sample: GGR207-CC173

Account: ENSRNJ AECOM, INC.

Lab FileID: GR6349.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File: X:\1\data\G160630\GR6349.d

Sample : CC173-25, FS-209

Misc : OP47904,GGR207,,,2,1

ALS Vial : 99 Sample Multiplier: 1

Acq On : 1 Jul 2016 4:50 am

Operator: MIKEW

Quant Time: Jul 01 07:33:44 2016

Quant Method : X:\1\methods\GCGR160401ALK-Rear.m

Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

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

Max. RRF Dev : 25% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1 I	5a-Androstane	1.000	1.000	0.0	180	0.00
2 S	o-Terphenyl	1.059	1.051	0.8	181	0.00
4	C-8	0.873	0.705	19.2	133	0.00
5	C-9	0.933	0.820	12.1	149	0.00
6	C-10	0.942	0.888	5.7	164	0.00
7	C-11	0.938	0.920	1.9	177	0.00
8	C-12	0.945	0.934	1.2	180	0.00
9 J1	C-13	0.946	0.946	0.0	183	0.00
11 J1	C-14	0.959	0.939	2.1	180	0.00
13	C-15	0.961	0.941	2.1	180	0.00
14 J1	C-16	0.970	0.959	1.1	181	0.00
16	C-17	0.969	0.938	3.2	177	0.00
17	Pristane	0.976	0.963	1.3	182	0.00
18	C-18	0.993	0.945	4.8	172	0.01
19	Phytane	0.862	0.847	1.7	182	0.01
20	C-19	1.023	0.959	6.3	171	0.01
21	C-20	0.978	0.971	0.7	180	0.00
22	C-21	0.983	0.974	0.9	179	0.00
23	C-22	1.000	0.966	3.4	175	0.00
24	C-23	1.008	0.977	3.1	174	0.00
25	C-24	1.002	1.017	-1.5	177	0.00
26	C-25	1.014	0.973	4.0	164	0.00
27	C-26	1.020	0.975	4.4	161	0.00
28	C-27	0.992	0.954	3.8	159	0.00
29	C-28	0.998	0.986	1.2	163	0.00
30	C-29	1.018	0.954	6.3	154	0.00
31	C-30	0.991	0.977	1.4	161	0.00
32	C-31	1.038	0.994	4.2	156	0.00
33	C-32	1.026	0.975	5.0	155	0.00
34	C-33	1.009	0.958	5.1	154	0.00
35	C-34	1.048	0.970	7.4	150	0.00
36	C-35	1.019	0.956	6.2	152	0.00
37	C-36	1.130	1.038	8.1	149	0.00
38	C-37	1.012	0.980	3.2	157	0.00
39	C-38	1.041	1.035	0.6	162	0.00
40	C-39	0.999	0.999	0.0	162	0.00
41	C-40	1.015	0.994	2.1	158	0.00

Evaluate Continuing Calibration Report - Not Found

3 S	1-chlorooctadecane	0.017	0.000	100.0#	0#	-35.93#
10 J2	2,6,10-trimethyldodecane (1	0.019	0.000	100.0#	0#	-23.67#

Continuing Calibration Summary

Page 2 of 2

Job Number: MC46549

Sample: GGR207-CC173

Account: ENSRNJ AECOM, INC.

Lab FileID: GR6349.D

Project: PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

12	J2	2,6,10-trimethyltridecane (	0.019	0.000	100.0#	0#	-25.39#
15	J2	2,6,10-trimethylpentadecane	0.019	0.000	100.0#	0#	-28.86#
42	H	TPH (C8-C40)	0.020	0.000	100.0#	0#	-5.62#
43	H	Total aliphatics	0.020	0.000	100.0#	0#	-5.62#
44	H	Total aromatics	0.020	0.000	100.0#	0#	-5.62#
45	H	TPH-DRO (C10-C28)	0.020	0.000	100.0#	0#	-39.09#
46	H	TPH-ORO (>C28-C40)	0.021	0.000	100.0#	0#	-22.72#

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

GCGR160401ALK-Rear.m Fri Jul 01 07:56:32 2016

8.7.5

8

GC Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6347.d
Sample : MC46549-1
Misc : OP47955,GGR207,0.0152,,,2,5
ALS Vial : 13 Sample Multiplier: 1
Acq On : 1 Jul 2016 2:11 am Operator: MIKEW

Quant Time: Jul 01 07:51:14 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Compound	R.T.	Response	Conc Units

Internal Standards			
1) I 5a-Androstane	35.208	106211071	60.000 µg/mLm
System Monitoring Compounds			
2) S o-Terphenyl	33.190	9680072	5.163 µg/mLm
Spiked Amount 25.000		Recovery =	20.65%
Target Compounds			
42) H TPH (C8-C40)	5.624	2289956047	1301.885 µg/mLm
SemiQuant Compounds - Not Calibrated on this Instrument			

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

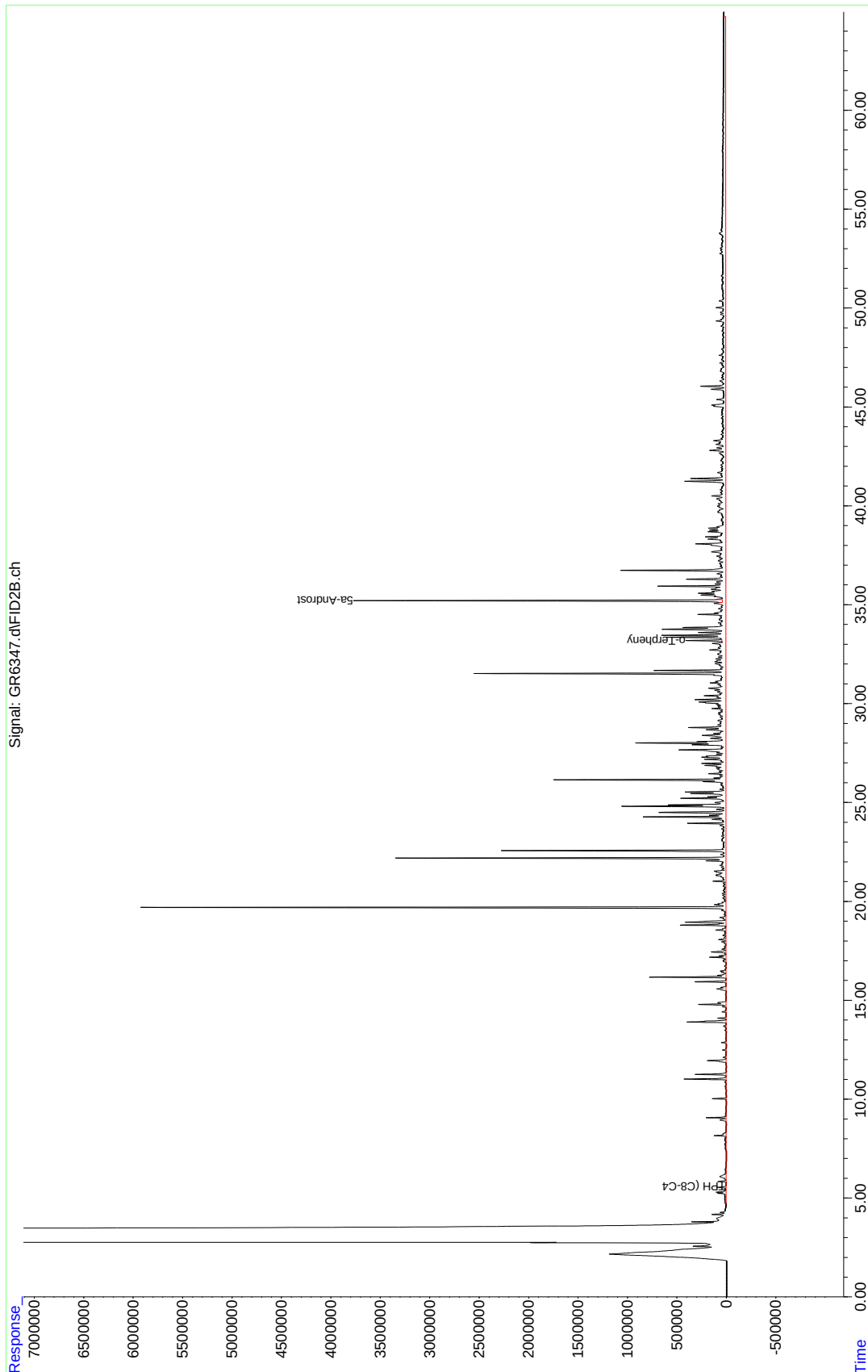
9.1.1

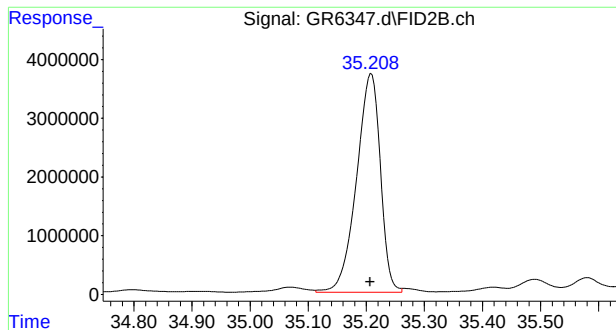
9

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6347.d
 Sample : MC46549-1
 Misc : OP47955, GGR207, 0.0152, , , 2, 5
 ALS Vial : 13 Sample Multiplier: 1
 Acq On : 1 Jul 2016 2:11 am
 Operator: MIKEW

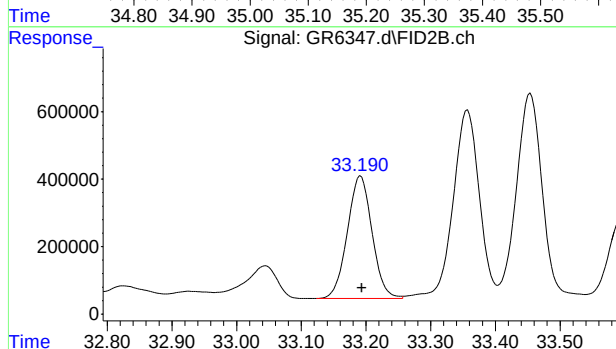
Quant Time: Jul 01 07:51:14 2016
 Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
 Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids





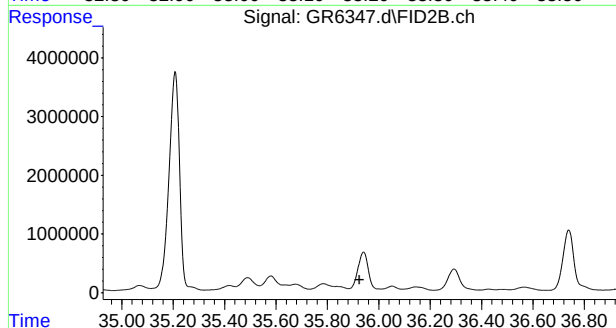
#1 5a-Androstane

R.T.: 35.208 min
Delta R.T.: 0.001 min
Response: 106211071
Conc: 60.00 µg/mL m



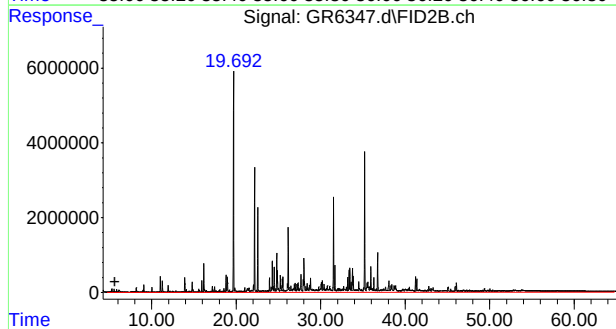
#2 o-Terphenyl

R.T.: 33.190 min
Delta R.T.: -0.003 min
Response: 9680072
Conc: 5.16 µg/mL m



#3 1-chlorooctadecane

R.T.: 0.000 min
Exp R.T.: 35.925 min
Response: 0
Conc: N.D.



#42 TPH (C8-C40)

R.T.: 5.624 min
Delta R.T.: 0.000 min
Response: 2289956047
Conc: 1301.88 µg/mL m

Ruben Parrilla
07/11/16 12:31

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6338.d
Sample : OP47955-MB, Method Blank
Misc : OP47955,GGR207,0.01,,,2,1
ALS Vial : 4 Sample Multiplier: 1
Acq On : 30 Jun 2016 2:27 pm

Operator: MIKEW

Quant Time: Jun 30 16:13:03 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Compound	R.T.	Response	Conc Units

Internal Standards			
1) I 5a-Androstane	35.202	92339577	50.000 µg/mLm
System Monitoring Compounds			
2) S o-Terphenyl	33.193	49022380	25.062 µg/mLm
Spiked Amount 25.000		Recovery =	100.25%
Target Compounds			
SemiQuant Compounds - Not Calibrated on this Instrument			

(f)=RT Delta > 1/2 Window

(m)=manual int.

9.2.1

9

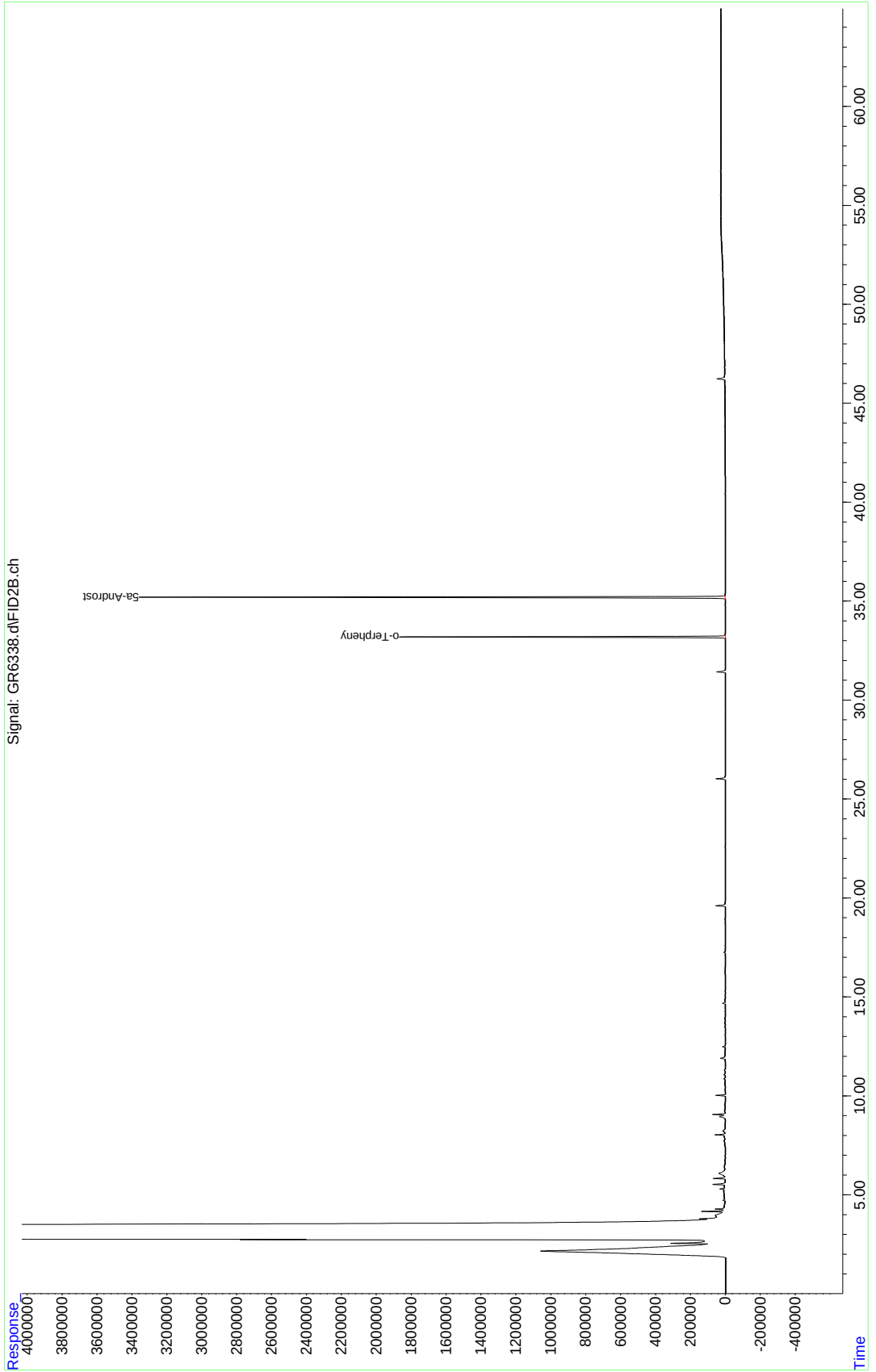
Data File: X:\1\data\G160630\GR6338.d
Sample : OP47955-MB, Method Blank
Misc : OP47955, GGR207, 0.01,,,2,1
ALS Vial : 4 Sample Multiplier: 1
Acq On : 30 Jun 2016 2:27 pm

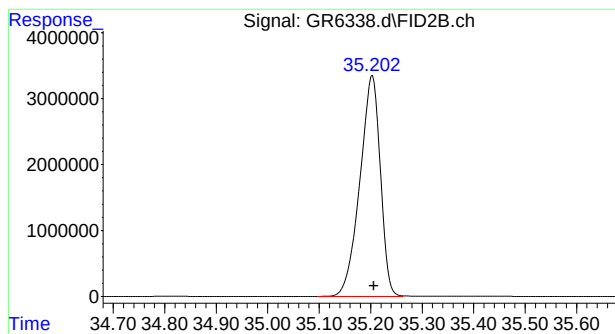
Operator: MIKEW

Quant Time: Jun 30 16:13:03 2016

Quant Method : X:\1\methods\GCGR160401ALK-Rear.m

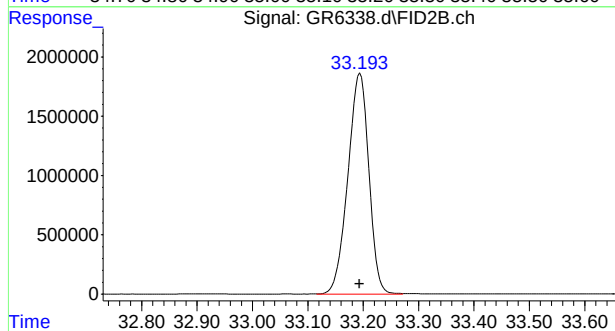
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids





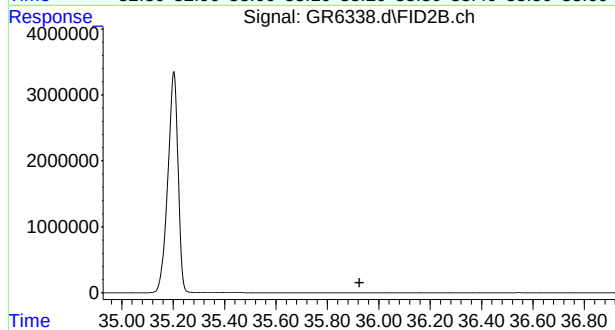
#1 5a-Androstane

R.T.: 35.202 min
Delta R.T.: -0.004 min
Response: 92339577
Conc: 50.00 µg/mL m



#2 o-Terphenyl

R.T.: 33.193 min
Delta R.T.: 0.000 min
Response: 49022380
Conc: 25.06 µg/mL m



#3 1-chlorooctadecane

R.T.: 0.000 min
Exp R.T.: 35.925 min
Response: 0
Conc: N.D.

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6339.d
Sample : OP47955-BS1
Misc : OP47955, GGR207, 0.01,,, 2, 1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 30 Jun 2016 3:45 pm

Operator: MIKEW

Quant Time: Jul 01 07:12:20 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Compound	R.T.	Response	Conc Units

Internal Standards			
1) I 5a-Androstane	35.204	94371287	50.000 µg/mL
System Monitoring Compounds			
2) S o-Terphenyl	33.194	50305262	25.164 µg/mLm
Spiked Amount 25.000		Recovery =	100.66%
Target Compounds			
4) C-8	9.154	37009299	22.473 µg/mLm
5) C-9	12.122	39172548	22.249 µg/mLm
6) C-10	14.893	41438491	23.311 µg/mLm
7) C-11	17.454	42630906	24.087 µg/mL
8) C-12	19.833	43000857	24.115 µg/mL
9) J1 C-13	22.057	43305921	24.256 µg/mL
11) J1 C-14	24.147	42958031	23.736 µg/mL
13) C-15	26.120	43071819	23.751 µg/mL
14) J1 C-16	27.987	43618701	23.827 µg/mL
16) C-17	29.759	42638304	23.318 µg/mLm
17) Pristane	29.878	43774687	23.767 µg/mL
18) C-18	31.445	45017659	24.025 µg/mLm
19) Phytane	31.614	38864222	23.878 µg/mLm
20) C-19	33.053	44014634	22.796 µg/mLm
21) C-20	34.590	43582235	23.613 µg/mL
22) C-21	36.059	43613151	23.514 µg/mL
23) C-22	37.466	43838838	23.238 µg/mL
24) C-23	38.817	43975507	23.122 µg/mL
25) C-24	40.117	43912784	23.228 µg/mL
26) C-25	41.367	44150784	23.068 µg/mL
27) C-26	42.571	44278099	22.988 µg/mL
28) C-27	43.731	42762964	22.838 µg/mL
29) C-28	44.855	44497751	23.621 µg/mL
30) C-29	45.939	43056695	22.416 µg/mL
31) C-30	46.987	44067580	23.552 µg/mL
32) C-31	48.006	44560631	22.739 µg/mL
33) C-32	48.992	43500184	22.465 µg/mL
34) C-33	49.948	42619273	22.379 µg/mL
35) C-34	50.878	42772106	21.623 µg/mL
36) C-35	51.780	41450307	21.556 µg/mLm
37) C-36	52.660	44409448	20.826 µg/mL
38) C-37	53.522	41260380	21.605 µg/mL
39) C-38	54.464	43399501	22.078 µg/mL
40) C-39	55.525	41828709	22.178 µg/mL
41) C-40	56.728	40795190	21.290 µg/mL

SemiQuant Compounds - Not Calibrated on this Instrument

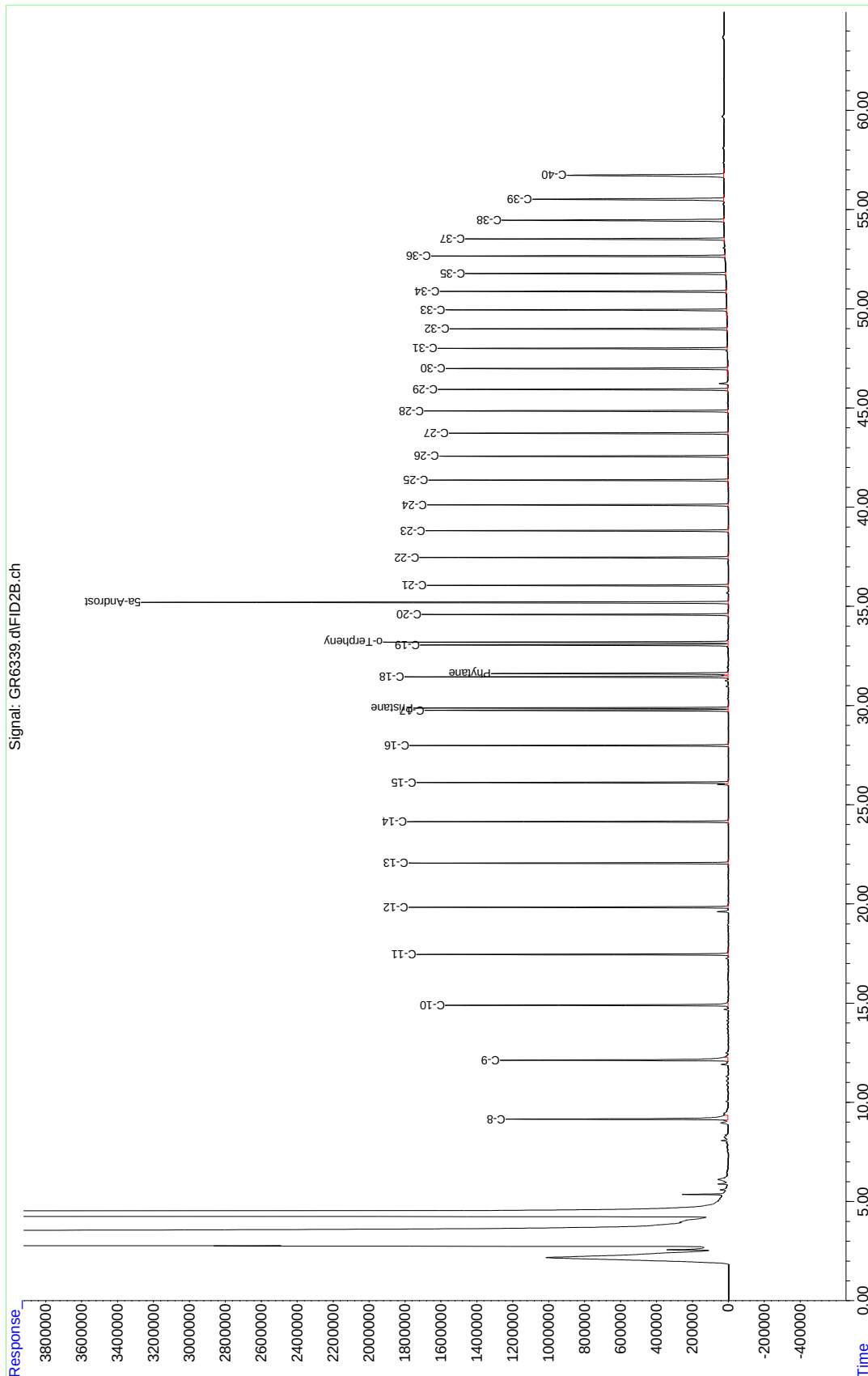
(f)=RT Delta > 1/2 Window

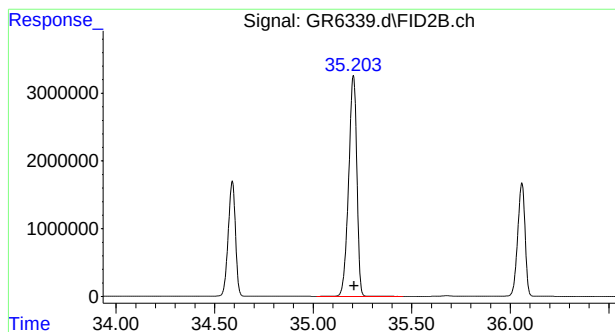
(m)=manual int.

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6339.d
Sample : OP47955-BS1
Misc : OP47955, GGR207.0.01,,,2,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 30 Jun 2016 3:45 pm
Operator: MIKEW

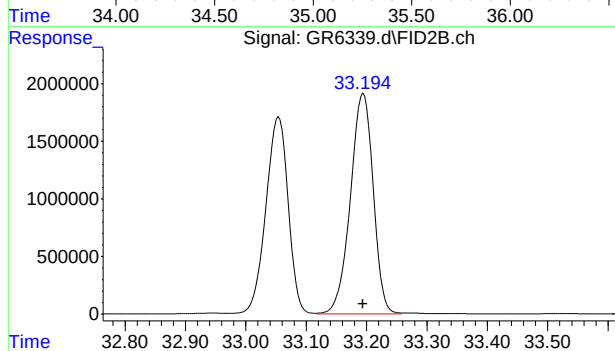
Quant Time: Jul 01 07:12:20 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids





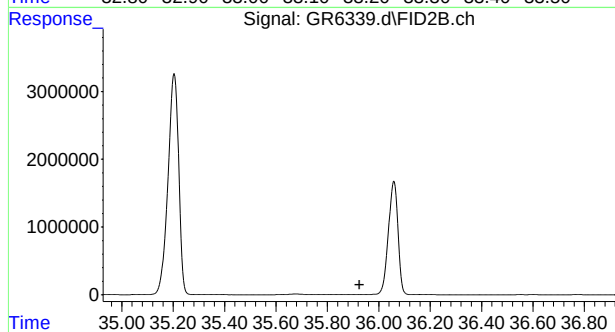
#1 5a-Androstane

R.T.: 35.204 min
Delta R.T.: -0.002 min
Response: 94371287
Conc: 50.00 µg/mL



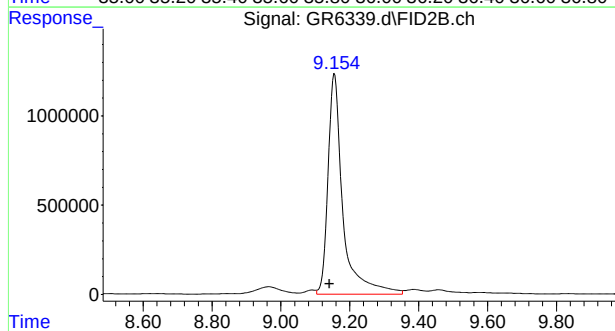
#2 o-Terphenyl

R.T.: 33.194 min
Delta R.T.: 0.000 min
Response: 50305262
Conc: 25.16 µg/mL m



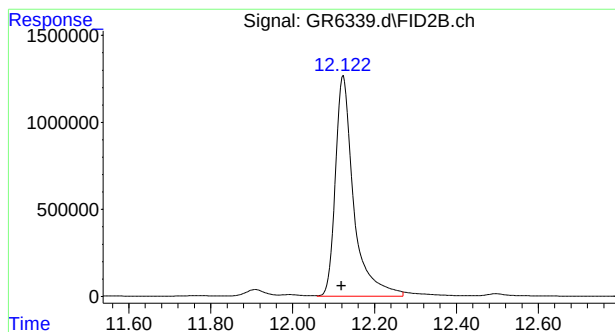
#3 1-chlorooctadecane

R.T.: 0.000 min
Exp R.T.: 35.925 min
Response: 0
Conc: N.D.



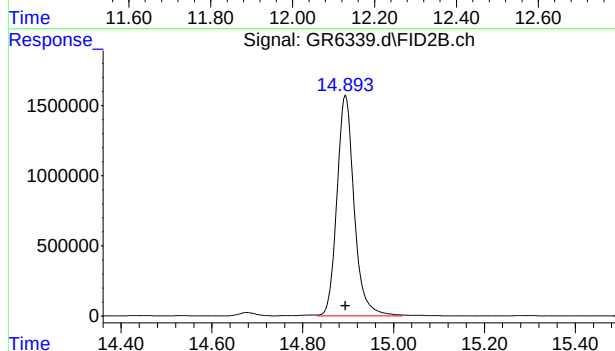
#4 C-8

R.T.: 9.154 min
Delta R.T.: 0.014 min
Response: 37009299
Conc: 22.47 µg/mL m



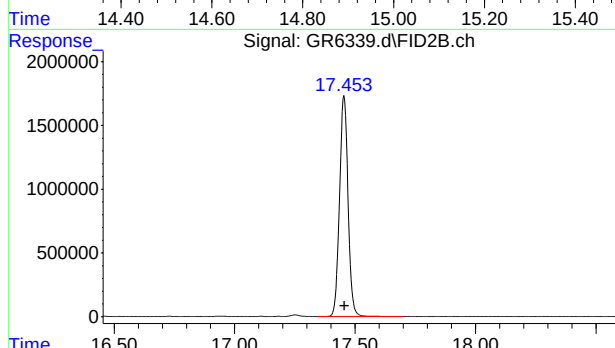
#5 C-9

R.T.: 12.122 min
Delta R.T.: 0.004 min
Response: 39172548
Conc: 22.25 µg/mL m



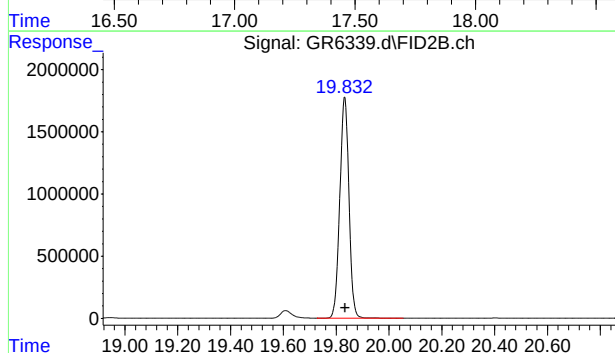
#6 C-10

R.T.: 14.893 min
Delta R.T.: 0.000 min
Response: 41438491
Conc: 23.31 µg/mL m



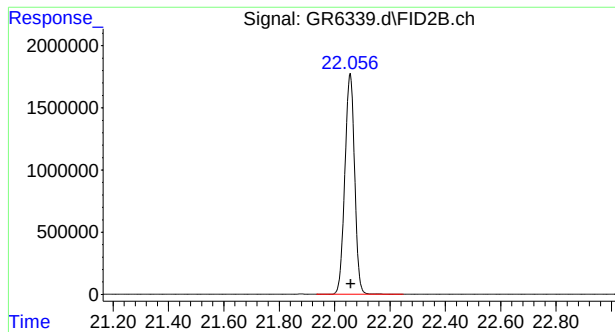
#7 C-11

R.T.: 17.454 min
Delta R.T.: -0.001 min
Response: 42630906
Conc: 24.09 µg/mL



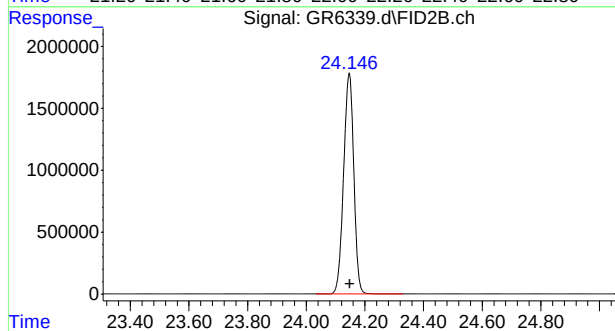
#8 C-12

R.T.: 19.833 min
Delta R.T.: 0.000 min
Response: 43000857
Conc: 24.12 µg/mL



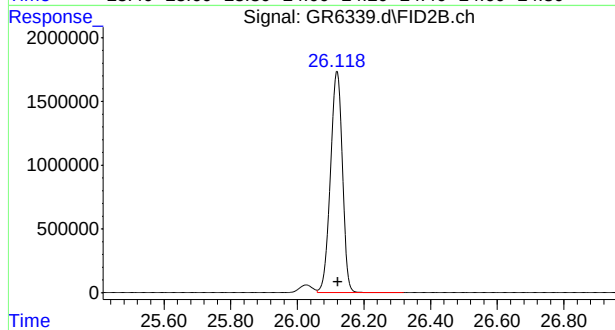
#9 C-13

R.T.: 22.057 min
Delta R.T.: -0.002 min
Response: 43305921
Conc: 24.26 µg/mL



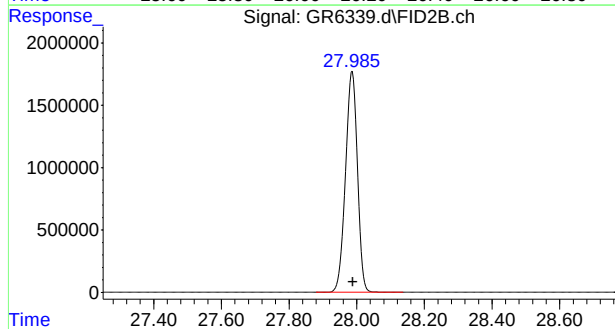
#11 C-14

R.T.: 24.147 min
Delta R.T.: -0.001 min
Response: 42958031
Conc: 23.74 µg/mL



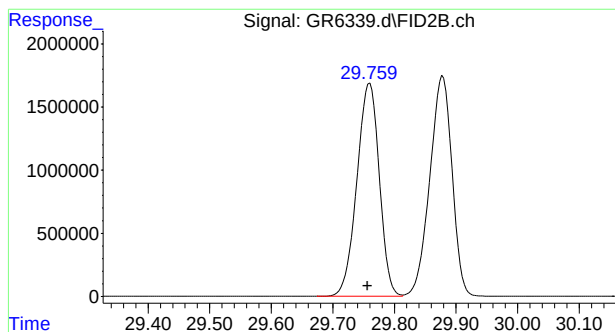
#13 C-15

R.T.: 26.120 min
Delta R.T.: -0.002 min
Response: 43071819
Conc: 23.75 µg/mL



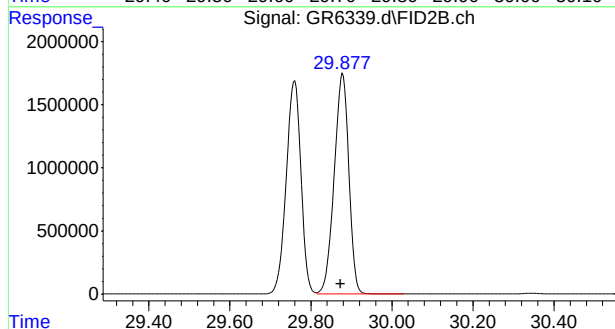
#14 C-16

R.T.: 27.987 min
Delta R.T.: -0.002 min
Response: 43618701
Conc: 23.83 µg/mL



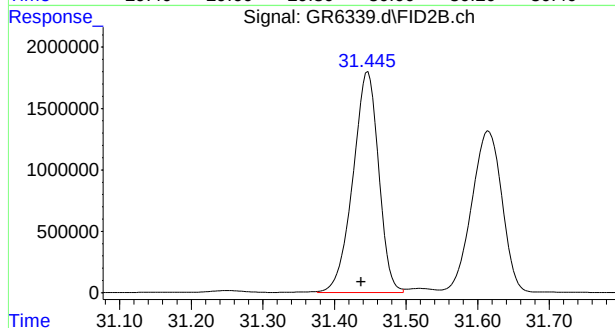
#16 C-17

R.T.: 29.759 min
Delta R.T.: 0.003 min
Response: 42638304
Conc: 23.32 µg/mL m



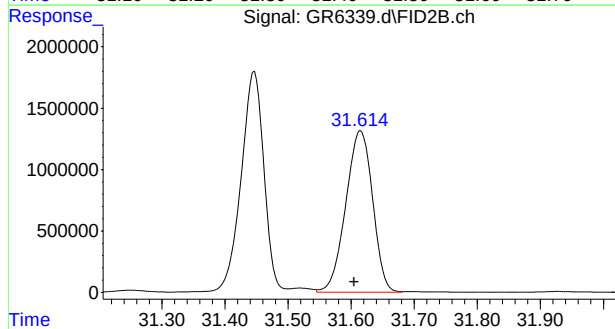
#17 Pristane

R.T.: 29.878 min
Delta R.T.: 0.005 min
Response: 43774687
Conc: 23.77 µg/mL



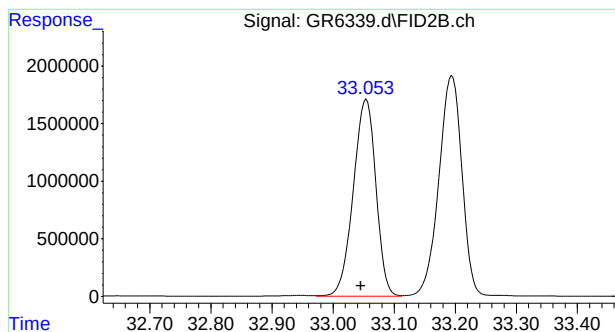
#18 C-18

R.T.: 31.445 min
Delta R.T.: 0.008 min
Response: 45017659
Conc: 24.02 µg/mL m



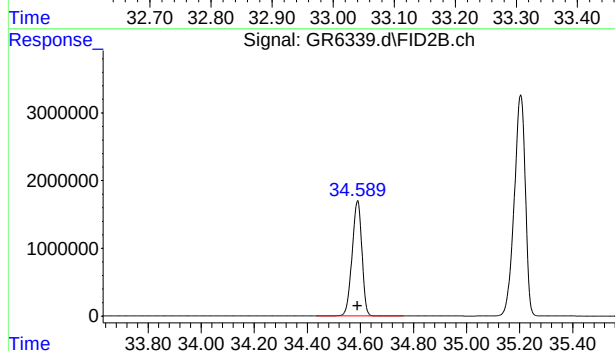
#19 Phytane

R.T.: 31.614 min
Delta R.T.: 0.009 min
Response: 38864222
Conc: 23.88 µg/mL m



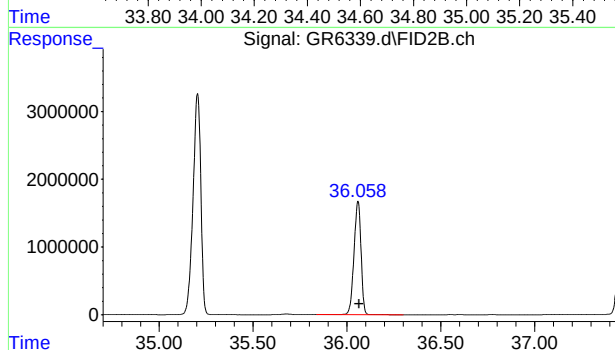
#20 C-19

R.T.: 33.053 min
Delta R.T.: 0.008 min
Response: 44014634
Conc: 22.80 µg/mL m



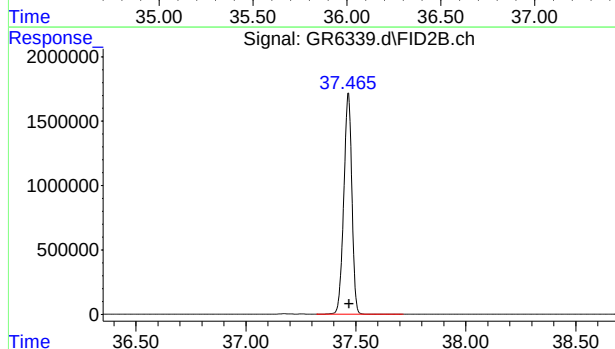
#21 C-20

R.T.: 34.590 min
Delta R.T.: 0.002 min
Response: 43582235
Conc: 23.61 µg/mL



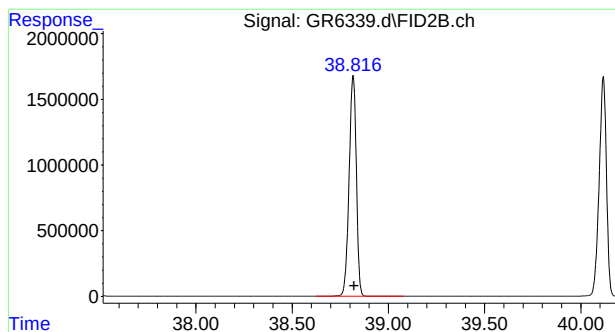
#22 C-21

R.T.: 36.059 min
Delta R.T.: -0.005 min
Response: 43613151
Conc: 23.51 µg/mL



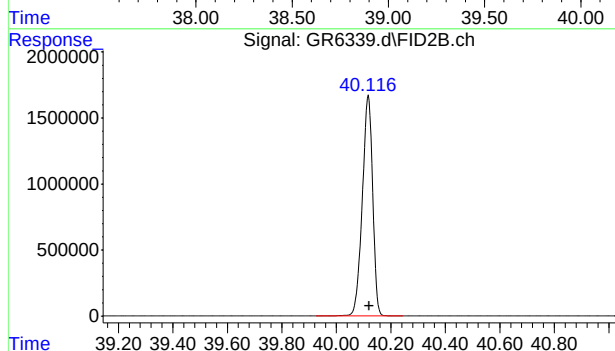
#23 C-22

R.T.: 37.466 min
Delta R.T.: -0.003 min
Response: 43838838
Conc: 23.24 µg/mL



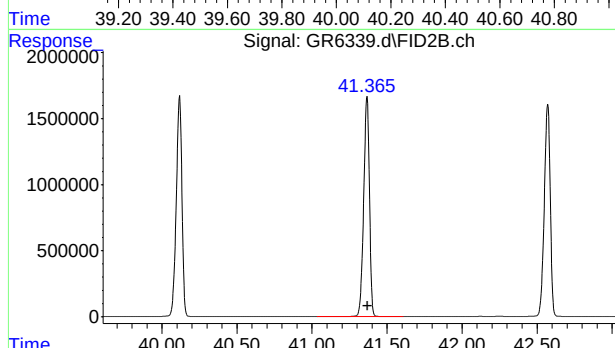
#24 C-23

R.T.: 38.817 min
Delta R.T.: -0.005 min
Response: 43975507
Conc: 23.12 µg/mL



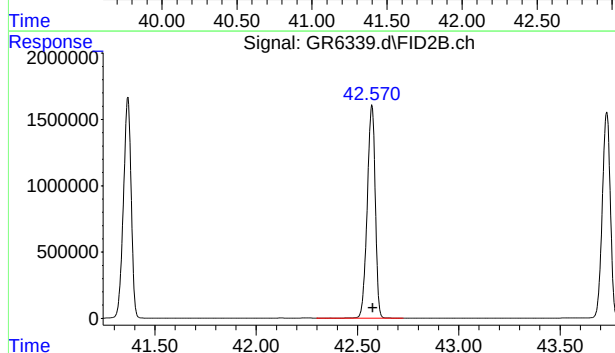
#25 C-24

R.T.: 40.117 min
Delta R.T.: -0.002 min
Response: 43912784
Conc: 23.23 µg/mL



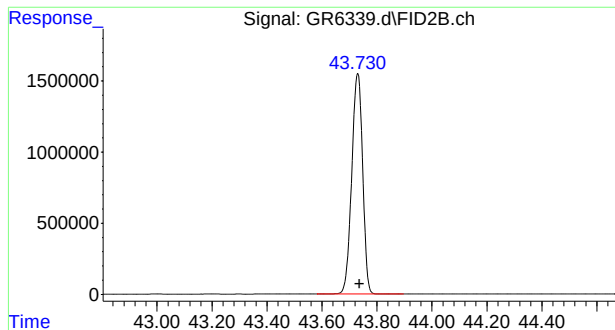
#26 C-25

R.T.: 41.367 min
Delta R.T.: -0.003 min
Response: 44150784
Conc: 23.07 µg/mL



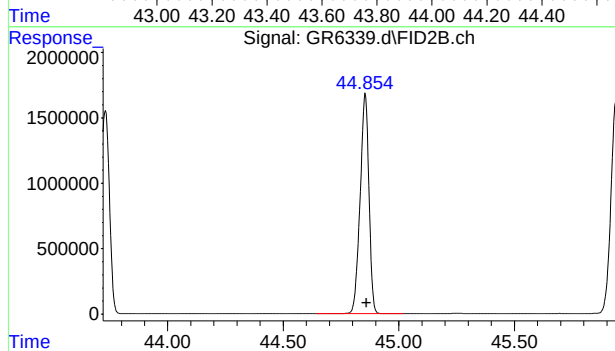
#27 C-26

R.T.: 42.571 min
Delta R.T.: -0.004 min
Response: 44278099
Conc: 22.99 µg/mL



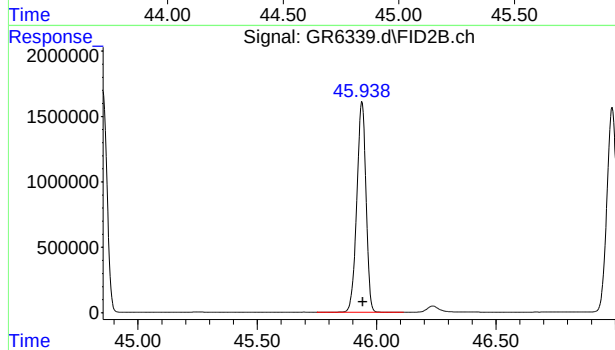
#28 C-27

R.T.: 43.731 min
Delta R.T.: -0.006 min
Response: 42762964
Conc: 22.84 µg/mL



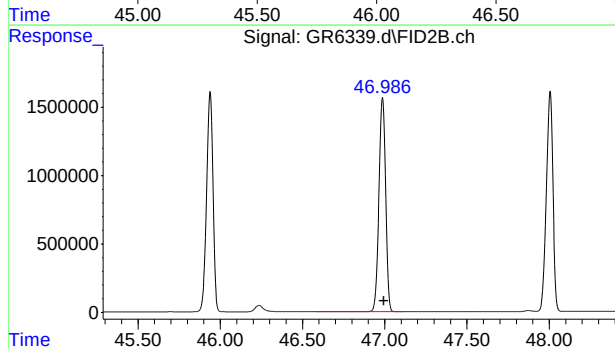
#29 C-28

R.T.: 44.855 min
Delta R.T.: -0.005 min
Response: 44497751
Conc: 23.62 µg/mL



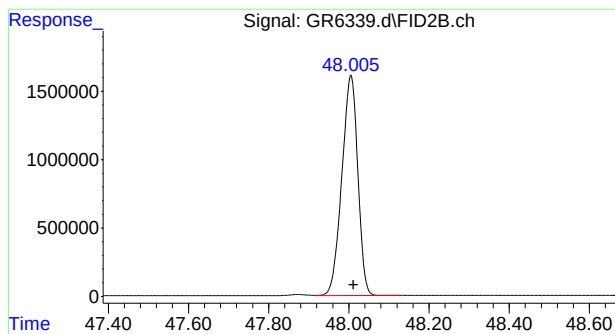
#30 C-29

R.T.: 45.939 min
Delta R.T.: -0.004 min
Response: 43056695
Conc: 22.42 µg/mL



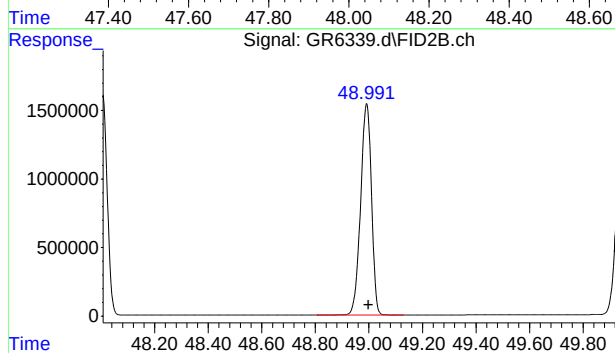
#31 C-30

R.T.: 46.987 min
Delta R.T.: -0.006 min
Response: 44067580
Conc: 23.55 µg/mL



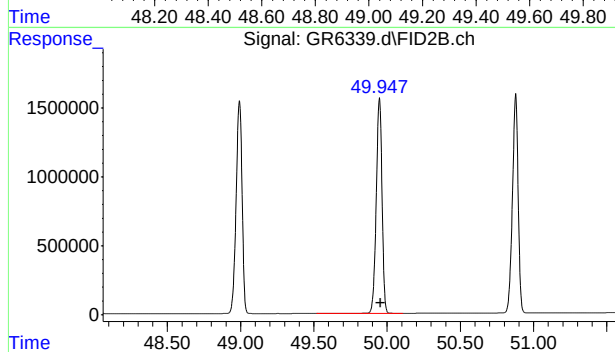
#32 C-31

R.T.: 48.006 min
Delta R.T.: -0.005 min
Response: 44560631
Conc: 22.74 µg/mL



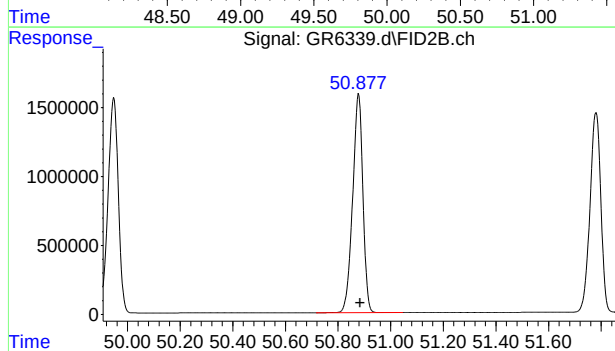
#33 C-32

R.T.: 48.992 min
Delta R.T.: -0.006 min
Response: 43500184
Conc: 22.47 µg/mL



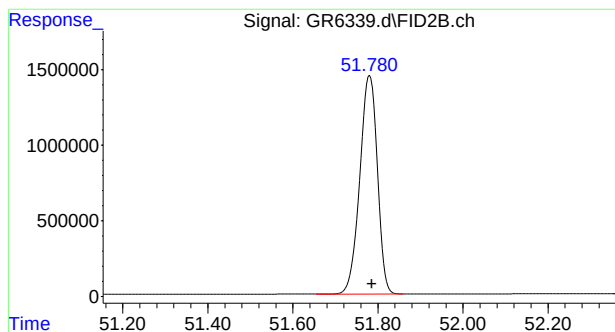
#34 C-33

R.T.: 49.948 min
Delta R.T.: -0.006 min
Response: 42619273
Conc: 22.38 µg/mL



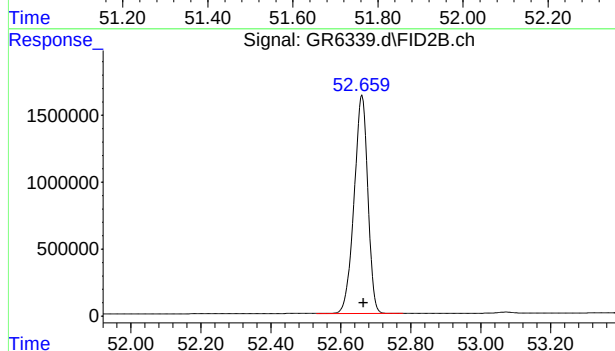
#35 C-34

R.T.: 50.878 min
Delta R.T.: -0.005 min
Response: 42772106
Conc: 21.62 µg/mL



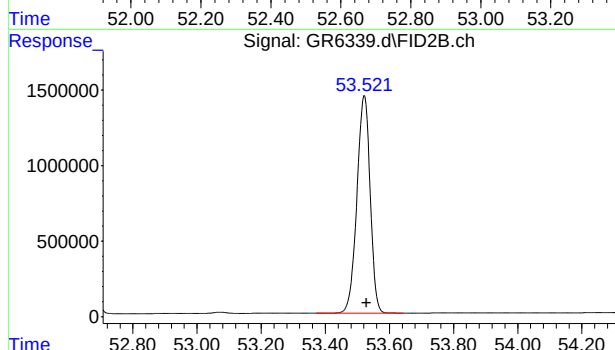
#36 C-35

R.T.: 51.780 min
Delta R.T.: -0.006 min
Response: 41450307
Conc: 21.56 µg/mL m



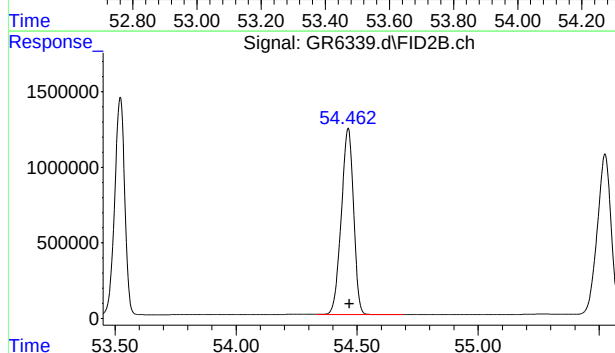
#37 C-36

R.T.: 52.660 min
Delta R.T.: -0.004 min
Response: 44409448
Conc: 20.83 µg/mL



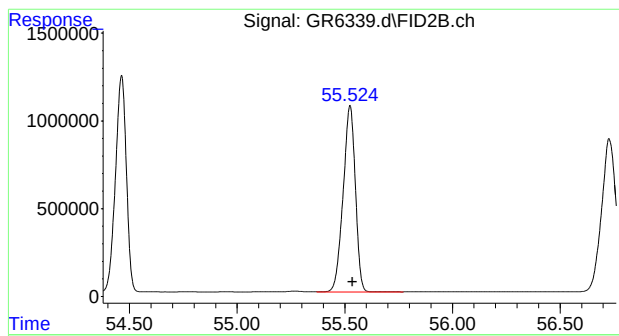
#38 C-37

R.T.: 53.522 min
Delta R.T.: -0.005 min
Response: 41260380
Conc: 21.60 µg/mL



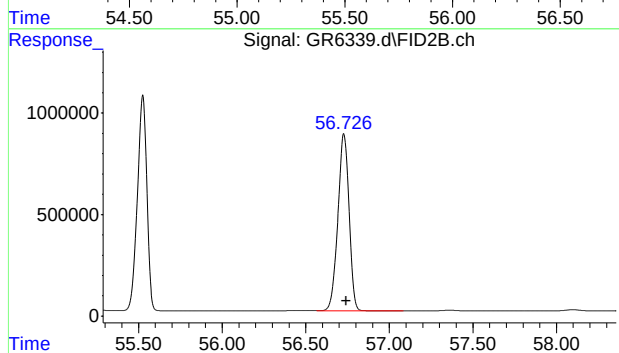
#39 C-38

R.T.: 54.464 min
Delta R.T.: -0.004 min
Response: 43399501
Conc: 22.08 µg/mL



#40 C-39

R.T.: 55.525 min
Delta R.T.: -0.010 min
Response: 41828709
Conc: 22.18 µg/mL



#41 C-40

R.T.: 56.728 min
Delta R.T.: -0.013 min
Response: 40795190
Conc: 21.29 µg/mL

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6346.d
Sample : OP47955-DUP1, MC46549-1
Misc : OP47955,GGR207,0.0161,,,2,5
ALS Vial : 12 Sample Multiplier: 1
Acq On : 1 Jul 2016 12:52 am

Operator: MIKEW

Quant Time: Jul 01 07:49:54 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Compound	R.T.	Response	Conc Units

Internal Standards			
1) I 5a-Androstane	35.208	105337501	60.000 µg/mLm
System Monitoring Compounds			
2) S o-Terphenyl	33.191	9974176	5.364 µg/mLm
Spiked Amount 25.000		Recovery =	21.46%
Target Compounds			
42) H TPH (C8-C40)	5.624	2476492500	1419.610 µg/mLm
SemiQuant Compounds - Not Calibrated on this Instrument			

(f)=RT Delta > 1/2 Window

(m)=manual int.

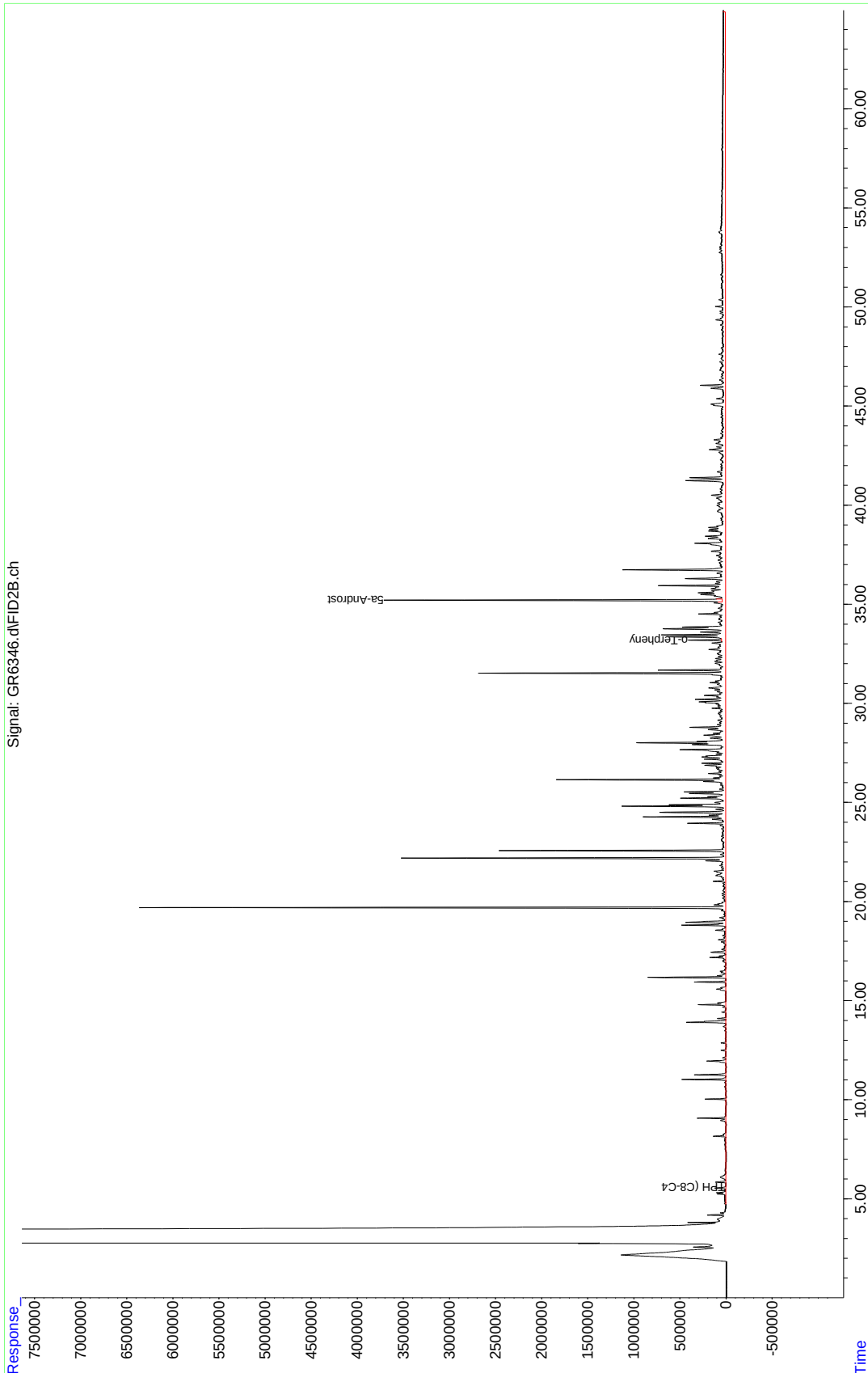
9.4.1

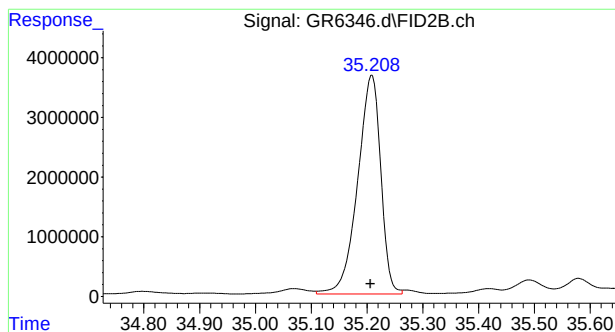
9

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6346.d
Sample : OP47955-DUP1, MC46549-1
Misc : OP47955, GGR207, 0.0161, 2, 5
ALS Vial : 12 Sample Multiplier: 1
Acq On : 1 Jul 2016 12:52 am
Operator: MIKEW

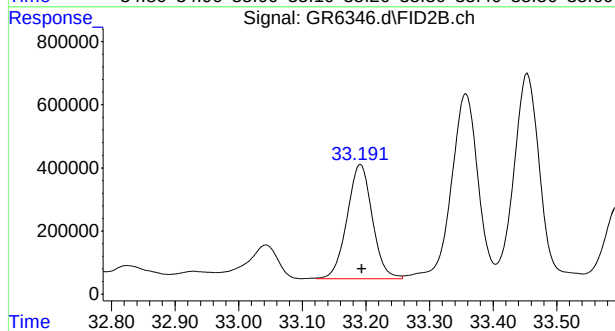
Quant Time: Jul 01 07:49:54 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids





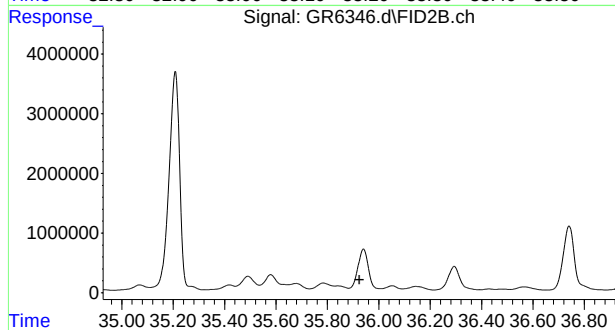
#1 5a-Androstane

R.T.: 35.208 min
Delta R.T.: 0.002 min
Response: 105337501
Conc: 60.00 µg/mL m



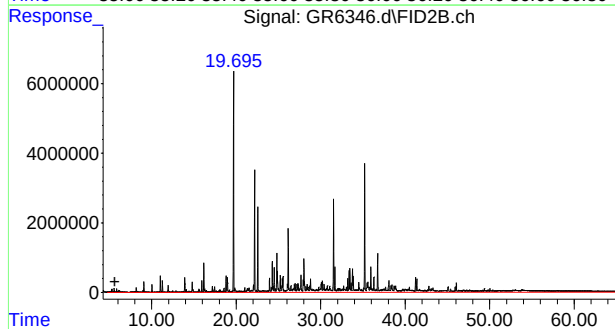
#2 o-Terphenyl

R.T.: 33.191 min
Delta R.T.: -0.003 min
Response: 9974176
Conc: 5.36 µg/mL m



#3 1-chlorooctadecane

R.T.: 0.000 min
Exp R.T.: 35.925 min
Response: 0
Conc: N.D.



#42 TPH (C8-C40)

R.T.: 5.624 min
Delta R.T.: 0.000 min
Response: 2476492500
Conc: 1419.61 µg/mL m

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5505.D

Sample : IC173-1.0, FS-179
Misc : OP46636,GGR173,,,2,1
ALS Vial : 2 Sample Multiplier: 1
Acq On : 1 Apr 2016 5:42 pm

Operator: MIKEW

Quant Time: Apr 05 12:13:13 2016

Quant Method : G:\1\methods\GCGR160401ALK-Rear.m

Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Compound	R.T.	Response	Conc Units

Internal Standards			
1) I 5a-Androstane	35.135	85340089	50.000 µg/mL
System Monitoring Compounds			
2) S o-Terphenyl	33.121	1994534	1.083 µg/mL
Spiked Amount 25.000		Recovery =	4.33%
3) S 1-chlorooctadecane	35.845	1517671	1.061 µg/mL
Target Compounds			
4) C-8	9.311	1732363	1.232 µg/mLm
5) C-9	12.239	1863438	1.246 µg/mLm
6) C-10	14.987	1811062	1.185 µg/mL
7) C-11	17.526	1771596	1.160 µg/mL
8) C-12	19.884	1734791	1.107 µg/mLm
9) J1 C-13	22.092	1732301	1.096 µg/mL
11) J1 C-14	24.166	1737537	1.077 µg/mLm
13) C-15	26.127	1743551	1.069 µg/mL
14) J1 C-16	27.980	1770606	1.075 µg/mLm
16) C-17	29.743	1740728	1.068 µg/mL
17) Pristane	29.862	1811530	1.093 µg/mL
18) C-18	31.417	1789262	1.064 µg/mLm
19) Phytane	31.589	1579765	1.084 µg/mL
20) C-19	33.020	1804161	1.059 µg/mL
21) C-20	34.545	1785284	1.071 µg/mLm
22) C-21	36.005	1803267	1.075 µg/mLm
23) C-22	37.407	1825802	1.066 µg/mLm
24) C-23	38.752	1897918	1.104 µg/mLm
25) C-24	40.046	1823018	1.075 µg/mLm
26) C-25	41.290	1836472	1.069 µg/mLm
27) C-26	42.489	1838142	1.075 µg/mLm
28) C-27	43.646	1785118	1.077 µg/mLm
29) C-28	44.767	1791315	1.077 µg/mLm
30) C-29	45.849	1825374	1.077 µg/mLm
31) C-30	46.896	1771729	1.073 µg/mLm
32) C-31	47.911	1858479	1.075 µg/mLm
33) C-32	48.896	1838260	1.078 µg/mLm
34) C-33	49.848	1804146	1.076 µg/mLm
35) C-34	50.777	1871970	1.079 µg/mLm
36) C-35	51.679	1816971	1.064 µg/mLm
37) C-36	52.558	2017482	1.086 µg/mLm
38) C-37	53.416	1804134	1.071 µg/mLm
39) C-38	54.344	1871074	1.090 µg/mLm
40) C-39	55.383	1762308	1.072 µg/mLm
41) C-40	56.568	1772400	1.056 µg/mLm

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window

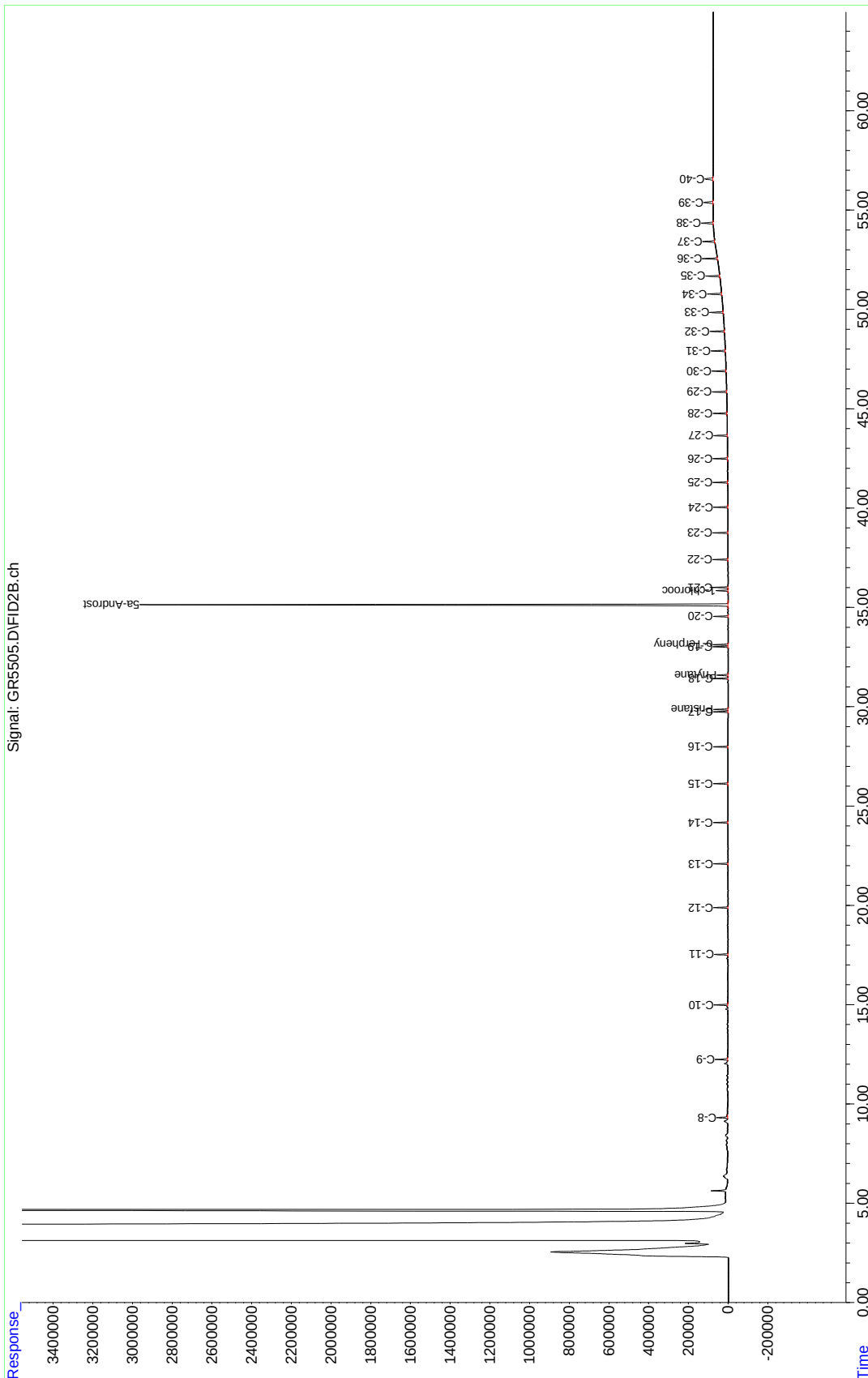
(m)=manual int.

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5505.D
Sample : IC173-1.0, FS-179
Misc : OP46636, GGR173,,2,1
ALS Vial : 2 Sample Multiplier: 1
Acq On : 1 Apr 2016 5:42 pm

Operator: MIKEW

Quant Time: Apr 05 12:13:13 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids



Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5506.D

Sample : IC173-5.0, FS-179

Misc : OP46636, GGR173,,,2,1

ALS Vial : 3 Sample Multiplier: 1

Acq On : 1 Apr 2016 7:02 pm

Operator: MIKEW

Quant Time: Apr 05 12:19:23 2016

Quant Method : G:\1\methods\GCGR160401ALK-Rear.m

Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Compound	R.T.	Response	Conc Units

Internal Standards			
1) I 5a-Androstane	35.132	86598732	50.000 µg/mLm
System Monitoring Compounds			
2) S o-Terphenyl	33.120	9270780	4.965 µg/mL
Spiked Amount 25.000		Recovery =	19.86%
3) S 1-chlorooctadecane	35.845	7149201	4.951 µg/mL
Target Compounds			
4) C-8	9.310	7378112	5.165 µg/mL
5) C-9	12.237	7857789	5.143 µg/mL
6) C-10	14.984	7913162	5.072 µg/mL
7) C-11	17.523	7852265	5.000 µg/mL
8) C-12	19.882	7991275	4.999 µg/mLm
9) J1 C-13	22.090	8014985	4.985 µg/mL
11) J1 C-14	24.166	8111830	4.948 µg/mL
13) C-15	26.125	8203810	4.986 µg/mLm
14) J1 C-16	27.981	8277256	4.979 µg/mL
16) C-17	29.742	8174285	4.958 µg/mL
17) Pristane	29.862	8445290	5.014 µg/mL
18) C-18	31.418	8408369	4.950 µg/mLm
19) Phytane	31.588	7366886	4.977 µg/mLm
20) C-19	33.019	8503071	4.947 µg/mL
21) C-20	34.546	8382700	4.972 µg/mL
22) C-21	36.006	8440262	4.971 µg/mLm
23) C-22	37.407	8569292	4.972 µg/mLm
24) C-23	38.752	8634579	4.970 µg/mLm
25) C-24	40.045	8536213	4.974 µg/mLm
26) C-25	41.291	8596847	4.969 µg/mLm
27) C-26	42.491	8627047	4.981 µg/mLm
28) C-27	43.650	8350756	4.978 µg/mLm
29) C-28	44.766	8407167	4.991 µg/mLm
30) C-29	45.849	8565959	4.989 µg/mLm
31) C-30	46.896	8329739	4.983 µg/mL
32) C-31	47.910	8730888	4.992 µg/mLm
33) C-32	48.895	8612841	4.985 µg/mLm
34) C-33	49.852	8480574	4.997 µg/mLm
35) C-34	50.778	8799645	5.005 µg/mLm
36) C-35	51.680	8566614	5.005 µg/mLm
37) C-36	52.559	9439759	5.002 µg/mLm
38) C-37	53.417	8486937	5.021 µg/mLm
39) C-38	54.342	8737134	5.052 µg/mLm
40) C-39	55.386	8392375	5.077 µg/mLm
41) C-40	56.567	8444235	5.027 µg/mLm

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window

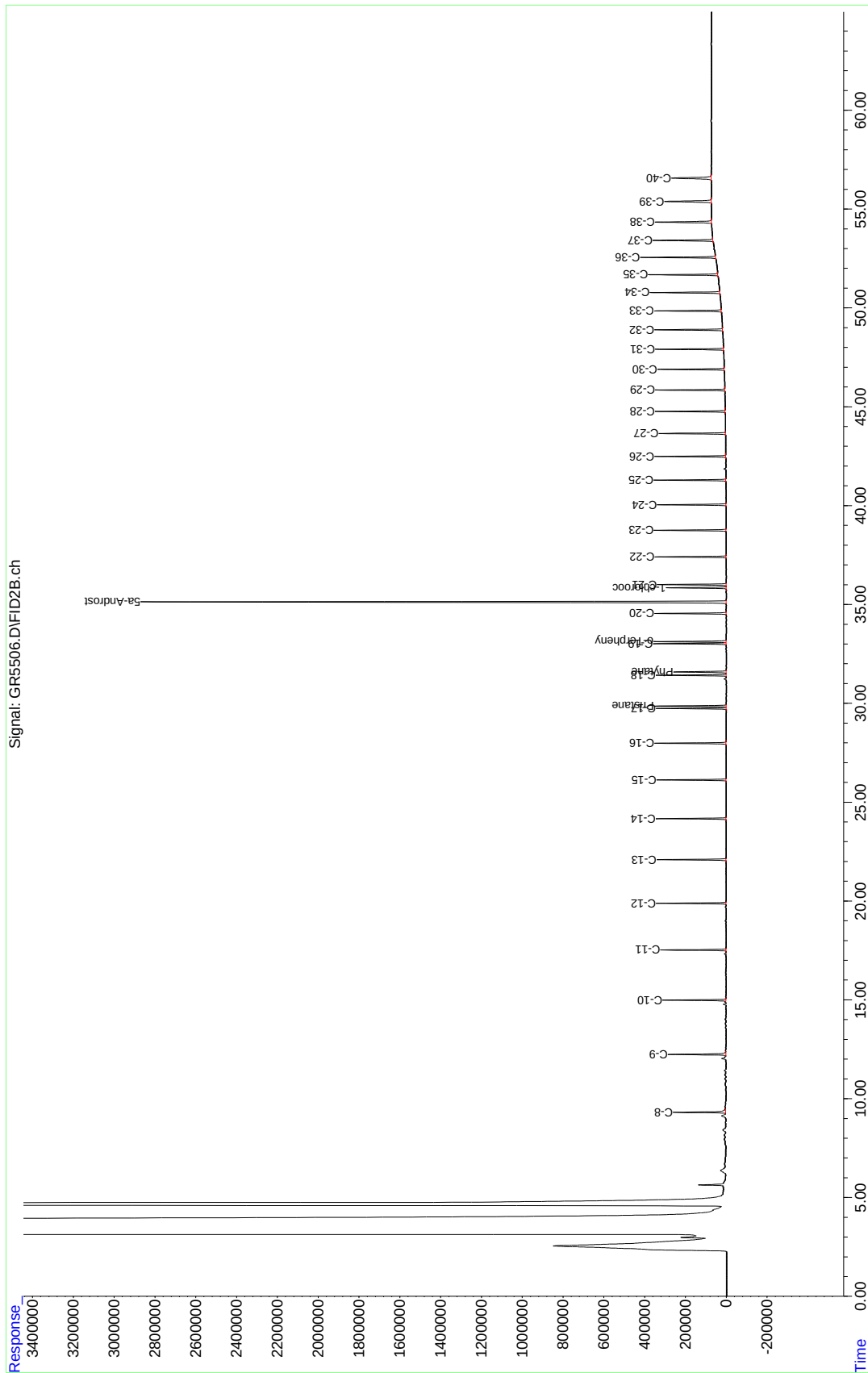
(m)=manual int.

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5506.D
Sample : IC173-5.0, FS-179
Misc : OP46636, GGR173,,,2,1
ALS Vial : 3 Sample Multiplier: 1
Acq On : 1 Apr 2016 7:02 pm

Operator: MIKEW

Quant Time: Apr 05 12:19:23 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids



Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5507.D

Sample : ICC173-25.0, FS-179

Misc : OP46636, GGR173,,,2,1

ALS Vial : 4 Sample Multiplier: 1

Acq On : 1 Apr 2016 8:22 pm

Operator: MIKEW

Quant Time: Apr 05 12:24:54 2016

Quant Method : G:\1\methods\GCGR160401ALK-Rear.m

Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Compound	R.T.	Response	Conc Units

Internal Standards			
1) I 5a-Androstane	35.130	75776222	50.000 µg/mL
System Monitoring Compounds			
2) S o-Terphenyl	33.128	39555096	24.198 µg/mL
Spiked Amount 25.000		Recovery =	96.79%
3) S 1-chlorooctadecane	35.852	31591980	24.997 µg/mL
Target Compounds			
4) C-8	9.322	36086122	28.609 µg/mL
5) C-9	12.244	37697241	27.902 µg/mL
6) C-10	14.988	36933687	26.835 µg/mL
7) C-11	17.525	35582564	25.701 µg/mLm
8) C-12	19.886	35456287	25.207 µg/mLm
9) J1 C-13	22.095	35214565	24.918 µg/mL
11) J1 C-14	24.169	35720028	24.853 µg/mLm
13) C-15	26.129	35751106	24.784 µg/mLm
14) J1 C-16	27.986	36197725	24.843 µg/mL
16) C-17	29.749	36099189	24.999 µg/mL
17) Pristane	29.869	36155023	24.452 µg/mL
18) C-18	31.427	37402542	25.159 µg/mL
19) Phytane	31.596	31864231	24.548 µg/mL
20) C-19	33.027	38355975	25.485 µg/mL
21) C-20	34.552	36839672	24.947 µg/mLm
22) C-21	36.016	37046894	24.935 µg/mLm
23) C-22	37.416	37620298	24.948 µg/mLm
24) C-23	38.762	38306917	25.190 µg/mLm
25) C-24	40.056	39113720	26.035 µg/mLm
26) C-25	41.303	40430559	26.719 µg/mLm
27) C-26	42.501	41460312	27.324 µg/mLm
28) C-27	43.660	40865573	27.812 µg/mLm
29) C-28	44.777	41367661	28.025 µg/mLm
30) C-29	45.859	42331719	28.140 µg/mLm
31) C-30	46.908	41361171	28.252 µg/mLm
32) C-31	47.923	43424904	28.337 µg/mLm
33) C-32	48.908	43040998	28.439 µg/mLm
34) C-33	49.863	42374746	28.499 µg/mLm
35) C-34	50.790	44131774	28.632 µg/mLm
36) C-35	51.694	42854231	28.616 µg/mLm
37) C-36	52.573	47584803	28.786 µg/mLm
38) C-37	53.430	42615493	28.844 µg/mLm
39) C-38	54.358	43693890	28.874 µg/mLm
40) C-39	55.404	42106176	29.113 µg/mLm
41) C-40	56.586	42950244	29.329 µg/mLm

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window

(m)=manual int.

9.53

9

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5507.D

Sample : ICC173-25.0, FS-179

Misc : OP46636, GGR173,, 2, 1

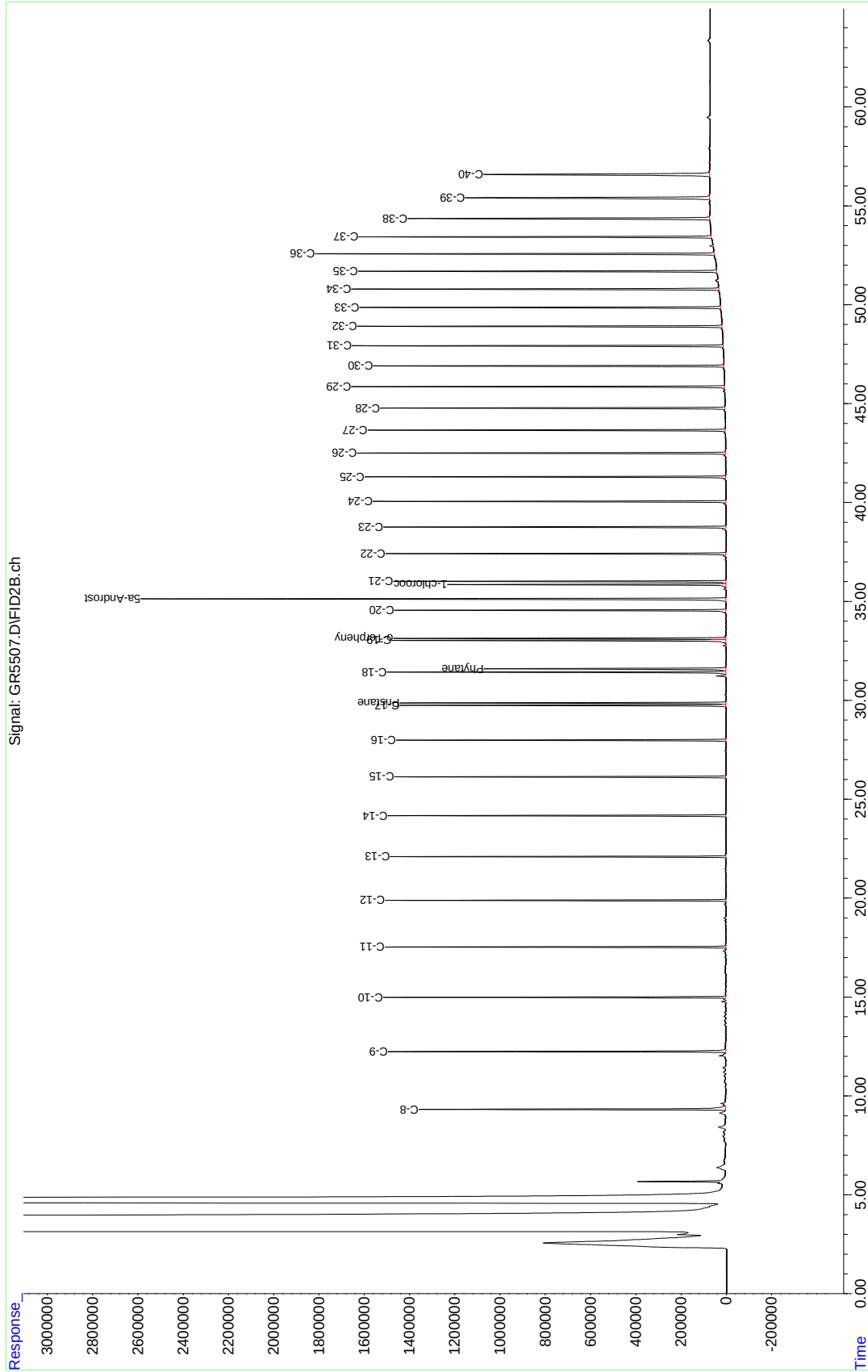
ALS Vial : 4 Sample Multiplier: 1

Acq On : 1 Apr 2016 8:22 pm Operator: MIKEW

Quant Time: Apr 05 12:24:54 2016

Quant Method : G:\1\methods\GCGR160401ALK-Rear.m

Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids



Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5508.D

Sample : IC173-50.0, FS-179

Misc : OP46636, GGR173,,,2,1

ALS Vial : 5 Sample Multiplier: 1

Acq On : 1 Apr 2016 9:43 pm

Operator: MIKEW

Quant Time: Apr 05 12:28:34 2016

Quant Method : G:\1\methods\GCGR160401ALK-Rear.m

Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Compound	R.T.	Response	Conc Units

Internal Standards			
1) I 5a-Androstane	35.130	78025361	50.000 µg/mL
System Monitoring Compounds			
2) S o-Terphenyl	33.138	79899558	47.582 µg/mL
Spiked Amount 25.000		Recovery =	190.33%
3) S 1-chlorooctadecane	35.860	63609889	48.727 µg/mL
Target Compounds			
4) C-8	9.324	63554655	47.334 µg/mL
5) C-9	12.247	67271551	46.979 µg/mL
6) C-10	14.993	69001326	47.711 µg/mL
7) C-11	17.533	69749002	48.363 µg/mL
8) C-12	19.895	71046665	48.741 µg/mL
9) J1 C-13	22.103	71082163	48.645 µg/mL
11) J1 C-14	24.179	72407380	48.800 µg/mL
13) C-15	26.138	72313016	48.582 µg/mL
14) J1 C-16	27.994	72825962	48.415 µg/mL
16) C-17	29.757	72503408	48.596 µg/mL
17) Pristane	29.878	73646959	48.357 µg/mL
18) C-18	31.435	74653591	48.559 µg/mL
19) Phytane	31.603	65123494	48.671 µg/mL
20) C-19	33.037	77032598	49.374 µg/mL
21) C-20	34.562	73229659	48.025 µg/mLm
22) C-21	36.024	73463860	47.890 µg/mLm
23) C-22	37.427	74694336	47.965 µg/mLm
24) C-23	38.772	74294214	47.188 µg/mLm
25) C-24	40.064	74068997	47.418 µg/mLm
26) C-25	41.310	74800164	47.318 µg/mLm
27) C-26	42.511	75090490	47.177 µg/mLm
28) C-27	43.667	72682936	46.997 µg/mLm
29) C-28	44.787	73023890	46.936 µg/mLm
30) C-29	45.870	74440031	46.918 µg/mLm
31) C-30	46.918	72526064	46.948 µg/mLm
32) C-31	47.935	75953167	46.938 µg/mLm
33) C-32	48.918	74999093	46.898 µg/mLm
34) C-33	49.874	73777500	46.967 µg/mL
35) C-34	50.799	76704030	47.064 µg/mLm
36) C-35	51.702	74511311	47.080 µg/mLm
37) C-36	52.584	82843587	47.399 µg/mLm
38) C-37	53.442	74201331	47.525 µg/mLm
39) C-38	54.373	76226227	47.671 µg/mLm
40) C-39	55.418	73257104	47.947 µg/mLm
41) C-40	56.606	74828420	48.350 µg/mLm

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window

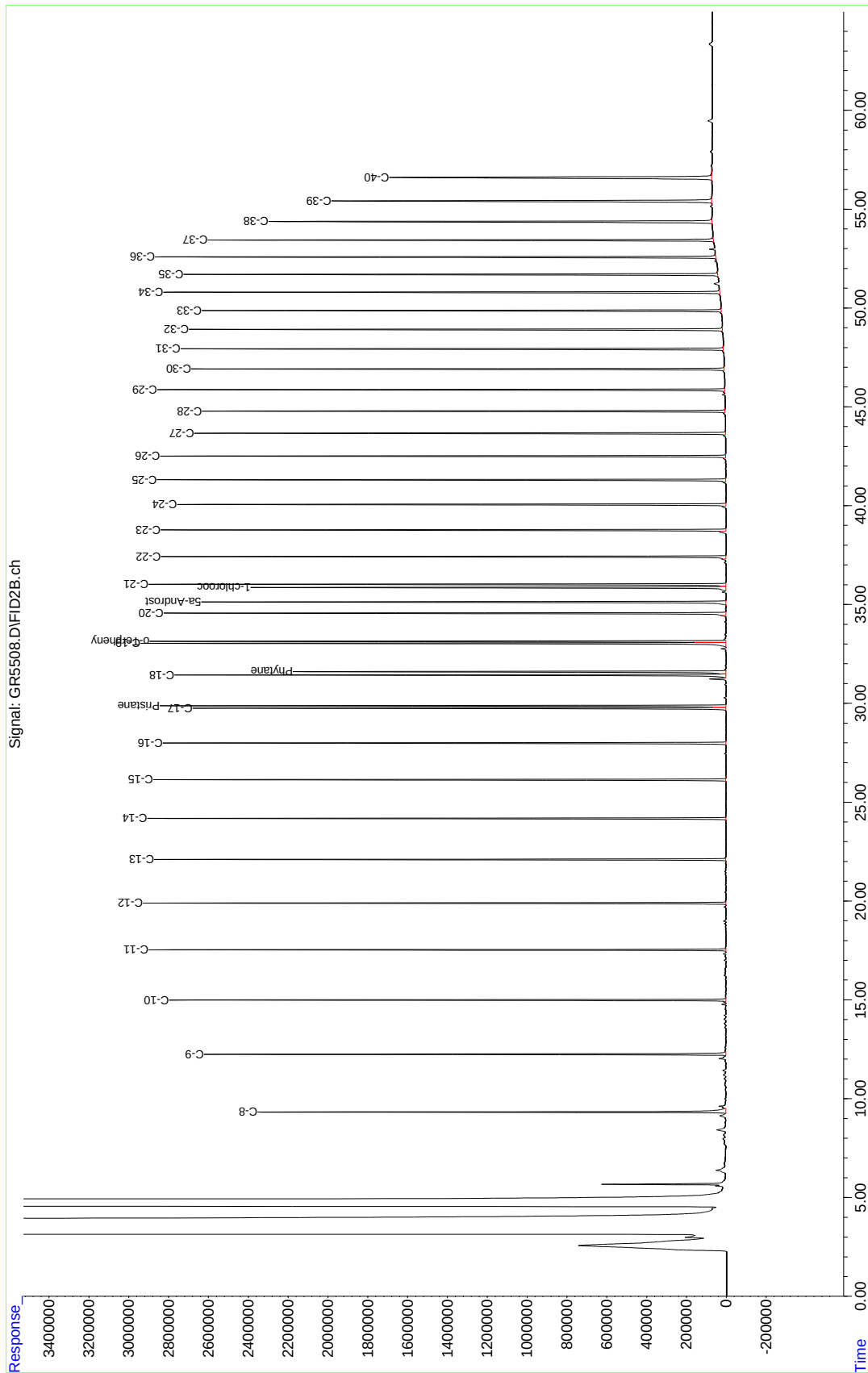
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Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5508.D
Sample : IC173-50.0, FS-179
Misc : OP46636, GGR173,,,2,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 1 Apr 2016 9:43 pm

Operator: MIKEW

Quant Time: Apr 05 12:28:34 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids



Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5509.D

Sample : IC173-100.0, FS-179

Misc : OP46636, GGR173,,,2,1

ALS Vial : 6 Sample Multiplier: 1

Acq On : 1 Apr 2016 11:03 pm

Operator: MIKEW

Quant Time: Apr 05 12:33:40 2016

Quant Method : G:\1\methods\GCGR160401ALK-Rear.m

Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Compound	R.T.	Response	Conc Units

Internal Standards			
1) I 5a-Androstane	35.134	83777778	50.000 µg/mLm
System Monitoring Compounds			
2) S o-Terphenyl	33.156	171300257	95.313 µg/mL
Spiked Amount 25.000		Recovery =	381.25%
3) S 1-chlorooctadecane	35.874	138736750	98.873 µg/mLm
Target Compounds			
4) C-8	9.372	129538509	88.875 µg/mL
5) C-9	12.268	144473972	93.181 µg/mLm
6) C-10	15.007	151203203	96.729 µg/mLm
7) C-11	17.544	152920389	98.215 µg/mLm
8) C-12	19.905	155738074	99.103 µg/mLm
9) J1 C-13	22.112	155858276	99.055 µg/mLm
11) J1 C-14	24.188	158543110	99.303 µg/mLm
13) C-15	26.149	158348927	98.938 µg/mLm
14) J1 C-16	28.007	159288935	98.534 µg/mL
16) C-17	29.771	161428873	100.639 µg/mL
17) Pristane	29.893	158141783	96.667 µg/mL
18) C-18	31.450	163758606	99.106 µg/mL
19) Phytane	31.619	141598380	98.398 µg/mL
20) C-19	33.053	168794302	100.318 µg/mLm
21) C-20	34.578	159765847	97.705 µg/mLm
22) C-21	36.043	159666264	97.118 µg/mL
23) C-22	37.444	162681967	97.488 µg/mLm
24) C-23	38.790	161884583	96.019 µg/mL
25) C-24	40.084	161323753	96.416 µg/mLm
26) C-25	41.331	162943205	96.185 µg/mLm
27) C-26	42.531	162981764	95.539 µg/mLm
28) C-27	43.690	158104095	95.382 µg/mLm
29) C-28	44.806	158743038	95.196 µg/mLm
30) C-29	45.891	161559515	94.996 µg/mLm
31) C-30	46.938	157682672	95.219 µg/mLm
32) C-31	47.955	164849546	95.035 µg/mLm
33) C-32	48.940	162676174	94.885 µg/mLm
34) C-33	49.895	159983303	94.984 µg/mLm
35) C-34	50.826	165972681	94.965 µg/mLm
36) C-35	51.727	161598469	95.281 µg/mLm
37) C-36	52.607	179126136	95.547 µg/mLm
38) C-37	53.468	160249071	95.721 µg/mLm
39) C-38	54.403	164557911	95.956 µg/mLm
40) C-39	55.453	158899538	97.017 µg/mLm
41) C-40	56.646	162063474	97.674 µg/mLm

SemiQuant Compounds - Not Calibrated on this Instrument

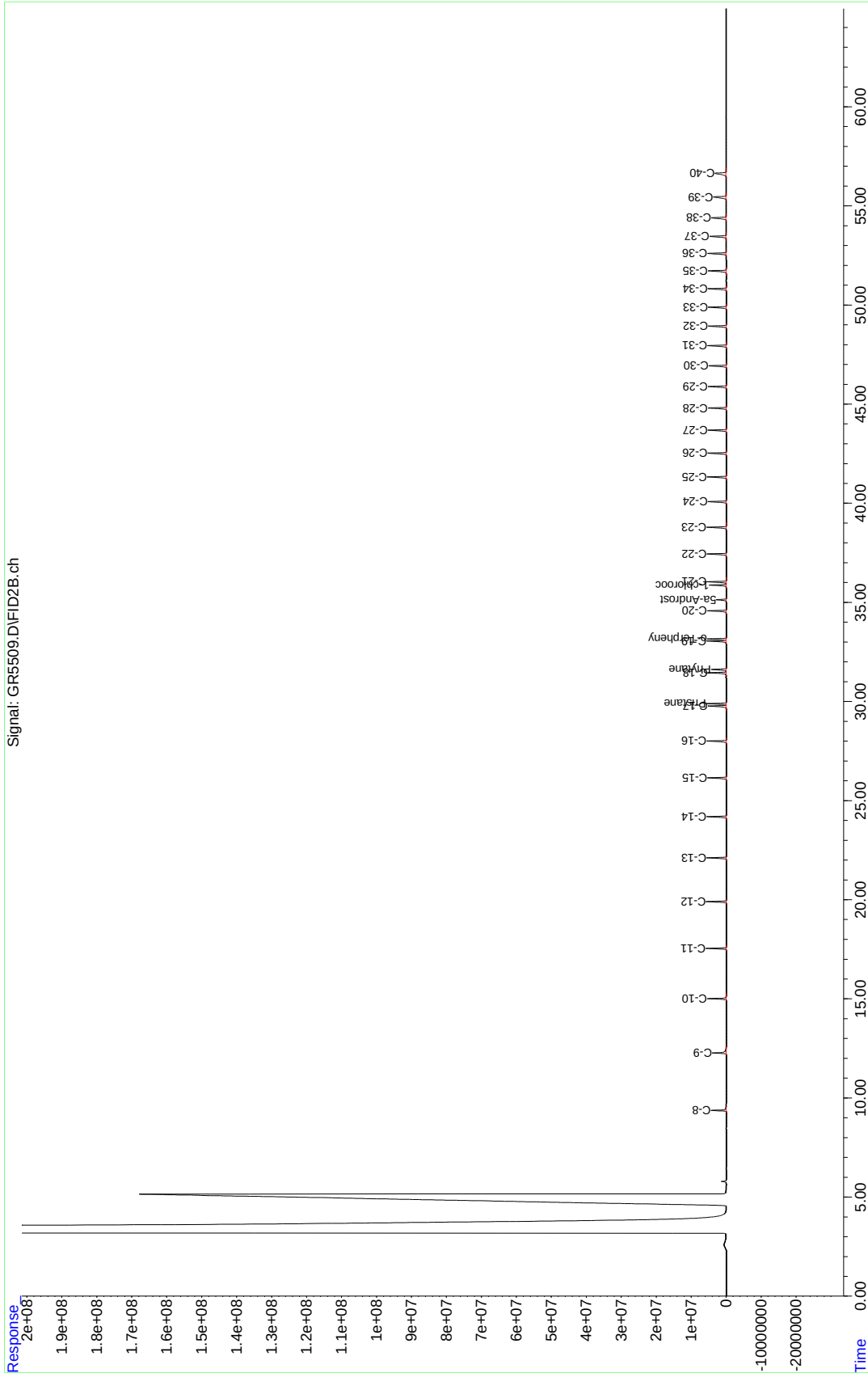
(f)=RT Delta > 1/2 Window

(m)=manual int.

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5509.D
Sample : IC173-100.0, FS-179
Misc : OP46636,GGR173,,2,1
ALS Vial : 6 Sample Multiplier: 1
Acq On : 1 Apr 2016 11:03 pm Operator: MIKEW

Quant Time: Apr 05 12:33:40 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids



Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5510.D

Sample : IC173-200.0, FS179

Misc : OP46636, GGR173,,,2,1

ALS Vial : 7 Sample Multiplier: 1

Acq On : 2 Apr 2016 12:21 am

Operator: MIKEW

Quant Time: Apr 05 12:37:46 2016

Quant Method : G:\1\methods\GCGR160401ALK-Rear.m

Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Compound	R.T.	Response	Conc Units

Internal Standards			
1) I 5a-Androstane	35.137	78813207	50.000 µg/mL
System Monitoring Compounds			
2) S o-Terphenyl	33.182	323309049	192.000 µg/mLm
Spiked Amount 25.000		Recovery =	768.00%
3) S 1-chlorooctadecane	35.900	272129979	205.662 µg/mL
Target Compounds			
4) C-8	9.420	261053953	190.613 µg/mLm
5) C-9	12.298	276938187	188.953 µg/mL
6) C-10	15.031	288324979	194.866 µg/mL
7) C-11	17.565	295037003	200.382 µg/mL
8) C-12	19.925	300592410	202.435 µg/mL
9) J1 C-13	22.132	304078561	204.679 µg/mL
11) J1 C-14	24.209	309447603	205.378 µg/mLm
13) C-15	26.171	309121981	204.731 µg/mL
14) J1 C-16	28.029	311110731	204.058 µg/mL
16) C-17	29.796	316378860	208.464 µg/mL
17) Pristane	29.920	307862960	200.119 µg/mL
18) C-18	31.475	320340578	205.420 µg/mL
19) Phytane	31.645	276504081	203.880 µg/mL
20) C-19	33.080	344278206	216.215 µg/mL
21) C-20	34.604	311777829	202.481 µg/mLm
22) C-21	36.070	312989519	202.315 µg/mLm
23) C-22	37.469	320524835	203.988 µg/mL
24) C-23	38.816	317642466	200.250 µg/mLm
25) C-24	40.109	318914875	202.554 µg/mL
26) C-25	41.356	320760849	201.160 µg/mL
27) C-26	42.558	321693007	200.463 µg/mL
28) C-27	43.717	311609662	199.784 µg/mL
29) C-28	44.836	313054191	199.513 µg/mL
30) C-29	45.919	319031213	199.411 µg/mL
31) C-30	46.967	310779240	199.450 µg/mL
32) C-31	47.986	324398215	198.740 µg/mLm
33) C-32	48.970	320249171	198.578 µg/mLm
34) C-33	49.928	314894279	198.715 µg/mLm
35) C-34	50.856	326910216	198.868 µg/mLm
36) C-35	51.757	317984985	199.336 µg/mLm
37) C-36	52.642	353109021	200.252 µg/mLm
38) C-37	53.500	315855362	200.687 µg/mLm
39) C-38	54.443	325187062	201.648 µg/mLm
40) C-39	55.501	313825006	203.776 µg/mLm
41) C-40	56.699	320876400	205.756 µg/mLm

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window

(m)=manual int.

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5510.D

Sample : IC173-200.0, FSI79

Misc : OP46636, GGR173, 2, 1

ALS Vial : 7 Sample Multiplier: 1

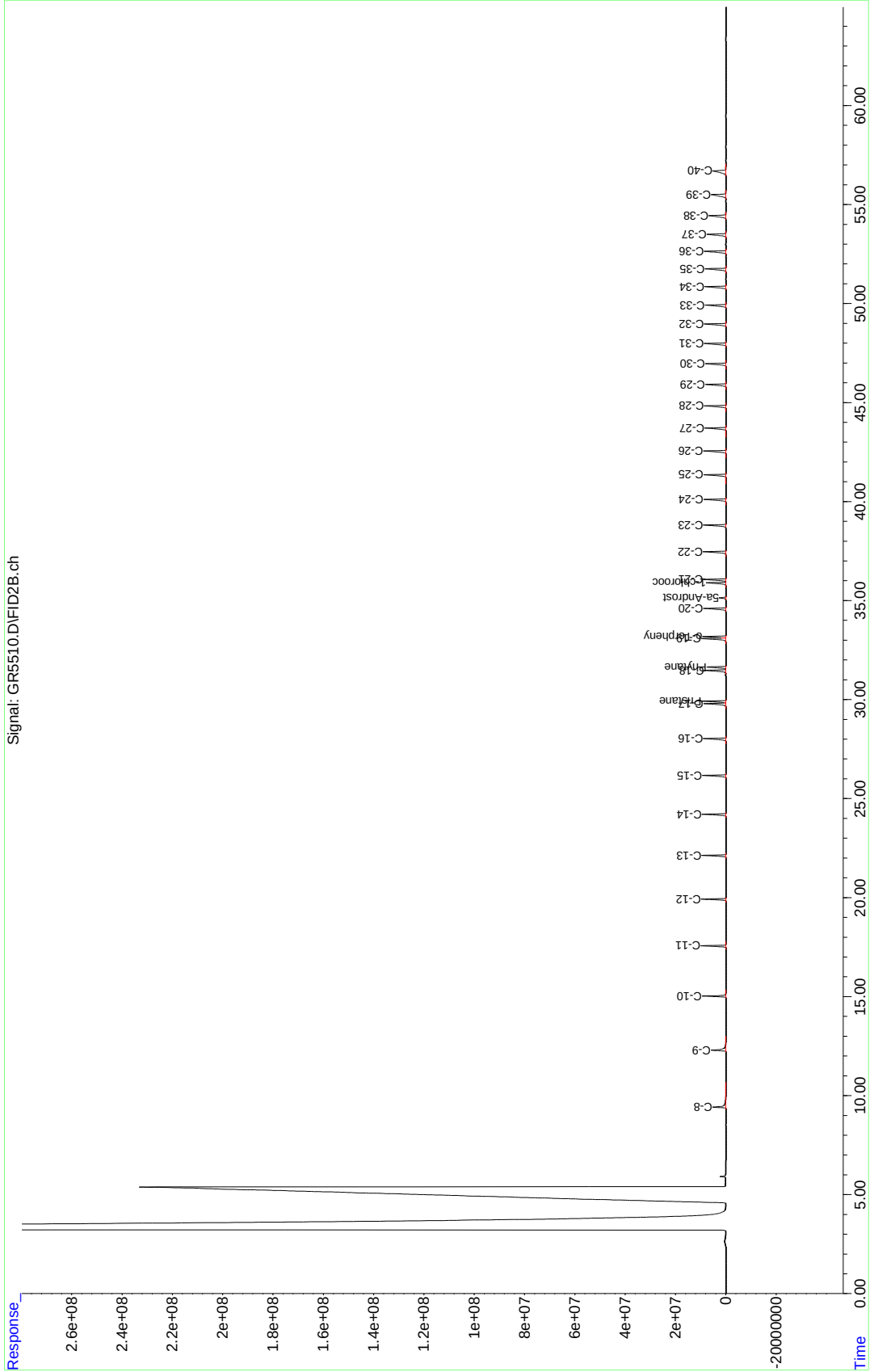
Acq On : 2 Apr 2016 12:21 am

Operator: MIKEW

Quant Time: Apr 05 12:37:46 2016

Quant Method : G:\1\methods\GCGR160401ALK-Rear.m

Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids



Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5511.D

Sample : ICV173-25.0, FS-185

Misc : OP46636,GGR173,,,2,1

ALS Vial : 8 Sample Multiplier: 1

Acq On : 2 Apr 2016 1:40 am

Operator: MIKEW

Quant Time: Apr 11 12:22:03 2016

Quant Method : G:\1\methods\GCGR160401ALK-Rear.m

Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Compound	R.T.	Response	Conc Units
Internal Standards			
1) I 5a-Androstane	35.131	94249823	50.000 µg/mL
System Monitoring Compounds			
2) S o-Terphenyl	33.127	47105469	23.594 µg/mL
Spiked Amount 25.000		Recovery =	94.38%
3) S 1-chlorooctadecane	35.850	37289628	23.480 µg/mL
Target Compounds			
4) C-8	9.324	37786788	22.975 µg/mL
5) C-9	12.241	40284912	22.910 µg/mL
6) C-10	14.985	41298324	23.262 µg/mL
7) C-11	17.525	41678377	23.579 µg/mL
8) C-12	19.887	42349677	23.780 µg/mL
9) J1 C-13	22.094	42697808	23.946 µg/mL
11) J1 C-14	24.170	43074140	23.831 µg/mL
13) C-15	26.129	43094183	23.794 µg/mL
14) J1 C-16	27.984	43644923	23.872 µg/mL
16) C-17	29.748	44103259	24.150 µg/mL
17) Pristane	29.868	42897965	23.321 µg/mL
18) C-18	31.426	44964581	24.027 µg/mL
19) Phytane	31.595	44043783	27.095 µg/mL
20) C-19	33.027	45451858	23.570 µg/mL
21) C-20	34.553	44499411	24.141 µg/mL
22) C-21	36.016	44843260	24.208 µg/mL
23) C-22	37.417	44532683	23.636 µg/mL
24) C-23	38.761	44515723	23.436 µg/mL
25) C-24	40.056	44752579	23.702 µg/mL
26) C-25	41.300	42116920	22.033 µg/mL
27) C-26	42.502	45721890	23.769 µg/mL
28) C-27	43.659	46176397	24.693 µg/mL
29) C-28	44.778	45321536	24.089 µg/mL
30) C-29	45.859	44876282	23.393 µg/mL
31) C-30	46.906	45686329	24.449 µg/mL
32) C-31	47.922	44248615	22.609 µg/mL
33) C-32	48.906	44547819	23.036 µg/mL
34) C-33	49.862	44419079	23.354 µg/mL
35) C-34	50.792	46774052	23.676 µg/mL
36) C-35	51.692	45296820	23.586 µg/mL
37) C-36	52.570	47445539	22.278 µg/mL
38) C-37	53.429	46016479	24.126 µg/mL
39) C-38	54.358	44867421	22.854 µg/mL
40) C-39	55.401	44060738	23.391 µg/mL
41) C-40	56.583	41146905	21.502 µg/mL

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window

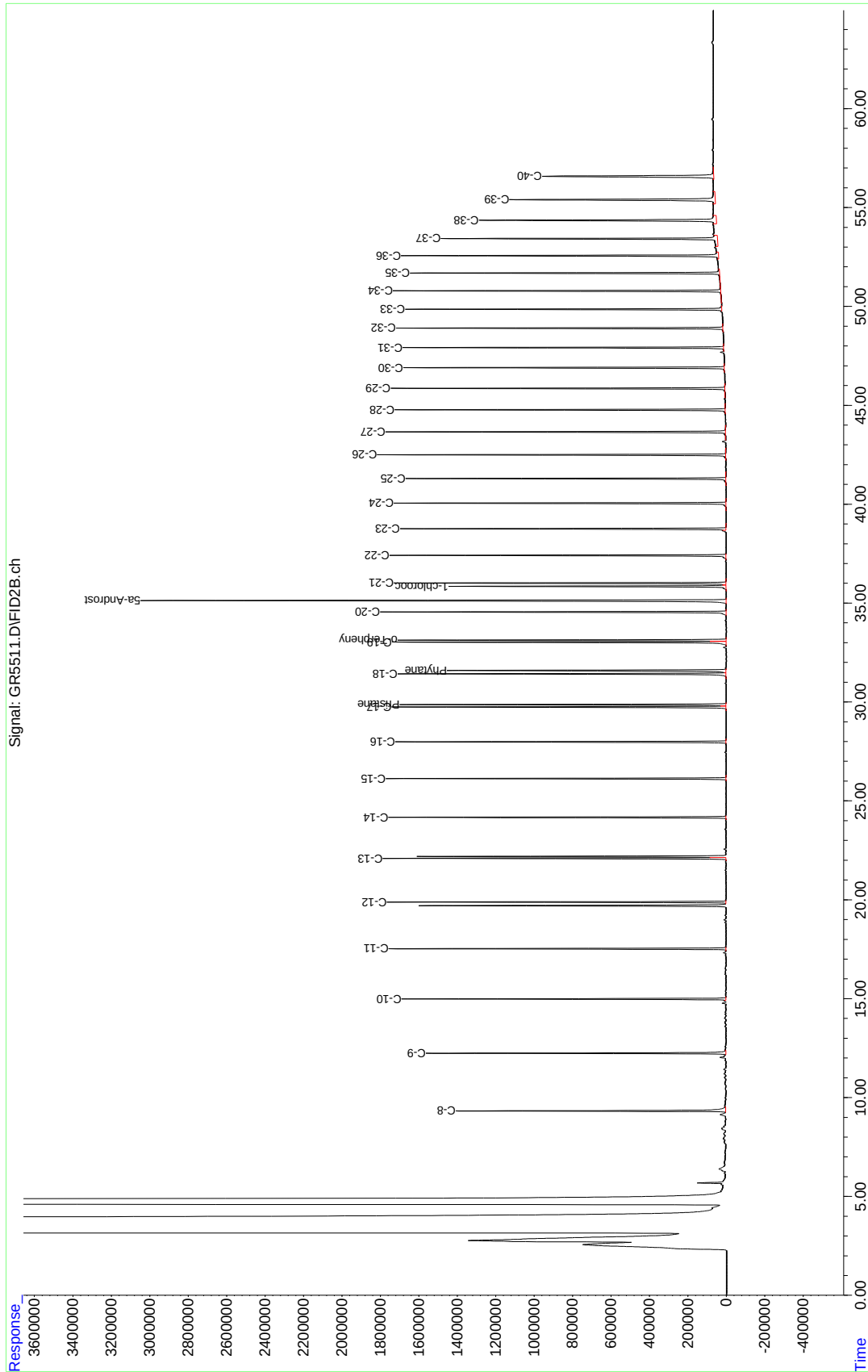
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Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5511.D
Sample : ICV173-25.0, FS-185
Misc : OP46636,GGR173,,,2,1
ALS Vial : 8 Sample Multiplier: 1
Acq On : 2 Apr 2016 1:40 am

Operator: MIKEW

Quant Time: Apr 11 12:22:03 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids



Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160629\GR6333.d
Sample : CC173-25, FS-209
Misc : OP47904,GGR206,,,2,1
ALS Vial : 2 Sample Multiplier: 1
Acq On : 30 Jun 2016 6:40 am

Operator: MIKEW

Quant Time: Jun 30 08:03:17 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Compound	R.T.	Response	Conc Units

Internal Standards			
1) I 5a-Androstane	35.212	123245706	50.000 µg/mLm
System Monitoring Compounds			
2) S o-Terphenyl	33.200	64381491	24.660 µg/mLm
Spiked Amount 25.000		Recovery =	98.64%
Target Compounds			
4) C-8	9.152	46307827	21.532 µg/mLm
5) C-9	12.123	52166056	22.687 µg/mLm
6) C-10	14.895	55470559	23.894 µg/mLm
7) C-11	17.457	57203255	24.748 µg/mL
8) C-12	19.836	57925744	24.874 µg/mL
9) J1 C-13	22.060	58536701	25.105 µg/mL
11) J1 C-14	24.151	58209643	24.628 µg/mL
13) C-15	26.122	58294772	24.614 µg/mL
14) J1 C-16	27.990	59356998	24.828 µg/mL
16) C-17	29.762	58331096	24.427 µg/mLm
17) Pristane	29.882	59106956	24.573 µg/mLm
18) C-18	31.451	58376097	23.855 µg/mLm
19) Phytane	31.620	52453582	24.677 µg/mL
20) C-19	33.059	59668637	23.663 µg/mLm
21) C-20	34.594	58503539	24.271 µg/mLm
22) C-21	36.064	59628278	24.617 µg/mLm
23) C-22	37.470	59338707	24.085 µg/mLm
24) C-23	38.821	59772614	24.065 µg/mLm
25) C-24	40.121	62031525	25.124 µg/mLm
26) C-25	41.372	59587588	23.839 µg/mLm
27) C-26	42.577	60172598	23.921 µg/mLm
28) C-27	43.740	58643024	23.982 µg/mL
29) C-28	44.861	60996239	24.793 µg/mL
30) C-29	45.947	58915674	23.486 µg/mL
31) C-30	46.998	60423879	24.728 µg/mL
32) C-31	48.012	61338294	23.968 µg/mL
33) C-32	49.000	60241657	23.822 µg/mL
34) C-33	49.958	59274085	23.833 µg/mL
35) C-34	50.886	59925389	23.197 µg/mL
36) C-35	51.788	59160829	23.558 µg/mL
37) C-36	52.667	63896159	22.944 µg/mLm
38) C-37	53.531	60114642	24.102 µg/mLm
39) C-38	54.475	63932102	24.903 µg/mLm
40) C-39	55.540	62125383	25.222 µg/mL
41) C-40	56.747	61869220	24.724 µg/mLm

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window

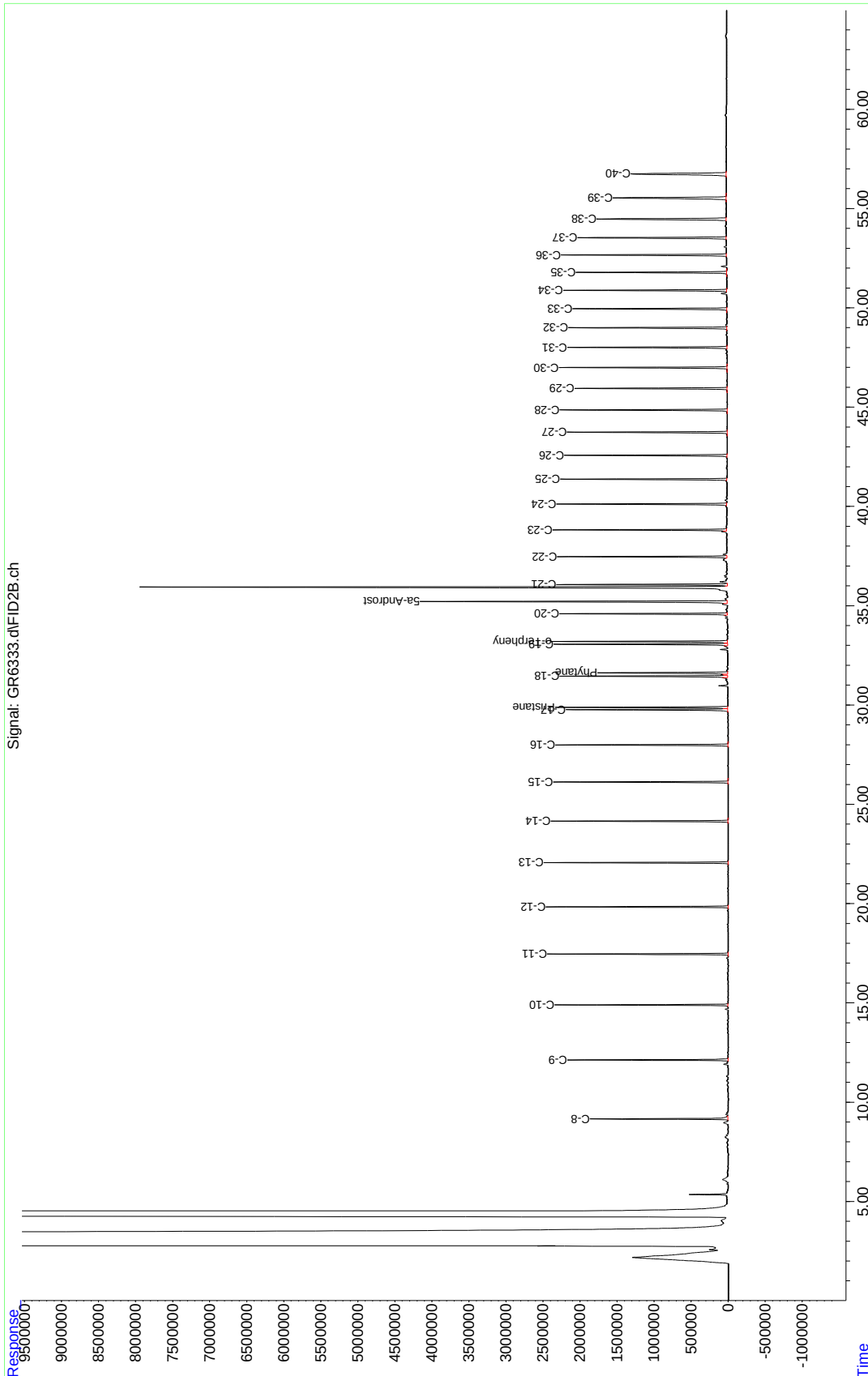
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Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160629\GR6333.d
 Sample : CC173-25, FS-209
 Misc : OP47904, GGR206,,,2,1
 ALS Vial : 2 Sample Multiplier: 1
 Acq On : 30 Jun 2016 6:40 am

Operator: MIKEW

Quant Time: Jun 30 08:03:17 2016
 Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
 Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids



Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6335.d
Sample : CC173-25, FS-209
Misc : OP47904,GGR207,,,2,1
ALS Vial : 2 Sample Multiplier: 1
Acq On : 30 Jun 2016 10:33 am

Operator: MIKEW

Quant Time: Jun 30 15:12:07 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Compound	R.T.	Response	Conc Units

Internal Standards			
1) I 5a-Androstane	35.210	113534154	50.000 µg/mLm
System Monitoring Compounds			
2) S o-Terphenyl	33.197	59592533	24.778 µg/mLm
Spiked Amount 25.000		Recovery =	99.11%
Target Compounds			
4) C-8	9.140	41543531	20.969 µg/mLm
5) C-9	12.119	47739310	22.538 µg/mLm
6) C-10	14.894	50692760	23.704 µg/mLm
7) C-11	17.457	52593626	24.700 µg/mL
8) C-12	19.835	53280426	24.837 µg/mL
9) J1 C-13	22.060	53866413	25.078 µg/mL
11) J1 C-14	24.150	53568572	24.603 µg/mL
13) C-15	26.122	53673577	24.602 µg/mL
14) J1 C-16	27.990	54647787	24.813 µg/mL
16) C-17	29.761	53766449	24.441 µg/mLm
17) Pristane	29.882	54701350	24.686 µg/mL
18) C-18	31.449	53740586	23.839 µg/mLm
19) Phytane	31.617	48362866	24.699 µg/mLm
20) C-19	33.058	54679160	23.539 µg/mLm
21) C-20	34.594	54341307	24.473 µg/mLm
22) C-21	36.064	55119077	24.701 µg/mLm
23) C-22	37.470	54715703	24.108 µg/mLm
24) C-23	38.822	55104068	24.083 µg/mLm
25) C-24	40.120	57457294	25.262 µg/mLm
26) C-25	41.370	55199101	23.972 µg/mLm
27) C-26	42.576	55421810	23.917 µg/mLm
28) C-27	43.737	53676030	23.828 µg/mLm
29) C-28	44.859	55877113	24.655 µg/mLm
30) C-29	45.944	54218871	23.463 µg/mL
31) C-30	46.994	55589181	24.695 µg/mL
32) C-31	48.012	56462621	23.950 µg/mL
33) C-32	48.999	55423430	23.792 µg/mL
34) C-33	49.955	54457543	23.769 µg/mL
35) C-34	50.884	55113054	23.159 µg/mL
36) C-35	51.787	54356468	23.496 µg/mL
37) C-36	52.665	58695573	22.879 µg/mLm
38) C-37	53.528	55198631	24.024 µg/mLm
39) C-38	54.468	58678024	24.812 µg/mLm
40) C-39	55.535	56807018	25.036 µg/mL
41) C-40	56.742	56711684	24.602 µg/mL

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window

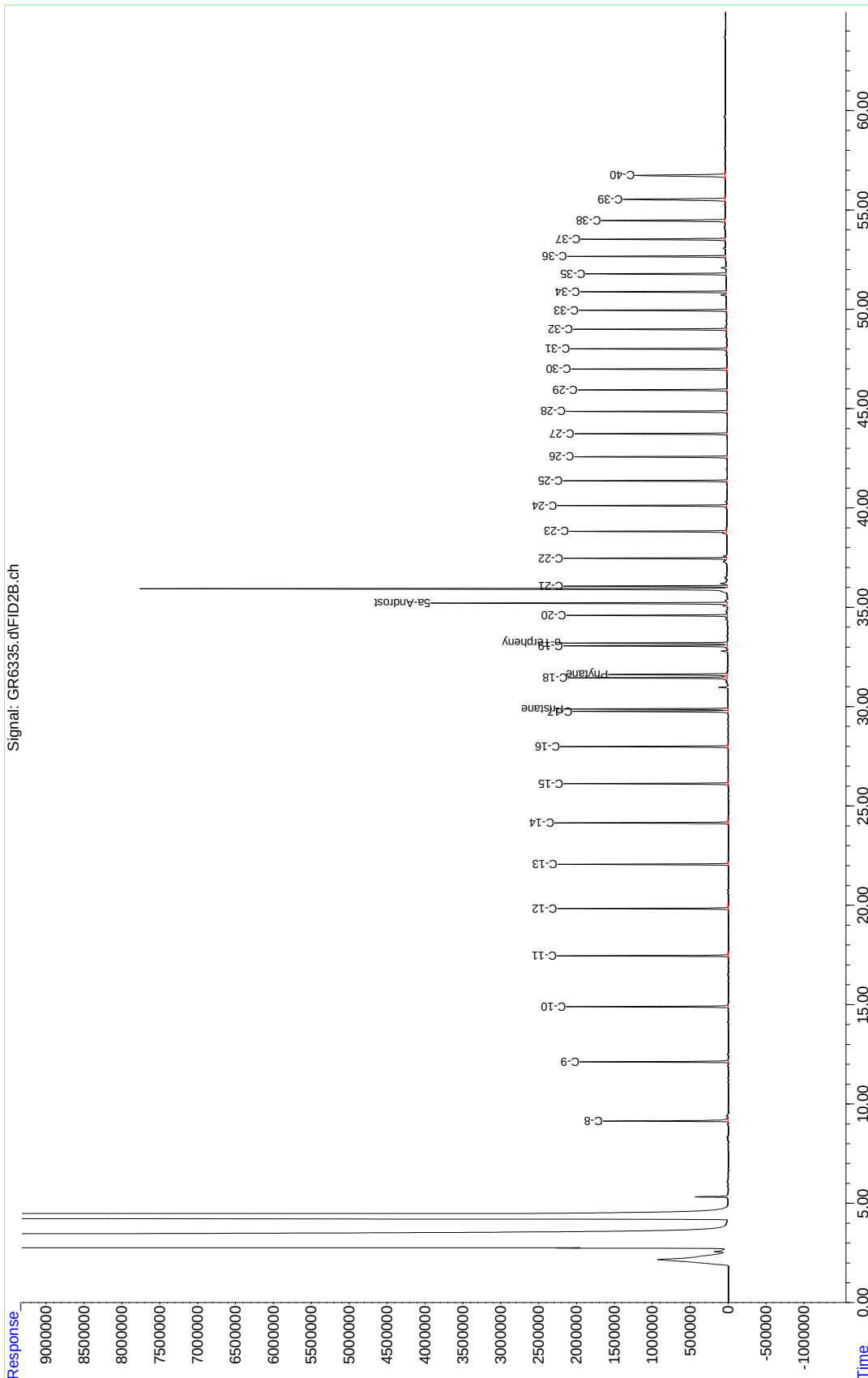
(m)=manual int.

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6335.d
 Sample : CC173-25, FS-209
 Misc : OP47904, GGR207,,,2,1
 ALS Vial : 2 Sample Multiplier: 1
 Acq On : 30 Jun 2016 10:33 am

Operator: MIKEW

Quant Time: Jun 30 15:12:07 2016
 Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
 Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids



Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6349.d
Sample : CC173-25, FS-209
Misc : OP47904, GGR207,,,2,1
ALS Vial : 99 Sample Multiplier: 1
Acq On : 1 Jul 2016 4:50 am

Operator: MIKEW

Quant Time: Jul 01 07:33:44 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Compound	R.T.	Response	Conc Units

Internal Standards			
1) I 5a-Androstane	35.213	136564944	50.000 µg/mLm
System Monitoring Compounds			
2) S o-Terphenyl	33.199	71736158	24.797 µg/mLm
Spiked Amount 25.000		Recovery =	99.19%
Target Compounds			
4) C-8	9.148	48171176	20.214 µg/mLm
5) C-9	12.120	56017083	21.986 µg/mLm
6) C-10	14.894	60607495	23.560 µg/mLm
7) C-11	17.455	62811856	24.524 µg/mLm
8) C-12	19.835	63755175	24.707 µg/mLm
9) J1 C-13	22.060	64614058	25.009 µg/mL
11) J1 C-14	24.151	64131815	24.487 µg/mL
13) C-15	26.123	64284445	24.496 µg/mL
14) J1 C-16	27.990	65482125	24.718 µg/mL
16) C-17	29.765	64023694	24.196 µg/mL
17) Pristane	29.882	65742806	24.666 µg/mL
18) C-18	31.450	64508388	23.790 µg/mLm
19) Phytane	31.619	57855590	24.564 µg/mLm
20) C-19	33.059	65508130	23.445 µg/mLm
21) C-20	34.595	66321946	24.831 µg/mLm
22) C-21	36.065	66479978	24.768 µg/mLm
23) C-22	37.470	65967134	24.164 µg/mLm
24) C-23	38.821	66682264	24.228 µg/mLm
25) C-24	40.118	69411471	25.372 µg/mLm
26) C-25	41.369	66443917	23.989 µg/mLm
27) C-26	42.573	66593258	23.892 µg/mLm
28) C-27	43.736	65166672	24.050 µg/mL
29) C-28	44.856	67337791	24.701 µg/mLm
30) C-29	45.944	65136618	23.434 µg/mL
31) C-30	46.992	66723193	24.643 µg/mL
32) C-31	48.010	67898663	23.944 µg/mL
33) C-32	48.995	66541577	23.747 µg/mL
34) C-33	49.953	65425913	23.741 µg/mL
35) C-34	50.881	66225220	23.135 µg/mL
36) C-35	51.786	65306264	23.469 µg/mL
37) C-36	52.664	70893137	22.973 µg/mL
38) C-37	53.527	66906197	24.209 µg/mL
39) C-38	54.467	70659106	24.839 µg/mL
40) C-39	55.532	68247368	25.005 µg/mL
41) C-40	56.737	67840053	24.466 µg/mL

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window

(m)=manual int.

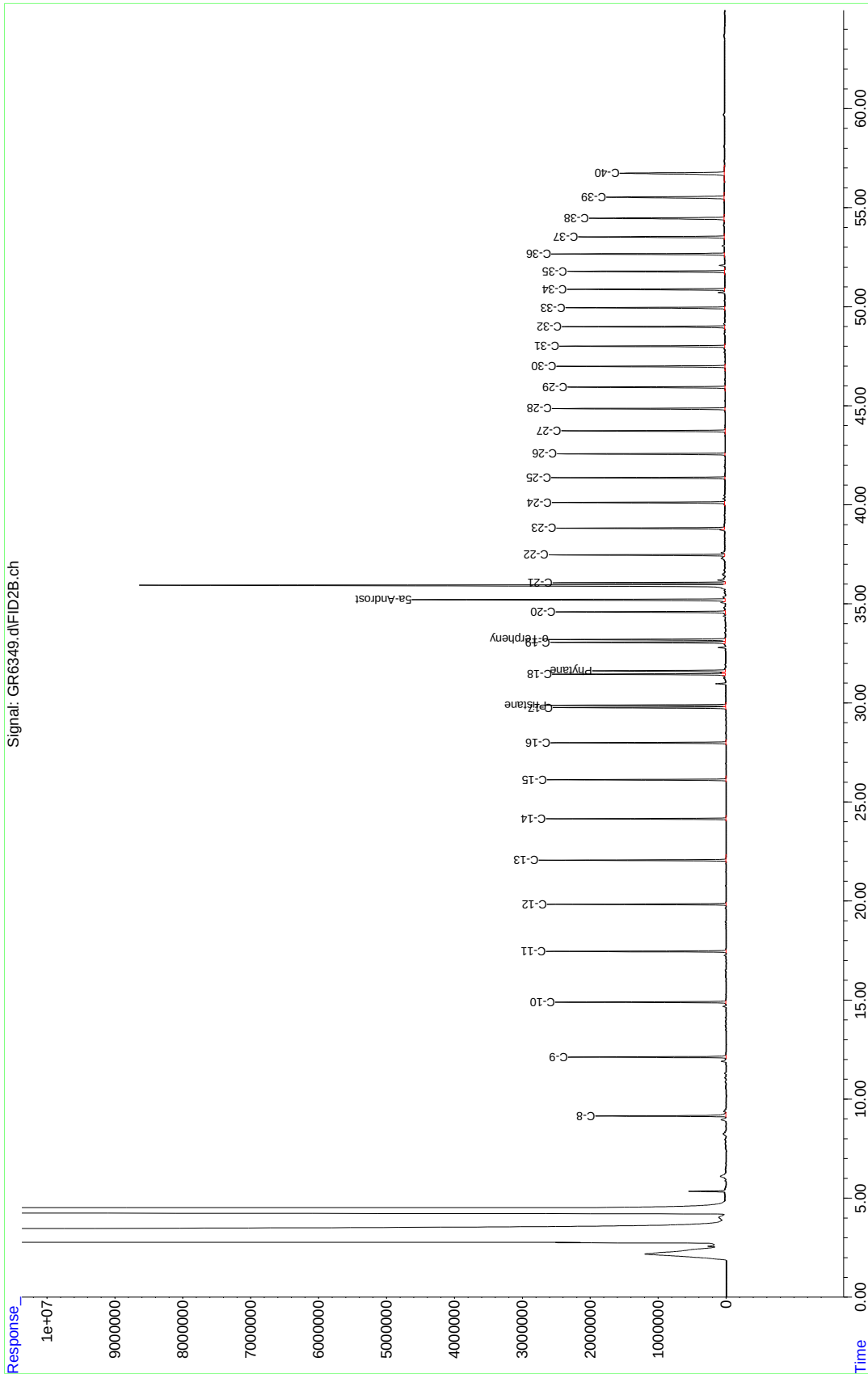
9.5.10
9

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6349.d
 Sample : CC173-25, FS-209
 Misc : OP47904,GGR207,,,2,1
 ALS Vial : 99 Sample Multiplier: 1
 Acq On : 1 Jul 2016 4:50 am

Operator: MIKEW

Quant Time: Jul 01 07:33:44 2016
 Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
 Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids



Run Date: 4/1/14 - SEC

Analyst Signature: MW

[illegible]

Rear) RTX-5 Alternate:

Sequence File: G/60401.SEC

Quantitation Methods: GCCR 1640/41E-Rear.M

Instrument Run Batches: ~~GGR173~~ ^{PAW} GGR173

Data Acquisition Methods: Forensic Data

Inl. Vol: 1

Inj. Vol:

Date of I/CAL: 4/1/16

ICAL Verified

Sample positions verified against sequence:

Vial #	Data File ID	Sample ID	Ext. Batch	Analysis	Matrix	Dilution	Comments
100	GR5502.D	DCM	N/A	N/A	N/A	N/A	
1	5503	1C173-10.0, FS-171		N/A			
1	5504						
2	5505	1C173-1.0, FS-171					
3	5506	1C173-5.0,					
4	5507	1C173-25.0					
5	5508	1C173-50.0,					
6	5509	1C173-100.0,					
7	5510	1C173-200.0,					
8	5511	1C173-25.0, FS-171					

Dilution Solvent:

Lot#: NA

✓ Date: 02/26/07

Review:

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G:\1\data\G160401_SEC\GRR511.D

Data File Name GRR511.D
 Data File Path G:\1\data\G160401_SEC\
 Operator MIKEW
 Date Acquired 4/2/2016 1:40
 Acq. Method File FORENSICDUAL.M
 Sample Name ICV173-25.0, FS-185
 Misc Info OP46536,GRR173,,2,1
 Vial Number 8
 Instrument Name GCG
 Number of Compounds 46.
 Sample Multiplier 1

Name	Level 1 Response	Level 2 Response	Level 3 Response	Level 4 Response	Level 5 Response	Level 6 Response
3a-Androstane	86540089	86598732	75776222	78025361	83777778	78813207
C-8	1732363	7378112	36086122	63654655	129538509	261053953
C-9	1863438	7857789	37687241	67271551	144473972	276938187
C-10	1811062	7913162	36933687	69001326	151203203	288324979
C-11	1771596	7852265	35562564	69749002	152920389	295037003
C-12	1734791	7991275	35456287	71046665	155738074	300592410
C-13	1732301	8014885	35214565	71082163	155856276	304078561
C-14	1737637	8111830	35720028	72407380	158543110	309447603
C-15	1743651	8203810	35761106	72313016	158348927	309121981
C-16	1770606	8277256	36197725	72823962	159288935	311110731
C-17	1740728	8174285	37402542	74653591	161428873	316378860
C-18	1789262	8408369	36099189	72503408	163758606	320340578
C-19	1804161	8503071	38355975	77032598	168794302	344278206
C-20	1786284	8382700	37046894	73463860	159765847	312989519
C-21	1803267	8440262	37620298	74294214	162681967	317642466
C-22	1828602	8669292	38305917	74068997	161884583	320524835
C-23	1897918	8634579	39113720	74800164	162943205	321693007
C-24	1823018	8536213	40430559	75090490	1587104095	311609662
C-25	1836472	8627047	41460312	72682936	158743038	313054191
C-26	1838142	8407167	41367661	73023890	161559515	310779240
C-27	1785118	8329739	41361171	72526064	157682672	324398215
C-28	1791315	8665959	42317719	75953167	164849546	320249171
C-29	1825374	8730888	43424904	74999093	159983303	314894279
C-30	1771729	8612841	42374746	73777500	165972681	326910216
C-31	1858479	8480574	42854231	74511311	161598469	317984985
C-32	1838260	8799645	42615493	74201331	160249071	353108021
C-33	1804146	8480574	42615493	74201331	160249071	31585362
C-34	1816971	8566614	42615493	74201331	160249071	325187062
C-35	2017482	8480574	42615493	74201331	160249071	313825006
C-36	1804134	8480574	42615493	74201331	160249071	320876400
C-37	181074	8480574	42615493	74201331	160249071	320876400
C-38	1762308	8480574	42615493	74201331	160249071	320876400
C-39	1762308	8480574	42615493	74201331	160249071	320876400
C-40	1772400	8480574	42615493	74201331	160249071	320876400
TPH (C8-C40)	1807332	8388417	39656933	73425992	159612369	313599105
DRO (C10-C28)	1790628	8315635	37671857	73050719	159683011	313035692
ORO (>C28-C40)	1831203	8614913	43064447	76176289	162920118	321242643

TPH (C8-C40) is calculated using the mean areas from all normal alkanes from C8 to C40.
 DRO (C10-C28) is calculated using the mean areas from all normal alkanes from C10 to C28.
 ORO (C28-C40) is calculated using the mean areas from all normal alkanes from C28 to C40.

Enter Bold Value Responses into Calibration Table for TPH (C8-C40), DRO (C10-C28) and TPH ORO (>C28-C40) compounds.

GC Analysis Log - Extractables

Run Date: 6/29/16Analyst Signature: MW

Standard Data

Lot #	Description	Conc
FS-191	RT Test	50 µg/mL
FS-209	CC173-25	25 µg/mL
FS-186	Qua Ibaa Crude	10.55 µg/mL
FS-218	PAH STD	25 µg/mL

Column Information: Front: RTX-5 Alternate:

(Rear) RTX-5 Alternate:

Sequence File: G160629Quantitation Methods: GCGR160YALIC-Rear-AInstrument Run Batches: GGR206Data Acquisition Methods: Forensic RearInj. Vol: 1

Inj. Vol:

Date of ICAL: 9/1/16ICAL Verified ☒Sample positions verified against sequence: ☒

Vial #	Data File ID	Sample ID	Ext. Batch	Analysis	Matrix	Dilution	Comments
1	GR6317.D	RT Test	NA	n-alk	NA	NA	FS-191
2	6318	CC173-25					FS-209
	6319						
	6321						
	6322	Qua Ibaa Crude					FS-186
	6323	PAH STD					FS-218
	6324	DCM					
5	6325	OP47995.MD	OP47995		S		
6	6326	-BS1			S		
7	6327	-D ₉					
8	6328	MC46486-1					
9	6329	OP47980-D ₉	OP47980			5X	
10	6330	MC46592-1					
11	6331	-2					
12	6332	DCM	NA		NA	NA	
13	6333	CC173-25					

Matrix: Designate W for water, S for soil, O for oil.

Dilution Solvent: DCMLot#: 163912

Review: _____

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Run Date:

Analyst Signature:

[illegible]

Column Information: Front: RTX-5 Alternate:

Rear RTX-5 Alternate:

Sequence File: G160630

Quantitation Methods: GCCR (6040) AILC Rec.M

Instrument Run Batches: 66R207

Data Acquisition Methods: Forensic Rec

Inj. Vol:

Ini. Vol:

Date of ICAL: 9/11/16

ICAL Verified

✓ Sample positions verified against sequence:

Vial #	Data File ID	Sample ID	Ext. Batch	Analysis	Matrix	Dilution	Comments
1	G6334.D	Qual/Don Card	NA	n-alk	NA	NA	FS-186
2	G6335	CC173-25	↓	↓	↓	↓	FS-209
3	G6336	PAH STD	↓	↓	↓	↓	FS-248
10e	G6337	DCM	↓	↓	↓	↓	
4	G6338	OPY7955-MD	OPY7955	↓	○	↓	
5	G6339	-DS1	↓	↓	↓	↓	
6	G6340	-Dp2	↓	↓	↓	↓	
7	G6341	MCY6563-1	↓	↓	↓	↓	
8	G6342	OPY7955-Dp2	↓	↓	↓	5X	Pre-emptive Dilution, Not needed
9	G6343	MCY6563-1	↓	↓	↓	↓	
10	G6344	OPY7955-Dp1	↓	↓	↓	NA	
11	G6345	MCY6544-1	↓	↓	↓	↓	
12	G6346	OPY7955-Dp1	↓	↓	↓	5X	
13	G6347	MCY6544-1	↓	↓	↓	↓	
10e	G6348	DCM	NA	↓	NA	NA	
99	G6349	CC173-25	↓	↓	↓	↓	FS-209

MTX = Matrix. Designate **W** for water, **S** for soil, **O** for oil.

Dilution Solvent:

Lot#:

Date: 02/26/07

Review:

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SGS ACCUTEST, Inc.

[illegible]

MOP016-01 (2/19/15)