



Fw: Transmittal of final report August 2011 sampling event
Scott Miller to: Debbie Jourdan

10/21/2011 11:38 PM

Debbie,
Good morning, please save this to SDMS for Capital City Plume.
Thanks,

Scott Miller
Remedial Project Manager
Superfund Division
Superfund Remedial Branch
Section C
U.S. EPA Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
Phone (404) 562-9120
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----- Forwarded by Scott Miller/R4/USEPA/US on 10/21/2011 11:34 PM -----

From: James E Landmeyer <jlandmey@usgs.gov>
To: Scott Miller/R4/USEPA/US@EPA
Date: 10/19/2011 11:06 AM
Subject: Transmittal of final report August 2011 sampling event

Hi Scott,

Here is the subject report for the work done August 16-18, 2011, to collect indoor air and outdoor soil-gas samples.

James E. Landmeyer, Ph.D.
U.S. Geological Survey



<https://profile.usgs.gov/jlandmey>FINAL REPORT USGS CCP Montgomery Alabama 8 2011.pdf



GORE[®] Surveys

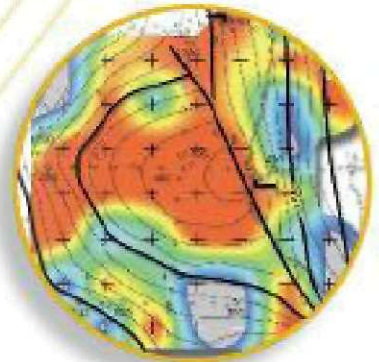
Final Report

Project: Alabama Site Phase 2
Gore Order Number: 21230476
Date Prepared: September 27, 2011
Prepared for: USGS-WRD
75 Techna Center Drive
Montgomery, AL 36117

Written/ Submitted by
Dayna M. Cobb
Project Manager

Reviewed/ Approved by
James E. Whetzel
Product Specialist

Analytical Data Reviewed by
Jeff Everhart
Chemist



W.L. Gore & Associates, Inc.
Survey Products Group

GORE® Surveys - Final Report

REPORT DATE: 09/27/2011

AUTHOR: DMC

SITE INFORMATION

Site Reference: Alabama Site Phase 2

Gore Production Order Number: 21230476

Gore Site Code: GCE

FIELD PROCEDURES

Modules shipped: 43

Installation Date(s): 8/16-8/17/2011

Modules Installed: 40

Field work performed by: USGS-WRD

Retrieval date(s): 8/16, 8/23/2011

Modules Retrieved: 40

Modules Lost in Field: 0

Modules Not Returned: 0

Exposure Time: 1 hour, 6 Days

Trip Blanks Returned: 3

Unused Modules Returned: 0

Date/Time Received by Gore: 8/26/2011 2:00 PM **By:** CW

Chain of Custody Form attached: Yes

Chain of Custody discrepancies: None

Comments:

All modules were returned with intact tamper seals.

Modules 670812, 670817, and 670818 were identified as trip blanks.

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QUALITY ASSURANCE STATEMENT

W.L. Gore & Associates' Survey Products' Laboratory operates under the guidelines of ISO Standard 17025, its Quality Assurance Manual, Operating Procedures and Methods. For this project, the analytical method, reported results, and observations reported are considered screening level and do not fall within the scope of W.L. Gore's ISO 17025 accreditation.

ANALYTICAL PROCEDURES

Instrumentation consists of state of the art gas chromatographs equipped with mass selective detectors, coupled with automated thermal desorption units. Sample preparation simply involves cutting the tip off the bottom of the sample module and transferring one or more exposed sorbent containers (sorbents, each containing engineered adsorbents) to a thermal desorption tube for analysis. Sorbents remain clean and protected from dirt, soil, and ground water by the insertion/retrieval cord, and require no further sample preparation.

Analytical Method Quality Assurance:

The analytical method employed is a modified EPA method 8260/8270. Before each run sequence, two instrument blanks, a sorbent containing 5µg BFB (Bromofluorobenzene), and a method blank are analyzed. The BFB mass spectra must meet the criteria set forth in the method before samples can be analyzed. A method blank and a sorbent containing BFB are also analyzed after every 30 samples and/or trip blanks. Standards containing the selected target compounds at five calibration levels are analyzed at the beginning of each run. The criterion for each target compound is less than 25% RSD (relative standard deviation). If this criterion is not met for any target compound, the analyst has the option of generating second- or third-order standard curves, as appropriate. A second-source reference standard, at a level of 10µg per target compound, is analyzed after every ten samples and/or trip blanks, and at the end of the run sequence. Positive identification of target compounds is determined by 1) the presence of the target ion and at least two secondary ions; 2) retention time versus reference standard; and, 3) the analyst's judgment.

NOTE: All data have been archived. Any replicate sorbents not used in the initial analysis will be discarded fifteen (15) days from the date of analysis.

Laboratory analysis: thermal desorption, gas chromatography, mass selective detection

Instrument ID: # 14 **Chemist:** DD/JE

Compounds/mixtures requested: A1

Deviations from Standard Method: High level standard was deleted for MtBE due to poor linearity.

Comments: Soil vapor analytes and abbreviations are tabulated in the Data Table Key (page 6).

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DATA TABULATION

NOTE: All data values presented in Appendix A represent masses of compound(s) desorbed from the GORE[®] Modules received and analyzed by W.L. Gore & Associates, Inc., as identified in the Chain of Custody (Appendix A). The measurement traceability and instrument performance are reproducible and accurate for the measurement process documented. Semi-quantitation of the compound mass is based on a five-level standard calibration.

General Comments:

- This survey reports mass levels adsorbed by the GORE[®] Module, as well as, calculated water, soil gas, and air concentration values.
- Soil vapors are subject to a variety of attenuation factors during migration away from the source concentration to the module. Thus, mass levels reported from the module will often be less than concentrations reported in soil and groundwater matrix data. In most instances, the masses reported on the modules compare favorably with concentrations reported in the soil or groundwater (e.g., where soil gas levels are reported at greater levels relative to other sampled locations on the site, matrix data should reveal the same pattern, and vice versa). However, due to a variety of factors, a perfect comparison between matrix data and soil gas levels can rarely be achieved.
- Soil gas signals reported by this method cannot be identified specifically to soil adsorbed, groundwater, and/or free-product contamination. The soil gas signal reported from each module can evolve from all of these sources. Differentiation between soil and groundwater contamination can only be achieved with prior knowledge of the site history (i.e., the site is known to have groundwater contamination only).
- Concentrations in air and soil gas were calculated using the observed mass, the reported exposure times, and experimentally measured and/or estimated compound specific uptake rates. No adjustments for wind velocity or temperature were made. It was assumed that ambient conditions were similar to uptake rate measurement conditions, which are typical for home or office environments. For soil gas, soil porosity values were also used to account for the restricted volume of air in the soil. A summary of the calculation procedure used is included in the appendix.
- Water concentrations are calculated using the quantified mass, exposure times, and compound specific uptake rates adjusted for water temperature and depth of installation. Compound uptake rates were determined in the laboratory by measuring mass adsorbed over different time periods and water concentrations. Rates were also adjusted for water temperature and for pressure and aquifer flow when depth of sampling and flows exceeded 34 feet and 10m/day respectively.
- The equation used to determine concentrations is as follows:
Conc., ug/L = mass, ug x (Exposure Time, hr/ Adjusted Uptake Rate, L/Hr)

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- Total petroleum hydrocarbon (TPH) values were calculated using the area under the peaks observed in m/z 55 and 57 selected ion chromatograms. Quantitation of the mass value was performed using the response factor a specific alkane (present in the calibration standards).
- TPH values include the entire chromatogram and provide estimates for aliphatic hydrocarbon ranges of C4 to C20.
- QA/QC trip blank modules were provided to document potential exposures that were not part of the signal of interest (i.e., impact during module shipment, installation and retrieval, and storage). The trip blanks are identically manufactured and packaged soil gas modules to those modules placed in the subsurface. However, the trip blanks remain unopened during all phases of the survey. Levels reported on the trip blanks may indicate potential impact to modules other than the contaminant source of interest.
- Unresolved peak envelopes (UPEs) are represented as a series of compound peaks clustered together around a central gas chromatograph elution time in the total ion chromatogram. Typically, UPEs are indicative of complex fluid mixtures that are present in the subsurface. UPEs observed early in the chromatogram are considered to indicate the presence of more volatile fluids, while UPEs observed later in the chromatogram may indicate the presence of less volatile fluids. Multiple UPEs may indicate the presence of multiple complex fluids.
- Stacked total ion chromatograms (TICs) are included in Appendix A. The six-digit serial number of each module is incorporated into the TIC identification (e.g.: 123456S.D represents module #123456).

Project Specific Comments:

- Modules 667997 was installed in a drainage pipe and treated as a water sampler.
- Modules 670800, 670801, 670803-670811, 670814 and 670816 were soil gas samples.
- The remainder of the modules are indoor air samplers.
- No target compounds were detected on the trip blanks and/or the method blanks. Thus, target analyte levels reported for the field-installed modules that exceed trip and method blank levels, and the analyte method detection limit, are more likely to have originated from on-site sources.

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KEY TO DATA TABLE

UNITS

µg	micrograms, relative mass value
µg/m ³	micrograms per cubic meter; estimated soil gas concentration
µg/L	micrograms per liter; estimated water concentration
MDL	method detection limit
bdl	below detection limit; compound was observed at level below the MDL
nd	non-detect, compound was not detected at any level
>	greater than; value considered estimated due to high mass levels

ANALYTES

TPH	total petroleum hydrocarbons
BTEX	combined masses of benzene, toluene, ethylbenzene and total xylenes (Gasoline Range Aromatics)
BENZ	benzene
TOL	toluene
EtBENZ	ethylbenzene
mpXYL	m-, p-xylene
oXYL	o-xylene
C11,C13&C15	combined masses of undecane, tridecane, and pentadecane (C11+C13+C15) (Diesel Range Alkanes)
UNDEC	undecane
TRIDEC	tridecane
PENTADEC	pentadecane
TMBs	combined masses of 1,3,5-trimethylbenzene and 1,2,4-trimethylbenzene
135TMB	1,3,5-trimethylbenzene
124TMB	1,2,4-trimethylbenzene
ct12DCE	cis- & trans-1,2-dichloroethene
t12DCE	trans-1,2-dichloroethene
c12DCE	cis-1,2-dichloroethene
NAPH&2-MN	combined masses of naphthalene and 2-methyl naphthalene
NAPH	naphthalene
2MeNAPH	2-methyl naphthalene
MTBE	methyl t-butyl ether
11DCA	1,1-dichloroethane
CHCl ₃	chloroform
111TCA	1,1,1-trichloroethane
12DCA	1,2-dichloroethane
CCl ₄	carbon tetrachloride
TCE	trichloroethene
OCT	octane
PCE	tetrachloroethene
CIBENZ	chlorobenzene
14DCB	1,4-dichlorobenzene
112TCA	1,1,2-trichloroethane
1112TetCA	1,1,1,2-tetrachloroethane
1122TetCA	1,1,2,2-tetrachloroethane
13DCB	1,3-dichlorobenzene
12DCB	1,2-dichlorobenzene

BLANKS

method blank	QA/QC module, documents analytical conditions during analysis
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APPENDIX A:

1. CHAIN OF CUSTODY AND INSTALLATION/ RETRIEVAL LOG
 2. DATA TABLES
3. SUMMARY OF CONCENTRATION CALCULATION PROCEDURE
 4. STACKED TOTAL ION CHROMATOGRAMS

GORE™ Screening Survey Chain of Custody

For W.L. Gore & Associates use only
Production Order # 21230476



W. L. Gore & Associates, Inc., Survey Products Group

100 Chesapeake Boulevard • Elkton, Maryland 21921 • Tel: (410) 392-7600 • Fax (410) 506-4780

Instructions: Customer must complete ALL shaded cells

Customer Name: <u>US GEOLOGICAL SURVEY</u>				Site Name: <u>ALABAMA SITE</u>			
Address: <u>75 TECHNACENTER DRIVE</u>				Site Address: <u>PHASE 2</u>			
<u>MONTGOMERY AL</u>							
Phone: <u>334 395 4128</u>				Project Manager: <u>AMY GILL</u>			
FAX: <u>334-395-4168</u>				Customer Project No.: _____			
				Customer P.O. #: _____		Quote #: _____	
Serial # of Modules Shipped				# of Modules for Installation <u>40</u>		# of Trip Blanks <u>3</u>	
# 667984 - # 668005	#	-	#	Total Modules Shipped: <u>43</u>		Pieces	
# 670798 - # 670818	#	-	#	Total Modules Received: <u>43</u>		Pieces	
# - #	#	-	#	Total Modules Installed: <u>40</u>		Pieces	
# - #	#	-	#	Serial # of Trip Blanks (Client Decides)			#
# - #	#	-	#	#	#	#	#
# - #	#	-	#	#	#	#	#
# - #	#	-	#	#	#	#	#
# - #	#	-	#	#	#	#	#
# - #	#	-	#	#	#	#	#
# - #	#	-	#	#	#	#	#
Prepared By: <u>William Mengle</u>				#	#	#	#
Verified By: <u>Barbara Galloway</u>				#	#	#	#
Installation Performed By:				Installation Method(s) (circle those that apply):			
Name (please print): <u>JAMES E. LANDMEYER</u>				Slide Hammer Hammer Drill Auger			
Company/Affiliation: <u>U.S. GEOLOGICAL SURVEY</u>				Other: _____			
Installation Start Date and Time: <u>08/16/2011</u> <u>10:40</u> <u>AM</u> <u>PM</u>							
Installation Complete Date and Time: <u>08/17/2011</u> <u>10:00</u> <u>AM</u> <u>PM</u>							
Retrieval Performed By:				Total Modules Retrieved: <u>40</u> Pieces			
Name (please print): <u>Amy C. Gill</u>				Total Modules Lost in Field: <u>0</u> Pieces			
Company/Affiliation: <u>U.S. Geological Survey</u>				Total Unused Modules Returned: _____ Pieces			
Retrieval Start Date and Time: <u>8/23/2011</u> <u>08:25</u> <u>AM</u> <u>PM</u>							
Retrieval Complete Date and Time: <u>8/23/2011</u> <u>11:20</u> <u>AM</u> <u>PM</u>							
Relinquished By: <u>William Mengle</u>	Date: <u>8/10/11</u>	Time: <u>2:00</u>	Received By: _____	Date: _____	Time: _____		
Affiliation: <u>W.L. Gore & Associates, Inc.</u>			Affiliation: _____				
Relinquished By: _____	Date: _____	Time: _____	Received By: _____	Date: _____	Time: _____		
Affiliation: _____			Affiliation: _____				
Relinquished By: <u>Amy C. Gill</u>	Date: <u>8/25/2011</u>	Time: <u>11:30</u>	Received By: <u>[Signature]</u>	Date: <u>8/26/11</u>	Time: <u>14:00</u>		
Affiliation: <u>U.S. Geological Survey</u>			Affiliation: <u>W.L. Gore & Associates, Inc.</u>				



W. L. Gore & Associates, Inc.
100 Chesapeake Boulevard
Elkton, MD USA 21921
ph: 410-302-7000

GORE Project No: ENV 21230476
Site Name: ALABAMA SITE
Site Location: Montgomery, Alabama

Company Name: US GEOLOGICAL SURVEY-MONTGOMERY AL
Location: Montgomery, Alabama
Samples collected by: Landmeyer/Gill

GORE® Surveys
Installation & Retrieval Log

* Optional or as needed

MODULE SERIAL NO.	FIELD ID* (e.g., arbitrary, US EPA)	SAMPLE TYPE (Field Sample, Trip Blank, Field Blank, etc.)	INSTALLATION DATE & TIME MM/DD/YYYY HH:MM (24 Hour) ex: 12/27/2008 13:30	RETRIEVAL DATE & TIME MM/DD/YYYY HH:MM (24 Hour) ex: 12/29/2008 13:30	OBSERVATIONS/COMMENTS* (e.g., sample depth, location description, missing, pulled from hole, etc. - as needed)	SAMPLE ENVIRONMENT* (e.g., grass, bare soil, through slab)	EVIDENCE OF LIQUID PETROLEUM HYDROCARBONS?		AT MINIMUM PROVIDE SOIL TYPE			LONGITUDE (easting) or X	LATITUDE (northing) or Y	COORDINATE SYSTEM* (e.g., UTM Zone, Stateplane, etc.)	COORDINATE DATUM* (e.g., WGS 84)
							ODOR ?	WATER IN INSTALLATION HOLE?	SOIL TYPE AT MODULE DEPTH (clay, loamy sand etc.)	TOTAL SOIL POROSITY AT MODULE DEPTH* (total volume of pores/total volume)	WATER FILLED SOIL POROSITY AT MODULE DEPTH* (volume of water/volume of pores)				
0067264		FIELD SAMPLE	8/19/11 10:43	8/23/11 8:33	Vapor (inside Annex II behind white panel)	indoor vapor									
0067265		FIELD SAMPLE	8/19/11 10:40	8/23/11 8:40	Vapor (inside Annex II ceiling panel in mezzanine) Park Office	indoor vapor									
0067266		FIELD SAMPLE	8/19/11 10:46	8/23/11 8:30	Vapor (inside Annex II light fixture mezzanine floor in between utility office)	indoor vapor									
0067267		FIELD SAMPLE	8/19/11 10:46	8/23/11 8:37	Vapor (inside Annex II in mezzanine cubicle office) flight code	indoor vapor									
0067268		FIELD SAMPLE	8/19/11 10:52	8/23/11 8:42	Vapor (inside Annex II in shed door storage Williams Creek)	indoor vapor									
0067269		FIELD SAMPLE	8/19/11 10:55	8/23/11 8:45	Vapor (inside Annex II in Room 109 Drain Pipe)	indoor vapor									
0067270		FIELD SAMPLE	8/19/11 11:26	8/23/11 9:20	Vapor (inside Annex II in Al handler main office, sunng grate)	indoor vapor		slightly							
0067261		FIELD SAMPLE	8/19/11 11:30	8/23/11 8:25	Vapor (inside Annex II in Archives Room 121)	indoor vapor									
0067262		FIELD SAMPLE	8/19/11 11:53	8/23/11 9:00											
0067263		FIELD SAMPLE	8/19/11 12:52	8/23/11 9:10	Vapor (inside Annex II in Book Room)	indoor vapor									
0067264		FIELD SAMPLE	8/19/11 13:10	8/23/11 9:13	Vapor (inside Annex II in HVAC Control room)	indoor vapor									
0067265		FIELD SAMPLE	8/19/11 13:17	8/23/11 9:05	Vapor (inside Annex II in Grate Room 125 closet w/cleaning supplies)	indoor vapor		intermittent							
0067266		FIELD SAMPLE	8/19/11 14:01	8/23/11 9:17	inside Annex II in floor of Room 109	concrete slab									
0067267		FIELD SAMPLE	8/19/11 16:14	8/18/11 17:23	Oil ALDOT in grass plot	indoor vapor									
0067268		FIELD SAMPLE	8/19/11 16:16	8/23/11 10:56	Oil ALDOT in ceiling beam	indoor vapor									
0067269		FIELD SAMPLE	8/19/11 16:26	8/23/11 11:15	Patrol Office in victim services support area in AB building	indoor vapor									
0068000		FIELD SAMPLE	8/19/11 16:30	8/23/11 11:13	Doris Hancock office - victim services support area in AB building	indoor vapor									
0068001		FIELD SAMPLE	8/19/11 16:36	8/23/11 11:10	Ashley's office victim services support area	indoor vapor									
0068002		FIELD SAMPLE	8/19/11 16:40	8/23/11 11:07	cubicle in Room 0815 victim services support	indoor vapor									
0068003		FIELD SAMPLE	8/19/11 16:52	8/23/11 11:20	Basement HVAC room (false supply room in AB building)	indoor vapor									
0068004		FIELD SAMPLE	8/19/11 17:00	8/23/11 11:03	Dirt Room in sub-basement of AB building	indoor vapor									
0068005		FIELD SAMPLE	8/17/11 10:00	8/23/11 9:56	Outside Annex II Grate in corner Lawrence/Washington	drainage grate	yes								
0067076		FIELD SAMPLE	8/17/11 10:11	8/23/11 9:41	Outside Annex II - Grate in back patio Lawrence/Washington corner	drainage grate									
0067079		FIELD SAMPLE	8/17/11 10:15	8/23/11 9:45	Outside Annex II - grate in street by West of Lawrence (S. Corner)	drainage grate	yes								
0067080		FIELD SAMPLE	8/17/11 11:50	8/23/11 9:48	Outside Annex II - Flower bed on Lawrence St.	flowerbed soil									
0067081		FIELD SAMPLE	8/17/11 12:00	8/23/11 9:52	Outside Annex II - Flower bed by Lawrence St. Door	flowerbed soil									
0067082		FIELD SAMPLE	8/17/11 13:00	8/23/11 8:49	Vapor (inside Annex II - 2nd Floor Tap Office Park)	indoor vapor									
0067083		FIELD SAMPLE	8/17/11 13:10	8/23/11 9:37	Outside Annex II (Washington Ave. flower bed) near Lawrence St.	flowerbed soil									
0067084		FIELD SAMPLE	8/17/11 13:15	8/23/11 9:36	Outside Annex II (by Washington Ave. Elevator)	flowerbed soil									
0067085		FIELD SAMPLE	8/17/11 15:13	8/23/11 10:05	Outside Annex II (Washington Ave./ McDonough St.) by parking lot west wing	grass									
0067086		FIELD SAMPLE	8/17/11 15:26	8/23/11 10:07	Outside Annex II (Washington Ave./ McDonough St.) by parking lot east wing	grass									
0067087		FIELD SAMPLE	8/17/11 15:26	8/23/11 10:07	Under manhole line in front of AG building	grass & leaves									
0067088		FIELD SAMPLE	8/17/11 15:20	8/23/11 10:37	Lean sample front of AG Building	grass									
0067089		FIELD SAMPLE	8/17/11 15:15	8/23/11 10:40	Lean sample front of AG Building	grass									
0067090		FIELD SAMPLE	8/17/11 15:10	8/23/11 10:44	Lean sample front of AG Building	grass									
0067091		FIELD SAMPLE	8/17/11 18:00	8/23/11 10:45	Lean sample by entrance steps in front of AG building	grass									
0067092		TRIP BLANK			Trip Blank										
0067093		FIELD SAMPLE	8/17/11 19:15	8/23/11 10:15	Street grate at Dexter and Decatur in grass at corner of Dexter and Decatur	drainage grate									
0067094		FIELD SAMPLE	8/17/11 19:17	8/23/11 10:20	Grate in grass at corner of Dexter and Decatur	grass									
0067095		FIELD SAMPLE	8/17/11 19:20	8/23/11 10:55	Grate in grass at corner of Dexter and Decatur	drainage grate									
0067096		FIELD SAMPLE	8/17/11 19:10	8/23/11 10:23	In grass at corner of Dexter and Decatur	grass									
0067097		TRIP BLANK			Trip Blank										
0067098		TRIP BLANK			Trip Blank										

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

DATE ANALYZED	SAMPLE NAME	TPH, ug	BTEX, ug	BENZ, ug	TOL, ug	EtBENZ, ug	mpXYL, ug	oXYL, ug	C11, C13, &C15, ug	UNDEC, ug
	MDL=	0.02		0.01	0.01	0.02	0.02	0.01		0.01
09/11/11	667984	41.24	1.85	nd	0.12	0.37	1.07	0.29	2.61	1.08
09/10/11	667985	59.99	1.83	0.02	0.11	0.35	1.05	0.30	4.05	1.39
09/10/11	667986	58.34	1.85	0.01	0.11	0.36	1.07	0.30	3.94	1.28
09/10/11	667987	50.92	1.68	0.02	0.10	0.33	0.96	0.27	3.29	1.16
09/12/11	667988	49.53	1.53	0.02	0.10	0.30	0.88	0.25	3.27	1.11
09/12/11	667989	53.65	2.56	nd	0.09	0.57	1.53	0.38	4.14	1.18
09/12/11	667990	49.00	1.19	nd	0.07	0.23	0.68	0.21	4.45	1.30
09/11/11	667991	89.60	2.69	bdl	0.13	0.53	1.58	0.45	8.78	1.86
09/12/11	667992	74.55	2.45	nd	0.15	0.46	1.39	0.45	6.15	1.64
09/12/11	667993	71.00	3.48	bdl	0.13	0.75	2.10	0.50	6.09	1.56
09/12/11	667994	73.88	2.86	nd	0.12	0.61	1.69	0.44	7.78	1.82
09/12/11	667995	92.50	3.80	0.01	0.11	0.78	2.30	0.59	6.97	1.37
09/12/11	667996	9.17	0.90	0.02	0.48	0.10	0.25	0.06	0.29	0.07
09/10/11	667997	1.62	0.06	0.01	0.04	nd	nd	nd	bdl	bdl
09/10/11	667998	35.91	0.63	nd	0.08	0.13	0.31	0.12	1.64	1.11
09/10/11	667999	103.94	2.14	nd	0.15	0.37	1.30	0.31	7.70	6.43
09/10/11	668000	99.17	2.13	bdl	0.16	0.37	1.29	0.31	7.83	6.56
09/11/11	668001	98.55	2.16	nd	0.17	0.37	1.30	0.31	7.28	5.94
09/12/11	668002	106.78	2.26	nd	0.16	0.39	1.38	0.33	8.12	6.26
09/10/11	668003	107.48	1.26	0.01	0.37	0.16	0.54	0.18	9.13	6.31
09/10/11	668004	81.60	1.74	nd	0.22	0.29	0.98	0.26	7.67	2.79
09/11/11	668005	12.25	0.18	0.01	0.10	bdl	0.05	0.03	0.17	0.10
09/11/11	670798	3.71	0.13	0.02	0.03	bdl	0.06	0.03	0.18	0.11
09/12/11	670799	5.05	0.15	0.01	0.04	bdl	0.07	0.03	0.03	0.03
09/10/11	670800	0.12	0.01	0.01	nd	nd	nd	nd	bdl	nd
09/11/11	670801	0.76	0.02	nd	0.02	nd	nd	nd	bdl	nd
09/10/11	670802	41.70	2.17	0.02	0.35	0.35	1.01	0.43	2.68	1.23
09/10/11	670803	24.60	nd	nd	nd	nd	nd	nd	0.02	bdl
09/11/11	670804	1.89	0.06	nd	0.06	nd	nd	nd	bdl	nd
09/10/11	670805	13.97	nd	nd	nd	nd	nd	nd	0.02	0.02
09/10/11	670806	5.26	nd	nd	nd	nd	nd	nd	bdl	bdl

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

DATE ANALYZED	SAMPLE NAME	TPH, ug	BTEX, ug	BENZ, ug	TOL, ug	EtBENZ, ug	mpXYL, ug	oXYL, ug	C11, C13, &C15, ug	UNDEC, ug
	MDL=	0.02		0.01	0.01	0.02	0.02	0.01		0.01
09/12/11	670807	23.12	0.30	bdl	0.30	nd	nd	nd	nd	nd
09/10/11	670808	0.73	0.01	nd	0.01	nd	nd	nd	0.01	bdl
09/10/11	670809	3.19	0.42	0.04	0.37	bdl	bdl	0.01	bdl	bdl
09/10/11	670810	0.90	0.07	nd	0.07	nd	nd	nd	bdl	bdl
09/10/11	670811	5.93	nd	nd	nd	nd	nd	nd	0.01	bdl
09/11/11	670813	4.27	0.15	0.02	0.04	bdl	0.06	0.03	0.23	0.10
09/11/11	670814	1.14	0.06	nd	0.06	nd	bdl	nd	bdl	bdl
09/10/11	670815	4.67	0.25	0.03	0.02	0.03	0.12	0.06	0.23	0.17
09/12/11	670816	1.17	bdl	nd	nd	nd	bdl	nd	0.04	0.02
09/10/11	670812	bdl	nd	nd	nd	nd	nd	nd	nd	nd
09/12/11	670817	bdl	nd	nd	nd	nd	nd	nd	nd	nd
09/10/11	670818	bdl	nd	nd	nd	nd	nd	nd	nd	nd
09/06/11	method blank	nd	nd	nd	nd	nd	nd	nd	nd	nd
09/07/11	method blank	nd	nd	nd	nd	nd	nd	nd	nd	nd
09/10/11	method blank	nd	nd	nd	nd	nd	nd	nd	nd	nd
09/11/11	method blank	bdl	nd	nd	nd	nd	nd	nd	nd	nd
	Maximum	107.48	3.80	0.04	0.48	0.78	2.30	0.59	9.13	6.56
	Standard Dev.	37.67	1.14	0.01	0.12	0.23	0.69	0.18	3.28	2.03
	Mean	39.07	1.13	0.01	0.12	0.21	0.63	0.17	2.87	1.35

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	TRIDEC, ug	PENTADEC, ug	TMBs, ug	124TMB, ug	135TMB, ug	ct12DCE, ug	t12DCE, ug	c12DCE, ug	NAPH&2-MN, ug
MDL=	0.01	0.01		0.01	0.02		0.05	0.02	
667984	0.48	1.05	0.84	0.37	0.47	nd	nd	nd	0.26
667985	0.88	1.78	1.27	0.52	0.75	nd	nd	nd	0.44
667986	0.90	1.76	1.21	0.51	0.70	nd	nd	nd	0.43
667987	0.69	1.44	1.15	0.46	0.69	nd	nd	nd	0.38
667988	0.72	1.44	1.08	0.42	0.66	nd	nd	nd	0.34
667989	0.94	2.03	1.33	0.72	0.62	nd	nd	nd	0.50
667990	1.43	1.73	2.21	1.49	0.72	nd	nd	nd	0.46
667991	2.87	4.05	2.69	1.62	1.07	nd	nd	nd	0.94
667992	1.67	2.84	1.82	1.01	0.81	nd	nd	nd	0.52
667993	1.63	2.91	2.24	1.32	0.92	nd	nd	nd	0.57
667994	2.33	3.63	3.18	2.05	1.13	nd	nd	nd	0.68
667995	1.74	3.86	1.43	1.03	0.40	nd	nd	nd	0.46
667996	0.10	0.12	0.21	0.14	0.07	nd	nd	nd	0.11
667997	bdl	nd	bdl	bdl	bdl	nd	nd	nd	bdl
667998	0.33	0.21	0.49	0.38	0.11	nd	nd	nd	1.33
667999	0.55	0.73	0.64	0.28	0.35	nd	nd	nd	0.25
668000	0.54	0.73	0.66	0.27	0.39	nd	nd	nd	0.24
668001	0.56	0.78	0.68	0.29	0.40	nd	nd	nd	0.27
668002	0.78	1.08	0.76	0.34	0.42	nd	nd	nd	0.31
668003	1.10	1.73	1.01	0.49	0.52	nd	nd	nd	0.44
668004	2.50	2.38	1.35	0.53	0.82	nd	nd	nd	0.62
668005	0.02	0.04	0.26	0.13	0.14	nd	nd	nd	0.14
670798	0.03	0.04	0.38	0.11	0.27	nd	nd	nd	0.13
670799	bdl	nd	0.12	0.08	0.05	nd	nd	nd	0.06
670800	bdl	bdl	0.02	0.02	nd	nd	nd	nd	bdl
670801	bdl	nd	0.01	0.01	bdl	nd	nd	nd	bdl
670802	0.26	1.19	0.91	0.35	0.56	nd	nd	nd	0.26
670803	0.02	nd	nd	nd	nd	nd	nd	nd	bdl
670804	bdl	bdl	nd	nd	nd	nd	nd	nd	nd
670805	bdl	nd	nd	nd	nd	nd	nd	nd	bdl
670806	bdl	nd	bdl	nd	bdl	nd	nd	nd	bdl

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	TRIDEC, ug	PENTADEC, ug	TMBs, ug	124TMB, ug	135TMB, ug	ct12DCE, ug	t12DCE, ug	c12DCE, ug	NAPH&2-MN, ug
MDL=	0.01	0.01		0.01	0.02		0.05	0.02	
670807	nd	nd	nd	nd	nd	nd	nd	nd	bdl
670808	bdl	0.01	bdl	bdl	nd	nd	nd	nd	nd
670809	bdl	nd	bdl	bdl	bdl	nd	nd	nd	0.01
670810	bdl	nd	nd	nd	nd	nd	nd	nd	0.02
670811	0.01	nd	nd	nd	nd	nd	nd	nd	bdl
670813	0.08	0.05	0.10	0.10	nd	nd	nd	nd	0.14
670814	bdl	nd	nd	nd	nd	nd	nd	nd	bdl
670815	0.02	0.03	0.11	0.11	nd	nd	nd	nd	0.45
670816	bdl	0.02	bdl	bdl	bdl	nd	nd	nd	nd
670812	nd	nd	nd	nd	nd	nd	nd	nd	nd
670817	nd	nd	nd	nd	nd	nd	nd	nd	nd
670818	nd	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd	nd
Maximum	2.87	4.05	3.18	2.05	1.13	bdl	0.00	0.00	1.33
Standard Dev.	0.78	1.21	0.83	0.50	0.35	bdl	0.00	0.00	0.29
Mean	0.58	0.94	0.70	0.38	0.33	bdl	0.00	0.00	0.27

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	NAPH, ug	2MeNAPH, ug	MTBE, ug	11DCA, ug	CHCl3, ug	111TCA, ug	12DCA, ug	TCE, ug	OCT, ug	PCE, ug	14DCB, ug
MDL=	0.01	0.01	0.03	0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.01
667984	0.21	0.06	nd	nd	nd	nd	nd	nd	nd	0.16	0.03
667985	0.34	0.10	nd	nd	nd	nd	nd	nd	0.24	0.16	0.04
667986	0.33	0.10	nd	nd	nd	nd	nd	nd	nd	0.16	0.04
667987	0.30	0.09	nd	nd	nd	nd	nd	nd	nd	0.14	0.04
667988	0.26	0.08	nd	nd	nd	nd	nd	nd	nd	0.14	0.03
667989	0.40	0.11	nd	nd	nd	nd	nd	nd	nd	0.68	0.05
667990	0.35	0.11	nd	nd	nd	nd	nd	nd	nd	0.14	0.05
667991	0.68	0.26	nd	nd	nd	nd	nd	0.26	nd	0.27	0.09
667992	0.38	0.14	nd	nd	nd	nd	nd	nd	nd	0.20	0.07
667993	0.42	0.15	nd	nd	nd	nd	nd	nd	nd	0.62	0.09
667994	0.51	0.17	nd	nd	nd	nd	nd	nd	nd	0.55	0.14
667995	0.34	0.12	nd	nd	nd	nd	nd	nd	0.03	0.47	0.07
667996	0.04	0.07	nd	nd	nd	nd	nd	0.04	0.04	0.20	bdl
667997	nd	bdl	nd	nd	nd	nd	nd	0.04	nd	nd	nd
667998	0.58	0.75	nd	nd	nd	nd	nd	nd	0.03	0.06	0.09
667999	0.19	0.05	nd	nd	nd	nd	nd	nd	0.12	nd	0.13
668000	0.19	0.05	nd	nd	nd	nd	nd	nd	nd	nd	0.14
668001	0.21	0.06	nd	nd	nd	nd	nd	nd	0.12	nd	0.15
668002	0.24	0.07	nd	nd	nd	nd	nd	nd	nd	nd	0.24
668003	0.33	0.12	nd	nd	nd	nd	nd	nd	0.20	nd	0.15
668004	0.46	0.16	nd	nd	nd	nd	nd	nd	nd	nd	0.40
668005	0.11	0.03	nd	nd	nd	nd	nd	bdl	bdl	bdl	0.08
670798	0.10	0.03	nd	nd	nd	nd	nd	nd	0.03	bdl	0.02
670799	0.05	0.01	nd	nd	nd	nd	nd	bdl	bdl	bdl	0.04
670800	nd	bdl	nd	nd	0.02	nd	nd	bdl	nd	0.06	nd
670801	nd	bdl	nd	nd	0.02	nd	nd	nd	nd	0.05	nd
670802	0.21	0.06	nd	nd	nd	nd	nd	nd	0.24	0.63	0.05
670803	nd	bdl	nd	nd	0.02	nd	nd	nd	nd	0.10	nd
670804	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.14	nd
670805	nd	bdl	nd	nd	nd	nd	nd	nd	nd	nd	nd
670806	nd	bdl	nd	nd	nd	nd	nd	0.16	nd	nd	nd

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	NAPH, ug	2MeNAPH, ug	MTBE, ug	11DCA, ug	CHCl3, ug	111TCA, ug	12DCA, ug	TCE, ug	OCT, ug	PCE, ug	14DCB, ug
MDL=	0.01	0.01	0.03	0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.01
670807	nd	bdl	nd	nd	nd	nd	nd	nd	nd	0.04	nd
670808	nd	nd	nd	nd	nd	nd	nd	nd	nd	bdl	nd
670809	0.01	bdl	nd	nd	0.03	nd	nd	nd	bdl	0.04	nd
670810	0.01	0.01	nd	nd	0.13	nd	nd	bdl	nd	0.41	nd
670811	nd	bdl	nd	nd	nd	nd	nd	nd	bdl	1.16	nd
670813	0.09	0.05	bdl	nd	nd	nd	nd	nd	bdl	nd	0.02
670814	nd	bdl	nd	nd	0.04	nd	nd	0.02	bdl	nd	nd
670815	0.13	0.32	nd	nd	nd	nd	nd	nd	0.02	nd	0.02
670816	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.03	nd
670812	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.03	nd
670817	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
670818	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Maximum	0.68	0.75	0.01	0.00	0.13	0.00	0.00	0.26	0.24	1.16	0.40
Standard Dev.	0.19	0.13	0.00	0.00	0.02	0.00	0.00	0.05	0.06	0.25	0.08
Mean	0.19	0.08	0.00	0.00	0.01	0.00	0.00	0.01	0.03	0.17	0.06

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	CCI4, ug	112TCA, ug	CIBENZ, ug	1112TetCA, ug	1122TetCA, ug	13DCB, ug	12DCB, ug
MDL=	0.03	0.02	0.03	0.02	0.01	0.01	0.01
667984	nd	nd	nd	nd	nd	nd	nd
667985	nd	nd	nd	nd	nd	nd	nd
667986	nd	nd	nd	nd	nd	nd	nd
667987	nd	nd	nd	nd	nd	nd	nd
667988	nd	nd	nd	nd	nd	nd	nd
667989	nd	nd	nd	nd	nd	nd	nd
667990	nd	nd	nd	nd	nd	nd	nd
667991	nd	nd	nd	nd	nd	nd	nd
667992	nd	nd	nd	nd	nd	nd	nd
667993	nd	nd	nd	nd	nd	nd	nd
667994	nd	nd	nd	nd	nd	nd	nd
667995	nd	nd	nd	nd	nd	nd	nd
667996	nd	nd	nd	nd	nd	nd	nd
667997	nd	nd	nd	nd	nd	nd	nd
667998	nd	nd	nd	nd	nd	nd	nd
667999	nd	nd	nd	nd	nd	nd	bdl
668000	nd	nd	nd	nd	nd	nd	bdl
668001	nd	nd	bdl	nd	nd	nd	bdl
668002	nd	nd	bdl	nd	nd	nd	bdl
668003	nd	nd	bdl	nd	nd	nd	bdl
668004	nd	nd	bdl	nd	nd	nd	bdl
668005	nd	nd	nd	nd	nd	nd	nd
670798	nd	nd	nd	nd	nd	nd	nd
670799	nd	nd	nd	nd	nd	nd	nd
670800	nd	nd	nd	nd	nd	nd	nd
670801	nd	nd	nd	nd	nd	nd	nd
670802	nd	nd	nd	nd	nd	nd	nd
670803	nd	nd	nd	nd	nd	nd	nd
670804	nd	nd	nd	nd	nd	nd	nd
670805	nd	nd	nd	nd	nd	nd	nd
670806	nd	nd	nd	nd	nd	nd	nd

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	CCI4, ug	112TCA, ug	CIBENZ, ug	1112TetCA, ug	1122TetCA, ug	13DCB, ug	12DCB, ug
MDL=	0.03	0.02	0.03	0.02	0.01	0.01	0.01
670807	nd	nd	nd	nd	nd	nd	nd
670808	nd	nd	nd	nd	nd	nd	nd
670809	nd	nd	nd	nd	nd	nd	nd
670810	nd	nd	nd	nd	nd	nd	nd
670811	nd	nd	nd	nd	nd	nd	nd
670813	nd	nd	nd	nd	nd	nd	nd
670814	nd	nd	nd	nd	nd	nd	nd
670815	nd	nd	nd	nd	nd	nd	nd
670816	nd	nd	nd	nd	nd	nd	nd
670812	nd	nd	nd	nd	nd	nd	nd
670817	nd	nd	nd	nd	nd	nd	nd
670818	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
Maximum	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Standard Dev.	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED AIR CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

DATE ANALYZED	SAMPLE NAME	TPH, ug/m^3	BTEX, ug/m^3	BENZ, ug/m^3	TOL, ug/m^3	EtBENZ, ug/m^3	mpXYL, ug/m^3	oXYL, ug/m^3
	MDL=	0.15		0.14	0.09	0.15	0.15	0.08
09/11/11	667984	88.81	4.07	nd	0.29	0.81	2.31	0.66
09/10/11	667985	>129.07	3.98	bdl	0.28	0.76	2.25	0.68
09/10/11	667986	>125.72	4.04	bdl	0.28	0.78	2.30	0.68
09/10/11	667987	>109.66	3.65	bdl	0.26	0.71	2.07	0.61
09/12/11	667988	106.66	3.34	bdl	0.25	0.64	1.89	0.56
09/12/11	667989	>115.54	5.60	nd	0.22	1.24	3.29	0.86
09/12/11	667990	105.49	2.61	nd	0.17	0.50	1.46	0.48
09/11/11	667991	>194.05	5.93	bdl	0.32	1.16	3.42	1.03
09/12/11	667992	>161.26	5.42	nd	0.38	0.99	3.01	1.04
09/12/11	667993	>154.33	7.68	bdl	0.32	1.64	4.56	1.16
09/12/11	667994	>160.83	6.34	nd	0.29	1.34	3.68	1.03
09/12/11	667995	>201.68	8.39	bdl	0.27	1.72	5.02	1.37
09/10/11	667998	78.83	1.43	nd	0.20	0.29	0.68	0.27
09/10/11	667999	>227.99	4.79	nd	0.39	0.82	2.86	0.73
09/10/11	668000	>217.67	4.78	bdl	0.40	0.81	2.84	0.73
09/11/11	668001	>216.49	4.84	nd	0.43	0.82	2.86	0.72
09/12/11	668002	>234.75	5.06	nd	0.40	0.85	3.03	0.78
09/10/11	668003	>236.26	2.89	bdl	0.93	0.36	1.18	0.41
09/10/11	668004	>179.83	3.96	nd	0.55	0.65	2.15	0.61
09/11/11	668005	30.39	0.28	bdl	0.28	bdl	bdl	bdl
09/11/11	670798	9.23	0.15	bdl	bdl	bdl	0.15	bdl
09/12/11	670799	12.58	0.36	bdl	0.11	bdl	0.16	0.09
09/10/11	670802	106.53	5.70	bdl	1.04	0.91	2.58	1.18
09/11/11	670813	11.30	0.28	bdl	0.11	bdl	0.16	bdl
09/10/11	670815	12.29	0.48	bdl	bdl	bdl	0.31	0.17
09/10/11	670812	bdl	nd	nd	nd	nd	nd	nd
09/12/11	670817	bdl	nd	nd	nd	nd	nd	nd
09/10/11	670818	bdl	nd	nd	nd	nd	nd	nd

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED AIR CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

DATE ANALYZED	SAMPLE NAME	TPH, ug/m ³	BTEX, ug/m ³	BENZ, ug/m ³	TOL, ug/m ³	EtBENZ, ug/m ³	mpXYL, ug/m ³	oXYL, ug/m ³
	MDL=	0.15		0.14	0.09	0.15	0.15	0.08
09/06/11	method blank	nd	nd	nd	nd	nd	nd	nd
09/07/11	method blank	nd	nd	nd	nd	nd	nd	nd
09/10/11	method blank	nd	nd	nd	nd	nd	nd	nd
09/11/11	method blank	bdl	nd	nd	nd	nd	nd	nd
	Maximum	502.46	23.45	8.06	15.39	1.72	5.02	1.37
	Standard Dev.	103.57	4.47	1.57	2.96	0.49	1.42	0.39
	Mean	143.45	4.60	0.35	0.91	0.69	2.09	0.62

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED AIR CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	C11, C13, &C15, ug/m^3	UNDEC, ug/m^3	TRIDEC, ug/m^3	PENTADEC, ug/m^3	TMBs, ug/m^3	124TMB, ug/m^3
MDL=		0.07	0.07	0.07		0.07
667984	5.61	2.32	1.03	2.27	1.93	0.81
667985	8.72	2.99	1.90	3.84	2.90	1.12
667986	8.49	2.76	1.94	3.78	2.77	1.11
667987	7.09	2.51	1.48	3.10	2.63	0.98
667988	7.05	2.39	1.55	3.11	2.47	0.90
667989	8.92	2.53	2.01	4.37	3.01	1.55
667990	9.58	2.79	3.07	3.72	4.91	3.20
667991	19.01	4.03	6.22	8.76	6.07	3.51
667992	13.30	3.54	3.61	6.15	4.12	2.18
667993	13.24	3.38	3.54	6.31	5.08	2.86
667994	16.93	3.97	5.07	7.89	7.18	4.46
667995	15.20	2.98	3.80	8.42	3.21	2.24
667998	3.60	2.43	0.72	0.45	1.09	0.83
667999	16.89	14.10	1.20	1.59	1.48	0.62
668000	17.18	14.40	1.18	1.61	1.53	0.59
668001	15.98	13.04	1.22	1.72	1.60	0.63
668002	17.85	13.76	1.72	2.37	1.76	0.74
668003	20.07	13.86	2.41	3.81	2.35	1.07
668004	16.91	6.15	5.52	5.24	3.18	1.17
668005	0.36	0.26	bdl	0.10	0.69	0.32
670798	0.46	0.28	0.08	0.10	1.01	0.26
670799	0.07	0.07	bdl	nd	0.19	0.19
670802	6.83	3.15	0.65	3.03	2.47	0.88
670813	0.60	0.27	0.20	0.12	0.25	0.25
670815	0.53	0.46	bdl	0.08	0.28	0.28
670812	nd	nd	nd	nd	nd	nd
670817	nd	nd	nd	nd	nd	nd
670818	nd	nd	nd	nd	nd	nd

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED AIR CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	C11, C13, &C15, ug/m^3	UNDEC, ug/m^3	TRIDEC, ug/m^3	PENTADEC, ug/m^3	TMBs, ug/m^3	124TMB, ug/m^3
MDL=		0.07	0.07	0.07		0.07
method blank	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd
Maximum	20.07	14.40	6.22	8.76	7.18	4.46
Standard Dev.	6.71	4.80	1.73	2.69	1.78	1.12
Mean	9.74	4.60	1.99	3.15	2.62	1.33

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED AIR CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	135TMB, ug/m ³	ct12DCE, ug/m ³	t12DCE, ug/m ³	c12DCE, ug/m ³	NAPH&2-MN, ug/m ³	NAPH, ug/m ³	2MeNAPH, ug/m ³
MDL=	0.16		2.92	0.56		0.07	0.07
667984	1.12	nd	nd	nd	0.57	0.44	0.12
667985	1.77	nd	nd	nd	0.96	0.74	0.22
667986	1.66	nd	nd	nd	0.92	0.71	0.20
667987	1.65	nd	nd	nd	0.82	0.64	0.18
667988	1.56	nd	nd	nd	0.73	0.57	0.17
667989	1.47	nd	nd	nd	1.08	0.85	0.23
667990	1.71	nd	nd	nd	0.99	0.75	0.24
667991	2.56	nd	nd	nd	2.02	1.47	0.55
667992	1.93	nd	nd	nd	1.12	0.82	0.30
667993	2.22	nd	nd	nd	1.23	0.91	0.32
667994	2.72	nd	nd	nd	1.47	1.11	0.36
667995	0.97	nd	nd	nd	1.01	0.75	0.26
667998	0.26	nd	nd	nd	2.91	1.27	1.64
667999	0.86	nd	nd	nd	0.54	0.43	0.12
668000	0.94	nd	nd	nd	0.53	0.42	0.12
668001	0.96	nd	nd	nd	0.58	0.45	0.13
668002	1.02	nd	nd	nd	0.67	0.53	0.14
668003	1.27	nd	nd	nd	0.98	0.72	0.26
668004	2.01	nd	nd	nd	1.37	1.01	0.36
668005	0.37	nd	nd	nd	0.34	0.26	0.08
670798	0.75	nd	nd	nd	0.33	0.24	0.08
670799	bdl	nd	nd	nd	0.12	0.12	bdl
670802	1.59	nd	nd	nd	0.67	0.52	0.15
670813	nd	nd	nd	nd	0.37	0.24	0.13
670815	nd	nd	nd	nd	1.19	0.34	0.85
670812	nd	nd	nd	nd	nd	nd	nd
670817	nd	nd	nd	nd	nd	nd	nd
670818	nd	nd	nd	nd	nd	nd	nd

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED AIR CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	135TMB, ug/m ³	ct12DCE, ug/m ³	t12DCE, ug/m ³	c12DCE, ug/m ³	NAPH&2-MN, ug/m ³	NAPH, ug/m ³	2MeNAPH, ug/m ³
MDL=	0.16		2.92	0.56		0.07	0.07
method blank	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
Maximum	2.72	bdl	0.00	0.00	2.91	1.47	2.17
Standard Dev.	0.76	bdl	0.00	0.00	0.62	0.35	0.49
Mean	1.29	bdl	0.00	0.00	0.99	0.63	0.36

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED AIR CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	MTBE, ug/m ³	11DCA, ug/m ³	CHCl ₃ , ug/m ³	111TCA, ug/m ³	12DCA, ug/m ³	TCE, ug/m ³	OCT, ug/m ³	PCE, ug/m ³
MDL=	1.52	0.79	0.26	0.32	0.16	0.26	0.17	0.18
667984	nd	nd	nd	nd	nd	nd	nd	0.41
667985	nd	nd	nd	nd	nd	nd	0.59	0.40
667986	nd	nd	nd	nd	nd	nd	nd	0.40
667987	nd	nd	nd	nd	nd	nd	nd	0.37
667988	nd	nd	nd	nd	nd	nd	nd	0.36
667989	nd	nd	nd	nd	nd	nd	nd	1.74
667990	nd	nd	nd	nd	nd	nd	nd	0.37
667991	nd	nd	nd	nd	nd	0.99	nd	0.70
667992	nd	nd	nd	nd	nd	nd	nd	0.52
667993	nd	nd	nd	nd	nd	nd	nd	1.60
667994	nd	nd	nd	nd	nd	nd	nd	1.42
667995	nd	nd	nd	nd	nd	nd	bdl	1.23
667998	nd	nd	nd	nd	nd	nd	bdl	bdl
667999	nd	nd	nd	nd	nd	nd	0.30	nd
668000	nd	nd	nd	nd	nd	nd	nd	nd
668001	nd	nd	nd	nd	nd	nd	0.30	nd
668002	nd	nd	nd	nd	nd	nd	nd	nd
668003	nd	nd	nd	nd	nd	nd	0.51	nd
668004	nd	nd	nd	nd	nd	nd	nd	nd
668005	nd	nd	nd	nd	nd	bdl	bdl	bdl
670798	nd	nd	nd	nd	nd	nd	bdl	bdl
670799	nd	nd	nd	nd	nd	bdl	bdl	bdl
670802	nd	nd	nd	nd	nd	nd	0.72	1.91
670813	bdl	nd	nd	nd	nd	nd	bdl	nd
670815	nd	nd	nd	nd	nd	nd	bdl	nd
670812	nd	nd	nd	nd	nd	nd	nd	bdl
670817	nd	nd	nd	nd	nd	nd	nd	nd
670818	nd	nd	nd	nd	nd	nd	nd	nd

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED AIR CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	MTBE, ug/m^3	11DCA, ug/m^3	CHCl3, ug/m^3	111TCA, ug/m^3	12DCA, ug/m^3	TCE, ug/m^3	OCT, ug/m^3	PCE, ug/m^3
MDL=	1.52	0.79	0.26	0.32	0.16	0.26	0.17	0.18
method blank	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd
Maximum	0.14	0.00	0.00	0.00	0.00	23.08	0.72	1.91
Standard Dev.	0.03	0.00	0.00	0.00	0.00	4.52	0.20	0.61
Mean	0.01	0.00	0.00	0.00	0.00	0.93	0.11	0.45

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED AIR CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	14DCB, ug/m^3	CCI4, ug/m^3	112TCA, ug/m^3	CIBENZ, ug/m^3	1112TetCA, ug/m^3	1122TetCA, ug/m^3	13DCB, ug/m^3
MDL=	0.06	0.91	0.17	0.22	0.16	0.08	0.06
667984	bdl	nd	nd	nd	nd	nd	nd
667985	0.07	nd	nd	nd	nd	nd	nd
667986	0.07	nd	nd	nd	nd	nd	nd
667987	0.06	nd	nd	nd	nd	nd	nd
667988	bdl	nd	nd	nd	nd	nd	nd
667989	0.09	nd	nd	nd	nd	nd	nd
667990	0.09	nd	nd	nd	nd	nd	nd
667991	0.17	nd	nd	nd	nd	nd	nd
667992	0.12	nd	nd	nd	nd	nd	nd
667993	0.16	nd	nd	nd	nd	nd	nd
667994	0.25	nd	nd	nd	nd	nd	nd
667995	0.12	nd	nd	nd	nd	nd	nd
667998	0.17	nd	nd	nd	nd	nd	nd
667999	0.25	nd	nd	nd	nd	nd	nd
668000	0.27	nd	nd	nd	nd	nd	nd
668001	0.27	nd	nd	bdl	nd	nd	nd
668002	0.43	nd	nd	bdl	nd	nd	nd
668003	0.28	nd	nd	bdl	nd	nd	nd
668004	0.75	nd	nd	bdl	nd	nd	nd
668005	0.17	nd	nd	nd	nd	nd	nd
670798	bdl	nd	nd	nd	nd	nd	nd
670799	0.08	nd	nd	nd	nd	nd	nd
670802	0.10	nd	nd	nd	nd	nd	nd
670813	bdl	nd	nd	nd	nd	nd	nd
670815	bdl	nd	nd	nd	nd	nd	nd
670812	nd	nd	nd	nd	nd	nd	nd
670817	nd	nd	nd	nd	nd	nd	nd
670818	nd	nd	nd	nd	nd	nd	nd

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED AIR CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	14DCB, ug/m^3	CCI4, ug/m^3	112TCA, ug/m^3	CIBENZ, ug/m^3	1112TetCA, ug/m^3	1122TetCA, ug/m^3	13DCB, ug/m^3
MDL=	0.06	0.91	0.17	0.22	0.16	0.08	0.06
method blank	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
Maximum	0.75	0.00	0.00	0.00	0.00	0.00	0.00
Standard Dev.	0.16	0.00	0.00	0.00	0.00	0.00	0.00
Mean	0.16	0.00	0.00	0.00	0.00	0.00	0.00

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED AIR CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	12DCB, ug/m^3
MDL=	0.06
667984	nd
667985	nd
667986	nd
667987	nd
667988	nd
667989	nd
667990	nd
667991	nd
667992	nd
667993	nd
667994	nd
667995	nd
667998	nd
667999	bdl
668000	bdl
668001	bdl
668002	bdl
668003	bdl
668004	bdl
668005	nd
670798	nd
670799	nd
670802	nd
670813	nd
670815	nd
670812	nd
670817	nd
670818	nd

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED AIR CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	12DCB, ug/m^3
MDL=	0.06
method blank	nd
method blank	nd
method blank	nd
method blank	nd
Maximum	0.01
Standard Dev.	0.00
Mean	0.00

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED SOIL GAS CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

DATE ANALYZED	SAMPLE NAME	TPH, ug/m ³	BTEX, ug/m ³	BENZ, ug/m ³	TOL, ug/m ³	EtBENZ, ug/m ³	mpXYL, ug/m ³	oXYL, ug/m ³
	MDL=	0.82		0.76	0.47	0.82	0.82	0.43
09/12/11	667996	320.15	34.69	0.97	19.28	3.34	8.80	2.30
09/10/11	670800	4.75	1.04	1.04	nd	nd	nd	nd
09/11/11	670801	30.46	1.02	nd	1.02	nd	nd	nd
09/10/11	670803	998.77	nd	nd	nd	nd	nd	nd
09/11/11	670804	76.63	2.58	nd	2.58	nd	nd	nd
09/10/11	670805	573.58	nd	nd	nd	nd	nd	nd
09/10/11	670806	216.45	nd	nd	nd	nd	nd	nd
09/12/11	670807	973.20	14.45	bdl	14.45	nd	nd	nd
09/10/11	670808	30.44	0.63	nd	0.63	nd	nd	nd
09/10/11	670809	133.20	21.22	3.10	17.68	bdl	bdl	0.44
09/10/11	670810	37.60	3.22	nd	3.22	nd	nd	nd
09/10/11	670811	247.34	nd	nd	nd	nd	nd	nd
09/11/11	670814	48.04	2.92	nd	2.92	nd	bdl	nd
09/12/11	670816	49.30	bdl	nd	nd	nd	bdl	nd
09/10/11	670812	bdl	nd	nd	nd	nd	nd	nd
09/12/11	670817	bdl	nd	nd	nd	nd	nd	nd
09/10/11	670818	bdl	nd	nd	nd	nd	nd	nd
09/06/11	method blank	nd	nd	nd	nd	nd	nd	nd
09/07/11	method blank	nd	nd	nd	nd	nd	nd	nd
09/10/11	method blank	nd	nd	nd	nd	nd	nd	nd
09/11/11	method blank	bdl	nd	nd	nd	nd	nd	nd
	Maximum	998.77	34.69	3.10	19.28	3.34	8.80	2.30
	Standard Dev.	341.57	10.43	0.86	7.06	0.89	2.34	0.62
	Mean	267.14	5.84	0.42	4.41	0.27	0.70	0.20

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED SOIL GAS CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	C11, C13, &C15, ug/m^3	UNDEC, ug/m^3	TRIDEC, ug/m^3	PENTADEC, ug/m^3	TMBs, ug/m^3	124TMB, ug/m^3
MDL=		0.41	0.41	0.41		0.41
667996	10.20	2.37	3.60	4.23	7.44	4.92
670800	bdl	nd	bdl	bdl	0.60	0.60
670801	bdl	nd	bdl	nd	0.48	0.48
670803	0.73	bdl	0.73	nd	nd	nd
670804	bdl	nd	bdl	bdl	nd	nd
670805	0.62	0.62	bdl	nd	nd	nd
670806	bdl	bdl	bdl	nd	bdl	nd
670807	nd	nd	nd	nd	nd	nd
670808	0.42	bdl	bdl	0.42	bdl	bdl
670809	bdl	bdl	bdl	nd	bdl	bdl
670810	bdl	bdl	bdl	nd	nd	nd
670811	0.50	bdl	0.50	nd	nd	nd
670814	bdl	bdl	bdl	nd	nd	nd
670816	1.48	0.63	bdl	0.84	bdl	bdl
670812	nd	nd	nd	nd	nd	nd
670817	nd	nd	nd	nd	nd	nd
670818	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd
Maximum	10.20	2.37	3.60	4.23	7.44	4.92
Standard Dev.	2.68	0.63	0.92	1.12	1.98	1.30
Mean	1.00	0.32	0.47	0.42	0.61	0.47

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED SOIL GAS CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	135TMB, ug/m ³	ct12DCE, ug/m ³	t12DCE, ug/m ³	c12DCE, ug/m ³	NAPH&2-MN, ug/m ³	NAPH, ug/m ³	2MeNAPH, ug/m ³
MDL=	0.90		16.01	3.06		0.41	0.41
667996	2.51	nd	nd	nd	3.91	1.50	2.41
670800	nd	nd	nd	nd	bdl	nd	bdl
670801	bdl	nd	nd	nd	bdl	nd	bdl
670803	nd	nd	nd	nd	bdl	nd	bdl
670804	nd	nd	nd	nd	nd	nd	nd
670805	nd	nd	nd	nd	bdl	nd	bdl
670806	bdl	nd	nd	nd	bdl	nd	bdl
670807	nd	nd	nd	nd	bdl	nd	bdl
670808	nd	nd	nd	nd	nd	nd	nd
670809	bdl	nd	nd	nd	0.42	0.42	bdl
670810	nd	nd	nd	nd	1.00	0.54	0.46
670811	nd	nd	nd	nd	bdl	nd	bdl
670814	nd	nd	nd	nd	bdl	nd	bdl
670816	bdl	nd	nd	nd	nd	nd	nd
670812	nd	nd	nd	nd	nd	nd	nd
670817	nd	nd	nd	nd	nd	nd	nd
670818	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
Maximum	2.51	bdl	0.00	0.00	3.91	1.50	2.41
Standard Dev.	0.66	bdl	0.00	0.00	1.05	0.42	0.61
Mean	0.24	bdl	0.00	0.00	0.38	0.18	0.34

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED SOIL GAS CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	MTBE, ug/m^3	11DCA, ug/m^3	CHCl3, ug/m^3	111TCA, ug/m^3	12DCA, ug/m^3	TCE, ug/m^3	OCT, ug/m^3	PCE, ug/m^3
MDL=	8.36	4.31	1.45	1.73	0.87	1.41	0.95	0.97
667996	nd	nd	nd	nd	nd	2.35	1.70	8.20
670800	nd	nd	2.28	nd	nd	bdl	nd	2.92
670801	nd	nd	3.28	nd	nd	nd	nd	2.30
670803	nd	nd	2.45	nd	nd	nd	nd	4.60
670804	nd	nd	nd	nd	nd	nd	nd	6.78
670805	nd	nd	nd	nd	nd	nd	nd	nd
670806	nd	nd	nd	nd	nd	11.09	nd	nd
670807	nd	nd	nd	nd	nd	nd	nd	2.11
670808	nd	nd	nd	nd	nd	nd	nd	bdl
670809	nd	nd	4.89	nd	nd	nd	bdl	1.84
670810	nd	nd	19.68	nd	nd	bdl	nd	20.30
670811	nd	nd	nd	nd	nd	nd	bdl	57.78
670814	nd	nd	6.58	nd	nd	1.53	bdl	nd
670816	nd	nd	nd	nd	nd	nd	nd	1.51
670812	nd	nd	nd	nd	nd	nd	nd	1.51
670817	nd	nd	nd	nd	nd	nd	nd	nd
670818	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd
Maximum	0.00	0.00	19.68	0.00	0.00	11.09	1.70	57.78
Standard Dev.	0.00	0.00	5.31	0.00	0.00	2.97	0.46	15.34
Mean	0.00	0.00	2.80	0.00	0.00	1.08	0.19	7.79

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED SOIL GAS CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	14DCB, ug/m^3	CCI4, ug/m^3	112TCA, ug/m^3	CIBENZ, ug/m^3	1112TetCA, ug/m^3	1122TetCA, ug/m^3	13DCB, ug/m^3
MDL=	0.34	4.97	0.95	1.20	0.86	0.43	0.35
667996	bdl	nd	nd	nd	nd	nd	nd
670800	nd	nd	nd	nd	nd	nd	nd
670801	nd	nd	nd	nd	nd	nd	nd
670803	nd	nd	nd	nd	nd	nd	nd
670804	nd	nd	nd	nd	nd	nd	nd
670805	nd	nd	nd	nd	nd	nd	nd
670806	nd	nd	nd	nd	nd	nd	nd
670807	nd	nd	nd	nd	nd	nd	nd
670808	nd	nd	nd	nd	nd	nd	nd
670809	nd	nd	nd	nd	nd	nd	nd
670810	nd	nd	nd	nd	nd	nd	nd
670811	nd	nd	nd	nd	nd	nd	nd
670814	nd	nd	nd	nd	nd	nd	nd
670816	nd	nd	nd	nd	nd	nd	nd
670812	nd	nd	nd	nd	nd	nd	nd
670817	nd	nd	nd	nd	nd	nd	nd
670818	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd
Maximum	0.12	0.00	0.00	0.00	0.00	0.00	0.00
Standard Dev.	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Mean	0.01	0.00	0.00	0.00	0.00	0.00	0.00

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED SOIL GAS CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	12DCB, ug/m^3
MDL=	0.35
667996	nd
670800	nd
670801	nd
670803	nd
670804	nd
670805	nd
670806	nd
670807	nd
670808	nd
670809	nd
670810	nd
670811	nd
670814	nd
670816	nd
670812	nd
670817	nd
670818	nd
method blank	nd
method blank	nd
method blank	nd
method blank	nd
Maximum	0.00
Standard Dev.	0.00
Mean	0.00

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED WATER CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

DATE ANALYZED	SAMPLE NAME	TPH, ug/L	BTEX, ug/L	BENZ, ug/L	TOL, ug/L	EtBENZ, ug/L	mpXYL, ug/L	oXYL, ug/L	C11, C13, &C15, ug/L
	MDL=	2.90		1.45	1.45	2.90	2.90	1.45	
09/10/11	667997	234.48	8.26	2.03	6.23	nd	nd	nd	0.00
09/10/11	670812	45.49	nd	nd	nd	nd	nd	nd	nd
09/12/11	670817	62.55	nd	nd	nd	nd	nd	nd	nd
09/10/11	670818	103.36	nd	nd	nd	nd	nd	nd	nd
09/06/11	method blank	nd	nd	nd	nd	nd	nd	nd	nd
09/07/11	method blank	nd	nd	nd	nd	nd	nd	nd	nd
09/10/11	method blank	nd	nd	nd	nd	nd	nd	nd	nd
09/11/11	method blank	8.11	nd	nd	nd	nd	nd	nd	nd
	Maximum	234.48	8.26	2.03	6.23	0.00	0.00	0.00	0.00
	Standard Dev.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Mean	234.48	8.26	2.03	6.23	0.00	0.00	0.00	0.00

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED WATER CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	UNDEC, ug/L	TRIDEC, ug/L	PENTADEC, ug/L	TMBs, ug/L	124TMB, ug/L	135TMB, ug/L	ct12DCE, ug/L	t12DCE, ug/L
MDL=	1.45	1.45	1.45		1.45	2.90		8.33
667997	bdl	bdl	nd	0.00	bdl	bdl	nd	nd
670812	nd	nd	nd	nd	nd	nd	nd	nd
670817	nd	nd	nd	nd	nd	nd	nd	nd
670818	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd
Maximum	0.58	0.72	0.00	0.00	0.87	0.87	0.00	0.00
Standard Dev.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mean	0.58	0.72	0.00	0.00	0.87	0.87	0.00	0.00

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED WATER CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	c12DCE, ug/L	NAPH&2-MN, ug/L	NAPH, ug/L	2MeNAPH, ug/L	MTBE, ug/L	11DCA, ug/L	CHCl3, ug/L	111TCA, ug/L
MDL=	2.99		1.45	1.45	8.70	2.90	1.45	1.45
667997	nd	0.00	nd	bdl	nd	nd	nd	nd
670812	nd	nd	nd	nd	nd	nd	nd	nd
670817	nd	nd	nd	nd	nd	nd	nd	nd
670818	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd
Maximum	0.00	0.00	0.00	1.01	0.00	0.00	0.00	0.00
Standard Dev.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mean	0.00	0.00	0.00	1.01	0.00	0.00	0.00	0.00

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED WATER CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	12DCA, ug/L	TCE, ug/L	OCT, ug/L	PCE, ug/L	14DCB, ug/L	CCI4, ug/L	112TCA, ug/L	CIBENZ, ug/L	1112TetCA, ug/L
MDL=	1.45	2.90	2.90	2.90	1.45	4.35	2.90	4.35	2.90
667997	nd	6.23	nd	nd	nd	nd	nd	nd	nd
670812	nd	nd	nd	218.34	nd	nd	nd	nd	nd
670817	nd	nd	nd	nd	nd	nd	nd	nd	nd
670818	nd	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd	nd	nd
Maximum	0.00	6.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Standard Dev.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mean	0.00	6.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE(TM) SURVEYS ANALYTICAL RESULTS
 USGS, MONTGOMERY, AL
 GORE STANDARD TARGET VOCs/SVOCs (A1)
 ESTIMATED WATER CONCENTRATIONS
 ALABAMA SITE, MONTGOMERY, AL
 SITE GCE - PRODUCTION ORDER #21230476

SAMPLE NAME	1122TetCA, ug/L	13DCB, ug/L	12DCB, ug/L
MDL=	1.45	1.45	1.45
667997	nd	nd	nd
670812	nd	nd	nd
670817	nd	nd	nd
670818	nd	nd	nd
method blank	nd	nd	nd
method blank	nd	nd	nd
method blank	nd	nd	nd
method blank	nd	nd	nd
Maximum	0.00	0.00	0.00
Standard Dev.	#DIV/0!	#DIV/0!	#DIV/0!
Mean	0.00	0.00	0.00

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.



GORE® Surveys

FOR ENVIRONMENTAL

Concentration Method Calculation Summary for GORE® Module

In environmental analysis obtaining a contaminate concentration value allows for quantifiable risk assessment. The following procedure outlines the method used to determine accurate concentration values from the GORE® Module in soil gas and air sampling:

DERIVATION OF CONCENTRATION EQUATION

When a fresh module (which, by definition and verification, has a contaminate concentration of zero) is inserted into a locally homogenous contaminated media (with a non-zero contaminant concentration), a concentration gradient is created between the module and the media. Due to the concentration gradient, contaminant will diffuse from the media across the permeable membrane to the enclosed adsorbents as described by Fick's first law of diffusion¹, often expressed in differential form as:

$$F = -D \left(\frac{dC}{dx} \right) \text{ or in the integral form as: } \frac{dm}{dt} = -D \left(\frac{A}{L} \right) (C_x - C_o) \quad (1)$$

where m = mass, t = time, D = diffusion coefficient, (A/L) = geometric parameter describing shape of sampler, C_x = concentration of analyte in the module at time, $t = x$, C_o = concentration at time, $t = 0$.

As we ultimately want to measure the concentration of the analyte, we rearrange equation (1) to solve for C_x :

$$C_x = - \left[\left(\frac{1}{D} \right) \left(\frac{L}{A} \right) \left(\frac{dm}{dt} \right) \right] + C_o \quad (2)$$

By using a fresh module, the initial concentration (C_o) in the module is zero. We combine the quantity $D \frac{A}{L}$, which is referred to as the sampling rate²(S) of the module, measured in units of vol/time for the analyte of interest. This yields:

$$C_x = - \left[\left(\frac{1}{S} \right) \left(\frac{dm}{dt} \right) \right] \quad (3)$$

Thus, concentration (C_x) can be calculated by using the mass (m) of the analyte adsorbed to the module after a given exposure time (t) and the sampling rate (S) for the analyte of interest. Two of these values are straightforward – the mass is measured using our standard thermal desorption GC/MS procedure, the time is documented by the field installation team. The third, sampling rate (S), is measured through a series of controlled chamber experiments for each analyte. Using these three values, an accurate contaminate concentration value can be calculated using the GORE® Module. The process for determining S for the GORE® Module is described briefly in the next section.

DETERMINING the S PARAMETER – GORE® Module Sampling Rate

To determine S for the GORE® Module we have exposed modules for different times (t) at various concentrations (C). We then plot mass (m) vs. time (t) and divide the slope by concentration to gain a value for S for that compound as shown in equation (4) which is rearranged from equation (3).

$$S = - \left[\left(\frac{1}{C} \right) \left(\frac{dm}{dt} \right) \right] \quad (4)$$

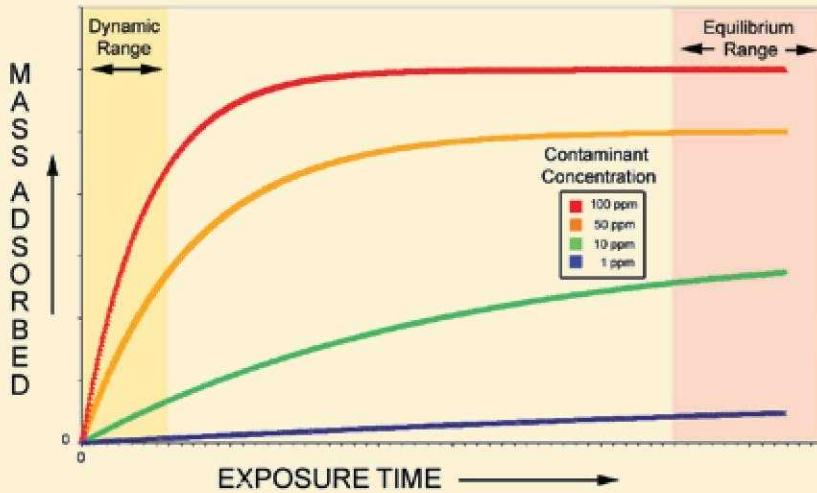


Figure 1 shows typical adsorption curves for a GORE® Module exposed to a compound at various concentration levels. Notice that in the dynamic range that slopes vary in proportion to concentration.

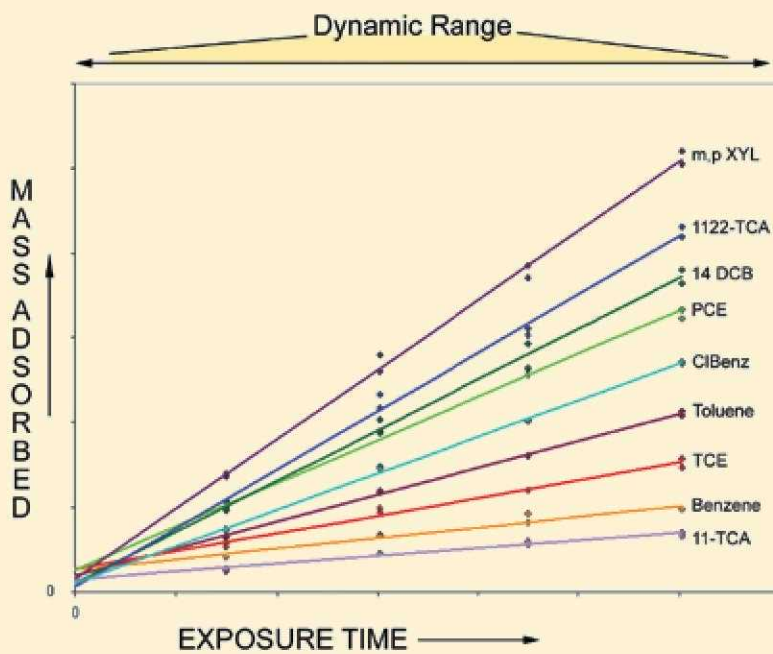


Figure 2 shows the uptake rate for various compounds typical of environmental investigations in the linear dynamic range.

When measuring S , we tested each compound at varying temperature (10 to 40°C), relative humidity (0 to 80%), flow rate (0.5 to 15cm/s) and vapor concentrations (0.1ppb to 100ppm).

Under typical sampling conditions, none of these variables were found to significantly impact the sampling rate.

ADJUSTMENTS FOR DIFFUSION RESISTANCE IN SOIL

When measuring gas concentration values in soils we must adjust the sampling rate (S_{air}) values to account for the increased tortuosity due to the presence of soil and moisture.

We previously defined the sampling rate of the module for the analyte of interest as:

$$S_{air} = D_{air} (A/L) \quad (5)$$

In soil, the effective diffusion coefficient (D_{soil}) is reduced due to the increased tortuosity, and can be described as:

$$D_{soil} = E(D_{air}) \quad (6)$$

resulting in (when combined with (5))

$$S_{soil} = E(S_{air}) \quad (7)$$

where E is the “Soil Effectiveness Factor.”

As Millington & Quirk³ showed, E is governed by the total soil porosity (θ , total volume of pores/total volume) and volumetric air content (Φ , volume of air/total volume) of the media and relates as:

$$E = \frac{(\Phi)^{10/3}}{(\theta)^2} \quad (8)$$

Expressing E as a function of total soil porosity (θ) and water filled porosity (ϵ , volume of water/volume of pores), this relation can be rearranged as:

$$E = \theta^{(4/3)} (1 - \epsilon)^{(10/3)}; \text{ as } \Phi, \theta \text{ and } \epsilon \text{ have the following relationship:} \quad (9)$$
$$\Phi = \theta (1 - \epsilon)$$

Once we’ve solved for E , we can solve for D_{soil} using equation (5) and S_{soil} using equation (7).

Thus, with measurements for two of these three site-specific soil parameters (θ , ϵ or Φ), soil gas concentration values can be calculated for modules installed in soil.

REFERENCES

¹ Cussler, E. L., 1997, *Diffusion, Mass Transfer in Fluid Systems*, 2nd ed., Cambridge Univ., Press, 570p.

² James D. Mulik and Robert G. Lewis *Advances in Air Sampling*, AICHG (1990), ISN 0-87371-115-7, Chapter 9, “Recent Developments in Passive Sampling Devices.”

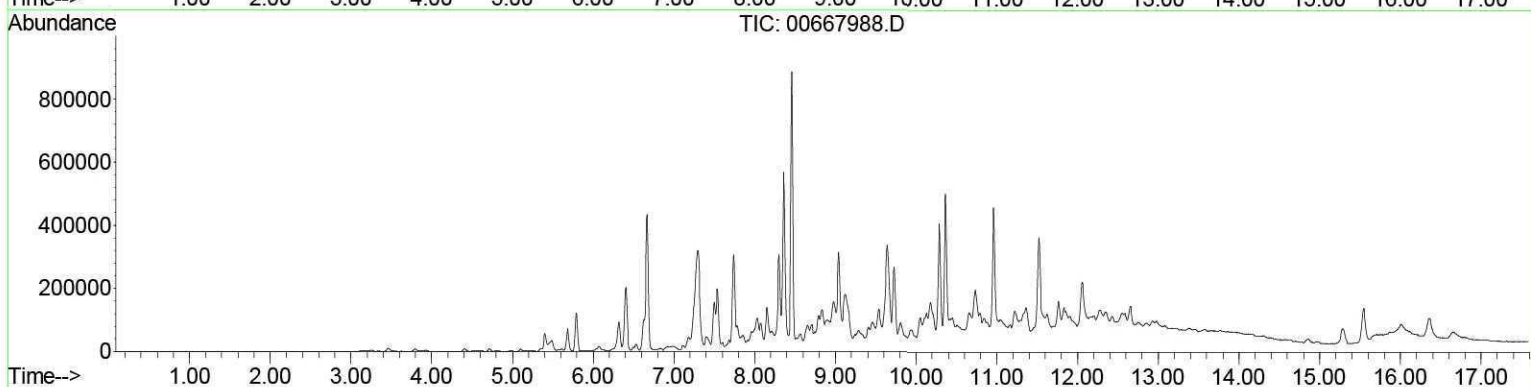
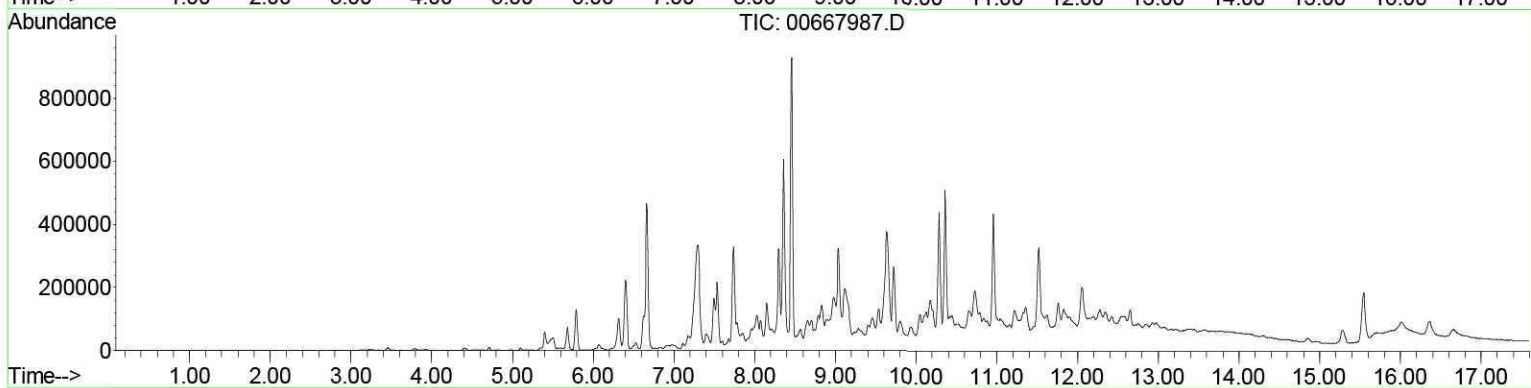
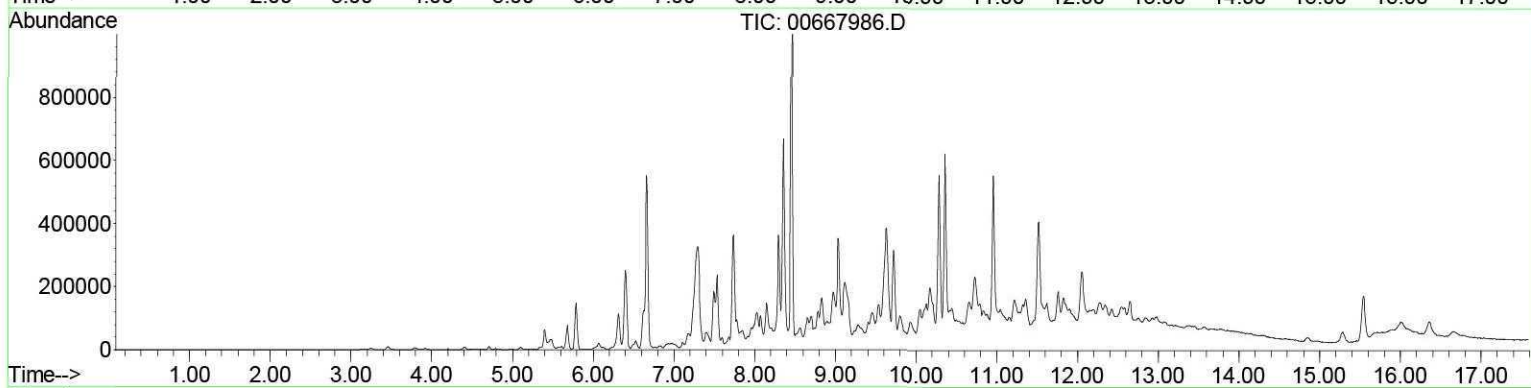
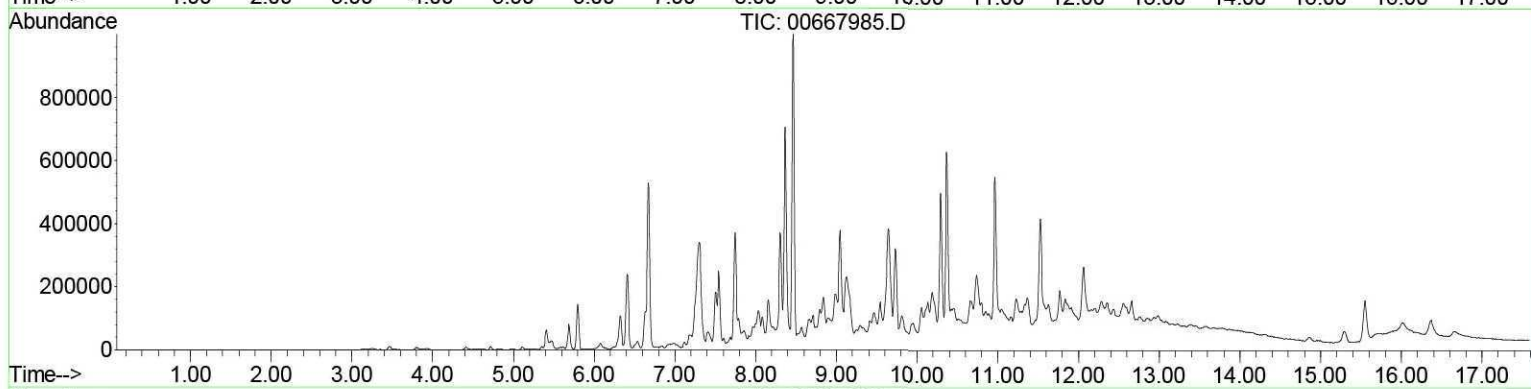
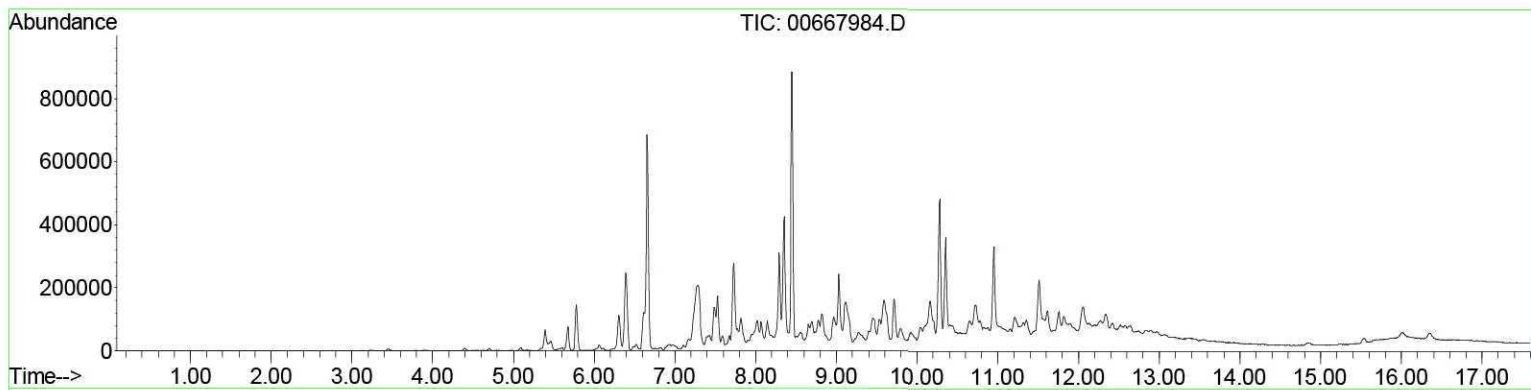
³ Millington, R.J., and J. M. Quirk, “Permeability of Porous Solids”, *Trans. Faraday Soc.*, 57, (1961), 1200-1207.

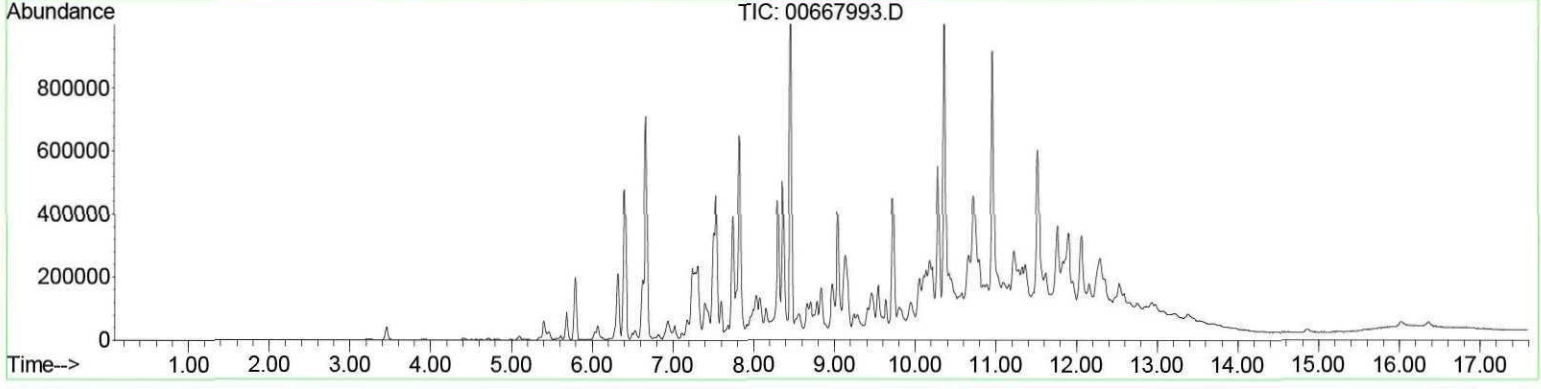
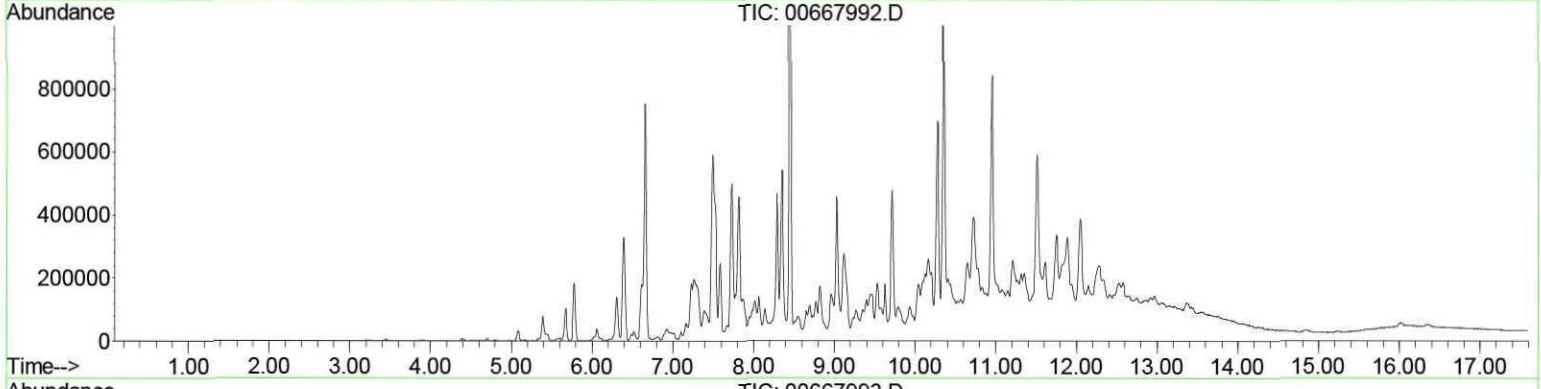
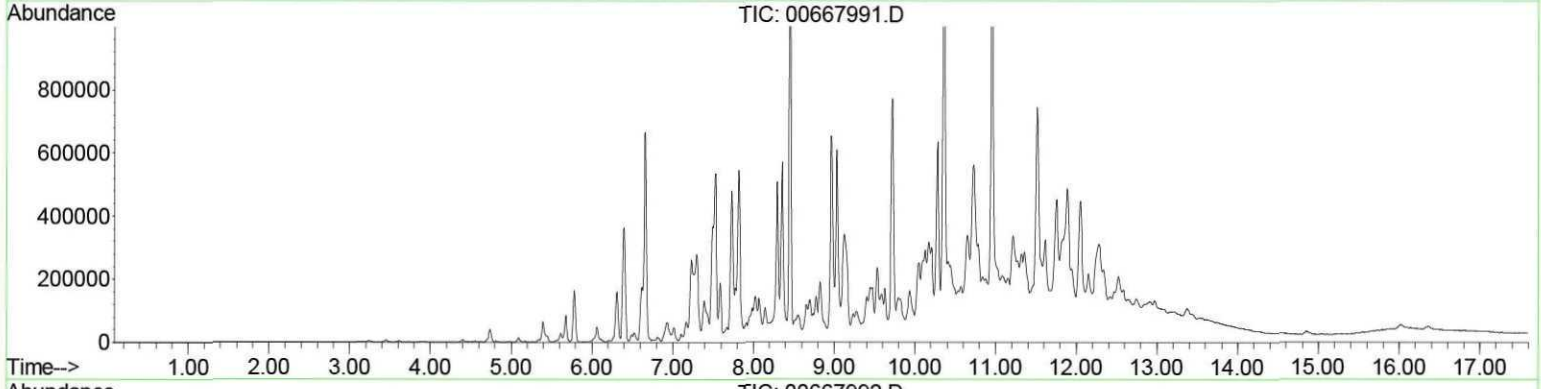
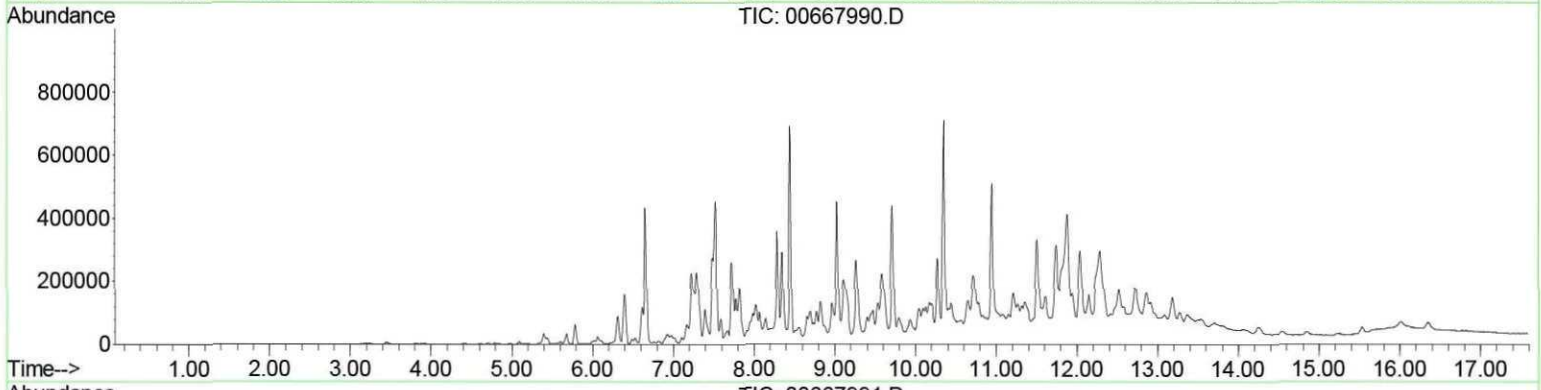
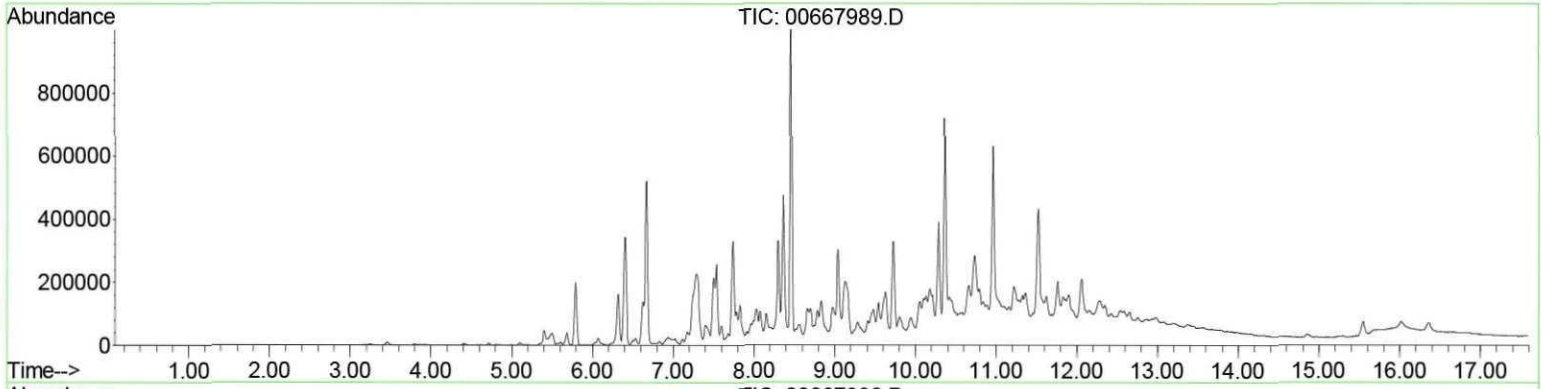
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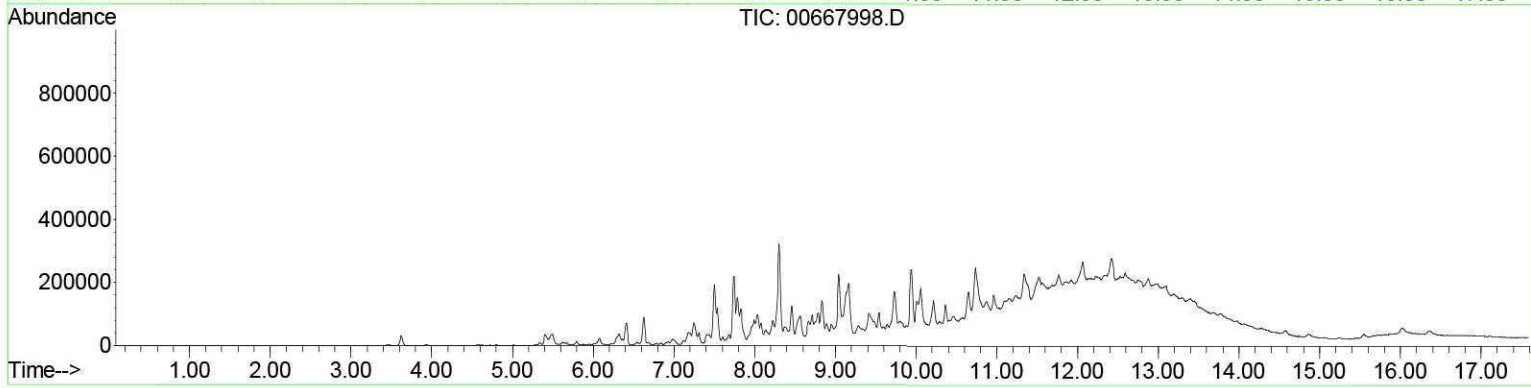
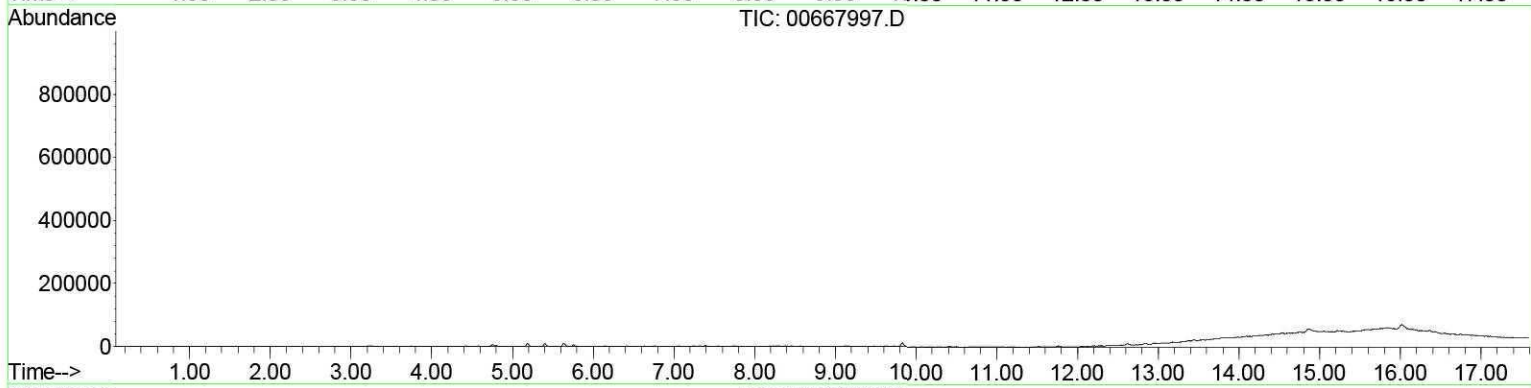
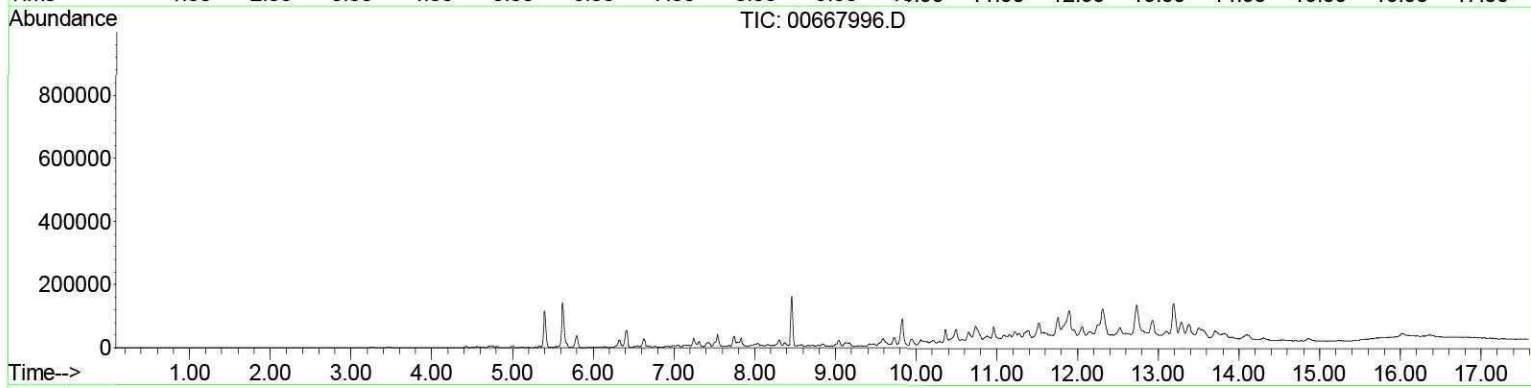
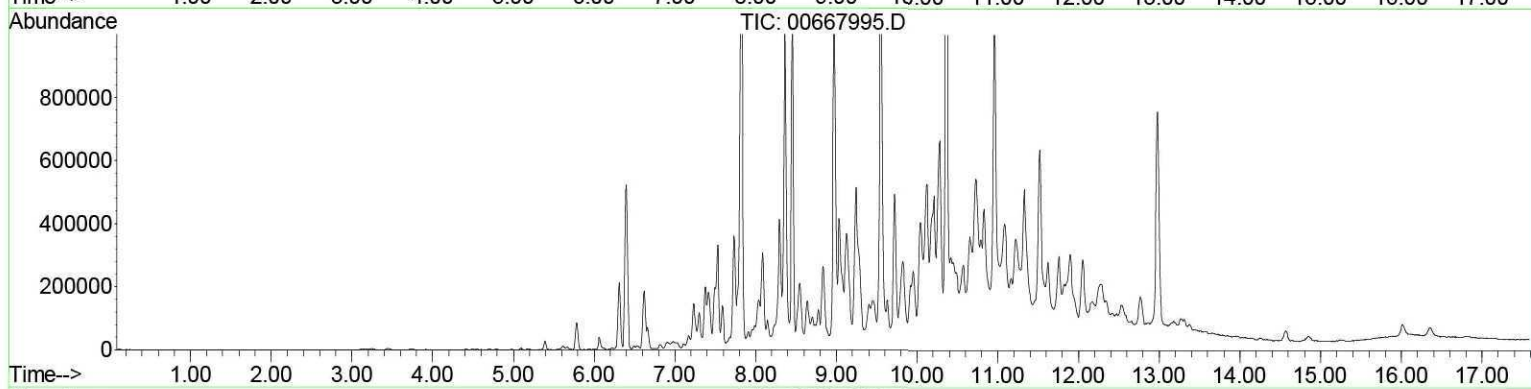
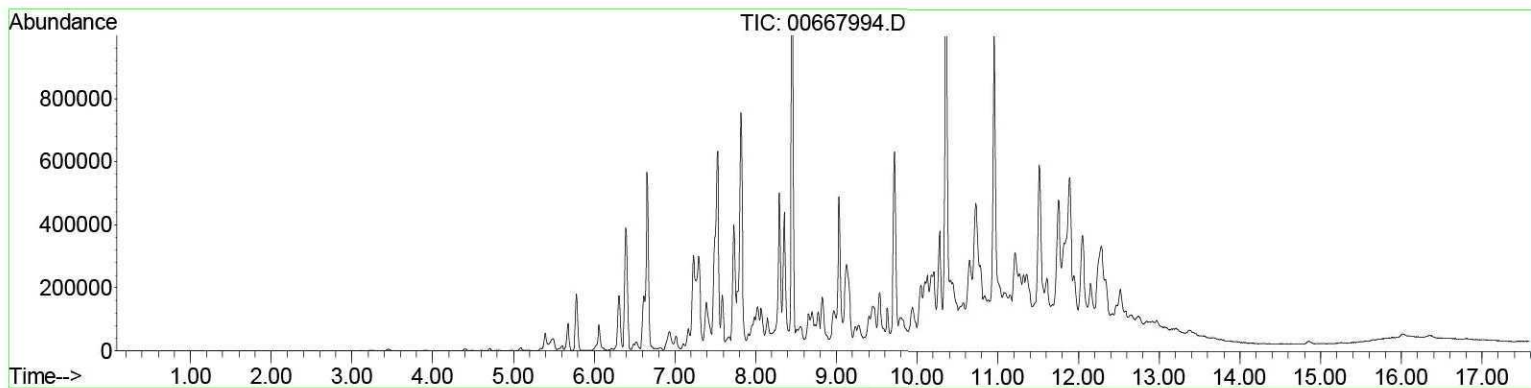
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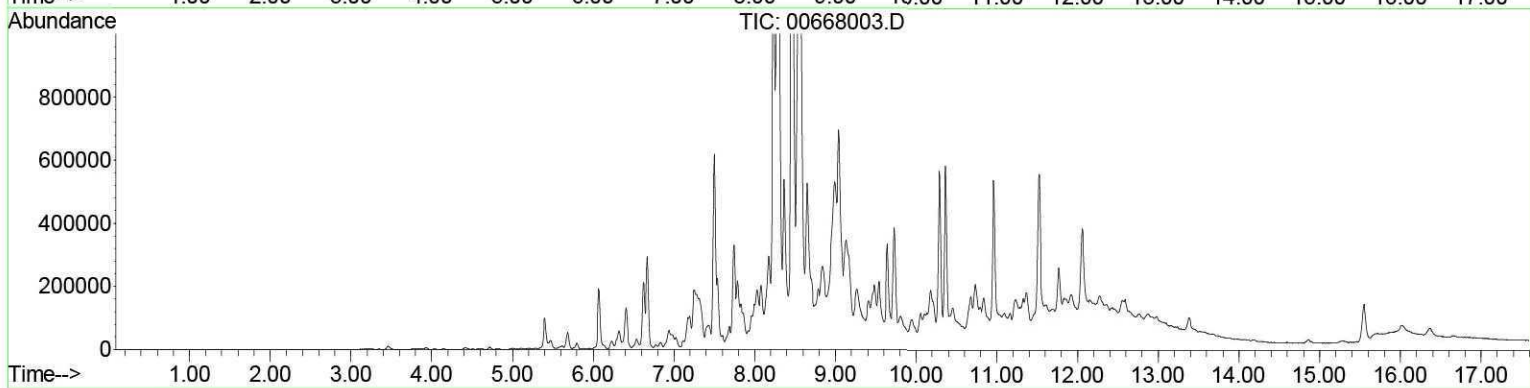
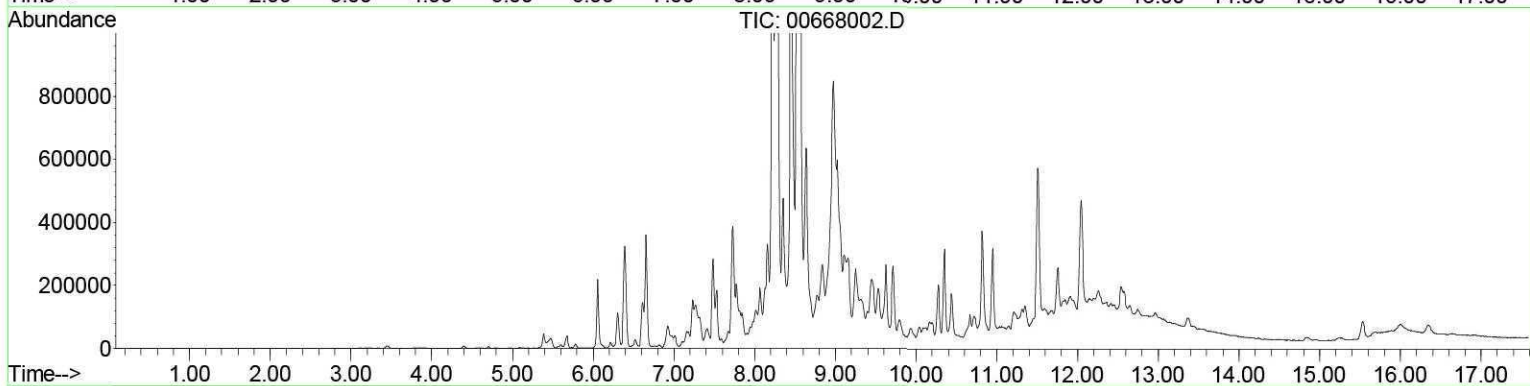
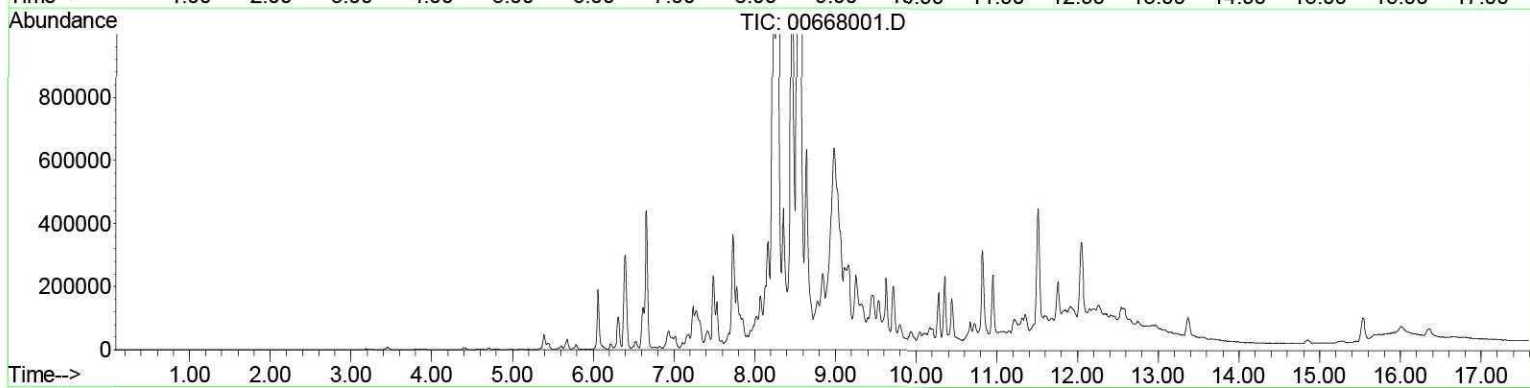
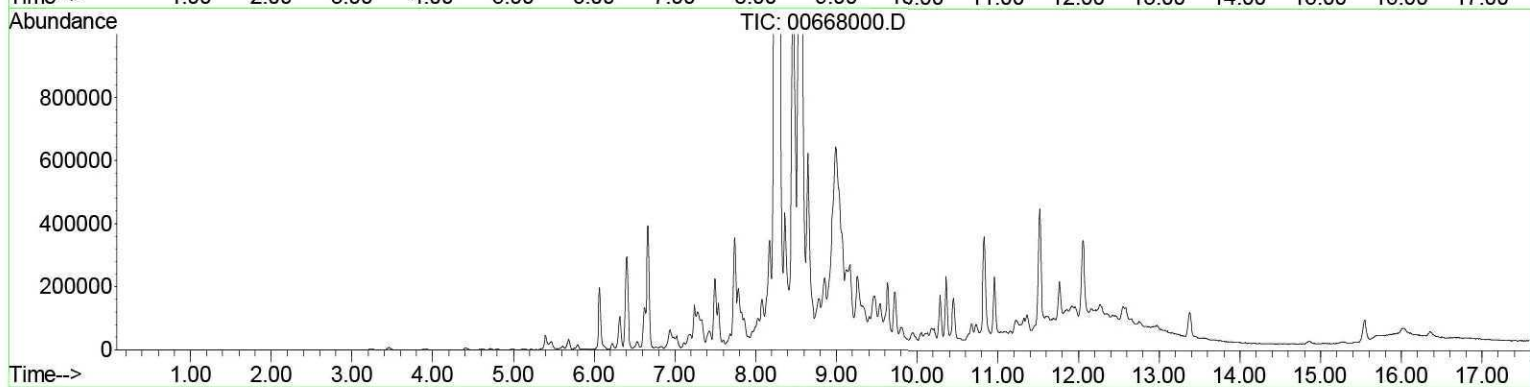
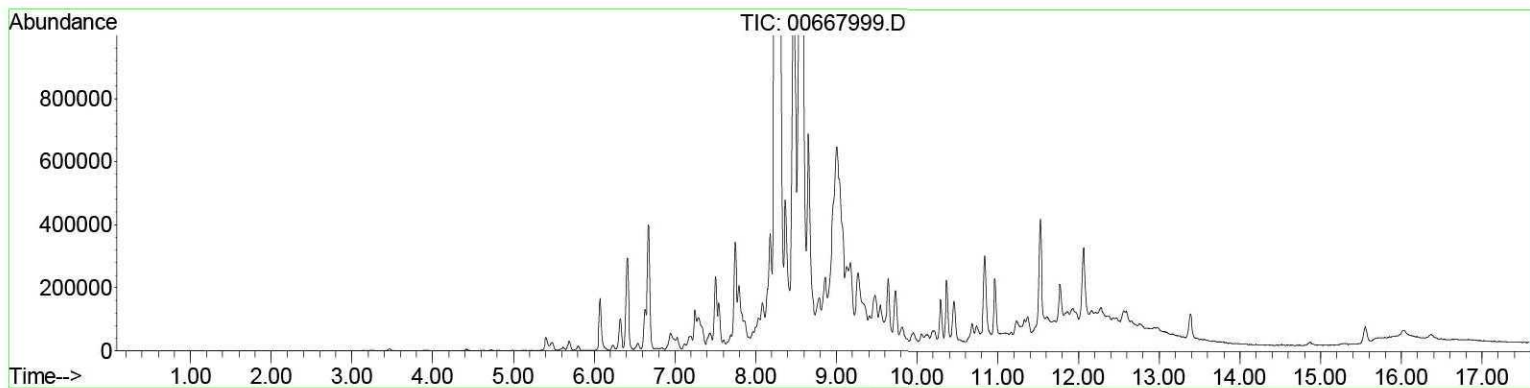
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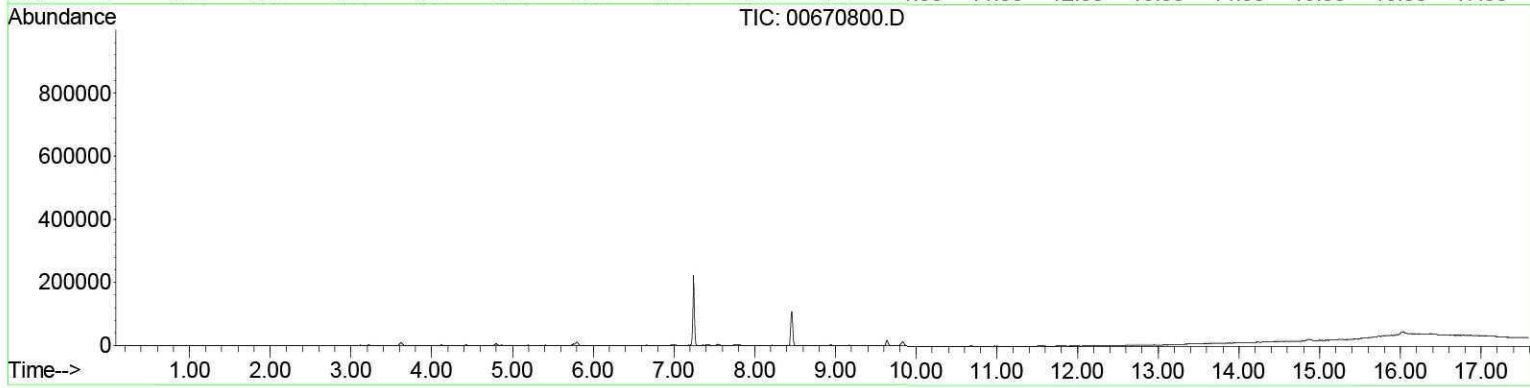
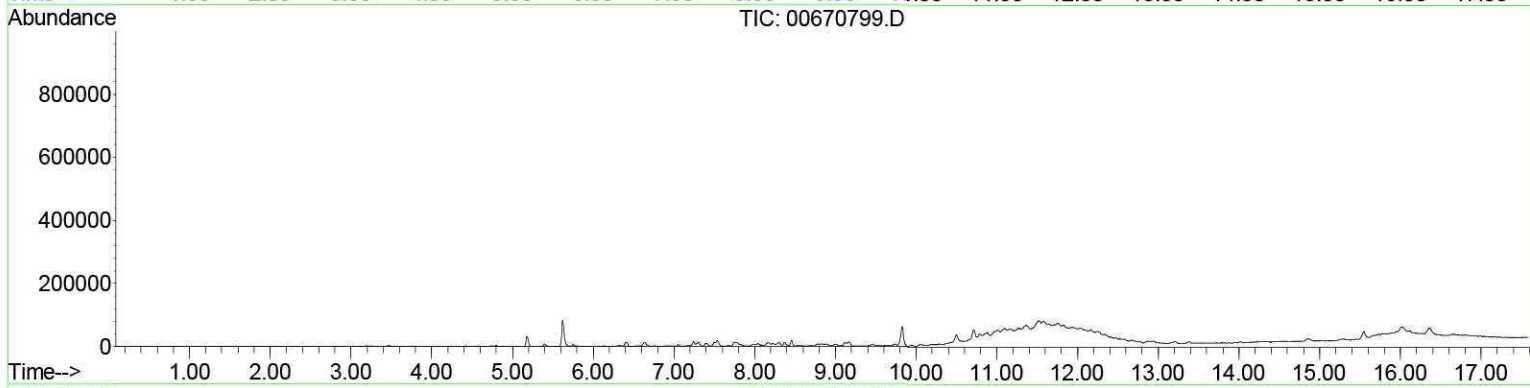
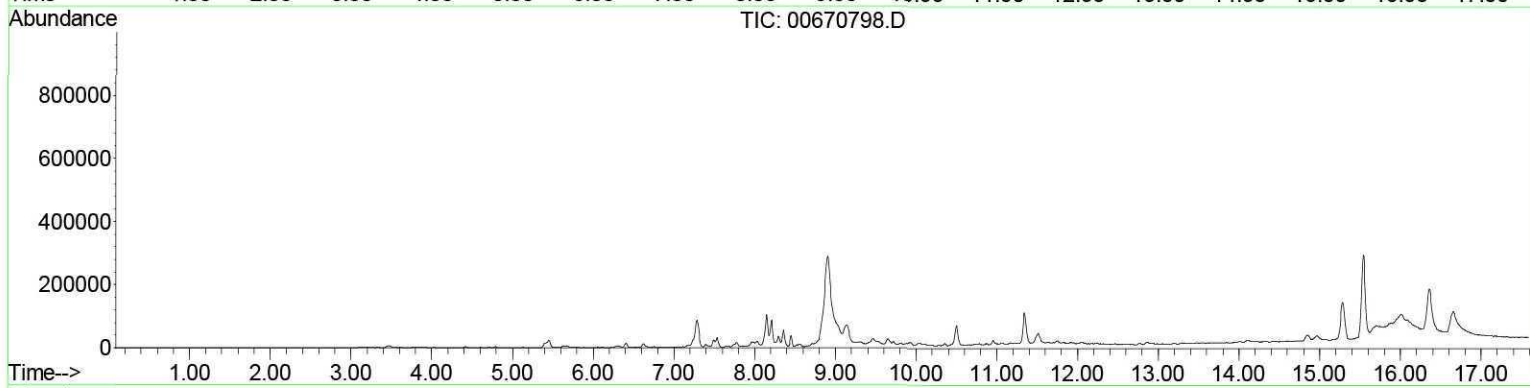
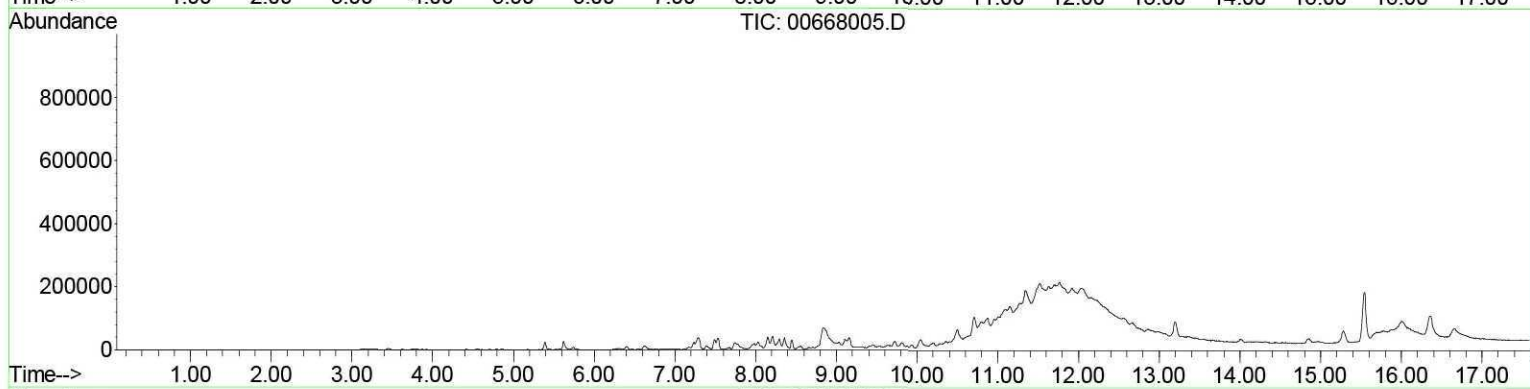
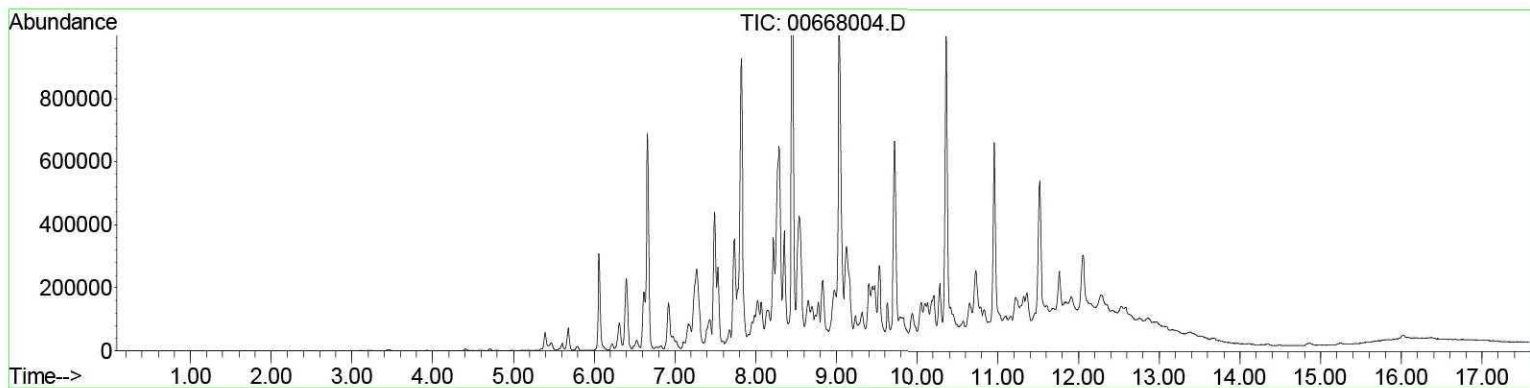


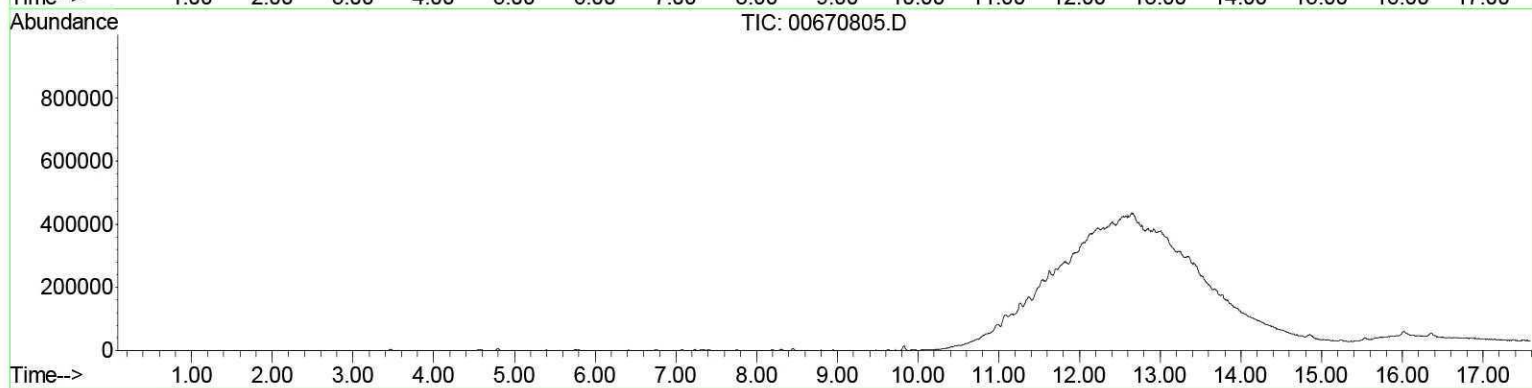
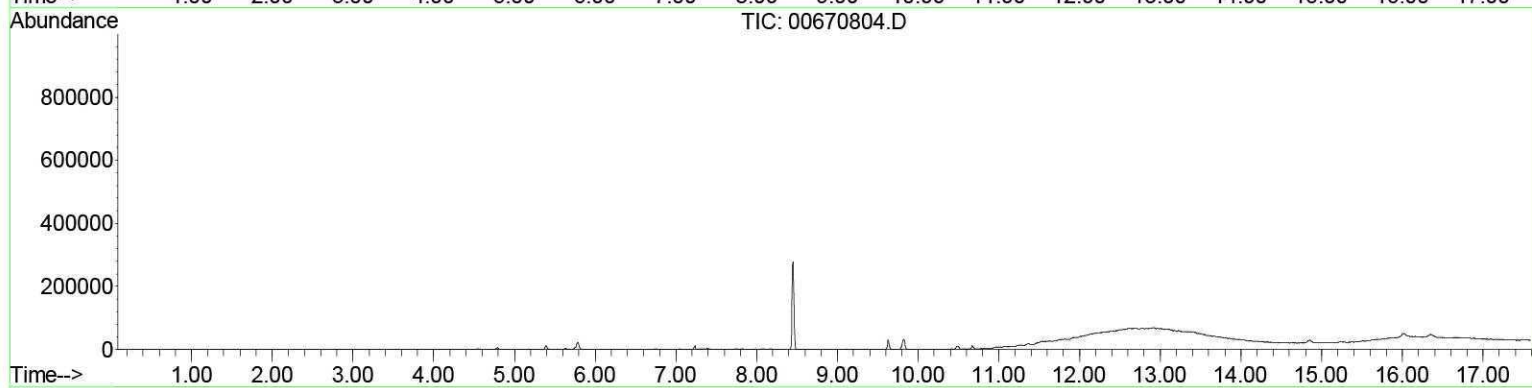
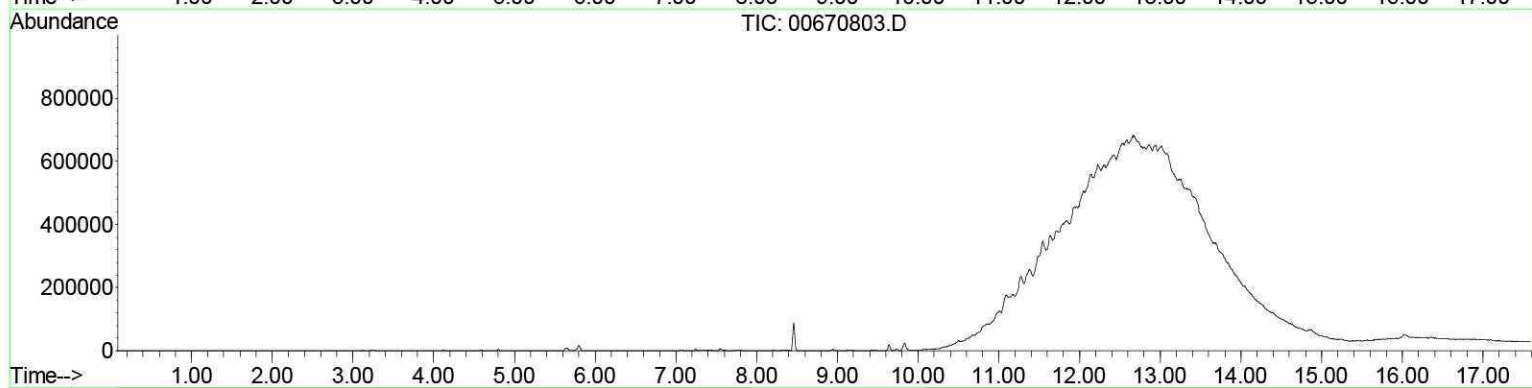
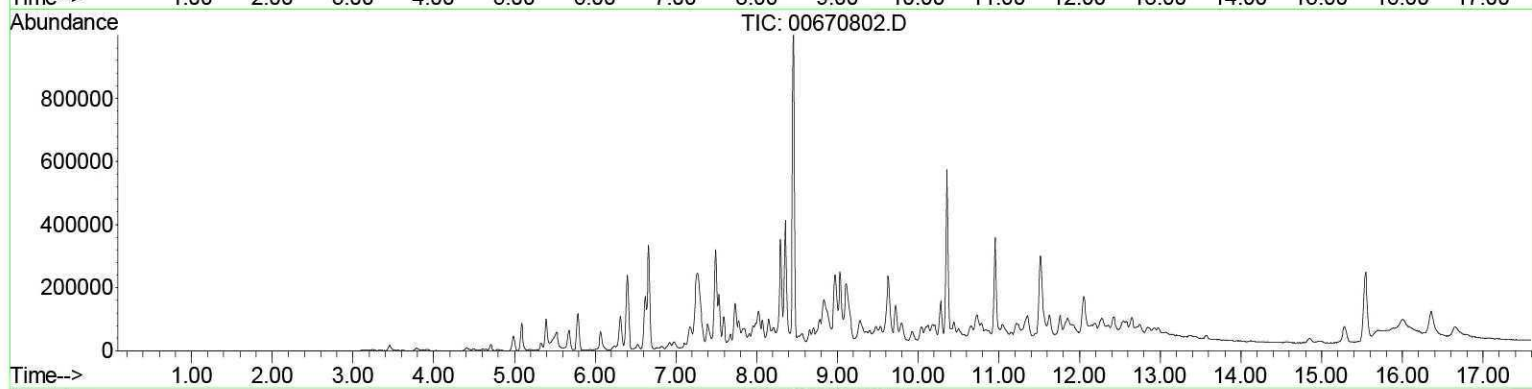
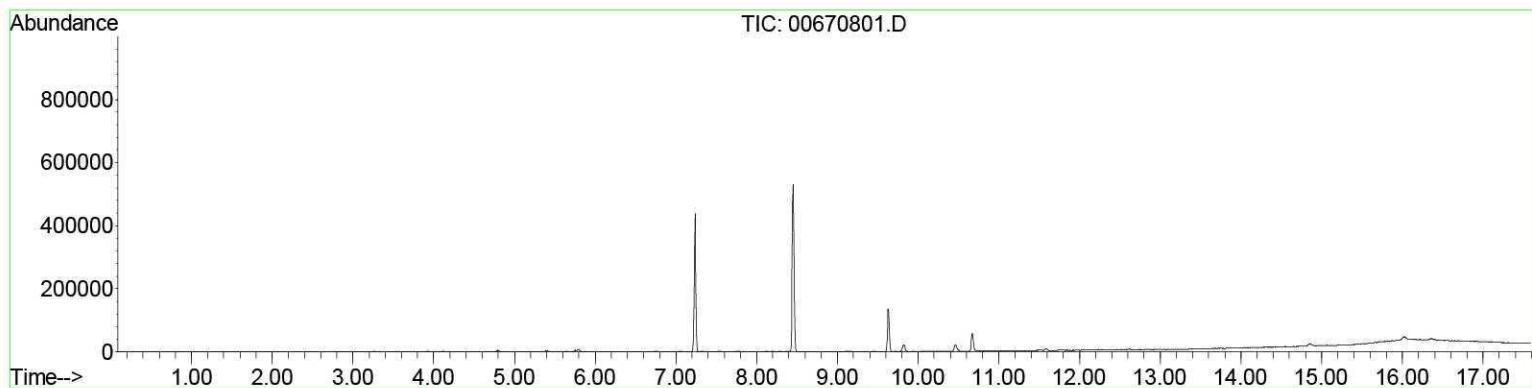


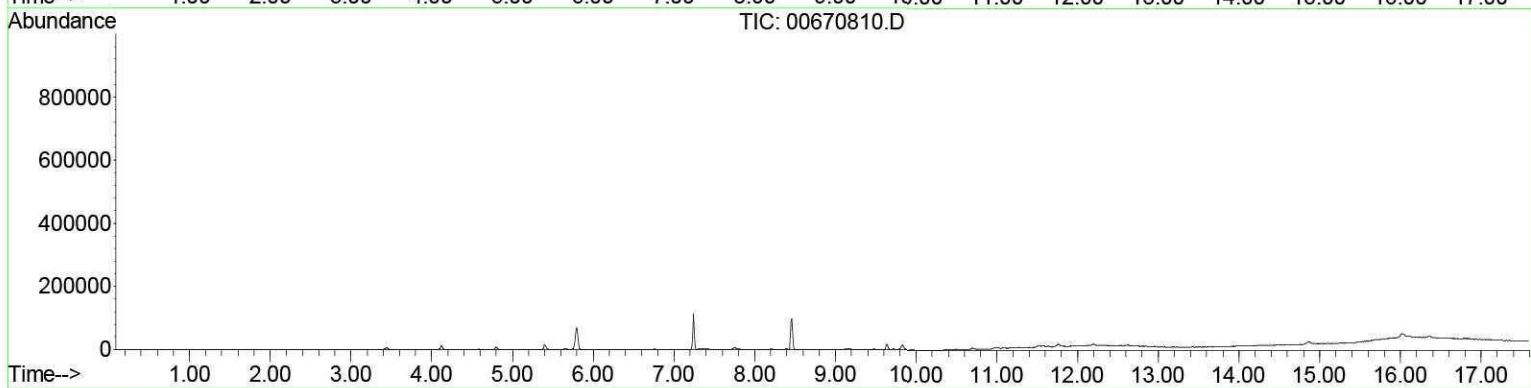
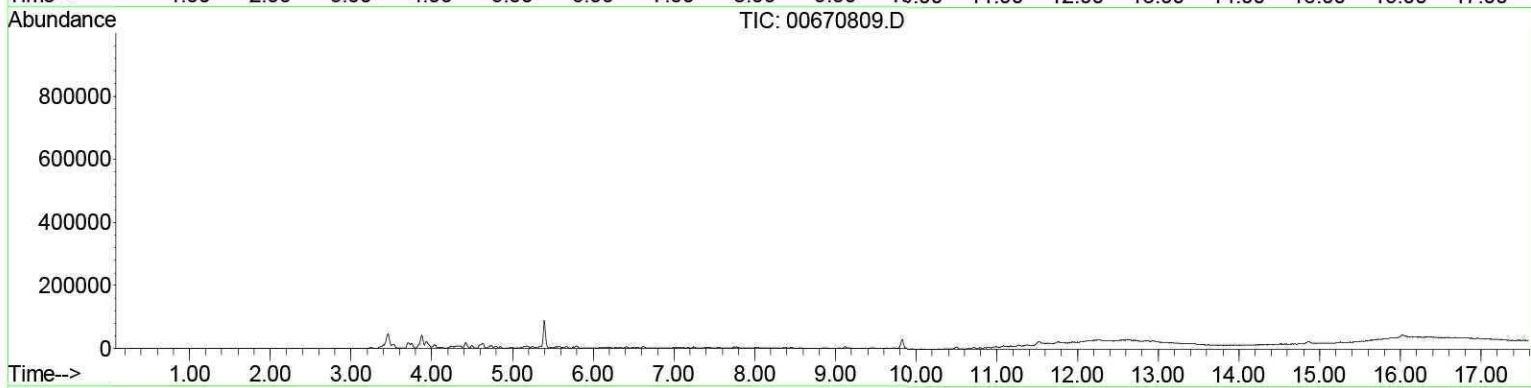
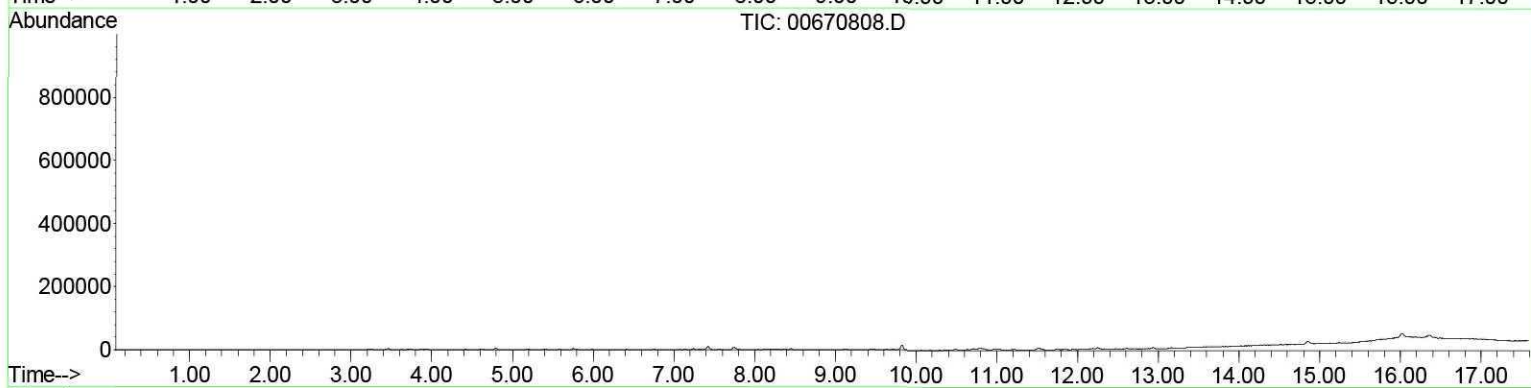
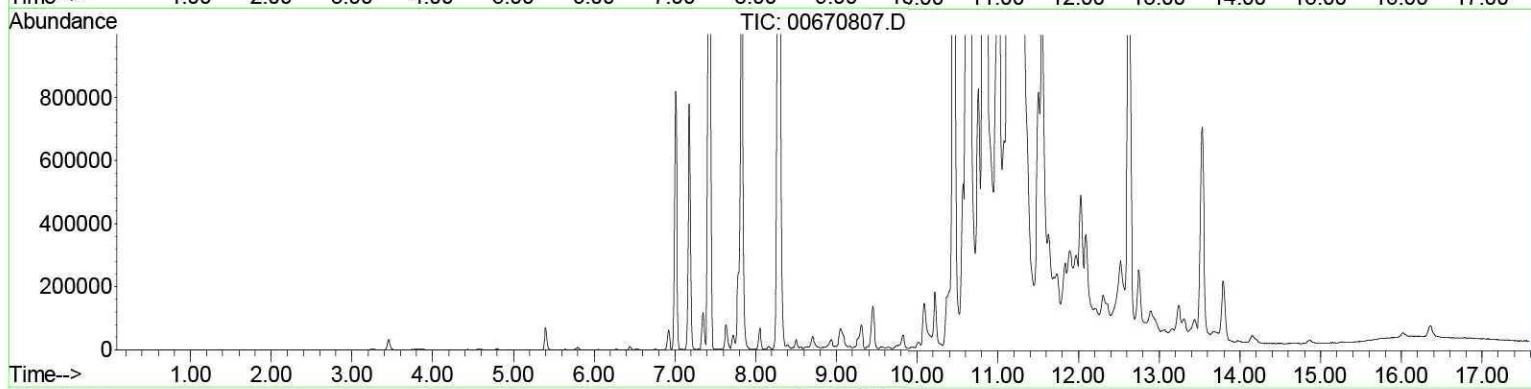
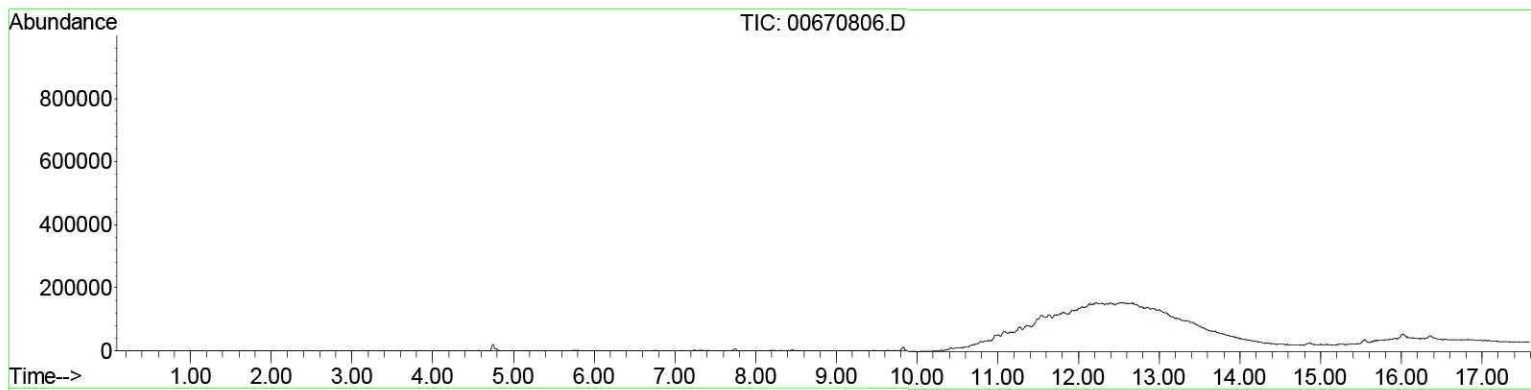


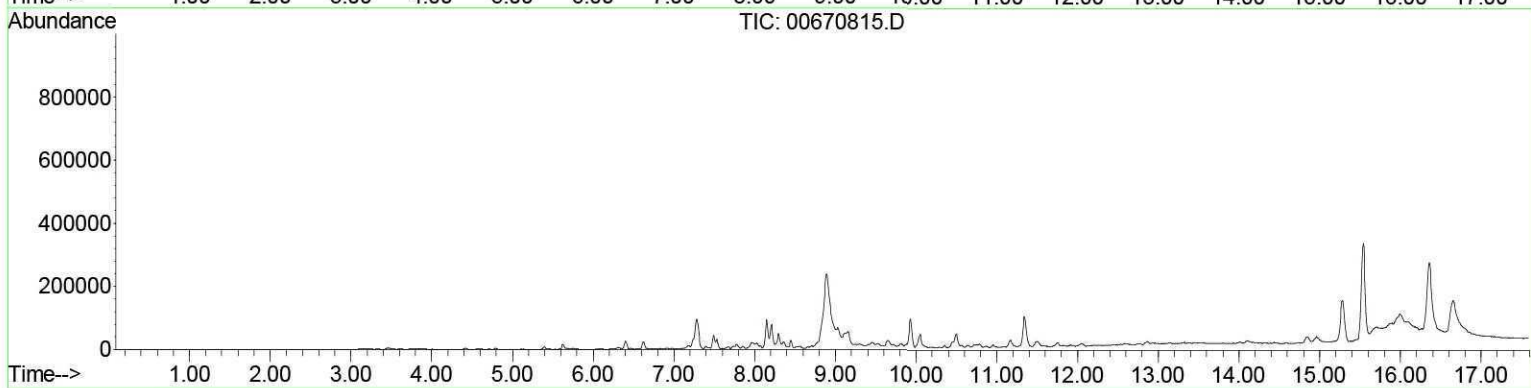
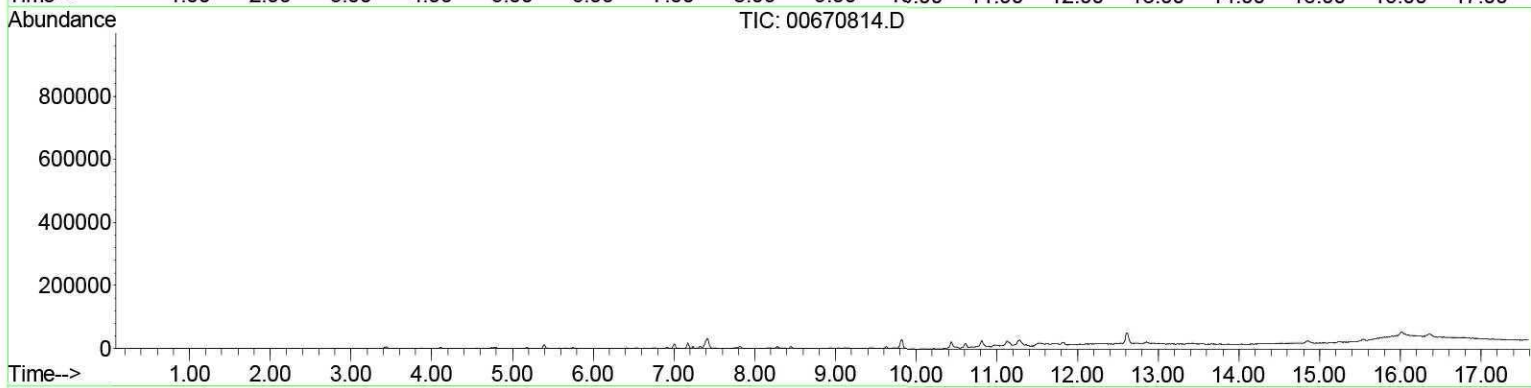
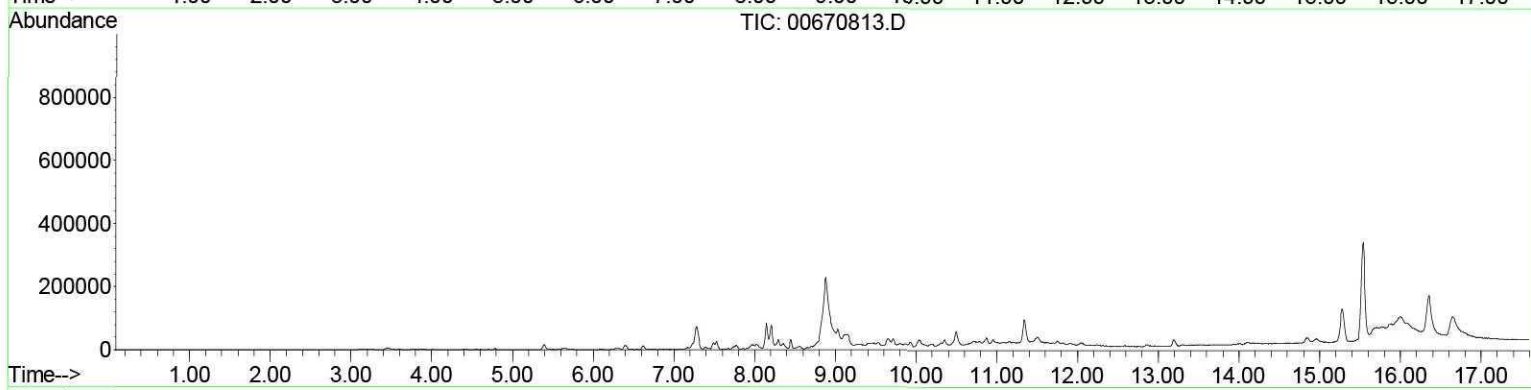
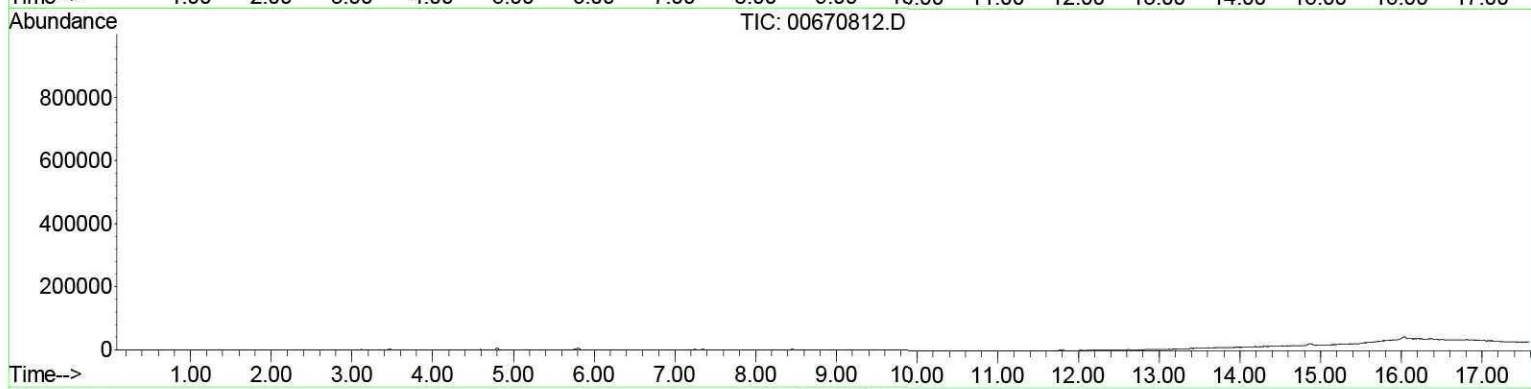
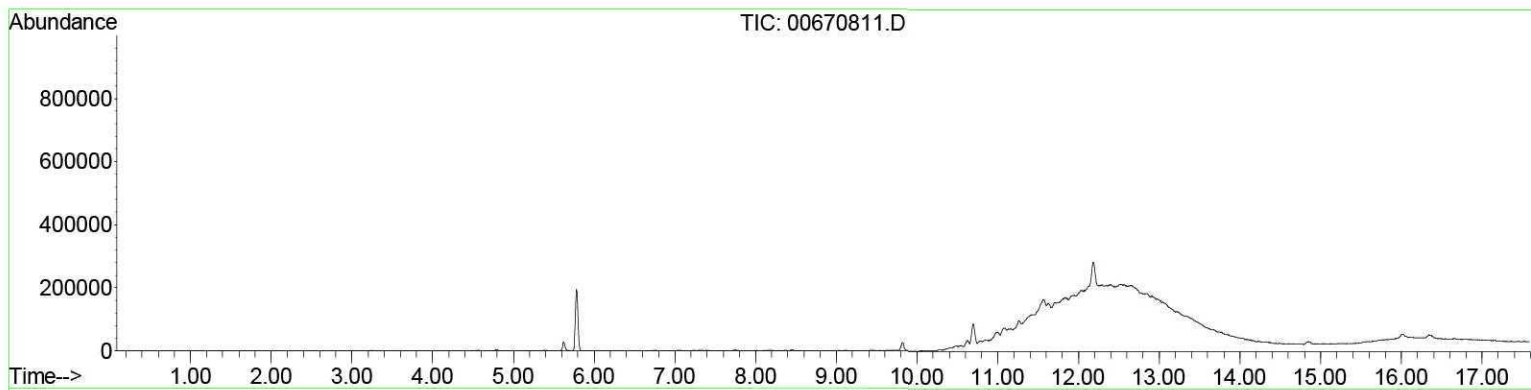


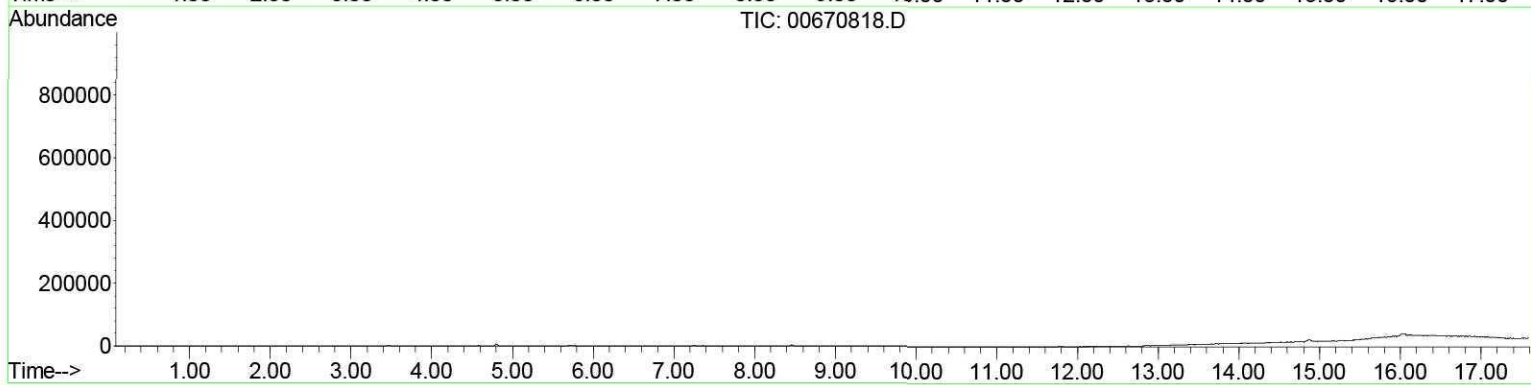
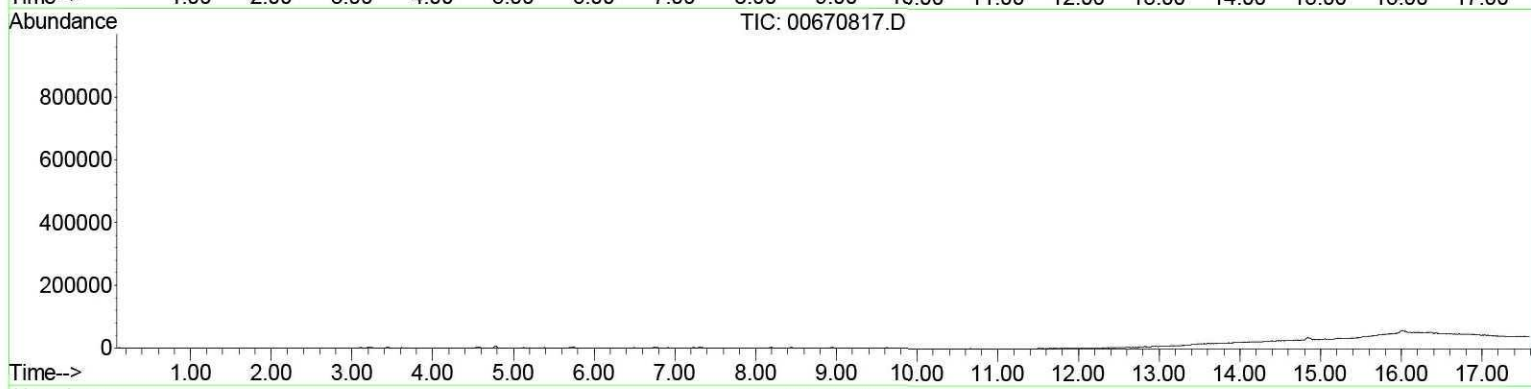
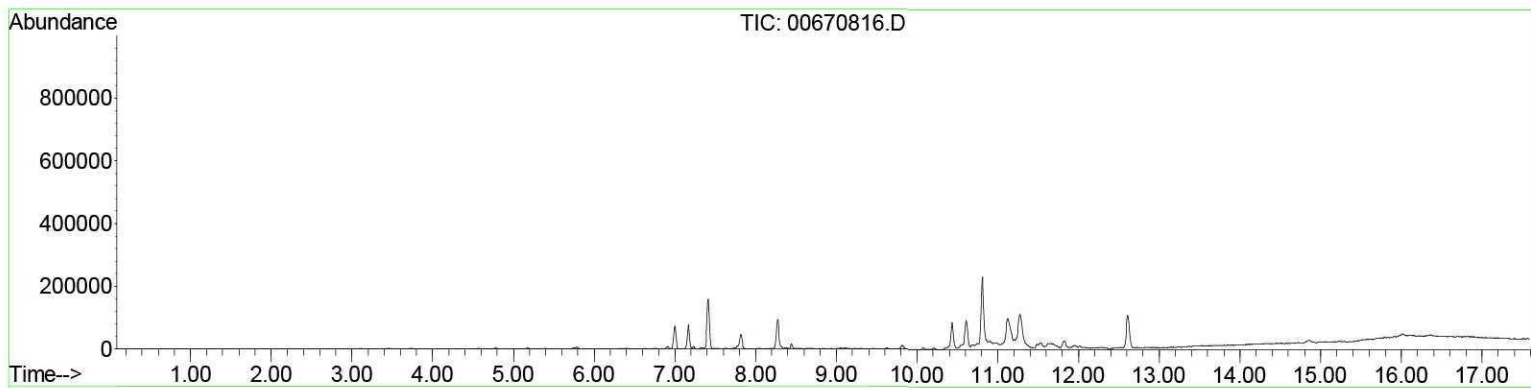












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