

Houston Forensic Science Center

Comparative and Analytical Division - Toxicology

Drug GC-MS SIM Batch Review Checklist

Batch Date: <u>THC-20180814U-TS</u>		Analyst Review	Technical Review
Worklist	Item tested written for each case	✓	✓
	Lot numbers for internal standard, calibrators, controls, negative matrices, reagents, solvents, and SPE columns are listed	✓	✓
	Pipette(s) used listed	✓	✓
	Verify preparation of internal standard, calibrators, and controls	✓	✓
Performance Verification	Verify autotune is acceptable and corresponds with method	✓	✓
	Verify system suitability is acceptable (abundance and chromatography)	✓	✓
GC-MS Method	Verify correct assay method is included	✓	✓
	All pages included	✓	✓
Sequence	Verify batch file name is consistent	✓	✓
	Reviewer verified, initialed, and dated sequence	✓	✓
	Verify appropriate controls are run at least after every 10 case samples	✓	✓
	Verify appropriate calibrators and control were analyzed	✓	✓
	Verify all cases were processed and have data	✓	✓
SIM Quantification Worksheet	Review batch file name	✓	✓
	Verify lot number for calibrators, controls, internal standard, negative matrices, reagents, solvents, and SPE columns against those on the worklist	✓	✓
	Verify ion ratios and concentrations against chromatograms, R ² value, and retention time	n/a	NA
	Verify calibrators and controls are acceptable for reporting analytes	n/a	NA
Data	Verify calibration curves are acceptable for reporting analyte(s)	n/a	NA
	Verify calibration curve values are within range for reporting analyte(s)	n/a	↓
	Verify calibration curve ion ratios are acceptable for reporting analyte(s)	n/a	
	Verify calibration curve against chromatograms for last calibration update	n/a	
	Verify control values are within range for reporting analyte(s)	n/a	
	Verify chromatography is acceptable for reporting analyte(s)	n/a	
	Verify RT or RRT are acceptable for reporting analyte(s)	n/a	
	Verify concentration for reporting analyte(s) is within quantification range	n/a	
Verify ion ratios are acceptable for reporting analyte(s)	n/a	✓	
Verify QCs were added to QC log		n/a	NA
All comments and/or strikethroughs, if any, initialed		✓	✓
All pages initialed		✓	✓

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Notes from Technical Review

lot # for 10M Potassium Hydroxide incorrect on batch of sheet.
Print updated sequence to show sample name
change that batch run under.

8/31/18
MK

Analyst Review

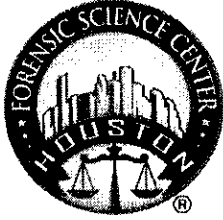
Technical Review

Signature/Date: Jamija Satheraji 8/28/18

Signature/Date: Mel Lloyd 8/31/18

THC - 20180814U - TS





Houston Forensic Science Center

INTEROFFICE MEMO

To: THC_20180814U_TS

From: Tanuja Sathiraj, MS, Forensic Analyst-Toxicology **Tanjuja Sathiraj**
Digitally signed by Tanuja Sathiraj
DN: cn=Tanjuja Sathiraj, o=Houston Forensic Science
Center, ou=Toxicology,
email=tsathiraj@houstonforensicscience.org, c=US
Date: 2018.08.21 10:21:27 -0500

cc: Melissa Lloyd, Supervisor-Toxicology **Melissa Lloyd**
Digitally signed by Melissa Lloyd
Date: 2018.08.21 12:52:05 -05'00'

Date: August 21, 2018

Re: Addressing entire batch failure

Batch THC_20180814U_TS failed for THC, 11-OH-THC, and THC-COOH because of poor extraction recovery of all samples including the cut off calibrator. As a result, the cut off calibrator was dropped for all three drugs. Without an acceptable cut off calibrator it is not possible to determine the absence or presence of cannabinoids in case samples. Therefore, the entire batch is deemed not acceptable and all case samples will have to be reanalyzed. No data was processed for this batch due to the poor extraction recovery of the cut off calibrator. The only data enclosed are the total ion chromatographs to show the case samples were injected.

TS



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Comparative and Analytical Division - Toxicology

SIM Batch QC Data - Cannabinoids Urine

Batch Name: THC_20180814U_TS

Analyte: THC

				Retention Time= 0.00				
Calibrator	Conc.(ng/mL)	% Difference	Lot #		371.3	303.1	374.3	306.1
4	0.00	100.0	20180516C-C-0.1					
80	0.00	100.0	20180516C-C-1		0.0	0.0	0.0	0.0
Control	Lot #	Conc.(ng/mL)	Tgt Range	Mean	0.0	0.0	0.0	0.0
Negative	042618u	0.00		(-)20%	0.0	0.0	0.0	0.0
PQC	20180516L-Q-0.1	0.00	> 4	(+)20%	0.0	0.0	0.0	0.0
PQC	-	0.00	> 4					
PQC	-	0.00	> 4					
PQC	20180516L-Q-0.1	0.00	> 4					

Analyte: 11-OH-THC

				Retention Time= 0.00				
Calibrator	Conc.(ng/mL)	% Difference	Lot #		474.0	459.0	477.0	462.0
4	0.00	100.0	20180516C-C-0.1					
80	0.00	100.0	20180516C-C-1		0.0	0.0	0.0	0.0
Control	Lot #	Conc.(ng/mL)	Tgt Range	Mean	0.0	0.0	0.0	0.0
Negative	042618u	0.00		(-)20%	0.0	0.0	0.0	0.0
PQC	20180516L-Q-0.1	0.00	> 4	(+)20%	0.0	0.0	0.0	0.0
PQC	-	0.00	> 4					
PQC	-	0.00	> 4					
PQC	20180516L-Q-0.1	0.00	> 4					

Analyte: THC-COOH

				Retention Time= 0.00				
Calibrator	Conc.(ng/mL)	% Difference	Lot #		488.0	371.0	491.0	374.0
4	0.00	100.0	20180516C-C-0.1					
80	0.00	100.0	20180516C-C-1		0.0	0.0	0.0	0.0
Control	Lot #	Conc.(ng/mL)	Tgt Range	Mean	0.0	0.0	0.0	0.0
Negative	042618u	0.00		(-)20%	0.0	0.0	0.0	0.0
Hydrolysis	180524C-Q-0.1	0.00	> 4	(+)20%	0.0	0.0	0.0	0.0
PQC	20180516L-Q-0.1	0.00	> 4					
PQC	-	0.00	> 4					
PQC	-	0.00	> 4					
PQC	20180516L-Q-0.1	0.00	> 4					



Houston Forensic Science Center
 Comparative and Analytical Division - Toxicology
SIM Batch QC Data - Cannabinoids Urine

Batch Name: THC_20180814U_TS

Internal Standard Lot:	<u>042718C-IS-2; exp: 04/27/19</u>		
SPE Columns Lot:	<u>1-170825</u>		
Pipettes:	<u>8937; 8793; 0398; 790G; 0009</u>		
Reagents:	Methanol	Lot #:	DR486 Exp: N/A
	10 M Potassium Hydroxide		180712-KOH ^{3/15 @ 3/18} 07/13/19
	Ammonium Hydroxide		55325 N/A
	Ethyl Acetate		0000086545 Retest date: 07/31/19
	Hexane		157196 N/A
	Glacial Acetic Acid		2256C473 N/A
	BSTFA with 1% TMCS		FN11031704 01/31/23
	Acetonitrile		200909618 N/A

This batch failed for THC, 11-OH-THC, and THC-COOH because of poor extraction recovery of all samples including the cut off calibrator. As a result, cut off calibrator was dropped. No data was processed due to poor extraction recovery. See memo THC_20180814U_TS for detailed explanation.

Comment:

Operator: Tanuja Sathiraj

Data Path: D:\DATA\2018\THC\THC_20180814U_TS\

Instrument Control Pre-Seq Cmd:

Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:

Data Analysis Post-Seq Cmd:

Method Sections To Run	Sequence Barcode Options
(X) Full Method	(X) On Mismatch, Inject Anyway
() Reprocessing Only	() On Mismatch, Don't Inject
	() Barcode Disabled

Line		Sample Name/Misc Info
1)	Specimen	11 01_BU THC_U Matrix Urine
2)	Specimen	12 02_COCAL THC_U Cut-Off Calibrator
3)	Specimen	13 03_HICAL THC_U High Calibrator
4)	Specimen	14 04_NEG THC_U Negative Control
5)	Specimen	15 Hydrolysis Control
	Datafile	05_HYDRO QC
	Method	THC_U
6)	Specimen	16 06_PQC1 THC_U Positive Control 1
7)	Specimen	17 2018-04393-3.1.3
	Datafile	07_2018-04393
	Method	THC_U
8)	Specimen	98 08_Etac THC_U Ethyl acetate
9)	Specimen	18 2018-06856-4.1.3-1:5DIL
	Datafile	09_2018-06856
	Method	THC_U
10)	Specimen	98 10_Etac THC_U Ethyl acetate
11)	Specimen	19 2018-07784-2.1.3-1:5DIL
	Datafile	11_2018-07784
	Method	THC_U
12)	Specimen	98 12_Etac THC_U Ethyl acetate
13)	Specimen	20 2018-08404-2.1.3-1:5 DIL
	Datafile	13_2018-08404
	Method	THC_U
14)	Specimen	98 14_Etac THC_U Ethyl acetate
15)	Specimen	21 2018-09027-3.1.3-1:5 DIL
	Datafile	15_2018-09027
	Method	THC_U
16)	Specimen	98 16_Etac THC_U Ethyl acetate
17)	Specimen	22 2018-09458-1.1.3-1:5 DIL
	Datafile	17_2018-09458
	Method	THC_U
18)	Specimen	98 18_Etac THC_U Ethyl acetate
19)	Specimen	23 Positive control 3
	Datafile	19_Positive control 3 322-4-11/18
	Method	THC_U TS 8/31/18
20)	Specimen	100 METHANOL1
	Datafile	20_METHANOL
	Method	THC_U
21)	Specimen	100 METHANOL2
	Datafile	21_METHANOL
	Method	THC_U
22)	Specimen	100 METHANOL3
	Datafile	22_METHANOL
	Method	THC_U

Verified 8/14/18 ay

TS.

THC-20180814U-TS

Comment:

Operator: Tanuja Sathiraj

Data Path: D:\DATA\2018\THC\THC_20180814U_TS\

Instrument Control Pre-Seq Cmd:

Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:

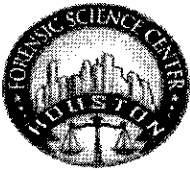
Data Analysis Post-Seq Cmd:

Method Sections To Run	Sequence Barcode Options
(X) Full Method	(X) On Mismatch, Inject Anyway
() Reprocessing Only	() On Mismatch, Don't Inject
	() Barcode Disabled

Line	Sample Name/Misc Info
1) Specimen	11 01_BU THC_U Matrix Urine
2) Specimen	12 02_COCAI THC_U Cut-Off Calibrator
3) Specimen	13 03_HICAL THC_U High Calibrator
4) Specimen	14 04_NEG THC_U Negative Control
5) Specimen	15 Hydrolysis Control
Datafile	05_HYDRO QC
Method	THC_U
6) Specimen	16 06_PQC1 THC_U Positive Control 1
7) Specimen	17 2018-04393-3.1.3
Datafile	07_2018-04393
Method	THC_U
8) Specimen	98 08_Etac THC_U Ethyl acetate
9) Specimen	18 2018-06856-4.1.3-1:5DIL
Datafile	09_2018-06856
Method	THC_U
10) Specimen	98 10_Etac THC_U Ethyl acetate
11) Specimen	19 2018-07784-2.1.3-1:5DIL
Datafile	11_2018-07784
Method	THC_U
12) Specimen	98 12_Etac THC_U Ethyl acetate
13) Specimen	20 2018-08404-2.1.3-1:5 DIL
Datafile	13_2018-08404
Method	THC_U
14) Specimen	98 14_Etac THC_U Ethyl acetate
15) Specimen	21 2018-09027-3.1.3-1:5 DIL
Datafile	15_2018-09027
Method	THC_U
16) Specimen	98 16_Etac THC_U Ethyl acetate
17) Specimen	22 2018-09458-1.1.3-1:5 DIL
Datafile	17_2018-09458
Method	THC_U
18) Specimen	98 18_Etac THC_U Ethyl acetate
19) Specimen	23 Positive control 2
Datafile	19_Positive control 3
Method	THC_U
20) Specimen	100 METHANOL1
Datafile	20_METHANOL
Method	THC_U
21) Specimen	100 METHANOL2
Datafile	21_METHANOL
Method	THC_U
22) Specimen	100 METHANOL3
Datafile	22_METHANOL
Method	THC_U

The sequence was updated and reprinted because the sampler name for Vial 23 was positive 3 and then I changed it to positive 2. The updated sequence did not need to be reverified because the vial positions did not change and the sample in vial position 23 was the same, a positive control. The numerical notation is used to represent the number and order of positive controls run. Thus, it was changed from 3 to 2 because there were only 2 positive controls run in this batch. TS 8/31/18

TS



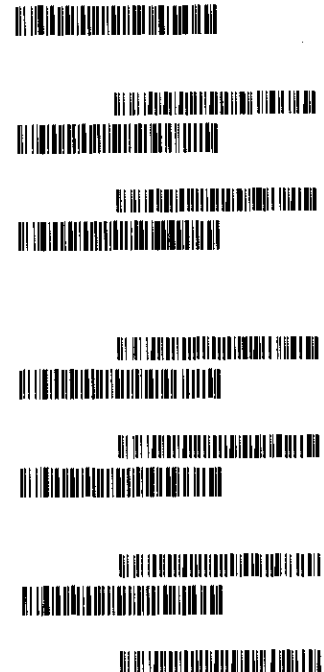
Alcohol/Toxicology
Work List for Tanuja Sathiraj / THC Urine

8/14/2018

Priority	Lab Case# / Item#	Description
2018-04393 ✓	033395718 Normal	Sexual Assault (Force Intercourse) HPD requested confirmatory analysis (email). -DL 6/14/2018 Re-analyze for Cannabinoids. TS 07/23/18
2018-06856 ✓	055290318 Normal	Sexual Assault (Force Intercourse) TS 8/31/18 Re-analyze for Cannabinoids; 1:5D and undiluted TS 07/31/18
2018-07784 ✓	063828618 Normal	Sexual Assault (Other Penetration)(Adult) BE dilute 1:20 MH 06/28/18 BAN reanalysis MH 07/4/18 TS 8/31/18 Re-analyze for Cannabinoids; 1:5D and undiluted TS 07/31/18
2018-08404 ✓	071077318 Normal	Sexual Assault (Other Penetration)(Adult) TS 8/31/18 Re-analyze for Cannabinoids; 1:5D and undiluted. TS 07/31/18
2018-09027 ✓	077225418 Normal	Sexual Assault (Force Intercourse) TS 8/31/18 Re-analyze for Cannabinoids; 1:5D and undiluted. TS 07/31/18 Re-analyze for BSD 8/9/18 MH
2018-09458 ✓	080067318 Normal	Sexual Assault (Force Intercourse) TS 8/31/18 Re-analyze for Cannabinoids; 1:5D and undiluted. TS 07/31/18

Total Tasks

6



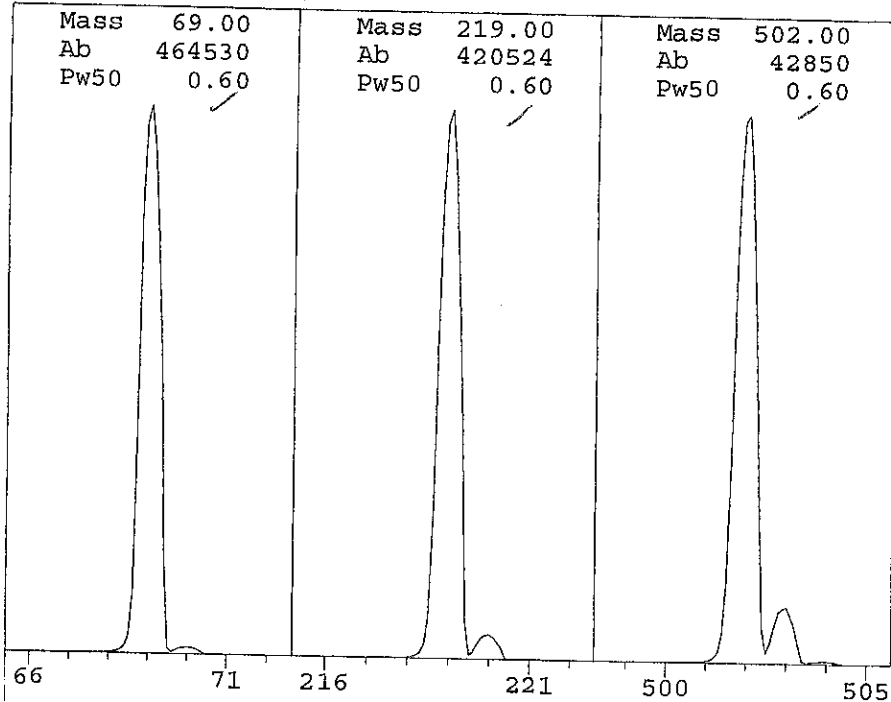
Matrix urine: - 042618u exp: 4/26/19 pipettes: - 8937 0009
 20180516C-C-01 ; exp: 5/16/19 8793
 180524C-α-0.1 ; exp: 5/24/19 0398
 042718C-IS-2 ; exp: -04/27/19 7906
 20180516C-C-1 ; exp: -5/16/19 Columns: 1-170825
 20180516L-α-0.1 ; exp: -5/16/19
 Reagents: 10M potassium Hydroxide: 180713-KOH ; exp 7/13/19
 methanol: -DR486; exp: n/a
 Ethyl Acetate: 0000086545; exp: 7/31/19
 Acetonitrile: 200909618; exp: n/a
 Ammonium Hydroxide: 55325; exp: n/a
 Acetic Acid: -2256473; exp: n/a
 Hexane: -1571961; exp: n/a
 BSTFA + 11-TMCS: FN11031704
 exp: - 01/31/23



12,254

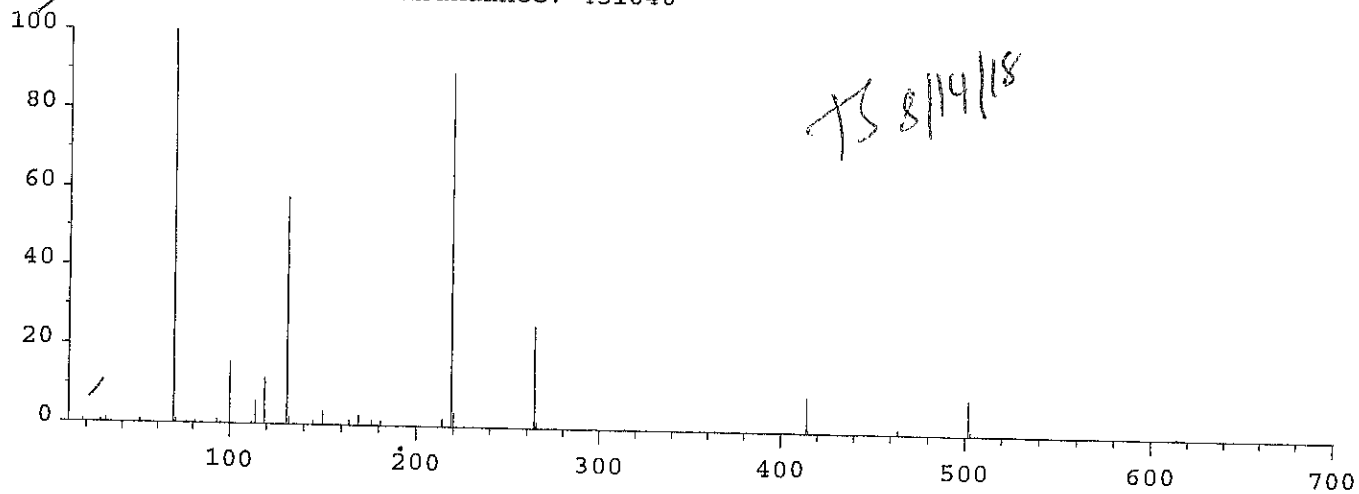
THC-20180814U-TS

TS



Ion Pol Pos MassGain -610
 MassOffs -36
 Emission 34.6 AmuGain 1915
 EIEnrgy 69.9 AmuOffs 121.75
 Filament 1 Wid219 -0.023
 DC Pol Pos
 Repeller 28.11
 IonFcus 90.2 HEDENab On
 EntLens 22.0 EMVolts 1624
 EntOffs 19.07
 Samples 8
 PFTBA Open Averages 3
 Stepsize 0.10
 Temperatures and Pressures:
 MS Source 230 Foreline48.117
 MS Quad 150 HiVac 1.00e10

Scan: 10.00 - 701.00 Samples: 8 Thresh: 100 Step: 0.10
 112 peaks Base: 69.00 Abundance: 451840



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	451840	100.00	70.00	5155	1.14
219.00	405888	89.83	220.00	17736	4.37
502.00	40976	9.07	503.00	4274	10.43

Air/Water Check: H2O~0.90% N2~0.60% O2~0.26% CO2~0.04% N2/H2O~66.63%
 Column(1) Flow: 0.95 Column(2): -1.79769e+308 ml/min. Interface Temp: 280
 Ramp Criteria:
 Ion Focus Maximum 90 volts using ion 502; EM Gain 18567
 Repeller Maximum 35 volts using ion 219; Gain Factor 0.19
 MassGain Values(Samples): -602(3) -599(2) -584(1) -558(0) -479(FS)

TARGET MASS:	50	69	131	219	414	502	1050
Amu Offset:	121.8	121.8	121.8	121.8	121.8	121.8	121.8
Entrance Lens Offset:	19.1	19.1	19.1	19.1	19.1	19.1	19.1

THC_20180814U_TS

TS

C:\MSDCHEM\1\METHODS\THC_U.M
 Wed Aug 15 13:01:57 2018

Control Information

Sample Inlet : GC
 Injection Source : GC ALS
 Mass Spectrometer : Enabled

No Sample Prep method has been assigned to this method.

GC
 Oven
 Temperature
 Setpoint On
 (Initial) 160 °C
 Hold Time 1 min
 Post Run 150 °C
 Program
 #1 Rate 25 °C/min
 #1 Value 230 °C
 #1 Hold Time 6 min
 #2 Rate 30 °C/min
 #2 Value 260 °C
 #2 Hold Time 4 min
 #3 Rate 10 °C/min
 #3 Value 270 °C
 #3 Hold Time 0.5 min
 #4 Rate 30 °C/min
 #4 Value 300 °C
 #4 Hold Time 5 min

Equilibration Time 0.5 min
 Max Temperature 325 °C
 Slow Fan Disabled
 Cryo Off

ALS
 Front Injector
 Syringe Size 10 µL
 Injection Volume 2 µL
 Injection Repetitions 1
 Injection Delay 0 sec
 Solvent A Washes (PreInj) 6
 Solvent A Washes (PostInj) 6
 Solvent A Volume 8 µL
 Solvent B Washes (PreInj) 6
 Solvent B Washes (PostInj) 6
 Solvent B Volume 8 µL
 Sample Washes 0
 Sample Wash Volume 8 µL
 Sample Pumps 0
 Dwell Time (PreInj) 0 min
 Dwell Time (PostInj) 0 min
 Solvent Wash Draw Speed 300 µL/min
 Solvent Wash Dispense Speed 6000 µL/min
 Sample Wash Draw Speed 300 µL/min
 Sample Wash Dispense Speed 6000 µL/min
 Injection Dispense Speed 6000 µL/min
 Viscosity Delay 7 sec
 Sample Depth Disabled

Sample Overlap
 Mode Sample overlap is not enabled



THC_20180814U-TS

ALS Errors

Pause for user interaction

Front SS Inlet He
Mode
Heater
Pressure
Total Flow
Septum Purge Flow
Gas Saver
Injection Pulse Pressure
Purge Flow to Split Vent

Pulsed Splitless
On 250 °C
On 13.164 psi
On 103.95 mL/min
On 3 mL/min
On 20 After 2 min mL/min
25 psi Until 0.25 min
100 mL/min at 0.5 min

Thermal Aux 2 (MSD Transfer Line)

Temperature
Setpoint
(Initial)
Hold Time
Post Run

On
280 °C
0 min
0 °C

Column

Column #1
Flow
Setpoint
(Initial)
Hold Time
Post Run
Program
#1 Rate
#1 Value
#1 Hold Time

Off
0.95 mL/min
16 min
0.57353 mL/min

99 mL/min per min
2 mL/min
0 min

Agilent 122-5532

DB-5MS
-60 °C-325 °C (325 °C): 30 m x 250 µm x 0.25 µm
In
Out
(Initial)
Pressure
Flow
Average Velocity
Holdup Time

Front SS Inlet He
MSD
160 °C
13.164 psi
0.95 mL/min
37.227 cm/sec
1.3431 min

Signals

Signal #1: Test Plot

Description
Details

Test Plot

Save
Data Rate
Dual Injection Assignment

Off
50 Hz
Front Sample

Signal #2: Test Plot

Description
Details

Test Plot

Save
Data Rate
Dual Injection Assignment

Off
50 Hz
Front Sample

Signal #3: Test Plot

Description
Details

Test Plot

Save
Data Rate
Dual Injection Assignment

Off
50 Hz
Back Sample

Signal #4: Test Plot

Description

Test Plot

TS

THC-20180814U-TS

Details
Save Off
Data Rate 50 Hz
Dual Injection Assignment Back Sample

MS ACQUISITION PARAMETERS

General Information

Tune File : atune.u
Acquisition Mode : SIM

MS Information

Solvent Delay : 8.00 min
EMV Mode : Relative
Relative Voltage : 200
Resulting EM Voltage : 1824

[Sim Parameters]

GROUP 1
Group ID : THC
Resolution : Low
Plot 1 Ion : 386.30
Ions/Dwell In Group (Mass, Dwell) (Mass, Dwell) (Mass, Dwell)
(303.10, 20) (306.10, 20) (371.30, 20)
(374.30, 20) (386.30, 20) (389.30, 20)

GROUP 2
Group ID : OH THC
Resolution : Low
Group Start Time : 12.00
Plot 1 Ion : 371.00
Ions/Dwell In Group (Mass, Dwell) (Mass, Dwell) (Mass, Dwell)
(371.00, 20) (374.00, 20) (459.00, 80)
(462.00, 20) (474.00, 80) (477.00, 20)

GROUP 3
Group ID : THCA
Resolution : Low
Group Start Time : 15.00
Plot 1 Ion : 473.00
Ions/Dwell In Group (Mass, Dwell) (Mass, Dwell) (Mass, Dwell)
(371.00, 50) (374.00, 50) (473.00, 50)
(476.00, 50) (488.00, 50) (491.00, 50)

[MSZones]

MS Source : 230 C maximum 250 C
MS Quad : 150 C maximum 200 C

END OF MS ACQUISITION PARAMETERS

TUNE PARAMETERS for SN: US92013452

Trace Ion Detection is OFF.

EMISSION : 34.610 ✓
ENERGY : 69.922 ✓
REPELLER : 28.112 ✓

THC-20180814U-TS

TS

IONFOCUS : 90.157 ✓
ENTRANCE_LE : 22.000 ✓
EMVOLTS : 1623.529 ✓

AMUGAIN : 1915.000 ✓
AMUOFFSET : 121.750 ✓
FILAMENT : 1.000 ✓
DCPOLARITY : 0.000 ✓
ENTLENSOFFS : 19.075 ✓
MASSGAIN : -610.000 ✓
MASSOFFSET : -36.000 ✓

Actual EMV : 1823.53
GAIN FACTOR : 0.59

TS
8/10/18

END OF TUNE PARAMETERS

END OF INSTRUMENT CONTROL PARAMETERS

THC-20180814U TS

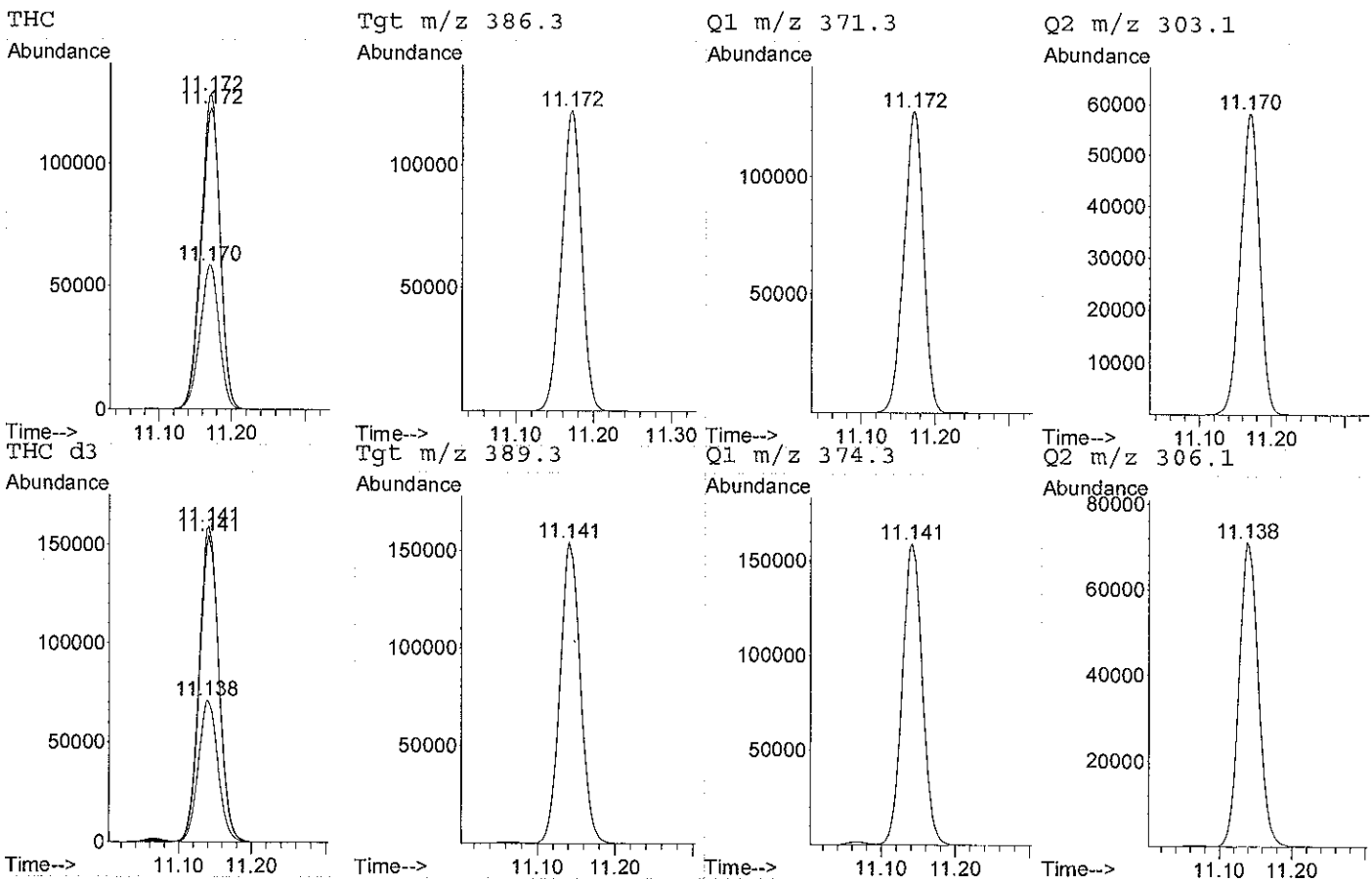
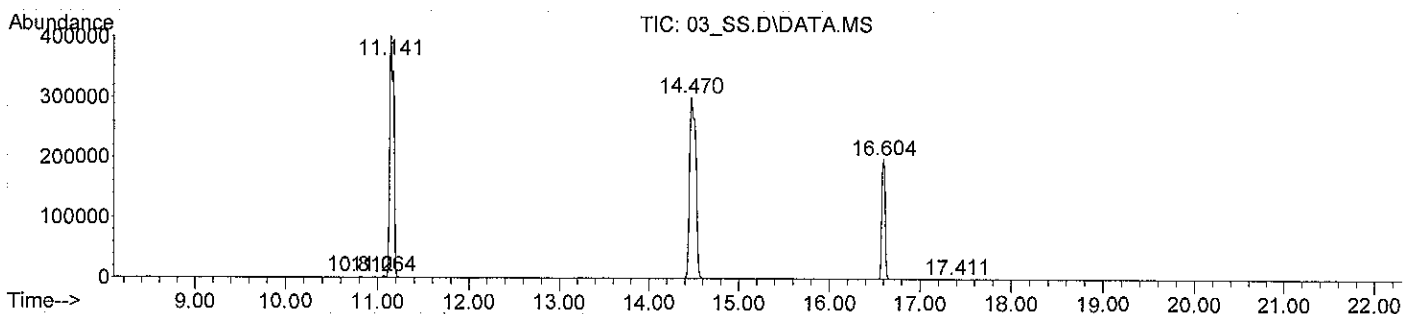
TS

QUANTITATION REPORT FOR THC ON : HFSC/GC-MS 4

Data File : D:\DATA\2018\System Suitability\THC_2018081....\03_SS.D
 Operator :
 Tune File Name : C:\msdchem\1\5975\atune.u
 Tune Date : 14 Aug 2018 11:59 am Mult : 1
 Acq Method Name : THC_U.M
 Calibration date : 03 Aug 2018 7:57 am
 Acquisition date : 14 Aug 2018 2:14 pm
 Sample Name : System Suitability
 Misc Info :
 Vial Number : 99

Compnd	Signal	RT	Limits	Response	QRatio	Limits
THC d3	389.3	11.141	10.874-11.432	286999*		0- 0
	374.3			298243	103.9	84.4-126.6
	306.1			133623	46.6	37.6- 56.4
THC	386.3	11.172	10.902-11.462	222850		
	371.3			234725	105.3	86.3-129.5
	303.1			107087	48.1	45.4- 68.2

Concentration: 45.52 ng/mL

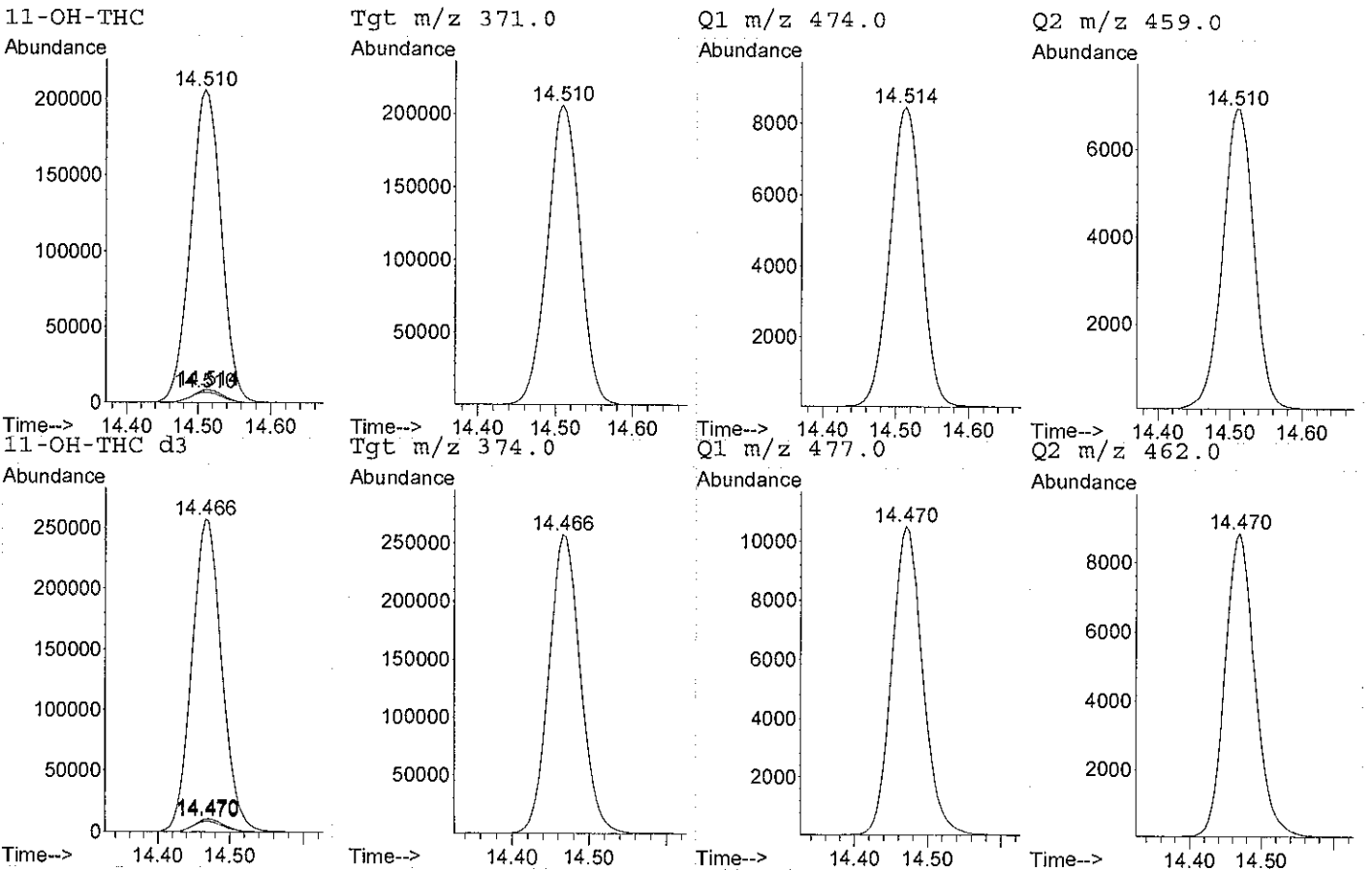
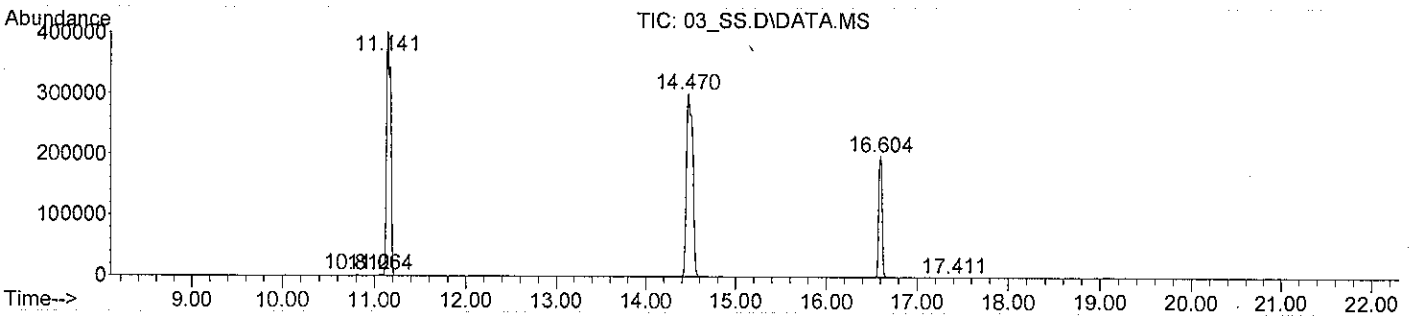


TS

Data File : D:\DATA\2018\System Suitability\THC_2018081...\03_SS.D
 Operator :
 Tune File Name : C:\msdchem\1\5975\atune.u
 Tune Date : 14 Aug 2018 11:59 am Mult : 1
 Acq Method Name : THC_U.M
 Calibration date : 03 Aug 2018 7:57 am
 Acquisition date : 14 Aug 2018 2:14 pm
 Sample Name : System Suitability
 Misc Info :
 Vial Number : 99

Compnd	Signal	RT	Limits	Response	QRatio	Limits
11-OH-THC d3	374.0	14.466	14.114-14.838	738097*		0- 0
	477.0			30628	4.1	3.2- 4.8
	462.0			25705	3.5	2.7- 4.1
11-OH-THC	371.0	14.510	14.158-14.884	610692		
	474.0			25208	4.1	3.3- 4.9
	459.0			21047	3.4	2.9- 4.3

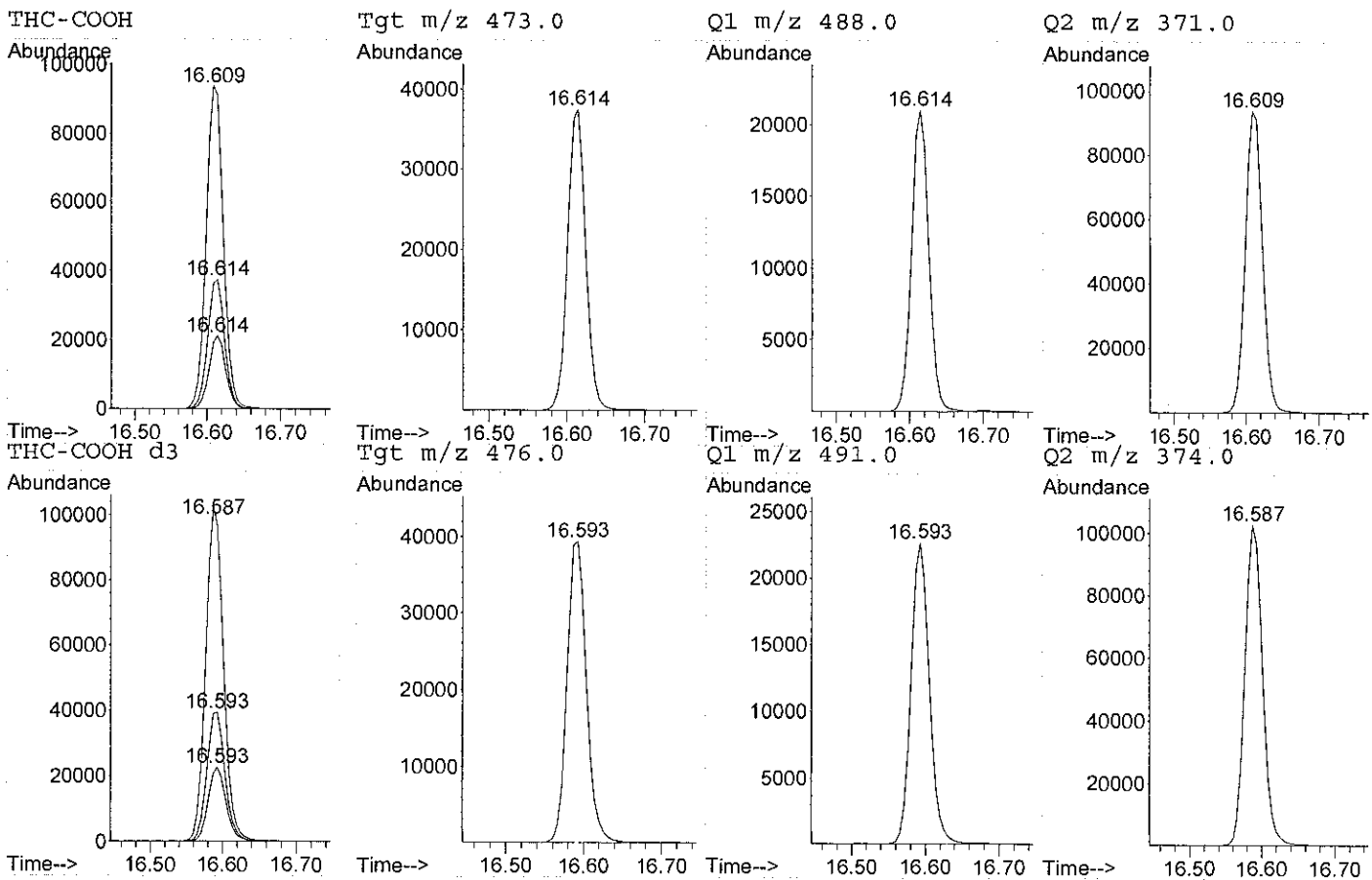
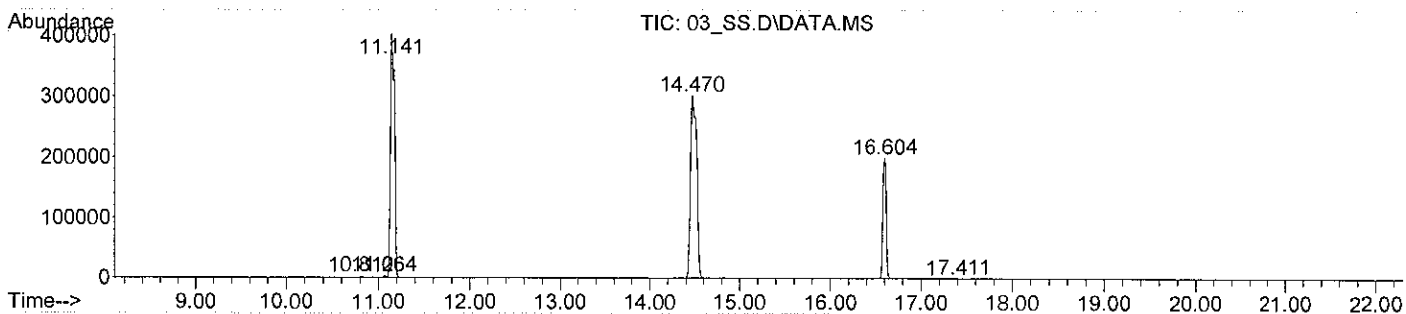
Concentration: 42.96 ng/mL



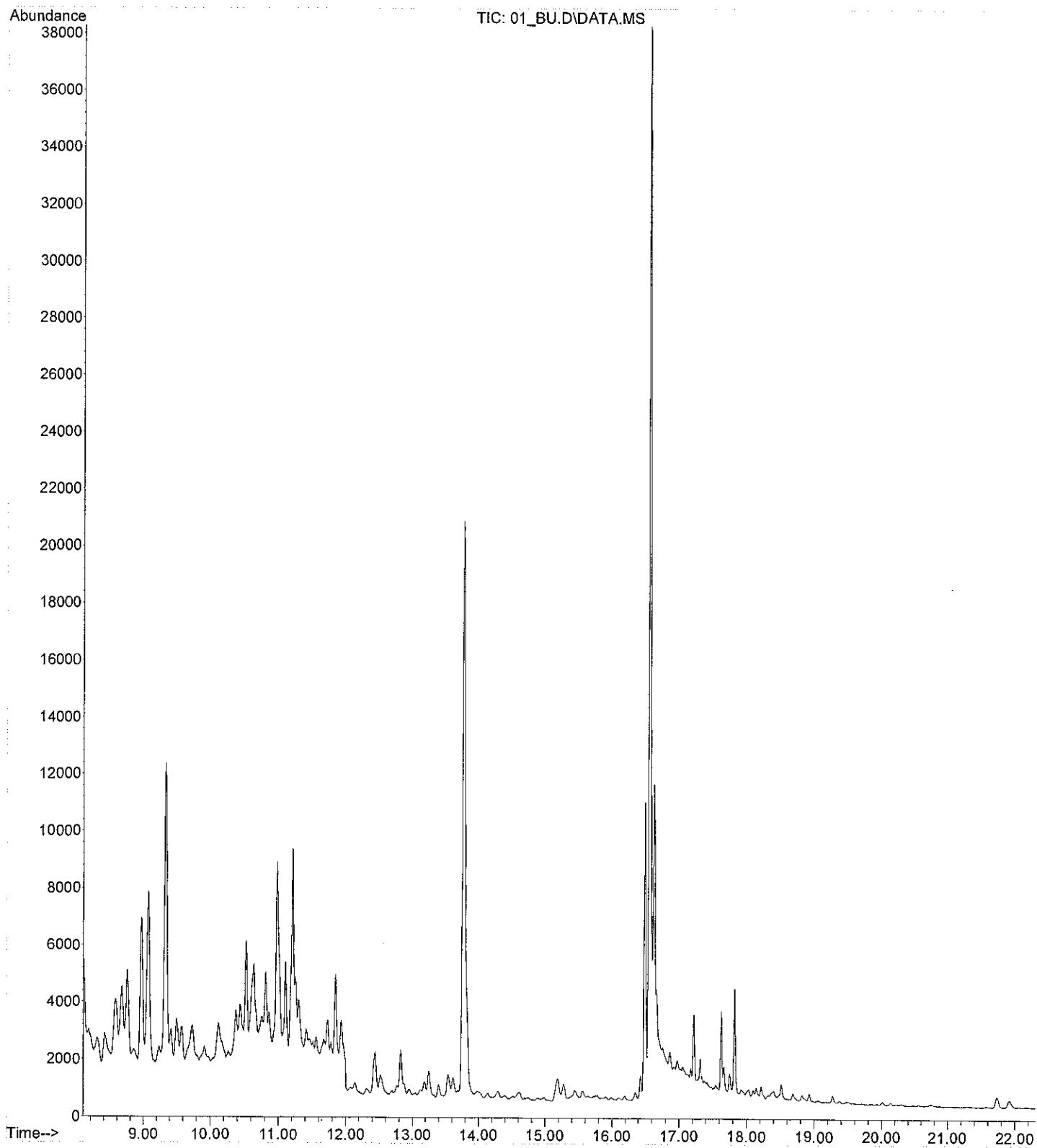
Data File : D:\DATA\2018\System Suitability\THC_2018081....\03_SS.D
 Operator :
 Tune File Name : C:\msdchem\1\5975\atune.u
 Tune Date : 14 Aug 2018 11:59 am Mult : 1
 Acq Method Name : THC_U.M
 Calibration date : 03 Aug 2018 7:57 am
 Acquisition date : 14 Aug 2018 2:14 pm
 Sample Name : System Suitability
 Misc Info :
 Vial Number : 99

Compnd	Signal	RT	Limits	Response	QRatio	Limits
THC-COOH d3	476.0	16.593	16.180-17.010	68625*		0- 0
	491.0			38872	56.6	46.1- 69.1
	374.0			174763	254.7	202.1-303.1
THC-COOH	473.0	16.614	16.202-17.032	60885		
	488.0			33887	55.7	44.4- 66.6
	371.0			153977	252.9	197.6-296.4

Concentration: 35.45 ng/mL

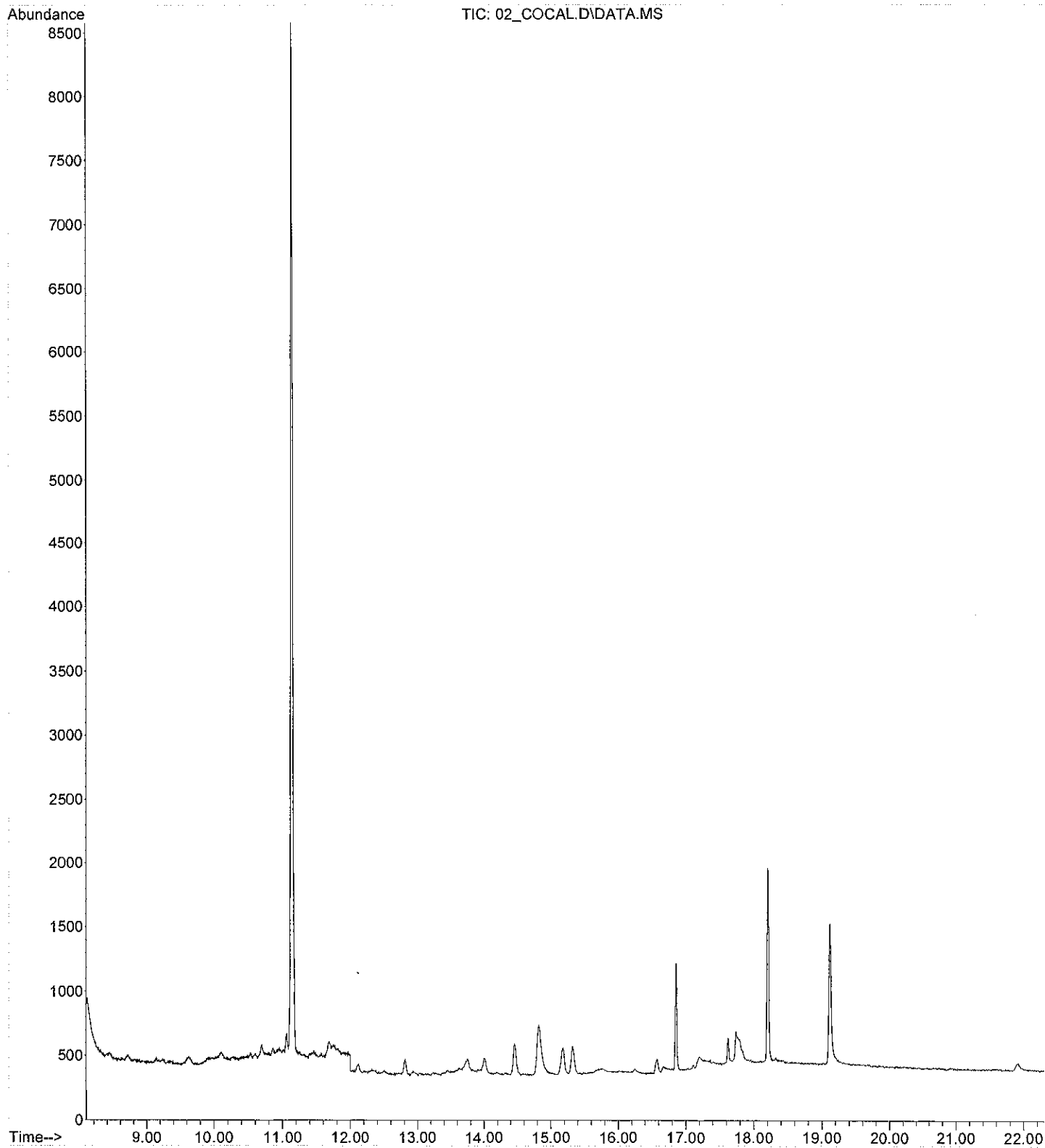


File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\01_BU.D
Operator : Tanuja Sathiraj
Acquired : 14 Aug 2018 5:34 pm using AcqMethod THC_U.M
Instrument : GC-MS 4
Sample Name: Matrix Urine
Misc Info :
Vial Number: 11



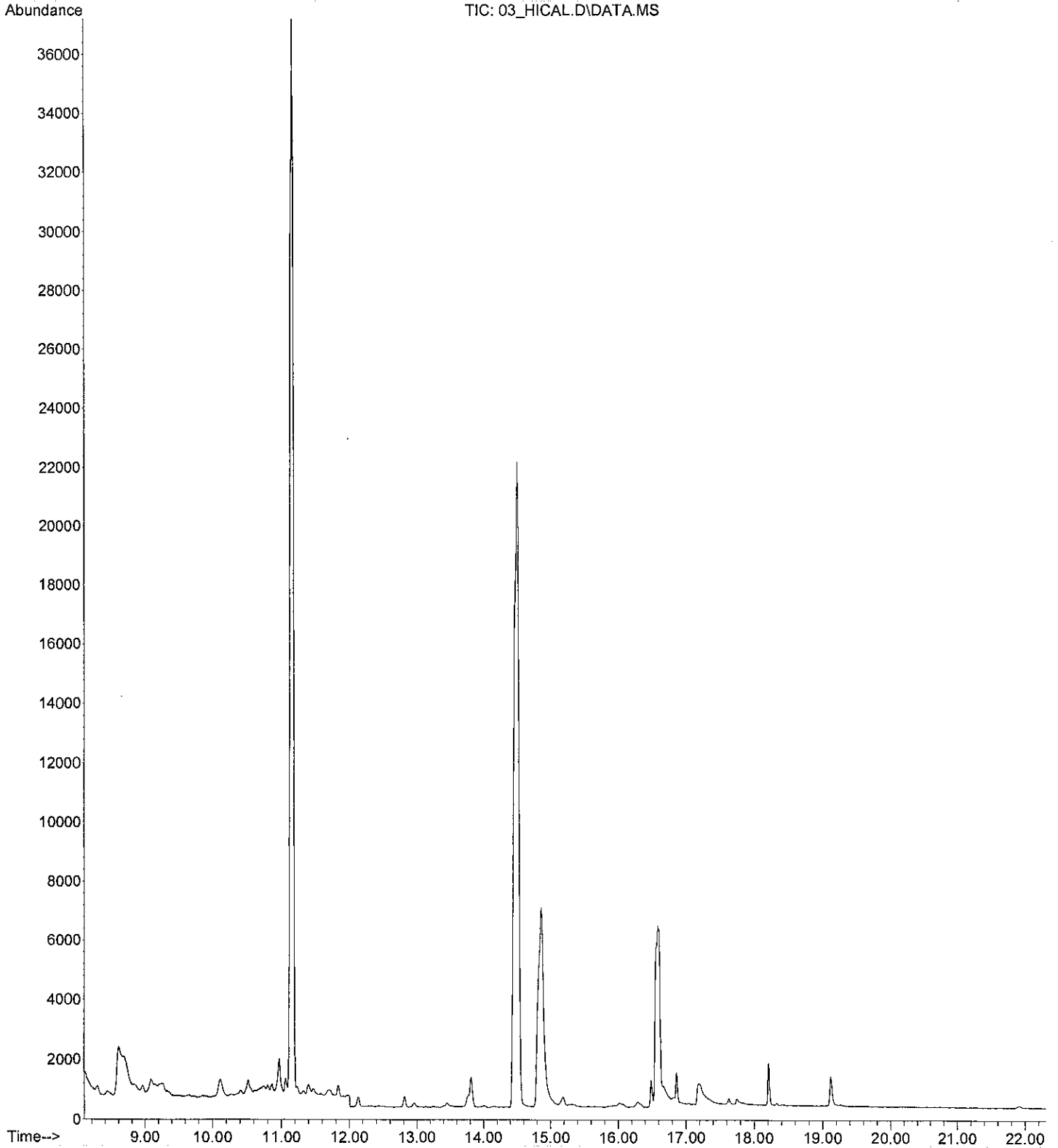
TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\02_COCAL
... .D
Operator : Tanuja Sathiraj
Instrument : GC-MS 4
Acquired : 14 Aug 2018 6:02 pm using AcqMethod THC_U.M
Sample Name: Cut-Off Calibrator
Misc Info :



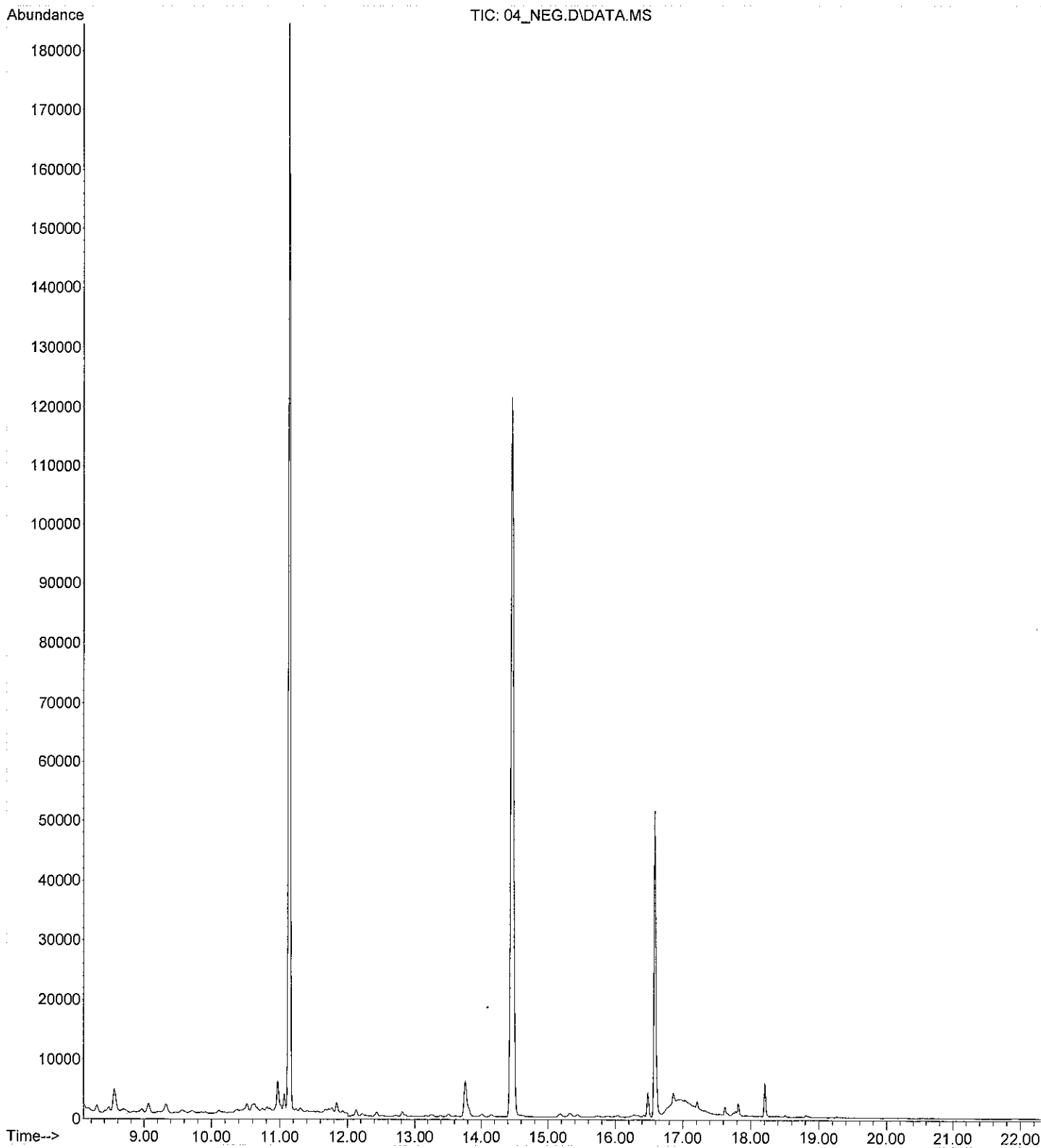
TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\03_HICAL
... .D
Operator : Tanuja Sathiraj
Instrument : GC-MS 4
Acquired : 14 Aug 2018 6:31 pm using AcqMethod THC_U.M
Sample Name: High Calibrator
Misc Info :



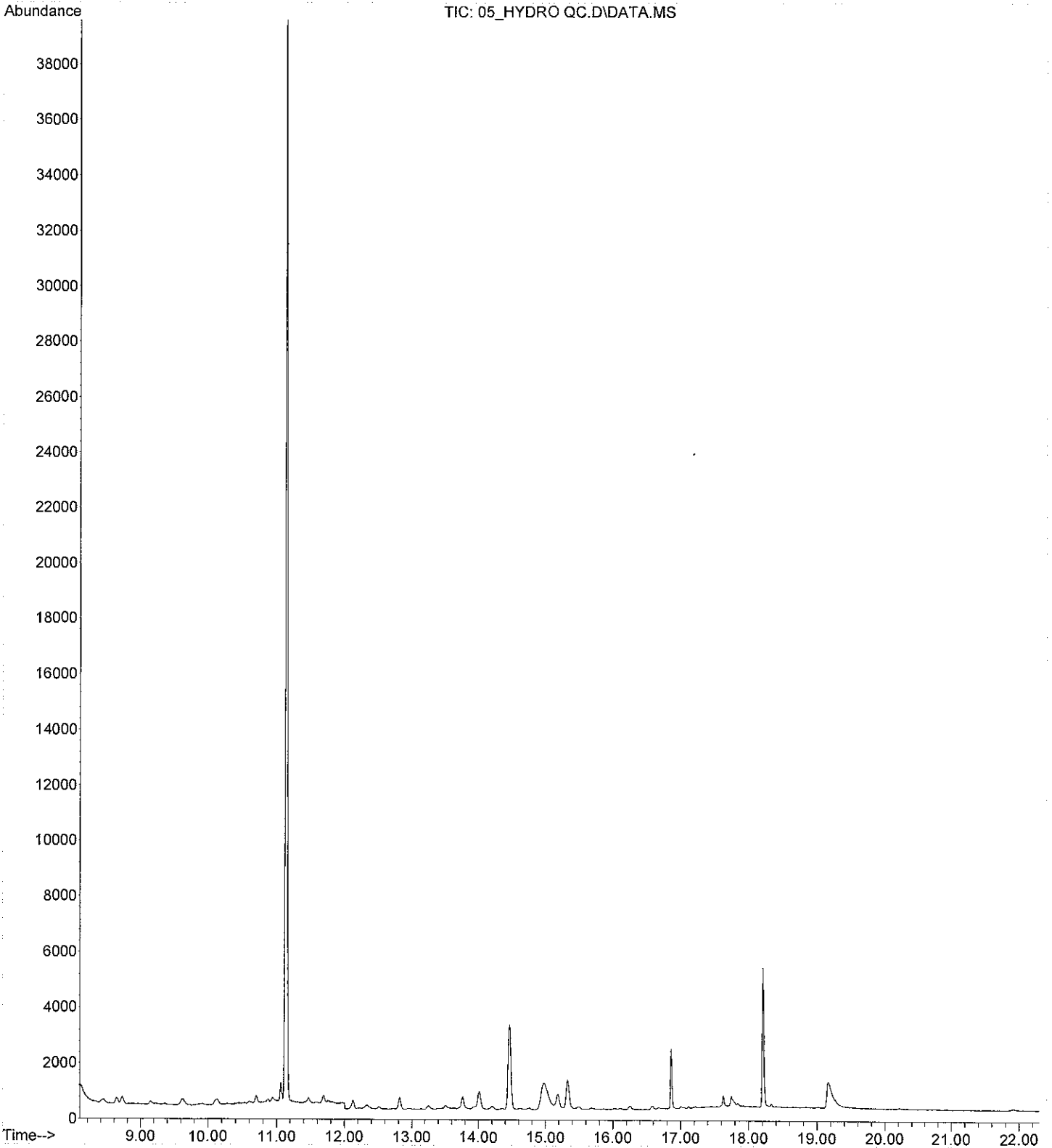
TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\04_NEG.D
Operator : Tanuja Sathiraj
Acquired : 14 Aug 2018 7:00 pm using AcqMethod THC_U.M
Instrument : GC-MS 4
Sample Name: Negative Control
Misc Info :
Vial Number: 14



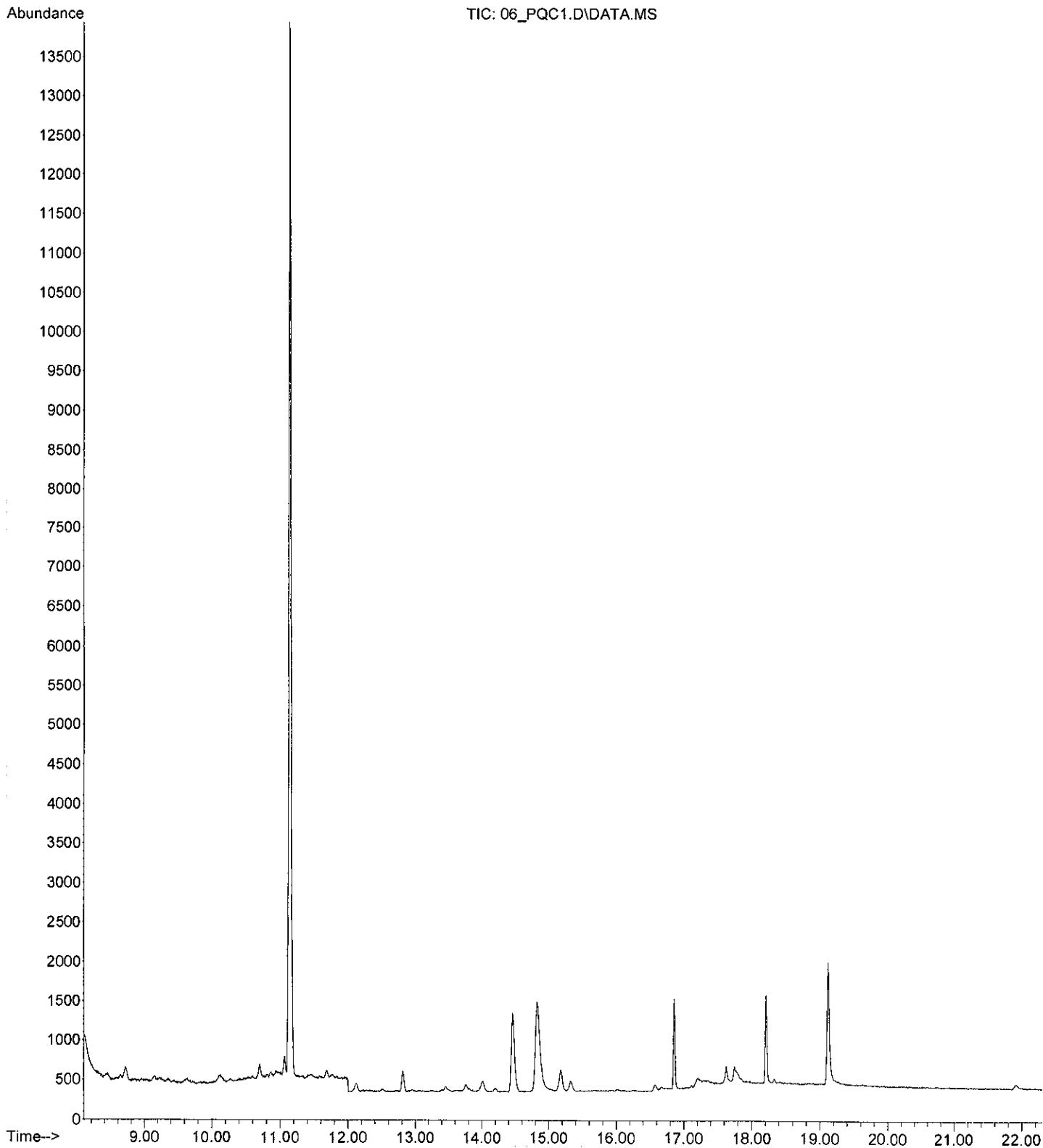
TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\05_HYDRO
... QC.D
Operator : Tanuja Sathiraj
Instrument : GC-MS 4
Acquired : 14 Aug 2018 7:30 pm using AcqMethod THC_U.M
Sample Name: Hydrolysis Control
Misc Info :



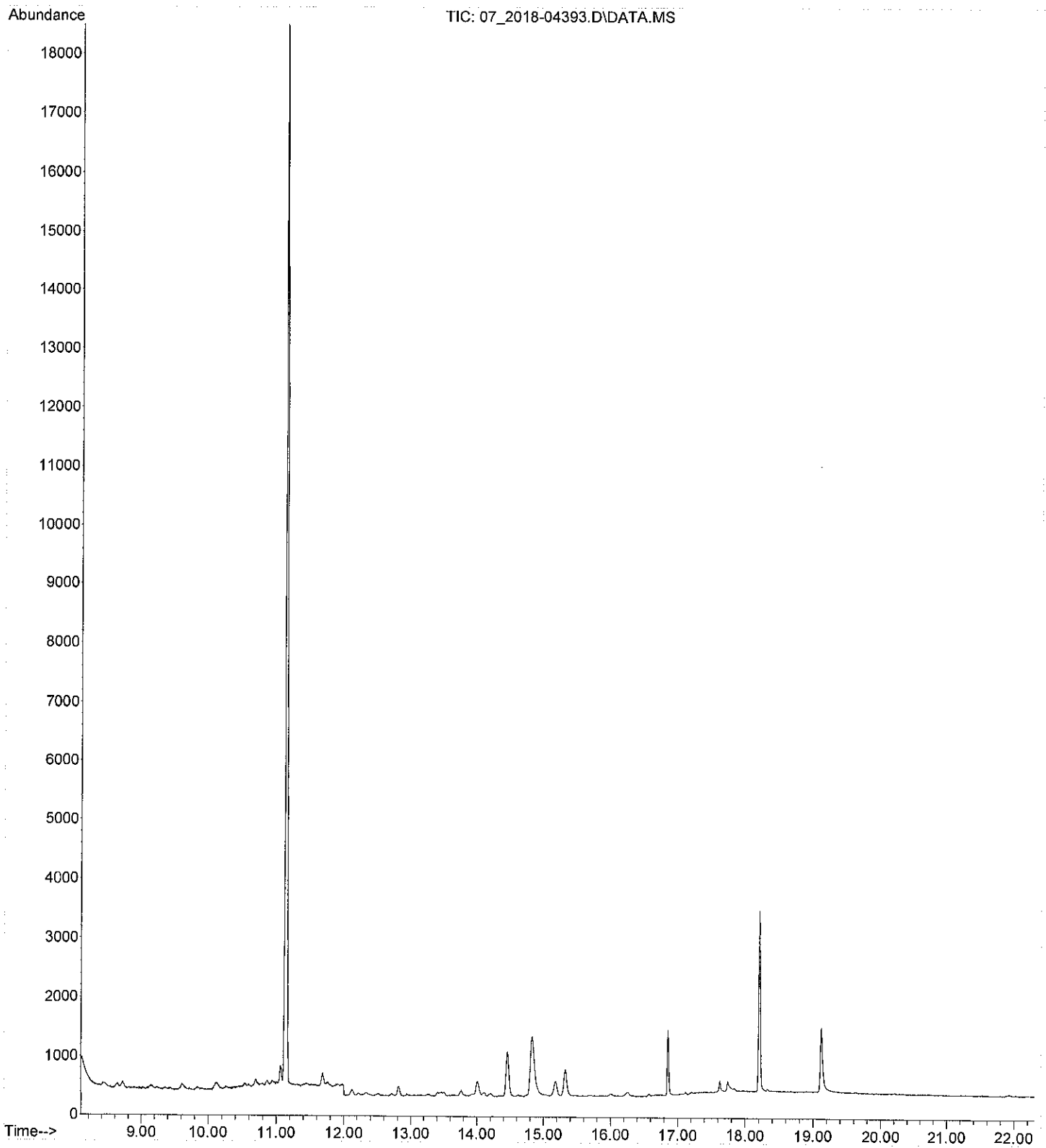
TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\06_PQC1.D
Operator : Tanuja Sathiraj
Acquired : 14 Aug 2018 8:00 pm using AcqMethod THC_U.M
Instrument : GC-MS 4
Sample Name: Positive Control 1
Misc Info :
Vial Number: 16



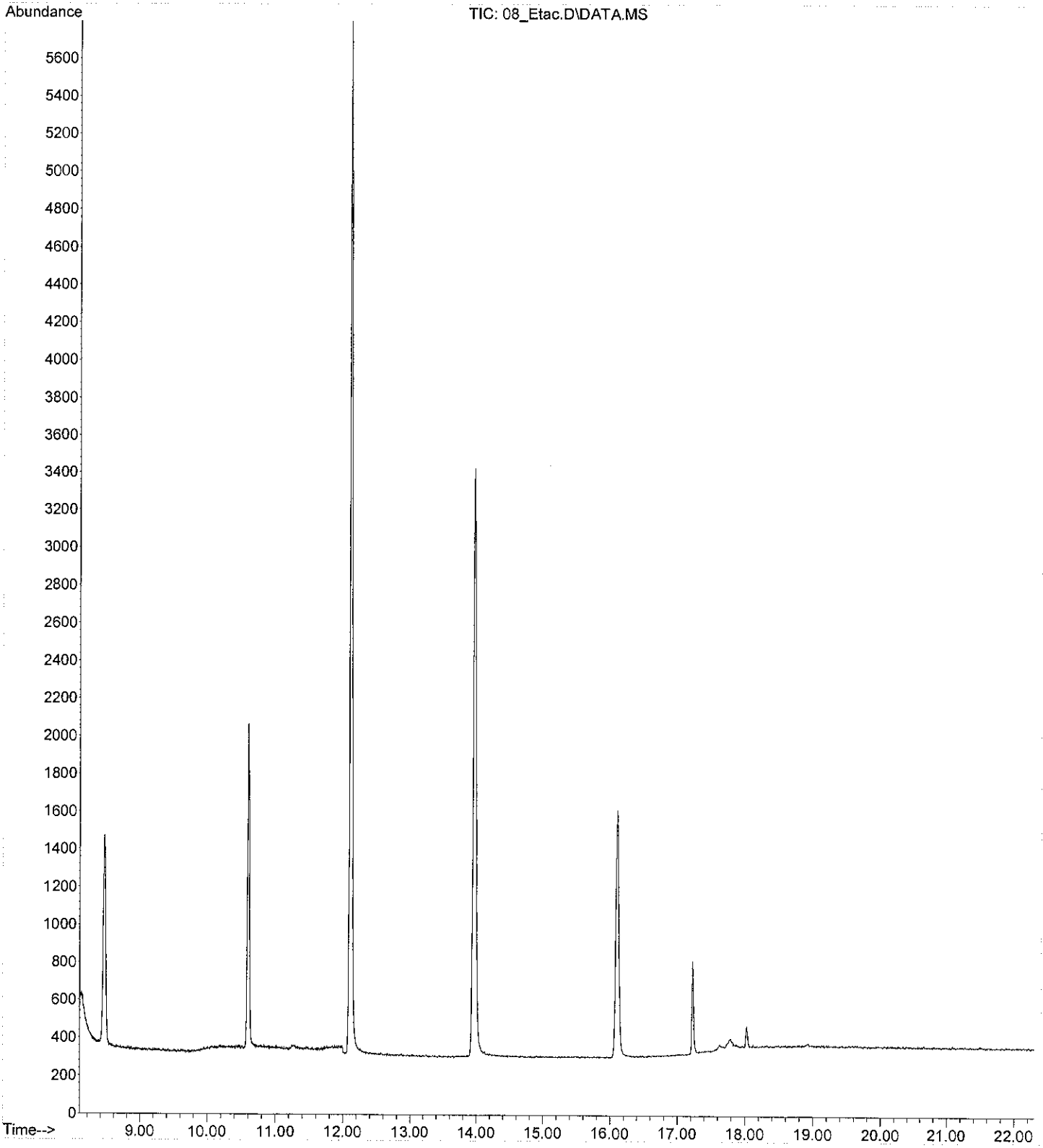
TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\07_2018-04393.D
Operator : Tanuja Sathiraj
Instrument : GC-MS 4
Acquired : 14 Aug 2018 8:31 pm using AcqMethod THC_U.M
Sample Name: 2018-04393-3.1.3
Misc Info :



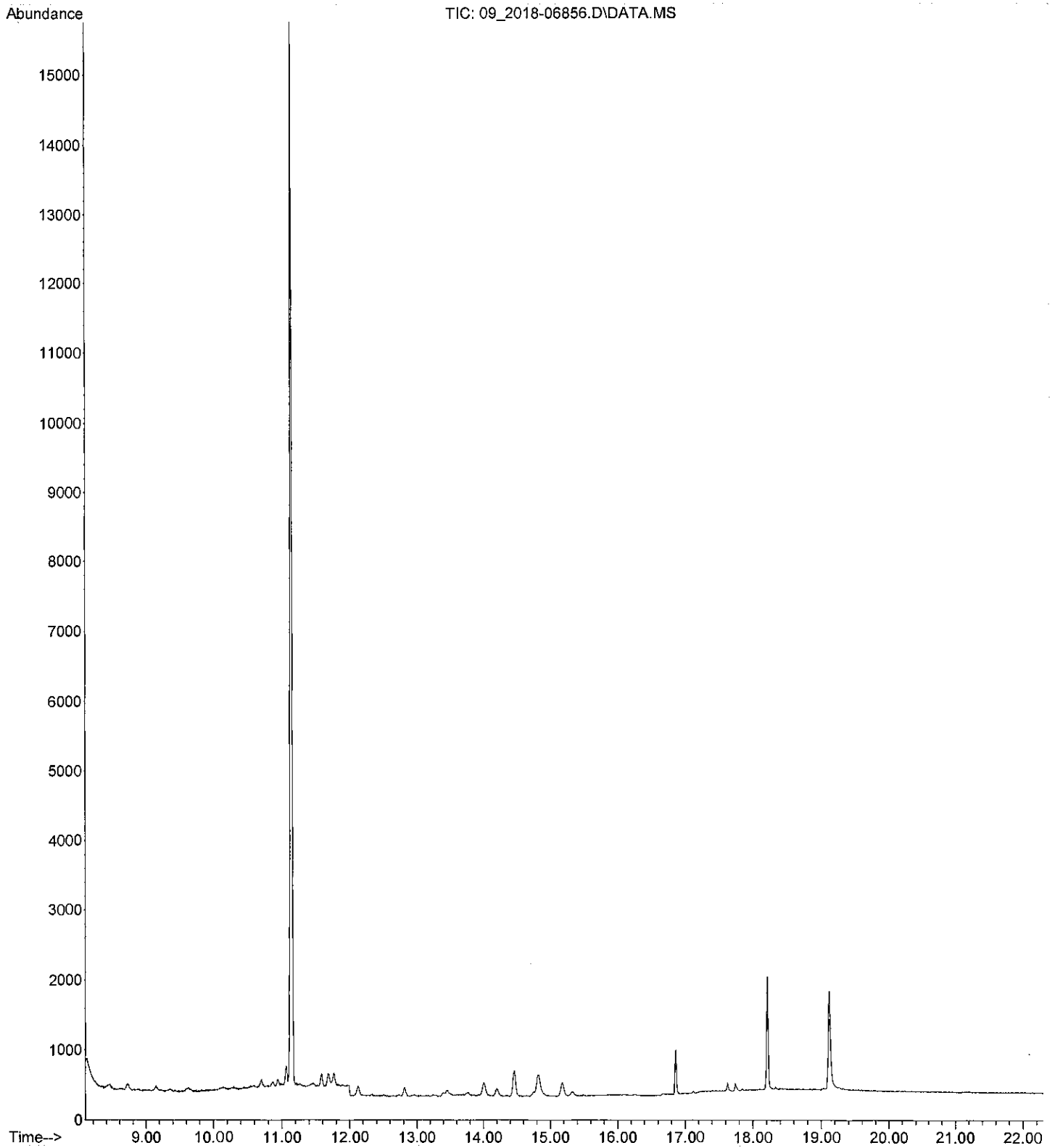
TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\08_Etac.D
Operator : Tanuja Sathiraj
Acquired : 14 Aug 2018 9:02 pm using AcqMethod THC_U.M
Instrument : GC-MS 4
Sample Name: Ethyl acetate
Misc Info :
Vial Number: 98



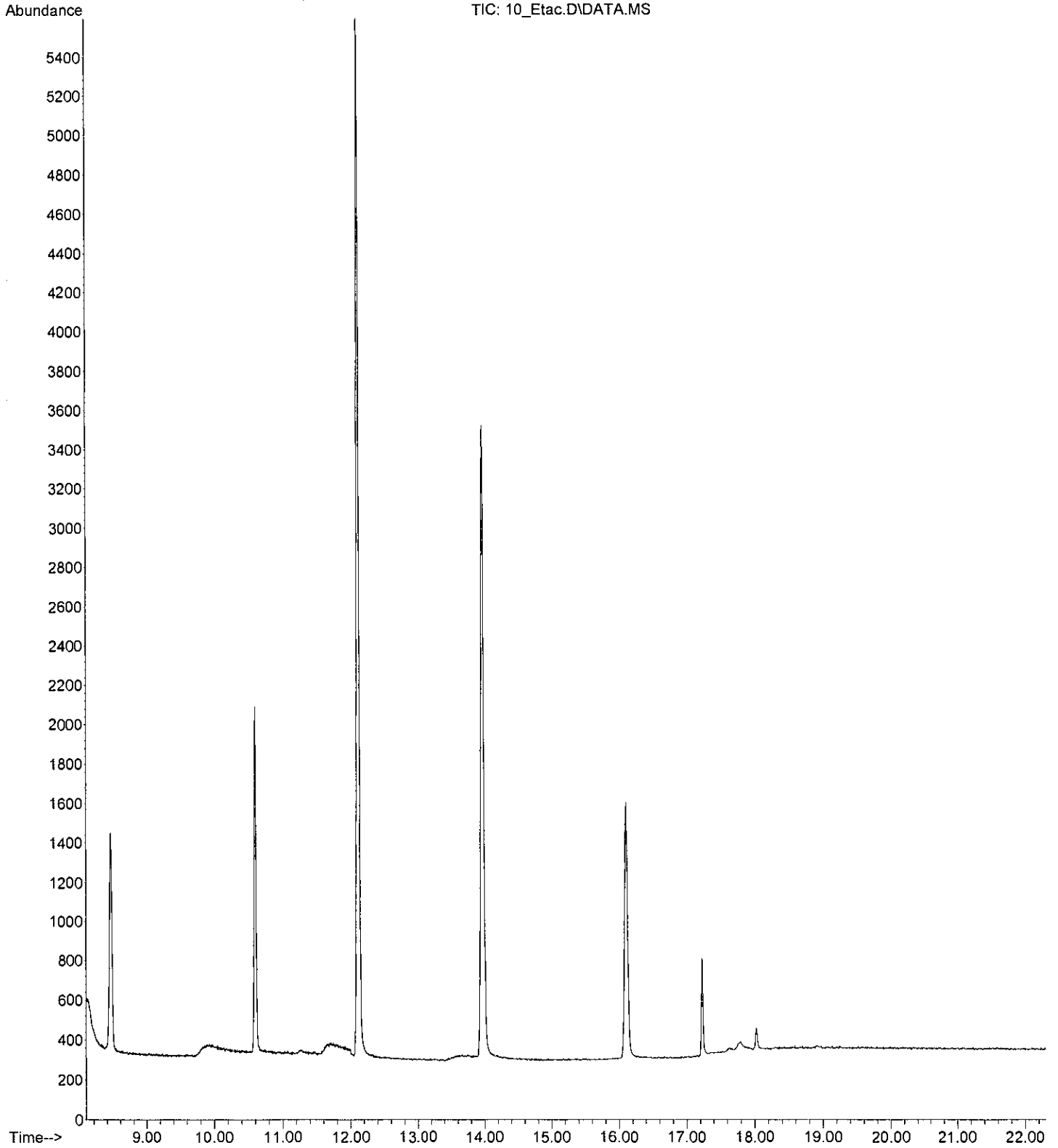
TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\09_2018-
... 06856.D
Operator : Tanuja Sathiraj
Instrument : GC-MS 4
Acquired : 14 Aug 2018 9:34 pm using AcqMethod THC_U.M
Sample Name: 2018-06856-4.1.3-1:5DIL
Misc Info :



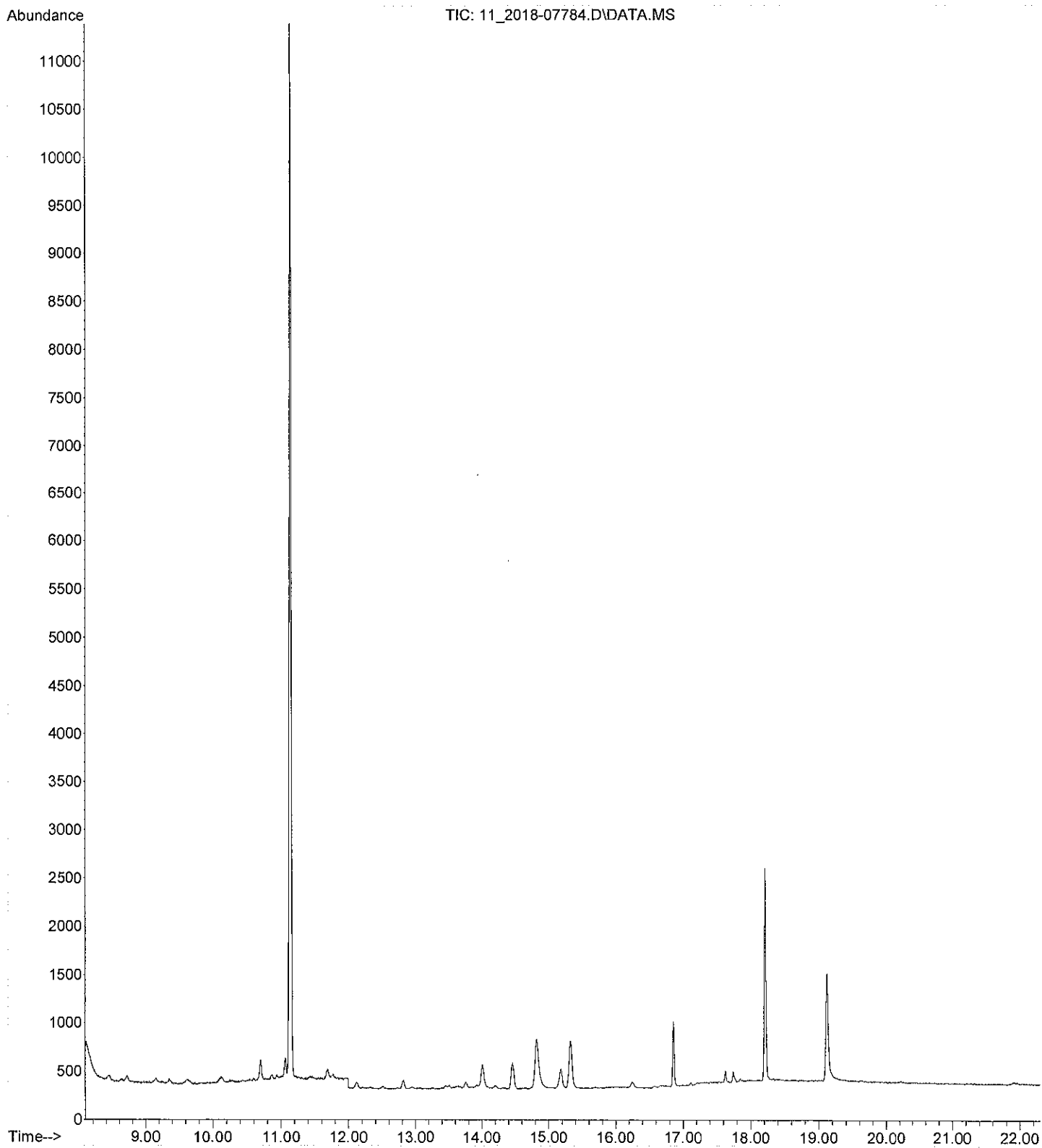
TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\10_Etac.D
Operator : Tanuja Sathiraj
Acquired : 14 Aug 2018 10:06 pm using AcqMethod THC_U.M
Instrument : GC-MS 4
Sample Name: Ethyl acetate
Misc Info :
Vial Number: 98



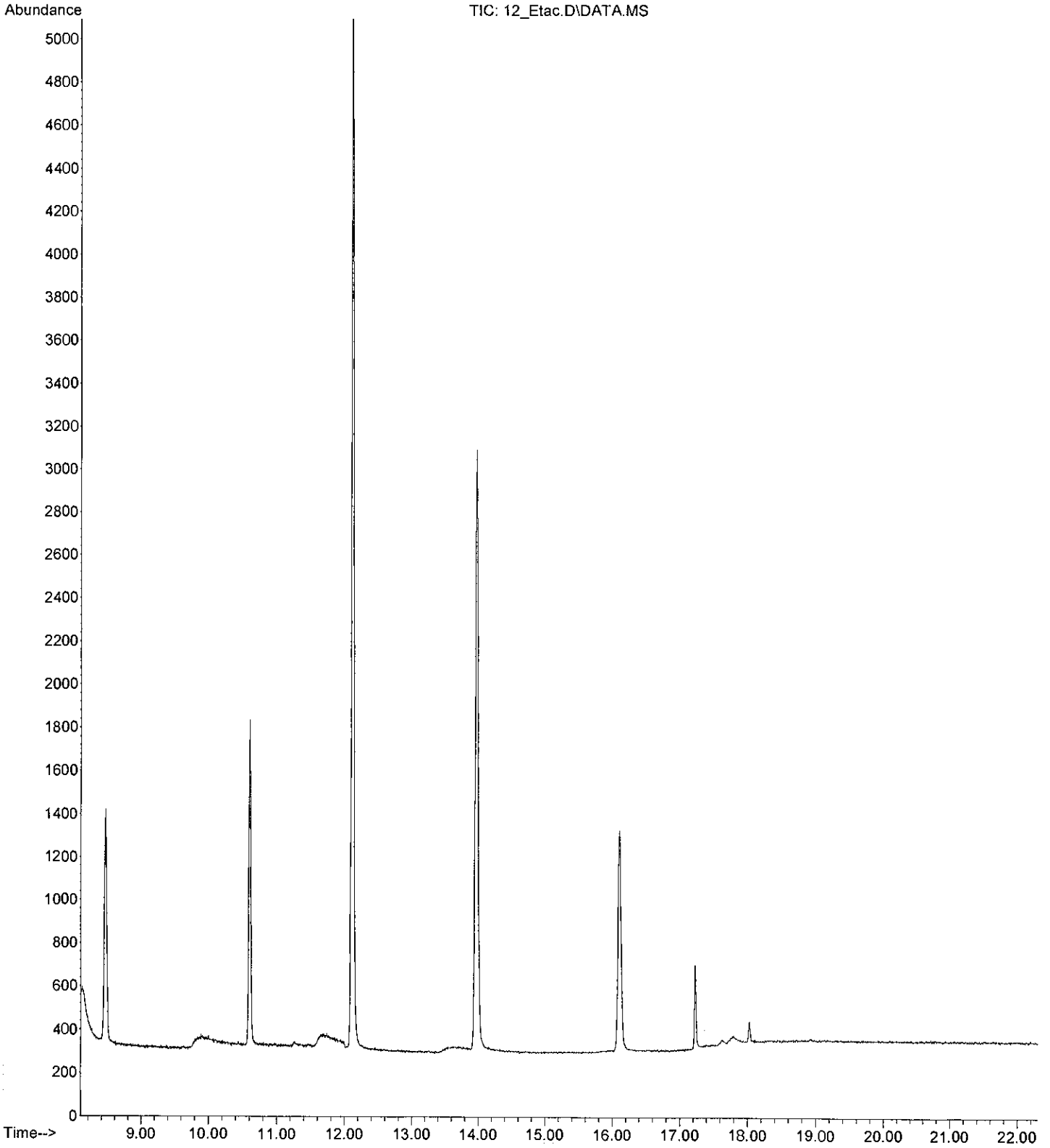
TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\11_2018-
... 07784.D
Operator : Tanuja Sathiraj
Instrument : GC-MS 4
Acquired : 14 Aug 2018 10:39 pm using AcqMethod THC_U.M
Sample Name: 2018-07784-2.1.3-1:5DIL
Misc Info :



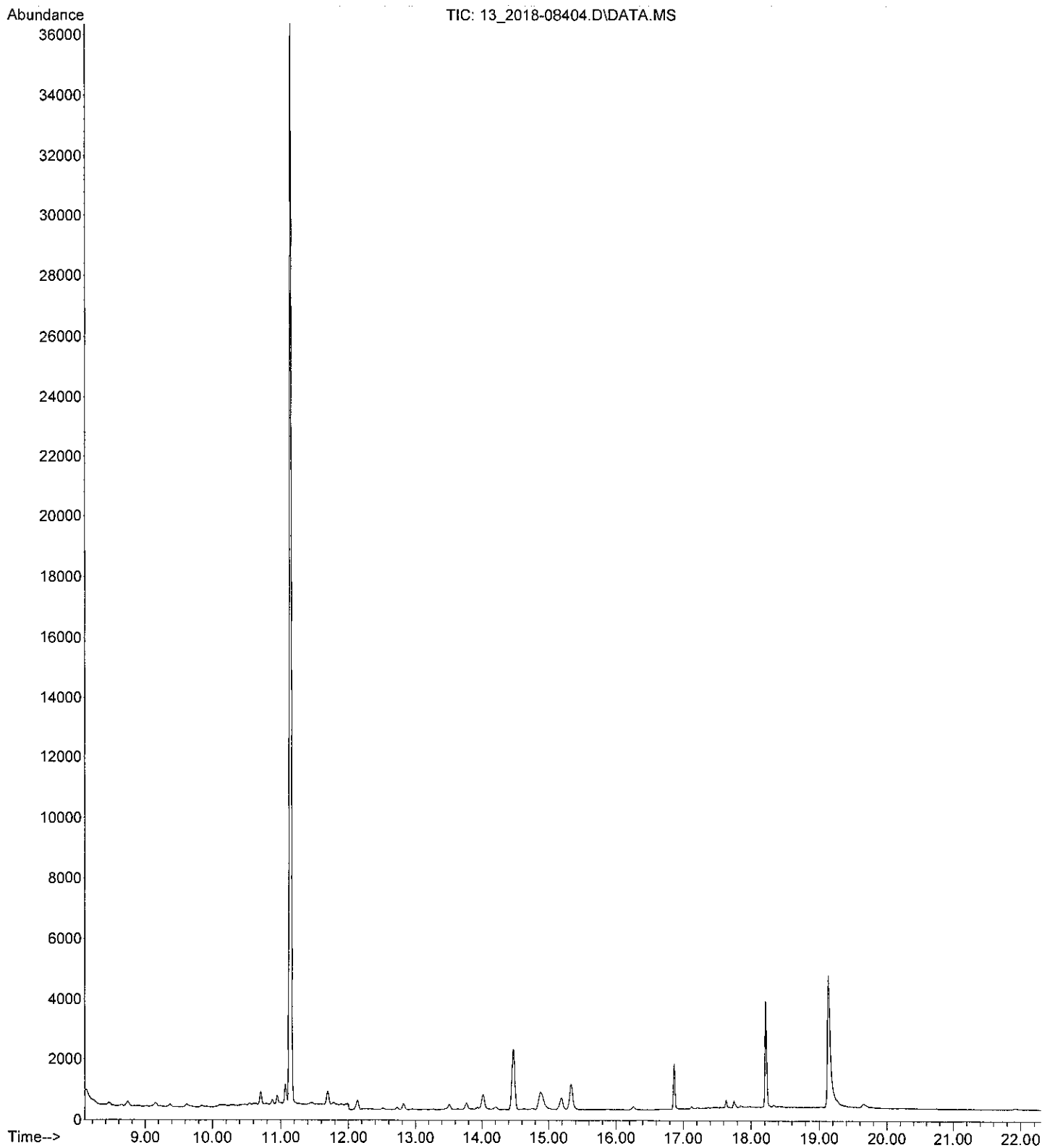
TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\12_Etac.D
Operator : Tanuja Sathiraj
Acquired : 14 Aug 2018 11:12 pm using AcqMethod THC_U.M
Instrument : GC-MS 4
Sample Name: Ethyl acetate
Misc Info :
Vial Number: 98



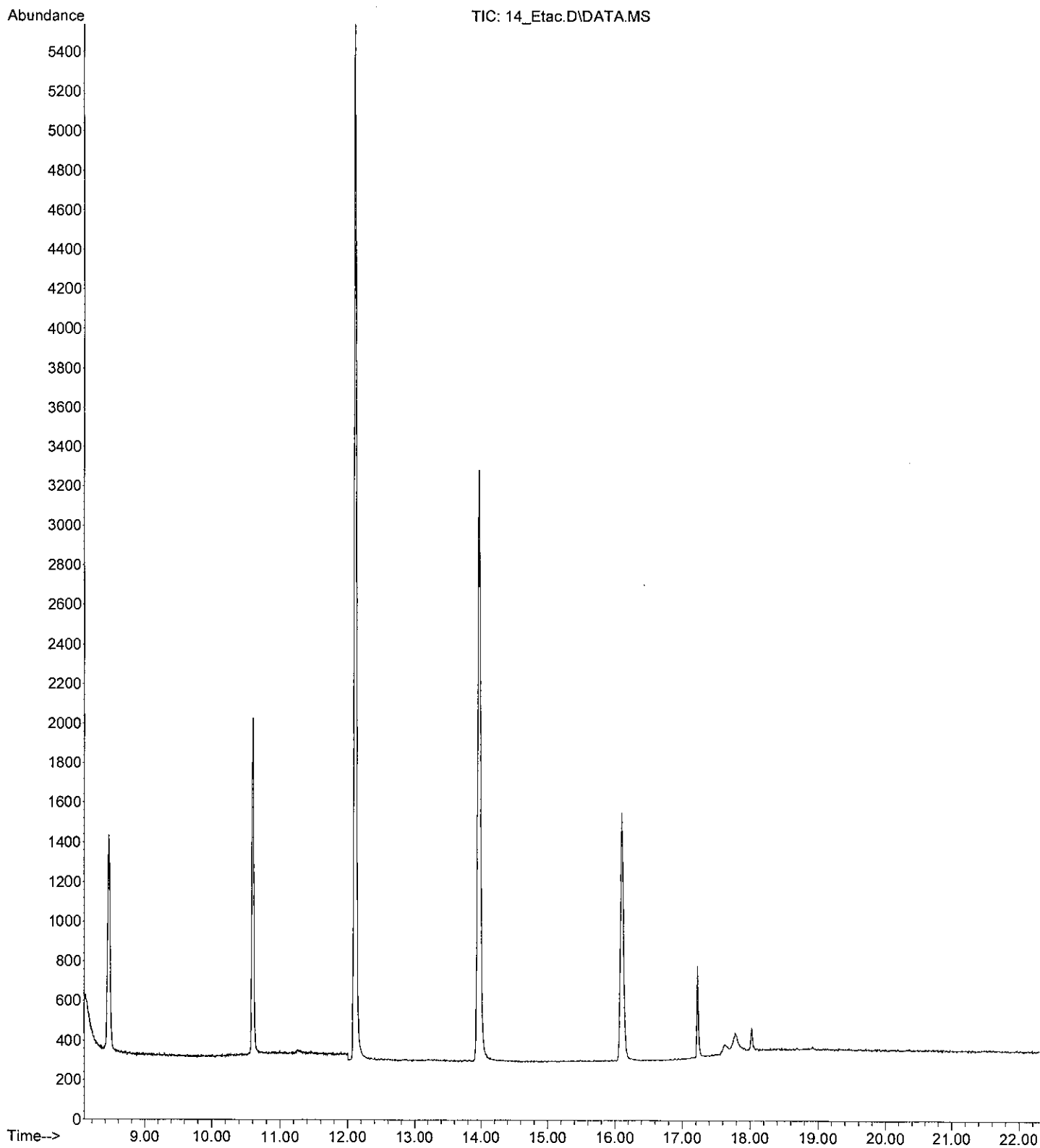
TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\13_2018-08404.D
Operator : Tanuja Sathiraj
Instrument : GC-MS 4
Acquired : 14 Aug 2018 11:46 pm using AcqMethod THC_U.M
Sample Name: 2018-08404-2.1.3-1:5 DIL
Misc Info :



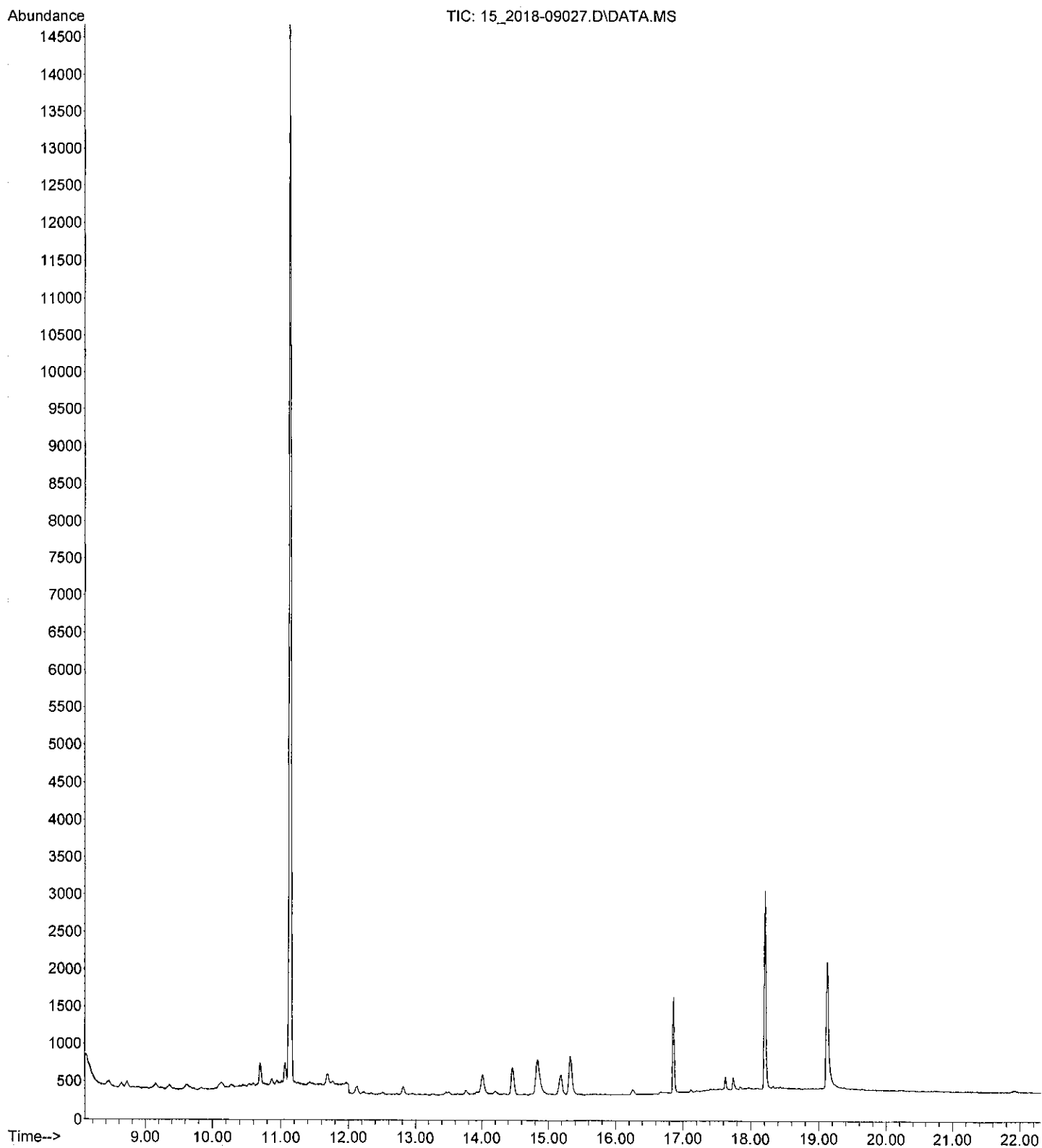
TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\14_Etac.D
Operator : Tanuja Sathiraj
Acquired : 15 Aug 2018 12:20 am using AcqMethod THC_U.M
Instrument : GC-MS 4
Sample Name: Ethyl acetate
Misc Info :
Vial Number: 98



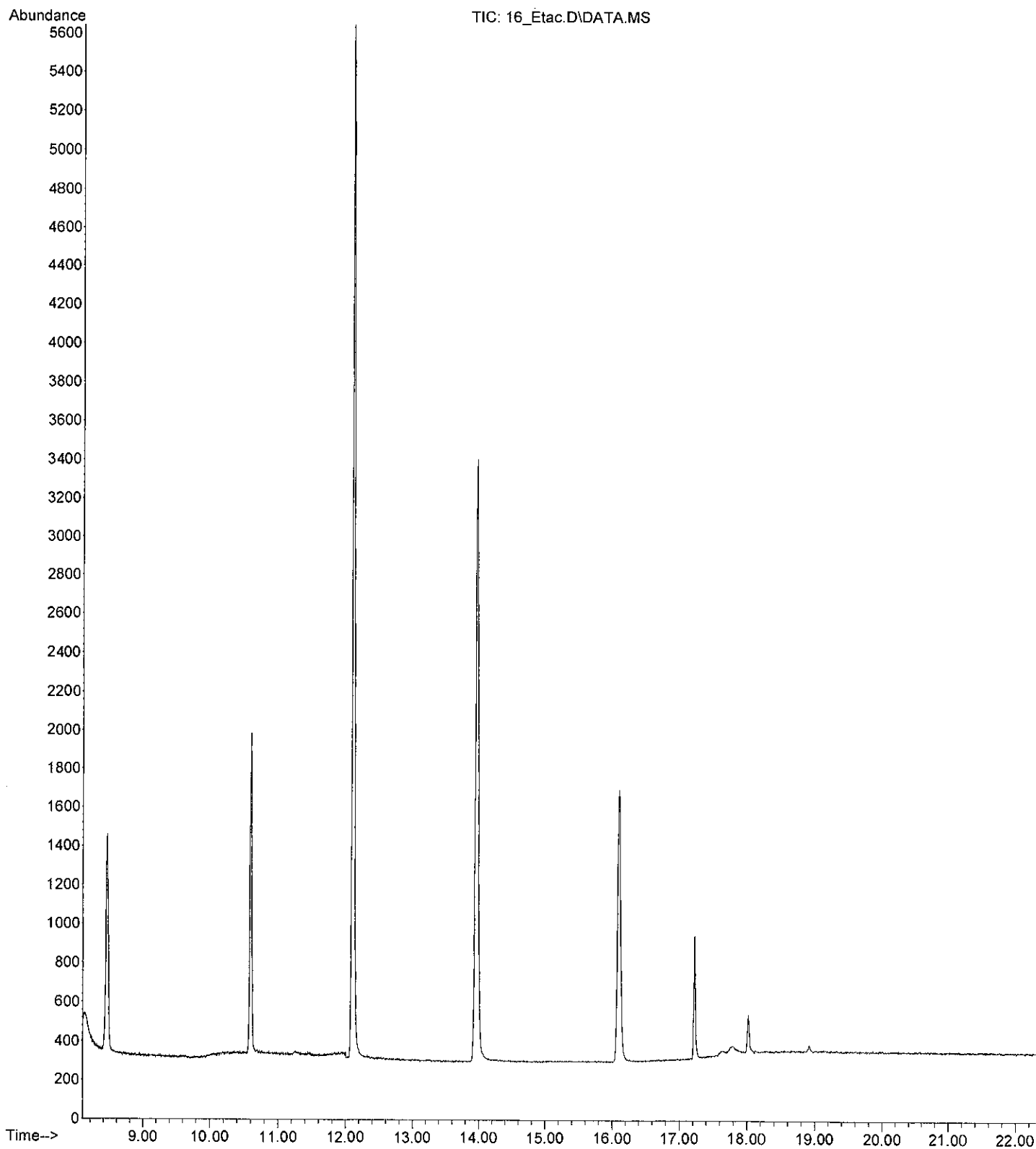
TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\15_2018-09027.D
Operator : Tanuja Sathiraj
Instrument : GC-MS 4
Acquired : 15 Aug 2018 12:53 am using AcqMethod THC_U.M
Sample Name: 2018-09027-3.1.3-1:5 DIL
Misc Info :



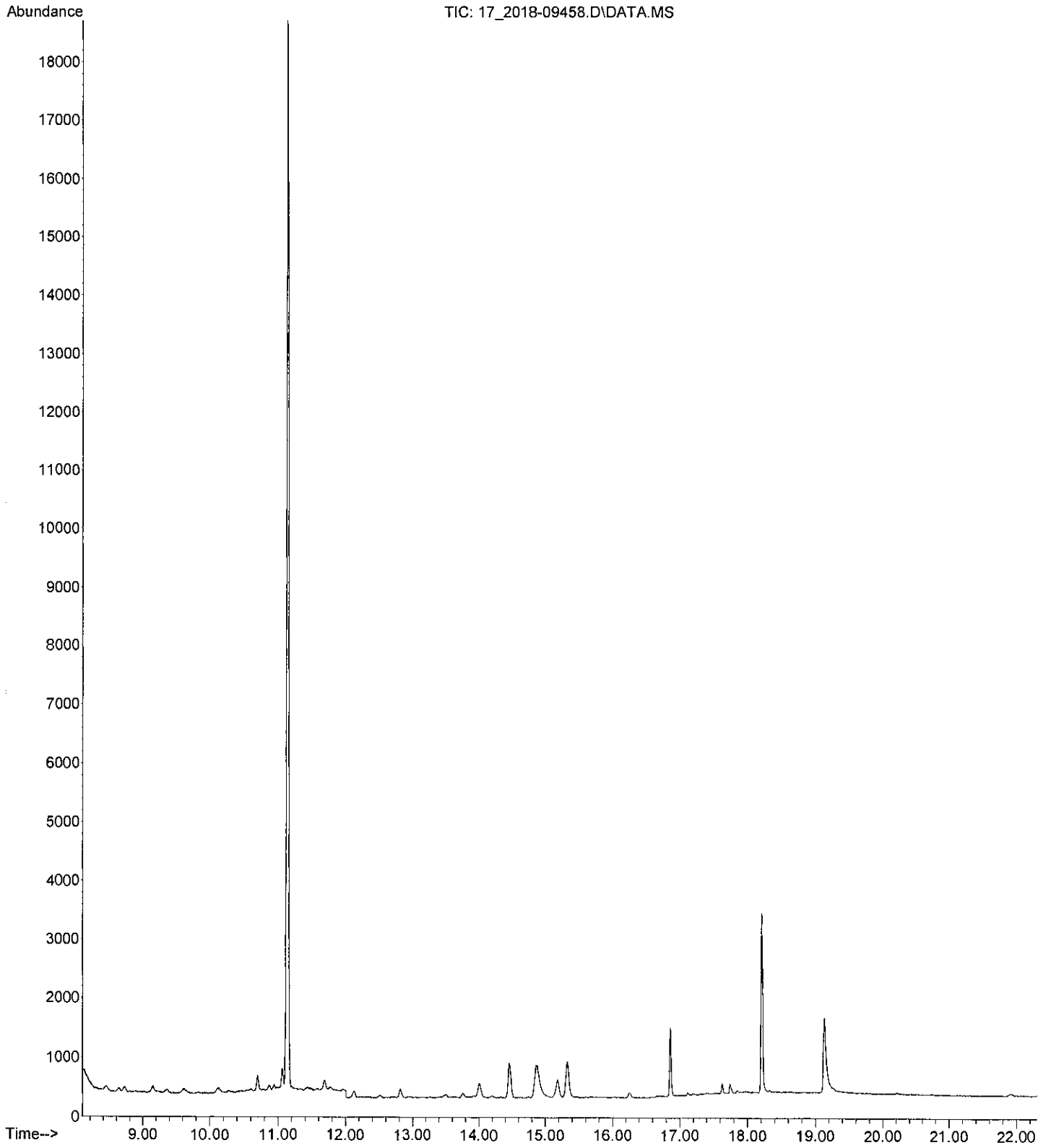
TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\16_Etac.D
Operator : Tanuja Sathiraj
Acquired : 15 Aug 2018 1:20 am using AcqMethod THC_U.M
Instrument : GC-MS 4
Sample Name: Ethyl acetate
Misc Info :
Vial Number: 98



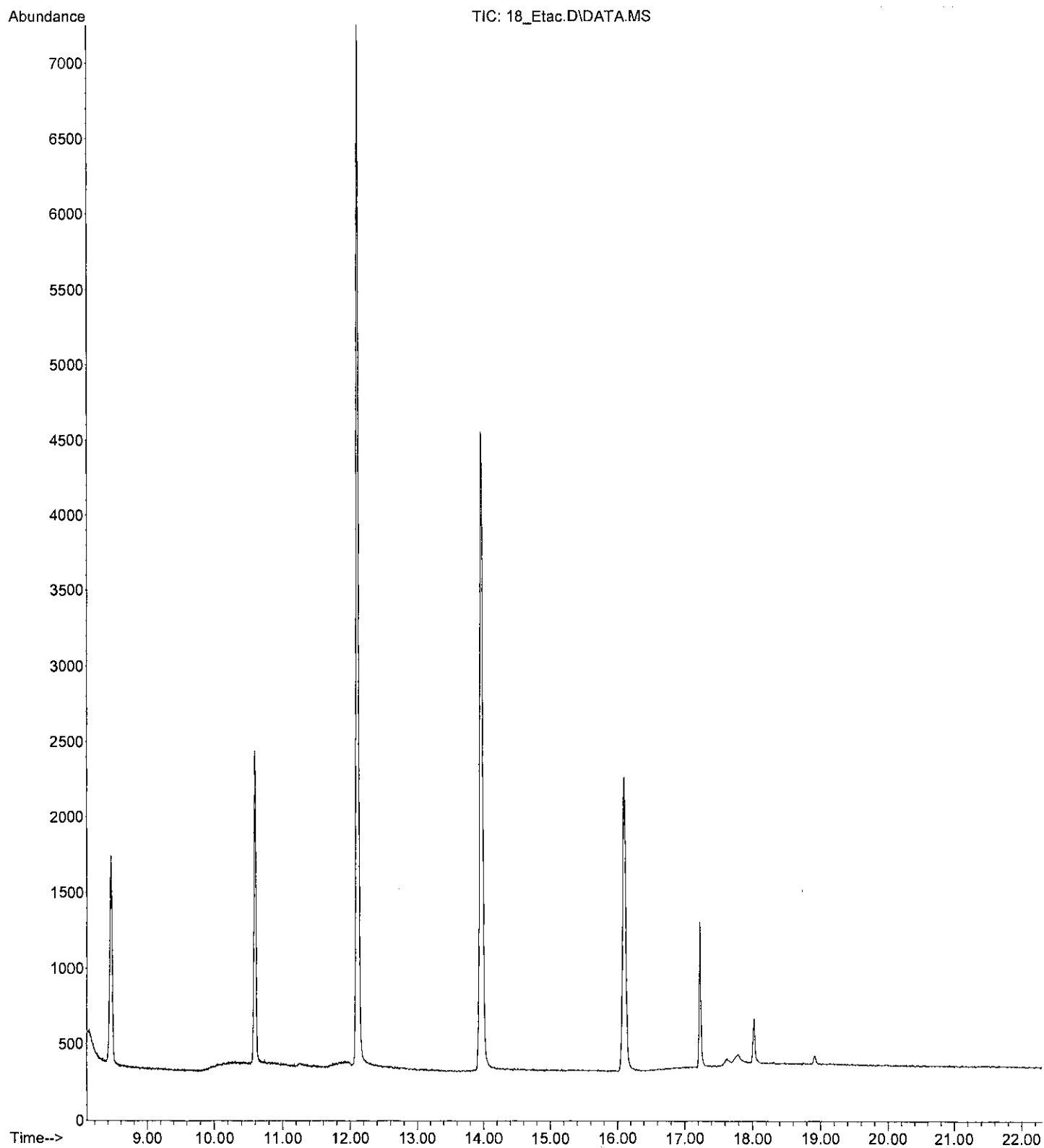
TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\17_2018-09458.D
Operator : Tanuja Sathiraj
Instrument : GC-MS 4
Acquired : 15 Aug 2018 1:47 am using AcqMethod THC_U.M
Sample Name: 2018-09458-1.1.3-1:5 DIL
Misc Info :



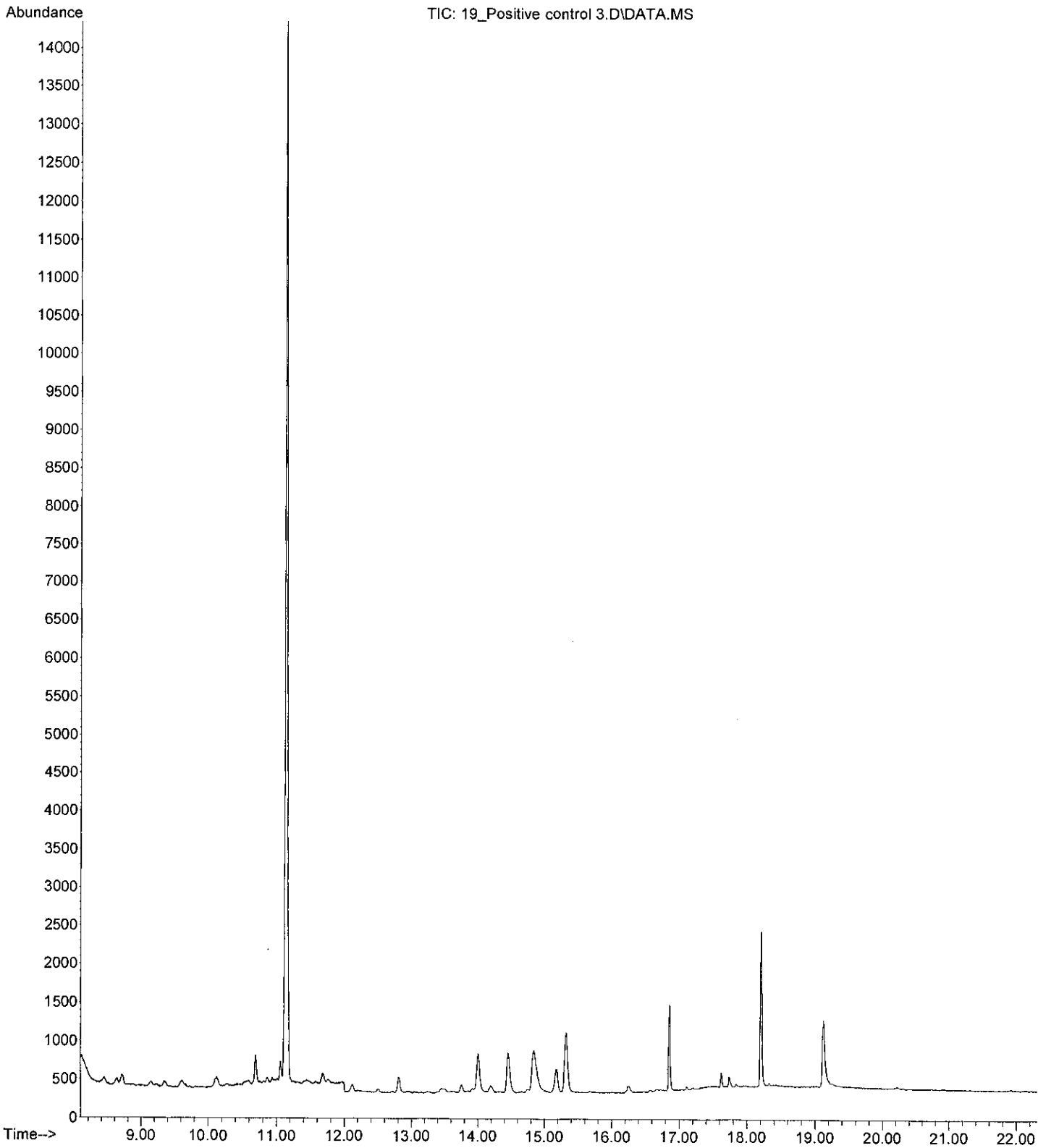
TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\18_Etac.D
Operator : Tanuja Sathiraj
Acquired : 15 Aug 2018 2:15 am using AcqMethod THC_U.M
Instrument : GC-MS 4
Sample Name: Ethyl acetate
Misc Info :
Vial Number: 98



TS

File :D:\DATA\2018\THC\THC_20180814U_TS\2018-08-14-1729.B\19_Posit
... ive control 3.D
Operator : Tanuja Sathiraj
Instrument : GC-MS 4
Acquired : 15 Aug 2018 2:42 am using AcqMethod THC_U.M
Sample Name: Positive control 2
Misc Info :



TS