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BERKELEY ANALYTICAL
815 Harbour Way South, Suite 6
Richmond, CA 94804
Ph. 510-236-2325; Fax 510-236-2335
E-mail info@berkeleyanalytical.com

Analysis of Field-Collected Air Samples

Customer and Project Information

Report Certification	
Report number	061-029-IH-Dec2315
Report date	December 23, 2015
Certified by (Name/Title)	Alfred T. Hodgson, Research Director
Signature	
Date	*December 23, 2015*

Methods	
U.S. EPA TO-17	Determination of Volatile Organic Compounds in Ambient...

Customer Information	
Customer:	US EPA
City/State/Country	San Francisco, CA, USA
Contact name/Title	Jeff Woodlee
Phone number	415-972-3740

Project Information	
Project number	Not given
Project name	IAQ 75 Hawthorne
Project location	Not given
Project date	December 22, 2015

Laboratory Receiving Information	
Date samples received by lab	December 22, 2015
Condition of samples	No observed problems
Lab tracking numbers	061-029-01 to 061-029-03

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Sample Information

Sample No.	Sample Description	Sampler No.	Date Collected	Volume (L)	Analysis Type	Specified Method
C9-01	10411	Mi59921	December 22, 2015	5.253	Caprolactam	TO-17
C9-02	10411	Mi51176	December 22, 2015	5.349	Caprolactam	TO-17
C9-03	10419	Mi51152	December 22, 2015	5.081	Caprolactam	TO-17

Analytical Information

Sample No.	Lab Track. No.	Method	Date Analyzed	Analyst	Data File
C9-01	061-029-01	TO-17	December 22, 2015	R. Gill	T151222_07
C9-02	061-029-02	TO-17	December 22, 2015	R. Gill	T151222_08
C9-03	061-029-03	TO-17	December 22, 2015	R. Gill	T151222_09

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Project Specific Information

Air samples for the analysis of caprolactam (CAS # 105-60-2) were received by the laboratory on December 22, 2015. There were three multi-sorbent tubes for caprolactam analysis. The analytical results are reported in Table 1. All laboratory data, including but not limited to raw instrument files, calibration files, and quality control checks used to generate the results will be made available to the customer upon request. All test methods used in this project are contained in the scope of Berkeley Analytical's ISO/IEC 17025 accreditation (TL-383, International Accreditation Service, Inc.).

Method – The multisorbent air samples were analyzed for caprolactam following U.S. EPA Compendium Method TO-17. Caprolactam was quantified using a multi-point calibration curve prepared with a pure standard.

MDL and LOQ – Method detection limit (MDL) of 3.9 nanograms for caprolactam was determined from the analysis of three replicates of the low level standard spiked onto multisorbent air sampling tubes; The practical lower limit of quantitation (LOQ) is three times the MDL.

Uncertainty – The laboratory uses the ISO GUM method to estimate the uncertainties associated with the measurement of VOCs . The expanded uncertainty is equal to two times the relative standard deviation. For 2015, the expanded uncertainty estimated for caprolactam was ±11%.

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Results

Table 1. Quantitative analysis of Caprolactam (CAS # 105-60-2).

Sample No.	Sample Name	Volume (L)	Mass (ng)	Conc ($\mu g/m^3$)
C9-01	10411	5.253	35.8	6.8
C9-02	10411	5.349	36.5	6.8
C9-03	10419	5.081	30.8	6.1

END OF REPORT

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Berkeley Analytical Associates, LLC
815 Harbour Way South, Suite 6
Richmond, CA 94804-3612
Phone: 510-236-2325 Fax: 510-236-2335
e-mail: baalab@berkeleyanalytical.com

CHAIN-OF-CUSTODY RECORD
for ANALYTICAL SERVICES
2009 Update

Client Information*	
Company: US EPA	
Street Address: 75 HAWTHORNE ST	
City/State/Zip Code: San Francisco, CA 94105	
Country:	Contact (for reporting): Jeff Woodlee
Project/Job Name: IAQ 75 HAWTHORNE	
Project/Job #:	P.O. #:
Phone: (415) 972-3740	Fax:
E-mail address: woodlee.jeff@epa.gov	

Received from BAA (check if applicable)	
Multi-sorbent tube samplers	☑
Aldehyde cartridge samplers	☐
Sampling pump(s)	☐
Other materials (specify):	☐

BAA Analysis Code	
Total VOCs by GC/MS total-ion-current method (TIC)	a
Qualitative GC/MS of individual VOCs	b
Qualitative GC/MS plus quantitation of up to 15 individual VOCs	c
Quantitative GC/MS analysis of target list of compounds	d
Quantitative GC/MS Total VOCs plus 4-PCH	e
Quantitative HPLC analysis of formaldehyde	f
Quantitative HPLC analysis of formaldehyde & acetaldehyde	g
Quantitative HPLC analysis of formaldehyde & C2-C9 carbonyls	h
Quantitative HPLC analysis of glutaraldehyde	i
	k
Other (specify):	z

Air Sampling Record

Tube/Cartridge Sampler No.	Collected Sample ID	Date Collected	Collection Minutes	Collected Volume (L)	Sample Location / Description / Remarks	Analysis Code	BAA Remarks
C9-01	C9-01	12/22/15	55	5.253	10411; Mi59921	Caprolactam	
C9-02	C9-02	12/22/15	55	5.349	10411; Mi51176		
C9-03	C9-03	12/22/15	54	5.081	10419; Mi51152		

Sample(s) Handling

Relinquished By	Received By	Signature	Date	Company
J. Woodlee		[signature]	12/22/15	USEPA
	Lois Switzer	[signature]	12/22/15	BKA

JC 061-029

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Quantitation Report (QT Reviewed)

Data Path : T:\5975 Data Files\Y2K15\Dec\
Data File : T151222_07.D
Acq On : 22 Dec 2015 6:22 pm
Operator : rgill
Sample : 061-029-01_US EPA, C9-01; 10411; 5.253L
Misc : Mi59921;107ngBFB;10:1 split
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 23 11:14:10 2015
Quant Method : M:\5975 Methods\Y2K15\Desorb_Merged_2015.M
Quant Title : AB95168
QLast Update : Wed Jul 29 18:05:39 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Bromo-4-flourobenzen...	13.928	95	736169	107.00 ng	0.00
22) 1-Bromo-4-flourobenzen...	0.000	95	0m	107.00 ng	-13.94
33) 1-Bromo-4-flourobenzen...	0.000	95	0m	107.00 ng	-13.94
50) 1-Bromo-4-flourobenzen...	0.000	95	0m	107.00 ng	-13.94
60) 1-Bromo-4-flourobenzen...	0.000	95	0m	107.00 ng	-13.94
82) 1-Bromo-4-flourobenzen...	0.000	95	0m	107.00 ng	-13.94
Target Compounds					Qvalue
2) Trichloroethene;79-01-6	0.000		0	N.D.	
3) Methyl methacrylate; 8...	0.000		0	N.D.	
4) Toluene; 108-88-3	0.000		0	N.D. d	
5) Tetrachloroethene; 127...	0.000		0	N.D.	
6) N,N-Dimethylformamide;...	0.000		0	N.D. d	
7) Ethylbenzene; 100-41-4	0.000		0	N.D. d	
8) Xylene {1}; 108-38-3	0.000		0	N.D. d	
9) Xylene {2}; 95-47-6	0.000		0	N.D. d	
10) Xylene - TOTAL; 1330-20-7	0.000		0	N.D.	
11) Styrene; 100-42-5	0.000		0	N.D. d	
12) 1,2,4-Trimethylbenzene...	0.000		0	N.D. d	
13) Octanal; 124-13-0	0.000		0	N.D. d	
14) Phenol; 108-95-2	0.000		0	N.D. d	
15) 1-Phenylethanone; 98-86-2	0.000		0	N.D. d	
16) 1-Methyl-2-pyrrolidino...	0.000		0	N.D.	
17) Nonanal; 124-19-6	0.000		0	N.D. d	
18) 2-Ethylhexanoic acid; ...	0.000		0	N.D. d	
19) Naphthalene; 91-20-3	0.000		0	N.D. d	
20) 4-Phenylcyclohexene; 4...	0.000		0	N.D.	
21) Caprolactam; 105-60-2	23.695	113	63930	35.80 ng	94
23) 1-Methoxy-2-propanol; ...	0.000		0	N.D. d	
24) Ethylene glycol; 107-21-1	0.000		0	N.D. d	
25) Butyl acetate; 123-86-4	0.000		0	N.D. d	
26) Propylene glycol; 57-55-6	0.000		0	N.D. d	
27) 2-Butoxyethanol; 111-76-2	0.000		0	N.D. d	
28) Hexanoic acid; 142-62-1	0.000		0	N.D. d	
29) 2-Ethyl-1-hexanol; 104...	0.000		0	N.D. d	
30) 2-(2-Butoxyethoxy) eth...	0.000		0	N.D. d	
31) Dodecanol; 112-53-8	0.000		0	N.D. d	
32) Butylated hydroxytolue...	0.000		0	N.D.	
34) n-Pentane; 109-66-0	0.000		0	N.D. d	
35) Ethanol; 64-17-5	0.000		0	N.D. d	
36) 2-Propanone(acetone); ...	0.000		0	N.D. d	
37) 2-Propanol; 67-63-0	0.000		0	N.D. d	
38) Carbon disulfide; 75-15-0	0.000		0	N.D.	
39) Dichloromethane; 75-09-2	0.000		0	N.D. d	
40) n-Hexane; 110-54-3	0.000		0	N.D. d	
41) Vinyl acetate; 108-05-4	0.000		0	N.D. d	
42) 2-Butanone; 78-93-3	0.000		0	N.D. d	
43) Ethyl acetate; 141-78-6	0.000		0	N.D. d	
44) Cyclohexane; 110-82-7	0.000		0	N.D. d	

45)	Benzene; 71-43-2	0.000	0	N.D. d
46)	2-Methyl-1-propanol; 7...	0.000	0	N.D. d
47)	1-Butanol; 71-36-3	0.000	0	N.D. d
48)	1,4-Dioxane; 123-91-1	0.000	0	N.D.
49)	Epichlorohydrin; 106-89-8	0.000	0	N.D. d
51)	n-Butanal;123-72-8	0.000	0	N.D.
52)	Pentanal; 110-62-3	0.000	0	N.D. d
53)	4-Methyl-2-pentanone; ...	0.000	0	N.D. d
54)	Hexanal; 66-25-1	0.000	0	N.D. d
55)	2-Furancarboxaldehyde;...	0.000	0	N.D. d
56)	4-Heptanone; 123-19-3	0.000	0	N.D. d
57)	2-Heptanone; 110-43-0	0.000	0	N.D. d
58)	Heptanal; 111-71-7	0.000	0	N.D. d
59)	Benzaldehyde; 100-52-7	0.000	0	N.D. d
61)	Octane; 111-65-9	0.000	0	N.D. d
62)	n-Nonane; 111-84-2	0.000	0	N.D. d
63)	alpha-Pinene; 7785-70-8	0.000	0	N.D. d
64)	Cyclohexanone; 108-94-1	0.000	0	N.D. d
65)	Camphene; 5794-03-6	0.000	0	N.D. d
66)	beta-Pinene; 19902-08-0	0.000	0	N.D.
67)	n-Decane; 124-18-5	0.000	0	N.D. d
68)	.alpha.-Methylstyrene;...	0.000	0	N.D.
69)	3-Carene; 13466-78-9	0.000	0	N.D.
70)	d-Limonene; 5989-27-5	0.000	0	N.D. d
71)	p-Cymene; 99-87-6	0.000	0	N.D. d
72)	1-Undecene; 821-95-4	0.000	0	N.D. d
73)	n-Undecane; 1120-21-4	0.000	0	N.D. d
74)	n-Dodecane; 112-40-3	0.000	0	N.D. d
75)	Dodecamethylpentasilox...	0.000	0	N.D.
76)	n-Tridecane; 629-50-5	0.000	0	N.D. d
77)	Benzothiazole; 95-16-9	0.000	0	N.D.
78)	n-Tetradecane; 629-59-4	0.000	0	N.D. d
79)	n-Pentadecane; 629-62-9	0.000	0	N.D. d
80)	n-Hexadecane; 544-76-3	0.000	0	N.D. d
81)	n-Heptadecane; 629-78-7	0.000	0	N.D. d
83)	Propyl acetate; 109-60-4	0.000	0	N.D.
84)	Isobutyl acetate;110-19-0	0.000	0	N.D. d
85)	PGMEA; 108-65-6	0.000	0	N.D. d
86)	1,3-Dichloro-2-propano...	0.000	0	N.D.
87)	DPGME isomer 1; 34590-...	0.000	0	N.D.
88)	DPGME isomer 2; 34590-...	0.000	0	N.D.
89)	DPGME isomer 3; 34590-...	0.000	0	N.D.
90)	1,1'-Oxybis-2-propanol...	0.000	0	N.D.
91)	Benzenemethanol; 100-51-6	0.000	0	N.D.
92)	Propylene carbonate; 1...	0.000	0	N.D.
93)	2,2'-Oxybis(1-propanol...	0.000	0	N.D. d
94)	2-(2-Hydroxypropoxy)1-...	0.000	0	N.D. d
95)	Octanoic acid; 124-07-2	0.000	0	N.D. d
96)	alpha-Terpineol; 10482...	0.000	0	N.D.
97)	Texanol 1; 25265-77-4-IS1	0.000	0	N.D. d
98)	Texanol 3; 25265-77-4-IS3	0.000	0	N.D. d
99)	1-Dodecanamine, N,N-di...	0.000	0	N.D.
100)	3-Methyl-1,1'-biphenyl...	0.000	0	N.D.
101)	TXIB; 6846-50-0	0.000	0	N.D. d

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

Desorb_Merged_2015.M Wed Dec 23 11:14:14 2015

Quantitation Report (QT Reviewed)

Data Path : T:\5975 Data Files\Y2K15\Dec\
Data File : T151222_08.D
Acq On : 22 Dec 2015 7:08 pm
Operator : rgill
Sample : 061-029-02_US EPA, C9-02; 10411; 5.349L
Misc : Mi51176;107ngBFB;10:1 split
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 23 11:14:59 2015
Quant Method : M:\5975 Methods\Y2K15\Desorb_Merged_2015.M
Quant Title : AB95168
QLast Update : Wed Jul 29 18:05:39 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Bromo-4-flourobenzen...	13.933	95	750782	107.00 ng	0.00
22) 1-Bromo-4-flourobenzen...	0.000	95	0m	107.00 ng	-13.94
33) 1-Bromo-4-flourobenzen...	0.000	95	0m	107.00 ng	-13.94
50) 1-Bromo-4-flourobenzen...	0.000	95	0m	107.00 ng	-13.94
60) 1-Bromo-4-flourobenzen...	0.000	95	0m	107.00 ng	-13.94
82) 1-Bromo-4-flourobenzen...	0.000	95	0m	107.00 ng	-13.94
Target Compounds					Qvalue
2) Trichloroethene;79-01-6	0.000		0	N.D.	
3) Methyl methacrylate; 8...	0.000		0	N.D.	
4) Toluene; 108-88-3	0.000		0	N.D. d	
5) Tetrachloroethene; 127...	0.000		0	N.D.	
6) N,N-Dimethylformamide;...	0.000		0	N.D. d	
7) Ethylbenzene; 100-41-4	0.000		0	N.D. d	
8) Xylene {1}; 108-38-3	0.000		0	N.D. d	
9) Xylene {2}; 95-47-6	0.000		0	N.D. d	
10) Xylene - TOTAL; 1330-20-7	0.000		0	N.D.	
11) Styrene; 100-42-5	0.000		0	N.D. d	
12) 1,2,4-Trimethylbenzene...	0.000		0	N.D. d	
13) Octanal; 124-13-0	0.000		0	N.D. d	
14) Phenol; 108-95-2	0.000		0	N.D. d	
15) 1-Phenylethanone; 98-86-2	0.000		0	N.D. d	
16) 1-Methyl-2-pyrrolidino...	0.000		0	N.D.	
17) Nonanal; 124-19-6	0.000		0	N.D. d	
18) 2-Ethylhexanoic acid; ...	0.000		0	N.D. d	
19) Naphthalene; 91-20-3	0.000		0	N.D.	
20) 4-Phenylcyclohexene; 4...	0.000		0	N.D.	
21) Caprolactam; 105-60-2	23.700	113	66555	36.54 ng	94
23) 1-Methoxy-2-propanol; ...	0.000		0	N.D. d	
24) Ethylene glycol; 107-21-1	0.000		0	N.D. d	
25) Butyl acetate; 123-86-4	0.000		0	N.D. d	
26) Propylene glycol; 57-55-6	0.000		0	N.D. d	
27) 2-Butoxyethanol; 111-76-2	0.000		0	N.D. d	
28) Hexanoic acid; 142-62-1	0.000		0	N.D. d	
29) 2-Ethyl-1-hexanol; 104...	0.000		0	N.D. d	
30) 2-(2-Butoxyethoxy) eth...	0.000		0	N.D. d	
31) Dodecanol; 112-53-8	0.000		0	N.D. d	
32) Butylated hydroxytolue...	0.000		0	N.D.	
34) n-Pentane; 109-66-0	0.000		0	N.D. d	
35) Ethanol; 64-17-5	0.000		0	N.D. d	
36) 2-Propanone(acetone); ...	0.000		0	N.D. d	
37) 2-Propanol; 67-63-0	0.000		0	N.D. d	
38) Carbon disulfide; 75-15-0	0.000		0	N.D.	
39) Dichloromethane; 75-09-2	0.000		0	N.D. d	
40) n-Hexane; 110-54-3	0.000		0	N.D. d	
41) Vinyl acetate; 108-05-4	0.000		0	N.D. d	
42) 2-Butanone; 78-93-3	0.000		0	N.D. d	
43) Ethyl acetate; 141-78-6	0.000		0	N.D. d	
44) Cyclohexane; 110-82-7	0.000		0	N.D. d	

45)	Benzene; 71-43-2	0.000	0	N.D. d
46)	2-Methyl-1-propanol; 7...	0.000	0	N.D. d
47)	1-Butanol; 71-36-3	0.000	0	N.D. d
48)	1,4-Dioxane; 123-91-1	0.000	0	N.D.
49)	Epichlorohydrin; 106-89-8	0.000	0	N.D. d
51)	n-Butanal;123-72-8	0.000	0	N.D.
52)	Pentanal; 110-62-3	0.000	0	N.D. d
53)	4-Methyl-2-pentanone; ...	0.000	0	N.D. d
54)	Hexanal; 66-25-1	0.000	0	N.D. d
55)	2-Furancarboxaldehyde;...	0.000	0	N.D. d
56)	4-Heptanone; 123-19-3	0.000	0	N.D. d
57)	2-Heptanone; 110-43-0	0.000	0	N.D. d
58)	Heptanal; 111-71-7	0.000	0	N.D. d
59)	Benzaldehyde; 100-52-7	0.000	0	N.D. d
61)	Octane; 111-65-9	0.000	0	N.D. d
62)	n-Nonane; 111-84-2	0.000	0	N.D. d
63)	alpha-Pinene; 7785-70-8	0.000	0	N.D. d
64)	Cyclohexanone; 108-94-1	0.000	0	N.D. d
65)	Camphene; 5794-03-6	0.000	0	N.D. d
66)	beta-Pinene; 19902-08-0	0.000	0	N.D.
67)	n-Decane; 124-18-5	0.000	0	N.D. d
68)	.alpha.-Methylstyrene;...	0.000	0	N.D.
69)	3-Carene; 13466-78-9	0.000	0	N.D.
70)	d-Limonene; 5989-27-5	0.000	0	N.D. d
71)	p-Cymene; 99-87-6	0.000	0	N.D. d
72)	1-Undecene; 821-95-4	0.000	0	N.D. d
73)	n-Undecane; 1120-21-4	0.000	0	N.D. d
74)	n-Dodecane; 112-40-3	0.000	0	N.D. d
75)	Dodecamethylpentasilox...	0.000	0	N.D.
76)	n-Tridecane; 629-50-5	0.000	0	N.D. d
77)	Benzothiazole; 95-16-9	0.000	0	N.D.
78)	n-Tetradecane; 629-59-4	0.000	0	N.D. d
79)	n-Pentadecane; 629-62-9	0.000	0	N.D. d
80)	n-Hexadecane; 544-76-3	0.000	0	N.D. d
81)	n-Heptadecane; 629-78-7	0.000	0	N.D.
83)	Propyl acetate; 109-60-4	0.000	0	N.D. d
84)	Isobutyl acetate;110-19-0	0.000	0	N.D. d
85)	PGMEA; 108-65-6	0.000	0	N.D. d
86)	1,3-Dichloro-2-propano...	0.000	0	N.D.
87)	DPGME isomer 1; 34590-...	0.000	0	N.D.
88)	DPGME isomer 2; 34590-...	0.000	0	N.D.
89)	DPGME isomer 3; 34590-...	0.000	0	N.D.
90)	1,1'-Oxybis-2-propanol...	0.000	0	N.D.
91)	Benzenemethanol; 100-51-6	0.000	0	N.D.
92)	Propylene carbonate; 1...	0.000	0	N.D.
93)	2,2'-Oxybis(1-propanol...	0.000	0	N.D. d
94)	2-(2-Hydroxypropoxy)1-...	0.000	0	N.D. d
95)	Octanoic acid; 124-07-2	0.000	0	N.D.
96)	alpha-Terpineol; 10482...	0.000	0	N.D.
97)	Texanol 1; 25265-77-4-IS1	0.000	0	N.D. d
98)	Texanol 3; 25265-77-4-IS3	0.000	0	N.D. d
99)	1-Dodecanamine, N,N-di...	0.000	0	N.D.
100)	3-Methyl-1,1'-biphenyl...	0.000	0	N.D.
101)	TXIB; 6846-50-0	0.000	0	N.D. d

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

Desorb_Merged_2015.M Wed Dec 23 11:15:02 2015

Quantitation Report (QT Reviewed)

Data Path : T:\5975 Data Files\Y2K15\Dec\
Data File : T151222_09.D
Acq On : 22 Dec 2015 7:54 pm
Operator : rgill
Sample : 061-029-03_US EPA, C9-03; 10419; 5.081L
Misc : Mi51152;107ngBFB;10:1 split
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 23 11:15:47 2015
Quant Method : M:\5975 Methods\Y2K15\Desorb_Merged_2015.M
Quant Title : AB95168
QLast Update : Wed Jul 29 18:05:39 2015
Response via : Initial Calibration

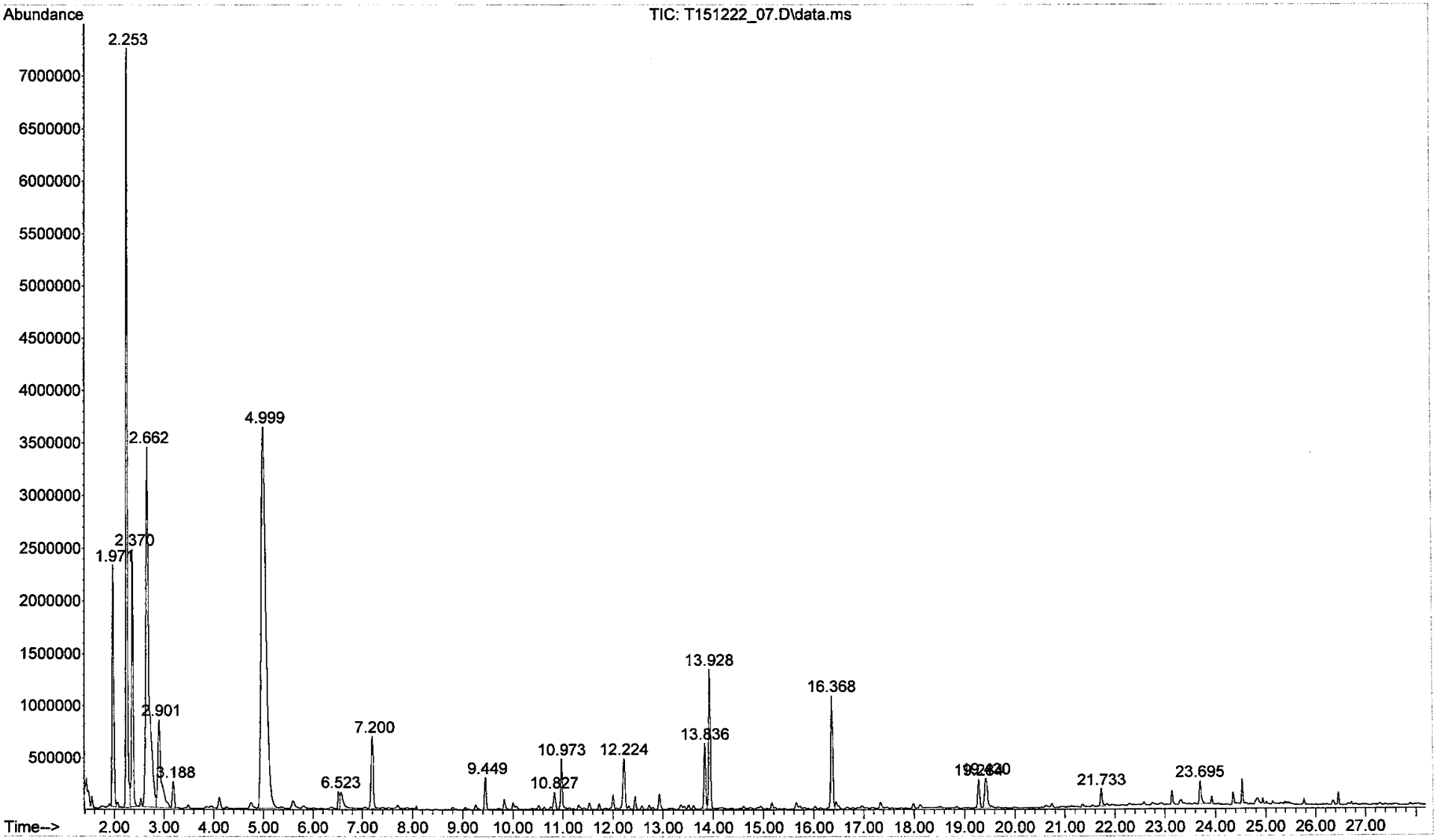
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Bromo-4-flourobenzen...	13.929	95	766020	107.00 ng	0.00
22) 1-Bromo-4-flourobenzen...	0.000	95	0m	107.00 ng	-13.94
33) 1-Bromo-4-flourobenzen...	0.000	95	0m	107.00 ng	-13.94
50) 1-Bromo-4-flourobenzen...	0.000	95	0m	107.00 ng	-13.94
60) 1-Bromo-4-flourobenzen...	0.000	95	0m	107.00 ng	-13.94
82) 1-Bromo-4-flourobenzen...	0.000	95	0m	107.00 ng	-13.94
Target Compounds					Qvalue
2) Trichloroethene;79-01-6	0.000		0	N.D.	
3) Methyl methacrylate; 8...	0.000		0	N.D.	
4) Toluene; 108-88-3	0.000		0	N.D. d	
5) Tetrachloroethene; 127...	0.000		0	N.D.	
6) N,N-Dimethylformamide;...	0.000		0	N.D. d	
7) Ethylbenzene; 100-41-4	0.000		0	N.D. d	
8) Xylene {1}; 108-38-3	0.000		0	N.D. d	
9) Xylene {2}; 95-47-6	0.000		0	N.D. d	
10) Xylene - TOTAL; 1330-20-7	0.000		0	N.D.	
11) Styrene; 100-42-5	0.000		0	N.D. d	
12) 1,2,4-Trimethylbenzene...	0.000		0	N.D. d	
13) Octanal; 124-13-0	0.000		0	N.D. d	
14) Phenol; 108-95-2	0.000		0	N.D. d	
15) 1-Phenylethanone; 98-86-2	0.000		0	N.D. d	
16) 1-Methyl-2-pyrrolidino...	0.000		0	N.D.	
17) Nonanal; 124-19-6	0.000		0	N.D. d	
18) 2-Ethylhexanoic acid; ...	0.000		0	N.D. d	
19) Naphthalene; 91-20-3	0.000		0	N.D.	
20) 4-Phenylcyclohexene; 4...	0.000		0	N.D.	
21) Caprolactam; 105-60-2	23.695	113	57226	30.77 ng	92
23) 1-Methoxy-2-propanol; ...	0.000		0	N.D. d	
24) Ethylene glycol; 107-21-1	0.000		0	N.D. d	
25) Butyl acetate; 123-86-4	0.000		0	N.D. d	
26) Propylene glycol; 57-55-6	0.000		0	N.D. d	
27) 2-Butoxyethanol; 111-76-2	0.000		0	N.D. d	
28) Hexanoic acid; 142-62-1	0.000		0	N.D. d	
29) 2-Ethyl-1-hexanol; 104...	0.000		0	N.D. d	
30) 2-(2-Butoxyethoxy) eth...	0.000		0	N.D. d	
31) Dodecanol; 112-53-8	0.000		0	N.D.	
32) Butylated hydroxytolue...	0.000		0	N.D.	
34) n-Pentane; 109-66-0	0.000		0	N.D. d	
35) Ethanol; 64-17-5	0.000		0	N.D. d	
36) 2-Propanone(acetone); ...	0.000		0	N.D. d	
37) 2-Propanol; 67-63-0	0.000		0	N.D. d	
38) Carbon disulfide; 75-15-0	0.000		0	N.D.	
39) Dichloromethane; 75-09-2	0.000		0	N.D. d	
40) n-Hexane; 110-54-3	0.000		0	N.D. d	
41) Vinyl acetate; 108-05-4	0.000		0	N.D. d	
42) 2-Butanone; 78-93-3	0.000		0	N.D. d	
43) Ethyl acetate; 141-78-6	0.000		0	N.D. d	
44) Cyclohexane; 110-82-7	0.000		0	N.D. d	

45)	Benzene; 71-43-2	0.000	0	N.D. d
46)	2-Methyl-1-propanol; 7...	0.000	0	N.D. d
47)	1-Butanol; 71-36-3	0.000	0	N.D. d
48)	1,4-Dioxane; 123-91-1	0.000	0	N.D.
49)	Epichlorohydrin; 106-89-8	0.000	0	N.D. d
51)	n-Butanal;123-72-8	0.000	0	N.D.
52)	Pentanal; 110-62-3	0.000	0	N.D. d
53)	4-Methyl-2-pentanone; ...	0.000	0	N.D. d
54)	Hexanal; 66-25-1	0.000	0	N.D. d
55)	2-Furancarboxaldehyde;...	0.000	0	N.D. d
56)	4-Heptanone; 123-19-3	0.000	0	N.D. d
57)	2-Heptanone; 110-43-0	0.000	0	N.D. d
58)	Heptanal; 111-71-7	0.000	0	N.D. d
59)	Benzaldehyde; 100-52-7	0.000	0	N.D. d
61)	Octane; 111-65-9	0.000	0	N.D. d
62)	n-Nonane; 111-84-2	0.000	0	N.D. d
63)	alpha-Pinene; 7785-70-8	0.000	0	N.D. d
64)	Cyclohexanone; 108-94-1	0.000	0	N.D. d
65)	Camphene; 5794-03-6	0.000	0	N.D. d
66)	beta-Pinene; 19902-08-0	0.000	0	N.D.
67)	n-Decane; 124-18-5	0.000	0	N.D. d
68)	.alpha.-Methylstyrene;...	0.000	0	N.D.
69)	3-Carene; 13466-78-9	0.000	0	N.D.
70)	d-Limonene; 5989-27-5	0.000	0	N.D. d
71)	p-Cymene; 99-87-6	0.000	0	N.D. d
72)	1-Undecene; 821-95-4	0.000	0	N.D. d
73)	n-Undecane; 1120-21-4	0.000	0	N.D. d
74)	n-Dodecane; 112-40-3	0.000	0	N.D. d
75)	Dodecamethylpentasilox...	0.000	0	N.D.
76)	n-Tridecane; 629-50-5	0.000	0	N.D. d
77)	Benzothiazole; 95-16-9	0.000	0	N.D.
78)	n-Tetradecane; 629-59-4	0.000	0	N.D. d
79)	n-Pentadecane; 629-62-9	0.000	0	N.D. d
80)	n-Hexadecane; 544-76-3	0.000	0	N.D. d
81)	n-Heptadecane; 629-78-7	0.000	0	N.D. d
83)	Propyl acetate; 109-60-4	0.000	0	N.D. d
84)	Isobutyl acetate;110-19-0	0.000	0	N.D. d
85)	PGMEA; 108-65-6	0.000	0	N.D. d
86)	1,3-Dichloro-2-propano...	0.000	0	N.D.
87)	DPGME isomer 1; 34590-...	0.000	0	N.D.
88)	DPGME isomer 2; 34590-...	0.000	0	N.D. d
89)	DPGME isomer 3; 34590-...	0.000	0	N.D. d
90)	1,1'-Oxybis-2-propanol...	0.000	0	N.D.
91)	Benzenemethanol; 100-51-6	0.000	0	N.D.
92)	Propylene carbonate; 1...	0.000	0	N.D.
93)	2,2'-Oxybis(1-propanol...	0.000	0	N.D. d
94)	2-(2-Hydroxypropoxy)1-...	0.000	0	N.D. d
95)	Octanoic acid; 124-07-2	0.000	0	N.D.
96)	alpha-Terpineol; 10482...	0.000	0	N.D.
97)	Texanol 1; 25265-77-4-IS1	0.000	0	N.D. d
98)	Texanol 3; 25265-77-4-IS3	0.000	0	N.D. d
99)	1-Dodecanamine, N,N-di...	0.000	0	N.D.
100)	3-Methyl-1,1'-biphenyl...	0.000	0	N.D.
101)	TXIB; 6846-50-0	0.000	0	N.D. d

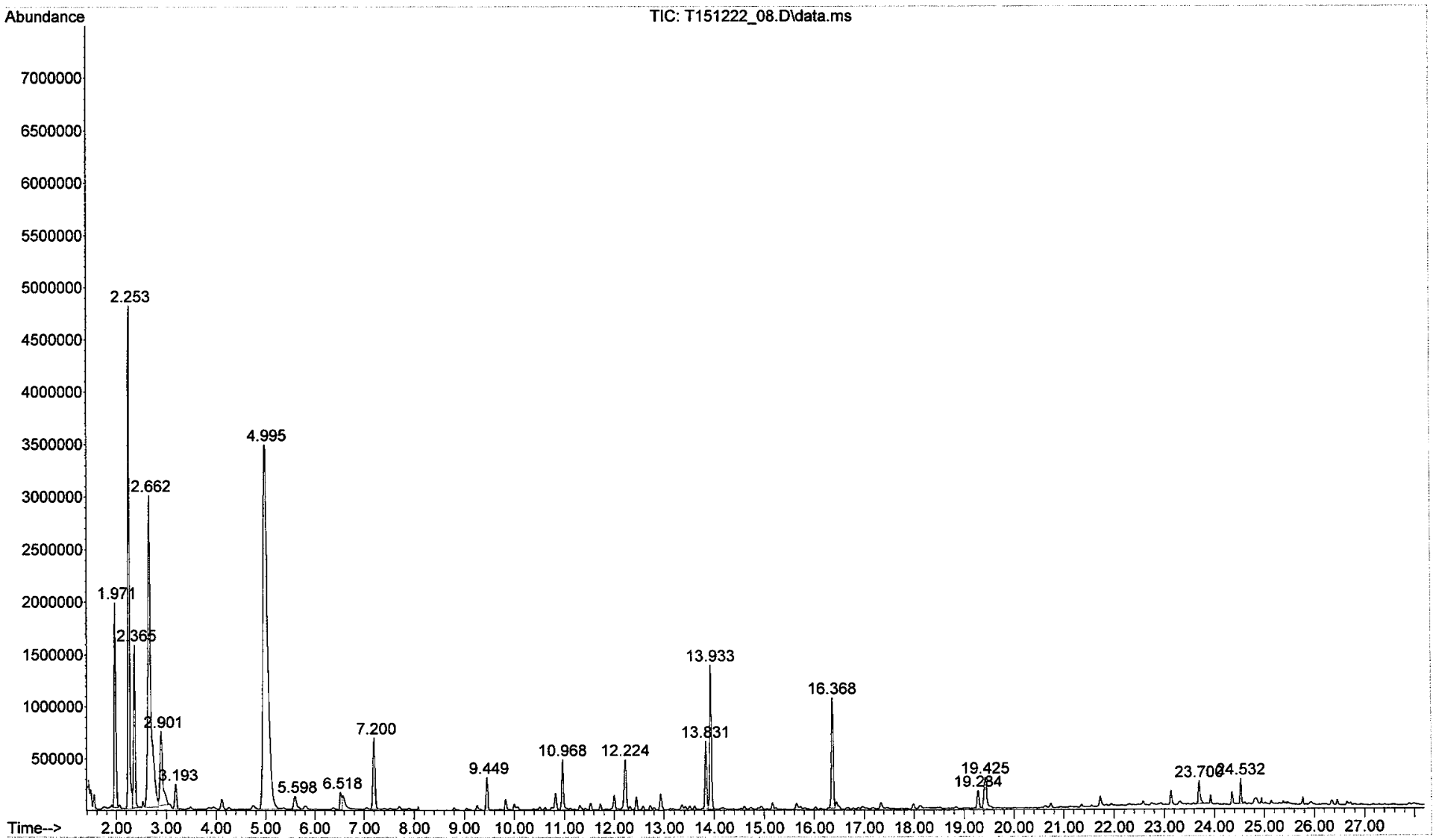
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Desorb_Merged_2015.M Wed Dec 23 11:15:50 2015

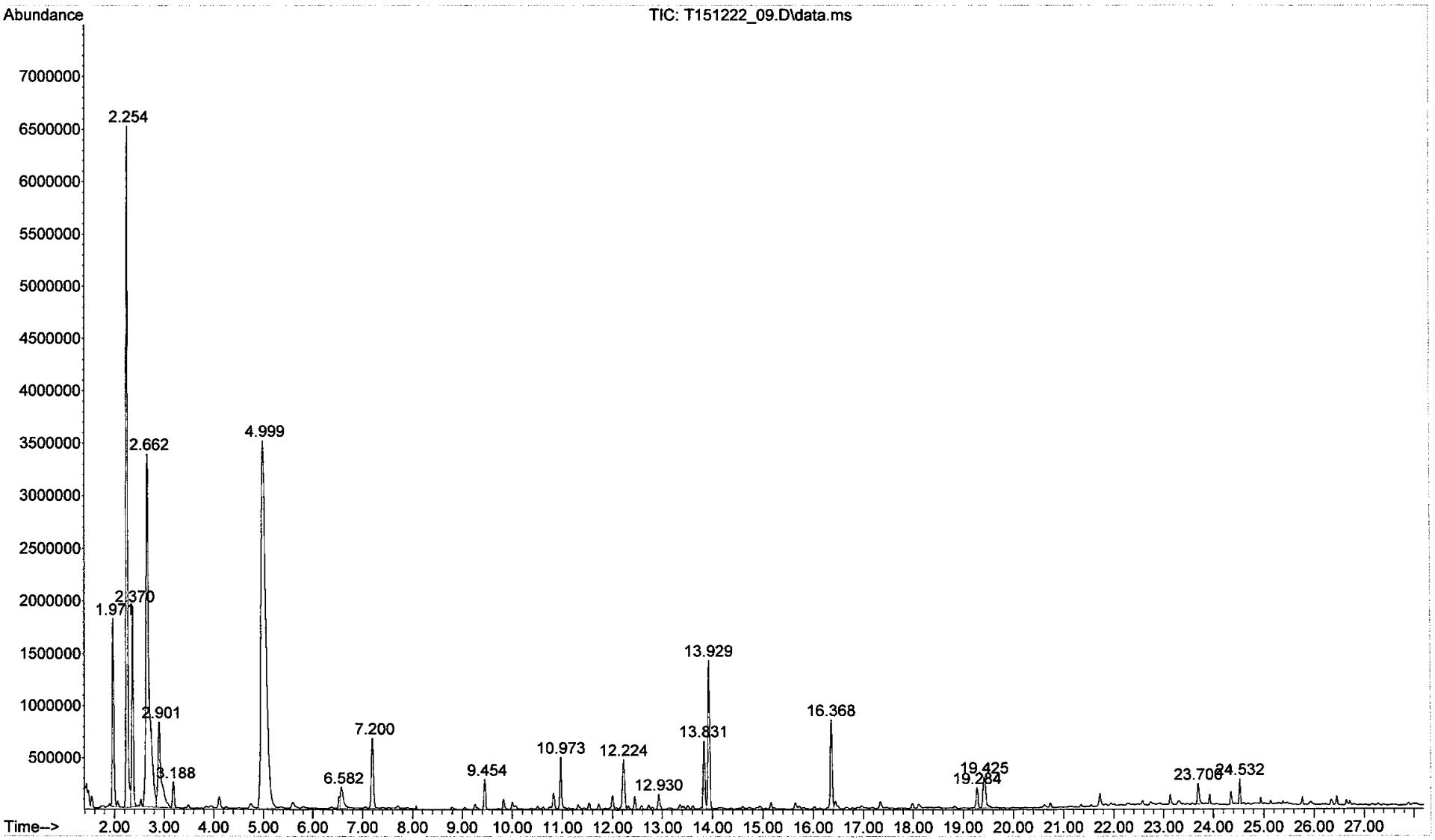
File :T:\5975 Data Files\Y2K15\Dec\T151222_07.D
Operator : rgill
Acquired : 22 Dec 2015 6:22 pm using AcqMethod 130812VOC.M
Instrument : GCMS_7890
Sample Name: 061-029-01_US EPA, C9-01; 10411; 5.253L
Misc Info : Mi59921;107ngBFB;10:1 split
Vial Number: 4



File :T:\5975 Data Files\Y2K15\Dec\T151222_08.D
Operator : rgill
Acquired : 22 Dec 2015 7:08 pm using AcqMethod 130812VOC.M
Instrument : GCMS_7890
Sample Name: 061-029-02_US EPA, C9-02; 10411; 5.349L
Misc Info : Mi51176;107ngBFB;10:1 split
Vial Number: 5



File :T:\5975 Data Files\Y2K15\Dec\T151222_09.D
Operator : rgill
Acquired : 22 Dec 2015 7:54 pm using AcqMethod 130812VOC.M
Instrument : GCMS_7890
Sample Name: 061-029-03_US EPA, C9-03; 10419; 5.081L
Misc Info : Mi51152;107ngBFB;10:1 split
Vial Number: 6



The mass for the UC compounds are calculated based on TIC using Toluene response factor.
TIC Unconfirmed
061-029-01_US EPA, C9-01; 10411; 5.253L

12/23/2015, Rgill

	BFB(ng)	RF		
TIC: T151222_07.D\data.ms	107		0.92	5.3

RT	Area	RelResp	Mass ng	Conc. ug/m3	CAS#	Compound
13.9	3213970.0	1.000	116.3	22.1		bfb-lstd
23.7	641830.0	0.200	35.8	6.8		Caprolactam

The mass for the UC compounds are calculated based on TIC using Toluene response factor.
TIC Unconfirmed
061-029-02_US EPA, C9-02; 10411; 5.349L

12/23/2015, Rgill

	BFB(ng)	RF			
TIC: T151222_08.D\data.ms	107		0.92	5.3	
			Mass	**Conc.**	
RT	Area	RelResp	ng	ug/m3	CAS#	Compound
13.9	3277387.0	1.000	116.3	21.7		bfb-lstd
23.7	656145.0	0.200	36.5	6.8		Caprolactam

The mass for the UC compounds are calculated based on TIC using Toluene response factor.
TIC Unconfirmed
061-029-03_US EPA, C9-03; 10419; 5.081L

12/23/2015, Rgill

	BFB(ng)	RF			
TIC: T151222_09.D\data.ms	107		0.92	5.1	
			Mass	**Conc.**	
RT	Area	RelResp	ng	ug/m3	CAS#	Compound
13.9	3348286.0	1.000	116.3	22.9		bfb-Istd
23.7	586199.0	0.175	30.8	6.1		Caprolactam

061-029-01 5.253 litres
US EPA
Mi59921 collected: 12/22/2015
1; 10411

061-029-02 5.349 litres
US EPA
Mi51176 collected: 12/22/2015
C9-02;10411

061-029-03 5.081 litres
US EPA
Mi51152 collected: 12/22/2015
C9-03; 10419