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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 240-67631-1

RVAAP,HWMU-13(OPEN BURNING)

Lot #: H6G290408

Opal Johnson

TestAmerica North Canton
4101 Shuffel Street NW
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TESTAMERICA LABORATORIES, INC.

Ryan Henry

Ryan Henry
Project Manager

August 29, 2016

ANALYTICAL METHODS SUMMARY

H6G290408

PARAMETER	ANALYTICAL METHOD
Dibenzodioxins and Dibenzofurans, HRGC/HRMS	SW846 8290A
Percent Moisture	MCAWW 160.3 MOD

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

H6G290408

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
M811L	001	NB-1	07/25/16	14:20
M811M	002	NB-2	07/25/16	14:30
M811N	003	SB-1	07/25/16	16:00
M811P	004	SB-2	07/25/16	16:15
M811Q	005	BERM-1	07/25/16	14:00
M811R	006	POND-1	07/25/16	14:10
M811T	007	PAD-1	07/25/16	15:00
M811V	008	PAD-2	07/25/16	15:20
M811W	009	PAD-3	07/25/16	15:40
M811X	010	PAD-4	07/25/16	16:30
M8110	011	PAD-5	07/25/16	17:00
M8111	012	PAD-6	07/25/16	17:20
M8112	013	PAD-7	07/25/16	17:35
M8113	014	PAD-8	07/25/16	18:00
M8114	015	PAD-XX	07/25/16	15:10
M8115	016	EB	07/25/16	13:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

PROJECT NARRATIVE
H6G290408

The results reported herein are applicable to the samples submitted for analysis only. If you have any questions about this report, please call (865) 291-3000 to speak with the TestAmerica project manager listed on the cover page.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

Custody seals were not present.

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

For solid and sediments samples, when percent moisture is included in the report header field, the sample results are reported on a dry weight basis. When percent moisture is not contained in the header field, sample results are reported on an as received or wet weight basis.

For method blank, M812E1AA, several of internal standards were below the lower acceptance criterion. The minimum required signal-to-noise ratio was present, and the target estimated detection limit for the associated analytes was met. The results are reported in accordance with the standard operating procedure. As indicated by the referenced method, isotope dilution techniques produce results that are independent of internal standard recovery.

All positive 2378-TCDF results at or above the minimum level were confirmed on a DB-225 column.

All 2378-TCDF results which met all qualitative requirements and were reported from the Rtx-5 column are qualified with an "X". This was done to indicate that the Rtx-5 column is not isomer specific for 2378-TCDF

The following flags are used to qualify results for chlorinated dioxin and furan results:

> **J** – The reported result is an estimate. The amount reported is below the Minimum Level (ML). The qualitative definition of the ML is "the lowest level at which the analytical system must give a reliable signal and an acceptable calibration point". The ML was introduced in EPA Methods 1624 and 1625 in 1980 and was promulgated in these methods in 1984 at 40 CFR Part 136, Appendix A. For the purposes of this report, the ML is qualitatively defined as described above, and quantitatively defined as follows:
>
> **Minimum Level**: The concentration or mass of analyte in the sample that corresponds to the lowest calibration level in the initial calibration. It represents a concentration (in the sample extract) equivalent to that of the lowest calibration standard, after corrections for method-specified sample weights, volumes and cleanup procedures has been employed.

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Example: The lowest calibration level for TCDD in the initial calibration is 0.5 pg/uL. A mass of 10 pg of 2,3,7,8-TCDD in the sample would result in a concentration of 0.5 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the lowest calibration standard, the 10 pg mass in the sample components is the ML. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The ML for 2,3,7,8-TCDD becomes 100 pg rather than the default of 10 pg.

E – The reported result is an estimate. The amount reported is above the Upper Calibration Level (UCL) described below. The quantitative definition of the UCL is listed below:

Upper Calibration Level: The concentration or mass of analyte in the sample that corresponds to the highest calibration level in the initial calibration. It is equivalent to the concentration of the highest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

Example: The maximum calibration level for TCDD in the initial calibration is 200 pg/uL. A mass of 4000 pg of 2,3,7,8-TCDD in the sampling components would result in a concentration of 200 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the highest calibration standard, the 4000 pg mass in the sample components is the UCL. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The UCL for 2,3,7,8-TCDD becomes 40,000 pg rather than the default of 4000 pg. In this example, all positive 2,3,7,8-TCDD results above 40,000 pg are flagged with an E.

B – The analyte is present in the associated method blank at a detectable level. For this analysis, there is no method specified reporting level other than the qualitative criterion that peaks must exhibit a signal-to-noise ratio of $\geq$2.5 to 1. Therefore, the presence of any reportable amount of the analyte in the blank will result in a B qualifier on all associated samples.

Q – Estimated maximum possible concentration. This qualifier is used when the result is generated from chromatographic data that does not meet all the qualitative criteria for a positive identification given in the method. These may include one or more of the following:

- Ion abundance ratios must be within specified limits (+/-15% of theoretical ion abundance ratio).
- Retention time criteria (relative to the method-specified isotope labeled retention time standard).
- Co-maximization criterion. The two quantitation ion peaks must reach their maxima within 2 seconds of each other.
- 2,3,7,8-TCDF result is reported from the non-isomer specific Rtx-5 column.

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- Polychlorinated dibenzofuran purity. An interference may be present on the indicated polychlorinated dibenzofuran when a polychlorinated diphenyl ether peak is present and maximizes within +/- 3 seconds of the dibenzofuran candidate.

S – Ion suppression evident. The trace indicating the signal from the lock mass of the calibration compound shows a deflection at the retention time of the analyte. This may indicate a temporary suppression of the instrument sensitivity due to a matrix-borne interference.

C – Coeluting Isomer. The isomer is known to coelute with another member of its homologue group, or the peak shape is shouldered, indicating the likelihood of a coeluting isomer.

X – Other. See explanation in narrative.

Laboratory studies supporting risk assessment and Total Maximum Daily Load (TMDL) evaluations, frequently use qualified data reported as low as the Method Detection Limit (MDL), or the Estimated Detection Limit (EDL). Several of EPA's isotope dilution methods employ the EDL.[1,2,3] The EDL is based on a direct measurement of the signal-to-noise (S/N) ratio acquired during sample analysis. This S/N measurement is used to calculate the concentration in the sample corresponding to the minimum intensity of the smallest quantifiable peak. The EDL reflects the amount of the particular analyte which would be required to cause a positive result for the particular analysis. Because the S/N obtained covaries with recovery, instrument sensitivity and sample-specific cleanup efficacy, the EDL is a more valid measure of the sensitivity of the entire analytical process for the specific sample than is an MDL run periodically on a reference matrix.

The EDL is typically calculated according to the following equation:

$$\text{Estimated Detection Limit} = \frac{N \times 2.5 \times Qis}{His \times RRF \times W \times S}$$

Where:

N	=	peak to peak noise of quantitation ion signal in the region of the ion chromatogram where the compound of interest is expected to elute
His	=	peak height of quantitation ion for appropriate internal standard
Qis	=	ng of internal standard added to sample
RRF	=	mean relative response factor of compound obtained during initial calibration
W	=	amount of sample extracted (grams or liters)
S	=	percent solids (optional, if results are requested to be reported on dry weight basis)

(The area of the internal standard is sometimes used instead of height, along with an area-to-height conversion factor.)

This method of estimating the detection limit differs from the MDL in that it does not carry the requirement that the sample be statistically distinguished as being from a contaminated

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population. As results approach the EDL, the risk of false positives and the analytical uncertainty increase significantly. However, a low false positive well below the ML or MDL is often closer to the true value than an assumption that the target analyte is present at the detection or reporting limits. For relatively clean samples, MDL studies may give an elevated estimate of the detection limit. Additionally, on contaminated samples, the MDL may give a falsely low estimate of the detection limit.

$$\text{Analyte Concentration} = \frac{As \times Qis}{Ais \times RRF \times W \times S}$$

Where:

As	=	Sum of areas of the target peaks
Qis	=	ng of internal standard added to sample
Ais	=	Sum of areas of the internal standard peaks
RRF	=	mean relative response factor of compound obtained during initial calibration
W	=	amount of sample extracted (grams or liters)
S	=	percent solids (optional, if results are requested to be reported on dry weight basis)

In sample data, peaks must have an intensity of $\geq$2.5 times the height of the background noise in order to be considered. Careful examination of the two equations above reveals that for the concentration of the smallest peak detectable (per the EDL equation) to exactly equal the smallest peaks that are calculated, requires that the average height to area ratio obtained during the calibration must equal the area to height ratio for every peak obtained near 2.5 times the noise. When the area to height ratio on a peak in a sample is less than the average obtained during calibration, the calculated result will correspond to a peak that would have been less than 2.5 times the noise on the calibration. This is the result of normal variability. Because the source methods for the EDL (SW-846 8290 and 8280A) do not provide for censoring of results by any other magnitude standard than being 2.5 times the noise, the laboratory does not censor at the calculated EDL. Hence, detections may be reported below the estimated detection limits.

Footnotes:

1. Code of Federal Regulations, Part 136, Chapter 1, Appendix 1, October 1994: Method 1613 Tetra- Through Octa-Chlorinated Dioxins and Furans by Isotope Dilution High Resolution Gas Chromatography/High Resolution Mass Spectrometry.
2. U.S. EPA. Test Methods for Evaluating Solid Waste, Volume II, SW-846, Update III, December 1996. Method 8280A: The Analysis of Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/Low Resolution Mass Spectrometry.
3. U.S. EPA. Test Methods for Evaluating Solid Waste, SW-846. Third Edition. March 1995 Method 8290: Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/High Resolution Mass Spectrometry.

CERTIFICATION SUMMARY

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Knoxville	L-A-B	DoD ELAP		L2311
TestAmerica Knoxville	Arkansas DEQ	State Program	6	88-0688
TestAmerica Knoxville	California	State Program	9	2423
TestAmerica Knoxville	Colorado	State Program	8	N/A
TestAmerica Knoxville	Connecticut	State Program	1	PH-0223
TestAmerica Knoxville	Florida	NELAC	4	E87177
TestAmerica Knoxville	Georgia	State Program	4	906
TestAmerica Knoxville	Hawaii	State Program	9	N/A
TestAmerica Knoxville	Kansas	NELAC	7	E-10349
TestAmerica Knoxville	Kentucky	State Program	4	90101
TestAmerica Knoxville	Louisiana DOHH	State Program	6	LA150004
TestAmerica Knoxville	Louisiana DEQ	NELAC	6	83979
TestAmerica Knoxville	Maryland	State Program	3	277
TestAmerica Knoxville	Michigan	State Program	5	9933
TestAmerica Knoxville	Nevada	State Program	9	TN00009
TestAmerica Knoxville	New Jersey	NELAC	2	TN001
TestAmerica Knoxville	New York	NELAC	2	10781
TestAmerica Knoxville	North Carolina DENR	State Program	4	64
TestAmerica Knoxville	North Carolina DHHS	State Program	4	21705
TestAmerica Knoxville	Ohio	OVAP	5	CL0059
TestAmerica Knoxville	Oklahoma	State Program	6	9415
TestAmerica Knoxville	Pennsylvania	NELAC	3	68-00576
TestAmerica Knoxville	South Carolina	State Program	4	84001
TestAmerica Knoxville	Tennessee	State Program	4	TN02014
TestAmerica Knoxville	Texas	NELAC	6	T104704380-14-7
TestAmerica Knoxville	Federal	USDA		P330-11-00260
TestAmerica Knoxville	Utah	NELAC	8	TN000092014-5
TestAmerica Knoxville	Virginia	NELAC	3	460176
TestAmerica Knoxville	Virginia	State Program	3	00165
TestAmerica Knoxville	Washington	State Program	10	C593
TestAmerica Knoxville	West Virginia DEP	State Program	3	345
TestAmerica Knoxville	West Virginia DHHR	State Program	3	9955C
TestAmerica Knoxville	Wisconsin	State Program	5	998044300

Accreditation may not be offered or required for all methods and analytes in this report. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Sample Data Summary

TestAmerica Canton

Sample ID: NB-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 001	**Work Order #....:**	M811L1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture**	17
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.2	0.043	pg/g
1,2,3,7,8-PeCDD	**0.63**	**Q B J**	**6.0**	**0.046**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.65**	**J**	**6.0**	**0.055**	**pg/g**
1,2,3,6,7,8-HxCDD	**1.5**	**J**	**6.0**	**0.058**	**pg/g**
1,2,3,7,8,9-HxCDD	**2.2**	**C J**	**6.0**	**0.053**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**31**		**6.0**	**0.10**	**pg/g**
OCDD	**320**	**B**	**12**	**0.10**	**pg/g**
1,2,3,7,8-PeCDF	**0.86**	**J**	**6.0**	**0.050**	**pg/g**
2,3,4,7,8-PeCDF	**1.0**	**J**	**6.0**	**0.044**	**pg/g**
1,2,3,4,7,8-HxCDF	**2.0**	**B C J**	**6.0**	**0.042**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.94**	**J**	**6.0**	**0.041**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.76**	**J**	**6.0**	**0.044**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		6.0	0.054	pg/g
1,2,3,4,6,7,8-HpCDF	**7.4**	**B**	**6.0**	**0.067**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**1.0**	**Q B J**	**6.0**	**0.078**	**pg/g**
OCDF	**15**	**B**	**12**	**0.041**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	64	40 - 135
13C-1,2,3,7,8-PeCDD	78	40 - 135
13C-1,2,3,4,7,8-HxCDD	68	40 - 135
13C-1,2,3,6,7,8-HxCDD	67	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	79	40 - 135
13C-OCDD	66	40 - 135
13C-1,2,3,7,8-PeCDF	70	40 - 135
13C-2,3,4,7,8-PeCDF	78	40 - 135
13C-1,2,3,4,7,8-HxCDF	66	40 - 135
13C-1,2,3,6,7,8-HxCDF	64	40 - 135
13C-2,3,4,6,7,8-HxCDF	70	40 - 135
13C-1,2,3,7,8,9-HxCDF	67	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	62	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	66	40 - 135
13C-OCDF	56	40 - 135

TestAmerica Canton

Sample ID: NB-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 001	**Work Order #....:**	M811L1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture**	17
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: NB-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 001	**Work Order #....:**	M811L1AD	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/23/16	**Percent Moisture**	17
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D12C	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Confirmation Run

PARAMETER	RESULT	MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDF	1.7	1.2	0.055	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDF	69	40 - 135

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

TestAmerica Canton

Sample ID: NB-2

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 002	**Work Order #....:**	M811M1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture**	11
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.6 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	**0.054**	**Q J**	**1.2**	**0.035**	**pg/g**
1,2,3,7,8-PeCDD	**0.32**	**Q B J**	**5.8**	**0.039**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.52**	**Q J**	**5.8**	**0.054**	**pg/g**
1,2,3,6,7,8-HxCDD	**1.1**	**J**	**5.8**	**0.057**	**pg/g**
1,2,3,7,8,9-HxCDD	**1.7**	**C J**	**5.8**	**0.052**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**25**		**5.8**	**0.090**	**pg/g**
OCDD	**260**	**B**	**12**	**0.082**	**pg/g**
1,2,3,7,8-PeCDF	**0.58**	**Q J**	**5.8**	**0.039**	**pg/g**
2,3,4,7,8-PeCDF	**0.68**	**J**	**5.8**	**0.034**	**pg/g**
1,2,3,4,7,8-HxCDF	**1.1**	**C B J**	**5.8**	**0.032**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.59**	**Q J**	**5.8**	**0.031**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.36**	**Q J**	**5.8**	**0.035**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		5.8	0.042	pg/g
1,2,3,4,6,7,8-HpCDF	**4.9**	**B J**	**5.8**	**0.063**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**0.67**	**Q B J**	**5.8**	**0.069**	**pg/g**
OCDF	**11**	**J B**	**12**	**0.027**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	62	40 - 135
13C-1,2,3,7,8-PeCDD	83	40 - 135
13C-1,2,3,4,7,8-HxCDD	69	40 - 135
13C-1,2,3,6,7,8-HxCDD	67	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	77	40 - 135
13C-OCDD	66	40 - 135
13C-1,2,3,7,8-PeCDF	76	40 - 135
13C-2,3,4,7,8-PeCDF	85	40 - 135
13C-1,2,3,4,7,8-HxCDF	68	40 - 135
13C-1,2,3,6,7,8-HxCDF	66	40 - 135
13C-2,3,4,6,7,8-HxCDF	71	40 - 135
13C-1,2,3,7,8,9-HxCDF	67	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	62	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	71	40 - 135
13C-OCDF	55	40 - 135

TestAmerica Canton

Sample ID: NB-2

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 002	**Work Order #....:**	M811M1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture**	11
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.6 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: NB-2

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 002	**Work Order #....:**	M811M1AE	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/23/16	**Percent Moisture**	11
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.6 g	**Instrument ID....:**	D12C	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Confirmation Run

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDF	**1.1**	**J**	**1.2**	**0.045**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDF	67	40 - 135

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

J Estimated Result.

TestAmerica Canton

Sample ID: SB-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 003	**Work Order #....:**	M811N1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture**	23
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.8 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.3	0.043	pg/g
1,2,3,7,8-PeCDD	**0.50**	**Q B J**	**6.6**	**0.049**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.58**	**Q J**	**6.6**	**0.074**	**pg/g**
1,2,3,6,7,8-HxCDD	**1.2**	**J**	**6.6**	**0.076**	**pg/g**
1,2,3,7,8,9-HxCDD	**1.7**	**C J**	**6.6**	**0.070**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**45**		**6.6**	**0.13**	**pg/g**
OCDD	**1300**	**B**	**13**	**0.14**	**pg/g**
2,3,7,8-TCDF	**0.14**	**J**	**1.3**	**0.043**	**pg/g**
1,2,3,7,8-PeCDF	**0.19**	**Q J**	**6.6**	**0.044**	**pg/g**
2,3,4,7,8-PeCDF	**0.29**	**Q J**	**6.6**	**0.039**	**pg/g**
1,2,3,4,7,8-HxCDF	**0.82**	**C B J**	**6.6**	**0.034**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.51**	**Q J**	**6.6**	**0.036**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.33**	**J**	**6.6**	**0.036**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		6.6	0.042	pg/g
1,2,3,4,6,7,8-HpCDF	**7.0**	**B**	**6.6**	**0.057**	**pg/g**
1,2,3,4,7,8,9-HpCDF	ND		6.6	0.066	pg/g
OCDF	**24**	**B**	**13**	**0.038**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	61	40 - 135
13C-1,2,3,7,8-PeCDD	76	40 - 135
13C-1,2,3,4,7,8-HxCDD	65	40 - 135
13C-1,2,3,6,7,8-HxCDD	66	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	77	40 - 135
13C-OCDD	73	40 - 135
13C-2,3,7,8-TCDF	67	40 - 135
13C-1,2,3,7,8-PeCDF	71	40 - 135
13C-2,3,4,7,8-PeCDF	77	40 - 135
13C-1,2,3,4,7,8-HxCDF	66	40 - 135
13C-1,2,3,6,7,8-HxCDF	62	40 - 135
13C-2,3,4,6,7,8-HxCDF	70	40 - 135
13C-1,2,3,7,8,9-HxCDF	69	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	62	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	69	40 - 135
13C-OCDF	59	40 - 135

TestAmerica Canton

Sample ID: SB-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 003	**Work Order #....:**	M811N1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture**	23
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.8 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: SB-2

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 004	**Work Order #....:**	M811P1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	20
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	**0.15**	**J**	**1.2**	**0.073**	**pg/g**
1,2,3,7,8-PeCDD	**1.7**	**Q B J**	**6.2**	**0.052**	**pg/g**
1,2,3,4,7,8-HxCDD	**1.6**	**J**	**6.2**	**0.052**	**pg/g**
1,2,3,6,7,8-HxCDD	**3.2**	**J**	**6.2**	**0.052**	**pg/g**
1,2,3,7,8,9-HxCDD	**4.5**	**C J**	**6.2**	**0.049**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**83**		**6.2**	**0.10**	**pg/g**
OCDD	**2300**	**B**	**12**	**0.095**	**pg/g**
1,2,3,7,8-PeCDF	**2.7**	**J**	**6.2**	**0.048**	**pg/g**
2,3,4,7,8-PeCDF	**4.0**	**J**	**6.2**	**0.043**	**pg/g**
1,2,3,4,7,8-HxCDF	**6.6**	**C B**	**6.2**	**0.043**	**pg/g**
1,2,3,6,7,8-HxCDF	**2.9**	**Q J**	**6.2**	**0.042**	**pg/g**
2,3,4,6,7,8-HxCDF	**2.6**	**J**	**6.2**	**0.044**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		6.2	0.051	pg/g
1,2,3,4,6,7,8-HpCDF	**16**	**B**	**6.2**	**0.047**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**1.6**	**B J**	**6.2**	**0.056**	**pg/g**
OCDF	**25**	**B**	**12**	**0.027**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	64	40 - 135
13C-1,2,3,7,8-PeCDD	73	40 - 135
13C-1,2,3,4,7,8-HxCDD	67	40 - 135
13C-1,2,3,6,7,8-HxCDD	68	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	75	40 - 135
13C-OCDD	84	40 - 135
13C-1,2,3,7,8-PeCDF	74	40 - 135
13C-2,3,4,7,8-PeCDF	80	40 - 135
13C-1,2,3,4,7,8-HxCDF	57	40 - 135
13C-1,2,3,6,7,8-HxCDF	56	40 - 135
13C-2,3,4,6,7,8-HxCDF	60	40 - 135
13C-1,2,3,7,8,9-HxCDF	61	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	53	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	59	40 - 135
13C-OCDF	59	40 - 135

TestAmerica Canton

Sample ID: SB-2

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 004	**Work Order #....:**	M811P1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	20
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: SB-2

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 004	**Work Order #....:**	M811P1AD	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/23/16	**Percent Moisture**	20
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D12C	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Confirmation Run

PARAMETER	RESULT	MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDF	4.2	1.2	0.068	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDF	70	40 - 135

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

TestAmerica Canton

Sample ID: BERM-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 005	**Work Order #....:**	M811Q1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture**	6.8
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.2 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	**0.11**	**Q J**	**1.1**	**0.041**	**pg/g**
1,2,3,7,8-PeCDD	**0.57**	**Q B J**	**5.3**	**0.050**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.37**	**Q J**	**5.3**	**0.046**	**pg/g**
1,2,3,6,7,8-HxCDD	**1.7**	**J**	**5.3**	**0.047**	**pg/g**
1,2,3,7,8,9-HxCDD	**1.5**	**C J**	**5.3**	**0.043**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**21**		**5.3**	**0.075**	**pg/g**
OCDD	**330**	**B**	**11**	**0.10**	**pg/g**
2,3,7,8-TCDF	**0.29**	**Q J**	**1.1**	**0.064**	**pg/g**
1,2,3,7,8-PeCDF	**0.34**	**J**	**5.3**	**0.045**	**pg/g**
2,3,4,7,8-PeCDF	**0.70**	**J**	**5.3**	**0.040**	**pg/g**
1,2,3,4,7,8-HxCDF	**1.5**	**C B J**	**5.3**	**0.035**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.69**	**J**	**5.3**	**0.035**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.47**	**J**	**5.3**	**0.036**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		5.3	0.046	pg/g
1,2,3,4,6,7,8-HpCDF	**4.7**	**B J**	**5.3**	**0.036**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**0.59**	**B J**	**5.3**	**0.043**	**pg/g**
OCDF	**6.5**	**B J**	**11**	**0.031**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	60	40 - 135
13C-1,2,3,7,8-PeCDD	72	40 - 135
13C-1,2,3,4,7,8-HxCDD	65	40 - 135
13C-1,2,3,6,7,8-HxCDD	64	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	76	40 - 135
13C-OCDD	62	40 - 135
13C-2,3,7,8-TCDF	64	40 - 135
13C-1,2,3,7,8-PeCDF	67	40 - 135
13C-2,3,4,7,8-PeCDF	74	40 - 135
13C-1,2,3,4,7,8-HxCDF	64	40 - 135
13C-1,2,3,6,7,8-HxCDF	62	40 - 135
13C-2,3,4,6,7,8-HxCDF	68	40 - 135
13C-1,2,3,7,8,9-HxCDF	63	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	61	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	66	40 - 135
13C-OCDF	54	40 - 135

TestAmerica Canton

Sample ID: BERM-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 005	**Work Order #....:**	M811Q1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture**	6.8
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.2 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: POND-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 006	**Work Order #....:**	M811R1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	2.9
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.8 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.1	0.029	pg/g
1,2,3,7,8-PeCDD	**0.47**	**B J**	**5.3**	**0.034**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.47**	**J**	**5.3**	**0.033**	**pg/g**
1,2,3,6,7,8-HxCDD	**1.3**	**J**	**5.3**	**0.035**	**pg/g**
1,2,3,7,8,9-HxCDD	**1.4**	**C J**	**5.3**	**0.032**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**20**		**5.3**	**0.057**	**pg/g**
OCDD	**210**	**B**	**11**	**0.061**	**pg/g**
2,3,7,8-TCDF	**0.58**	**Q J**	**1.1**	**0.041**	**pg/g**
1,2,3,7,8-PeCDF	**0.25**	**Q J**	**5.3**	**0.031**	**pg/g**
2,3,4,7,8-PeCDF	**0.39**	**J**	**5.3**	**0.027**	**pg/g**
1,2,3,4,7,8-HxCDF	**0.80**	**C B J**	**5.3**	**0.031**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.41**	**Q J**	**5.3**	**0.030**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.45**	**J**	**5.3**	**0.032**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		5.3	0.040	pg/g
1,2,3,4,6,7,8-HpCDF	**3.6**	**B J**	**5.3**	**0.032**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**0.56**	**Q B J**	**5.3**	**0.040**	**pg/g**
OCDF	**7.9**	**B Q J**	**11**	**0.022**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	67	40 - 135
13C-1,2,3,7,8-PeCDD	76	40 - 135
13C-1,2,3,4,7,8-HxCDD	70	40 - 135
13C-1,2,3,6,7,8-HxCDD	72	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	77	40 - 135
13C-OCDD	71	40 - 135
13C-2,3,7,8-TCDF	60	40 - 135
13C-1,2,3,7,8-PeCDF	74	40 - 135
13C-2,3,4,7,8-PeCDF	80	40 - 135
13C-1,2,3,4,7,8-HxCDF	60	40 - 135
13C-1,2,3,6,7,8-HxCDF	59	40 - 135
13C-2,3,4,6,7,8-HxCDF	61	40 - 135
13C-1,2,3,7,8,9-HxCDF	60	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	54	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	57	40 - 135
13C-OCDF	55	40 - 135

TestAmerica Canton

Sample ID: POND-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 006	**Work Order #....:**	M811R1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	2.9
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.8 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: PAD-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 007	**Work Order #....:**	M811T1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	1.5
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.5 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		0.97	0.022	pg/g
1,2,3,7,8-PeCDD	**0.33**	**Q B J**	**4.8**	**0.028**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.29**	**J**	**4.8**	**0.032**	**pg/g**
1,2,3,6,7,8-HxCDD	**0.61**	**Q J**	**4.8**	**0.033**	**pg/g**
1,2,3,7,8,9-HxCDD	**0.71**	**C J**	**4.8**	**0.030**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**9.8**		**4.8**	**0.039**	**pg/g**
OCDD	**94**	**B**	**9.7**	**0.056**	**pg/g**
2,3,7,8-TCDF	**0.20**	**Q J**	**0.97**	**0.027**	**pg/g**
1,2,3,7,8-PeCDF	**0.19**	**Q J**	**4.8**	**0.022**	**pg/g**
2,3,4,7,8-PeCDF	**0.20**	**Q J**	**4.8**	**0.020**	**pg/g**
1,2,3,4,7,8-HxCDF	**0.44**	**Q B J**	**4.8**	**0.022**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.24**	**J**	**4.8**	**0.023**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.19**	**Q J**	**4.8**	**0.023**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		4.8	0.029	pg/g
1,2,3,4,6,7,8-HpCDF	**1.9**	**B J**	**4.8**	**0.026**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**0.25**	**Q B J**	**4.8**	**0.029**	**pg/g**
OCDF	**3.4**	**B J**	**9.7**	**0.028**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	63	40 - 135
13C-1,2,3,7,8-PeCDD	81	40 - 135
13C-1,2,3,4,7,8-HxCDD	70	40 - 135
13C-1,2,3,6,7,8-HxCDD	69	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	81	40 - 135
13C-OCDD	74	40 - 135
13C-2,3,7,8-TCDF	59	40 - 135
13C-1,2,3,7,8-PeCDF	75	40 - 135
13C-2,3,4,7,8-PeCDF	82	40 - 135
13C-1,2,3,4,7,8-HxCDF	57	40 - 135
13C-1,2,3,6,7,8-HxCDF	53	40 - 135
13C-2,3,4,6,7,8-HxCDF	60	40 - 135
13C-1,2,3,7,8,9-HxCDF	59	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	56	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	65	40 - 135
13C-OCDF	56	40 - 135

TestAmerica Canton

Sample ID: PAD-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 007	**Work Order #....:**	M811T1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	1.5
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.5 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: PAD-2

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 008	**Work Order #....:**	M811V1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	4.0
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.8 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	0.088	J	1.1	0.031	pg/g
1,2,3,7,8-PeCDD	0.52	Q B J	5.3	0.040	pg/g
1,2,3,4,7,8-HxCDD	0.47	J	5.3	0.040	pg/g
1,2,3,6,7,8-HxCDD	1.6	J	5.3	0.040	pg/g
1,2,3,7,8,9-HxCDD	1.5	C J	5.3	0.037	pg/g
1,2,3,4,6,7,8-HpCDD	24		5.3	0.063	pg/g
OCDD	290	B	11	0.075	pg/g
2,3,7,8-TCDF	0.77	Q J	1.1	0.050	pg/g
1,2,3,7,8-PeCDF	0.42	J	5.3	0.033	pg/g
2,3,4,7,8-PeCDF	0.77	Q J	5.3	0.028	pg/g
1,2,3,4,7,8-HxCDF	1.7	C B J	5.3	0.030	pg/g
1,2,3,6,7,8-HxCDF	0.62	Q J	5.3	0.030	pg/g
2,3,4,6,7,8-HxCDF	0.75	J	5.3	0.030	pg/g
1,2,3,7,8,9-HxCDF	ND		5.3	0.038	pg/g
1,2,3,4,6,7,8-HpCDF	5.3	B J	5.3	0.036	pg/g
1,2,3,4,7,8,9-HpCDF	0.66	B J	5.3	0.045	pg/g
OCDF	11	B	11	0.023	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	64	40 - 135
13C-1,2,3,7,8-PeCDD	78	40 - 135
13C-1,2,3,4,7,8-HxCDD	66	40 - 135
13C-1,2,3,6,7,8-HxCDD	70	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	79	40 - 135
13C-OCDD	72	40 - 135
13C-2,3,7,8-TCDF	58	40 - 135
13C-1,2,3,7,8-PeCDF	71	40 - 135
13C-2,3,4,7,8-PeCDF	81	40 - 135
13C-1,2,3,4,7,8-HxCDF	57	40 - 135
13C-1,2,3,6,7,8-HxCDF	54	40 - 135
13C-2,3,4,6,7,8-HxCDF	60	40 - 135
13C-1,2,3,7,8,9-HxCDF	56	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	53	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	55	40 - 135
13C-OCDF	55	40 - 135

TestAmerica Canton

Sample ID: PAD-2

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 008	**Work Order #....:**	M811V1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	4.0
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.8 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: PAD-3

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 009	**Work Order #....:**	M811W1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	12
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.3 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.1	0.013	pg/g
1,2,3,7,8-PeCDD	**0.14**	**Q B J**	**5.5**	**0.020**	**pg/g**
1,2,3,4,7,8-HxCDD	ND		5.5	0.028	pg/g
1,2,3,6,7,8-HxCDD	ND		5.5	0.031	pg/g
1,2,3,7,8,9-HxCDD	**0.18**	**Q J**	**5.5**	**0.027**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**7.3**		**5.5**	**0.065**	**pg/g**
OCDD	**500**	**B**	**11**	**0.080**	**pg/g**
2,3,7,8-TCDF	**0.070**	**J**	**1.1**	**0.020**	**pg/g**
1,2,3,7,8-PeCDF	ND		5.5	0.022	pg/g
2,3,4,7,8-PeCDF	**0.088**	**Q J**	**5.5**	**0.019**	**pg/g**
1,2,3,4,7,8-HxCDF	**0.25**	**B J**	**5.5**	**0.026**	**pg/g**
1,2,3,6,7,8-HxCDF	ND		5.5	0.023	pg/g
2,3,4,6,7,8-HxCDF	**0.077**	**Q J**	**5.5**	**0.022**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		5.5	0.029	pg/g
1,2,3,4,6,7,8-HpCDF	**0.34**	**B J**	**5.5**	**0.024**	**pg/g**
1,2,3,4,7,8,9-HpCDF	ND		5.5	0.028	pg/g
OCDF	**0.55**	**Q B J**	**11**	**0.031**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	66	40 - 135
13C-1,2,3,7,8-PeCDD	84	40 - 135
13C-1,2,3,4,7,8-HxCDD	71	40 - 135
13C-1,2,3,6,7,8-HxCDD	71	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	81	40 - 135
13C-OCDD	74	40 - 135
13C-2,3,7,8-TCDF	60	40 - 135
13C-1,2,3,7,8-PeCDF	76	40 - 135
13C-2,3,4,7,8-PeCDF	84	40 - 135
13C-1,2,3,4,7,8-HxCDF	56	40 - 135
13C-1,2,3,6,7,8-HxCDF	59	40 - 135
13C-2,3,4,6,7,8-HxCDF	68	40 - 135
13C-1,2,3,7,8,9-HxCDF	63	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	56	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	63	40 - 135
13C-OCDF	58	40 - 135

TestAmerica Canton

Sample ID: PAD-3

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 009	**Work Order #....:**	M811W1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	12
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.3 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: PAD-4

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 010	**Work Order #....:**	M811X1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	18
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	**0.15**	**Q J**	**1.2**	**0.041**	**pg/g**
1,2,3,7,8-PeCDD	**0.61**	**Q B J**	**6.0**	**0.036**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.54**	**Q J**	**6.0**	**0.050**	**pg/g**
1,2,3,6,7,8-HxCDD	**1.4**	**J**	**6.0**	**0.051**	**pg/g**
1,2,3,7,8,9-HxCDD	**1.6**	**C J**	**6.0**	**0.047**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**22**		**6.0**	**0.059**	**pg/g**
OCDD	**250**	**B**	**12**	**0.068**	**pg/g**
2,3,7,8-TCDF	**0.86**	**Q J**	**1.2**	**0.054**	**pg/g**
1,2,3,7,8-PeCDF	**0.27**	**Q J**	**6.0**	**0.032**	**pg/g**
2,3,4,7,8-PeCDF	**0.46**	**Q J**	**6.0**	**0.029**	**pg/g**
1,2,3,4,7,8-HxCDF	**0.88**	**C B J**	**6.0**	**0.029**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.42**	**Q J**	**6.0**	**0.029**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.26**	**J**	**6.0**	**0.029**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		6.0	0.035	pg/g
1,2,3,4,6,7,8-HpCDF	**4.1**	**B J**	**6.0**	**0.044**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**0.48**	**Q B J**	**6.0**	**0.046**	**pg/g**
OCDF	**8.3**	**B J**	**12**	**0.028**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	64	40 - 135
13C-1,2,3,7,8-PeCDD	75	40 - 135
13C-1,2,3,4,7,8-HxCDD	68	40 - 135
13C-1,2,3,6,7,8-HxCDD	68	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	75	40 - 135
13C-OCDD	67	40 - 135
13C-2,3,7,8-TCDF	60	40 - 135
13C-1,2,3,7,8-PeCDF	71	40 - 135
13C-2,3,4,7,8-PeCDF	75	40 - 135
13C-1,2,3,4,7,8-HxCDF	59	40 - 135
13C-1,2,3,6,7,8-HxCDF	56	40 - 135
13C-2,3,4,6,7,8-HxCDF	64	40 - 135
13C-1,2,3,7,8,9-HxCDF	62	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	52	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	62	40 - 135
13C-OCDF	52	40 - 135

TestAmerica Canton

Sample ID: PAD-4

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 010	**Work Order #....:**	M811X1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	18
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: PAD-5

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 011	**Work Order #....:**	M81101AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	2.9
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.2 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.0	0.030	pg/g
1,2,3,7,8-PeCDD	**0.41**	**Q B J**	**5.0**	**0.037**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.35**	**J**	**5.0**	**0.048**	**pg/g**
1,2,3,6,7,8-HxCDD	**0.75**	**Q J**	**5.0**	**0.048**	**pg/g**
1,2,3,7,8,9-HxCDD	**0.97**	**C J**	**5.0**	**0.045**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**11**		**5.0**	**0.046**	**pg/g**
OCDD	**130**	**B**	**10**	**0.074**	**pg/g**
2,3,7,8-TCDF	**0.49**	**Q J**	**1.0**	**0.049**	**pg/g**
1,2,3,7,8-PeCDF	**0.29**	**J**	**5.0**	**0.032**	**pg/g**
2,3,4,7,8-PeCDF	**0.58**	**J**	**5.0**	**0.028**	**pg/g**
1,2,3,4,7,8-HxCDF	**1.2**	**C B J**	**5.0**	**0.029**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.44**	**Q J**	**5.0**	**0.029**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.60**	**J**	**5.0**	**0.029**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		5.0	0.036	pg/g
1,2,3,4,6,7,8-HpCDF	**2.7**	**B J**	**5.0**	**0.032**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**0.36**	**Q B J**	**5.0**	**0.037**	**pg/g**
OCDF	**3.7**	**B J**	**10**	**0.026**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	64	40 - 135
13C-1,2,3,7,8-PeCDD	78	40 - 135
13C-1,2,3,4,7,8-HxCDD	67	40 - 135
13C-1,2,3,6,7,8-HxCDD	68	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	76	40 - 135
13C-OCDD	71	40 - 135
13C-2,3,7,8-TCDF	60	40 - 135
13C-1,2,3,7,8-PeCDF	71	40 - 135
13C-2,3,4,7,8-PeCDF	79	40 - 135
13C-1,2,3,4,7,8-HxCDF	58	40 - 135
13C-1,2,3,6,7,8-HxCDF	55	40 - 135
13C-2,3,4,6,7,8-HxCDF	61	40 - 135
13C-1,2,3,7,8,9-HxCDF	59	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	51	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	60	40 - 135
13C-OCDF	55	40 - 135

TestAmerica Canton

Sample ID: PAD-5

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 011	**Work Order #....:**	M81101AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	2.9
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.2 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: PAD-6

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 012	**Work Order #....:**	M81111AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	7.0
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.7 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	**0.18**	**J**	**1.1**	**0.039**	**pg/g**
1,2,3,7,8-PeCDD	**0.77**	**Q B J**	**5.5**	**0.048**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.80**	**J**	**5.5**	**0.059**	**pg/g**
1,2,3,6,7,8-HxCDD	**2.0**	**J**	**5.5**	**0.063**	**pg/g**
1,2,3,7,8,9-HxCDD	**2.5**	**C J**	**5.5**	**0.057**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**36**		**5.5**	**0.065**	**pg/g**
OCDD	**380**	**B**	**11**	**0.060**	**pg/g**
1,2,3,7,8-PeCDF	**0.47**	**J**	**5.5**	**0.043**	**pg/g**
2,3,4,7,8-PeCDF	**0.72**	**Q J**	**5.5**	**0.038**	**pg/g**
1,2,3,4,7,8-HxCDF	**1.5**	**C B J**	**5.5**	**0.033**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.69**	**Q J**	**5.5**	**0.034**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.48**	**J**	**5.5**	**0.034**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		5.5	0.043	pg/g
1,2,3,4,6,7,8-HpCDF	**5.5**	**B J**	**5.5**	**0.041**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**0.70**	**Q B J**	**5.5**	**0.046**	**pg/g**
OCDF	**12**	**B**	**11**	**0.031**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	62	40 - 135
13C-1,2,3,7,8-PeCDD	73	40 - 135
13C-1,2,3,4,7,8-HxCDD	65	40 - 135
13C-1,2,3,6,7,8-HxCDD	65	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	73	40 - 135
13C-OCDD	65	40 - 135
13C-1,2,3,7,8-PeCDF	70	40 - 135
13C-2,3,4,7,8-PeCDF	75	40 - 135
13C-1,2,3,4,7,8-HxCDF	55	40 - 135
13C-1,2,3,6,7,8-HxCDF	53	40 - 135
13C-2,3,4,6,7,8-HxCDF	60	40 - 135
13C-1,2,3,7,8,9-HxCDF	57	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	49	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	56	40 - 135
13C-OCDF	51	40 - 135

TestAmerica Canton

Sample ID: PAD-6

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 012	**Work Order #....:**	M81111AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	7.0
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.7 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: PAD-6

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 012	**Work Order #....:**	M81111AD	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/23/16	**Percent Moisture**	7.0
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.7 g	**Instrument ID....:**	D12C	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Confirmation Run

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDF	0.86	J	1.1	0.053	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDF	70	40 - 135

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

J Estimated Result.

TestAmerica Canton

Sample ID: PAD-7

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 013	**Work Order #....:**	M81121AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	3.5
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.6 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	**0.073**	**Q J**	**1.1**	**0.025**	**pg/g**
1,2,3,7,8-PeCDD	**0.26**	**Q B J**	**5.4**	**0.035**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.30**	**J**	**5.4**	**0.031**	**pg/g**
1,2,3,6,7,8-HxCDD	**0.55**	**J**	**5.4**	**0.035**	**pg/g**
1,2,3,7,8,9-HxCDD	**0.81**	**C J**	**5.4**	**0.031**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**11**		**5.4**	**0.052**	**pg/g**
OCDD	**110**	**B**	**11**	**0.060**	**pg/g**
2,3,7,8-TCDF	**0.28**	**Q J**	**1.1**	**0.041**	**pg/g**
1,2,3,7,8-PeCDF	**0.24**	**J**	**5.4**	**0.027**	**pg/g**
2,3,4,7,8-PeCDF	**0.30**	**J**	**5.4**	**0.025**	**pg/g**
1,2,3,4,7,8-HxCDF	**0.66**	**C B J**	**5.4**	**0.025**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.35**	**J**	**5.4**	**0.026**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.21**	**J**	**5.4**	**0.026**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		5.4	0.032	pg/g
1,2,3,4,6,7,8-HpCDF	**2.1**	**B J**	**5.4**	**0.032**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**0.29**	**Q B J**	**5.4**	**0.033**	**pg/g**
OCDF	**3.6**	**B J**	**11**	**0.020**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	62	40 - 135
13C-1,2,3,7,8-PeCDD	75	40 - 135
13C-1,2,3,4,7,8-HxCDD	66	40 - 135
13C-1,2,3,6,7,8-HxCDD	63	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	75	40 - 135
13C-OCDD	65	40 - 135
13C-2,3,7,8-TCDF	60	40 - 135
13C-1,2,3,7,8-PeCDF	73	40 - 135
13C-2,3,4,7,8-PeCDF	79	40 - 135
13C-1,2,3,4,7,8-HxCDF	56	40 - 135
13C-1,2,3,6,7,8-HxCDF	52	40 - 135
13C-2,3,4,6,7,8-HxCDF	60	40 - 135
13C-1,2,3,7,8,9-HxCDF	59	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	53	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	61	40 - 135
13C-OCDF	54	40 - 135

TestAmerica Canton

Sample ID: PAD-7

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 013	**Work Order #....:**	M81121AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	3.5
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.6 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: PAD-8

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 014	**Work Order #....:**	M81131AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	2.2
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.7 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.1	0.023	pg/g
1,2,3,7,8-PeCDD	ND		5.3	0.028	pg/g
1,2,3,4,7,8-HxCDD	**0.16**	**J**	**5.3**	**0.038**	**pg/g**
1,2,3,6,7,8-HxCDD	**0.32**	**Q J**	**5.3**	**0.040**	**pg/g**
1,2,3,7,8,9-HxCDD	**0.47**	**C J**	**5.3**	**0.037**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**6.6**		**5.3**	**0.061**	**pg/g**
OCDD	**220**	**B**	**11**	**0.073**	**pg/g**
2,3,7,8-TCDF	**0.29**	**J**	**1.1**	**0.029**	**pg/g**
1,2,3,7,8-PeCDF	ND		5.3	0.021	pg/g
2,3,4,7,8-PeCDF	**0.12**	**Q J**	**5.3**	**0.019**	**pg/g**
1,2,3,4,7,8-HxCDF	**0.27**	**Q B J**	**5.3**	**0.028**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.15**	**Q J**	**5.3**	**0.026**	**pg/g**
2,3,4,6,7,8-HxCDF	ND		5.3	0.029	pg/g
1,2,3,7,8,9-HxCDF	ND		5.3	0.036	pg/g
1,2,3,4,6,7,8-HpCDF	**0.86**	**B J**	**5.3**	**0.030**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**0.17**	**Q B J**	**5.3**	**0.033**	**pg/g**
OCDF	**2.0**	**B J**	**11**	**0.027**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	64	40 - 135
13C-1,2,3,7,8-PeCDD	73	40 - 135
13C-1,2,3,4,7,8-HxCDD	66	40 - 135
13C-1,2,3,6,7,8-HxCDD	70	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	78	40 - 135
13C-OCDD	74	40 - 135
13C-2,3,7,8-TCDF	62	40 - 135
13C-1,2,3,7,8-PeCDF	72	40 - 135
13C-2,3,4,7,8-PeCDF	78	40 - 135
13C-1,2,3,4,7,8-HxCDF	61	40 - 135
13C-1,2,3,6,7,8-HxCDF	61	40 - 135
13C-2,3,4,6,7,8-HxCDF	63	40 - 135
13C-1,2,3,7,8,9-HxCDF	61	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	53	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	60	40 - 135
13C-OCDF	55	40 - 135

TestAmerica Canton

Sample ID: PAD-8

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 014	**Work Order #....:**	M81131AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	2.2
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.7 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: PAD-XX

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 015	**Work Order #....:**	M81141AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	8.6
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.7 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.1	0.022	pg/g
1,2,3,7,8-PeCDD	**0.22**	**Q B J**	**5.6**	**0.021**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.11**	**Q J**	**5.6**	**0.036**	**pg/g**
1,2,3,6,7,8-HxCDD	**0.31**	**Q J**	**5.6**	**0.037**	**pg/g**
1,2,3,7,8,9-HxCDD	**0.42**	**C J**	**5.6**	**0.034**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**4.0**	**J**	**5.6**	**0.048**	**pg/g**
OCDD	**38**	**B**	**11**	**0.041**	**pg/g**
2,3,7,8-TCDF	**0.11**	**Q J**	**1.1**	**0.020**	**pg/g**
1,2,3,7,8-PeCDF	**0.071**	**Q J**	**5.6**	**0.020**	**pg/g**
2,3,4,7,8-PeCDF	**0.11**	**J**	**5.6**	**0.017**	**pg/g**
1,2,3,4,7,8-HxCDF	**0.27**	**C B J**	**5.6**	**0.023**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.14**	**J**	**5.6**	**0.022**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.10**	**Q J**	**5.6**	**0.023**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		5.6	0.029	pg/g
1,2,3,4,6,7,8-HpCDF	**0.80**	**B J**	**5.6**	**0.025**	**pg/g**
1,2,3,4,7,8,9-HpCDF	ND		5.6	0.027	pg/g
OCDF	**1.4**	**Q B J**	**11**	**0.019**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	61	40 - 135
13C-1,2,3,7,8-PeCDD	73	40 - 135
13C-1,2,3,4,7,8-HxCDD	66	40 - 135
13C-1,2,3,6,7,8-HxCDD	66	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	78	40 - 135
13C-OCDD	68	40 - 135
13C-2,3,7,8-TCDF	62	40 - 135
13C-1,2,3,7,8-PeCDF	70	40 - 135
13C-2,3,4,7,8-PeCDF	76	40 - 135
13C-1,2,3,4,7,8-HxCDF	57	40 - 135
13C-1,2,3,6,7,8-HxCDF	57	40 - 135
13C-2,3,4,6,7,8-HxCDF	61	40 - 135
13C-1,2,3,7,8,9-HxCDF	59	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	54	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	62	40 - 135
13C-OCDF	55	40 - 135

TestAmerica Canton

Sample ID: PAD-XX

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 015	**Work Order #....:**	M81141AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	8.6
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.7 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: EB

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 016	**Work Order #....:**	M81151AA	**Matrix....:**	WATER
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	07/31/16	**Analysis Date....:**	08/09/16		
Prep Batch # ....:	6211032				
Initial Wgt/Vol :	943 mL	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		11	0.23	pg/L
1,2,3,7,8-PeCDD	ND		53	0.18	pg/L
1,2,3,4,7,8-HxCDD	ND		53	0.32	pg/L
1,2,3,6,7,8-HxCDD	ND		53	0.33	pg/L
1,2,3,7,8,9-HxCDD	ND		53	0.31	pg/L
1,2,3,4,6,7,8-HpCDD	ND		53	0.47	pg/L
OCDD	**2.0**	**Q B J**	**110**	**0.17**	**pg/L**
2,3,7,8-TCDF	ND		11	0.44	pg/L
1,2,3,7,8-PeCDF	ND		53	0.35	pg/L
2,3,4,7,8-PeCDF	ND		53	0.35	pg/L
1,2,3,4,7,8-HxCDF	ND		53	0.31	pg/L
1,2,3,6,7,8-HxCDF	ND		53	0.31	pg/L
2,3,4,6,7,8-HxCDF	ND		53	0.28	pg/L
1,2,3,7,8,9-HxCDF	ND		53	0.37	pg/L
1,2,3,4,6,7,8-HpCDF	ND		53	0.065	pg/L
1,2,3,4,7,8,9-HpCDF	ND		53	0.090	pg/L
OCDF	**1.6**	**Q B J**	**110**	**0.10**	**pg/L**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	68	40 - 135
13C-1,2,3,7,8-PeCDD	68	40 - 135
13C-1,2,3,4,7,8-HxCDD	72	40 - 135
13C-1,2,3,6,7,8-HxCDD	64	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	73	40 - 135
13C-OCDD	66	40 - 135
13C-2,3,7,8-TCDF	52	40 - 135
13C-1,2,3,7,8-PeCDF	69	40 - 135
13C-2,3,4,7,8-PeCDF	67	40 - 135
13C-1,2,3,4,7,8-HxCDF	56	40 - 135
13C-1,2,3,6,7,8-HxCDF	50	40 - 135
13C-2,3,4,6,7,8-HxCDF	64	40 - 135
13C-1,2,3,7,8,9-HxCDF	58	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	53	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	53	40 - 135
13C-OCDF	46	40 - 135

TestAmerica Canton

Sample ID: EB

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 016	**Work Order #....:**	M81151AA	**Matrix....:**	WATER
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	07/31/16	**Analysis Date....:**	08/09/16		
Prep Batch # ....:	6211032				
Initial Wgt/Vol :	943 mL	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

Method Blank Report

Trace Level Organic Compounds

Lot - Sample #....:	H6G290000 - 032B	**Work Order #....:**	M812E1AA	**Matrix....:**	WATER
Dilution Factor:	1				
Prep Date....:	07/31/16	**Analysis Date....:**	08/03/16		
Prep Batch # ....:	6211032				
Initial Wgt/Vol :	1000 mL	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		10	0.38	pg/L
1,2,3,7,8-PeCDD	ND		50	0.30	pg/L
1,2,3,4,7,8-HxCDD	ND		50	0.75	pg/L
1,2,3,6,7,8-HxCDD	ND		50	0.77	pg/L
1,2,3,7,8,9-HxCDD	ND		50	0.72	pg/L
1,2,3,4,6,7,8-HpCDD	ND		50	0.90	pg/L
OCDD	**5.6**	**J**	**100**	**0.33**	**pg/L**
2,3,7,8-TCDF	ND		10	0.59	pg/L
1,2,3,7,8-PeCDF	ND		50	0.45	pg/L
2,3,4,7,8-PeCDF	ND		50	0.41	pg/L
1,2,3,4,7,8-HxCDF	ND		50	0.80	pg/L
1,2,3,6,7,8-HxCDF	ND		50	0.82	pg/L
2,3,4,6,7,8-HxCDF	ND		50	0.47	pg/L
1,2,3,7,8,9-HxCDF	ND		50	0.58	pg/L
1,2,3,4,6,7,8-HpCDF	**1.8**	**Q J**	**50**	**0.31**	**pg/L**
1,2,3,4,7,8,9-HpCDF	**2.4**	**J**	**50**	**0.29**	**pg/L**
OCDF	**3.7**	**Q J**	**100**	**0.28**	**pg/L**

INTERNAL STANDARDS	PERCENT RECOVERY		RECOVERY LIMITS
13C-2,3,7,8-TCDD	64		40 - 135
13C-1,2,3,7,8-PeCDD	54		40 - 135
13C-1,2,3,4,7,8-HxCDD	52		40 - 135
13C-1,2,3,6,7,8-HxCDD	51		40 - 135
13C-1,2,3,4,6,7,8-HpCDD	69		40 - 135
13C-OCDD	59		40 - 135
13C-2,3,7,8-TCDF	62		40 - 135
13C-1,2,3,7,8-PeCDF	57		40 - 135
13C-2,3,4,7,8-PeCDF	58		40 - 135
13C-1,2,3,4,7,8-HxCDF	38	*	40 - 135
13C-1,2,3,6,7,8-HxCDF	37	*	40 - 135
13C-2,3,4,6,7,8-HxCDF	74		40 - 135
13C-1,2,3,7,8,9-HxCDF	73		40 - 135
13C-1,2,3,4,6,7,8-HpCDF	44		40 - 135
13C-1,2,3,4,7,8,9-HpCDF	63		40 - 135
13C-OCDF	49		40 - 135

Method Blank Report

Trace Level Organic Compounds

Lot - Sample #....:	H6G290000 - 032B	**Work Order #....:**	M812E1AA	**Matrix....:**	WATER
Dilution Factor:	1				
Prep Date....:	07/31/16	**Analysis Date....:**	08/03/16		
Prep Batch # ....:	6211032				
Initial Wgt/Vol :	1000 mL	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

QUALIFIERS

*	Surrogate recovery is outside stated control limits.
J	Estimated Result.
Q	Estimated maximum possible concentration (EMPC).

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot # ...: H6G290408 **Work Order # ...:** M812E1AC-LCS **Matrix .....:** WATER
LCS Lot-Sample#: H6G290000 - 032
Prep Date .....: 07/31/16 **Analysis Date ..:** 08/03/16
Prep Batch # ...: 6211032
Dilution Factor : 1
Analyst ID.....: Melissa A. Davidson **Instrument ID..:** D2A **Method.....:** SW846 8290A
Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY		RECOVERY LIMITS
2,3,7,8-TCDD	**200**	**217**	**pg/L**	**108**		**(77 - 127)**
1,2,3,7,8-PeCDD	**1000**	**1040**	**pg/L**	**104**		**(78 - 128)**
1,2,3,4,7,8-HxCDD	**1000**	**1080**	**pg/L**	**108**		**(73 - 123)**
1,2,3,6,7,8-HxCDD	**1000**	**1030**	**pg/L**	**103**		**(72 - 127)**
1,2,3,7,8,9-HxCDD	**1000**	**1190**	**pg/L**	**119**		**(76 - 126)**
1,2,3,4,6,7,8-HpCDD	**1000**	**1050**	**pg/L**	**105**		**(73 - 123)**
OCDD	**2000**	**1840**	**pg/L**	**92**	**B**	**(75 - 125)**
2,3,7,8-TCDF	**200**	**225**	**pg/L**	**112**		**(74 - 124)**
1,2,3,7,8-PeCDF	**1000**	**969**	**pg/L**	**97**		**(74 - 124)**
2,3,4,7,8-PeCDF	**1000**	**1040**	**pg/L**	**104**		**(74 - 124)**
1,2,3,4,7,8-HxCDF	**1000**	**1060**	**pg/L**	**106**		**(75 - 125)**
1,2,3,6,7,8-HxCDF	**1000**	**1030**	**pg/L**	**103**		**(75 - 125)**
2,3,4,6,7,8-HxCDF	**1000**	**1050**	**pg/L**	**105**		**(76 - 126)**
1,2,3,7,8,9-HxCDF	**1000**	**1000**	**pg/L**	**100**		**(76 - 126)**
1,2,3,4,6,7,8-HpCDF	**1000**	**1060**	**pg/L**	**106**	**B**	**(71 - 121)**
1,2,3,4,7,8,9-HpCDF	**1000**	**983**	**pg/L**	**98**	**B**	**(73 - 123)**
OCDF	**2000**	**1910**	**pg/L**	**96**	**B**	**(68 - 132)**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	69	(40 - 135)
13C-1,2,3,7,8-PeCDD	68	(40 - 135)
13C-1,2,3,4,7,8-HxCDD	72	(40 - 135)
13C-1,2,3,6,7,8-HxCDD	70	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDD	87	(40 - 135)
13C-OCDD	81	(40 - 135)
13C-2,3,7,8-TCDF	72	(40 - 135)
13C-1,2,3,7,8-PeCDF	66	(40 - 135)
13C-2,3,4,7,8-PeCDF	67	(40 - 135)
13C-1,2,3,4,7,8-HxCDF	66	(40 - 135)
13C-1,2,3,6,7,8-HxCDF	61	(40 - 135)
13C-2,3,4,6,7,8-HxCDF	86	(40 - 135)
13C-1,2,3,7,8,9-HxCDF	86	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDF	67	(40 - 135)
13C-1,2,3,4,7,8,9-HpCDF	88	(40 - 135)
13C-OCDF	73	(40 - 135)

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Notes:

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Method Blank Report

Trace Level Organic Compounds

Lot - Sample #....:	H6H040000 - 014B	**Work Order #....:**	M82RE1AA	**Matrix....:**	SOLID
Dilution Factor:	1				
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture:**	0.0
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.0	0.016	pg/g
1,2,3,7,8-PeCDD	**0.13**	**Q J**	**5.0**	**0.021**	**pg/g**
1,2,3,4,7,8-HxCDD	ND		5.0	0.034	pg/g
1,2,3,6,7,8-HxCDD	ND		5.0	0.037	pg/g
1,2,3,7,8,9-HxCDD	ND		5.0	0.033	pg/g
1,2,3,4,6,7,8-HpCDD	ND		5.0	0.025	pg/g
OCDD	**0.51**	**Q J**	**10**	**0.032**	**pg/g**
2,3,7,8-TCDF	ND		1.0	0.0087	pg/g
1,2,3,7,8-PeCDF	ND		5.0	0.017	pg/g
2,3,4,7,8-PeCDF	ND		5.0	0.015	pg/g
1,2,3,4,7,8-HxCDF	**0.20**	**Q J**	**5.0**	**0.021**	**pg/g**
1,2,3,6,7,8-HxCDF	ND		5.0	0.021	pg/g
2,3,4,6,7,8-HxCDF	ND		5.0	0.021	pg/g
1,2,3,7,8,9-HxCDF	**0.15**	**Q J**	**5.0**	**0.027**	**pg/g**
1,2,3,4,6,7,8-HpCDF	**0.088**	**Q J**	**5.0**	**0.018**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**0.13**	**Q J**	**5.0**	**0.021**	**pg/g**
OCDF	**0.28**	**Q J**	**10**	**0.014**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	63	40 - 135
13C-1,2,3,7,8-PeCDD	78	40 - 135
13C-1,2,3,4,7,8-HxCDD	68	40 - 135
13C-1,2,3,6,7,8-HxCDD	68	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	82	40 - 135
13C-OCDD	69	40 - 135
13C-2,3,7,8-TCDF	68	40 - 135
13C-1,2,3,7,8-PeCDF	72	40 - 135
13C-2,3,4,7,8-PeCDF	79	40 - 135
13C-1,2,3,4,7,8-HxCDF	69	40 - 135
13C-1,2,3,6,7,8-HxCDF	67	40 - 135
13C-2,3,4,6,7,8-HxCDF	74	40 - 135
13C-1,2,3,7,8,9-HxCDF	69	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	65	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	71	40 - 135
13C-OCDF	58	40 - 135

Method Blank Report

Trace Level Organic Compounds

Lot - Sample #....:	H6H040000 - 014B	**Work Order #....:**	M82RE1AA	**Matrix....:**	SOLID
Dilution Factor:	1				
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture:**	0.0
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

QUALIFIERS

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot # ...:	H6G290408	**Work Order # ...:**	M82RE1AC-LCS	**Matrix .....:**	SOLID
LCS Lot-Sample#:	H6H040000 - 014				
Prep Date .....:	08/04/16	**Analysis Date ..:**	08/17/16		
Prep Batch # ...:	6217014				
Dilution Factor :	1				
Analyst ID.....:	Kenneya L. Reynolds	**Instrument ID..:**	D11A	**Method.....:**	SW846 8290A
Initial Wgt/Vol:	10 g				

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY		RECOVERY LIMITS
2,3,7,8-TCDD	**20.0**	**21.6**	**pg/g**	**108**		**(79 - 129)**
1,2,3,7,8-PeCDD	**100**	**100**	**pg/g**	**100**	**B**	**(79 - 129)**
1,2,3,4,7,8-HxCDD	**100**	**104**	**pg/g**	**104**		**(73 - 123)**
1,2,3,6,7,8-HxCDD	**100**	**102**	**pg/g**	**102**		**(74 - 124)**
1,2,3,7,8,9-HxCDD	**100**	**112**	**pg/g**	**112**		**(70 - 124)**
1,2,3,4,6,7,8-HpCDD	**100**	**97.4**	**pg/g**	**97**		**(73 - 123)**
OCDD	**200**	**196**	**pg/g**	**98**	**B**	**(75 - 125)**
2,3,7,8-TCDF	**20.0**	**21.7**	**pg/g**	**108**		**(75 - 125)**
1,2,3,7,8-PeCDF	**100**	**96.0**	**pg/g**	**96**		**(74 - 124)**
2,3,4,7,8-PeCDF	**100**	**103**	**pg/g**	**103**		**(75 - 125)**
1,2,3,4,7,8-HxCDF	**100**	**104**	**pg/g**	**104**	**B**	**(75 - 125)**
1,2,3,6,7,8-HxCDF	**100**	**102**	**pg/g**	**102**		**(76 - 126)**
2,3,4,6,7,8-HxCDF	**100**	**102**	**pg/g**	**102**		**(76 - 126)**
1,2,3,7,8,9-HxCDF	**100**	**100**	**pg/g**	**100**	**B**	**(77 - 127)**
1,2,3,4,6,7,8-HpCDF	**100**	**104**	**pg/g**	**104**	**B**	**(77 - 127)**
1,2,3,4,7,8,9-HpCDF	**100**	**97.5**	**pg/g**	**97**	**B**	**(73 - 123)**
OCDF	**200**	**188**	**pg/g**	**94**	**B**	**(49 - 128)**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	65	(40 - 135)
13C-1,2,3,7,8-PeCDD	82	(40 - 135)
13C-1,2,3,4,7,8-HxCDD	70	(40 - 135)
13C-1,2,3,6,7,8-HxCDD	71	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDD	84	(40 - 135)
13C-OCDD	71	(40 - 135)
13C-2,3,7,8-TCDF	70	(40 - 135)
13C-1,2,3,7,8-PeCDF	75	(40 - 135)
13C-2,3,4,7,8-PeCDF	83	(40 - 135)
13C-1,2,3,4,7,8-HxCDF	71	(40 - 135)
13C-1,2,3,6,7,8-HxCDF	70	(40 - 135)
13C-2,3,4,6,7,8-HxCDF	77	(40 - 135)
13C-1,2,3,7,8,9-HxCDF	72	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDF	69	(40 - 135)
13C-1,2,3,4,7,8,9-HpCDF	74	(40 - 135)
13C-OCDF	60	(40 - 135)

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Notes:

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

MATRIX/MATRIX SPIKE DATA REPORT

Trace Level Organic Compounds

Client Lot # ...:	H6G290408	**Work Order # ...:**	M811X1AD-MS	**Matrix .....:**	SOLID
OS Lot-Sample# :	H6G290408 - 010		M811X1AE-MSD		
Prep Date .....:	08/04/16	**Analysis Date ..:**	08/18/16		
Prep Batch # ...:	6217014				
Dilution Factor :	1				
Analyst ID.....:	Kenneya L. Reynolds	**Instrument ID..:**	D11A	**Method.....:**	SW846 8290A
Initial Wgt/Vol:	10.1 g				

PARAMETER	SAMPLE AMOUNT	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS
2,3,7,8-TCDD	0.15	24.3	25.0	pg/g	102	(79 - 129)		
	0.15	24.3	24.9	pg/g	102	(79 - 129)	0.54	(0 - 15)
1,2,3,7,8-PeCDD	0.61	121	123	pg/g	101 B	(79 - 129)		
	0.61	121	124	pg/g	102 B	(79 - 129)	0.58	(0 - 15)
1,2,3,4,7,8-HxCDD	0.54	121	114	pg/g	93	(73 - 123)		
	0.54	121	114	pg/g	93	(73 - 123)	0.080	(0 - 15)
1,2,3,6,7,8-HxCDD	1.4	121	112	pg/g	91	(73 - 127)		
	1.4	121	111	pg/g	90	(73 - 127)	0.51	(0 - 15)
1,2,3,7,8,9-HxCDD	1.6	121	118	pg/g	96	(65 - 141)		
	1.6	121	121	pg/g	99	(65 - 141)	3.1	(0 - 15)
1,2,3,4,6,7,8-HpCDD	22	121	122	pg/g	82	(54 - 138)		
	22	121	146	pg/g	102 p	(54 - 138)	18	(0 - 15)
OCDD	250	243	445	pg/g	81 B	(31 - 154)		
	250	243	789	pg/g	222 a p B	(31 - 154)	56	(0 - 15)
2,3,7,8-TCDF	0.86	24.3	24.6	pg/g	98 X	(75 - 125)		
	0.86	24.3	23.3	pg/g	92 X	(75 - 125)	5.5	(0 - 15)
1,2,3,7,8-PeCDF	0.27	121	111	pg/g	91	(74 - 124)		
	0.27	121	111	pg/g	91	(74 - 124)	0.41	(0 - 15)
2,3,4,7,8-PeCDF	0.46	121	119	pg/g	97	(75 - 125)		
	0.46	121	121	pg/g	99	(75 - 125)	1.6	(0 - 15)
1,2,3,4,7,8-HxCDF	0.88	121	110	pg/g	90 B	(75 - 125)		
	0.88	121	113	pg/g	92 B	(75 - 125)	2.4	(0 - 15)
1,2,3,6,7,8-HxCDF	0.42	121	111	pg/g	91	(73 - 131)		
	0.42	121	110	pg/g	91	(73 - 131)	0.43	(0 - 15)
2,3,4,6,7,8-HxCDF	0.26	121	111	pg/g	91	(76 - 129)		
	0.26	121	111	pg/g	91	(76 - 129)	0.060	(0 - 15)
1,2,3,7,8,9-HxCDF	ND	121	105	pg/g	87 B	(77 - 127)		
	ND	121	110	pg/g	91 B	(77 - 127)	4.7	(0 - 15)
1,2,3,4,6,7,8-HpCDF	4.1	121	115	pg/g	91 B	(72 - 134)		
	4.1	121	120	pg/g	95 B	(72 - 134)	4.3	(0 - 15)
1,2,3,4,7,8,9-HpCDF	0.48	121	109	pg/g	89 B	(73 - 124)		
	0.48	121	115	pg/g	94 B	(73 - 124)	5.4	(0 - 15)
OCDF	8.3	243	211	pg/g	83 B	(45 - 135)		
	8.3	243	223	pg/g	88 B	(45 - 135)	5.7	(0 - 15)

MATRIX/MATRIX SPIKE DATA REPORT

Trace Level Organic Compounds

Client Lot # ...:	H6G290408	**Work Order # ...:**	M811X1AD-MS	**Matrix .....:**	SOLID
OS Lot-Sample# :	H6G290408 - 010		M811X1AE-MSD		
Prep Date .....:	08/04/16	**Analysis Date ..:**	08/18/16		
Prep Batch # ...:	6217014				
Dilution Factor :	1				
Analyst ID.....:	Kenneya L. Reynolds	**Instrument ID..:**	D11A	**Method.....:**	SW846 8290A
Initial Wgt/Vol:	10.1 g				

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	62	(40 - 135)
	66	(40 - 135)
13C-1,2,3,7,8-PeCDD	77	(40 - 135)
	85	(40 - 135)
13C-1,2,3,4,7,8-HxCDD	67	(40 - 135)
	68	(40 - 135)
13C-1,2,3,6,7,8-HxCDD	67	(40 - 135)
	67	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDD	75	(40 - 135)
	78	(40 - 135)
13C-OCDD	65	(40 - 135)
	70	(40 - 135)
13C-2,3,7,8-TCDF	63	(40 - 135)
	65	(40 - 135)
13C-1,2,3,7,8-PeCDF	73	(40 - 135)
	80	(40 - 135)
13C-2,3,4,7,8-PeCDF	78	(40 - 135)
	93	(40 - 135)
13C-1,2,3,4,7,8-HxCDF	59	(40 - 135)
	57	(40 - 135)
13C-1,2,3,6,7,8-HxCDF	56	(40 - 135)
	54	(40 - 135)
13C-2,3,4,6,7,8-HxCDF	63	(40 - 135)
	61	(40 - 135)
13C-1,2,3,7,8,9-HxCDF	61	(40 - 135)
	61	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDF	54	(40 - 135)
	54	(40 - 135)
13C-1,2,3,4,7,8,9-HpCDF	59	(40 - 135)
	59	(40 - 135)
13C-OCDF	53	(40 - 135)
	56	(40 - 135)

Sample Receipt Documentation

TestAmerica Canton
4101 Shuffel Street NW
North Canton, OH 44720
Phone (330) 497-9396 Fax (330) 497-0772

H6290408

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Opal	Carrier Tracking No(s):	COC No: 240-59405.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: opal.johnson@testamericainc.com		Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.				Job #: 240-67631-1 67643 67646
Address: 5815 Middlebrook Pike, ,	Due Date Requested: 8/31/2016			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37921				
Phone: 865-291-3000(Tel) 865-584-4315(Fax)	PO #:			
Email:	WO #:			
Project Name: RVAAP, HWMU-13 (Open Burning Ground)	Project #: 24008575			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (8290A, Dioxins/Furans,)/ 8290A, Dioxins/Furans,	SUB (160.3 MOD, Moisture, Percent Knoxville)/ 160.3 MOD, Moisture, Percent Knoxville	SUB (Dioxin/Furans - 8290A)/ 8290A	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
SB-1 (240-67631-1)	7/25/16	14:20 Eastern		Solid			X	X		1	
SB-2 (240-67631-2)	7/25/16	14:30 Eastern		Solid			X	X		1	NO CUSTODY SEALS
SB-1 (240-67631-3)	7/25/16	16:00 Eastern		Solid			X	X		1	RECEIVED AT RT 0.1, 0.1
SB-2 (240-67631-4)	7/25/16	16:15 Eastern		Solid			X	X		1	CY 0.1, 0.1 C
BERM-1 (240-67631-5)	7/25/16	14:00 Eastern		Solid			X	X		1	DKD 7-29-13
POND-1 (240-67631-6)	7/25/16	14:10 Eastern		Solid			X	X		1	2 COOLERS FEDX #
PAD-1 (240-67642-1)	7/25/16	15:00 Eastern		Solid			X			2	6825 0100 1404
PAD-2 (240-67642-2)	7/25/16	15:20 Eastern		Solid			X			2	6825 0100 1415
PAD-3 (240-67642-3)	7/25/16	15:40 Eastern		Solid			X			2	
PAD-4 (240-67642-4)	7/25/16	16:30 Eastern		Solid			X			6	
PAD-5 (240-67642-5)	7/25/16	17:00 Eastern		Solid			X			2	

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Rebecca	7-28-2016			7-29-16 10:00	TA Knox
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

TestAmerica Canton
4101 Shuffel Street NW
North Canton, OH 44720
Phone (330) 497-9396 Fax (330) 497-0772

HG290408

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Opal	Carrier Tracking No(s):	COC No: 240-59405.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: opal.johnson@testamericainc.com		Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.				Job #: 240-67631-1
Address: 5815 Middlebrook Pike, ,	Due Date Requested: 8/31/2016			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37921				
Phone: 865-291-3000(Tel) 865-584-4315(Fax)	PO #:			
Email:	WO #:			
Project Name: RVAAP, HWMU-13 (Open Burning Ground)	Project #: 24008575			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (8290A, Dioxins/Furans,)/ 8290A, Dioxins/Furans,	SUB (160.3 MOD, Moisture, Percent Knoxville)/ 160.3 MOD, Moisture, Percent Knoxville	SUB (Dioxin/Furans - 8290A)/ 8290A	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
PAD-6 (240-67642-6)	7/25/16	17:20 Eastern		Solid			X			2	
PAD-7 (240-67642-7)	7/25/16	17:35 Eastern		Solid			X			2	
PAD-8 (240-67642-8)	7/25/16	18:00 Eastern		Solid			X			2	
PAD-XX (240-67642-10)	7/25/16	15:10 Eastern		Solid			X	X		2	
EB (240-67646-1)	7/25/16	13:00 Eastern		Water					X	2	

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 7-28-2016	Company	Received by:	Date/Time: 7-29-16 10:01	Company TA TANOR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Lot Number: 1766290408

Review Items	Yes	No	NA	If No, what was the problem?
1. Do sample container labels match COC? (IDs, Dates, Times)	✓			☐ 1a Do not match COC ☐ 1b Incomplete information ☐ 1c Marking smeared ☐ 1d Label torn ☐ 1e No label ☐ 1f COC not received ☐ 1g Other:
2. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : S061 Correction factor: 0.0	✓			☐ 2a Temp Blank = _____ ☐ 2b Cooler Temp = _____ ☐ 2c Cooling initiated for recently collected samples, ice present.
3. Were samples received with correct chemical preservative (excluding Encore)?			✓	☐ 3a See box 3A for pH Preservation ☐ 3b Other:
4. Were custody seals present/intact on cooler and/or containers?		✓	✓	☑ 4a Not present ☐ 4b Not intact ☐ 4c Other:
5. Were all of the samples listed on the COC received?	✓			☐ 5a Samples received-not on COC ☐ 5b Samples not received-on COC
6. Were all of the sample containers received intact?	✓			☐ 6a Leaking ☐ 6b Broken
7. Were VOA samples received without headspace?			✓	☐ 7a Headspace (VOA only)
8. Were samples received in appropriate containers?	✓			☐ 8a Improper container
9. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number:			✓	☐ 9a Could not be determined due to matrix interference
10. Were samples received within holding time?	✓			☐ 10a Holding time expired
11. For rad samples, was sample activity info. provided?			✓	☐ Incomplete information
12. For 1613B water samples is pH<9?			✓	If no, was pH adjusted to pH 7 - 9 with sulfuric acid? _____
13. Are the shipping containers intact?	✓			☐ 13a Leaking ☐ 13b Other:
14. Was COC relinquished? (Signed/Dated/Timed)	✓			☐ 14a Not relinquished
15. Are tests/parameters listed for each sample?	✓			☐ 15a Incomplete information
16. Is the matrix of the samples noted?	✓			☐ 15a Incomplete information
17. Is the date/time of sample collection noted?	✓			☐ 15a Incomplete information
18. Is the client and project name/# identified?	✓			☐ 15a Incomplete information
19. Was the sampler identified on the COC?		✓		☐ 19a Other

Comments/Actions Taken

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Labeling Verified by: _____ **Date:** _____

pH test strip lot number: _____

	Box 3A: pH Preservation	Box 9A: Residual Chlorine
Preservative:		
Lot Number:		
Exp Date:		
Analyst:		
Date:		
Time:		

Quote #: 91315 PM Instructions: NA

Sample Receiving Associate: [signature] Date: 7-24-16

QA026R29.doc, 041115

Trace Level Organics

Raw Sample Data
DB-5 Column

TestAmerica Canton

Sample ID: NB-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 001	**Work Order #....:**	M811L1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture**	17
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.2	0.043	pg/g
1,2,3,7,8-PeCDD	**0.63**	**Q B J**	**6.0**	**0.046**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.65**	**J**	**6.0**	**0.055**	**pg/g**
1,2,3,6,7,8-HxCDD	**1.5**	**J**	**6.0**	**0.058**	**pg/g**
1,2,3,7,8,9-HxCDD	**2.2**	**C J**	**6.0**	**0.053**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**31**		**6.0**	**0.10**	**pg/g**
OCDD	**320**	**B**	**12**	**0.10**	**pg/g**
1,2,3,7,8-PeCDF	**0.86**	**J**	**6.0**	**0.050**	**pg/g**
2,3,4,7,8-PeCDF	**1.0**	**J**	**6.0**	**0.044**	**pg/g**
1,2,3,4,7,8-HxCDF	**2.0**	**B C J**	**6.0**	**0.042**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.94**	**J**	**6.0**	**0.041**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.76**	**J**	**6.0**	**0.044**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		6.0	0.054	pg/g
1,2,3,4,6,7,8-HpCDF	**7.4**	**B**	**6.0**	**0.067**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**1.0**	**Q B J**	**6.0**	**0.078**	**pg/g**
OCDF	**15**	**B**	**12**	**0.041**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	64	40 - 135
13C-1,2,3,7,8-PeCDD	78	40 - 135
13C-1,2,3,4,7,8-HxCDD	68	40 - 135
13C-1,2,3,6,7,8-HxCDD	67	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	79	40 - 135
13C-OCDD	66	40 - 135
13C-1,2,3,7,8-PeCDF	70	40 - 135
13C-2,3,4,7,8-PeCDF	78	40 - 135
13C-1,2,3,4,7,8-HxCDF	66	40 - 135
13C-1,2,3,6,7,8-HxCDF	64	40 - 135
13C-2,3,4,6,7,8-HxCDF	70	40 - 135
13C-1,2,3,7,8,9-HxCDF	67	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	62	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	66	40 - 135
13C-OCDF	56	40 - 135

TestAmerica Canton

Sample ID: NB-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 001	**Work Order #....:**	M811L1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture**	17
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811L1AC	Prep Batch	6217014	Lot No	H6G290408-001
Data File	/20160817s1/d1tm811l.d	Prep Date	08/04/16	SDG No	
Analysis ID	180424	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/17/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	13:31	Initial Wt/Vol	10.1 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD				1.144				ND		0.0353
Total TCDD		4675	1060	1.144		2.685121		0.265854	QJ	0.0353
2,3,7,8-TCDF	30:42	52423	5541	1.066		19.396855		~~1.920481~~ X	NA	0.0881
Total TCDF		102403	12518	1.066		57.286639		5.671944	Q	0.0881
1,2,3,7,8-PeCDD	41:24	7605	1507	1.060		5.316332		0.526370	QBJ	0.0380
Total PeCDD		8074	1729	1.060		10.960522		1.085200	QJB	0.0380
1,2,3,7,8-PeCDF	39:44	17414	3782	1.179		7.215843		0.714440	J	0.0414
2,3,4,7,8-PeCDF	40:54	21582	4863	1.115		8.524615		0.844021	J	0.0361
Total PeCDF		43526	8370	1.147		33.318601		3.298871	QJ	0.0385
1,2,3,4,7,8-HxCDD	45:39	9058	2388	1.131		5.409595		0.535603	J	0.0456
1,2,3,6,7,8-HxCDD	45:46	20637	5185	1.116		12.786835		1.266023	J	0.0484
1,2,3,7,8,9-HxCDD	46:09	32012	6389	1.205		18.152996		1.797326	CJ	0.0438
Total HxCDD				1.151		36.349427		3.598953	J	0.0459
1,2,3,4,7,8-HxCDF	44:34	44163	7650	1.350		16.431919		1.626923	BCJ	0.0348
1,2,3,6,7,8-HxCDF	44:42	22471	5500	1.242		7.897025		0.781884	J	0.0340
2,3,4,6,7,8-HxCDF	45:28	17695	4183	1.241		6.386316		0.632308	J	0.0361
1,2,3,7,8,9-HxCDF				1.262				ND		0.0445
Total HxCDF		24881	5915	1.274		39.993713		3.959774	QJB	0.0369
1,2,3,4,6,7,8-HpCDD	50:41	393201	81373	1.114		259.473983		25.690493		0.0842
Total HpCDD		360726	70403	1.114		497.517659		49.259174		0.0842
1,2,3,4,6,7,8-HpCDF	48:58	134218	27888	1.461		61.866574		6.125403	B	0.0557
1,2,3,4,7,8,9-HpCDF	51:18	15150	2456	1.370		8.654232		0.856855	QBJ	0.0650
Total HpCDF		168795	32156	1.416		156.846385		15.529345	QB	0.0601
OCDD	54:41	3011835	767239	1.203		2676.76282		265.026022	B	0.0826
OCDF	54:49	176062	42675	1.134		123.677934		12.245340	B	0.0336
13C-2,3,7,8-TCDD	32:46	1522551	147053	1.093	1000	644.139897	64.41	63.776227		0.189
13C-2,3,7,8-TCDF	30:38	2536304	260931	1.794	1000	653.339136	65.33	64.687043		0.0802
13C-1,2,3,7,8-PeCDD	41:22	1349664	325814	0.800	1000	779.826860	77.98	77.210580		0.0595
13C-1,2,3,7,8-PeCDF	39:43	2046669	435878	1.356	1000	697.426454	69.74	69.052124		0.0902
13C-2,3,4,7,8-PeCDF	40:52	2271489	529347	1.343	1000	781.776700	78.18	77.403634		0.0911
13C-1,2,3,4,7,8-HxCDD	45:37	1480347	364405	0.916	1000	680.581089	68.06	67.384266		0.0833
13C-1,2,3,6,7,8-HxCDD	45:45	1446232	348196	0.906	1000	671.923234	67.19	66.527053		0.0842
13C-1,2,3,4,7,8-HxCDF	44:33	1990199	527390	1.268	1000	660.680890	66.07	65.413949		0.0625
13C-1,2,3,6,7,8-HxCDF	44:41	2291769	586565	1.506	1000	640.946383	64.09	63.460038		0.0527
13C-2,3,4,6,7,8-HxCDF	45:27	2232917	552623	1.344	1000	699.577407	69.96	69.265090		0.0590
13C-1,2,3,7,8,9-HxCDF	46:26	1906235	440948	1.202	1000	667.713037	66.77	66.110202		0.0660
13C-1,2,3,4,6,7,8-HpCDD	50:40	1360644	290383	0.728	1000	786.530826	78.65	77.874339		0.0225
13C-1,2,3,4,6,7,8-HpCDF	48:57	1484909	313420	1.008	1000	620.240526	62.02	61.409953		0.0453
13C-1,2,3,4,7,8,9-HpCDF	51:17	1277479	286303	0.811	1000	663.441524	66.34	65.687280		0.0563
13C-OCDD	54:41	1870632	473525	0.597	2000	1318.51719	65.93	130.546257		0.0894
13C-1,2,3,4-TCDD	32:14	4327099	436881	1.000	2000	2000.00000	100.00	198.019802		0.206
13C-1,2,3,7,8,9-HxCDD	46:09	4749934	1148928	1.000	2000	2000.00000	100.00	198.019802		0.0763
13C-OCDF	54:49	2509910	662481	0.946	2000	1117.15739	55.86	110.609642		0.0337

KLR by LKM 8-18-16

Qcd LKM 8-18-16

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811L1AC	Prep Batch	6217014	Lot No	H6G290408-001
Data File	/20160817s1/d1tm8111.d	Prep Date	08/04/16	SDG No	
Analysis ID	180424	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/17/16 13:31	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.1 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	105	143	42	57	0.74	/	
	Unidentified	29:30	00:00	0	10237	15810	1291	1728	0.65	ABV/ABB	
	Unidentified	30:12	00:00	0	9148	7746	1051	1106	1.18 *	AVB/ABV	RT
	2,3,7,8-TCDF	30:42	30:40	2	23743	28680	2504	3037	0.83	MBV/ABV	D
	Unidentified	30:49	00:00	0	4303	6571	1010	1367	0.65	AVV/AVB	
	Unidentified	31:57	00:00	0	20905	27683	2356	2609	0.76	ABV/ABB	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	210	108	84	43	1.95 *	/	
	Unidentified	29:29	00:00	0	8903	4657	1204	659	1.91 *	ABB/ABB	RT
	13C-2,3,7,8-TCDF	30:38	30:37	1	1127208	1409096	115218	145713	0.80	ABV/ABV	
	Unidentified	30:58	00:00	0	3192	4780	841	1019	0.67	AVB/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	25	35	10	14	0.71	/	
	Unidentified	31:24	00:00	0	254	238	124	86	1.07 *	ABB/ABB	R
	Unidentified	32:33	00:00	0	739	915	130	179	0.81	ABV/ABV	
	Unidentified	32:38	00:00	0	640	661	178	159	0.97 *	AVB/AVV	RT
	Unidentified	33:55	00:00	0	511	717	96	108	0.71	ABB/ABB	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	213	243	85	97	0.88	/	
	13C-1,2,3,4-TCDD	32:14	32:15	-1	1929190	2397909	195792	241089	0.80	ABV/ABV	
	13C-2,3,7,8-TCDD	32:46	32:48	-2	673773	848778	66314	80739	0.79	AVV/AVV	M
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	100	115	40	46	0.87 *	/	
	1,2,3,7,8-PeCDF	39:44	39:42	2	10025	7389	2343	1439	1.36	MVB/AVB	
	Unidentified	40:02	00:00	0	5580	4938	976	1074	1.13 *	ABB/ABB	R
	Unidentified	40:13	00:00	0	6128	4790	1316	897	1.28 *	AVB/ABB	R
	2,3,4,7,8-PeCDF	40:54	40:51	3	12459	9123	2662	2201	1.37	ABV/ABB	M
	Unidentified	41:06	00:00	0	12621	9469	2253	1854	1.33	AVB/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	163	108	65	43	1.51	/	
	13C-1,2,3,7,8-PeCDF	39:43	39:40	3	1258963	787706	265692	170186	1.60	ABV/ABV	M
	Unidentified	39:59	00:00	0	8156	10330	1587	1560	0.79 *	AVB/AVV	R
	Unidentified	40:13	00:00	0	12332	8590	1405	1843	1.44	ABV/AVB	
	13C-2,3,4,7,8-PeCDF	40:52	40:50	2	1401796	869693	327064	202283	1.61	ABV/AVV	
	Unidentified	41:09	00:00	0	4904	2106	1291	1021	2.33 *	AVV/AVB	R
	Unidentified	41:16	00:00	0	4420	3713	1161	720	1.19 *	AVV/ABV	RT
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	60	73	24	29	0.83 *	/	
	Unidentified	40:59	00:00	0	2399	818	364	199	2.93 *	ABV/ABB	R
	1,2,3,7,8-PeCDD	41:24	41:21	3	3458	4147	891	616	0.83 *	ABB/ABB	RM
	Unidentified	41:37	00:00	0	1151	859	248	198	1.34	ABB/ABB	
	Unidentified	42:02	00:00	0	1631	1216	393	327	1.34	ABB/AVB	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811L1AC	Prep Batch	6217014	Lot No	H6G290408-001
Data File	/20160817s1/d1tm811l.d	Prep Date	08/04/16	SDG No	
Analysis ID	180424	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/17/16 13:31	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.1 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	48	58	19	23	0.83 *	/	
	13C-1,2,3,7,8-PeCDD	41:22	41:20	2	820616	529048	198755	127059	1.55	ABB/ABV	
	Unidentified	41:37	00:00	0	3362	1346	889	447	2.50 *	ABV/AVB	R
	Unidentified	42:02	00:00	0	1570	529	393	255	2.97 *	AVB/ABB	RT
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	108	143	43	57	0.75 *	/	
	Unidentified	44:18	00:00	0	2568	1132	1264	684	2.27 *	ABB/ABB	R
	1,2,3,4,7,8-HxCDF	44:34	44:32	2	25015	19148	4422	3228	1.31	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:42	44:40	2	11796	10675	2935	2565	1.11	AVB/MVB	
	Unidentified	44:50	00:00	0	1616	2299	429	436	0.70 *	AVB/AVB	RT
	Unidentified	45:05	00:00	0	3377	3109	520	305	1.09	ABV/ABV	
	Unidentified	45:15	00:00	0	1846	2251	463	499	0.82 *	AVV/AVV	R
	2,3,4,6,7,8-HxCDF	45:28	45:26	2	9584	8111	2427	1756	1.18	AVB/MBB	
	Unidentified	46:36	00:00	0	2860	3823	685	630	0.75 *	AVB/ABB	R
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	185	275	74	110	0.67 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:33	44:31	2	700115	1290084	187243	340147	0.54	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:41	44:39	2	819278	1472491	208584	377981	0.56	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:27	45:25	2	774949	1457968	193950	358673	0.53	ABV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:26	46:26	0	674367	1231868	156677	284271	0.55	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	108	83	43	33	1.30	/	
	1,2,3,4,7,8-HxCDD	45:39	45:37	2	5119	3939	1386	1002	1.30	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:46	45:44	2	12136	8501	3056	2129	1.43	AVB/AVV	
	1,2,3,7,8,9-HxCDD	46:09	46:08	1	18246	13766	3773	2616	1.33	ABV/AVB	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	240	203	96	81	1.19	/	
	13C-1,2,3,4,7,8-HxCDD	45:37	45:36	1	840290	640057	206123	158282	1.31	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:45	45:43	2	786729	659503	191600	156596	1.19	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:09	46:07	2	2674338	2075596	643106	505822	1.29	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	183	75	73	30	2.43 *	/	
	1,2,3,4,6,7,8-HpCDF	48:58	48:58	0	69005	65213	14232	13656	1.06	ABV/ABV	
	Unidentified	49:23	00:00	0	8911	4442	906	700	2.01 *	AVV/ABV	R
	Unidentified	49:38	00:00	0	75646	70063	15004	14038	1.08	AVV/AVV	
	Unidentified	49:47	00:00	0	6292	3441	898	610	1.83 *	AVB/AVV	R
	1,2,3,4,7,8,9-HpCDF	51:18	51:19	-1	10822	4328	1489	967	2.50 *	ABB/ABV	R
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	113	153	45	61	0.74 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:57	48:57	0	476172	1008737	101000	212420	0.47	ABV/ABV	
	Unidentified	49:20	00:00	0	3395	10172	1121	1677	0.33 *	ABV/AVB	R
	13C-1,2,3,4,7,8,9-HpCDF	51:17	51:18	-1	380242	897237	84238	202065	0.42	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811L1AC	Prep Batch	6217014	Lot No	H6G290408-001
Data File	/20160817s1/d1tm811l.d	Prep Date	08/04/16	SDG No	
Analysis ID	180424	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/17/16 13:31	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.1 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

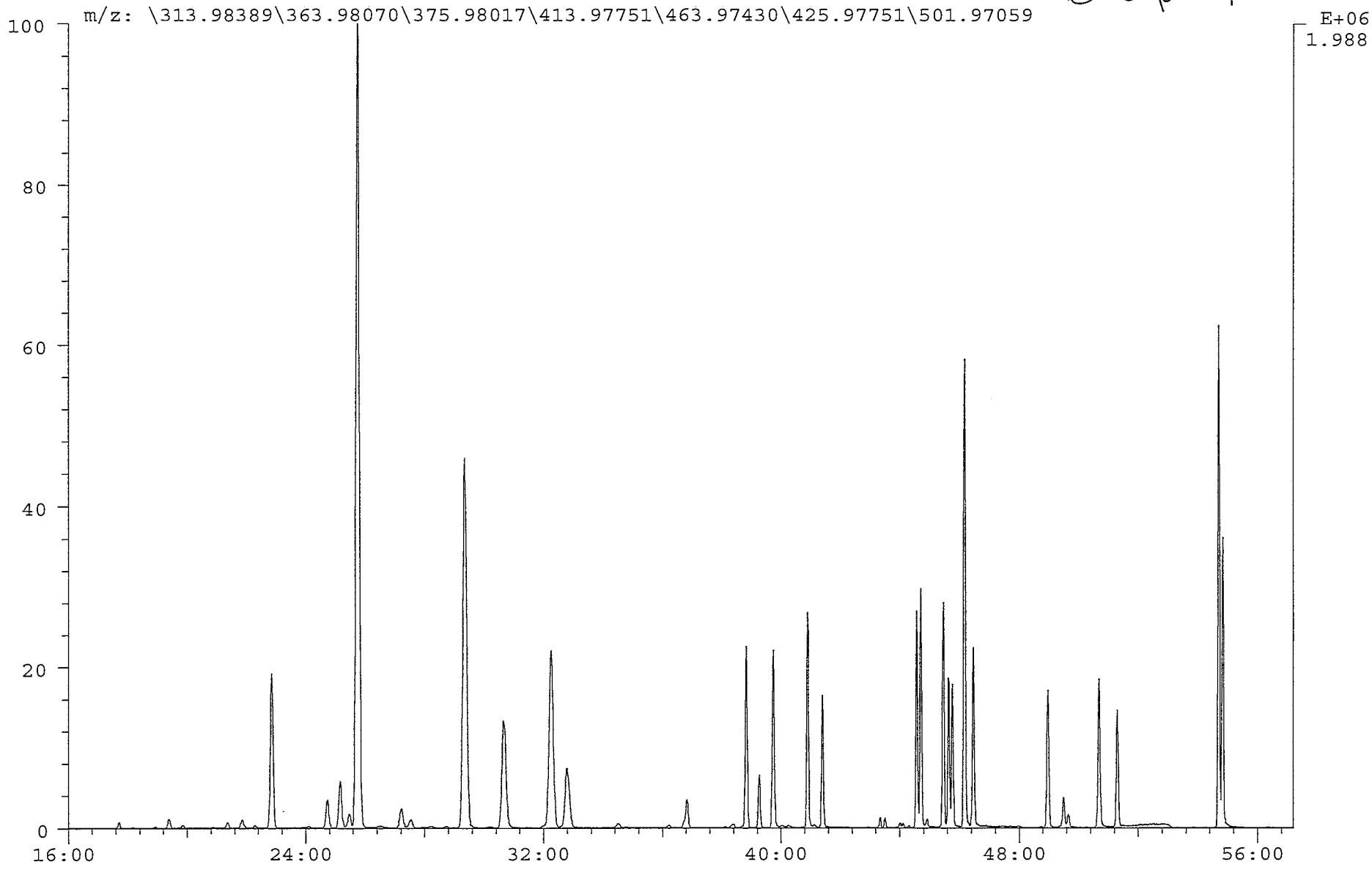
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Unidentified	51:42	00:00	0	4706	4815	977	1076	0.98 *	AVB/AVB	RT
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	143	133	57	53	1.08	/	
	Unidentified	49:28	00:00	0	188551	172175	36324	34079	1.10	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:41	50:42	-1	204488	188713	42038	39335	1.08	ABV/ABV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	35	60	14	24	0.58 *	/	
	Unidentified	49:28	00:00	0	7970	8666	1658	1948	0.92	ABB/ABB	
	13C-1,2,3,4,6,7,8-HpCDD	50:40	50:40	0	724063	636581	153709	136674	1.14	ABV/ABV	
	Unidentified	51:06	00:00	0	1906	534	561	288	3.57 *	ABB/AVB	R
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	78	50	31	20	1.55 *	/	
	OCDF	54:49	54:51	-2	81073	94989	19420	23255	0.85	ABV/ABB	
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	90	95	36	38	0.95	/	
	13C-OCDF	54:49	54:50	-1	1196386	1313524	316119	346362	0.91	ABV/ABV	
	Unidentified	55:14	00:00	0	2709	2084	728	533	1.30 *	AVV/AVB	R
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	120	118	48	47	1.02	/	
	OCDD	54:41	54:43	-2	1430250	1581585	359495	407744	0.90	ABV/ABV	
	Unidentified	55:07	00:00	0	2877	753	340	249	3.82 *	AVB/ABB	RT
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	55	255	22	102	0.22 *	/	
	13C-OCDD	54:41	54:42	-1	900022	970610	232891	240634	0.93	ABV/ABV	
	Unidentified	54:54	00:00	0	6746	12215	1336	1082	0.55 *	AVV/AVB	RT

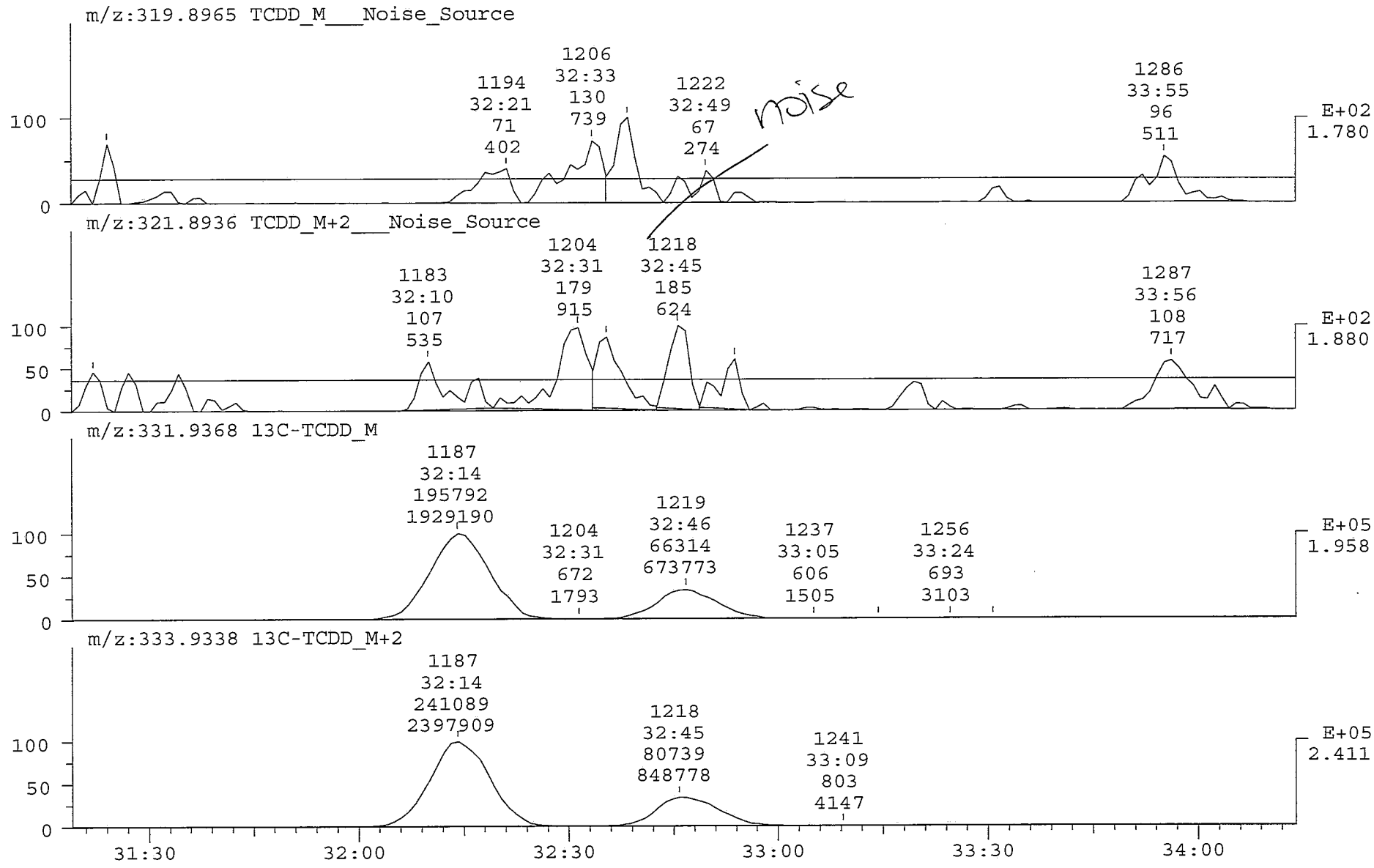
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. ku 8/17/16
+ Calc.
Qed LM 8-18-16
Rev ku 8/24/16

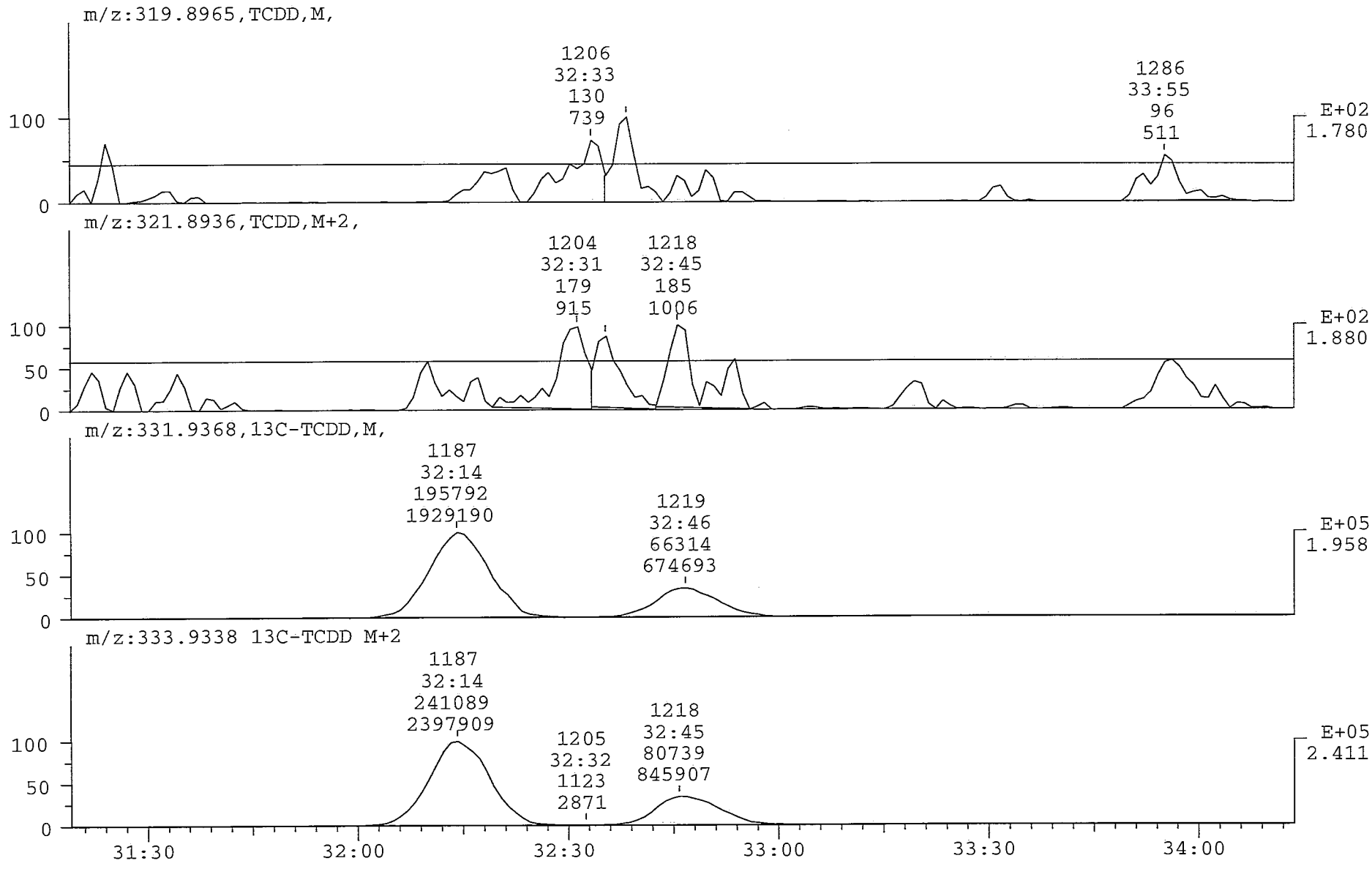
```
CHRO:  d1tm811l                                  17-Aug-16  Elapse:  46:27      2009
Samp:  WO=m811l1ac Meth=9Ao Dil=1                           Start :  13:31:33   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  6217014 (10.1g)
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm      Label wndw:   233 > 2629            Masses:  303 > 514
Area:  5, 0.50, 0       Baseline  :   100, 3                Label :  0, 0.0
Disp:  Height  Area
```



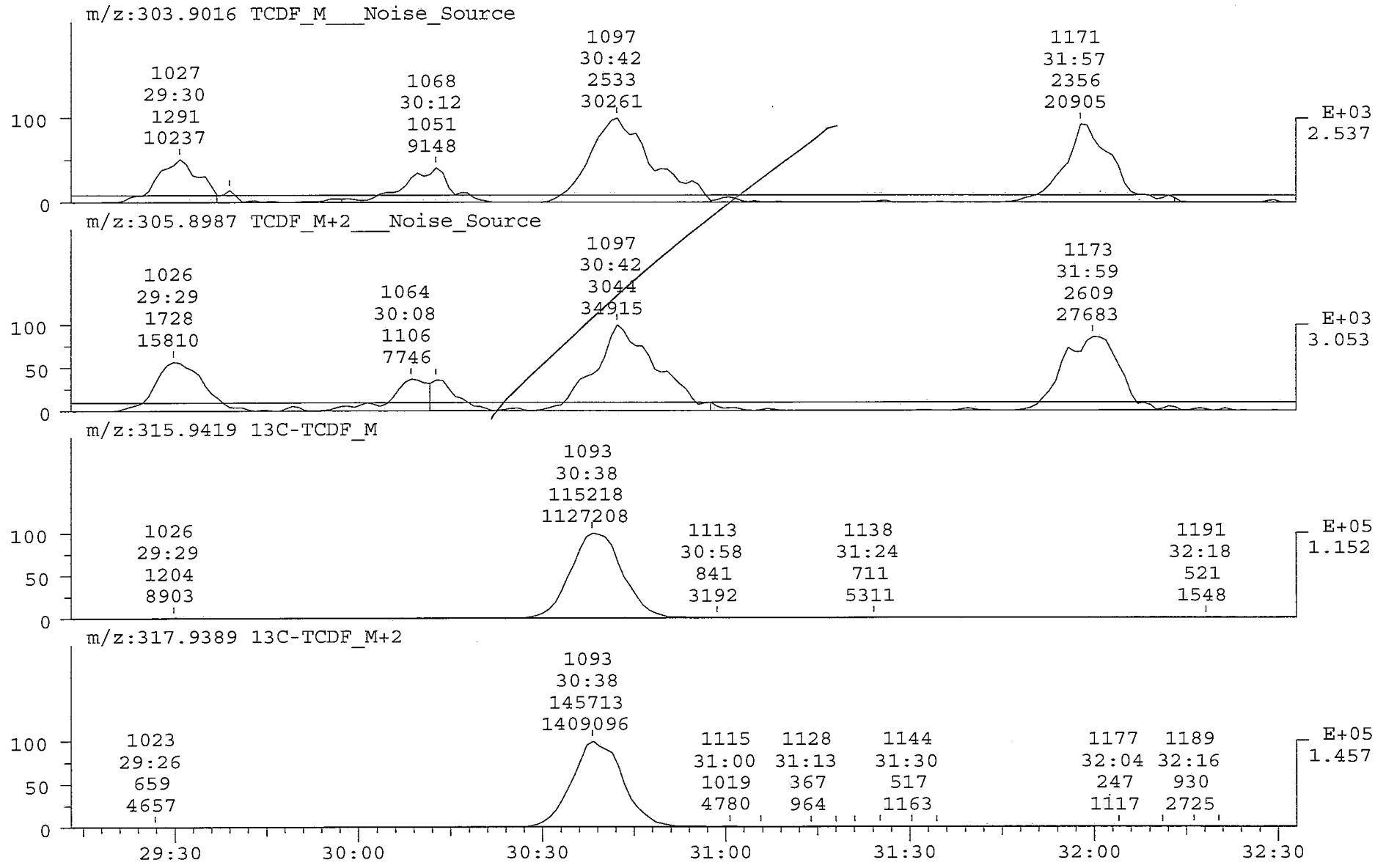
CHRO: d1tm8111 17-Aug-16 Elapse: 32:45 1218
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1133 > 1304 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



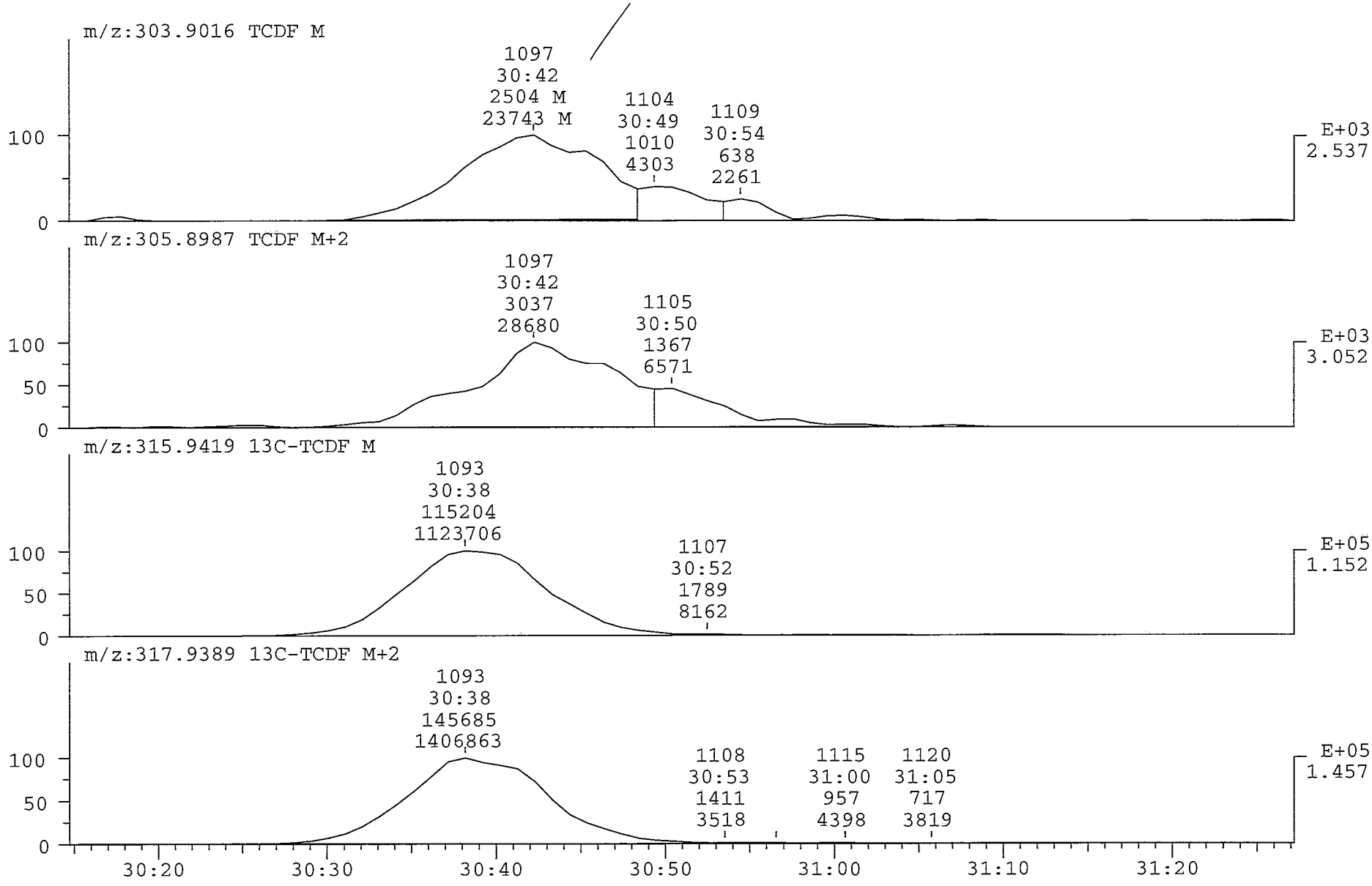
CHRO: d1tm8111 17-Aug-16 Elapse: 54:53 2495
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1133 > 1304 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



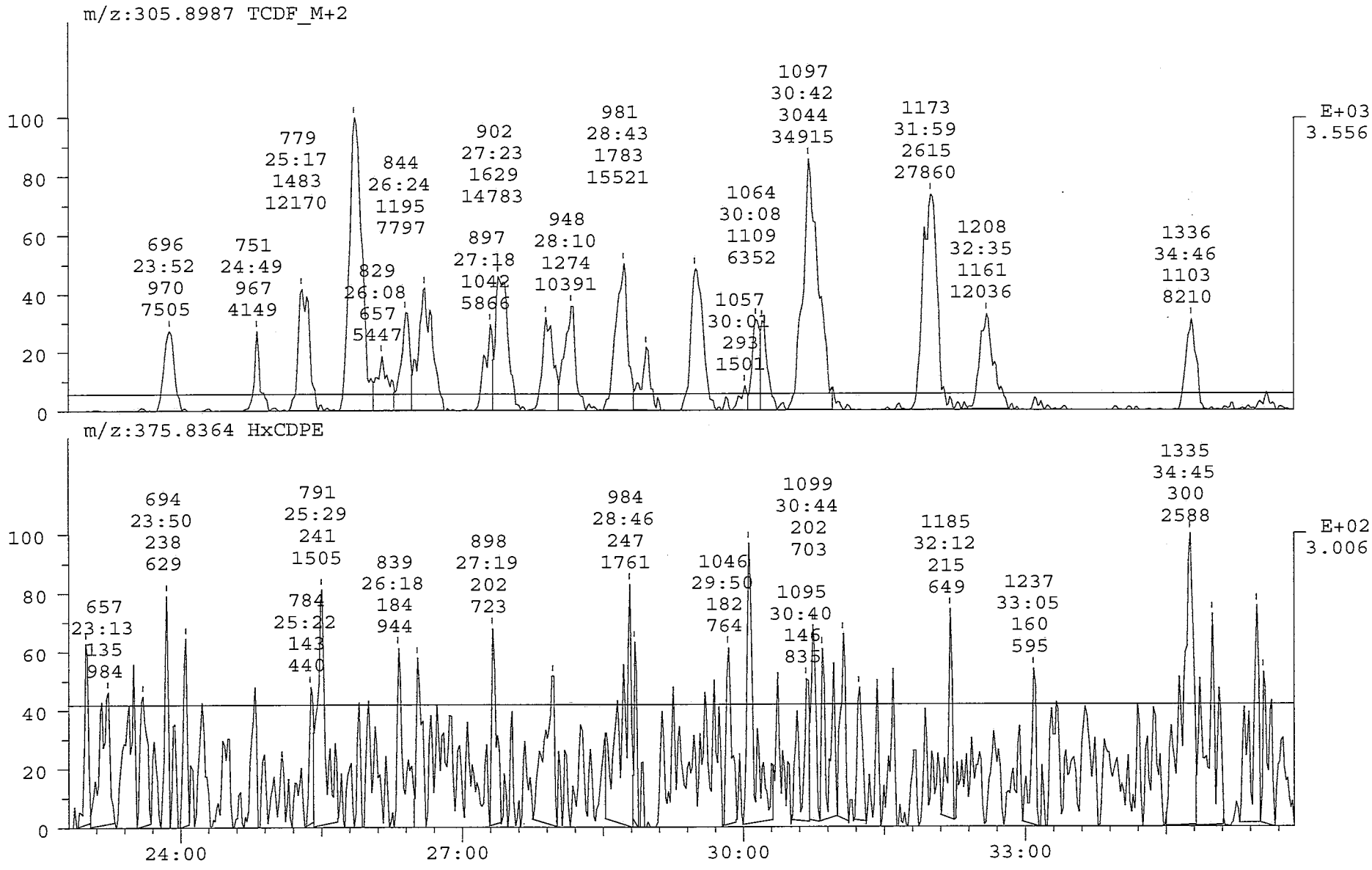
CHRO: d1tm8111 17-Aug-16 Elapse: 30:50 1105
Samp: WO=m8111lac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1010 > 1205 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



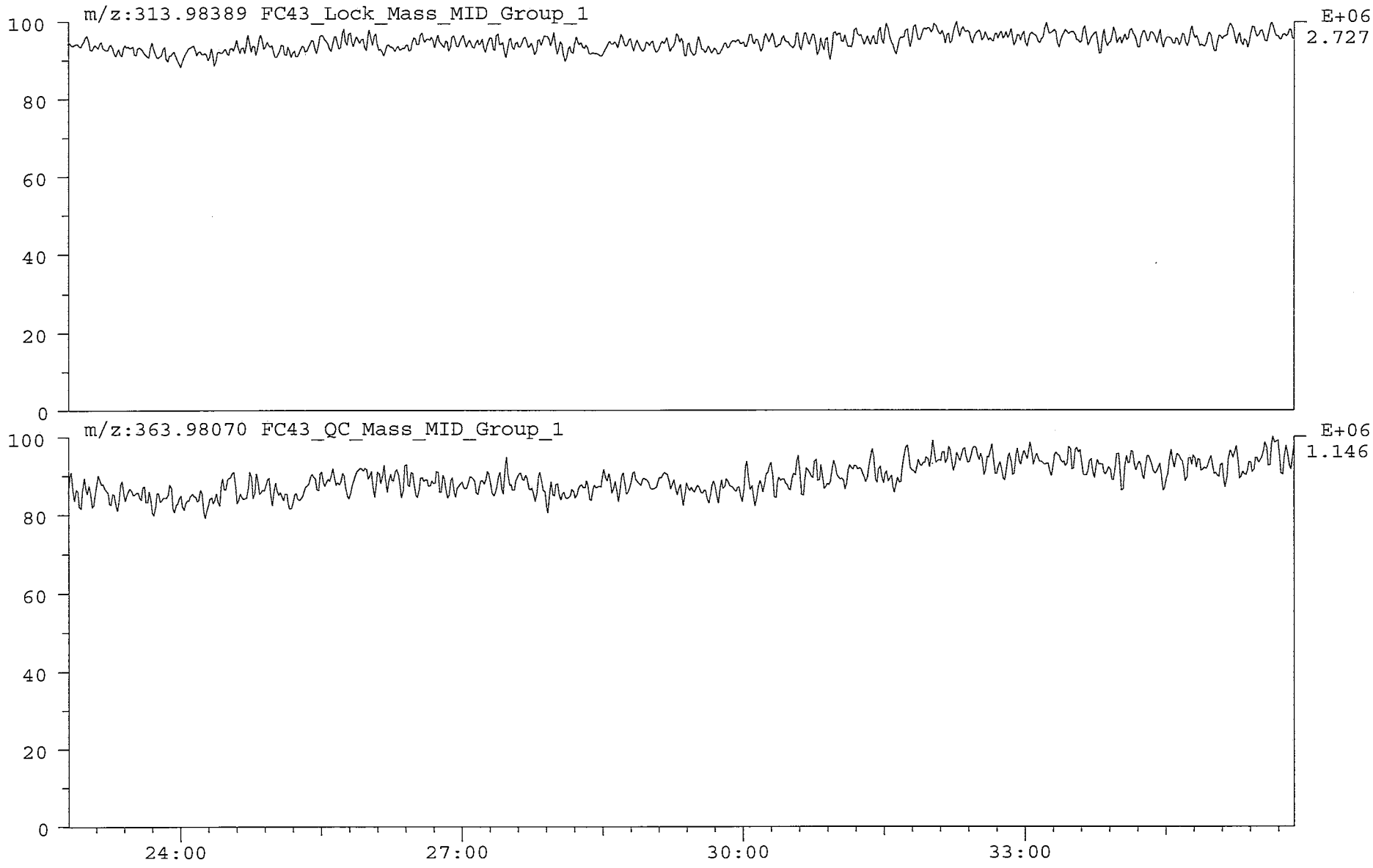
CHRO: d1tm8111 17-Aug-16 Elapse: 54:53 2495
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1070 > 1141 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : 2, 5.0
Disp: Height Area



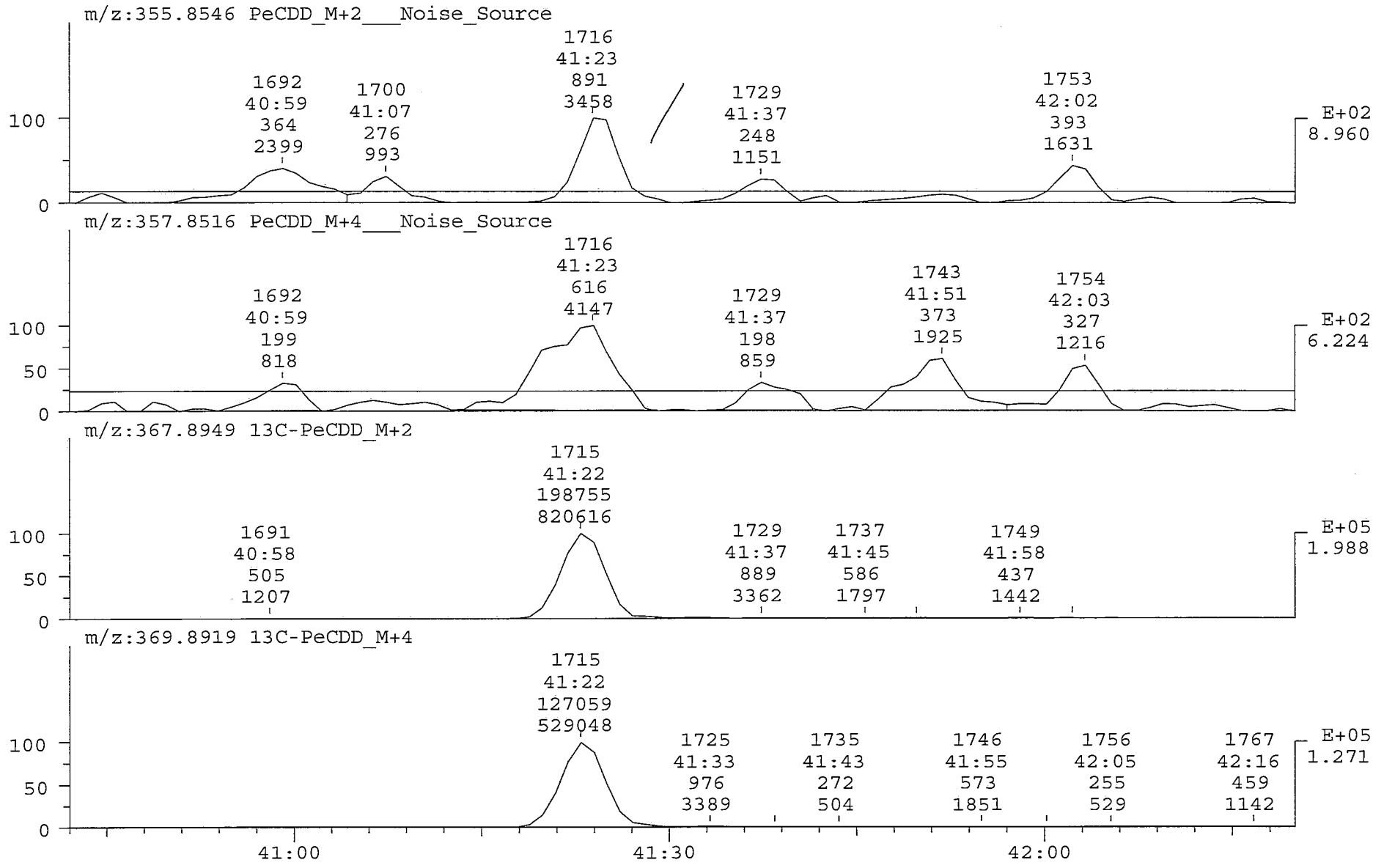
CHRO: d1tm8111 17-Aug-16 Elapse: 30:50 1105
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 632 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



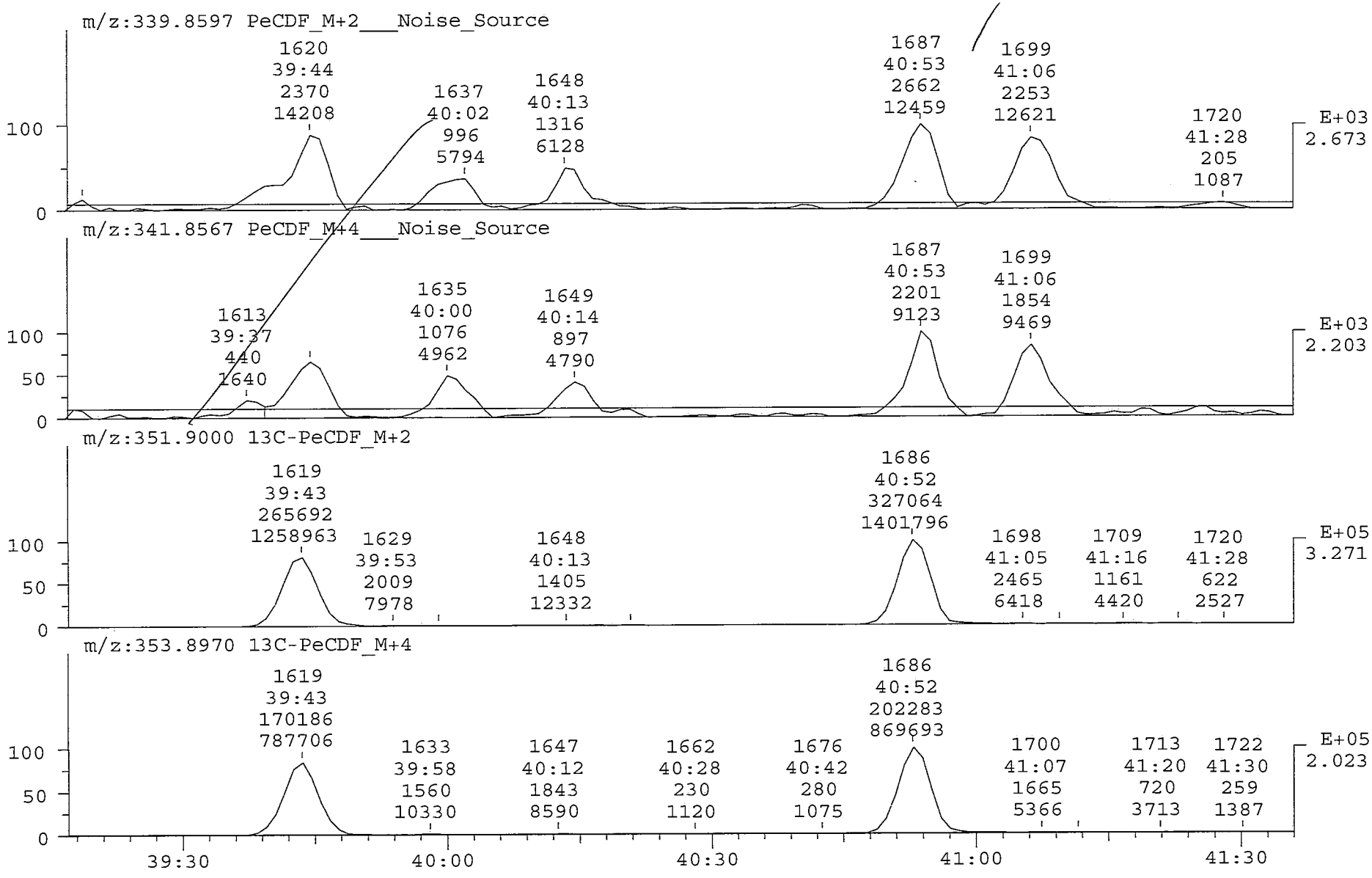
CHRO: d1tm8111 17-Aug-16 Elapse: 30:50 1105
Samp: WO=m8111lac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 632 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



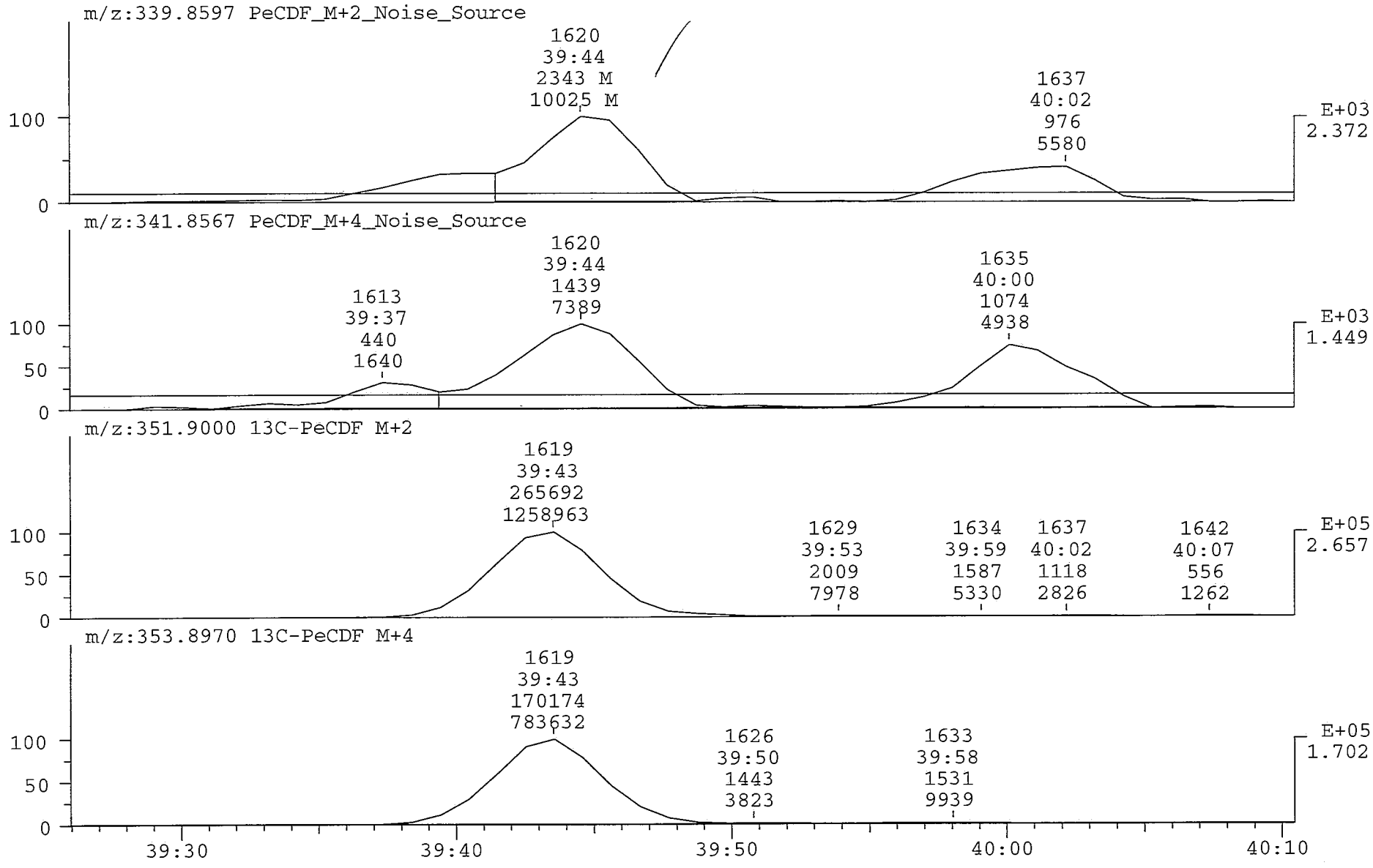
CHRO: d1tm8111 17-Aug-16 Elapse: 41:28 1720
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1676 > 1770 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



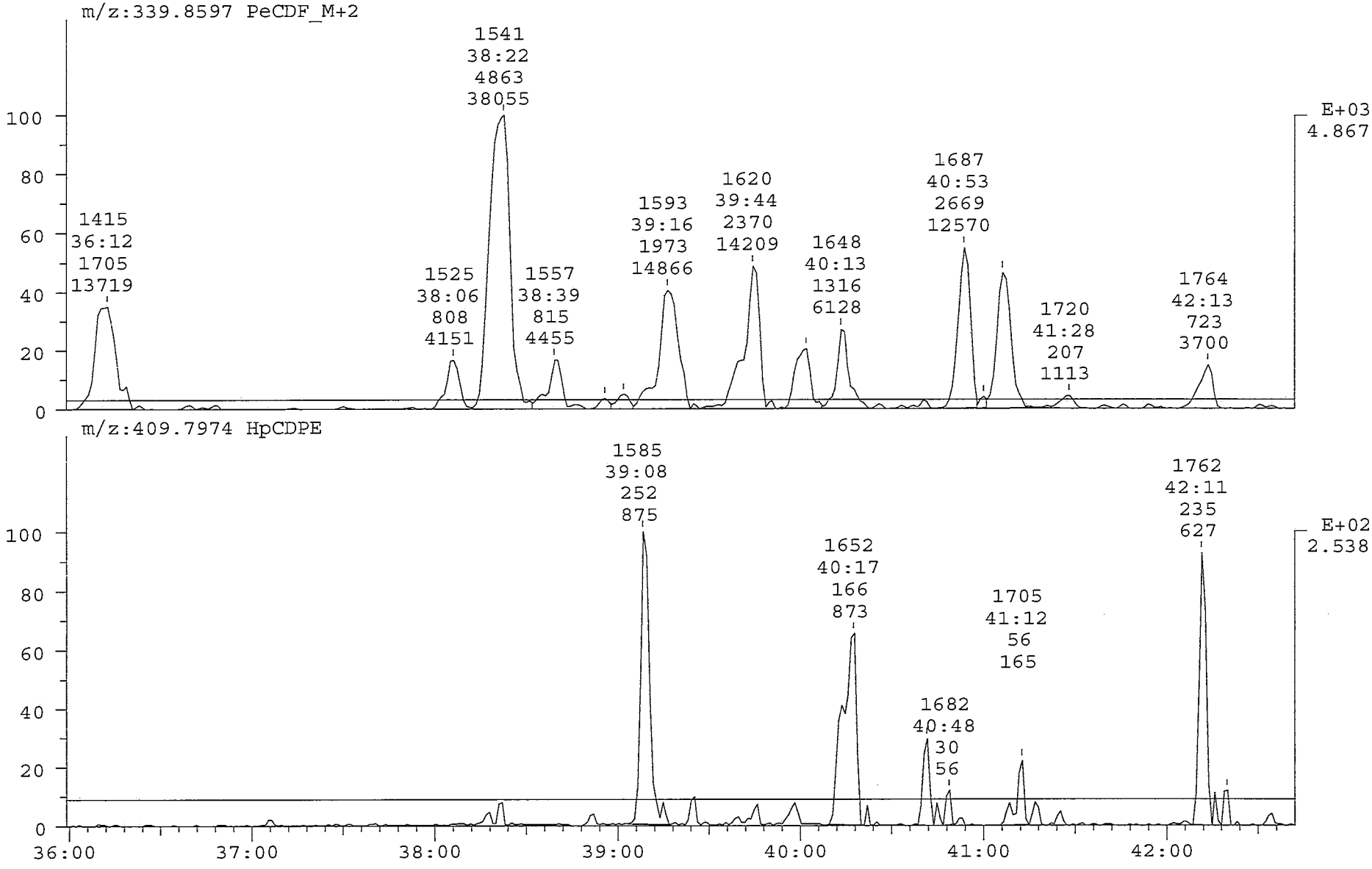
CHRO: d1tm8111 17-Aug-16 Elapse: 40:26 1660
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1593 > 1728 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



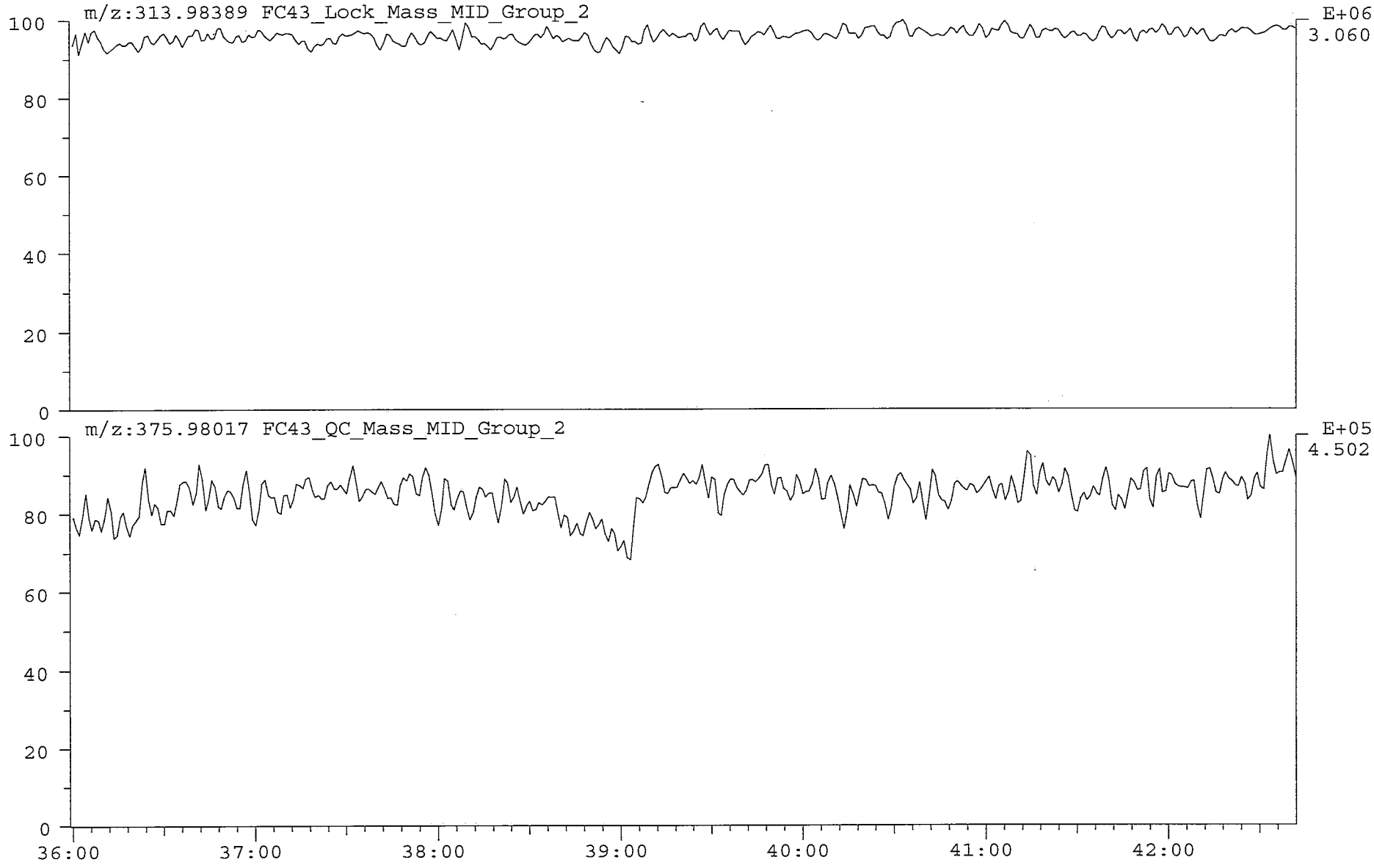
CHRO: d1tm8111 17-Aug-16 Elapse: 54:53 2495
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1602 > 1645 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : -2, 5.0
Disp: Height Area



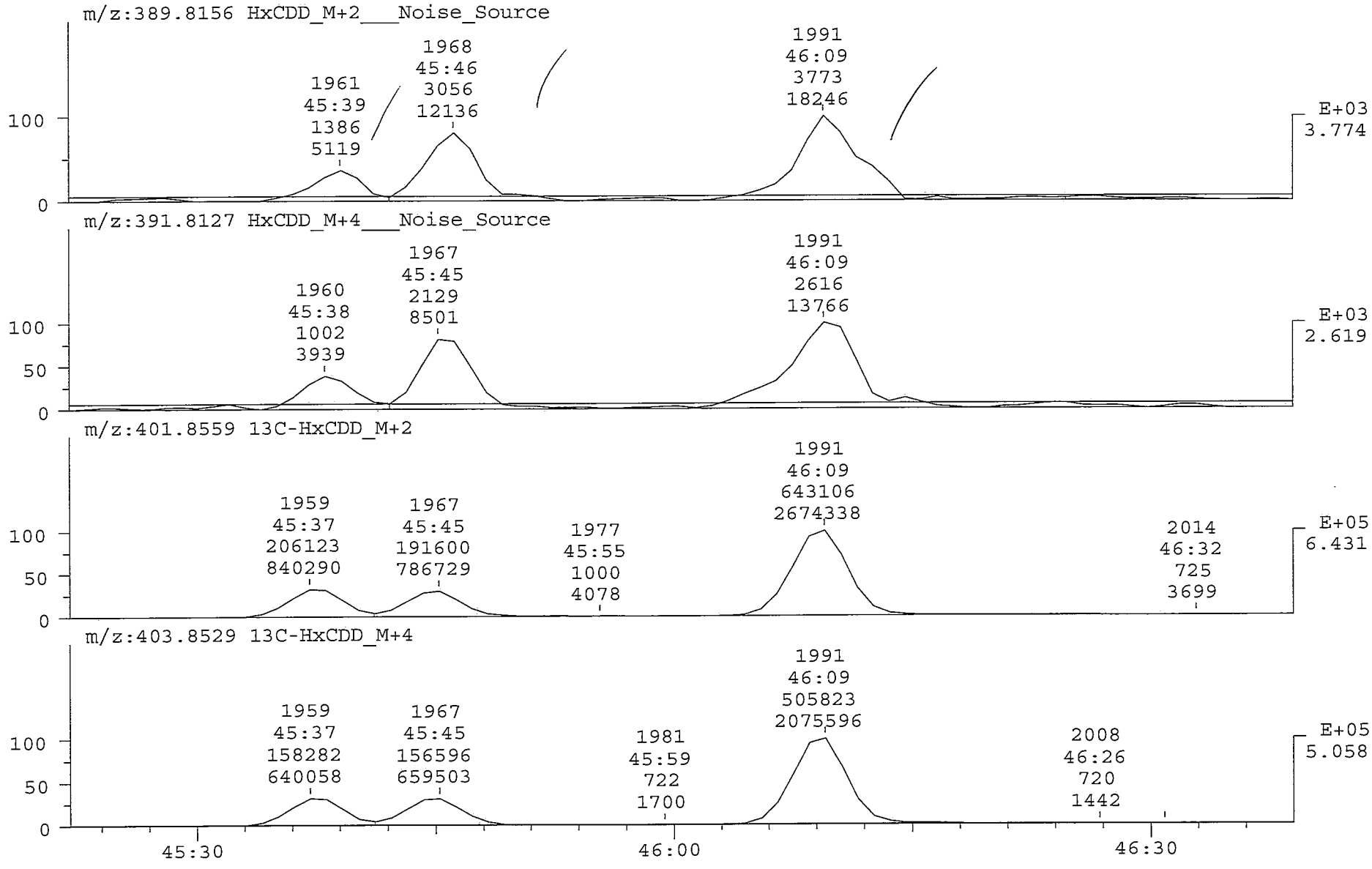
CHRO: d1tm8111 17-Aug-16 Elapse: 40:26 1660
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



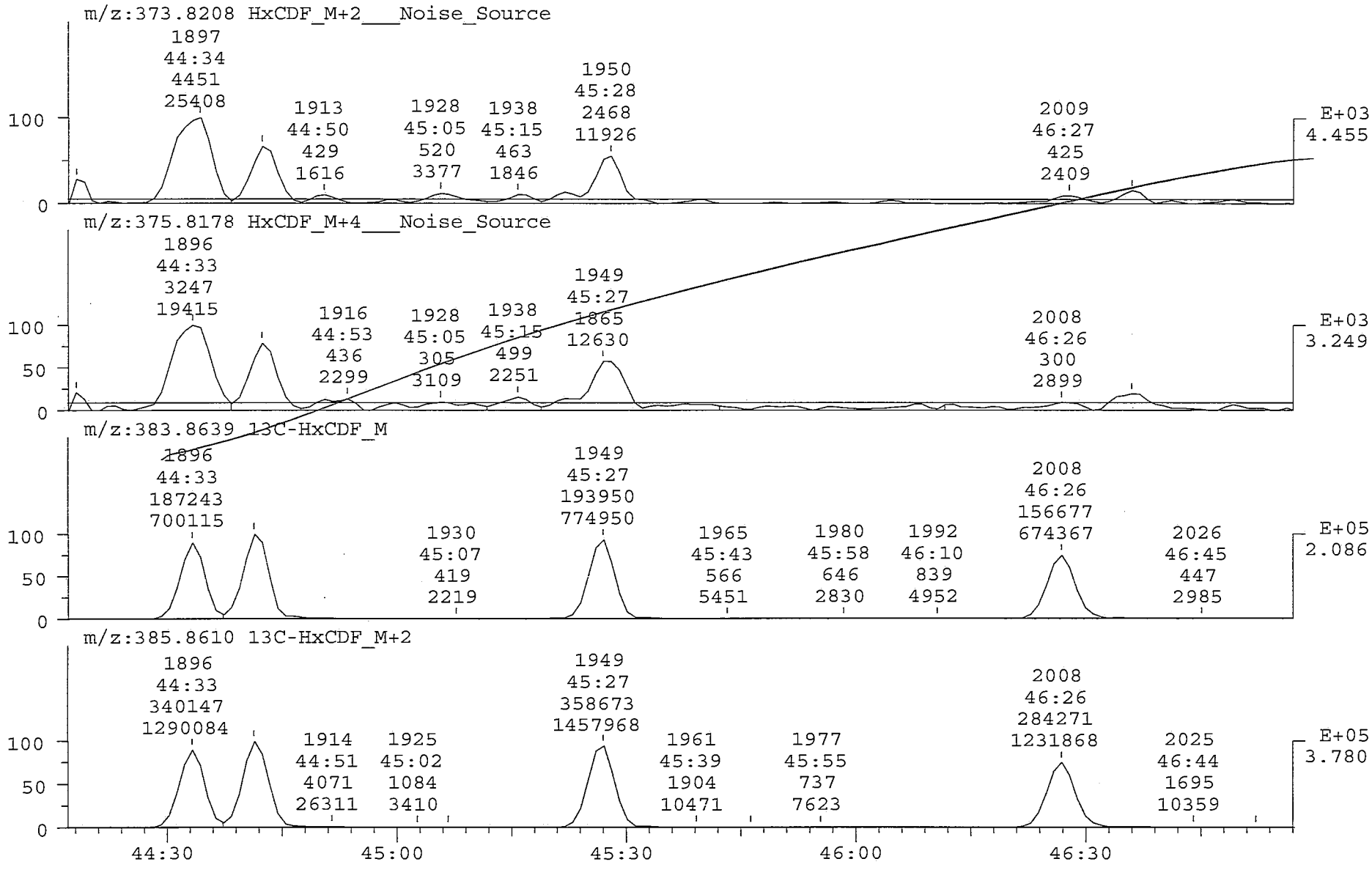
```
CHRO:  d1tm8111                                17-Aug-16  Elapse:  40:26      1660
Samp:  WO=m81111ac Meth=9Ao Dil=1                         Start :  13:31:33   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.1g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



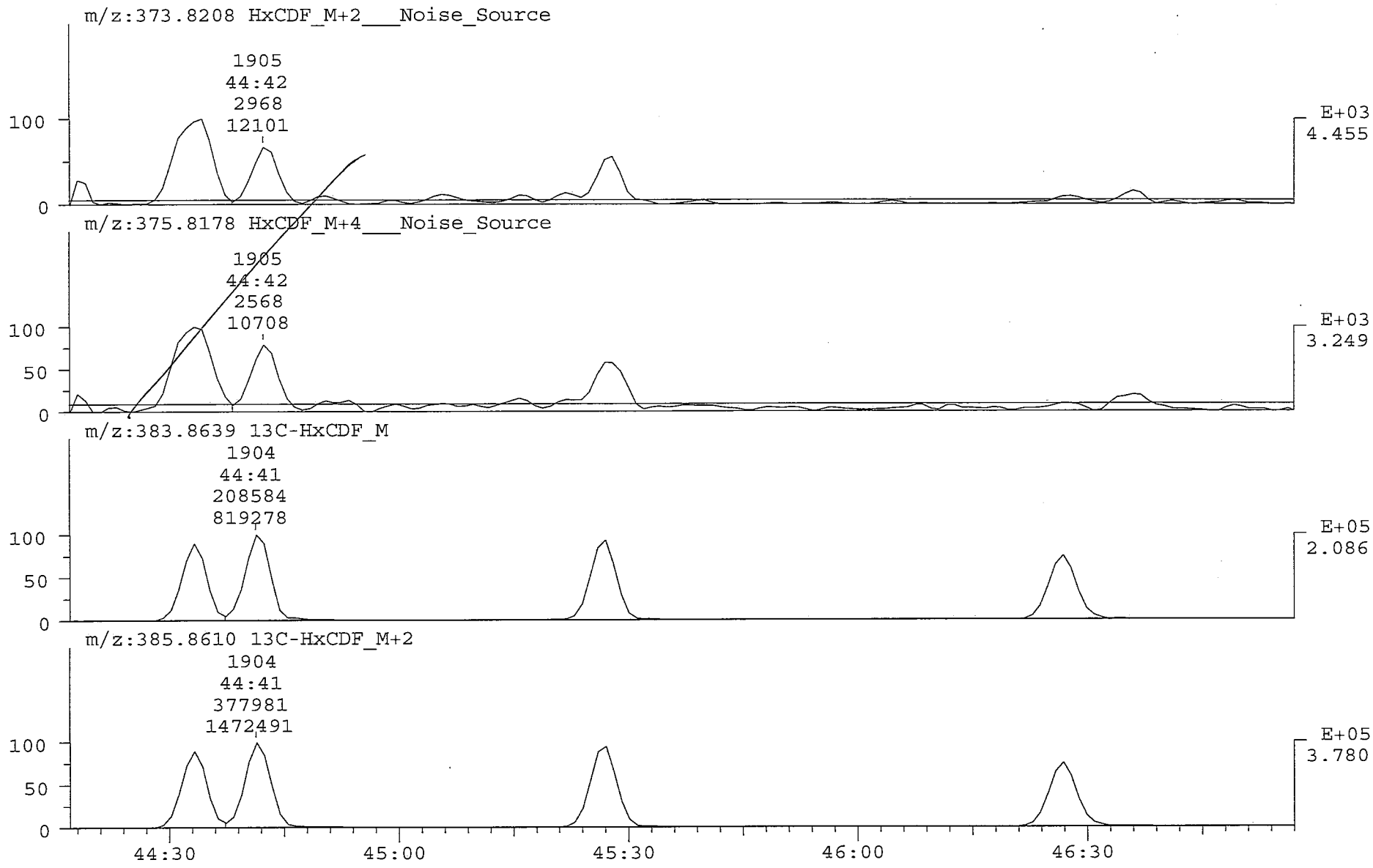
CHRO: d1tm8111 17-Aug-16 Elapse: 46:00 1982
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1944 > 2020 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



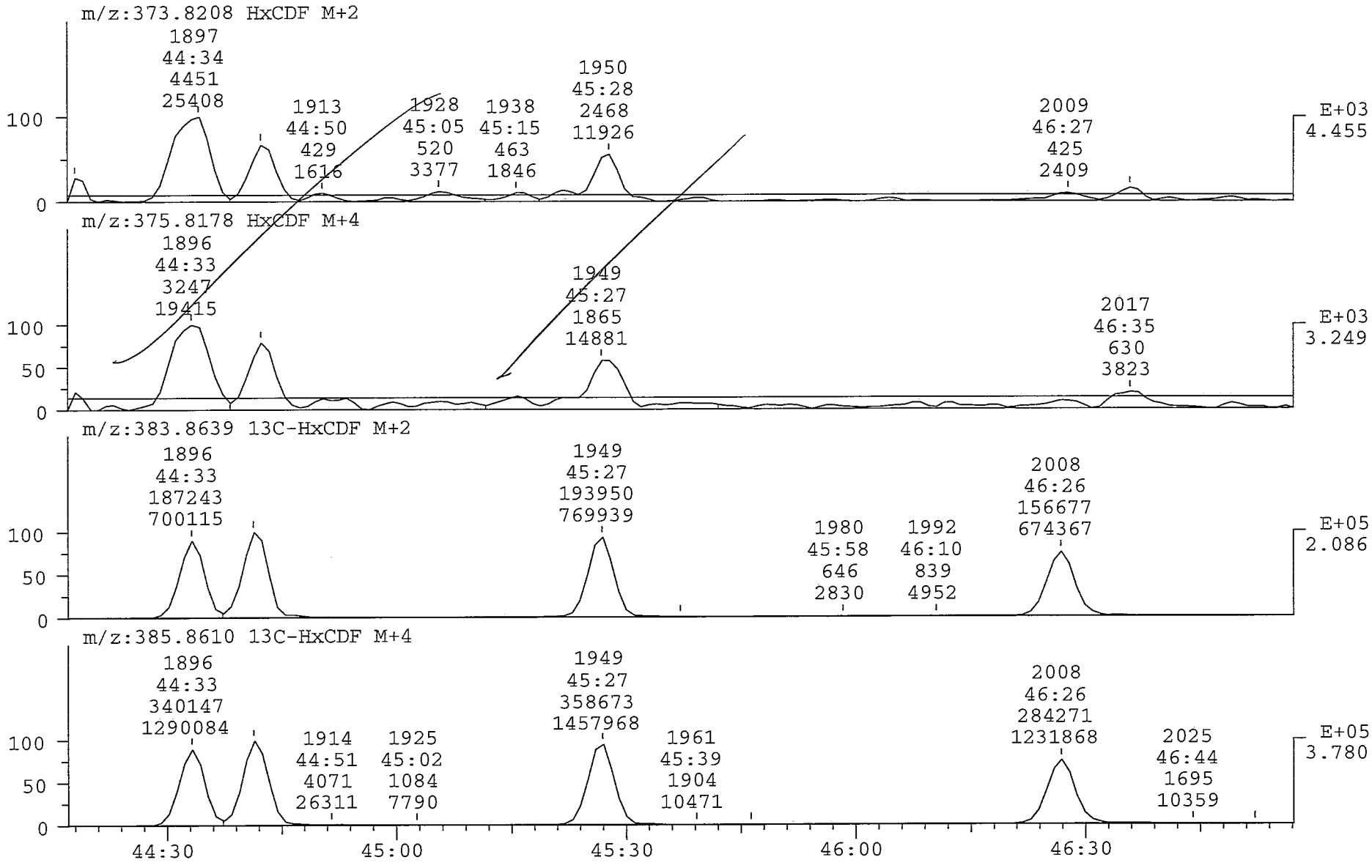
CHRO: d1tm8111 17-Aug-16 Elapse: 45:37 1959
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1880 > 2038 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



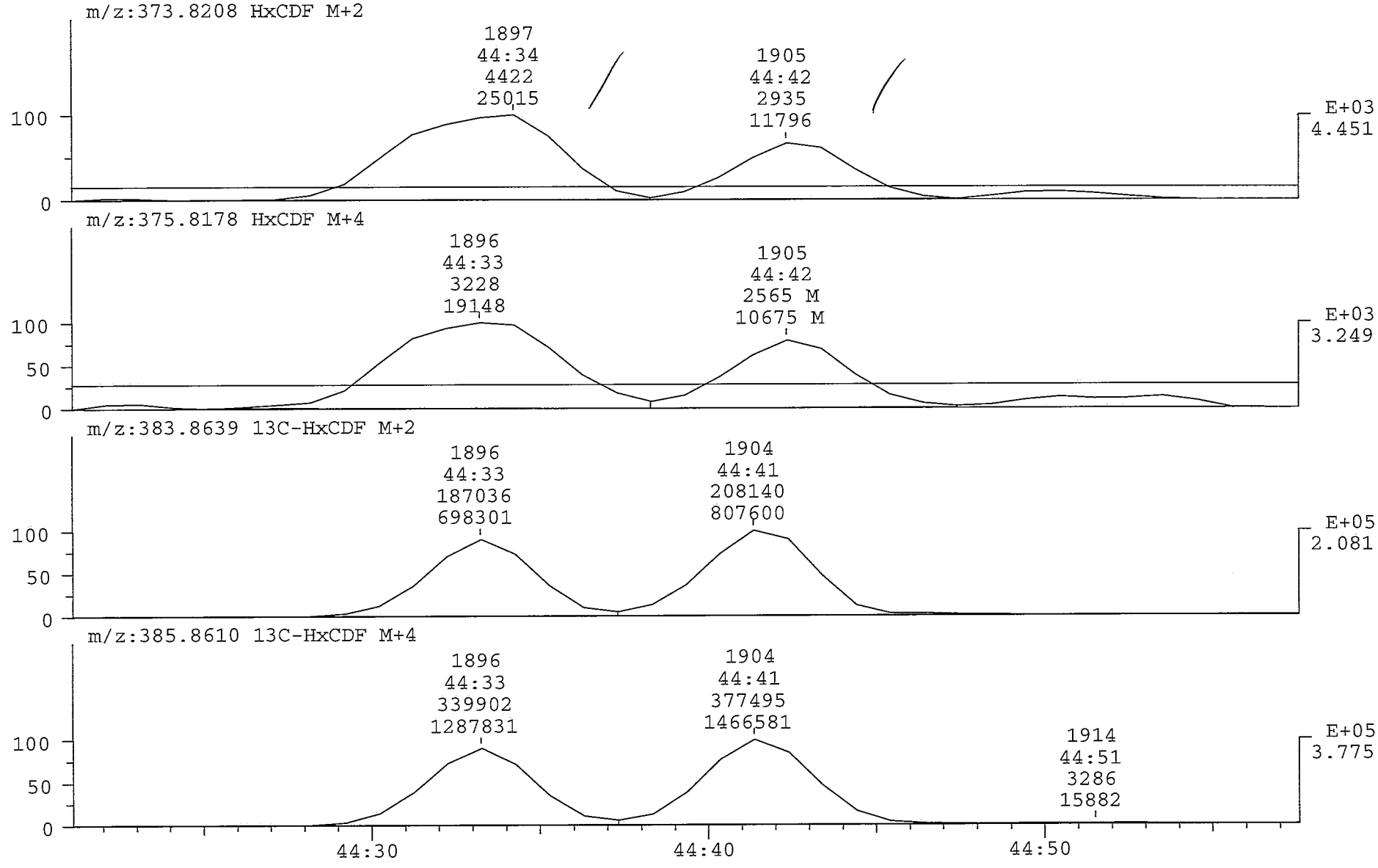
CHRO: d1tm8111 17-Aug-16 Elapse: 44:45 1908
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1904 > 1912 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



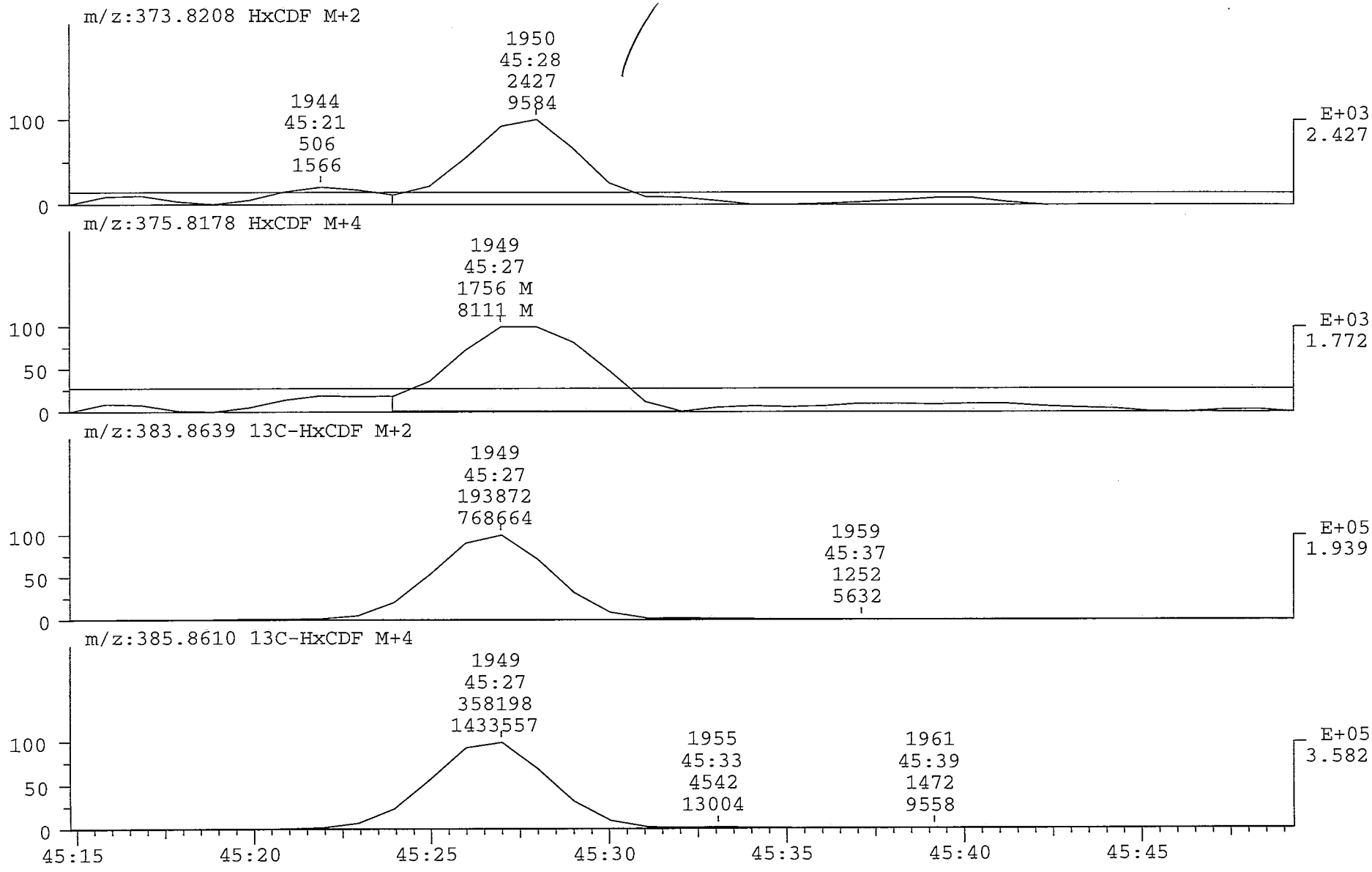
CHRO: d1tm8111 17-Aug-16 Elapse: 54:53 2495
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1880 > 2038 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



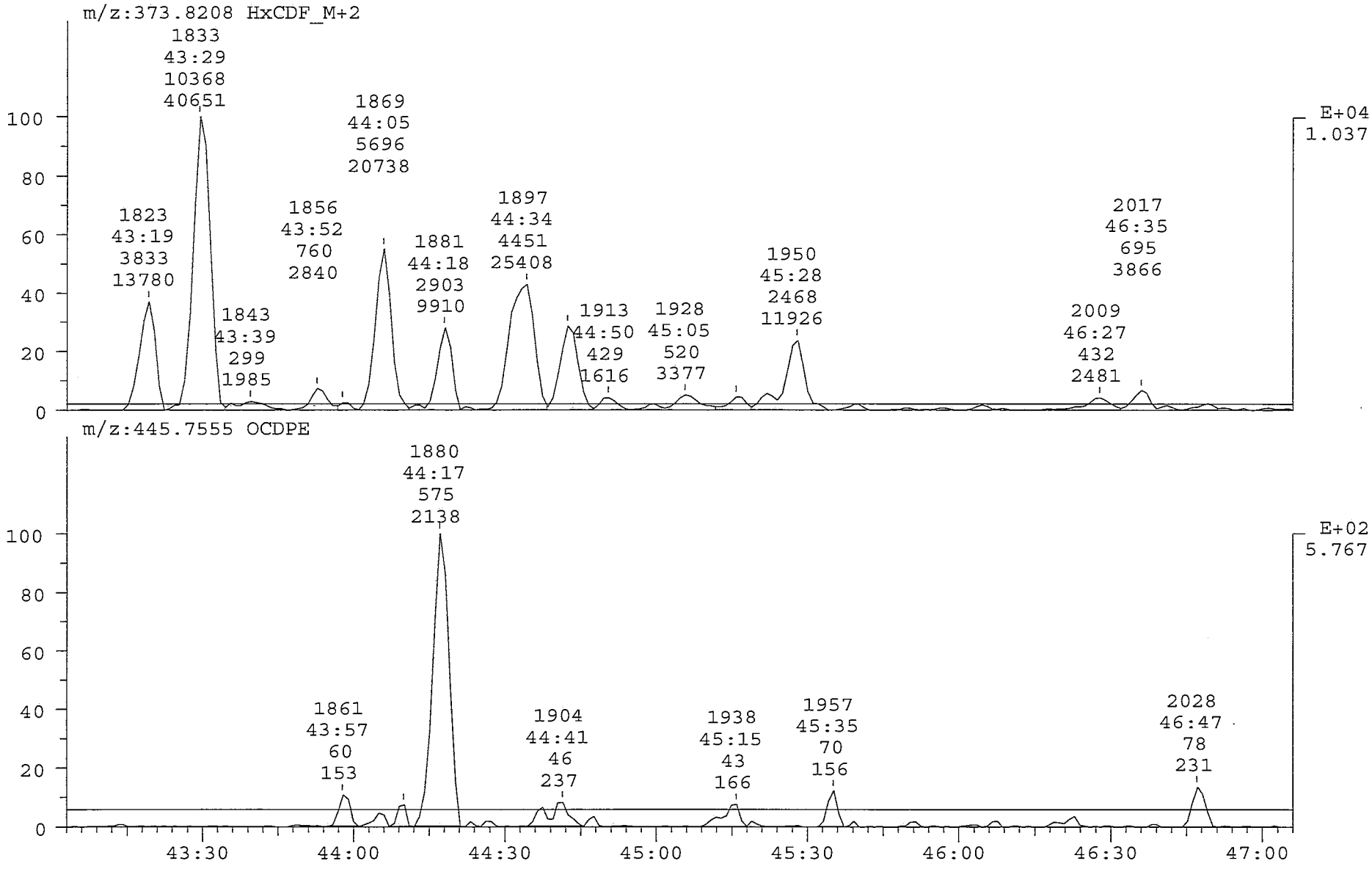
CHRO: d1tm8111 17-Aug-16 Elapse: 54:53 2495
Samp: WO=m8111lac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1884 > 1920 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



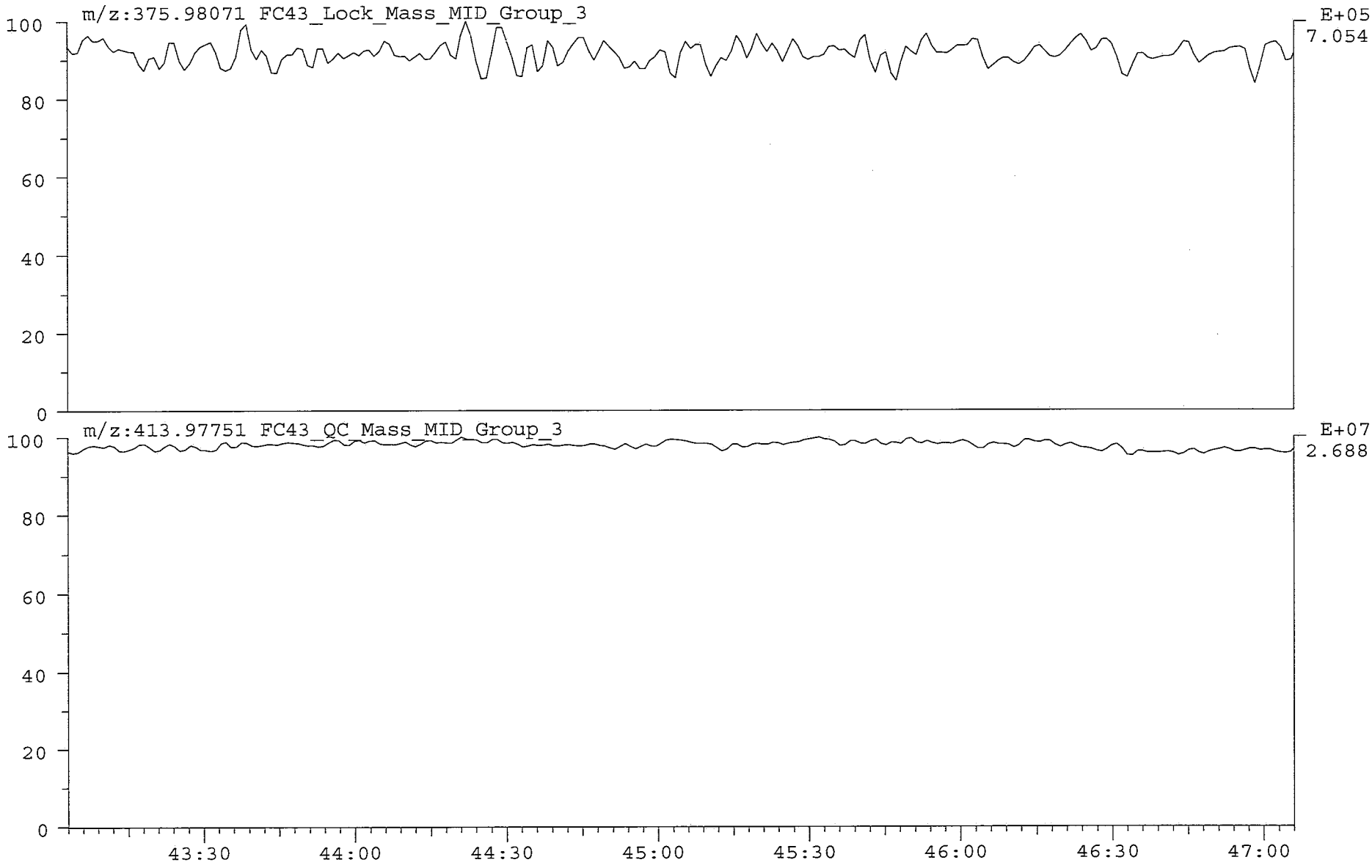
CHRO: d1tm8111 17-Aug-16 Elapse: 54:53 2495
Samp: WO=m8111lac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1937 > 1971 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : -2, 8.0
Disp: Height Area



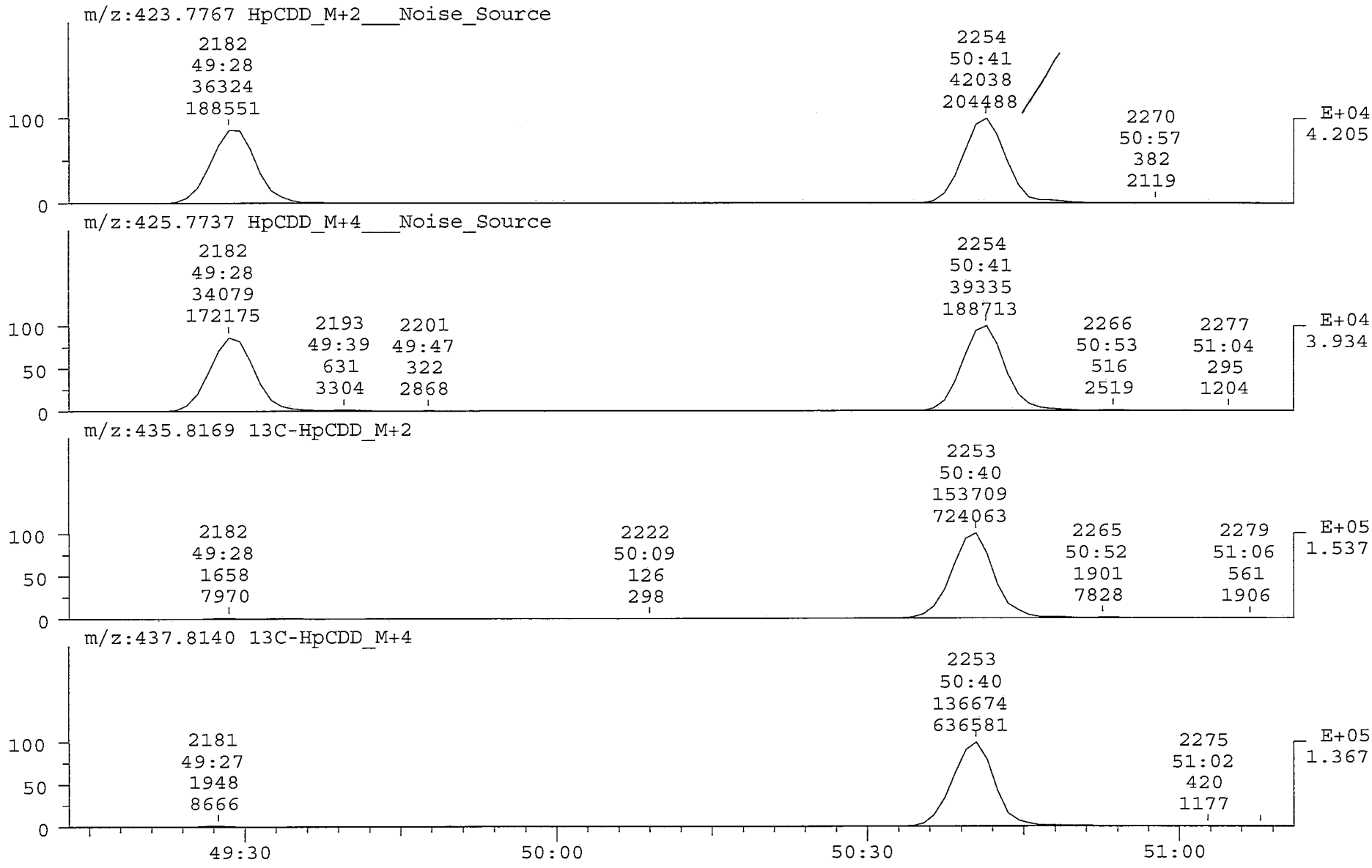
CHRO: d1tm8111 17-Aug-16 Elapse: 44:45 1908
Samp: WO=m8111lac Meth=9Ao Di1=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1807 > 2047 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



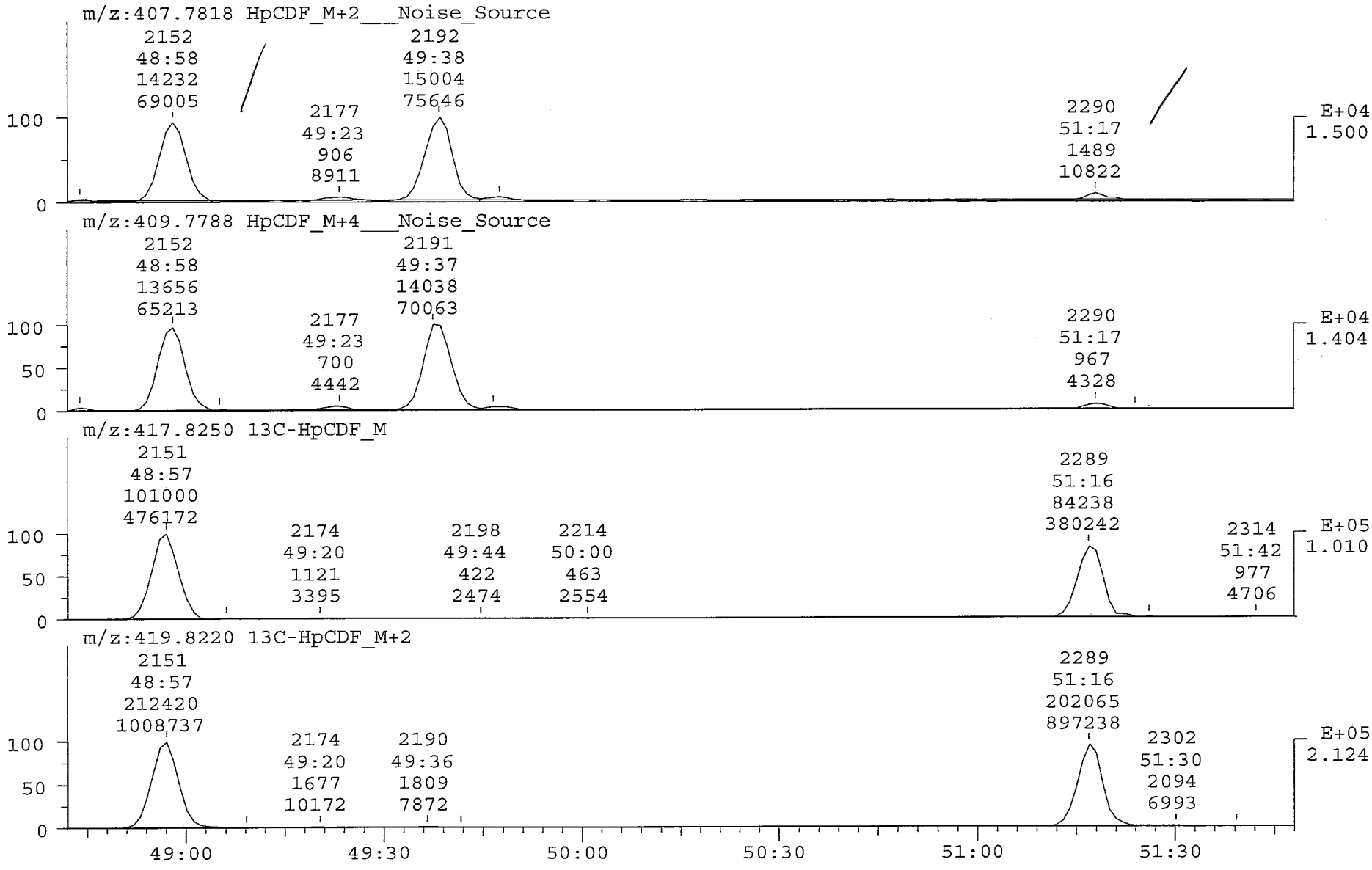
```
CHRO:  d1tm8111                                17-Aug-16  Elapse:  44:45      1908
Samp:  WO=m8111lac Meth=9Ao Dil=1                         Start :  13:31:33   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.1g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1807 > 2047          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



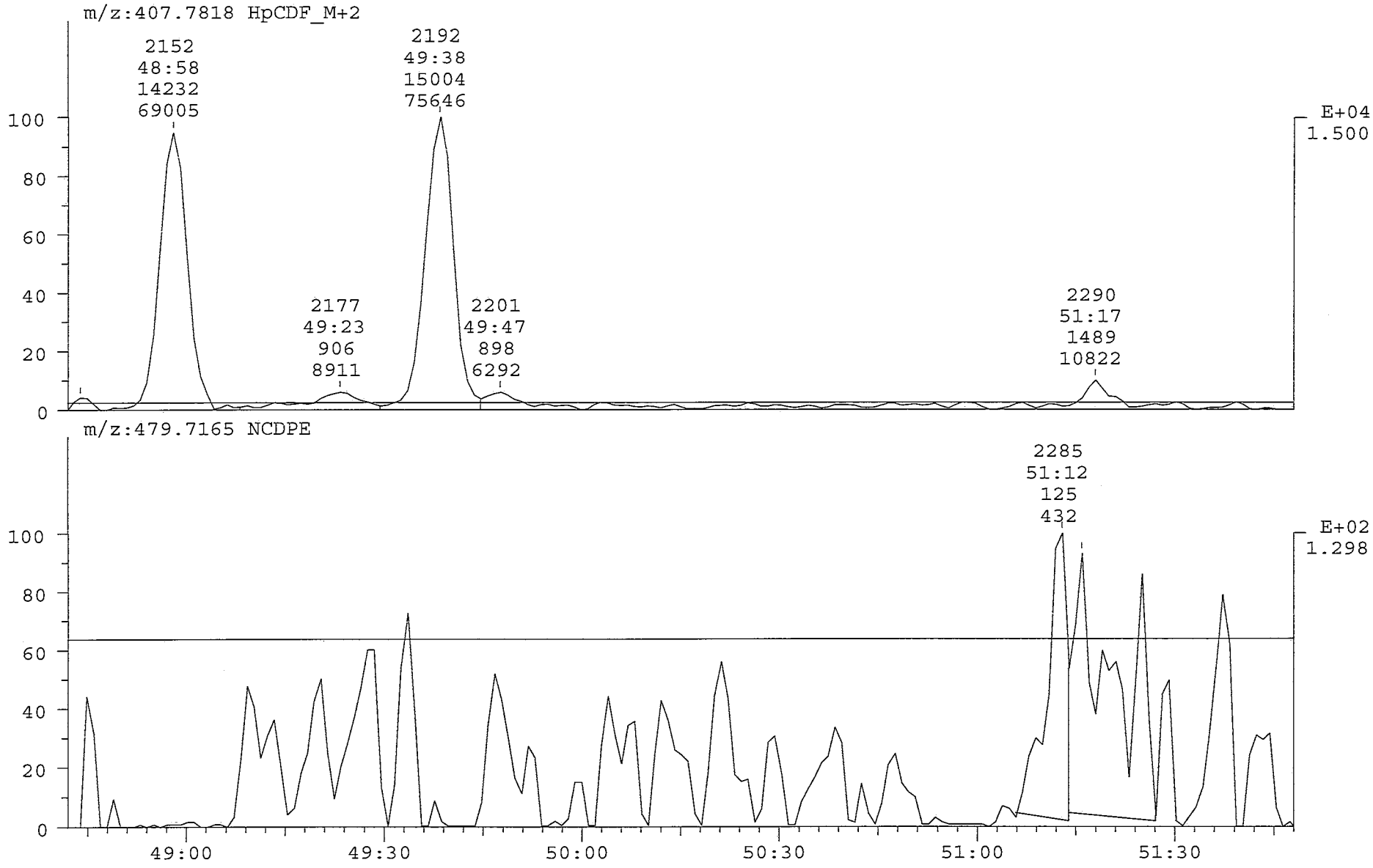
CHRO: d1tm8111 17-Aug-16 Elapse: 44:45 1908
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2167 > 2283 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



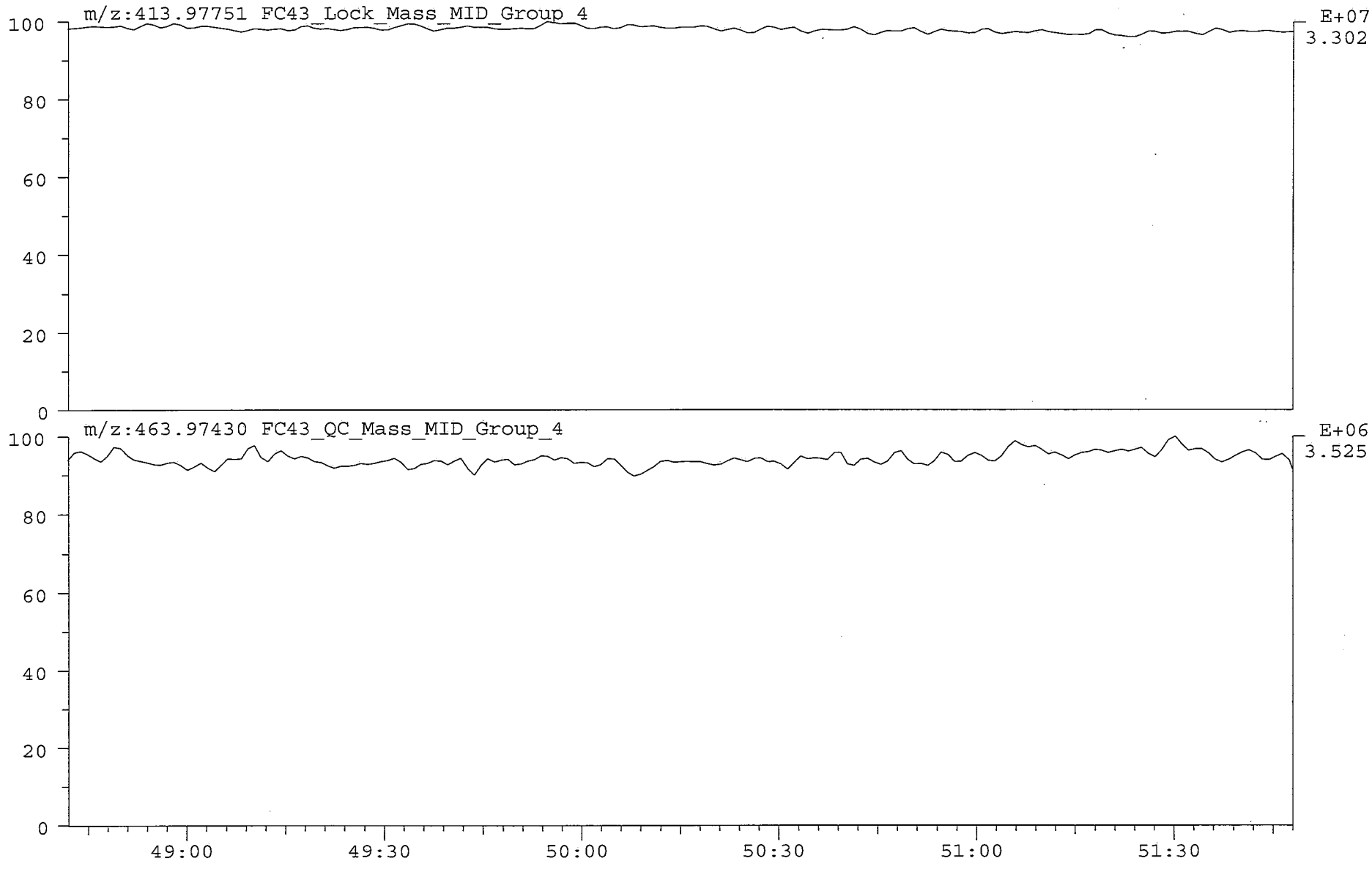
CHRO: d1tm8111 17-Aug-16 Elapse: 50:15 2228
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2136 > 2320 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



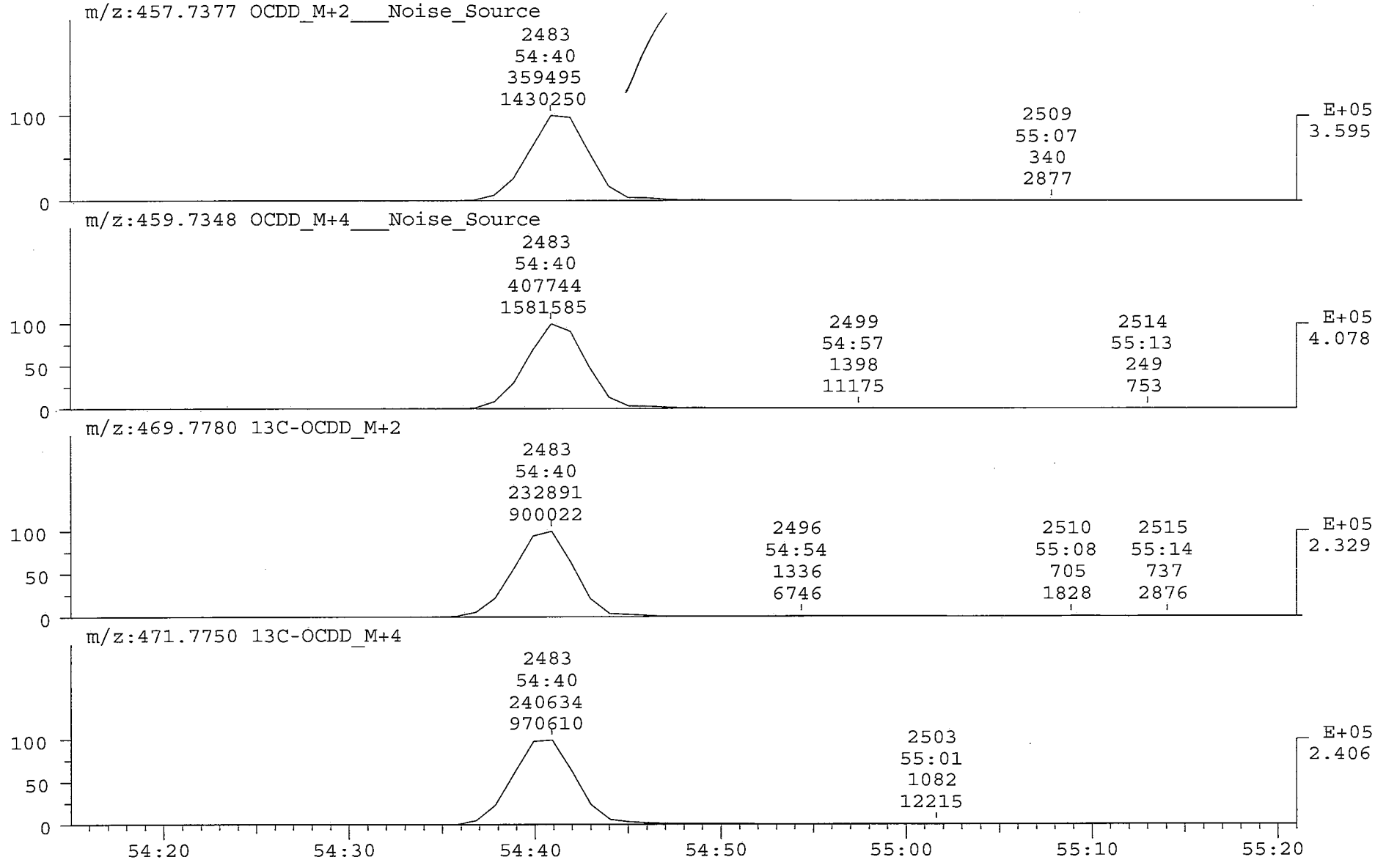
```
CHRO:  d1tm8111                                17-Aug-16  Elapse:  50:15      2228
Samp:  WO=m8111lac Meth=9Ao Dil=1                         Start :  13:31:33   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.1g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2136 > 2320          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



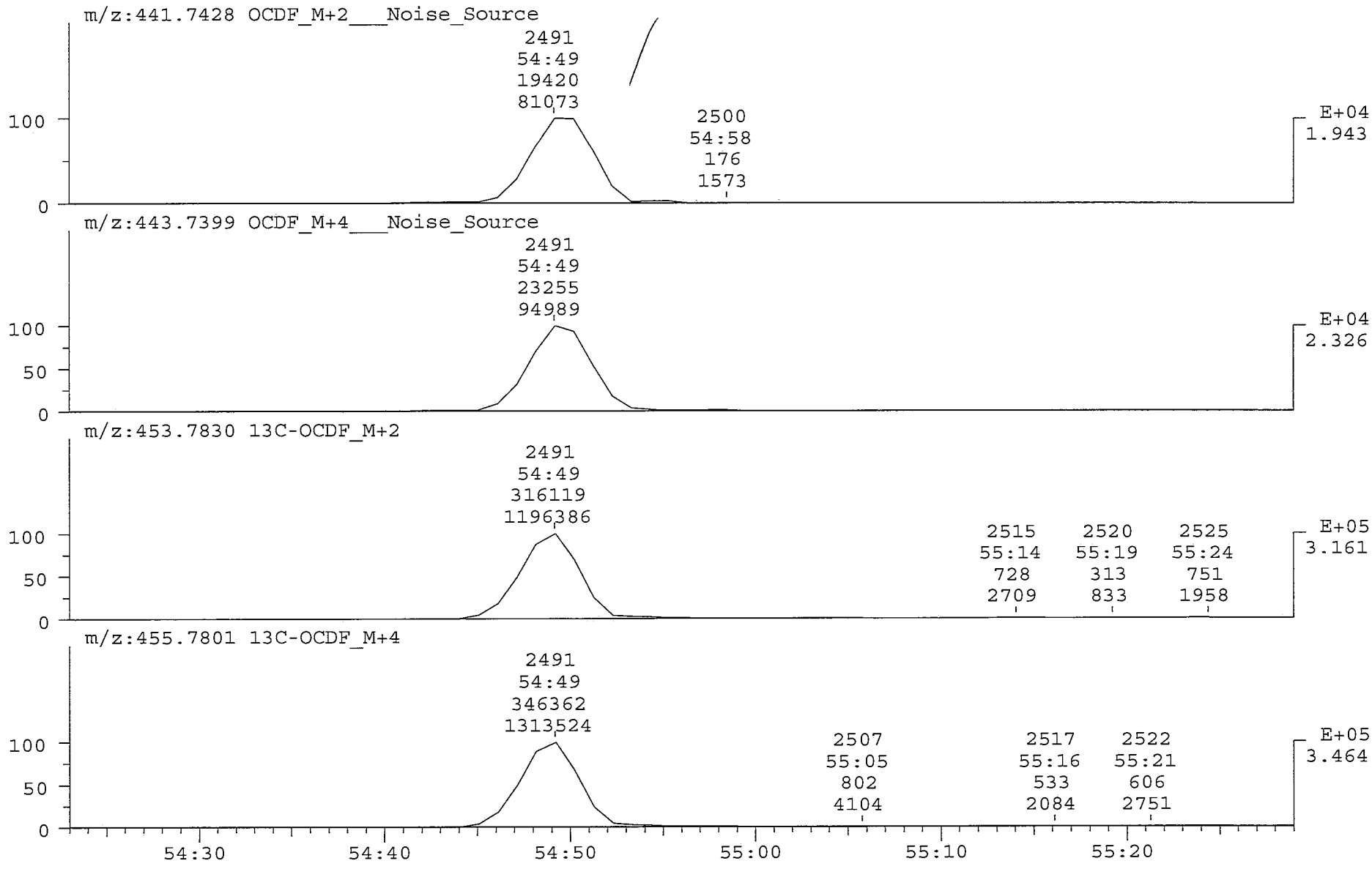
```
CHRO:  d1tm8111                              17-Aug-16  Elapse:  50:15      2228
Samp:  WO=m81111ac Meth=9Ao Dil=1                       Start :  13:31:33   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                              Study :  6217014 (10.1g)
Oper:  KLR                                              Inlet :  LC
Peak:  100.00 ppm     Label wndw:   2136 > 2320         Masses:  303 > 514
Area:  5, 0.50, 15    Baseline  :   100, 3              Label :  0, 0.0
Disp:  Height  Area
```



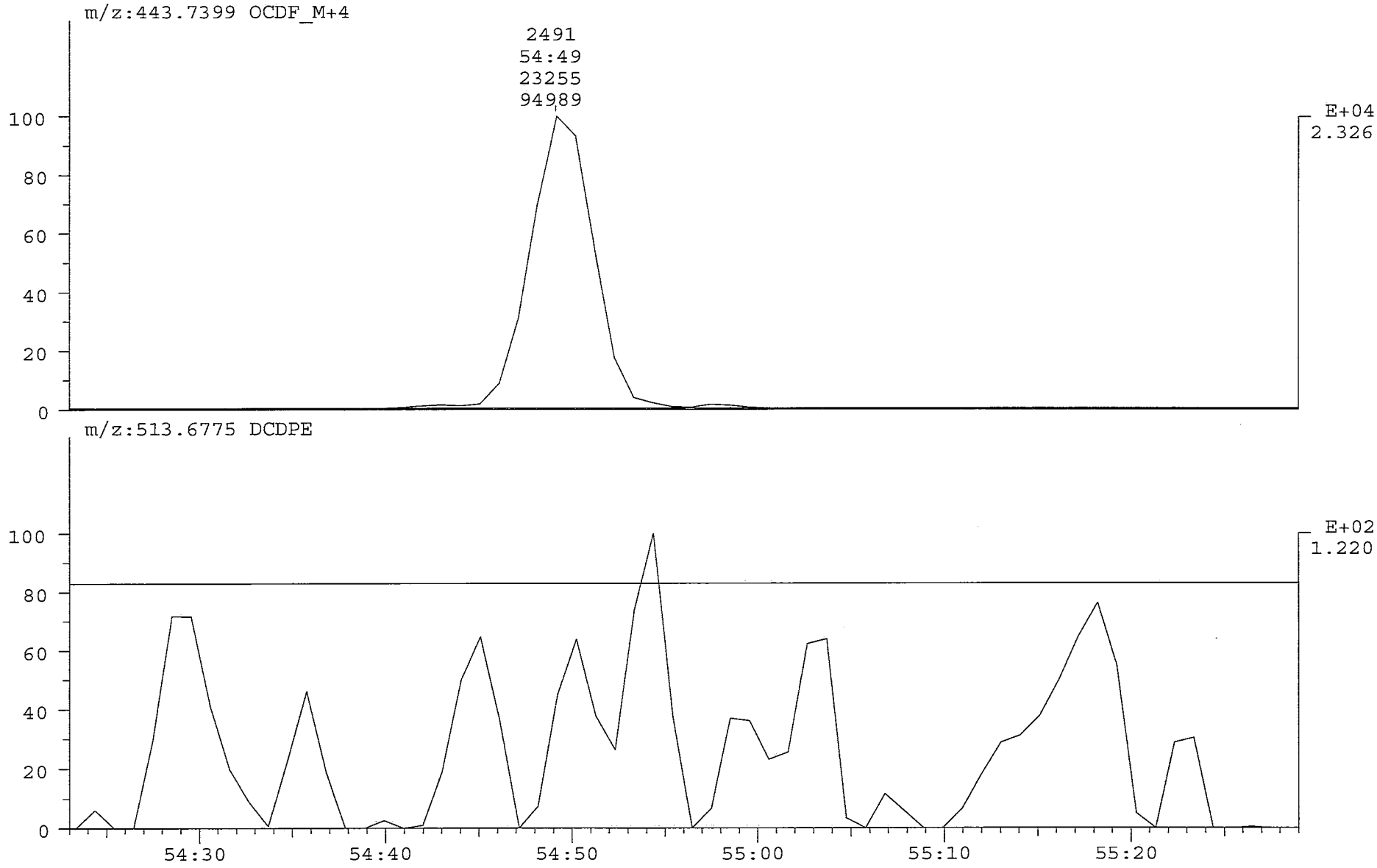
```
CHRO:  d1tm8111                                17-Aug-16  Elapse:  54:45      2487
Samp:  WO=m81111ac Meth=9Ao Dil=1                         Start :  13:31:33   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.1g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2458 > 2522          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



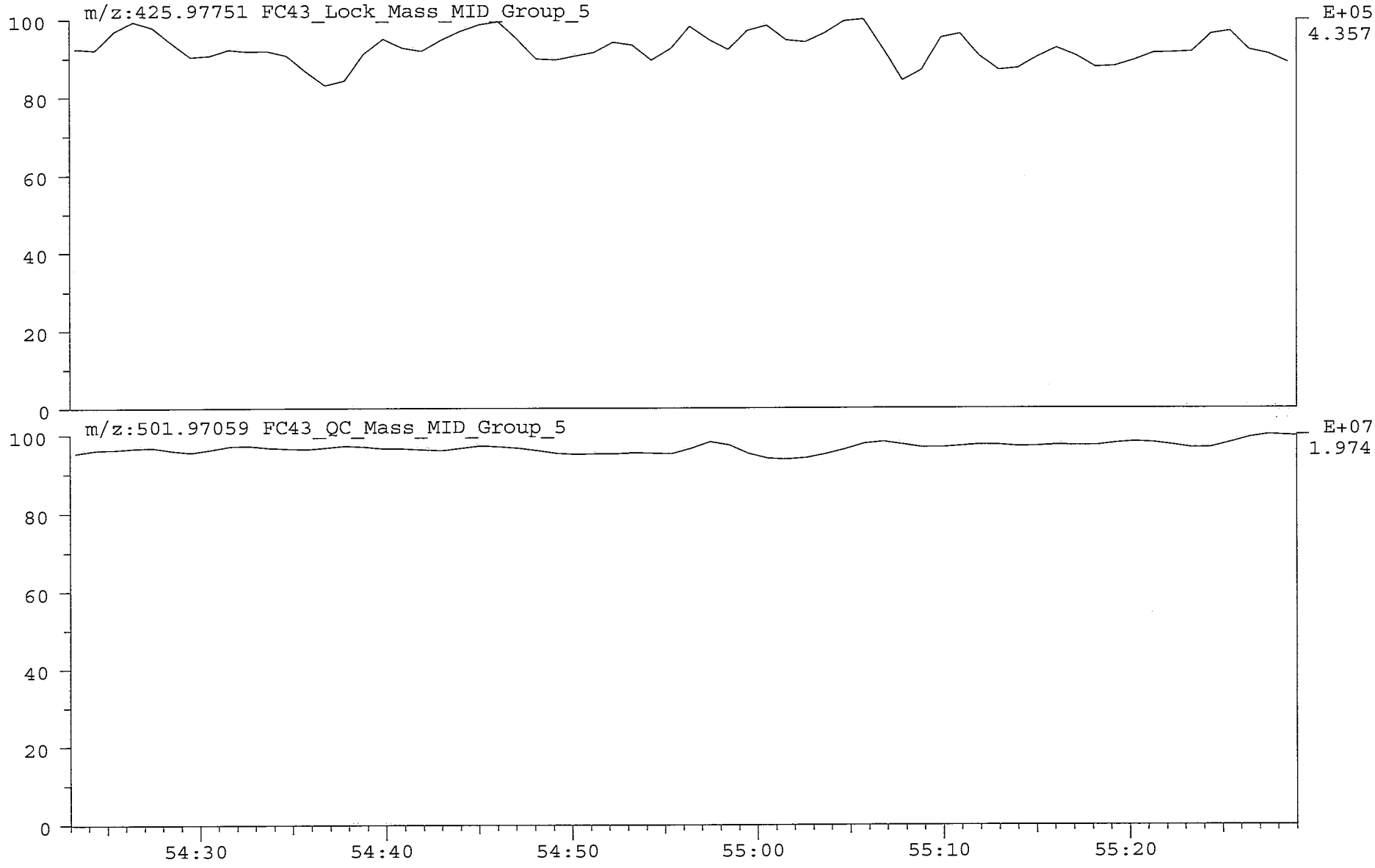
CHRO: d1tm8111 17-Aug-16 Elapse: 54:53 2495
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2466 > 2529 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d1tm8111                                17-Aug-16  Elapse:  54:53      2495
Samp:  WO=m8111lac Meth=9Ao Dil=1                         Start :  13:31:33   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.1g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2466 > 2529          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d1tm8111 17-Aug-16 Elapse: 54:53 2495
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2466 > 2529 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Wed Aug 17 13:36:01 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 17-Aug-16 13:36:00

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160817125951

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

```
 375.9802     20  1        7
 383.8639      5  1       29
 385.8610      5  1       29
 389.8158      1  1      146
 391.8127      1  1      146
 401.8559      5  1       29
 403.8529      5  1       29
 413.9770 c   20  1        7
 413.9770     20  1        7
 445.7555      1  1      146
Window # 4
     mass F  int  gr  time (ms)
 407.7817      1  1      146
 409.7788      1  1      146
 413.9770 l   20  1        7
 413.9770     20  1        7
 417.8250      5  1       29
 419.8220      5  1       29
 423.7767      1  1      146
 425.7737      1  1      146
 435.8169      5  1       29
 437.8140      5  1       29
 463.9738 c   20  1        7
 463.9738     20  1        7
 479.7165      1  1      146
Window # 5
     mass F  int  gr  time (ms)
 425.9770 l   20  1        7
 425.9770     20  1        7
 441.7428      1  1      146
 443.7399      1  1      146
 453.7830      5  1       29
 455.7801      5  1       29
 457.7377      1  1      146
 459.7348      1  1      146
 469.7780      5  1       29
 471.7750      5  1       29
 501.9706 c   20  1        7
 501.9706     20  1        7
 513.6775      1  1      146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          309.9834
 BQUAD            2.4000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE       18.0000  ECORR           1.0008   ECURR            1.0000
 EDAC        7969177.0000  EDACG           0.9997   EDACZ         2585.8226
 ELEN           -45.0000   EMULT        1802.0000   ENS            210.0000
 ENSBR            2.4000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           172.0000   EXSBR            2.5000
 FDMA       18000000.0000  FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            6.4000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0469	FVSRC	0.0394
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	642.0000
LENS_SYM	7.2500	LM	375.8364	LMII	500.0000
LMASS	309.9834	LKM	425.9770	MASS	309.9834
MDAC	3563488.4337	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2650.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-2.0000	RECURR	0.8996	RELEN	0.0000
RES	13298.9835	RPUSHER	-1.9414	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	684.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0994	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	309.9834	XLENS_POT	916.0000
XLENS_SYM	24.3000	YLENS_POT	856.0000	YLENS_SYM	15.0000

```
Source Gauge:         2.6e-005 mbar
Analyzer Penning:     9.5e-008 mbar
Pirani Analyse:       4.4e-003 mbar
Pirani Source:        4.0e-002 mbar
Pirani Inlet System: 4.7e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11763.
MID Time Window 2: Resolution is 12294.
MID Time Window 3: Resolution is 11926.
MID Time Window 4: Resolution is 12467.
MID Time Window 5: Resolution is 13298.

Amplifier Offset: 87.


*** File closed Wed Aug 17 14:33:14 2016
  ***
```

QUAN: d1tm8111.q0 Entries: 270

Data file(s) used
File: d1tm8111 17-Aug-16
Samp: WO=m8111lac Meth=9Ao Dil=1 Start : 13:31:33 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (1
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:33	739.	130.	32:24	32:35	10.	1	1.0	ABV
321.8775	32:31	915.	179.	32:19	32:33	14.	1	1.0	ABV
319.8805	31:24	254.	124.	31:22	31:26	10.	2	5.0	ABB
319.8805	32:21	402.	71.	32:13	32:23	10.	2	5.0	ABB
319.8805	32:33	739.	130.	32:24	32:35	10.	2	5.0	ABV
319.8805	32:38	640.	178.	32:35	32:43	10.	2	5.0	AVB
319.8805	32:49	274.	67.	32:43	32:52	10.	2	5.0	ABB
319.8805	33:55	511.	96.	33:49	34:04	10.	2	5.0	ABB
321.8775	31:22	238.	86.	31:19	31:25	14.	2	5.0	ABB
321.8775	32:10	535.	107.	32:07	32:19	14.	2	5.0	ABB
321.8775	32:31	915.	179.	32:19	32:33	14.	2	5.0	ABV
321.8775	32:35	661.	159.	32:33	32:42	14.	2	5.0	AVV
321.8775	32:45	624.	185.	32:42	32:48	14.	2	5.0	AVV
321.8775	32:54	382.	111.	32:48	32:56	14.	2	5.0	AVB
321.8775	33:56	717.	108.	33:49	34:04	14.	2	5.0	ABB
331.9202	32:14	1929190.	195792.	31:58	32:29	85.	2	5.0	ABV
331.9202	32:31	1793.	672.	32:29	32:33	85.	2	5.0	AVV
331.9202	32:46	673773.	66314.	32:33	33:02	85.	2	5.0	AVV
331.9202	33:05	1505.	606.	33:03	33:07	85.	2	5.0	AVB
331.9202	33:14	3141.	541.	33:07	33:16	85.	2	5.0	ABB
331.9202	33:24	3103.	693.	33:18	33:28	85.	2	5.0	ABV
331.9202	33:30	3488.	505.	33:28	33:46	85.	2	5.0	AVB
333.9171	32:14	2397909.	241089.	31:58	32:29	97.	2	5.0	ABV
333.9171	32:45	848778.	80739.	32:30	33:01	97.	2	5.0	AVV
333.9171	33:09	4147.	803.	33:02	33:12	97.	2	5.0	ABB
303.8864	30:42	30261.	2533.	30:30	30:57	42.	1	1.0	ABV
305.8834	30:42	34915.	3044.	30:29	30:57	57.	1	1.0	ABV
303.8864	29:30	10237.	1291.	29:20	29:37	42.	2	5.0	ABV
303.8864	29:39	867.	351.	29:37	29:41	42.	2	5.0	AVB
303.8864	30:12	9148.	1051.	29:57	30:21	42.	2	5.0	AVB
303.8864	30:42	30261.	2533.	30:30	30:57	42.	2	5.0	ABV
303.8864	31:57	20905.	2356.	31:45	32:13	42.	2	5.0	ABV
305.8834	29:29	15810.	1728.	29:20	29:43	57.	2	5.0	ABB
305.8834	30:08	7746.	1106.	29:54	30:11	57.	2	5.0	ABV
305.8834	30:12	5158.	1086.	30:11	30:21	57.	2	5.0	AVB
305.8834	30:42	34915.	3044.	30:29	30:57	57.	2	5.0	ABV
305.8834	31:59	27683.	2609.	31:47	32:14	57.	2	5.0	ABB
315.9261	29:29	8903.	1204.	29:16	29:41	84.	2	5.0	ABB
315.9261	30:38	1127208.	115218.	30:24	30:53	84.	2	5.0	ABV
315.9261	30:58	3192.	841.	30:57	31:04	84.	2	5.0	AVB
315.9261	31:24	5311.	711.	31:17	31:38	84.	2	5.0	ABB
315.9261	32:18	1548.	521.	32:16	32:21	84.	2	5.0	ABB
317.9230	29:26	4657.	659.	29:21	29:31	43.	2	5.0	ABB
317.9230	30:38	1409096.	145713.	30:22	30:53	43.	2	5.0	ABV
317.9230	31:00	4780.	1019.	30:57	31:03	43.	2	5.0	AVV
317.9230	31:05	3790.	787.	31:03	31:11	43.	2	5.0	AVV
317.9230	31:14	964.	367.	31:11	31:16	43.	2	5.0	AVV
317.9230	31:18	921.	390.	31:16	31:19	43.	2	5.0	AVV
317.9230	31:21	1135.	385.	31:19	31:23	43.	2	5.0	AVV
317.9230	31:25	2030.	626.	31:23	31:28	43.	2	5.0	AVV

317.9230	31:30	1163.	517.	31:28	31:32	43.	2	5.0	AVB
317.9230	31:34	1063.	336.	31:32	31:39	43.	2	5.0	ABB
317.9230	32:04	1117.	247.	31:58	32:08	43.	2	5.0	ABB
317.9230	32:11	1216.	448.	32:08	32:13	43.	2	5.0	ABV
317.9230	32:16	2725.	930.	32:13	32:18	43.	2	5.0	AVB
317.9230	32:20	1115.	603.	32:18	32:22	43.	2	5.0	ABB
355.8368	41:24	3458.	891.	41:18	41:30	24.	1	1.0	ABB
357.8337	41:24	4147.	616.	41:12	41:29	29.	1	1.0	ABB
355.8368	40:59	2399.	364.	40:49	41:04	24.	2	5.0	ABV
355.8368	41:07	993.	276.	41:04	41:12	24.	2	5.0	AVB
355.8368	41:24	3458.	891.	41:18	41:30	24.	2	5.0	ABB
355.8368	41:37	1151.	248.	41:31	41:43	24.	2	5.0	ABB
355.8368	42:02	1631.	393.	41:56	42:10	24.	2	5.0	ABB
357.8337	40:59	818.	199.	40:54	41:02	29.	2	5.0	ABB
357.8337	41:24	4147.	616.	41:12	41:29	29.	2	5.0	ABB
357.8337	41:37	859.	198.	41:34	41:41	29.	2	5.0	ABB
357.8337	41:51	1925.	373.	41:45	41:57	29.	2	5.0	ABV
357.8337	42:03	1216.	327.	41:57	42:06	29.	2	5.0	AVB
367.8765	40:58	1207.	505.	40:55	41:00	19.	2	5.0	ABB
367.8765	41:22	820616.	198755.	41:14	41:35	19.	2	5.0	ABB
367.8765	41:37	3362.	889.	41:35	41:42	19.	2	5.0	ABV
367.8765	41:45	1797.	586.	41:42	41:47	19.	2	5.0	AVV
367.8765	41:49	2405.	636.	41:47	41:55	19.	2	5.0	AVV
367.8765	41:58	1442.	437.	41:55	42:00	19.	2	5.0	AVV
367.8765	42:02	1570.	393.	42:00	42:07	19.	2	5.0	AVB
369.8734	41:22	529048.	127059.	41:15	41:31	23.	2	5.0	ABV
369.8734	41:33	3389.	976.	41:31	41:36	23.	2	5.0	AVV
369.8734	41:38	1346.	447.	41:36	41:41	23.	2	5.0	AVB
369.8734	41:43	504.	272.	41:41	41:44	23.	2	5.0	ABB
369.8734	41:55	1851.	573.	41:51	41:58	23.	2	5.0	ABV
369.8734	42:00	1804.	592.	41:58	42:03	23.	2	5.0	AVB
369.8734	42:05	529.	255.	42:03	42:07	23.	2	5.0	ABB
369.8734	42:16	1142.	459.	42:13	42:18	23.	2	5.0	ABB
339.8427	39:44	13864.	2370.	39:31	39:48	40.	1	1.0	AVV
341.8396	40:54	9123.	2201.	40:45	40:59	46.	1	1.0	ABB
339.8427	39:18	882.	358.	39:16	39:22	40.	2	5.0	ABB
339.8427	39:44	14208.	2370.	39:29	39:51	40.	2	5.0	AVB
339.8427	40:02	5794.	996.	39:55	40:07	40.	2	5.0	ABV
339.8427	40:13	6128.	1316.	40:07	40:22	40.	2	5.0	AVB
339.8427	40:54	12459.	2662.	40:46	40:58	40.	2	5.0	ABV
339.8427	41:06	12621.	2253.	40:58	41:16	40.	2	5.0	AVB
339.8427	41:28	1087.	205.	41:18	41:32	40.	2	5.0	ABB
341.8396	39:37	1640.	440.	39:31	39:39	46.	2	5.0	ABV
341.8396	39:44	7389.	1439.	39:39	39:52	46.	2	5.0	AVB
341.8396	40:00	4962.	1076.	39:53	40:05	46.	2	5.0	ABB
341.8396	40:14	4790.	897.	40:05	40:22	46.	2	5.0	ABB
341.8396	40:54	9123.	2201.	40:45	40:59	46.	2	5.0	ABB
341.8396	41:06	9469.	1854.	40:59	41:21	46.	2	5.0	ABV
351.8824	39:43	1258963.	265692.	39:35	39:51	65.	2	5.0	ABV
351.8824	39:53	7978.	2009.	39:51	39:57	65.	2	5.0	AVV
351.8824	39:59	8156.	1587.	39:57	40:05	65.	2	5.0	AVB
351.8824	40:13	12332.	1405.	40:05	40:18	65.	2	5.0	ABV
351.8824	40:20	2037.	832.	40:18	40:22	65.	2	5.0	AVB
351.8824	40:52	1401796.	327064.	40:38	41:03	65.	2	5.0	ABV
351.8824	41:05	6418.	2465.	41:03	41:07	65.	2	5.0	AVV
351.8824	41:09	4904.	1291.	41:07	41:13	65.	2	5.0	AVV
351.8824	41:16	4420.	1161.	41:13	41:19	65.	2	5.0	AVV
351.8824	41:22	3640.	1058.	41:19	41:25	65.	2	5.0	AVV
351.8824	41:28	2527.	622.	41:25	41:31	65.	2	5.0	AVB
353.8793	39:43	787706.	170186.	39:35	39:53	43.	2	5.0	ABV
353.8793	39:58	10330.	1560.	39:53	40:06	43.	2	5.0	AVV
353.8793	40:12	8590.	1843.	40:06	40:20	43.	2	5.0	AVB
353.8793	40:28	1120.	230.	40:22	40:31	43.	2	5.0	ABB
353.8793	40:42	1075.	280.	40:37	40:44	43.	2	5.0	ABV
353.8793	40:52	869693.	202283.	40:44	41:05	43.	2	5.0	AVV
353.8793	41:07	5366.	1665.	41:05	41:10	43.	2	5.0	AVV
353.8793	41:11	2106.	1021.	41:10	41:13	43.	2	5.0	AVB

353.8793	41:20	3713.	720.	41:14	41:24	43.	2	5.0	ABV
353.8793	41:30	1387.	259.	41:24	41:32	43.	2	5.0	AVB
389.7961	46:09	17362.	3773.	46:01	46:15	43.	1	1.0	ABV
391.7931	46:09	13766.	2616.	45:56	46:18	33.	1	1.0	AVB
389.7961	45:39	5119.	1386.	45:33	45:42	43.	2	5.0	ABV
389.7961	45:46	12136.	3056.	45:42	45:53	43.	2	5.0	AVB
389.7961	46:09	18246.	3773.	46:01	46:24	43.	2	5.0	ABV
391.7931	45:38	3939.	1002.	45:34	45:42	33.	2	5.0	ABV
391.7931	45:45	8501.	2129.	45:42	45:56	33.	2	5.0	AVV
391.7931	46:09	13766.	2616.	45:56	46:18	33.	2	5.0	AVB
401.8358	45:37	840290.	206123.	45:31	45:41	96.	2	5.0	ABV
401.8358	45:45	786729.	191600.	45:41	45:54	96.	2	5.0	AVV
401.8358	45:55	4078.	1000.	45:54	46:00	96.	2	5.0	AVV
401.8358	46:09	2674338.	643106.	46:00	46:24	96.	2	5.0	AVV
401.8358	46:32	3699.	725.	46:29	46:38	96.	2	5.0	AVB
403.8327	45:37	640057.	158282.	45:30	45:41	81.	2	5.0	ABV
403.8327	45:45	659503.	156596.	45:41	45:58	81.	2	5.0	AVV
403.8327	45:59	1700.	722.	45:58	46:01	81.	2	5.0	AVV
403.8327	46:09	2075596.	505822.	46:01	46:24	81.	2	5.0	AVV
403.8327	46:26	1442.	720.	46:24	46:28	81.	2	5.0	AVB
403.8327	46:30	4528.	876.	46:28	46:38	81.	2	5.0	ABB
373.8021	44:34	25408.	4451.	44:24	44:38	43.	1	1.0	ABV
375.7990	44:33	19415.	3247.	44:25	44:38	57.	1	1.0	ABV
373.8021	44:18	2568.	1264.	44:17	44:21	43.	2	5.0	ABB
373.8021	44:34	25408.	4451.	44:24	44:38	43.	2	5.0	ABV
373.8021	44:42	12101.	2968.	44:38	44:47	43.	2	5.0	AVV
373.8021	44:50	1616.	429.	44:47	44:54	43.	2	5.0	AVB
373.8021	45:05	3377.	520.	44:54	45:11	43.	2	5.0	ABV
373.8021	45:15	1846.	463.	45:11	45:18	43.	2	5.0	AVV
373.8021	45:28	11926.	2468.	45:18	45:34	43.	2	5.0	AVB
373.8021	46:27	2409.	425.	46:15	46:31	43.	2	5.0	ABV
373.8021	46:36	2860.	685.	46:31	46:44	43.	2	5.0	AVB
375.7990	44:18	1132.	684.	44:17	44:20	57.	2	5.0	ABB
375.7990	44:33	19415.	3247.	44:25	44:38	57.	2	5.0	ABV
375.7990	44:42	10708.	2568.	44:38	44:47	57.	2	5.0	AVV
375.7990	44:53	2299.	436.	44:47	44:55	57.	2	5.0	AVB
375.7990	45:05	3109.	305.	44:56	45:11	57.	2	5.0	ABV
375.7990	45:15	2251.	499.	45:11	45:18	57.	2	5.0	AVV
375.7990	45:27	12630.	1865.	45:18	45:42	57.	2	5.0	AVV
375.7990	46:26	2899.	300.	46:11	46:30	57.	2	5.0	AVB
375.7990	46:36	3823.	630.	46:30	46:46	57.	2	5.0	ABB
373.8021	44:18	2568.	1264.	44:17	44:21	43.	2	5.0	ABB
373.8021	44:34	25408.	4451.	44:24	44:38	43.	2	5.0	ABV
373.8021	44:42	12101.	2968.	44:38	44:47	43.	2	5.0	AVV
373.8021	44:50	1616.	429.	44:47	44:54	43.	2	5.0	AVB
373.8021	45:05	3377.	520.	44:54	45:11	43.	2	5.0	ABV
373.8021	45:15	1846.	463.	45:11	45:18	43.	2	5.0	AVV
373.8021	45:28	11926.	2468.	45:18	45:34	43.	2	5.0	AVB
373.8021	46:27	2409.	425.	46:15	46:31	43.	2	5.0	ABV
373.8021	46:36	2860.	685.	46:31	46:44	43.	2	5.0	AVB
375.7990	44:18	1132.	684.	44:17	44:20	57.	2	5.0	ABB
375.7990	44:33	19415.	3247.	44:25	44:38	57.	2	5.0	ABV
375.7990	44:42	10708.	2568.	44:38	44:47	57.	2	5.0	AVV
375.7990	44:53	2299.	436.	44:47	44:55	57.	2	5.0	AVB
375.7990	45:05	3109.	305.	44:56	45:11	57.	2	5.0	ABV
375.7990	45:15	2251.	499.	45:11	45:18	57.	2	5.0	AVV
375.7990	45:27	12630.	1865.	45:18	45:42	57.	2	5.0	AVV
375.7990	46:26	2899.	300.	46:11	46:30	57.	2	5.0	AVB
375.7990	46:36	3823.	630.	46:30	46:46	57.	2	5.0	ABB
383.8447	44:33	700115.	187243.	44:26	44:37	74.	2	5.0	ABV
383.8447	44:41	819278.	208584.	44:37	44:56	74.	2	5.0	AVV
383.8447	45:07	2219.	419.	45:02	45:10	74.	2	5.0	ABB
383.8447	45:27	774949.	193950.	45:16	45:41	74.	2	5.0	ABV
383.8447	45:43	5451.	566.	45:41	45:56	74.	2	5.0	AVV
383.8447	45:58	2830.	646.	45:56	46:04	74.	2	5.0	AVB
383.8447	46:10	4952.	839.	46:04	46:19	74.	2	5.0	ABB
383.8447	46:26	674367.	156677.	46:19	46:42	74.	2	5.0	ABV

383.8447	46:45	2985.	447.	46:42	46:54	74.	2	5.0	AVB
385.8417	44:33	1290084.	340147.	44:25	44:37	110.	2	5.0	ABV
385.8417	44:41	1472491.	377981.	44:37	44:48	110.	2	5.0	AVV
385.8417	44:51	26311.	4071.	44:48	45:00	110.	2	5.0	AVV
385.8417	45:02	3410.	1084.	45:00	45:04	110.	2	5.0	AVV
385.8417	45:06	4379.	1060.	45:04	45:12	110.	2	5.0	AVV
385.8417	45:27	1457968.	358673.	45:12	45:37	110.	2	5.0	AVV
385.8417	45:39	10471.	1904.	45:37	45:44	110.	2	5.0	AVV
385.8417	45:46	4960.	1155.	45:44	45:52	110.	2	5.0	AVV
385.8417	45:55	7623.	737.	45:52	46:10	110.	2	5.0	AVV
385.8417	46:26	1231868.	284271.	46:19	46:40	110.	2	5.0	ABV
385.8417	46:44	10359.	1695.	46:40	46:49	110.	2	5.0	AVV
385.8417	46:52	3894.	1118.	46:49	46:57	110.	2	5.0	AVB
423.7555	50:41	204315.	42038.	50:33	50:55	57.	1	1.0	AVV
425.7524	50:41	188713.	39335.	50:34	50:50	53.	1	1.0	ABV
423.7555	49:28	188551.	36324.	49:21	49:43	57.	2	5.0	ABV
423.7555	50:41	204488.	42038.	50:30	50:55	57.	2	5.0	ABV
425.7524	49:28	172175.	34079.	49:20	49:37	53.	2	5.0	ABV
425.7524	50:41	188713.	39335.	50:34	50:50	53.	2	5.0	ABV
435.7951	49:28	7970.	1658.	49:24	49:36	14.	2	5.0	ABB
435.7951	50:09	298.	126.	50:06	50:11	14.	2	5.0	ABB
435.7951	50:40	724063.	153709.	50:31	50:50	14.	2	5.0	ABV
435.7951	50:52	7828.	1901.	50:50	51:02	14.	2	5.0	AVB
435.7951	51:06	1906.	561.	51:02	51:08	14.	2	5.0	ABB
437.7921	49:27	8666.	1948.	49:21	49:36	24.	2	5.0	ABB
437.7921	50:40	636581.	136674.	50:32	50:55	24.	2	5.0	ABV
437.7921	51:02	1177.	420.	50:59	51:05	24.	2	5.0	ABV
437.7921	51:07	534.	288.	51:05	51:08	24.	2	5.0	AVB
407.7614	49:38	75646.	15004.	49:29	49:44	73.	1	1.0	AVV
409.7583	49:37	70063.	14038.	49:29	49:44	30.	1	1.0	AVV
407.7614	48:43	1969.	628.	48:41	48:47	73.	2	5.0	ABB
407.7614	48:58	69005.	14232.	48:48	49:04	73.	2	5.0	ABV
407.7614	49:23	8911.	906.	49:08	49:29	73.	2	5.0	AVV
407.7614	49:38	75646.	15004.	49:29	49:44	73.	2	5.0	AVV
407.7614	49:47	6292.	898.	49:44	49:59	73.	2	5.0	AVB
407.7614	51:18	10822.	1489.	51:02	51:33	73.	2	5.0	ABB
409.7583	48:43	1708.	564.	48:41	48:47	30.	2	5.0	ABB
409.7583	48:58	65213.	13656.	48:50	49:04	30.	2	5.0	ABV
409.7583	49:05	891.	249.	49:04	49:10	30.	2	5.0	AVB
409.7583	49:23	4442.	700.	49:10	49:29	30.	2	5.0	ABV
409.7583	49:37	70063.	14038.	49:29	49:44	30.	2	5.0	AVV
409.7583	49:46	3441.	610.	49:44	50:02	30.	2	5.0	AVV
409.7583	51:18	4328.	967.	51:10	51:22	30.	2	5.0	ABV
409.7583	51:24	464.	191.	51:22	51:26	30.	2	5.0	AVB
417.8041	48:57	476172.	101000.	48:48	49:03	45.	2	5.0	ABV
417.8041	49:06	4912.	1033.	49:03	49:11	45.	2	5.0	AVB
417.8041	49:20	3395.	1121.	49:15	49:23	45.	2	5.0	ABV
417.8041	49:44	2474.	422.	49:39	49:47	45.	2	5.0	AVB
417.8041	50:00	2554.	463.	49:48	50:03	45.	2	5.0	ABB
417.8041	51:17	380242.	84238.	51:09	51:24	45.	2	5.0	ABV
417.8041	51:26	3101.	837.	51:24	51:30	45.	2	5.0	AVV
417.8041	51:42	4706.	977.	51:37	51:48	45.	2	5.0	AVB
419.8010	48:57	1008737.	212420.	48:49	49:07	61.	2	5.0	ABV
419.8010	49:09	4919.	865.	49:07	49:15	61.	2	5.0	AVV
419.8010	49:20	10172.	1677.	49:15	49:27	61.	2	5.0	AVB
419.8010	49:36	7872.	1809.	49:32	49:39	61.	2	5.0	AVV
419.8010	49:41	4420.	1093.	49:39	49:45	61.	2	5.0	AVV
419.8010	51:17	897237.	202065.	51:08	51:28	61.	2	5.0	ABV
419.8010	51:30	6993.	2094.	51:28	51:33	61.	2	5.0	AVV
419.8010	51:39	4815.	1076.	51:37	51:44	61.	2	5.0	AVB
457.7148	54:41	1430250.	359495.	54:34	54:56	48.	1	1.0	ABV
459.7118	54:41	1581585.	407744.	54:34	54:55	47.	1	1.0	ABV
457.7148	54:41	1430250.	359495.	54:34	54:56	48.	2	5.0	ABV
457.7148	55:07	2877.	340.	55:05	55:21	48.	2	5.0	AVB
459.7118	54:41	1581585.	407744.	54:34	54:55	47.	2	5.0	ABV
459.7118	54:57	11175.	1398.	54:55	55:10	47.	2	5.0	AVB
459.7118	55:13	753.	249.	55:10	55:15	47.	2	5.0	ABB

469.7545	54:41	900022.	232891.	54:33	54:50	22.	2	5.0	ABV
469.7545	54:54	6746.	1336.	54:50	54:59	22.	2	5.0	AVV
469.7545	55:08	1828.	705.	55:06	55:12	22.	2	5.0	ABV
469.7545	55:14	2876.	737.	55:12	55:21	22.	2	5.0	AVB
471.7514	54:41	970610.	240634.	54:33	54:52	102.	2	5.0	ABV
471.7514	55:01	12215.	1082.	54:52	55:11	102.	2	5.0	AVB
441.7207	54:49	81928.	19420.	54:37	55:02	31.	1	1.0	ABV
443.7177	54:49	94989.	23255.	54:37	55:03	20.	1	1.0	ABB
441.7207	54:49	81073.	19420.	54:37	54:56	31.	2	5.0	ABV
441.7207	54:58	1573.	176.	54:56	55:11	31.	2	5.0	AVB
443.7177	54:49	94989.	23255.	54:37	55:03	20.	2	5.0	ABB
453.7603	54:49	1196386.	316119.	54:37	55:04	36.	2	5.0	ABV
453.7603	55:14	2709.	728.	55:10	55:17	36.	2	5.0	AVV
453.7603	55:19	833.	313.	55:17	55:21	36.	2	5.0	AVB
453.7603	55:24	1958.	751.	55:21	55:26	36.	2	5.0	ABB
455.7573	54:49	1313524.	346362.	54:35	55:03	38.	2	5.0	ABV
455.7573	55:05	4104.	802.	55:03	55:11	38.	2	5.0	AVV
455.7573	55:16	2084.	533.	55:11	55:18	38.	2	5.0	AVB
455.7573	55:21	2751.	606.	55:18	55:27	38.	2	5.0	ABB

TestAmerica Canton

Sample ID: NB-2

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 002	Work Order #....:	M811M1AC	Matrix....:	SOLID
Date Sampled....:	07/25/16	Date Received....:	07/29/16	Dilution Factor:	1
Prep Date....:	08/04/16	Analysis Date....:	08/17/16	Percent Moisture	11
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.6 g	Instrument ID....:	D11A	Method:	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	0.054	Q J	1.2	0.035	pg/g
1,2,3,7,8-PeCDD	0.32	Q B J	5.8	0.039	pg/g
1,2,3,4,7,8-HxCDD	0.52	Q J	5.8	0.054	pg/g
1,2,3,6,7,8-HxCDD	1.1	J	5.8	0.057	pg/g
1,2,3,7,8,9-HxCDD	1.7	C J	5.8	0.052	pg/g
1,2,3,4,6,7,8-HpCDD	25		5.8	0.090	pg/g
OCDD	260	B	12	0.082	pg/g
1,2,3,7,8-PeCDF	0.58	Q J	5.8	0.039	pg/g
2,3,4,7,8-PeCDF	0.68	J	5.8	0.034	pg/g
1,2,3,4,7,8-HxCDF	1.1	C B J	5.8	0.032	pg/g
1,2,3,6,7,8-HxCDF	0.59	Q J	5.8	0.031	pg/g
2,3,4,6,7,8-HxCDF	0.36	Q J	5.8	0.035	pg/g
1,2,3,7,8,9-HxCDF	ND		5.8	0.042	pg/g
1,2,3,4,6,7,8-HpCDF	4.9	B J	5.8	0.063	pg/g
1,2,3,4,7,8,9-HpCDF	0.67	Q B J	5.8	0.069	pg/g
OCDF	11	J B	12	0.027	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	62	40 - 135
13C-1,2,3,7,8-PeCDD	83	40 - 135
13C-1,2,3,4,7,8-HxCDD	69	40 - 135
13C-1,2,3,6,7,8-HxCDD	67	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	77	40 - 135
13C-OCDD	66	40 - 135
13C-1,2,3,7,8-PeCDF	76	40 - 135
13C-2,3,4,7,8-PeCDF	85	40 - 135
13C-1,2,3,4,7,8-HxCDF	68	40 - 135
13C-1,2,3,6,7,8-HxCDF	66	40 - 135
13C-2,3,4,6,7,8-HxCDF	71	40 - 135
13C-1,2,3,7,8,9-HxCDF	67	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	62	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	71	40 - 135
13C-OCDF	55	40 - 135

TestAmerica Canton

Sample ID: NB-2

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 002	**Work Order #....:**	M811M1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture**	11
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.6 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811M1AC	Prep Batch	6217014	Lot No	H6G290408-002
Data File	/20160817s1/d1tm811m.d	Prep Date	08/04/16	SDG No	
Analysis ID	180430	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/17/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	14:33	Initial Wt/Vol	9.6 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD	32:51	777	204	1.144		0.467933		0.048743	QJ	0.0314
Total TCDD		2047	504	1.144		1.700700		0.177156	QJ	0.0314
2,3,7,8-TCDF	30:43	36900	3932	1.066		12.526266		~~1.304819~~ X	NA	0.0675
Total TCDF		76542	8976	1.066		38.509611		4.011418	Q	0.0675
1,2,3,7,8-PeCDD	41:24	4120	1175	1.060		2.749075		0.286362	QBJ	0.0348
Total PeCDD		4475	940	1.060		5.735025		0.597398	QJB	0.0348
1,2,3,7,8-PeCDF	39:45	13073	2321	1.179		5.017647		0.522672	QJ	0.0348
2,3,4,7,8-PeCDF	40:54	16069	3270	1.115		5.880724		0.612575	J	0.0307
Total PeCDF		27020	5186	1.147		21.007422		2.188273	QJ	0.0326
1,2,3,4,7,8-HxCDD	45:38	7888	2058	1.131		4.450091		0.463551	QJ	0.0483
1,2,3,6,7,8-HxCDD	45:46	15503	3441	1.116		9.122046		0.950213	J	0.0511
1,2,3,7,8,9-HxCDD	46:10	27277	5063	1.205		14.649812		1.526022	CJ	0.0463
Total HxCDD				1.151		28.221950		2.939786	JQ	0.0485
1,2,3,4,7,8-HxCDF	44:34	27907	5549	1.350		9.596477		0.999633	CBJ	0.0287
1,2,3,6,7,8-HxCDF	44:43	15508	3495	1.242		5.058472		0.526924	QJ	0.0282
2,3,4,6,7,8-HxCDF	45:27	9229	2282	1.241		3.131734		0.326222	QJ	0.0309
1,2,3,7,8,9-HxCDF				1.262				ND		0.0377
Total HxCDF		21236	5603	1.274		25.180034		2.622920	JQB	0.0310
1,2,3,4,6,7,8-HpCDD	50:42	337053	70574	1.114		216.538273		22.556070		0.0806
Total HpCDD		318275	63080	1.114		421.012700		43.855490		0.0806
1,2,3,4,6,7,8-HpCDF	48:58	96883	19931	1.461		42.192685		4.395071	BJ	0.0561
1,2,3,4,7,8,9-HpCDF	51:18	11243	1744	1.370		5.739384		0.597852	QBJ	0.0617
Total HpCDF		140630	26725	1.416		114.131440		11.888692	QB	0.0588
OCDD	54:41	2611731	685201	1.203		2194.52084		228.595921	B	0.0732
OCDF	54:49	132515	34648	1.134		90.360795		9.412583	JB	0.0239
13C-2,3,7,8-TCDD	32:48	1452082	145129	1.093	1000	621.151023	62.12	64.703232		0.198
13C-2,3,7,8-TCDF	30:39	2764493	296671	1.794	1000	720.029971	72.00	75.003122		0.106
13C-1,2,3,7,8-PeCDD	41:23	1413999	345522	0.800	1000	826.074736	82.61	86.049452		0.0683
13C-1,2,3,7,8-PeCDF	39:44	2209588	475526	1.356	1000	761.306994	76.13	79.302812		0.115
13C-2,3,4,7,8-PeCDF	40:53	2451612	570785	1.343	1000	853.142417	85.31	88.869002		0.116
13C-1,2,3,4,7,8-HxCDD	45:37	1567090	385949	0.916	1000	685.897749	68.59	71.447682		0.136
13C-1,2,3,6,7,8-HxCDD	45:44	1522923	370148	0.906	1000	673.610310	67.36	70.167741		0.137
13C-1,2,3,4,7,8-HxCDF	44:33	2153414	570270	1.268	1000	680.568528	68.06	70.892555		0.0627
13C-1,2,3,6,7,8-HxCDF	44:42	2469155	633292	1.506	1000	657.428160	65.74	68.482100		0.0528
13C-2,3,4,6,7,8-HxCDF	45:26	2374883	577157	1.344	1000	708.360772	70.84	73.787580		0.0592
13C-1,2,3,7,8,9-HxCDF	46:27	2022600	464715	1.202	1000	674.485330	67.45	70.258889		0.0661
13C-1,2,3,4,6,7,8-HpCDD	50:41	1397614	292911	0.728	1000	769.143844	76.91	80.119150		0.0394
13C-1,2,3,4,6,7,8-HpCDF	48:57	1571649	317535	1.008	1000	624.978315	62.50	65.101908		0.0473
13C-1,2,3,4,7,8,9-HpCDF	51:17	1429508	308009	0.811	1000	706.780500	70.68	73.622969		0.0588
13C-OCDD	54:40	1978590	503083	0.597	2000	1327.70728	66.39	138.302842		0.0362
13C-1,2,3,4-TCDD	32:15	4279560	438620	1.000	2000	2000.00000	100.00	208.333333		0.216
13C-1,2,3,7,8,9-HxCDD	46:09	4989287	1179187	1.000	2000	2000.00000	100.00	208.333333		0.124
13C-OCDF	54:49	2585650	653741	0.946	2000	1095.65806	54.78	114.131048		0.0850

KLR 8/24/16

KLR 8/23/16

LKN 8-18-16

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811M1AC	Prep Batch	6217014	Lot No	H6G290408-002
Data File	/20160817s1/d1tm811m.d	Prep Date	08/04/16	SDG No	
Analysis ID	180430	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/17/16 14:33	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.6 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	98	108	39	43	0.91 *	/	
	Unidentified	29:32	00:00	0	8892	11894	868	1493	0.75	ABB/ABB	
	Unidentified	30:14	00:00	0	8418	7277	799	883	1.16 *	AVB/AVB	R
	2,3,7,8-TCDF	30:43	30:42	1	16565	20335	1910	2022	0.81	ABV/ABV	D
	Unidentified	30:51	00:00	0	3643	4181	584	949	0.87	AVB/AVV	
	Unidentified	31:59	00:00	0	14013	18224	1401	1999	0.77	ABB/ABV	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	155	245	62	98	0.63 *	/	
	13C-2,3,7,8-TCDF	30:39	30:39	0	1228189	1536304	126037	170634	0.80	AVV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	23	28	9	11	0.82	/	
	Unidentified	32:09	00:00	0	250	354	59	81	0.71	ABV/ABV	T
	Unidentified	32:18	00:00	0	389	200	82	95	1.95 *	AVB/AVB	R
	Unidentified	32:33	00:00	0	459	395	105	82	1.16 *	ABB/ABB	RT
	2,3,7,8-TCDD	32:51	32:53	-2	260	517	76	128	0.50 *		RM
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	208	248	83	99	0.84	/	
	13C-1,2,3,4-TCDD	32:15	32:16	-1	1912342	2367218	192277	246343	0.81	ABV/ABV	
	13C-2,3,7,8-TCDD	32:48	32:50	-2	638016	814066	60119	85010	0.78	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	90	98	36	39	0.92 *	/	
	1,2,3,7,8-PeCDF	39:45	39:43	2	8475	4598	1425	896	1.84 *	ABB/AVB	R
	Unidentified	40:00	00:00	0	4514	2360	1041	526	1.91 *	ABB/ABB	R
	Unidentified	40:15	00:00	0	4200	3914	729	615	1.07 *	ABB/ABB	R
	2,3,4,7,8-PeCDF	40:54	40:52	2	9372	6697	2094	1176	1.40	ABB/AVV	
	Unidentified	41:06	00:00	0	7264	4768	1321	954	1.52	ABB/AVB	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	205	123	82	49	1.67	/	
	13C-1,2,3,7,8-PeCDF	39:44	39:41	3	1350602	858986	290227	185299	1.57	ABV/ABV	M
	Unidentified	39:59	00:00	0	9254	1314	1940	604	7.04 *	AVV/AVV	R
	Unidentified	40:12	00:00	0	14071	8393	2877	1751	1.68	AVV/AVB	
	13C-2,3,4,7,8-PeCDF	40:53	40:51	2	1498861	952751	344716	226069	1.57	AVV/AVV	DM
	Unidentified	41:12	00:00	0	6327	4539	1800	846	1.39	AVV/AVV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	60	63	24	25	0.96 *	/	
	Unidentified	40:58	00:00	0	1590	734	198	151	2.17 *	ABB/ABB	RT
	1,2,3,7,8-PeCDD	41:24	41:22	2	2861	1259	840	335	2.27 *	ABB/ABB	RM
	Unidentified	42:02	00:00	0	1006	1145	339	252	0.88 *	ABB/ABB	R
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	85	30	34	12	2.83 *	/	
	13C-1,2,3,7,8-PeCDD	41:23	41:21	2	868793	545206	215657	129865	1.59	ABV/ABV	DM
	Unidentified	41:49	00:00	0	707	1856	365	398	0.38 *	AVB/AVB	R

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811M1AC	Prep Batch	6217014	Lot No	H6G290408-002
Data File	/20160817s1/d1tm811m.d	Prep Date	08/04/16	SDG No	
Analysis ID	180430	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/17/16 14:33	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.6 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Unidentified	42:00	00:00	0	1194	1833	522	402	0.65 *	AVV/ABB	R
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	95	118	38	47	0.81 *	/	
	Unidentified	44:18	00:00	0	4385	3626	1854	1450	1.21	ABB/ABB	
	1,2,3,4,7,8-HxCDF	44:34	44:32	2	15615	12292	3115	2434	1.27	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:43	44:40	3	7303	8205	1798	1697	0.89 *	AVB/AVB	RM
	Unidentified	44:55	00:00	0	932	3876	256	375	0.24 *	AVV/AVV	RT
	Unidentified	45:16	00:00	0	2485	1836	678	430	1.35	ABV/AVV	
	2,3,4,6,7,8-HxCDF	45:27	45:26	1	5540	3689	1300	982	1.50 *	AVB/MBB	R
	Unidentified	46:28	00:00	0	1148	2948	306	254	0.39 *	ABV/AVV	RM
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	165	285	66	114	0.58	/	
	13C-1,2,3,4,7,8-HxCDF	44:33	44:31	2	753977	1399437	197997	372273	0.54	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:42	44:39	3	846691	1622464	223301	409991	0.52	AVV/AVV	M
	13C-2,3,4,6,7,8-HxCDF	45:26	45:25	1	820328	1554555	195345	381812	0.53	ABV/AVV	
	Unidentified	46:10	00:00	0	4043	9261	1056	1552	0.44	ABB/ABB	
	13C-1,2,3,7,8,9-HxCDF	46:27	46:26	1	707294	1315306	160298	304417	0.54	AVV/ABV	
	Unidentified	46:41	00:00	0	3048	9538	1164	2143	0.32 *	AVV/AVV	R
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	118	85	47	34	1.38	/	
	1,2,3,4,7,8-HxCDD	45:38	45:37	1	4723	3165	1256	802	1.49 *	ABV/ABV	R
	1,2,3,6,7,8-HxCDD	45:46	45:44	2	8786	6717	1887	1554	1.31	AVB/AVB	
	1,2,3,7,8,9-HxCDD	46:10	46:09	1	15174	12103	2919	2144	1.25	ABB/AVB	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	295	408	118	163	0.72 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:37	45:36	1	887766	679324	219266	166683	1.31	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:44	45:43	1	850954	671969	208990	161158	1.27	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:09	46:08	1	2775160	2214127	653029	526158	1.25	ABV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	178	73	71	29	2.45 *	/	
	1,2,3,4,6,7,8-HpCDF	48:58	48:58	0	51953	44930	10293	9638	1.16	ABV/ABB	
	Unidentified	49:24	00:00	0	5132	3500	941	678	1.47 *	AVV/ABV	R
	Unidentified	49:39	00:00	0	64298	59177	12365	11479	1.09	AVV/AVV	
	Unidentified	49:48	00:00	0	5341	3182	622	640	1.68 *	AVV/AVB	R
	1,2,3,4,7,8,9-HpCDF	51:18	51:19	-1	7044	4199	999	745	1.68 *	ABB/ABB	R
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	85	185	34	74	0.46	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:57	48:57	0	511553	1060096	101564	215971	0.48	AVV/ABV	
	Unidentified	49:44	00:00	0	2264	10624	636	1925	0.21 *	AVV/AVV	RT
	13C-1,2,3,4,7,8,9-HpCDF	51:17	51:18	-1	445586	983922	98301	209708	0.45	AVV/ABB	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	115	138	46	55	0.84 *	/	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811M1AC	Prep Batch	6217014	Lot No	H6G290408-002
Data File	/20160817s1/d1tm811m.d	Prep Date	08/04/16	SDG No	
Analysis ID	180430	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/17/16 14:33	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.6 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

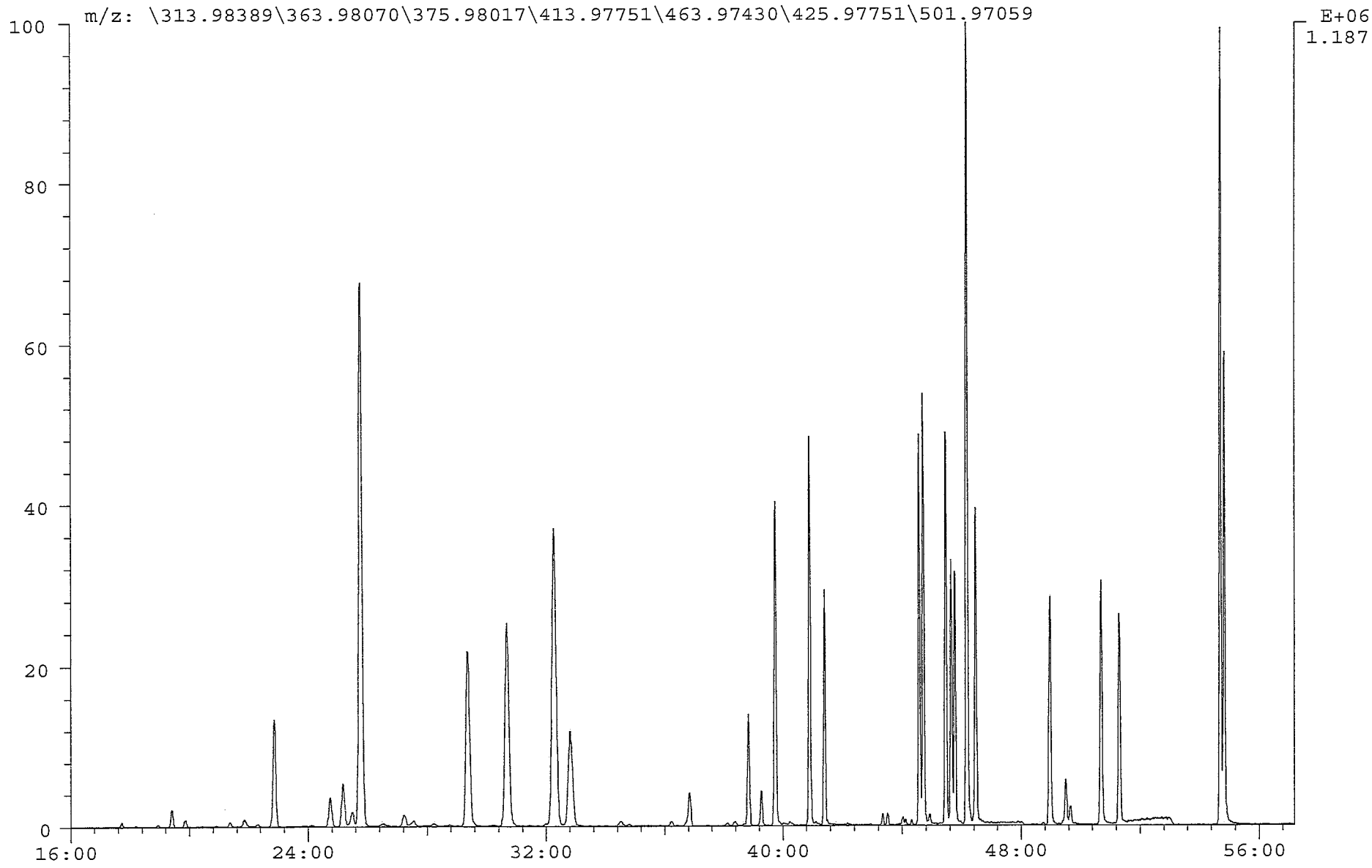
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Unidentified	49:29	00:00	0	162980	155295	32230	30850	1.05	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:42	50:41	1	173894	163159	37255	33319	1.07	ABV/ABV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	85	78	34	31	1.10	/	
	Unidentified	49:27	00:00	0	6278	10328	1547	1957	0.61 *	ABV/ABV	R
	13C-1,2,3,4,6,7,8-HpCDD	50:41	50:40	1	741806	655808	156543	136368	1.13	ABV/ABV	
	Unidentified	50:58	00:00	0	2680	3126	745	987	0.86 *	AVB/AVV	R
	Unidentified	51:06	00:00	0	1036	2018	399	682	0.51 *	ABB/AVB	R
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	40	45	16	18	0.89	/	
	Unidentified	54:42	00:00	0	1062	71131	260	18546	0.01 *	ABV/ABV	RT
	OCDF	54:49	54:51	-2	61384	71131	16102	18546	0.86	AVV/ABV	M
	Unidentified	55:01	00:00	0	468	251	121	120	1.86 *	AVB/AVB	R
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	83	373	33	149	0.22 *	/	
	13C-OCDF	54:49	54:50	-1	1239801	1345849	318695	335046	0.92	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	98	115	39	46	0.85	/	
	OCDD	54:41	54:43	-2	1232416	1379315	320045	365156	0.89	ABV/ABV	
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	83	40	33	16	2.06 *	/	
	13C-OCDD	54:40	54:42	-2	949523	1029067	241950	261133	0.92	ABV/ABV	
	Unidentified	54:52	00:00	0	8029	2113	1526	841	3.80 *	AVV/AVV	RT
	Unidentified	55:04	00:00	0	1252	1768	396	788	0.71 *	AVV/AVV	R

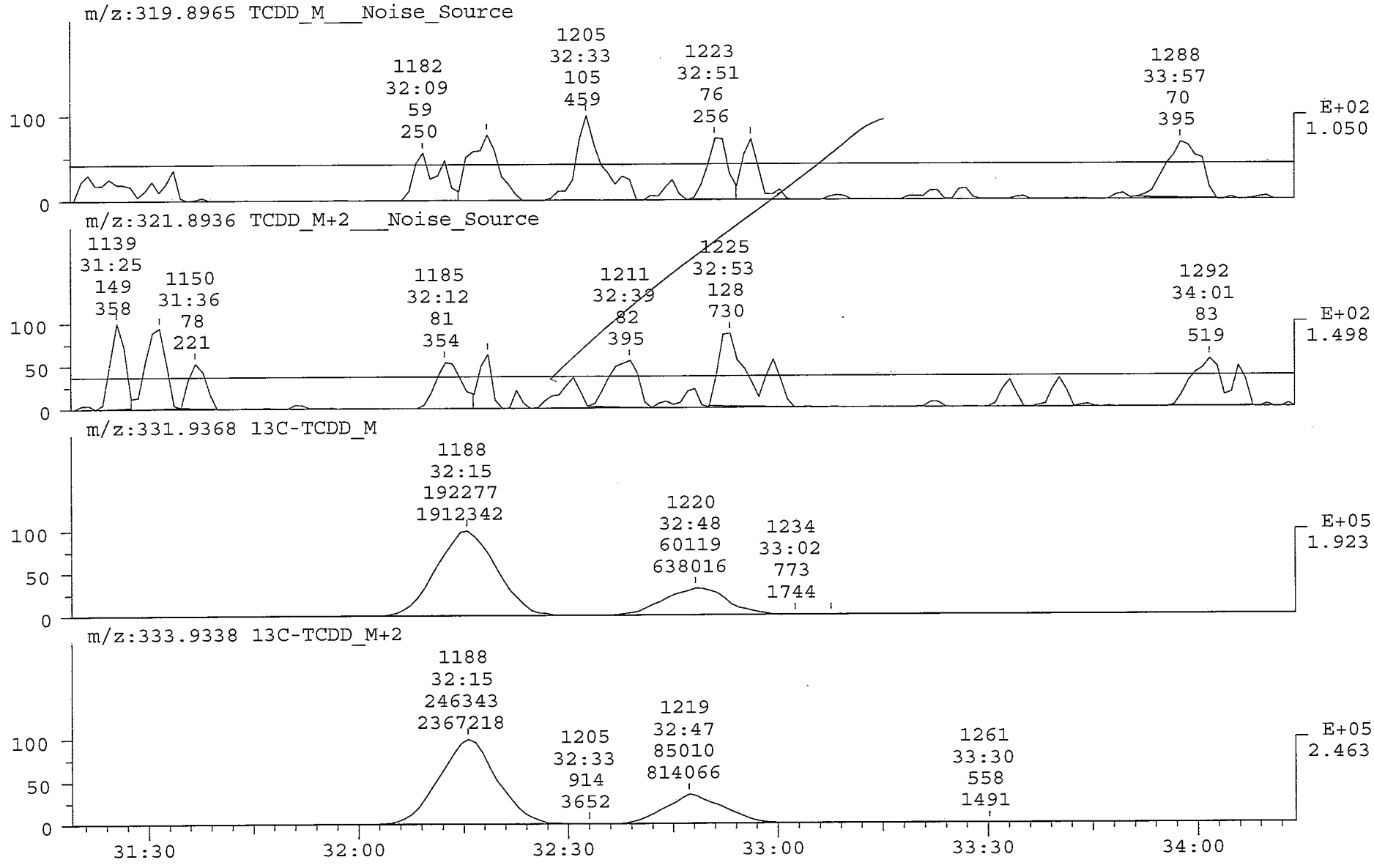
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. K 8/17/16
Calc. LK 8-18-16
QC/Rev K 8/23/16

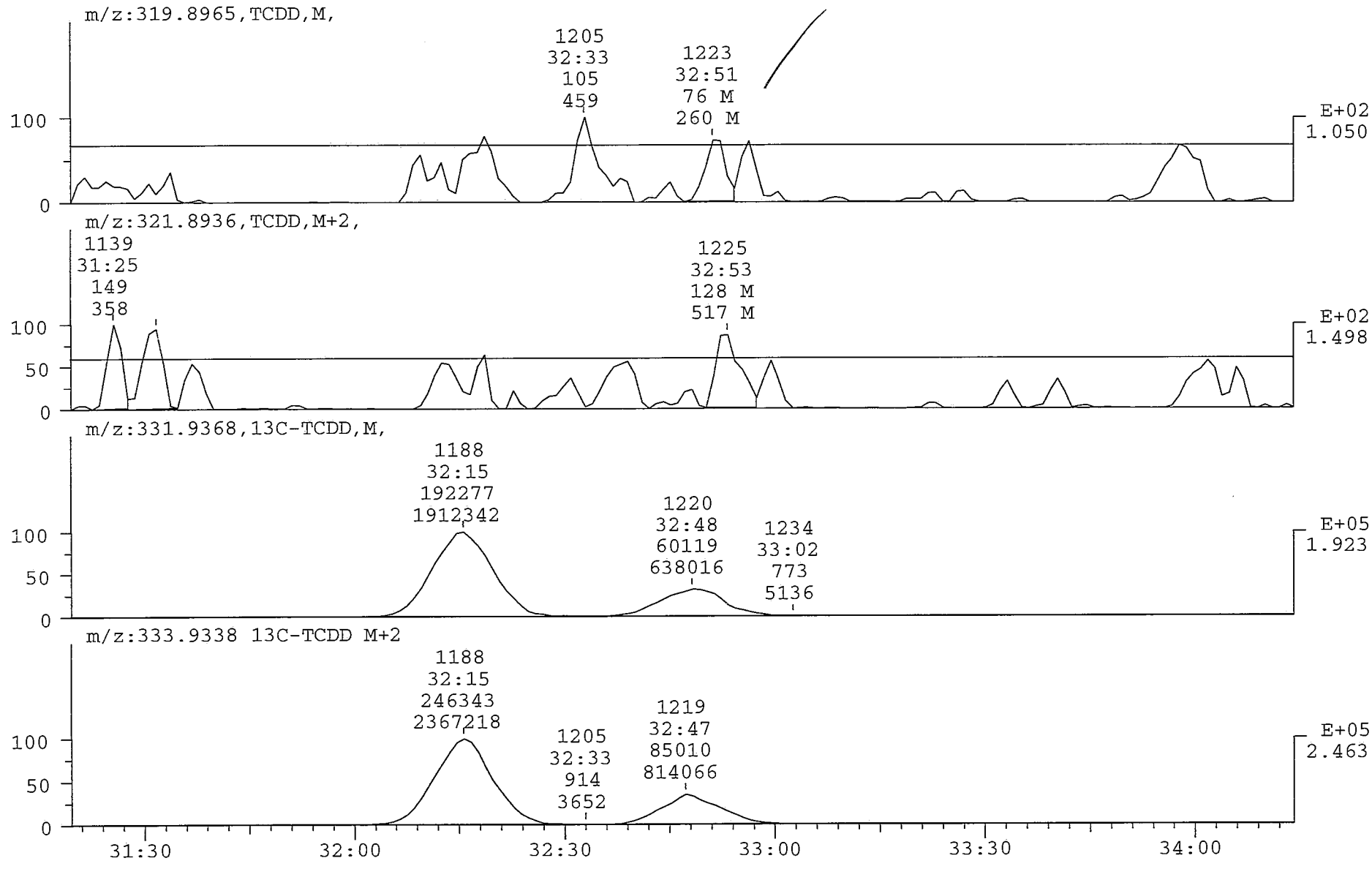
CHRO:	dltm811m	17-Aug-16	Elapse:	54:53	2495
Samp:	WO=m811m1ac Meth=9Ao Dil=1		Start :	14:33:16	2628
Comm:	Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1				
Mode:	EI ESI + Q1MS UP LR		Study :	6217014 (9.6g)	
Oper:	KLR		Inlet :	LC	
Peak:	100.00 ppm	Label wndw: 232 > 2628	Masses:	303 > 514	
Area:	5, 0.50, 0	Baseline : 100, 3	Label :	0, 0.0	
Disp:	Height Area				



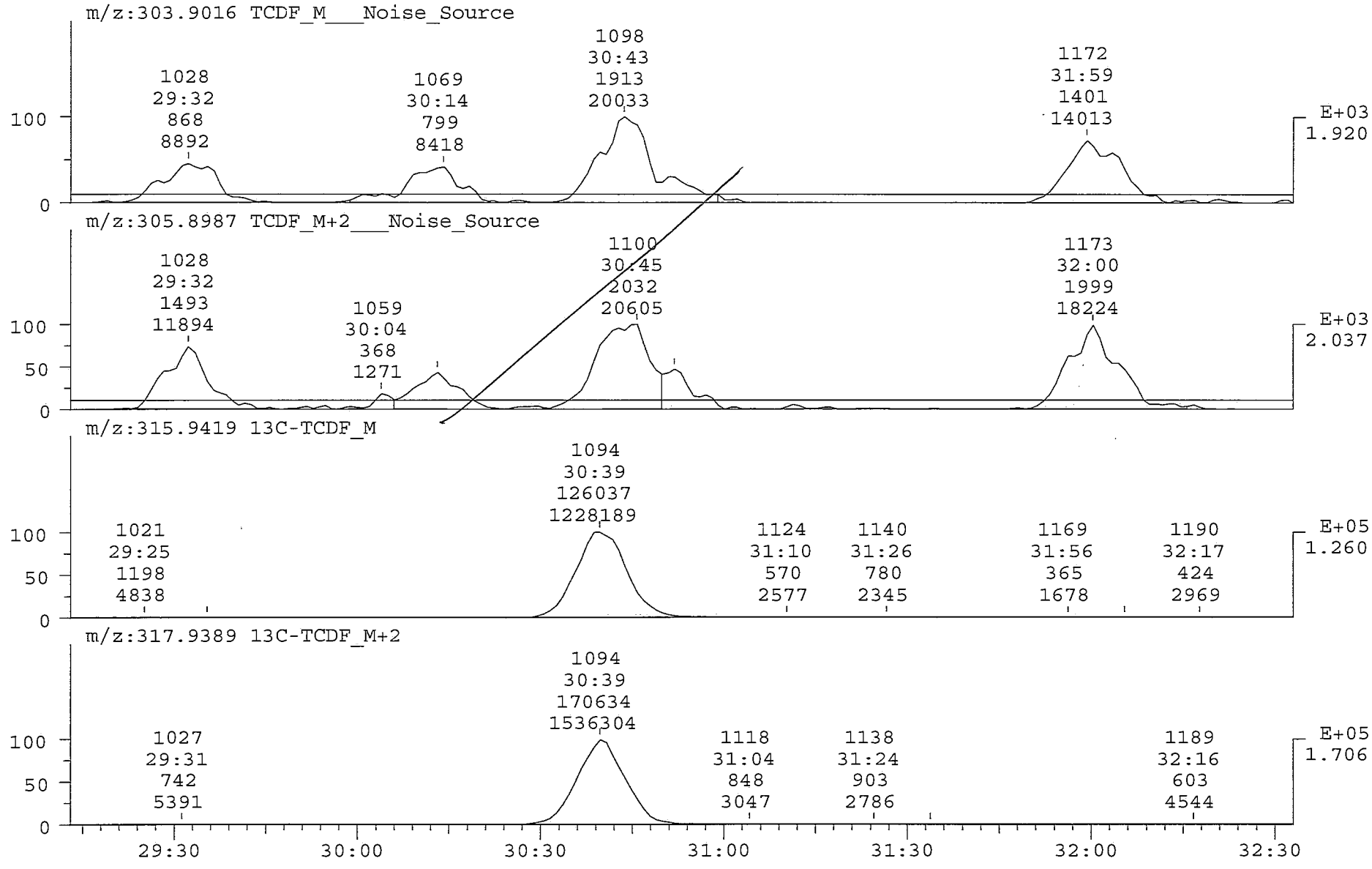
CHRO: d1tm811m 17-Aug-16 Elapse: 32:46 1218
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1133 > 1304 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



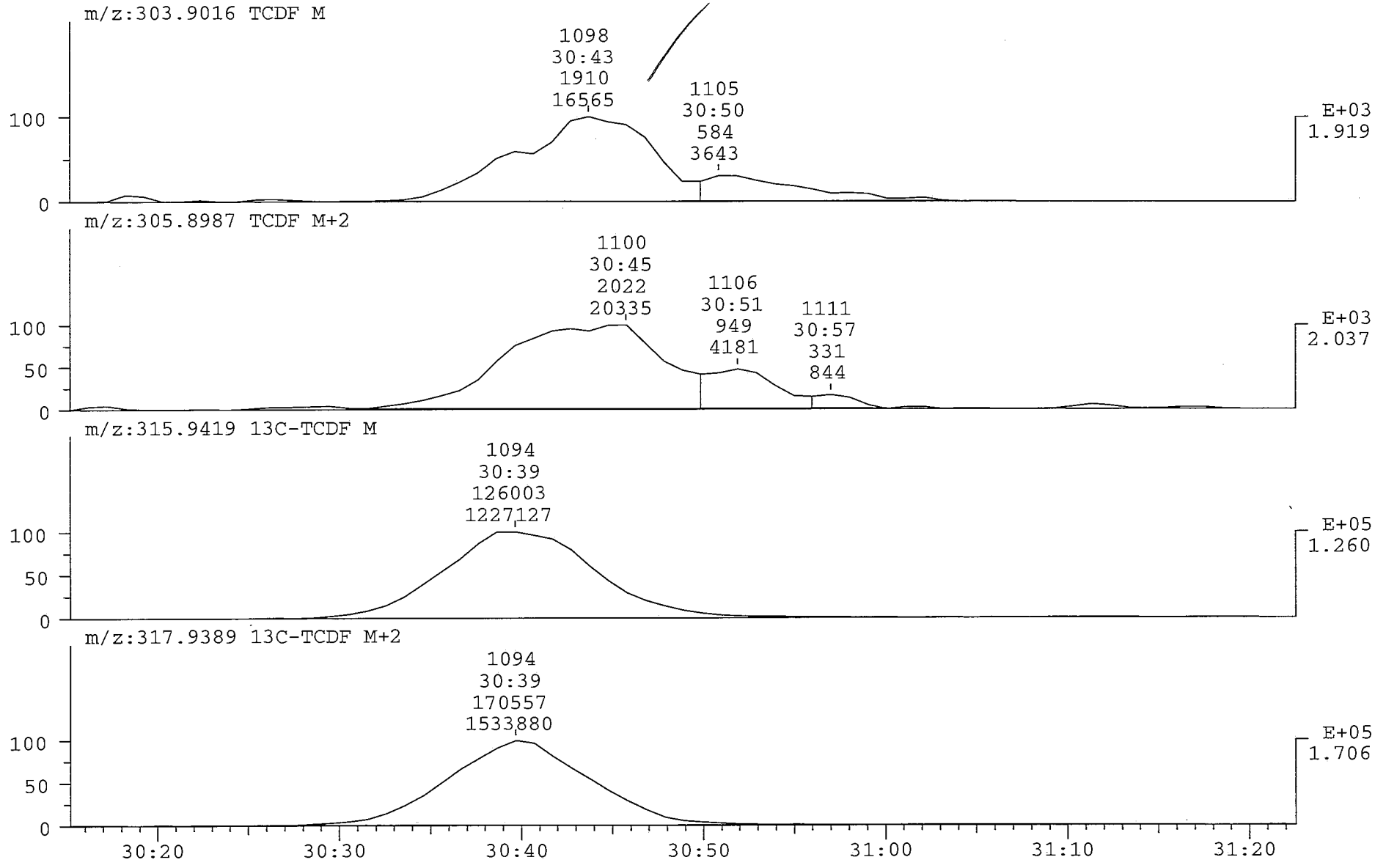
CHRO: d1tm811m 17-Aug-16 Elapse: 54:52 2494
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1133 > 1304 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



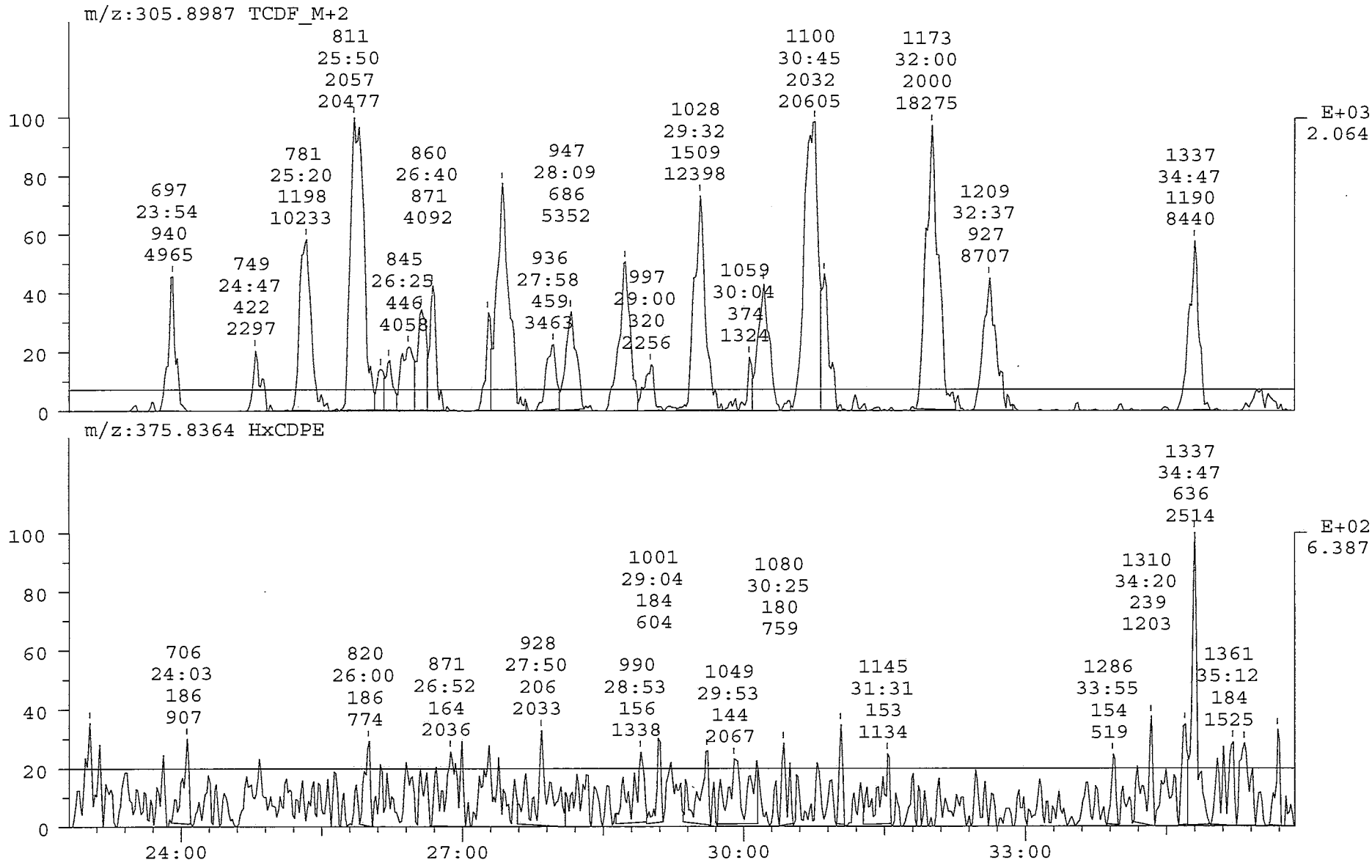
CHRO: d1tm811m 17-Aug-16 Elapse: 30:49 1104
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1009 > 1205 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



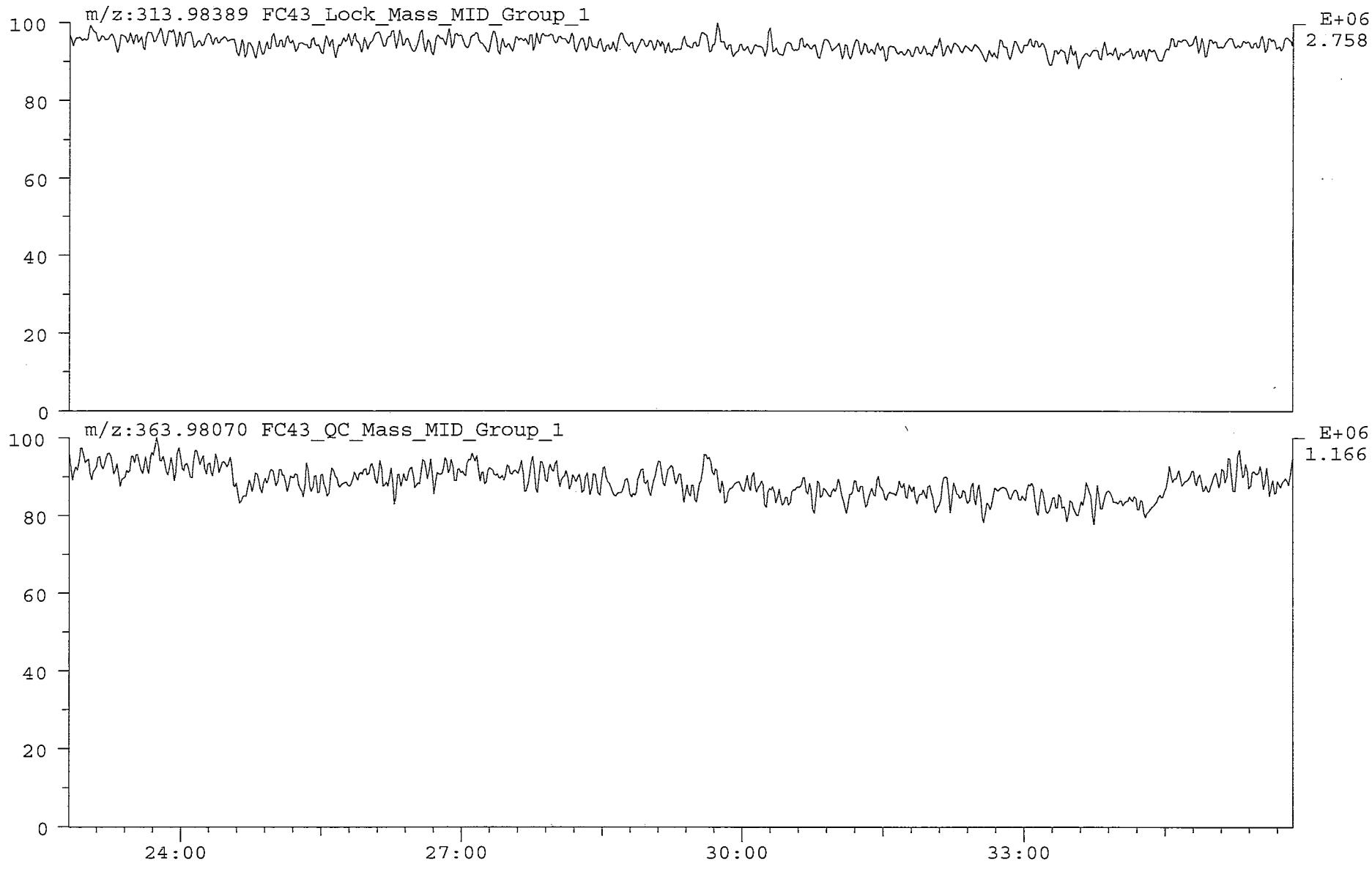
CHRO: d1tm811m 17-Aug-16 Elapse: 54:52 2494
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1070 > 1136 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 2 Label : 2, 5.0
Disp: Height Area



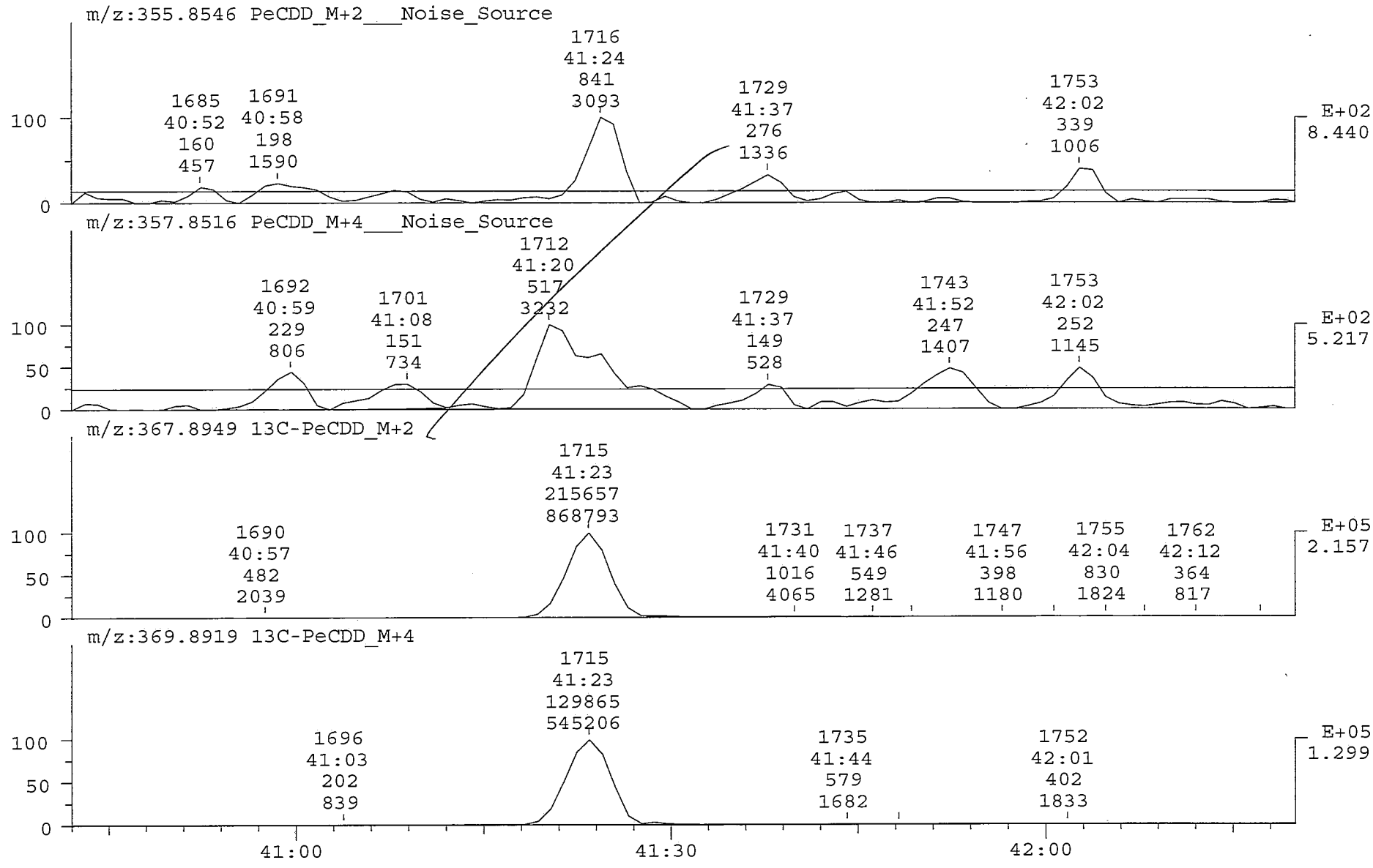
CHRO: d1tm811m 17-Aug-16 Elapse: 30:49 1104
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 632 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



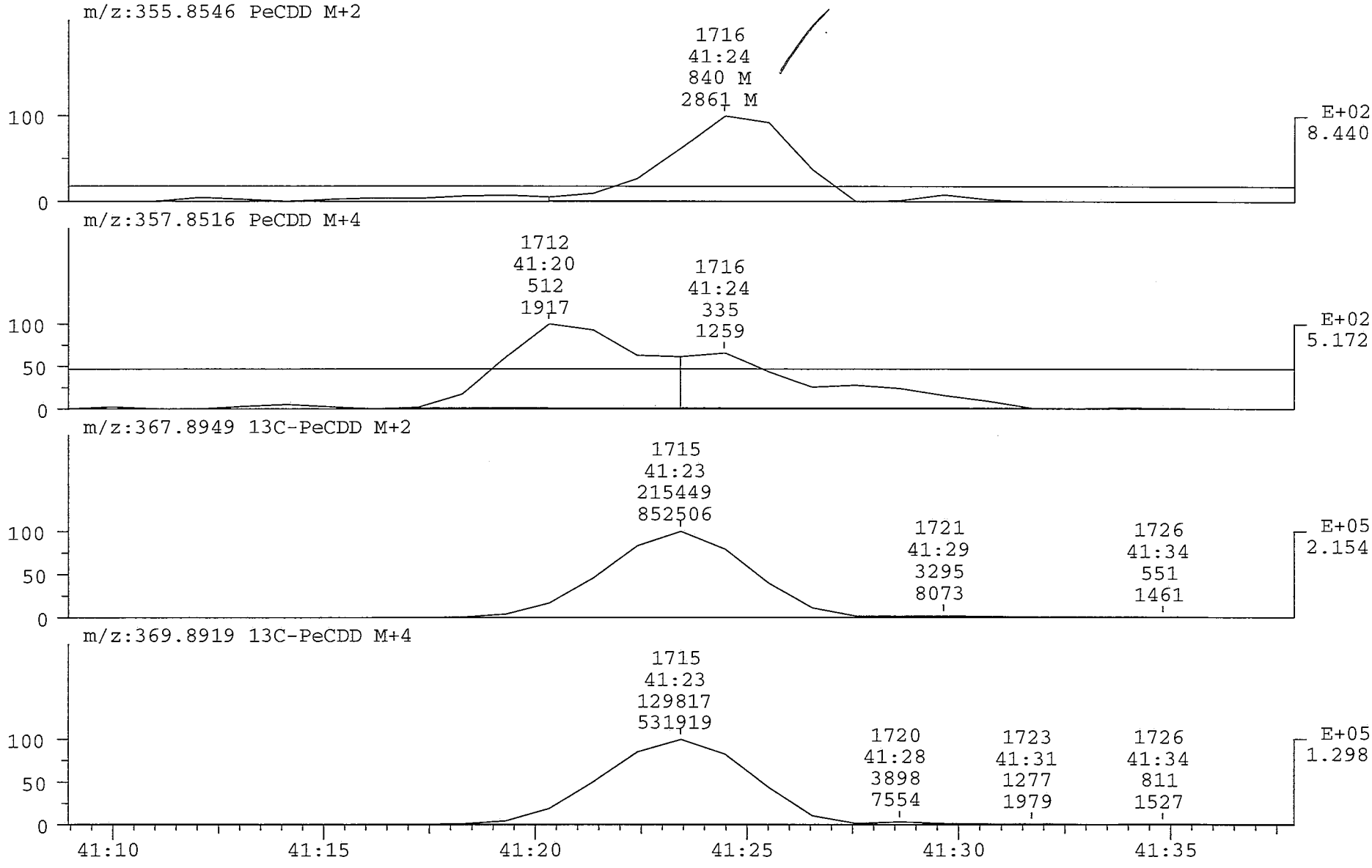
```
CHRO:  d1tm811m                                17-Aug-16  Elapse:  30:49      1104
Samp:  WO=m811m1ac Meth=9Ao Dil=1                         Start :  14:33:16   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.6g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   632 > 1400           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



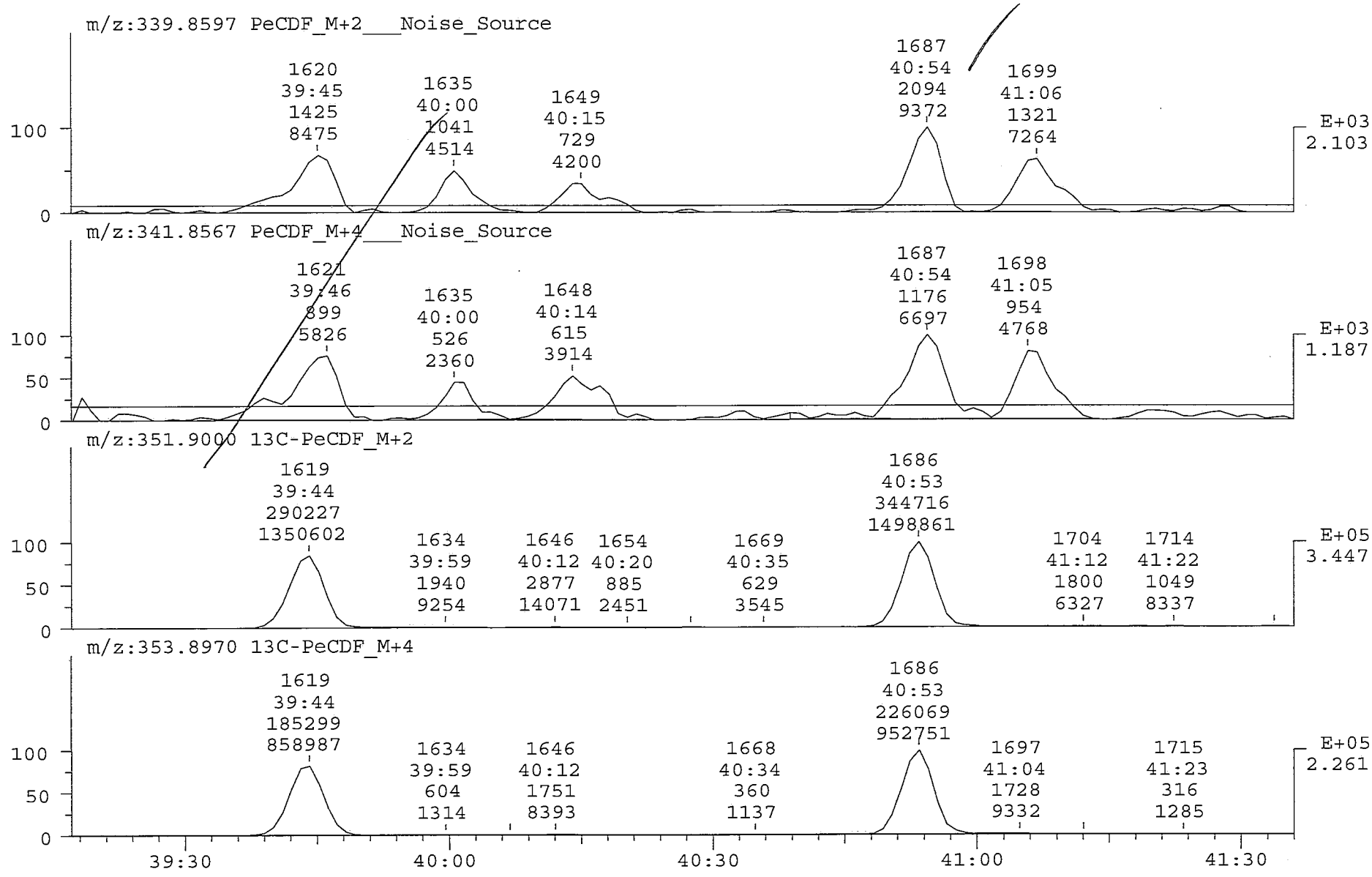
CHRO: d1tm811m 17-Aug-16 Elapse: 41:27 1719
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1675 > 1770 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



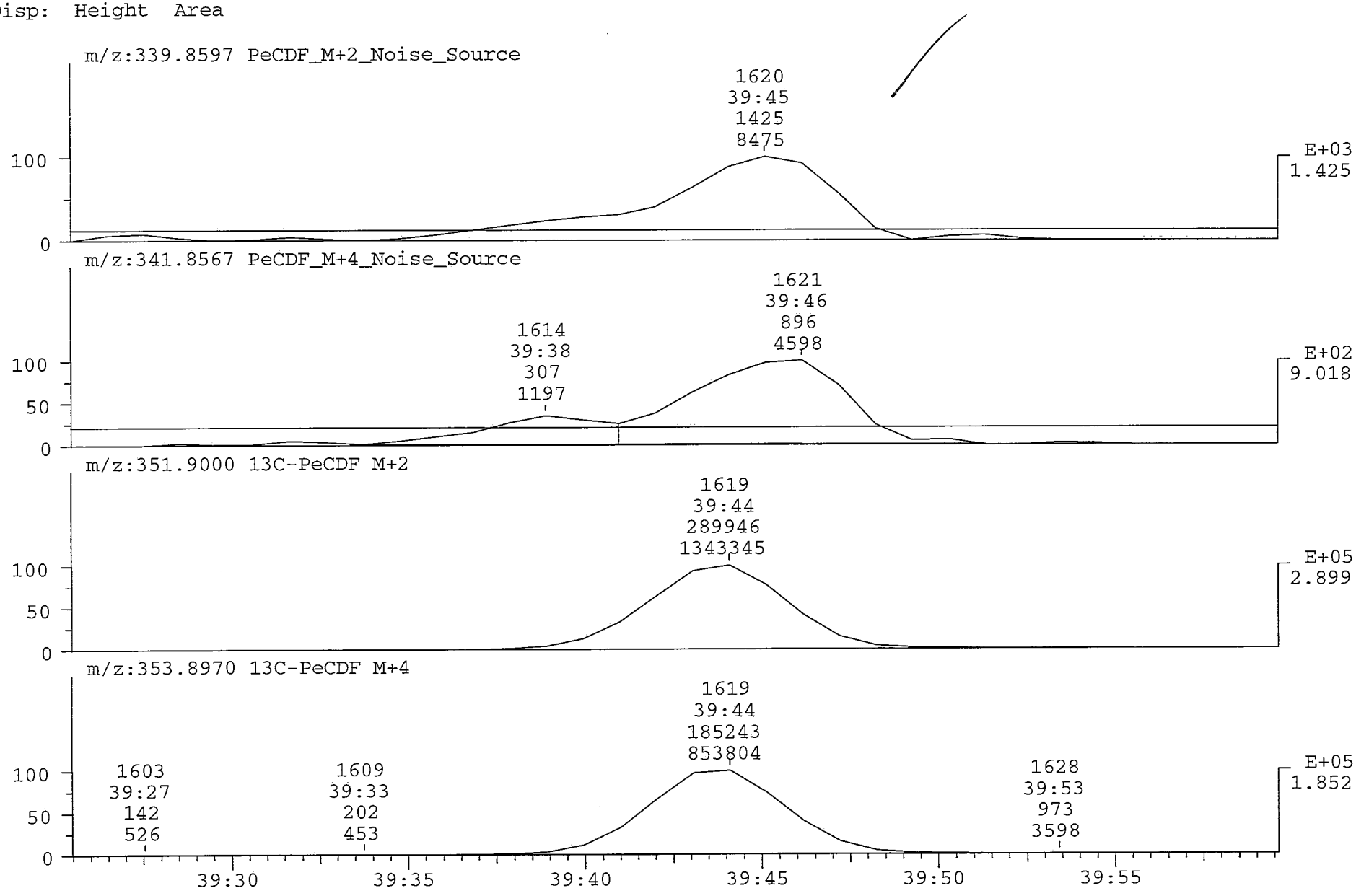
CHRO: d1tm811m 17-Aug-16 Elapse: 54:52 2494
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1701 > 1729 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : -2, 8.0
Disp: Height Area



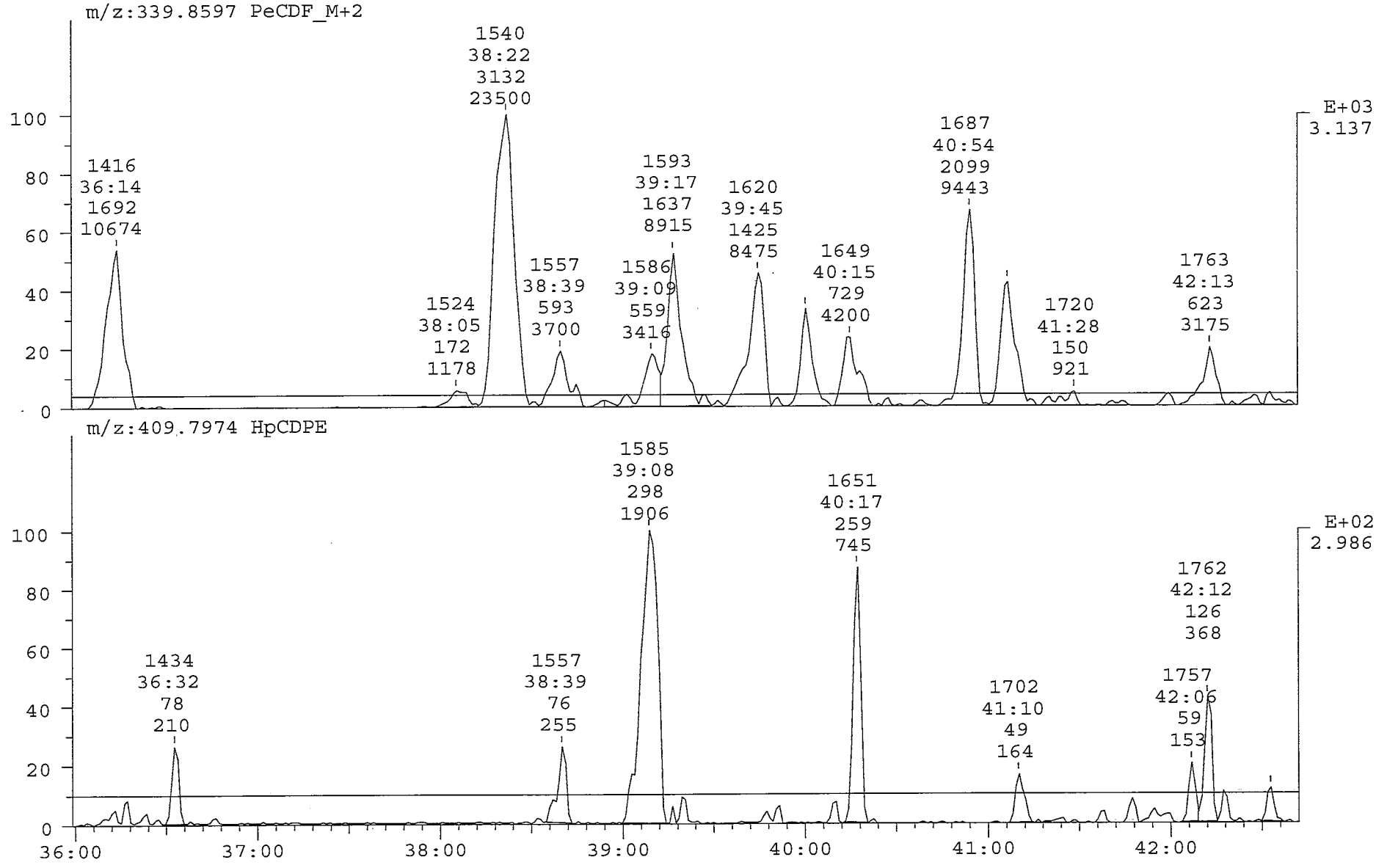
CHRO: d1tm811m 17-Aug-16 Elapse: 40:26 1660
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1593 > 1727 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



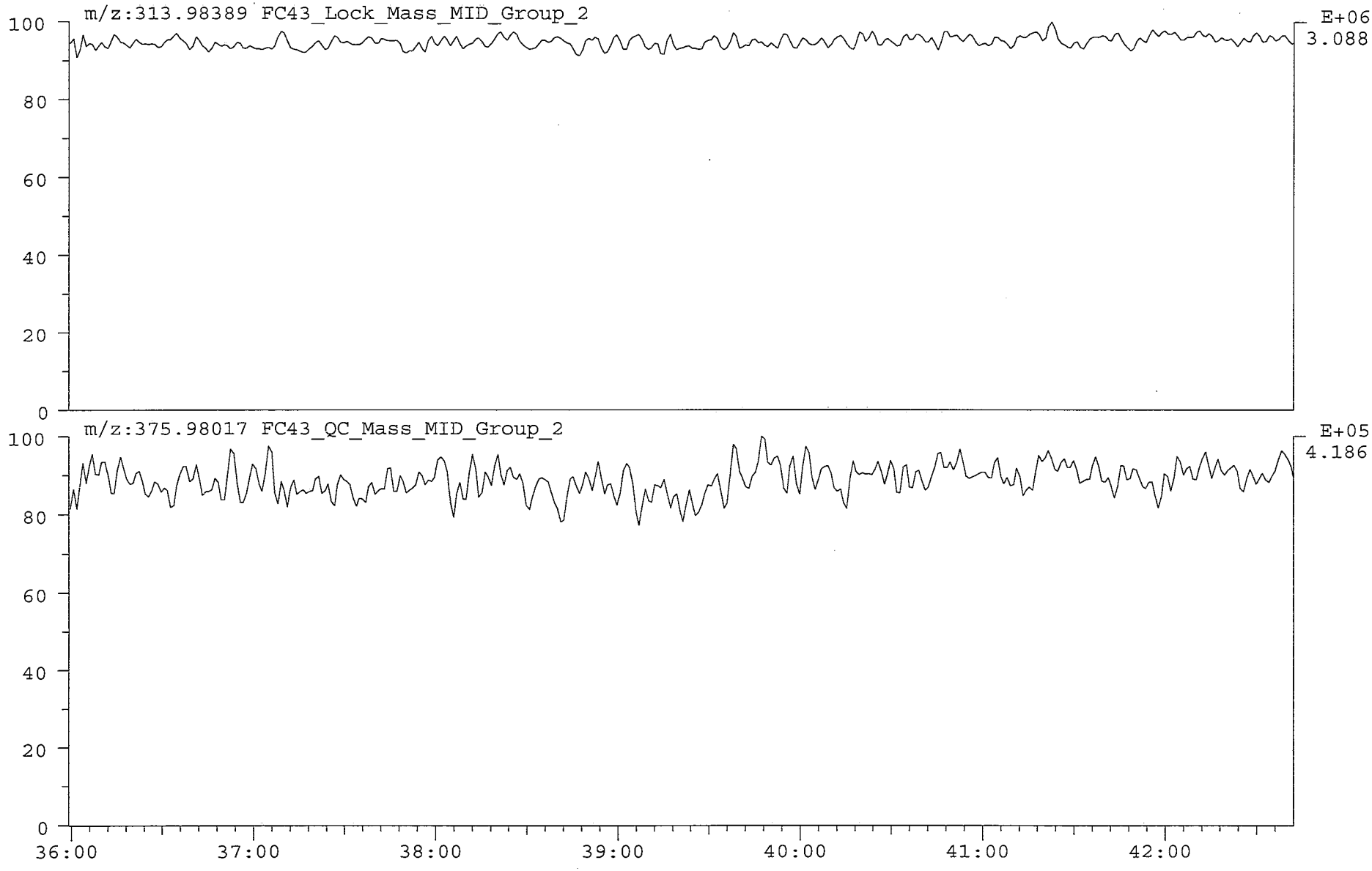
CHRO: d1tm811m 17-Aug-16 Elapse: 54:52 2494
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1601 > 1634 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : -2, 5.0
Disp: Height Area



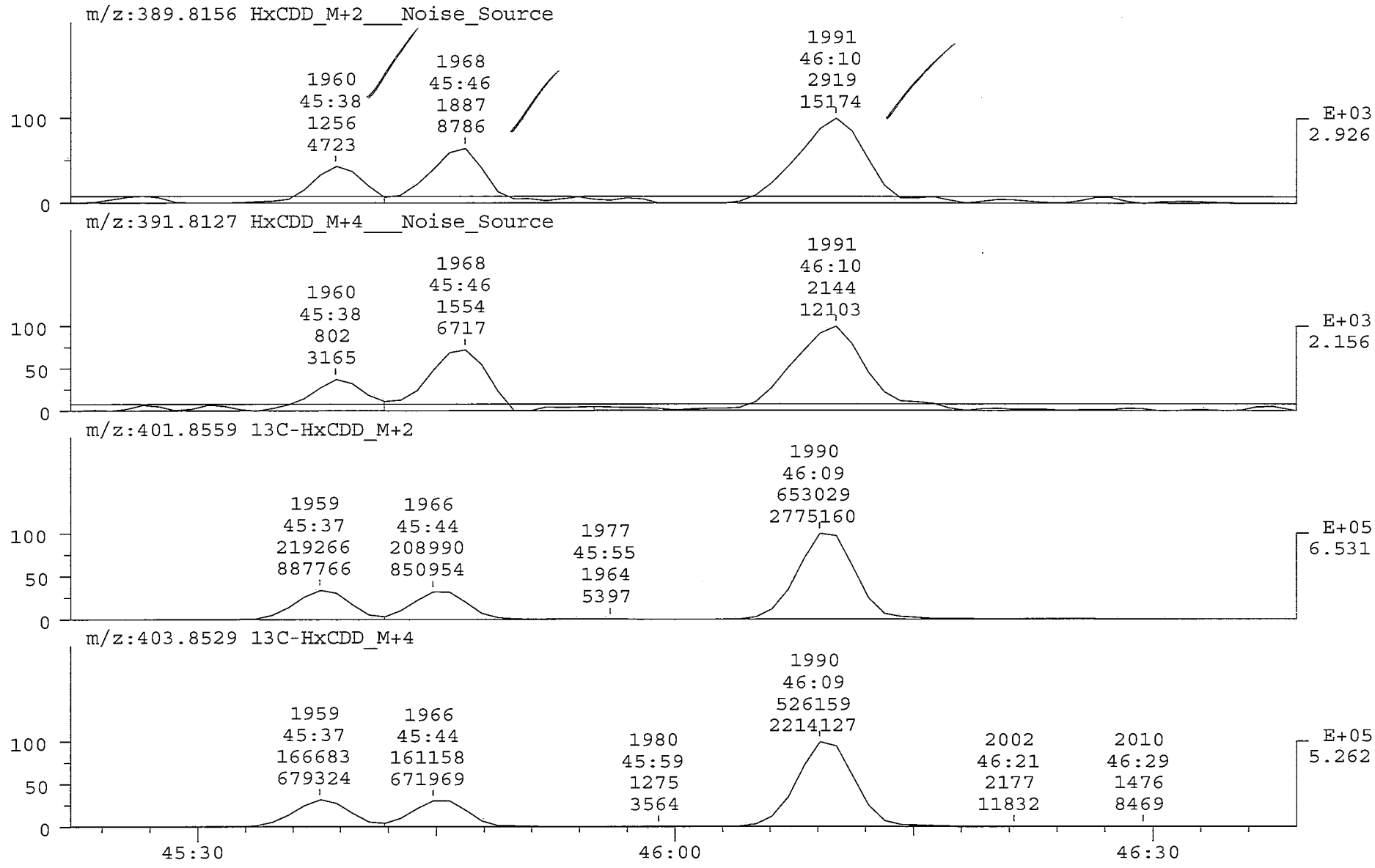
CHRO: dltm811m 17-Aug-16 Elapse: 40:26 1660
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1402 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



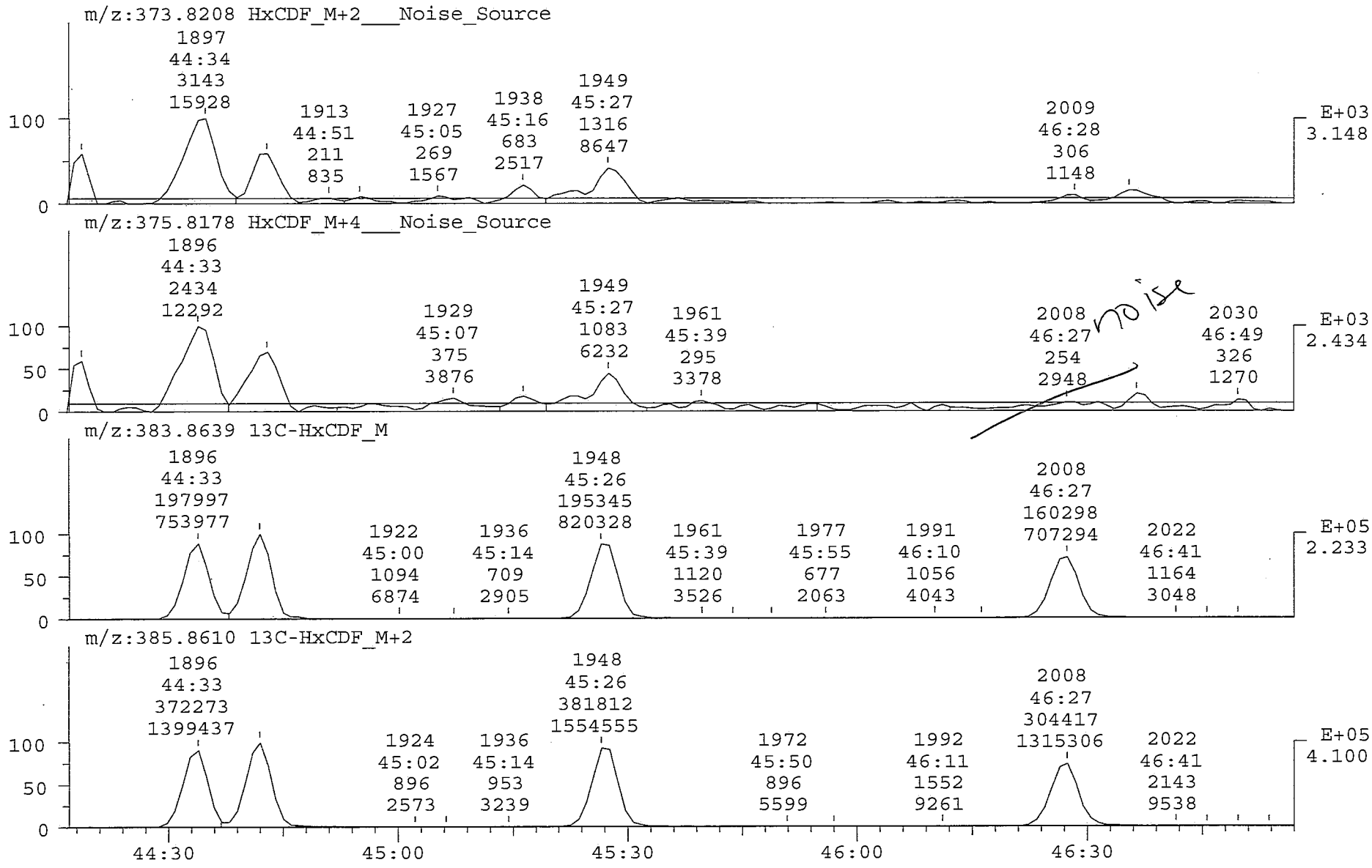
CHRO: d1tm811m 17-Aug-16 Elapse: 40:26 1660
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1402 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



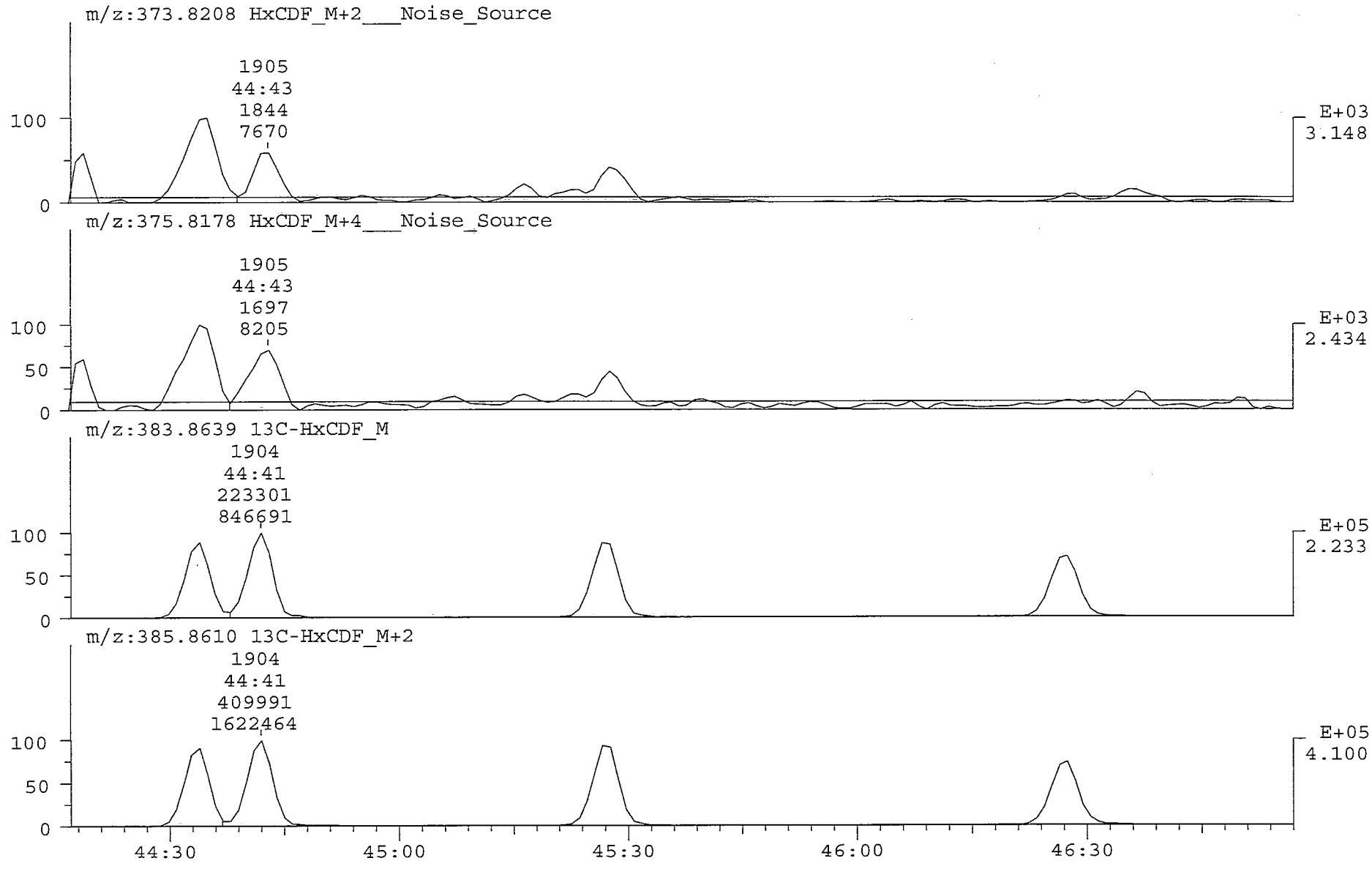
CHRO: d1tm811m 17-Aug-16 Elapse: 46:00 1981
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1944 > 2019 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



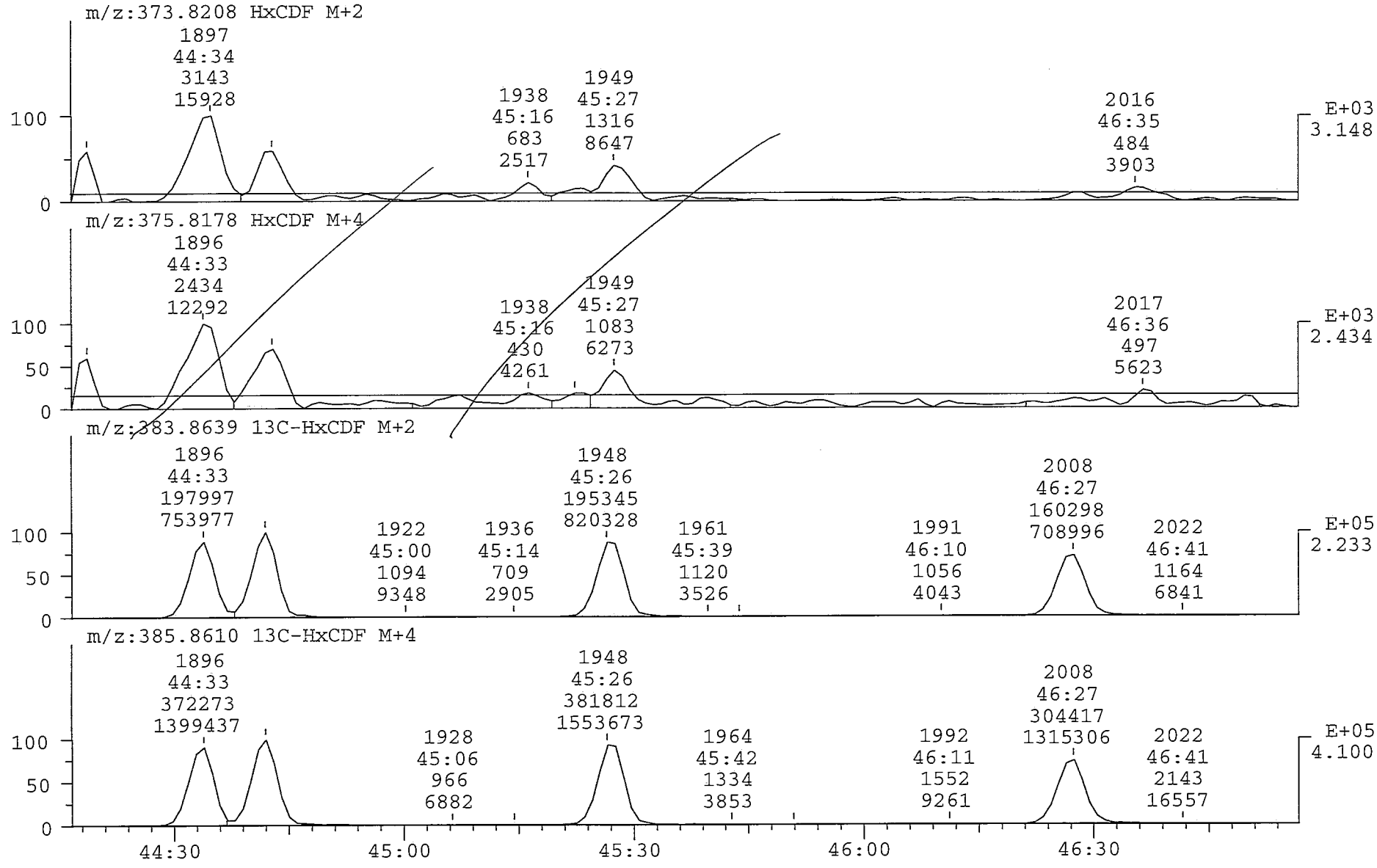
CHRO: d1tm811m 17-Aug-16 Elapse: 45:36 1958
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1879 > 2037 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



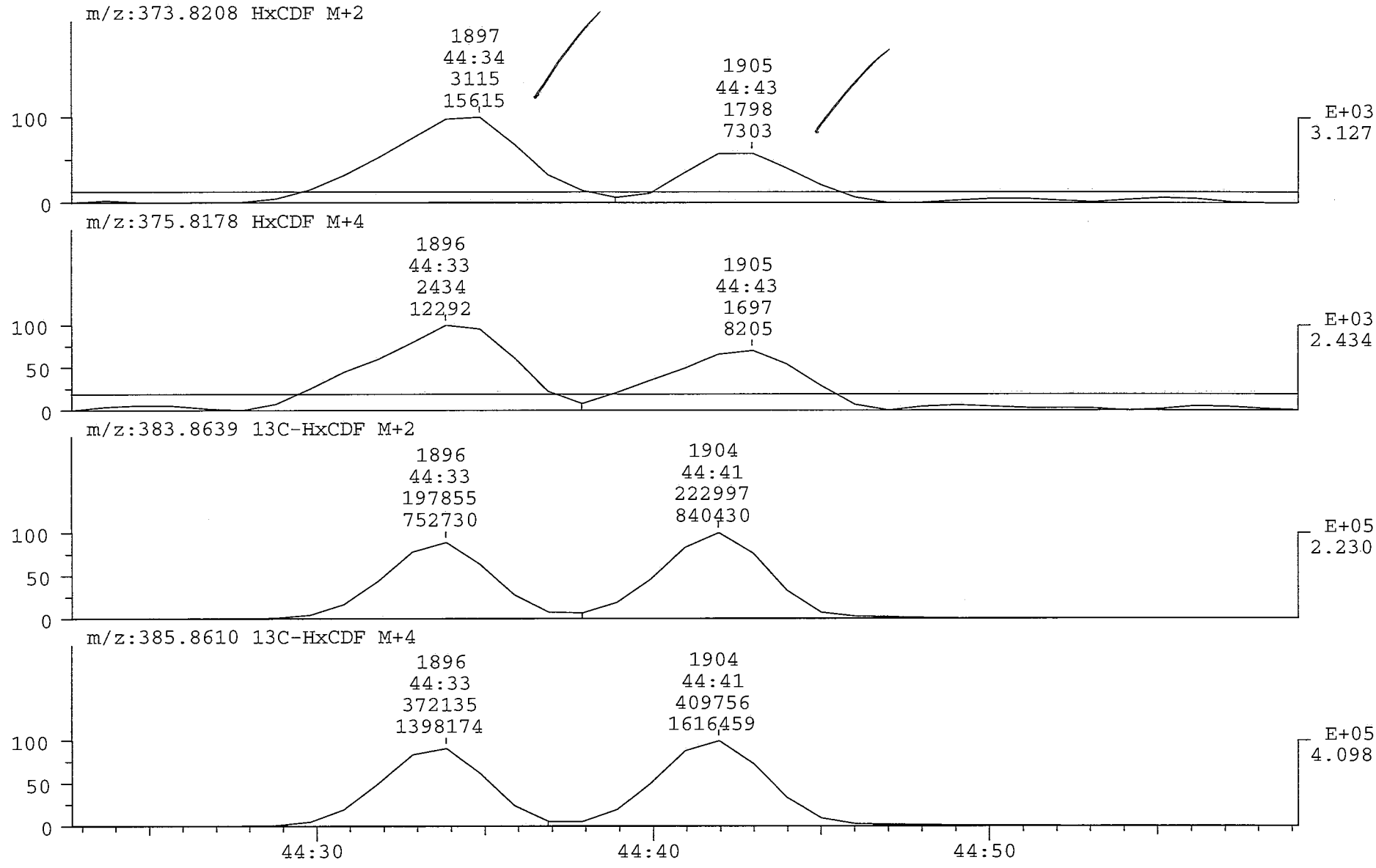
CHRO: d1tm811m 17-Aug-16 Elapse: 44:45 1907
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1903 > 1911 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



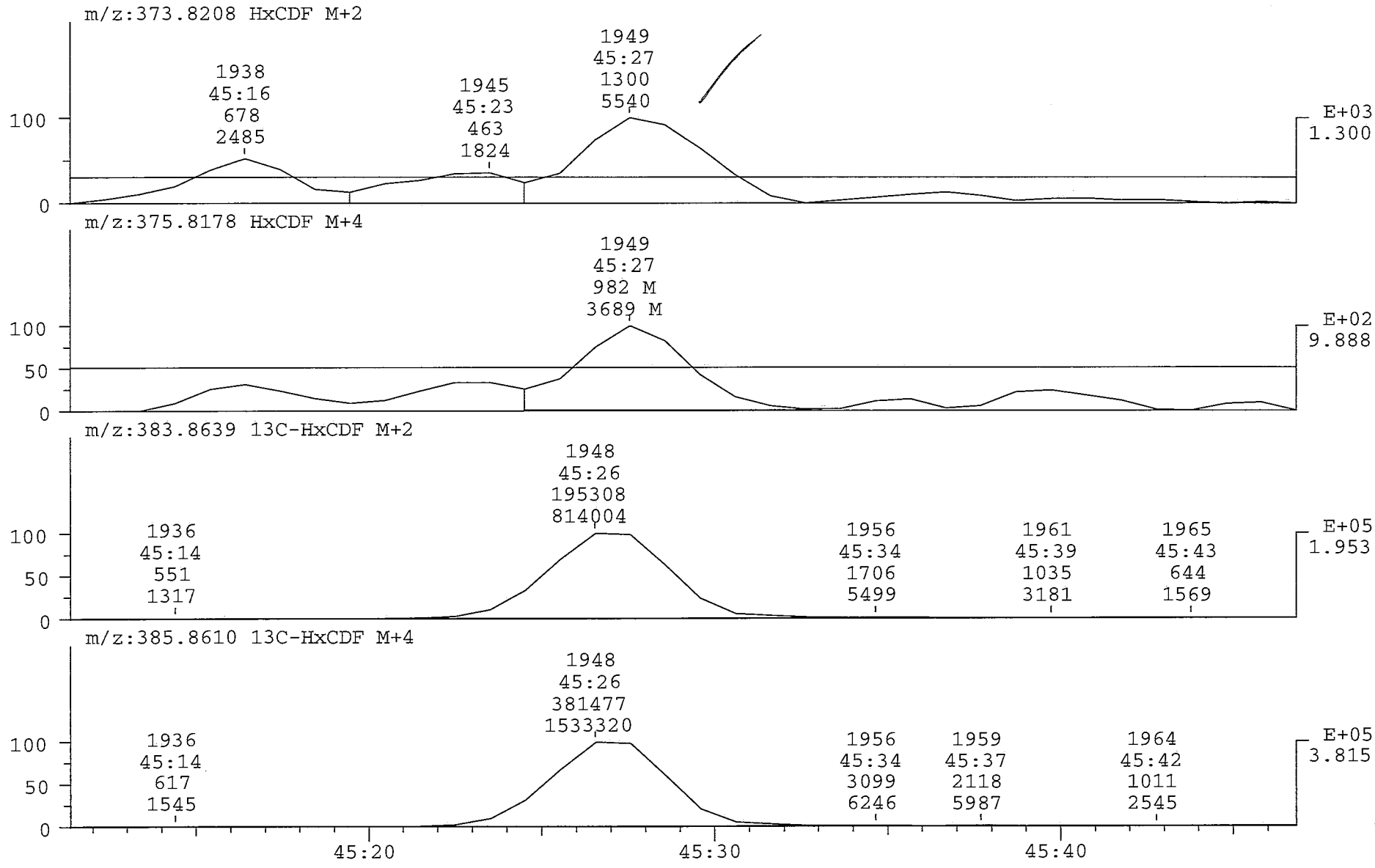
CHRO: d1tm811m 17-Aug-16 Elapse: 54:52 2494
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1879 > 2037 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



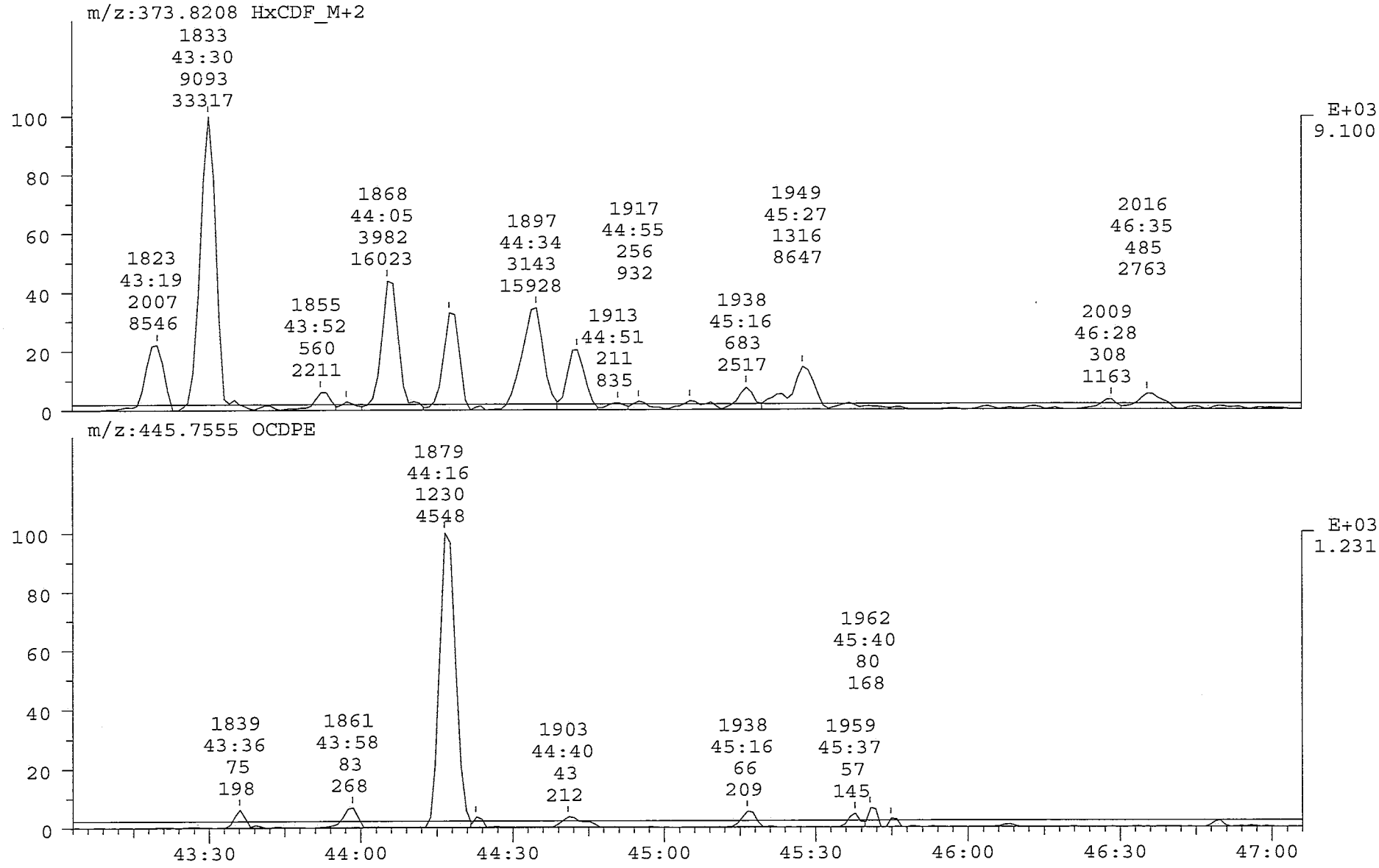
CHRO: d1tm811m 17-Aug-16 Elapse: 54:52 2494
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1885 > 1921 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



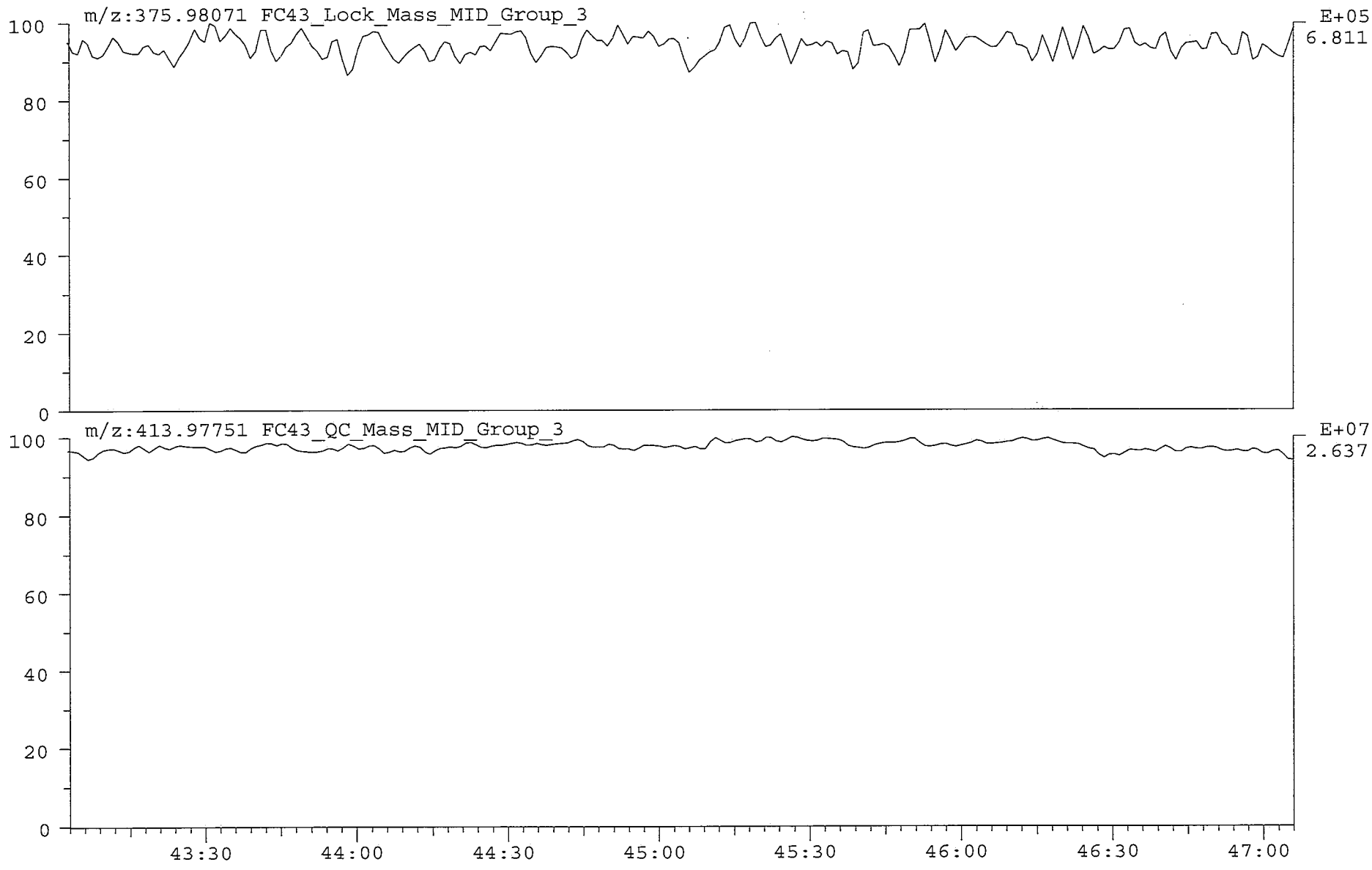
CHRO: d1tm811m 17-Aug-16 Elapse: 54:52 2494
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1933 > 1968 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : -2, 8.0
Disp: Height Area



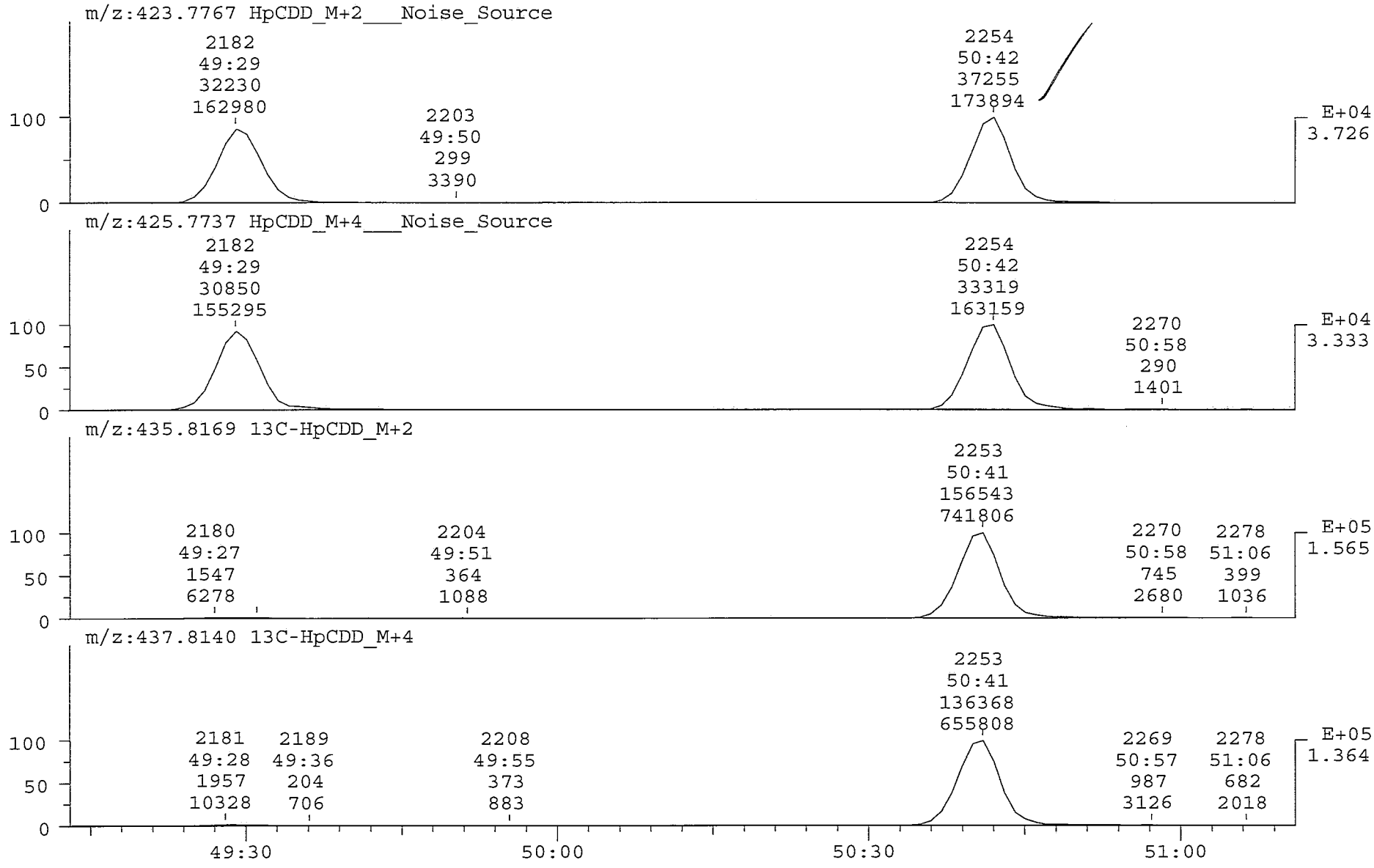
CHRO: d1tm811m 17-Aug-16 Elapse: 44:45 1907
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1806 > 2046 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



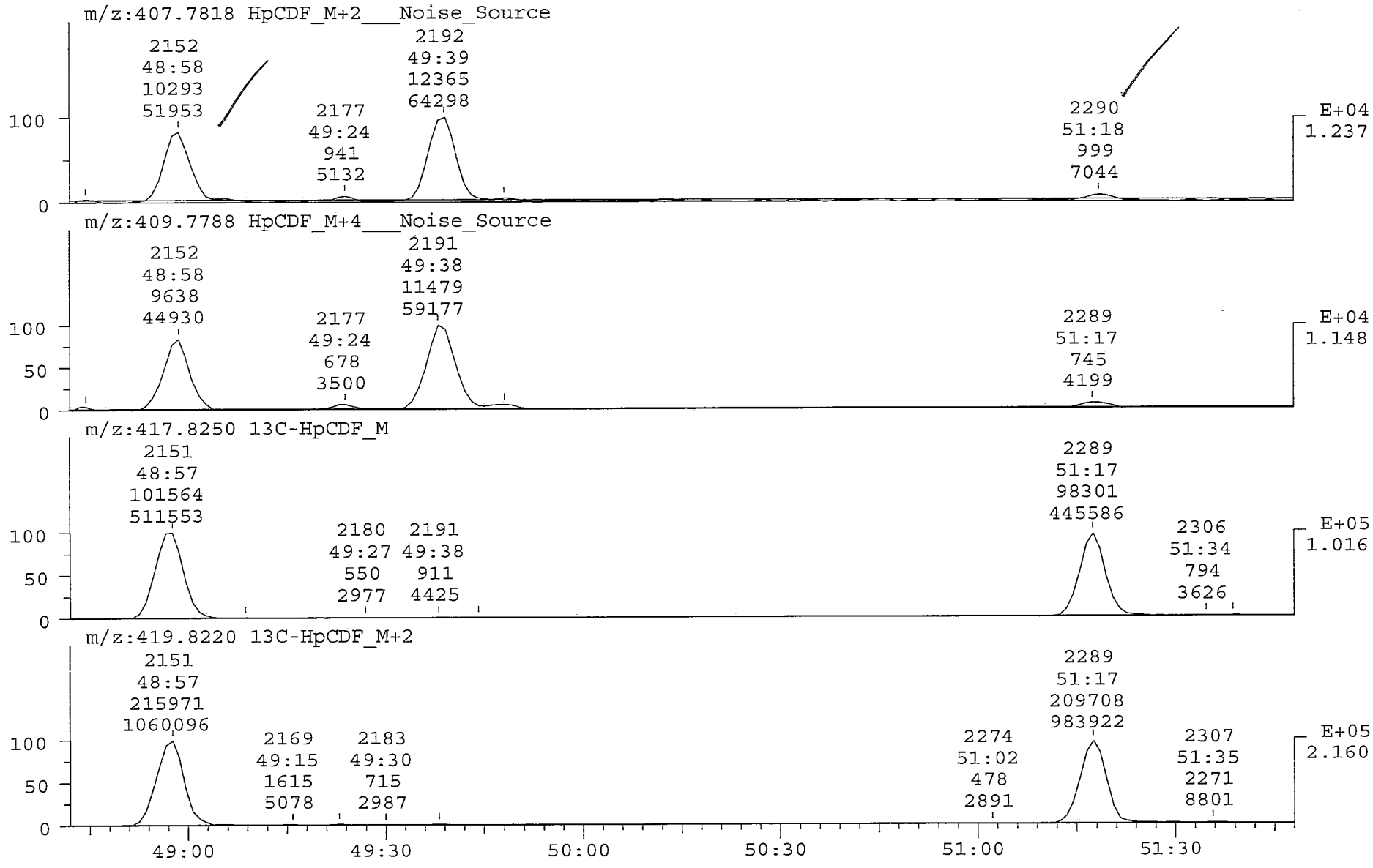
CHRO: d1tm811m 17-Aug-16 Elapse: 44:45 1907
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1806 > 2046 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



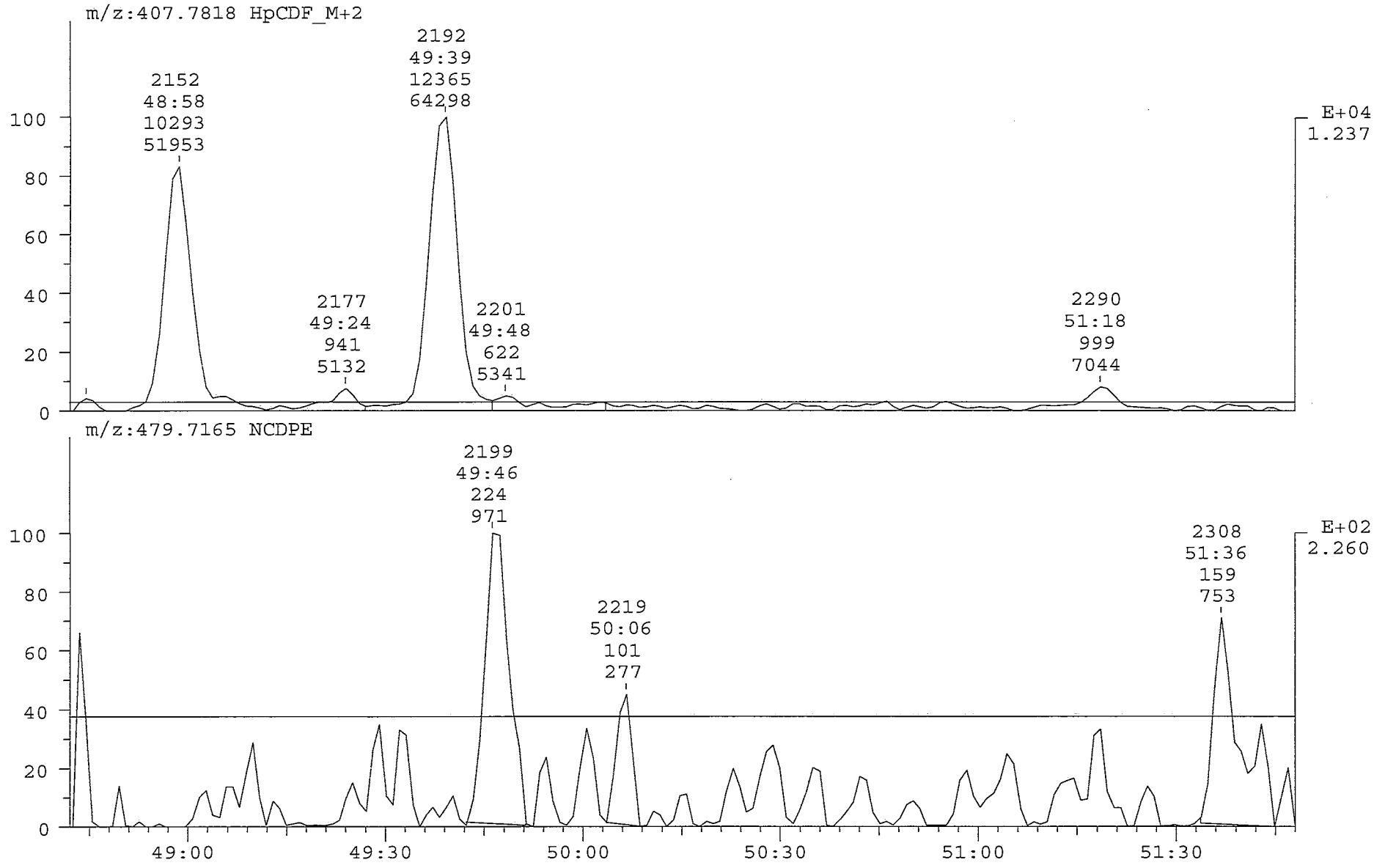
CHRO: d1tm811m 17-Aug-16 Elapse: 44:45 1907
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2166 > 2283 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



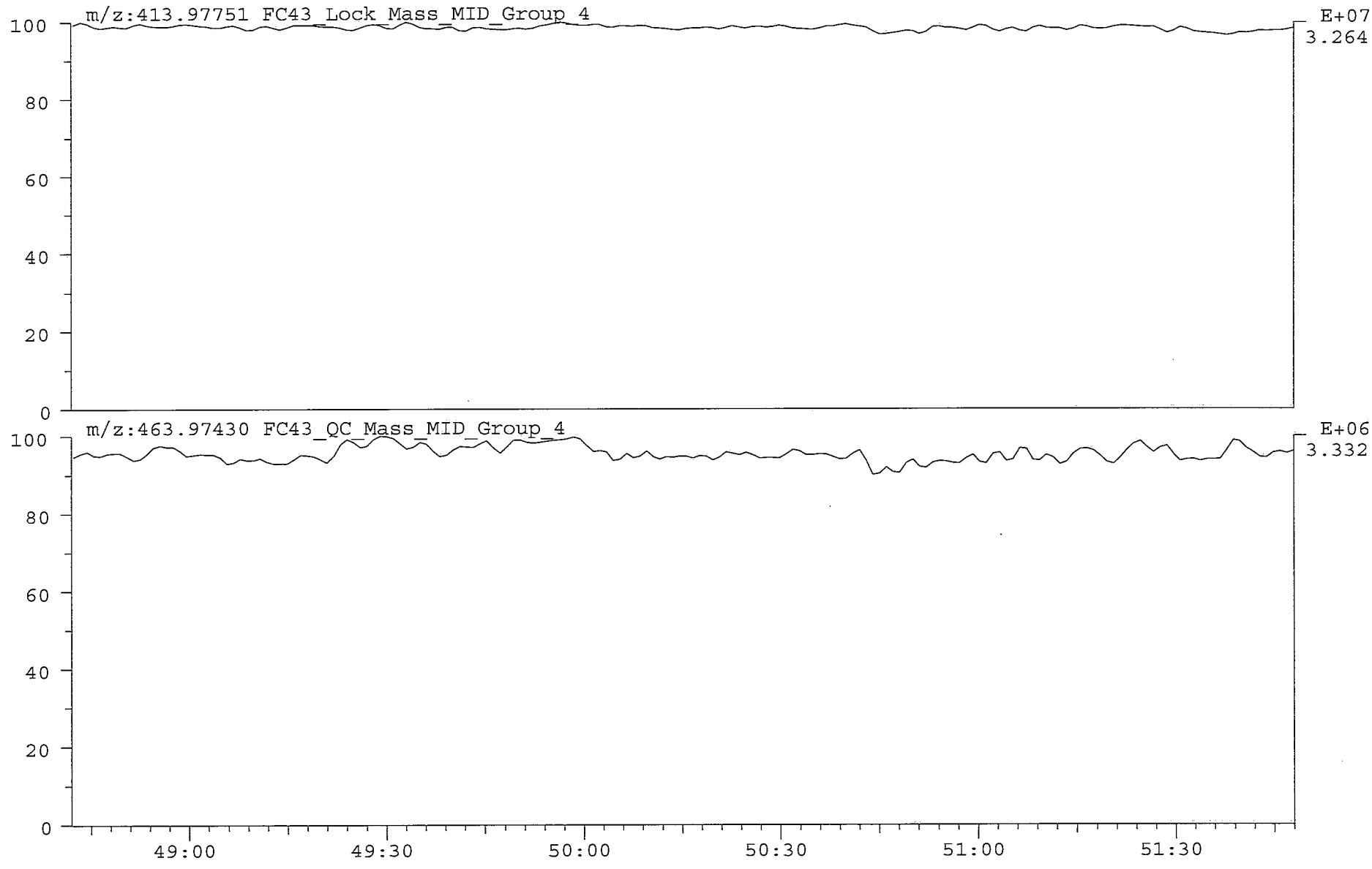
CHRO: d1tm811m 17-Aug-16 Elapse: 50:14 2227
Samp: WO=m811m1ac Meth=9Ao Di1=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2136 > 2319 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



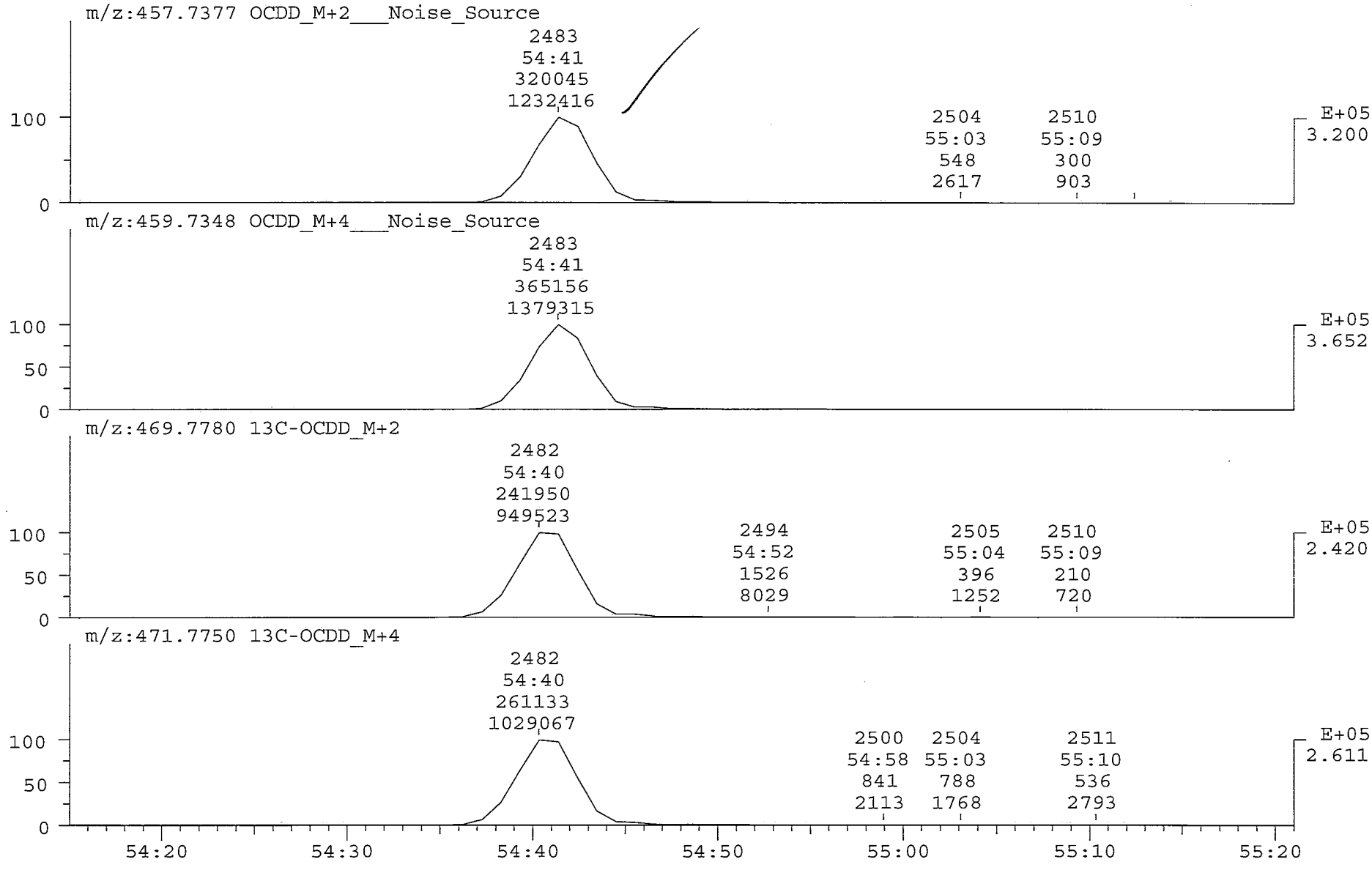
CHRO: d1tm811m 17-Aug-16 Elapse: 50:14 2227
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2136 > 2319 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



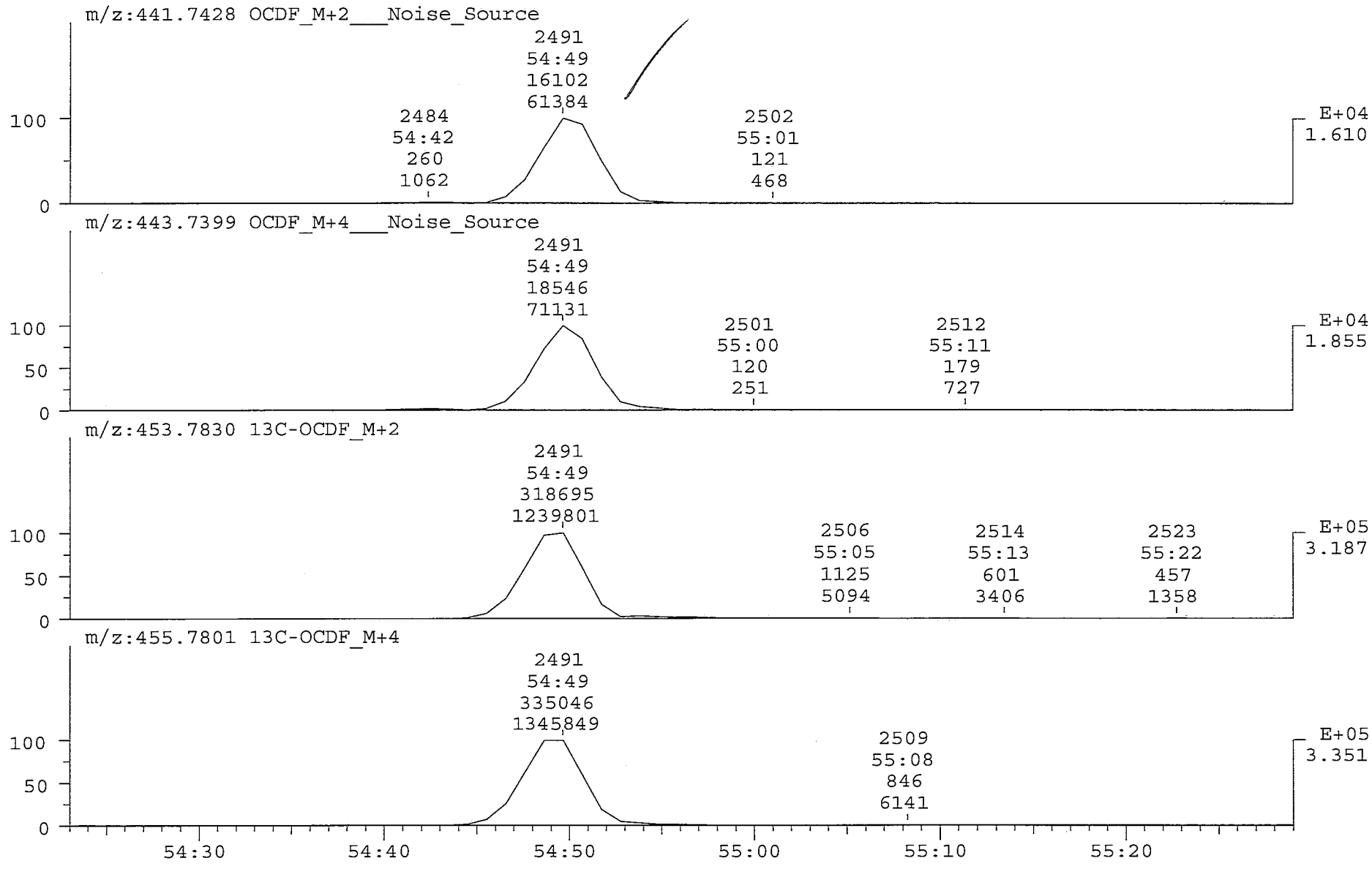
CHRO: dltm811m 17-Aug-16 Elapse: 50:14 2227
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2136 > 2319 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



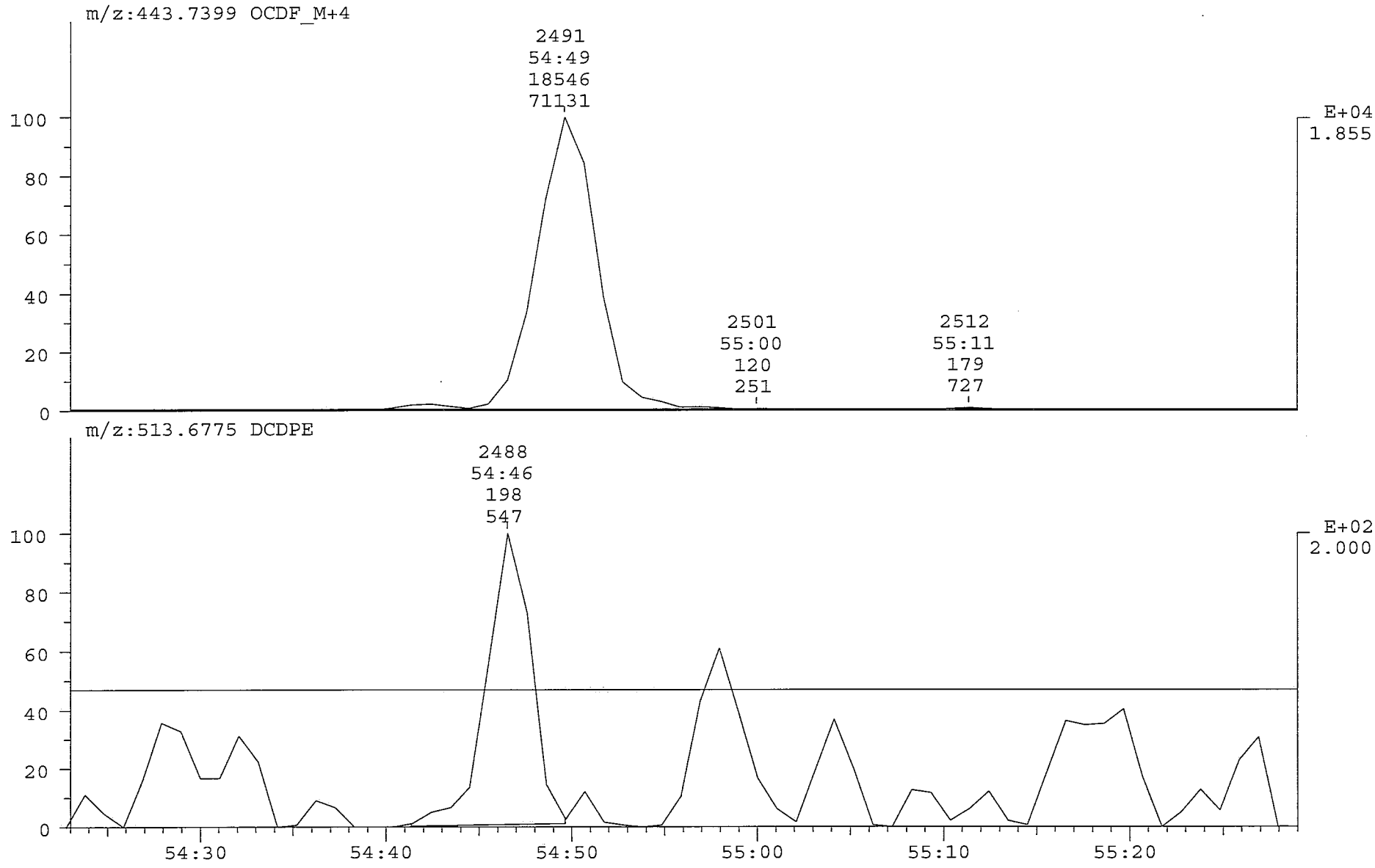
CHRO: d1tm811m 17-Aug-16 Elapse: 54:45 2487
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2458 > 2521 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



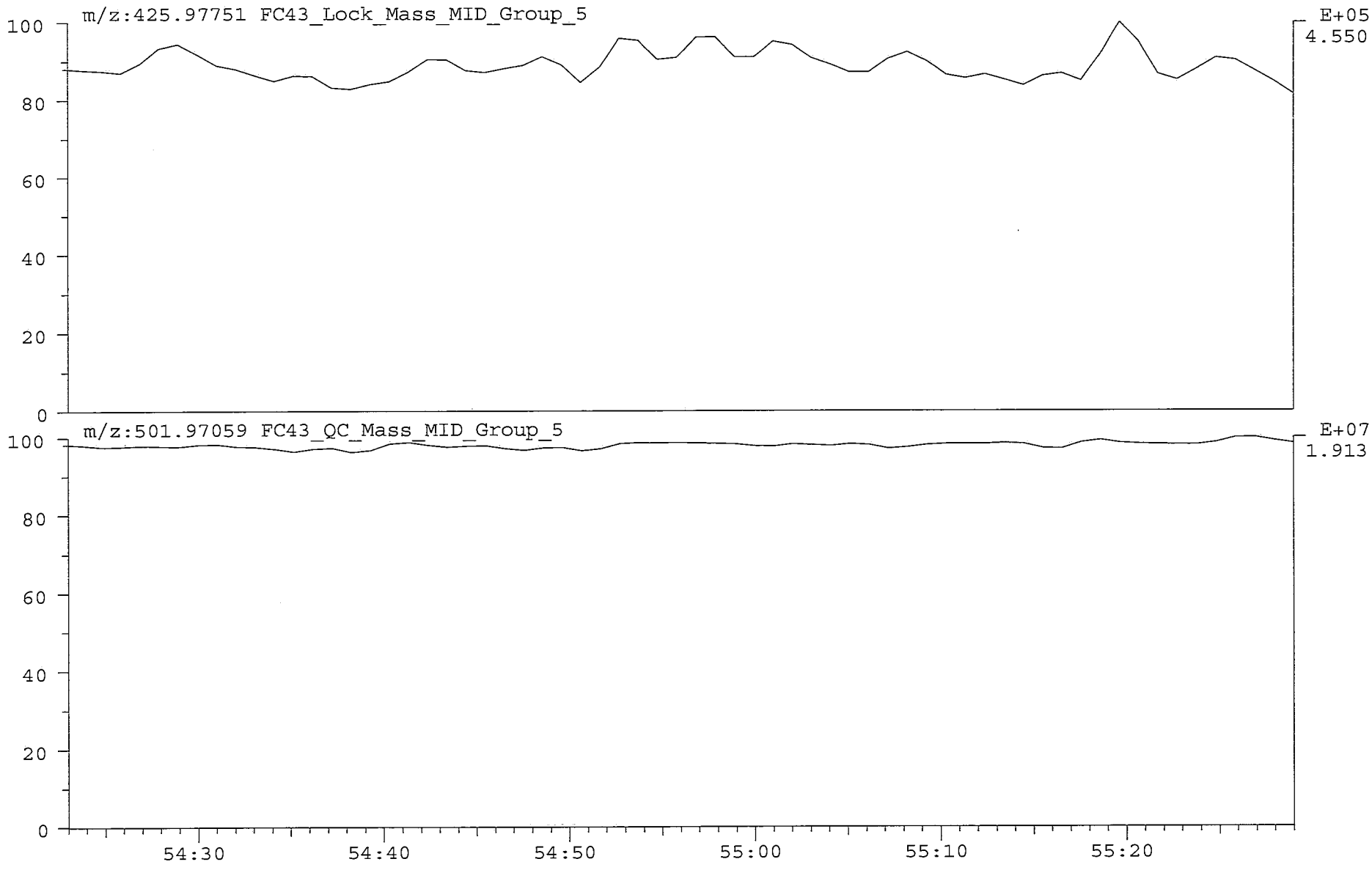
CHRO: d1tm811m 17-Aug-16 Elapse: 54:52 2494
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2465 > 2529 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d1tm811m                                17-Aug-16  Elapse:  54:52      2494
Samp:  WO=m811m1ac Meth=9Ao Dil=1                         Start :  14:33:16   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.6g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2465 > 2529          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d1tm811m 17-Aug-16 Elapse: 54:52 2494
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2465 > 2529 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Wed Aug 17 14:37:43 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 17-Aug-16 14:37:43

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160817130054

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

```
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          309.4834
 BQUAD            2.4000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE      18.0000   ECORR           1.0008   ECURR            1.0000
 EDAC        7969177.0000   EDACG           0.9997   EDACZ         2585.8226
 ELEN           -45.0000   EMULT        1802.0000   ENS            210.0000
 ENSBR            2.4000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           172.0000   EXSBR            2.5000
 FDMA       18000000.0000   FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            6.4000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0469	FVSRC	0.0394
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	642.0000
LENS_SYM	7.2500	LM	375.8364	LMII	500.0000
LMASS	309.4834	LKM	425.9770	MASS	309.4834
MDAC	3559369.1559	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2649.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-2.0000	RECURR	0.8977	RELEN	0.0000
RES	13360.9605	RPUSHER	-1.9414	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	684.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0994	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	309.4834	XLENS_POT	916.0000
XLENS_SYM	24.3000	YLENS_POT	856.0000	YLENS_SYM	15.0000

```
Source Gauge:         2.5e-005 mbar
Analyzer Penning:     9.5e-008 mbar
Pirani Analyse:       4.4e-003 mbar
Pirani Source:        3.9e-002 mbar
Pirani Inlet System: 4.7e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11859.
MID Time Window 2: Resolution is 11928.
MID Time Window 3: Resolution is 13329.
MID Time Window 4: Resolution is 12452.
MID Time Window 5: Resolution is 13360.

Amplifier Offset: 89.


*** File closed Wed Aug 17 15:34:56 2016
  ***
```

QUAN: d1tm811m.q0 Entries: 275

Data file(s) used
File: d1tm811m 17-Aug-16
Samp: WO=m811m1ac Meth=9Ao Dil=1 Start : 14:33:16 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:09	250.	59.	32:06	32:14	9.	2	5.0	ABV
319.8805	32:18	389.	82.	32:14	32:23	9.	2	5.0	AVB
319.8805	32:33	459.	105.	32:27	32:40	9.	2	5.0	ABB
319.8805	32:51	256.	76.	32:48	32:54	9.	2	5.0	ABV
319.8805	32:56	210.	75.	32:54	33:01	9.	2	5.0	AVB
319.8805	33:57	395.	70.	33:51	34:02	9.	2	5.0	ABB
321.8775	31:25	358.	149.	31:22	31:27	11.	2	5.0	ABV
321.8775	31:31	472.	140.	31:27	31:34	11.	2	5.0	AVB
321.8775	31:36	221.	78.	31:34	31:40	11.	2	5.0	ABB
321.8775	32:12	354.	81.	32:08	32:16	11.	2	5.0	ABV
321.8775	32:18	200.	95.	32:16	32:20	11.	2	5.0	AVB
321.8775	32:39	395.	82.	32:33	32:42	11.	2	5.0	ABB
321.8775	32:53	730.	128.	32:50	33:02	11.	2	5.0	ABB
321.8775	34:01	519.	83.	33:56	34:08	11.	2	5.0	ABB
331.9202	32:15	1912342.	192277.	32:01	32:31	83.	2	5.0	ABV
331.9202	32:48	638016.	60119.	32:35	33:00	83.	2	5.0	AVV
331.9202	33:02	1744.	773.	33:00	33:03	83.	2	5.0	AVV
331.9202	33:07	3391.	643.	33:03	33:11	83.	2	5.0	AVB
333.9171	32:15	2367218.	246343.	32:00	32:31	99.	2	5.0	ABV
333.9171	32:33	3652.	914.	32:31	32:36	99.	2	5.0	AVV
333.9171	32:47	814066.	85010.	32:36	33:02	99.	2	5.0	AVV
333.9171	33:30	1491.	558.	33:27	33:32	99.	2	5.0	ABB
303.8864	30:43	20033.	1913.	30:31	30:59	39.	1	1.0	ABV
305.8834	30:45	20580.	2032.	30:31	30:49	43.	1	1.0	AVV
303.8864	29:32	8892.	868.	29:21	29:43	39.	2	5.0	ABB
303.8864	30:14	8418.	799.	29:58	30:23	39.	2	5.0	AVB
303.8864	30:43	20033.	1913.	30:31	30:59	39.	2	5.0	ABV
303.8864	31:59	14013.	1401.	31:49	32:12	39.	2	5.0	ABB
305.8834	29:32	11894.	1493.	29:23	29:43	43.	2	5.0	ABB
305.8834	30:04	1271.	368.	29:56	30:06	43.	2	5.0	ABV
305.8834	30:13	7277.	883.	30:06	30:23	43.	2	5.0	AVB
305.8834	30:45	20605.	2032.	30:30	30:49	43.	2	5.0	AVV
305.8834	30:52	5061.	955.	30:49	31:00	43.	2	5.0	AVB
305.8834	32:00	18224.	1999.	31:50	32:15	43.	2	5.0	ABV
315.9261	29:25	4838.	1198.	29:21	29:30	62.	2	5.0	ABV
315.9261	29:35	3872.	1028.	29:30	29:37	62.	2	5.0	AVB
315.9261	30:39	1228189.	126037.	30:24	30:55	62.	2	5.0	AVV
315.9261	31:10	2577.	570.	31:08	31:15	62.	2	5.0	ABB
315.9261	31:26	2345.	780.	31:23	31:34	62.	2	5.0	ABB
315.9261	31:56	1678.	365.	31:53	32:00	62.	2	5.0	ABB
315.9261	32:05	2207.	645.	32:00	32:07	62.	2	5.0	ABB
315.9261	32:17	2969.	424.	32:07	32:19	62.	2	5.0	ABB
317.9230	29:31	5391.	742.	29:21	29:37	98.	2	5.0	ABB
317.9230	30:39	1536304.	170634.	30:24	30:55	98.	2	5.0	AVV
317.9230	31:04	3047.	848.	30:57	31:06	98.	2	5.0	AVB
317.9230	31:24	2786.	903.	31:19	31:26	98.	2	5.0	ABB
317.9230	31:33	3898.	548.	31:31	31:46	98.	2	5.0	ABB
317.9230	32:16	4544.	603.	32:09	32:23	98.	2	5.0	ABB
355.8368	41:24	3093.	841.	41:14	41:27	24.	1	1.0	ABB
357.8337	41:20	3232.	517.	41:16	41:31	25.	1	1.0	ABB

355.8368	40:52	457.	160.	40:48	40:55	24.	2	5.0 ABB
355.8368	40:58	1590.	198.	40:55	41:14	24.	2	5.0 ABB
355.8368	41:24	3093.	841.	41:14	41:27	24.	2	5.0 ABB
355.8368	41:38	1336.	276.	41:32	41:46	24.	2	5.0 ABB
355.8368	42:02	1006.	339.	41:58	42:05	24.	2	5.0 ABB
357.8337	40:59	806.	229.	40:54	41:02	25.	2	5.0 ABB
357.8337	41:09	734.	151.	41:02	41:12	25.	2	5.0 ABB
357.8337	41:20	3232.	517.	41:16	41:31	25.	2	5.0 ABB
357.8337	41:38	528.	149.	41:32	41:41	25.	2	5.0 ABB
357.8337	41:52	1407.	247.	41:41	41:56	25.	2	5.0 ABB
357.8337	42:02	1145.	252.	41:57	42:16	25.	2	5.0 ABB
367.8765	40:57	2039.	482.	40:50	40:59	34.	2	5.0 ABB
367.8765	41:23	868793.	215657.	41:16	41:38	34.	2	5.0 ABV
367.8765	41:40	4065.	1016.	41:38	41:44	34.	2	5.0 AVV
367.8765	41:46	1281.	549.	41:44	41:48	34.	2	5.0 AVV
367.8765	41:49	707.	365.	41:48	41:51	34.	2	5.0 AVB
367.8765	41:56	1180.	398.	41:52	41:58	34.	2	5.0 ABV
367.8765	42:00	1194.	522.	41:58	42:02	34.	2	5.0 AVV
367.8765	42:04	1824.	830.	42:02	42:06	34.	2	5.0 AVB
367.8765	42:08	453.	224.	42:06	42:10	34.	2	5.0 ABB
367.8765	42:12	817.	364.	42:10	42:14	34.	2	5.0 ABV
367.8765	42:17	699.	275.	42:14	42:19	34.	2	5.0 AVB
369.8734	41:03	839.	202.	41:00	41:09	12.	2	5.0 ABB
369.8734	41:23	545206.	129865.	41:16	41:39	12.	2	5.0 ABV
369.8734	41:44	1682.	579.	41:41	41:46	12.	2	5.0 ABV
369.8734	41:48	1856.	398.	41:46	41:54	12.	2	5.0 AVB
369.8734	42:01	1833.	402.	41:54	42:04	12.	2	5.0 ABB
339.8427	40:54	9372.	2094.	40:44	41:00	36.	1	1.0 ABB
341.8396	40:54	6223.	1176.	40:48	41:01	39.	1	1.0 AVV
339.8427	39:45	8475.	1425.	39:33	39:49	36.	2	5.0 ABB
339.8427	40:00	4514.	1041.	39:54	40:09	36.	2	5.0 ABB
339.8427	40:15	4200.	729.	40:10	40:22	36.	2	5.0 ABB
339.8427	40:54	9372.	2094.	40:44	41:00	36.	2	5.0 ABB
339.8427	41:06	7264.	1321.	41:00	41:16	36.	2	5.0 ABB
341.8396	39:46	5826.	899.	39:33	39:51	39.	2	5.0 ABB
341.8396	40:00	2360.	526.	39:52	40:06	39.	2	5.0 ABB
341.8396	40:14	3914.	615.	40:06	40:23	39.	2	5.0 ABB
341.8396	40:54	6697.	1176.	40:39	41:01	39.	2	5.0 AVV
341.8396	41:05	4768.	954.	41:01	41:13	39.	2	5.0 AVB
351.8824	39:44	1350602.	290227.	39:35	39:56	82.	2	5.0 ABV
351.8824	39:59	9254.	1940.	39:56	40:04	82.	2	5.0 AVV
351.8824	40:12	14071.	2877.	40:04	40:18	82.	2	5.0 AVV
351.8824	40:20	2451.	885.	40:18	40:22	82.	2	5.0 AVV
351.8824	40:27	2801.	774.	40:22	40:30	82.	2	5.0 AVB
351.8824	40:35	3545.	629.	40:32	40:46	82.	2	5.0 ABV
351.8824	40:53	1498861.	344716.	40:46	41:09	82.	2	5.0 AVV
351.8824	41:12	6327.	1800.	41:10	41:15	82.	2	5.0 AVV
351.8824	41:22	8337.	1049.	41:15	41:30	82.	2	5.0 AVV
351.8824	41:33	2390.	888.	41:30	41:35	82.	2	5.0 AVB
353.8793	39:44	858986.	185299.	39:35	39:57	49.	2	5.0 ABV
353.8793	39:59	1314.	604.	39:57	40:01	49.	2	5.0 AVV
353.8793	40:06	2437.	775.	40:01	40:09	49.	2	5.0 AVV
353.8793	40:12	8393.	1751.	40:09	40:17	49.	2	5.0 AVB
353.8793	40:34	1137.	360.	40:31	40:39	49.	2	5.0 ABV
353.8793	40:53	952751.	226069.	40:39	41:01	49.	2	5.0 AVV
353.8793	41:04	9332.	1728.	41:01	41:10	49.	2	5.0 AVV
353.8793	41:12	4539.	846.	41:10	41:20	49.	2	5.0 AVV
353.8793	41:23	1285.	316.	41:20	41:26	49.	2	5.0 AVB
389.7961	46:10	15174.	2919.	46:03	46:18	47.	1	1.0 ABB
391.7931	46:10	11744.	2144.	46:00	46:18	34.	1	1.0 AVB
389.7961	45:38	4723.	1256.	45:32	45:41	47.	2	5.0 ABV
389.7961	45:46	8786.	1887.	45:41	45:59	47.	2	5.0 AVB
389.7961	46:10	15174.	2919.	46:03	46:18	47.	2	5.0 ABB
391.7931	45:38	3165.	802.	45:33	45:41	34.	2	5.0 ABV
391.7931	45:46	6717.	1554.	45:41	45:49	34.	2	5.0 AVB
391.7931	46:10	12103.	2144.	45:55	46:18	34.	2	5.0 AVB
401.8358	45:37	887766.	210266.	45:30	45:41	118.	2	5.0 ABV

401.8358	45:44	850954.	208990.	45:41	45:55	118.	2	5.0 AVV
401.8358	45:56	5397.	1964.	45:55	45:59	118.	2	5.0 AVB
401.8358	46:09	2775160.	653029.	46:00	46:24	118.	2	5.0 ABV
403.8327	45:37	679324.	166683.	45:31	45:41	163.	2	5.0 ABV
403.8327	45:44	671969.	161158.	45:41	45:57	163.	2	5.0 AVV
403.8327	45:59	3564.	1275.	45:57	46:01	163.	2	5.0 AVV
403.8327	46:09	2214127.	526158.	46:01	46:19	163.	2	5.0 AVV
403.8327	46:21	11832.	2177.	46:19	46:27	163.	2	5.0 AVV
403.8327	46:29	8469.	1476.	46:27	46:37	163.	2	5.0 AVB
373.8021	44:34	15928.	3143.	44:25	44:39	38.	1	1.0 ABV
375.7990	44:33	12292.	2434.	44:27	44:37	47.	1	1.0 ABV
373.8021	44:18	4385.	1854.	44:16	44:20	38.	2	5.0 ABB
373.8021	44:34	15928.	3143.	44:25	44:39	38.	2	5.0 ABV
373.8021	44:43	7670.	1844.	44:39	44:47	38.	2	5.0 AVV
373.8021	44:51	835.	211.	44:47	44:53	38.	2	5.0 AVV
373.8021	44:55	932.	256.	44:53	45:00	38.	2	5.0 AVV
373.8021	45:05	1567.	269.	45:00	45:11	38.	2	5.0 AVB
373.8021	45:16	2517.	683.	45:11	45:19	38.	2	5.0 ABV
373.8021	45:27	8647.	1316.	45:19	45:42	38.	2	5.0 AVV
373.8021	46:28	1148.	306.	46:22	46:30	38.	2	5.0 ABV
373.8021	46:35	2755.	484.	46:30	46:41	38.	2	5.0 AVB
375.7990	44:18	3626.	1450.	44:16	44:21	47.	2	5.0 ABB
375.7990	44:33	12292.	2434.	44:27	44:37	47.	2	5.0 ABV
375.7990	44:43	8205.	1697.	44:37	44:47	47.	2	5.0 AVB
375.7990	45:07	3876.	375.	44:52	45:13	47.	2	5.0 AVV
375.7990	45:16	1836.	430.	45:13	45:19	47.	2	5.0 AVV
375.7990	45:27	6232.	1083.	45:19	45:32	47.	2	5.0 AVV
375.7990	45:39	3378.	295.	45:32	45:55	47.	2	5.0 AVV
375.7990	46:27	2948.	254.	46:12	46:33	47.	2	5.0 AVV
375.7990	46:36	2209.	497.	46:33	46:44	47.	2	5.0 AVV
375.7990	46:49	1270.	326.	46:44	46:52	47.	2	5.0 AVB
373.8021	44:18	4385.	1854.	44:16	44:20	38.	2	5.0 ABB
373.8021	44:34	15928.	3143.	44:25	44:39	38.	2	5.0 ABV
373.8021	44:43	7670.	1844.	44:39	44:47	38.	2	5.0 AVV
373.8021	44:51	835.	211.	44:47	44:53	38.	2	5.0 AVV
373.8021	44:55	932.	256.	44:53	45:00	38.	2	5.0 AVV
373.8021	45:05	1567.	269.	45:00	45:11	38.	2	5.0 AVB
373.8021	45:16	2517.	683.	45:11	45:19	38.	2	5.0 ABV
373.8021	45:27	8647.	1316.	45:19	45:42	38.	2	5.0 AVV
373.8021	46:28	1148.	306.	46:22	46:30	38.	2	5.0 ABV
373.8021	46:35	2755.	484.	46:30	46:41	38.	2	5.0 AVB
375.7990	44:18	3626.	1450.	44:16	44:21	47.	2	5.0 ABB
375.7990	44:33	12292.	2434.	44:27	44:37	47.	2	5.0 ABV
375.7990	44:43	8205.	1697.	44:37	44:47	47.	2	5.0 AVB
375.7990	45:07	3876.	375.	44:52	45:13	47.	2	5.0 AVV
375.7990	45:16	1836.	430.	45:13	45:19	47.	2	5.0 AVV
375.7990	45:27	6232.	1083.	45:19	45:32	47.	2	5.0 AVV
375.7990	45:39	3378.	295.	45:32	45:55	47.	2	5.0 AVV
375.7990	46:27	2948.	254.	46:12	46:33	47.	2	5.0 AVV
375.7990	46:36	2209.	497.	46:33	46:44	47.	2	5.0 AVV
375.7990	46:49	1270.	326.	46:44	46:52	47.	2	5.0 AVB
383.8447	44:33	753977.	197997.	44:26	44:37	66.	2	5.0 ABV
383.8447	44:42	846691.	223301.	44:37	44:54	66.	2	5.0 AVV
383.8447	45:00	6874.	1094.	44:54	45:03	66.	2	5.0 AVV
383.8447	45:07	2473.	508.	45:03	45:09	66.	2	5.0 AVV
383.8447	45:14	2905.	709.	45:09	45:16	66.	2	5.0 AVB
383.8447	45:26	820328.	195345.	45:16	45:37	66.	2	5.0 ABV
383.8447	45:39	3526.	1120.	45:37	45:41	66.	2	5.0 AVV
383.8447	45:43	1972.	744.	45:41	45:45	66.	2	5.0 AVV
383.8447	45:48	1749.	507.	45:45	45:51	66.	2	5.0 AVV
383.8447	45:56	2063.	677.	45:51	45:58	66.	2	5.0 AVB
383.8447	46:10	4043.	1056.	46:03	46:12	66.	2	5.0 ABB
383.8447	46:16	1702.	434.	46:12	46:19	66.	2	5.0 ABV
383.8447	46:27	707294.	160298.	46:19	46:39	66.	2	5.0 AVV
383.8447	46:41	3048.	1164.	46:39	46:43	66.	2	5.0 AVV
383.8447	46:45	1798.	740.	46:43	46:47	66.	2	5.0 AVV
383.8447	46:49	1995.	601.	46:47	46:54	66.	2	5.0 AVB

385.8417	44:33	1399437.	372273.	44:23	44:36	114.	2	5.0 ABV
385.8417	44:42	1622464.	409991.	44:36	44:57	114.	2	5.0 AVV
385.8417	45:02	2573.	896.	45:00	45:04	114.	2	5.0 AVV
385.8417	45:06	4309.	966.	45:04	45:11	114.	2	5.0 AVV
385.8417	45:14	3239.	953.	45:11	45:16	114.	2	5.0 AVV
385.8417	45:26	1554555.	381812.	45:16	45:41	114.	2	5.0 AVV
385.8417	45:50	5599.	896.	45:44	45:54	114.	2	5.0 AVB
385.8417	45:57	4624.	952.	45:54	46:02	114.	2	5.0 ABB
385.8417	46:11	9261.	1552.	46:02	46:18	114.	2	5.0 ABB
385.8417	46:27	1315306.	304417.	46:19	46:38	114.	2	5.0 ABV
385.8417	46:41	9538.	2143.	46:38	46:44	114.	2	5.0 AVV
385.8417	46:45	2354.	914.	46:44	46:47	114.	2	5.0 AVV
385.8417	46:49	2371.	903.	46:47	46:51	114.	2	5.0 AVV
385.8417	46:53	2294.	1098.	46:51	46:55	114.	2	5.0 AVB
423.7555	50:42	173811.	37255.	50:34	50:57	46.	1	1.0 AVV
425.7524	50:42	163159.	33319.	50:31	50:54	55.	1	1.0 ABV
423.7555	49:29	162980.	32230.	49:21	49:42	46.	2	5.0 ABV
423.7555	50:42	173894.	37255.	50:31	50:57	46.	2	5.0 ABV
425.7524	49:29	155295.	30850.	49:21	49:44	55.	2	5.0 ABV
425.7524	50:42	163159.	33319.	50:31	50:54	55.	2	5.0 ABV
435.7951	49:27	6278.	1547.	49:22	49:29	34.	2	5.0 ABV
435.7951	49:31	7343.	1969.	49:29	49:36	34.	2	5.0 AVB
435.7951	49:51	1088.	364.	49:47	49:53	34.	2	5.0 ABB
435.7951	50:41	741806.	156543.	50:32	50:56	34.	2	5.0 ABV
435.7951	50:58	2680.	745.	50:56	51:03	34.	2	5.0 AVB
435.7951	51:06	1036.	399.	51:03	51:08	34.	2	5.0 ABB
437.7921	49:28	10328.	1957.	49:22	49:35	31.	2	5.0 ABV
437.7921	49:36	706.	204.	49:35	49:40	31.	2	5.0 AVB
437.7921	49:55	883.	373.	49:52	49:57	31.	2	5.0 ABB
437.7921	50:41	655808.	136368.	50:31	50:55	31.	2	5.0 ABV
437.7921	50:57	3126.	987.	50:55	51:01	31.	2	5.0 AVV
437.7921	51:06	2018.	682.	51:04	51:10	31.	2	5.0 AVB
407.7614	49:39	64298.	12365.	49:27	49:46	71.	1	1.0 AVV
409.7583	49:38	59177.	11479.	49:31	49:45	29.	1	1.0 AVV
407.7614	48:44	1485.	515.	48:42	48:47	71.	2	5.0 ABB
407.7614	48:58	51953.	10293.	48:50	49:11	71.	2	5.0 ABV
407.7614	49:24	5132.	941.	49:11	49:27	71.	2	5.0 AVV
407.7614	49:39	64298.	12365.	49:27	49:46	71.	2	5.0 AVV
407.7614	49:48	5341.	622.	49:46	50:03	71.	2	5.0 AVV
407.7614	51:18	7044.	999.	51:06	51:29	71.	2	5.0 ABB
409.7583	48:44	1147.	464.	48:42	48:46	29.	2	5.0 ABB
409.7583	48:58	44930.	9638.	48:51	49:08	29.	2	5.0 ABB
409.7583	49:24	3500.	678.	49:14	49:31	29.	2	5.0 ABV
409.7583	49:38	59177.	11479.	49:31	49:45	29.	2	5.0 AVV
409.7583	49:48	3182.	640.	49:45	49:53	29.	2	5.0 AVB
409.7583	51:17	4199.	745.	51:10	51:27	29.	2	5.0 ABB
417.8041	48:57	511553.	101564.	48:49	49:04	34.	2	5.0 AVV
417.8041	49:08	4402.	793.	49:04	49:12	34.	2	5.0 AVV
417.8041	49:27	2977.	550.	49:21	49:29	34.	2	5.0 AVB
417.8041	49:38	4425.	911.	49:29	49:41	34.	2	5.0 ABV
417.8041	49:44	2264.	636.	49:41	49:46	34.	2	5.0 AVV
417.8041	51:17	445586.	98301.	51:09	51:29	34.	2	5.0 AVV
417.8041	51:34	3626.	794.	51:29	51:36	34.	2	5.0 AVV
417.8041	51:38	3653.	1190.	51:36	51:42	34.	2	5.0 AVB
419.8010	48:57	1060096.	215971.	48:47	49:12	74.	2	5.0 ABV
419.8010	49:15	5078.	1615.	49:12	49:17	74.	2	5.0 AVV
419.8010	49:23	9911.	2465.	49:17	49:26	74.	2	5.0 AVV
419.8010	49:30	2987.	715.	49:26	49:33	74.	2	5.0 AVV
419.8010	49:38	10624.	1925.	49:33	49:53	74.	2	5.0 AVV
419.8010	51:02	2891.	478.	50:58	51:09	74.	2	5.0 ABB
419.8010	51:17	983922.	209708.	51:09	51:32	74.	2	5.0 ABB
419.8010	51:35	8801.	2271.	51:32	51:40	74.	2	5.0 ABV
457.7148	54:41	1232416.	320045.	54:34	54:56	39.	1	1.0 ABV
459.7118	54:41	1379315.	365156.	54:33	54:56	46.	1	1.0 ABV
457.7148	54:41	1232416.	320045.	54:34	54:56	39.	2	5.0 ABV
457.7148	55:03	2617.	548.	55:01	55:07	39.	2	5.0 AVV
457.7148	55:09	903.	300.	55:07	55:11	39.	2	5.0 AVV

457.7148	55:12	1271.	278.	55:11	55:19	39.	2	5.0	AVB
459.7118	54:41	1379315.	365156.	54:33	54:56	46.	2	5.0	ABV
469.7545	54:40	949523.	241950.	54:34	54:50	33.	2	5.0	ABV
469.7545	54:52	8029.	1526.	54:50	55:02	33.	2	5.0	AVV
469.7545	55:04	1252.	396.	55:02	55:07	33.	2	5.0	AVV
469.7545	55:09	720.	210.	55:07	55:14	33.	2	5.0	AVB
471.7514	54:40	1029067.	261133.	54:34	54:55	16.	2	5.0	ABV
471.7514	54:59	2113.	841.	54:56	55:01	16.	2	5.0	AVV
471.7514	55:03	1768.	788.	55:01	55:05	16.	2	5.0	AVV
471.7514	55:10	2793.	536.	55:05	55:13	16.	2	5.0	AVV
441.7207	54:49	61852.	16102.	54:44	55:05	16.	1	1.0	AVB
443.7177	54:49	71382.	18546.	54:37	55:02	18.	1	1.0	ABB
441.7207	54:42	1062.	260.	54:37	54:44	16.	2	5.0	ABV
441.7207	54:49	61384.	16102.	54:44	54:59	16.	2	5.0	AVV
441.7207	55:01	468.	121.	54:59	55:05	16.	2	5.0	AVB
443.7177	54:49	71131.	18546.	54:37	54:59	18.	2	5.0	ABV
443.7177	55:00	251.	120.	54:59	55:02	18.	2	5.0	AVB
443.7177	55:11	727.	179.	55:02	55:14	18.	2	5.0	ABB
453.7603	54:49	1239801.	318695.	54:42	55:02	33.	2	5.0	ABV
453.7603	55:05	5094.	1125.	55:02	55:08	33.	2	5.0	AVV
453.7603	55:13	3406.	601.	55:08	55:18	33.	2	5.0	AVV
453.7603	55:22	1358.	457.	55:18	55:24	33.	2	5.0	AVB
455.7573	54:49	1345849.	335046.	54:39	55:05	149.	2	5.0	ABV
455.7573	55:08	6141.	846.	55:07	55:19	149.	2	5.0	AVB

TestAmerica Canton

Sample ID: SB-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 003	**Work Order #....:**	M811N1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture**	23
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.8 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.3	0.043	pg/g
1,2,3,7,8-PeCDD	**0.50**	**Q B J**	**6.6**	**0.049**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.58**	**Q J**	**6.6**	**0.074**	**pg/g**
1,2,3,6,7,8-HxCDD	**1.2**	**J**	**6.6**	**0.076**	**pg/g**
1,2,3,7,8,9-HxCDD	**1.7**	**C J**	**6.6**	**0.070**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**45**		**6.6**	**0.13**	**pg/g**
OCDD	**1300**	**B**	**13**	**0.14**	**pg/g**
2,3,7,8-TCDF	**0.14**	**J**	**1.3**	**0.043**	**pg/g**
1,2,3,7,8-PeCDF	**0.19**	**Q J**	**6.6**	**0.044**	**pg/g**
2,3,4,7,8-PeCDF	**0.29**	**Q J**	**6.6**	**0.039**	**pg/g**
1,2,3,4,7,8-HxCDF	**0.82**	**C B J**	**6.6**	**0.034**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.51**	**Q J**	**6.6**	**0.036**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.33**	**J**	**6.6**	**0.036**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		6.6	0.042	pg/g
1,2,3,4,6,7,8-HpCDF	**7.0**	**B**	**6.6**	**0.057**	**pg/g**
1,2,3,4,7,8,9-HpCDF	ND		6.6	0.066	pg/g
OCDF	**24**	**B**	**13**	**0.038**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	61	40 - 135
13C-1,2,3,7,8-PeCDD	76	40 - 135
13C-1,2,3,4,7,8-HxCDD	65	40 - 135
13C-1,2,3,6,7,8-HxCDD	66	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	77	40 - 135
13C-OCDD	73	40 - 135
13C-2,3,7,8-TCDF	67	40 - 135
13C-1,2,3,7,8-PeCDF	71	40 - 135
13C-2,3,4,7,8-PeCDF	77	40 - 135
13C-1,2,3,4,7,8-HxCDF	66	40 - 135
13C-1,2,3,6,7,8-HxCDF	62	40 - 135
13C-2,3,4,6,7,8-HxCDF	70	40 - 135
13C-1,2,3,7,8,9-HxCDF	69	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	62	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	69	40 - 135
13C-OCDF	59	40 - 135

TestAmerica Canton

Sample ID: SB-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 003	**Work Order #....:**	M811N1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture**	23
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.8 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811N1AC	Prep Batch	6217014	Lot No	H6G290408-003
Data File	/20160817s1/d1tm811n.d	Prep Date	08/04/16	SDG No	
Analysis ID	180440	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/17/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	15:34	Initial Wt/Vol	9.8 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD				1.144				ND		0.0331
Total TCDD		8038	1019	1.144		4.642827		0.473758	JQ	0.0331
2,3,7,8-TCDF	30:42	3030	666	1.066		1.043409		0.106470	J	0.0328
Total TCDF		22904	3294	1.066		8.930619		0.911288	QJ	0.0328
1,2,3,7,8-PeCDD	41:26	5515	1012	1.060		3.784109		0.386134	QBJ	0.0376
Total PeCDD		2333	299	1.060		5.384894		0.549479	QJB	0.0376
1,2,3,7,8-PeCDF	39:44	3760	753	1.179		1.464924		0.149482	QJ	0.0339
2,3,4,7,8-PeCDF	40:54	5807	1259	1.115		2.218730		0.226401	QJ	0.0302
Total PeCDF		19717	3821	1.147		11.282481		1.151274	QJ	0.0319
1,2,3,4,7,8-HxCDD	45:39	7322	1814	1.131		4.333671		0.442211	QJ	0.0570
1,2,3,6,7,8-HxCDD	45:46	15098	3585	1.116		9.068370		0.925344	J	0.0584
1,2,3,7,8,9-HxCDD	46:10	23322	4069	1.205		12.963559		1.322812	CJ	0.0538
Total HxCDD				1.151		26.365600		2.690367	JQ	0.0563
1,2,3,4,7,8-HxCDF	44:34	17443	3241	1.350		6.169014		0.629491	CBJ	0.0265
1,2,3,6,7,8-HxCDF	44:42	11310	2096	1.242		3.867180		0.394610	QJ	0.0273
2,3,4,6,7,8-HxCDF	45:28	7239	1940	1.241		2.480606		0.253123	J	0.0273
1,2,3,7,8,9-HxCDF				1.262				ND		0.0323
Total HxCDF		13378	3840	1.274		17.250230		1.760228	JQB	0.0282
1,2,3,4,6,7,8-HpCDD	50:42	532982	110412	1.114		341.890735		34.886810		0.0987
Total HpCDD		821506	162372	1.114		868.860296		88.659214		0.0987
1,2,3,4,6,7,8-HpCDF	48:58	121065	24932	1.461		53.044275		5.412681	B	0.0438
1,2,3,4,7,8,9-HpCDF				1.370				ND		0.0509
Total HpCDF		251513	49689	1.416		172.599399		17.612184	QB	0.0472
OCDD	54:41	12656973	3334964	1.203		9647.07966		984.395884	B	0.111
OCDF	54:49	282349	72208	1.134		179.277427		18.293615	B	0.0292
13C-2,3,7,8-TCDD	32:50	1513978	155207	1.093	1000	614.151726	61.42	62.668543		0.285
13C-2,3,7,8-TCDF	30:42	2725202	299123	1.794	1000	673.106568	67.31	68.684344		0.0360
13C-1,2,3,7,8-PeCDD	41:24	1375056	326311	0.800	1000	761.799482	76.18	77.734641		0.189
13C-1,2,3,7,8-PeCDF	39:43	2176752	459353	1.356	1000	711.225827	71.12	72.574064		0.0936
13C-2,3,4,7,8-PeCDF	40:54	2348232	545738	1.343	1000	774.927099	77.49	79.074194		0.0945
13C-1,2,3,4,7,8-HxCDD	45:37	1493722	364158	0.916	1000	650.437965	65.04	66.371221		0.0730
13C-1,2,3,6,7,8-HxCDD	45:45	1491917	360377	0.906	1000	656.517202	65.65	66.991551		0.0738
13C-1,2,3,4,7,8-HxCDF	44:33	2093783	563799	1.268	1000	658.334578	65.83	67.176998		0.0554
13C-1,2,3,6,7,8-HxCDF	44:41	2355484	594896	1.506	1000	623.951416	62.40	63.668512		0.0467
13C-2,3,4,6,7,8-HxCDF	45:27	2351761	595200	1.344	1000	697.872580	69.79	71.211488		0.0523
13C-1,2,3,7,8,9-HxCDF	46:27	2074473	493767	1.202	1000	688.241662	68.82	70.228741		0.0584
13C-1,2,3,4,6,7,8-HpCDD	50:41	1399745	294670	0.728	1000	766.372509	76.64	78.201276		0.0398
13C-1,2,3,4,6,7,8-HpCDF	48:57	1562159	330779	1.008	1000	618.023929	61.80	63.063666		0.0396
13C-1,2,3,4,7,8,9-HpCDF	51:17	1409896	303278	0.811	1000	693.514769	69.35	70.766813		0.0493
13C-OCDD	54:41	2181228	557047	0.597	2000	1456.19072	72.81	148.590889		0.123
13C-1,2,3,4-TCDD	32:17	4512831	466230	1.000	2000	2000.00000	100.00	204.081633		0.312
13C-1,2,3,7,8,9-HxCDD	46:10	5014964	1212858	1.000	2000	2000.00000	100.00	204.081633		0.0669
13C-OCDF	54:48	2776805	692396	0.946	2000	1170.63458	58.53	119.452509		0.0334

KL 8/23/16

LKM 8-18-16

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811N1AC	Prep Batch	6217014	Lot No	H6G290408-003
Data File	/20160817s1/d1tm811n.d	Prep Date	08/04/16	SDG No	
Analysis ID	180440	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/17/16 15:34	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.8 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	48	55	19	22	0.86	/	
	Unidentified	29:37	00:00	0	1607	1752	303	272	0.92 *	ABB/ABB	RT
	Unidentified	30:05	00:00	0	1235	1487	158	249	0.83	ABV/ABV	
	Unidentified	30:11	00:00	0	655	776	248	257	0.84	AVB/AVV	
	2,3,7,8-TCDF	30:42	30:44	-2	1253	1777	246	420	0.71	ABV/ABV	
	Unidentified	30:48	00:00	0	4819	4450	595	495	1.08 *	AVB/AVB	R
	Unidentified	32:04	00:00	0	2846	3277	306	411	0.87	ABB/ABB	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	90	58	36	23	1.57 *	/	
	Unidentified	29:33	00:00	0	6368	2720	1168	666	2.34 *	ABB/AVV	RT
	13C-2,3,7,8-TCDF	30:42	30:41	1	1199843	1525359	131459	167664	0.79	ABV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	23	35	9	14	0.64 *	/	
	Unidentified	32:35	00:00	0	2726	3567	313	390	0.76	ABB/ABV	
	Unidentified	32:57	00:00	0	577	1168	128	188	0.49 *	ABB/AVB	RDTM
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	293	420	117	168	0.70	/	
	13C-1,2,3,4-TCDD	32:17	32:19	-2	2019825	2493006	212742	253488	0.81	ABV/AVV	
	13C-2,3,7,8-TCDD	32:50	32:52	-2	675100	838878	68813	86394	0.80	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	90	90	36	36	1.00 *	/	
	Unidentified	39:18	00:00	0	1338	428	461	301	3.13 *	ABB/ABB	R
	Unidentified	39:40	00:00	0	868	522	266	151	1.66	ABV/ABV	
	1,2,3,7,8-PeCDF	39:44	39:45	-1	1331	2429	268	485	0.55 *	AVB/AVB	R
	Unidentified	40:01	00:00	0	861	485	193	126	1.78	ABB/ABB	
	Unidentified	40:18	00:00	0	4918	3845	623	624	1.28 *	ABB/ABB	R
	2,3,4,7,8-PeCDF	40:54	40:53	1	3223	2584	759	500	1.25 *	ABV/ABV	R
	Unidentified	41:06	00:00	0	4080	2372	716	360	1.72	AVB/AVV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	210	80	84	32	2.63 *	/	
	13C-1,2,3,7,8-PeCDF	39:43	39:43	0	1350057	826695	280758	178595	1.63	ABV/ABV	
	Unidentified	39:59	00:00	0	7971	7644	1397	1220	1.04 *	AVV/AVV	RT
	Unidentified	40:13	00:00	0	16525	7446	2981	1776	2.22 *	AVV/AVV	R
	13C-2,3,4,7,8-PeCDF	40:54	40:52	2	1434489	913743	331343	214395	1.57	ABV/ABV	
	Unidentified	41:05	00:00	0	12657	7810	1578	1754	1.62	AVV/AVB	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	63	65	25	26	0.96 *	/	
	Unidentified	41:07	00:00	0	1644	689	162	137	2.39 *	AVB/ABB	RT
	1,2,3,7,8-PeCDD	41:26	41:23	3	2605	2910	507	505	0.90 *	ABB/ABB	RM
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	185	160	74	64	1.16 *	/	
	13C-1,2,3,7,8-PeCDD	41:24	41:22	2	833097	541959	197766	128545	1.54	ABV/ABB	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811N1AC	Prep Batch	6217014	Lot No	H6G290408-003
Data File	/20160817s1/d1tm811n.d	Prep Date	08/04/16	SDG No	
Analysis ID	180440	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/17/16 15:34	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.8 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Unidentified	41:34	00:00	0	8364	2544	1471	918	3.29 *	AVV/ABV	RT
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	85	113	34	45	0.76 *	/	
	Unidentified	44:18	00:00	0	1862	1466	922	772	1.27	ABB/ABB	
	1,2,3,4,7,8-HxCDF	44:34	44:33	1	9942	7501	1813	1428	1.33	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:42	44:41	1	5431	5879	989	1107	0.92 *	AVV/AVV	R
	Unidentified	45:06	00:00	0	1024	2356	174	308	0.43 *	ABB/AVV	R
	Unidentified	45:16	00:00	0	1545	1851	430	412	0.83 *	ABV/AVV	R
	Unidentified	45:22	00:00	0	1696	1578	388	434	1.07	AVV/AVV	
	2,3,4,6,7,8-HxCDF	45:28	45:27	1	3929	3310	1127	813	1.19	AVB/AVB	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	138	280	55	112	0.49	/	
	13C-1,2,3,4,7,8-HxCDF	44:33	44:32	1	730914	1362869	199858	363941	0.54	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:41	44:40	1	834477	1521007	212965	381931	0.55	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:27	45:26	1	826357	1525404	210535	384665	0.54	AVV/AVV	
	Unidentified	45:44	00:00	0	3222	7281	830	1175	0.44	AVV/AVV	
	Unidentified	46:10	00:00	0	2058	10183	755	1769	0.20 *	AVB/ABB	R
	13C-1,2,3,7,8,9-HxCDF	46:27	46:26	1	723070	1351403	172906	320861	0.54	ABV/ABV	
	Unidentified	46:44	00:00	0	2472	10147	756	1961	0.24 *	AVV/AVV	R
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	133	98	53	39	1.36	/	
	1,2,3,4,7,8-HxCDD	45:39	45:38	1	4413	2909	1088	726	1.52 *	ABV/ABV	R
	1,2,3,6,7,8-HxCDD	45:46	45:45	1	8175	6923	2059	1526	1.18	AVB/AVB	
	1,2,3,7,8,9-HxCDD	46:10	46:09	1	12720	10602	2261	1808	1.20	ABV/ABB	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	270	128	108	51	2.12 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:37	45:37	0	844415	649307	205272	158886	1.30	AVV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:45	45:44	1	813855	678062	195588	164789	1.20	AVV/AVV	
	Unidentified	46:00	00:00	0	4519	3685	1639	931	1.23	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:10	46:08	2	2812151	2202813	682952	529906	1.28	AVV/AVV	
	Unidentified	46:24	00:00	0	15407	9137	2175	2074	1.69 *	AVV/AVV	R
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	140	68	56	27	2.07 *	/	
	1,2,3,4,6,7,8-HpCDF	48:58	48:58	0	59587	61478	12555	12377	0.97	ABB/ABV	
	Unidentified	49:25	00:00	0	3010	2001	474	526	1.50 *	ABV/ABV	RT
	Unidentified	49:39	00:00	0	122639	115841	24385	23025	1.06	AVV/AVV	
	Unidentified	51:20	00:00	0	3818	4204	478	801	0.91	AVV/ABV	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	100	138	40	55	0.73 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:57	48:57	0	492393	1069766	102107	228672	0.46	ABV/ABV	
	Unidentified	49:07	00:00	0	2702	5835	960	1763	0.46	AVB/AVV	
	Unidentified	49:21	00:00	0	5376	13621	1394	2161	0.39	ABV/AVV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811N1AC	Prep Batch	6217014	Lot No	H6G290408-003
Data File	/20160817s1/d1tm811n.d	Prep Date	08/04/16	SDG No	
Analysis ID	180440	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/17/16 15:34	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.8 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

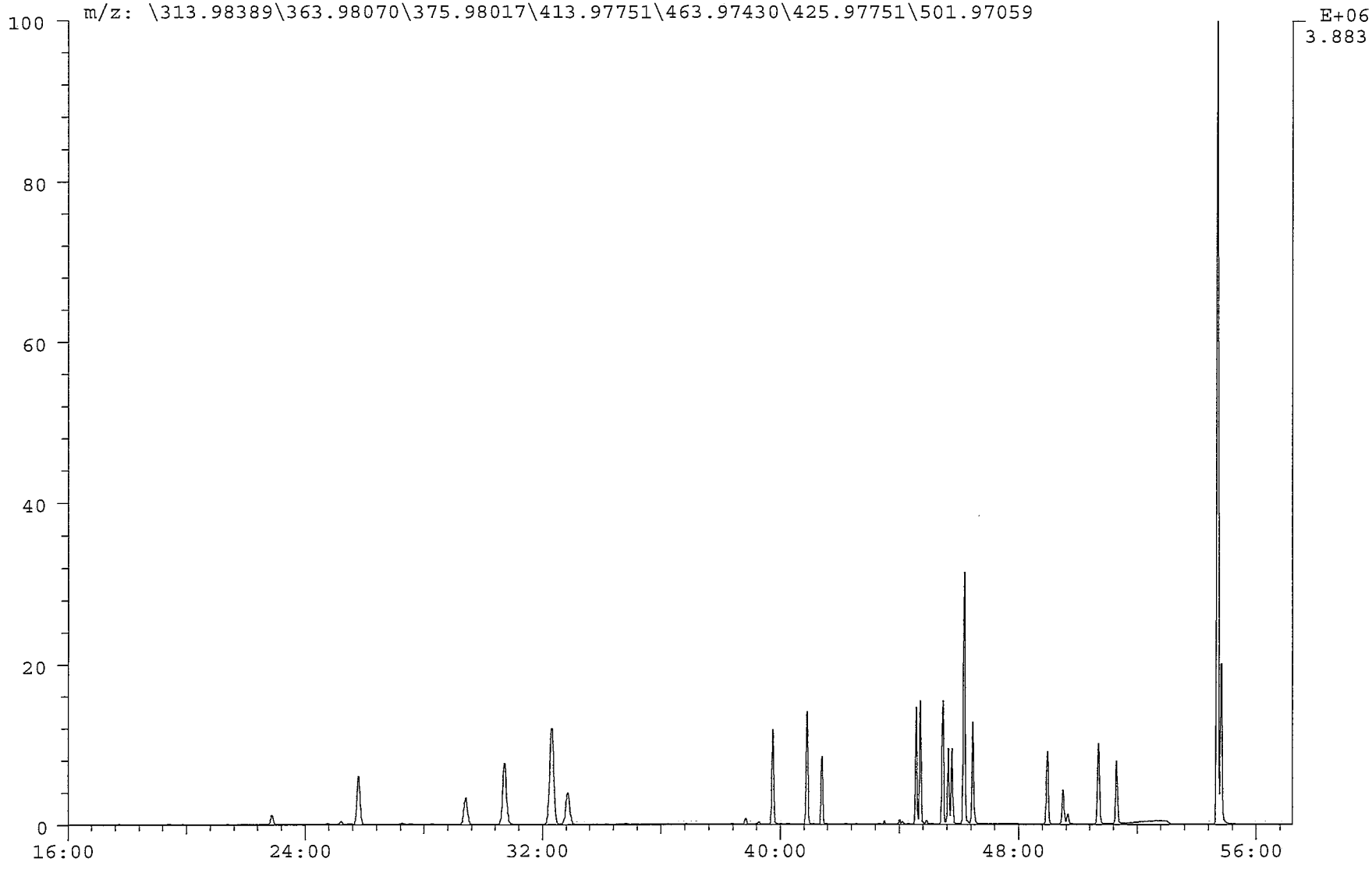
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Unidentified	49:38	00:00	0	4673	12572	1388	2135	0.37	AVV/AVV	
	13C-1,2,3,4,7,8,9-HpCDF	51:17	51:18	-1	444833	965063	95512	207766	0.46	AVV/ABV	M
	Unidentified	51:29	00:00	0	7837	4012	1630	1296	1.95 *	AVB/AVV	R
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	123	195	49	78	0.63 *	/	
	Unidentified	49:30	00:00	0	415394	406112	82642	79730	1.02	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:42	50:42	0	269574	263408	56889	53523	1.02	ABV/ABV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	93	80	37	32	1.16	/	
	Unidentified	49:30	00:00	0	12663	10194	2433	2524	1.24 *	ABV/ABB	R
	13C-1,2,3,4,6,7,8-HpCDD	50:41	50:41	0	743493	656252	159616	135054	1.13	ABV/ABV	
	Unidentified	51:02	00:00	0	3694	1918	662	428	1.93 *	AVV/AVV	R
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	55	58	22	23	0.96	/	
	Unidentified	54:42	00:00	0	5218	3777	1613	1155	1.38 *	ABV/ABV	R
	OCDF	54:49	54:51	-2	136161	146188	35634	36574	0.93	AVV/AVV	
	Unidentified	55:13	00:00	0	1164	723	216	133	1.61 *	AVB/AVB	RT
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	103	85	41	34	1.21 *	/	
	13C-OCDF	54:48	54:50	-2	1338732	1438073	333247	359149	0.93	ABV/ABV	
	Unidentified	55:12	00:00	0	4055	2694	911	813	1.51 *	AVB/AVB	RT
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	195	170	78	68	1.15 *	/	
	OCDD	54:41	54:43	-2	6022687	6634286	1580461	1754503	0.91	ABV/ABV	
	Unidentified	55:14	00:00	0	3264	1539	724	518	2.12 *	AVB/AVB	R
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	355	83	142	33	4.30 *	/	
	13C-OCDD	54:41	54:42	-1	1049013	1132215	267476	289571	0.93	ABV/ABV	

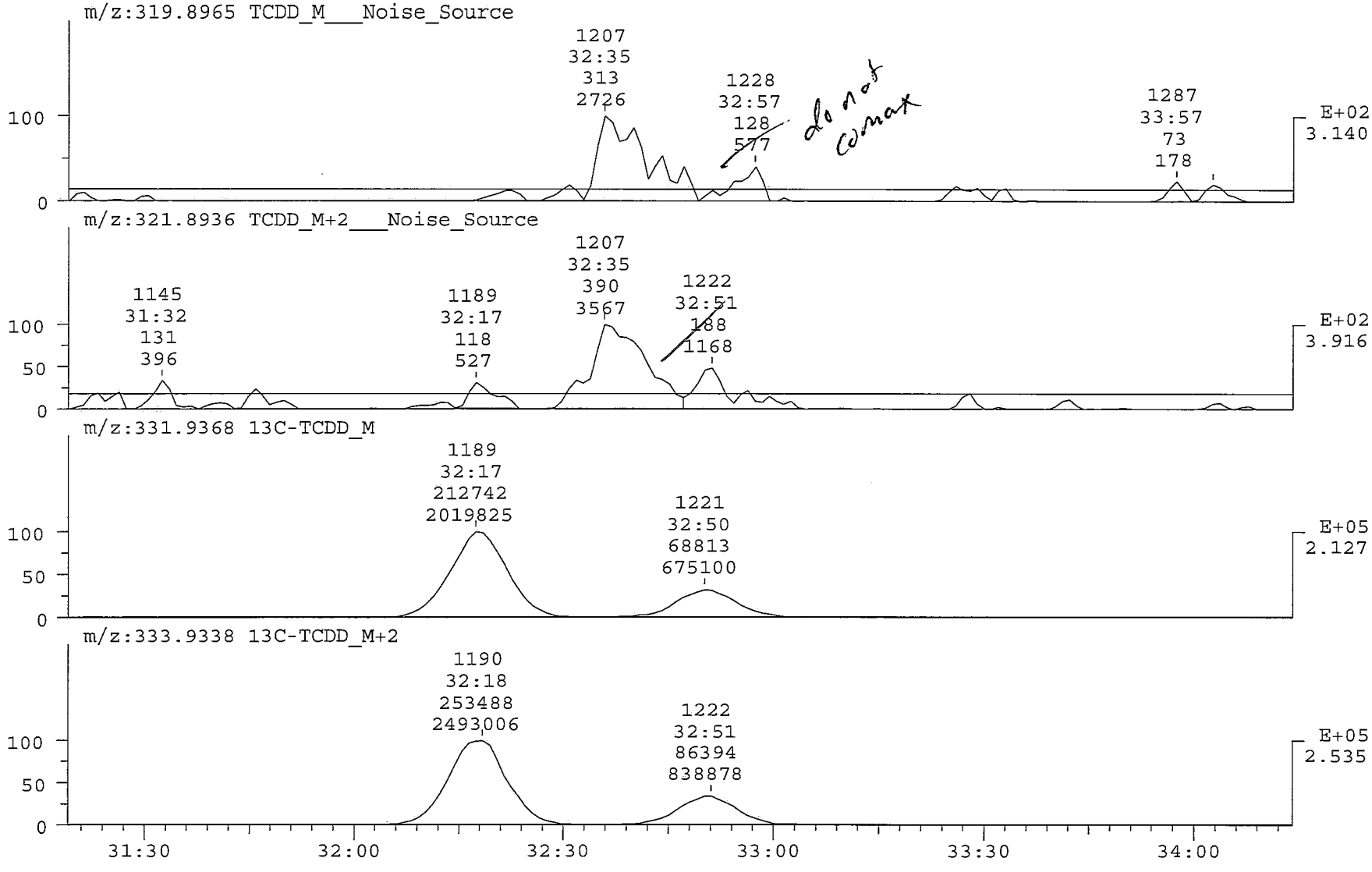
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int LK 8-17-16
Calc.?
QC/Rev K 8/23/16

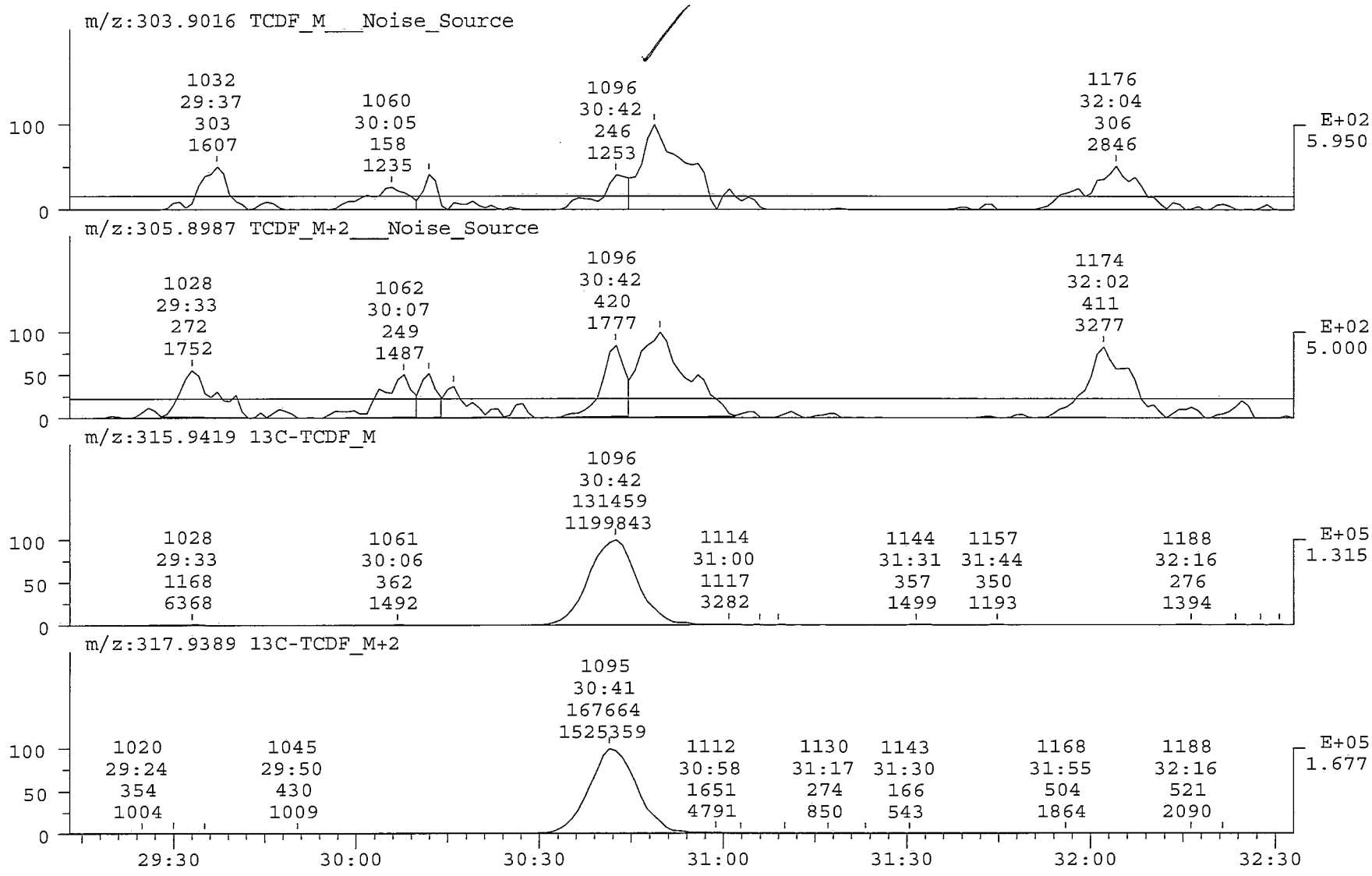
```
CHRO:  d1tm811n                          17-Aug-16  Elapse:  54:53      2494
Samp:  WO=m811n1ac Meth=9Ao Dil=1                   Start :  15:34:59   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                          Study :  6217014 (9.8g)
Oper:  KLR                                          Inlet :  LC
Peak:  100.00  ppm     Label wndw:   232 > 2628     Masses:  303 > 514
Area:  5, 0.50, 0      Baseline  :   100, 3         Label :  0, 0.0
Disp:  Height  Area
```



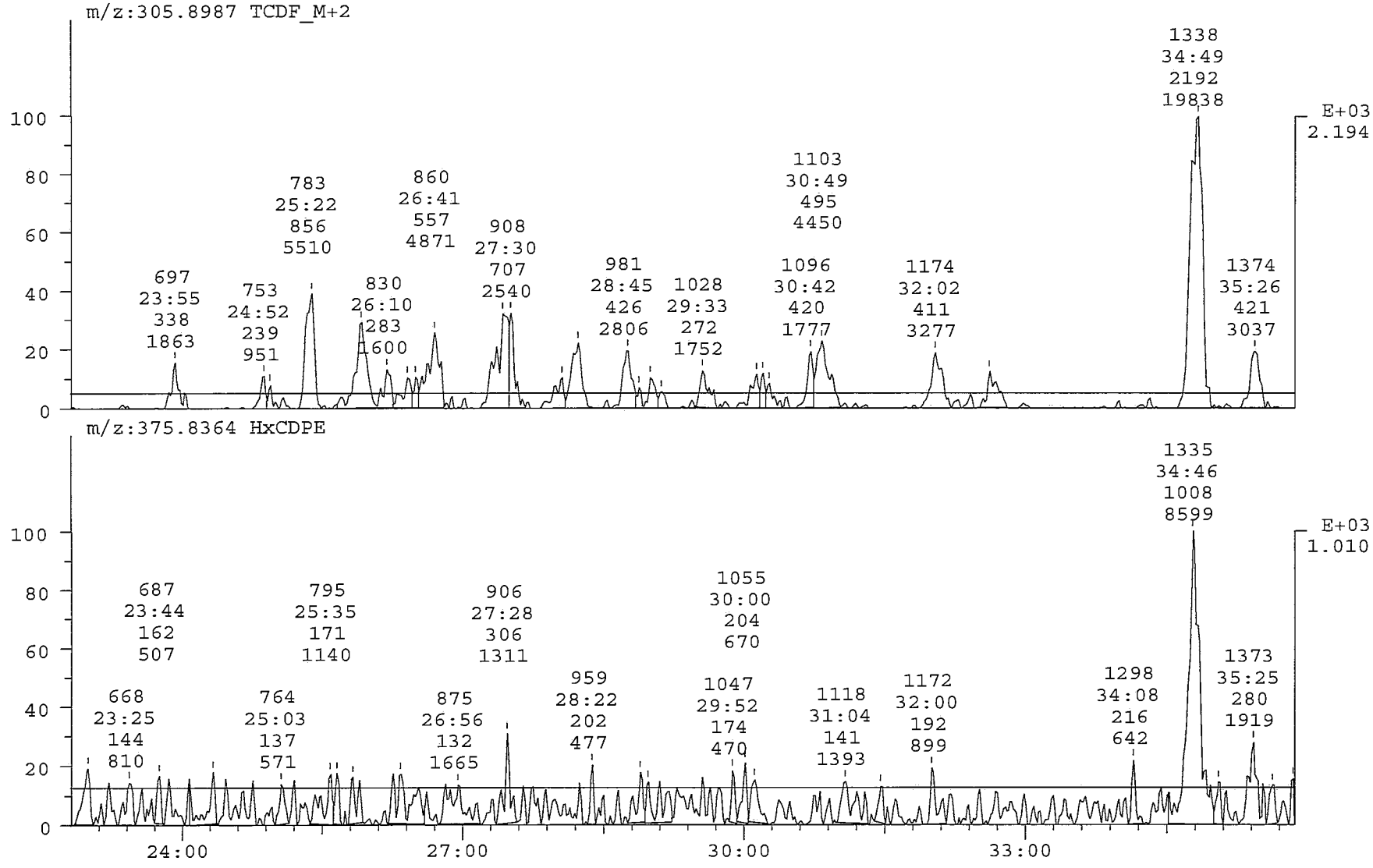
CHRO: d1tm811n 17-Aug-16 Elapse: 32:46 1217
Samp: WO=m811n1ac Meth=9Ao Dil=1 Start : 15:34:59 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1132 > 1303 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



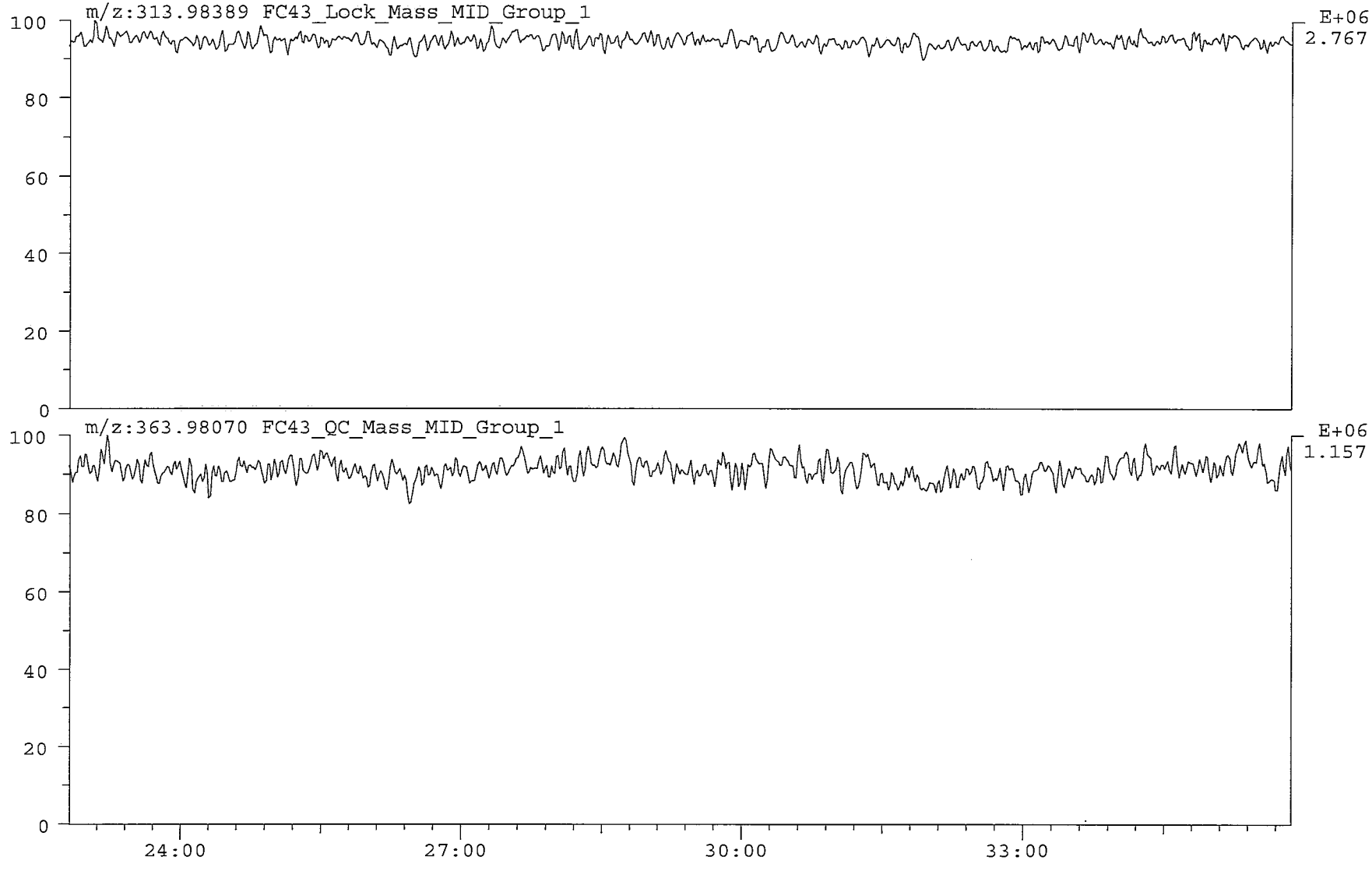
```
CHRO:  d1tm811n                                  17-Aug-16  Elapse:  30:49      1103
Samp:  WO=m811n1ac Meth=9Ao Dil=1                           Start :  15:34:59   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  6217014 (9.8g)
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1008 > 1204            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



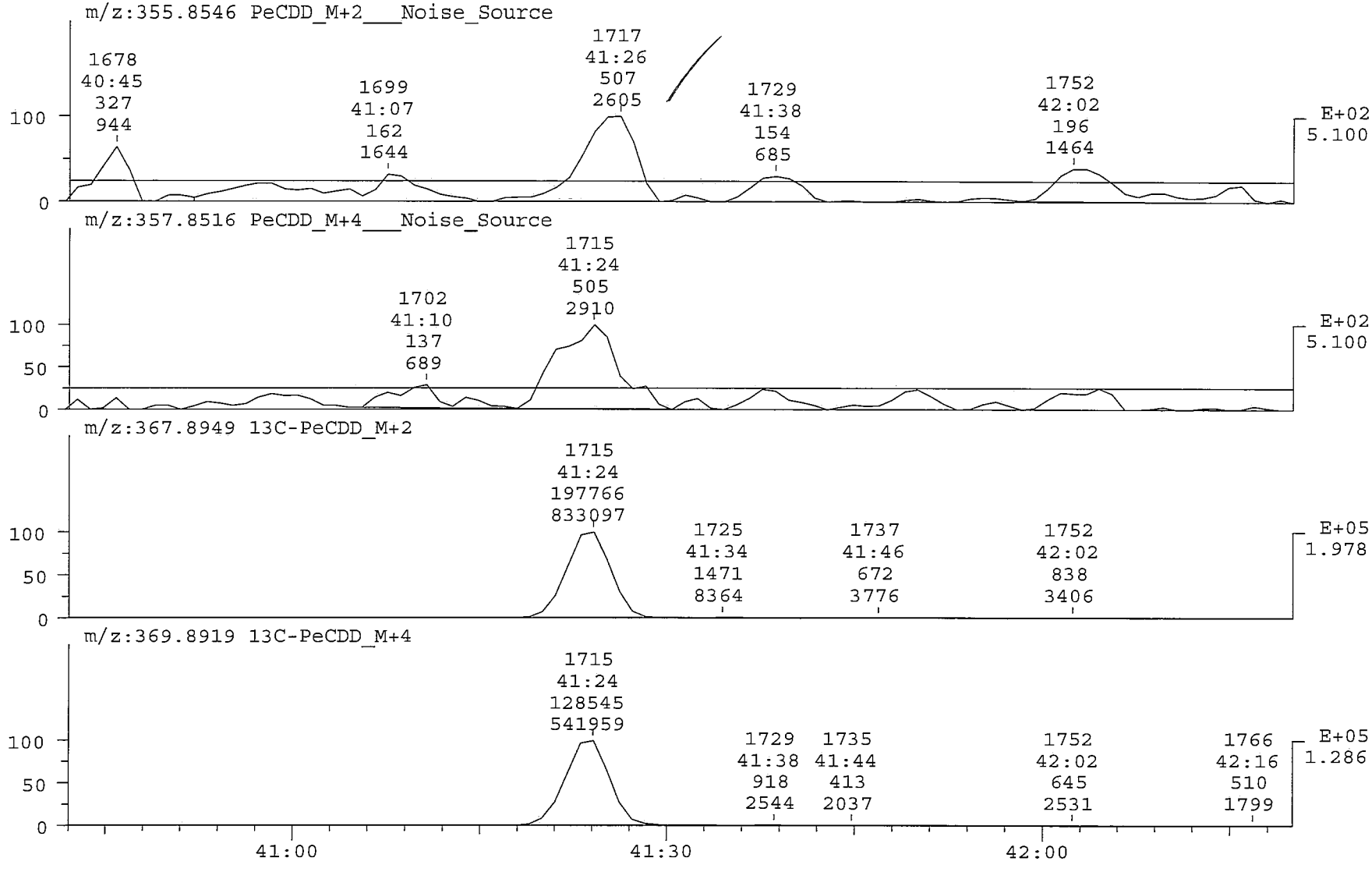
```
CHRO:  d1tm811n                                  17-Aug-16  Elapse:  30:49      1103
Samp:  WO=m811n1ac Meth=9Ao Dil=1                           Start :  15:34:59   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  6217014 (9.8g)
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   631 > 1399             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



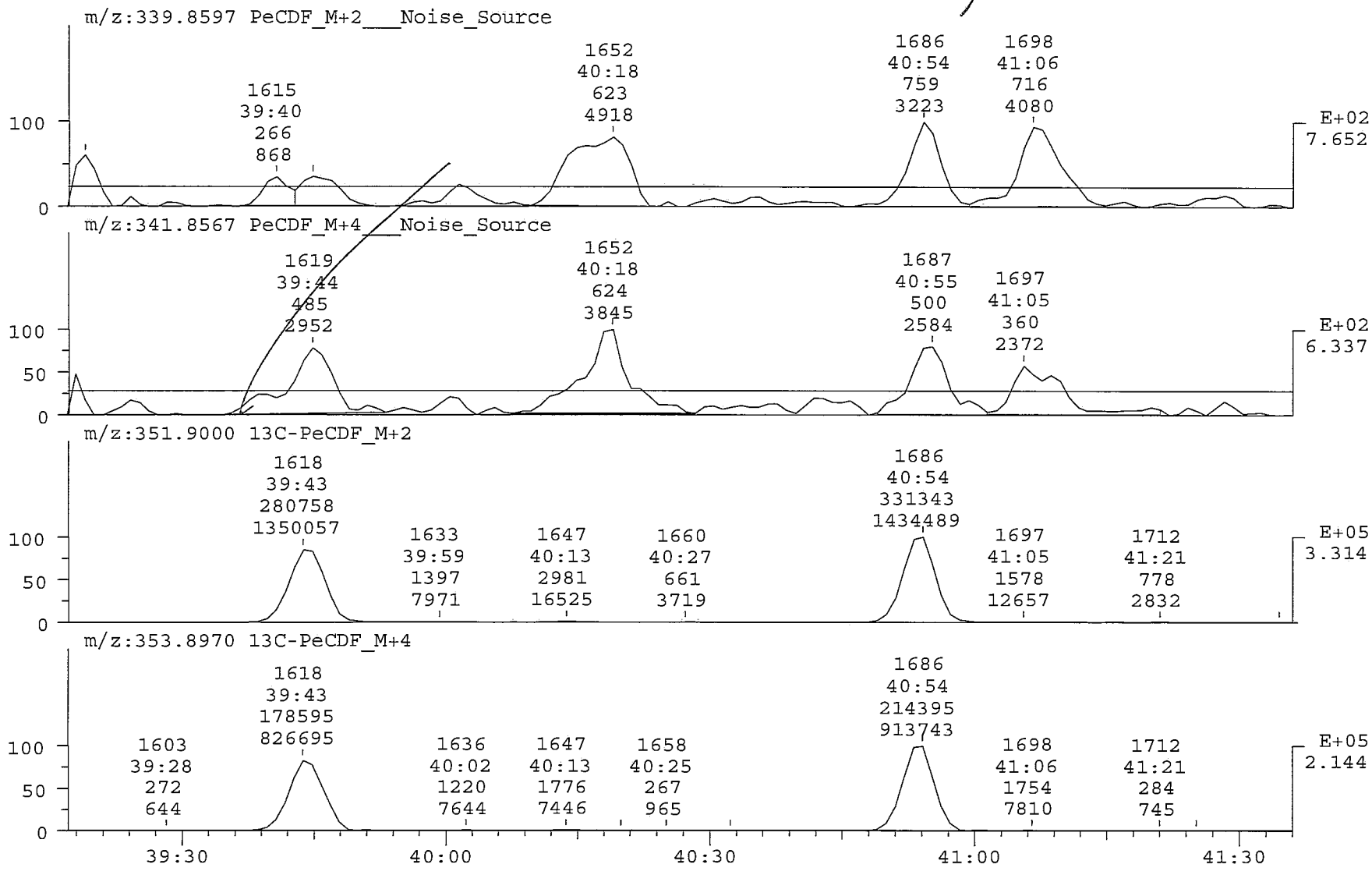
```
CHRO:  d1tm811n                                17-Aug-16  Elapse:  30:49      1103
Samp:  WO=m811n1ac Meth=9Ao Dil=1                         Start :  15:34:59   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   631 > 1399           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



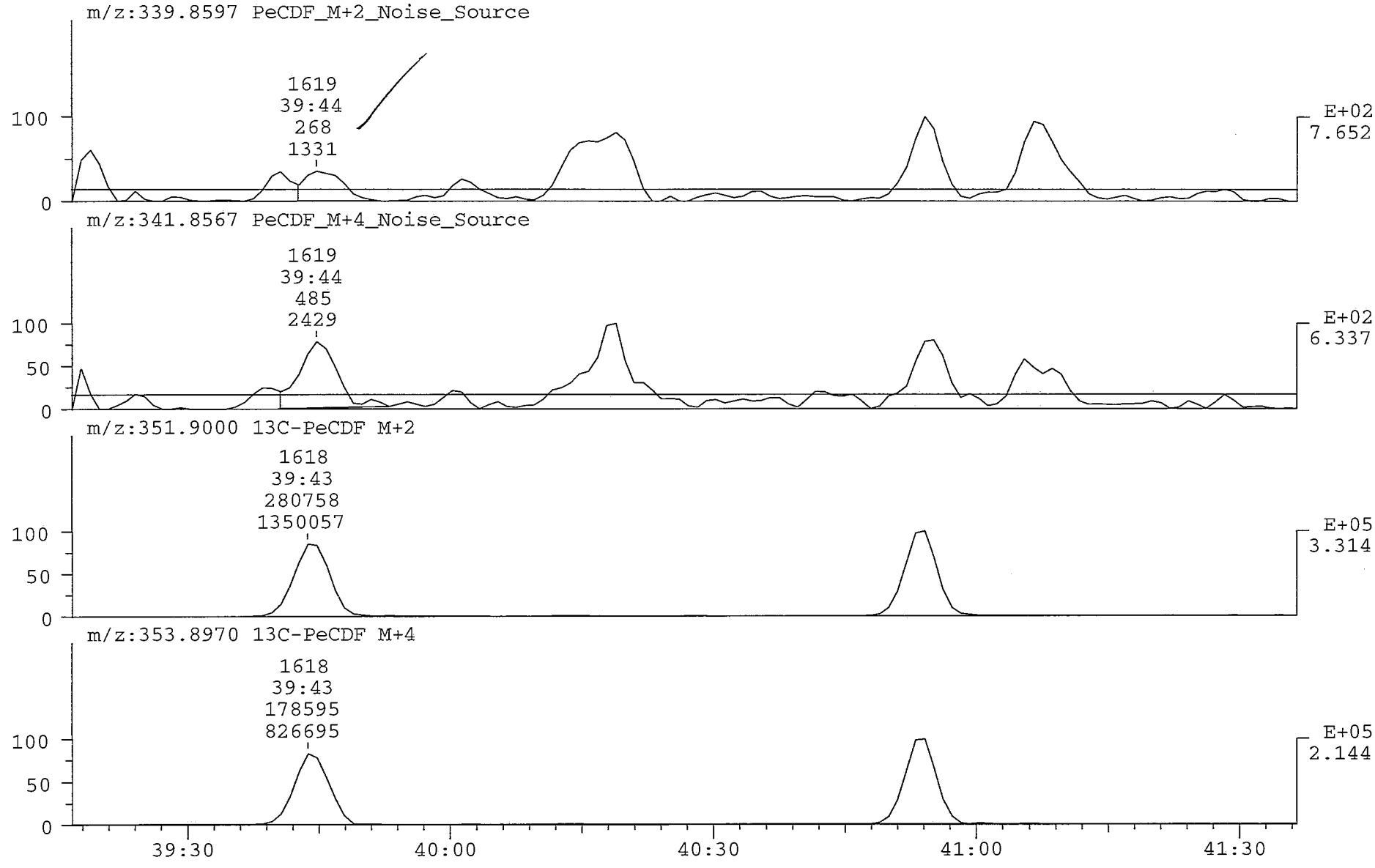
```
CHRO:  d1tm811n                                17-Aug-16  Elapse:  41:28      1719
Samp:  WO=m811n1ac Meth=9Ao Dil=1                         Start :  15:34:59   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1674 > 1769          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



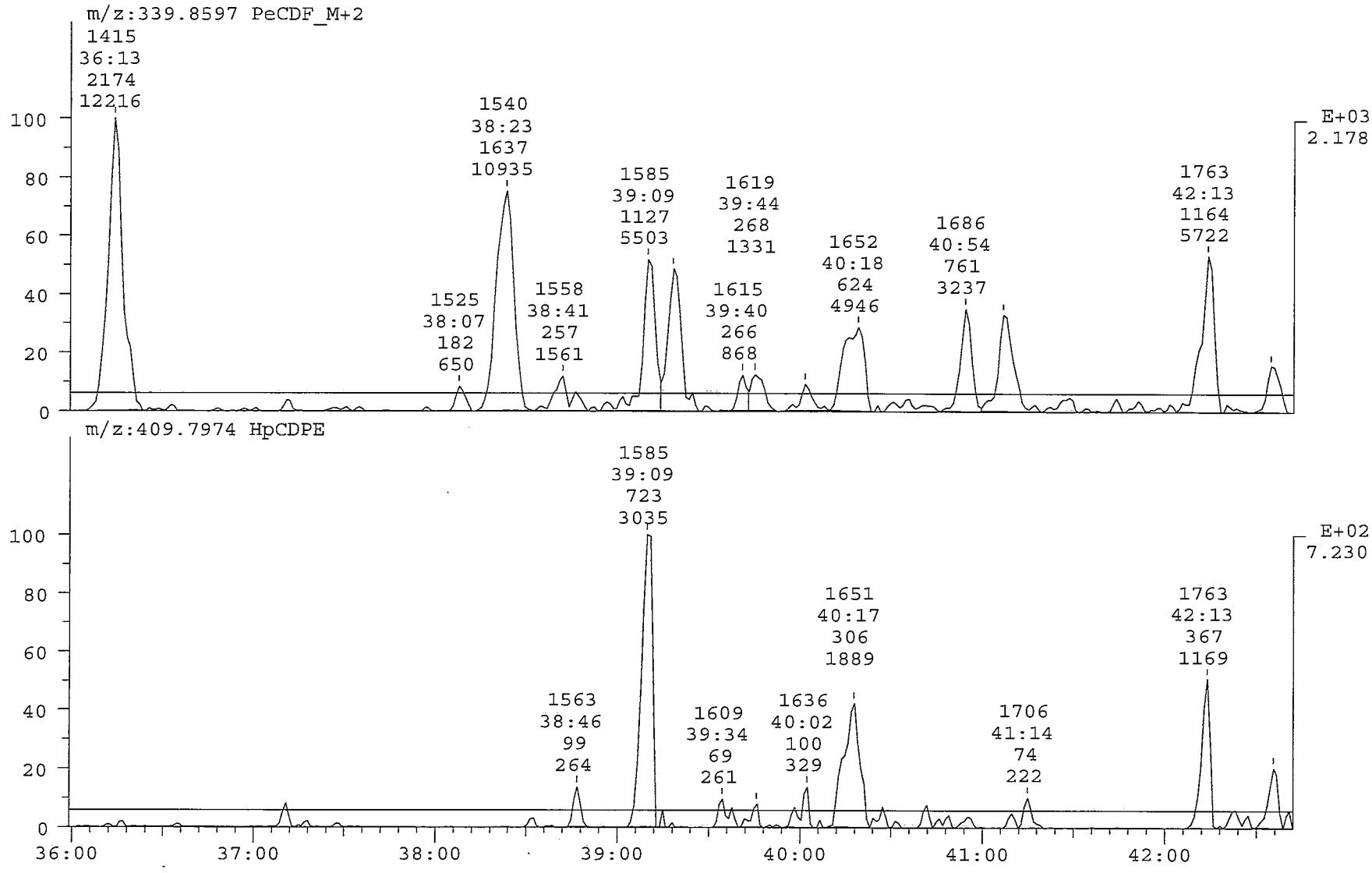
CHRO: d1tm811n 17-Aug-16 Elapse: 40:26 1659
Samp: WO=m811n1ac Meth=9Ao Dil=1 Start : 15:34:59 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1592 > 1727 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



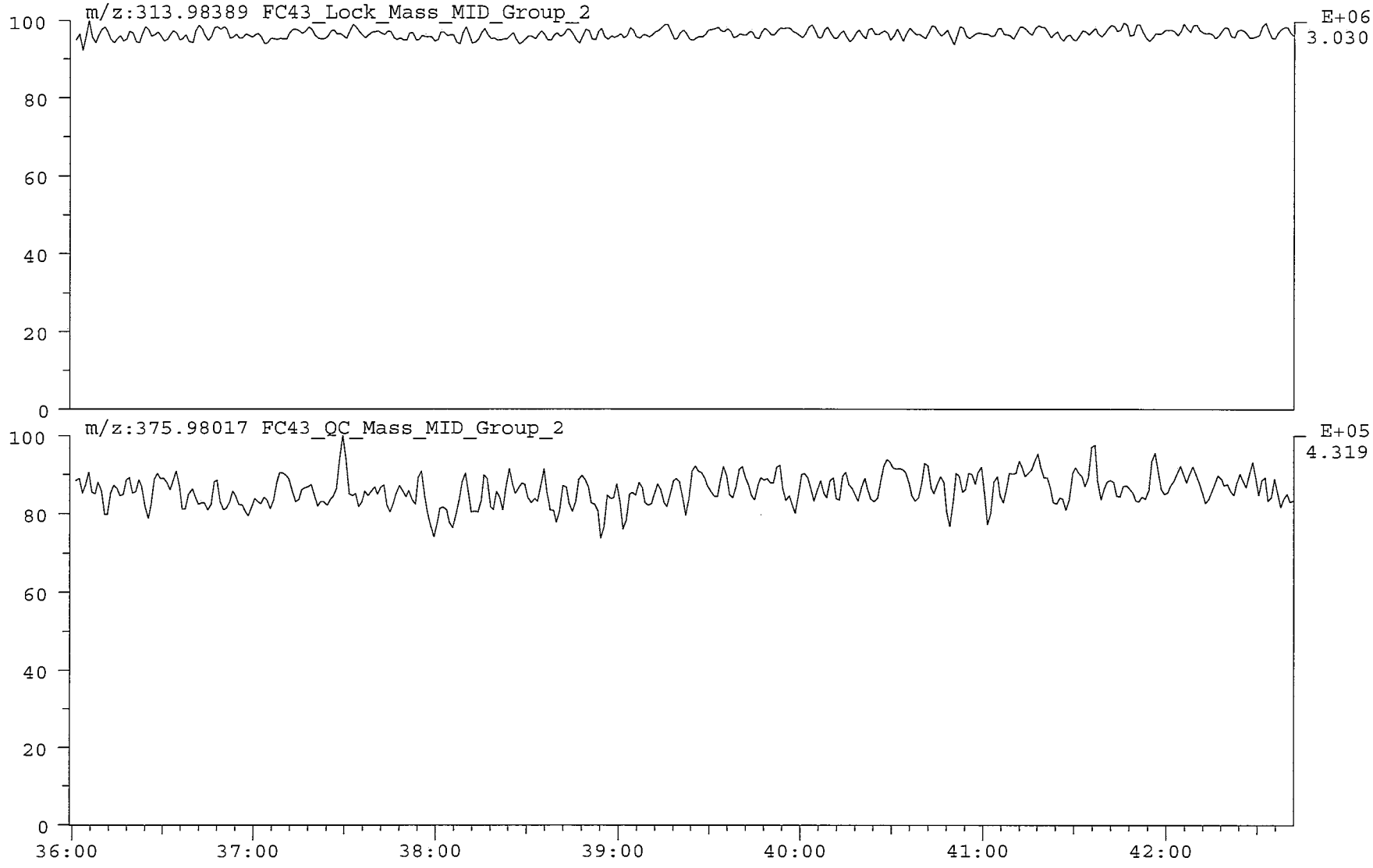
CHRO: d1tm811n 17-Aug-16 Elapse: 39:45 1620
Samp: WO=m811n1ac Meth=9Ao Dil=1 Start : 15:34:59 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1617 > 1623 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



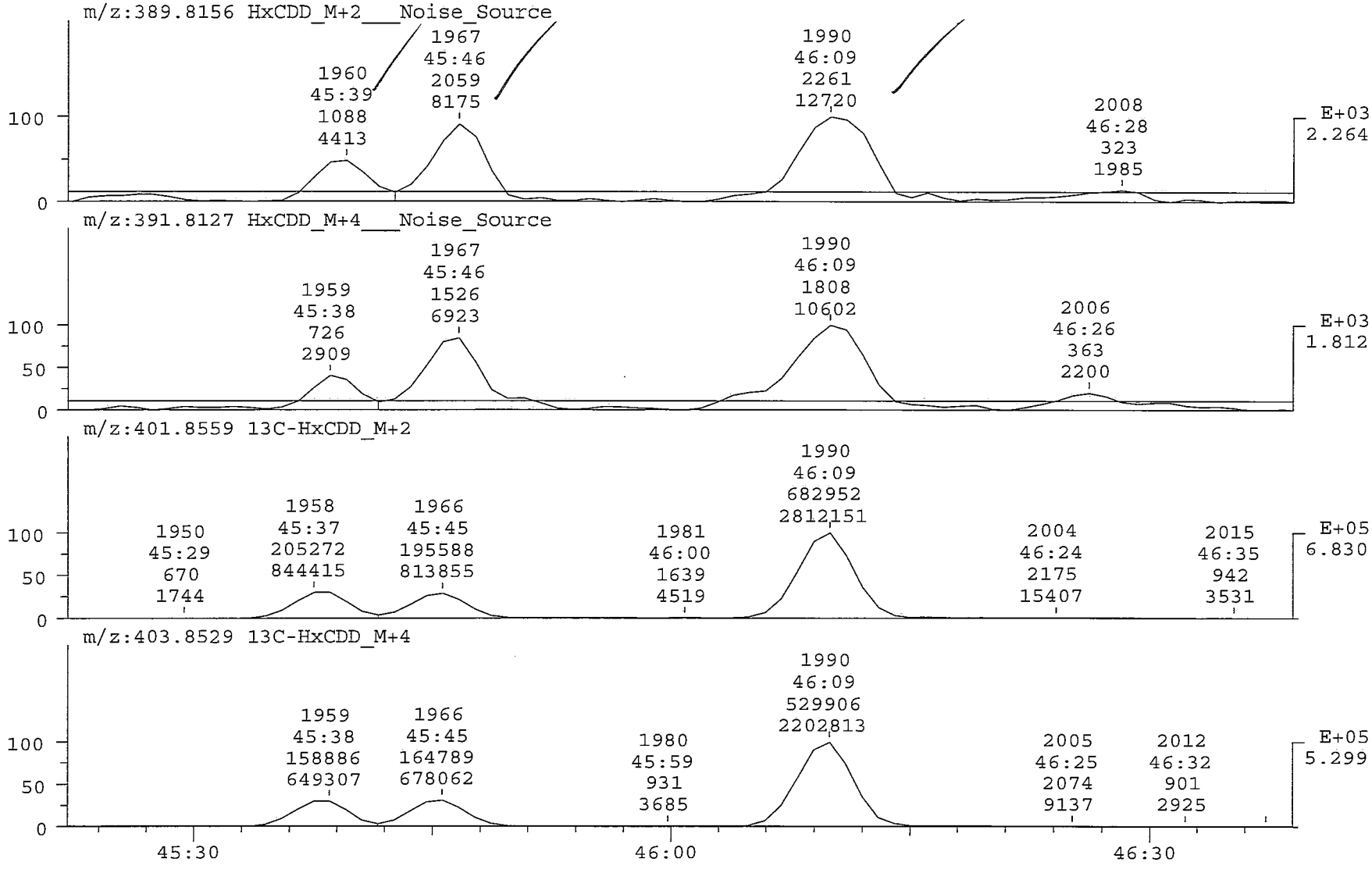
```
CHRO:  d1tm811n                                  17-Aug-16  Elapse:  40:26      1659
Samp:  WO=m811n1ac Meth=9Ao Dil=1                           Start :  15:34:59   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  6217014 (9.8g)
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1790            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



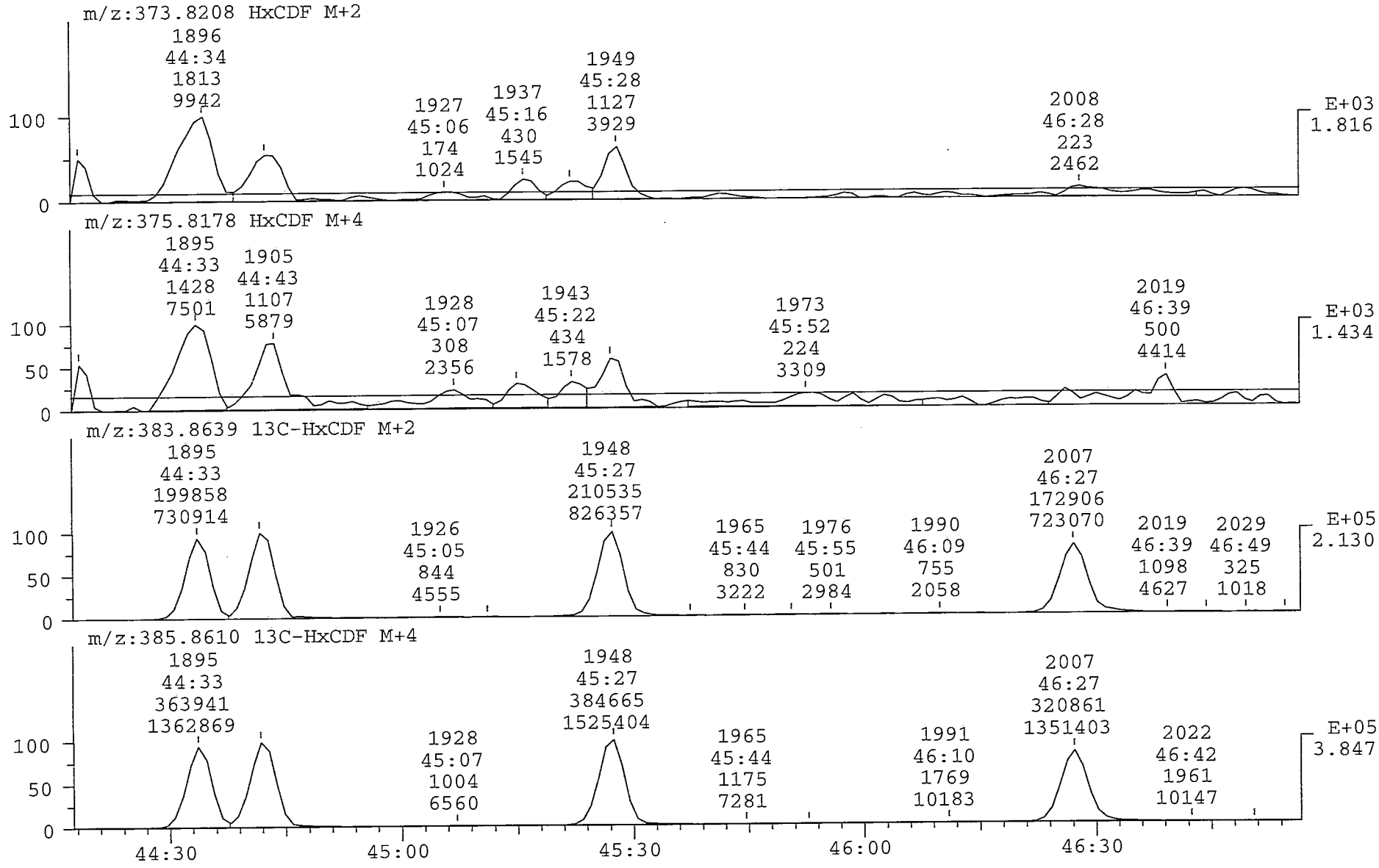
```
CHRO:  d1tm811n                                17-Aug-16  Elapse:  40:26      1659
Samp:  WO=m811n1ac Meth=9Ao Dil=1                         Start :  15:34:59   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1790          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



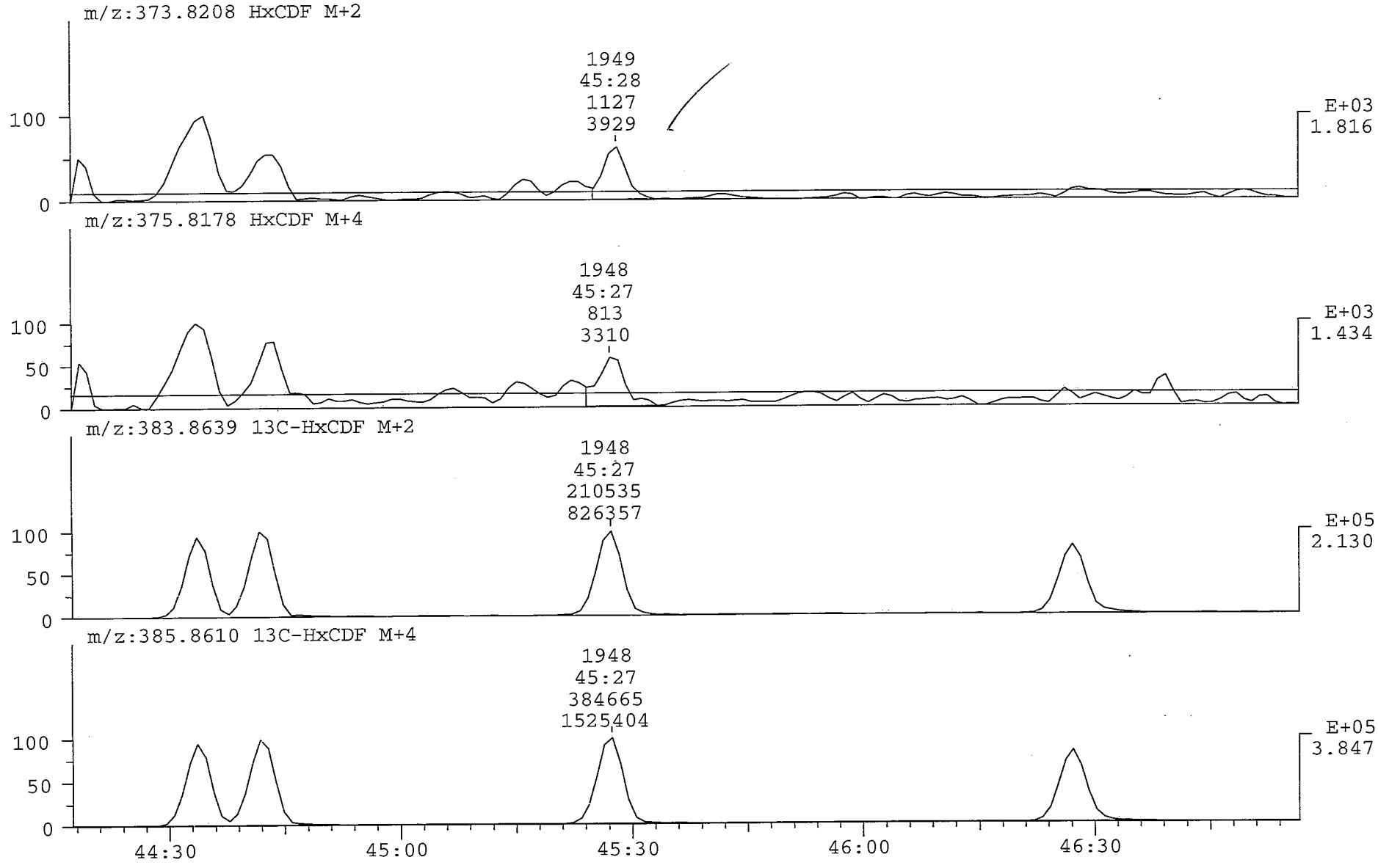
```
CHRO:  d1tm811n                                  17-Aug-16  Elapse:  45:59      1980
Samp:  WO=m811n1ac Meth=9Ao Dil=1                           Start :  15:34:59   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  6217014 (9.8g)
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1943 > 2019            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



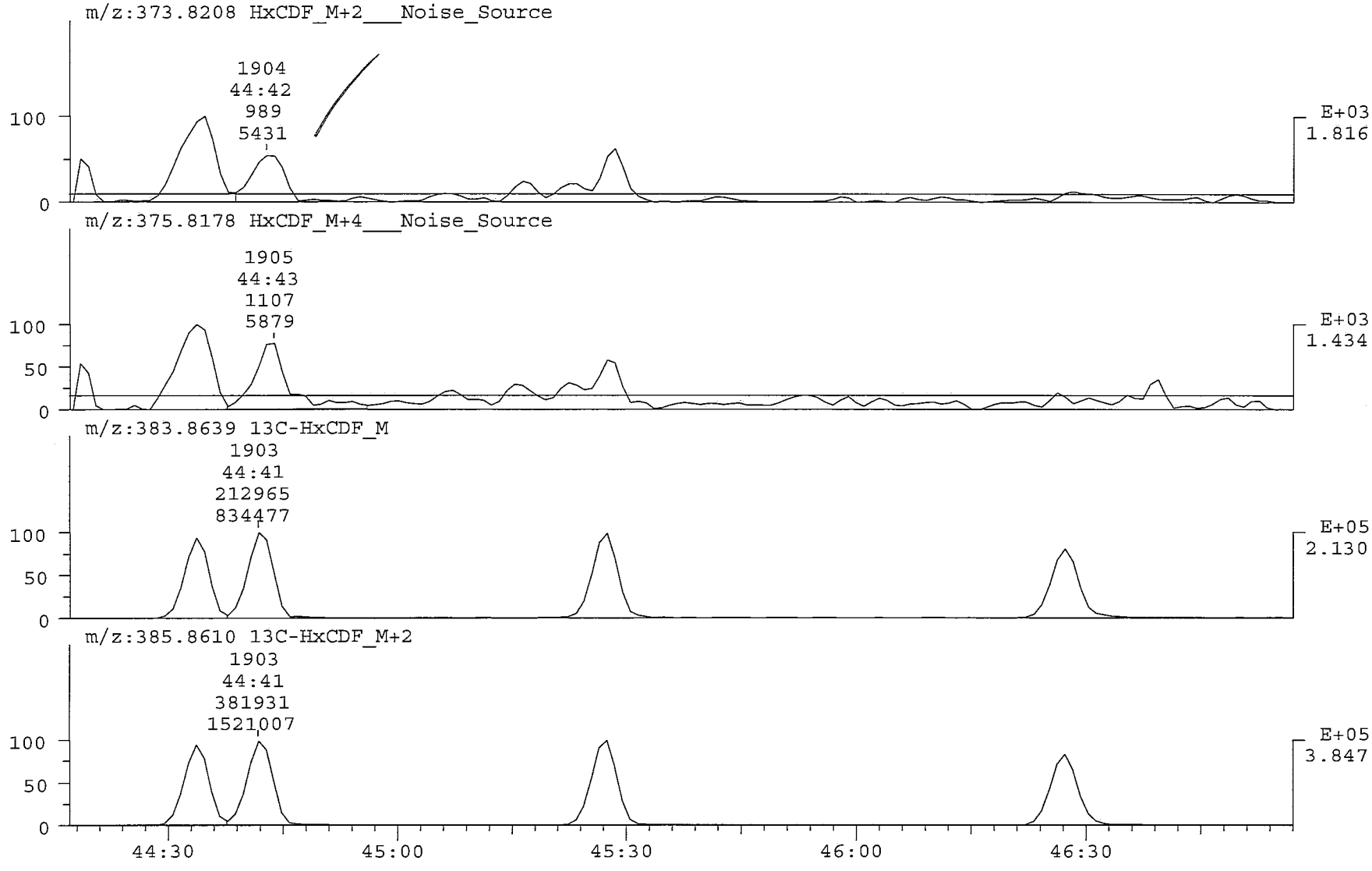
CHRO: d1tm811n 17-Aug-16 Elapse: 54:52 2493
Samp: WO=m811n1ac Meth=9Ao Dil=1 Start : 15:34:59 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1879 > 2036 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



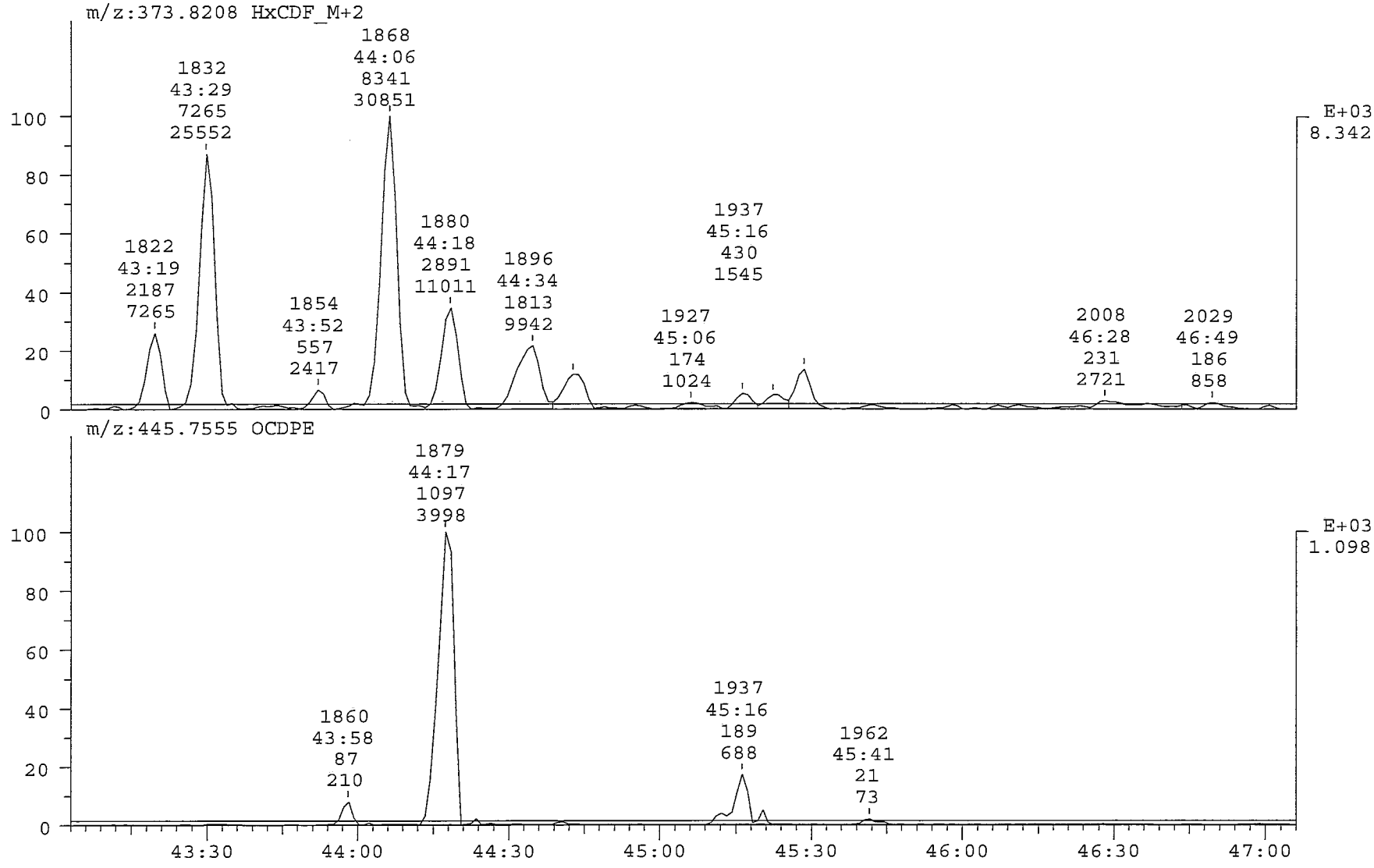
CHRO: d1tm811n 17-Aug-16 Elapse: 45:28 1949
Samp: WO=m811n1ac Meth=9Ao Dil=1 Start : 15:34:59 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1946 > 1952 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



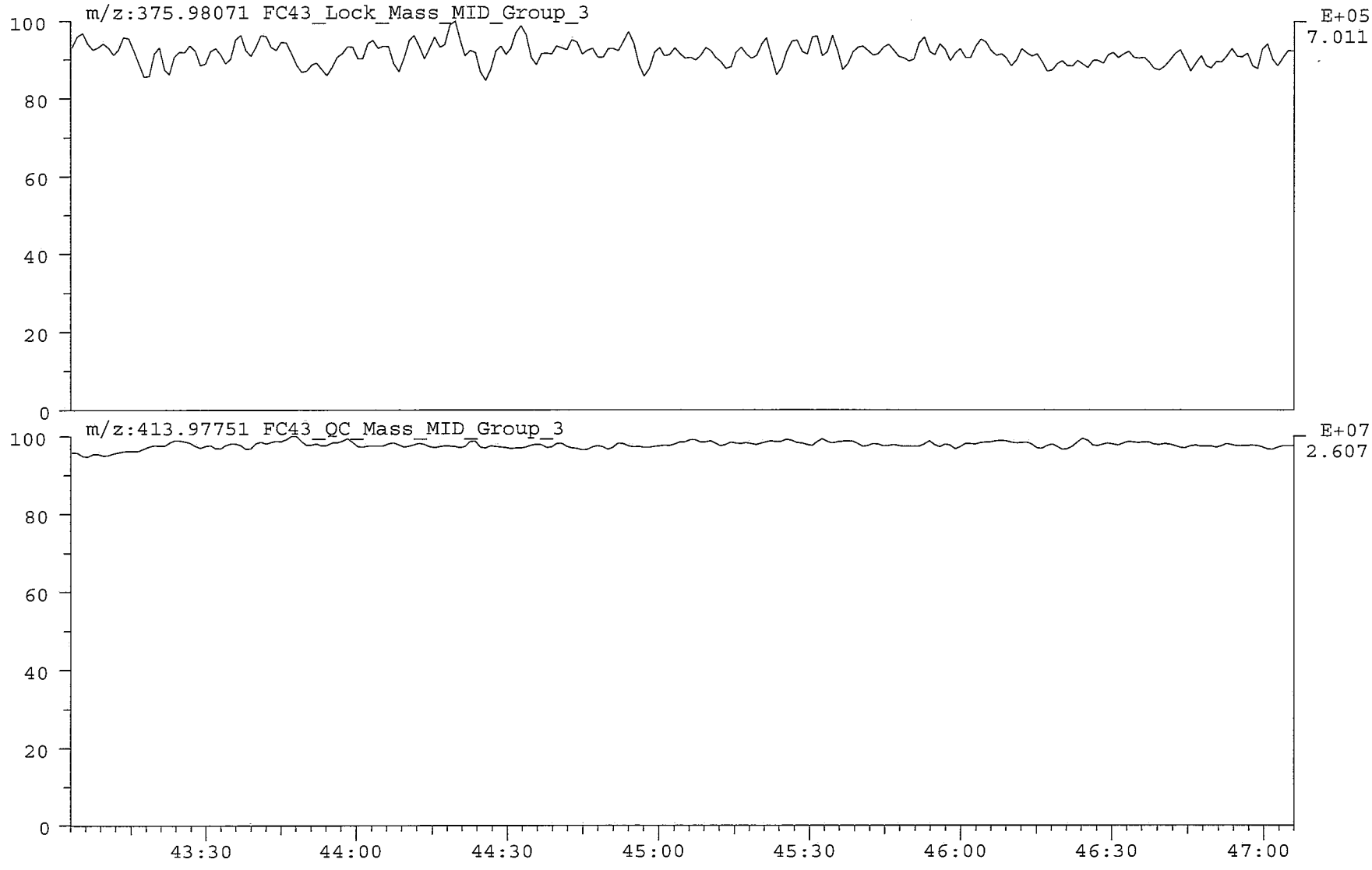
```
CHRO:  d1tm811n                                17-Aug-16  Elapse:  44:44      1906
Samp:  WO=m811n1ac Meth=9Ao Dil=1                         Start :  15:34:59   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1902 > 1910          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



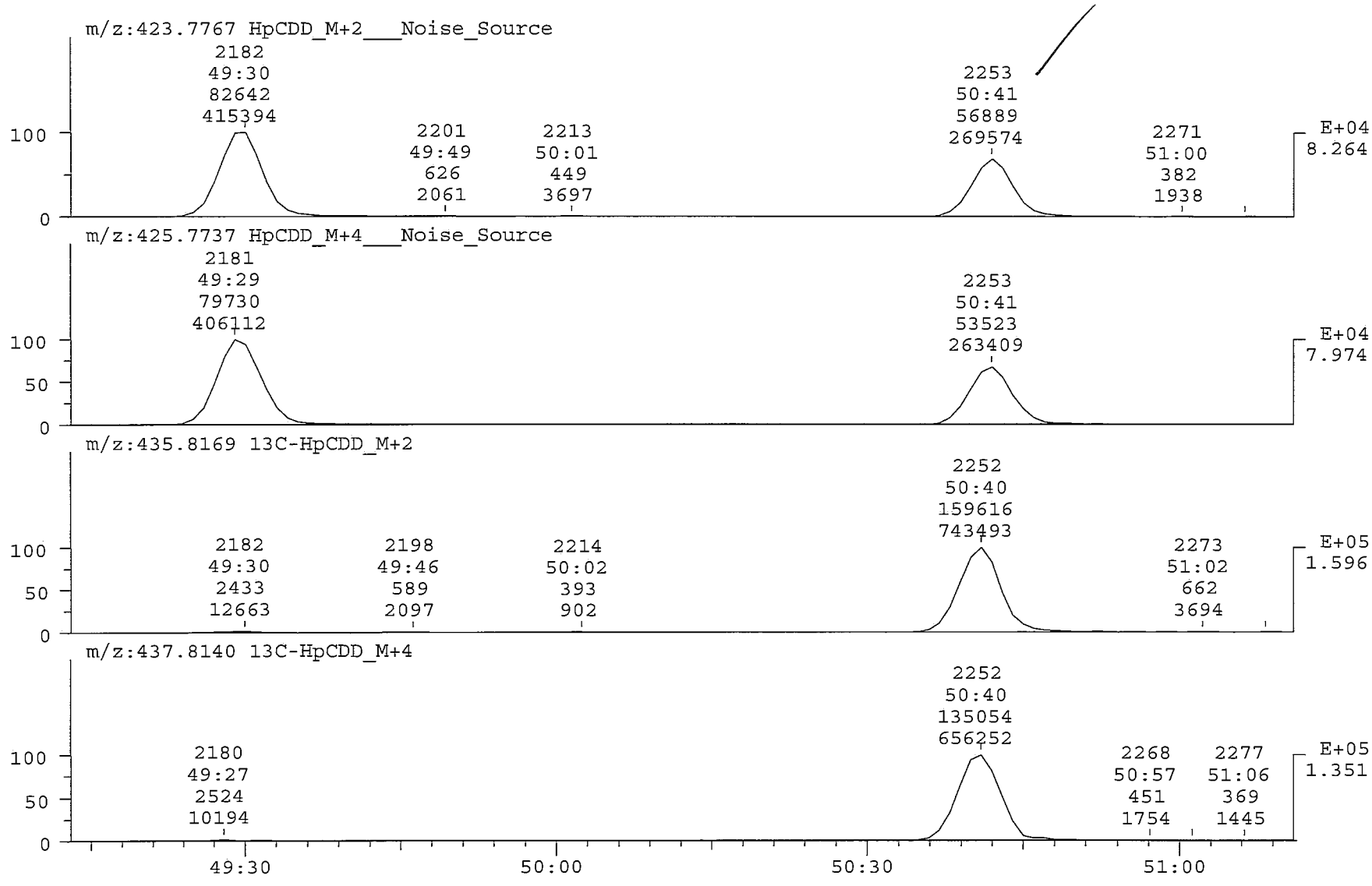
```
CHRO:  d1tm811n                                  17-Aug-16  Elapse:  44:44      1906
Samp:  WO=m811n1ac Meth=9Ao Dil=1                           Start :  15:34:59   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  6217014 (9.8g)
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1806 > 2045            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



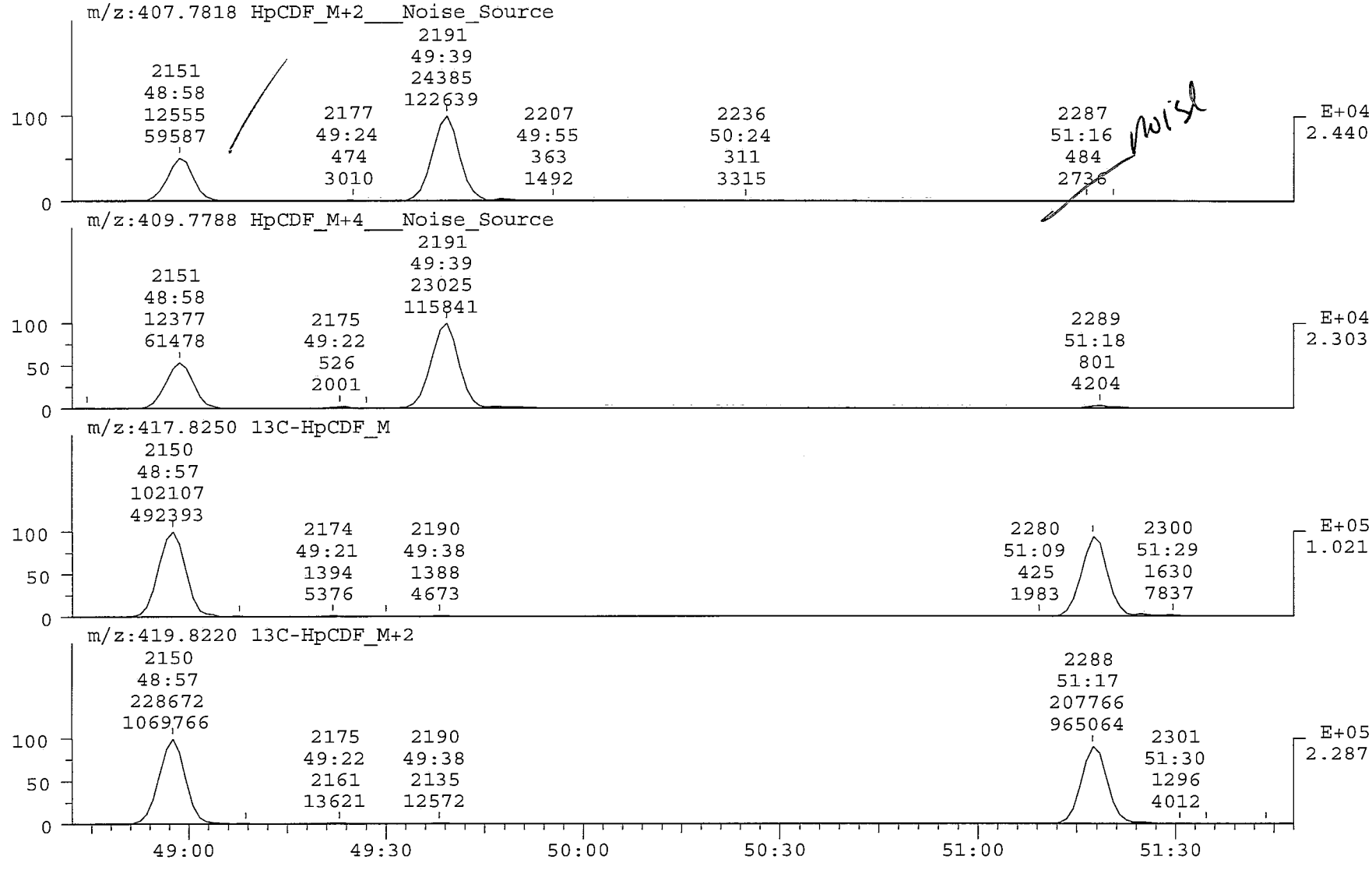
```
CHRO:  d1tm811n                                17-Aug-16  Elapse:  44:44      1906
Samp:  WO=m811n1ac Meth=9Ao Dil=1                         Start :  15:34:59   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1806 > 2045          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0,. 0.0
Disp:  Height  Area
```



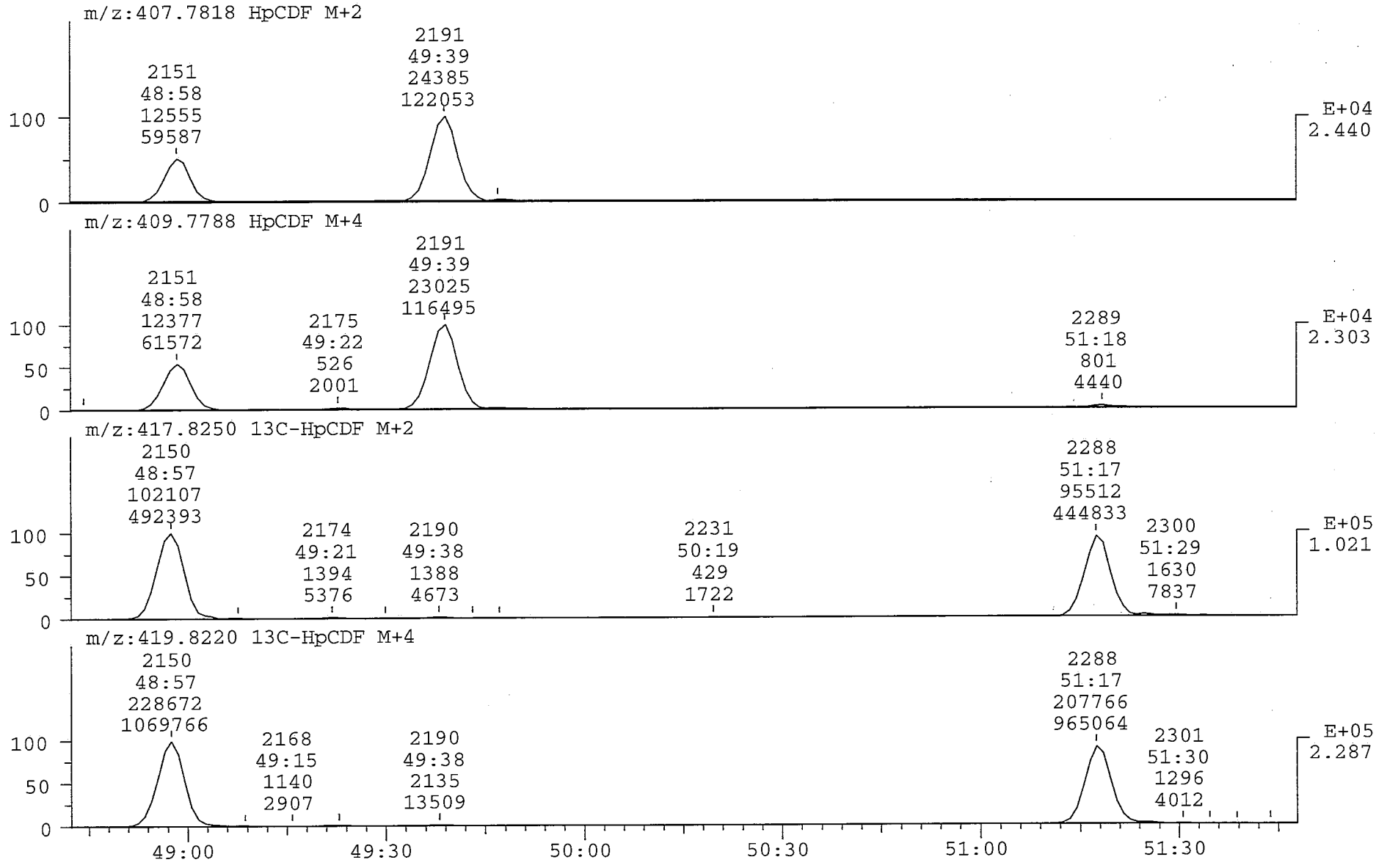
```
CHRO:  d1tm811n                                17-Aug-16  Elapse:  44:44      1906
Samp:  WO=m811n1ac Meth=9Ao Dil=1                         Start :  15:34:59   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2165 > 2282          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



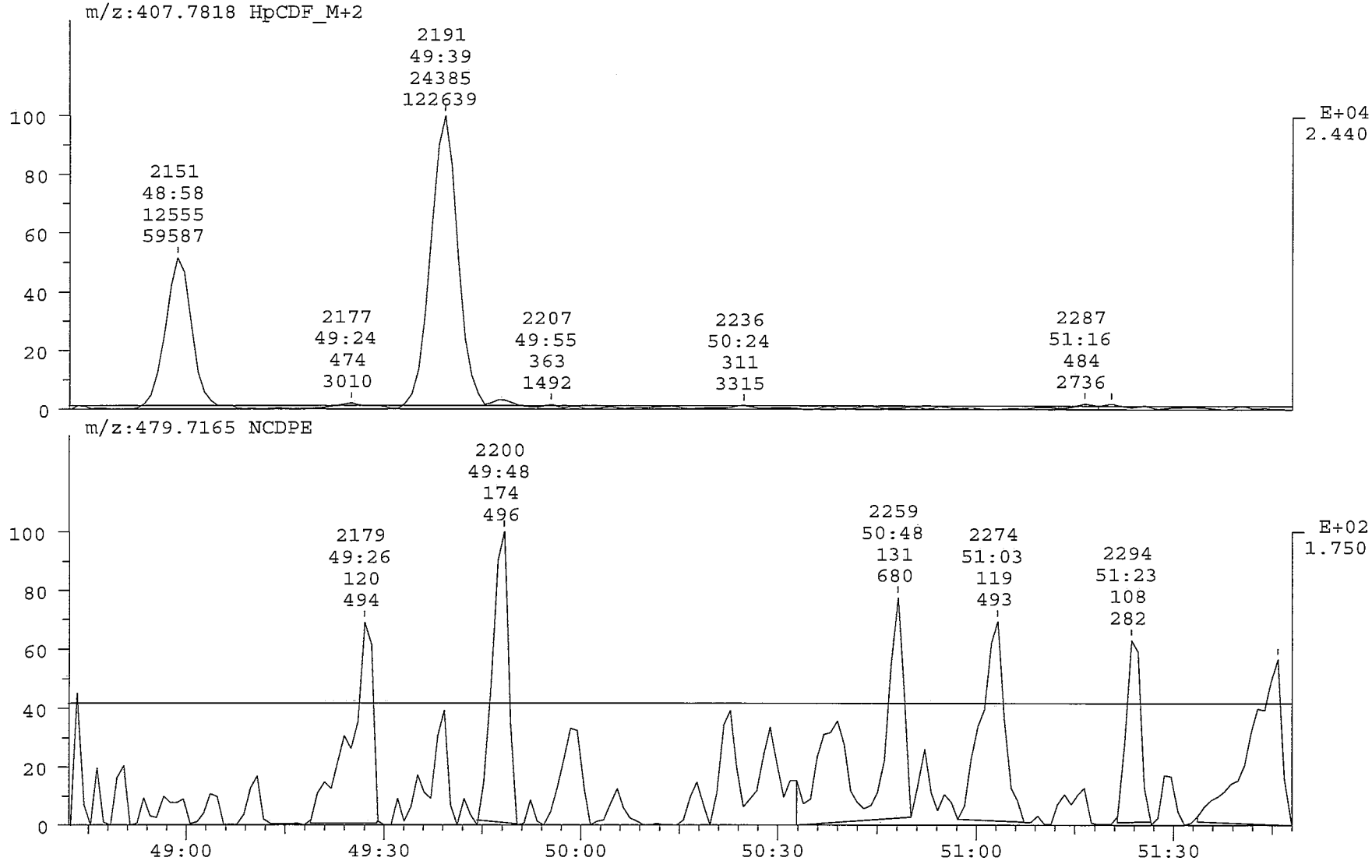
```
CHRO:  d1tm811n                                17-Aug-16  Elapse:  50:14      2226
Samp:  WO=m811n1ac Meth=9Ao Dil=1                         Start :  15:34:59   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2135 > 2318          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



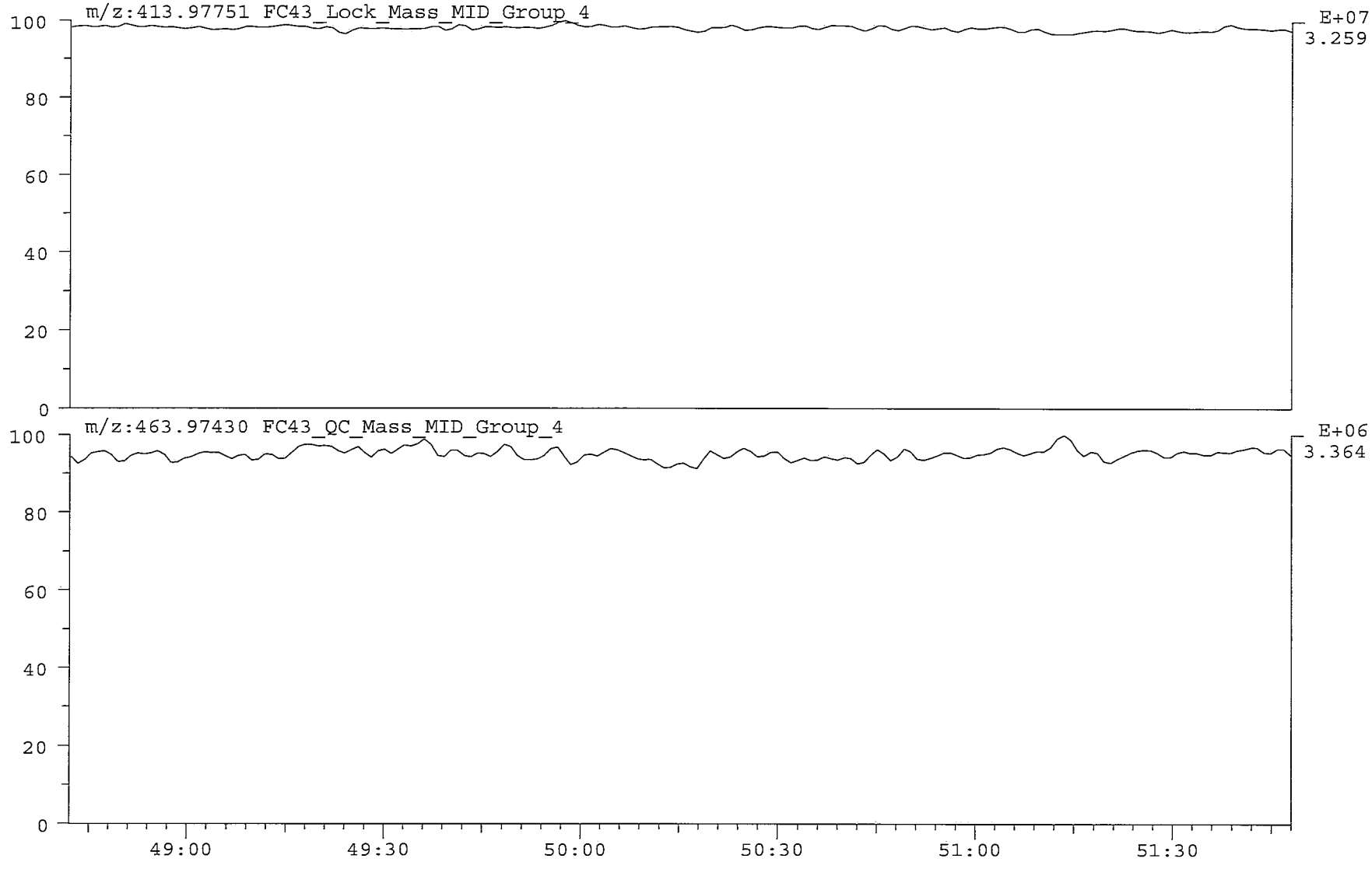
CHRO: d1tm811n 17-Aug-16 Elapse: 39:45 1620
Samp: WO=m811n1ac Meth=9Ao Dil=1 Start : 15:34:59 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2135 > 2318 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



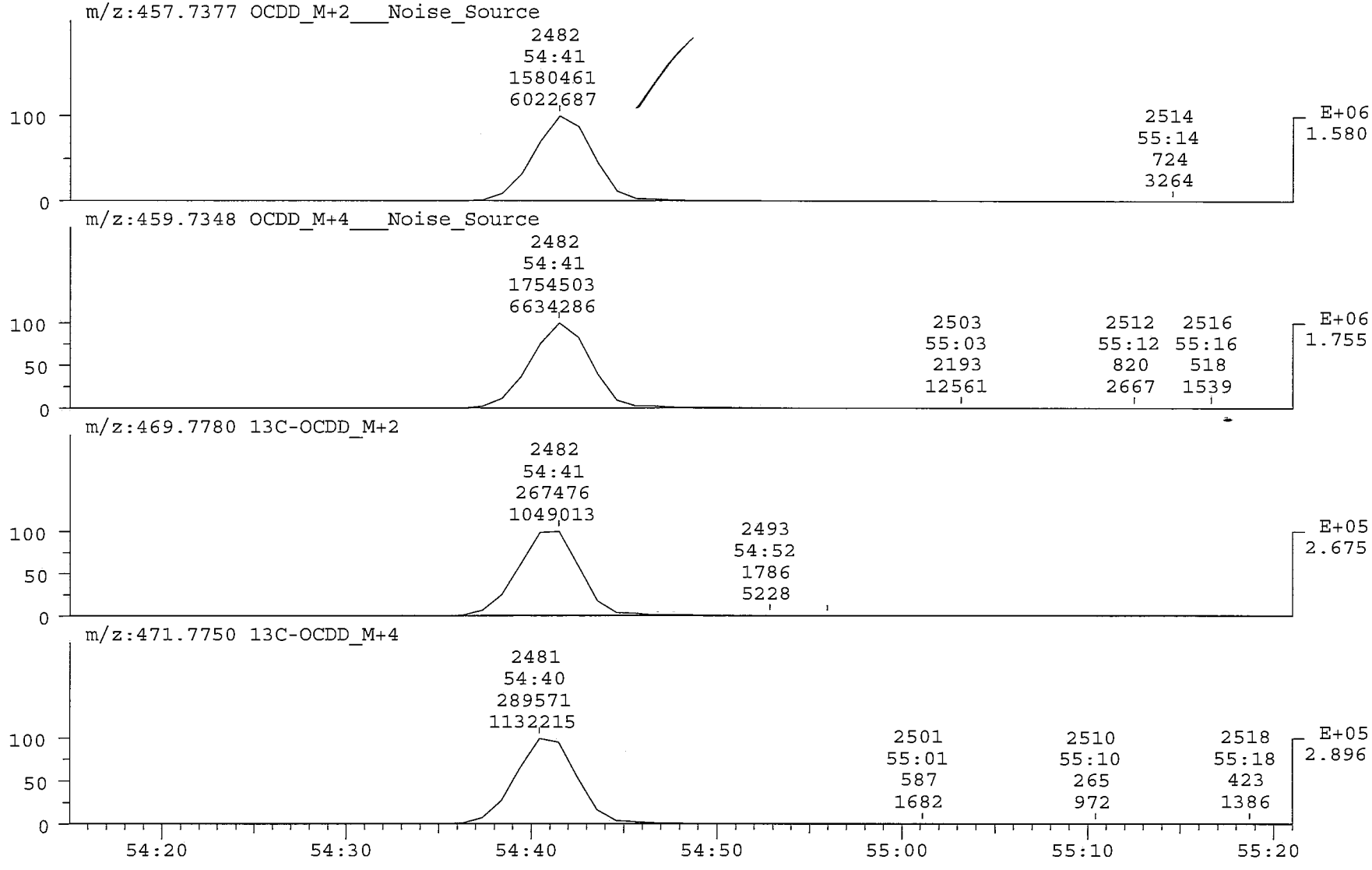
```
CHRO:  d1tm811n                                  17-Aug-16   Elapse:  50:14      2226
Samp:  WO=m811n1ac Meth=9Ao Dil=1                            Start :  15:34:59   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                   Study :  6217014 (9.8g)
Oper:  KLR                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2135 > 2318             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  -2, 5.0
Disp:  Height  Area
```



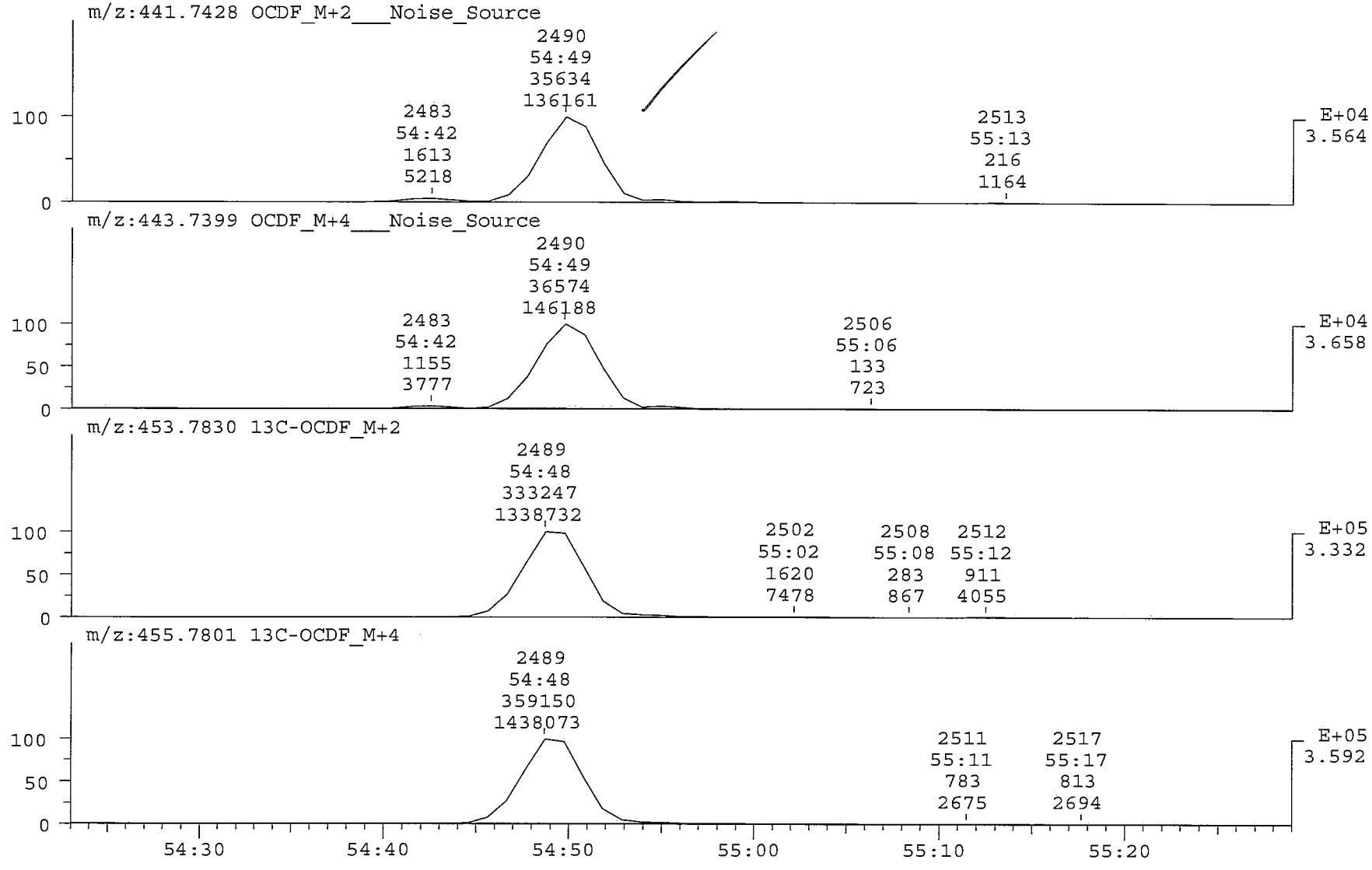
```
CHRO:  d1tm811n                                17-Aug-16  Elapse:  50:14      2226
Samp:  WO=m811n1ac Meth=9Ao Dil=1                         Start :  15:34:59   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2135 > 2318          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



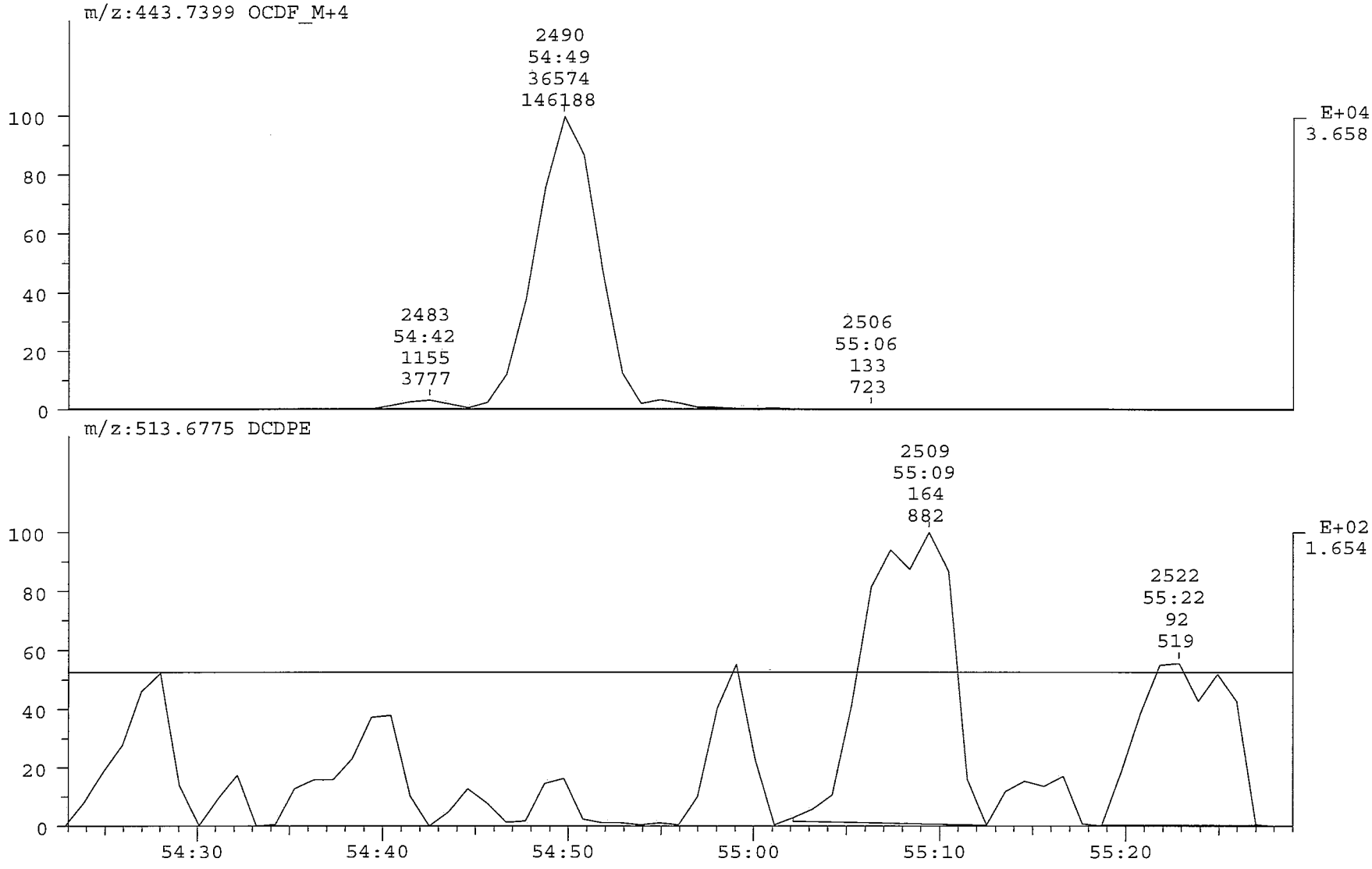
CHRO: d1tm811n 17-Aug-16 Elapse: 54:44 2485
Samp: WO=m811n1ac Meth=9Ao Dil=1 Start : 15:34:59 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2456 > 2520 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



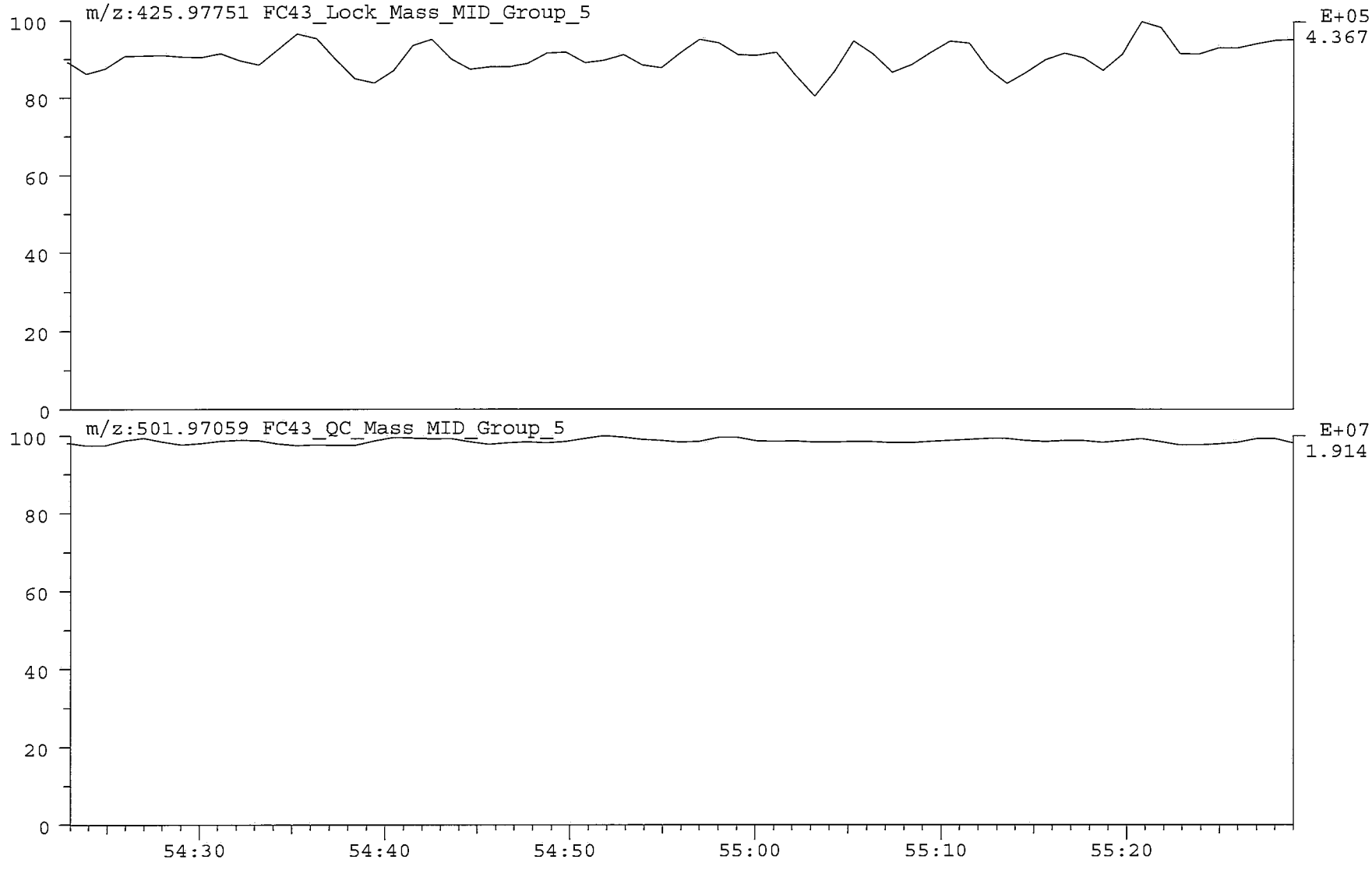
CHRO: d1tm811n 17-Aug-16 Elapse: 54:52 2493
Samp: WO=m811n1ac Meth=9Ao Dil=1 Start : 15:34:59 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2464 > 2528 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d1tm811n                                17-Aug-16  Elapse:  54:52      2493
Samp:  WO=m811n1ac Meth=9Ao Dil=1                         Start :  15:34:59   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2464 > 2528          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1tm811n                              17-Aug-16  Elapse:  54:52      2493
Samp:  WO=m811n1ac Meth=9Ao Dil=1                       Start :  15:34:59   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                              Study :  6217014 (9.8g)
Oper:  KLR                                              Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2464 > 2528        Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3             Label :  0, 0.0
Disp:  Height  Area
```



```
*** file opened Wed Aug 17 15:39:35 2016 ***

Started by                - Xcalibur
Instrument Internet name  - DFS MS
Instrument model          - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

  Analysis started at: 17-Aug-16 15:39:35

  Analysis will stop at user request

  Firmware Version: 1.03

  MCAL file name: mcal1.cal

  Sequence : 021716KLR_160817130111

  MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF


  Mid Time Windows:
        Start        Measure      End        Cycletime

  # 1  12:00 min  23:53 min  35:53 min   1.00 sec
  # 2  35:53 min   6:50 min  42:43 min   1.00 sec
  # 3  42:43 min   5:16 min  48:00 min   1.00 sec
  # 4  48:00 min   5:00 min  53:00 min   1.00 sec
  # 5  53:00 min   4:12 min  57:12 min   1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    303.9016     1  1      123
    305.8987     1  1      123
    313.9834 l  20  1        6
    313.9834    20  1        6
    315.9419     5  1       24
    317.9389     5  1       24
    319.8965     1  1      123
    321.8936     1  1      123
    327.8847     1  1      123
    331.9368     5  1       24
    333.9338     5  1       24
    363.9802 c  20  1        6
    363.9802 c  20  1        6
    375.8364     1  1      123
   Window # 2
        mass F  int  gr  time (ms)
    313.9834 l  20  1        7
    313.9834    20  1        7
    339.8597     1  1      146
    341.8567     1  1      146
    351.9000     5  1       29
    353.8970     5  1       29
    355.8546     1  1      146
    357.8516     1  1      146
    367.8949     5  1       29
    369.8919     5  1       29
    375.9802 c  20  1        7
    375.9802    20  1        7
    409.7974     1  1      146
   Window # 3
        mass F  int  gr  time (ms)
    373.8208     1  1      146
    375.8178     1  1      146
    375.9802 l  20  1        7
```

```
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          308.9834
 BQUAD            2.4000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE       18.0000  ECORR           1.0008   ECURR            1.0000
 EDAC       7969177.0000   EDACG           0.9997   EDACZ         2585.8226
 ELEN           -45.0000   EMULT        1802.0000   ENS            210.0000
 ENSBR            2.4000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           172.0000   EXSBR            2.5000
 FDMA      18000000.0000   FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            6.4000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0471	FVSRC	0.0394
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	642.0000
LENS_SYM	7.2500	LM	375.8364	LMII	500.0000
LMASS	308.9834	LKM	425.9770	MASS	308.9834
MDAC	3555246.5912	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2649.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-2.0000	RECURR	0.8982	RELEN	0.0000
RES	12558.9441	RPUSHER	-1.9121	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	684.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0994	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	308.9834	XLENS_POT	916.0000
XLENS_SYM	24.3000	YLENS_POT	856.0000	YLENS_SYM	15.0000

```
Source Gauge:         2.5e-005 mbar
Analyzer Penning:     9.5e-008 mbar
Pirani Analyse:       4.4e-003 mbar
Pirani Source:        3.9e-002 mbar
Pirani Inlet System:  4.7e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 12110.
MID Time Window 2: Resolution is 12229.
MID Time Window 3: Resolution is 12001.
MID Time Window 4: Resolution is 12303.
MID Time Window 5: Resolution is 12558.

Amplifier Offset: 89.


*** File closed Wed Aug 17 16:36:49 2016
  ***
```

QUAN: d1tm811n.q0 Entries: 267

Data file(s) used
File: d1tm811n 17-Aug-16
Samp: WO=m811n1ac Meth=9Ao Dil=1 Start : 15:34:59 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:35	2554.	313.	32:32	32:49	9.	1	1.0	AVB
321.8775	32:35	3567.	390.	32:27	32:47	14.	1	1.0	ABV
319.8805	32:35	2726.	313.	32:26	32:49	9.	2	5.0	ABB
319.8805	32:57	577.	128.	32:49	32:59	9.	2	5.0	ABB
319.8805	33:57	178.	73.	33:54	33:59	9.	2	5.0	ABB
319.8805	34:02	219.	62.	33:59	34:07	9.	2	5.0	ABB
321.8775	31:32	396.	131.	31:28	31:37	14.	2	5.0	ABB
321.8775	32:17	527.	118.	32:14	32:23	14.	2	5.0	ABB
321.8775	32:35	3567.	390.	32:27	32:47	14.	2	5.0	ABV
321.8775	32:51	1168.	188.	32:47	33:03	14.	2	5.0	AVB
331.9202	32:17	2019825.	212742.	32:02	32:32	117.	2	5.0	ABV
331.9202	32:50	675100.	68813.	32:34	33:05	117.	2	5.0	AVV
333.9171	32:18	2493006.	253488.	32:03	32:33	168.	2	5.0	AVV
333.9171	32:51	838878.	86394.	32:35	33:06	168.	2	5.0	AVV
303.8864	30:48	4819.	595.	30:44	30:58	19.	1	1.0	AVB
305.8834	30:49	4450.	495.	30:44	31:01	22.	1	1.0	AVB
303.8864	29:37	1607.	303.	29:28	29:42	19.	2	5.0	ABB
303.8864	30:05	1235.	158.	29:55	30:09	19.	2	5.0	ABV
303.8864	30:11	655.	248.	30:09	30:14	19.	2	5.0	AVB
303.8864	30:42	1253.	246.	30:33	30:44	19.	2	5.0	ABV
303.8864	30:48	4819.	595.	30:44	30:58	19.	2	5.0	AVB
303.8864	32:04	2846.	306.	31:50	32:12	19.	2	5.0	ABB
305.8834	29:33	1752.	272.	29:28	29:42	22.	2	5.0	ABB
305.8834	30:07	1487.	249.	29:54	30:09	22.	2	5.0	ABV
305.8834	30:11	776.	257.	30:09	30:13	22.	2	5.0	AVV
305.8834	30:15	821.	179.	30:13	30:24	22.	2	5.0	AVB
305.8834	30:42	1777.	420.	30:33	30:44	22.	2	5.0	ABV
305.8834	30:49	4450.	495.	30:44	31:01	22.	2	5.0	AVB
305.8834	32:02	3277.	411.	31:52	32:12	22.	2	5.0	ABB
315.9261	29:33	6368.	1168.	29:21	29:36	36.	2	5.0	ABB
315.9261	30:06	1492.	362.	29:59	30:08	36.	2	5.0	ABB
315.9261	30:42	1199843.	131459.	30:27	30:57	36.	2	5.0	ABV
315.9261	31:00	3282.	1117.	30:58	31:03	36.	2	5.0	AVV
315.9261	31:05	777.	314.	31:03	31:07	36.	2	5.0	AVV
315.9261	31:09	2218.	317.	31:07	31:21	36.	2	5.0	AVB
315.9261	31:31	1499.	357.	31:25	31:35	36.	2	5.0	ABB
315.9261	31:44	1193.	350.	31:37	31:49	36.	2	5.0	ABB
315.9261	32:16	1394.	276.	32:11	32:19	36.	2	5.0	ABV
315.9261	32:23	1041.	275.	32:19	32:25	36.	2	5.0	AVV
315.9261	32:27	534.	232.	32:25	32:28	36.	2	5.0	AVV
315.9261	32:30	825.	396.	32:28	32:32	36.	2	5.0	AVB
317.9230	29:24	1004.	354.	29:21	29:26	23.	2	5.0	ABV
317.9230	29:30	2720.	666.	29:26	29:33	23.	2	5.0	AVV
317.9230	29:35	1835.	434.	29:33	29:40	23.	2	5.0	AVB
317.9230	29:50	1009.	430.	29:47	29:52	23.	2	5.0	ABB
317.9230	30:41	1525359.	167664.	30:26	30:56	23.	2	5.0	ABV
317.9230	30:58	4791.	1651.	30:56	31:01	23.	2	5.0	AVV
317.9230	31:02	437.	192.	31:01	31:04	23.	2	5.0	AVV
317.9230	31:10	1773.	675.	31:04	31:12	23.	2	5.0	AVB
317.9230	31:17	850.	274.	31:13	31:19	23.	2	5.0	ABV

317.9230	31:23	565.	196.	31:19	31:25	23.	2	5.0	AVB
317.9230	31:30	543.	166.	31:25	31:32	23.	2	5.0	ABB
317.9230	31:56	1864.	504.	31:46	32:02	23.	2	5.0	ABB
317.9230	32:16	2090.	521.	32:10	32:19	23.	2	5.0	ABV
317.9230	32:21	1338.	517.	32:19	32:23	23.	2	5.0	AVB
355.8368	41:26	2605.	507.	41:15	41:29	25.	1	1.0	ABB
357.8337	41:24	2910.	505.	41:17	41:30	26.	1	1.0	ABB
355.8368	40:45	944.	327.	40:41	40:47	25.	2	5.0	ABB
355.8368	41:07	1644.	162.	40:52	41:14	25.	2	5.0	AVB
355.8368	41:26	2605.	507.	41:15	41:29	25.	2	5.0	ABB
355.8368	41:38	685.	154.	41:34	41:42	25.	2	5.0	ABB
355.8368	42:02	1464.	196.	41:58	42:17	25.	2	5.0	ABB
357.8337	41:10	689.	137.	41:05	41:17	26.	2	5.0	ABB
357.8337	41:24	2910.	505.	41:17	41:30	26.	2	5.0	ABB
367.8765	41:24	833097.	197766.	41:13	41:32	74.	2	5.0	ABV
367.8765	41:34	8364.	1471.	41:32	41:40	74.	2	5.0	AVV
367.8765	41:46	3776.	672.	41:40	41:54	74.	2	5.0	AVB
367.8765	42:02	3406.	838.	41:57	42:08	74.	2	5.0	ABB
369.8734	41:24	541959.	128545.	41:16	41:35	64.	2	5.0	ABB
369.8734	41:38	2544.	918.	41:35	41:40	64.	2	5.0	ABV
369.8734	41:44	2037.	413.	41:40	41:50	64.	2	5.0	AVB
369.8734	42:02	2531.	645.	41:54	42:04	64.	2	5.0	ABB
369.8734	42:16	1799.	510.	42:08	42:20	64.	2	5.0	ABB
339.8427	40:18	4918.	623.	40:09	40:23	36.	1	1.0	ABB
341.8396	40:18	3845.	624.	40:07	40:28	36.	1	1.0	ABB
339.8427	39:18	1338.	461.	39:16	39:22	36.	2	5.0	ABB
339.8427	39:40	868.	266.	39:36	39:42	36.	2	5.0	ABV
339.8427	39:44	1331.	268.	39:42	39:51	36.	2	5.0	AVB
339.8427	40:18	4918.	623.	40:09	40:23	36.	2	5.0	ABB
339.8427	40:54	3223.	759.	40:45	40:59	36.	2	5.0	ABV
339.8427	41:06	4080.	716.	40:59	41:14	36.	2	5.0	AVB
341.8396	39:44	2952.	485.	39:35	39:53	36.	2	5.0	ABB
341.8396	40:18	3845.	624.	40:07	40:28	36.	2	5.0	ABB
341.8396	40:55	2584.	500.	40:48	41:01	36.	2	5.0	ABV
341.8396	41:05	2372.	360.	41:01	41:21	36.	2	5.0	AVV
351.8824	39:43	1350057.	280758.	39:35	39:56	84.	2	5.0	ABV
351.8824	39:59	7971.	1397.	39:56	40:05	84.	2	5.0	AVV
351.8824	40:13	16525.	2981.	40:05	40:22	84.	2	5.0	AVV
351.8824	40:27	3719.	661.	40:22	40:33	84.	2	5.0	AVB
351.8824	40:54	1434489.	331343.	40:45	41:03	84.	2	5.0	ABV
351.8824	41:05	12657.	1578.	41:03	41:19	84.	2	5.0	AVV
351.8824	41:21	2832.	778.	41:19	41:26	84.	2	5.0	AVV
351.8824	41:34	3342.	519.	41:26	41:36	84.	2	5.0	AVB
353.8793	39:28	644.	272.	39:25	39:30	32.	2	5.0	ABB
353.8793	39:43	826695.	178595.	39:32	39:56	32.	2	5.0	ABV
353.8793	40:02	7644.	1220.	39:56	40:07	32.	2	5.0	AVV
353.8793	40:13	7446.	1776.	40:07	40:16	32.	2	5.0	AVV
353.8793	40:20	1013.	268.	40:16	40:22	32.	2	5.0	AVB
353.8793	40:25	965.	267.	40:22	40:30	32.	2	5.0	ABV
353.8793	40:32	759.	258.	40:30	40:37	32.	2	5.0	AVB
353.8793	40:54	913743.	214395.	40:45	41:03	32.	2	5.0	ABV
353.8793	41:06	7810.	1754.	41:03	41:19	32.	2	5.0	AVB
353.8793	41:21	745.	284.	41:19	41:23	32.	2	5.0	ABV
353.8793	41:25	533.	227.	41:23	41:27	32.	2	5.0	AVB
389.7961	46:10	12720.	2261.	46:01	46:18	53.	1	1.0	ABV
391.7931	46:10	10602.	1808.	46:00	46:21	39.	1	1.0	ABB
389.7961	45:39	4413.	1088.	45:34	45:42	53.	2	5.0	ABV
389.7961	45:46	8175.	2059.	45:42	45:53	53.	2	5.0	AVB
389.7961	46:10	12720.	2261.	46:01	46:18	53.	2	5.0	ABV
389.7961	46:28	1985.	323.	46:18	46:31	53.	2	5.0	AVB
391.7931	45:38	2909.	726.	45:27	45:41	39.	2	5.0	ABV
391.7931	45:46	6923.	1526.	45:41	45:53	39.	2	5.0	AVB
391.7931	46:10	10602.	1808.	46:00	46:21	39.	2	5.0	ABB
391.7931	46:26	2200.	363.	46:21	46:36	39.	2	5.0	ABB
401.8358	45:29	1744.	670.	45:27	45:31	108.	2	5.0	ABV
401.8358	45:37	844415.	205272.	45:31	45:41	108.	2	5.0	AVV
401.8358	45:45	813855.	195588.	45:41	45:58	108.	2	5.0	AVV

401.8358	46:00	4519.	1639.	45:58	46:02	108.	2	5.0	AVV
401.8358	46:10	2812151.	682952.	46:02	46:22	108.	2	5.0	AVV
401.8358	46:24	15407.	2175.	46:22	46:33	108.	2	5.0	AVV
401.8358	46:35	3531.	942.	46:33	46:39	108.	2	5.0	AVB
403.8327	45:38	649307.	158886.	45:29	45:41	51.	2	5.0	ABV
403.8327	45:45	678062.	164789.	45:41	45:56	51.	2	5.0	AVV
403.8327	45:59	3685.	931.	45:56	46:02	51.	2	5.0	AVV
403.8327	46:10	2202813.	529906.	46:02	46:22	51.	2	5.0	AVV
403.8327	46:25	9137.	2074.	46:22	46:30	51.	2	5.0	AVV
403.8327	46:32	2925.	901.	46:30	46:35	51.	2	5.0	AVV
403.8327	46:37	2177.	883.	46:35	46:39	51.	2	5.0	AVB
373.8021	44:34	9848.	1813.	44:25	44:38	34.	1	1.0	AVV
375.7990	44:33	7501.	1428.	44:27	44:37	45.	1	1.0	ABV
373.8021	44:18	1862.	922.	44:17	44:21	34.	2	5.0	ABB
373.8021	44:34	9942.	1813.	44:22	44:38	34.	2	5.0	ABV
373.8021	44:42	5431.	989.	44:38	44:58	34.	2	5.0	AVV
373.8021	45:06	1024.	174.	45:00	45:13	34.	2	5.0	ABB
373.8021	45:16	1545.	430.	45:13	45:19	34.	2	5.0	ABV
373.8021	45:22	1696.	388.	45:19	45:25	34.	2	5.0	AVV
373.8021	45:28	3929.	1127.	45:25	45:33	34.	2	5.0	AVB
373.8021	46:28	2462.	223.	46:17	46:43	34.	2	5.0	ABV
375.7990	44:18	1466.	772.	44:17	44:21	45.	2	5.0	ABB
375.7990	44:33	7501.	1428.	44:27	44:37	45.	2	5.0	ABV
375.7990	44:43	5879.	1107.	44:37	44:56	45.	2	5.0	AVV
375.7990	45:07	2356.	308.	44:56	45:12	45.	2	5.0	AVV
375.7990	45:15	1851.	412.	45:12	45:19	45.	2	5.0	AVV
375.7990	45:22	1578.	434.	45:19	45:24	45.	2	5.0	AVV
375.7990	45:27	3310.	813.	45:24	45:33	45.	2	5.0	AVB
375.7990	45:52	3309.	224.	45:37	46:08	45.	2	5.0	AVV
375.7990	46:39	4414.	500.	46:24	46:54	45.	2	5.0	AVB
373.8021	44:18	1862.	922.	44:17	44:21	34.	2	5.0	ABB
373.8021	44:34	9942.	1813.	44:22	44:38	34.	2	5.0	ABV
373.8021	44:42	5431.	989.	44:38	44:58	34.	2	5.0	AVV
373.8021	45:06	1024.	174.	45:00	45:13	34.	2	5.0	ABB
373.8021	45:16	1545.	430.	45:13	45:19	34.	2	5.0	ABV
373.8021	45:22	1696.	388.	45:19	45:25	34.	2	5.0	AVV
373.8021	45:28	3929.	1127.	45:25	45:33	34.	2	5.0	AVB
373.8021	46:28	2462.	223.	46:17	46:43	34.	2	5.0	ABV
375.7990	44:18	1466.	772.	44:17	44:21	45.	2	5.0	ABB
375.7990	44:33	7501.	1428.	44:27	44:37	45.	2	5.0	ABV
375.7990	44:43	5879.	1107.	44:37	44:56	45.	2	5.0	AVV
375.7990	45:07	2356.	308.	44:56	45:12	45.	2	5.0	AVV
375.7990	45:15	1851.	412.	45:12	45:19	45.	2	5.0	AVV
375.7990	45:22	1578.	434.	45:19	45:24	45.	2	5.0	AVV
375.7990	45:27	3310.	813.	45:24	45:33	45.	2	5.0	AVB
375.7990	45:52	3309.	224.	45:37	46:08	45.	2	5.0	AVV
375.7990	46:39	4414.	500.	46:24	46:54	45.	2	5.0	AVB
383.8447	44:33	730914.	199858.	44:24	44:37	55.	2	5.0	ABV
383.8447	44:41	834477.	212965.	44:37	44:57	55.	2	5.0	AVV
383.8447	45:05	4555.	844.	44:58	45:08	55.	2	5.0	AVV
383.8447	45:11	2147.	732.	45:08	45:14	55.	2	5.0	AVV
383.8447	45:27	826357.	210535.	45:14	45:36	55.	2	5.0	AVV
383.8447	45:37	1367.	623.	45:36	45:39	55.	2	5.0	AVV
383.8447	45:44	3222.	830.	45:39	45:47	55.	2	5.0	AVV
383.8447	45:50	2136.	540.	45:47	45:53	55.	2	5.0	AVV
383.8447	45:55	2984.	501.	45:53	46:08	55.	2	5.0	AVV
383.8447	46:10	2058.	755.	46:08	46:13	55.	2	5.0	AVB
383.8447	46:27	723070.	172906.	46:17	46:37	55.	2	5.0	ABV
383.8447	46:39	4627.	1098.	46:37	46:42	55.	2	5.0	AVV
383.8447	46:44	2472.	756.	46:42	46:47	55.	2	5.0	AVV
383.8447	46:49	1018.	325.	46:47	46:52	55.	2	5.0	AVV
383.8447	46:54	1307.	536.	46:52	46:56	55.	2	5.0	AVB
385.8417	44:33	1362869.	363941.	44:26	44:37	112.	2	5.0	ABV
385.8417	44:41	1521007.	381931.	44:37	44:57	112.	2	5.0	AVV
385.8417	45:07	6560.	1004.	45:00	45:11	112.	2	5.0	AVB
385.8417	45:27	1525404.	384665.	45:12	45:40	112.	2	5.0	AVV
385.8417	45:44	7281.	1175.	45:40	45:49	112.	2	5.0	AVV

385.8417	45:52	3767.	638.	45:49	46:00	112.	2	5.0 AVB
385.8417	46:11	10183.	1769.	46:00	46:20	112.	2	5.0 ABB
385.8417	46:27	1351403.	320861.	46:20	46:39	112.	2	5.0 ABV
385.8417	46:42	10147.	1961.	46:39	46:48	112.	2	5.0 AVV
385.8417	46:50	3872.	1069.	46:48	46:56	112.	2	5.0 AVB
423.7555	49:30	415394.	82642.	49:20	49:45	49.	1	1.0 ABV
425.7524	49:29	405852.	79730.	49:20	49:44	78.	1	1.0 AVV
423.7555	49:30	415394.	82642.	49:20	49:45	49.	2	5.0 ABV
423.7555	50:42	269574.	56889.	50:31	50:56	49.	2	5.0 ABV
425.7524	49:29	406112.	79730.	49:16	49:44	78.	2	5.0 ABV
425.7524	50:42	263408.	53523.	50:34	50:57	78.	2	5.0 ABV
435.7951	49:30	12663.	2433.	49:22	49:35	37.	2	5.0 ABV
435.7951	49:46	2097.	589.	49:40	49:48	37.	2	5.0 ABB
435.7951	50:02	902.	393.	49:59	50:04	37.	2	5.0 ABB
435.7951	50:41	743493.	159616.	50:31	50:54	37.	2	5.0 ABV
435.7951	51:02	3694.	662.	50:54	51:05	37.	2	5.0 AVV
435.7951	51:08	849.	360.	51:05	51:10	37.	2	5.0 AVB
437.7921	49:28	10194.	2524.	49:21	49:39	32.	2	5.0 ABB
437.7921	50:41	656252.	135054.	50:30	50:54	32.	2	5.0 ABV
437.7921	50:57	1754.	451.	50:54	50:59	32.	2	5.0 AVV
437.7921	51:01	1918.	428.	50:59	51:05	32.	2	5.0 AVV
437.7921	51:06	1445.	369.	51:05	51:11	32.	2	5.0 AVB
407.7614	49:39	122639.	24385.	49:31	49:53	56.	1	1.0 AVV
409.7583	49:39	116223.	23025.	49:26	49:54	27.	1	1.0 AVV
407.7614	48:58	59587.	12555.	48:51	49:11	56.	2	5.0 ABB
407.7614	49:25	3010.	474.	49:15	49:31	56.	2	5.0 ABV
407.7614	49:39	122639.	24385.	49:31	49:53	56.	2	5.0 AVV
407.7614	49:55	1492.	363.	49:53	50:01	56.	2	5.0 AVV
407.7614	50:24	3315.	311.	50:09	50:33	56.	2	5.0 AVB
407.7614	51:16	2736.	484.	51:03	51:18	56.	2	5.0 ABV
407.7614	51:20	3818.	478.	51:18	51:35	56.	2	5.0 AVV
409.7583	48:44	713.	314.	48:42	48:46	27.	2	5.0 ABB
409.7583	48:58	61478.	12377.	48:50	49:13	27.	2	5.0 ABV
409.7583	49:22	2001.	526.	49:16	49:26	27.	2	5.0 ABV
409.7583	49:27	381.	176.	49:26	49:29	27.	2	5.0 AVV
409.7583	49:39	115841.	23025.	49:29	49:54	27.	2	5.0 AVV
409.7583	51:18	4204.	801.	51:11	51:33	27.	2	5.0 ABV
417.8041	48:57	492393.	102107.	48:43	49:05	40.	2	5.0 ABV
417.8041	49:07	2702.	960.	49:05	49:10	40.	2	5.0 AVB
417.8041	49:21	5376.	1394.	49:16	49:27	40.	2	5.0 ABV
417.8041	49:30	1936.	446.	49:27	49:35	40.	2	5.0 AVV
417.8041	49:38	4673.	1388.	49:35	49:41	40.	2	5.0 AVV
417.8041	51:09	1983.	425.	51:02	51:11	40.	2	5.0 ABV
417.8041	51:17	442850.	95512.	51:11	51:26	40.	2	5.0 AVV
417.8041	51:29	7837.	1630.	51:26	51:35	40.	2	5.0 AVB
419.8010	48:57	1069766.	228672.	48:49	49:06	55.	2	5.0 ABV
419.8010	49:08	5835.	1763.	49:06	49:13	55.	2	5.0 AVV
419.8010	49:22	13621.	2161.	49:17	49:34	55.	2	5.0 AVV
419.8010	49:38	12572.	2135.	49:34	49:49	55.	2	5.0 AVV
419.8010	51:17	965063.	207766.	51:07	51:28	55.	2	5.0 ABV
419.8010	51:30	4012.	1296.	51:28	51:32	55.	2	5.0 AVV
419.8010	51:34	2929.	1175.	51:32	51:36	55.	2	5.0 AVB
419.8010	51:43	3973.	1123.	51:41	51:47	55.	2	5.0 ABB
457.7148	54:41	6022687.	1580461.	54:34	54:57	78.	1	1.0 ABV
459.7118	54:41	6634286.	1754503.	54:34	54:57	68.	1	1.0 ABV
457.7148	54:41	6022687.	1580461.	54:34	54:57	78.	2	5.0 ABV
457.7148	55:14	3264.	724.	55:11	55:20	78.	2	5.0 AVB
459.7118	54:41	6634286.	1754503.	54:34	54:57	68.	2	5.0 ABV
459.7118	55:03	12561.	2193.	55:01	55:10	68.	2	5.0 AVV
459.7118	55:12	2667.	820.	55:10	55:14	68.	2	5.0 AVV
459.7118	55:16	1539.	518.	55:14	55:19	68.	2	5.0 AVB
469.7545	54:41	1049013.	267476.	54:34	54:50	142.	2	5.0 ABV
469.7545	54:52	5228.	1786.	54:50	54:54	142.	2	5.0 AVV
469.7545	54:56	5860.	1060.	54:54	55:07	142.	2	5.0 AVB
471.7514	54:40	1132215.	289571.	54:34	54:56	33.	2	5.0 ABV
471.7514	55:01	1682.	587.	54:59	55:04	33.	2	5.0 AVV
471.7514	55:10	972.	265.	55:07	55:13	33.	2	5.0 AVV

471.7514	55:18	1386.	423.	55:13	55:20	33.	2	5.0	AVB
441.7207	54:49	136161.	35634.	54:44	55:04	22.	1	1.0	AVV
443.7177	54:49	146188.	36574.	54:44	55:03	23.	1	1.0	AVV
441.7207	54:42	5218.	1613.	54:37	54:44	22.	2	5.0	ABV
441.7207	54:49	136161.	35634.	54:44	55:04	22.	2	5.0	AVV
441.7207	55:13	1164.	216.	55:04	55:20	22.	2	5.0	AVB
443.7177	54:42	3777.	1155.	54:37	54:44	23.	2	5.0	ABV
443.7177	54:49	146188.	36574.	54:44	55:03	23.	2	5.0	AVV
443.7177	55:06	723.	133.	55:03	55:12	23.	2	5.0	AVB
453.7603	54:48	1338732.	333247.	54:39	54:59	41.	2	5.0	ABV
453.7603	55:02	7478.	1620.	54:59	55:06	41.	2	5.0	AVV
453.7603	55:08	867.	283.	55:06	55:10	41.	2	5.0	AVV
453.7603	55:12	4055.	911.	55:10	55:22	41.	2	5.0	AVB
455.7573	54:48	1438073.	359149.	54:36	55:04	34.	2	5.0	ABV
455.7573	55:11	2675.	783.	55:08	55:14	34.	2	5.0	AVV
455.7573	55:17	2694.	813.	55:14	55:23	34.	2	5.0	AVB

TestAmerica Canton

Sample ID: SB-2

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 004	Work Order #....:	M811P1AC	Matrix....:	SOLID
Date Sampled....:	07/25/16	Date Received....:	07/29/16	Dilution Factor:	1
Prep Date....:	08/04/16	Analysis Date....:	08/18/16	Percent Moisture	20
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.1 g	Instrument ID....:	D11A	Method:	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	0.15	J	1.2	0.073	pg/g
1,2,3,7,8-PeCDD	1.7	Q B J	6.2	0.052	pg/g
1,2,3,4,7,8-HxCDD	1.6	J	6.2	0.052	pg/g
1,2,3,6,7,8-HxCDD	3.2	J	6.2	0.052	pg/g
1,2,3,7,8,9-HxCDD	4.5	C J	6.2	0.049	pg/g
1,2,3,4,6,7,8-HpCDD	83		6.2	0.10	pg/g
OCDD	2300	B	12	0.095	pg/g
1,2,3,7,8-PeCDF	2.7	J	6.2	0.048	pg/g
2,3,4,7,8-PeCDF	4.0	J	6.2	0.043	pg/g
1,2,3,4,7,8-HxCDF	6.6	C B	6.2	0.043	pg/g
1,2,3,6,7,8-HxCDF	2.9	Q J	6.2	0.042	pg/g
2,3,4,6,7,8-HxCDF	2.6	J	6.2	0.044	pg/g
1,2,3,7,8,9-HxCDF	ND		6.2	0.051	pg/g
1,2,3,4,6,7,8-HpCDF	16	B	6.2	0.047	pg/g
1,2,3,4,7,8,9-HpCDF	1.6	B J	6.2	0.056	pg/g
OCDF	25	B	12	0.027	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	64	40 - 135
13C-1,2,3,7,8-PeCDD	73	40 - 135
13C-1,2,3,4,7,8-HxCDD	67	40 - 135
13C-1,2,3,6,7,8-HxCDD	68	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	75	40 - 135
13C-OCDD	84	40 - 135
13C-1,2,3,7,8-PeCDF	74	40 - 135
13C-2,3,4,7,8-PeCDF	80	40 - 135
13C-1,2,3,4,7,8-HxCDF	57	40 - 135
13C-1,2,3,6,7,8-HxCDF	56	40 - 135
13C-2,3,4,6,7,8-HxCDF	60	40 - 135
13C-1,2,3,7,8,9-HxCDF	61	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	53	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	59	40 - 135
13C-OCDF	59	40 - 135

TestAmerica Canton

Sample ID: SB-2

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 004	**Work Order #....:**	M811P1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	20
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811P1AC	Prep Batch	6217014	Lot No	H6G290408-004
Data File	/20160817s3/d1tm811pa.d	Prep Date	08/04/16	SDG No	
Analysis ID	180447	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/18/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	01:16	Initial Wt/Vol	10.1 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD	32:50	4068	846	1.144		1.201136		0.118924	J	0.0583
Total TCDD		68986	8280	1.144		21.570247		2.135668	QJ	0.0583
2,3,7,8-TCDF	30:47	230902	31301	1.066		49.734775		~~4.924235~~ X		0.110
Total TCDF		720551	79785	1.066		204.936730		20.290765	Q	0.110
1,2,3,7,8-PeCDD	41:25	36254	6721	1.060		13.892751		1.375520	QBJ	0.0416
Total PeCDD		74086	16582	1.060		42.282952		4.186431	JQB	0.0416
1,2,3,7,8-PeCDF	39:46	108649	22843	1.179		21.939234		2.172201	J	0.0382
2,3,4,7,8-PeCDF	40:55	164587	35120	1.115		32.762528		3.243815	J	0.0344
Total PeCDF		579376	116294	1.147		170.741424		16.905091	JQ	0.0361
1,2,3,4,7,8-HxCDD	45:40	34819	8263	1.131		12.803930		1.267716	J	0.0417
1,2,3,6,7,8-HxCDD	45:47	71200	17427	1.116		26.160444		2.590143	J	0.0419
1,2,3,7,8,9-HxCDD	46:10	105899	19706	1.205		36.288359		3.592907	CJ	0.0390
Total HxCDD				1.151		75.252733		7.450766	J	0.0408
1,2,3,4,7,8-HxCDF	44:33	207480	36037	1.350		53.565480		5.303513	CB	0.0342
1,2,3,6,7,8-HxCDF	44:43	97060	23197	1.242		23.507708		2.327496	QJ	0.0339
2,3,4,6,7,8-HxCDF	45:28	81717	19674	1.241		20.841814		2.063546	J	0.0352
1,2,3,7,8,9-HxCDF				1.262				ND		0.0408
Total HxCDF		157641	38272	1.274		138.331278		13.696166	QB	0.0358
1,2,3,4,6,7,8-HpCDD	50:42	1604344	333193	1.114		672.119903		66.546525		0.0803
Total HpCDD		1710942	343222	1.114		1388.89771		137.514625		0.0803
1,2,3,4,6,7,8-HpCDF	48:58	407292	85856	1.461		132.396591		13.108573	B	0.0381
1,2,3,4,7,8,9-HpCDF	51:19	32808	6602	1.370		12.659607		1.253426	BJ	0.0449
Total HpCDF		449133	88789	1.416		303.812850		30.080480	QB	0.0413
OCDD	54:42	43294294	11692077	1.203		18233.6825		1805.31510	B	0.0758
OCDF	54:51	515804	131158	1.134		206.080078		20.403968	B	0.0214
13C-2,3,7,8-TCDD	32:50	2961713	297013	1.093	1000	644.045169	64.40	63.766848		0.0818
13C-2,3,7,8-TCDF	30:42	4356907	455610	1.794	1000	576.873596	57.69	57.116198		0.0489
13C-1,2,3,7,8-PeCDD	41:24	2462103	606548	0.800	1000	731.212737	73.12	72.397301		0.0473
13C-1,2,3,7,8-PeCDF	39:45	4199914	896620	1.356	1000	735.624537	73.56	72.834113		0.0946
13C-2,3,4,7,8-PeCDF	40:54	4507252	1050905	1.343	1000	797.349873	79.73	78.945532		0.0956
13C-1,2,3,4,7,8-HxCDD	45:39	2404191	603600	0.916	1000	665.857635	66.59	65.926499		0.0716
13C-1,2,3,6,7,8-HxCDD	45:46	2438874	609059	0.906	1000	682.601318	68.26	67.584289		0.0723
13C-1,2,3,4,7,8-HxCDF	44:34	2868253	745639	1.268	1000	573.599501	57.36	56.792030		0.0324
13C-1,2,3,6,7,8-HxCDF	44:42	3325385	817323	1.506	1000	560.259025	56.03	55.471191		0.0273
13C-2,3,4,6,7,8-HxCDF	45:27	3159725	787456	1.344	1000	596.360059	59.64	59.045550		0.0306
13C-1,2,3,7,8,9-HxCDF	46:27	2895352	668493	1.202	1000	610.957294	61.10	60.490821		0.0342
13C-1,2,3,4,6,7,8-HpCDD	50:41	2143258	462100	0.728	1000	746.348661	74.63	73.895907		0.0171
13C-1,2,3,4,6,7,8-HpCDF	48:57	2105592	440564	1.008	1000	529.822734	52.98	52.457696		0.0307
13C-1,2,3,4,7,8,9-HpCDF	51:18	1891164	398605	0.811	1000	591.662630	59.17	58.580458		0.0382
13C-OCDD	54:41	3947511	1085079	0.597	2000	1676.16533	83.81	165.956964		0.0240
13C-1,2,3,4-TCDD	32:18	8418444	864103	1.000	2000	2000.00000	100.00	198.019802		0.0894
13C-1,2,3,7,8,9-HxCDD	46:10	7884815	1903004	1.000	2000	2000.00000	100.00	198.019802		0.0656
13C-OCDF	54:50	4412995	1140001	0.946	2000	1183.27507	59.16	117.155948		0.0236

NA
8/24/17

8/24/16

8-24-16

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811P1AC	Prep Batch	6217014	Lot No	H6G290408-004
Data File	/20160817s3/d1tm811pa.	Prep Date	08/04/16	SDG No	
Analysis ID	180447	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 01:16	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.1 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	250	290	100	116	0.86	/	
	Unidentified	29:34	00:00	0	72622	90199	7652	9841	0.81	AVV/AVB	
	Unidentified	30:14	00:00	0	60143	81078	5831	7229	0.74	AVV/AVV	
	2,3,7,8-TCDF	30:47	30:46	1	94042	136860	14206	17095	0.69	ABV/ABV	
	Unidentified	30:50	00:00	0	104697	110838	13752	15894	0.94 *	AVV/AVB	R
	Unidentified	32:02	00:00	0	88757	112217	8358	11228	0.79	ABV/ABV	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	210	173	84	69	1.22 *	/	
	13C-2,3,7,8-TCDF	30:42	30:42	0	1931252	2425655	203938	251672	0.80	ABV/ABV	
	Unidentified	31:04	00:00	0	6311	8096	1543	1316	0.78	AVV/AVB	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	93	108	37	43	0.86	/	
	Unidentified	31:22	00:00	0	5476	9277	550	861	0.59 *	ABB/ABB	R
	Unidentified	32:19	00:00	0	4979	8312	744	912	0.60 *	ABV/ABV	R
	Unidentified	32:31	00:00	0	1495	1174	387	386	1.27 *	AVV/AVV	R
	Unidentified	32:39	00:00	0	10111	13750	1144	1440	0.74	AVV/AVV	T
	2,3,7,8-TCDD	32:50	32:54	-4	1760	2308	416	430	0.76	AVV/AVV	M
	Unidentified	33:24	00:00	0	1212	2865	243	275	0.42 *	ABV/ABB	R
	Unidentified	34:02	00:00	0	4075	6260	474	864	0.65	ABB/ABB	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	323	68	129	27	4.78 *	/	
	13C-1,2,3,4-TCDD	32:18	32:19	-1	3723278	4695166	387274	476829	0.79	AVV/AVV	
	13C-2,3,7,8-TCDD	32:50	32:51	-1	1301802	1659911	133940	163073	0.78	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	205	203	82	81	1.01 *	/	
	Unidentified	39:18	00:00	0	101562	61294	19596	11227	1.66	ABB/ABB	
	Unidentified	39:41	00:00	0	23221	14079	5971	3301	1.65	ABV/ABV	
	1,2,3,7,8-PeCDF	39:46	39:46	0	66306	42343	14102	8741	1.57	AVB/AVB	
	Unidentified	40:01	00:00	0	50781	31677	10494	6755	1.60	AVV/ABV	
	Unidentified	40:15	00:00	0	66467	44222	11831	7702	1.50	AVB/AVB	
	2,3,4,7,8-PeCDF	40:55	40:54	1	101122	63465	21296	13824	1.59	ABV/ABV	
	Unidentified	41:08	00:00	0	107736	64876	22881	13295	1.66	AVB/AVB	
	Unidentified	41:28	00:00	0	8728	4733	2132	1109	1.84 *	ABB/ABB	R
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	298	263	119	105	1.13 *	/	
	13C-1,2,3,7,8-PeCDF	39:45	39:44	1	2593453	1606461	554769	341851	1.61	ABV/ABV	
	Unidentified	40:00	00:00	0	18580	13907	3214	1832	1.34	AVV/AVV	
	Unidentified	40:13	00:00	0	34283	17250	7684	3491	1.99 *	AVV/AVV	R
	13C-2,3,4,7,8-PeCDF	40:54	40:53	1	2772972	1734280	645070	405835	1.60	AVV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	120	150	48	60	0.80 *	/	
	Unidentified	40:44	00:00	0	12251	9072	2690	1987	1.35	ABB/ABB	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811P1AC	Prep Batch	6217014	Lot No	H6G290408-004
Data File	/20160817s3/d1tm811pa.	Prep Date	08/04/16	SDG No	
Analysis ID	180447	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 01:16	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.1 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Unidentified	40:59	00:00	0	11193	7453	2725	1488	1.50	ABV/ABB	
	Unidentified	41:09	00:00	0	3602	2250	762	370	1.60	AVB/ABB	
	1,2,3,7,8-PeCDD	41:25	41:24	1	17441	18813	3980	2741	0.93 *	ABV/ABV	R
	Unidentified	41:39	00:00	0	6520	5327	1592	1166	1.22 *	AVB/AVV	R
	Unidentified	42:04	00:00	0	9943	6475	2183	1619	1.54	ABB/AVB	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	105	60	42	24	1.75	/	
	Unidentified	40:58	00:00	0	2975	3290	823	535	0.90 *	ABB/ABB	R
	13C-1,2,3,7,8-PeCDD	41:24	41:23	1	1521406	940697	370187	236361	1.62	ABV/ABV	
	Unidentified	41:37	00:00	0	10648	13097	2291	1373	0.81 *	AVV/AVV	R
	Unidentified	41:45	00:00	0	4182	1342	911	575	3.12 *	AVB/AVB	R
	Unidentified	42:04	00:00	0	7587	2043	1454	404	3.71 *	ABB/AVB	R
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	180	168	72	67	1.07	/	
	Unidentified	44:19	00:00	0	34671	27358	10213	7656	1.27	ABB/ABB	
	1,2,3,4,7,8-HxCDF	44:33	44:34	-1	113551	93929	19515	16522	1.21	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:43	44:43	0	55487	41573	13460	9737	1.33	AVV/AVV	
	Unidentified	44:52	00:00	0	7748	6001	1639	1324	1.29	AVV/AVV	
	Unidentified	45:07	00:00	0	15376	15002	2392	2047	1.02 *	AVV/AVV	R
	Unidentified	45:17	00:00	0	6111	5289	1692	1278	1.16	AVV/AVV	
	Unidentified	45:22	00:00	0	9511	6541	2815	1884	1.45 *	AVV/AVV	R
	2,3,4,6,7,8-HxCDF	45:28	45:28	0	46186	35531	10954	8720	1.30	AVV/AVV	
	Unidentified	45:40	00:00	0	3550	2033	586	645	1.75 *	AVV/AVB	R
	Unidentified	46:36	00:00	0	11010	7440	2569	1532	1.48 *	ABV/AVB	R
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	175	220	70	88	0.80 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:34	44:33	1	984650	1883603	258636	487003	0.52	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:42	44:41	1	1147624	2177761	277539	539784	0.53	AVV/AVV	
	Unidentified	45:08	00:00	0	4812	12734	1174	1574	0.38 *	AVB/AVV	RT
	13C-2,3,4,6,7,8-HxCDF	45:27	45:27	0	1070667	2089058	267089	520367	0.51	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:27	46:27	0	1013784	1881568	230739	437754	0.54	ABV/ABV	
	Unidentified	46:43	00:00	0	3281	6991	1327	1388	0.47	AVB/AVB	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	163	125	65	50	1.30	/	
	1,2,3,4,7,8-HxCDD	45:40	45:39	1	19600	15219	4672	3591	1.29	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:47	45:46	1	39960	31240	9839	7588	1.28	AVB/AVB	
	1,2,3,7,8,9-HxCDD	46:10	46:11	-1	58792	47107	11123	8583	1.25	ABB/ABV	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	325	305	130	122	1.07	/	
	13C-1,2,3,4,7,8-HxCDD	45:39	45:38	1	1349224	1054967	338965	264635	1.28	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:46	45:45	1	1371731	1067143	339841	269218	1.29	AVV/AVB	
	13C-1,2,3,7,8,9-HxCDD	46:10	46:10	0	4401024	3483791	1061304	841700	1.26	AVV/ABV	
	Unidentified	46:29	00:00	0	4883	5964	1826	2009	0.82 *	AVV/AVB	R

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811P1AC	Prep Batch	6217014	Lot No	H6G290408-004
Data File	/20160817s3/d1tm811pa.	Prep Date	08/04/16	SDG No	
Analysis ID	180447	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 01:16	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.1 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao

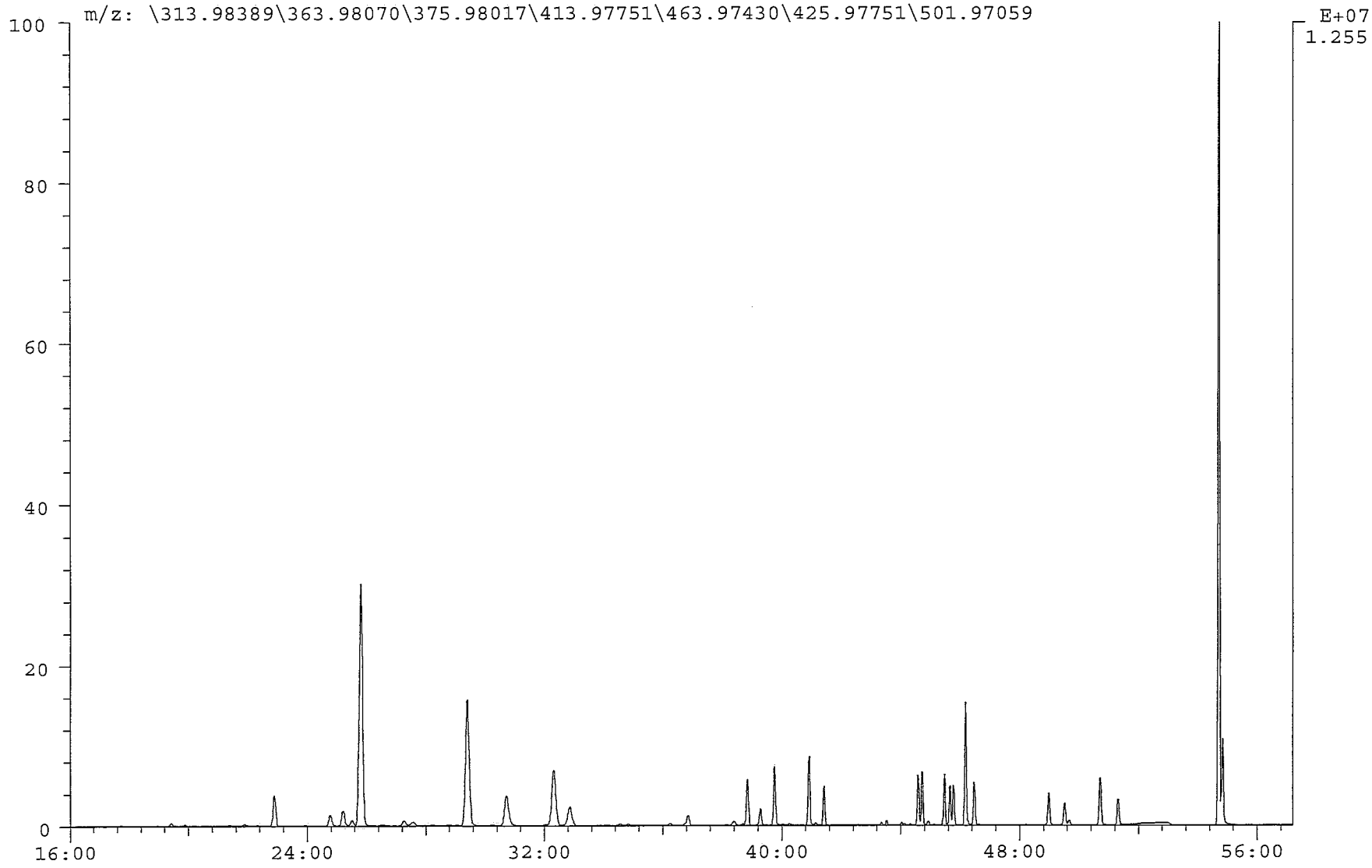
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	153	95	61	38	1.61 *	/	
	1,2,3,4,6,7,8-HpCDF	48:58	48:59	-1	210553	196739	44550	41306	1.07	ABV/ABV	
	Unidentified	49:24	00:00	0	20459	17207	3848	3315	1.19	AVV/AVV	
	Unidentified	49:39	00:00	0	201640	194895	40396	38642	1.03	AVV/AVV	
	Unidentified	49:49	00:00	0	6844	8088	1404	1184	0.85 *	AVV/AVV	R
	1,2,3,4,7,8,9-HpCDF	51:19	51:19	0	17278	15530	3478	3124	1.11	ABB/ABV	
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	135	163	54	65	0.83 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:57	48:58	-1	641623	1463969	134566	305998	0.44	ABV/ABV	
	Unidentified	49:39	00:00	0	2908	12303	664	2293	0.24 *	AVV/AVV	R
	13C-1,2,3,4,7,8,9-HpCDF	51:18	51:18	0	598990	1292174	127871	270734	0.46	AVV/ABV	
	Unidentified	51:37	00:00	0	4028	3317	845	878	1.21 *	AVB/AVB	R
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	213	205	85	82	1.04	/	
	Unidentified	49:30	00:00	0	859368	851574	173548	169674	1.01	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:42	50:43	-1	821222	783122	171659	161534	1.05	ABV/ABV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	78	43	31	17	1.82 *	/	
	Unidentified	49:29	00:00	0	15476	8418	2839	2038	1.84 *	ABV/ABB	R
	13C-1,2,3,4,6,7,8-HpCDD	50:41	50:42	-1	1086428	1056830	231975	230125	1.03	ABV/ABV	
	Unidentified	51:05	00:00	0	1298	1608	510	696	0.81 *	ABB/AVB	R
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	70	70	28	28	1.00	/	
	Unidentified	54:42	00:00	0	14354	16804	3737	4751	0.85	ABV/ABV	
	OCDF	54:51	54:51	0	240472	275332	62209	68949	0.87	AVV/AVV	
	Unidentified	55:06	00:00	0	2398	1619	256	287	1.48 *	AVB/AVV	R
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	115	100	46	40	1.15 *	/	
	13C-OCDF	54:50	54:50	0	2082862	2330133	538637	601364	0.89	ABV/ABV	
	Unidentified	55:16	00:00	0	1365	5959	625	890	0.23 *	AVB/AVB	RT
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	283	218	113	87	1.30 *	/	
	OCDD	54:42	54:43	-1	20361088	22933206	5562585	6129492	0.89	ABV/ABV	
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	73	65	29	26	1.12 *	/	
	13C-OCDD	54:41	54:42	-1	1864944	2082567	512502	572577	0.90	ABV/ABV	
	Unidentified	55:02	00:00	0	8045	6410	1257	1174	1.26 *	AVV/AVB	R

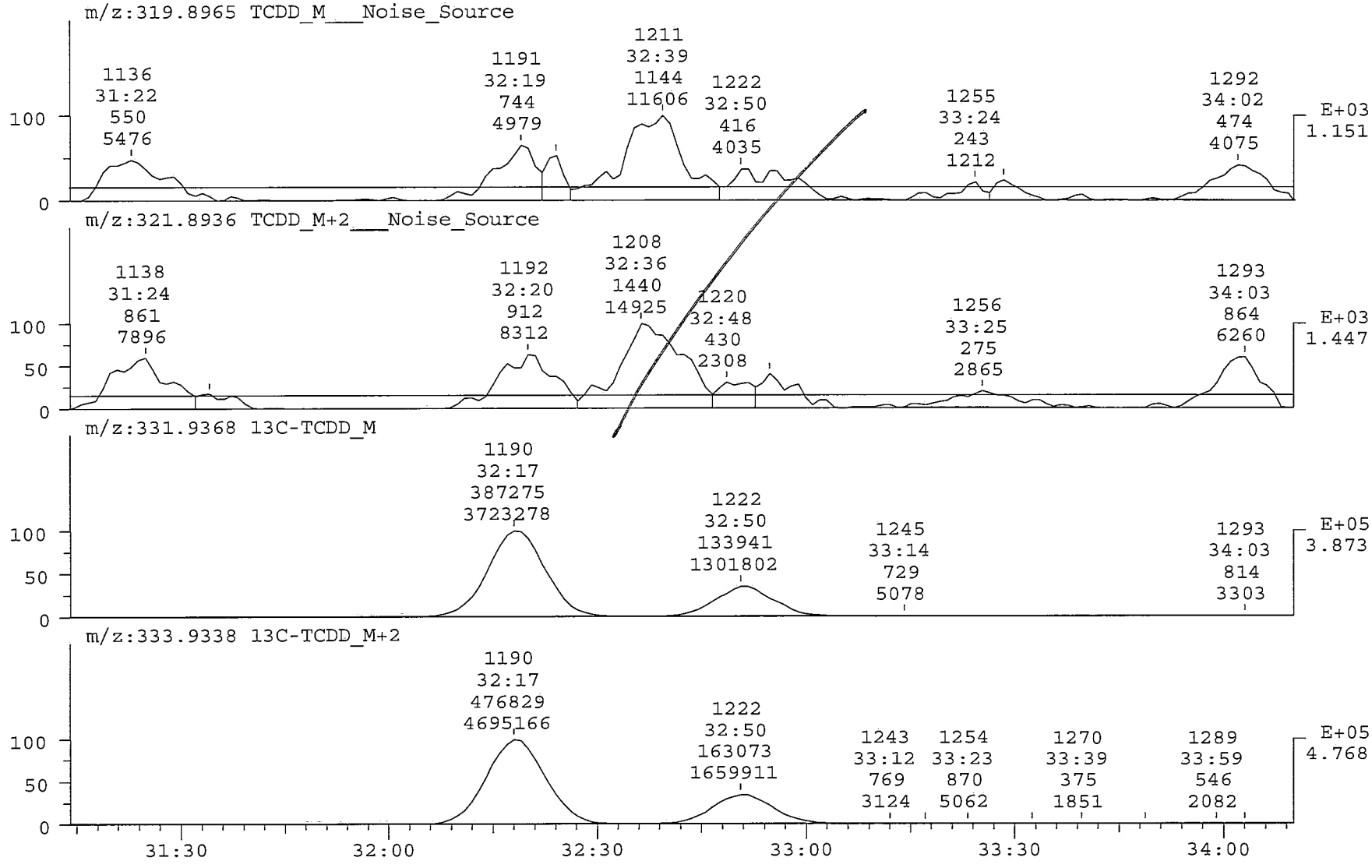
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. LKM 8-18-16
Calc KM 8-24-16
QC Rev KM 8/24/16

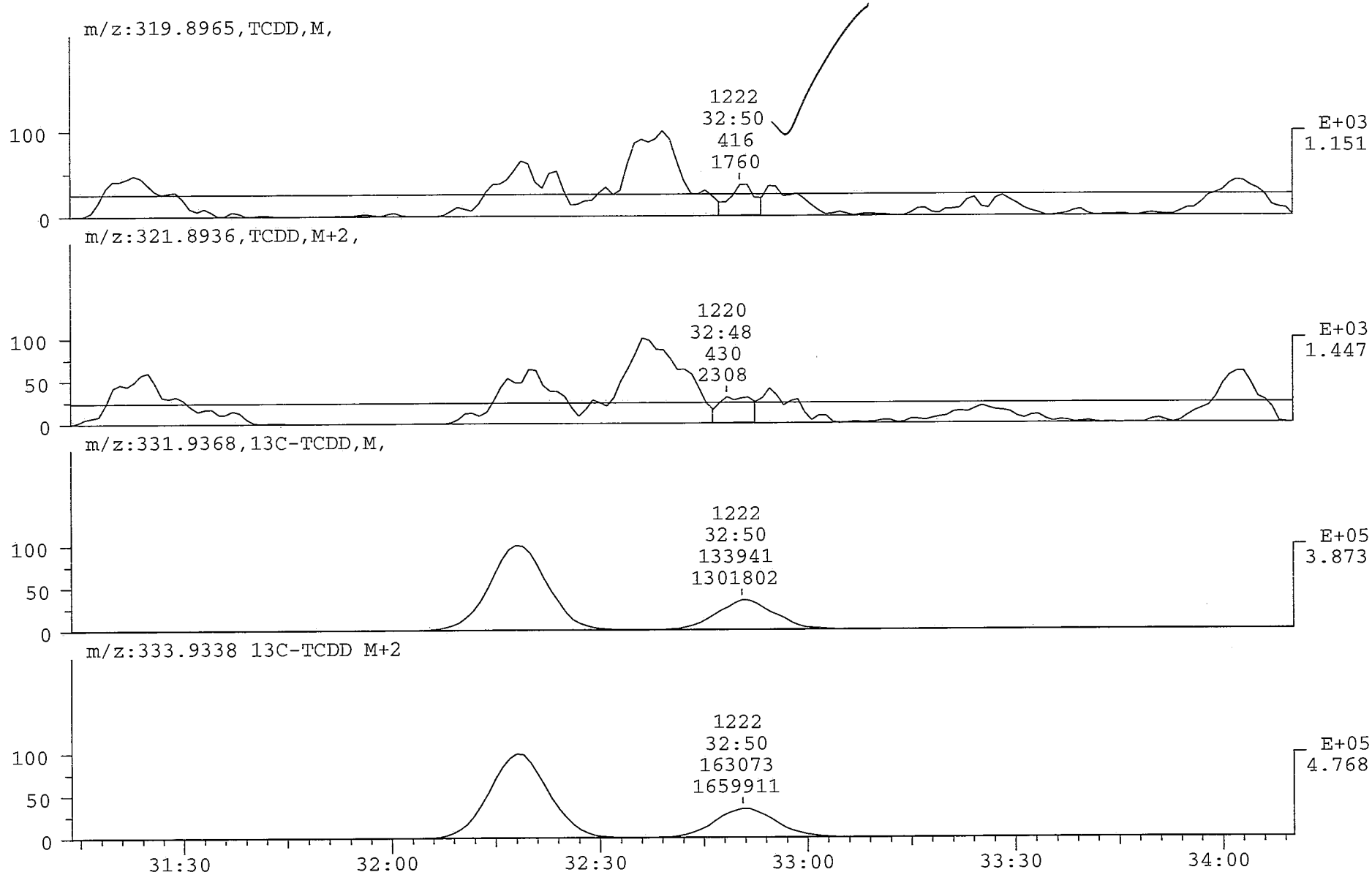
CHRO: d1tm811pa 18-Aug-16 Elapse: 45:27 1949
Samp: WO=m811p1ac Meth=9Ao Dil=1 Start : 01:16:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 232 > 2628 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



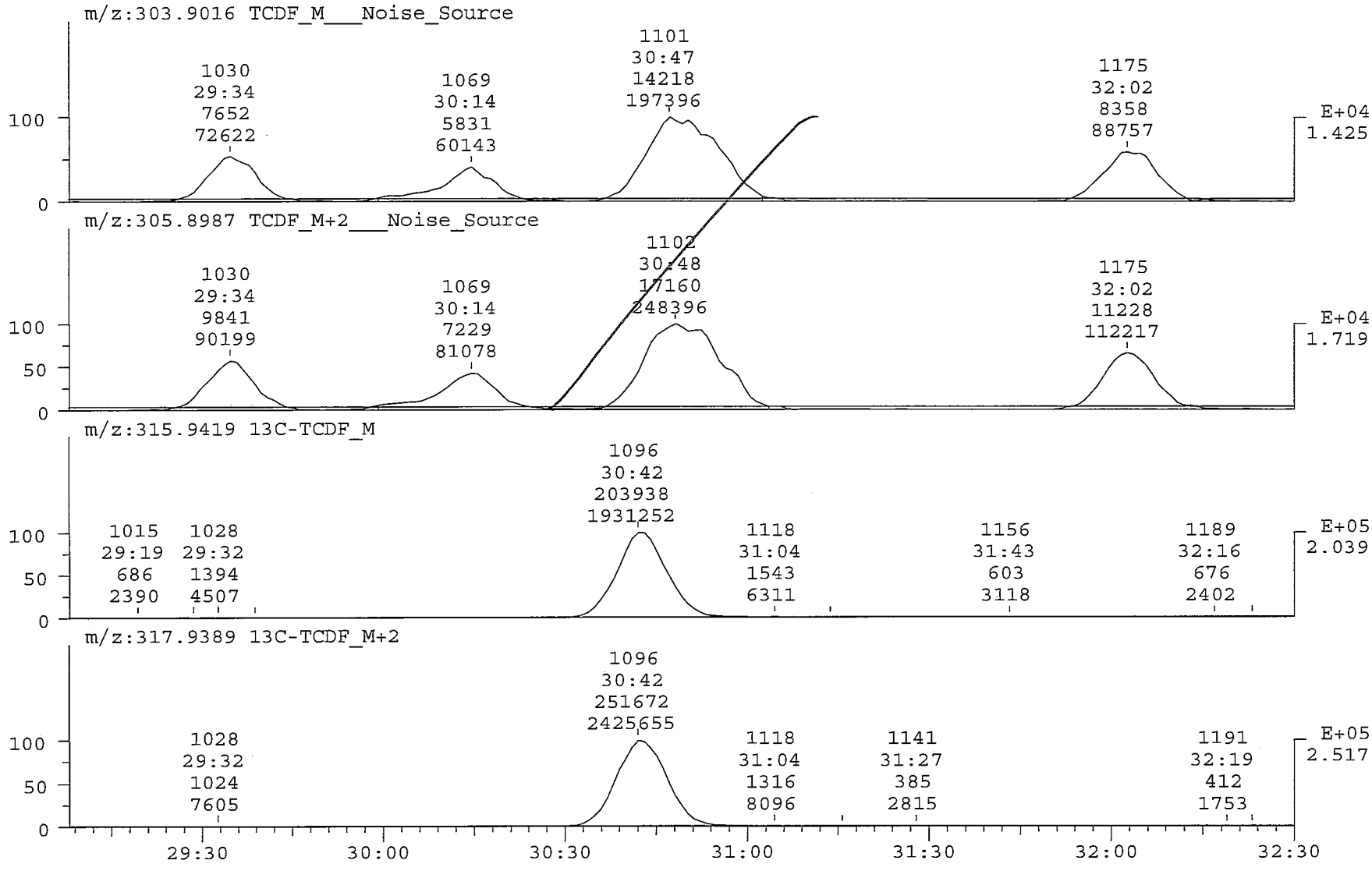
CHRO: d1tm811pa 18-Aug-16 Elapse: 32:42 1214
Samp: WO=m811p1ac Meth=9Ao Dil=1 Start : 01:16:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1127 > 1300 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



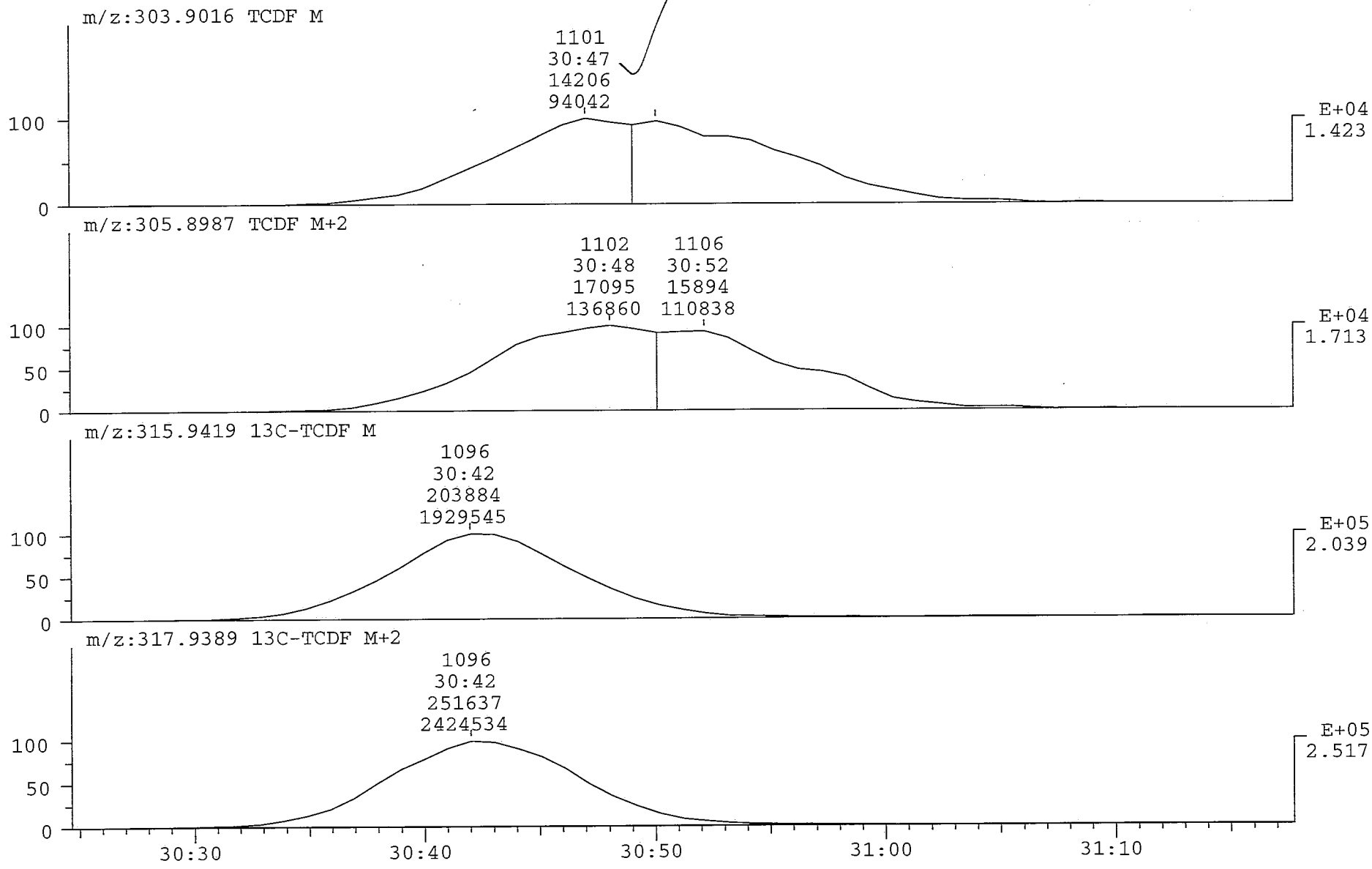
CHRO: d1tm811pa 18-Aug-16 Elapse: 32:51 1223
Samp: WO=m811p1ac Meth=9Ao Dil=1 Start : 01:16:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1220 > 1226 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



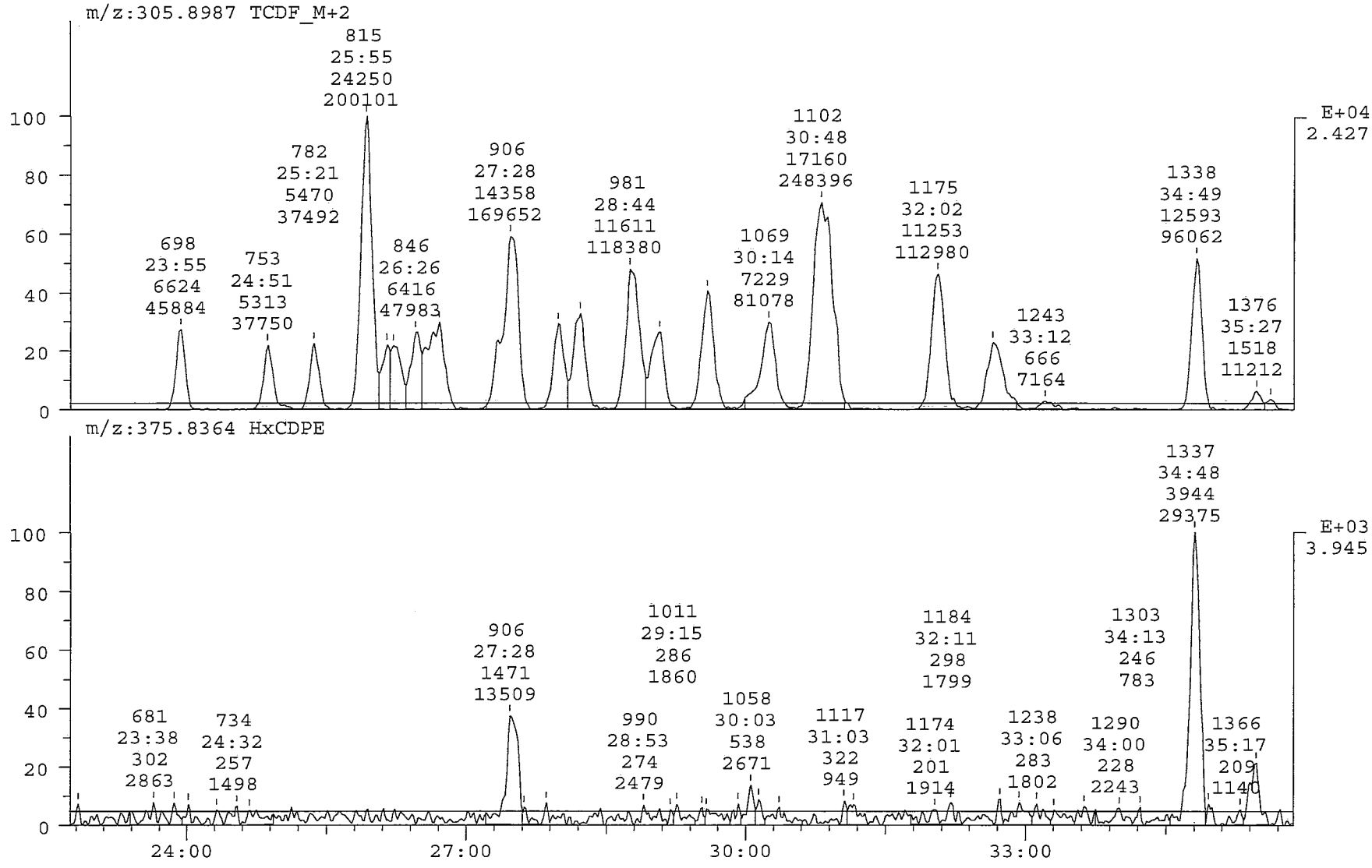
```
CHRO:  d1tm811pa                              18-Aug-16   Elapse:  30:46      1100
Samp:  WO=m811p1ac Meth=9Ao Dil=1                         Start :  01:16:30   2628
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.1g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1004 > 1202          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



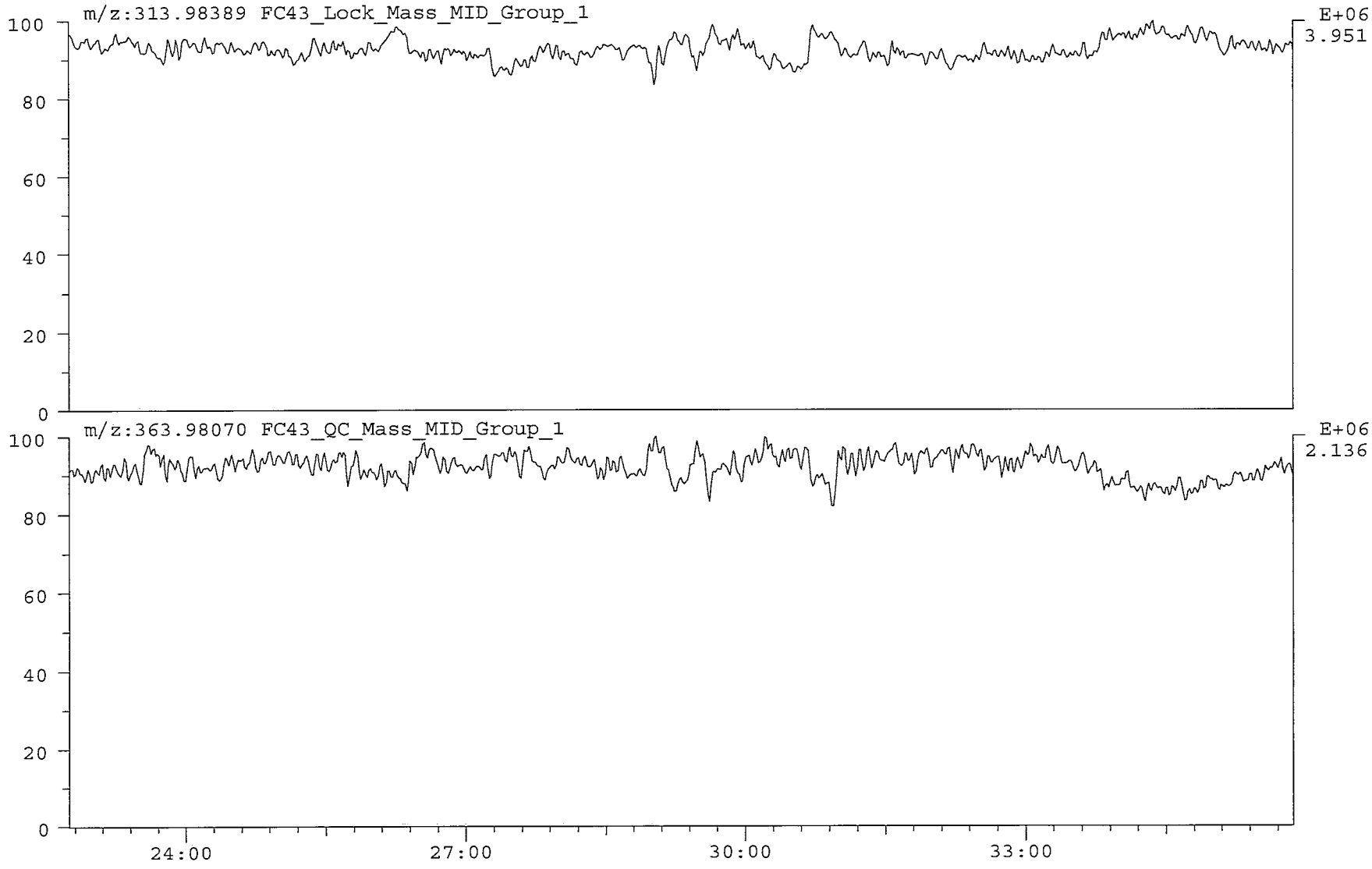
CHRO: d1tm811pa 18-Aug-16 Elapse: 32:51 1223
Samp: WO=m811p1ac Meth=9Ao Dil=1 Start : 01:16:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1079 > 1131 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 2 Label : 2, 5.0
Disp: Height Area



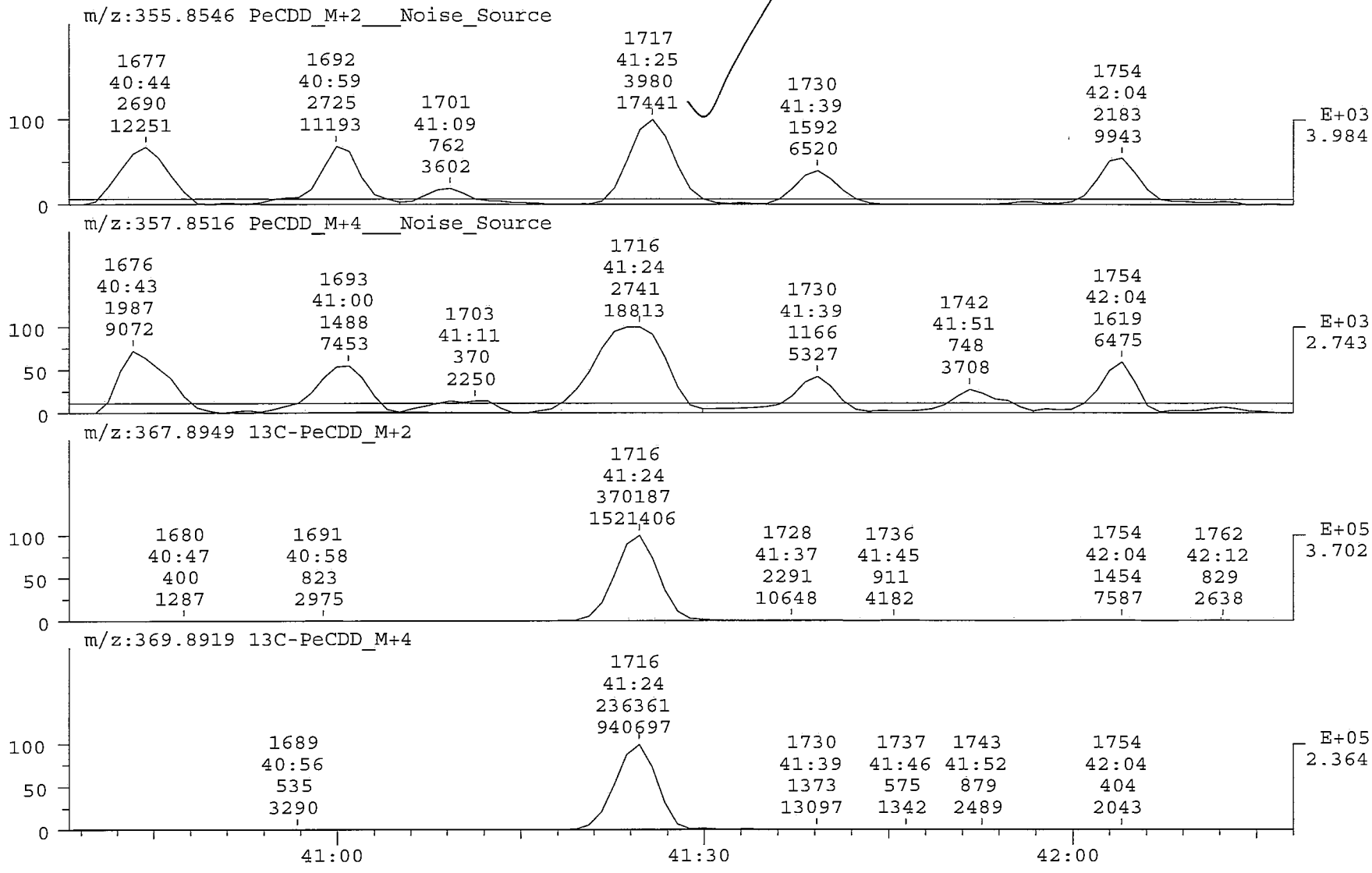
```
CHRO:  d1tm811pa                                18-Aug-16  Elapse:  30:46      1100
Samp:  WO=m811p1ac Meth=9Ao Dil=1                          Start :  01:16:30   2628
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.1g)
Oper:  LKM                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   628 > 1400            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



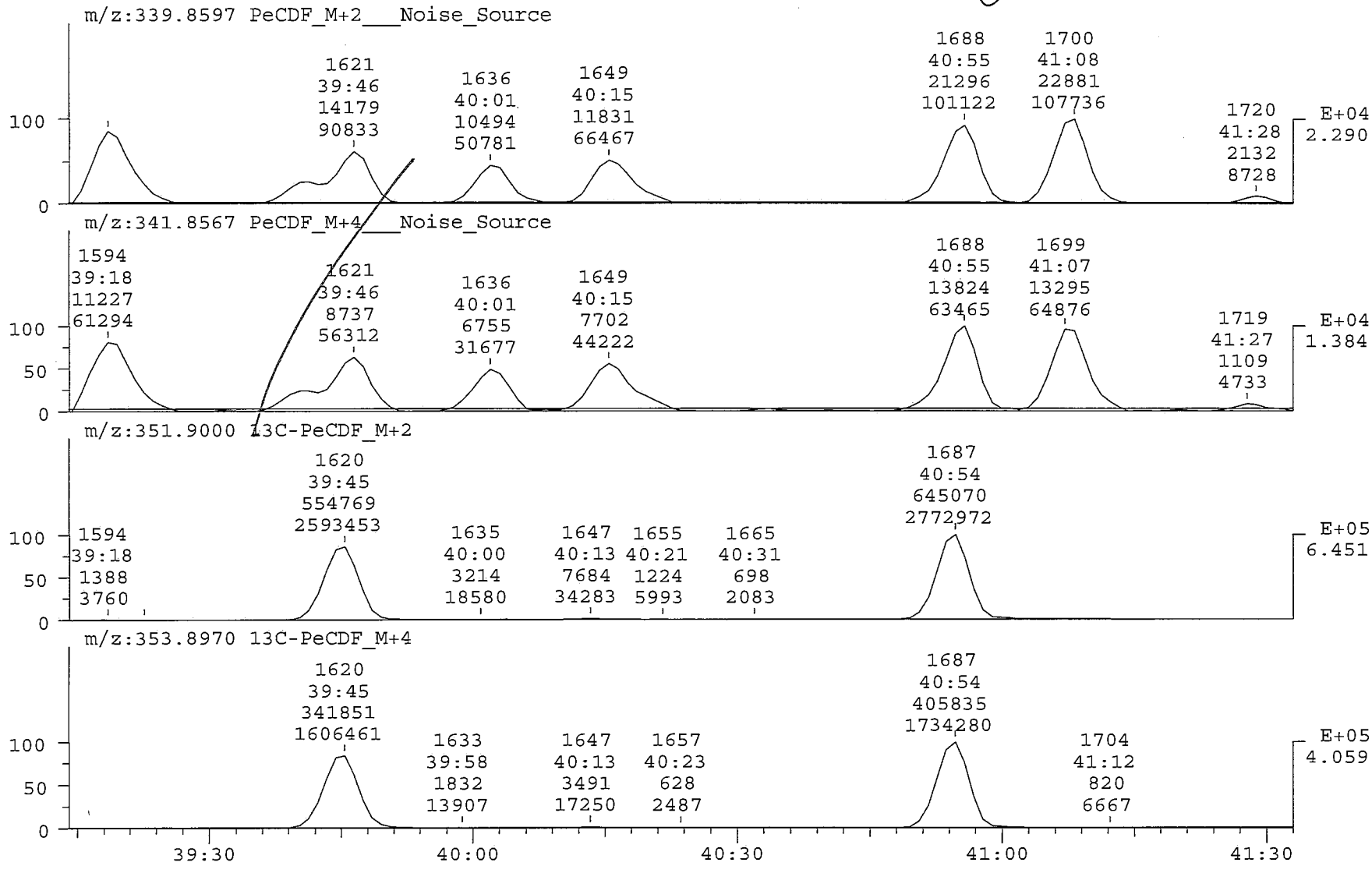
```
CHRO:  d1tm811pa                              18-Aug-16  Elapse:  30:46      1100
Samp:  WO=m811p1ac Meth=9Ao Dil=1                        Start :  01:16:30   2628
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                               Study :  6217014 (10.1g)
Oper:  LKM                                               Inlet :  LC
Peak:  100.00  ppm     Label wndw:   628 > 1400          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3              Label :  0, 0.0
Disp:  Height  Area
```



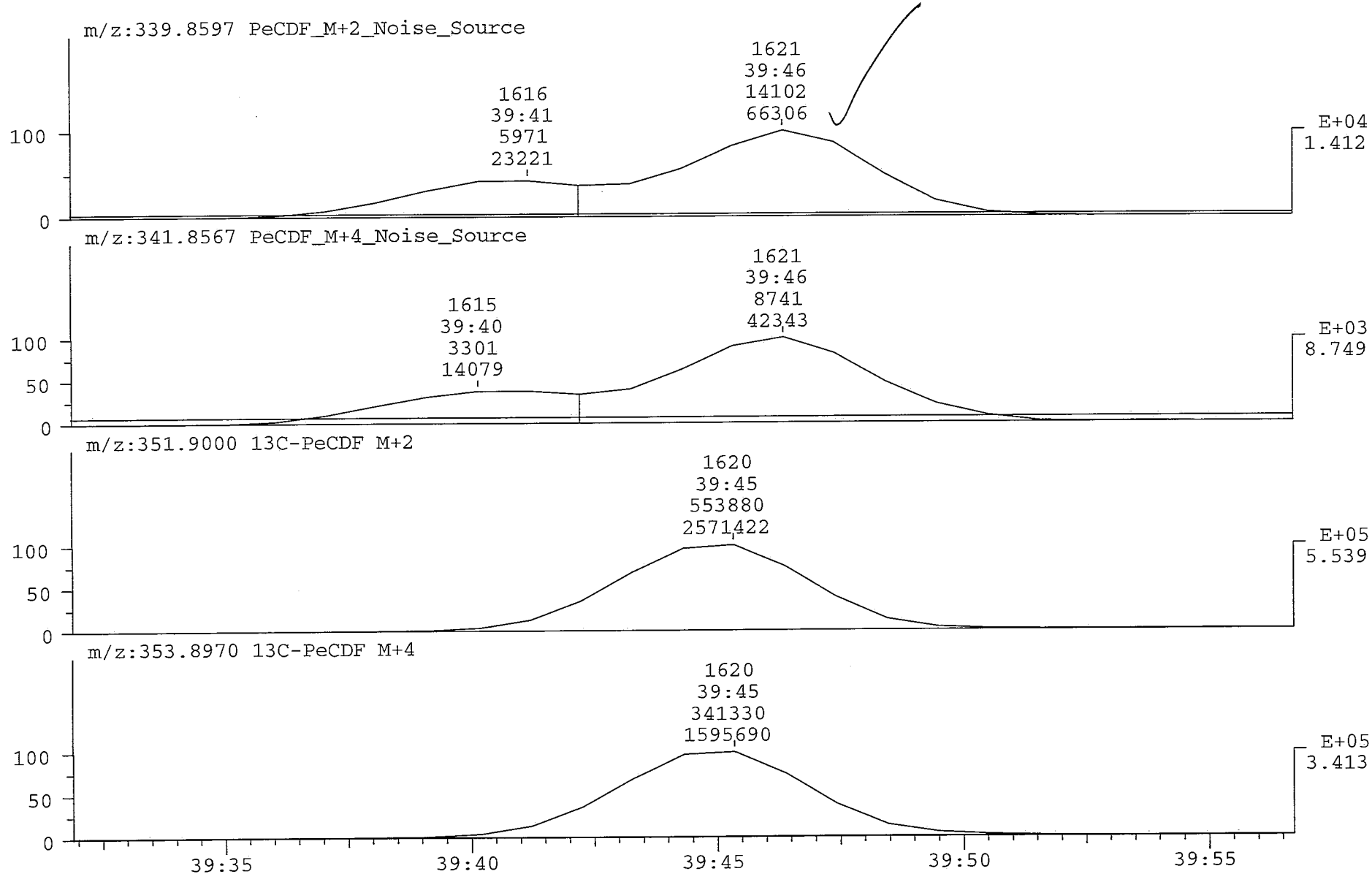
CHRO: d1tm811pa 18-Aug-16 Elapse: 41:24 1716
Samp: WO=m811p1ac Meth=9Ao Dil=1 Start : 01:16:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1671 > 1768 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



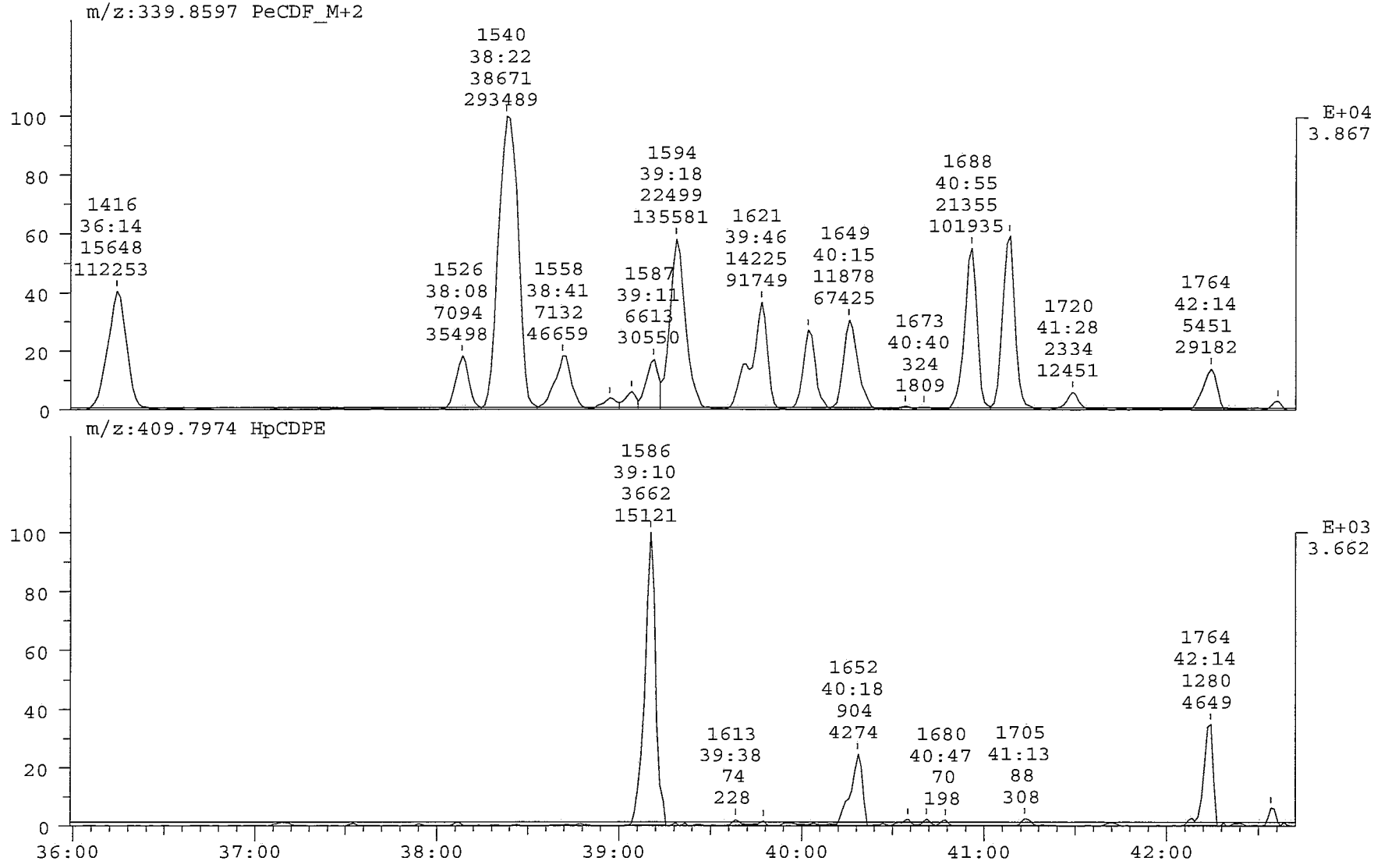
CHRO: d1tm811pa 18-Aug-16 Elapse: 40:22 1656
Samp: WO=m811p1ac Meth=9Ao Dil=1 Start : 01:16:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1590 > 1724 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



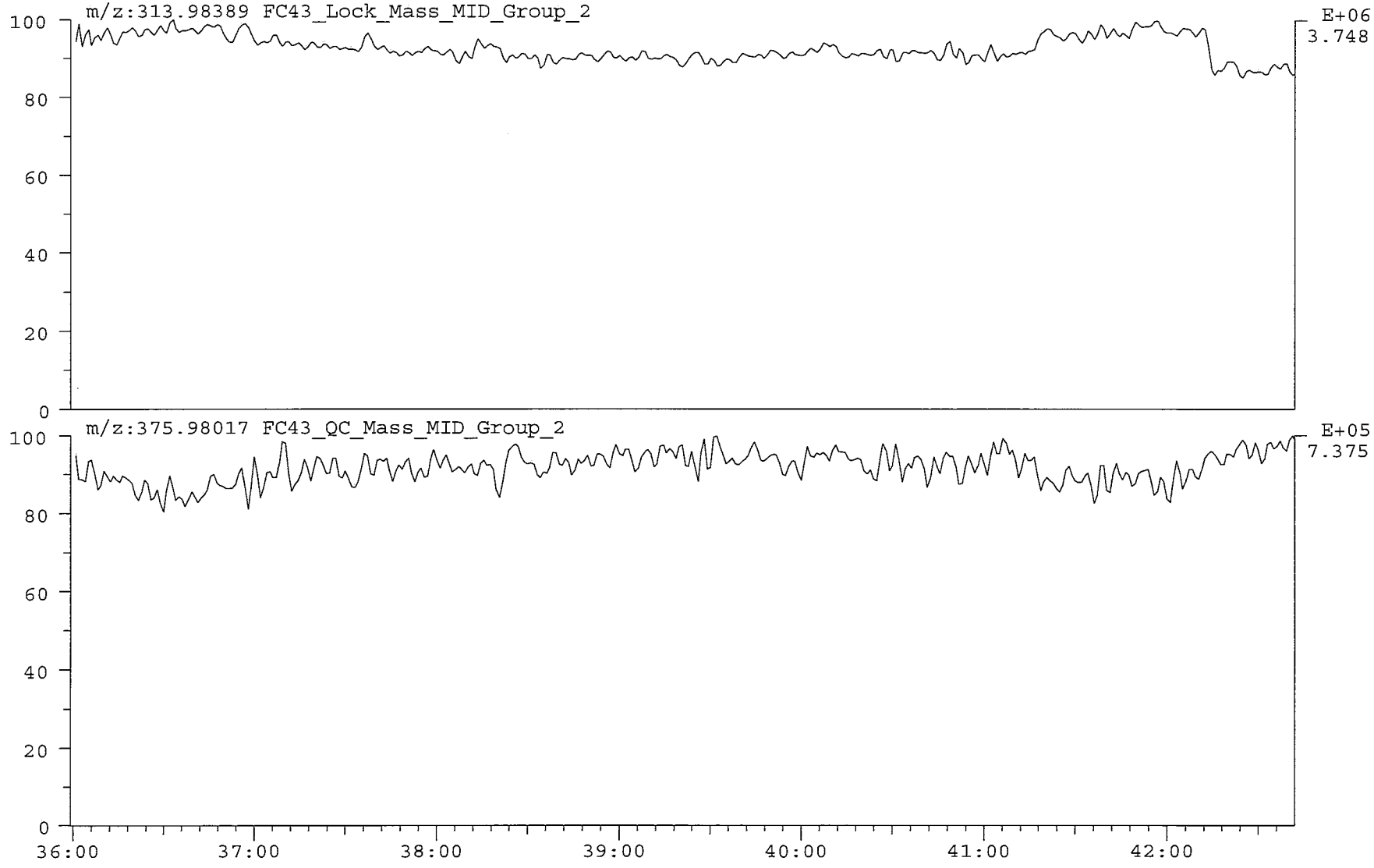
CHRO: d1tm811pa 18-Aug-16 Elapse: 32:51 1223
Samp: WO=m811p1ac Meth=9Ao Dil=1 Start : 01:16:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1607 > 1631 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : -2, 5.0
Disp: Height Area



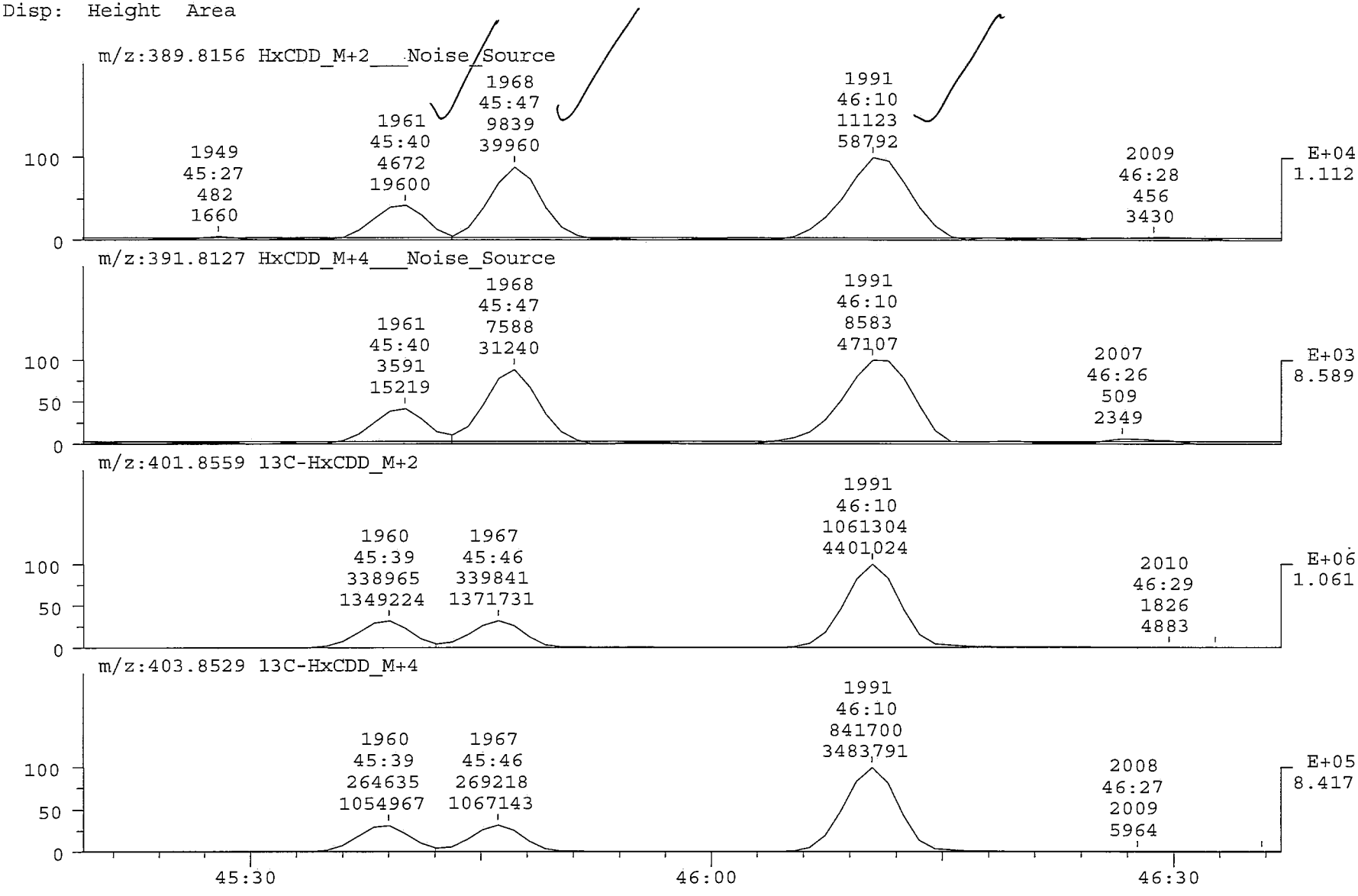
```
CHRO:  d1tm811pa                                18-Aug-16  Elapse:  40:22      1656
Samp:  WO=m811p1ac Meth=9Ao Dil=1                          Start :  01:16:30   2628
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.1g)
Oper:  LKM                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



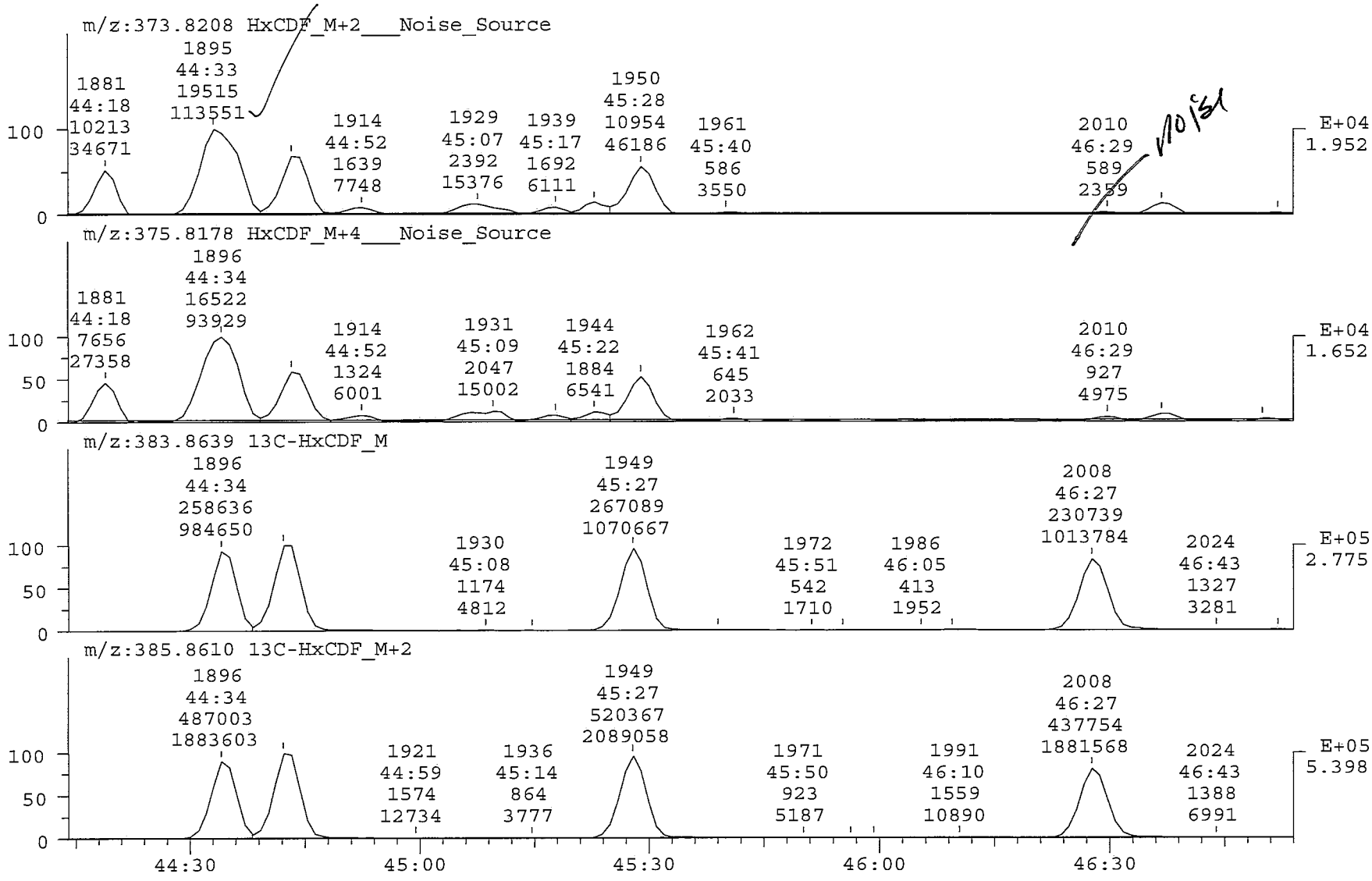
```
CHRO:  d1tm811pa                              18-Aug-16  Elapse:  40:22      1656
Samp:  WO=m811p1ac Meth=9Ao Dil=1                        Start :  01:16:30   2628
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                               Study :  6217014 (10.1g)
Oper:  LKM                                               Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791         Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3              Label :  0, 0.0
Disp:  Height  Area
```



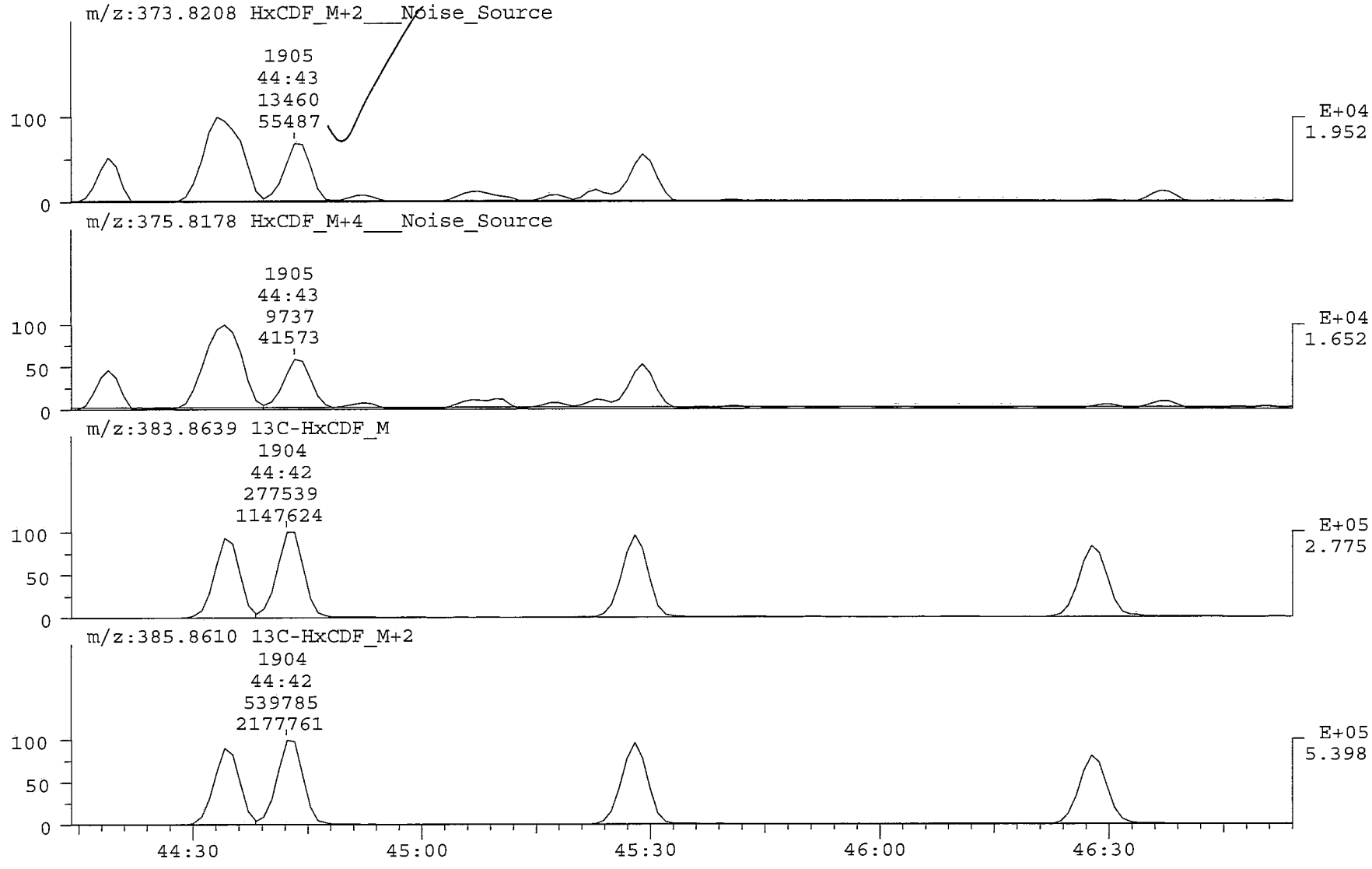
CHRO: d1tm811pa 18-Aug-16 Elapse: 45:58 1979
Samp: WO=m811p1ac Meth=9Ao Dil=1 Start : 01:16:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1940 > 2017 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



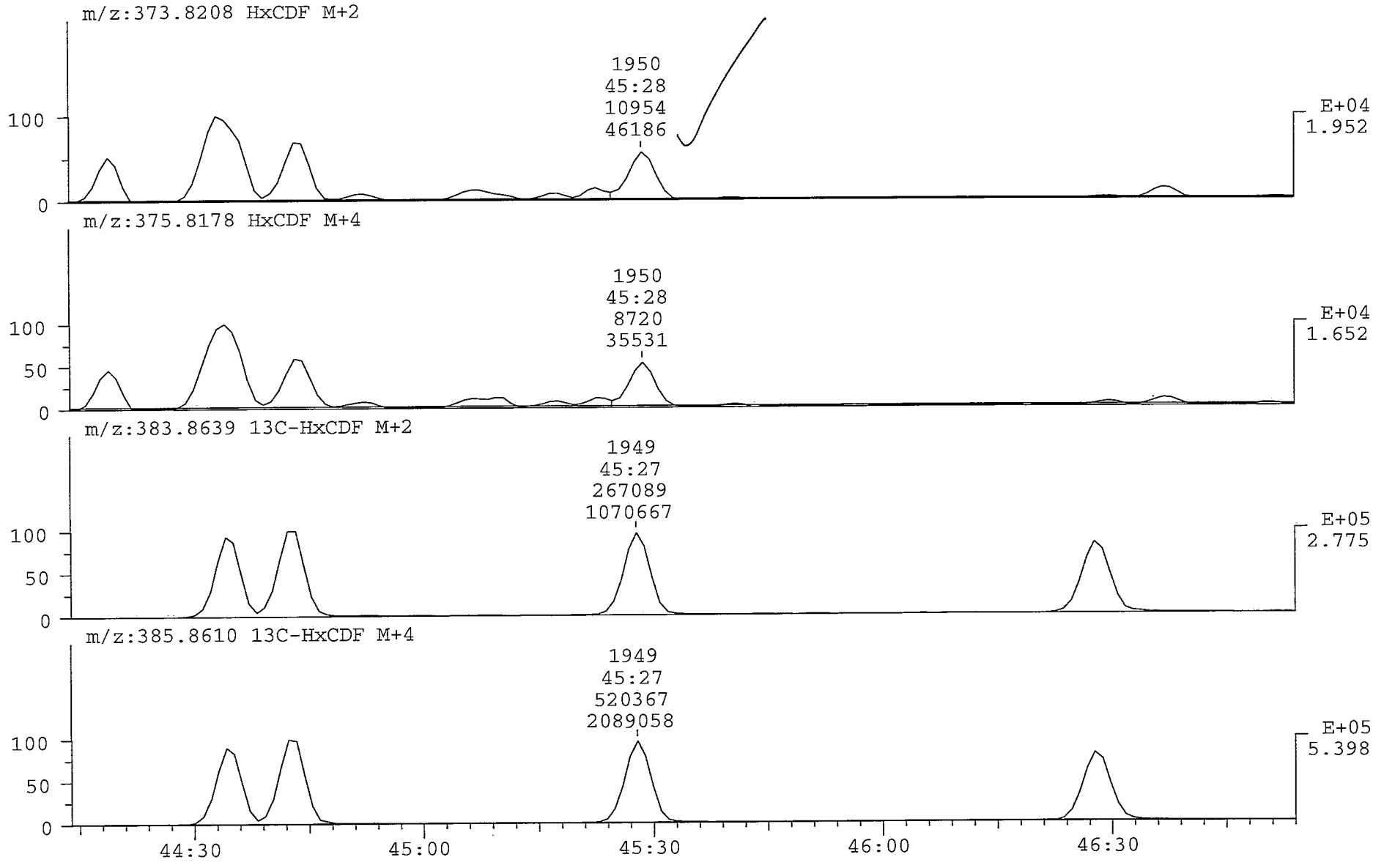
CHRO: d1tm811pa 18-Aug-16 Elapse: 45:33 1955
Samp: WO=m811p1ac Meth=9Ao Dil=1 Start : 01:16:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1876 > 2034 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



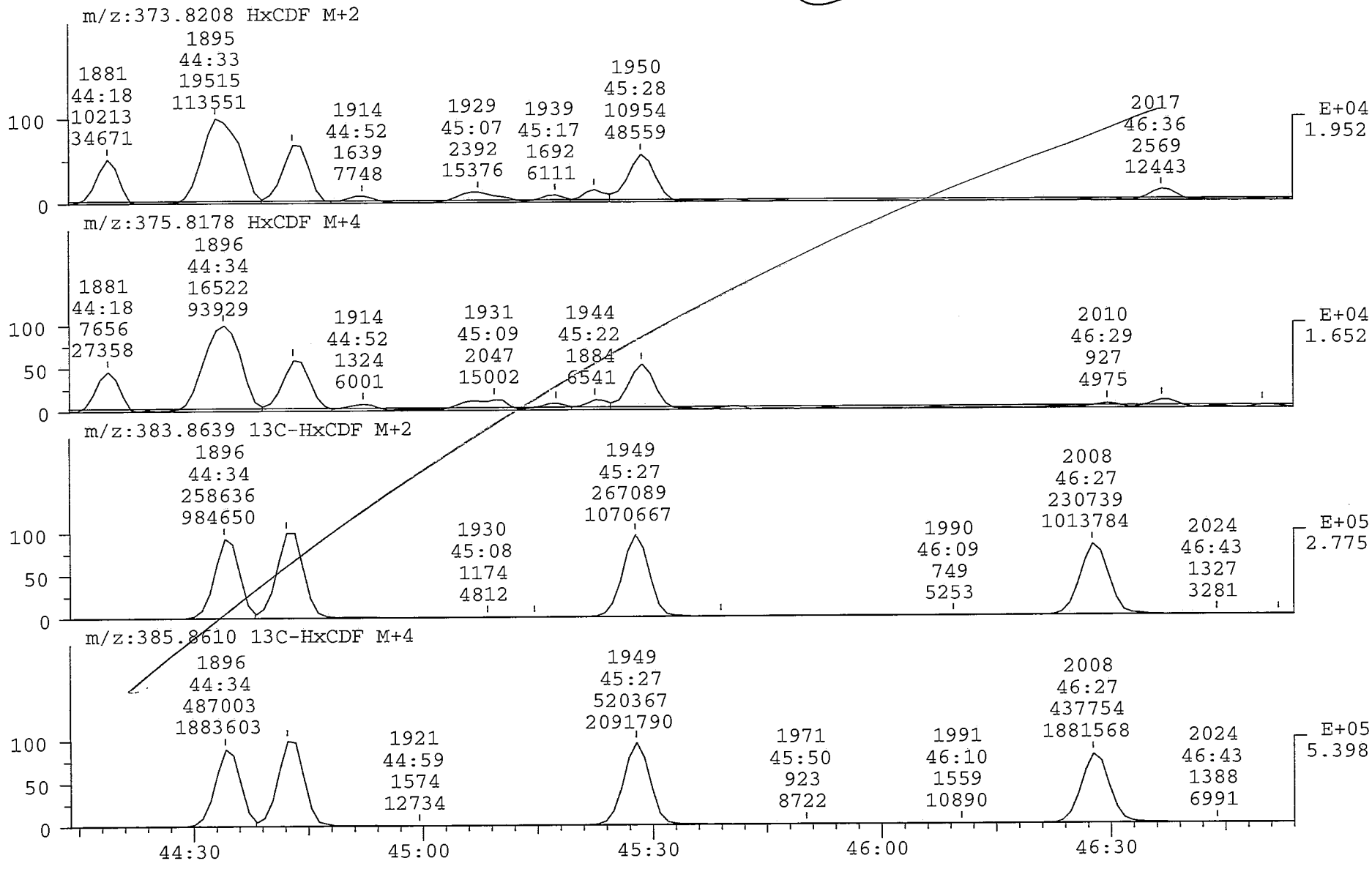
```
CHRO:  d1tm811pa                                18-Aug-16  Elapse:  44:42      1904
Samp:  WO=m811p1ac Meth=9Ao Dil=1                          Start :  01:16:30   2628
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.1g)
Oper:  LKM                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1900 > 1908           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



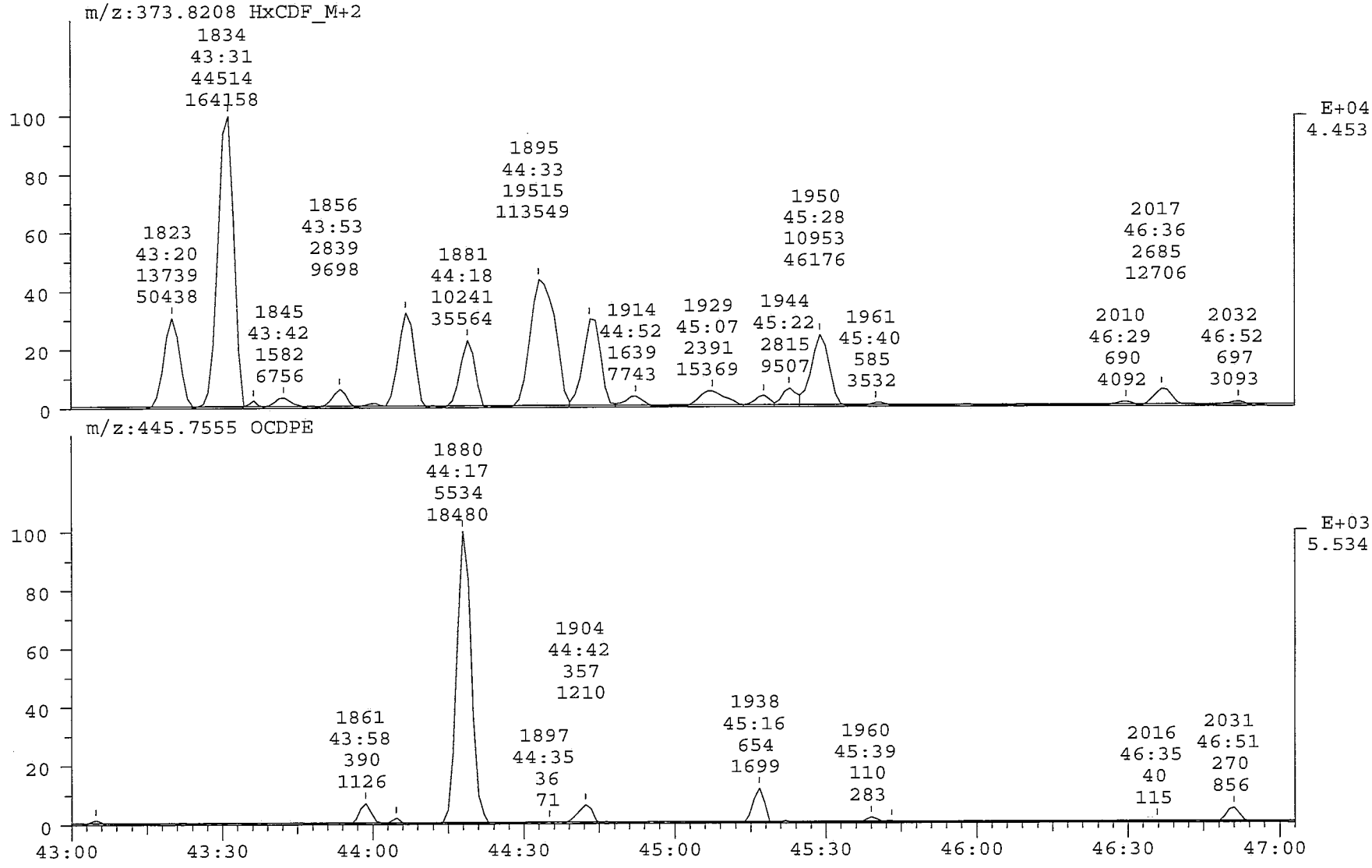
CHRO: d1tm811pa 18-Aug-16 Elapse: 45:28 1950
Samp: WO=m811p1ac Meth=9Ao Dil=1 Start : 01:16:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1947 > 1953 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



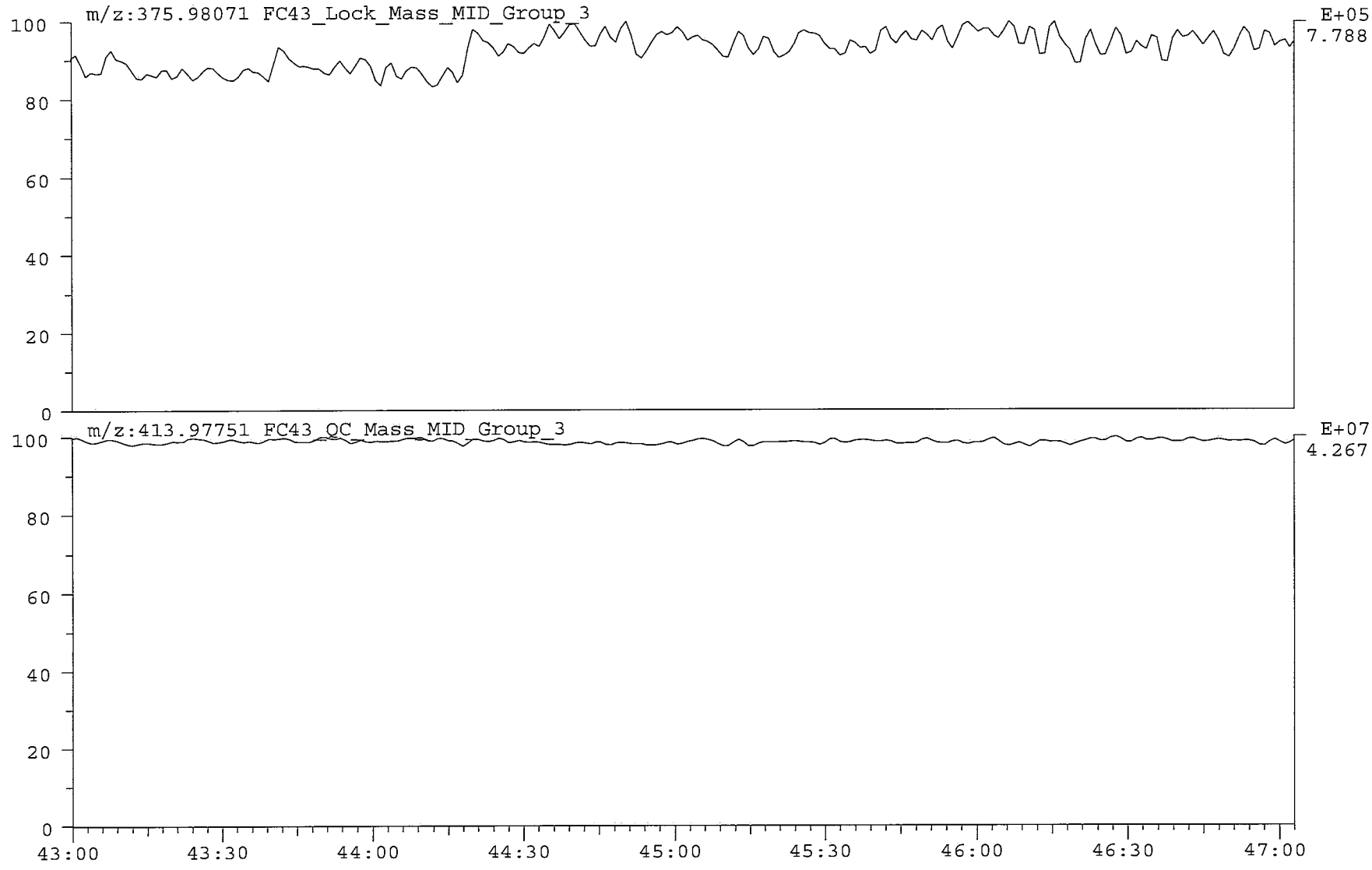
CHRO: d1tm811pa 18-Aug-16 Elapse: 45:28 1950
Samp: WO=m811p1ac Meth=9Ao Dil=1 Start : 01:16:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1876 > 2034 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



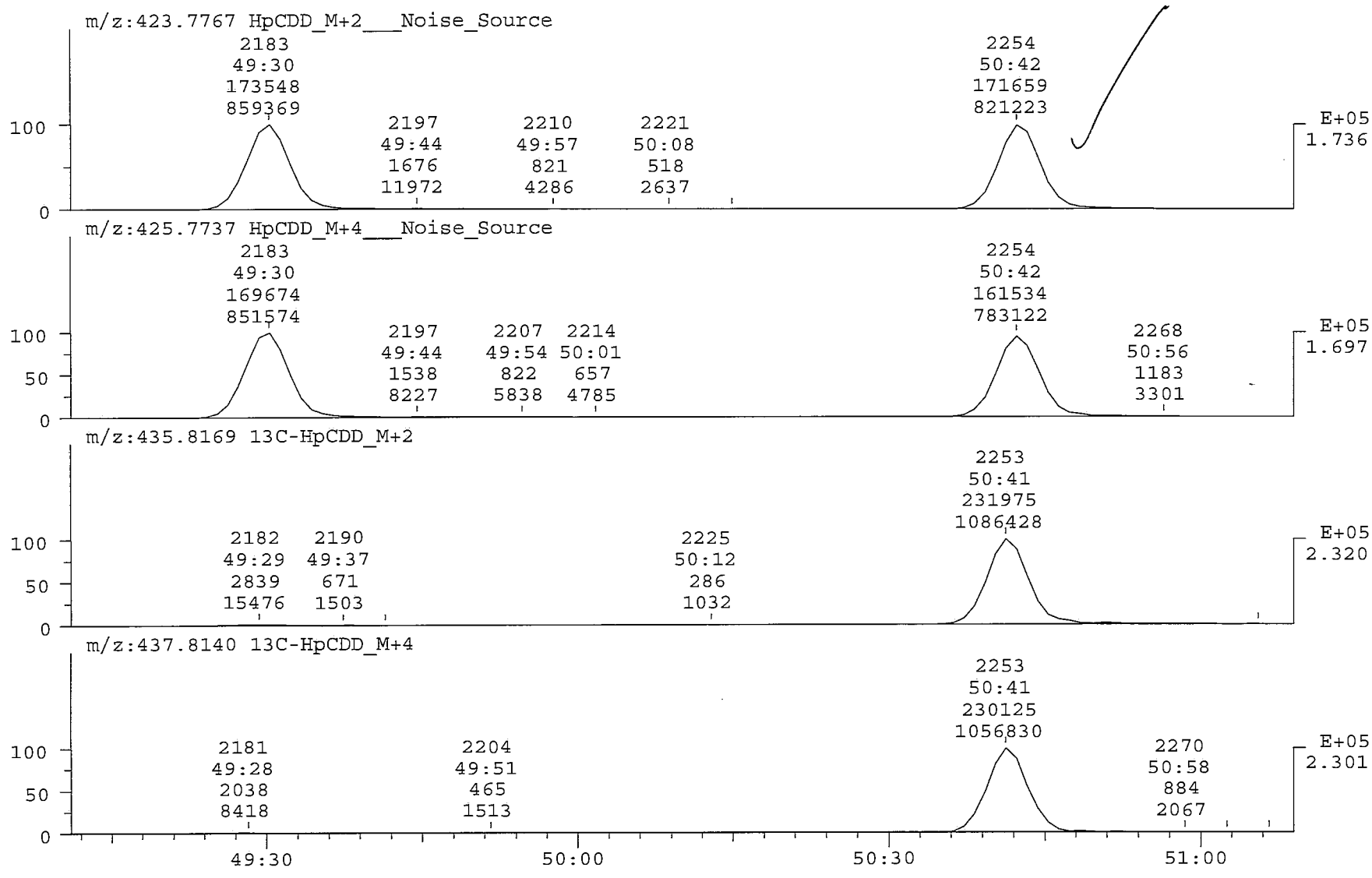
CHRO: d1tm811pa 18-Aug-16 Elapse: 44:42 1904
Samp: WO=m811p1ac Meth=9Ao Dil=1 Start : 01:16:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1803 > 2043 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



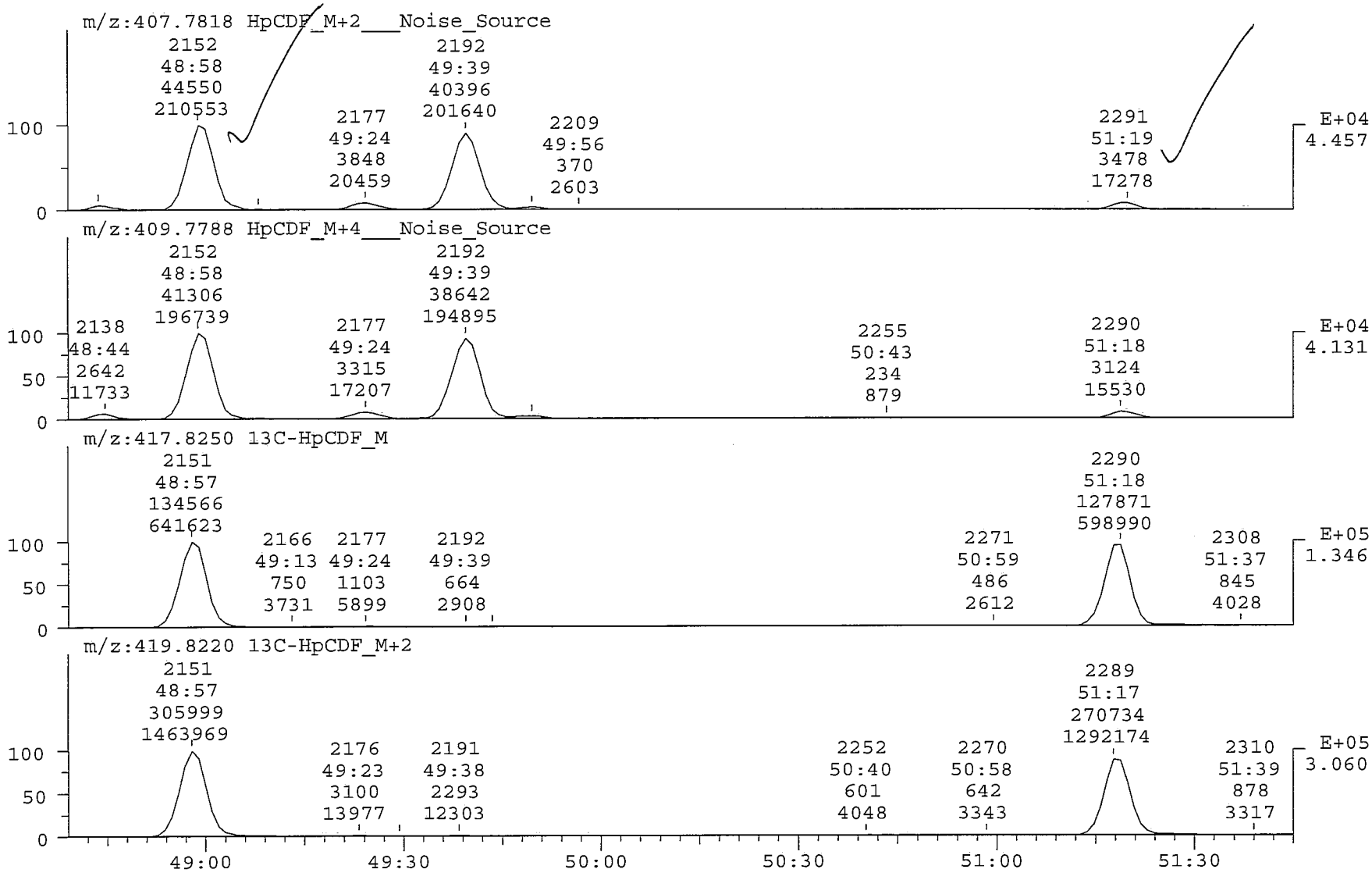
```
CHRO:  d1tm811pa                                18-Aug-16  Elapse:  44:42      1904
Samp:  WO=m811p1ac Meth=9Ao Dil=1                          Start :  01:16:30   2628
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.1g)
Oper:  LKM                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1803 > 2043           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  0, 0.0
Disp:  Height  Area
```



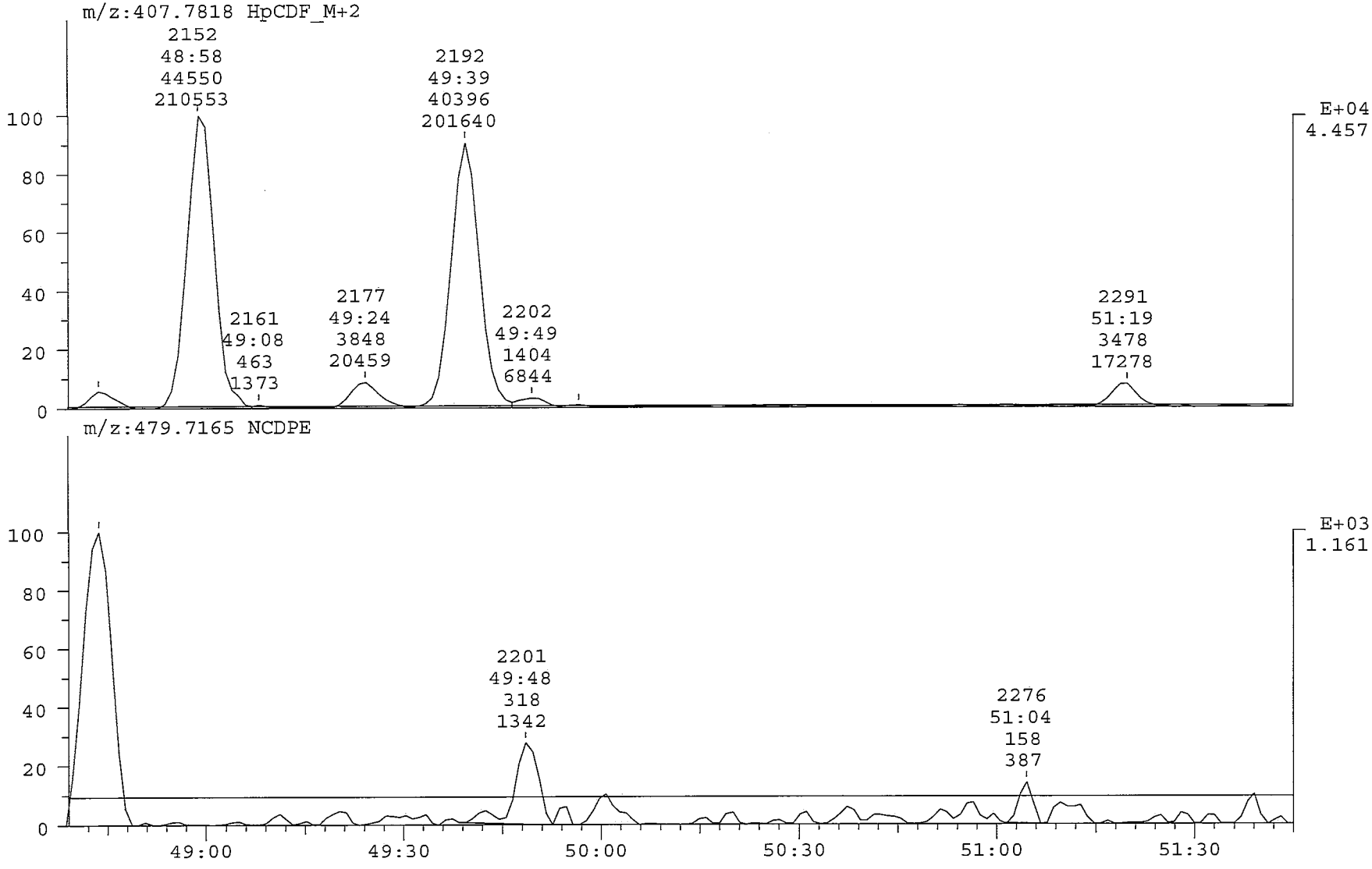
```
CHRO:  d1tm811pa                              18-Aug-16  Elapse:  44:42      1904
Samp:  WO=m811p1ac Meth=9Ao Dil=1                        Start :  01:16:30   2628
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                               Study :  6217014 (10.1g)
Oper:  LKM                                               Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2164 > 2280         Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3              Label :  -2, 5.0
Disp:  Height  Area
```



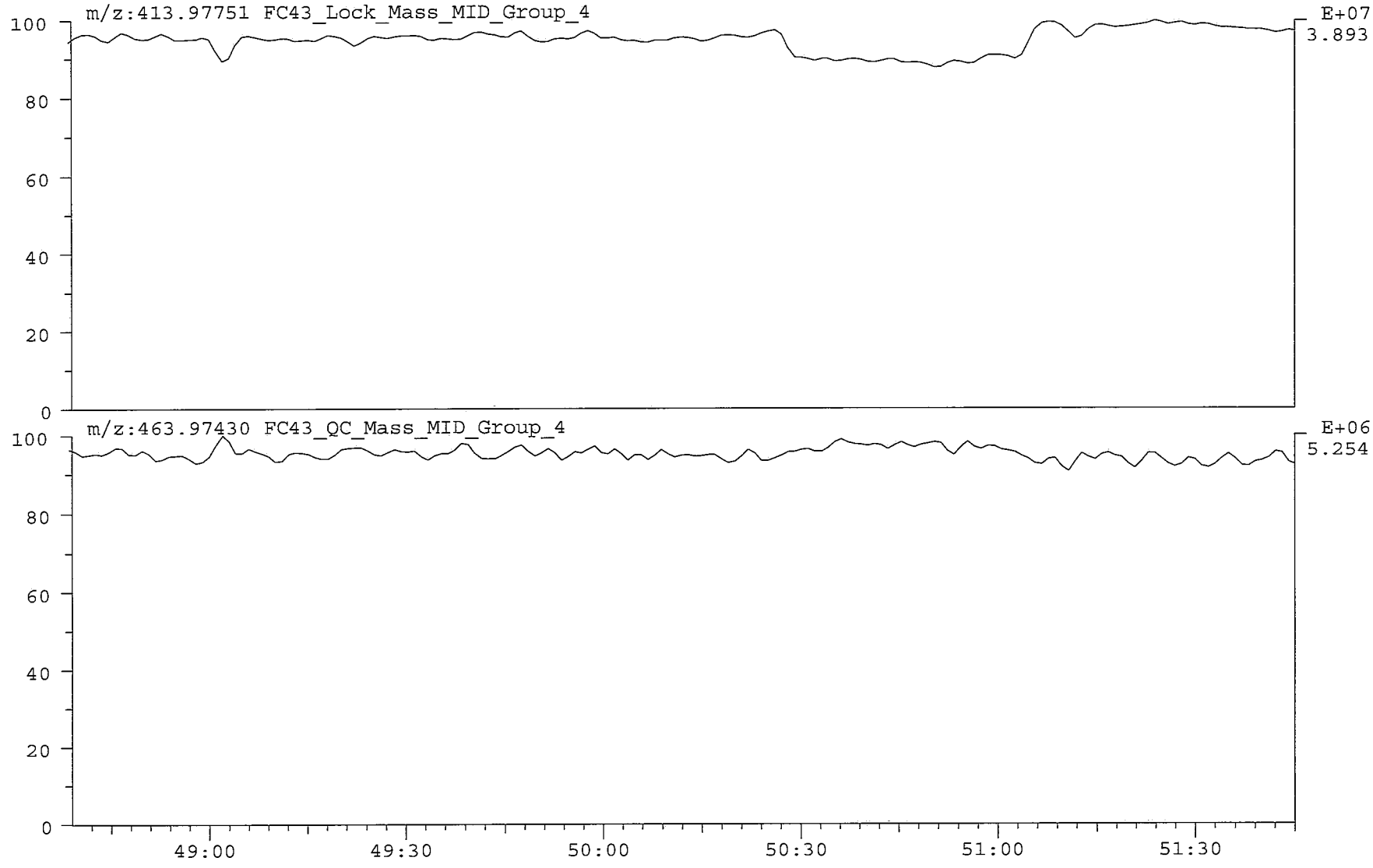
CHRO: d1tm811pa 18-Aug-16 Elapse: 50:11 2224
Samp: WO=m811p1ac Meth=9Ao Dil=1 Start : 01:16:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2132 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



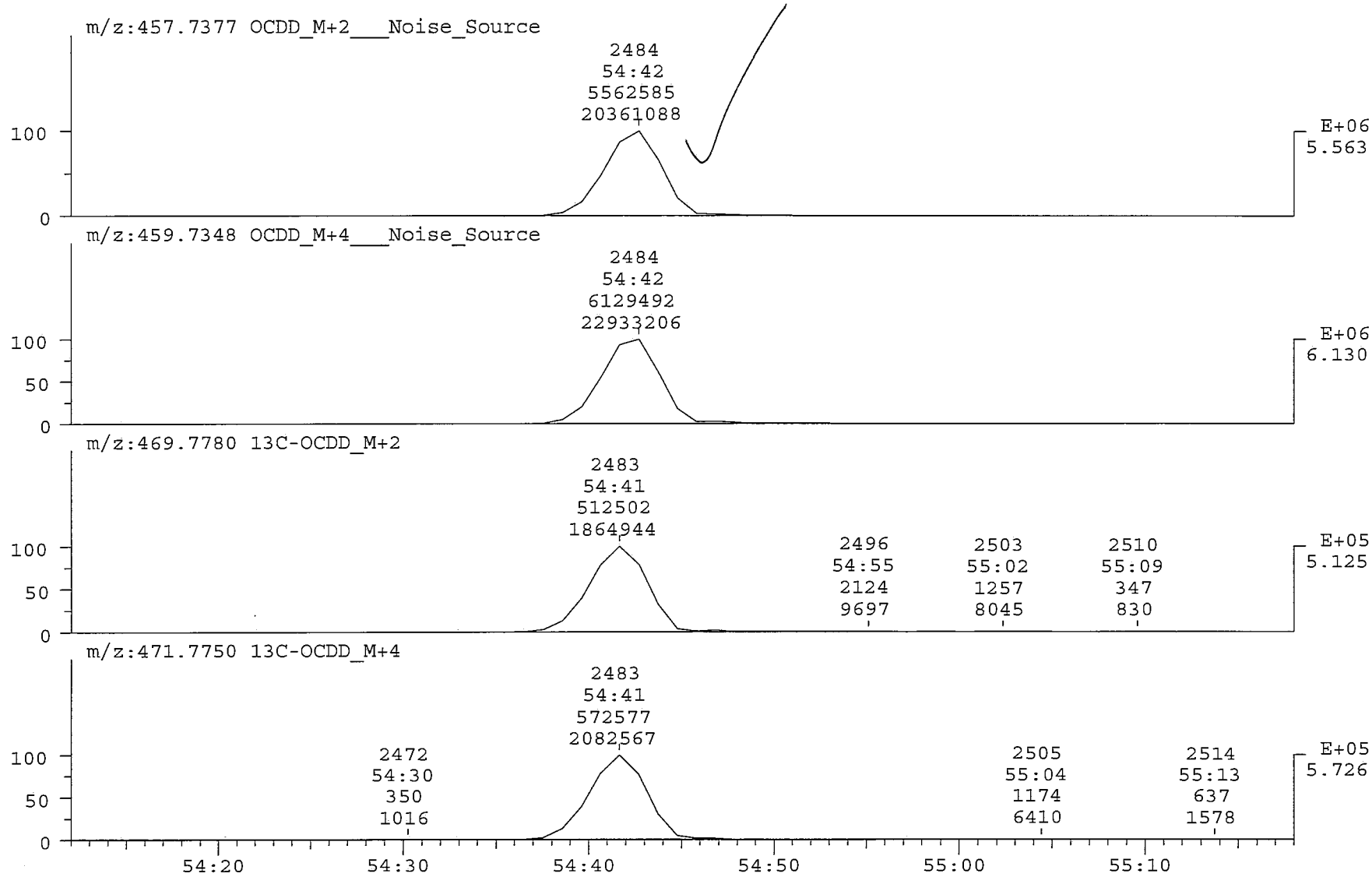
```
CHRO:  d1tm811pa                                18-Aug-16  Elapse:  50:11      2224
Samp:  WO=m811p1ac Meth=9Ao Dil=1                          Start :  01:16:30   2628
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.1g)
Oper:  LKM                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2132 > 2316           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



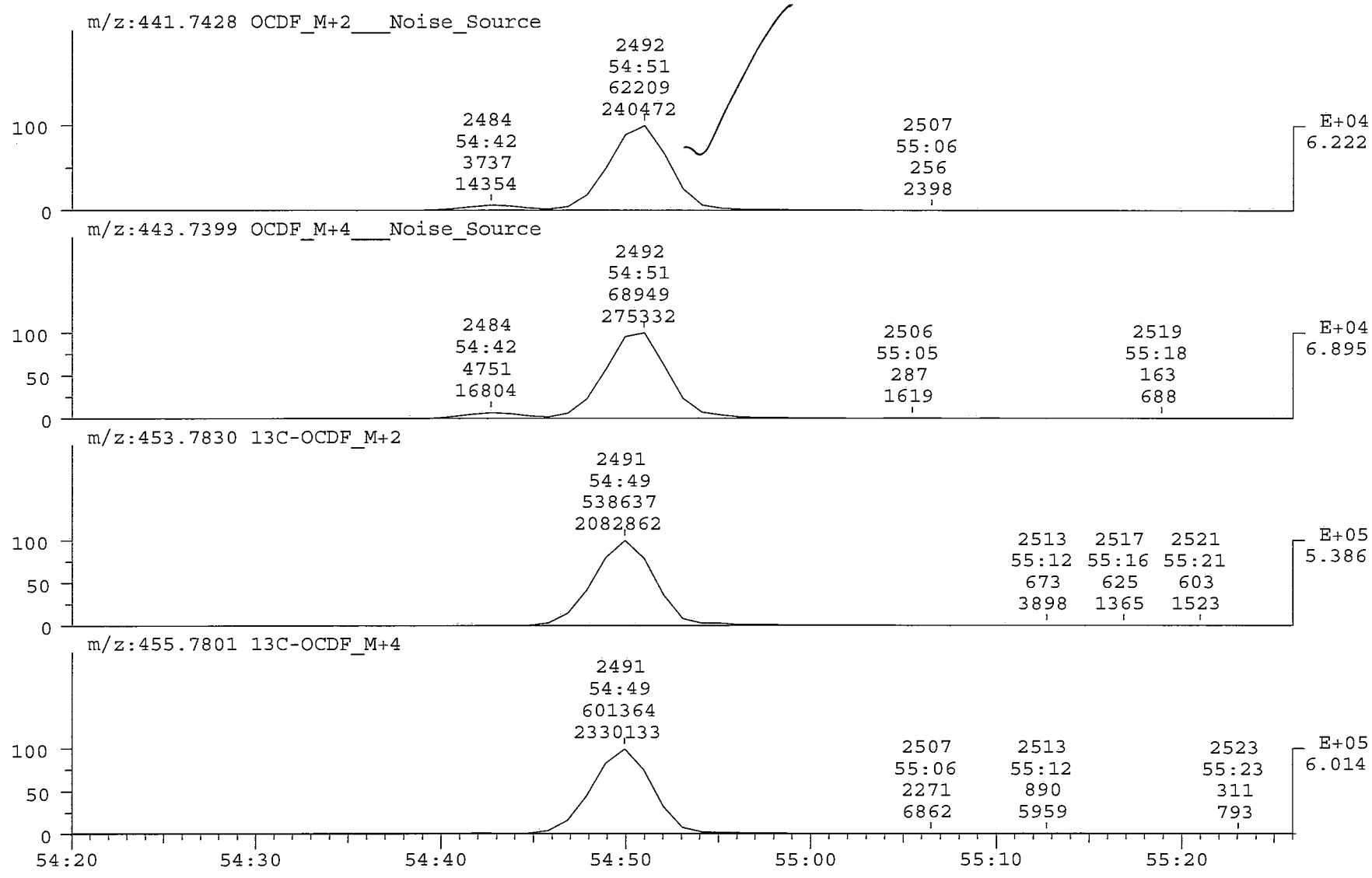
```
CHRO:  d1tm811pa                              18-Aug-16  Elapse:  50:11      2224
Samp:  WO=m811p1ac Meth=9Ao Dil=1                        Start :  01:16:30   2628
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                               Study :  6217014 (10.1g)
Oper:  LKM                                               Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2132 > 2316         Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3              Label :  0, 0.0
Disp:  Height  Area
```



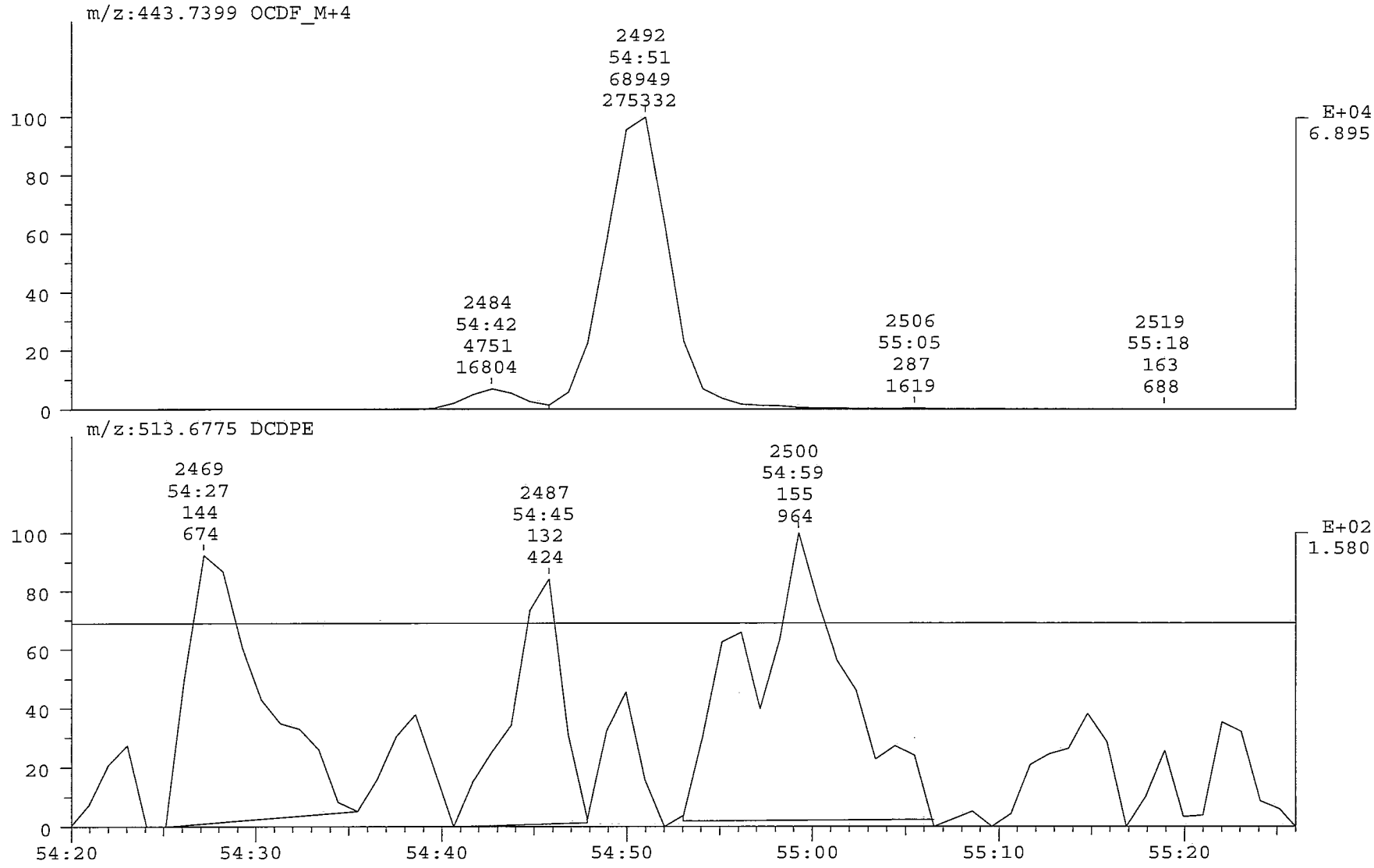
CHRO: d1tm811pa 18-Aug-16 Elapse: 54:41 2483
Samp: WO=m811p1ac Meth=9Ao Dil=1 Start : 01:16:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2454 > 2518 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



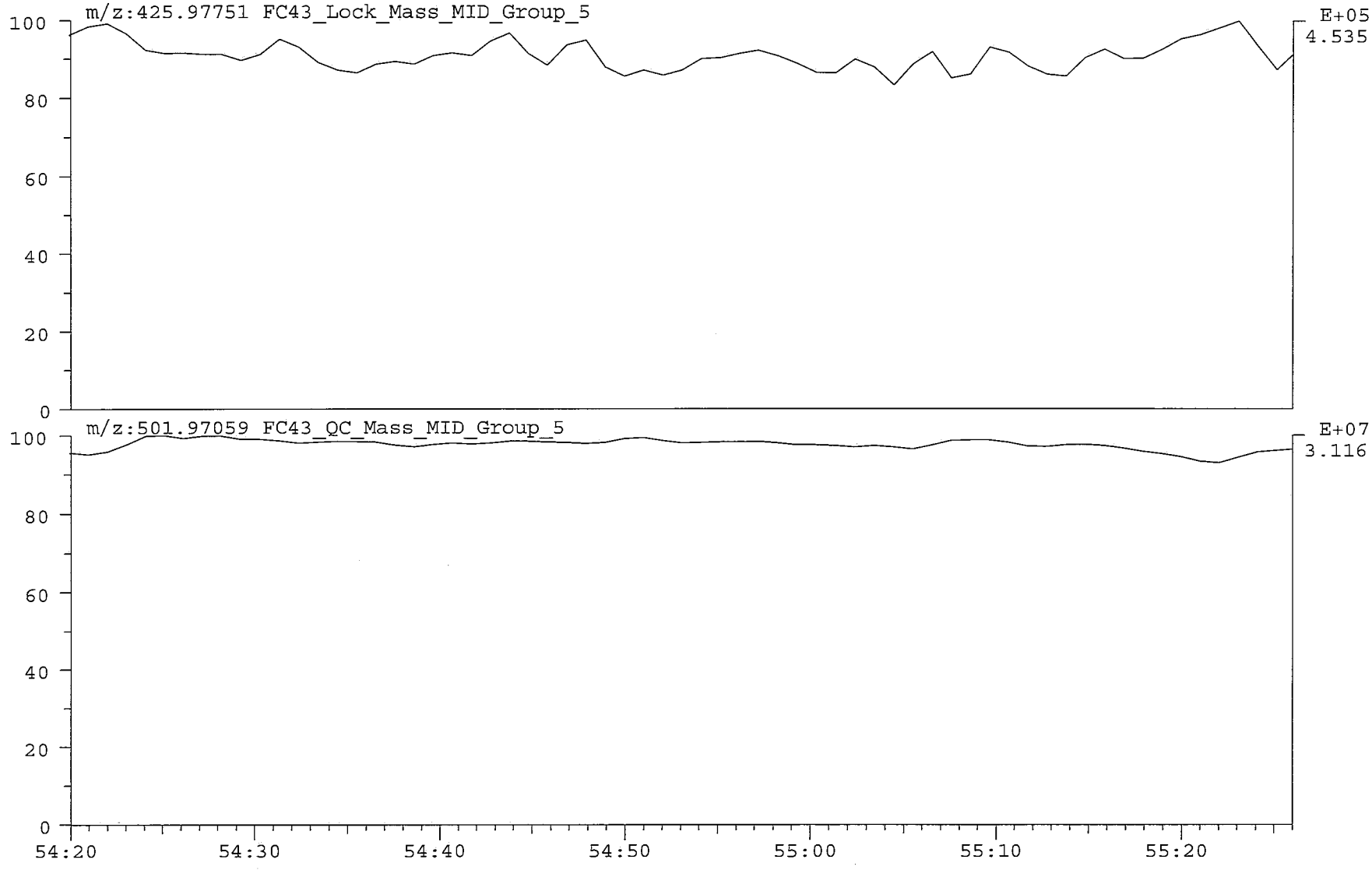
CHRO: d1tm811pa 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m811p1ac Meth=9Ao Dil=1 Start : 01:16:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2462 > 2526 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d1tm811pa                              18-Aug-16  Elapse:  54:49      2491
Samp:  WO=m811p1ac Meth=9Ao Dil=1                        Start :  01:16:30   2628
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                               Study :  6217014 (10.1g)
Oper:  LKM                                               Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2462 > 2526         Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3              Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1tm811pa                              18-Aug-16  Elapse:  54:49      2491
Samp:  WO=m811p1ac Meth=9Ao Dil=1                        Start :  01:16:30   2628
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                               Study :  6217014 (10.1g)
Oper:  LKM                                               Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2462 > 2526         Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3              Label :  0, 0.0
Disp:  Height  Area
```



```
*** file opened Thu Aug 18 01:18:42 2016 ***

Started by                - Xcalibur
Instrument Internet name  - DFS MS
Instrument model          - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

  Analysis started at: 18-Aug-16 01:18:41

  Analysis will stop at user request

  Firmware Version: 1.03

  MCAL file name: mcal1.cal

  Sequence : 021716KLR_160818011630

  MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF


  Mid Time Windows:
        Start        Measure      End       Cycletime

  # 1  12:00 min  23:53 min  35:53 min   1.00 sec
  # 2  35:53 min   6:50 min  42:43 min   1.00 sec
  # 3  42:43 min   5:16 min  48:00 min   1.00 sec
  # 4  48:00 min   5:00 min  53:00 min   1.00 sec
  # 5  53:00 min   4:12 min  57:12 min   1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    303.9016     1  1      123
    305.8987     1  1      123
    313.9834 l  20  1        6
    313.9834    20  1        6
    315.9419     5  1       24
    317.9389     5  1       24
    319.8965     1  1      123
    321.8936     1  1      123
    327.8847     1  1      123
    331.9368     5  1       24
    333.9338     5  1       24
    363.9802 c  20  1        6
    363.9802 c  20  1        6
    375.8364     1  1      123
   Window # 2
        mass F  int  gr  time (ms)
    313.9834 l  20  1        7
    313.9834    20  1        7
    339.8597     1  1      146
    341.8567     1  1      146
    351.9000     5  1       29
    353.8970     5  1       29
    355.8546     1  1      146
    357.8516     1  1      146
    367.8949     5  1       29
    369.8919     5  1       29
    375.9802 c  20  1        7
    375.9802    20  1        7
    409.7974     1  1      146
   Window # 3
        mass F  int  gr  time (ms)
    373.8208     1  1      146
    375.8178     1  1      146
    375.9802 l  20  1        7
```

```
 375.9802     20  1        7
 383.8639      5  1       29
 385.8610      5  1       29
 389.8158      1  1      146
 391.8127      1  1      146
 401.8559      5  1       29
 403.8529      5  1       29
 413.9770 c   20  1        7
 413.9770     20  1        7
 445.7555      1  1      146
Window # 4
     mass F  int  gr  time (ms)
 407.7817      1  1      146
 409.7788      1  1      146
 413.9770 l   20  1        7
 413.9770     20  1        7
 417.8250      5  1       29
 419.8220      5  1       29
 423.7767      1  1      146
 425.7737      1  1      146
 435.8169      5  1       29
 437.8140      5  1       29
 463.9738 c   20  1        7
 463.9738     20  1        7
 479.7165      1  1      146
Window # 5
     mass F  int  gr  time (ms)
 425.9770 l   20  1        7
 425.9770     20  1        7
 441.7428      1  1      146
 443.7399      1  1      146
 453.7830      5  1       29
 455.7801      5  1       29
 457.7377      1  1      146
 459.7348      1  1      146
 469.7780      5  1       29
 471.7750      5  1       29
 501.9706 c   20  1        7
 501.9706     20  1        7
 513.6775      1  1      146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS         310.9834
 BQUAD            2.4000   CAPIL           0.0000   CAPTSET       200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY           0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS           0.0000
 DYNVOLTAGE       18.0000  ECORR           1.0008   ECURR           1.0000
 EDAC        7969177.0000  EDACG           0.9997   EDACZ        2585.8226
 ELEN           -45.0000   EMULT        1802.0000   ENS           210.0000
 ENSBR            2.4000   ERATIO          1.0000   ESA           679.0600
 ESIPAR           0.0000   EXS           172.0000   EXSBR           2.5000
 FDMA       18000000.0000  FILTER        100.0000   FLENS           1.0000
 FM             375.8364   FMII           50.0000   FQUAD           6.7000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0479	FVSRC	0.0398
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	620.0000
LENS_SYM	-4.7500	LM	375.8364	LMII	500.0000
LMASS	310.9834	LKM	425.9770	MASS	310.9834
MDAC	3571716.8312	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2649.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-7.0000	RECURR	0.8938	RELEN	0.0000
RES	12253.0659	RPUSHER	-6.9231	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	310.9834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:         2.6e-005 mbar
Analyzer Penning:     9.3e-008 mbar
Pirani Analyse:       4.4e-003 mbar
Pirani Source:        4.0e-002 mbar
Pirani Inlet System: 4.8e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 12237.
MID Time Window 2: Resolution is 12113.
MID Time Window 3: Resolution is 12558.
MID Time Window 4: Resolution is 12071.
MID Time Window 5: Resolution is 12253.

Amplifier Offset: 88.


*** File closed Thu Aug 18 02:15:55 2016
  ***
```

QUAN: d1tm811pa.q0 Entries: 292

Data file(s) used
File: d1tm811pa 18-Aug-16
Samp: WO=m811p1ac Meth=9Ao Dil=1 Start : 01:16:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (1
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:39	11606.	1144.	32:26	32:47	37.	1	1.0	AVV
321.8775	32:36	14925.	1440.	32:27	32:46	43.	1	1.0	AVV
319.8805	31:22	5476.	550.	31:15	31:35	37.	2	5.0	ABB
319.8805	32:19	4979.	744.	32:07	32:22	37.	2	5.0	ABV
319.8805	32:24	1815.	604.	32:22	32:26	37.	2	5.0	AVV
319.8805	32:39	11606.	1144.	32:26	32:47	37.	2	5.0	AVV
319.8805	32:50	4035.	416.	32:47	33:06	37.	2	5.0	AVV
319.8805	33:24	1212.	243.	33:14	33:26	37.	2	5.0	ABV
319.8805	33:28	1159.	274.	33:26	33:34	37.	2	5.0	AVB
319.8805	34:02	4075.	474.	33:52	34:10	37.	2	5.0	ABB
321.8775	31:24	7896.	861.	31:13	31:32	43.	2	5.0	ABV
321.8775	31:34	1381.	242.	31:32	31:40	43.	2	5.0	AVB
321.8775	32:20	8312.	912.	32:08	32:27	43.	2	5.0	ABV
321.8775	32:36	14925.	1440.	32:27	32:46	43.	2	5.0	AVV
321.8775	32:48	2308.	430.	32:46	32:52	43.	2	5.0	AVV
321.8775	32:54	3170.	575.	32:52	33:03	43.	2	5.0	AVB
321.8775	33:25	2865.	275.	33:14	33:38	43.	2	5.0	ABB
321.8775	34:03	6260.	864.	33:52	34:08	43.	2	5.0	ABB
331.9202	32:18	3723278.	387274.	32:02	32:33	129.	2	5.0	AVV
331.9202	32:50	1301802.	133940.	32:35	33:06	129.	2	5.0	AVV
331.9202	33:14	5078.	729.	33:10	33:23	129.	2	5.0	AVB
331.9202	34:03	3303.	814.	33:58	34:07	129.	2	5.0	ABB
333.9171	32:18	4695166.	476829.	32:02	32:33	27.	2	5.0	AVV
333.9171	32:50	1659911.	163073.	32:36	33:06	27.	2	5.0	AVV
333.9171	33:12	3124.	769.	33:10	33:15	27.	2	5.0	AVV
333.9171	33:17	1861.	610.	33:15	33:19	27.	2	5.0	AVV
333.9171	33:23	5062.	870.	33:19	33:31	27.	2	5.0	AVV
333.9171	33:32	410.	200.	33:31	33:35	27.	2	5.0	AVB
333.9171	33:39	1851.	375.	33:35	33:44	27.	2	5.0	ABB
333.9171	33:48	1148.	415.	33:44	33:50	27.	2	5.0	ABB
333.9171	33:59	2082.	546.	33:52	34:01	27.	2	5.0	ABV
333.9171	34:03	1082.	420.	34:01	34:07	27.	2	5.0	AVB
303.8864	30:47	197396.	14218.	30:32	31:02	100.	1	1.0	ABV
305.8834	30:48	248396.	17160.	30:32	31:03	116.	1	1.0	AVV
303.8864	29:34	72622.	7652.	29:19	29:50	100.	2	5.0	AVV
303.8864	30:14	60143.	5831.	29:59	30:29	100.	2	5.0	AVV
303.8864	30:47	197396.	14218.	30:32	31:02	100.	2	5.0	ABV
303.8864	32:02	88757.	8358.	31:47	32:18	100.	2	5.0	ABV
305.8834	29:34	90199.	9841.	29:19	29:50	116.	2	5.0	AVB
305.8834	30:14	81078.	7229.	29:59	30:29	116.	2	5.0	AVV
305.8834	30:48	248396.	17160.	30:32	31:03	116.	2	5.0	AVV
305.8834	32:02	112217.	11228.	31:50	32:18	116.	2	5.0	ABV
315.9261	29:19	2390.	686.	29:11	29:21	84.	2	5.0	ABB
315.9261	29:28	2449.	926.	29:25	29:30	84.	2	5.0	ABV
315.9261	29:32	4507.	1394.	29:30	29:35	84.	2	5.0	AVV
315.9261	29:38	2360.	737.	29:35	29:40	84.	2	5.0	AVB
315.9261	30:42	1931252.	203938.	30:26	30:57	84.	2	5.0	ABV
315.9261	31:04	6311.	1543.	31:02	31:09	84.	2	5.0	AVV
315.9261	31:13	3723.	716.	31:09	31:19	84.	2	5.0	AVB
315.9261	31:43	3118.	603.	31:40	31:50	84.	2	5.0	ABB

315.9261	32:17	2402.	676.	32:13	32:20	84.	2	5.0	ABV
315.9261	32:23	3027.	940.	32:20	32:26	84.	2	5.0	AVB
317.9230	29:32	7605.	1024.	29:23	29:39	69.	2	5.0	ABB
317.9230	30:42	2425655.	251672.	30:26	30:57	69.	2	5.0	ABV
317.9230	31:04	8096.	1316.	31:01	31:13	69.	2	5.0	AVB
317.9230	31:15	2393.	456.	31:13	31:23	69.	2	5.0	ABV
317.9230	31:28	2815.	385.	31:23	31:37	69.	2	5.0	AVB
317.9230	32:19	1753.	412.	32:12	32:21	69.	2	5.0	ABV
317.9230	32:23	1032.	383.	32:21	32:25	69.	2	5.0	AVB
355.8368	41:25	17441.	3980.	41:18	41:34	48.	1	1.0	ABV
357.8337	41:24	18813.	2741.	41:15	41:29	60.	1	1.0	ABV
355.8368	40:44	12251.	2690.	40:39	40:49	48.	2	5.0	ABB
355.8368	40:59	11193.	2725.	40:49	41:05	48.	2	5.0	ABV
355.8368	41:09	3602.	762.	41:05	41:17	48.	2	5.0	AVB
355.8368	41:25	17441.	3980.	41:18	41:34	48.	2	5.0	ABV
355.8368	41:39	6520.	1592.	41:34	41:45	48.	2	5.0	AVB
355.8368	42:04	9943.	2183.	41:52	42:14	48.	2	5.0	ABB
357.8337	40:43	9072.	1987.	40:40	40:50	60.	2	5.0	ABB
357.8337	41:00	7453.	1488.	40:50	41:05	60.	2	5.0	ABB
357.8337	41:11	2250.	370.	41:05	41:14	60.	2	5.0	ABB
357.8337	41:24	18813.	2741.	41:15	41:29	60.	2	5.0	ABV
357.8337	41:39	5327.	1166.	41:29	41:43	60.	2	5.0	AVV
357.8337	41:51	3708.	748.	41:43	41:56	60.	2	5.0	AVV
357.8337	42:04	6475.	1619.	41:56	42:16	60.	2	5.0	AVB
367.8765	40:47	1287.	400.	40:44	40:51	42.	2	5.0	ABB
367.8765	40:58	2975.	823.	40:53	41:02	42.	2	5.0	ABB
367.8765	41:24	1521406.	370187.	41:15	41:35	42.	2	5.0	ABV
367.8765	41:37	10648.	2291.	41:35	41:43	42.	2	5.0	AVV
367.8765	41:45	4182.	911.	41:43	41:51	42.	2	5.0	AVB
367.8765	42:04	7587.	1454.	41:52	42:07	42.	2	5.0	ABB
367.8765	42:12	2638.	829.	42:08	42:14	42.	2	5.0	ABB
369.8734	40:56	3290.	535.	40:50	41:03	24.	2	5.0	ABB
369.8734	41:24	940697.	236361.	41:17	41:32	24.	2	5.0	ABV
369.8734	41:39	13097.	1373.	41:32	41:44	24.	2	5.0	AVV
369.8734	41:46	1342.	575.	41:44	41:49	24.	2	5.0	AVB
369.8734	41:52	2489.	879.	41:49	41:54	24.	2	5.0	ABV
369.8734	42:04	2043.	404.	41:54	42:07	24.	2	5.0	AVB
339.8427	41:08	107736.	22881.	41:02	41:16	82.	1	1.0	AVB
341.8396	41:07	64876.	13295.	41:02	41:14	81.	1	1.0	AVB
339.8427	39:18	101562.	19596.	39:14	39:26	82.	2	5.0	ABB
339.8427	39:46	90833.	14179.	39:34	39:53	82.	2	5.0	ABV
339.8427	40:01	50781.	10494.	39:53	40:09	82.	2	5.0	AVV
339.8427	40:15	66467.	11831.	40:09	40:28	82.	2	5.0	AVB
339.8427	40:55	101122.	21296.	40:47	41:02	82.	2	5.0	ABV
339.8427	41:08	107736.	22881.	41:02	41:16	82.	2	5.0	AVB
339.8427	41:28	8728.	2132.	41:22	41:33	82.	2	5.0	ABB
341.8396	39:18	61294.	11227.	39:14	39:26	81.	2	5.0	ABB
341.8396	39:46	56312.	8737.	39:35	39:52	81.	2	5.0	ABB
341.8396	40:01	31677.	6755.	39:55	40:07	81.	2	5.0	ABV
341.8396	40:15	44222.	7702.	40:07	40:25	81.	2	5.0	AVB
341.8396	40:55	63465.	13824.	40:46	41:02	81.	2	5.0	ABV
341.8396	41:07	64876.	13295.	41:02	41:14	81.	2	5.0	AVB
341.8396	41:27	4733.	1109.	41:23	41:33	81.	2	5.0	ABB
351.8824	39:18	3760.	1388.	39:14	39:20	119.	2	5.0	ABB
351.8824	39:22	2018.	660.	39:20	39:25	119.	2	5.0	ABB
351.8824	39:45	2593453.	554769.	39:31	39:57	119.	2	5.0	ABV
351.8824	40:00	18580.	3214.	39:57	40:09	119.	2	5.0	AVV
351.8824	40:13	34283.	7684.	40:09	40:19	119.	2	5.0	AVV
351.8824	40:21	5993.	1224.	40:19	40:28	119.	2	5.0	AVV
351.8824	40:32	2083.	698.	40:28	40:34	119.	2	5.0	AVB
351.8824	40:54	2772972.	645070.	40:39	41:10	119.	2	5.0	AVV
353.8793	39:45	1606461.	341851.	39:36	39:55	105.	2	5.0	ABV
353.8793	39:58	13907.	1832.	39:55	40:08	105.	2	5.0	AVV
353.8793	40:13	17250.	3491.	40:08	40:19	105.	2	5.0	AVV
353.8793	40:23	2487.	628.	40:19	40:27	105.	2	5.0	AVB
353.8793	40:54	1734280.	405835.	40:47	41:10	105.	2	5.0	ABV
353.8793	41:12	6667.	820.	41:10	41:27	105.	2	5.0	AVV

389.7961	46:10	58177.	11123.	46:02	46:22	65.	1	1.0	AVB
391.7931	46:10	46080.	8583.	46:02	46:17	50.	1	1.0	ABV
389.7961	45:27	1660.	482.	45:21	45:30	65.	2	5.0	ABB
389.7961	45:40	19600.	4672.	45:30	45:43	65.	2	5.0	ABV
389.7961	45:47	39960.	9839.	45:43	45:55	65.	2	5.0	AVB
389.7961	46:10	58792.	11123.	45:56	46:22	65.	2	5.0	ABB
389.7961	46:28	3430.	456.	46:22	46:34	65.	2	5.0	ABB
391.7931	45:40	15219.	3591.	45:30	45:43	50.	2	5.0	ABV
391.7931	45:47	31240.	7588.	45:43	45:52	50.	2	5.0	AVB
391.7931	46:10	47107.	8583.	46:02	46:23	50.	2	5.0	ABV
391.7931	46:26	2349.	509.	46:23	46:31	50.	2	5.0	AVB
401.8358	45:39	1349224.	338965.	45:27	45:42	130.	2	5.0	ABV
401.8358	45:46	1371731.	339841.	45:42	46:01	130.	2	5.0	AVV
401.8358	46:10	4401024.	1061304.	46:01	46:25	130.	2	5.0	AVV
401.8358	46:29	4883.	1826.	46:27	46:31	130.	2	5.0	AVV
401.8358	46:32	4046.	1204.	46:31	46:36	130.	2	5.0	AVB
403.8327	45:39	1054967.	264635.	45:32	45:42	122.	2	5.0	ABV
403.8327	45:46	1067143.	269218.	45:42	46:01	122.	2	5.0	AVB
403.8327	46:10	3483791.	841700.	46:03	46:25	122.	2	5.0	ABV
403.8327	46:27	5964.	2009.	46:25	46:30	122.	2	5.0	AVB
403.8327	46:35	2872.	696.	46:30	46:36	122.	2	5.0	ABB
373.8021	44:33	113174.	19515.	44:26	44:39	72.	1	1.0	AVV
375.7990	44:34	93517.	16522.	44:26	44:39	67.	1	1.0	AVV
373.8021	44:19	34671.	10213.	44:13	44:23	72.	2	5.0	ABB
373.8021	44:33	113551.	19515.	44:23	44:39	72.	2	5.0	ABV
373.8021	44:43	55487.	13460.	44:39	44:48	72.	2	5.0	AVV
373.8021	44:52	7748.	1639.	44:48	45:00	72.	2	5.0	AVV
373.8021	45:07	15376.	2392.	45:00	45:13	72.	2	5.0	AVV
373.8021	45:17	6111.	1692.	45:13	45:19	72.	2	5.0	AVV
373.8021	45:22	9511.	2815.	45:19	45:24	72.	2	5.0	AVV
373.8021	45:28	46186.	10954.	45:24	45:37	72.	2	5.0	AVV
373.8021	45:40	3550.	586.	45:37	45:55	72.	2	5.0	AVV
373.8021	46:29	2359.	589.	46:22	46:32	72.	2	5.0	ABB
373.8021	46:36	11010.	2569.	46:32	46:47	72.	2	5.0	ABV
373.8021	46:52	2095.	564.	46:47	46:54	72.	2	5.0	AVB
375.7990	44:19	27358.	7656.	44:13	44:23	67.	2	5.0	ABB
375.7990	44:34	93929.	16522.	44:23	44:39	67.	2	5.0	ABV
375.7990	44:43	41573.	9737.	44:39	44:48	67.	2	5.0	AVV
375.7990	44:52	6001.	1324.	44:48	44:56	67.	2	5.0	AVV
375.7990	45:09	15002.	2047.	44:56	45:12	67.	2	5.0	AVV
375.7990	45:17	5289.	1278.	45:12	45:19	67.	2	5.0	AVV
375.7990	45:22	6541.	1884.	45:19	45:24	67.	2	5.0	AVV
375.7990	45:28	35531.	8720.	45:24	45:37	67.	2	5.0	AVV
375.7990	45:41	2033.	645.	45:37	45:43	67.	2	5.0	AVB
375.7990	46:29	4975.	927.	46:18	46:32	67.	2	5.0	ABV
375.7990	46:36	7440.	1532.	46:32	46:47	67.	2	5.0	AVB
375.7990	46:50	2113.	582.	46:47	46:54	67.	2	5.0	ABB
373.8021	44:19	34671.	10213.	44:13	44:23	72.	2	5.0	ABB
373.8021	44:33	113551.	19515.	44:23	44:39	72.	2	5.0	ABV
373.8021	44:43	55487.	13460.	44:39	44:48	72.	2	5.0	AVV
373.8021	44:52	7748.	1639.	44:48	45:00	72.	2	5.0	AVV
373.8021	45:07	15376.	2392.	45:00	45:13	72.	2	5.0	AVV
373.8021	45:17	6111.	1692.	45:13	45:19	72.	2	5.0	AVV
373.8021	45:22	9511.	2815.	45:19	45:24	72.	2	5.0	AVV
373.8021	45:28	46186.	10954.	45:24	45:37	72.	2	5.0	AVV
373.8021	45:40	3550.	586.	45:37	45:55	72.	2	5.0	AVV
373.8021	46:29	2359.	589.	46:22	46:32	72.	2	5.0	ABB
373.8021	46:36	11010.	2569.	46:32	46:47	72.	2	5.0	ABV
373.8021	46:52	2095.	564.	46:47	46:54	72.	2	5.0	AVB
375.7990	44:19	27358.	7656.	44:13	44:23	67.	2	5.0	ABB
375.7990	44:34	93929.	16522.	44:23	44:39	67.	2	5.0	ABV
375.7990	44:43	41573.	9737.	44:39	44:48	67.	2	5.0	AVV
375.7990	44:52	6001.	1324.	44:48	44:56	67.	2	5.0	AVV
375.7990	45:09	15002.	2047.	44:56	45:12	67.	2	5.0	AVV
375.7990	45:17	5289.	1278.	45:12	45:19	67.	2	5.0	AVV
375.7990	45:22	6541.	1884.	45:19	45:24	67.	2	5.0	AVV
375.7990	45:28	35531.	8720.	45:24	45:37	67.	2	5.0	AVV

375.7990	45:41	2033.	645.	45:37	45:43	67.	2	5.0	AVB
375.7990	46:29	4975.	927.	46:18	46:32	67.	2	5.0	ABV
375.7990	46:36	7440.	1532.	46:32	46:47	67.	2	5.0	AVB
375.7990	46:50	2113.	582.	46:47	46:54	67.	2	5.0	ABB
383.8447	44:34	984650.	258636.	44:27	44:38	70.	2	5.0	ABV
383.8447	44:42	1147624.	277539.	44:38	44:57	70.	2	5.0	AVV
383.8447	45:08	4812.	1174.	45:02	45:11	70.	2	5.0	AVB
383.8447	45:14	2170.	789.	45:11	45:16	70.	2	5.0	ABV
383.8447	45:27	1070667.	267089.	45:16	45:37	70.	2	5.0	AVV
383.8447	45:39	10937.	1771.	45:37	45:49	70.	2	5.0	AVV
383.8447	45:51	1710.	542.	45:49	45:53	70.	2	5.0	AVV
383.8447	45:55	1932.	410.	45:53	46:01	70.	2	5.0	AVV
383.8447	46:05	1952.	413.	46:01	46:07	70.	2	5.0	AVV
383.8447	46:09	3301.	749.	46:07	46:14	70.	2	5.0	AVB
383.8447	46:27	1013784.	230739.	46:18	46:41	70.	2	5.0	ABV
383.8447	46:43	3281.	1327.	46:41	46:45	70.	2	5.0	AVB
383.8447	46:52	2870.	992.	46:45	46:54	70.	2	5.0	ABB
385.8417	44:34	1883603.	487003.	44:25	44:38	88.	2	5.0	ABV
385.8417	44:42	2177761.	539784.	44:38	44:57	88.	2	5.0	AVV
385.8417	44:59	12734.	1574.	44:57	45:09	88.	2	5.0	AVV
385.8417	45:14	3777.	864.	45:09	45:16	88.	2	5.0	AVV
385.8417	45:27	2089058.	520367.	45:16	45:43	88.	2	5.0	AVV
385.8417	45:50	5187.	923.	45:46	45:54	88.	2	5.0	AVV
385.8417	45:56	1994.	793.	45:54	45:58	88.	2	5.0	AVV
385.8417	45:59	1541.	742.	45:58	46:02	88.	2	5.0	AVB
385.8417	46:10	10890.	1559.	46:02	46:16	88.	2	5.0	ABB
385.8417	46:27	1881568.	437754.	46:16	46:41	88.	2	5.0	ABV
385.8417	46:43	6991.	1388.	46:41	46:52	88.	2	5.0	AVB
423.7555	49:30	859368.	173548.	49:22	49:42	85.	1	1.0	ABV
425.7524	49:30	851574.	169674.	49:21	49:42	82.	1	1.0	ABV
423.7555	49:30	859368.	173548.	49:22	49:42	85.	2	5.0	ABV
423.7555	50:42	821222.	171659.	50:35	50:57	85.	2	5.0	ABV
425.7524	49:30	851574.	169674.	49:21	49:42	82.	2	5.0	ABV
425.7524	50:42	783122.	161534.	50:34	50:54	82.	2	5.0	ABV
435.7951	49:29	15476.	2839.	49:22	49:35	31.	2	5.0	ABV
435.7951	49:37	1503.	671.	49:35	49:39	31.	2	5.0	AVV
435.7951	49:41	825.	195.	49:39	49:46	31.	2	5.0	AVB
435.7951	50:12	1032.	286.	50:09	50:17	31.	2	5.0	ABB
435.7951	50:41	1086428.	231975.	50:33	50:56	31.	2	5.0	ABV
435.7951	51:05	1298.	510.	51:02	51:07	31.	2	5.0	ABB
437.7921	49:28	8418.	2038.	49:22	49:33	17.	2	5.0	ABB
437.7921	49:51	1513.	465.	49:45	49:53	17.	2	5.0	AVV
437.7921	50:41	1056830.	230125.	50:34	50:56	17.	2	5.0	ABV
437.7921	50:58	2067.	884.	50:56	51:00	17.	2	5.0	AVV
437.7921	51:02	2396.	825.	51:00	51:04	17.	2	5.0	AVV
437.7921	51:06	1608.	696.	51:04	51:08	17.	2	5.0	AVB
407.7614	48:58	211801.	44550.	48:51	49:13	61.	1	1.0	AVV
409.7583	48:58	196739.	41306.	48:50	49:14	38.	1	1.0	ABV
407.7614	48:43	11663.	2568.	48:38	48:49	61.	2	5.0	ABB
407.7614	48:58	210553.	44550.	48:49	49:07	61.	2	5.0	ABV
407.7614	49:08	1373.	463.	49:07	49:15	61.	2	5.0	AVV
407.7614	49:24	20459.	3848.	49:15	49:31	61.	2	5.0	AVV
407.7614	49:39	201640.	40396.	49:31	49:46	61.	2	5.0	AVV
407.7614	49:49	6844.	1404.	49:46	49:53	61.	2	5.0	AVV
407.7614	49:56	2603.	370.	49:53	50:11	61.	2	5.0	AVV
407.7614	51:19	17278.	3478.	51:10	51:30	61.	2	5.0	ABB
409.7583	48:44	11733.	2642.	48:38	48:49	38.	2	5.0	ABB
409.7583	48:58	196739.	41306.	48:50	49:14	38.	2	5.0	ABV
409.7583	49:24	17207.	3315.	49:17	49:30	38.	2	5.0	AVV
409.7583	49:39	194895.	38642.	49:30	49:45	38.	2	5.0	AVV
409.7583	49:49	8088.	1184.	49:45	50:04	38.	2	5.0	AVV
409.7583	50:43	879.	234.	50:39	50:48	38.	2	5.0	ABB
409.7583	51:18	15530.	3124.	51:08	51:34	38.	2	5.0	ABV
417.8041	48:57	641623.	134566.	48:42	49:11	54.	2	5.0	ABV
417.8041	49:13	3731.	750.	49:11	49:19	54.	2	5.0	AVV
417.8041	49:24	5899.	1103.	49:19	49:30	54.	2	5.0	AVV
417.8041	49:39	2908.	664.	49:34	49:41	54.	2	5.0	AVV

417.8041	49:43	3435.	621.	49:41	49:52	54.	2	5.0	AVB
417.8041	50:59	2612.	486.	50:57	51:10	54.	2	5.0	ABV
417.8041	51:18	598990.	127871.	51:10	51:34	54.	2	5.0	AVV
417.8041	51:37	4028.	845.	51:35	51:43	54.	2	5.0	AVB
419.8010	48:57	1463969.	305998.	48:49	49:13	65.	2	5.0	ABV
419.8010	49:23	13977.	3100.	49:15	49:26	65.	2	5.0	AVV
419.8010	49:29	3474.	936.	49:26	49:32	65.	2	5.0	AVV
419.8010	49:38	12303.	2293.	49:32	49:43	65.	2	5.0	AVV
419.8010	50:40	4048.	601.	50:25	50:45	65.	2	5.0	AVB
419.8010	50:58	3343.	642.	50:46	51:01	65.	2	5.0	ABV
419.8010	51:17	1292174.	270734.	51:09	51:33	65.	2	5.0	ABV
419.8010	51:39	3317.	878.	51:36	51:42	65.	2	5.0	AVB
457.7148	54:42	20361088.	5562585.	54:35	54:58	113.	1	1.0	ABV
459.7118	54:42	22933206.	6129492.	54:34	54:58	87.	1	1.0	ABV
457.7148	54:42	20361088.	5562585.	54:35	54:58	113.	2	5.0	ABV
459.7118	54:42	22933206.	6129492.	54:34	54:58	87.	2	5.0	ABV
469.7545	54:41	1864944.	512502.	54:35	54:51	29.	2	5.0	ABV
469.7545	54:55	9697.	2124.	54:51	54:57	29.	2	5.0	AVV
469.7545	55:02	8045.	1257.	54:57	55:07	29.	2	5.0	AVV
469.7545	55:09	830.	347.	55:07	55:11	29.	2	5.0	AVV
471.7514	54:30	1016.	350.	54:26	54:32	26.	2	5.0	ABB
471.7514	54:41	2082567.	572577.	54:34	54:57	26.	2	5.0	ABV
471.7514	55:04	6410.	1174.	54:59	55:11	26.	2	5.0	AVB
471.7514	55:13	1578.	637.	55:11	55:17	26.	2	5.0	ABB
441.7207	54:51	240472.	62209.	54:45	55:04	28.	1	1.0	AVV
443.7177	54:51	275332.	68949.	54:45	55:03	28.	1	1.0	AVV
441.7207	54:42	14354.	3737.	54:35	54:45	28.	2	5.0	ABV
441.7207	54:51	240472.	62209.	54:45	55:04	28.	2	5.0	AVV
441.7207	55:06	2398.	256.	55:04	55:20	28.	2	5.0	AVB
443.7177	54:42	16804.	4751.	54:36	54:45	28.	2	5.0	ABV
443.7177	54:51	275332.	68949.	54:45	55:03	28.	2	5.0	AVV
443.7177	55:05	1619.	287.	55:03	55:12	28.	2	5.0	AVV
443.7177	55:19	688.	163.	55:12	55:22	28.	2	5.0	AVB
453.7603	54:50	2082862.	538637.	54:38	55:05	46.	2	5.0	ABV
453.7603	55:12	3898.	673.	55:07	55:14	46.	2	5.0	AVV
453.7603	55:16	1365.	625.	55:14	55:19	46.	2	5.0	AVB
453.7603	55:21	1523.	603.	55:19	55:24	46.	2	5.0	ABB
455.7573	54:50	2330133.	601364.	54:36	55:04	40.	2	5.0	ABV
455.7573	55:06	6862.	2271.	55:04	55:09	40.	2	5.0	AVV
455.7573	55:12	5959.	890.	55:09	55:21	40.	2	5.0	AVB
455.7573	55:23	793.	311.	55:21	55:26	40.	2	5.0	ABB

TestAmerica Canton

Sample ID: BERM-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 005	Work Order #....:	M811Q1AC	Matrix....:	SOLID
Date Sampled....:	07/25/16	Date Received....:	07/29/16	Dilution Factor:	1
Prep Date....:	08/04/16	Analysis Date....:	08/17/16	Percent Moisture	6.8
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.2 g	Instrument ID....:	D11A	Method:	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	0.11	Q J	1.1	0.041	pg/g
1,2,3,7,8-PeCDD	0.57	Q B J	5.3	0.050	pg/g
1,2,3,4,7,8-HxCDD	0.37	Q J	5.3	0.046	pg/g
1,2,3,6,7,8-HxCDD	1.7	J	5.3	0.047	pg/g
1,2,3,7,8,9-HxCDD	1.5	C J	5.3	0.043	pg/g
1,2,3,4,6,7,8-HpCDD	21		5.3	0.075	pg/g
OCDD	330	B	11	0.10	pg/g
2,3,7,8-TCDF	0.29	Q J	1.1	0.064	pg/g
1,2,3,7,8-PeCDF	0.34	J	5.3	0.045	pg/g
2,3,4,7,8-PeCDF	0.70	J	5.3	0.040	pg/g
1,2,3,4,7,8-HxCDF	1.5	C B J	5.3	0.035	pg/g
1,2,3,6,7,8-HxCDF	0.69	J	5.3	0.035	pg/g
2,3,4,6,7,8-HxCDF	0.47	J	5.3	0.036	pg/g
1,2,3,7,8,9-HxCDF	ND		5.3	0.046	pg/g
1,2,3,4,6,7,8-HpCDF	4.7	B J	5.3	0.036	pg/g
1,2,3,4,7,8,9-HpCDF	0.59	B J	5.3	0.043	pg/g
OCDF	6.5	B J	11	0.031	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	60	40 - 135
13C-1,2,3,7,8-PeCDD	72	40 - 135
13C-1,2,3,4,7,8-HxCDD	65	40 - 135
13C-1,2,3,6,7,8-HxCDD	64	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	76	40 - 135
13C-OCDD	62	40 - 135
13C-2,3,7,8-TCDF	64	40 - 135
13C-1,2,3,7,8-PeCDF	67	40 - 135
13C-2,3,4,7,8-PeCDF	74	40 - 135
13C-1,2,3,4,7,8-HxCDF	64	40 - 135
13C-1,2,3,6,7,8-HxCDF	62	40 - 135
13C-2,3,4,6,7,8-HxCDF	68	40 - 135
13C-1,2,3,7,8,9-HxCDF	63	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	61	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	66	40 - 135
13C-OCDF	54	40 - 135

TestAmerica Canton

Sample ID: BERM-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 005	**Work Order #....:**	M811Q1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture**	6.8
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.2 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811Q1AC	Prep Batch	6217014	Lot No	H6G290408-005
Data File	/20160817s1/d1tm811q.d	Prep Date	08/04/16	SDG No	
Analysis ID	180439	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/17/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	17:38	Initial Wt/Vol	10.2 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD	32:52	1677	379	1.144		1.093405		0.107197	QJ	0.0381
Total TCDD		1959	700	1.144		2.370674		0.232419	JQ	0.0381
2,3,7,8-TCDF	30:40	6871	1684	1.066		2.757192		0.270313	QJ	0.0595
Total TCDF		68139	10508	1.066		30.099978		2.950978	QJ	0.0595
1,2,3,7,8-PeCDD	41:25	6754	1492	1.060		5.409506		0.530344	QBJ	0.0465
Total PeCDD		7824	2037	1.060		11.676011		1.144707	QJB	0.0465
1,2,3,7,8-PeCDF	39:45	7130	1442	1.179		3.255487		0.319165	J	0.0419
2,3,4,7,8-PeCDF	40:55	15223	3600	1.115		6.697009		0.656570	J	0.0372
Total PeCDF		34711	7177	1.147		25.486171		2.498644	QJ	0.0393
1,2,3,4,7,8-HxCDD	45:38	5361	1471	1.131		3.478593		0.341039	QJ	0.0430
1,2,3,6,7,8-HxCDD	45:46	24896	5813	1.116		16.606189		1.628058	J	0.0435
1,2,3,7,8,9-HxCDD	46:09	23097	4532	1.205		14.165583		1.388783	CJ	0.0403
Total HxCDD				1.151		34.250366		3.357879	JQ	0.0422
1,2,3,4,7,8-HxCDF	44:33	35618	6123	1.350		14.025131		1.375013	CBJ	0.0323
1,2,3,6,7,8-HxCDF	44:42	17546	4195	1.242		6.523735		0.639582	J	0.0323
2,3,4,6,7,8-HxCDF	45:28	11718	3170	1.241		4.504100		0.441578	J	0.0338
1,2,3,7,8,9-HxCDF				1.262				ND		0.0433
Total HxCDF		25579	6746	1.274		35.233525		3.454267	QJB	0.0349
1,2,3,4,6,7,8-HpCDD	50:42	277129	57041	1.114		195.932625		19.209081		0.0698
Total HpCDD		243122	47788	1.114		367.822003		36.060981		0.0698
1,2,3,4,6,7,8-HpCDF	48:58	92133	18951	1.461		44.814136		4.393543	BJ	0.0339
1,2,3,4,7,8,9-HpCDF	51:18	9513	1765	1.370		5.653022		0.554218	BJ	0.0399
Total HpCDF		114111	22482	1.416		111.643054		10.945397	QB	0.0367
OCDD	54:41	3256960	858531	1.203		3146.55789		308.486068	B	0.0939
OCDF	54:49	82335	21443	1.134		61.563593		6.035646	BJ	0.0291
13C-2,3,7,8-TCDD	32:47	1341239	129465	1.093	1000	601.057617	60.11	58.927217		0.173
13C-2,3,7,8-TCDF	30:40	2338642	247601	1.794	1000	638.120495	63.81	62.560833		0.0911
13C-1,2,3,7,8-PeCDD	41:24	1177991	283681	0.800	1000	720.968150	72.10	70.683152		0.105
13C-1,2,3,7,8-PeCDF	39:43	1857418	391896	1.356	1000	670.443271	67.04	65.729732		0.126
13C-2,3,4,7,8-PeCDF	40:54	2039450	467001	1.343	1000	743.509854	74.35	72.893123		0.127
13C-1,2,3,4,7,8-HxCDD	45:37	1362505	337604	0.916	1000	645.243788	64.52	63.259195		0.114
13C-1,2,3,6,7,8-HxCDD	45:45	1343427	338439	0.906	1000	642.932148	64.29	63.032564		0.115
13C-1,2,3,4,7,8-HxCDF	44:33	1880567	499734	1.268	1000	643.062864	64.31	63.045379		0.0595
13C-1,2,3,6,7,8-HxCDF	44:41	2166176	543716	1.506	1000	624.042227	62.40	61.180610		0.0501
13C-2,3,4,6,7,8-HxCDF	45:27	2096611	519955	1.344	1000	676.628728	67.66	66.336150		0.0562
13C-1,2,3,7,8,9-HxCDF	46:27	1746875	399525	1.202	1000	630.296106	63.03	61.793736		0.0628
13C-1,2,3,4,6,7,8-HpCDD	50:41	1269986	271031	0.728	1000	756.205007	75.62	74.137746		0.0430
13C-1,2,3,4,6,7,8-HpCDF	48:57	1407166	296746	1.008	1000	605.445438	60.54	59.357396		0.0385
13C-1,2,3,4,7,8,9-HpCDF	51:17	1228023	268917	0.811	1000	656.938568	65.69	64.405742		0.0479
13C-OCDD	54:40	1720853	434080	0.597	2000	1249.42614	62.47	122.492759		0.0894
13C-1,2,3,4-TCDD	32:16	4085030	401987	1.000	2000	2000.00000	100.00	196.078431		0.189
13C-1,2,3,7,8,9-HxCDD	46:09	4611245	1110319	1.000	2000	2000.00000	100.00	196.078431		0.105
13C-OCDF	54:48	2358008	594821	0.946	2000	1081.11244	54.06	105.991416		0.0229

KLM 8/23/16

LM 8-18-16

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811Q1AC	Prep Batch	6217014	Lot No	H6G290408-005
Data File	/20160817s1/d1tm811q.d	Prep Date	08/04/16	SDG No	
Analysis ID	180439	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/17/16 17:38	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.2 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	73	88	29	35	0.83	/	
	Unidentified	29:32	00:00	0	3812	7199	532	873	0.53 *	ABV/ABB	R
	Unidentified	30:00	00:00	0	700	1012	162	235	0.69	ABV/ABV	
	Unidentified	30:10	00:00	0	3413	6279	477	827	0.54 *	AVV/AVB	RT
	2,3,7,8-TCDF	30:40	30:42	-2	1465	5406	473	1211	0.27 *	ABV/ABV	R
	Unidentified	30:46	00:00	0	7636	6830	1385	1590	1.12 *	AVV/AVV	R
	Unidentified	30:50	00:00	0	4757	8703	951	1375	0.55 *	AVV/AVB	R
	Unidentified	32:01	00:00	0	7981	9817	1065	1036	0.81	ABB/ABB	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	188	148	75	59	1.27 *	/	
	13C-2,3,7,8-TCDF	30:40	30:39	1	1068473	1270169	114166	133435	0.84	ABV/ABB	
	Unidentified	30:59	00:00	0	5326	4229	826	1124	1.26 *	AVB/AVV	RT
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	25	33	10	13	0.77	/	
	Unidentified	32:13	00:00	0	332	513	117	129	0.65	ABB/ABV	
	Unidentified	32:19	00:00	0	459	231	157	111	1.99 *	ABV/AVV	R
	Unidentified	32:22	00:00	0	167	257	74	112	0.65	AVV/AVV	
	2,3,7,8-TCDD	32:52	32:53	-1	841	836	166	213	1.01 *	ABB/ABB	RD
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	245	143	98	57	1.72 *	/	
	13C-1,2,3,4-TCDD	32:16	32:17	-1	1825066	2259964	180284	221703	0.81	AVV/AVV	
	13C-2,3,7,8-TCDD	32:47	32:50	-3	589610	751629	52949	76516	0.78	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	95	103	38	41	0.93 *	/	
	Unidentified	39:19	00:00	0	1795	713	505	396	2.52 *	ABB/ABB	R
	1,2,3,7,8-PeCDF	39:45	39:43	2	4269	2861	838	604	1.49	ABB/AVB	M
	Unidentified	40:01	00:00	0	3649	3137	673	598	1.16 *	ABV/ABB	R
	Unidentified	40:14	00:00	0	6953	3756	1381	705	1.85 *	AVB/ABB	R
	2,3,4,7,8-PeCDF	40:55	40:52	3	9080	6143	2203	1397	1.48	ABB/ABV	M
	Unidentified	41:07	00:00	0	8269	6439	1729	1190	1.28 *	ABB/AVB	R
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	220	130	88	52	1.69	/	
	13C-1,2,3,7,8-PeCDF	39:43	39:41	2	1132173	725245	238797	153099	1.56	ABV/ABV	
	Unidentified	40:00	00:00	0	5158	5157	1643	733	1.00 *	AVV/AVV	R
	13C-2,3,4,7,8-PeCDF	40:54	40:51	3	1255765	783685	290701	176300	1.60	ABV/ABV	M
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	80	63	32	25	1.28 *	/	
	Unidentified	40:44	00:00	0	1418	582	406	258	2.44 *	ABB/ABB	R
	Unidentified	41:00	00:00	0	717	741	219	186	0.97 *	ABB/ABB	R
	1,2,3,7,8-PeCDD	41:25	41:22	3	3835	2919	992	500	1.31 *	ABB/ABB	RM
	Unidentified	41:38	00:00	0	1015	975	274	267	1.04 *	ABB/ABB	R
	Unidentified	42:02	00:00	0	1666	710	291	136	2.35 *	ABB/AVB	R

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811Q1AC	Prep Batch	6217014	Lot No	H6G290408-005
Data File	/20160817s1/d1tm811q.d	Prep Date	08/04/16	SDG No	
Analysis ID	180439	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/17/16 17:38	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.2 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	130	43	52	17	3.06 *	/	
	13C-1,2,3,7,8-PeCDD	41:24	41:21	3	704720	473271	172474	111207	1.49	ABV/ABV	DM
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	108	115	43	46	0.93 *	/	
	Unidentified	44:18	00:00	0	2182	1246	1060	753	1.75 *	ABB/ABB	R
	1,2,3,4,7,8-HxCDF	44:33	44:32	1	19512	16106	3451	2672	1.21	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:42	44:40	2	9393	8153	2206	1989	1.15	AVV/AVV	
	Unidentified	44:51	00:00	0	1205	1775	357	280	0.68 *	AVB/AVB	R
	Unidentified	45:05	00:00	0	2590	1787	392	377	1.45 *	ABV/ABV	R
	Unidentified	45:17	00:00	0	2465	2536	561	555	0.97 *	AVV/AVV	R
	Unidentified	45:22	00:00	0	2941	2678	861	637	1.10	AVV/AVV	
	2,3,4,6,7,8-HxCDF	45:28	45:26	2	6689	5029	1641	1529	1.33	AVB/AVV	
	Unidentified	46:36	00:00	0	2058	2116	448	465	0.97 *	ABB/AVB	R
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	210	218	84	87	0.97 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:33	44:31	2	661243	1219324	174391	325343	0.54	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:41	44:39	2	759685	1406491	191723	351993	0.54	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:27	45:25	2	738691	1357920	186870	333085	0.54	ABV/ABV	
	13C-1,2,3,7,8,9-HxCDF	46:27	46:26	1	623213	1123662	142058	257467	0.55	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	93	75	37	30	1.23	/	
	1,2,3,4,7,8-HxCDD	45:38	45:38	0	2541	2820	765	706	0.90 *		RM
	1,2,3,6,7,8-HxCDD	45:46	45:45	1	13963	10933	3044	2769	1.28	AVB/AVB	
	1,2,3,7,8,9-HxCDD	46:09	46:09	0	12320	10777	2519	2013	1.14	ABB/ABV	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	358	235	143	94	1.52 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:37	45:37	0	767149	595356	192351	145253	1.29	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:45	45:44	1	745578	597849	188647	149792	1.25	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:09	46:08	1	2554864	2056381	615905	494414	1.24	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	93	58	37	23	1.61 *	/	
	1,2,3,4,6,7,8-HpCDF	48:58	48:58	0	49159	42974	10383	8568	1.14	ABB/ABV	
	Unidentified	49:23	00:00	0	4419	3205	693	593	1.38 *	ABV/ABB	R
	Unidentified	49:39	00:00	0	51829	50274	10326	10098	1.03	AVV/ABV	
	Unidentified	49:49	00:00	0	2019	2365	359	413	0.85 *	AVB/AVB	R
	1,2,3,4,7,8,9-HpCDF	51:18	51:19	-1	4593	4920	933	832	0.93	ABB/ABB	
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	88	133	35	53	0.66 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:57	48:57	0	440363	966803	92617	204129	0.46	ABV/ABV	
	Unidentified	49:12	00:00	0	1389	3196	483	901	0.43	AVV/AVB	
	Unidentified	49:37	00:00	0	4892	5282	1272	1095	0.93 *	ABB/AVV	RT
	13C-1,2,3,4,7,8,9-HpCDF	51:17	51:18	-1	390181	837842	85101	183816	0.47	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811Q1AC	Prep Batch	6217014	Lot No	H6G290408-005
Data File	/20160817s1/d1tm811q.d	Prep Date	08/04/16	SDG No	
Analysis ID	180439	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/17/16 17:38	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.2 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	88	128	35	51	0.69 *	/	
	Unidentified	49:30	00:00	0	124589	118533	23689	24099	1.05	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:42	50:41	1	145008	132121	30531	26510	1.10	ABV/ABV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	95	83	38	33	1.15	/	
	Unidentified	49:29	00:00	0	16225	12035	3164	2443	1.35 *	ABB/ABV	R
	13C-1,2,3,4,6,7,8-HpCDD	50:41	50:40	1	656243	613743	139480	131551	1.07	ABV/ABV	
	Unidentified	51:04	00:00	0	2550	1674	766	415	1.52 *	ABV/AVB	RT
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	53	48	21	19	1.11 *	/	
	OCDF	54:49	54:51	-2	38708	43627	10166	11277	0.89	ABV/AVB	
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	53	70	21	28	0.75 *	/	
	13C-OCDF	54:48	54:50	-2	1125603	1232405	285182	309639	0.91	ABV/ABB	
	Unidentified	55:10	00:00	0	1504	4751	711	1044	0.32 *	AVB/ABV	R
	Unidentified	55:14	00:00	0	1338	897	469	406	1.49 *	ABB/AVB	RT
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	105	145	42	58	0.72 *	/	
	OCDD	54:41	54:43	-2	1544513	1712447	406847	451684	0.90	ABV/ABV	
	Unidentified	55:13	00:00	0	749	4911	314	608	0.15 *	ABB/AVB	RT
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	120	183	48	73	0.66 *	/	
	13C-OCDD	54:40	54:42	-2	816750	904103	207515	226565	0.90	ABV/ABB	
	Unidentified	54:52	00:00	0	7862	5179	1653	1653	1.52 *	AVV/AVV	RT
	Unidentified	55:06	00:00	0	2112	4112	703	778	0.51 *	AVV/AVB	RT

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. LMS-1716
Calc.?
QC/Rev K 8/23/16

```
CHRO:  d1tm811q                                17-Aug-16  Elapse:  54:53      2495
Samp:  WO=m811q1ac Meth=9Ao Dil=1                         Start :  17:38:31   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.2g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   233 > 2629           Masses:  303 > 514
Area:  5, 0.50, 0      Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
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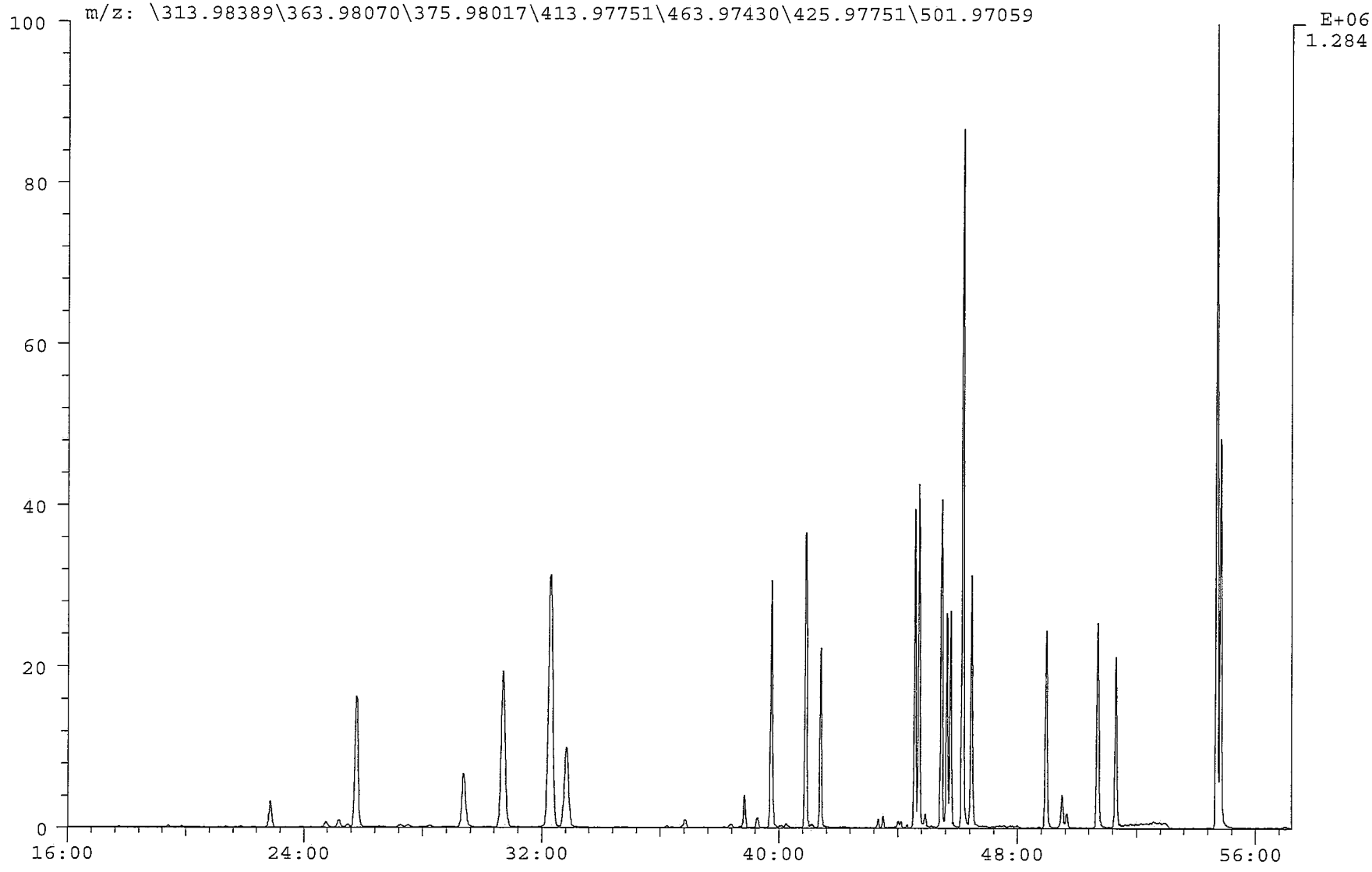

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CHRO:  d1tm811q                                  17-Aug-16  Elapse:  32:46      1218
Samp:  WO=m811q1ac Meth=9Ao Dil=1                           Start :  17:38:31   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  6217014 (10.2g)
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1133 > 1304            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```
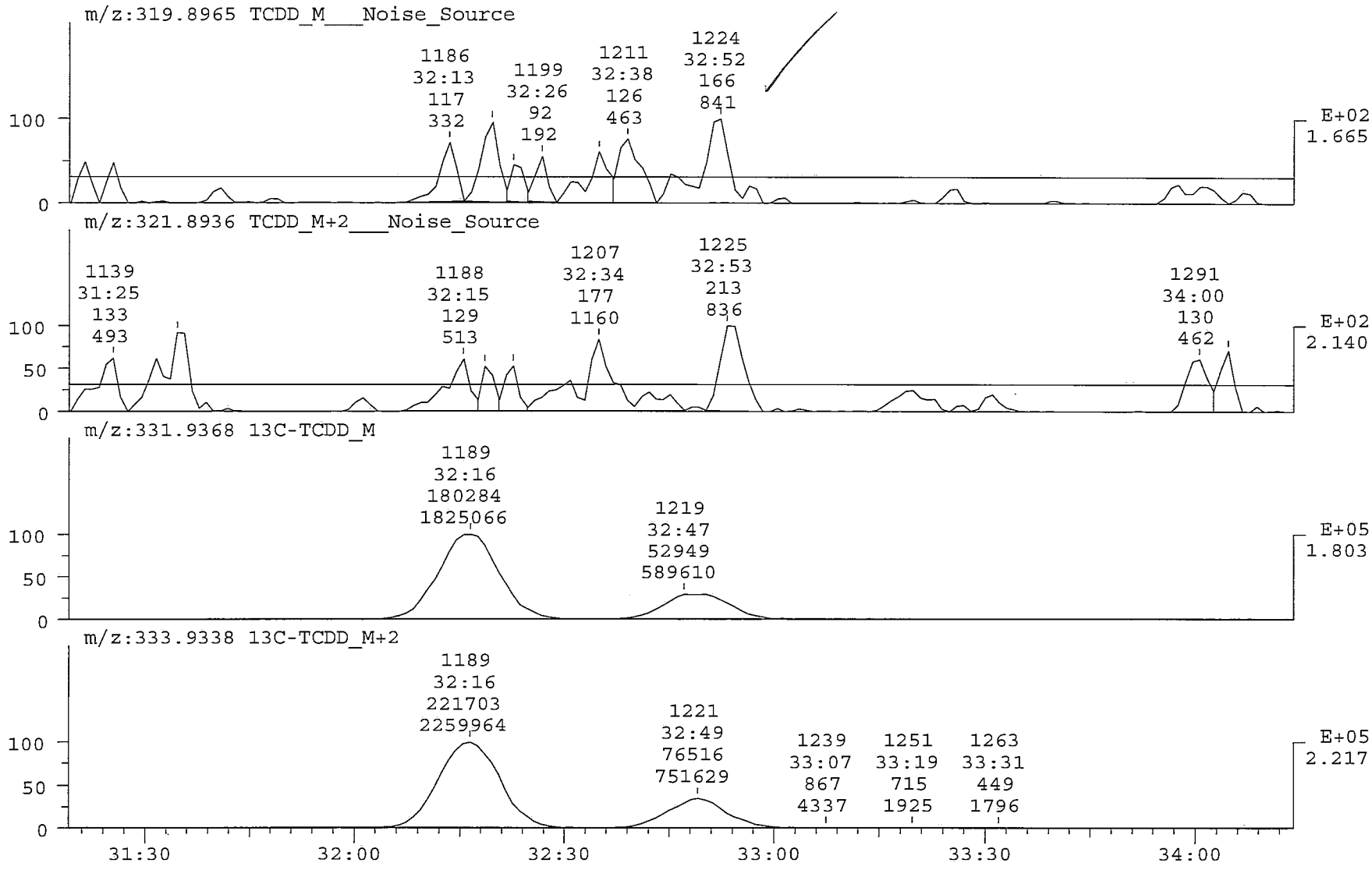
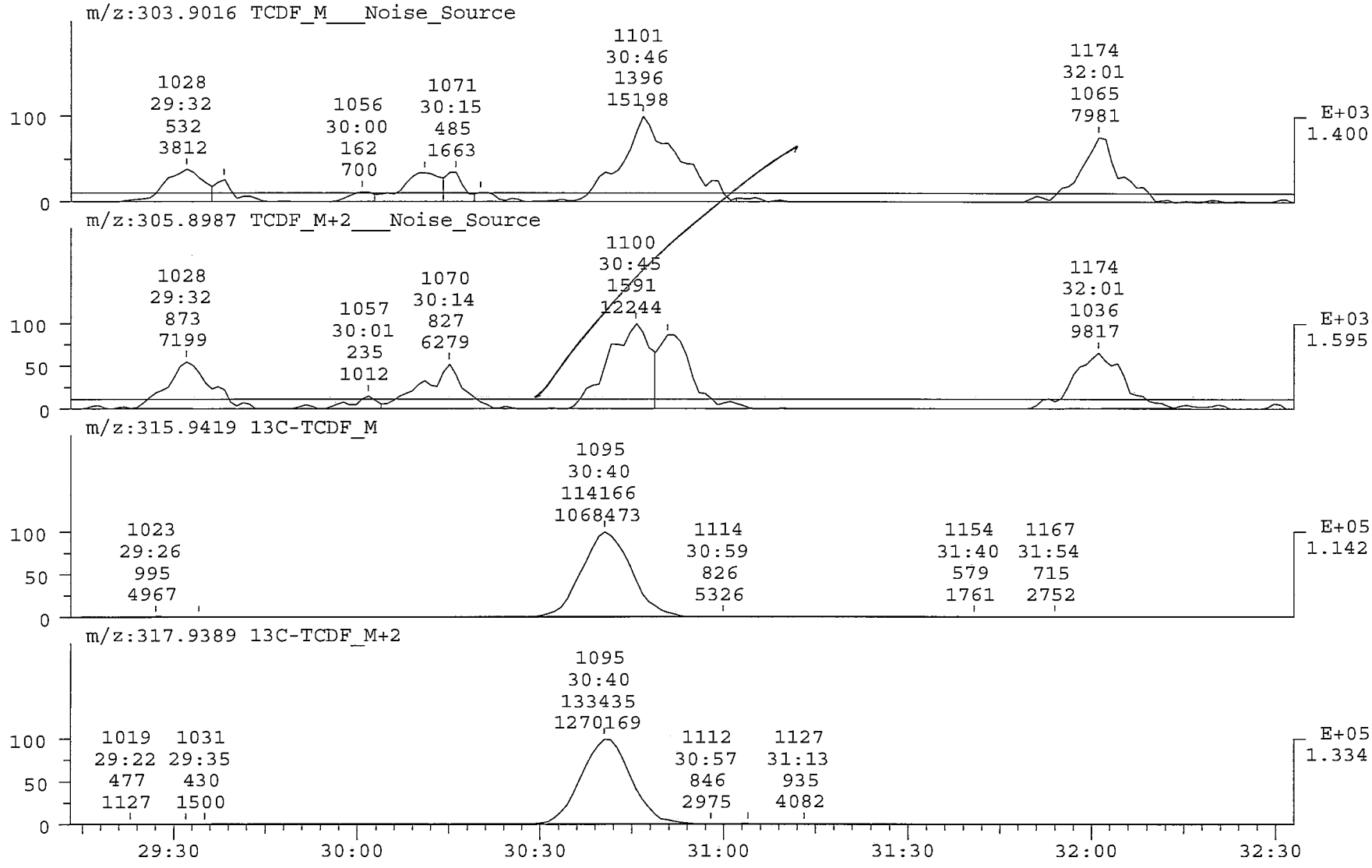
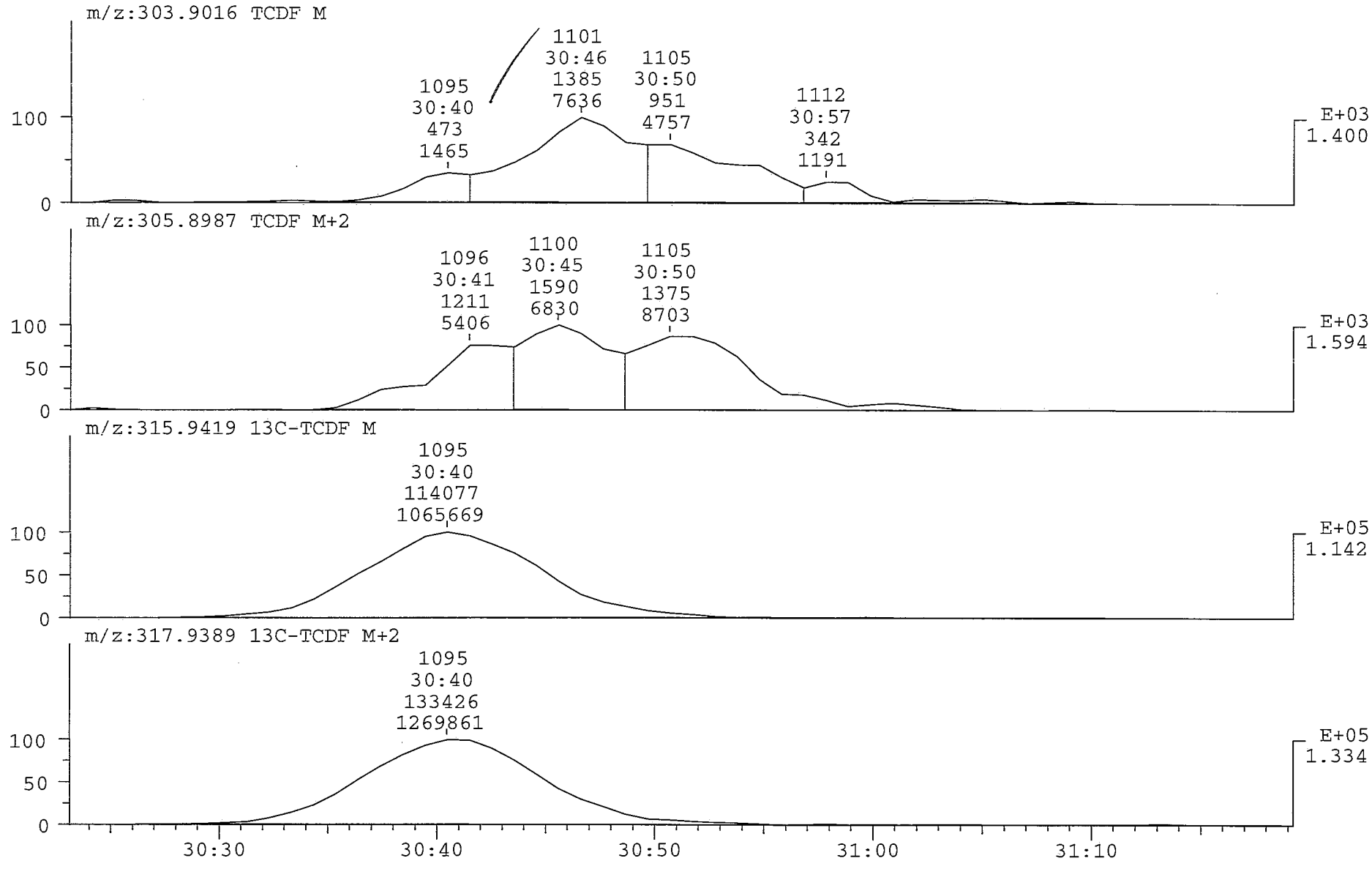



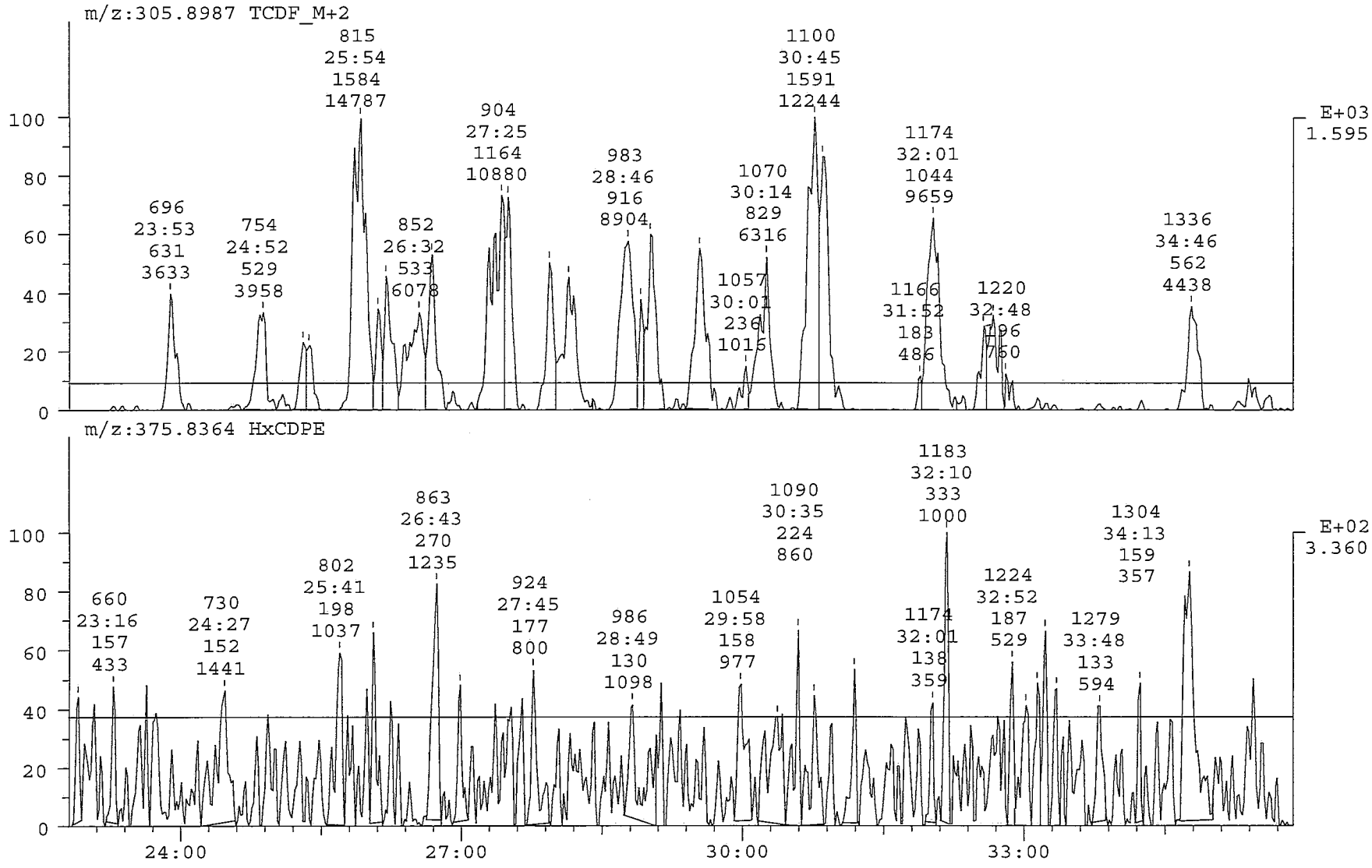
```
CHRO:  d1tm811q                                  17-Aug-16  Elapse:  30:49      1104
Samp:  WO=m811q1ac Meth=9Ao Dil=1                           Start :  17:38:31   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  6217014 (10.2g)
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1009 > 1205            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



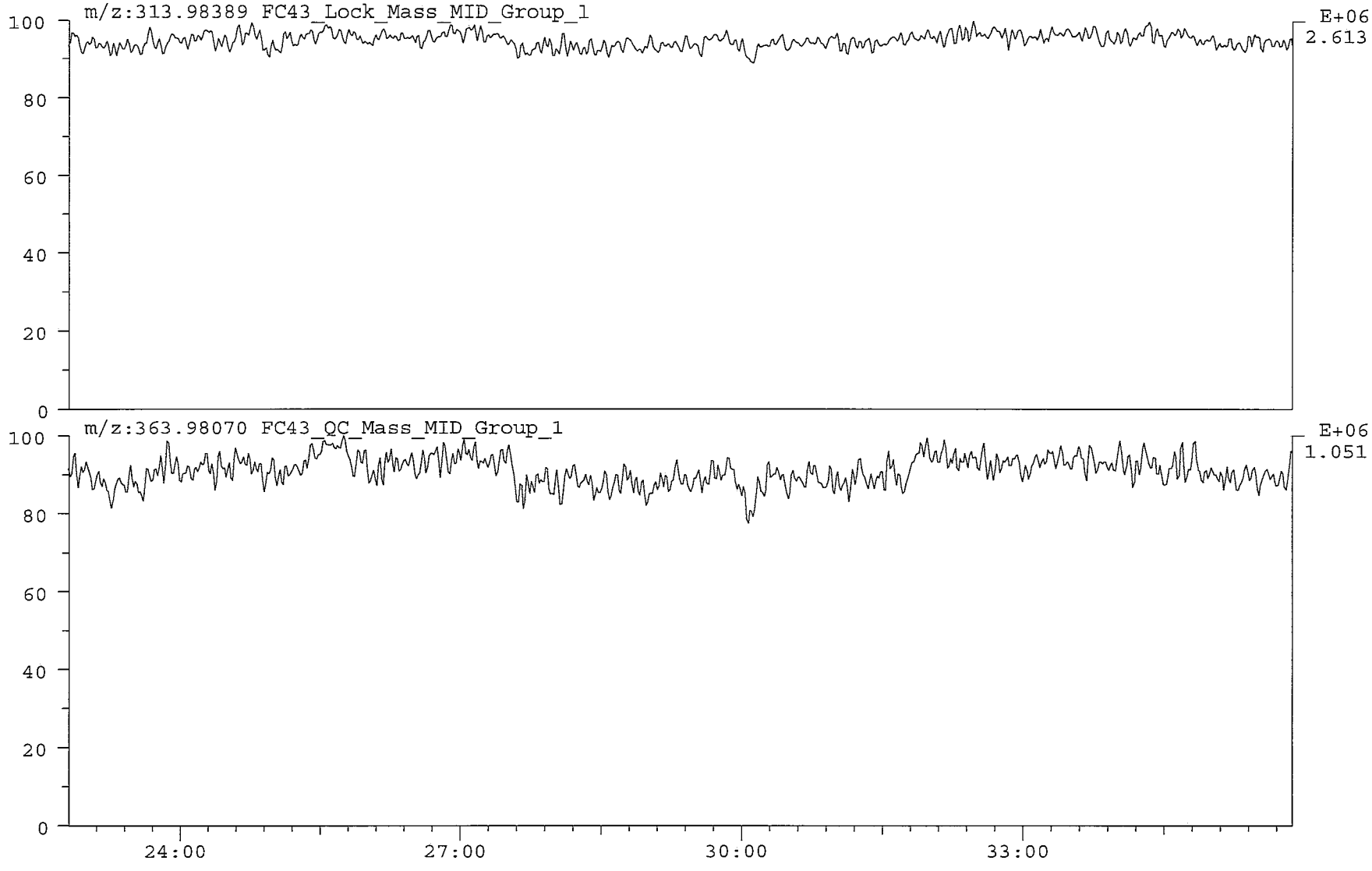
CHRO: d1tm811q 17-Aug-16 Elapse: 54:52 2494
Samp: WO=m811q1ac Meth=9Ao Dil=1 Start : 17:38:31 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1078 > 1133 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : 2, 5.0
Disp: Height Area



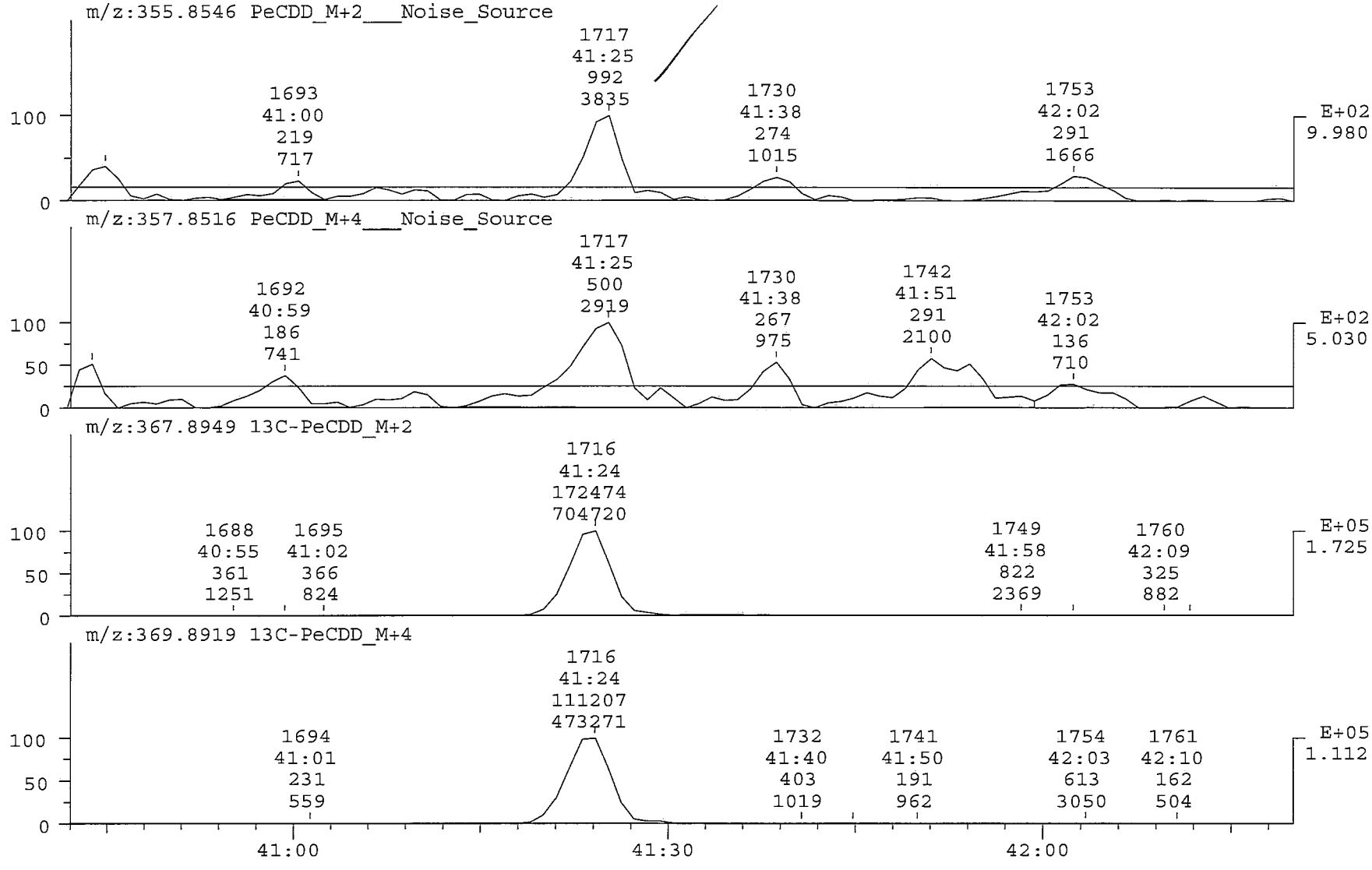
CHRO: d1tm811q 17-Aug-16 Elapse: 30:49 1104
Samp: WO=m811q1ac Meth=9Ao Dil=1 Start : 17:38:31 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 632 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



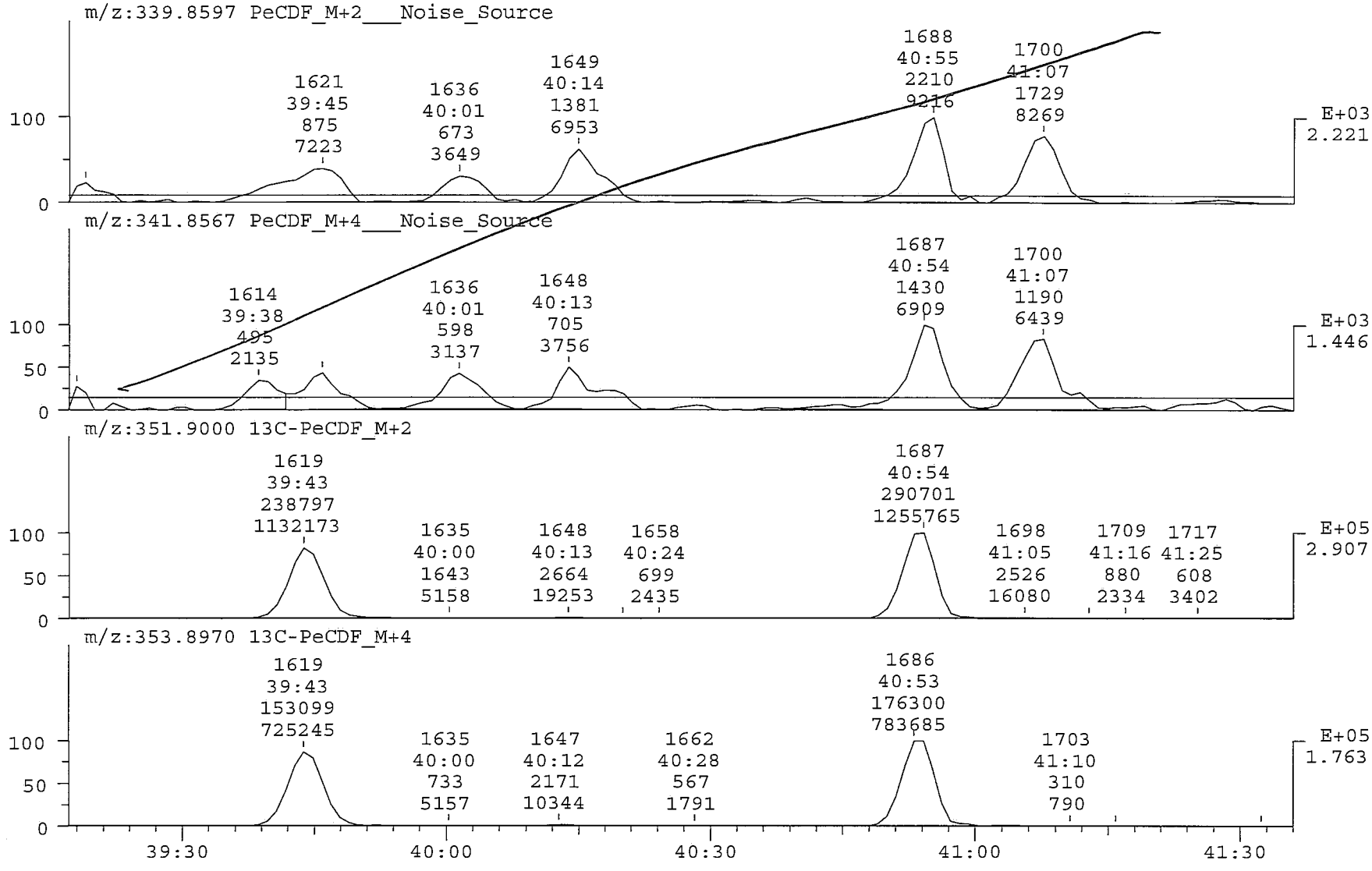
```
CHRO:  d1tm811q                              17-Aug-16  Elapse:  30:49      1104
Samp:  WO=m811q1ac Meth=9Ao Dil=1                       Start :  17:38:31   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                              Study :  6217014 (10.2g)
Oper:  KLR                                              Inlet :  LC
Peak:  100.00  ppm     Label wndw:   632 > 1400         Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3             Label :  0, 0.0
Disp:  Height  Area
```



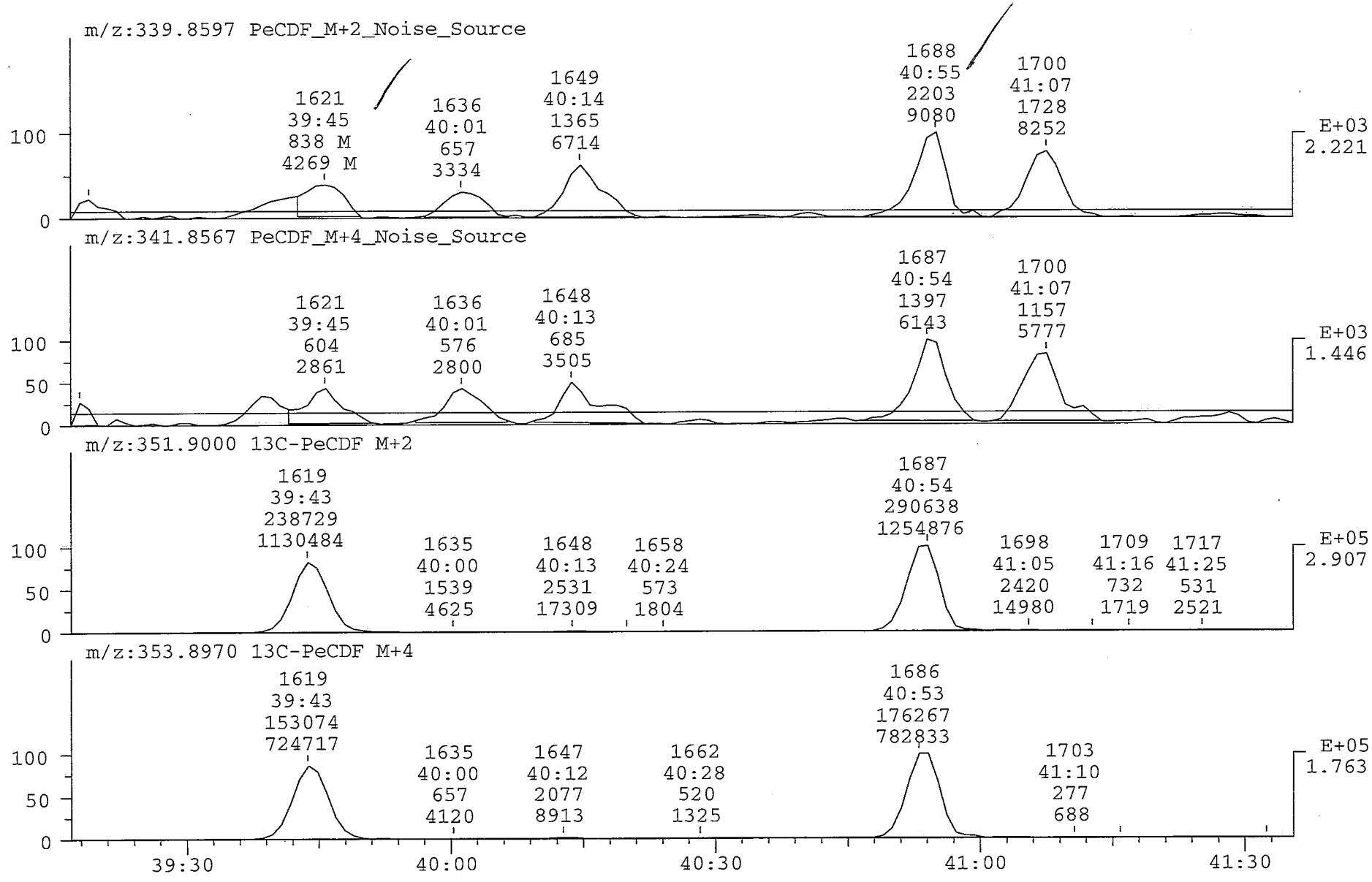
```
CHRO:  d1tm811q                                17-Aug-16  Elapse:  41:28      1720
Samp:  WO=m811q1ac Meth=9Ao Dil=1                         Start :  17:38:31   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.2g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1675 > 1770          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



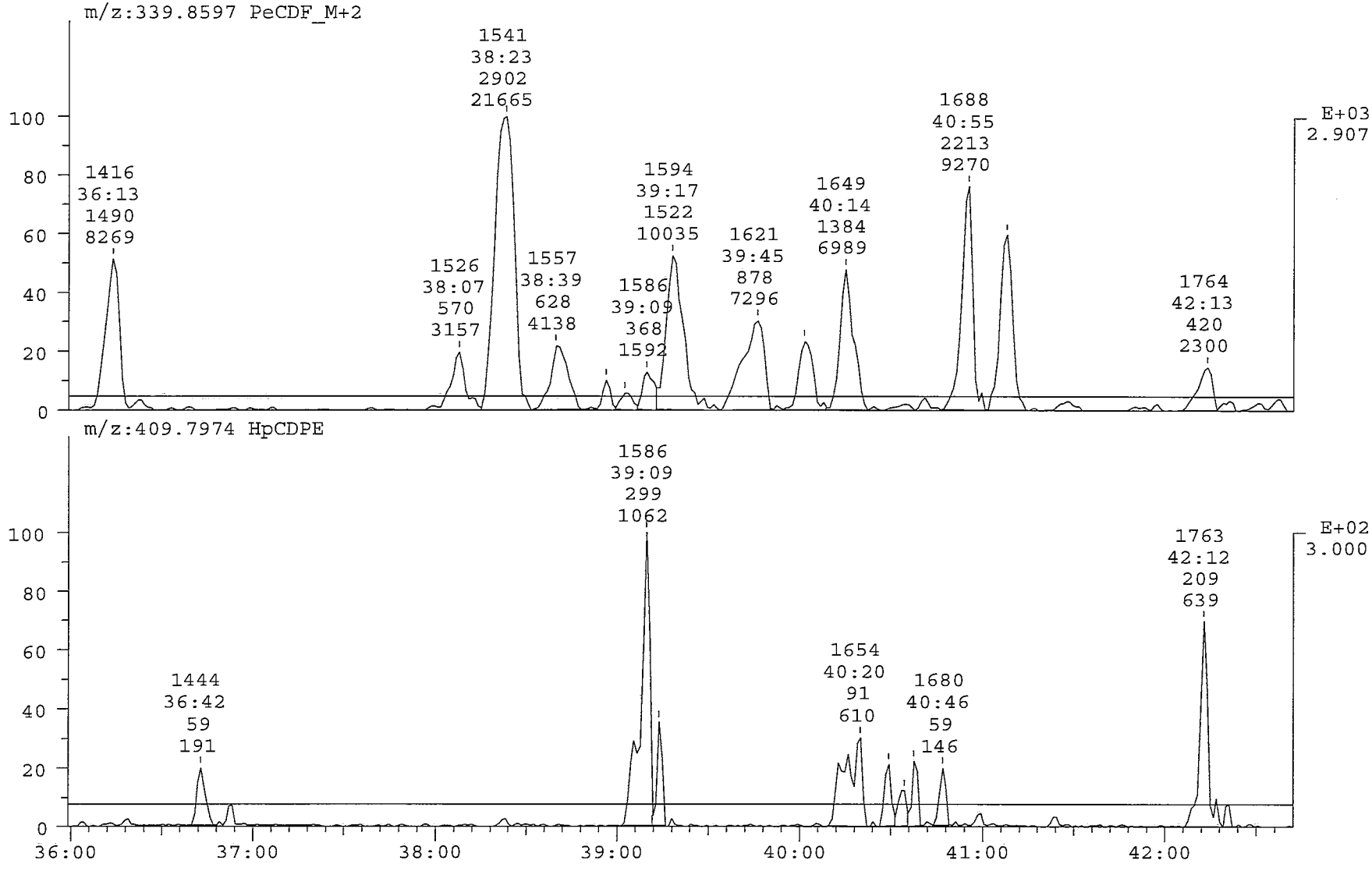
CHRO: d1tm811q 17-Aug-16 Elapse: 40:26 1660
Samp: WO=m811q1ac Meth=9Ao Dil=1 Start : 17:38:31 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1593 > 1727 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



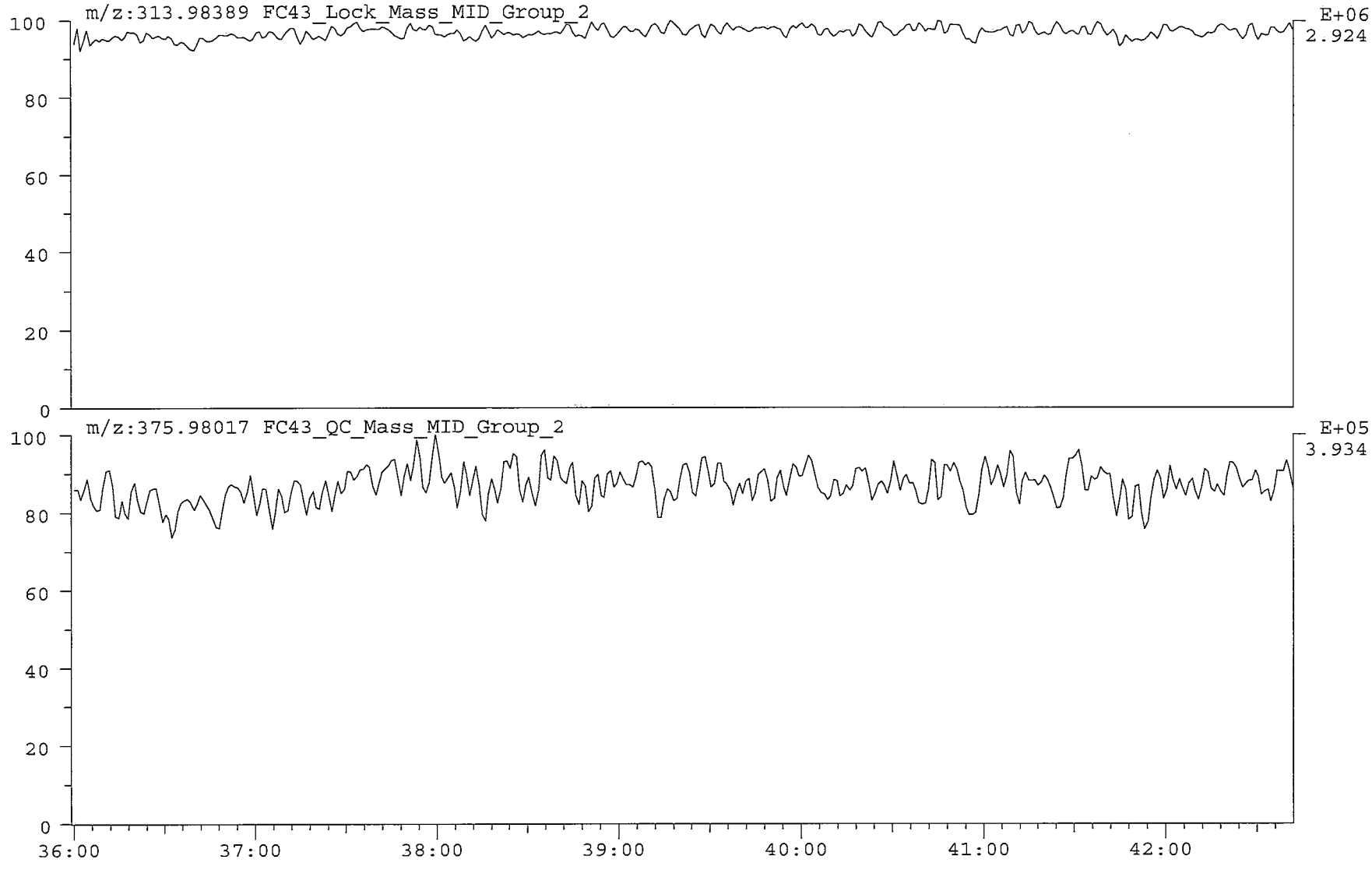
CHRO: d1tm811q 17-Aug-16 Elapse: 12:03.6 1
Samp: WO=m811q1ac Meth=9Ao Dil=1 Start : 17:38:31 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 1000.00 mmu Label wndw: 1593 > 1727 Masses: 303 > 514
Area: 5, 2.00, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



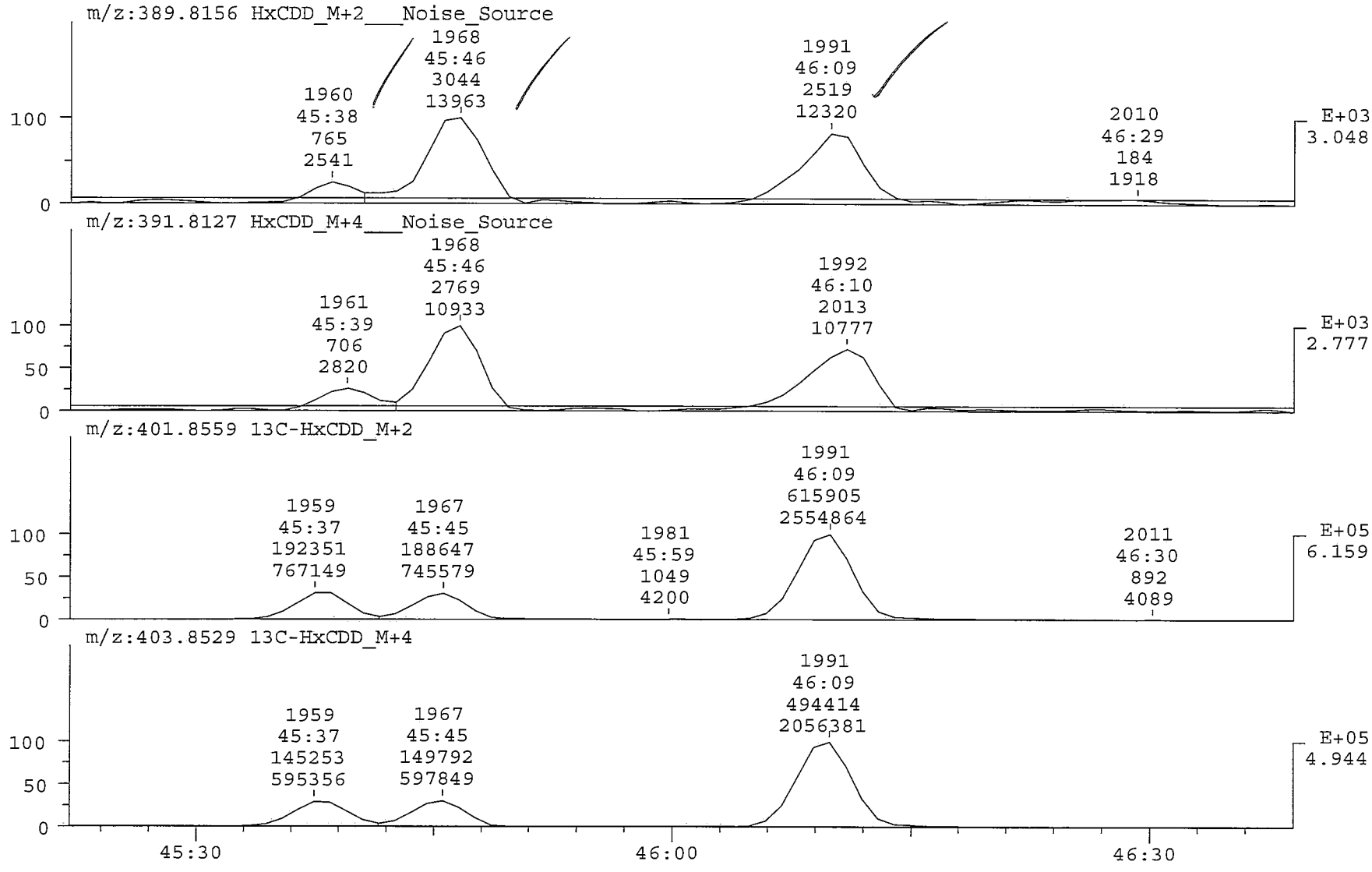
```
CHRO:  d1tm811q                                17-Aug-16  Elapse:  40:26      1660
Samp:  WO=m811q1ac Meth=9Ao Dil=1                         Start :  17:38:31   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.2g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



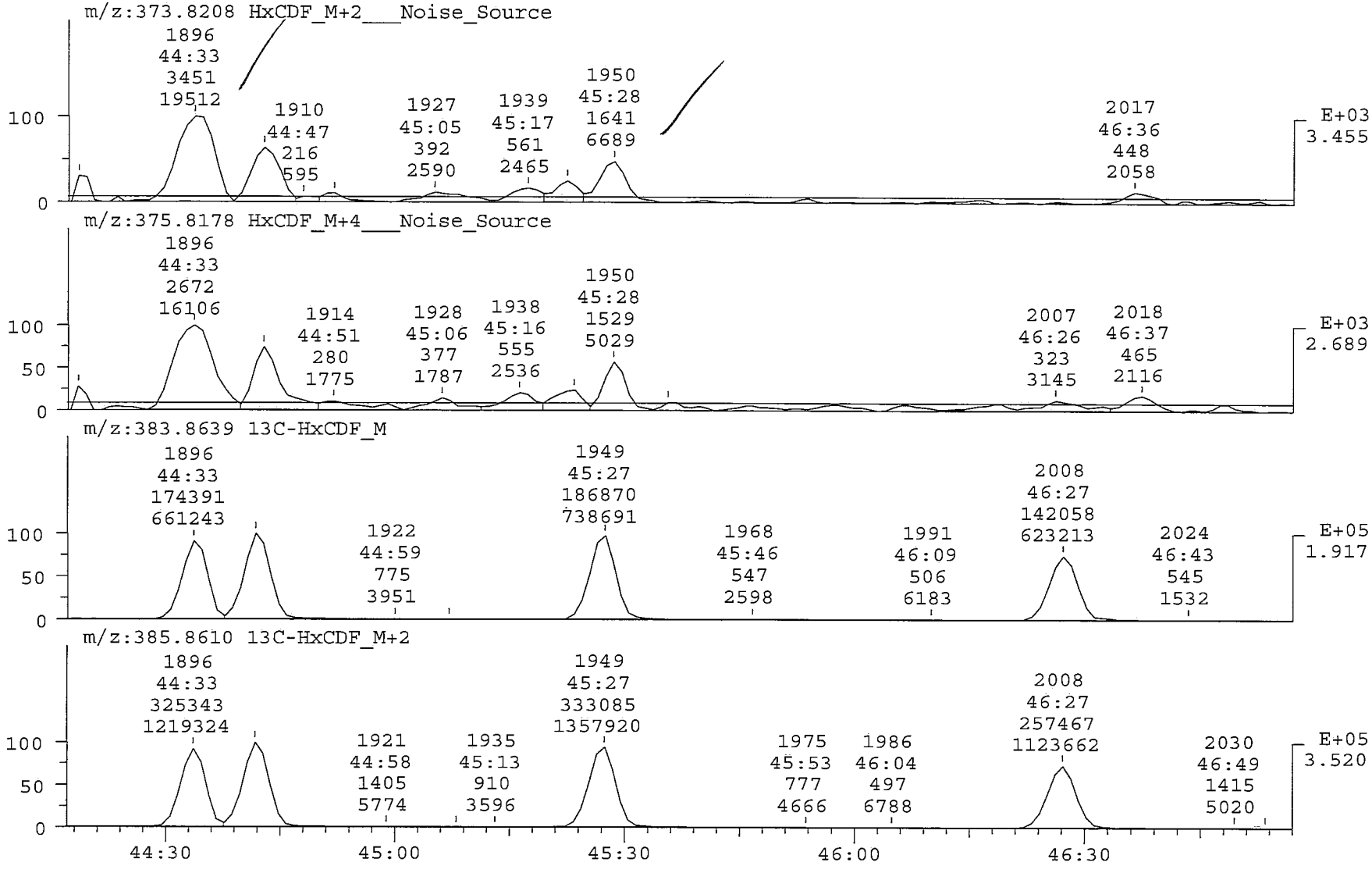
```
CHRO:  d1tm811q                                17-Aug-16  Elapse:  40:26      1660
Samp:  WO=m811q1ac Meth=9Ao Dil=1                         Start :  17:38:31   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.2g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



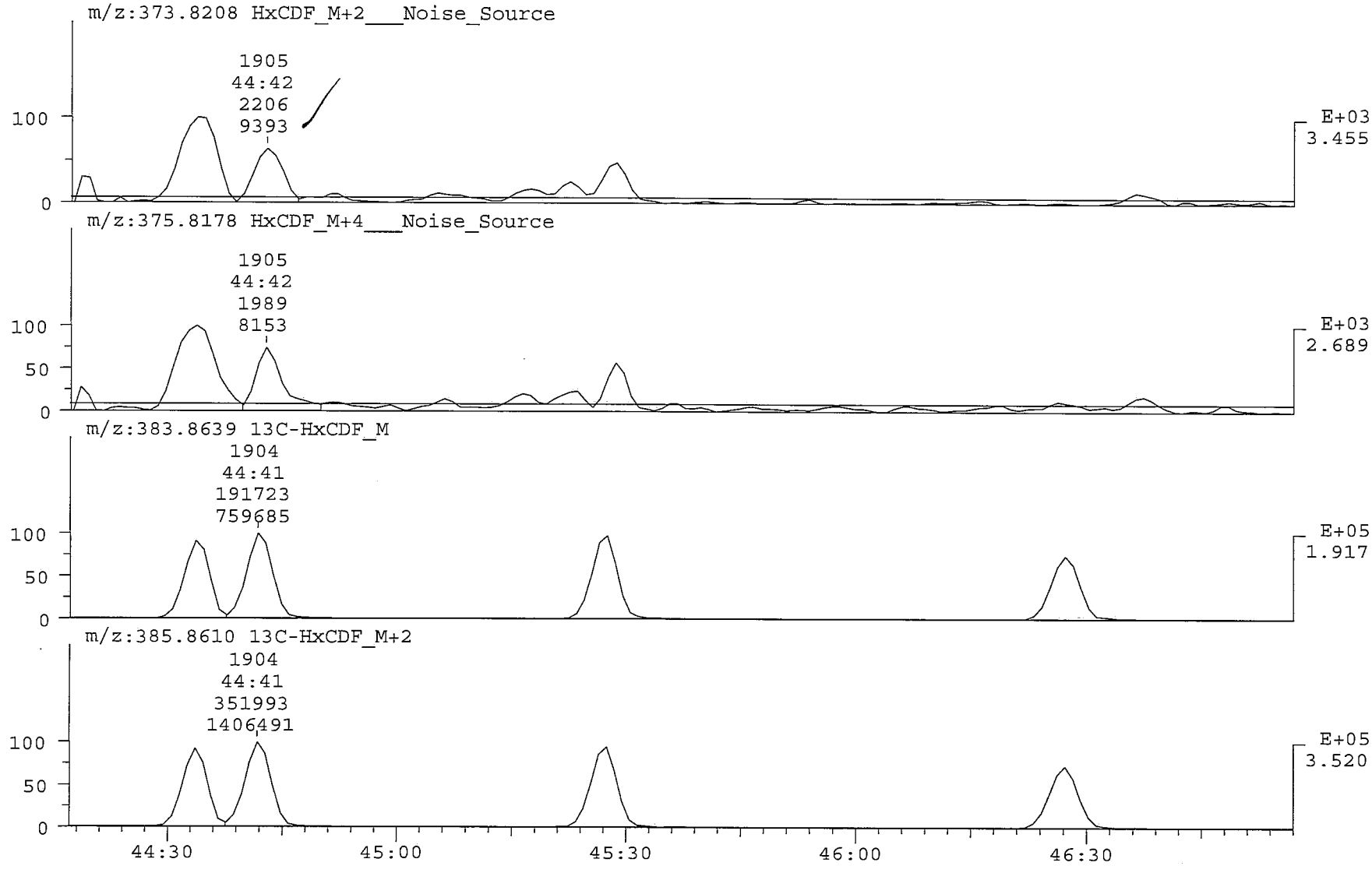
CHRO: d1tm811q 17-Aug-16 Elapse: 45:59 1981
Samp: WO=m811q1ac Meth=9Ao Dil=1 Start : 17:38:31 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1944 > 2020 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



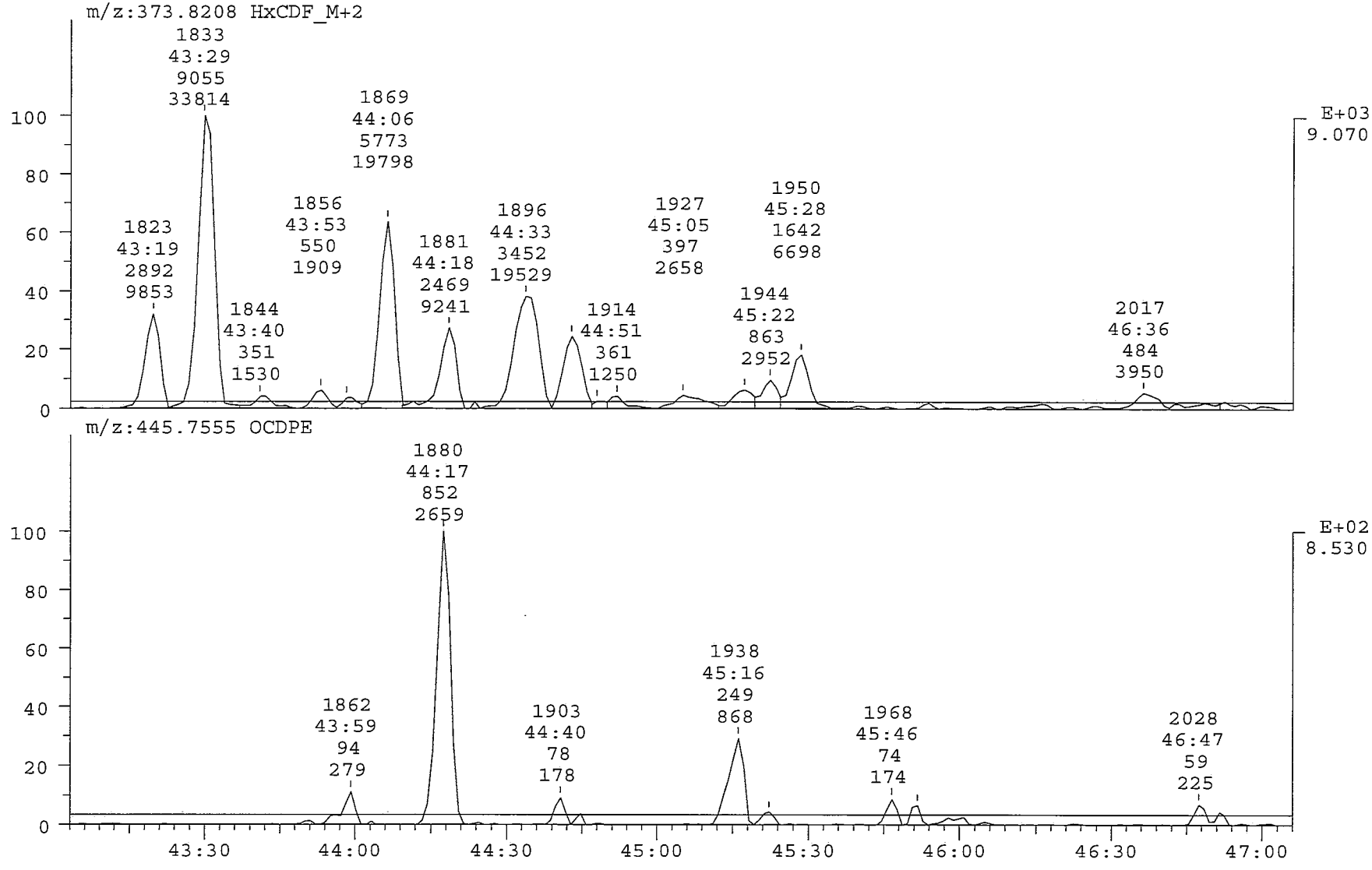
CHRO: d1tm811q 17-Aug-16 Elapse: 45:37 1959
Samp: WO=m811q1ac Meth=9Ao Dil=1 Start : 17:38:31 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1880 > 2037 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



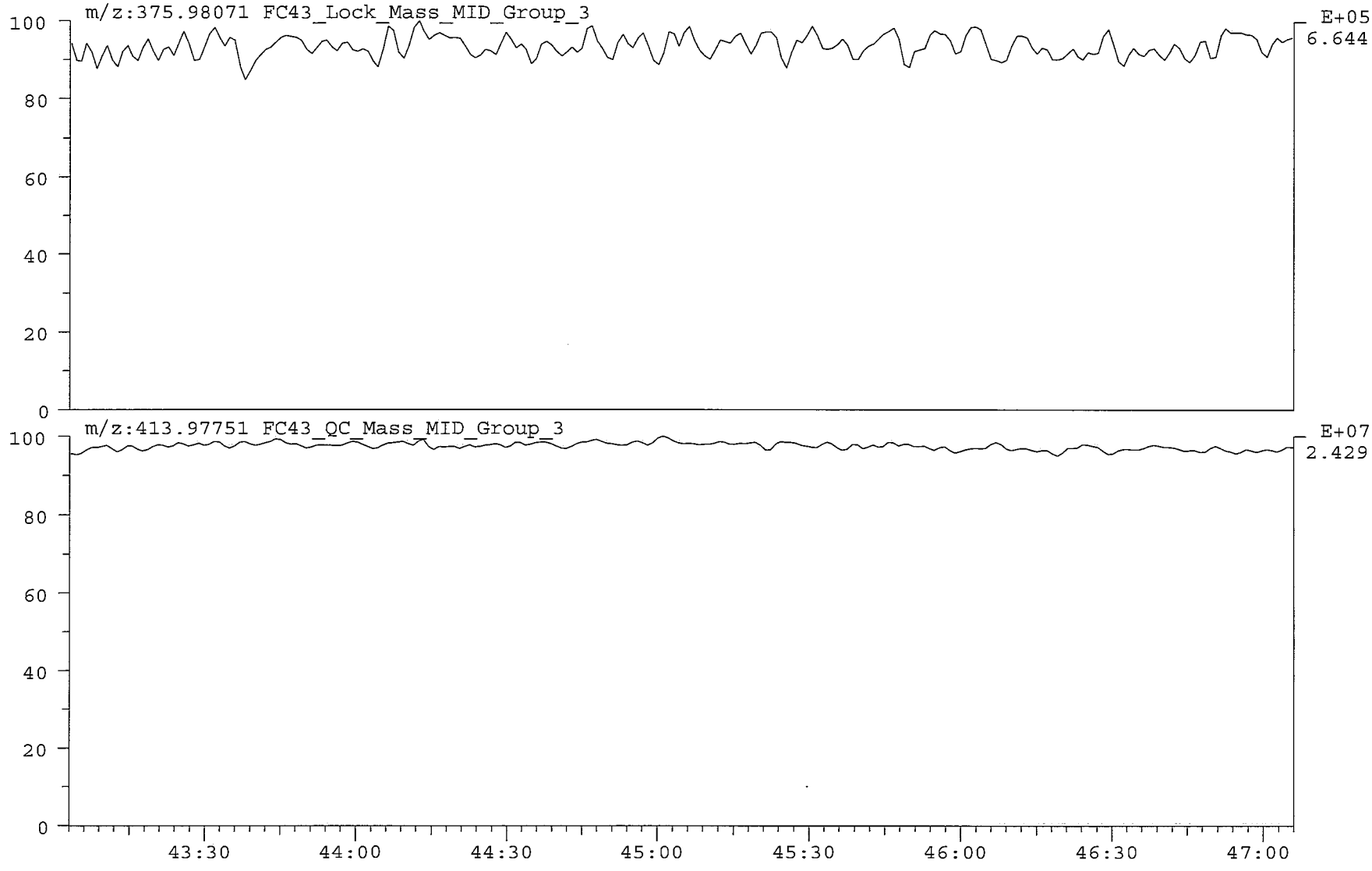
```
CHRO:  d1tm811q                                17-Aug-16  Elapse:  44:44      1907
Samp:  WO=m811q1ac Meth=9Ao Dil=1                         Start :  17:38:31   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.2g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1903 > 1911          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



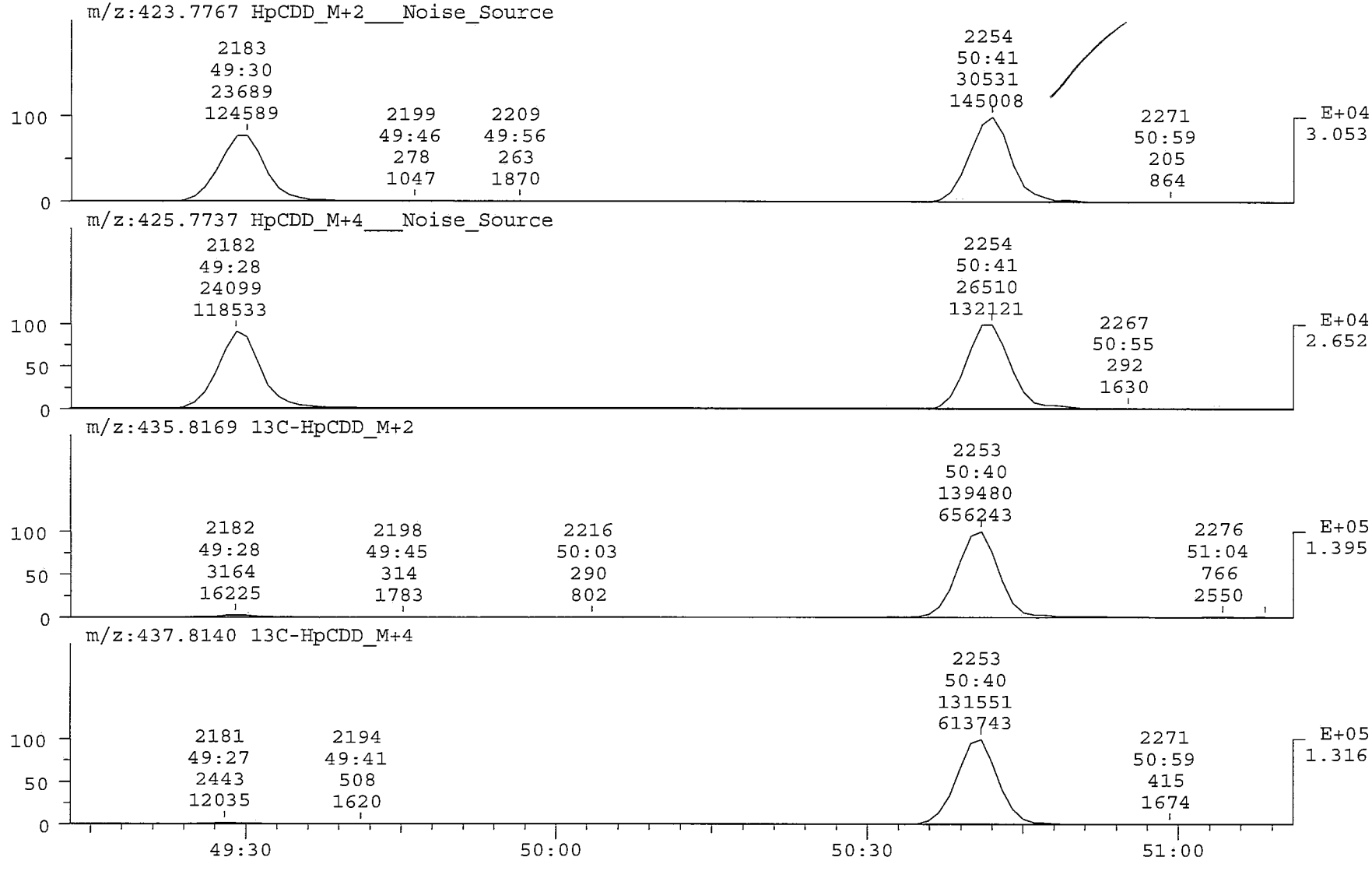
```
CHRO:  d1tm811q                                  17-Aug-16  Elapse:  44:44      1907
Samp:  WO=m811q1ac Meth=9Ao Dil=1                           Start :  17:38:31   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  6217014 (10.2g)
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1807 > 2046            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



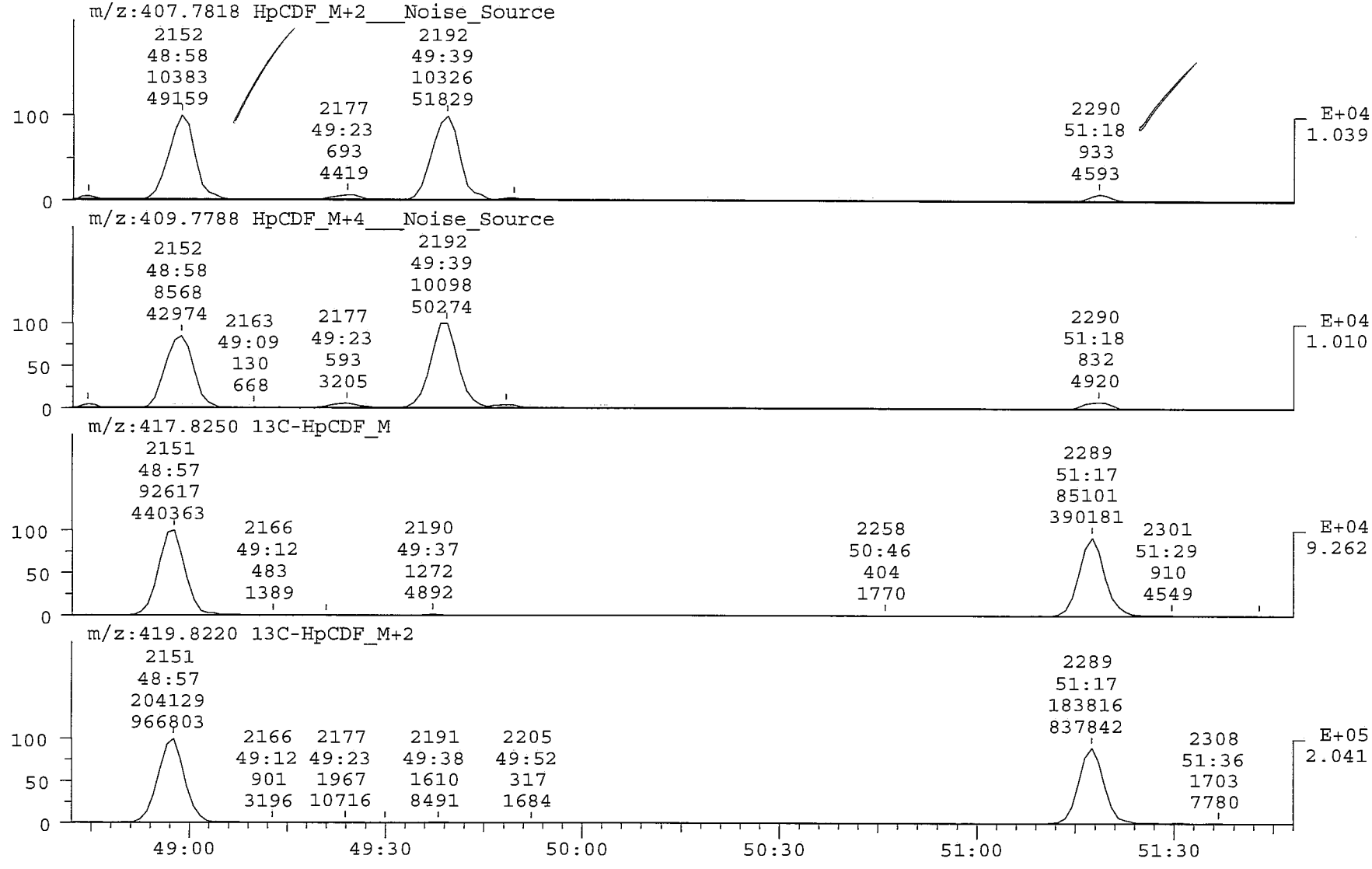
```
CHRO:  d1tm811q                                17-Aug-16  Elapse:  44:44      1907
Samp:  WO=m811q1ac Meth=9Ao Dil=1                         Start :  17:38:31   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.2g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1807 > 2046          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



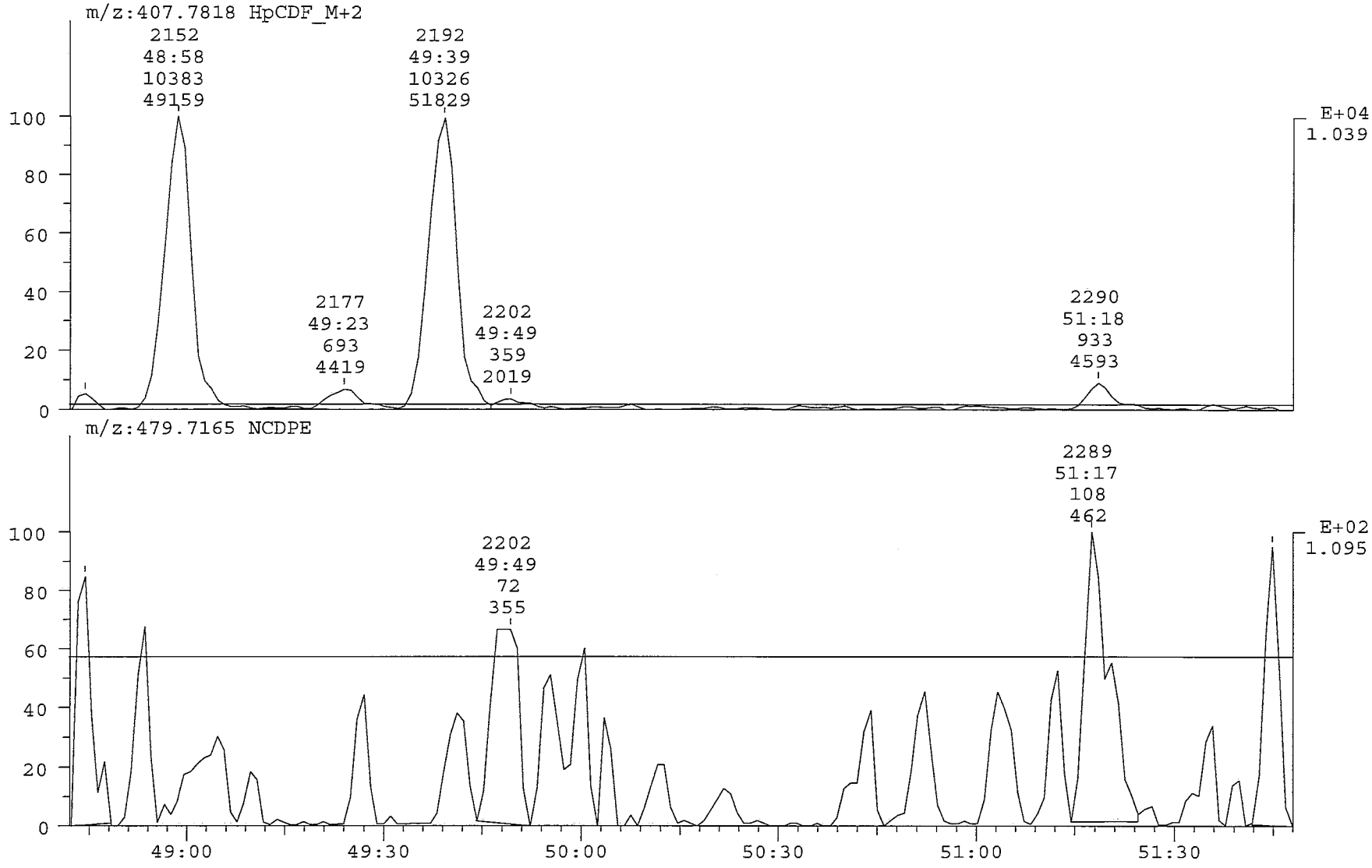
CHRO: d1tm811q 17-Aug-16 Elapse: 44:44 1907
Samp: WO=m811q1ac Meth=9Ao Dil=1 Start : 17:38:31 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2166 > 2283 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



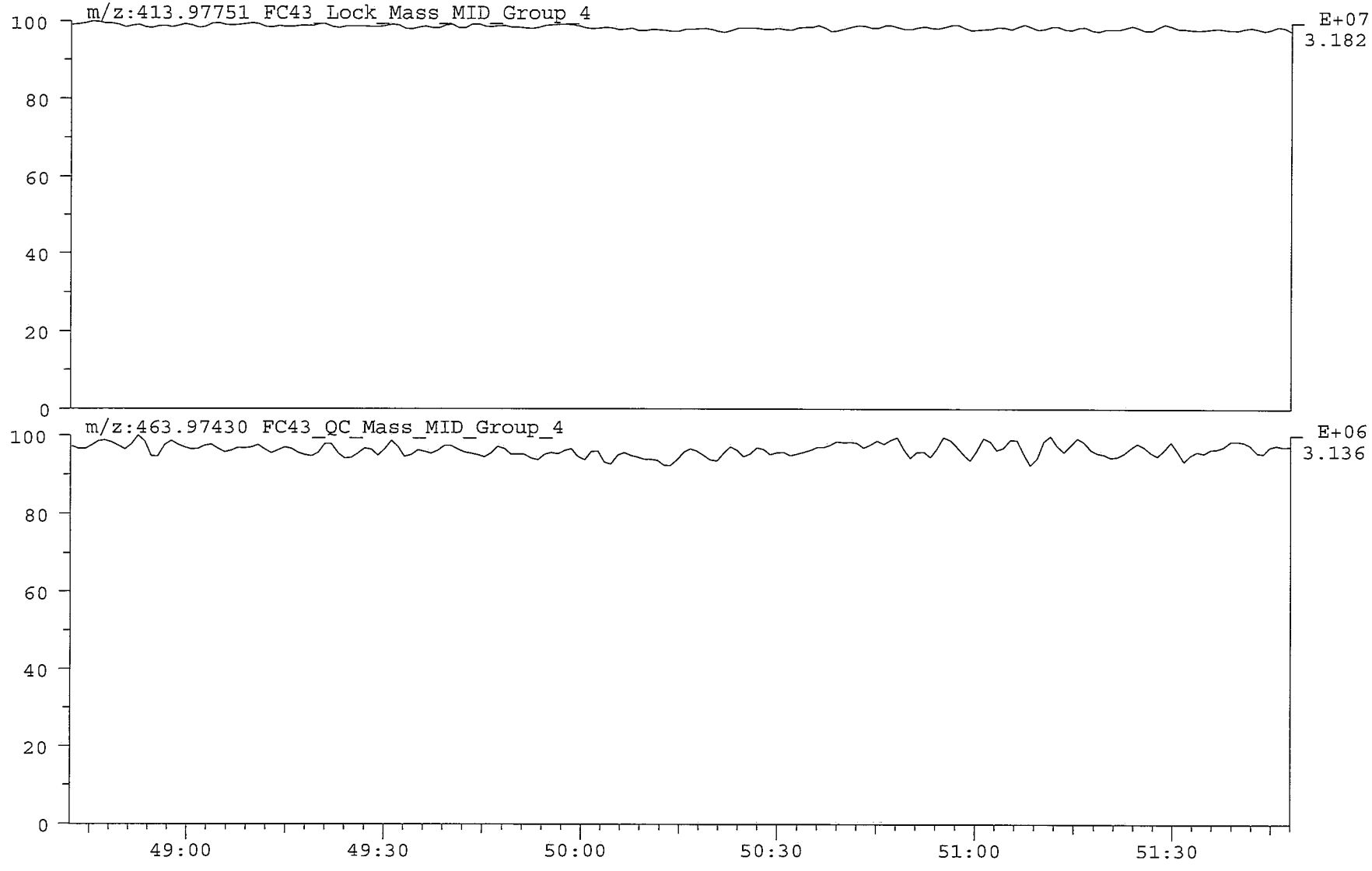
CHRO: d1tm811q 17-Aug-16 Elapse: 50:14 2227
Samp: WO=m811q1ac Meth=9Ao Dil=1 Start : 17:38:31 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2136 > 2319 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



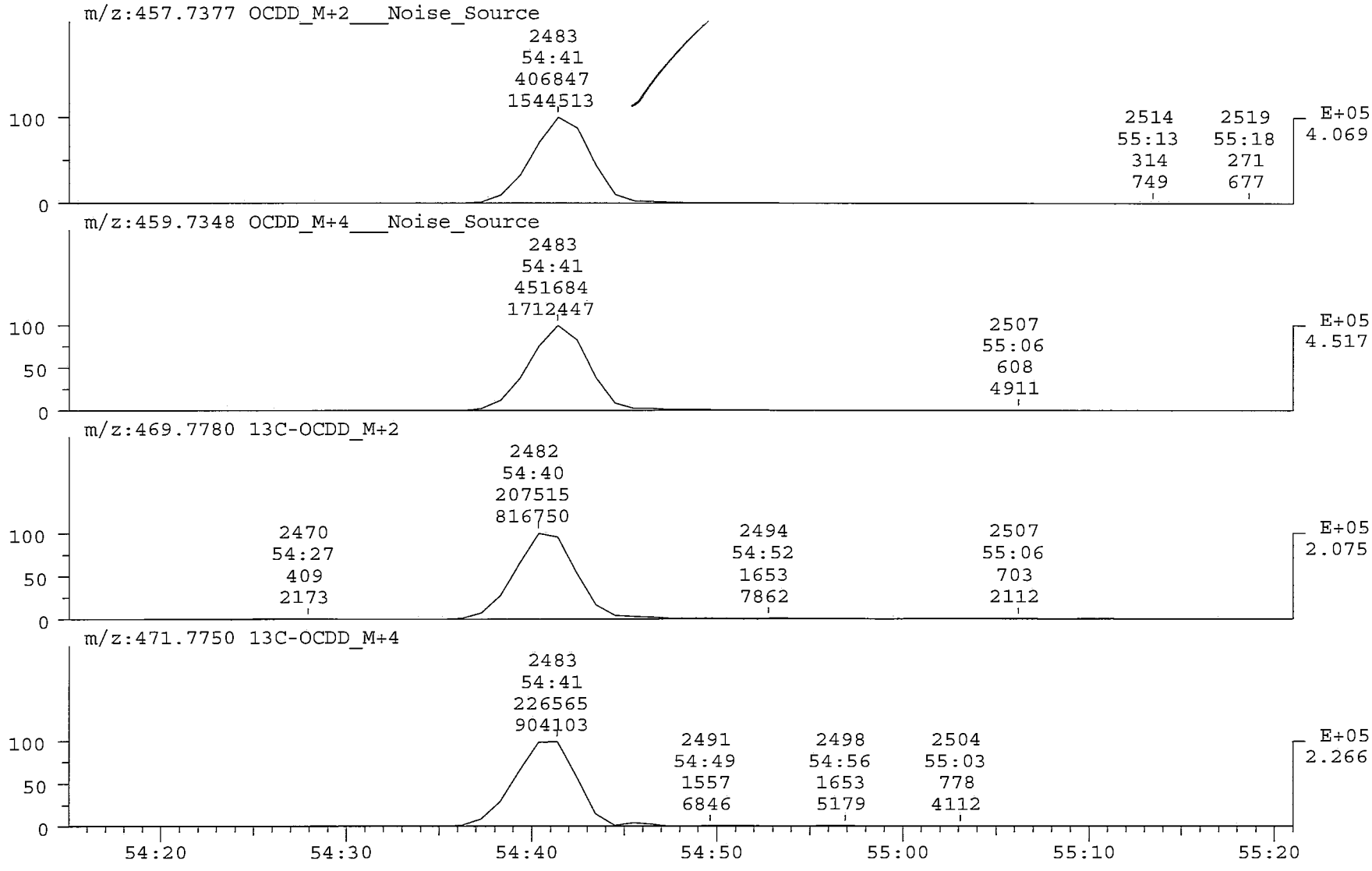
```
CHRO:  d1tm811q                                17-Aug-16  Elapse:  50:14      2227
Samp:  WO=m811q1ac Meth=9Ao Dil=1                         Start :  17:38:31   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.2g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2136 > 2319          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



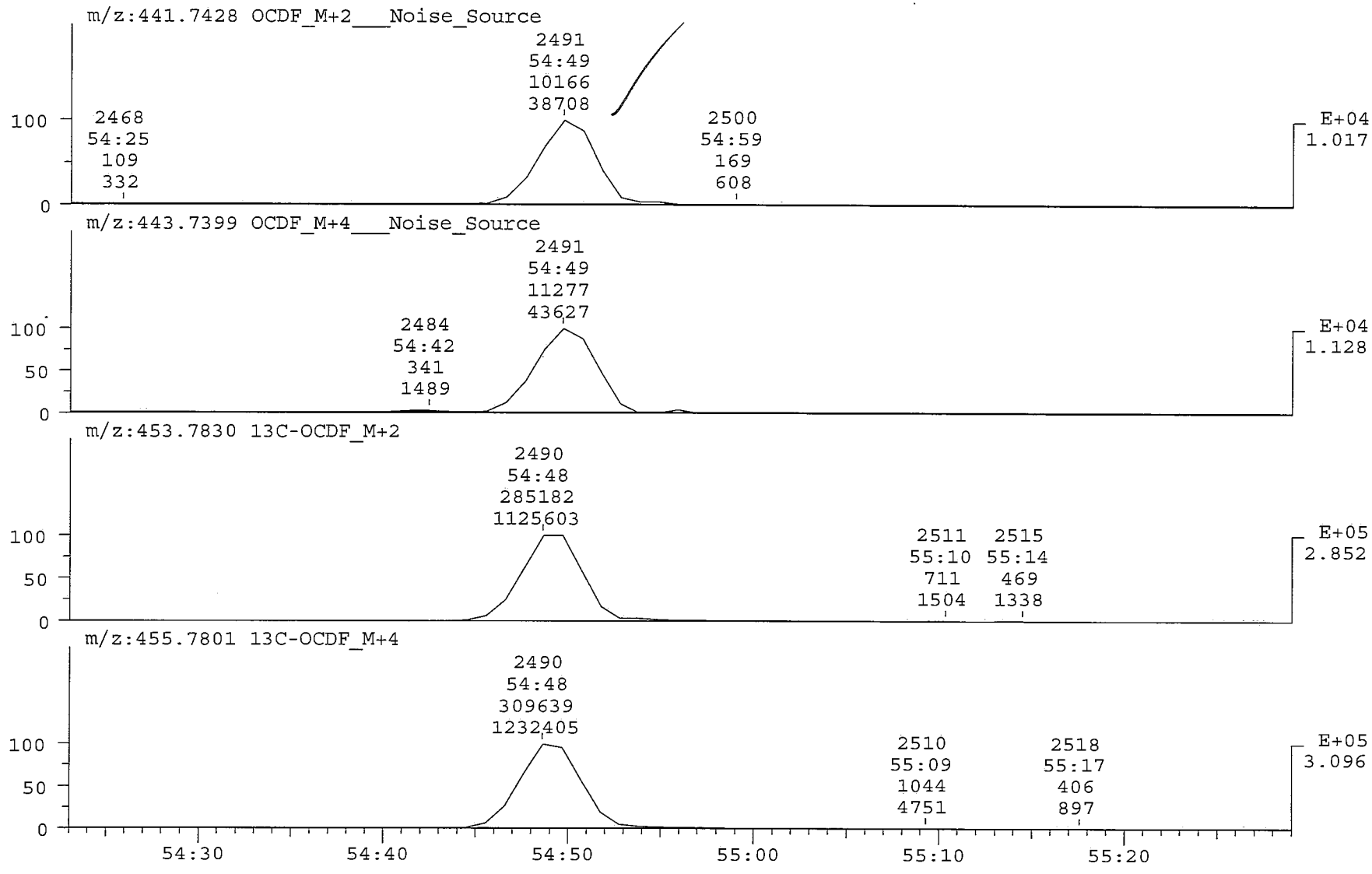
```
CHRO:  d1tm811q                              17-Aug-16   Elapse:  50:14      2227
Samp:  WO=m811q1ac Meth=9Ao Dil=1                        Start :  17:38:31   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                               Study :  6217014 (10.2g)
Oper:  KLR                                               Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2136 > 2319         Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3              Label :  0, 0.0
Disp:  Height  Area
```



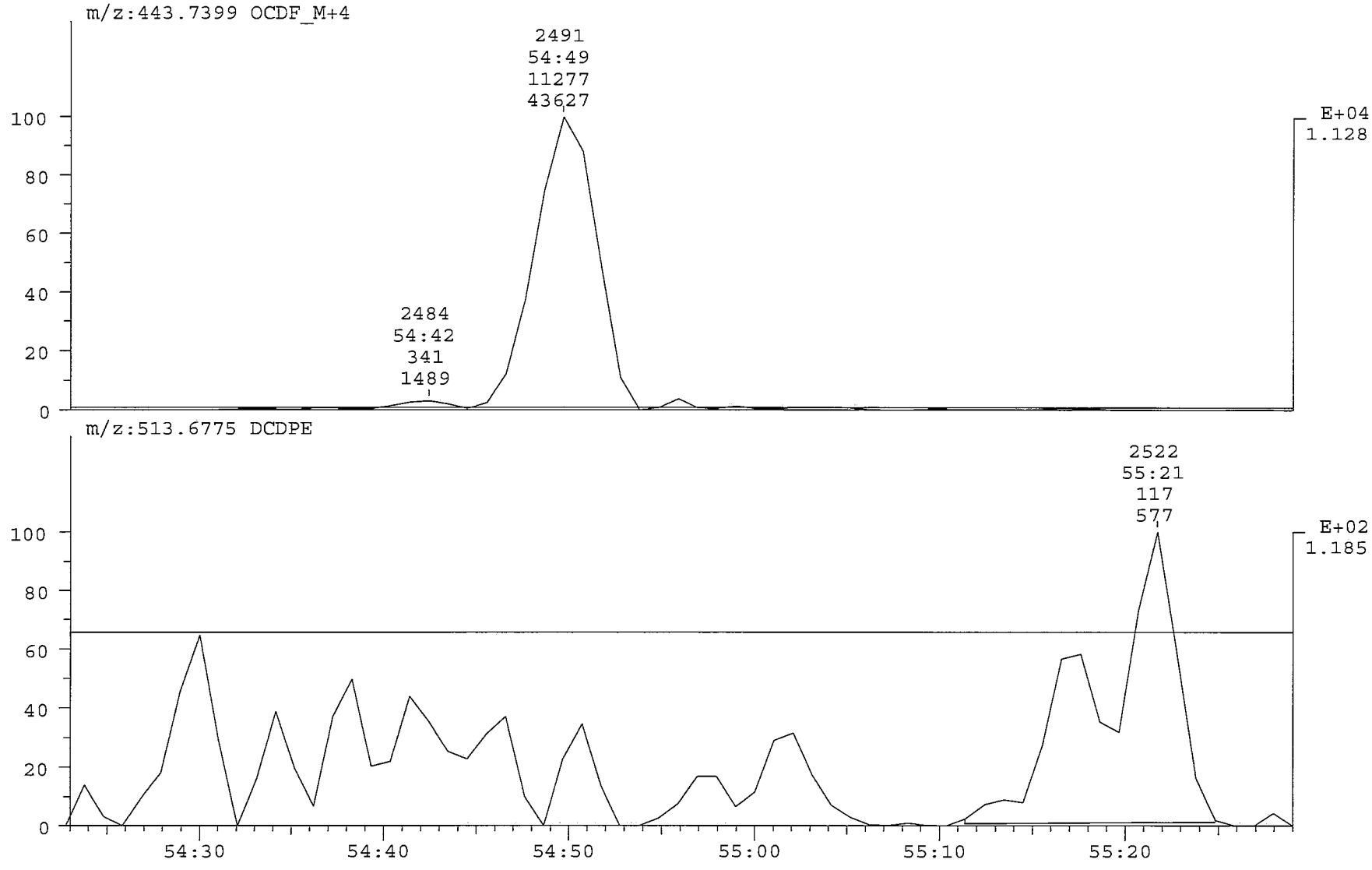
CHRO: d1tm811q 17-Aug-16 Elapse: 54:45 2487
Samp: WO=m811q1ac Meth=9Ao Dil=1 Start : 17:38:31 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2458 > 2521 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



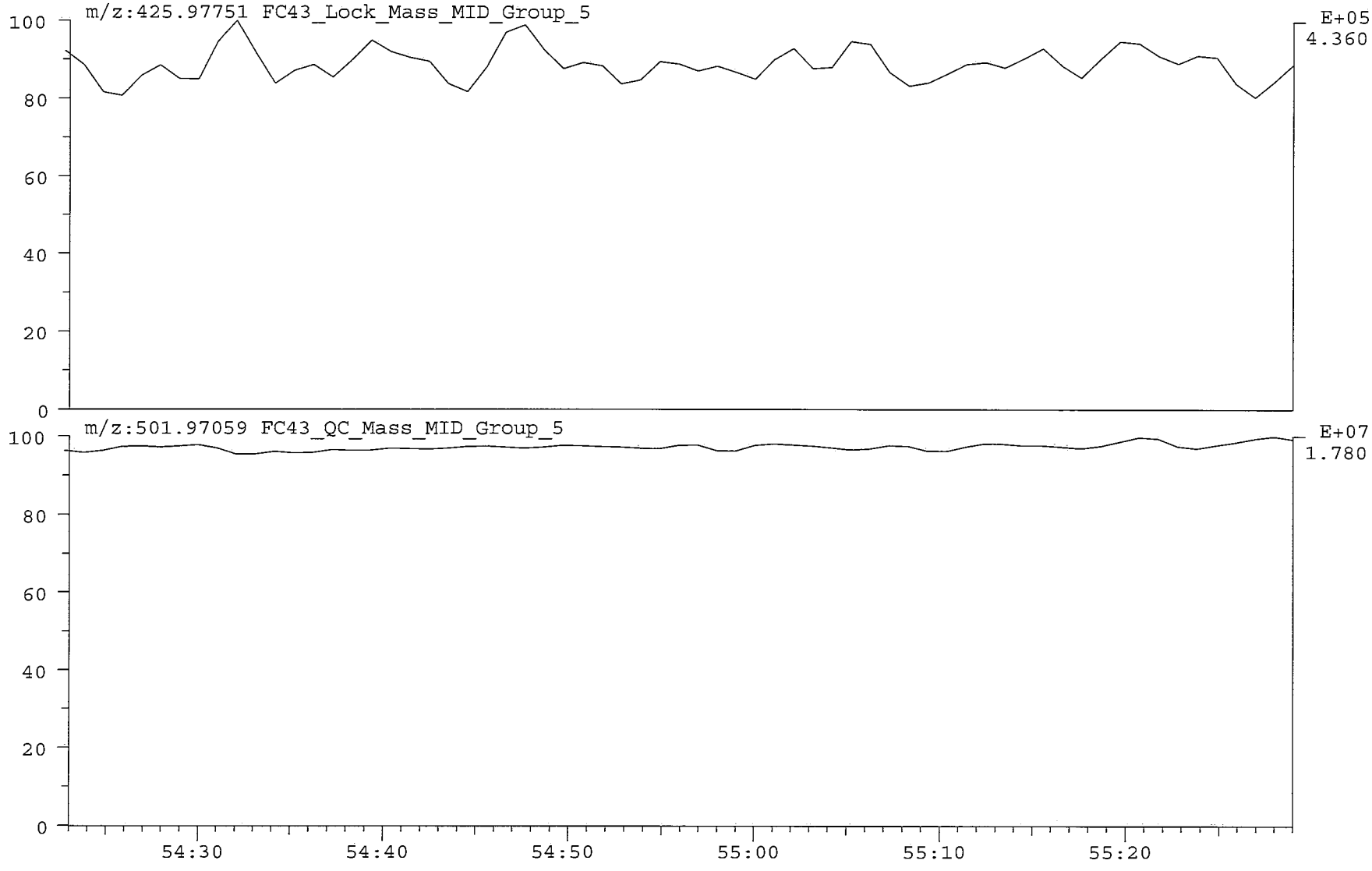
```
CHRO:  d1tm811q                                17-Aug-16  Elapse:  54:52      2494
Samp:  WO=m811q1ac Meth=9Ao Dil=1                         Start :  17:38:31   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.2g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2465 > 2529          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1tm811q                                17-Aug-16  Elapse:  54:52      2494
Samp:  WO=m811q1ac Meth=9Ao Dil=1                         Start :  17:38:31   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.2g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2465 > 2529          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1tm811q                              17-Aug-16  Elapse:  54:52      2494
Samp:  WO=m811q1ac Meth=9Ao Dil=1                       Start :  17:38:31   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                              Study :  6217014 (10.2g)
Oper:  KLR                                              Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2465 > 2529        Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3             Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Wed Aug 17 17:43:07 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 17-Aug-16 17:43:06

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160817130149

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

375.9802		20	1	7
383.8639		5	1	29
385.8610		5	1	29
389.8158		1	1	146
391.8127		1	1	146
401.8559		5	1	29
403.8529		5	1	29
413.9770	c	20	1	7
413.9770		20	1	7
445.7555		1	1	146

Window # 4

mass	F	int	gr	time (ms)
407.7817		1	1	146
409.7788		1	1	146
413.9770	l	20	1	7
413.9770		20	1	7
417.8250		5	1	29
419.8220		5	1	29
423.7767		1	1	146
425.7737		1	1	146
435.8169		5	1	29
437.8140		5	1	29
463.9738	c	20	1	7
463.9738		20	1	7
479.7165		1	1	146

Window # 5

mass	F	int	gr	time (ms)
425.9770	l	20	1	7
425.9770		20	1	7
441.7428		1	1	146
443.7399		1	1	146
453.7830		5	1	29
455.7801		5	1	29
457.7377		1	1	146
459.7348		1	1	146
469.7780		5	1	29
471.7750		5	1	29
501.9706	c	20	1	7
501.9706		20	1	7
513.6775		1	1	146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	307.9834
BQUAD	2.4000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	18.0000	ECORR	1.0008	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2585.8226
ELEN	-45.0000	EMULT	1802.0000	ENS	210.0000
ENSBR	2.4000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	172.0000	EXSBR	2.5000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	6.4000

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0469	FVSRC	0.0394
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	642.0000
LENS_SYM	7.2500	LM	375.8364	LMII	500.0000
LMASS	307.9834	LKM	425.9770	MASS	307.9834
MDAC	3546991.5696	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2650.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-2.0000	RECURR	0.8996	RELEN	0.0000
RES	13473.9982	RPUSHER	-1.9707	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	684.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0994	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	307.9834	XLENS_POT	916.0000
XLENS_SYM	24.3000	YLENS_POT	856.0000	YLENS_SYM	15.0000

```
Source Gauge:         2.5e-005 mbar
Analyzer Penning:     9.6e-008 mbar
Pirani Analyse:       4.4e-003 mbar
Pirani Source:        3.9e-002 mbar
Pirani Inlet System: 4.7e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11496.
MID Time Window 2: Resolution is 12128.
MID Time Window 3: Resolution is 12380.
MID Time Window 4: Resolution is 12119.
MID Time Window 5: Resolution is 13473.

Amplifier Offset: 88.


*** File closed Wed Aug 17 18:40:21 2016
  ***
```

QUAN: d1tm811q.q0 Entries: 269

Data file(s) used
File: d1tm811q 17-Aug-16
Samp: WO=m811q1ac Meth=9Ao Dil=1 Start : 17:38:31 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (1
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:13	332.	117.	32:07	32:15	10.	2	5.0	ABB
319.8805	32:19	459.	157.	32:15	32:21	10.	2	5.0	ABV
319.8805	32:22	167.	74.	32:21	32:24	10.	2	5.0	AVV
319.8805	32:26	192.	92.	32:24	32:28	10.	2	5.0	AVB
319.8805	32:34	372.	101.	32:28	32:36	10.	2	5.0	ABV
319.8805	32:38	463.	126.	32:36	32:43	10.	2	5.0	AVB
319.8805	32:52	841.	166.	32:43	32:58	10.	2	5.0	ABB
321.8775	31:25	493.	133.	31:19	31:27	13.	2	5.0	ABB
321.8775	31:34	913.	196.	31:27	31:39	13.	2	5.0	ABB
321.8775	32:15	513.	129.	32:07	32:17	13.	2	5.0	ABV
321.8775	32:18	231.	111.	32:17	32:20	13.	2	5.0	AVV
321.8775	32:22	257.	112.	32:20	32:24	13.	2	5.0	AVV
321.8775	32:34	1160.	177.	32:24	32:47	13.	2	5.0	AVB
321.8775	32:53	836.	213.	32:50	32:58	13.	2	5.0	ABB
321.8775	34:00	462.	130.	33:56	34:02	13.	2	5.0	ABV
321.8775	34:04	348.	151.	34:02	34:06	13.	2	5.0	AVB
331.9202	32:16	1825066.	180284.	32:01	32:31	98.	2	5.0	AVV
331.9202	32:47	589610.	52949.	32:33	33:02	98.	2	5.0	AVV
333.9171	32:16	2259964.	221703.	32:01	32:31	57.	2	5.0	AVV
333.9171	32:49	751629.	76516.	32:35	33:04	57.	2	5.0	AVV
333.9171	33:07	4337.	867.	33:04	33:15	57.	2	5.0	AVB
333.9171	33:19	1925.	715.	33:15	33:21	57.	2	5.0	ABB
333.9171	33:32	1796.	449.	33:21	33:34	57.	2	5.0	ABB
303.8864	30:46	15061.	1396.	30:35	31:00	29.	1	1.0	AVV
305.8834	30:45	12244.	1591.	30:34	30:48	35.	1	1.0	ABV
303.8864	29:32	3812.	532.	29:20	29:36	29.	2	5.0	ABV
303.8864	29:38	1297.	362.	29:36	29:45	29.	2	5.0	AVB
303.8864	30:00	700.	162.	29:55	30:02	29.	2	5.0	ABV
303.8864	30:10	3413.	477.	30:02	30:14	29.	2	5.0	AVV
303.8864	30:16	1663.	485.	30:14	30:19	29.	2	5.0	AVV
303.8864	30:20	630.	153.	30:19	30:27	29.	2	5.0	AVB
303.8864	30:46	15198.	1396.	30:31	31:01	29.	2	5.0	AVV
303.8864	32:01	7981.	1065.	31:48	32:10	29.	2	5.0	ABB
305.8834	29:32	7199.	873.	29:22	29:43	35.	2	5.0	ABB
305.8834	30:01	1012.	235.	29:54	30:03	35.	2	5.0	ABV
305.8834	30:15	6279.	827.	30:03	30:23	35.	2	5.0	AVB
305.8834	30:45	12244.	1591.	30:34	30:48	35.	2	5.0	ABV
305.8834	30:50	8747.	1376.	30:48	31:05	35.	2	5.0	AVB
305.8834	32:01	9817.	1036.	31:49	32:13	35.	2	5.0	ABB
315.9261	29:27	4967.	995.	29:20	29:32	75.	2	5.0	ABV
315.9261	29:34	2809.	703.	29:32	29:38	75.	2	5.0	AVB
315.9261	30:40	1068473.	114166.	30:26	30:55	75.	2	5.0	ABV
315.9261	30:59	5326.	826.	30:57	31:14	75.	2	5.0	AVB
315.9261	31:40	1761.	579.	31:36	31:42	75.	2	5.0	ABB
315.9261	31:54	2752.	715.	31:44	31:56	75.	2	5.0	ABB
317.9230	29:22	1127.	477.	29:19	29:24	59.	2	5.0	ABB
317.9230	29:32	1796.	350.	29:24	29:33	59.	2	5.0	ABV
317.9230	29:35	1500.	430.	29:33	29:38	59.	2	5.0	AVB
317.9230	30:40	1270169.	133435.	30:26	30:55	59.	2	5.0	ABB
317.9230	30:57	2975.	846.	30:55	31:00	59.	2	5.0	ABV

317.9230	31:04	4229.	1124.	31:00	31:08	59.	2	5.0 AVV
317.9230	31:13	4082.	935.	31:08	31:23	59.	2	5.0 AVB
355.8368	41:25	3792.	992.	41:16	41:30	32.	1	1.0 ABV
357.8337	41:25	2919.	500.	41:13	41:31	25.	1	1.0 ABB
355.8368	40:44	1418.	406.	40:41	40:51	32.	2	5.0 ABB
355.8368	41:00	717.	219.	40:54	41:02	32.	2	5.0 ABB
355.8368	41:25	3835.	992.	41:16	41:32	32.	2	5.0 ABB
355.8368	41:38	1015.	274.	41:34	41:41	32.	2	5.0 ABB
355.8368	42:02	1666.	291.	41:54	42:07	32.	2	5.0 ABB
357.8337	40:43	582.	258.	40:41	40:45	25.	2	5.0 ABB
357.8337	40:59	741.	186.	40:54	41:04	25.	2	5.0 ABB
357.8337	41:25	2919.	500.	41:13	41:31	25.	2	5.0 ABB
357.8337	41:38	975.	267.	41:31	41:41	25.	2	5.0 ABB
357.8337	41:51	2100.	291.	41:41	41:59	25.	2	5.0 ABV
357.8337	42:02	710.	136.	41:59	42:07	25.	2	5.0 AVB
367.8765	40:55	1251.	361.	40:50	40:57	52.	2	5.0 ABV
367.8765	40:59	1129.	438.	40:57	41:01	52.	2	5.0 AVV
367.8765	41:02	824.	366.	41:01	41:05	52.	2	5.0 AVB
367.8765	41:24	704720.	172474.	41:12	41:39	52.	2	5.0 ABV
367.8765	41:58	2369.	822.	41:55	42:00	52.	2	5.0 ABV
367.8765	42:02	2415.	488.	42:00	42:07	52.	2	5.0 AVV
367.8765	42:09	882.	325.	42:07	42:10	52.	2	5.0 AVV
367.8765	42:11	1947.	329.	42:10	42:20	52.	2	5.0 AVB
369.8734	41:01	559.	231.	40:58	41:03	17.	2	5.0 ABB
369.8734	41:24	473271.	111207.	41:16	41:38	17.	2	5.0 ABV
369.8734	41:40	1019.	403.	41:38	41:42	17.	2	5.0 AVB
369.8734	41:44	579.	279.	41:42	41:46	17.	2	5.0 ABB
369.8734	41:50	962.	191.	41:48	41:58	17.	2	5.0 ABB
369.8734	42:03	3050.	613.	41:59	42:09	17.	2	5.0 ABV
369.8734	42:10	504.	162.	42:09	42:16	17.	2	5.0 AVB
339.8427	40:55	9216.	2210.	40:46	41:00	38.	1	1.0 ABB
341.8396	40:54	6637.	1430.	40:45	41:00	41.	1	1.0 AVV
339.8427	39:19	1795.	505.	39:16	39:23	38.	2	5.0 ABB
339.8427	39:45	7223.	875.	39:33	39:50	38.	2	5.0 ABB
339.8427	40:01	3649.	673.	39:54	40:08	38.	2	5.0 ABV
339.8427	40:14	6953.	1381.	40:08	40:22	38.	2	5.0 AVB
339.8427	40:55	9216.	2210.	40:46	41:00	38.	2	5.0 ABB
339.8427	41:07	8269.	1729.	41:01	41:13	38.	2	5.0 ABB
341.8396	39:17	713.	396.	39:16	39:20	41.	2	5.0 ABB
341.8396	39:38	2135.	495.	39:33	39:41	41.	2	5.0 ABV
341.8396	39:45	2988.	616.	39:41	39:52	41.	2	5.0 AVB
341.8396	40:01	3137.	598.	39:52	40:07	41.	2	5.0 ABB
341.8396	40:13	3756.	705.	40:08	40:22	41.	2	5.0 ABB
341.8396	40:54	6909.	1430.	40:38	41:00	41.	2	5.0 ABV
341.8396	41:07	6439.	1190.	41:00	41:20	41.	2	5.0 AVB
351.8824	39:43	1132173.	238797.	39:34	39:57	88.	2	5.0 ABV
351.8824	40:00	5158.	1643.	39:57	40:02	88.	2	5.0 AVV
351.8824	40:13	19253.	2664.	40:02	40:17	88.	2	5.0 AVV
351.8824	40:20	1648.	621.	40:17	40:22	88.	2	5.0 AVV
351.8824	40:24	2435.	699.	40:22	40:28	88.	2	5.0 AVB
351.8824	40:54	1255765.	290701.	40:45	41:00	88.	2	5.0 ABV
351.8824	41:05	16080.	2526.	41:00	41:10	88.	2	5.0 AVV
351.8824	41:12	2009.	564.	41:10	41:14	88.	2	5.0 AVV
351.8824	41:16	2334.	880.	41:14	41:19	88.	2	5.0 AVV
351.8824	41:25	3402.	608.	41:19	41:28	88.	2	5.0 AVB
353.8793	39:43	725245.	153099.	39:35	39:54	52.	2	5.0 ABV
353.8793	40:00	5157.	733.	39:54	40:07	52.	2	5.0 AVV
353.8793	40:12	10344.	2171.	40:07	40:23	52.	2	5.0 AVV
353.8793	40:28	1791.	567.	40:23	40:30	52.	2	5.0 AVB
353.8793	40:53	783685.	176300.	40:42	41:08	52.	2	5.0 ABV
353.8793	41:10	790.	310.	41:09	41:12	52.	2	5.0 AVV
353.8793	41:15	1848.	465.	41:12	41:21	52.	2	5.0 AVB
353.8793	41:32	1891.	369.	41:22	41:33	52.	2	5.0 ABB
389.7961	45:46	13561.	3044.	45:40	45:50	37.	1	1.0 AVV
391.7931	45:46	10610.	2769.	45:42	45:51	30.	1	1.0 AVV
389.7961	45:38	2541.	765.	45:32	45:40	37.	2	5.0 ABV
389.7961	45:46	13963.	3044.	45:40	45:55	37.	2	5.0 AVB

389.7961	46:09	12320.	2519.	46:01	46:18	37.	2	5.0	ABB
389.7961	46:29	1918.	184.	46:18	46:35	37.	2	5.0	ABB
391.7931	45:39	2820.	706.	45:35	45:42	30.	2	5.0	ABV
391.7931	45:46	10933.	2769.	45:42	45:57	30.	2	5.0	AVB
391.7931	46:11	10777.	2013.	45:58	46:26	30.	2	5.0	ABV
401.8358	45:37	767149.	192351.	45:29	45:41	143.	2	5.0	ABV
401.8358	45:45	745578.	188647.	45:41	45:55	143.	2	5.0	AVV
401.8358	45:59	4200.	1049.	45:55	46:01	143.	2	5.0	AVV
401.8358	46:09	2554864.	615905.	46:01	46:25	143.	2	5.0	AVV
401.8358	46:30	4089.	892.	46:29	46:35	143.	2	5.0	AVB
403.8327	45:37	595356.	145253.	45:31	45:41	94.	2	5.0	ABV
403.8327	45:45	597849.	149792.	45:41	46:00	94.	2	5.0	AVV
403.8327	46:09	2056381.	494414.	46:02	46:25	94.	2	5.0	AVV
373.8021	44:33	19512.	3451.	44:24	44:38	43.	1	1.0	ABV
375.7990	44:33	16106.	2672.	44:27	44:39	46.	1	1.0	ABV
373.8021	44:18	2182.	1060.	44:17	44:21	43.	2	5.0	ABB
373.8021	44:33	19512.	3451.	44:24	44:38	43.	2	5.0	ABV
373.8021	44:42	9393.	2206.	44:38	44:46	43.	2	5.0	AVV
373.8021	44:47	595.	216.	44:46	44:49	43.	2	5.0	AVV
373.8021	44:51	1205.	357.	44:49	44:59	43.	2	5.0	AVB
373.8021	45:05	2590.	392.	45:00	45:12	43.	2	5.0	ABV
373.8021	45:17	2465.	561.	45:12	45:19	43.	2	5.0	AVV
373.8021	45:22	2941.	861.	45:19	45:24	43.	2	5.0	AVV
373.8021	45:28	6689.	1641.	45:24	45:34	43.	2	5.0	AVB
373.8021	46:36	2058.	448.	46:31	46:41	43.	2	5.0	ABB
375.7990	44:18	1246.	753.	44:17	44:20	46.	2	5.0	ABB
375.7990	44:33	16106.	2672.	44:27	44:39	46.	2	5.0	ABV
375.7990	44:42	8153.	1989.	44:39	44:49	46.	2	5.0	AVV
375.7990	44:51	1775.	280.	44:49	45:01	46.	2	5.0	AVB
375.7990	45:06	1787.	377.	45:01	45:11	46.	2	5.0	ABV
375.7990	45:16	2536.	555.	45:11	45:19	46.	2	5.0	AVV
375.7990	45:23	2678.	637.	45:19	45:25	46.	2	5.0	AVV
375.7990	45:28	5029.	1529.	45:25	45:33	46.	2	5.0	AVV
375.7990	45:35	1026.	259.	45:33	45:41	46.	2	5.0	AVB
375.7990	46:26	3145.	323.	46:11	46:33	46.	2	5.0	AVV
375.7990	46:37	2116.	465.	46:33	46:42	46.	2	5.0	AVB
373.8021	44:18	2182.	1060.	44:17	44:21	43.	2	5.0	ABB
373.8021	44:33	19512.	3451.	44:24	44:38	43.	2	5.0	ABV
373.8021	44:42	9393.	2206.	44:38	44:46	43.	2	5.0	AVV
373.8021	44:47	595.	216.	44:46	44:49	43.	2	5.0	AVV
373.8021	44:51	1205.	357.	44:49	44:59	43.	2	5.0	AVB
373.8021	45:05	2590.	392.	45:00	45:12	43.	2	5.0	ABV
373.8021	45:17	2465.	561.	45:12	45:19	43.	2	5.0	AVV
373.8021	45:22	2941.	861.	45:19	45:24	43.	2	5.0	AVV
373.8021	45:28	6689.	1641.	45:24	45:34	43.	2	5.0	AVB
373.8021	46:36	2058.	448.	46:31	46:41	43.	2	5.0	ABB
375.7990	44:18	1246.	753.	44:17	44:20	46.	2	5.0	ABB
375.7990	44:33	16106.	2672.	44:27	44:39	46.	2	5.0	ABV
375.7990	44:42	8153.	1989.	44:39	44:49	46.	2	5.0	AVV
375.7990	44:51	1775.	280.	44:49	45:01	46.	2	5.0	AVB
375.7990	45:06	1787.	377.	45:01	45:11	46.	2	5.0	ABV
375.7990	45:16	2536.	555.	45:11	45:19	46.	2	5.0	AVV
375.7990	45:23	2678.	637.	45:19	45:25	46.	2	5.0	AVV
375.7990	45:28	5029.	1529.	45:25	45:33	46.	2	5.0	AVV
375.7990	45:35	1026.	259.	45:33	45:41	46.	2	5.0	AVB
375.7990	46:26	3145.	323.	46:11	46:33	46.	2	5.0	AVV
375.7990	46:37	2116.	465.	46:33	46:42	46.	2	5.0	AVB
383.8447	44:33	661243.	174391.	44:26	44:37	84.	2	5.0	ABV
383.8447	44:41	759685.	191723.	44:37	44:56	84.	2	5.0	AVV
383.8447	45:00	3951.	775.	44:56	45:05	84.	2	5.0	AVV
383.8447	45:07	2952.	745.	45:05	45:17	84.	2	5.0	AVB
383.8447	45:27	738691.	186870.	45:17	45:42	84.	2	5.0	ABV
383.8447	45:46	2598.	547.	45:42	45:52	84.	2	5.0	AVB
383.8447	46:09	6183.	506.	45:54	46:15	84.	2	5.0	AVB
383.8447	46:27	623213.	142058.	46:15	46:42	84.	2	5.0	ABV
383.8447	46:43	1532.	545.	46:42	46:47	84.	2	5.0	AVB
385.8417	44:33	1219324.	325343.	44:25	44:37	87.	2	5.0	ABV

385.8417	44:41	1406491.	351993.	44:37	44:56	87.	2	5.0 AVV
385.8417	44:59	5774.	1405.	44:56	45:03	87.	2	5.0 AVV
385.8417	45:08	3880.	876.	45:03	45:10	87.	2	5.0 AVV
385.8417	45:13	3596.	910.	45:10	45:16	87.	2	5.0 AVB
385.8417	45:27	1357920.	333085.	45:16	45:42	87.	2	5.0 ABV
385.8417	45:53	4666.	777.	45:48	45:58	87.	2	5.0 AVB
385.8417	46:04	6788.	497.	45:58	46:20	87.	2	5.0 ABB
385.8417	46:27	1123662.	257467.	46:20	46:42	87.	2	5.0 ABV
385.8417	46:49	5020.	1415.	46:45	46:52	87.	2	5.0 AVV
385.8417	46:53	1331.	635.	46:52	46:55	87.	2	5.0 AVB
423.7555	50:42	145008.	30531.	50:34	50:55	35.	1	1.0 ABV
425.7524	50:42	132121.	26510.	50:30	50:52	51.	1	1.0 ABV
423.7555	49:30	124589.	23689.	49:21	49:44	35.	2	5.0 ABV
423.7555	50:42	145008.	30531.	50:34	50:55	35.	2	5.0 ABV
425.7524	49:29	118533.	24099.	49:21	49:44	51.	2	5.0 ABV
425.7524	50:42	132121.	26510.	50:30	50:52	51.	2	5.0 ABV
435.7951	49:29	16225.	3164.	49:21	49:37	38.	2	5.0 ABB
435.7951	49:45	1783.	314.	49:40	49:57	38.	2	5.0 ABB
435.7951	50:03	802.	290.	50:00	50:06	38.	2	5.0 ABB
435.7951	50:41	656243.	139480.	50:29	50:56	38.	2	5.0 ABV
435.7951	51:04	2550.	766.	50:58	51:06	38.	2	5.0 ABV
435.7951	51:08	1042.	405.	51:06	51:10	38.	2	5.0 AVB
437.7921	49:28	12035.	2443.	49:21	49:39	33.	2	5.0 ABV
437.7921	49:41	1620.	508.	49:39	49:48	33.	2	5.0 AVB
437.7921	50:41	613743.	131551.	50:31	50:56	33.	2	5.0 ABV
437.7921	50:59	1674.	415.	50:57	51:07	33.	2	5.0 AVB
407.7614	49:39	51829.	10326.	49:32	49:46	37.	1	1.0 AVV
409.7583	49:39	50274.	10098.	49:30	49:45	23.	1	1.0 ABV
407.7614	48:44	1609.	548.	48:42	48:47	37.	2	5.0 ABB
407.7614	48:58	49159.	10383.	48:51	49:10	37.	2	5.0 ABB
407.7614	49:23	4419.	693.	49:10	49:32	37.	2	5.0 ABV
407.7614	49:39	51829.	10326.	49:32	49:46	37.	2	5.0 AVV
407.7614	49:49	2019.	359.	49:46	49:57	37.	2	5.0 AVB
407.7614	51:18	4593.	933.	51:13	51:29	37.	2	5.0 ABB
409.7583	48:44	1253.	476.	48:42	48:47	23.	2	5.0 ABB
409.7583	48:58	42974.	8568.	48:50	49:05	23.	2	5.0 ABV
409.7583	49:09	668.	130.	49:05	49:16	23.	2	5.0 AVB
409.7583	49:23	3205.	593.	49:17	49:29	23.	2	5.0 ABB
409.7583	49:39	50274.	10098.	49:30	49:45	23.	2	5.0 ABV
409.7583	49:48	2365.	413.	49:45	49:58	23.	2	5.0 AVB
409.7583	51:18	4920.	832.	51:09	51:30	23.	2	5.0 ABB
417.8041	48:57	440363.	92617.	48:49	49:10	35.	2	5.0 ABV
417.8041	49:12	1389.	483.	49:10	49:15	35.	2	5.0 AVV
417.8041	49:20	1182.	332.	49:15	49:22	35.	2	5.0 AVV
417.8041	49:37	4892.	1272.	49:29	49:44	35.	2	5.0 ABB
417.8041	50:46	1770.	404.	50:37	50:51	35.	2	5.0 ABB
417.8041	51:17	390181.	85101.	51:09	51:27	35.	2	5.0 ABV
417.8041	51:29	4549.	910.	51:27	51:39	35.	2	5.0 AVB
417.8041	51:42	2305.	618.	51:39	51:47	35.	2	5.0 ABB
419.8010	48:57	966803.	204129.	48:48	49:10	53.	2	5.0 ABV
419.8010	49:12	3196.	901.	49:10	49:15	53.	2	5.0 AVB
419.8010	49:23	10716.	1967.	49:15	49:27	53.	2	5.0 ABV
419.8010	49:30	5282.	1095.	49:27	49:35	53.	2	5.0 AVV
419.8010	49:38	8491.	1610.	49:35	49:48	53.	2	5.0 AVB
419.8010	49:52	1684.	317.	49:49	49:58	53.	2	5.0 ABB
419.8010	51:17	837842.	183816.	51:05	51:32	53.	2	5.0 ABV
419.8010	51:36	7780.	1703.	51:33	51:43	53.	2	5.0 AVB
457.7148	54:41	1544513.	406847.	54:35	54:56	42.	1	1.0 ABV
459.7118	54:41	1712447.	451684.	54:34	54:56	58.	1	1.0 ABV
457.7148	54:41	1544513.	406847.	54:35	54:56	42.	2	5.0 ABV
457.7148	55:13	749.	314.	55:11	55:15	42.	2	5.0 ABB
457.7148	55:18	677.	271.	55:15	55:20	42.	2	5.0 ABB
459.7118	54:41	1712447.	451684.	54:34	54:56	58.	2	5.0 ABV
459.7118	55:06	4911.	608.	55:02	55:14	58.	2	5.0 AVB
469.7545	54:28	2173.	409.	54:23	54:33	48.	2	5.0 AVB
469.7545	54:40	816750.	207515.	54:34	54:51	48.	2	5.0 ABV
469.7545	54:52	7862.	1653.	54:51	54:59	48.	2	5.0 AVV

469.7545	55:06	2112.	703.	55:04	55:08	48.	2	5.0	AVV
471.7514	54:41	904103.	226565.	54:34	54:47	73.	2	5.0	ABB
471.7514	54:49	6846.	1557.	54:47	54:53	73.	2	5.0	ABV
471.7514	54:56	5179.	1653.	54:53	54:59	73.	2	5.0	AVV
471.7514	55:03	4112.	778.	54:59	55:08	73.	2	5.0	AVB
441.7207	54:49	38708.	10166.	54:38	54:56	21.	1	1.0	ABV
443.7177	54:49	43627.	11277.	54:44	54:53	19.	1	1.0	AVB
441.7207	54:25	332.	109.	54:22	54:29	21.	2	5.0	ABB
441.7207	54:49	38708.	10166.	54:38	54:56	21.	2	5.0	ABV
441.7207	54:59	608.	169.	54:56	55:05	21.	2	5.0	AVB
443.7177	54:42	1489.	341.	54:30	54:44	19.	2	5.0	ABV
443.7177	54:49	43627.	11277.	54:44	54:53	19.	2	5.0	AVB
453.7603	54:48	1125603.	285182.	54:41	55:04	21.	2	5.0	ABV
453.7603	55:10	1504.	711.	55:08	55:12	21.	2	5.0	AVB
453.7603	55:14	1338.	469.	55:12	55:21	21.	2	5.0	ABB
455.7573	54:48	1232405.	309639.	54:37	55:03	28.	2	5.0	ABB
455.7573	55:09	4751.	1044.	55:03	55:15	28.	2	5.0	ABV
455.7573	55:17	897.	406.	55:15	55:19	28.	2	5.0	AVB

TestAmerica Canton

Sample ID: POND-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 006	Work Order #....:	M811R1AC	Matrix....:	SOLID
Date Sampled....:	07/25/16	Date Received....:	07/29/16	Dilution Factor:	1
Prep Date....:	08/04/16	Analysis Date....:	08/18/16	Percent Moisture	2.9
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.8 g	Instrument ID....:	D11A	Method:	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.1	0.029	pg/g
1,2,3,7,8-PeCDD	0.47	B J	5.3	0.034	pg/g
1,2,3,4,7,8-HxCDD	0.47	J	5.3	0.033	pg/g
1,2,3,6,7,8-HxCDD	1.3	J	5.3	0.035	pg/g
1,2,3,7,8,9-HxCDD	1.4	C J	5.3	0.032	pg/g
1,2,3,4,6,7,8-HpCDD	20		5.3	0.057	pg/g
OCDD	210	B	11	0.061	pg/g
2,3,7,8-TCDF	0.58	Q J	1.1	0.041	pg/g
1,2,3,7,8-PeCDF	0.25	Q J	5.3	0.031	pg/g
2,3,4,7,8-PeCDF	0.39	J	5.3	0.027	pg/g
1,2,3,4,7,8-HxCDF	0.80	C B J	5.3	0.031	pg/g
1,2,3,6,7,8-HxCDF	0.41	Q J	5.3	0.030	pg/g
2,3,4,6,7,8-HxCDF	0.45	J	5.3	0.032	pg/g
1,2,3,7,8,9-HxCDF	ND		5.3	0.040	pg/g
1,2,3,4,6,7,8-HpCDF	3.6	B J	5.3	0.032	pg/g
1,2,3,4,7,8,9-HpCDF	0.56	Q B J	5.3	0.040	pg/g
OCDF	7.9	B Q J	11	0.022	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	67	40 - 135
13C-1,2,3,7,8-PeCDD	76	40 - 135
13C-1,2,3,4,7,8-HxCDD	70	40 - 135
13C-1,2,3,6,7,8-HxCDD	72	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	77	40 - 135
13C-OCDD	71	40 - 135
13C-2,3,7,8-TCDF	60	40 - 135
13C-1,2,3,7,8-PeCDF	74	40 - 135
13C-2,3,4,7,8-PeCDF	80	40 - 135
13C-1,2,3,4,7,8-HxCDF	60	40 - 135
13C-1,2,3,6,7,8-HxCDF	59	40 - 135
13C-2,3,4,6,7,8-HxCDF	61	40 - 135
13C-1,2,3,7,8,9-HxCDF	60	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	54	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	57	40 - 135
13C-OCDF	55	40 - 135

TestAmerica Canton

Sample ID: POND-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 006	**Work Order #....:**	M811R1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	2.9
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.8 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811R1AC	Prep Batch	6217014	Lot No	H6G290408-006
Data File	/20160817s3/d1tm811r.d	Prep Date	08/04/16	SDG No	
Analysis ID	180448	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/18/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	02:15	Initial Wt/Vol	9.8 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD				1.144				ND		0.0283
Total TCDD		9086	2329	1.144		3.122530		0.318626	QJ	0.0283
2,3,7,8-TCDF	30:50	21906	2657	1.066		5.506188		0.561856	QJ	0.0398
Total TCDF		53371	7510	1.066		18.921269		1.930742	JQ	0.0398
1,2,3,7,8-PeCDD	41:25	10048	1939	1.060		4.479247		0.457066	BJ	0.0333
Total PeCDD		9496	1885	1.060		8.712421		0.889023	JQB	0.0333
1,2,3,7,8-PeCDF	39:46	9932	1927	1.179		2.399952		0.244893	QJ	0.0298
2,3,4,7,8-PeCDF	40:55	15295	3360	1.115		3.678901		0.375398	J	0.0262
Total PeCDF		54555	10250	1.147		19.219848		1.961209	QJ	0.0278
1,2,3,4,7,8-HxCDD	45:39	10292	2583	1.131		4.445276		0.453600	J	0.0323
1,2,3,6,7,8-HxCDD	45:46	29697	7363	1.116		12.682306		1.294113	J	0.0338
1,2,3,7,8,9-HxCDD	46:11	33437	6667	1.205		13.386799		1.366000	CJ	0.0308
Total HxCDD				1.151		30.514381		3.113712	J	0.0323
1,2,3,4,7,8-HxCDF	44:33	24910	3896	1.350		7.576173		0.773079	CBJ	0.0298
1,2,3,6,7,8-HxCDF	44:42	13649	2969	1.242		3.882610		0.396185	QJ	0.0294
2,3,4,6,7,8-HxCDF	45:28	13881	2553	1.241		4.236560		0.432302	J	0.0307
1,2,3,7,8,9-HxCDF				1.262				ND		0.0389
Total HxCDF		29475	7924	1.274		24.754456		2.525965	JQB	0.0318
1,2,3,4,6,7,8-HpCDD	50:41	388016	78622	1.114		193.037899		19.697745		0.0554
Total HpCDD		337556	68582	1.114		360.971956		36.833873		0.0554
1,2,3,4,6,7,8-HpCDF	48:59	88160	17719	1.461		34.701629		3.540983	BJ	0.0314
1,2,3,4,7,8,9-HpCDF	51:19	10723	1782	1.370		5.312903		0.542133	QBJ	0.0392
Total HpCDF		131233	26388	1.416		97.740622		9.973533	QB	0.0350
OCDD	54:42	3357420	845656	1.203		2043.40612		208.510829	B	0.0594
OCDF	54:50	141865	35933	1.134		75.342468		7.688007	BQJ	0.0215
13C-2,3,7,8-TCDD	32:51	2544604	244190	1.093	1000	670.279239	67.03	68.395841		0.134
13C-2,3,7,8-TCDF	30:42	3733557	397228	1.794	1000	598.807685	59.88	61.102825		0.0326
13C-1,2,3,7,8-PeCDD	41:24	2116475	520930	0.800	1000	761.400015	76.14	77.693879		0.0694
13C-1,2,3,7,8-PeCDF	39:45	3509702	755280	1.356	1000	744.643255	74.46	75.984006		0.0824
13C-2,3,4,7,8-PeCDF	40:54	3730140	908779	1.343	1000	799.326900	79.93	81.563969		0.0832
13C-1,2,3,4,7,8-HxCDD	45:38	2046902	536900	0.916	1000	697.135200	69.71	71.136245		0.0787
13C-1,2,3,6,7,8-HxCDD	45:45	2098306	520480	0.906	1000	722.194416	72.22	73.693308		0.0795
13C-1,2,3,4,7,8-HxCDF	44:33	2434726	628365	1.268	1000	598.754715	59.88	61.097420		0.0479
13C-1,2,3,6,7,8-HxCDF	44:42	2831320	691989	1.506	1000	586.601851	58.66	59.857332		0.0403
13C-2,3,4,6,7,8-HxCDF	45:27	2640461	662517	1.344	1000	612.839239	61.28	62.534616		0.0452
13C-1,2,3,7,8,9-HxCDF	46:27	2311020	514936	1.202	1000	599.681612	59.97	61.192001		0.0505
13C-1,2,3,4,6,7,8-HpCDD	50:40	1804807	371815	0.728	1000	772.868516	77.29	78.864134		0.0285
13C-1,2,3,4,6,7,8-HpCDF	48:57	1738869	356027	1.008	1000	538.060086	53.81	54.904090		0.0264
13C-1,2,3,4,7,8,9-HpCDF	51:17	1472835	303847	0.811	1000	566.639164	56.66	57.820323		0.0328
13C-OCDD	54:41	2731606	721390	0.597	2000	1426.32702	71.32	145.543573		0.0614
13C-1,2,3,4-TCDD	32:18	6949757	707414	1.000	2000	2000.00000	100.00	204.081633		0.146
13C-1,2,3,7,8,9-HxCDD	46:10	6411859	1571380	1.000	2000	2000.00000	100.00	204.081633		0.0721
13C-OCDF	54:49	3319863	878207	0.946	2000	1094.66186	54.73	111.700190		0.0268

LK 8/24/16

8-24-16

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811R1AC	Prep Batch	6217014	Lot No	H6G290408-006
Data File	/20160817s3/d1tm811r.d	Prep Date	08/04/16	SDG No	
Analysis ID	180448	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 02:15	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.8 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	83	83	33	33	1.00 *	/	
	Unidentified	29:35	00:00	0	6648	7750	835	1081	0.86	ABB/ABV	
	Unidentified	30:03	00:00	0	921	1111	165	224	0.83	ABV/ABV	
	Unidentified	30:10	00:00	0	1609	6464	388	691	0.25 *	AVV/AVB	RT
	2,3,7,8-TCDF	30:50	30:46	4	8198	13708	1026	1631	0.60 *	ABV/ABV	RTM
	Unidentified	30:55	00:00	0	6101	6161	853	1111	0.99 *	AVB/AVB	R
	Unidentified	32:02	00:00	0	7419	9187	1000	1162	0.81	ABV/ABB	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	95	108	38	43	0.88	/	
	Unidentified	29:32	00:00	0	4361	4309	764	1133	1.01 *	ABV/ABB	R
	13C-2,3,7,8-TCDF	30:42	30:42	0	1631056	2102501	173268	223960	0.78	AVV/ABV	
	Unidentified	31:08	00:00	0	1417	5202	497	1069	0.27 *	AVV/AVV	R
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	35	43	14	17	0.82	/	
	Unidentified	31:23	00:00	0	442	973	112	195	0.45 *	ABV/ABV	R
	Unidentified	31:27	00:00	0	408	449	89	178	0.91 *	AVB/AVV	RT
	Unidentified	32:17	00:00	0	461	806	82	166	0.57 *	ABV/ABV	R
	Unidentified	32:22	00:00	0	596	472	209	150	1.26 *	AVB/AVB	R
	Unidentified	32:38	00:00	0	565	903	161	244	0.63 *	AVV/ABV	R
	Unidentified	32:42	00:00	0	623	348	192	107	1.79 *	AVV/AVB	R
	Unidentified	32:57	00:00	0	315	632	100	112	0.50 *	AVB/AVB	R
	Unidentified	34:01	00:00	0	664	429	96	136	1.55 *	ABB/ABB	RT
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	348	160	139	64	2.17 *	/	
	13C-1,2,3,4-TCDD	32:18	32:19	-1	3080365	3869392	311721	395693	0.80	AVV/ABV	
	13C-2,3,7,8-TCDD	32:51	32:51	0	1105482	1439122	106871	137319	0.77	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	128	133	51	53	0.96 *	/	
	Unidentified	39:19	00:00	0	10287	5727	1909	1051	1.80 *	ABB/ABB	R
	1,2,3,7,8-PeCDF	39:46	39:45	1	6442	3490	1267	660	1.85 *	MBB/AVB	R
	Unidentified	40:02	00:00	0	3481	2282	872	483	1.53	ABB/ABV	
	Unidentified	40:15	00:00	0	7587	5854	1272	875	1.30 *	ABB/AVB	R
	2,3,4,7,8-PeCDF	40:55	40:54	1	9163	6132	2086	1274	1.49	ABV/ABV	
	Unidentified	41:07	00:00	0	10010	9327	2179	1609	1.07 *	AVB/AVV	R
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	218	170	87	68	1.28 *	/	
	Unidentified	39:17	00:00	0	4980	3874	1214	1302	1.29 *	ABB/ABB	R
	13C-1,2,3,7,8-PeCDF	39:45	39:43	2	2146908	1362794	461973	293307	1.58	ABV/ABV	
	Unidentified	40:02	00:00	0	14975	14113	2103	2205	1.06 *	AVV/AVV	R
	Unidentified	40:14	00:00	0	30030	15254	4020	2553	1.97 *	AVV/AVV	R
	13C-2,3,4,7,8-PeCDF	40:54	40:53	1	2305093	1425047	565334	343445	1.62	AVV/ABV	
	Unidentified	41:05	00:00	0	19559	10650	3983	1752	1.84 *	AVV/AVV	R
	Unidentified	41:27	00:00	0	9243	3422	1179	755	2.70 *	AVB/AVV	RT

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811R1AC	Prep Batch	6217014	Lot No	H6G290408-006
Data File	/20160817s3/d1tm811r.d	Prep Date	08/04/16	SDG No	
Analysis ID	180448	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 02:15	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.8 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	103	78	41	31	1.32	/	
	Unidentified	40:44	00:00	0	3028	2106	598	487	1.44	ABB/ABB	
	1,2,3,7,8-PeCDD	41:25	41:24	1	5972	4076	1422	517	1.47	ABB/ABB	
	Unidentified	42:02	00:00	0	2420	1942	493	307	1.25 *	ABB/ABB	R
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	133	60	53	24	2.21 *	/	
	13C-1,2,3,7,8-PeCDD	41:24	41:23	1	1320537	795938	328400	192530	1.66	ABV/ABV	
	Unidentified	41:44	00:00	0	2490	5368	690	1545	0.46 *	AVV/AVB	RT
	Unidentified	41:49	00:00	0	3791	2715	639	383	1.40	AVV/ABV	
	Unidentified	42:00	00:00	0	1828	3748	706	1043	0.49 *	ABV/AVB	R
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	113	135	45	54	0.83 *	/	
	Unidentified	44:18	00:00	0	10437	9123	3080	2794	1.14	ABB/ABB	
	1,2,3,4,7,8-HxCDF	44:33	44:33	0	13682	11228	2135	1761	1.22	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:42	44:42	0	7131	6518	1529	1440	1.09	AVB/AVB	
	Unidentified	45:17	00:00	0	2668	2424	537	665	1.10	ABV/AVB	
	2,3,4,6,7,8-HxCDF	45:28	45:27	1	7630	6251	1446	1107	1.22	AVB/AVV	
	Unidentified	46:38	00:00	0	3049	1774	489	359	1.72 *	ABB/ABB	R
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	128	340	51	136	0.38 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:33	44:32	1	837906	1596820	219146	409219	0.52	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:42	44:40	2	979518	1851802	247997	443992	0.53	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:27	45:26	1	934490	1705971	234561	427956	0.55	ABV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:27	46:27	0	783973	1527047	177301	337635	0.51	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	105	88	42	35	1.20	/	
	1,2,3,4,7,8-HxCDD	45:39	45:38	1	5913	4379	1335	1248	1.35	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:46	45:46	0	15676	14021	4005	3358	1.12	AVB/AVV	
	1,2,3,7,8,9-HxCDD	46:11	46:11	0	19165	14272	3798	2869	1.34	ABV/AVB	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	285	270	114	108	1.06	/	
	13C-1,2,3,4,7,8-HxCDD	45:38	45:37	1	1134641	912261	299786	237114	1.24	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:45	45:45	0	1197295	901011	295719	224761	1.33	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:10	46:10	0	3562884	2848975	869906	701474	1.25	AVV/AVV	
	Unidentified	46:20	00:00	0	43687	10373	7534	1739	4.21 *	AVV/AVB	RT
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	108	53	43	21	2.05 *	/	
	1,2,3,4,6,7,8-HpCDF	48:59	48:58	1	47096	41064	9202	8517	1.15	ABV/ABB	
	Unidentified	49:25	00:00	0	3608	2517	513	568	1.43 *	AVB/AVB	R
	Unidentified	49:40	00:00	0	59098	59295	11759	12465	1.00	ABV/ABV	
	Unidentified	49:49	00:00	0	4181	2534	544	539	1.65 *	AVV/AVB	R
	1,2,3,4,7,8,9-HpCDF	51:19	51:18	1	6481	4242	835	947	1.53 *	AVV/ABB	R

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811R1AC	Prep Batch	6217014	Lot No	H6G290408-006
Data File	/20160817s3/d1tm811r.d	Prep Date	08/04/16	SDG No	
Analysis ID	180448	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 02:15	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.8 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao

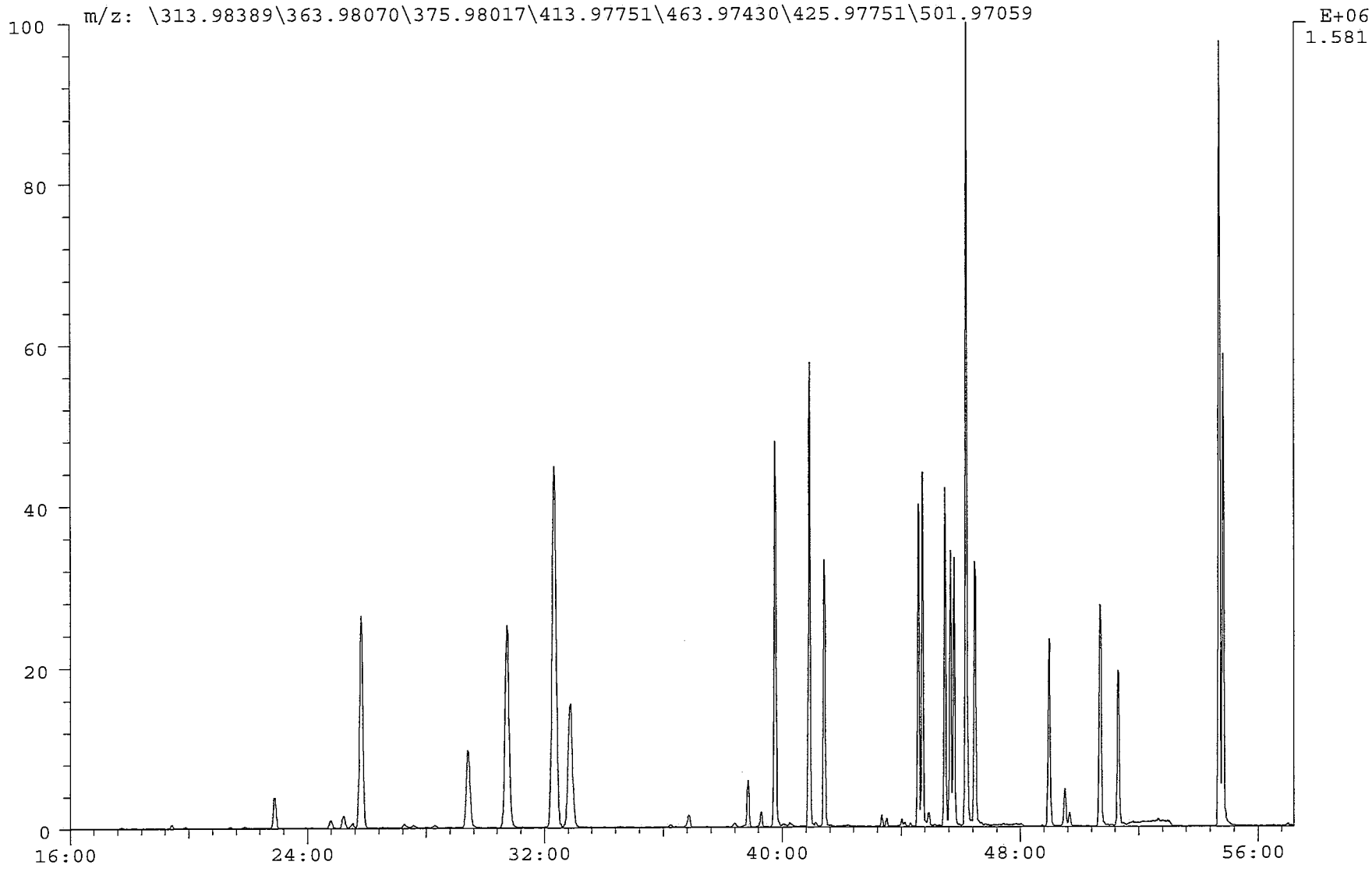
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	100	105	40	42	0.95 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:57	48:57	0	527300	1211569	108494	247533	0.44	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	51:17	51:17	0	464408	1008427	91442	212405	0.46	ABV/ABV	M
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	75	150	30	60	0.50 *	/	
	Unidentified	49:29	00:00	0	167688	169868	34458	34124	0.99	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:41	50:42	-1	198284	189732	39383	39239	1.05	ABV/ABV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	78	83	31	33	0.94	/	
	Unidentified	49:29	00:00	0	20149	13727	3529	2549	1.47 *	ABB/ABV	R
	13C-1,2,3,4,6,7,8-HpCDD	50:40	50:41	-1	942239	862568	191430	180385	1.09	ABV/ABV	
	Unidentified	51:03	00:00	0	3159	1994	932	810	1.58 *	AVV/AVB	R
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	35	70	14	28	0.50 *	/	
	Unidentified	54:42	00:00	0	1194	715	355	215	1.67 *	ABV/ABV	R
	OCDF	54:50	54:50	0	68411	73454	17910	18023	0.93	AVV/AVV	
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	88	108	35	43	0.81	/	
	13C-OCDF	54:49	54:49	0	1542139	1777724	408409	469798	0.87	ABV/ABV	
	Unidentified	55:12	00:00	0	2302	4566	765	972	0.50 *	AVV/AVB	RT
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	113	140	45	56	0.80	/	
	OCDD	54:42	54:42	0	1590256	1767164	405154	440502	0.90	ABV/ABV	
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	143	140	57	56	1.02	/	
	13C-OCDD	54:41	54:41	0	1280157	1451449	340138	381252	0.88	ABV/ABV	
	Unidentified	54:55	00:00	0	8737	6570	1859	904	1.33 *	AVV/AVB	RT

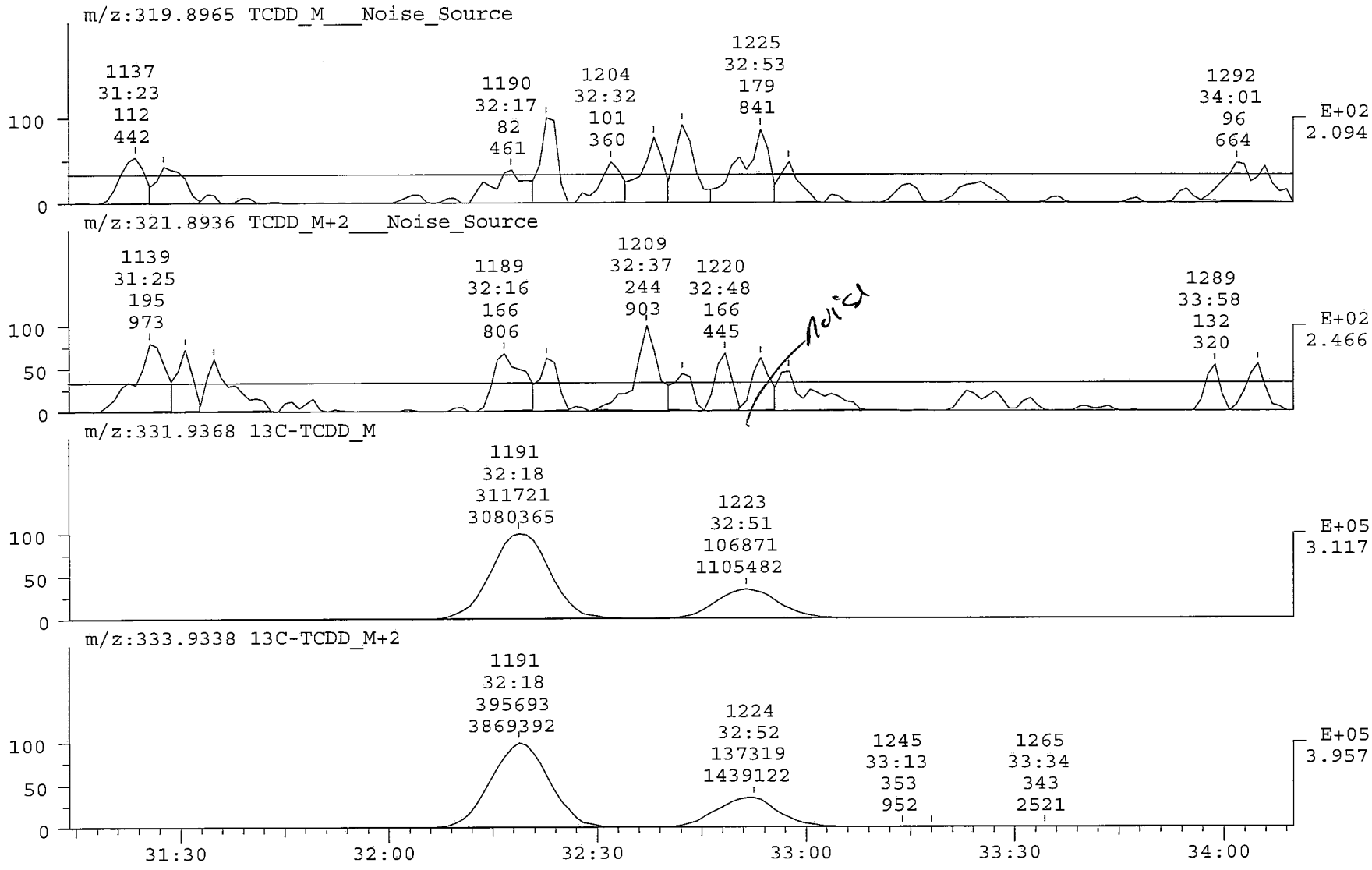
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. LM 8-18-16
calc KM 8-24-16
QC/Rw K 8/24/16

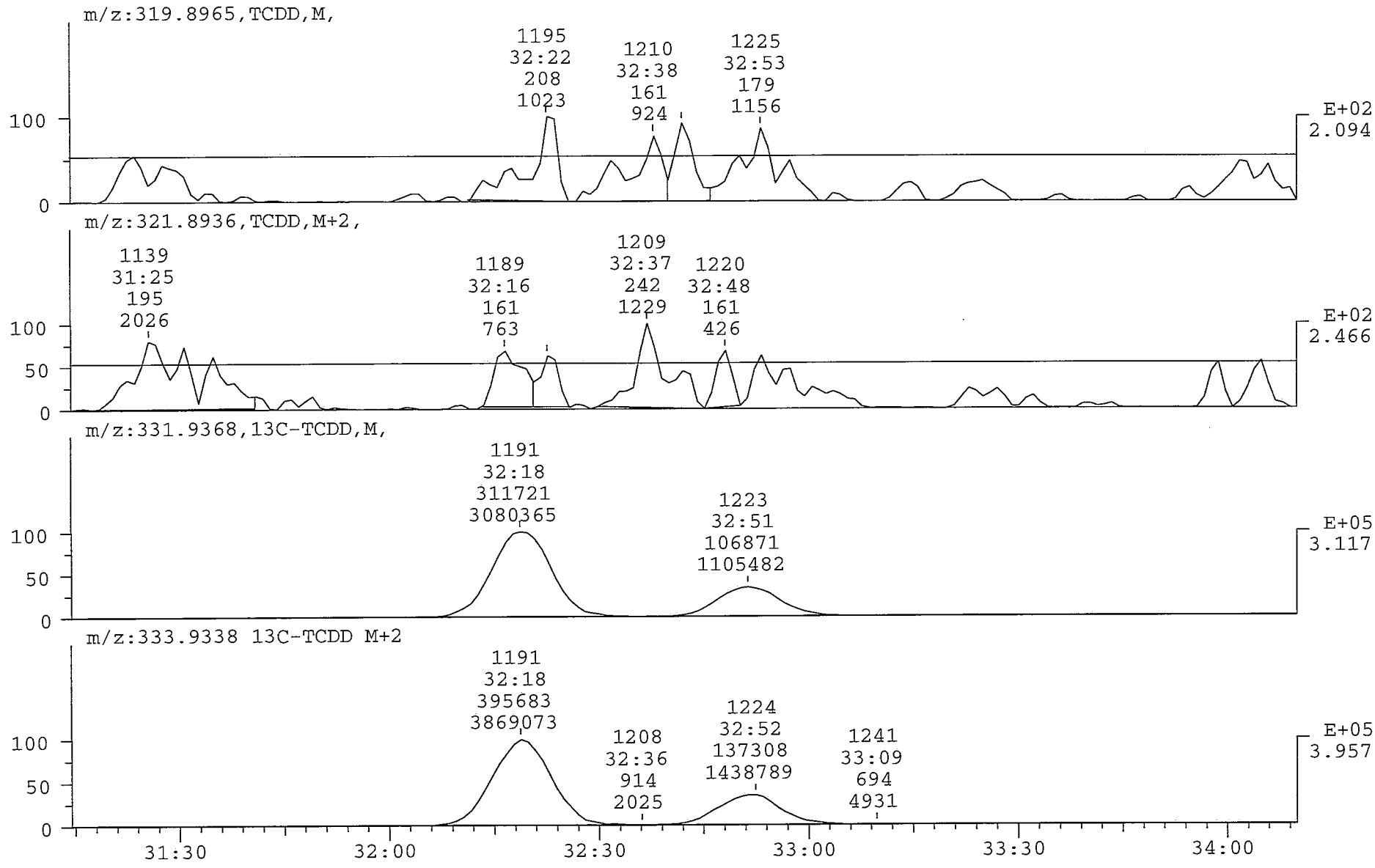
CHRO: d1tm811r 18-Aug-16 Elapse: 45:28 1950
Samp: WO=m811r1ac Meth=9Ao Dil=1 Start : 02:15:58 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 232 > 2629 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



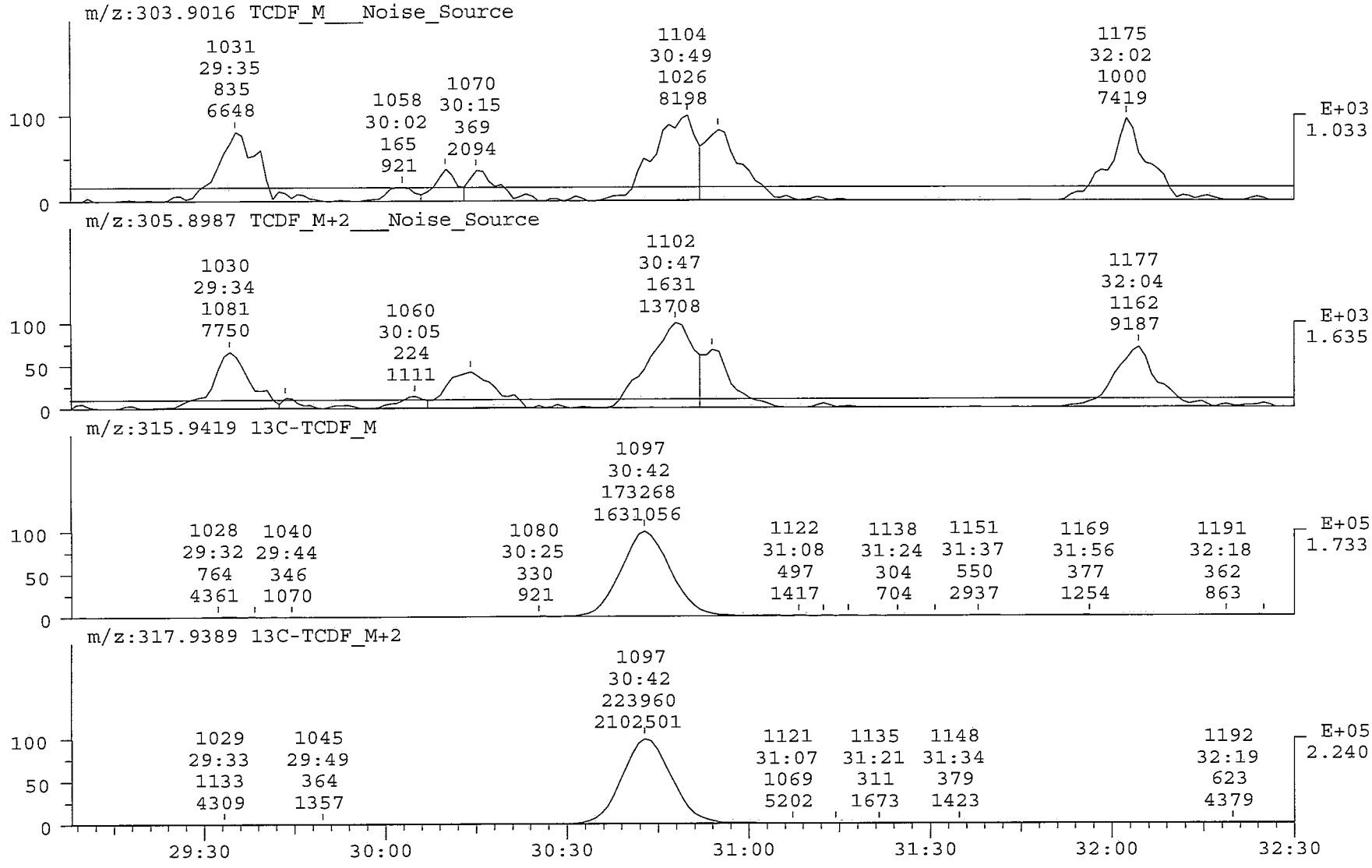
CHRO: d1tm811r 18-Aug-16 Elapse: 32:42 1214
Samp: WO=m811r1ac Meth=9Ao Dil=1 Start : 02:15:58 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1128 > 1300 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



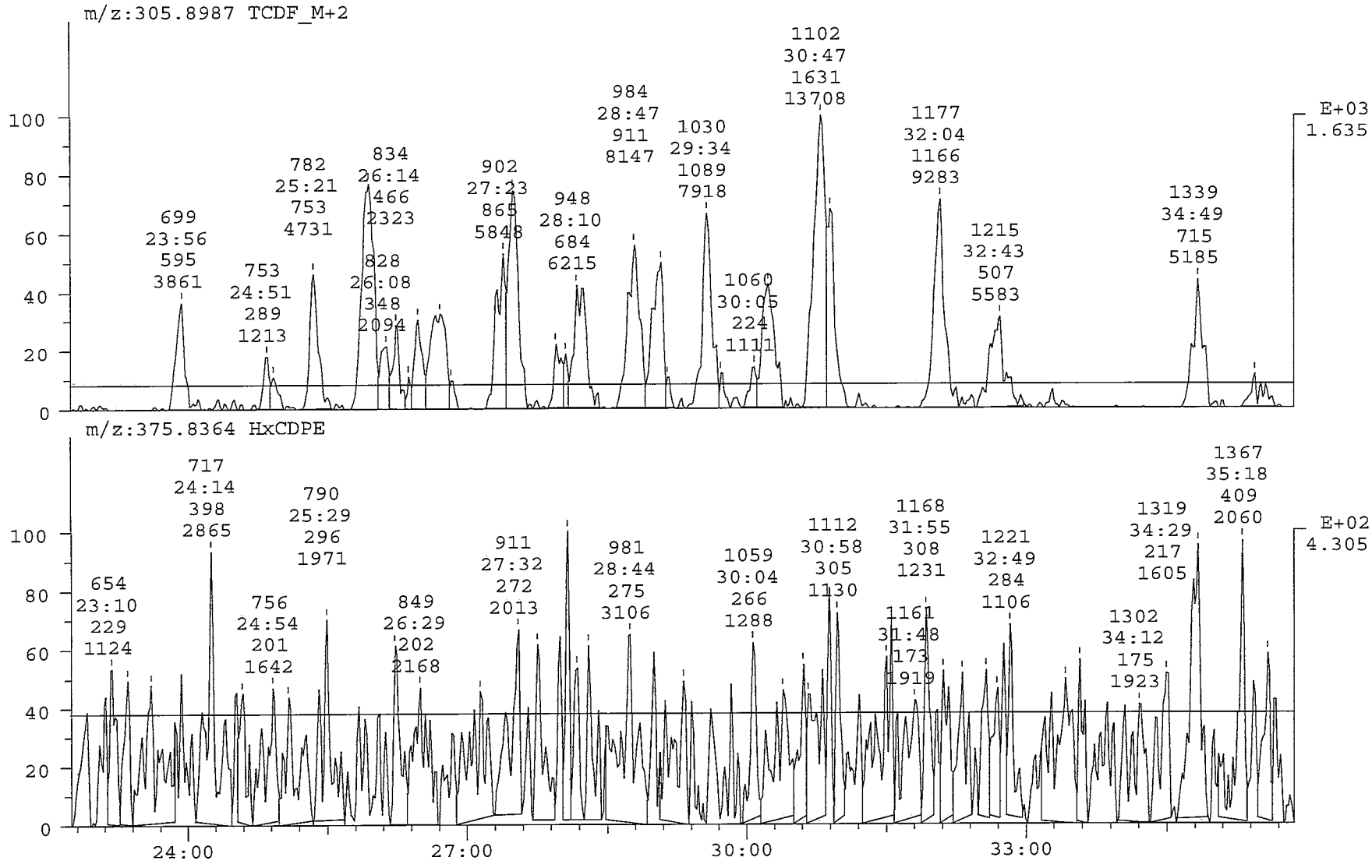
CHRO: d1tm811r 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m811r1ac Meth=9Ao Dil=1 Start : 02:15:58 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1128 > 1300 Masses: 303 > 514
Area: 5, 1.00, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



CHRO: d1tm811r 18-Aug-16 Elapse: 30:45 1100
Samp: WO=m811r1ac Meth=9Ao Dil=1 Start : 02:15:58 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1004 > 1202 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1tm811r 18-Aug-16 Elapse: 30:45 1100
Samp: WO=m811r1ac Meth=9Ao Dil=1 Start : 02:15:58 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 628 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



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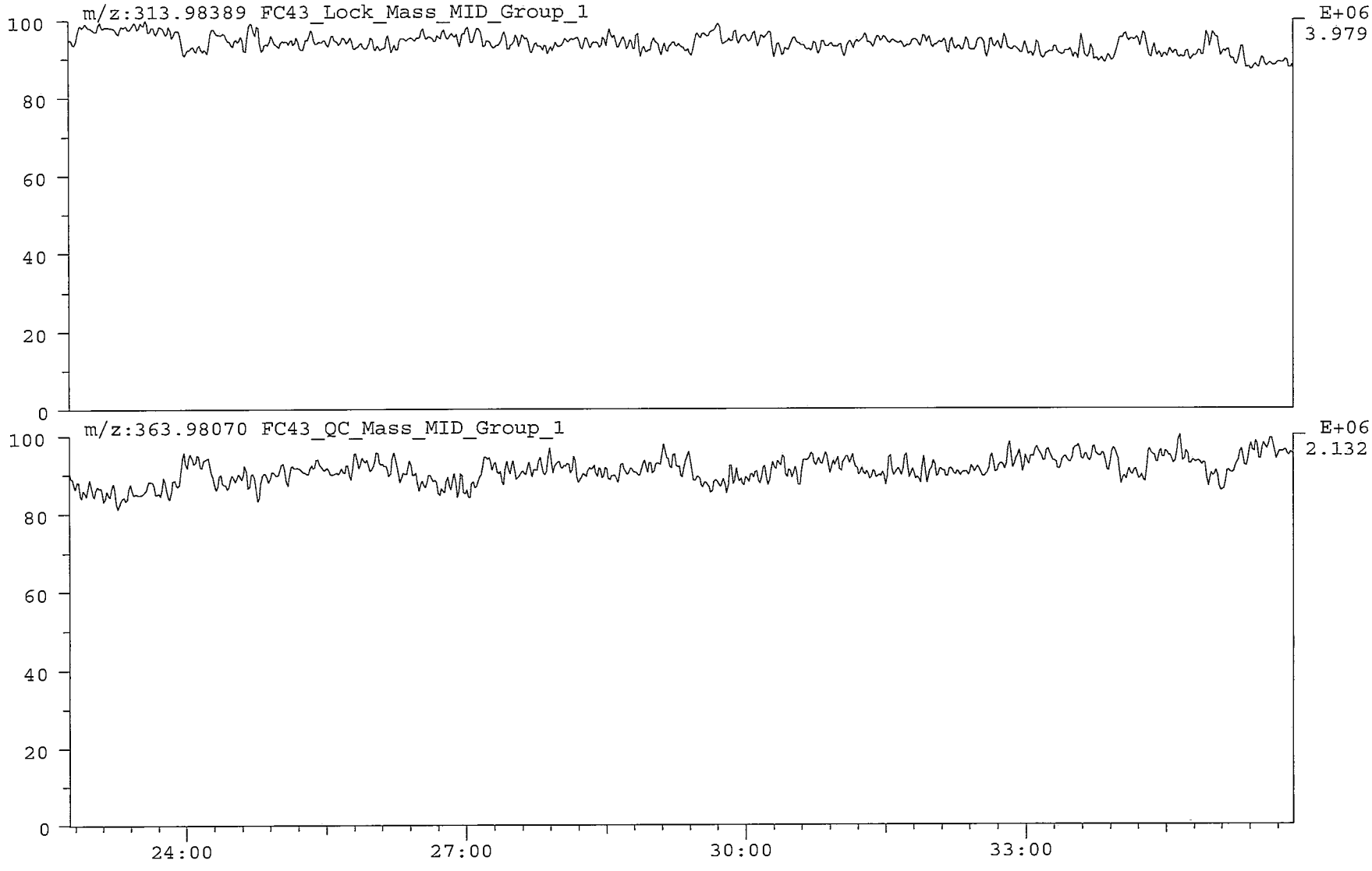
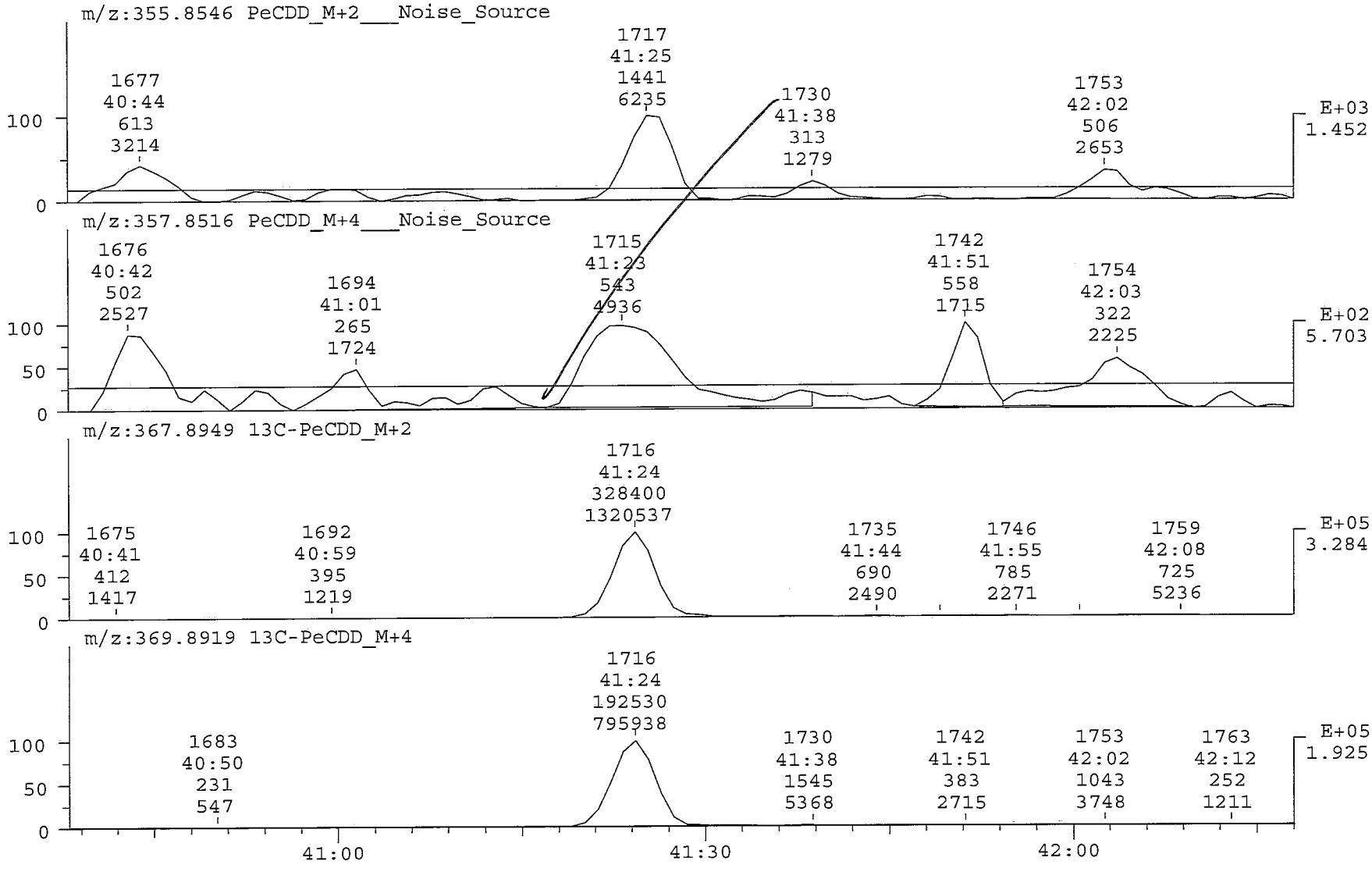
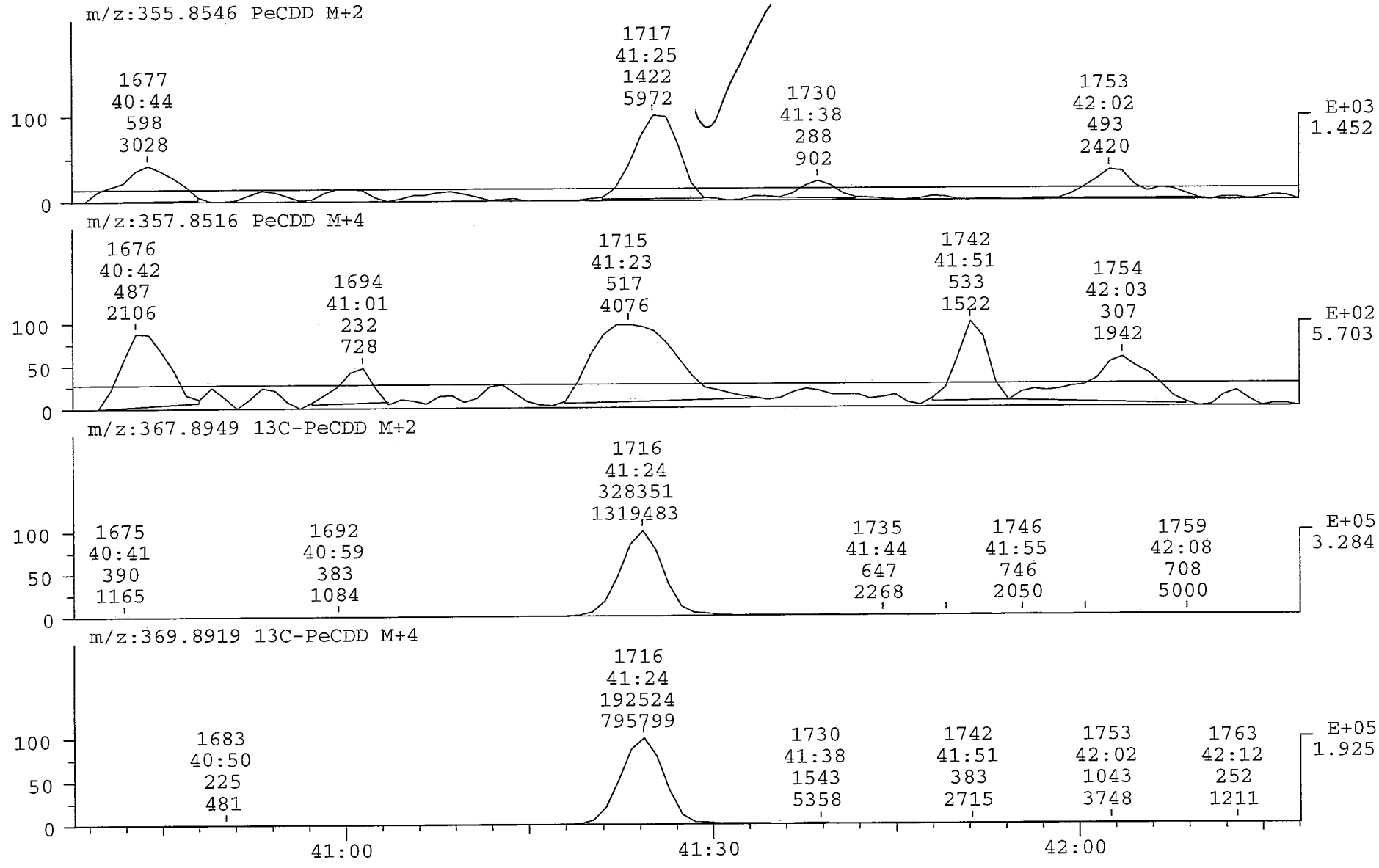
CHRO:  d1tm811r                                18-Aug-16  Elapse:  30:45      1100
Samp:  WO=m811r1ac Meth=9Ao Dil=1                         Start :  02:15:58   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   628 > 1400           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



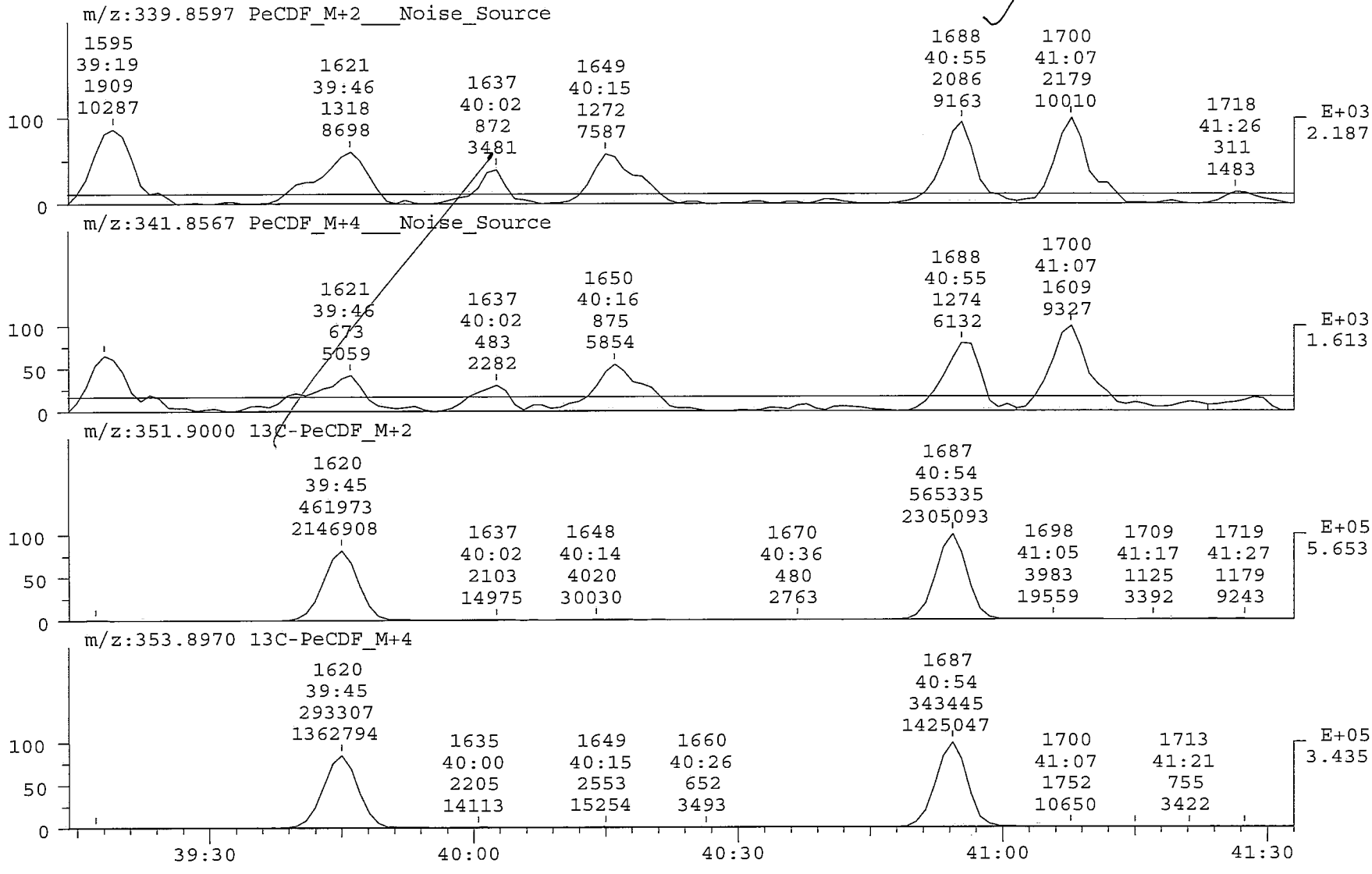
CHRO: d1tm811r 18-Aug-16 Elapse: 41:25 1717
Samp: WO=m811r1ac Meth=9Ao Dil=1 Start : 02:15:58 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1671 > 1768 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



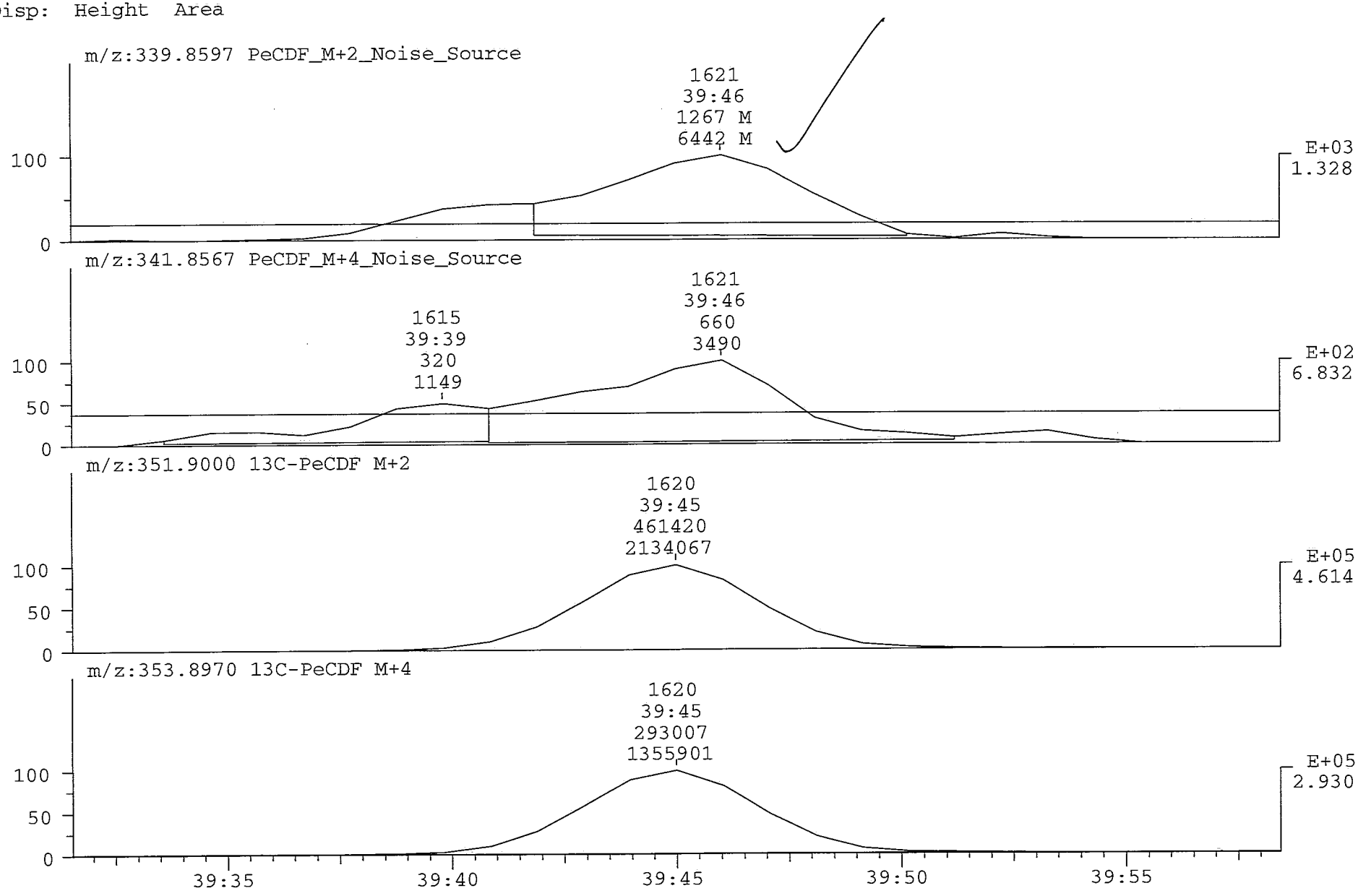
CHRO: d1tm811r 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m811r1ac Meth=9Ao Dil=1 Start : 02:15:58 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1671 > 1768 Masses: 303 > 514
Area: 5, 2.00, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



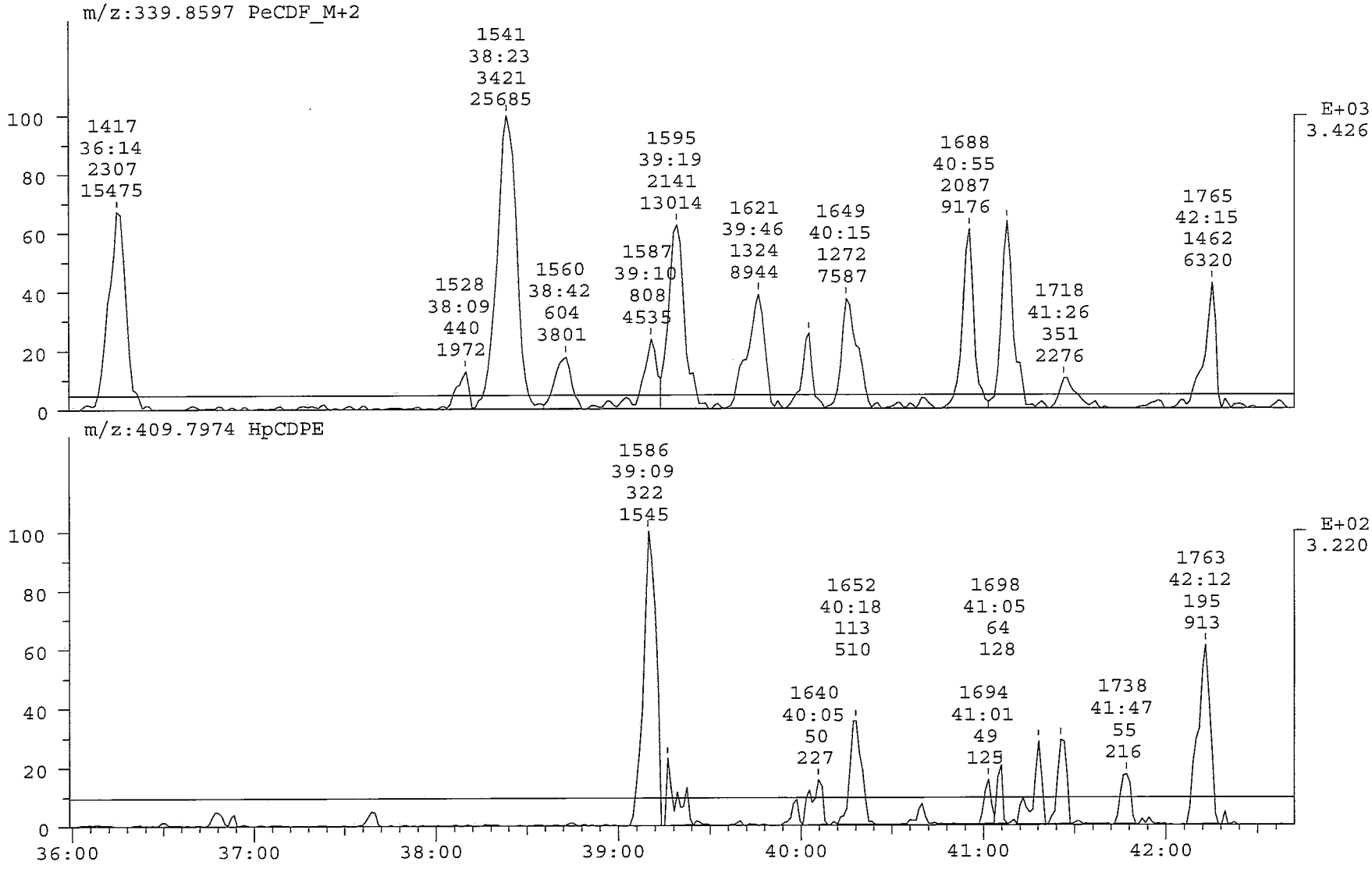
CHRO: d1tm811r 18-Aug-16 Elapse: 40:23 1657
Samp: WO=m811r1ac Meth=9Ao Dil=1 Start : 02:15:58 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1590 > 1724 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



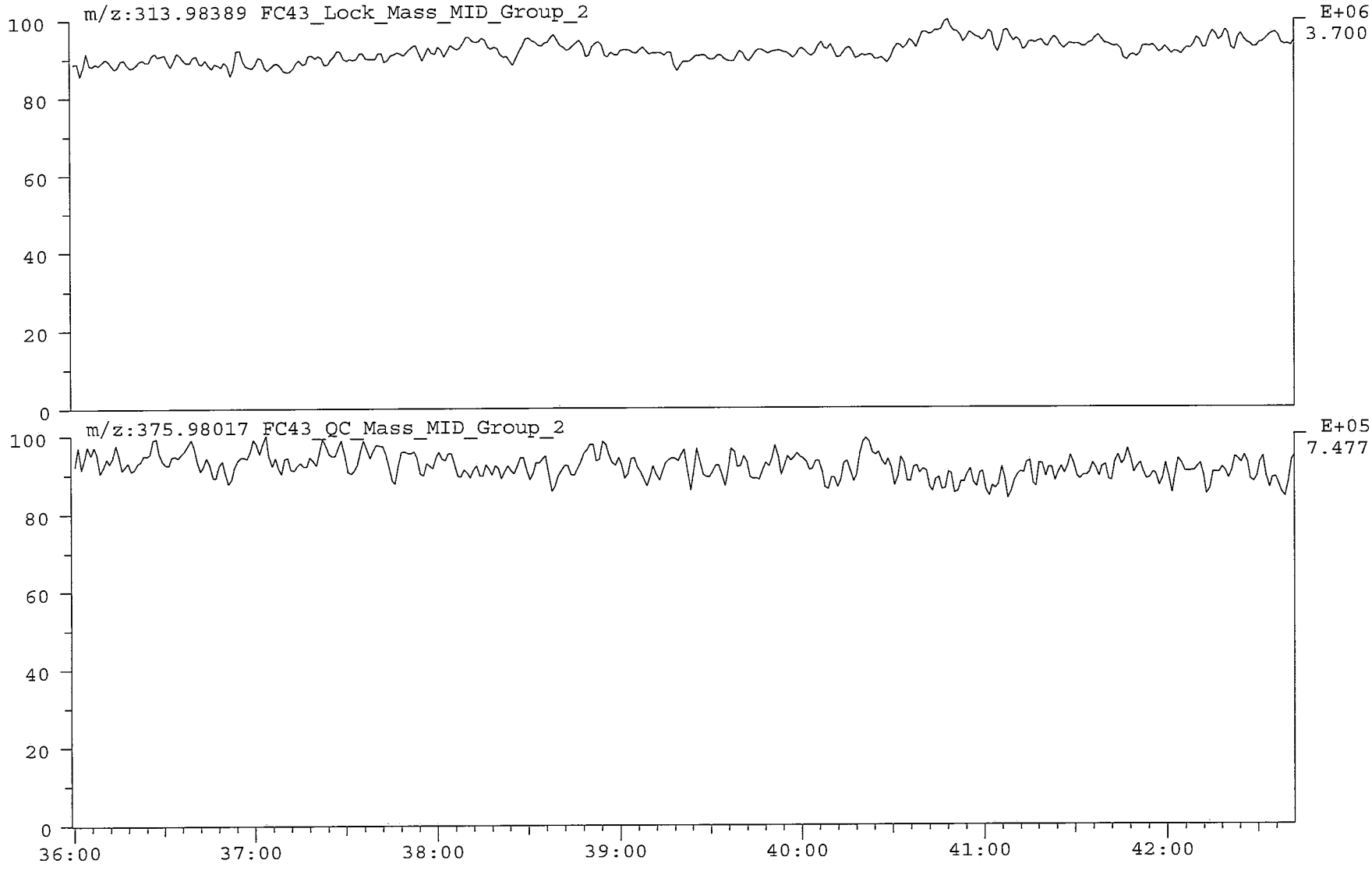
CHRO: d1tm811r 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m811r1ac Meth=9Ao Dil=1 Start : 02:15:58 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1607 > 1633 Masses: 303 > 514
Area: 5, 1.00, 15 Baseline : 100, 1 Label : -2, 5.0
Disp: Height Area



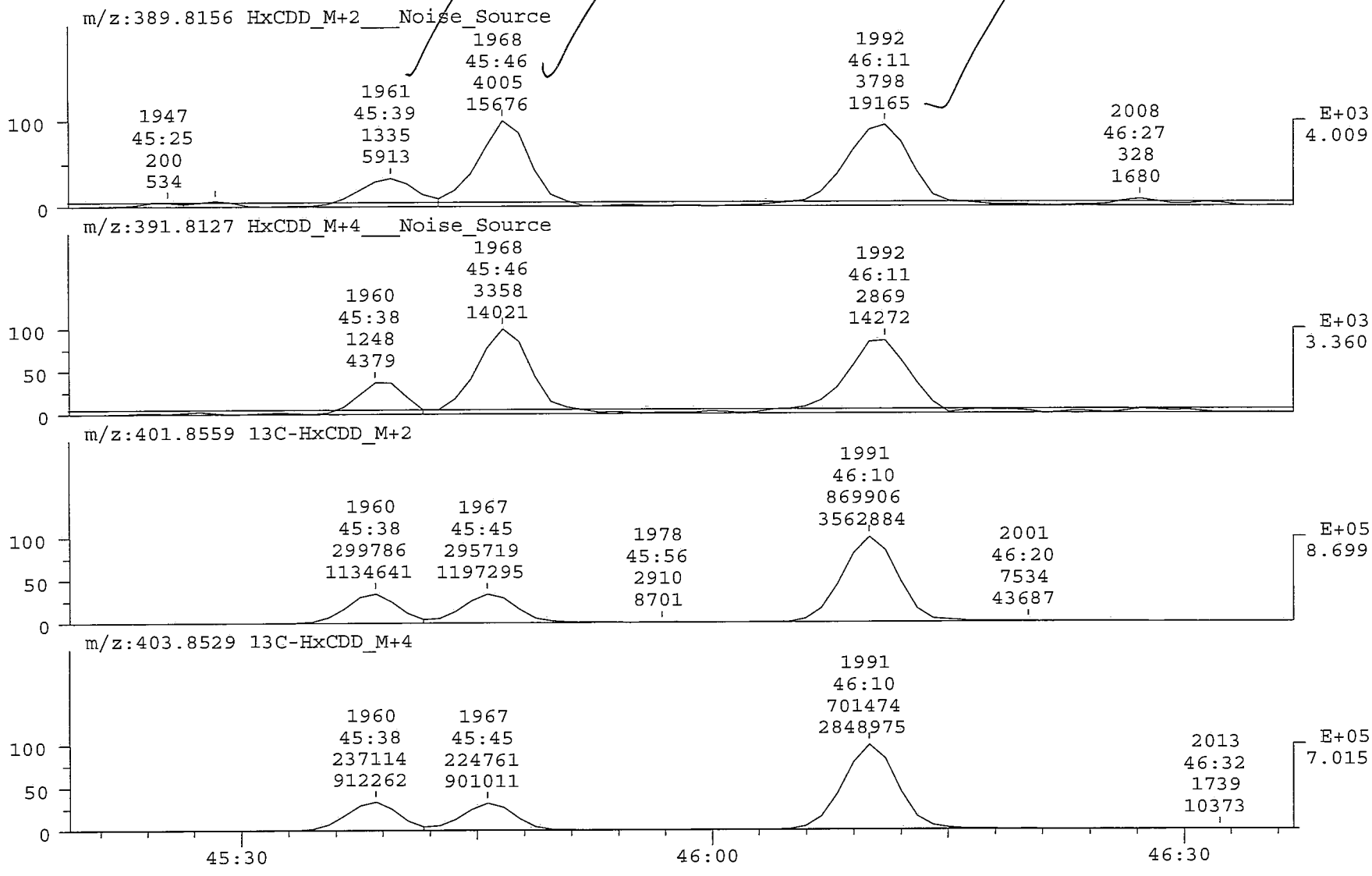
```
CHRO:  d1tm811r                                18-Aug-16   Elapse:  40:23      1657
Samp:  WO=m811r1ac Meth=9Ao Dil=1                          Start :  02:15:58   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (9.8g)
Oper:  LKM                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



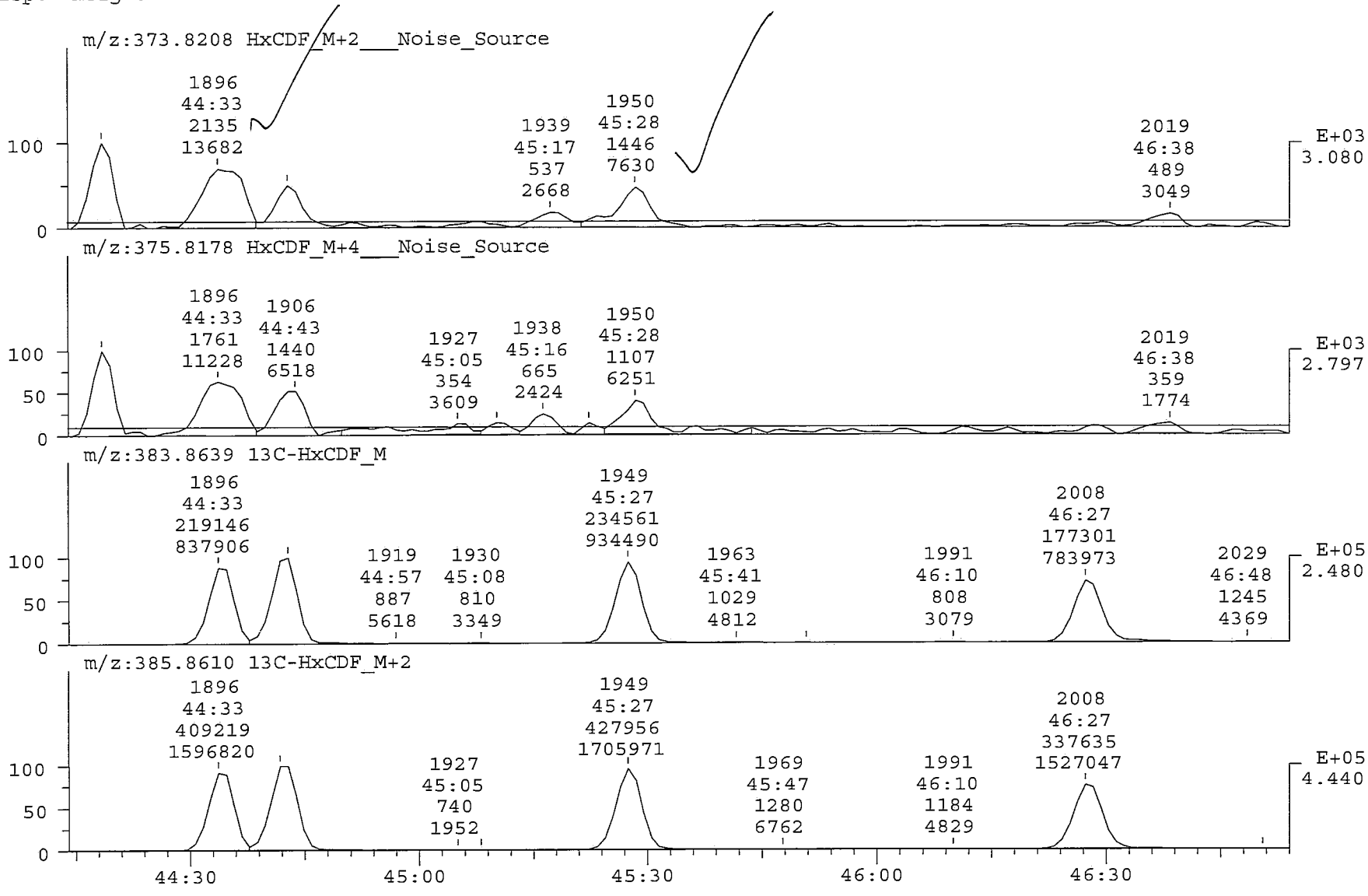
```
CHRO:  d1tm811r                                18-Aug-16  Elapse:  40:23      1657
Samp:  WO=m811r1ac Meth=9Ao Dil=1                         Start :  02:15:58   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



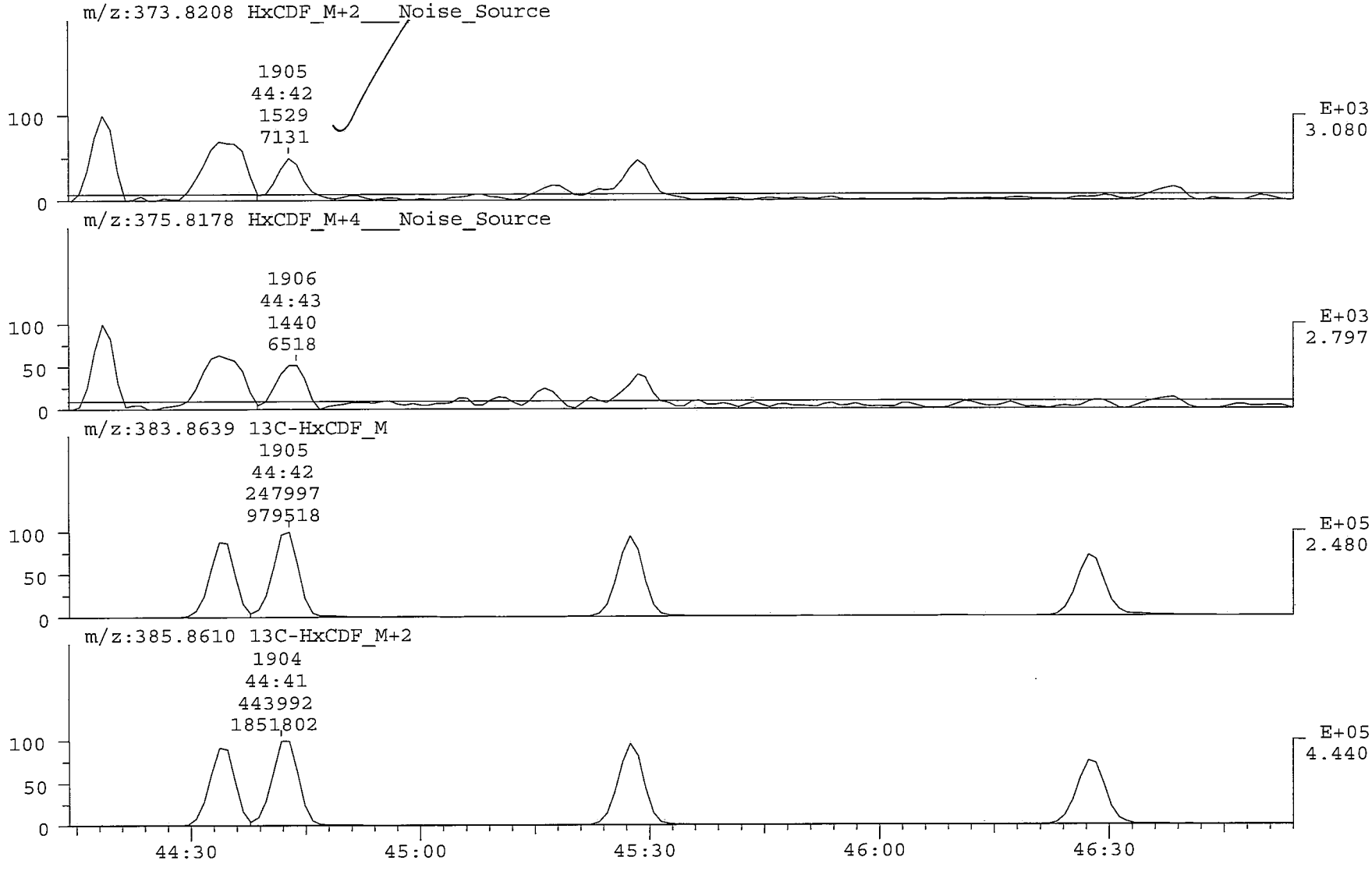
CHRO: d1tm811r 18-Aug-16 Elapse: 45:57 1979
Samp: WO=m811r1ac Meth=9Ao Dil=1 Start : 02:15:58 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1941 > 2018 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



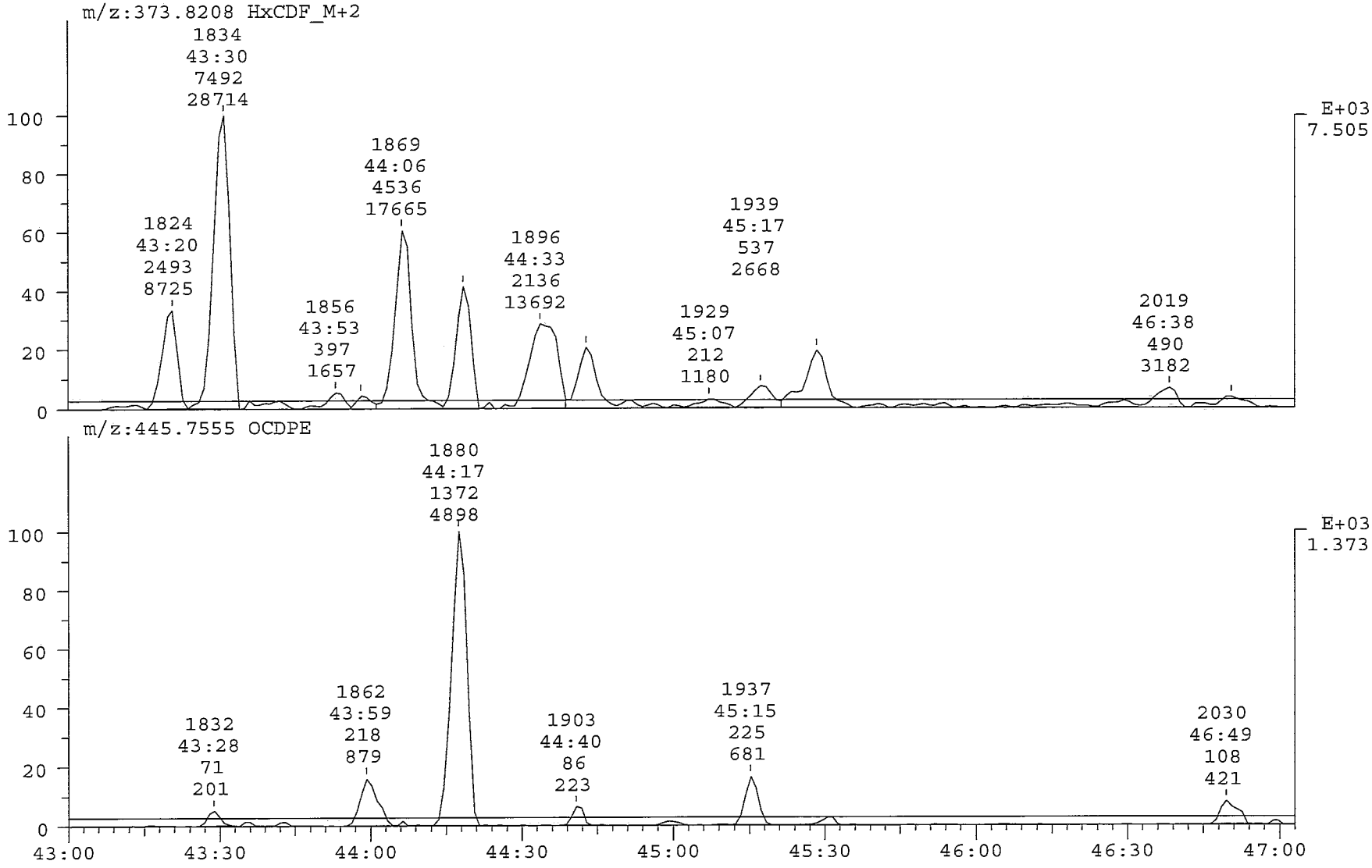
CHRO: d1tm811r 18-Aug-16 Elapse: 45:34 1956
Samp: WO=m811r1ac Meth=9Ao Dil=1 Start : 02:15:58 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1877 > 2034 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



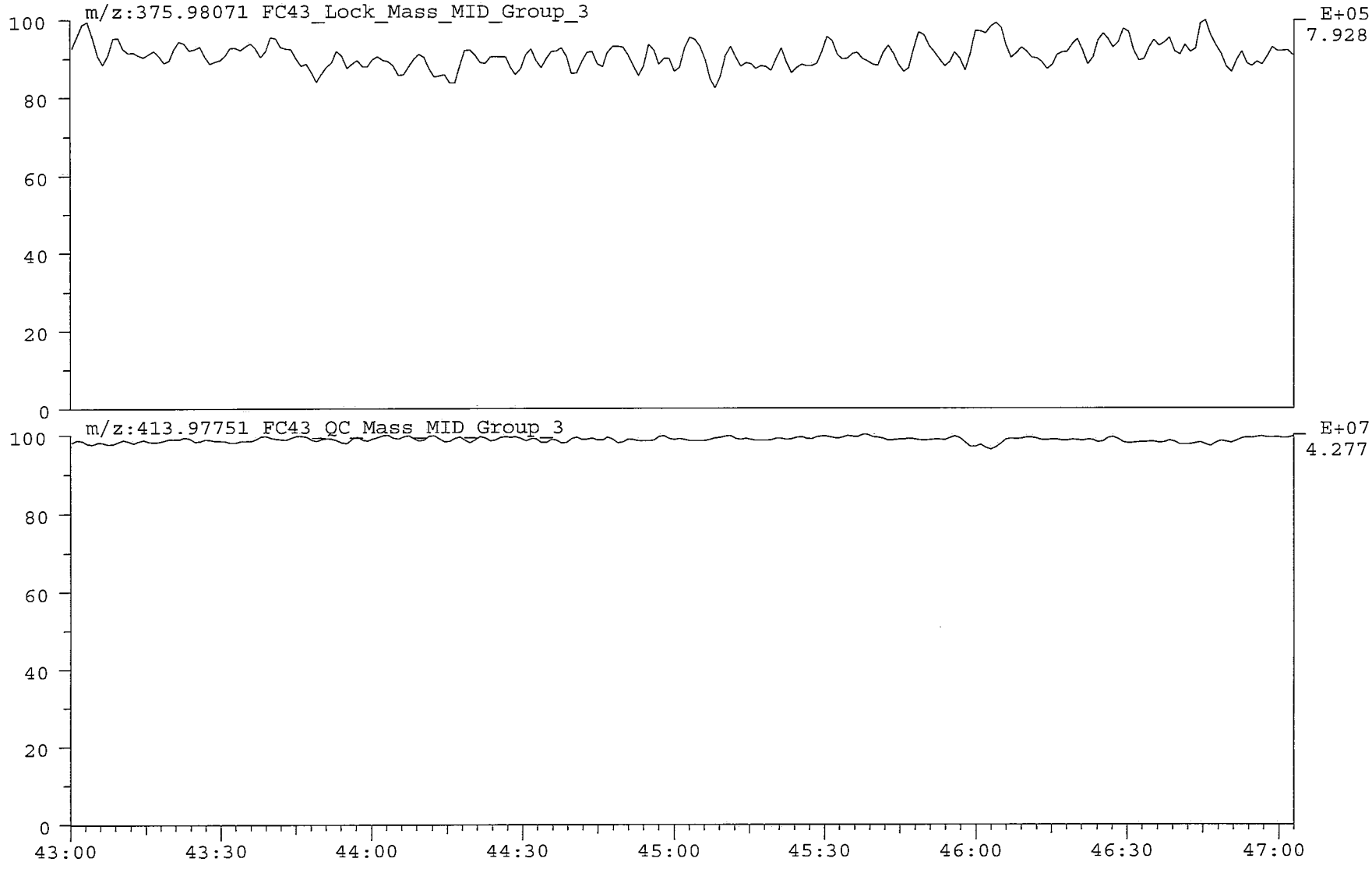
```
CHRO:  d1tm811r                                18-Aug-16  Elapse:  44:41      1904
Samp:  WO=m811r1ac Meth=9Ao Dil=1                         Start :  02:15:58   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1900 > 1908          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



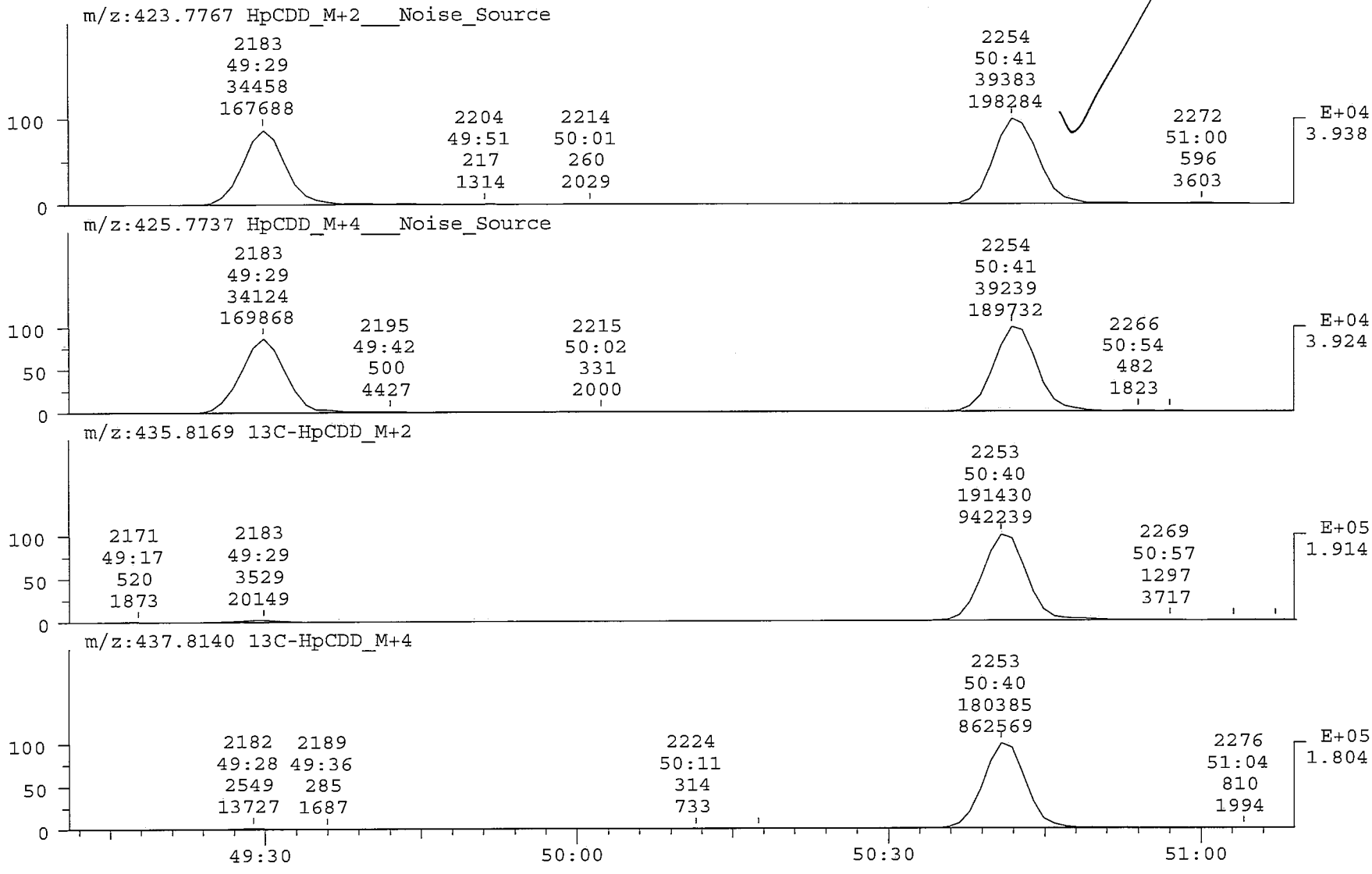
CHRO: d1tm811r 18-Aug-16 Elapse: 44:41 1904
Samp: WO=m811r1ac Meth=9Ao Dil=1 Start : 02:15:58 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1804 > 2043 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



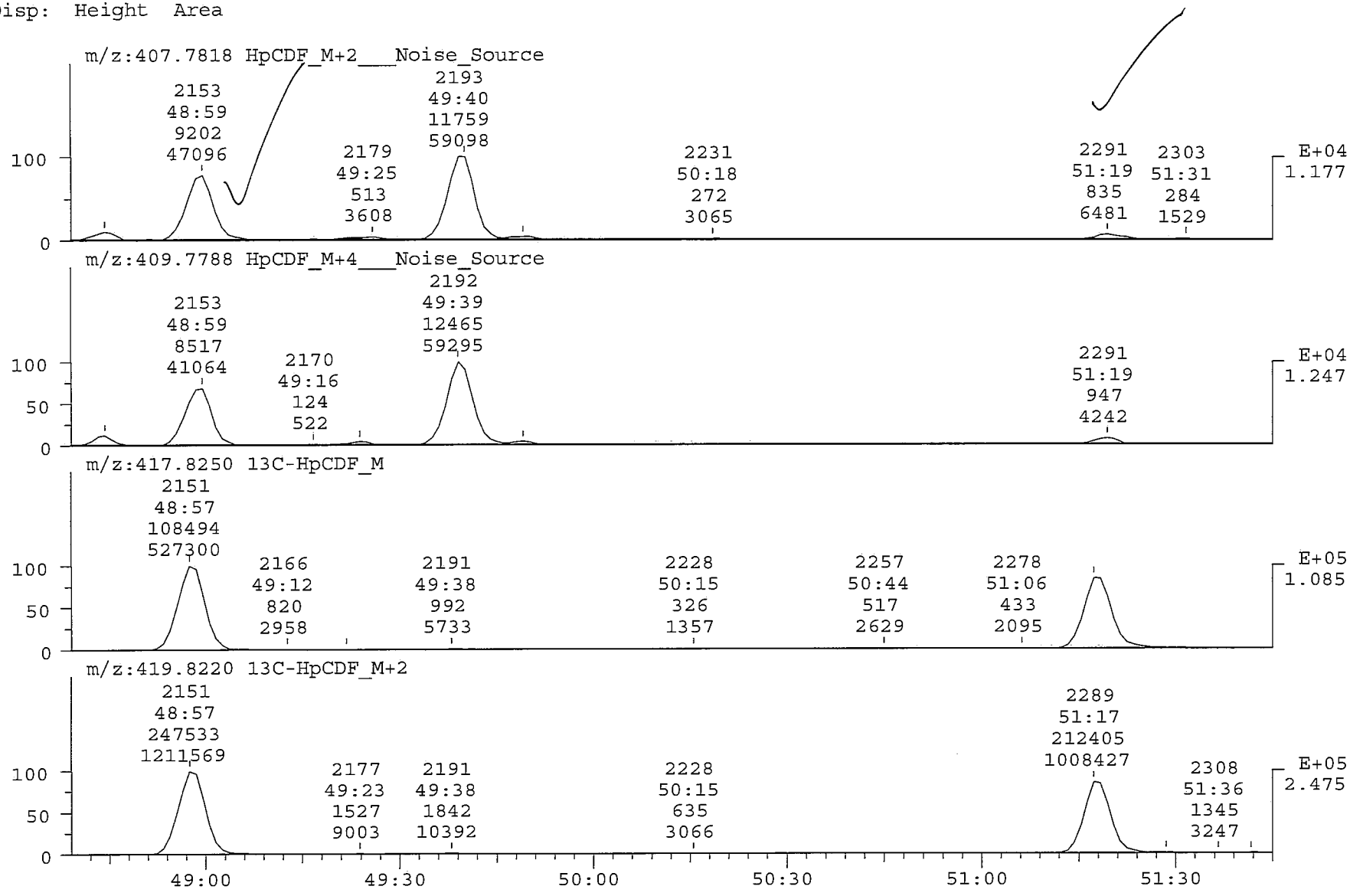
```
CHRO:  d1tm811r                              18-Aug-16   Elapse:  44:41      1904
Samp:  WO=m811r1ac Meth=9Ao Dil=1                        Start :  02:15:58   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                               Study :  6217014 (9.8g)
Oper:  LKM                                               Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1804 > 2043         Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3              Label :  0, 0.0
Disp:  Height  Area
```



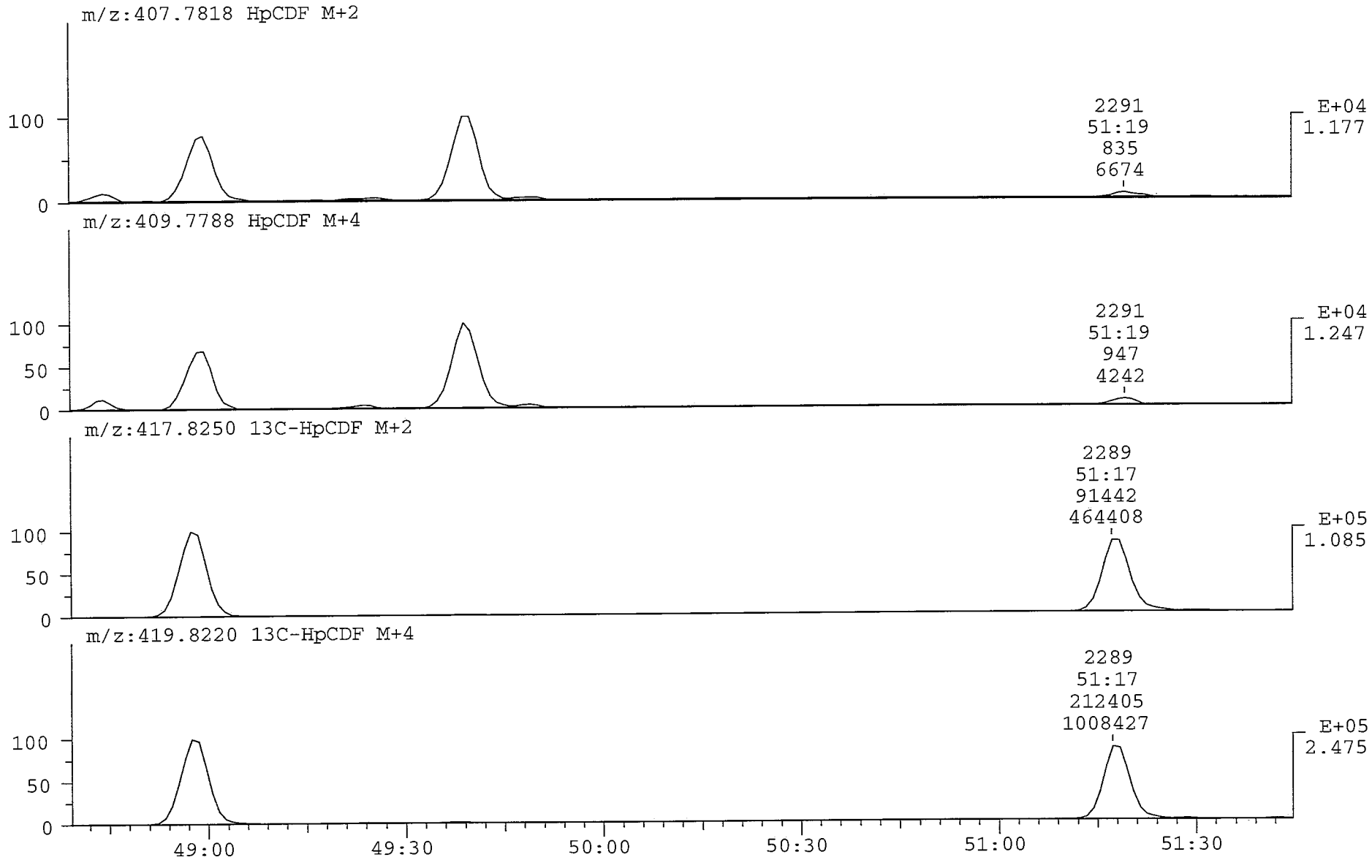
CHRO: d1tm811r 18-Aug-16 Elapse: 44:41 1904
Samp: WO=m811r1ac Meth=9Ao Dil=1 Start : 02:15:58 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2164 > 2281 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



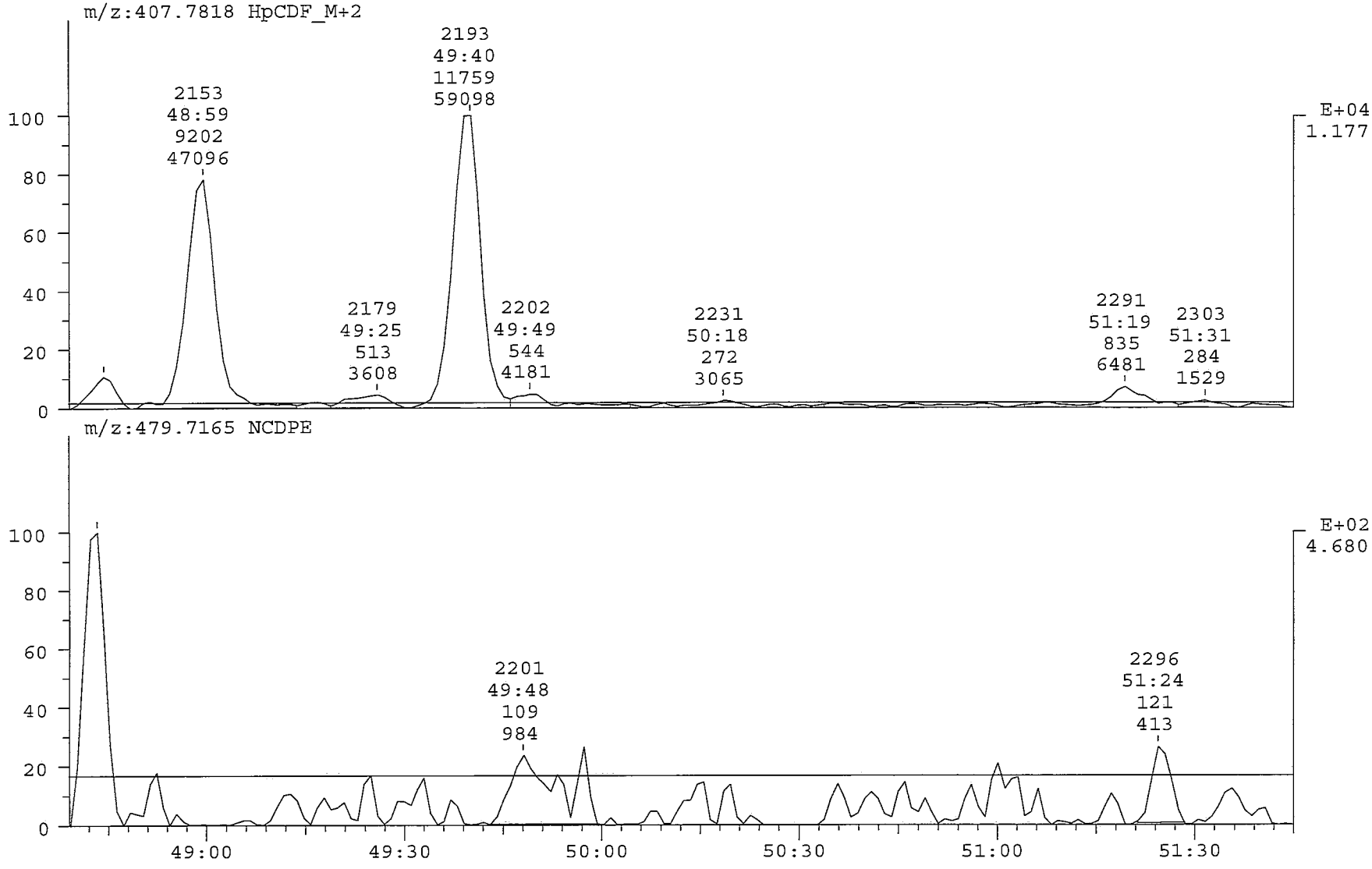
CHRO: d1tm811r 18-Aug-16 Elapse: 50:12 2225
Samp: WO=m811r1ac Meth=9Ao Dil=1 Start : 02:15:58 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



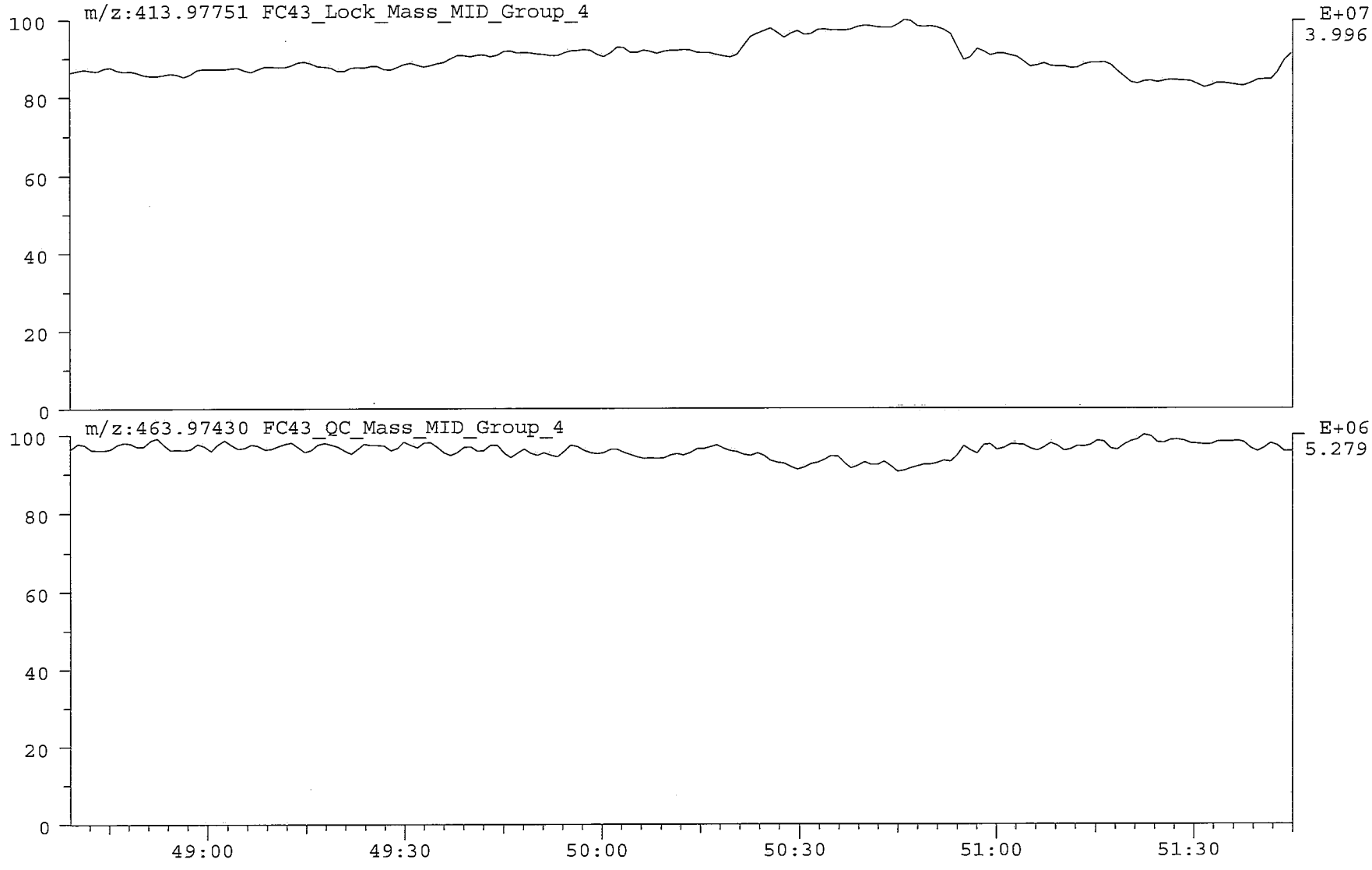
CHRO: d1tm811r 18-Aug-16 Elapse: 51:16 2288
Samp: WO=m811r1ac Meth=9Ao Dil=1 Start : 02:15:58 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2285 > 2291 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



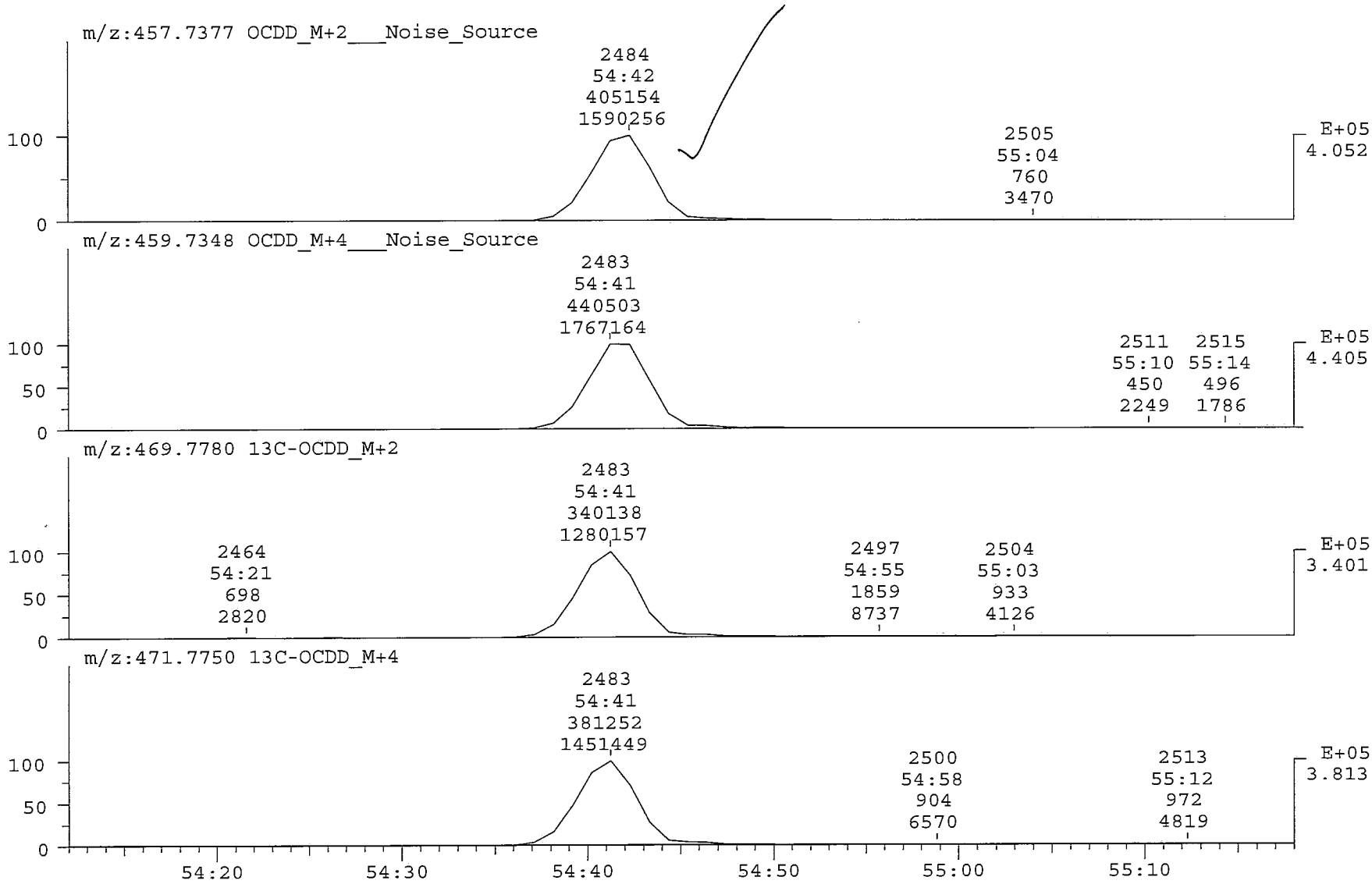
```
CHRO:  d1tm811r                                18-Aug-16  Elapse:  50:12      2225
Samp:  WO=m811r1ac Meth=9Ao Dil=1                         Start :  02:15:58   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2133 > 2316          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



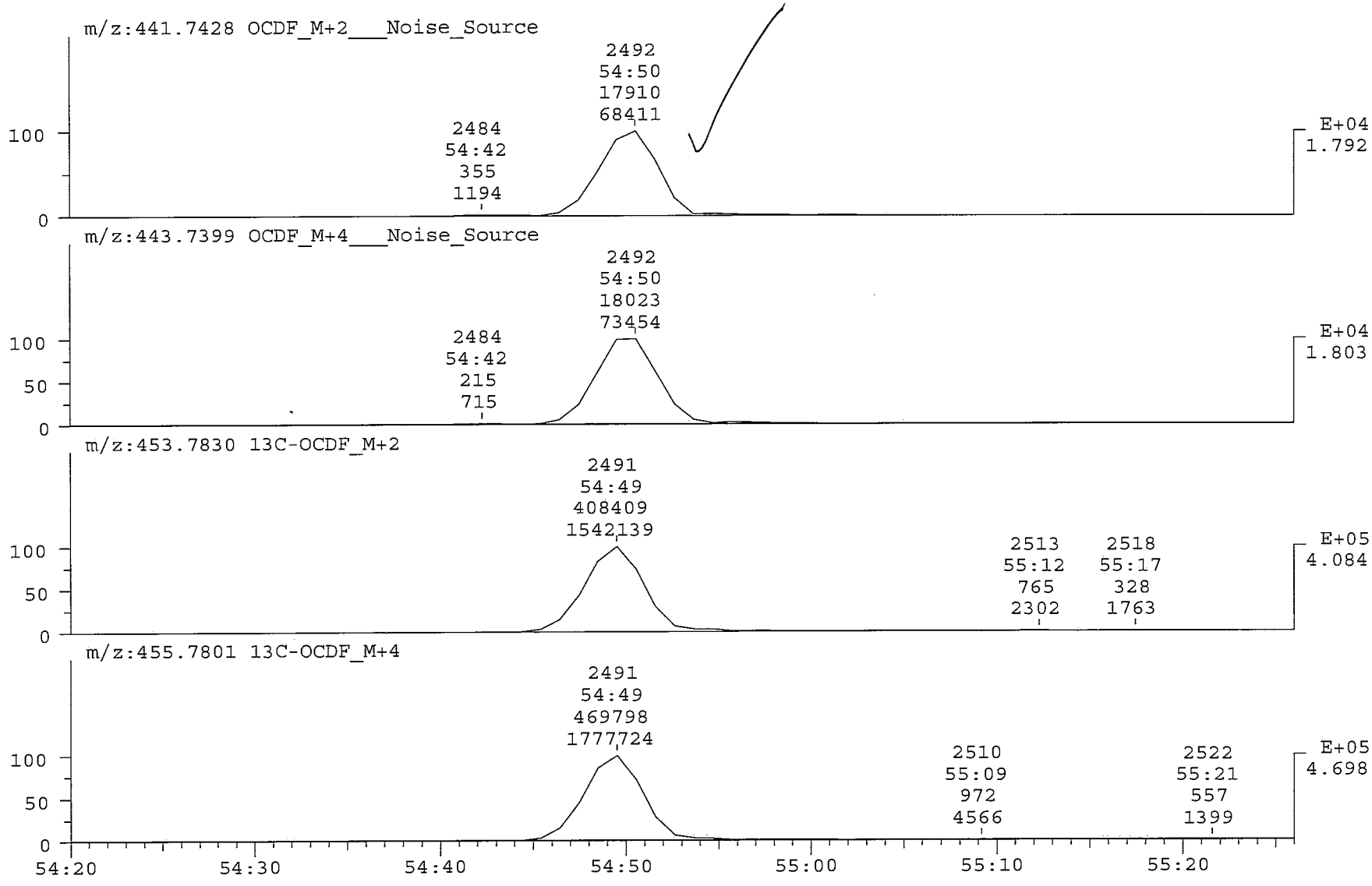
```
CHRO:  d1tm811r                                18-Aug-16  Elapse:  50:12      2225
Samp:  WO=m811r1ac Meth=9Ao Dil=1                         Start :  02:15:58   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2133 > 2316          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



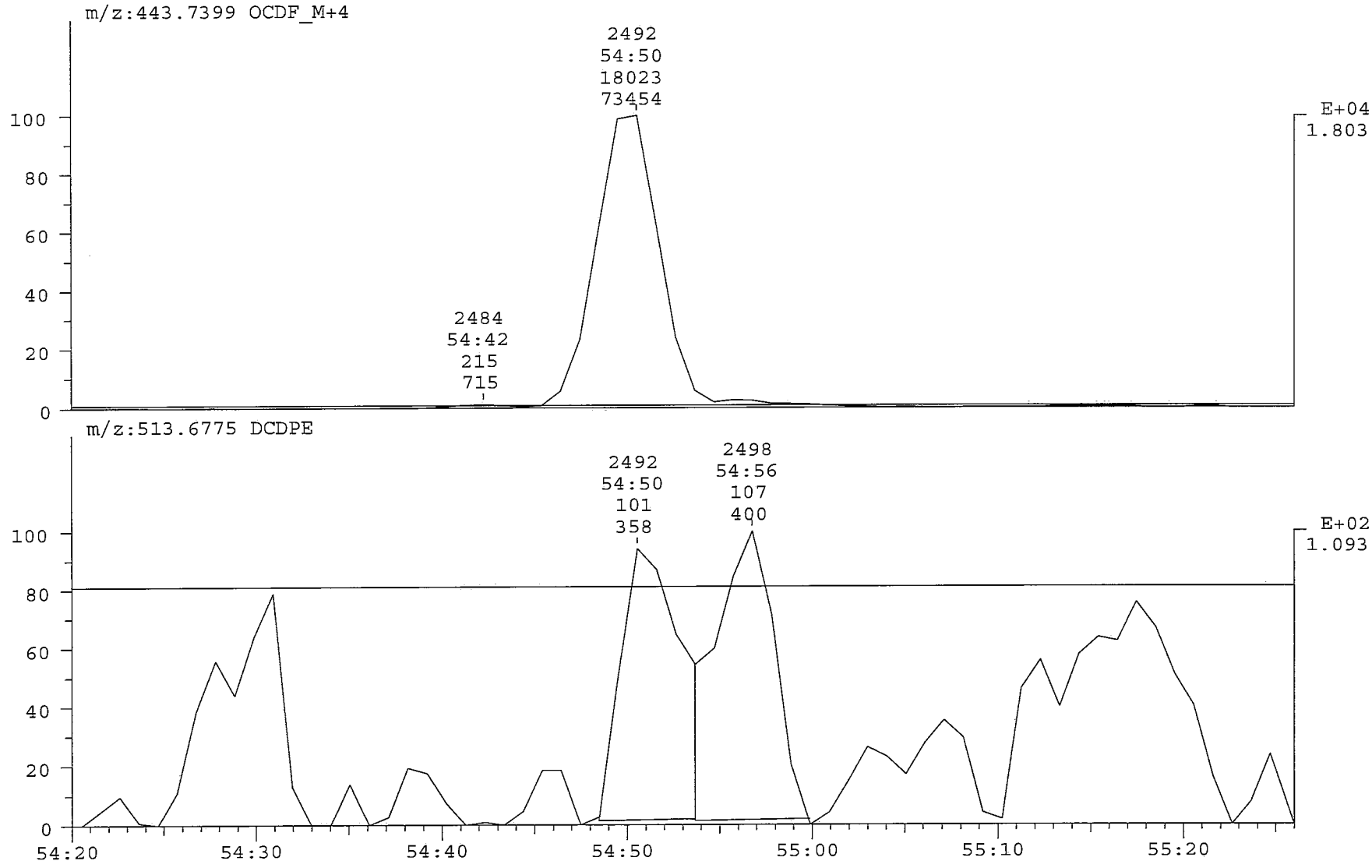
```
CHRO:  d1tm811r                                18-Aug-16  Elapse:  54:42      2484
Samp:  WO=m811r1ac Meth=9Ao Dil=1                         Start :  02:15:58   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2455 > 2519          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



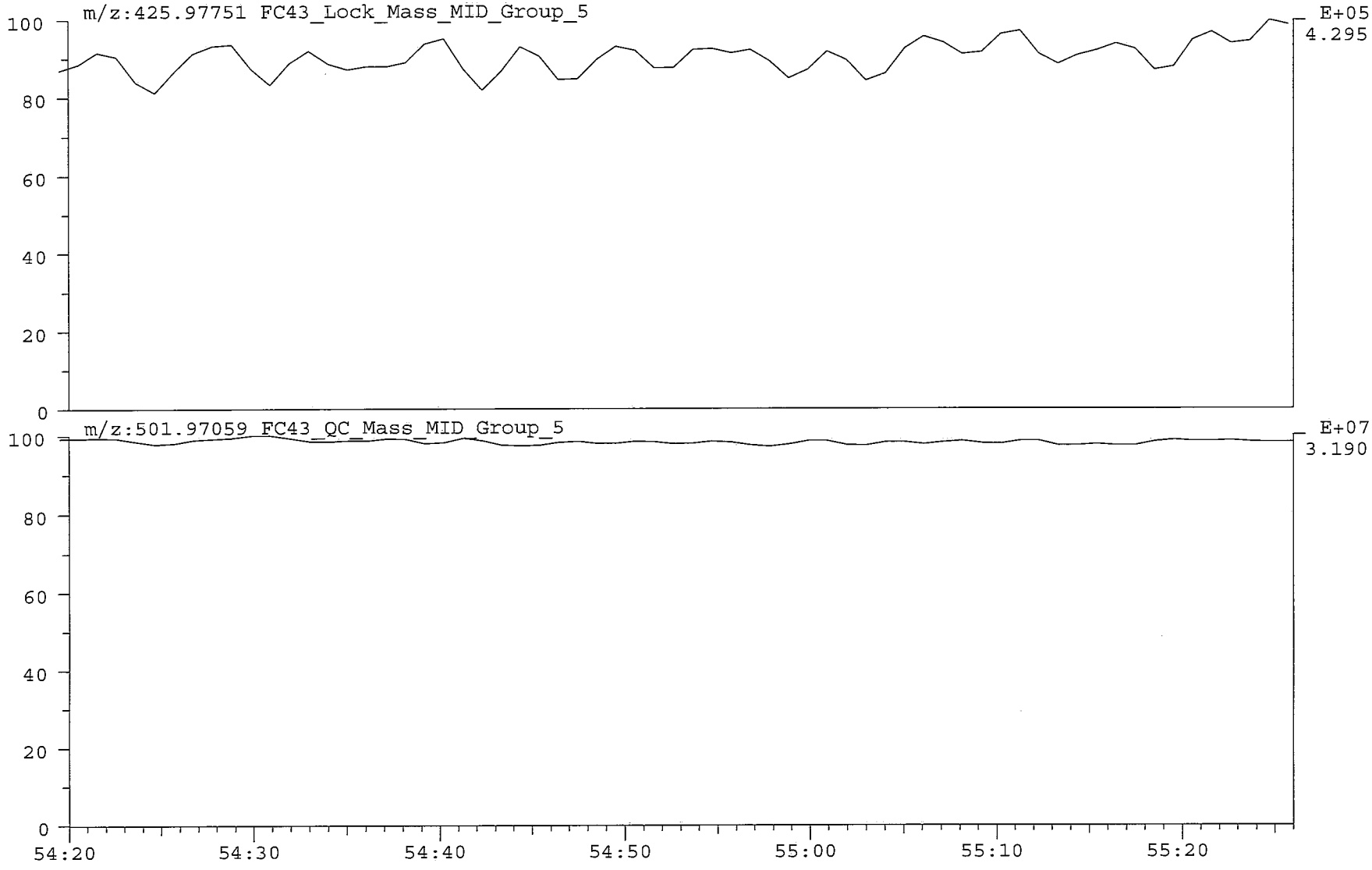
CHRO: d1tm811r 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m811r1ac Meth=9Ao Dil=1 Start : 02:15:58 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2462 > 2526 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d1tm811r                                18-Aug-16  Elapse:  54:49      2491
Samp:  WO=m811r1ac Meth=9Ao Dil=1                         Start :  02:15:58   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2462 > 2526          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1tm811r                              18-Aug-16  Elapse:  54:49      2491
Samp:  WO=m811r1ac Meth=9Ao Dil=1                       Start :  02:15:58   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                              Study :  6217014 (9.8g)
Oper:  LKM                                              Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2462 > 2526        Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3             Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Thu Aug 18 02:20:23 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 18-Aug-16 02:20:23

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160818011725

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

```
 375.9802     20  1        7
 383.8639      5  1       29
 385.8610      5  1       29
 389.8158      1  1      146
 391.8127      1  1      146
 401.8559      5  1       29
 403.8529      5  1       29
 413.9770 c   20  1        7
 413.9770     20  1        7
 445.7555      1  1      146
Window # 4
     mass F  int  gr  time (ms)
 407.7817      1  1      146
 409.7788      1  1      146
 413.9770 l   20  1        7
 413.9770     20  1        7
 417.8250      5  1       29
 419.8220      5  1       29
 423.7767      1  1      146
 425.7737      1  1      146
 435.8169      5  1       29
 437.8140      5  1       29
 463.9738 c   20  1        7
 463.9738     20  1        7
 479.7165      1  1      146
Window # 5
     mass F  int  gr  time (ms)
 425.9770 l   20  1        7
 425.9770     20  1        7
 441.7428      1  1      146
 443.7399      1  1      146
 453.7830      5  1       29
 455.7801      5  1       29
 457.7377      1  1      146
 459.7348      1  1      146
 469.7780      5  1       29
 471.7750      5  1       29
 501.9706 c   20  1        7
 501.9706     20  1        7
 513.6775      1  1      146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          310.4834
 BQUAD            2.4000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE       18.0000  ECORR           1.0008   ECURR            1.0000
 EDAC        7969177.0000  EDACG           0.9997   EDACZ         2585.8226
 ELEN           -45.0000   EMULT        1802.0000   ENS            210.0000
 ENSBR            2.4000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           172.0000   EXSBR            2.5000
 FDMA       18000000.0000  FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            6.7000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0477	FVSRC	0.0394
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	620.0000
LENS_SYM	-4.7500	LM	375.8364	LMII	500.0000
LMASS	310.4834	LKM	425.9770	MASS	310.4834
MDAC	3567604.1033	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2650.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-7.0000	RECURR	0.8996	RELEN	0.0000
RES	11084.4738	RPUSHER	-6.9670	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	310.4834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:        2.6e-005 mbar
Analyzer Penning:    9.4e-008 mbar
Pirani Analyse:      4.4e-003 mbar
Pirani Source:       4.0e-002 mbar
Pirani Inlet System: 4.7e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11954.
MID Time Window 2: Resolution is 12207.
MID Time Window 3: Resolution is 12091.
MID Time Window 4: Resolution is 12025.
MID Time Window 5: Resolution is 11084.

Amplifier Offset: 88.


*** File closed Thu Aug 18 03:17:37 2016
  ***
```

QUAN: d1tm811r.q0 Entries: 274

Data file(s) used
File: d1tm811r 18-Aug-16
Samp: WO=m811r1ac Meth=9Ao Dil=1 Start : 02:15:58 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	31:23	442.	112.	31:18	31:25	14.	2	5.0	ABV
319.8805	31:27	408.	89.	31:25	31:32	14.	2	5.0	AVB
319.8805	32:17	461.	82.	32:11	32:20	14.	2	5.0	ABV
319.8805	32:22	596.	209.	32:20	32:25	14.	2	5.0	AVB
319.8805	32:32	360.	101.	32:27	32:34	14.	2	5.0	ABV
319.8805	32:38	565.	161.	32:34	32:40	14.	2	5.0	AVV
319.8805	32:42	623.	192.	32:40	32:46	14.	2	5.0	AVV
319.8805	32:53	841.	179.	32:46	32:55	14.	2	5.0	AVV
319.8805	32:57	315.	100.	32:55	33:01	14.	2	5.0	AVB
319.8805	34:01	664.	96.	33:56	34:10	14.	2	5.0	ABB
321.8775	31:25	973.	195.	31:18	31:28	17.	2	5.0	ABV
321.8775	31:30	449.	178.	31:28	31:32	17.	2	5.0	AVV
321.8775	31:34	650.	149.	31:32	31:43	17.	2	5.0	AVB
321.8775	32:16	806.	166.	32:12	32:20	17.	2	5.0	ABV
321.8775	32:22	472.	150.	32:20	32:25	17.	2	5.0	AVB
321.8775	32:37	903.	244.	32:30	32:40	17.	2	5.0	ABV
321.8775	32:42	348.	107.	32:40	32:45	17.	2	5.0	AVB
321.8775	32:48	445.	166.	32:45	32:50	17.	2	5.0	ABV
321.8775	32:53	438.	152.	32:50	32:55	17.	2	5.0	AVV
321.8775	32:57	632.	112.	32:55	33:07	17.	2	5.0	AVB
321.8775	33:58	320.	132.	33:55	34:00	17.	2	5.0	ABB
321.8775	34:04	429.	136.	34:00	34:09	17.	2	5.0	ABB
331.9202	32:18	3080365.	311721.	32:03	32:34	139.	2	5.0	AVV
331.9202	32:51	1105482.	106871.	32:37	33:06	139.	2	5.0	AVV
333.9171	32:18	3869392.	395693.	32:03	32:34	64.	2	5.0	ABV
333.9171	32:52	1439122.	137319.	32:37	33:07	64.	2	5.0	AVV
333.9171	33:13	952.	353.	33:11	33:14	64.	2	5.0	AVV
333.9171	33:18	2592.	564.	33:14	33:24	64.	2	5.0	AVB
333.9171	33:34	2521.	343.	33:29	33:41	64.	2	5.0	ABB
303.8864	30:50	8198.	1026.	30:35	30:52	33.	1	1.0	ABV
305.8834	30:47	13708.	1631.	30:36	30:52	33.	1	1.0	ABV
303.8864	29:35	6648.	835.	29:23	29:49	33.	2	5.0	ABB
303.8864	30:03	921.	165.	29:55	30:06	33.	2	5.0	ABV
303.8864	30:10	1609.	388.	30:06	30:13	33.	2	5.0	AVV
303.8864	30:15	2094.	369.	30:13	30:25	33.	2	5.0	AVB
303.8864	30:50	8198.	1026.	30:35	30:52	33.	2	5.0	ABV
303.8864	30:55	6101.	853.	30:52	31:08	33.	2	5.0	AVB
303.8864	32:02	7419.	1000.	31:51	32:17	33.	2	5.0	ABV
305.8834	29:34	7750.	1081.	29:22	29:42	33.	2	5.0	ABV
305.8834	29:43	624.	188.	29:42	29:48	33.	2	5.0	AVB
305.8834	30:05	1111.	224.	29:57	30:07	33.	2	5.0	ABV
305.8834	30:14	6464.	691.	30:07	30:23	33.	2	5.0	AVB
305.8834	30:47	13708.	1631.	30:36	30:52	33.	2	5.0	ABV
305.8834	30:54	6161.	1111.	30:52	31:05	33.	2	5.0	AVB
305.8834	32:04	9187.	1162.	31:51	32:16	33.	2	5.0	ABB
315.9261	29:32	4361.	764.	29:23	29:36	38.	2	5.0	ABV
315.9261	29:38	1823.	492.	29:36	29:43	38.	2	5.0	AVV
315.9261	29:44	1070.	346.	29:43	29:49	38.	2	5.0	AVB
315.9261	30:25	921.	330.	30:22	30:27	38.	2	5.0	ABV
315.9261	30:42	1631056.	173268.	30:27	30:58	38.	2	5.0	AVV

315.9261	31:08	1417.	497.	31:06	31:10	38.	2	5.0	AVV
315.9261	31:12	1276.	483.	31:10	31:14	38.	2	5.0	AVV
315.9261	31:16	2505.	734.	31:14	31:22	38.	2	5.0	AVV
315.9261	31:24	704.	304.	31:22	31:26	38.	2	5.0	AVB
315.9261	31:30	747.	267.	31:26	31:32	38.	2	5.0	ABV
315.9261	31:37	2937.	550.	31:32	31:46	38.	2	5.0	AVB
315.9261	31:56	1254.	377.	31:50	31:58	38.	2	5.0	ABB
315.9261	32:18	863.	362.	32:15	32:20	38.	2	5.0	ABB
315.9261	32:24	1581.	637.	32:20	32:27	38.	2	5.0	ABB
317.9230	29:33	4309.	1133.	29:25	29:35	43.	2	5.0	ABB
317.9230	29:49	1357.	364.	29:42	29:55	43.	2	5.0	ABB
317.9230	30:42	2102501.	223960.	30:27	30:58	43.	2	5.0	ABV
317.9230	31:07	5202.	1069.	31:05	31:12	43.	2	5.0	AVV
317.9230	31:14	3219.	931.	31:12	31:18	43.	2	5.0	AVV
317.9230	31:21	1673.	311.	31:18	31:30	43.	2	5.0	AVB
317.9230	31:34	1423.	379.	31:30	31:37	43.	2	5.0	ABB
317.9230	32:19	4379.	623.	32:06	32:28	43.	2	5.0	ABB
355.8368	41:25	6235.	1441.	41:19	41:31	41.	1	1.0	ABB
357.8337	41:23	4617.	543.	41:17	41:34	31.	1	1.0	ABV
355.8368	40:44	3214.	613.	40:38	40:49	41.	2	5.0	ABB
355.8368	41:25	6235.	1441.	41:19	41:31	41.	2	5.0	ABB
355.8368	41:38	1279.	313.	41:32	41:45	41.	2	5.0	ABB
355.8368	42:02	2653.	506.	41:55	42:10	41.	2	5.0	ABB
357.8337	40:43	2527.	502.	40:39	40:51	31.	2	5.0	ABB
357.8337	41:01	1724.	265.	40:56	41:17	31.	2	5.0	ABB
357.8337	41:23	4936.	543.	41:17	41:38	31.	2	5.0	ABV
357.8337	41:51	1715.	558.	41:47	41:54	31.	2	5.0	ABV
357.8337	42:03	2225.	322.	41:54	42:09	31.	2	5.0	AVB
367.8765	40:41	1417.	412.	40:38	40:47	53.	2	5.0	ABB
367.8765	40:59	1219.	395.	40:56	41:02	53.	2	5.0	ABB
367.8765	41:24	1320537.	328400.	41:17	41:39	53.	2	5.0	ABV
367.8765	41:44	2490.	690.	41:40	41:46	53.	2	5.0	AVV
367.8765	41:49	3791.	639.	41:46	41:53	53.	2	5.0	AVV
367.8765	41:55	2271.	785.	41:53	41:58	53.	2	5.0	AVB
367.8765	42:00	1828.	706.	41:58	42:02	53.	2	5.0	ABV
367.8765	42:08	5236.	725.	42:02	42:14	53.	2	5.0	AVB
369.8734	40:50	547.	231.	40:47	40:52	24.	2	5.0	ABB
369.8734	41:24	795938.	192530.	41:15	41:36	24.	2	5.0	ABV
369.8734	41:38	5368.	1545.	41:36	41:45	24.	2	5.0	AVB
369.8734	41:51	2715.	383.	41:46	41:59	24.	2	5.0	ABV
369.8734	42:02	3748.	1043.	41:59	42:08	24.	2	5.0	AVB
369.8734	42:13	1211.	252.	42:08	42:18	24.	2	5.0	ABB
339.8427	39:19	10287.	1909.	39:14	39:26	51.	1	1.0	ABB
341.8396	41:07	8698.	1609.	41:01	41:18	53.	1	1.0	AVV
339.8427	39:19	10287.	1909.	39:14	39:26	51.	2	5.0	ABB
339.8427	39:46	8698.	1318.	39:35	39:51	51.	2	5.0	ABB
339.8427	40:02	3481.	872.	39:55	40:07	51.	2	5.0	ABB
339.8427	40:15	7587.	1272.	40:07	40:23	51.	2	5.0	ABB
339.8427	40:55	9163.	2086.	40:47	41:01	51.	2	5.0	ABV
339.8427	41:07	10010.	2179.	41:01	41:17	51.	2	5.0	AVB
339.8427	41:26	1483.	311.	41:22	41:32	51.	2	5.0	ABB
341.8396	39:18	5727.	1051.	39:14	39:28	53.	2	5.0	ABB
341.8396	39:46	5059.	673.	39:32	39:55	53.	2	5.0	ABB
341.8396	40:02	2282.	483.	39:56	40:05	53.	2	5.0	ABV
341.8396	40:16	5854.	875.	40:05	40:26	53.	2	5.0	AVB
341.8396	40:55	6132.	1274.	40:49	41:01	53.	2	5.0	ABV
341.8396	41:07	9327.	1609.	41:01	41:23	53.	2	5.0	AVV
351.8824	39:17	4980.	1214.	39:14	39:22	87.	2	5.0	ABB
351.8824	39:45	2146908.	461973.	39:36	39:56	87.	2	5.0	ABV
351.8824	40:02	14975.	2103.	39:56	40:05	87.	2	5.0	AVV
351.8824	40:14	30030.	4020.	40:05	40:29	87.	2	5.0	AVV
351.8824	40:36	2763.	480.	40:29	40:41	87.	2	5.0	AVV
351.8824	40:54	2305093.	565334.	40:41	41:03	87.	2	5.0	AVV
351.8824	41:05	19559.	3983.	41:03	41:14	87.	2	5.0	AVV
351.8824	41:17	3392.	1125.	41:14	41:19	87.	2	5.0	AVV
351.8824	41:27	9243.	1179.	41:19	41:32	87.	2	5.0	AVB
353.8793	39:17	3874.	1302.	39:14	39:20	68.	2	5.0	ABB

353.8793	39:45	1362794.	293307.	39:35	39:56	68.	2	5.0	ABV
353.8793	40:00	14113.	2205.	39:56	40:07	68.	2	5.0	AVV
353.8793	40:15	15254.	2553.	40:07	40:21	68.	2	5.0	AVV
353.8793	40:26	3493.	652.	40:21	40:30	68.	2	5.0	AVB
353.8793	40:54	1425047.	343445.	40:38	41:03	68.	2	5.0	ABV
353.8793	41:07	10650.	1752.	41:03	41:13	68.	2	5.0	AVV
353.8793	41:15	3341.	663.	41:13	41:19	68.	2	5.0	AVV
353.8793	41:21	3422.	755.	41:19	41:25	68.	2	5.0	AVV
353.8793	41:27	1816.	655.	41:25	41:29	68.	2	5.0	AVB
389.7961	46:11	19165.	3798.	46:00	46:22	42.	1	1.0	ABV
391.7931	46:11	14272.	2869.	46:01	46:21	35.	1	1.0	AVB
389.7961	45:25	534.	200.	45:22	45:26	42.	2	5.0	ABV
389.7961	45:28	796.	285.	45:26	45:31	42.	2	5.0	AVB
389.7961	45:39	5913.	1335.	45:31	45:42	42.	2	5.0	ABV
389.7961	45:46	15676.	4005.	45:42	45:52	42.	2	5.0	AVB
389.7961	46:11	19165.	3798.	46:00	46:22	42.	2	5.0	ABV
389.7961	46:27	1680.	328.	46:22	46:34	42.	2	5.0	AVB
391.7931	45:38	4379.	1248.	45:34	45:41	35.	2	5.0	ABV
391.7931	45:46	14021.	3358.	45:41	46:01	35.	2	5.0	AVV
391.7931	46:11	14272.	2869.	46:01	46:21	35.	2	5.0	AVB
401.8358	45:38	1134641.	299786.	45:27	45:41	114.	2	5.0	ABV
401.8358	45:45	1197295.	295719.	45:41	45:54	114.	2	5.0	AVV
401.8358	45:56	8701.	2910.	45:54	45:59	114.	2	5.0	AVV
401.8358	46:10	3562884.	869906.	45:59	46:18	114.	2	5.0	AVV
401.8358	46:20	43687.	7534.	46:18	46:35	114.	2	5.0	AVV
403.8327	45:38	912261.	237114.	45:31	45:41	108.	2	5.0	ABV
403.8327	45:45	901011.	224761.	45:41	46:00	108.	2	5.0	AVV
403.8327	46:10	2848975.	701474.	46:00	46:25	108.	2	5.0	AVV
403.8327	46:32	10373.	1739.	46:26	46:37	108.	2	5.0	AVB
373.8021	44:33	13682.	2135.	44:25	44:38	45.	1	1.0	ABV
375.7990	44:33	11228.	1761.	44:25	44:38	54.	1	1.0	ABV
373.8021	44:18	10437.	3080.	44:14	44:21	45.	2	5.0	ABB
373.8021	44:33	13682.	2135.	44:25	44:38	45.	2	5.0	ABV
373.8021	44:42	7131.	1529.	44:38	44:58	45.	2	5.0	AVB
373.8021	45:17	2668.	537.	45:12	45:21	45.	2	5.0	ABV
373.8021	45:28	7630.	1446.	45:21	45:35	45.	2	5.0	AVB
373.8021	46:38	3049.	489.	46:24	46:41	45.	2	5.0	ABB
375.7990	44:18	9123.	2794.	44:14	44:24	54.	2	5.0	ABB
375.7990	44:33	11228.	1761.	44:25	44:38	54.	2	5.0	ABV
375.7990	44:43	6518.	1440.	44:38	44:46	54.	2	5.0	AVB
375.7990	45:05	3609.	354.	44:49	45:08	54.	2	5.0	AVV
375.7990	45:10	1337.	379.	45:08	45:13	54.	2	5.0	AVV
375.7990	45:16	2424.	665.	45:13	45:20	54.	2	5.0	AVB
375.7990	45:22	898.	355.	45:20	45:24	54.	2	5.0	ABV
375.7990	45:28	6251.	1107.	45:24	45:43	54.	2	5.0	AVV
375.7990	46:38	1774.	359.	46:32	46:41	54.	2	5.0	ABB
373.8021	44:18	10437.	3080.	44:14	44:21	45.	2	5.0	ABB
373.8021	44:33	13682.	2135.	44:25	44:38	45.	2	5.0	ABV
373.8021	44:42	7131.	1529.	44:38	44:58	45.	2	5.0	AVB
373.8021	45:17	2668.	537.	45:12	45:21	45.	2	5.0	ABV
373.8021	45:28	7630.	1446.	45:21	45:35	45.	2	5.0	AVB
373.8021	46:38	3049.	489.	46:24	46:41	45.	2	5.0	ABB
375.7990	44:18	9123.	2794.	44:14	44:24	54.	2	5.0	ABB
375.7990	44:33	11228.	1761.	44:25	44:38	54.	2	5.0	ABV
375.7990	44:43	6518.	1440.	44:38	44:46	54.	2	5.0	AVB
375.7990	45:05	3609.	354.	44:49	45:08	54.	2	5.0	AVV
375.7990	45:10	1337.	379.	45:08	45:13	54.	2	5.0	AVV
375.7990	45:16	2424.	665.	45:13	45:20	54.	2	5.0	AVB
375.7990	45:22	898.	355.	45:20	45:24	54.	2	5.0	ABV
375.7990	45:28	6251.	1107.	45:24	45:43	54.	2	5.0	AVV
375.7990	46:38	1774.	359.	46:32	46:41	54.	2	5.0	ABB
383.8447	44:33	837906.	219146.	44:25	44:37	51.	2	5.0	ABV
383.8447	44:42	979518.	247997.	44:37	44:55	51.	2	5.0	AVV
383.8447	44:57	5618.	887.	44:55	45:04	51.	2	5.0	AVV
383.8447	45:08	3349.	810.	45:04	45:11	51.	2	5.0	AVB
383.8447	45:27	934490.	234561.	45:12	45:39	51.	2	5.0	ABV
383.8447	45:41	4812.	1029.	45:39	45:46	51.	2	5.0	AVV

383.8447	45:50	1882.	548.	45:46	45:52	51.	2	5.0 AVB
383.8447	46:10	3079.	808.	46:06	46:13	51.	2	5.0 ABB
383.8447	46:27	783973.	177301.	46:13	46:42	51.	2	5.0 ABV
383.8447	46:48	4369.	1245.	46:46	46:53	51.	2	5.0 ABB
385.8417	44:33	1596820.	409219.	44:26	44:37	136.	2	5.0 ABV
385.8417	44:41	1851802.	443992.	44:37	44:57	136.	2	5.0 AVV
385.8417	45:05	1952.	740.	45:03	45:06	136.	2	5.0 AVV
385.8417	45:08	6875.	1513.	45:06	45:13	136.	2	5.0 AVV
385.8417	45:27	1705971.	427956.	45:13	45:41	136.	2	5.0 AVV
385.8417	45:47	6762.	1280.	45:41	45:50	136.	2	5.0 AVB
385.8417	46:10	4829.	1184.	46:02	46:16	136.	2	5.0 ABB
385.8417	46:27	1527047.	337635.	46:20	46:42	136.	2	5.0 ABV
385.8417	46:50	3576.	745.	46:45	46:52	136.	2	5.0 AVB
423.7555	50:41	198284.	39383.	50:30	50:55	30.	1	1.0 ABV
425.7524	50:41	189732.	39239.	50:34	50:51	60.	1	1.0 ABV
423.7555	49:29	167688.	34458.	49:21	49:45	30.	2	5.0 ABV
423.7555	50:41	198284.	39383.	50:30	50:55	30.	2	5.0 ABV
425.7524	49:29	169868.	34124.	49:18	49:39	60.	2	5.0 ABV
425.7524	50:41	189732.	39239.	50:34	50:51	60.	2	5.0 ABV
435.7951	49:17	1873.	520.	49:11	49:19	31.	2	5.0 ABB
435.7951	49:29	20149.	3529.	49:20	49:38	31.	2	5.0 ABB
435.7951	50:40	942239.	191430.	50:30	50:55	31.	2	5.0 ABV
435.7951	50:57	3717.	1297.	50:55	51:00	31.	2	5.0 AVV
435.7951	51:03	3159.	932.	51:00	51:05	31.	2	5.0 AVV
435.7951	51:07	1738.	671.	51:05	51:09	31.	2	5.0 AVB
437.7921	49:28	13727.	2549.	49:21	49:35	33.	2	5.0 ABV
437.7921	49:36	1687.	285.	49:35	49:43	33.	2	5.0 AVB
437.7921	50:11	733.	314.	50:08	50:13	33.	2	5.0 ABB
437.7921	50:17	767.	242.	50:14	50:20	33.	2	5.0 ABB
437.7921	50:40	862568.	180385.	50:30	50:56	33.	2	5.0 ABV
437.7921	51:04	1994.	810.	51:02	51:06	33.	2	5.0 AVB
407.7614	49:40	59098.	11759.	49:30	49:46	43.	1	1.0 ABV
409.7583	49:39	59295.	12465.	49:32	49:46	21.	1	1.0 ABV
407.7614	48:44	5431.	1258.	48:39	48:48	43.	2	5.0 ABB
407.7614	48:59	47096.	9202.	48:49	49:13	43.	2	5.0 ABV
407.7614	49:25	3608.	513.	49:18	49:30	43.	2	5.0 AVB
407.7614	49:40	59098.	11759.	49:30	49:46	43.	2	5.0 ABV
407.7614	49:49	4181.	544.	49:46	50:04	43.	2	5.0 AVV
407.7614	50:18	3065.	272.	50:06	50:33	43.	2	5.0 AVV
407.7614	51:19	6481.	835.	51:04	51:27	43.	2	5.0 AVV
407.7614	51:31	1529.	284.	51:27	51:36	43.	2	5.0 AVB
409.7583	48:44	5595.	1549.	48:39	48:49	21.	2	5.0 ABB
409.7583	48:59	41064.	8517.	48:49	49:08	21.	2	5.0 ABB
409.7583	49:16	522.	124.	49:11	49:18	21.	2	5.0 ABV
409.7583	49:23	2517.	568.	49:18	49:30	21.	2	5.0 AVB
409.7583	49:39	59295.	12465.	49:32	49:46	21.	2	5.0 ABV
409.7583	49:49	2534.	539.	49:46	50:01	21.	2	5.0 AVB
409.7583	51:19	4242.	947.	51:10	51:23	21.	2	5.0 ABB
417.8041	48:57	527300.	108494.	48:49	49:09	40.	2	5.0 ABV
417.8041	49:12	2958.	820.	49:09	49:15	40.	2	5.0 AVV
417.8041	49:21	5974.	693.	49:15	49:28	40.	2	5.0 AVB
417.8041	49:38	5733.	992.	49:34	49:46	40.	2	5.0 AVB
417.8041	50:15	1357.	326.	50:08	50:17	40.	2	5.0 ABV
417.8041	50:44	2629.	517.	50:37	50:48	40.	2	5.0 ABV
417.8041	51:06	2095.	433.	50:53	51:10	40.	2	5.0 ABB
417.8041	51:17	464064.	91442.	51:10	51:32	40.	2	5.0 ABV
419.8010	48:57	1211569.	247533.	48:49	49:12	42.	2	5.0 ABV
419.8010	49:23	9003.	1527.	49:17	49:29	42.	2	5.0 AVV
419.8010	49:38	10392.	1842.	49:34	49:53	42.	2	5.0 AVV
419.8010	50:15	3066.	635.	50:11	50:24	42.	2	5.0 ABV
419.8010	51:17	1008427.	212405.	51:05	51:26	42.	2	5.0 ABV
419.8010	51:28	13120.	3399.	51:26	51:34	42.	2	5.0 AVV
419.8010	51:36	3247.	1345.	51:34	51:38	42.	2	5.0 AVB
419.8010	51:41	5493.	1893.	51:38	51:44	42.	2	5.0 ABB
457.7148	54:42	1590256.	405154.	54:34	54:57	45.	1	1.0 ABV
459.7118	54:41	1767164.	440502.	54:32	54:56	56.	1	1.0 ABV
457.7148	54:42	1590256.	405154.	54:34	54:57	45.	2	5.0 ABV

457.7148	55:04	3470.	760.	55:02	55:10	45.	2	5.0	AVB
459.7118	54:41	1767164.	440502.	54:32	54:56	56.	2	5.0	ABV
459.7118	55:10	2249.	450.	55:06	55:12	56.	2	5.0	AVV
459.7118	55:14	1786.	496.	55:12	55:18	56.	2	5.0	AVB
469.7545	54:21	2820.	698.	54:12	54:23	57.	2	5.0	ABV
469.7545	54:41	1280157.	340138.	54:34	54:53	57.	2	5.0	ABV
469.7545	54:55	8737.	1859.	54:53	55:01	57.	2	5.0	AVV
469.7545	55:03	4126.	933.	55:01	55:08	57.	2	5.0	AVV
471.7514	54:41	1451449.	381252.	54:33	54:55	56.	2	5.0	ABV
471.7514	54:58	6570.	904.	54:55	55:06	56.	2	5.0	AVB
471.7514	55:12	4819.	972.	55:06	55:17	56.	2	5.0	ABB
441.7207	54:50	68411.	17910.	54:45	55:06	14.	1	1.0	AVV
443.7177	54:50	73454.	18023.	54:44	55:06	28.	1	1.0	AVV
441.7207	54:42	1194.	355.	54:39	54:45	14.	2	5.0	ABV
441.7207	54:50	68411.	17910.	54:45	55:06	14.	2	5.0	AVV
443.7177	54:42	715.	215.	54:38	54:44	28.	2	5.0	ABV
443.7177	54:50	73454.	18023.	54:44	55:06	28.	2	5.0	AVV
453.7603	54:49	1542139.	408409.	54:37	55:05	35.	2	5.0	ABV
453.7603	55:12	2302.	765.	55:09	55:14	35.	2	5.0	AVV
453.7603	55:17	1763.	328.	55:14	55:24	35.	2	5.0	AVB
455.7573	54:49	1777724.	469798.	54:37	55:05	43.	2	5.0	ABV
455.7573	55:09	4566.	972.	55:07	55:17	43.	2	5.0	AVB
455.7573	55:21	1399.	557.	55:18	55:23	43.	2	5.0	ABB

TestAmerica Canton

Sample ID: PAD-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 007	Work Order #....:	M811T1AC	Matrix....:	SOLID
Date Sampled....:	07/25/16	Date Received....:	07/29/16	Dilution Factor:	1
Prep Date....:	08/04/16	Analysis Date....:	08/18/16	Percent Moisture	1.5
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.5 g	Instrument ID....:	D11A	Method:	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		0.97	0.022	pg/g
1,2,3,7,8-PeCDD	0.33	Q B J	4.8	0.028	pg/g
1,2,3,4,7,8-HxCDD	0.29	J	4.8	0.032	pg/g
1,2,3,6,7,8-HxCDD	0.61	Q J	4.8	0.033	pg/g
1,2,3,7,8,9-HxCDD	0.71	C J	4.8	0.030	pg/g
1,2,3,4,6,7,8-HpCDD	9.8		4.8	0.039	pg/g
OCDD	94	B	9.7	0.056	pg/g
2,3,7,8-TCDF	0.20	Q J	0.97	0.027	pg/g
1,2,3,7,8-PeCDF	0.19	Q J	4.8	0.022	pg/g
2,3,4,7,8-PeCDF	0.20	Q J	4.8	0.020	pg/g
1,2,3,4,7,8-HxCDF	0.44	Q B J	4.8	0.022	pg/g
1,2,3,6,7,8-HxCDF	0.24	J	4.8	0.023	pg/g
2,3,4,6,7,8-HxCDF	0.19	Q J	4.8	0.023	pg/g
1,2,3,7,8,9-HxCDF	ND		4.8	0.029	pg/g
1,2,3,4,6,7,8-HpCDF	1.9	B J	4.8	0.026	pg/g
1,2,3,4,7,8,9-HpCDF	0.25	Q B J	4.8	0.029	pg/g
OCDF	3.4	B J	9.7	0.028	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	63	40 - 135
13C-1,2,3,7,8-PeCDD	81	40 - 135
13C-1,2,3,4,7,8-HxCDD	70	40 - 135
13C-1,2,3,6,7,8-HxCDD	69	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	81	40 - 135
13C-OCDD	74	40 - 135
13C-2,3,7,8-TCDF	59	40 - 135
13C-1,2,3,7,8-PeCDF	75	40 - 135
13C-2,3,4,7,8-PeCDF	82	40 - 135
13C-1,2,3,4,7,8-HxCDF	57	40 - 135
13C-1,2,3,6,7,8-HxCDF	53	40 - 135
13C-2,3,4,6,7,8-HxCDF	60	40 - 135
13C-1,2,3,7,8,9-HxCDF	59	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	56	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	65	40 - 135
13C-OCDF	56	40 - 135

TestAmerica Canton

Sample ID: PAD-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 007	**Work Order #....:**	M811T1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	1.5
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.5 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811T1AC	Prep Batch	6217014	Lot No	H6G290408-007
Data File	/20160817s3/d1tm811t.d	Prep Date	08/04/16	SDG No	
Analysis ID	180449	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/18/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	03:17	Initial Wt/Vol	10.5 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD				1.144				ND		0.0221
Total TCDD		3406	657	1.144		1.263198		0.120305	QJ	0.0221
2,3,7,8-TCDF	30:44	8088	1127	1.066		2.105425		0.200517	QJ	0.0266
Total TCDF		24320	4430	1.066		8.436277		0.803455	QJ	0.0266
1,2,3,7,8-PeCDD	41:24	7934	1424	1.060		3.372823		0.321221	QBJ	0.0278
Total PeCDD		8161	1775	1.060		6.842147		0.651633	QJB	0.0278
1,2,3,7,8-PeCDF	39:45	7929	1474	1.179		1.939716		0.184735	QJ	0.0217
2,3,4,7,8-PeCDF	40:54	8876	1905	1.115		2.113908		0.201325	QJ	0.0199
Total PeCDF		35224	6458	1.147		12.545148		1.194776	QJ	0.0207
1,2,3,4,7,8-HxCDD	45:39	7003	1646	1.131		2.950816		0.281030	J	0.0311
1,2,3,6,7,8-HxCDD	45:45	14576	3290	1.116		6.344239		0.604213	QJ	0.0326
1,2,3,7,8,9-HxCDD	46:10	18306	3538	1.205		7.308262		0.696025	CJ	0.0297
Total HxCDD		4957	1003	1.151		18.675844		1.778652	QJ	0.0311
1,2,3,4,7,8-HxCDF	44:34	14478	2712	1.350		4.547435		0.433089	QBJ	0.0221
1,2,3,6,7,8-HxCDF	44:42	8074	1865	1.242		2.491211		0.237258	J	0.0228
2,3,4,6,7,8-HxCDF	45:28	6389	1644	1.241		1.936911		0.184468	QJ	0.0229
1,2,3,7,8,9-HxCDF				1.262				ND		0.0284
Total HxCDF		20271	5349	1.274		15.366897		1.463514	JQB	0.0238
1,2,3,4,6,7,8-HpCDD	50:41	218015	43999	1.114		100.956711		9.614925		0.0380
Total HpCDD		197298	39608	1.114		192.319952		18.316186		0.0380
1,2,3,4,6,7,8-HpCDF	48:58	52427	10476	1.461		19.425118		1.850011	BJ	0.0258
1,2,3,4,7,8,9-HpCDF	51:18	6110	831	1.370		2.589531		0.246622	QBJ	0.0289
Total HpCDF		71141	14470	1.416		50.174018		4.778478	QJB	0.0273
OCDD	54:41	1695870	439766	1.203		972.760230		92.643831	B	0.0550
OCDF	54:49	69802	17062	1.134		35.259935		3.358089	BJ	0.0276
13C-2,3,7,8-TCDD	32:49	2357910	226394	1.093	1000	630.847324	63.08	60.080698		0.168
13C-2,3,7,8-TCDF	30:41	3605057	378535	1.794	1000	587.270510	58.73	55.930525		0.0388
13C-1,2,3,7,8-PeCDD	41:23	2219408	524817	0.800	1000	810.958001	81.10	77.234095		0.102
13C-1,2,3,7,8-PeCDF	39:43	3466701	742838	1.356	1000	747.060683	74.71	71.148636		0.0743
13C-2,3,4,7,8-PeCDF	40:54	3767254	858443	1.343	1000	819.946804	81.99	78.090172		0.0750
13C-1,2,3,4,7,8-HxCDD	45:37	2098157	513660	0.916	1000	697.357460	69.74	66.414996		0.0679
13C-1,2,3,6,7,8-HxCDD	45:45	2058796	497745	0.906	1000	691.506277	69.15	65.857741		0.0686
13C-1,2,3,4,7,8-HxCDF	44:33	2357590	628983	1.268	1000	565.802213	56.58	53.885925		0.0380
13C-1,2,3,6,7,8-HxCDF	44:41	2610298	664467	1.506	1000	527.766804	52.78	50.263505		0.0320
13C-2,3,4,6,7,8-HxCDF	45:27	2658249	662204	1.344	1000	602.088003	60.21	57.341715		0.0358
13C-1,2,3,7,8,9-HxCDF	46:27	2333900	525650	1.202	1000	591.012655	59.10	56.286919		0.0401
13C-1,2,3,4,6,7,8-HpCDD	50:40	1938987	399050	0.728	1000	810.302641	81.03	77.171680		0.0590
13C-1,2,3,4,6,7,8-HpCDF	48:57	1847296	385359	1.008	1000	557.824917	55.78	53.126183		0.0333
13C-1,2,3,4,7,8,9-HpCDF	51:17	1721828	366927	0.811	1000	646.457184	64.65	61.567351		0.0414
13C-OCDD	54:41	2898370	719912	0.597	2000	1476.90440	73.85	140.657562		0.153
13C-1,2,3,4-TCDD	32:17	6842395	704218	1.000	2000	2000.00000	100.00	190.476190		0.184
13C-1,2,3,7,8,9-HxCDD	46:09	6570319	1562162	1.000	2000	2000.00000	100.00	190.476190		0.0622
13C-OCDF	54:49	3490367	882985	0.946	2000	1123.12586	56.16	106.964367		0.0222

Kim 8/24/16

KM 8-24-16

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811T1AC	Prep Batch	6217014	Lot No	H6G290408-007
Data File	/20160817s3/d1tm811t.d	Prep Date	08/04/16	SDG No	
Analysis ID	180449	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 03:17	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.5 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	48	65	19	26	0.73	/	
	Unidentified	29:30	00:00	0	2483	2259	308	346	1.10 *	ABB/ABV	RT
	Unidentified	30:07	00:00	0	1073	1456	167	242	0.74	ABV/ABV	
	Unidentified	30:13	00:00	0	1041	2258	211	326	0.46 *	AVB/AVB	R
	Unidentified	30:40	00:00	0	1097	2291	303	521	0.48 *	ABV/ABV	RM
	2,3,7,8-TCDF	30:44	30:44	0	2453	5635	421	706	0.44 *		RM
	Unidentified	32:00	00:00	0	2140	2661	446	590	0.80	ABV/ABV	
	Unidentified	32:05	00:00	0	2375	3186	432	538	0.75	AVB/AVB	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	118	140	47	56	0.84	/	
	Unidentified	29:28	00:00	0	6197	7238	925	978	0.86	ABB/ABV	
	13C-2,3,7,8-TCDF	30:41	30:40	1	1578961	2026096	165534	213001	0.78	AVV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	28	33	11	13	0.85	/	
	Unidentified	31:19	00:00	0	310	652	68	162	0.48 *	ABB/ABV	RT
	Unidentified	31:29	00:00	0	348	812	75	167	0.43 *	ABB/AVB	RT
	Unidentified	32:38	00:00	0	623	661	94	91	0.94 *	ABB/ABB	R
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	265	415	106	166	0.64 *	/	
	13C-1,2,3,4-TCDD	32:17	32:18	-1	3076388	3766007	315050	389168	0.82	AVV/ABV	
	13C-2,3,7,8-TCDD	32:49	32:50	-1	1049238	1308672	103027	123367	0.80	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	108	93	43	37	1.16 *	/	
	Unidentified	39:19	00:00	0	5977	2931	1224	690	2.04 *	ABB/ABB	R
	Unidentified	39:39	00:00	0	786	3723	307	700	0.21 *	ABV/ABB	RT
	1,2,3,7,8-PeCDF	39:45	39:45	0	4206	3723	774	700	1.13 *	AVB/ABB	RM
	Unidentified	40:01	00:00	0	1796	2561	411	369	0.70 *	ABB/ABV	R
	Unidentified	40:15	00:00	0	4109	3136	643	467	1.31 *	ABB/AVB	R
	2,3,4,7,8-PeCDF	40:54	40:53	1	4456	4420	1023	882	1.01 *	ABB/ABV	R
	Unidentified	41:06	00:00	0	5894	4311	1109	538	1.37	ABB/AVV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	198	175	79	70	1.13 *	/	
	13C-1,2,3,7,8-PeCDF	39:43	39:43	0	2089824	1376877	450120	292718	1.52	ABV/ABV	
	Unidentified	39:57	00:00	0	7441	6433	2262	1478	1.16 *	AVV/AVV	R
	Unidentified	40:01	00:00	0	7276	6848	2016	1570	1.06 *	AVV/AVB	R
	Unidentified	40:12	00:00	0	23998	13675	5215	2699	1.75	AVV/ABB	
	13C-2,3,4,7,8-PeCDF	40:54	40:52	2	2309444	1457810	523784	334659	1.58	AVV/ABV	
	Unidentified	41:27	00:00	0	5574	1901	795	725	2.93 *	AVB/AVB	RT
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	75	88	30	35	0.86 *	/	
	Unidentified	40:43	00:00	0	1882	829	461	227	2.27 *	ABB/ABB	R
	Unidentified	40:59	00:00	0	940	522	330	187	1.80 *	ABB/AVB	R

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811T1AC	Prep Batch	6217014	Lot No	H6G290408-007
Data File	/20160817s3/d1tm811t.d	Prep Date	08/04/16	SDG No	
Analysis ID	180449	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 03:17	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.5 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	1,2,3,7,8-PeCDD	41:24	41:23	1	3996	3938	891	533	1.01 *	ABB/ABB	R
	Unidentified	42:02	00:00	0	1724	2264	344	226	0.76 *	ABB/AVB	R
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	195	108	78	43	1.81 *	/	
	13C-1,2,3,7,8-PeCDD	41:23	41:22	1	1337380	882028	316450	208367	1.52	ABV/ABV	
	Unidentified	42:02	00:00	0	6212	2714	1150	713	2.29 *	AVV/ABB	R
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	90	108	36	43	0.84 *	/	
	Unidentified	44:18	00:00	0	4132	3483	1232	1075	1.19	ABB/ABB	
	1,2,3,4,7,8-HxCDF	44:34	44:33	1	7304	7174	1316	1396	1.02 *	ABV/MBV	R
	1,2,3,6,7,8-HxCDF	44:42	44:42	0	4264	3810	1005	860	1.12	AVB/AVB	
	Unidentified	45:05	00:00	0	1582	2384	381	419	0.66 *	ABV/AVV	R
	Unidentified	45:17	00:00	0	1974	1585	545	415	1.25	AVV/AVB	
	Unidentified	45:23	00:00	0	960	928	277	373	1.03 *	AVV/ABV	R
	2,3,4,6,7,8-HxCDF	45:28	45:27	1	2901	3488	937	707	0.83 *	MBB/AVB	R
	Unidentified	46:35	00:00	0	1032	2211	292	340	0.47 *	ABB/ABV	R
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	160	235	64	94	0.68 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:33	44:32	1	801704	1555886	210576	418407	0.52	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:41	44:40	1	883098	1727200	223909	440558	0.51	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:27	45:26	1	909450	1748799	227196	435008	0.52	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:27	46:26	1	786793	1547107	176863	348787	0.51	ABV/ABV	
	Unidentified	46:45	00:00	0	3171	5539	841	1105	0.57	ABV/AVB	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	115	75	46	30	1.53 *	/	
	Unidentified	45:25	00:00	0	1675	3282	327	676	0.51 *	ABV/ABV	RT
	1,2,3,4,7,8-HxCDD	45:39	45:38	1	3721	3282	970	676	1.13	AVV/ABV	M
	1,2,3,6,7,8-HxCDD	45:45	45:45	0	7044	7532	1627	1663	0.94 *	AVB/AVB	R
	1,2,3,7,8,9-HxCDD	46:10	46:10	0	10371	7935	1683	1855	1.31	AVB/ABB	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	345	165	138	66	2.09 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:37	45:37	0	1182361	915796	289462	224198	1.29	AVV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:45	45:44	1	1152072	906724	283111	214634	1.27	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:09	46:09	0	3667565	2902754	870723	691439	1.26	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	100	53	40	21	1.90 *	/	
	1,2,3,4,6,7,8-HpCDF	48:58	48:58	0	27258	25169	5336	5140	1.08	ABV/ABB	
	Unidentified	49:22	00:00	0	2244	1476	346	407	1.52 *	ABB/ABB	R
	Unidentified	49:39	00:00	0	32013	32190	6492	6521	0.99	ABV/ABV	
	Unidentified	49:49	00:00	0	2202	1016	446	258	2.17 *	AVV/AVB	R
	1,2,3,4,7,8,9-HpCDF	51:18	51:18	0	4190	1920	513	318	2.18 *	MBB/ABB	R
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811T1AC	Prep Batch	6217014	Lot No	H6G290408-007
Data File	/20160817s3/d1tm811t.d	Prep Date	08/04/16	SDG No	
Analysis ID	180449	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 03:17	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.5 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao

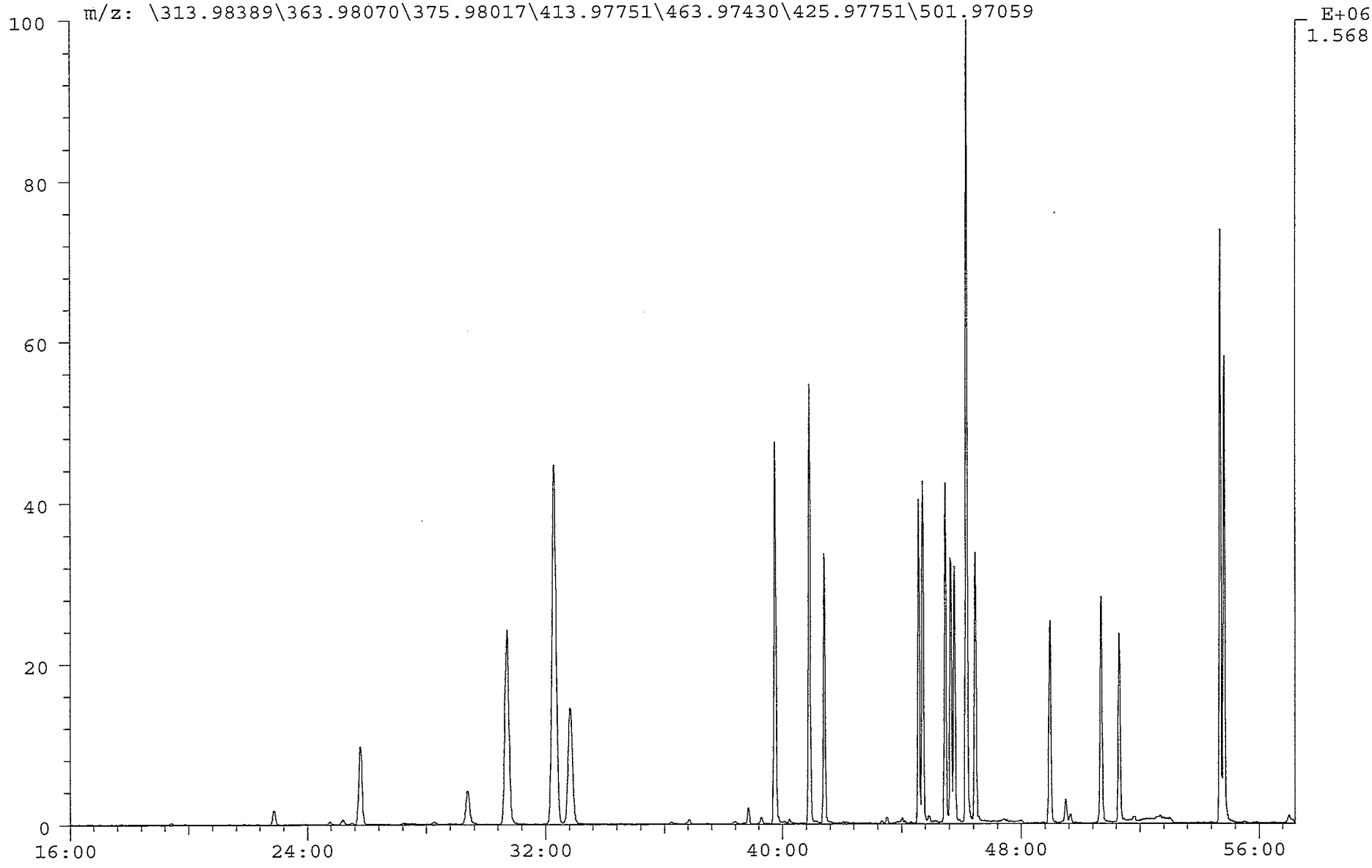
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	95	180	38	72	0.53 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:57	48:57	0	573656	1273640	120775	264584	0.45	ABV/ABV	
	Unidentified	49:21	00:00	0	4223	8893	861	1248	0.47	AVV/AVV	
	Unidentified	49:26	00:00	0	3466	2735	756	902	1.27 *	AVV/AVV	R
	Unidentified	49:37	00:00	0	5820	19250	1062	2302	0.30 *	AVB/AVV	R
	13C-1,2,3,4,7,8,9-HpCDF	51:17	51:17	0	513915	1207913	111409	255518	0.43	AVB/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	83	95	33	38	0.87 *	/	
	Unidentified	49:28	00:00	0	100802	96496	20049	19559	1.04	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:41	50:42	-1	113471	104544	23034	20965	1.09	ABV/ABV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	270	83	108	33	3.27 *	/	
	Unidentified	49:28	00:00	0	30551	16083	3536	2390	1.90 *	AVV/ABB	R
	13C-1,2,3,4,6,7,8-HpCDD	50:40	50:41	-1	1016254	922733	207373	191677	1.10	AVV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	95	50	38	20	1.90 *	/	
	OCDF	54:49	54:50	-1	32904	36898	7945	9117	0.89	ABV/AVV	
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	70	103	28	41	0.68 *	/	
	13C-OCDF	54:49	54:49	0	1669262	1821105	423491	459494	0.92	ABV/AVV	
	Unidentified	55:08	00:00	0	5593	4155	1117	961	1.35 *	AVV/AVB	RT
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	135	115	54	46	1.17 *	/	
	OCDD	54:41	54:42	-1	799269	896601	203231	236535	0.89	ABV/ABV	
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	450	300	180	120	1.50 *	/	
	13C-OCDD	54:41	54:41	0	1400556	1497814	349254	370658	0.94	ABV/ABV	

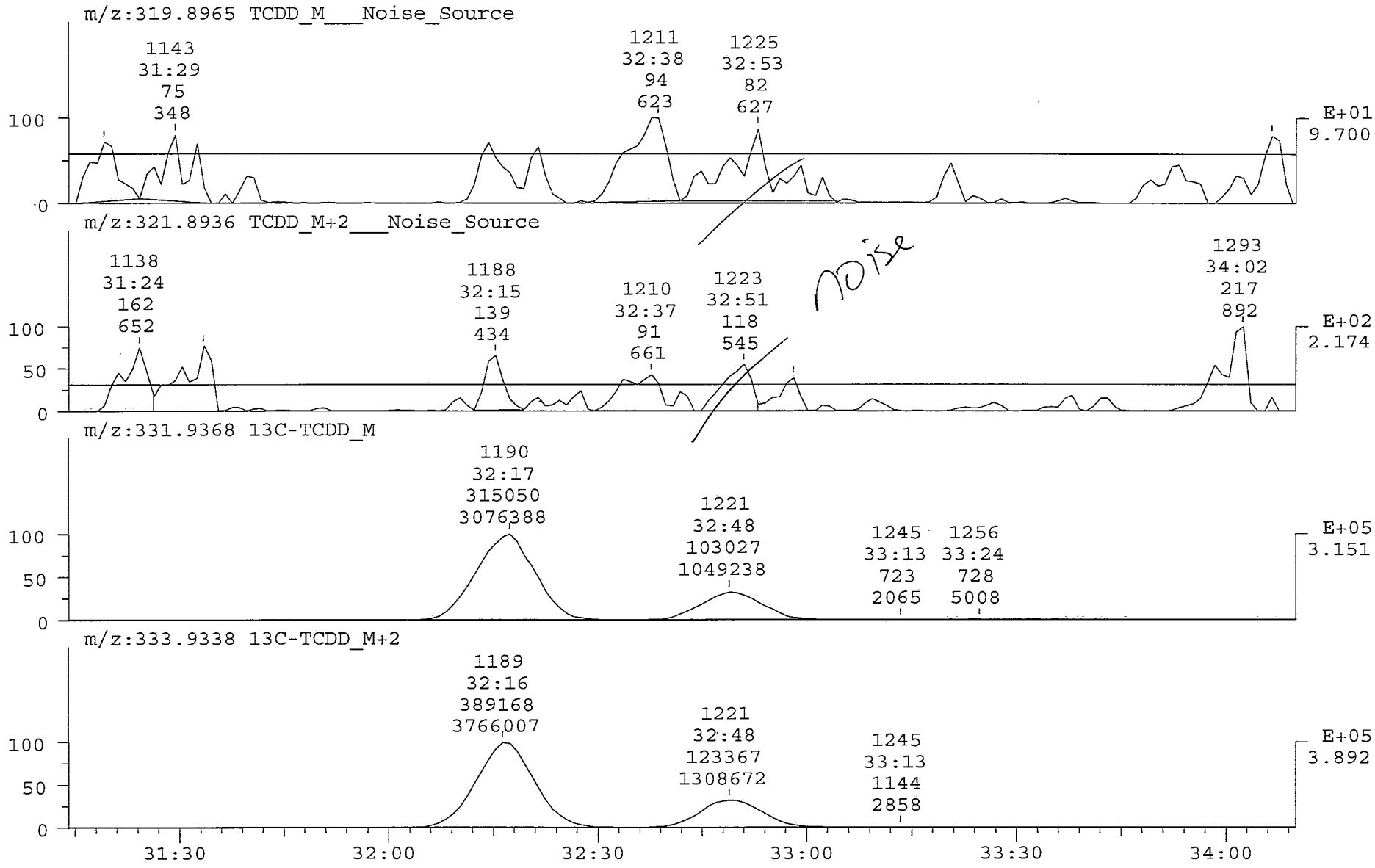
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. K 8/18/16
Calc KM 8-24-16
QC/Rev K 8/24/16

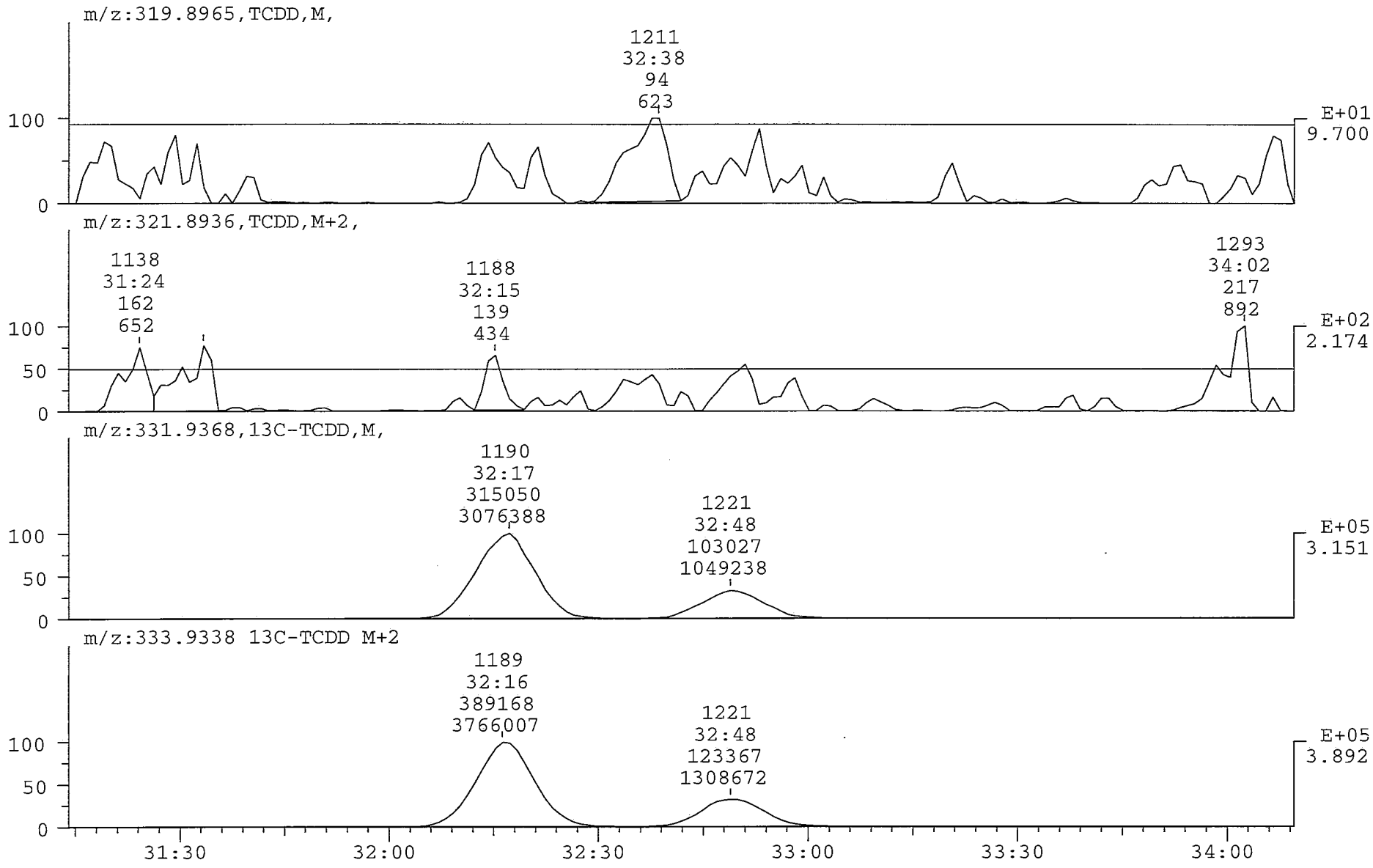
CHRO:	d1tm811t	18-Aug-16	Elapse:	54:49	2491
Samp:	WO=m811t1ac Meth=9Ao Dil=1		Start :	03:17:39	2629
Comm:	Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3				
Mode:	EI ESI + Q1MS UP LR		Study :	6217014 (10.5g)	
Oper:	LKM		Inlet :	LC	
Peak:	100.00 ppm	Label wndw: 233 > 2629	Masses:	303 > 514	
Area:	5, 0.50, 0	Baseline : 100, 3	Label :	0, 0.0	
Disp:	Height Area				



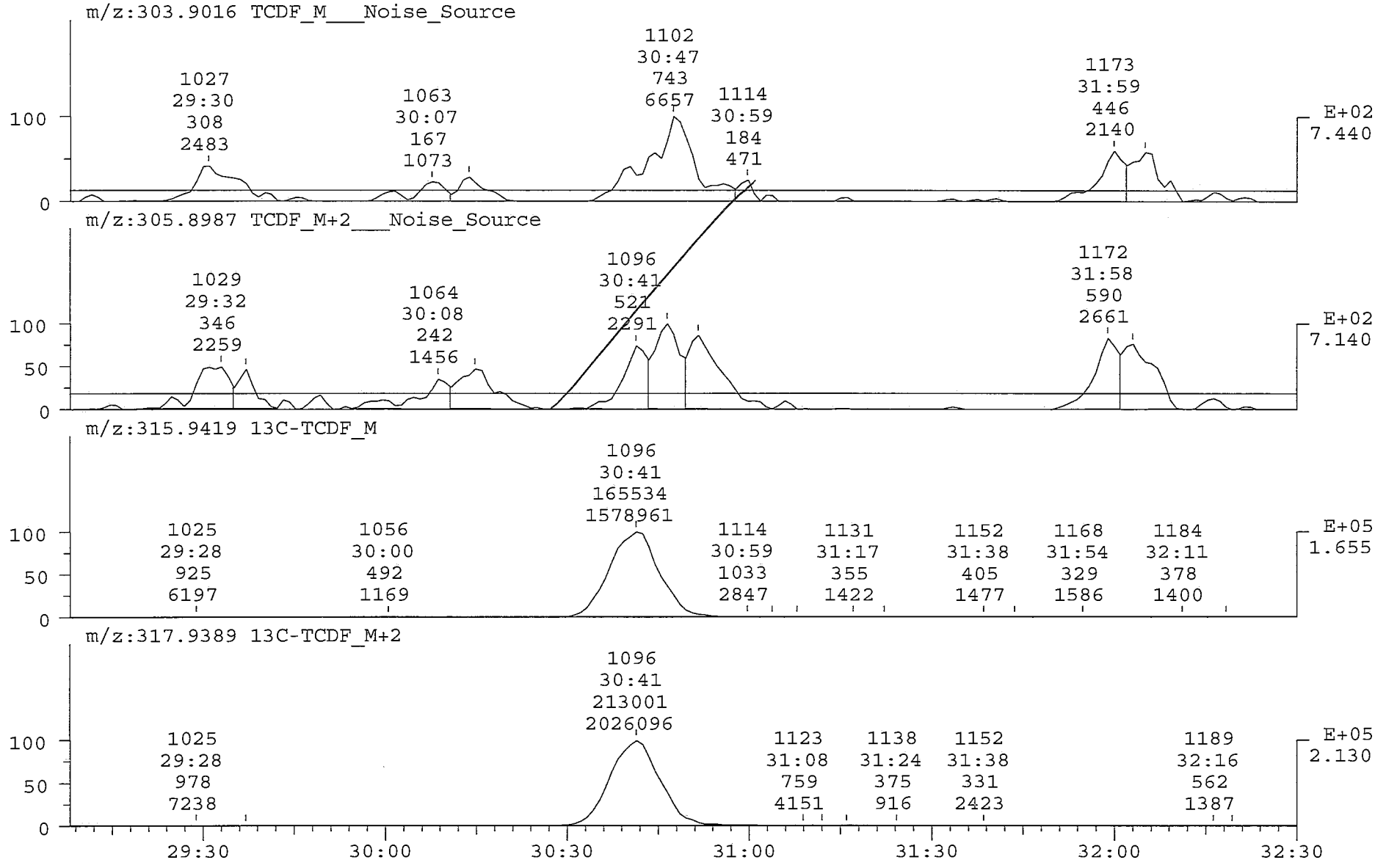
CHRO: d1tm811t 18-Aug-16 Elapse: 32:41 1214
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1128 > 1300 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



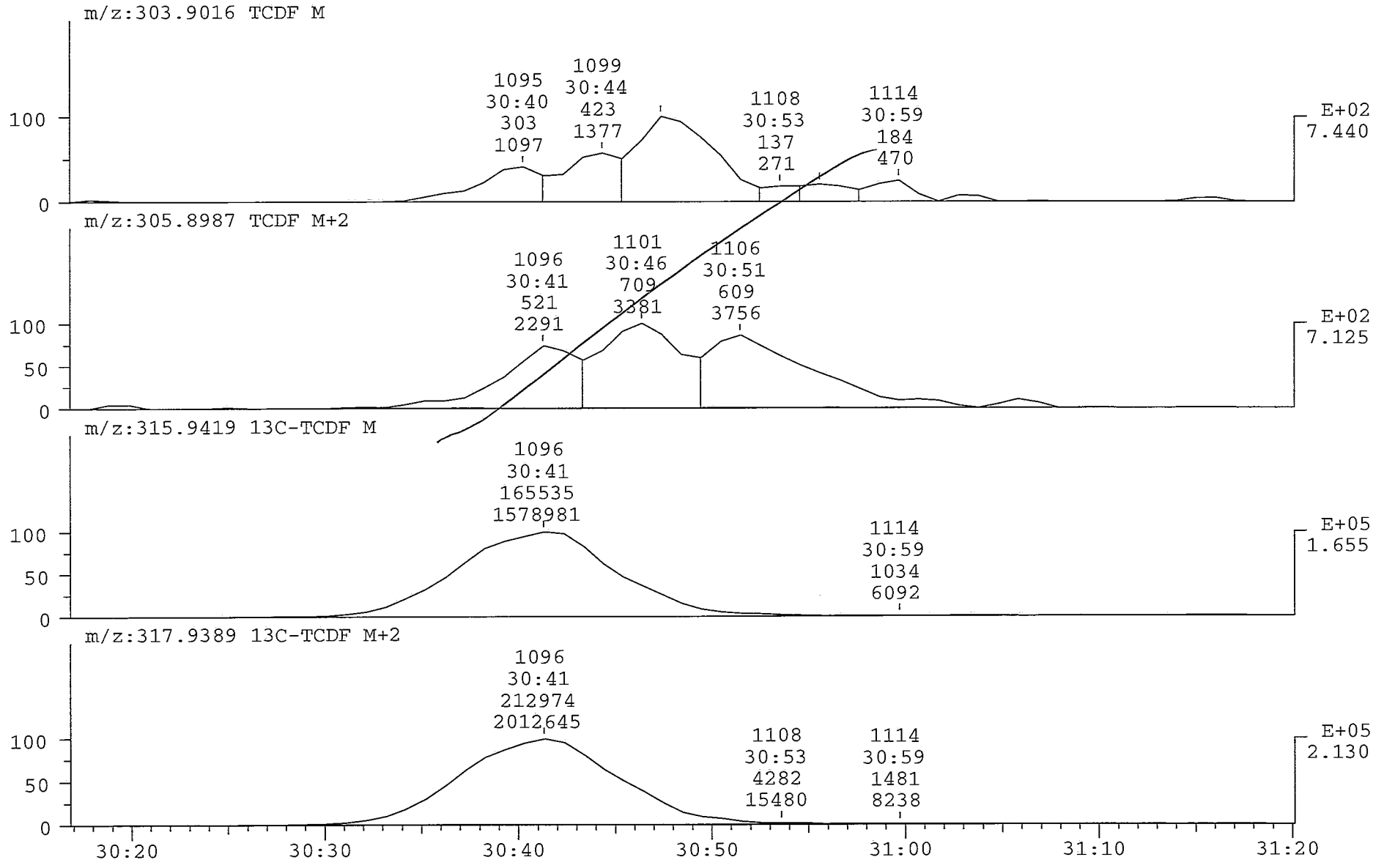
```
CHRO:  d1tm811t                                18-Aug-16  Elapse:  54:49      2491
Samp:  WO=m811t1ac Meth=9Ao Dil=1                         Start :  03:17:39   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.5g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1128 > 1300          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 8.0
Disp:  Height  Area
```



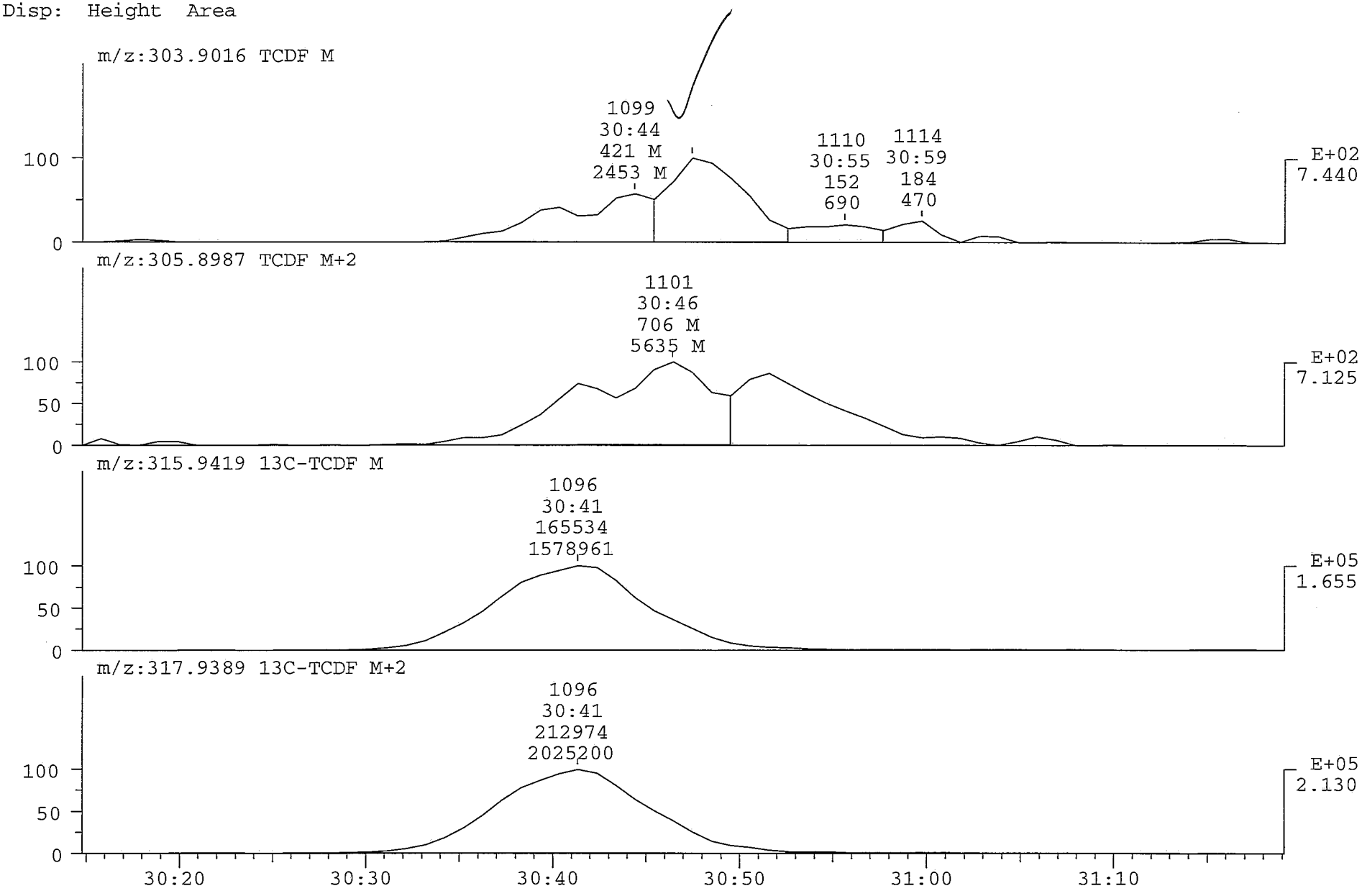
CHRO: d1tm811t 18-Aug-16 Elapse: 30:46 1101
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1005 > 1202 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



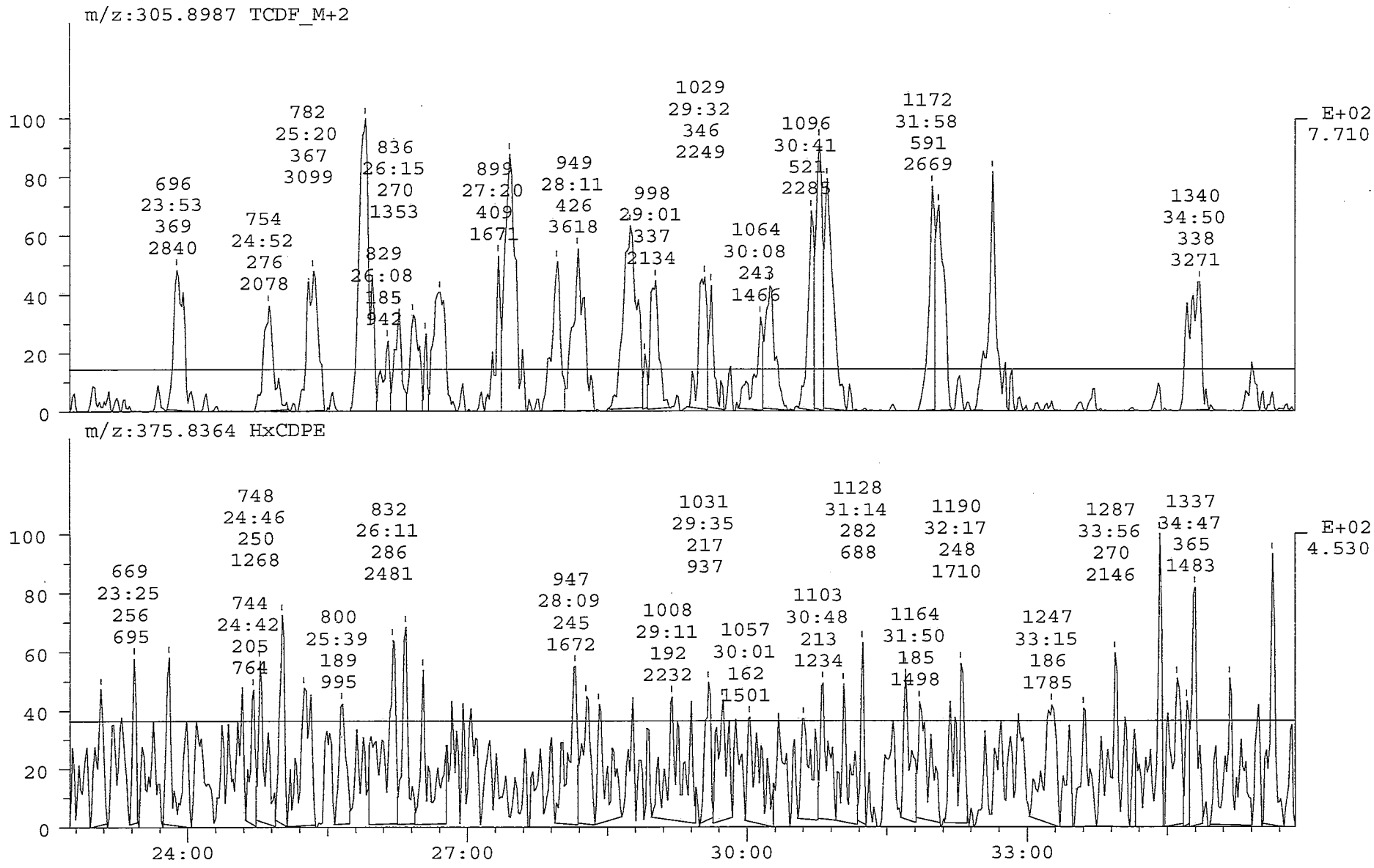
CHRO: d1tm811t 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1072 > 1134 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : 2, 5.0
Disp: Height Area



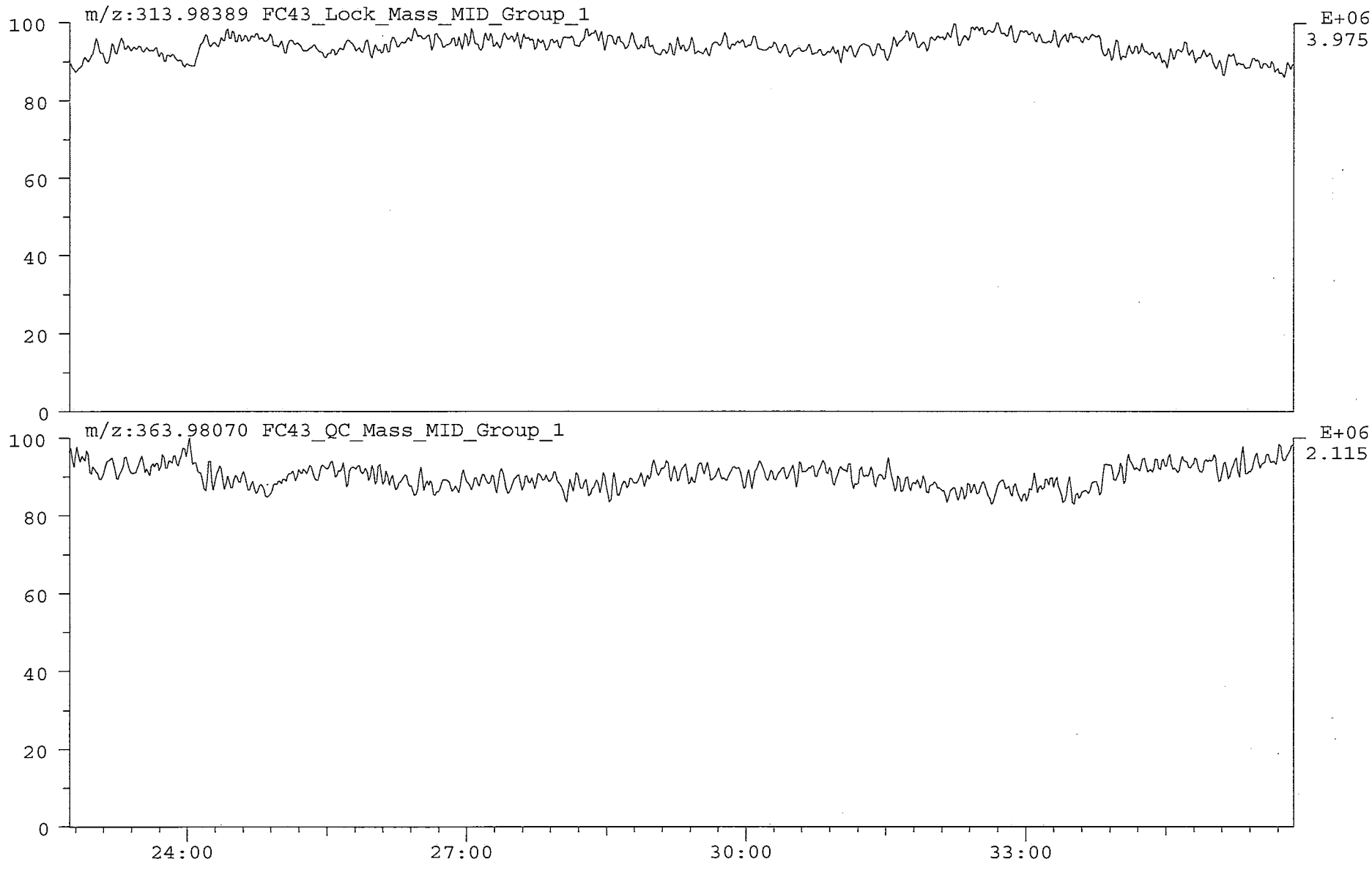
CHRO: d1tm811t 18-Aug-16 Elapse: 45:27 1949
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1070 > 1133 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 5 Label : 2, 5.0
Disp: Height Area



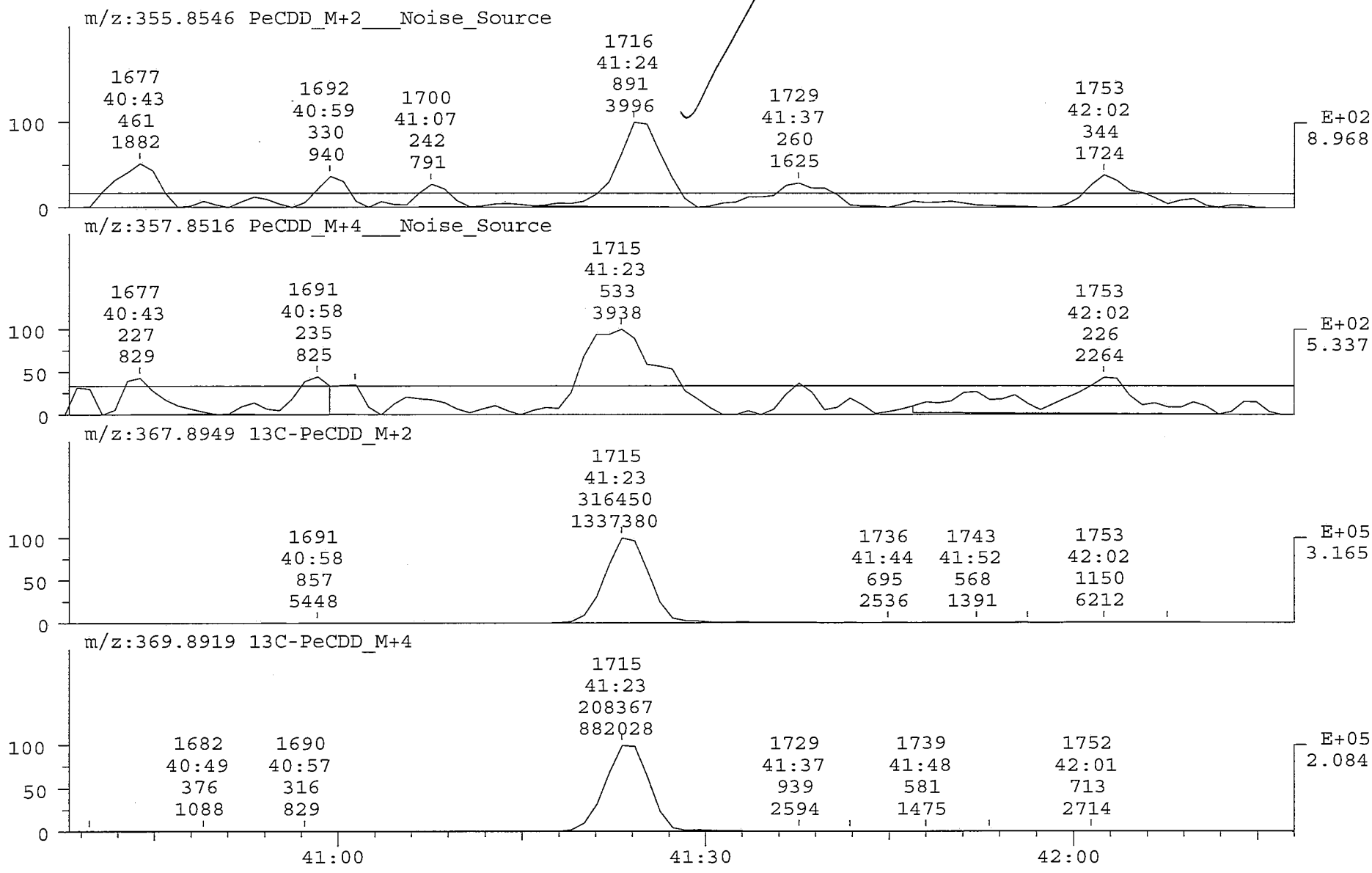
CHRO: d1tm811t 18-Aug-16 Elapse: 30:46 1101
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 628 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



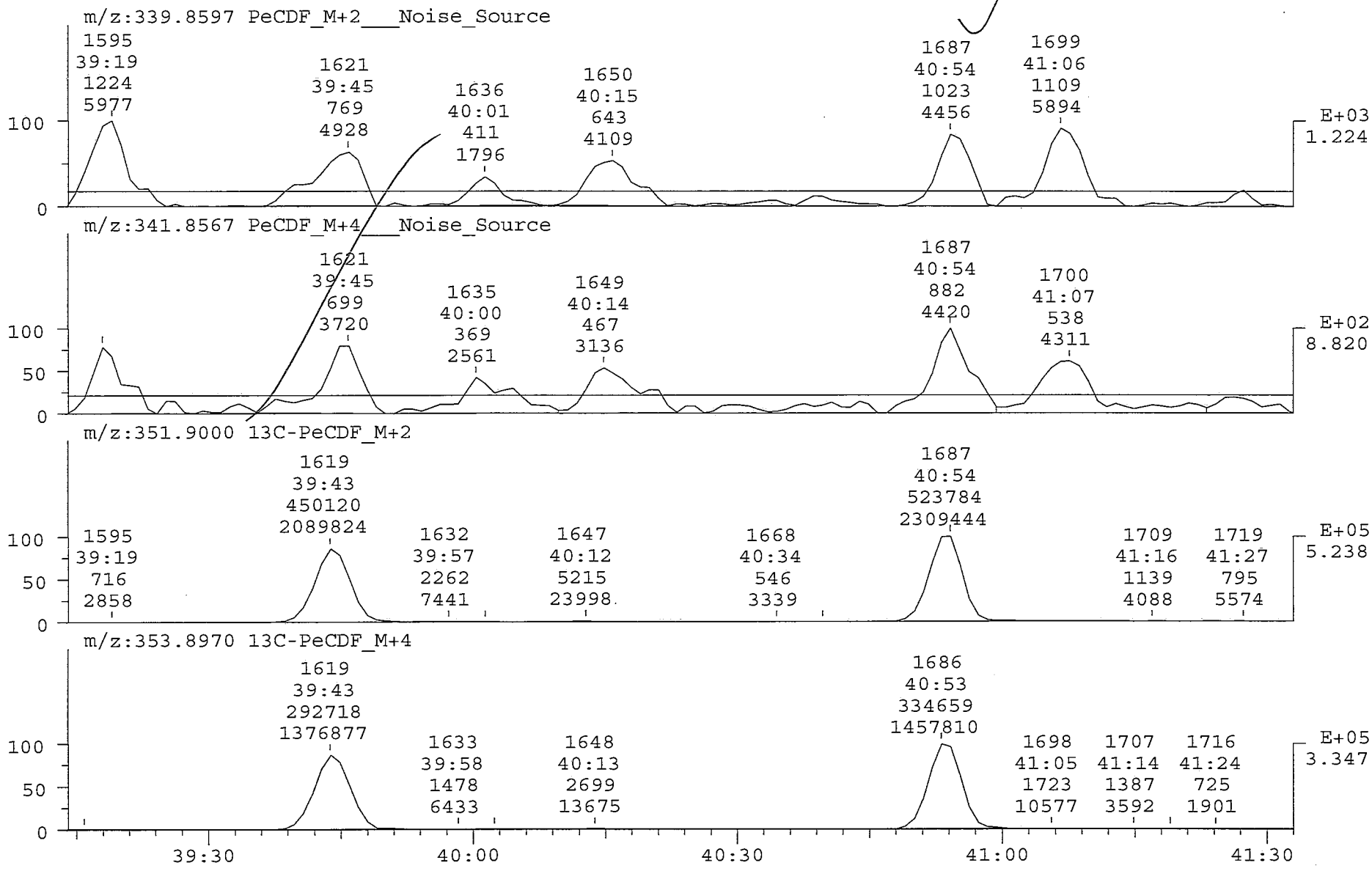
```
CHRO:  d1tm811t                                18-Aug-16  Elapse:  30:46      1101
Samp:  WO=m811t1ac Meth=9Ao Dil=1                         Start :  03:17:39   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.5g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   628 > 1400           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



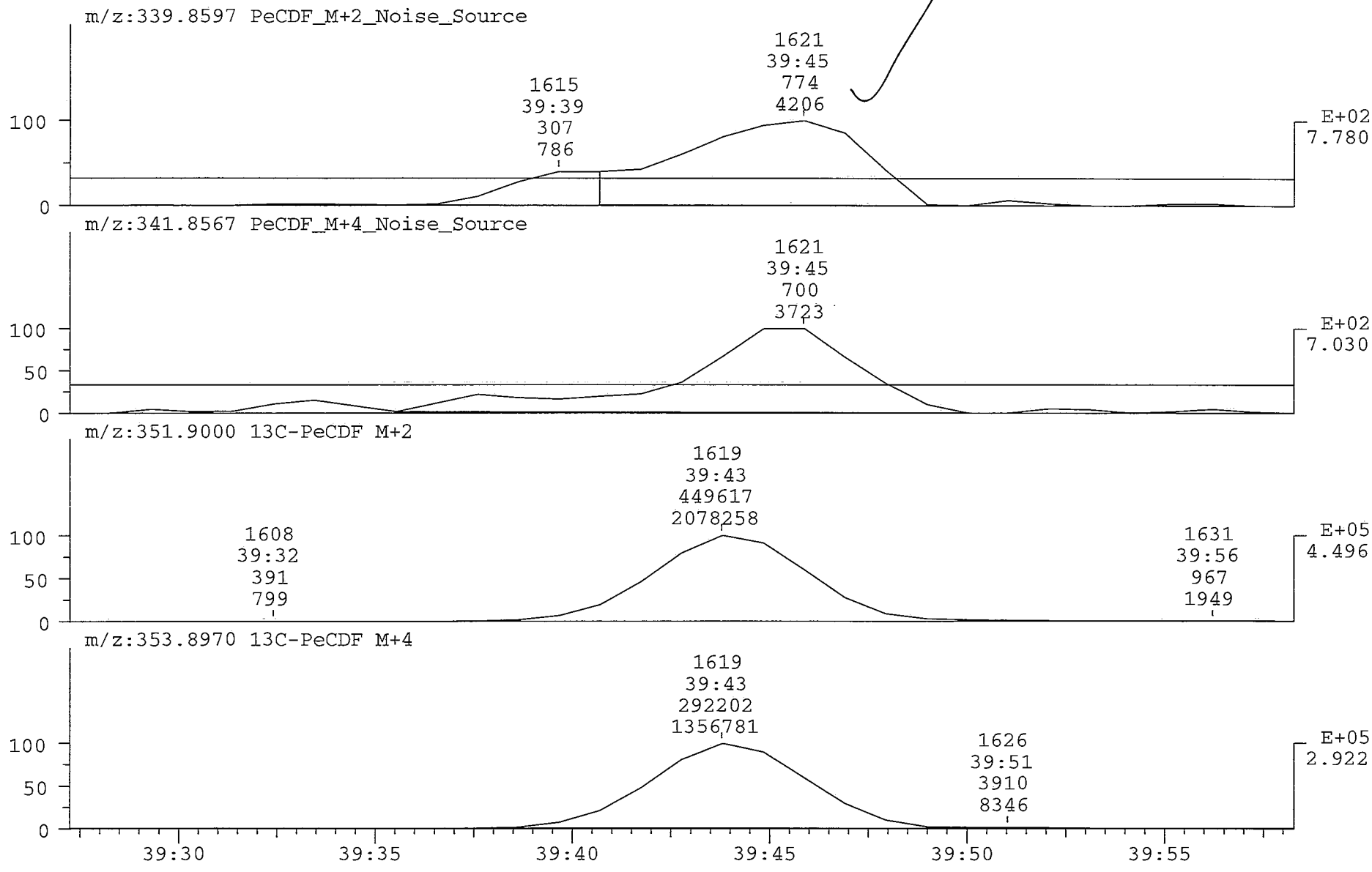
CHRO: d1tm811t 18-Aug-16 Elapse: 41:25 1717
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1671 > 1768 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



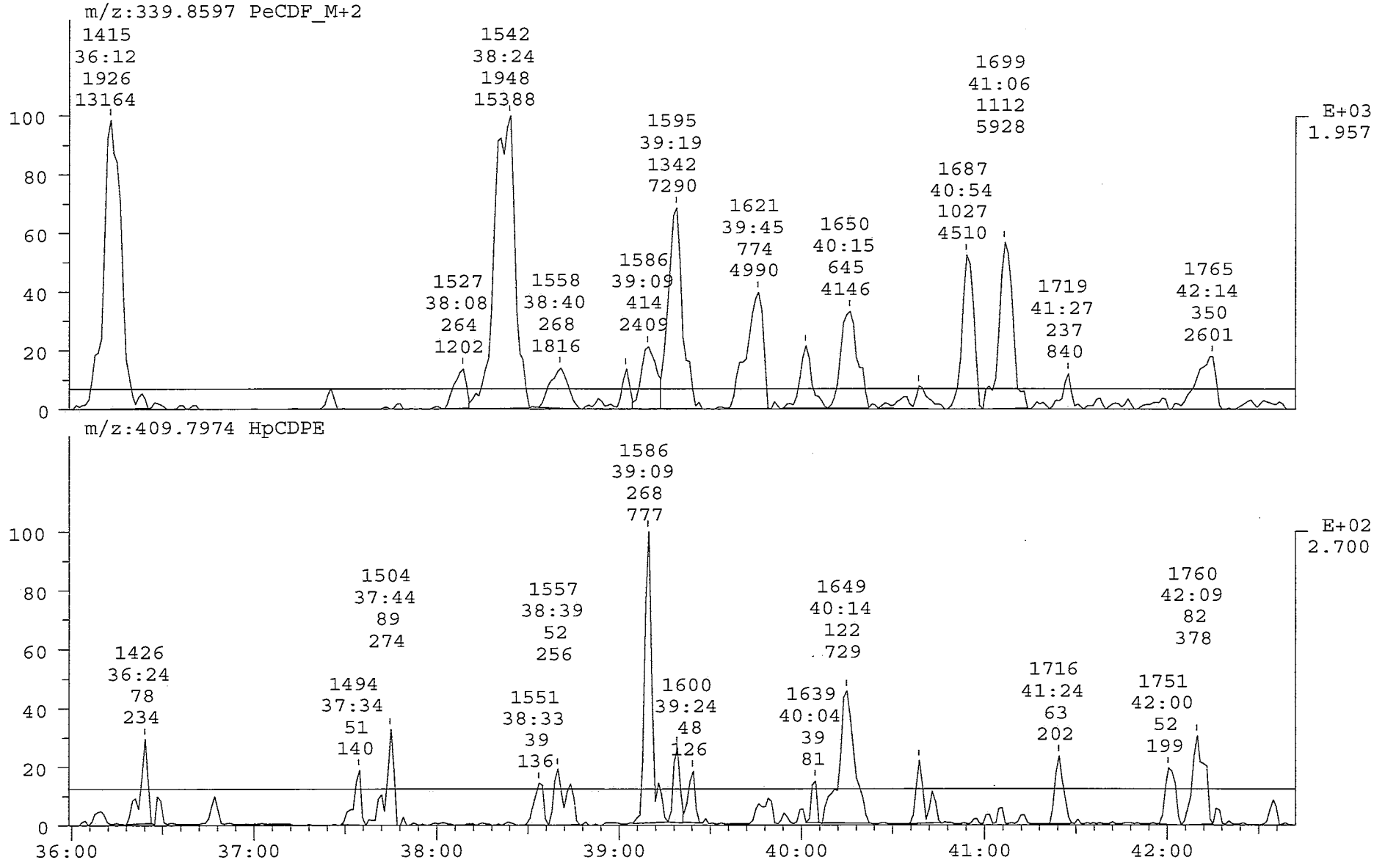
CHRO: d1tm811t 18-Aug-16 Elapse: 40:23 1657
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1590 > 1725 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



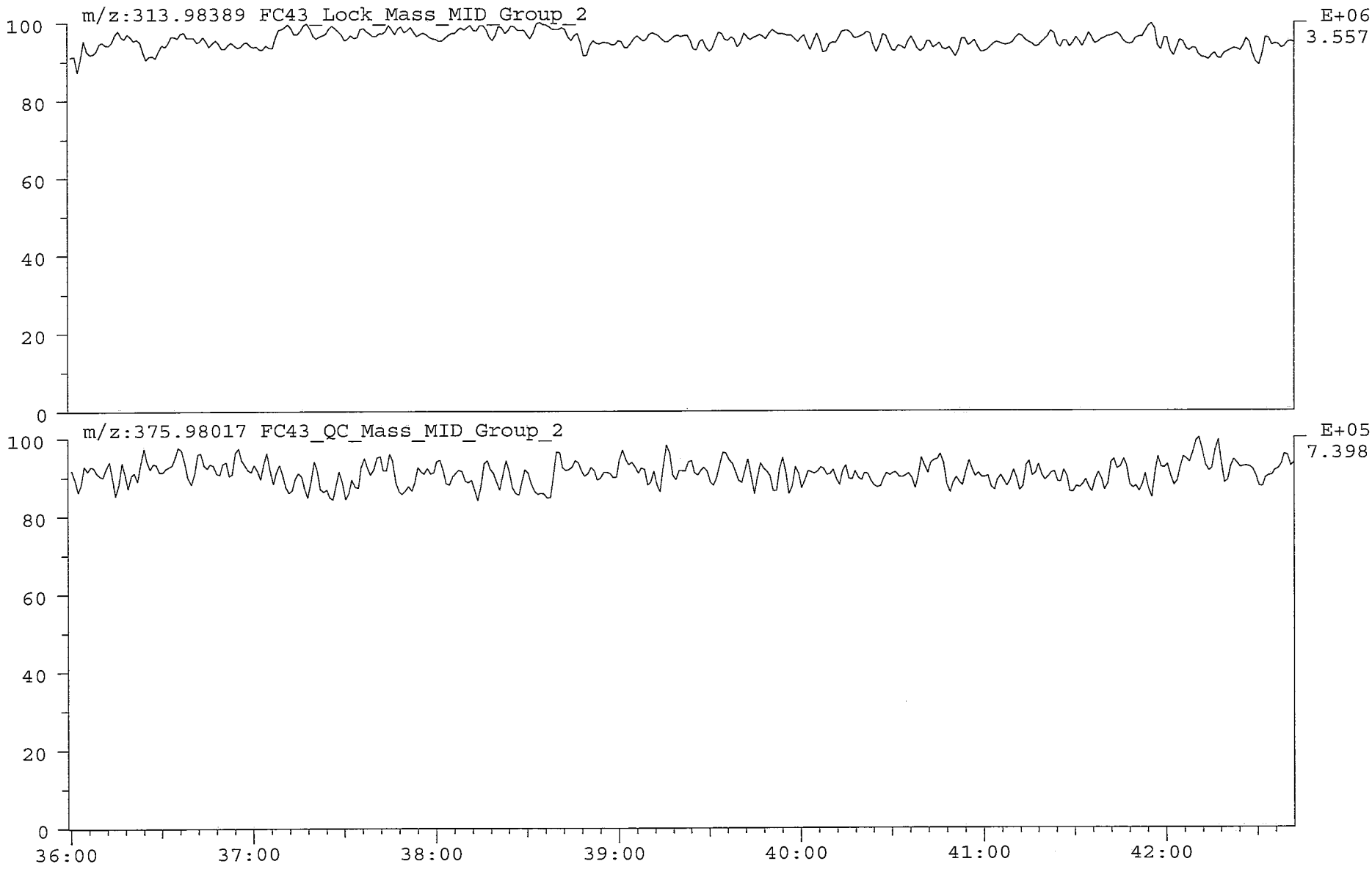
CHRO: d1tm811t 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1603 > 1633 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : -2, 8.0
Disp: Height Area



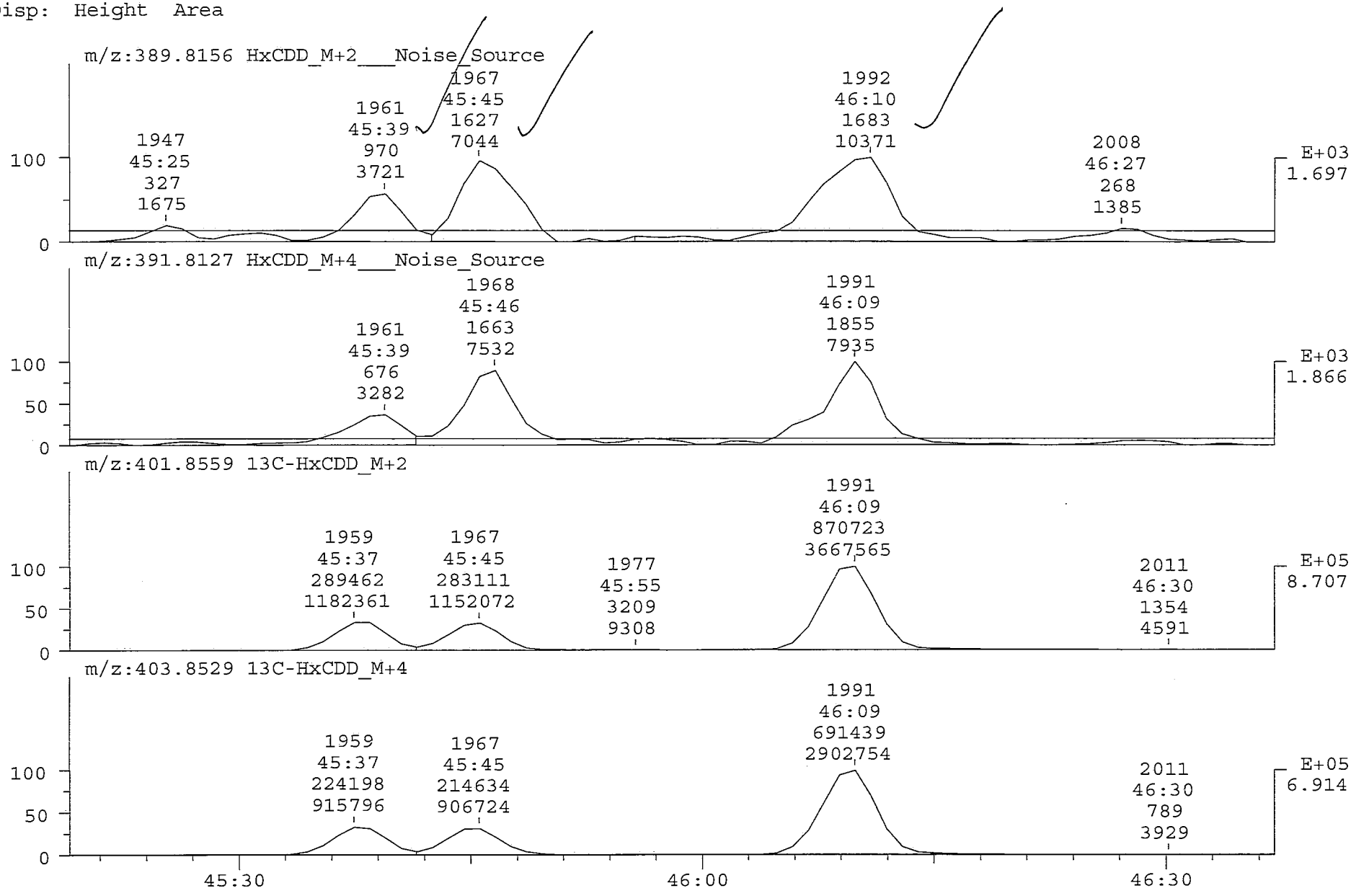
```
CHRO:  d1tm811t                                18-Aug-16  Elapse:  40:23      1657
Samp:  WO=m811t1ac Meth=9Ao Dil=1                         Start :  03:17:39   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.5g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



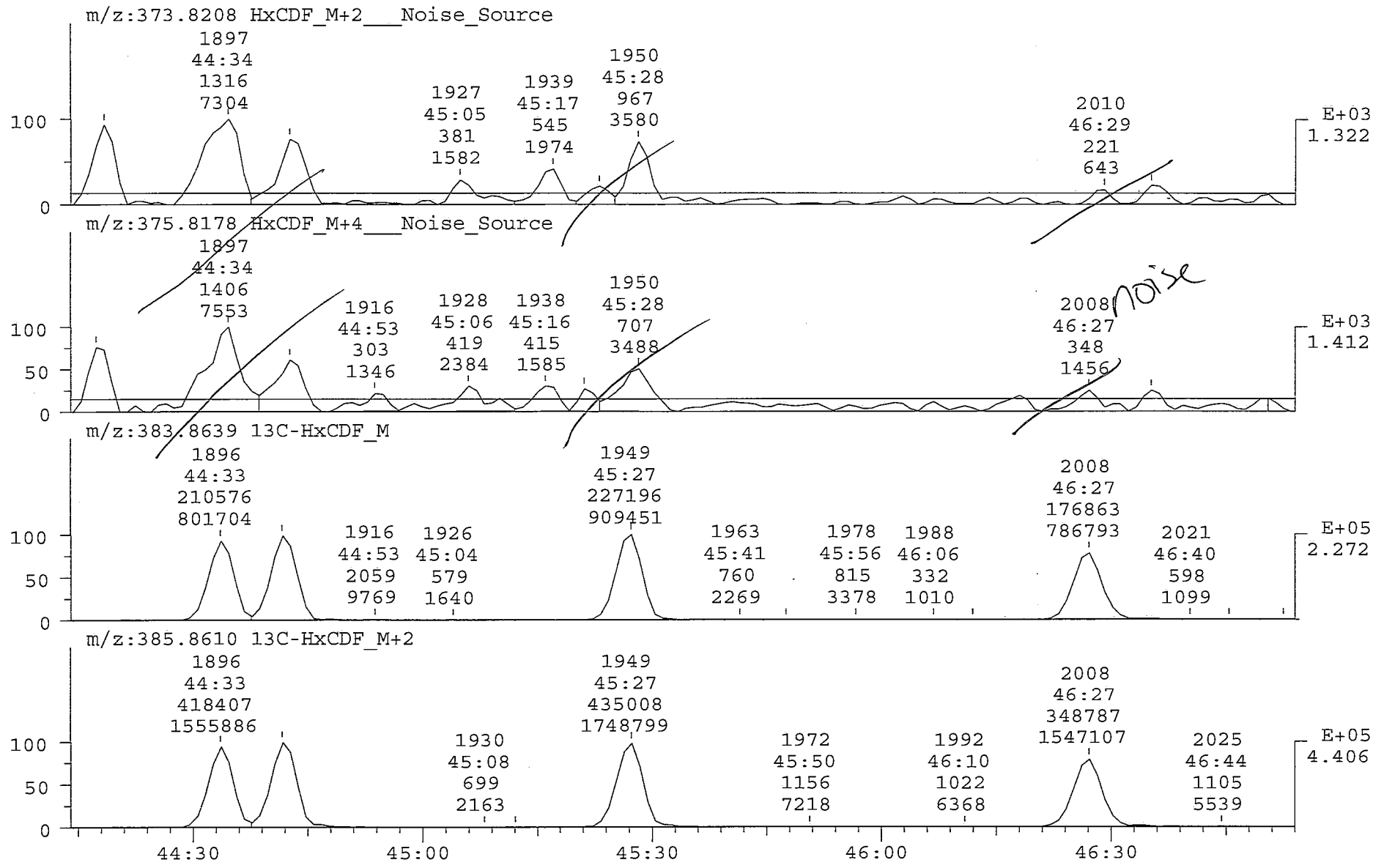
CHRO: d1tm811t 18-Aug-16 Elapse: 40:23 1657
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



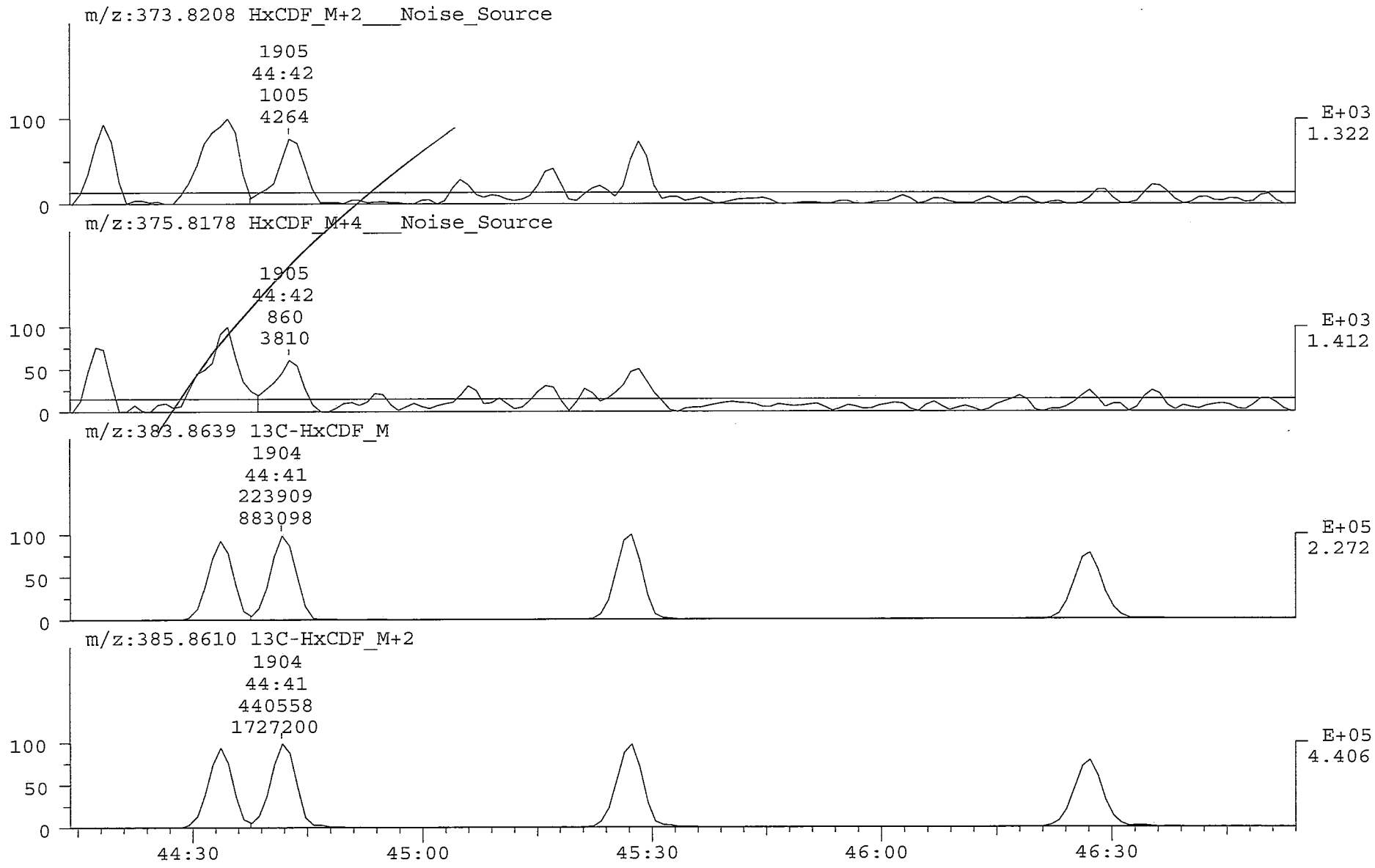
CHRO: d1tm811t 18-Aug-16 Elapse: 45:57 1979
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1941 > 2018 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



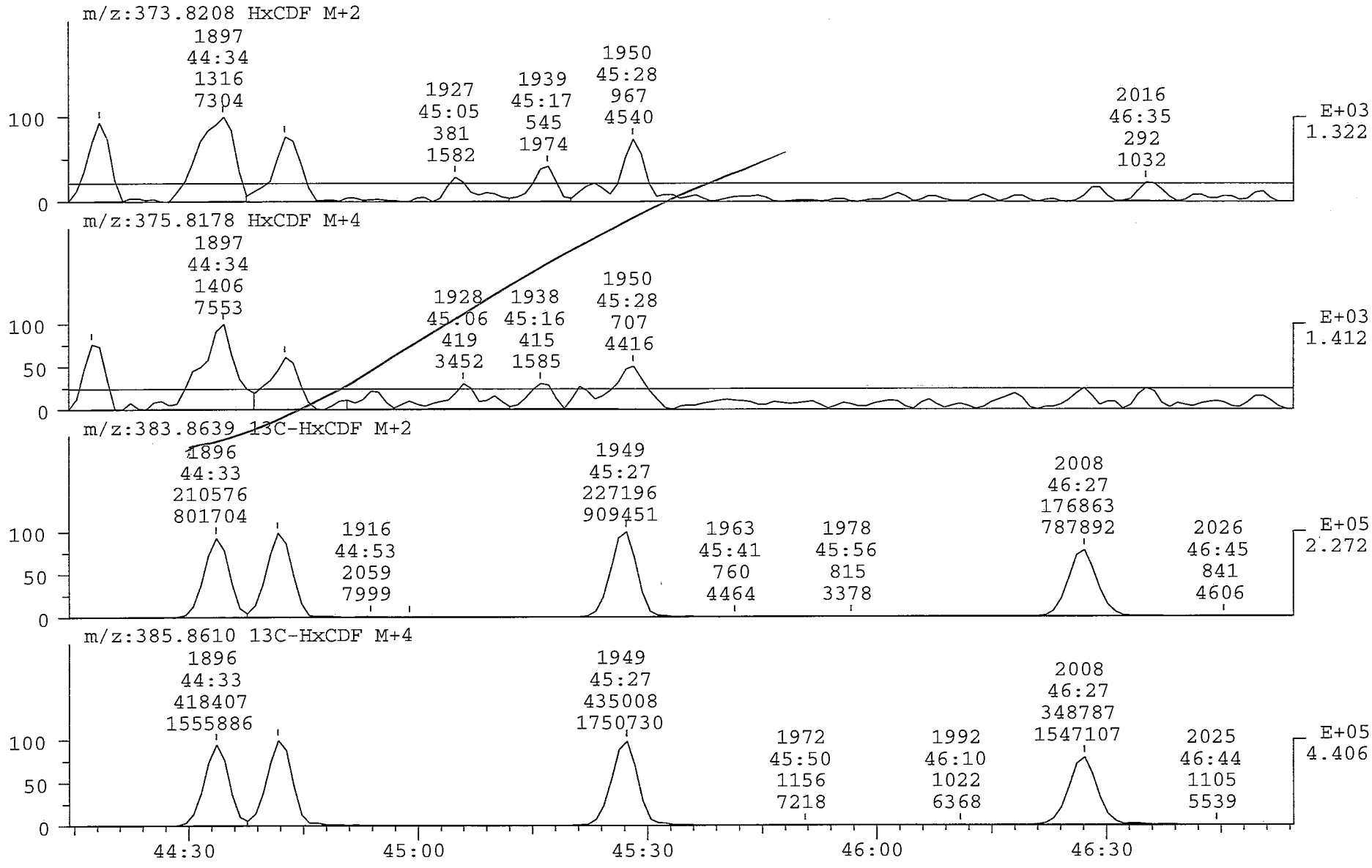
CHRO: d1tm811t 18-Aug-16 Elapse: 45:34 1956
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1877 > 2035 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



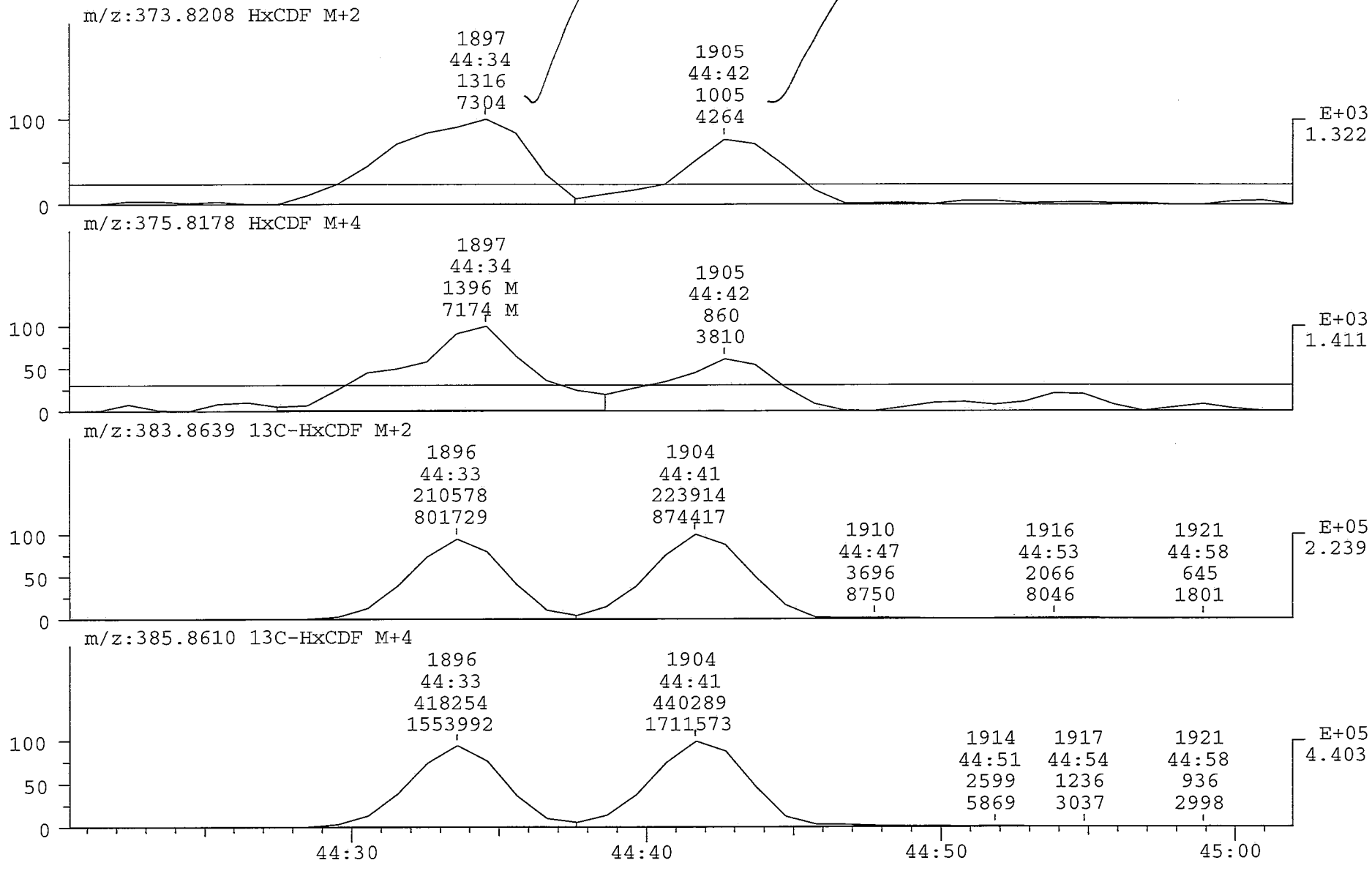
CHRO: d1tm811t 18-Aug-16 Elapse: 44:41 1904
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1900 > 1908 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



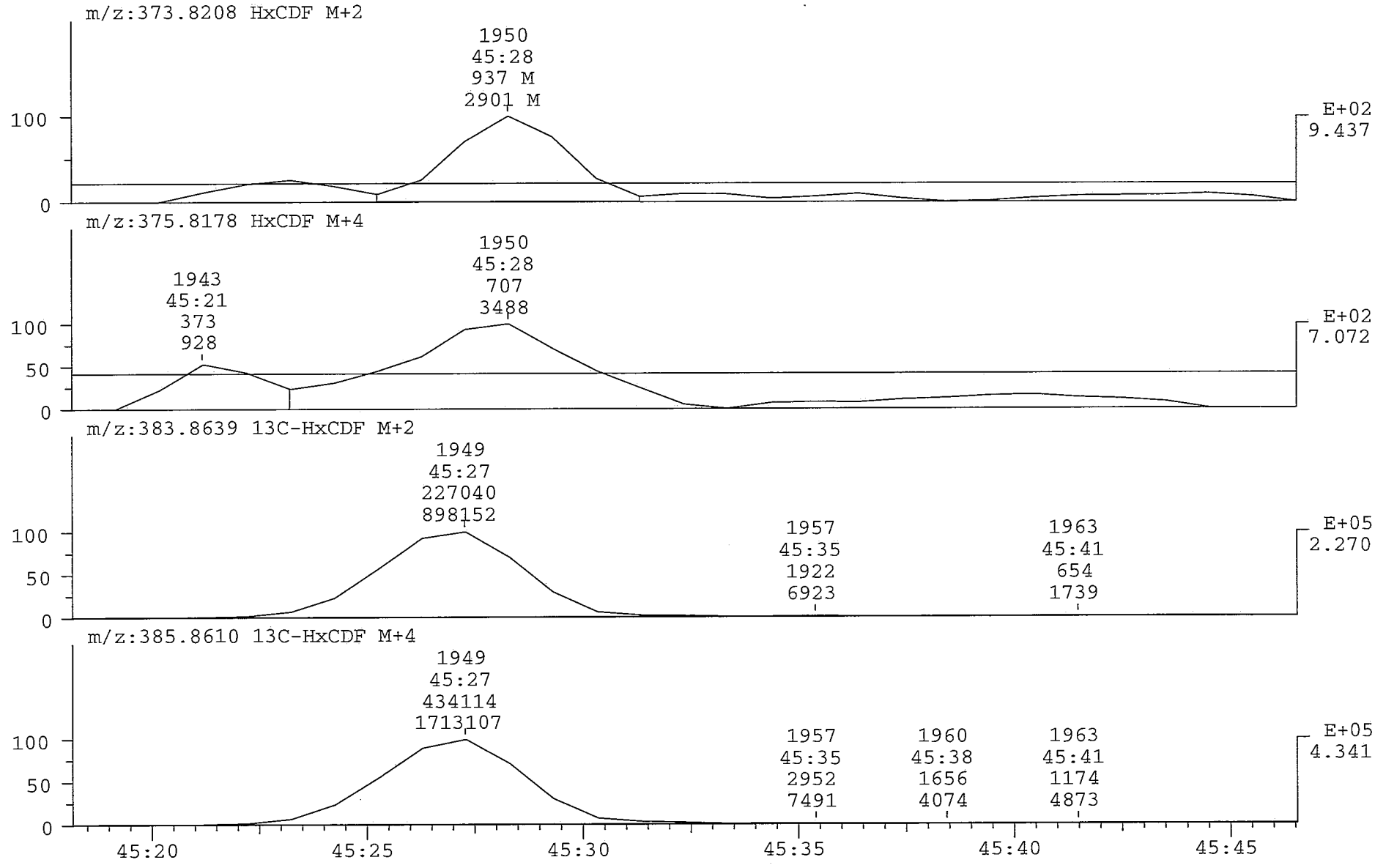
CHRO: d1tm811t 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1877 > 2035 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



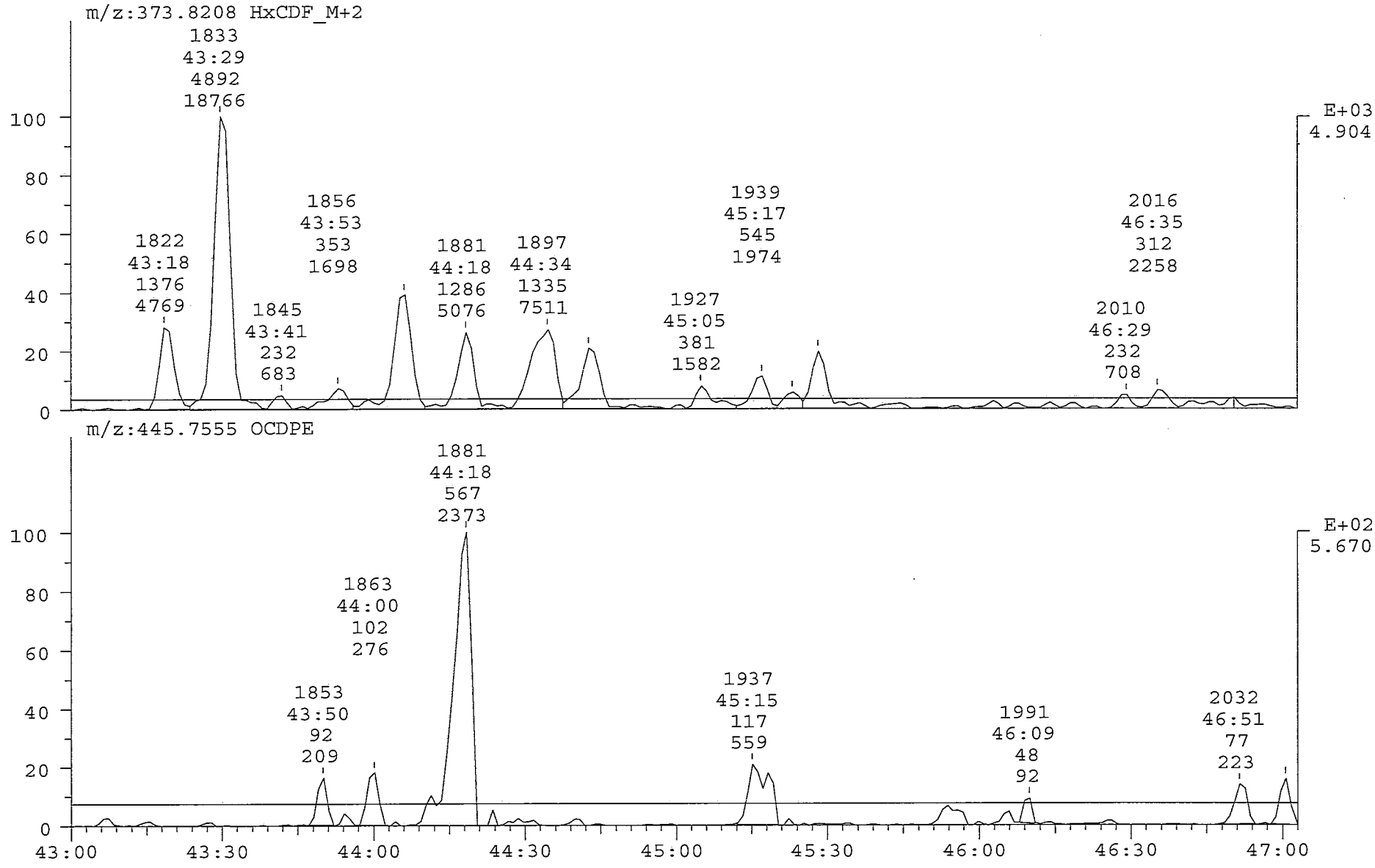
CHRO: d1tm811t 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1883 > 1924 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : -2, 8.0
Disp: Height Area



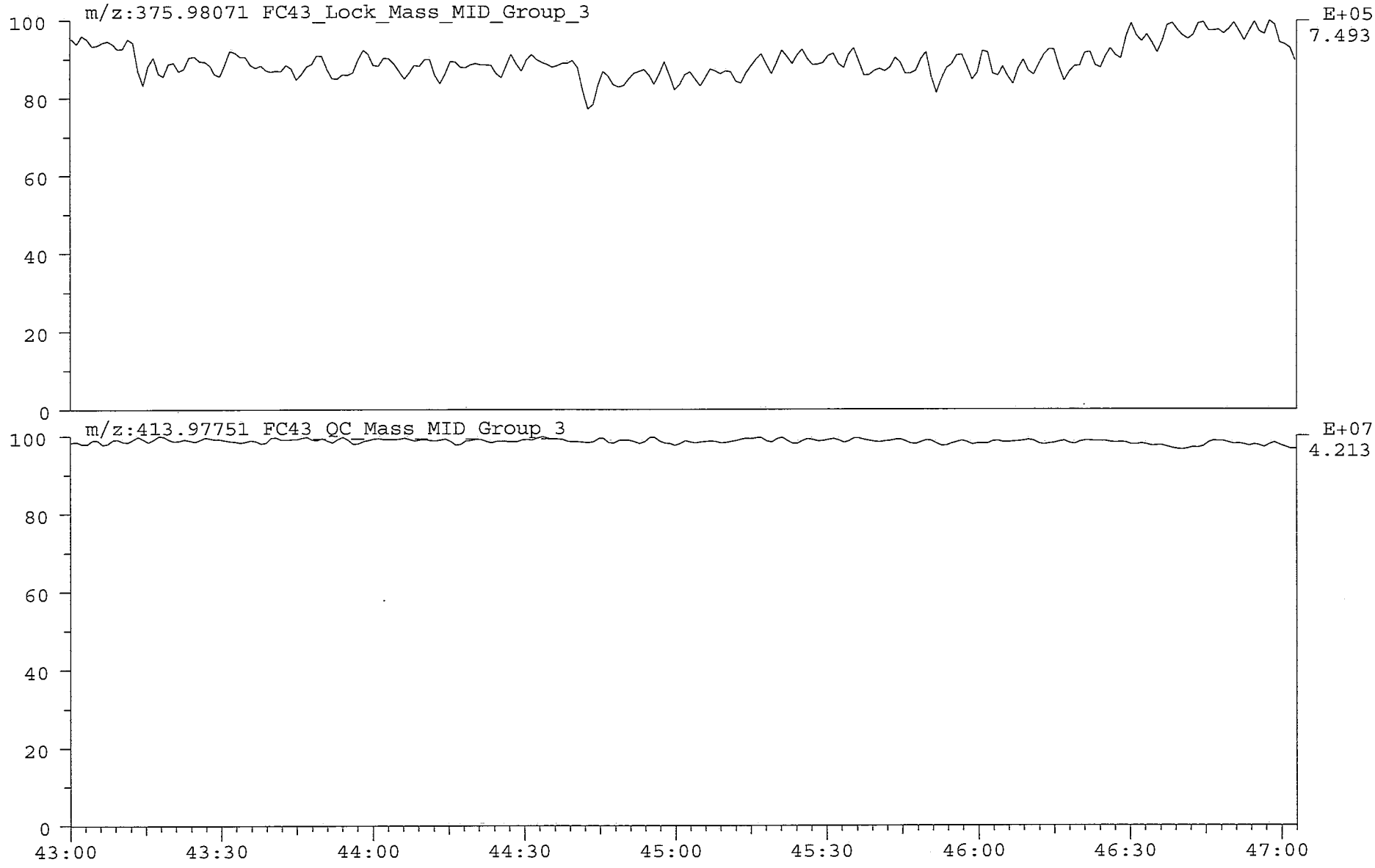
CHRO: d1tm811t 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1940 > 1968 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : -2, 8.0
Disp: Height Area



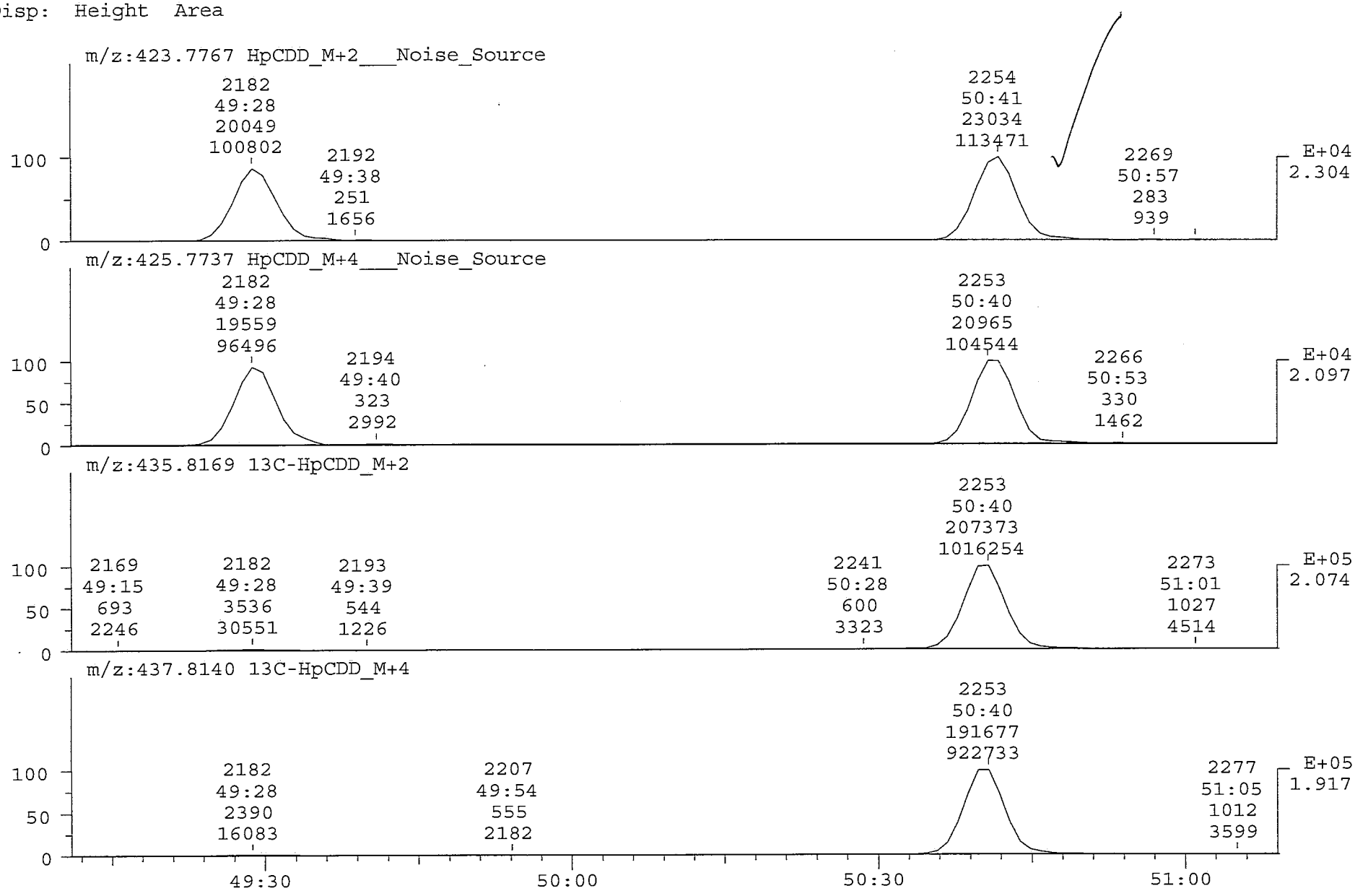
CHRO: d1tm811t 18-Aug-16 Elapse: 44:41 1904
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1804 > 2043 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



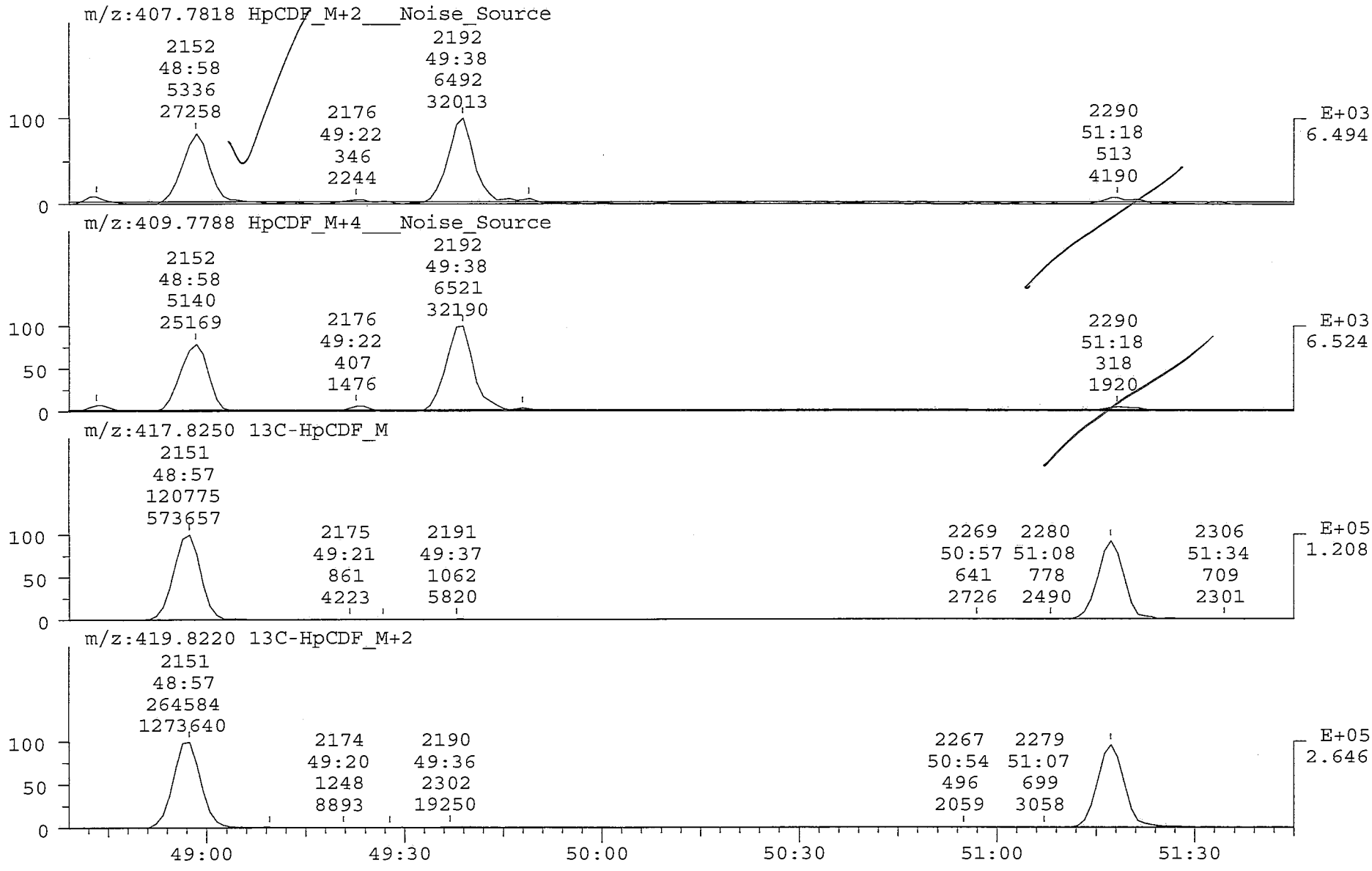
CHRO: d1tm811t 18-Aug-16 Elapse: 44:41 1904
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1804 > 2043 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



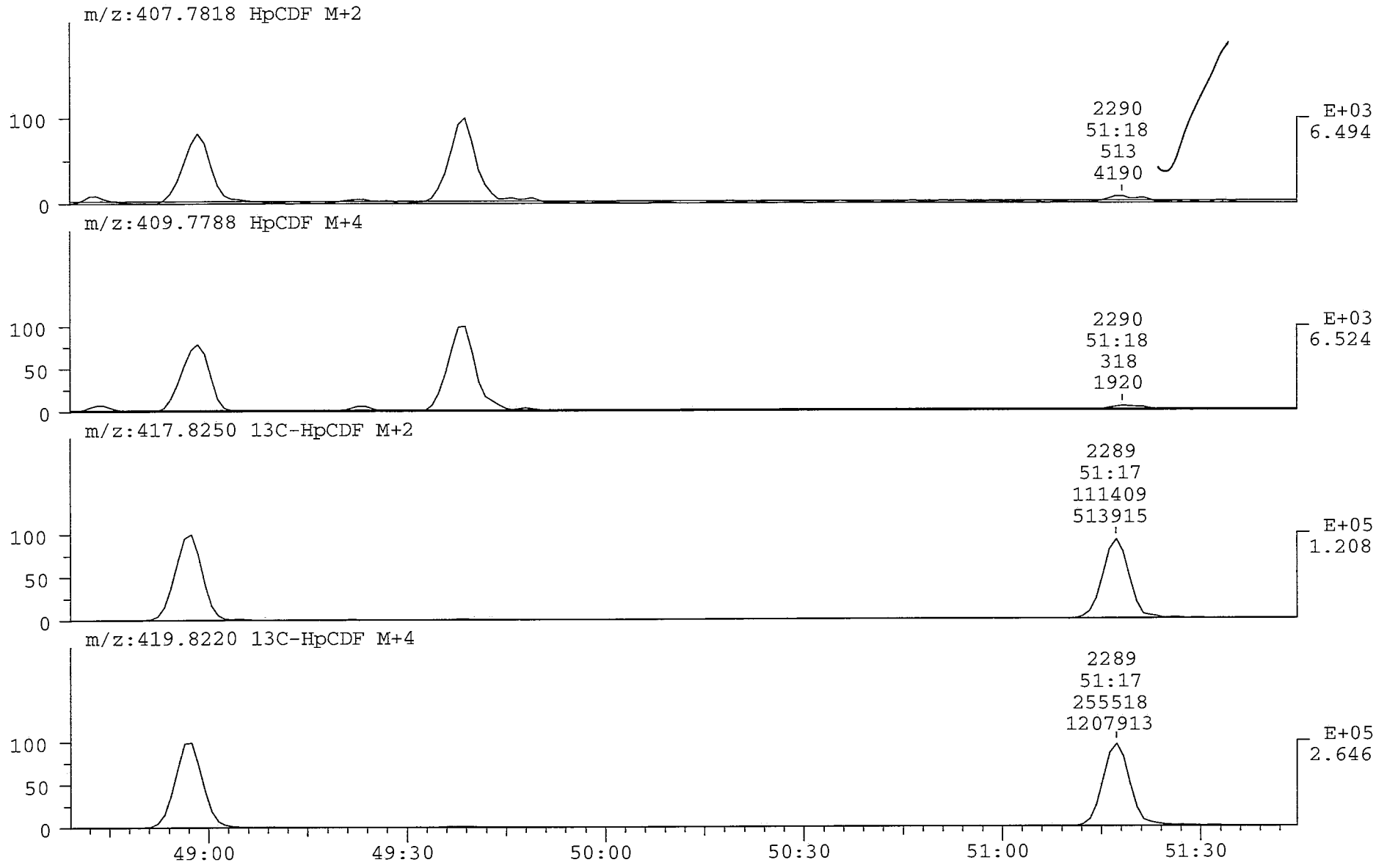
CHRO: d1tm811t 18-Aug-16 Elapse: 44:41 1904
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2164 > 2281 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



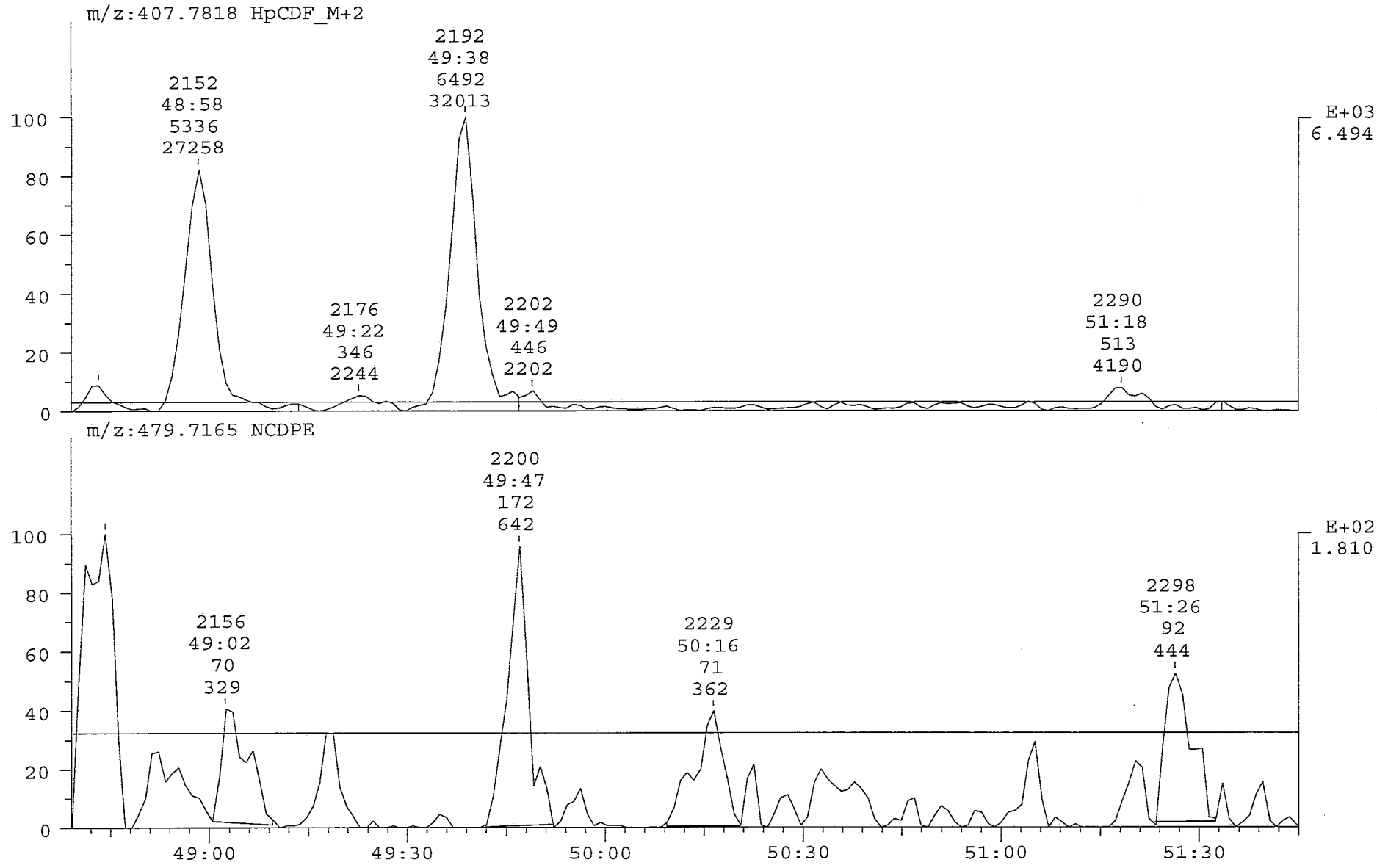
CHRO: d1tm811t 18-Aug-16 Elapse: 50:12 2225
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



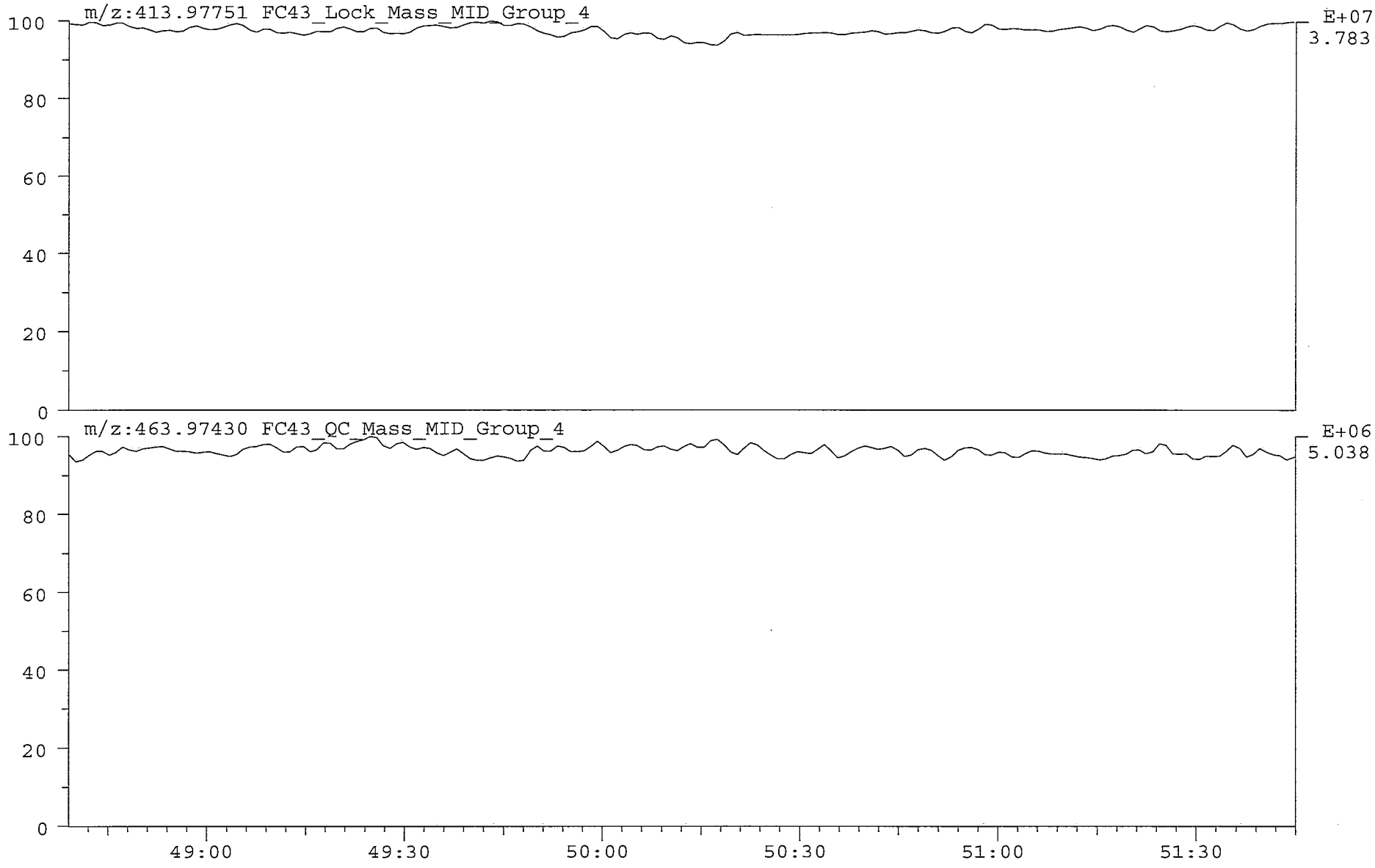
CHRO: d1tm811t 18-Aug-16 Elapse: 51:17 2289
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2286 > 2292 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



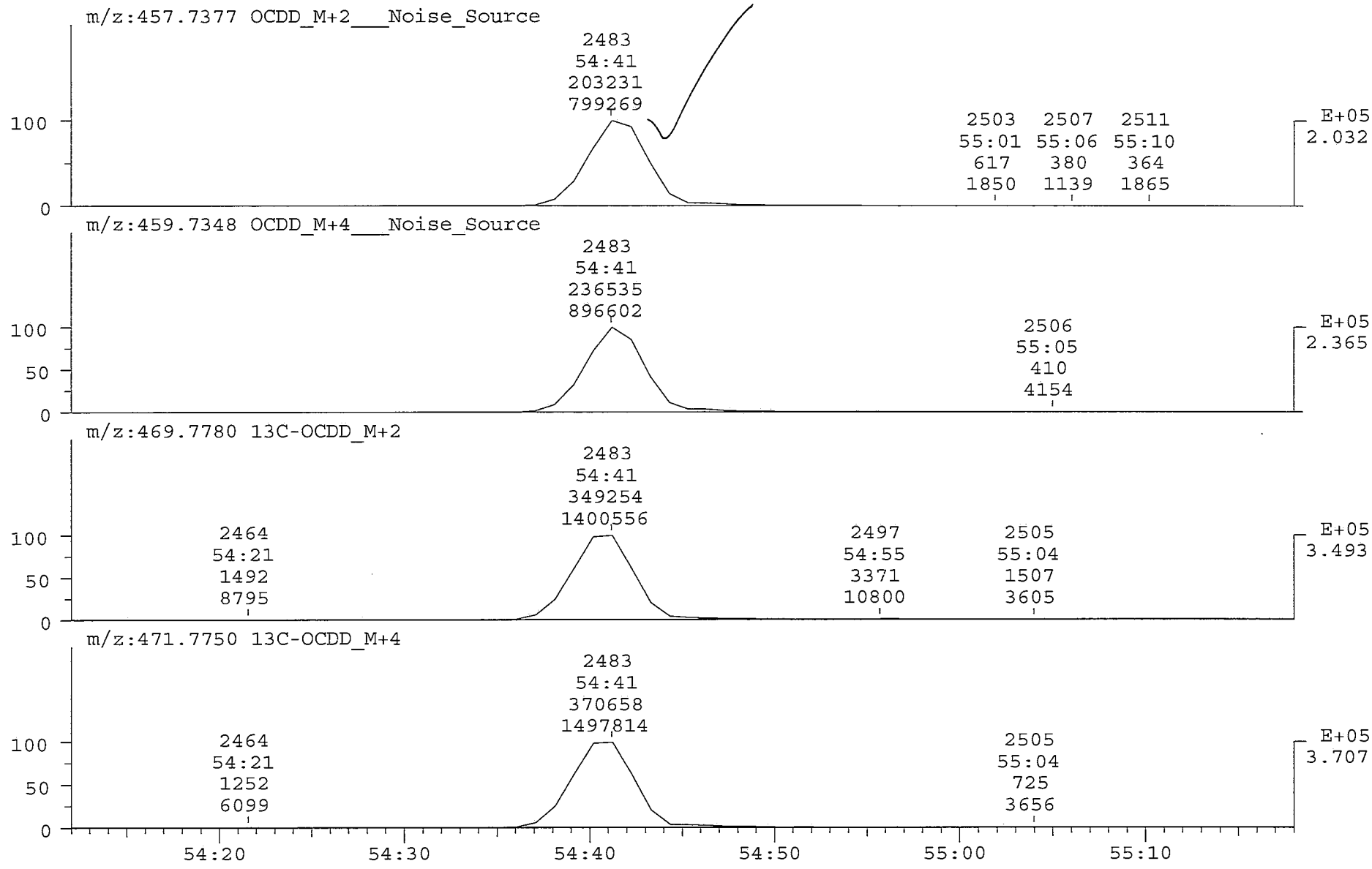
CHRO: d1tm811t 18-Aug-16 Elapse: 50:12 2225
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



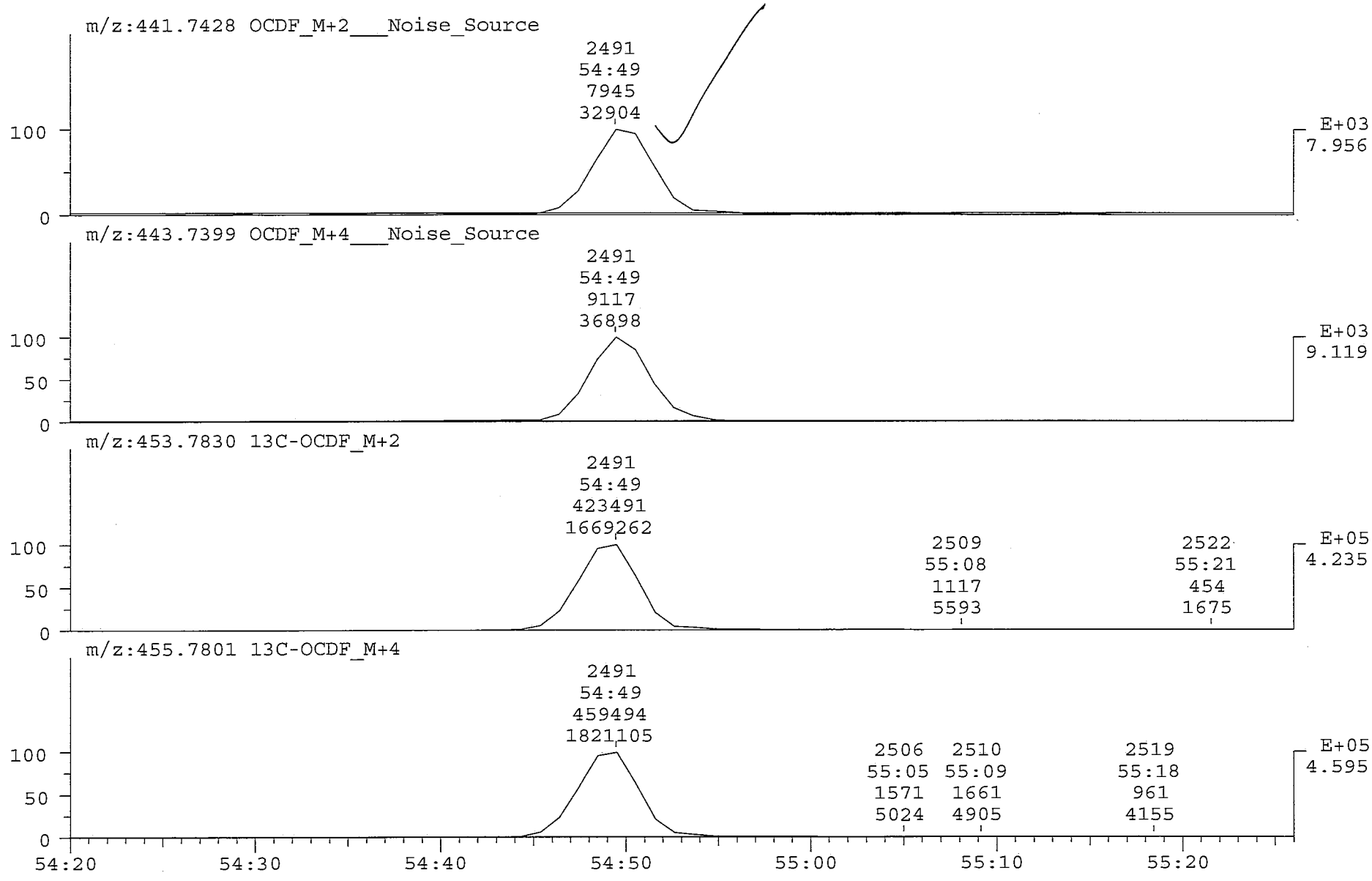
CHRO: d1tm811t 18-Aug-16 Elapse: 50:12 2225
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



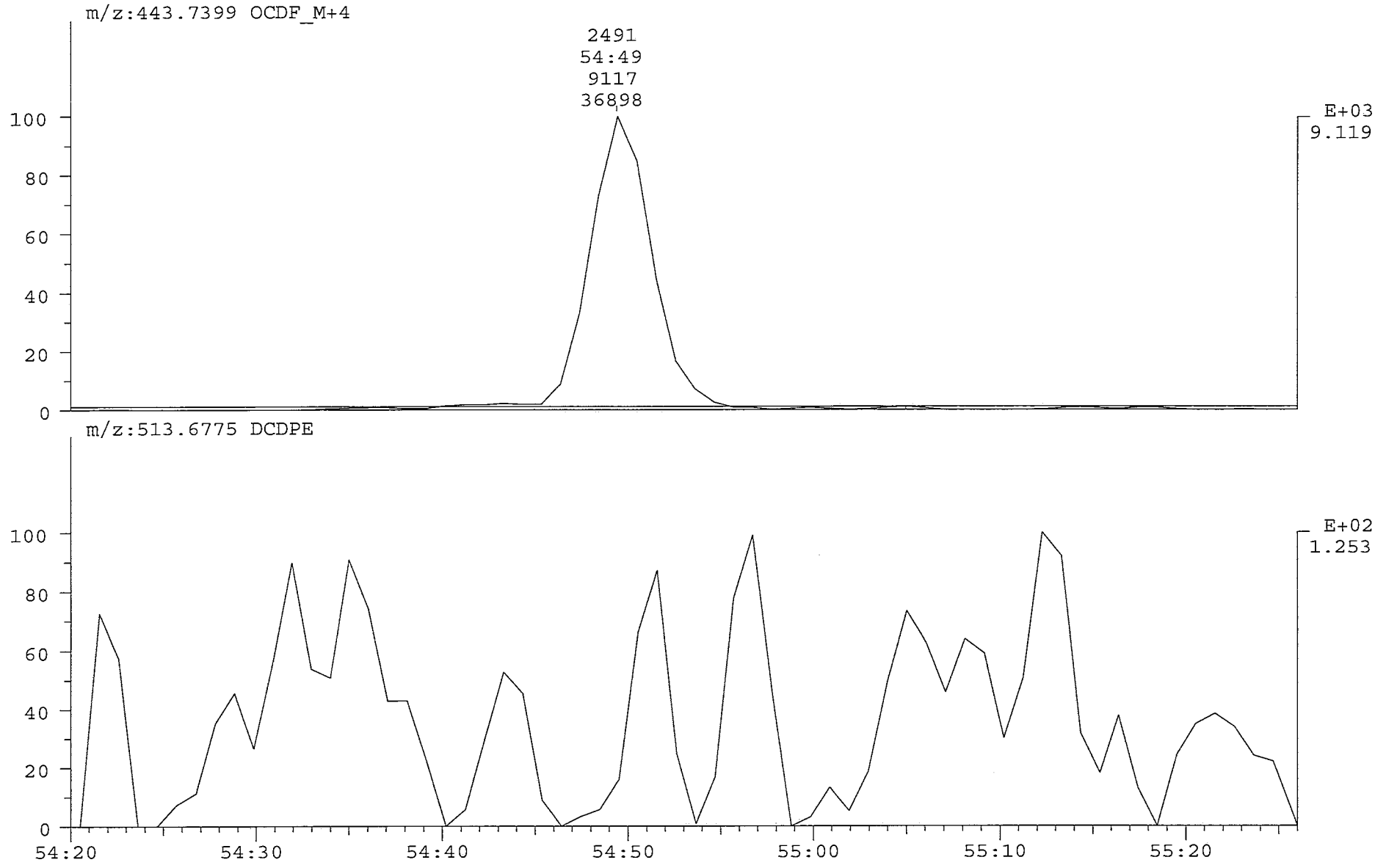
CHRO: d1tm811t 18-Aug-16 Elapse: 54:42 2484
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.5g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2455 > 2519 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



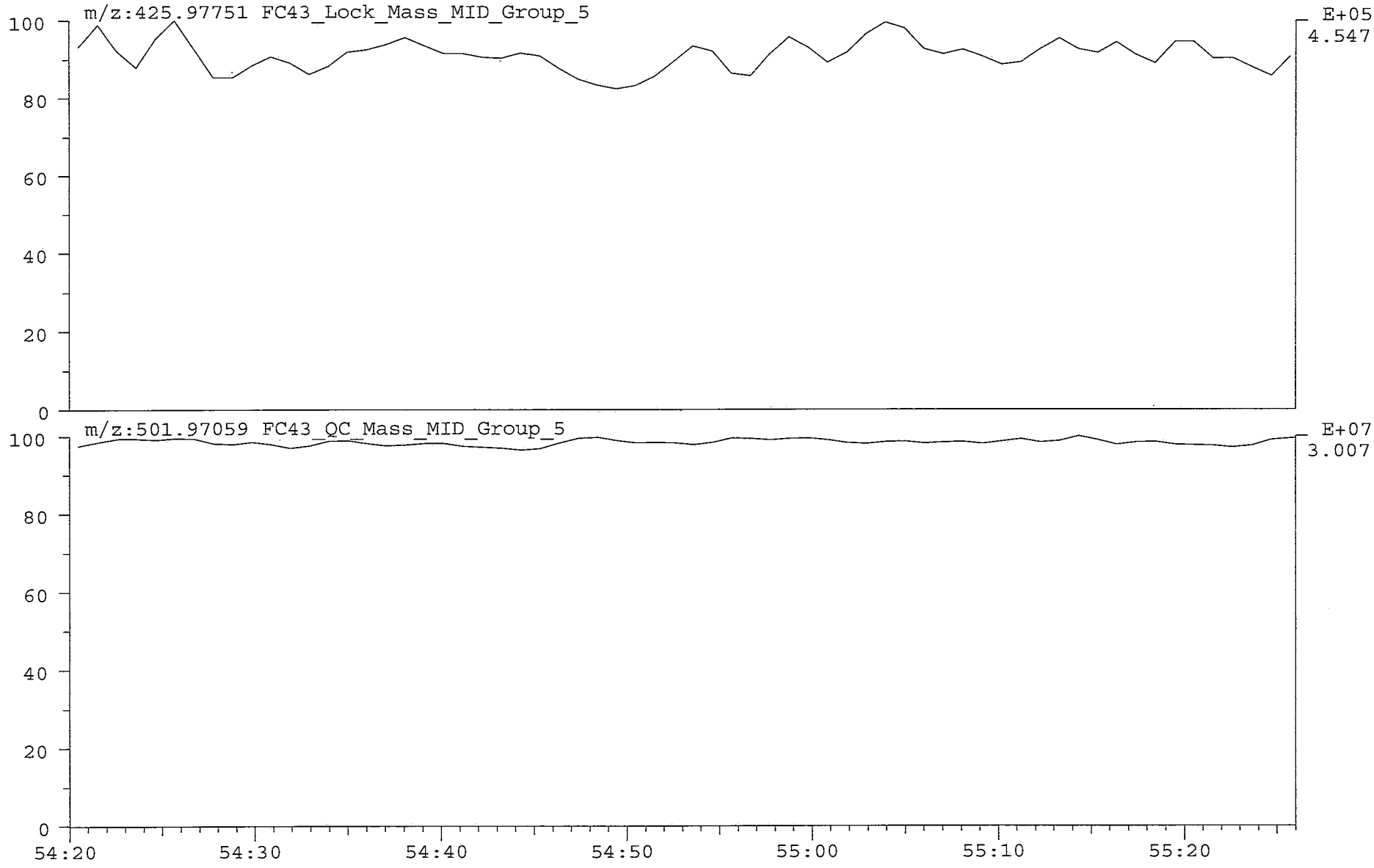
```
CHRO:  d1tm811t                                18-Aug-16  Elapse:  54:50      2492
Samp:  WO=m811t1ac Meth=9Ao Dil=1                         Start :  03:17:39   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.5g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2463 > 2526          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1tm811t                                18-Aug-16  Elapse:  54:50      2492
Samp:  WO=m811t1ac Meth=9Ao Dil=1                         Start :  03:17:39   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.5g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2463 > 2526          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1tm811t                                18-Aug-16  Elapse:  54:50      2492
Samp:  WO=m811t1ac Meth=9Ao Dil=1                         Start :  03:17:39   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.5g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2463 > 2526          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Thu Aug 18 03:22:05 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 18-Aug-16 03:22:04

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160818011732

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

```
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          309.9834
 BQUAD            2.4000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE      18.0000   ECORR           1.0008   ECURR            1.0000
 EDAC        7969177.0000  EDACG           0.9997   EDACZ         2585.8226
 ELEN           -45.0000   EMULT        1802.0000   ENS            210.0000
 ENSBR            2.4000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           172.0000   EXSBR            2.5000
 FDMA       18000000.0000  FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            6.7000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0477	FVSRC	0.0398
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	620.0000
LENS_SYM	-4.7500	LM	375.8364	LMII	500.0000
LMASS	309.9834	LKM	425.9770	MASS	309.9834
MDAC	3563488.1043	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2650.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-7.0000	RECURR	0.9016	RELEN	0.0000
RES	11025.3113	RPUSHER	-6.9670	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	309.9834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:         2.6e-005 mbar
Analyzer Penning:     9.3e-008 mbar
Pirani Analyse:       4.4e-003 mbar
Pirani Source:        4.0e-002 mbar
Pirani Inlet System: 4.8e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11925.
MID Time Window 2: Resolution is 12092.
MID Time Window 3: Resolution is 12309.
MID Time Window 4: Resolution is 12174.
MID Time Window 5: Resolution is 11025.

Amplifier Offset: 87.


*** File closed Thu Aug 18 04:19:18 2016
  ***
```

QUAN: d1tm811t.q0 Entries: 279

Data file(s) used
File: d1tm811t 18-Aug-16
Samp: WO=m811t1ac Meth=9Ao Dil=1 Start : 03:17:39 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (1
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:38	623.	94.	32:29	32:41	11.	1	1.0	ABB
321.8775	34:02	892.	217.	33:52	34:04	13.	1	1.0	ABB
319.8805	31:19	310.	68.	31:15	31:24	11.	2	5.0	ABB
319.8805	31:29	348.	75.	31:24	31:34	11.	2	5.0	ABB
319.8805	32:38	623.	94.	32:29	32:41	11.	2	5.0	ABB
319.8805	32:53	627.	82.	32;41	33:04	11.	2	5.0	ABB
319.8805	34:06	351.	77.	33:58	34:09	11.	2	5.0	ABB
321.8775	31:24	652.	162.	31:18	31:26	13.	2	5.0	ABV
321.8775	31:33	812.	167.	31:26	31:35	13.	2	5.0	AVB
321.8775	32:15	434.	139.	32:12	32:19	13.	2	5.0	ABB
321.8775	32:37	661.	91.	32:29	32:43	13.	2	5.0	ABB
321.8775	32:51	545.	118.	32:44	32:53	13.	2	5.0	ABV
321.8775	32:58	294.	84.	32:53	33:00	13.	2	5.0	AVB
321.8775	34:02	892.	217.	33:52	34:04	13.	2	5.0	ABB
331.9202	32:17	3076388.	315050.	32:02	32:32	106.	2	5.0	AVV
331.9202	32:49	1049238.	103027.	32:34	33:04	106.	2	5.0	AVV
331.9202	33:13	2065.	723.	33:11	33:16	106.	2	5.0	AVB
331.9202	33:24	5008.	728.	33:16	33:33	106.	2	5.0	ABB
333.9171	32:16	3766007.	389168.	32:01	32:31	166.	2	5.0	ABV
333.9171	32:49	1308672.	123367.	32:33	33:04	166.	2	5.0	AVV
333.9171	33:13	2858.	1144.	33:10	33:15	166.	2	5.0	ABB
303.8864	30:47	6657.	743.	30:33	30:57	19.	1	1.0	ABV
305.8834	30:51	3757.	609.	30:49	31:03	26.	1	1.0	AVB
303.8864	29:30	2483.	308.	29:23	29:42	19.	2	5.0	ABB
303.8864	30:07	1073.	167.	29:57	30:10	19.	2	5.0	ABV
303.8864	30:13	1041.	211.	30:10	30:20	19.	2	5.0	AVB
303.8864	30:47	6657.	743.	30:33	30:57	19.	2	5.0	ABV
303.8864	30:59	471.	184.	30:57	31:01	19.	2	5.0	AVB
303.8864	32:00	2140.	446.	31:50	32:02	19.	2	5.0	ABV
303.8864	32:05	2375.	432.	32:02	32:11	19.	2	5.0	AVB
305.8834	29:33	2259.	346.	29:22	29:35	26.	2	5.0	ABV
305.8834	29:37	1054.	326.	29:35	29:42	26.	2	5.0	AVB
305.8834	30:08	1456.	242.	29:54	30:10	26.	2	5.0	ABV
305.8834	30:14	2258.	326.	30:10	30:24	26.	2	5.0	AVB
305.8834	30:41	2291.	521.	30:33	30:43	26.	2	5.0	ABV
305.8834	30:46	3381.	709.	30:43	30:49	26.	2	5.0	AVV
305.8834	30:51	3757.	609.	30:49	31:03	26.	2	5.0	AVB
305.8834	31:59	2661.	590.	31:49	32:01	26.	2	5.0	ABV
305.8834	32:03	3186.	538.	32:01	32:10	26.	2	5.0	AVB
315.9261	29:28	6197.	925.	29:22	29:38	47.	2	5.0	ABB
315.9261	30:00	1169.	492.	29:57	30:02	47.	2	5.0	ABB
315.9261	30:41	1578961.	165534.	30:26	30:56	47.	2	5.0	AVV
315.9261	30:59	2847.	1033.	30:57	31:01	47.	2	5.0	AVV
315.9261	31:03	1252.	458.	31:01	31:05	47.	2	5.0	AVV
315.9261	31:07	1591.	330.	31:05	31:13	47.	2	5.0	AVV
315.9261	31:17	1422.	355.	31:13	31:19	47.	2	5.0	AVB
315.9261	31:22	853.	375.	31:19	31:24	47.	2	5.0	ABB
315.9261	31:38	1477.	405.	31:34	31:40	47.	2	5.0	ABV
315.9261	31:43	1779.	460.	31:40	31:46	47.	2	5.0	AVV
315.9261	31:54	1586.	329.	31:46	31:56	47.	2	5.0	AVB

315.9261	32:11	1400.	378.	32:06	32:15	47.	2	5.0	ABV
315.9261	32:18	3080.	522.	32:15	32:26	47.	2	5.0	AVB
317.9230	29:28	7238.	978.	29:20	29:35	56.	2	5.0	ABV
317.9230	29:37	2080.	653.	29:35	29:40	56.	2	5.0	AVB
317.9230	30:41	2026096.	213001.	30:26	30:56	56.	2	5.0	ABV
317.9230	31:08	4151.	759.	31:02	31:11	56.	2	5.0	AVV
317.9230	31:12	1189.	620.	31:11	31:14	56.	2	5.0	AVB
317.9230	31:16	1689.	412.	31:14	31:22	56.	2	5.0	ABV
317.9230	31:24	916.	375.	31:22	31:26	56.	2	5.0	AVV
317.9230	31:38	2423.	331.	31:26	31:40	56.	2	5.0	AVB
317.9230	32:16	1387.	562.	32:13	32:18	56.	2	5.0	ABV
317.9230	32:19	794.	337.	32:18	32:23	56.	2	5.0	AVB
355.8368	41:24	3996.	891.	41:16	41:29	30.	1	1.0	ABB
357.8337	41:23	3938.	533.	41:14	41:31	35.	1	1.0	ABB
355.8368	40:43	1882.	461.	40:39	40:47	30.	2	5.0	ABB
355.8368	40:59	940.	330.	40:56	41:02	30.	2	5.0	ABB
355.8368	41:07	791.	242.	41:02	41:10	30.	2	5.0	ABB
355.8368	41:24	3996.	891.	41:16	41:29	30.	2	5.0	ABB
355.8368	41:37	1625.	260.	41:29	41:44	30.	2	5.0	ABB
355.8368	42:02	1724.	344.	41:58	42:11	30.	2	5.0	ABB
357.8337	40:43	829.	227.	40:40	40:50	35.	2	5.0	ABB
357.8337	40:58	825.	235.	40:51	40:59	35.	2	5.0	ABV
357.8337	41:01	522.	187.	40:59	41:03	35.	2	5.0	AVB
357.8337	41:23	3938.	533.	41:14	41:31	35.	2	5.0	ABB
357.8337	42:02	2264.	226.	41:47	42:11	35.	2	5.0	AVB
367.8765	40:58	5448.	857.	40:51	41:08	78.	2	5.0	ABB
367.8765	41:23	1337380.	316450.	41:12	41:38	78.	2	5.0	ABV
367.8765	41:44	2536.	695.	41:42	41:50	78.	2	5.0	AVB
367.8765	41:52	1391.	568.	41:50	41:54	78.	2	5.0	ABV
367.8765	41:56	1638.	494.	41:54	41:58	78.	2	5.0	AVV
367.8765	42:02	6212.	1150.	41:58	42:05	78.	2	5.0	AVV
367.8765	42:07	4315.	1192.	42:05	42:11	78.	2	5.0	AVB
369.8734	40:39	606.	300.	40:37	40:41	43.	2	5.0	ABB
369.8734	40:49	1088.	376.	40:45	40:52	43.	2	5.0	ABB
369.8734	40:57	829.	316.	40:54	41:00	43.	2	5.0	ABB
369.8734	41:23	882028.	208367.	41:16	41:35	43.	2	5.0	ABV
369.8734	41:37	2594.	939.	41:35	41:39	43.	2	5.0	AVB
369.8734	41:41	2046.	543.	41:39	41:46	43.	2	5.0	ABV
369.8734	41:48	1475.	581.	41:46	41:50	43.	2	5.0	AVB
369.8734	41:53	1433.	399.	41:51	41:57	43.	2	5.0	ABB
369.8734	42:01	2714.	713.	41:58	42:07	43.	2	5.0	ABB
339.8427	39:19	5977.	1224.	39:13	39:25	43.	1	1.0	ABB
341.8396	40:54	4420.	882.	40:47	40:59	37.	1	1.0	ABV
339.8427	39:19	5977.	1224.	39:13	39:25	43.	2	5.0	ABB
339.8427	39:45	4928.	769.	39:36	39:49	43.	2	5.0	ABB
339.8427	40:01	1796.	411.	39:54	40:07	43.	2	5.0	ABB
339.8427	40:15	4109.	643.	40:08	40:22	43.	2	5.0	ABB
339.8427	40:54	4456.	1023.	40:49	40:59	43.	2	5.0	ABB
339.8427	41:06	5894.	1109.	40:59	41:13	43.	2	5.0	ABB
341.8396	39:18	2931.	690.	39:13	39:24	37.	2	5.0	ABB
341.8396	39:45	3720.	699.	39:35	39:50	37.	2	5.0	ABB
341.8396	40:00	2561.	369.	39:51	40:09	37.	2	5.0	ABV
341.8396	40:14	3136.	467.	40:09	40:23	37.	2	5.0	AVB
341.8396	40:54	4420.	882.	40:47	40:59	37.	2	5.0	ABV
341.8396	41:07	4311.	538.	40:59	41:23	37.	2	5.0	AVV
351.8824	39:19	2858.	716.	39:13	39:22	79.	2	5.0	ABB
351.8824	39:43	2089824.	450120.	39:34	39:55	79.	2	5.0	ABV
351.8824	39:57	7441.	2262.	39:55	39:59	79.	2	5.0	AVV
351.8824	40:01	7276.	2016.	39:59	40:04	79.	2	5.0	AVV
351.8824	40:12	23998.	5215.	40:04	40:25	79.	2	5.0	AVV
351.8824	40:34	3339.	546.	40:25	40:36	79.	2	5.0	AVV
351.8824	40:39	2172.	507.	40:36	40:42	79.	2	5.0	AVV
351.8824	40:54	2309444.	523784.	40:42	41:09	79.	2	5.0	AVV
351.8824	41:17	4088.	1139.	41:14	41:20	79.	2	5.0	AVV
351.8824	41:27	5574.	795.	41:20	41:29	79.	2	5.0	AVB
353.8793	39:15	2066.	796.	39:13	39:21	70.	2	5.0	ABB
353.8793	39:43	1376877.	292718.	39:33	39:55	70.	2	5.0	ABV

353.8793	39:58	6433.	1478.	39:55	40:00	70.	2	5.0 AVV
353.8793	40:02	6848.	1570.	40:00	40:07	70.	2	5.0 AVB
353.8793	40:13	13675.	2699.	40:07	40:24	70.	2	5.0 ABB
353.8793	40:53	1457810.	334659.	40:45	41:03	70.	2	5.0 ABV
353.8793	41:05	10577.	1723.	41:03	41:12	70.	2	5.0 AVV
353.8793	41:14	3592.	1387.	41:12	41:17	70.	2	5.0 AVV
353.8793	41:19	3224.	1034.	41:17	41:22	70.	2	5.0 AVV
353.8793	41:24	1901.	725.	41:22	41:26	70.	2	5.0 AVB
389.7961	46:10	9946.	1683.	46:01	46:19	46.	1	1.0 AVB
391.7931	46:09	7863.	1855.	46:00	46:18	30.	1	1.0 ABV
389.7961	45:25	1675.	327.	45:21	45:34	46.	2	5.0 ABV
389.7961	45:39	3721.	970.	45:34	45:42	46.	2	5.0 AVV
389.7961	45:45	7044.	1627.	45:42	45:50	46.	2	5.0 AVB
389.7961	46:10	10371.	1683.	45:55	46:19	46.	2	5.0 AVB
389.7961	46:27	1385.	268.	46:20	46:35	46.	2	5.0 ABB
391.7931	45:39	3282.	676.	45:24	45:41	30.	2	5.0 ABV
391.7931	45:46	7532.	1663.	45:41	45:59	30.	2	5.0 AVB
391.7931	46:09	7935.	1855.	46:00	46:21	30.	2	5.0 ABB
401.8358	45:37	1182361.	289462.	45:22	45:41	138.	2	5.0 AVV
401.8358	45:45	1152072.	283111.	45:41	45:53	138.	2	5.0 AVV
401.8358	45:55	9308.	3209.	45:53	45:57	138.	2	5.0 AVV
401.8358	46:09	3667565.	870723.	45:57	46:25	138.	2	5.0 AVV
401.8358	46:30	4591.	1354.	46:27	46:33	138.	2	5.0 AVB
403.8327	45:37	915796.	224198.	45:31	45:41	66.	2	5.0 ABV
403.8327	45:45	906724.	214634.	45:41	45:58	66.	2	5.0 AVV
403.8327	46:09	2902754.	691439.	45:58	46:25	66.	2	5.0 AVV
403.8327	46:30	3929.	789.	46:27	46:36	66.	2	5.0 ABB
373.8021	44:34	7304.	1316.	44:27	44:37	36.	1	1.0 ABV
375.7990	44:34	7553.	1406.	44:24	44:38	43.	1	1.0 ABV
373.8021	44:18	4132.	1232.	44:14	44:21	36.	2	5.0 ABB
373.8021	44:34	7304.	1316.	44:27	44:37	36.	2	5.0 ABV
373.8021	44:42	4264.	1005.	44:37	44:49	36.	2	5.0 AVB
373.8021	45:05	1582.	381.	45:02	45:12	36.	2	5.0 ABV
373.8021	45:17	1974.	545.	45:12	45:20	36.	2	5.0 AVV
373.8021	45:23	960.	277.	45:20	45:25	36.	2	5.0 AVV
373.8021	45:28	3580.	967.	45:25	45:38	36.	2	5.0 AVB
373.8021	46:29	643.	221.	46:25	46:32	36.	2	5.0 ABB
373.8021	46:35	1032.	292.	46:32	46:39	36.	2	5.0 ABB
375.7990	44:17	3483.	1075.	44:14	44:20	43.	2	5.0 ABB
375.7990	44:34	7553.	1406.	44:24	44:38	43.	2	5.0 ABV
375.7990	44:42	3810.	860.	44:38	44:46	43.	2	5.0 AVB
375.7990	44:53	1346.	303.	44:47	44:56	43.	2	5.0 ABV
375.7990	45:06	2384.	419.	44:56	45:12	43.	2	5.0 AVV
375.7990	45:16	1585.	415.	45:12	45:19	43.	2	5.0 AVB
375.7990	45:21	928.	373.	45:19	45:23	43.	2	5.0 ABV
375.7990	45:28	3488.	707.	45:23	45:33	43.	2	5.0 AVB
375.7990	46:27	1456.	348.	46:21	46:32	43.	2	5.0 ABB
375.7990	46:35	2211.	340.	46:32	46:50	43.	2	5.0 ABV
373.8021	44:18	4132.	1232.	44:14	44:21	36.	2	5.0 ABB
373.8021	44:34	7304.	1316.	44:27	44:37	36.	2	5.0 ABV
373.8021	44:42	4264.	1005.	44:37	44:49	36.	2	5.0 AVB
373.8021	45:05	1582.	381.	45:02	45:12	36.	2	5.0 ABV
373.8021	45:17	1974.	545.	45:12	45:20	36.	2	5.0 AVV
373.8021	45:23	960.	277.	45:20	45:25	36.	2	5.0 AVV
373.8021	45:28	3580.	967.	45:25	45:38	36.	2	5.0 AVB
373.8021	46:29	643.	221.	46:25	46:32	36.	2	5.0 ABB
373.8021	46:35	1032.	292.	46:32	46:39	36.	2	5.0 ABB
375.7990	44:17	3483.	1075.	44:14	44:20	43.	2	5.0 ABB
375.7990	44:34	7553.	1406.	44:24	44:38	43.	2	5.0 ABV
375.7990	44:42	3810.	860.	44:38	44:46	43.	2	5.0 AVB
375.7990	44:53	1346.	303.	44:47	44:56	43.	2	5.0 ABV
375.7990	45:06	2384.	419.	44:56	45:12	43.	2	5.0 AVV
375.7990	45:16	1585.	415.	45:12	45:19	43.	2	5.0 AVB
375.7990	45:21	928.	373.	45:19	45:23	43.	2	5.0 ABV
375.7990	45:28	3488.	707.	45:23	45:33	43.	2	5.0 AVB
375.7990	46:27	1456.	348.	46:21	46:32	43.	2	5.0 ABB
375.7990	46:35	2211.	340.	46:32	46:50	43.	2	5.0 ABV

383.8447	44:33	801704.	210576.	44:24	44:37	64.	2	5.0 ABV
383.8447	44:41	883098.	223909.	44:37	44:50	64.	2	5.0 AVV
383.8447	44:53	9769.	2059.	44:50	45:01	64.	2	5.0 AVB
383.8447	45:04	1640.	579.	45:02	45:07	64.	2	5.0 ABV
383.8447	45:27	909450.	227196.	45:12	45:39	64.	2	5.0 AVV
383.8447	45:41	2269.	760.	45:39	45:44	64.	2	5.0 AVV
383.8447	45:47	2195.	524.	45:44	45:53	64.	2	5.0 AVB
383.8447	45:56	3378.	815.	45:53	46:04	64.	2	5.0 ABB
383.8447	46:06	1010.	332.	46:04	46:09	64.	2	5.0 ABV
383.8447	46:12	1028.	418.	46:09	46:14	64.	2	5.0 AVB
383.8447	46:27	786793.	176863.	46:18	46:39	64.	2	5.0 ABV
383.8447	46:40	1099.	598.	46:39	46:42	64.	2	5.0 AVB
383.8447	46:45	3171.	841.	46:42	46:49	64.	2	5.0 ABV
383.8447	46:52	1435.	443.	46:49	46:54	64.	2	5.0 AVB
385.8417	44:33	1555886.	418407.	44:21	44:37	94.	2	5.0 ABV
385.8417	44:41	1727200.	440558.	44:37	44:56	94.	2	5.0 AVV
385.8417	45:08	2163.	699.	45:06	45:10	94.	2	5.0 AVV
385.8417	45:12	3128.	772.	45:10	45:15	94.	2	5.0 AVV
385.8417	45:27	1748799.	435008.	45:15	45:42	94.	2	5.0 AVV
385.8417	45:50	7218.	1156.	45:46	46:00	94.	2	5.0 AVB
385.8417	46:10	6368.	1022.	46:00	46:18	94.	2	5.0 ABB
385.8417	46:27	1547107.	348787.	46:18	46:41	94.	2	5.0 ABV
385.8417	46:44	5539.	1105.	46:41	46:49	94.	2	5.0 AVB
423.7555	50:41	113471.	23034.	50:33	50:54	33.	1	1.0 ABV
425.7524	50:40	104544.	20965.	50:31	50:52	38.	1	1.0 ABV
423.7555	49:28	100802.	20049.	49:18	49:37	33.	2	5.0 ABV
423.7555	50:41	113471.	23034.	50:33	50:54	33.	2	5.0 ABV
425.7524	49:28	96496.	19559.	49:20	49:36	38.	2	5.0 ABV
425.7524	50:40	104544.	20965.	50:31	50:52	38.	2	5.0 ABV
435.7951	49:15	2246.	693.	49:11	49:17	108.	2	5.0 ABV
435.7951	49:28	30551.	3536.	49:17	49:39	108.	2	5.0 AVV
435.7951	49:40	1226.	544.	49:39	49:43	108.	2	5.0 AVB
435.7951	50:28	3323.	600.	50:22	50:30	108.	2	5.0 ABV
435.7951	50:40	1016254.	207373.	50:30	50:56	108.	2	5.0 AVV
435.7951	51:01	4514.	1027.	50:59	51:09	108.	2	5.0 AVB
437.7921	49:28	16083.	2390.	49:21	49:39	33.	2	5.0 ABB
437.7921	49:54	2182.	555.	49:50	50:02	33.	2	5.0 ABB
437.7921	50:40	922733.	191677.	50:29	50:56	33.	2	5.0 ABV
437.7921	51:05	3599.	1012.	51:03	51:09	33.	2	5.0 AVB
407.7614	49:39	32013.	6492.	49:29	49:47	40.	1	1.0 ABV
409.7583	49:39	32190.	6521.	49:31	49:46	21.	1	1.0 ABV
407.7614	48:43	2562.	580.	48:39	48:51	40.	2	5.0 ABB
407.7614	48:58	27258.	5336.	48:52	49:13	40.	2	5.0 ABV
407.7614	49:22	2244.	346.	49:16	49:29	40.	2	5.0 ABB
407.7614	49:39	32013.	6492.	49:29	49:47	40.	2	5.0 ABV
407.7614	49:49	2202.	446.	49:47	50:04	40.	2	5.0 AVV
407.7614	51:18	4190.	513.	51:07	51:33	40.	2	5.0 ABV
409.7583	48:43	1999.	478.	48:39	48:48	21.	2	5.0 ABB
409.7583	48:58	25169.	5140.	48:51	49:07	21.	2	5.0 ABB
409.7583	49:22	1476.	407.	49:18	49:26	21.	2	5.0 ABB
409.7583	49:39	32190.	6521.	49:31	49:46	21.	2	5.0 ABV
409.7583	49:48	1016.	258.	49:46	49:56	21.	2	5.0 AVB
409.7583	51:18	1920.	318.	51:10	51:25	21.	2	5.0 ABB
417.8041	48:57	573656.	120775.	48:47	49:10	38.	2	5.0 ABV
417.8041	49:21	4223.	861.	49:17	49:24	38.	2	5.0 AVV
417.8041	49:26	3466.	756.	49:24	49:32	38.	2	5.0 AVV
417.8041	49:37	5820.	1062.	49:32	49:44	38.	2	5.0 AVB
417.8041	50:57	2726.	641.	50:48	51:01	38.	2	5.0 ABV
417.8041	51:08	2490.	778.	51:05	51:10	38.	2	5.0 ABV
417.8041	51:17	513915.	111409.	51:10	51:31	38.	2	5.0 AVB
417.8041	51:34	2301.	709.	51:31	51:37	38.	2	5.0 ABV
419.8010	48:57	1273640.	264584.	48:48	49:07	72.	2	5.0 ABV
419.8010	49:09	7926.	2062.	49:07	49:14	72.	2	5.0 AVV
419.8010	49:20	8893.	1248.	49:14	49:25	72.	2	5.0 AVV
419.8010	49:27	2735.	902.	49:25	49:29	72.	2	5.0 AVV
419.8010	49:36	19250.	2302.	49:29	49:52	72.	2	5.0 AVV
419.8010	50:55	2059.	496.	50:48	50:58	72.	2	5.0 ABB

419.8010	51:07	3058.	699.	50:58	51:09	72.	2	5.0	ABB
419.8010	51:17	1207913.	255518.	51:09	51:32	72.	2	5.0	ABV
457.7148	54:41	799269.	203231.	54:33	54:56	54.	1	1.0	ABV
459.7118	54:41	896601.	236535.	54:34	54:56	46.	1	1.0	ABV
457.7148	54:41	799269.	203231.	54:33	54:56	54.	2	5.0	ABV
457.7148	55:01	1850.	617.	54:59	55:04	54.	2	5.0	AVV
457.7148	55:06	1139.	380.	55:04	55:08	54.	2	5.0	AVV
457.7148	55:10	1865.	364.	55:08	55:18	54.	2	5.0	AVB
459.7118	54:41	896601.	236535.	54:34	54:56	46.	2	5.0	ABV
459.7118	55:05	4154.	410.	54:58	55:18	46.	2	5.0	AVB
469.7545	54:21	8795.	1492.	54:12	54:24	180.	2	5.0	ABV
469.7545	54:41	1400556.	349254.	54:28	54:53	180.	2	5.0	ABV
469.7545	54:55	10800.	3371.	54:53	54:58	180.	2	5.0	AVV
469.7545	55:04	3605.	1507.	55:01	55:06	180.	2	5.0	AVB
471.7514	54:21	6099.	1252.	54:14	54:29	120.	2	5.0	ABB
471.7514	54:41	1497814.	370658.	54:34	54:56	120.	2	5.0	ABV
471.7514	55:04	3656.	725.	55:01	55:12	120.	2	5.0	AVB
441.7207	54:49	32651.	7945.	54:39	55:00	38.	1	1.0	ABV
443.7177	54:49	36564.	9117.	54:34	54:57	20.	1	1.0	AVV
441.7207	54:49	32904.	7945.	54:39	55:05	38.	2	5.0	ABV
443.7177	54:49	36898.	9117.	54:34	55:05	20.	2	5.0	AVV
453.7603	54:49	1669262.	423491.	54:38	55:05	28.	2	5.0	ABV
453.7603	55:08	5593.	1117.	55:06	55:18	28.	2	5.0	AVV
453.7603	55:21	1675.	454.	55:18	55:24	28.	2	5.0	AVB
455.7573	54:49	1821105.	459494.	54:42	55:03	41.	2	5.0	AVV
455.7573	55:05	5024.	1571.	55:03	55:07	41.	2	5.0	AVV
455.7573	55:09	4905.	1661.	55:07	55:12	41.	2	5.0	AVV
455.7573	55:18	4155.	961.	55:12	55:20	41.	2	5.0	AVB

TestAmerica Canton

Sample ID: PAD-2

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 008	Work Order #....:	M811V1AC	Matrix....:	SOLID
Date Sampled....:	07/25/16	Date Received....:	07/29/16	Dilution Factor:	1
Prep Date....:	08/04/16	Analysis Date....:	08/18/16	Percent Moisture	4.0
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.8 g	Instrument ID....:	D11A	Method:	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	0.088	J	1.1	0.031	pg/g
1,2,3,7,8-PeCDD	0.52	Q B J	5.3	0.040	pg/g
1,2,3,4,7,8-HxCDD	0.47	J	5.3	0.040	pg/g
1,2,3,6,7,8-HxCDD	1.6	J	5.3	0.040	pg/g
1,2,3,7,8,9-HxCDD	1.5	C J	5.3	0.037	pg/g
1,2,3,4,6,7,8-HpCDD	24		5.3	0.063	pg/g
OCDD	290	B	11	0.075	pg/g
2,3,7,8-TCDF	0.77	Q J	1.1	0.050	pg/g
1,2,3,7,8-PeCDF	0.42	J	5.3	0.033	pg/g
2,3,4,7,8-PeCDF	0.77	Q J	5.3	0.028	pg/g
1,2,3,4,7,8-HxCDF	1.7	C B J	5.3	0.030	pg/g
1,2,3,6,7,8-HxCDF	0.62	Q J	5.3	0.030	pg/g
2,3,4,6,7,8-HxCDF	0.75	J	5.3	0.030	pg/g
1,2,3,7,8,9-HxCDF	ND		5.3	0.038	pg/g
1,2,3,4,6,7,8-HpCDF	5.3	B J	5.3	0.036	pg/g
1,2,3,4,7,8,9-HpCDF	0.66	B J	5.3	0.045	pg/g
OCDF	11	B	11	0.023	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	64	40 - 135
13C-1,2,3,7,8-PeCDD	78	40 - 135
13C-1,2,3,4,7,8-HxCDD	66	40 - 135
13C-1,2,3,6,7,8-HxCDD	70	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	79	40 - 135
13C-OCDD	72	40 - 135
13C-2,3,7,8-TCDF	58	40 - 135
13C-1,2,3,7,8-PeCDF	71	40 - 135
13C-2,3,4,7,8-PeCDF	81	40 - 135
13C-1,2,3,4,7,8-HxCDF	57	40 - 135
13C-1,2,3,6,7,8-HxCDF	54	40 - 135
13C-2,3,4,6,7,8-HxCDF	60	40 - 135
13C-1,2,3,7,8,9-HxCDF	56	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	53	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	55	40 - 135
13C-OCDF	55	40 - 135

TestAmerica Canton

Sample ID: PAD-2

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 008	**Work Order #....:**	M811V1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	4.0
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.8 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811V1AC	Prep Batch	6217014	Lot No	H6G290408-008
Data File	/20160817s3/d1tm811v.d	Prep Date	08/04/16	SDG No	
Analysis ID	180450	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/18/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	04:19	Initial Wt/Vol	9.8 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD	32:51	2342	289	1.144		0.832405		0.084939	J	0.0296
Total TCDD		7469	1369	1.144		3.487072		0.355824	QJ	0.0296
2,3,7,8-TCDF	30:45	28361	4118	1.066		7.235603		0.738327	QJ	0.0476
Total TCDF		90508	12950	1.066		30.326467		3.094537	QJ	0.0476
1,2,3,7,8-PeCDD	41:25	11293	2556	1.060		4.845291		0.494417	QBJ	0.0388
Total PeCDD		16253	3192	1.060		11.818683		1.205988	JQB	0.0388
1,2,3,7,8-PeCDF	39:44	15795	3182	1.179		3.957178		0.403794	J	0.0318
2,3,4,7,8-PeCDF	40:55	30565	7306	1.115		7.215819		0.736308	QJ	0.0267
Total PeCDF		126936	24542	1.147		41.980003		4.283674	JQ	0.0289
1,2,3,4,7,8-HxCDD	45:38	10403	2619	1.131		4.465380		0.455651	J	0.0382
1,2,3,6,7,8-HxCDD	45:46	35008	9182	1.116		14.646455		1.494536	J	0.0387
1,2,3,7,8,9-HxCDD	46:11	36477	7213	1.205		14.408178		1.470222	CJ	0.0359
Total HxCDD				1.151		33.520013		3.420409	J	0.0376
1,2,3,4,7,8-HxCDF	44:32	51435	8559	1.350		15.647358		1.596669	CBJ	0.0284
1,2,3,6,7,8-HxCDF	44:42	20017	5002	1.242		5.793589		0.591183	QJ	0.0288
2,3,4,6,7,8-HxCDF	45:28	23868	5514	1.241		7.025902		0.716929	J	0.0284
1,2,3,7,8,9-HxCDF				1.262				ND		0.0367
Total HxCDF		36446	8673	1.274		39.643454		4.045250	QJB	0.0302
1,2,3,4,6,7,8-HpCDD	50:41	503869	103698	1.114		230.381167		23.508282		0.0607
Total HpCDD		382669	74527	1.114		405.346745		41.361913		0.0607
1,2,3,4,6,7,8-HpCDF	48:58	131683	26108	1.461		49.584939		5.059688	BJ	0.0347
1,2,3,4,7,8,9-HpCDF	51:19	13016	2478	1.370		6.236333		0.636361	BJ	0.0429
Total HpCDF		170756	33428	1.416		128.030608		13.064348	QB	0.0385
OCDD	54:42	4777446	1242465	1.203		2707.05530		276.230133	B	0.0718
OCDF	54:50	210253	53701	1.134		104.323432		10.645248	B	0.0223
13C-2,3,7,8-TCDD	32:50	2460404	233578	1.093	1000	642.534664	64.25	65.564762		0.240
13C-2,3,7,8-TCDF	30:40	3678388	387296	1.794	1000	584.893361	58.49	59.682996		0.0610
13C-1,2,3,7,8-PeCDD	41:24	2199014	520729	0.800	1000	784.300167	78.43	80.030629		0.0626
13C-1,2,3,7,8-PeCDF	39:43	3385090	708295	1.356	1000	712.037411	71.20	72.656879		0.0659
13C-2,3,4,7,8-PeCDF	40:54	3800428	891270	1.343	1000	807.395606	80.74	82.387307		0.0666
13C-1,2,3,4,7,8-HxCDD	45:38	2059663	524826	0.916	1000	662.447537	66.24	67.596687		0.0604
13C-1,2,3,6,7,8-HxCDD	45:45	2141851	525937	0.906	1000	696.161368	69.62	71.036874		0.0610
13C-1,2,3,4,7,8-HxCDF	44:33	2434131	645424	1.268	1000	565.298927	56.53	57.683564		0.0399
13C-1,2,3,6,7,8-HxCDF	44:41	2782680	692621	1.506	1000	544.443854	54.44	55.555495		0.0337
13C-2,3,4,6,7,8-HxCDF	45:27	2737703	702765	1.344	1000	600.051464	60.01	61.229741		0.0377
13C-1,2,3,7,8,9-HxCDF	46:27	2285902	534379	1.202	1000	560.157296	56.02	57.158908		0.0422
13C-1,2,3,4,6,7,8-HpCDD	50:40	1963787	418954	0.728	1000	794.153749	79.42	81.036097		0.0464
13C-1,2,3,4,6,7,8-HpCDF	48:57	1817712	377326	1.008	1000	531.158758	53.12	54.199873		0.0344
13C-1,2,3,4,7,8,9-HpCDF	51:18	1523063	325480	0.811	1000	553.357398	55.34	56.465041		0.0428
13C-OCDD	54:41	2934038	768029	0.597	2000	1446.77883	72.34	147.630493		0.0941
13C-1,2,3,4-TCDD	32:17	7009952	713221	1.000	2000	2000.00000	100.00	204.081633		0.263
13C-1,2,3,7,8,9-HxCDD	46:10	6789669	1661371	1.000	2000	2000.00000	100.00	204.081633		0.0553
13C-OCDF	54:49	3553408	950042	0.946	2000	1106.47157	55.32	112.905262		0.0263

LKM 8/24/16

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811V1AC	Prep Batch	6217014	Lot No	H6G290408-008
Data File	/20160817s3/d1tm811v.d	Prep Date	08/04/16	SDG No	
Analysis ID	180450	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 04:19	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.8 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	88	105	35	42	0.83	/	
	Unidentified	29:30	00:00	0	3484	10999	768	1218	0.32 *	ABV/ABB	RT
	Unidentified	30:13	00:00	0	8464	10240	887	807	0.83	AVB/AVB	
	2,3,7,8-TCDF	30:45	30:45	0	13694	14667	1901	2217	0.93 *	ABV/ABV	RD
	Unidentified	30:49	00:00	0	11066	7800	1845	1949	1.42 *	AVV/AVV	R
	Unidentified	30:56	00:00	0	4122	10221	991	1871	0.40 *	AVB/AVB	RT
	Unidentified	32:04	00:00	0	11031	13081	1049	1565	0.84	AVB/ABB	T
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	240	143	96	57	1.68 *	/	
	13C-2,3,7,8-TCDF	30:40	30:41	-1	1655334	2023054	176124	211172	0.82	ABV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	35	43	14	17	0.82	/	
	Unidentified	31:22	00:00	0	730	677	86	99	1.08 *	ABB/ABB	R
	Unidentified	32:15	00:00	0	1197	1503	155	332	0.80	ABB/AVB	T
	Unidentified	32:33	00:00	0	459	1414	122	285	0.32 *	ABV/ABB	RT
	2,3,7,8-TCDD	32:51	32:53	-2	987	1355	141	148	0.73	AVB/ABB	
	Unidentified	34:01	00:00	0	867	622	146	144	1.39 *	ABB/ABB	R
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	665	253	266	101	2.63 *	/	
	13C-1,2,3,4-TCDD	32:17	32:18	-1	3117761	3892191	323665	389556	0.80	AVV/AVV	
	13C-2,3,7,8-TCDD	32:50	32:50	0	1089326	1371078	101187	132391	0.79	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	120	140	48	56	0.86 *	/	
	Unidentified	39:18	00:00	0	25251	14902	4985	3249	1.69	ABB/ABB	
	Unidentified	39:39	00:00	0	5235	4351	1032	932	1.20 *	ABV/ABV	R
	1,2,3,7,8-PeCDF	39:44	39:45	-1	9457	6338	1888	1294	1.49	AVB/AVV	
	Unidentified	40:01	00:00	0	6529	5397	1308	1061	1.21 *	ABV/AVV	R
	Unidentified	40:15	00:00	0	11420	8220	1896	1270	1.39	AVB/AVB	
	2,3,4,7,8-PeCDF	40:55	40:53	2	16818	13747	4224	3082	1.22 *	ABB/ABB	R
	Unidentified	41:07	00:00	0	24105	14674	4638	3215	1.64	ABV/ABV	
	Unidentified	41:27	00:00	0	3576	3276	496	460	1.09 *	AVB/AVB	R
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	145	168	58	67	0.87 *	/	
	13C-1,2,3,7,8-PeCDF	39:43	39:43	0	2038929	1346161	425304	282991	1.51	ABV/ABV	
	Unidentified	39:59	00:00	0	17548	10516	2590	1424	1.67	AVV/AVV	T
	Unidentified	40:13	00:00	0	21072	12349	3334	2382	1.71	AVB/AVV	
	13C-2,3,4,7,8-PeCDF	40:54	40:52	2	2311093	1489335	543081	348189	1.55	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	105	105	42	42	1.00 *	/	
	Unidentified	40:42	00:00	0	3972	2627	860	679	1.51	ABB/ABB	
	Unidentified	41:01	00:00	0	3231	3093	437	405	1.04 *	ABB/ABB	R
	1,2,3,7,8-PeCDD	41:25	41:23	2	5192	6101	1231	1325	0.85 *	ABB/ABB	R

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811V1AC	Prep Batch	6217014	Lot No	H6G290408-008
Data File	/20160817s3/d1tm811v.d	Prep Date	08/04/16	SDG No	
Analysis ID	180450	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 04:19	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.8 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Unidentified	41:37	00:00	0	1611	1719	343	468	0.94 *	ABB/ABB	R
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	133	43	53	17	3.12 *	/	
	13C-1,2,3,7,8-PeCDD	41:24	41:22	2	1334566	864448	318906	201823	1.54	ABV/ABV	
	Unidentified	41:36	00:00	0	9016	7207	1130	1481	1.25 *	AVV/AVB	R
	Unidentified	42:02	00:00	0	3020	1979	808	465	1.53	AVB/ABB	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	98	145	39	58	0.67 *	/	
	Unidentified	44:18	00:00	0	8589	8369	2358	2336	1.03 *	ABB/ABB	R
	1,2,3,4,7,8-HxCDF	44:32	44:33	-1	28241	23194	4838	3721	1.22	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:42	44:42	0	11073	8944	2924	2078	1.24	AVV/MVB	
	Unidentified	45:06	00:00	0	4343	5296	751	654	0.82 *	AVV/AVV	R
	Unidentified	45:17	00:00	0	4306	1668	891	566	2.58 *	ABV/ABV	R
	Unidentified	45:22	00:00	0	1914	1961	579	538	0.98 *	AVV/AVV	R
	2,3,4,6,7,8-HxCDF	45:28	45:27	1	12909	10959	2971	2543	1.18	AVV/AVB	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	185	228	74	91	0.81 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:33	44:32	1	828811	1605320	220600	424824	0.52	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:41	44:40	1	924643	1858037	229666	462955	0.50	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:27	45:26	1	944799	1792904	240795	461970	0.53	ABV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:27	46:26	1	767860	1518042	180017	354362	0.51	AVV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	118	105	47	42	1.12	/	
	1,2,3,4,7,8-HxCDD	45:38	45:38	0	5835	4568	1395	1224	1.28	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:46	45:45	1	19880	15128	5166	4016	1.31	AVB/AVB	
	1,2,3,7,8,9-HxCDD	46:11	46:10	1	19538	16939	3968	3245	1.15	ABB/ABB	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	258	193	103	77	1.34	/	
	13C-1,2,3,4,7,8-HxCDD	45:38	45:37	1	1162861	896802	294205	230621	1.30	AVV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:45	45:44	1	1186327	955524	287465	238472	1.24	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:10	46:09	1	3762592	3027077	925031	736340	1.24	ABV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	103	85	41	34	1.21 *	/	
	1,2,3,4,6,7,8-HpCDF	48:58	48:58	0	67051	64632	13006	13102	1.04	ABV/ABB	
	Unidentified	49:24	00:00	0	5887	4825	968	1051	1.22 *	AVV/ABV	R
	Unidentified	49:39	00:00	0	80879	79165	16175	15234	1.02	AVV/AVB	
	1,2,3,4,7,8,9-HpCDF	51:19	51:19	0	7048	5968	1219	1259	1.18	AVV/ABB	
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	118	165	47	66	0.71 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:57	48:57	0	543154	1274558	113813	263513	0.43	ABV/ABV	
	Unidentified	49:22	00:00	0	2907	7419	856	1335	0.39	AVV/AVB	T
	Unidentified	49:39	00:00	0	3339	9522	634	1808	0.35 *	ABB/ABV	R

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

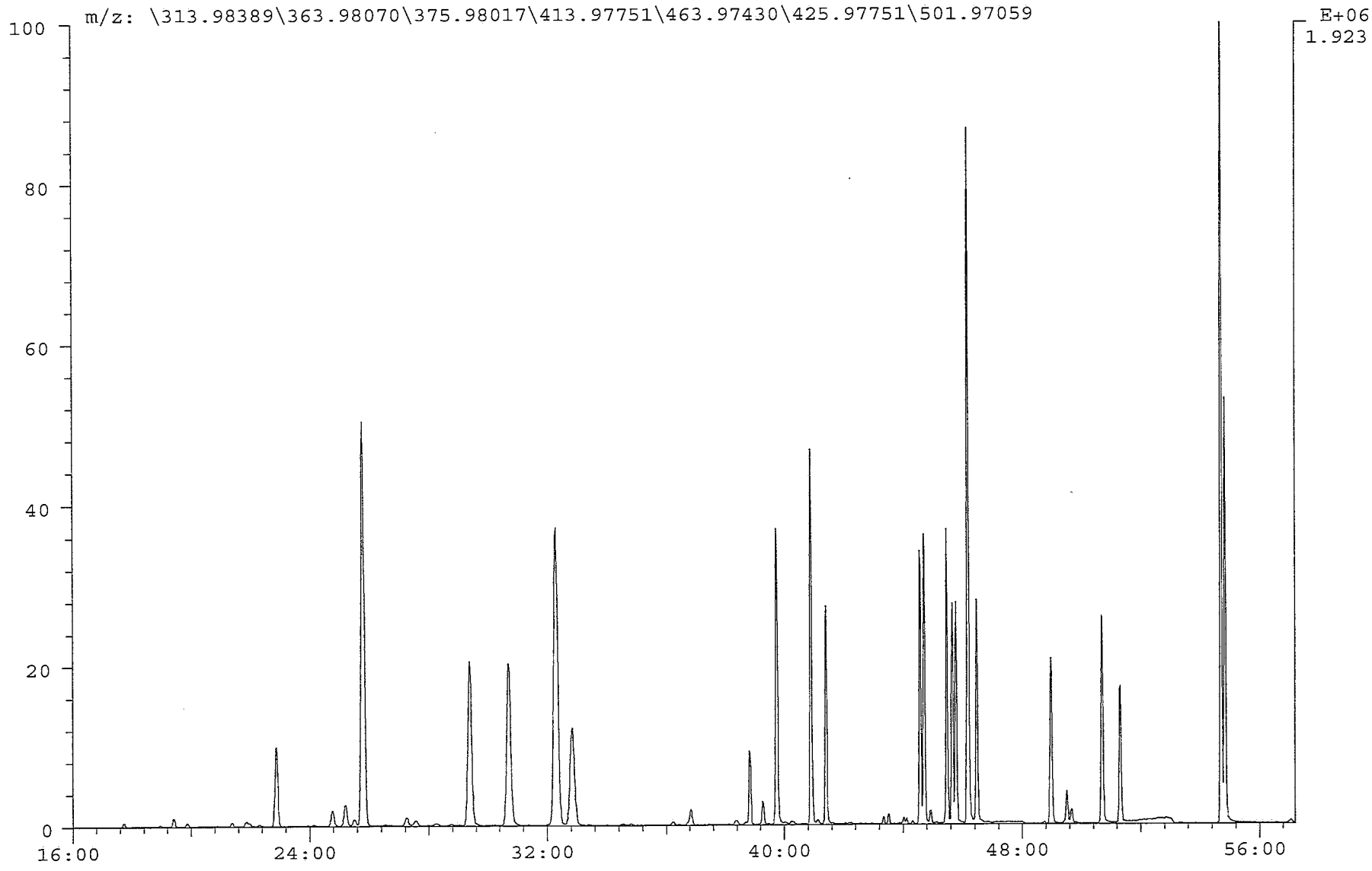
Workorder	M811V1AC	Prep Batch	6217014	Lot No	H6G290408-008
Data File	/20160817s3/d1tm811v.d	Prep Date	08/04/16	SDG No	
Analysis ID	180450	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 04:19	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.8 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao
		View Small Peaks?	False	View deleted peaks?	False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	13C-1,2,3,4,7,8,9-HpCDF	51:18	51:18	0	463737	1059326	100115	225365	0.44	ABV/AVV	
	Unidentified	51:30	00:00	0	8652	5497	1427	1891	1.57 *	AVB/AVB	RT
	Unidentified	51:41	00:00	0	3211	3376	1324	1016	0.95 *	ABB/ABB	R
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	133	145	53	58	0.91	/	
	Unidentified	49:29	00:00	0	190434	192235	36126	38401	0.99	ABV/AVV	
	1,2,3,4,6,7,8-HpCDD	50:41	50:42	-1	257246	246623	53255	50443	1.04	ABV/ABV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	178	98	71	39	1.82 *	/	
	Unidentified	49:29	00:00	0	13321	14704	1748	2527	0.91	ABB/ABV	
	13C-1,2,3,4,6,7,8-HpCDD	50:40	50:41	-1	1007699	956088	219510	199444	1.05	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	55	63	22	25	0.88	/	
	OCDF	54:50	54:50	0	98767	111486	26089	27612	0.89	AVB/AVV	
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	108	95	43	38	1.13 *	/	
	13C-OCDF	54:49	54:49	0	1666115	1887293	447759	502283	0.88	ABV/ABV	
	Unidentified	55:08	00:00	0	2522	10762	796	1656	0.23 *	AVV/AVV	RT
	Unidentified	55:14	00:00	0	4365	1221	880	478	3.57 *	AVV/AVV	R
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	158	168	63	67	0.94	/	
	OCDD	54:42	54:42	0	2256529	2520917	596104	646361	0.90	ABV/ABV	
	Unidentified	55:08	00:00	0	2784	3557	744	464	0.78	AVB/AVB	
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	203	255	81	102	0.79	/	
	13C-OCDD	54:41	54:41	0	1409025	1525013	368298	399731	0.92	AVV/ABV	
	Unidentified	54:58	00:00	0	10029	3409	1815	1162	2.94 *	AVB/AVV	RT

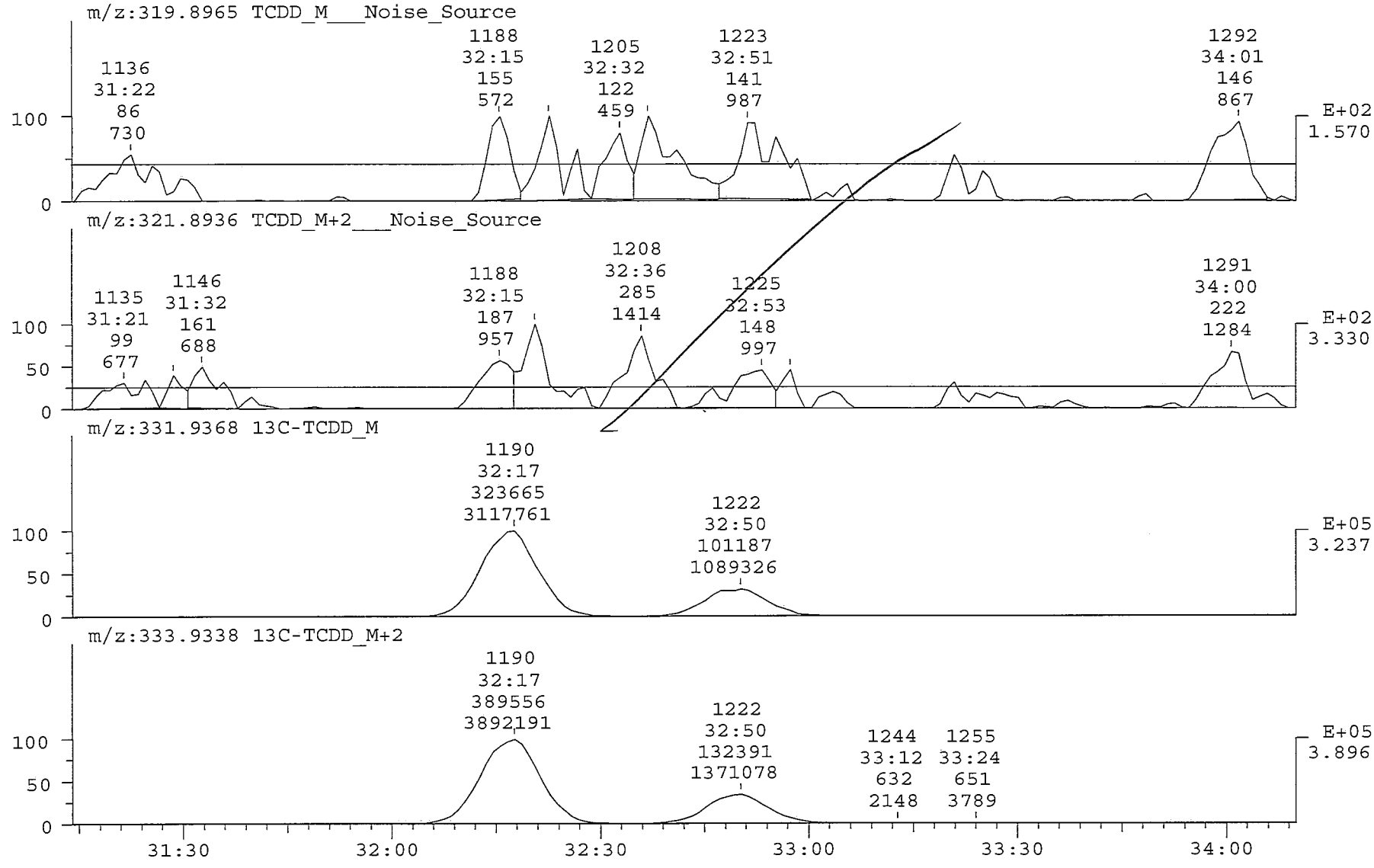
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. KL 8/18/16
Calc LKM 8-24-16
QC/Rev KL 8/24/16

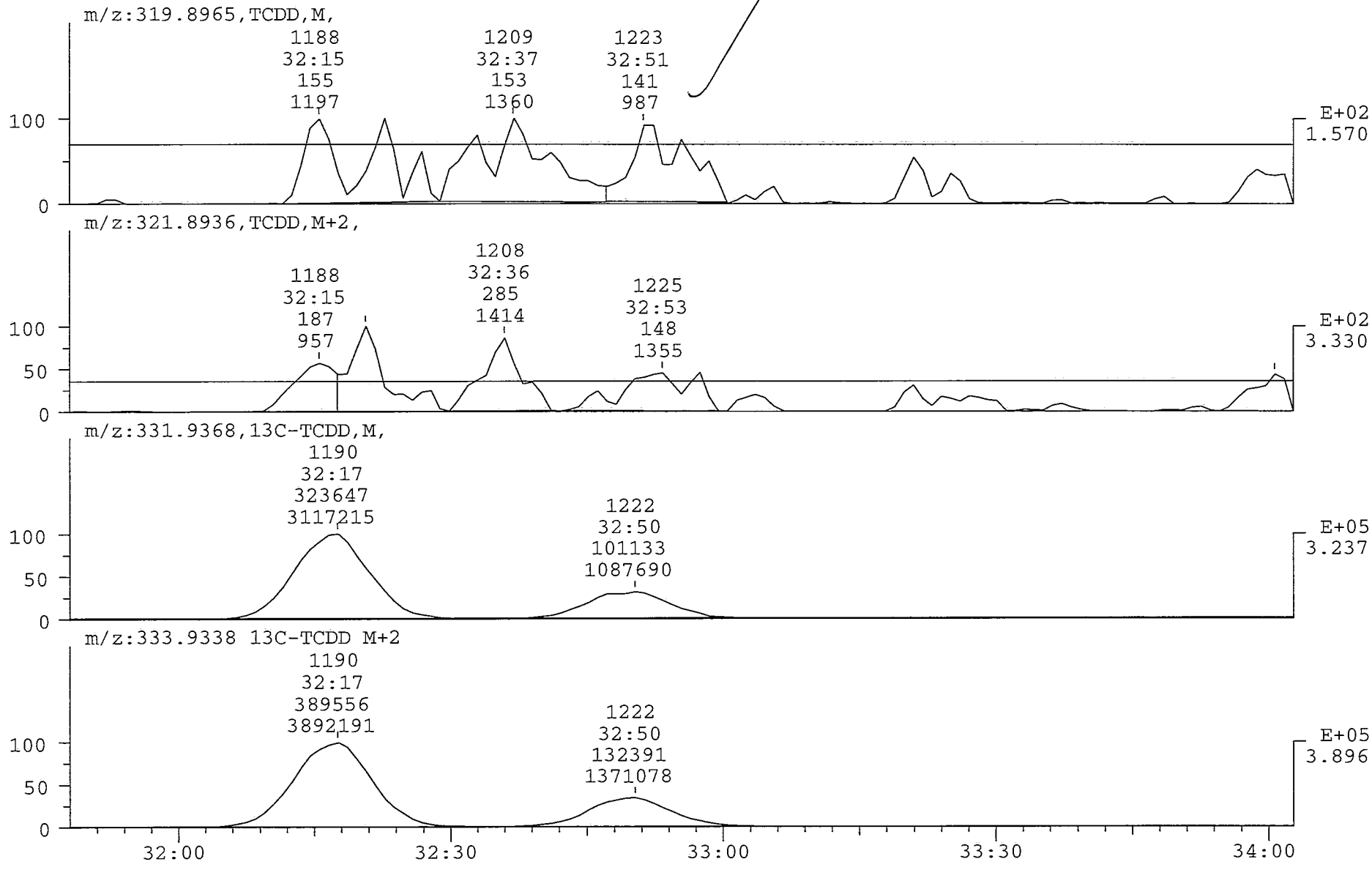
CHRO: d1tm811v 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 232 > 2629 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



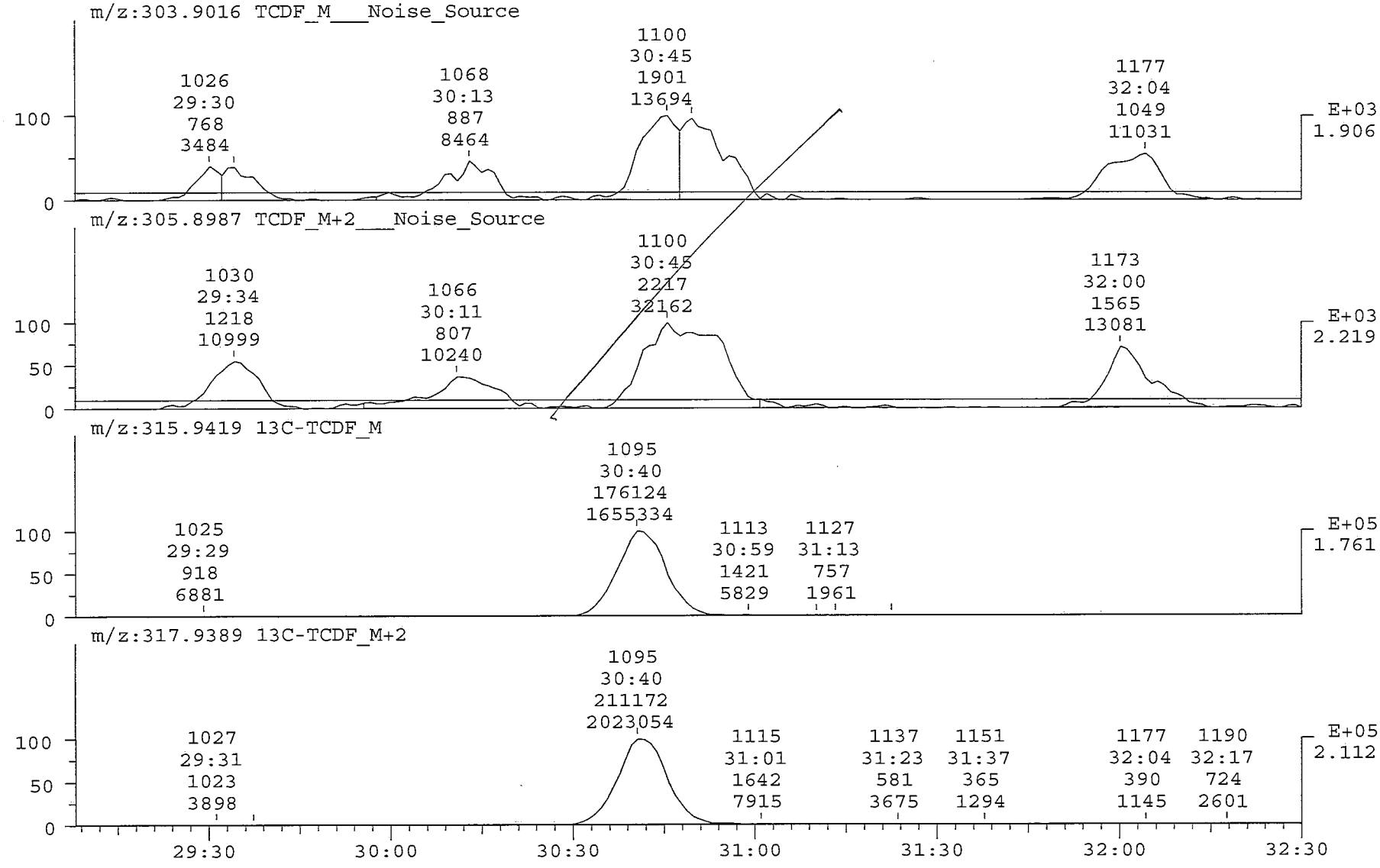
CHRO: d1tm811v 18-Aug-16 Elapse: 32:42 1214
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1128 > 1300 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



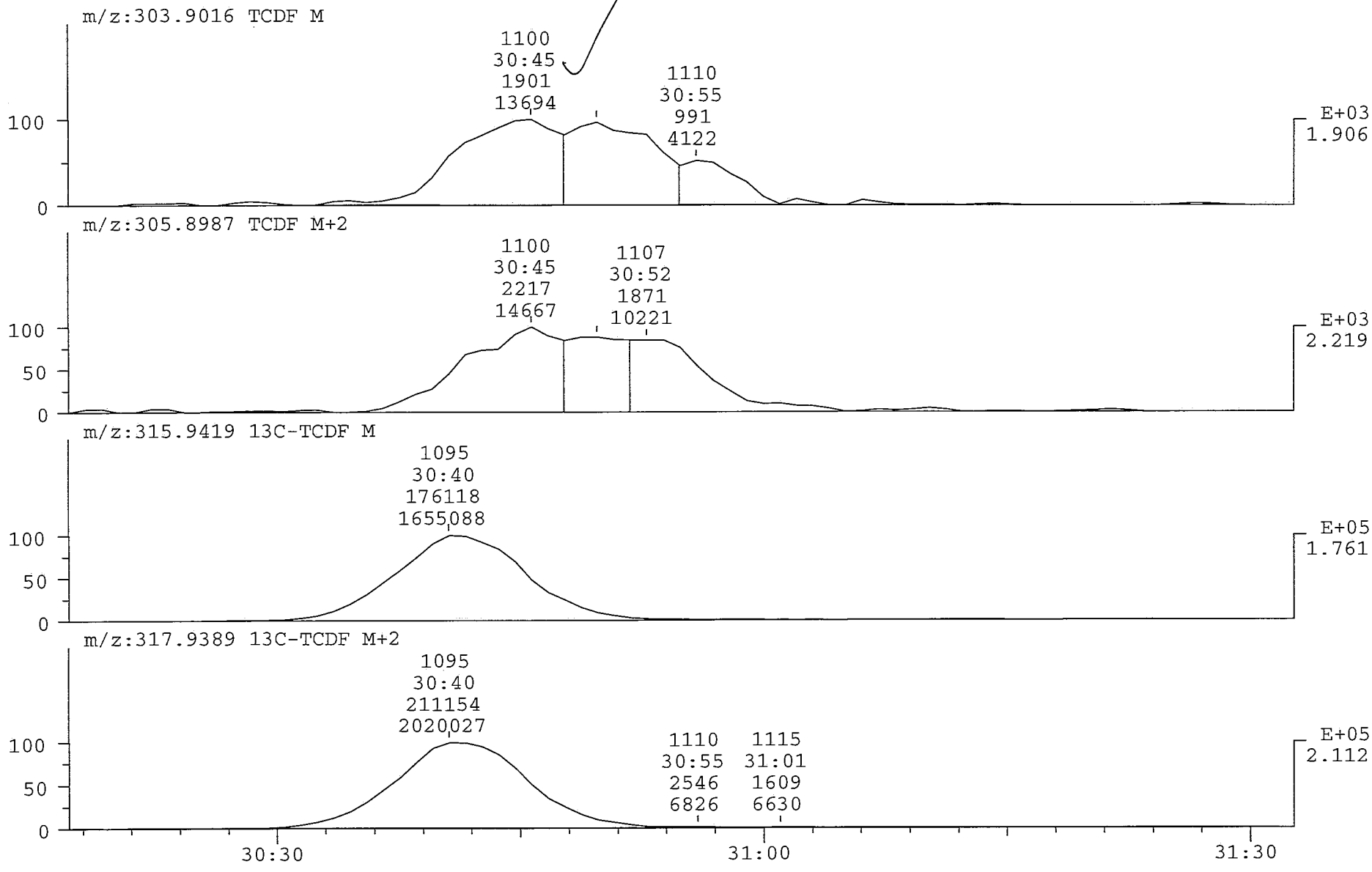
CHRO: d1tm811v 18-Aug-16 Elapse: 51:17 2289
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1161 > 1293 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



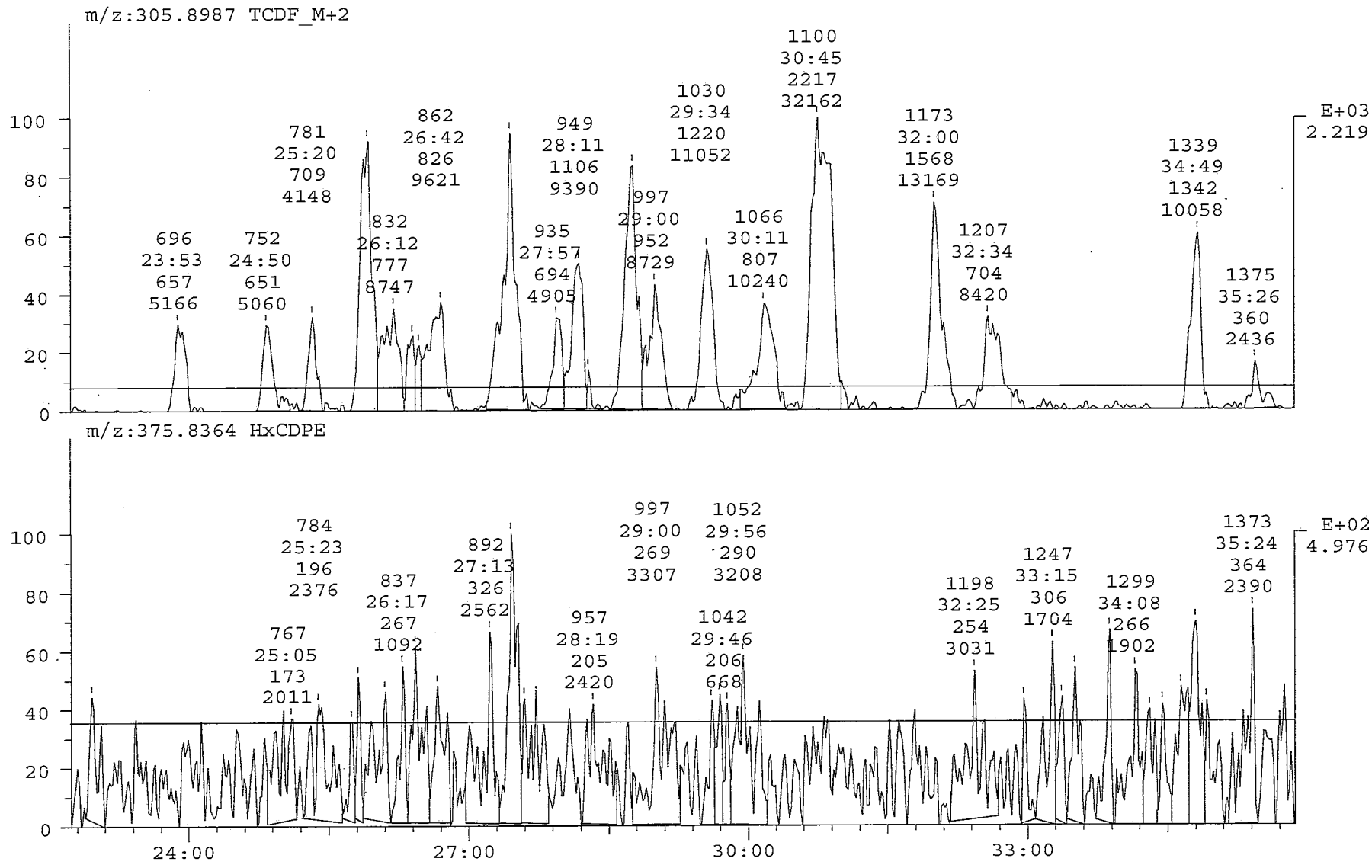
```
CHRO:  d1tm811v                                18-Aug-16  Elapse:  30:45      1100
Samp:  WO=m811v1ac Meth=9Ao Dil=1                         Start :  04:19:20   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1004 > 1202          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



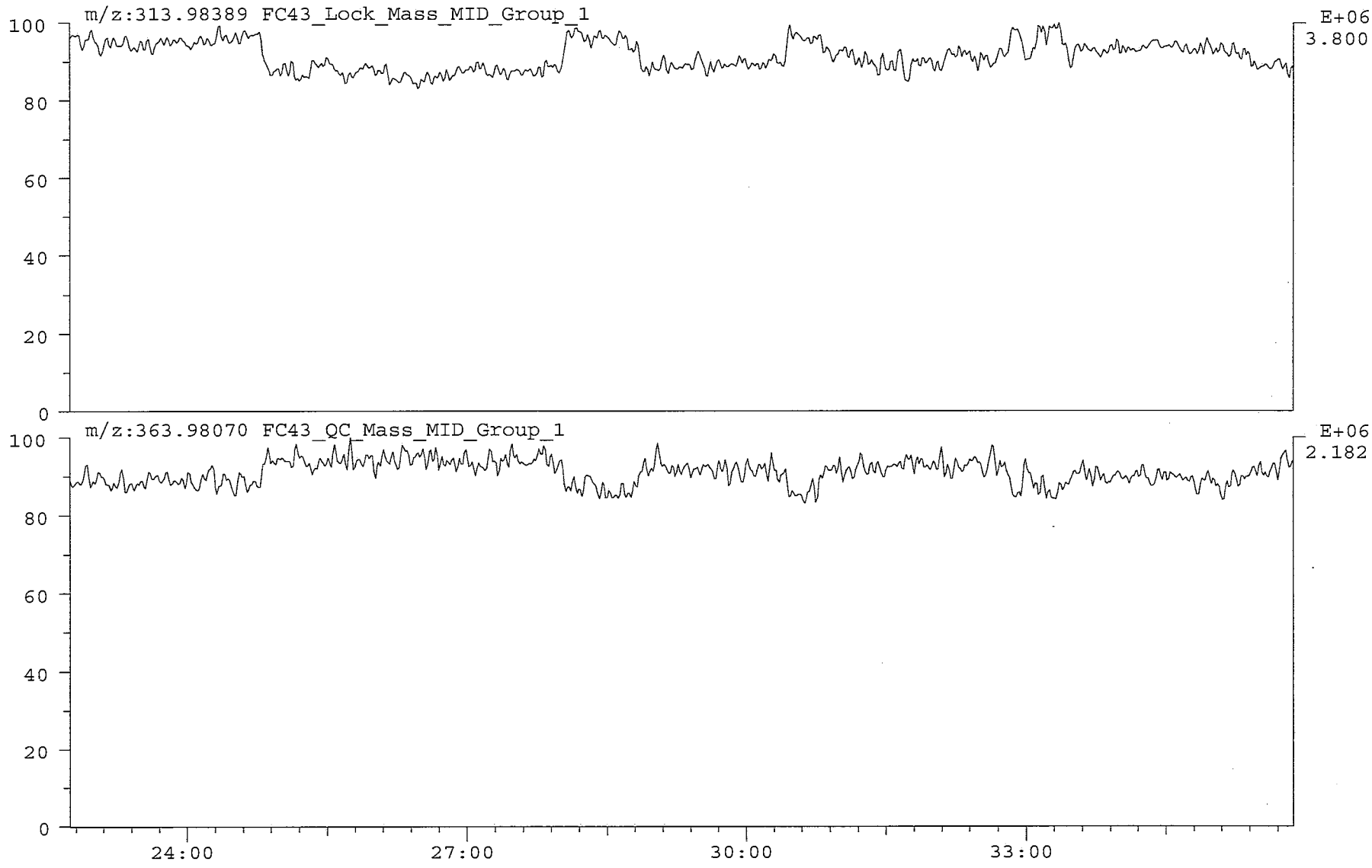
CHRO: d1tm811v 18-Aug-16 Elapse: 51:17 2289
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1072 > 1146 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : 2, 5.0
Disp: Height Area



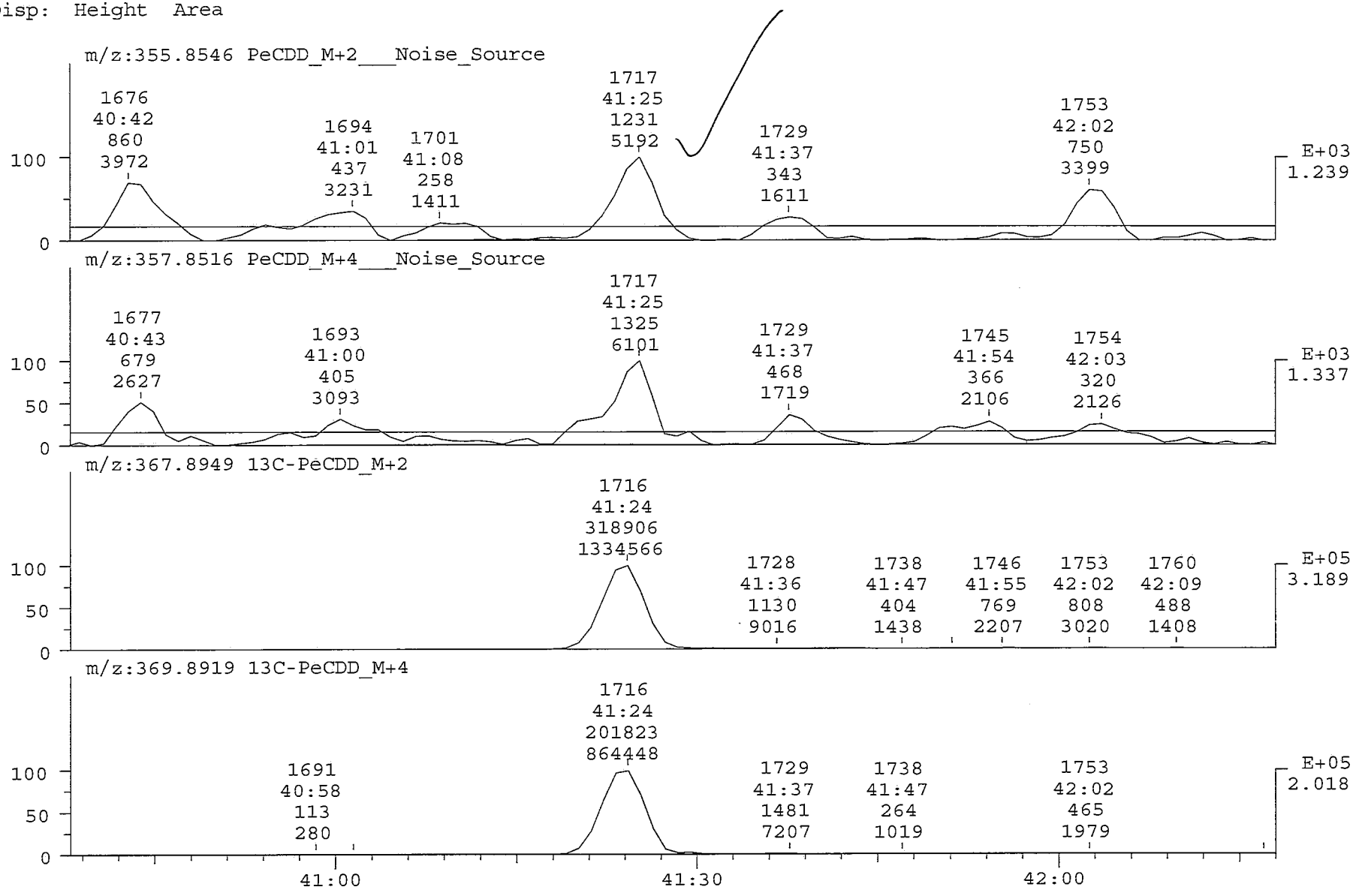
CHRO: d1tm811v 18-Aug-16 Elapse: 30:45 1100
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 628 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



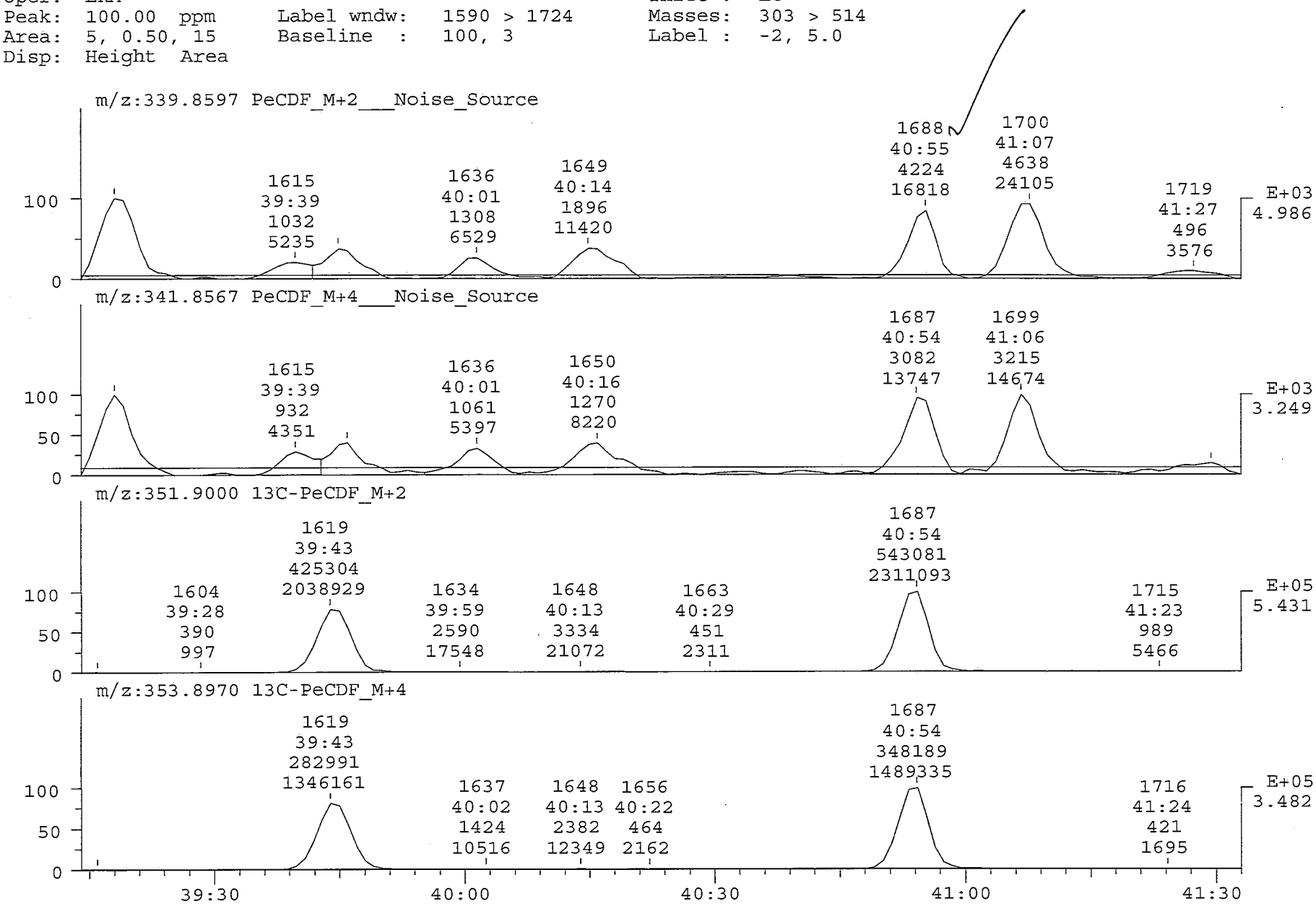
```
CHRO:  d1tm811v                                18-Aug-16  Elapse:  30:45      1100
Samp:  WO=m811v1ac Meth=9Ao Dil=1                         Start :  04:19:20   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   628 > 1400           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



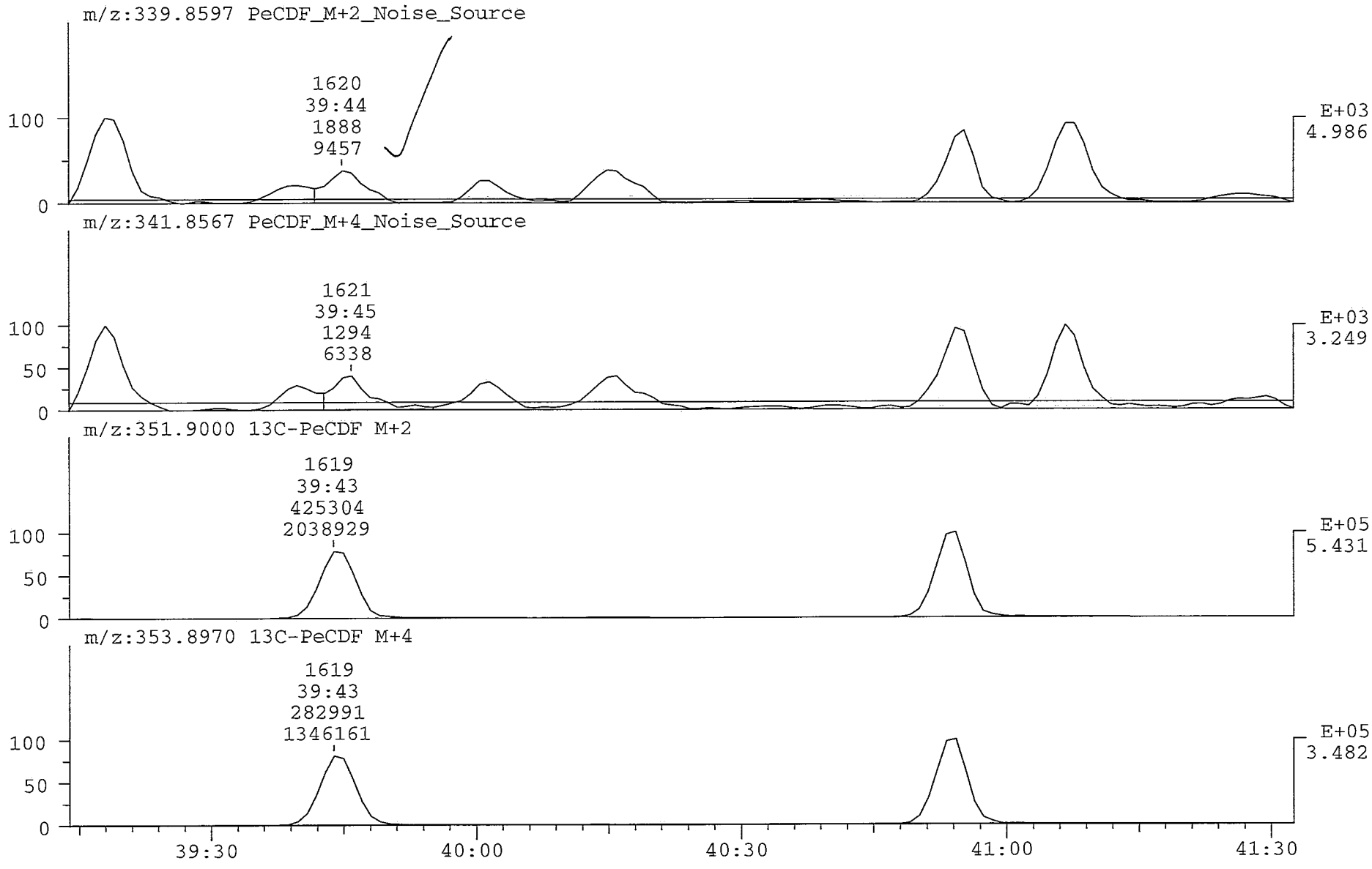
CHRO: d1tm811v 18-Aug-16 Elapse: 41:25 1717
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1671 > 1768 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



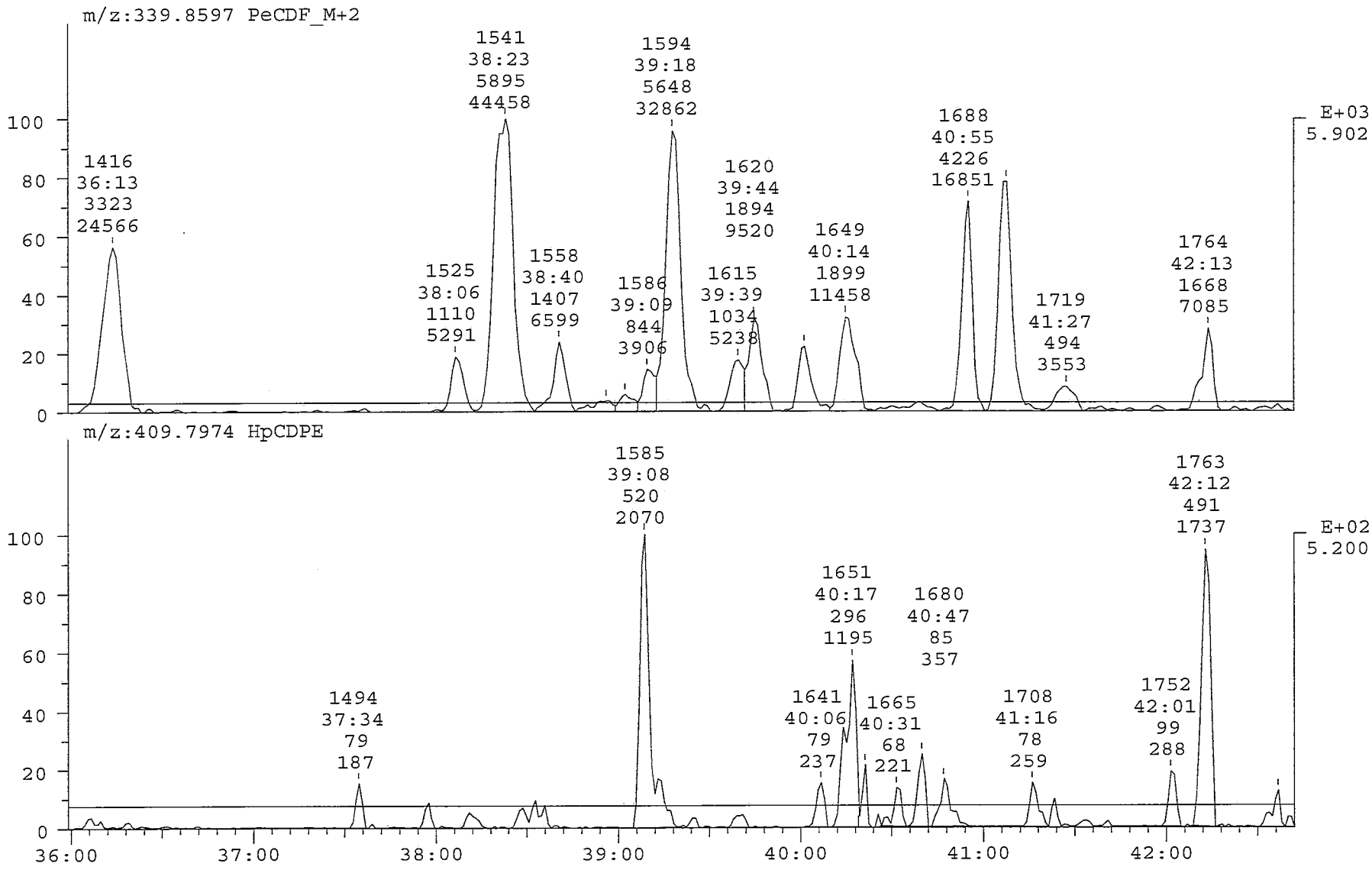
CHRO: d1tm811v 18-Aug-16 Elapse: 40:23 1657
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1590 > 1724 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



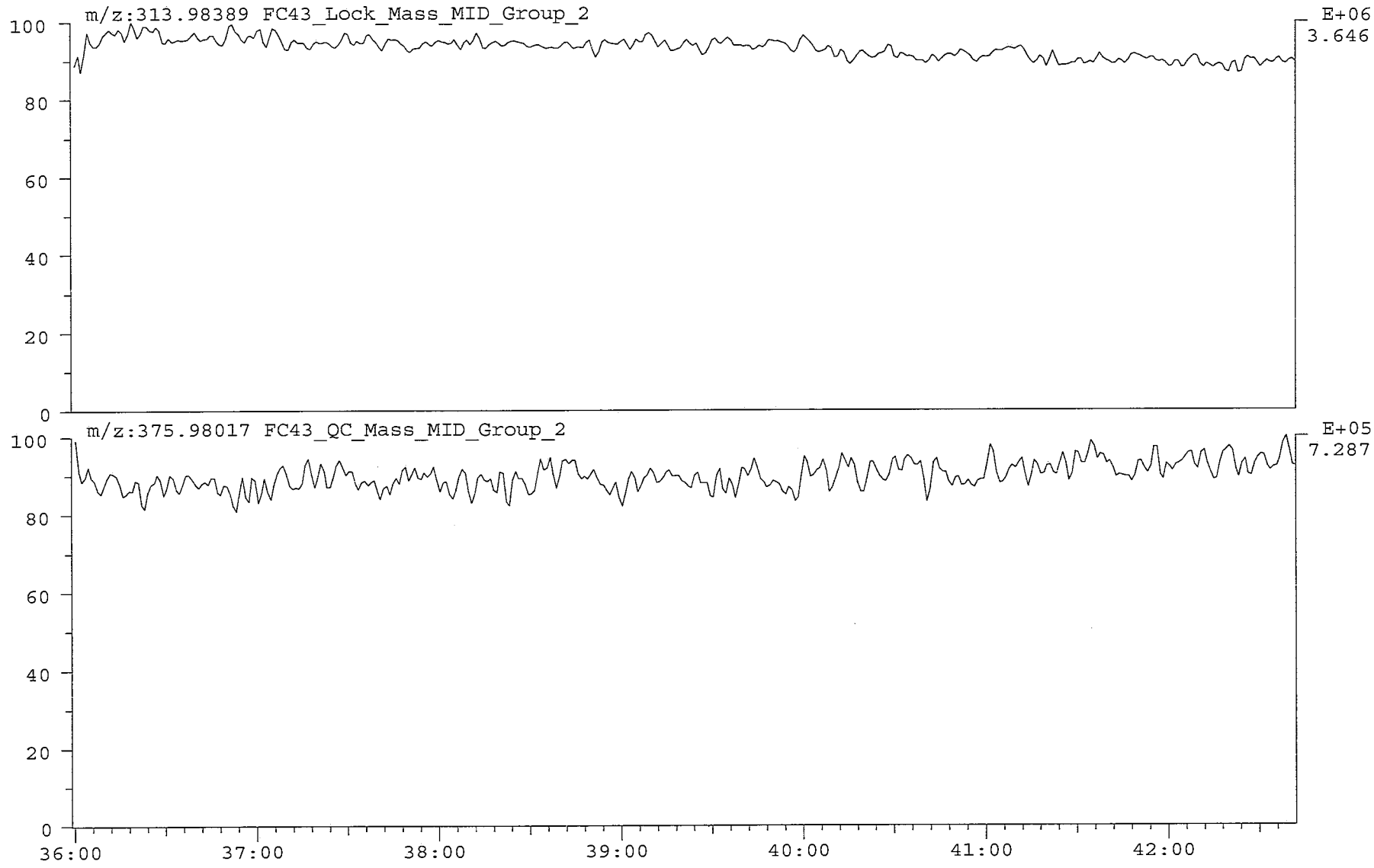
CHRO: d1tm811v 18-Aug-16 Elapse: 39:44 1620
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1617 > 1623 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



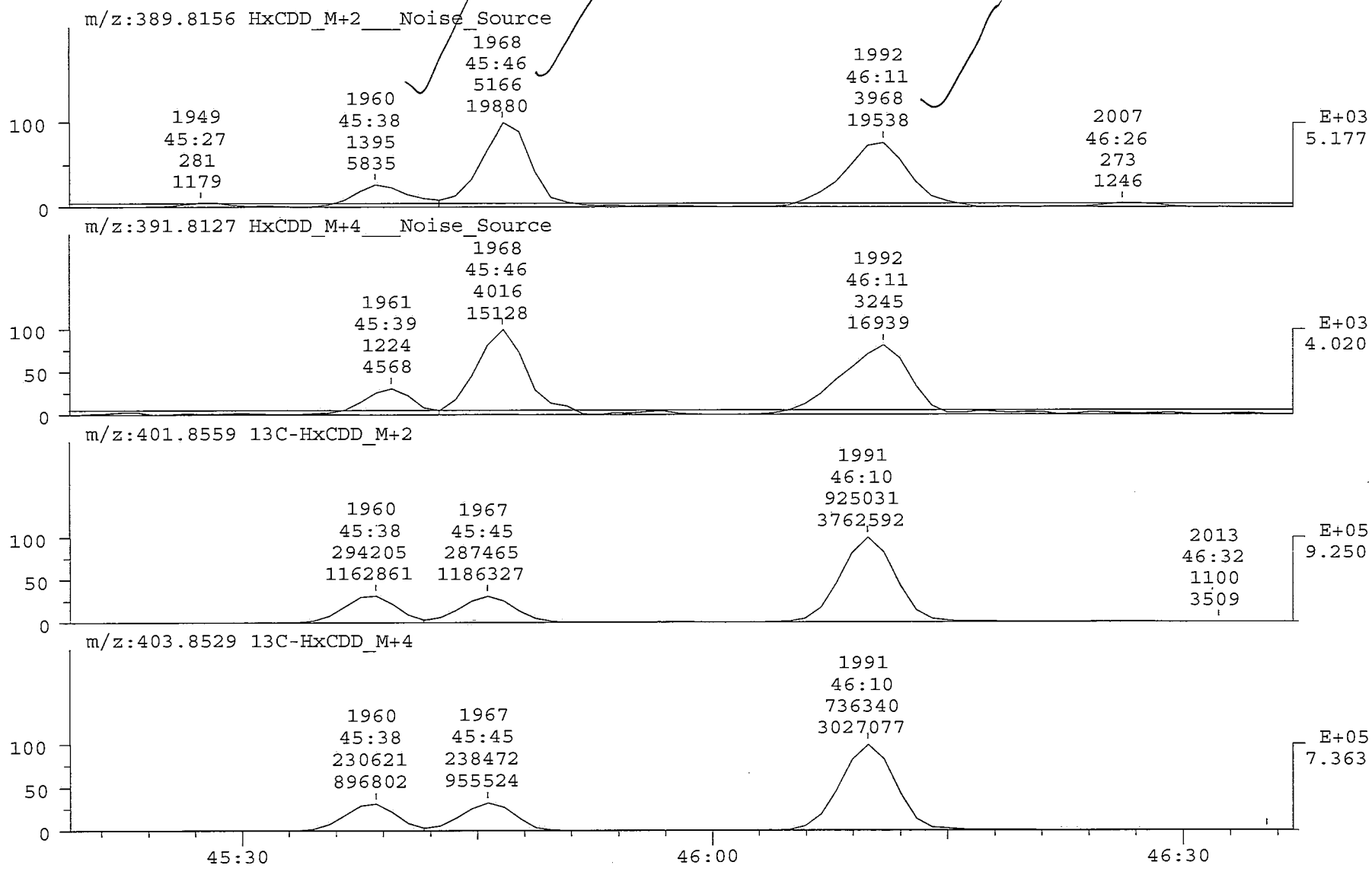
```
CHRO:  d1tm811v                                  18-Aug-16   Elapse:  40:23      1657
Samp:  WO=m811v1ac Meth=9Ao Dil=1                            Start :  04:19:20   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                   Study :  6217014 (9.8g)
Oper:  LKM                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  -2, 5.0
Disp:  Height  Area
```



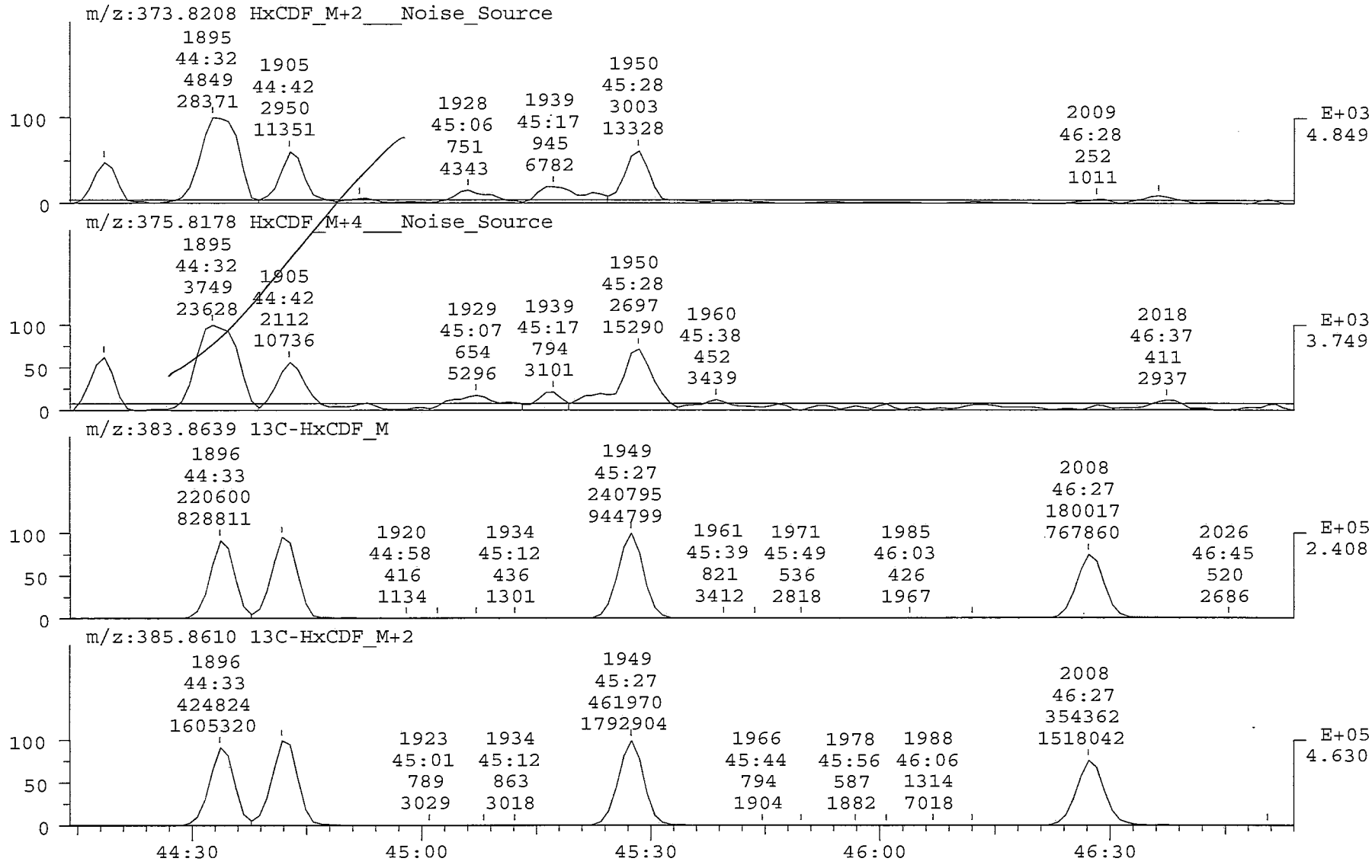
```
CHRO:  d1tm811v                                18-Aug-16  Elapse:  40:23      1657
Samp:  WO=m811v1ac Meth=9Ao Dil=1                         Start :  04:19:20   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



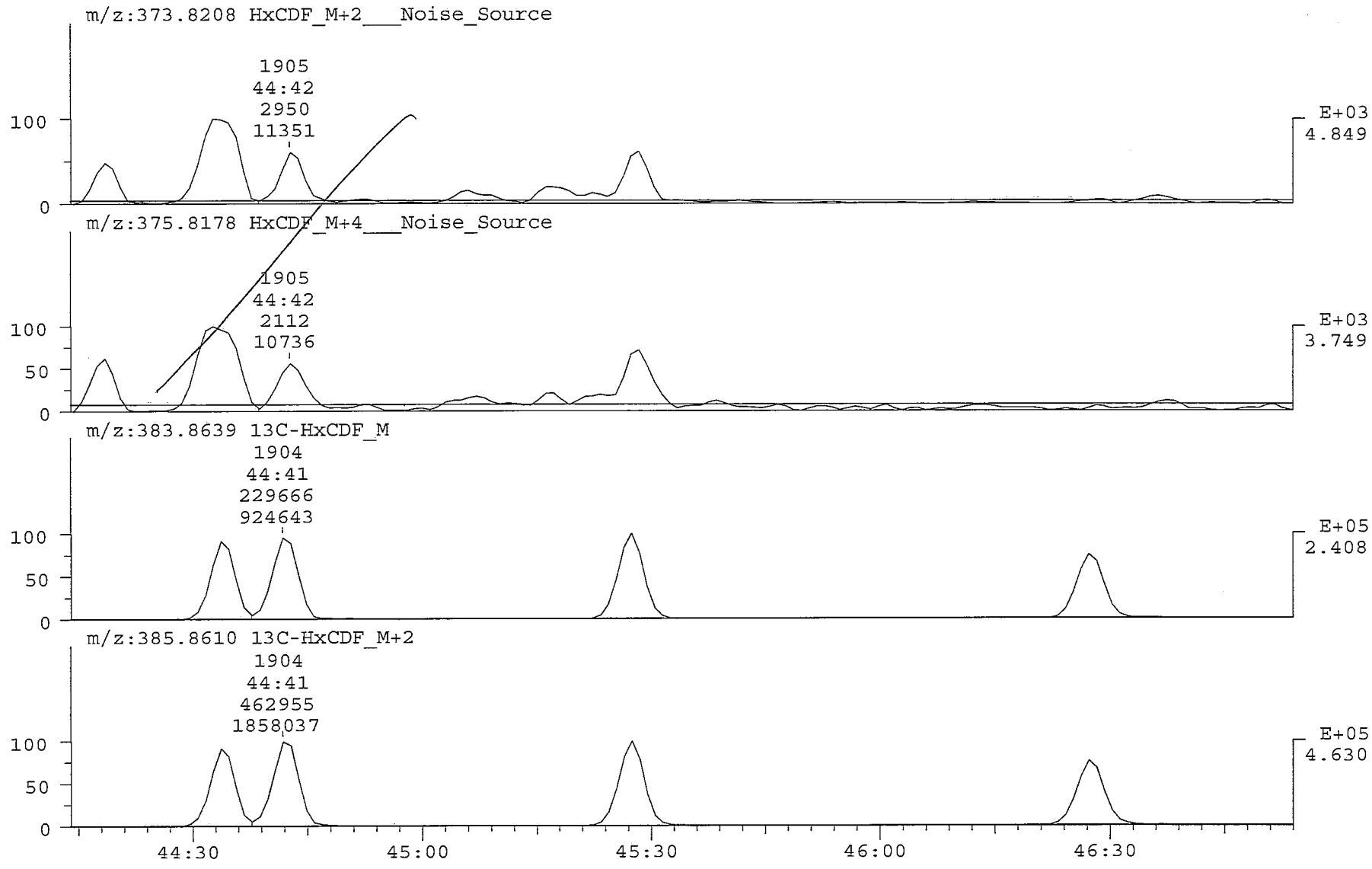
CHRO: d1tm811v 18-Aug-16 Elapse: 45:57 1979
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1941 > 2018 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



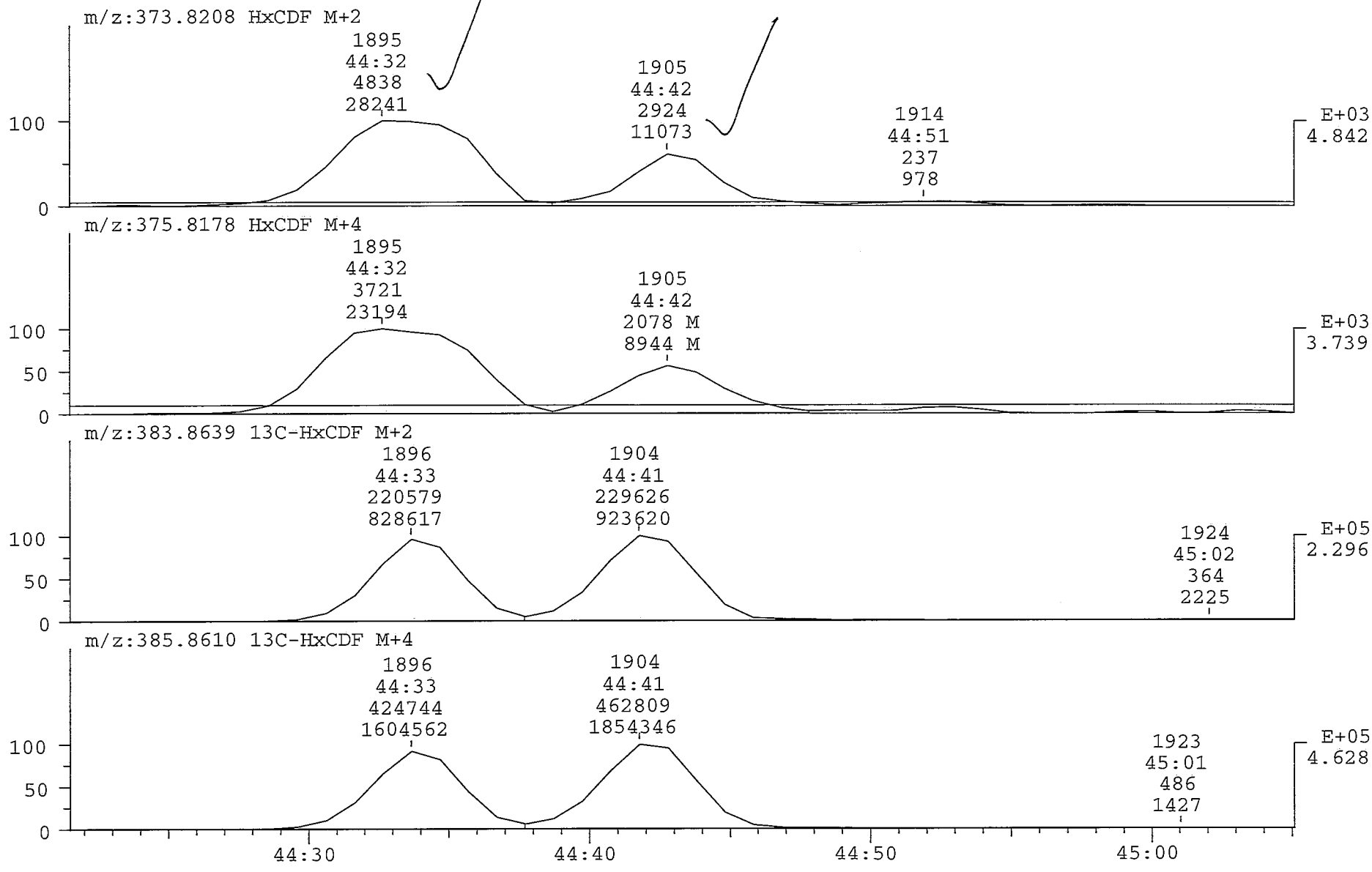
CHRO: d1tm811v 18-Aug-16 Elapse: 45:34 1956
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1877 > 2034 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



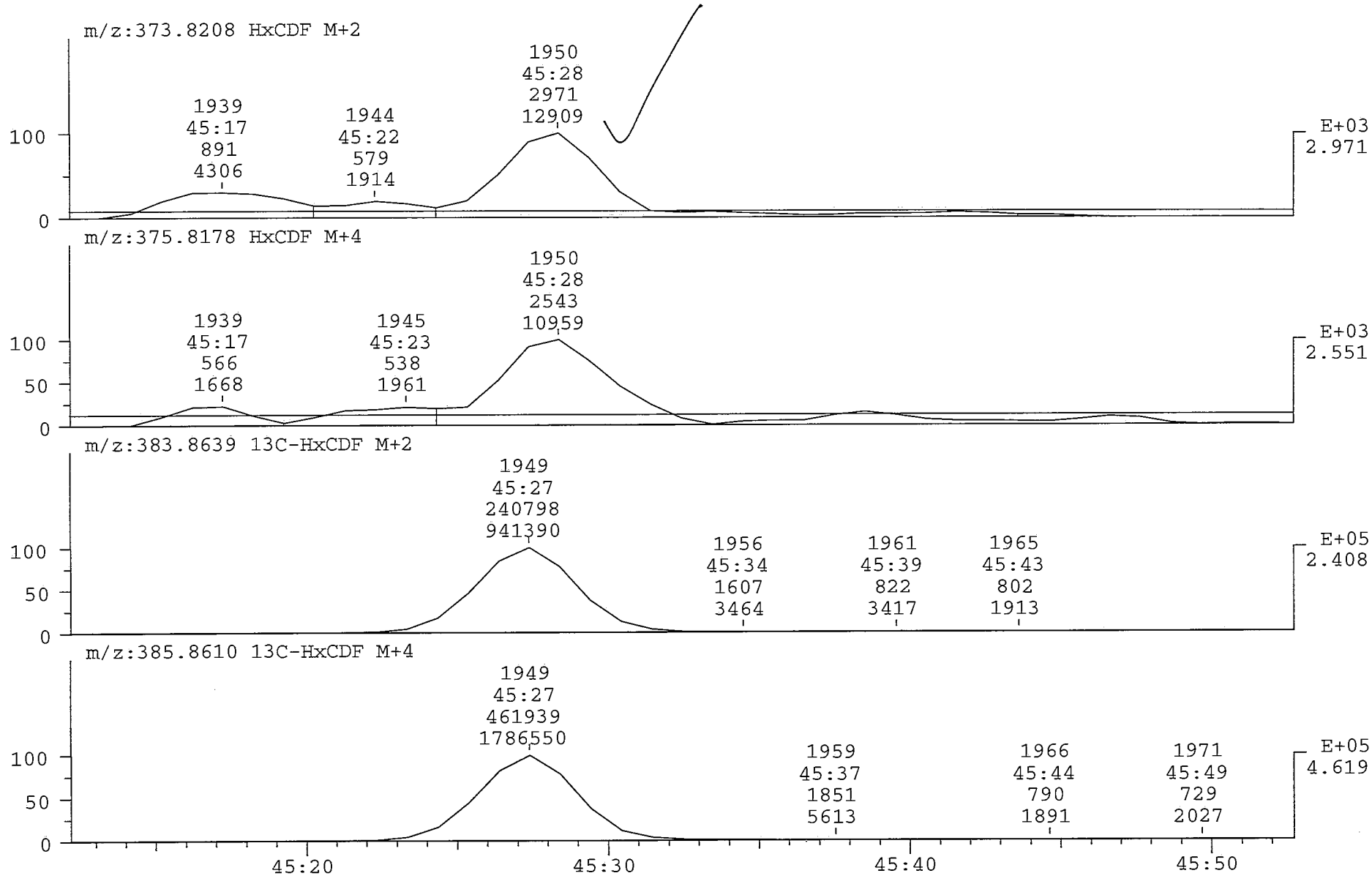
CHRO: d1tm811v 18-Aug-16 Elapse: 44:41 1904
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1900 > 1908 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



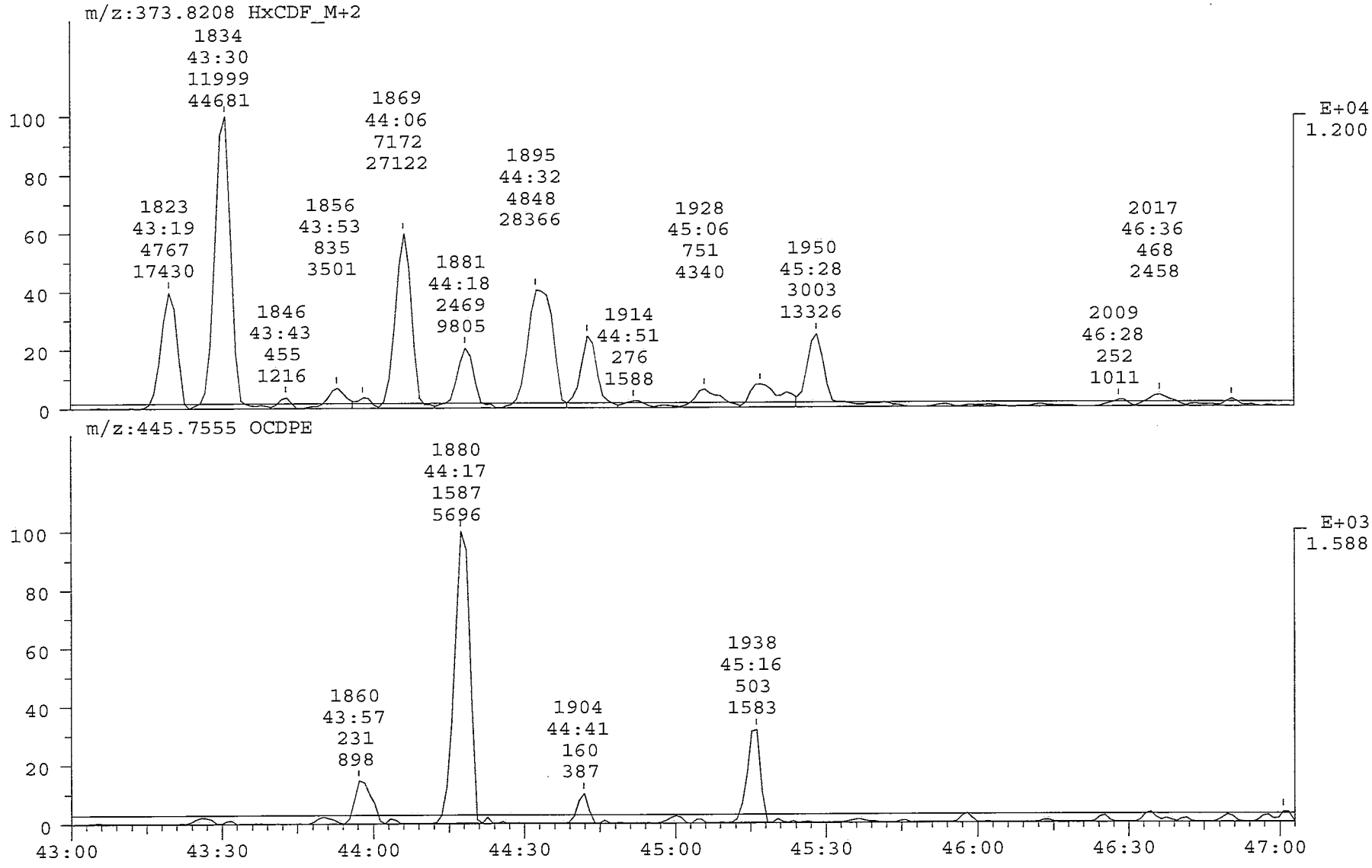
CHRO: d1tm811v 18-Aug-16 Elapse: 39:44 1620
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1884 > 1927 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



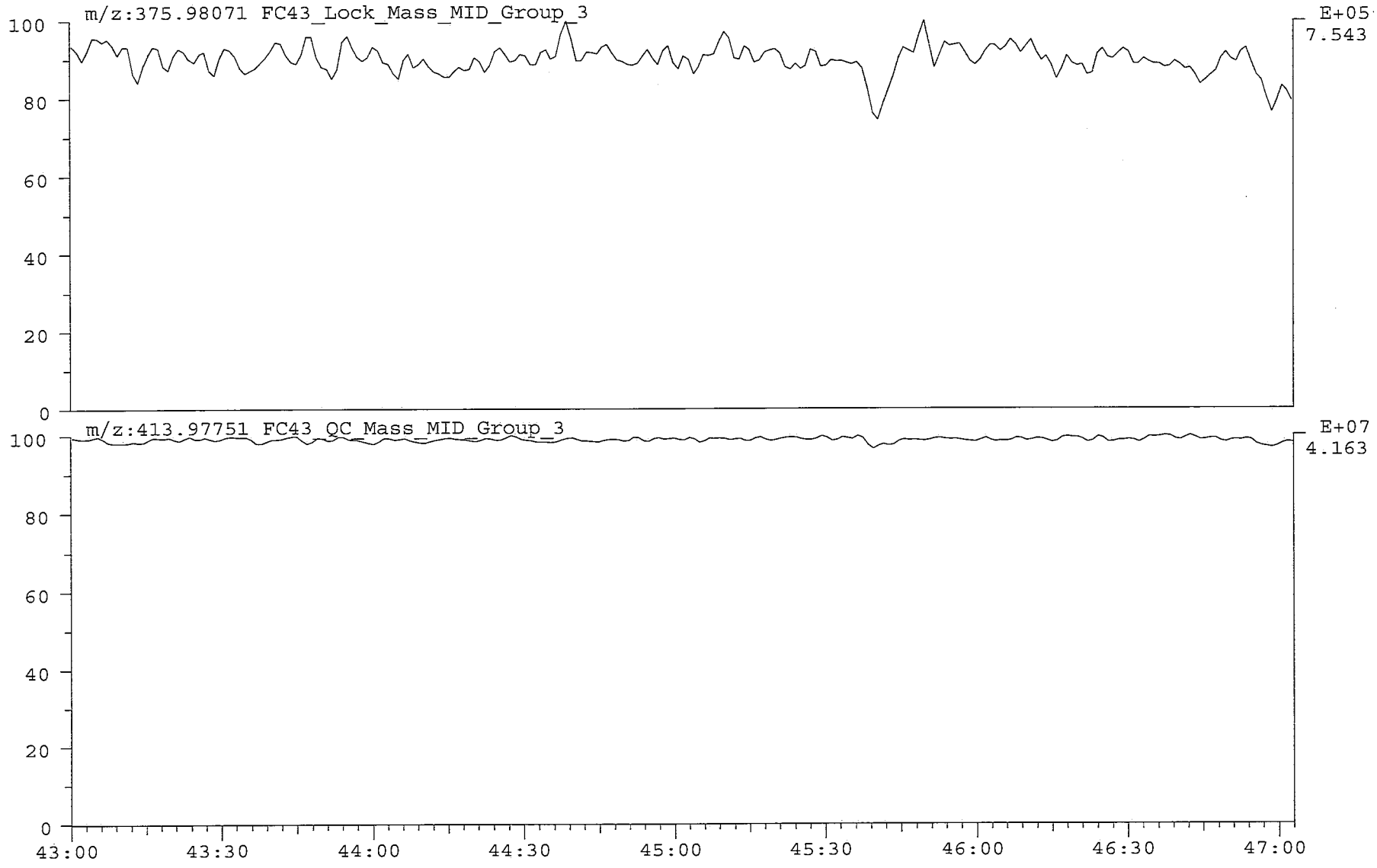
CHRO: d1tm811v 18-Aug-16 Elapse: 39:44 1620
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1934 > 1974 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : -2, 5.0
Disp: Height Area



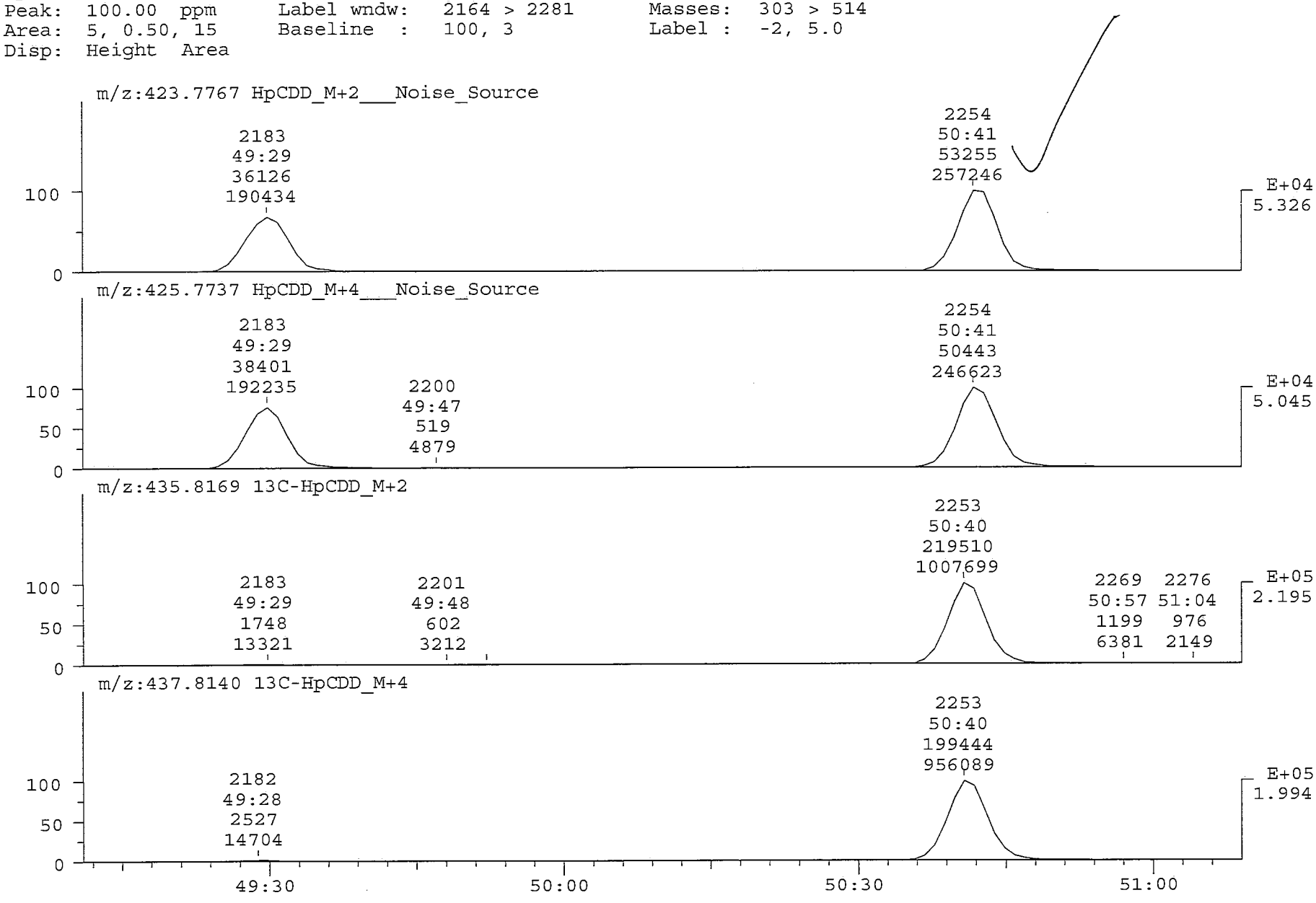
CHRO: d1tm811v 18-Aug-16 Elapse: 44:41 1904
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1804 > 2043 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



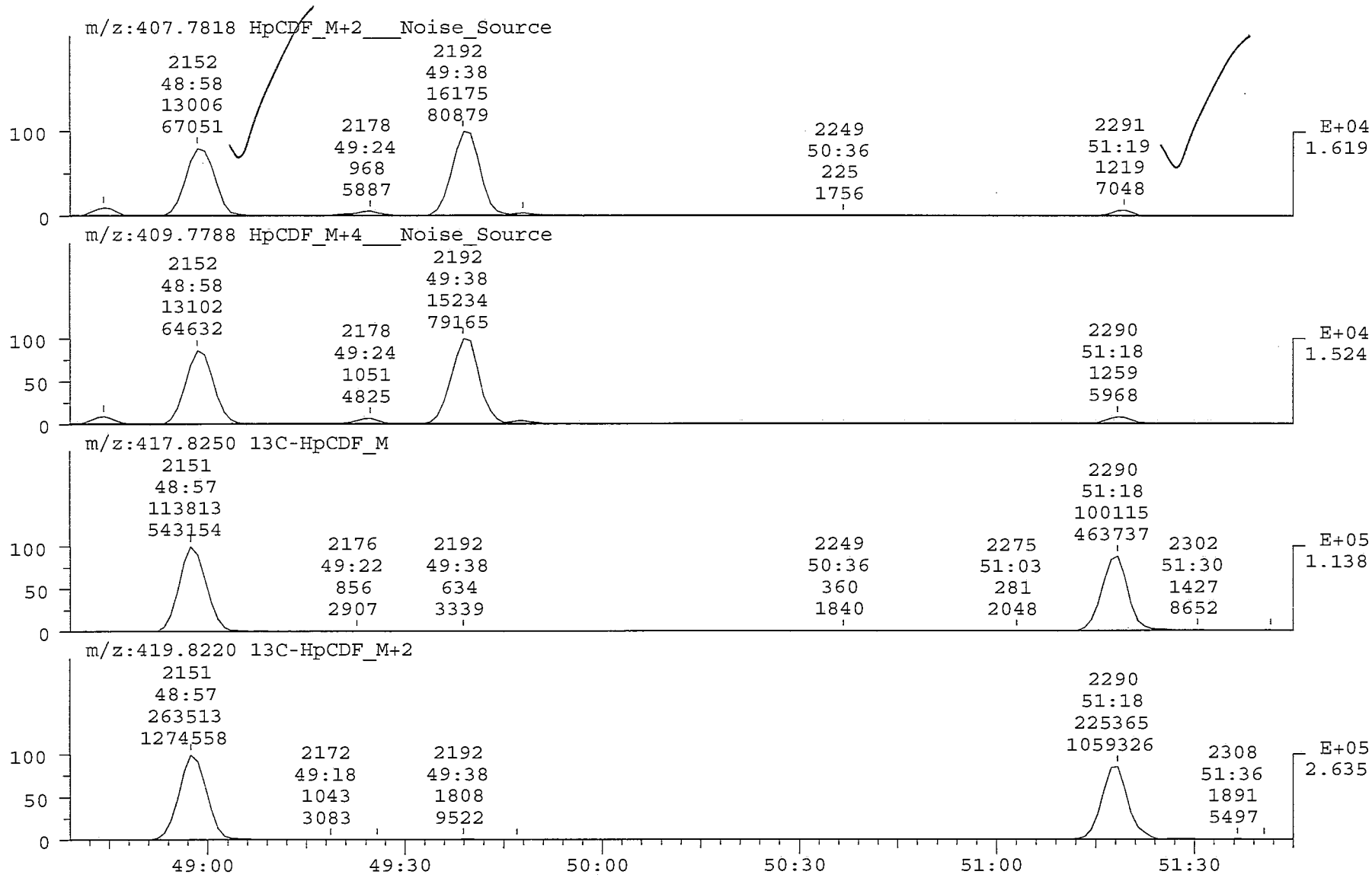
CHRO: d1tm811v 18-Aug-16 Elapse: 44:41 1904
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1804 > 2043 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



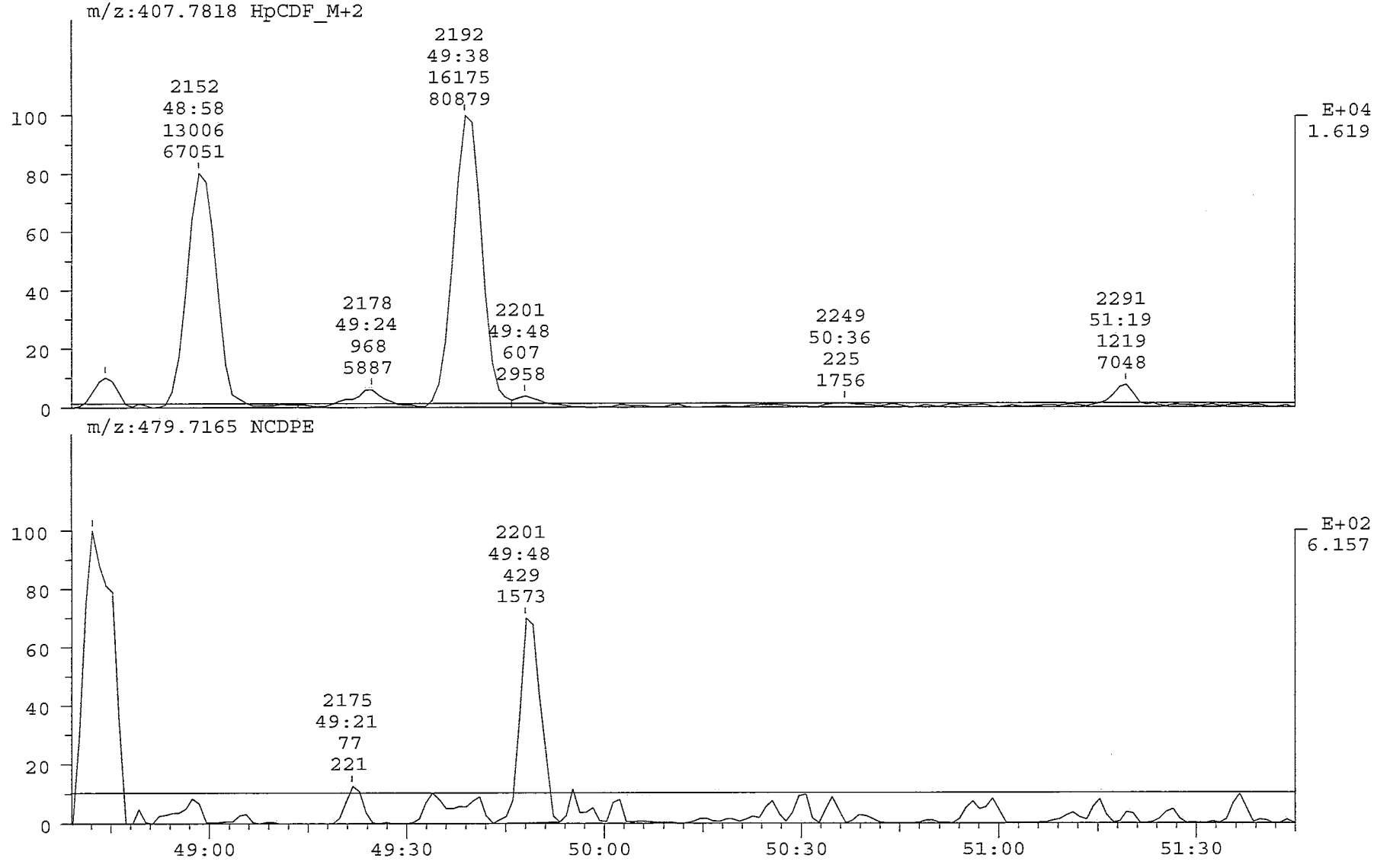
CHRO: d1tm811v 18-Aug-16 Elapse: 44:41 1904
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2164 > 2281 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



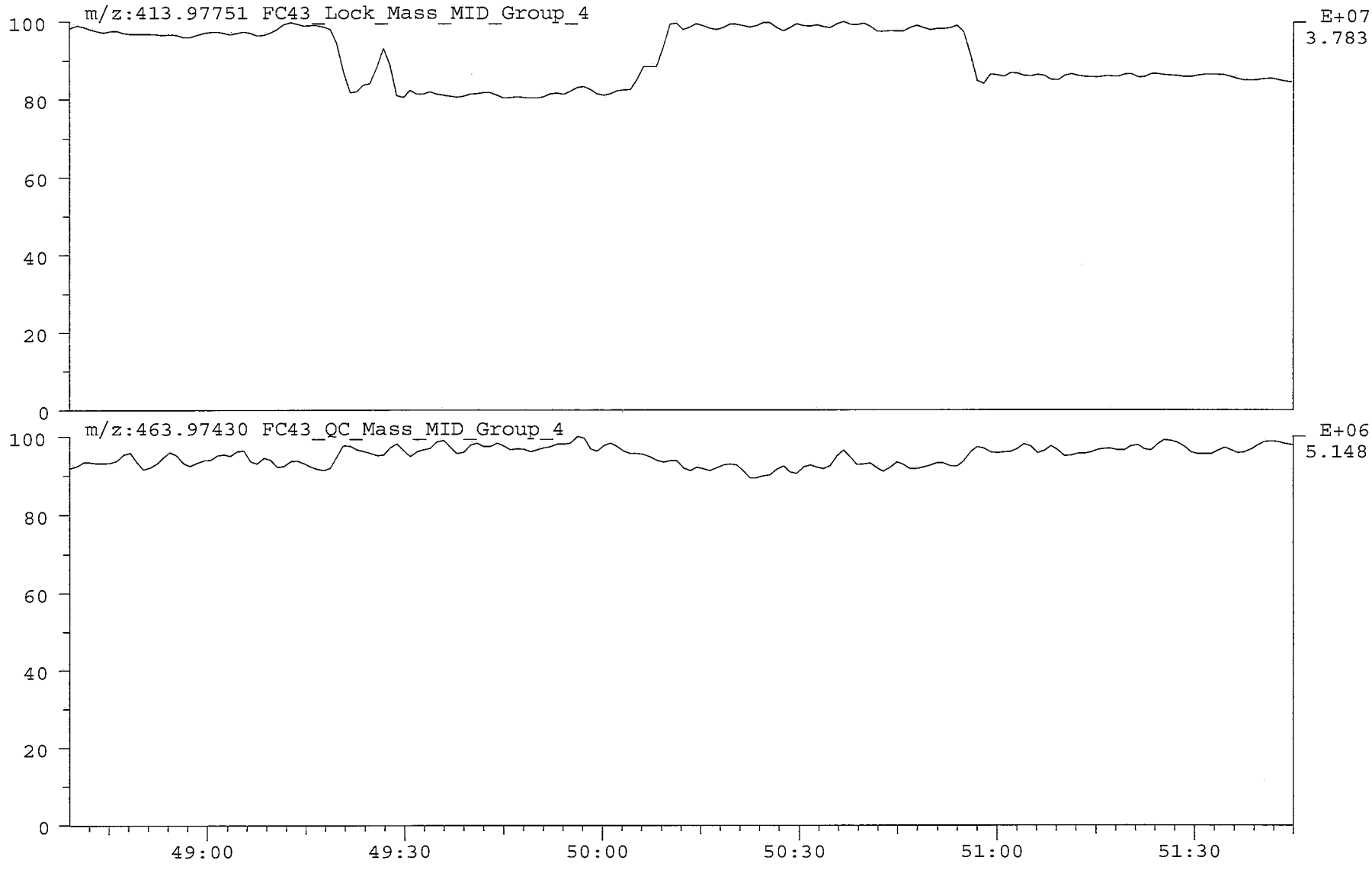
CHRO: d1tm811v 18-Aug-16 Elapse: 50:12 2225
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



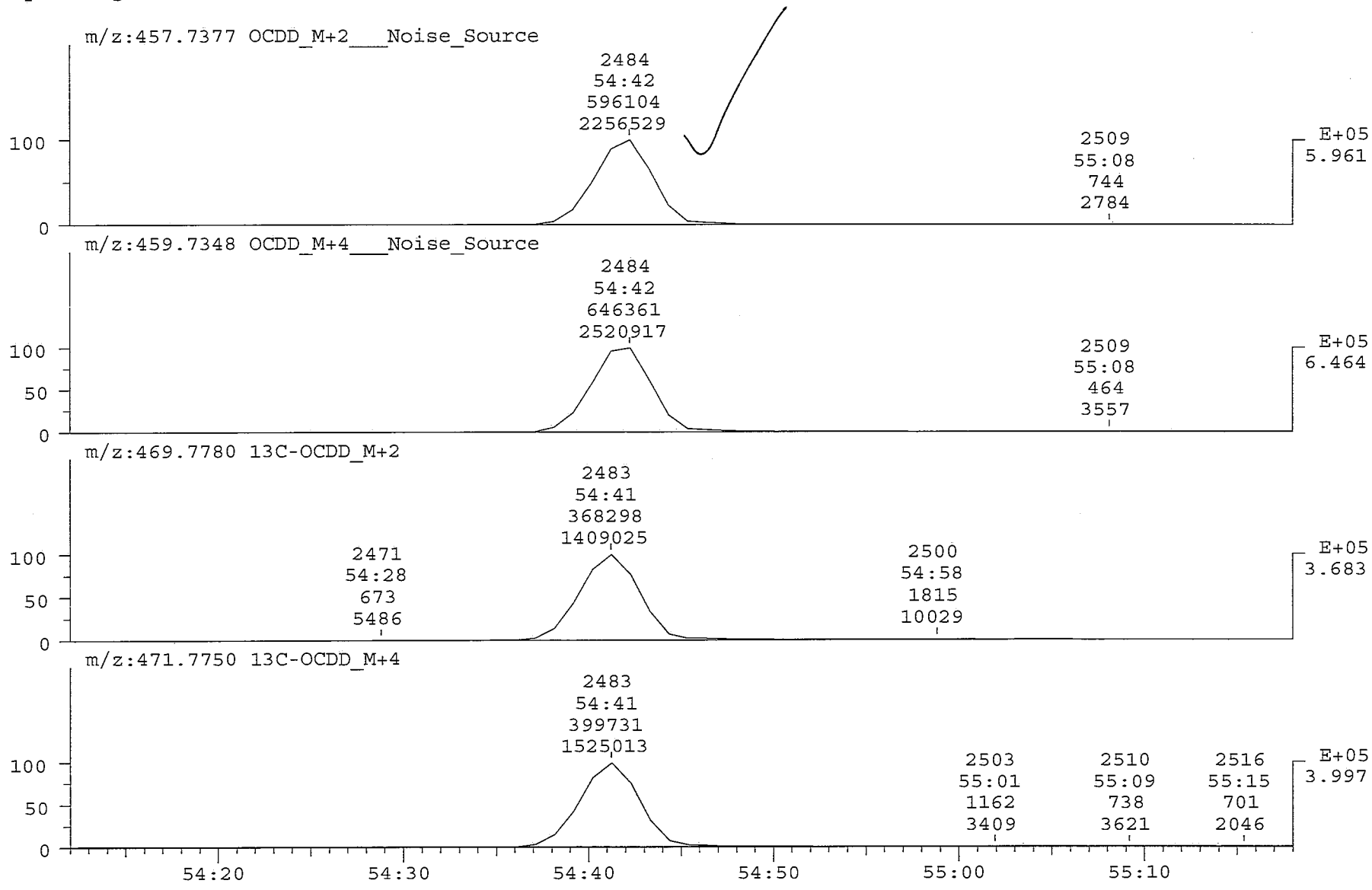
```
CHRO:  d1tm811v                                18-Aug-16  Elapse:  50:12      2225
Samp:  WO=m811v1ac Meth=9Ao Dil=1                         Start :  04:19:20   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2133 > 2316          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



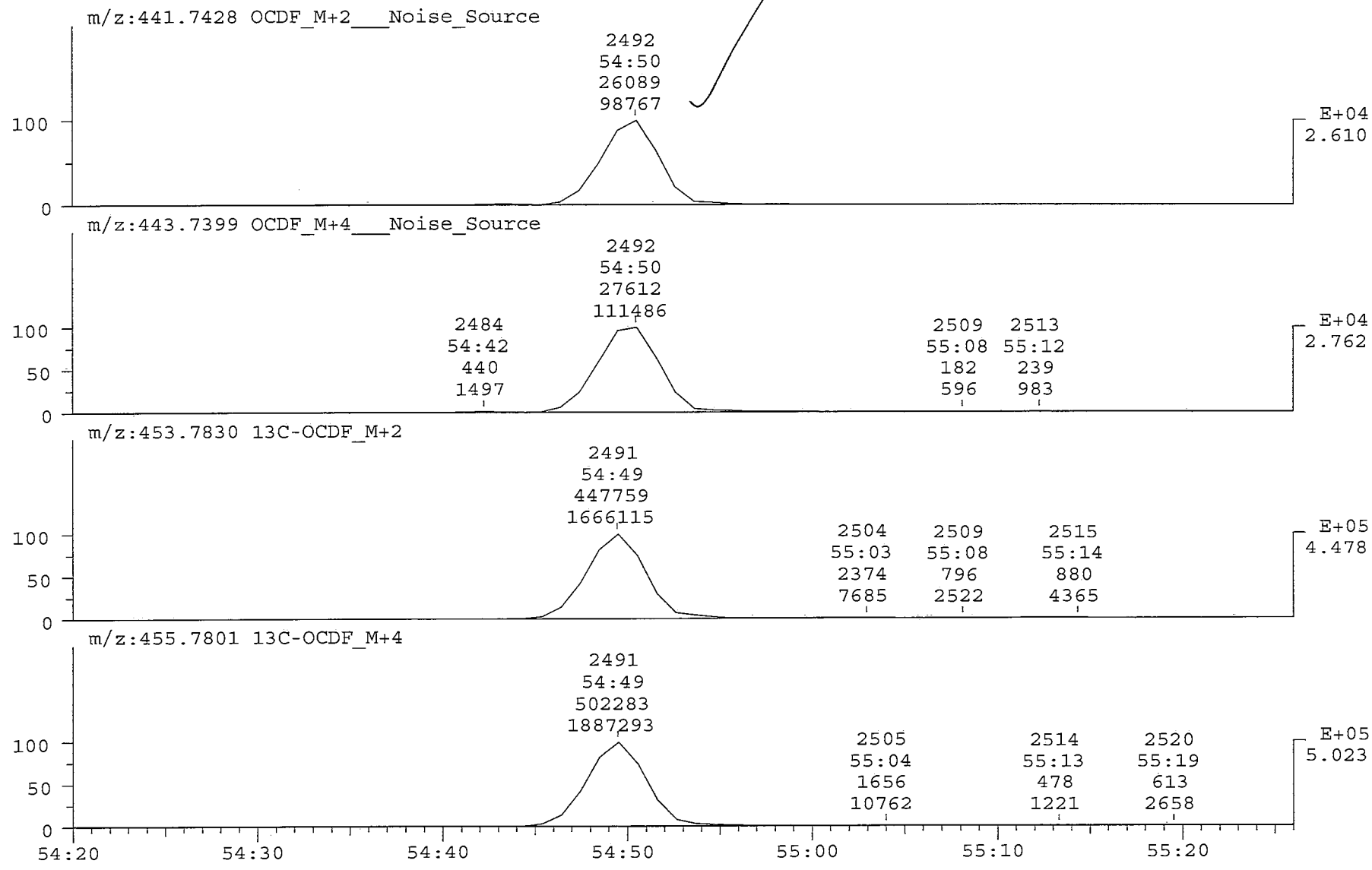
```
CHRO:  d1tm811v                                18-Aug-16  Elapse:  50:12      2225
Samp:  WO=m811v1ac Meth=9Ao Dil=1                         Start :  04:19:20   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2133 > 2316          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



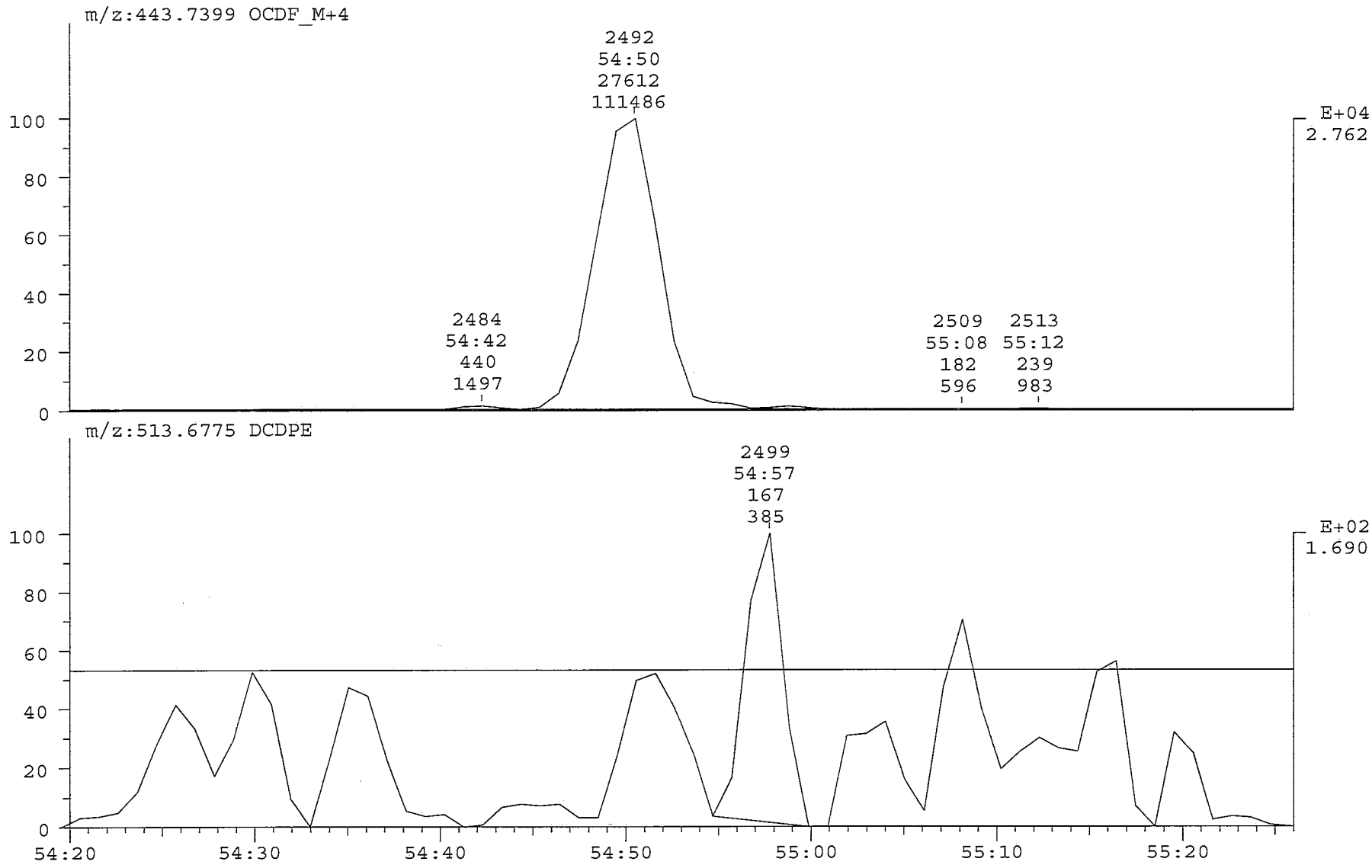
CHRO: d1tm811v 18-Aug-16 Elapse: 54:42 2484
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.8g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2455 > 2519 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



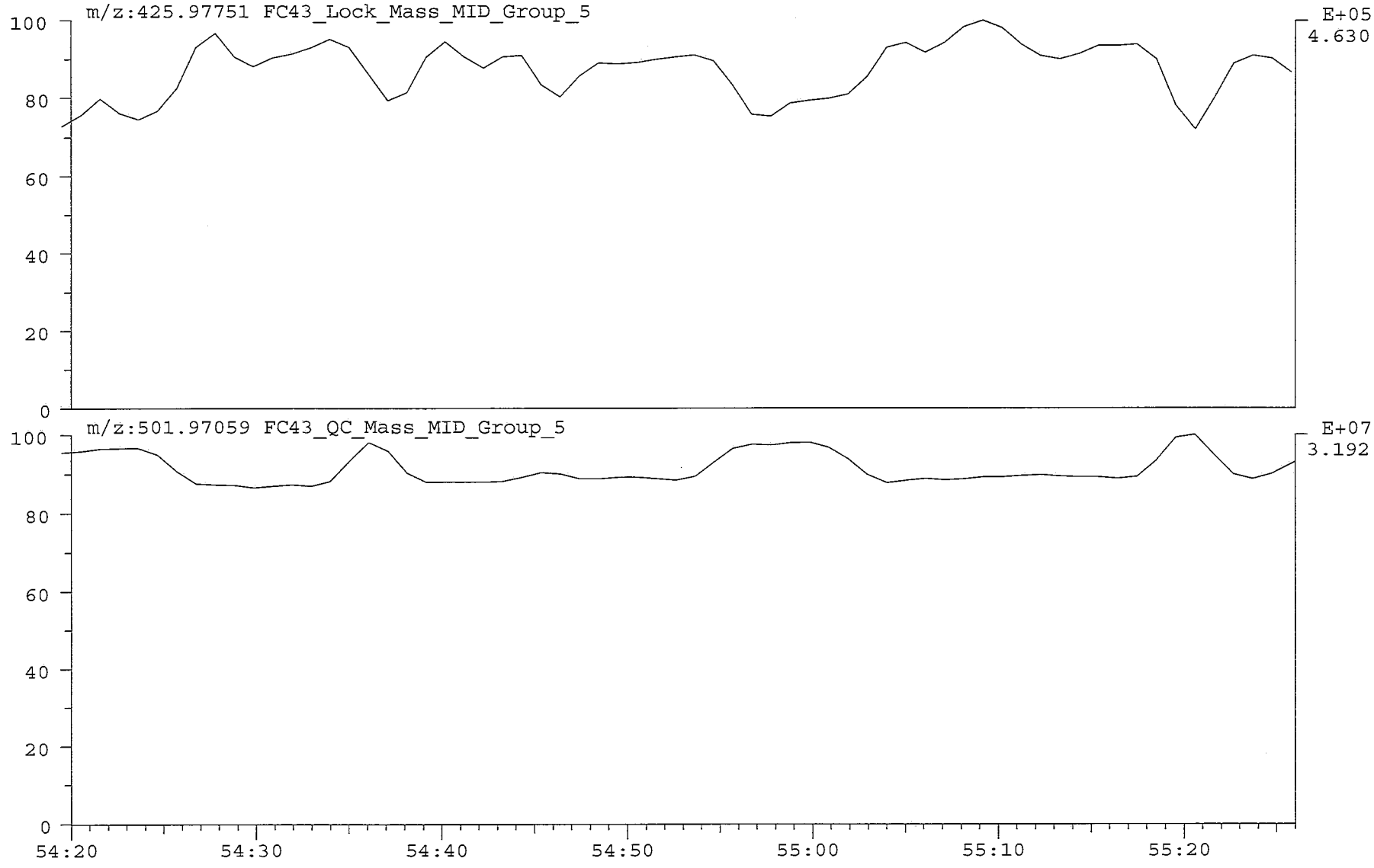
```
CHRO:  d1tm811v                                18-Aug-16   Elapse:  54:49      2491
Samp:  WO=m811v1ac Meth=9Ao Dil=1                          Start :  04:19:20   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (9.8g)
Oper:  LKM                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2462 > 2526           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1tm811v                                18-Aug-16  Elapse:  54:49      2491
Samp:  WO=m811v1ac Meth=9Ao Dil=1                         Start :  04:19:20   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2462 > 2526          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1tm811v                                18-Aug-16  Elapse:  54:49      2491
Samp:  WO=m811v1ac Meth=9Ao Dil=1                         Start :  04:19:20   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.8g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2462 > 2526          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



```
*** file opened Thu Aug 18 04:23:46 2016 ***

Started by                - Xcalibur
Instrument Internet name  - DFS MS
Instrument model          - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

  Analysis started at: 18-Aug-16 04:23:45

  Analysis will stop at user request

  Firmware Version: 1.03

  MCAL file name: mcal1.cal

  Sequence : 021716KLR_160818011736

  MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF


  Mid Time Windows:
        Start        Measure      End       Cycletime

  # 1  12:00 min  23:53 min  35:53 min   1.00 sec
  # 2  35:53 min   6:50 min  42:43 min   1.00 sec
  # 3  42:43 min   5:16 min  48:00 min   1.00 sec
  # 4  48:00 min   5:00 min  53:00 min   1.00 sec
  # 5  53:00 min   4:12 min  57:12 min   1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    303.9016     1  1      123
    305.8987     1  1      123
    313.9834 l  20  1        6
    313.9834    20  1        6
    315.9419     5  1       24
    317.9389     5  1       24
    319.8965     1  1      123
    321.8936     1  1      123
    327.8847     1  1      123
    331.9368     5  1       24
    333.9338     5  1       24
    363.9802 c  20  1        6
    363.9802 c  20  1        6
    375.8364     1  1      123
   Window # 2
        mass F  int  gr  time (ms)
    313.9834 l  20  1        7
    313.9834    20  1        7
    339.8597     1  1      146
    341.8567     1  1      146
    351.9000     5  1       29
    353.8970     5  1       29
    355.8546     1  1      146
    357.8516     1  1      146
    367.8949     5  1       29
    369.8919     5  1       29
    375.9802 c  20  1        7
    375.9802    20  1        7
    409.7974     1  1      146
   Window # 3
        mass F  int  gr  time (ms)
    373.8208     1  1      146
    375.8178     1  1      146
    375.9802 l  20  1        7
```

```
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          309.4834
 BQUAD            2.4000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE      18.0000   ECORR           1.0008   ECURR            1.0000
 EDAC        7969177.0000  EDACG           0.9997   EDACZ         2585.8226
 ELEN           -45.0000   EMULT        1802.0000   ENS            210.0000
 ENSBR            2.4000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           172.0000   EXSBR            2.5000
 FDMA       18000000.0000  FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            6.7000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0479	FVSRC	0.0396
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	620.0000
LENS_SYM	-4.7500	LM	375.8364	LMII	500.0000
LMASS	309.4834	LKM	425.9770	MASS	309.4834
MDAC	3559368.8262	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2650.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-7.0000	RECURR	0.8991	RELEN	0.0000
RES	11173.6749	RPUSHER	-6.9524	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	309.4834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:         2.6e-005 mbar
Analyzer Penning:     9.4e-008 mbar
Pirani Analyse:       4.3e-003 mbar
Pirani Source:        4.0e-002 mbar
Pirani Inlet System: 4.7e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 12565.
MID Time Window 2: Resolution is 12114.
MID Time Window 3: Resolution is 12881.
MID Time Window 4: Resolution is 12084.
MID Time Window 5: Resolution is 11173.

Amplifier Offset: 88.


*** File closed Thu Aug 18 05:21:00 2016
  ***
```

QUAN: d1tm811v.q0 Entries: 265

Data file(s) used
File: d1tm811v 18-Aug-16
Samp: WO=m811v1ac Meth=9Ao Dil=1 Start : 04:19:20 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:51	987.	141.	32:47	33:00	14.	1	1.0	AVB
321.8775	32:36	1414.	285.	32:29	32:41	17.	1	1.0	ABB
319.8805	31:22	730.	86.	31:14	31:32	14.	2	5.0	ABB
319.8805	32:15	572.	155.	32:11	32:18	14.	2	5.0	ABV
319.8805	32:22	626.	154.	32:18	32:28	14.	2	5.0	AVB
319.8805	32:33	459.	122.	32:28	32:35	14.	2	5.0	ABV
319.8805	32:37	901.	153.	32:35	32:47	14.	2	5.0	AVV
319.8805	32:51	987.	141.	32:47	33:00	14.	2	5.0	AVB
319.8805	34:01	867.	146.	33:54	34:05	14.	2	5.0	ABB
321.8775	31:21	677.	99.	31:15	31:26	17.	2	5.0	ABB
321.8775	31:28	318.	127.	31:26	31:30	17.	2	5.0	ABV
321.8775	31:32	688.	161.	31:30	31:37	17.	2	5.0	AVB
321.8775	32:15	957.	187.	32:09	32:17	17.	2	5.0	ABV
321.8775	32:20	1503.	332.	32:17	32:29	17.	2	5.0	AVB
321.8775	32:36	1414.	285.	32:29	32:41	17.	2	5.0	ABB
321.8775	32:53	997.	148.	32:43	32:55	17.	2	5.0	ABV
321.8775	32:57	358.	150.	32:55	32:59	17.	2	5.0	AVB
321.8775	34:00	1284.	222.	33:54	34:08	17.	2	5.0	ABB
331.9202	32:17	3117761.	323665.	32:02	32:33	266.	2	5.0	AVV
331.9202	32:50	1089326.	101187.	32:35	33:05	266.	2	5.0	AVV
333.9171	32:17	3892191.	389556.	32:02	32:33	101.	2	5.0	AVV
333.9171	32:50	1371078.	132391.	32:35	33:05	101.	2	5.0	AVV
333.9171	33:12	2148.	632.	33:10	33:15	101.	2	5.0	AVB
333.9171	33:24	3789.	651.	33:19	33:32	101.	2	5.0	ABB
303.8864	30:49	14965.	1845.	30:47	31:01	35.	1	1.0	AVV
305.8834	30:45	32162.	2217.	30:34	31:01	42.	1	1.0	ABV
303.8864	29:30	3484.	768.	29:22	29:32	35.	2	5.0	ABV
303.8864	29:34	4401.	754.	29:32	29:44	35.	2	5.0	AVB
303.8864	30:13	8464.	887.	29:57	30:25	35.	2	5.0	AVB
303.8864	30:45	13694.	1901.	30:32	30:47	35.	2	5.0	ABV
303.8864	30:49	15188.	1845.	30:47	31:04	35.	2	5.0	AVB
303.8864	32:04	11031.	1049.	31:49	32:15	35.	2	5.0	AVB
305.8834	29:34	10999.	1218.	29:22	29:45	42.	2	5.0	ABB
305.8834	30:11	10240.	807.	29:55	30:25	42.	2	5.0	AVB
305.8834	30:45	32162.	2217.	30:34	31:01	42.	2	5.0	ABV
305.8834	32:00	13081.	1565.	31:50	32:14	42.	2	5.0	ABB
315.9261	29:29	6881.	918.	29:20	29:41	96.	2	5.0	ABB
315.9261	30:40	1655334.	176124.	30:25	30:56	96.	2	5.0	ABV
315.9261	30:59	5829.	1421.	30:56	31:05	96.	2	5.0	AVB
315.9261	31:10	2534.	570.	31:05	31:11	96.	2	5.0	ABV
315.9261	31:13	1961.	757.	31:11	31:15	96.	2	5.0	AVV
315.9261	31:22	3765.	929.	31:15	31:25	96.	2	5.0	AVB
317.9230	29:31	3898.	1023.	29:22	29:33	57.	2	5.0	ABV
317.9230	29:37	2440.	491.	29:33	29:44	57.	2	5.0	AVB
317.9230	30:40	2023054.	211172.	30:26	30:56	57.	2	5.0	ABV
317.9230	31:01	7915.	1642.	30:59	31:15	57.	2	5.0	AVV
317.9230	31:23	3675.	581.	31:15	31:31	57.	2	5.0	AVB
317.9230	31:37	1294.	365.	31:31	31:39	57.	2	5.0	ABB
317.9230	32:04	1145.	390.	32:01	32:07	57.	2	5.0	ABB
317.9230	32:17	2601.	724.	32:09	32:20	57.	2	5.0	ABB

355.8368	41:25	5120.	1231.	41:19	41:30	42.	1	1.0	AVB
357.8337	41:25	6101.	1325.	41:18	41:31	42.	1	1.0	ABB
355.8368	40:42	3972.	860.	40:38	40:49	42.	2	5.0	ABB
355.8368	41:01	3231.	437.	40:50	41:04	42.	2	5.0	ABB
355.8368	41:08	1411.	258.	41:04	41:14	42.	2	5.0	ABB
355.8368	41:25	5192.	1231.	41:16	41:30	42.	2	5.0	ABB
355.8368	41:37	1611.	343.	41:33	41:44	42.	2	5.0	ABB
355.8368	42:02	3399.	750.	41:52	42:06	42.	2	5.0	ABB
357.8337	40:43	2627.	679.	40:39	40:50	42.	2	5.0	ABB
357.8337	41:00	3093.	405.	40:51	41:14	42.	2	5.0	ABB
357.8337	41:25	6101.	1325.	41:18	41:31	42.	2	5.0	ABB
357.8337	41:37	1719.	468.	41:34	41:44	42.	2	5.0	ABB
357.8337	41:54	2106.	366.	41:46	41:57	42.	2	5.0	ABV
357.8337	42:03	2126.	320.	41:57	42:12	42.	2	5.0	AVB
367.8765	41:24	1334566.	318906.	41:14	41:34	53.	2	5.0	ABV
367.8765	41:36	9016.	1130.	41:34	41:45	53.	2	5.0	AVV
367.8765	41:47	1438.	404.	41:45	41:49	53.	2	5.0	AVV
367.8765	41:51	1141.	434.	41:49	41:53	53.	2	5.0	AVV
367.8765	41:55	2207.	769.	41:53	41:58	53.	2	5.0	AVV
367.8765	42:02	3020.	808.	41:58	42:05	53.	2	5.0	AVB
367.8765	42:09	1408.	488.	42:05	42:12	53.	2	5.0	ABB
369.8734	40:58	280.	113.	40:55	40:59	17.	2	5.0	ABV
369.8734	41:01	384.	178.	40:59	41:03	17.	2	5.0	AVB
369.8734	41:24	864448.	201823.	41:16	41:33	17.	2	5.0	ABV
369.8734	41:37	7207.	1481.	41:33	41:42	17.	2	5.0	AVB
369.8734	41:47	1019.	264.	41:42	41:49	17.	2	5.0	ABB
369.8734	42:02	1979.	465.	41:58	42:10	17.	2	5.0	ABB
369.8734	42:17	515.	286.	42:15	42:18	17.	2	5.0	ABB
339.8427	39:18	25251.	4985.	39:13	39:26	48.	1	1.0	ABB
341.8396	39:18	14902.	3249.	39:13	39:25	56.	1	1.0	ABB
339.8427	39:18	25251.	4985.	39:13	39:26	48.	2	5.0	ABB
339.8427	39:39	5235.	1032.	39:33	39:41	48.	2	5.0	ABV
339.8427	39:44	9457.	1888.	39:41	39:51	48.	2	5.0	AVB
339.8427	40:01	6529.	1308.	39:54	40:09	48.	2	5.0	ABV
339.8427	40:15	11420.	1896.	40:09	40:24	48.	2	5.0	AVB
339.8427	40:55	16818.	4224.	40:46	41:00	48.	2	5.0	ABB
339.8427	41:07	24105.	4638.	41:00	41:20	48.	2	5.0	ABV
339.8427	41:27	3576.	496.	41:20	41:32	48.	2	5.0	AVB
341.8396	39:18	14902.	3249.	39:13	39:25	56.	2	5.0	ABB
341.8396	39:39	4351.	932.	39:34	39:42	56.	2	5.0	ABV
341.8396	39:46	6338.	1294.	39:42	39:55	56.	2	5.0	AVV
341.8396	40:01	5397.	1061.	39:55	40:06	56.	2	5.0	AVV
341.8396	40:16	8220.	1270.	40:06	40:24	56.	2	5.0	AVB
341.8396	40:54	13747.	3082.	40:43	40:59	56.	2	5.0	ABB
341.8396	41:06	14674.	3215.	40:59	41:19	56.	2	5.0	ABV
341.8396	41:29	3276.	460.	41:19	41:32	56.	2	5.0	AVB
351.8824	39:16	3348.	862.	39:13	39:23	58.	2	5.0	ABB
351.8824	39:28	997.	390.	39:26	39:31	58.	2	5.0	ABB
351.8824	39:43	2038929.	425304.	39:34	39:55	58.	2	5.0	ABV
351.8824	39:59	17548.	2590.	39:55	40:06	58.	2	5.0	AVV
351.8824	40:13	21072.	3334.	40:06	40:26	58.	2	5.0	AVB
351.8824	40:29	2311.	451.	40:26	40:41	58.	2	5.0	ABB
351.8824	40:54	2311093.	543081.	40:46	41:09	58.	2	5.0	ABV
351.8824	41:23	5466.	989.	41:16	41:28	58.	2	5.0	AVB
353.8793	39:16	2958.	664.	39:13	39:21	67.	2	5.0	ABB
353.8793	39:43	1346161.	282991.	39:35	39:56	67.	2	5.0	ABV
353.8793	40:02	10516.	1424.	39:56	40:07	67.	2	5.0	AVV
353.8793	40:13	12349.	2382.	40:07	40:19	67.	2	5.0	AVV
353.8793	40:22	2162.	464.	40:19	40:27	67.	2	5.0	AVB
353.8793	40:54	1489335.	348189.	40:47	41:09	67.	2	5.0	ABV
353.8793	41:24	1695.	421.	41:20	41:26	67.	2	5.0	AVB
389.7961	45:46	19880.	5166.	45:42	45:59	47.	1	1.0	AVB
391.7931	46:11	16939.	3245.	46:02	46:22	42.	1	1.0	ABB
389.7961	45:27	1179.	281.	45:23	45:33	47.	2	5.0	ABB
389.7961	45:38	5835.	1395.	45:33	45:42	47.	2	5.0	ABV
389.7961	45:46	19880.	5166.	45:42	45:59	47.	2	5.0	AVB
389.7961	46:11	19538.	3968.	46:00	46:17	47.	2	5.0	ABB

389.7961	46:26	1246.	273.	46:20	46:31	47.	2	5.0 ABB
391.7931	45:39	4568.	1224.	45:32	45:42	42.	2	5.0 ABV
391.7931	45:46	15128.	4016.	45:42	45:52	42.	2	5.0 AVB
391.7931	46:11	16939.	3245.	46:02	46:22	42.	2	5.0 ABB
401.8358	45:38	1162861.	294205.	45:23	45:41	103.	2	5.0 AVV
401.8358	45:45	1186327.	287465.	45:41	46:00	103.	2	5.0 AVV
401.8358	46:10	3762592.	925031.	46:01	46:25	103.	2	5.0 ABV
401.8358	46:32	3509.	1100.	46:30	46:37	103.	2	5.0 AVB
403.8327	45:38	896802.	230621.	45:31	45:41	77.	2	5.0 ABV
403.8327	45:45	955524.	238472.	45:41	46:00	77.	2	5.0 AVV
403.8327	46:10	3027077.	736340.	46:00	46:25	77.	2	5.0 AVV
403.8327	46:35	1603.	504.	46:33	46:37	77.	2	5.0 AVB
373.8021	44:32	28371.	4849.	44:25	44:38	39.	1	1.0 ABV
375.7990	44:32	23628.	3749.	44:23	44:38	58.	1	1.0 ABV
373.8021	44:18	8589.	2358.	44:14	44:24	39.	2	5.0 ABB
373.8021	44:32	28371.	4849.	44:25	44:38	39.	2	5.0 ABV
373.8021	44:42	11351.	2950.	44:38	44:48	39.	2	5.0 AVV
373.8021	44:52	1591.	277.	44:48	45:01	39.	2	5.0 AVV
373.8021	45:06	4343.	751.	45:01	45:13	39.	2	5.0 AVV
373.8021	45:17	6782.	945.	45:13	45:24	39.	2	5.0 AVV
373.8021	45:28	13328.	3003.	45:24	45:43	39.	2	5.0 AVV
373.8021	46:28	1011.	252.	46:23	46:31	39.	2	5.0 ABB
373.8021	46:36	2374.	460.	46:31	46:41	39.	2	5.0 ABB
375.7990	44:18	8369.	2336.	44:14	44:22	58.	2	5.0 ABB
375.7990	44:32	23628.	3749.	44:23	44:38	58.	2	5.0 ABV
375.7990	44:42	10736.	2112.	44:38	44:57	58.	2	5.0 AVV
375.7990	45:07	5296.	654.	44:57	45:13	58.	2	5.0 AVV
375.7990	45:17	3101.	794.	45:13	45:19	58.	2	5.0 AVV
375.7990	45:28	15290.	2697.	45:19	45:33	58.	2	5.0 AVV
375.7990	45:38	3439.	452.	45:33	45:49	58.	2	5.0 AVB
375.7990	46:37	2937.	411.	46:22	46:43	58.	2	5.0 ABB
373.8021	44:18	8589.	2358.	44:14	44:24	39.	2	5.0 ABB
373.8021	44:32	28371.	4849.	44:25	44:38	39.	2	5.0 ABV
373.8021	44:42	11351.	2950.	44:38	44:48	39.	2	5.0 AVV
373.8021	44:52	1591.	277.	44:48	45:01	39.	2	5.0 AVV
373.8021	45:06	4343.	751.	45:01	45:13	39.	2	5.0 AVV
373.8021	45:17	6782.	945.	45:13	45:24	39.	2	5.0 AVV
373.8021	45:28	13328.	3003.	45:24	45:43	39.	2	5.0 AVV
373.8021	46:28	1011.	252.	46:23	46:31	39.	2	5.0 ABB
373.8021	46:36	2374.	460.	46:31	46:41	39.	2	5.0 ABB
375.7990	44:18	8369.	2336.	44:14	44:22	58.	2	5.0 ABB
375.7990	44:32	23628.	3749.	44:23	44:38	58.	2	5.0 ABV
375.7990	44:42	10736.	2112.	44:38	44:57	58.	2	5.0 AVV
375.7990	45:07	5296.	654.	44:57	45:13	58.	2	5.0 AVV
375.7990	45:17	3101.	794.	45:13	45:19	58.	2	5.0 AVV
375.7990	45:28	15290.	2697.	45:19	45:33	58.	2	5.0 AVV
375.7990	45:38	3439.	452.	45:33	45:49	58.	2	5.0 AVB
375.7990	46:37	2937.	411.	46:22	46:43	58.	2	5.0 ABB
383.8447	44:33	828811.	220600.	44:25	44:37	74.	2	5.0 ABV
383.8447	44:41	924643.	229666.	44:37	44:57	74.	2	5.0 AVV
383.8447	44:58	1134.	416.	44:57	45:00	74.	2	5.0 AVV
383.8447	45:02	1784.	451.	45:00	45:05	74.	2	5.0 AVV
383.8447	45:07	2304.	720.	45:05	45:10	74.	2	5.0 AVV
383.8447	45:12	1301.	436.	45:10	45:16	74.	2	5.0 AVB
383.8447	45:27	944799.	240795.	45:17	45:36	74.	2	5.0 ABV
383.8447	45:39	3412.	821.	45:36	45:41	74.	2	5.0 AVV
383.8447	45:43	1911.	801.	45:41	45:45	74.	2	5.0 AVB
383.8447	45:49	2818.	536.	45:45	45:54	74.	2	5.0 ABB
383.8447	46:03	1967.	426.	45:55	46:07	74.	2	5.0 ABB
383.8447	46:12	3154.	624.	46:08	46:18	74.	2	5.0 ABV
383.8447	46:27	767860.	180017.	46:18	46:41	74.	2	5.0 AVV
383.8447	46:45	2686.	520.	46:41	46:53	74.	2	5.0 AVB
385.8417	44:33	1605320.	424824.	44:25	44:37	91.	2	5.0 ABV
385.8417	44:41	1858037.	462955.	44:37	44:57	91.	2	5.0 AVV
385.8417	45:01	3029.	789.	45:00	45:05	91.	2	5.0 AVV
385.8417	45:08	2629.	727.	45:05	45:10	91.	2	5.0 AVV
385.8417	45:12	3018.	863.	45:10	45:16	91.	2	5.0 AVV

385.8417	45:27	1792904.	461970.	45:16	45:42	91.	2	5.0 AVV
385.8417	45:44	1904.	794.	45:42	45:46	91.	2	5.0 AVB
385.8417	45:49	2072.	736.	45:46	45:52	91.	2	5.0 ABB
385.8417	45:56	1882.	587.	45:52	45:58	91.	2	5.0 ABV
385.8417	46:00	1769.	699.	45:58	46:01	91.	2	5.0 AVV
385.8417	46:07	7018.	1314.	46:01	46:11	91.	2	5.0 AVV
385.8417	46:12	1426.	467.	46:11	46:15	91.	2	5.0 AVB
385.8417	46:27	1518042.	354362.	46:15	46:42	91.	2	5.0 ABV
385.8417	46:50	4837.	1348.	46:45	46:52	91.	2	5.0 AVB
423.7555	50:41	257246.	53255.	50:29	50:57	53.	1	1.0 ABV
425.7524	50:41	246489.	50443.	50:34	50:56	58.	1	1.0 ABV
423.7555	49:29	190434.	36126.	49:20	49:45	53.	2	5.0 ABV
423.7555	50:41	257246.	53255.	50:29	50:57	53.	2	5.0 ABV
425.7524	49:29	192235.	38401.	49:14	49:42	58.	2	5.0 AVV
425.7524	50:41	246623.	50443.	50:34	50:57	58.	2	5.0 ABV
435.7951	49:29	13321.	1748.	49:20	49:35	71.	2	5.0 ABB
435.7951	49:48	3212.	602.	49:37	49:50	71.	2	5.0 ABV
435.7951	49:52	1410.	655.	49:50	49:54	71.	2	5.0 AVB
435.7951	50:40	1007699.	219510.	50:30	50:52	71.	2	5.0 ABV
435.7951	50:57	6381.	1199.	50:52	51:02	71.	2	5.0 AVB
435.7951	51:04	2149.	976.	51:02	51:06	71.	2	5.0 ABB
437.7921	49:28	14704.	2527.	49:22	49:44	39.	2	5.0 ABV
437.7921	50:40	956088.	199444.	50:28	50:56	39.	2	5.0 ABV
407.7614	49:39	80879.	16175.	49:31	49:46	41.	1	1.0 AVV
409.7583	49:39	79165.	15234.	49:28	49:53	34.	1	1.0 AVB
407.7614	48:44	7179.	1649.	48:39	48:51	41.	2	5.0 ABB
407.7614	48:58	67051.	13006.	48:51	49:13	41.	2	5.0 ABV
407.7614	49:24	5887.	968.	49:16	49:31	41.	2	5.0 AVV
407.7614	49:39	80879.	16175.	49:31	49:46	41.	2	5.0 AVV
407.7614	49:48	2958.	607.	49:46	49:57	41.	2	5.0 AVB
407.7614	50:36	1756.	225.	50:31	50:46	41.	2	5.0 ABB
407.7614	51:19	7048.	1219.	51:04	51:34	41.	2	5.0 AVV
409.7583	48:44	6000.	1443.	48:39	48:49	34.	2	5.0 ABB
409.7583	48:58	64632.	13102.	48:51	49:06	34.	2	5.0 ABB
409.7583	49:24	4825.	1051.	49:17	49:28	34.	2	5.0 ABV
409.7583	49:39	79165.	15234.	49:28	49:53	34.	2	5.0 AVB
409.7583	51:18	5968.	1259.	51:10	51:24	34.	2	5.0 ABB
417.8041	48:57	543154.	113813.	48:47	49:12	47.	2	5.0 ABV
417.8041	49:22	2907.	856.	49:19	49:27	47.	2	5.0 AVV
417.8041	49:39	3339.	634.	49:33	49:45	47.	2	5.0 ABB
417.8041	50:36	1840.	360.	50:28	50:41	47.	2	5.0 ABV
417.8041	51:03	2048.	281.	50:56	51:08	47.	2	5.0 ABB
417.8041	51:18	463737.	100115.	51:09	51:27	47.	2	5.0 ABV
417.8041	51:30	8652.	1427.	51:27	51:38	47.	2	5.0 AVB
417.8041	51:41	3211.	1324.	51:38	51:43	47.	2	5.0 ABB
419.8010	48:57	1274558.	263513.	48:49	49:12	66.	2	5.0 ABV
419.8010	49:18	3083.	1043.	49:16	49:20	66.	2	5.0 AVV
419.8010	49:25	7419.	1335.	49:20	49:28	66.	2	5.0 AVB
419.8010	49:39	9522.	1808.	49:28	49:45	66.	2	5.0 ABV
419.8010	49:47	3445.	713.	49:45	49:54	66.	2	5.0 AVB
419.8010	51:18	1059326.	225365.	51:09	51:32	66.	2	5.0 AVV
419.8010	51:36	5497.	1891.	51:32	51:38	66.	2	5.0 AVB
419.8010	51:40	3376.	1016.	51:38	51:44	66.	2	5.0 ABB
457.7148	54:42	2256529.	596104.	54:35	54:57	63.	1	1.0 ABV
459.7118	54:42	2520917.	646361.	54:35	54:57	67.	1	1.0 ABV
457.7148	54:42	2256529.	596104.	54:35	54:57	63.	2	5.0 ABV
457.7148	55:08	2784.	744.	55:06	55:13	63.	2	5.0 AVB
459.7118	54:42	2520917.	646361.	54:35	54:57	67.	2	5.0 ABV
459.7118	55:08	3557.	464.	55:02	55:14	67.	2	5.0 AVB
469.7545	54:28	5486.	673.	54:17	54:34	81.	2	5.0 ABV
469.7545	54:41	1409025.	368298.	54:34	54:56	81.	2	5.0 AVV
469.7545	54:58	10029.	1815.	54:56	55:08	81.	2	5.0 AVB
471.7514	54:41	1525013.	399731.	54:29	54:56	102.	2	5.0 ABV
471.7514	55:02	3409.	1162.	54:59	55:04	102.	2	5.0 AVV
471.7514	55:09	3621.	738.	55:04	55:11	102.	2	5.0 AVV
471.7514	55:15	2046.	701.	55:11	55:17	102.	2	5.0 AVB
441.7207	54:50	98606.	26089.	54:39	55:00	22.	1	1.0 AVB

443.7177	54:50	111486.	27612.	54:44	55:05	25.	1	1.0 AVV
441.7207	54:50	98767.	26089.	54:35	55:00	22.	2	5.0 AVB
443.7177	54:42	1497.	440.	54:35	54:44	25.	2	5.0 ABV
443.7177	54:50	111486.	27612.	54:44	55:05	25.	2	5.0 AVV
443.7177	55:08	596.	182.	55:05	55:10	25.	2	5.0 AVV
443.7177	55:12	983.	239.	55:10	55:20	25.	2	5.0 AVB
453.7603	54:49	1666115.	447759.	54:39	55:00	43.	2	5.0 ABV
453.7603	55:03	7685.	2374.	55:00	55:06	43.	2	5.0 AVV
453.7603	55:08	2522.	796.	55:06	55:10	43.	2	5.0 AVV
453.7603	55:14	4365.	880.	55:10	55:17	43.	2	5.0 AVV
455.7573	54:49	1887293.	502283.	54:37	55:02	38.	2	5.0 ABV
455.7573	55:04	10762.	1656.	55:02	55:11	38.	2	5.0 AVV
455.7573	55:13	1221.	478.	55:11	55:15	38.	2	5.0 AVV
455.7573	55:19	2658.	613.	55:15	55:22	38.	2	5.0 AVB

TestAmerica Canton

Sample ID: PAD-3

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 009	**Work Order #....:**	M811W1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	12
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.3 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.1	0.013	pg/g
1,2,3,7,8-PeCDD	**0.14**	**Q B J**	**5.5**	**0.020**	**pg/g**
1,2,3,4,7,8-HxCDD	ND		5.5	0.028	pg/g
1,2,3,6,7,8-HxCDD	ND		5.5	0.031	pg/g
1,2,3,7,8,9-HxCDD	**0.18**	**Q J**	**5.5**	**0.027**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**7.3**		**5.5**	**0.065**	**pg/g**
OCDD	**500**	**B**	**11**	**0.080**	**pg/g**
2,3,7,8-TCDF	**0.070**	**J**	**1.1**	**0.020**	**pg/g**
1,2,3,7,8-PeCDF	ND		5.5	0.022	pg/g
2,3,4,7,8-PeCDF	**0.088**	**Q J**	**5.5**	**0.019**	**pg/g**
1,2,3,4,7,8-HxCDF	**0.25**	**B J**	**5.5**	**0.026**	**pg/g**
1,2,3,6,7,8-HxCDF	ND		5.5	0.023	pg/g
2,3,4,6,7,8-HxCDF	**0.077**	**Q J**	**5.5**	**0.022**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		5.5	0.029	pg/g
1,2,3,4,6,7,8-HpCDF	**0.34**	**B J**	**5.5**	**0.024**	**pg/g**
1,2,3,4,7,8,9-HpCDF	ND		5.5	0.028	pg/g
OCDF	**0.55**	**Q B J**	**11**	**0.031**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	66	40 - 135
13C-1,2,3,7,8-PeCDD	84	40 - 135
13C-1,2,3,4,7,8-HxCDD	71	40 - 135
13C-1,2,3,6,7,8-HxCDD	71	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	81	40 - 135
13C-OCDD	74	40 - 135
13C-2,3,7,8-TCDF	60	40 - 135
13C-1,2,3,7,8-PeCDF	76	40 - 135
13C-2,3,4,7,8-PeCDF	84	40 - 135
13C-1,2,3,4,7,8-HxCDF	56	40 - 135
13C-1,2,3,6,7,8-HxCDF	59	40 - 135
13C-2,3,4,6,7,8-HxCDF	68	40 - 135
13C-1,2,3,7,8,9-HxCDF	63	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	56	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	63	40 - 135
13C-OCDF	58	40 - 135

TestAmerica Canton

Sample ID: PAD-3

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 009	**Work Order #....:**	M811W1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	12
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.3 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811W1AC	Prep Batch	6217014	Lot No	H6G290408-009
Data File	/20160817s3/d1tm811w.d	Prep Date	08/04/16	SDG No	
Analysis ID	180622	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/18/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	05:21	Initial Wt/Vol	10.3 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD				1.144				ND		0.0110
Total TCDD				1.144				ND		0.0110
2,3,7,8-TCDF	30:44	2185	440	1.066		0.630287		0.061193	J	0.0175
Total TCDF		5544	1023	1.066		2.229513		0.216458	QJ	0.0175
1,2,3,7,8-PeCDD	41:26	2650	583	1.060		1.246576		0.121027	QBJ	0.0173
Total PeCDD		2141	287	1.060		2.253715		0.218807	QJB	0.0173
1,2,3,7,8-PeCDF				1.179				ND		0.0194
2,3,4,7,8-PeCDF	40:56	2996	723	1.115		0.796675		0.077347	QJ	0.0165
Total PeCDF		10446	1841	1.147		3.608476		0.350338	QJ	0.0178
1,2,3,4,7,8-HxCDD				1.131				ND		0.0245
1,2,3,6,7,8-HxCDD				1.116				ND		0.0274
1,2,3,7,8,9-HxCDD	46:09	3751	964	1.205		1.671122		0.162245	QJ	0.0241
Total HxCDD				1.151		1.671122		0.162245	QJ	0.0253
1,2,3,4,7,8-HxCDF	44:35	6298	1196	1.350		2.302806		0.223573	BJ	0.0224
1,2,3,6,7,8-HxCDF				1.242				ND		0.0198
2,3,4,6,7,8-HxCDF	45:29	2265	568	1.241		0.692090		0.067193	QJ	0.0194
1,2,3,7,8,9-HxCDF				1.262				ND		0.0255
Total HxCDF		9788	1517	1.274		6.271496		0.608883	QJB	0.0215
1,2,3,4,6,7,8-HpCDD	50:41	125448	23319	1.114		66.406979		6.447280		0.0568
Total HpCDD		145921	26420	1.114		143.651518		13.946749		0.0568
1,2,3,4,6,7,8-HpCDF	48:58	7386	1378	1.461		3.095464		0.300530	BJ	0.0215
1,2,3,4,7,8,9-HpCDF				1.370				ND		0.0246
Total HpCDF		6637	1049	1.416		6.115948		0.593781	QJB	0.0230
OCDD	54:41	6852729	1739485	1.203		4507.82232		437.652653	B	0.0704
OCDF	54:50	8977	1994	1.134		5.011953		0.486597	QBJ	0.0269
13C-2,3,7,8-TCDD	32:49	2155382	212176	1.093	1000	657.581511	65.76	63.842865		0.0981
13C-2,3,7,8-TCDF	30:42	3253299	325970	1.794	1000	604.335823	60.43	58.673381		0.0575
13C-1,2,3,7,8-PeCDD	41:23	2005699	489028	0.800	1000	835.709377	83.57	81.136833		0.0680
13C-1,2,3,7,8-PeCDF	39:44	3104629	657400	1.356	1000	762.917375	76.29	74.069648		0.0855
13C-2,3,4,7,8-PeCDF	40:53	3374074	819660	1.343	1000	837.420675	83.74	81.302978		0.0863
13C-1,2,3,4,7,8-HxCDD	45:38	1876793	489744	0.916	1000	713.326302	71.33	69.254981		0.0850
13C-1,2,3,6,7,8-HxCDD	45:45	1848279	444844	0.906	1000	709.912354	70.99	68.923530		0.0859
13C-1,2,3,4,7,8-HxCDF	44:34	2025217	521098	1.268	1000	555.804833	55.58	53.961634		0.0471
13C-1,2,3,6,7,8-HxCDF	44:42	2533218	642612	1.506	1000	585.705010	58.57	56.864564		0.0397
13C-2,3,4,6,7,8-HxCDF	45:27	2637412	654921	1.344	1000	683.119506	68.31	66.322282		0.0445
13C-1,2,3,7,8,9-HxCDF	46:26	2185132	490593	1.202	1000	632.771058	63.28	61.434083		0.0497
13C-1,2,3,4,6,7,8-HpCDD	50:40	1696187	364720	0.728	1000	810.588580	81.06	78.697920		0.0248
13C-1,2,3,4,6,7,8-HpCDF	48:57	1633160	339966	1.008	1000	563.955125	56.40	54.752925		0.0404
13C-1,2,3,4,7,8,9-HpCDF	51:16	1471112	316909	0.811	1000	631.611650	63.16	61.321519		0.0502
13C-OCDD	54:40	2527341	676559	0.597	2000	1472.70850	73.64	142.981408		0.0541
13C-1,2,3,4-TCDD	32:17	6000395	607102	1.000	2000	2000.00000	100.00	194.174757		0.107
13C-1,2,3,7,8,9-HxCDD	46:09	5745556	1396249	1.000	2000	2000.00000	100.00	194.174757		0.0779
13C-OCDF	54:49	3157977	828302	0.946	2000	1162.03896	58.10	112.819316		0.0254

Kfm 8/24/16

KM 8-24-16

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811W1AC	Prep Batch	6217014	Lot No	H6G290408-009
Data File	/20160817s3/d1tm811w.d	Prep Date	08/04/16	SDG No	
Analysis ID	180622	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 05:21	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.3 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	25	38	10	15	0.67	/	
	Unidentified	29:29	00:00	0	491	584	86	102	0.84	ABB/ABB	T
	2,3,7,8-TCDF	30:44	30:45	-1	908	1277	170	270	0.71		M
	Unidentified	30:53	00:00	0	1099	1189	227	273	0.92 *	AVB/AVB	R
	Unidentified	31:58	00:00	0	604	1577	100	235	0.38 *	ABB/ABB	RT
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	145	178	58	71	0.82	/	
	13C-2,3,7,8-TCDF	30:42	30:41	1	1446365	1806934	147359	178611	0.80	AVV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	10	18	4	7	0.57 *	/	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	213	123	85	49	1.73 *	/	
	13C-1,2,3,4-TCDD	32:17	32:18	-1	2679868	3320527	274843	332259	0.81	AVV/AVV	
	13C-2,3,7,8-TCDD	32:49	32:50	-1	963604	1191778	95601	116575	0.81	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	68	88	27	35	0.77 *	/	
	Unidentified	39:19	00:00	0	1720	1707	341	295	1.01 *	ABB/ABB	R
	Unidentified	40:15	00:00	0	1208	1457	203	197	0.83 *	ABB/ABB	R
	2,3,4,7,8-PeCDF	40:56	40:53	3	1501	1495	366	357	1.00 *	MBB/ABB	RTM
	Unidentified	41:07	00:00	0	2003	2351	368	437	0.85 *	ABB/ABB	R
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	268	95	107	38	2.82 *	/	
	13C-1,2,3,7,8-PeCDF	39:44	39:43	1	1898865	1205764	399450	257950	1.57	ABV/ABV	
	Unidentified	40:00	00:00	0	14708	6195	2063	1714	2.37 *	AVV/AVV	R
	Unidentified	40:13	00:00	0	22186	10941	4571	2654	2.03 *	AVB/AVV	R
	13C-2,3,4,7,8-PeCDF	40:53	40:52	1	2051339	1322735	497191	322469	1.55	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	50	43	20	17	1.18 *	/	
	Unidentified	40:52	00:00	0	1384	757	171	116	1.83 *	ABV/ABB	R
	1,2,3,7,8-PeCDD	41:26	41:23	3	1219	1431	274	309	0.85 *	ABB/ABB	RM
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	120	50	48	20	2.40 *	/	
	13C-1,2,3,7,8-PeCDD	41:23	41:22	1	1233160	772539	294118	194910	1.60	ABV/ABV	
	Unidentified	42:01	00:00	0	7012	1815	1288	491	3.86 *	AVV/AVB	R
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	58	105	23	42	0.55 *	/	
	1,2,3,4,7,8-HxCDF	44:35	44:33	2	3379	2919	647	549	1.16	ABV/MBV	
	Unidentified	44:45	00:00	0	1095	3591	228	344	0.30 *	AVB/AVV	R
	Unidentified	45:20	00:00	0	565	1215	121	391	0.47 *	ABB/AVV	R
	2,3,4,6,7,8-HxCDF	45:29	45:27	2	863	1402	180	388	0.62 *	MBB/MBB	R
	Unidentified	46:36	00:00	0	834	2488	182	251	0.34 *	ABB/AVB	R
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811W1AC	Prep Batch	6217014	Lot No	H6G290408-009
Data File	/20160817s3/d1tm811w.d	Prep Date	08/04/16	SDG No	
Analysis ID	180622	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 05:21	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.3 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	180	250	72	100	0.72 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:34	44:32	2	685392	1339825	177663	343435	0.51	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:42	44:40	2	861332	1671886	220684	421928	0.52	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:27	45:26	1	911381	1726031	230643	424278	0.53	ABV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:26	46:26	0	742830	1442302	167249	323344	0.52	ABV/AVV	
	Unidentified	46:44	00:00	0	2869	10558	795	2177	0.27 *	AVV/AVB	RT
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	78	63	31	25	1.24	/	
	1,2,3,7,8,9-HxCDD	46:09	46:10	-1	1652	2099	382	582	0.79 *		RM
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	360	200	144	80	1.80 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:38	45:37	1	1035920	840873	269255	220489	1.23	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:45	45:44	1	1042752	805527	251083	193761	1.29	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:09	46:09	0	3217105	2528451	776276	619973	1.27	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	75	35	30	14	2.14 *	/	
	1,2,3,4,6,7,8-HpCDF	48:58	48:58	0	4034	3352	784	594	1.20	ABB/ABB	
	Unidentified	49:39	00:00	0	3957	2680	457	592	1.48 *	ABV/ABB	R
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	85	208	34	83	0.41	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:57	48:57	0	490411	1142749	99237	240729	0.43	ABV/ABV	
	Unidentified	49:23	00:00	0	1907	8442	690	1313	0.23 *	ABV/AVV	R
	Unidentified	49:38	00:00	0	4760	16000	984	1994	0.30 *	ABV/AVB	R
	13C-1,2,3,4,7,8,9-HpCDF	51:16	51:17	-1	453856	1017256	94019	222890	0.45	AVB/ABV	
	Unidentified	51:41	00:00	0	4444	6639	1002	1345	0.67 *	AVB/AVB	RT
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	90	148	36	59	0.61 *	/	
	Unidentified	49:29	00:00	0	72641	73280	13431	12989	0.99	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:41	50:42	-1	64624	60824	12172	11147	1.06	ABV/ABV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	78	53	31	21	1.48 *	/	
	Unidentified	49:30	00:00	0	17137	10226	2792	2622	1.68 *	ABV/ABV	R
	13C-1,2,3,4,6,7,8-HpCDD	50:40	50:41	-1	878644	817543	191914	172806	1.07	ABV/ABV	
	Unidentified	50:55	00:00	0	4341	3417	1250	1041	1.27 *	AVB/AVV	RT
	Unidentified	51:04	00:00	0	1925	1919	575	564	1.00	ABB/AVB	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	75	55	30	22	1.36 *	/	
	Unidentified	54:41	00:00	0	2177	2562	583	685	0.85	ABV/ABV	
	OCDF	54:50	54:50	0	4693	4284	956	1038	1.10 *	AVB/AVV	R
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	133	40	53	16	3.31 *	/	
	13C-OCDF	54:49	54:49	0	1513067	1644910	398902	429400	0.92	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811W1AC	Prep Batch	6217014	Lot No	H6G290408-009
Data File	/20160817s3/d1tm811w.d	Prep Date	08/04/16	SDG No	
Analysis ID	180622	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 05:21	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.3 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao

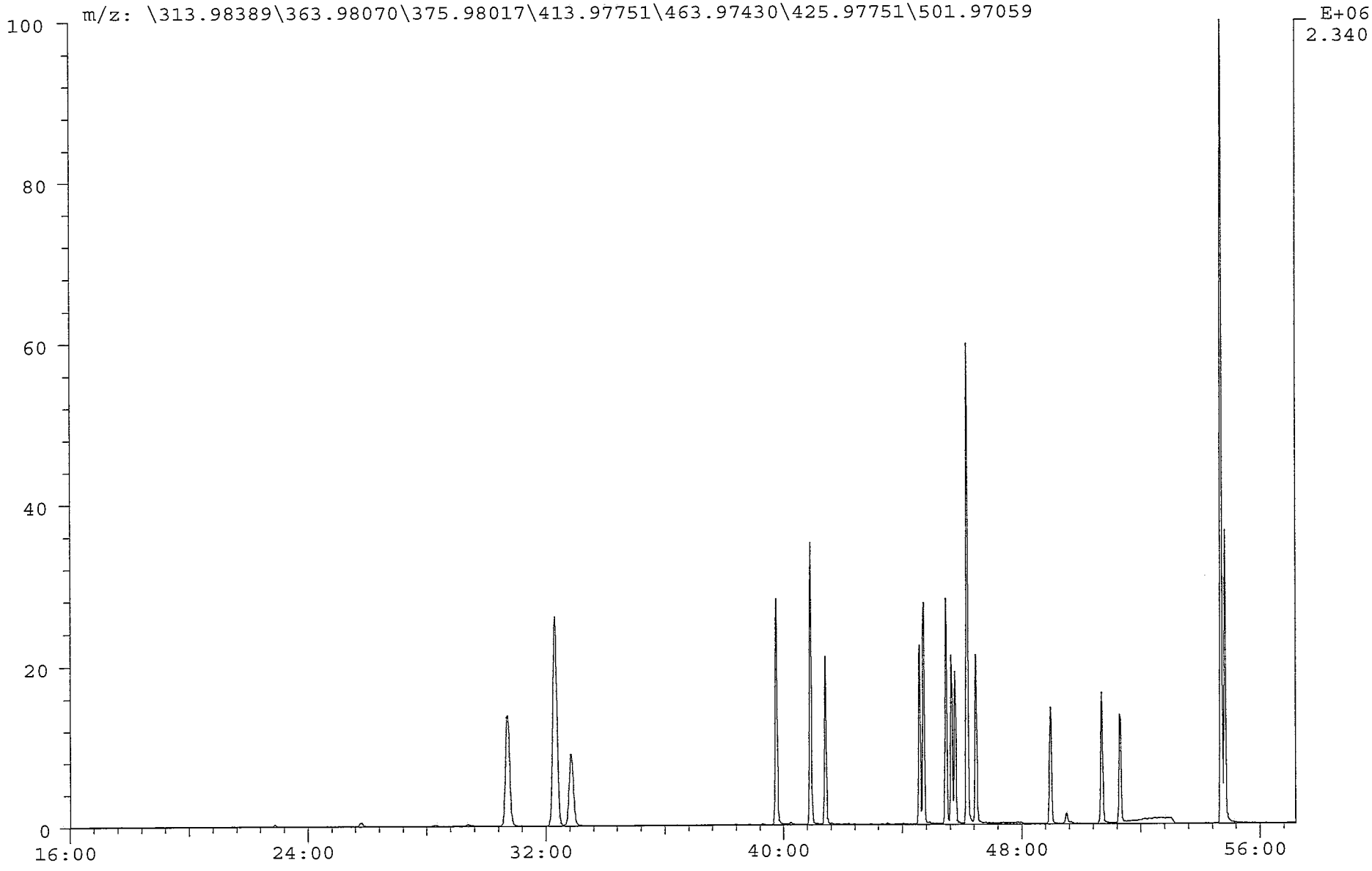
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Unidentified	55:07	00:00	0	2804	5822	929	1647	0.48 *	AVV/AVV	R
	Unidentified	55:11	00:00	0	2135	6151	765	1047	0.35 *	AVV/AVB	R
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	143	153	57	61	0.93	/	
	OCDD	54:41	54:42	-1	3224427	3628302	829566	909919	0.89	ABV/ABV	
	Unidentified	55:04	00:00	0	5489	4700	1078	768	1.17 *	AVV/AVB	R
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	138	95	55	38	1.45 *	/	
	13C-OCDD	54:40	54:41	-1	1213513	1313828	322235	354324	0.92	ABV/ABV	
	Unidentified	55:00	00:00	0	6011	1535	888	424	3.92 *	AVB/AVB	RT

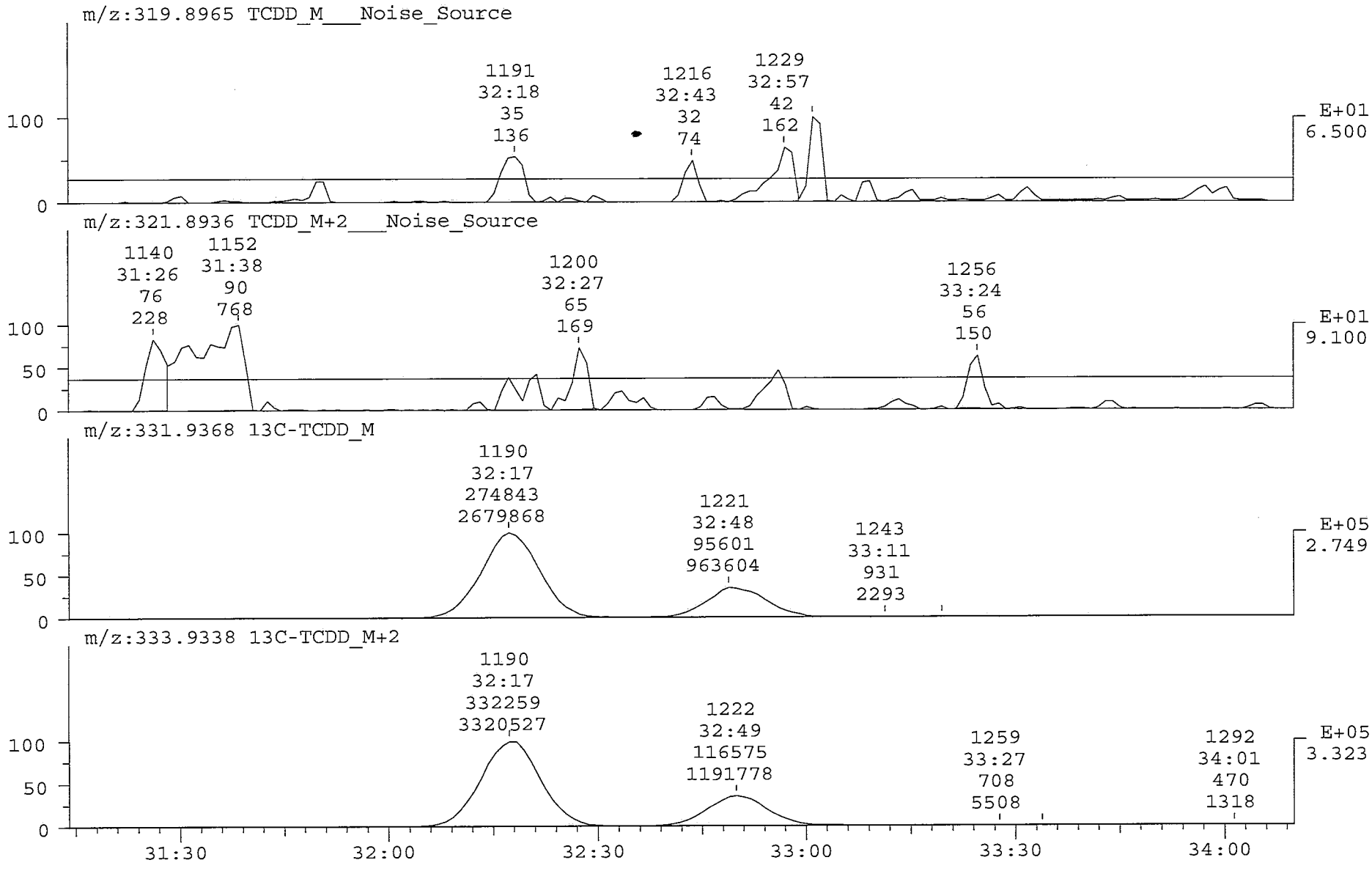
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. k 8/18/16
calc KM 8-24-16
QC Rev k 8/24/16

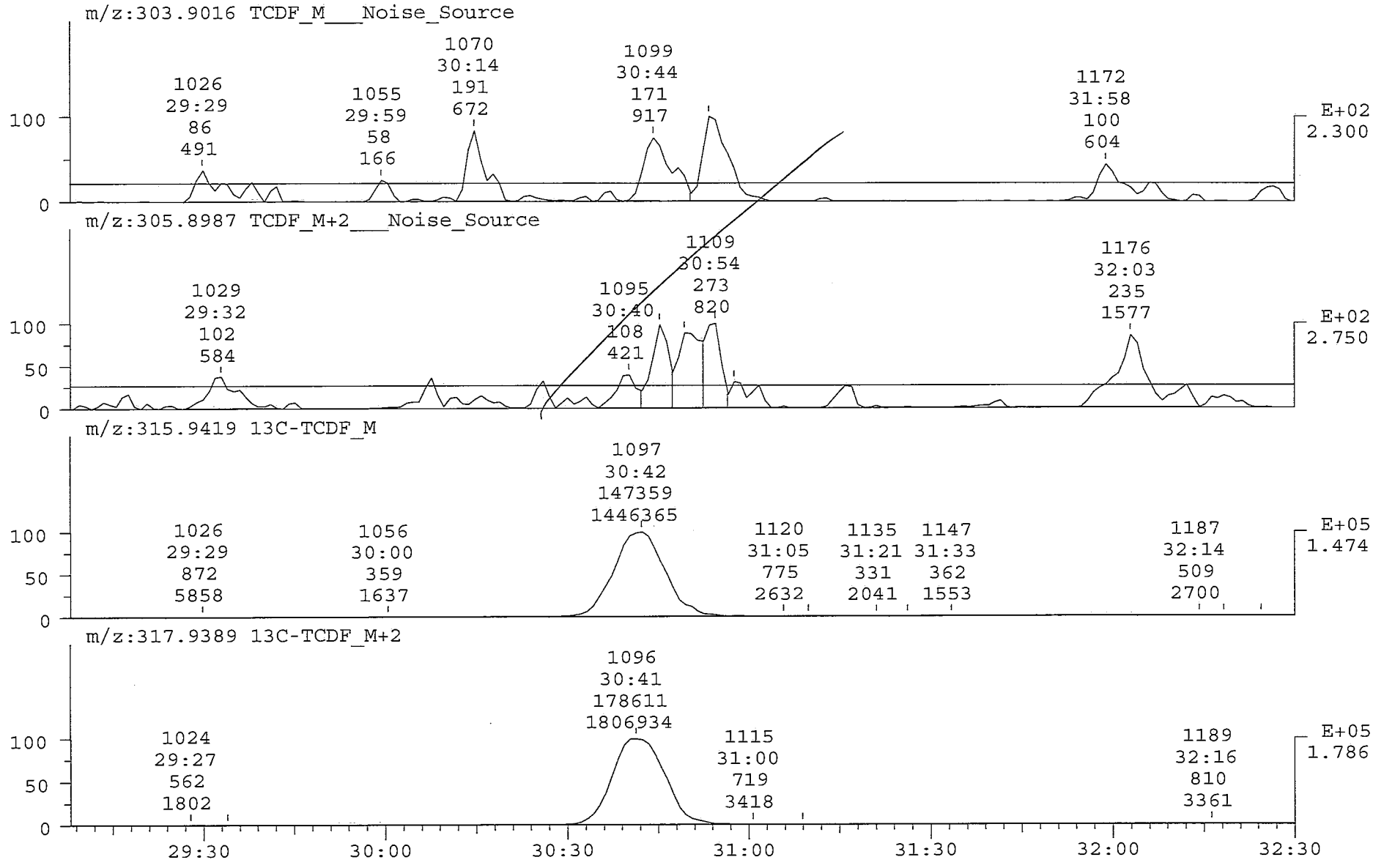
CHRO: d1tm811w 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 233 > 2629 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



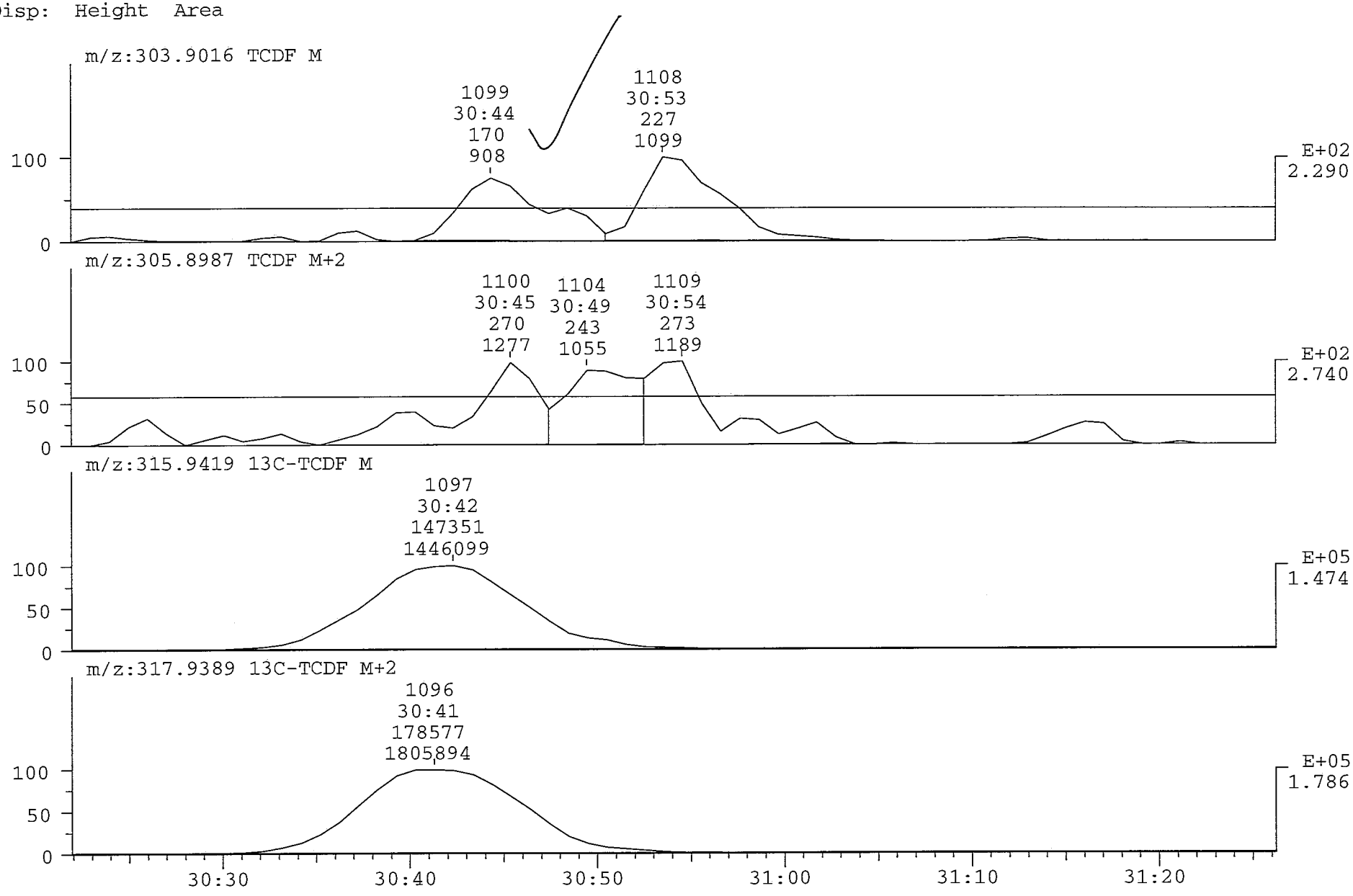
CHRO: d1tm811w 18-Aug-16 Elapse: 32:41 1214
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1128 > 1300 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



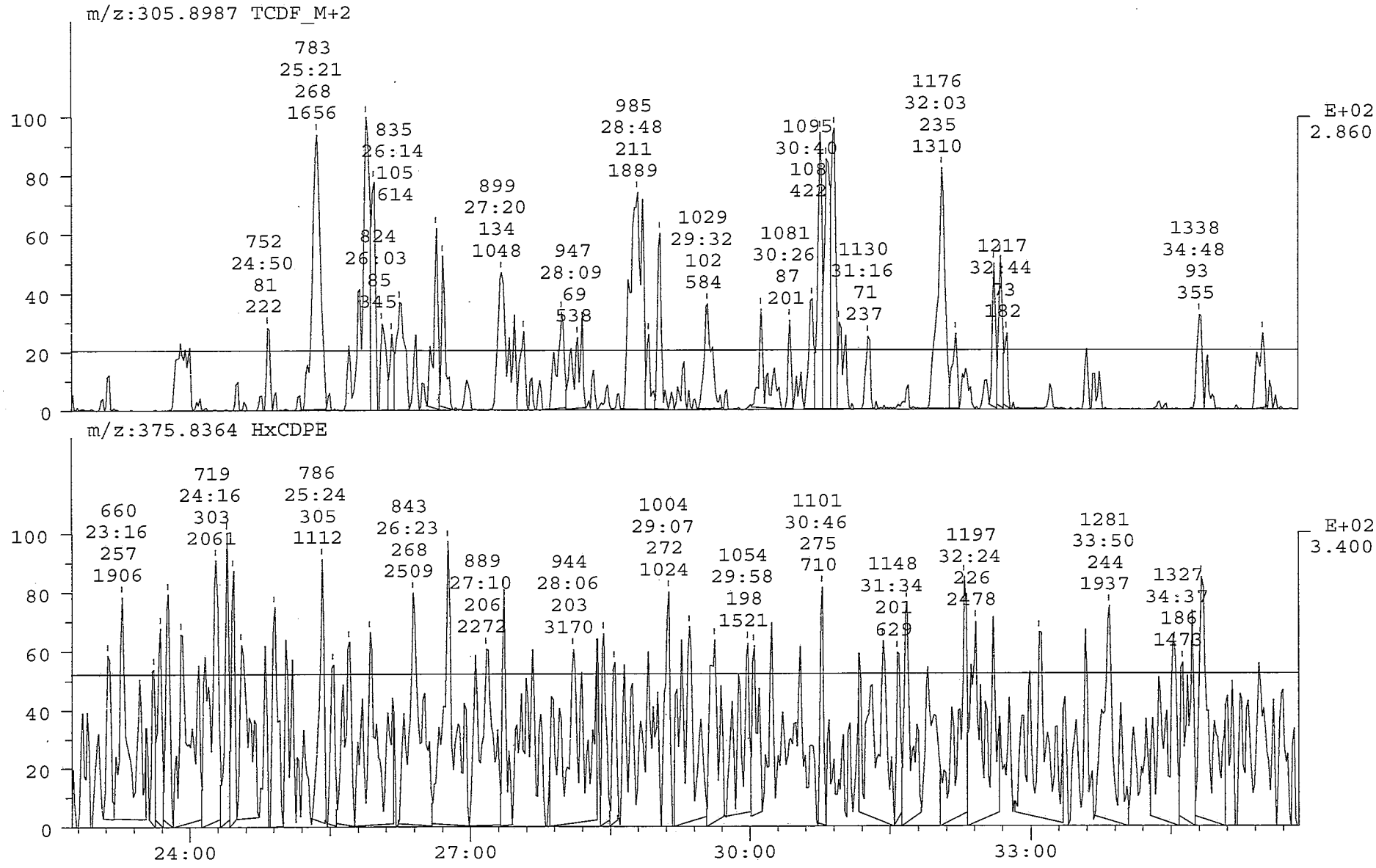
CHRO: d1tm811w 18-Aug-16 Elapse: 30:46 1101
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1005 > 1202 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



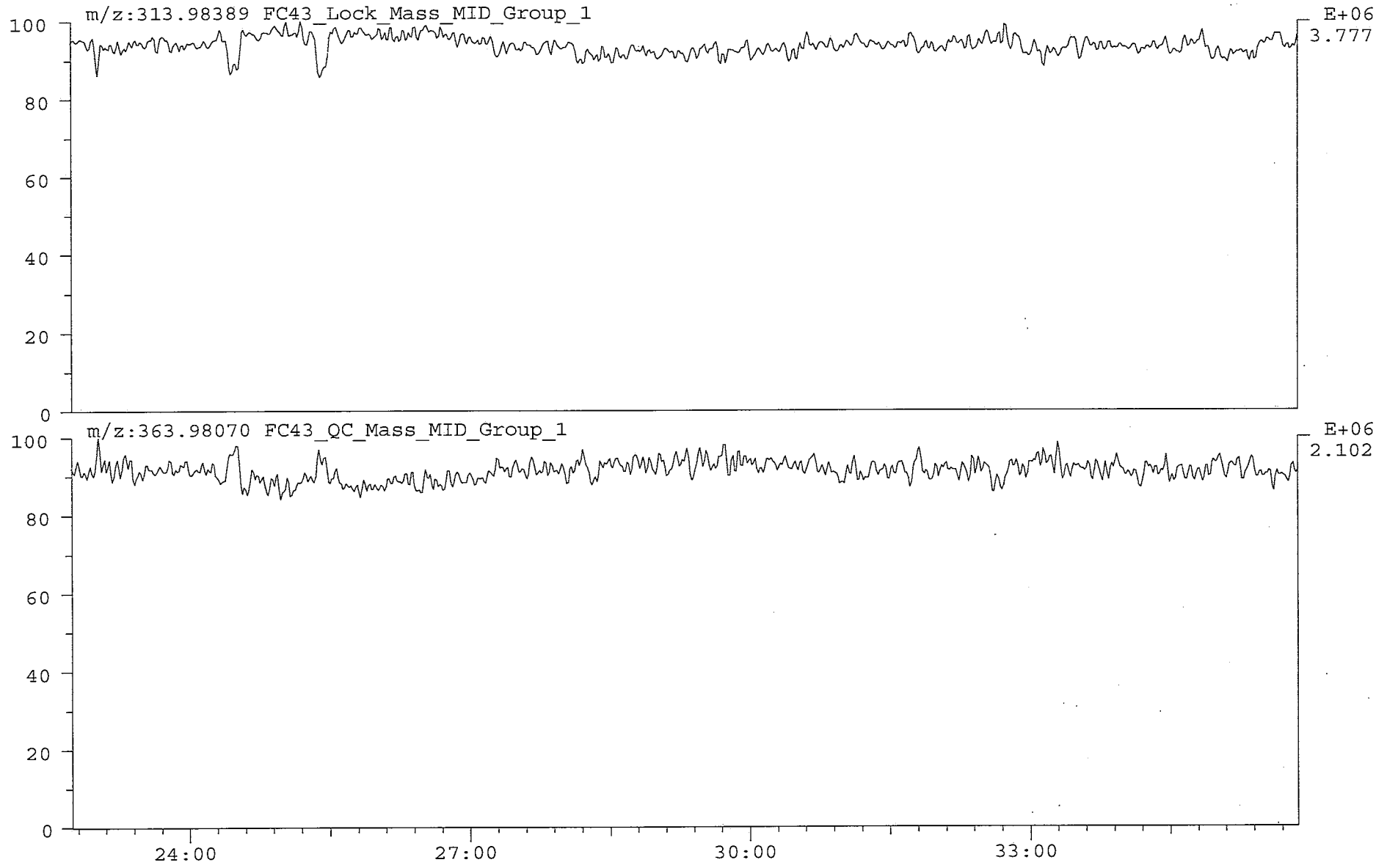
CHRO: d1tm811w 18-Aug-16 Elapse: 39:44 1620
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1077 > 1140 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



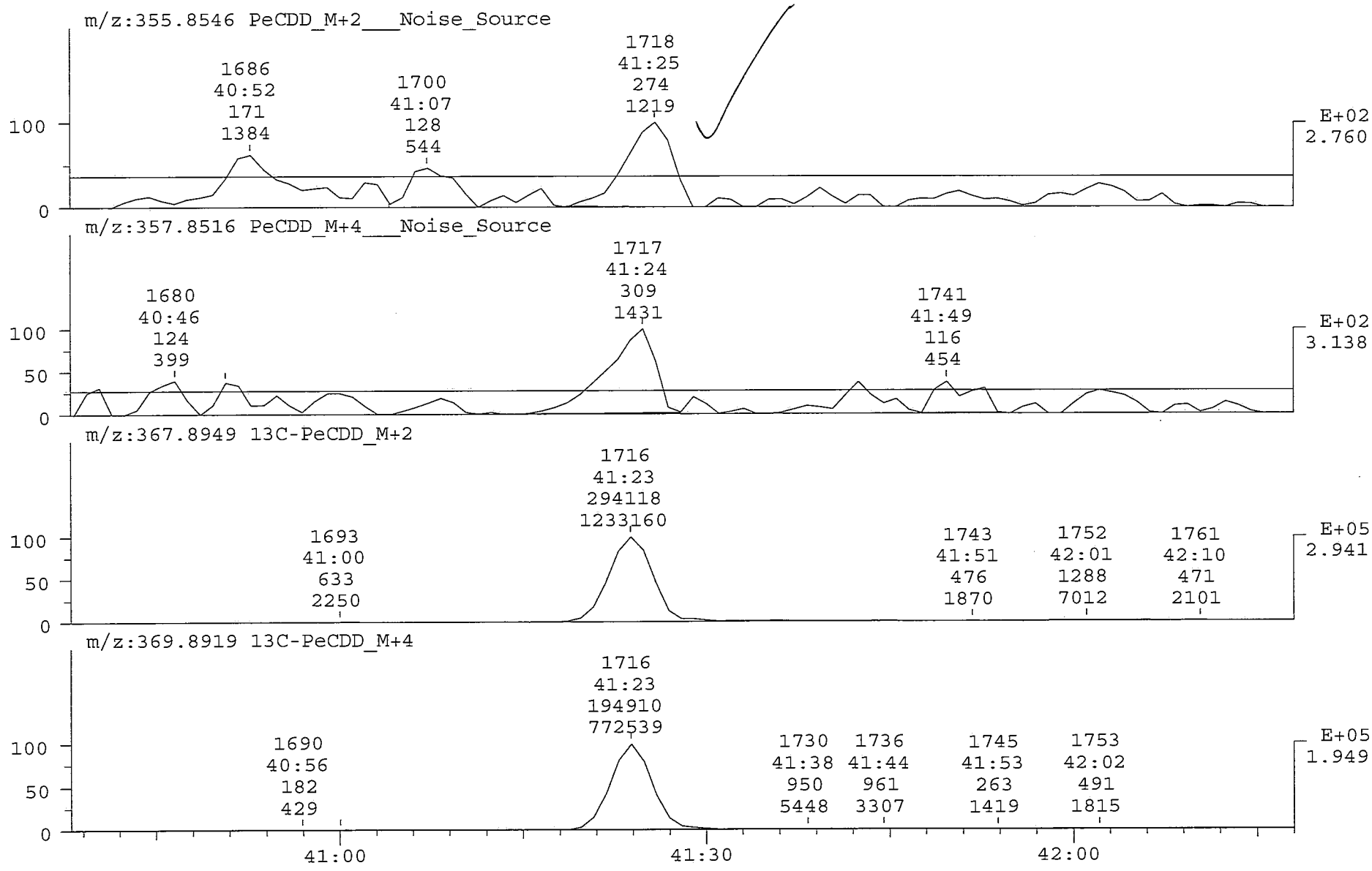
CHRO: d1tm811w 18-Aug-16 Elapse: 30:46 1101
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 628 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



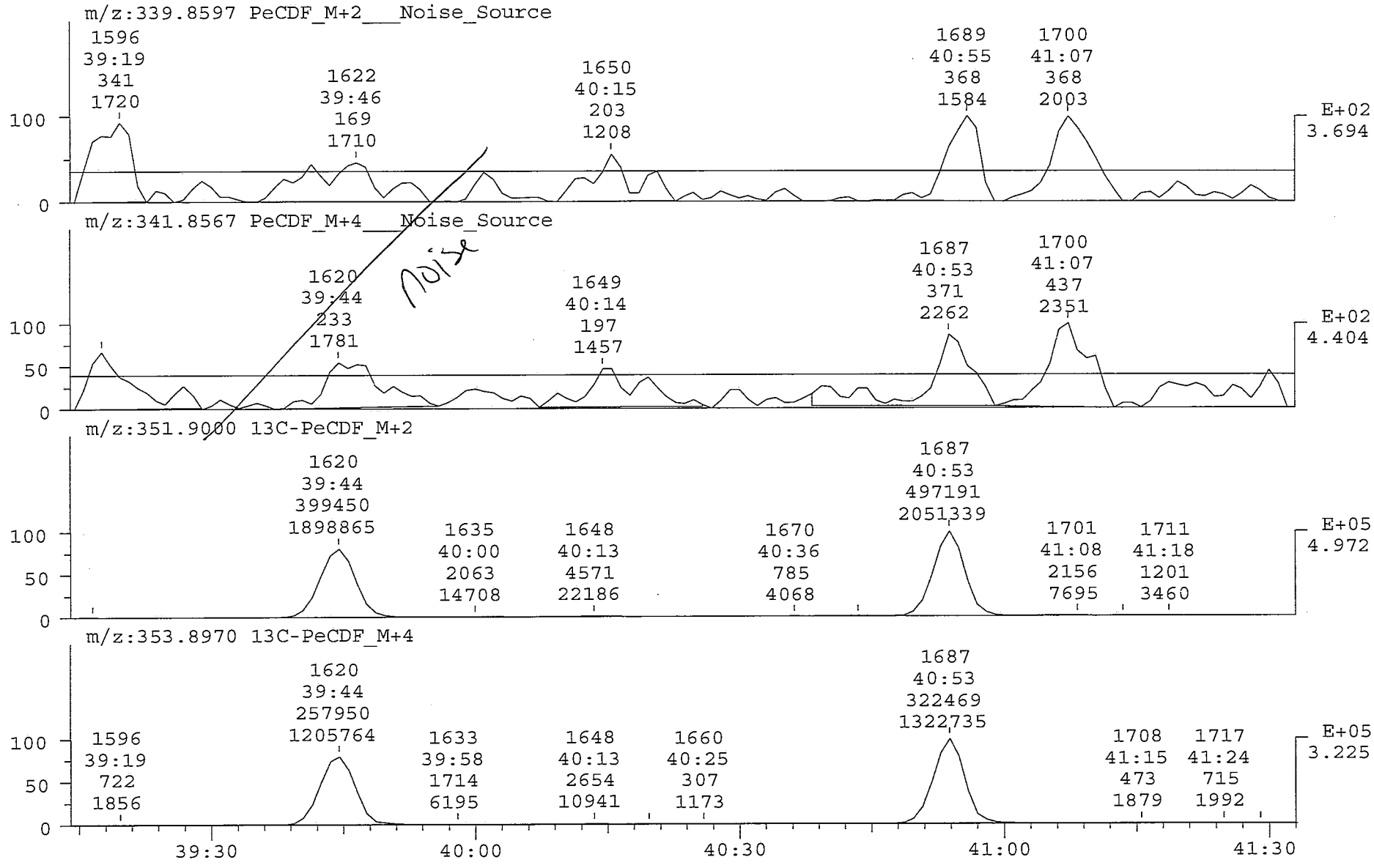
CHRO: d1tm811w 18-Aug-16 Elapse: 30:46 1101
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 628 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



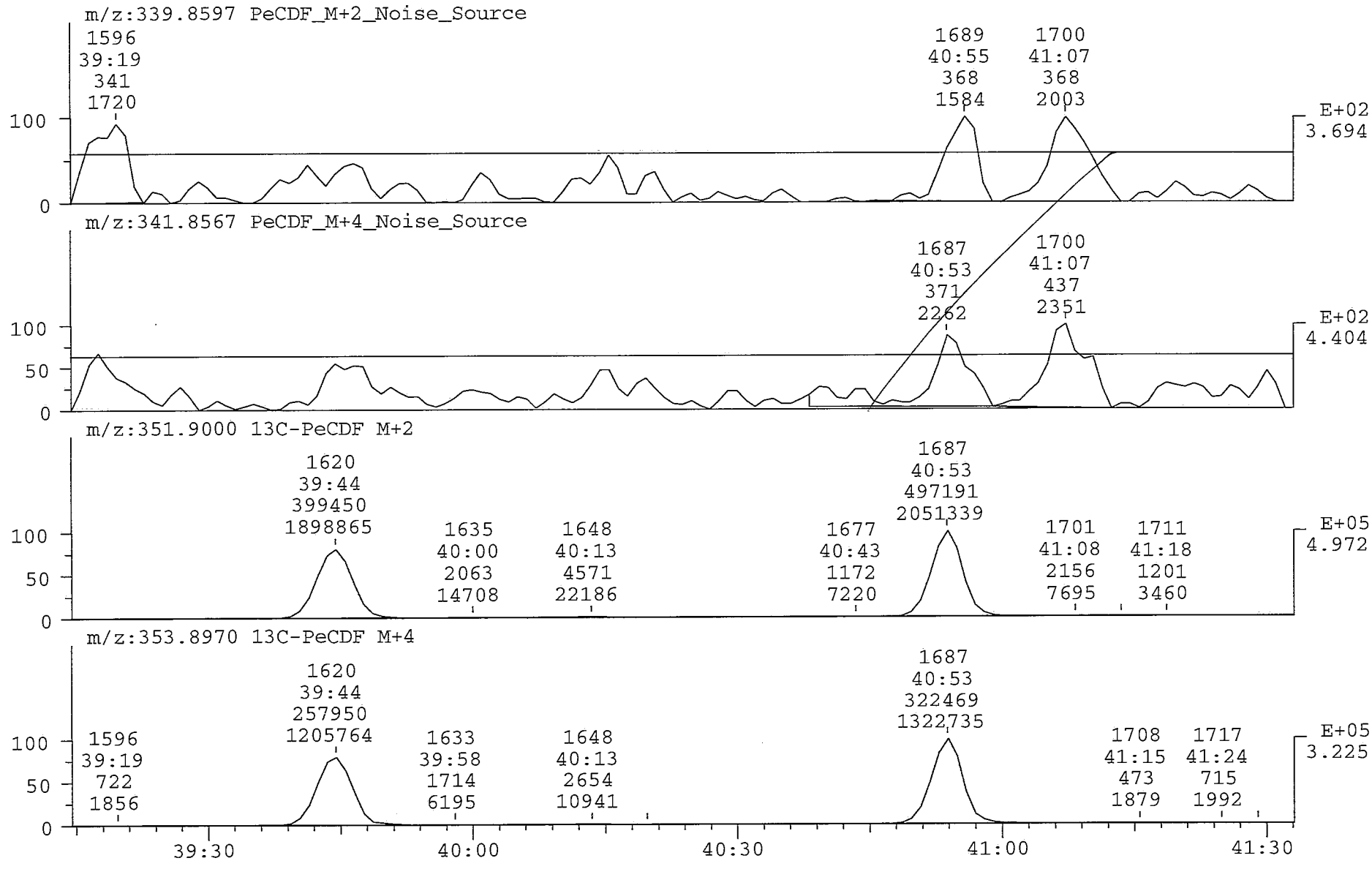
CHRO: d1tm811w 18-Aug-16 Elapse: 41:24 1717
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1672 > 1768 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



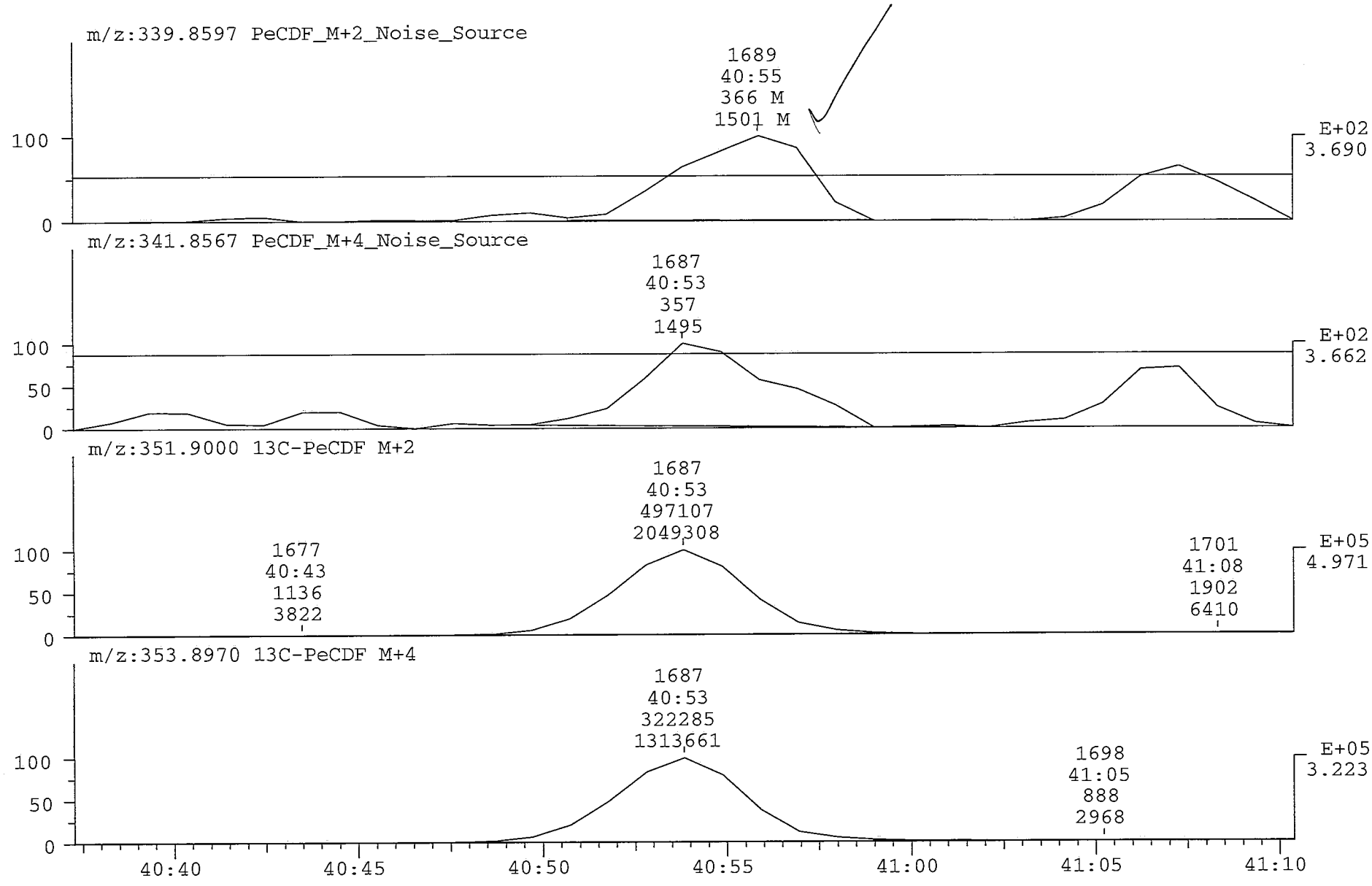
CHRO: d1tm811w 18-Aug-16 Elapse: 40:22 1657
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1591 > 1725 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1tm811w 18-Aug-16 Elapse: 39:44 1620
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1591 > 1725 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



CHRO: d1tm811w 18-Aug-16 Elapse: 39:44 1620
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1671 > 1703 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



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CHRO:  d1tm811w                                18-Aug-16  Elapse:  40:22      1657
Samp:  WO=m811w1ac Meth=9Ao Dil=1                         Start :  05:21:02   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.3g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1792          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```
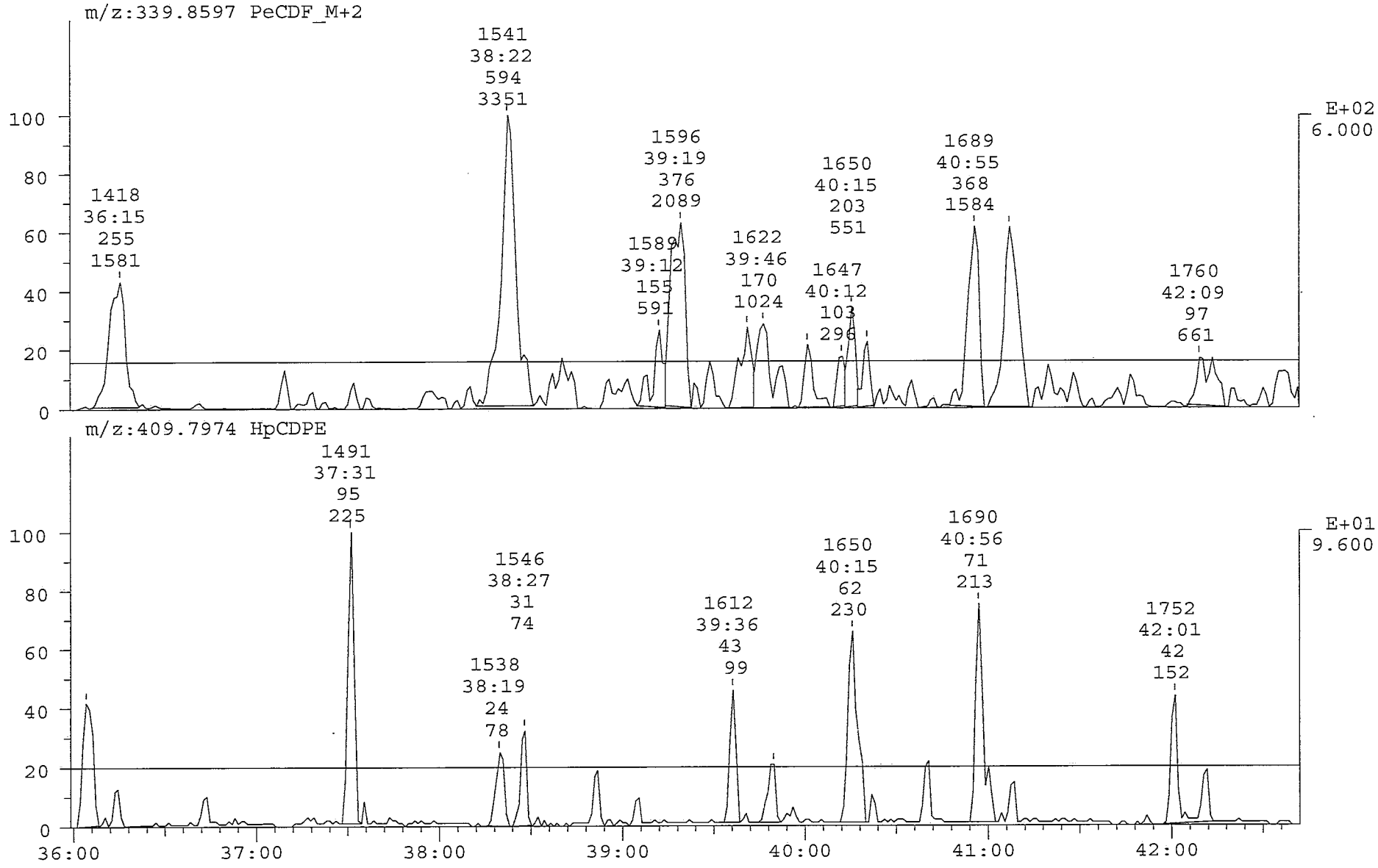
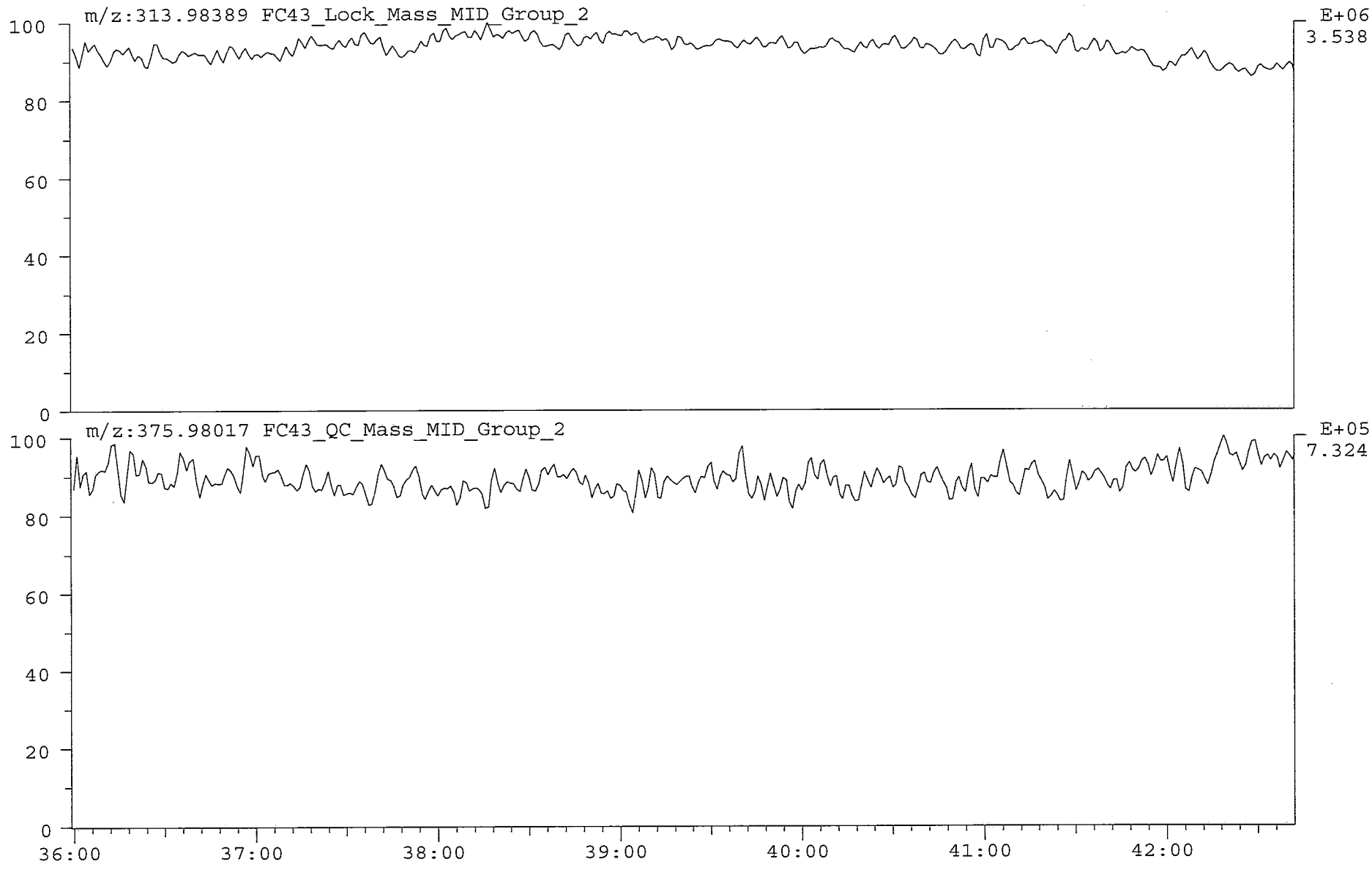
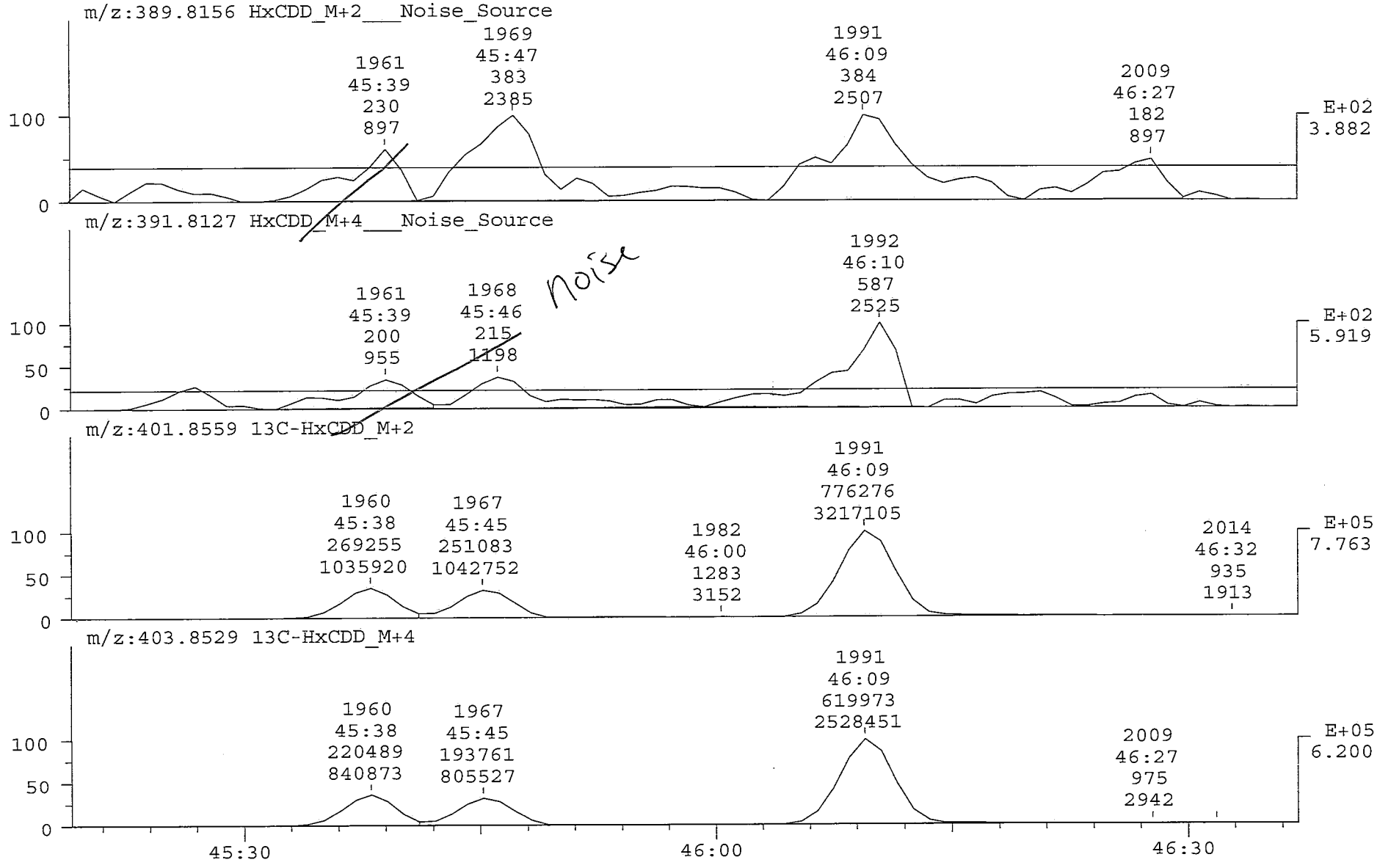



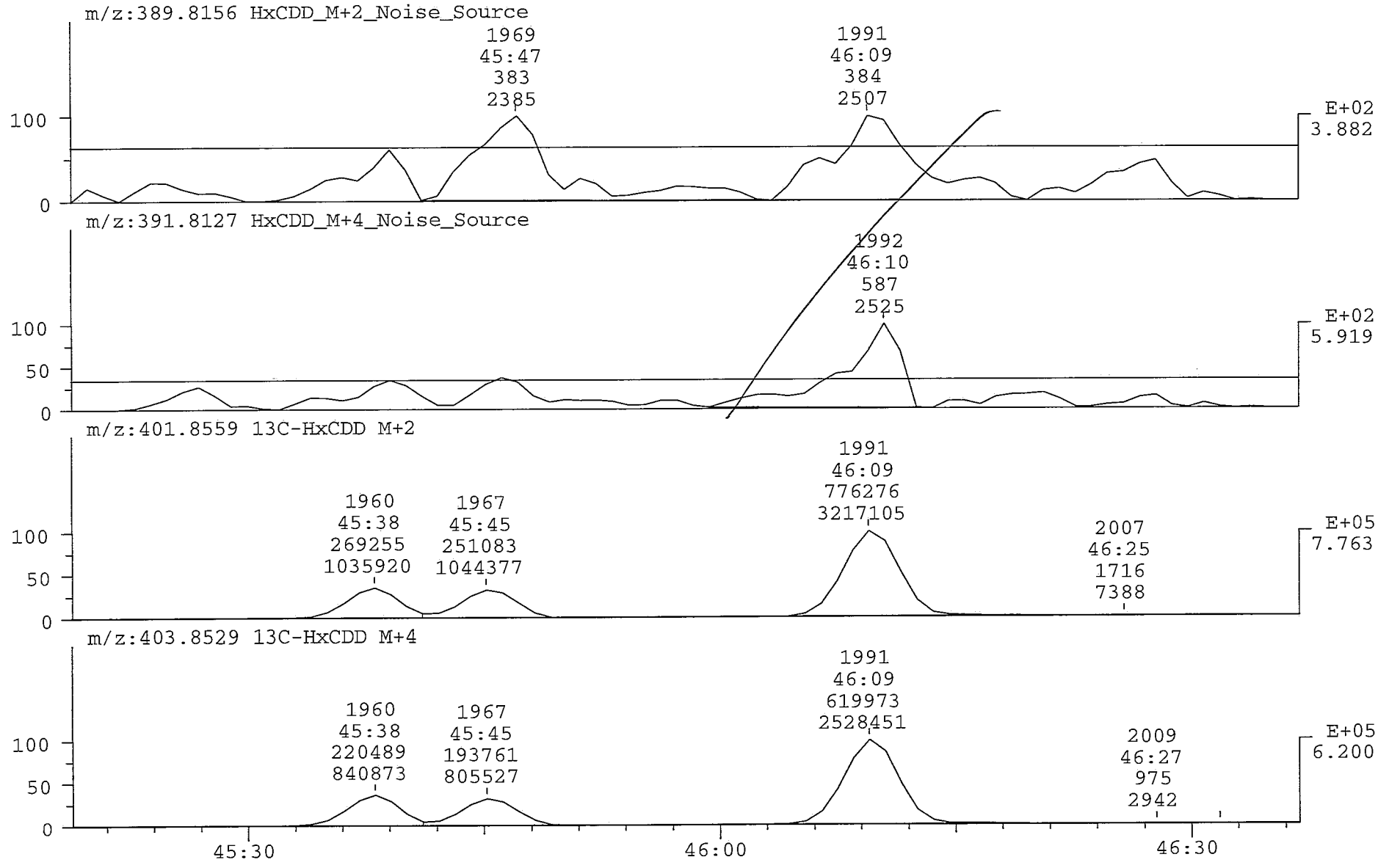
CHRO: d1tm811w 18-Aug-16 Elapse: 40:22 1657
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1792 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



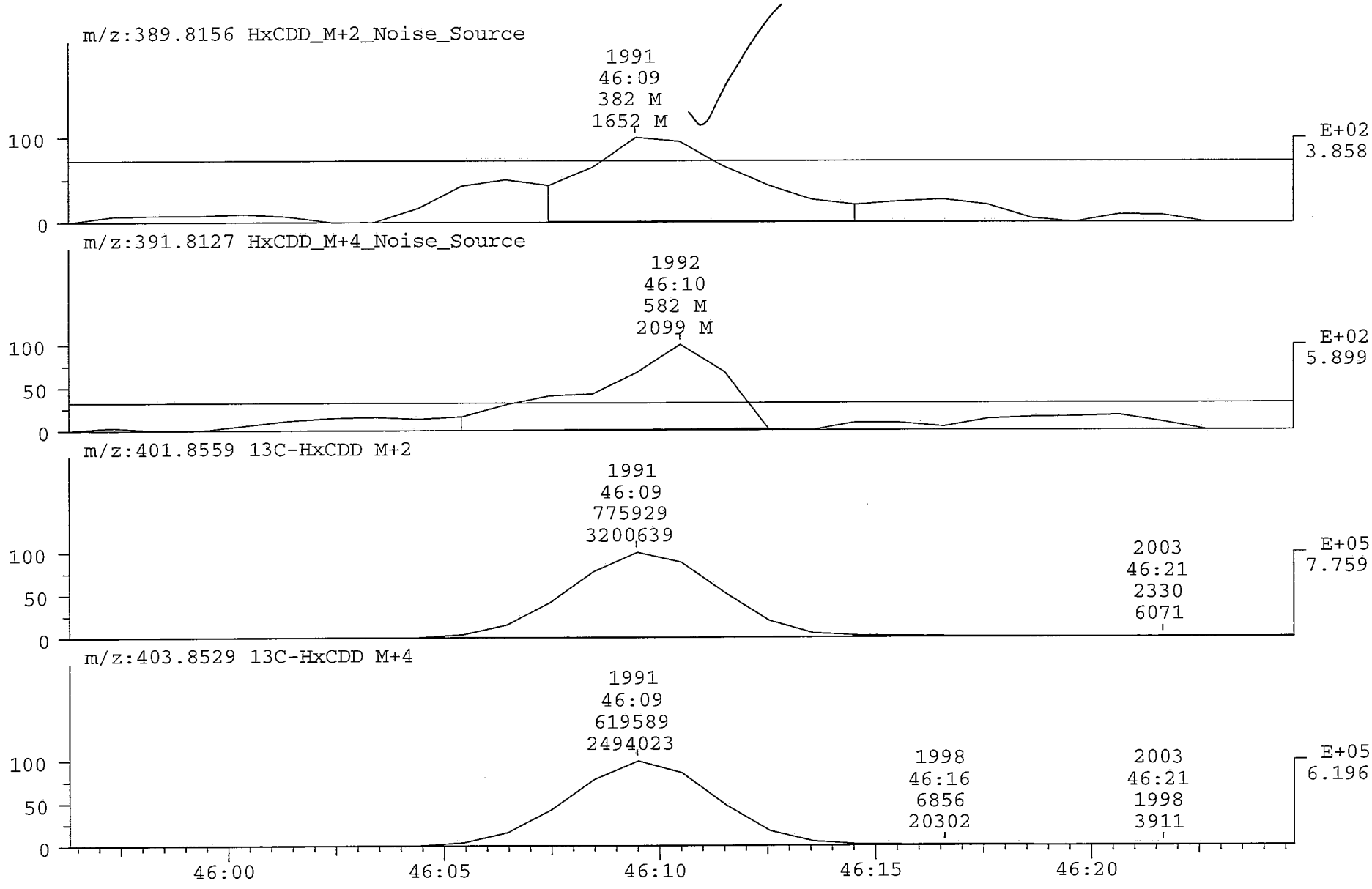
CHRO: d1tm811w 18-Aug-16 Elapse: 45:58 1980
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1941 > 2018 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



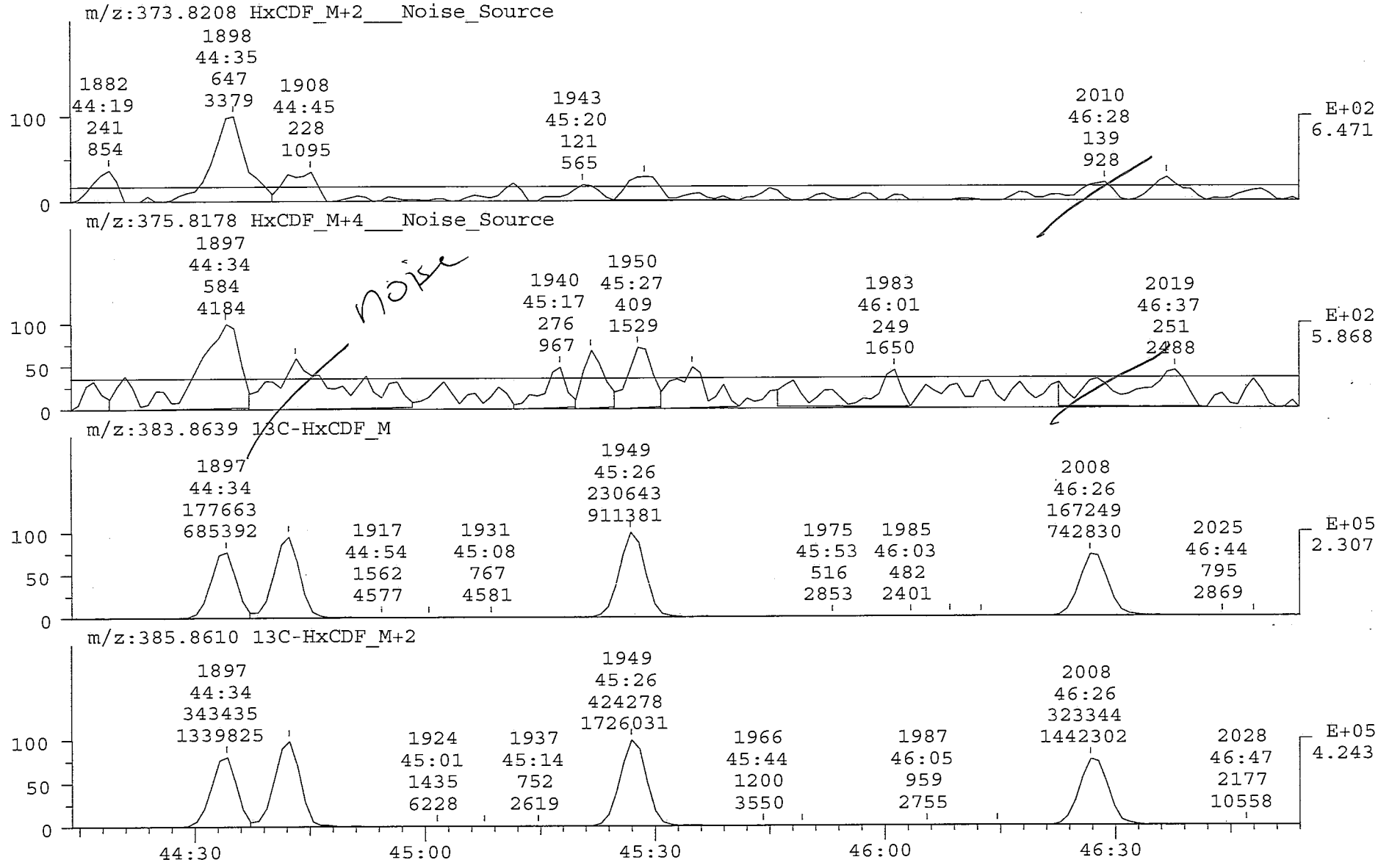
CHRO: d1tm811w 18-Aug-16 Elapse: 39:44 1620
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1941 > 2018 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



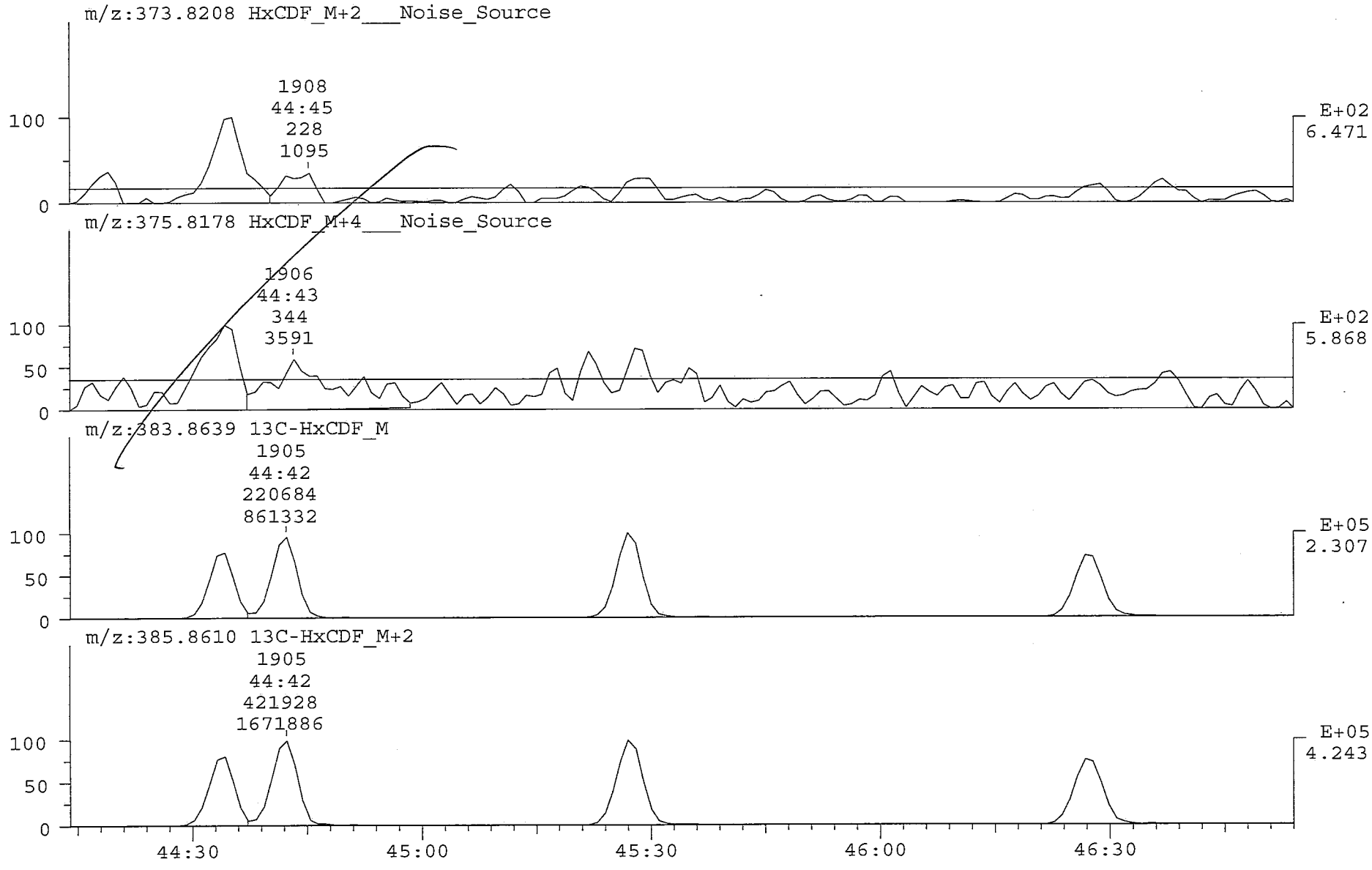
CHRO: d1tm811w 18-Aug-16 Elapse: 39:44 1620
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1978 > 2006 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : -2, 8.0
Disp: Height Area



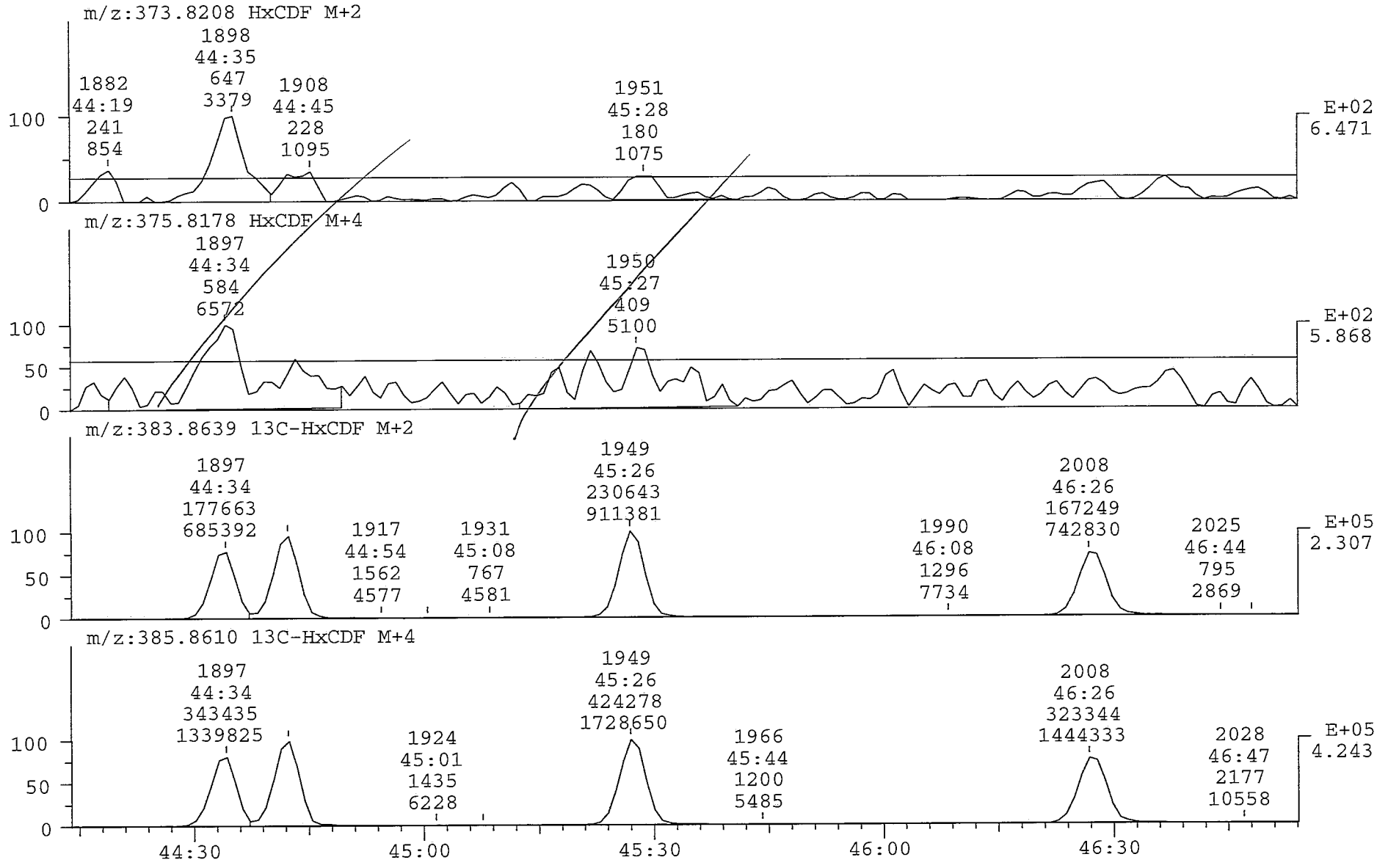
CHRO: d1tm811w 18-Aug-16 Elapse: 45:34 1956
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1877 > 2035 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



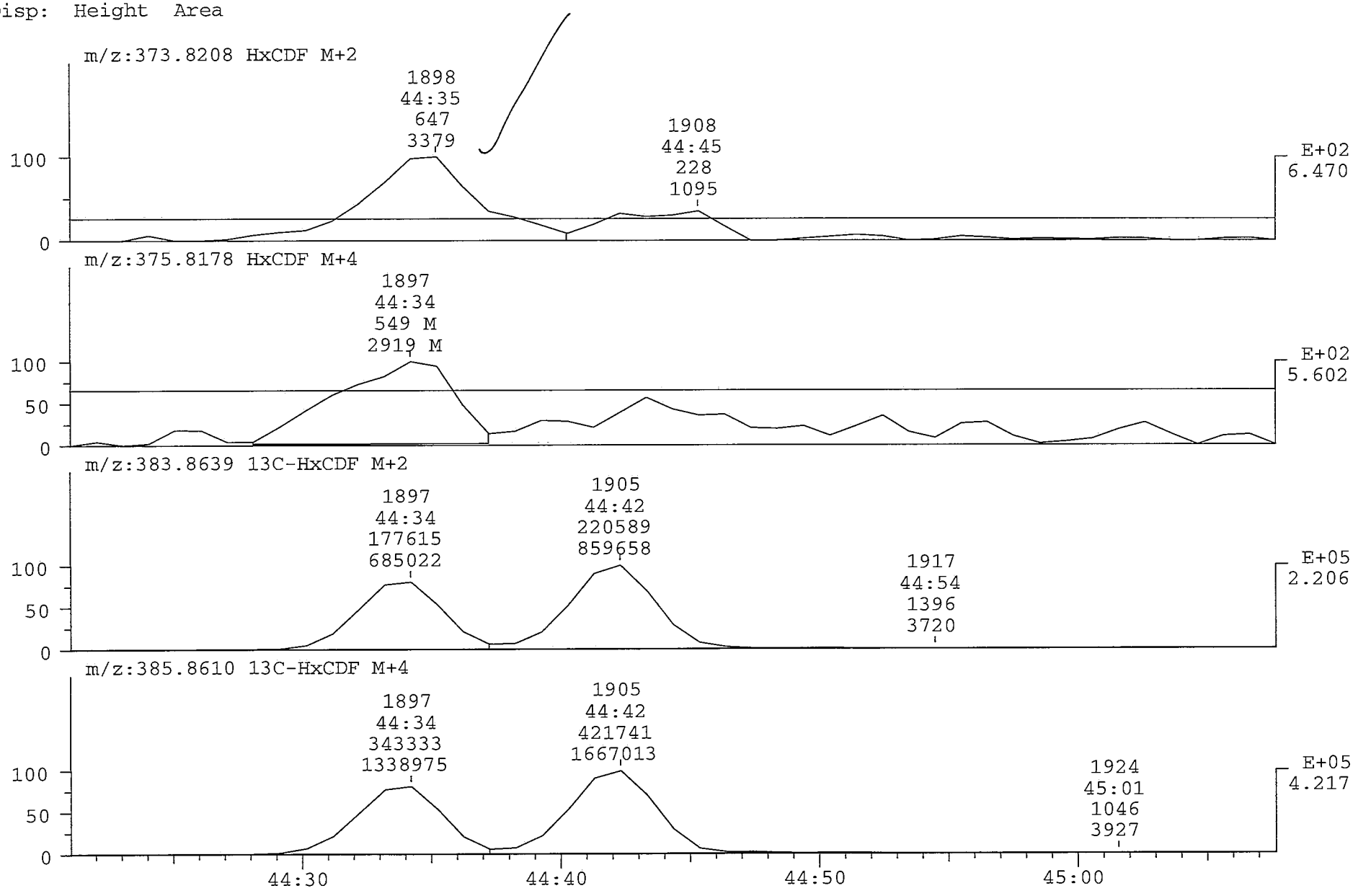
CHRO: d1tm811w 18-Aug-16 Elapse: 44:42 1905
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1901 > 1909 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



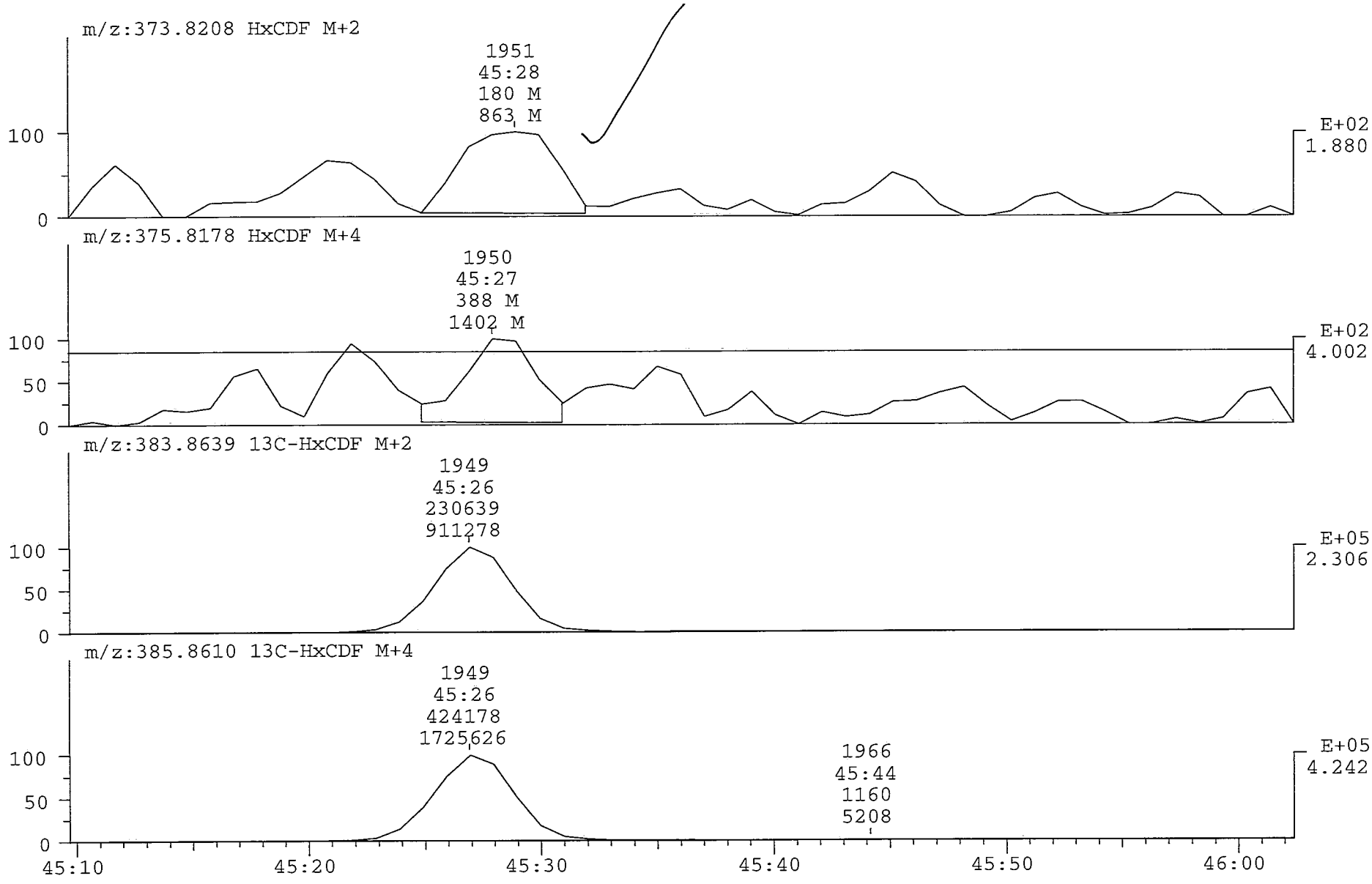
CHRO: d1tm811w 18-Aug-16 Elapse: 39:44 1620
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1877 > 2035 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



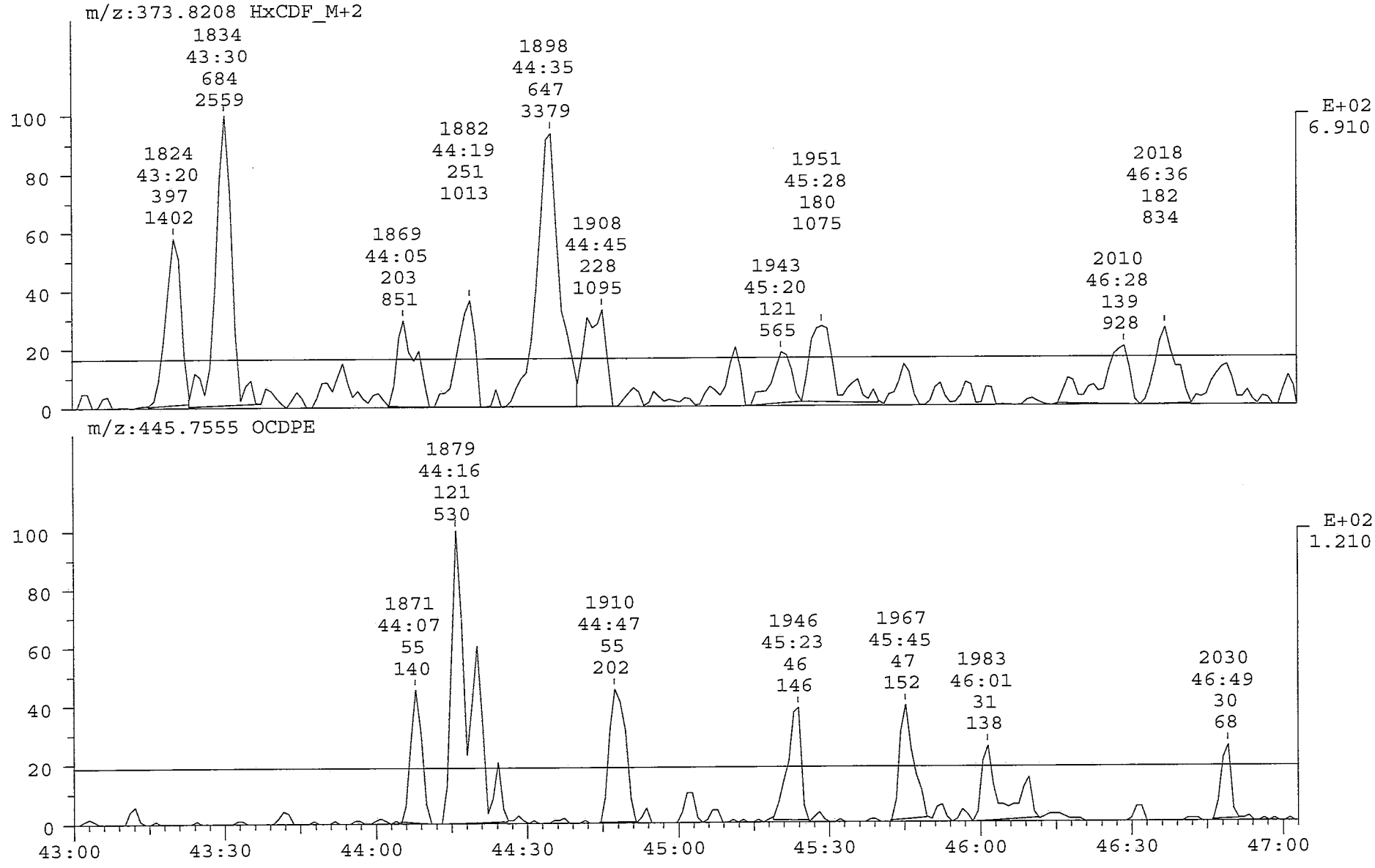
CHRO: d1tm811w 18-Aug-16 Elapse: 39:44 1620
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1884 > 1930 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



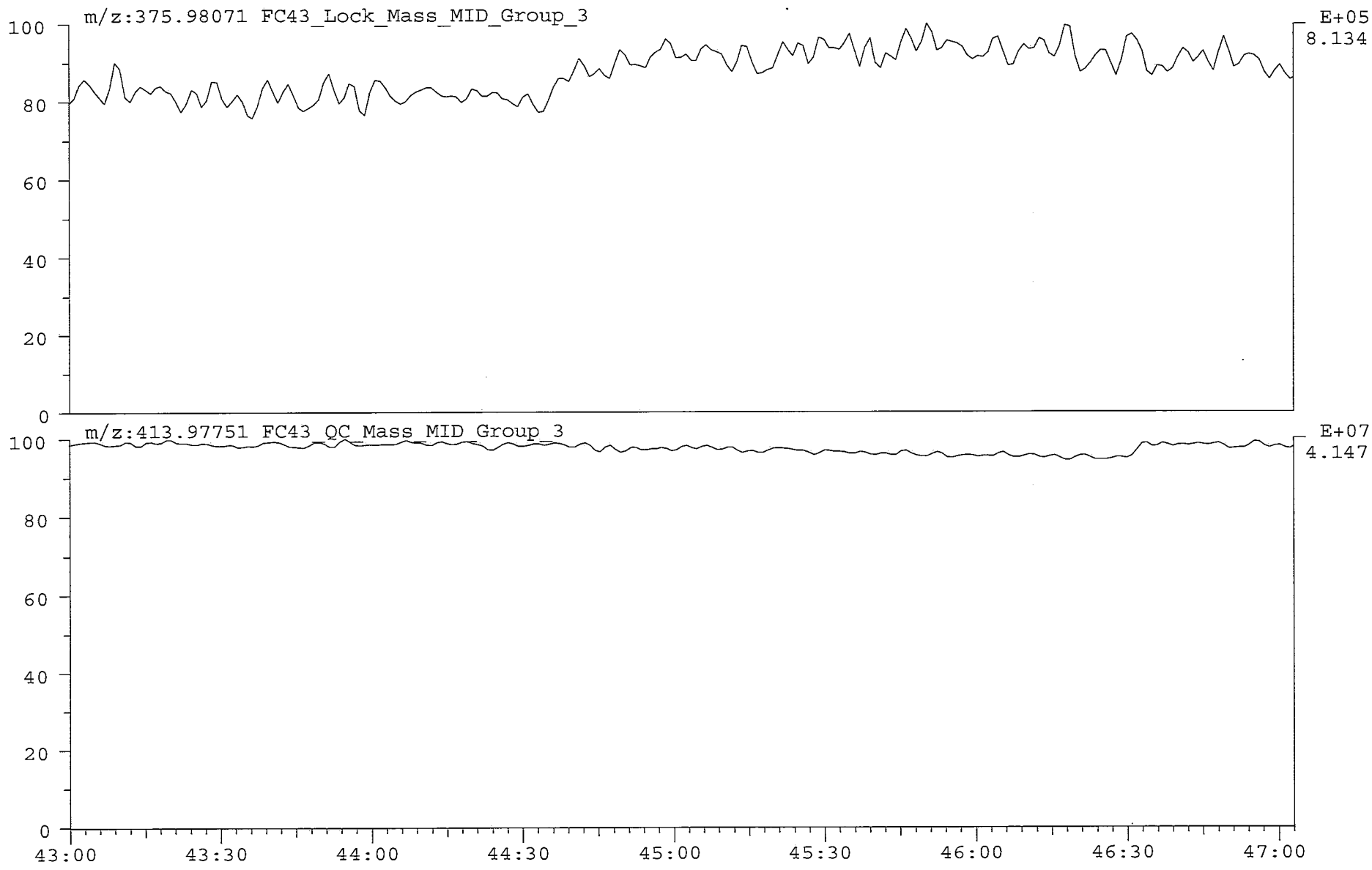
CHRO: d1tm811w 18-Aug-16 Elapse: 39:44 1620
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1932 > 1984 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



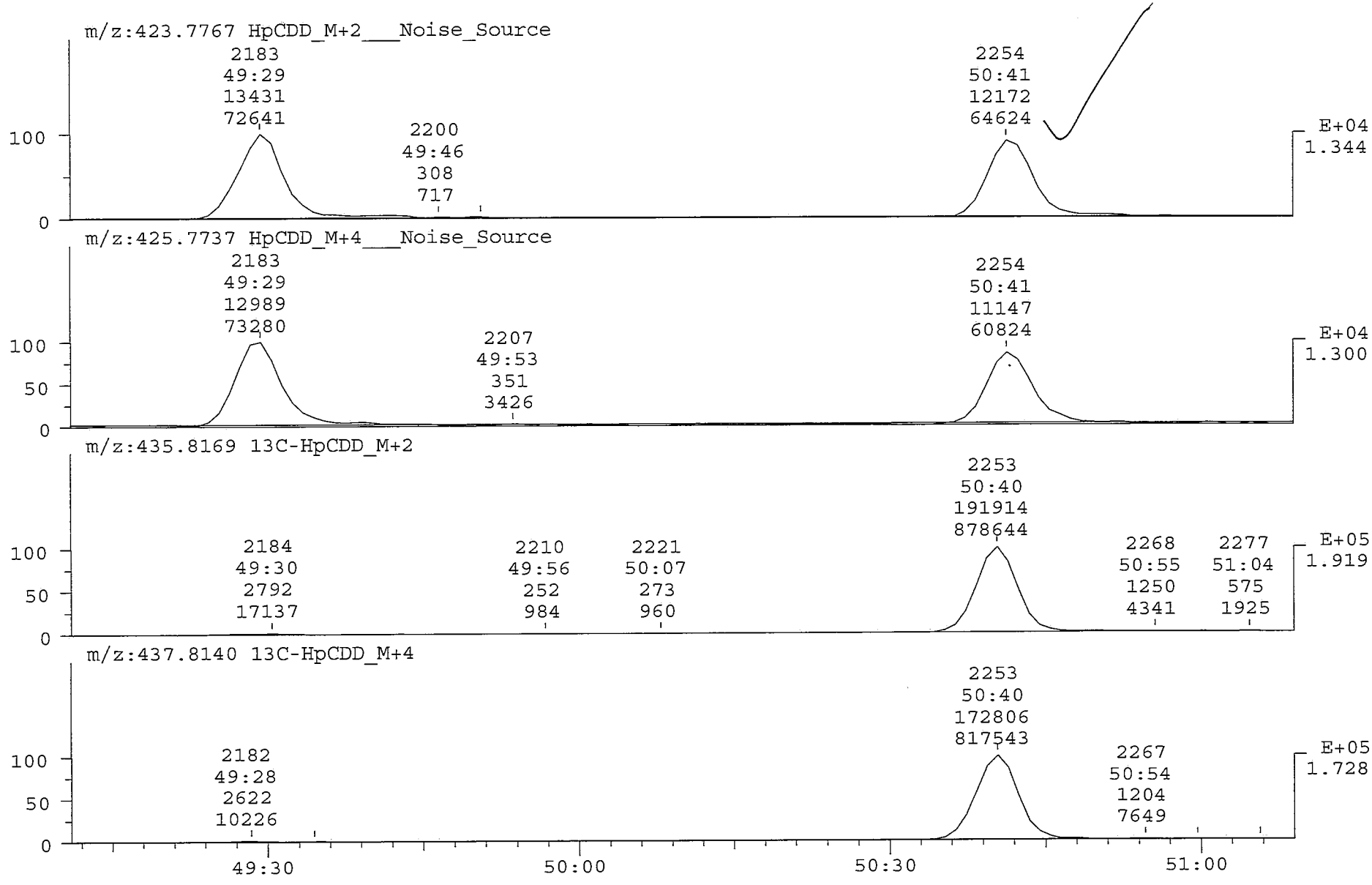
CHRO: d1tm811w 18-Aug-16 Elapse: 44:42 1905
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1804 > 2044 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



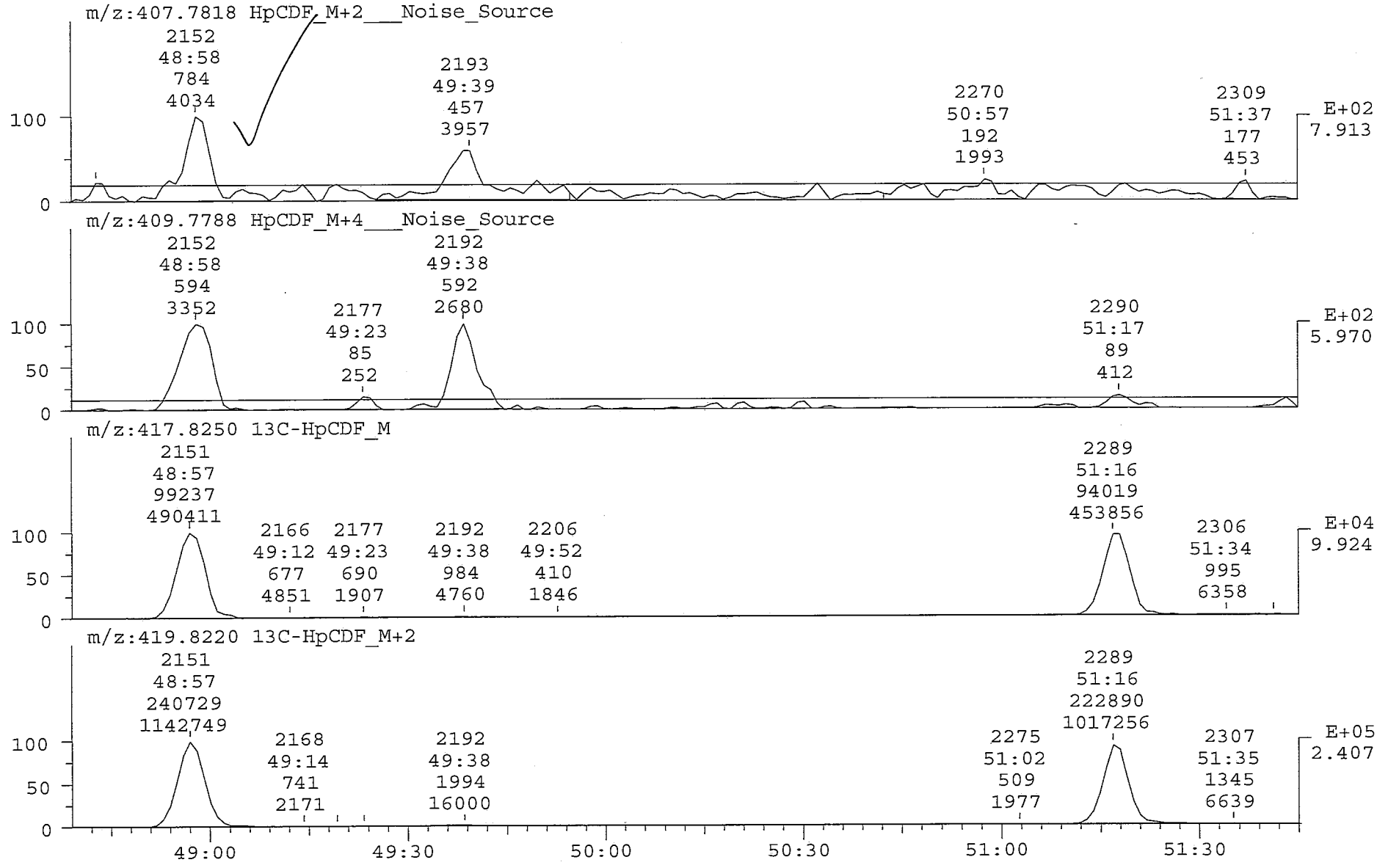
CHRO: dltm811w 18-Aug-16 Elapse: 44:42 1905
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1804 > 2044 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



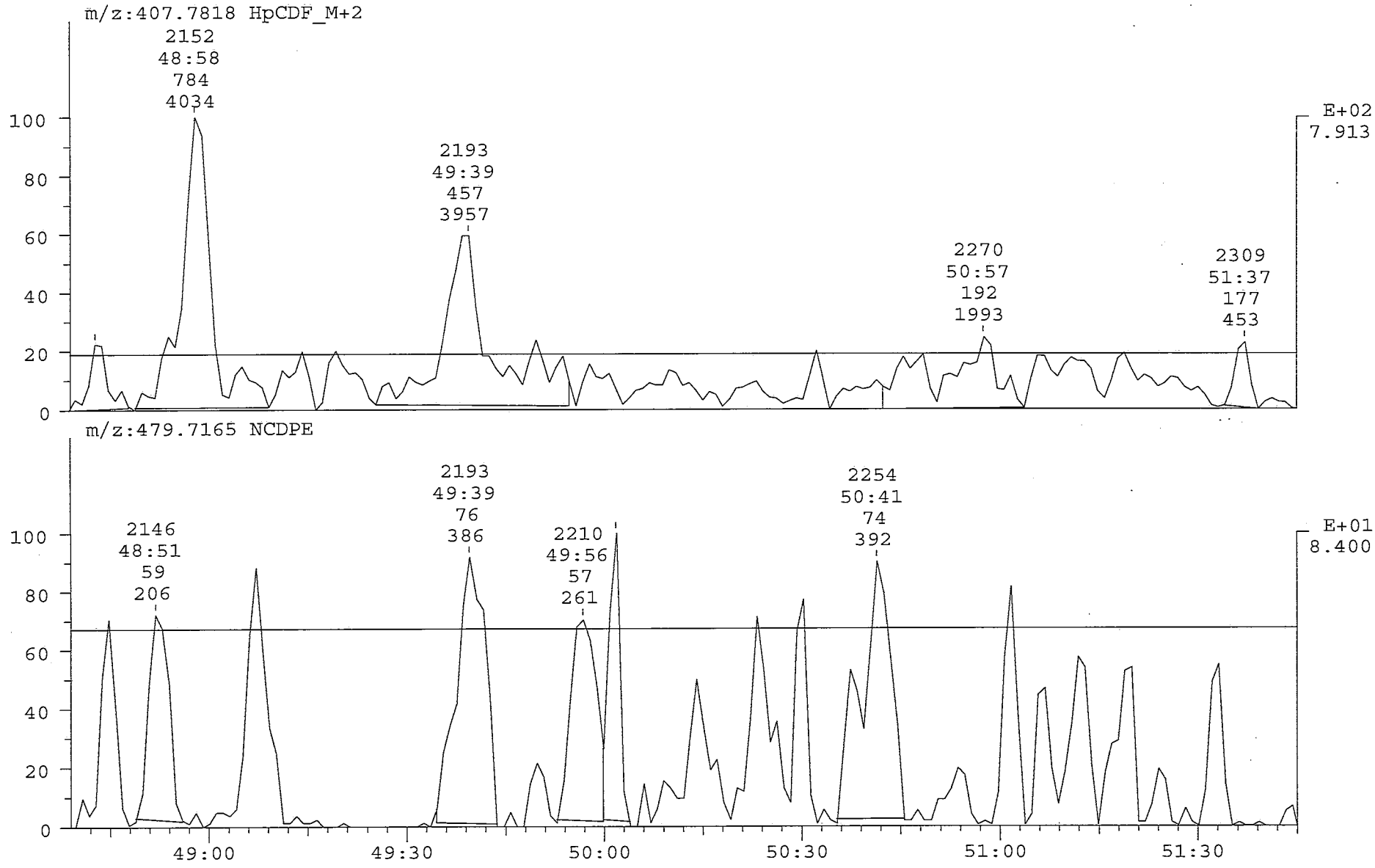
CHRO: d1tm811w 18-Aug-16 Elapse: 44:42 1905
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2165 > 2281 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



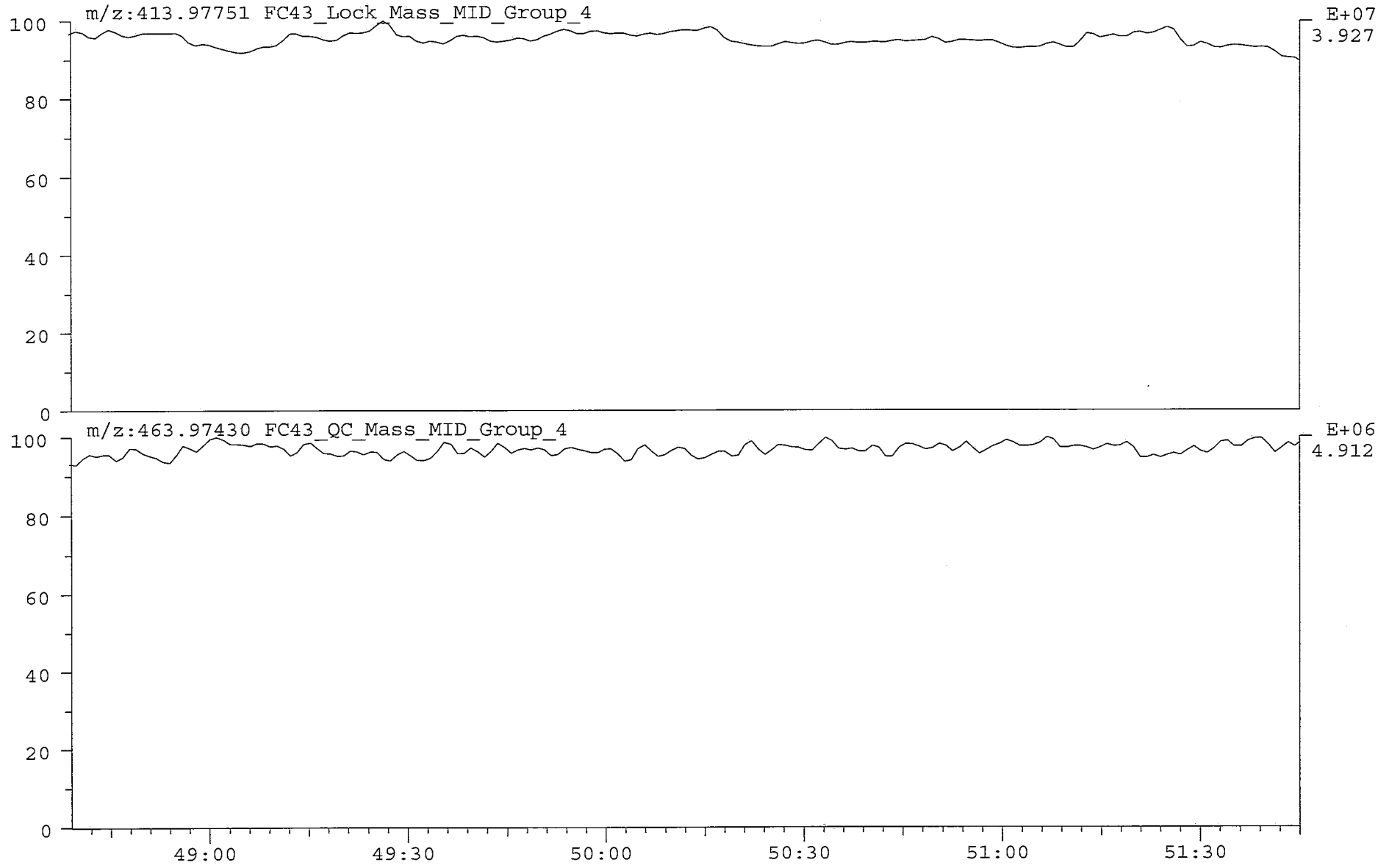
CHRO: d1tm811w 18-Aug-16 Elapse: 50:12 2225
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2317 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



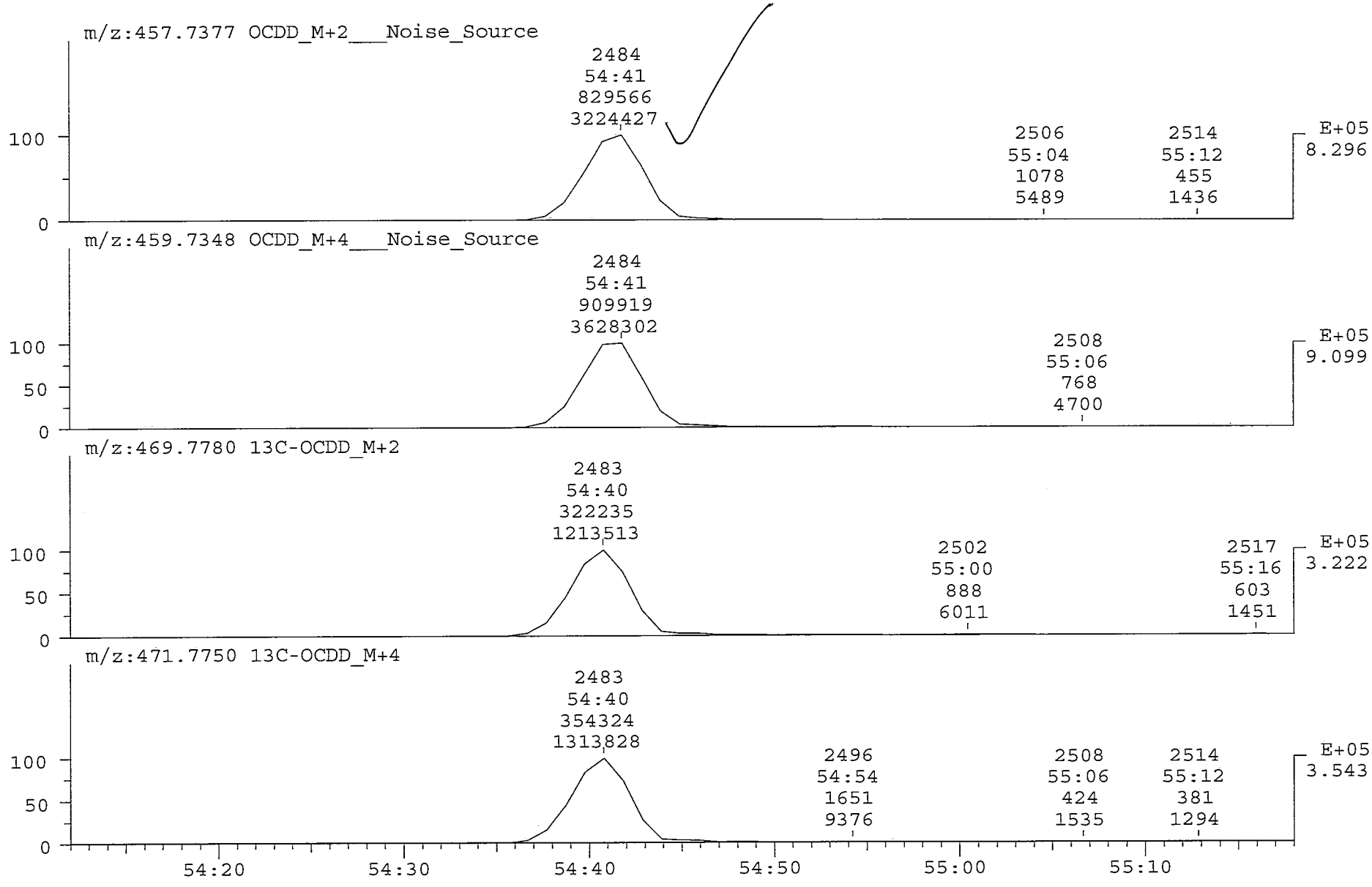
CHRO: dltm811w 18-Aug-16 Elapse: 50:12 2225
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=dl1a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2317 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



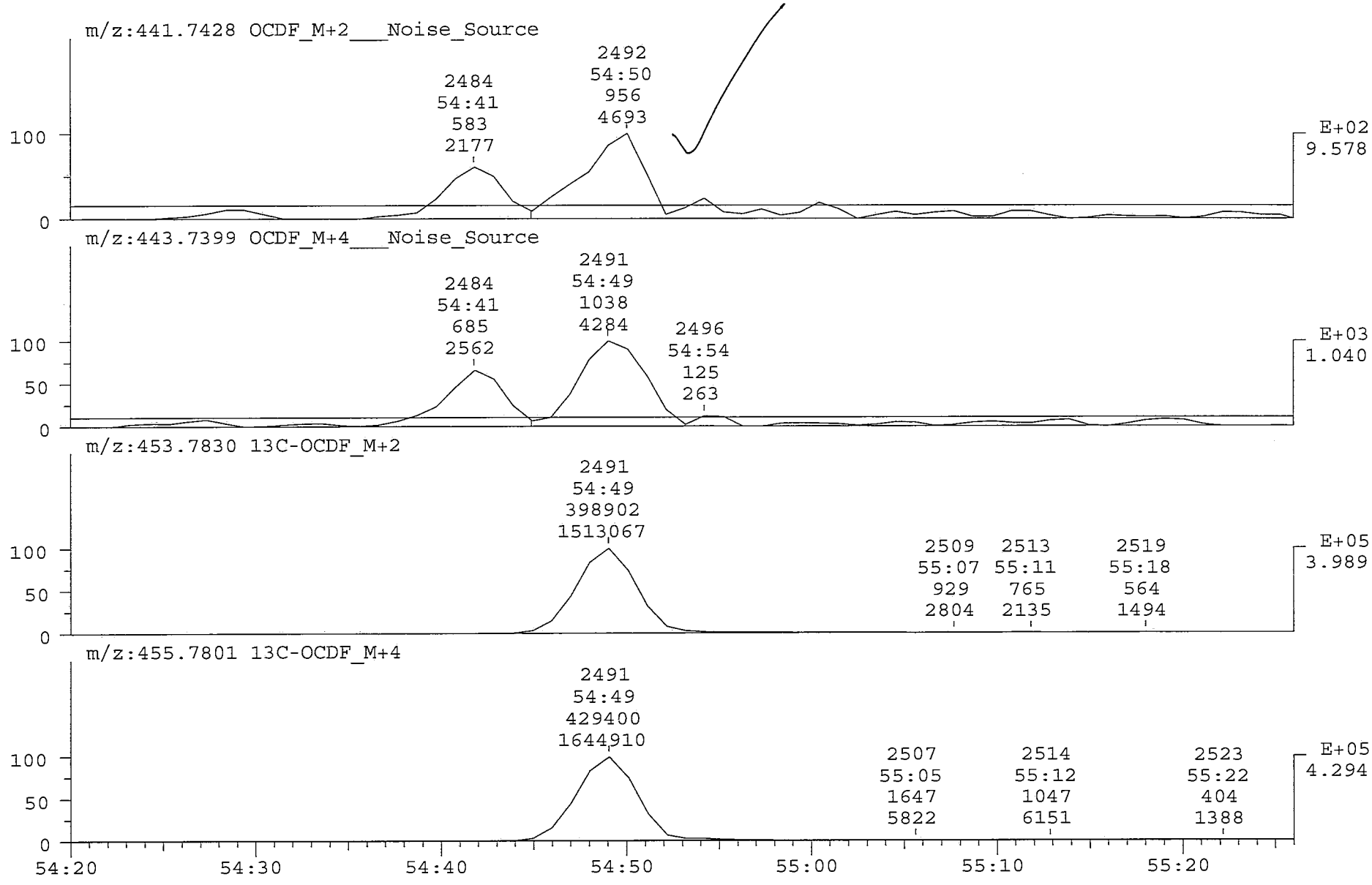
CHRO: dltm811w 18-Aug-16 Elapse: 50:12 2225
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2317 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



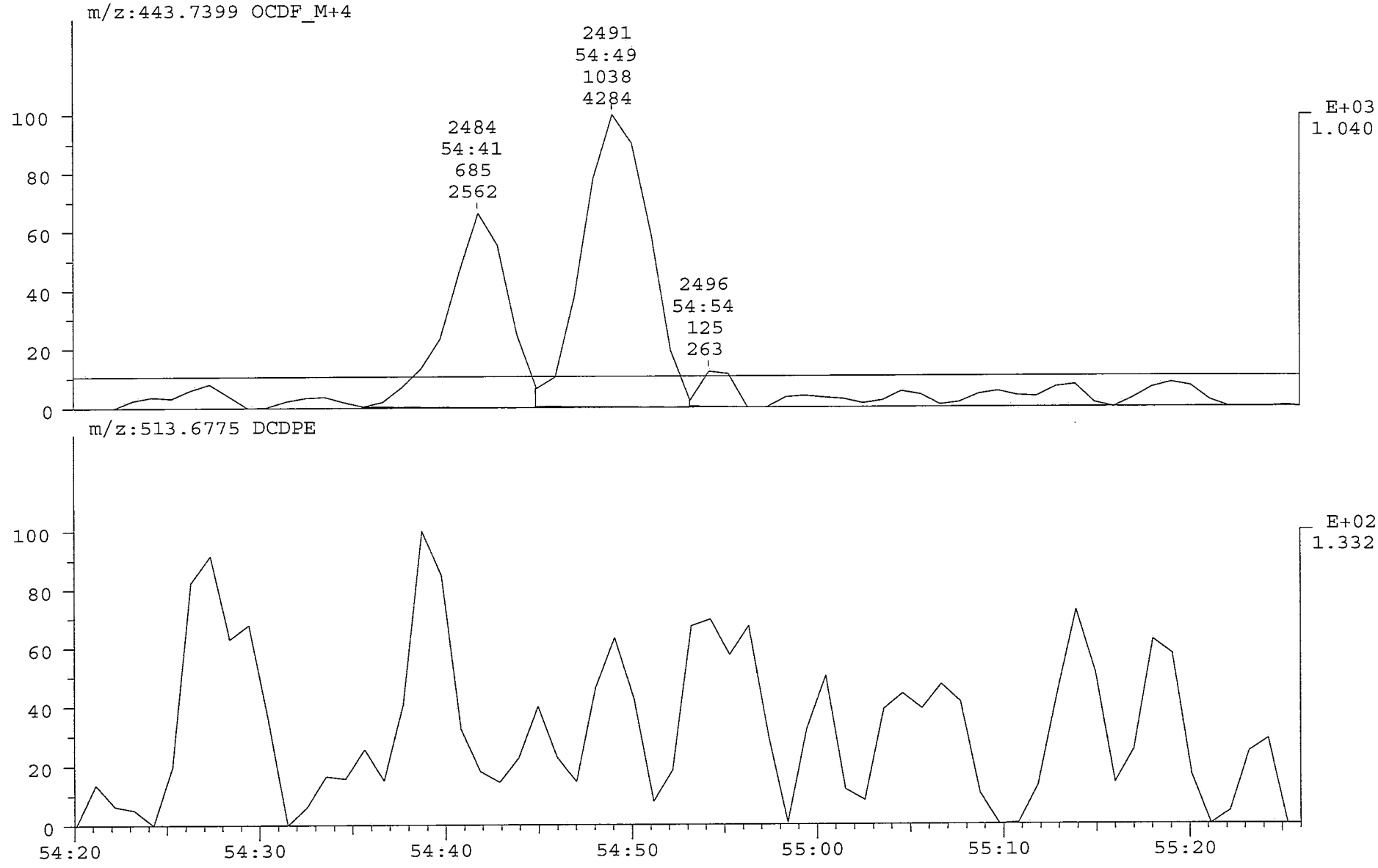
CHRO: d1tm811w 18-Aug-16 Elapse: 54:41 2484
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2455 > 2519 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



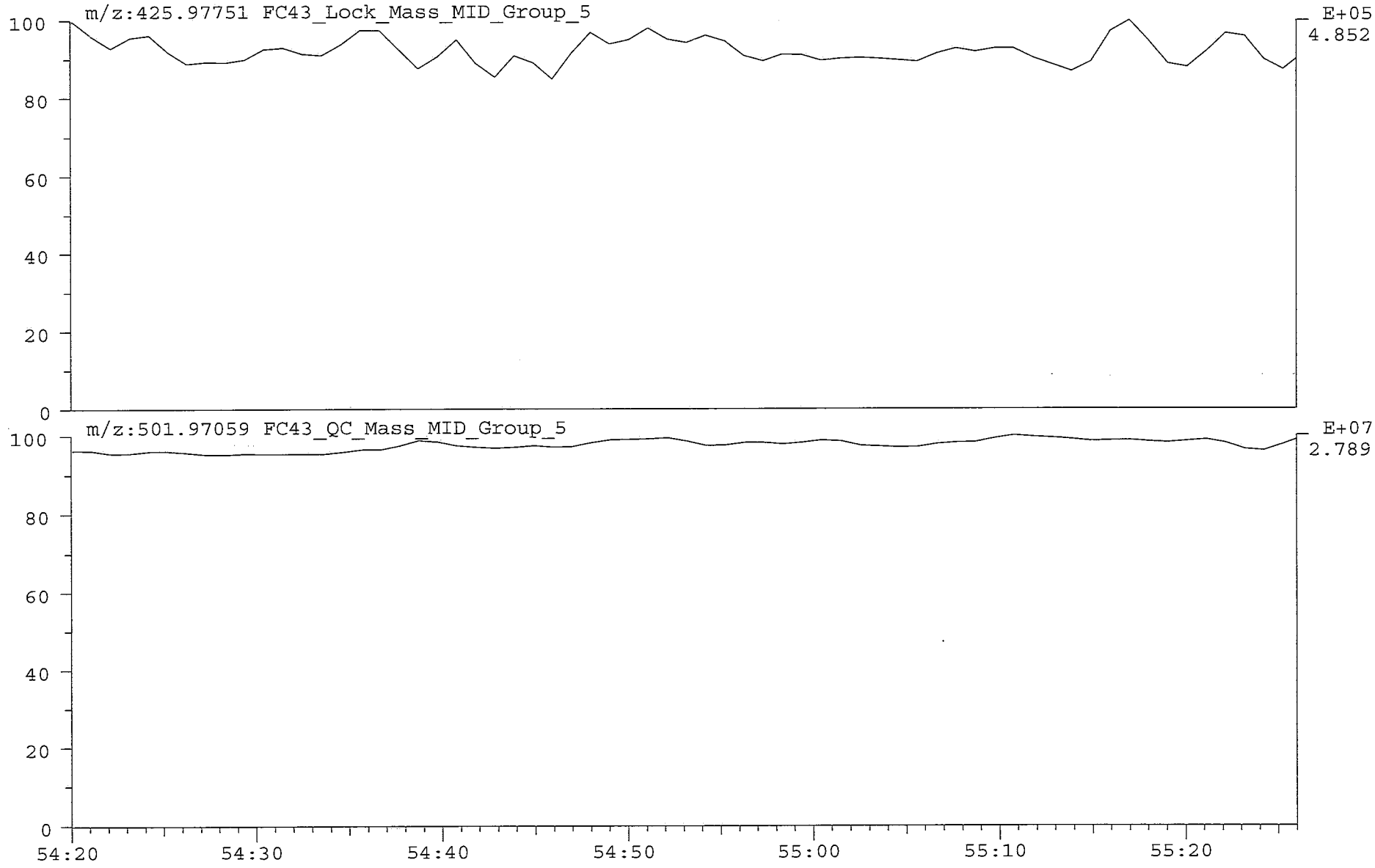
CHRO: d1tm811w 18-Aug-16 Elapse: 54:50 2492
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2463 > 2527 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1tm811w 18-Aug-16 Elapse: 54:50 2492
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2463 > 2527 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1tm811w 18-Aug-16 Elapse: 54:50 2492
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.3g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2463 > 2527 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Thu Aug 18 05:25:28 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 18-Aug-16 05:25:27

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160818011739

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

375.9802		20	1	7
383.8639		5	1	29
385.8610		5	1	29
389.8158		1	1	146
391.8127		1	1	146
401.8559		5	1	29
403.8529		5	1	29
413.9770	c	20	1	7
413.9770		20	1	7
445.7555		1	1	146

Window # 4

mass	F	int	gr	time (ms)
407.7817		1	1	146
409.7788		1	1	146
413.9770	l	20	1	7
413.9770		20	1	7
417.8250		5	1	29
419.8220		5	1	29
423.7767		1	1	146
425.7737		1	1	146
435.8169		5	1	29
437.8140		5	1	29
463.9738	c	20	1	7
463.9738		20	1	7
479.7165		1	1	146

Window # 5

mass	F	int	gr	time (ms)
425.9770	l	20	1	7
425.9770		20	1	7
441.7428		1	1	146
443.7399		1	1	146
453.7830		5	1	29
455.7801		5	1	29
457.7377		1	1	146
459.7348		1	1	146
469.7780		5	1	29
471.7750		5	1	29
501.9706	c	20	1	7
501.9706		20	1	7
513.6775		1	1	146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	308.9834
BQUAD	2.4000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	18.0000	ECORR	1.0008	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2585.8226
ELEN	-45.0000	EMULT	1802.0000	ENS	210.0000
ENSBR	2.4000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	172.0000	EXSBR	2.5000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	6.7000

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0045	FVINLET	0.0479	FVSRC	0.0400
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	620.0000
LENS_SYM	-4.7500	LM	375.8364	LMII	500.0000
LMASS	308.9834	LKM	425.9770	MASS	308.9834
MDAC	3555246.2612	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2650.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-7.0000	RECURR	0.8991	RELEN	0.0000
RES	13467.5873	RPUSHER	-6.9670	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	308.9834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:         2.6e-005 mbar
Analyzer Penning:     9.4e-008 mbar
Pirani Analyse:       4.4e-003 mbar
Pirani Source:        4.0e-002 mbar
Pirani Inlet System: 4.8e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 12488.
MID Time Window 2: Resolution is 12155.
MID Time Window 3: Resolution is 11311.
MID Time Window 4: Resolution is 11986.
MID Time Window 5: Resolution is 13467.

Amplifier Offset: 88.


*** File closed Thu Aug 18 06:22:41 2016
  ***
```

QUAN: d1tm811w.q0 Entries: 252

Data file(s) used
File: d1tm811w 18-Aug-16
Samp: WO=m811w1ac Meth=9Ao Dil=1 Start : 05:21:02 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (1
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:18	136.	35.	32:14	32:21	4.	2	5.0	ABB
319.8805	32:43	74.	32.	32:40	32:45	4.	2	5.0	ABB
319.8805	32:57	162.	42.	32:49	32:59	4.	2	5.0	ABV
319.8805	33:01	140.	65.	32:59	33:03	4.	2	5.0	AVB
321.8775	31:26	228.	76.	31:23	31:28	7.	2	5.0	ABV
321.8775	31:38	768.	90.	31:28	31:40	7.	2	5.0	AVB
321.8775	32:27	169.	65.	32:23	32:29	7.	2	5.0	ABB
321.8775	33:24	150.	56.	33:21	33:28	7.	2	5.0	ABB
331.9202	32:17	2679868.	274843.	32:02	32:32	85.	2	5.0	AVV
331.9202	32:49	963604.	95601.	32:33	33:04	85.	2	5.0	AVV
331.9202	33:11	2293.	931.	33:09	33:13	85.	2	5.0	AVB
331.9202	33:19	3568.	500.	33:13	33:27	85.	2	5.0	ABB
333.9171	32:17	3320527.	332259.	32:02	32:32	49.	2	5.0	AVV
333.9171	32:50	1191778.	116575.	32:34	33:05	49.	2	5.0	AVV
333.9171	33:27	5508.	708.	33:17	33:32	49.	2	5.0	AVV
333.9171	33:33	1104.	420.	33:32	33:40	49.	2	5.0	AVB
333.9171	34:01	1318.	470.	33:58	34:06	49.	2	5.0	ABB
303.8864	30:53	1103.	228.	30:50	31:02	10.	1	1.0	AVB
305.8834	32:03	1310.	235.	31:54	32:08	15.	1	1.0	ABV
303.8864	29:29	491.	86.	29:26	29:40	10.	2	5.0	ABB
303.8864	29:59	166.	58.	29:56	30:02	10.	2	5.0	ABB
303.8864	30:14	672.	191.	30:11	30:20	10.	2	5.0	ABB
303.8864	30:44	917.	171.	30:40	30:50	10.	2	5.0	ABV
303.8864	30:53	1103.	228.	30:50	31:02	10.	2	5.0	AVB
303.8864	31:58	604.	100.	31:52	32:10	10.	2	5.0	ABB
305.8834	29:33	584.	102.	29:26	29:42	15.	2	5.0	ABB
305.8834	30:40	421.	108.	30:35	30:42	15.	2	5.0	ABV
305.8834	30:45	856.	270.	30:42	30:47	15.	2	5.0	AVV
305.8834	30:49	1055.	243.	30:47	30:52	15.	2	5.0	AVV
305.8834	30:54	820.	273.	30:52	30:56	15.	2	5.0	AVV
305.8834	30:57	368.	84.	30:56	31:03	15.	2	5.0	AVB
305.8834	32:03	1577.	235.	31:54	32:14	15.	2	5.0	ABB
315.9261	29:29	5858.	872.	29:23	29:37	58.	2	5.0	ABB
315.9261	30:00	1637.	359.	29:51	30:02	58.	2	5.0	ABB
315.9261	30:42	1446365.	147359.	30:27	30:57	58.	2	5.0	AVV
315.9261	31:05	2632.	775.	31:02	31:07	58.	2	5.0	AVV
315.9261	31:10	2426.	780.	31:07	31:13	58.	2	5.0	AVB
315.9261	31:21	2041.	331.	31:13	31:23	58.	2	5.0	ABV
315.9261	31:26	1932.	484.	31:23	31:29	58.	2	5.0	AVV
315.9261	31:33	1553.	362.	31:29	31:35	58.	2	5.0	AVB
315.9261	32:14	2700.	509.	32:04	32:16	58.	2	5.0	ABV
315.9261	32:18	1206.	478.	32:16	32:20	58.	2	5.0	AVB
315.9261	32:24	1573.	526.	32:20	32:26	58.	2	5.0	ABB
317.9230	29:27	1802.	562.	29:23	29:29	71.	2	5.0	ABV
317.9230	29:34	3604.	690.	29:29	29:43	71.	2	5.0	AVB
317.9230	30:41	1806934.	178611.	30:27	30:56	71.	2	5.0	ABV
317.9230	31:00	3418.	719.	30:58	31:04	71.	2	5.0	AVV
317.9230	31:08	4965.	544.	31:04	31:24	71.	2	5.0	AVB
317.9230	32:16	3361.	810.	32:13	32:24	71.	2	5.0	ABB
355.8368	41:26	1219.	274.	41:18	41:29	20.	1	1.0	ABB

357.8337	41:24	1431.	309.	41:15	41:28	17.	1	1.0 ABB
355.8368	40:52	1384.	171.	40:41	41:04	20.	2	5.0 ABV
355.8368	41:07	544.	128.	41:04	41:11	20.	2	5.0 AVB
355.8368	41:26	1219.	274.	41:18	41:29	20.	2	5.0 ABB
357.8337	40:46	399.	124.	40:42	40:48	17.	2	5.0 ABB
357.8337	40:50	757.	116.	40:48	41:03	17.	2	5.0 ABB
357.8337	41:24	1431.	309.	41:15	41:28	17.	2	5.0 ABB
357.8337	41:49	454.	116.	41:47	41:53	17.	2	5.0 ABB
367.8765	41:00	2250.	633.	40:52	41:03	48.	2	5.0 ABB
367.8765	41:23	1233160.	294118.	41:15	41:39	48.	2	5.0 ABV
367.8765	41:51	1870.	476.	41:48	41:56	48.	2	5.0 AVV
367.8765	42:01	7012.	1288.	41:56	42:07	48.	2	5.0 AVV
367.8765	42:10	2101.	471.	42:07	42:15	48.	2	5.0 AVB
369.8734	40:57	429.	182.	40:53	40:58	20.	2	5.0 ABV
369.8734	41:00	351.	167.	40:58	41:02	20.	2	5.0 AVB
369.8734	41:23	772539.	194910.	41:16	41:34	20.	2	5.0 ABV
369.8734	41:38	5448.	950.	41:34	41:42	20.	2	5.0 AVV
369.8734	41:44	3307.	961.	41:42	41:49	20.	2	5.0 AVB
369.8734	41:53	1419.	263.	41:49	42:00	20.	2	5.0 ABV
369.8734	42:02	1815.	491.	42:00	42:07	20.	2	5.0 AVB
339.8427	41:07	2003.	368.	41:00	41:13	27.	1	1.0 ABB
341.8396	41:07	2351.	437.	40:59	41:12	35.	1	1.0 ABB
339.8427	39:19	1720.	341.	39:14	39:22	27.	2	5.0 ABB
339.8427	39:46	1710.	169.	39:35	39:54	27.	2	5.0 ABB
339.8427	40:15	1208.	203.	40:09	40:22	27.	2	5.0 ABB
339.8427	40:56	1584.	368.	40:47	40:59	27.	2	5.0 ABB
339.8427	41:07	2003.	368.	41:00	41:13	27.	2	5.0 ABB
341.8396	39:17	1707.	295.	39:14	39:29	35.	2	5.0 ABB
341.8396	39:44	1781.	233.	39:38	39:55	35.	2	5.0 ABB
341.8396	40:14	1457.	197.	40:07	40:25	35.	2	5.0 ABB
341.8396	40:53	2262.	371.	40:38	40:59	35.	2	5.0 AVB
341.8396	41:07	2351.	437.	40:59	41:12	35.	2	5.0 ABB
351.8824	39:16	3209.	846.	39:14	39:24	107.	2	5.0 ABB
351.8824	39:44	1898865.	399450.	39:36	39:55	107.	2	5.0 ABV
351.8824	40:00	14708.	2063.	39:55	40:06	107.	2	5.0 AVV
351.8824	40:13	22186.	4571.	40:06	40:18	107.	2	5.0 AVB
351.8824	40:36	4068.	785.	40:22	40:38	107.	2	5.0 ABV
351.8824	40:43	4230.	1172.	40:38	40:46	107.	2	5.0 AVB
351.8824	40:53	2051339.	497191.	40:46	41:05	107.	2	5.0 ABV
351.8824	41:08	7695.	2156.	41:05	41:10	107.	2	5.0 AVV
351.8824	41:13	6979.	1302.	41:10	41:17	107.	2	5.0 AVV
351.8824	41:18	3460.	1201.	41:17	41:22	107.	2	5.0 AVB
353.8793	39:19	1856.	722.	39:14	39:21	38.	2	5.0 ABB
353.8793	39:44	1205764.	257950.	39:34	39:57	38.	2	5.0 ABV
353.8793	39:58	6195.	1714.	39:57	40:03	38.	2	5.0 AVV
353.8793	40:13	10941.	2654.	40:03	40:16	38.	2	5.0 AVV
353.8793	40:19	2124.	485.	40:16	40:22	38.	2	5.0 AVV
353.8793	40:25	1173.	307.	40:22	40:32	38.	2	5.0 AVB
353.8793	40:53	1322735.	322469.	40:44	41:09	38.	2	5.0 ABV
353.8793	41:15	1879.	473.	41:13	41:20	38.	2	5.0 AVV
353.8793	41:24	1992.	715.	41:20	41:27	38.	2	5.0 AVB
353.8793	41:29	1306.	439.	41:27	41:33	38.	2	5.0 ABB
389.7961	46:09	2507.	384.	46:03	46:19	31.	1	1.0 ABB
391.7931	46:10	2525.	587.	45:59	46:12	25.	1	1.0 ABB
389.7961	45:39	897.	230.	45:32	45:41	31.	2	5.0 ABB
389.7961	45:47	2385.	383.	45:41	46:02	31.	2	5.0 ABB
389.7961	46:09	2507.	384.	46:03	46:19	31.	2	5.0 ABB
389.7961	46:27	897.	182.	46:19	46:29	31.	2	5.0 ABB
391.7931	45:39	955.	200.	45:32	45:42	25.	2	5.0 ABV
391.7931	45:46	1198.	215.	45:42	45:59	25.	2	5.0 AVB
391.7931	46:10	2525.	587.	45:59	46:12	25.	2	5.0 ABB
401.8358	45:38	1035920.	269255.	45:31	45:41	144.	2	5.0 ABV
401.8358	45:45	1042752.	251083.	45:41	45:58	144.	2	5.0 AVV
401.8358	46:00	3152.	1283.	45:58	46:02	144.	2	5.0 AVV
401.8358	46:09	3217105.	776276.	46:02	46:24	144.	2	5.0 AVV
401.8358	46:32	1913.	935.	46:30	46:33	144.	2	5.0 AVB
403.8327	45:38	840873.	220489.	45:31	45:41	80.	2	5.0 ABV

403.8327	45:45	805527.	193761.	45:41	46:00	80.	2	5.0 AVV
403.8327	46:09	2528451.	619973.	46:02	46:24	80.	2	5.0 AVV
403.8327	46:27	2942.	975.	46:25	46:29	80.	2	5.0 AVV
403.8327	46:31	3243.	964.	46:29	46:35	80.	2	5.0 AVB
373.8021	44:35	3379.	647.	44:26	44:40	23.	1	1.0 ABV
375.7990	44:34	3279.	584.	44:27	44:37	42.	1	1.0 AVV
373.8021	44:19	854.	241.	44:14	44:21	23.	2	5.0 ABB
373.8021	44:35	3379.	647.	44:26	44:40	23.	2	5.0 ABV
373.8021	44:45	1095.	228.	44:40	44:47	23.	2	5.0 AVB
373.8021	45:20	565.	121.	45:14	45:24	23.	2	5.0 ABB
373.8021	45:29	1075.	180.	45:24	45:40	23.	2	5.0 ABB
373.8021	46:28	928.	139.	46:15	46:31	23.	2	5.0 ABB
373.8021	46:36	834.	182.	46:31	46:42	23.	2	5.0 ABB
375.7990	44:34	4184.	584.	44:19	44:37	42.	2	5.0 AVV
375.7990	44:43	3591.	344.	44:37	44:58	42.	2	5.0 AVV
375.7990	45:17	967.	276.	45:11	45:19	42.	2	5.0 AVV
375.7990	45:21	1215.	391.	45:19	45:24	42.	2	5.0 AVV
375.7990	45:28	1529.	409.	45:24	45:31	42.	2	5.0 AVV
375.7990	45:35	1416.	272.	45:31	45:41	42.	2	5.0 AVB
375.7990	46:01	1650.	249.	45:46	46:03	42.	2	5.0 AVB
375.7990	46:37	2488.	251.	46:22	46:41	42.	2	5.0 AVB
373.8021	44:19	854.	241.	44:14	44:21	23.	2	5.0 ABB
373.8021	44:35	3379.	647.	44:26	44:40	23.	2	5.0 ABV
373.8021	44:45	1095.	228.	44:40	44:47	23.	2	5.0 AVB
373.8021	45:20	565.	121.	45:14	45:24	23.	2	5.0 ABB
373.8021	45:29	1075.	180.	45:24	45:40	23.	2	5.0 ABB
373.8021	46:28	928.	139.	46:15	46:31	23.	2	5.0 ABB
373.8021	46:36	834.	182.	46:31	46:42	23.	2	5.0 ABB
375.7990	44:34	4184.	584.	44:19	44:37	42.	2	5.0 AVV
375.7990	44:43	3591.	344.	44:37	44:58	42.	2	5.0 AVV
375.7990	45:17	967.	276.	45:11	45:19	42.	2	5.0 AVV
375.7990	45:21	1215.	391.	45:19	45:24	42.	2	5.0 AVV
375.7990	45:28	1529.	409.	45:24	45:31	42.	2	5.0 AVV
375.7990	45:35	1416.	272.	45:31	45:41	42.	2	5.0 AVB
375.7990	46:01	1650.	249.	45:46	46:03	42.	2	5.0 AVB
375.7990	46:37	2488.	251.	46:22	46:41	42.	2	5.0 AVB
383.8447	44:34	685392.	177663.	44:26	44:37	72.	2	5.0 ABV
383.8447	44:42	861332.	220684.	44:37	44:52	72.	2	5.0 AVV
383.8447	44:54	4577.	1562.	44:52	44:57	72.	2	5.0 AVV
383.8447	45:00	3432.	703.	44:57	45:04	72.	2	5.0 AVV
383.8447	45:08	4581.	767.	45:04	45:19	72.	2	5.0 AVB
383.8447	45:27	911381.	230643.	45:19	45:42	72.	2	5.0 ABV
383.8447	45:53	2853.	516.	45:47	45:58	72.	2	5.0 ABB
383.8447	46:03	2401.	482.	45:58	46:05	72.	2	5.0 ABV
383.8447	46:08	3724.	1296.	46:05	46:10	72.	2	5.0 AVV
383.8447	46:12	1610.	415.	46:10	46:15	72.	2	5.0 AVB
383.8447	46:26	742830.	167249.	46:15	46:41	72.	2	5.0 ABV
383.8447	46:44	2869.	795.	46:41	46:46	72.	2	5.0 AVV
383.8447	46:48	2742.	813.	46:46	46:51	72.	2	5.0 AVB
385.8417	44:34	1339825.	343435.	44:25	44:37	100.	2	5.0 ABV
385.8417	44:42	1671886.	421928.	44:37	44:57	100.	2	5.0 AVV
385.8417	45:01	6228.	1435.	44:57	45:03	100.	2	5.0 AVV
385.8417	45:07	5032.	892.	45:03	45:11	100.	2	5.0 AVV
385.8417	45:14	2619.	752.	45:11	45:17	100.	2	5.0 AVV
385.8417	45:27	1726031.	424278.	45:17	45:42	100.	2	5.0 AVV
385.8417	45:44	3550.	1200.	45:42	45:46	100.	2	5.0 AVV
385.8417	45:49	1936.	590.	45:46	45:51	100.	2	5.0 AVB
385.8417	46:05	2755.	959.	46:02	46:08	100.	2	5.0 ABB
385.8417	46:14	2888.	634.	46:08	46:17	100.	2	5.0 ABV
385.8417	46:26	1442302.	323344.	46:17	46:41	100.	2	5.0 AVV
385.8417	46:47	10558.	2177.	46:41	46:51	100.	2	5.0 AVB
423.7555	49:29	72641.	13431.	49:22	49:44	36.	1	1.0 ABV
425.7524	49:29	73280.	12989.	49:20	49:44	59.	1	1.0 ABV
423.7555	49:29	72641.	13431.	49:22	49:44	36.	2	5.0 ABV
423.7555	50:41	64624.	12172.	50:35	50:56	36.	2	5.0 ABV
425.7524	49:29	73280.	12989.	49:20	49:44	59.	2	5.0 ABV
425.7524	50:41	60824.	11147.	50:33	50:56	59.	2	5.0 ABV

435.7951	49:30	17137.	2792.	49:21	49:35	31.	2	5.0 ABV
435.7951	49:56	984.	252.	49:51	49:58	31.	2	5.0 ABB
435.7951	50:08	960.	273.	50:02	50:10	31.	2	5.0 ABB
435.7951	50:40	878644.	191914.	50:27	50:54	31.	2	5.0 ABV
435.7951	50:55	4341.	1250.	50:54	51:01	31.	2	5.0 AVB
435.7951	51:04	1925.	575.	51:01	51:07	31.	2	5.0 ABB
437.7921	49:28	10226.	2622.	49:22	49:32	21.	2	5.0 ABV
437.7921	49:34	3360.	1072.	49:32	49:39	21.	2	5.0 AVB
437.7921	50:40	817543.	172806.	50:30	50:49	21.	2	5.0 ABV
437.7921	50:54	7648.	1204.	50:49	50:57	21.	2	5.0 AVV
437.7921	50:59	3417.	1041.	50:57	51:02	21.	2	5.0 AVV
437.7921	51:05	1919.	564.	51:02	51:08	21.	2	5.0 AVB
407.7614	48:58	3630.	784.	48:48	49:03	30.	1	1.0 ABV
409.7583	48:58	3335.	594.	48:50	49:03	14.	1	1.0 ABV
407.7614	48:42	576.	175.	48:38	48:47	30.	2	5.0 ABB
407.7614	48:58	4034.	784.	48:48	49:09	30.	2	5.0 ABB
407.7614	49:39	3957.	457.	49:25	49:54	30.	2	5.0 ABV
407.7614	50:57	1993.	192.	50:42	51:03	30.	2	5.0 AVB
407.7614	51:37	453.	177.	51:34	51:39	30.	2	5.0 ABB
409.7583	48:58	3352.	594.	48:50	49:05	14.	2	5.0 ABB
409.7583	49:23	252.	85.	49:20	49:26	14.	2	5.0 ABB
409.7583	49:38	2680.	592.	49:30	49:44	14.	2	5.0 ABB
409.7583	51:17	412.	89.	51:13	51:24	14.	2	5.0 ABB
417.8041	48:57	490411.	99237.	48:48	49:07	34.	2	5.0 ABV
417.8041	49:12	4851.	677.	49:07	49:19	34.	2	5.0 AVB
417.8041	49:23	1907.	690.	49:20	49:25	34.	2	5.0 ABV
417.8041	49:38	4760.	984.	49:33	49:46	34.	2	5.0 ABV
417.8041	49:52	1846.	410.	49:46	49:54	34.	2	5.0 AVB
417.8041	51:16	453856.	94019.	51:09	51:28	34.	2	5.0 AVB
417.8041	51:34	6358.	995.	51:28	51:37	34.	2	5.0 ABV
417.8041	51:41	4444.	1002.	51:37	51:44	34.	2	5.0 AVB
419.8010	48:57	1142749.	240729.	48:48	49:12	83.	2	5.0 ABV
419.8010	49:14	2171.	741.	49:12	49:16	83.	2	5.0 AVV
419.8010	49:19	2112.	803.	49:16	49:20	83.	2	5.0 AVV
419.8010	49:23	8442.	1313.	49:20	49:32	83.	2	5.0 AVV
419.8010	49:38	16000.	1994.	49:32	49:52	83.	2	5.0 AVB
419.8010	51:02	1977.	509.	50:58	51:05	83.	2	5.0 ABB
419.8010	51:16	1017256.	222890.	51:06	51:32	83.	2	5.0 ABV
419.8010	51:35	6639.	1345.	51:33	51:45	83.	2	5.0 AVB
457.7148	54:41	3224427.	829566.	54:32	54:57	57.	1	1.0 ABV
459.7118	54:41	3628302.	909919.	54:34	54:57	61.	1	1.0 ABV
457.7148	54:41	3224427.	829566.	54:32	54:57	57.	2	5.0 ABV
457.7148	55:04	5489.	1078.	55:02	55:10	57.	2	5.0 AVV
457.7148	55:12	1436.	455.	55:10	55:16	57.	2	5.0 AVB
459.7118	54:41	3628302.	909919.	54:34	54:57	61.	2	5.0 ABV
459.7118	55:06	4700.	768.	55:04	55:15	61.	2	5.0 AVB
469.7545	54:40	1213513.	322235.	54:33	54:56	55.	2	5.0 ABV
469.7545	55:00	6011.	888.	54:56	55:08	55.	2	5.0 AVB
469.7545	55:16	1451.	603.	55:12	55:18	55.	2	5.0 ABB
471.7514	54:40	1313828.	354324.	54:32	54:51	38.	2	5.0 ABV
471.7514	54:54	9376.	1651.	54:51	55:01	38.	2	5.0 AVV
471.7514	55:06	1535.	424.	55:01	55:08	38.	2	5.0 AVB
471.7514	55:12	1294.	381.	55:08	55:16	38.	2	5.0 ABB
441.7207	54:50	4293.	956.	54:45	54:58	30.	1	1.0 AVV
443.7177	54:49	4548.	1038.	54:45	54:56	22.	1	1.0 AVB
441.7207	54:41	2177.	583.	54:35	54:45	30.	2	5.0 ABV
441.7207	54:50	4693.	956.	54:45	55:02	30.	2	5.0 AVB
443.7177	54:41	2562.	685.	54:35	54:45	22.	2	5.0 ABV
443.7177	54:49	4284.	1038.	54:45	54:53	22.	2	5.0 AVV
443.7177	54:54	263.	125.	54:53	54:56	22.	2	5.0 AVB
453.7603	54:49	1513067.	398902.	54:36	55:04	53.	2	5.0 ABV
453.7603	55:07	2804.	929.	55:05	55:09	53.	2	5.0 AVV
453.7603	55:11	2135.	765.	55:09	55:15	53.	2	5.0 AVV
453.7603	55:18	1494.	564.	55:15	55:20	53.	2	5.0 AVB
455.7573	54:49	1644910.	429400.	54:37	55:03	16.	2	5.0 ABV
455.7573	55:05	5822.	1647.	55:03	55:08	16.	2	5.0 AVV
455.7573	55:12	6151.	1047.	55:08	55:19	16.	2	5.0 AVB

455.7573 55:22 1388. 404. 55:20 55:25 16. 2 5.0 ABB

TestAmerica Canton

Sample ID: PAD-4

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 010	Work Order #....:	M811X1AC	Matrix....:	SOLID
Date Sampled....:	07/25/16	Date Received....:	07/29/16	Dilution Factor:	1
Prep Date....:	08/04/16	Analysis Date....:	08/18/16	Percent Moisture	18
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.1 g	Instrument ID....:	D11A	Method:	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	0.15	Q J	1.2	0.041	pg/g
1,2,3,7,8-PeCDD	0.61	Q B J	6.0	0.036	pg/g
1,2,3,4,7,8-HxCDD	0.54	Q J	6.0	0.050	pg/g
1,2,3,6,7,8-HxCDD	1.4	J	6.0	0.051	pg/g
1,2,3,7,8,9-HxCDD	1.6	C J	6.0	0.047	pg/g
1,2,3,4,6,7,8-HpCDD	22		6.0	0.059	pg/g
OCDD	250	B	12	0.068	pg/g
2,3,7,8-TCDF	0.86	Q J	1.2	0.054	pg/g
1,2,3,7,8-PeCDF	0.27	Q J	6.0	0.032	pg/g
2,3,4,7,8-PeCDF	0.46	Q J	6.0	0.029	pg/g
1,2,3,4,7,8-HxCDF	0.88	C B J	6.0	0.029	pg/g
1,2,3,6,7,8-HxCDF	0.42	Q J	6.0	0.029	pg/g
2,3,4,6,7,8-HxCDF	0.26	J	6.0	0.029	pg/g
1,2,3,7,8,9-HxCDF	ND		6.0	0.035	pg/g
1,2,3,4,6,7,8-HpCDF	4.1	B J	6.0	0.044	pg/g
1,2,3,4,7,8,9-HpCDF	0.48	Q B J	6.0	0.046	pg/g
OCDF	8.3	B J	12	0.028	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	64	40 - 135
13C-1,2,3,7,8-PeCDD	75	40 - 135
13C-1,2,3,4,7,8-HxCDD	68	40 - 135
13C-1,2,3,6,7,8-HxCDD	68	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	75	40 - 135
13C-OCDD	67	40 - 135
13C-2,3,7,8-TCDF	60	40 - 135
13C-1,2,3,7,8-PeCDF	71	40 - 135
13C-2,3,4,7,8-PeCDF	75	40 - 135
13C-1,2,3,4,7,8-HxCDF	59	40 - 135
13C-1,2,3,6,7,8-HxCDF	56	40 - 135
13C-2,3,4,6,7,8-HxCDF	64	40 - 135
13C-1,2,3,7,8,9-HxCDF	62	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	52	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	62	40 - 135
13C-OCDF	52	40 - 135

TestAmerica Canton

Sample ID: PAD-4

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 010	**Work Order #....:**	M811X1AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	18
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811X1AC	Prep Batch	6217014	Lot No	H6G290408-010
Data File	/20160817s3/d1tm811x.d	Prep Date	08/04/16	SDG No	
Analysis ID	180451	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/18/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	06:22	Initial Wt/Vol	10.1 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD	32:55	3866	519	1.144		1.275068		0.126244	QJ	0.0338
Total TCDD		16947	2469	1.144		6.864456		0.679649	QJ	0.0338
2,3,7,8-TCDF	30:45	30973	4225	1.066		7.137600		0.706693	QJ	0.0444
Total TCDF		88098	12132	1.066		27.439422		2.716774	JQ	0.0444
1,2,3,7,8-PeCDD	41:24	12214	2626	1.060		5.071010		0.502080	QBJ	0.0300
Total PeCDD		15049	3360	1.060		11.319056		1.120699	QJB	0.0300
1,2,3,7,8-PeCDF	39:45	9733	2211	1.179		2.268300		0.224584	QJ	0.0264
2,3,4,7,8-PeCDF	40:54	16075	3339	1.115		3.783228		0.374577	QJ	0.0240
Total PeCDF		56615	10686	1.147		19.301795		1.911069	QJ	0.0251
1,2,3,4,7,8-HxCDD	45:39	11256	2668	1.131		4.527581		0.448275	QJ	0.0410
1,2,3,6,7,8-HxCDD	45:46	28249	6635	1.116		11.614483		1.149949	J	0.0423
1,2,3,7,8,9-HxCDD	46:10	34683	6368	1.205		13.149003		1.301881	CJ	0.0388
Total HxCDD				1.151		29.291066		2.900106	JQ	0.0406
1,2,3,4,7,8-HxCDF	44:33	25985	4572	1.350		7.311255		0.723887	CBJ	0.0242
1,2,3,6,7,8-HxCDF	44:42	13072	3024	1.242		3.505212		0.347051	QJ	0.0242
2,3,4,6,7,8-HxCDF	45:28	8176	2060	1.241		2.169370		0.214789	J	0.0238
1,2,3,7,8,9-HxCDF				1.262				ND		0.0291
Total HxCDF		49901	12651	1.274		26.833908		2.656823	JQB	0.0252
1,2,3,4,6,7,8-HpCDD	50:41	401752	80226	1.114		186.068633		18.422637		0.0484
Total HpCDD		364583	72201	1.114		354.922704		35.140862		0.0484
1,2,3,4,6,7,8-HpCDF	48:58	93634	18855	1.461		34.262820		3.392358	BJ	0.0362
1,2,3,4,7,8,9-HpCDF	51:18	9697	1634	1.370		3.974628		0.393528	QBJ	0.0379
Total HpCDF		151540	29437	1.416		96.877786		9.591860	QB	0.0370
OCDD	54:41	3511051	914124	1.203		2064.51277		204.407205	B	0.0557
OCDF	54:49	136181	34008	1.134		69.409503		6.872228	BJ	0.0234
13C-2,3,7,8-TCDD	32:48	2651445	262671	1.093	1000	639.971818	64.00	63.363546		0.106
13C-2,3,7,8-TCDF	30:41	4072319	423488	1.794	1000	598.479162	59.85	59.255363		0.0382
13C-1,2,3,7,8-PeCDD	41:23	2272490	553098	0.800	1000	749.107910	74.91	74.169100		0.0802
13C-1,2,3,7,8-PeCDF	39:43	3639002	755680	1.356	1000	707.461768	70.75	70.045720		0.0654
13C-2,3,4,7,8-PeCDF	40:53	3812257	878287	1.343	1000	748.555716	74.86	74.114427		0.0660
13C-1,2,3,4,7,8-HxCDD	45:38	2197930	550081	0.916	1000	677.216019	67.72	67.051091		0.0743
13C-1,2,3,6,7,8-HxCDD	45:45	2179504	540422	0.906	1000	678.635193	67.86	67.191603		0.0751
13C-1,2,3,4,7,8-HxCDF	44:33	2631825	695911	1.268	1000	585.530153	58.55	57.973282		0.0353
13C-1,2,3,6,7,8-HxCDF	44:41	3003583	756496	1.506	1000	562.972931	56.30	55.739894		0.0298
13C-2,3,4,6,7,8-HxCDF	45:27	3037244	770993	1.344	1000	637.734473	63.77	63.142027		0.0334
13C-1,2,3,7,8,9-HxCDF	46:26	2643470	620019	1.202	1000	620.561486	62.06	61.441731		0.0373
13C-1,2,3,4,6,7,8-HpCDD	50:40	1938691	404003	0.728	1000	751.063829	75.11	74.362755		0.0257
13C-1,2,3,4,6,7,8-HpCDF	48:57	1870491	379424	1.008	1000	523.616036	52.36	51.843172		0.0357
13C-1,2,3,4,7,8,9-HpCDF	51:17	1780371	386325	0.811	1000	619.664202	61.97	61.352891		0.0444
13C-OCDD	54:41	2827396	709413	0.597	2000	1335.61440	66.78	132.239050		0.0850
13C-1,2,3,4-TCDD	32:16	7584500	787064	1.000	2000	2000.00000	100.00	198.019802		0.116
13C-1,2,3,7,8,9-HxCDD	46:09	7087459	1745120	1.000	2000	2000.00000	100.00	198.019802		0.0681
13C-OCDF	54:49	3459253	859719	0.946	2000	1031.89511	51.59	102.167833		0.0576

KLM 8/24/16

KLM 8-24-16

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811X1AC	Prep Batch	6217014	Lot No	H6G290408-010
Data File	/20160817s3/d1tm811x.d	Prep Date	08/04/16	SDG No	
Analysis ID	180451	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 06:22	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.1 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	88	115	35	46	0.76	/	
	Unidentified	29:31	00:00	0	9781	14366	1024	1405	0.68	ABB/ABV	
	Unidentified	30:15	00:00	0	8480	10618	770	1343	0.80	AVB/AVB	T
	2,3,7,8-TCDF	30:45	30:44	1	12083	18890	1914	2311	0.64 *	ABV/ABV	RD
	Unidentified	30:48	00:00	0	8562	5756	1555	1660	1.49 *	AVV/AVV	RT
	Unidentified	30:56	00:00	0	1428	4648	526	1089	0.31 *	AVV/AVB	R
	Unidentified	32:00	00:00	0	9974	14485	1259	1501	0.69	ABB/ABB	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	163	110	65	44	1.48 *	/	
	Unidentified	29:28	00:00	0	3048	9161	966	1625	0.33 *	ABV/ABB	RT
	13C-2,3,7,8-TCDF	30:41	30:40	1	1808821	2263498	187716	235772	0.80	AVV/ABV	
	Unidentified	31:07	00:00	0	2683	3424	1035	744	0.78	AVB/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	43	60	17	24	0.71	/	
	Unidentified	31:24	00:00	0	1321	1067	189	162	1.24 *	ABB/AVV	R
	Unidentified	32:18	00:00	0	2385	2441	355	292	0.98 *	AVV/ABV	R
	Unidentified	32:36	00:00	0	2108	1846	242	275	1.14 *	ABB/ABV	R
	Unidentified	32:47	00:00	0	474	2189	204	319	0.22 *	AVV/AVB	RT
	2,3,7,8-TCDD	32:55	32:52	3	1677	2189	200	319	0.77	ABB/AVB	TM
	Unidentified	33:59	00:00	0	1098	2018	207	224	0.54 *	ABV/ABB	RT
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	300	160	120	64	1.88 *	/	
	13C-1,2,3,4-TCDD	32:16	32:17	-1	3399108	4185392	355987	431077	0.81	AVV/AVV	
	13C-2,3,7,8-TCDD	32:48	32:49	-1	1180339	1471106	116616	146055	0.80	ABV/AVV	
	Unidentified	33:15	00:00	0	4174	11203	1250	1070	0.37 *	ABB/AVB	RT
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	125	113	50	45	1.11 *	/	
	Unidentified	39:18	00:00	0	6984	5764	1622	991	1.21 *	ABB/ABB	R
	Unidentified	39:39	00:00	0	2050	2178	554	511	0.94 *	ABV/ABV	R
	1,2,3,7,8-PeCDF	39:45	39:44	1	6719	3014	1476	735	2.23 *	AVB/AVB	R
	Unidentified	40:01	00:00	0	3663	2559	667	467	1.43	ABV/ABB	
	Unidentified	40:14	00:00	0	10140	2960	1360	760	3.43 *	AVB/ABV	R
	Unidentified	40:40	00:00	0	1117	2382	320	374	0.47 *	ABB/ABB	R
	2,3,4,7,8-PeCDF	40:54	40:53	1	8268	7807	1930	1409	1.06 *	ABB/ABV	R
	Unidentified	41:07	00:00	0	9473	7345	1662	1398	1.29 *	ABB/AVB	R
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	215	138	86	55	1.56	/	
	Unidentified	39:16	00:00	0	3149	3843	909	1396	0.82 *	ABB/ABV	R
	13C-1,2,3,7,8-PeCDF	39:43	39:42	1	2239387	1399615	465215	290465	1.60	ABV/ABV	
	Unidentified	40:13	00:00	0	22788	15126	5534	3002	1.51	AVV/AVB	
	13C-2,3,4,7,8-PeCDF	40:53	40:52	1	2326484	1485773	533654	344633	1.57	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811X1AC	Prep Batch	6217014	Lot No	H6G290408-010
Data File	/20160817s3/d1tm811x.d	Prep Date	08/04/16	SDG No	
Analysis ID	180451	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 06:22	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.1 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	93	85	37	34	1.09 *	/	
	Unidentified	40:43	00:00	0	5213	2358	1019	607	2.21 *	ABB/ABB	R
	Unidentified	40:58	00:00	0	1713	826	345	239	2.07 *	AVB/ABB	R
	1,2,3,7,8-PeCDD	41:24	41:23	1	6253	5961	1297	1329	1.05 *	ABB/AVB	R
	Unidentified	42:03	00:00	0	2827	2112	629	521	1.34	ABB/ABB	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	93	163	37	65	0.57 *	/	
	13C-1,2,3,7,8-PeCDD	41:23	41:22	1	1408468	864022	347803	205295	1.63	ABV/ABV	
	Unidentified	41:35	00:00	0	14520	9323	2996	1203	1.56	AVV/AVB	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	103	128	41	51	0.80 *	/	
	Unidentified	44:18	00:00	0	16299	11628	4617	3568	1.40	ABB/ABB	
	1,2,3,4,7,8-HxCDF	44:33	44:33	0	14068	11917	2432	2140	1.18	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:42	44:42	0	6661	6411	1557	1467	1.04 *	AVB/MVB	R
	Unidentified	45:04	00:00	0	1289	2460	268	312	0.52 *	AVV/ABV	R
	Unidentified	45:17	00:00	0	6309	6729	1455	1677	0.94 *	ABV/ABV	R
	2,3,4,6,7,8-HxCDF	45:28	45:27	1	4233	3943	1033	1027	1.07	AVB/MVB	
	Unidentified	46:37	00:00	0	2071	3116	293	461	0.66 *	ABB/AVB	R
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	143	253	57	101	0.56	/	
	13C-1,2,3,4,7,8-HxCDF	44:33	44:32	1	918868	1712957	244111	451800	0.54	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:41	44:40	1	1027460	1976123	257328	499168	0.52	AVV/AVV	
	Unidentified	44:59	00:00	0	3291	6559	991	1734	0.50	AVV/AVV	
	Unidentified	45:08	00:00	0	5924	6324	961	1576	0.94 *	AVB/AVB	R
	13C-2,3,4,6,7,8-HxCDF	45:27	45:26	1	1031933	2005311	259954	511039	0.51	ABV/AVV	
	Unidentified	45:40	00:00	0	9255	5677	1311	1372	1.63 *	AVB/AVV	RT
	Unidentified	46:18	00:00	0	2718	1732608	708	407267	0.00 *	ABV/ABV	RT
	13C-1,2,3,7,8,9-HxCDF	46:26	46:26	0	910862	1732608	212752	407267	0.53	AVV/ABV	
	Unidentified	46:45	00:00	0	3908	3126	1090	1347	1.25 *	AVB/AVB	R
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	115	143	46	57	0.81 *	/	
	1,2,3,4,7,8-HxCDD	45:39	45:38	1	6685	4571	1598	1070	1.46 *	AVV/ABV	R
	1,2,3,6,7,8-HxCDD	45:46	45:45	1	16272	11977	3750	2885	1.36	AVB/AVB	
	1,2,3,7,8,9-HxCDD	46:10	46:10	0	18985	15698	3713	2655	1.21	ABV/ABV	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	258	343	103	137	0.75 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:38	45:37	1	1247388	950542	312791	237290	1.31	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:45	45:44	1	1220980	958524	299935	240487	1.27	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:09	46:09	0	3917850	3169609	963603	781517	1.24	AVV/ABV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	123	80	49	32	1.53 *	/	
	1,2,3,4,6,7,8-HpCDF	48:58	48:58	0	47711	45923	9846	9009	1.04	ABB/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811X1AC	Prep Batch	6217014	Lot No	H6G290408-010
Data File	/20160817s3/d1tm811x.d	Prep Date	08/04/16	SDG No	
Analysis ID	180451	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 06:22	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.1 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	LKM	Diluton Factor	1.00	Code	9Ao

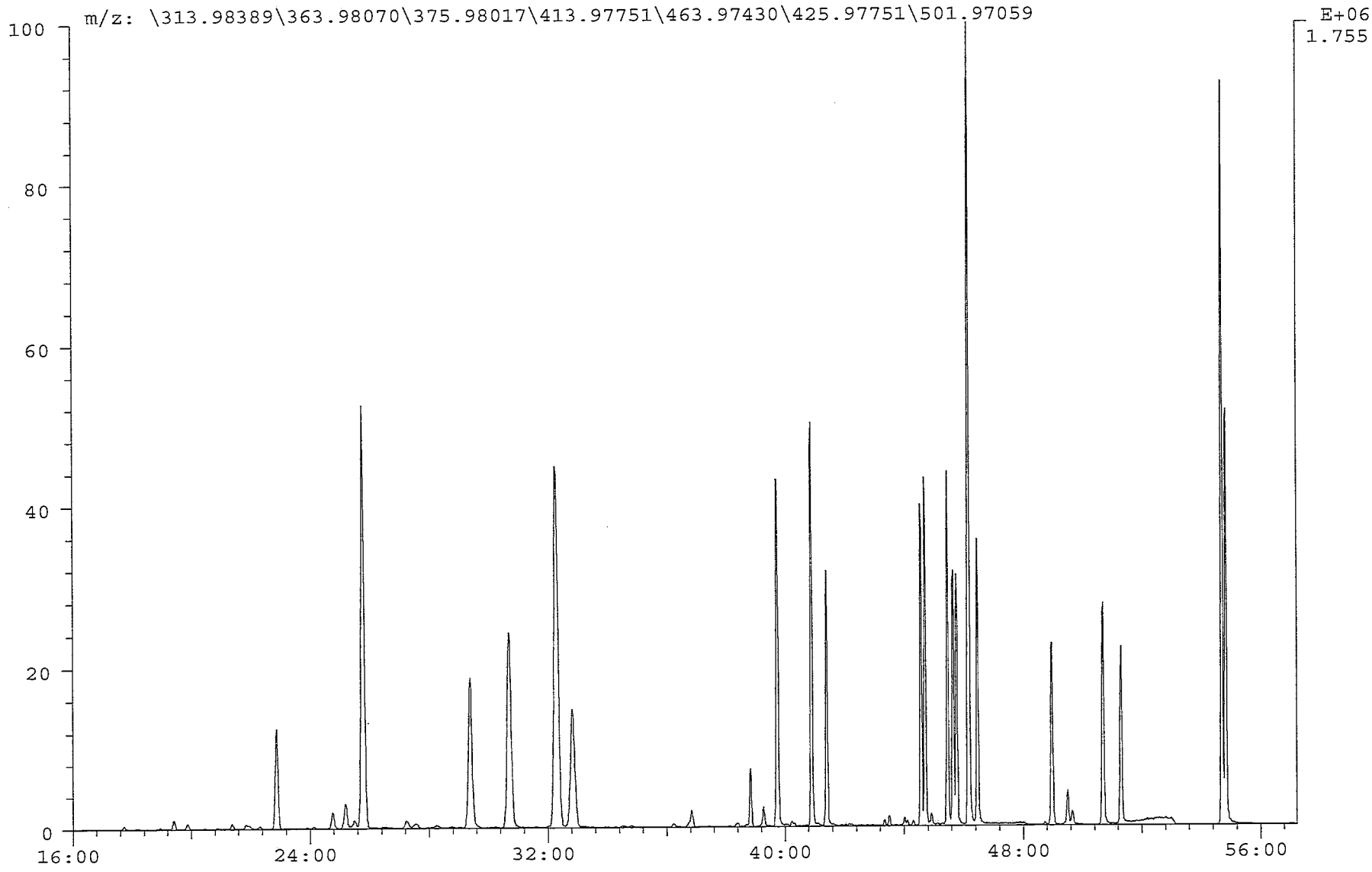
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Unidentified	49:22	00:00	0	4033	2375	530	558	1.70 *	ABV/ABB	R
	Unidentified	49:39	00:00	0	69738	66467	13605	13118	1.05	AVV/ABV	
	Unidentified	49:48	00:00	0	5504	3423	910	716	1.61 *	AVV/AVB	R
	1,2,3,4,7,8,9-HpCDF	51:18	51:18	0	5475	4222	895	739	1.30 *	ABB/ABV	R
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	100	218	40	87	0.46	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:57	48:57	0	568631	1301860	115659	263765	0.44	ABV/ABV	
	Unidentified	49:25	00:00	0	4558	11462	690	2294	0.40	ABB/AVV	T
	Unidentified	49:37	00:00	0	3590	8559	1052	1454	0.42	ABV/AVV	
	13C-1,2,3,4,7,8,9-HpCDF	51:17	51:17	0	547301	1233070	120213	266112	0.44	ABV/ABV	
	Unidentified	51:31	00:00	0	11618	9879	1458	2614	1.18 *	AVV/AVV	R
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	93	128	37	51	0.73 *	/	
	Unidentified	49:28	00:00	0	188406	176177	36762	35439	1.07	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:41	50:42	-1	204127	197625	41248	38978	1.03	ABV/ABV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	90	75	36	30	1.20	/	
	Unidentified	49:27	00:00	0	9187	10014	2107	2058	0.92	ABV/ABV	
	13C-1,2,3,4,6,7,8-HpCDD	50:40	50:41	-1	978344	960347	203404	200599	1.02	ABV/ABV	
	Unidentified	50:59	00:00	0	6547	2116	962	642	3.09 *	AVV/AVB	R
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	68	48	27	19	1.42 *	/	
	Unidentified	54:42	00:00	0	1405	71356	405	18084	0.02 *	ABV/ABV	RT
	OCDF	54:49	54:50	-1	64825	71356	15924	18084	0.91	AVV/AVB	
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	238	243	95	97	0.98	/	
	13C-OCDF	54:49	54:49	0	1620365	1838888	406709	453010	0.88	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	110	130	44	52	0.85	/	
	OCDD	54:41	54:42	-1	1657864	1853187	428900	485224	0.89	ABV/ABV	
	Unidentified	55:11	00:00	0	3178	2414	420	468	1.32 *	AVB/AVB	RT
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	60	388	24	155	0.15 *	/	
	13C-OCDD	54:41	54:41	0	1364249	1463147	342306	367107	0.93	ABV/ABV	

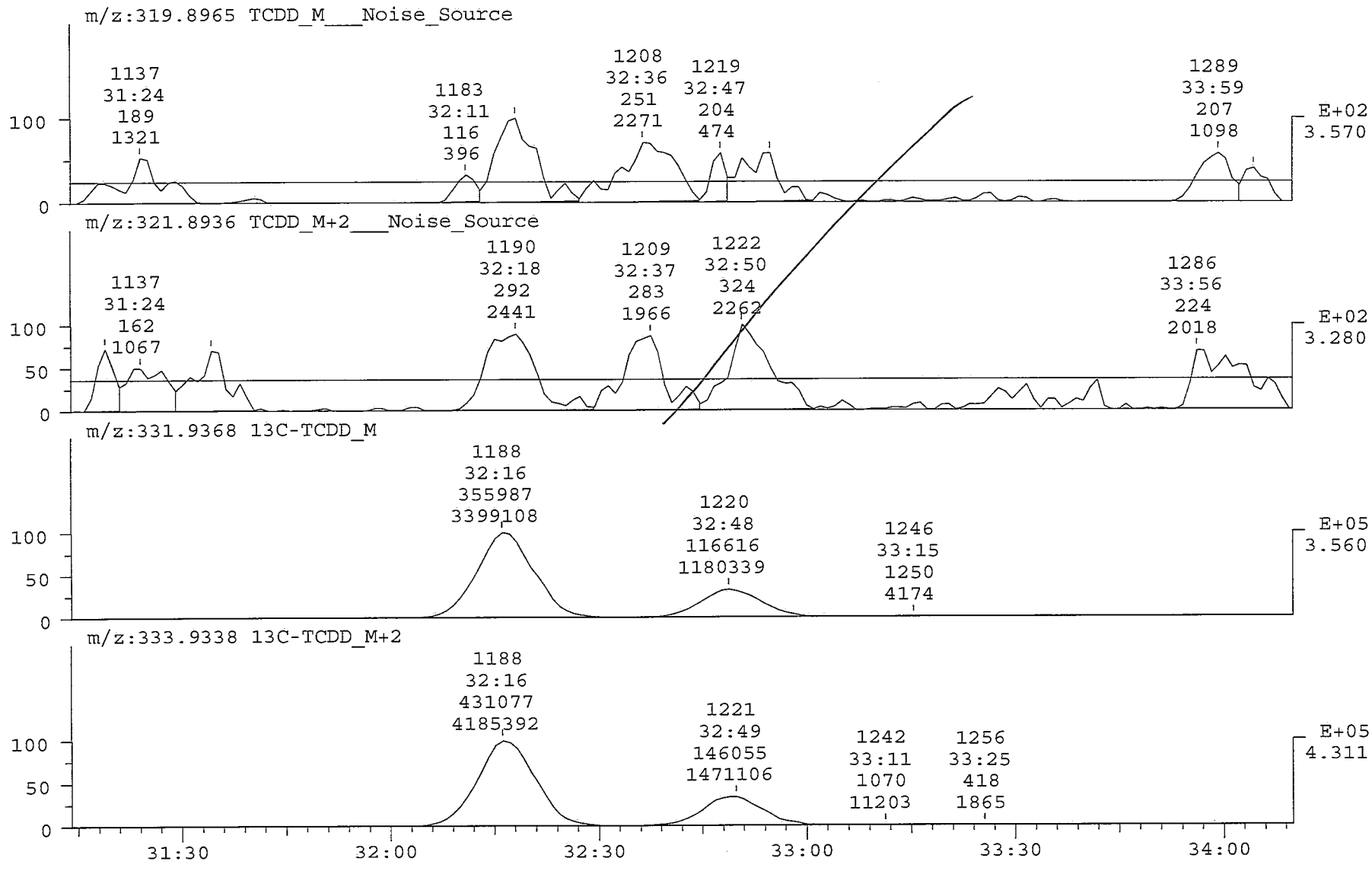
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. KM 8/18/16
Calck KM 8-24-16
QC/Rev KM 8/24/16

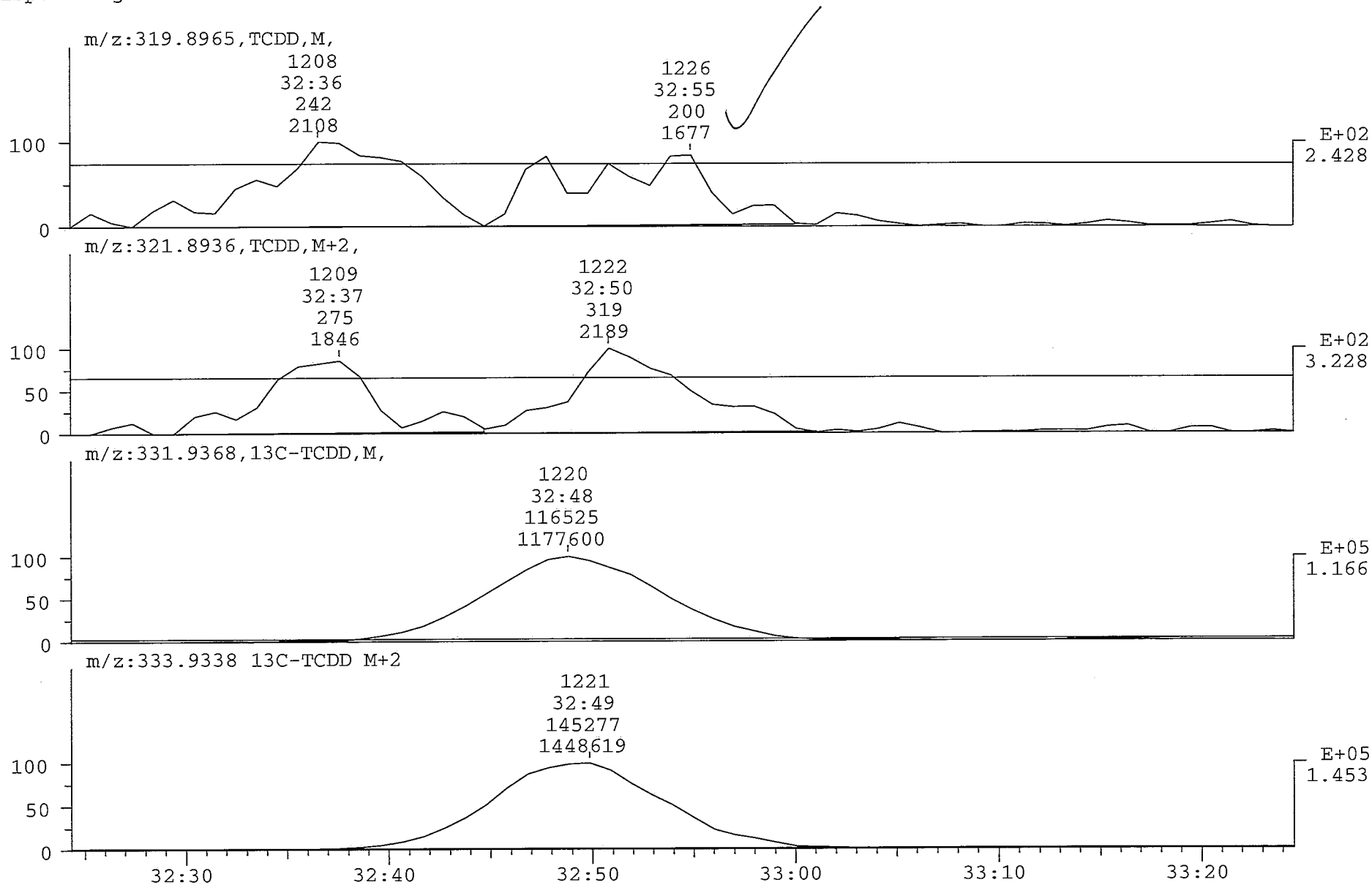
CHRO:	d1tm811x	18-Aug-16	Elapse:	54:51	2492
Samp:	WO=m811x1ac Meth=9Ao Dil=1		Start :	06:22:44	2629
Comm:	Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3				
Mode:	EI ESI + Q1MS UP LR		Study :	6217014 (10.1g)	
Oper:	LKM		Inlet :	LC	
Peak:	100.00 ppm	Label wndw: 232 > 2629	Masses:	303 > 514	
Area:	5, 0.50, 0	Baseline : 100, 3	Label :	0, 0.0	
Disp:	Height Area				



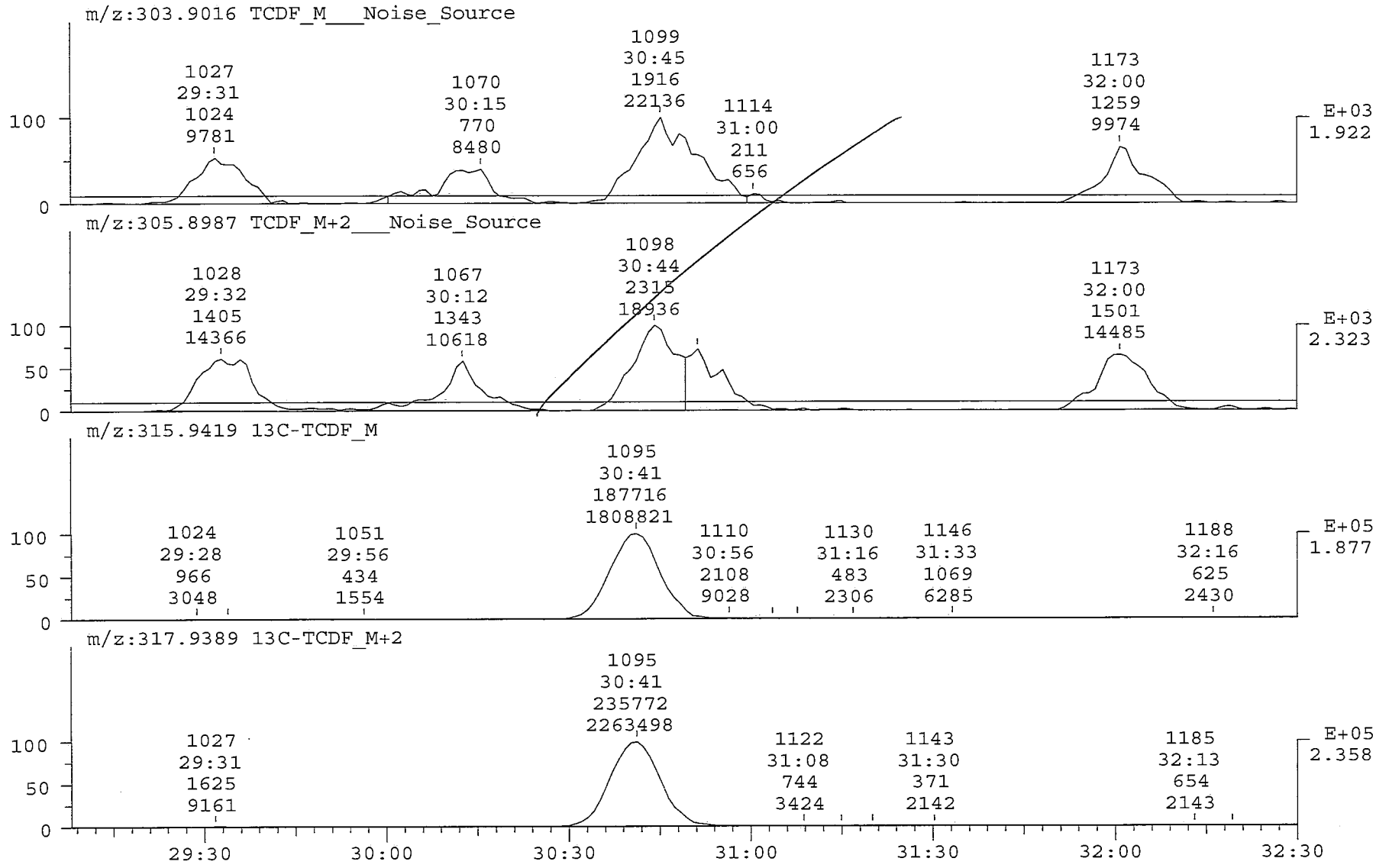
CHRO: d1tm811x 18-Aug-16 Elapse: 32:41 1213
Samp: WO=m811x1ac Meth=9Ao Dil=1 Start : 06:22:44 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1127 > 1300 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



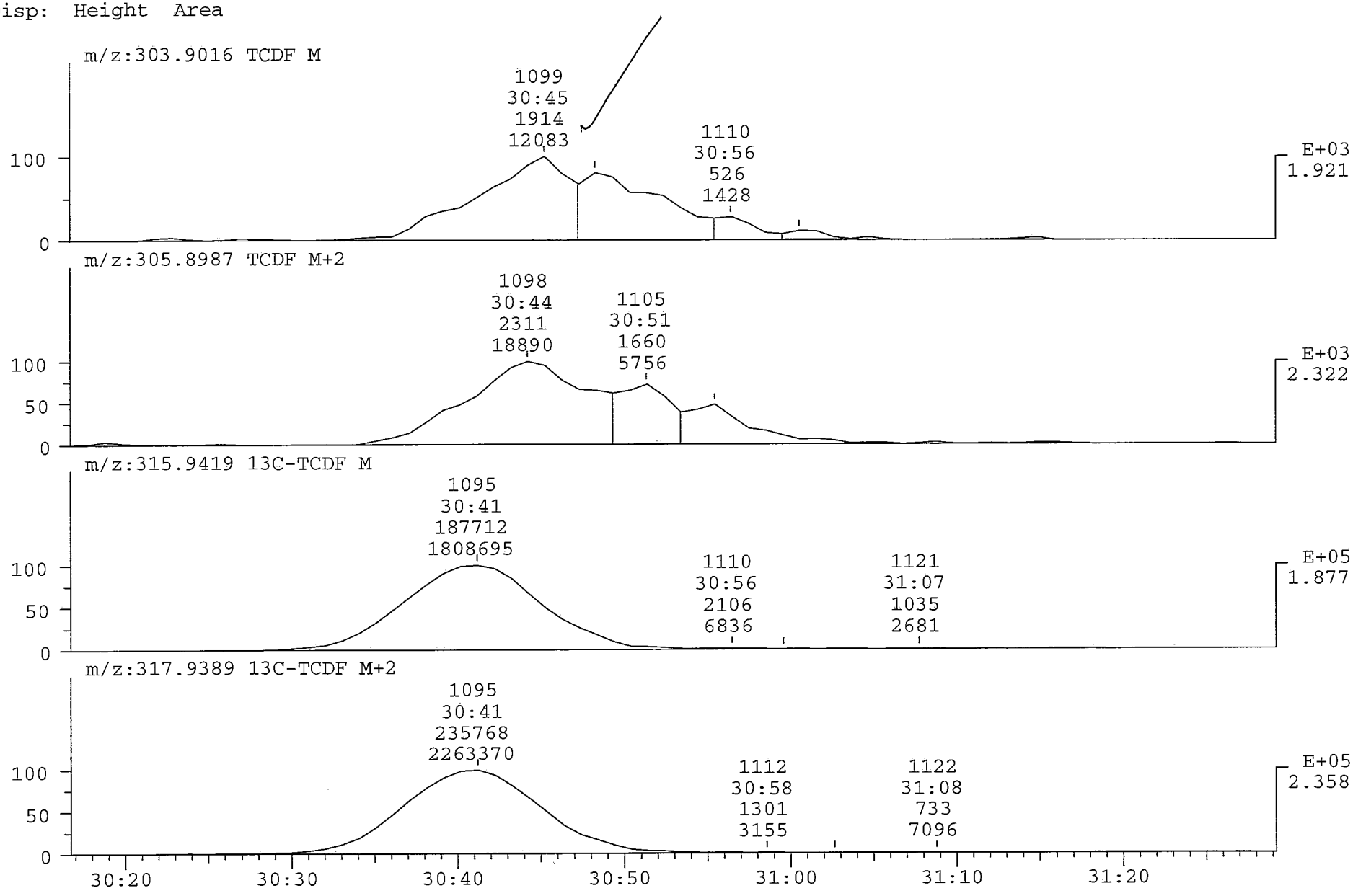
CHRO: d1tm811x 18-Aug-16 Elapse: 39:45 1620
Samp: WO=m811x1ac Meth=9Ao Dil=1 Start : 06:22:44 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1196 > 1255 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



CHRO: d1tm811x 18-Aug-16 Elapse: 30:46 1100
Samp: WO=m811x1ac Meth=9Ao Dil=1 Start : 06:22:44 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1004 > 1202 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1tm811x 18-Aug-16 Elapse: 39:45 1620
Samp: WO=m811x1ac Meth=9Ao Dil=1 Start : 06:22:44 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1071 > 1142 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : 2, 5.0
Disp: Height Area



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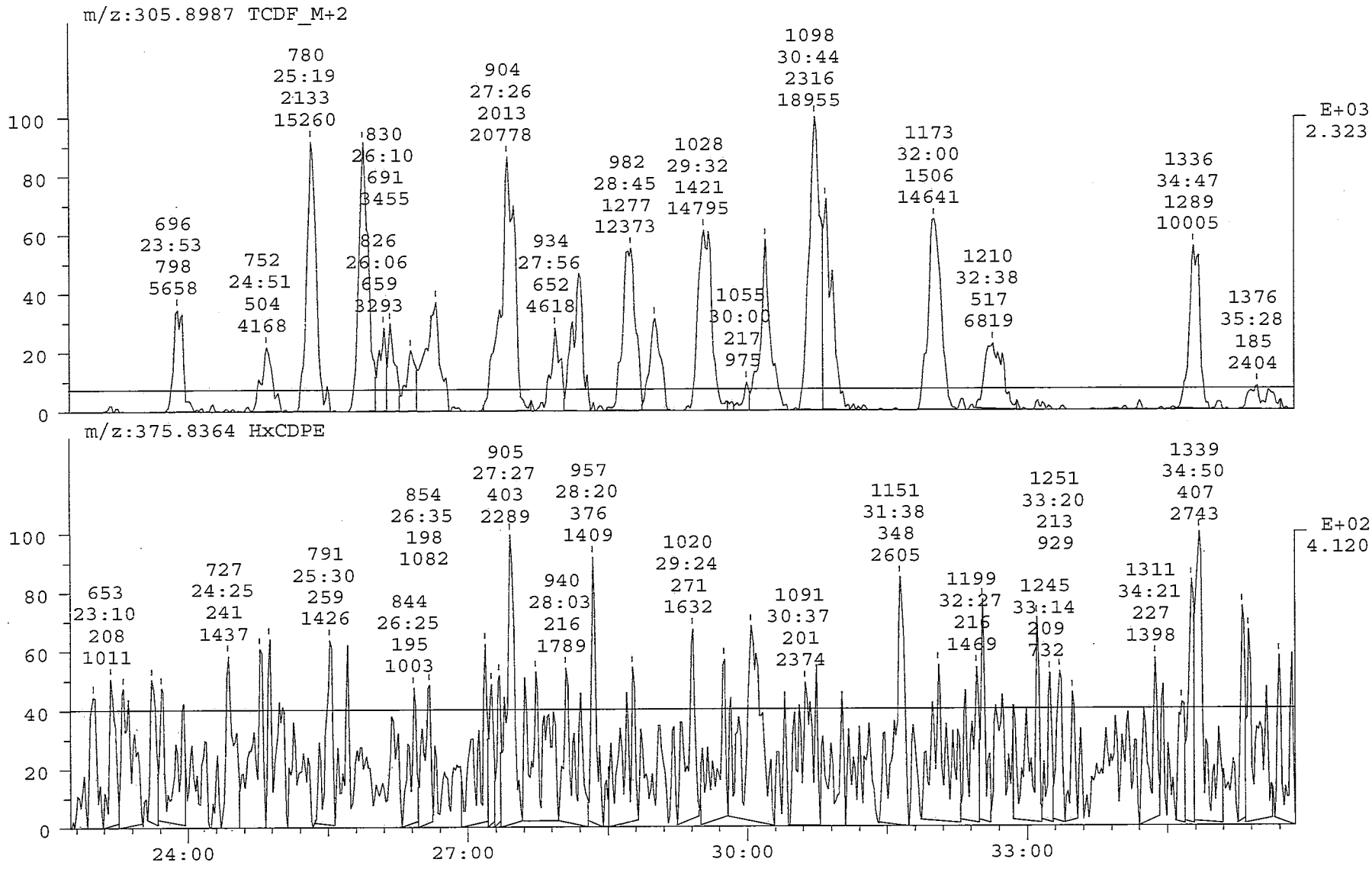
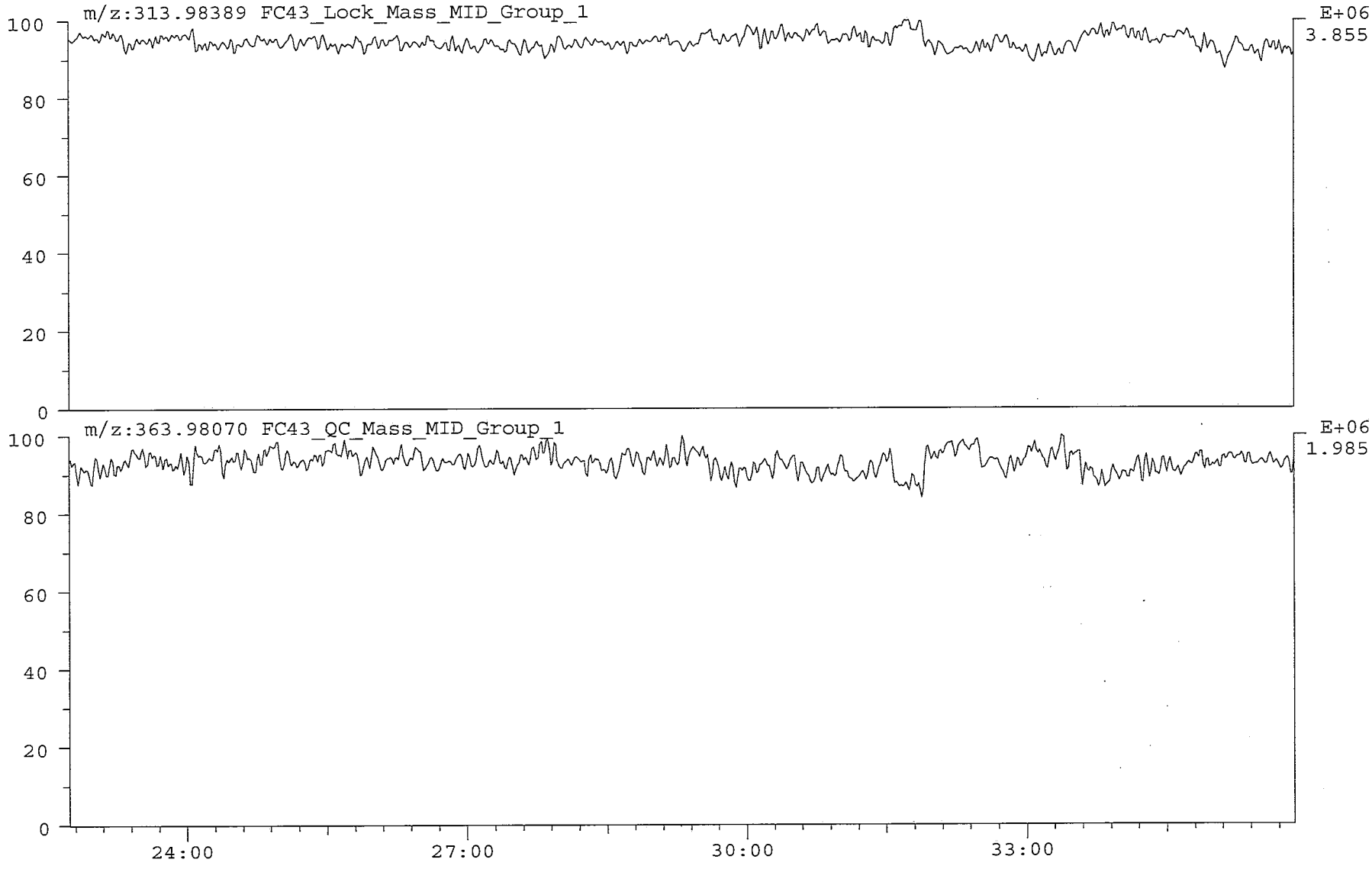
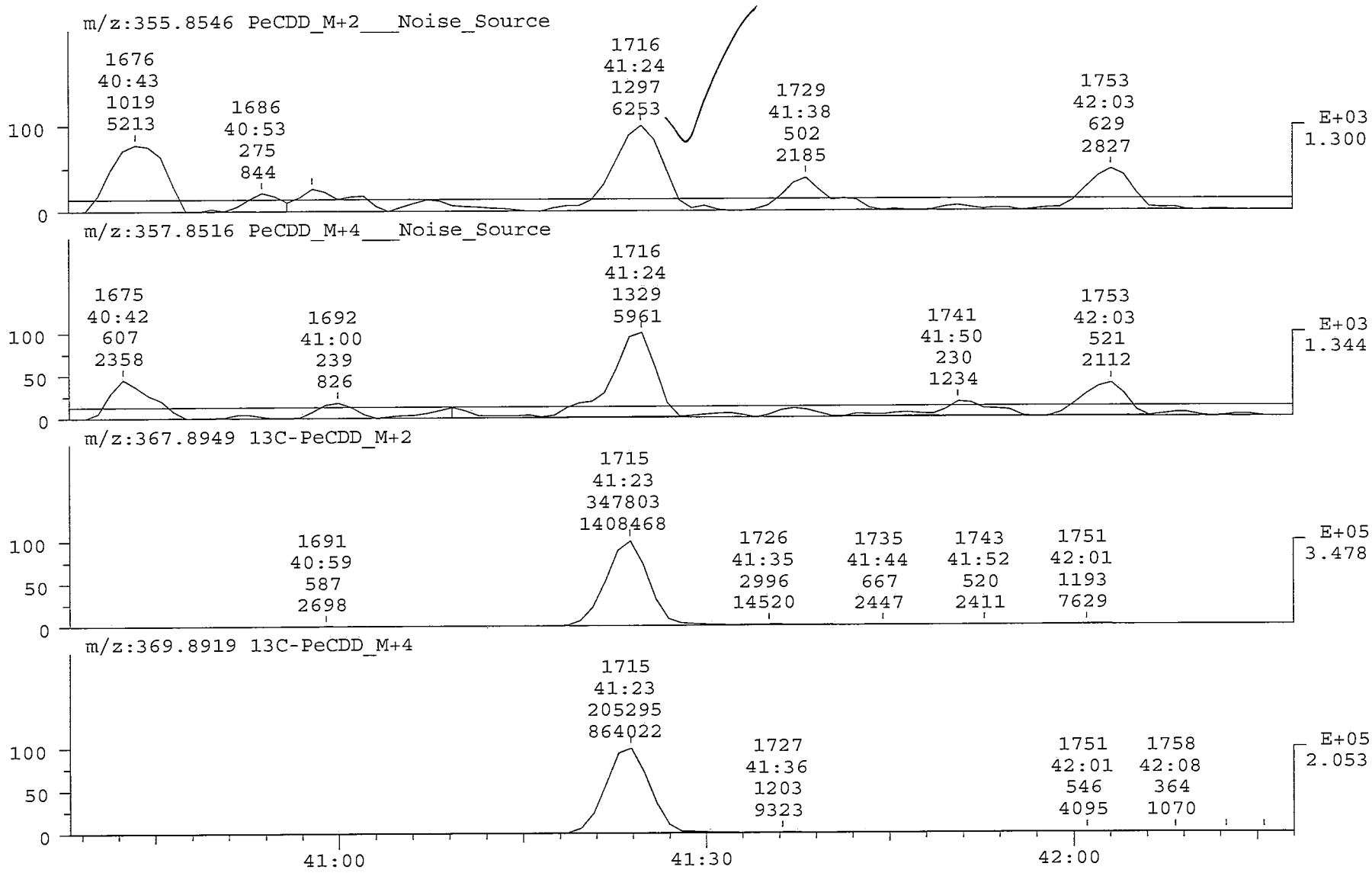
CHRO:  d1tm811x                                  18-Aug-16   Elapse:  30:46      1100
Samp:  WO=m811x1ac Meth=9Ao Dil=1                            Start :  06:22:44   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                   Study :  6217014 (10.1g)
Oper:  LKM                                                   Inlet :  LC
Peak:  100.00 ppm     Label wndw:   628 > 1399               Masses:  303 > 514
Area:  5, 0.50, 15    Baseline  :   100, 3                   Label :  -2, 5.0
Disp:  Height  Area
```



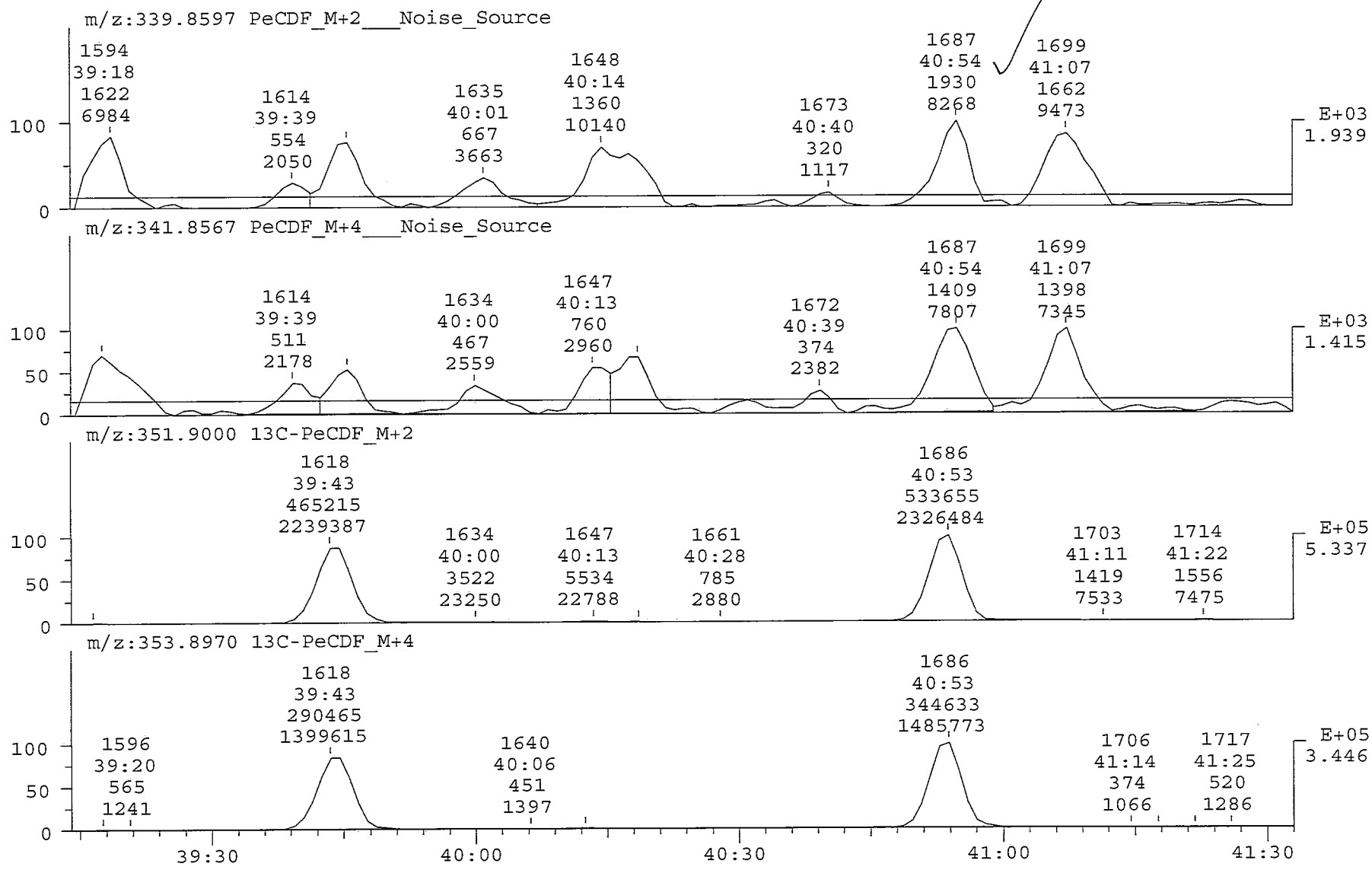
```
CHRO:  d1tm811x                                18-Aug-16  Elapse:  30:46      1100
Samp:  WO=m811x1ac Meth=9Ao Dil=1                         Start :  06:22:44   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.1g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   628 > 1399           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



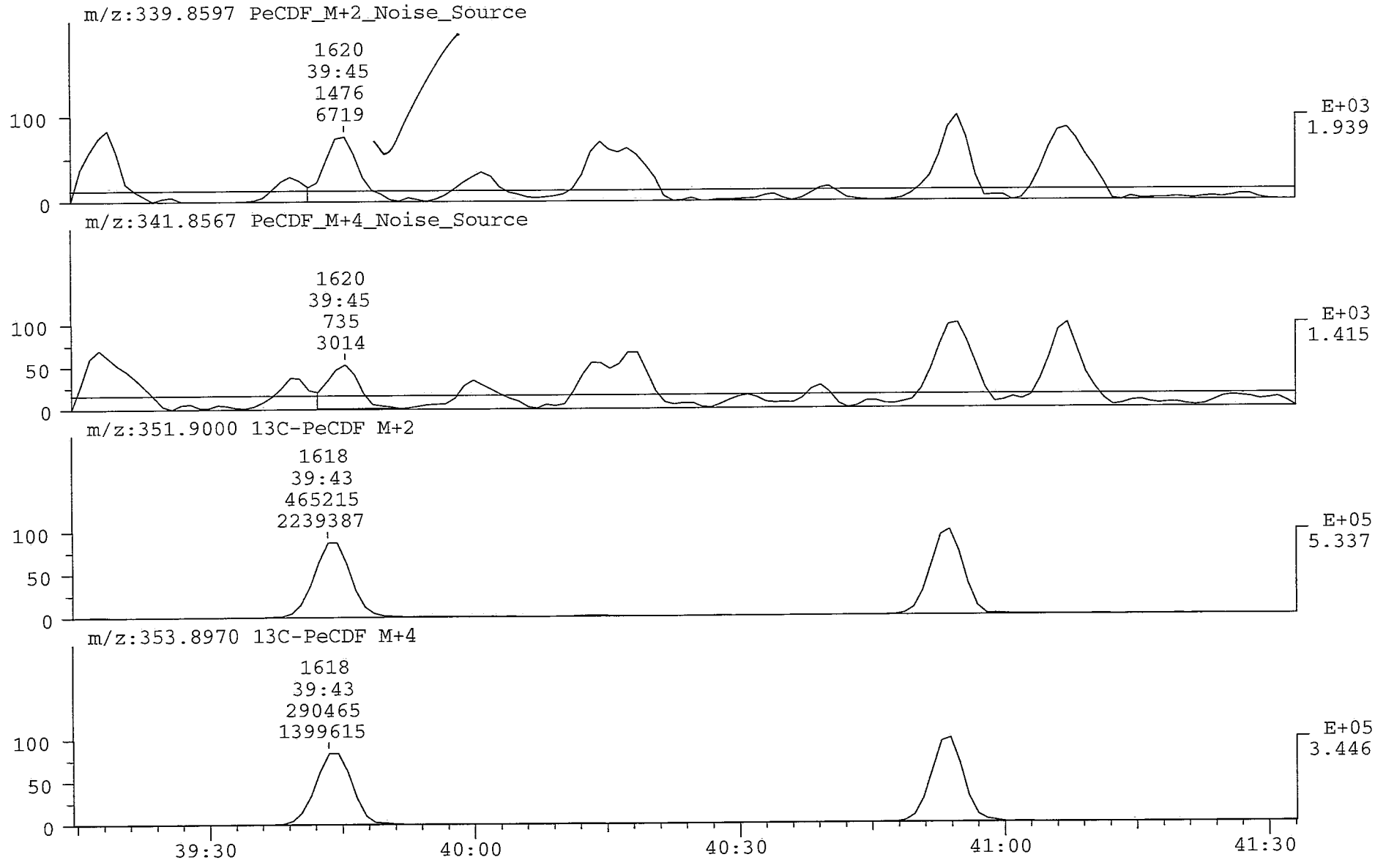
CHRO: d1tm811x 18-Aug-16 Elapse: 41:24 1716
Samp: WO=m811x1ac Meth=9Ao Dil=1 Start : 06:22:44 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1671 > 1767 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



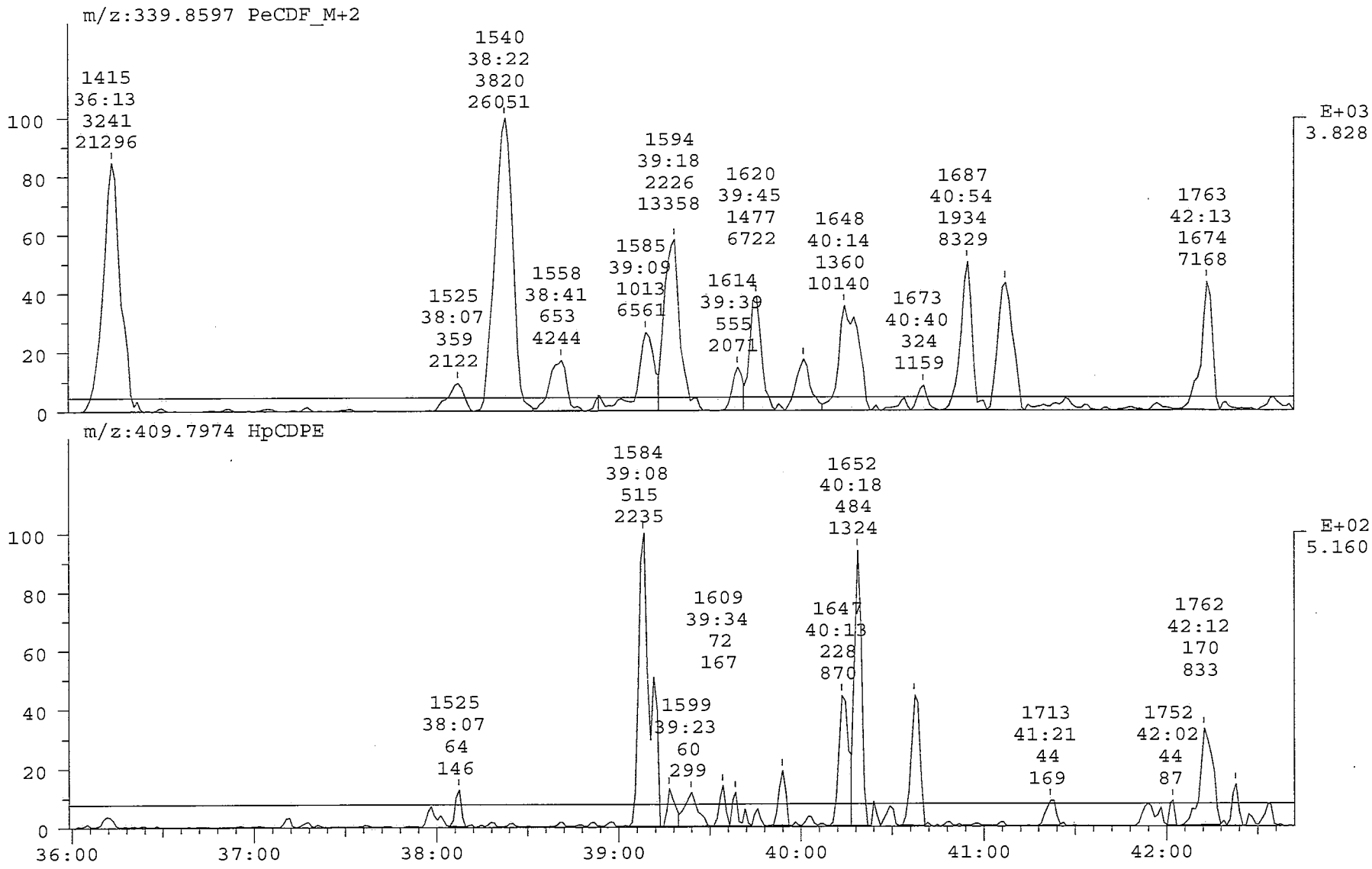
CHRO: d1tm811x 18-Aug-16 Elapse: 40:22 1656
Samp: WO=m811x1ac Meth=9Ao Dil=1 Start : 06:22:44 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1590 > 1724 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



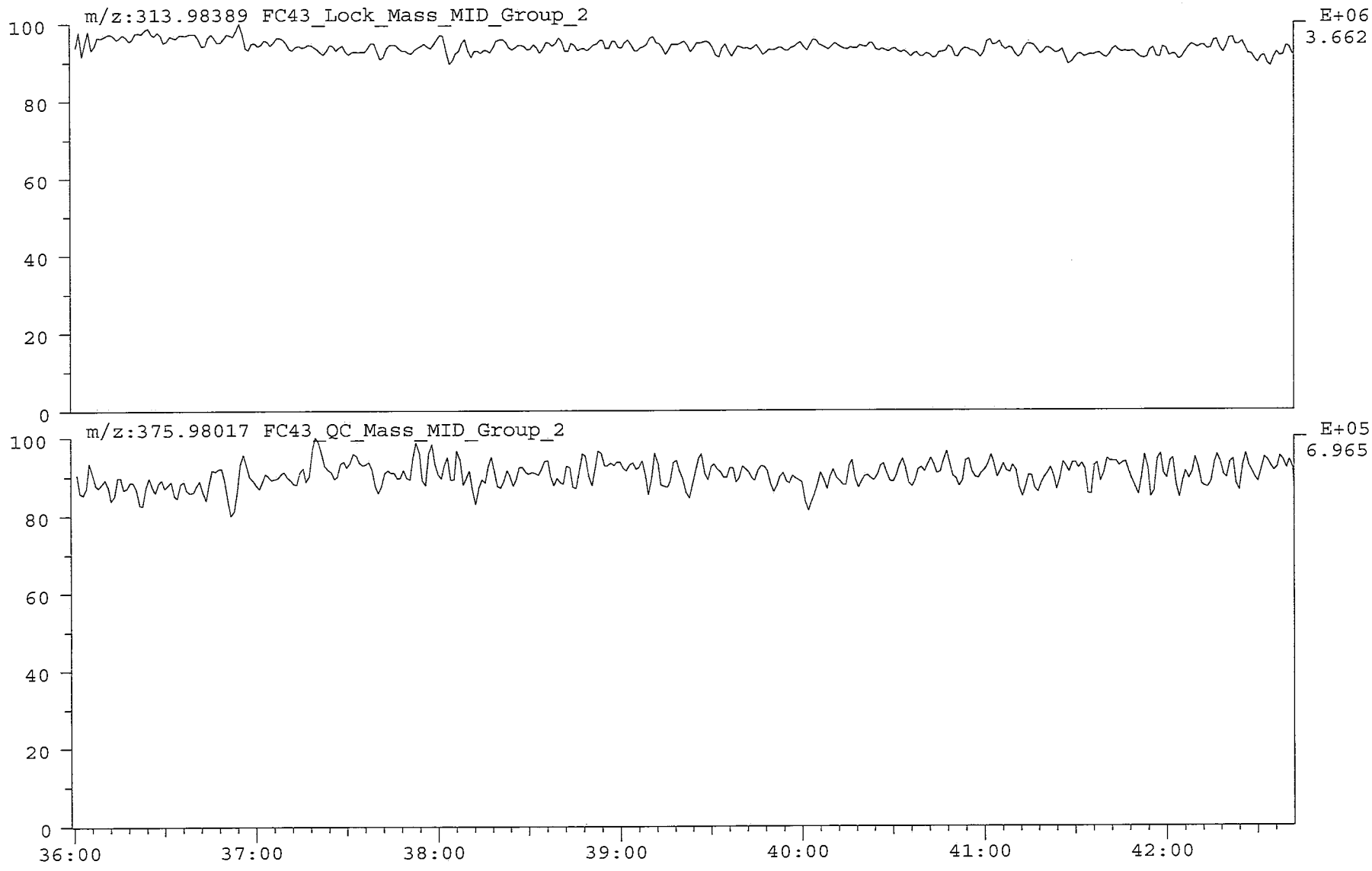
CHRO: d1tm811x 18-Aug-16 Elapse: 39:45 1620
Samp: WO=m811x1ac Meth=9Ao Dil=1 Start : 06:22:44 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1617 > 1623 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



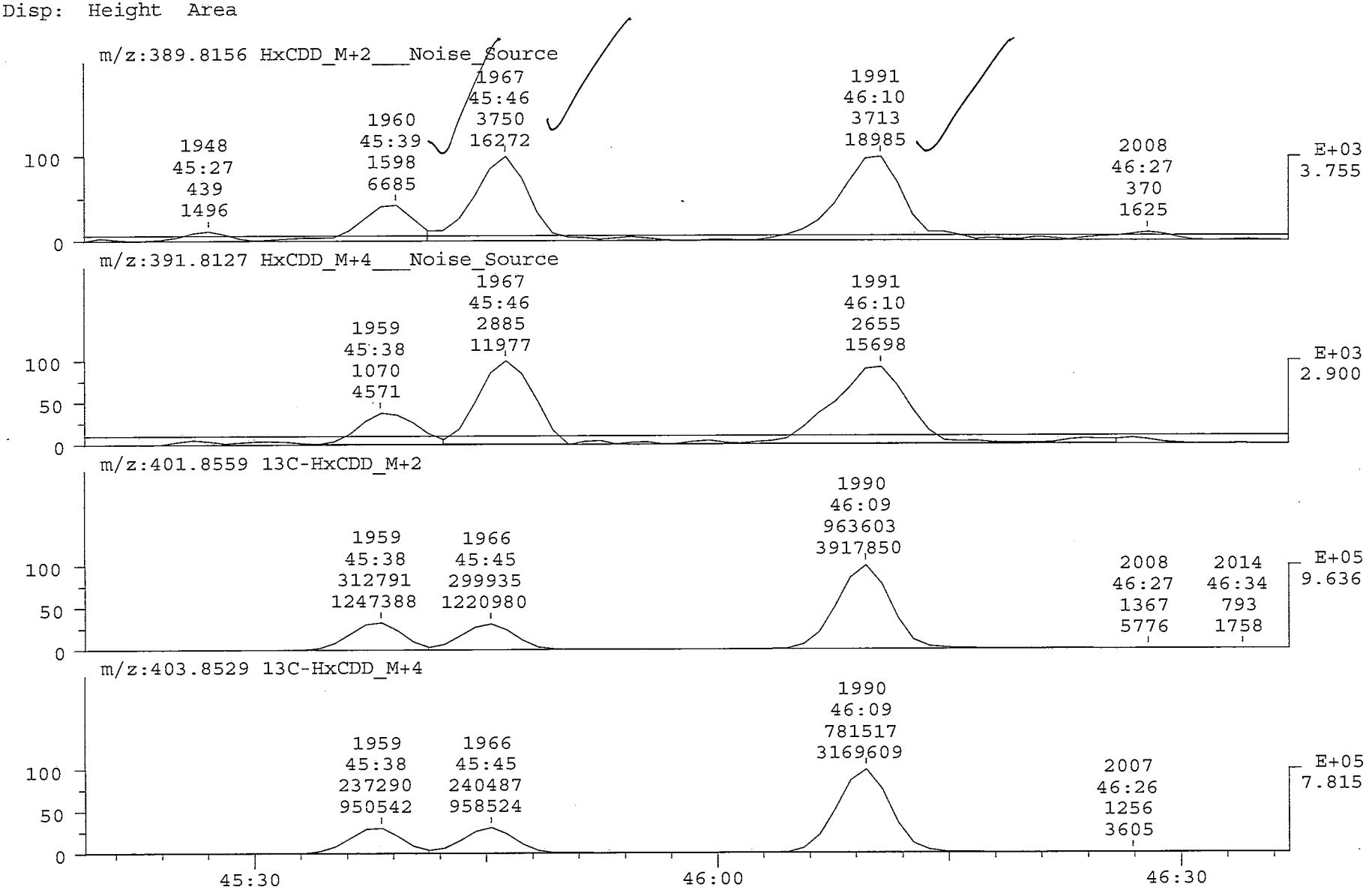
```
CHRO:  d1tm811x                                  18-Aug-16   Elapse:  40:22      1656
Samp:  WO=m811x1ac Meth=9Ao Dil=1                            Start :  06:22:44   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                   Study :  6217014 (10.1g)
Oper:  LKM                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  -2, 5.0
Disp:  Height  Area
```



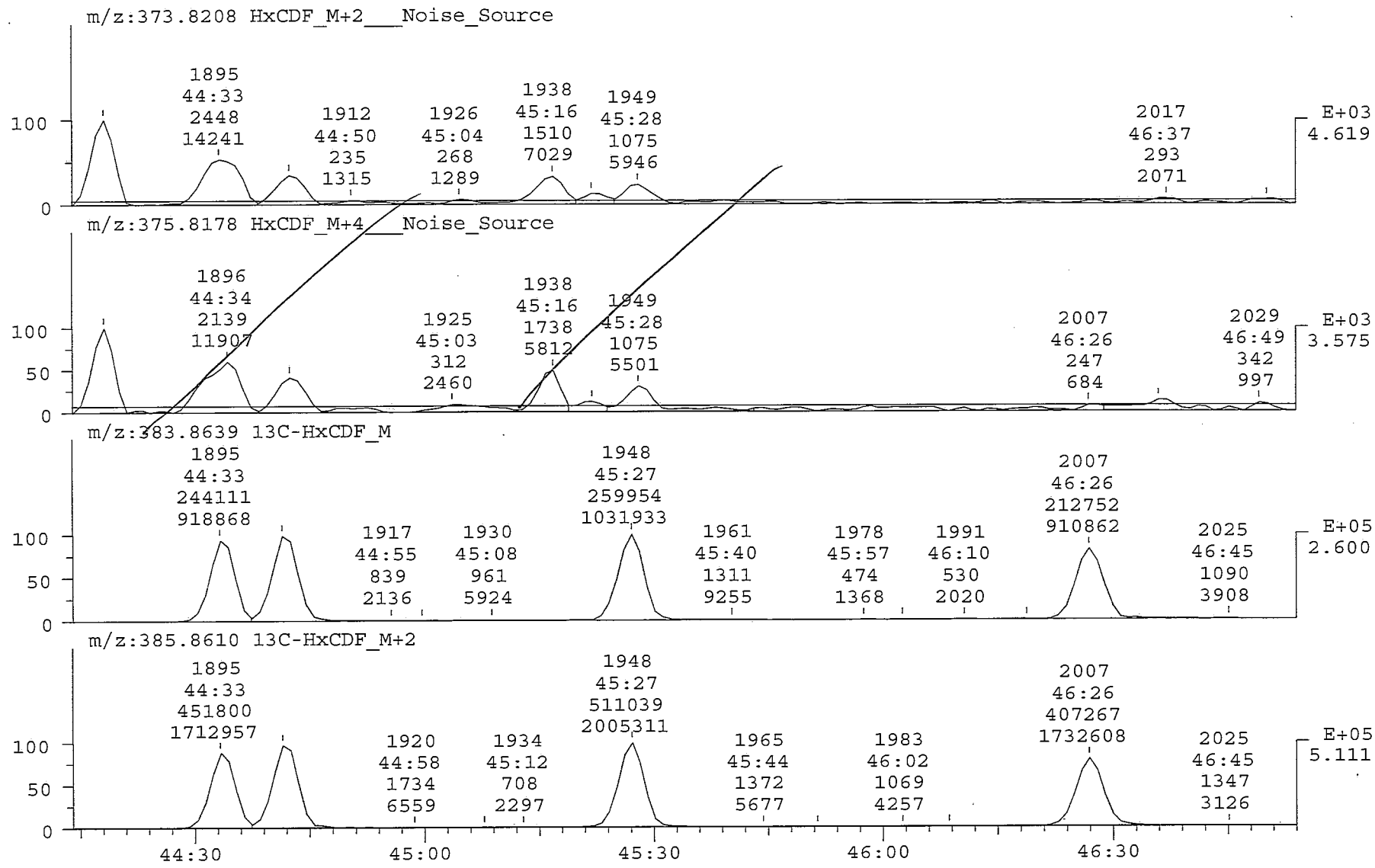
```
CHRO:  d1tm811x                                18-Aug-16  Elapse:  40:22      1656
Samp:  WO=m811x1ac Meth=9Ao Dil=1                         Start :  06:22:44   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.1g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



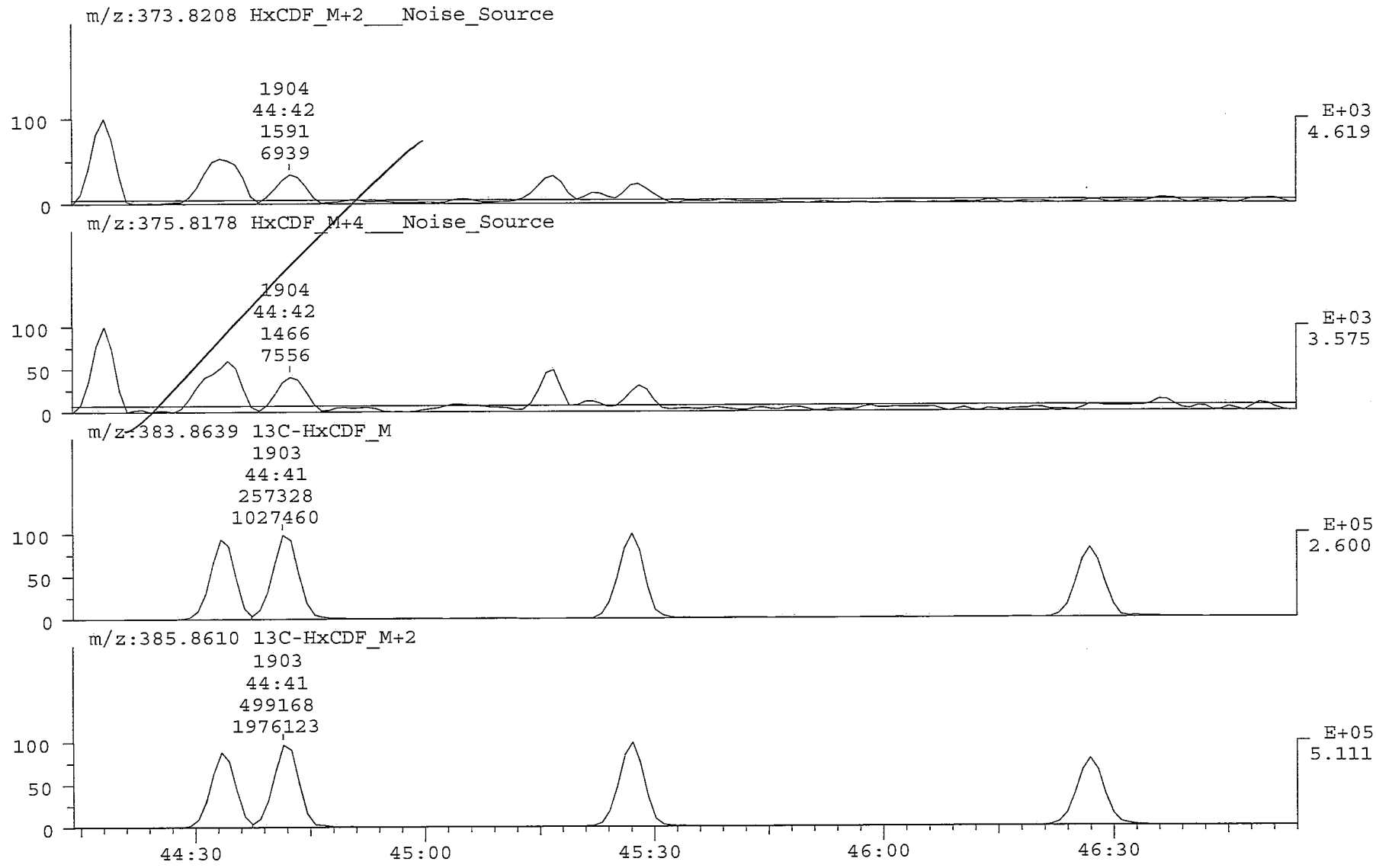
CHRO: d1tm811x 18-Aug-16 Elapse: 45:58 1979
Samp: WO=m811x1ac Meth=9Ao Dil=1 Start : 06:22:44 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1940 > 2017 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



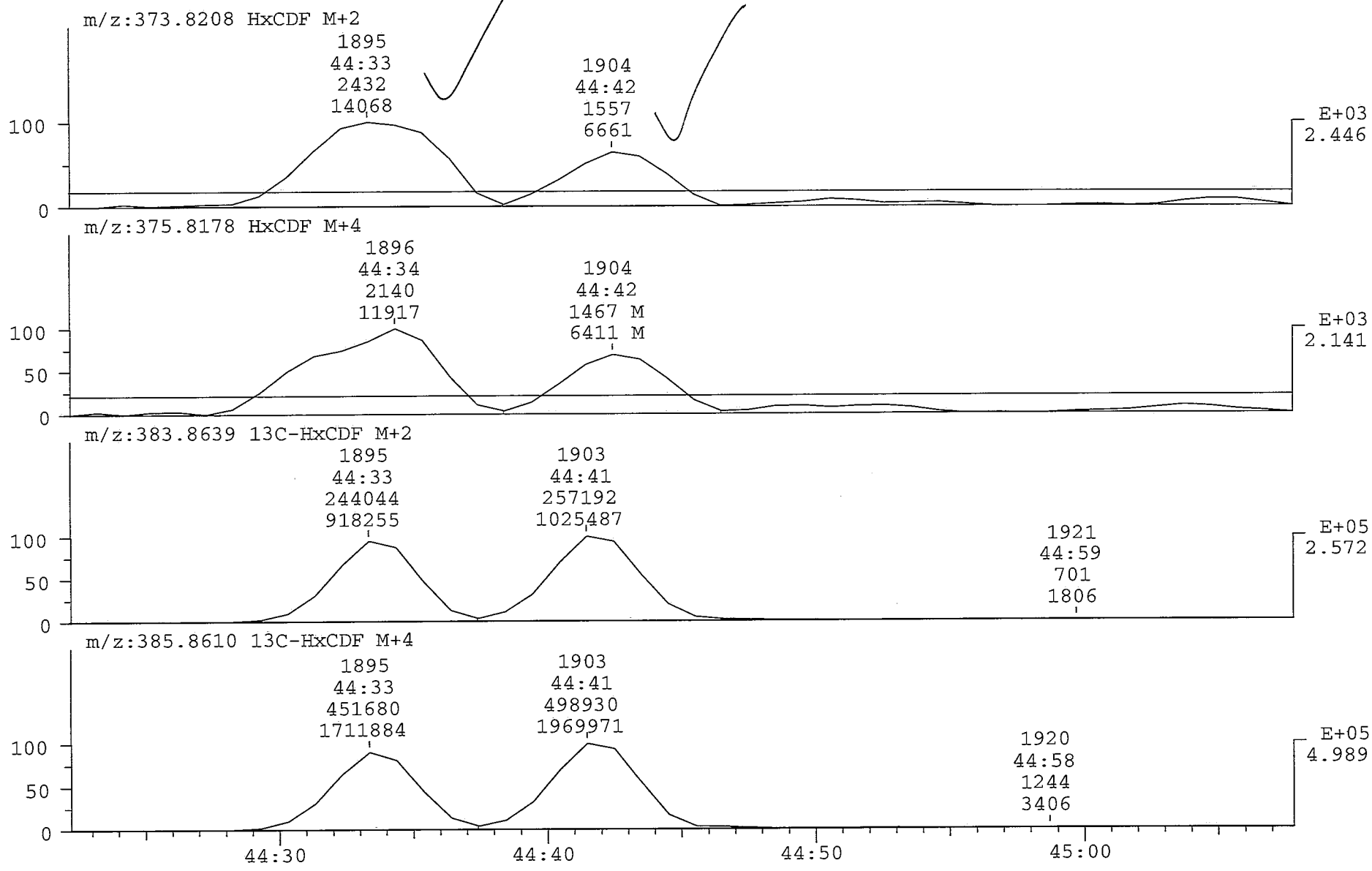
```
CHRO:  d1tm811x                                  18-Aug-16   Elapse:  45:34      1955
Samp:  WO=m811x1ac Meth=9Ao Dil=1                            Start :  06:22:44   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                   Study :  6217014 (10.1g)
Oper:  LKM                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1876 > 2034             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  -2, 5.0
Disp:  Height  Area
```



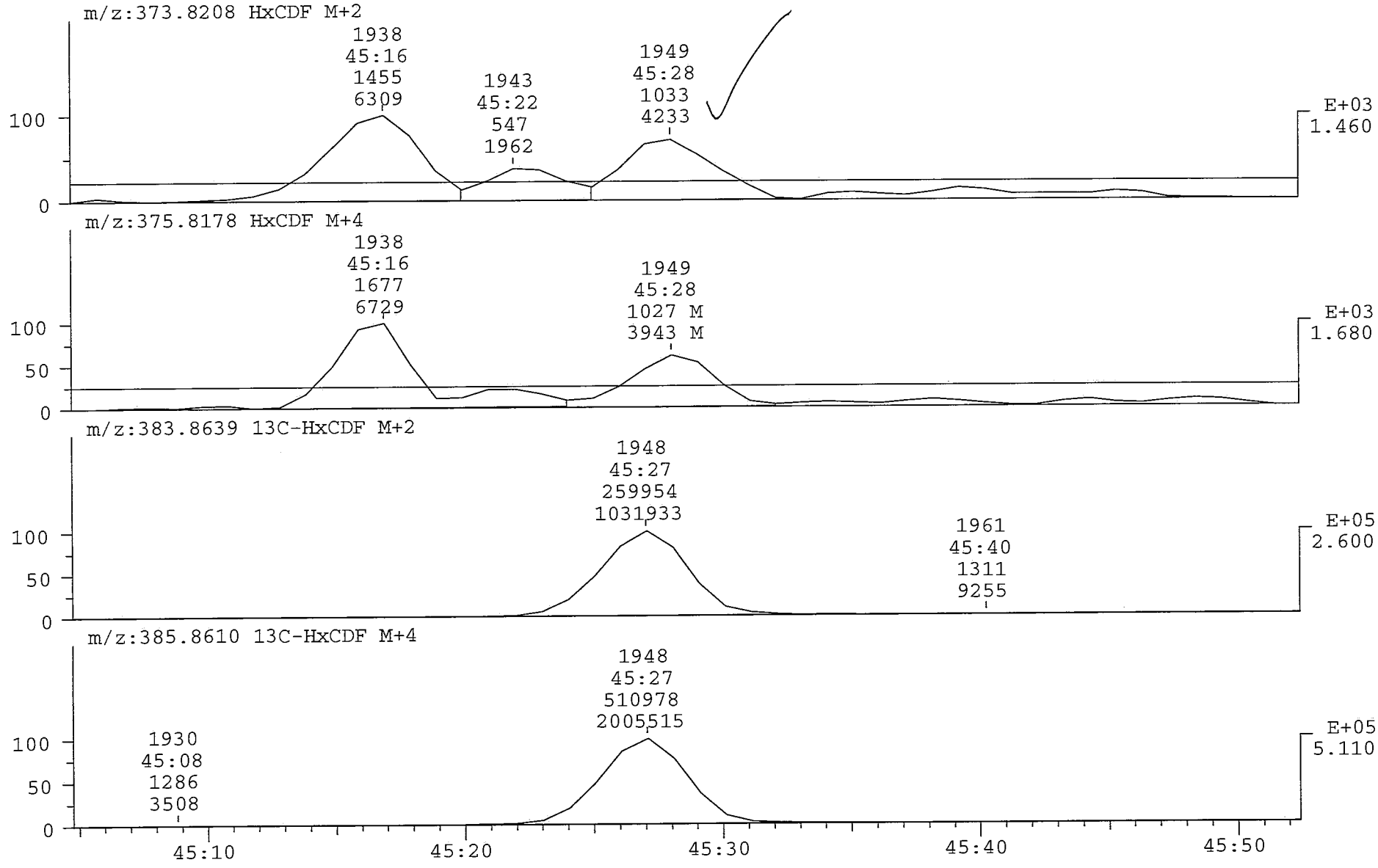
```
CHRO:  d1tm811x                                18-Aug-16   Elapse:  44:42      1904
Samp:  WO=m811x1ac Meth=9Ao Dil=1                          Start :  06:22:44   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.1g)
Oper:  LKM                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1900 > 1908           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



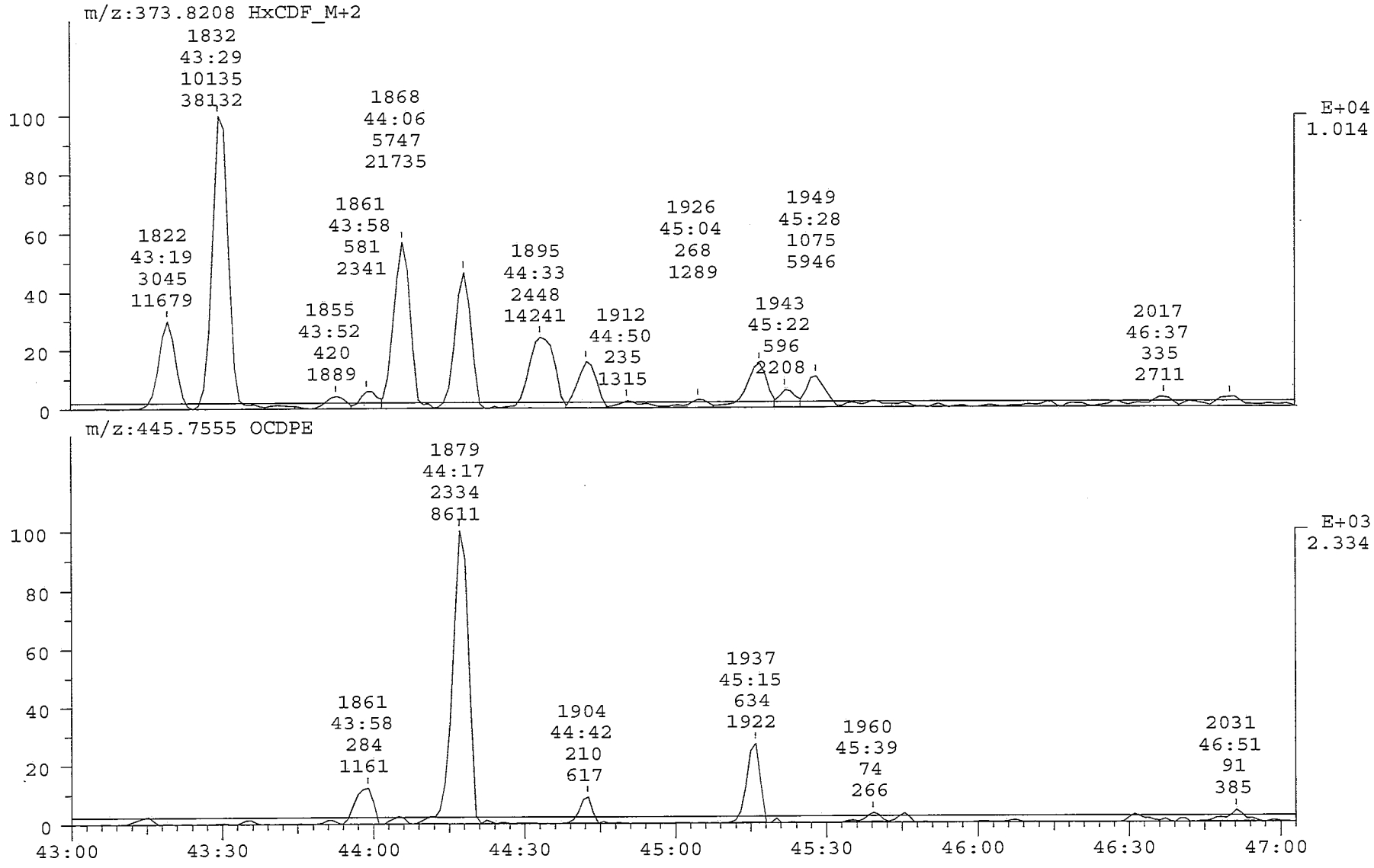
CHRO: d1tm811x 18-Aug-16 Elapse: 39:45 1620
Samp: WO=m811x1ac Meth=9Ao Dil=1 Start : 06:22:44 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1884 > 1929 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



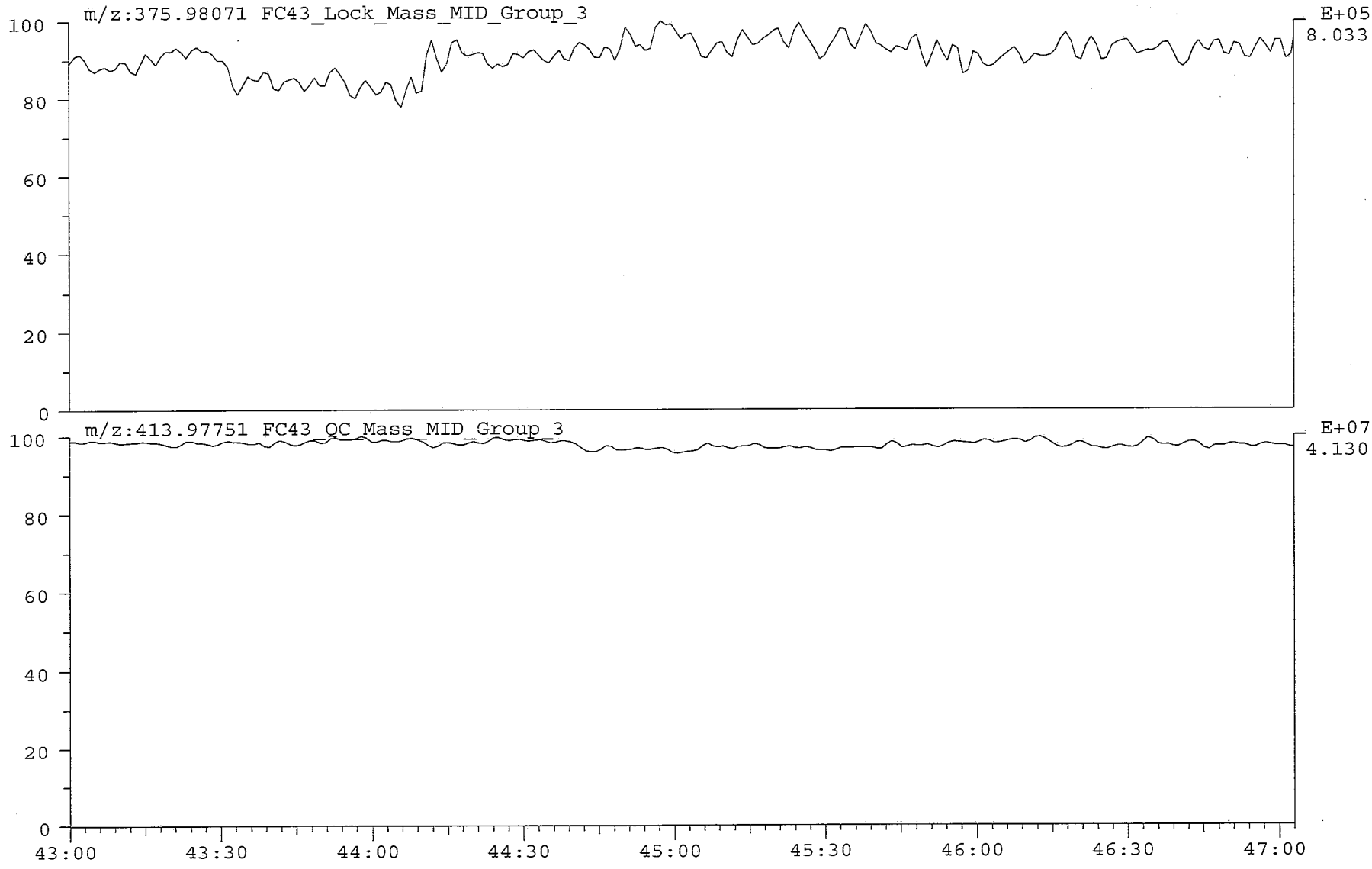
CHRO: d1tm811x 18-Aug-16 Elapse: 39:45 1620
Samp: WO=m811x1ac Meth=9Ao Dil=1 Start : 06:22:44 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1926 > 1973 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



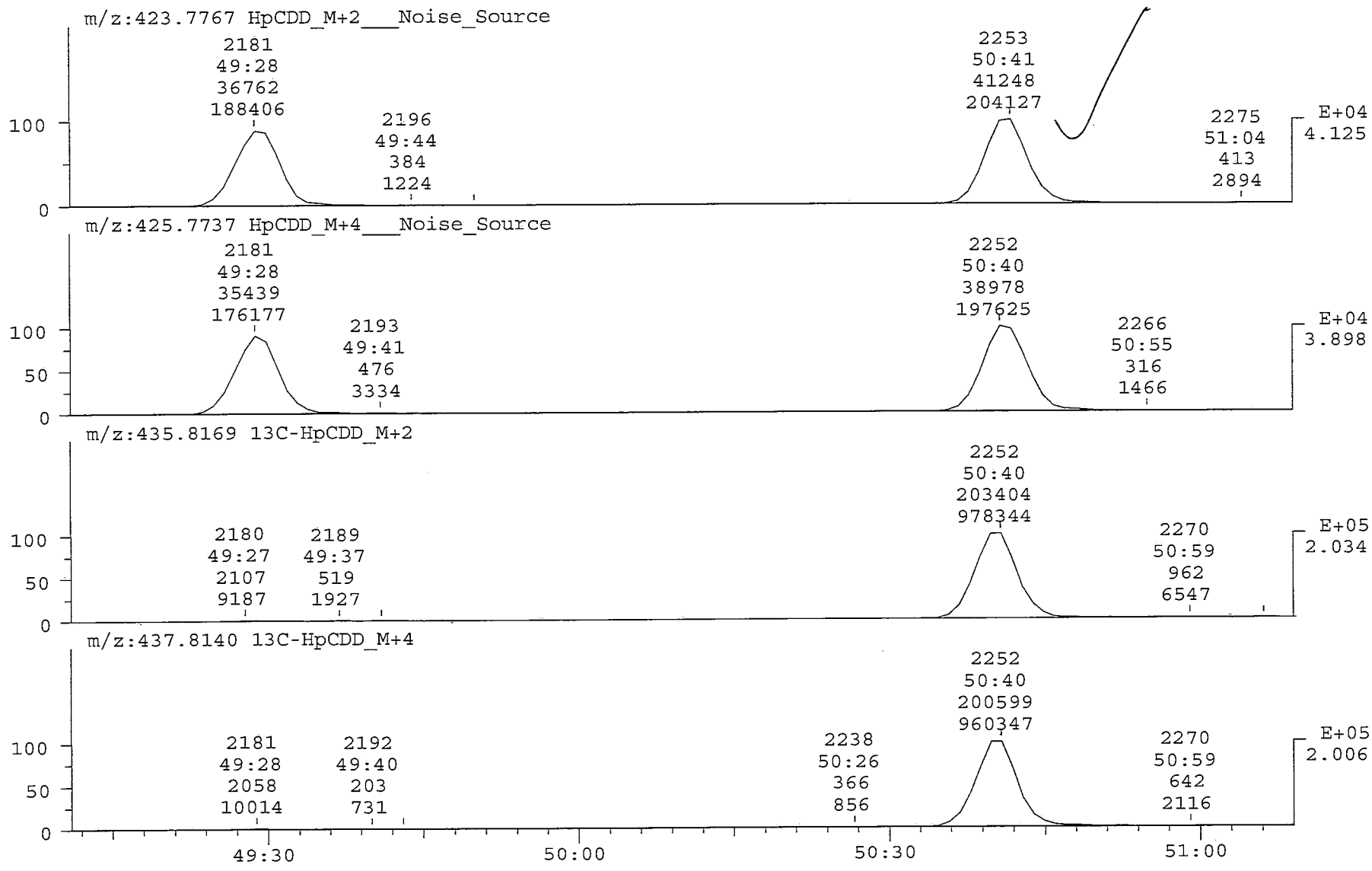
```
CHRO:  d1tm811x                                  18-Aug-16  Elapse:  44:42      1904
Samp:  WO=m811x1ac Meth=9Ao Dil=1                           Start :  06:22:44   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                  Study :  6217014 (10.1g)
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1803 > 2043            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



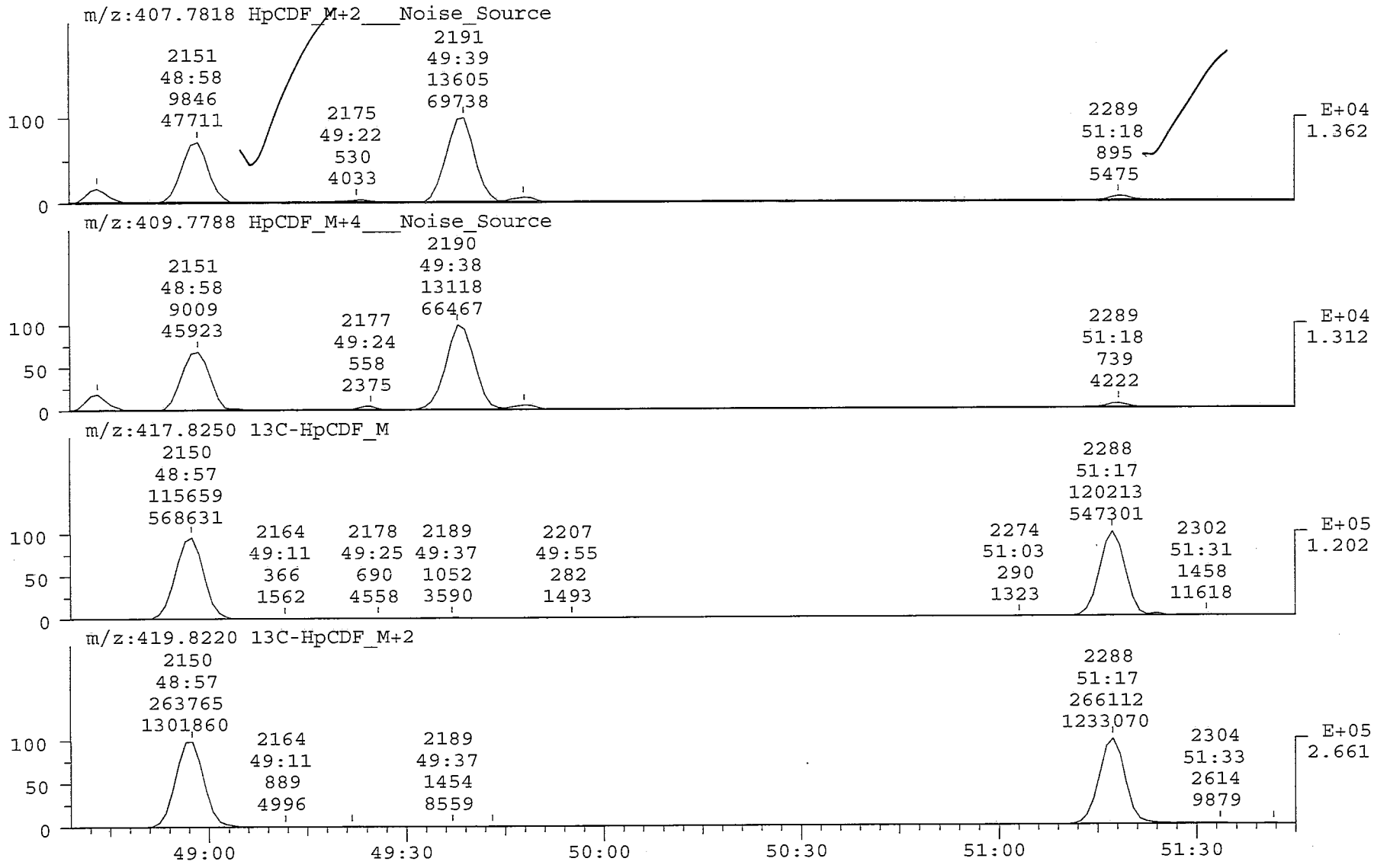
```
CHRO:  d1tm811x                                18-Aug-16  Elapse:  44:42      1904
Samp:  WO=m811x1ac Meth=9Ao Dil=1                         Start :  06:22:44   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.1g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1803 > 2043          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



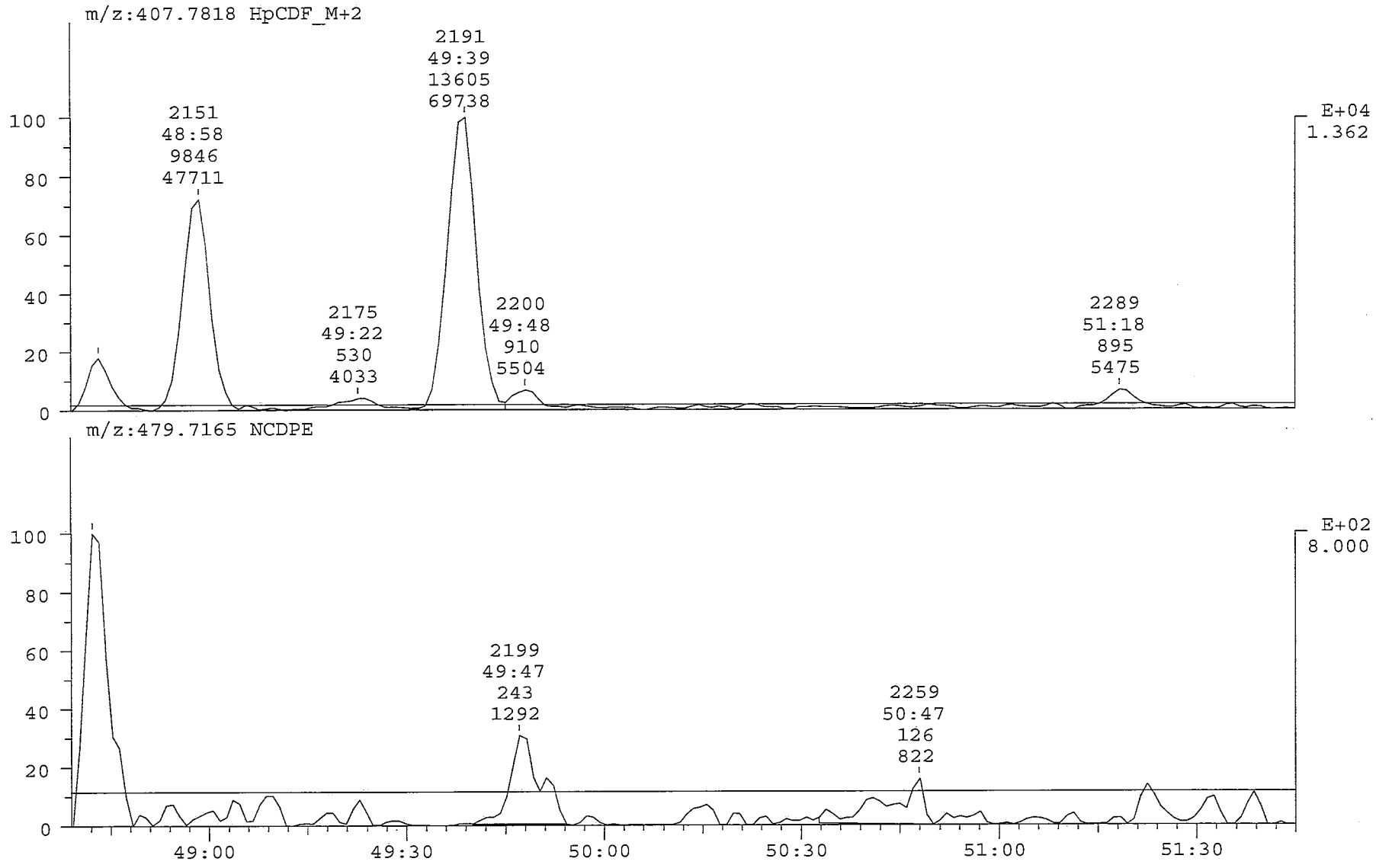
CHRO: d1tm811x 18-Aug-16 Elapse: 44:42 1904
Samp: WO=m811x1ac Meth=9Ao Dil=1 Start : 06:22:44 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2163 > 2280 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



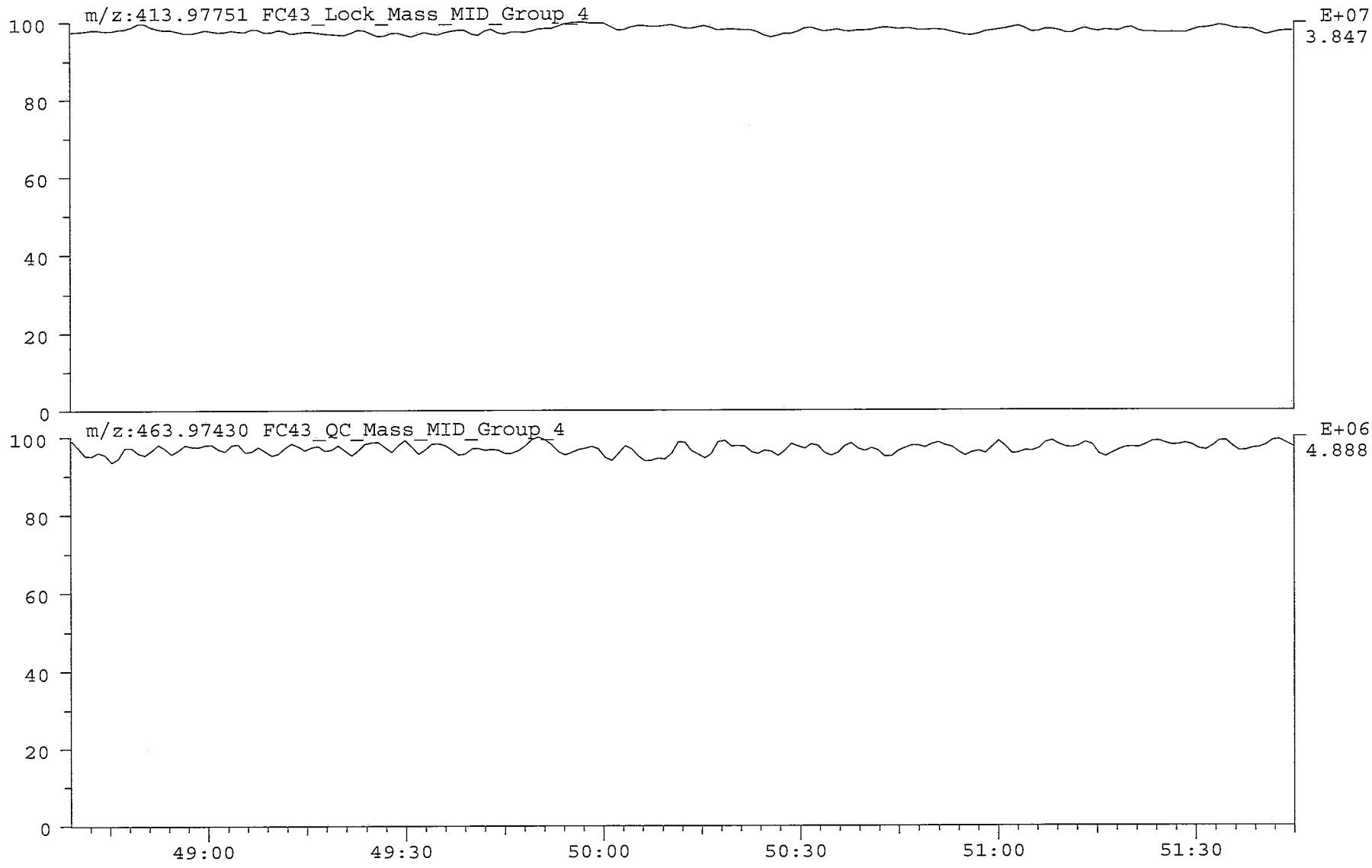
CHRO: d1tm811x 18-Aug-16 Elapse: 50:12 2224
Samp: WO=m811x1ac Meth=9Ao Dil=1 Start : 06:22:44 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2132 > 2315 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



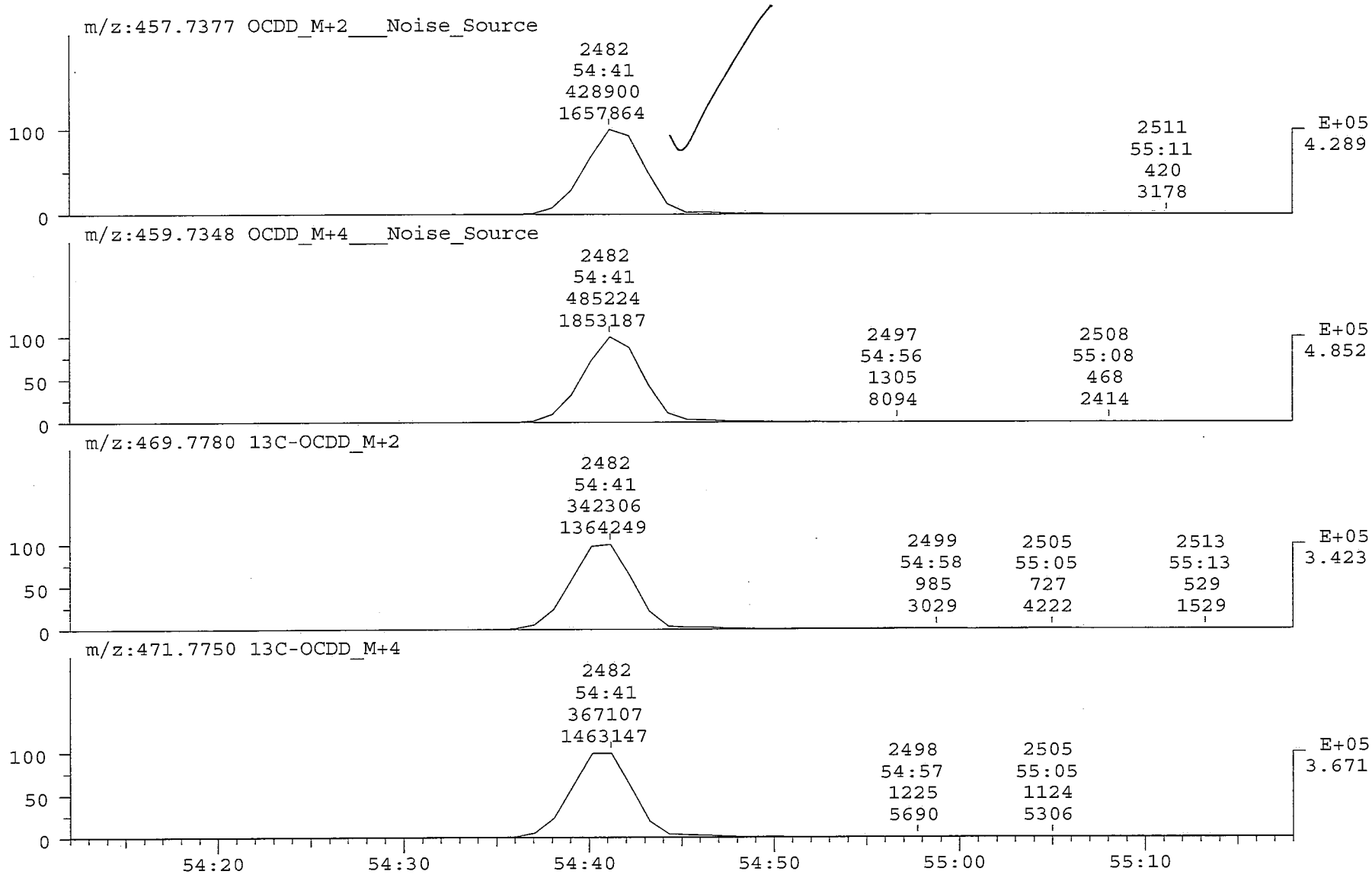
```
CHRO:  d1tm811x                                  18-Aug-16   Elapse:  50:12      2224
Samp:  WO=m811x1ac Meth=9Ao Dil=1                            Start :  06:22:44   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                   Study :  6217014 (10.1g)
Oper:  LKM                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2132 > 2315             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  -2, 5.0
Disp:  Height  Area
```



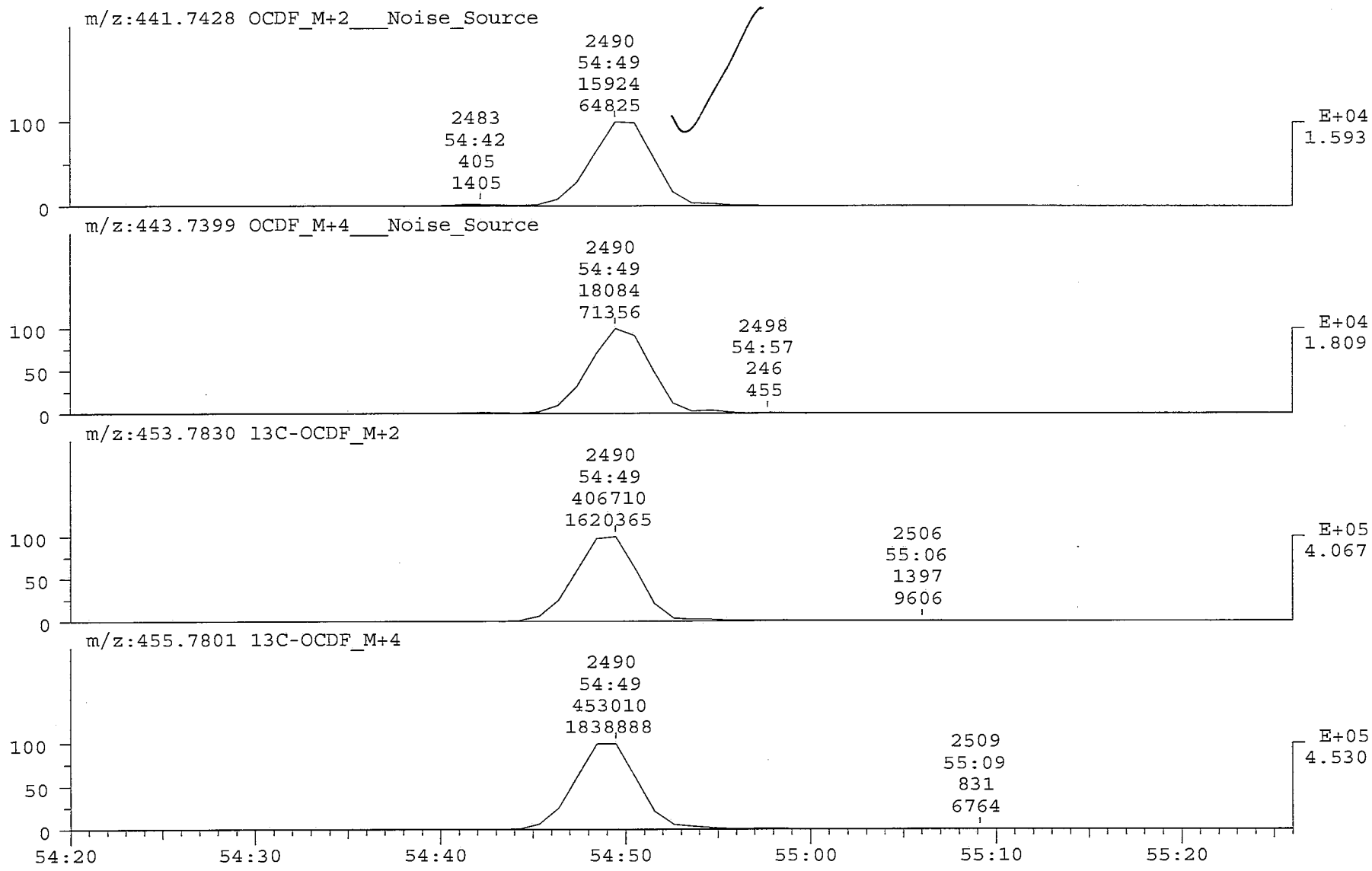
```
CHRO:  d1tm811x                                18-Aug-16  Elapse:  50:12      2224
Samp:  WO=m811x1ac Meth=9Ao Dil=1                         Start :  06:22:44   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.1g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2132 > 2315          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



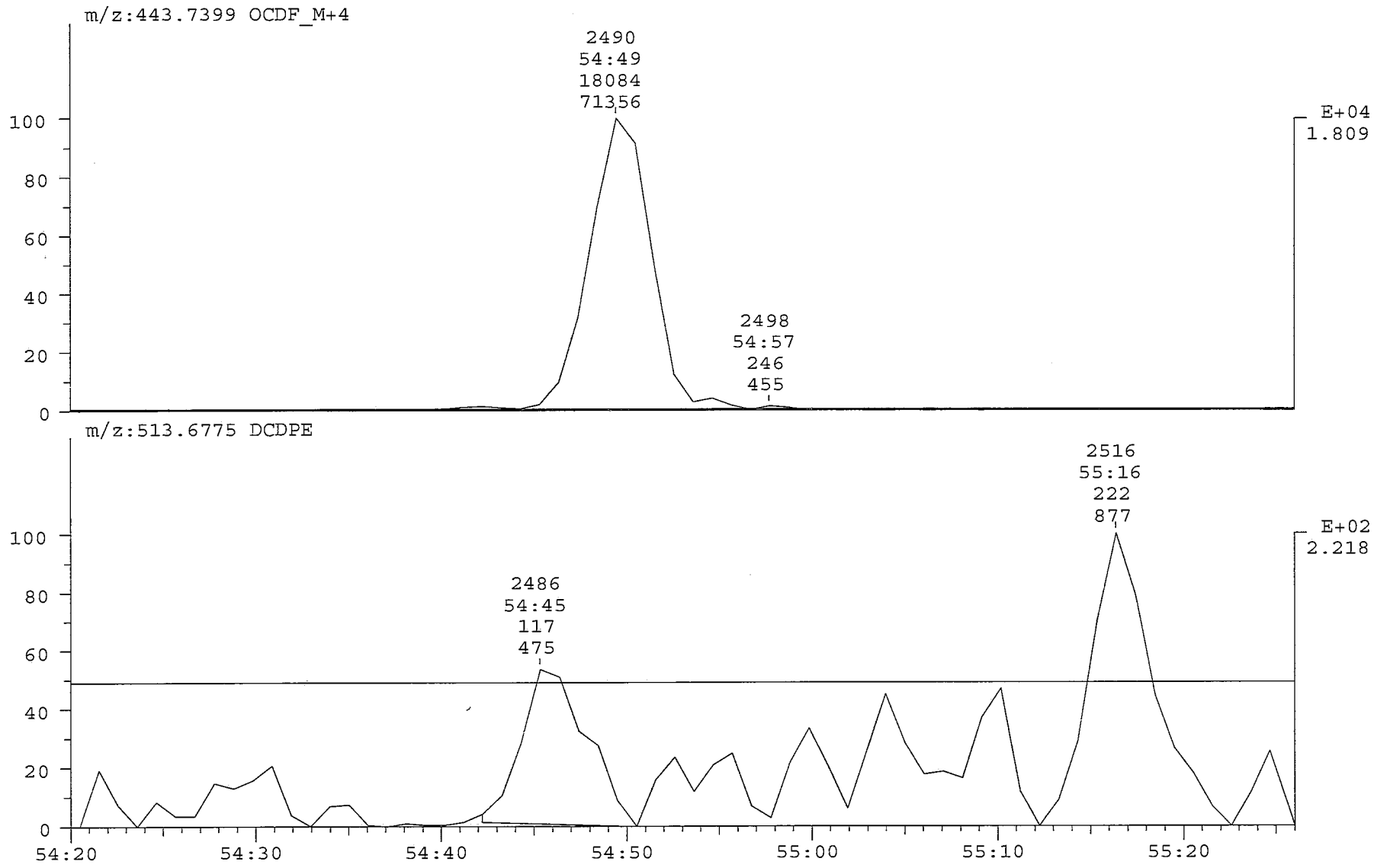
```
CHRO:  d1tm811x                                18-Aug-16   Elapse:  54:42      2483
Samp:  WO=m811x1ac Meth=9Ao Dil=1                          Start :  06:22:44   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.1g)
Oper:  LKM                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2454 > 2518           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



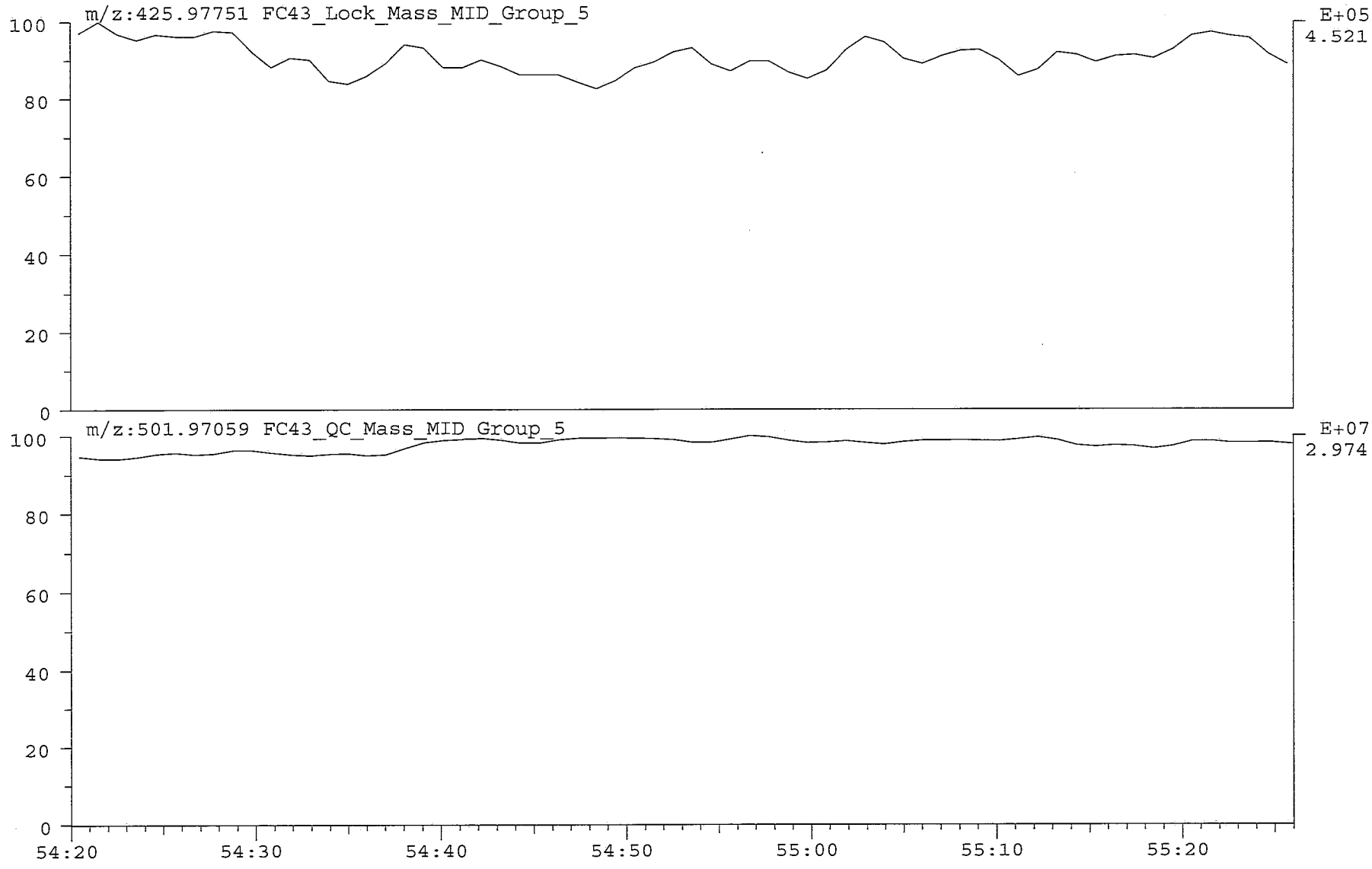
```
CHRO:  d1tm811x                                18-Aug-16   Elapse:  54:50      2491
Samp:  WO=m811x1ac Meth=9Ao Dil=1                          Start :  06:22:44   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.1g)
Oper:  LKM                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2462 > 2525           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1tm811x                                18-Aug-16  Elapse:  54:50      2491
Samp:  WO=m811x1ac Meth=9Ao Dil=1                         Start :  06:22:44   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.1g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2462 > 2525          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1tm811x                                18-Aug-16  Elapse:  54:50      2491
Samp:  WO=m811x1ac Meth=9Ao Dil=1                         Start :  06:22:44   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.1g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2462 > 2525          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



```
*** file opened Thu Aug 18 06:27:09 2016 ***

Started by                - Xcalibur
Instrument Internet name  - DFS MS
Instrument model          - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

  Analysis started at: 18-Aug-16 06:27:09

  Analysis will stop at user request

  Firmware Version: 1.03

  MCAL file name: mcal1.cal

  Sequence : 021716KLR_160818011744

  MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF


  Mid Time Windows:
        Start        Measure      End        Cycletime

  # 1  12:00 min  23:53 min  35:53 min   1.00 sec
  # 2  35:53 min   6:50 min  42:43 min   1.00 sec
  # 3  42:43 min   5:16 min  48:00 min   1.00 sec
  # 4  48:00 min   5:00 min  53:00 min   1.00 sec
  # 5  53:00 min   4:12 min  57:12 min   1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    303.9016     1  1      123
    305.8987     1  1      123
    313.9834 l  20  1        6
    313.9834    20  1        6
    315.9419     5  1       24
    317.9389     5  1       24
    319.8965     1  1      123
    321.8936     1  1      123
    327.8847     1  1      123
    331.9368     5  1       24
    333.9338     5  1       24
    363.9802 c  20  1        6
    363.9802 c  20  1        6
    375.8364     1  1      123
   Window # 2
        mass F  int  gr  time (ms)
    313.9834 l  20  1        7
    313.9834    20  1        7
    339.8597     1  1      146
    341.8567     1  1      146
    351.9000     5  1       29
    353.8970     5  1       29
    355.8546     1  1      146
    357.8516     1  1      146
    367.8949     5  1       29
    369.8919     5  1       29
    375.9802 c  20  1        7
    375.9802    20  1        7
    409.7974     1  1      146
   Window # 3
        mass F  int  gr  time (ms)
    373.8208     1  1      146
    375.8178     1  1      146
    375.9802 l  20  1        7
```

```
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          308.4834
 BQUAD            2.4000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE       18.0000  ECORR           1.0008   ECURR            1.0000
 EDAC        7969177.0000  EDACG           0.9997   EDACZ         2585.8226
 ELEN           -45.0000   EMULT        1802.0000   ENS            210.0000
 ENSBR            2.4000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           172.0000   EXSBR            2.5000
 FDMA       18000000.0000  FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            6.7000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0477	FVSRC	0.0398
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	620.0000
LENS_SYM	-4.7500	LM	375.8364	LMII	500.0000
LMASS	308.4834	LKM	425.9770	MASS	308.4834
MDAC	3551120.4015	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2650.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-7.0000	RECURR	0.8982	RELEN	0.0000
RES	13480.6277	RPUSHER	-6.9377	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	308.4834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:         2.6e-005 mbar
Analyzer Penning:     9.3e-008 mbar
Pirani Analyse:       4.4e-003 mbar
Pirani Source:        4.0e-002 mbar
Pirani Inlet System: 4.8e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 12248.
MID Time Window 2: Resolution is 12249.
MID Time Window 3: Resolution is 12763.
MID Time Window 4: Resolution is 11756.
MID Time Window 5: Resolution is 13480.

Amplifier Offset: 88.


*** File closed Thu Aug 18 07:24:25 2016
 ***
```

QUAN: d1tm811x.q0 Entries: 275

Data file(s) used
File: d1tm811x 18-Aug-16
Samp: WO=m811x1ac Meth=9Ao Dil=1 Start : 06:22:44 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : 6217014 (1
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:18	2385.	355.	32:13	32:27	17.	1	1.0	AVV
321.8775	32:18	2325.	292.	32:10	32:25	24.	1	1.0	ABV
319.8805	31:24	1321.	189.	31:15	31:32	17.	2	5.0	ABB
319.8805	32:11	396.	116.	32:07	32:13	17.	2	5.0	ABV
319.8805	32:18	2385.	355.	32:13	32:27	17.	2	5.0	AVV
319.8805	32:36	2271.	251.	32:27	32:44	17.	2	5.0	AVV
319.8805	32:47	474.	204.	32:44	32:48	17.	2	5.0	AVV
319.8805	32:55	1266.	203.	32:48	33:01	17.	2	5.0	AVB
319.8805	33:59	1098.	207.	33:53	34:02	17.	2	5.0	ABV
319.8805	34:04	559.	143.	34:02	34:08	17.	2	5.0	AVB
321.8775	31:19	686.	237.	31:16	31:21	24.	2	5.0	ABV
321.8775	31:24	1067.	162.	31:21	31:29	24.	2	5.0	AVV
321.8775	31:34	1281.	229.	31:29	31:40	24.	2	5.0	AVB
321.8775	32:18	2441.	292.	32:10	32:29	24.	2	5.0	ABV
321.8775	32:37	1966.	283.	32:29	32:44	24.	2	5.0	AVV
321.8775	32:50	2262.	324.	32:44	33:01	24.	2	5.0	AVB
321.8775	33:56	2018.	224.	33:53	34:09	24.	2	5.0	ABB
331.9202	32:16	3399108.	355987.	32:00	32:31	120.	2	5.0	AVV
331.9202	32:48	1180339.	116616.	32:33	33:04	120.	2	5.0	ABV
331.9202	33:15	4174.	1250.	33:11	33:18	120.	2	5.0	ABB
333.9171	32:16	4185392.	431077.	32:00	32:31	64.	2	5.0	AVV
333.9171	32:49	1471106.	146055.	32:34	33:03	64.	2	5.0	AVV
333.9171	33:11	11203.	1070.	33:03	33:21	64.	2	5.0	AVB
333.9171	33:25	1865.	418.	33:22	33:31	64.	2	5.0	ABB
303.8864	30:45	22313.	1916.	30:32	31:00	35.	1	1.0	ABV
305.8834	30:44	18936.	2315.	30:34	30:49	46.	1	1.0	ABV
303.8864	29:31	9781.	1024.	29:19	29:44	35.	2	5.0	ABB
303.8864	30:15	8480.	770.	30:00	30:24	35.	2	5.0	AVB
303.8864	30:45	22136.	1916.	30:32	30:59	35.	2	5.0	ABV
303.8864	31:00	656.	211.	30:59	31:06	35.	2	5.0	AVB
303.8864	32:00	9974.	1259.	31:50	32:12	35.	2	5.0	ABB
305.8834	29:32	14366.	1405.	29:23	29:48	46.	2	5.0	ABV
305.8834	30:12	10618.	1343.	29:57	30:27	46.	2	5.0	AVB
305.8834	30:44	18936.	2315.	30:34	30:49	46.	2	5.0	ABV
305.8834	30:51	10615.	1667.	30:49	31:06	46.	2	5.0	AVB
305.8834	32:00	14485.	1501.	31:50	32:13	46.	2	5.0	ABB
315.9261	29:28	3048.	966.	29:24	29:30	65.	2	5.0	ABV
315.9261	29:33	6015.	1152.	29:30	29:41	65.	2	5.0	AVB
315.9261	29:56	1554.	434.	29:51	29:58	65.	2	5.0	ABB
315.9261	30:41	1808821.	187716.	30:25	30:54	65.	2	5.0	AVV
315.9261	30:56	9028.	2108.	30:54	31:01	65.	2	5.0	AVV
315.9261	31:03	1079.	516.	31:01	31:04	65.	2	5.0	AVV
315.9261	31:07	2683.	1035.	31:04	31:09	65.	2	5.0	AVB
315.9261	31:17	2306.	483.	31:13	31:24	65.	2	5.0	ABB
315.9261	31:33	6285.	1069.	31:25	31:42	65.	2	5.0	ABB
315.9261	32:16	2430.	625.	32:11	32:19	65.	2	5.0	ABB
317.9230	29:31	9161.	1625.	29:21	29:41	44.	2	5.0	ABB
317.9230	30:41	2263498.	235772.	30:25	30:56	44.	2	5.0	ABV
317.9230	31:08	3424.	744.	31:05	31:12	44.	2	5.0	AVV
317.9230	31:15	1576.	549.	31:12	31:17	44.	2	5.0	AVV

317.9230	31:20	2349.	657.	31:17	31:23	44.	2	5.0 AVB
317.9230	31:30	2142.	371.	31:23	31:37	44.	2	5.0 ABB
317.9230	32:13	2143.	654.	32:08	32:16	44.	2	5.0 ABV
317.9230	32:19	2158.	635.	32:16	32:22	44.	2	5.0 AVB
355.8368	41:24	6253.	1297.	41:16	41:32	37.	1	1.0 ABB
357.8337	41:24	5608.	1329.	41:16	41:28	34.	1	1.0 AVB
355.8368	40:43	5213.	1019.	40:39	40:47	37.	2	5.0 ABB
355.8368	40:53	844.	275.	40:50	40:55	37.	2	5.0 ABV
355.8368	40:58	1713.	345.	40:55	41:04	37.	2	5.0 AVB
355.8368	41:24	6253.	1297.	41:16	41:32	37.	2	5.0 ABB
355.8368	41:38	2185.	502.	41:33	41:44	37.	2	5.0 ABB
355.8368	42:03	2827.	629.	41:55	42:09	37.	2	5.0 ABB
357.8337	40:42	2358.	607.	40:39	40:47	34.	2	5.0 ABB
357.8337	41:00	826.	239.	40:55	41:03	34.	2	5.0 ABB
357.8337	41:24	5961.	1329.	41:09	41:28	34.	2	5.0 AVB
357.8337	41:50	1234.	230.	41:41	41:57	34.	2	5.0 ABB
357.8337	42:03	2112.	521.	41:58	42:06	34.	2	5.0 ABB
367.8765	40:59	2698.	587.	40:52	41:02	37.	2	5.0 ABB
367.8765	41:23	1408468.	347803.	41:16	41:33	37.	2	5.0 ABV
367.8765	41:35	14520.	2996.	41:33	41:42	37.	2	5.0 AVV
367.8765	41:44	2447.	667.	41:42	41:47	37.	2	5.0 AVV
367.8765	41:52	2411.	520.	41:47	41:55	37.	2	5.0 AVV
367.8765	42:01	7629.	1193.	41:55	42:10	37.	2	5.0 AVB
369.8734	41:23	864022.	205295.	41:16	41:34	65.	2	5.0 ABV
369.8734	41:36	9323.	1203.	41:34	41:46	65.	2	5.0 AVB
369.8734	42:01	4095.	546.	41:48	42:06	65.	2	5.0 ABV
369.8734	42:08	1070.	364.	42:06	42:10	65.	2	5.0 AVV
369.8734	42:12	1371.	611.	42:10	42:14	65.	2	5.0 AVV
369.8734	42:15	1047.	497.	42:14	42:17	65.	2	5.0 AVB
339.8427	40:14	10140.	1360.	40:07	40:22	50.	1	1.0 AVB
341.8396	40:54	7438.	1409.	40:47	40:59	45.	1	1.0 AVV
339.8427	39:18	6984.	1622.	39:14	39:23	50.	2	5.0 ABB
339.8427	39:39	2050.	554.	39:35	39:41	50.	2	5.0 ABV
339.8427	39:45	6719.	1476.	39:41	39:51	50.	2	5.0 AVB
339.8427	40:01	3663.	667.	39:54	40:07	50.	2	5.0 ABV
339.8427	40:14	10140.	1360.	40:07	40:22	50.	2	5.0 AVB
339.8427	40:40	1117.	320.	40:36	40:44	50.	2	5.0 ABB
339.8427	40:54	8268.	1930.	40:47	41:01	50.	2	5.0 ABB
339.8427	41:07	9473.	1662.	41:01	41:13	50.	2	5.0 ABB
341.8396	39:17	5764.	991.	39:14	39:25	45.	2	5.0 ABB
341.8396	39:39	2178.	511.	39:34	39:42	45.	2	5.0 ABV
341.8396	39:45	3014.	735.	39:42	39:51	45.	2	5.0 AVB
341.8396	40:00	2559.	467.	39:52	40:07	45.	2	5.0 ABB
341.8396	40:13	2960.	760.	40:07	40:15	45.	2	5.0 ABV
341.8396	40:18	4324.	939.	40:15	40:27	45.	2	5.0 AVB
341.8396	40:39	2382.	374.	40:27	40:42	45.	2	5.0 ABB
341.8396	40:54	7807.	1409.	40:42	40:59	45.	2	5.0 ABV
341.8396	41:07	7345.	1398.	40:59	41:21	45.	2	5.0 AVB
351.8824	39:16	3149.	909.	39:14	39:20	86.	2	5.0 ABB
351.8824	39:43	2239387.	465215.	39:33	39:52	86.	2	5.0 ABV
351.8824	40:00	23250.	3522.	39:52	40:08	86.	2	5.0 AVV
351.8824	40:13	22788.	5534.	40:08	40:16	86.	2	5.0 AVV
351.8824	40:18	3072.	925.	40:16	40:22	86.	2	5.0 AVB
351.8824	40:28	2880.	785.	40:22	40:32	86.	2	5.0 ABB
351.8824	40:53	2326484.	533654.	40:45	41:09	86.	2	5.0 ABV
351.8824	41:11	7533.	1419.	41:09	41:18	86.	2	5.0 AVV
351.8824	41:22	7475.	1556.	41:18	41:30	86.	2	5.0 AVB
353.8793	39:17	3843.	1396.	39:14	39:19	55.	2	5.0 ABV
353.8793	39:20	1241.	565.	39:19	39:22	55.	2	5.0 AVB
353.8793	39:43	1399615.	290465.	39:35	39:59	55.	2	5.0 ABV
353.8793	40:06	1397.	451.	40:04	40:08	55.	2	5.0 AVV
353.8793	40:12	15126.	3002.	40:08	40:18	55.	2	5.0 AVB
353.8793	40:53	1485773.	344633.	40:39	41:09	55.	2	5.0 ABV
353.8793	41:14	1066.	374.	41:12	41:16	55.	2	5.0 AVV
353.8793	41:17	1114.	435.	41:16	41:19	55.	2	5.0 AVV
353.8793	41:21	1609.	568.	41:19	41:23	55.	2	5.0 AVV
353.8793	41:25	1286.	520.	41:23	41:28	55.	2	5.0 AVB

389.7961	46:10	18687.	3713.	46:02	46:19	46.	1	1.0 ABV
391.7931	46:10	14784.	2655.	46:01	46:18	57.	1	1.0 AVV
389.7961	45:27	1496.	439.	45:22	45:30	46.	2	5.0 ABV
389.7961	45:39	6685.	1598.	45:30	45:41	46.	2	5.0 AVV
389.7961	45:46	16272.	3750.	45:41	45:57	46.	2	5.0 AVB
389.7961	46:10	18985.	3713.	46:02	46:22	46.	2	5.0 ABV
389.7961	46:27	1625.	370.	46:22	46:31	46.	2	5.0 AVB
391.7931	45:38	4571.	1070.	45:34	45:42	57.	2	5.0 ABV
391.7931	45:46	11977.	2885.	45:42	45:50	57.	2	5.0 AVB
391.7931	46:10	15698.	2655.	45:56	46:25	57.	2	5.0 ABV
401.8358	45:38	1247388.	312791.	45:24	45:41	103.	2	5.0 ABV
401.8358	45:45	1220980.	299935.	45:41	46:00	103.	2	5.0 AVV
401.8358	46:09	3917850.	963603.	46:00	46:24	103.	2	5.0 AVV
401.8358	46:27	5776.	1367.	46:25	46:32	103.	2	5.0 AVV
401.8358	46:34	1758.	793.	46:32	46:36	103.	2	5.0 AVB
403.8327	45:38	950542.	237290.	45:30	45:41	137.	2	5.0 ABV
403.8327	45:45	958524.	240487.	45:41	46:00	137.	2	5.0 AVV
403.8327	46:09	3169609.	781517.	46:02	46:23	137.	2	5.0 ABV
403.8327	46:26	3605.	1256.	46:23	46:30	137.	2	5.0 AVB
373.8021	44:18	16299.	4617.	44:14	44:22	41.	1	1.0 ABB
375.7990	44:34	11907.	2139.	44:27	44:38	51.	1	1.0 ABV
373.8021	44:18	16299.	4617.	44:14	44:22	41.	2	5.0 ABB
373.8021	44:33	14241.	2448.	44:25	44:38	41.	2	5.0 ABV
373.8021	44:42	6939.	1591.	44:38	44:46	41.	2	5.0 AVV
373.8021	44:50	1315.	235.	44:46	44:57	41.	2	5.0 AVV
373.8021	45:04	1289.	268.	44:57	45:07	41.	2	5.0 AVV
373.8021	45:17	7029.	1510.	45:07	45:20	41.	2	5.0 AVV
373.8021	45:22	2208.	596.	45:20	45:25	41.	2	5.0 AVV
373.8021	45:28	5946.	1075.	45:25	45:43	41.	2	5.0 AVV
373.8021	46:37	2071.	293.	46:22	46:40	41.	2	5.0 ABB
373.8021	46:50	1232.	257.	46:46	46:53	41.	2	5.0 ABB
375.7990	44:18	11628.	3568.	44:14	44:21	51.	2	5.0 ABB
375.7990	44:34	11907.	2139.	44:27	44:38	51.	2	5.0 ABV
375.7990	44:42	7556.	1466.	44:38	44:55	51.	2	5.0 AVB
375.7990	45:03	2460.	312.	44:58	45:11	51.	2	5.0 ABV
375.7990	45:17	5812.	1738.	45:11	45:19	51.	2	5.0 AVV
375.7990	45:22	1650.	417.	45:19	45:24	51.	2	5.0 AVV
375.7990	45:28	5501.	1075.	45:24	45:43	51.	2	5.0 AVV
375.7990	46:26	684.	247.	46:24	46:29	51.	2	5.0 ABV
375.7990	46:36	3116.	461.	46:29	46:43	51.	2	5.0 AVB
375.7990	46:49	997.	342.	46:47	46:53	51.	2	5.0 ABB
373.8021	44:18	16299.	4617.	44:14	44:22	41.	2	5.0 ABB
373.8021	44:33	14241.	2448.	44:25	44:38	41.	2	5.0 ABV
373.8021	44:42	6939.	1591.	44:38	44:46	41.	2	5.0 AVV
373.8021	44:50	1315.	235.	44:46	44:57	41.	2	5.0 AVV
373.8021	45:04	1289.	268.	44:57	45:07	41.	2	5.0 AVV
373.8021	45:17	7029.	1510.	45:07	45:20	41.	2	5.0 AVV
373.8021	45:22	2208.	596.	45:20	45:25	41.	2	5.0 AVV
373.8021	45:28	5946.	1075.	45:25	45:43	41.	2	5.0 AVV
373.8021	46:37	2071.	293.	46:22	46:40	41.	2	5.0 ABB
373.8021	46:50	1232.	257.	46:46	46:53	41.	2	5.0 ABB
375.7990	44:18	11628.	3568.	44:14	44:21	51.	2	5.0 ABB
375.7990	44:34	11907.	2139.	44:27	44:38	51.	2	5.0 ABV
375.7990	44:42	7556.	1466.	44:38	44:55	51.	2	5.0 AVB
375.7990	45:03	2460.	312.	44:58	45:11	51.	2	5.0 ABV
375.7990	45:17	5812.	1738.	45:11	45:19	51.	2	5.0 AVV
375.7990	45:22	1650.	417.	45:19	45:24	51.	2	5.0 AVV
375.7990	45:28	5501.	1075.	45:24	45:43	51.	2	5.0 AVV
375.7990	46:26	684.	247.	46:24	46:29	51.	2	5.0 ABV
375.7990	46:36	3116.	461.	46:29	46:43	51.	2	5.0 AVB
375.7990	46:49	997.	342.	46:47	46:53	51.	2	5.0 ABB
383.8447	44:33	918868.	244111.	44:25	44:37	57.	2	5.0 ABV
383.8447	44:41	1027460.	257328.	44:37	44:54	57.	2	5.0 AVV
383.8447	44:55	2136.	839.	44:54	44:57	57.	2	5.0 AVV
383.8447	44:59	3291.	991.	44:57	45:02	57.	2	5.0 AVV
383.8447	45:08	5924.	961.	45:02	45:13	57.	2	5.0 AVB
383.8447	45:27	1031933.	259954.	45:15	45:36	57.	2	5.0 ABV

383.8447	45:40	9255.	1311.	45:36	45:48	57.	2	5.0 AVB
383.8447	45:57	1368.	474.	45:54	46:00	57.	2	5.0 ABV
383.8447	46:02	1206.	501.	46:00	46:04	57.	2	5.0 AVB
383.8447	46:10	2020.	530.	46:05	46:13	57.	2	5.0 ABB
383.8447	46:18	2718.	708.	46:13	46:20	57.	2	5.0 ABV
383.8447	46:26	910862.	212752.	46:20	46:42	57.	2	5.0 AVV
383.8447	46:45	3908.	1090.	46:42	46:50	57.	2	5.0 AVB
385.8417	44:33	1712957.	451800.	44:26	44:37	101.	2	5.0 ABV
385.8417	44:41	1976123.	499168.	44:37	44:56	101.	2	5.0 AVV
385.8417	44:58	6559.	1734.	44:57	45:03	101.	2	5.0 AVV
385.8417	45:07	6324.	1576.	45:03	45:10	101.	2	5.0 AVB
385.8417	45:12	2297.	708.	45:10	45:16	101.	2	5.0 ABV
385.8417	45:27	2005311.	511039.	45:16	45:42	101.	2	5.0 AVV
385.8417	45:44	5677.	1372.	45:42	45:49	101.	2	5.0 AVV
385.8417	45:51	2513.	859.	45:49	45:55	101.	2	5.0 AVV
385.8417	46:02	4257.	1069.	45:55	46:04	101.	2	5.0 AVB
385.8417	46:08	5111.	1614.	46:04	46:11	101.	2	5.0 ABB
385.8417	46:26	1732608.	407267.	46:12	46:42	101.	2	5.0 ABV
385.8417	46:45	3126.	1347.	46:43	46:47	101.	2	5.0 AVB
423.7555	50:41	204127.	41248.	50:31	50:56	37.	1	1.0 ABV
425.7524	50:40	197411.	38978.	50:33	50:54	51.	1	1.0 AVV
423.7555	49:28	188406.	36762.	49:18	49:42	37.	2	5.0 ABV
423.7555	50:41	204127.	41248.	50:31	50:56	37.	2	5.0 ABV
425.7524	49:28	176177.	35439.	49:17	49:39	51.	2	5.0 ABV
425.7524	50:40	197625.	38978.	50:30	50:54	51.	2	5.0 ABV
435.7951	49:27	9187.	2107.	49:23	49:34	36.	2	5.0 ABV
435.7951	49:37	1927.	519.	49:34	49:39	36.	2	5.0 AVV
435.7951	49:41	2406.	676.	49:39	49:45	36.	2	5.0 AVV
435.7951	50:40	978344.	203404.	50:31	50:53	36.	2	5.0 ABV
435.7951	50:59	6547.	962.	50:53	51:03	36.	2	5.0 AVV
435.7951	51:06	2244.	588.	51:03	51:09	36.	2	5.0 AVB
437.7921	49:28	10014.	2058.	49:23	49:35	30.	2	5.0 ABV
437.7921	49:40	731.	203.	49:35	49:41	30.	2	5.0 AVV
437.7921	49:43	1715.	664.	49:41	49:47	30.	2	5.0 AVB
437.7921	50:26	856.	366.	50:23	50:28	30.	2	5.0 ABB
437.7921	50:40	960347.	200599.	50:32	50:56	30.	2	5.0 ABV
437.7921	50:59	2116.	642.	50:57	51:04	30.	2	5.0 AVB
407.7614	49:39	69738.	13605.	49:30	49:45	49.	1	1.0 AVV
409.7583	49:38	66467.	13118.	49:29	49:45	32.	1	1.0 ABV
407.7614	48:43	10247.	2475.	48:39	48:51	49.	2	5.0 ABB
407.7614	48:58	47711.	9846.	48:51	49:11	49.	2	5.0 ABB
407.7614	49:22	4033.	530.	49:11	49:30	49.	2	5.0 ABV
407.7614	49:39	69738.	13605.	49:30	49:45	49.	2	5.0 AVV
407.7614	49:48	5504.	910.	49:45	50:03	49.	2	5.0 AVV
407.7614	51:18	5475.	895.	51:11	51:30	49.	2	5.0 ABB
409.7583	48:43	9728.	2521.	48:39	48:48	32.	2	5.0 ABB
409.7583	48:58	45923.	9009.	48:51	49:13	32.	2	5.0 ABV
409.7583	49:24	2375.	558.	49:15	49:29	32.	2	5.0 ABB
409.7583	49:38	66467.	13118.	49:29	49:45	32.	2	5.0 ABV
409.7583	49:48	3423.	716.	49:45	49:55	32.	2	5.0 AVB
409.7583	51:18	4222.	739.	51:07	51:33	32.	2	5.0 ABV
417.8041	48:57	568631.	115659.	48:49	49:07	40.	2	5.0 ABV
417.8041	49:11	1562.	366.	49:07	49:13	40.	2	5.0 AVB
417.8041	49:25	4558.	690.	49:14	49:28	40.	2	5.0 ABB
417.8041	49:37	3590.	1052.	49:28	49:40	40.	2	5.0 ABV
417.8041	49:55	1493.	282.	49:52	50:02	40.	2	5.0 ABB
417.8041	51:03	1323.	290.	50:55	51:05	40.	2	5.0 ABB
417.8041	51:17	547301.	120213.	51:09	51:26	40.	2	5.0 ABV
417.8041	51:31	11618.	1458.	51:26	51:40	40.	2	5.0 AVV
419.8010	48:57	1301860.	263765.	48:48	49:09	87.	2	5.0 ABV
419.8010	49:11	4996.	889.	49:09	49:18	87.	2	5.0 AVV
419.8010	49:21	11462.	2294.	49:18	49:30	87.	2	5.0 AVV
419.8010	49:37	8559.	1454.	49:30	49:41	87.	2	5.0 AVV
419.8010	49:43	3807.	767.	49:41	49:54	87.	2	5.0 AVB
419.8010	51:17	1233070.	266112.	51:08	51:31	87.	2	5.0 ABV
419.8010	51:33	9879.	2614.	51:31	51:37	87.	2	5.0 AVV
419.8010	51:41	7090.	2141.	51:37	51:43	87.	2	5.0 AVB

457.7148	54:41	1657864.	428900.	54:35	54:56	44.	1	1.0	ABV
459.7118	54:41	1853187.	485224.	54:34	54:54	52.	1	1.0	ABV
457.7148	54:41	1657864.	428900.	54:35	54:56	44.	2	5.0	ABV
457.7148	55:11	3178.	420.	55:04	55:14	44.	2	5.0	AVB
459.7118	54:41	1853187.	485224.	54:34	54:54	52.	2	5.0	ABV
459.7118	54:56	8094.	1305.	54:54	55:06	52.	2	5.0	AVV
459.7118	55:08	2414.	468.	55:06	55:17	52.	2	5.0	AVB
469.7545	54:41	1364249.	342306.	54:33	54:56	24.	2	5.0	ABV
469.7545	54:58	3029.	985.	54:56	55:00	24.	2	5.0	AVV
469.7545	55:05	4222.	727.	55:00	55:10	24.	2	5.0	AVV
469.7545	55:13	1529.	529.	55:10	55:15	24.	2	5.0	AVV
471.7514	54:41	1463147.	367107.	54:31	54:55	155.	2	5.0	ABV
471.7514	54:57	5690.	1225.	54:55	55:03	155.	2	5.0	AVV
471.7514	55:05	5306.	1124.	55:03	55:13	155.	2	5.0	AVB
441.7207	54:49	64394.	15924.	54:44	54:58	27.	1	1.0	AVV
443.7177	54:49	71811.	18084.	54:35	54:59	19.	1	1.0	ABB
441.7207	54:42	1405.	405.	54:38	54:44	27.	2	5.0	ABV
441.7207	54:49	64825.	15924.	54:44	55:05	27.	2	5.0	AVV
443.7177	54:49	71356.	18084.	54:35	54:56	19.	2	5.0	ABV
443.7177	54:57	455.	246.	54:56	54:59	19.	2	5.0	AVB
453.7603	54:49	1620365.	406709.	54:39	55:01	95.	2	5.0	ABV
453.7603	55:06	9606.	1397.	55:01	55:21	95.	2	5.0	AVV
455.7573	54:49	1838888.	453010.	54:37	55:05	97.	2	5.0	ABV
455.7573	55:09	6764.	831.	55:07	55:24	97.	2	5.0	AVV

TestAmerica Canton

Sample ID: PAD-5

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 011	Work Order #....:	M81101AC	Matrix....:	SOLID
Date Sampled....:	07/25/16	Date Received....:	07/29/16	Dilution Factor:	1
Prep Date....:	08/04/16	Analysis Date....:	08/18/16	Percent Moisture	2.9
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.2 g	Instrument ID....:	D11A	Method:	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.0	0.030	pg/g
1,2,3,7,8-PeCDD	0.41	Q B J	5.0	0.037	pg/g
1,2,3,4,7,8-HxCDD	0.35	J	5.0	0.048	pg/g
1,2,3,6,7,8-HxCDD	0.75	Q J	5.0	0.048	pg/g
1,2,3,7,8,9-HxCDD	0.97	C J	5.0	0.045	pg/g
1,2,3,4,6,7,8-HpCDD	11		5.0	0.046	pg/g
OCDD	130	B	10	0.074	pg/g
2,3,7,8-TCDF	0.49	Q J	1.0	0.049	pg/g
1,2,3,7,8-PeCDF	0.29	J	5.0	0.032	pg/g
2,3,4,7,8-PeCDF	0.58	J	5.0	0.028	pg/g
1,2,3,4,7,8-HxCDF	1.2	C B J	5.0	0.029	pg/g
1,2,3,6,7,8-HxCDF	0.44	Q J	5.0	0.029	pg/g
2,3,4,6,7,8-HxCDF	0.60	J	5.0	0.029	pg/g
1,2,3,7,8,9-HxCDF	ND		5.0	0.036	pg/g
1,2,3,4,6,7,8-HpCDF	2.7	B J	5.0	0.032	pg/g
1,2,3,4,7,8,9-HpCDF	0.36	Q B J	5.0	0.037	pg/g
OCDF	3.7	B J	10	0.026	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	64	40 - 135
13C-1,2,3,7,8-PeCDD	78	40 - 135
13C-1,2,3,4,7,8-HxCDD	67	40 - 135
13C-1,2,3,6,7,8-HxCDD	68	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	76	40 - 135
13C-OCDD	71	40 - 135
13C-2,3,7,8-TCDF	60	40 - 135
13C-1,2,3,7,8-PeCDF	71	40 - 135
13C-2,3,4,7,8-PeCDF	79	40 - 135
13C-1,2,3,4,7,8-HxCDF	58	40 - 135
13C-1,2,3,6,7,8-HxCDF	55	40 - 135
13C-2,3,4,6,7,8-HxCDF	61	40 - 135
13C-1,2,3,7,8,9-HxCDF	59	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	51	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	60	40 - 135
13C-OCDF	55	40 - 135

TestAmerica Canton

Sample ID: PAD-5

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 011	**Work Order #....:**	M81101AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	2.9
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.2 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81101AC	Prep Batch	6217014	Lot No	H6G290408-011
Data File	/20160818s1/d1tm8110.d	Prep Date	08/04/16	SDG No	
Analysis ID	180465	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/18/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	13:05	Initial Wt/Vol	10.2 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD				1.144				ND		0.0292
Total TCDD		6516	1450	1.144		2.609040		0.255788	QJ	0.0292
2,3,7,8-TCDF	30:47	17045	3205	1.066		4.818951		0.472446	QJ	0.0479
Total TCDF		56213	7839	1.066		20.711452		2.030534	QJ	0.0479
1,2,3,7,8-PeCDD	41:26	8381	1865	1.060		4.070023		0.399022	QBJ	0.0359
Total PeCDD		16897	3324	1.060		12.275629		1.203493	JQB	0.0359
1,2,3,7,8-PeCDF	39:46	10191	2018	1.179		2.908573		0.285154	J	0.0315
2,3,4,7,8-PeCDF	40:56	21063	3970	1.115		5.761040		0.564808	J	0.0269
Total PeCDF		85697	16620	1.147		32.574402		3.193569	JQ	0.0289
1,2,3,4,7,8-HxCDD	45:40	7238	1676	1.131		3.462212		0.339433	J	0.0462
1,2,3,6,7,8-HxCDD	45:47	15270	3491	1.116		7.384425		0.723963	QJ	0.0468
1,2,3,7,8,9-HxCDD	46:12	21365	3918	1.205		9.579645		0.939181	CJ	0.0433
Total HxCDD				1.151		20.426282		2.002577	JQ	0.0454
1,2,3,4,7,8-HxCDF	44:34	35598	5968	1.350		11.904524		1.167110	CBJ	0.0281
1,2,3,6,7,8-HxCDF	44:45	13421	3224	1.242		4.326114		0.424129	QJ	0.0286
2,3,4,6,7,8-HxCDF	45:29	17974	4738	1.241		5.897257		0.578162	J	0.0285
1,2,3,7,8,9-HxCDF				1.262				ND		0.0349
Total HxCDF		23643	4843	1.274		30.097655		2.950750	JQB	0.0298
1,2,3,4,6,7,8-HpCDD	50:43	200246	42339	1.114		107.658987		10.554803		0.0447
Total HpCDD		188639	38022	1.114		209.077660		20.497810		0.0447
1,2,3,4,6,7,8-HpCDF	48:59	60712	12618	1.461		26.811894		2.628617	BJ	0.0312
1,2,3,4,7,8,9-HpCDF	51:19	7076	1317	1.370		3.543708		0.347422	QBJ	0.0357
Total HpCDF		58065	11552	1.416		57.635744		5.650563	QJB	0.0333
OCDD	54:43	1973937	503695	1.203		1287.37218		126.212959	B	0.0720
OCDF	54:51	64536	16454	1.134		36.231501		3.552108	BJ	0.0250
13C-2,3,7,8-TCDD	32:50	2184009	219976	1.093	1000	644.239390	64.42	63.160725		0.216
13C-2,3,7,8-TCDF	30:42	3319367	345801	1.794	1000	596.179639	59.62	58.448984		0.0442
13C-1,2,3,7,8-PeCDD	41:25	1942842	470439	0.800	1000	782.698515	78.27	76.735149		0.0853
13C-1,2,3,7,8-PeCDF	39:45	2971481	619878	1.356	1000	706.005791	70.60	69.216254		0.102
13C-2,3,4,7,8-PeCDF	40:55	3280296	769711	1.343	1000	787.171967	78.72	77.173722		0.103
13C-1,2,3,4,7,8-HxCDD	45:39	1848251	469260	0.916	1000	668.114005	66.81	65.501373		0.0581
13C-1,2,3,6,7,8-HxCDD	45:46	1853006	469224	0.906	1000	676.911345	67.69	66.363857		0.0587
13C-1,2,3,4,7,8-HxCDF	44:34	2214317	574790	1.268	1000	577.974012	57.80	56.664119		0.0448
13C-1,2,3,6,7,8-HxCDF	44:44	2498612	613833	1.506	1000	549.443396	54.94	53.867000		0.0378
13C-2,3,4,6,7,8-HxCDF	45:28	2456219	617009	1.344	1000	605.067126	60.51	59.320306		0.0423
13C-1,2,3,7,8,9-HxCDF	46:28	2146970	495727	1.202	1000	591.306521	59.13	57.971228		0.0473
13C-1,2,3,4,6,7,8-HpCDD	50:42	1670080	364069	0.728	1000	759.069931	75.91	74.418621		0.0269
13C-1,2,3,4,6,7,8-HpCDF	48:58	1549859	333827	1.008	1000	509.009356	50.90	49.902878		0.0294
13C-1,2,3,4,7,8,9-HpCDF	51:18	1457134	310612	0.811	1000	595.006415	59.50	58.333962		0.0365
13C-OCDD	54:42	2549155	667603	0.597	2000	1412.75534	70.64	138.505425		0.0317
13C-1,2,3,4-TCDD	32:17	6206008	617623	1.000	2000	2000.00000	100.00	196.078431		0.236
13C-1,2,3,7,8,9-HxCDD	46:11	6041076	1473920	1.000	2000	2000.00000	100.00	196.078431		0.0532
13C-OCDF	54:50	3140512	829019	0.946	2000	1099.08162	54.95	107.753100		0.0141

KLR 8/24/16

KLM 8-24-16

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81101AC	Prep Batch	6217014	Lot No	H6G290408-011
Data File	/20160818s1/d1tm8110.d	Prep Date	08/04/16	SDG No	
Analysis ID	180465	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 13:05	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.2 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	88	93	35	37	0.95 *	/	
	Unidentified	29:32	00:00	0	3382	7587	652	931	0.45 *	ABV/ABV	R
	Unidentified	30:11	00:00	0	3344	7387	532	961	0.45 *	ABV/AVB	R
	2,3,7,8-TCDF	30:47	30:45	2	9173	7872	1446	1759	1.17 *	ABV/ABV	RD
	Unidentified	30:51	00:00	0	9022	8123	1341	1460	1.11 *	AVV/AVB	R
	Unidentified	32:01	00:00	0	7738	9630	1042	920	0.80	ABB/ABB	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	158	93	63	37	1.70 *	/	
	Unidentified	29:35	00:00	0	3188	1330	709	398	2.40 *	AVB/ABB	RT
	13C-2,3,7,8-TCDF	30:42	30:42	0	1480465	1838902	150016	195785	0.81	ABV/ABV	
	Unidentified	31:05	00:00	0	3150	5606	830	941	0.56 *	AVB/AVB	R
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	35	40	14	16	0.88	/	
	Unidentified	31:26	00:00	0	652	484	95	110	1.35 *	ABB/ABV	R
	Unidentified	32:23	00:00	0	280	903	100	245	0.31 *	AVB/AVB	RT
	Unidentified	32:42	00:00	0	743	1038	116	143	0.72	ABB/AVV	T
	Unidentified	32:56	00:00	0	570	921	141	181	0.62 *	ABB/AVB	R
	Unidentified	33:58	00:00	0	255	670	94	225	0.38 *	ABB/ABB	RT
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	228	515	91	206	0.44 *	/	
	13C-1,2,3,4-TCDD	32:17	32:18	-1	2770938	3435070	277245	340378	0.81	AVV/AVV	
	13C-2,3,7,8-TCDD	32:50	32:50	0	978726	1205283	100288	119688	0.81	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	105	130	42	52	0.81 *	/	
	Unidentified	39:19	00:00	0	16355	11527	2831	2112	1.42	ABB/ABB	
	Unidentified	39:41	00:00	0	2769	2141	683	440	1.29 *	ABV/ABV	R
	1,2,3,7,8-PeCDF	39:46	39:46	0	5800	4391	1131	887	1.32	AVV/AVB	
	Unidentified	40:03	00:00	0	4080	4770	877	827	0.86 *	AVB/ABV	R
	Unidentified	40:16	00:00	0	8190	5650	1598	932	1.45	ABB/AVB	
	2,3,4,7,8-PeCDF	40:56	40:56	0	12189	8874	2384	1586	1.37	ABB/AVB	
	Unidentified	41:08	00:00	0	17701	12514	3519	2801	1.41	ABB/ABB	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	268	170	107	68	1.57	/	
	Unidentified	39:18	00:00	0	7382	2940	1119	828	2.51 *	ABB/ABB	R
	13C-1,2,3,7,8-PeCDF	39:45	39:45	0	1821173	1150308	375855	244023	1.58	ABV/ABV	
	Unidentified	40:00	00:00	0	10290	5711	1518	1168	1.80 *	AVV/AVV	R
	Unidentified	40:14	00:00	0	19236	11132	2904	1991	1.73	AVV/AVB	
	13C-2,3,4,7,8-PeCDF	40:55	40:55	0	1988234	1292062	461002	308709	1.54	ABV/ABV	
	Unidentified	41:08	00:00	0	17461	12989	2481	1514	1.34	AVV/AVV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	95	88	38	35	1.09 *	/	
	Unidentified	40:46	00:00	0	2883	1943	619	431	1.48	ABB/ABB	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81101AC	Prep Batch	6217014	Lot No	H6G290408-011
Data File	/20160818s1/d1tm8110.d	Prep Date	08/04/16	SDG No	
Analysis ID	180465	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 13:05	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.2 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Unidentified	40:55	00:00	0	1247	1730	233	287	0.72 *	ABV/ABB	RT
	Unidentified	41:10	00:00	0	1617	972	302	209	1.66	ABB/ABB	
	1,2,3,7,8-PeCDD	41:26	41:26	0	4482	3899	1106	759	1.15 *	ABB/ABB	R
	Unidentified	41:40	00:00	0	1237	1189	198	289	1.04 *	ABB/ABB	R
	Unidentified	42:04	00:00	0	2271	1808	379	377	1.26 *	ABB/ABB	R
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	105	110	42	44	0.95 *	/	
	13C-1,2,3,7,8-PeCDD	41:25	41:25	0	1181524	761318	288319	182120	1.55	ABV/ABV	
	Unidentified	41:54	00:00	0	4161	3237	650	847	1.29 *	AVV/AVV	R
	Unidentified	42:03	00:00	0	1759	3836	611	908	0.46 *	AVV/AVB	R
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	93	130	37	52	0.71 *	/	
	Unidentified	44:19	00:00	0	4684	3783	1104	927	1.24	ABB/ABB	
	1,2,3,4,7,8-HxCDF	44:34	44:36	-2	20019	15579	3572	2396	1.28	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:45	44:44	1	6629	6792	1745	1479	0.98 *	AVB/AVB	R
	Unidentified	45:07	00:00	0	2713	3612	501	524	0.75 *	ABV/AVV	R
	Unidentified	45:16	00:00	0	1765	1743	407	526	1.01 *	AVV/AVV	R
	2,3,4,6,7,8-HxCDF	45:29	45:30	-1	9628	8346	2684	2054	1.15	MBB/MBB	
	Unidentified	46:37	00:00	0	1898	3445	359	495	0.55 *	AVB/ABB	R
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	203	225	81	90	0.90 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:34	44:35	-1	759635	1454682	199191	375599	0.52	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:44	44:43	1	853517	1645095	209979	403854	0.52	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:28	45:29	-1	824833	1631386	206029	410980	0.51	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:28	46:29	-1	716312	1430658	161357	334370	0.50	AVB/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	125	125	50	50	1.00 *	/	
	1,2,3,4,7,8-HxCDD	45:40	45:40	0	3966	3272	849	827	1.21	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:47	45:48	-1	10153	5117	2155	1336	1.98 *	AVB/AVB	R
	1,2,3,7,8,9-HxCDD	46:12	46:12	0	12230	9135	2334	1584	1.34	ABB/ABB	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	245	155	98	62	1.58 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:39	45:39	0	1040658	807593	263956	205304	1.29	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:46	45:47	-1	1037627	815379	260864	208360	1.27	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:11	46:11	0	3339054	2702022	817504	656416	1.24	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	100	55	40	22	1.82 *	/	
	1,2,3,4,6,7,8-HpCDF	48:59	49:00	-1	32306	28406	6495	6123	1.14	ABV/ABB	
	Unidentified	49:25	00:00	0	4412	2882	717	502	1.53 *	AVV/ABB	R
	Unidentified	49:39	00:00	0	27012	23759	5110	5223	1.14	AVV/ABV	
	1,2,3,4,7,8,9-HpCDF	51:19	51:20	-1	3898	3178	665	652	1.23 *	AVB/ABB	R
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81101AC	Prep Batch	6217014	Lot No	H6G290408-011
Data File	/20160818s1/d1tm8110.d	Prep Date	08/04/16	SDG No	
Analysis ID	180465	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 13:05	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.2 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

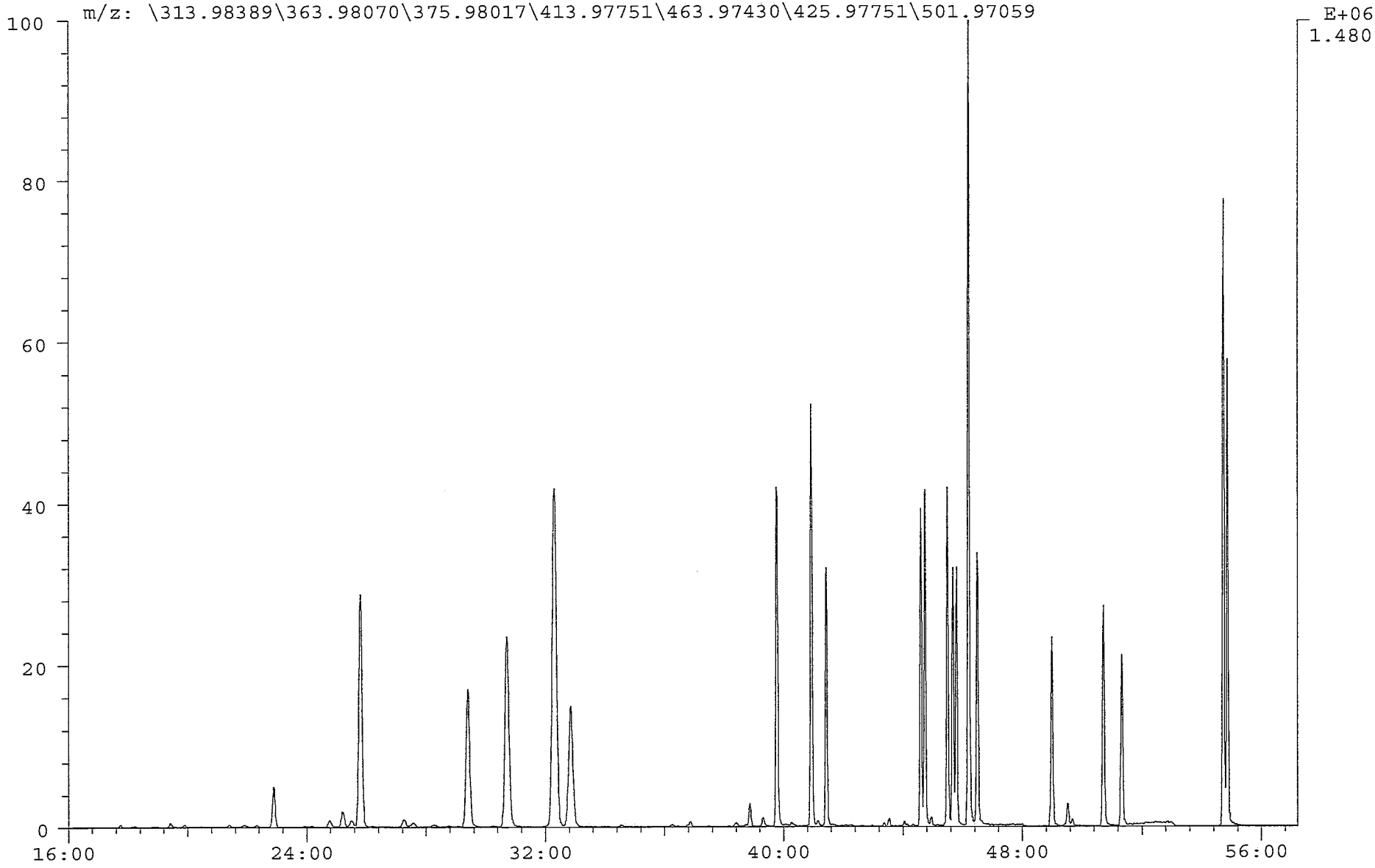
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	108	115	43	46	0.93 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:58	48:58	0	479280	1070579	102118	231709	0.45	ABV/ABV	
	Unidentified	49:24	00:00	0	6009	10064	892	1646	0.60 *	AVB/AVV	R
	Unidentified	49:40	00:00	0	2695	12708	788	1872	0.21 *	ABV/AVV	R
	13C-1,2,3,4,7,8,9-HpCDF	51:18	51:19	-1	458397	998737	99038	211574	0.46	ABV/ABV	
	Unidentified	51:34	00:00	0	2740	7296	580	1620	0.38	AVV/AVB	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	75	110	30	44	0.68 *	/	
	Unidentified	49:31	00:00	0	97019	91620	18976	19046	1.06	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:43	50:42	1	102401	97845	20961	21378	1.05	ABV/ABV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	53	95	21	38	0.55 *	/	
	Unidentified	49:30	00:00	0	9606	13464	2188	2293	0.71 *	ABV/ABB	R
	13C-1,2,3,4,6,7,8-HpCDD	50:42	50:41	1	844820	825260	183441	180628	1.02	ABV/ABV	
	Unidentified	51:01	00:00	0	1889	4556	480	808	0.41 *	AVB/AVB	RT
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	63	58	25	23	1.09 *	/	
	Unidentified	54:43	00:00	0	643	959	151	179	0.67 *	ABV/ABV	R
	OCDF	54:51	54:50	1	32039	32497	7960	8494	0.99	AVV/AVB	
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	68	33	27	13	2.08 *	/	
	13C-OCDF	54:50	54:50	0	1496966	1643546	404095	424924	0.91	ABV/ABV	
	Unidentified	55:03	00:00	0	9698	8523	1927	1765	1.14 *	AVV/AVV	R
	Unidentified	55:10	00:00	0	1747	2214	658	688	0.79	AVV/AVV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	100	195	40	78	0.51 *	/	
	OCDD	54:43	54:42	1	930083	1043854	240143	263552	0.89	ABV/ABV	
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	63	80	25	32	0.78	/	
	13C-OCDD	54:42	54:42	0	1206717	1342438	316955	350648	0.90	ABV/ABV	
	Unidentified	55:03	00:00	0	1877	3998	833	994	0.47 *	AVB/AVV	R
	Unidentified	55:09	00:00	0	2908	3365	836	793	0.86	ABB/AVB	

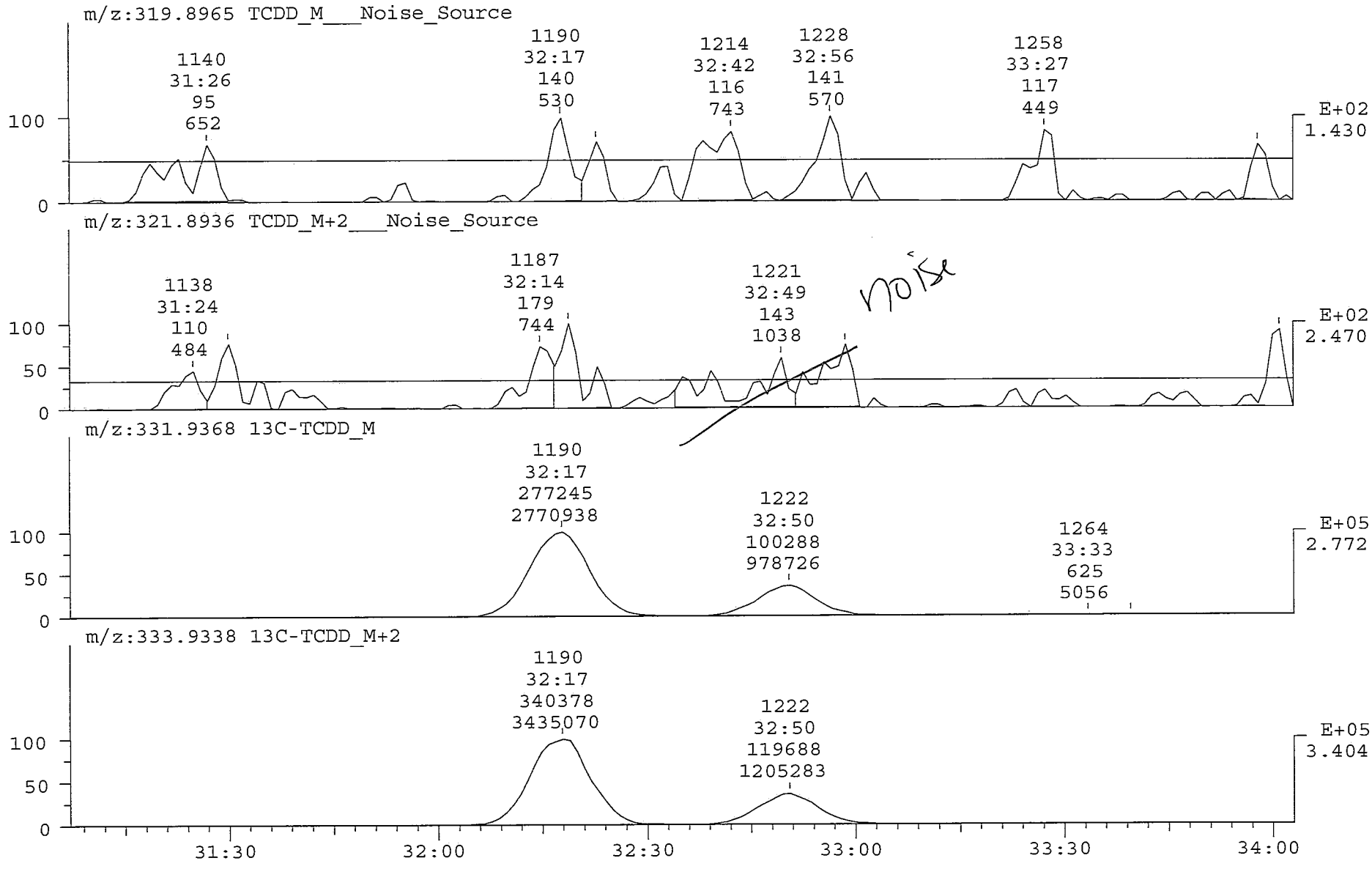
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. K 8/18/16
Calc KM 8-24-16
QC Rev K 8/24/16

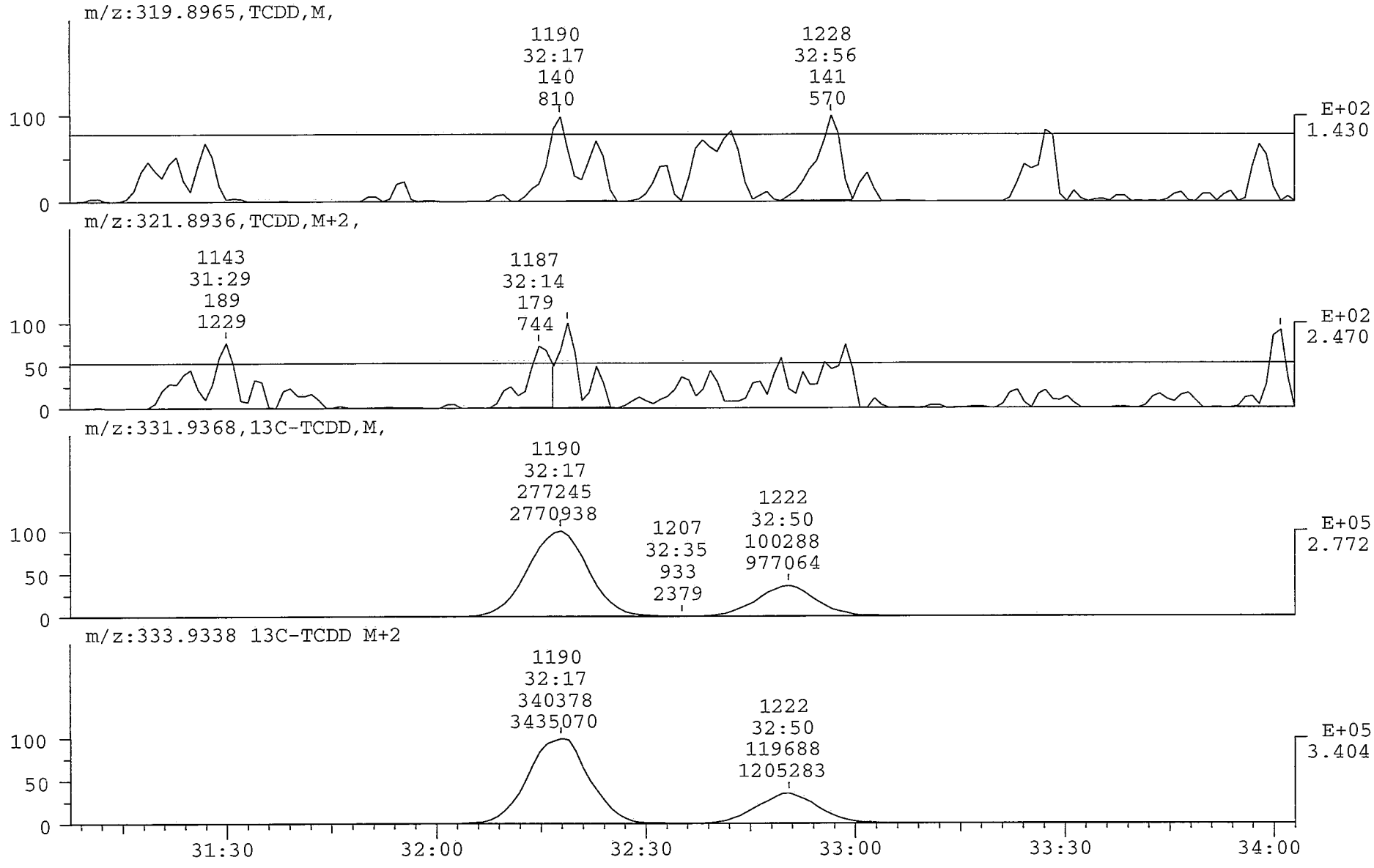
CHRO:	d1tm8110	18-Aug-16	Elapse:	54:49	2491
Samp:	WO=m81101ac Meth=9Ao Dil=1		Start :	13:05:10	2629
Comm:	Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1				
Mode:	EI ESI + Q1MS UP LR		Study :	6217014 (10.2g)	
Oper:	KLR		Inlet :	LC	
Peak:	100.00 ppm	Label wndw: 232 > 2629	Masses:	303 > 514	
Area:	5, 0.50, 0	Baseline : 100, 3	Label :	0, 0.0	
Disp:	Height Area				



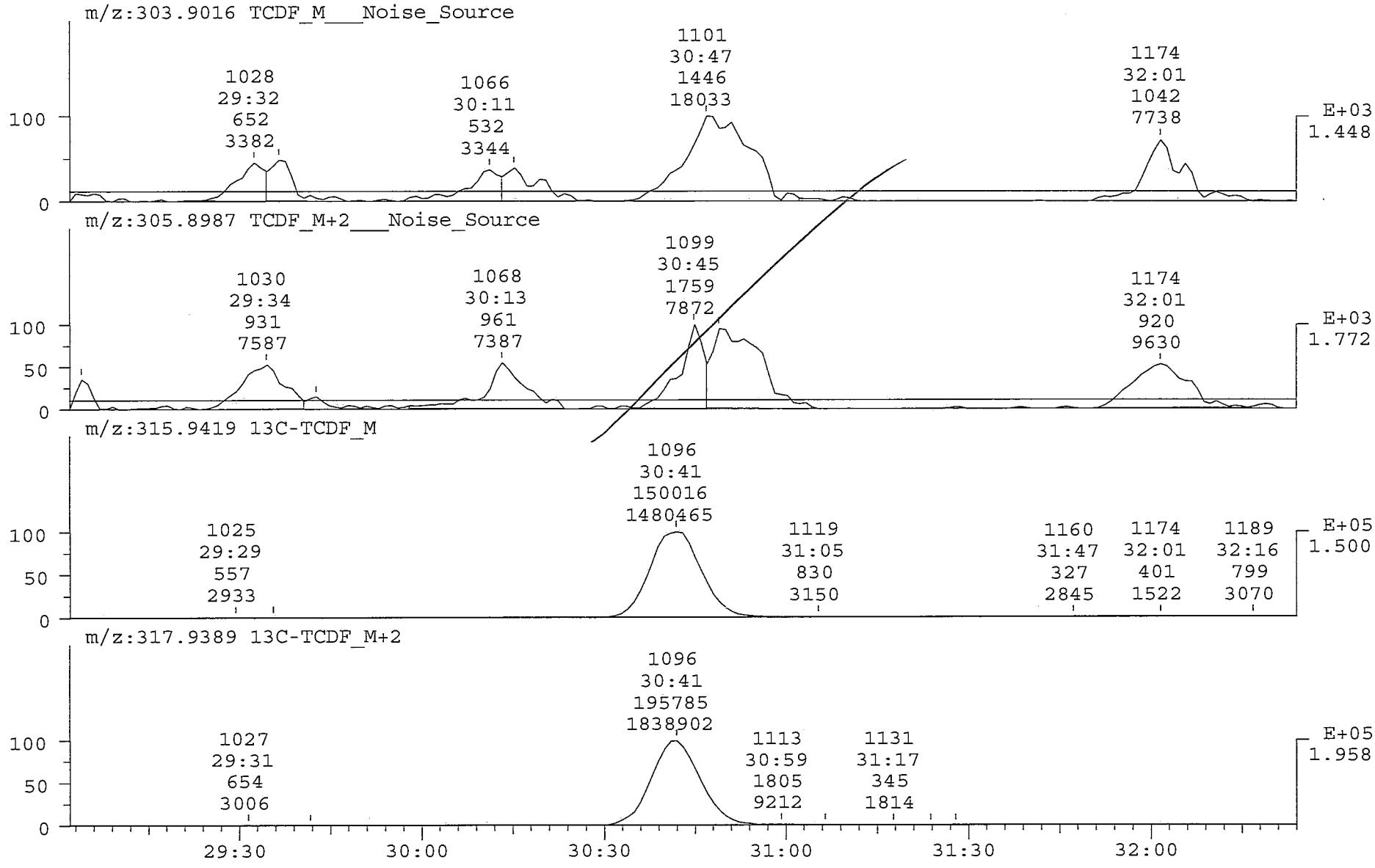
CHRO: d1tm8110 18-Aug-16 Elapse: 32:35 1207
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1121 > 1293 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



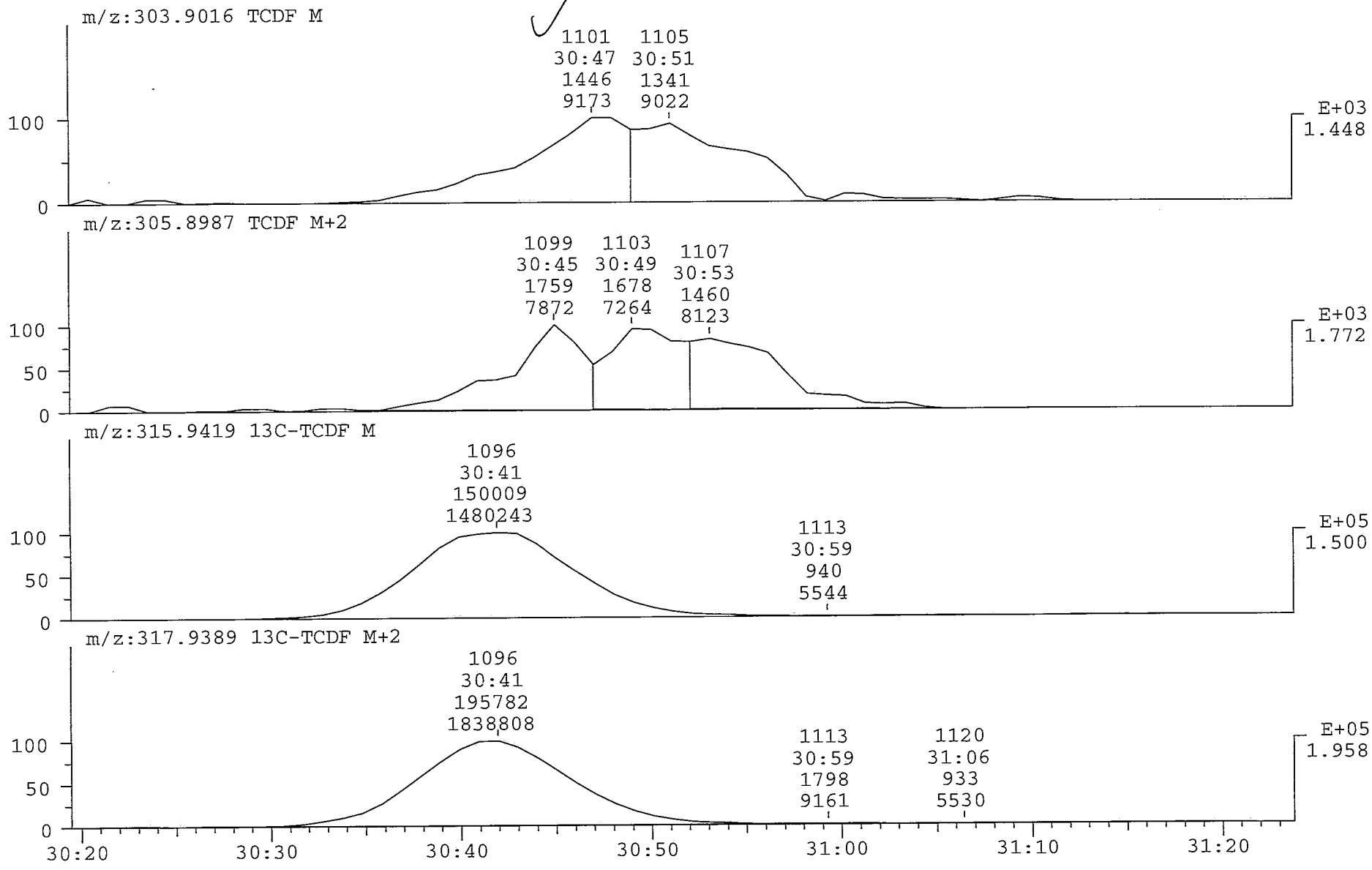
CHRO: d1tm8110 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1121 > 1293 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



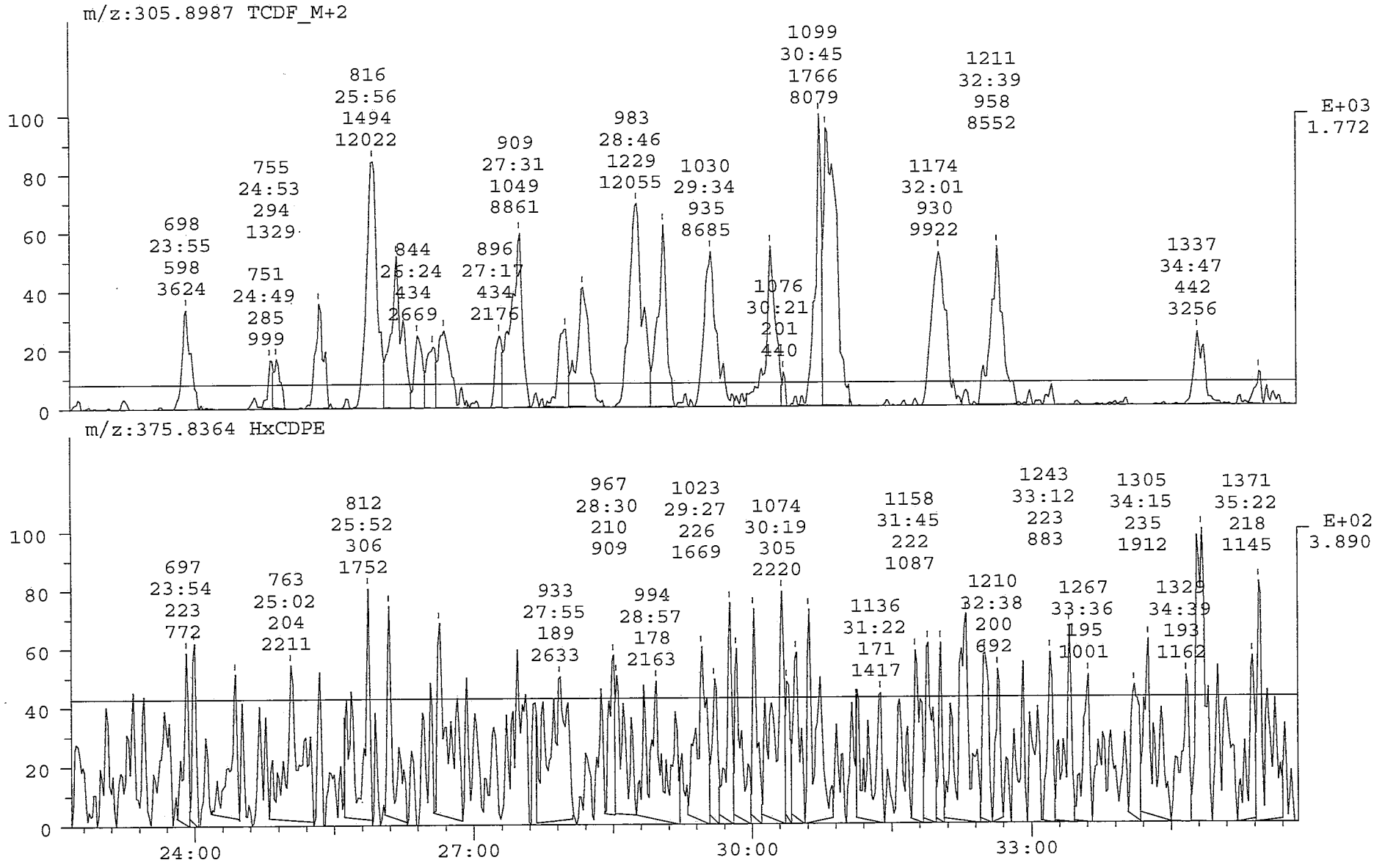
CHRO: d1tm8110 18-Aug-16 Elapse: 30:39 1094
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 998 > 1196 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



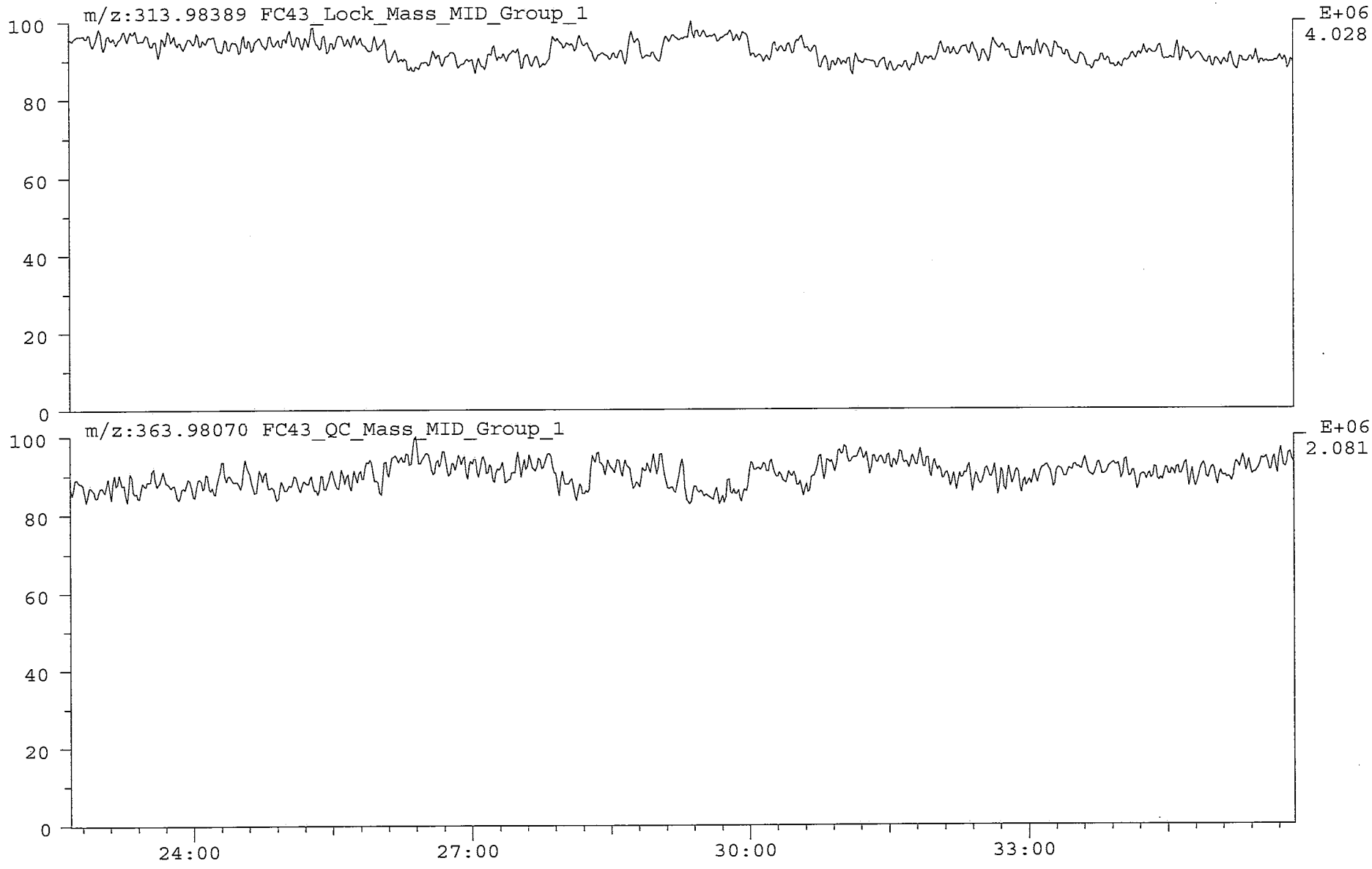
CHRO: d1tm8110 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1074 > 1137 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : 2, 5.0
Disp: Height Area



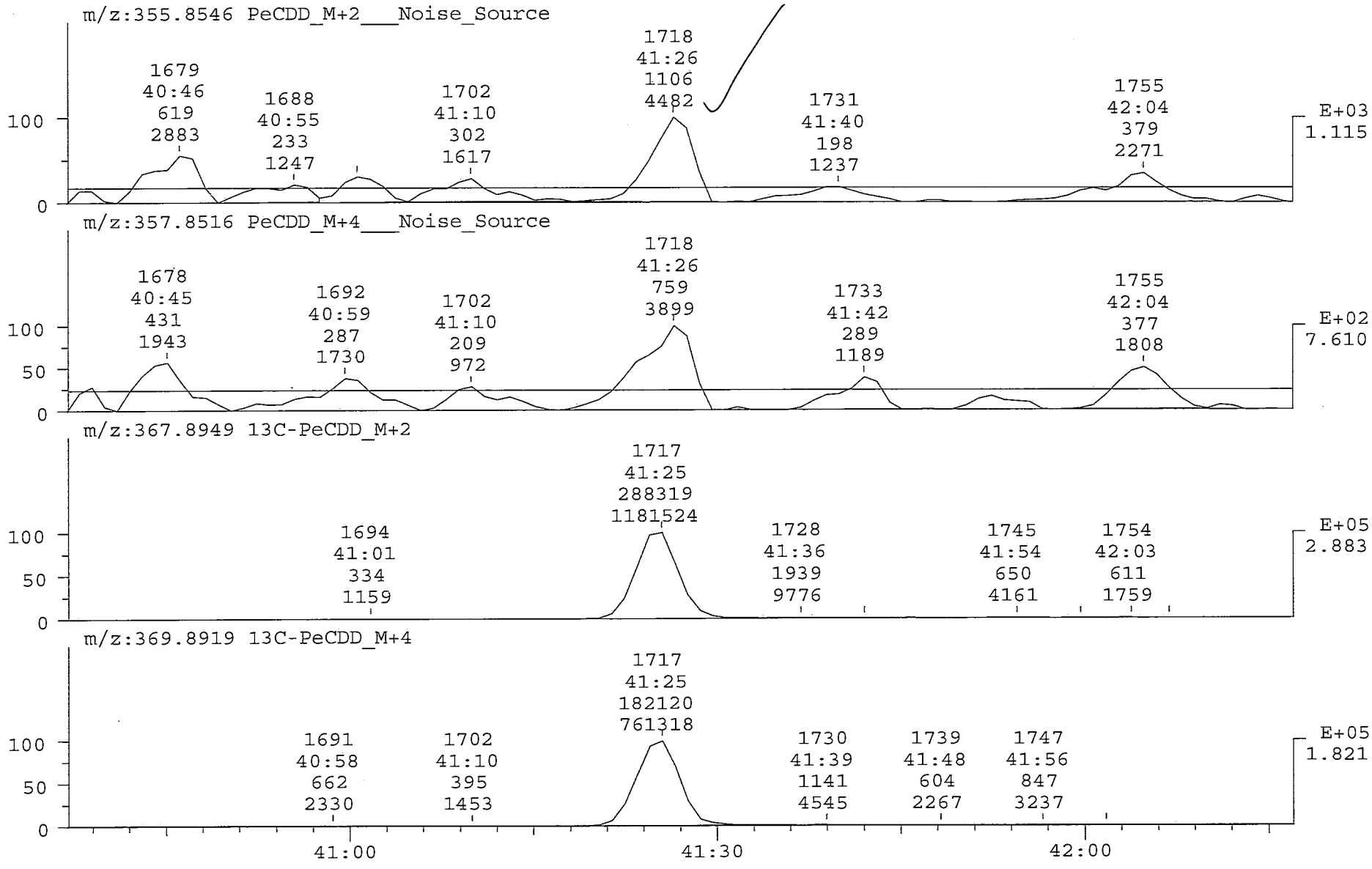
CHRO: d1tm8110 18-Aug-16 Elapse: 30:39 1094
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 624 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



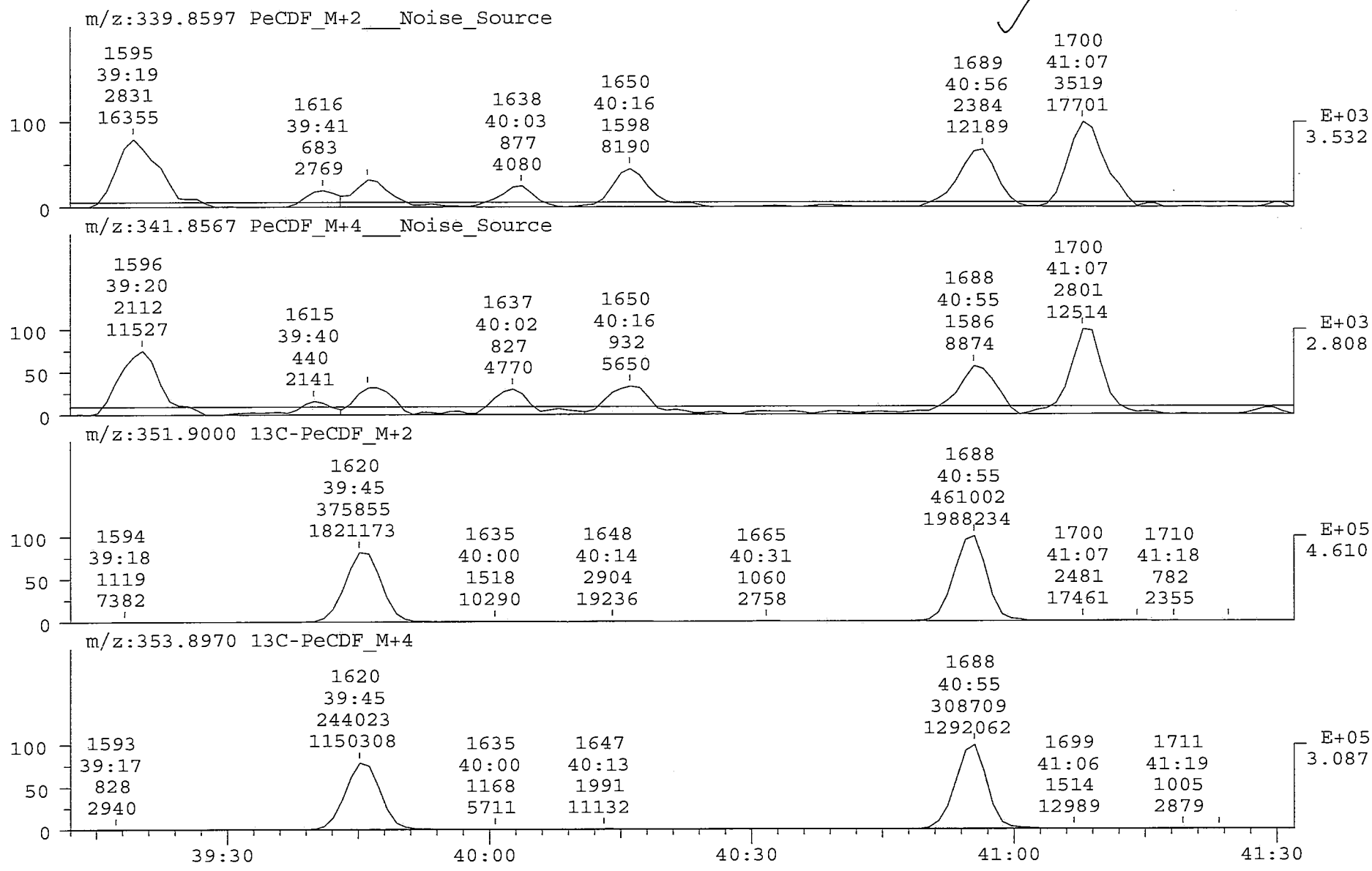
CHRO: d1tm8110 18-Aug-16 Elapse: 30:39 1094
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 624 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



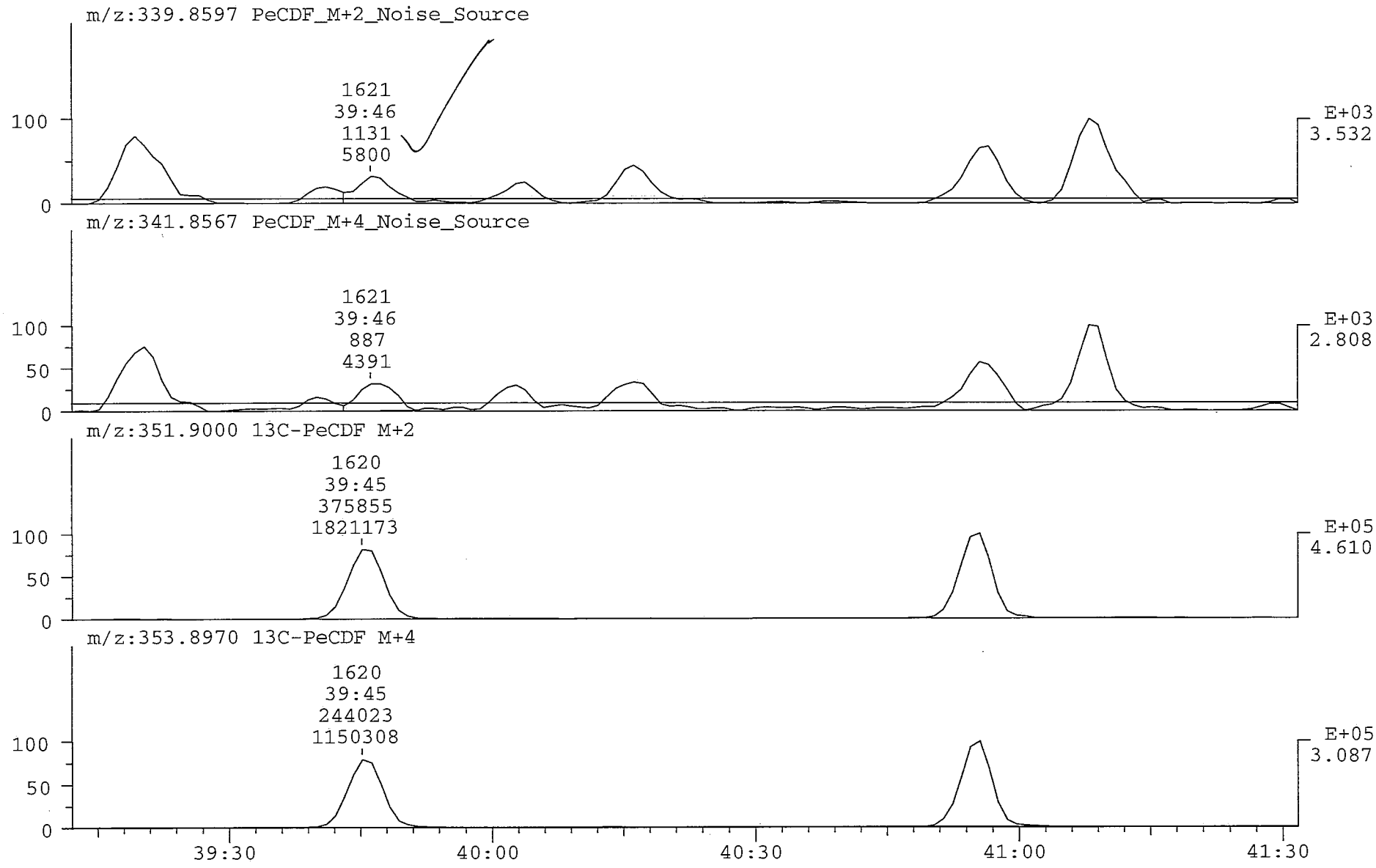
CHRO: d1tm8110 18-Aug-16 Elapse: 41:24 1716
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1670 > 1767 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



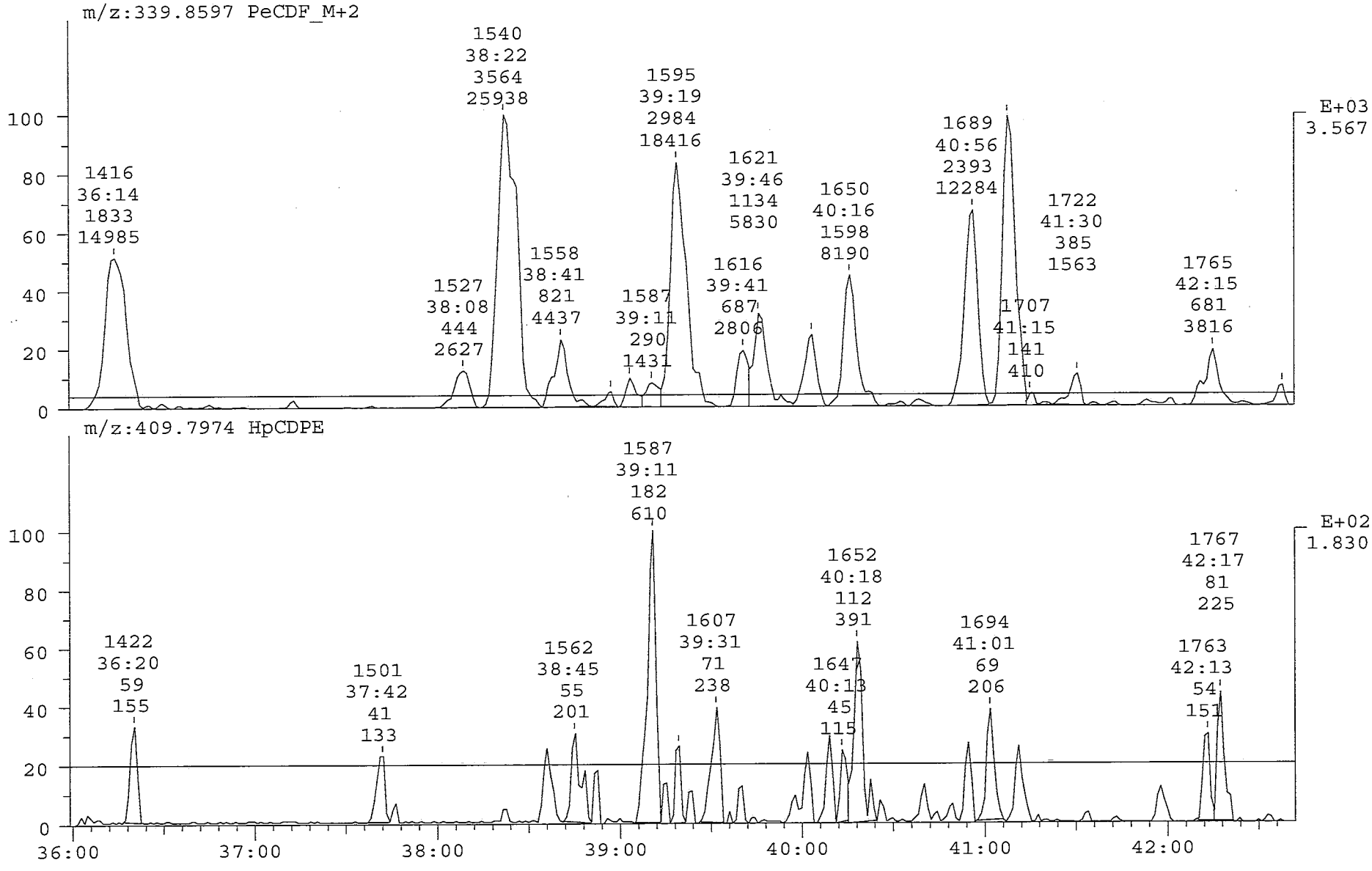
CHRO: d1tm8110 18-Aug-16 Elapse: 40:22 1656
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1588 > 1723 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



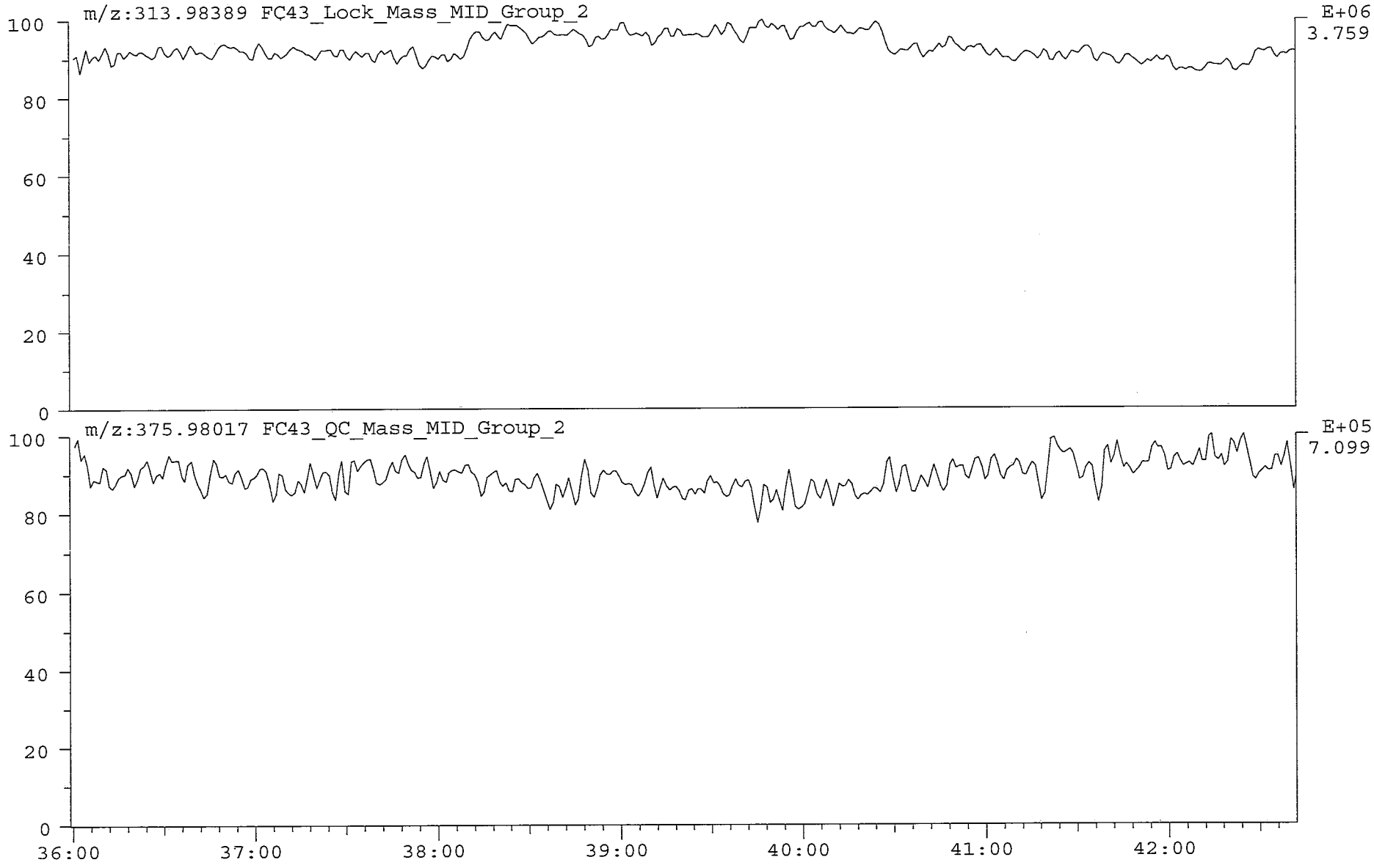
CHRO: d1tm8110 18-Aug-16 Elapse: 39:46 1621
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1618 > 1624 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



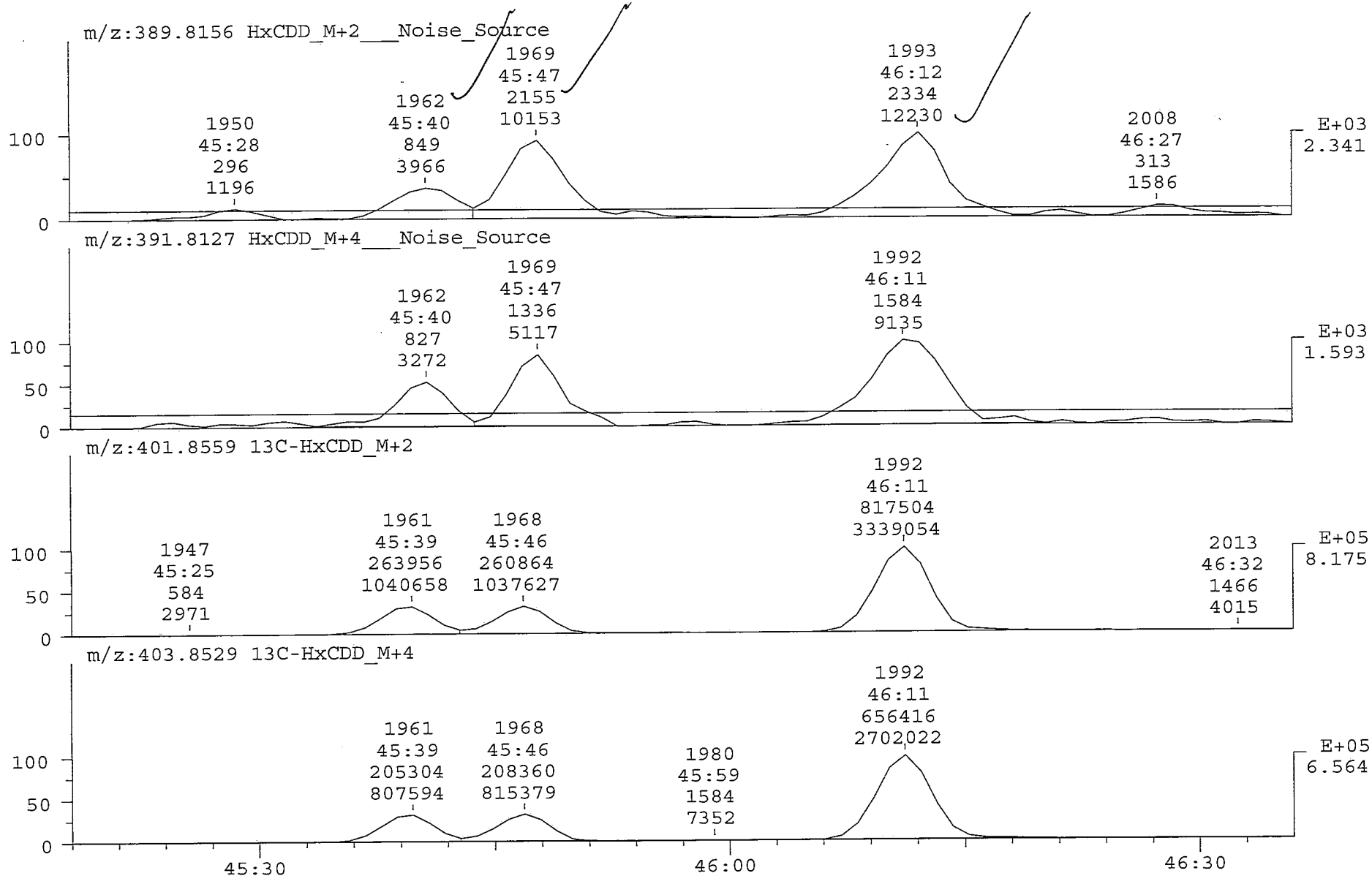
```
CHRO:  d1tm8110                                  18-Aug-16  Elapse:  40:22      1656
Samp:  WO=m81101ac Meth=9Ao Dil=1                           Start :  13:05:10   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  6217014 (10.2g)
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



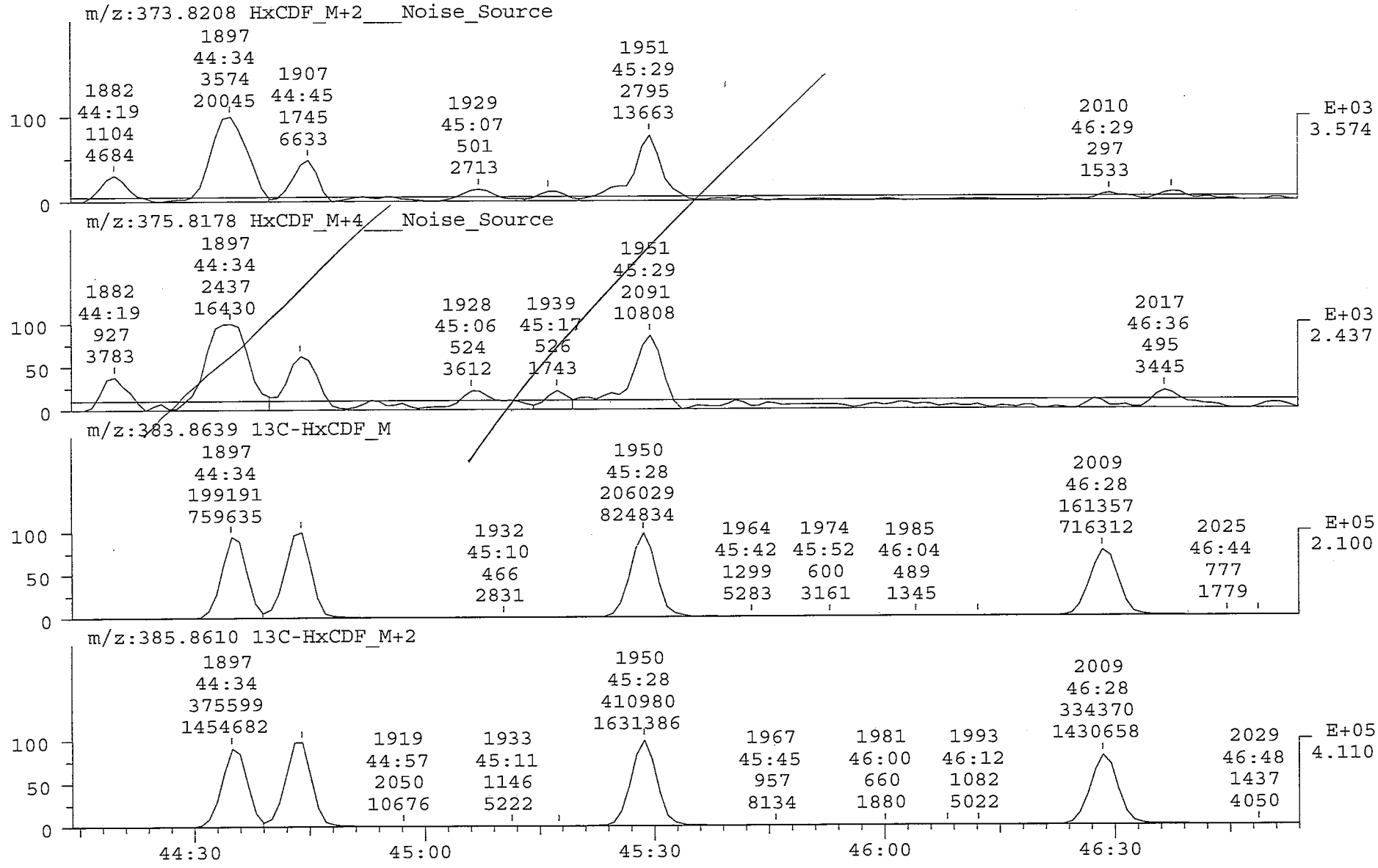
CHRO: d1tm8110 18-Aug-16 Elapse: 40:22 1656
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



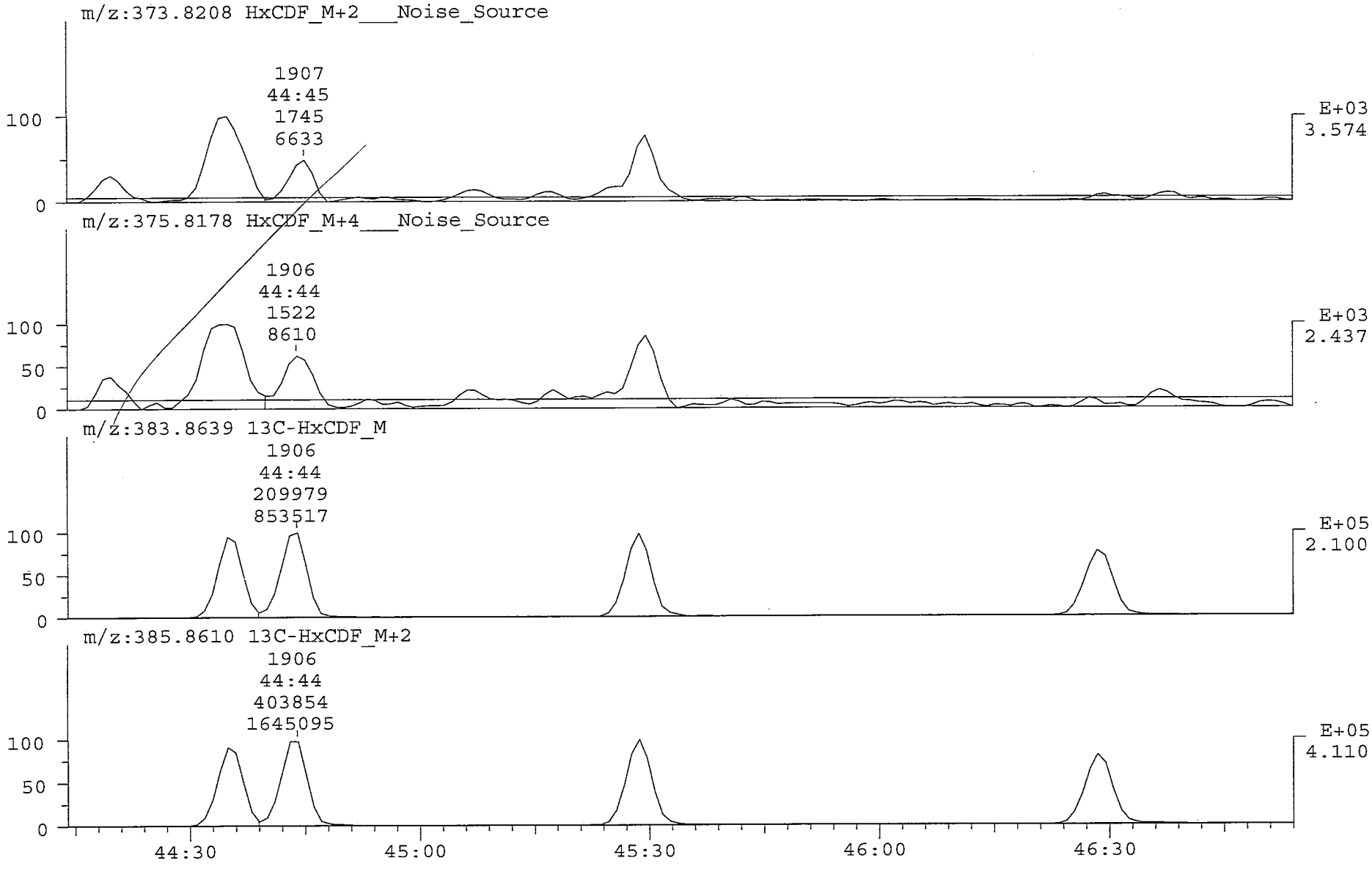
CHRO: d1tm8110 18-Aug-16 Elapse: 45:57 1978
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1940 > 2016 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



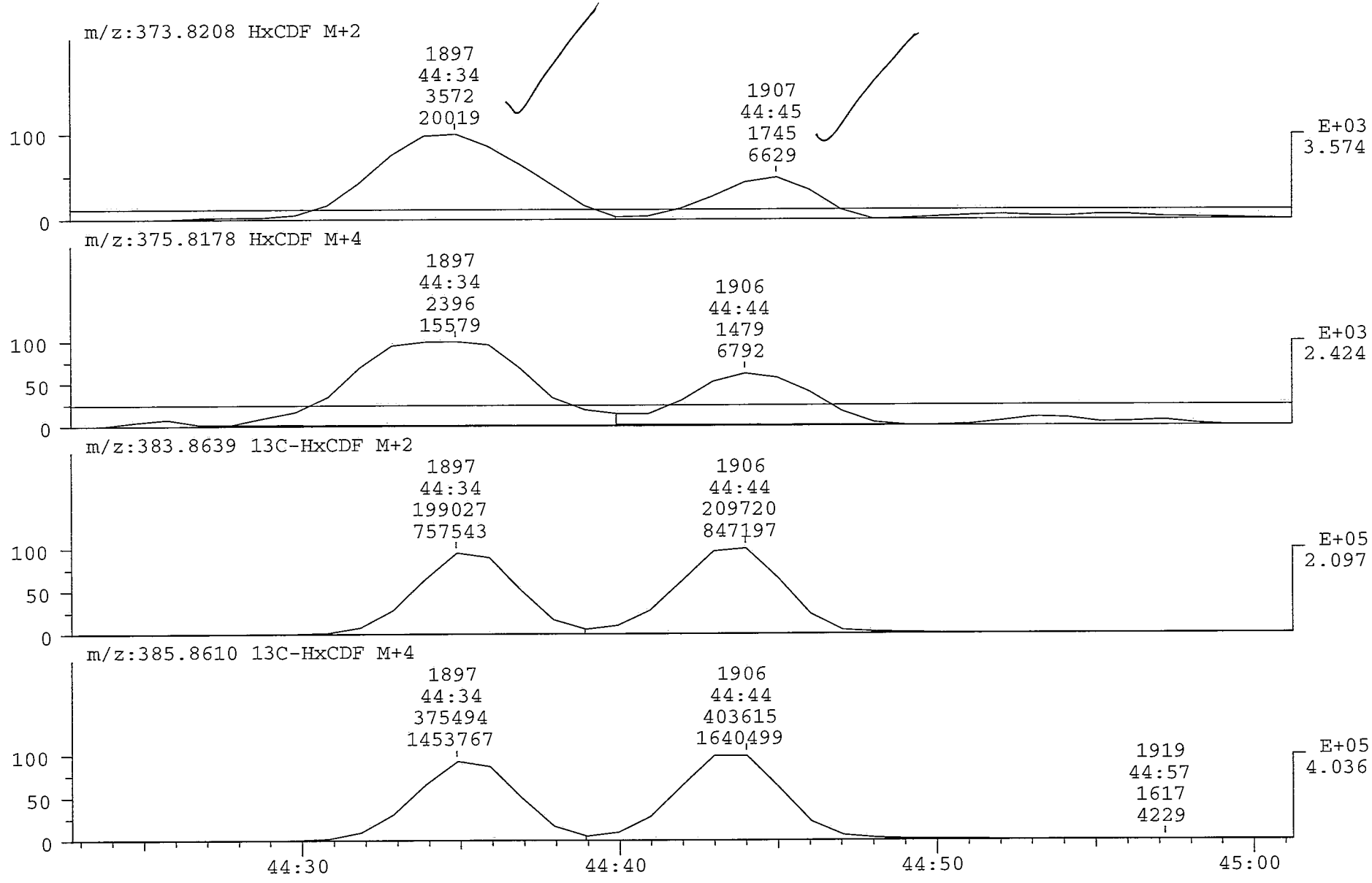
CHRO: d1tm8110 18-Aug-16 Elapse: 45:33 1955
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1876 > 2034 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



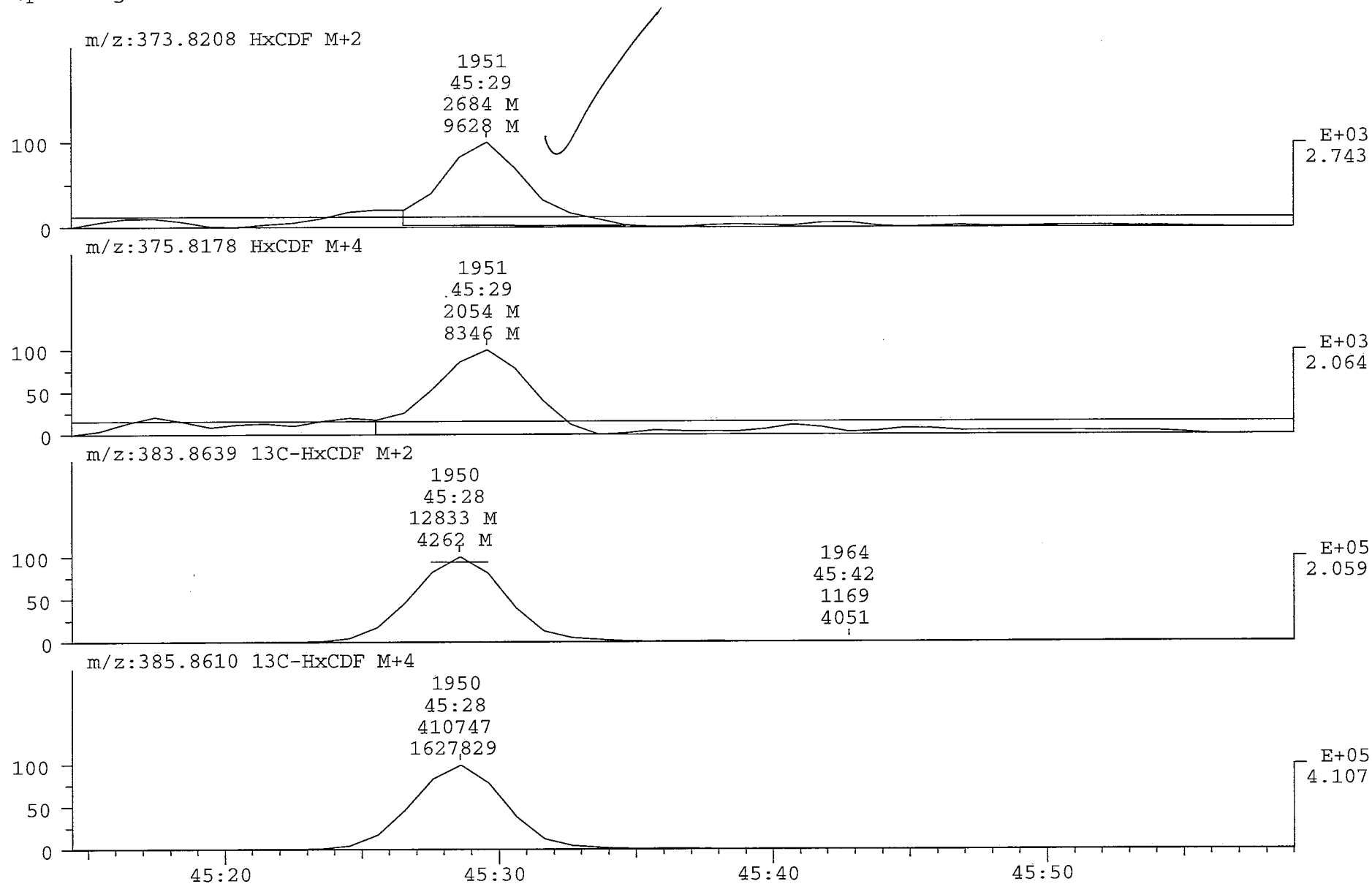
```
CHRO:  d1tm8110                                18-Aug-16  Elapse:  44:42      1904
Samp:  WO=m81101ac Meth=9Ao Dil=1                         Start :  13:05:10   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.2g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1900 > 1908          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



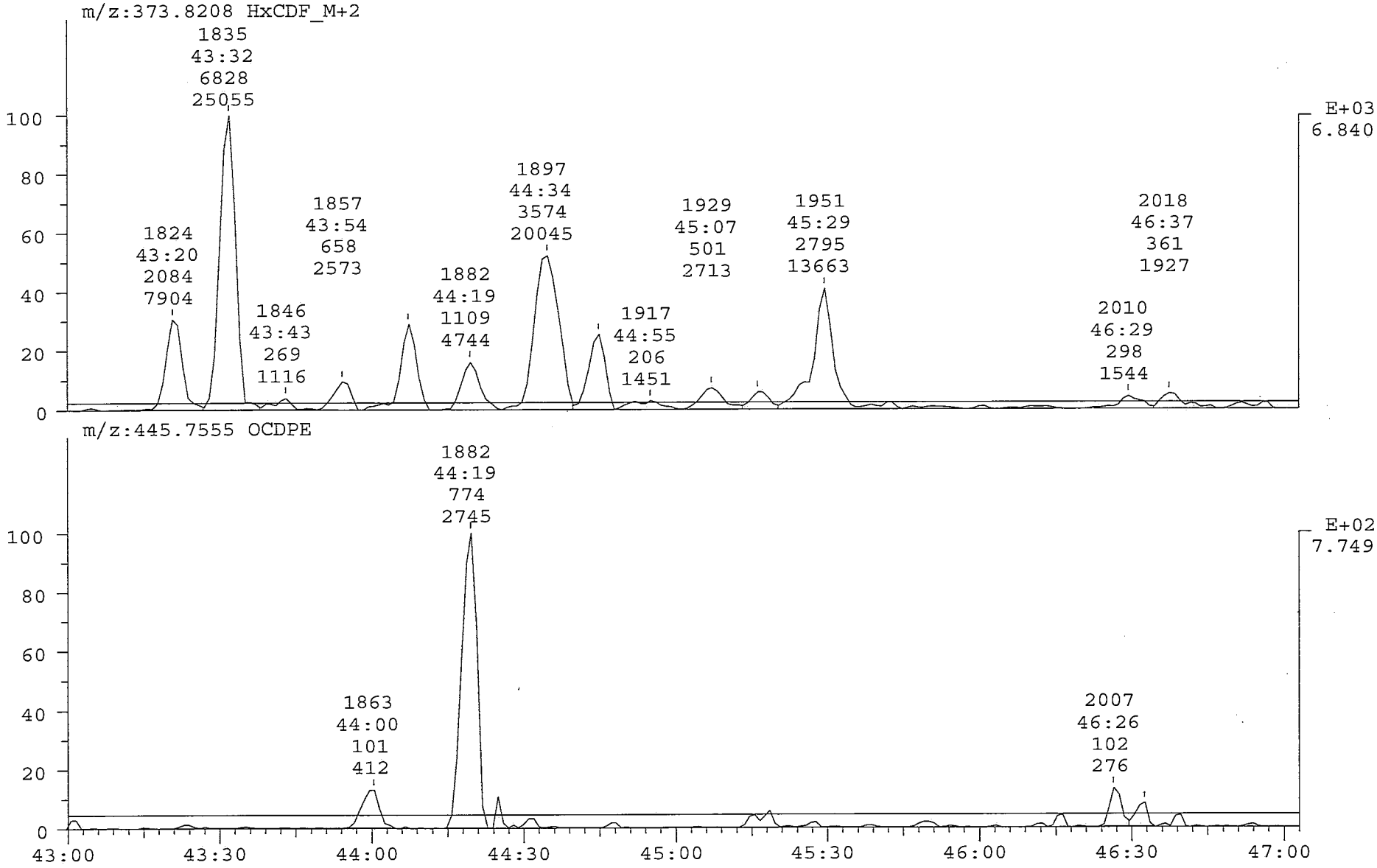
CHRO: d1tm8110 18-Aug-16 Elapse: 39:46 1621
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1885 > 1923 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



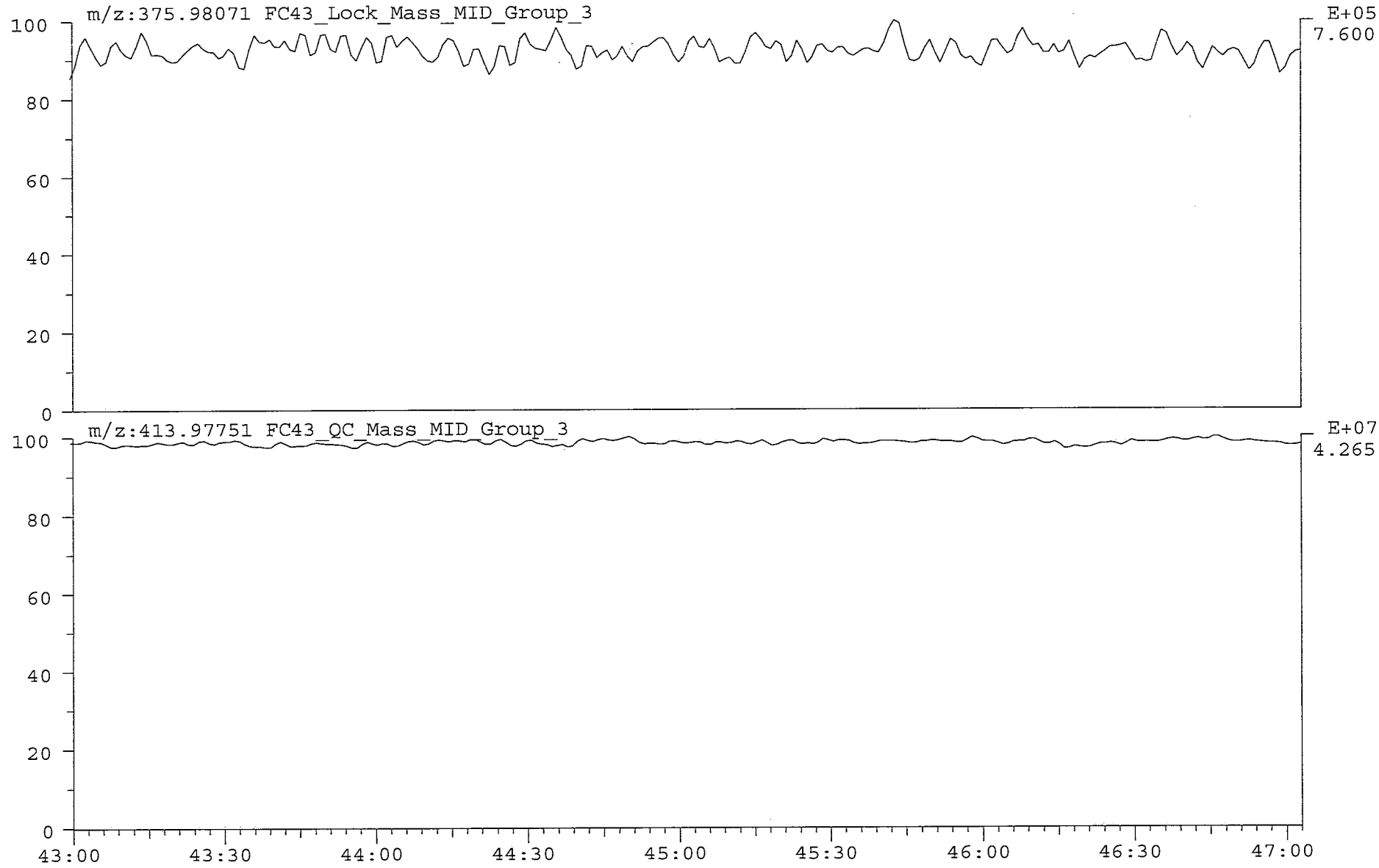
CHRO: d1tm8110 18-Aug-16 Elapse: 39:46 1621
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1936 > 1980 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



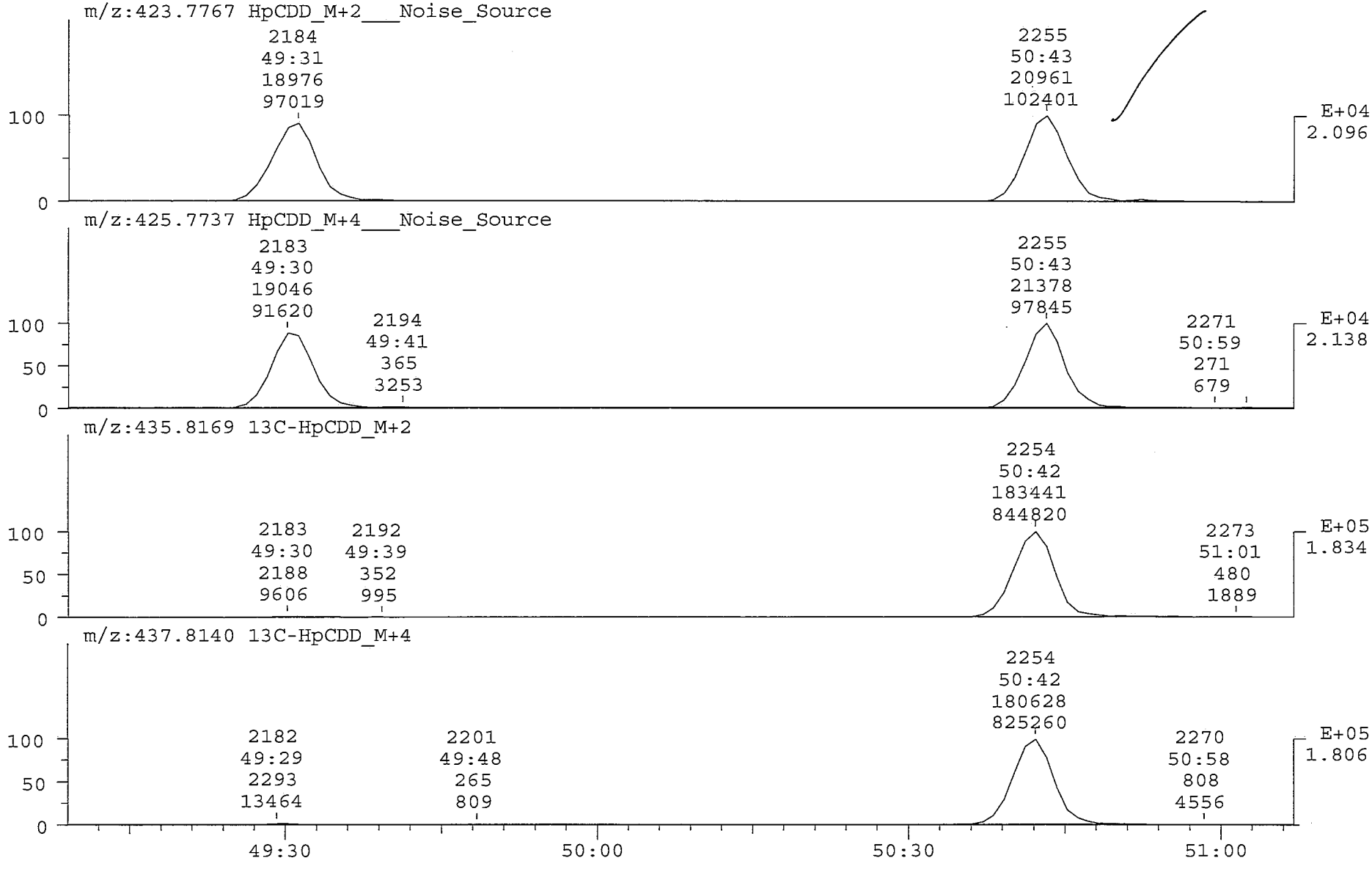
```
CHRO:  d1tm8110                                  18-Aug-16  Elapse:  44:42      1904
Samp:  WO=m81101ac Meth=9Ao Dil=1                           Start :  13:05:10   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  6217014 (10.2g)
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1803 > 2043            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



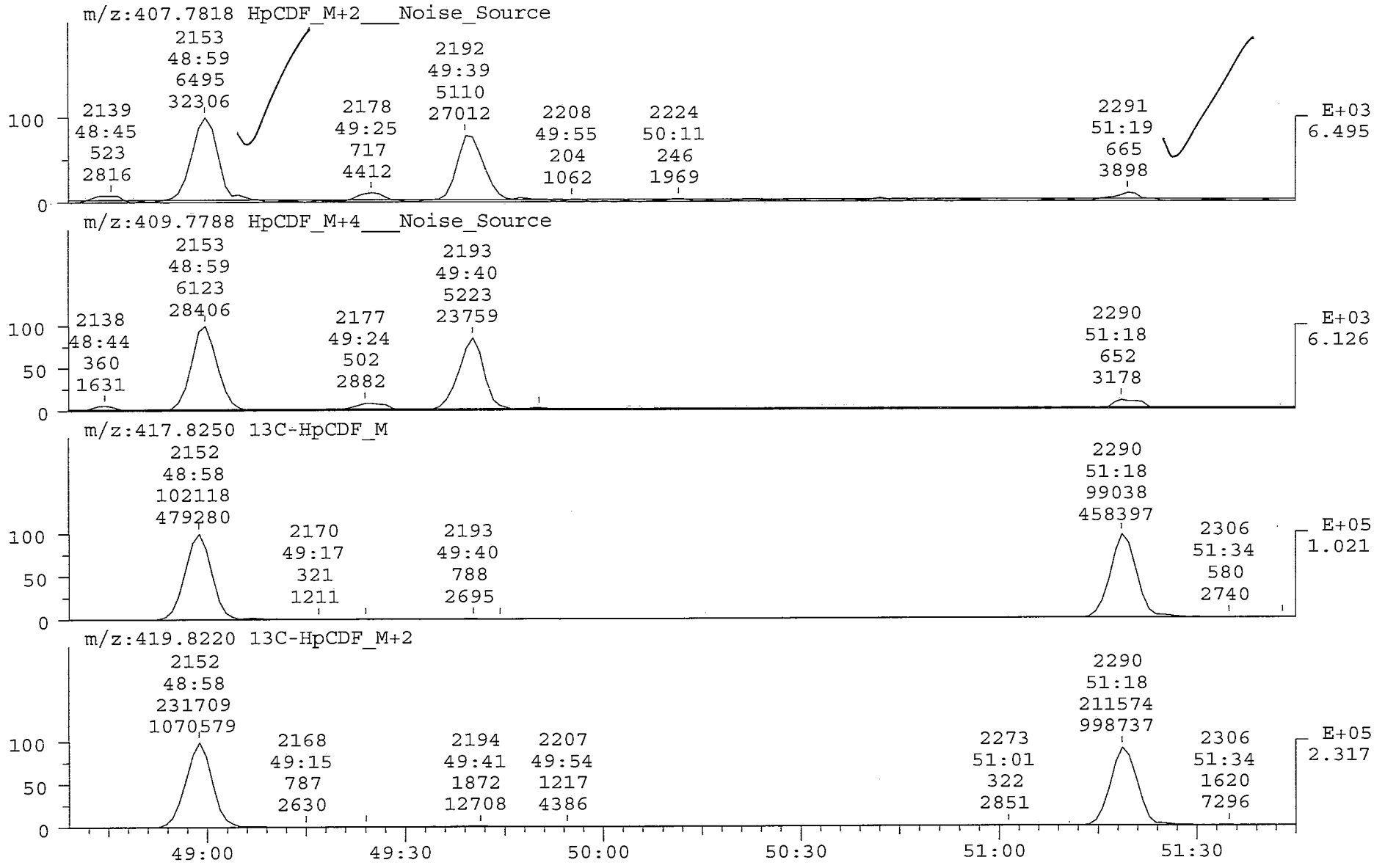
CHRO: d1tm8110 18-Aug-16 Elapse: 44:42 1904
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1803 > 2043 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



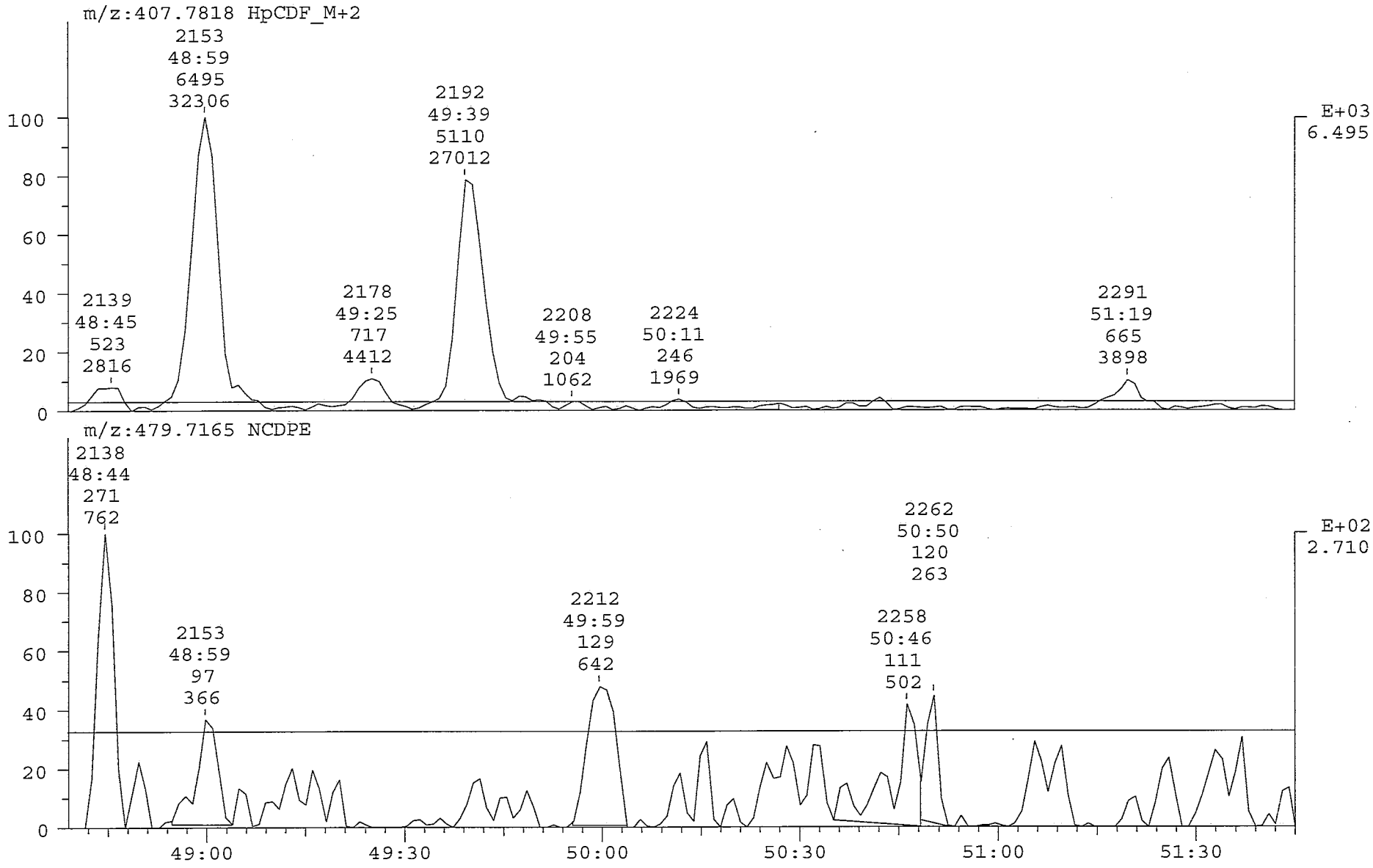
CHRO: d1tm8110 18-Aug-16 Elapse: 44:42 1904
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2162 > 2279 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



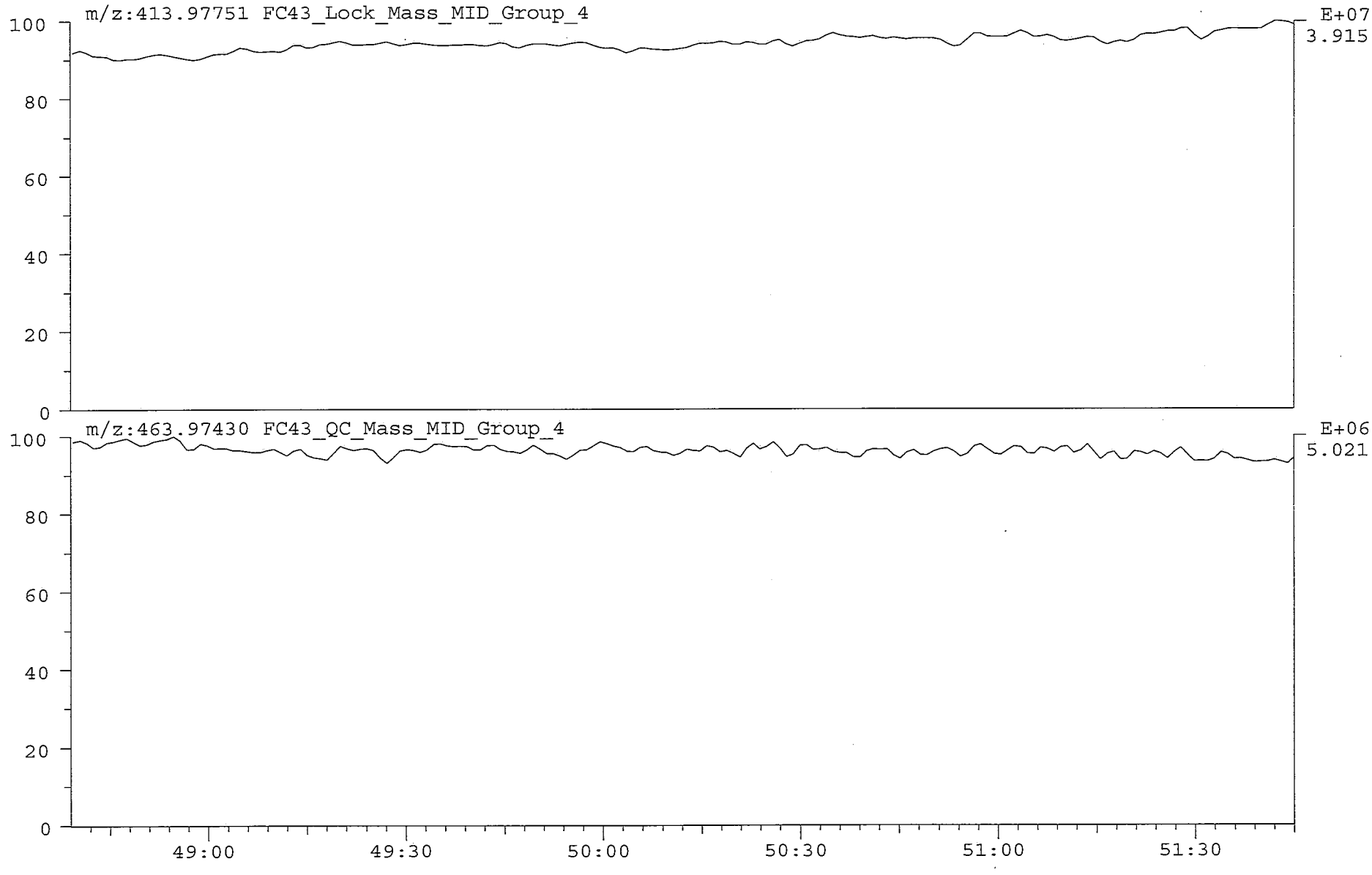
CHRO: d1tm8110 18-Aug-16 Elapse: 50:11 2224
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



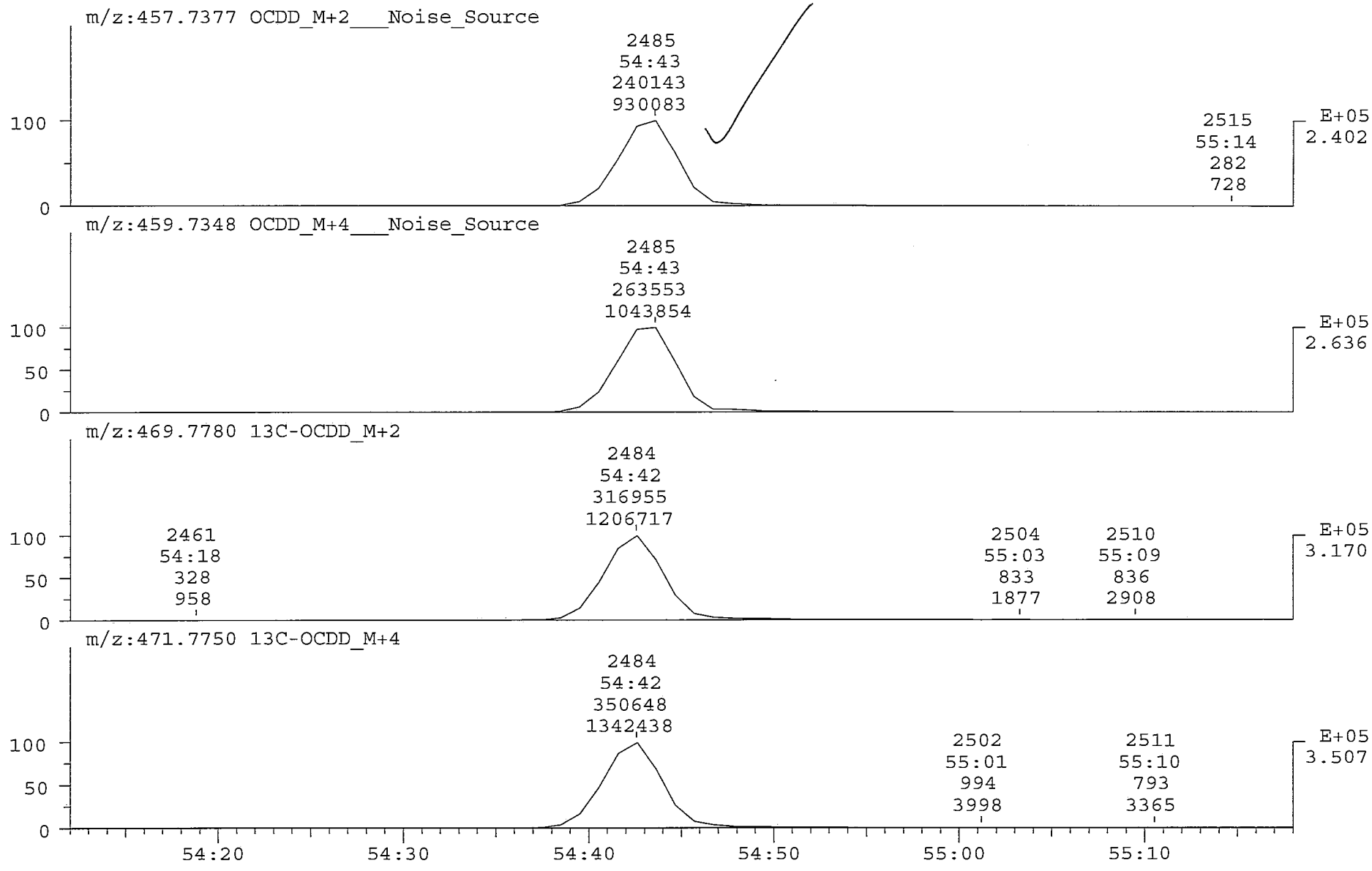
CHRO: d1tm8110 18-Aug-16 Elapse: 50:11 2224
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



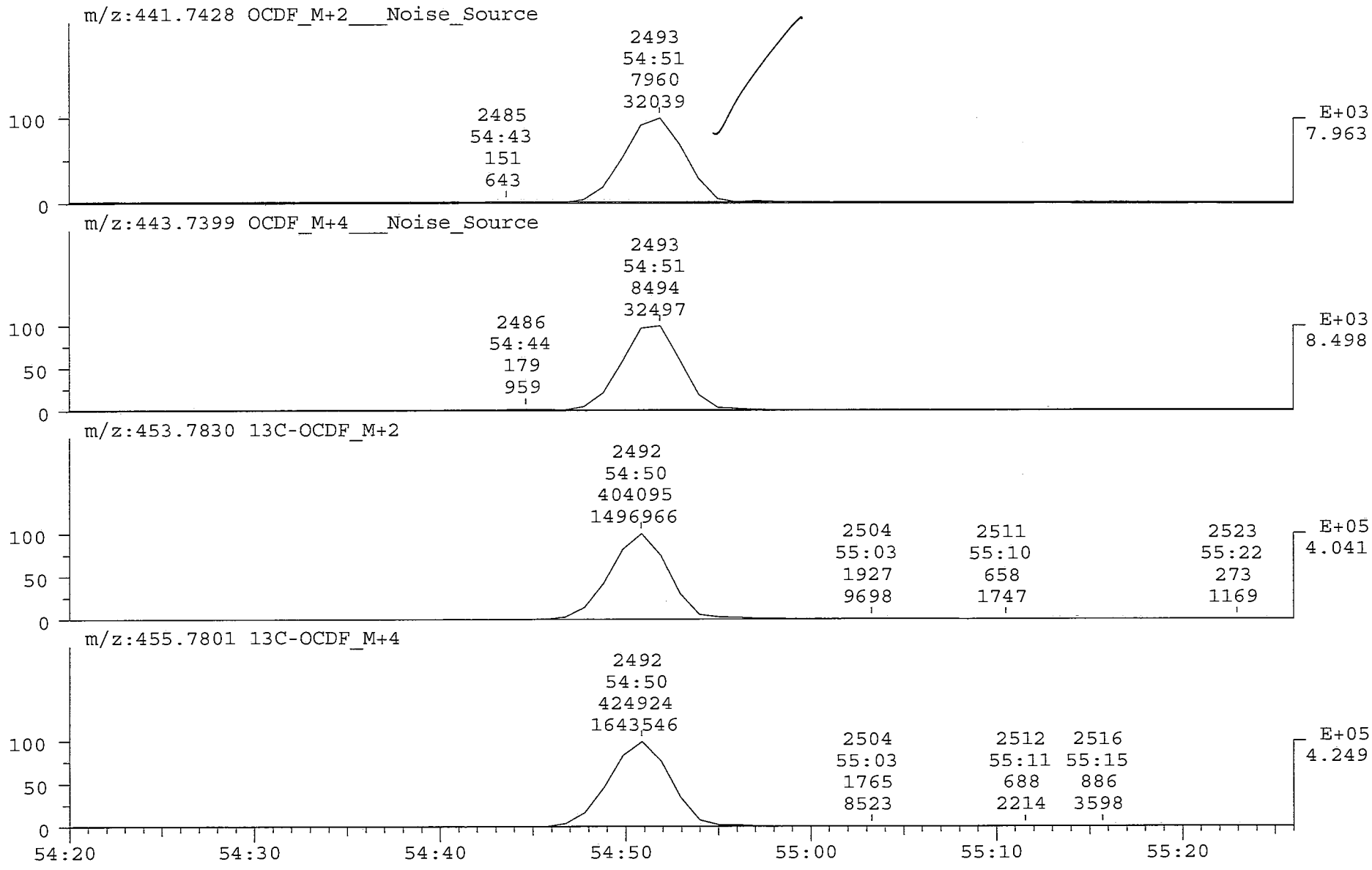
CHRO: d1tm8110 18-Aug-16 Elapse: 50:11 2224
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



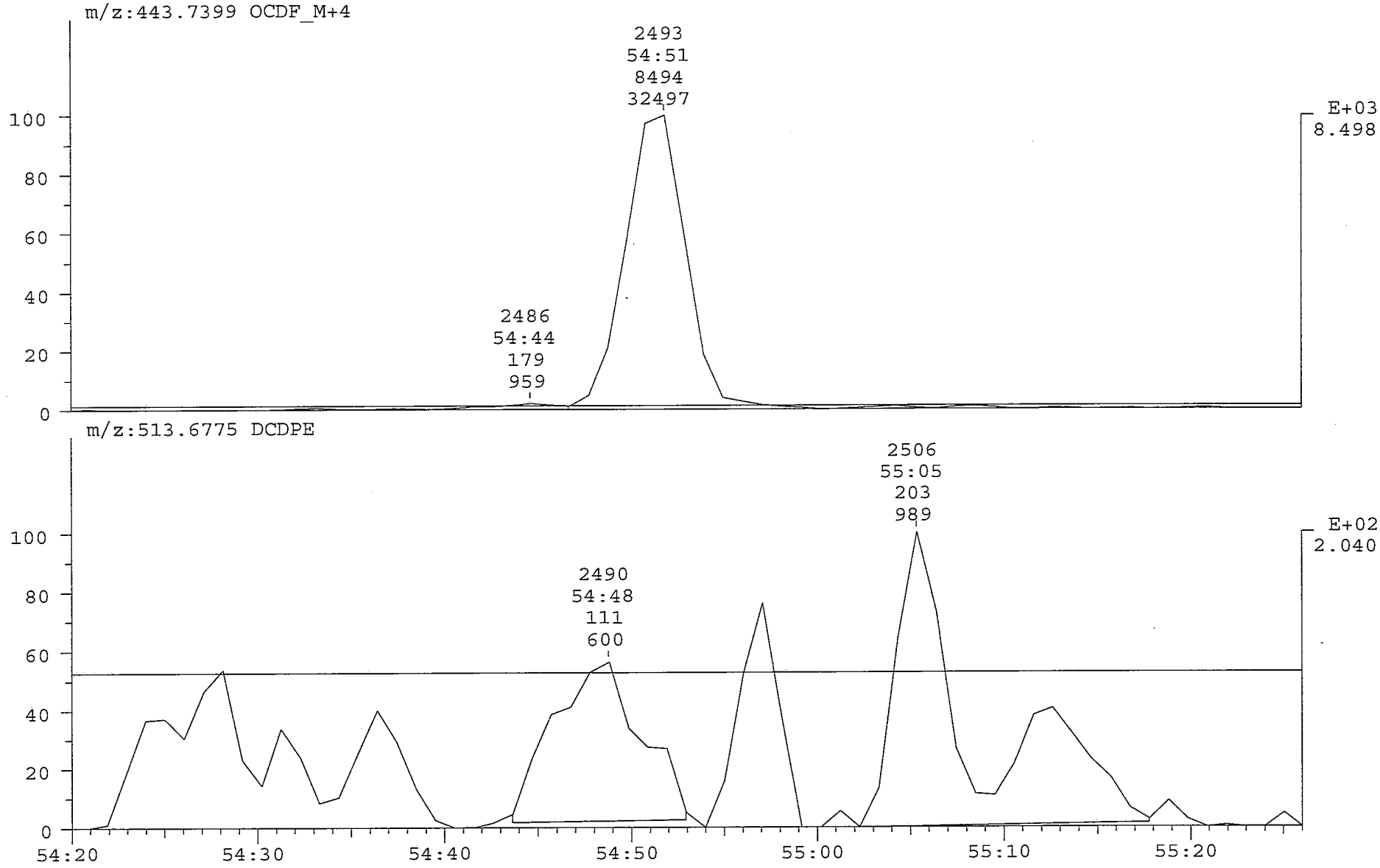
CHRO: d1tm8110 18-Aug-16 Elapse: 54:41 2483
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2454 > 2518 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



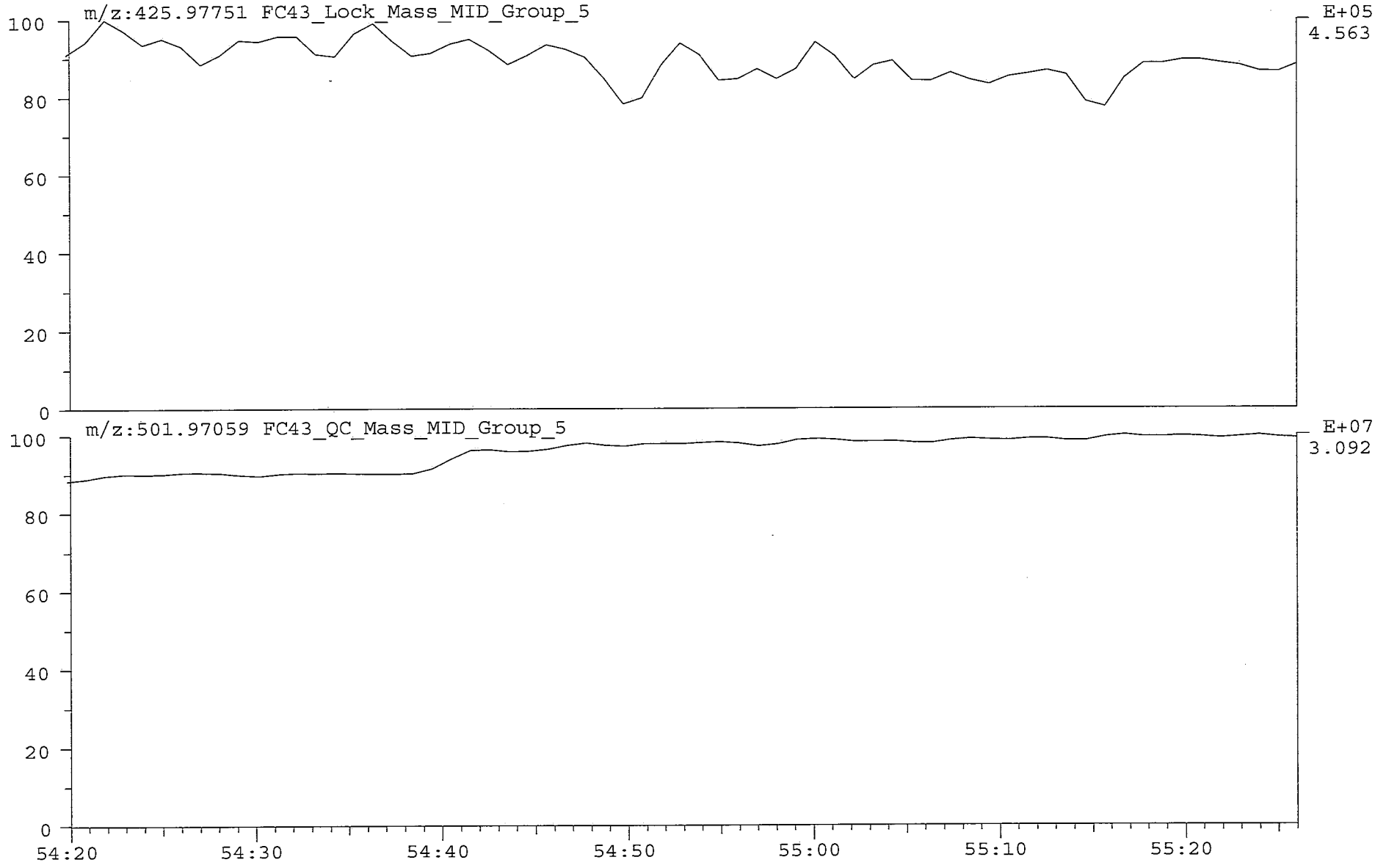
CHRO: d1tm8110 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2462 > 2526 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1tm8110 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2462 > 2526 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1tm8110 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2462 > 2526 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Thu Aug 18 13:09:33 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 18-Aug-16 13:09:33

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160818104933

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

```
 375.9802     20  1        7
 383.8639      5  1       29
 385.8610      5  1       29
 389.8158      1  1      146
 391.8127      1  1      146
 401.8559      5  1       29
 403.8529      5  1       29
 413.9770 c   20  1        7
 413.9770     20  1        7
 445.7555      1  1      146
Window # 4
     mass F  int  gr  time (ms)
 407.7817      1  1      146
 409.7788      1  1      146
 413.9770 l   20  1        7
 413.9770     20  1        7
 417.8250      5  1       29
 419.8220      5  1       29
 423.7767      1  1      146
 425.7737      1  1      146
 435.8169      5  1       29
 437.8140      5  1       29
 463.9738 c   20  1        7
 463.9738     20  1        7
 479.7165      1  1      146
Window # 5
     mass F  int  gr  time (ms)
 425.9770 l   20  1        7
 425.9770     20  1        7
 441.7428      1  1      146
 443.7399      1  1      146
 453.7830      5  1       29
 455.7801      5  1       29
 457.7377      1  1      146
 459.7348      1  1      146
 469.7780      5  1       29
 471.7750      5  1       29
 501.9706 c   20  1        7
 501.9706     20  1        7
 513.6775      1  1      146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          310.4834
 BQUAD            2.4000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE      18.0000   ECORR           1.0008   ECURR            1.0000
 EDAC        7969177.0000  EDACG           0.9997   EDACZ         2585.8226
 ELEN           -45.0000   EMULT        1802.0000   ENS            210.0000
 ENSBR            2.4000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           172.0000   EXSBR            2.5000
 FDMA       18000000.0000  FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            6.7000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0482	FVSRC	0.0400
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	620.0000
LENS_SYM	-4.7500	LM	375.8364	LMII	500.0000
LMASS	310.4834	LKM	425.9770	MASS	310.4834
MDAC	3567604.4324	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2650.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-7.0000	RECURR	0.8996	RELEN	0.0000
RES	11430.0415	RPUSHER	-6.9524	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0986	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	310.4834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:         2.6e-005 mbar
Analyzer Penning:     9.4e-008 mbar
Pirani Analyse:       4.4e-003 mbar
Pirani Source:        4.0e-002 mbar
Pirani Inlet System: 4.7e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 12202.
MID Time Window 2: Resolution is 12063.
MID Time Window 3: Resolution is 12136.
MID Time Window 4: Resolution is 11935.
MID Time Window 5: Resolution is 11430.

Amplifier Offset: 88.


*** File closed Thu Aug 18 14:06:47 2016
  ***
```

QUAN: d1tm8110.q0 Entries: 261

Data file(s) used
File: d1tm8110 18-Aug-16
Samp: WO=m81101ac Meth=9Ao Dil=1 Start : 13:05:10 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (1
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:42	743.	116.	32:35	32:45	14.	1	1.0	ABB
321.8775	32:58	921.	181.	32:51	33:00	16.	1	1.0	AVB
319.8805	31:26	652.	95.	31:15	31:30	14.	2	5.0	ABB
319.8805	32:17	530.	140.	32:11	32:21	14.	2	5.0	ABV
319.8805	32:23	280.	100.	32:21	32:26	14.	2	5.0	AVB
319.8805	32:42	743.	116.	32:35	32:45	14.	2	5.0	ABB
319.8805	32:56	570.	141.	32:49	32:59	14.	2	5.0	ABB
319.8805	33:27	449.	117.	33:22	33:30	14.	2	5.0	ABB
319.8805	33:58	255.	94.	33:55	34:01	14.	2	5.0	ABB
321.8775	31:24	484.	110.	31:18	31:26	16.	2	5.0	ABV
321.8775	31:30	744.	189.	31:26	31:36	16.	2	5.0	AVB
321.8775	32:14	744.	179.	32:07	32:16	16.	2	5.0	ABV
321.8775	32:18	903.	245.	32:16	32:25	16.	2	5.0	AVB
321.8775	32:49	1038.	143.	32:34	32:51	16.	2	5.0	AVV
321.8775	32:58	921.	181.	32:51	33:00	16.	2	5.0	AVB
321.8775	34:01	670.	225.	33:54	34:03	16.	2	5.0	ABB
331.9202	32:17	2770938.	277245.	32:02	32:33	91.	2	5.0	AVV
331.9202	32:50	978726.	100288.	32:35	33:05	91.	2	5.0	AVV
331.9202	33:33	5056.	625.	33:18	33:35	91.	2	5.0	ABB
331.9202	33:39	1772.	580.	33:35	33:41	91.	2	5.0	ABB
333.9171	32:17	3435070.	340378.	32:02	32:33	206.	2	5.0	AVV
333.9171	32:50	1205283.	119688.	32:35	33:05	206.	2	5.0	AVV
303.8864	30:47	17740.	1446.	30:33	30:59	35.	1	1.0	ABV
305.8834	30:49	15366.	1678.	30:47	31:04	37.	1	1.0	AVV
303.8864	29:32	3382.	652.	29:23	29:34	35.	2	5.0	ABV
303.8864	29:36	3243.	702.	29:34	29:47	35.	2	5.0	AVB
303.8864	30:11	3344.	532.	29:57	30:13	35.	2	5.0	ABV
303.8864	30:15	3475.	570.	30:13	30:25	35.	2	5.0	AVB
303.8864	30:47	18033.	1446.	30:33	31:02	35.	2	5.0	ABV
303.8864	32:01	7738.	1042.	31:50	32:16	35.	2	5.0	ABB
305.8834	29:04	1785.	633.	29:01	29:07	37.	2	5.0	ABB
305.8834	29:34	7587.	931.	29:24	29:40	37.	2	5.0	ABV
305.8834	29:42	1056.	251.	29:40	29:53	37.	2	5.0	AVB
305.8834	30:13	7387.	961.	29:58	30:23	37.	2	5.0	AVB
305.8834	30:45	7872.	1759.	30:35	30:47	37.	2	5.0	ABV
305.8834	30:49	15366.	1678.	30:47	31:04	37.	2	5.0	AVV
305.8834	32:01	9630.	920.	31:51	32:15	37.	2	5.0	ABB
315.9261	29:29	2933.	557.	29:22	29:32	63.	2	5.0	ABV
315.9261	29:35	3188.	709.	29:32	29:43	63.	2	5.0	AVB
315.9261	30:42	1480465.	150016.	30:27	30:57	63.	2	5.0	ABV
315.9261	31:05	3150.	830.	31:02	31:10	63.	2	5.0	AVB
315.9261	31:47	2845.	327.	31:32	31:52	63.	2	5.0	AVB
315.9261	32:01	1522.	401.	31:58	32:07	63.	2	5.0	ABB
315.9261	32:16	3070.	799.	32:13	32:24	63.	2	5.0	ABB
317.9230	29:31	3006.	654.	29:24	29:35	37.	2	5.0	ABB
317.9230	29:41	1330.	398.	29:36	29:45	37.	2	5.0	ABB
317.9230	30:42	1838902.	195785.	30:26	30:56	37.	2	5.0	ABV
317.9230	30:59	9212.	1805.	30:56	31:03	37.	2	5.0	AVV
317.9230	31:06	5606.	941.	31:03	31:12	37.	2	5.0	AVB
317.9230	31:17	1814.	345.	31:13	31:21	37.	2	5.0	ABV

317.9230	31:23	1294.	460.	31:21	31:26	37.	2	5.0	AVV
317.9230	31:27	851.	222.	31:26	31:36	37.	2	5.0	AVB
355.8368	41:26	4482.	1106.	41:18	41:29	38.	1	1.0	ABB
357.8337	41:26	3899.	759.	41:17	41:29	35.	1	1.0	ABB
355.8368	40:46	2883.	619.	40:41	40:49	38.	2	5.0	ABB
355.8368	40:55	1247.	233.	40:49	40:57	38.	2	5.0	ABV
355.8368	41:00	1293.	330.	40:57	41:04	38.	2	5.0	AVB
355.8368	41:10	1617.	302.	41:04	41:18	38.	2	5.0	ABB
355.8368	41:26	4482.	1106.	41:18	41:29	38.	2	5.0	ABB
355.8368	41:40	1237.	198.	41:32	41:45	38.	2	5.0	ABB
355.8368	42:04	2271.	379.	41:53	42:11	38.	2	5.0	ABB
357.8337	40:45	1943.	431.	40:41	40:50	35.	2	5.0	ABB
357.8337	40:59	1730.	287.	40:50	41:05	35.	2	5.0	ABB
357.8337	41:10	972.	209.	41:05	41:16	35.	2	5.0	ABB
357.8337	41:26	3899.	759.	41:17	41:29	35.	2	5.0	ABB
357.8337	41:42	1189.	289.	41:35	41:45	35.	2	5.0	ABB
357.8337	42:04	1808.	377.	41:59	42:10	35.	2	5.0	ABB
367.8765	41:01	1159.	334.	40:56	41:03	42.	2	5.0	ABB
367.8765	41:25	1181524.	288319.	41:17	41:33	42.	2	5.0	ABV
367.8765	41:36	9776.	1939.	41:33	41:40	42.	2	5.0	AVV
367.8765	41:42	6766.	1585.	41:40	41:47	42.	2	5.0	AVV
367.8765	41:54	4161.	650.	41:47	41:57	42.	2	5.0	AVV
367.8765	41:59	1801.	594.	41:57	42:01	42.	2	5.0	AVV
367.8765	42:03	1759.	611.	42:01	42:05	42.	2	5.0	AVV
367.8765	42:06	1337.	378.	42:05	42:12	42.	2	5.0	AVB
369.8734	40:58	2330.	662.	40:54	41:03	44.	2	5.0	ABB
369.8734	41:10	1453.	395.	41:05	41:13	44.	2	5.0	ABB
369.8734	41:25	761318.	182120.	41:17	41:36	44.	2	5.0	ABV
369.8734	41:39	4545.	1141.	41:36	41:44	44.	2	5.0	AVB
369.8734	41:48	2267.	604.	41:44	41:51	44.	2	5.0	ABV
369.8734	41:56	3237.	847.	41:51	41:59	44.	2	5.0	AVV
369.8734	42:01	3836.	908.	41:59	42:09	44.	2	5.0	AVB
339.8427	41:08	17701.	3519.	41:01	41:17	42.	1	1.0	ABB
341.8396	41:08	12514.	2801.	41:00	41:17	52.	1	1.0	ABB
339.8427	39:19	16355.	2831.	39:14	39:28	42.	2	5.0	ABB
339.8427	39:41	2769.	683.	39:36	39:43	42.	2	5.0	ABV
339.8427	39:46	5800.	1131.	39:43	39:57	42.	2	5.0	AVV
339.8427	40:03	4080.	877.	39:57	40:09	42.	2	5.0	AVB
339.8427	40:16	8190.	1598.	40:09	40:25	42.	2	5.0	ABB
339.8427	40:56	12189.	2384.	40:48	41:01	42.	2	5.0	ABB
339.8427	41:08	17701.	3519.	41:01	41:17	42.	2	5.0	ABB
341.8396	39:20	11527.	2112.	39:14	39:27	52.	2	5.0	ABB
341.8396	39:40	2141.	440.	39:29	39:43	52.	2	5.0	ABV
341.8396	39:46	4391.	887.	39:43	39:51	52.	2	5.0	AVB
341.8396	40:02	4770.	827.	39:51	40:11	52.	2	5.0	ABV
341.8396	40:16	5650.	932.	40:11	40:27	52.	2	5.0	AVB
341.8396	40:55	8874.	1586.	40:40	41:00	52.	2	5.0	AVB
341.8396	41:08	12514.	2801.	41:00	41:17	52.	2	5.0	ABB
351.8824	39:18	7382.	1119.	39:12	39:28	107.	2	5.0	ABB
351.8824	39:45	1821173.	375855.	39:32	39:58	107.	2	5.0	ABV
351.8824	40:00	10290.	1518.	39:58	40:09	107.	2	5.0	AVV
351.8824	40:14	19236.	2904.	40:09	40:28	107.	2	5.0	AVV
351.8824	40:31	2758.	1060.	40:28	40:34	107.	2	5.0	AVB
351.8824	40:55	1988234.	461002.	40:45	41:02	107.	2	5.0	ABV
351.8824	41:08	17461.	2481.	41:02	41:13	107.	2	5.0	AVV
351.8824	41:14	2157.	929.	41:13	41:16	107.	2	5.0	AVV
351.8824	41:18	2355.	782.	41:16	41:21	107.	2	5.0	AVB
351.8824	41:24	3048.	585.	41:21	41:29	107.	2	5.0	ABB
353.8793	39:17	2940.	828.	39:12	39:20	68.	2	5.0	ABB
353.8793	39:45	1150308.	244023.	39:35	39:58	68.	2	5.0	ABV
353.8793	40:00	5711.	1168.	39:58	40:06	68.	2	5.0	AVV
353.8793	40:13	11132.	1991.	40:06	40:21	68.	2	5.0	AVB
353.8793	40:55	1292062.	308709.	40:46	41:03	68.	2	5.0	ABV
353.8793	41:06	12989.	1514.	41:03	41:17	68.	2	5.0	AVV
353.8793	41:19	2879.	1005.	41:17	41:21	68.	2	5.0	AVV
353.8793	41:23	2274.	452.	41:21	41:30	68.	2	5.0	AVB
389.7961	46:12	11807.	2334.	46:02	46:19	50.	1	1.0	ABV

391.7931	46:11	9135.	1584.	46:02	46:20	50.	1	1.0 ABB
389.7961	45:28	1196.	296.	45:22	45:31	50.	2	5.0 ABB
389.7961	45:40	3966.	849.	45:35	45:43	50.	2	5.0 ABV
389.7961	45:47	10153.	2155.	45:43	46:01	50.	2	5.0 AVB
389.7961	46:12	12230.	2334.	46:02	46:23	50.	2	5.0 ABB
389.7961	46:27	1586.	313.	46:23	46:35	50.	2	5.0 ABB
391.7931	45:40	3272.	827.	45:33	45:43	50.	2	5.0 ABV
391.7931	45:47	5117.	1336.	45:43	45:53	50.	2	5.0 AVB
391.7931	46:11	9135.	1584.	46:02	46:20	50.	2	5.0 ABB
401.8358	45:25	2971.	584.	45:20	45:30	98.	2	5.0 ABB
401.8358	45:39	1040658.	263956.	45:30	45:42	98.	2	5.0 ABV
401.8358	45:46	1037627.	260864.	45:42	46:00	98.	2	5.0 AVV
401.8358	46:11	3339054.	817504.	46:00	46:26	98.	2	5.0 AVV
401.8358	46:32	4015.	1466.	46:30	46:35	98.	2	5.0 AVB
403.8327	45:39	807593.	205304.	45:32	45:42	62.	2	5.0 ABV
403.8327	45:46	815379.	208360.	45:42	45:56	62.	2	5.0 AVV
403.8327	45:59	7352.	1584.	45:56	46:04	62.	2	5.0 AVV
403.8327	46:11	2702022.	656416.	46:04	46:26	62.	2	5.0 AVV
373.8021	44:34	20045.	3574.	44:25	44:40	37.	1	1.0 ABV
375.7990	44:34	16111.	2437.	44:26	44:40	52.	1	1.0 AVV
373.8021	44:19	4684.	1104.	44:14	44:25	37.	2	5.0 ABB
373.8021	44:34	20045.	3574.	44:25	44:40	37.	2	5.0 ABV
373.8021	44:45	6633.	1745.	44:40	44:48	37.	2	5.0 AVB
373.8021	45:07	2713.	501.	45:01	45:13	37.	2	5.0 ABV
373.8021	45:16	1765.	407.	45:13	45:20	37.	2	5.0 AVV
373.8021	45:29	13663.	2795.	45:20	45:44	37.	2	5.0 AVB
373.8021	46:29	1533.	297.	46:21	46:34	37.	2	5.0 ABV
373.8021	46:37	1898.	359.	46:34	46:46	37.	2	5.0 AVB
375.7990	44:19	3783.	927.	44:15	44:23	52.	2	5.0 ABB
375.7990	44:34	16430.	2437.	44:23	44:40	52.	2	5.0 ABV
375.7990	44:44	8610.	1522.	44:40	44:59	52.	2	5.0 AVV
375.7990	45:06	3612.	524.	44:59	45:14	52.	2	5.0 AVV
375.7990	45:17	1743.	526.	45:14	45:19	52.	2	5.0 AVV
375.7990	45:29	10808.	2091.	45:19	45:33	52.	2	5.0 AVB
375.7990	46:36	3445.	495.	46:25	46:45	52.	2	5.0 ABB
373.8021	44:19	4684.	1104.	44:14	44:25	37.	2	5.0 ABB
373.8021	44:34	20045.	3574.	44:25	44:40	37.	2	5.0 ABV
373.8021	44:45	6633.	1745.	44:40	44:48	37.	2	5.0 AVB
373.8021	45:07	2713.	501.	45:01	45:13	37.	2	5.0 ABV
373.8021	45:16	1765.	407.	45:13	45:20	37.	2	5.0 AVV
373.8021	45:29	13663.	2795.	45:20	45:44	37.	2	5.0 AVB
373.8021	46:29	1533.	297.	46:21	46:34	37.	2	5.0 ABV
373.8021	46:37	1898.	359.	46:34	46:46	37.	2	5.0 AVB
375.7990	44:19	3783.	927.	44:15	44:23	52.	2	5.0 ABB
375.7990	44:34	16430.	2437.	44:23	44:40	52.	2	5.0 ABV
375.7990	44:44	8610.	1522.	44:40	44:59	52.	2	5.0 AVV
375.7990	45:06	3612.	524.	44:59	45:14	52.	2	5.0 AVV
375.7990	45:17	1743.	526.	45:14	45:19	52.	2	5.0 AVV
375.7990	45:29	10808.	2091.	45:19	45:33	52.	2	5.0 AVB
375.7990	46:36	3445.	495.	46:25	46:45	52.	2	5.0 ABB
383.8447	44:34	759635.	199191.	44:23	44:39	81.	2	5.0 ABV
383.8447	44:44	853517.	209979.	44:39	44:59	81.	2	5.0 AVV
383.8447	45:10	2831.	466.	45:07	45:18	81.	2	5.0 AVV
383.8447	45:28	824833.	206029.	45:18	45:40	81.	2	5.0 AVV
383.8447	45:42	5283.	1299.	45:40	45:49	81.	2	5.0 AVV
383.8447	45:53	3161.	600.	45:49	46:01	81.	2	5.0 AVB
383.8447	46:04	1345.	489.	46:01	46:06	81.	2	5.0 ABB
383.8447	46:12	3919.	546.	46:06	46:17	81.	2	5.0 ABV
383.8447	46:28	716312.	161357.	46:17	46:42	81.	2	5.0 AVB
383.8447	46:44	1779.	777.	46:42	46:46	81.	2	5.0 ABV
383.8447	46:48	2710.	620.	46:46	46:53	81.	2	5.0 AVB
385.8417	44:34	1454682.	375599.	44:27	44:39	90.	2	5.0 ABV
385.8417	44:44	1645095.	403854.	44:39	44:55	90.	2	5.0 AVV
385.8417	44:57	10676.	2050.	44:55	45:06	90.	2	5.0 AVV
385.8417	45:11	5222.	1146.	45:06	45:13	90.	2	5.0 AVV
385.8417	45:17	3511.	937.	45:13	45:19	90.	2	5.0 AVV
385.8417	45:28	1631386.	410980.	45:19	45:43	90.	2	5.0 AVV

385.8417	45:45	8134.	957.	45:43	45:58	90.	2	5.0	AVV
385.8417	46:00	1880.	660.	45:58	46:03	90.	2	5.0	AVB
385.8417	46:08	3154.	868.	46:03	46:10	90.	2	5.0	ABV
385.8417	46:12	5022.	1082.	46:10	46:18	90.	2	5.0	AVB
385.8417	46:28	1430658.	334370.	46:18	46:43	90.	2	5.0	ABV
385.8417	46:48	4050.	1437.	46:46	46:51	90.	2	5.0	AVB
423.7555	50:43	102401.	20961.	50:29	50:58	30.	1	1.0	ABV
425.7524	50:43	97295.	21378.	50:36	50:57	44.	1	1.0	AVV
423.7555	49:31	97019.	18976.	49:19	49:46	30.	2	5.0	ABV
423.7555	50:43	102401.	20961.	50:29	50:58	30.	2	5.0	ABV
425.7524	49:30	91620.	19046.	49:19	49:38	44.	2	5.0	ABV
425.7524	50:43	97845.	21378.	50:29	50:57	44.	2	5.0	ABV
435.7951	49:30	9606.	2188.	49:24	49:37	21.	2	5.0	ABV
435.7951	49:39	995.	352.	49:37	49:44	21.	2	5.0	AVB
435.7951	50:42	844820.	183441.	50:33	50:57	21.	2	5.0	ABV
435.7951	51:01	1889.	480.	50:57	51:04	21.	2	5.0	AVB
437.7921	49:29	13464.	2293.	49:23	49:43	38.	2	5.0	ABB
437.7921	49:48	809.	265.	49:45	49:51	38.	2	5.0	ABB
437.7921	50:42	825260.	180628.	50:34	50:56	38.	2	5.0	ABV
437.7921	50:58	4556.	808.	50:56	51:07	38.	2	5.0	AVB
407.7614	48:59	31753.	6495.	48:51	49:09	40.	1	1.0	AVV
409.7583	48:59	28406.	6123.	48:52	49:12	22.	1	1.0	ABB
407.7614	48:45	2816.	523.	48:39	48:48	40.	2	5.0	ABB
407.7614	48:59	32306.	6495.	48:48	49:15	40.	2	5.0	ABV
407.7614	49:25	4412.	717.	49:15	49:31	40.	2	5.0	AVV
407.7614	49:39	27012.	5110.	49:31	49:53	40.	2	5.0	AVV
407.7614	49:55	1062.	204.	49:53	50:05	40.	2	5.0	AVB
407.7614	50:11	1969.	246.	50:05	50:27	40.	2	5.0	ABV
407.7614	51:19	3898.	665.	51:04	51:25	40.	2	5.0	AVB
409.7583	48:44	1631.	360.	48:39	48:51	22.	2	5.0	ABB
409.7583	48:59	28406.	6123.	48:52	49:12	22.	2	5.0	ABB
409.7583	49:24	2882.	502.	49:19	49:29	22.	2	5.0	ABB
409.7583	49:40	23759.	5223.	49:29	49:47	22.	2	5.0	ABV
409.7583	49:50	873.	157.	49:47	50:00	22.	2	5.0	AVB
409.7583	51:18	3178.	652.	51:11	51:23	22.	2	5.0	ABB
417.8041	48:58	479280.	102118.	48:50	49:14	43.	2	5.0	ABV
417.8041	49:17	1211.	321.	49:15	49:20	43.	2	5.0	ABV
417.8041	49:24	6009.	892.	49:20	49:32	43.	2	5.0	AVB
417.8041	49:40	2695.	788.	49:33	49:42	43.	2	5.0	ABV
417.8041	49:44	1553.	290.	49:42	49:53	43.	2	5.0	AVB
417.8041	51:18	458397.	99038.	51:11	51:31	43.	2	5.0	ABV
417.8041	51:34	2740.	580.	51:31	51:41	43.	2	5.0	AVV
417.8041	51:43	1750.	838.	51:41	51:45	43.	2	5.0	AVB
419.8010	48:58	1070579.	231709.	48:50	49:13	46.	2	5.0	ABV
419.8010	49:15	2630.	787.	49:13	49:18	46.	2	5.0	AVV
419.8010	49:24	10064.	1646.	49:18	49:31	46.	2	5.0	AVV
419.8010	49:41	12708.	1872.	49:31	49:44	46.	2	5.0	AVV
419.8010	49:54	4386.	1217.	49:47	49:57	46.	2	5.0	ABB
419.8010	51:01	2851.	322.	50:50	51:08	46.	2	5.0	ABB
419.8010	51:18	998737.	211574.	51:10	51:32	46.	2	5.0	ABV
419.8010	51:34	7296.	1620.	51:32	51:40	46.	2	5.0	AVB
457.7148	54:43	930083.	240143.	54:35	54:59	40.	1	1.0	ABV
459.7118	54:43	1043854.	263552.	54:36	54:59	78.	1	1.0	ABV
457.7148	54:43	930083.	240143.	54:35	54:59	40.	2	5.0	ABV
457.7148	55:14	728.	282.	55:12	55:16	40.	2	5.0	AVB
459.7118	54:43	1043854.	263552.	54:36	54:59	78.	2	5.0	ABV
469.7545	54:18	958.	328.	54:13	54:20	25.	2	5.0	ABB
469.7545	54:42	1206717.	316955.	54:33	54:58	25.	2	5.0	ABV
469.7545	55:03	1877.	833.	55:01	55:05	25.	2	5.0	AVB
469.7545	55:09	2908.	836.	55:05	55:12	25.	2	5.0	ABB
471.7514	54:42	1342438.	350648.	54:34	54:58	32.	2	5.0	ABV
471.7514	55:01	3998.	994.	54:59	55:05	32.	2	5.0	AVV
471.7514	55:10	3365.	793.	55:05	55:12	32.	2	5.0	AVB
441.7207	54:51	31887.	7960.	54:46	55:04	25.	1	1.0	AVV
443.7177	54:51	33204.	8494.	54:39	55:00	23.	1	1.0	AVB
441.7207	54:43	643.	151.	54:40	54:46	25.	2	5.0	ABV
441.7207	54:51	32039.	7960.	54:46	55:07	25.	2	5.0	AVV

443.7177	54:44	959.	179.	54:30	54:46	23.	2	5.0	ABV
443.7177	54:51	32497.	8494.	54:46	55:00	23.	2	5.0	AVB
453.7603	54:50	1496966.	404095.	54:39	55:00	27.	2	5.0	ABV
453.7603	55:03	9698.	1927.	55:00	55:08	27.	2	5.0	AVV
453.7603	55:10	1747.	658.	55:08	55:12	27.	2	5.0	AVV
453.7603	55:23	1169.	273.	55:17	55:25	27.	2	5.0	AVB
455.7573	54:50	1643546.	424924.	54:41	55:01	13.	2	5.0	ABV
455.7573	55:03	8523.	1765.	55:01	55:09	13.	2	5.0	AVV
455.7573	55:11	2214.	688.	55:09	55:13	13.	2	5.0	AVV
455.7573	55:15	3598.	886.	55:13	55:20	13.	2	5.0	AVB

TestAmerica Canton

Sample ID: PAD-6

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 012	Work Order #....:	M81111AC	Matrix....:	SOLID
Date Sampled....:	07/25/16	Date Received....:	07/29/16	Dilution Factor:	1
Prep Date....:	08/04/16	Analysis Date....:	08/18/16	Percent Moisture	7.0
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.7 g	Instrument ID....:	D11A	Method:	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	0.18	J	1.1	0.039	pg/g
1,2,3,7,8-PeCDD	0.77	Q B J	5.5	0.048	pg/g
1,2,3,4,7,8-HxCDD	0.80	J	5.5	0.059	pg/g
1,2,3,6,7,8-HxCDD	2.0	J	5.5	0.063	pg/g
1,2,3,7,8,9-HxCDD	2.5	C J	5.5	0.057	pg/g
1,2,3,4,6,7,8-HpCDD	36		5.5	0.065	pg/g
OCDD	380	B	11	0.060	pg/g
1,2,3,7,8-PeCDF	0.47	J	5.5	0.043	pg/g
2,3,4,7,8-PeCDF	0.72	Q J	5.5	0.038	pg/g
1,2,3,4,7,8-HxCDF	1.5	C B J	5.5	0.033	pg/g
1,2,3,6,7,8-HxCDF	0.69	Q J	5.5	0.034	pg/g
2,3,4,6,7,8-HxCDF	0.48	J	5.5	0.034	pg/g
1,2,3,7,8,9-HxCDF	ND		5.5	0.043	pg/g
1,2,3,4,6,7,8-HpCDF	5.5	B J	5.5	0.041	pg/g
1,2,3,4,7,8,9-HpCDF	0.70	Q B J	5.5	0.046	pg/g
OCDF	12	B	11	0.031	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	62	40 - 135
13C-1,2,3,7,8-PeCDD	73	40 - 135
13C-1,2,3,4,7,8-HxCDD	65	40 - 135
13C-1,2,3,6,7,8-HxCDD	65	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	73	40 - 135
13C-OCDD	65	40 - 135
13C-1,2,3,7,8-PeCDF	70	40 - 135
13C-2,3,4,7,8-PeCDF	75	40 - 135
13C-1,2,3,4,7,8-HxCDF	55	40 - 135
13C-1,2,3,6,7,8-HxCDF	53	40 - 135
13C-2,3,4,6,7,8-HxCDF	60	40 - 135
13C-1,2,3,7,8,9-HxCDF	57	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	49	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	56	40 - 135
13C-OCDF	51	40 - 135

TestAmerica Canton

Sample ID: PAD-6

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 012	**Work Order #....:**	M81111AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	7.0
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.7 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81111AC	Prep Batch	6217014	Lot No	H6G290408-012
Data File	/20160818s1/d1tm8111.d	Prep Date	08/04/16	SDG No	
Analysis ID	180611	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/18/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	14:06	Initial Wt/Vol	9.7 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD	32:57	3981	666	1.144		1.588490		0.163762	J	0.0358
Total TCDD		9077	2042	1.144		5.210374		0.537152	QJ	0.0358
2,3,7,8-TCDF	30:48	67453	5157	1.066		18.386037		~~1.895468~~	NA	0.0614
Total TCDF		78655	9408	1.066		39.825464		4.105718	Q	0.0614
1,2,3,7,8-PeCDD	41:26	14040	2969	1.060		6.967649		0.718314	QBJ	0.0443
Total PeCDD		18828	4182	1.060		16.311446		1.681592	JQB	0.0443
1,2,3,7,8-PeCDF	39:46	15453	3192	1.179		4.267651		0.439964	J	0.0399
2,3,4,7,8-PeCDF	40:55	23782	5234	1.115		6.482794		0.668329	QJ	0.0356
Total PeCDF		89805	16633	1.147		35.366151		3.645995	JQ	0.0375
1,2,3,4,7,8-HxCDD	45:39	16025	3618	1.131		7.218033		0.744127	J	0.0545
1,2,3,6,7,8-HxCDD	45:46	38293	9221	1.116		17.734050		1.828253	J	0.0586
1,2,3,7,8,9-HxCDD	46:10	51990	9688	1.205		22.136244		2.282087	CJ	0.0527
Total HxCDD				1.151		47.088327		4.854467	J	0.0552
1,2,3,4,7,8-HxCDF	44:35	40628	6733	1.350		13.110947		1.351644	CBJ	0.0309
1,2,3,6,7,8-HxCDF	44:42	20231	5061	1.242		6.238228		0.643116	QJ	0.0313
2,3,4,6,7,8-HxCDF	45:28	14190	3454	1.241		4.331446		0.446541	J	0.0312
1,2,3,7,8,9-HxCDF				1.262				ND		0.0399
Total HxCDF		48727	12494	1.274		39.311240		4.052705	JQB	0.0329
1,2,3,4,6,7,8-HpCDD	50:41	638452	134624	1.114		326.988250		33.710129		0.0603
Total HpCDD		508816	103004	1.114		587.582396		60.575505		0.0603
1,2,3,4,6,7,8-HpCDF	48:58	116560	24748	1.461		49.198882		5.072050	BJ	0.0379
1,2,3,4,7,8,9-HpCDF	51:18	12945	2137	1.370		6.298803		0.649361	QBJ	0.0430
Total HpCDF		172781	35467	1.416		133.700583		13.783565	QB	0.0403
OCDD	54:42	5273303	1347805	1.203		3446.65442		355.325198	B	0.0556
OCDF	54:50	196806	50536	1.134		109.841287		11.323844	B	0.0284
13C-2,3,7,8-TCDD	32:52	2191603	207556	1.093	1000	616.682305	61.67	63.575495		0.173
13C-2,3,7,8-TCDF	30:42	3442896	366199	1.794	1000	589.864856	58.99	60.810810		0.0414
13C-1,2,3,7,8-PeCDD	41:24	1901163	466318	0.800	1000	730.605824	73.06	75.320188		0.0504
13C-1,2,3,7,8-PeCDF	39:44	3070860	657464	1.356	1000	695.988515	69.60	71.751393		0.0833
13C-2,3,4,7,8-PeCDF	40:54	3291394	780436	1.343	1000	753.430519	75.34	77.673249		0.0841
13C-1,2,3,4,7,8-HxCDD	45:38	1962796	505642	0.916	1000	654.369132	65.44	67.460735		0.0671
13C-1,2,3,6,7,8-HxCDD	45:45	1934933	476694	0.906	1000	651.896897	65.19	67.205866		0.0678
13C-1,2,3,4,7,8-HxCDF	44:34	2294656	611576	1.268	1000	552.387853	55.24	56.947201		0.0444
13C-1,2,3,6,7,8-HxCDF	44:42	2611969	656467	1.506	1000	529.724634	52.97	54.610787		0.0374
13C-2,3,4,6,7,8-HxCDF	45:27	2640109	658426	1.344	1000	599.813648	59.98	61.836459		0.0419
13C-1,2,3,7,8,9-HxCDF	46:27	2243006	506347	1.202	1000	569.737942	56.97	58.735870		0.0468
13C-1,2,3,4,6,7,8-HpCDD	50:40	1753153	372197	0.728	1000	734.890016	73.49	75.761857		0.0256
13C-1,2,3,4,6,7,8-HpCDF	48:57	1621584	344369	1.008	1000	491.169105	49.12	50.635990		0.0311
13C-1,2,3,4,7,8,9-HpCDF	51:17	1499732	323928	0.811	1000	564.798883	56.48	58.226689		0.0387
13C-OCDD	54:41	2543619	678347	0.597	2000	1300.11207	65.01	134.032172		0.0422
13C-1,2,3,4-TCDD	32:19	6505873	652442	1.000	2000	2000.00000	100.00	206.185567		0.189
13C-1,2,3,7,8,9-HxCDD	46:09	6550226	1576100	1.000	2000	2000.00000	100.00	206.185567		0.0615
13C-OCDF	54:49	3159057	847651	0.946	2000	1019.63554	50.98	105.117066		0.0190

NA 8/24/16

KLM 8/24/16

KLM 8-24-16

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81111AC	Prep Batch	6217014	Lot No	H6G290408-012
Data File	/20160818s1/d1tm8111.d	Prep Date	08/04/16	SDG No	
Analysis ID	180611	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 14:06	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.7 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	103	130	41	52	0.79	/	
	Unidentified	29:05	00:00	0	2307	1211	610	328	1.91 *	ABB/ABB	R
	Unidentified	29:34	00:00	0	9353	13281	1059	1907	0.70	ABB/ABB	
	Unidentified	30:17	00:00	0	10406	10876	1049	918	0.96 *	AVV/AVB	R
	2,3,7,8-TCDF	30:48	30:46	2	29052	38401	2075	3082	0.76	ABV/ABV	D
	Unidentified	32:05	00:00	0	14396	16825	1751	1786	0.86	ABB/ABB	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	100	135	40	54	0.74	/	
	Unidentified	29:33	00:00	0	5374	3981	1213	893	1.35 *	AVV/AVB	R
	13C-2,3,7,8-TCDF	30:42	30:43	-1	1539957	1902939	161756	204443	0.81	ABV/AVV	
	Unidentified	31:06	00:00	0	3791	1866	876	754	2.03 *	AVV/AVV	R
	Unidentified	31:15	00:00	0	2447	2059	749	623	1.19 *	AVB/AVB	RT
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	38	45	15	18	0.83	/	
	Unidentified	31:27	00:00	0	891	542	281	148	1.64 *	ABB/AVV	RT
	Unidentified	32:19	00:00	0	2187	2006	323	413	1.09 *	ABV/AVV	RT
	Unidentified	32:29	00:00	0	187	582	81	216	0.32 *	AVV/AVV	R
	Unidentified	32:36	00:00	0	1720	962	267	313	1.79 *	AVB/AVV	RT
	2,3,7,8-TCDD	32:57	32:53	4	1640	2341	246	420	0.70	ABB/AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	250	348	100	139	0.72	/	
	13C-1,2,3,4-TCDD	32:19	32:18	1	2917772	3588101	294635	357807	0.81	AVV/ABV	
	13C-2,3,7,8-TCDD	32:52	32:50	2	972040	1219563	92123	115433	0.80	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	135	165	54	66	0.82 *	/	
	Unidentified	39:18	00:00	0	15709	11829	2530	1785	1.33	ABB/ABB	
	Unidentified	39:41	00:00	0	4144	2699	1038	647	1.54	ABV/ABV	
	1,2,3,7,8-PeCDF	39:46	39:46	0	9767	5686	1982	1210	1.72	AVB/AVB	
	Unidentified	40:02	00:00	0	4976	4955	1253	1095	1.00 *	ABV/ABB	R
	Unidentified	40:14	00:00	0	11840	7826	1722	1306	1.51	AVB/ABB	
	2,3,4,7,8-PeCDF	40:55	40:56	-1	13273	10509	3168	2066	1.26 *	ABV/AVV	R
	Unidentified	41:07	00:00	0	15413	10414	3318	1939	1.48	AVB/AVB	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	228	130	91	52	1.75	/	
	Unidentified	39:16	00:00	0	4201	4260	925	906	0.99 *	ABB/ABB	RT
	13C-1,2,3,7,8-PeCDF	39:44	39:45	-1	1874067	1196793	399391	258073	1.57	ABV/ABV	
	Unidentified	39:59	00:00	0	15569	7186	2277	1993	2.17 *	AVV/AVV	RT
	Unidentified	40:14	00:00	0	20746	17776	3782	2367	1.17 *	AVV/AVV	R
	13C-2,3,4,7,8-PeCDF	40:54	40:55	-1	2017275	1274119	474707	305729	1.58	ABV/ABV	
	Unidentified	41:16	00:00	0	4878	3242	1088	612	1.50	AVV/AVB	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	110	103	44	41	1.07 *	/	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81111AC	Prep Batch	6217014	Lot No	H6G290408-012
Data File	/20160818s1/d1tm8111.d	Prep Date	08/04/16	SDG No	
Analysis ID	180611	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 14:06	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.7 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Unidentified	40:43	00:00	0	5080	3224	983	763	1.58	ABB/ABB	
	1,2,3,7,8-PeCDD	41:26	41:26	0	7932	6108	1974	995	1.30 *	ABB/ABB	R
	Unidentified	41:40	00:00	0	2462	1931	594	499	1.27 *	ABB/ABB	R
	Unidentified	42:04	00:00	0	3745	2386	805	538	1.57	ABB/ABB	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	85	43	34	17	2.00 *	/	
	13C-1,2,3,7,8-PeCDD	41:24	41:25	-1	1163657	737506	282958	183360	1.58	ABV/ABV	
	Unidentified	41:37	00:00	0	14897	5445	2277	1186	2.74 *	AVB/AVB	R
	Unidentified	42:02	00:00	0	5208	314	1037	178	16.59 *	ABV/AVB	RT
	Unidentified	42:08	00:00	0	2622	3911	525	1031	0.67 *	AVB/ABB	RT
	Unidentified	42:12	00:00	0	1371	486	468	189	2.82 *	ABB/ABB	R
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	110	138	44	55	0.80 *	/	
	Unidentified	44:19	00:00	0	15704	13806	4112	3932	1.14	ABB/ABB	
	1,2,3,4,7,8-HxCDF	44:35	44:35	0	21833	18795	3822	2911	1.16	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:42	44:43	-1	10267	9964	2721	2340	1.03 *	AVV/AVB	R
	Unidentified	45:05	00:00	0	2415	1039	359	353	2.32 *	AVB/AVV	RT
	Unidentified	45:17	00:00	0	5033	3834	1235	1128	1.31	ABV/AVV	
	2,3,4,6,7,8-HxCDF	45:28	45:29	-1	8075	6115	2069	1385	1.32	AVV/AVB	
	Unidentified	46:36	00:00	0	3796	3100	928	447	1.22	ABV/ABB	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	123	308	49	123	0.40 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:34	44:34	0	778256	1516400	207272	404304	0.51	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:42	44:42	0	888249	1723720	224295	432172	0.52	AVV/AVV	
	Unidentified	45:02	00:00	0	2810	8350	720	1669	0.34 *	AVB/AVV	RT
	13C-2,3,4,6,7,8-HxCDF	45:27	45:28	-1	895222	1744887	224206	434220	0.51	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:27	46:28	-1	755285	1487721	169410	336937	0.51	AVV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	173	130	69	52	1.33	/	
	1,2,3,4,7,8-HxCDD	45:39	45:39	0	8607	7418	1930	1688	1.16	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:46	45:47	-1	21714	16579	5313	3908	1.31	AVV/AVB	
	1,2,3,7,8,9-HxCDD	46:10	46:11	-1	27619	24371	5268	4420	1.13	ABV/ABB	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	278	193	111	77	1.44 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:38	45:38	0	1108893	853903	278357	227285	1.30	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:45	45:46	-1	1064815	870118	262851	213843	1.22	AVV/AVB	
	13C-1,2,3,7,8,9-HxCDD	46:09	46:10	-1	3612379	2937847	863499	712601	1.23	AVV/AVV	
	Unidentified	46:29	00:00	0	6163	2919	2042	1088	2.11 *	AVV/ABB	R
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	113	73	45	29	1.55 *	/	
	1,2,3,4,6,7,8-HpCDF	48:58	48:59	-1	59983	56577	12393	12355	1.06	ABB/ABV	
	Unidentified	49:24	00:00	0	4263	1777	619	382	2.40 *	ABV/AVV	R

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81111AC	Prep Batch	6217014	Lot No	H6G290408-012
Data File	/20160818s1/d1tm8111.d	Prep Date	08/04/16	SDG No	
Analysis ID	180611	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 14:06	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.7 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

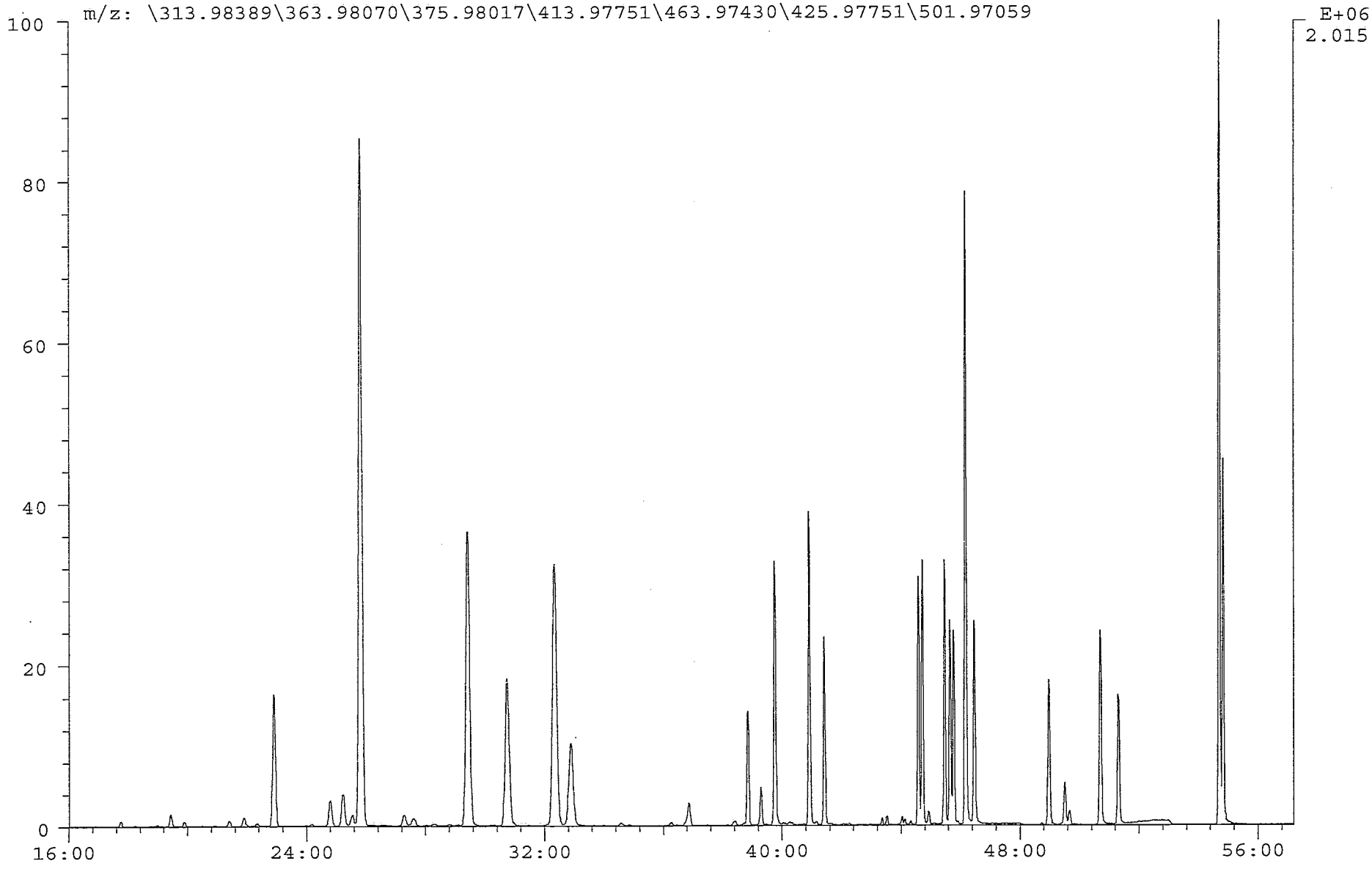
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Unidentified	49:38	00:00	0	83107	76099	17210	15672	1.09	AVV/AVV	
	Unidentified	49:48	00:00	0	4355	3180	940	644	1.37 *	AVB/AVB	R
	1,2,3,4,7,8,9-HpCDF	51:18	51:18	0	7096	5849	1058	1079	1.21 *	ABV/ABB	R
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	95	145	38	58	0.66 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:57	48:57	0	510386	1111198	106518	237851	0.46	ABV/ABV	
	Unidentified	49:21	00:00	0	5696	10994	966	1482	0.52 *	ABV/AVV	R
	Unidentified	49:36	00:00	0	6905	9354	1108	1354	0.74 *	AVB/AVV	R
	13C-1,2,3,4,7,8,9-HpCDF	51:17	51:17	0	473574	1026158	101269	222659	0.46	AVV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	118	125	47	50	0.94	/	
	Unidentified	49:29	00:00	0	257793	251023	53223	49781	1.03	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:41	50:40	1	332876	305576	69862	64762	1.09	ABV/ABV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	75	68	30	27	1.11	/	
	Unidentified	49:28	00:00	0	11275	7532	2417	1550	1.50 *	ABB/ABB	R
	13C-1,2,3,4,6,7,8-HpCDD	50:40	50:39	1	868651	884502	182278	189919	0.98	ABV/ABV	
	Unidentified	50:55	00:00	0	1323	1236	542	429	1.07	AVV/AVV	
	Unidentified	50:59	00:00	0	1063	3610	427	894	0.29 *	AVV/AVB	RT
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	75	58	30	23	1.30 *	/	
	Unidentified	54:42	00:00	0	2155	2134	523	572	1.01	ABV/ABV	
	OCDF	54:50	54:48	2	92811	103995	23944	26592	0.89	AVV/AVV	
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	63	75	25	30	0.83	/	
	13C-OCDF	54:49	54:48	1	1508716	1650341	408228	439423	0.91	AVV/ABV	
	Unidentified	55:16	00:00	0	3076	1016	693	486	3.03 *	AVB/AVB	R
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	123	98	49	39	1.26 *	/	
	OCDD	54:42	54:41	1	2479289	2794014	630271	717534	0.89	ABV/ABV	
	Unidentified	55:10	00:00	0	2882	1940	452	448	1.49 *	AVB/AVB	R
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	88	105	35	42	0.83	/	
	13C-OCDD	54:41	54:41	0	1210178	1333441	323362	354985	0.91	ABV/ABV	
	Unidentified	55:04	00:00	0	4160	2556	731	830	1.63 *	AVB/AVB	R

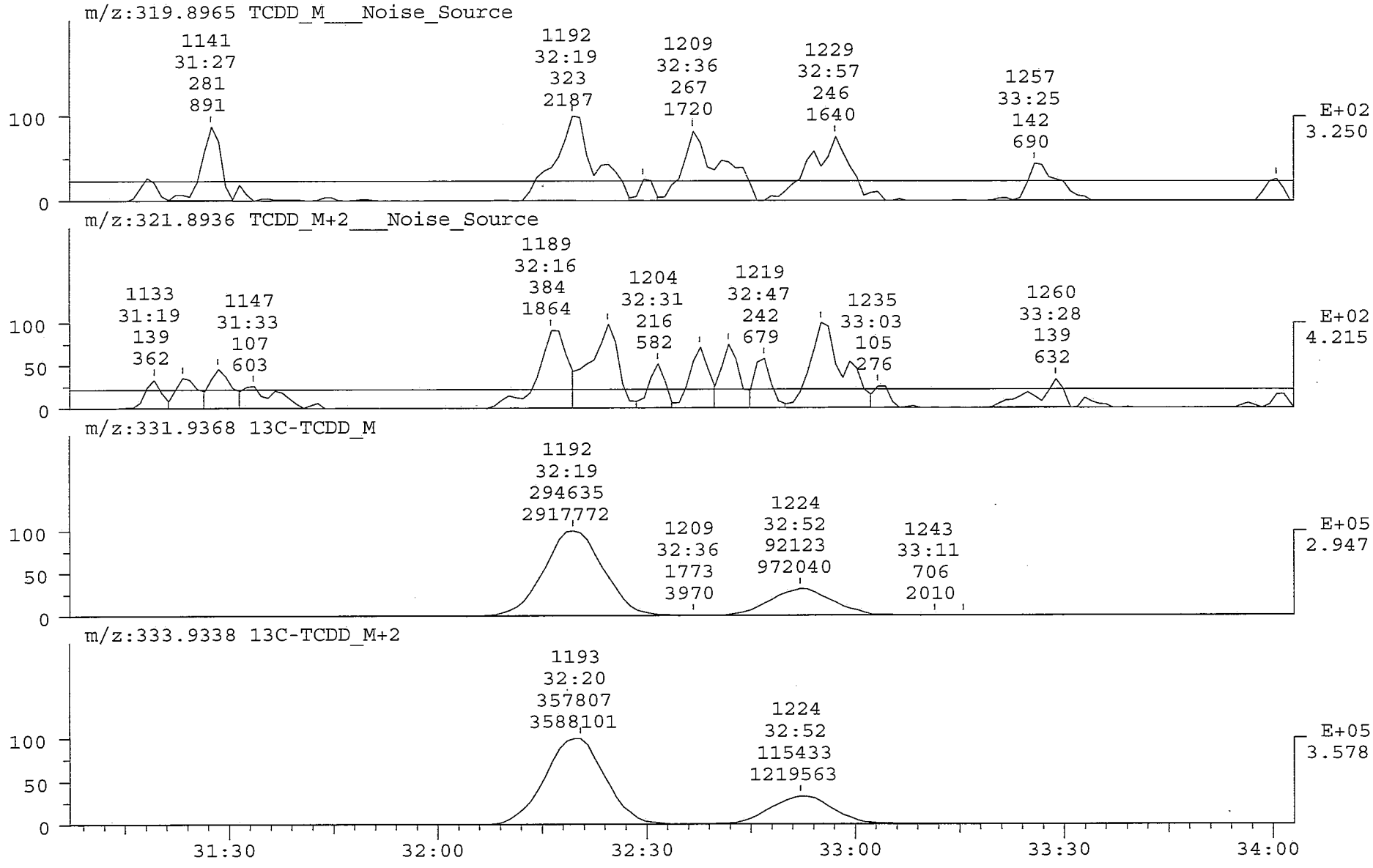
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

CHRO: d1tm8111 18-Aug-16 Elapse: 39:45 1621
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 233 > 2629 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

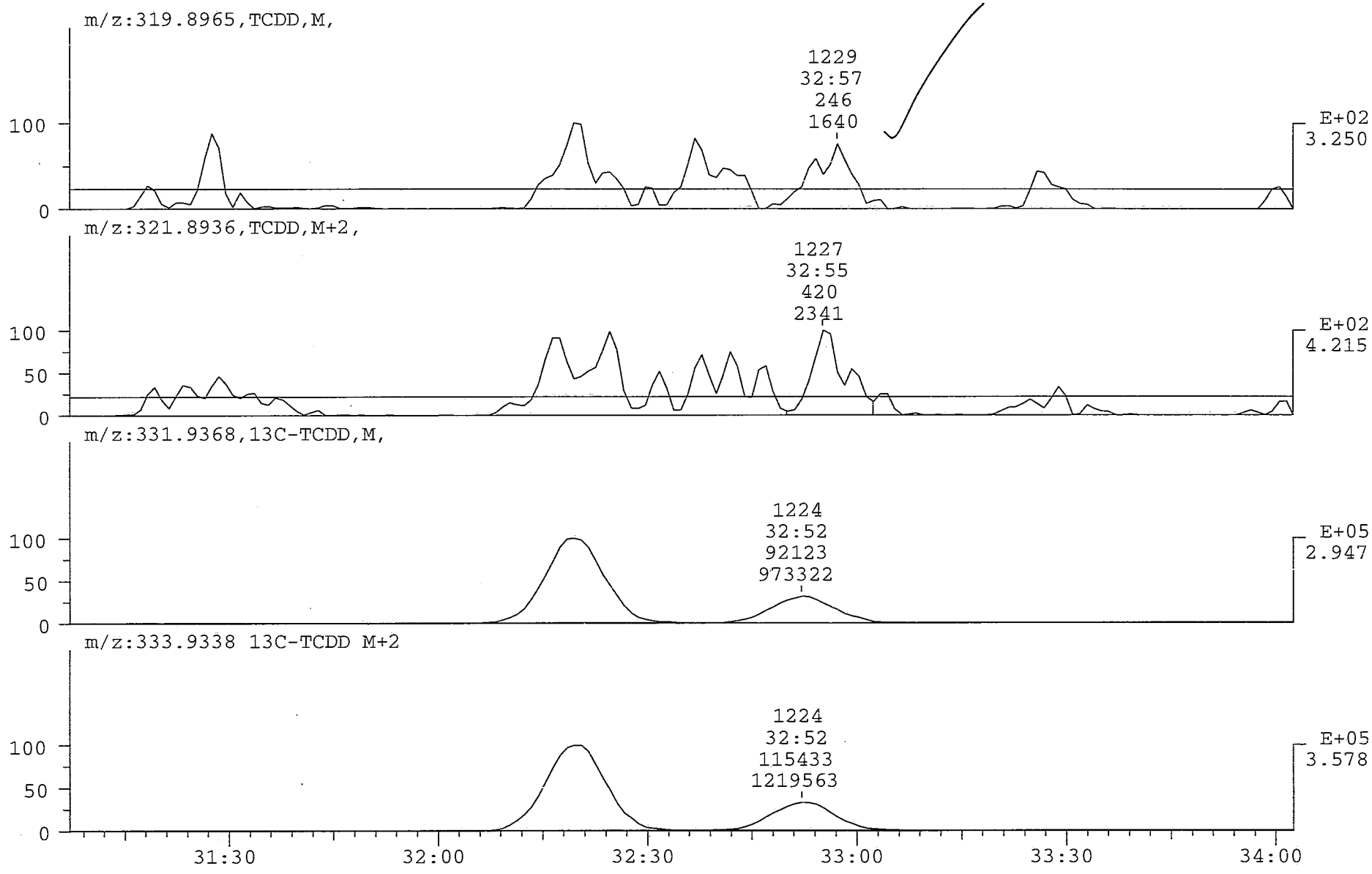
Int. Lm 8-18-16
Calc KM 8-24-16
QC/Rev KL 8/24/16



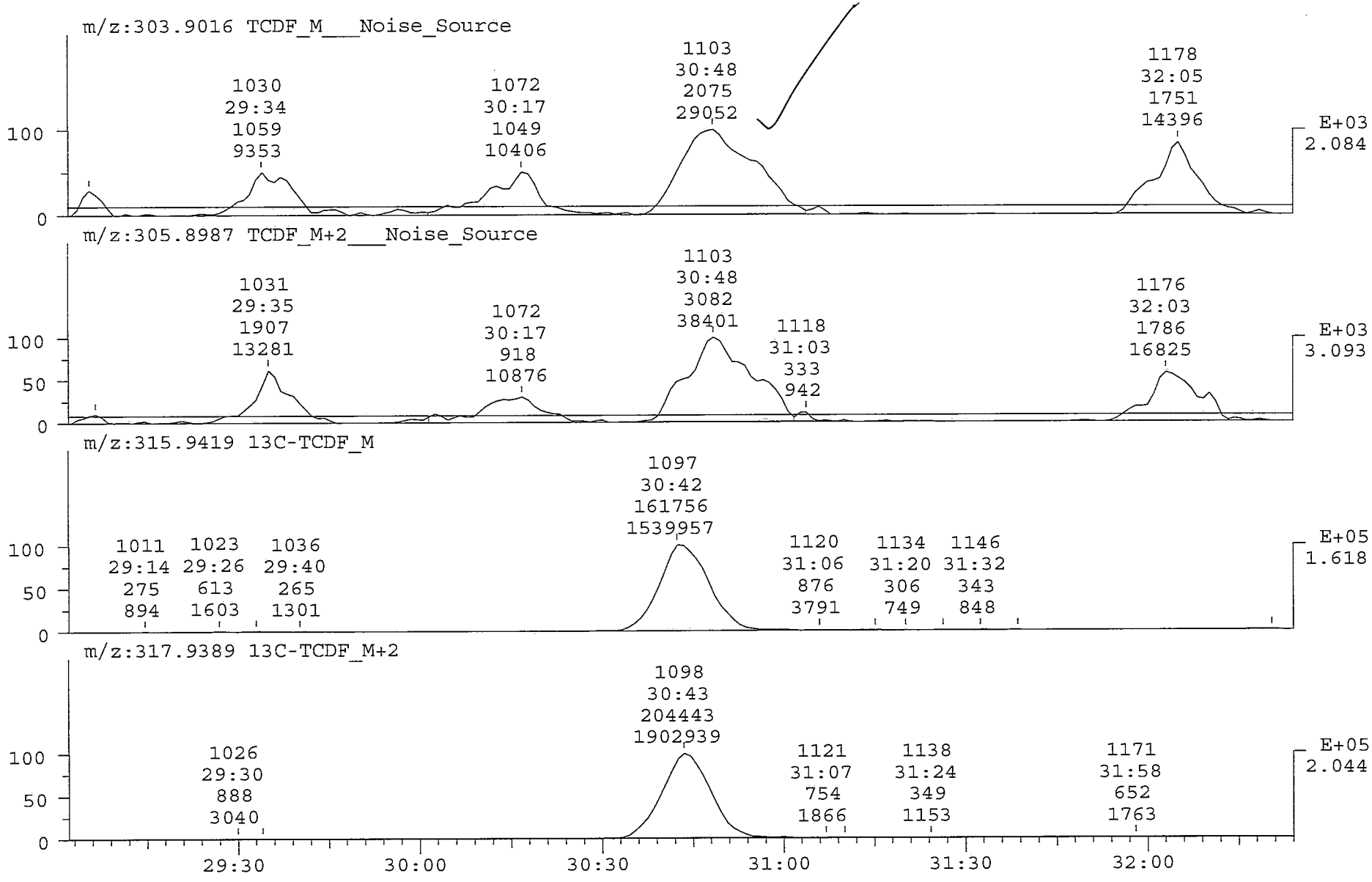
CHRO: d1tm8111 18-Aug-16 Elapse: 32:34 1207
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1121 > 1293 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



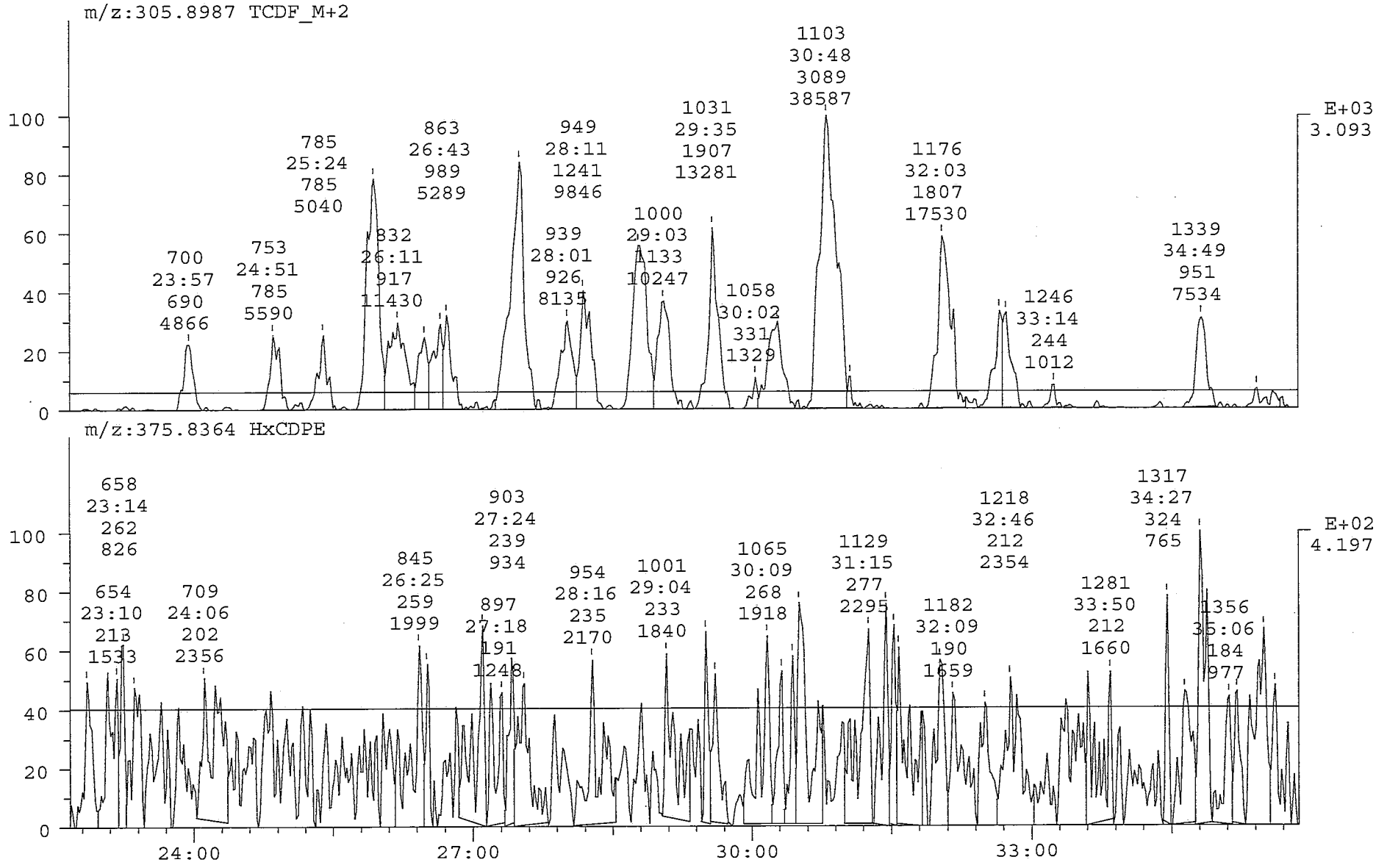
CHRO: d1tm8111 18-Aug-16 Elapse: 32:55 1227
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1224 > 1230 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 5 Label : -2, 5.0
Disp: Height Area



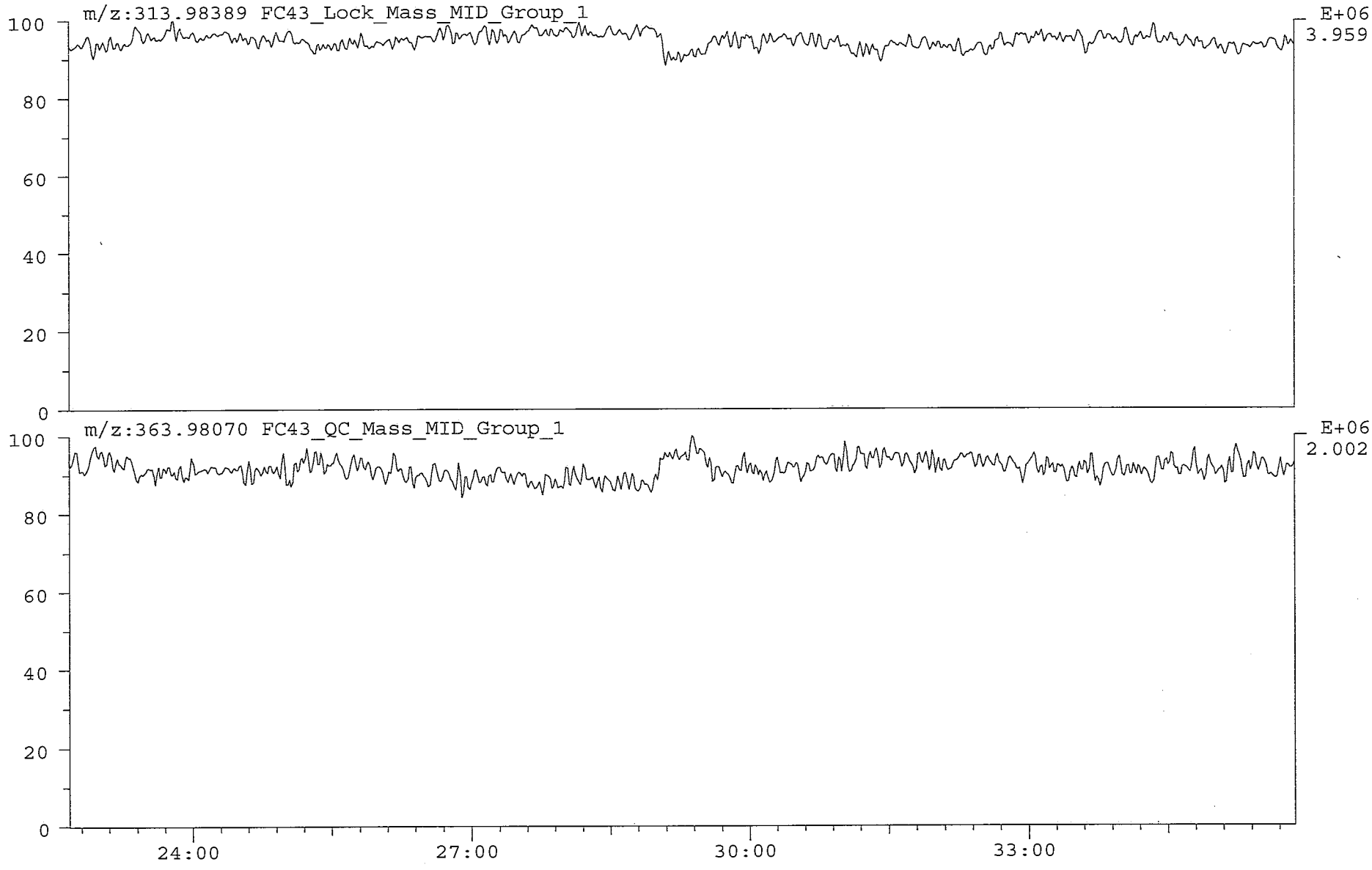
CHRO: d1tm8111 18-Aug-16 Elapse: 30:40 1095
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 999 > 1196 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



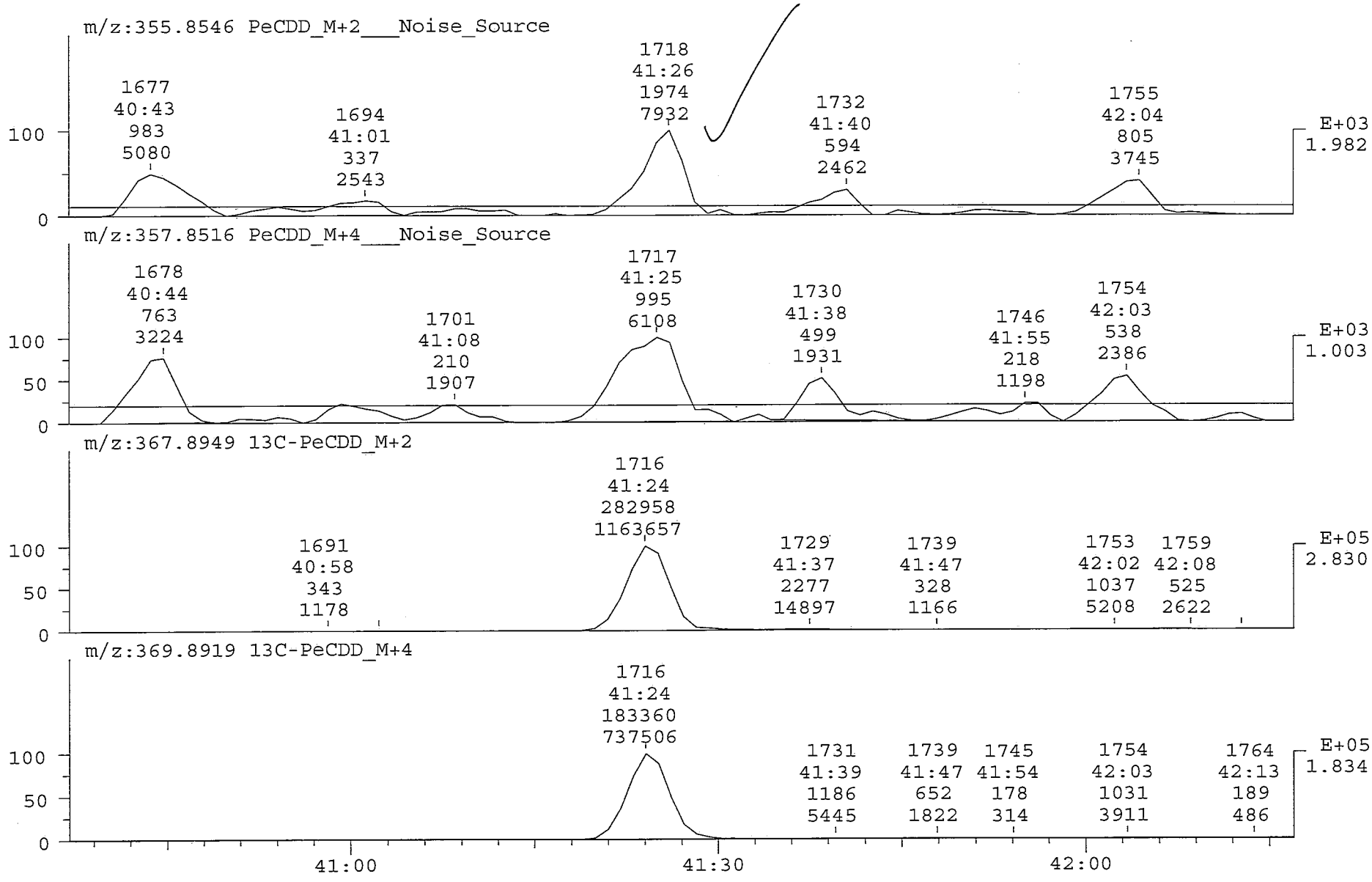
CHRO: d1tm8111 18-Aug-16 Elapse: 30:40 1095
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 624 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



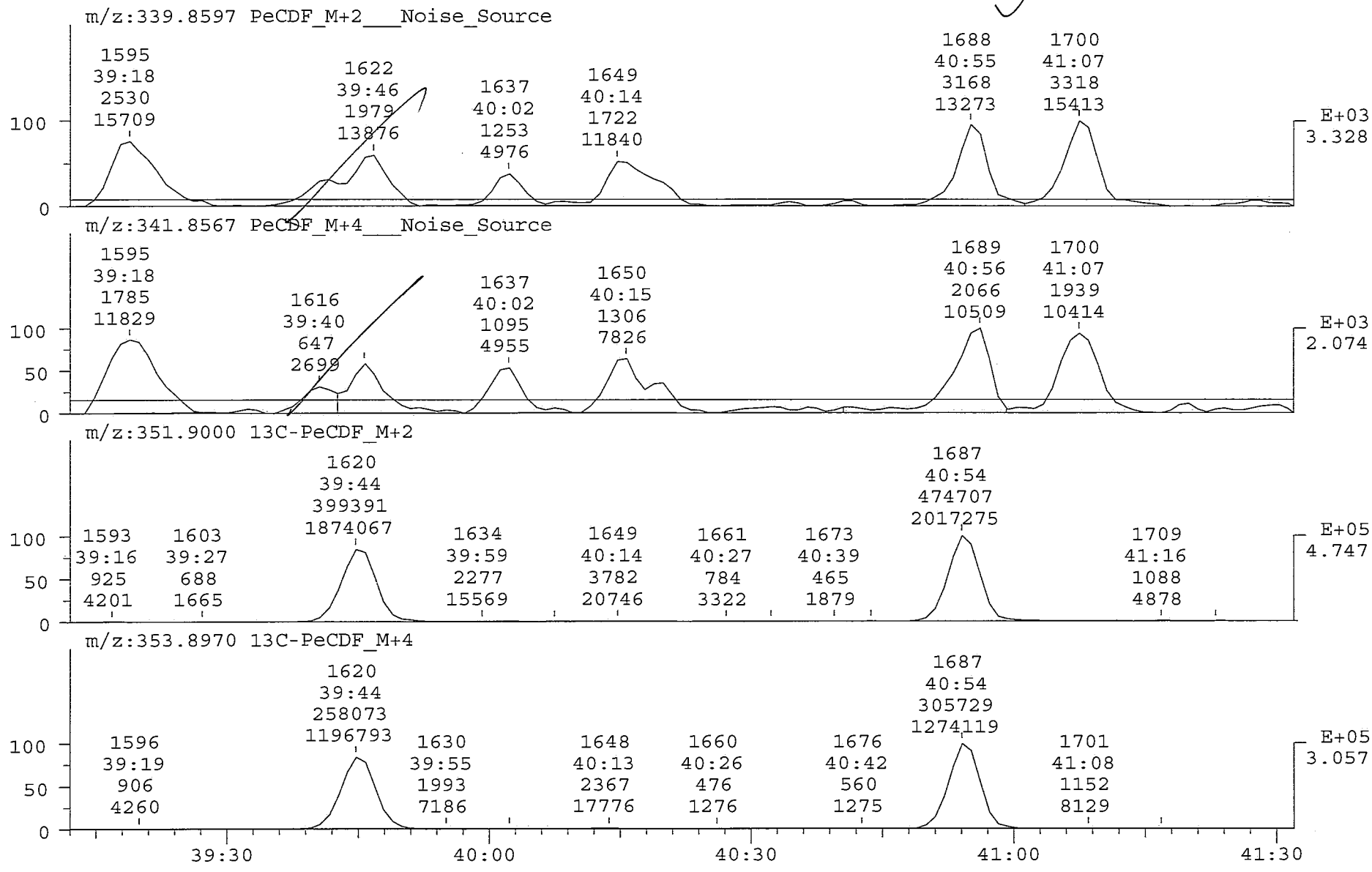
CHRO: d1tm8111 18-Aug-16 Elapse: 30:40 1095
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 624 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



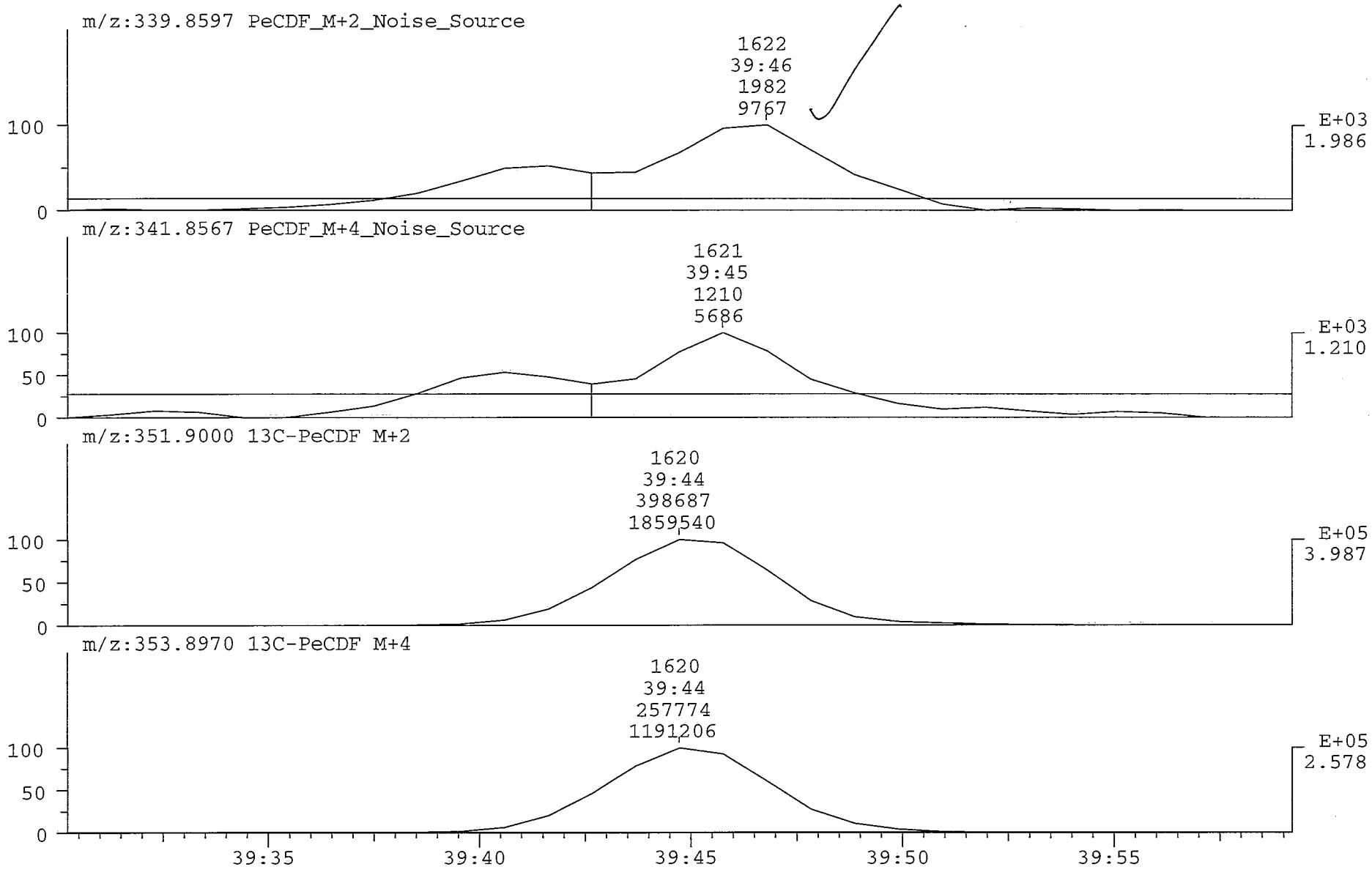
CHRO: d1tm8111 18-Aug-16 Elapse: 41:24 1716
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1671 > 1767 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



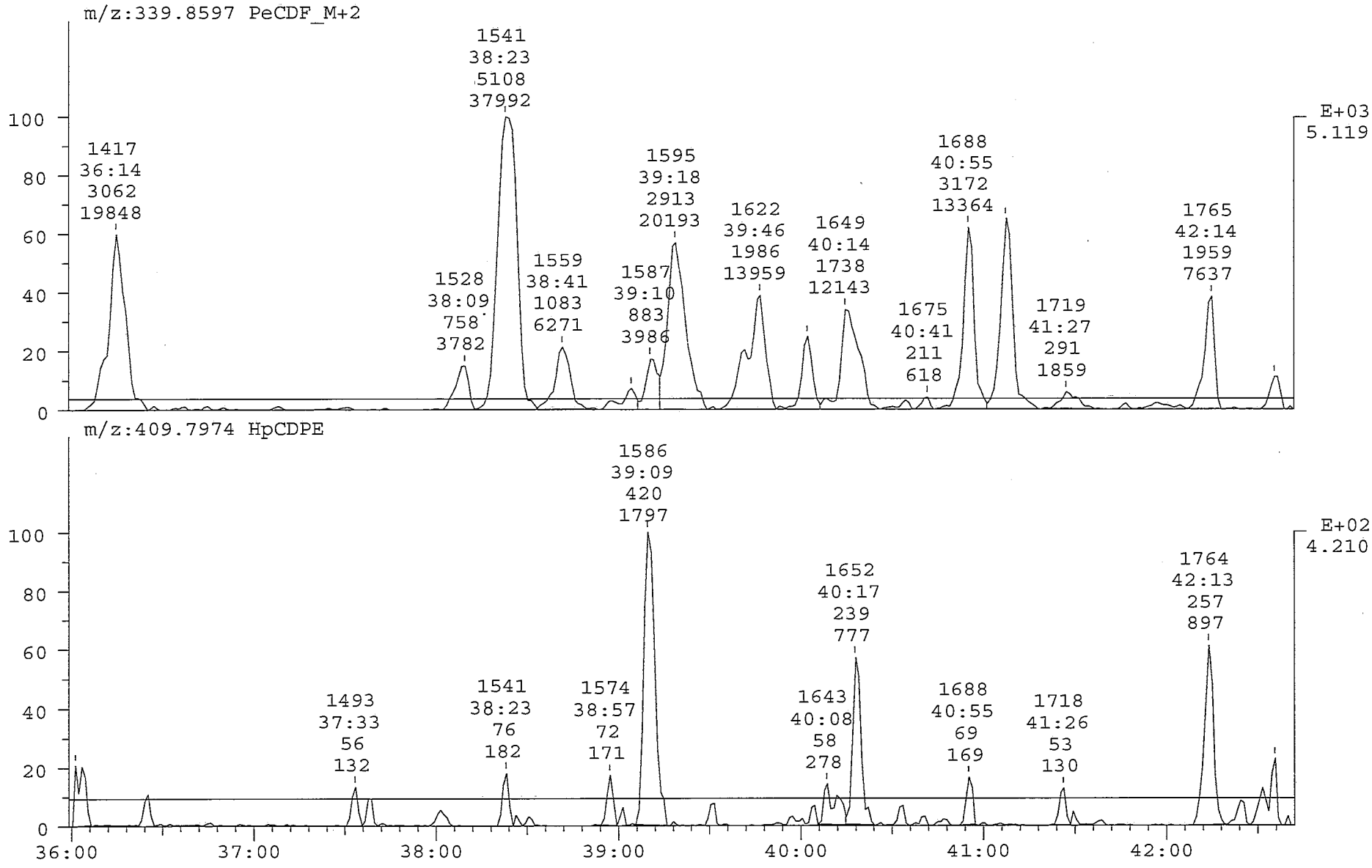
CHRO: d1tm8111 18-Aug-16 Elapse: 40:22 1656
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1588 > 1724 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



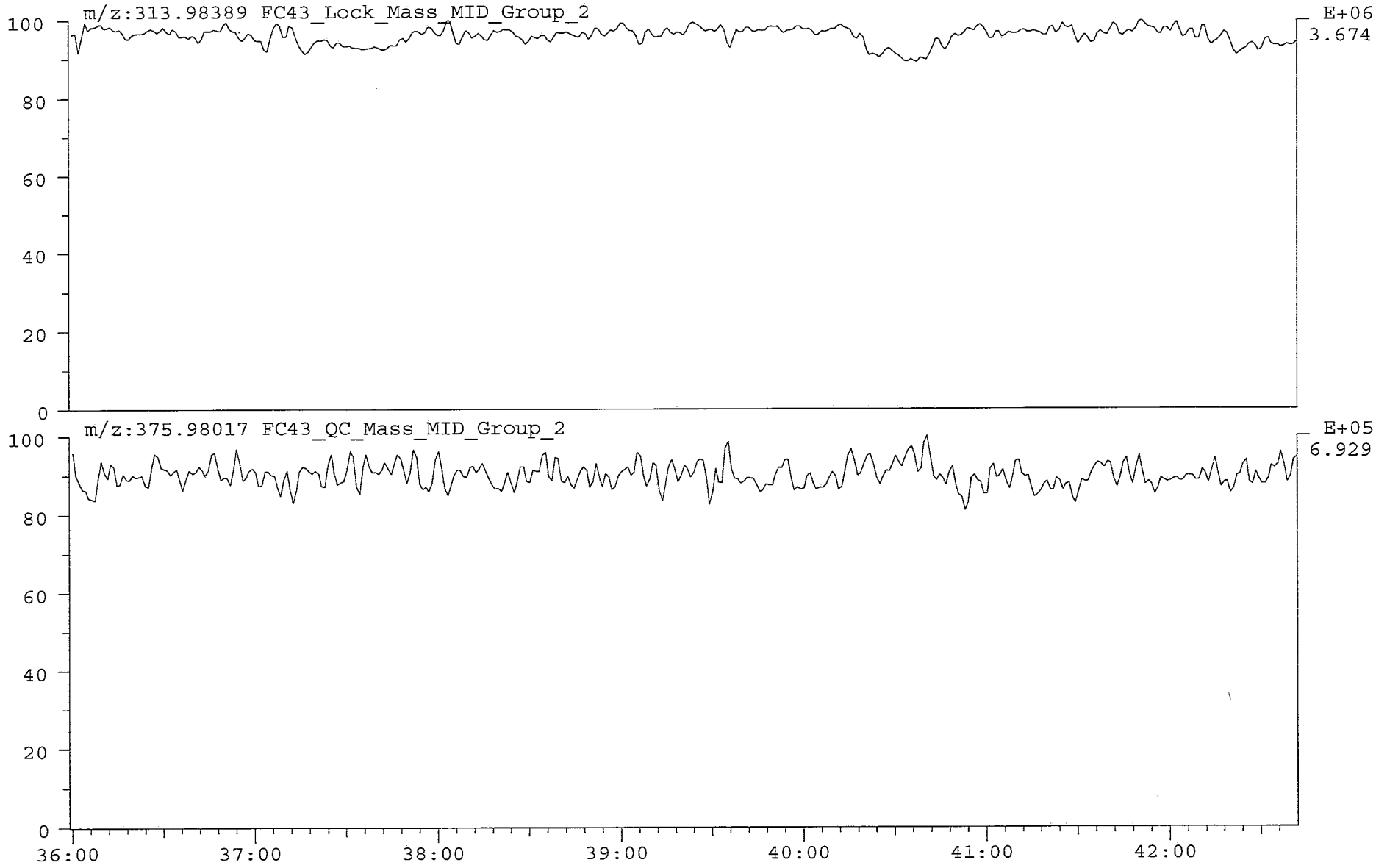
```
CHRO:  d1tm8111                                18-Aug-16  Elapse:  39:46      1622
Samp:  WO=m81111ac Meth=9Ao Dil=1                         Start :  14:06:49   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1619 > 1625          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 2               Label :  -2, 5.0
Disp:  Height  Area
```



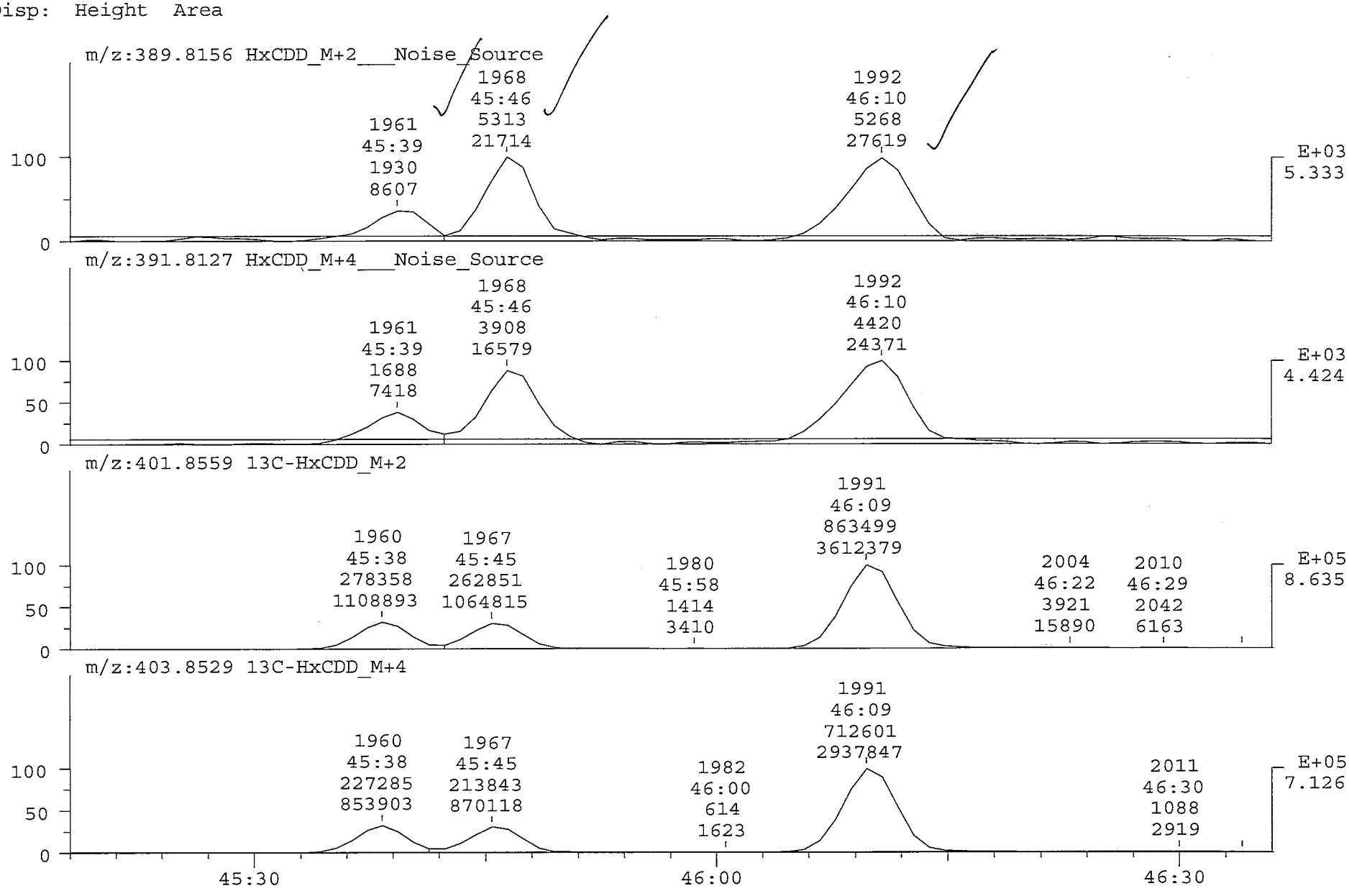
CHRO: d1tm8111 18-Aug-16 Elapse: 40:22 1656
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



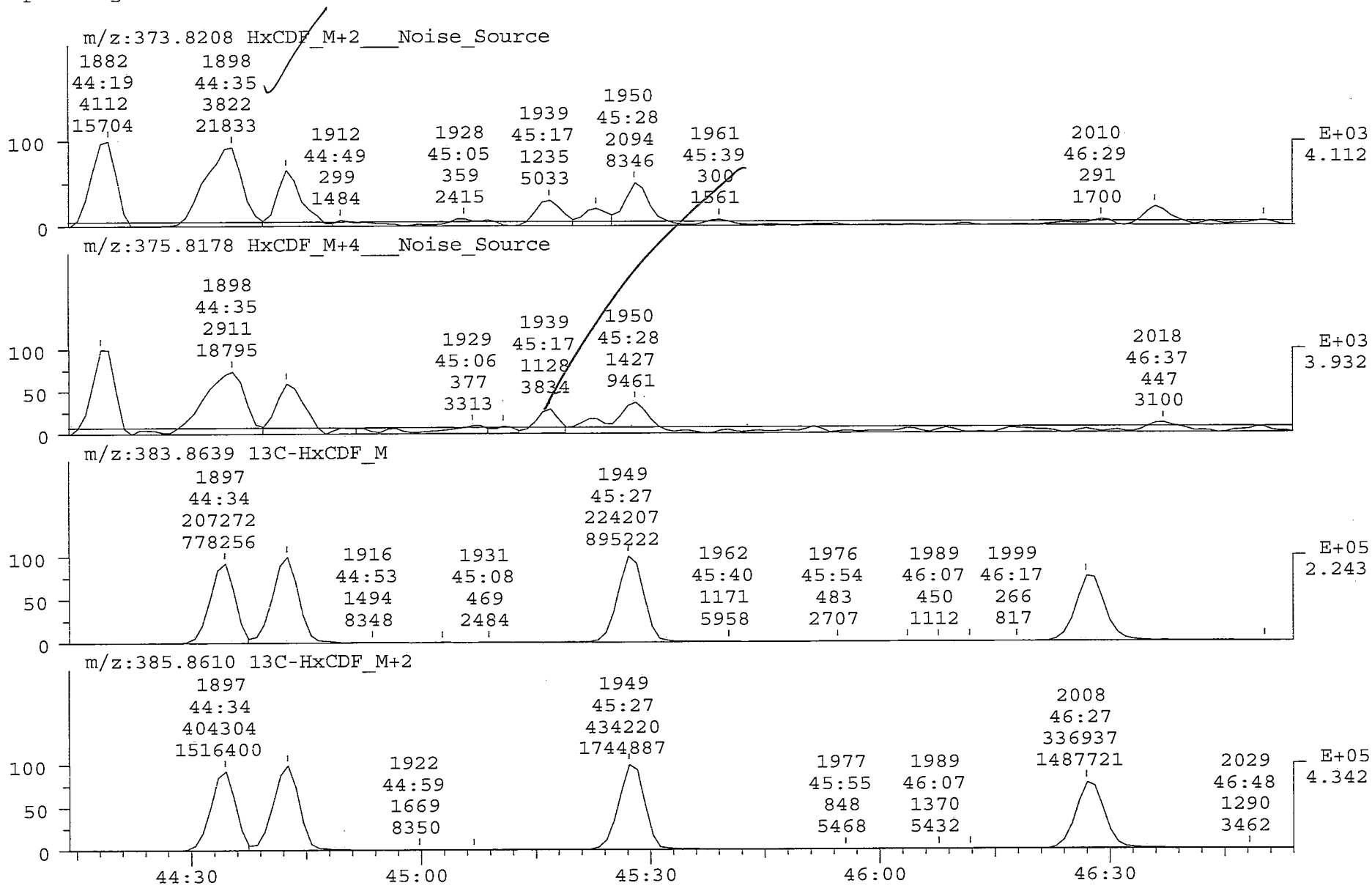
CHRO: d1tm8111 18-Aug-16 Elapse: 40:22 1656
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



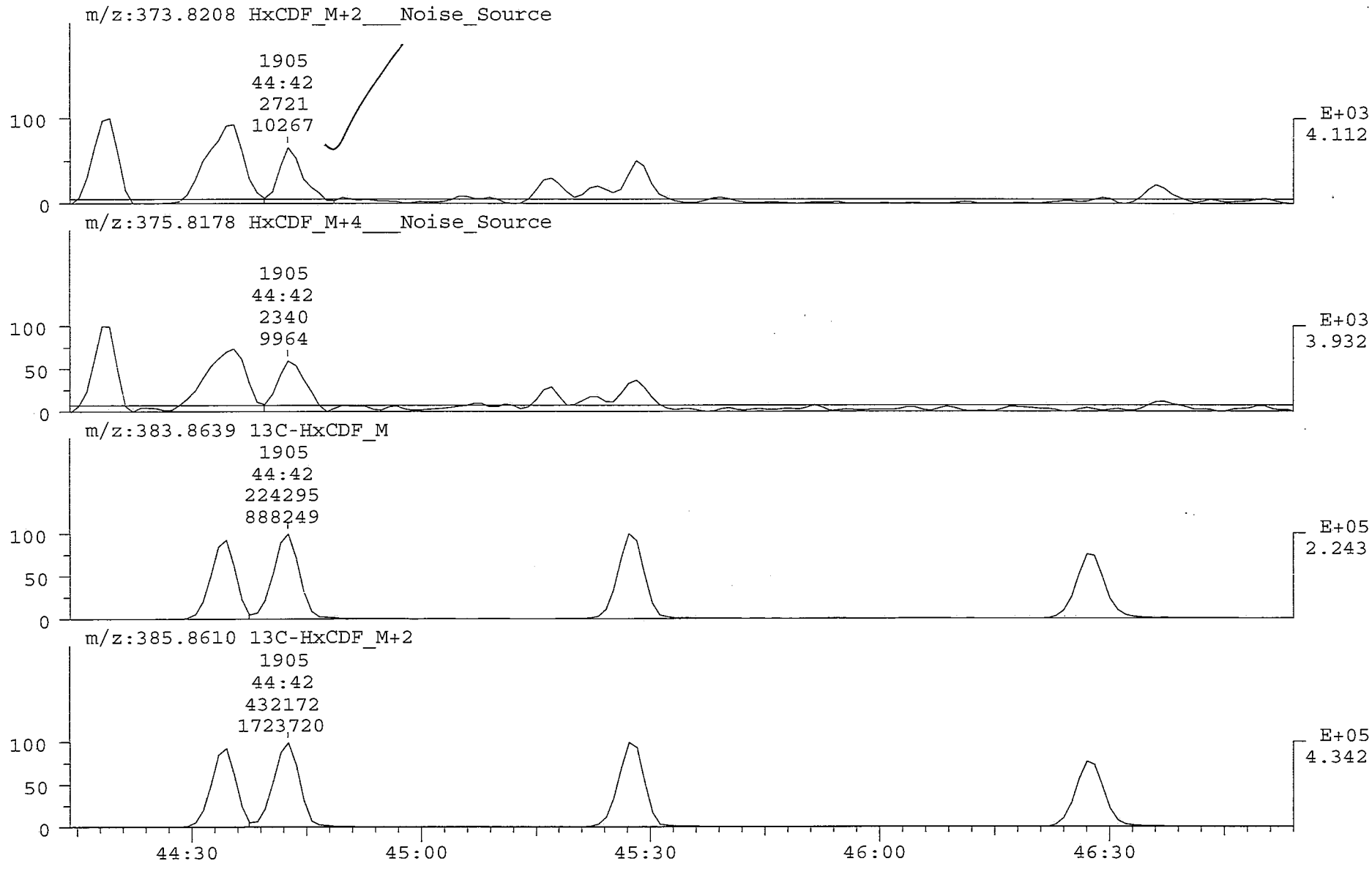
CHRO: d1tm8111 18-Aug-16 Elapse: 45:56 1978
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1940 > 2017 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



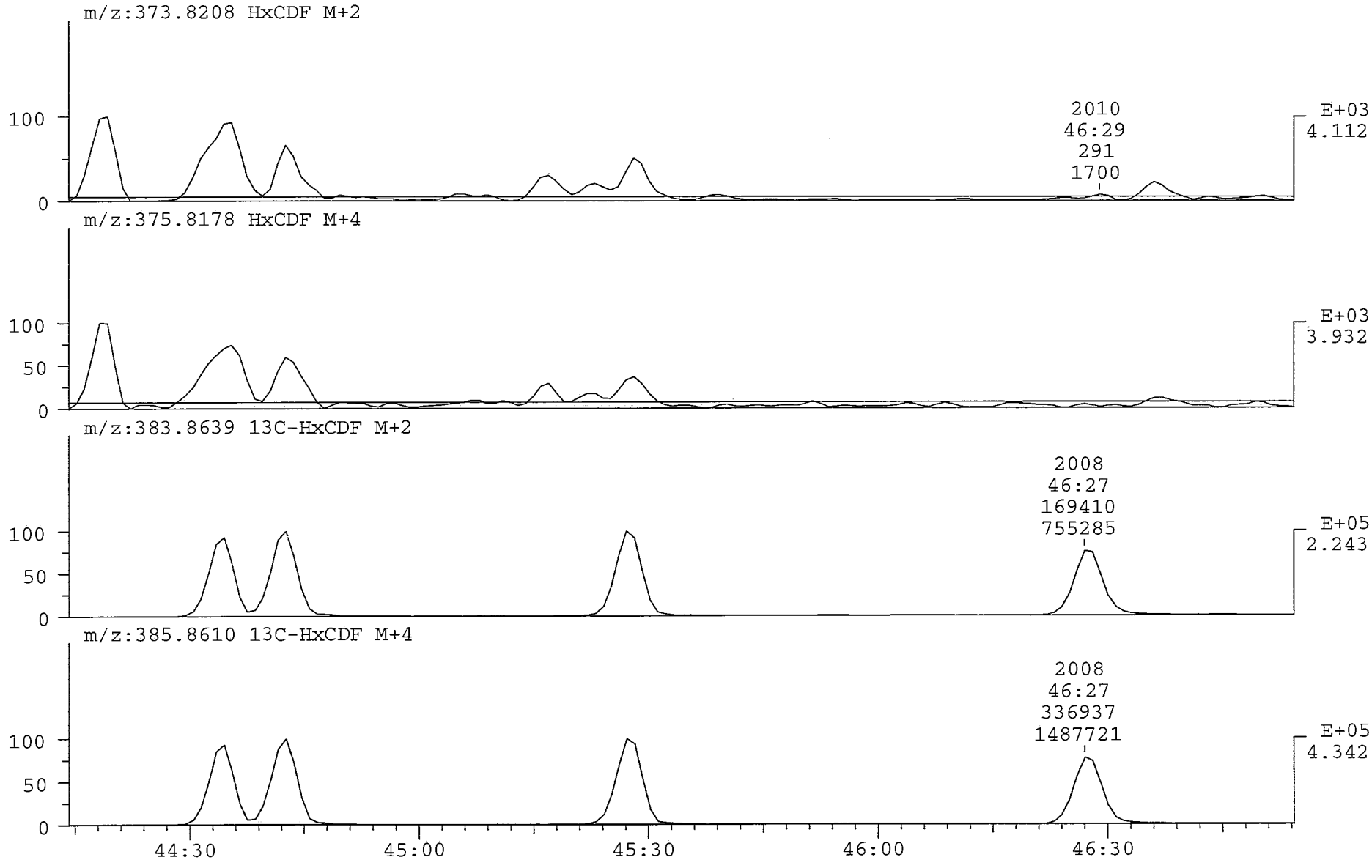
CHRO: d1tm8111 18-Aug-16 Elapse: 45:34 1956
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1877 > 2035 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



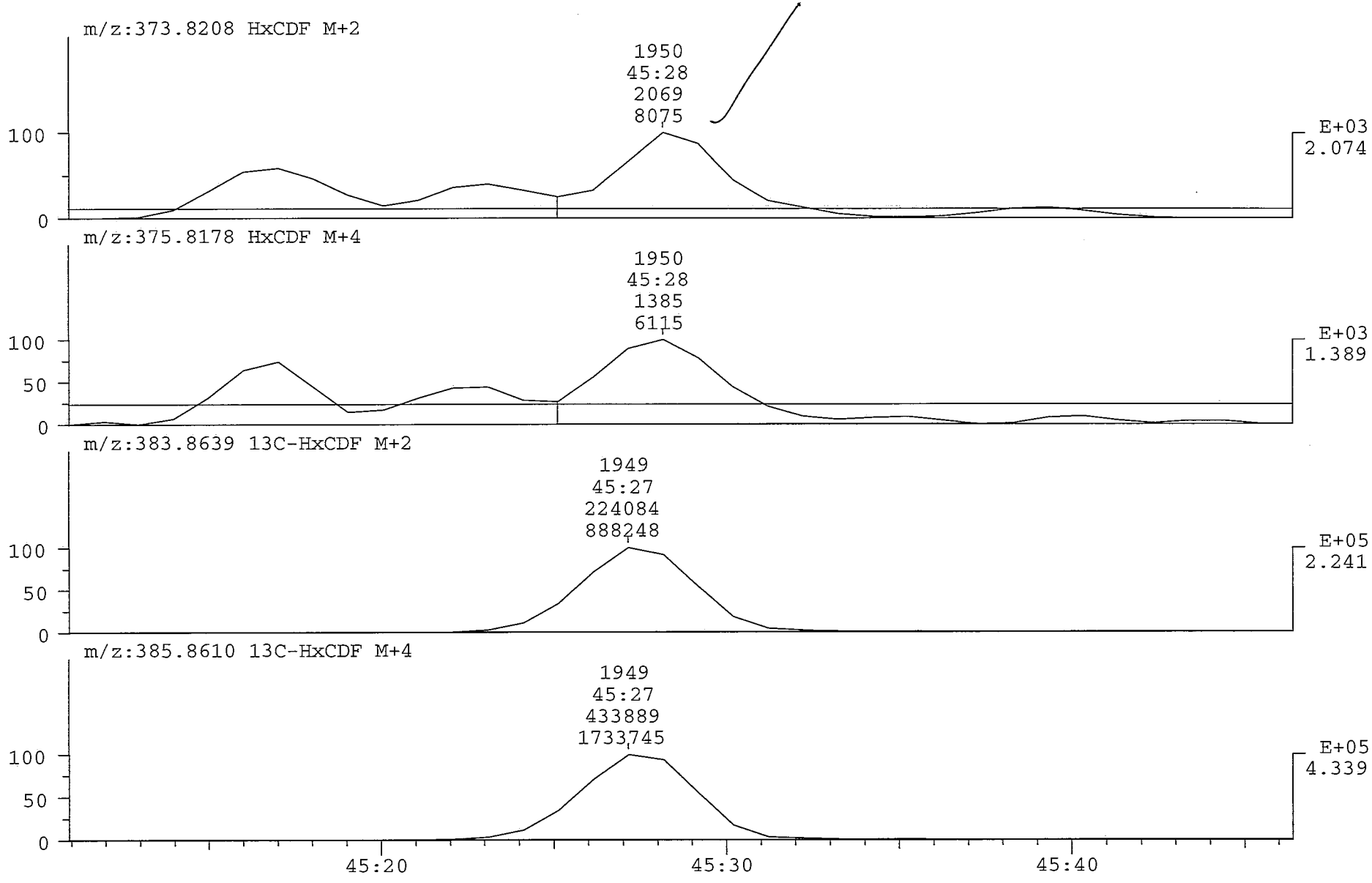
CHRO: d1tm8111 18-Aug-16 Elapse: 44:41 1904
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1900 > 1908 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



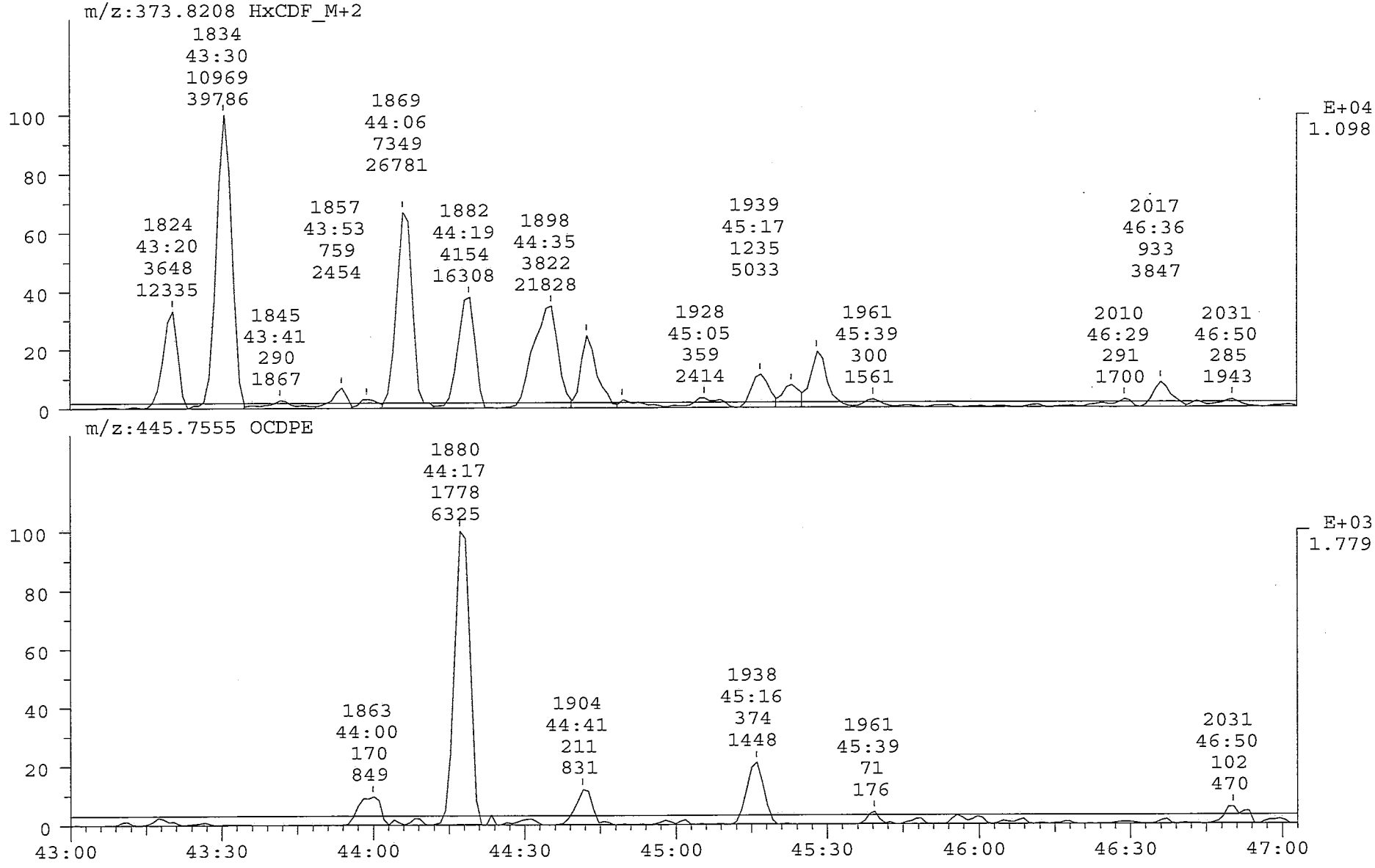
CHRO: d1tm8111 18-Aug-16 Elapse: 46:29 2010
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2007 > 2013 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



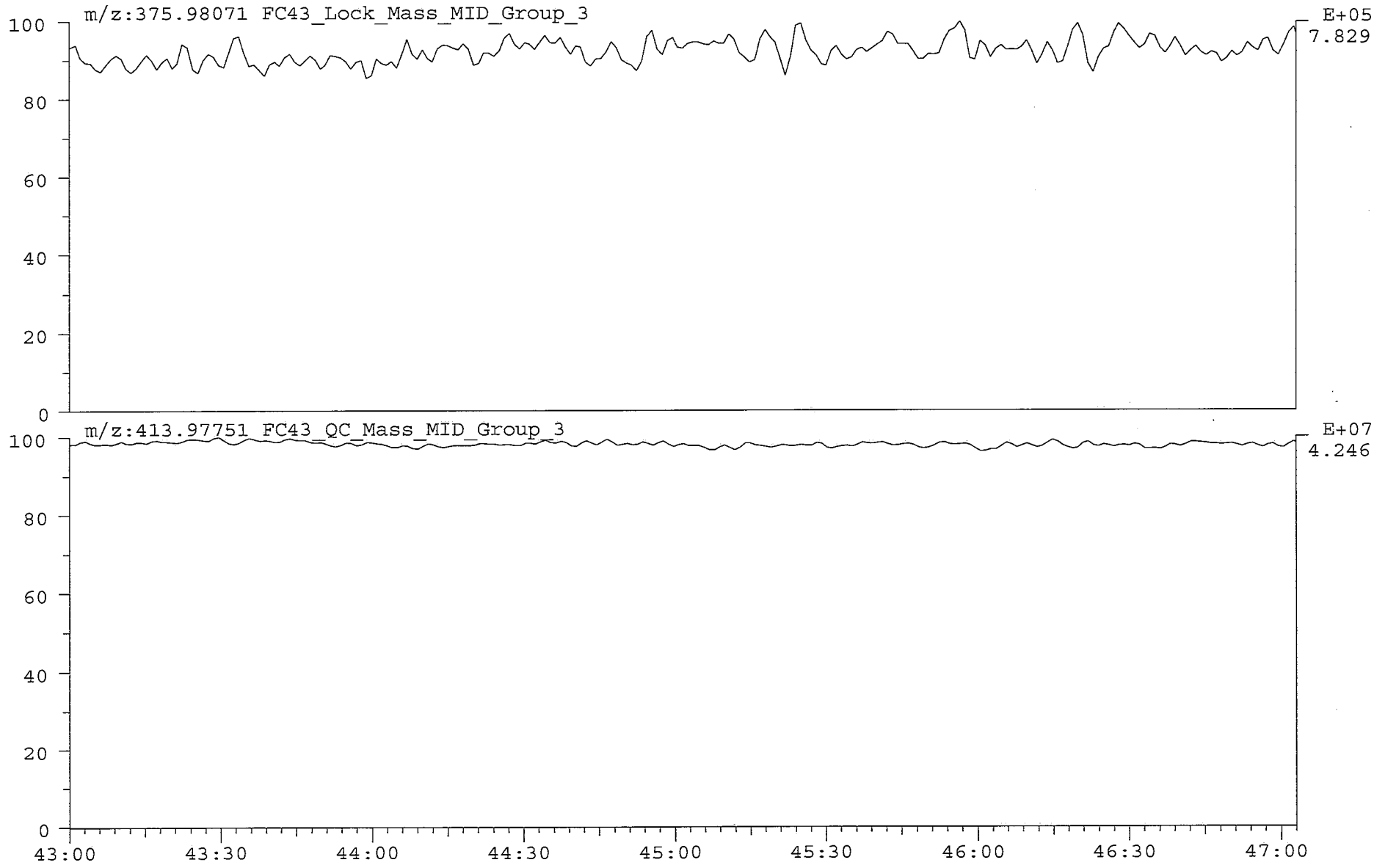
CHRO: d1tm8111 18-Aug-16 Elapse: 45:28 1950
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1947 > 1953 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 2 Label : -2, 5.0
Disp: Height Area



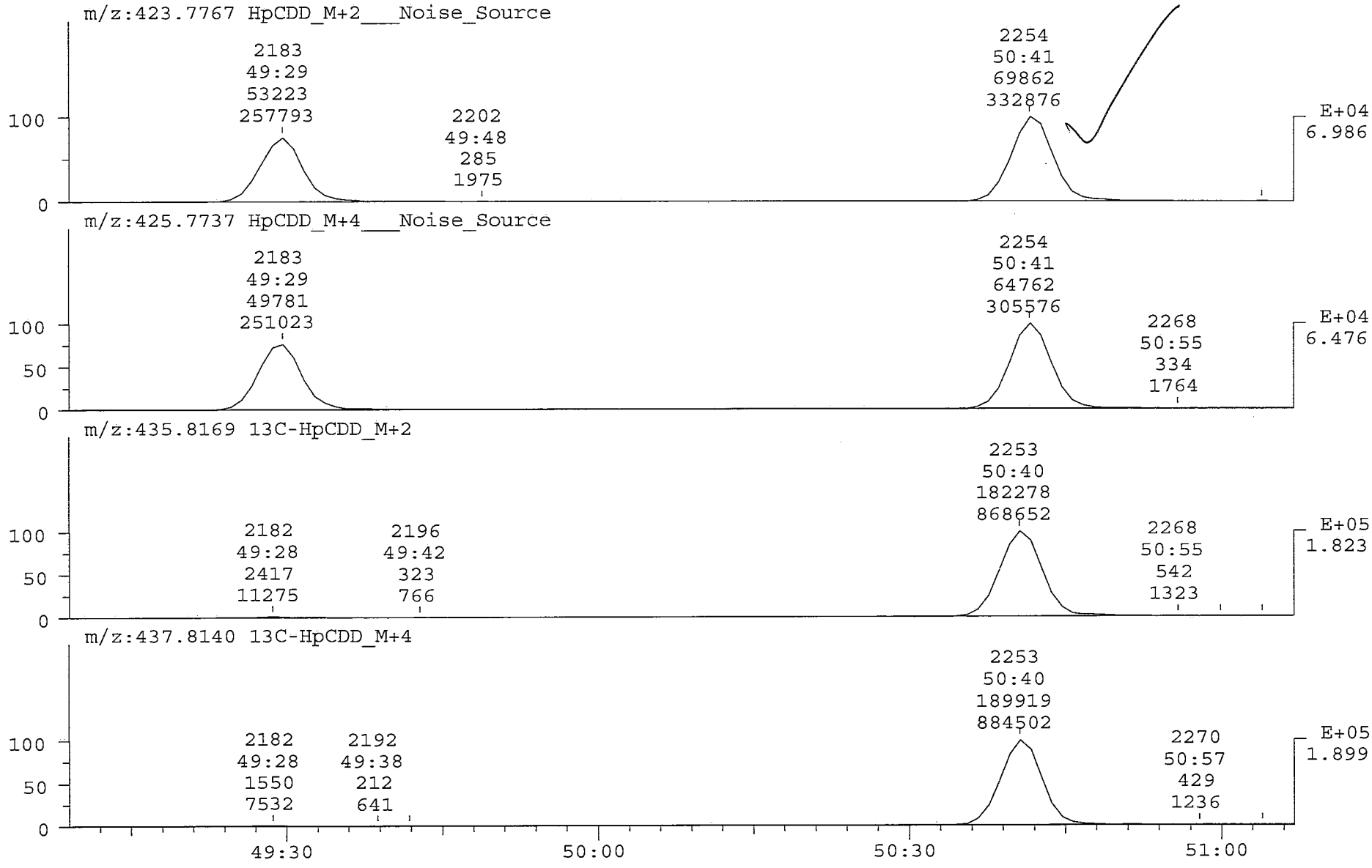
CHRO: d1tm8111 18-Aug-16 Elapse: 44:41 1904
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1804 > 2044 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



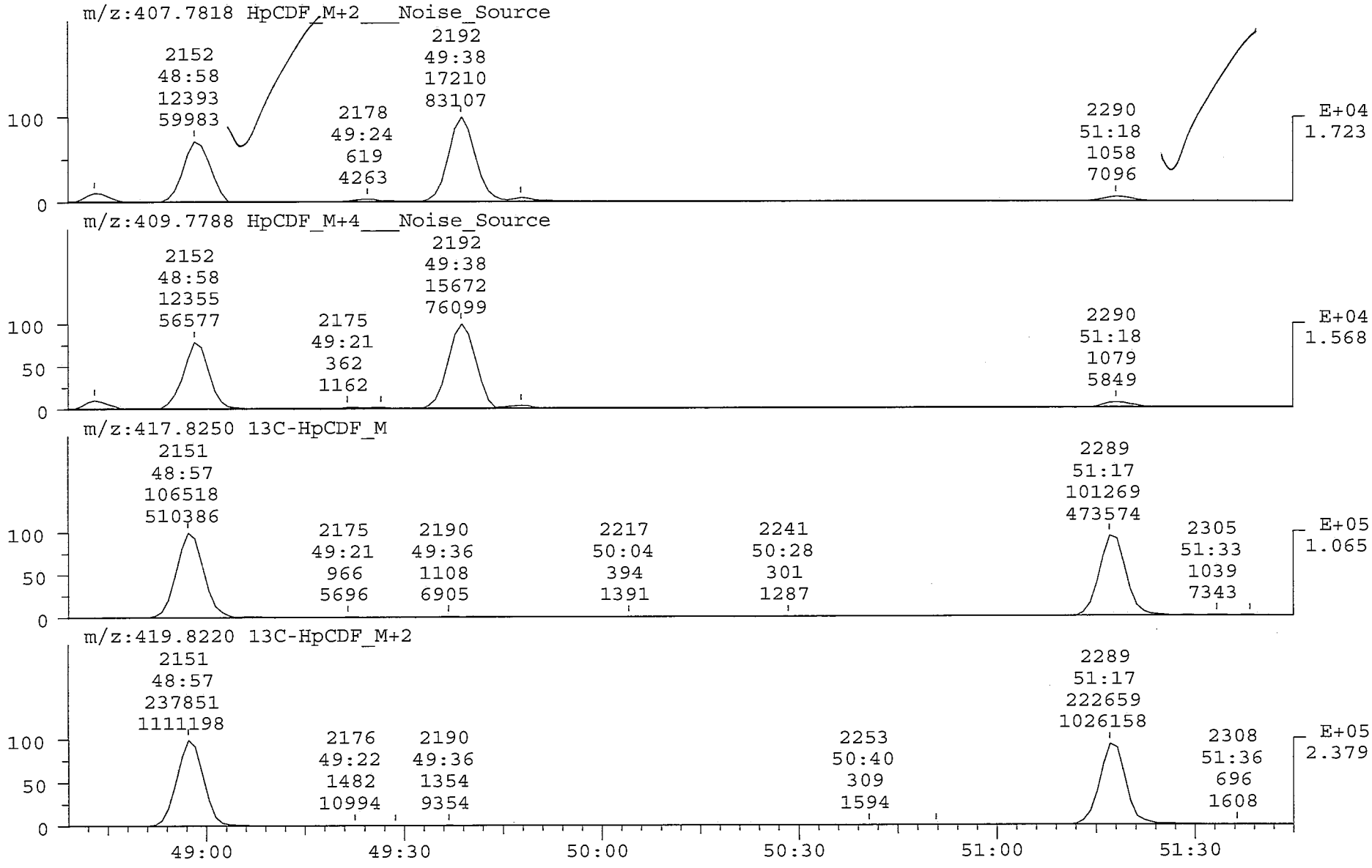
CHRO: d1tm8111 18-Aug-16 Elapse: 44:41 1904
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1804 > 2044 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



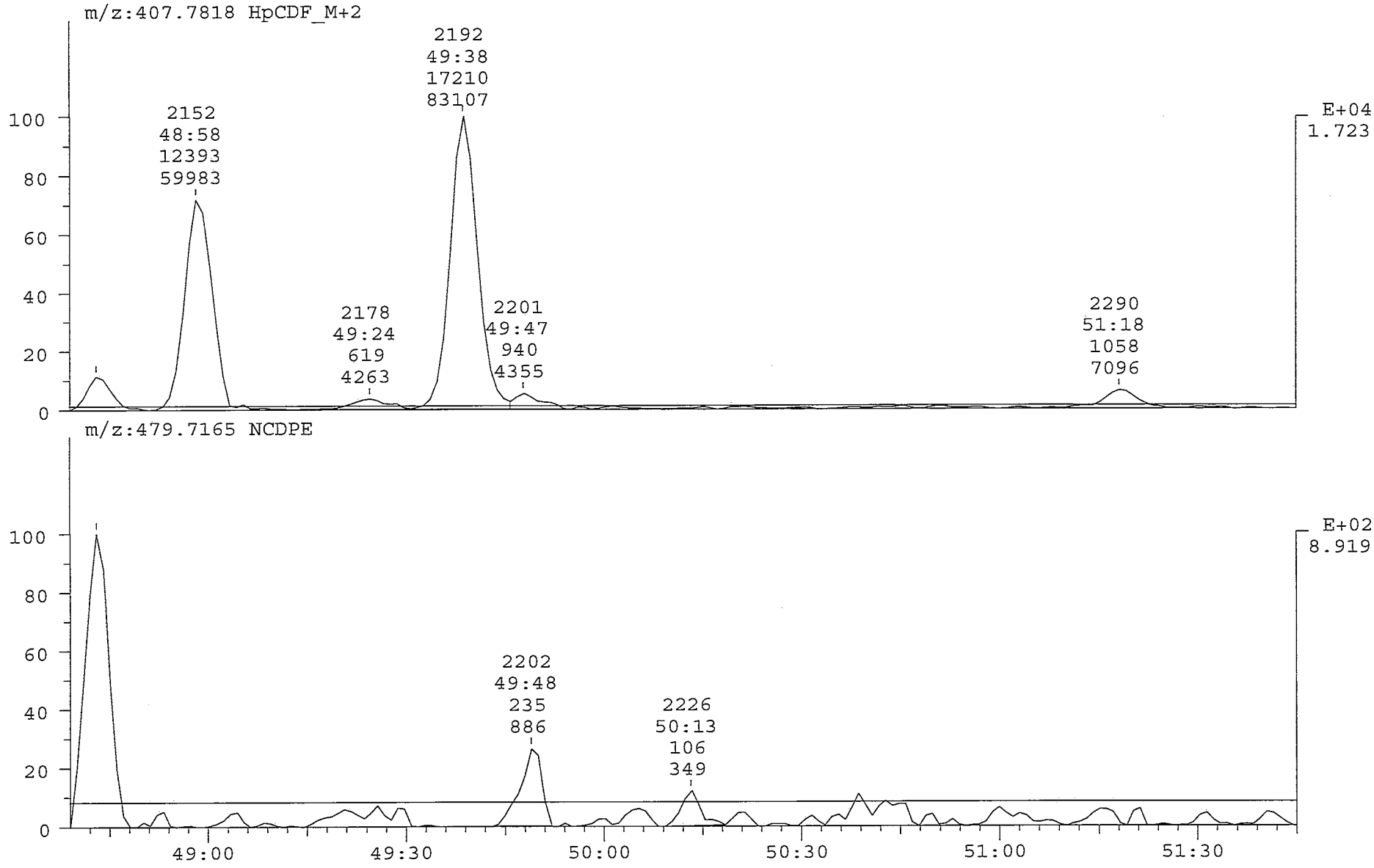
CHRO: d1tm8111 18-Aug-16 Elapse: 44:41 1904
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2163 > 2279 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



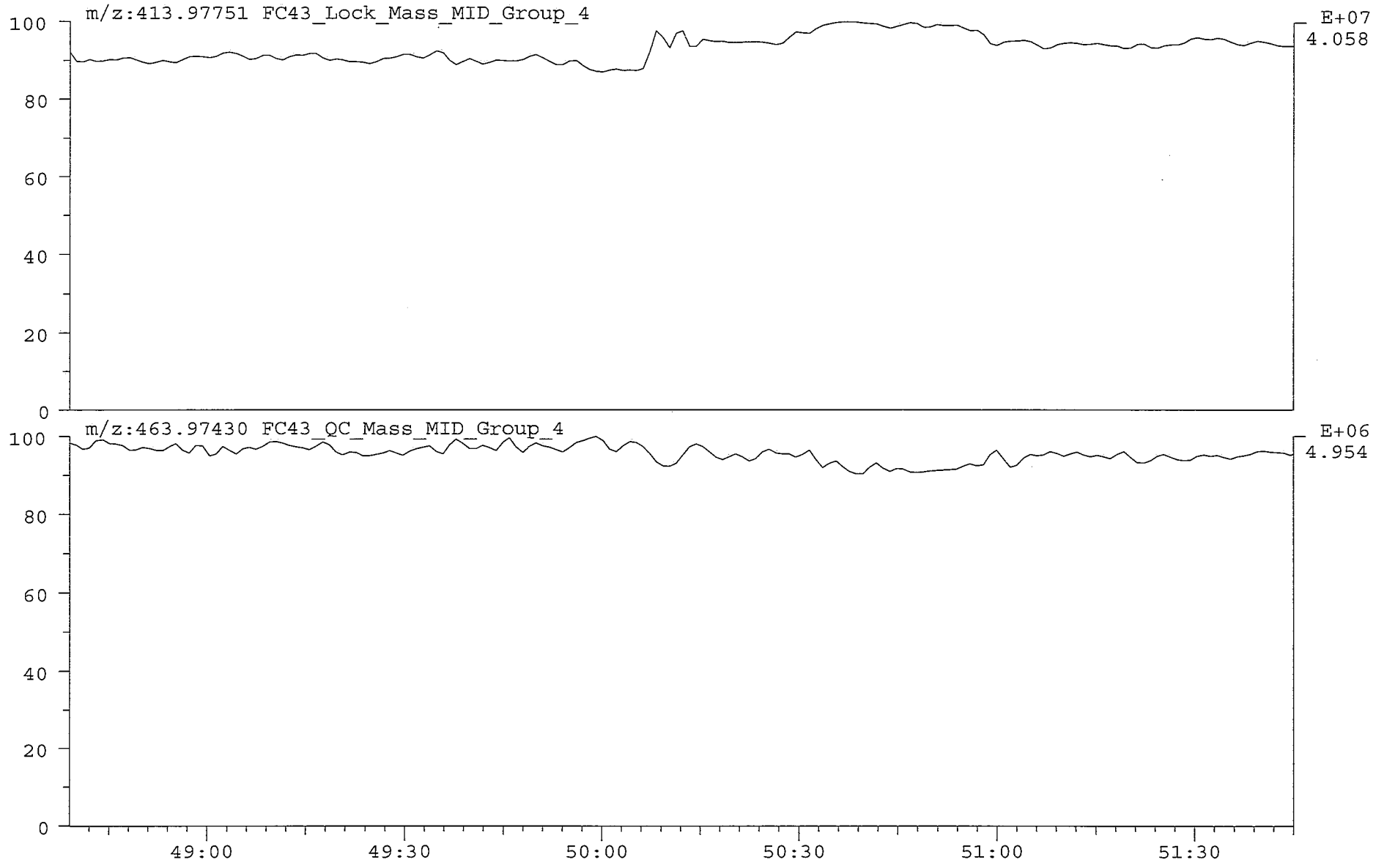
CHRO: d1tm8111 18-Aug-16 Elapse: 50:12 2225
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2317 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



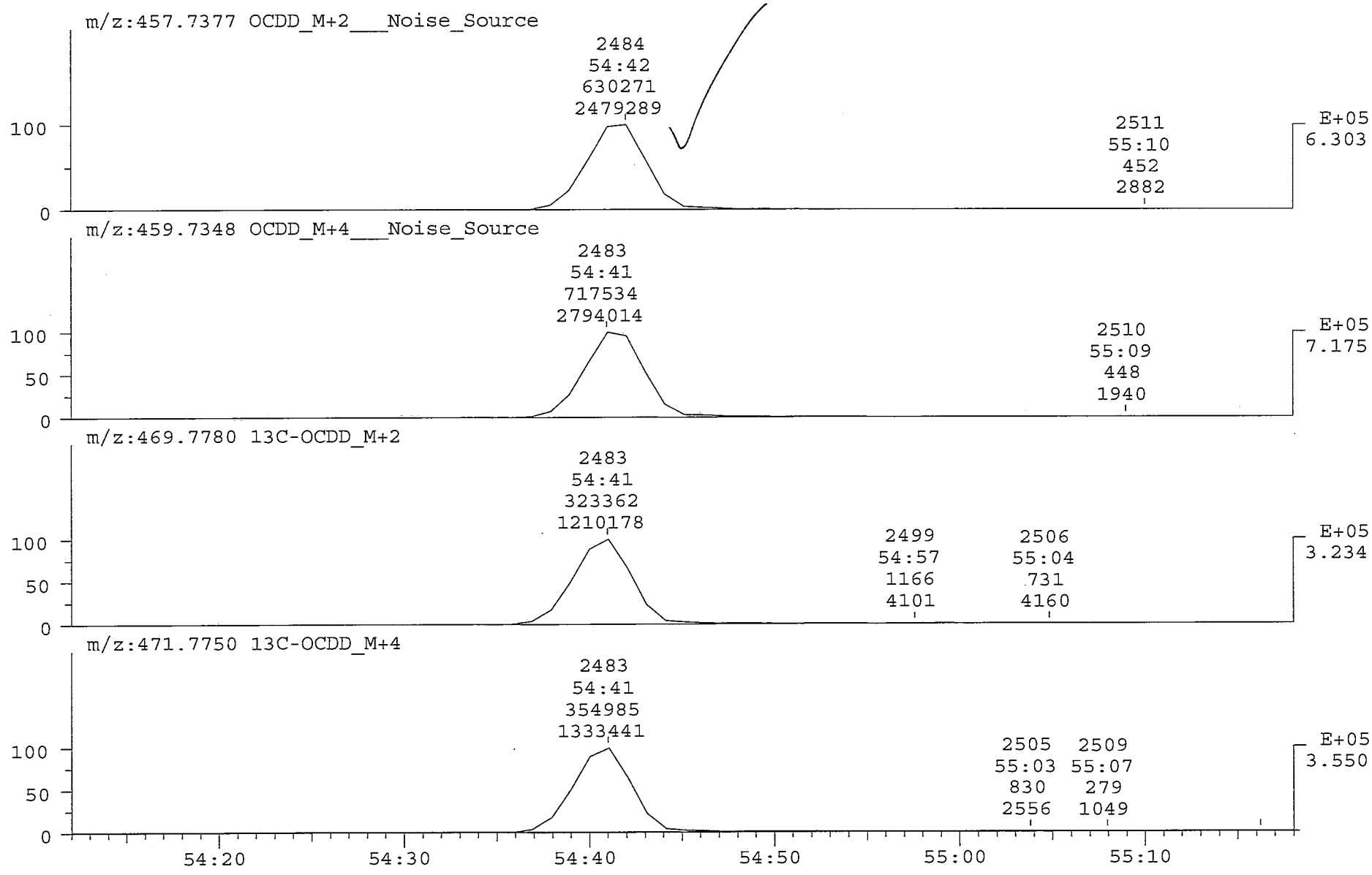
CHRO: d1tm8111 18-Aug-16 Elapse: 50:12 2225
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2317 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



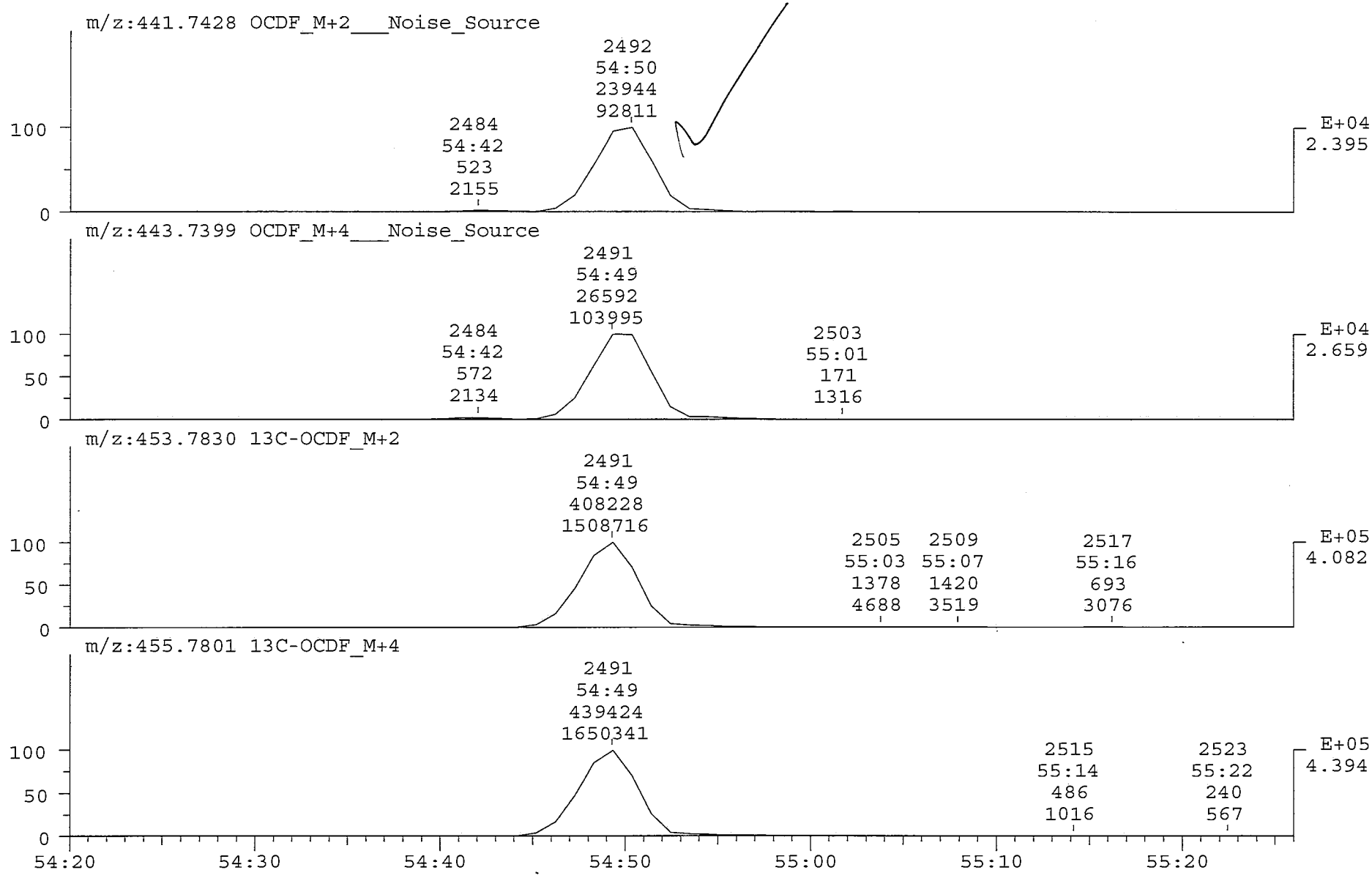
CHRO: d1tm8111 18-Aug-16 Elapse: 50:12 2225
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2317 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



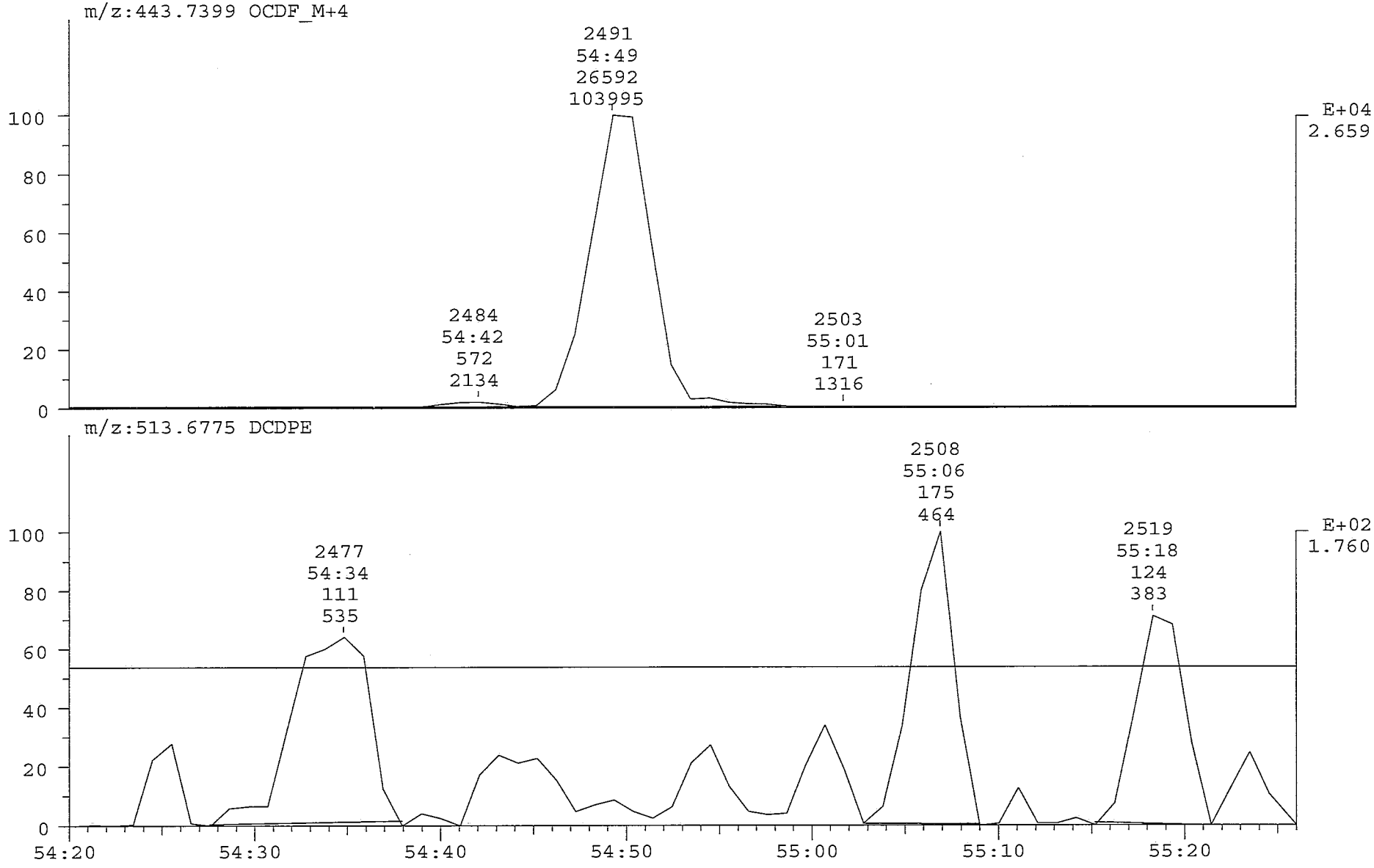
CHRO: d1tm8111 18-Aug-16 Elapse: 54:42 2484
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2455 > 2519 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



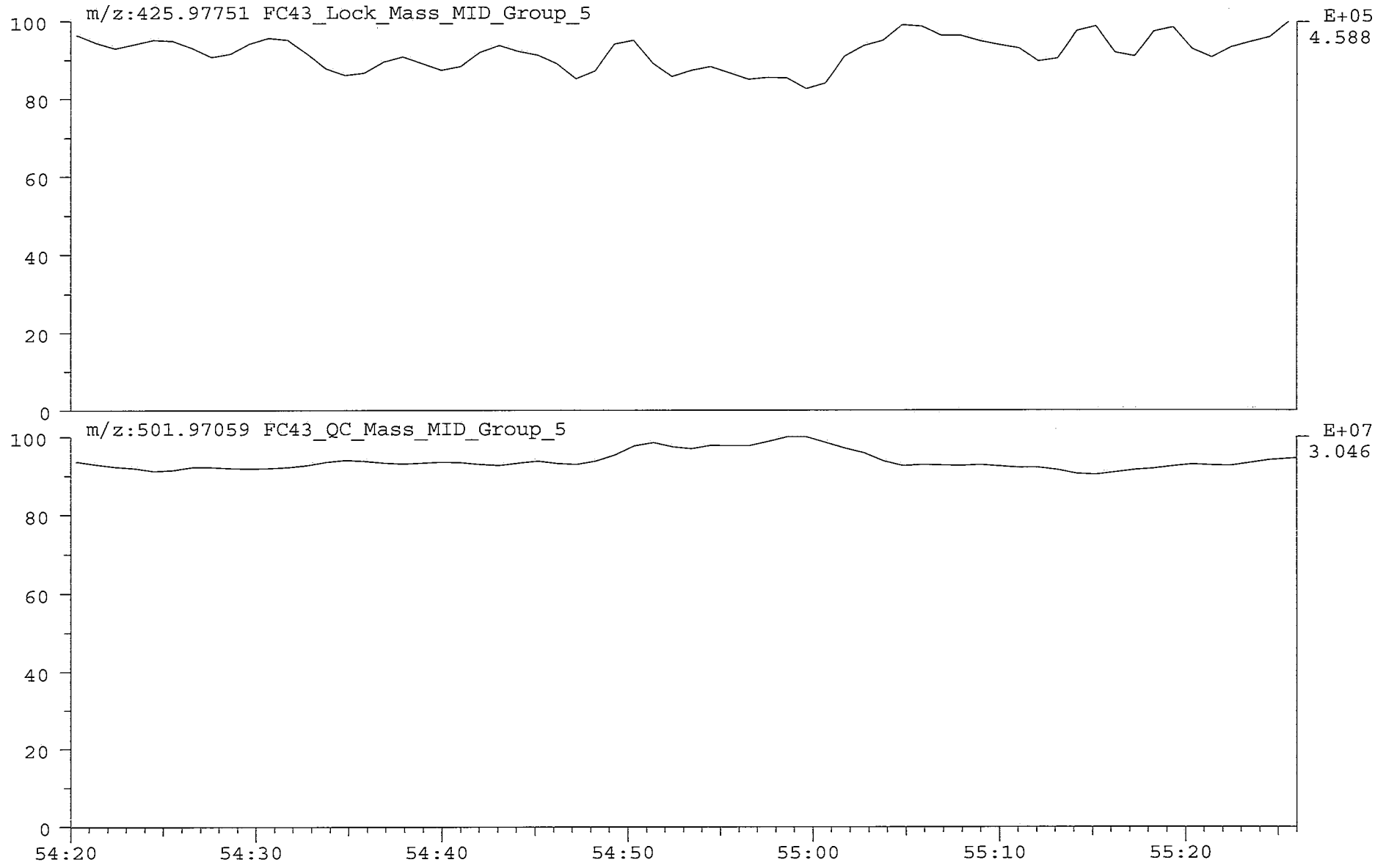
CHRO: d1tm8111 18-Aug-16 Elapse: 54:50 2492
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2463 > 2526 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1tm8111 18-Aug-16 Elapse: 54:50 2492
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2463 > 2526 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1tm8111 18-Aug-16 Elapse: 54:50 2492
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2463 > 2526 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Thu Aug 18 14:11:27 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 18-Aug-16 14:11:26

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160818104938

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

```
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          309.9834
 BQUAD            2.4000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE      18.0000   ECORR           1.0008   ECURR            1.0000
 EDAC        7969177.0000   EDACG           0.9997   EDACZ         2585.8226
 ELEN           -45.0000   EMULT        1802.0000   ENS            210.0000
 ENSBR            2.4000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           172.0000   EXSBR            2.5000
 FDMA      18000000.0000   FILTER        100.0000   FLENS            1.0000
 FM            375.8364   FMII           50.0000   FQUAD            6.7000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0482	FVSRC	0.0398
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	620.0000
LENS_SYM	-4.7500	LM	375.8364	LMII	500.0000
LMASS	309.9834	LKM	425.9770	MASS	309.9834
MDAC	3563488.4337	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2650.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-7.0000	RECURR	0.8991	RELEN	0.0000
RES	11172.2742	RPUSHER	-6.9963	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0986	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	309.9834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:         2.5e-005 mbar
Analyzer Penning:     9.4e-008 mbar
Pirani Analyse:       4.4e-003 mbar
Pirani Source:        4.0e-002 mbar
Pirani Inlet System: 4.8e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 12424.
MID Time Window 2: Resolution is 12347.
MID Time Window 3: Resolution is 11996.
MID Time Window 4: Resolution is 11986.
MID Time Window 5: Resolution is 11172.

Amplifier Offset: 88.


*** File closed Thu Aug 18 15:08:40 2016
  ***
```

QUAN: d1tm8111.q0 Entries: 289

Data file(s) used
File: d1tm8111 18-Aug-16
Samp: WO=m81111ac Meth=9Ao Dil=1 Start : 14:06:49 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:19	2187.	323.	32:12	32:27	15.	1	1.0	ABV
321.8775	32:55	2617.	420.	32:50	33:06	18.	1	1.0	AVB
319.8805	31:27	891.	281.	31:21	31:30	15.	2	5.0	ABB
319.8805	32:19	2187.	323.	32:12	32:27	15.	2	5.0	ABV
319.8805	32:29	187.	81.	32:27	32:31	15.	2	5.0	AVV
319.8805	32:36	1720.	267.	32:31	32:46	15.	2	5.0	AVB
319.8805	32:57	1640.	246.	32:47	33:04	15.	2	5.0	ABB
319.8805	33:25	690.	142.	33:22	33:34	15.	2	5.0	ABB
319.8805	34:00	247.	85.	33:57	34:02	15.	2	5.0	ABB
321.8775	31:19	362.	139.	31:16	31:21	18.	2	5.0	ABV
321.8775	31:23	542.	148.	31:21	31:26	18.	2	5.0	AVV
321.8775	31:28	687.	192.	31:26	31:31	18.	2	5.0	AVV
321.8775	31:33	603.	107.	31:31	31:40	18.	2	5.0	AVB
321.8775	32:16	1864.	384.	32:07	32:19	18.	2	5.0	ABV
321.8775	32:24	2006.	413.	32:19	32:28	18.	2	5.0	AVV
321.8775	32:31	582.	216.	32:28	32:33	18.	2	5.0	AVV
321.8775	32:37	934.	299.	32:33	32:39	18.	2	5.0	AVV
321.8775	32:41	962.	313.	32:39	32:45	18.	2	5.0	AVV
321.8775	32:47	679.	242.	32:45	32:50	18.	2	5.0	AVV
321.8775	32:55	2341.	420.	32:50	33:02	18.	2	5.0	AVV
321.8775	33:03	276.	105.	33:02	33:06	18.	2	5.0	AVB
321.8775	33:28	632.	139.	33:19	33:30	18.	2	5.0	ABB
331.9202	32:19	2917772.	294635.	32:04	32:34	100.	2	5.0	AVV
331.9202	32:36	3970.	1773.	32:34	32:37	100.	2	5.0	AVV
331.9202	32:52	972040.	92123.	32:37	33:07	100.	2	5.0	AVV
331.9202	33:11	2010.	706.	33:09	33:13	100.	2	5.0	AVV
331.9202	33:15	4671.	593.	33:13	33:29	100.	2	5.0	AVB
333.9171	32:20	3588101.	357807.	32:05	32:35	139.	2	5.0	ABV
333.9171	32:52	1219563.	115433.	32:36	33:07	139.	2	5.0	AVV
303.8864	30:48	29052.	2075.	30:36	31:04	41.	1	1.0	ABV
305.8834	30:48	38986.	3082.	30:35	31:04	52.	1	1.0	ABV
303.8864	29:05	2307.	610.	29:02	29:09	41.	2	5.0	ABB
303.8864	29:34	9353.	1059.	29:21	29:48	41.	2	5.0	ABB
303.8864	30:17	10406.	1049.	30:01	30:32	41.	2	5.0	AVV
303.8864	30:48	29052.	2075.	30:36	31:04	41.	2	5.0	ABV
303.8864	32:05	14396.	1751.	31:55	32:16	41.	2	5.0	ABB
305.8834	29:06	1211.	328.	29:02	29:09	52.	2	5.0	ABB
305.8834	29:35	13281.	1907.	29:23	29:46	52.	2	5.0	ABB
305.8834	30:17	10876.	918.	30:01	30:28	52.	2	5.0	AVB
305.8834	30:48	38401.	3082.	30:35	31:01	52.	2	5.0	ABV
305.8834	31:04	942.	333.	31:01	31:09	52.	2	5.0	AVB
305.8834	32:03	16825.	1786.	31:53	32:16	52.	2	5.0	ABB
315.9261	29:14	894.	275.	29:11	29:18	40.	2	5.0	ABB
315.9261	29:27	1603.	613.	29:23	29:30	40.	2	5.0	ABV
315.9261	29:33	5374.	1213.	29:30	29:39	40.	2	5.0	AVV
315.9261	29:40	1301.	265.	29:39	29:47	40.	2	5.0	AVB
315.9261	30:42	1539957.	161756.	30:27	30:57	40.	2	5.0	ABV
315.9261	31:06	3791.	876.	31:02	31:11	40.	2	5.0	AVV
315.9261	31:15	2447.	749.	31:11	31:17	40.	2	5.0	AVB
315.9261	31:20	749.	306.	31:18	31:22	40.	2	5.0	ABV

315.9261	31:26	2289.	387.	31:22	31:31	40.	2	5.0	AVV
315.9261	31:32	848.	343.	31:31	31:35	40.	2	5.0	AVV
315.9261	31:38	1365.	248.	31:35	31:44	40.	2	5.0	AVB
315.9261	32:20	2999.	825.	32:14	32:22	40.	2	5.0	ABB
317.9230	29:30	3040.	888.	29:26	29:32	54.	2	5.0	ABV
317.9230	29:34	3981.	893.	29:32	29:41	54.	2	5.0	AVB
317.9230	30:43	1902939.	204443.	30:28	30:58	54.	2	5.0	AVV
317.9230	31:07	1866.	754.	31:05	31:09	54.	2	5.0	AVV
317.9230	31:10	2059.	623.	31:09	31:17	54.	2	5.0	AVB
317.9230	31:24	1153.	349.	31:21	31:27	54.	2	5.0	ABB
317.9230	31:58	1763.	652.	31:55	32:01	54.	2	5.0	ABB
355.8368	41:26	7932.	1974.	41:18	41:31	44.	1	1.0	ABB
357.8337	41:25	6108.	995.	41:16	41:31	41.	1	1.0	ABB
355.8368	40:43	5080.	983.	40:39	40:50	44.	2	5.0	ABB
355.8368	41:01	2543.	337.	40:50	41:04	44.	2	5.0	ABB
355.8368	41:26	7932.	1974.	41:18	41:31	44.	2	5.0	ABB
355.8368	41:40	2462.	594.	41:32	41:42	44.	2	5.0	ABB
355.8368	42:04	3745.	805.	41:58	42:11	44.	2	5.0	ABB
357.8337	40:44	3224.	763.	40:39	40:48	41.	2	5.0	ABB
357.8337	41:08	1907.	210.	40:56	41:12	41.	2	5.0	ABB
357.8337	41:25	6108.	995.	41:16	41:31	41.	2	5.0	ABB
357.8337	41:38	1931.	499.	41:34	41:45	41.	2	5.0	ABB
357.8337	41:55	1198.	218.	41:46	41:58	41.	2	5.0	ABB
357.8337	42:03	2386.	538.	41:58	42:07	41.	2	5.0	ABB
367.8765	40:58	1178.	343.	40:54	41:00	34.	2	5.0	ABV
367.8765	41:02	1178.	496.	41:00	41:04	34.	2	5.0	AVB
367.8765	41:24	1163657.	282958.	41:16	41:33	34.	2	5.0	ABV
367.8765	41:37	14897.	2277.	41:33	41:43	34.	2	5.0	AVB
367.8765	41:47	1166.	328.	41:43	41:50	34.	2	5.0	ABB
367.8765	42:02	5208.	1037.	41:51	42:04	34.	2	5.0	ABV
367.8765	42:08	2622.	525.	42:04	42:10	34.	2	5.0	AVB
367.8765	42:12	1371.	468.	42:10	42:16	34.	2	5.0	ABB
369.8734	41:24	737506.	183360.	41:16	41:36	17.	2	5.0	ABV
369.8734	41:39	5445.	1186.	41:36	41:45	17.	2	5.0	AVB
369.8734	41:47	1822.	652.	41:45	41:53	17.	2	5.0	ABV
369.8734	41:54	314.	178.	41:53	41:56	17.	2	5.0	AVB
369.8734	42:03	3911.	1031.	41:56	42:11	17.	2	5.0	ABB
369.8734	42:13	486.	189.	42:11	42:16	17.	2	5.0	ABB
339.8427	39:18	15709.	2530.	39:13	39:29	54.	1	1.0	ABB
341.8396	39:18	11829.	1785.	39:13	39:27	66.	1	1.0	ABB
339.8427	39:18	15709.	2530.	39:13	39:29	54.	2	5.0	ABB
339.8427	39:46	13876.	1979.	39:33	39:52	54.	2	5.0	ABB
339.8427	40:02	4976.	1253.	39:55	40:06	54.	2	5.0	ABV
339.8427	40:14	11840.	1722.	40:06	40:25	54.	2	5.0	AVB
339.8427	40:55	13273.	3168.	40:45	41:01	54.	2	5.0	ABV
339.8427	41:07	15413.	3318.	41:01	41:17	54.	2	5.0	AVB
341.8396	39:18	11829.	1785.	39:13	39:27	66.	2	5.0	ABB
341.8396	39:40	2699.	647.	39:35	39:42	66.	2	5.0	ABV
341.8396	39:45	5687.	1210.	39:42	39:57	66.	2	5.0	AVB
341.8396	40:02	4955.	1095.	39:57	40:09	66.	2	5.0	ABB
341.8396	40:15	7826.	1306.	40:10	40:25	66.	2	5.0	ABB
341.8396	40:56	10509.	2066.	40:40	40:59	66.	2	5.0	AVV
341.8396	41:07	10414.	1939.	40:59	41:14	66.	2	5.0	AVB
351.8824	39:16	4201.	925.	39:11	39:21	91.	2	5.0	ABB
351.8824	39:27	1665.	688.	39:24	39:29	91.	2	5.0	ABB
351.8824	39:44	1874067.	399391.	39:34	39:55	91.	2	5.0	ABV
351.8824	39:59	15569.	2277.	39:55	40:04	91.	2	5.0	AVV
351.8824	40:07	2920.	867.	40:04	40:08	91.	2	5.0	AVV
351.8824	40:14	20746.	3782.	40:08	40:23	91.	2	5.0	AVV
351.8824	40:27	3322.	784.	40:23	40:29	91.	2	5.0	AVV
351.8824	40:32	3039.	658.	40:29	40:36	91.	2	5.0	AVV
351.8824	40:39	1879.	465.	40:36	40:41	91.	2	5.0	AVV
351.8824	40:43	2451.	766.	40:41	40:46	91.	2	5.0	AVB
351.8824	40:54	2017275.	474707.	40:46	41:09	91.	2	5.0	ABV
351.8824	41:16	4878.	1088.	41:13	41:21	91.	2	5.0	AVV
351.8824	41:23	3122.	847.	41:21	41:32	91.	2	5.0	AVB
353.8793	39:19	4260.	906.	39:13	39:28	52.	2	5.0	ABB

353.8793	39:44	1196793.	258073.	39:36	39:54	52.	2	5.0	ABV
353.8793	39:55	7186.	1993.	39:54	39:59	52.	2	5.0	AVV
353.8793	40:02	7958.	1704.	39:59	40:07	52.	2	5.0	AVV
353.8793	40:13	17776.	2367.	40:07	40:24	52.	2	5.0	AVV
353.8793	40:26	1276.	476.	40:24	40:31	52.	2	5.0	AVB
353.8793	40:42	1275.	560.	40:39	40:44	52.	2	5.0	ABB
353.8793	40:54	1274119.	305729.	40:44	41:04	52.	2	5.0	ABV
353.8793	41:08	8129.	1152.	41:04	41:14	52.	2	5.0	AVV
353.8793	41:16	3242.	612.	41:14	41:28	52.	2	5.0	AVB
389.7961	46:10	25998.	5268.	46:02	46:15	69.	1	1.0	ABV
391.7931	46:10	24371.	4420.	45:56	46:20	52.	1	1.0	ABB
389.7961	45:39	8607.	1930.	45:32	45:42	69.	2	5.0	ABV
389.7961	45:46	21714.	5313.	45:42	46:01	69.	2	5.0	AVV
389.7961	46:10	27619.	5268.	46:02	46:26	69.	2	5.0	ABV
391.7931	45:39	7418.	1688.	45:28	45:42	52.	2	5.0	ABV
391.7931	45:46	16579.	3908.	45:42	45:52	52.	2	5.0	AVB
391.7931	46:10	24371.	4420.	45:56	46:20	52.	2	5.0	ABB
401.8358	45:38	1108893.	278357.	45:24	45:42	111.	2	5.0	ABV
401.8358	45:45	1064815.	262851.	45:42	45:56	111.	2	5.0	AVV
401.8358	45:58	3410.	1414.	45:56	46:00	111.	2	5.0	AVV
401.8358	46:09	3612379.	863499.	46:00	46:20	111.	2	5.0	AVV
401.8358	46:23	15890.	3921.	46:20	46:27	111.	2	5.0	AVV
401.8358	46:29	6163.	2042.	46:27	46:32	111.	2	5.0	AVV
401.8358	46:34	2345.	800.	46:32	46:36	111.	2	5.0	AVB
403.8327	45:38	853903.	227285.	45:31	45:41	77.	2	5.0	ABV
403.8327	45:45	870118.	213843.	45:41	45:58	77.	2	5.0	AVB
403.8327	46:00	1623.	614.	45:58	46:02	77.	2	5.0	ABV
403.8327	46:09	2937847.	712601.	46:02	46:25	77.	2	5.0	AVV
403.8327	46:30	2919.	1088.	46:27	46:32	77.	2	5.0	ABB
403.8327	46:34	1485.	613.	46:32	46:36	77.	2	5.0	ABB
373.8021	44:35	21833.	3822.	44:25	44:39	44.	1	1.0	ABV
375.7990	44:35	18162.	2911.	44:27	44:39	55.	1	1.0	AVV
373.8021	44:19	15704.	4112.	44:14	44:22	44.	2	5.0	ABB
373.8021	44:35	21833.	3822.	44:25	44:39	44.	2	5.0	ABV
373.8021	44:42	10267.	2721.	44:39	44:48	44.	2	5.0	AVV
373.8021	44:49	1484.	299.	44:48	44:57	44.	2	5.0	AVV
373.8021	45:05	2415.	359.	44:57	45:12	44.	2	5.0	AVB
373.8021	45:17	5033.	1235.	45:12	45:20	44.	2	5.0	ABV
373.8021	45:23	3215.	843.	45:20	45:25	44.	2	5.0	AVV
373.8021	45:28	8346.	2094.	45:25	45:35	44.	2	5.0	AVV
373.8021	45:39	1561.	300.	45:35	45:49	44.	2	5.0	AVB
373.8021	46:29	1700.	291.	46:14	46:32	44.	2	5.0	ABB
373.8021	46:36	3796.	928.	46:32	46:41	44.	2	5.0	ABV
373.8021	46:50	1678.	263.	46:41	46:54	44.	2	5.0	AVB
375.7990	44:18	13806.	3932.	44:14	44:22	55.	2	5.0	ABB
375.7990	44:35	18795.	2911.	44:22	44:39	55.	2	5.0	ABV
375.7990	44:42	9964.	2340.	44:39	44:47	55.	2	5.0	AVB
375.7990	45:06	3313.	377.	44:51	45:08	55.	2	5.0	AVV
375.7990	45:11	1039.	353.	45:08	45:13	55.	2	5.0	AVV
375.7990	45:17	3834.	1128.	45:13	45:19	55.	2	5.0	AVV
375.7990	45:28	9461.	1427.	45:19	45:37	55.	2	5.0	AVB
375.7990	46:37	3100.	447.	46:25	46:44	55.	2	5.0	ABB
373.8021	44:19	15704.	4112.	44:14	44:22	44.	2	5.0	ABB
373.8021	44:35	21833.	3822.	44:25	44:39	44.	2	5.0	ABV
373.8021	44:42	10267.	2721.	44:39	44:48	44.	2	5.0	AVV
373.8021	44:49	1484.	299.	44:48	44:57	44.	2	5.0	AVV
373.8021	45:05	2415.	359.	44:57	45:12	44.	2	5.0	AVB
373.8021	45:17	5033.	1235.	45:12	45:20	44.	2	5.0	ABV
373.8021	45:23	3215.	843.	45:20	45:25	44.	2	5.0	AVV
373.8021	45:28	8346.	2094.	45:25	45:35	44.	2	5.0	AVV
373.8021	45:39	1561.	300.	45:35	45:49	44.	2	5.0	AVB
373.8021	46:29	1700.	291.	46:14	46:32	44.	2	5.0	ABB
373.8021	46:36	3796.	928.	46:32	46:41	44.	2	5.0	ABV
373.8021	46:50	1678.	263.	46:41	46:54	44.	2	5.0	AVB
375.7990	44:18	13806.	3932.	44:14	44:22	55.	2	5.0	ABB
375.7990	44:35	18795.	2911.	44:22	44:39	55.	2	5.0	ABV
375.7990	44:42	9964.	2340.	44:39	44:47	55.	2	5.0	AVB

375.7990	45:06	3313.	377.	44:51	45:08	55.	2	5.0	AVV
375.7990	45:11	1039.	353.	45:08	45:13	55.	2	5.0	AVV
375.7990	45:17	3834.	1128.	45:13	45:19	55.	2	5.0	AVV
375.7990	45:28	9461.	1427.	45:19	45:37	55.	2	5.0	AVB
375.7990	46:37	3100.	447.	46:25	46:44	55.	2	5.0	ABB
383.8447	44:34	778256.	207272.	44:25	44:37	49.	2	5.0	ABV
383.8447	44:42	888249.	224295.	44:37	44:49	49.	2	5.0	AVV
383.8447	44:53	8348.	1494.	44:49	44:58	49.	2	5.0	AVV
383.8447	45:02	2810.	720.	44:58	45:05	49.	2	5.0	AVB
383.8447	45:08	2484.	469.	45:05	45:16	49.	2	5.0	ABV
383.8447	45:27	895222.	224206.	45:16	45:37	49.	2	5.0	AVV
383.8447	45:40	5958.	1171.	45:37	45:48	49.	2	5.0	AVV
383.8447	45:54	2707.	483.	45:48	45:58	49.	2	5.0	AVB
383.8447	46:03	1797.	363.	45:58	46:06	49.	2	5.0	ABV
383.8447	46:07	1112.	450.	46:06	46:09	49.	2	5.0	AVV
383.8447	46:11	944.	448.	46:09	46:13	49.	2	5.0	AVB
383.8447	46:17	817.	266.	46:14	46:19	49.	2	5.0	ABV
383.8447	46:27	755285.	169410.	46:19	46:42	49.	2	5.0	AVV
383.8447	46:50	574.	290.	46:48	46:51	49.	2	5.0	ABB
385.8417	44:34	1516400.	404304.	44:26	44:37	123.	2	5.0	ABV
385.8417	44:42	1723720.	432172.	44:37	44:56	123.	2	5.0	AVV
385.8417	44:59	8350.	1669.	44:56	45:04	123.	2	5.0	AVV
385.8417	45:06	8640.	1169.	45:04	45:17	123.	2	5.0	AVV
385.8417	45:27	1744887.	434220.	45:17	45:42	123.	2	5.0	AVV
385.8417	45:55	5468.	848.	45:50	46:00	123.	2	5.0	AVB
385.8417	46:07	5432.	1370.	46:00	46:09	123.	2	5.0	ABV
385.8417	46:11	4720.	1287.	46:09	46:16	123.	2	5.0	AVB
385.8417	46:27	1487721.	336937.	46:17	46:42	123.	2	5.0	ABV
385.8417	46:48	3462.	1290.	46:46	46:52	123.	2	5.0	AVB
423.7555	50:41	332876.	69862.	50:34	50:56	47.	1	1.0	ABV
425.7524	50:41	306446.	64762.	50:32	50:56	50.	1	1.0	ABV
423.7555	49:29	257793.	53223.	49:21	49:44	47.	2	5.0	ABV
423.7555	50:41	332876.	69862.	50:34	50:56	47.	2	5.0	ABV
425.7524	49:29	251023.	49781.	49:20	49:44	50.	2	5.0	ABV
425.7524	50:41	305576.	64762.	50:32	50:53	50.	2	5.0	ABV
435.7951	49:28	11275.	2417.	49:20	49:34	30.	2	5.0	ABB
435.7951	49:42	766.	323.	49:39	49:44	30.	2	5.0	ABB
435.7951	50:40	868651.	182278.	50:30	50:53	30.	2	5.0	ABV
435.7951	50:55	1323.	542.	50:53	50:57	30.	2	5.0	AVV
435.7951	50:59	1063.	427.	50:57	51:02	30.	2	5.0	AVV
435.7951	51:04	512.	215.	51:02	51:06	30.	2	5.0	AVB
437.7921	49:28	7532.	1550.	49:20	49:34	27.	2	5.0	ABB
437.7921	49:38	641.	212.	49:34	49:40	27.	2	5.0	ABV
437.7921	49:41	417.	195.	49:40	49:43	27.	2	5.0	AVB
437.7921	50:40	884502.	189919.	50:30	50:54	27.	2	5.0	ABV
437.7921	50:57	1236.	429.	50:54	50:58	27.	2	5.0	AVV
437.7921	51:04	3610.	894.	50:58	51:06	27.	2	5.0	AVB
407.7614	49:38	83107.	17210.	49:30	49:45	45.	1	1.0	AVV
409.7583	49:38	76099.	15672.	49:31	49:43	29.	1	1.0	AVV
407.7614	48:43	8709.	1983.	48:39	48:51	45.	2	5.0	ABB
407.7614	48:58	59983.	12393.	48:51	49:12	45.	2	5.0	ABB
407.7614	49:24	4263.	619.	49:12	49:30	45.	2	5.0	ABV
407.7614	49:38	83107.	17210.	49:30	49:45	45.	2	5.0	AVV
407.7614	49:48	4355.	940.	49:45	49:55	45.	2	5.0	AVB
407.7614	51:18	7096.	1058.	51:06	51:33	45.	2	5.0	ABV
409.7583	48:43	7218.	1679.	48:39	48:50	29.	2	5.0	ABB
409.7583	48:58	56577.	12355.	48:51	49:13	29.	2	5.0	ABV
409.7583	49:21	1162.	362.	49:17	49:23	29.	2	5.0	AVV
409.7583	49:26	1777.	382.	49:23	49:31	29.	2	5.0	AVV
409.7583	49:38	76099.	15672.	49:31	49:43	29.	2	5.0	AVV
409.7583	49:48	3180.	644.	49:43	49:53	29.	2	5.0	AVB
409.7583	51:18	5849.	1079.	51:12	51:30	29.	2	5.0	ABB
417.8041	48:57	510386.	106518.	48:49	49:10	38.	2	5.0	ABV
417.8041	49:21	5696.	966.	49:15	49:31	38.	2	5.0	ABV
417.8041	49:36	6905.	1108.	49:31	49:45	38.	2	5.0	AVB
417.8041	50:04	1391.	394.	49:58	50:06	38.	2	5.0	ABB
417.8041	50:28	1287.	301.	50:23	50:30	38.	2	5.0	ABB

417.8041	51:17	473574.	101269.	51:02	51:26	38.	2	5.0	AVV
417.8041	51:33	7343.	1039.	51:26	51:36	38.	2	5.0	AVV
417.8041	51:38	2091.	826.	51:36	51:40	38.	2	5.0	AVB
419.8010	48:57	1111198.	237851.	48:49	49:12	58.	2	5.0	ABV
419.8010	49:22	10994.	1482.	49:13	49:27	58.	2	5.0	AVV
419.8010	49:28	1358.	562.	49:27	49:31	58.	2	5.0	AVV
419.8010	49:36	9354.	1354.	49:31	49:44	58.	2	5.0	AVV
419.8010	50:40	1594.	309.	50:33	50:43	58.	2	5.0	ABB
419.8010	50:50	2350.	472.	50:44	50:56	58.	2	5.0	ABB
419.8010	51:17	1026158.	222659.	51:07	51:32	58.	2	5.0	ABV
419.8010	51:36	1608.	696.	51:34	51:38	58.	2	5.0	AVB
457.7148	54:42	2479289.	630271.	54:31	54:57	49.	1	1.0	ABV
459.7118	54:41	2794014.	717534.	54:34	54:56	39.	1	1.0	ABV
457.7148	54:42	2479289.	630271.	54:31	54:57	49.	2	5.0	ABV
457.7148	55:10	2882.	452.	55:05	55:15	49.	2	5.0	AVB
459.7118	54:41	2794014.	717534.	54:34	54:56	39.	2	5.0	ABV
459.7118	55:09	1940.	448.	55:07	55:15	39.	2	5.0	AVB
469.7545	54:41	1210178.	323362.	54:33	54:55	35.	2	5.0	ABV
469.7545	54:57	4101.	1166.	54:55	55:00	35.	2	5.0	AVV
469.7545	55:04	4160.	731.	55:00	55:10	35.	2	5.0	AVB
471.7514	54:41	1333441.	354985.	54:33	54:56	42.	2	5.0	ABV
471.7514	55:03	2556.	830.	55:00	55:07	42.	2	5.0	AVB
471.7514	55:08	1049.	279.	55:07	55:12	42.	2	5.0	ABB
471.7514	55:16	733.	306.	55:14	55:18	42.	2	5.0	ABB
441.7207	54:50	92730.	23944.	54:45	55:04	30.	1	1.0	AVV
443.7177	54:49	103995.	26592.	54:44	54:59	23.	1	1.0	AVV
441.7207	54:42	2155.	523.	54:35	54:45	30.	2	5.0	ABV
441.7207	54:50	92811.	23944.	54:45	55:05	30.	2	5.0	AVV
443.7177	54:42	2134.	572.	54:36	54:44	23.	2	5.0	ABV
443.7177	54:49	103995.	26592.	54:44	54:59	23.	2	5.0	AVV
443.7177	55:01	1316.	171.	54:59	55:17	23.	2	5.0	AVV
453.7603	54:49	1508716.	408228.	54:43	55:01	25.	2	5.0	AVV
453.7603	55:03	4688.	1378.	55:01	55:05	25.	2	5.0	AVV
453.7603	55:08	3519.	1420.	55:05	55:10	25.	2	5.0	AVV
453.7603	55:16	3076.	693.	55:10	55:20	25.	2	5.0	AVB
455.7573	54:49	1650341.	439423.	54:36	55:04	30.	2	5.0	ABV
455.7573	55:14	1016.	486.	55:13	55:16	30.	2	5.0	AVB
455.7573	55:22	567.	240.	55:20	55:25	30.	2	5.0	ABB

TestAmerica Canton

Sample ID: PAD-7

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 013	Work Order #....:	M81121AC	Matrix....:	SOLID
Date Sampled....:	07/25/16	Date Received....:	07/29/16	Dilution Factor:	1
Prep Date....:	08/04/16	Analysis Date....:	08/18/16	Percent Moisture	3.5
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.6 g	Instrument ID....:	D11A	Method:	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	0.073	Q J	1.1	0.025	pg/g
1,2,3,7,8-PeCDD	0.26	Q B J	5.4	0.035	pg/g
1,2,3,4,7,8-HxCDD	0.30	J	5.4	0.031	pg/g
1,2,3,6,7,8-HxCDD	0.55	J	5.4	0.035	pg/g
1,2,3,7,8,9-HxCDD	0.81	C J	5.4	0.031	pg/g
1,2,3,4,6,7,8-HpCDD	11		5.4	0.052	pg/g
OCDD	110	B	11	0.060	pg/g
2,3,7,8-TCDF	0.28	Q J	1.1	0.041	pg/g
1,2,3,7,8-PeCDF	0.24	J	5.4	0.027	pg/g
2,3,4,7,8-PeCDF	0.30	J	5.4	0.025	pg/g
1,2,3,4,7,8-HxCDF	0.66	C B J	5.4	0.025	pg/g
1,2,3,6,7,8-HxCDF	0.35	J	5.4	0.026	pg/g
2,3,4,6,7,8-HxCDF	0.21	J	5.4	0.026	pg/g
1,2,3,7,8,9-HxCDF	ND		5.4	0.032	pg/g
1,2,3,4,6,7,8-HpCDF	2.1	B J	5.4	0.032	pg/g
1,2,3,4,7,8,9-HpCDF	0.29	Q B J	5.4	0.033	pg/g
OCDF	3.6	B J	11	0.020	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	62	40 - 135
13C-1,2,3,7,8-PeCDD	75	40 - 135
13C-1,2,3,4,7,8-HxCDD	66	40 - 135
13C-1,2,3,6,7,8-HxCDD	63	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	75	40 - 135
13C-OCDD	65	40 - 135
13C-2,3,7,8-TCDF	60	40 - 135
13C-1,2,3,7,8-PeCDF	73	40 - 135
13C-2,3,4,7,8-PeCDF	79	40 - 135
13C-1,2,3,4,7,8-HxCDF	56	40 - 135
13C-1,2,3,6,7,8-HxCDF	52	40 - 135
13C-2,3,4,6,7,8-HxCDF	60	40 - 135
13C-1,2,3,7,8,9-HxCDF	59	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	53	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	61	40 - 135
13C-OCDF	54	40 - 135

TestAmerica Canton

Sample ID: PAD-7

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 013	**Work Order #....:**	M81121AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	3.5
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.6 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81121AC	Prep Batch	6217014	Lot No	H6G290408-013
Data File	/20160818s1/d1tm8112.d	Prep Date	08/04/16	SDG No	
Analysis ID	180612	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/18/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	15:08	Initial Wt/Vol	9.6 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD	32:49	1650	272	1.144		0.673686		0.070176	QJ	0.0238
Total TCDD		2841	750	1.144		1.833652		0.191005	QJ	0.0238
2,3,7,8-TCDF	30:45	9290	1695	1.066		2.562558		0.266933	QJ	0.0396
Total TCDF		41837	5573	1.066		14.102894		1.469051	QJ	0.0396
1,2,3,7,8-PeCDD	41:24	4863	1045	1.060		2.410058		0.251048	QBJ	0.0336
Total PeCDD		6327	1341	1.060		5.545660		0.577673	JQB	0.0336
1,2,3,7,8-PeCDF	39:45	8244	1659	1.179		2.250927		0.234472	J	0.0265
2,3,4,7,8-PeCDF	40:54	10358	2511	1.115		2.780735		0.289660	J	0.0238
Total PeCDF		38290	6993	1.147		15.387273		1.602841	JQ	0.0250
1,2,3,4,7,8-HxCDD	45:38	6040	1089	1.131		2.767335		0.288264	J	0.0303
1,2,3,6,7,8-HxCDD	45:46	10374	2273	1.116		5.082746		0.529453	J	0.0339
1,2,3,7,8,9-HxCDD	46:10	17075	3322	1.205		7.539351		0.785349	CJ	0.0298
Total HxCDD				1.151		15.389432		1.603066	J	0.0312
1,2,3,4,7,8-HxCDF	44:34	18899	3320	1.350		6.141775		0.639768	CBJ	0.0246
1,2,3,6,7,8-HxCDF	44:43	10115	2134	1.242		3.224507		0.335886	J	0.0247
2,3,4,6,7,8-HxCDF	45:29	6097	1615	1.241		1.901941		0.198119	J	0.0253
1,2,3,7,8,9-HxCDF				1.262				ND		0.0312
Total HxCDF		20555	4872	1.274		17.953592		1.870166	JQB	0.0262
1,2,3,4,6,7,8-HpCDD	50:42	189099	39194	1.114		97.458209		10.151897		0.0504
Total HpCDD		186832	36670	1.114		193.748048		20.182088		0.0504
1,2,3,4,6,7,8-HpCDF	48:59	49324	9980	1.461		19.681481		2.050154	BJ	0.0305
1,2,3,4,7,8,9-HpCDF	51:17	5686	988	1.370		2.642274		0.275237	QBJ	0.0321
Total HpCDF		62699	11855	1.416		49.282517		5.133596	QJB	0.0313
OCDD	54:41	1537812	403298	1.203		1024.09147		106.676195	B	0.0575
OCDF	54:50	61222	15390	1.134		33.042611		3.441939	BJ	0.0194
13C-2,3,7,8-TCDD	32:51	2141807	210786	1.093	1000	620.996262	62.10	64.687111		0.218
13C-2,3,7,8-TCDF	30:42	3402145	357575	1.794	1000	600.607137	60.06	62.563243		0.0587
13C-1,2,3,7,8-PeCDD	41:23	1903774	467472	0.800	1000	753.855693	75.39	78.526635		0.0830
13C-1,2,3,7,8-PeCDF	39:44	3106081	674690	1.356	1000	725.377172	72.54	75.560122		0.0734
13C-2,3,4,7,8-PeCDF	40:53	3342028	796036	1.343	1000	788.283563	78.83	82.112871		0.0742
13C-1,2,3,4,7,8-HxCDD	45:38	1929617	486536	0.916	1000	658.687380	65.87	68.613269		0.0826
13C-1,2,3,6,7,8-HxCDD	45:45	1828952	440776	0.906	1000	630.922297	63.09	65.721073		0.0835
13C-1,2,3,4,7,8-HxCDF	44:34	2278616	603700	1.268	1000	561.640297	56.16	58.504198		0.0422
13C-1,2,3,6,7,8-HxCDF	44:42	2526472	653193	1.506	1000	524.634959	52.46	54.649475		0.0355
13C-2,3,4,6,7,8-HxCDF	45:27	2583400	637837	1.344	1000	600.961606	60.10	62.600167		0.0398
13C-1,2,3,7,8,9-HxCDF	46:27	2266900	509121	1.202	1000	589.573093	58.96	61.413864		0.0445
13C-1,2,3,4,6,7,8-HpCDD	50:41	1742186	361824	0.728	1000	747.752086	74.78	77.890842		0.0243
13C-1,2,3,4,6,7,8-HpCDF	48:58	1715322	344965	1.008	1000	531.983098	53.20	55.414906		0.0416
13C-1,2,3,4,7,8,9-HpCDF	51:17	1570358	349533	0.811	1000	605.535247	60.55	63.076588		0.0517
13C-OCDD	54:40	2496500	647338	0.597	2000	1306.53451	65.33	136.097345		0.0337
13C-1,2,3,4-TCDD	32:17	6313883	643258	1.000	2000	2000.00000	100.00	208.333333		0.238
13C-1,2,3,7,8,9-HxCDD	46:09	6397285	1527804	1.000	2000	2000.00000	100.00	208.333333		0.0757
13C-OCDF	54:49	3266765	851855	0.946	2000	1079.60772	53.98	112.459138		0.0213

KLR 8/24/16

KM 8-24-16

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81121AC	Prep Batch	6217014	Lot No	H6G290408-013
Data File	/20160818s1/d1tm8112.d	Prep Date	08/04/16	SDG No	
Analysis ID	180612	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 15:08	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.6 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	70	75	28	30	0.93 *	/	
	Unidentified	29:32	00:00	0	3228	6744	543	823	0.48 *	ABV/ABB	RT
	Unidentified	30:13	00:00	0	5207	6811	537	889	0.76	ABB/AVV	
	2,3,7,8-TCDF	30:45	30:45	0	4603	4687	778	917	0.98 *	ABV/ABV	R
	Unidentified	30:56	00:00	0	1989	6294	513	853	0.32 *	AVB/AVB	R
	Unidentified	32:04	00:00	0	5242	6322	598	817	0.83	ABV/ABB	T
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	178	148	71	59	1.20 *	/	
	13C-2,3,7,8-TCDF	30:42	30:42	0	1475709	1926436	154730	202845	0.77	ABV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	23	33	9	13	0.69	/	
	Unidentified	31:24	00:00	0	222	673	55	117	0.33 *	ABV/ABV	RT
	Unidentified	32:34	00:00	0	445	434	170	122	1.03 *	ABB/ABV	R
	Unidentified	32:38	00:00	0	347	720	115	171	0.48 *	ABB/AVB	R
	2,3,7,8-TCDD	32:49	32:53	-4	1023	627	127	145	1.63 *	ABB/ABB	RTM
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	320	415	128	166	0.77	/	
	13C-1,2,3,4-TCDD	32:17	32:18	-1	2800580	3513303	282175	361083	0.80	AVV/ABV	
	13C-2,3,7,8-TCDD	32:51	32:50	1	971715	1170092	96651	114135	0.83	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	103	100	41	40	1.03 *	/	
	Unidentified	39:17	00:00	0	7120	4433	1270	861	1.61	ABB/ABB	
	Unidentified	39:40	00:00	0	1183	1811	297	353	0.65 *	ABV/ABV	R
	1,2,3,7,8-PeCDF	39:45	39:46	-1	5156	3088	1057	602	1.67	AVB/AVB	
	Unidentified	40:02	00:00	0	2266	1885	416	414	1.20 *	ABB/ABB	R
	Unidentified	40:14	00:00	0	3999	3888	651	445	1.03 *	ABB/ABB	R
	2,3,4,7,8-PeCDF	40:54	40:55	-1	6456	3902	1568	943	1.65	ABB/ABV	
	Unidentified	41:07	00:00	0	6064	5641	1182	1104	1.07 *	ABB/AVB	R
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	205	103	82	41	2.00 *	/	
	Unidentified	39:17	00:00	0	6554	3774	1615	1113	1.74	ABB/ABB	
	13C-1,2,3,7,8-PeCDF	39:44	39:45	-1	1904158	1201923	413079	261611	1.58	ABV/ABV	
	Unidentified	40:01	00:00	0	12504	7682	2836	2260	1.63	AVV/AVB	
	Unidentified	40:13	00:00	0	23346	12593	4015	2703	1.85 *	AVV/ABB	R
	13C-2,3,4,7,8-PeCDF	40:53	40:54	-1	2063351	1278677	490364	305672	1.61	ABV/ABV	
	Unidentified	41:07	00:00	0	10205	13495	2275	2665	0.76 *	AVV/AVV	R
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	90	70	36	28	1.29 *	/	
	Unidentified	40:44	00:00	0	2068	1560	503	338	1.33	ABB/ABB	
	1,2,3,7,8-PeCDD	41:24	41:25	-1	2466	2397	602	443	1.03 *	MBB/ABB	R
	Unidentified	42:03	00:00	0	1959	740	346	154	2.65 *	ABB/ABB	RT
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81121AC	Prep Batch	6217014	Lot No	H6G290408-013
Data File	/20160818s1/d1tm8112.d	Prep Date	08/04/16	SDG No	
Analysis ID	180612	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 15:08	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.6 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	143	63	57	25	2.28 *	/	
	13C-1,2,3,7,8-PeCDD	41:23	41:24	-1	1165608	738166	283814	183658	1.58	ABV/ABV	
	Unidentified	41:35	00:00	0	16145	9404	2360	1748	1.72	AVV/AVV	
	Unidentified	41:46	00:00	0	3052	1215	790	345	2.51 *	AVV/AVV	R
	Unidentified	41:54	00:00	0	1661	1032	672	316	1.61	AVB/AVB	
	Unidentified	42:03	00:00	0	3794	2442	654	486	1.55	ABB/ABB	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	83	110	33	44	0.75 *	/	
	Unidentified	44:18	00:00	0	5229	4060	1402	970	1.29	ABB/ABB	
	1,2,3,4,7,8-HxCDF	44:34	44:35	-1	10422	8477	1878	1442	1.23	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:43	44:43	0	5277	4838	1281	853	1.09	AVB/AVV	
	Unidentified	45:05	00:00	0	1764	2520	258	320	0.70 *	ABV/AVB	RT
	Unidentified	45:16	00:00	0	1737	2667	447	711	0.65 *	AVV/ABV	R
	Unidentified	45:22	00:00	0	1238	1340	346	418	0.92 *	AVV/AVV	R
	2,3,4,6,7,8-HxCDF	45:29	45:29	0	3267	2830	891	724	1.15	AVB/AVB	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	190	203	76	81	0.94 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:34	44:34	0	772904	1505712	207942	395758	0.51	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:42	44:42	0	882295	1644177	221248	431945	0.54	AVV/AVV	
	Unidentified	44:59	00:00	0	5296	11266	926	2326	0.47	AVV/AVV	T
	13C-2,3,4,6,7,8-HxCDF	45:27	45:28	-1	867531	1715869	215080	422757	0.51	AVV/ABV	
	Unidentified	45:43	00:00	0	3325	8223	886	1532	0.40 *	AVV/AVV	R
	Unidentified	45:58	00:00	0	3362	5847	787	1491	0.57	AVB/AVV	T
	13C-1,2,3,7,8,9-HxCDF	46:27	46:28	-1	755954	1510946	168405	340716	0.50	ABV/ABV	
	Unidentified	46:44	00:00	0	3607	5562	1224	1471	0.65 *	AVV/AVB	R
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	75	85	30	34	0.88 *	/	
	1,2,3,4,7,8-HxCDD	45:38	45:39	-1	3090	2950	571	518	1.05	AVV/AVV	
	1,2,3,6,7,8-HxCDD	45:46	45:47	-1	5885	4489	1291	982	1.31	AVB/AVB	
	1,2,3,7,8,9-HxCDD	46:10	46:11	-1	9526	7549	1798	1524	1.26	ABB/AVB	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	223	333	89	133	0.67 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:38	45:38	0	1071428	858189	269590	216946	1.25	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:45	45:46	-1	1022602	806350	242666	198110	1.27	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:09	46:10	-1	3616313	2780972	862604	665200	1.30	ABV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	93	55	37	22	1.68 *	/	
	1,2,3,4,6,7,8-HpCDF	48:59	48:58	1	25851	23473	5031	4949	1.10	ABV/ABV	
	Unidentified	49:23	00:00	0	2045	1535	375	316	1.33 *	AVV/ABV	R
	Unidentified	49:38	00:00	0	29469	29650	5107	6057	0.99	AVV/AVV	
	1,2,3,4,7,8,9-HpCDF	51:17	51:18	-1	3566	2120	509	479	1.68 *		RM
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81121AC	Prep Batch	6217014	Lot No	H6G290408-013
Data File	/20160818s1/d1tm8112.d	Prep Date	08/04/16	SDG No	
Analysis ID	180612	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 15:08	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.6 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

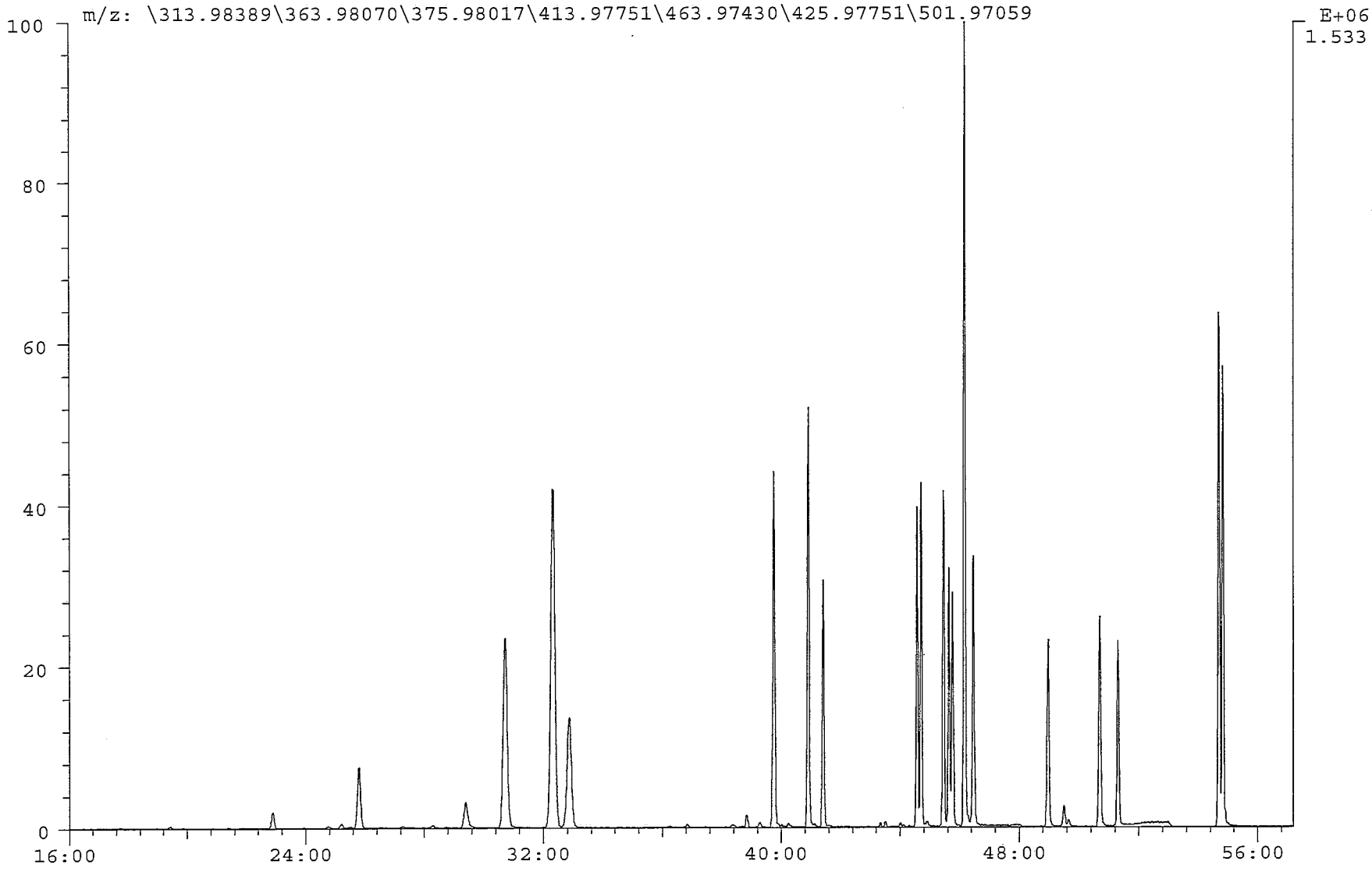
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	148	160	59	64	0.92 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:58	48:56	2	526561	1188761	106427	238538	0.44	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	51:17	51:17	0	481135	1089223	105311	244222	0.44	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	95	100	38	40	0.95	/	
	Unidentified	49:29	00:00	0	94647	92185	18681	17989	1.03	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:42	50:40	2	92721	96378	19782	19412	0.96	ABV/ABB	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	78	53	31	21	1.48 *	/	
	Unidentified	49:29	00:00	0	13337	12618	1902	2487	1.06	ABV/ABV	
	13C-1,2,3,4,6,7,8-HpCDD	50:41	50:39	2	899934	842252	187463	174361	1.07	ABV/ABV	
	Unidentified	50:57	00:00	0	2673	2087	794	445	1.28 *	AVV/AVB	R
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	40	50	16	20	0.80	/	
	Unidentified	54:41	00:00	0	309	660	101	195	0.47 *	ABV/ABV	R
	OCDF	54:50	54:49	1	28855	32367	7255	8135	0.89	AVB/AVV	
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	80	68	32	27	1.19 *	/	
	13C-OCDF	54:49	54:49	0	1547261	1719504	398832	453023	0.90	ABV/ABV	
	Unidentified	55:15	00:00	0	4445	1408	875	512	3.16 *	AVB/ABV	RT
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	133	83	53	33	1.61 *	/	
	OCDD	54:41	54:41	0	722320	815492	191633	211665	0.89	ABV/ABV	
	Unidentified	55:01	00:00	0	3072	3836	414	509	0.80	AVB/AVB	
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	68	80	27	32	0.84	/	
	13C-OCDD	54:40	54:41	-1	1169211	1327289	303617	343721	0.88	ABV/ABV	
	Unidentified	55:07	00:00	0	1725	940	657	439	1.84 *	AVV/ABV	R

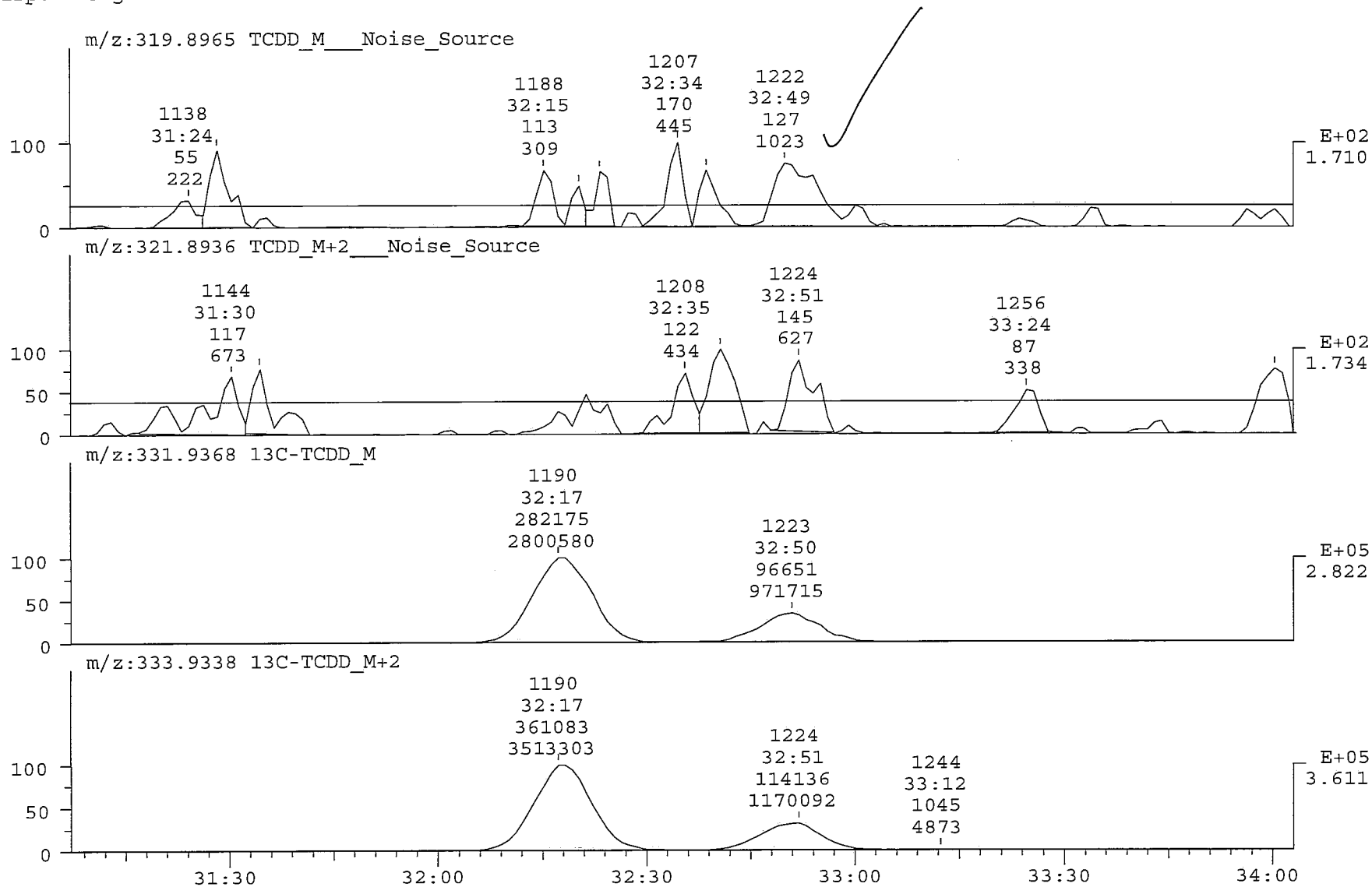
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. LK 8-18-16
CALCKM 8-24-16
QC/Pw LK 8/24/16

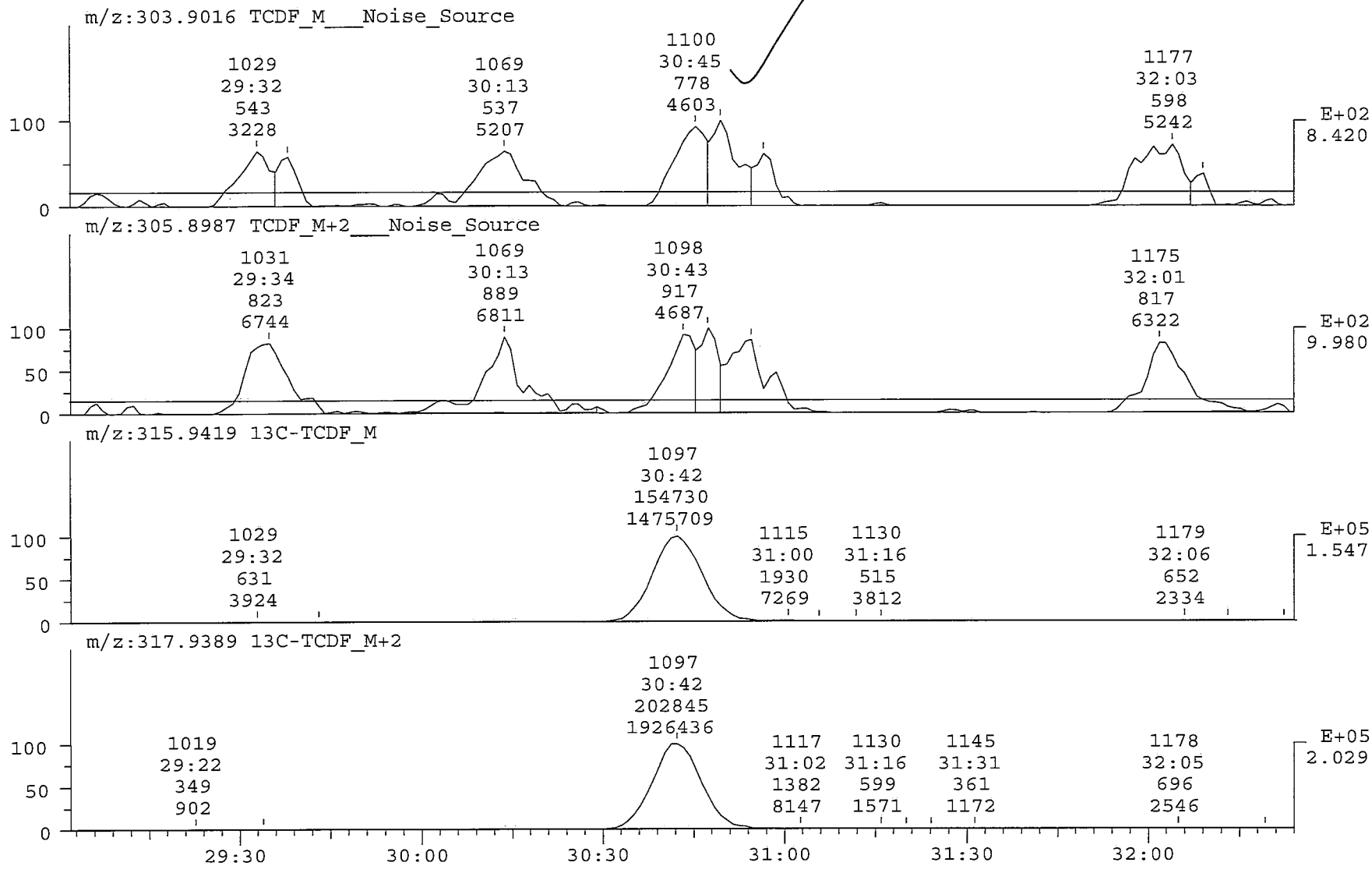
CHRO:	d1tm8112	18-Aug-16	Elapse:	54:49	2491
Samp:	WO=m81121ac Meth=9Ao Dil=1		Start :	15:08:43	2629
Comm:	Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1				
Mode:	EI ESI + Q1MS UP LR		Study :	6217014 (9.6g)	
Oper:	KLR		Inlet :	LC	
Peak:	100.00 ppm	Label wndw: 233 > 2629	Masses:	303 > 514	
Area:	5, 0.50, 0	Baseline : 100, 3	Label :	0, 0.0	
Disp:	Height Area				



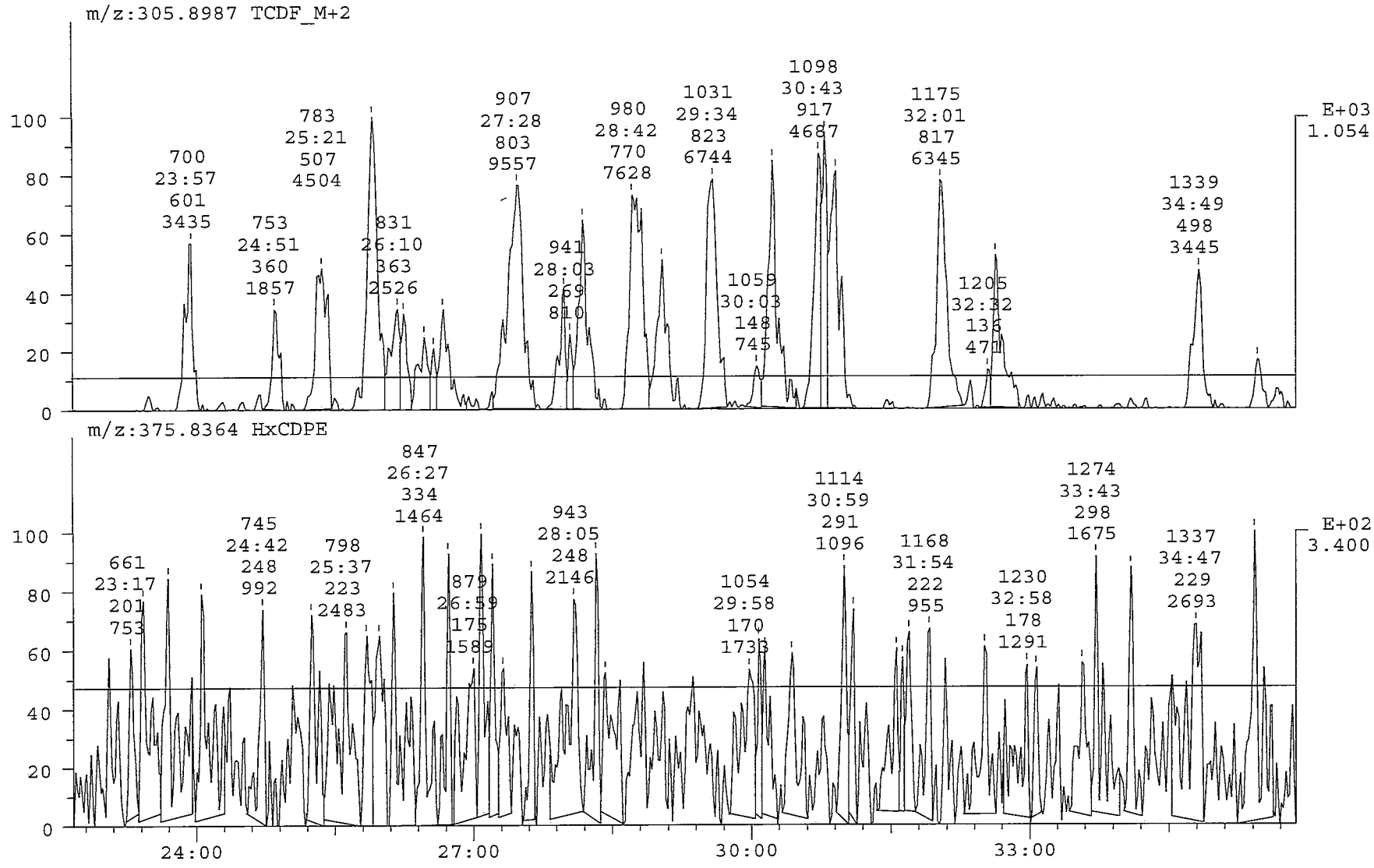
CHRO: d1tm8112 18-Aug-16 Elapse: 32:34 1207
Samp: WO=m81121ac Meth=9Ao Dil=1 Start : 15:08:43 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1121 > 1294 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



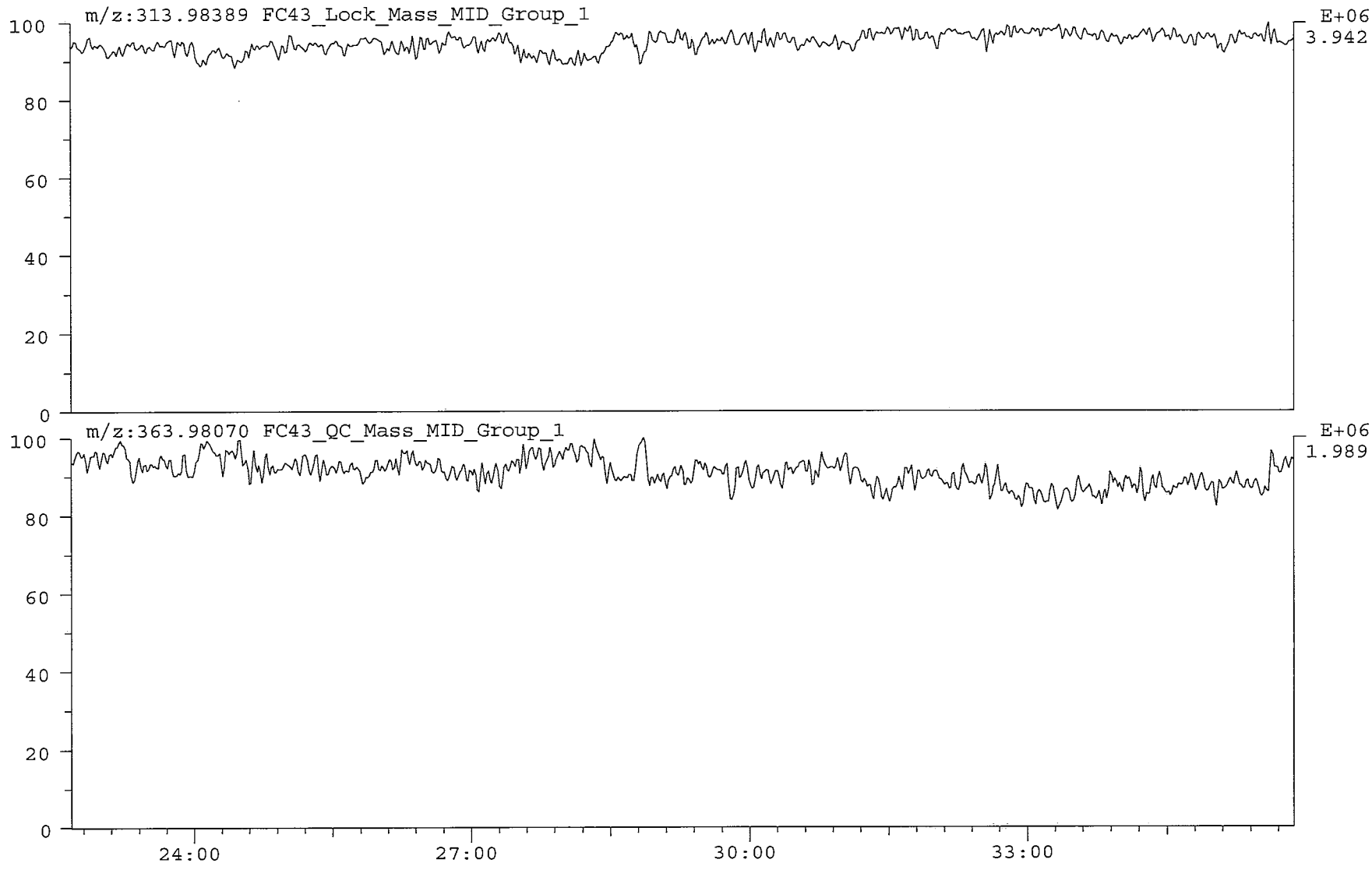
CHRO: d1tm8112 18-Aug-16 Elapse: 30:40 1095
Samp: WO=m81121ac Meth=9Ao Dil=1 Start : 15:08:43 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 999 > 1197 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



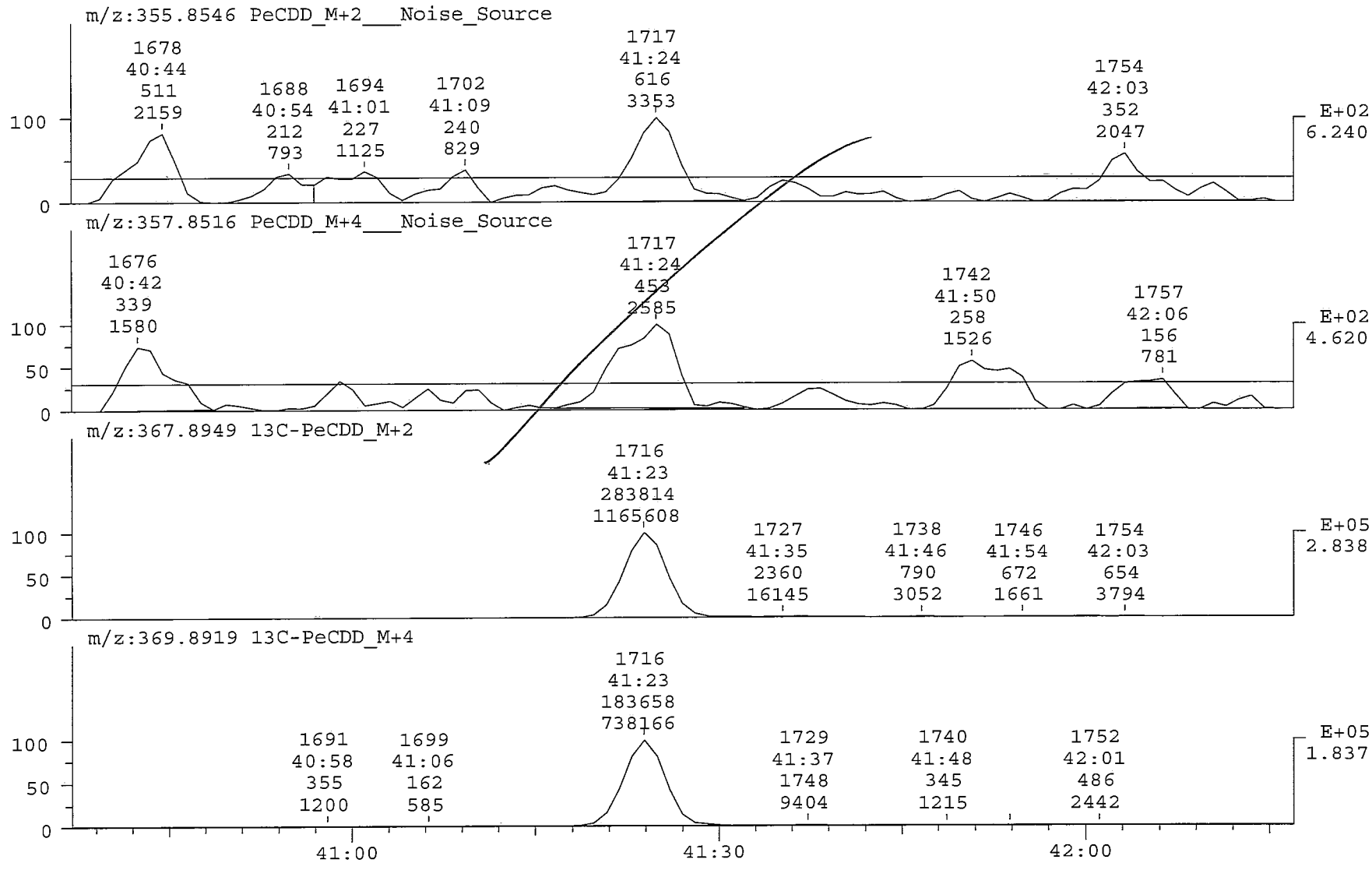
CHRO: d1tm8112 18-Aug-16 Elapse: 30:40 1095
Samp: WO=m81121ac Meth=9Ao Dil=1 Start : 15:08:43 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 625 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



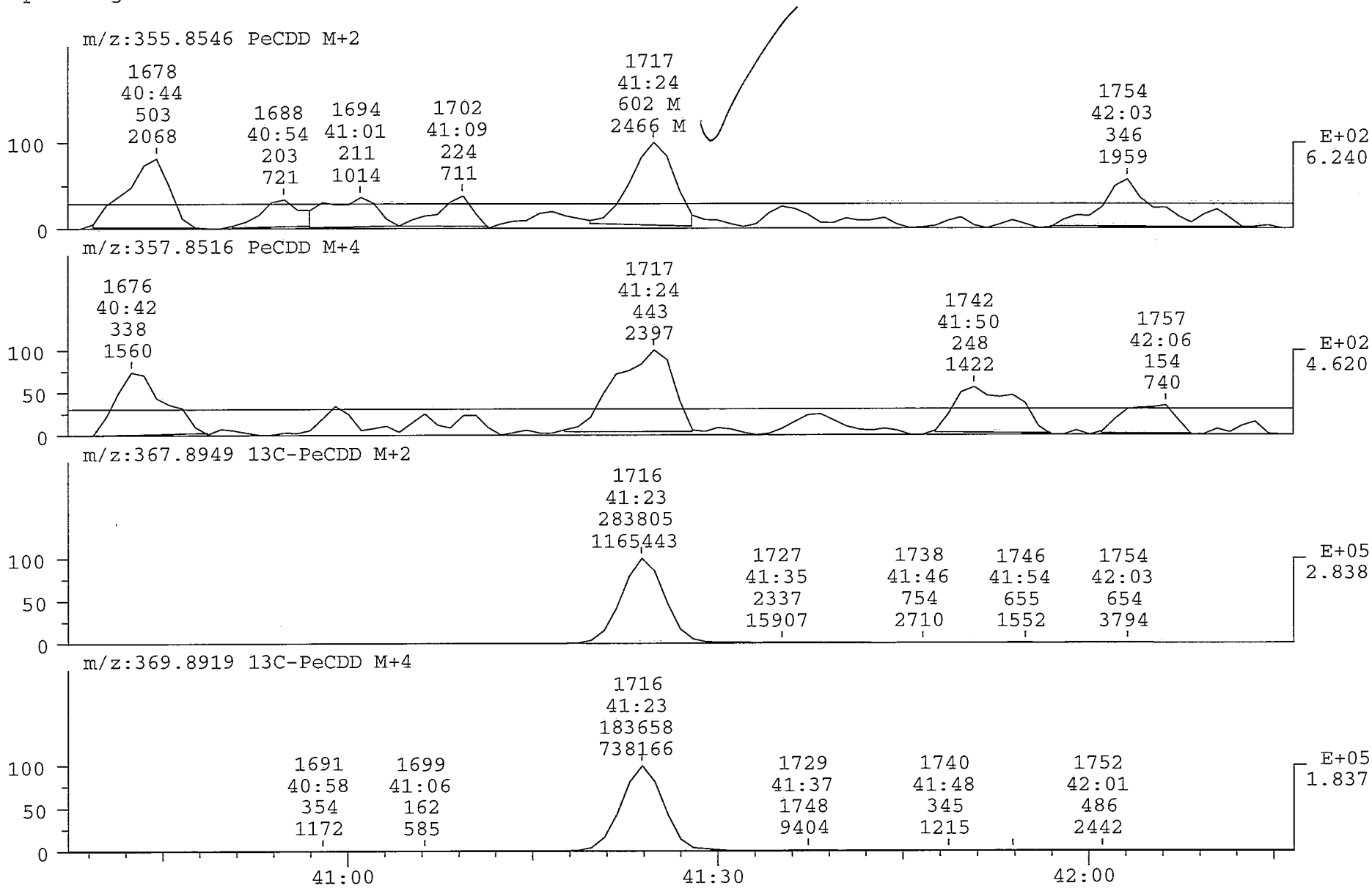
```
CHRO:  d1tm8112                                18-Aug-16  Elapse:  30:40      1095
Samp:  WO=m81121ac Meth=9Ao Dil=1                         Start :  15:08:43   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.6g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   625 > 1400           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



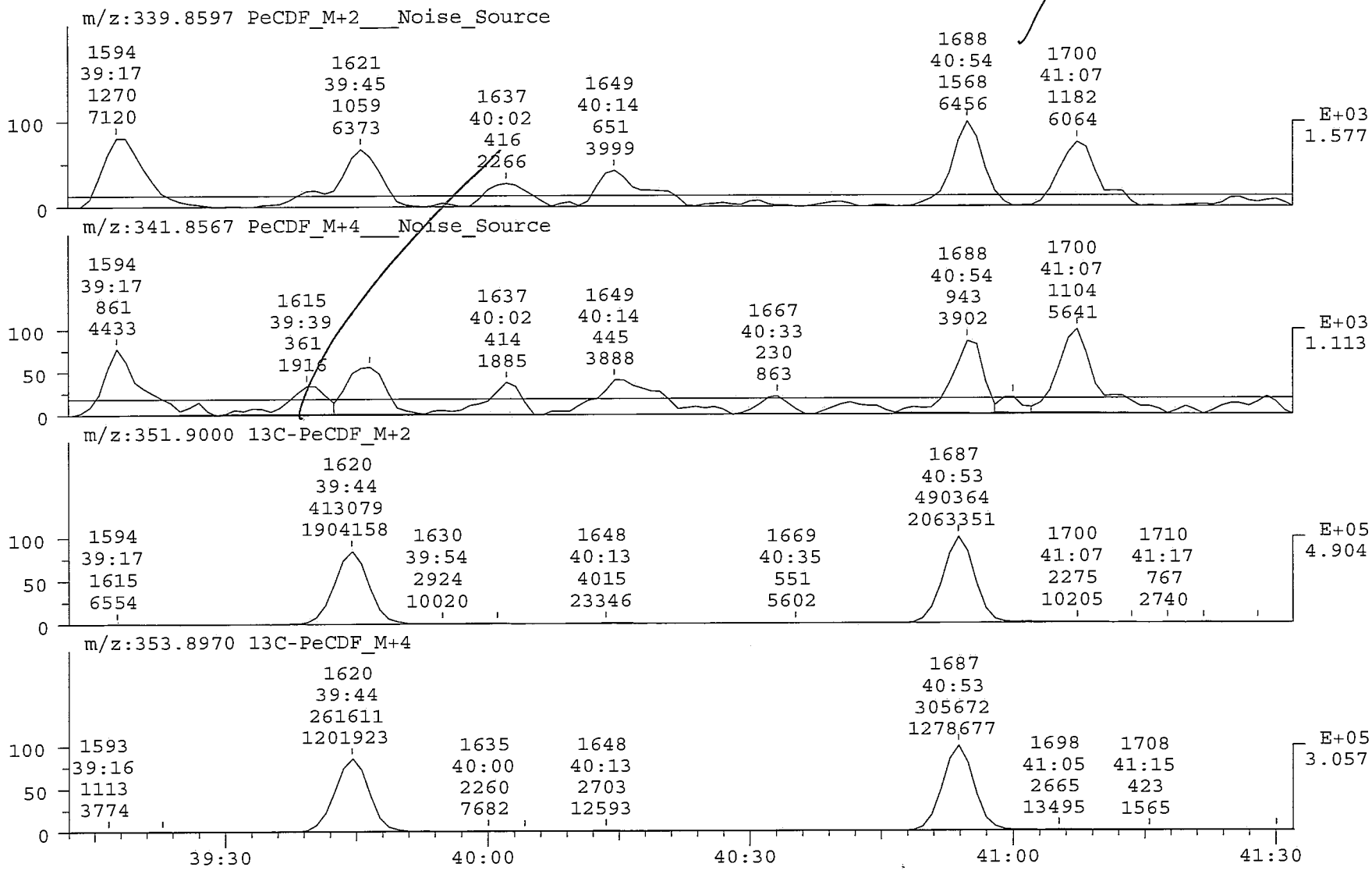
CHRO: d1tm8112 18-Aug-16 Elapse: 41:23 1716
Samp: WO=m81121ac Meth=9Ao Dil=1 Start : 15:08:43 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1671 > 1767 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



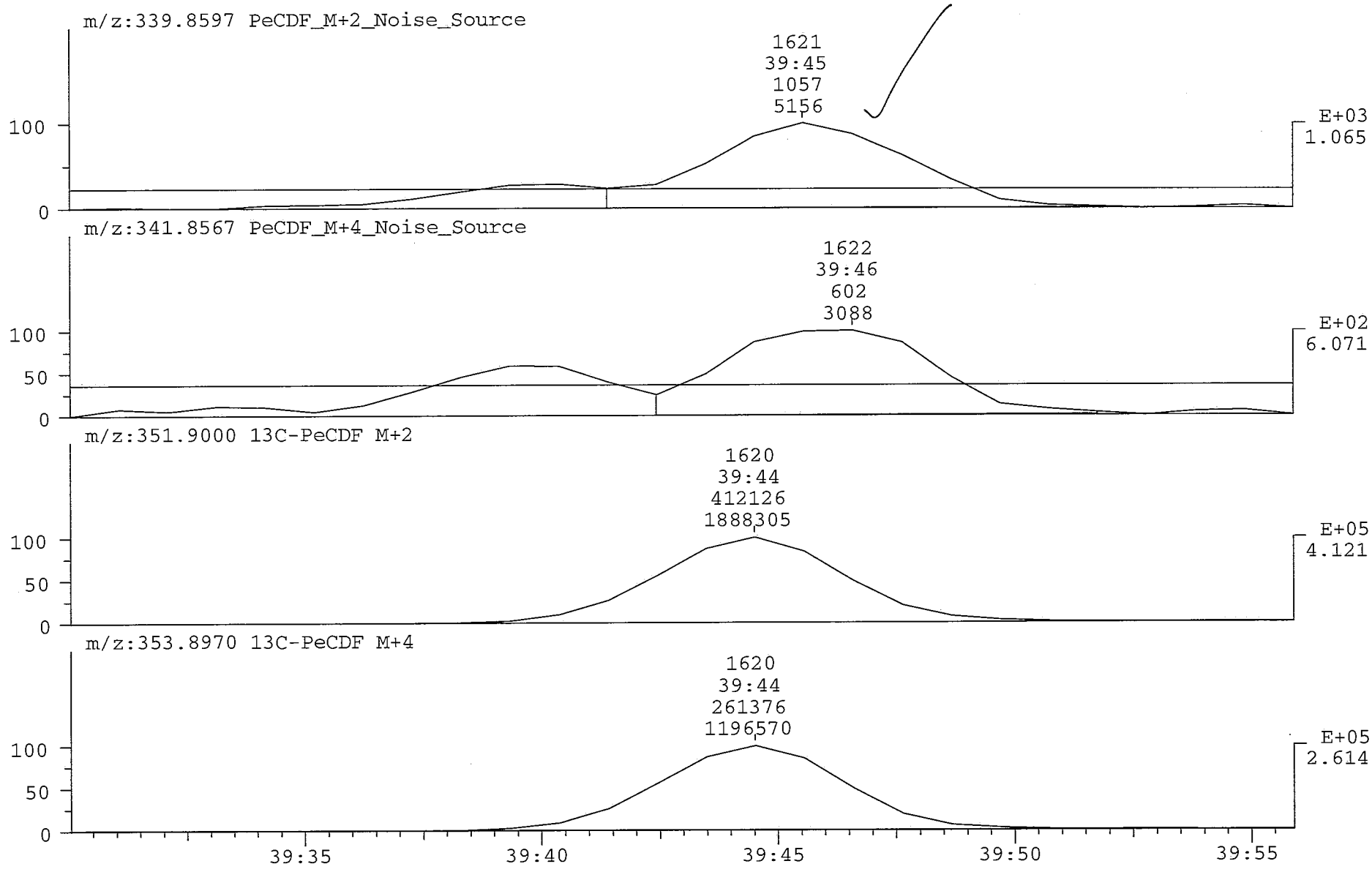
CHRO: d1tm8112 18-Aug-16 Elapse: 12:03.4 1
Samp: WO=m81121ac Meth=9Ao Dil=1 Start : 15:08:43 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1671 > 1767 Masses: 303 > 514
Area: 5, 1.00, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



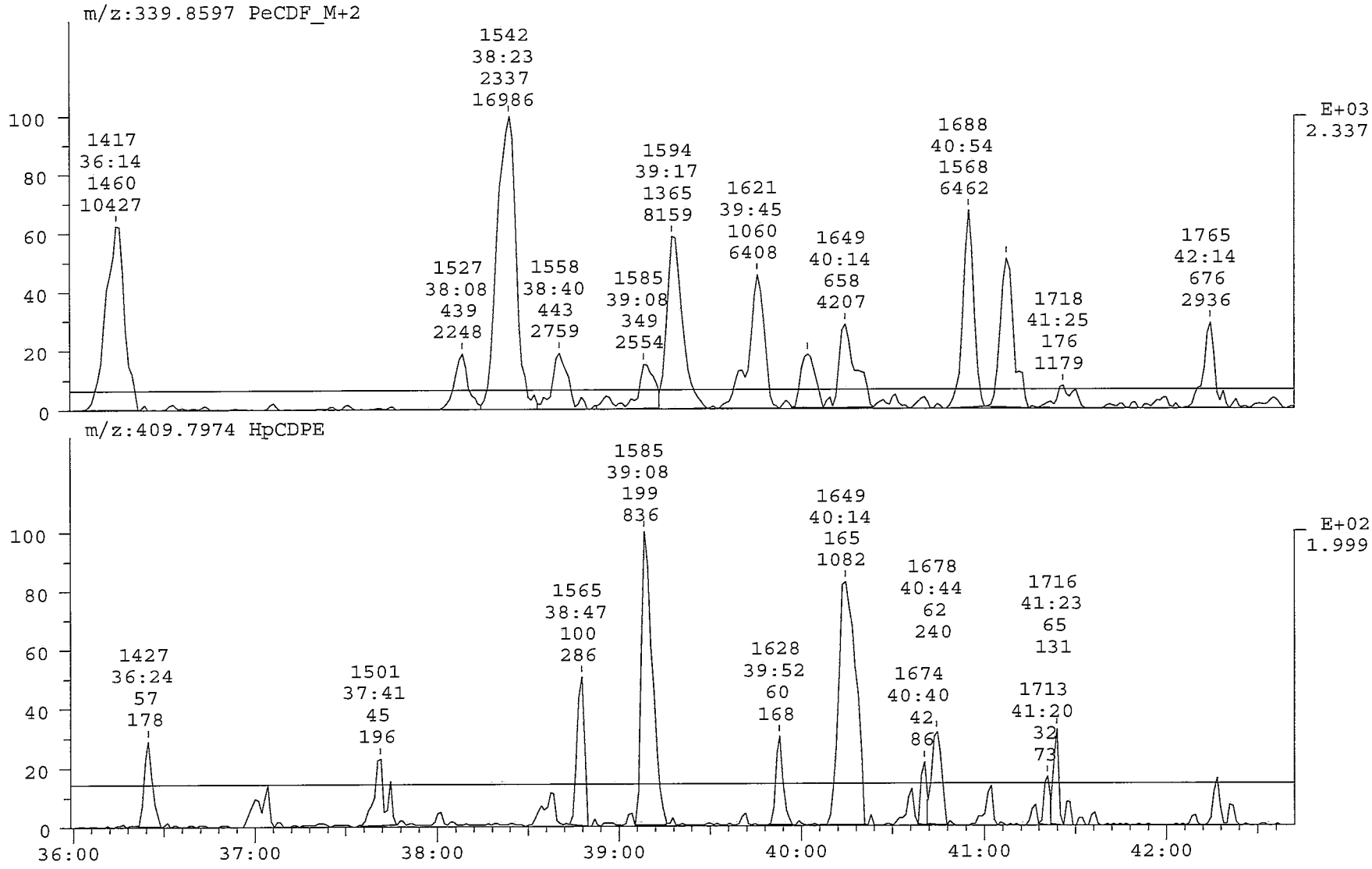
CHRO: d1tm8112 18-Aug-16 Elapse: 40:21 1656
Samp: WO=m81121ac Meth=9Ao Dil=1 Start : 15:08:43 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1589 > 1724 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



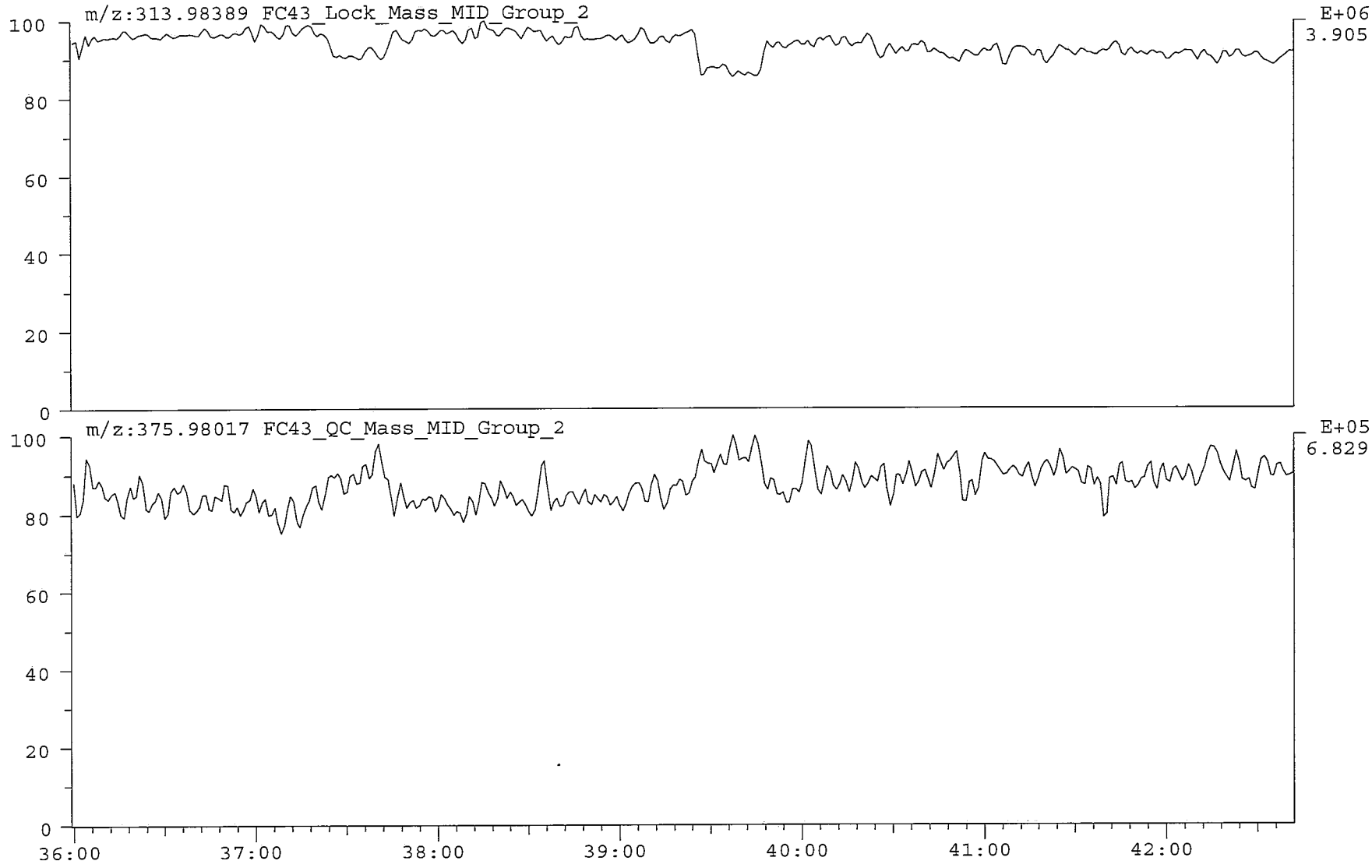
CHRO: d1tm8112 18-Aug-16 Elapse: 39:45 1621
Samp: WO=m81121ac Meth=9Ao Dil=1 Start : 15:08:43 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1618 > 1624 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 2 Label : -2, 5.0
Disp: Height Area



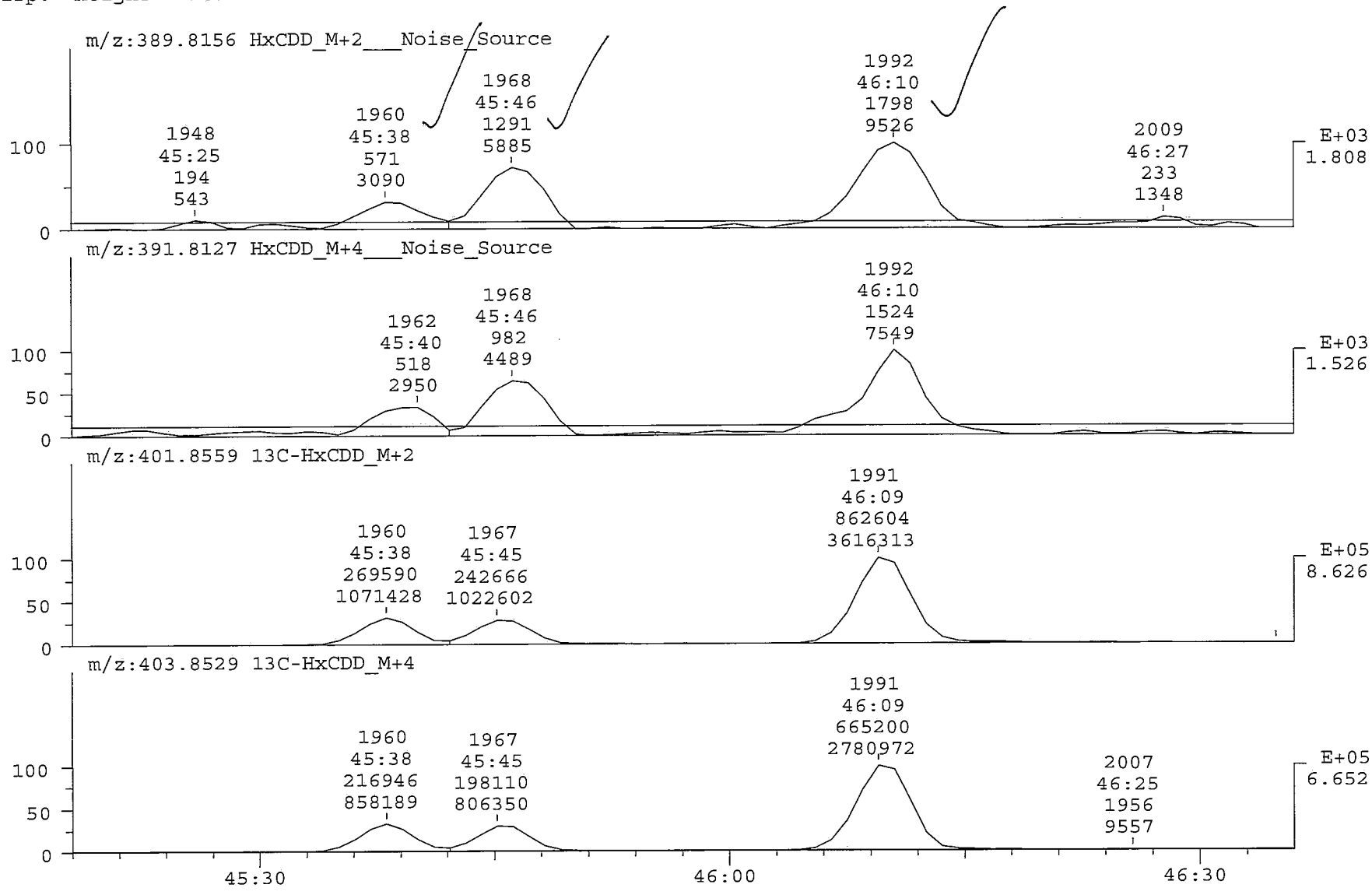
```
CHRO:  d1tm8112                                18-Aug-16  Elapse:  40:21      1656
Samp:  WO=m81121ac Meth=9Ao Dil=1                         Start :  15:08:43   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.6g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1792          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



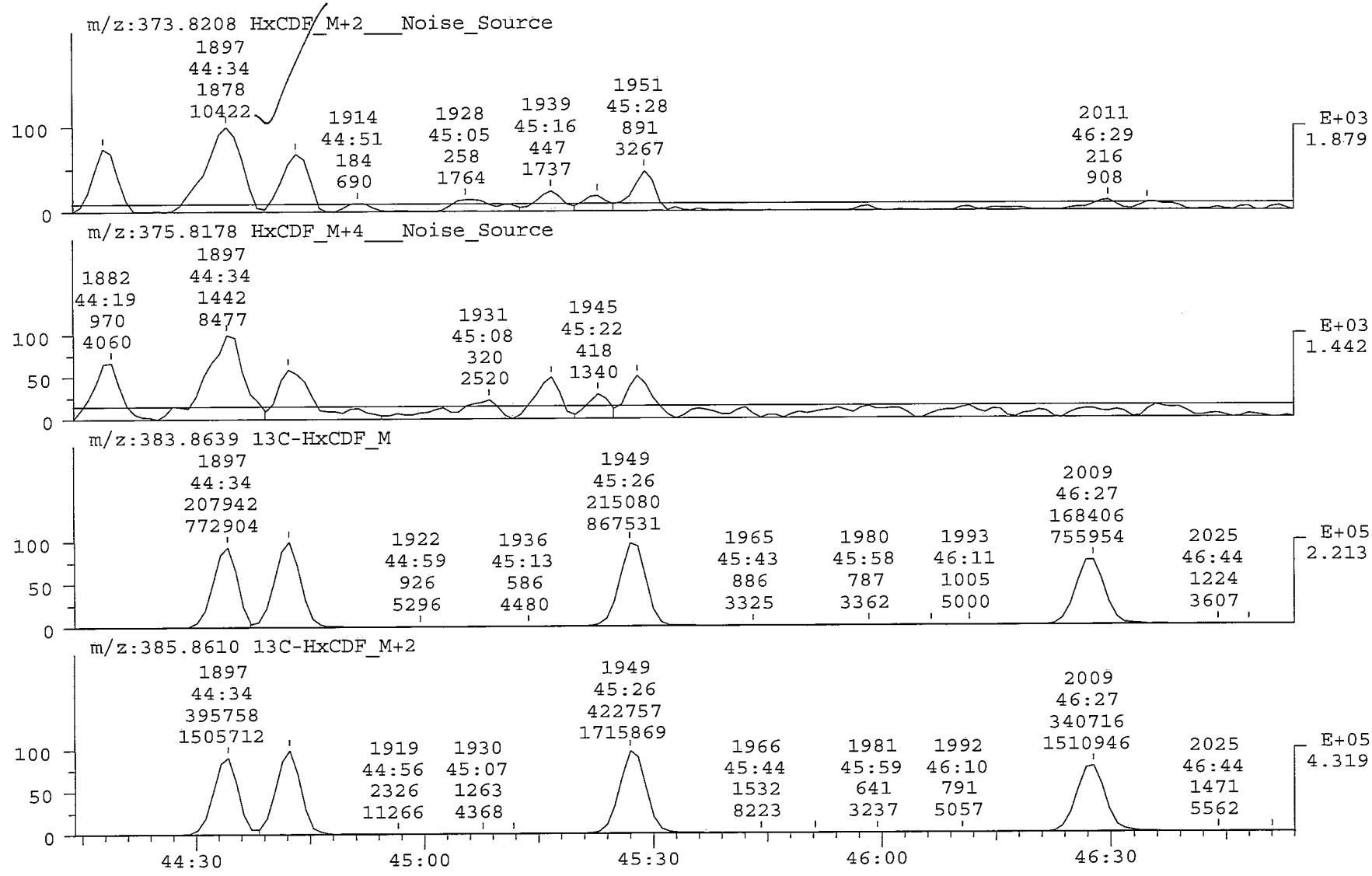
```
CHRO:  d1tm8112                                18-Aug-16  Elapse:  40:21      1656
Samp:  WO=m81121ac Meth=9Ao Dil=1                         Start :  15:08:43   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.6g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1792          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



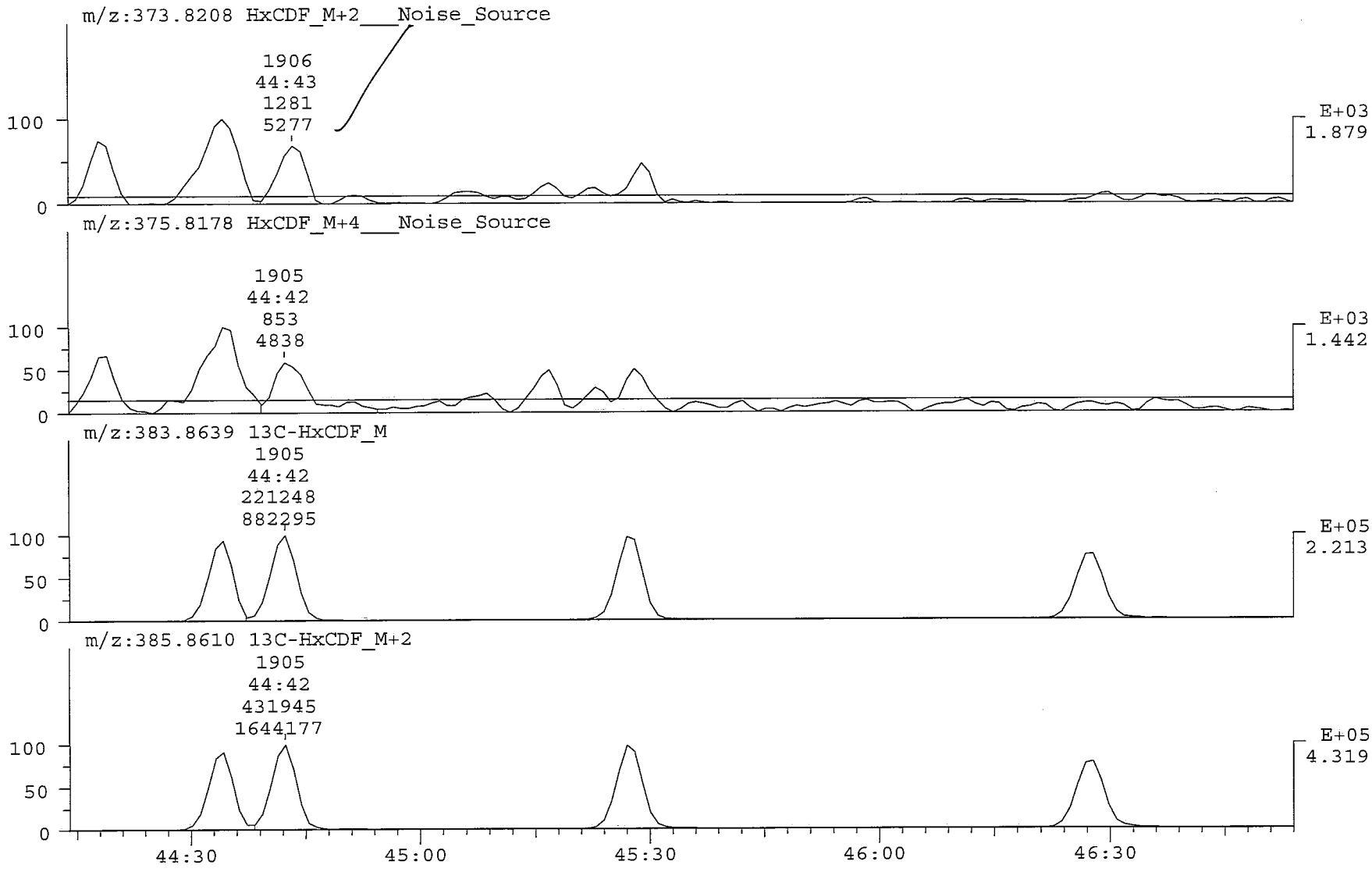
CHRO: d1tm8112 18-Aug-16 Elapse: 45:57 1979
Samp: WO=m81121ac Meth=9Ao Dil=1 Start : 15:08:43 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1940 > 2017 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



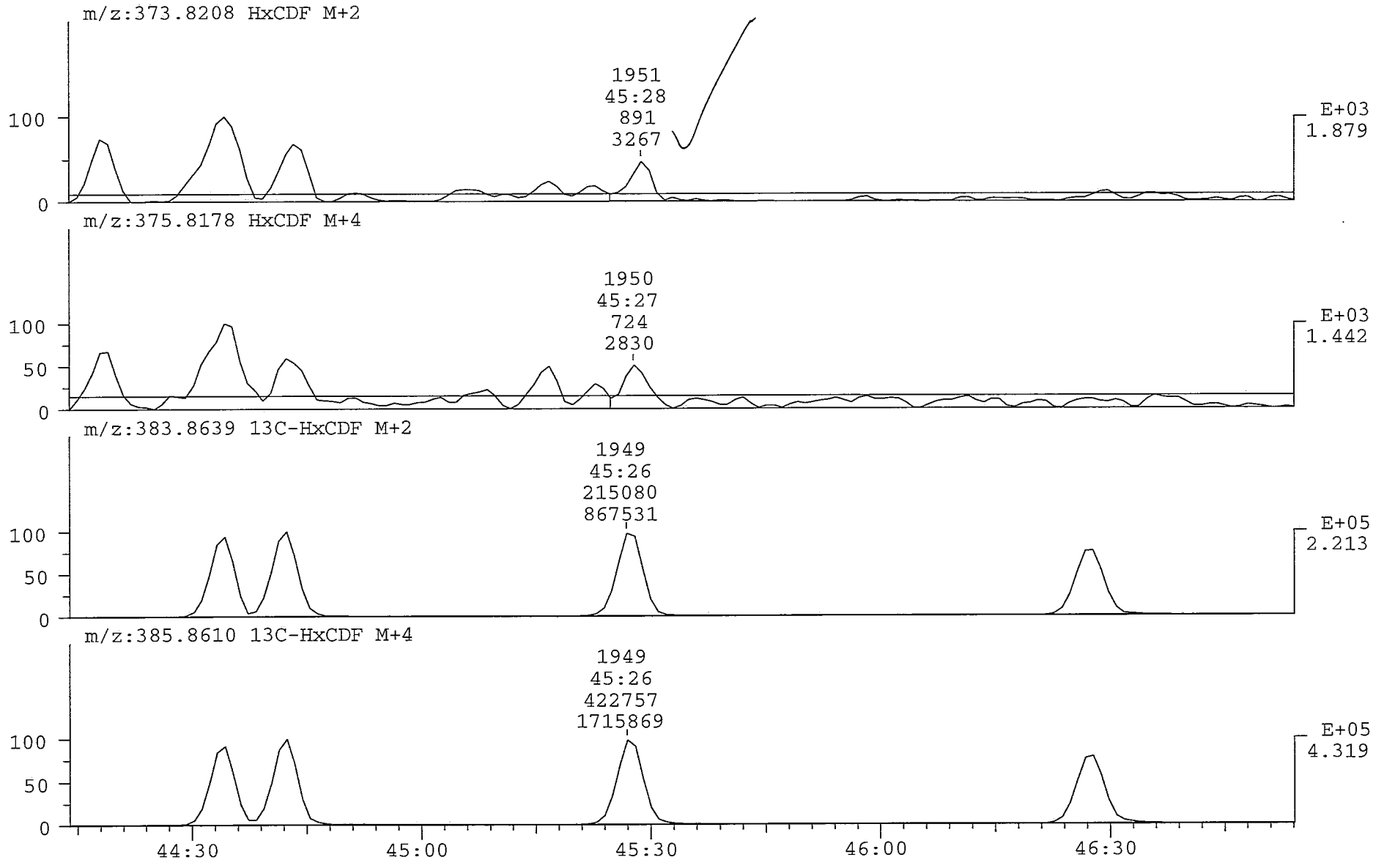
CHRO: d1tm8112 18-Aug-16 Elapse: 45:34 1956
Samp: WO=m81121ac Meth=9Ao Dil=1 Start : 15:08:43 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1877 > 2035 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



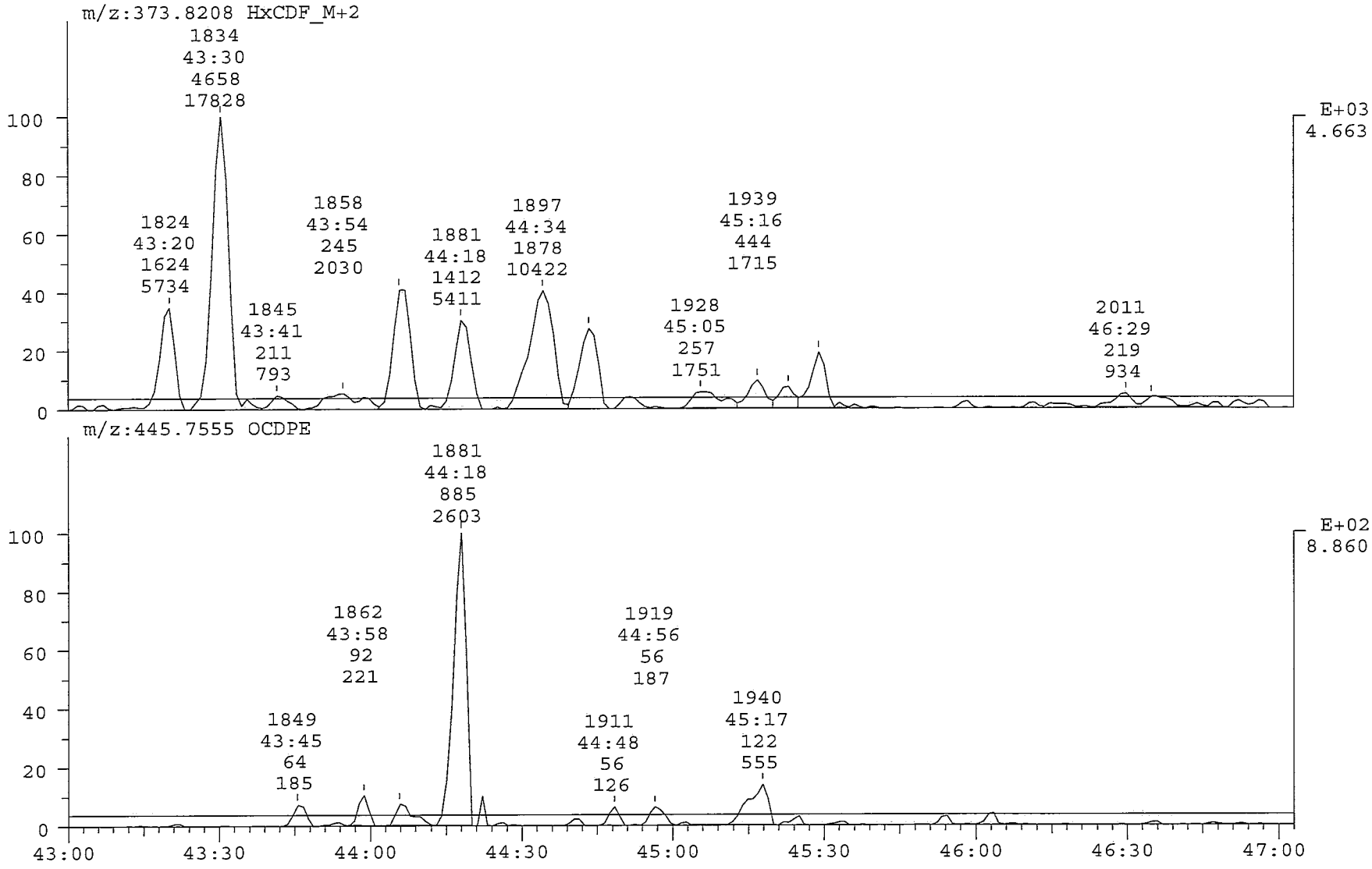
```
CHRO:  d1tm8112                                18-Aug-16  Elapse:  44:42      1905
Samp:  WO=m81121ac Meth=9Ao Dil=1                         Start :  15:08:43   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.6g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1901 > 1909          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



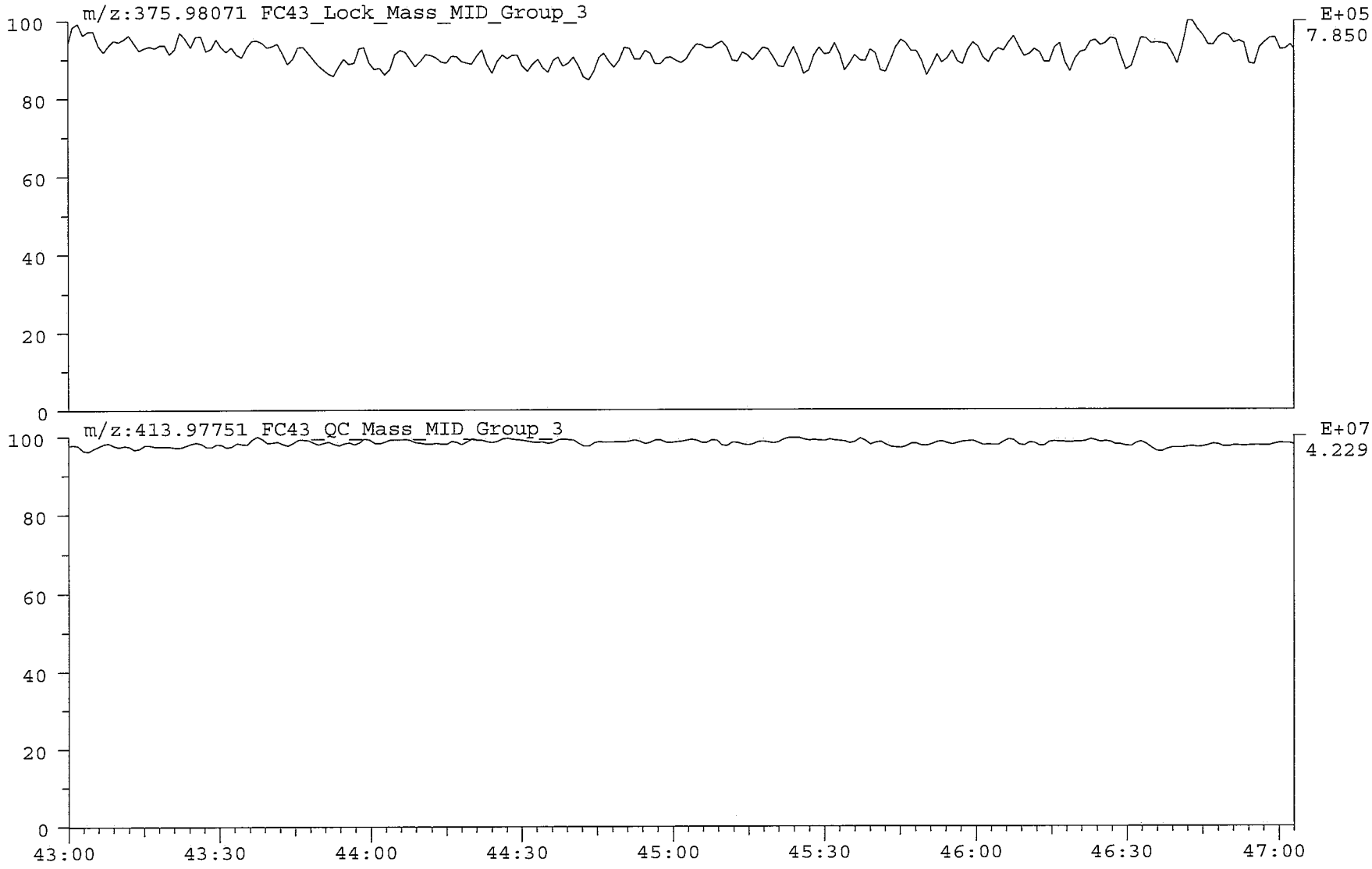
CHRO: d1tm8112 18-Aug-16 Elapse: 45:28 1951
Samp: WO=m81121ac Meth=9Ao Dil=1 Start : 15:08:43 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1948 > 1954 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



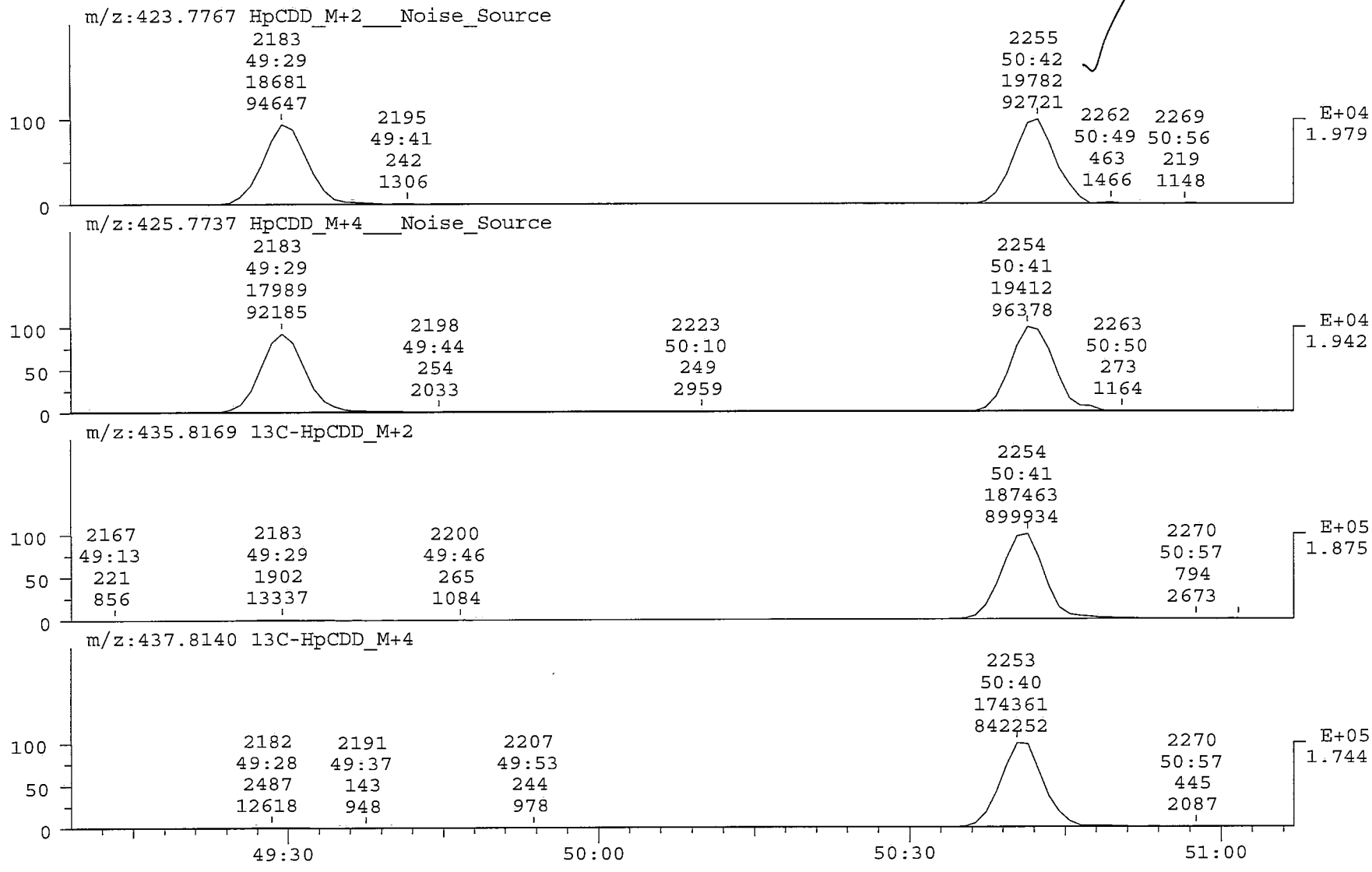
```
CHRO:  d1tm8112                                18-Aug-16  Elapse:  44:42      1905
Samp:  WO=m81121ac Meth=9Ao Dil=1                         Start :  15:08:43   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.6g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1804 > 2044          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



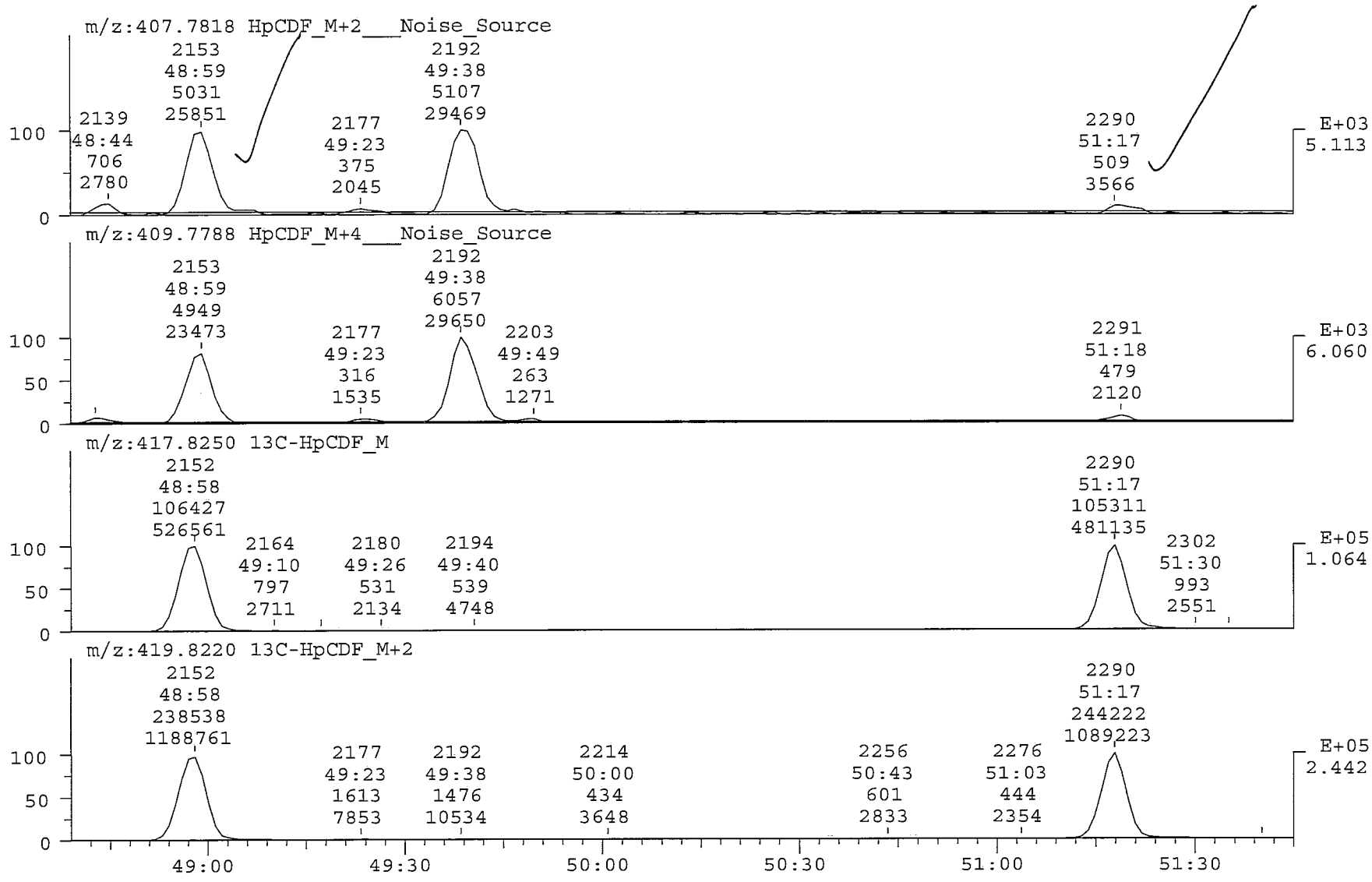
```
CHRO:  d1tm8112                                18-Aug-16  Elapse:  44:42      1905
Samp:  WO=m81121ac Meth=9Ao Dil=1                         Start :  15:08:43   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.6g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1804 > 2044          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



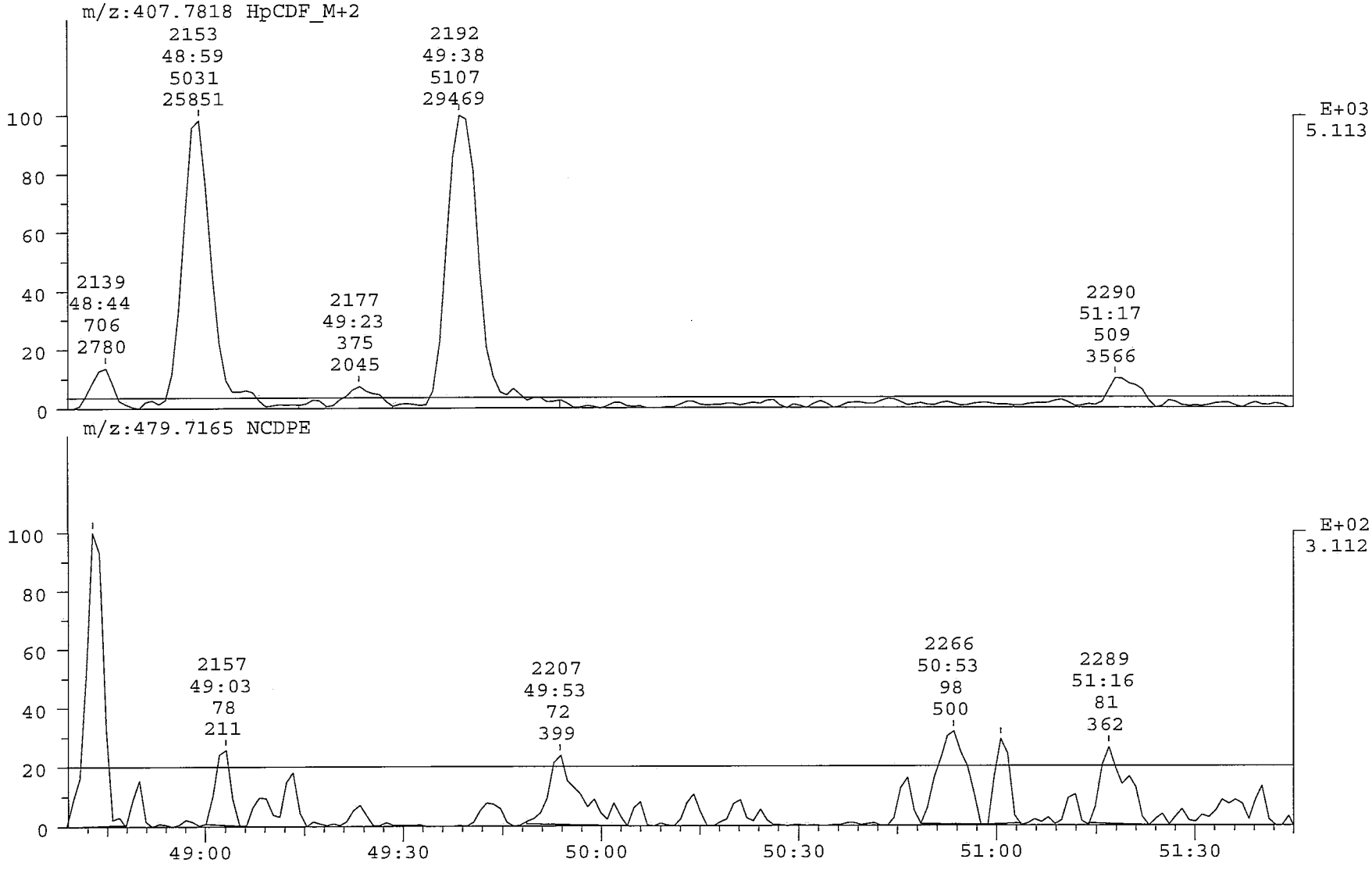
CHRO: d1tm8112 18-Aug-16 Elapse: 44:42 1905
Samp: WO=m81121ac Meth=9Ao Dil=1 Start : 15:08:43 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2163 > 2279 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



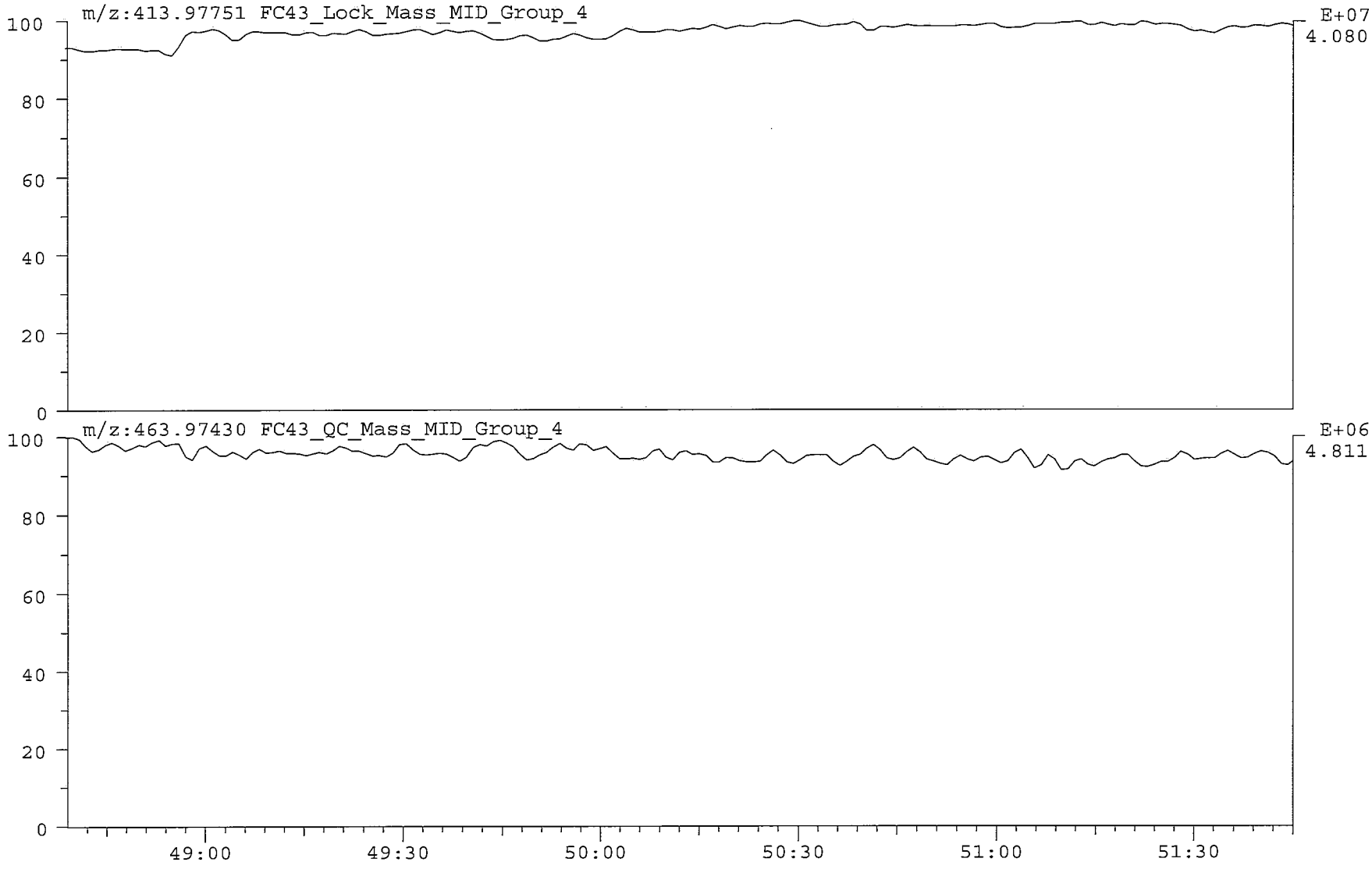
CHRO: d1tm8112 18-Aug-16 Elapse: 50:12 2225
Samp: WO=m81121ac Meth=9Ao Dil=1 Start : 15:08:43 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2317 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



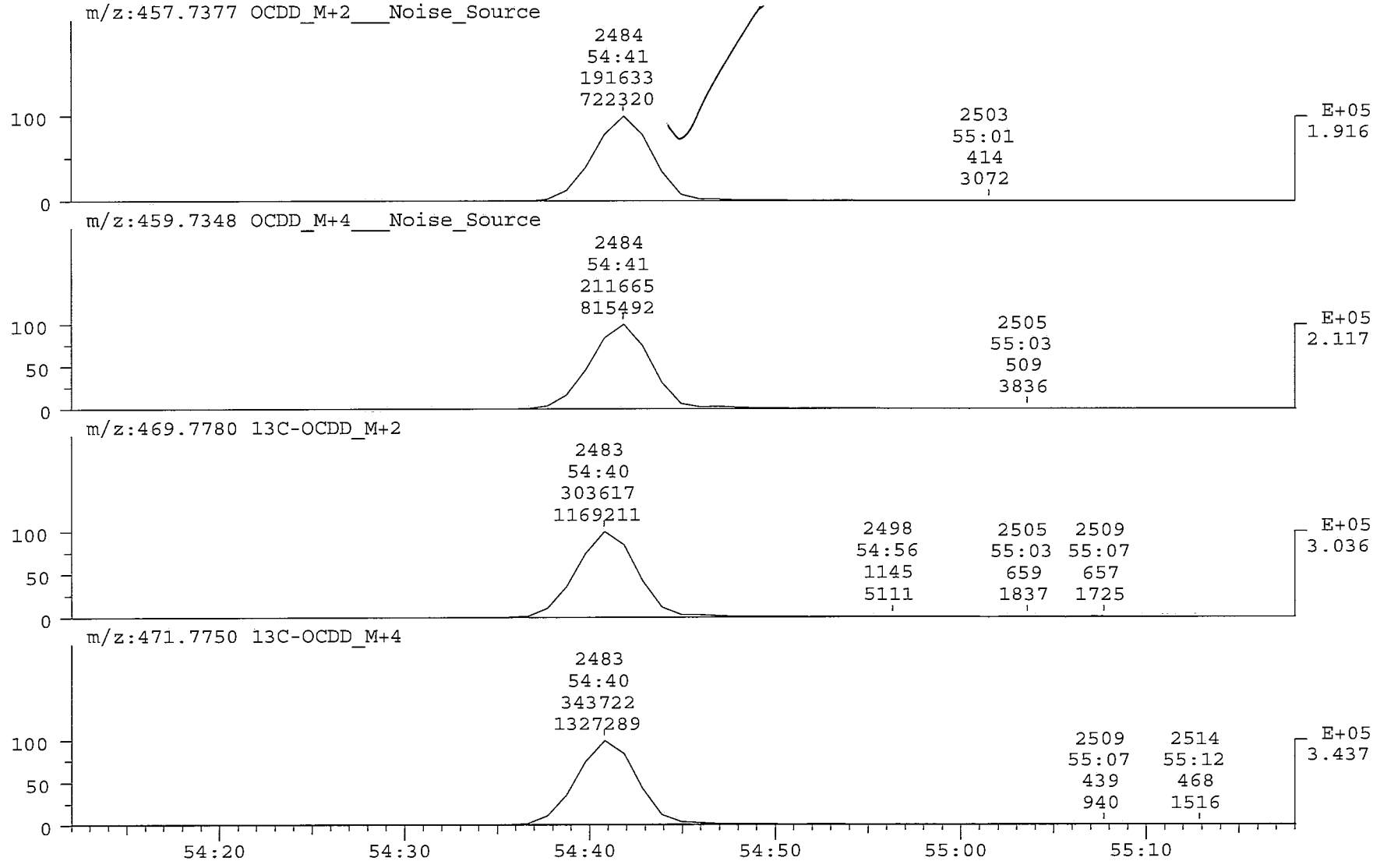
```
CHRO:  d1tm8112                                18-Aug-16  Elapse:  50:12      2225
Samp:  WO=m81121ac Meth=9Ao Dil=1                         Start :  15:08:43   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.6g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2133 > 2317          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



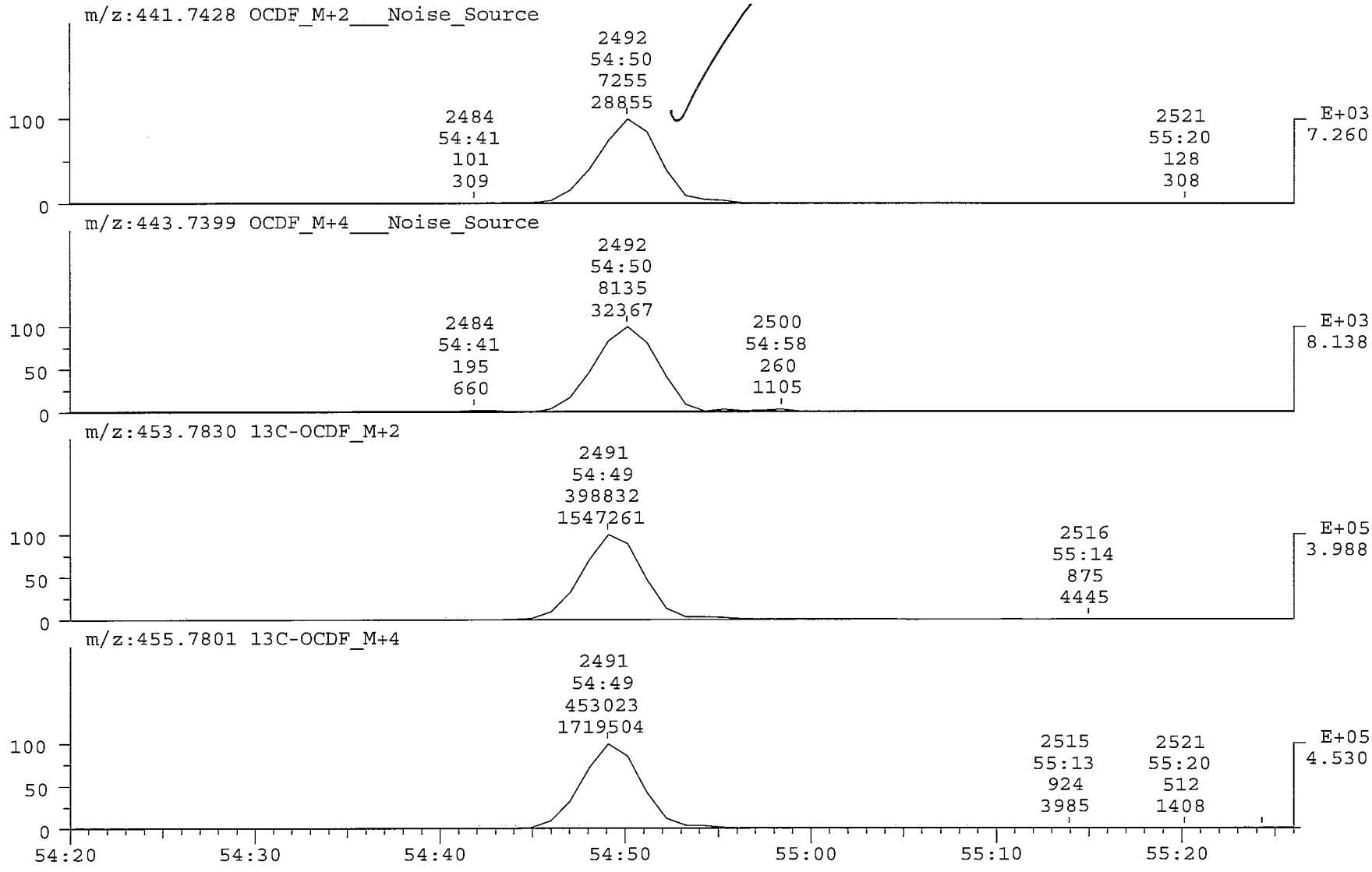
```
CHRO:  d1tm8112                                18-Aug-16  Elapse:  50:12      2225
Samp:  WO=m81121ac Meth=9Ao Dil=1                         Start :  15:08:43   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.6g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2133 > 2317          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



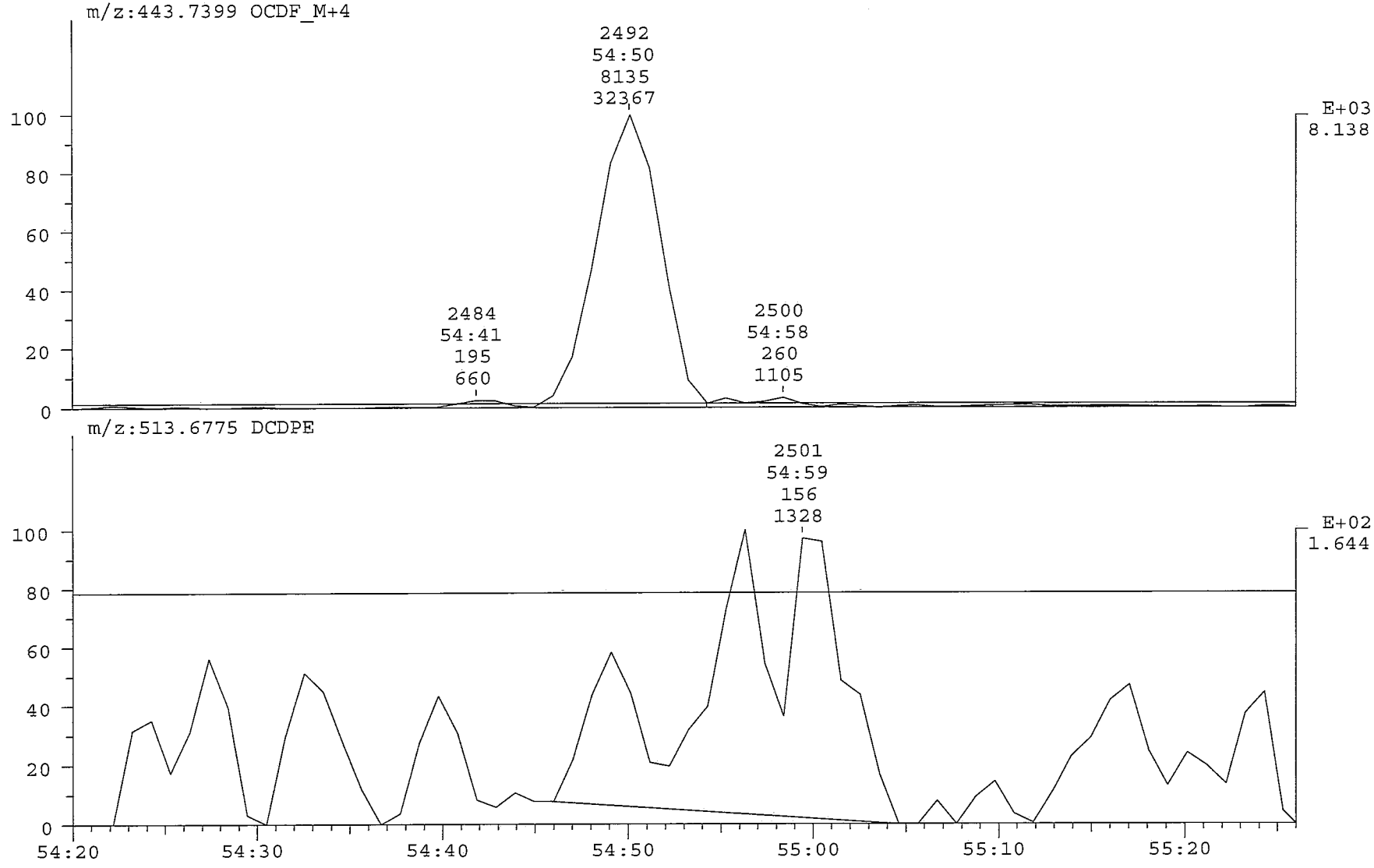
CHRO: d1tm8112 18-Aug-16 Elapse: 54:41 2484
Samp: WO=m81121ac Meth=9Ao Dil=1 Start : 15:08:43 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2455 > 2519 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



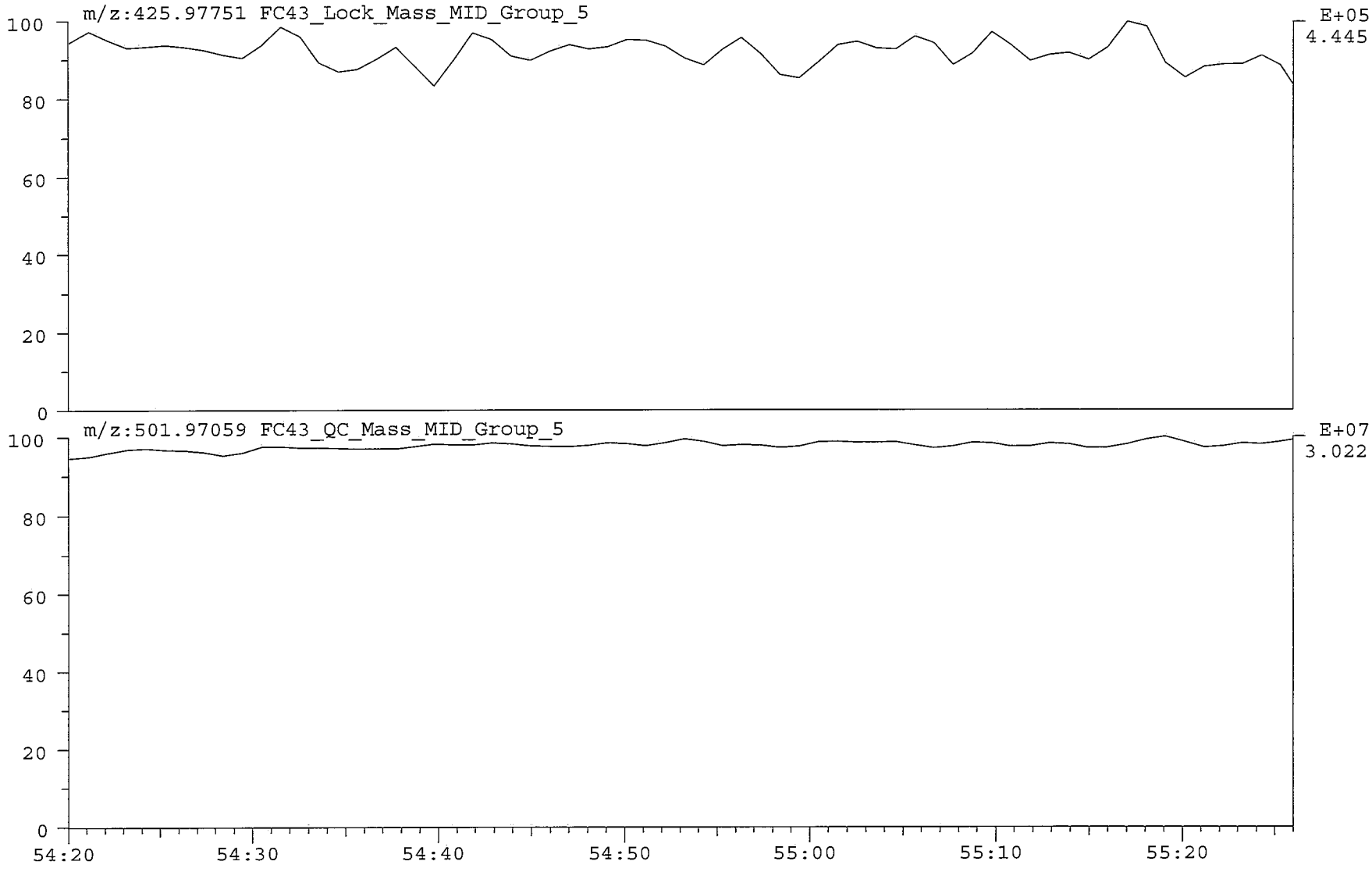
CHRO: d1tm8112 18-Aug-16 Elapse: 54:50 2492
Samp: WO=m81121ac Meth=9Ao Dil=1 Start : 15:08:43 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2463 > 2527 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d1tm8112                                18-Aug-16  Elapse:  54:50      2492
Samp:  WO=m81121ac Meth=9Ao Dil=1                         Start :  15:08:43   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.6g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2463 > 2527          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1tm8112                                18-Aug-16  Elapse:  54:50      2492
Samp:  WO=m81121ac Meth=9Ao Dil=1                         Start :  15:08:43   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.6g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2463 > 2527          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Thu Aug 18 15:13:09 2016 ***

```
Started by                - Xcalibur
Instrument Internet name  - DFS MS
Instrument model          - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01
```

Analysis started at: 18-Aug-16 15:13:08

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160818104941

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

```
 375.9802    20  1        7
 383.8639     5  1       29
 385.8610     5  1       29
 389.8158     1  1      146
 391.8127     1  1      146
 401.8559     5  1       29
 403.8529     5  1       29
 413.9770 c  20  1        7
 413.9770    20  1        7
 445.7555     1  1      146
Window # 4
     mass F  int  gr  time (ms)
 407.7817     1  1      146
 409.7788     1  1      146
 413.9770 l  20  1        7
 413.9770    20  1        7
 417.8250     5  1       29
 419.8220     5  1       29
 423.7767     1  1      146
 425.7737     1  1      146
 435.8169     5  1       29
 437.8140     5  1       29
 463.9738 c  20  1        7
 463.9738    20  1        7
 479.7165     1  1      146
Window # 5
     mass F  int  gr  time (ms)
 425.9770 l  20  1        7
 425.9770    20  1        7
 441.7428     1  1      146
 443.7399     1  1      146
 453.7830     5  1       29
 455.7801     5  1       29
 457.7377     1  1      146
 459.7348     1  1      146
 469.7780     5  1       29
 471.7750     5  1       29
 501.9706 c  20  1        7
 501.9706    20  1        7
 513.6775     1  1      146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          309.4834
 BQUAD            2.4000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE      18.0000   ECORR           1.0008   ECURR            1.0000
 EDAC        7969177.0000  EDACG           0.9997   EDACZ         2585.8226
 ELEN           -45.0000   EMULT        1802.0000   ENS            210.0000
 ENSBR            2.4000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           172.0000   EXSBR            2.5000
 FDMA       18000000.0000  FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            6.7000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0477	FVSRC	0.0396
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	620.0000
LENS_SYM	-4.7500	LM	375.8364	LMII	500.0000
LMASS	309.4834	LKM	425.9770	MASS	309.4834
MDAC	3559369.1559	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2650.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-7.0000	RECURR	0.8987	RELEN	0.0000
RES	12455.5288	RPUSHER	-6.9817	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0986	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	309.4834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:        2.6e-005 mbar
Analyzer Penning:    9.5e-008 mbar
Pirani Analyse:      4.4e-003 mbar
Pirani Source:       4.0e-002 mbar
Pirani Inlet System: 4.8e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 12117.
MID Time Window 2: Resolution is 12657.
MID Time Window 3: Resolution is 12443.
MID Time Window 4: Resolution is 11978.
MID Time Window 5: Resolution is 12455.

Amplifier Offset: 89.


*** File closed Thu Aug 18 16:10:22 2016
  ***
```

QUAN: d1tm8112.q0 Entries: 273

Data file(s) used
File: d1tm8112 18-Aug-16
Samp: WO=m81121ac Meth=9Ao Dil=1 Start : 15:08:43 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:49	902.	127.	32:44	32:58	9.	1	1.0	ABV
321.8775	32:40	720.	171.	32:37	32:44	13.	1	1.0	AVB
319.8805	31:24	222.	55.	31:19	31:26	9.	2	5.0	ABV
319.8805	31:28	503.	156.	31:26	31:33	9.	2	5.0	AVB
319.8805	32:15	309.	113.	32:12	32:18	9.	2	5.0	ABV
319.8805	32:20	161.	82.	32:18	32:21	9.	2	5.0	AVV
319.8805	32:23	266.	111.	32:21	32:25	9.	2	5.0	AVB
319.8805	32:34	445.	170.	32:29	32:36	9.	2	5.0	ABB
319.8805	32:38	347.	115.	32:36	32:43	9.	2	5.0	ABB
319.8805	32:49	1023.	127.	32:44	33:03	9.	2	5.0	ABB
321.8775	31:30	673.	117.	31:17	31:32	13.	2	5.0	ABV
321.8775	31:34	473.	133.	31:32	31:41	13.	2	5.0	AVB
321.8775	32:35	434.	122.	32:29	32:37	13.	2	5.0	ABV
321.8775	32:40	720.	171.	32:37	32:44	13.	2	5.0	AVB
321.8775	32:52	627.	145.	32:47	32:57	13.	2	5.0	ABB
321.8775	33:24	338.	87.	33:20	33:27	13.	2	5.0	ABB
321.8775	34:00	607.	133.	33:55	34:03	13.	2	5.0	ABB
331.9202	32:17	2800580.	282175.	32:01	32:32	128.	2	5.0	AVV
331.9202	32:51	971715.	96651.	32:35	33:06	128.	2	5.0	AVV
333.9171	32:17	3513303.	361083.	32:01	32:32	166.	2	5.0	ABV
333.9171	32:52	1170092.	114135.	32:36	33:07	166.	2	5.0	AVV
333.9171	33:12	4873.	1045.	33:10	33:20	166.	2	5.0	AVB
303.8864	32:04	5242.	598.	31:50	32:07	28.	1	1.0	ABV
305.8834	29:35	6744.	823.	29:25	29:44	30.	1	1.0	ABB
303.8864	29:32	3228.	543.	29:24	29:36	28.	2	5.0	ABV
303.8864	29:38	1752.	483.	29:36	29:42	28.	2	5.0	AVB
303.8864	30:13	5207.	537.	29:59	30:22	28.	2	5.0	ABB
303.8864	30:45	4603.	778.	30:37	30:47	28.	2	5.0	ABV
303.8864	30:49	4074.	839.	30:47	30:54	28.	2	5.0	AVV
303.8864	30:56	1989.	513.	30:54	31:02	28.	2	5.0	AVB
303.8864	32:04	5242.	598.	31:50	32:07	28.	2	5.0	ABV
303.8864	32:09	876.	312.	32:07	32:11	28.	2	5.0	AVB
305.8834	29:35	6744.	823.	29:25	29:44	30.	2	5.0	ABB
305.8834	30:13	6811.	889.	29:58	30:29	30.	2	5.0	AVV
305.8834	30:43	4687.	917.	30:34	30:45	30.	2	5.0	ABV
305.8834	30:47	3352.	994.	30:45	30:49	30.	2	5.0	AVV
305.8834	30:54	6294.	853.	30:49	31:05	30.	2	5.0	AVB
305.8834	32:01	6322.	817.	31:53	32:16	30.	2	5.0	ABB
315.9261	29:32	3924.	631.	29:27	29:39	71.	2	5.0	ABB
315.9261	29:43	1405.	376.	29:39	29:45	71.	2	5.0	ABB
315.9261	30:42	1475709.	154730.	30:27	30:57	71.	2	5.0	ABV
315.9261	31:00	7269.	1930.	30:57	31:03	71.	2	5.0	AVB
315.9261	31:05	1975.	608.	31:03	31:08	71.	2	5.0	ABV
315.9261	31:11	2531.	654.	31:08	31:14	71.	2	5.0	AVV
315.9261	31:16	3812.	515.	31:14	31:31	71.	2	5.0	AVV
315.9261	32:06	2334.	652.	31:59	32:08	71.	2	5.0	ABV
315.9261	32:13	1813.	525.	32:08	32:15	71.	2	5.0	AVV
315.9261	32:22	2510.	592.	32:15	32:24	71.	2	5.0	AVB
317.9230	29:22	902.	349.	29:20	29:25	59.	2	5.0	ABB
317.9230	29:33	6857.	1112.	29:25	29:42	59.	2	5.0	ABB

317.9230	30:42	1926436.	202845.	30:27	30:57	59.	2	5.0	ABV
317.9230	31:02	8147.	1382.	31:00	31:14	59.	2	5.0	AVV
317.9230	31:16	1571.	599.	31:14	31:18	59.	2	5.0	AVV
317.9230	31:20	1119.	403.	31:18	31:22	59.	2	5.0	AVV
317.9230	31:24	1598.	357.	31:22	31:28	59.	2	5.0	AVB
317.9230	31:31	1172.	361.	31:28	31:34	59.	2	5.0	ABB
317.9230	32:05	2546.	696.	31:59	32:08	59.	2	5.0	ABB
317.9230	32:19	1981.	556.	32:13	32:21	59.	2	5.0	ABB
355.8368	41:24	2787.	616.	41:19	41:32	36.	1	1.0	AVB
357.8337	41:24	2524.	453.	41:16	41:29	28.	1	1.0	ABV
355.8368	40:44	2159.	511.	40:38	40:47	36.	2	5.0	ABB
355.8368	40:54	793.	212.	40:49	40:57	36.	2	5.0	ABV
355.8368	41:01	1125.	227.	40:57	41:04	36.	2	5.0	AVV
355.8368	41:09	829.	240.	41:04	41:11	36.	2	5.0	AVB
355.8368	41:24	3353.	616.	41:11	41:32	36.	2	5.0	ABB
355.8368	42:03	2047.	352.	41:57	42:12	36.	2	5.0	ABB
357.8337	40:42	1580.	339.	40:39	40:48	28.	2	5.0	ABB
357.8337	41:24	2585.	453.	41:16	41:32	28.	2	5.0	ABB
357.8337	41:50	1526.	258.	41:46	41:57	28.	2	5.0	ABB
357.8337	42:06	781.	156.	42:00	42:08	28.	2	5.0	ABB
367.8765	41:23	1165608.	283814.	41:16	41:33	57.	2	5.0	ABV
367.8765	41:35	16145.	2360.	41:33	41:42	57.	2	5.0	AVV
367.8765	41:46	3052.	790.	41:42	41:51	57.	2	5.0	AVV
367.8765	41:54	1661.	672.	41:51	41:57	57.	2	5.0	AVB
367.8765	42:03	3794.	654.	41:57	42:06	57.	2	5.0	ABB
369.8734	40:58	1200.	355.	40:52	41:01	25.	2	5.0	ABB
369.8734	41:06	585.	162.	41:02	41:09	25.	2	5.0	ABB
369.8734	41:23	738166.	183658.	41:15	41:32	25.	2	5.0	ABV
369.8734	41:37	9404.	1748.	41:32	41:43	25.	2	5.0	AVV
369.8734	41:48	1215.	345.	41:43	41:50	25.	2	5.0	AVV
369.8734	41:53	1032.	316.	41:50	41:56	25.	2	5.0	AVB
369.8734	42:01	2442.	486.	41:58	42:08	25.	2	5.0	ABB
339.8427	39:17	7120.	1270.	39:13	39:28	41.	1	1.0	ABB
341.8396	41:07	5641.	1104.	41:02	41:17	40.	1	1.0	AVB
339.8427	39:17	7120.	1270.	39:13	39:28	41.	2	5.0	ABB
339.8427	39:45	6373.	1059.	39:33	39:52	41.	2	5.0	ABB
339.8427	40:02	2266.	416.	39:58	40:07	41.	2	5.0	ABB
339.8427	40:14	3999.	651.	40:10	40:23	41.	2	5.0	ABB
339.8427	40:54	6456.	1568.	40:47	41:00	41.	2	5.0	ABB
339.8427	41:07	6064.	1182.	41:01	41:14	41.	2	5.0	ABB
341.8396	39:17	4433.	861.	39:12	39:29	40.	2	5.0	ABB
341.8396	39:39	1916.	361.	39:30	39:42	40.	2	5.0	ABV
341.8396	39:46	3179.	610.	39:42	39:52	40.	2	5.0	AVB
341.8396	40:02	1885.	414.	39:52	40:05	40.	2	5.0	ABB
341.8396	40:14	3888.	445.	40:06	40:28	40.	2	5.0	ABB
341.8396	40:33	863.	230.	40:29	40:36	40.	2	5.0	ABB
341.8396	40:54	3902.	943.	40:46	40:58	40.	2	5.0	ABV
341.8396	41:00	623.	211.	40:58	41:02	40.	2	5.0	AVV
341.8396	41:07	5641.	1104.	41:02	41:17	40.	2	5.0	AVB
351.8824	39:17	6554.	1615.	39:12	39:24	82.	2	5.0	ABB
351.8824	39:44	1904158.	413079.	39:35	39:52	82.	2	5.0	ABV
351.8824	39:54	10020.	2924.	39:52	39:57	82.	2	5.0	AVV
351.8824	40:01	12504.	2836.	39:57	40:04	82.	2	5.0	AVV
351.8824	40:13	23346.	4015.	40:04	40:24	82.	2	5.0	AVV
351.8824	40:35	5602.	551.	40:24	40:42	82.	2	5.0	AVB
351.8824	40:53	2063351.	490364.	40:42	41:05	82.	2	5.0	ABV
351.8824	41:07	10205.	2275.	41:05	41:11	82.	2	5.0	AVV
351.8824	41:13	3419.	1208.	41:11	41:15	82.	2	5.0	AVV
351.8824	41:17	2740.	767.	41:15	41:19	82.	2	5.0	AVV
351.8824	41:21	2878.	912.	41:19	41:23	82.	2	5.0	AVV
351.8824	41:28	3250.	784.	41:23	41:31	82.	2	5.0	AVB
353.8793	39:16	3774.	1113.	39:12	39:18	41.	2	5.0	ABB
353.8793	39:22	1350.	298.	39:19	39:27	41.	2	5.0	ABB
353.8793	39:44	1201923.	261611.	39:34	39:56	41.	2	5.0	ABV
353.8793	40:00	7682.	2260.	39:56	40:03	41.	2	5.0	AVB
353.8793	40:04	740.	409.	40:03	40:06	41.	2	5.0	ABB
353.8793	40:13	12593.	2703.	40:06	40:22	41.	2	5.0	ABB

353.8793	40:53	1278677.	305672.	40:40	41:03	41.	2	5.0 ABV
353.8793	41:05	13495.	2665.	41:03	41:14	41.	2	5.0 AVV
353.8793	41:15	1565.	423.	41:14	41:23	41.	2	5.0 AVB
353.8793	41:30	1738.	476.	41:23	41:32	41.	2	5.0 ABB
389.7961	46:10	9526.	1798.	46:02	46:17	30.	1	1.0 ABB
391.7931	46:10	7163.	1524.	46:03	46:18	34.	1	1.0 AVB
389.7961	45:26	543.	194.	45:22	45:29	30.	2	5.0 ABV
389.7961	45:38	3090.	571.	45:29	45:42	30.	2	5.0 AVV
389.7961	45:46	5885.	1291.	45:42	45:50	30.	2	5.0 AVB
389.7961	46:10	9526.	1798.	46:02	46:17	30.	2	5.0 ABB
389.7961	46:27	1348.	233.	46:18	46:33	30.	2	5.0 ABB
391.7931	45:40	2950.	518.	45:24	45:42	34.	2	5.0 AVV
391.7931	45:46	4489.	982.	45:42	45:51	34.	2	5.0 AVB
391.7931	46:10	7549.	1524.	45:55	46:18	34.	2	5.0 AVB
401.8358	45:38	1071428.	269590.	45:31	45:42	89.	2	5.0 ABV
401.8358	45:45	1022602.	242666.	45:42	46:00	89.	2	5.0 AVV
401.8358	46:09	3616313.	862604.	46:01	46:24	89.	2	5.0 ABV
401.8358	46:34	1349.	649.	46:32	46:35	89.	2	5.0 AVB
403.8327	45:38	858189.	216946.	45:31	45:42	133.	2	5.0 ABV
403.8327	45:45	806350.	198110.	45:42	46:00	133.	2	5.0 AVV
403.8327	46:09	2780972.	665200.	46:00	46:24	133.	2	5.0 AVV
403.8327	46:25	9557.	1956.	46:24	46:34	133.	2	5.0 AVB
373.8021	44:34	10422.	1878.	44:26	44:39	33.	1	1.0 ABV
375.7990	44:34	8477.	1442.	44:25	44:39	44.	1	1.0 ABV
373.8021	44:18	5229.	1402.	44:14	44:22	33.	2	5.0 ABB
373.8021	44:34	10422.	1878.	44:26	44:39	33.	2	5.0 ABV
373.8021	44:43	5277.	1281.	44:39	44:47	33.	2	5.0 AVB
373.8021	44:51	690.	184.	44:48	44:55	33.	2	5.0 ABB
373.8021	45:05	1764.	258.	45:01	45:12	33.	2	5.0 ABV
373.8021	45:16	1737.	447.	45:12	45:19	33.	2	5.0 AVV
373.8021	45:22	1238.	346.	45:19	45:24	33.	2	5.0 AVV
373.8021	45:29	3267.	891.	45:24	45:38	33.	2	5.0 AVB
373.8021	46:29	908.	216.	46:23	46:32	33.	2	5.0 ABV
373.8021	46:34	1003.	166.	46:32	46:46	33.	2	5.0 AVB
375.7990	44:19	4060.	970.	44:14	44:25	44.	2	5.0 ABB
375.7990	44:34	8477.	1442.	44:25	44:39	44.	2	5.0 ABV
375.7990	44:42	4838.	853.	44:39	44:54	44.	2	5.0 AVV
375.7990	45:08	2520.	320.	44:54	45:11	44.	2	5.0 AVB
375.7990	45:16	2667.	711.	45:11	45:19	44.	2	5.0 ABV
375.7990	45:22	1340.	418.	45:19	45:24	44.	2	5.0 AVV
375.7990	45:28	2830.	724.	45:24	45:33	44.	2	5.0 AVB
373.8021	44:18	5229.	1402.	44:14	44:22	33.	2	5.0 ABB
373.8021	44:34	10422.	1878.	44:26	44:39	33.	2	5.0 ABV
373.8021	44:43	5277.	1281.	44:39	44:47	33.	2	5.0 AVB
373.8021	44:51	690.	184.	44:48	44:55	33.	2	5.0 ABB
373.8021	45:05	1764.	258.	45:01	45:12	33.	2	5.0 ABV
373.8021	45:16	1737.	447.	45:12	45:19	33.	2	5.0 AVV
373.8021	45:22	1238.	346.	45:19	45:24	33.	2	5.0 AVV
373.8021	45:29	3267.	891.	45:24	45:38	33.	2	5.0 AVB
373.8021	46:29	908.	216.	46:23	46:32	33.	2	5.0 ABV
373.8021	46:34	1003.	166.	46:32	46:46	33.	2	5.0 AVB
375.7990	44:19	4060.	970.	44:14	44:25	44.	2	5.0 ABB
375.7990	44:34	8477.	1442.	44:25	44:39	44.	2	5.0 ABV
375.7990	44:42	4838.	853.	44:39	44:54	44.	2	5.0 AVV
375.7990	45:08	2520.	320.	44:54	45:11	44.	2	5.0 AVB
375.7990	45:16	2667.	711.	45:11	45:19	44.	2	5.0 ABV
375.7990	45:22	1340.	418.	45:19	45:24	44.	2	5.0 AVV
375.7990	45:28	2830.	724.	45:24	45:33	44.	2	5.0 AVB
383.8447	44:34	772904.	207942.	44:27	44:37	76.	2	5.0 ABV
383.8447	44:42	882295.	221248.	44:37	44:54	76.	2	5.0 AVV
383.8447	44:59	5296.	926.	44:54	45:02	76.	2	5.0 AVV
383.8447	45:13	4480.	586.	45:02	45:17	76.	2	5.0 AVV
383.8447	45:27	867531.	215080.	45:17	45:41	76.	2	5.0 AVV
383.8447	45:43	3325.	886.	45:41	45:50	76.	2	5.0 AVV
383.8447	45:58	3362.	787.	45:50	46:00	76.	2	5.0 AVB
383.8447	46:06	2247.	561.	46:00	46:08	76.	2	5.0 ABV
383.8447	46:11	5000.	1005.	46:08	46:19	76.	2	5.0 AVB

383.8447	46:27	755954.	168405.	46:19	46:41	76.	2	5.0 ABV
383.8447	46:44	3607.	1224.	46:41	46:46	76.	2	5.0 AVV
383.8447	46:48	2071.	689.	46:46	46:52	76.	2	5.0 AVB
385.8417	44:34	1505712.	395758.	44:26	44:38	81.	2	5.0 ABV
385.8417	44:42	1644177.	431945.	44:38	44:54	81.	2	5.0 AVV
385.8417	44:56	11266.	2326.	44:54	45:04	81.	2	5.0 AVV
385.8417	45:07	4368.	1263.	45:04	45:09	81.	2	5.0 AVV
385.8417	45:11	2360.	609.	45:09	45:15	81.	2	5.0 AVB
385.8417	45:27	1715869.	422757.	45:15	45:42	81.	2	5.0 ABV
385.8417	45:44	8223.	1532.	45:42	45:49	81.	2	5.0 AVV
385.8417	45:51	5847.	1491.	45:49	45:57	81.	2	5.0 AVV
385.8417	45:59	3237.	641.	45:57	46:04	81.	2	5.0 AVV
385.8417	46:10	5057.	791.	46:04	46:14	81.	2	5.0 AVB
385.8417	46:27	1510946.	340716.	46:14	46:42	81.	2	5.0 ABV
385.8417	46:44	5562.	1471.	46:42	46:48	81.	2	5.0 AVB
385.8417	46:51	2840.	879.	46:48	46:54	81.	2	5.0 ABB
423.7555	49:29	94647.	18681.	49:22	49:39	38.	1	1.0 ABV
425.7524	50:41	96378.	19412.	50:34	50:49	40.	1	1.0 ABB
423.7555	49:29	94647.	18681.	49:22	49:39	38.	2	5.0 ABV
423.7555	50:42	92721.	19782.	50:34	50:47	38.	2	5.0 ABV
425.7524	49:29	92185.	17989.	49:22	49:42	40.	2	5.0 ABV
425.7524	50:41	96378.	19412.	50:34	50:49	40.	2	5.0 ABB
435.7951	49:13	856.	221.	49:09	49:16	31.	2	5.0 ABB
435.7951	49:29	13337.	1902.	49:22	49:37	31.	2	5.0 ABV
435.7951	49:46	1084.	265.	49:41	49:51	31.	2	5.0 ABB
435.7951	50:41	899934.	187463.	50:29	50:54	31.	2	5.0 ABV
435.7951	50:57	2673.	794.	50:54	50:59	31.	2	5.0 AVV
435.7951	51:01	1091.	508.	50:59	51:03	31.	2	5.0 AVB
437.7921	49:28	12618.	2487.	49:23	49:35	21.	2	5.0 ABV
437.7921	49:37	948.	143.	49:35	49:45	21.	2	5.0 AVB
437.7921	49:53	978.	244.	49:45	49:55	21.	2	5.0 ABB
437.7921	50:40	842252.	174361.	50:32	50:55	21.	2	5.0 ABV
437.7921	50:57	2087.	445.	50:55	51:03	21.	2	5.0 AVB
407.7614	49:38	29226.	5107.	49:32	49:53	37.	1	1.0 AVV
409.7583	49:38	29650.	6057.	49:29	49:45	22.	1	1.0 AVV
407.7614	48:44	2780.	706.	48:39	48:49	37.	2	5.0 ABB
407.7614	48:59	25851.	5031.	48:49	49:14	37.	2	5.0 ABV
407.7614	49:23	2045.	375.	49:18	49:28	37.	2	5.0 AVV
407.7614	49:38	29469.	5107.	49:28	49:53	37.	2	5.0 AVV
407.7614	51:17	3566.	509.	51:02	51:24	37.	2	5.0 AVB
409.7583	48:42	1950.	426.	48:38	48:48	22.	2	5.0 ABB
409.7583	48:59	23473.	4949.	48:52	49:14	22.	2	5.0 ABV
409.7583	49:23	1535.	316.	49:19	49:29	22.	2	5.0 ABV
409.7583	49:38	29650.	6057.	49:29	49:45	22.	2	5.0 AVV
409.7583	49:49	1271.	263.	49:45	49:54	22.	2	5.0 AVB
409.7583	51:18	2120.	479.	51:13	51:28	22.	2	5.0 ABB
417.8041	48:58	526561.	106427.	48:48	49:08	59.	2	5.0 ABV
417.8041	49:10	2711.	797.	49:08	49:13	59.	2	5.0 AVV
417.8041	49:17	2254.	493.	49:13	49:20	59.	2	5.0 AVV
417.8041	49:26	2134.	531.	49:24	49:32	59.	2	5.0 AVV
417.8041	49:40	4748.	539.	49:32	49:46	59.	2	5.0 AVB
417.8041	51:17	481135.	105311.	51:07	51:28	59.	2	5.0 ABV
417.8041	51:30	2551.	993.	51:28	51:32	59.	2	5.0 AVV
417.8041	51:35	3048.	1005.	51:32	51:37	59.	2	5.0 AVV
419.8010	48:58	1188761.	238538.	48:49	49:13	64.	2	5.0 ABV
419.8010	49:23	7853.	1613.	49:18	49:30	64.	2	5.0 AVV
419.8010	49:38	10534.	1476.	49:34	49:51	64.	2	5.0 AVV
419.8010	50:00	3648.	434.	49:51	50:06	64.	2	5.0 AVB
419.8010	50:43	2833.	601.	50:36	50:46	64.	2	5.0 ABB
419.8010	51:03	2354.	444.	50:50	51:05	64.	2	5.0 ABV
419.8010	51:17	1089223.	244222.	51:09	51:33	64.	2	5.0 ABV
419.8010	51:40	2782.	648.	51:37	51:43	64.	2	5.0 AVB
457.7148	54:41	722320.	191633.	54:34	54:57	53.	1	1.0 ABV
459.7118	54:41	815492.	211665.	54:34	54:57	33.	1	1.0 ABV
457.7148	54:41	722320.	191633.	54:34	54:57	53.	2	5.0 ABV
457.7148	55:01	3072.	414.	54:59	55:12	53.	2	5.0 AVB
459.7118	54:41	815492.	211665.	54:34	54:57	33.	2	5.0 ABV

459.7118	55:03	3836.	509.	55:00	55:18	33.	2	5.0	AVB
469.7545	54:40	1169211.	303617.	54:32	54:54	27.	2	5.0	ABV
469.7545	54:56	5111.	1145.	54:54	55:01	27.	2	5.0	AVV
469.7545	55:03	1837.	659.	55:01	55:05	27.	2	5.0	AVV
469.7545	55:07	1725.	657.	55:05	55:09	27.	2	5.0	AVV
471.7514	54:40	1327289.	343721.	54:33	54:56	32.	2	5.0	ABV
471.7514	55:07	940.	439.	55:05	55:09	32.	2	5.0	ABV
471.7514	55:12	1516.	468.	55:09	55:18	32.	2	5.0	AVB
441.7207	54:50	29164.	7255.	54:36	54:58	16.	1	1.0	ABB
443.7177	54:50	32367.	8135.	54:45	54:54	20.	1	1.0	AVV
441.7207	54:41	309.	101.	54:36	54:42	16.	2	5.0	ABV
441.7207	54:50	28855.	7255.	54:42	54:58	16.	2	5.0	AVB
441.7207	55:20	308.	128.	55:17	55:22	16.	2	5.0	ABB
443.7177	54:41	660.	195.	54:35	54:45	20.	2	5.0	ABV
443.7177	54:50	32367.	8135.	54:45	54:54	20.	2	5.0	AVV
443.7177	54:58	1105.	260.	54:54	55:03	20.	2	5.0	AVB
453.7603	54:49	1547261.	398832.	54:36	55:04	32.	2	5.0	ABV
453.7603	55:15	4445.	875.	55:12	55:24	32.	2	5.0	AVB
455.7573	54:49	1719504.	453023.	54:36	55:04	27.	2	5.0	ABV
455.7573	55:14	3985.	924.	55:08	55:17	27.	2	5.0	ABB
455.7573	55:20	1408.	512.	55:17	55:22	27.	2	5.0	ABV
455.7573	55:24	961.	386.	55:22	55:26	27.	2	5.0	AVB

TestAmerica Canton

Sample ID: PAD-8

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 014	**Work Order #....:**	M81131AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	2.2
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.7 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.1	0.023	pg/g
1,2,3,7,8-PeCDD	ND		5.3	0.028	pg/g
1,2,3,4,7,8-HxCDD	**0.16**	**J**	**5.3**	**0.038**	**pg/g**
1,2,3,6,7,8-HxCDD	**0.32**	**Q J**	**5.3**	**0.040**	**pg/g**
1,2,3,7,8,9-HxCDD	**0.47**	**C J**	**5.3**	**0.037**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**6.6**		**5.3**	**0.061**	**pg/g**
OCDD	**220**	**B**	**11**	**0.073**	**pg/g**
2,3,7,8-TCDF	**0.29**	**J**	**1.1**	**0.029**	**pg/g**
1,2,3,7,8-PeCDF	ND		5.3	0.021	pg/g
2,3,4,7,8-PeCDF	**0.12**	**Q J**	**5.3**	**0.019**	**pg/g**
1,2,3,4,7,8-HxCDF	**0.27**	**Q B J**	**5.3**	**0.028**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.15**	**Q J**	**5.3**	**0.026**	**pg/g**
2,3,4,6,7,8-HxCDF	ND		5.3	0.029	pg/g
1,2,3,7,8,9-HxCDF	ND		5.3	0.036	pg/g
1,2,3,4,6,7,8-HpCDF	**0.86**	**B J**	**5.3**	**0.030**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**0.17**	**Q B J**	**5.3**	**0.033**	**pg/g**
OCDF	**2.0**	**B J**	**11**	**0.027**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	64	40 - 135
13C-1,2,3,7,8-PeCDD	73	40 - 135
13C-1,2,3,4,7,8-HxCDD	66	40 - 135
13C-1,2,3,6,7,8-HxCDD	70	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	78	40 - 135
13C-OCDD	74	40 - 135
13C-2,3,7,8-TCDF	62	40 - 135
13C-1,2,3,7,8-PeCDF	72	40 - 135
13C-2,3,4,7,8-PeCDF	78	40 - 135
13C-1,2,3,4,7,8-HxCDF	61	40 - 135
13C-1,2,3,6,7,8-HxCDF	61	40 - 135
13C-2,3,4,6,7,8-HxCDF	63	40 - 135
13C-1,2,3,7,8,9-HxCDF	61	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	53	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	60	40 - 135
13C-OCDF	55	40 - 135

TestAmerica Canton

Sample ID: PAD-8

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 014	**Work Order #....:**	M81131AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	2.2
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.7 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81131AC	Prep Batch	6217014	Lot No	H6G290408-014
Data File	/20160818s1/d1tm8113.d	Prep Date	08/04/16	SDG No	
Analysis ID	180613	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/18/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	16:10	Initial Wt/Vol	9.7 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD				1.144				ND		0.0229
Total TCDD		963	389	1.144		0.427355		0.044057	QJ	0.0229
2,3,7,8-TCDF	30:48	9023	783	1.066		2.712503		0.279640	J	0.0285
Total TCDF		9065	1525	1.066		5.437633		0.560581	QJ	0.0285
1,2,3,7,8-PeCDD				1.060				ND		0.0279
Total PeCDD		1429	355	1.060		0.820221		0.084559	QJ	0.0279
1,2,3,7,8-PeCDF				1.179				ND		0.0207
2,3,4,7,8-PeCDF	40:55	3791	899	1.115		1.152943		0.118860	QJ	0.0185
Total PeCDF		11363	2143	1.147		4.632785		0.477607	QJ	0.0195
1,2,3,4,7,8-HxCDD	45:38	2888	643	1.131		1.545026		0.159281	J	0.0373
1,2,3,6,7,8-HxCDD	45:46	5932	1479	1.116		3.053672		0.314812	QJ	0.0393
1,2,3,7,8,9-HxCDD	46:09	9161	1795	1.205		4.480399		0.461897	CJ	0.0357
Total HxCDD				1.151		9.079097		0.935989	JQ	0.0374
1,2,3,4,7,8-HxCDF	44:34	7384	1405	1.350		2.574959		0.265460	QBJ	0.0270
1,2,3,6,7,8-HxCDF	44:44	4316	1057	1.242		1.391288		0.143432	QJ	0.0257
2,3,4,6,7,8-HxCDF				1.241				ND		0.0286
1,2,3,7,8,9-HxCDF				1.262				ND		0.0356
Total HxCDF		10122	1819	1.274		7.522034		0.775467	QJB	0.0288
1,2,3,4,6,7,8-HpCDD	50:42	107783	20844	1.114		62.201114		6.412486		0.0595
Total HpCDD		112392	21580	1.114		127.062063		13.099182		0.0595
1,2,3,4,6,7,8-HpCDF	48:58	17311	3595	1.461		8.180356		0.843336	BJ	0.0289
1,2,3,4,7,8,9-HpCDF	51:18	2873	530	1.370		1.578662		0.162749	QBJ	0.0320
Total HpCDF		23583	4731	1.416		21.758695		2.243164	QJB	0.0304
OCDD	54:42	2993538	764772	1.203		2060.60863		212.433879	B	0.0719
OCDF	54:50	30465	7523	1.134		18.834525		1.941704	BJ	0.0265
13C-2,3,7,8-TCDD	32:51	1970569	197025	1.093	1000	643.400360	64.34	66.329934		0.194
13C-2,3,7,8-TCDF	30:42	3121702	322114	1.794	1000	620.597629	62.06	63.979137		0.0358
13C-1,2,3,7,8-PeCDD	41:24	1643766	401450	0.800	1000	732.982863	73.30	75.565244		0.0429
13C-1,2,3,7,8-PeCDF	39:44	2744391	591462	1.356	1000	721.735543	72.17	74.405726		0.105
13C-2,3,4,7,8-PeCDF	40:54	2950119	698360	1.343	1000	783.597283	78.36	80.783225		0.106
13C-1,2,3,4,7,8-HxCDD	45:38	1652561	439334	0.916	1000	660.128249	66.01	68.054459		0.0774
13C-1,2,3,6,7,8-HxCDD	45:45	1740737	423396	0.906	1000	702.698977	70.27	72.443193		0.0782
13C-1,2,3,4,7,8-HxCDF	44:34	2123477	550402	1.268	1000	612.487559	61.25	63.143047		0.0493
13C-1,2,3,6,7,8-HxCDF	44:42	2498482	629334	1.506	1000	607.129806	60.71	62.590702		0.0416
13C-2,3,4,6,7,8-HxCDF	45:27	2304227	567182	1.344	1000	627.253257	62.73	64.665284		0.0466
13C-1,2,3,7,8,9-HxCDF	46:28	2013212	447846	1.202	1000	612.713425	61.27	63.166332		0.0521
13C-1,2,3,4,6,7,8-HpCDD	50:40	1555879	314979	0.728	1000	781.450594	78.15	80.561917		0.0297
13C-1,2,3,4,6,7,8-HpCDF	48:57	1448422	305223	1.008	1000	525.665993	52.57	54.192370		0.0441
13C-1,2,3,4,7,8,9-HpCDF	51:18	1328055	293748	0.811	1000	599.265686	59.93	61.779968		0.0549
13C-OCDD	54:41	2415218	632042	0.597	2000	1479.13647	73.96	152.488295		0.0521
13C-1,2,3,4-TCDD	32:18	5606806	570280	1.000	2000	2000.00000	100.00	206.185567		0.212
13C-1,2,3,7,8,9-HxCDD	46:09	5466799	1309465	1.000	2000	2000.00000	100.00	206.185567		0.0709
13C-OCDF	54:49	2851880	755373	0.946	2000	1102.91471	55.15	113.702547		0.0258

KLM 8/24/16

KLM 8-24-16

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Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81131AC	Prep Batch	6217014	Lot No	H6G290408-014
Data File	/20160818s1/d1tm8113.d	Prep Date	08/04/16	SDG No	
Analysis ID	180613	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 16:10	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.7 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	43	53	17	21	0.81	/	
	Unidentified	29:35	00:00	0	909	575	138	167	1.58 *	ABB/ABV	R
	Unidentified	30:17	00:00	0	1281	537	188	140	2.39 *	ABV/AVV	RT
	Unidentified	30:20	00:00	0	444	874	100	209	0.51 *	AVB/AVB	R
	2,3,7,8-TCDF	30:48	30:45	3	3733	5290	316	467	0.71	ABB/ABB	M
	Unidentified	32:04	00:00	0	1519	2926	261	322	0.52 *	ABB/ABB	R
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	70	108	28	43	0.65	/	
	Unidentified	29:35	00:00	0	6191	2835	1082	641	2.18 *	ABB/AVB	RT
	13C-2,3,7,8-TCDF	30:42	30:42	0	1382650	1739052	138269	183845	0.80	ABV/ABV	
	Unidentified	31:14	00:00	0	2099	4563	494	1063	0.46 *	AVV/AVV	RT
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	23	28	9	11	0.82	/	
	Unidentified	32:56	00:00	0	249	184	93	65	1.35 *	ABV/ABV	R
	Unidentified	33:00	00:00	0	269	261	123	108	1.03 *	AVB/AVB	R
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	373	215	149	86	1.73 *	/	
	13C-1,2,3,4-TCDD	32:18	32:18	0	2558347	3048459	268402	301878	0.84	AVV/AVV	
	13C-2,3,7,8-TCDD	32:51	32:50	1	855794	1114775	88490	108535	0.77	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	65	75	26	30	0.87 *	/	
	Unidentified	39:20	00:00	0	1965	1786	330	461	1.10 *	ABB/ABB	R
	Unidentified	40:16	00:00	0	1782	1665	312	295	1.07 *	ABB/ABB	R
	2,3,4,7,8-PeCDF	40:55	40:56	-1	2593	1198	536	363	2.16 *	ABB/ABB	R
	Unidentified	41:07	00:00	0	1865	2300	403	342	0.81 *	ABB/ABB	R
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	208	185	83	74	1.12 *	/	
	Unidentified	39:16	00:00	0	6417	4231	863	799	1.52	ABB/ABV	T
	13C-1,2,3,7,8-PeCDF	39:44	39:45	-1	1695471	1048920	364795	226667	1.62	AVV/ABV	
	Unidentified	40:00	00:00	0	12732	7340	2102	1173	1.73	AVV/AVB	
	Unidentified	40:14	00:00	0	21251	10326	3973	1848	2.06 *	AVV/ABB	R
	13C-2,3,4,7,8-PeCDF	40:54	40:55	-1	1803957	1146162	423457	274903	1.57	AVV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	60	55	24	22	1.09 *	/	
	Unidentified	40:43	00:00	0	1099	330	197	158	3.33 *	ABB/ABB	RT
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	48	48	19	19	1.00 *	/	
	13C-1,2,3,7,8-PeCDD	41:24	41:25	-1	1017783	625983	250421	151029	1.63	ABV/ABV	
	Unidentified	41:37	00:00	0	7625	6742	2242	2299	1.13 *	AVV/AVV	R
	Unidentified	41:42	00:00	0	3561	1951	1023	517	1.83 *	AVV/AVB	RT
	Unidentified	42:03	00:00	0	4018	1740	1212	386	2.31 *	AVB/ABB	R
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81131AC	Prep Batch	6217014	Lot No	H6G290408-014
Data File	/20160818s1/d1tm8113.d	Prep Date	08/04/16	SDG No	
Analysis ID	180613	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 16:10	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.7 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	78	118	31	47	0.66 *	/	
	Unidentified	44:18	00:00	0	2015	2798	613	692	0.72 *	ABB/ABB	R
	1,2,3,4,7,8-HxCDF	44:34	44:35	-1	3128	4256	701	704	0.73 *	ABV/ABV	R
	1,2,3,6,7,8-HxCDF	44:44	44:43	1	1979	2337	438	619	0.85 *	AVB/AVB	R
	Unidentified	45:17	00:00	0	612	4697	183	331	0.13 *	ABB/AVV	RT
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	203	195	81	78	1.04 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:34	44:34	0	737281	1386196	190242	360160	0.53	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:42	44:42	0	842811	1655671	210540	418794	0.51	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:27	45:28	-1	794977	1509250	194424	372758	0.53	ABV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:28	46:28	0	692489	1320723	152233	295613	0.52	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	100	80	40	32	1.25	/	
	1,2,3,4,7,8-HxCDD	45:38	45:39	-1	1503	1385	326	317	1.09	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:46	45:47	-1	3704	2228	923	556	1.66 *	AVB/AVB	R
	1,2,3,7,8,9-HxCDD	46:09	46:11	-2	4933	4228	946	849	1.17	ABB/ABV	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	213	238	85	95	0.89 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:38	45:38	0	936132	716429	246509	192825	1.31	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:45	45:46	-1	977246	763491	234142	189254	1.28	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:09	46:10	-1	3030856	2435943	725098	584367	1.24	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	80	45	32	18	1.78 *	/	
	1,2,3,4,6,7,8-HpCDF	48:58	48:58	0	9103	8208	1942	1653	1.11	ABV/ABB	
	Unidentified	49:24	00:00	0	815	359	263	145	2.27 *	ABB/ABB	R
	Unidentified	49:38	00:00	0	10506	9717	2041	1857	1.08	ABV/ABV	
	Unidentified	49:45	00:00	0	1855	331	307	118	5.60 *	AVB/AVB	RT
	1,2,3,4,7,8,9-HpCDF	51:18	51:18	0	1781	1092	293	237	1.63 *	ABB/ABB	R
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	93	190	37	76	0.49	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:57	48:56	1	443457	1004965	92026	213197	0.44	ABV/ABB	
	Unidentified	49:23	00:00	0	4242	6427	1126	1502	0.66 *	ABB/AVV	R
	Unidentified	49:40	00:00	0	5296	9005	1286	1646	0.59 *	AVB/AVV	RT
	13C-1,2,3,4,7,8,9-HpCDF	51:18	51:17	1	410184	917871	92079	201669	0.45	ABB/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	90	113	36	45	0.80 *	/	
	Unidentified	49:29	00:00	0	56587	55805	10772	10808	1.01	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:42	50:40	2	54985	52798	10650	10194	1.04	ABV/ABV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	80	58	32	23	1.39 *	/	
	Unidentified	49:28	00:00	0	14461	7739	2728	2046	1.87 *	ABB/ABV	R
	13C-1,2,3,4,6,7,8-HpCDD	50:40	50:39	1	793216	762663	161800	153179	1.04	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81131AC	Prep Batch	6217014	Lot No	H6G290408-014
Data File	/20160818s1/d1tm8113.d	Prep Date	08/04/16	SDG No	
Analysis ID	180613	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 16:10	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.7 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Unidentified	51:00	00:00	0	3612	2718	723	704	1.33 *	AVB/ABB	R
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	60	50	24	20	1.20 *	/	
	Unidentified	54:42	00:00	0	1464	636	351	275	2.30 *	ABV/ABV	R
	OCDF	54:50	54:49	1	13945	16520	3517	4006	0.84	AVB/AVB	
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	98	58	39	23	1.70 *	/	
	13C-OCDF	54:49	54:49	0	1360289	1491591	361450	393923	0.91	ABV/ABV	
	Unidentified	55:15	00:00	0	2309	2286	643	595	1.01	ABV/AVB	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	138	128	55	51	1.08 *	/	
	OCDD	54:42	54:41	1	1408809	1584729	363192	401580	0.89	ABV/ABV	
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	100	98	40	39	1.03 *	/	
	13C-OCDD	54:41	54:41	0	1135710	1279508	292836	339206	0.89	ABV/ABV	
	Unidentified	55:00	00:00	0	3679	4959	887	724	0.74 *	AVV/AVV	RT

Notes:
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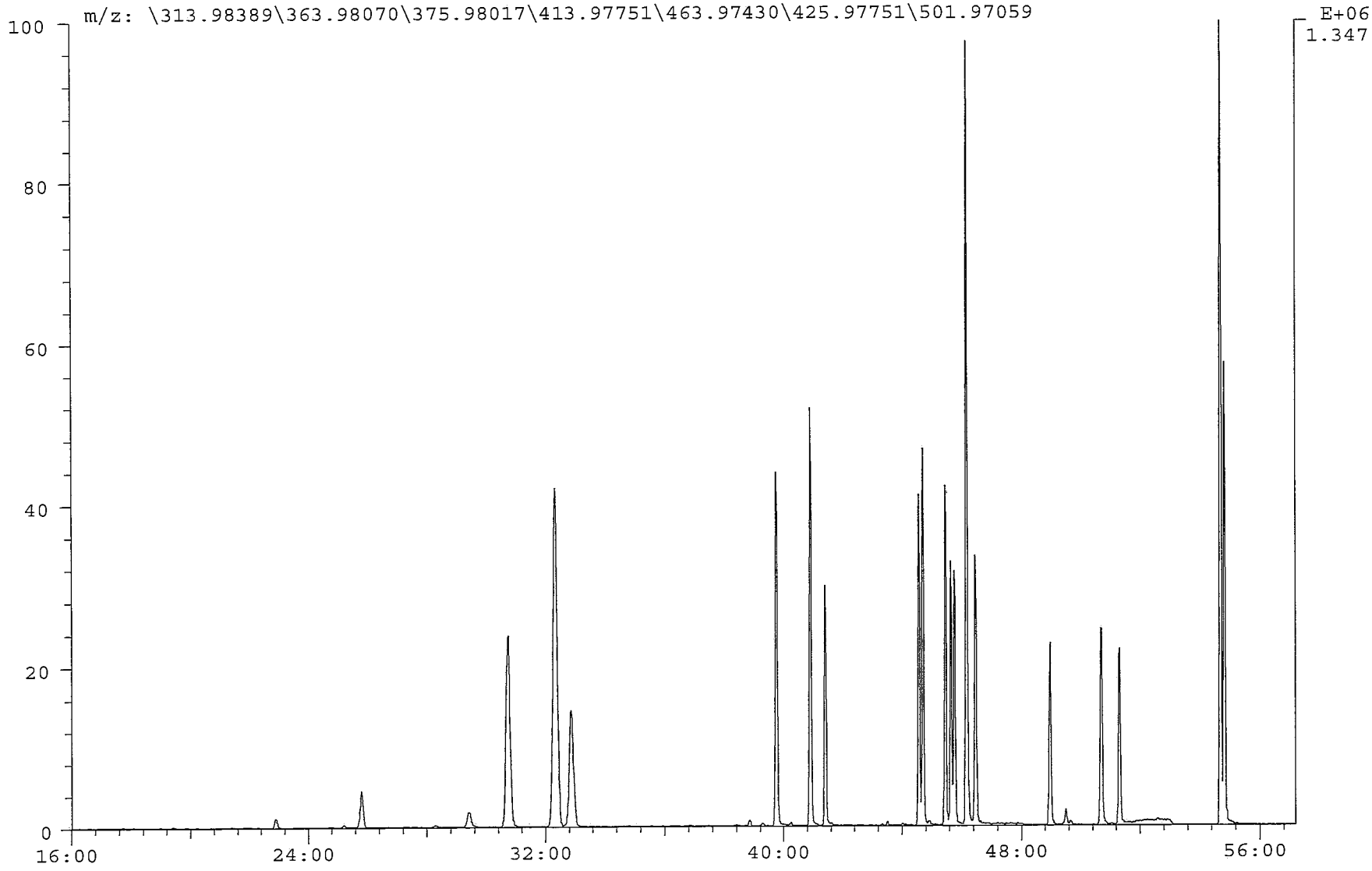
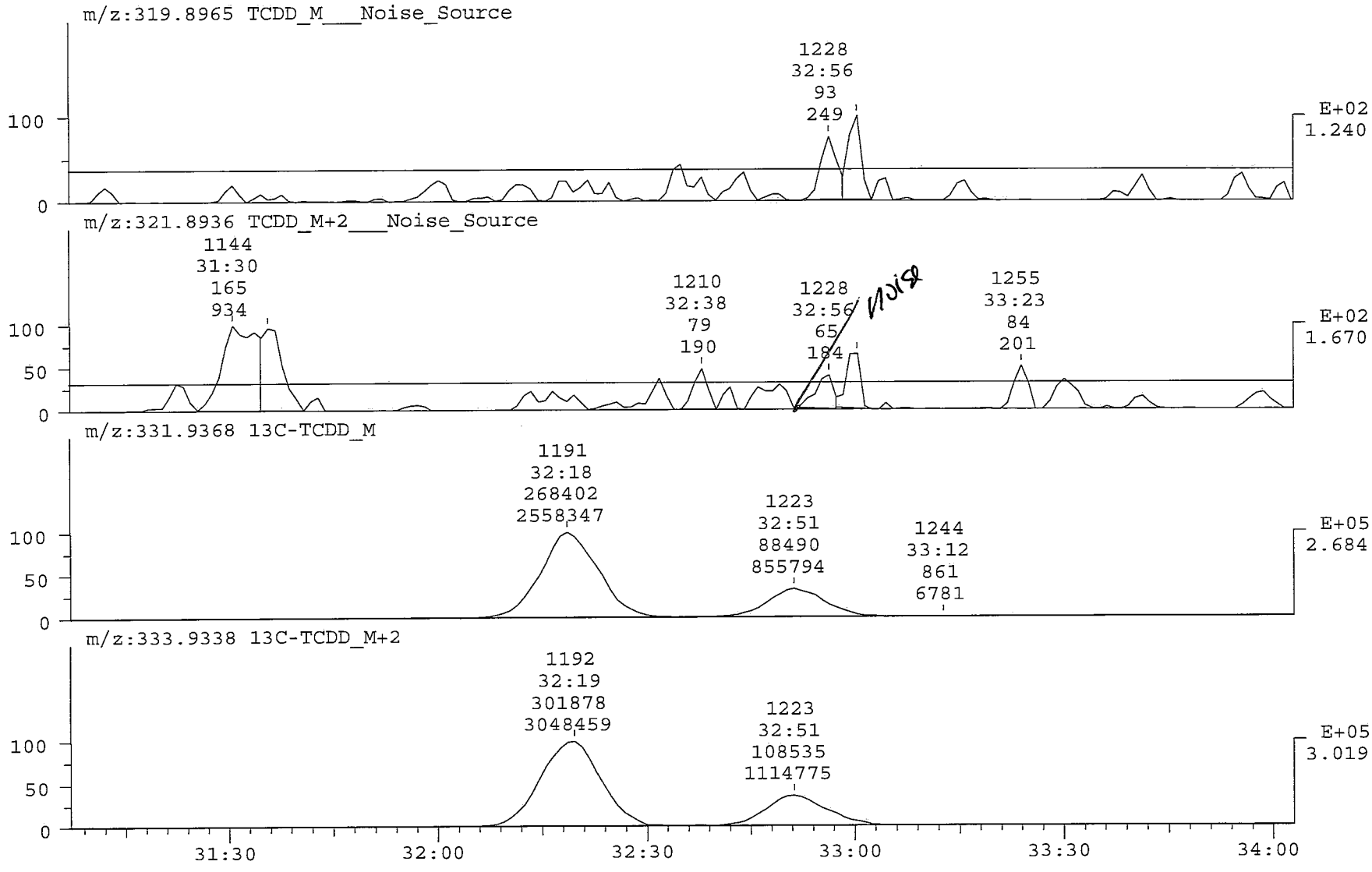
Int. LM 8-18-16
Calc KM 8-24-16
QC/Rw/a 8/24/16

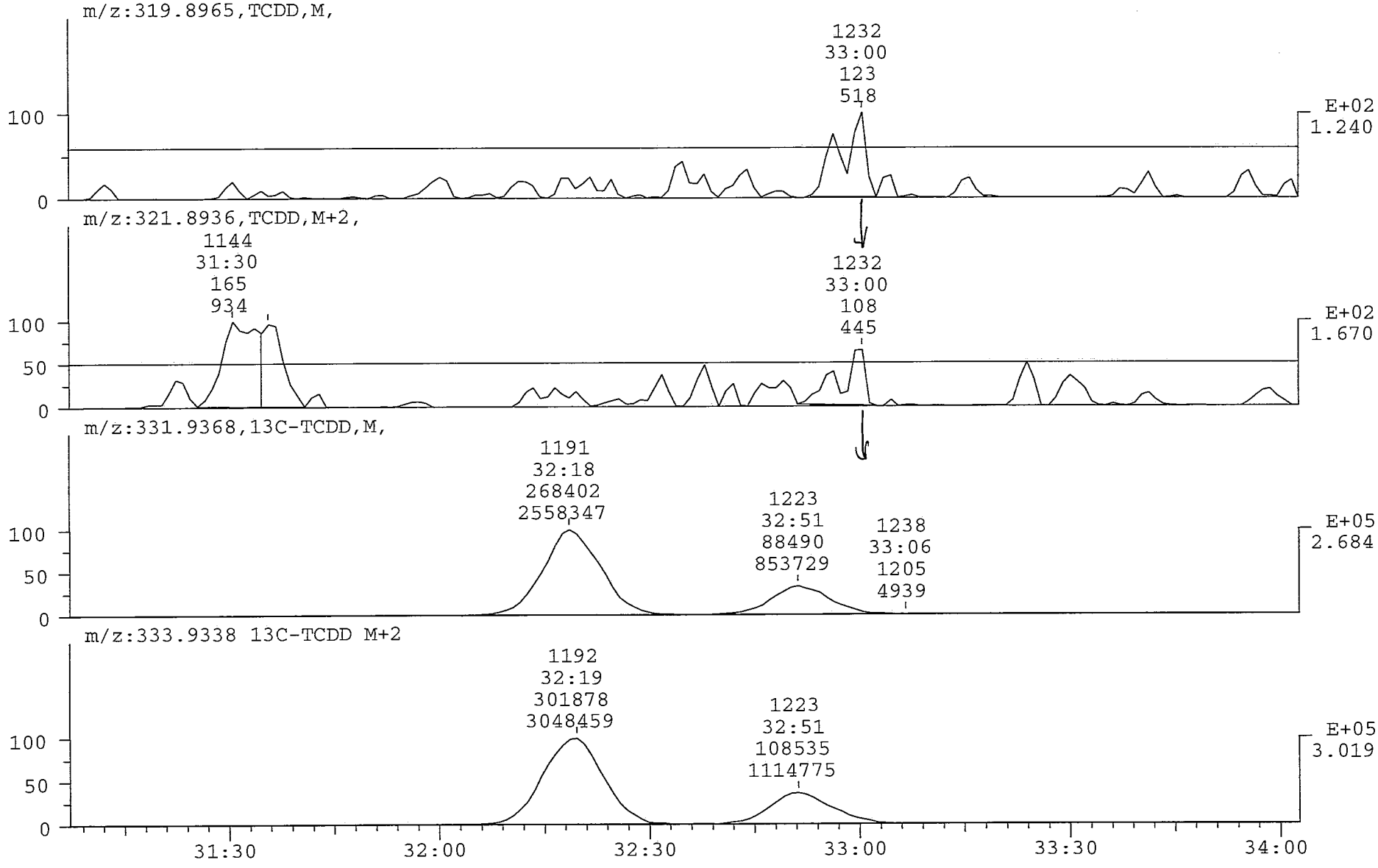
CHRO:	d1tm8113	18-Aug-16	Elapse:	54:50	2492
Samp:	WO=m81131ac Meth=9Ao Dil=1		Start :	16:10:24	2629
Comm:	Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1				
Mode:	EI ESI + Q1MS UP LR		Study :	6217014 (9.7g)	
Oper:	KLR		Inlet :	LC	
Peak:	100.00 ppm	Label wndw: 232 > 2629	Masses:	303 > 514	
Area:	5, 0.50, 0	Baseline : 100, 3	Label :	0, 0.0	
Disp:	Height Area				



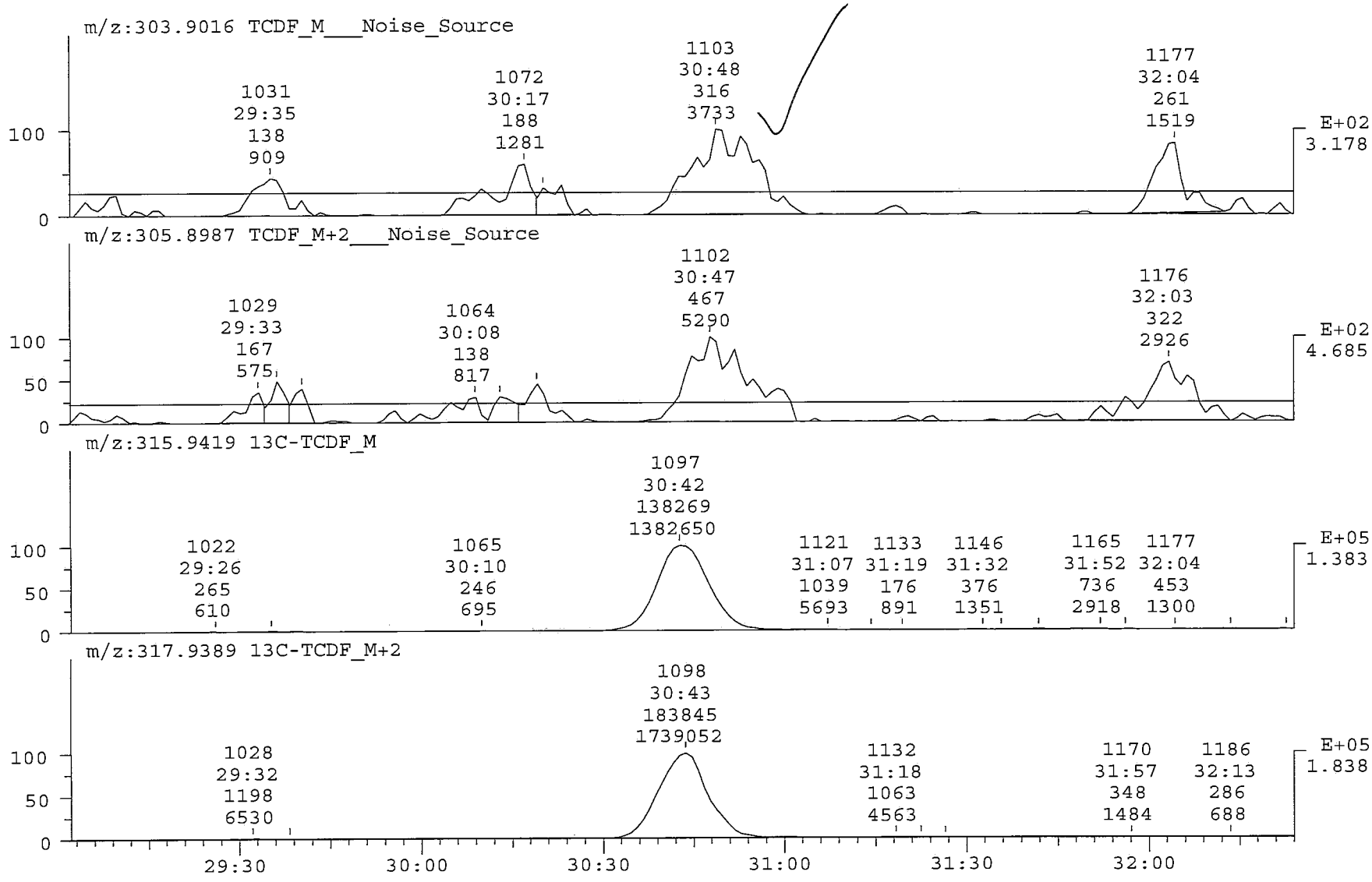
CHRO: d1tm8113 18-Aug-16 Elapse: 32:34 1207
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1121 > 1293 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



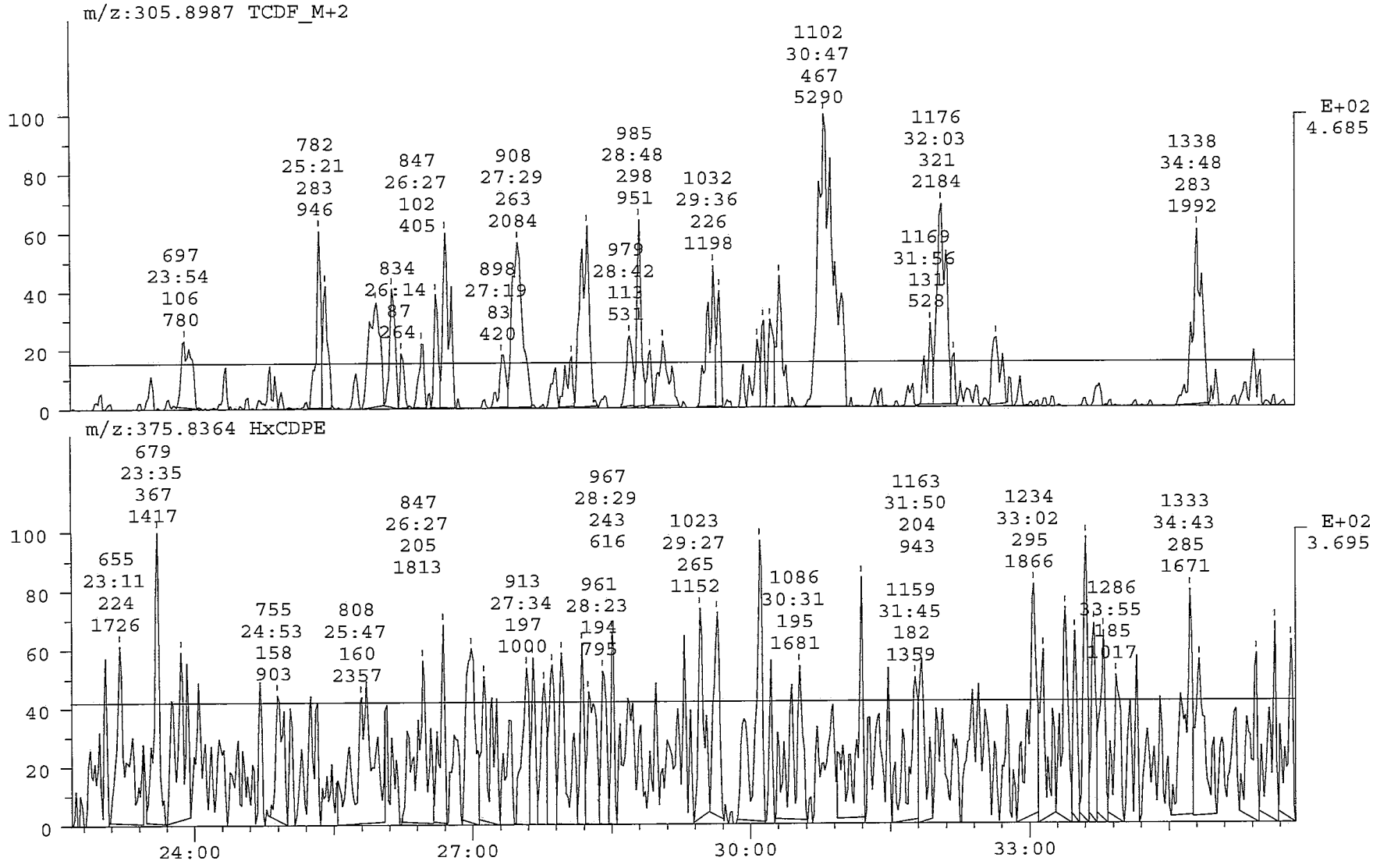
CHRO: d1tm8113 18-Aug-16 Elapse: 45:29 1951
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1121 > 1293 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



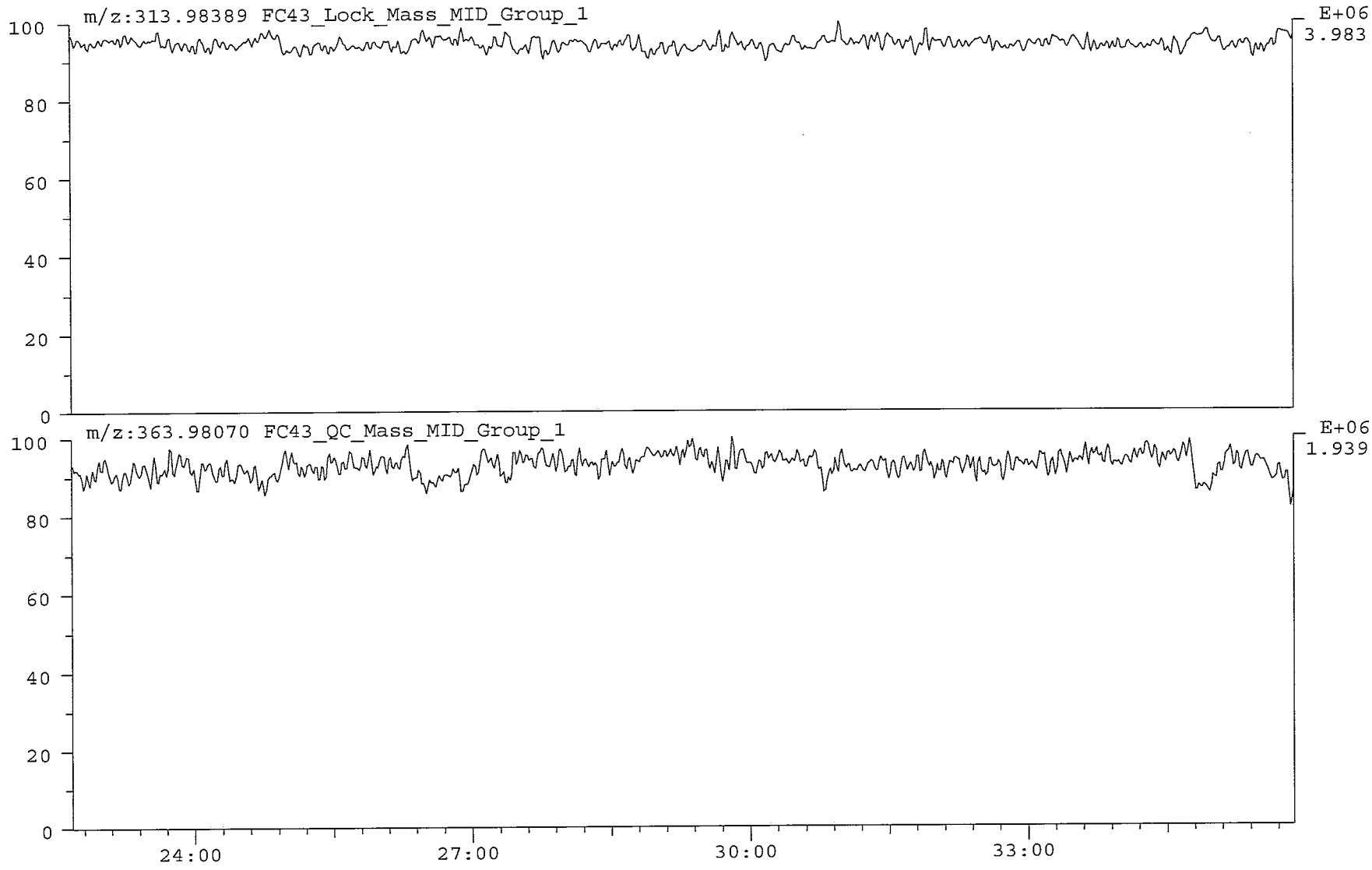
CHRO: d1tm8113 18-Aug-16 Elapse: 30:39 1094
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 998 > 1196 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



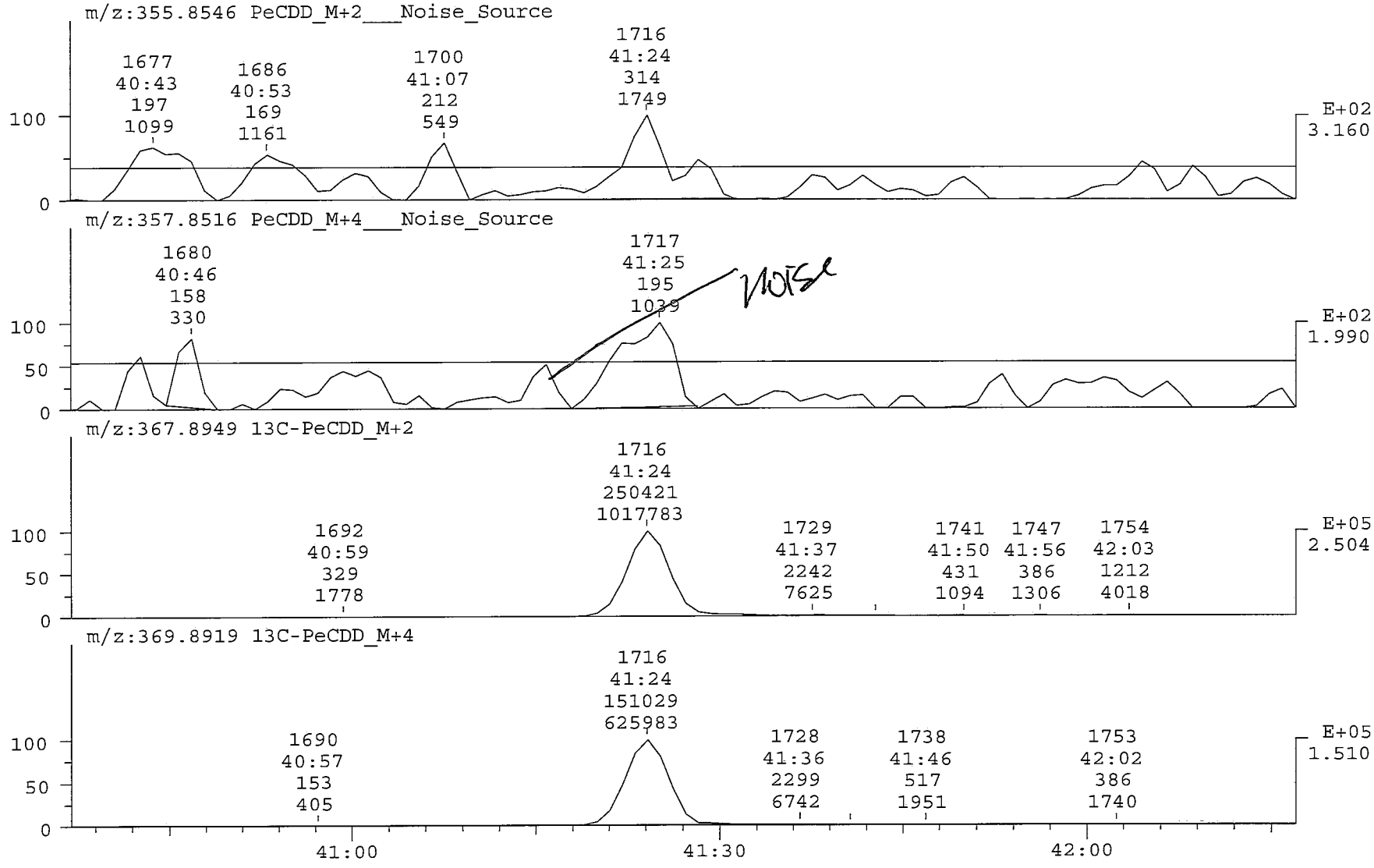
CHRO: d1tm8113 18-Aug-16 Elapse: 30:39 1094
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 624 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



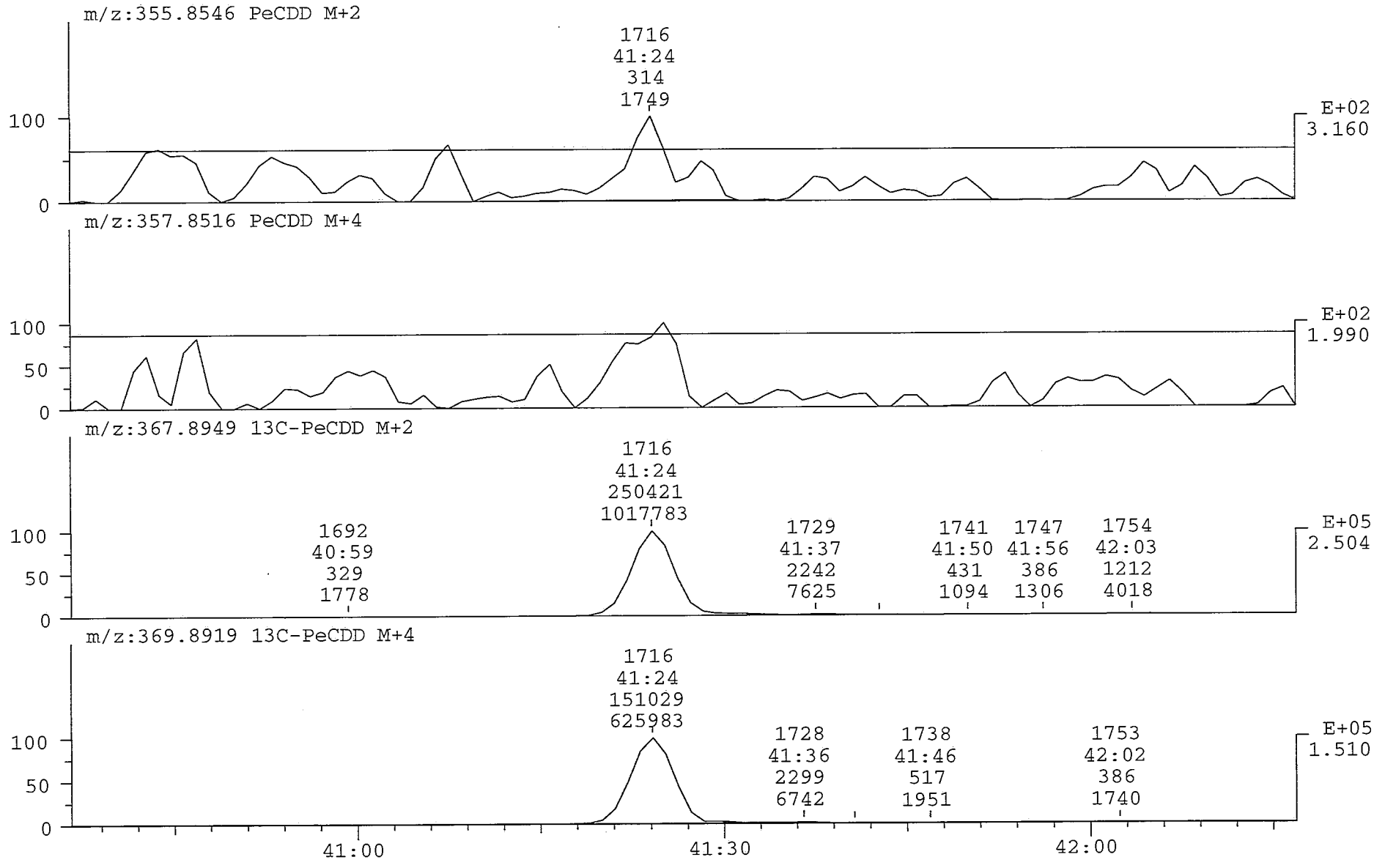
```
CHRO:  d1tm8113                                18-Aug-16  Elapse:  30:39      1094
Samp:  WO=m81131ac Meth=9Ao Dil=1                         Start :  16:10:24   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   624 > 1400           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



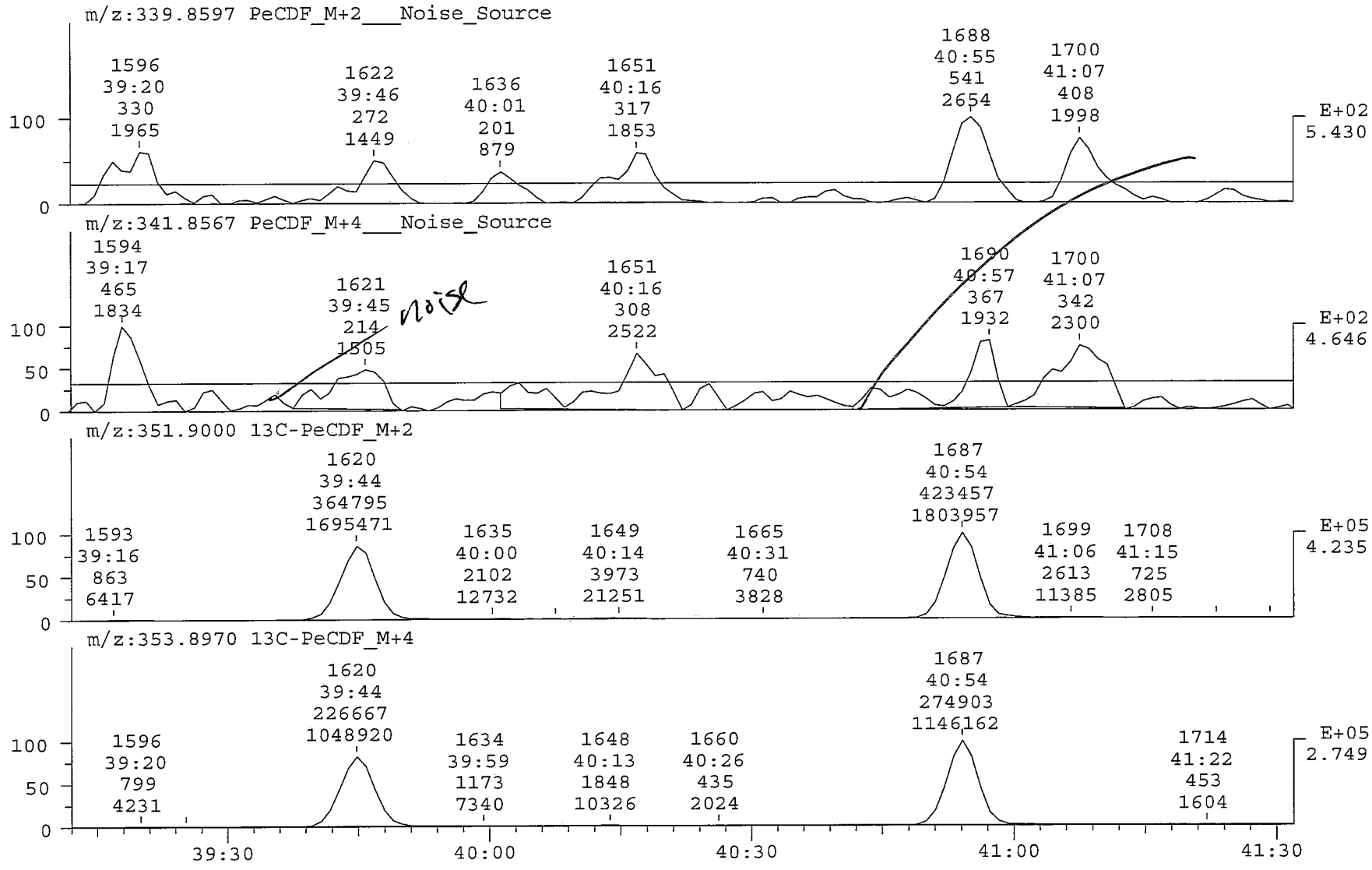
CHRO: d1tm8113 18-Aug-16 Elapse: 41:24 1716
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1670 > 1767 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



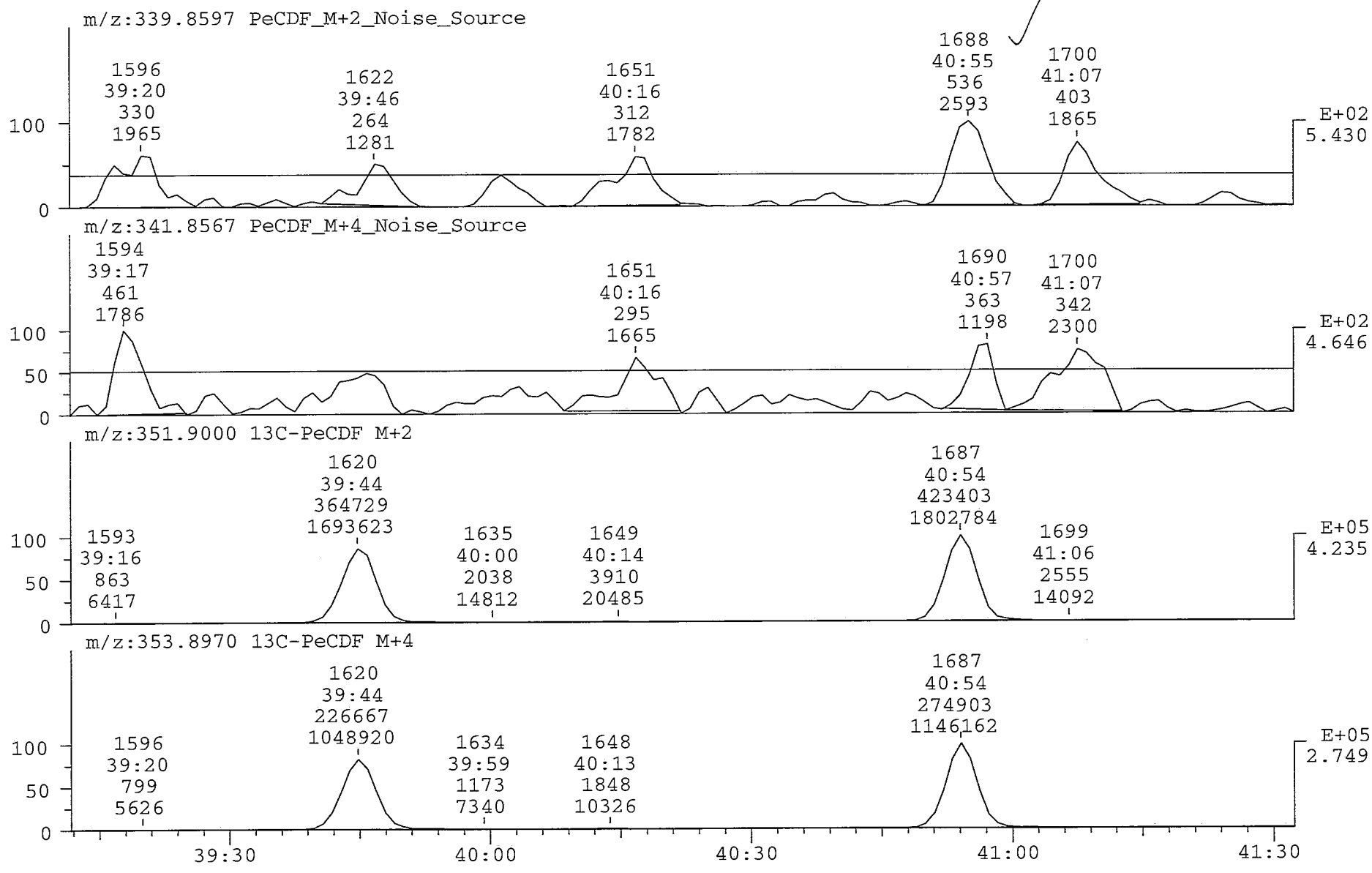
CHRO: d1tm8113 18-Aug-16 Elapse: 45:29 1951
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1670 > 1767 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



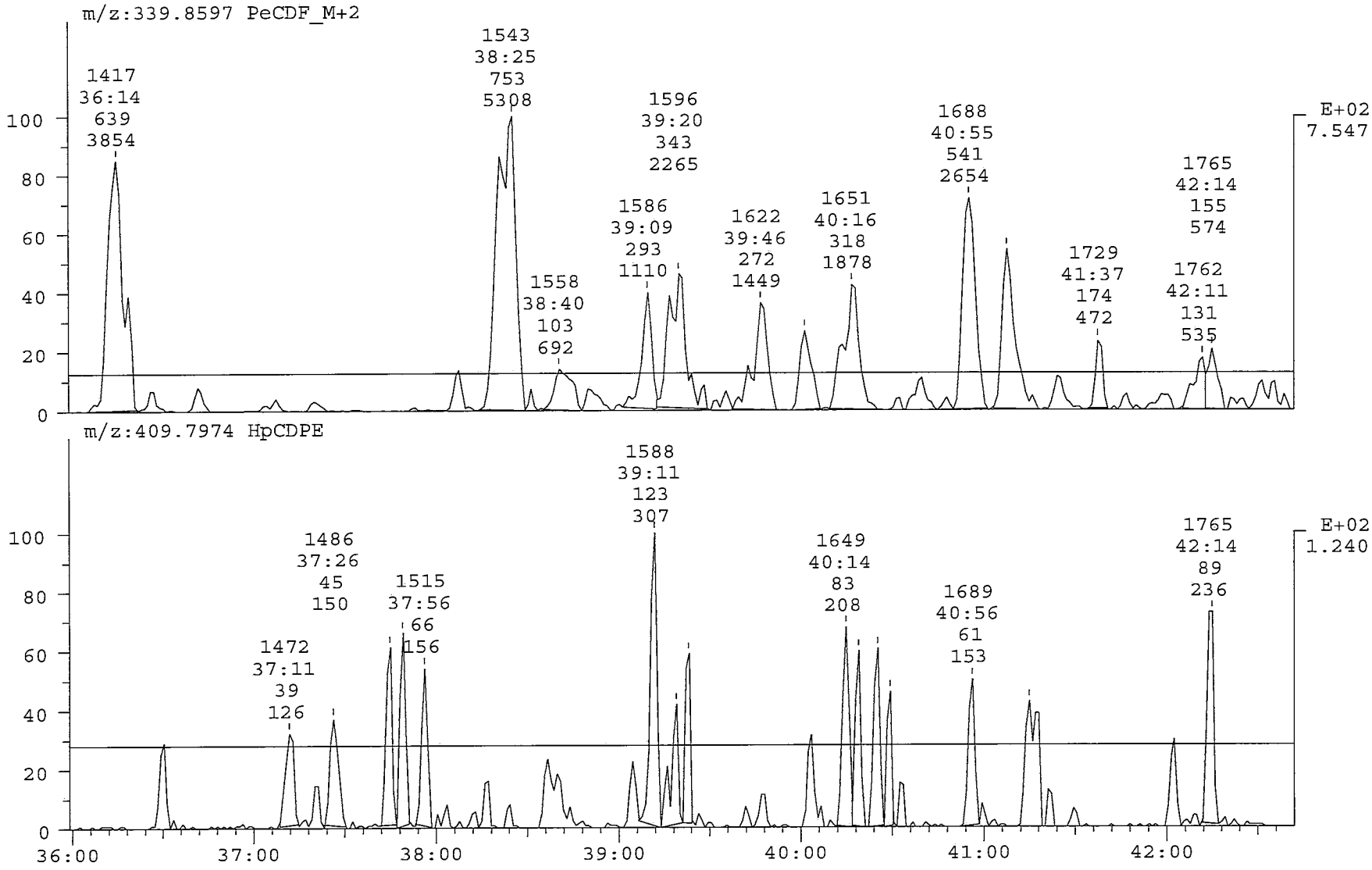
CHRO: d1tm8113 18-Aug-16 Elapse: 40:22 1656
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1588 > 1724 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



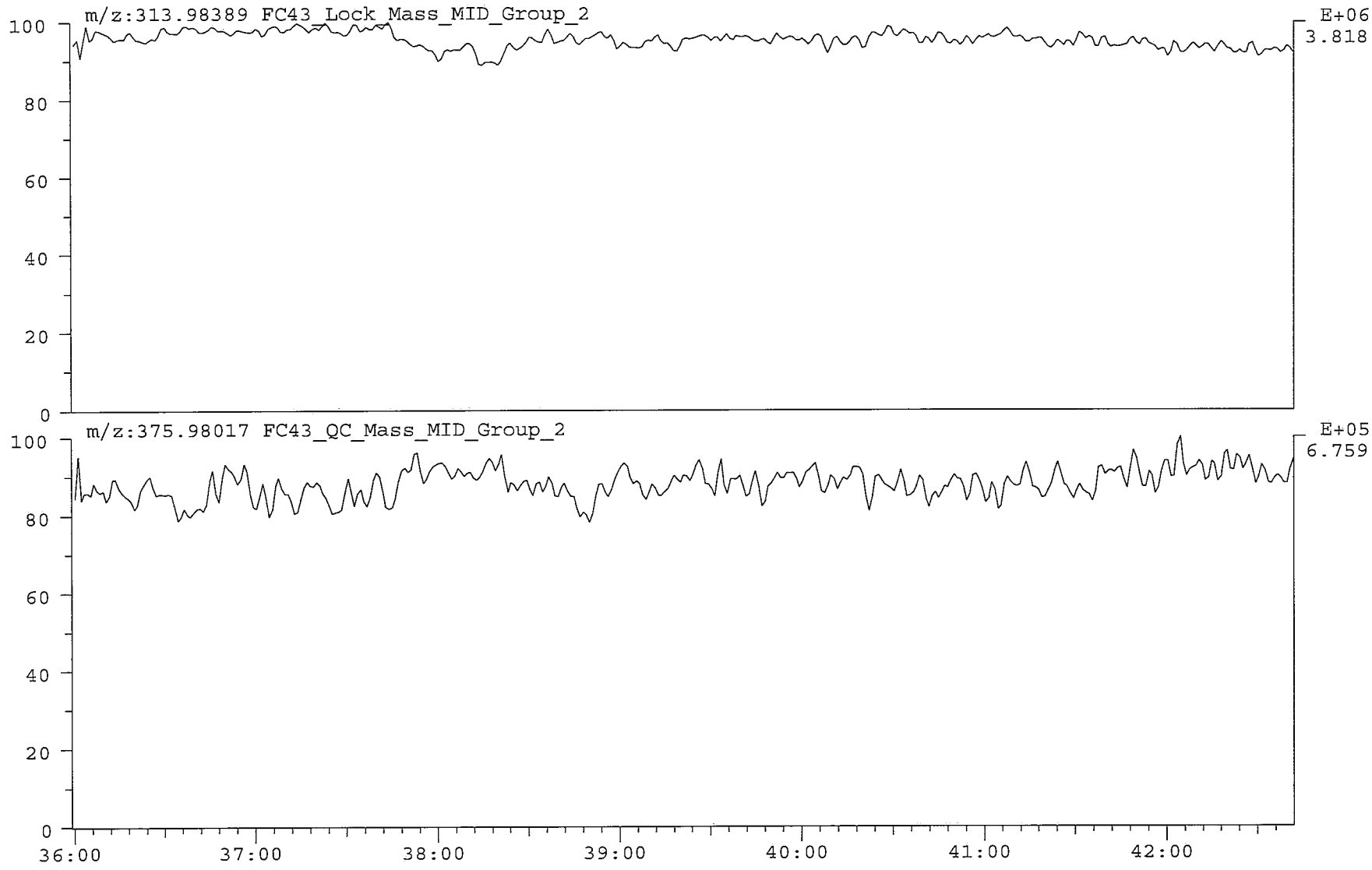
CHRO: d1tm8113 18-Aug-16 Elapse: 45:29 1951
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1588 > 1724 Masses: 303 > 514
Area: 5, 1.00, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



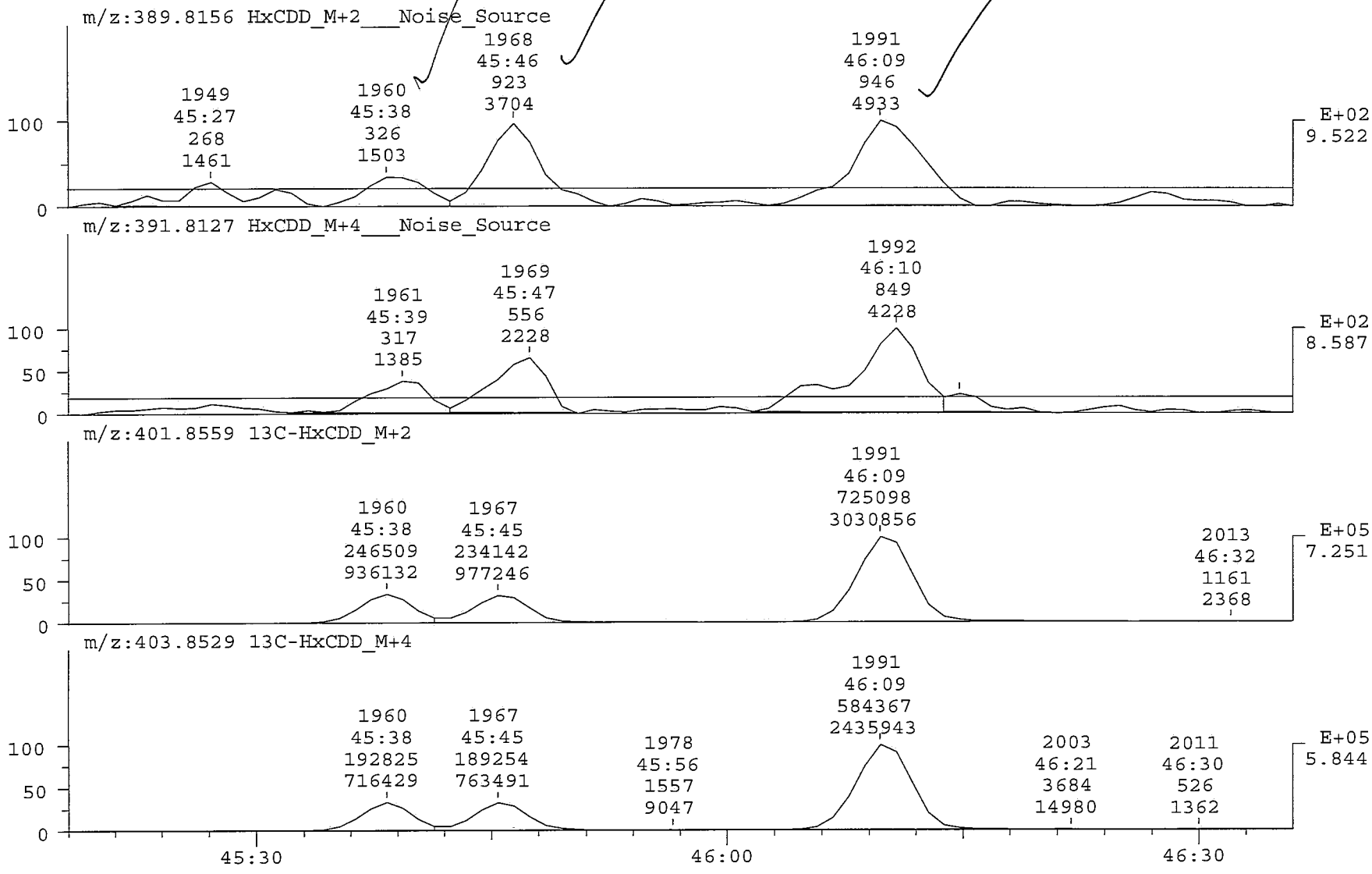
```
CHRO:  d1tm8113                                18-Aug-16  Elapse:  40:22      1656
Samp:  WO=m81131ac Meth=9Ao Dil=1                         Start :  16:10:24   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



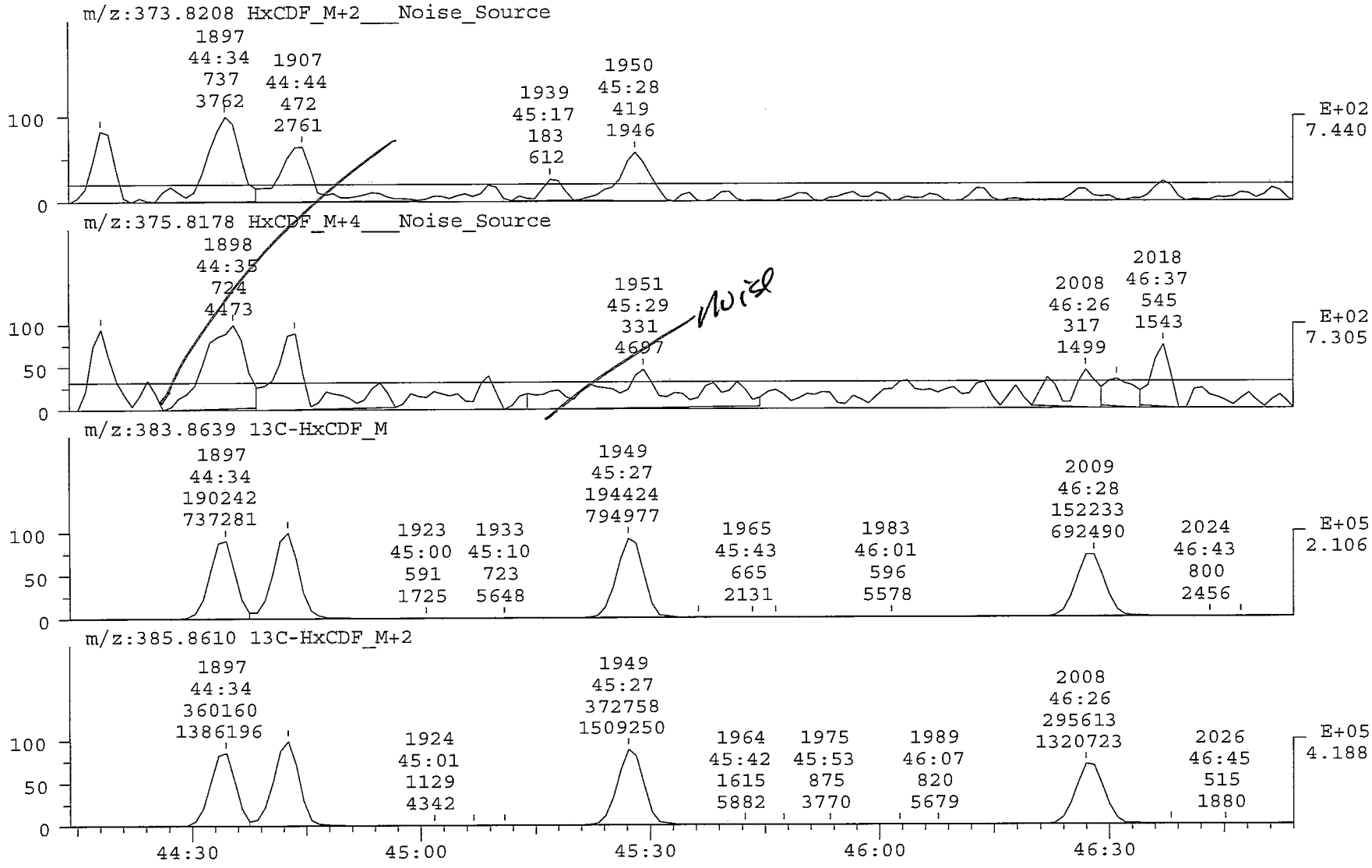
```
CHRO:  d1tm8113                                18-Aug-16  Elapse:  40:22      1656
Samp:  WO=m81131ac Meth=9Ao Dil=1                         Start :  16:10:24   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



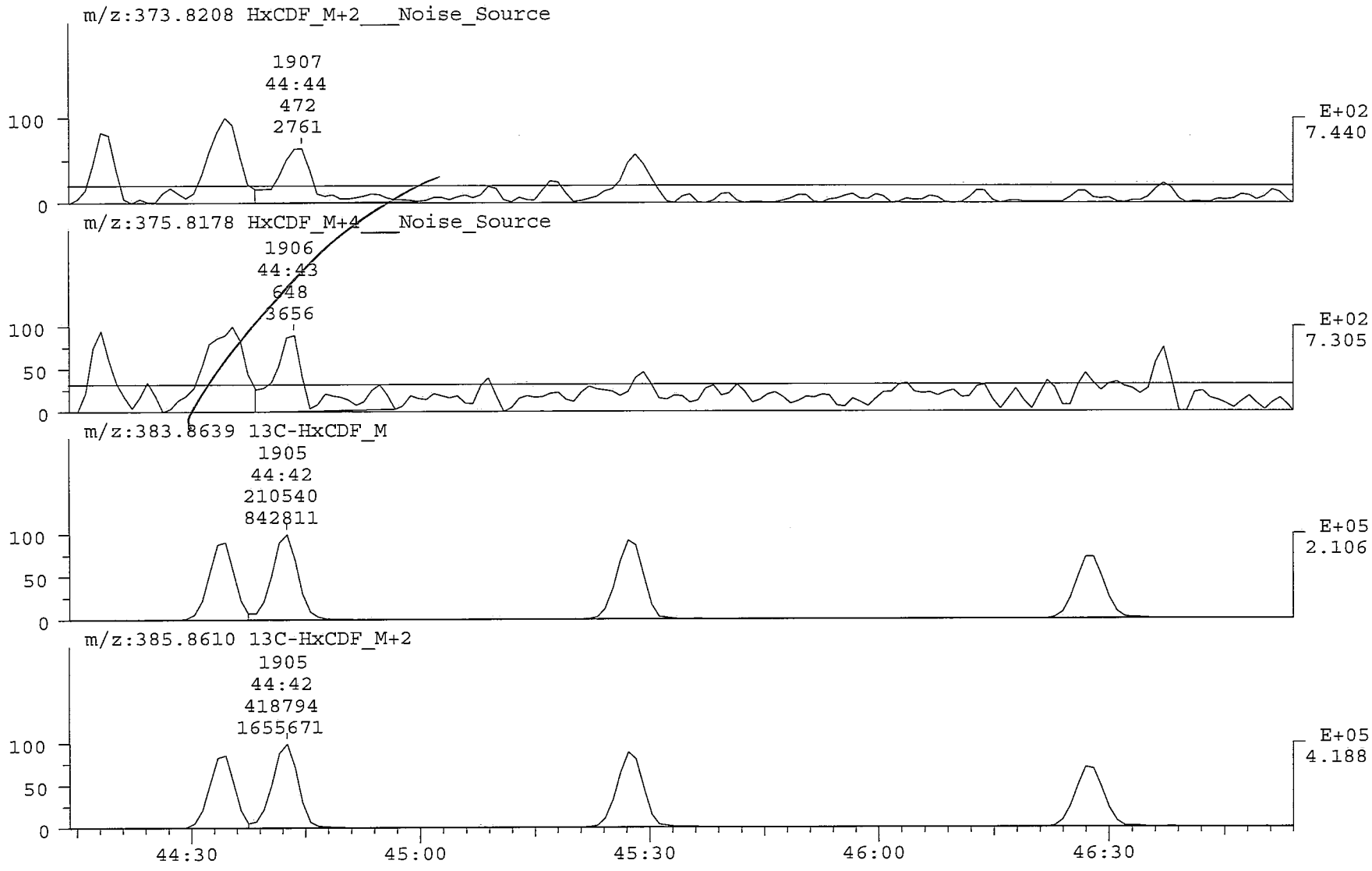
CHRO: d1tm8113 18-Aug-16 Elapse: 45:56 1978
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1940 > 2017 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



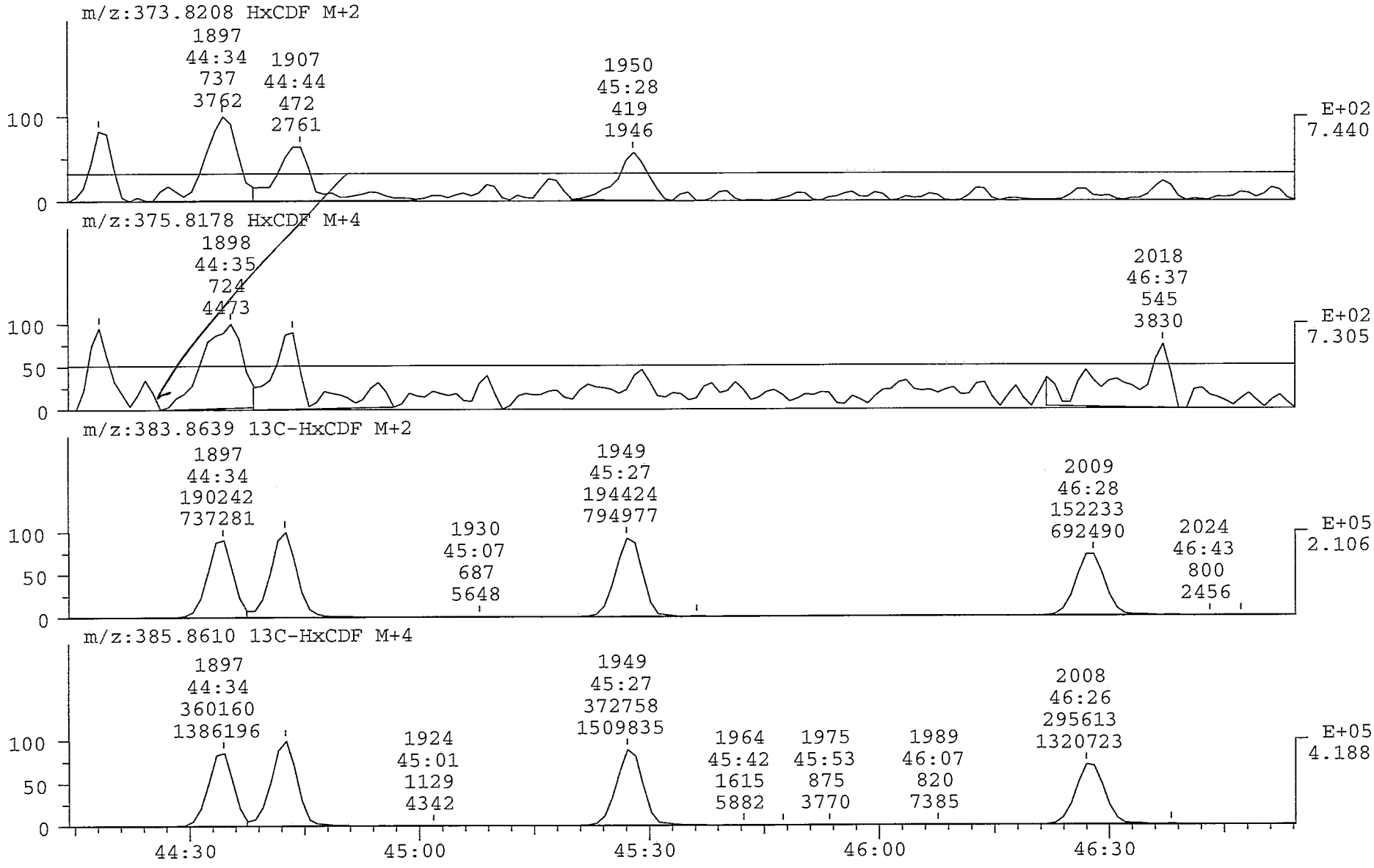
CHRO: d1tm8113 18-Aug-16 Elapse: 45:34 1956
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1877 > 2035 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



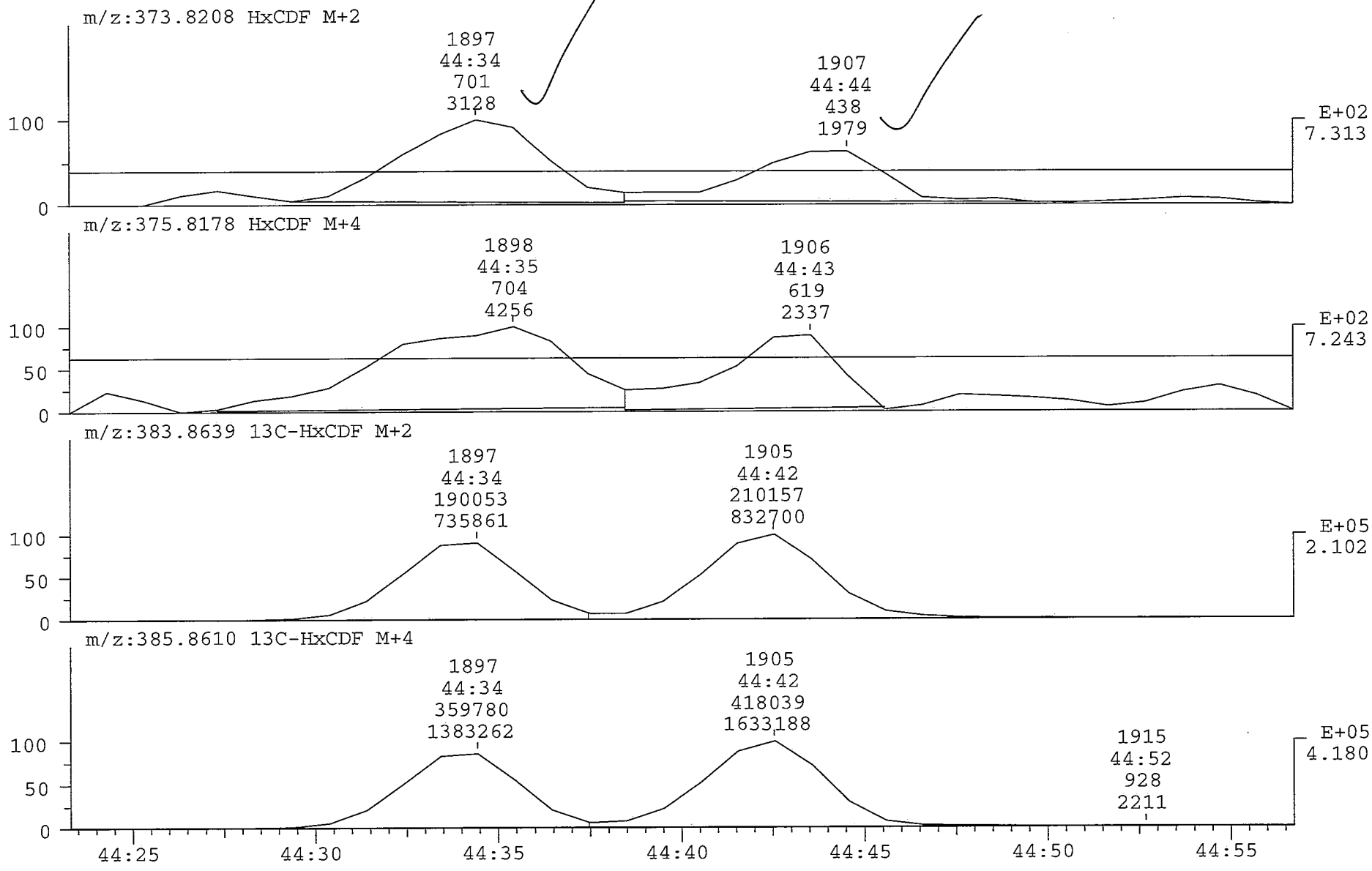
CHRO: d1tm8113 18-Aug-16 Elapse: 44:41 1904
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1900 > 1908 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



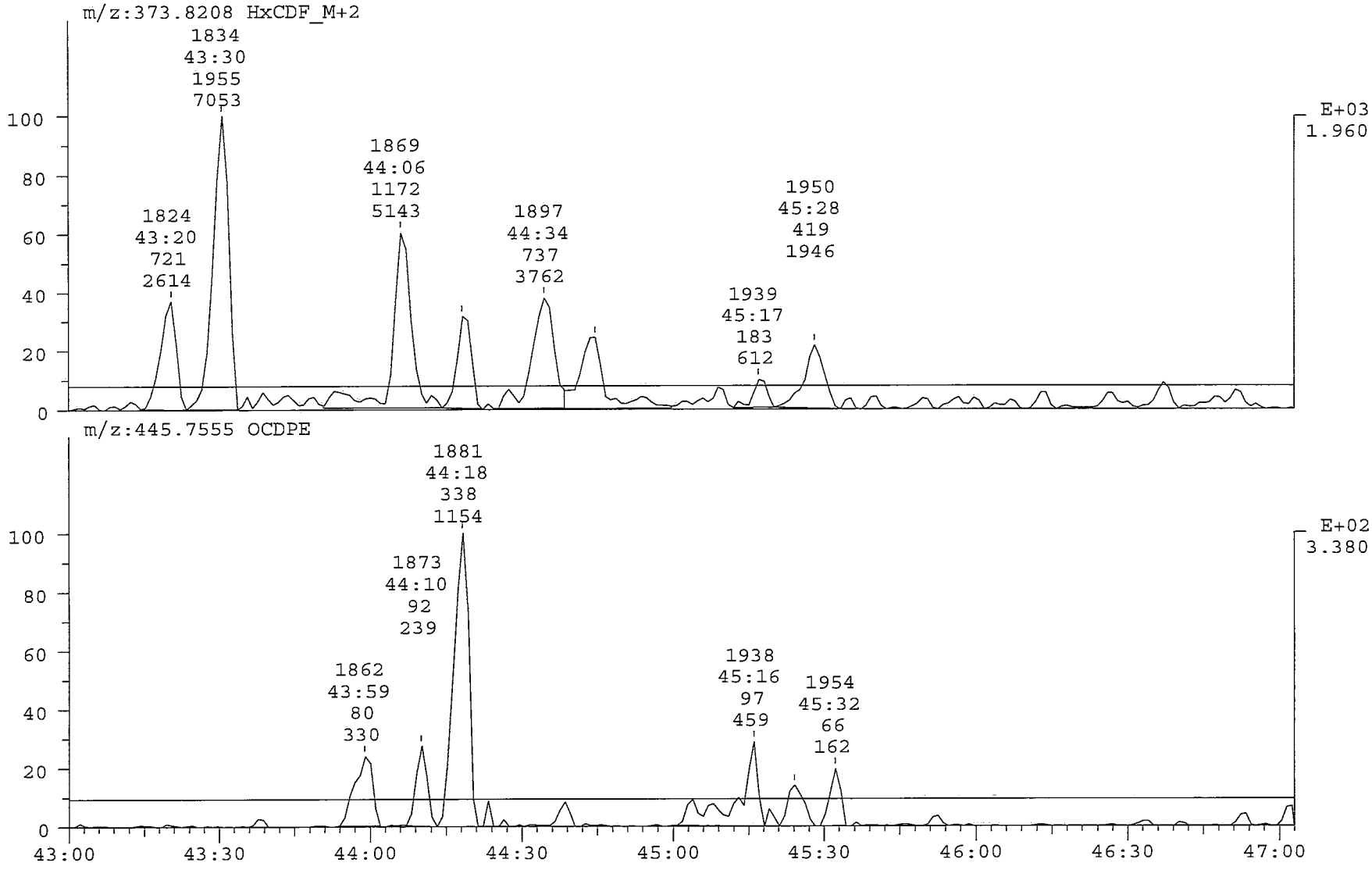
CHRO: d1tm8113 18-Aug-16 Elapse: 45:29 1951
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1877 > 2035 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



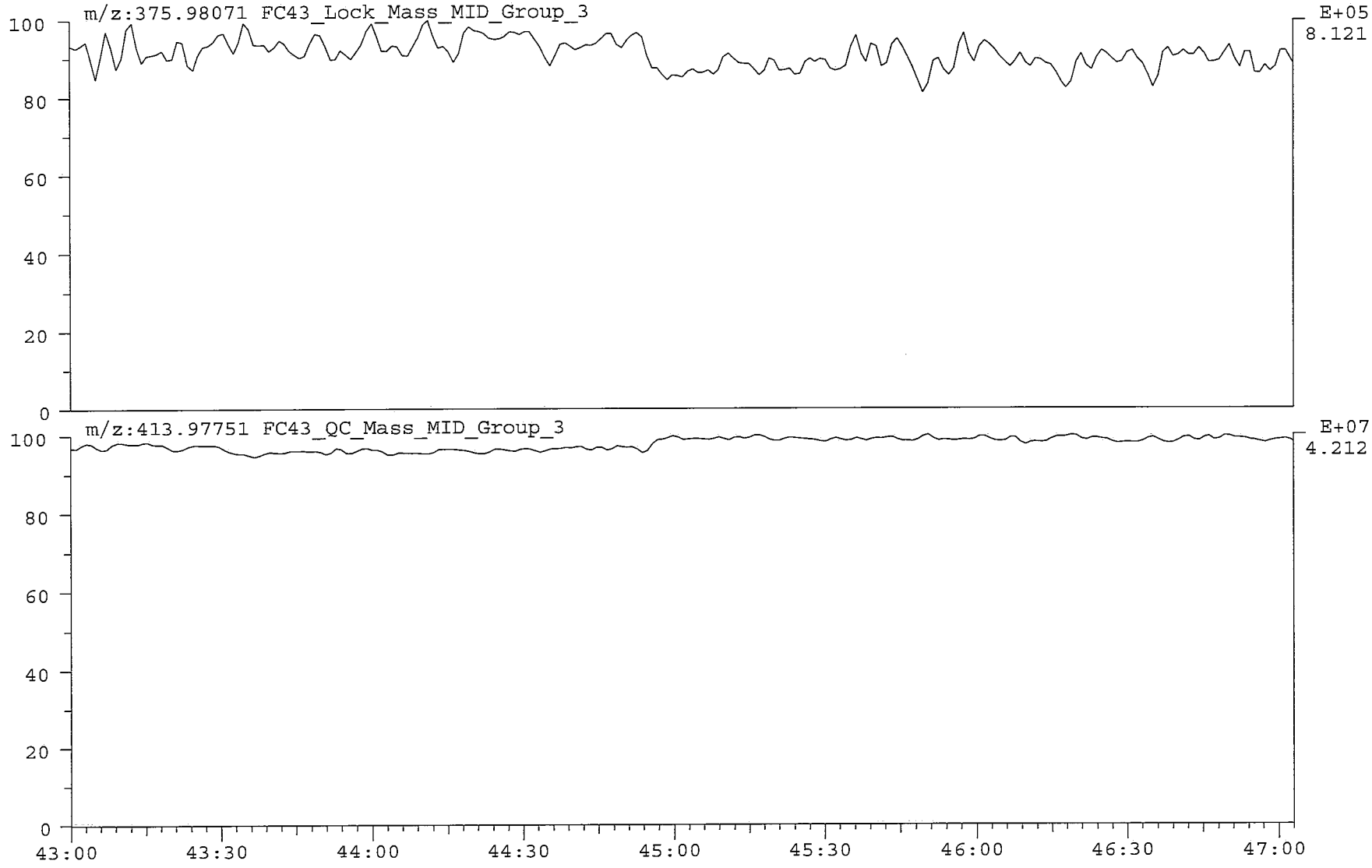
CHRO: d1tm8113 18-Aug-16 Elapse: 45:29 1951
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1886 > 1919 Masses: 303 > 514
Area: 5, 1.00, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



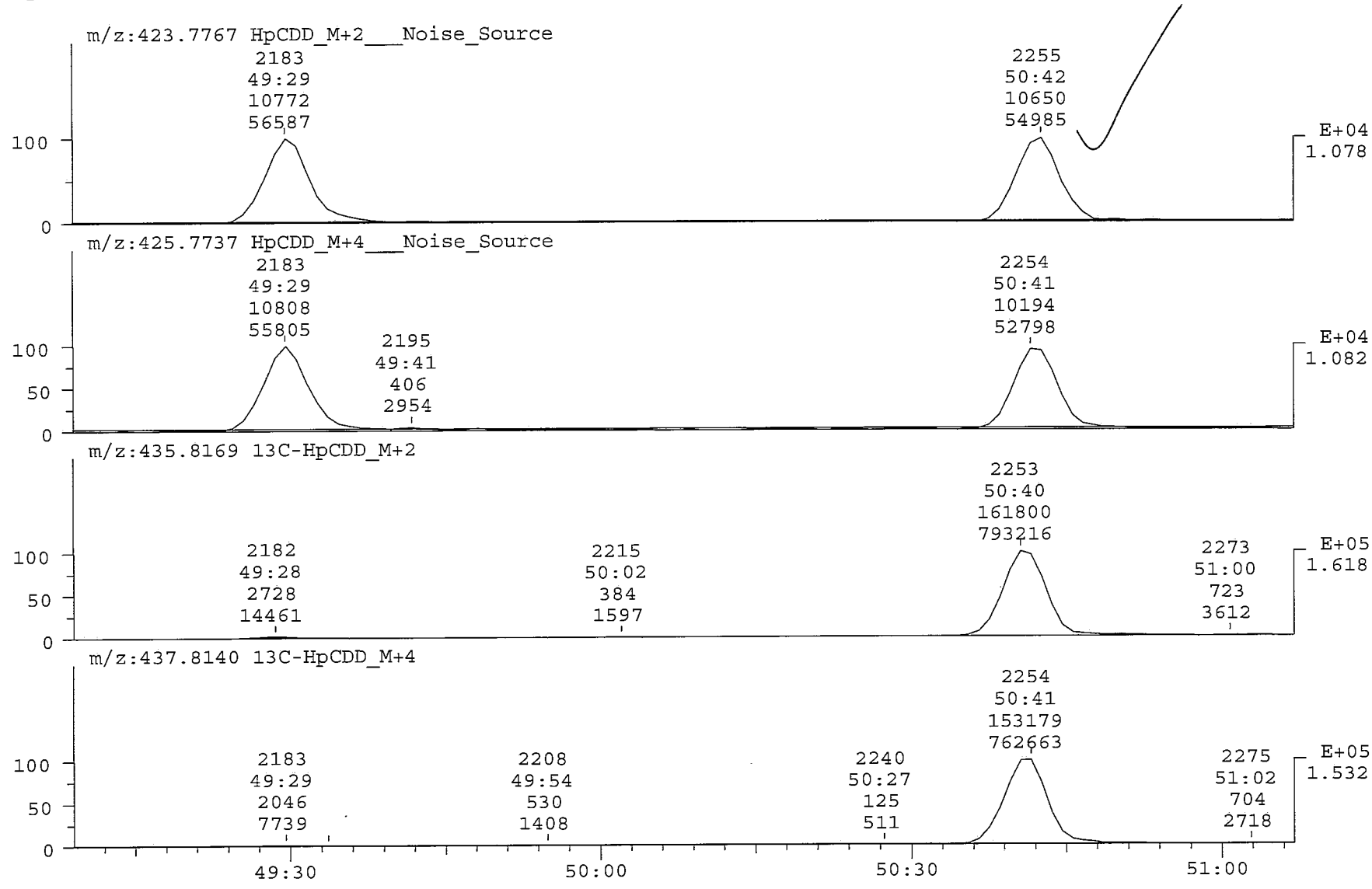
```
CHRO:  d1tm8113                                18-Aug-16  Elapse:  44:41      1904
Samp:  WO=m81131ac Meth=9Ao Dil=1                         Start :  16:10:24   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1804 > 2044          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



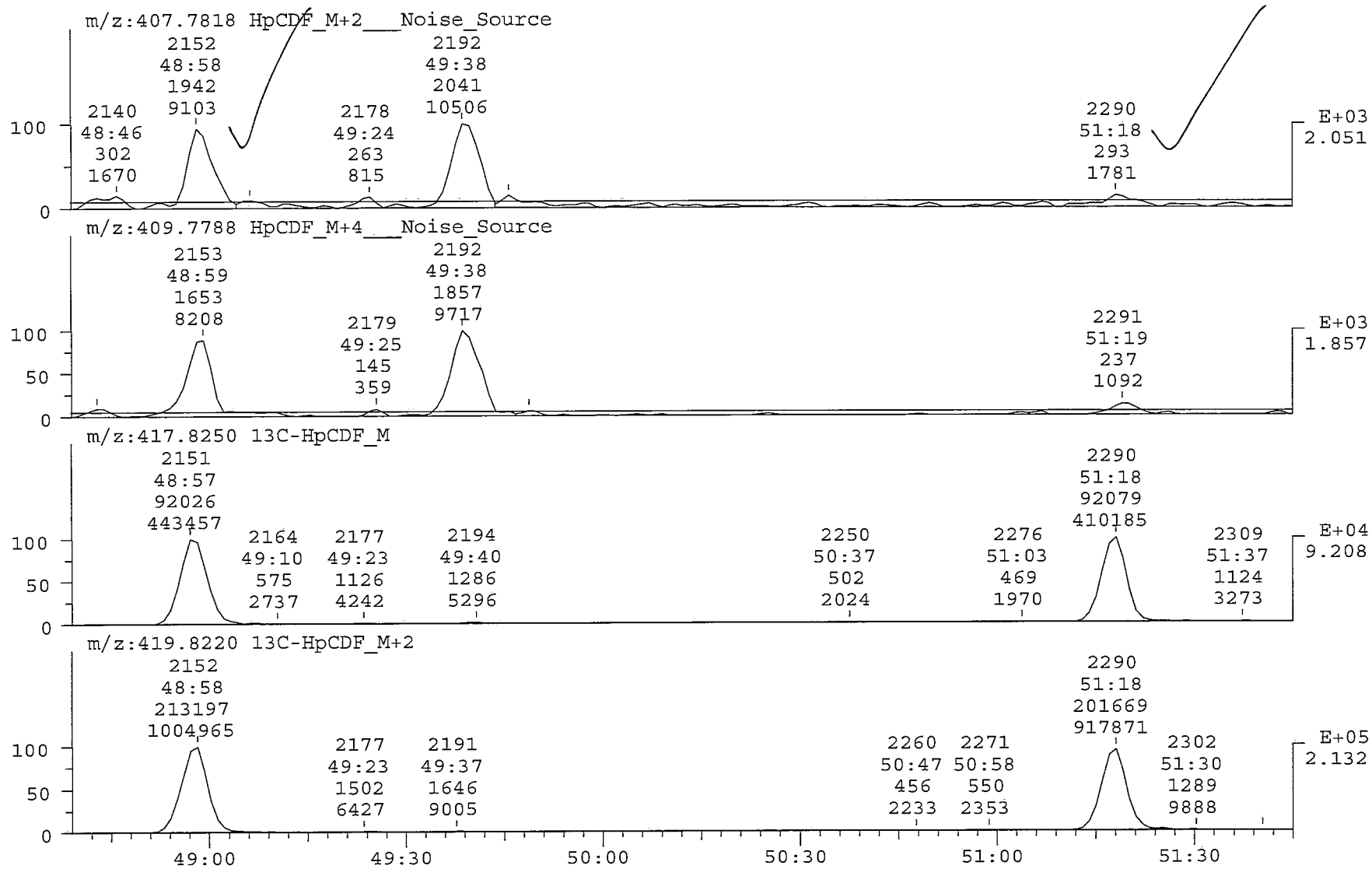
CHRO: d1tm8113 18-Aug-16 Elapse: 44:41 1904
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1804 > 2044 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



CHRO: d1tm8113 18-Aug-16 Elapse: 44:41 1904
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2163 > 2279 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1tm8113 18-Aug-16 Elapse: 50:12 2225
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2317 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



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CHRO:  d1tm8113                                  18-Aug-16  Elapse:  50:12      2225
Samp:  WO=m81131ac Meth=9Ao Dil=1                           Start :  16:10:24   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  6217014 (9.7g)
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2133 > 2317            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```
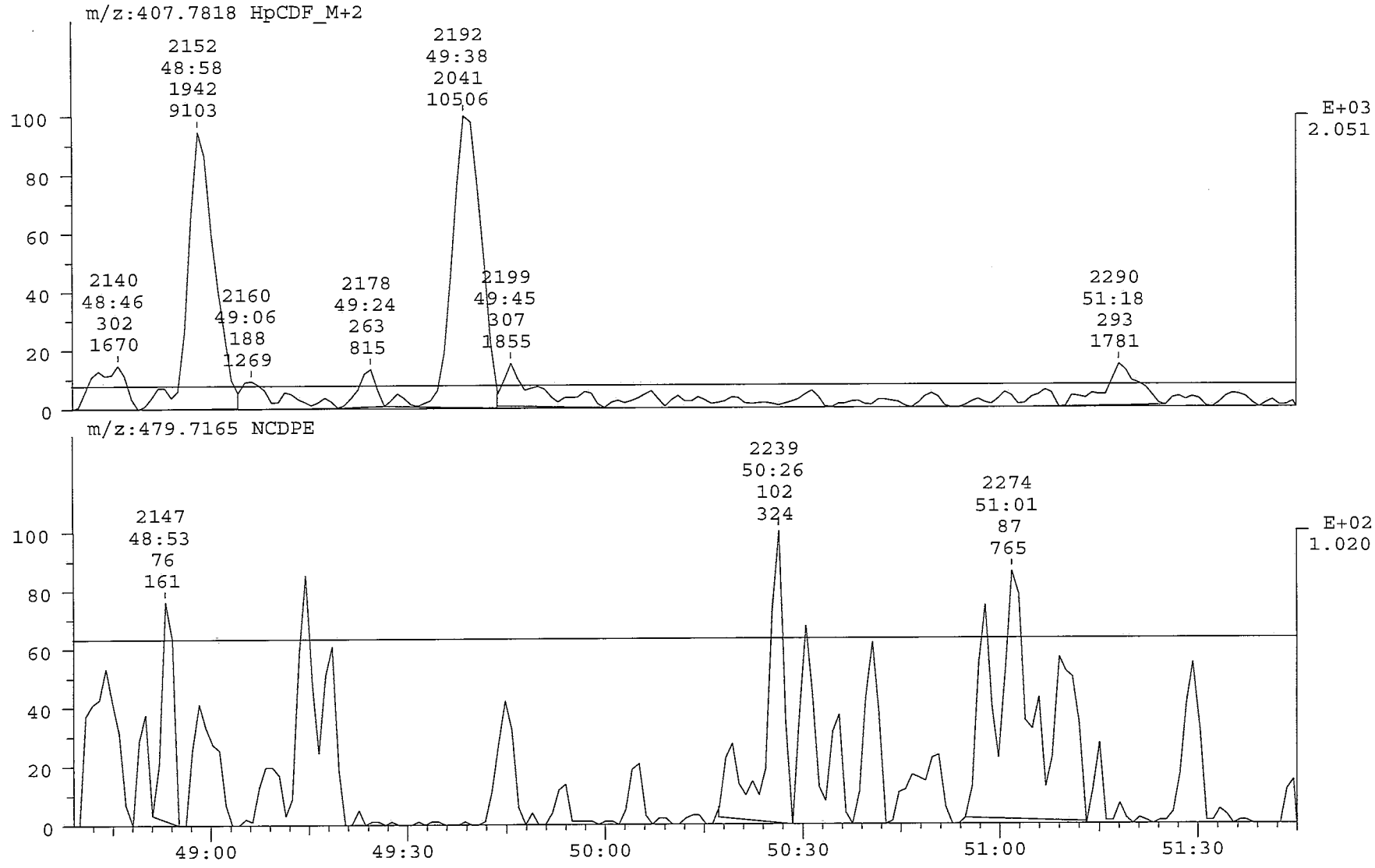
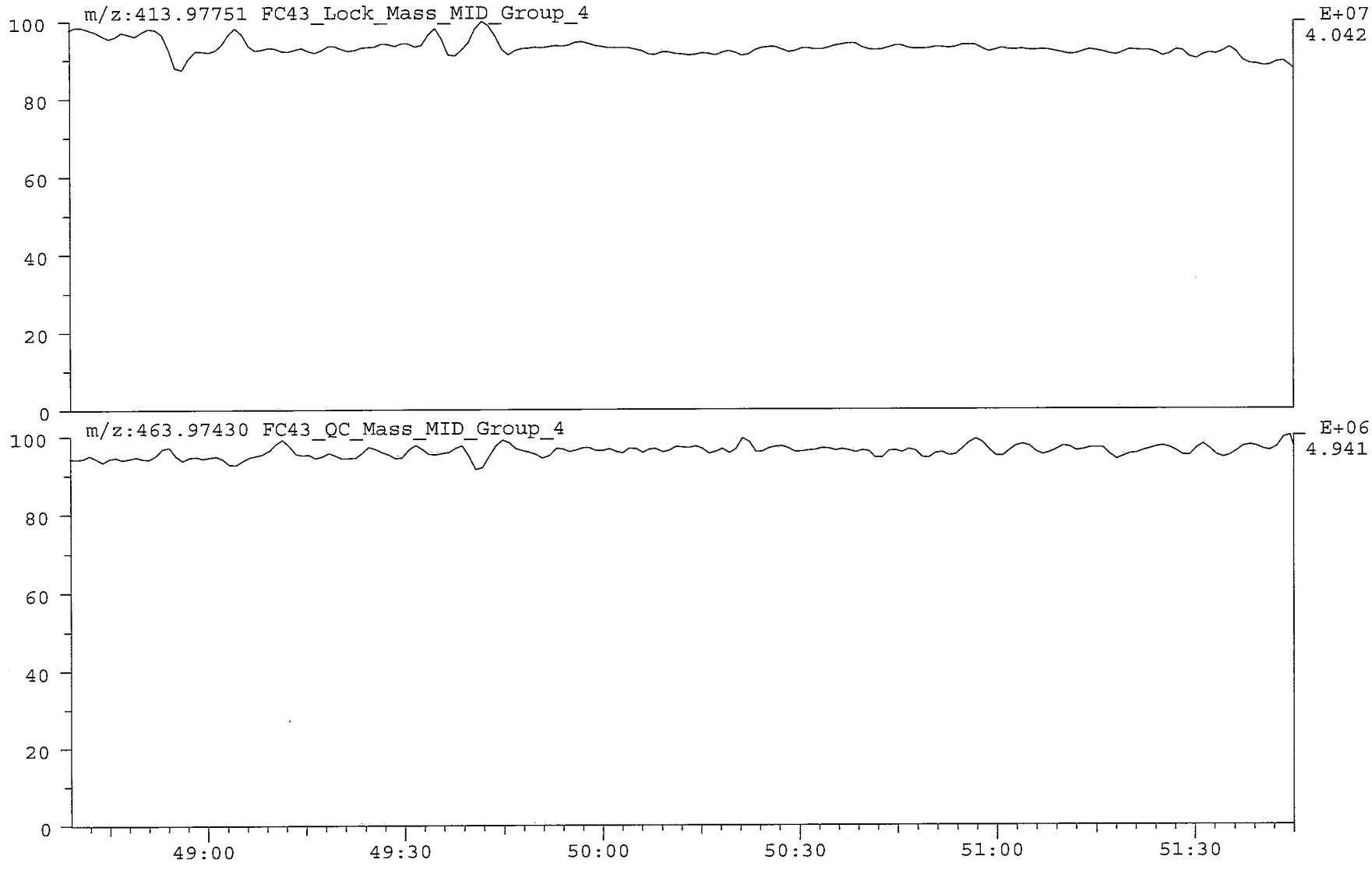
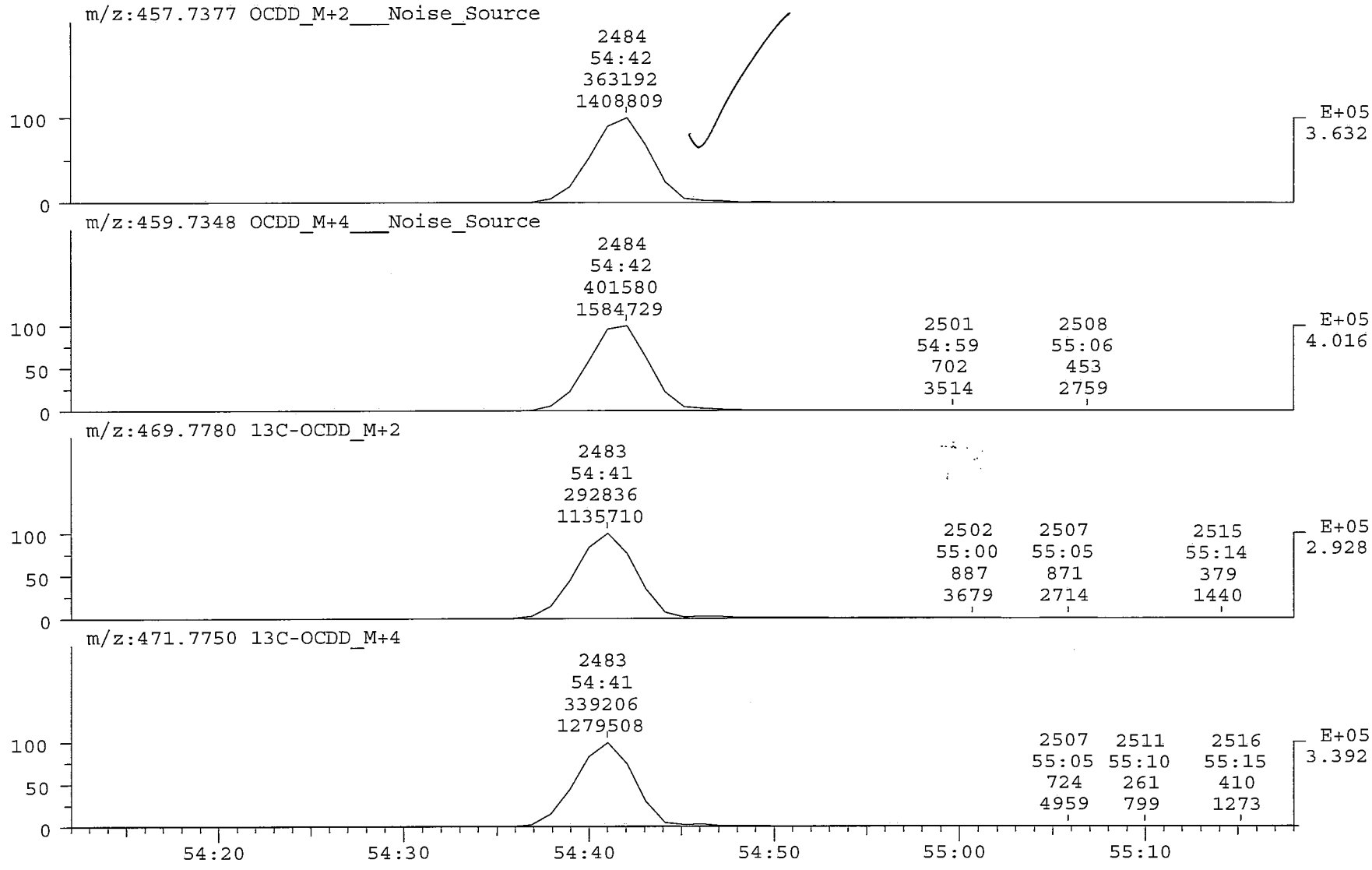



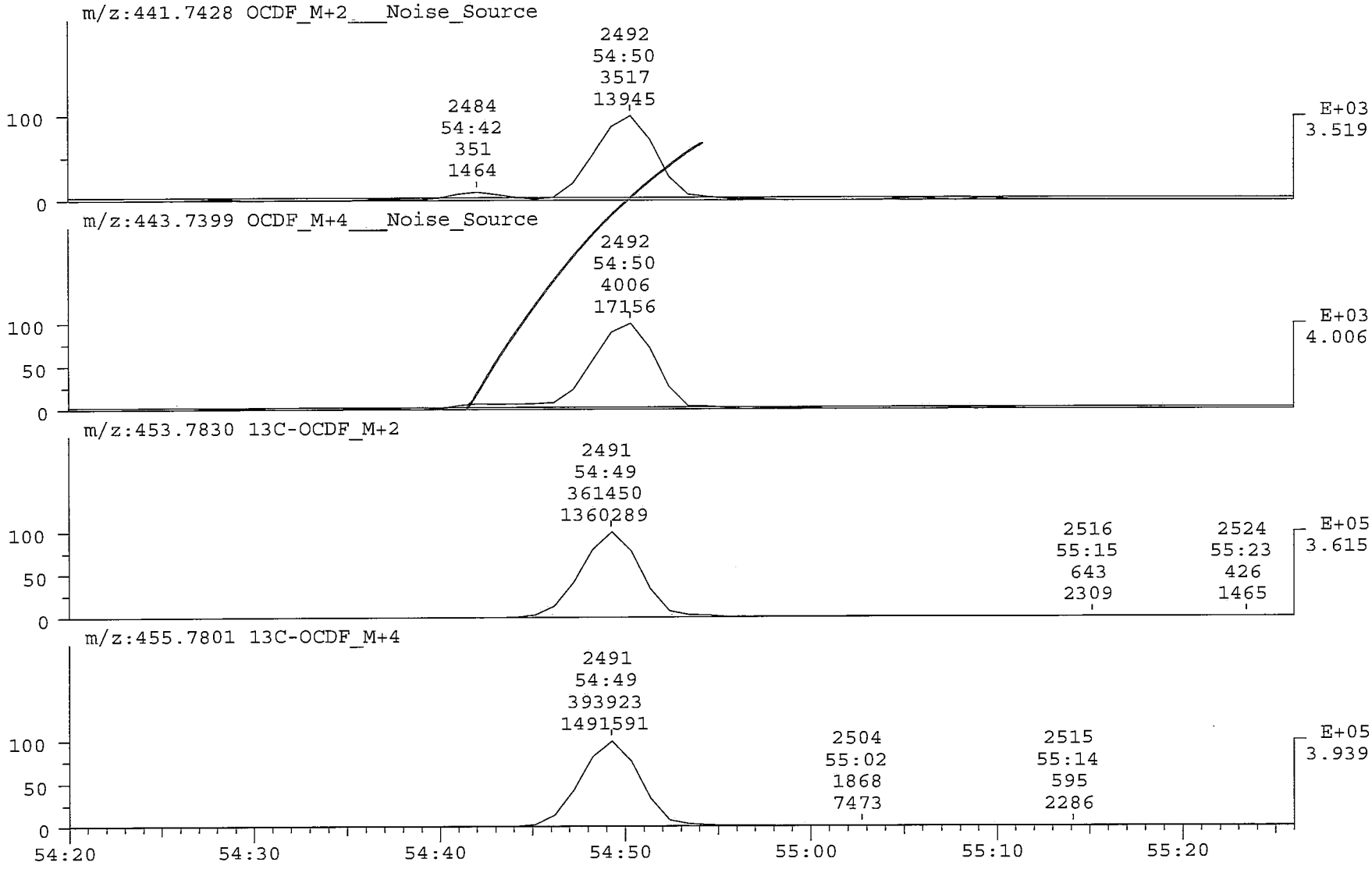
```
CHRO:  d1tm8113                                18-Aug-16  Elapse:  50:12      2225
Samp:  WO=m81131ac Meth=9Ao Dil=1                         Start :  16:10:24   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2133 > 2317          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



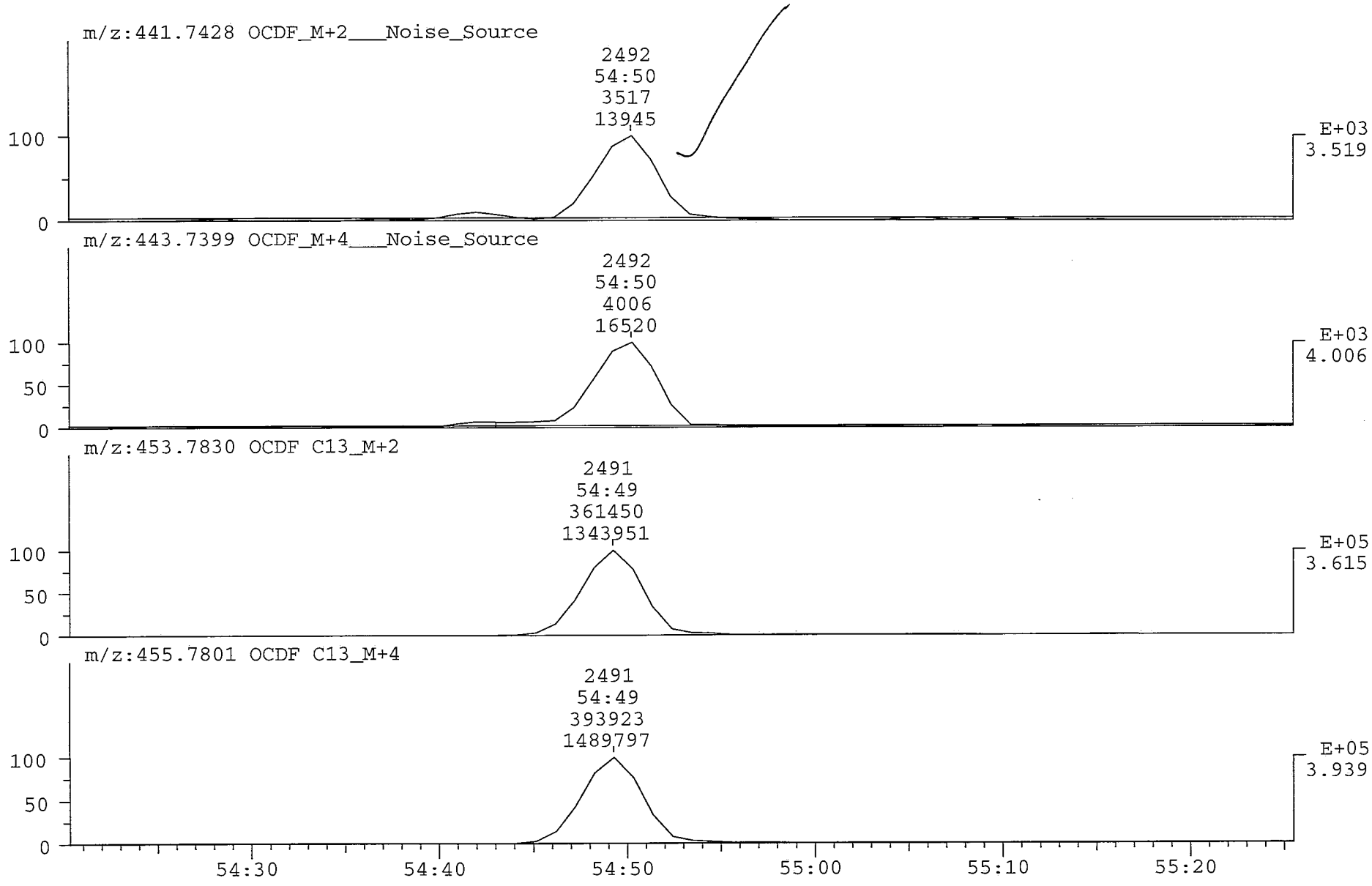
```
CHRO:  d1tm8113                                18-Aug-16  Elapse:  54:42      2484
Samp:  WO=m81131ac Meth=9Ao Dil=1                         Start :  16:10:24   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2455 > 2519          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



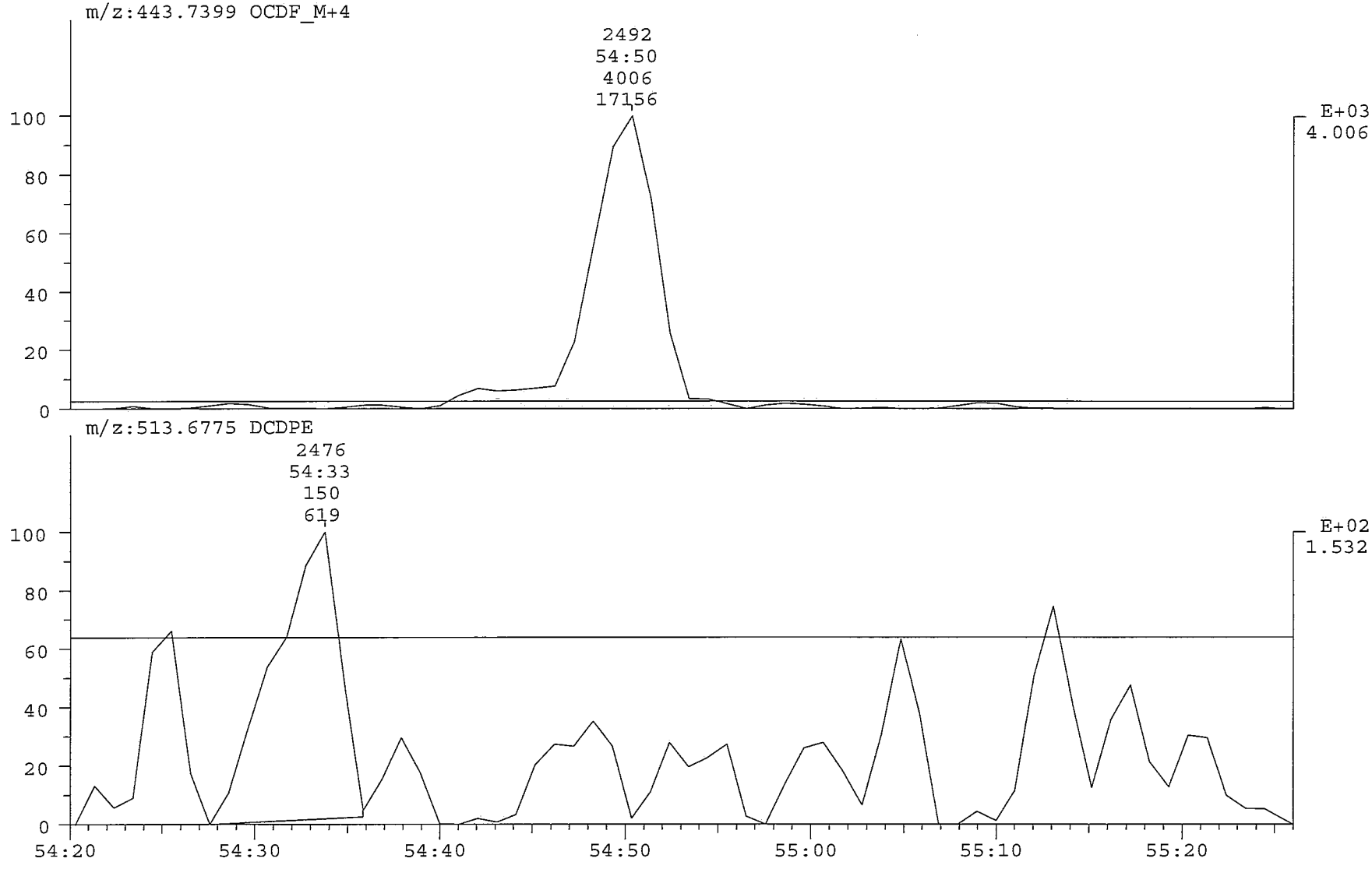
CHRO: d1tm8113 18-Aug-16 Elapse: 54:50 2492
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2463 > 2526 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



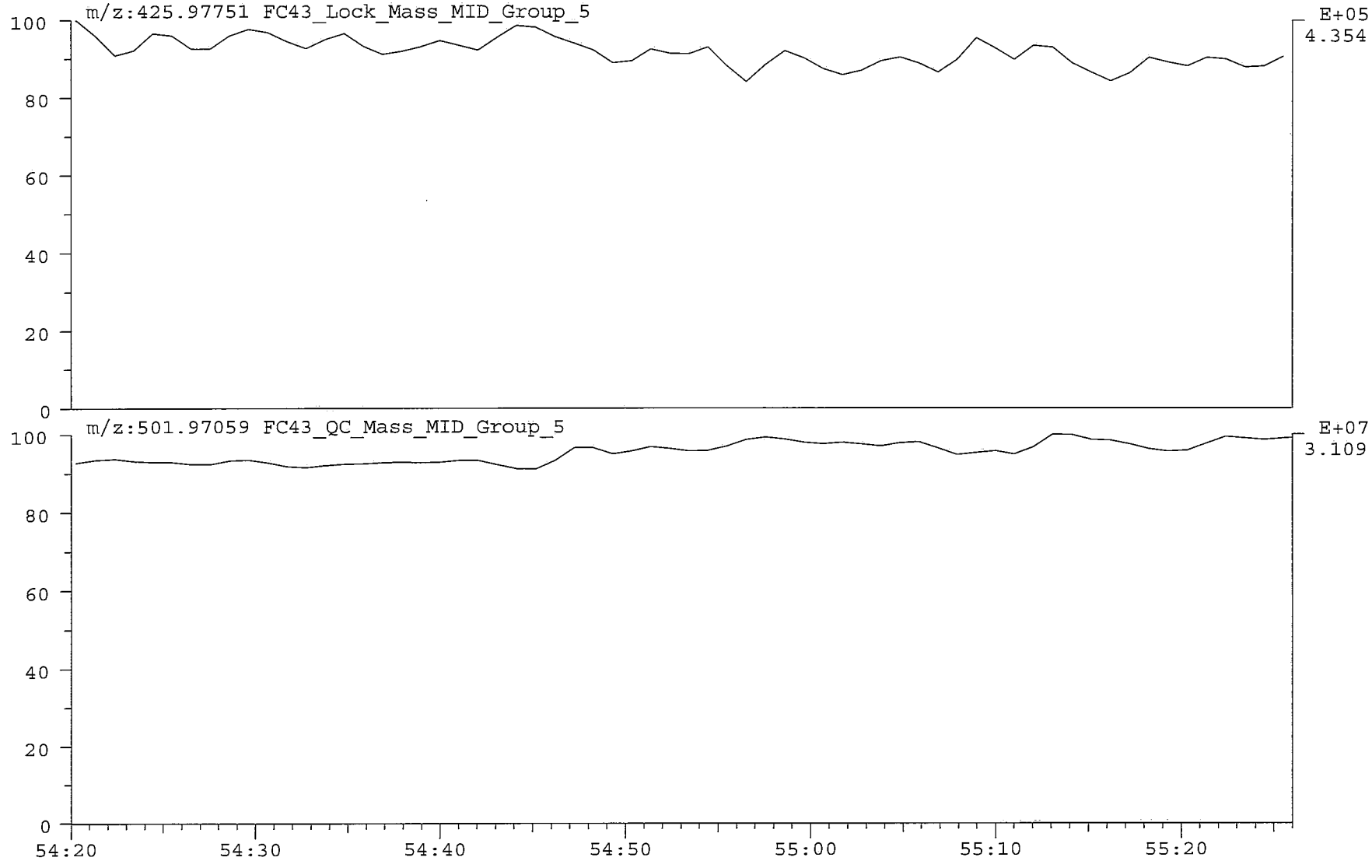
CHRO: d1tm8113 18-Aug-16 Elapse: 54:50 2492
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2489 > 2495 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d1tm8113                              18-Aug-16  Elapse:  54:50      2492
Samp:  WO=m81131ac Meth=9Ao Dil=1                       Start :  16:10:24   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                              Study :  6217014 (9.7g)
Oper:  KLR                                              Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2463 > 2526        Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3             Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1tm8113                                18-Aug-16  Elapse:  54:50      2492
Samp:  WO=m81131ac Meth=9Ao Dil=1                         Start :  16:10:24   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2463 > 2526          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



```
*** file opened Thu Aug 18 16:14:52 2016 ***

Started by                - Xcalibur
Instrument Internet name  - DFS MS
Instrument model          - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

  Analysis started at: 18-Aug-16 16:14:51

  Analysis will stop at user request

  Firmware Version: 1.03

  MCAL file name: mcal1.cal

  Sequence : 021716KLR_160818104944

  MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF


  Mid Time Windows:
        Start        Measure      End       Cycletime

  # 1  12:00 min  23:53 min  35:53 min   1.00 sec
  # 2  35:53 min   6:50 min  42:43 min   1.00 sec
  # 3  42:43 min   5:16 min  48:00 min   1.00 sec
  # 4  48:00 min   5:00 min  53:00 min   1.00 sec
  # 5  53:00 min   4:12 min  57:12 min   1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    303.9016     1  1      123
    305.8987     1  1      123
    313.9834 l  20  1        6
    313.9834    20  1        6
    315.9419     5  1       24
    317.9389     5  1       24
    319.8965     1  1      123
    321.8936     1  1      123
    327.8847     1  1      123
    331.9368     5  1       24
    333.9338     5  1       24
    363.9802 c  20  1        6
    363.9802 c  20  1        6
    375.8364     1  1      123
   Window # 2
        mass F  int  gr  time (ms)
    313.9834 l  20  1        7
    313.9834    20  1        7
    339.8597     1  1      146
    341.8567     1  1      146
    351.9000     5  1       29
    353.8970     5  1       29
    355.8546     1  1      146
    357.8516     1  1      146
    367.8949     5  1       29
    369.8919     5  1       29
    375.9802 c  20  1        7
    375.9802    20  1        7
    409.7974     1  1      146
   Window # 3
        mass F  int  gr  time (ms)
    373.8208     1  1      146
    375.8178     1  1      146
    375.9802 l  20  1        7
```

```
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          308.9834
 BQUAD            2.4000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE       18.0000  ECORR           1.0008   ECURR            1.0000
 EDAC        7969177.0000  EDACG           0.9997   EDACZ         2585.8226
 ELEN           -45.0000   EMULT        1802.0000   ENS            210.0000
 ENSBR            2.4000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           172.0000   EXSBR            2.5000
 FDMA       18000000.0000  FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            6.7000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0479	FVSRC	0.0400
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	620.0000
LENS_SYM	-4.7500	LM	375.8364	LMII	500.0000
LMASS	308.9834	LKM	425.9770	MASS	308.9834
MDAC	3555246.5912	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2650.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-7.0000	RECURR	0.8991	RELEN	0.0000
RES	12296.4302	RPUSHER	-6.9670	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0986	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	308.9834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:        2.6e-005 mbar
Analyzer Penning:    9.5e-008 mbar
Pirani Analyse:      4.4e-003 mbar
Pirani Source:       4.0e-002 mbar
Pirani Inlet System: 4.8e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 12202.
MID Time Window 2: Resolution is 12558.
MID Time Window 3: Resolution is 11945.
MID Time Window 4: Resolution is 11955.
MID Time Window 5: Resolution is 12296.

Amplifier Offset: 87.


*** File closed Thu Aug 18 17:12:05 2016
  ***
```

QUAN: d1tm8113.q0 Entries: 250

Data file(s) used
File: d1tm8113 18-Aug-16
Samp: WO=m81131ac Meth=9Ao Dil=1 Start : 16:10:24 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	33:00	518.	123.	32:53	33:02	9.	1	1.0	ABB
321.8775	31:30	934.	165.	31:25	31:34	11.	1	1.0	ABV
319.8805	32:56	249.	93.	32:53	32:58	9.	2	5.0	ABV
319.8805	33:00	269.	123.	32:58	33:02	9.	2	5.0	AVB
321.8775	31:30	934.	165.	31:25	31:34	11.	2	5.0	ABV
321.8775	31:35	549.	160.	31:34	31:40	11.	2	5.0	AVB
321.8775	32:38	190.	79.	32:35	32:40	11.	2	5.0	ABB
321.8775	32:56	184.	65.	32:51	32:57	11.	2	5.0	ABV
321.8775	33:00	261.	108.	32:57	33:02	11.	2	5.0	AVB
321.8775	33:24	201.	84.	33:20	33:26	11.	2	5.0	ABB
331.9202	32:18	2558347.	268402.	32:03	32:33	149.	2	5.0	AVV
331.9202	32:51	855794.	88490.	32:36	33:06	149.	2	5.0	AVV
331.9202	33:12	6781.	861.	33:10	33:25	149.	2	5.0	ABB
333.9171	32:19	3048459.	301878.	32:04	32:33	86.	2	5.0	AVV
333.9171	32:51	1114775.	108535.	32:36	33:06	86.	2	5.0	AVV
303.8864	30:48	3733.	316.	30:37	31:03	17.	1	1.0	ABB
305.8834	30:47	5290.	467.	30:36	31:02	21.	1	1.0	ABB
303.8864	29:35	909.	138.	29:28	29:42	17.	2	5.0	ABB
303.8864	30:17	1281.	188.	30:03	30:19	17.	2	5.0	ABV
303.8864	30:20	444.	100.	30:19	30:25	17.	2	5.0	AVB
303.8864	30:48	3733.	316.	30:37	31:03	17.	2	5.0	ABB
303.8864	32:04	1519.	261.	31:57	32:12	17.	2	5.0	ABB
305.8834	29:33	575.	167.	29:27	29:34	21.	2	5.0	ABV
305.8834	29:36	616.	225.	29:34	29:38	21.	2	5.0	AVV
305.8834	29:40	498.	185.	29:38	29:42	21.	2	5.0	AVB
305.8834	30:09	817.	138.	29:57	30:11	21.	2	5.0	ABV
305.8834	30:13	537.	140.	30:11	30:16	21.	2	5.0	AVV
305.8834	30:19	874.	209.	30:16	30:25	21.	2	5.0	AVB
305.8834	30:47	5290.	467.	30:36	31:02	21.	2	5.0	ABB
305.8834	32:03	2926.	322.	31:50	32:13	21.	2	5.0	ABB
315.9261	29:26	610.	265.	29:23	29:28	28.	2	5.0	ABB
315.9261	29:35	6191.	1082.	29:28	29:42	28.	2	5.0	ABB
315.9261	30:10	695.	246.	30:07	30:15	28.	2	5.0	ABB
315.9261	30:42	1382650.	138269.	30:28	30:58	28.	2	5.0	ABV
315.9261	31:07	5693.	1039.	31:02	31:10	28.	2	5.0	AVV
315.9261	31:14	2099.	494.	31:10	31:17	28.	2	5.0	AVV
315.9261	31:19	891.	176.	31:17	31:25	28.	2	5.0	AVB
315.9261	31:32	1351.	376.	31:26	31:34	28.	2	5.0	ABV
315.9261	31:35	585.	267.	31:34	31:38	28.	2	5.0	AVB
315.9261	31:41	1127.	369.	31:38	31:44	28.	2	5.0	ABV
315.9261	31:52	2918.	736.	31:44	31:54	28.	2	5.0	AVV
315.9261	31:56	1561.	638.	31:54	31:59	28.	2	5.0	AVB
315.9261	32:04	1300.	453.	32:01	32:07	28.	2	5.0	ABB
315.9261	32:13	2016.	543.	32:08	32:16	28.	2	5.0	ABB
315.9261	32:22	767.	347.	32:19	32:23	28.	2	5.0	ABB
317.9230	29:32	6530.	1198.	29:24	29:35	43.	2	5.0	ABV
317.9230	29:38	2835.	641.	29:35	29:44	43.	2	5.0	AVB
317.9230	30:43	1739052.	183845.	30:28	30:59	43.	2	5.0	ABV
317.9230	31:18	4563.	1063.	31:09	31:20	43.	2	5.0	AVV
317.9230	31:22	2184.	1003.	31:20	31:24	43.	2	5.0	AVV

317.9230	31:26	2103.	364.	31:24	31:38	43.	2	5.0	AVB
317.9230	31:57	1484.	348.	31:50	31:59	43.	2	5.0	ABB
317.9230	32:13	688.	286.	32:10	32:15	43.	2	5.0	ABB
355.8368	41:24	1685.	314.	41:12	41:31	24.	1	1.0	AVB
357.8337	41:25	1039.	195.	41:18	41:28	22.	1	1.0	ABB
355.8368	40:43	1099.	197.	40:39	40:49	24.	2	5.0	ABB
355.8368	40:53	1161.	169.	40:49	41:03	24.	2	5.0	ABB
355.8368	41:07	549.	212.	41:04	41:09	24.	2	5.0	ABB
355.8368	41:24	1749.	314.	41:09	41:31	24.	2	5.0	ABB
357.8337	40:46	330.	158.	40:44	40:49	22.	2	5.0	ABB
357.8337	41:25	1039.	195.	41:18	41:28	22.	2	5.0	ABB
367.8765	40:59	1778.	329.	40:54	41:07	19.	2	5.0	ABB
367.8765	41:24	1017783.	250421.	41:16	41:35	19.	2	5.0	ABV
367.8765	41:37	7625.	2242.	41:35	41:40	19.	2	5.0	AVV
367.8765	41:42	3561.	1023.	41:40	41:48	19.	2	5.0	AVV
367.8765	41:50	1094.	431.	41:48	41:52	19.	2	5.0	AVB
367.8765	41:56	1306.	386.	41:52	41:59	19.	2	5.0	ABV
367.8765	42:03	4018.	1212.	41:59	42:08	19.	2	5.0	AVB
369.8734	40:57	405.	153.	40:54	41:01	19.	2	5.0	ABB
369.8734	41:24	625983.	151029.	41:16	41:34	19.	2	5.0	ABV
369.8734	41:36	6742.	2299.	41:34	41:39	19.	2	5.0	AVV
369.8734	41:40	596.	317.	41:39	41:42	19.	2	5.0	AVV
369.8734	41:46	1951.	517.	41:42	41:50	19.	2	5.0	AVB
369.8734	42:02	1740.	386.	41:58	42:09	19.	2	5.0	ABB
339.8427	40:55	2654.	541.	40:50	41:01	26.	1	1.0	ABB
341.8396	41:07	2300.	342.	40:59	41:12	30.	1	1.0	ABB
339.8427	39:20	1965.	330.	39:13	39:26	26.	2	5.0	ABB
339.8427	39:46	1449.	272.	39:37	39:52	26.	2	5.0	ABB
339.8427	40:01	879.	201.	39:57	40:06	26.	2	5.0	ABB
339.8427	40:16	1853.	317.	40:09	40:24	26.	2	5.0	ABB
339.8427	40:55	2654.	541.	40:50	41:01	26.	2	5.0	ABB
339.8427	41:07	1998.	408.	41:03	41:18	26.	2	5.0	ABB
341.8396	39:18	1834.	465.	39:14	39:25	30.	2	5.0	ABB
341.8396	39:45	1505.	214.	39:37	39:50	30.	2	5.0	ABB
341.8396	40:16	2522.	308.	40:01	40:22	30.	2	5.0	AVB
341.8396	40:57	1932.	367.	40:41	40:59	30.	2	5.0	AVB
341.8396	41:07	2300.	342.	40:59	41:12	30.	2	5.0	ABB
351.8824	39:16	6417.	863.	39:11	39:23	83.	2	5.0	ABB
351.8824	39:44	1695471.	364795.	39:29	39:55	83.	2	5.0	AVV
351.8824	40:00	12732.	2102.	39:55	40:03	83.	2	5.0	AVV
351.8824	40:07	2947.	718.	40:03	40:08	83.	2	5.0	AVV
351.8824	40:14	21251.	3973.	40:08	40:28	83.	2	5.0	AVV
351.8824	40:31	3828.	740.	40:28	40:42	83.	2	5.0	AVV
351.8824	40:54	1803957.	423457.	40:42	41:04	83.	2	5.0	AVV
351.8824	41:06	11385.	2613.	41:04	41:12	83.	2	5.0	AVV
351.8824	41:15	2805.	725.	41:12	41:19	83.	2	5.0	AVV
351.8824	41:23	2097.	433.	41:19	41:26	83.	2	5.0	AVV
351.8824	41:29	1930.	678.	41:26	41:31	83.	2	5.0	AVB
353.8793	39:20	4231.	799.	39:12	39:23	74.	2	5.0	ABV
353.8793	39:25	1396.	423.	39:23	39:28	74.	2	5.0	AVB
353.8793	39:44	1048920.	226667.	39:36	39:56	74.	2	5.0	ABV
353.8793	39:59	7340.	1173.	39:56	40:05	74.	2	5.0	AVB
353.8793	40:13	10326.	1848.	40:05	40:19	74.	2	5.0	ABB
353.8793	40:26	2024.	435.	40:20	40:31	74.	2	5.0	ABB
353.8793	40:54	1146162.	274903.	40:44	41:09	74.	2	5.0	ABV
353.8793	41:22	1604.	453.	41:18	41:24	74.	2	5.0	AVB
389.7961	46:09	4933.	946.	46:02	46:15	40.	1	1.0	ABB
391.7931	46:10	4772.	849.	46:01	46:19	32.	1	1.0	ABB
389.7961	45:27	1461.	268.	45:21	45:34	40.	2	5.0	ABB
389.7961	45:38	1503.	326.	45:34	45:42	40.	2	5.0	ABV
389.7961	45:46	3704.	923.	45:42	45:52	40.	2	5.0	AVB
389.7961	46:09	4933.	946.	46:02	46:15	40.	2	5.0	ABB
391.7931	45:39	1385.	317.	45:32	45:42	32.	2	5.0	ABV
391.7931	45:47	2228.	556.	45:42	45:50	32.	2	5.0	AVB
391.7931	46:10	4228.	849.	46:01	46:13	32.	2	5.0	ABV
391.7931	46:14	544.	183.	46:13	46:19	32.	2	5.0	AVB
401.8358	45:38	936132.	246509.	45:29	45:41	85.	2	5.0	ABV

401.8358	45:45	977246.	234142.	45:41	46:00	85.	2	5.0	AVV
401.8358	46:09	3030856.	725098.	46:02	46:25	85.	2	5.0	AVV
401.8358	46:32	2368.	1161.	46:30	46:34	85.	2	5.0	AVB
403.8327	45:38	716429.	192825.	45:30	45:41	95.	2	5.0	ABV
403.8327	45:45	763491.	189254.	45:41	45:52	95.	2	5.0	AVV
403.8327	45:56	9047.	1557.	45:52	46:02	95.	2	5.0	AVV
403.8327	46:09	2435943.	584367.	46:02	46:19	95.	2	5.0	AVV
403.8327	46:21	14980.	3684.	46:19	46:29	95.	2	5.0	AVV
403.8327	46:30	1362.	526.	46:29	46:33	95.	2	5.0	AVB
373.8021	44:34	3452.	737.	44:29	44:38	31.	1	1.0	AVV
375.7990	44:35	4473.	724.	44:26	44:38	47.	1	1.0	ABV
373.8021	44:18	2015.	613.	44:14	44:22	31.	2	5.0	ABB
373.8021	44:34	3762.	737.	44:25	44:38	31.	2	5.0	ABV
373.8021	44:44	2761.	472.	44:38	44:59	31.	2	5.0	AVV
373.8021	45:17	612.	183.	45:12	45:20	31.	2	5.0	ABB
373.8021	45:28	1946.	419.	45:20	45:33	31.	2	5.0	ABB
375.7990	44:18	2798.	692.	44:15	44:26	47.	2	5.0	ABB
375.7990	44:35	4473.	724.	44:26	44:38	47.	2	5.0	ABV
375.7990	44:43	3656.	648.	44:38	44:56	47.	2	5.0	AVB
375.7990	45:29	4697.	331.	45:14	45:44	47.	2	5.0	AVV
375.7990	46:27	1499.	317.	46:19	46:29	47.	2	5.0	ABV
375.7990	46:31	1036.	242.	46:29	46:34	47.	2	5.0	AVV
375.7990	46:37	1543.	545.	46:34	46:39	47.	2	5.0	AVB
373.8021	44:18	2015.	613.	44:14	44:22	31.	2	5.0	ABB
373.8021	44:34	3762.	737.	44:25	44:38	31.	2	5.0	ABV
373.8021	44:44	2761.	472.	44:38	44:59	31.	2	5.0	AVV
373.8021	45:17	612.	183.	45:12	45:20	31.	2	5.0	ABB
373.8021	45:28	1946.	419.	45:20	45:33	31.	2	5.0	ABB
375.7990	44:18	2798.	692.	44:15	44:26	47.	2	5.0	ABB
375.7990	44:35	4473.	724.	44:26	44:38	47.	2	5.0	ABV
375.7990	44:43	3656.	648.	44:38	44:56	47.	2	5.0	AVB
375.7990	45:29	4697.	331.	45:14	45:44	47.	2	5.0	AVV
375.7990	46:27	1499.	317.	46:19	46:29	47.	2	5.0	ABV
375.7990	46:31	1036.	242.	46:29	46:34	47.	2	5.0	AVV
375.7990	46:37	1543.	545.	46:34	46:39	47.	2	5.0	AVB
383.8447	44:34	737281.	190242.	44:27	44:37	81.	2	5.0	ABV
383.8447	44:42	842811.	210540.	44:37	44:57	81.	2	5.0	AVV
383.8447	45:00	1725.	591.	44:58	45:02	81.	2	5.0	AVV
383.8447	45:11	5648.	723.	45:02	45:15	81.	2	5.0	AVB
383.8447	45:27	794977.	194424.	45:16	45:34	81.	2	5.0	ABV
383.8447	45:36	6307.	1557.	45:34	45:41	81.	2	5.0	AVV
383.8447	45:43	2131.	665.	45:41	45:45	81.	2	5.0	AVV
383.8447	45:46	1249.	472.	45:45	45:49	81.	2	5.0	AVV
383.8447	46:01	5578.	596.	45:49	46:14	81.	2	5.0	AVB
383.8447	46:28	692489.	152233.	46:16	46:41	81.	2	5.0	ABV
383.8447	46:43	2456.	800.	46:41	46:45	81.	2	5.0	AVV
383.8447	46:47	3566.	762.	46:45	46:52	81.	2	5.0	AVB
385.8417	44:34	1386196.	360160.	44:26	44:37	78.	2	5.0	ABV
385.8417	44:42	1655671.	418794.	44:37	44:57	78.	2	5.0	AVV
385.8417	45:01	4342.	1129.	44:58	45:03	78.	2	5.0	AVB
385.8417	45:06	1481.	411.	45:03	45:08	78.	2	5.0	ABV
385.8417	45:11	1752.	401.	45:08	45:15	78.	2	5.0	AVV
385.8417	45:27	1509250.	372758.	45:15	45:38	78.	2	5.0	AVV
385.8417	45:42	5882.	1615.	45:38	45:44	78.	2	5.0	AVV
385.8417	45:47	3601.	798.	45:44	45:50	78.	2	5.0	AVV
385.8417	45:53	3770.	875.	45:50	45:59	78.	2	5.0	AVB
385.8417	46:02	1706.	566.	45:59	46:04	78.	2	5.0	ABV
385.8417	46:07	5679.	820.	46:04	46:19	78.	2	5.0	AVB
385.8417	46:27	1320723.	295613.	46:19	46:36	78.	2	5.0	ABV
385.8417	46:38	9390.	2460.	46:36	46:43	78.	2	5.0	AVV
385.8417	46:45	1880.	515.	46:43	46:49	78.	2	5.0	AVB
423.7555	49:29	56587.	10772.	49:21	49:44	36.	1	1.0	ABV
425.7524	49:29	55514.	10808.	49:21	49:39	45.	1	1.0	AVV
423.7555	49:29	56587.	10772.	49:21	49:44	36.	2	5.0	ABV
423.7555	50:42	54985.	10650.	50:34	50:57	36.	2	5.0	ABV
425.7524	49:29	55805.	10808.	49:16	49:39	45.	2	5.0	ABV
425.7524	50:41	52798.	10194.	50:34	50:56	45.	2	5.0	ABV

435.7951	49:28	14461.	2728.	49:22	49:35	32.	2	5.0	ABB
435.7951	50:02	1597.	384.	49:55	50:04	32.	2	5.0	ABB
435.7951	50:40	793216.	161800.	50:32	50:55	32.	2	5.0	ABV
435.7951	51:00	3612.	723.	50:57	51:07	32.	2	5.0	AVB
437.7921	49:29	7739.	2046.	49:23	49:32	23.	2	5.0	ABV
437.7921	49:33	2096.	407.	49:32	49:43	23.	2	5.0	AVB
437.7921	49:55	1408.	530.	49:51	49:58	23.	2	5.0	ABB
437.7921	50:27	511.	125.	50:23	50:30	23.	2	5.0	ABB
437.7921	50:41	762663.	153179.	50:31	50:56	23.	2	5.0	ABV
437.7921	51:02	2718.	704.	50:57	51:05	23.	2	5.0	ABB
407.7614	49:38	11683.	2041.	49:31	49:53	32.	1	1.0	AVV
409.7583	49:38	9622.	1857.	49:32	49:46	18.	1	1.0	AVV
407.7614	48:46	1670.	302.	48:40	48:49	32.	2	5.0	ABB
407.7614	48:58	9103.	1942.	48:49	49:04	32.	2	5.0	ABV
407.7614	49:06	1269.	188.	49:04	49:19	32.	2	5.0	AVB
407.7614	49:24	815.	263.	49:19	49:26	32.	2	5.0	ABB
407.7614	49:38	10506.	2041.	49:26	49:43	32.	2	5.0	ABV
407.7614	49:45	1855.	307.	49:43	50:00	32.	2	5.0	AVB
407.7614	51:18	1781.	293.	51:10	51:25	32.	2	5.0	ABB
409.7583	48:43	665.	160.	48:39	48:47	18.	2	5.0	ABB
409.7583	48:59	8208.	1653.	48:48	49:13	18.	2	5.0	ABB
409.7583	49:25	359.	145.	49:22	49:27	18.	2	5.0	ABB
409.7583	49:38	9717.	1857.	49:28	49:46	18.	2	5.0	ABV
409.7583	49:48	331.	118.	49:46	49:51	18.	2	5.0	AVB
409.7583	51:19	1092.	237.	51:13	51:24	18.	2	5.0	ABB
417.8041	48:57	443457.	92026.	48:46	49:09	37.	2	5.0	ABV
417.8041	49:10	2737.	574.	49:09	49:18	37.	2	5.0	AVB
417.8041	49:23	4242.	1126.	49:18	49:28	37.	2	5.0	ABB
417.8041	49:40	5296.	1286.	49:36	49:45	37.	2	5.0	AVB
417.8041	50:37	2024.	502.	50:33	50:40	37.	2	5.0	ABV
417.8041	51:03	1970.	469.	50:56	51:05	37.	2	5.0	ABB
417.8041	51:18	410184.	92079.	51:09	51:31	37.	2	5.0	ABB
417.8041	51:37	3273.	1124.	51:35	51:40	37.	2	5.0	AVB
419.8010	48:58	1004965.	213197.	48:49	49:12	76.	2	5.0	ABB
419.8010	49:23	6427.	1502.	49:20	49:27	76.	2	5.0	AVV
419.8010	49:37	9005.	1646.	49:34	49:44	76.	2	5.0	AVV
419.8010	50:47	2233.	456.	50:44	50:53	76.	2	5.0	ABB
419.8010	50:58	2353.	550.	50:55	51:03	76.	2	5.0	ABB
419.8010	51:18	917871.	201669.	51:10	51:28	76.	2	5.0	ABV
419.8010	51:30	9888.	1289.	51:28	51:38	76.	2	5.0	AVB
419.8010	51:40	2194.	1010.	51:38	51:42	76.	2	5.0	ABB
457.7148	54:42	1408809.	363192.	54:34	54:57	55.	1	1.0	ABV
459.7118	54:42	1584729.	401580.	54:34	54:57	51.	1	1.0	ABV
457.7148	54:42	1408809.	363192.	54:34	54:57	55.	2	5.0	ABV
459.7118	54:42	1584729.	401580.	54:34	54:57	51.	2	5.0	ABV
459.7118	54:59	3514.	702.	54:57	55:04	51.	2	5.0	AVV
459.7118	55:06	2759.	453.	55:04	55:14	51.	2	5.0	AVB
469.7545	54:41	1135710.	292836.	54:28	54:56	40.	2	5.0	ABV
469.7545	55:00	3679.	887.	54:57	55:02	40.	2	5.0	AVV
469.7545	55:05	2714.	871.	55:02	55:08	40.	2	5.0	AVB
469.7545	55:14	1440.	379.	55:10	55:17	40.	2	5.0	ABB
471.7514	54:41	1279508.	339206.	54:33	54:56	39.	2	5.0	ABV
471.7514	55:05	4959.	724.	54:57	55:08	39.	2	5.0	AVV
471.7514	55:10	799.	261.	55:08	55:12	39.	2	5.0	AVV
471.7514	55:15	1273.	410.	55:12	55:18	39.	2	5.0	AVB
441.7207	54:50	13945.	3517.	54:45	54:59	24.	1	1.0	AVB
443.7177	54:50	17156.	4006.	54:39	54:56	20.	1	1.0	ABB
441.7207	54:42	1464.	351.	54:34	54:45	24.	2	5.0	ABV
441.7207	54:50	13945.	3517.	54:45	54:59	24.	2	5.0	AVB
443.7177	54:50	17156.	4006.	54:39	54:56	20.	2	5.0	ABB
453.7603	54:49	1360289.	361450.	54:42	55:04	39.	2	5.0	ABV
453.7603	55:15	2309.	643.	55:10	55:18	39.	2	5.0	ABV
453.7603	55:23	1465.	426.	55:18	55:25	39.	2	5.0	AVB
455.7573	54:49	1491591.	393923.	54:37	54:59	23.	2	5.0	ABV
455.7573	55:02	7473.	1868.	54:59	55:09	23.	2	5.0	AVV
455.7573	55:14	2286.	595.	55:09	55:16	23.	2	5.0	AVB

TestAmerica Canton

Sample ID: PAD-XX

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 015	**Work Order #....:**	M81141AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	8.6
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.7 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.1	0.022	pg/g
1,2,3,7,8-PeCDD	**0.22**	**Q B J**	**5.6**	**0.021**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.11**	**Q J**	**5.6**	**0.036**	**pg/g**
1,2,3,6,7,8-HxCDD	**0.31**	**Q J**	**5.6**	**0.037**	**pg/g**
1,2,3,7,8,9-HxCDD	**0.42**	**C J**	**5.6**	**0.034**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**4.0**	**J**	**5.6**	**0.048**	**pg/g**
OCDD	**38**	**B**	**11**	**0.041**	**pg/g**
2,3,7,8-TCDF	**0.11**	**Q J**	**1.1**	**0.020**	**pg/g**
1,2,3,7,8-PeCDF	**0.071**	**Q J**	**5.6**	**0.020**	**pg/g**
2,3,4,7,8-PeCDF	**0.11**	**J**	**5.6**	**0.017**	**pg/g**
1,2,3,4,7,8-HxCDF	**0.27**	**C B J**	**5.6**	**0.023**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.14**	**J**	**5.6**	**0.022**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.10**	**Q J**	**5.6**	**0.023**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		5.6	0.029	pg/g
1,2,3,4,6,7,8-HpCDF	**0.80**	**B J**	**5.6**	**0.025**	**pg/g**
1,2,3,4,7,8,9-HpCDF	ND		5.6	0.027	pg/g
OCDF	**1.4**	**Q B J**	**11**	**0.019**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	61	40 - 135
13C-1,2,3,7,8-PeCDD	73	40 - 135
13C-1,2,3,4,7,8-HxCDD	66	40 - 135
13C-1,2,3,6,7,8-HxCDD	66	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	78	40 - 135
13C-OCDD	68	40 - 135
13C-2,3,7,8-TCDF	62	40 - 135
13C-1,2,3,7,8-PeCDF	70	40 - 135
13C-2,3,4,7,8-PeCDF	76	40 - 135
13C-1,2,3,4,7,8-HxCDF	57	40 - 135
13C-1,2,3,6,7,8-HxCDF	57	40 - 135
13C-2,3,4,6,7,8-HxCDF	61	40 - 135
13C-1,2,3,7,8,9-HxCDF	59	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	54	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	62	40 - 135
13C-OCDF	55	40 - 135

TestAmerica Canton

Sample ID: PAD-XX

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 015	**Work Order #....:**	M81141AC	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/18/16	**Percent Moisture**	8.6
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.7 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

C Co-eluting isomer.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81141AC	Prep Batch	6217014	Lot No	H6G290408-015
Data File	/20160818s1/d1tm8114.d	Prep Date	08/04/16	SDG No	
Analysis ID	180614	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/18/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	17:12	Initial Wt/Vol	9.7 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD				1.144				ND		0.0200
Total TCDD				1.144				ND		0.0200
2,3,7,8-TCDF	30:44	3655	748	1.066		1.003776		0.103482	QJ	0.0184
Total TCDF		11238	2131	1.066		4.090077		0.421657	QJ	0.0184
1,2,3,7,8-PeCDD	41:23	3686	748	1.060		1.929124		0.198879	QBJ	0.0190
Total PeCDD		1230	267	1.060		2.572863		0.265244	QJB	0.0190
1,2,3,7,8-PeCDF	39:43	2156	595	1.179		0.630775		0.065028	QJ	0.0185
2,3,4,7,8-PeCDF	40:55	3342	862	1.115		0.951135		0.098055	J	0.0160
Total PeCDF		11823	1919	1.147		4.989161		0.514346	QJ	0.0171
1,2,3,4,7,8-HxCDD	45:40	2063	457	1.131		0.979908		0.101021	QJ	0.0327
1,2,3,6,7,8-HxCDD	45:45	5565	1435	1.116		2.704812		0.278847	QJ	0.0341
1,2,3,7,8,9-HxCDD	46:11	8294	1558	1.205		3.715170		0.383007	CJ	0.0311
Total HxCDD				1.151		7.399891		0.762875	JQ	0.0326
1,2,3,4,7,8-HxCDF	44:33	7124	1433	1.350		2.358537		0.243148	CBJ	0.0206
1,2,3,6,7,8-HxCDF	44:42	3974	955	1.242		1.217452		0.125511	J	0.0203
2,3,4,6,7,8-HxCDF	45:27	2788	639	1.241		0.886192		0.091360	QJ	0.0212
1,2,3,7,8,9-HxCDF				1.262				ND		0.0262
Total HxCDF		8204	1855	1.274		7.144926		0.736590	JQB	0.0218
1,2,3,4,6,7,8-HpCDD	50:41	69882	14955	1.114		35.631441		3.673344	J	0.0435
Total HpCDD		65315	13124	1.114		68.934259		7.106625	J	0.0435
1,2,3,4,6,7,8-HpCDF	48:58	17293	3890	1.461		7.090786		0.731009	BJ	0.0228
1,2,3,4,7,8,9-HpCDF				1.370				ND		0.0248
Total HpCDF		21018	4174	1.416		16.315125		1.681972	QJB	0.0238
OCDD	54:41	502494	133541	1.203		334.699405		34.505093	B	0.0372
OCDF	54:49	22957	5886	1.134		12.542760		1.293068	BJ Q	0.0173
13C-2,3,7,8-TCDD	32:48	2048484	202951	1.093	1000	610.084240	61.01	62.895282		0.192
13C-2,3,7,8-TCDF	30:40	3417130	354906	1.794	1000	619.651846	61.97	63.881634		0.0347
13C-1,2,3,7,8-PeCDD	41:23	1802743	436121	0.800	1000	733.255321	73.33	75.593332		0.0434
13C-1,2,3,7,8-PeCDF	39:43	2898746	612748	1.356	1000	695.360228	69.54	71.686621		0.0911
13C-2,3,4,7,8-PeCDF	40:53	3152522	753144	1.343	1000	763.799008	76.38	78.742166		0.0920
13C-1,2,3,4,7,8-HxCDD	45:37	1861272	466819	0.916	1000	658.412831	65.84	67.877611		0.0761
13C-1,2,3,6,7,8-HxCDD	45:44	1843667	453773	0.906	1000	659.077167	65.91	67.946100		0.0769
13C-1,2,3,4,7,8-HxCDF	44:33	2236698	594073	1.268	1000	571.313758	57.13	58.898326		0.0453
13C-1,2,3,6,7,8-HxCDF	44:41	2628983	653651	1.506	1000	565.731981	56.57	58.322885		0.0381
13C-2,3,4,6,7,8-HxCDF	45:26	2535347	626453	1.344	1000	611.185011	61.12	63.008764		0.0427
13C-1,2,3,7,8,9-HxCDF	46:27	2202351	499227	1.202	1000	593.570139	59.36	61.192798		0.0478
13C-1,2,3,4,6,7,8-HpCDD	50:39	1760985	361800	0.728	1000	783.247444	78.32	80.747159		0.0197
13C-1,2,3,4,6,7,8-HpCDF	48:57	1669249	348508	1.008	1000	536.479976	53.65	55.307214		0.0365
13C-1,2,3,4,7,8,9-HpCDF	51:17	1549749	340829	0.811	1000	619.273274	61.93	63.842606		0.0453
13C-OCDD	54:40	2495991	655999	0.597	2000	1353.66919	67.68	139.553525		0.0609
13C-1,2,3,4-TCDD	32:15	6146784	638023	1.000	2000	2000.00000	100.00	206.185567		0.209
13C-1,2,3,7,8,9-HxCDD	46:08	6173273	1472586	1.000	2000	2000.00000	100.00	206.185567		0.0697
13C-OCDF	54:48	3227058	840276	0.946	2000	1105.18524	55.26	113.936622		0.0300

KLR 8/24/16

KM 8-24-16

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81141AC	Prep Batch	6217014	Lot No	H6G290408-015
Data File	/20160818s1/d1tm8114.d	Prep Date	08/04/16	SDG No	
Analysis ID	180614	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 17:12	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.7 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	30	38	12	15	0.80	/	
	Unidentified	29:33	00:00	0	526	1285	108	160	0.41 *	ABV/ABB	R
	Unidentified	30:03	00:00	0	279	565	98	114	0.49 *	ABV/ABV	R
	Unidentified	30:08	00:00	0	769	629	124	109	1.22 *	AVB/AVV	RT
	2,3,7,8-TCDF	30:44	30:43	1	1178	2477	296	452	0.48 *	ABV/ABV	RD
	Unidentified	30:48	00:00	0	1657	1589	230	252	1.04 *	AVB/AVB	RT
	Unidentified	32:00	00:00	0	856	612	246	189	1.40 *	ABV/ABV	RT
	Unidentified	32:04	00:00	0	519	1952	203	298	0.27 *	AVB/AVV	RT
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	100	93	40	37	1.08 *	/	
	Unidentified	29:28	00:00	0	3623	3015	834	517	1.20 *	ABV/ABV	R
	13C-2,3,7,8-TCDF	30:40	30:40	0	1511469	1905661	155136	199770	0.79	AVV/AVV	
	Unidentified	31:11	00:00	0	4304	2683	764	552	1.60 *	AVV/AVV	R
	Unidentified	31:18	00:00	0	1829	2070	453	493	0.88	AVV/AVB	
	Unidentified	32:18	00:00	0	2497	2497	499	476	1.00 *	ABB/ABB	R
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	25	20	10	8	1.25 *	/	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	375	273	150	109	1.38 *	/	
	13C-1,2,3,4-TCDD	32:15	32:16	-1	2746006	3400778	288634	349389	0.81	AVV/AVV	
	13C-2,3,7,8-TCDD	32:48	32:48	0	910227	1138257	92960	109991	0.80	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	60	70	24	28	0.86 *	/	
	Unidentified	39:17	00:00	0	1324	2373	289	338	0.56 *	ABB/ABV	R
	Unidentified	39:39	00:00	0	607	602	153	130	1.01 *	ABV/ABV	R
	1,2,3,7,8-PeCDF	39:43	39:44	-1	1203	953	253	342	1.26 *	AVB/AVB	R
	Unidentified	40:14	00:00	0	2291	808	273	201	2.84 *	ABB/AVB	RT
	2,3,4,7,8-PeCDF	40:55	40:54	1	1979	1363	571	291	1.45	ABB/AVV	
	Unidentified	41:07	00:00	0	1219	2599	200	335	0.47 *	ABB/AVB	R
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	225	158	90	63	1.43	/	
	Unidentified	39:15	00:00	0	4924	4098	1460	1043	1.20 *	ABV/ABB	R
	13C-1,2,3,7,8-PeCDF	39:43	39:43	0	1766714	1132032	370806	241942	1.56	ABV/ABV	
	Unidentified	39:59	00:00	0	9864	5417	1943	1639	1.82 *	AVV/AVV	R
	Unidentified	40:13	00:00	0	16977	11841	3175	1313	1.43	AVV/AVB	
	13C-2,3,4,7,8-PeCDF	40:53	40:53	0	1933870	1218652	460116	293028	1.59	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	50	35	20	14	1.43	/	
	Unidentified	40:41	00:00	0	935	295	171	96	3.17 *	ABV/ABB	RT
	1,2,3,7,8-PeCDD	41:23	41:24	-1	1637	2049	420	328	0.80 *	ABB/ABB	R
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	48	60	19	24	0.79 *	/	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81141AC	Prep Batch	6217014	Lot No	H6G290408-015
Data File	/20160818s1/d1tm8114.d	Prep Date	08/04/16	SDG No	
Analysis ID	180614	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 17:12	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.7 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Unidentified	40:41	00:00	0	1488	809	395	331	1.84 *	ABB/ABB	R
	13C-1,2,3,7,8-PeCDD	41:23	41:23	0	1112344	690399	268366	167755	1.61	ABV/ABV	
	Unidentified	41:49	00:00	0	3919	1372	807	323	2.86 *	AVB/ABV	R
	Unidentified	42:00	00:00	0	3359	2703	791	489	1.24 *	ABV/ABV	R
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	58	103	23	41	0.56 *	/	
	Unidentified	44:18	00:00	0	2458	2029	693	707	1.21	ABB/ABB	
	1,2,3,4,7,8-HxCDF	44:33	44:34	-1	3759	3365	770	663	1.12	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:42	44:42	0	2166	1808	552	403	1.20	AVB/AVB	
	Unidentified	45:15	00:00	0	826	2891	202	253	0.29 *	ABB/AVV	R
	2,3,4,6,7,8-HxCDF	45:27	45:28	-1	1406	1382	318	321	1.02 *	ABB/MVV	R
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	183	228	73	91	0.80 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:33	44:33	0	744010	1492688	202535	391538	0.50	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:41	44:41	0	870653	1758330	218923	434728	0.50	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:26	45:27	-1	868347	1667000	216986	409467	0.52	ABV/AVV	
	Unidentified	45:46	00:00	0	3579	5643	837	1593	0.63 *	AVV/AVB	R
	13C-1,2,3,7,8,9-HxCDF	46:27	46:27	0	753967	1448384	170189	329038	0.52	ABV/AVV	
	Unidentified	46:47	00:00	0	3288	4886	1136	1322	0.67 *	AVB/AVB	RT
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	98	70	39	28	1.39	/	
	1,2,3,4,7,8-HxCDD	45:40	45:38	2	1388	675	246	211	2.06 *	ABV/ABV	R
	1,2,3,6,7,8-HxCDD	45:45	45:46	-1	3408	2157	938	497	1.58 *	AVB/AVB	R
	1,2,3,7,8,9-HxCDD	46:11	46:10	1	4640	3654	874	684	1.27	ABB/ABB	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	285	213	114	85	1.34	/	
	13C-1,2,3,4,7,8-HxCDD	45:37	45:37	0	1027442	833830	256068	210751	1.23	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:44	45:45	-1	1036538	807129	251969	201804	1.28	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:08	46:09	-1	3438566	2734707	817970	654616	1.26	AVV/ABV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	70	43	28	17	1.65 *	/	
	1,2,3,4,6,7,8-HpCDF	48:58	48:57	1	8922	8371	1958	1932	1.07	ABB/ABB	
	Unidentified	49:39	00:00	0	10783	8666	2224	1519	1.24 *	AVV/ABV	R
	Unidentified	49:48	00:00	0	1181	388	321	110	3.04 *	AVB/AVB	R
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	93	170	37	68	0.54 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:57	48:55	2	513407	1155842	106935	241573	0.44	ABV/ABV	
	Unidentified	49:13	00:00	0	1819	3989	468	916	0.46	AVB/AVV	
	Unidentified	49:21	00:00	0	5984	11899	975	1919	0.50	ABV/AVV	
	Unidentified	49:38	00:00	0	4836	13475	1098	2190	0.36 *	AVB/AVV	R
	13C-1,2,3,4,7,8,9-HpCDF	51:17	51:16	1	482289	1067460	108354	232475	0.45	AVB/ABV	
	Unidentified	51:32	00:00	0	2554	13426	725	2219	0.19 *	ABV/AVV	R

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

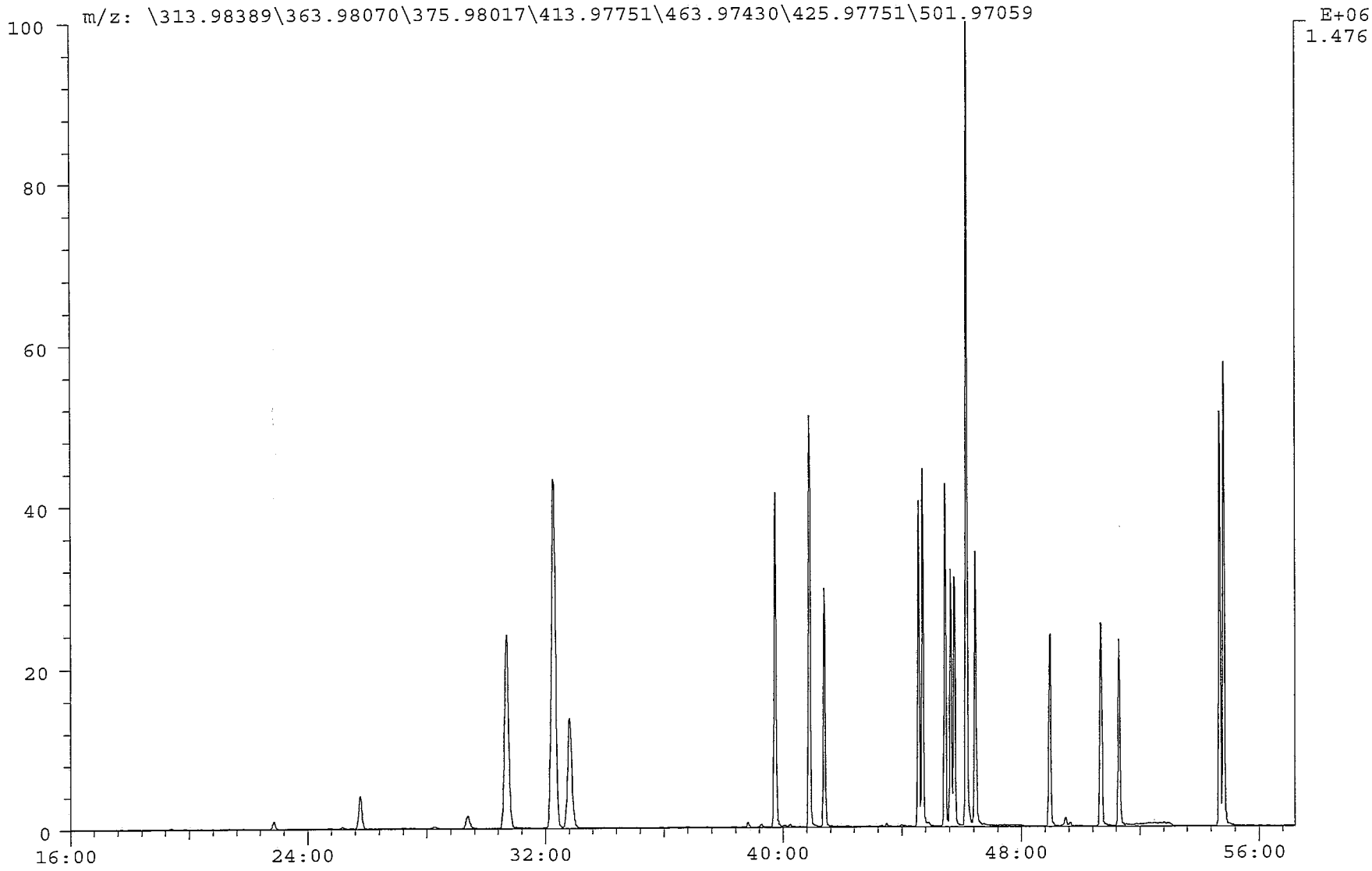
Workorder	M81141AC	Prep Batch	6217014	Lot No	H6G290408-015
Data File	/20160818s1/d1tm8114.d	Prep Date	08/04/16	SDG No	
Analysis ID	180614	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 17:12	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.7 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao
		View Small Peaks?	False	View deleted peaks?	False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	53	118	21	47	0.45 *	/	
	Unidentified	49:28	00:00	0	33257	32058	6723	6401	1.04	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:41	50:39	2	36750	33132	7802	7153	1.11	AVV/AVV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	68	35	27	14	1.93 *	/	
	Unidentified	49:27	00:00	0	12056	9875	1846	1812	1.22 *	ABV/ABB	R
	13C-1,2,3,4,6,7,8-HpCDD	50:39	50:38	1	921654	839331	187391	174409	1.10	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	40	40	16	16	1.00	/	
	OCDF	54:49	54:48	1	10393	12564	2722	3164	0.83	ABB/ABB	
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	90	113	36	45	0.80	/	
	13C-OCDF	54:48	54:48	0	1505351	1721707	388533	451743	0.87	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	70	73	28	29	0.97	/	
	OCDD	54:41	54:40	1	239707	262787	62928	70613	0.91	ABV/ABV	
	Unidentified	54:55	00:00	0	918	2405	206	332	0.38 *	AVV/AVB	R
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	188	73	75	29	2.59 *	/	
	13C-OCDD	54:40	54:40	0	1187207	1308784	310372	345627	0.91	ABV/ABV	
	Unidentified	54:59	00:00	0	3795	4702	795	1011	0.81	AVV/AVV	T
	Unidentified	55:07	00:00	0	3554	962	989	497	3.69 *	AVB/AVB	R

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int- LKh 8-18-16
Calcom 8-24-16
QC/Rev 8/24/16

CHRO:	d1tm8114	18-Aug-16	Elapse:	54:51	2492
Samp:	WO=m81141ac Meth=9Ao Dil=1		Start :	17:12:07	2628
Comm:	Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1				
Mode:	EI ESI + Q1MS UP LR		Study :	6217014 (9.7g)	
Oper:	KLR		Inlet :	LC	
Peak:	100.00 ppm	Label wndw: 232 > 2628	Masses:	303 > 514	
Area:	5, 0.50, 0	Baseline : 100, 3	Label :	0, 0.0	
Disp:	Height Area				



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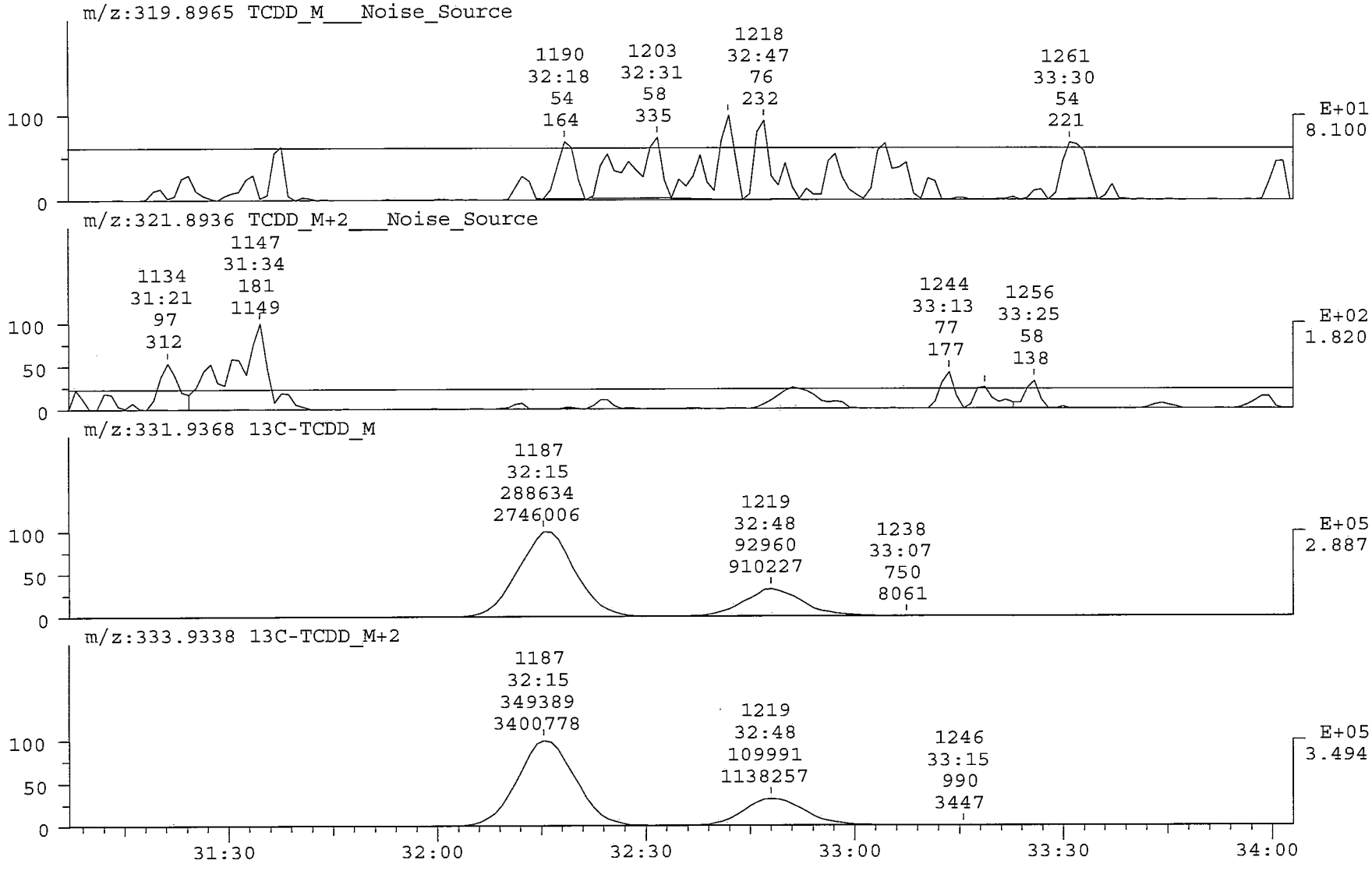
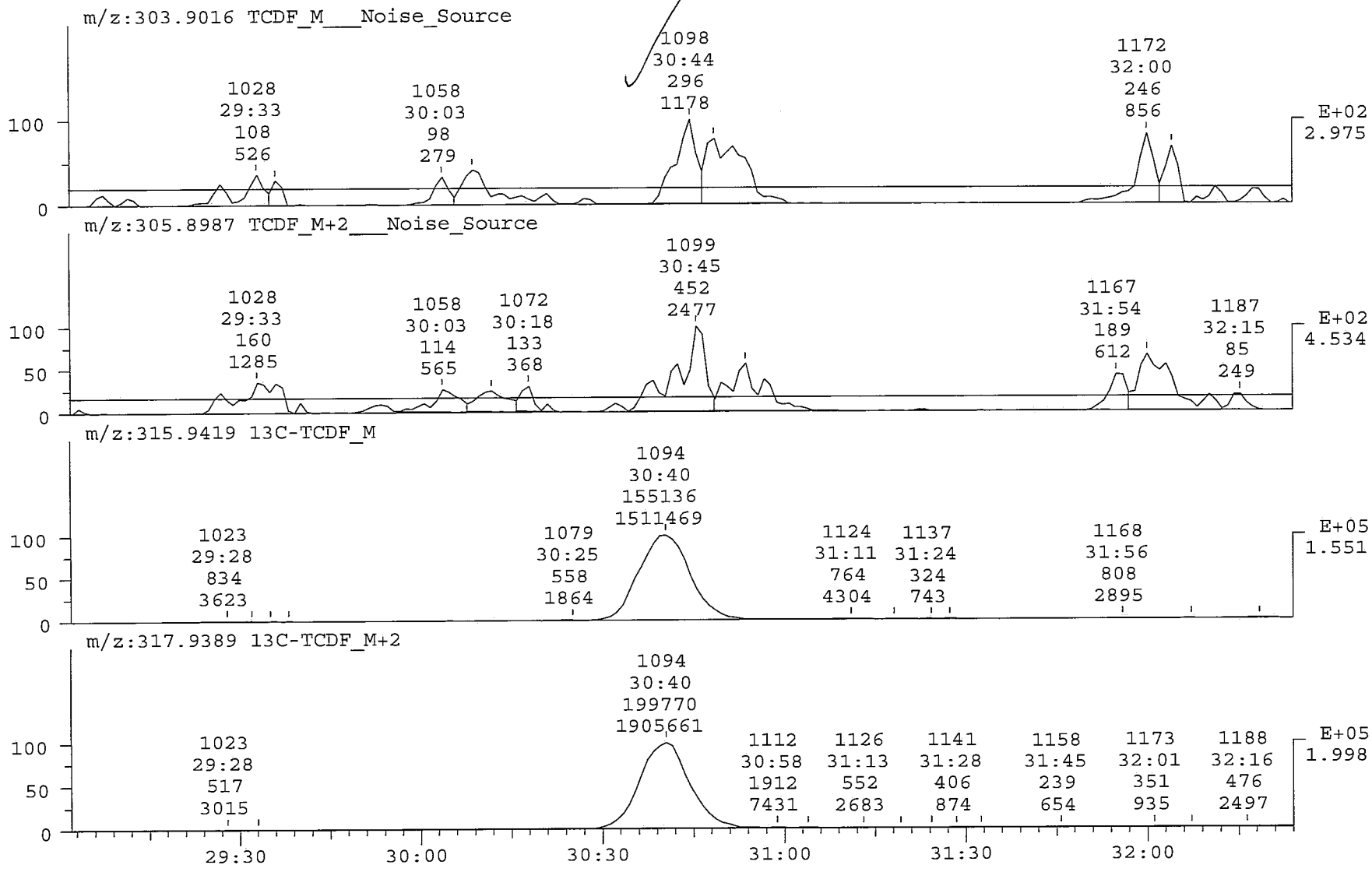
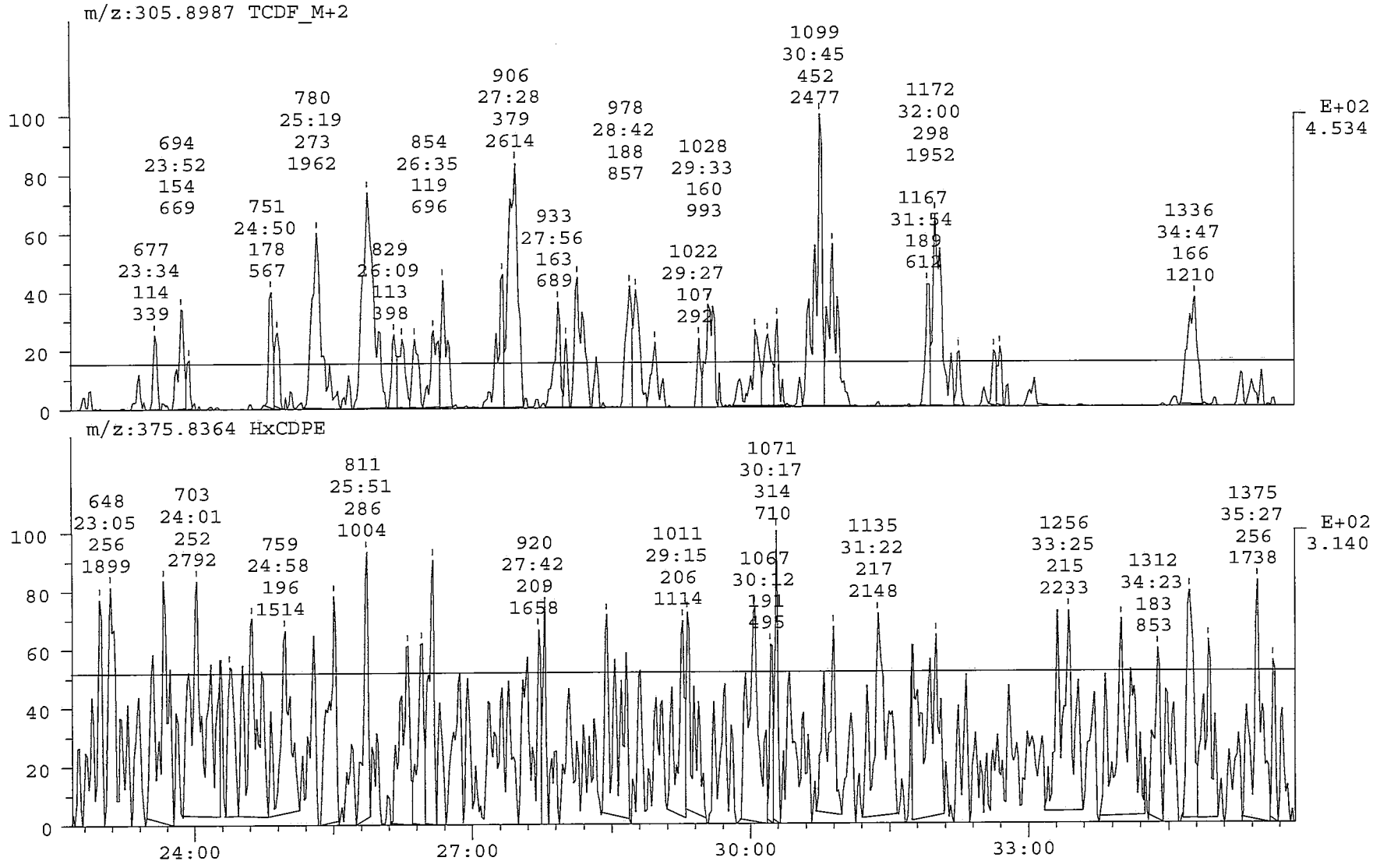
CHRO:  d1tm8114                                18-Aug-16  Elapse:  32:34      1206
Samp:  WO=m81141ac Meth=9Ao Dil=1                         Start :  17:12:07   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1120 > 1292          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



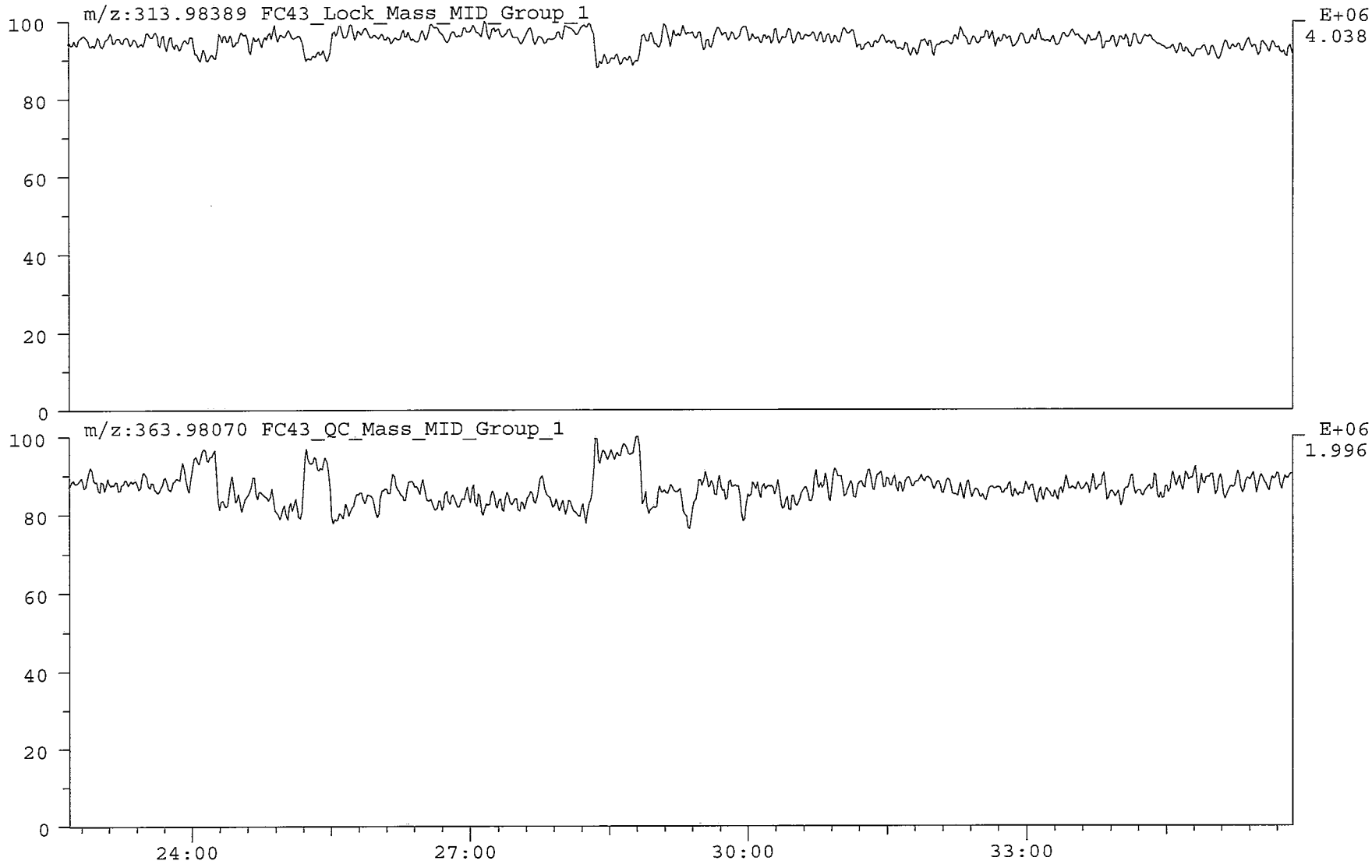
CHRO: d1tm8114 18-Aug-16 Elapse: 30:40 1094
Samp: WO=m81141ac Meth=9Ao Dil=1 Start : 17:12:07 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 998 > 1195 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



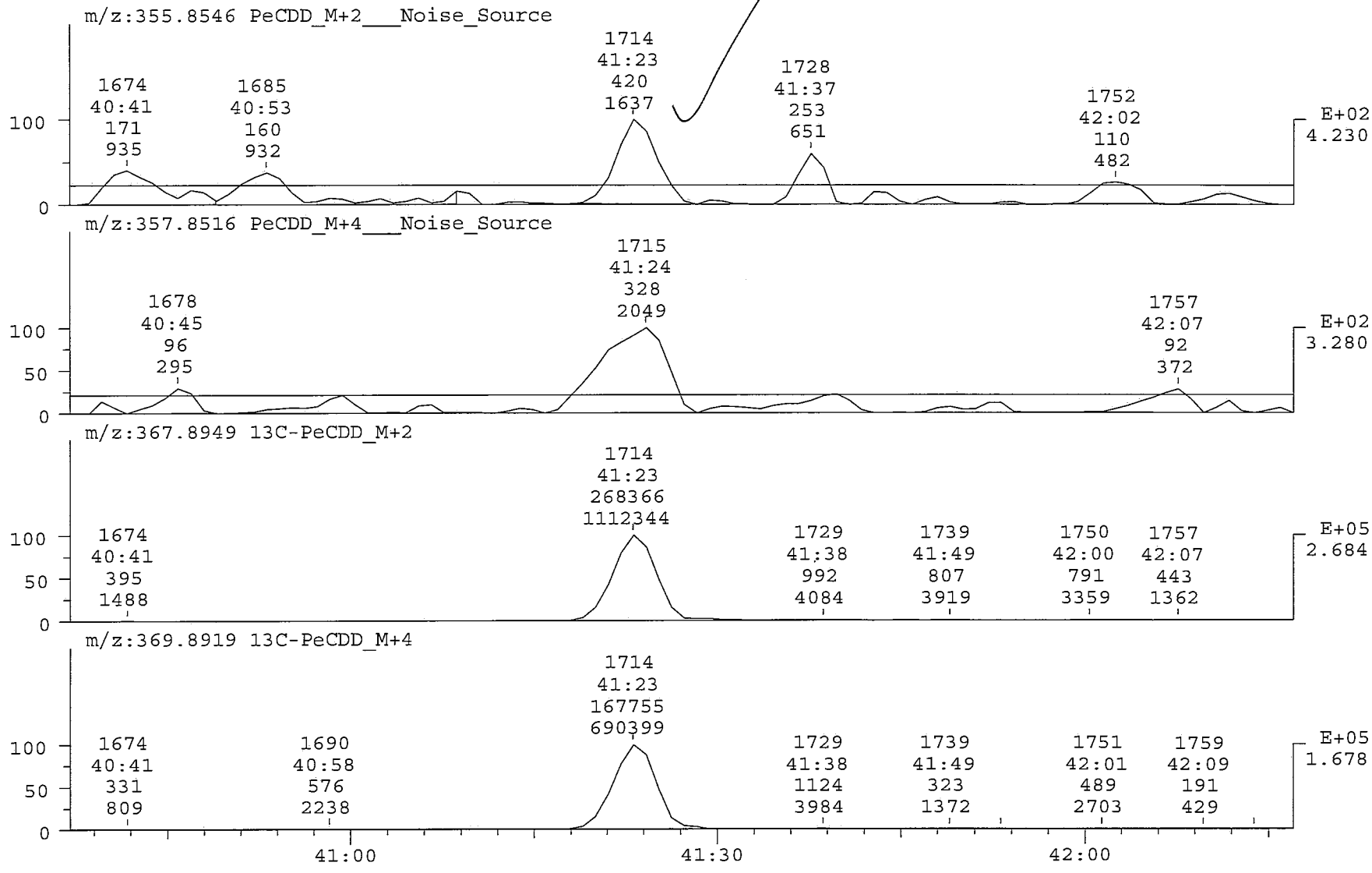
CHRO: d1tm8114 18-Aug-16 Elapse: 30:40 1094
Samp: WO=m81141ac Meth=9Ao Dil=1 Start : 17:12:07 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 623 > 1399 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



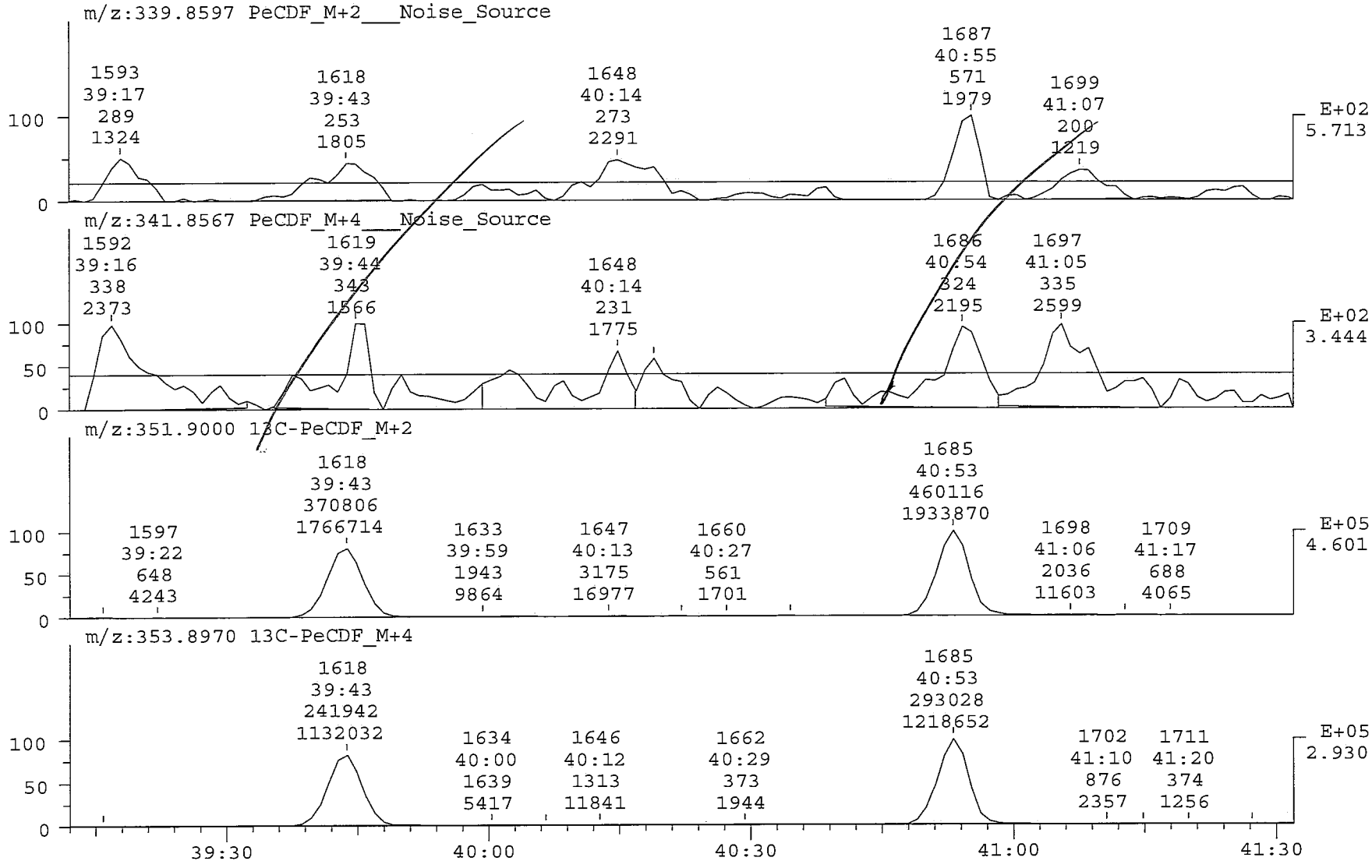
```
CHRO:  d1tm8114                                18-Aug-16  Elapse:  30:40      1094
Samp:  WO=m81141ac Meth=9Ao Dil=1                         Start :  17:12:07   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   623 > 1399           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



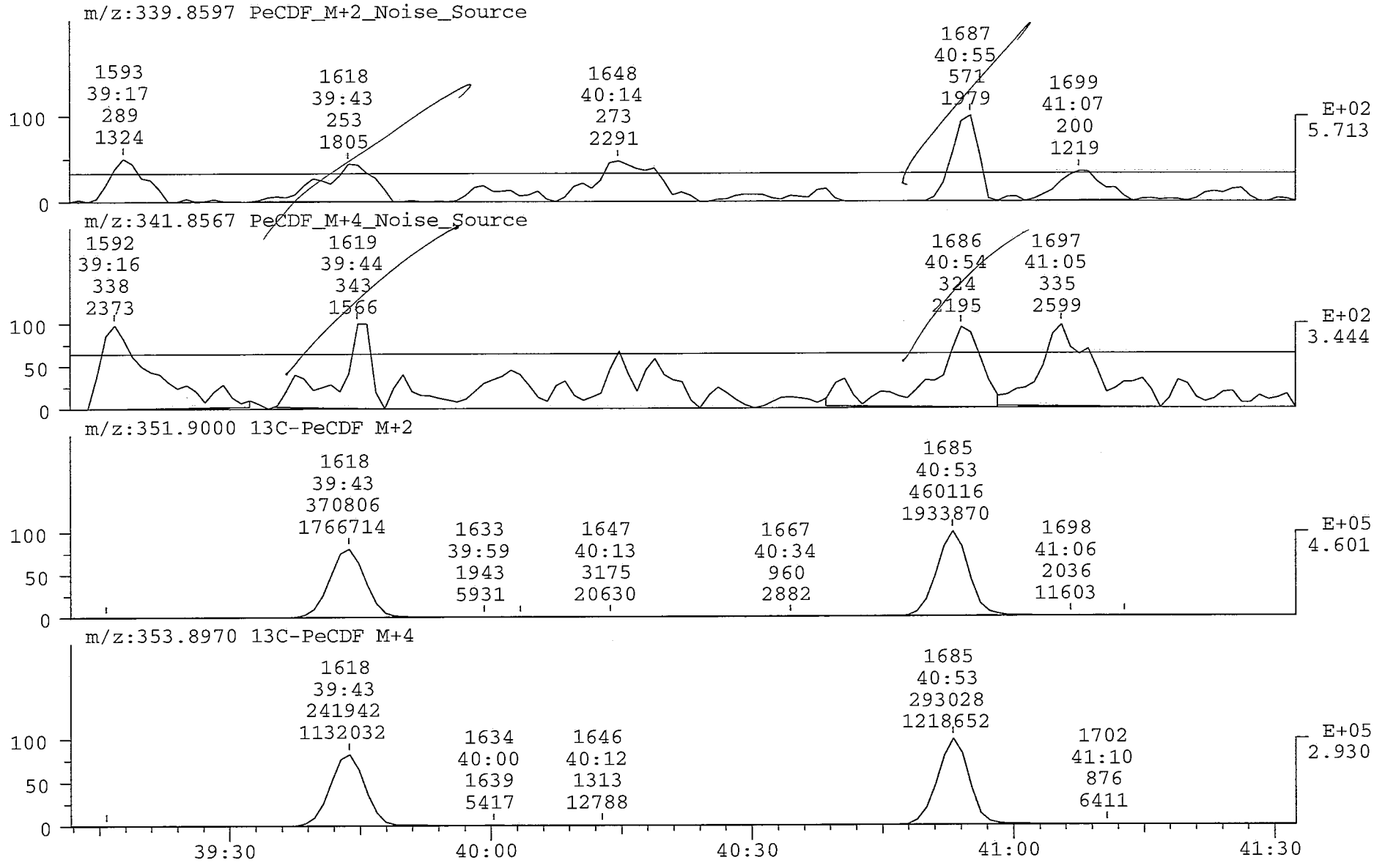
CHRO: d1tm8114 18-Aug-16 Elapse: 41:24 1715
Samp: WO=m81141ac Meth=9Ao Dil=1 Start : 17:12:07 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1669 > 1766 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



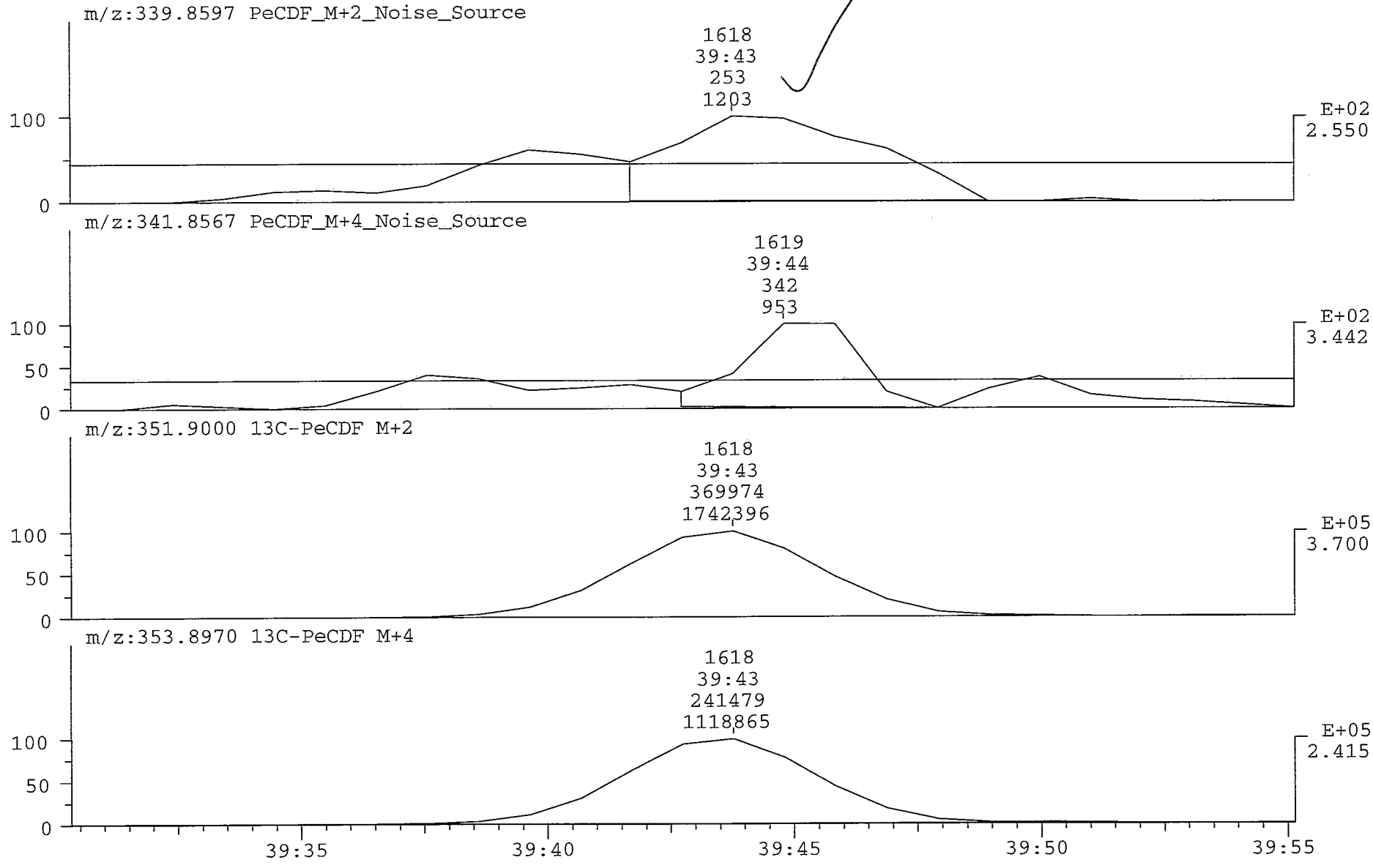
CHRO: d1tm8114 18-Aug-16 Elapse: 40:22 1655
Samp: WO=m81141ac Meth=9Ao Dil=1 Start : 17:12:07 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1587 > 1723 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



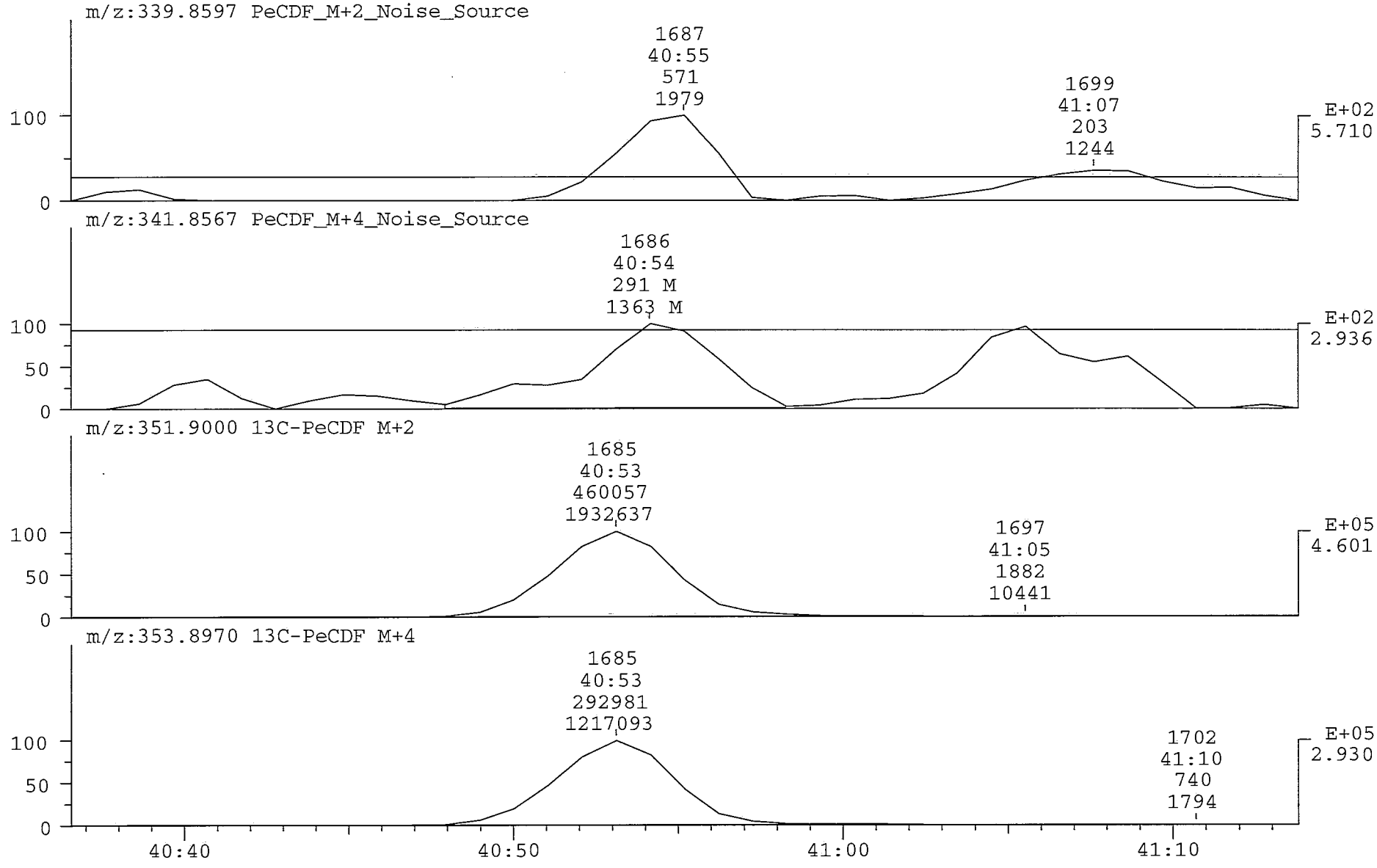
CHRO: d1tm8114 18-Aug-16 Elapse: 54:52 2493
Samp: WO=m81141ac Meth=9Ao Dil=1 Start : 17:12:07 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1587 > 1723 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



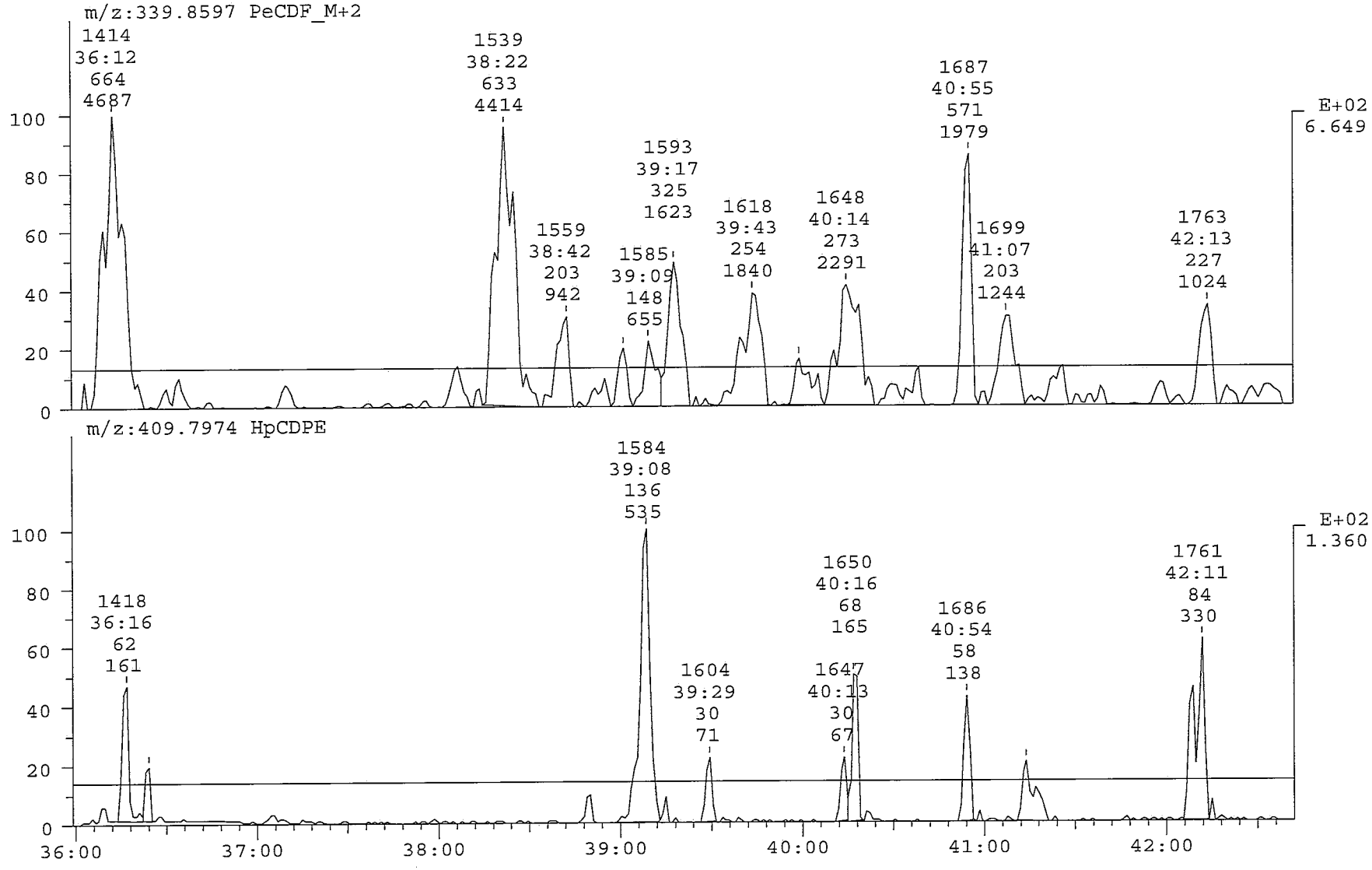
CHRO: d1tm8114 18-Aug-16 Elapse: 39:43 1618
Samp: WO=m81141ac Meth=9Ao Dil=1 Start : 17:12:07 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1615 > 1621 Masses: 303 > 514
Area: 5, 1.00, 15 Baseline : 100, 1 Label : -2, 5.0
Disp: Height Area



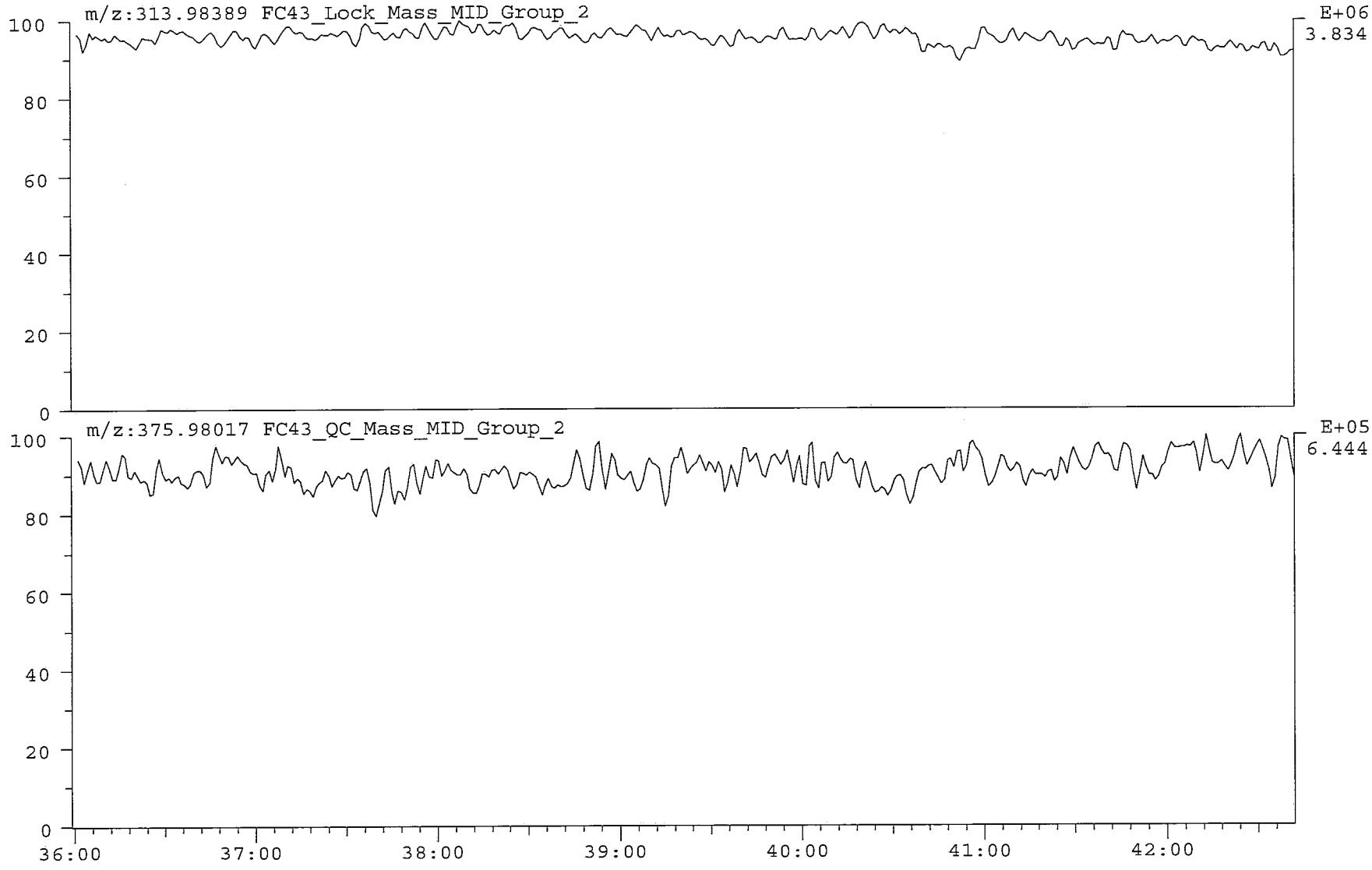
CHRO: d1tm8114 18-Aug-16 Elapse: 54:52 2493
Samp: WO=m81141ac Meth=9Ao Dil=1 Start : 17:12:07 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1669 > 1705 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



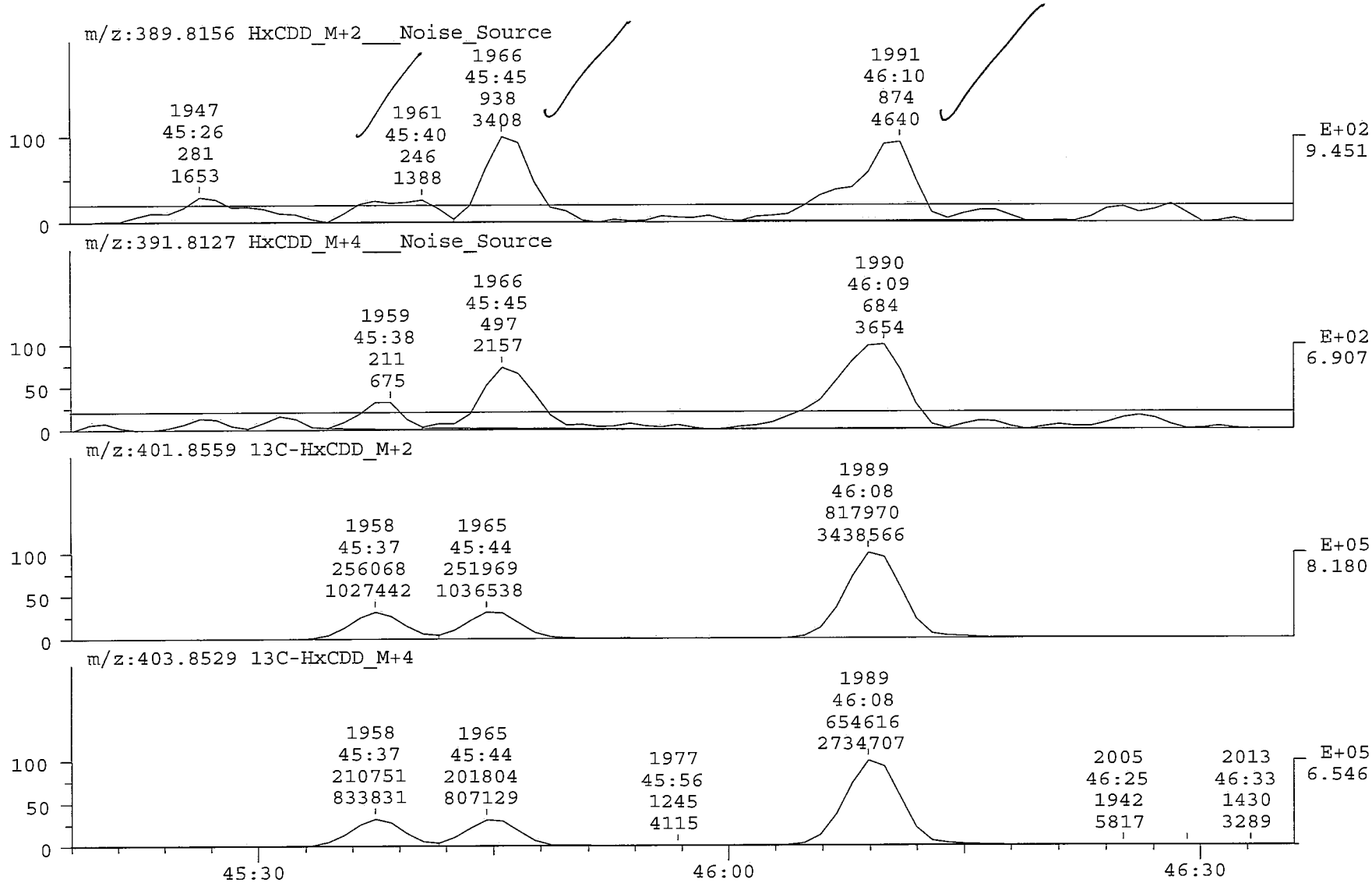
CHRO: d1tm8114 18-Aug-16 Elapse: 40:22 1655
Samp: WO=m81141ac Meth=9Ao Dil=1 Start : 17:12:07 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1790 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



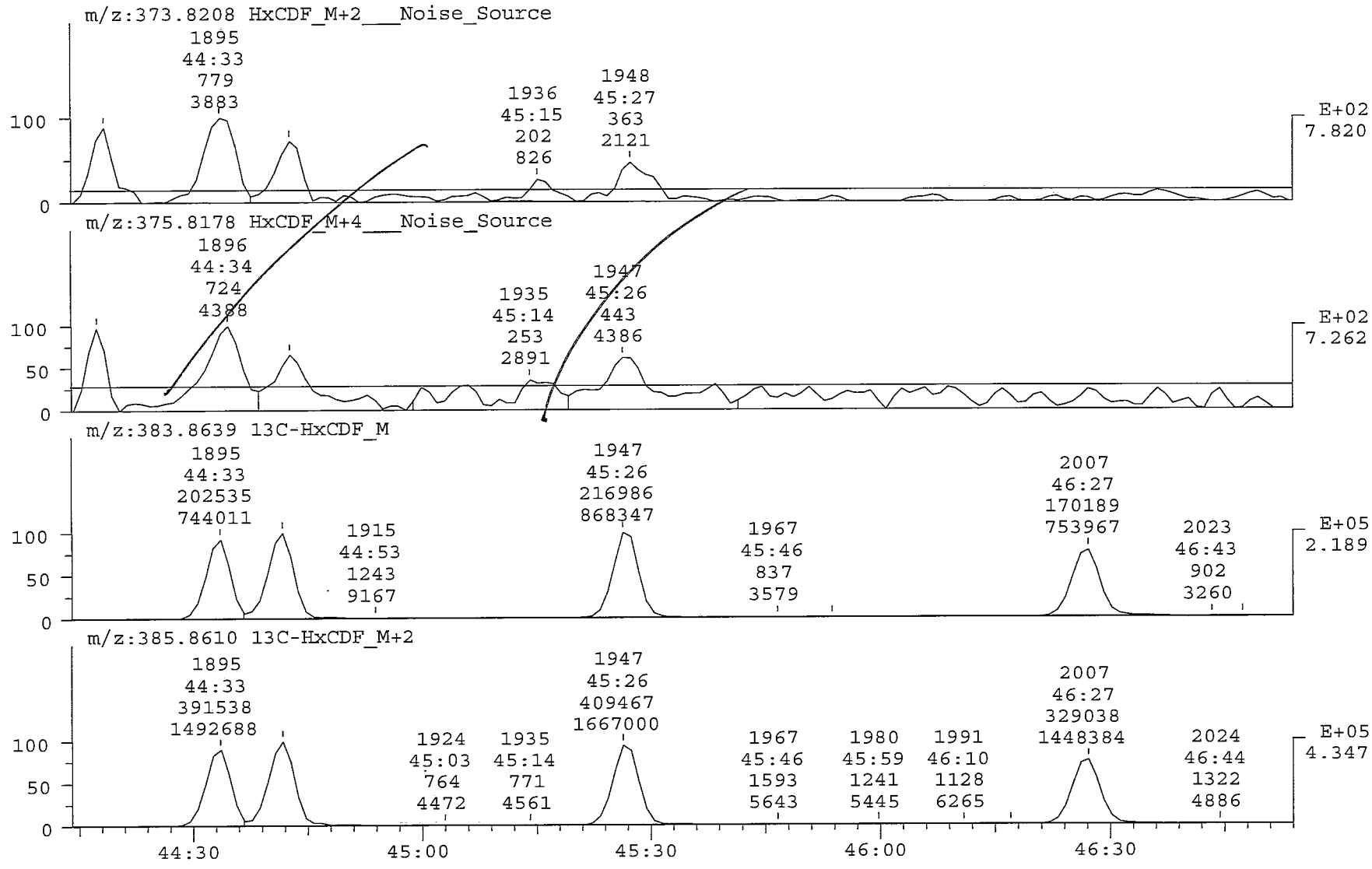
```
CHRO:  d1tm8114                                18-Aug-16  Elapse:  40:22      1655
Samp:  WO=m81141ac Meth=9Ao Dil=1                         Start :  17:12:07   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1790          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



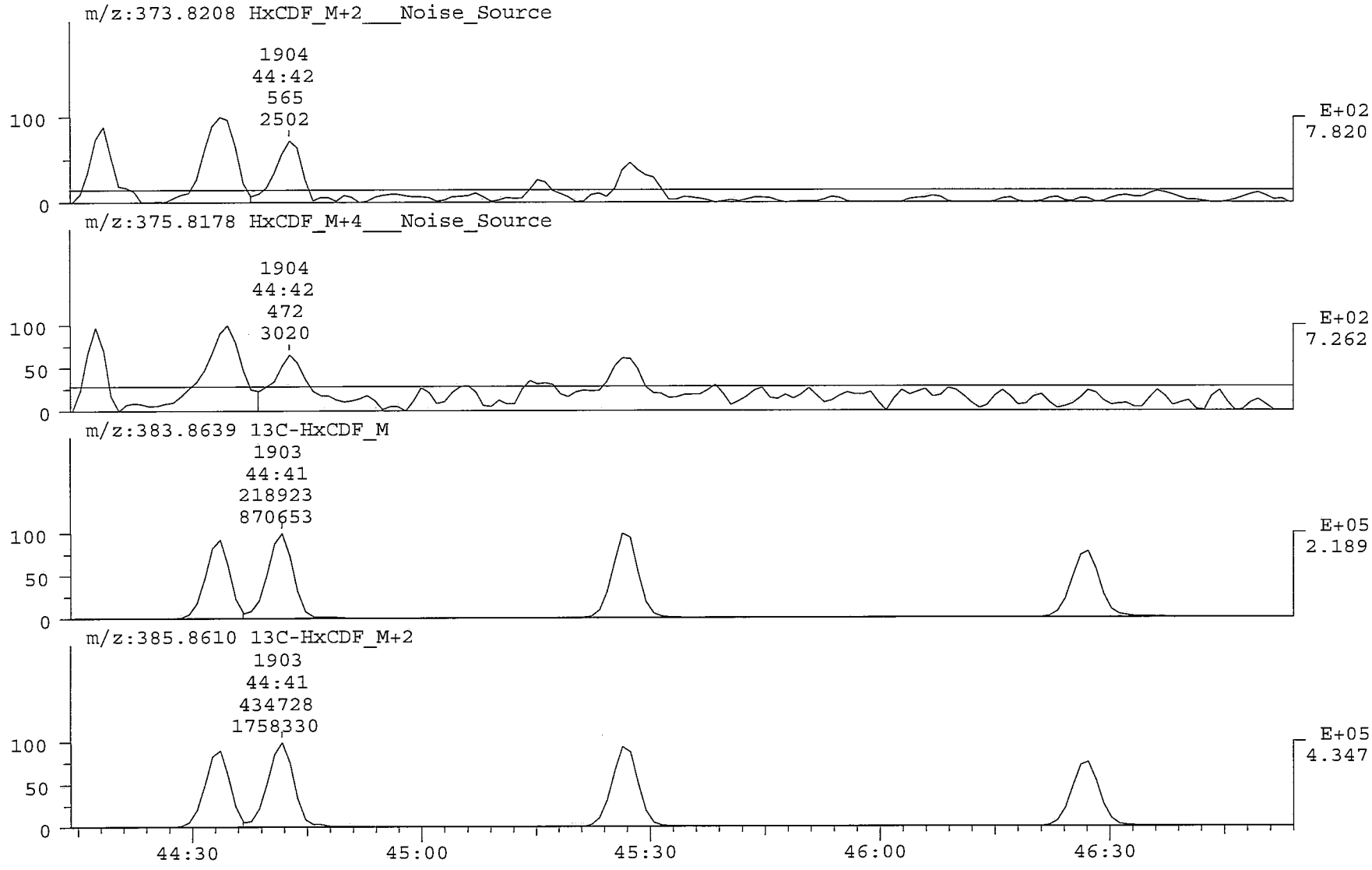
CHRO: d1tm8114 18-Aug-16 Elapse: 45:56 1977
Samp: WO=m81141ac Meth=9Ao Dil=1 Start : 17:12:07 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1939 > 2016 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



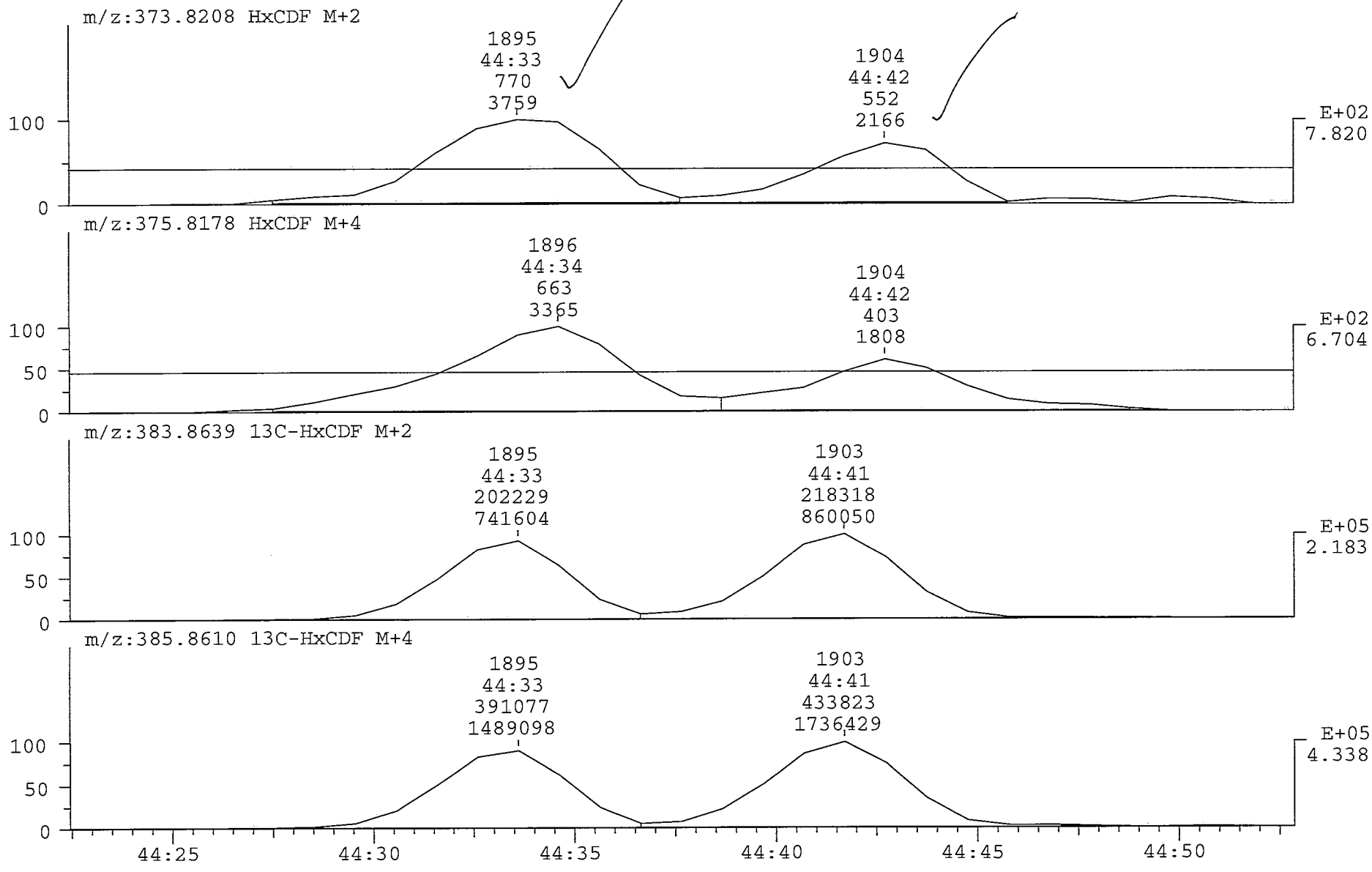
CHRO: d1tm8114 18-Aug-16 Elapse: 45:34 1955
Samp: WO=m81141ac Meth=9Ao Dil=1 Start : 17:12:07 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1876 > 2033 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



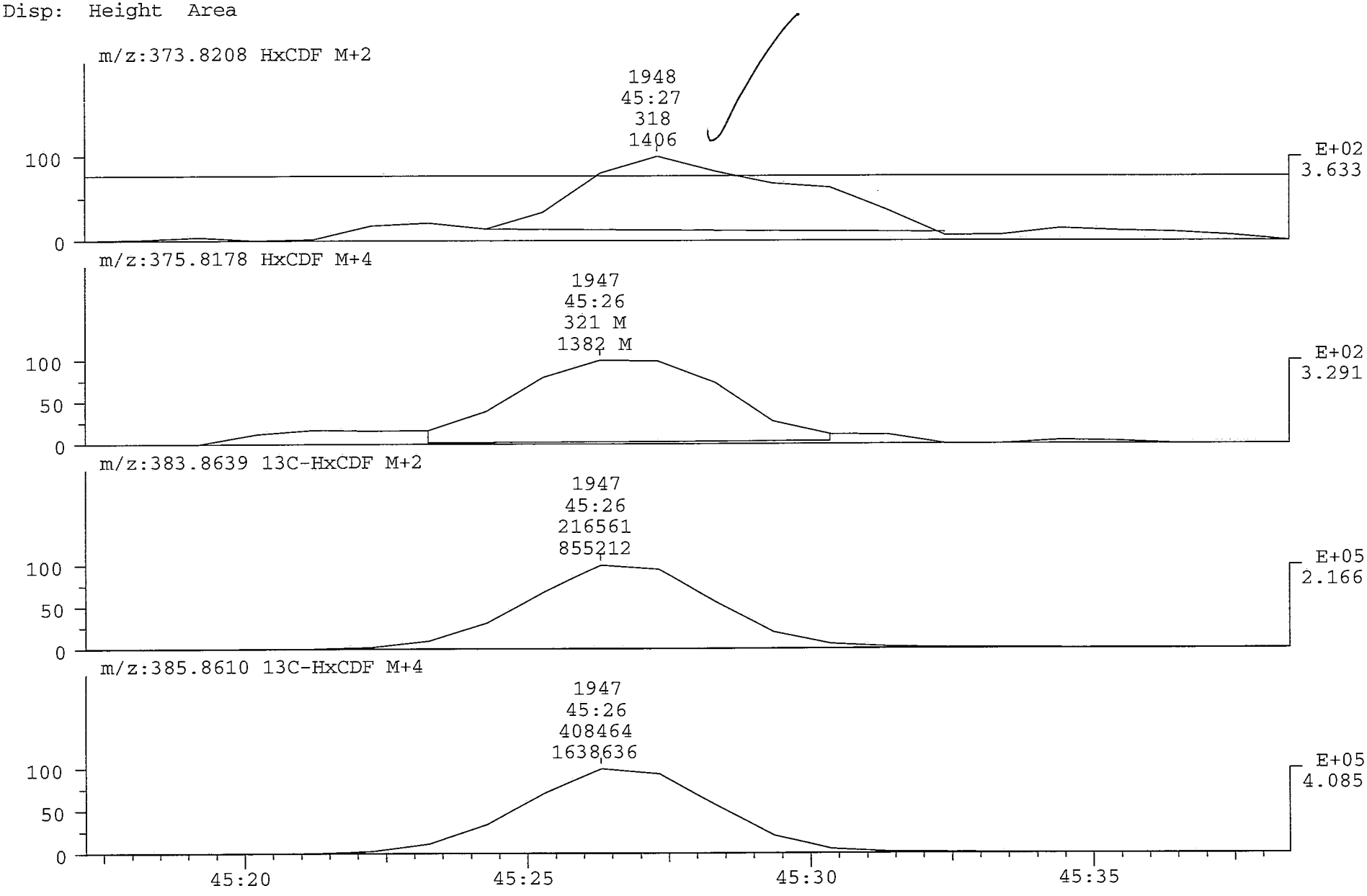
CHRO: d1tm8114 18-Aug-16 Elapse: 44:41 1903
Samp: WO=m81141ac Meth=9Ao Dil=1 Start : 17:12:07 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1899 > 1907 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



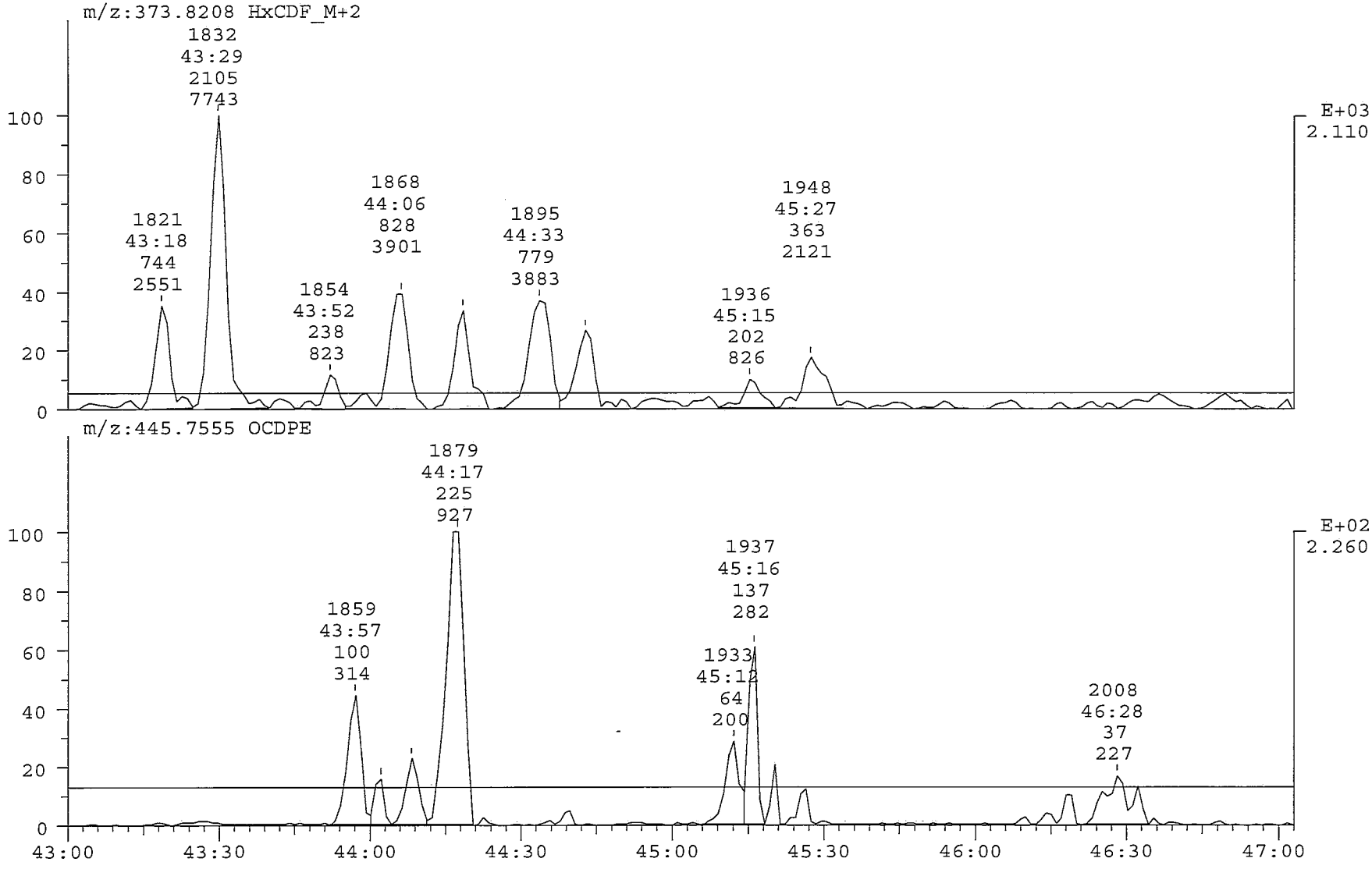
CHRO: d1tm8114 18-Aug-16 Elapse: 39:43 1618
Samp: WO=m81141ac Meth=9Ao Dil=1 Start : 17:12:07 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1884 > 1914 Masses: 303 > 514
Area: 5, 1.00, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



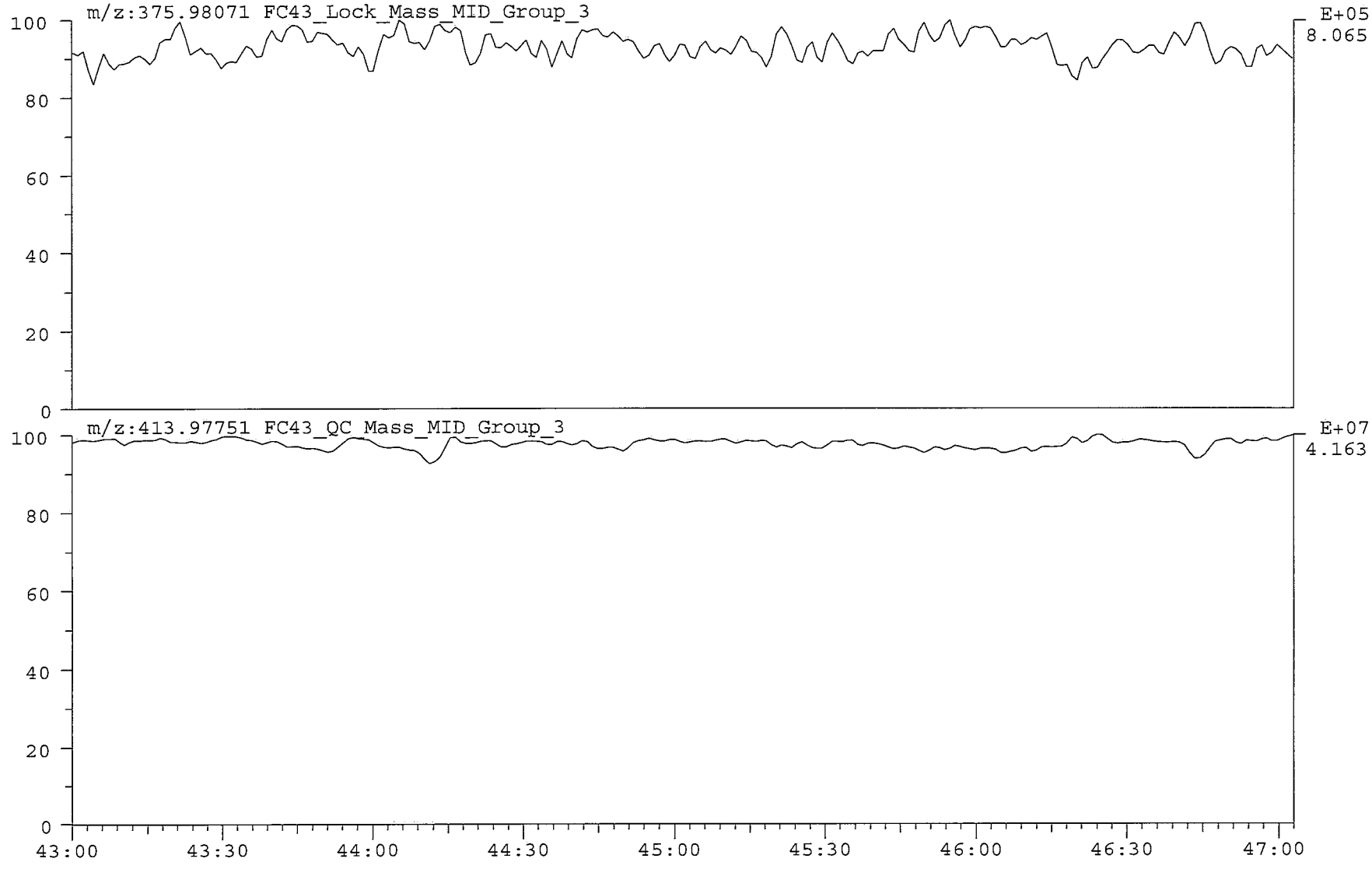
CHRO: d1tm8114 18-Aug-16 Elapse: 39:43 1618
Samp: WO=m81141ac Meth=9Ao Dil=1 Start : 17:12:07 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1938 > 1959 Masses: 303 > 514
Area: 5, 2.00, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



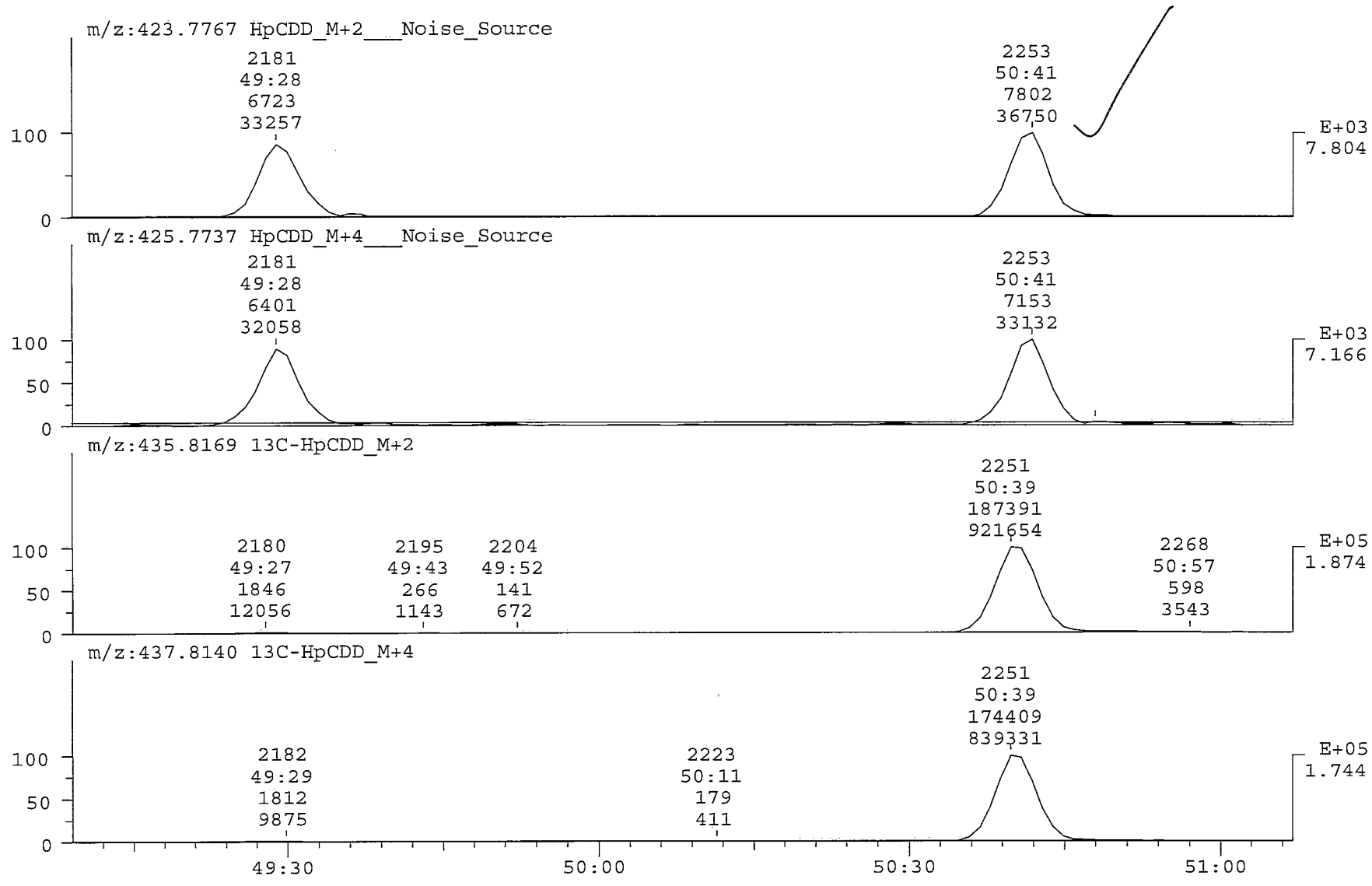
```
CHRO:  d1tm8114                                18-Aug-16  Elapse:  44:41      1903
Samp:  WO=m81141ac Meth=9Ao Dil=1                         Start :  17:12:07   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1803 > 2042          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



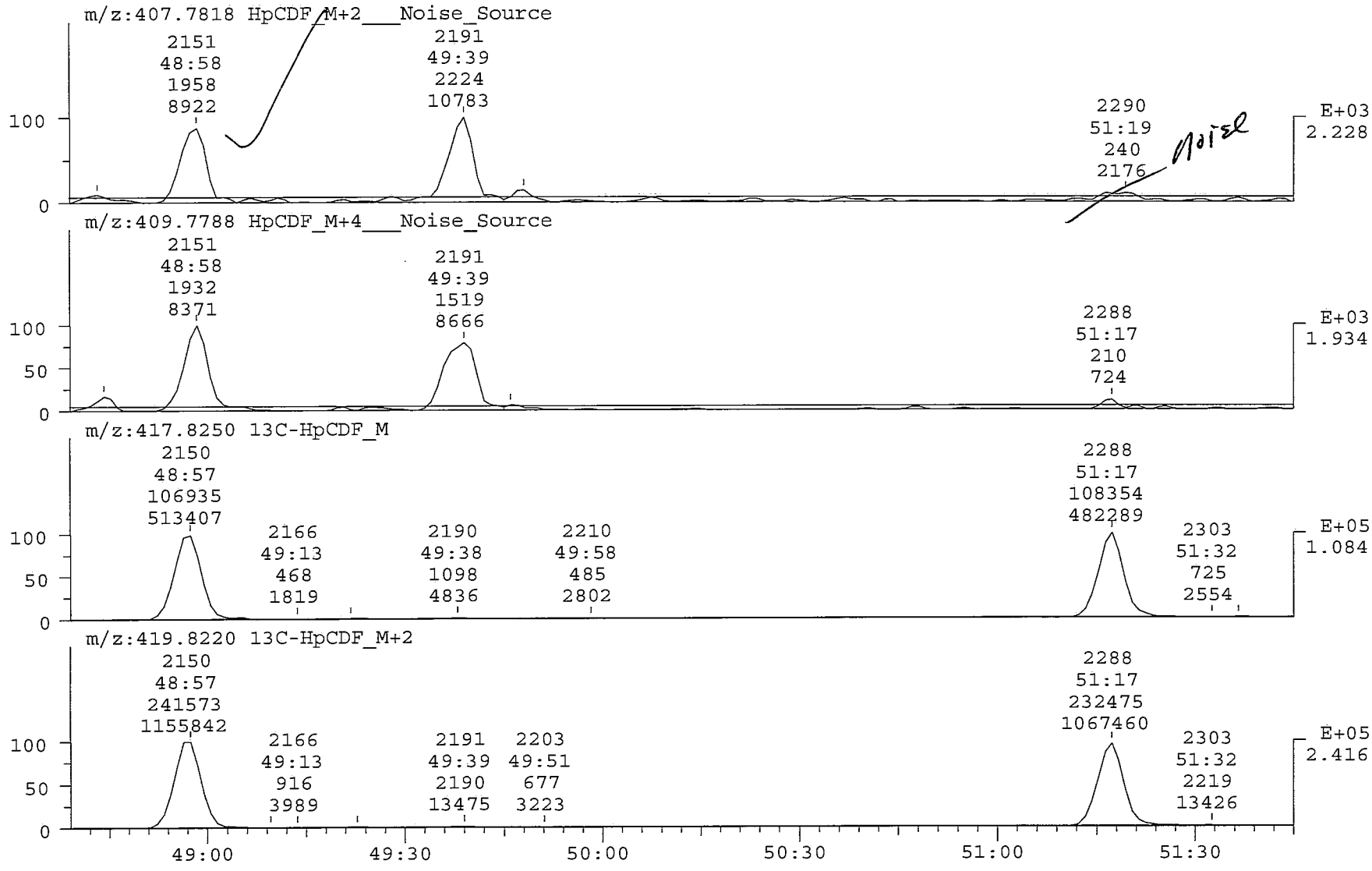
```
CHRO:  d1tm8114                                18-Aug-16  Elapse:  44:41      1903
Samp:  WO=m81141ac Meth=9Ao Dil=1                         Start :  17:12:07   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1803 > 2042          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



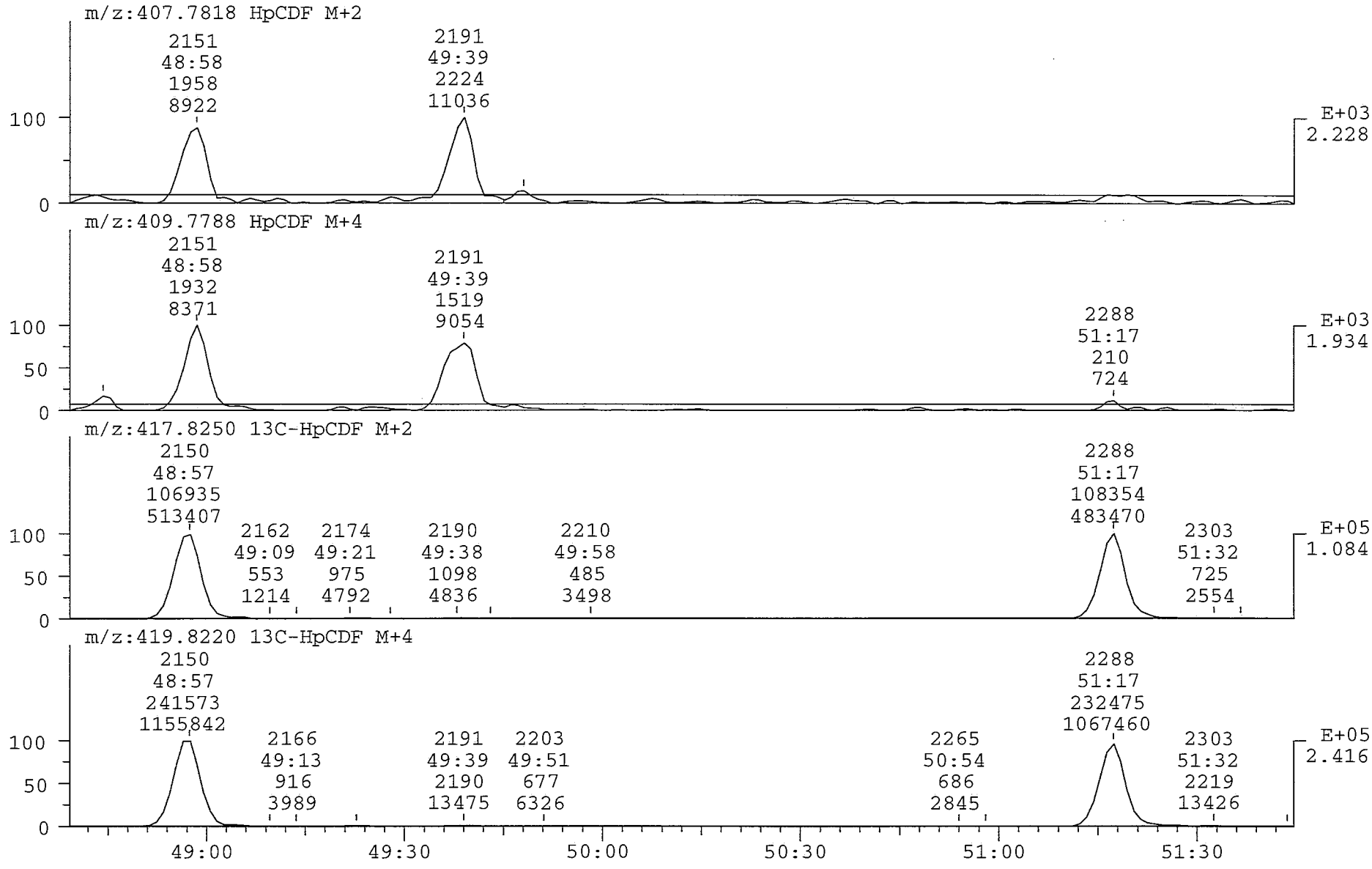
```
CHRO:  d1tm8114                                18-Aug-16  Elapse:  44:41      1903
Samp:  WO=m81141ac Meth=9Ao Dil=1                         Start :  17:12:07   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2161 > 2278          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



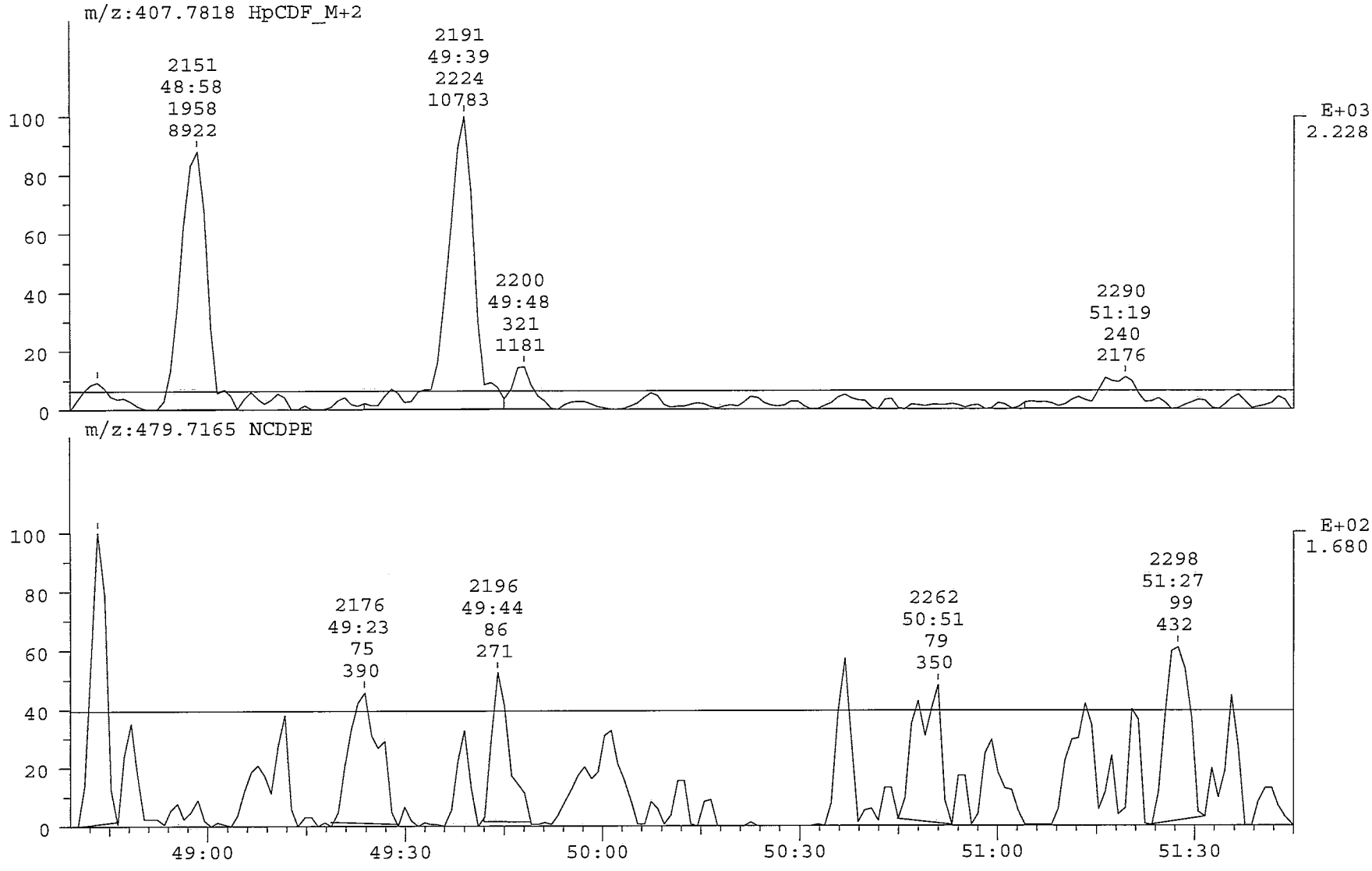
CHRO: d1tm8114 18-Aug-16 Elapse: 50:12 2224
Samp: WO=m81141ac Meth=9Ao Dil=1 Start : 17:12:07 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2132 > 2315 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



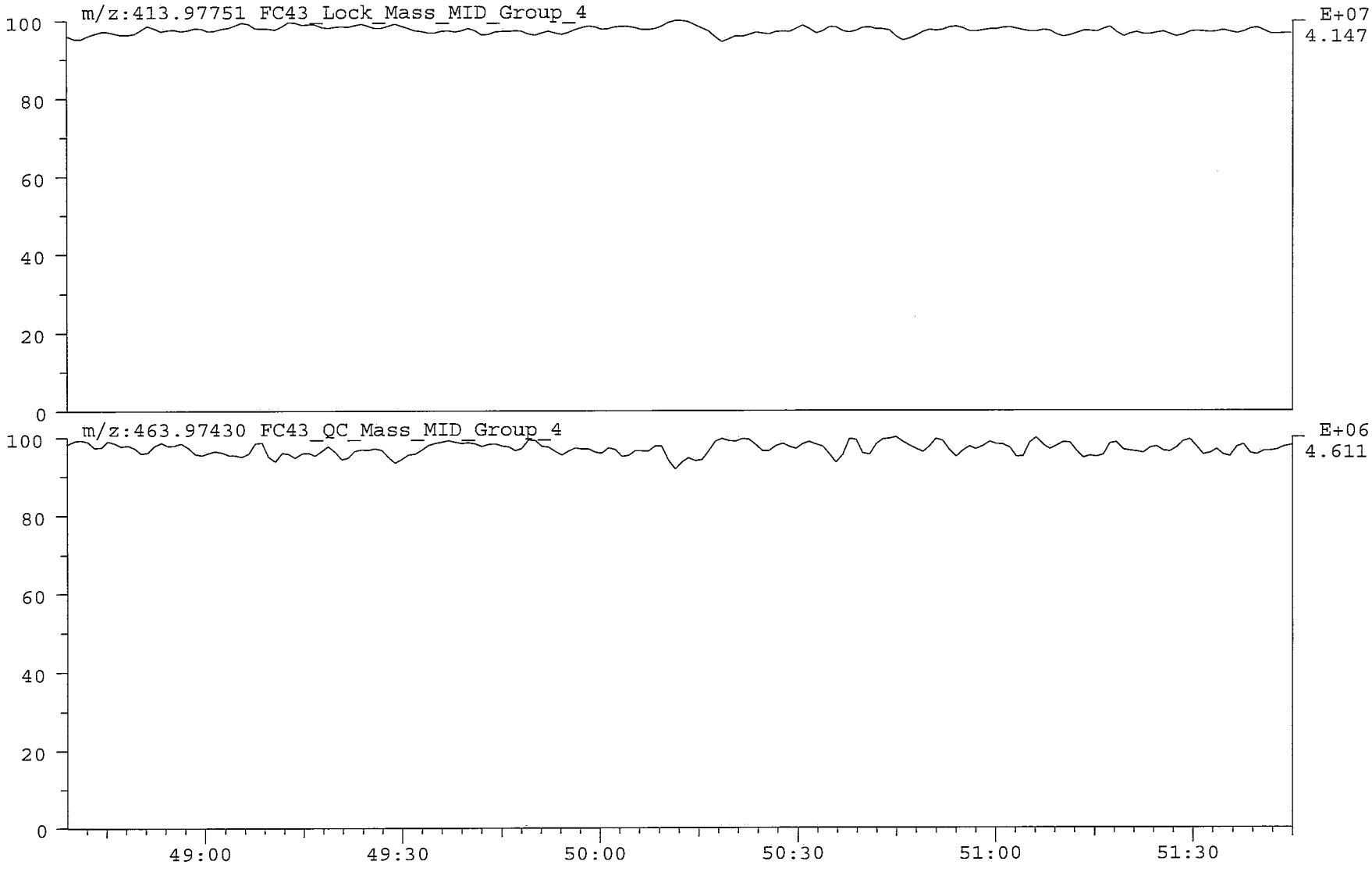
CHRO: d1tm8114 18-Aug-16 Elapse: 39:43 1618
Samp: WO=m81141ac Meth=9Ao Dil=1 Start : 17:12:07 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2132 > 2315 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



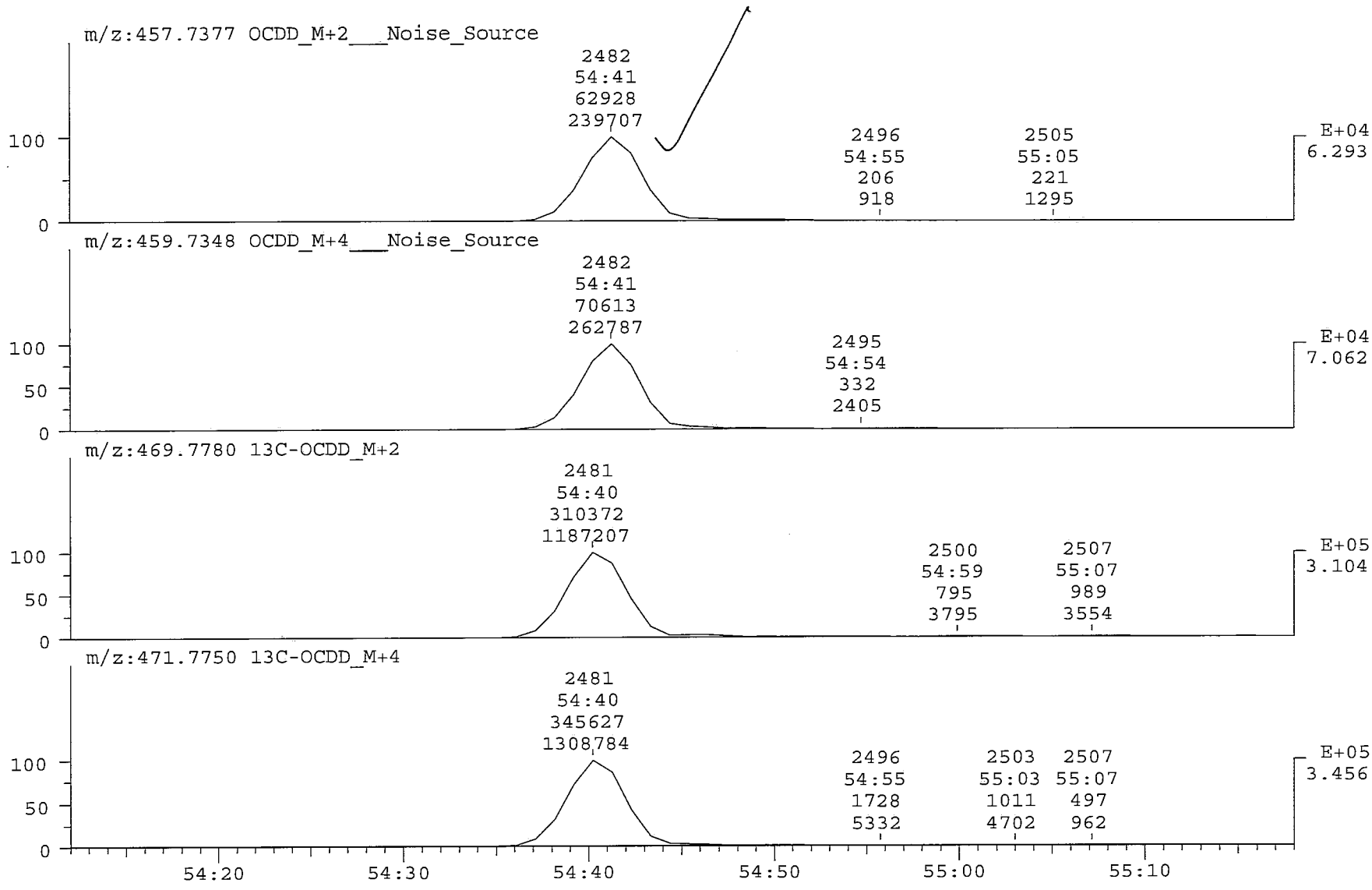
```
CHRO:  d1tm8114                                18-Aug-16  Elapse:  50:12      2224
Samp:  WO=m81141ac Meth=9Ao Dil=1                         Start :  17:12:07   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2132 > 2315          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



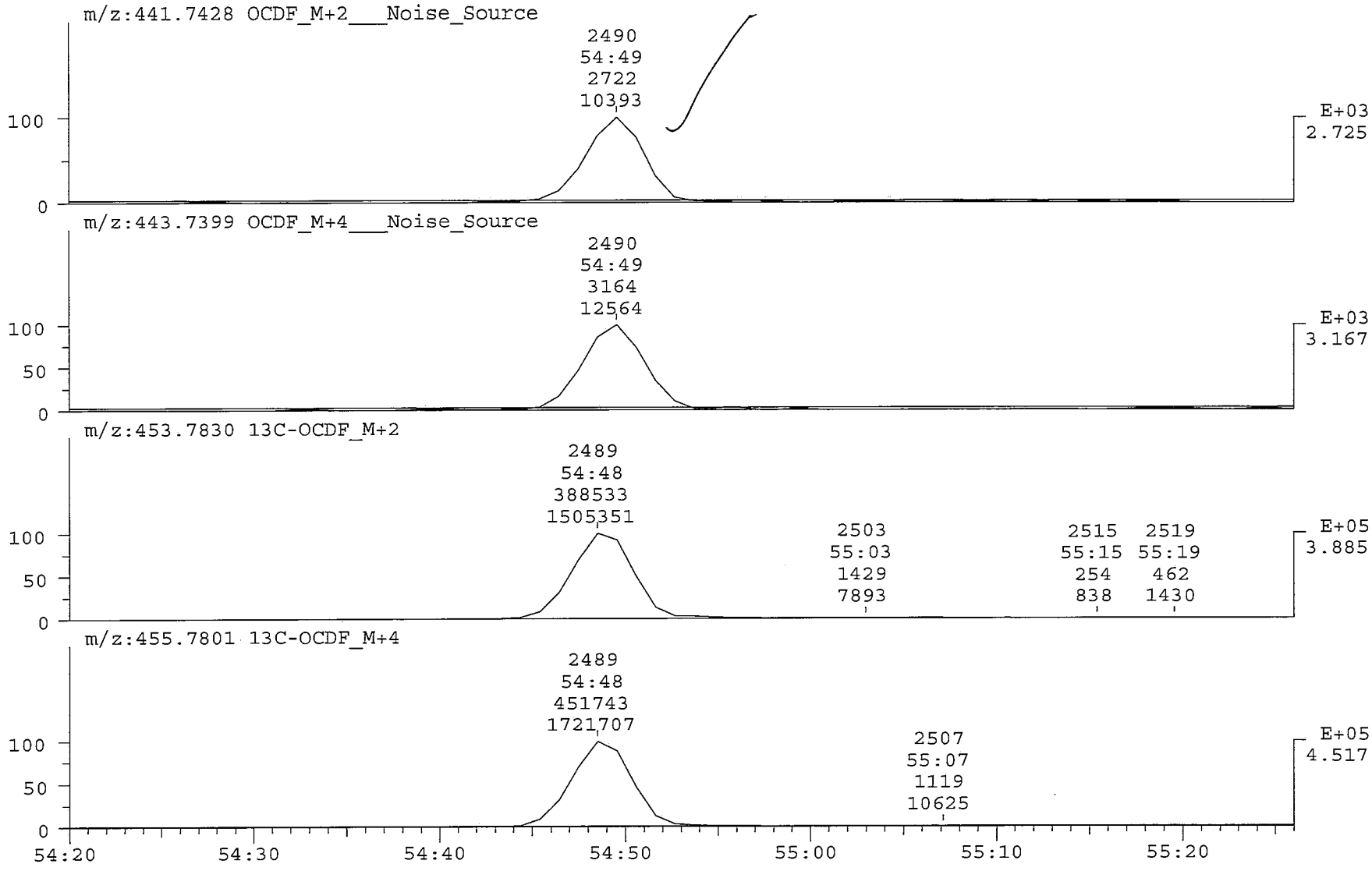
```
CHRO:  d1tm8114                                18-Aug-16  Elapse:  50:12      2224
Samp:  WO=m81141ac Meth=9Ao Dil=1                         Start :  17:12:07   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2132 > 2315          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



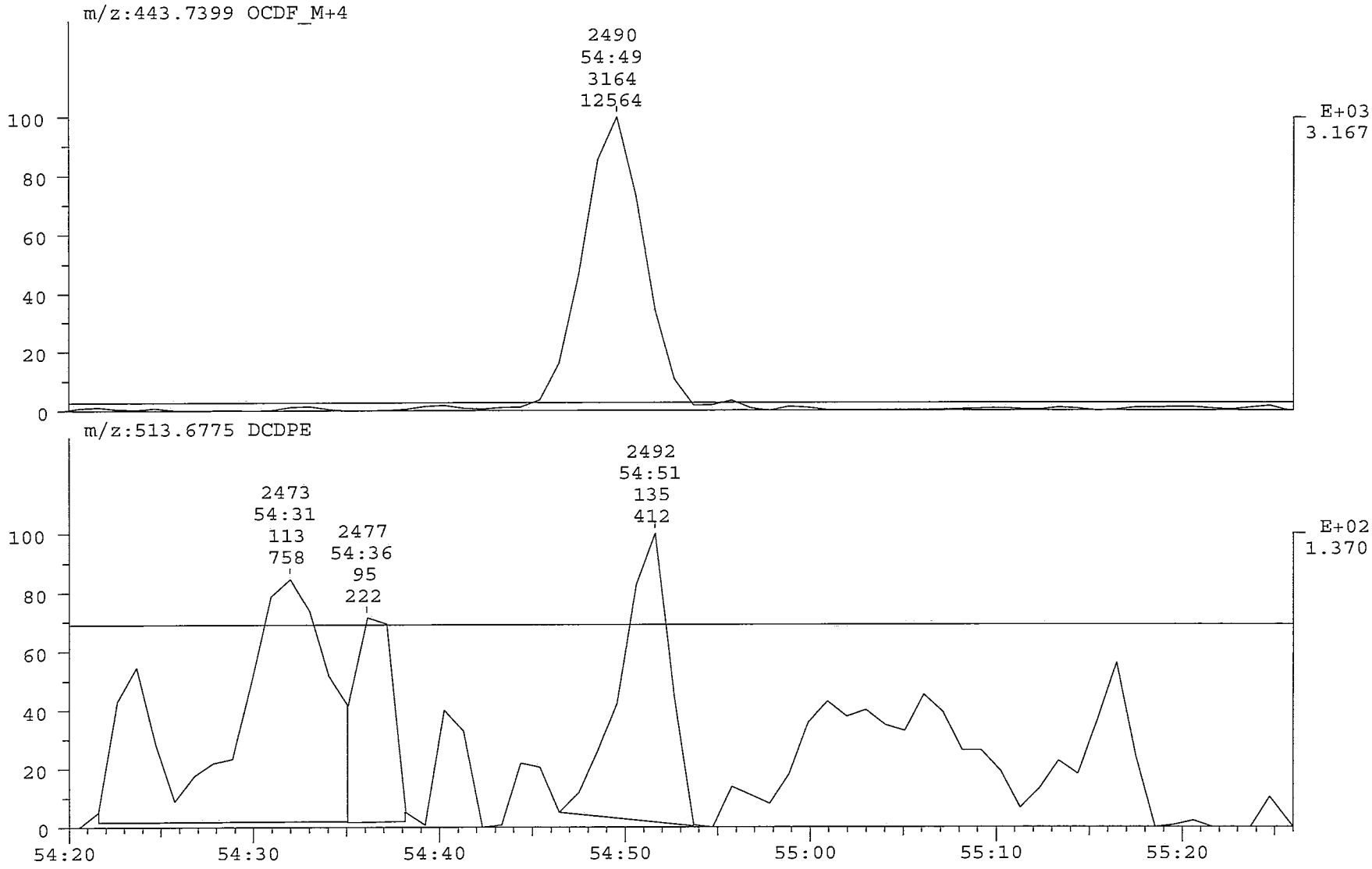
```
CHRO:  d1tm8114                                18-Aug-16  Elapse:  54:42      2483
Samp:  WO=m81141ac Meth=9Ao Dil=1                         Start :  17:12:07   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2454 > 2518          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



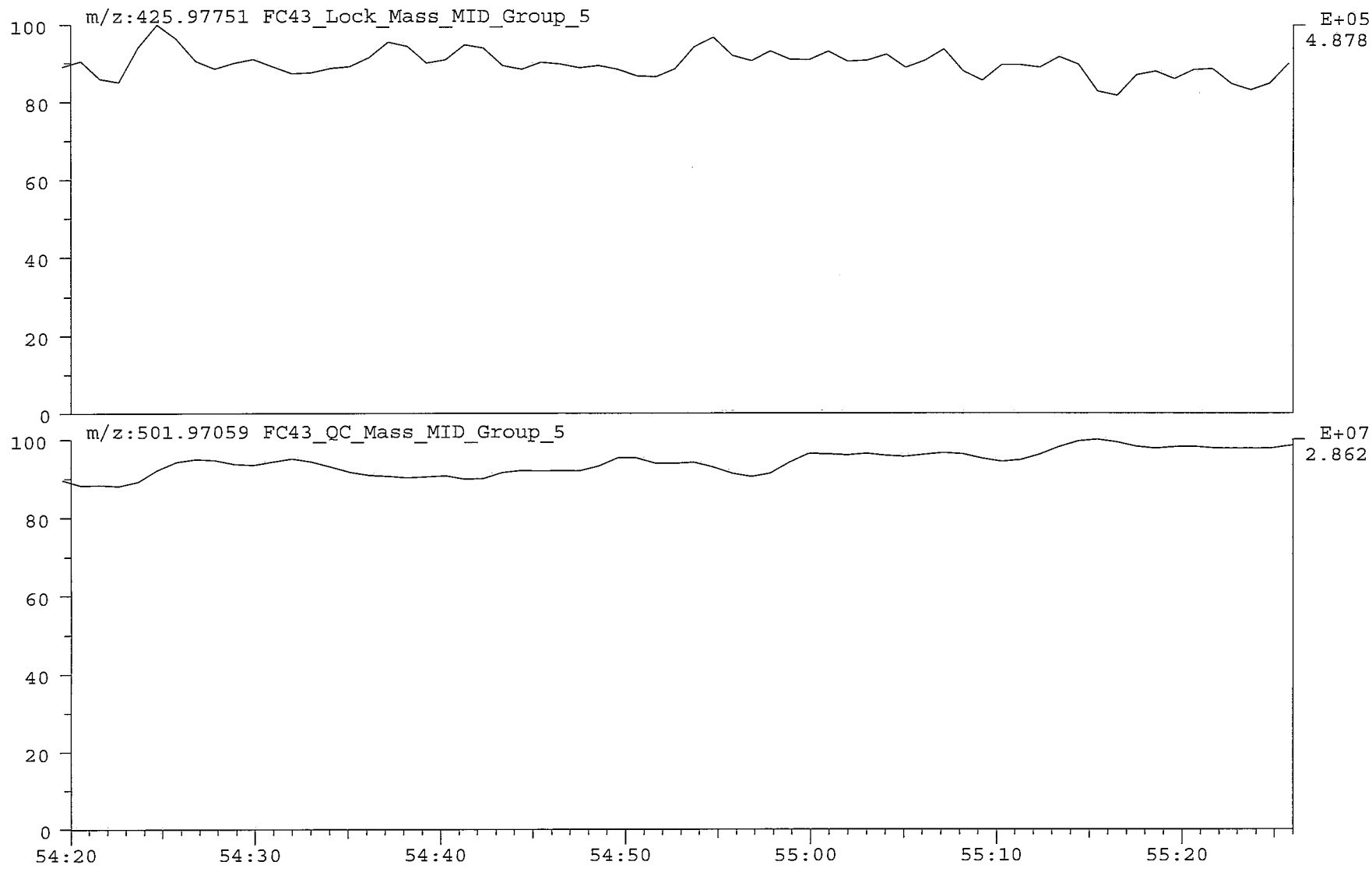
CHRO: d1tm8114 18-Aug-16 Elapse: 54:49 2490
Samp: WO=m81141ac Meth=9Ao Dil=1 Start : 17:12:07 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2461 > 2525 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d1tm8114                                18-Aug-16  Elapse:  54:49      2490
Samp:  WO=m81141ac Meth=9Ao Dil=1                         Start :  17:12:07   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2461 > 2525          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1tm8114                                18-Aug-16  Elapse:  54:49      2490
Samp:  WO=m81141ac Meth=9Ao Dil=1                         Start :  17:12:07   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  KLR                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2461 > 2525          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



```
*** file opened Thu Aug 18 17:16:33 2016 ***

Started by                - Xcalibur
Instrument Internet name  - DFS MS
Instrument model          - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

  Analysis started at: 18-Aug-16 17:16:33

  Analysis will stop at user request

  Firmware Version: 1.03

  MCAL file name: mcal1.cal

  Sequence : 021716KLR_160818104947

  MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF


  Mid Time Windows:
        Start        Measure      End       Cycletime

  # 1  12:00 min  23:53 min  35:53 min   1.00 sec
  # 2  35:53 min   6:50 min  42:43 min   1.00 sec
  # 3  42:43 min   5:16 min  48:00 min   1.00 sec
  # 4  48:00 min   5:00 min  53:00 min   1.00 sec
  # 5  53:00 min   4:12 min  57:12 min   1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    303.9016     1  1      123
    305.8987     1  1      123
    313.9834 l  20  1        6
    313.9834    20  1        6
    315.9419     5  1       24
    317.9389     5  1       24
    319.8965     1  1      123
    321.8936     1  1      123
    327.8847     1  1      123
    331.9368     5  1       24
    333.9338     5  1       24
    363.9802 c  20  1        6
    363.9802 c  20  1        6
    375.8364     1  1      123
   Window # 2
        mass F  int  gr  time (ms)
    313.9834 l  20  1        7
    313.9834    20  1        7
    339.8597     1  1      146
    341.8567     1  1      146
    351.9000     5  1       29
    353.8970     5  1       29
    355.8546     1  1      146
    357.8516     1  1      146
    367.8949     5  1       29
    369.8919     5  1       29
    375.9802 c  20  1        7
    375.9802    20  1        7
    409.7974     1  1      146
   Window # 3
        mass F  int  gr  time (ms)
    373.8208     1  1      146
    375.8178     1  1      146
    375.9802 l  20  1        7
```

```
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          308.4834
 BQUAD            2.4000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE       18.0000  ECORR           1.0008   ECURR            1.0000
 EDAC       7969177.0000   EDACG           0.9997   EDACZ         2585.8226
 ELEN           -45.0000   EMULT        1802.0000   ENS            210.0000
 ENSBR            2.4000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           172.0000   EXSBR            2.5000
 FDMA      18000000.0000   FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            6.7000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0045	FVINLET	0.0479	FVSRC	0.0398
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	620.0000
LENS_SYM	-4.7500	LM	375.8364	LMII	500.0000
LMASS	308.4834	LKM	425.9770	MASS	308.4834
MDAC	3551120.7317	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2649.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-7.0000	RECURR	0.9001	RELEN	0.0000
RES	12920.7432	RPUSHER	-6.9524	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0986	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	308.4834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:        2.6e-005 mbar
Analyzer Penning:    9.6e-008 mbar
Pirani Analyse:      4.4e-003 mbar
Pirani Source:       4.0e-002 mbar
Pirani Inlet System: 4.8e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 12418.
MID Time Window 2: Resolution is 11959.
MID Time Window 3: Resolution is 11362.
MID Time Window 4: Resolution is 11825.
MID Time Window 5: Resolution is 12920.

Amplifier Offset: 87.


*** File closed Thu Aug 18 18:13:46 2016
  ***
```

QUAN: d1tm8114.q0 Entries: 252

Data file(s) used
File: d1tm8114 18-Aug-16
Samp: WO=m81141ac Meth=9Ao Dil=1 Start : 17:12:07 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:47	232.	76.	32:44	32:52	10.	1	1.0	ABB
321.8775	31:34	1149.	181.	31:24	31:41	8.	1	1.0	AVB
319.8805	32:18	164.	54.	32:15	32:21	10.	2	5.0	ABB
319.8805	32:31	335.	58.	32:22	32:33	10.	2	5.0	ABB
319.8805	32:42	300.	81.	32:33	32:44	10.	2	5.0	ABB
319.8805	32:47	232.	76.	32:44	32:52	10.	2	5.0	ABB
319.8805	33:31	221.	54.	33:27	33:35	10.	2	5.0	ABB
321.8775	31:21	312.	97.	31:18	31:24	8.	2	5.0	ABV
321.8775	31:34	1149.	181.	31:24	31:41	8.	2	5.0	AVB
321.8775	33:13	177.	77.	33:10	33:15	8.	2	5.0	ABB
321.8775	33:18	157.	45.	33:15	33:22	8.	2	5.0	ABV
321.8775	33:25	138.	58.	33:22	33:27	8.	2	5.0	AVB
331.9202	32:15	2746006.	288634.	32:00	32:30	150.	2	5.0	AVV
331.9202	32:48	910227.	92960.	32:33	33:03	150.	2	5.0	AVV
331.9202	33:07	8061.	750.	33:05	33:22	150.	2	5.0	AVV
333.9171	32:15	3400778.	349389.	32:00	32:30	109.	2	5.0	AVV
333.9171	32:48	1138257.	109991.	32:33	33:03	109.	2	5.0	AVV
333.9171	33:15	3447.	990.	33:09	33:17	109.	2	5.0	AVB
303.8864	30:48	1657.	230.	30:46	31:00	12.	1	1.0	AVB
305.8834	30:45	2477.	452.	30:34	30:48	15.	1	1.0	ABV
303.8864	29:33	526.	108.	29:21	29:35	12.	2	5.0	ABV
303.8864	29:36	178.	87.	29:35	29:38	12.	2	5.0	AVB
303.8864	30:03	279.	98.	29:58	30:05	12.	2	5.0	ABV
303.8864	30:08	769.	124.	30:05	30:23	12.	2	5.0	AVB
303.8864	30:44	1178.	296.	30:38	30:46	12.	2	5.0	ABV
303.8864	30:48	1657.	230.	30:46	31:00	12.	2	5.0	AVB
303.8864	32:00	856.	246.	31:48	32:02	12.	2	5.0	ABV
303.8864	32:04	519.	203.	32:02	32:07	12.	2	5.0	AVB
305.8834	29:33	1285.	160.	29:23	29:39	15.	2	5.0	ABB
305.8834	30:03	565.	114.	29:56	30:07	15.	2	5.0	ABV
305.8834	30:11	629.	109.	30:07	30:16	15.	2	5.0	AVV
305.8834	30:18	368.	133.	30:16	30:23	15.	2	5.0	AVB
305.8834	30:45	2477.	452.	30:34	30:48	15.	2	5.0	ABV
305.8834	30:53	1589.	252.	30:48	31:05	15.	2	5.0	AVB
305.8834	31:55	612.	189.	31:50	31:57	15.	2	5.0	ABV
305.8834	32:00	1952.	298.	31:57	32:12	15.	2	5.0	AVV
305.8834	32:15	249.	85.	32:12	32:18	15.	2	5.0	AVB
315.9261	29:28	3623.	834.	29:21	29:30	40.	2	5.0	ABV
315.9261	29:32	1428.	551.	29:30	29:34	40.	2	5.0	AVV
315.9261	29:35	773.	391.	29:34	29:37	40.	2	5.0	AVV
315.9261	29:38	516.	247.	29:37	29:40	40.	2	5.0	AVB
315.9261	30:25	1864.	558.	30:20	30:27	40.	2	5.0	ABV
315.9261	30:40	1511469.	155136.	30:27	30:55	40.	2	5.0	AVV
315.9261	31:11	4304.	764.	31:07	31:16	40.	2	5.0	AVV
315.9261	31:18	1829.	453.	31:16	31:22	40.	2	5.0	AVV
315.9261	31:24	743.	324.	31:22	31:25	40.	2	5.0	AVV
315.9261	31:27	1813.	513.	31:25	31:35	40.	2	5.0	AVB
315.9261	31:56	2895.	808.	31:47	31:59	40.	2	5.0	ABB
315.9261	32:07	1151.	294.	32:00	32:09	40.	2	5.0	ABB
315.9261	32:18	2497.	499.	32:13	32:23	40.	2	5.0	ABB

317.9230	29:28	3015.	517.	29:16	29:30	37.	2	5.0	ABV
317.9230	29:33	3438.	778.	29:30	29:42	37.	2	5.0	AVB
317.9230	30:40	1905661.	199770.	30:25	30:55	37.	2	5.0	AVV
317.9230	30:58	7431.	1912.	30:56	31:01	37.	2	5.0	AVV
317.9230	31:04	6459.	1615.	31:01	31:09	37.	2	5.0	AVV
317.9230	31:13	2683.	552.	31:09	31:15	37.	2	5.0	AVV
317.9230	31:19	2070.	493.	31:15	31:22	37.	2	5.0	AVB
317.9230	31:24	1688.	572.	31:22	31:27	37.	2	5.0	ABV
317.9230	31:28	874.	406.	31:27	31:30	37.	2	5.0	AVV
317.9230	31:32	554.	233.	31:30	31:35	37.	2	5.0	AVB
317.9230	31:45	654.	239.	31:41	31:47	37.	2	5.0	ABB
317.9230	32:01	935.	351.	31:58	32:03	37.	2	5.0	ABB
317.9230	32:07	1126.	317.	32:03	32:12	37.	2	5.0	ABB
317.9230	32:16	2497.	476.	32:12	32:22	37.	2	5.0	ABB
355.8368	41:23	1637.	420.	41:18	41:28	20.	1	1.0	ABB
357.8337	41:24	2049.	328.	41:15	41:28	14.	1	1.0	ABB
355.8368	40:41	935.	171.	40:37	40:49	20.	2	5.0	ABV
355.8368	40:53	932.	160.	40:49	41:08	20.	2	5.0	AVV
355.8368	41:23	1637.	420.	41:18	41:28	20.	2	5.0	ABB
355.8368	41:37	651.	253.	41:34	41:40	20.	2	5.0	ABB
355.8368	42:02	482.	110.	41:58	42:06	20.	2	5.0	ABB
357.8337	40:45	295.	96.	40:41	40:49	14.	2	5.0	ABB
357.8337	41:24	2049.	328.	41:15	41:28	14.	2	5.0	ABB
357.8337	42:07	372.	92.	42:01	42:09	14.	2	5.0	ABB
367.8765	40:41	1488.	395.	40:37	40:49	19.	2	5.0	ABB
367.8765	41:23	1112344.	268366.	41:15	41:36	19.	2	5.0	ABV
367.8765	41:38	4084.	992.	41:36	41:42	19.	2	5.0	AVV
367.8765	41:49	3919.	807.	41:42	41:52	19.	2	5.0	AVB
367.8765	42:00	3359.	791.	41:53	42:05	19.	2	5.0	ABV
367.8765	42:07	1362.	443.	42:05	42:11	19.	2	5.0	AVB
369.8734	40:41	809.	331.	40:38	40:43	24.	2	5.0	ABB
369.8734	40:58	2238.	576.	40:53	41:00	24.	2	5.0	ABB
369.8734	41:23	690399.	167755.	41:15	41:33	24.	2	5.0	ABV
369.8734	41:38	3984.	1124.	41:33	41:40	24.	2	5.0	AVB
369.8734	41:49	1372.	323.	41:41	41:51	24.	2	5.0	ABV
369.8734	41:53	540.	259.	41:51	41:55	24.	2	5.0	AVB
369.8734	42:01	2703.	489.	41:56	42:07	24.	2	5.0	ABV
369.8734	42:09	429.	191.	42:07	42:11	24.	2	5.0	AVV
369.8734	42:13	591.	284.	42:11	42:15	24.	2	5.0	AVB
339.8427	40:14	2291.	273.	40:07	40:24	24.	1	1.0	ABB
341.8396	39:16	2126.	338.	39:13	39:27	28.	1	1.0	ABV
339.8427	39:17	1324.	289.	39:13	39:23	24.	2	5.0	ABB
339.8427	39:43	1805.	253.	39:33	39:49	24.	2	5.0	ABB
339.8427	40:14	2291.	273.	40:07	40:24	24.	2	5.0	ABB
339.8427	40:55	1979.	571.	40:50	40:58	24.	2	5.0	ABB
339.8427	41:07	1219.	200.	41:01	41:13	24.	2	5.0	ABB
341.8396	39:16	2373.	338.	39:13	39:32	28.	2	5.0	ABV
341.8396	39:44	1566.	343.	39:35	39:48	28.	2	5.0	ABB
341.8396	40:14	1775.	231.	39:59	40:16	28.	2	5.0	AVV
341.8396	40:19	808.	201.	40:16	40:24	28.	2	5.0	AVB
341.8396	40:54	2195.	324.	40:38	40:58	28.	2	5.0	AVV
341.8396	41:05	2599.	335.	40:58	41:17	28.	2	5.0	AVB
351.8824	39:15	4924.	1460.	39:11	39:17	90.	2	5.0	ABV
351.8824	39:22	4243.	648.	39:17	39:30	90.	2	5.0	AVB
351.8824	39:43	1766714.	370806.	39:31	39:57	90.	2	5.0	ABV
351.8824	39:59	9864.	1943.	39:57	40:07	90.	2	5.0	AVV
351.8824	40:13	16977.	3175.	40:07	40:20	90.	2	5.0	AVV
351.8824	40:22	1976.	697.	40:20	40:24	90.	2	5.0	AVV
351.8824	40:27	1701.	561.	40:24	40:30	90.	2	5.0	AVB
351.8824	40:34	2882.	960.	40:30	40:36	90.	2	5.0	ABB
351.8824	40:53	1933870.	460116.	40:45	41:03	90.	2	5.0	ABV
351.8824	41:06	11603.	2036.	41:03	41:10	90.	2	5.0	AVV
351.8824	41:12	4333.	1032.	41:10	41:17	90.	2	5.0	AVV
351.8824	41:18	4065.	688.	41:17	41:28	90.	2	5.0	AVB
353.8793	39:15	4098.	1043.	39:11	39:22	63.	2	5.0	ABB
353.8793	39:43	1132032.	241942.	39:35	39:58	63.	2	5.0	ABV
353.8793	40:00	5417.	1639.	39:58	40:04	63.	2	5.0	AVV

353.8793	40:06	947.	385.	40:04	40:07	63.	2	5.0	AVV
353.8793	40:12	11841.	1313.	40:07	40:26	63.	2	5.0	AVB
353.8793	40:29	1944.	373.	40:27	40:39	63.	2	5.0	ABB
353.8793	40:53	1218652.	293028.	40:43	41:08	63.	2	5.0	ABV
353.8793	41:10	2357.	876.	41:08	41:12	63.	2	5.0	AVV
353.8793	41:14	1810.	481.	41:12	41:18	63.	2	5.0	AVV
353.8793	41:20	1256.	374.	41:18	41:23	63.	2	5.0	AVV
353.8793	41:27	2088.	491.	41:23	41:30	63.	2	5.0	AVB
389.7961	46:11	4239.	874.	46:00	46:14	39.	1	1.0	ABV
391.7931	46:09	3654.	684.	45:59	46:14	28.	1	1.0	ABB
389.7961	45:26	1653.	281.	45:21	45:34	39.	2	5.0	ABB
389.7961	45:40	1388.	246.	45:34	45:42	39.	2	5.0	ABV
389.7961	45:45	3408.	938.	45:42	45:51	39.	2	5.0	AVB
389.7961	46:11	4640.	874.	46:00	46:19	39.	2	5.0	ABB
391.7931	45:38	675.	211.	45:34	45:40	28.	2	5.0	ABV
391.7931	45:45	2157.	497.	45:40	45:58	28.	2	5.0	AVB
391.7931	46:09	3654.	684.	45:59	46:14	28.	2	5.0	ABB
401.8358	45:37	1027442.	256068.	45:26	45:41	114.	2	5.0	ABV
401.8358	45:44	1036538.	251969.	45:41	45:58	114.	2	5.0	AVV
401.8358	46:08	3438566.	817970.	45:58	46:24	114.	2	5.0	AVV
403.8327	45:37	833830.	210751.	45:30	45:41	85.	2	5.0	ABV
403.8327	45:44	807129.	201804.	45:41	45:54	85.	2	5.0	AVV
403.8327	45:56	4115.	1245.	45:54	45:59	85.	2	5.0	AVB
403.8327	46:08	2734707.	654616.	45:59	46:23	85.	2	5.0	ABV
403.8327	46:25	5817.	1942.	46:23	46:27	85.	2	5.0	AVV
403.8327	46:29	3934.	1577.	46:27	46:31	85.	2	5.0	AVV
403.8327	46:33	3289.	1430.	46:31	46:36	85.	2	5.0	AVB
373.8021	44:33	3883.	779.	44:26	44:37	23.	1	1.0	ABV
375.7990	44:34	4191.	724.	44:24	44:38	41.	1	1.0	AVV
373.8021	44:18	2458.	693.	44:14	44:23	23.	2	5.0	ABB
373.8021	44:33	3883.	779.	44:26	44:37	23.	2	5.0	ABV
373.8021	44:42	2502.	565.	44:37	44:51	23.	2	5.0	AVB
373.8021	45:15	826.	202.	45:09	45:20	23.	2	5.0	ABB
373.8021	45:27	2121.	363.	45:20	45:38	23.	2	5.0	ABB
375.7990	44:17	2029.	707.	44:14	44:20	41.	2	5.0	ABB
375.7990	44:34	4388.	724.	44:20	44:38	41.	2	5.0	ABV
375.7990	44:42	3020.	472.	44:38	44:54	41.	2	5.0	AVB
375.7990	45:14	2891.	253.	44:59	45:19	41.	2	5.0	AVV
375.7990	45:26	4386.	443.	45:19	45:41	41.	2	5.0	AVV
373.8021	44:18	2458.	693.	44:14	44:23	23.	2	5.0	ABB
373.8021	44:33	3883.	779.	44:26	44:37	23.	2	5.0	ABV
373.8021	44:42	2502.	565.	44:37	44:51	23.	2	5.0	AVB
373.8021	45:15	826.	202.	45:09	45:20	23.	2	5.0	ABB
373.8021	45:27	2121.	363.	45:20	45:38	23.	2	5.0	ABB
375.7990	44:17	2029.	707.	44:14	44:20	41.	2	5.0	ABB
375.7990	44:34	4388.	724.	44:20	44:38	41.	2	5.0	ABV
375.7990	44:42	3020.	472.	44:38	44:54	41.	2	5.0	AVB
375.7990	45:14	2891.	253.	44:59	45:19	41.	2	5.0	AVV
375.7990	45:26	4386.	443.	45:19	45:41	41.	2	5.0	AVV
383.8447	44:33	744010.	202535.	44:25	44:36	73.	2	5.0	ABV
383.8447	44:41	870653.	218923.	44:36	44:51	73.	2	5.0	AVV
383.8447	44:53	9167.	1243.	44:51	45:09	73.	2	5.0	AVV
383.8447	45:26	868347.	216986.	45:16	45:41	73.	2	5.0	ABV
383.8447	45:46	3579.	837.	45:43	45:50	73.	2	5.0	AVV
383.8447	45:53	1551.	447.	45:50	45:56	73.	2	5.0	AVB
383.8447	46:27	753967.	170189.	46:17	46:40	73.	2	5.0	ABV
383.8447	46:43	3260.	902.	46:40	46:45	73.	2	5.0	AVV
383.8447	46:47	3288.	1136.	46:45	46:50	73.	2	5.0	AVB
385.8417	44:33	1492688.	391538.	44:25	44:36	91.	2	5.0	ABV
385.8417	44:41	1758330.	434728.	44:36	44:57	91.	2	5.0	AVV
385.8417	45:03	4472.	764.	45:01	45:09	91.	2	5.0	AVV
385.8417	45:14	4561.	771.	45:09	45:17	91.	2	5.0	AVV
385.8417	45:26	1667000.	409467.	45:17	45:41	91.	2	5.0	AVV
385.8417	45:46	5643.	1593.	45:44	45:51	91.	2	5.0	AVB
385.8417	45:59	5445.	1241.	45:51	46:01	91.	2	5.0	ABV
385.8417	46:11	6265.	1128.	46:01	46:15	91.	2	5.0	AVB
385.8417	46:17	3073.	997.	46:15	46:20	91.	2	5.0	ABV

385.8417	46:27	1448384.	329038.	46:20	46:42	91.	2	5.0	AVV
385.8417	46:44	4886.	1322.	46:42	46:51	91.	2	5.0	AVB
423.7555	50:41	36498.	7802.	50:29	50:54	21.	1	1.0	AVV
425.7524	50:41	33611.	7153.	50:31	50:52	47.	1	1.0	AVV
423.7555	49:28	33257.	6723.	49:20	49:44	21.	2	5.0	ABV
423.7555	50:41	36750.	7802.	50:26	50:57	21.	2	5.0	AVV
425.7524	49:28	32058.	6401.	49:20	49:44	47.	2	5.0	ABV
425.7524	50:41	33132.	7153.	50:26	50:47	47.	2	5.0	AVV
435.7951	49:27	12056.	1846.	49:21	49:36	27.	2	5.0	ABV
435.7951	49:43	1143.	266.	49:36	49:46	27.	2	5.0	AVB
435.7951	49:52	672.	141.	49:49	49:59	27.	2	5.0	ABB
435.7951	50:39	921654.	187391.	50:32	50:54	27.	2	5.0	ABV
435.7951	50:57	3543.	598.	50:54	51:05	27.	2	5.0	AVB
437.7921	49:29	9875.	1812.	49:21	49:40	14.	2	5.0	ABB
437.7921	50:11	411.	179.	50:08	50:13	14.	2	5.0	ABB
437.7921	50:39	839331.	174409.	50:30	50:55	14.	2	5.0	ABV
407.7614	49:39	10297.	2224.	49:29	49:45	28.	1	1.0	AVV
409.7583	49:39	9054.	1519.	49:31	49:52	17.	1	1.0	ABB
407.7614	48:43	1140.	209.	48:39	48:50	28.	2	5.0	ABB
407.7614	48:58	8922.	1958.	48:52	49:04	28.	2	5.0	ABB
407.7614	49:39	10783.	2224.	49:23	49:45	28.	2	5.0	AVV
407.7614	49:48	1181.	321.	49:45	49:52	28.	2	5.0	AVB
407.7614	51:19	2176.	240.	51:04	51:26	28.	2	5.0	AVB
409.7583	48:44	1120.	327.	48:39	48:47	17.	2	5.0	ABB
409.7583	48:58	8371.	1932.	48:52	49:10	17.	2	5.0	ABB
409.7583	49:39	8666.	1519.	49:31	49:45	17.	2	5.0	ABV
409.7583	49:46	388.	110.	49:45	49:52	17.	2	5.0	AVB
409.7583	51:17	724.	210.	51:13	51:22	17.	2	5.0	ABB
417.8041	48:57	513407.	106935.	48:49	49:07	37.	2	5.0	ABV
417.8041	49:13	1819.	468.	49:10	49:16	37.	2	5.0	AVB
417.8041	49:21	5984.	975.	49:16	49:29	37.	2	5.0	ABV
417.8041	49:38	4836.	1098.	49:29	49:41	37.	2	5.0	AVB
417.8041	49:58	2802.	485.	49:47	50:00	37.	2	5.0	ABV
417.8041	51:17	482289.	108354.	51:09	51:28	37.	2	5.0	AVB
417.8041	51:32	2554.	725.	51:28	51:34	37.	2	5.0	ABV
417.8041	51:36	2630.	949.	51:34	51:40	37.	2	5.0	AVB
419.8010	48:57	1155842.	241573.	48:48	49:07	68.	2	5.0	ABV
419.8010	49:09	3401.	1143.	49:07	49:11	68.	2	5.0	AVV
419.8010	49:13	3989.	916.	49:11	49:17	68.	2	5.0	AVV
419.8010	49:22	11899.	1919.	49:17	49:31	68.	2	5.0	AVV
419.8010	49:39	13475.	2190.	49:31	49:46	68.	2	5.0	AVV
419.8010	49:51	3223.	677.	49:46	49:57	68.	2	5.0	AVV
419.8010	51:17	1067460.	232475.	51:07	51:28	68.	2	5.0	ABV
419.8010	51:32	13426.	2219.	51:28	51:41	68.	2	5.0	AVV
457.7148	54:41	239707.	62928.	54:33	54:53	28.	1	1.0	ABV
459.7118	54:41	262787.	70613.	54:32	54:52	29.	1	1.0	ABV
457.7148	54:41	239707.	62928.	54:33	54:53	28.	2	5.0	ABV
457.7148	54:55	918.	206.	54:53	54:59	28.	2	5.0	AVV
457.7148	55:05	1295.	221.	54:59	55:12	28.	2	5.0	AVB
459.7118	54:41	262787.	70613.	54:32	54:52	29.	2	5.0	ABV
459.7118	54:54	2405.	332.	54:52	55:07	29.	2	5.0	AVB
469.7545	54:40	1187207.	310372.	54:34	54:55	75.	2	5.0	ABV
469.7545	54:59	3795.	795.	54:57	55:05	75.	2	5.0	AVV
469.7545	55:07	3554.	989.	55:05	55:12	75.	2	5.0	AVB
471.7514	54:40	1308784.	345627.	54:32	54:53	29.	2	5.0	ABV
471.7514	54:55	5332.	1728.	54:53	54:57	29.	2	5.0	AVV
471.7514	55:03	4702.	1011.	54:57	55:05	29.	2	5.0	AVV
471.7514	55:07	962.	497.	55:05	55:09	29.	2	5.0	AVB
441.7207	54:49	10157.	2722.	54:41	54:54	16.	1	1.0	ABV
443.7177	54:49	12417.	3164.	54:42	54:57	16.	1	1.0	AVB
441.7207	54:49	10393.	2722.	54:41	54:59	16.	2	5.0	ABB
443.7177	54:49	12564.	3164.	54:37	54:57	16.	2	5.0	ABB
453.7603	54:48	1505351.	388533.	54:37	55:01	36.	2	5.0	ABV
453.7603	55:03	7893.	1429.	55:01	55:13	36.	2	5.0	AVV
453.7603	55:15	838.	254.	55:13	55:17	36.	2	5.0	AVV
453.7603	55:19	1430.	462.	55:17	55:24	36.	2	5.0	AVB
455.7573	54:48	1721707.	451743.	54:41	55:04	45.	2	5.0	ABV

455.7573	55:07	10625.	1119.	55:05	55:22	45. 2	5.0 AVV

TestAmerica Canton

Sample ID: EB

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 016	**Work Order #....:**	M81151AA	**Matrix....:**	WATER
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	07/31/16	**Analysis Date....:**	08/09/16		
Prep Batch # ....:	6211032				
Initial Wgt/Vol :	943 mL	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		11	0.23	pg/L
1,2,3,7,8-PeCDD	ND		53	0.18	pg/L
1,2,3,4,7,8-HxCDD	ND		53	0.32	pg/L
1,2,3,6,7,8-HxCDD	ND		53	0.33	pg/L
1,2,3,7,8,9-HxCDD	ND		53	0.31	pg/L
1,2,3,4,6,7,8-HpCDD	ND		53	0.47	pg/L
OCDD	**2.0**	**Q B J**	**110**	**0.17**	**pg/L**
2,3,7,8-TCDF	ND		11	0.44	pg/L
1,2,3,7,8-PeCDF	ND		53	0.35	pg/L
2,3,4,7,8-PeCDF	ND		53	0.35	pg/L
1,2,3,4,7,8-HxCDF	ND		53	0.31	pg/L
1,2,3,6,7,8-HxCDF	ND		53	0.31	pg/L
2,3,4,6,7,8-HxCDF	ND		53	0.28	pg/L
1,2,3,7,8,9-HxCDF	ND		53	0.37	pg/L
1,2,3,4,6,7,8-HpCDF	ND		53	0.065	pg/L
1,2,3,4,7,8,9-HpCDF	ND		53	0.090	pg/L
OCDF	**1.6**	**Q B J**	**110**	**0.10**	**pg/L**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	68	40 - 135
13C-1,2,3,7,8-PeCDD	68	40 - 135
13C-1,2,3,4,7,8-HxCDD	72	40 - 135
13C-1,2,3,6,7,8-HxCDD	64	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	73	40 - 135
13C-OCDD	66	40 - 135
13C-2,3,7,8-TCDF	52	40 - 135
13C-1,2,3,7,8-PeCDF	69	40 - 135
13C-2,3,4,7,8-PeCDF	67	40 - 135
13C-1,2,3,4,7,8-HxCDF	56	40 - 135
13C-1,2,3,6,7,8-HxCDF	50	40 - 135
13C-2,3,4,6,7,8-HxCDF	64	40 - 135
13C-1,2,3,7,8,9-HxCDF	58	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	53	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	53	40 - 135
13C-OCDF	46	40 - 135

TestAmerica Canton

Sample ID: EB

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 016	**Work Order #....:**	M81151AA	**Matrix....:**	WATER
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	07/31/16	**Analysis Date....:**	08/09/16		
Prep Batch # ....:	6211032				
Initial Wgt/Vol :	943 mL	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81151AA	Prep Batch	6211032	Lot No	H6G290408-016
Data File	/20160809s1/d2tm8115.d	Prep Date	07/31/16	SDG No	
Analysis ID	180505	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/9/2016	Matrix	AQUEOUS	Date Sampled	07/25/16
Analysis Time	20:03	Initial Wt/Vol	943 mL	Lims Test Code	XXI09Q&01
Anal Exp Date	09/14/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D2A	Dil Factor	1.00	Code	9Ao
Analyst	MSD				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/L)		DL (pg/L)
2,3,7,8-TCDD				1.171				ND		0.229
Total TCDD				1.171				ND		0.229
2,3,7,8-TCDF				1.090				ND		0.442
Total TCDF		1959	289	1.090		1.621134		1.719124	QJ	0.442
1,2,3,7,8-PeCDD				1.047				ND		0.184
Total PeCDD				1.047				ND		0.184
1,2,3,7,8-PeCDF				1.187				ND		0.352
2,3,4,7,8-PeCDF				1.105				ND		0.353
Total PeCDF				1.146				ND		0.352
1,2,3,4,7,8-HxCDD				1.140				ND		0.320
1,2,3,6,7,8-HxCDD				1.146				ND		0.329
1,2,3,7,8,9-HxCDD				1.210				ND		0.306
Total HxCDD				1.166				ND		0.318
1,2,3,4,7,8-HxCDF				1.364				ND		0.307
1,2,3,6,7,8-HxCDF				1.278				ND		0.308
2,3,4,6,7,8-HxCDF				1.267				ND		0.279
1,2,3,7,8,9-HxCDF				1.285				ND		0.375
Total HxCDF		1553	267	1.299		1.764287		1.870930	QJ	0.313
1,2,3,4,6,7,8-HpCDD				1.121				ND		0.471
Total HpCDD				1.121				ND		0.471
1,2,3,4,6,7,8-HpCDF				1.497				ND		0.0651
1,2,3,4,7,8,9-HpCDF				1.383				ND		0.0899
Total HpCDF				1.440				ND		0.0759
OCDD	54:04	982	350	1.243		1.875290		1.988642	QBJ	0.173
OCDF	54:13	770	294	1.119		1.534609		1.627369	QBJ	0.101
13C-2,3,7,8-TCDD	31:18	883830	88835	1.067	1000	681.435747	68.14	722.625394		5.19
13C-2,3,7,8-TCDF	29:17	1109028	121198	1.750	1000	521.461935	52.15	552.981904		1.11
13C-1,2,3,7,8-PeCDD	40:46	717337	165482	0.873	1000	675.988651	67.60	716.849047		0.546
13C-1,2,3,7,8-PeCDF	39:00	1146038	228414	1.368	1000	689.065928	68.91	730.716785		0.849
13C-2,3,4,7,8-PeCDF	40:15	1121208	245079	1.381	1000	668.205039	66.82	708.594951		0.841
13C-1,2,3,4,7,8-HxCDD	45:00	579894	145453	0.893	1000	716.351993	71.64	759.652166		1.85
13C-1,2,3,6,7,8-HxCDD	45:07	537801	140668	0.929	1000	638.279048	63.83	676.860072		1.78
13C-1,2,3,4,7,8-HxCDF	43:58	617090	171035	1.213	1000	560.941839	56.09	594.848185		0.822
13C-1,2,3,6,7,8-HxCDF	44:06	680568	181996	1.489	1000	504.255089	50.43	534.734983		0.670
13C-2,3,4,6,7,8-HxCDF	44:50	782879	202646	1.346	1000	641.362987	64.14	680.130421		0.741
13C-1,2,3,7,8,9-HxCDF	45:47	630854	148718	1.210	1000	575.210746	57.52	609.979582		0.824
13C-1,2,3,4,6,7,8-HpCDD	49:52	546329	105467	0.823	1000	732.027029	73.20	776.274686		0.195
13C-1,2,3,4,6,7,8-HpCDF	48:11	509608	108844	1.069	1000	525.569408	52.56	557.337655		0.504
13C-1,2,3,4,7,8,9-HpCDF	50:31	437996	85264	0.904	1000	534.311422	53.43	566.608082		0.596
13C-OCDD	54:03	842441	221823	0.708	2000	1312.90716	65.65	1392.26634		0.453
13C-1,2,3,4-TCDD	30:47	2430738	255616	1.000	2000	2000.00000	100.00	2120.89077		5.54
13C-1,2,3,7,8,9-HxCDD	45:30	1813423	462675	1.000	2000	2000.00000	100.00	2120.89077		1.65
13C-OCDF	54:11	896488	234318	1.072	2000	922.159879	46.11	977.900190		0.299

8/19/16

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81151AA	Prep Batch	6211032	Lot No	H6G290408-016
Data File	/20160809s1/d2tm8115.d	Prep Date	07/31/16	SDG No	
Analysis ID	180505	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/09/16 20:03	Matrix	AQUEOUS	Date Sampled	07/25/16
Anal Exp Date	09/14/16	Initial Wt/Vol	943 mL	Lims Test Code	XXI09Q&01
Instrument	D2A	Extract Vol	20 uL	Method	DX8290A
Analyst	MSD	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	8	48	3	19	0.16 *	/	
	Unidentified	28:02	00:00	0	70	1104	32	116	0.06 *	ABB/AVB	RT
	Unidentified	30:43	00:00	0	113	672	28	113	0.17 *	ABB/ABB	RT
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	118	118	47	47	1.00 *	/	
	13C-2,3,7,8-TCDF	29:17	29:16	1	473706	635322	50795	70403	0.75	ABV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	15	8	6	3	2.00 *	/	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	320	348	128	139	0.92 *	/	
	13C-1,2,3,4-TCDD	30:47	30:48	-1	1083129	1347609	116569	139047	0.80	AVV/AVV	
	13C-2,3,7,8-TCDD	31:18	31:18	0	399531	484299	38399	50436	0.82	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	30	60	12	24	0.50 *	/	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	103	38	41	15	2.73 *	/	
	13C-1,2,3,7,8-PeCDF	39:00	39:01	-1	715829	430209	138080	90334	1.66	ABV/ABV	
	Unidentified	39:31	00:00	0	12874	5794	1797	1347	2.22 *	AVV/ABV	R
	13C-2,3,4,7,8-PeCDF	40:15	40:14	1	700374	420834	150970	94109	1.66	ABV/ABV	
	Unidentified	40:28	00:00	0	6154	5122	1160	1253	1.20 *	AVV/AVV	R
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	23	8	9	3	3.00 *	/	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	40	18	16	7	2.29 *	/	
	13C-1,2,3,7,8-PeCDD	40:46	40:46	0	452191	265146	106393	59089	1.71	ABB/ABV	
	Unidentified	41:02	00:00	0	2894	2496	604	1017	1.16 *	ABB/AVB	R
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	10	58	4	23	0.17 *	/	
	Unidentified	45:51	00:00	0	126	1427	39	228	0.09 *	ABB/ABB	RT
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	75	143	30	57	0.53	/	
	13C-1,2,3,4,7,8-HxCDF	43:58	43:59	-1	205179	411911	58915	112120	0.50	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:06	44:07	-1	241500	439068	64070	117926	0.55	AVV/AVV	
	Unidentified	44:16	00:00	0	3026	2879	1095	1117	1.05 *	AVV/AVV	R
	Unidentified	44:20	00:00	0	1115	1901	550	776	0.59	AVB/AVV	
	13C-2,3,4,6,7,8-HxCDF	44:50	44:50	0	272447	510432	71920	130726	0.53	AVV/ABB	M
	Unidentified	45:01	00:00	0	1884	4334	812	1246	0.43	AVB/ABV	
	Unidentified	45:05	00:00	0	1461	1812	532	787	0.81 *	ABB/AVV	R
	13C-1,2,3,7,8,9-HxCDF	45:47	45:47	0	214539	416315	50609	98109	0.52	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	30	20	12	8	1.50 *	/	
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M81151AA	Prep Batch	6211032	Lot No	H6G290408-016
Data File	/20160809s1/d2tm8115.d	Prep Date	07/31/16	SDG No	
Analysis ID	180505	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/09/16 20:03	Matrix	AQUEOUS	Date Sampled	07/25/16
Anal Exp Date	09/14/16	Initial Wt/Vol	943 mL	Lims Test Code	XXI09Q&01
Instrument	D2A	Extract Vol	20 uL	Method	DX8290A
Analyst	MSD	Diluton Factor	1.00	Code	9Ao

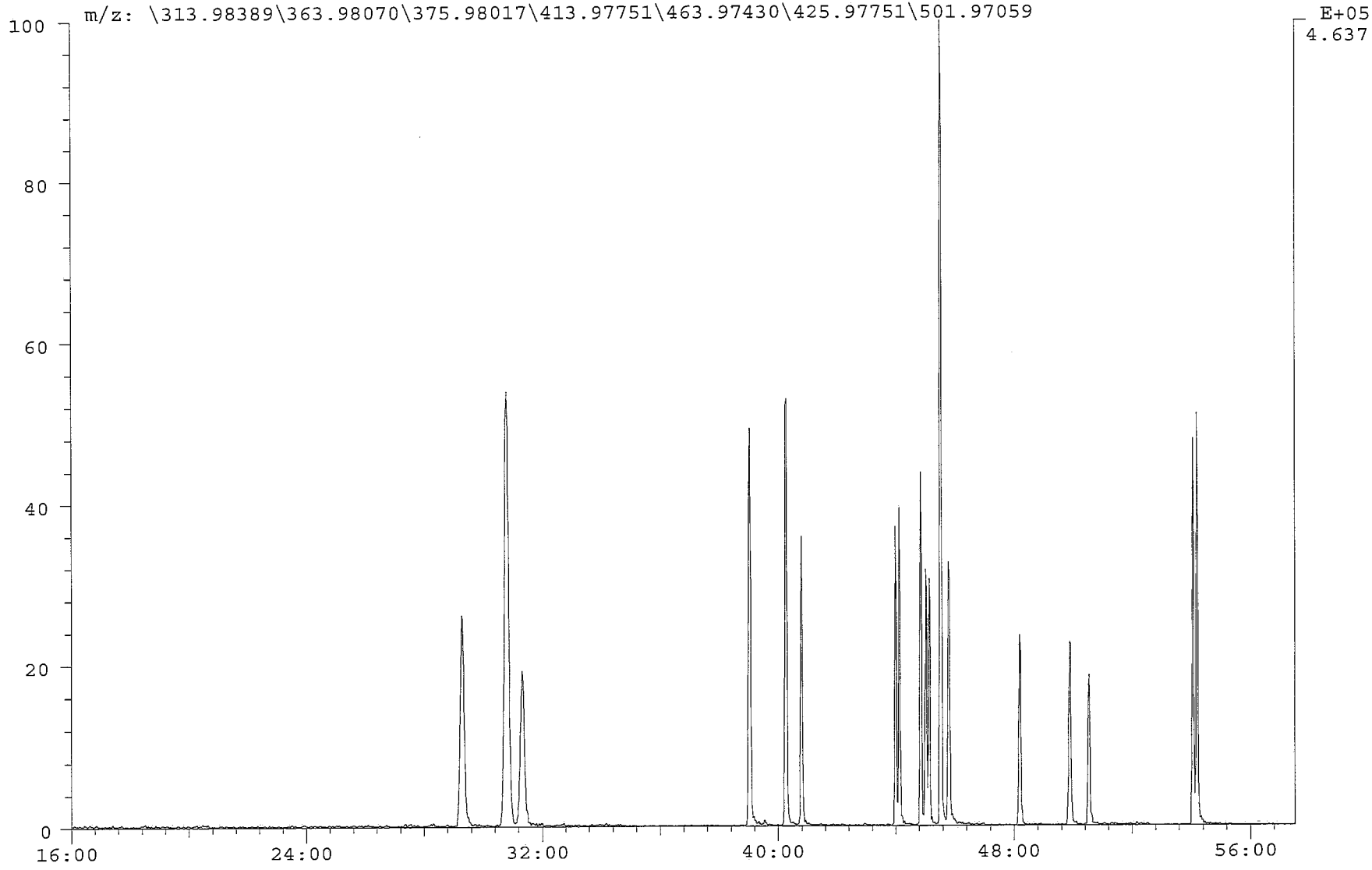
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	225	135	90	54	1.67 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:00	45:00	0	329268	250626	83699	61754	1.31	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:07	45:07	0	310119	227682	79213	61455	1.36	AVB/AVB	
	13C-1,2,3,7,8,9-HxCDD	45:30	45:31	-1	1004202	809221	254015	208660	1.24	ABV/ABV	
	Unidentified	45:44	00:00	0	9392	5005	1953	864	1.88 *	AVB/AVB	R
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	8	3	3	1	3.00 *	/	
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	55	63	22	25	0.88 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:11	48:10	1	146521	363087	29941	78903	0.40	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:31	50:31	0	135214	302782	29815	55449	0.45	ABV/ABV	
	Unidentified	50:51	00:00	0	1261	5917	422	1110	0.21 *	ABB/AVB	RT
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	10	43	4	17	0.24 *	/	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	18	18	7	7	1.00	/	
	13C-1,2,3,4,6,7,8-HpCDD	49:52	49:51	1	275590	270739	51608	53859	1.02	ABV/ABV	
	Unidentified	50:15	00:00	0	512	1622	160	507	0.32 *	ABB/AVB	RT
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	8	5	3	2	1.50 *	/	
	OCDF	54:13	54:12	1	642	128	257	37	5.02 *	ABB/ABB	R
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	40	30	16	12	1.33 *	/	
	13C-OCDF	54:11	54:12	-1	431750	464738	112754	121564	0.93	ABV/ABV	
	Unidentified	54:38	00:00	0	2844	814	577	509	3.49 *	ABB/ABV	R
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	15	8	6	3	2.00 *	/	
	OCDD	54:04	54:03	1	348	634	126	224	0.55 *	ABV/ABB	R
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	50	20	20	8	2.50 *	/	
	13C-OCDD	54:03	54:03	0	394757	447684	104924	116899	0.88	ABV/ABV	
	Unidentified	54:21	00:00	0	2002	2990	553	573	0.67 *	AVB/AVV	R

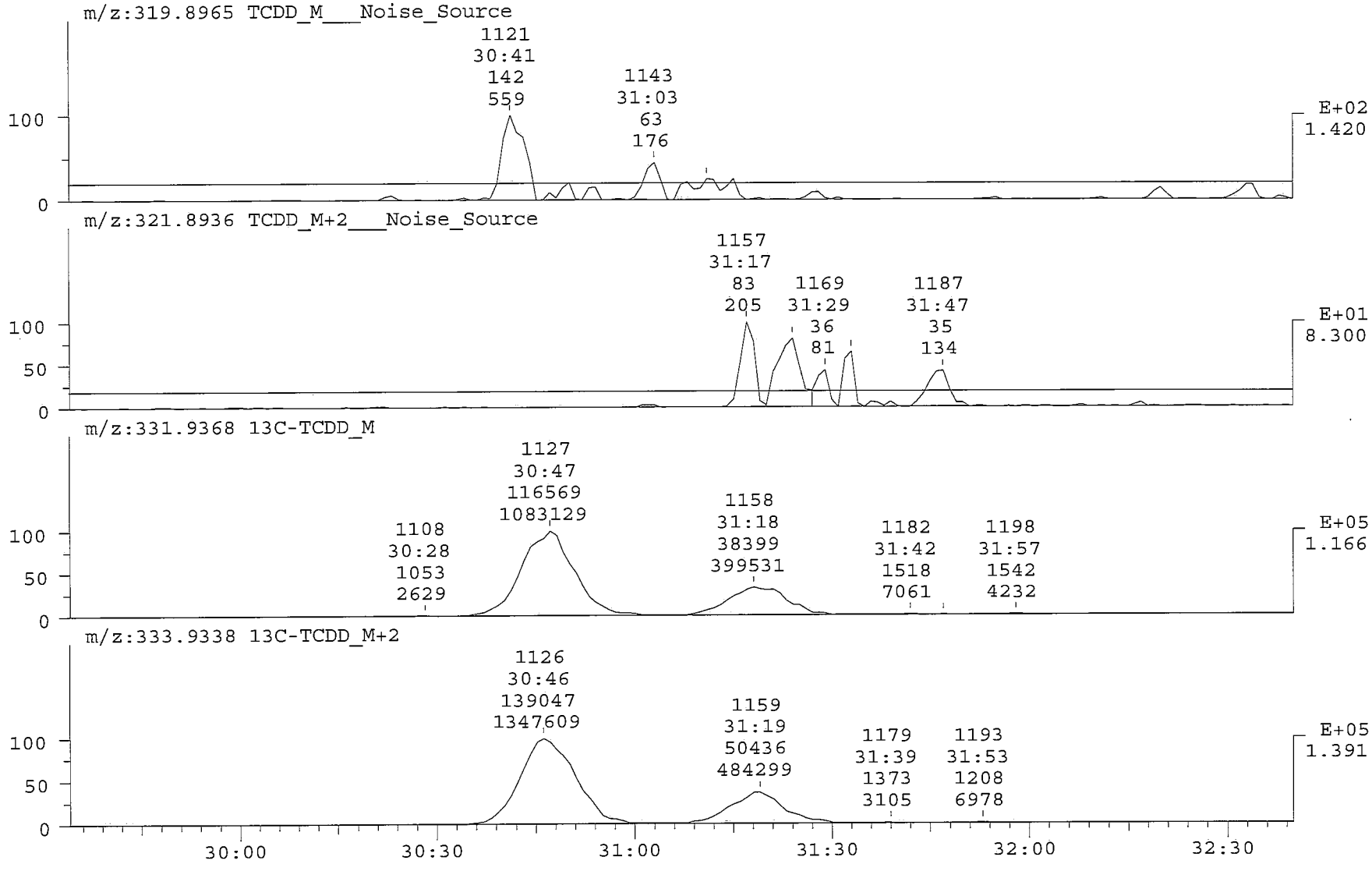
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int LM 8-9-16
Calc. LM 8/19/16
QCRev KM 8-24-16

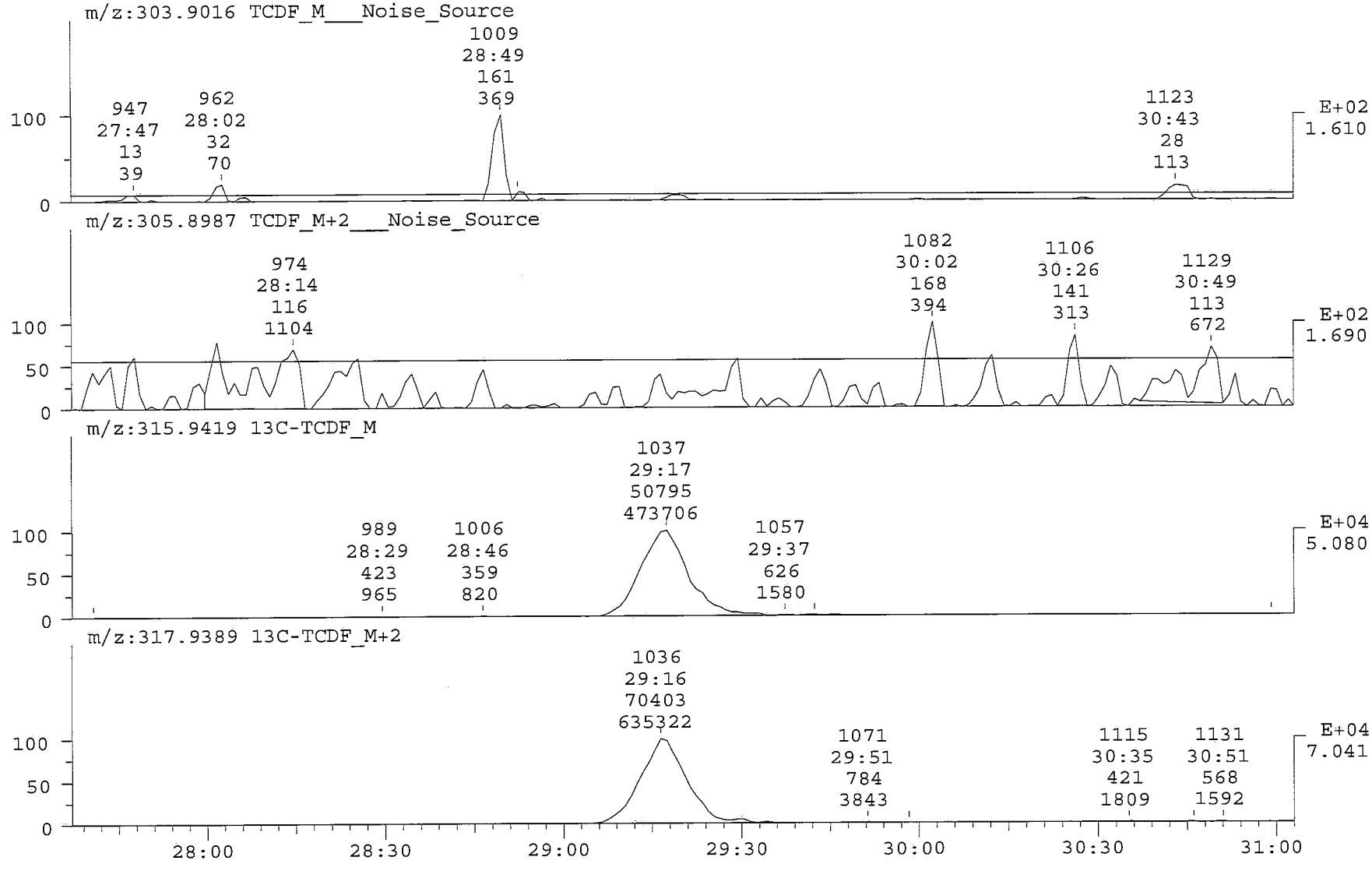
CHRO:	d2tm8115	09-Aug-16	Elapse:	54:13	2488
Samp:	WO=m81151aa Meth=9Ao Dil=1		Start :	20:03:37	2678
Comm:	Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1				
Mode:	EI ESI + Q1MS UP LR		Study :	6211032 (0.943L)	
Oper:	MSD		Inlet :	LC	
Peak:	100.00 ppm	Label wndw: 238 > 2678	Masses:	303 > 514	
Area:	5, 0.50, 0	Baseline : 100, 3	Label :	0, 0.0	
Disp:	Height Area				



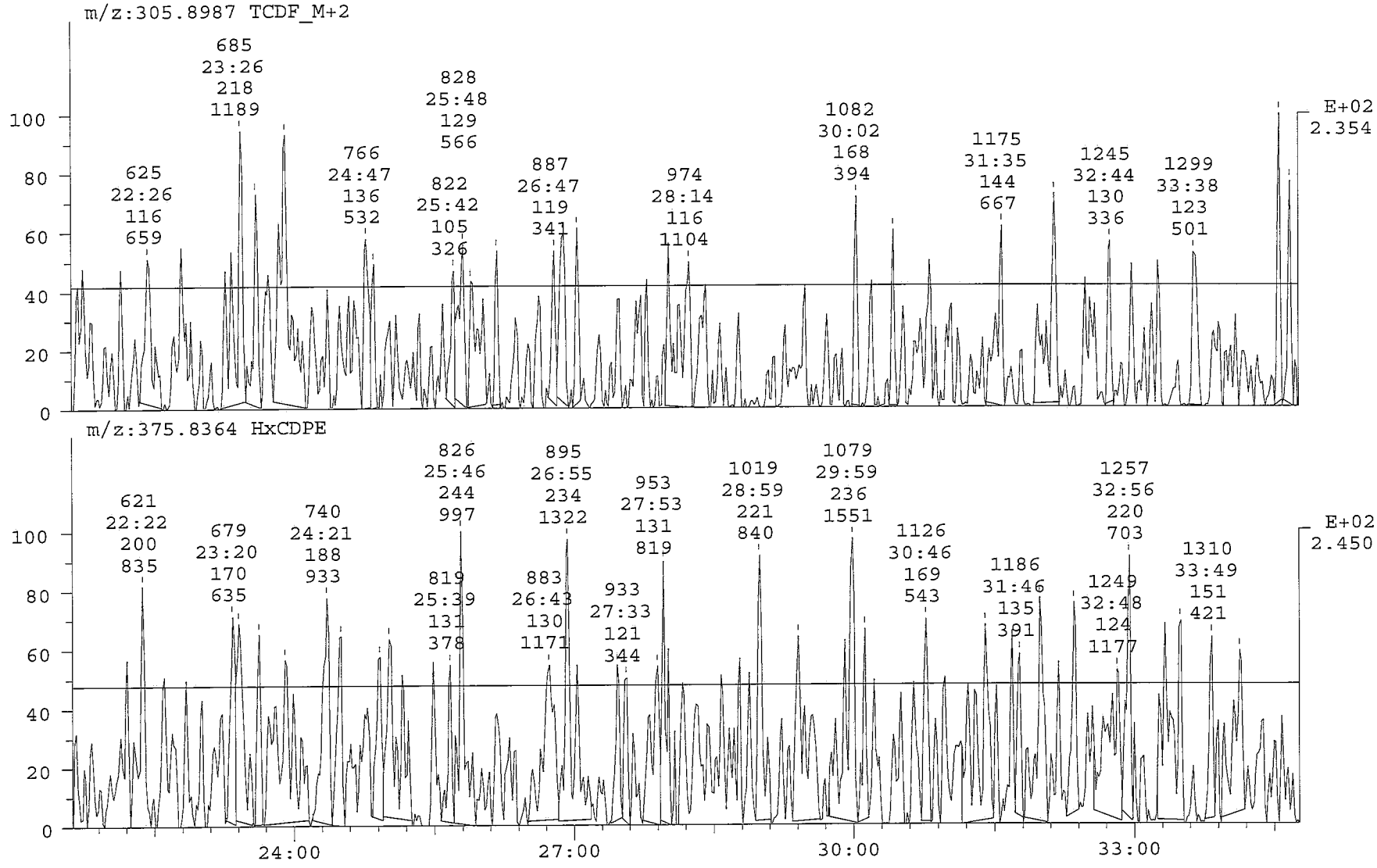
CHRO: d2tm8115 09-Aug-16 Elapse: 31:07 1147
Samp: WO=m81151aa Meth=9Ao Dil=1 Start : 20:03:37 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : 6211032 (0.943L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1054 > 1240 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



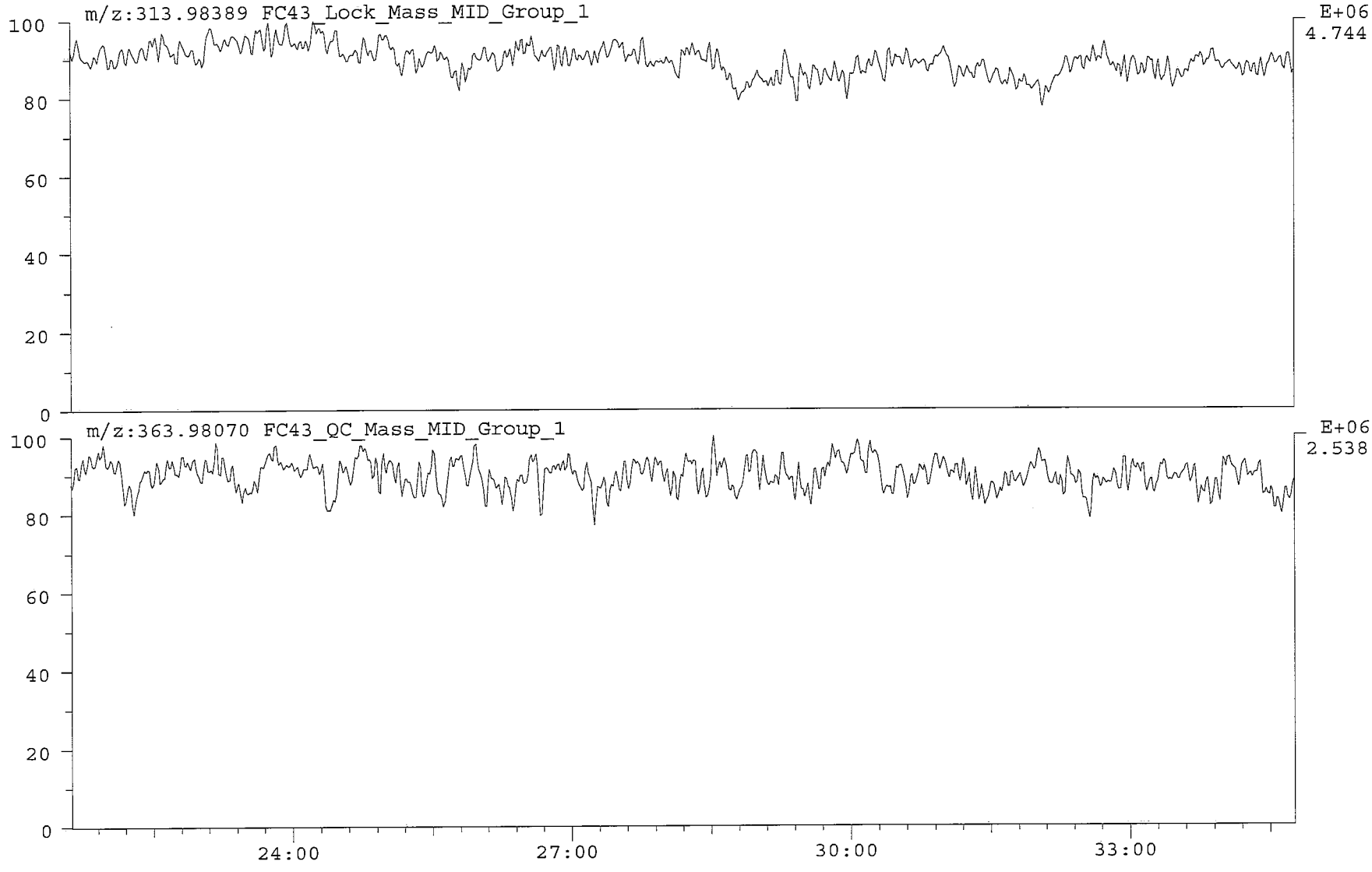
CHRO: d2tm8115 09-Aug-16 Elapse: 29:17 1037
Samp: WO=m81151aa Meth=9Ao Dil=1 Start : 20:03:37 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : 6211032 (0.943L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 936 > 1143 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



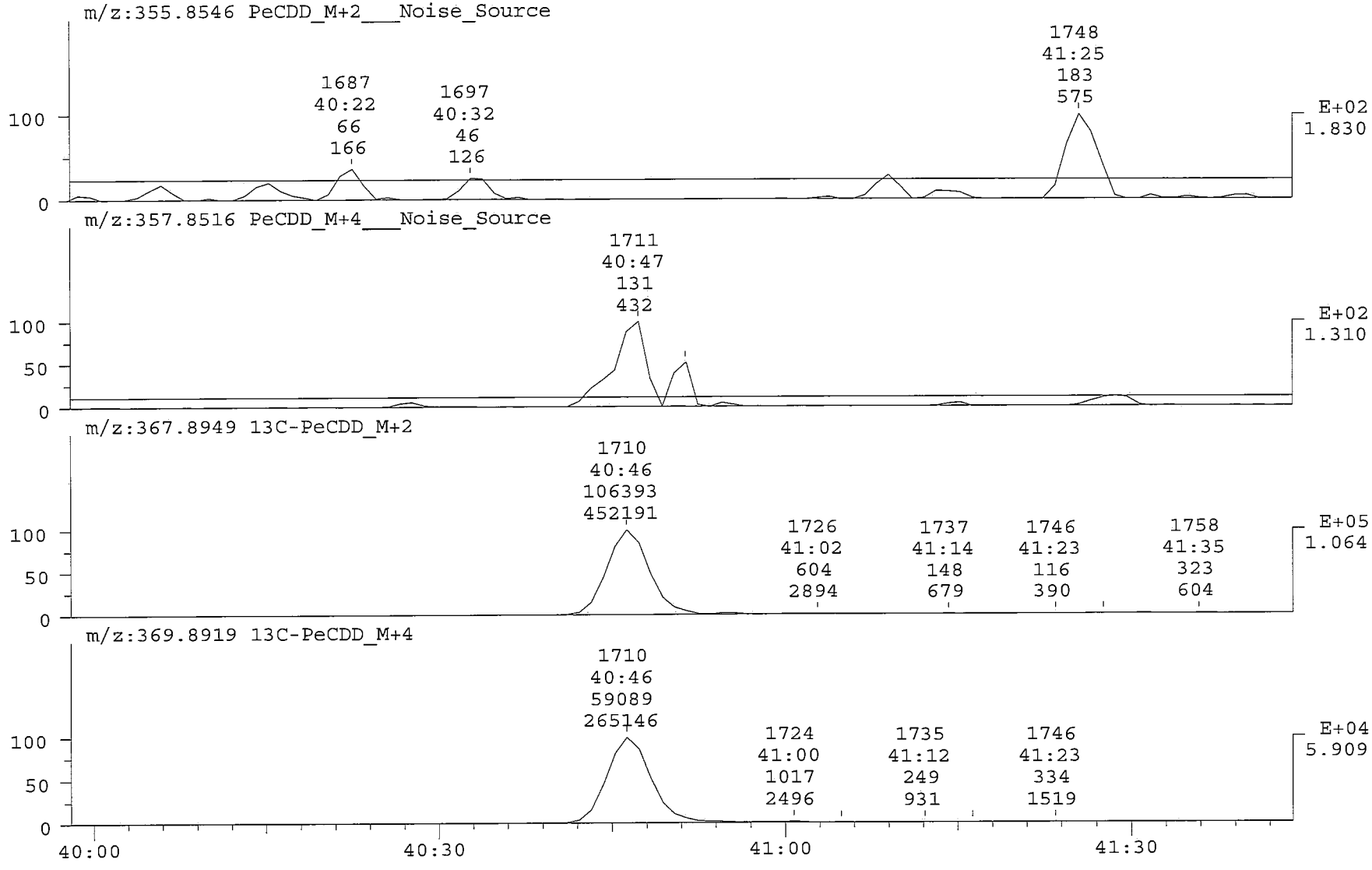
CHRO: d2tm8115 09-Aug-16 Elapse: 29:17 1037
Samp: WO=m81151aa Meth=9Ao Dil=1 Start : 20:03:37 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : 6211032 (0.943L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 575 > 1366 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



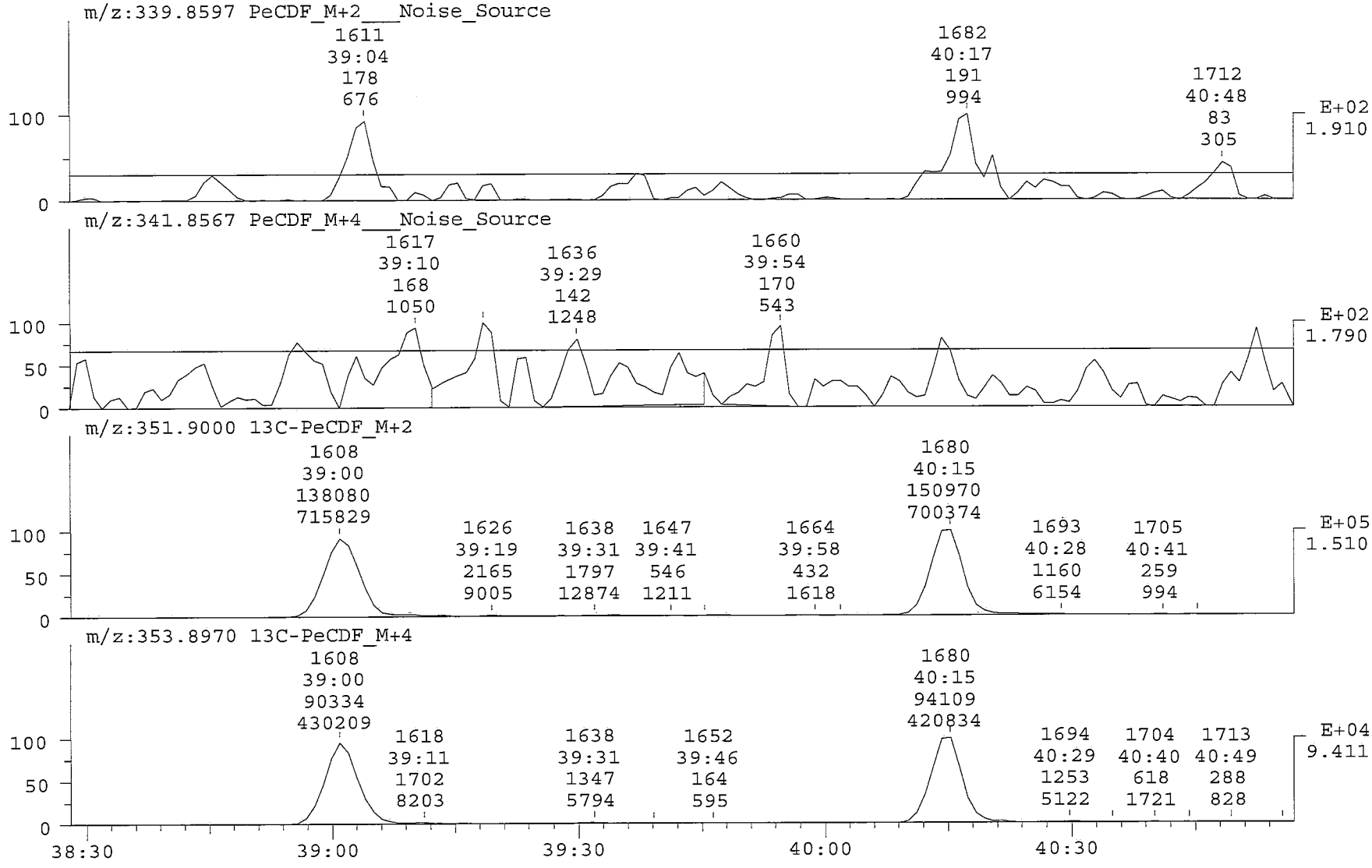
```
CHRO:  d2tm8115                                09-Aug-16  Elapse:  29:17      1037
Samp:  WO=m81151aa Meth=9Ao Dil=1                         Start :  20:03:37   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6211032 (0.943L)
Oper:  MSD                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   575 > 1366           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



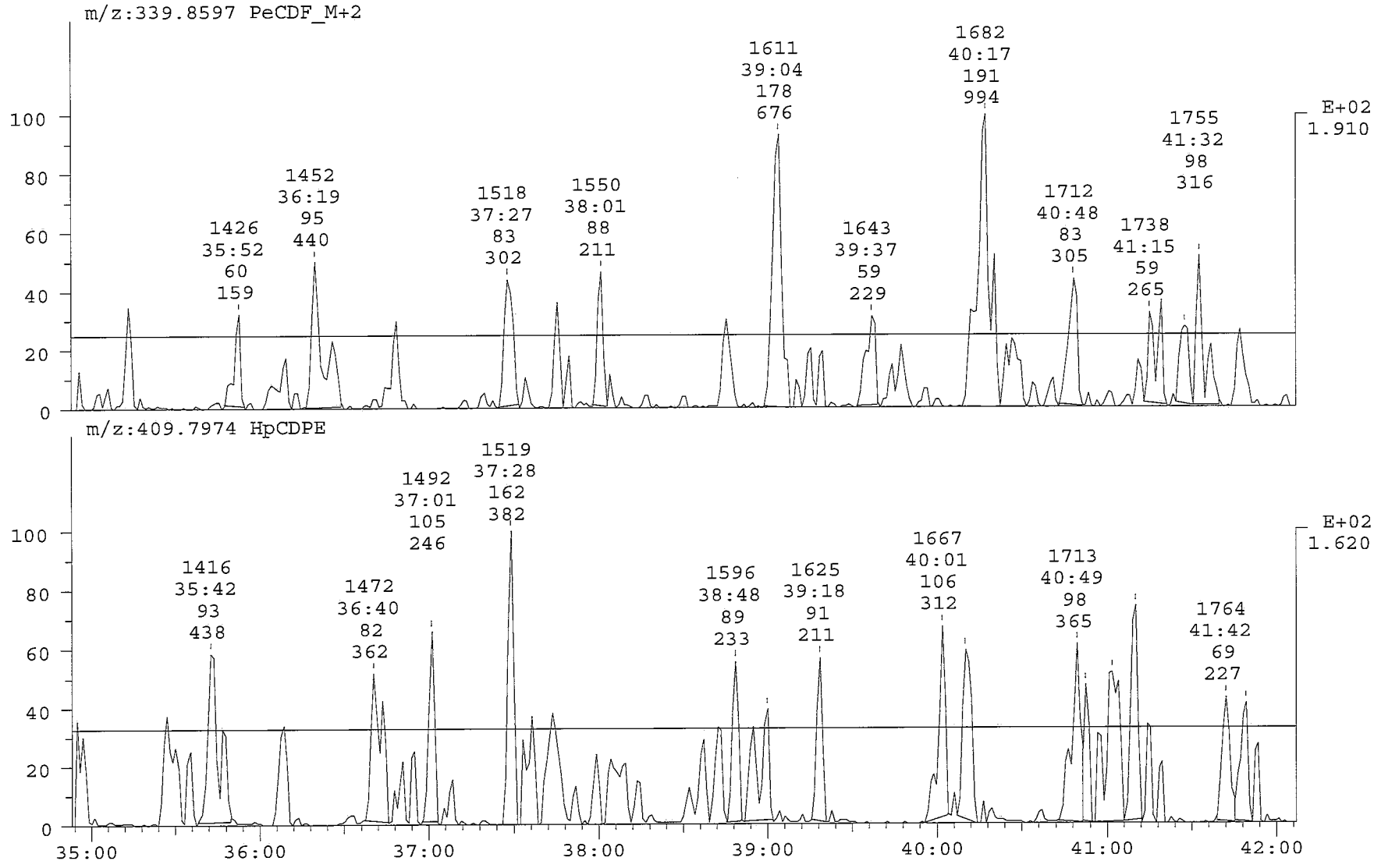
CHRO: d2tm8115 09-Aug-16 Elapse: 40:48 1712
Samp: WO=m81151aa Meth=9Ao Dil=1 Start : 20:03:37 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : 6211032 (0.943L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1663 > 1766 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



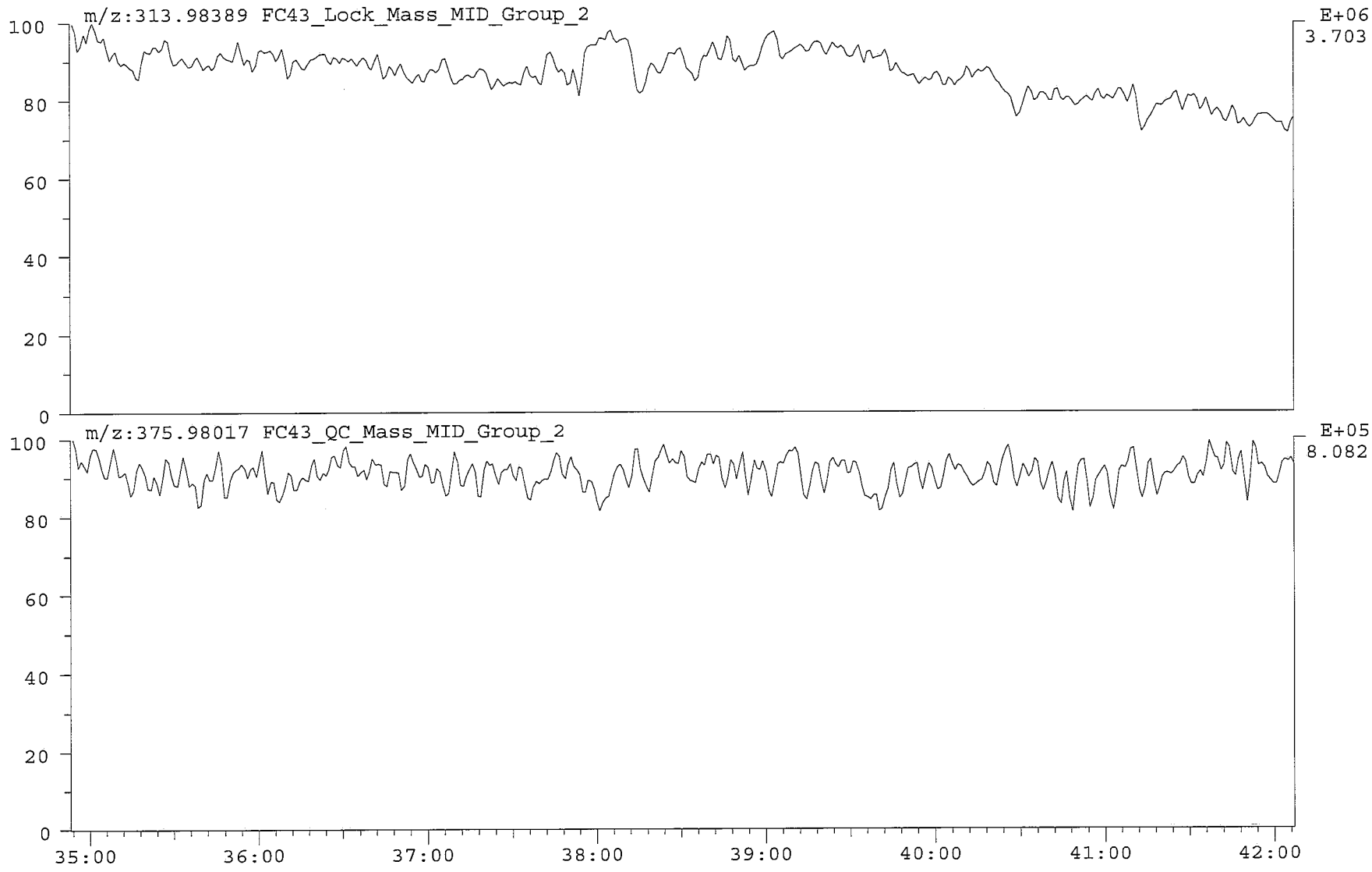
CHRO: d2tm8115 09-Aug-16 Elapse: 39:42 1648
Samp: WO=m81151aa Meth=9Ao Dil=1 Start : 20:03:37 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : 6211032 (0.943L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1576 > 1720 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



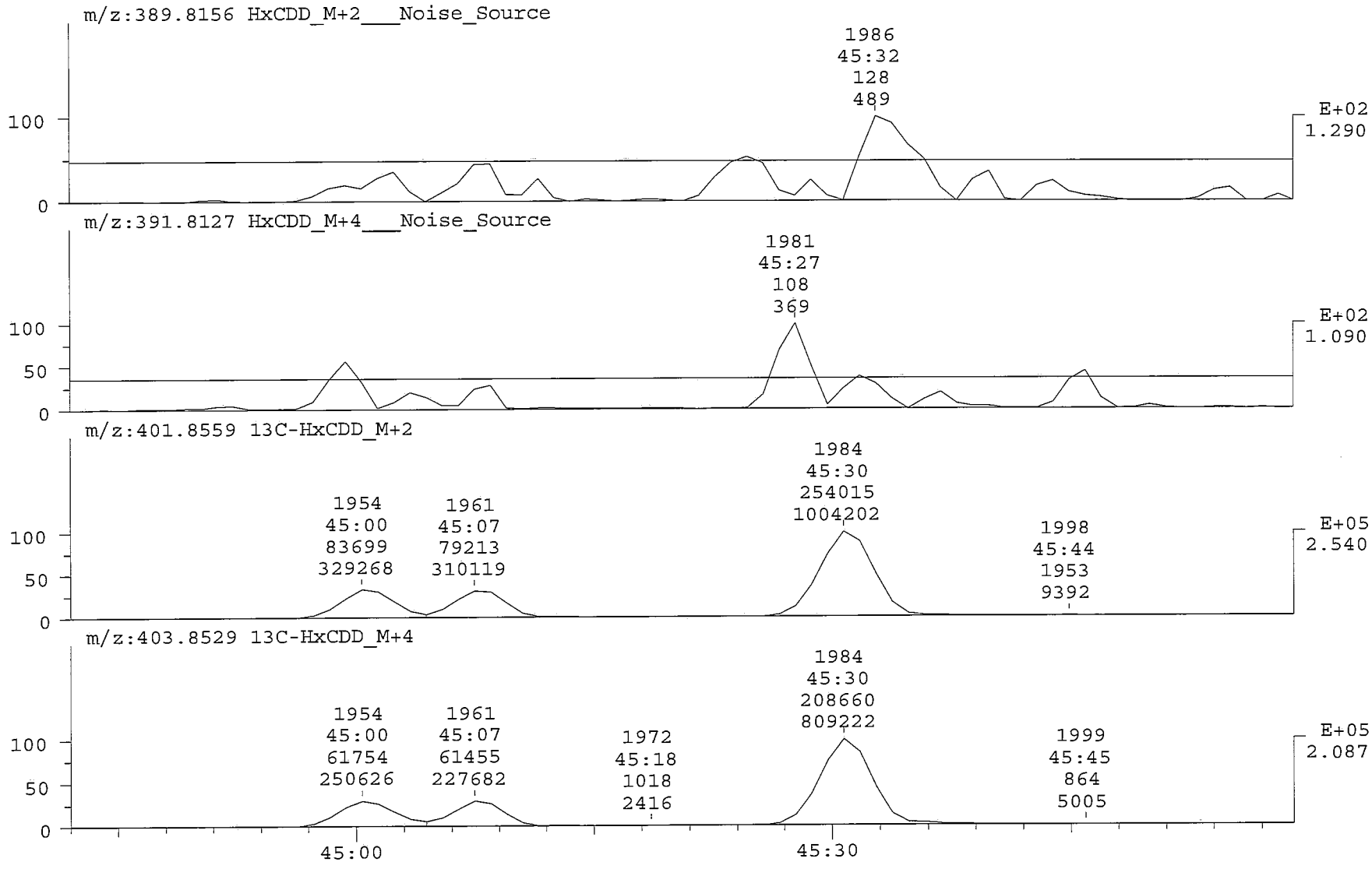
```
CHRO:  d2tm8115                                  09-Aug-16  Elapse:  39:42      1648
Samp:  WO=m81151aa Meth=9Ao Dil=1                           Start :  20:03:37   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  6211032 (0.943L)
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1369 > 1788            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



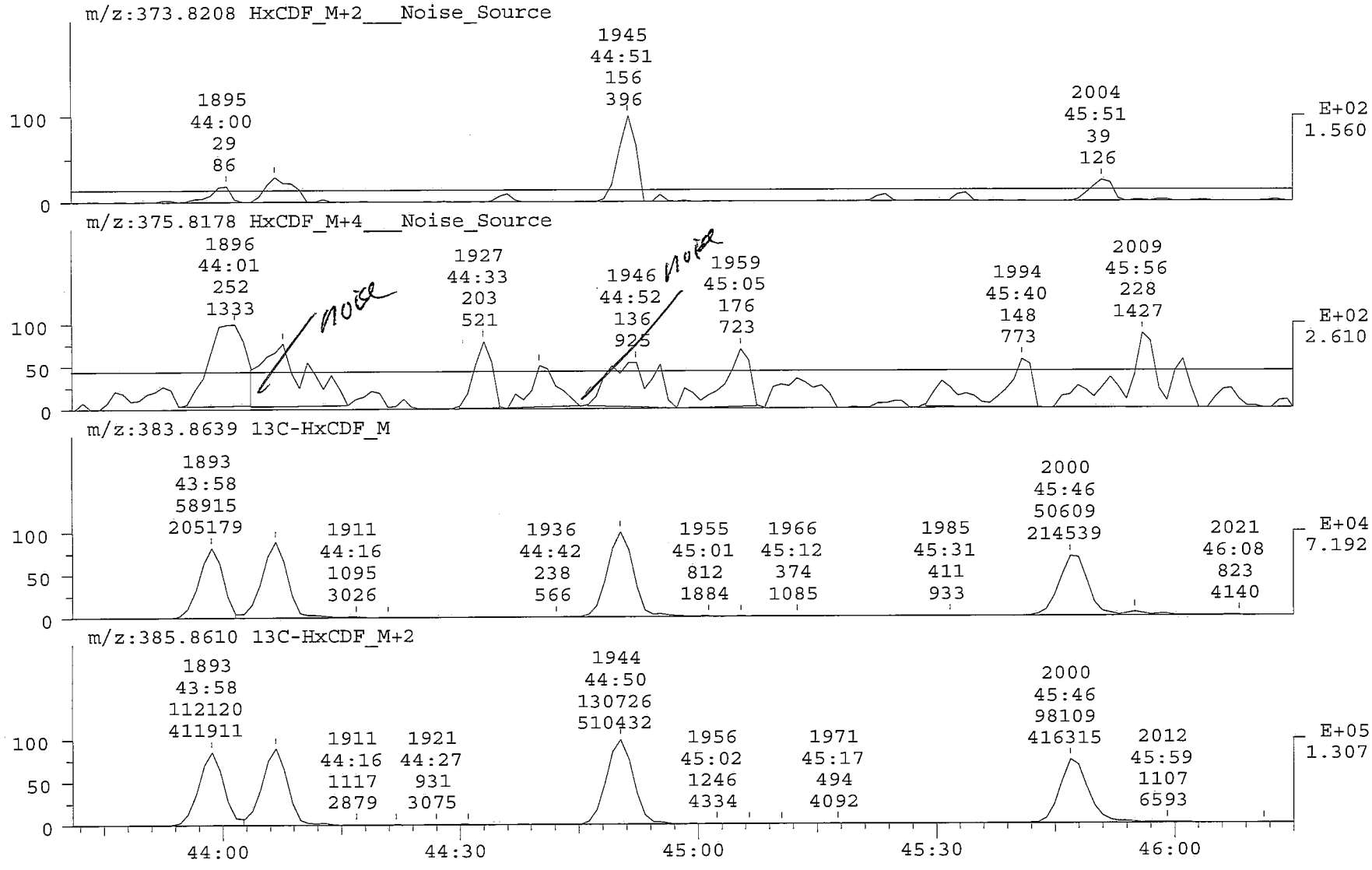
```
CHRO:  d2tm8115                                09-Aug-16  Elapse:  39:42      1648
Samp:  WO=m81151aa Meth=9Ao Dil=1                         Start :  20:03:37   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6211032 (0.943L)
Oper:  MSD                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1369 > 1788          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



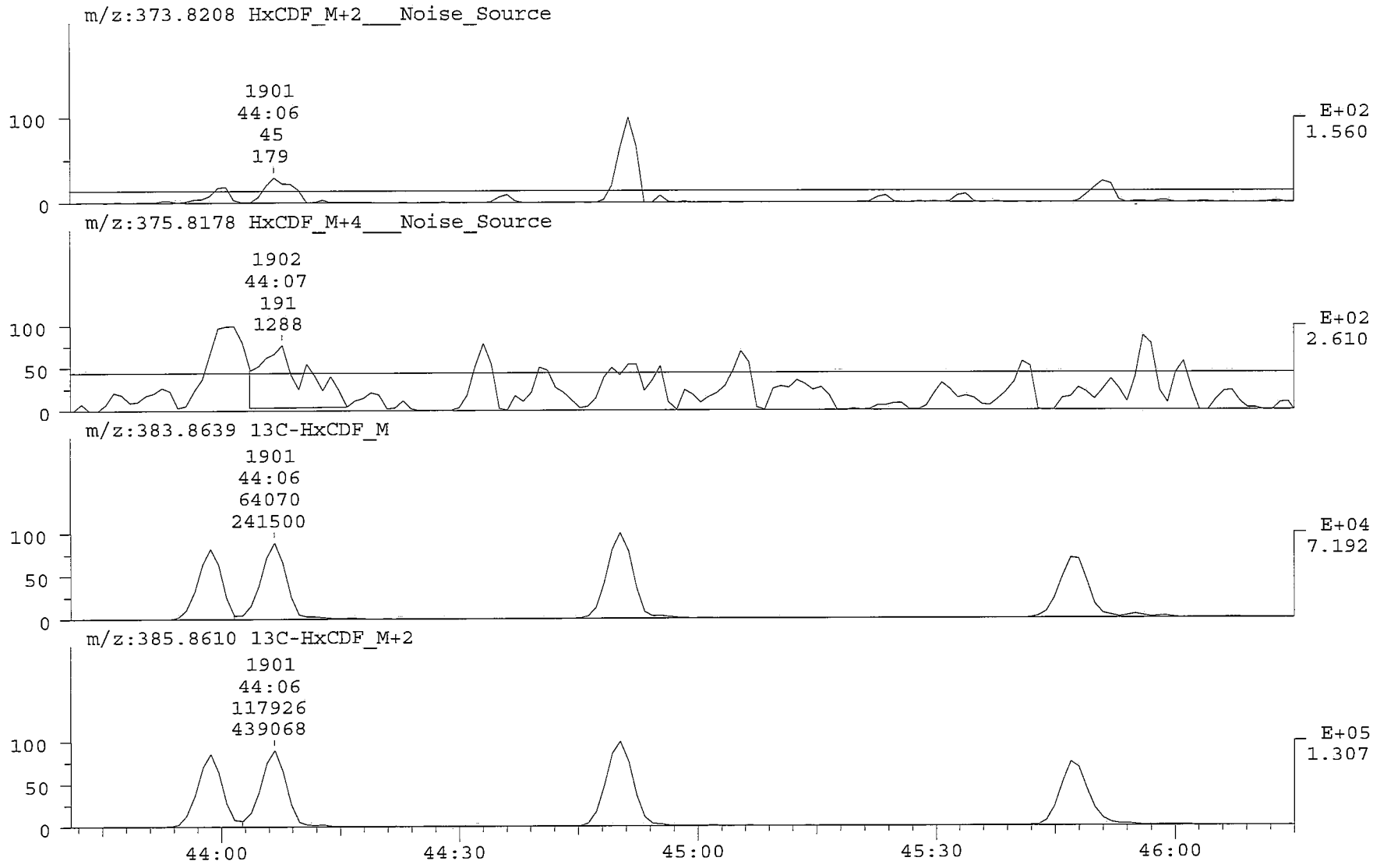
CHRO: d2tm8115 09-Aug-16 Elapse: 45:19 1973
Samp: WO=m81151aa Meth=9Ao Dil=1 Start : 20:03:37 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : 6211032 (0.943L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1936 > 2012 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



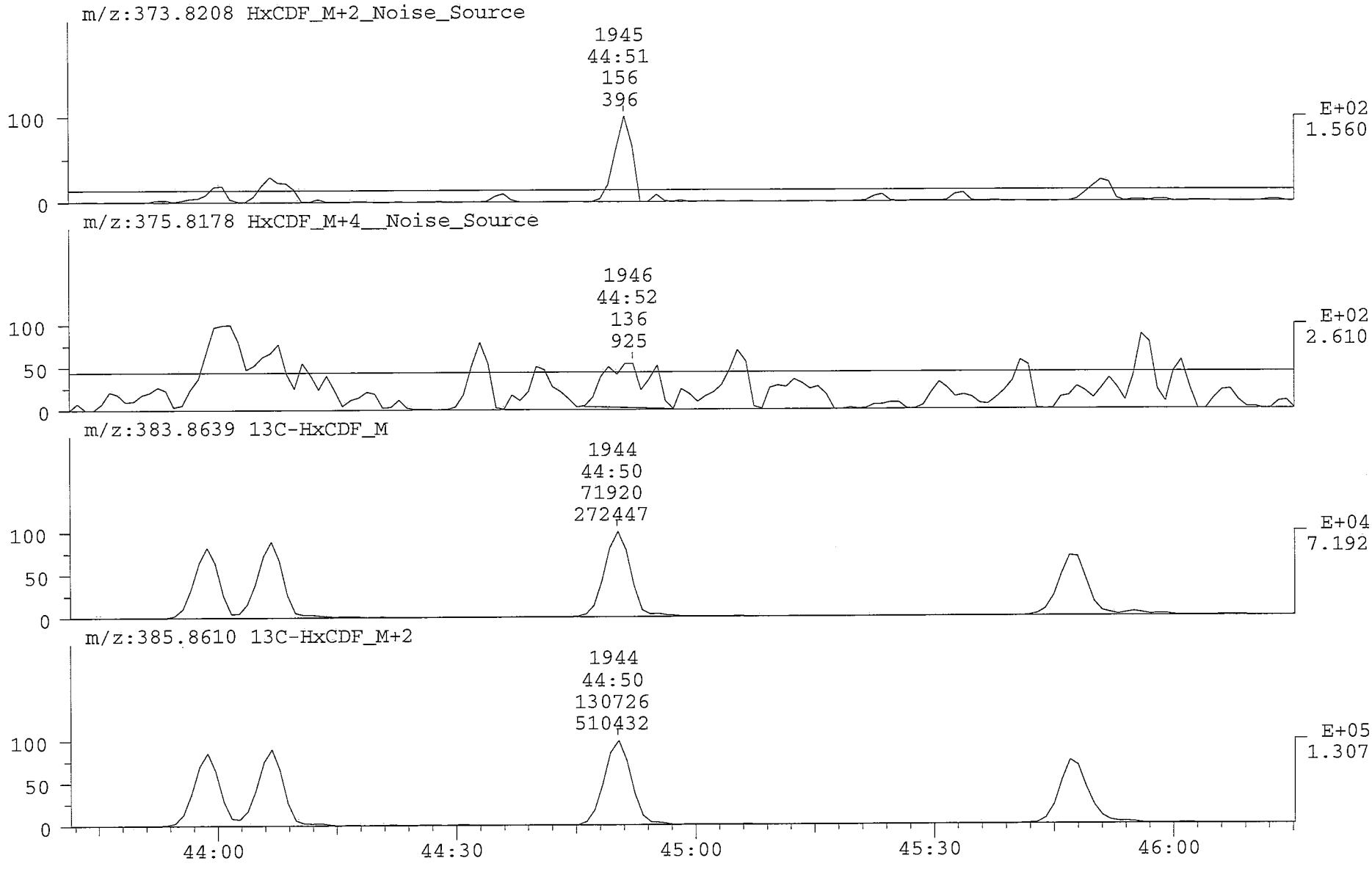
```
CHRO:  d2tm8115                                  09-Aug-16  Elapse:  44:58      1952
Samp:  WO=m81151aa Meth=9Ao Dil=1                           Start :  20:03:37   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  6211032 (0.943L)
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1876 > 2028            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



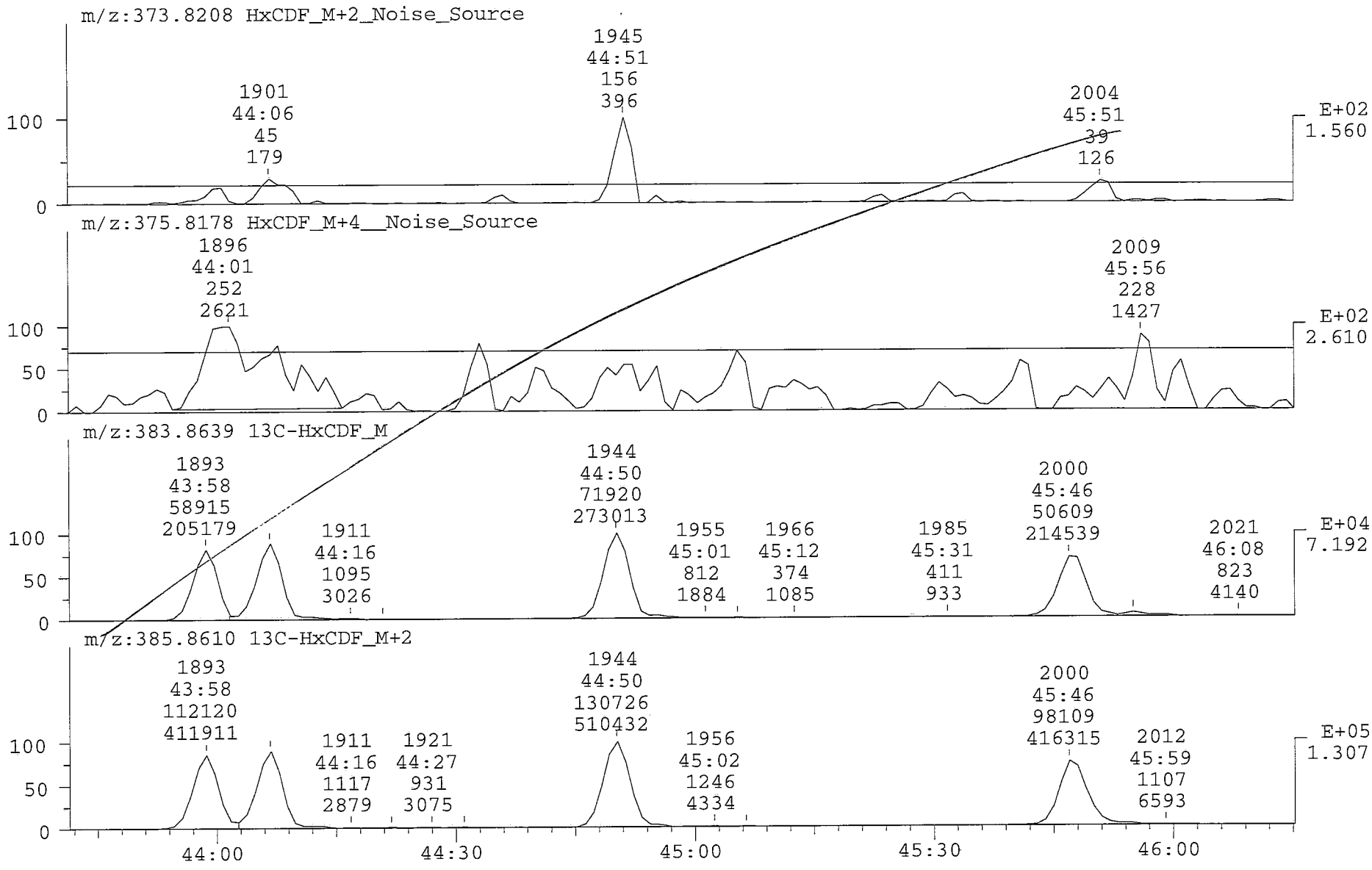
```
CHRO:  d2tm8115                                  09-Aug-16  Elapse:  44:08      1903
Samp:  WO=m81151aa Meth=9Ao Dil=1                           Start :  20:03:37   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  6211032 (0.943L)
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1899 > 1907            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



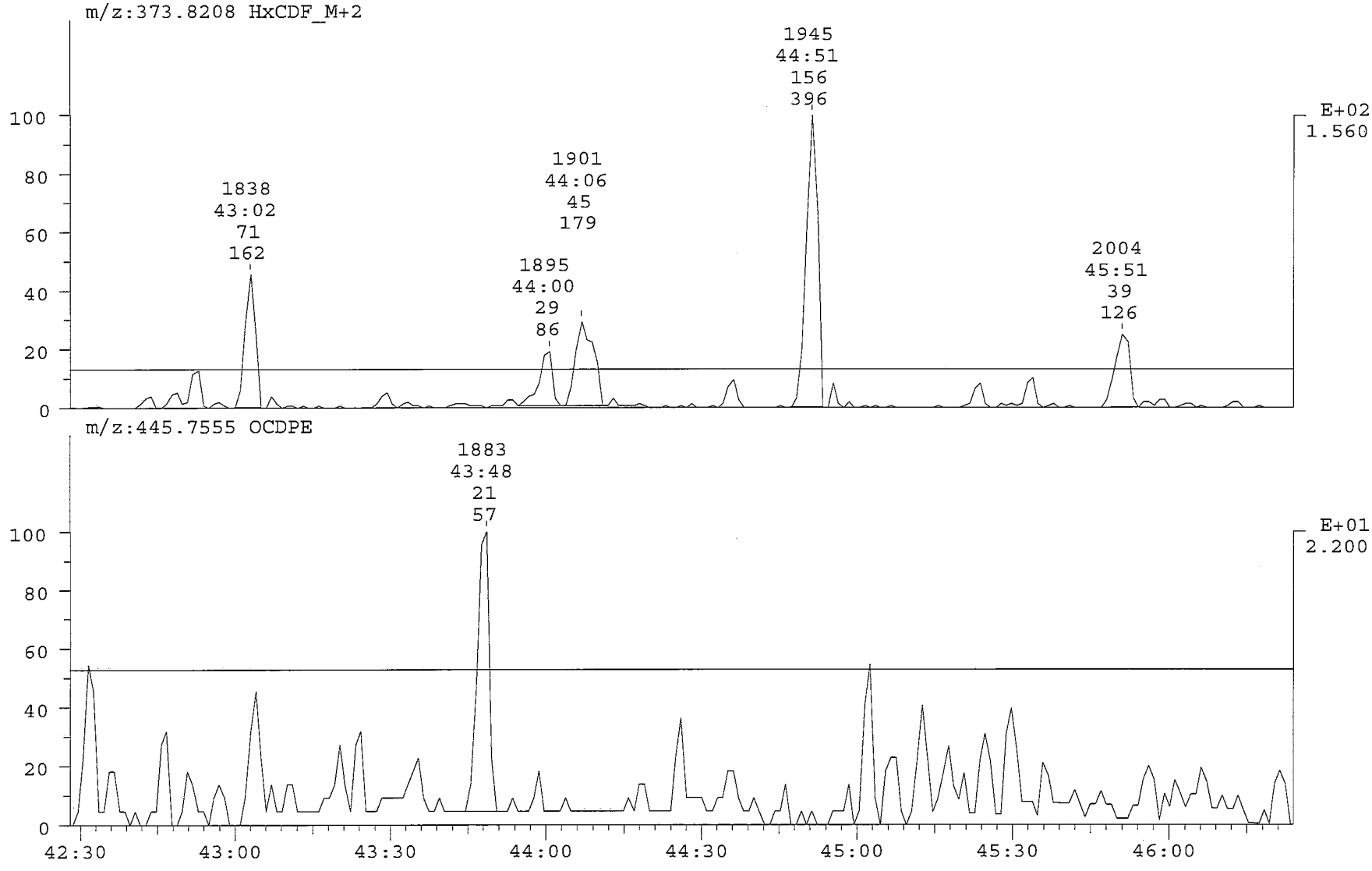
CHRO: d2tm8115 09-Aug-16 Elapse: 44:50 1944
Samp: WO=m81151aa Meth=9Ao Dil=1 Start : 20:03:37 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : 6211032 (0.943L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1941 > 1947 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



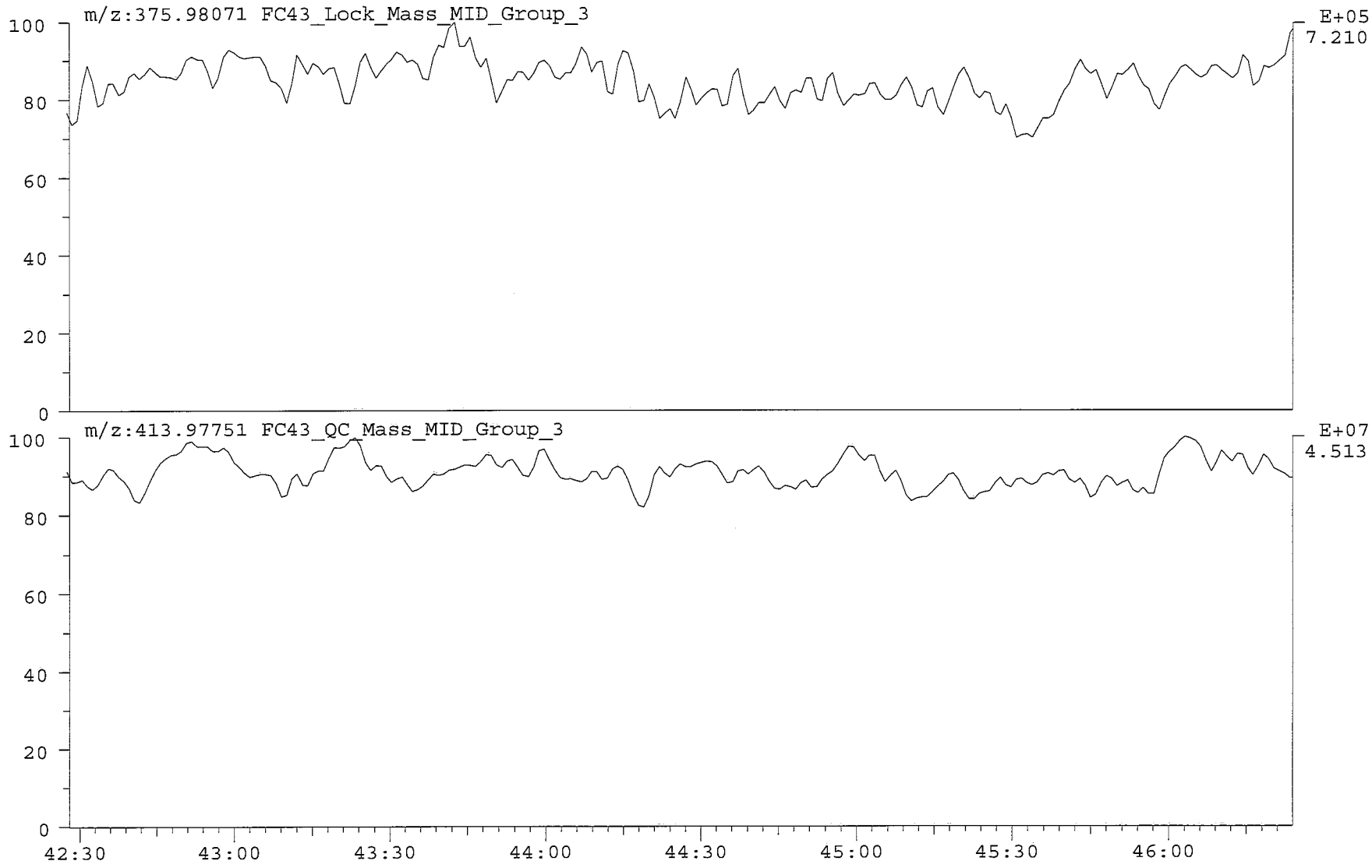
```
CHRO:  d2tm8115                                  09-Aug-16   Elapse:  44:50      1944
Samp:  WO=m81151aa Meth=9Ao Dil=1                            Start :  20:03:37   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                   Study :  6211032 (0.943L)
Oper:  MSD                                                   Inlet :  LC
Peak:  100.00  ppm      Label wndw:   1876 > 2028            Masses:  303 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3                 Label :  -2, 8.0
Disp:  Height  Area
```



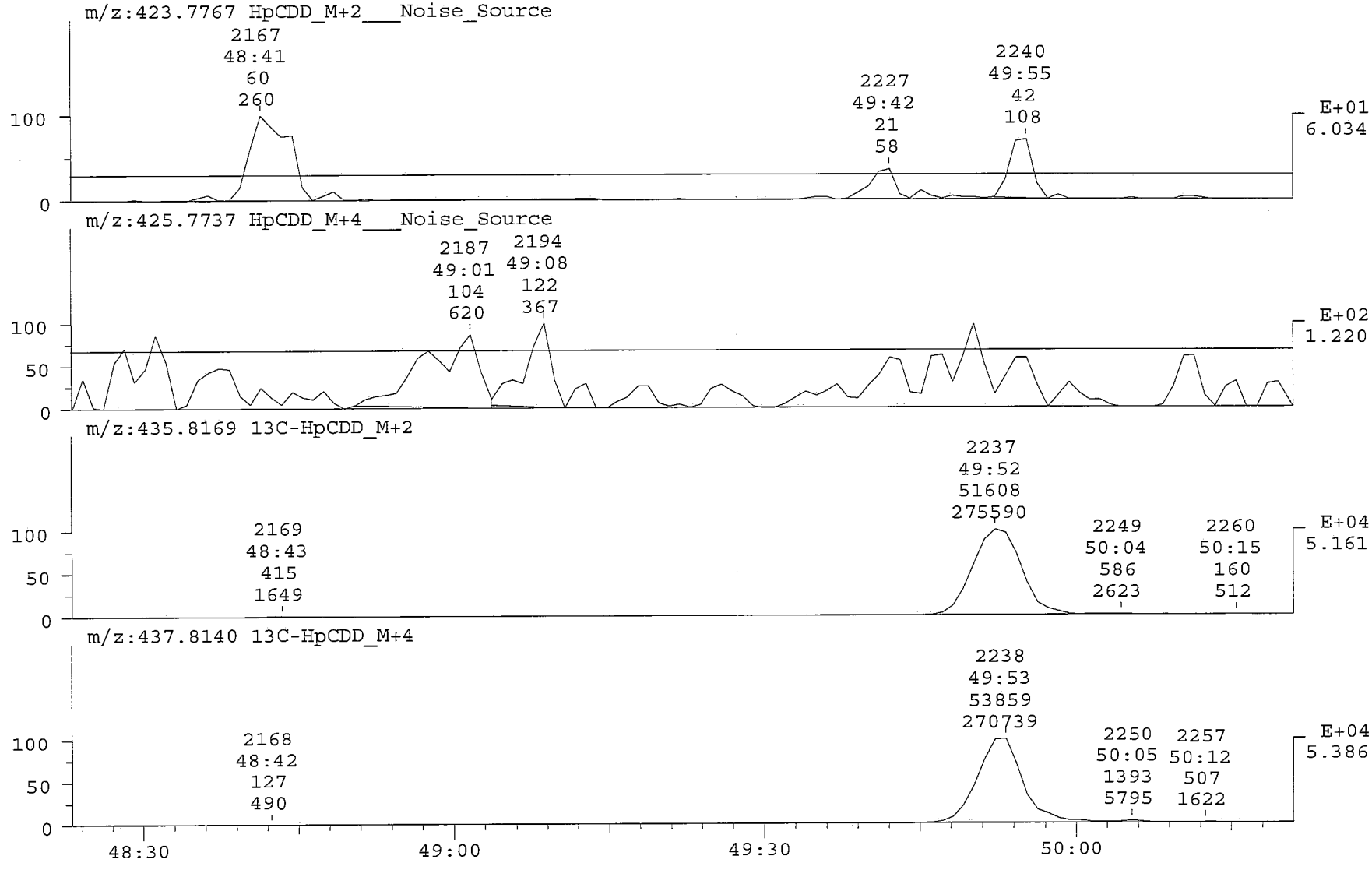
```
CHRO:  d2tm8115                                09-Aug-16  Elapse:  44:08      1903
Samp:  WO=m81151aa Meth=9Ao Dil=1                         Start :  20:03:37   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6211032 (0.943L)
Oper:  MSD                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1803 > 2037          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



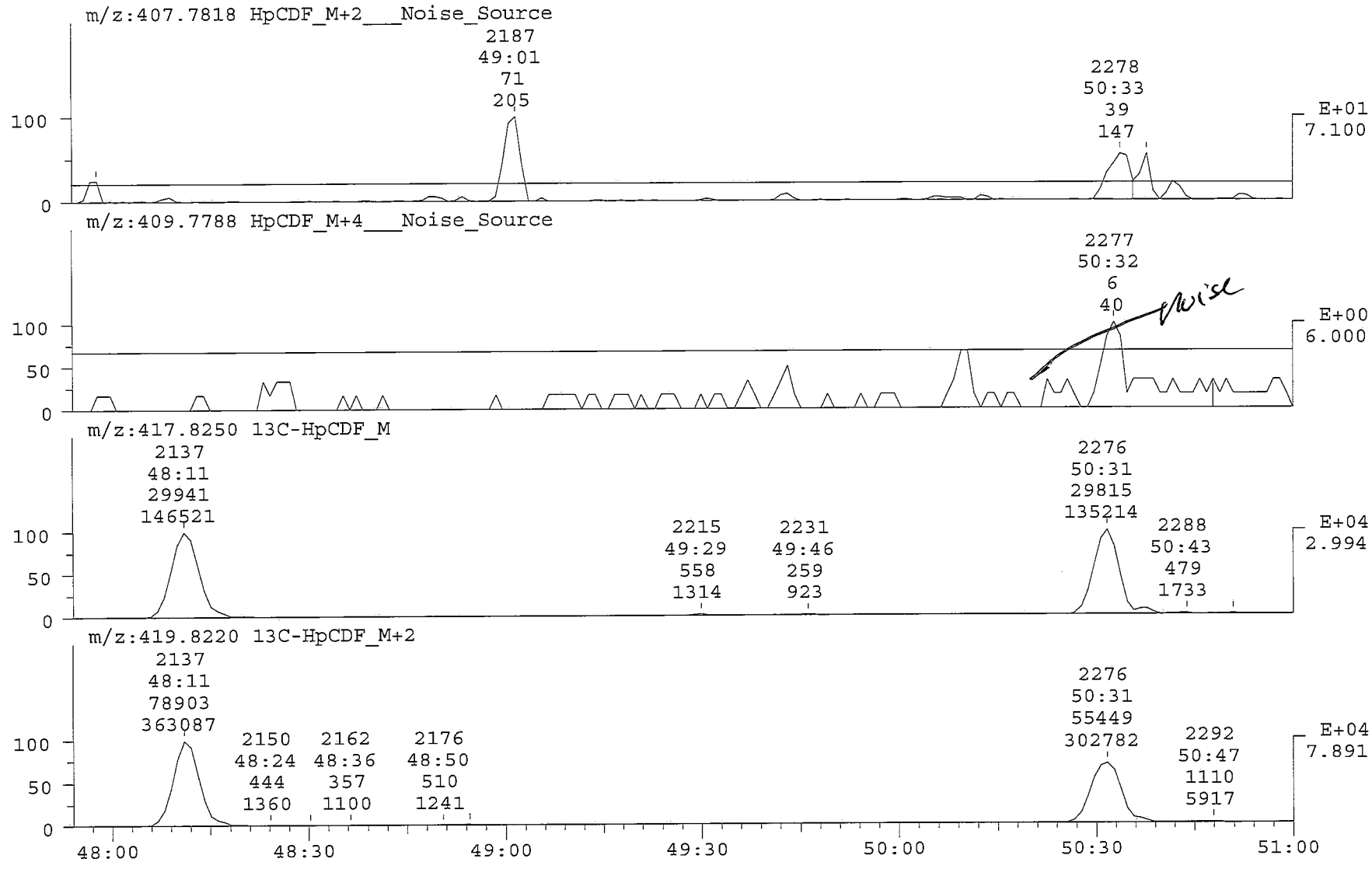
```
CHRO:  d2tm8115                                09-Aug-16  Elapse:  44:08      1903
Samp:  WO=m81151aa Meth=9Ao Dil=1                         Start :  20:03:37   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6211032 (0.943L)
Oper:  MSD                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1803 > 2037          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



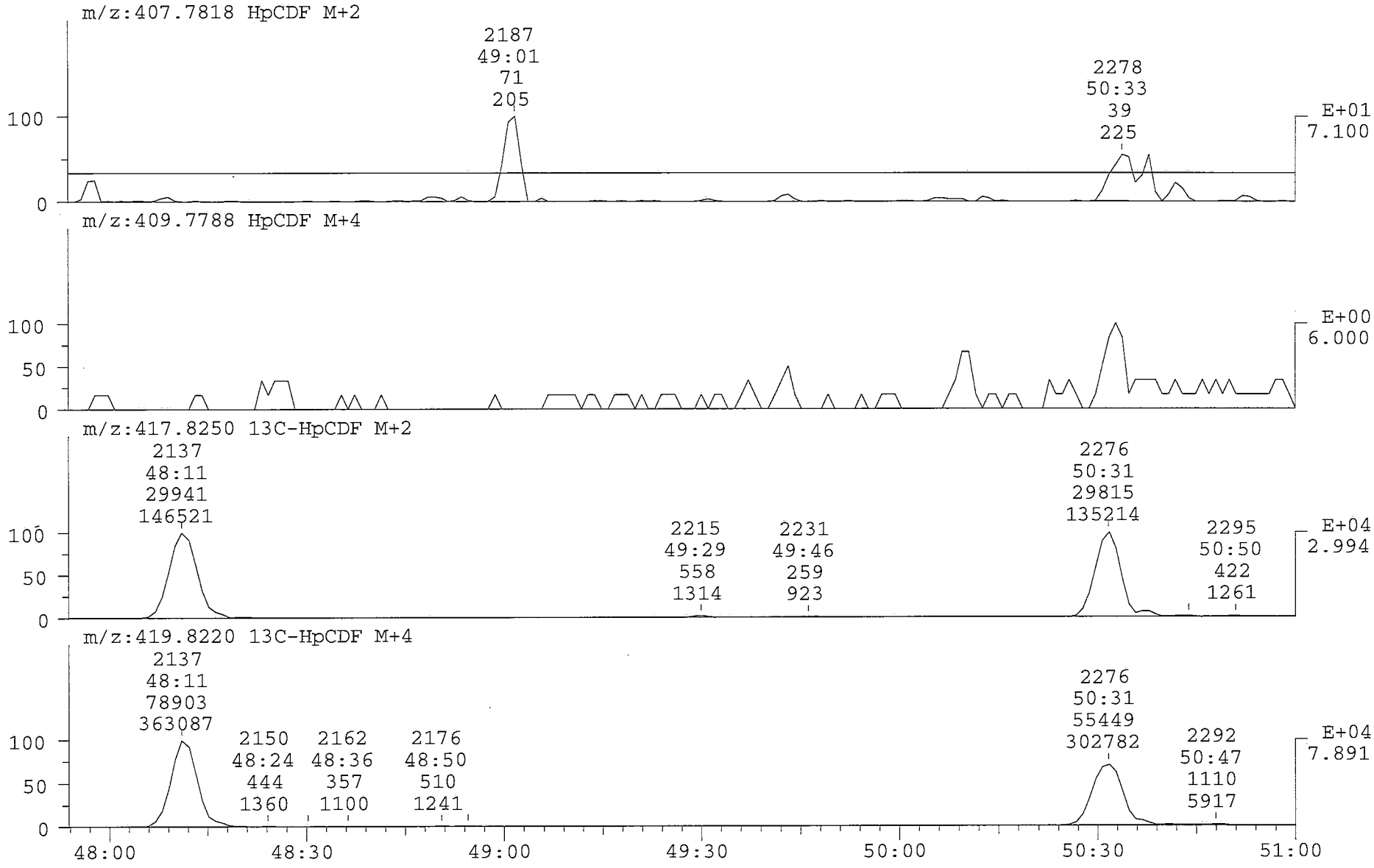
CHRO: d2tm8115 09-Aug-16 Elapse: 44:08 1903
Samp: WO=m81151aa Meth=9Ao Dil=1 Start : 20:03:37 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : 6211032 (0.943L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2149 > 2265 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



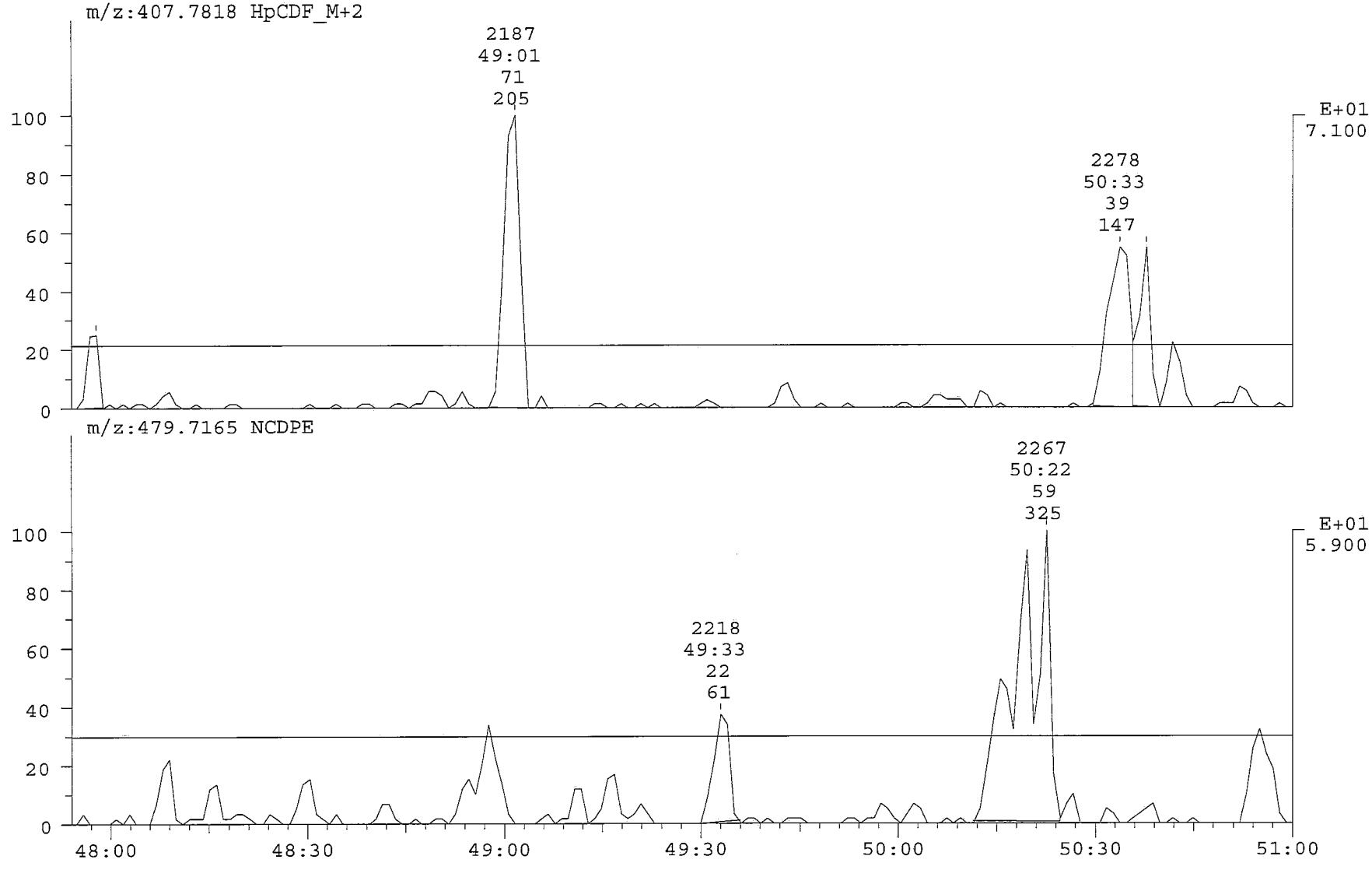
CHRO: d2tm8115 09-Aug-16 Elapse: 49:26 2212
Samp: WO=m81151aa Meth=9Ao Dil=1 Start : 20:03:37 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : 6211032 (0.943L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2120 > 2304 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



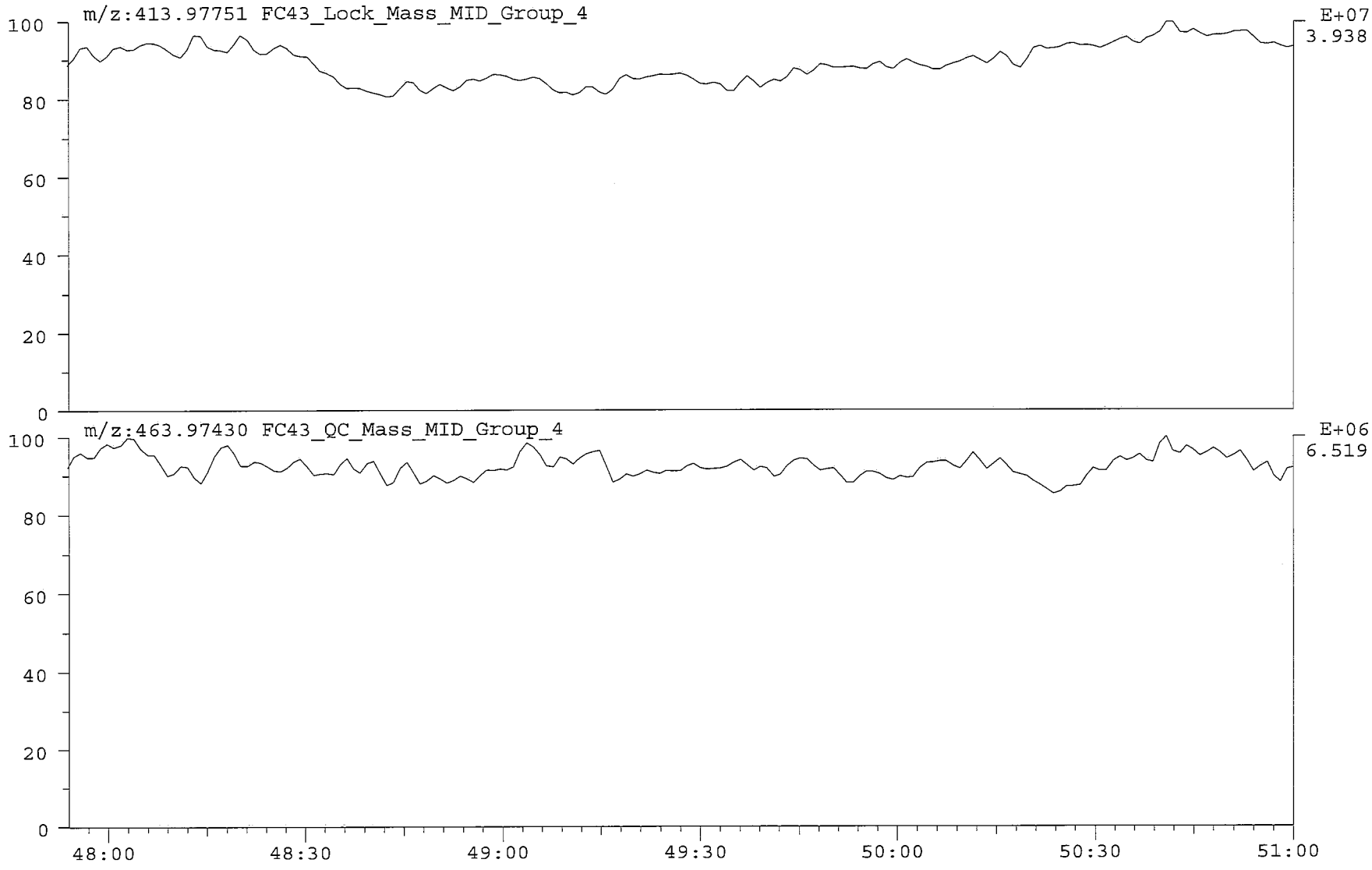
CHRO: d2tm8115 09-Aug-16 Elapse: 44:50 1944
Samp: WO=m81151aa Meth=9Ao Dil=1 Start : 20:03:37 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : 6211032 (0.943L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2120 > 2304 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



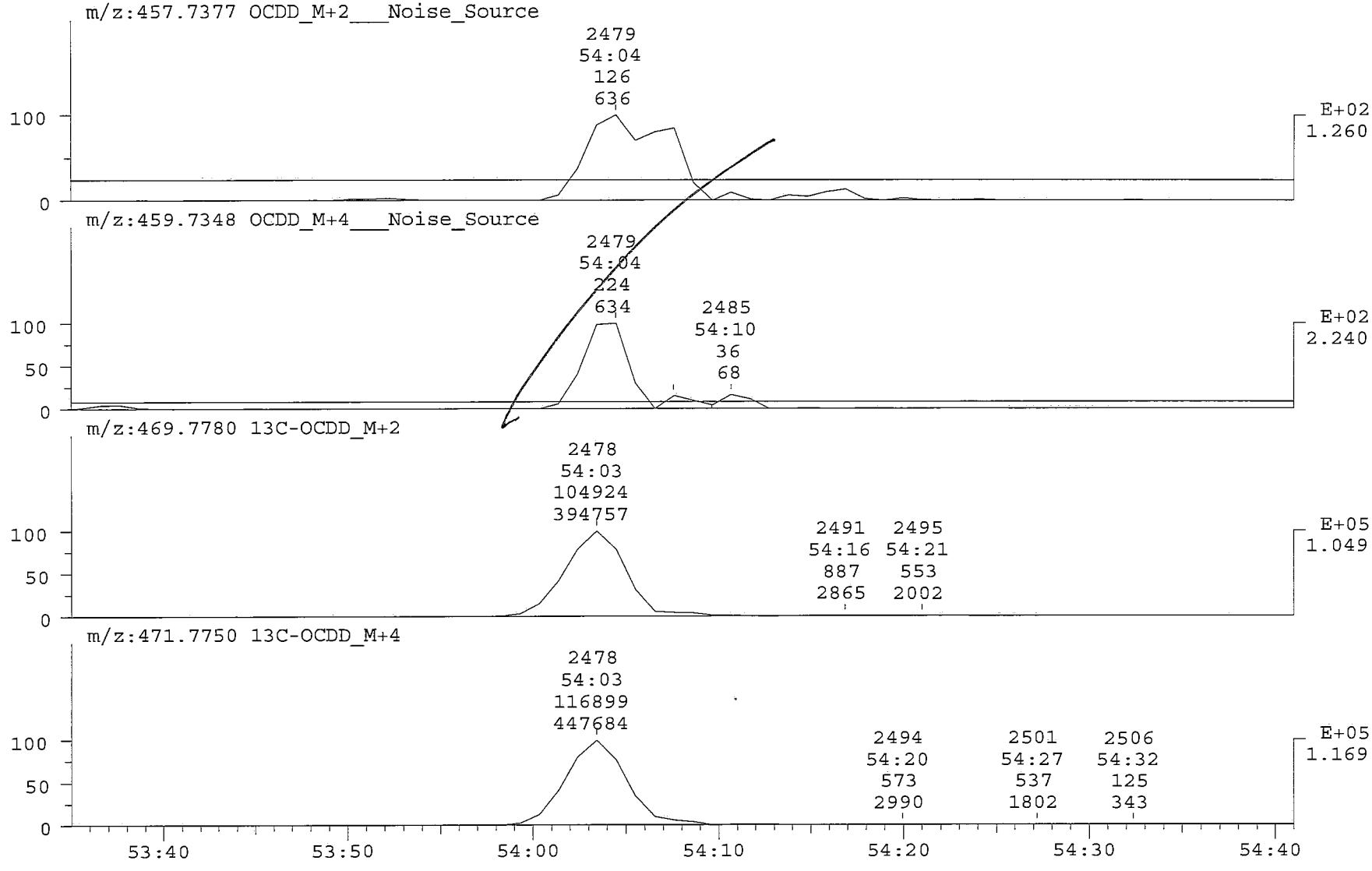
```
CHRO:  d2tm8115                                09-Aug-16  Elapse:  49:26      2212
Samp:  WO=m81151aa Meth=9Ao Dil=1                         Start :  20:03:37   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6211032 (0.943L)
Oper:  MSD                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2120 > 2304          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



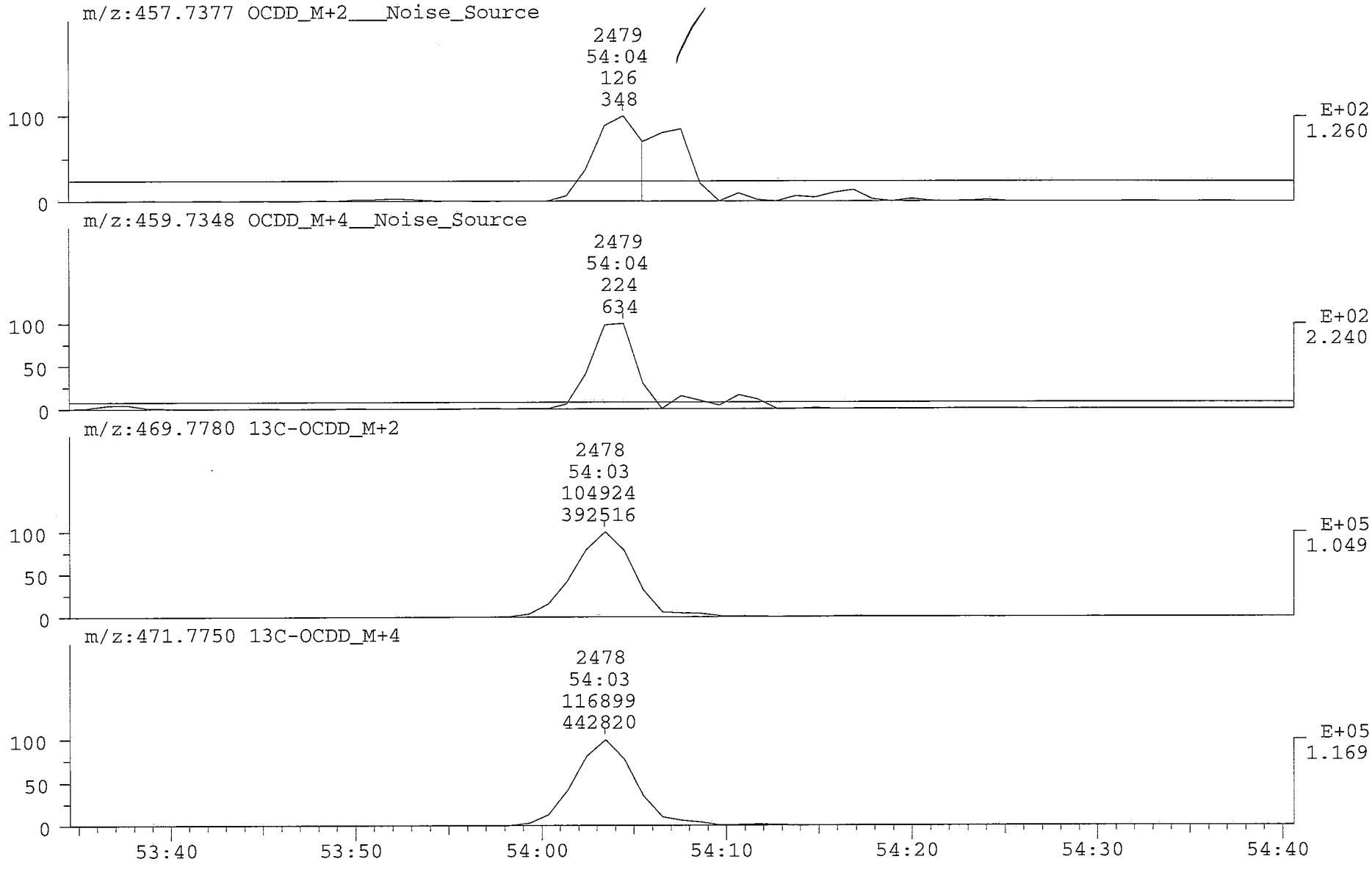
```
CHRO:  d2tm8115                                09-Aug-16  Elapse:  49:26      2212
Samp:  WO=m81151aa Meth=9Ao Dil=1                         Start :  20:03:37   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6211032 (0.943L)
Oper:  MSD                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2120 > 2304          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



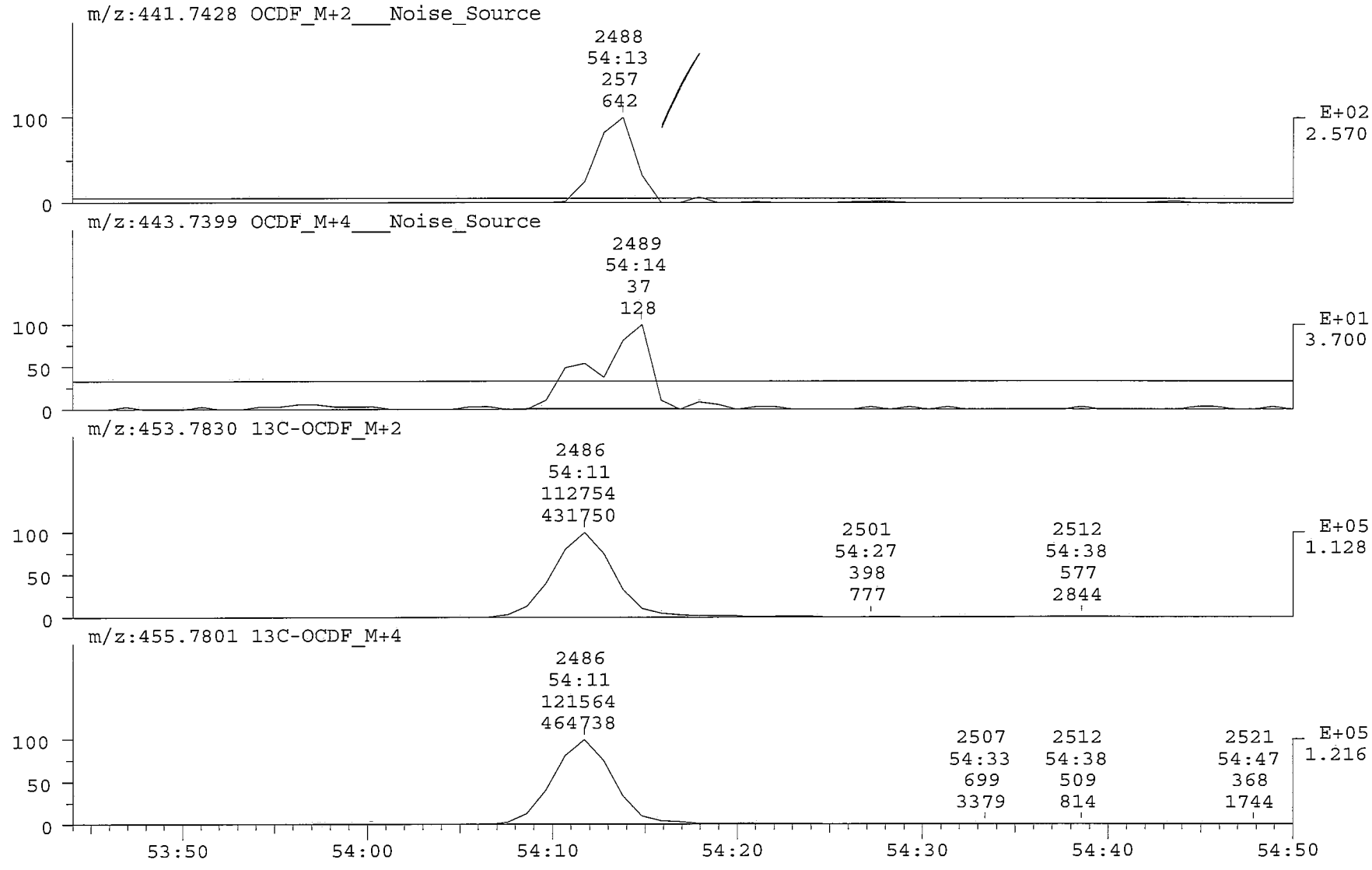
```
CHRO:  d2tm8115                                  09-Aug-16   Elapse:  54:05      2480
Samp:  WO=m81151aa Meth=9Ao Dil=1                            Start :  20:03:37   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                   Study :  6211032 (0.943L)
Oper:  MSD                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2450 > 2514             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  -2, 5.0
Disp:  Height  Area
```



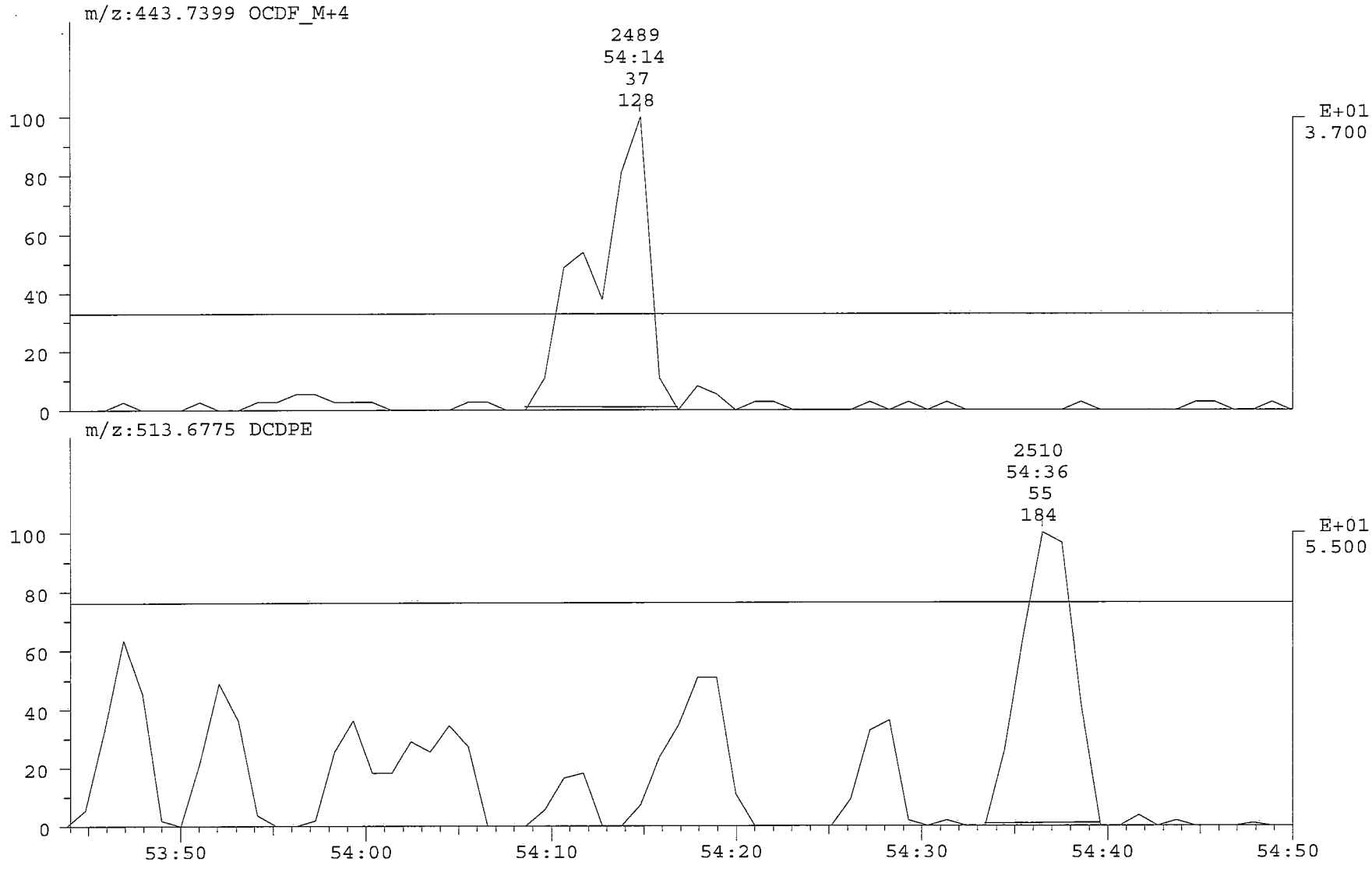
```
CHRO:  d2tm8115                                09-Aug-16  Elapse:  54:04      2479
Samp:  WO=m81151aa Meth=9Ao Dil=1                         Start :  20:03:37   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6211032 (0.943L)
Oper:  MSD                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2476 > 2482          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 1               Label :  -2, 5.0
Disp:  Height  Area
```



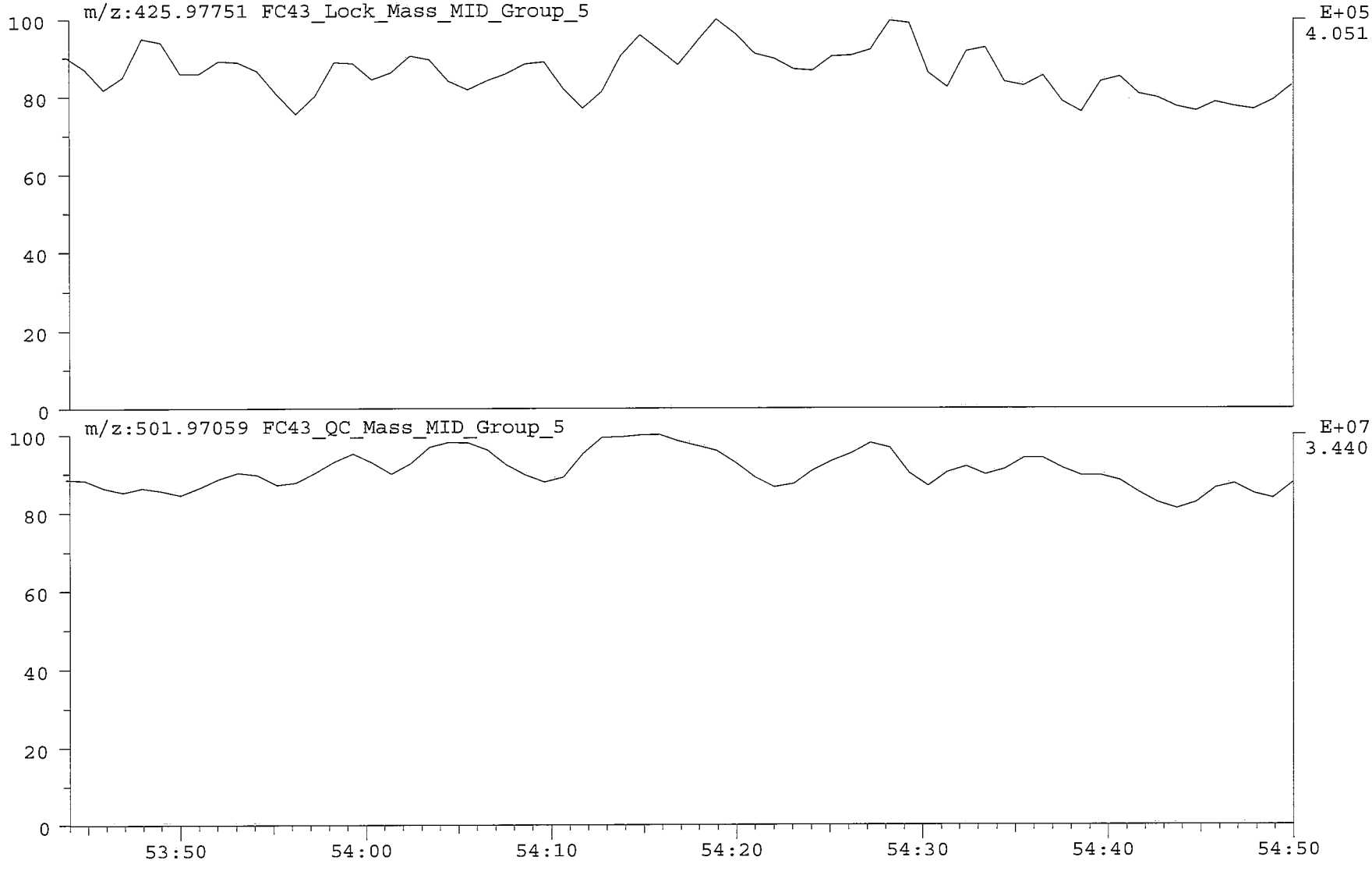
```
CHRO:  d2tm8115                                09-Aug-16  Elapse:  54:13      2488
Samp:  WO=m81151aa Meth=9Ao Dil=1                         Start :  20:03:37   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6211032 (0.943L)
Oper:  MSD                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2459 > 2523          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d2tm8115                                09-Aug-16  Elapse:  54:13      2488
Samp:  WO=m81151aa Meth=9Ao Dil=1                         Start :  20:03:37   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6211032 (0.943L)
Oper:  MSD                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2459 > 2523          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d2tm8115                                09-Aug-16  Elapse:  54:13      2488
Samp:  WO=m81151aa Meth=9Ao Dil=1                         Start :  20:03:37   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6211032 (0.943L)
Oper:  MSD                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2459 > 2523          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Tue Aug 09 20:05:32 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - D5FBM84J

Analysis started at: 09-Aug-16 20:05:31

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence :

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	22:47 min	34:47 min	0.99 sec
# 2	34:47 min	7:21 min	42:08 min	1.00 sec
# 3	42:08 min	4:51 min	47:00 min	1.00 sec
# 4	47:00 min	5:30 min	52:30 min	1.00 sec
# 5	52:30 min	5:00 min	57:30 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	122
305.8987		1	1	122
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	122
321.8936		1	1	122
327.8847		1	1	122
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	122

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7

```
  375.9802     20  1         7
  409.7974      1  1       146
 Window # 3
      mass F  int  gr  time (ms)
  373.8208      1  1       146
  375.8178      1  1       146
  375.9802 l   20  1         7
  375.9802     20  1         7
  383.8639      5  1        29
  385.8610      5  1        29
  389.8158      1  1       146
  391.8127      1  1       146
  401.8559      5  1        29
  403.8529      5  1        29
  413.9770 c   20  1         7
  413.9770     20  1         7
  445.7555      1  1       146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1       146
  409.7788      1  1       146
  413.9770 l   20  1         7
  413.9770     20  1         7
  417.8250      5  1        29
  419.8220      5  1        29
  423.7767      1  1       146
  425.7737      1  1       146
  435.8169      5  1        29
  437.8140      5  1        29
  463.9738 c   20  1         7
  463.9738     20  1         7
  479.7165      1  1       146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1         7
  425.9770     20  1         7
  441.7428      1  1       146
  443.7399      1  1       146
  453.7830      5  1        29
  455.7801      5  1        29
  457.7377      1  1       146
  459.7348      1  1       146
  469.7780      5  1        29
  471.7750      5  1        29
  501.9706 c   20  1         7
  501.9706     20  1         7
  513.6775      1  1       146

MID Window terminated after 34.800000 minutes
MID Window end time was 34.800000 minutes
MID Window terminated after 42.150000 minutes
MID Window end time was 42.150000 minutes
MID Window terminated after 47.000000 minutes
MID Window end time was 47.000000 minutes
MID Window terminated after 52.500000 minutes
MID Window end time was 52.500000 minutes
MID Window terminated after 57.500000 minutes
MID Window end time was 57.500000 minutes

Tune file name: C:\Xcalibur\system\DFS\MSI\Tune2.DFSTune
```

DFS - Parameter

ACCU	2000.0000	BCORRS	0.0177	BMASS	310.4834
BQUAD	7.7500	CAPIL	0.0000	CAPTSET	0.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	15.5000	ECORR	1.0007	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2469.0000
ELEN	-45.0000	EMULT	1687.0000	ENS	170.0000
ENSBR	7.7500	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	155.0000	EXSBR	2.5000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	10.0000	FMII	50.0000	FQUAD	6.1000
FQUADGAIN	22.0000	FREQ	200.0000	FSLOPE	36000000.0000
FVANAL	0.0132	FVINLET	0.0356	FVSRC	0.0313
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	740.0000
LENS_SYM	19.3000	LM	50.0000	LMII	500.0000
LMASS	310.4834	LKM	425.9770	MASS	310.4834
MDAC	3516951.9748	MRANGE	1238.2603	NSAM	100.0000
NSCAN	2699.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	0.0000	PSAM	10.0000
PUSHER	-1.0000	RECURR	0.9016	RELEN	0.0000
RES	12341.4058	RPUSHER	-0.9304	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	728.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	0.0000	SLOW	60.0000	SS	2.0000
SW	0.1590	TANAL	0.0000	TCURR	0.0000
TD	5.0000	TS	3.5343	THRESH	2.0000
TIS	0.2000	TREF	80.0000	TSAM	100.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	310.4834	XLENS_POT	910.0000
XLENS_SYM	13.5000	YLENS_POT	800.0000	YLENS_SYM	0.0000

Source Gauge: 1.5e-005 mbar
Analyzer Penning: 1.1e-007 mbar
Pirani Analyse: 1.3e-002 mbar
Pirani Source: 3.1e-002 mbar
Pirani Inlet System: 3.6e-002 mbar

Scantype is electric

Sourcemode is EI POS

MID Time Window 1: Resolution is 11938.
MID Time Window 2: Resolution is 12921.
MID Time Window 3: Resolution is 13526.
MID Time Window 4: Resolution is 12078.
MID Time Window 5: Resolution is 12341.

Amplifier Offset: 95.

*** File closed Tue Aug 09 21:03:04 2016
***

```
User: finnigan
Host: knx-alpha5.tai.com
Class: knx-alpha5.tai.com
Job: d2tm8115.log
```

Raw Sample Data
DB-225 Column

TestAmerica Canton

Sample ID: NB-1

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 001	**Work Order #....:**	M811L1AD	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/23/16	**Percent Moisture**	17
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D12C	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Confirmation Run

PARAMETER	RESULT	MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDF	1.7	1.2	0.055	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDF	69	40 - 135

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

TCDD/F by EPA Method 8290A - DB-225

Workorder	M811L1AD	Prep Batch	6217014	Lot No	H6G290408-001
Data File	/20160823s1/d2fm811l.d	Prep Date	08/04/16	SDG No	
Analysis ID	180637	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/23/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	04:02	Initial Wt/Vol	10.1 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A Conf
Instrument	D12C	Dil Factor	1.00	Code	9Ac
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)	DL (pg/g)
2,3,7,8-TCDD				1.149				ND	0.0381
2,3,7,8-TCDF	17:05	58259	10130	1.046		13.966116		1.382784	0.0456
13C-2,3,7,8-TCDD	15:26	2540871	514151	1.008	1000	663.149005	66.31	65.658317	0.0476
13C-2,3,7,8-TCDF	17:04	3989094	711560	1.511	1000	694.562321	69.46	68.768547	0.0539
13C-1,2,3,4-TCDD	15:39	7603836	1599178	1.000	2000	2000.00000	100.00	198.019802	0.0480

KL 8/24/16

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

TCDD/F by EPA Method 8290A - DB-225

Workorder	M811L1AD	Prep Batch	6217014	Lot No	H6G290408-001
Data File	/20160823s1/d2fm811l.d	Prep Date	08/04/16	SDG No	
Analysis ID	180637	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/23/16 04:02	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.1 g	Lims Test Code	XXA11Q&01
Instrument	D12C	Extract Vol	20 uL	Method	DX8290A Conf
Analyst	LKM	Diluton Factor	1.00	Code	9Ac

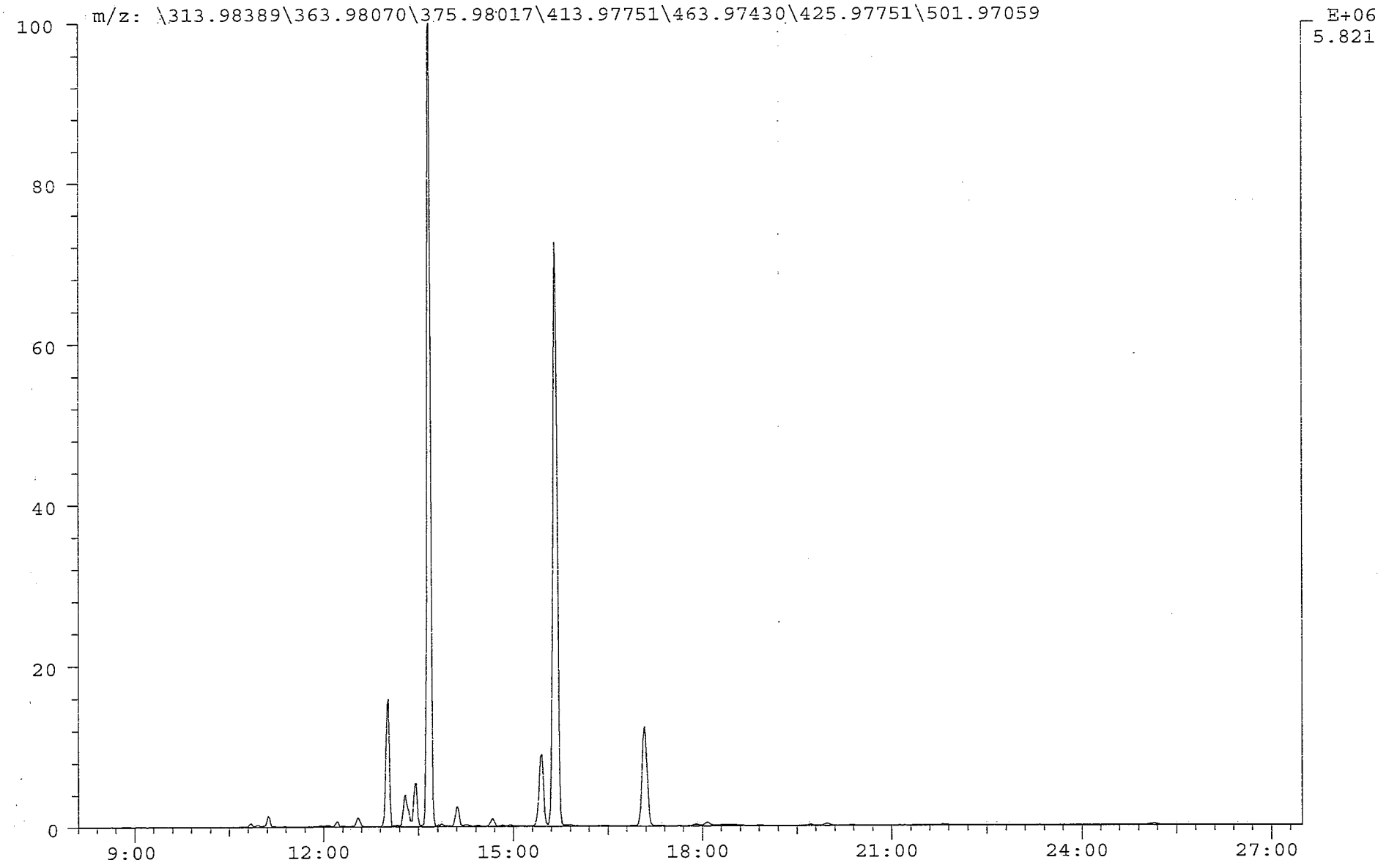
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	150	193	60	77	0.78	/	
	Unidentified	16:26	00:00	0	3774	5377	1020	1316	0.70	ABB/ABB	
	Unidentified	16:54	00:00	0	8086	8880	1505	1350	0.91 *	ABB/ABV	R
	2,3,7,8-TCDF	17:05	17:05	0	24153	34106	4149	5981	0.71	ABV/AVV	
	Unidentified	17:19	00:00	0	5594	9073	898	1620	0.62 *	AVB/AVB	R
	Unidentified	17:39	00:00	0	4118	5962	714	915	0.69	ABB/ABB	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	515	143	206	57	3.61 *	/	
	13C-2,3,7,8-TCDF	17:04	17:04	0	1776020	2213074	320177	391383	0.80	AVV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	90	138	36	55	0.65	/	
	Unidentified	14:34	00:00	0	2242	3997	524	679	0.56 *	ABB/ABV	R
	Unidentified	15:24	00:00	0	10236	14997	1093	1676	0.68	AVV/AVV	T
	Unidentified	15:35	00:00	0	2437	2836	540	935	0.86	AVV/AVV	
	Unidentified	15:41	00:00	0	1951	8239	550	1234	0.24 *	AVV/AVV	R
	Unidentified	15:46	00:00	0	2199	1905	384	290	1.15 *	AVV/AVB	RT
	Unidentified	16:37	00:00	0	1939	1897	351	276	1.02 *	ABB/ABB	R
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	315	73	126	29	4.34 *	/	
	13C-2,3,7,8-TCDD	15:26	15:26	0	1143763	1397108	232349	281802	0.82	ABV/ABV	
	13C-1,2,3,4-TCDD	15:39	15:39	0	3406321	4197515	707991	891187	0.81	AVV/AVB	

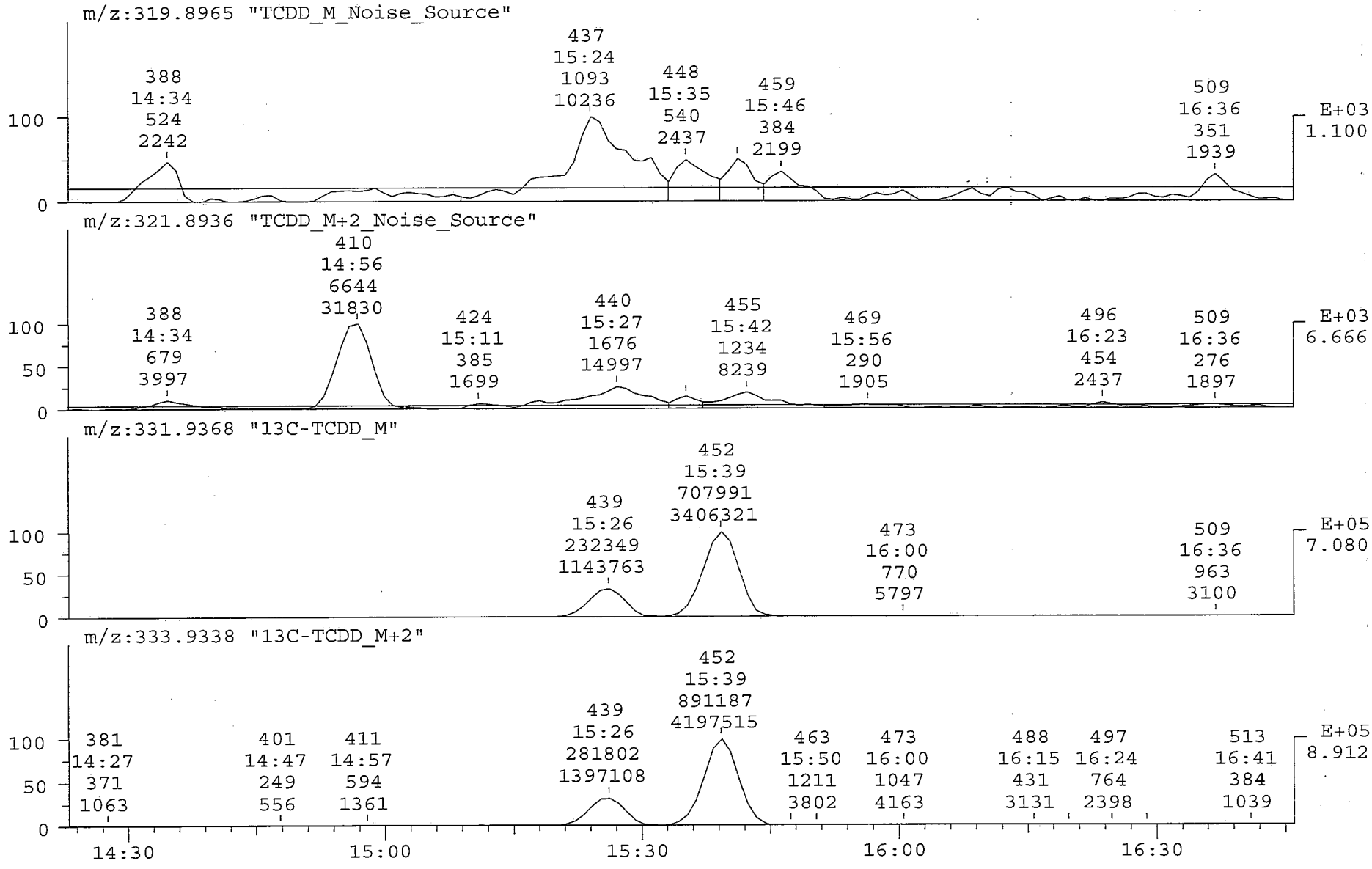
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. kr 8/23/16
Calc. kr 8/24/16

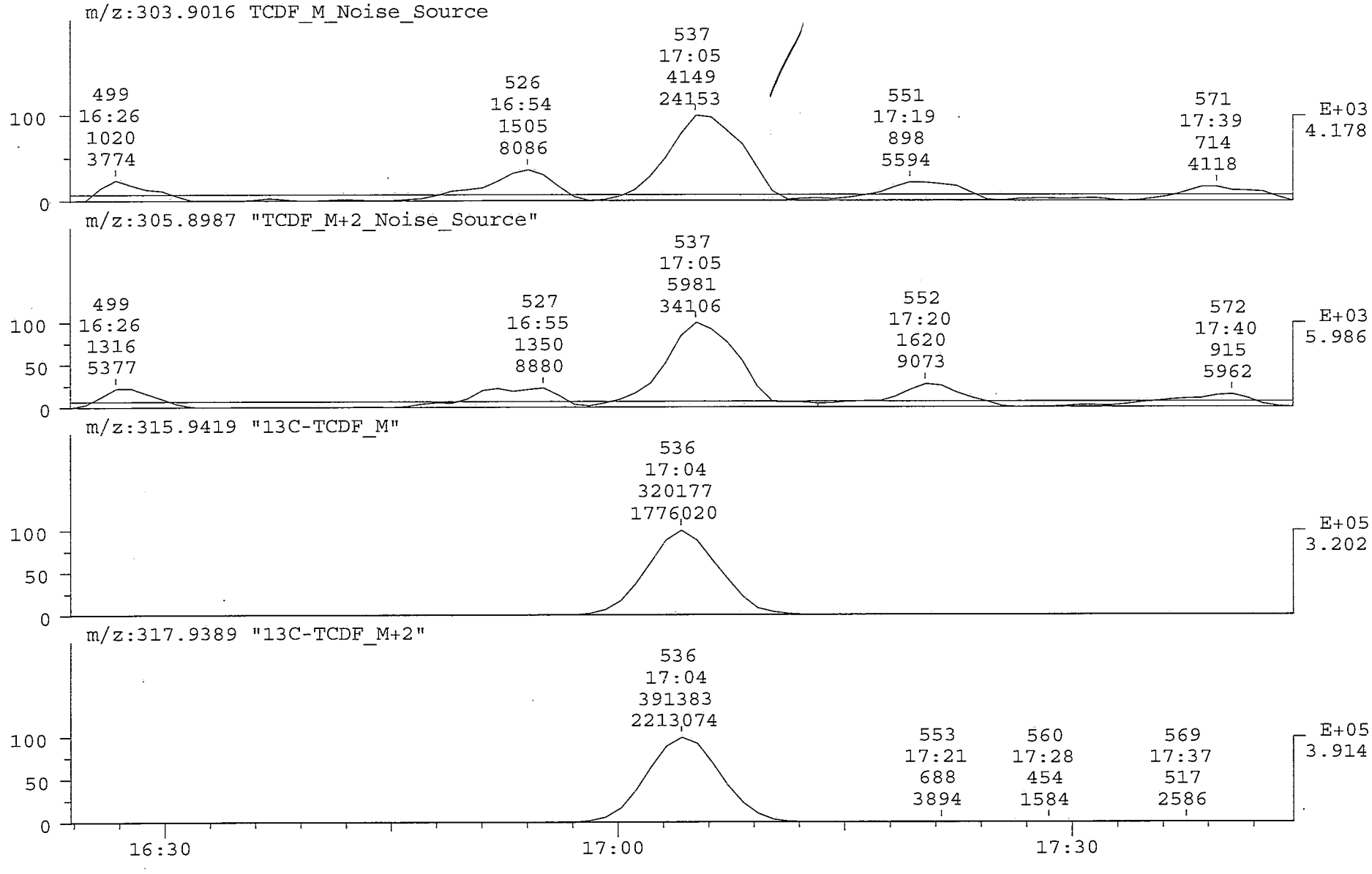
CHRO: d2fm8111 23-Aug-16 Elapse: 08:03.5 1
Samp: WO=m81111ad Meth=9Ac Dil=1 Start : 04:02:48 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 3 > 1154 Masses: 303 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



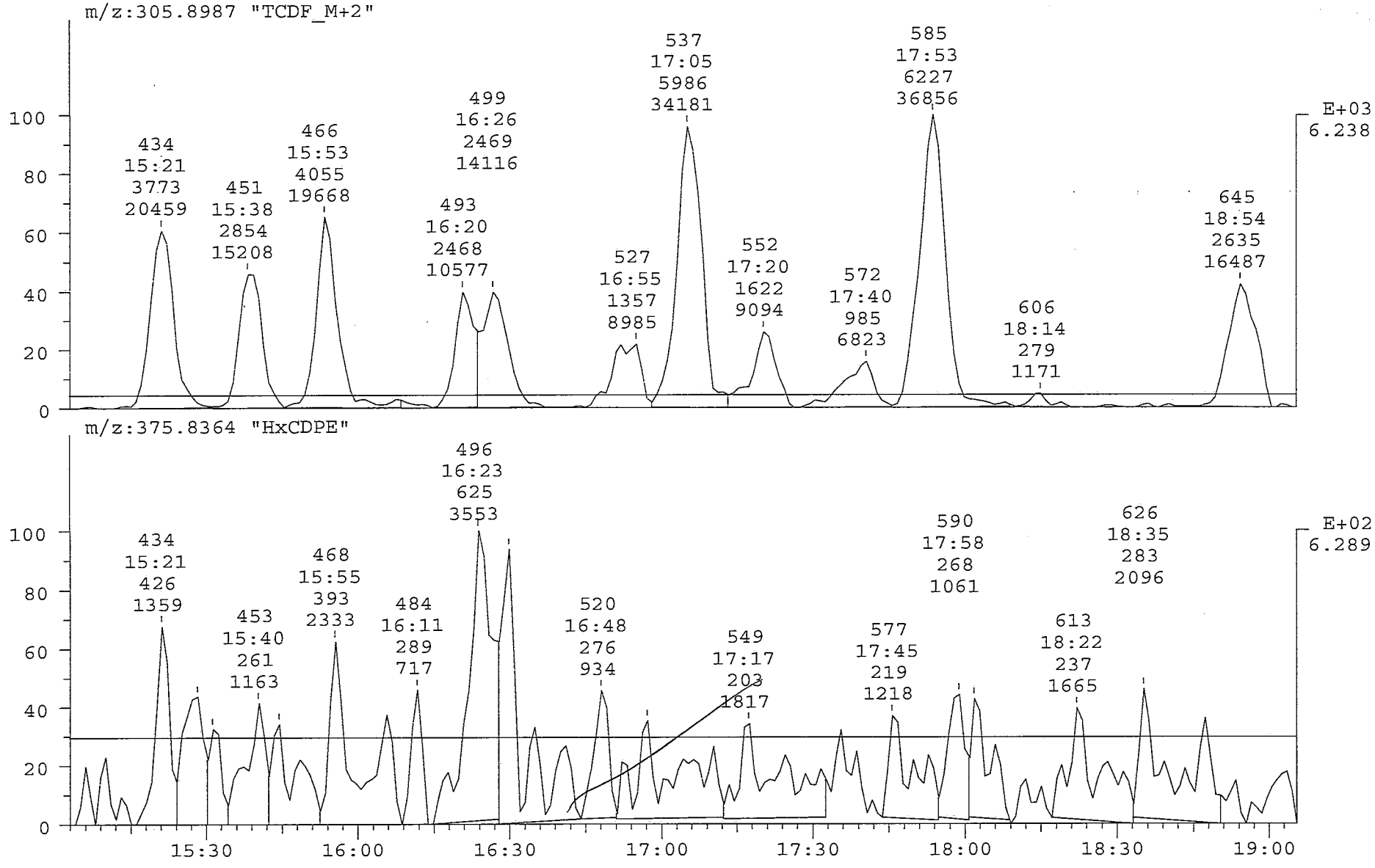
```
CHRO:  d2fm8111                                23-Aug-16  Elapse:  15:34.2      447
Samp:  WO=m81111ad Meth=9Ac Dil=1                         Start :  04:02:48    1155
Comm:  Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.1g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   376 > 518            Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



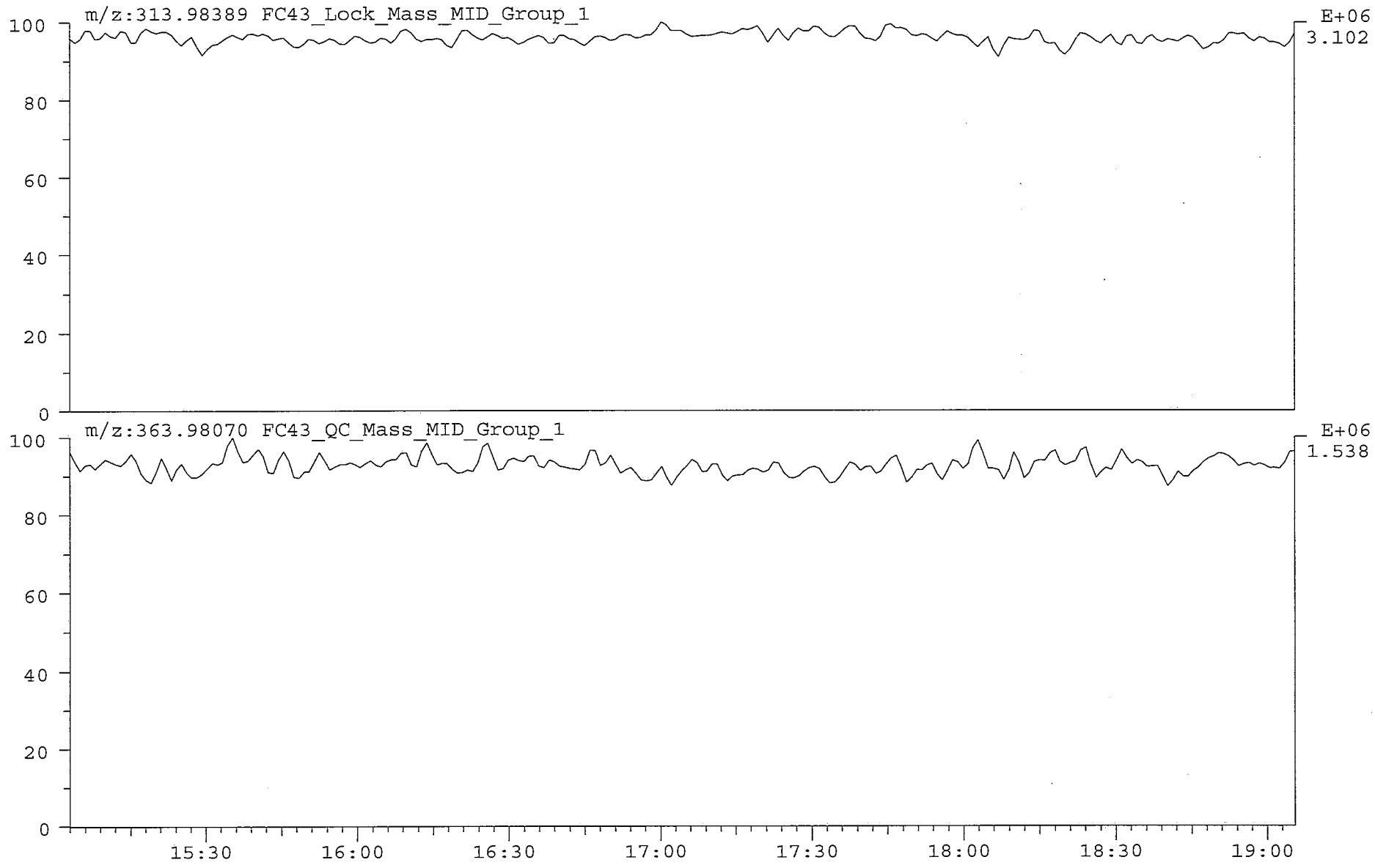
```
CHRO:  d2fm8111                                23-Aug-16  Elapse:  17:04.2      536
Samp:  WO=m81111ad Meth=9Ac Dil=1                         Start :  04:02:48    1155
Comm:  Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.1g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   496 > 576            Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d2fm8111 23-Aug-16 Elapse: 17:04.2 536
Samp: WO=m81111ad Meth=9Ac Dil=1 Start : 04:02:48 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 416 > 656 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d2fm8111 23-Aug-16 Elapse: 17:04.2 536
Samp: WO=m81111ad Meth=9Ac Dil=1 Start : 04:02:48 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.1g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 416 > 656 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Tue Aug 23 04:06:15 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 23-Aug-16 04:06:14

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160823022432

MID procedure: 5W_DB225_FC43_SINGLEGC

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	8:00 min	19:30 min	27:30 min	1.00 sec

Mid Masses:
Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

MID Window terminated after 27.500000 minutes
MID Window end time was 27.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	309.4834
BQUAD	2.4000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	18.0000	ECORR	1.0007	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2585.8226
ELEN	-45.0000	EMULT	1802.0000	ENS	210.0000
ENSBR	2.4000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	173.0000	EXSBR	2.5000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	6.7000
FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0490	FVSRC	0.0417
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000

ISTC	260.0000	ISTS	260.0000	LENS_POT	628.0000
LENS_SYM	1.7500	LM	375.8364	LMII	500.0000
LMASS	309.4834	LKM	313.9834	MASS	309.4834
MDAC	3559369.1559	MRANGE	1241.7659	NSAM	200.0000
NSCAN	1160.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	14.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-6.0000	RECURR	0.9001	RELEN	0.0000
RES	11808.4619	RPUSHER	-5.9560	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	309.4834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:         2.8e-005 mbar
Analyzer Penning:     9.5e-008 mbar
Pirani Analyse:       4.4e-003 mbar
Pirani Source:        4.2e-002 mbar
Pirani Inlet System: 4.9e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11808.

Amplifier Offset: 88.


*** File closed Tue Aug 23 04:33:46 2016
  ***
```

QUAN: d2fm8111.q0 Entries: 37

Data file(s) used
File: d2fm8111 23-Aug-16
Samp: WO=m8111lad Meth=9Ac Dil=1 Start : 04:02:48 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (1
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	15:24	10186.	1093.	15:10	15:33	36.	1	1.0	AVV
321.8775	14:56	31830.	6644.	14:46	15:05	55.	1	1.0	AVB
319.8805	14:34	2242.	524.	14:28	14:37	36.	2	5.0	ABB
319.8805	15:24	10236.	1093.	15:09	15:33	36.	2	5.0	AVV
319.8805	15:35	2437.	540.	15:33	15:39	36.	2	5.0	AVV
319.8805	15:41	1951.	550.	15:39	15:44	36.	2	5.0	AVV
319.8805	15:46	2199.	384.	15:44	16:01	36.	2	5.0	AVV
319.8805	16:37	1939.	351.	16:23	16:45	36.	2	5.0	ABB
321.8775	14:34	3997.	679.	14:29	14:46	55.	2	5.0	ABV
321.8775	14:56	31830.	6644.	14:46	15:05	55.	2	5.0	AVB
321.8775	15:11	1699.	385.	15:06	15:15	55.	2	5.0	ABV
321.8775	15:27	14997.	1676.	15:15	15:33	55.	2	5.0	AVV
321.8775	15:35	2836.	935.	15:33	15:37	55.	2	5.0	AVV
321.8775	15:42	8239.	1234.	15:37	15:51	55.	2	5.0	AVV
321.8775	15:56	1905.	290.	15:51	16:01	55.	2	5.0	AVB
321.8775	16:23	2437.	454.	16:16	16:30	55.	2	5.0	ABB
321.8775	16:37	1897.	276.	16:30	16:44	55.	2	5.0	ABB
331.9202	15:26	1143763.	232349.	15:17	15:32	126.	2	5.0	ABV
331.9202	15:39	3406321.	707991.	15:32	15:54	126.	2	5.0	AVV
333.9171	15:26	1397108.	281802.	15:15	15:32	29.	2	5.0	ABV
333.9171	15:39	4197515.	891187.	15:32	15:45	29.	2	5.0	AVB
327.8683	15:39	12716099.	2616454.	15:31	15:54	85.	1	1.0	AVV
327.8683	15:39	12716099.	2616454.	15:31	15:54	85.	2	5.0	AVV
303.8864	17:05	24153.	4149.	16:58	17:11	60.	1	1.0	ABV
305.8834	17:05	34106.	5981.	16:58	17:13	77.	1	1.0	AVV
303.8864	16:26	3774.	1020.	16:23	16:31	60.	2	5.0	ABB
303.8864	16:54	8086.	1505.	16:44	16:58	60.	2	5.0	ABB
303.8864	17:05	24153.	4149.	16:58	17:11	60.	2	5.0	ABV
303.8864	17:19	5594.	898.	17:11	17:25	60.	2	5.0	AVB
303.8864	17:39	4118.	714.	17:33	17:44	60.	2	5.0	ABB
305.8834	16:26	5377.	1316.	16:23	16:31	77.	2	5.0	ABB
305.8834	16:55	8880.	1350.	16:45	16:58	77.	2	5.0	ABV
305.8834	17:05	34106.	5981.	16:58	17:13	77.	2	5.0	AVV
305.8834	17:20	9073.	1620.	17:13	17:26	77.	2	5.0	AVB
305.8834	17:40	5962.	915.	17:27	17:44	77.	2	5.0	ABB
315.9261	17:04	1776020.	320177.	16:49	17:19	206.	2	5.0	AVV
317.9230	17:04	2213074.	391383.	16:49	17:19	57.	2	5.0	ABV

TestAmerica Canton

Sample ID: NB-2

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 002	**Work Order #....:**	M811M1AE	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/23/16	**Percent Moisture**	11
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.6 g	**Instrument ID....:**	D12C	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Confirmation Run

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDF	1.1	J	1.2	0.045	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDF	67	40 - 135

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

J Estimated Result.

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

TCDD/F by EPA Method 8290A - DB-225

Workorder	M811M1AE	Prep Batch	6217014	Lot No	H6G290408-002
Data File	/20160823s1/d2fm811m.d	Prep Date	08/04/16	SDG No	
Analysis ID	180638	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/23/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	04:36	Initial Wt/Vol	9.6 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A Conf
Instrument	D12C	Dil Factor	1.00	Code	9Ac
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD	15:29	913088	57173	1.149		286.786595		29.873604	Q	0.0851
2,3,7,8-TCDF	17:07	40412	7267	1.046		9.451653		0.984547	J	0.0405
13C-2,3,7,8-TCDD	15:26	2771544	580556	1.008	1000	684.804359	68.48	71.333787		0.0201
13C-2,3,7,8-TCDF	17:05	4088740	737684	1.511	1000	673.973277	67.40	70.205550		0.0239
13C-1,2,3,4-TCDD	15:39	8031867	1644390	1.000	2000	2000.00000	100.00	208.333333		0.0203

KL 8/24/16

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

TCDD/F by EPA Method 8290A - DB-225

Workorder	M811M1AE	Prep Batch	6217014	Lot No	H6G290408-002
Data File	/20160823s1/d2fm811m.d	Prep Date	08/04/16	SDG No	
Analysis ID	180638	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/23/16 04:36	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.6 g	Lims Test Code	XXA11Q&01
Instrument	D12C	Extract Vol	20 uL	Method	DX8290A Conf
Analyst	LKM	Diluton Factor	1.00	Code	9Ac

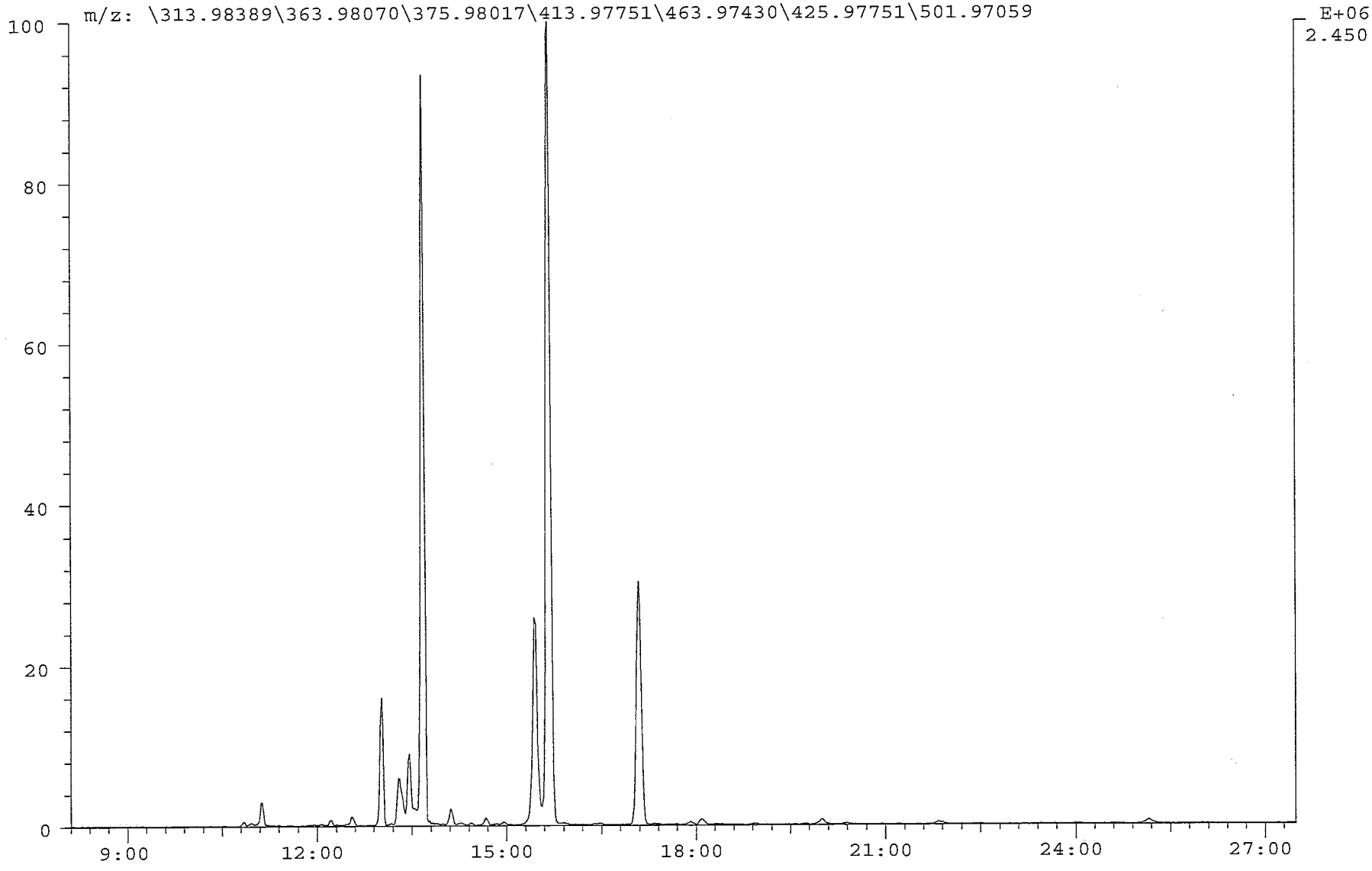
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	120	180	48	72	0.67	/	
	Unidentified	16:28	00:00	0	4952	7938	1450	1930	0.62 *	ABB/ABB	R
	Unidentified	16:49	00:00	0	822	6426	315	870	0.13 *	ABV/ABV	RT
	2,3,7,8-TCDF	17:07	17:06	1	17887	22525	3328	3939	0.79	AVB/AVB	
	Unidentified	17:21	00:00	0	3997	4647	750	756	0.86	ABB/ABB	
	Unidentified	17:38	00:00	0	3660	2289	598	570	1.60 *	ABB/ABB	R
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	143	143	57	57	1.00 *	/	
	13C-2,3,7,8-TCDF	17:05	17:05	0	1812820	2275920	323674	414010	0.80	AVV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	260	285	104	114	0.91 *	/	
	2,3,7,8-TCDD	15:29	15:27	2	354081	559007	22486	34687	0.63 *	AVV/AVV	R
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	83	78	33	31	1.06 *	/	
	13C-2,3,7,8-TCDD	15:26	15:26	0	1254620	1516924	264342	316214	0.83	ABV/ABV	
	13C-1,2,3,4-TCDD	15:39	15:39	0	3650677	4381190	751882	892508	0.83	AVV/AVV	

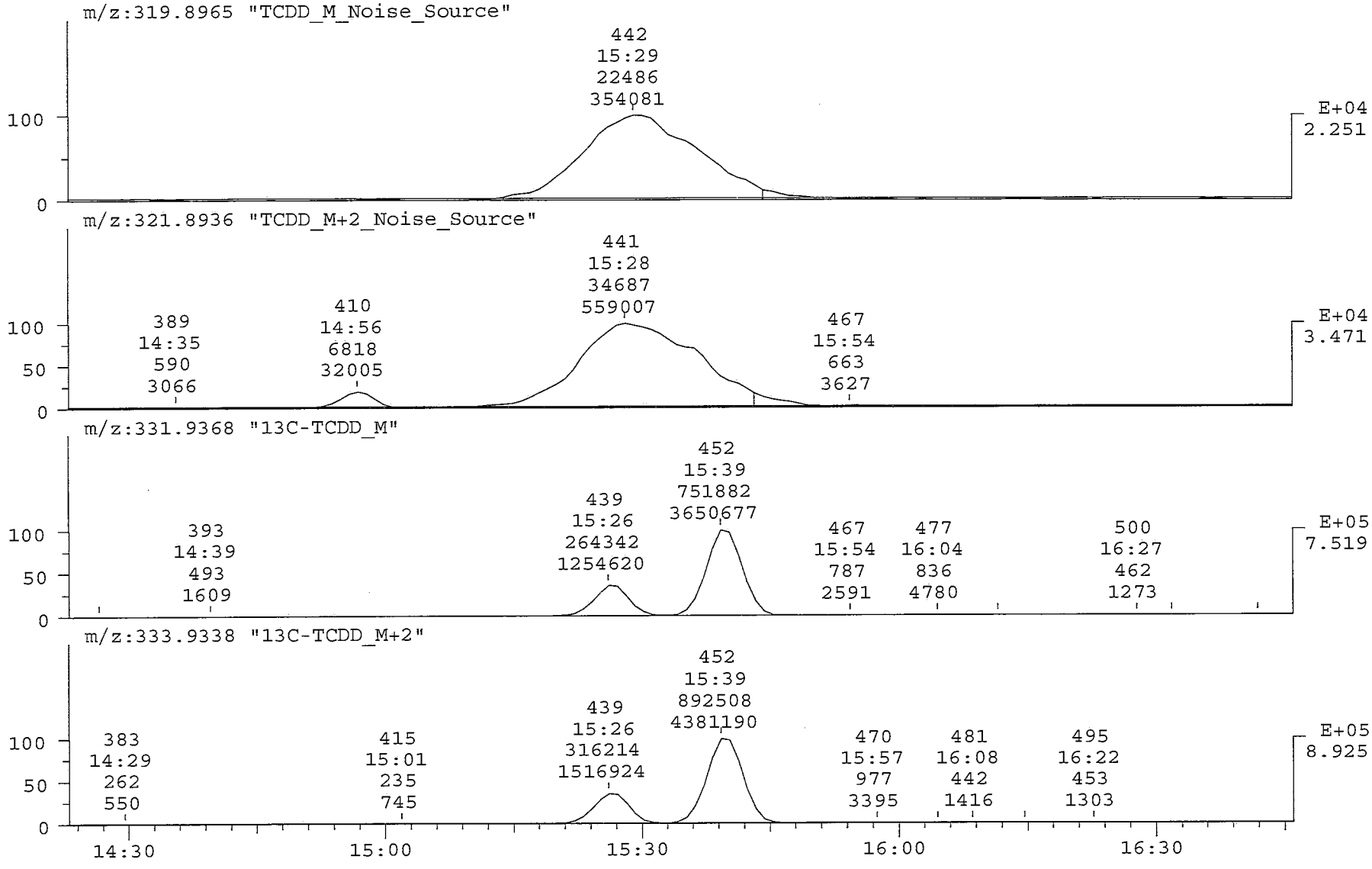
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. lk 8/23/14
Calc. lk 8/24/14

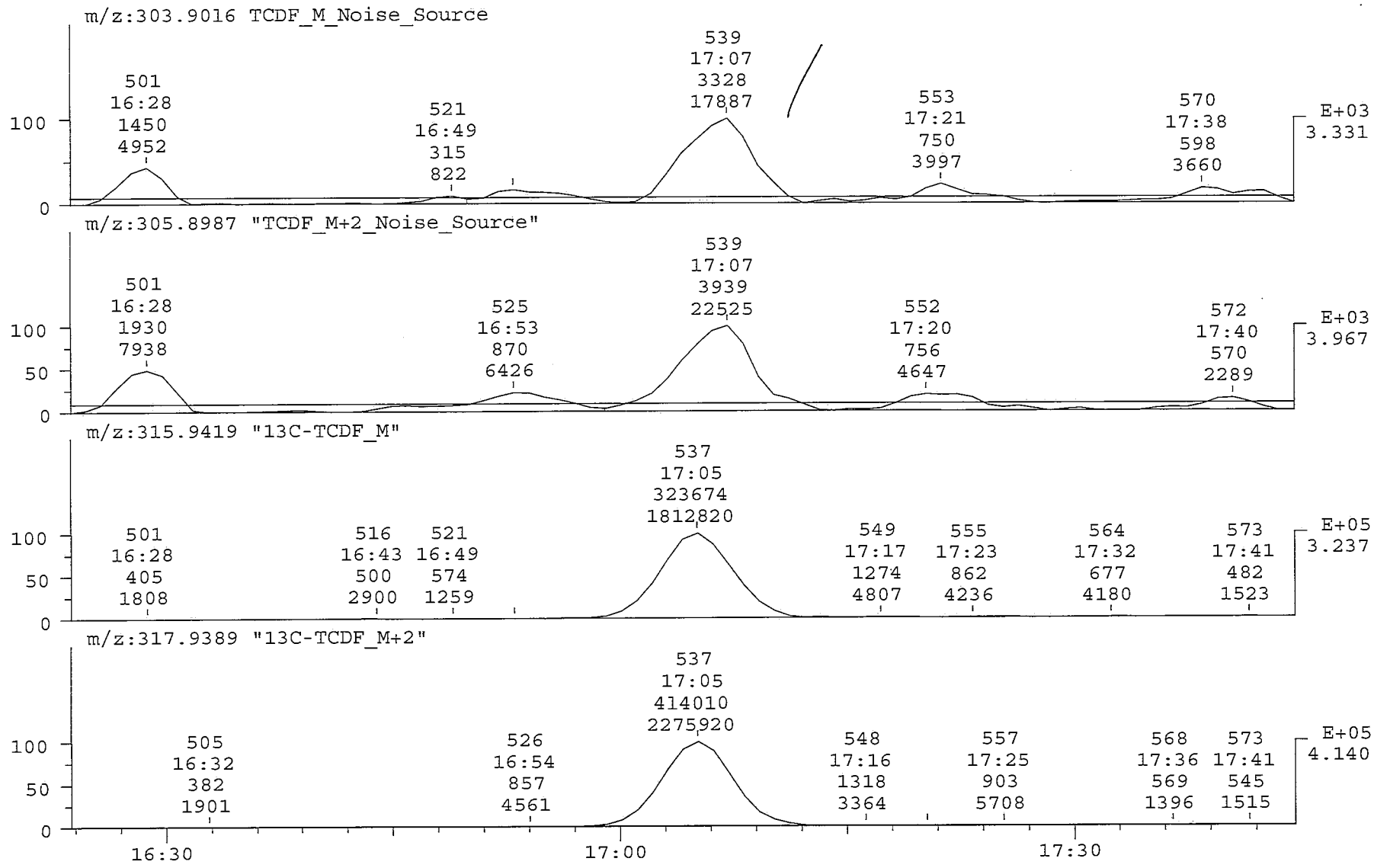
CHRO: d2fm811m 23-Aug-16 Elapse: 17:04.1 536
Samp: WO=m811m1ae Meth=9Ac Dil=1 Start : 04:36:46 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 3 > 1154 Masses: 303 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



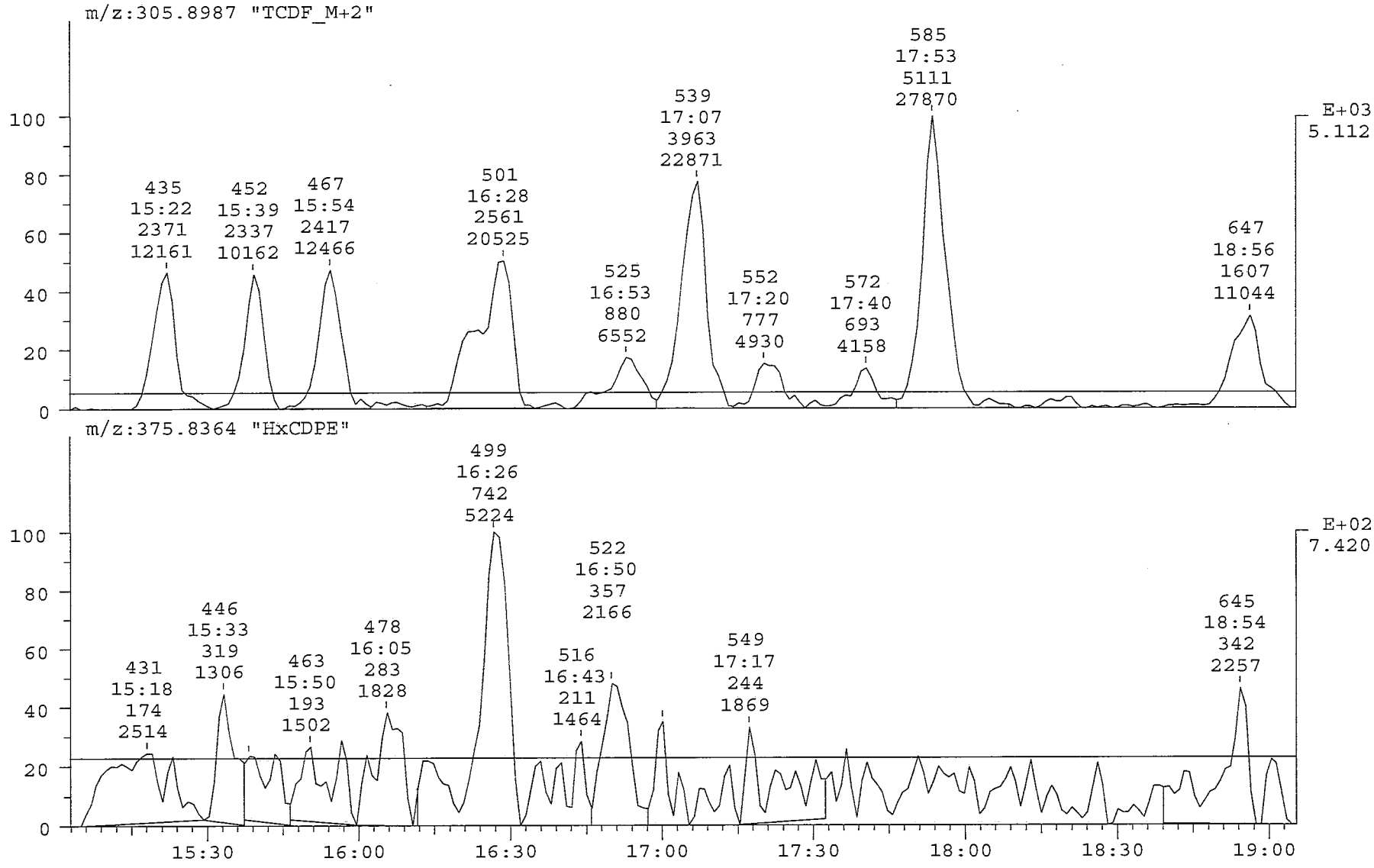
CHRO: d2fm811m 23-Aug-16 Elapse: 15:34.2 447
Samp: WO=m811m1ae Meth=9Ac Dil=1 Start : 04:36:46 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.6g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 377 > 518 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



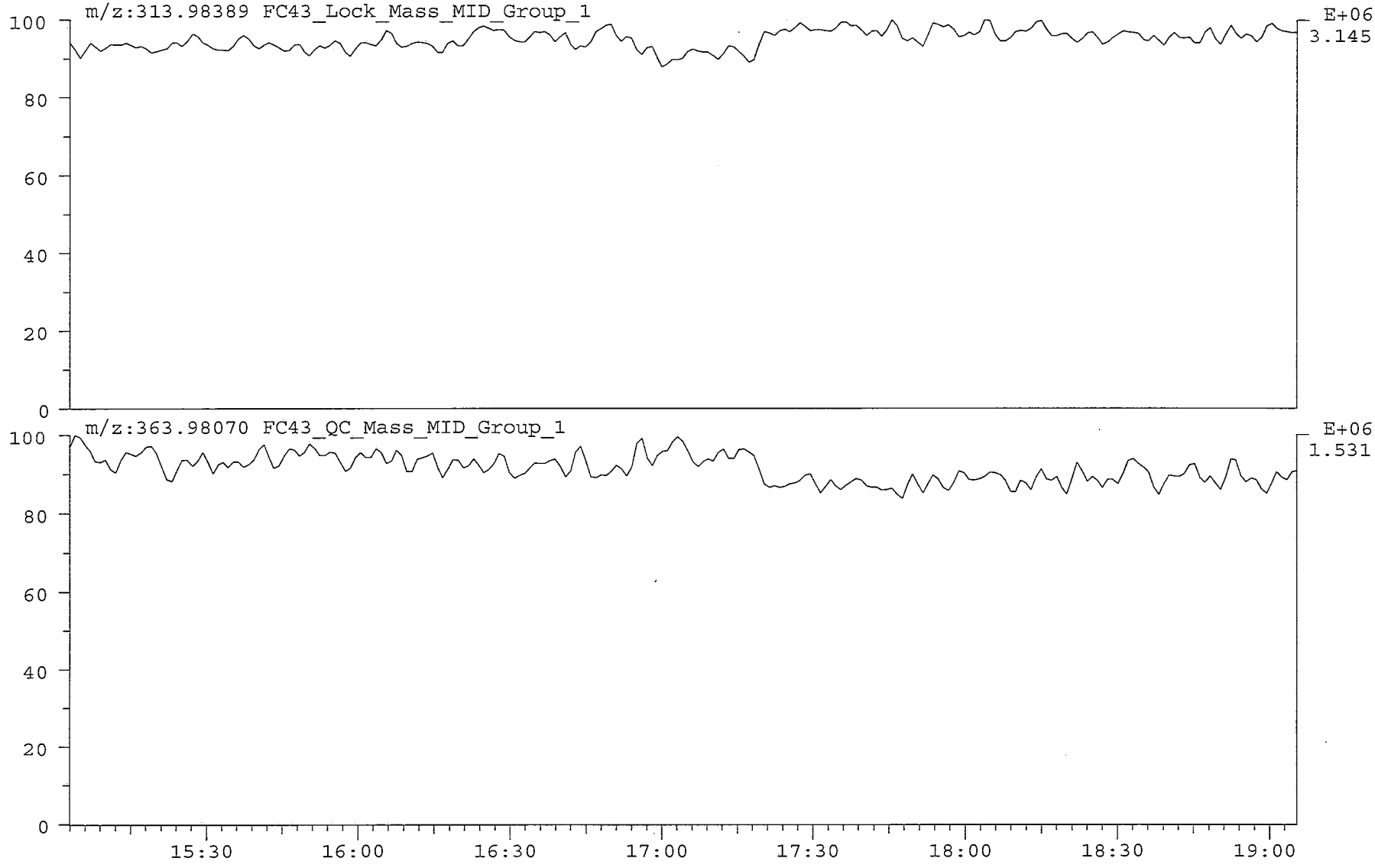
```
CHRO:  d2fm811m                                23-Aug-16  Elapse:  17:04.1      536
Samp:  WO=m811m1ae Meth=9Ac Dil=1                         Start :  04:36:46    1155
Comm:  Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.6g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   496 > 576            Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d2fm811m                                23-Aug-16  Elapse:  17:04.1     536
Samp:  WO=m811m1ae Meth=9Ac Dil=1                         Start :  04:36:46   1155
Comm:  Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.6g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   416 > 656            Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d2fm811m                                23-Aug-16  Elapse:  17:04.1      536
Samp:  WO=m811m1ae Meth=9Ac Dil=1                         Start :  04:36:46    1155
Comm:  Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.6g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   416 > 656            Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Tue Aug 23 04:40:12 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 23-Aug-16 04:40:11

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160823022439

MID procedure: 5W_DB225_FC43_SINGLEGC

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	8:00 min	19:30 min	27:30 min	1.00 sec

Mid Masses:
Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

MID Window terminated after 27.500000 minutes
MID Window end time was 27.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	308.9834
BQUAD	2.4000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	18.0000	ECORR	1.0007	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2585.8226
ELEN	-45.0000	EMULT	1802.0000	ENS	210.0000
ENSBR	2.4000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	173.0000	EXSBR	2.5000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	6.7000
FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0493	FVSRC	0.0417
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000

ISTC	260.0000	ISTS	260.0000	LENS_POT	628.0000
LENS_SYM	1.7500	LM	375.8364	LMII	500.0000
LMASS	308.9834	LKM	313.9834	MASS	308.9834
MDAC	3555246.5912	MRANGE	1241.7659	NSAM	200.0000
NSCAN	1160.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	14.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-6.0000	RECURR	0.8987	RELEN	0.0000
RES	11545.5977	RPUSHER	-5.9414	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	308.9834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:         2.8e-005 mbar
Analyzer Penning:     9.5e-008 mbar
Pirani Analyse:       4.4e-003 mbar
Pirani Source:        4.2e-002 mbar
Pirani Inlet System: 4.9e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11545.

Amplifier Offset: 87.


*** File closed Tue Aug 23 05:07:43 2016
 ***
```

QUAN: d2fm811m.q0 Entries: 26

Data file(s) used
File: d2fm811m 23-Aug-16
Samp: WO=m811m1ae Meth=9Ac Dil=1 Start : 04:36:46 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	15:29	354081.	22486.	15:14	15:44	104.	2	5.0	AVV
321.8775	14:35	3066.	590.	14:29	14:41	114.	2	5.0	ABB
321.8775	14:56	32005.	6818.	14:49	15:03	114.	2	5.0	ABB
321.8775	15:28	559007.	34687.	15:13	15:43	114.	2	5.0	AVV
321.8775	15:54	3627.	663.	15:52	15:59	114.	2	5.0	AVB
331.9202	15:26	1254620.	264342.	15:15	15:32	33.	2	5.0	ABV
331.9202	15:39	3650677.	751882.	15:32	15:51	33.	2	5.0	AVV
333.9171	15:26	1516924.	316214.	15:18	15:33	31.	2	5.0	ABV
333.9171	15:39	4381190.	892508.	15:33	15:54	31.	2	5.0	AVV
327.8683	15:40	3852216.	818230.	15:32	15:48	60.	1	1.0	AVV
327.8683	15:40	3852216.	818230.	15:32	15:48	60.	2	5.0	AVV
303.8864	17:07	17887.	3328.	17:00	17:12	48.	1	1.0	AVB
305.8834	17:07	22525.	3939.	16:59	17:14	72.	1	1.0	AVB
303.8864	16:28	4952.	1450.	16:24	16:31	48.	2	5.0	ABB
303.8864	16:49	822.	315.	16:45	16:50	48.	2	5.0	ABV
303.8864	16:53	3223.	551.	16:50	17:00	48.	2	5.0	AVV
303.8864	17:07	17887.	3328.	17:00	17:12	48.	2	5.0	AVB
303.8864	17:21	3997.	750.	17:12	17:27	48.	2	5.0	ABB
303.8864	17:38	3660.	598.	17:28	17:44	48.	2	5.0	ABB
305.8834	16:28	7938.	1930.	16:23	16:32	72.	2	5.0	ABB
305.8834	16:53	6426.	870.	16:43	16:59	72.	2	5.0	ABV
305.8834	17:07	22525.	3939.	16:59	17:14	72.	2	5.0	AVB
305.8834	17:20	4647.	756.	17:14	17:28	72.	2	5.0	ABB
305.8834	17:40	2289.	570.	17:34	17:43	72.	2	5.0	ABB
315.9261	17:05	1812820.	323674.	16:55	17:15	57.	2	5.0	AVV
317.9230	17:05	2275920.	414010.	16:56	17:15	57.	2	5.0	AVV

TestAmerica Canton

Sample ID: SB-2

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 004	**Work Order #....:**	M811P1AD	**Matrix....:**	SOLID
Date Sampled....:	07/25/16	**Date Received....:**	07/29/16	**Dilution Factor:**	1
Prep Date....:	08/04/16	**Analysis Date....:**	08/23/16	**Percent Moisture**	20
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D12C	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Confirmation Run

PARAMETER	RESULT	MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDF	4.2	1.2	0.068	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDF	70	40 - 135

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

TestAmerica
Knoxville

IsoCalc Preliminary Sample Report

TCDD/F by EPA Method 8290A - DB-225

Workorder	M811P1AD	Prep Batch	6217014	Lot No	H6G290408-004
Data File	/20160823s1/d2tm811p.d	Prep Date	08/04/16	SDG No	
Analysis ID	180640	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/23/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	05:10	Initial Wt/Vol	10.1 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A Conf
Instrument	D12C	Dil Factor	1.00	Code	9Ac
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD	15:28	1143993	68986	1.149		214.316866		21.219492	Q	0.0928
2,3,7,8-TCDF	17:06	250646	47206	1.046		33.797024		3.346240		0.0548
13C-2,3,7,8-TCDD	15:26	4646597	1005298	1.008	1000	688.754005	68.88	68.193466		0.0220
13C-2,3,7,8-TCDF	17:05	7092008	1256494	1.511	1000	701.304765	70.13	69.436115		0.0126
13C-1,2,3,4-TCDD	15:39	13388506	2729408	1.000	2000	2000.00000	100.00	198.019802		0.0221

Kr 8/24/16

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

TCDD/F by EPA Method 8290A - DB-225

Workorder	M811P1AD	Prep Batch	6217014	Lot No	H6G290408-004
Data File	/20160823s1/d2tm811p.d	Prep Date	08/04/16	SDG No	
Analysis ID	180640	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/23/16 05:10	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.1 g	Lims Test Code	XXA11Q&01
Instrument	D12C	Extract Vol	20 uL	Method	DX8290A Conf
Analyst	LKM	Diluton Factor	1.00	Code	9Ac

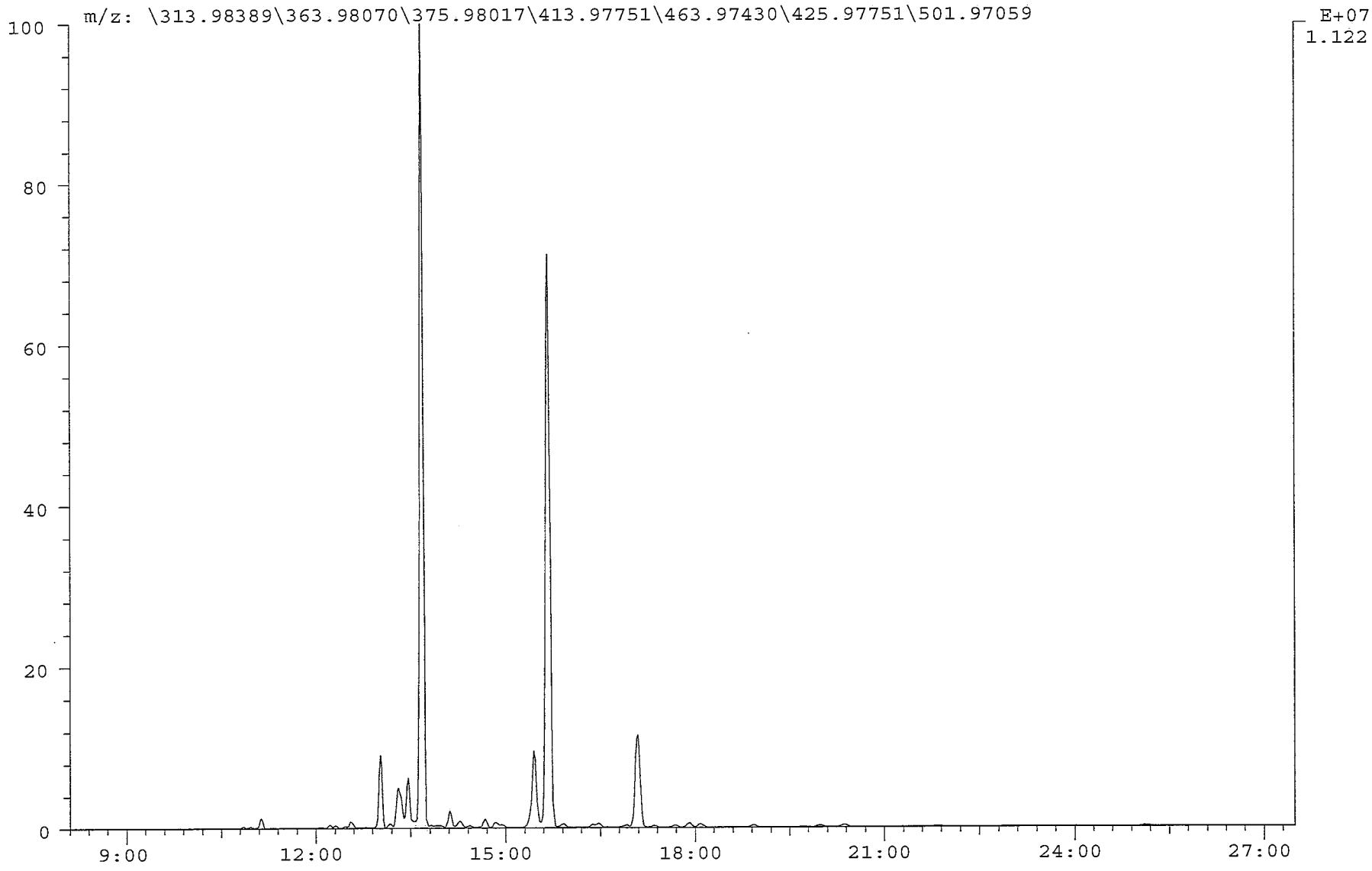
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	295	433	118	173	0.68	/	
	Unidentified	16:27	00:00	0	60150	74699	15419	17764	0.81	ABB/ABB	
	Unidentified	16:54	00:00	0	88480	106094	13722	16580	0.83	ABV/ABV	
	2,3,7,8-TCDF	17:06	17:06	0	112277	138369	21148	26058	0.81	AVV/AVV	
	Unidentified	17:20	00:00	0	58385	79304	8985	12264	0.74	AVB/AVB	
	Unidentified	17:39	00:00	0	61526	78811	10670	14480	0.78	ABB/ABB	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	140	123	56	49	1.14 *	/	
	13C-2,3,7,8-TCDF	17:05	17:05	0	3114082	3977926	552474	704020	0.78	ABV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	445	638	178	255	0.70	/	
	Unidentified	14:34	00:00	0	14097	22155	2611	4300	0.64 *	ABB/ABB	R
	Unidentified	14:57	00:00	0	6110	60772	1400	13656	0.10 *	ABB/ABB	R
	2,3,7,8-TCDD	15:28	15:27	1	436559	707434	26563	42423	0.62 *	AVV/AVV	R
	Unidentified	16:08	00:00	0	5486	7379	1034	1271	0.74	ABB/ABB	
	Unidentified	16:36	00:00	0	8561	9949	1771	1758	0.86	ABB/ABB	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	90	215	36	86	0.42 *	/	
	13C-2,3,7,8-TCDD	15:26	15:26	0	2056243	2590354	446559	558739	0.79	ABV/ABV	
	13C-1,2,3,4-TCDD	15:39	15:39	0	6013886	7374620	1227564	1501844	0.82	AVV/AVV	

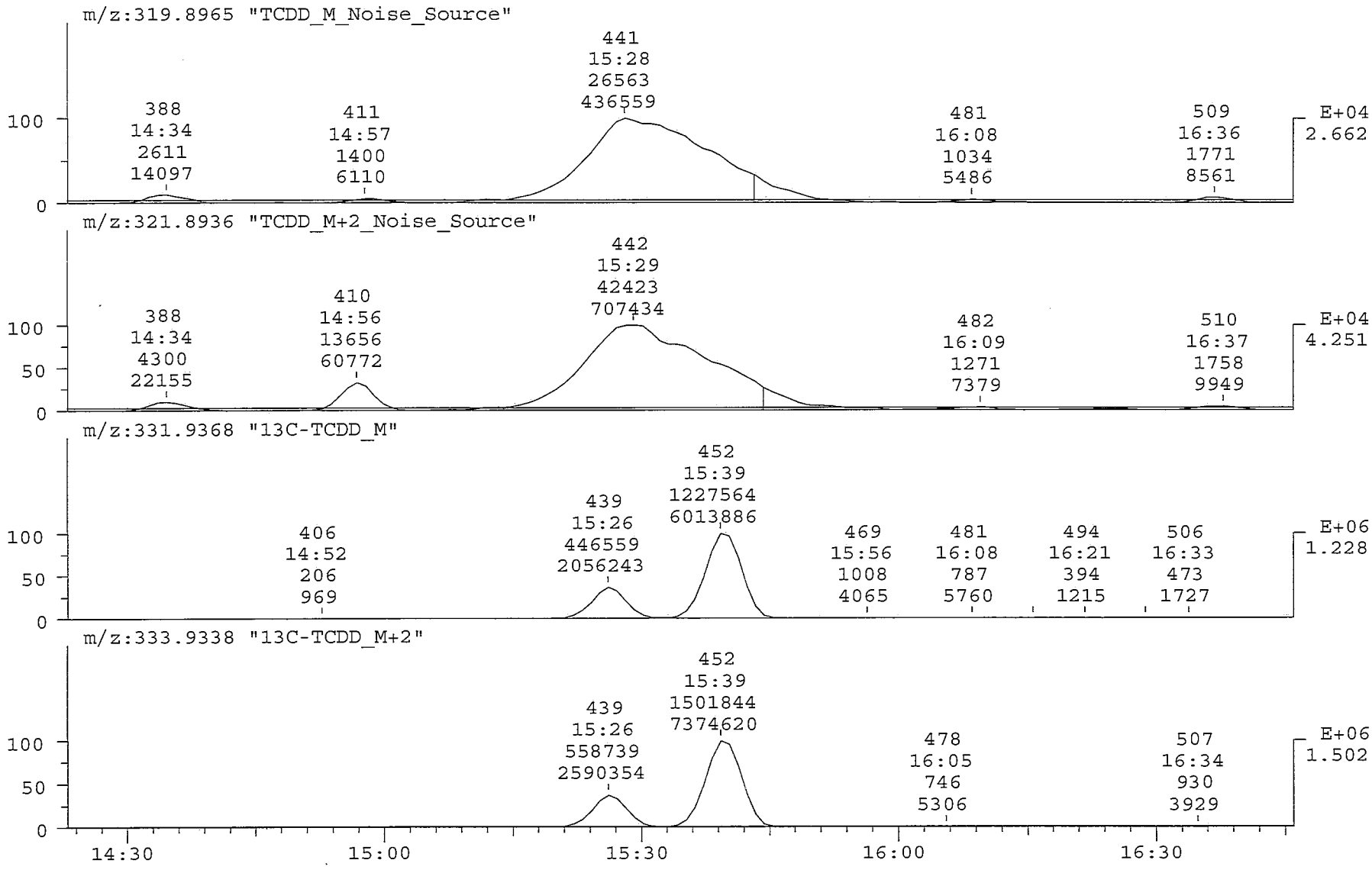
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. lk 8/23/16
Calc. lk 8/24/16

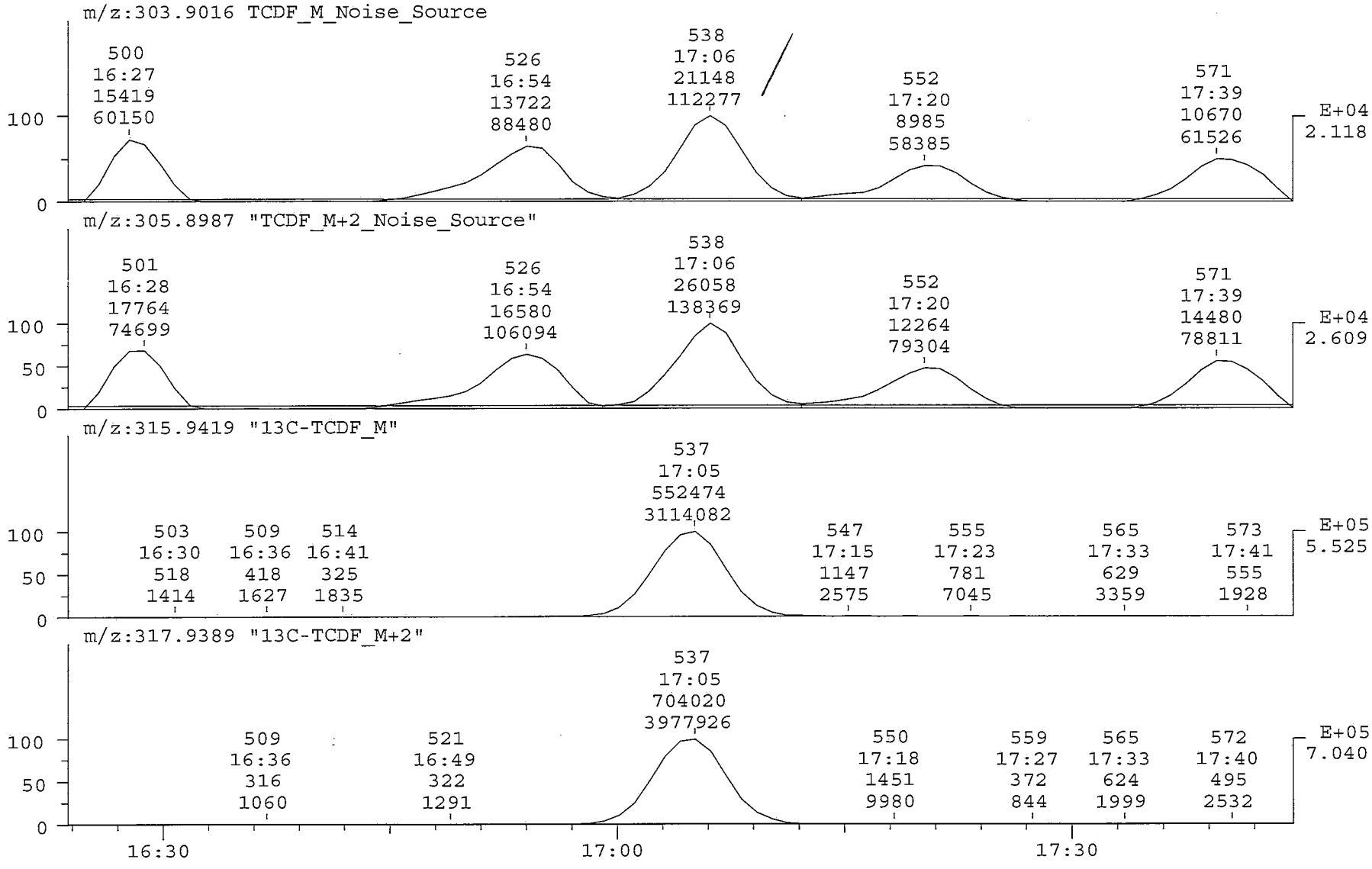
CHRO: d2tm811p 23-Aug-16 Elapse: 17:04.1 536
Samp: WO=m811p1ad Meth=9Ac Dil=1 Start : 05:10:43 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.2g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 3 > 1154 Masses: 303 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



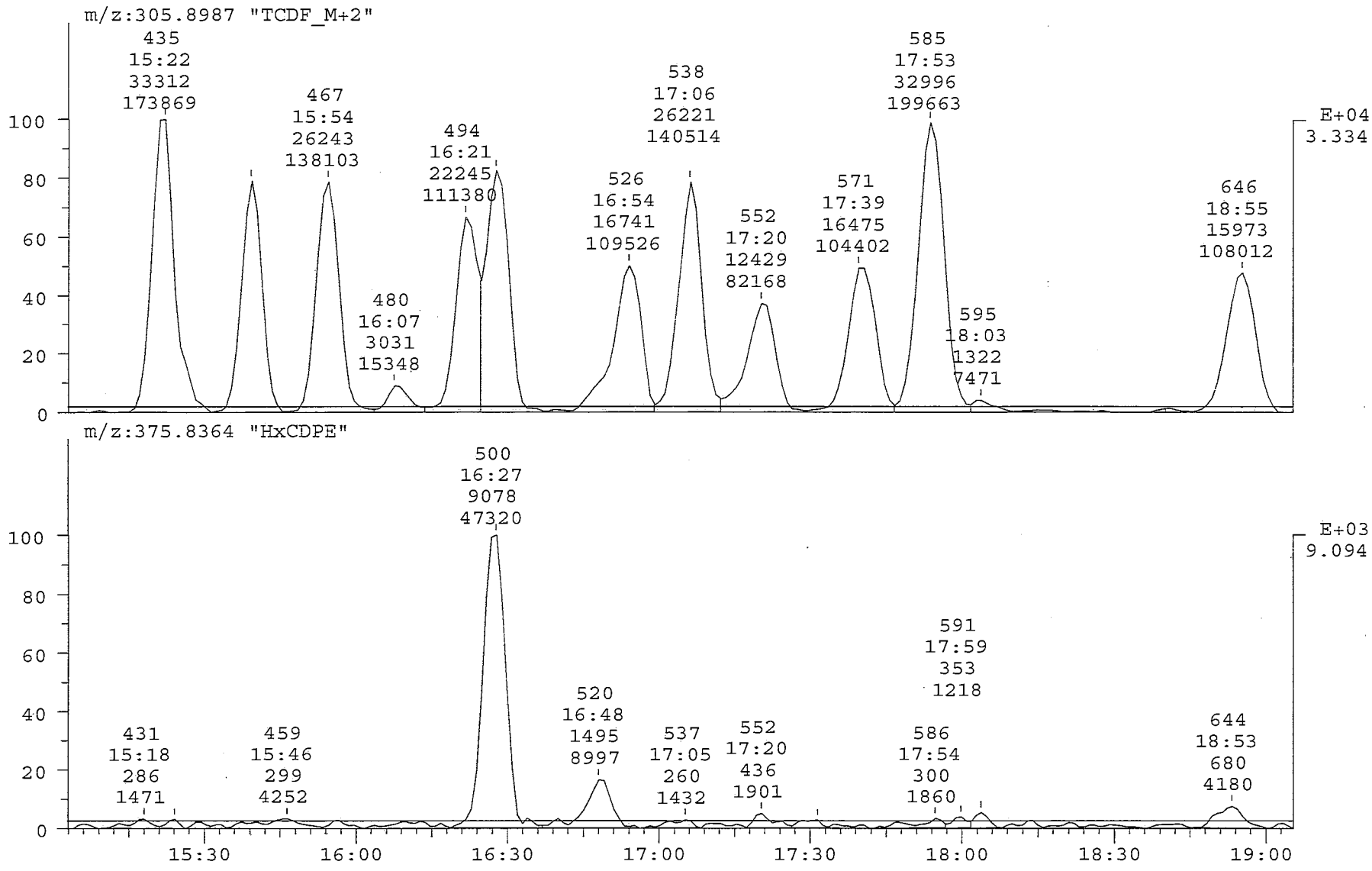
```
CHRO:  d2tm811p                                23-Aug-16  Elapse:  15:34.2     447
Samp:  WO=m811p1ad Meth=9Ac Dil=1                         Start :  05:10:43   1155
Comm:  Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.2g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   377 > 518            Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



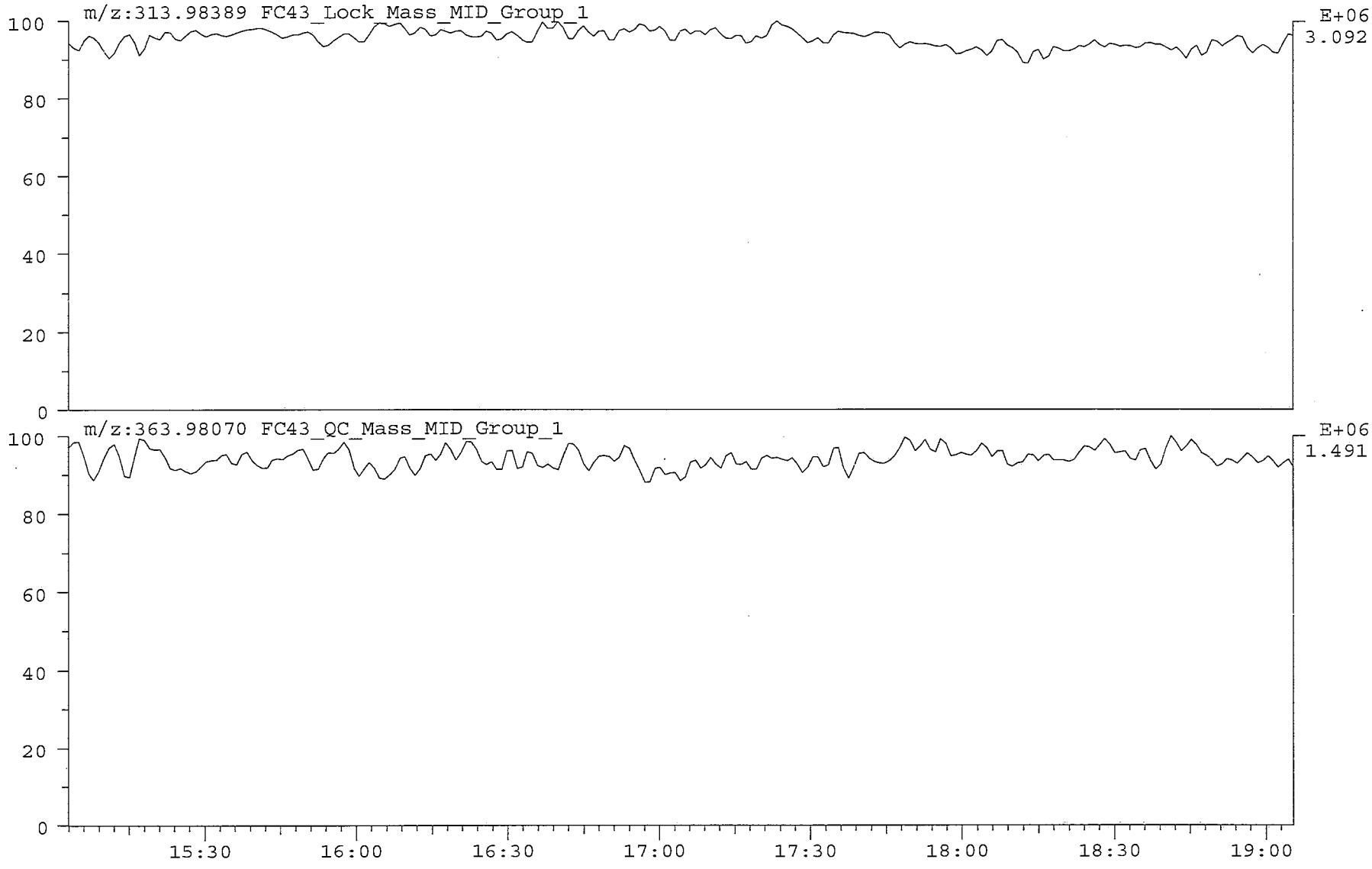
```
CHRO:  d2tm811p                                23-Aug-16  Elapse:  17:04.1      536
Samp:  WO=m811p1ad Meth=9Ac Dil=1                         Start :  05:10:43    1155
Comm:  Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.2g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   496 > 576            Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d2tm811p                                  23-Aug-16   Elapse:  17:04.1      536
Samp:  WO=m811p1ad Meth=9Ac Dil=1                            Start :  05:10:43    1155
Comm:  Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode:  EI ESI + Q1MS UP LR                                   Study :  6217014 (10.2g)
Oper:  LKM                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   416 > 656               Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d2tm811p                                23-Aug-16  Elapse:  17:04.1      536
Samp:  WO=m811p1ad Meth=9Ac Dil=1                         Start :  05:10:43    1155
Comm:  Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (10.2g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   416 > 656            Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Tue Aug 23 05:14:08 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 23-Aug-16 05:14:07

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160823022448

MID procedure: 5W_DB225_FC43_SINGLEGC

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	8:00 min	19:30 min	27:30 min	1.00 sec

Mid Masses:
Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

MID Window terminated after 27.500000 minutes
MID Window end time was 27.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	308.4834
BQUAD	2.4000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	18.0000	ECORR	1.0007	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2585.8226
ELEN	-45.0000	EMULT	1802.0000	ENS	210.0000
ENSBR	2.4000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	173.0000	EXSBR	2.5000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	6.7000
FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0496	FVSRC	0.0417
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000

ISTC	260.0000	ISTS	260.0000	LENS_POT	628.0000
LENS_SYM	1.7500	LM	375.8364	LMII	500.0000
LMASS	308.4834	LKM	313.9834	MASS	308.4834
MDAC	3551120.7317	MRANGE	1241.7659	NSAM	200.0000
NSCAN	1160.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	14.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-6.0000	RECURR	0.8996	RELEN	0.0000
RES	11288.6657	RPUSHER	-5.9267	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	308.4834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:         2.9e-005 mbar
Analyzer Penning:     9.6e-008 mbar
Pirani Analyse:       4.5e-003 mbar
Pirani Source:        4.2e-002 mbar
Pirani Inlet System: 5.0e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11288.

Amplifier Offset: 89.


*** File closed Tue Aug 23 05:41:39 2016
 ***
```

QUAN: d2tm811p.q0 Entries: 32

Data file(s) used
File: d2tm811p 23-Aug-16
Samp: WO=m811p1ad Meth=9Ac Dil=1 Start : 05:10:43 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (1
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	15:28	436559.	26563.	15:13	15:43	178.	1	1.0	AVV
321.8775	15:29	707434.	42423.	15:14	15:44	255.	1	1.0	AVV
319.8805	14:34	14097.	2611.	14:28	14:39	178.	2	5.0	ABB
319.8805	14:57	6110.	1400.	14:53	15:02	178.	2	5.0	ABB
319.8805	15:28	436559.	26563.	15:13	15:43	178.	2	5.0	AVV
319.8805	16:08	5486.	1034.	16:03	16:15	178.	2	5.0	ABB
319.8805	16:36	8561.	1771.	16:31	16:41	178.	2	5.0	ABB
321.8775	14:34	22155.	4300.	14:29	14:41	255.	2	5.0	ABB
321.8775	14:56	60772.	13656.	14:48	15:02	255.	2	5.0	ABB
321.8775	15:29	707434.	42423.	15:14	15:44	255.	2	5.0	AVV
321.8775	16:09	7379.	1271.	16:02	16:14	255.	2	5.0	ABB
321.8775	16:37	9949.	1758.	16:31	16:41	255.	2	5.0	ABB
331.9202	15:26	2056243.	446559.	15:13	15:32	36.	2	5.0	ABV
331.9202	15:39	6013886.	1227564.	15:32	15:53	36.	2	5.0	AVV
333.9171	15:26	2590354.	558739.	15:13	15:32	86.	2	5.0	ABV
333.9171	15:39	7374620.	1501844.	15:32	15:54	86.	2	5.0	AVV
327.8683	15:40	24555870.	5293223.	15:29	15:47	203.	1	1.0	AVB
327.8683	15:40	24555870.	5293223.	15:29	15:47	203.	2	5.0	AVB
303.8864	17:06	112277.	21148.	17:00	17:12	118.	1	1.0	AVV
305.8834	17:06	138369.	26058.	16:59	17:12	173.	1	1.0	AVV
303.8864	16:27	60150.	15419.	16:24	16:32	118.	2	5.0	ABB
303.8864	16:54	88480.	13722.	16:43	17:00	118.	2	5.0	ABV
303.8864	17:06	112277.	21148.	17:00	17:12	118.	2	5.0	AVV
303.8864	17:20	58385.	8985.	17:12	17:28	118.	2	5.0	AVB
303.8864	17:39	61526.	10670.	17:33	17:44	118.	2	5.0	ABB
305.8834	16:28	74699.	17764.	16:24	16:32	173.	2	5.0	ABB
305.8834	16:54	106094.	16580.	16:43	16:59	173.	2	5.0	ABV
305.8834	17:06	138369.	26058.	16:59	17:12	173.	2	5.0	AVV
305.8834	17:20	79304.	12264.	17:12	17:28	173.	2	5.0	AVB
305.8834	17:39	78811.	14480.	17:33	17:44	173.	2	5.0	ABB
315.9261	17:05	3114082.	552474.	16:51	17:14	56.	2	5.0	ABV
317.9230	17:05	3977926.	704020.	16:53	17:14	49.	2	5.0	ABV

TestAmerica Canton

Sample ID: PAD-6

Trace Level Organic Compounds

Lot - Sample #....:	H6G290408 - 012	Work Order #....:	M81111AD	Matrix....:	SOLID
Date Sampled....:	07/25/16	Date Received....:	07/29/16	Dilution Factor:	1
Prep Date....:	08/04/16	Analysis Date....:	08/23/16	Percent Moisture	7.0
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	9.7 g	Instrument ID....:	D12C	Method:	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Confirmation Run

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDF	0.86	J	1.1	0.053	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDF	70	40 - 135

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

J Estimated Result.

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

TCDD/F by EPA Method 8290A - DB-225

Workorder	M81111AD	Prep Batch	6217014	Lot No	H6G290408-012
Data File	/20160823s1/d2tm8111.d	Prep Date	08/04/16	SDG No	
Analysis ID	180639	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/23/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	05:44	Initial Wt/Vol	9.7 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A Conf
Instrument	D12C	Dil Factor	1.00	Code	9Ac
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD	15:28	1675279	103696	1.149		502.952105		51.850732	Q	0.131
2,3,7,8-TCDF	17:05	36354	7206	1.046		7.770286		0.801060	J	0.0493
13C-2,3,7,8-TCDD	15:25	2899536	615263	1.008	1000	675.555587	67.56	69.644906		0.0176
13C-2,3,7,8-TCDF	17:04	4474063	800690	1.511	1000	695.413510	69.54	71.692114		0.0213
13C-1,2,3,4-TCDD	15:39	8517824	1743207	1.000	2000	2000.00000	100.00	206.185567		0.0177

KL 8/24/16

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

TCDD/F by EPA Method 8290A - DB-225

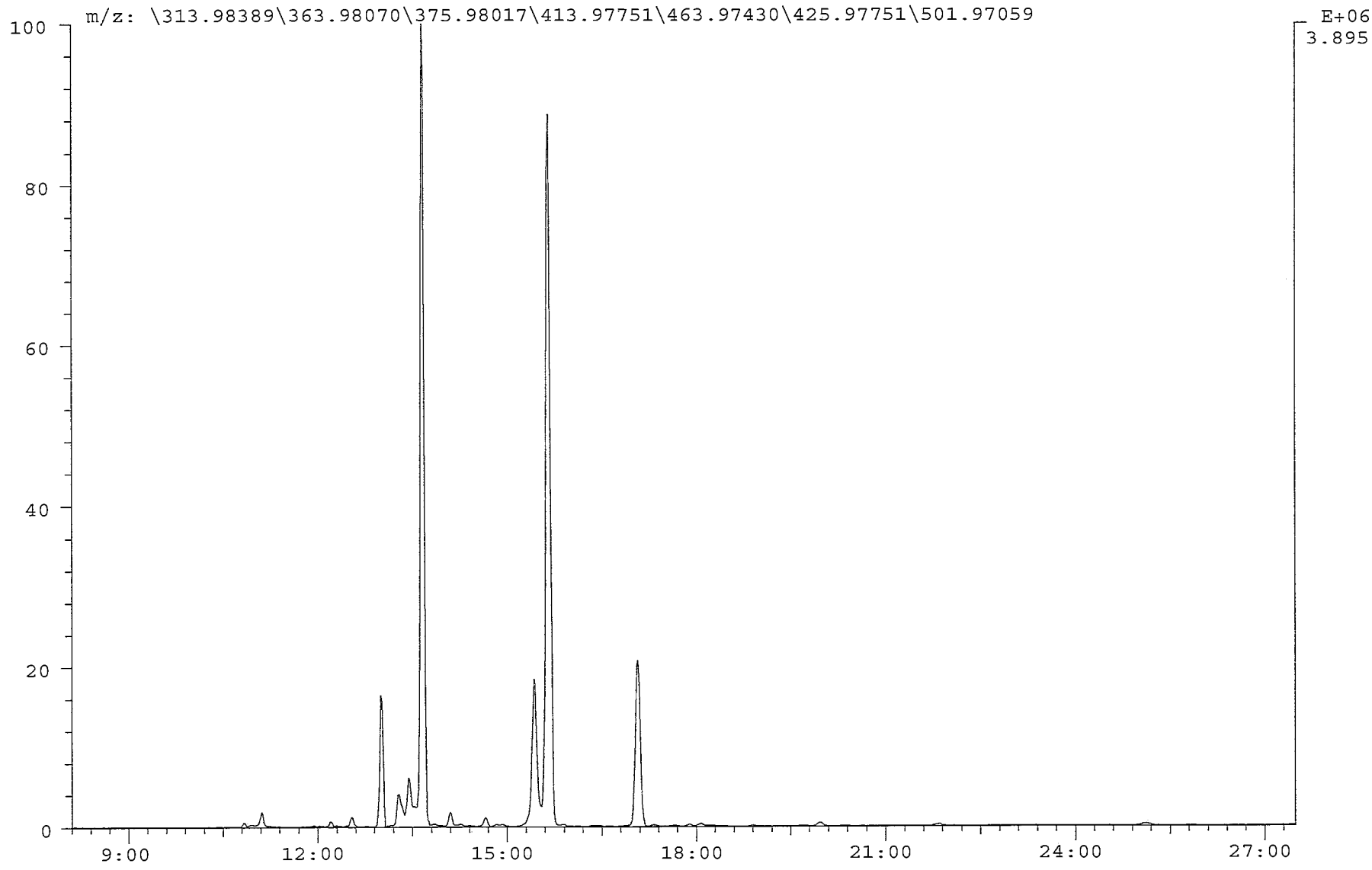
Workorder	M81111AD	Prep Batch	6217014	Lot No	H6G290408-012
Data File	/20160823s1/d2tm8111.d	Prep Date	08/04/16	SDG No	
Analysis ID	180639	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/23/16 05:44	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	9.7 g	Lims Test Code	XXA11Q&01
Instrument	D12C	Extract Vol	20 uL	Method	DX8290A Conf
Analyst	LKM	Diluton Factor	1.00	Code	9Ac
		View Small Peaks?	False	View deleted peaks?	False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	180	220	72	88	0.82	/	
	Unidentified	16:27	00:00	0	3144	5602	952	1170	0.56 *	ABB/ABB	R
	Unidentified	16:53	00:00	0	11261	12158	1937	2042	0.93 *	ABV/ABV	R
	2,3,7,8-TCDF	17:05	17:05	0	15673	20681	3134	4072	0.76	AVV/AVV	
	Unidentified	17:40	00:00	0	9922	12889	1606	2055	0.77	ABB/ABB	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	153	120	61	48	1.27 *	/	
	13C-2,3,7,8-TCDF	17:04	17:04	0	1999126	2474937	358856	441834	0.81	AVV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	385	513	154	205	0.75	/	
	2,3,7,8-TCDD	15:28	15:26	2	653182	1022097	41451	62245	0.64 *	AVV/AVV	R
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	115	35	46	14	3.29 *	/	
	13C-2,3,7,8-TCDD	15:25	15:25	0	1303092	1596444	275104	340159	0.82	ABV/ABV	
	13C-1,2,3,4-TCDD	15:39	15:39	0	3812612	4705212	769154	974053	0.81	AVV/AVV	

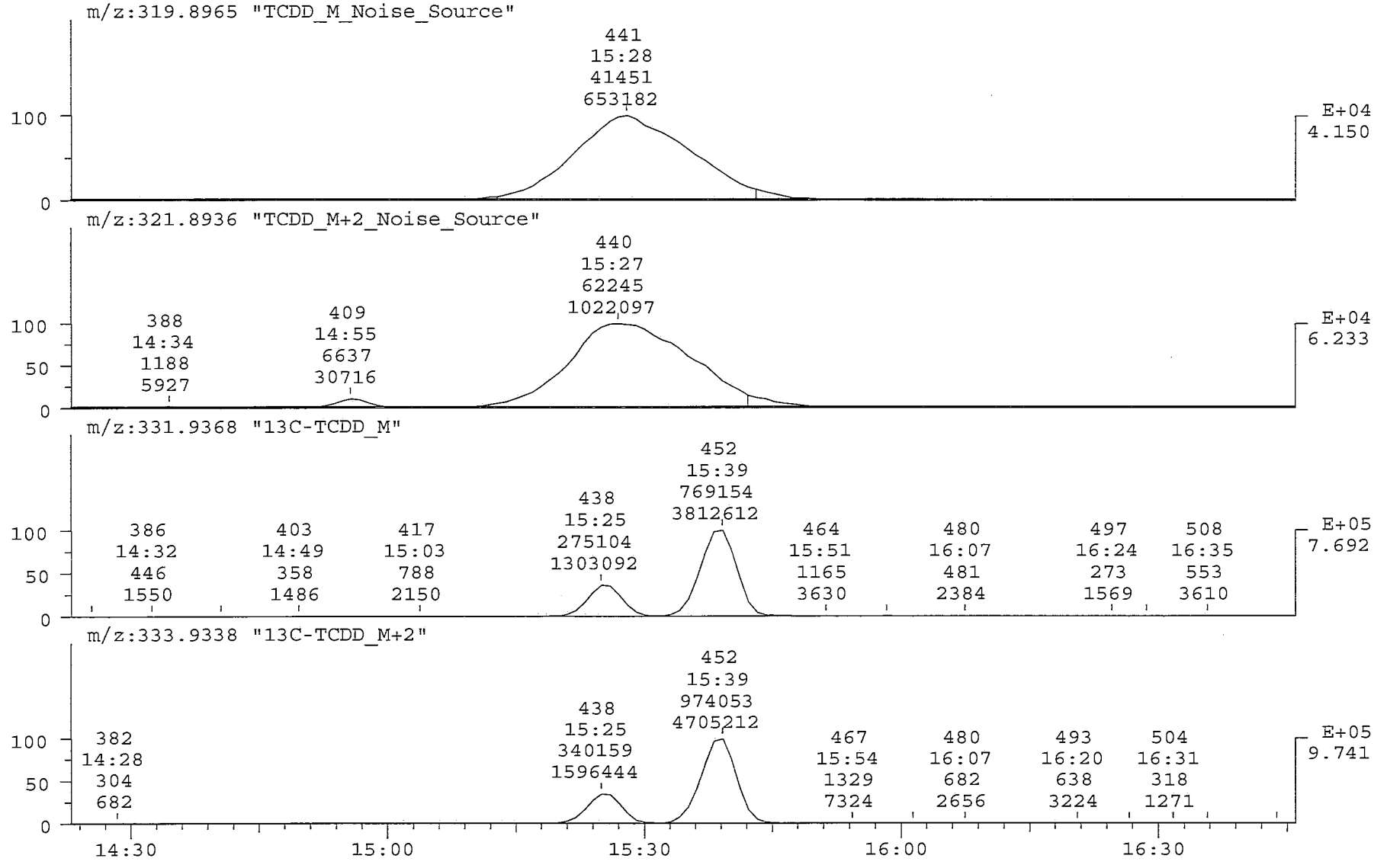
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. lh 8/23/16
Calc. lh 8/24/16

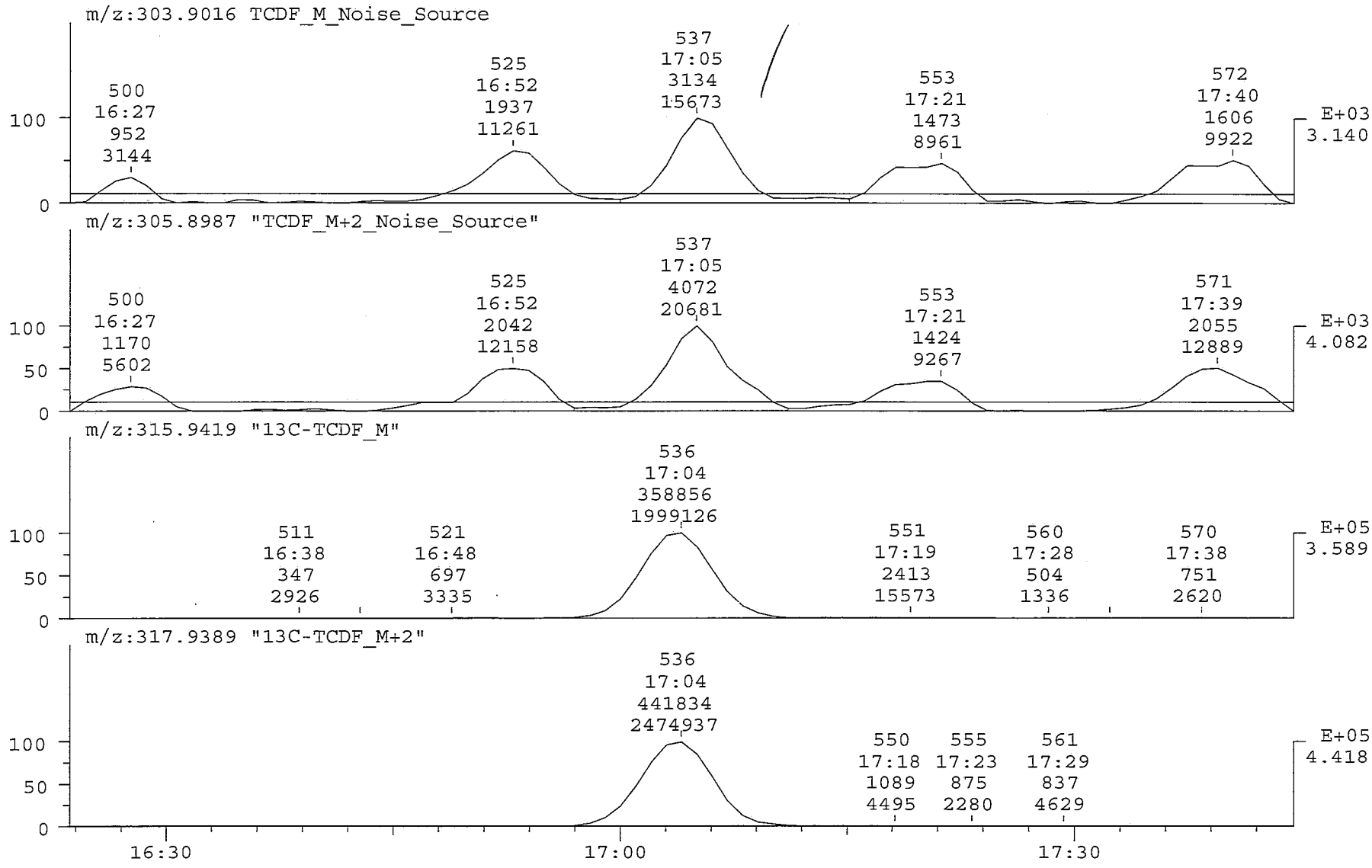
CHRO: d2tm8111 23-Aug-16 Elapse: 17:04.0 536
Samp: WO=m81111ad Meth=9Ac Dil=1 Start : 05:44:39 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 4 > 1154 Masses: 303 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



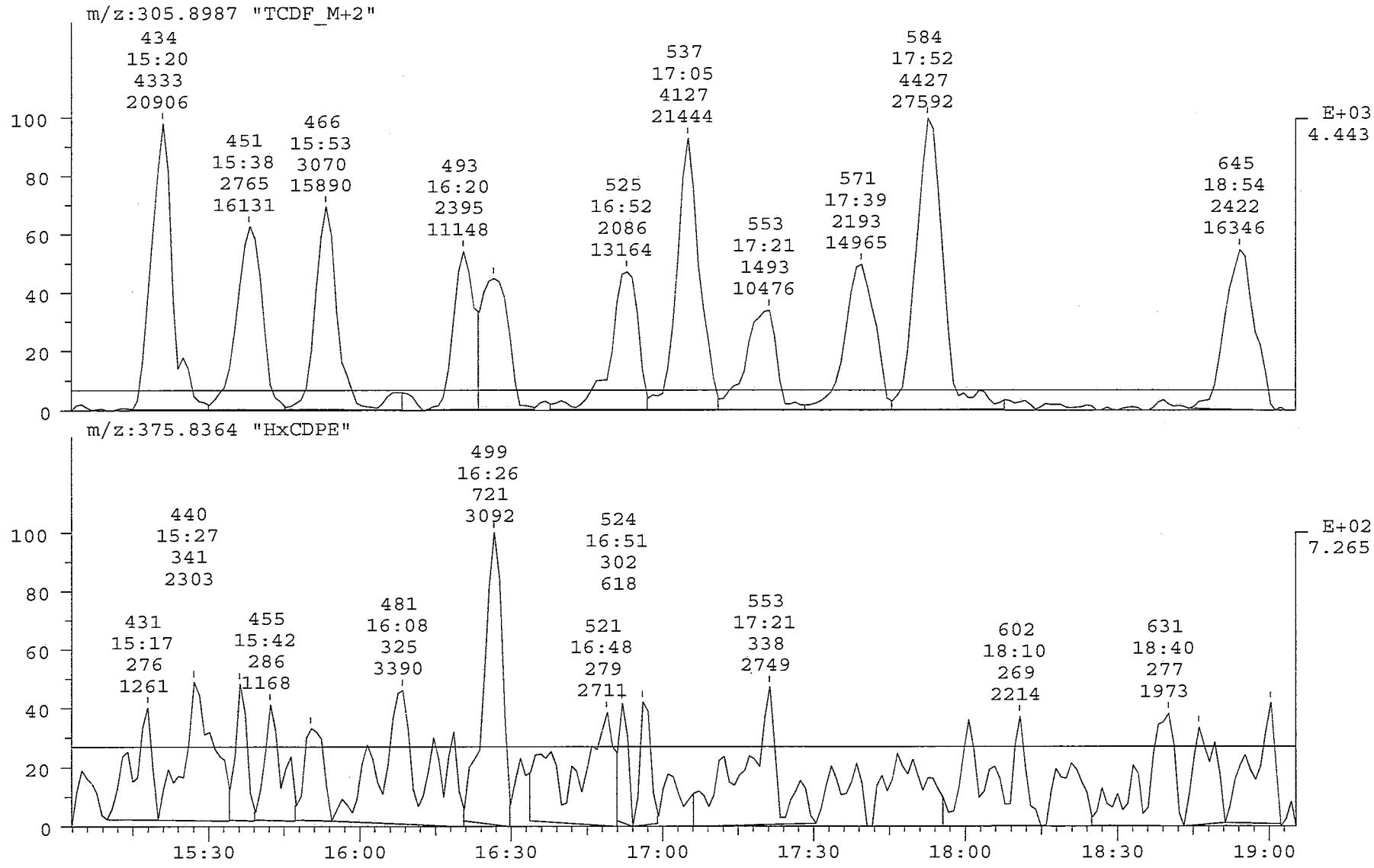
```
CHRO:  d2tm8111                                23-Aug-16   Elapse:  15:34.1      447
Samp:  WO=m81111ad Meth=9Ac Dil=1                          Start :  05:44:39    1155
Comm:  Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (9.7g)
Oper:  LKM                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   377 > 518             Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



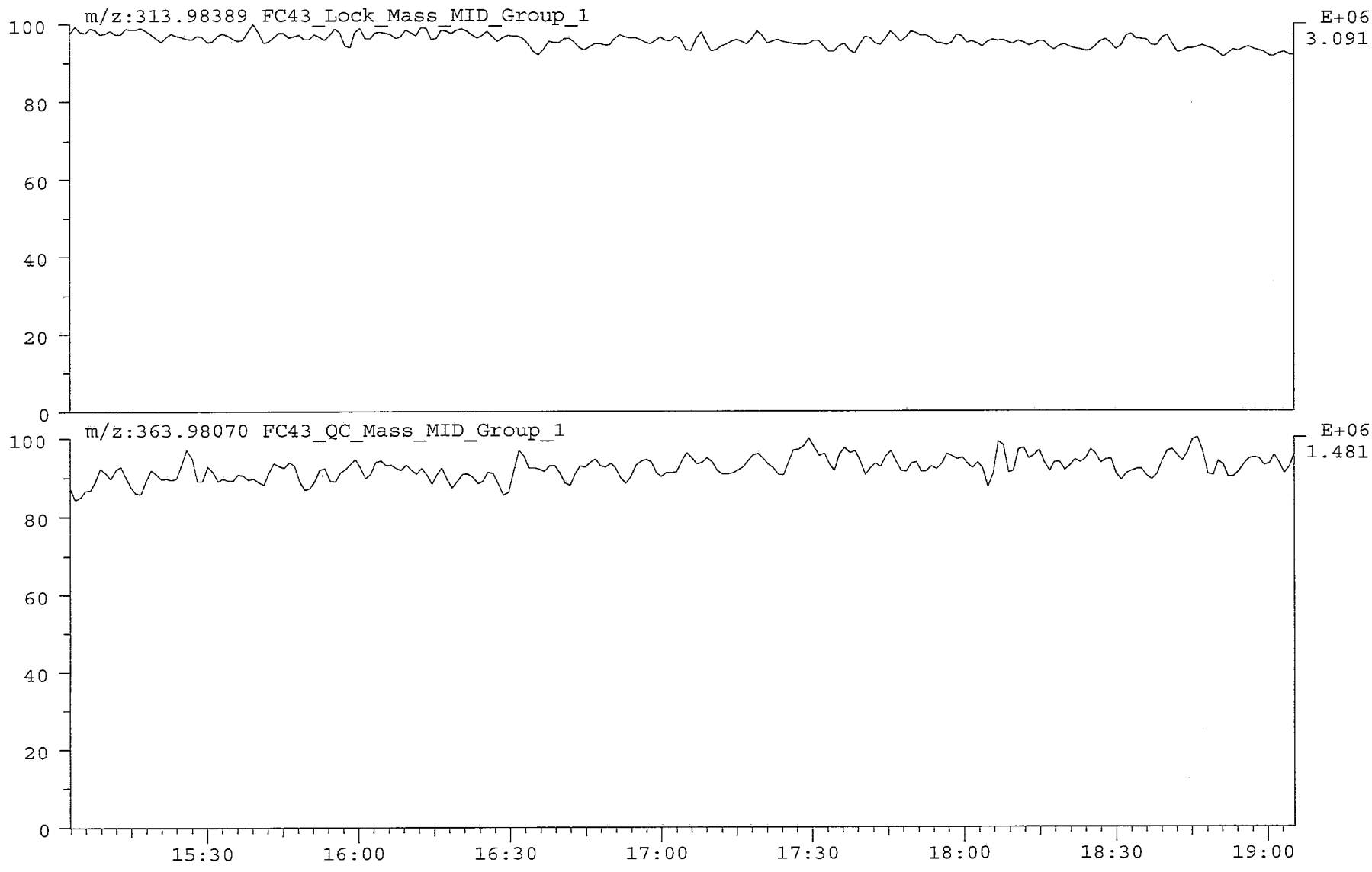
CHRO: d2tm8111 23-Aug-16 Elapse: 17:04.0 536
Samp: WO=m81111ad Meth=9Ac Dil=1 Start : 05:44:39 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9.7g)
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 496 > 576 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d2tm8111                                23-Aug-16   Elapse:  17:04.0      536
Samp:  WO=m81111ad Meth=9Ac Dil=1                          Start :  05:44:39    1155
Comm:  Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (9.7g)
Oper:  LKM                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   416 > 656             Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d2tm8111                                23-Aug-16  Elapse:  17:04.0      536
Samp:  WO=m81111ad Meth=9Ac Dil=1                         Start :  05:44:39    1155
Comm:  Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode:  EI ESI + Q1MS UP LR                                Study :  6217014 (9.7g)
Oper:  LKM                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   416 > 656            Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Tue Aug 23 05:48:07 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 23-Aug-16 05:48:06

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160823022458

MID procedure: 5W_DB225_FC43_SINGLEGC

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	8:00 min	19:30 min	27:30 min	1.00 sec

Mid Masses:
Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

MID Window terminated after 27.500000 minutes
MID Window end time was 27.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	307.9834
BQUAD	2.4000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	18.0000	ECORR	1.0007	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2585.8226
ELEN	-45.0000	EMULT	1802.0000	ENS	210.0000
ENSBR	2.4000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	173.0000	EXSBR	2.5000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	6.7000
FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0496	FVSRC	0.0419
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000

ISTC	260.0000	ISTS	260.0000	LENS_POT	628.0000
LENS_SYM	1.7500	LM	375.8364	LMII	500.0000
LMASS	307.9834	LKM	313.9834	MASS	307.9834
MDAC	3546991.5696	MRANGE	1241.7659	NSAM	200.0000
NSCAN	1160.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	14.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-6.0000	RECURR	0.9001	RELEN	0.0000
RES	10999.8575	RPUSHER	-5.9267	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	307.9834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:         2.8e-005 mbar
Analyzer Penning:     9.6e-008 mbar
Pirani Analyse:       4.4e-003 mbar
Pirani Source:        4.2e-002 mbar
Pirani Inlet System: 5.0e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 10999.

Amplifier Offset: 88.


*** File closed Tue Aug 23 06:15:38 2016
  ***
```

QUAN: d2tm8111.q0 Entries: 26

Data file(s) used
File: d2tm8111 23-Aug-16
Samp: WO=m81111ad Meth=9Ac Dil=1 Start : 05:44:39 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (9
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	15:28	653182.	41451.	15:12	15:43	154.	1	1.0	AVV
321.8775	15:27	1022097.	62245.	15:11	15:42	205.	1	1.0	AVV
319.8805	15:28	653182.	41451.	15:12	15:43	154.	2	5.0	AVV
321.8775	14:34	5927.	1188.	14:28	14:40	205.	2	5.0	ABB
321.8775	14:55	30716.	6637.	14:49	15:02	205.	2	5.0	ABB
321.8775	15:27	1022097.	62245.	15:11	15:42	205.	2	5.0	AVV
331.9202	15:25	1303092.	275104.	15:17	15:32	46.	2	5.0	ABV
331.9202	15:39	3812612.	769154.	15:32	15:49	46.	2	5.0	AVV
333.9171	15:25	1596444.	340159.	15:15	15:32	14.	2	5.0	ABV
333.9171	15:39	4705212.	974053.	15:32	15:47	14.	2	5.0	AVV
327.8683	15:39	7891523.	1672820.	15:30	15:47	78.	1	1.0	AVV
327.8683	15:39	7891523.	1672820.	15:30	15:47	78.	2	5.0	AVV
303.8864	17:05	15673.	3134.	17:00	17:15	72.	1	1.0	AVV
305.8834	17:05	20681.	4072.	16:57	17:11	88.	1	1.0	AVV
303.8864	16:27	3144.	952.	16:23	16:30	72.	2	5.0	ABB
303.8864	16:53	11261.	1937.	16:41	17:00	72.	2	5.0	ABV
303.8864	17:05	15673.	3134.	17:00	17:15	72.	2	5.0	AVV
303.8864	17:21	8961.	1473.	17:15	17:28	72.	2	5.0	AVB
303.8864	17:40	9922.	1606.	17:32	17:44	72.	2	5.0	ABB
305.8834	16:27	5602.	1170.	16:23	16:31	88.	2	5.0	ABB
305.8834	16:53	12158.	2042.	16:42	16:57	88.	2	5.0	ABV
305.8834	17:05	20681.	4072.	16:57	17:11	88.	2	5.0	AVV
305.8834	17:21	9267.	1424.	17:11	17:24	88.	2	5.0	AVB
305.8834	17:39	12889.	2055.	17:30	17:44	88.	2	5.0	ABB
315.9261	17:04	1999126.	358856.	16:54	17:14	61.	2	5.0	AVV
317.9230	17:04	2474937.	441834.	16:48	17:15	48.	2	5.0	AVV

Standards Data
DB-5 Column

TestAmerica Knoxville Dioxin GC/MS Initial Calibration Data Review / Narrative Checklist
Method: 1613B - KNOX-ID-0004-R12

Mass Res.✓ Date/Time:	5-16-14/10:01	Inst:	D2A	Win Filename:	d31405160l	Col Perf Filename:	d31405160l

CS0.5 Filename	CS1Filename	CS2 Filename	CS3 Filename	CS4 Filename	CS5 Filename
d31405161 6	d31405161 1	d31405160 2	d31405161 3	d31405161 4	d31405161 5

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented before beginning the initial calibration?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (MAT) and > 10,000 on FC43 m/z 313.9838, 351.9802 and 363.9807? FC43 m/z 313.9838, 351.9802 and 375.9802? FC43 m/z 375.9802, 401.9770 and 413.9770? FC43 m/z 413.9775, 425.9770 and 463.9738? FC43 m/z 425.9775, 463.9743 and 501.9706? (DFS)		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) or m/z363.9807 (FC43) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
5. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer on their respective columns?		✓			✓
6. Were the five calibration standard solutions, at the concentrations specified in Table 5 of the SOP, analyzed (6 point calibration used for microwave extractions)?		✓			✓
7. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
8. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 3), quantitation ions (Table 21) and formula (Section 10.2.7)?		✓			✓
9. Is the retention time of $^{13}C_{12}$-1,2,3,4-TCDD >25.0 minutes on the DB/Rtx-5 column (15.0 minutes on the DB/Rtx-225 column)?		✓			✓
10. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 3?		✓			✓
11. Are %RSD ≤20% for all unlabeled native analytes except 1,2,3,7,8,9-HxCDD and OCDF?		✓			✓
12. Are %RSD ≤35% for 1,2,3,7,8,9-HxCDD and OCDF and all labeled internal standards?		✓			✓
13. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
14. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP?		✓			✓
15. Was the second source ICV standard analyzed according to Sec 10.2.9 of the SOP?		✓			✓
16. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
17. Were before/after chromatograms reviewed to determine whether the software and manual integrations were appropriate?		✓			✓
18. Were manual integrations documented properly?	✓				✓
19. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
20. Does the ICAL folder contain **complete** data in the following order: Data review checklist, a **complete** run log, Avg. %RSD summary, Ratio summary, Calculation summary, PFK/FC43 resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards, in order from low to high standard, ICV Summary Table, Calculation Summary, and chromatograms?		✓			✓

Analyst:	Date: 5/19/14	2nd Level Reviewer :	Date: 5/19/14
Comments:		Comments:	

ID023R15doc, 041913

TestAmerica Knoxville Dioxin GC/MS Initial Calibration Data Review / Narrative Checklist
Method: 8290/8290A - KNOX-ID-0004-R12

Mass Res. ✓ Date/Time:	5/16/14 10:01	Inst:	D21A	Win Filename:	d31405160w1	Col Perf Filename:	d31405160w1

CS0.5 Filename	CS1 Filename	CS2 Filename	CS3 Filename	CS4 Filename	CS5 Filename
d31405161i6	d31405161i1	d31405161i2	d31405161i3	d31405161i4	d31405161i5

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented before beginning the initial calibration?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (MAT) and > 10,000 on FC43 m/z 313.9838, 351.9802 and 363.9807? FC43 m/z 313.9838, 351.9802 and 375.9802? FC43 m/z 375.9802, 401.9770 and 413.9770? FC43 m/z 413.9775, 425.9770 and 463.9738? FC43 m/z 425.9775, 463.9743 and 501.9706? (DFS)		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) or 363.9807 (FC43) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
5. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer on their respective columns?		✓			✓
6. Were the five calibration standard solutions, at the concentrations specified in Table 5 of the SOP, analyzed (6 point calibration used for microwave extractions)?		✓			✓
7. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
8. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 3), quantitation ions (Table 21), and formula (Section 10.2.7)?		✓			✓
9. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 3?		✓			✓
10. Are %RSD ≤20% for all unlabeled native analytes?		✓			✓
11. **8290**, are %RSD ≤30% for all labeled internal standards?		✓			✓
12. **8090A**, are %RSD ≤20% for all labeled internal standards?		✓			✓
13. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
14. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP?		✓			✓
15. Was the second source ICV standard analyzed according to Sec 10.2.9 of the SOP?		✓			✓
16. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
17. Were before/after chromatograms reviewed to determine whether the software and manual integrations were appropriate?		✓			✓
18. Were manual integrations documented properly?	✓				✓
19. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
20. Does the ICAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, Avg. %RSD summary, Ratio summary, Calculation summary, PFK/FC43 resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards, in order from low to high standard, ICV Summary Table, Calculation Summary, and chromatograms?		✓			✓

Analyst: [signature] Date: 5/19/14	2nd Level Reviewer: [signature] Date: 5/19/14
Comments:	Comments:

TestAmerica Knoxville Dioxin GC/MS Initial Calibration Data Review / Narrative Checklist
Method: 8290/8290A - KNOX-ID-0004-R14

Mass Res. ✓ Date/Time:	5/16/14 10:01	Inst:	D2A	Win Filename:	d31405160w1	Col Perf Filename:	d31405160w1

CS0.5 Filename	CS1 Filename	CS2 Filename	CS3 Filename	CS4 Filename	CS5 Filename
d31405161b	d31405161	d31405161z	d31405161z3	d31405161z4	d31405161z5

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented before beginning the initial calibration?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (MAT) and > 10,000 on FC43 m/z 313.9838, 351.9802 and 363.9807? FC43 m/z 313.9838, 351.9802 and 375.9802? FC43 m/z 375.9802, 401.9770 and 413.9770? FC43 m/z 413.9775, 425.9770 and 463.9738? FC43 m/z 425.9775, 463.9743 and 501.9706? (DFS)		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) or 363.9807 (FC43) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
5. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer on their respective columns?		✓			✓
6. Was DoD Performance check criteria met? Identification of all first and last eluters of the eight homologue retention time windows and documentation by labeling (F/L) on the chromatogram Absolute retention times for switching from one homologous series to the next ≥ 10 seconds for all components of the mixture.		✓			✓
7. Were the five calibration standard solutions, at the concentrations specified in Table 5 of the SOP, analyzed (6 point calibration used for microwave extractions)?		✓			✓
8. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 3), quantitation ions (Table 21), and formula (Section 10.2.7)?		✓			✓
10. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 3?		✓			✓
11. Are %RSD ≤20% for all unlabeled native analytes?		✓			✓
12. **8290**, are %RSD ≤30% for all labeled internal standards?		✓			✓
13. **8090A**, are %RSD ≤20% for all labeled internal standards?		✓			✓
14. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
15. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP?		✓			✓
16. Was the second source ICV standard analyzed according to Sec 10.2.9 of the SOP?		✓			✓
17. Was DoD ICV Criteria met? (For unlabeled standards, RF within ± 20% D of RF established in the ICAL.For labeled standards, RF within ± 30% D of the mean RF established in ICAL.		✓			✓
1. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
2. Were before/after chromatograms reviewed to determine whether the software and manual integrations were appropriate?		✓			✓
3. Were manual integrations documented properly?	✓				✓
18. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
19. Does the ICAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, Avg. %RSD summary, Ratio summary, Calculation summary, PFK/FC43 resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards, in order from low to high standard, ICV Summary Table, Calculation Summary, and chromatograms?		✓			✓

Analyst:	Date: 11/18/14	2nd Level Reviewer :	Date: 11/18/14
Comments:		Comments:	

TESTAMERICA KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT RUN LOG
Inst: DFS2

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
5-16-14	10:01	MID	FC43	d2140516r2	OK	—	Res		Mass Res Cell
5-16-14	10:23	MID	4104:83	d3140516w1	OK	—	WIN		Col Ref line
5-16-14	11:25	MID	Noname	rinse	OK	—	QC		rinses
5-16-14	11:40	MID			OK	—	QC		
5-16-14	11:56	MID			OK	—	QC		
5-16-14	12:12	MID			OK	—	QC		
5-16-14	12:25	MID			OK	—	QC		
5-16-14	12:40	MID			OK	—	QC		
5-16-14	13:02	MID	4104:85 CS0.5	d3140516i6	OK	—	ICAL		8290/1613 ICAL
5-16-14	14:26	MID	4104:74 CS1	d3140516i1	OK	—	ICAL		
5-16-14	15:26	MID	4104:74 CS2	d3140516i2	OK	—	ICAL		
5-16-14	16:27	MID	4104:74 CS3	d3140516i3	OK	—	ICAL		
5-16-14	17:29	MID	4104:74 CS4	d3140516i4	OK	—	ICAL		
5-16-14	18:31	MID	4104:74 CS5	d3140516i5	OK	—	ICAL		
5-16-14	19:33	MID	Noname	rinse	OK	—	QC		rinse
5-16-14	19:48	MID			OK	—	QC		
5-16-14	20:04	MID			OK	—	QC		
5-16-14	20:20	MID			OK	—	QC		
5-16-14	20:36	MID	4104:76	d3140516SS	OK	—	SS		Second Source
5-19-14	10:51	MID	FC43	d2140519r1	OK	—	Res		Mass Res Cell
5-19-14	11:02	MID	4104:83	d3140519S1	OK	—	Qu WIN		Qu WIN
5-19-14		MID	M3RK41AC	d2tm3rk4c		HW	QC		H4E160000-033C

USD 5-16-14

Read and Understood by:

_____ Date: _____

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TestAmerica Knoxville

IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

ICAL ID: 69004 - 20140516I
Date: 05/16/14 14:26
Method: F8o - DX1613B

Instrument: D2A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1182082

Level	Filename	Date/Time	Sample ID	Result Directory
CS1:	d3140516i1	05/16/14 14:26	4104:74CS1	/20140516i/d3140516i1.d
CS2:	d3140516i2	05/16/14 15:26	4104:74CS2	/20140516i/d3140516i2.d
CS3:	d3140516i3	05/16/14 16:27	4104:74CS3	/20140516i/d3140516i3.d
CS4:	d3140516i4	05/16/14 17:29	4104:74CS4	/20140516i/d3140516i4.d
CS5:	d3140516i5	05/16/14 18:31	4104:74CS5	/20140516i/d3140516i5.d

	Response Factors								
Analyte	CS1	CS2	CS3	CS4	CS5	Mean RF	%RSD	Limit	Valid?
2,3,7,8-TCDD	1.188	1.233	1.151	1.133	1.151	1.171	3.4	20.0	True
Total TCDD						1.171	0.0	20.0	True
2,3,7,8-TCDF	1.165	1.080	1.077	1.068	1.057	1.090	4.0	20.0	True
Total TCDF						1.090	0.0	20.0	True
1,2,3,7,8-PeCDD	1.124	1.054	1.013	1.001	1.045	1.047	4.6	20.0	True
Total PeCDD						1.047	0.0	20.0	True
1,2,3,7,8-PeCDF	1.255	1.184	1.143	1.150	1.203	1.187	3.8	20.0	True
2,3,4,7,8-PeCDF	1.168	1.095	1.066	1.063	1.131	1.105	4.1	20.0	True
Total PeCDF						1.146	0.0	20.0	True
1,2,3,4,7,8-HxCDD	1.223	1.123	1.117	1.100	1.136	1.140	4.2	20.0	True
1,2,3,6,7,8-HxCDD	1.203	1.180	1.127	1.087	1.134	1.146	4.0	20.0	True
1,2,3,7,8,9-HxCDD	1.240	1.255	1.166	1.165	1.226	1.210	3.5	35.0	True
Total HxCDD	1.222	1.186	1.137	1.117	1.166	1.166	0.0	20.0	True
1,2,3,4,7,8-HxCDF	1.429	1.350	1.327	1.312	1.401	1.364	3.6	20.0	True
1,2,3,6,7,8-HxCDF	1.413	1.264	1.237	1.212	1.263	1.278	6.1	20.0	True
2,3,4,6,7,8-HxCDF	1.363	1.227	1.228	1.231	1.288	1.267	4.7	20.0	True
1,2,3,7,8,9-HxCDF	1.391	1.286	1.234	1.247	1.268	1.285	4.9	20.0	True
Total HxCDF						1.299	0.0	20.0	True
1,2,3,4,6,7,8-HpCDD	1.178	1.124	1.113	1.085	1.105	1.121	3.1	20.0	True
Total HpCDD						1.121	0.0	20.0	True
1,2,3,4,6,7,8-HpCDF	1.604	1.504	1.459	1.446	1.472	1.497	4.2	20.0	True
1,2,3,4,7,8,9-HpCDF	1.423	1.404	1.350	1.350	1.388	1.383	2.3	20.0	True
Total HpCDF						1.440	0.0	20.0	True
OCDD	1.428	1.198	1.202	1.158	1.230	1.243	8.6	20.0	True
OCDF	1.155	1.131	1.100	1.065	1.146	1.119	3.3	20.0	True
13C-2,3,7,8-TCDD	1.048	1.066	1.054	1.077	1.090	1.067	1.6	35.0	True
13C-2,3,7,8-TCDF	1.724	1.755	1.737	1.766	1.768	1.750	1.1	35.0	True
13C-1,2,3,7,8-PeCDD	0.828	0.815	0.829	0.909	0.984	0.873	8.3	35.0	True
13C-1,2,3,7,8-PeCDF	1.311	1.292	1.336	1.404	1.499	1.368	6.2	35.0	True
13C-2,3,4,7,8-PeCDF	1.324	1.322	1.331	1.426	1.501	1.381	5.8	35.0	True
13C-1,2,3,4,7,8-HxCDD	0.899	0.896	0.893	0.894	0.881	0.893	0.8	35.0	True
13C-1,2,3,6,7,8-HxCDD	0.920	0.922	0.941	0.960	0.904	0.929	2.3	35.0	True
13C-1,2,3,4,7,8-HxCDF	1.232	1.234	1.223	1.211	1.166	1.213	2.3	35.0	True
13C-1,2,3,6,7,8-HxCDF	1.466	1.499	1.520	1.505	1.452	1.489	1.9	35.0	True
13C-2,3,4,6,7,8-HxCDF	1.359	1.385	1.367	1.338	1.283	1.346	2.9	35.0	True
13C-1,2,3,7,8,9-HxCDF	1.186	1.232	1.212	1.212	1.206	1.210	1.4	35.0	True
13C-1,2,3,4,6,7,8-HpCDD	0.835	0.827	0.807	0.826	0.820	0.823	1.2	35.0	True
13C-1,2,3,4,6,7,8-HpCDF	1.066	1.087	1.064	1.066	1.064	1.069	0.9	35.0	True
13C-1,2,3,4,7,8,9-HpCDF	0.908	0.902	0.892	0.904	0.914	0.904	0.9	35.0	True
13C-OCDD	0.685	0.706	0.669	0.734	0.745	0.708	4.5	35.0	True
13C-OCDF	1.040	1.049	1.019	1.115	1.137	1.072	4.8	35.0	True
37Cl4-2,3,7,8-TCDD	1.268	1.208	1.175	1.216	1.232	1.220	2.8	35.0	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	35.0	True
13C-1,2,3,7,8,9-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	35.0	True

TestAmerica
Knoxville

IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

ICAL ID: 69004 - 20140516I
Date: 05/16/14 14:26
Method: F8o - DX1613B

Instrument: D2A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1182082

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d3140516i1	05/16/14	14:26	4104:74CS1	/20140516i/d3140516i1.d
CS2:	d3140516i2	05/16/14	15:26	4104:74CS2	/20140516i/d3140516i2.d
CS3:	d3140516i3	05/16/14	16:27	4104:74CS3	/20140516i/d3140516i3.d
CS4:	d3140516i4	05/16/14	17:29	4104:74CS4	/20140516i/d3140516i4.d
CS5:	d3140516i5	05/16/14	18:31	4104:74CS5	/20140516i/d3140516i5.d

Ion Abundance Ratios

Analyte	M/Z's	CS1	CS2	CS3	CS4	CS5	Ratio Limits	Valid?
2,3,7,8-TCDD	M/M+2	0.70	0.86	0.77	0.80	0.80	0.65-0.89	True
2,3,7,8-TCDF	M/M+2	0.75	0.81	0.79	0.80	0.79	0.65-0.89	True
1,2,3,7,8-PeCDD	M+2/M+4	1.76	1.59	1.56	1.56	1.59	1.32-1.78	True
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.73	1.60	1.58	1.60	1.32-1.78	True
2,3,4,7,8-PeCDF	M+2/M+4	1.52	1.58	1.58	1.59	1.60	1.32-1.78	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.21	1.31	1.27	1.24	1.26	1.05-1.43	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.20	1.27	1.27	1.27	1.05-1.43	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.29	1.28	1.27	1.26	1.26	1.05-1.43	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.24	1.26	1.24	1.25	1.05-1.43	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.19	1.30	1.22	1.25	1.25	1.05-1.43	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.30	1.25	1.26	1.25	1.05-1.43	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.25	1.26	1.25	1.26	1.05-1.43	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	1.02	1.05	1.06	1.05	0.88-1.20	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.04	1.04	1.05	1.04	1.03	0.88-1.20	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	1.05	1.07	1.05	1.04	0.88-1.20	True
OCDD	M+2/M+4	0.84	0.91	0.89	0.90	0.89	0.76-1.02	True
OCDF	M+2/M+4	0.90	0.94	0.91	0.92	0.90	0.76-1.02	True
13C-2,3,7,8-TCDD	M/M+2	0.82	0.83	0.81	0.83	0.80	0.65-0.89	True
13C-2,3,7,8-TCDF	M/M+2	0.80	0.81	0.81	0.81	0.79	0.65-0.89	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.60	1.63	1.59	1.61	1.62	1.32-1.78	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.59	1.57	1.59	1.59	1.32-1.78	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.55	1.57	1.59	1.61	1.32-1.78	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.26	1.24	1.28	1.26	1.05-1.43	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.20	1.26	1.26	1.28	1.05-1.43	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.53	0.53	0.53	0.54	0.43-0.59	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.54	0.53	0.54	0.54	0.43-0.59	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.54	0.55	0.53	0.52	0.43-0.59	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.55	0.54	0.54	0.55	0.43-0.59	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	1.09	1.10	1.10	1.07	0.88-1.20	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.47	0.44	0.46	0.46	0.37-0.51	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.47	0.45	0.45	0.45	0.37-0.51	True
13C-OCDD	M+2/M+4	0.91	0.92	0.91	0.92	0.92	0.76-1.02	True
13C-OCDF	M+2/M+4	0.92	0.92	0.90	0.91	0.89	0.76-1.02	True
37Cl4-2,3,7,8-TCDD	M							
13C-1,2,3,4-TCDD	M/M+2	0.81	0.82	0.81	0.82	0.81	0.65-0.89	True
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.25	1.26	1.25	1.29	1.05-1.43	True

TestAmerica
Knoxville

IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

ICAL ID: 69004 - 20140516I
Date: 05/16/14 14:26
Method: F8o - DX1613B

Instrument: D2A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1182082

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d3140516i1	05/16/14	14:26	4104:74CS1	/20140516i/d3140516i1.d
CS2:	d3140516i2	05/16/14	15:26	4104:74CS2	/20140516i/d3140516i2.d
CS3:	d3140516i3	05/16/14	16:27	4104:74CS3	/20140516i/d3140516i3.d
CS4:	d3140516i4	05/16/14	17:29	4104:74CS4	/20140516i/d3140516i4.d
CS5:	d3140516i5	05/16/14	18:31	4104:74CS5	/20140516i/d3140516i5.d

Relative Retention Time

Analyte	CS1	CS2	CS3	CS4	CS5	RRT Limits		Valid?
2,3,7,8-TCDD	1.002	1.002	1.002	1.002	1.001	0.999	-1.002	True
2,3,7,8-TCDF	1.001	1.002	1.001	1.002	1.002	0.999	-1.003	True
1,2,3,7,8-PeCDD	1.000	1.000	1.001	1.000	1.000	0.999	-1.002	True
1,2,3,7,8-PeCDF	1.000	1.000	1.000	1.000	1.000	0.999	-1.002	True
2,3,4,7,8-PeCDF	1.000	1.000	1.001	1.000	1.000	0.999	-1.002	True
1,2,3,4,7,8-HxCDD	1.001	1.000	1.000	1.000	1.000	0.999	-1.001	True
1,2,3,6,7,8-HxCDD	1.000	1.000	1.000	1.000	1.000	0.998	-1.004	True
1,2,3,7,8,9-HxCDD	1.009	1.009	1.009	1.009	1.009	1.000	-1.019	True
1,2,3,4,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	0.999	-1.001	True
1,2,3,6,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	0.997	-1.005	True
2,3,4,6,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	0.999	-1.001	True
1,2,3,7,8,9-HxCDF	1.000	1.000	1.000	1.000	1.000	0.999	-1.001	True
1,2,3,4,6,7,8-HpCDD	1.000	1.000	1.000	1.000	1.000	0.999	-1.001	True
1,2,3,4,6,7,8-HpCDF	1.000	1.000	1.000	1.000	1.000	0.999	-1.001	True
1,2,3,4,7,8,9-HpCDF	1.000	1.000	1.001	1.001	1.000	0.999	-1.001	True
OCDD	1.000	1.000	1.000	1.000	1.000	0.999	-1.001	True
OCDF	1.000	1.001	1.000	1.000	1.000	0.999	-1.008	True
13C-2,3,7,8-TCDD	1.017	1.017	1.017	1.017	1.017	0.976	-1.043	True
13C-2,3,7,8-TCDF	0.950	0.950	0.950	0.950	0.950	0.923	-1.103	True
13C-1,2,3,7,8-PeCDD	1.311	1.311	1.311	1.311	1.311	1.000	-1.567	True
13C-1,2,3,7,8-PeCDF	1.256	1.256	1.256	1.256	1.256	1.000	-1.425	True
13C-2,3,4,7,8-PeCDF	1.295	1.295	1.294	1.295	1.294	1.011	-1.526	True
13C-1,2,3,4,7,8-HxCDD	0.989	0.989	0.989	0.989	0.989	0.977	-1.000	True
13C-1,2,3,6,7,8-HxCDD	0.992	0.991	0.992	0.991	0.991	0.981	-1.003	True
13C-1,2,3,4,7,8-HxCDF	0.966	0.966	0.966	0.966	0.966	0.944	-0.970	True
13C-1,2,3,6,7,8-HxCDF	0.969	0.969	0.969	0.969	0.969	0.949	-0.975	True
13C-2,3,4,6,7,8-HxCDF	0.985	0.985	0.985	0.985	0.985	0.977	-1.047	True
13C-1,2,3,7,8,9-HxCDF	1.006	1.006	1.006	1.006	1.006	0.959	-1.021	True
13C-1,2,3,4,6,7,8-HpCDD	1.097	1.097	1.097	1.097	1.097	1.086	-1.110	True
13C-1,2,3,4,6,7,8-HpCDF	1.059	1.059	1.059	1.059	1.059	1.043	-1.085	True
13C-1,2,3,4,7,8,9-HpCDF	1.110	1.110	1.110	1.110	1.111	1.057	-1.151	True
13C-OCDD	1.187	1.187	1.187	1.187	1.187	1.032	-1.311	True
13C-OCDF	1.190	1.190	1.190	1.190	1.190	1.032	-1.311	True
37Cl4-2,3,7,8-TCDD	1.019	1.019	1.018	1.018	1.018	0.989	-1.052	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	-1.000	True
13C-1,2,3,7,8,9-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	-1.000	True

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IsoCalc Initial Calibration Report

TCDD/F in Drinking Water by EPA Method 1613B

ICAL ID: 69007 - 20140516I
Date: 05/16/14 14:26
Method: L1 - DX1613_L

Instrument: D2A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1182082

Level	Filename	Date/Time	Sample ID	Result Directory
CS1:	d3140516i1	05/16/14 14:26	4104:74CS1	/20140516i/d3140516i1.d
CS2:	d3140516i2	05/16/14 15:26	4104:74CS2	/20140516i/d3140516i2.d
CS3:	d3140516i3	05/16/14 16:27	4104:74CS3	/20140516i/d3140516i3.d
CS4:	d3140516i4	05/16/14 17:29	4104:74CS4	/20140516i/d3140516i4.d
CS5:	d3140516i5	05/16/14 18:31	4104:74CS5	/20140516i/d3140516i5.d

Response Factors

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RF	%RSD	Limit	Valid?
2,3,7,8-TCDD	1.188	1.233	1.151	1.133	1.151	1.171	3.4	20.0	True
2,3,7,8-TCDF	1.165	1.080	1.077	1.068	1.057	1.090	4.0	20.0	True
37Cl4-2,3,7,8-TCDD	1.268	1.208	1.175	1.216	1.232	1.220	2.8	35.0	True
13C-2,3,7,8-TCDD	1.048	1.066	1.054	1.077	1.090	1.067	1.6	35.0	True
13C-2,3,7,8-TCDF	1.724	1.755	1.737	1.766	1.768	1.750	1.1	35.0	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	0.0	True

KH 5/19/14

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IsoCalc Initial Calibration Report

TCDD/F in Drinking Water by EPA Method 1613B

ICAL ID: 69007 - 20140516I
Date: 05/16/14 14:26
Method: L1 - DX1613_L

Instrument: D2A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1182082

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d3140516i1	05/16/14	14:26	4104:74CS1	/20140516i/d3140516i1.d
CS2:	d3140516i2	05/16/14	15:26	4104:74CS2	/20140516i/d3140516i2.d
CS3:	d3140516i3	05/16/14	16:27	4104:74CS3	/20140516i/d3140516i3.d
CS4:	d3140516i4	05/16/14	17:29	4104:74CS4	/20140516i/d3140516i4.d
CS5:	d3140516i5	05/16/14	18:31	4104:74CS5	/20140516i/d3140516i5.d

Ion Abundance Ratios

Analyte	M/Z's	CS1	CS2	CS3	CS4	CS5	Ratio Limits	Valid?
2,3,7,8-TCDD	M/M+2	0.70	0.86	0.77	0.80	0.80	0.65-0.89	True
2,3,7,8-TCDF	M/M+2	0.75	0.81	0.79	0.80	0.79	0.65-0.89	True
37Cl4-2,3,7,8-TCDD	M							
13C-2,3,7,8-TCDD	M/M+2	0.82	0.83	0.81	0.83	0.80	0.65-0.89	True
13C-2,3,7,8-TCDF	M/M+2	0.80	0.81	0.81	0.81	0.79	0.65-0.89	True
13C-1,2,3,4-TCDD	M/M+2	0.81	0.82	0.81	0.82	0.81	0.65-0.89	True

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IsoCalc Initial Calibration Report

TCDD/F in Drinking Water by EPA Method 1613B

ICAL ID: 69007 - 20140516I
Date: 05/16/14 14:26
Method: L1 - DX1613_L

Instrument: D2A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1182082

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d3140516i1	05/16/14	14:26	4104:74CS1	/20140516i/d3140516i1.d
CS2:	d3140516i2	05/16/14	15:26	4104:74CS2	/20140516i/d3140516i2.d
CS3:	d3140516i3	05/16/14	16:27	4104:74CS3	/20140516i/d3140516i3.d
CS4:	d3140516i4	05/16/14	17:29	4104:74CS4	/20140516i/d3140516i4.d
CS5:	d3140516i5	05/16/14	18:31	4104:74CS5	/20140516i/d3140516i5.d

Relative Retention Time

Analyte	CS1	CS2	CS3	CS4	CS5	RRT Limits		Valid?
2,3,7,8-TCDD	1.002	1.002	1.002	1.002	1.001	0.999	-1.002	True
2,3,7,8-TCDF	1.001	1.002	1.001	1.002	1.002	0.999	-1.003	True
37Cl4-2,3,7,8-TCDD	1.019	1.019	1.018	1.018	1.018	0.989	-1.052	True
13C-2,3,7,8-TCDD	1.017	1.017	1.017	1.017	1.017	0.976	-1.043	True
13C-2,3,7,8-TCDF	0.950	0.950	0.950	0.950	0.950	0.923	-1.103	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	-1.000	True

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IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 8290 w/15 IS's (13C-OCDF

ICAL ID: 69006 - 20140516I
Date: 05/16/14 14:26
Method: IN2o - DX8290_2

Instrument: D2A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1182082

Level	Filename	Date/Time	Sample ID	Result Directory
CS1:	d3140516i1	05/16/14 14:26	4104:74CS1	/20140516i/d3140516i1.d
CS2:	d3140516i2	05/16/14 15:26	4104:74CS2	/20140516i/d3140516i2.d
CS3:	d3140516i3	05/16/14 16:27	4104:74CS3	/20140516i/d3140516i3.d
CS4:	d3140516i4	05/16/14 17:29	4104:74CS4	/20140516i/d3140516i4.d
CS5:	d3140516i5	05/16/14 18:31	4104:74CS5	/20140516i/d3140516i5.d

	Response Factors								
Analyte	CS1	CS2	CS3	CS4	CS5	Mean RF	%RSD	Limit	Valid?
2,3,7,8-TCDD	1.188	1.233	1.151	1.133	1.151	1.171	3.4	20.0	True
Total TCDD						1.171	0.0	20.0	True
2,3,7,8-TCDF	1.165	1.080	1.077	1.068	1.057	1.090	4.0	20.0	True
Total TCDF						1.090	0.0	20.0	True
1,2,3,7,8-PeCDD	1.124	1.054	1.013	1.001	1.045	1.047	4.6	20.0	True
Total PeCDD						1.047	0.0	20.0	True
1,2,3,7,8-PeCDF	1.255	1.184	1.143	1.150	1.203	1.187	3.8	20.0	True
2,3,4,7,8-PeCDF	1.168	1.095	1.066	1.063	1.131	1.105	4.1	20.0	True
Total PeCDF						1.146	0.0	20.0	True
1,2,3,4,7,8-HxCDD	1.223	1.123	1.117	1.100	1.136	1.140	4.2	20.0	True
1,2,3,6,7,8-HxCDD	1.203	1.180	1.127	1.087	1.134	1.146	4.0	20.0	True
1,2,3,7,8,9-HxCDD	1.240	1.255	1.166	1.165	1.226	1.210	3.5	20.0	True
Total HxCDD						1.166	0.0	20.0	True
1,2,3,4,7,8-HxCDF	1.429	1.350	1.327	1.312	1.401	1.364	3.6	20.0	True
1,2,3,6,7,8-HxCDF	1.413	1.264	1.237	1.212	1.263	1.278	6.1	20.0	True
2,3,4,6,7,8-HxCDF	1.363	1.227	1.228	1.231	1.288	1.267	4.7	20.0	True
1,2,3,7,8,9-HxCDF	1.391	1.286	1.234	1.247	1.268	1.285	4.9	20.0	True
Total HxCDF						1.299	0.0	20.0	True
1,2,3,4,6,7,8-HpCDD	1.178	1.124	1.113	1.085	1.105	1.121	3.1	20.0	True
Total HpCDD						1.121	0.0	20.0	True
1,2,3,4,6,7,8-HpCDF	1.604	1.504	1.459	1.446	1.472	1.497	4.2	20.0	True
1,2,3,4,7,8,9-HpCDF	1.423	1.404	1.350	1.350	1.388	1.383	2.3	20.0	True
Total HpCDF						1.440	0.0	20.0	True
OCDD	1.428	1.198	1.202	1.158	1.230	1.243	8.6	20.0	True
OCDF	1.155	1.131	1.100	1.065	1.146	1.119	3.3	20.0	True
13C-2,3,7,8-TCDD	1.048	1.066	1.054	1.077	1.090	1.067	1.6	30.0	True
13C-2,3,7,8-TCDF	1.724	1.755	1.737	1.766	1.768	1.750	1.1	30.0	True
13C-1,2,3,7,8-PeCDD	0.828	0.815	0.829	0.909	0.984	0.873	8.3	30.0	True
13C-1,2,3,7,8-PeCDF	1.311	1.292	1.336	1.404	1.499	1.368	6.2	30.0	True
13C-2,3,4,7,8-PeCDF	1.324	1.322	1.331	1.426	1.501	1.381	5.8	30.0	True
13C-1,2,3,4,7,8-HxCDD	0.899	0.896	0.893	0.894	0.881	0.893	0.8	30.0	True
13C-1,2,3,6,7,8-HxCDD	0.920	0.922	0.941	0.960	0.904	0.929	2.3	30.0	True
13C-1,2,3,4,7,8-HxCDF	1.232	1.234	1.223	1.211	1.166	1.213	2.3	30.0	True
13C-1,2,3,6,7,8-HxCDF	1.466	1.499	1.520	1.505	1.452	1.489	1.9	30.0	True
13C-2,3,4,6,7,8-HxCDF	1.359	1.385	1.367	1.338	1.283	1.346	2.9	30.0	True
13C-1,2,3,7,8,9-HxCDF	1.186	1.232	1.212	1.212	1.206	1.210	1.4	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	0.835	0.827	0.807	0.826	0.820	0.823	1.2	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	1.066	1.087	1.064	1.066	1.064	1.069	0.9	30.0	True
13C-1,2,3,4,7,8,9-HpCDF	0.908	0.902	0.892	0.904	0.914	0.904	0.9	30.0	True
13C-OCDD	0.685	0.706	0.669	0.734	0.745	0.708	4.5	30.0	True
13C-OCDF	1.040	1.049	1.019	1.115	1.137	1.072	4.8	30.0	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	30.0	True
13C-1,2,3,7,8,9-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	30.0	True

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IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 8290 w/15 IS's (13C-OCDF

ICAL ID: 69006 - 20140516I
Date: 05/16/14 14:26
Method: IN2o - DX8290_2

Instrument: D2A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1182082

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d3140516i1	05/16/14	14:26	4104:74CS1	/20140516i/d3140516i1.d
CS2:	d3140516i2	05/16/14	15:26	4104:74CS2	/20140516i/d3140516i2.d
CS3:	d3140516i3	05/16/14	16:27	4104:74CS3	/20140516i/d3140516i3.d
CS4:	d3140516i4	05/16/14	17:29	4104:74CS4	/20140516i/d3140516i4.d
CS5:	d3140516i5	05/16/14	18:31	4104:74CS5	/20140516i/d3140516i5.d

Ion Abundance Ratios

Analyte	M/Z's	CS1	CS2	CS3	CS4	CS5	Ratio Limits	Valid?
2,3,7,8-TCDD	M/M+2	0.70	0.86	0.77	0.80	0.80	0.65-0.89	True
2,3,7,8-TCDF	M/M+2	0.75	0.81	0.79	0.80	0.79	0.65-0.89	True
1,2,3,7,8-PeCDD	M+2/M+4	1.76	1.59	1.56	1.56	1.59	1.32-1.78	True
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.73	1.60	1.58	1.60	1.32-1.78	True
2,3,4,7,8-PeCDF	M+2/M+4	1.52	1.58	1.58	1.59	1.60	1.32-1.78	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.21	1.31	1.27	1.24	1.26	1.05-1.43	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.20	1.27	1.27	1.27	1.05-1.43	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.29	1.28	1.27	1.26	1.26	1.05-1.43	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.24	1.26	1.24	1.25	1.05-1.43	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.19	1.30	1.22	1.25	1.25	1.05-1.43	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.30	1.25	1.26	1.25	1.05-1.43	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.25	1.26	1.25	1.26	1.05-1.43	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	1.02	1.05	1.06	1.05	0.88-1.20	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.04	1.04	1.05	1.04	1.03	0.88-1.20	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	1.05	1.07	1.05	1.04	0.88-1.20	True
OCDD	M+2/M+4	0.84	0.91	0.89	0.90	0.89	0.76-1.02	True
OCDF	M+2/M+4	0.90	0.94	0.91	0.92	0.90	0.76-1.02	True
13C-2,3,7,8-TCDD	M/M+2	0.82	0.83	0.81	0.83	0.80	0.65-0.89	True
13C-2,3,7,8-TCDF	M/M+2	0.80	0.81	0.81	0.81	0.79	0.65-0.89	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.60	1.63	1.59	1.61	1.62	1.32-1.78	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.59	1.57	1.59	1.59	1.32-1.78	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.55	1.57	1.59	1.61	1.32-1.78	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.26	1.24	1.28	1.26	1.05-1.43	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.20	1.26	1.26	1.28	1.05-1.43	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.53	0.53	0.53	0.54	0.43-0.59	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.54	0.53	0.54	0.54	0.43-0.59	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.54	0.55	0.53	0.52	0.43-0.59	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.55	0.54	0.54	0.55	0.43-0.59	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	1.09	1.10	1.10	1.07	0.88-1.20	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.47	0.44	0.46	0.46	0.37-0.51	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.47	0.45	0.45	0.45	0.37-0.51	True
13C-OCDD	M+2/M+4	0.91	0.92	0.91	0.92	0.92	0.76-1.02	True
13C-OCDF	M+2/M+4	0.92	0.92	0.90	0.91	0.89	0.76-1.02	True
13C-1,2,3,4-TCDD	M/M+2	0.81	0.82	0.81	0.82	0.81	0.65-0.89	True
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.25	1.26	1.25	1.29	1.05-1.43	True

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IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 8290 w/15 IS's (13C-OCDF

ICAL ID: 69006 - 20140516I
Date: 05/16/14 14:26
Method: IN2o - DX8290_2

Instrument: D2A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1182082

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d3140516i1	05/16/14	14:26	4104:74CS1	/20140516i/d3140516i1.d
CS2:	d3140516i2	05/16/14	15:26	4104:74CS2	/20140516i/d3140516i2.d
CS3:	d3140516i3	05/16/14	16:27	4104:74CS3	/20140516i/d3140516i3.d
CS4:	d3140516i4	05/16/14	17:29	4104:74CS4	/20140516i/d3140516i4.d
CS5:	d3140516i5	05/16/14	18:31	4104:74CS5	/20140516i/d3140516i5.d

Relative Retention Time

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RRT	Range	Window
2,3,7,8-TCDD	1.002	1.002	1.002	1.002	1.001	1.002	1.002-1.002	0.000
2,3,7,8-TCDF	1.001	1.002	1.001	1.002	1.002	1.002	1.001-1.002	0.001
1,2,3,7,8-PeCDD	1.000	1.000	1.001	1.000	1.000	1.000	1.000-1.001	0.001
1,2,3,7,8-PeCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
2,3,4,7,8-PeCDF	1.000	1.000	1.001	1.000	1.000	1.000	1.000-1.001	0.001
1,2,3,4,7,8-HxCDD	1.001	1.000	1.000	1.000	1.000	1.000	1.000-1.001	0.001
1,2,3,6,7,8-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,7,8,9-HxCDD	1.009	1.009	1.009	1.009	1.009	1.009	1.009-1.009	0.000
1,2,3,4,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,6,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
2,3,4,6,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,7,8,9-HxCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,4,6,7,8-HpCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,4,6,7,8-HpCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,4,7,8,9-HpCDF	1.000	1.000	1.001	1.001	1.000	1.000	1.000-1.001	0.001
OCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
OCDF	1.000	1.001	1.000	1.000	1.000	1.000	1.000-1.001	0.001
13C-2,3,7,8-TCDD	1.017	1.017	1.017	1.017	1.017	1.017	1.017-1.017	0.000
13C-2,3,7,8-TCDF	0.950	0.950	0.950	0.950	0.950	0.950	0.950-0.950	0.000
13C-1,2,3,7,8-PeCDD	1.311	1.311	1.311	1.311	1.311	1.311	1.311-1.311	0.000
13C-1,2,3,7,8-PeCDF	1.256	1.256	1.256	1.256	1.256	1.256	1.256-1.256	0.000
13C-2,3,4,7,8-PeCDF	1.295	1.295	1.294	1.295	1.294	1.295	1.294-1.295	0.001
13C-1,2,3,4,7,8-HxCDD	0.989	0.989	0.989	0.989	0.989	0.989	0.989-0.989	0.000
13C-1,2,3,6,7,8-HxCDD	0.992	0.991	0.992	0.991	0.991	0.991	0.991-0.992	0.001
13C-1,2,3,4,7,8-HxCDF	0.966	0.966	0.966	0.966	0.966	0.966	0.966-0.966	0.000
13C-1,2,3,6,7,8-HxCDF	0.969	0.969	0.969	0.969	0.969	0.969	0.969-0.969	0.000
13C-2,3,4,6,7,8-HxCDF	0.985	0.985	0.985	0.985	0.985	0.985	0.985-0.985	0.000
13C-1,2,3,7,8,9-HxCDF	1.006	1.006	1.006	1.006	1.006	1.006	1.006-1.006	0.000
13C-1,2,3,4,6,7,8-HpCDD	1.097	1.097	1.097	1.097	1.097	1.097	1.097-1.097	0.000
13C-1,2,3,4,6,7,8-HpCDF	1.059	1.059	1.059	1.059	1.059	1.059	1.059-1.059	0.000
13C-1,2,3,4,7,8,9-HpCDF	1.110	1.110	1.110	1.110	1.111	1.110	1.110-1.110	0.000
13C-OCDD	1.187	1.187	1.187	1.187	1.187	1.187	1.187-1.187	0.000
13C-OCDF	1.190	1.190	1.190	1.190	1.190	1.190	1.190-1.190	0.000
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
13C-1,2,3,7,8,9-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000

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IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

ICAL ID: 69008 - 20140516I
Date: 05/16/14 14:26
Method: 9Ao - DX8290A

Instrument: D2A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1182082

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d3140516i1	05/16/14	14:26	4104:74CS1	/20140516i/d3140516i1.d
CS2:	d3140516i2	05/16/14	15:26	4104:74CS2	/20140516i/d3140516i2.d
CS3:	d3140516i3	05/16/14	16:27	4104:74CS3	/20140516i/d3140516i3.d
CS4:	d3140516i4	05/16/14	17:29	4104:74CS4	/20140516i/d3140516i4.d
CS5:	d3140516i5	05/16/14	18:31	4104:74CS5	/20140516i/d3140516i5.d

Analyte	Response Factors CS1	CS2	CS3	CS4	CS5	Mean RF	%RSD	Limit	Valid?
2,3,7,8-TCDD	1.188	1.233	1.151	1.133	1.151	1.171	3.4	20.0	True
Total TCDD						1.171	0.0	20.0	True
2,3,7,8-TCDF	1.165	1.080	1.077	1.068	1.057	1.090	4.0	20.0	True
Total TCDF						1.090	0.0	20.0	True
1,2,3,7,8-PeCDD	1.124	1.054	1.013	1.001	1.045	1.047	4.6	20.0	True
Total PeCDD						1.047	0.0	20.0	True
1,2,3,7,8-PeCDF	1.255	1.184	1.143	1.150	1.203	1.187	3.8	20.0	True
2,3,4,7,8-PeCDF	1.168	1.095	1.066	1.063	1.131	1.105	4.1	20.0	True
Total PeCDF						1.146	0.0	20.0	True
1,2,3,4,7,8-HxCDD	1.223	1.123	1.117	1.100	1.136	1.140	4.2	20.0	True
1,2,3,6,7,8-HxCDD	1.203	1.180	1.127	1.087	1.134	1.146	4.0	20.0	True
1,2,3,7,8,9-HxCDD	1.240	1.255	1.166	1.165	1.226	1.210	3.5	20.0	True
Total HxCDD						1.166	0.0	20.0	True
1,2,3,4,7,8-HxCDF	1.429	1.350	1.327	1.312	1.401	1.364	3.6	20.0	True
1,2,3,6,7,8-HxCDF	1.413	1.264	1.237	1.212	1.263	1.278	6.1	20.0	True
2,3,4,6,7,8-HxCDF	1.363	1.227	1.228	1.231	1.288	1.267	4.7	20.0	True
1,2,3,7,8,9-HxCDF	1.391	1.286	1.234	1.247	1.268	1.285	4.9	20.0	True
Total HxCDF						1.299	0.0	20.0	True
1,2,3,4,6,7,8-HpCDD	1.178	1.124	1.113	1.085	1.105	1.121	3.1	20.0	True
Total HpCDD						1.121	0.0	20.0	True
1,2,3,4,6,7,8-HpCDF	1.604	1.504	1.459	1.446	1.472	1.497	4.2	20.0	True
1,2,3,4,7,8,9-HpCDF	1.423	1.404	1.350	1.350	1.388	1.383	2.3	20.0	True
Total HpCDF						1.440	0.0	20.0	True
OCDD	1.428	1.198	1.202	1.158	1.230	1.243	8.6	20.0	True
OCDF	1.155	1.131	1.100	1.065	1.146	1.119	3.3	20.0	True
13C-2,3,7,8-TCDD	1.048	1.066	1.054	1.077	1.090	1.067	1.6	20.0	True
13C-2,3,7,8-TCDF	1.724	1.755	1.737	1.766	1.768	1.750	1.1	20.0	True
13C-1,2,3,7,8-PeCDD	0.828	0.815	0.829	0.909	0.984	0.873	8.3	20.0	True
13C-1,2,3,7,8-PeCDF	1.311	1.292	1.336	1.404	1.499	1.368	6.2	20.0	True
13C-2,3,4,7,8-PeCDF	1.324	1.322	1.331	1.426	1.501	1.381	5.8	20.0	True
13C-1,2,3,4,7,8-HxCDD	0.899	0.896	0.893	0.894	0.881	0.893	0.8	20.0	True
13C-1,2,3,6,7,8-HxCDD	0.920	0.922	0.941	0.960	0.904	0.929	2.3	20.0	True
13C-1,2,3,4,7,8-HxCDF	1.232	1.234	1.223	1.211	1.166	1.213	2.3	20.0	True
13C-1,2,3,6,7,8-HxCDF	1.466	1.499	1.520	1.505	1.452	1.489	1.9	20.0	True
13C-2,3,4,6,7,8-HxCDF	1.359	1.385	1.367	1.338	1.283	1.346	2.9	20.0	True
13C-1,2,3,7,8,9-HxCDF	1.186	1.232	1.212	1.212	1.206	1.210	1.4	20.0	True
13C-1,2,3,4,6,7,8-HpCDD	0.835	0.827	0.807	0.826	0.820	0.823	1.2	20.0	True
13C-1,2,3,4,6,7,8-HpCDF	1.066	1.087	1.064	1.066	1.064	1.069	0.9	20.0	True
13C-1,2,3,4,7,8,9-HpCDF	0.908	0.902	0.892	0.904	0.914	0.904	0.9	20.0	True
13C-OCDD	0.685	0.706	0.669	0.734	0.745	0.708	4.5	20.0	True
13C-OCDF	1.040	1.049	1.019	1.115	1.137	1.072	4.8	20.0	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	30.0	True
13C-1,2,3,7,8,9-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	30.0	True

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IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

ICAL ID: 69008 - 20140516I
Date: 05/16/14 14:26
Method: 9Ao - DX8290A

Instrument: D2A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1182082

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d3140516i1	05/16/14	14:26	4104:74CS1	/20140516i/d3140516i1.d
CS2:	d3140516i2	05/16/14	15:26	4104:74CS2	/20140516i/d3140516i2.d
CS3:	d3140516i3	05/16/14	16:27	4104:74CS3	/20140516i/d3140516i3.d
CS4:	d3140516i4	05/16/14	17:29	4104:74CS4	/20140516i/d3140516i4.d
CS5:	d3140516i5	05/16/14	18:31	4104:74CS5	/20140516i/d3140516i5.d

Ion Abundance Ratios

Analyte	M/Z's	CS1	CS2	CS3	CS4	CS5	Ratio Limits	Valid?
2,3,7,8-TCDD	M/M+2	0.70	0.86	0.77	0.80	0.80	0.65-0.89	True
2,3,7,8-TCDF	M/M+2	0.75	0.81	0.79	0.80	0.79	0.65-0.89	True
1,2,3,7,8-PeCDD	M+2/M+4	1.76	1.59	1.56	1.56	1.59	1.32-1.78	True
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.73	1.60	1.58	1.60	1.32-1.78	True
2,3,4,7,8-PeCDF	M+2/M+4	1.52	1.58	1.58	1.59	1.60	1.32-1.78	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.21	1.31	1.27	1.24	1.26	1.05-1.43	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.20	1.27	1.27	1.27	1.05-1.43	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.29	1.28	1.27	1.26	1.26	1.05-1.43	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.24	1.26	1.24	1.25	1.05-1.43	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.19	1.30	1.22	1.25	1.25	1.05-1.43	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.30	1.25	1.26	1.25	1.05-1.43	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.25	1.26	1.25	1.26	1.05-1.43	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	1.02	1.05	1.06	1.05	0.88-1.20	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.04	1.04	1.05	1.04	1.03	0.88-1.20	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	1.05	1.07	1.05	1.04	0.88-1.20	True
OCDD	M+2/M+4	0.84	0.91	0.89	0.90	0.89	0.76-1.02	True
OCDF	M+2/M+4	0.90	0.94	0.91	0.92	0.90	0.76-1.02	True
13C-2,3,7,8-TCDD	M/M+2	0.82	0.83	0.81	0.83	0.80	0.65-0.89	True
13C-2,3,7,8-TCDF	M/M+2	0.80	0.81	0.81	0.81	0.79	0.65-0.89	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.60	1.63	1.59	1.61	1.62	1.32-1.78	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.59	1.57	1.59	1.59	1.32-1.78	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.55	1.57	1.59	1.61	1.32-1.78	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.26	1.24	1.28	1.26	1.05-1.43	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.20	1.26	1.26	1.28	1.05-1.43	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.53	0.53	0.53	0.54	0.43-0.59	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.54	0.53	0.54	0.54	0.43-0.59	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.54	0.55	0.53	0.52	0.43-0.59	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.55	0.54	0.54	0.55	0.43-0.59	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	1.09	1.10	1.10	1.07	0.88-1.20	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.47	0.44	0.46	0.46	0.37-0.51	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.47	0.45	0.45	0.45	0.37-0.51	True
13C-OCDD	M+2/M+4	0.91	0.92	0.91	0.92	0.92	0.76-1.02	True
13C-OCDF	M+2/M+4	0.92	0.92	0.90	0.91	0.89	0.76-1.02	True
13C-1,2,3,4-TCDD	M/M+2	0.81	0.82	0.81	0.82	0.81	0.65-0.89	True
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.25	1.26	1.25	1.29	1.05-1.43	True

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Knoxville

IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

ICAL ID: 69008 - 20140516I
Date: 05/16/14 14:26
Method: 9Ao - DX8290A

Instrument: D2A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1182082

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d3140516i1	05/16/14	14:26	4104:74CS1	/20140516i/d3140516i1.d
CS2:	d3140516i2	05/16/14	15:26	4104:74CS2	/20140516i/d3140516i2.d
CS3:	d3140516i3	05/16/14	16:27	4104:74CS3	/20140516i/d3140516i3.d
CS4:	d3140516i4	05/16/14	17:29	4104:74CS4	/20140516i/d3140516i4.d
CS5:	d3140516i5	05/16/14	18:31	4104:74CS5	/20140516i/d3140516i5.d

Relative Retention Time

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RRT	Range	Window
2,3,7,8-TCDD	1.002	1.002	1.002	1.002	1.001	1.002	1.002-1.002	0.000
2,3,7,8-TCDF	1.001	1.002	1.001	1.002	1.002	1.002	1.001-1.002	0.001
1,2,3,7,8-PeCDD	1.000	1.000	1.001	1.000	1.000	1.000	1.000-1.001	0.001
1,2,3,7,8-PeCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
2,3,4,7,8-PeCDF	1.000	1.000	1.001	1.000	1.000	1.000	1.000-1.001	0.001
1,2,3,4,7,8-HxCDD	1.001	1.000	1.000	1.000	1.000	1.000	1.000-1.001	0.001
1,2,3,6,7,8-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,7,8,9-HxCDD	1.009	1.009	1.009	1.009	1.009	1.009	1.009-1.009	0.000
1,2,3,4,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,6,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
2,3,4,6,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,7,8,9-HxCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,4,6,7,8-HpCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,4,6,7,8-HpCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,4,7,8,9-HpCDF	1.000	1.000	1.001	1.001	1.000	1.000	1.000-1.001	0.001
OCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
OCDF	1.000	1.001	1.000	1.000	1.000	1.000	1.000-1.001	0.001
13C-2,3,7,8-TCDD	1.017	1.017	1.017	1.017	1.017	1.017	1.017-1.017	0.000
13C-2,3,7,8-TCDF	0.950	0.950	0.950	0.950	0.950	0.950	0.950-0.950	0.000
13C-1,2,3,7,8-PeCDD	1.311	1.311	1.311	1.311	1.311	1.311	1.311-1.311	0.000
13C-1,2,3,7,8-PeCDF	1.256	1.256	1.256	1.256	1.256	1.256	1.256-1.256	0.000
13C-2,3,4,7,8-PeCDF	1.295	1.295	1.294	1.295	1.294	1.295	1.294-1.295	0.001
13C-1,2,3,4,7,8-HxCDD	0.989	0.989	0.989	0.989	0.989	0.989	0.989-0.989	0.000
13C-1,2,3,6,7,8-HxCDD	0.992	0.991	0.992	0.991	0.991	0.991	0.991-0.992	0.001
13C-1,2,3,4,7,8-HxCDF	0.966	0.966	0.966	0.966	0.966	0.966	0.966-0.966	0.000
13C-1,2,3,6,7,8-HxCDF	0.969	0.969	0.969	0.969	0.969	0.969	0.969-0.969	0.000
13C-2,3,4,6,7,8-HxCDF	0.985	0.985	0.985	0.985	0.985	0.985	0.985-0.985	0.000
13C-1,2,3,7,8,9-HxCDF	1.006	1.006	1.006	1.006	1.006	1.006	1.006-1.006	0.000
13C-1,2,3,4,6,7,8-HpCDD	1.097	1.097	1.097	1.097	1.097	1.097	1.097-1.097	0.000
13C-1,2,3,4,6,7,8-HpCDF	1.059	1.059	1.059	1.059	1.059	1.059	1.059-1.059	0.000
13C-1,2,3,4,7,8,9-HpCDF	1.110	1.110	1.110	1.110	1.111	1.110	1.110-1.110	0.000
13C-OCDD	1.187	1.187	1.187	1.187	1.187	1.187	1.187-1.187	0.000
13C-OCDF	1.190	1.190	1.190	1.190	1.190	1.190	1.190-1.190	0.000
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
13C-1,2,3,7,8,9-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:83	Prep Batch		Lot No	
Data File	/20140516i/d3140516w1.d	Prep Date		SDG No	
Analysis ID	161055	Prep Exp Date		Date Received	
Analysis Date	5/16/2014	Matrix	UNKNOWN	Date Sampled	
Analysis Time	10:23	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D2A	Dil Factor	1.00	Code	F8o
Analyst	MSD				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)	DL (ng/mL)
2,3,7,8-TCDD	31:50	1586883	158525	1.000	10.00	11.552185	115.52	11.552185	0.0242
Total TCDD		7189589	819793	1.000		63.890929		63.890929	0.0242
2,3,7,8-TCDF	29:46	2356686	256131	1.000	10.00	10.551217	105.51	10.551217	0.00764
Total TCDF		4902378	672911	1.000		32.499858		32.499858	0.00764
1,2,3,7,8-PeCDD	41:00	5939133	1419637	1.000	50.00	52.372591	104.75	52.372591	0.0141
Total PeCDD		12055882	2468336	1.000		158.684030		158.684030	0.0141
1,2,3,7,8-PeCDF	39:17	10247917	2129804	1.000	50.00	58.965318	117.93	58.965318	0.0150
2,3,4,7,8-PeCDF	40:29	9892109	2275830	1.000	50.00	54.985523	109.97	54.985523	0.0133
Total PeCDF		18444237	3487025	1.000		218.244087		218.244087	0.0141
1,2,3,4,7,8-HxCDD	45:13	7469392	1905960	1.000	50.00	57.407187	114.81	57.407187	0.0258
1,2,3,6,7,8-HxCDD	45:20	7552598	1836768	1.000	50.00	56.748157	113.50	56.748157	0.0267
1,2,3,7,8,9-HxCDD	45:45	8268425	1893211	1.000	50.00	62.829442	125.66	62.829442	0.0263
Total HxCDD		8574247	2264233	1.000		242.138084		242.138084	0.0263
1,2,3,4,7,8-HxCDF	44:10	12540335	3393950	1.000	50.00	66.466631	132.93	66.466631	0.0224
1,2,3,6,7,8-HxCDF	44:19	13389613	3460099	1.000	50.00	61.907538	123.82	61.907538	0.0206
2,3,4,6,7,8-HxCDF	45:03	12208934	2999655	1.000	50.00	61.292614	122.59	61.292614	0.0234
1,2,3,7,8,9-HxCDF	46:01	10526703	2537908	1.000	50.00	60.161565	120.32	60.161565	0.0286
Total HxCDF		21823679	5495069	1.000		361.871053		361.871053	0.0234
1,2,3,4,6,7,8-HpCDD	50:10	6763248	1274602	1.000	50.00	55.011477	110.02	55.011477	0.0420
Total HpCDD		7121759	1421317	1.000		112.939042		112.939042	0.0420
1,2,3,4,6,7,8-HpCDF	48:27	11078173	2349685	1.000	50.00	72.435229	144.87	72.435229	0.0251
1,2,3,4,7,8,9-HpCDF	50:47	9230689	1857042	1.000	50.00	69.002554	138.01	69.002554	0.0299
Total HpCDF				1.000		141.437783		141.437783	0.0273
OCDD	54:17	12262686	2965971	1.000	100.0	124.377732	124.38	124.377732	0.0316
OCDF	54:25	16252401	3983364	1.000	100.0	109.779796	109.78	109.779796	0.0203
13C-2,3,7,8-TCDD	31:48	13736648	1416679	1.000	100.0	108.432143	108.43	108.432143	0.0292
13C-2,3,7,8-TCDF	29:44	22335679	2485332	1.000	100.0	176.309792	176.31	176.309792	0.0101
13C-1,2,3,7,8-PeCDD	40:59	11340155	2676083	1.000	100.0	89.515092	89.52	89.515092	0.00623
13C-1,2,3,7,8-PeCDF	39:16	17379567	3555806	1.000	100.0	137.188032	137.19	137.188032	0.0154
13C-2,3,4,7,8-PeCDF	40:28	17990388	4035410	1.000	100.0	142.009632	142.01	142.009632	0.0154
13C-1,2,3,4,7,8-HxCDD	45:12	13011249	3317831	1.000	100.0	87.770109	87.77	87.770109	0.0174
13C-1,2,3,6,7,8-HxCDD	45:19	13308975	3211054	1.000	100.0	89.778482	89.78	89.778482	0.0174
13C-1,2,3,4,7,8-HxCDF	44:09	18867114	5081425	1.000	100.0	127.272075	127.27	127.272075	0.0228
13C-1,2,3,6,7,8-HxCDF	44:18	21628405	5539840	1.000	100.0	145.898942	145.90	145.898942	0.0228
13C-2,3,4,6,7,8-HxCDF	45:02	19919095	4880944	1.000	100.0	134.368433	134.37	134.368433	0.0228
13C-1,2,3,7,8,9-HxCDF	46:00	17497389	3983796	1.000	100.0	118.032307	118.03	118.032307	0.0228
13C-1,2,3,4,6,7,8-HpCDD	50:08	12294249	2307795	1.000	100.0	82.933435	82.93	82.933435	0.00835
13C-1,2,3,4,6,7,8-HpCDF	48:26	15293902	3192032	1.000	100.0	103.168224	103.17	103.168224	0.0275
13C-1,2,3,4,7,8,9-HpCDF	50:46	13377315	2672565	1.000	100.0	90.239484	90.24	90.239484	0.0275
13C-OCDD	54:16	19718459	4765324	1.000	200.0	133.015001	66.51	133.015001	0.0222
13C-OCDF	54:24	29609093	7397500	1.000	200.0	199.734347	99.87	199.734347	0.0214
37Cl4-2,3,7,8-TCDD	31:51	1537364	163270	1.000	10.00	12.135397	121.35	12.135397	0.0112
13C-1,2,3,4-TCDD	31:16	12668428	1363440	1.000	100.0	100.000000	100.00	100.000000	0.0292
13C-1,2,3,7,8,9-HxCDD	45:44	14824237	3384976	1.000	100.0	100.000000	100.00	100.000000	0.0174

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:83	Prep Batch		Lot No	
Data File	/20140516i/d3140516w1.	Prep Date		SDG No	
Analysis ID	161055	Prep Exp Date		Date Received	
Analysis Date	05/16/14 10:23	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	85	105	34	42	0.81	/	
	Unidentified	23:11	00:00	0	1186991	1514584	179702	224524	0.78	ABV/AVV	
	2,3,7,8-TCDF	29:46	00:00	0	1030356	1326330	110722	145409	0.78	AVV/ABV	M
	Unidentified	34:48	00:00	0	973845	1226958	119816	148869	0.79	ABV/ABV	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	105	33	42	13	3.23 *	/	
	13C-2,3,7,8-TCDF	29:44	00:00	0	9826142	12509537	1091207	1394125	0.79	ABV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	168	175	67	70	0.96 *	/	
	Unidentified	25:41	00:00	0	659339	833321	89771	110818	0.79	ABB/ABB	
	Unidentified	31:19	00:00	0	633904	795114	64846	85112	0.80	ABV/AVV	
	Unidentified	31:33	00:00	0	595647	756160	66053	78974	0.79	AVV/AVB	
	2,3,7,8-TCDD	31:50	00:00	0	693771	893112	69179	89346	0.78	AVV/AVV	M
	Unidentified	32:21	00:00	0	675844	834463	67226	80263	0.81	AVV/AVV	
	Unidentified	34:55	00:00	0	618644	787153	77121	99609	0.79	ABB/ABV	
328					327.8847		327.8847				
	Noise	00:00	00:00	0	153		61				
	37Cl4-2,3,7,8-TCDD	31:51	00:00	0	1537364		163270			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	250	148	100	59	1.69 *	/	
	13C-1,2,3,4-TCDD	31:16	00:00	0	5608835	7059593	605062	758378	0.79	AVV/AVV	
	13C-2,3,7,8-TCDD	31:48	00:00	0	6106952	7629696	623492	793187	0.80	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	298	238	119	95	1.25 *	/	
	Unidentified	35:28	00:00	0	5659978	3585121	794221	502838	1.58	ABB/ABB	
	1,2,3,7,8-PeCDF	39:17	00:00	0	6283151	3964766	1306195	823609	1.58	ABV/AVV	M
	2,3,4,7,8-PeCDF	40:29	00:00	0	6082716	3809393	1399274	876556	1.60	ABV/ABV	
	Unidentified	41:46	00:00	0	5624476	3574662	1327932	862034	1.57	ABV/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	118	93	47	37	1.27 *	/	
	13C-1,2,3,7,8-PeCDF	39:16	00:00	0	10682309	6697258	2182491	1373315	1.60	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:28	00:00	0	11078498	6911890	2464520	1570890	1.60	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	205	173	82	69	1.19 *	/	
	Unidentified	38:11	00:00	0	3524929	2234929	602438	374757	1.58	ABV/ABV	
	1,2,3,7,8-PeCDD	41:00	00:00	0	3620644	2318489	866062	553575	1.56	ABV/ABV	M
	Unidentified	41:38	00:00	0	3856918	2439106	904774	586367	1.58	ABV/ABB	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	50	35	20	14	1.43	/	
	13C-1,2,3,7,8-PeCDD	40:59	00:00	0	6991400	4348755	1653761	1022322	1.61	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	488	653	195	261	0.75 *	/	

Notes:
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T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:83	Prep Batch		Lot No	
Data File	/20140516i/d3140516w1.	Prep Date		SDG No	
Analysis ID	161055	Prep Exp Date		Date Received	
Analysis Date	05/16/14 10:23	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Unidentified	42:57	00:00	0	6407681	5067447	1762342	1395763	1.26	ABV/ABV	
	1,2,3,4,7,8-HxCDF	44:10	00:00	0	6950543	5589792	1877053	1516897	1.24	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:19	00:00	0	7418333	5971280	1903557	1556542	1.24	AVV/AVV	M
	2,3,4,6,7,8-HxCDF	45:03	00:00	0	6796679	5412255	1685820	1313835	1.26	AVV/AVB	M
	1,2,3,7,8,9-HxCDF	46:01	00:00	0	5853589	4673114	1414785	1123123	1.25	ABV/ABV	M
	Unidentified	46:09	00:00	0	5760591	4587960	1304882	1032082	1.26	AVB/AVV	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	270	503	108	201	0.54	/	
	13C-1,2,3,4,7,8-HxCDF	44:09	00:00	0	6481137	12385977	1763001	3318424	0.52	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:18	00:00	0	7556931	14071474	1932723	3607117	0.54	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:02	00:00	0	6871251	13047844	1685787	3195157	0.53	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:00	00:00	0	6134491	11362898	1404999	2578797	0.54	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	470	388	188	155	1.21	/	
	Unidentified	43:37	00:00	0	4824845	3749402	1263241	1000992	1.29	ABV/ABV	
	1,2,3,4,7,8-HxCDD	45:13	00:00	0	4163195	3306197	1065255	840705	1.26	ABV/ABV	M
	1,2,3,6,7,8-HxCDD	45:20	00:00	0	4200978	3351620	1010891	825877	1.25	AVV/AVV	M
	1,2,3,7,8,9-HxCDD	45:45	00:00	0	4577616	3690809	1053036	840175	1.24	AVV/AVV	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	433	155	173	62	2.79 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:12	00:00	0	7291648	5719601	1863126	1454705	1.27	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:19	00:00	0	7462810	5846165	1801896	1409158	1.28	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	45:44	00:00	0	8228282	6595955	1898121	1486855	1.25	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	428	373	171	149	1.15	/	
	1,2,3,4,6,7,8-HpCDF	48:27	00:00	0	5630400	5447773	1196112	1153573	1.03	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	50:47	00:00	0	4736532	4494157	943901	913141	1.05	ABV/ABV	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	408	523	163	209	0.78 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:26	00:00	0	4841315	10452587	1020741	2171291	0.46	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:46	00:00	0	4196791	9180524	839680	1832885	0.46	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	468	503	187	201	0.93	/	
	Unidentified	48:57	00:00	0	3629844	3491915	724399	696918	1.04	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:10	00:00	0	3479568	3283680	651688	622914	1.06	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	155	128	62	51	1.22 *	/	
	13C-1,2,3,4,6,7,8-HpCDD	50:08	00:00	0	6353303	5940946	1191570	1116225	1.07	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	360	393	144	157	0.92	/	
	OCDF	54:25	00:00	0	7745694	8506707	1914311	2069053	0.91	ABV/ABV	M
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		

Notes:
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TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:83	Prep Batch		Lot No	
Data File	/20140516i/d3140516w1.	Prep Date		SDG No	
Analysis ID	161055	Prep Exp Date		Date Received	
Analysis Date	05/16/14 10:23	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	483	243	193	97	1.99 *	/	
	13C-OCDF	54:24	00:00	0	13987624	15621469	3508655	3888845	0.90	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	503	250	201	100	2.01 *	/	
	OCDD	54:17	00:00	0	5838727	6423959	1424928	1541043	0.91	ABV/ABV	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	120	630	48	252	0.19 *	/	
	13C-OCDD	54:16	00:00	0	9364125	10354334	2240455	2524869	0.90	ABV/ABV	

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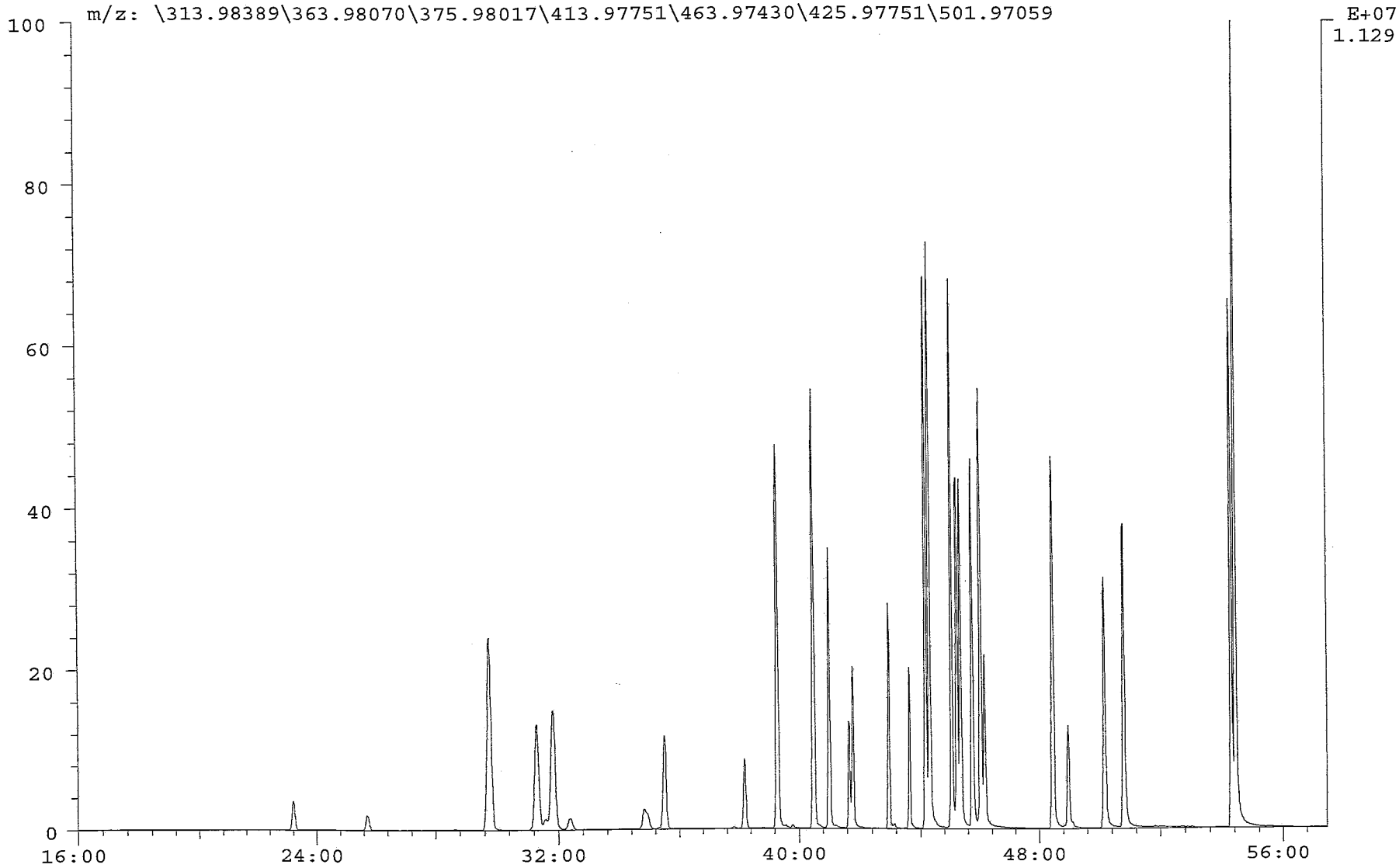
CHRO: d3140516w1 16-May-14 Elapse: 54:24 2501
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 239 > 2680 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

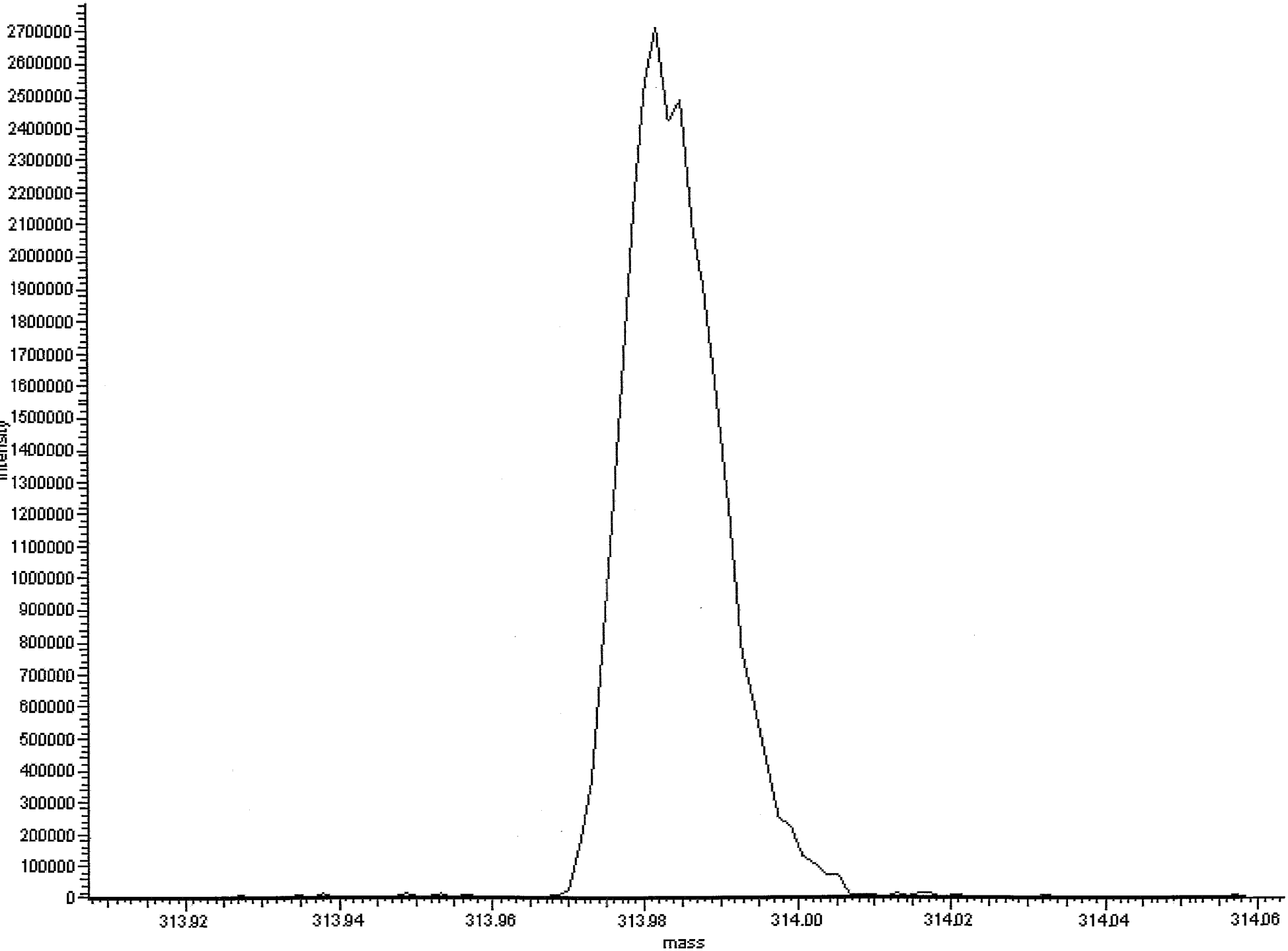
Jut, Calc MID 5-16-14
QC Kh 5/19/14

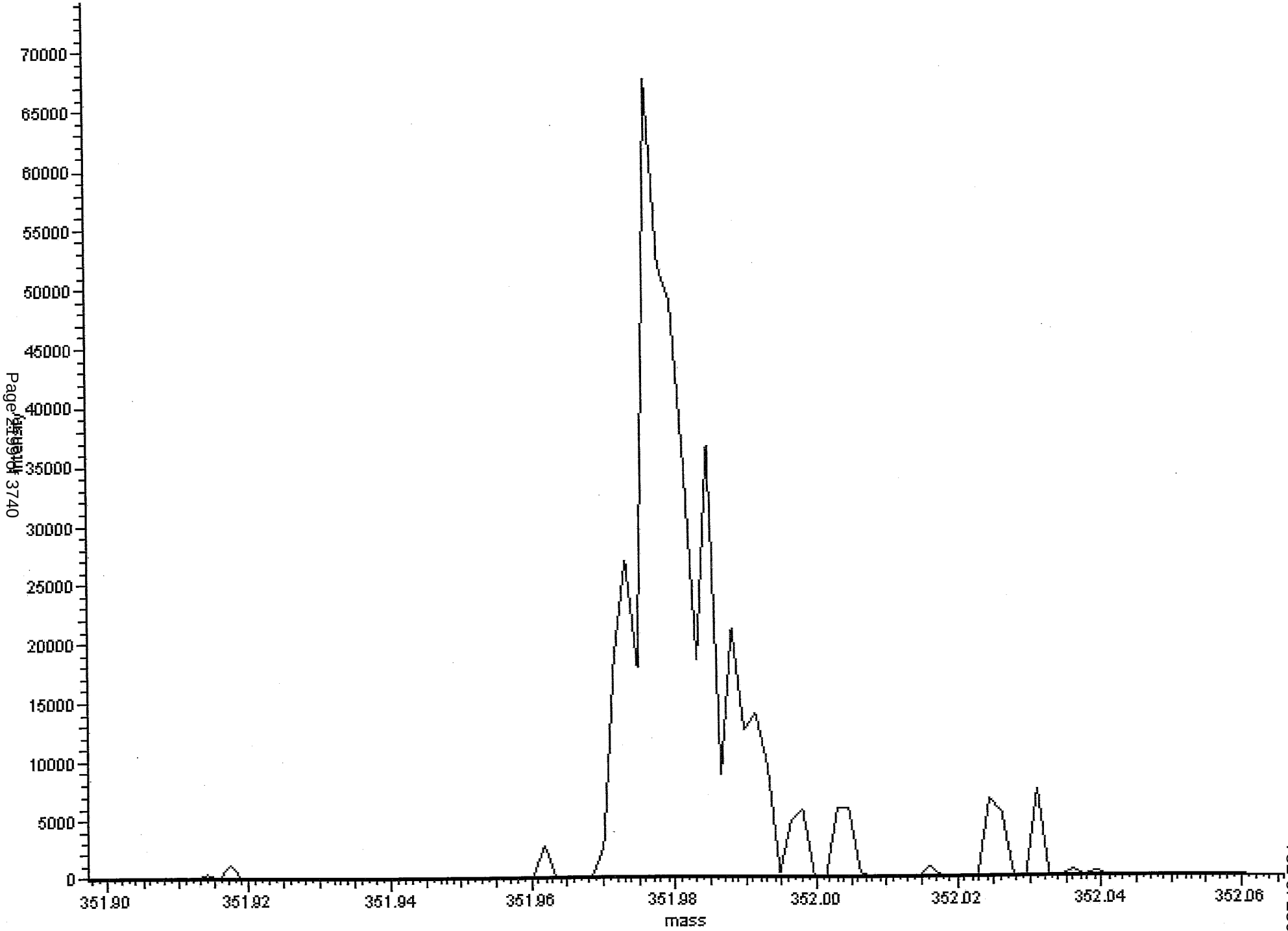


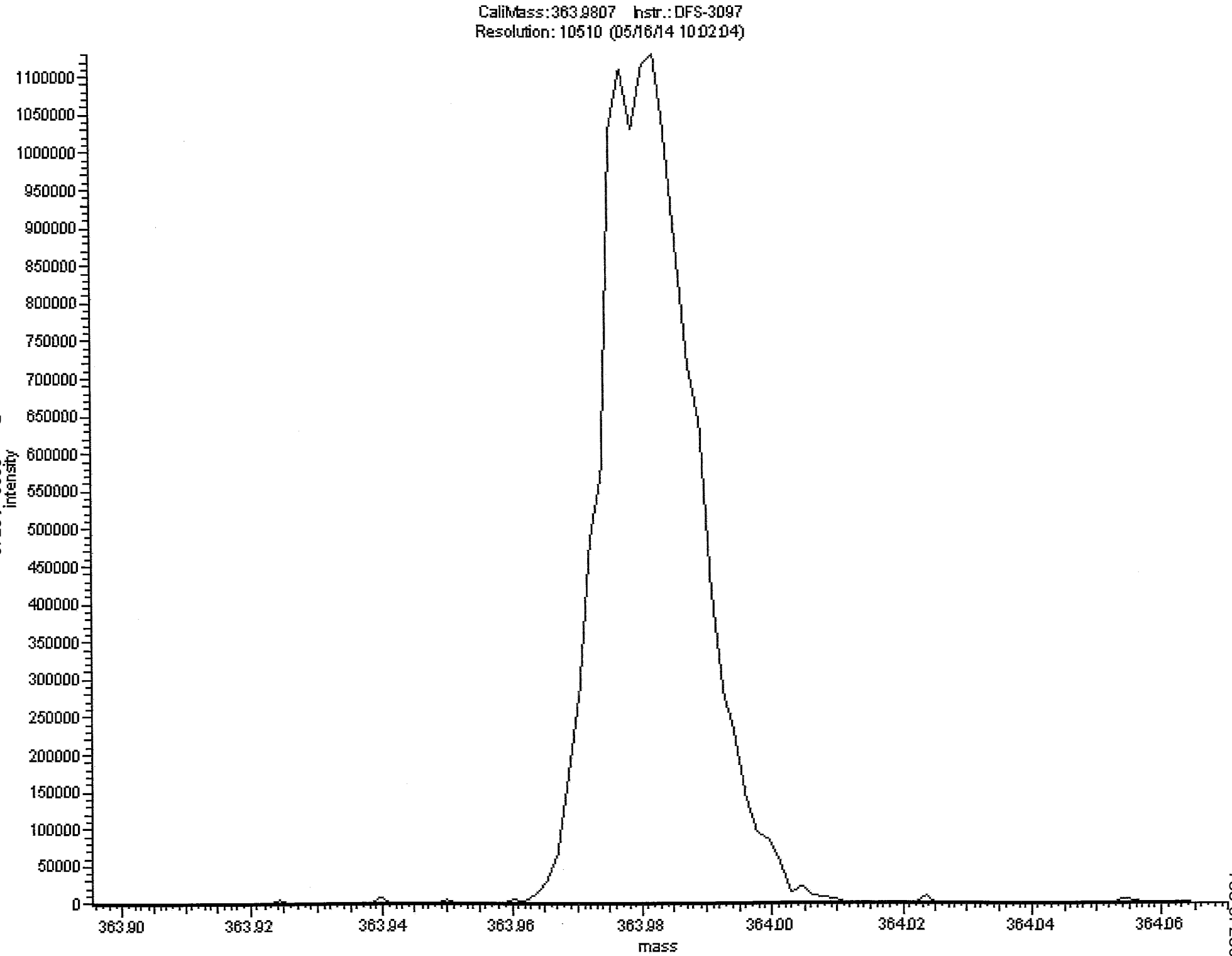
```
Reports
10:08:13:  Peak matching procedure started
10:08:14:
10:08:14:  Reference mass: 313.98336
10:08:15:  Sample mass: 364.0
10:08:15:
10:08:16:  Finding reference mass
10:08:17:  Finding sample mass
10:08:17:
10:08:23:  [1]   363.9794 amu, mean: 363.9794
10:08:26:  [2]   363.9801 amu, mean: 363.9798     SD: 0.48 mmu or: 1.31 ppm
10:08:29:  [3]   363.9812 amu, mean: 363.9802     SD: 0.90 mmu or: 2.48 ppm
10:08:32:  [4]   363.9808 amu, mean: 363.9804     SD: 0.79 mmu or: 2.18 ppm
10:08:36:  [5]   363.9802 amu, mean: 363.9804     SD: 0.69 mmu or: 1.90 ppm
10:08:39:  [6]   363.9808 amu, mean: 363.9804     SD: 0.65 mmu or: 1.78 ppm
10:08:42:  [7]   363.9798 amu, mean: 363.9803     SD: 0.64 mmu or: 1.76 ppm
10:08:45:  [8]   363.9810 amu, mean: 363.9804     SD: 0.64 mmu or: 1.76 ppm
10:08:48:  [9]   363.9810 amu, mean: 363.9805     SD: 0.63 mmu or: 1.73 ppm
10:08:51:  [10]   363.9806 amu, mean: 363.9805     SD: 0.59 mmu or: 1.63 ppm
10:08:52:
10:08:52:  Stop requested. Please wait for procedure to finish.
10:08:52:
```

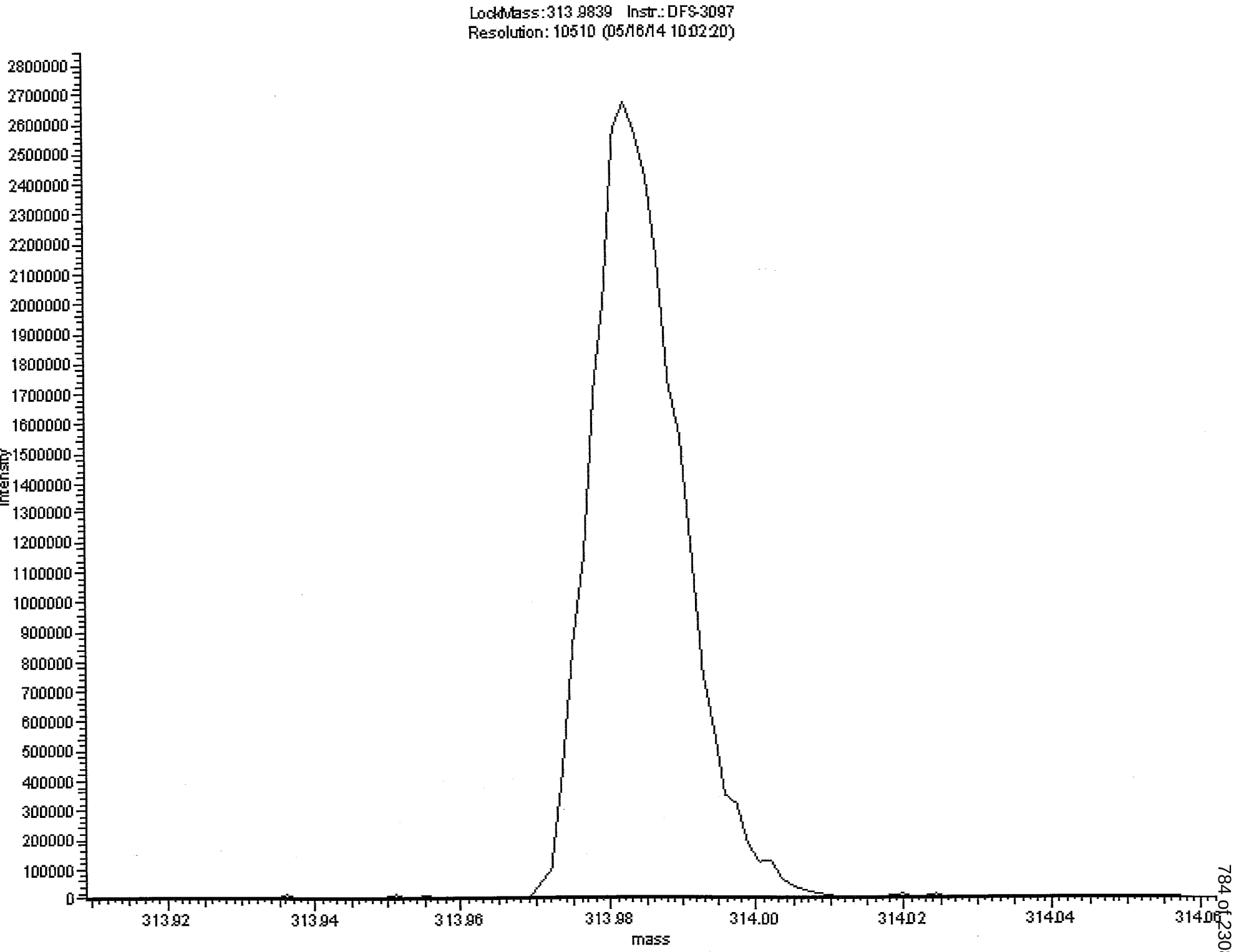
Signature UJD 5/16/14

LockMass:313.9838 Instr.: DFS-3097
Resolution: 10281 (05/16/14 10:01:15)

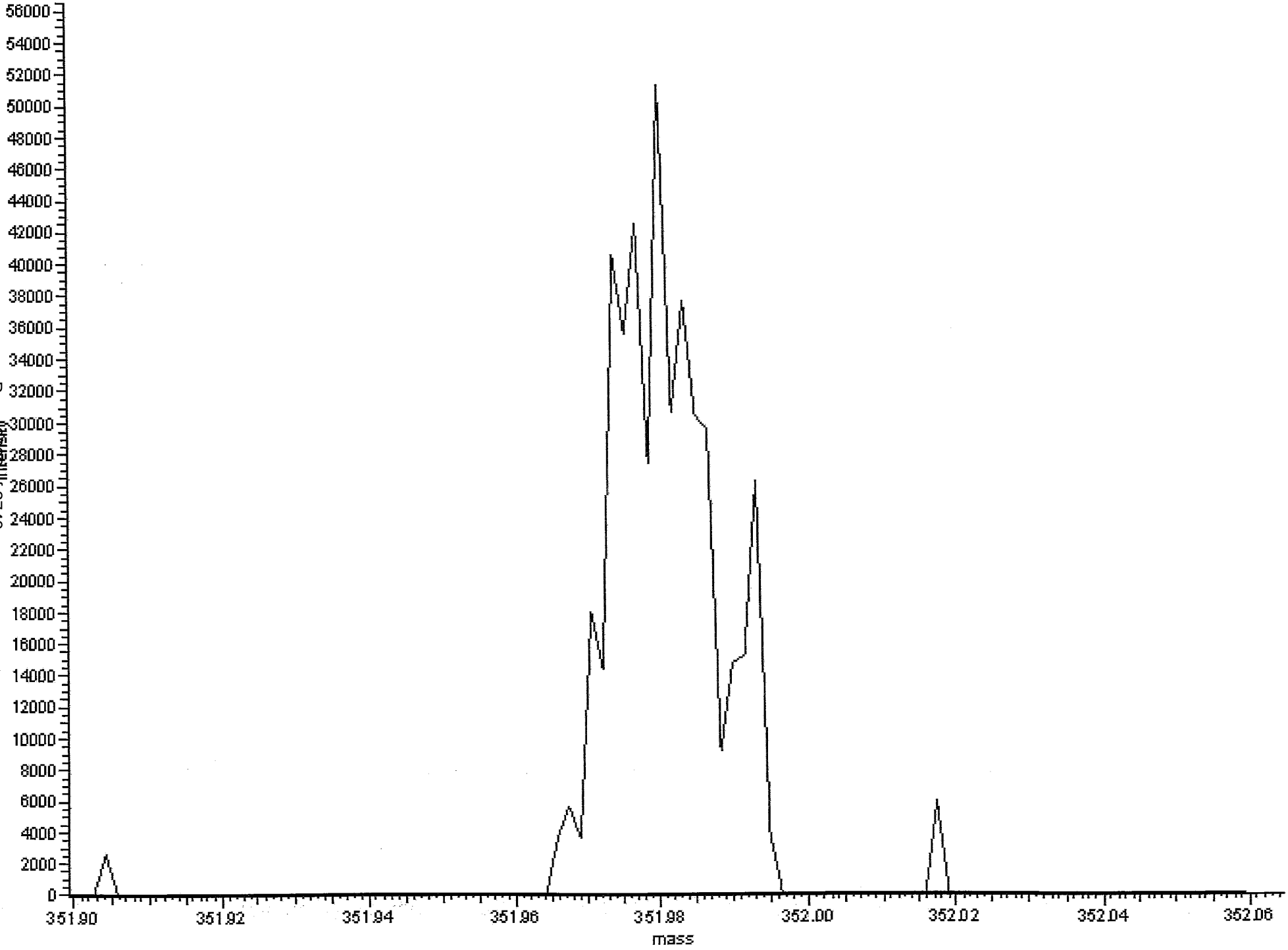



Mass:351.9802 Instr.: DFS-3097
Resolution: 12224 (05/16/14 10:02:01)
70000
65000
60000
55000
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
351.90
351.92
351.94
351.96
351.98
352.00
352.02
352.04
352.06
mass

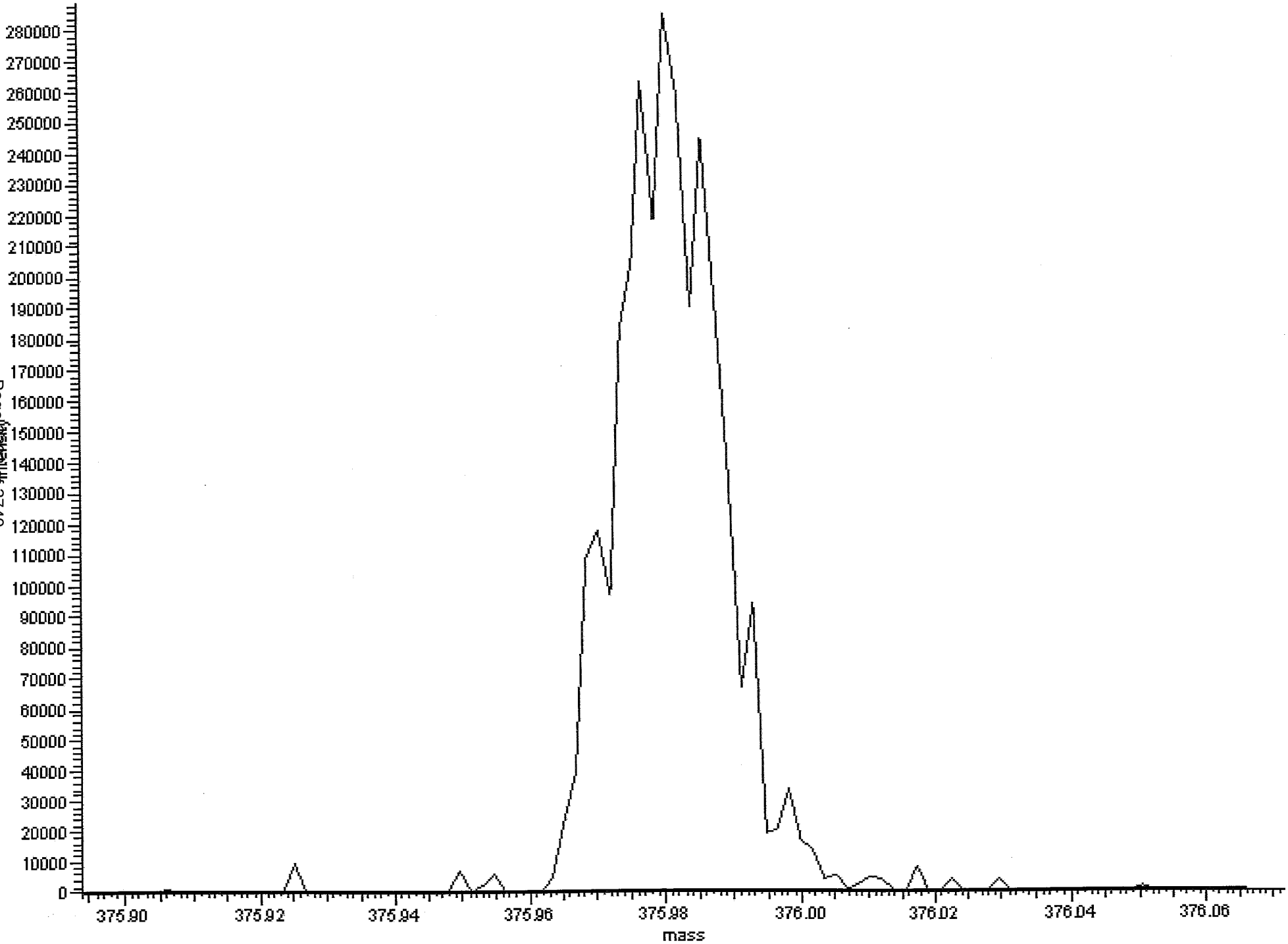

CaliMass:363.9807 Instr.: DFS-3097
Resolution: 10510 (05/16/14 10:02:04)
1100000
1050000
1000000
950000
900000
850000
800000
750000
700000
650000
600000
550000
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
Intensity
363.90
363.92
363.94
363.96
363.98
364.00
364.02
364.04
364.06
mass


LockMass:313.9839 Instr.:DFS-3097
Resolution: 10510 (05/16/14 10:02:20)
2800000
2700000
2600000
2500000
2400000
2300000
2200000
2100000
2000000
1900000
1800000
1700000
1600000
1500000
1400000
1300000
1200000
1100000
1000000
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
Intensity
313.92
313.94
313.96
313.98
314.00
314.02
314.04
314.06
mass

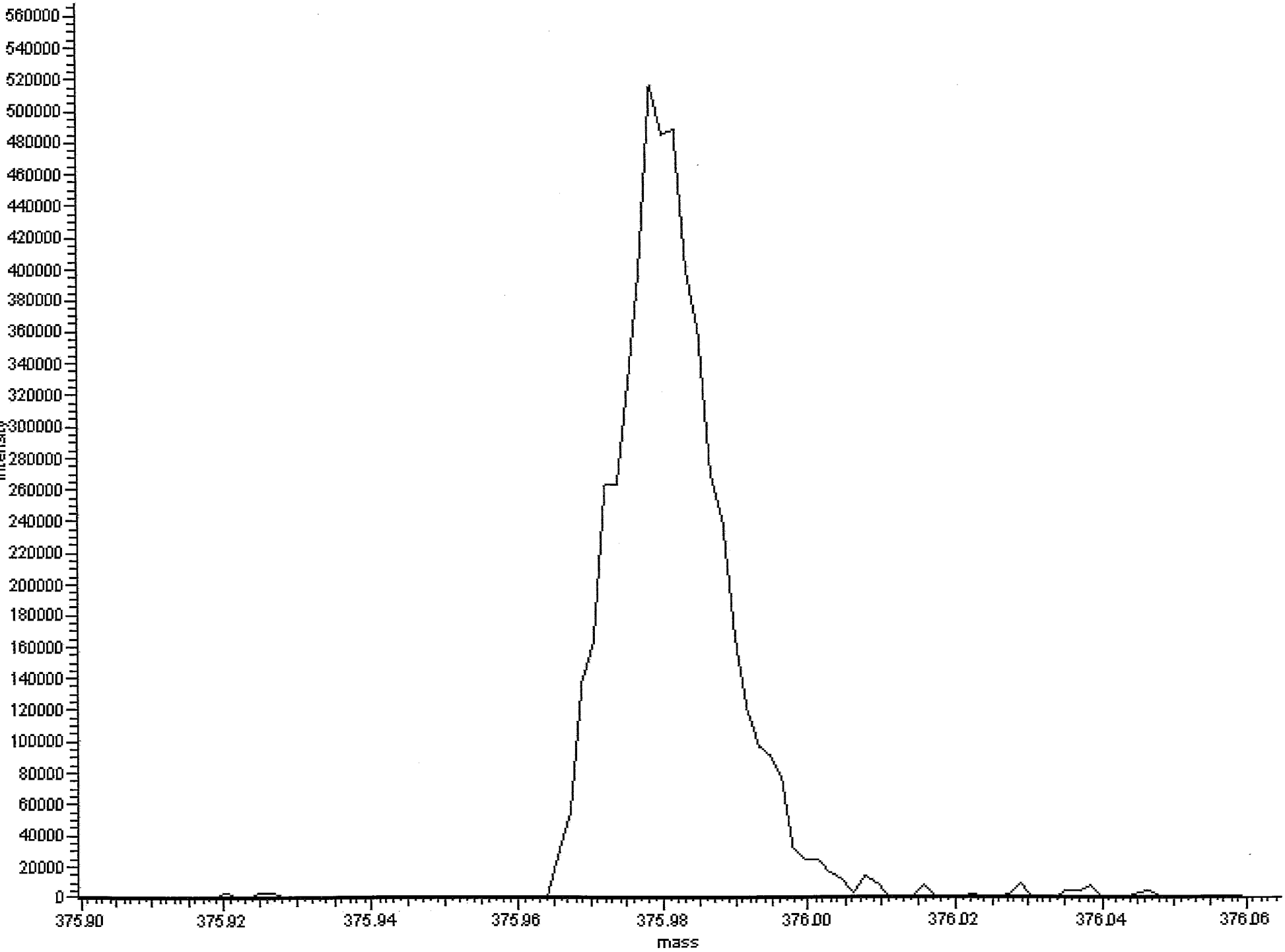
Mass:351.9802 Instr.: DFS-3097
Resolution: 12694 (05/16/14 10:03:07)



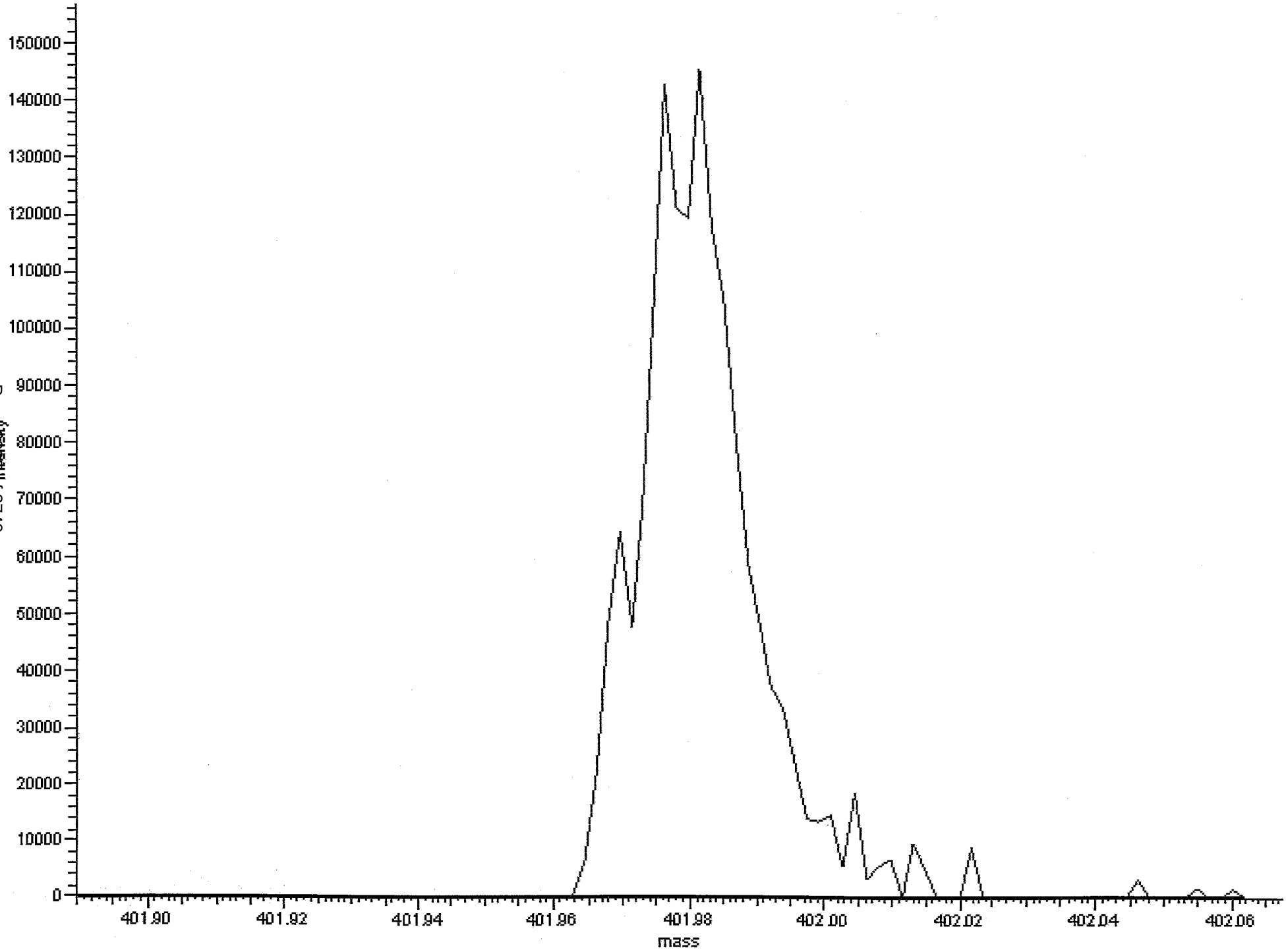
CaliMass:375.9802 Instr.: DFS-3097
Resolution: 11628 (05/16/14 10:03:10)



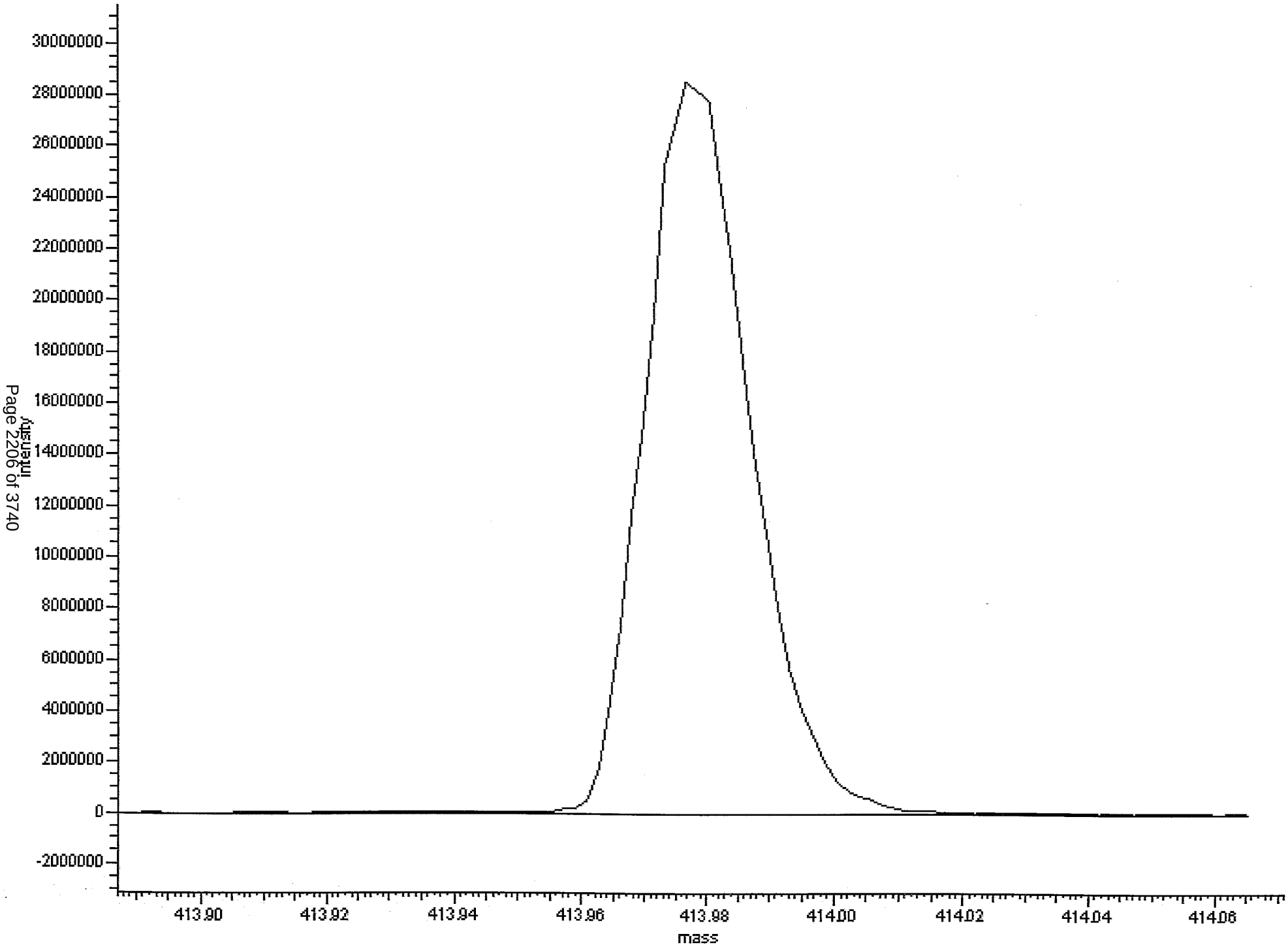
LockMass:375.9802 Instr.:DFS-3097
Resolution: 11628 (05/16/14 10:03:25)

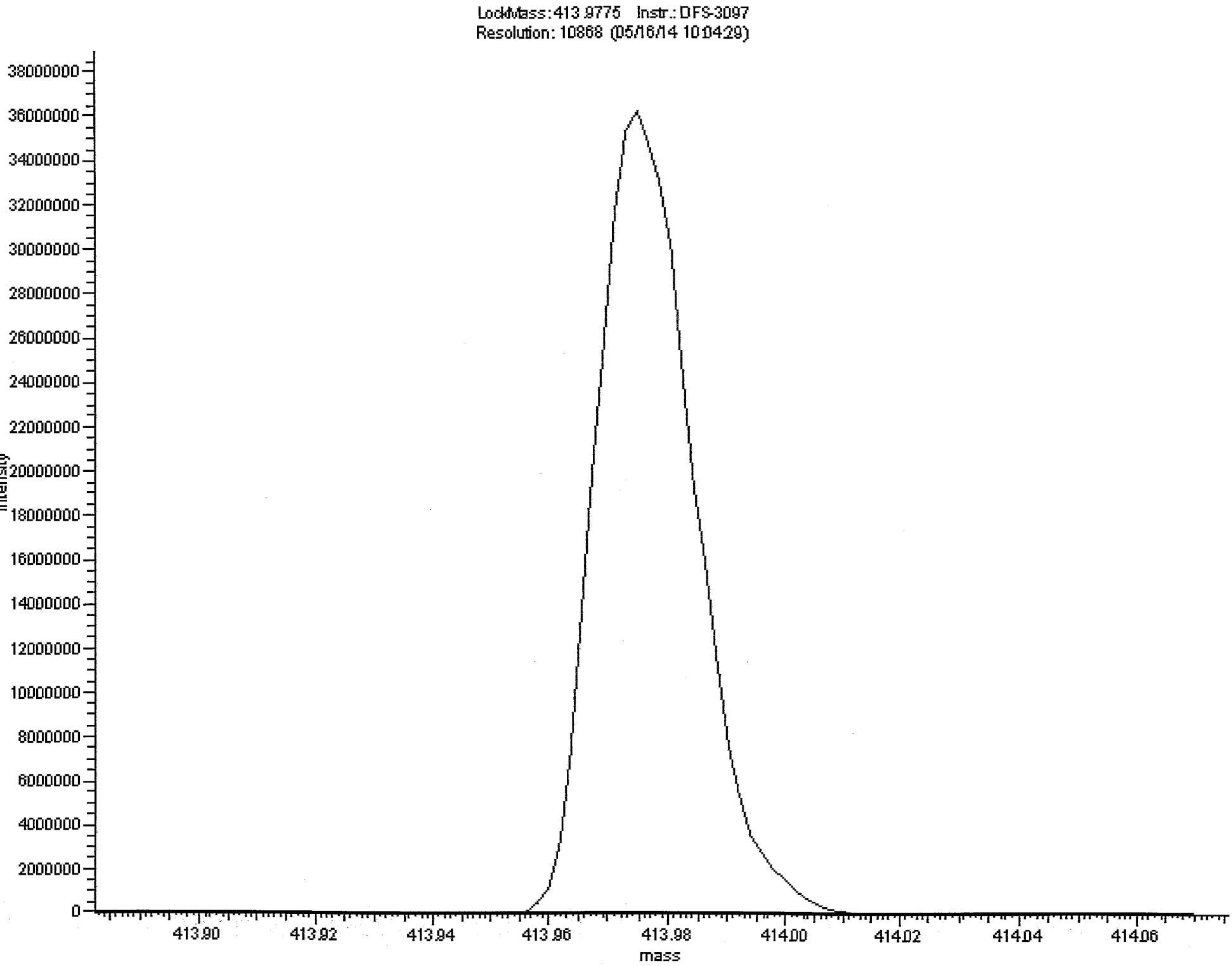


Mass: 401.9770 Instr.: DFS-3097
Resolution: 10656 (05/16/14 10:04:11)

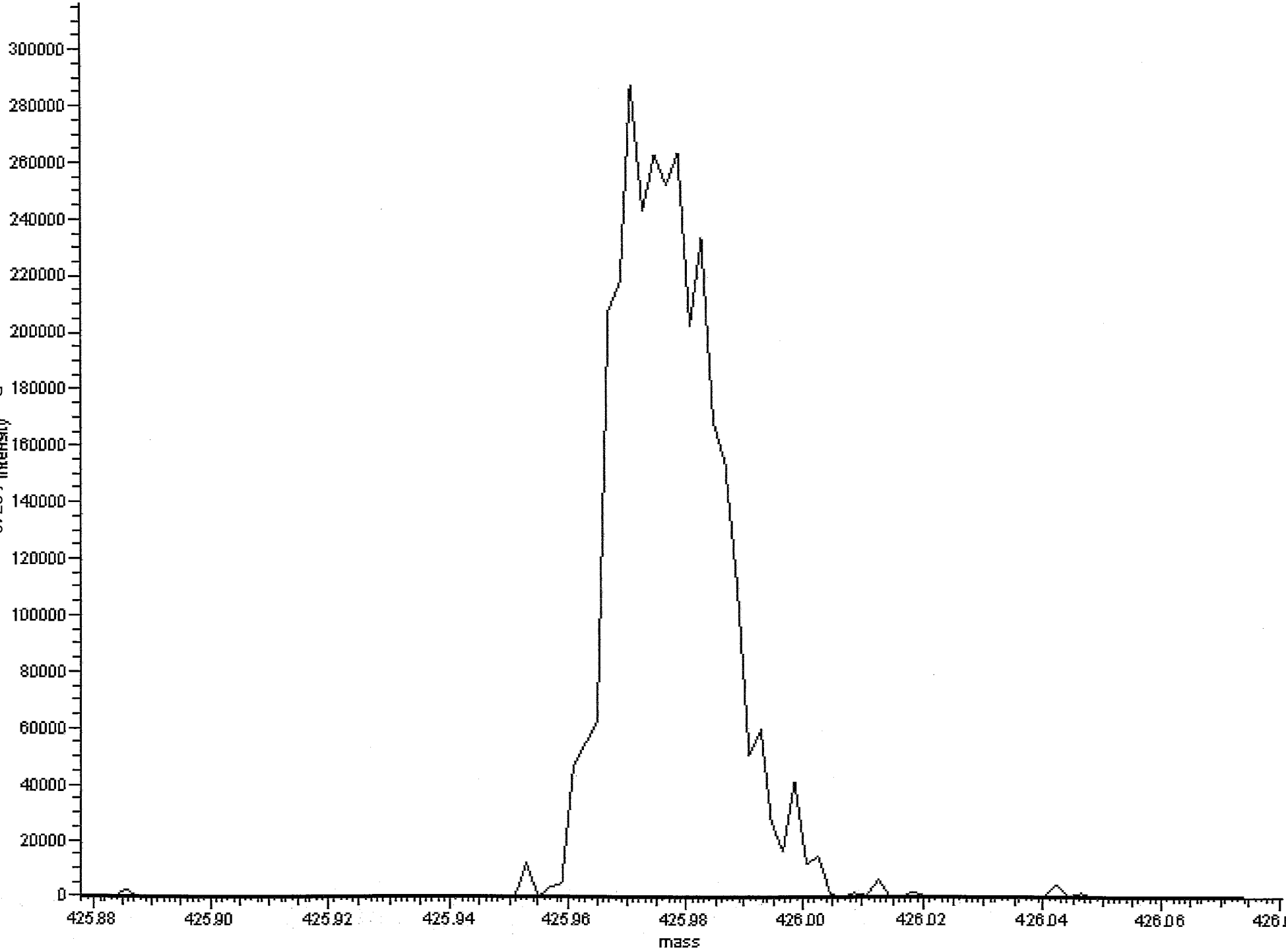


CaliMass: 413.9770 Instr.: DFS-3097
Resolution: 10868 (05/16/14 10:04:14)

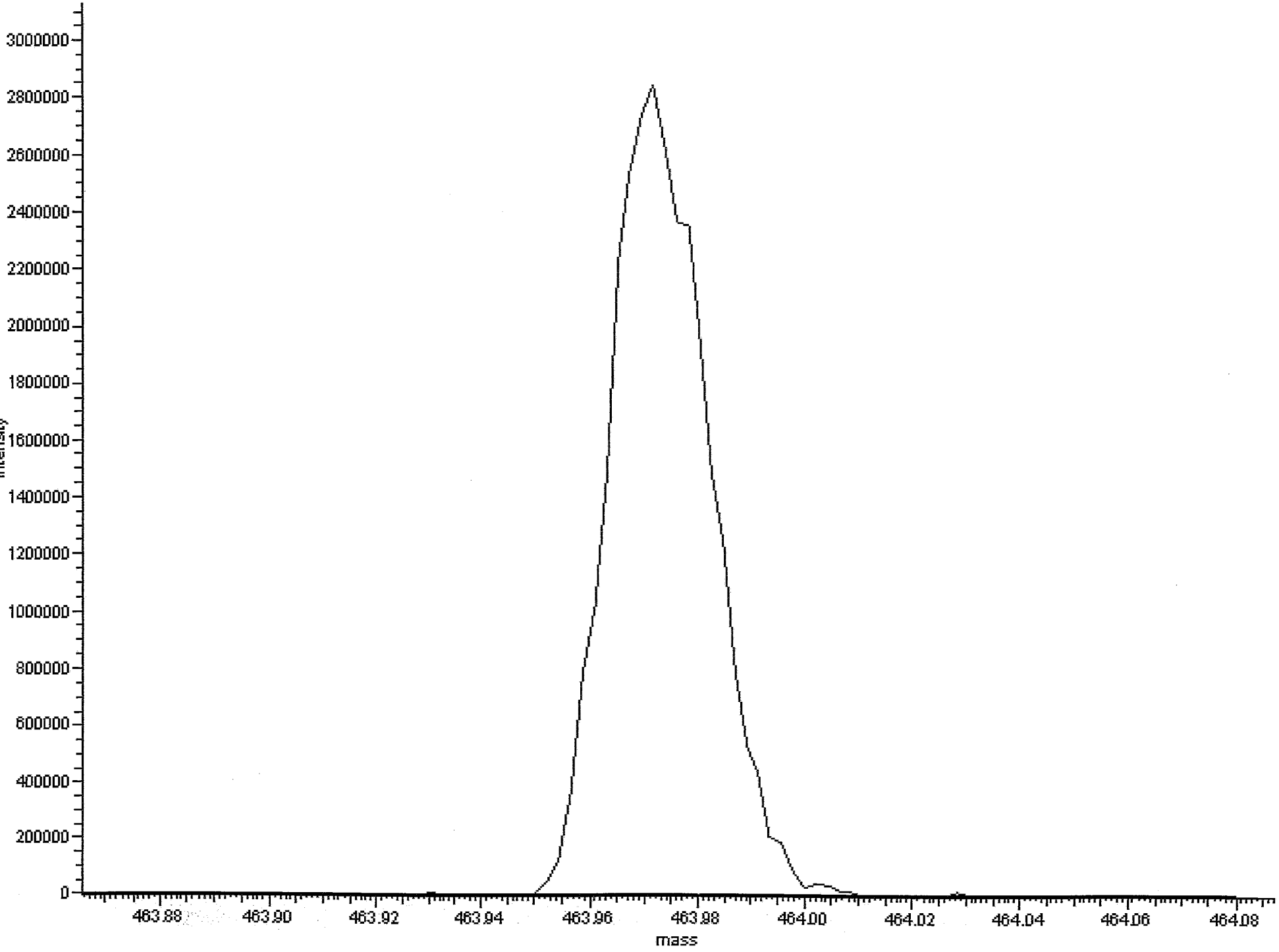


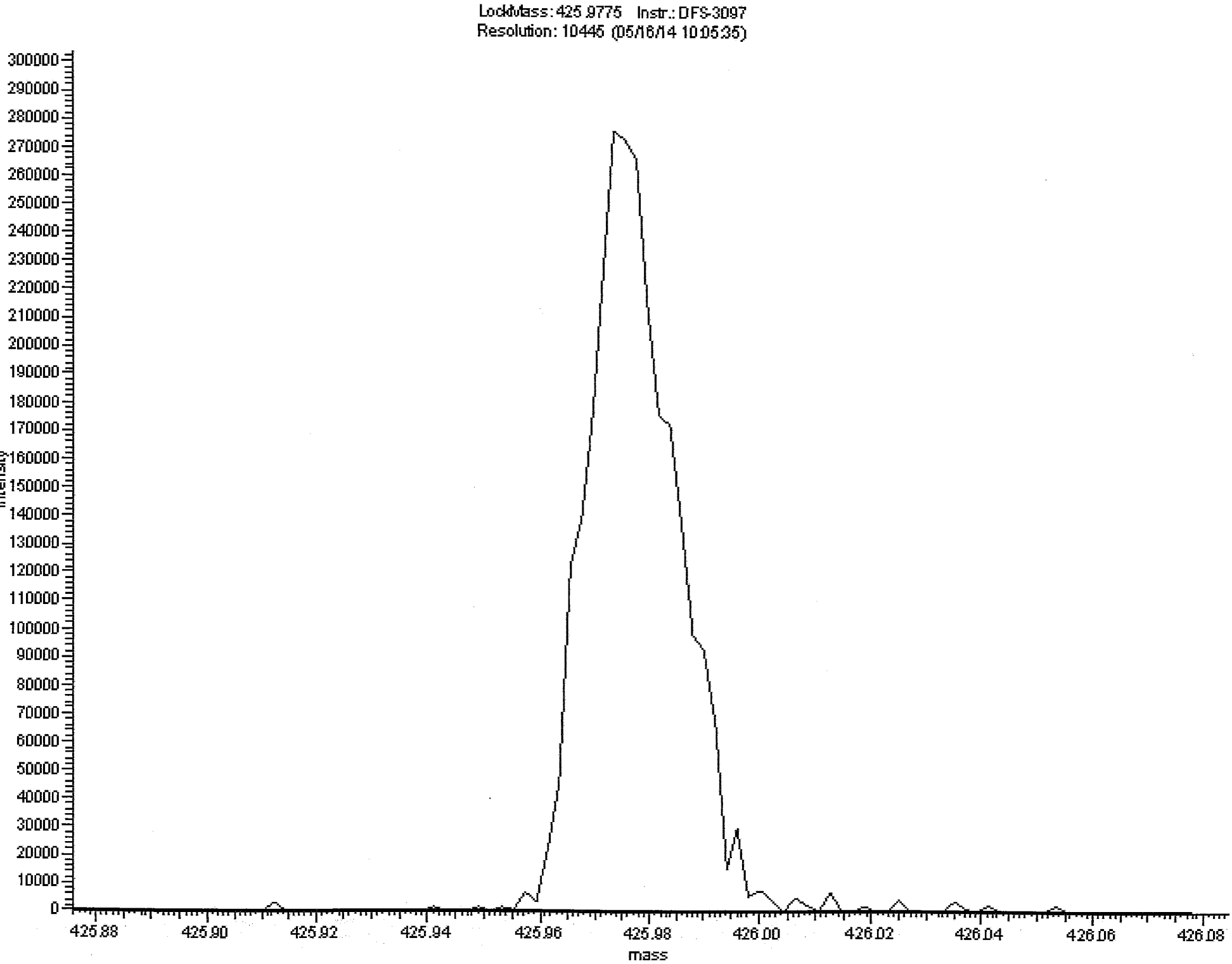

LockMass:413.9775 Instr.: DFS-3097
Resolution: 10868 (05/16/14 10:04:29)
38000000
36000000
34000000
32000000
30000000
28000000
26000000
24000000
22000000
20000000
18000000
16000000
14000000
12000000
10000000
8000000
6000000
4000000
2000000
0
Intensity
413.90
413.92
413.94
413.96
413.98
414.00
414.02
414.04
414.06
mass

Mass: 425.9770 Instr.: DFS-3097
Resolution: 10853 (05/16/14 10:05:16)

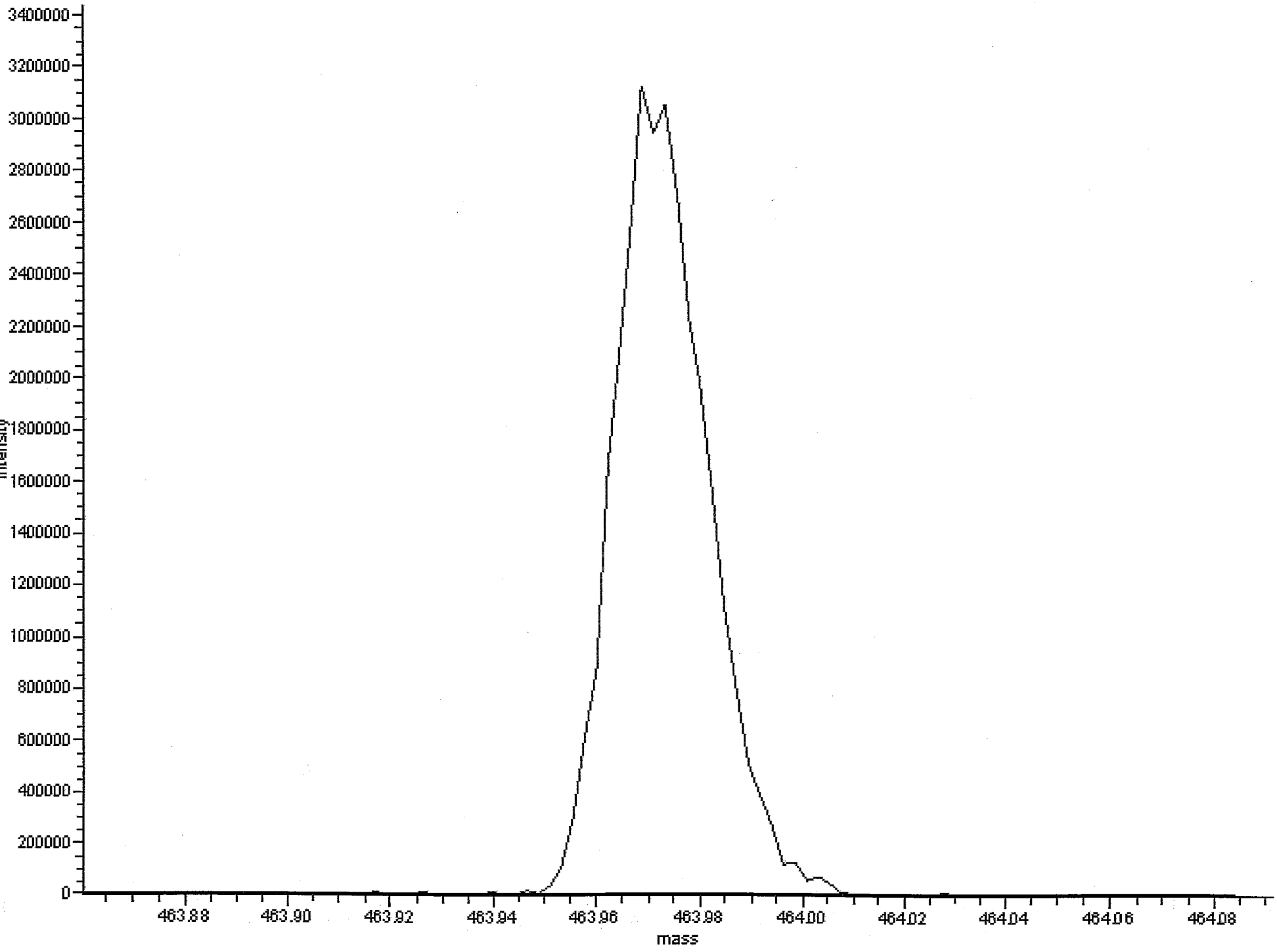


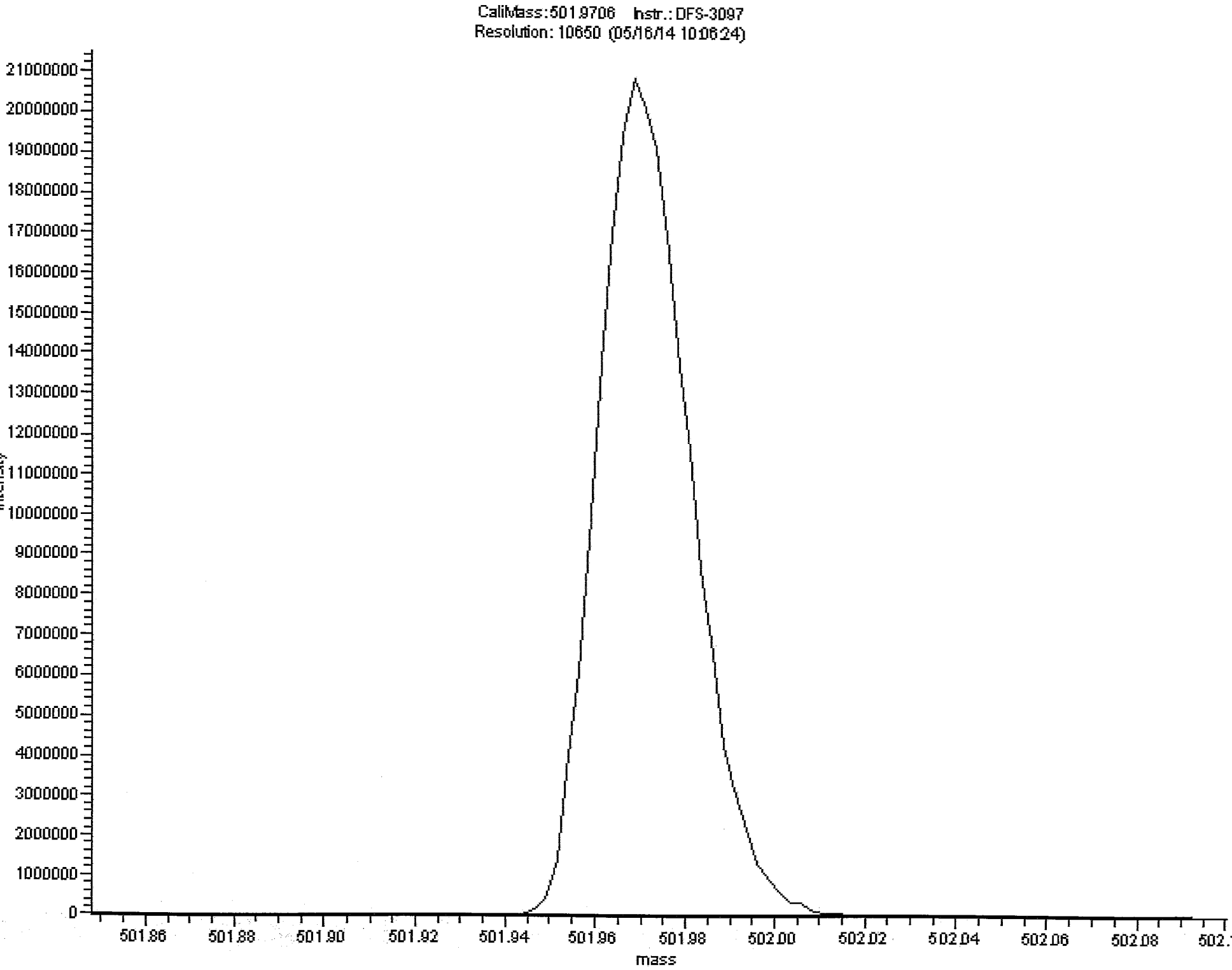
CaliMass: 463.9738 Instr.: DFS-3097
Resolution: 10445 (05/16/14 10:05:19)



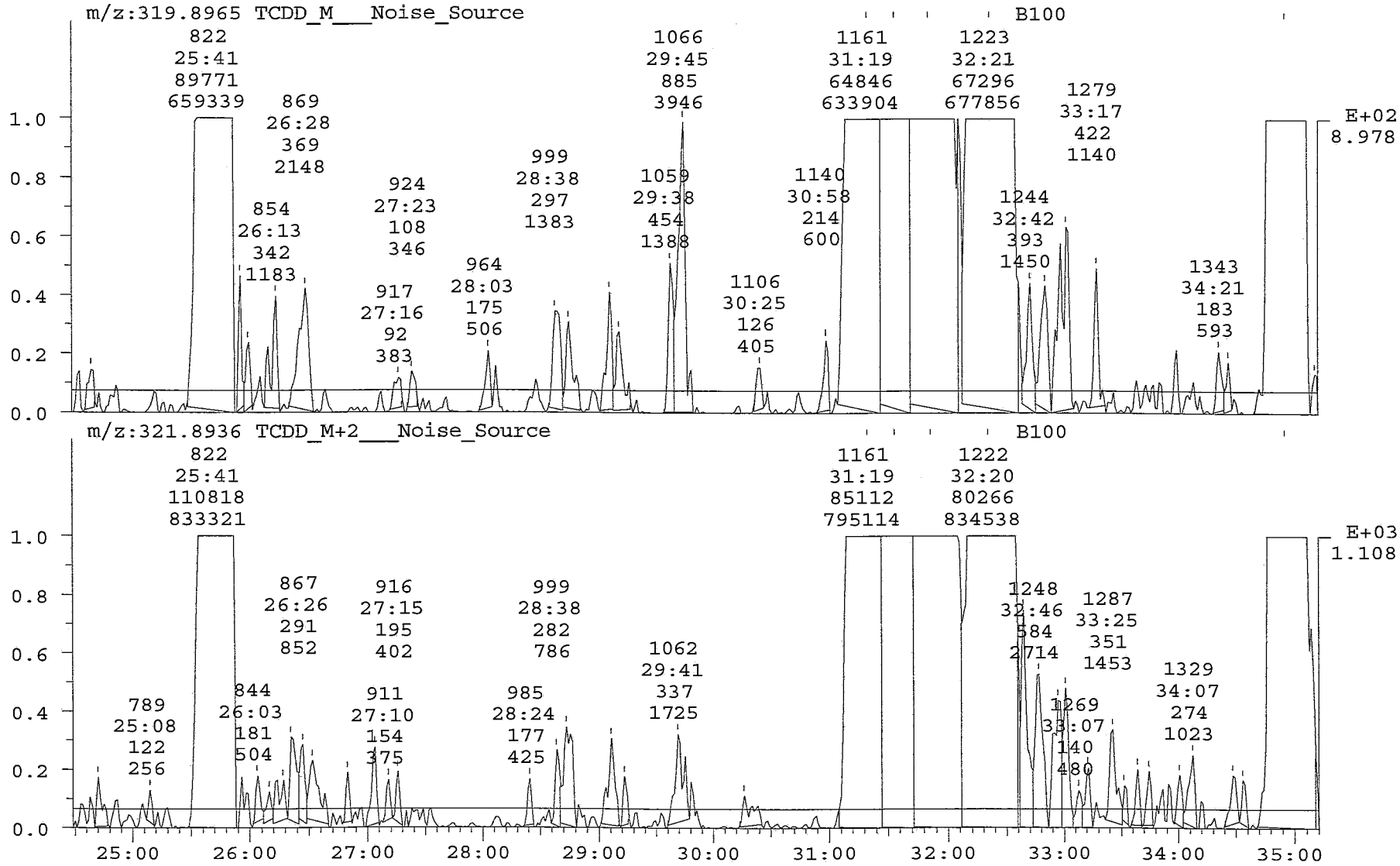

Lockmass: 425.9775 Instr.: DFS-3097
Resolution: 10445 (05/16/14 10:05:35)
300000
290000
280000
270000
260000
250000
240000
230000
220000
210000
200000
190000
180000
170000
160000
150000
140000
130000
120000
110000
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
425.88
425.90
425.92
425.94
425.96
425.98
426.00
426.02
426.04
426.06
426.08
mass

Mass: 463.9743 Instr.: DFS-3097
Resolution: 11159 (05/16/14 10:06:21)

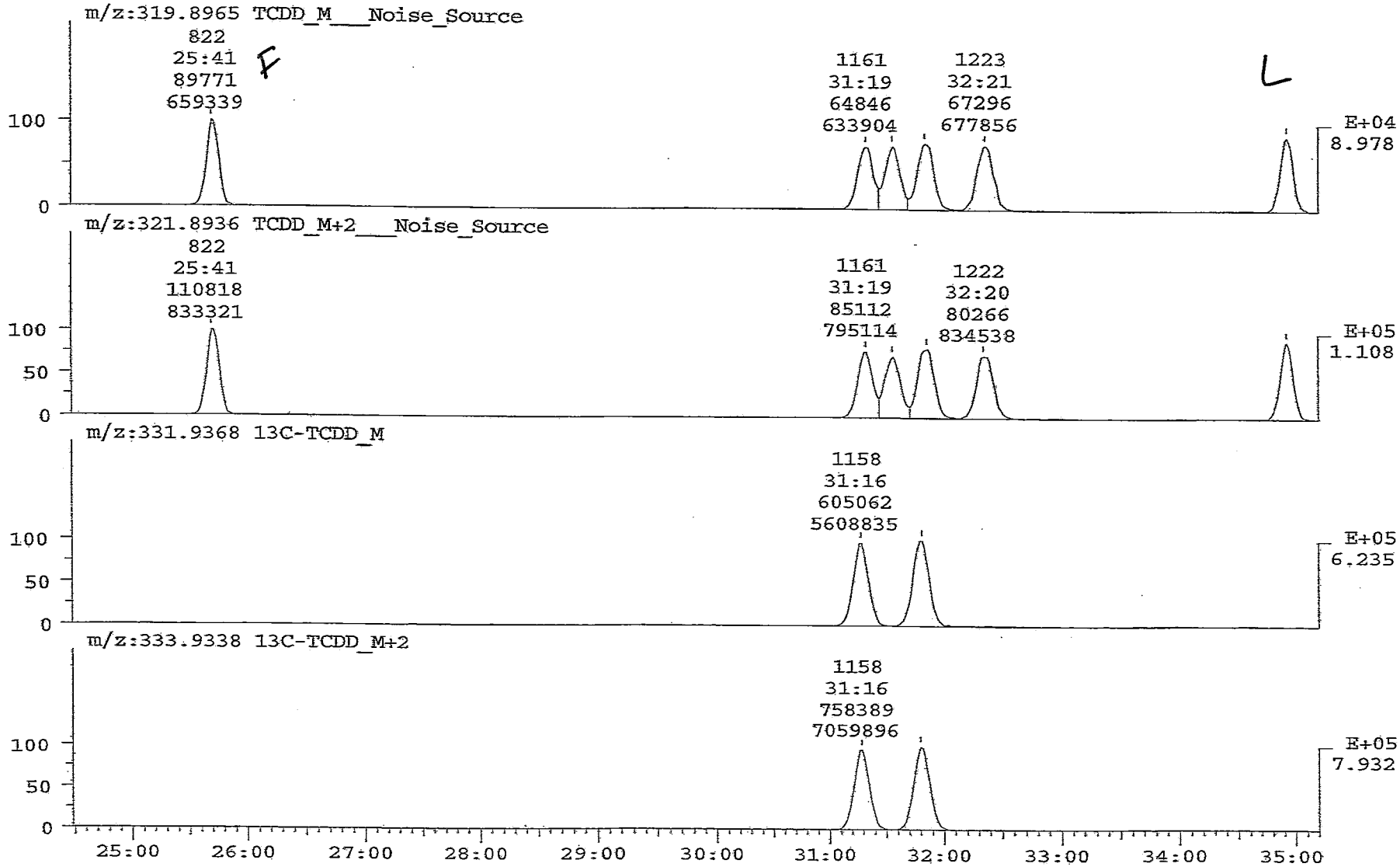



CalibMass:501.9706 Instr.: DFS-3097
Resolution: 10650 (05/16/14 10:06:24)
intensity
21000000
20000000
19000000
18000000
17000000
16000000
15000000
14000000
13000000
12000000
11000000
10000000
9000000
8000000
7000000
6000000
5000000
4000000
3000000
2000000
1000000
0
501.86
501.88
501.90
501.92
501.94
501.96
501.98
502.00
502.02
502.04
502.06
502.08
502.10
mass

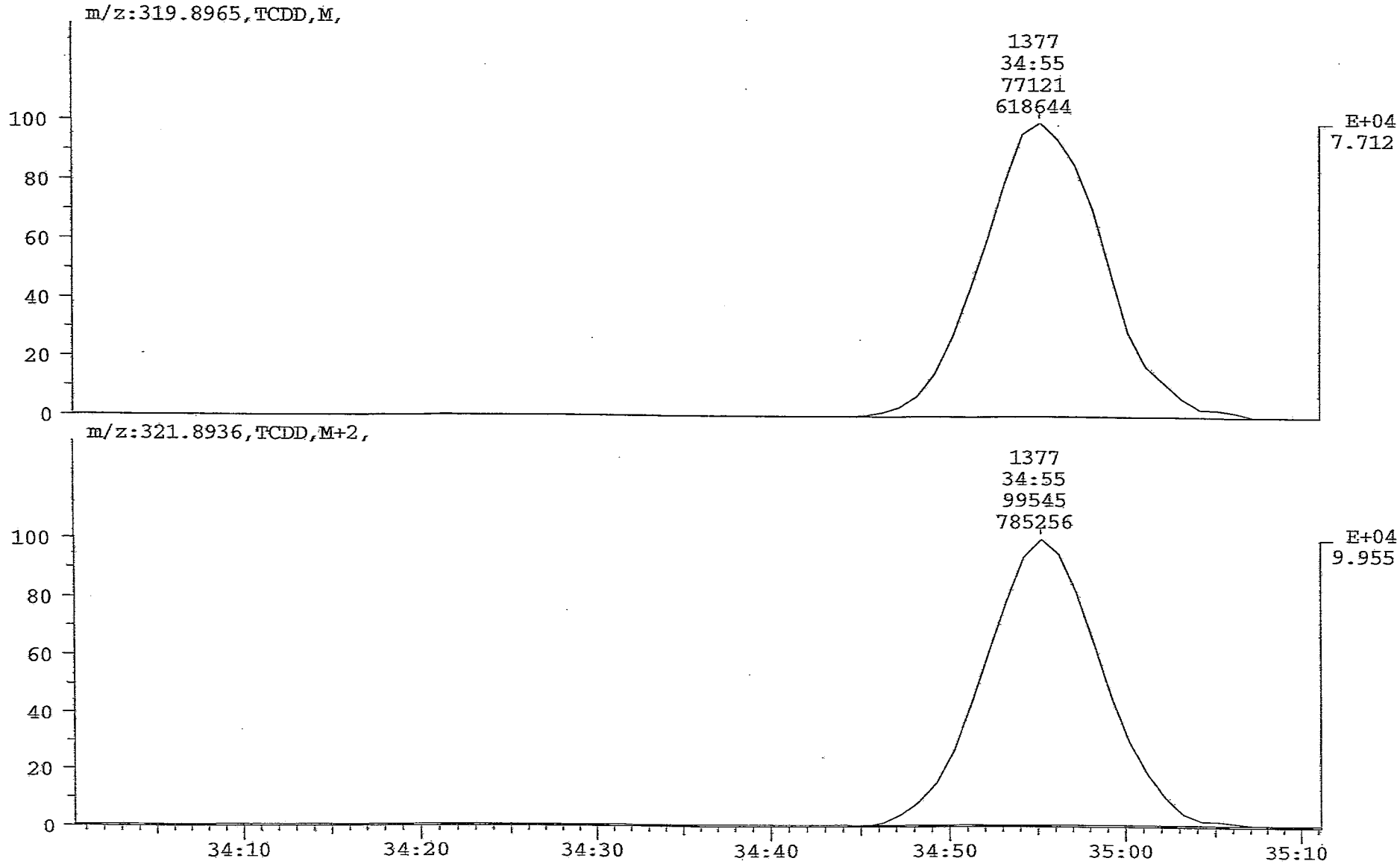
CHRO: d3140516w1 16-May-14 Elapse: 54:24 2501
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 749 > 1394 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 1.0
Disp: Height Area



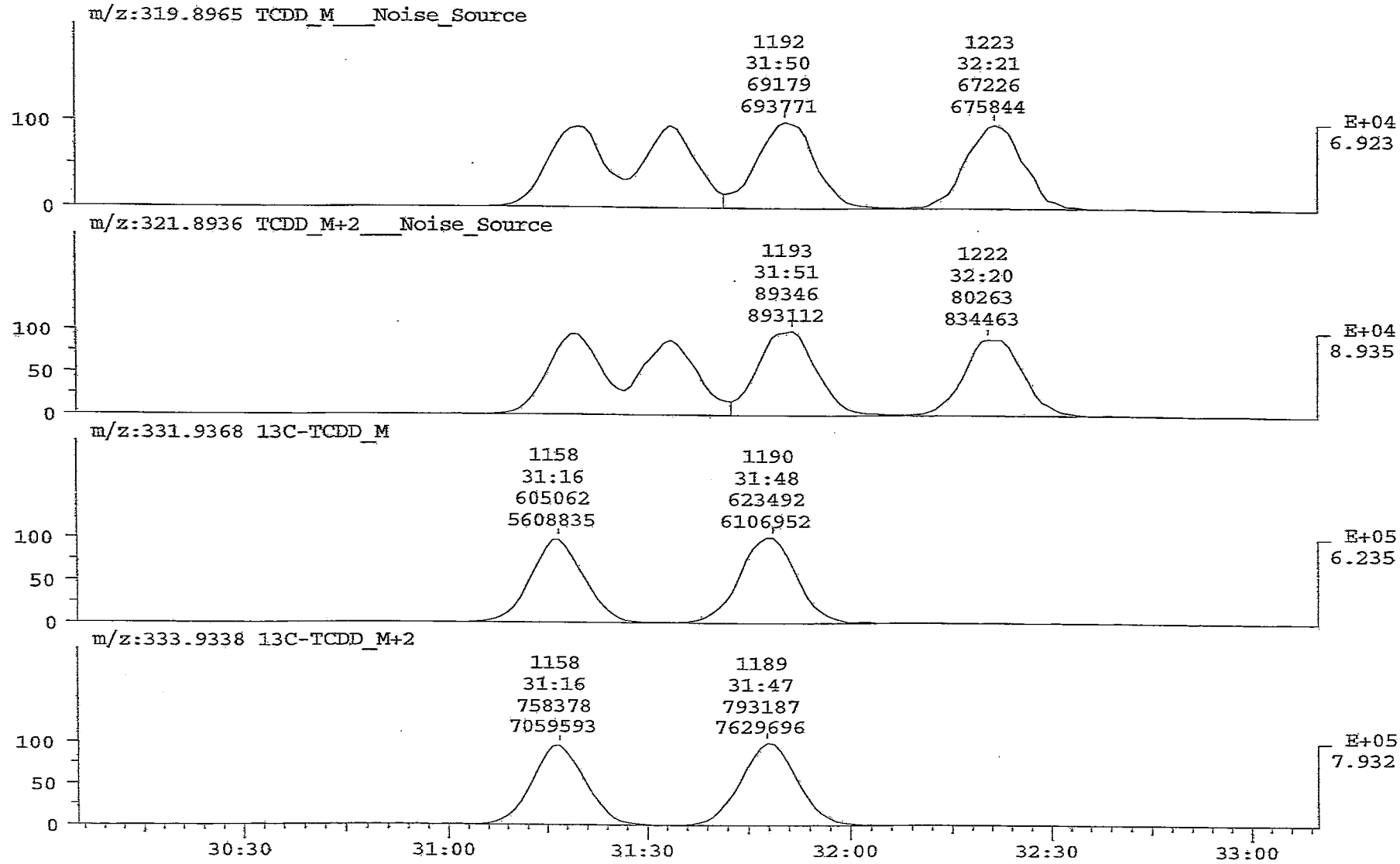
CHRO: d3140516w1 16-May-14 Elapse: 54:24 2501
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 749 > 1394 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



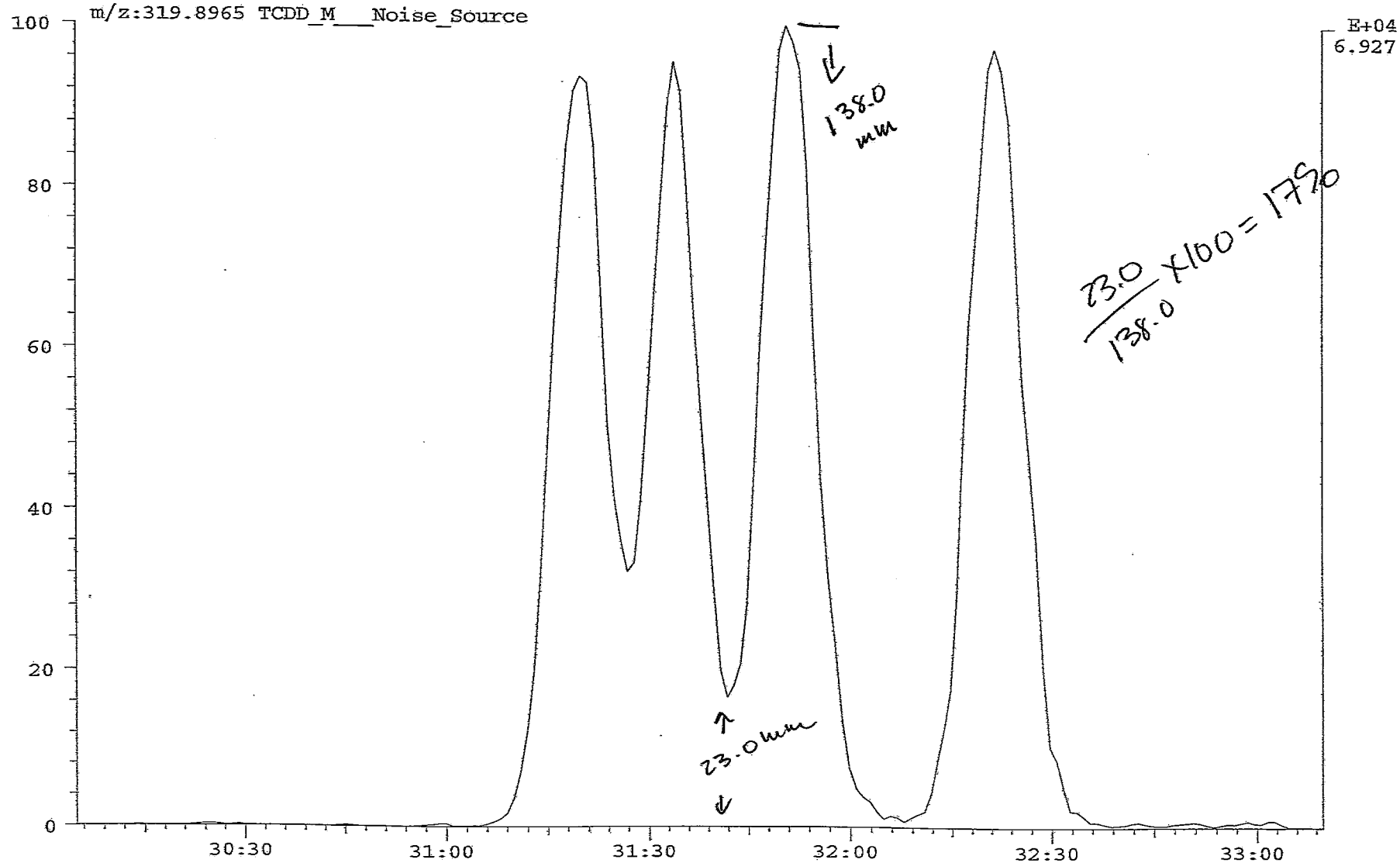
CHRO: d3140516w1 16-May-14 Elapse: 54:25 2502
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1322 > 1393 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



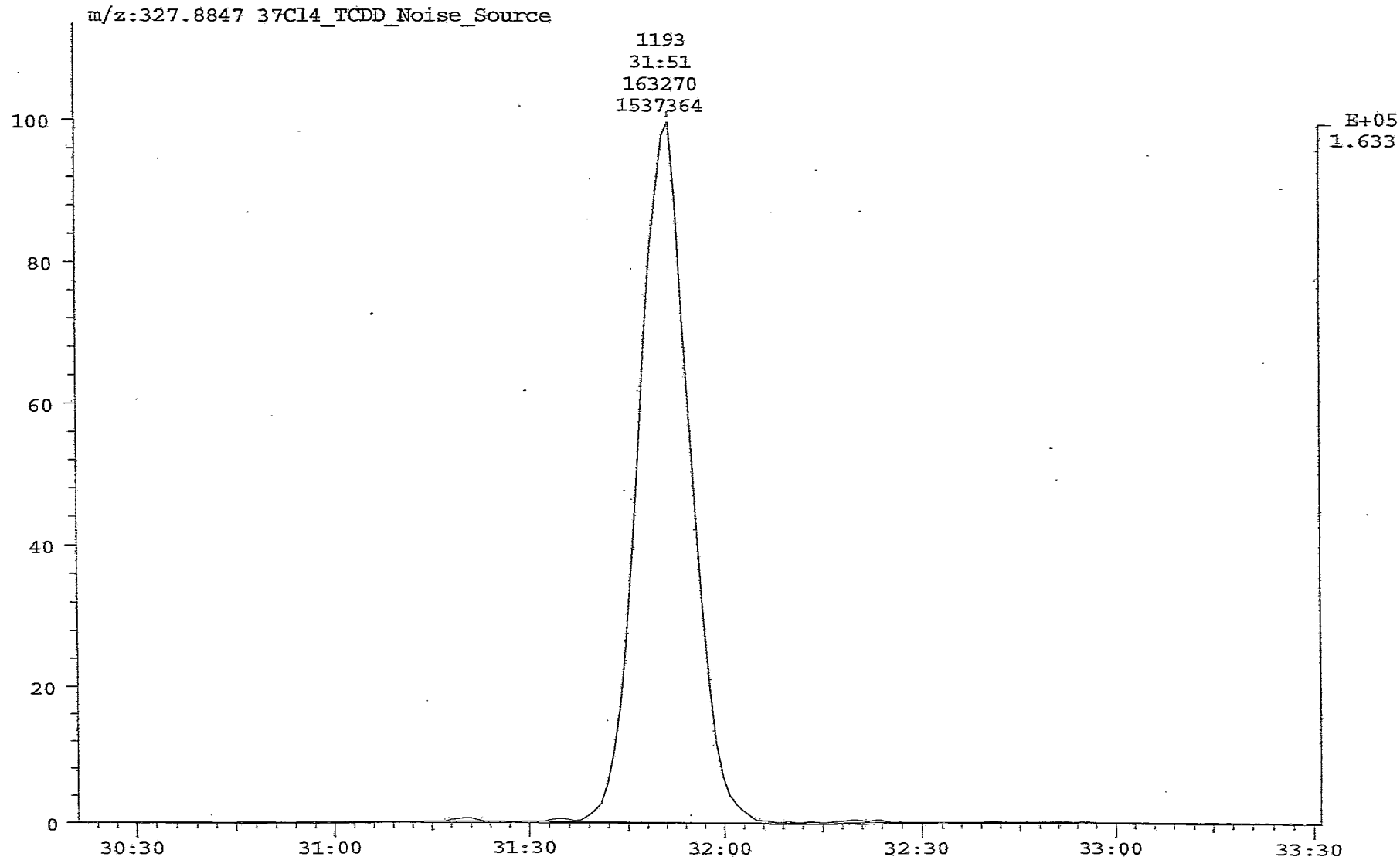
CHRO: d3140516w1 16-May-14 Elapse: 31:36 1178
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1086 > 1271 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



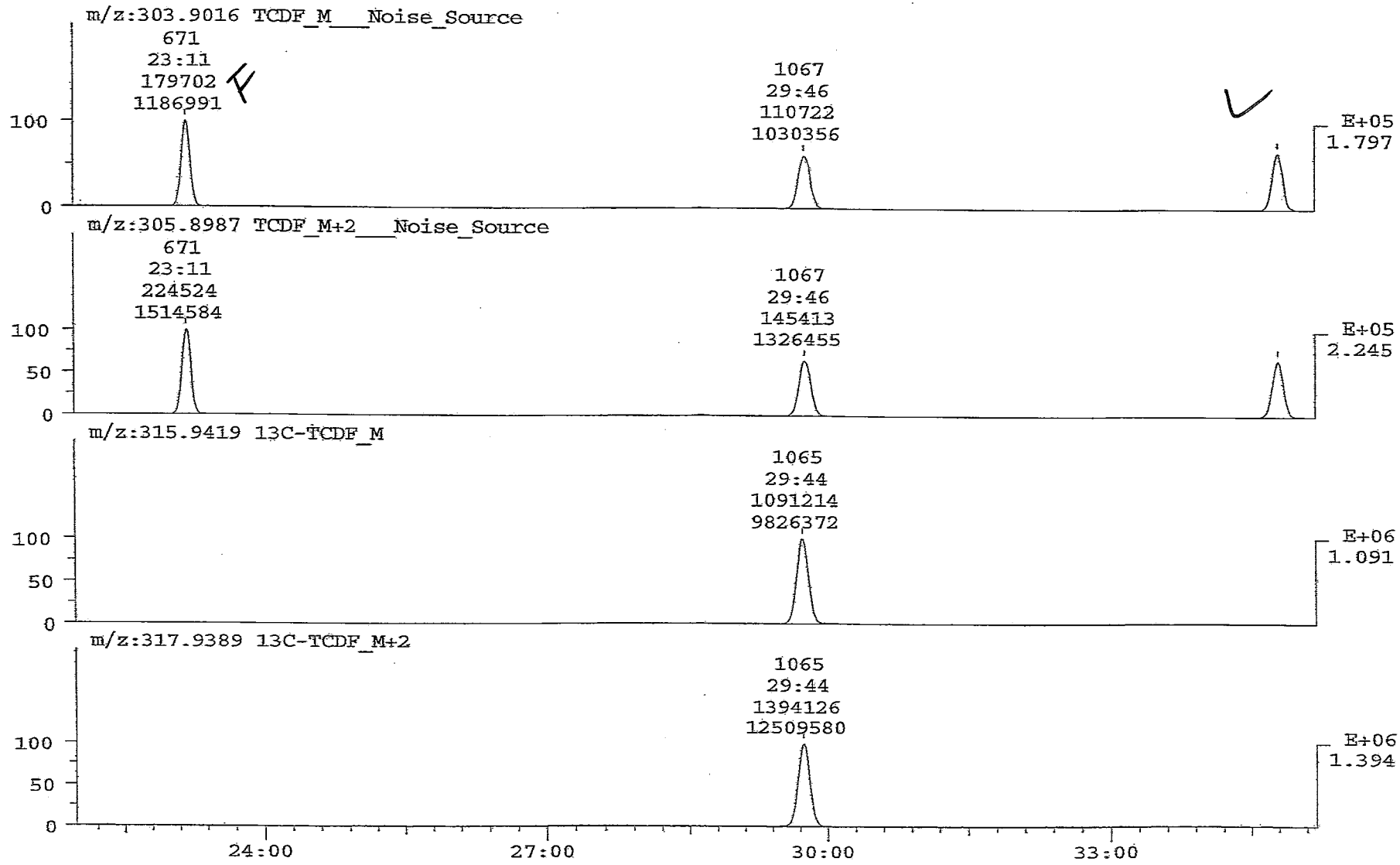
CHRO: d3140516w1 16-May-14 Elapse: 31:36 1178
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1086 > 1271 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



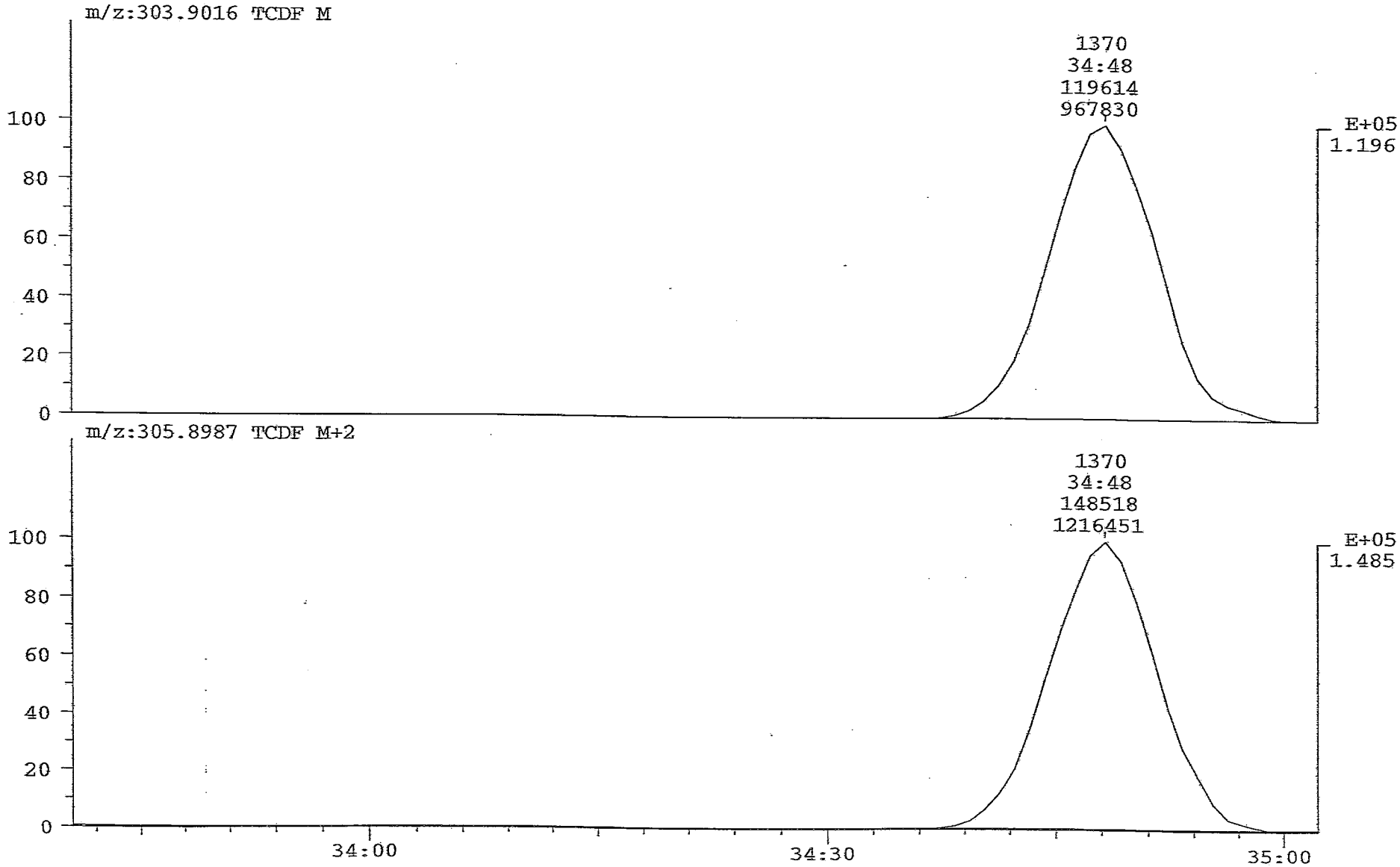
CHRO: d3140516w1 16-May-14 Elapse: 31:52 1194
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1102 > 1293 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



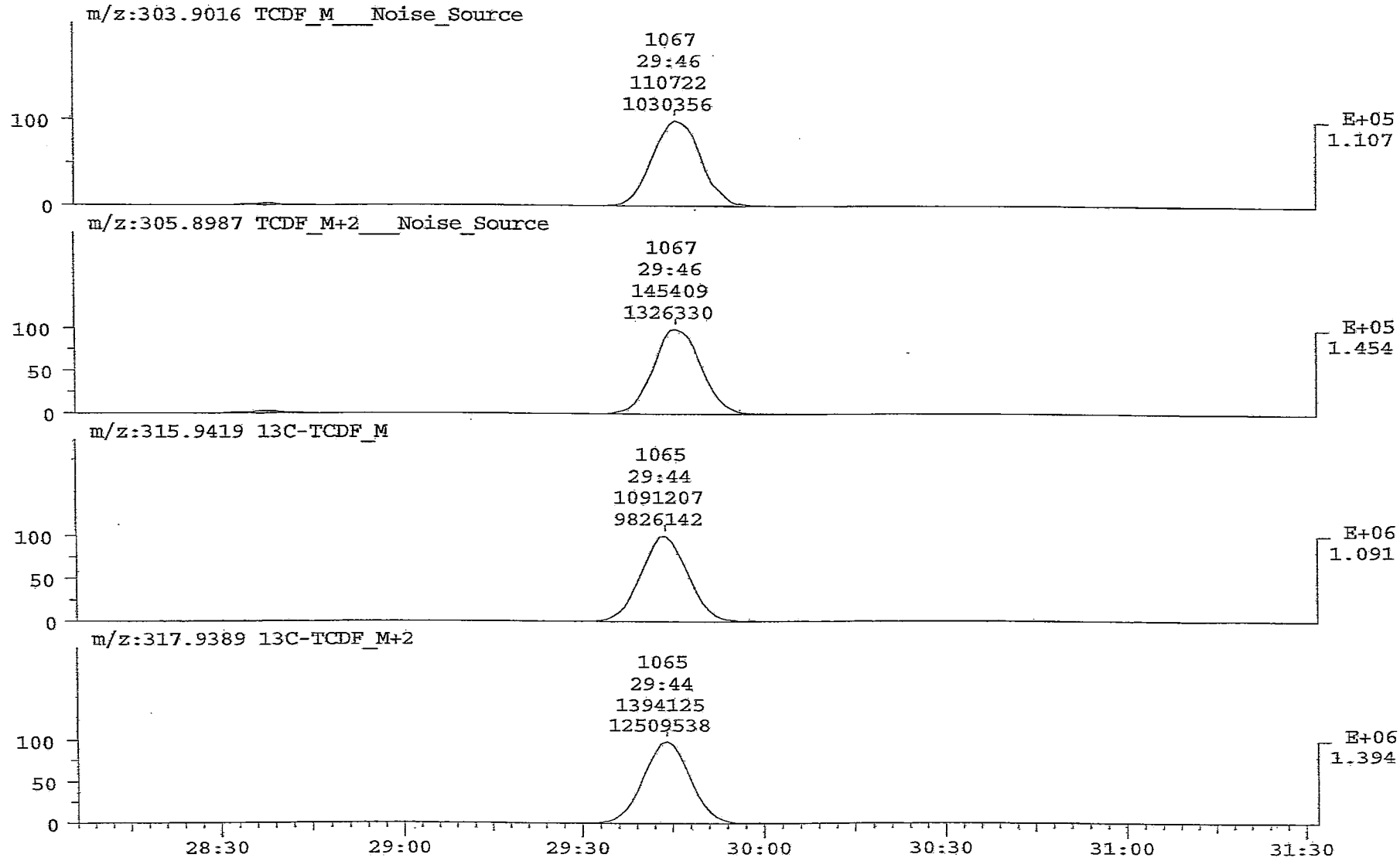
CHRO: d3140516w1 16-May-14 Elapse: 31:52 1194
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 598 > 1394 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



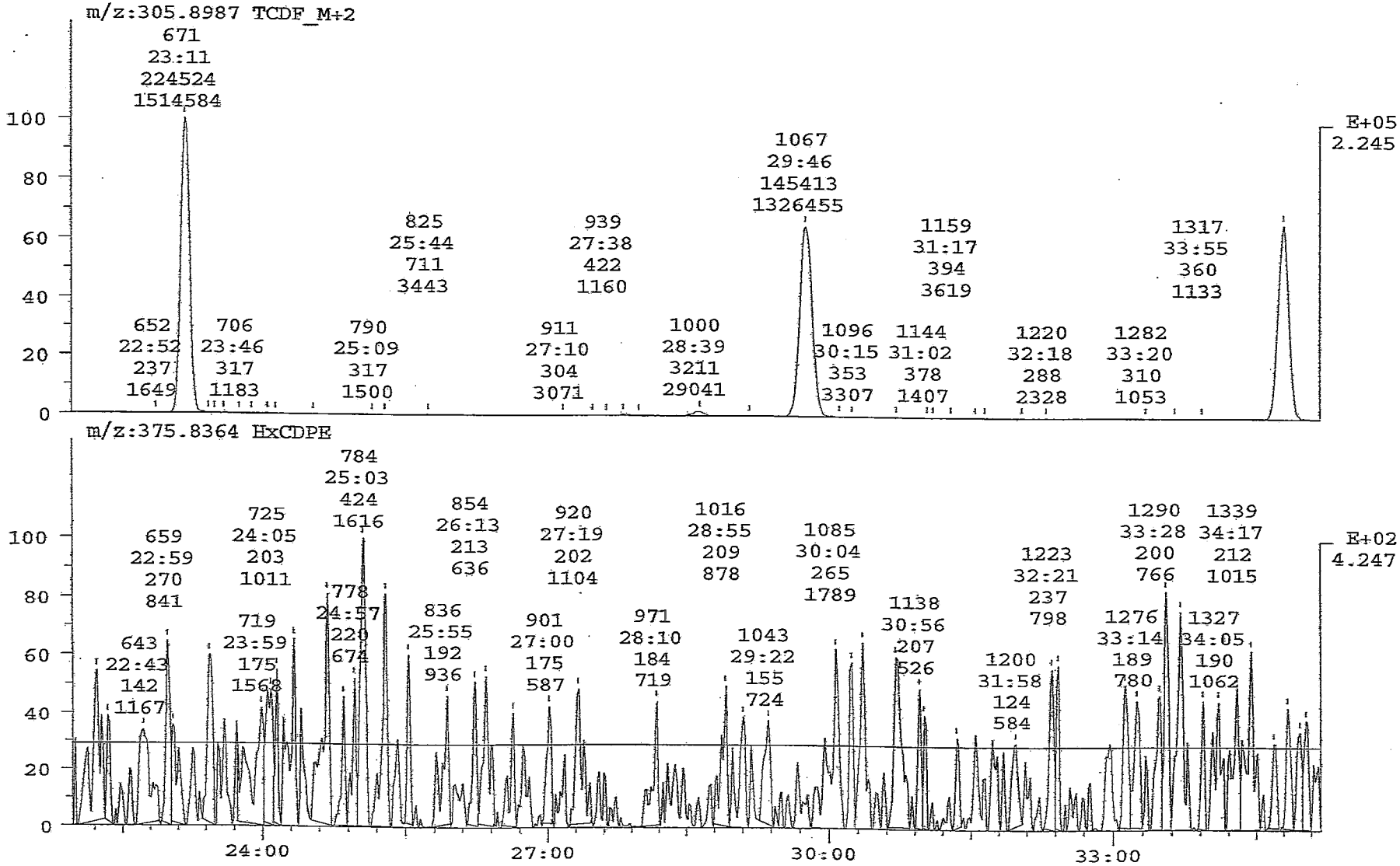
CHRO: d3140516w1 16-May-14 Elapse: 54:25 2502
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1302 > 1384 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



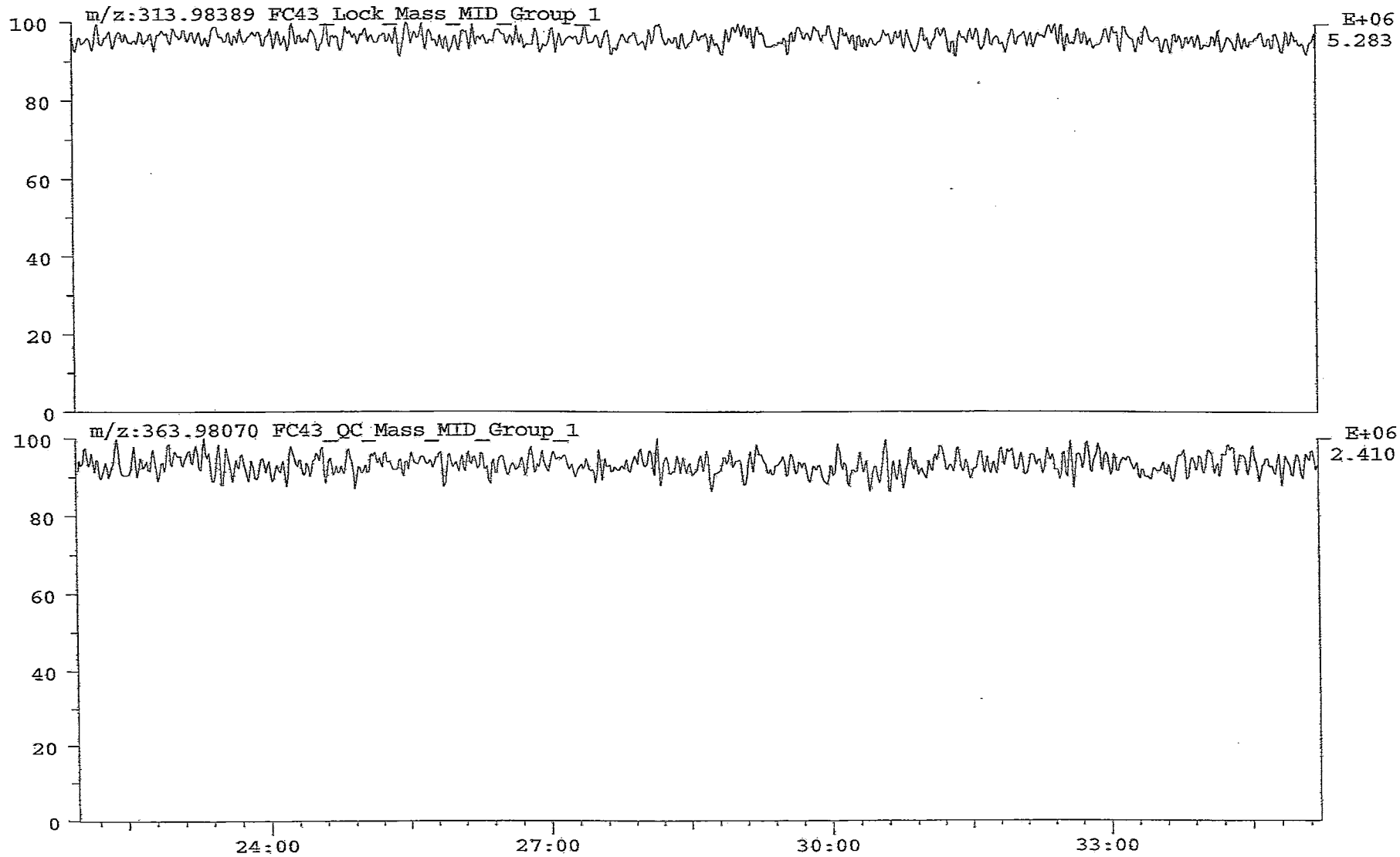
CHRO: d3140516w1 16-May-14 Elapse: 29:46 1067
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 967 > 1173 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



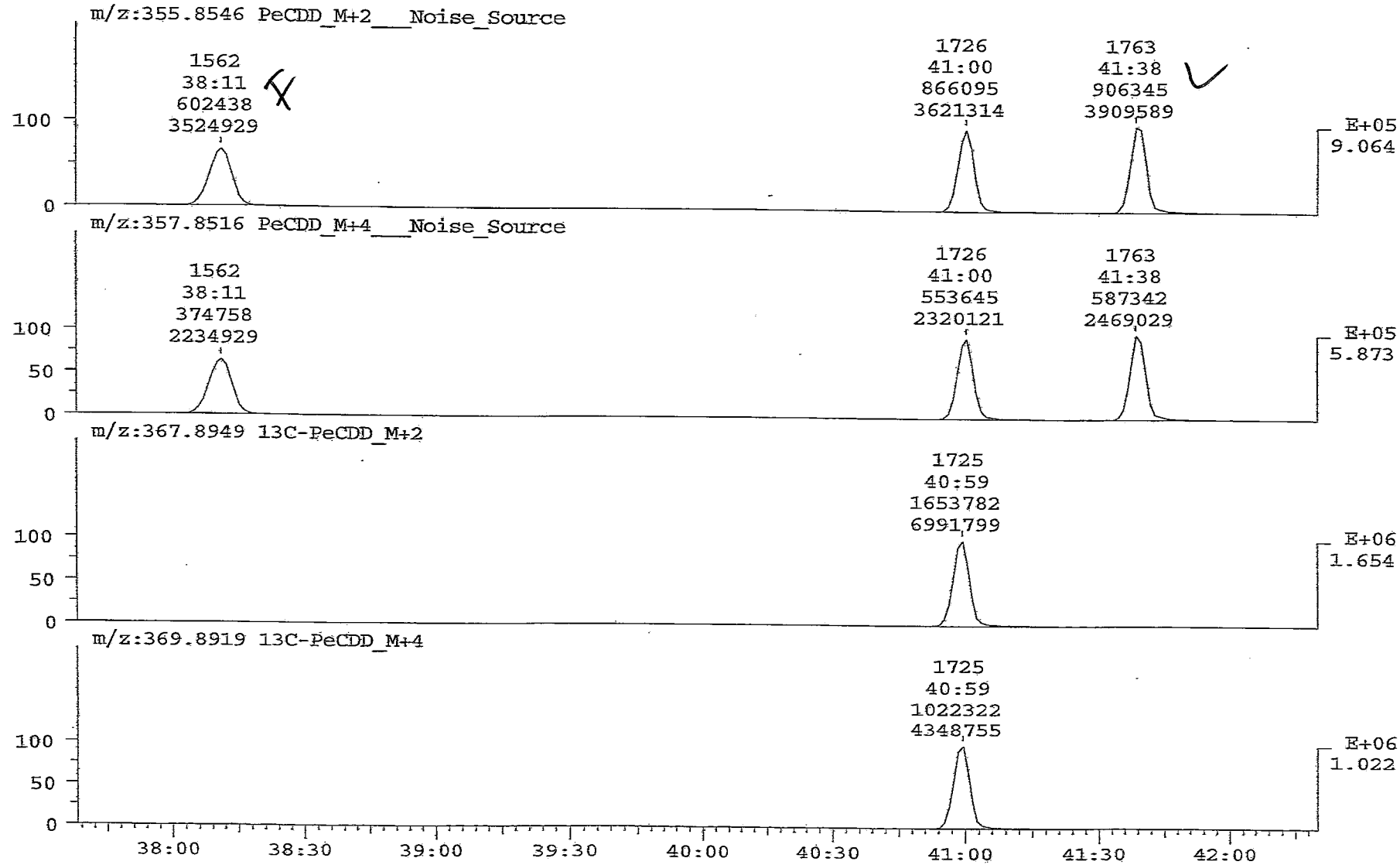
CHRO: d3140516w1 16-May-14 Elapse: 29:46 1067
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 598 > 1394 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



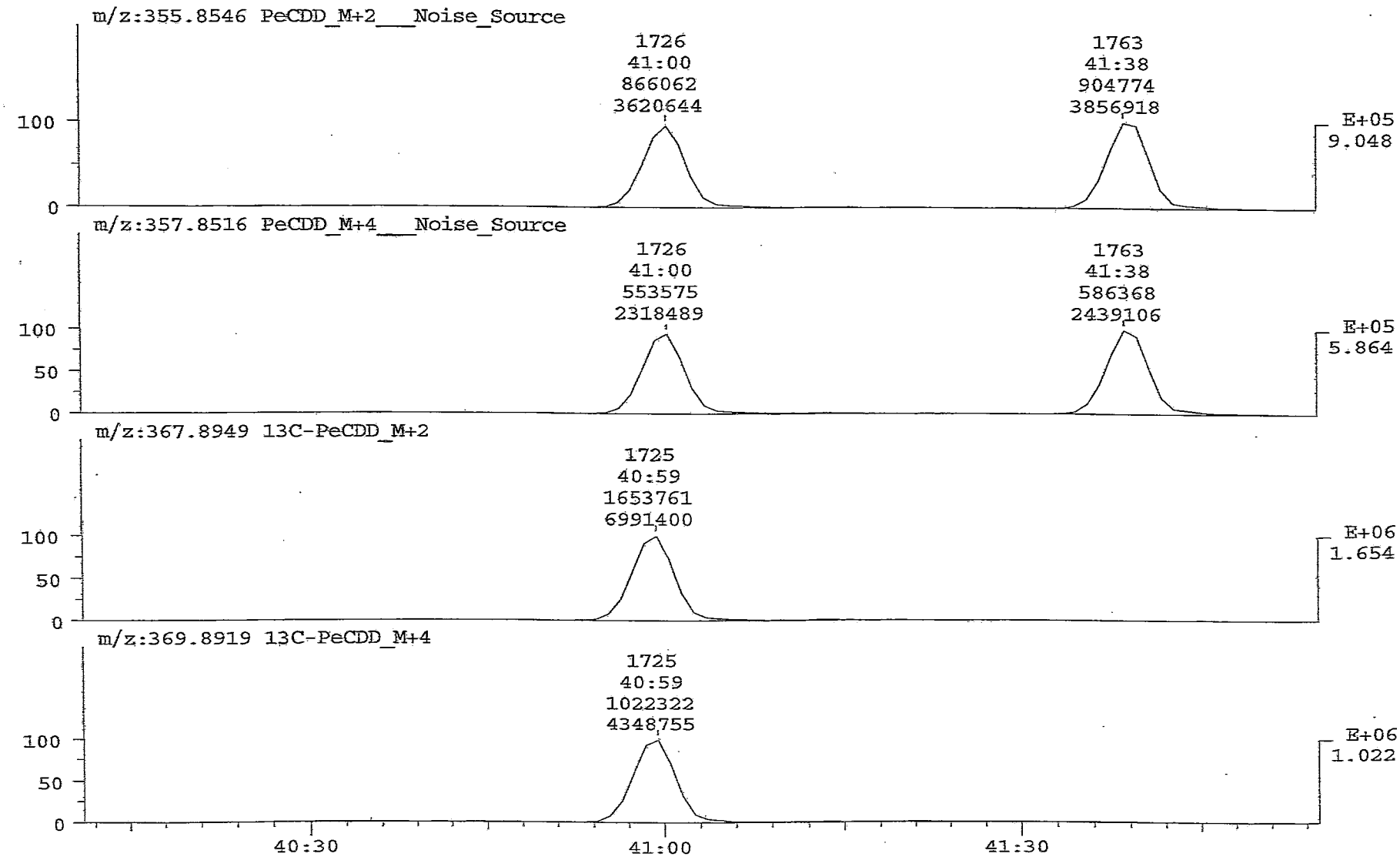
CHRO: d3140516w1 16-May-14 Elapse: 29:46 1067
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 598 > 1394 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



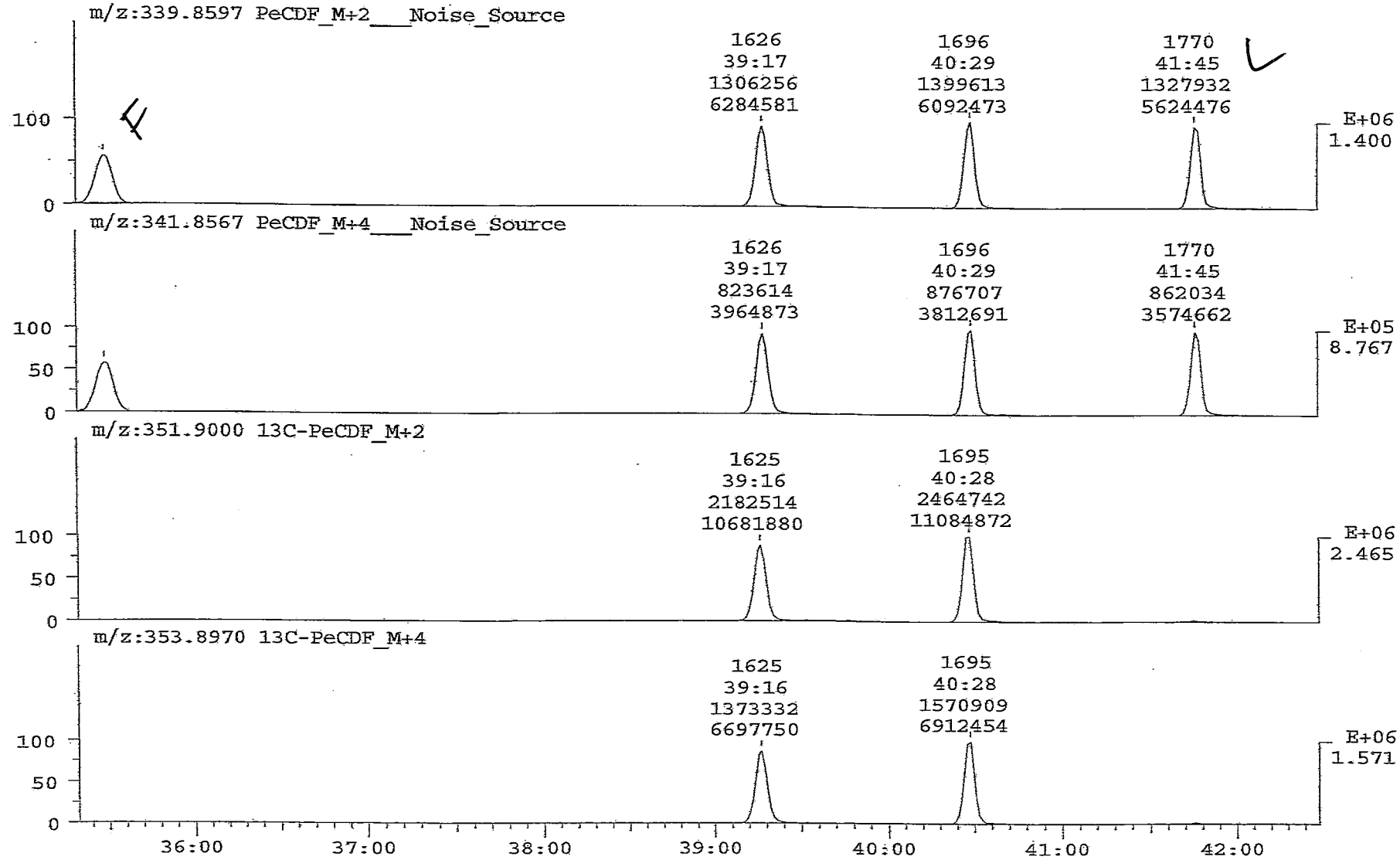
CHRO: d3140516w1 16-May-14 Elapse: 29:46 1067
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1530 > 1803 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



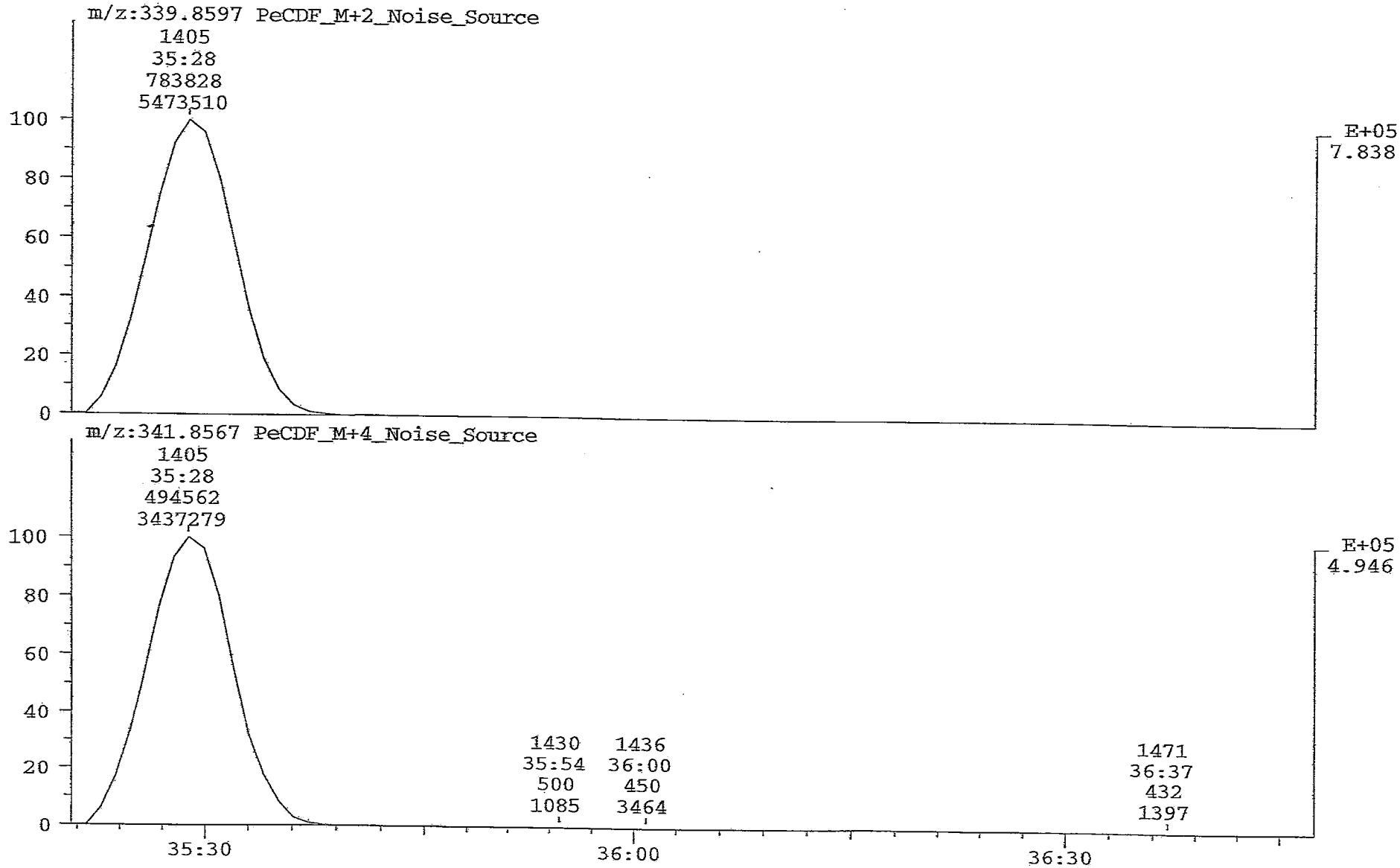
CHRO: d3140516w1 16-May-14 Elapse: 41:00 1726
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1678 > 1779 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



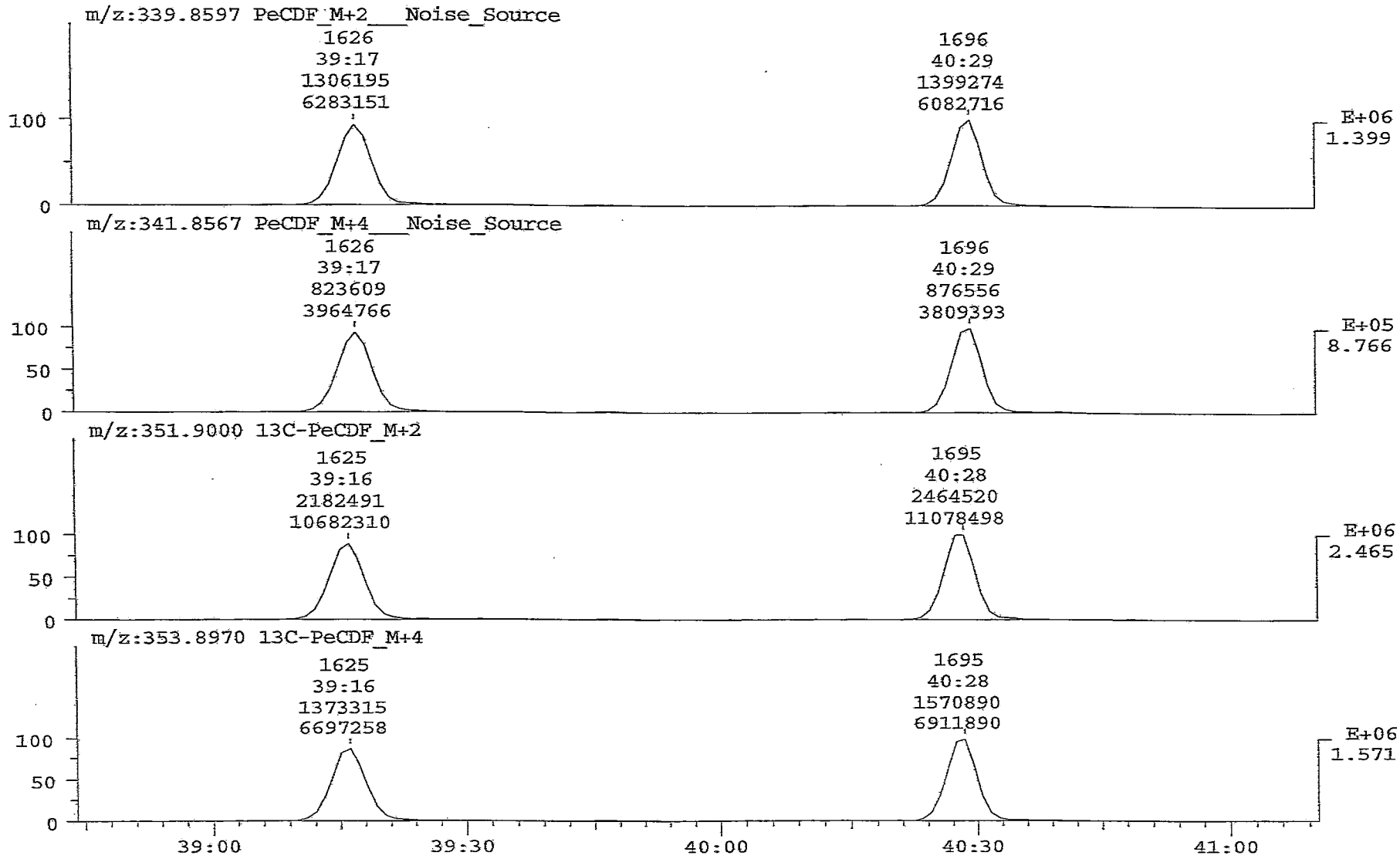
CHRO: d3140516w1 16-May-14 Elapse: 41:00 1726
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1396 > 1812 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



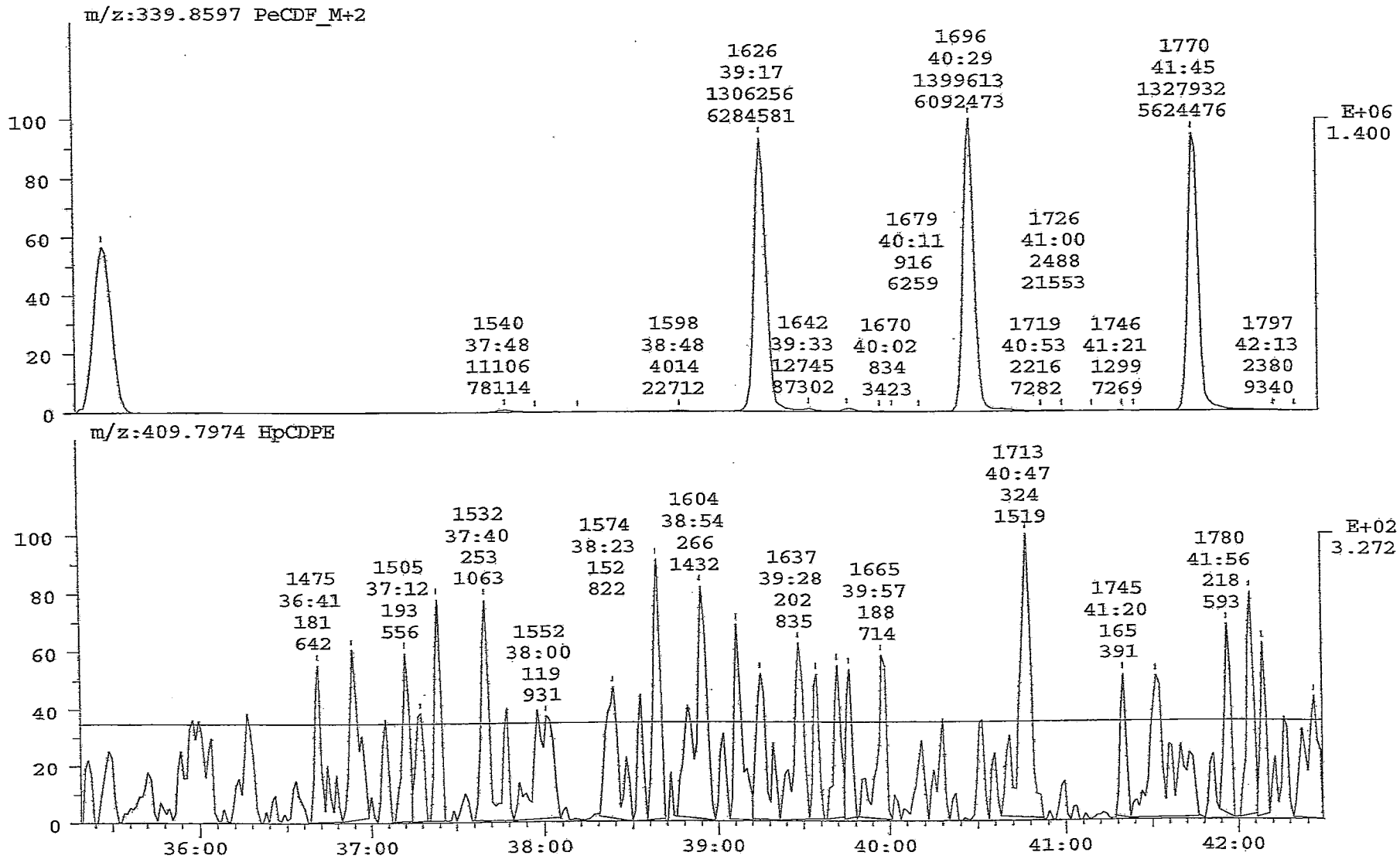
CHRO: d3140516w1 16-May-14 Elapse: 54:25 2502
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1397 > 1481 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



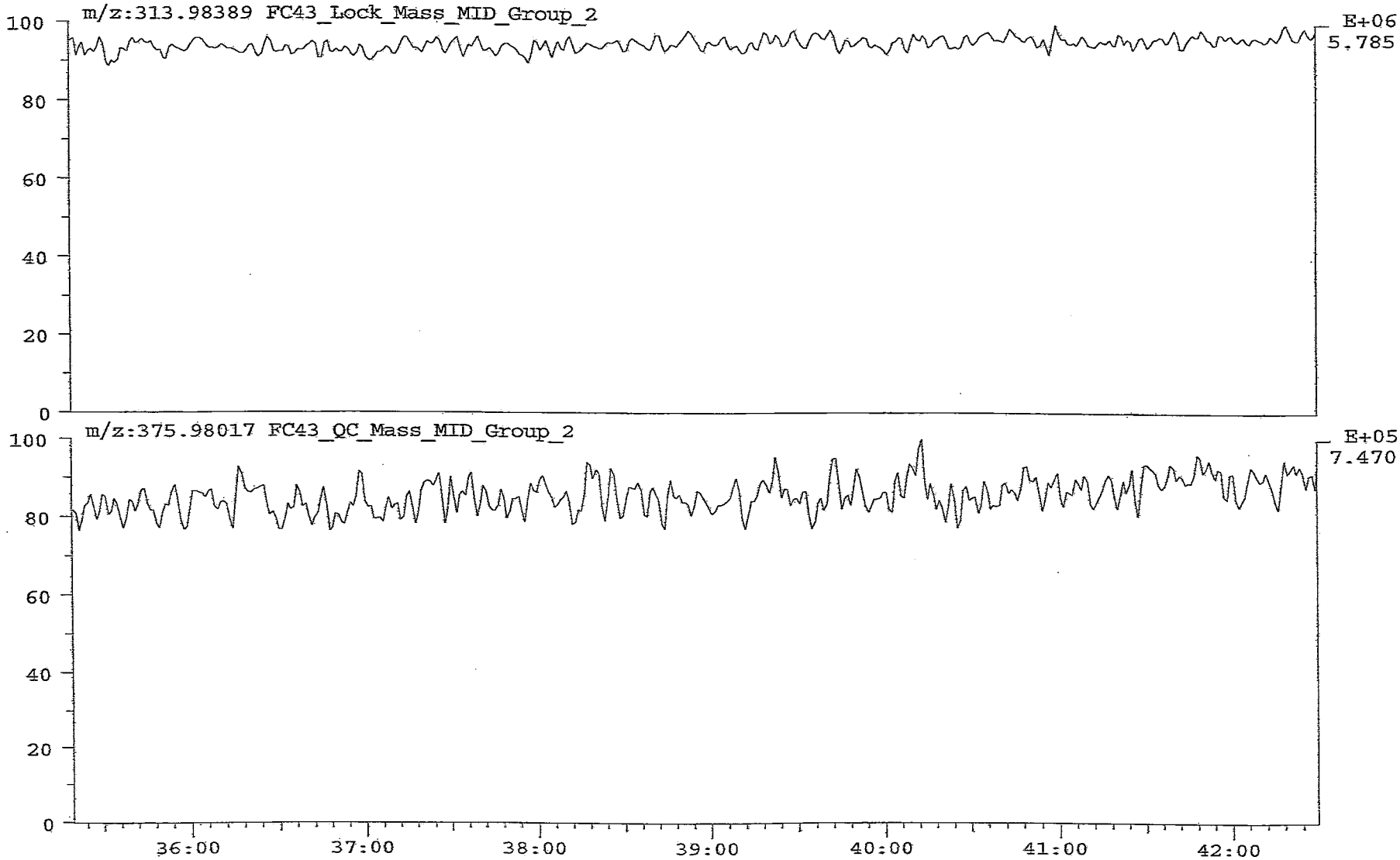
CHRO: d3140516w1 16-May-14 Elapse: 39:57 1665
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1594 > 1735 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



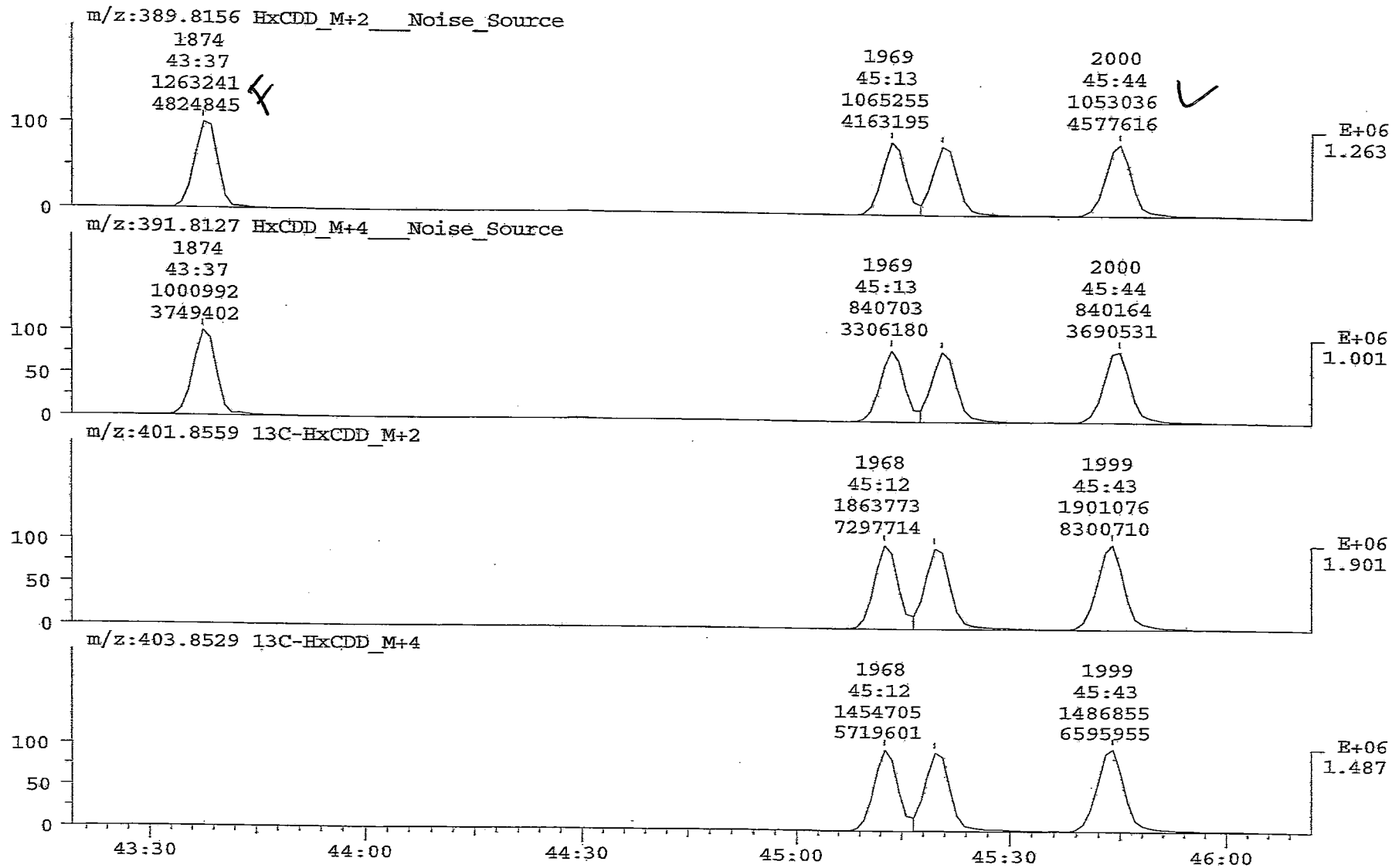
CHRO: d3140516w1 16-May-14 Elapse: 39:57 1665
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1396 > 1812 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



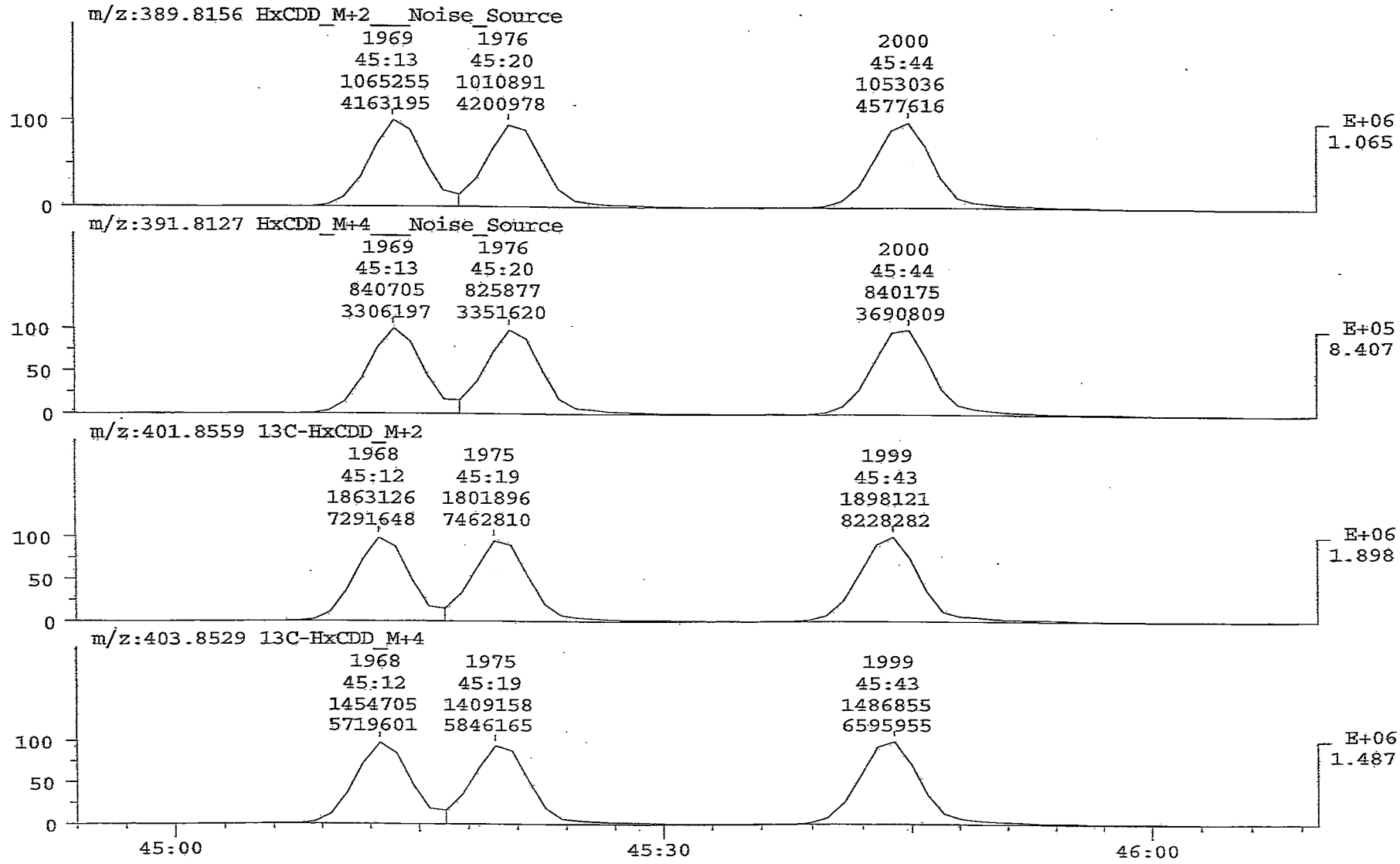
CHRO: d3140516w1 16-May-14 Elapse: 39:57 1665
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1396 > 1812 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



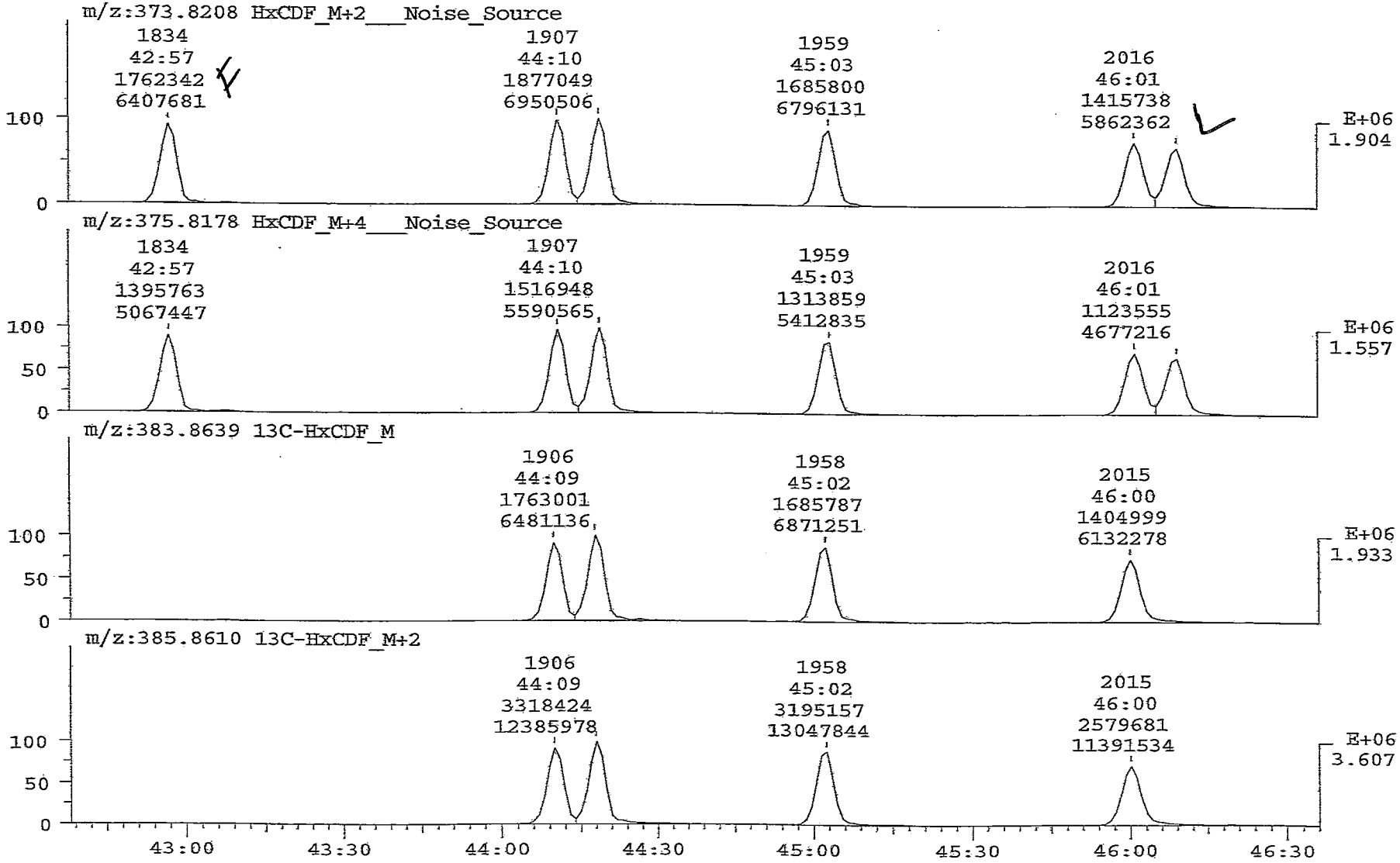
CHRO: d3140516w1 16-May-14 Elapse: 39:57 1665
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1856 > 2027 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



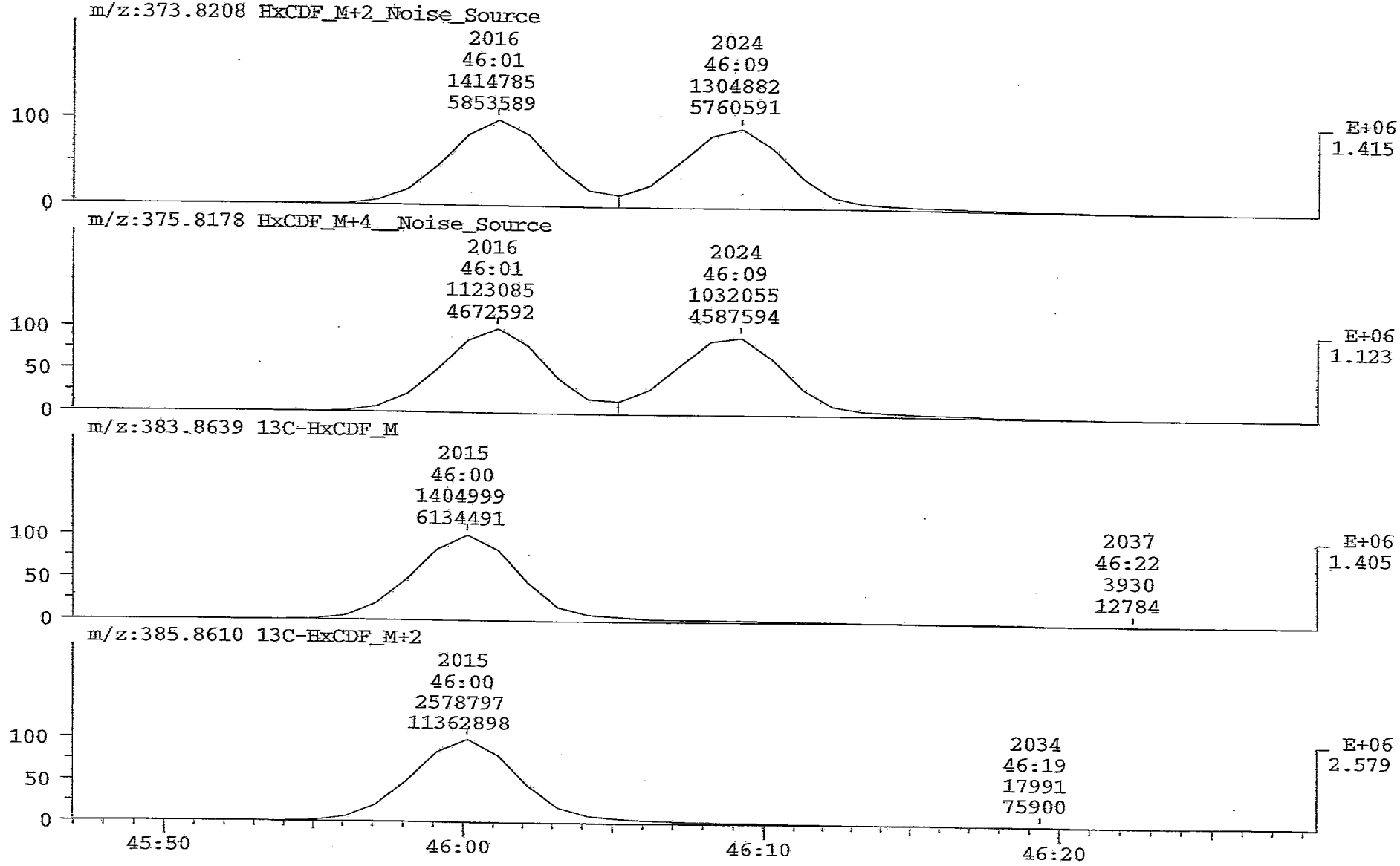
CHRO: d3140516w1 16-May-14 Elapse: 45:31 1987
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1950 > 2025 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



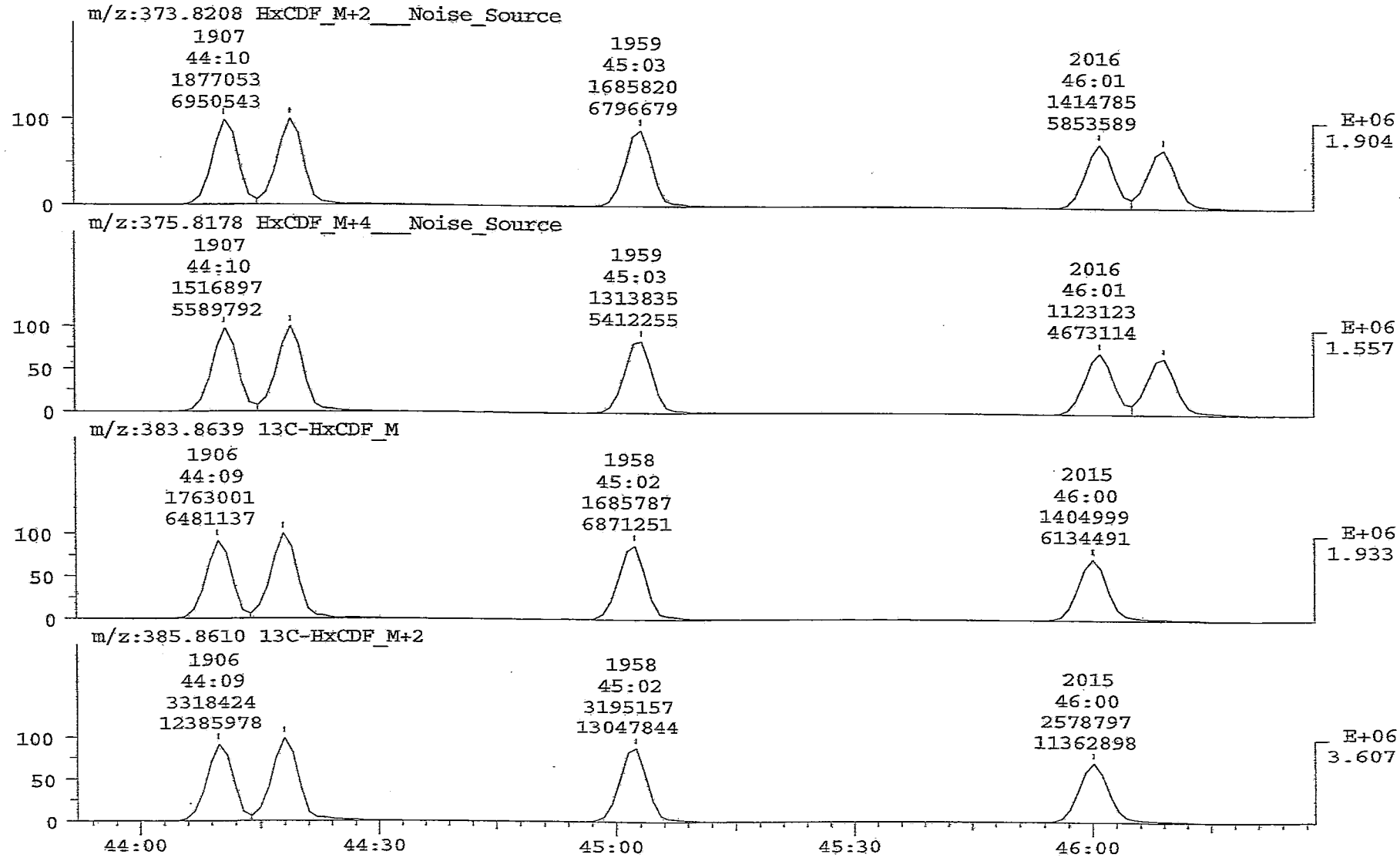
CHRO: d3140516w1 16-May-14 Elapse: 45:31 1987
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1815 > 2050 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



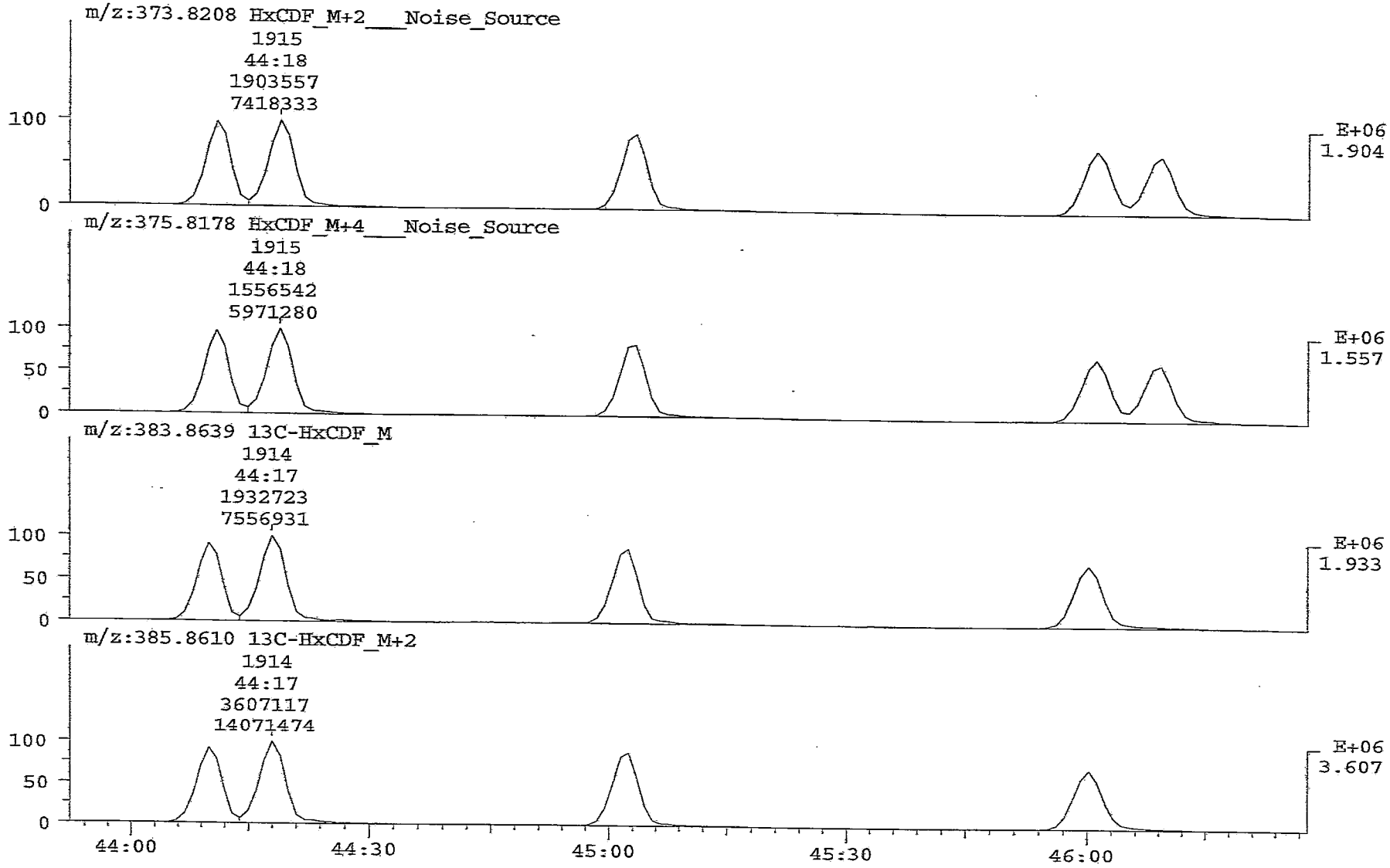
CHRO: d3140516w1 16-May-14 Elapse: 54:25 2502
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2002 > 2043 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



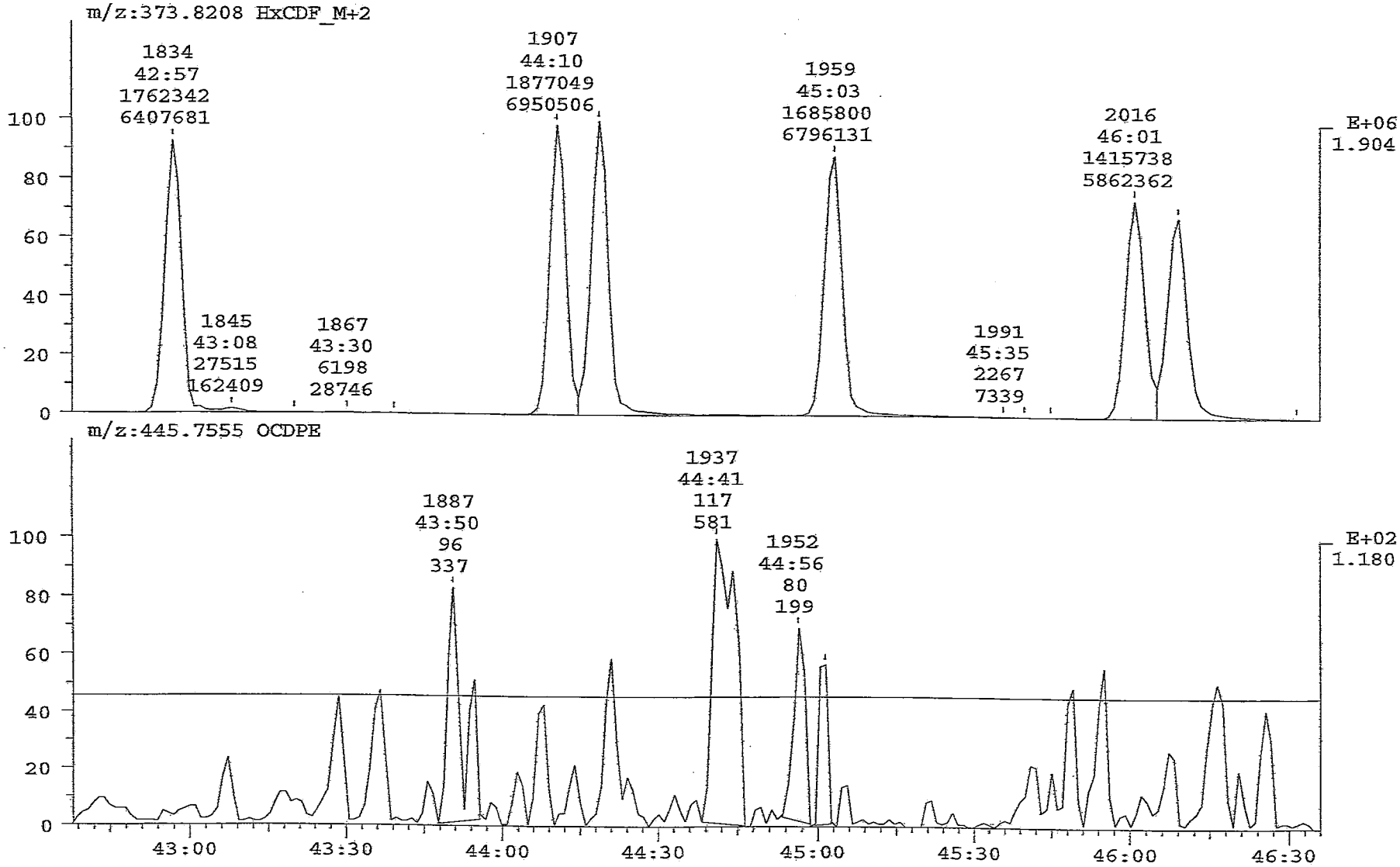
CHRO: d3140516w1 16-May-14 Elapse: 45:09 1965
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1888 > 2043 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



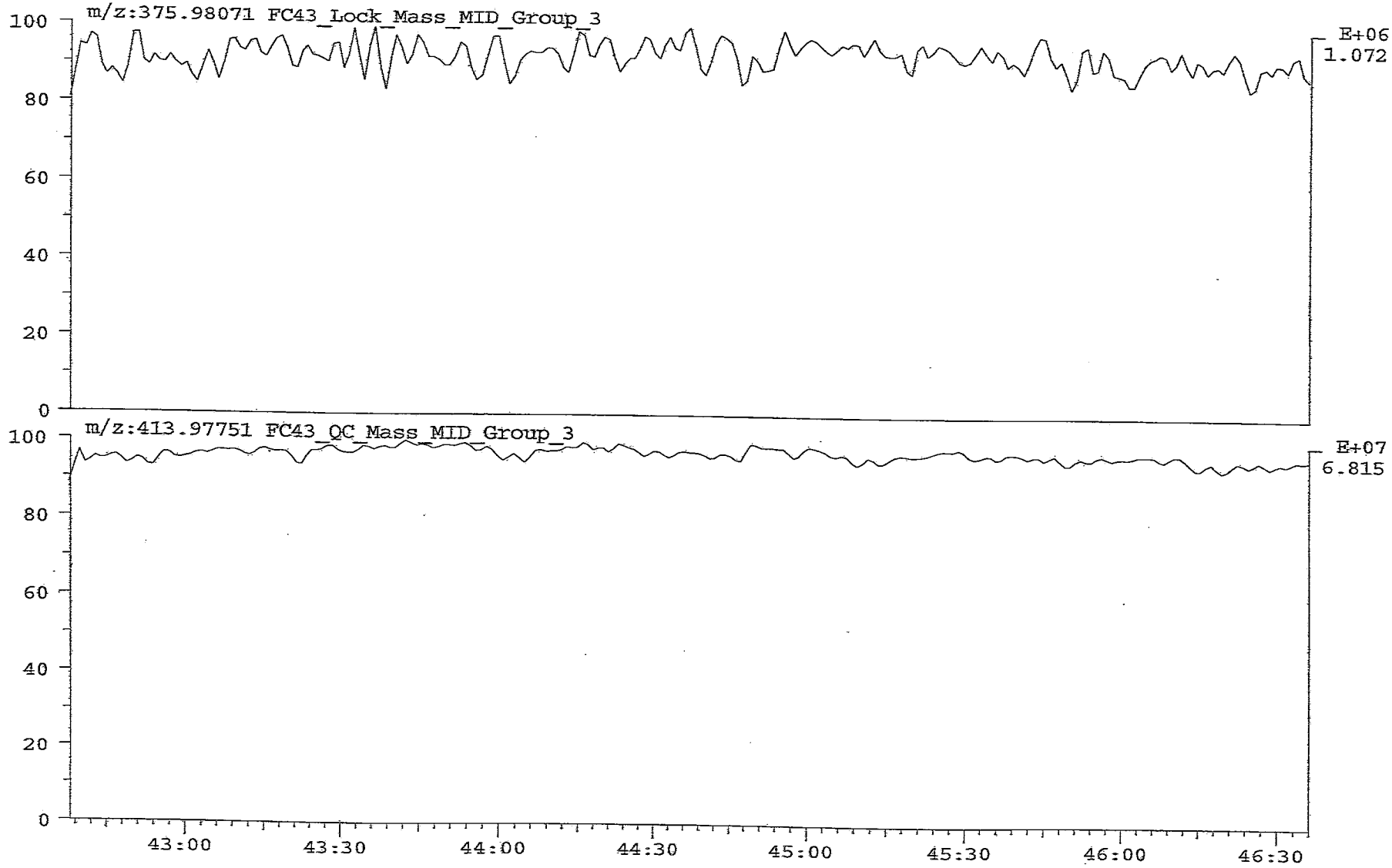
CHRO: d3140516w1 16-May-14 Elapse: 44:20 1916
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1912 > 1920 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



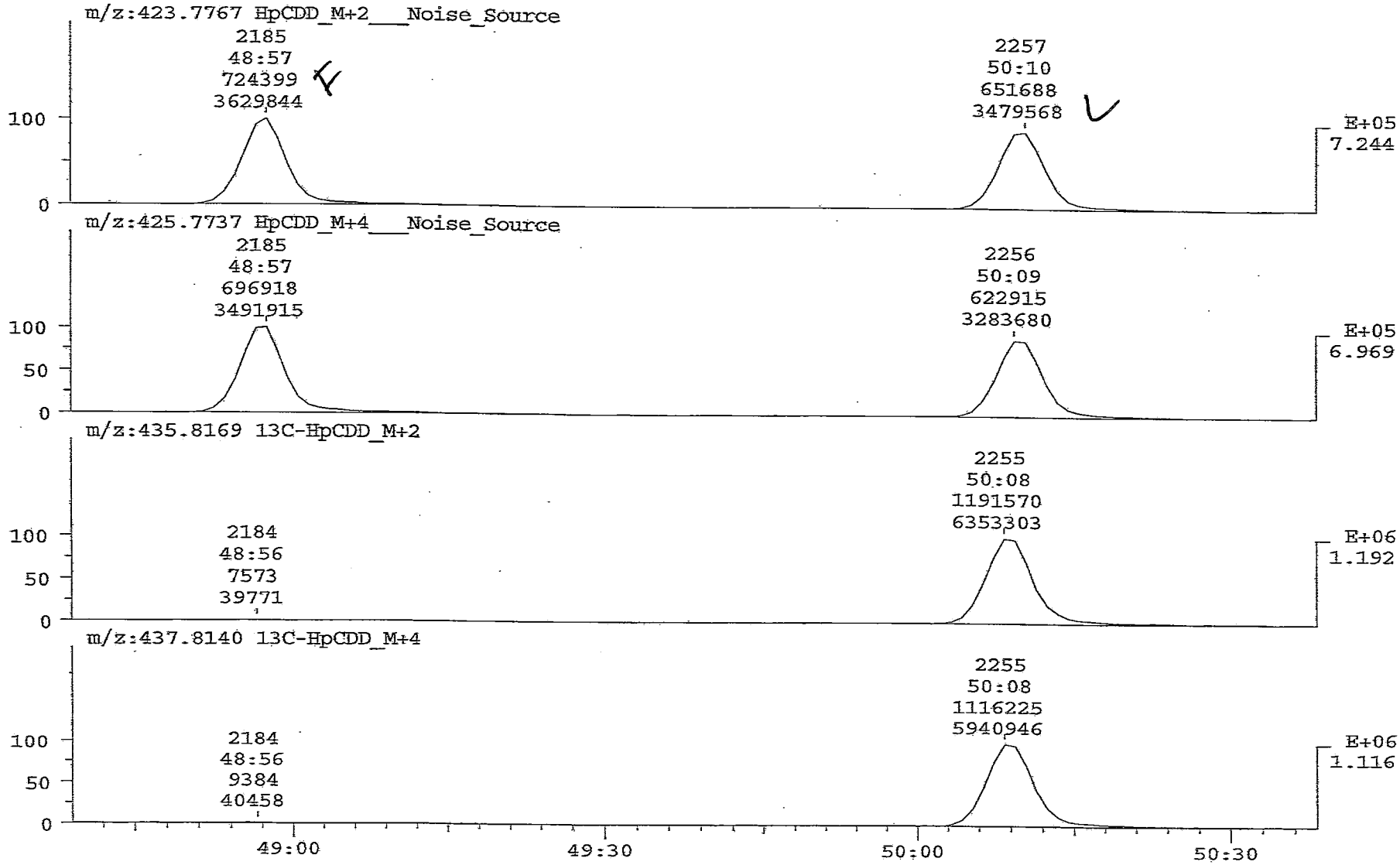
CHRO: d3140516w1 16-May-14 Elapse: 44:20 1916
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1815 > 2050 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



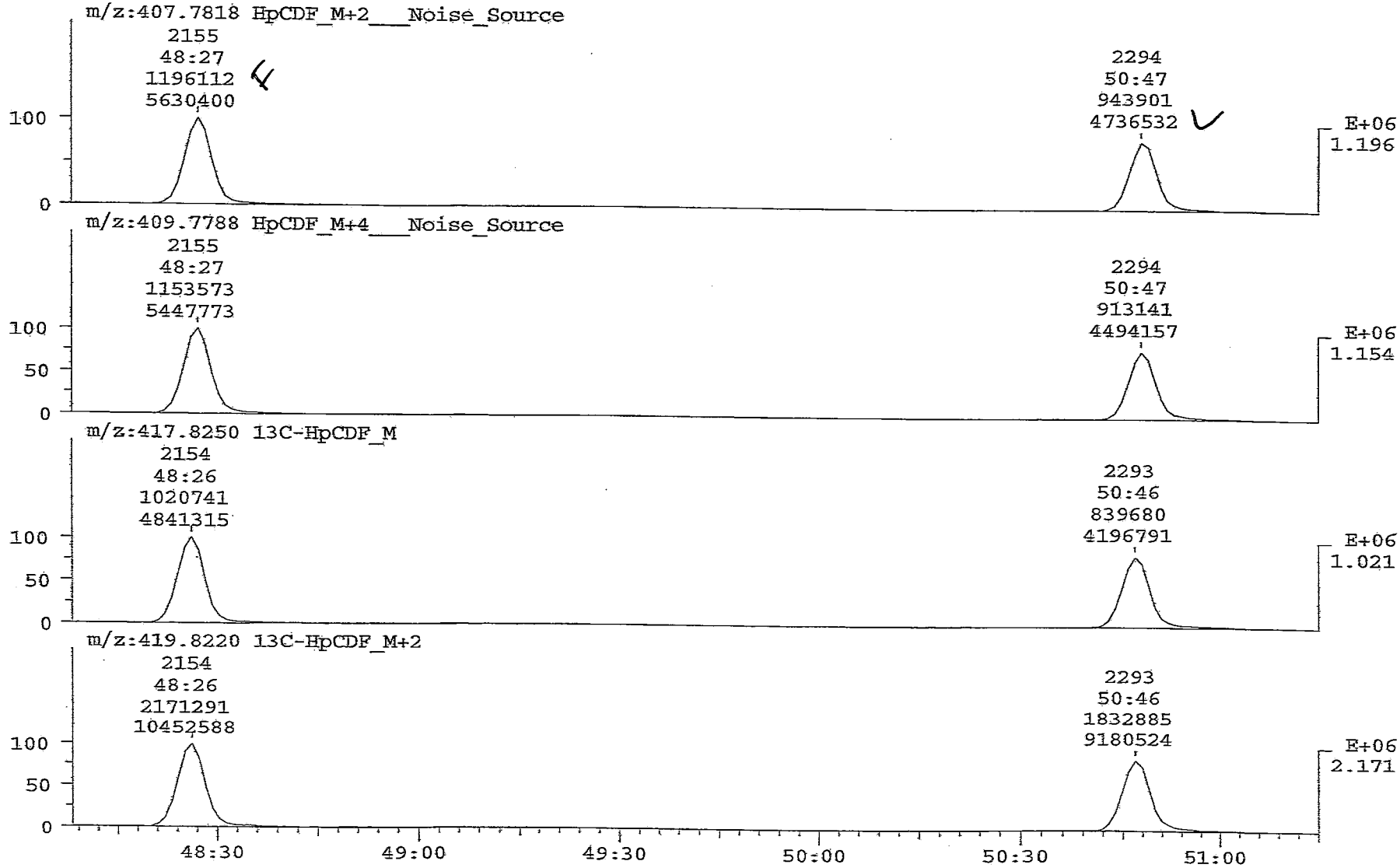
CHRO: d3140516w1 16-May-14 Elapse: 44:20 1916
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1815 > 2050 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



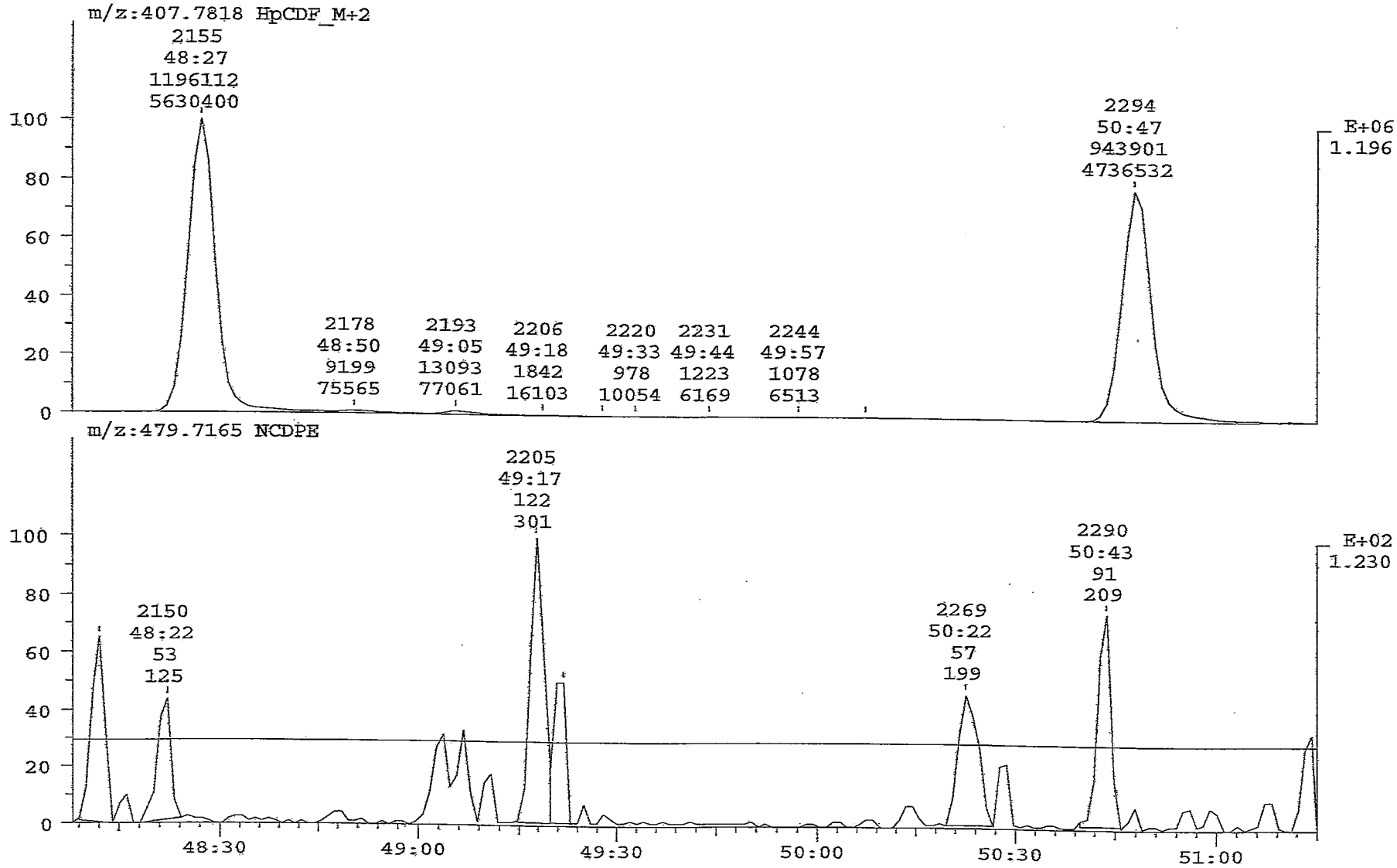
CHRO: d3140516w1 16-May-14 Elapse: 44:20 1916
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2167 > 2284 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



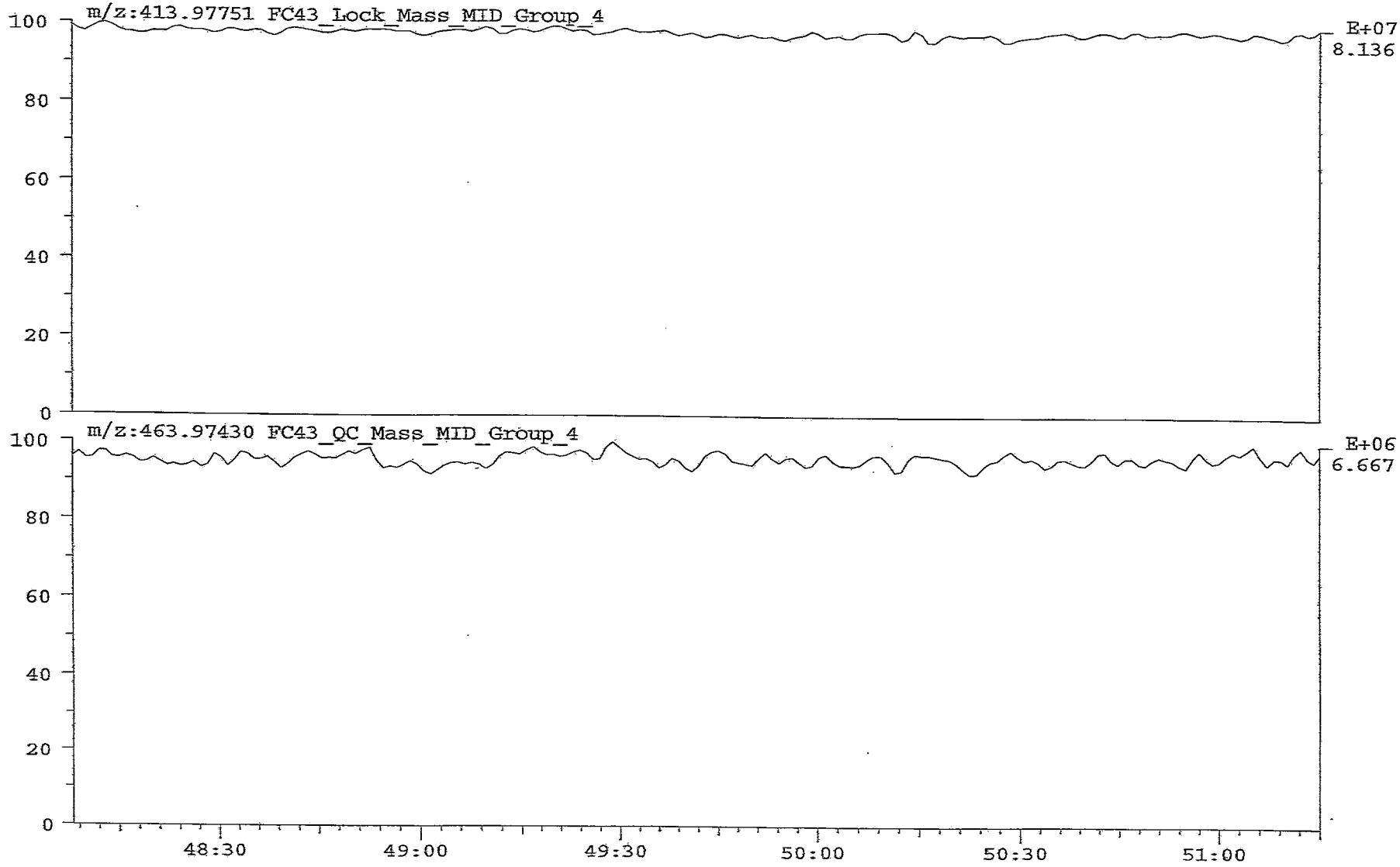
CHRO: d3140516w1 16-May-14 Elapse: 49:41 2228
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2136 > 2321 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



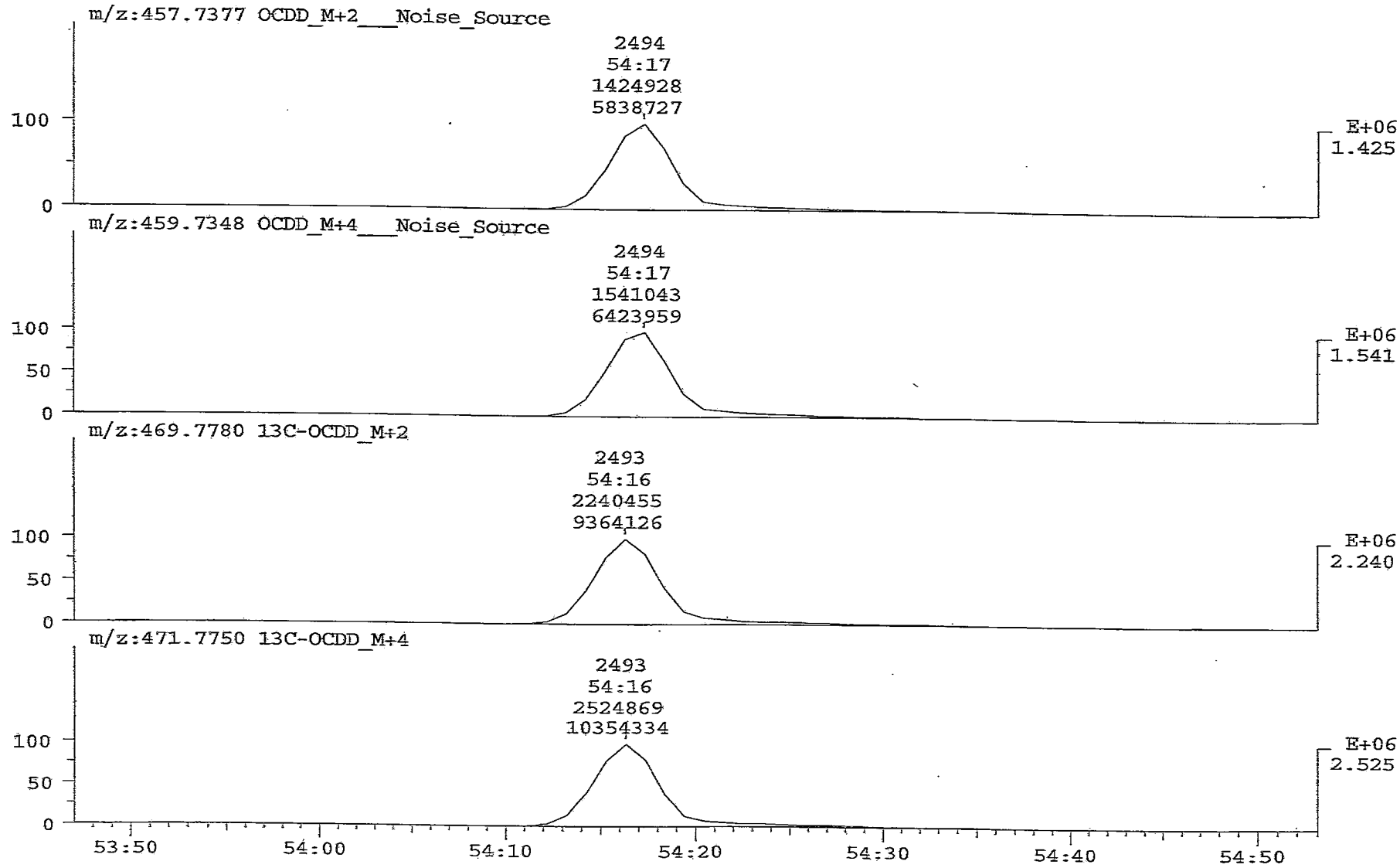
CHRO: d3140516w1 16-May-14 Elapse: 49:41 2228
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2136 > 2321 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



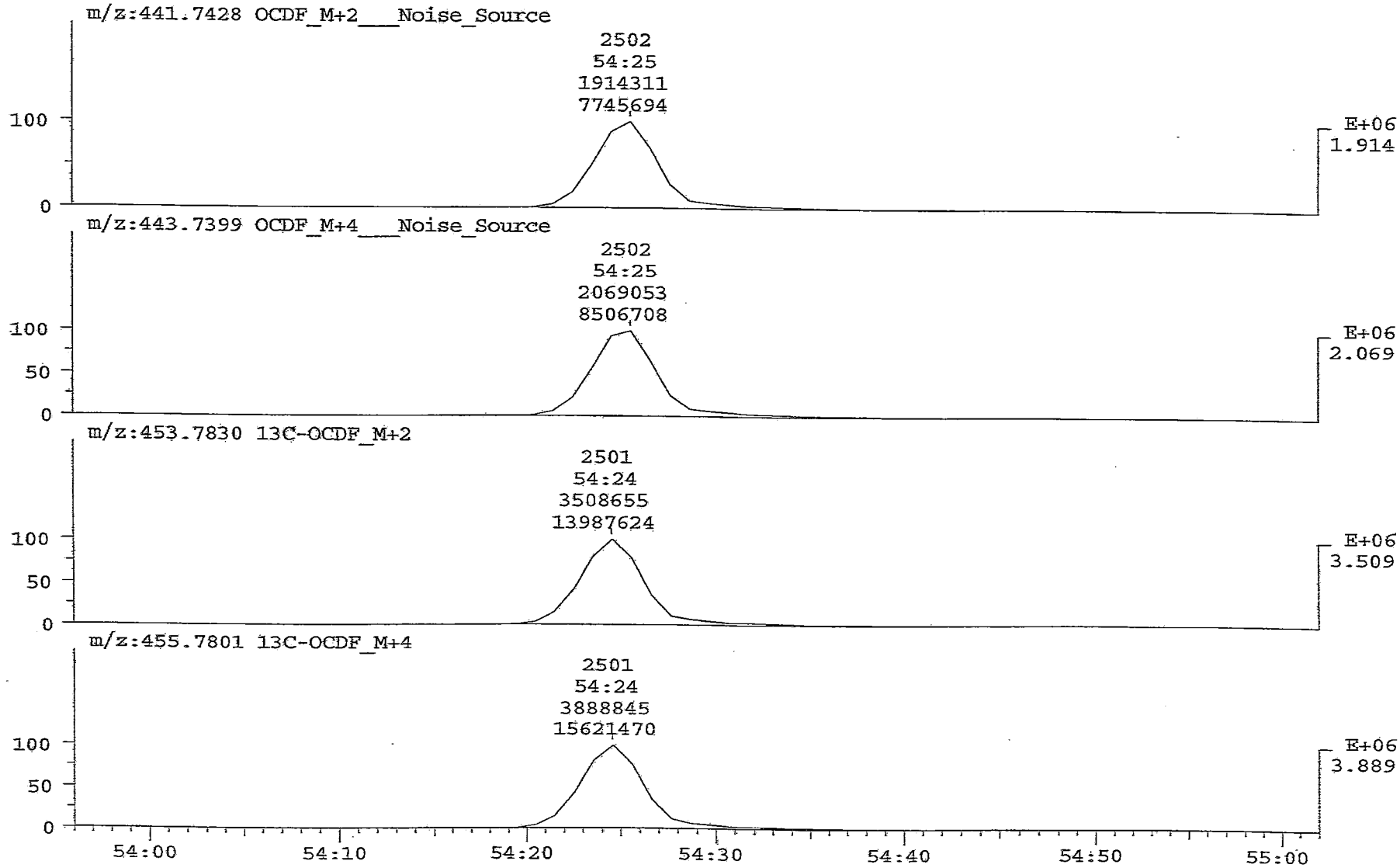
CHRO: d3140516w1 16-May-14 Elapse: 49:41 2228
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2136 > 2321 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



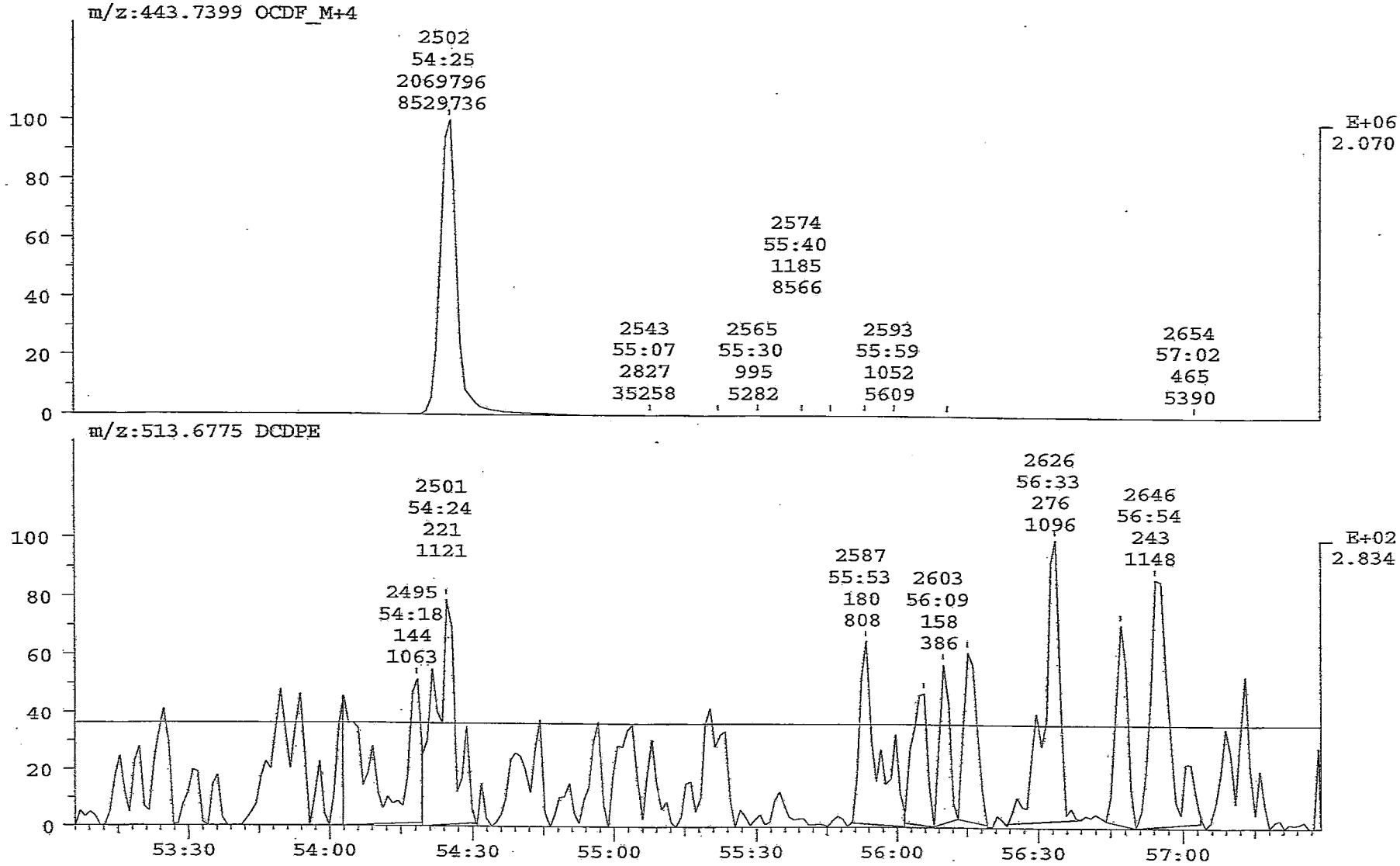
CHRO: d3140516w1 16-May-14 Elapse: 54:17 2494
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2465 > 2529 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



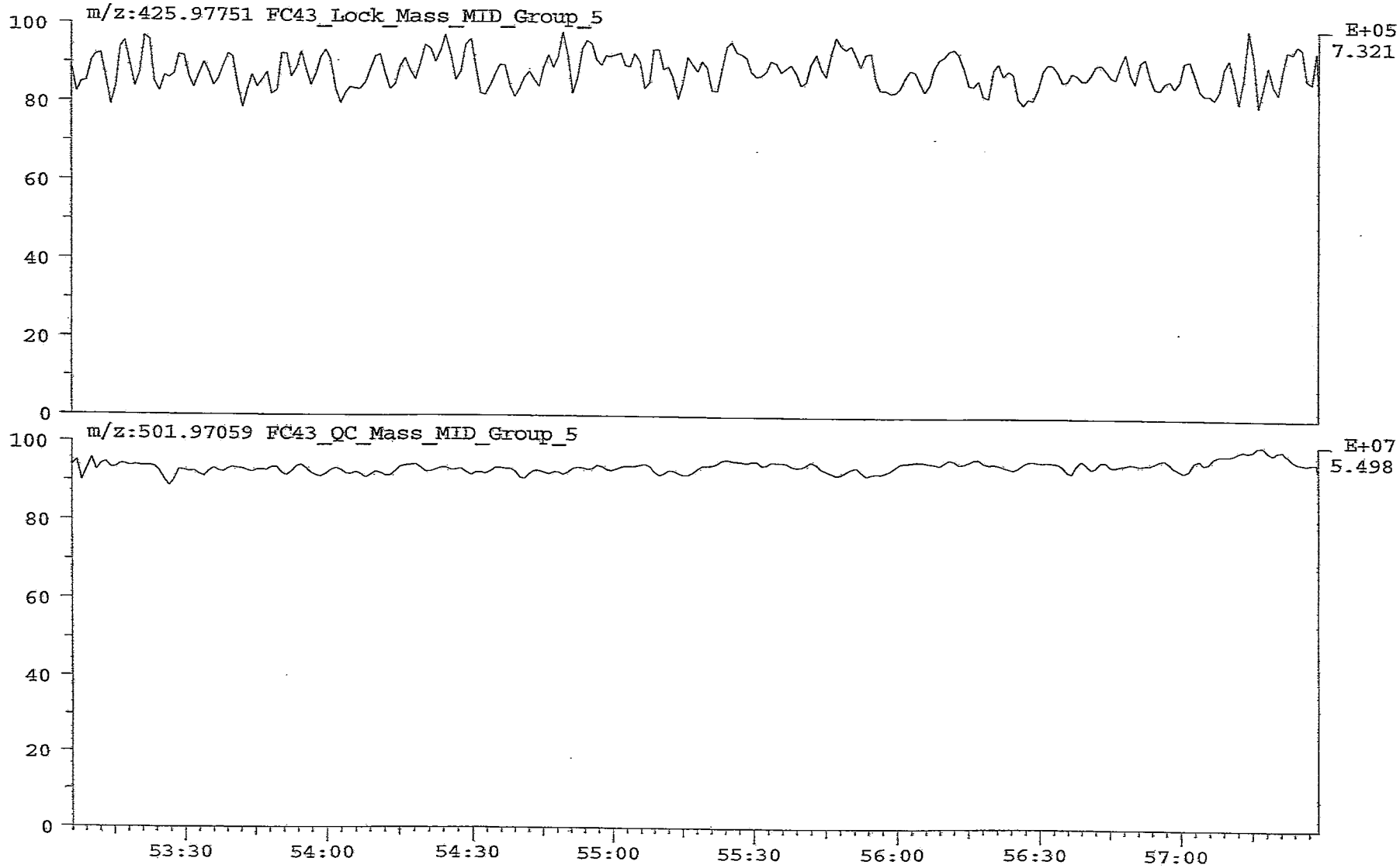
CHRO: d3140516w1 16-May-14 Elapse: 54:25 2502
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2473 > 2537 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d3140516w1 16-May-14 Elapse: 54:25 2502
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2425 > 2680 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d3140516w1 16-May-14 Elapse: 54:25 2502
Samp: WO=4104:83 Meth=F8o Dil=1 Start : 10:23:05 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : Win/Ver
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2425 > 2680 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Fri May 16 10:27:25 2014 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - D5FBM84J

Analysis started at: 16-May-14 10:27:24

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence :

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:13 min	35:13 min	0.99 sec
# 2	35:13 min	7:16 min	42:30 min	1.00 sec
# 3	42:30 min	5:00 min	47:30 min	1.00 sec
# 4	47:30 min	5:30 min	53:00 min	1.00 sec
# 5	53:00 min	4:30 min	57:30 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	122
305.8987		1	1	122
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	122
321.8936		1	1	122
327.8847		1	1	122
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	122

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7

```
  375.9802     20  1        7
  409.7974      1  1      146
 Window # 3
      mass F  int  gr  time (ms)
  373.8208      1  1      146
  375.8178      1  1      146
  375.9802 l   20  1        7
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 35.233333 minutes
MID Window end time was 35.220000 minutes
MID Window terminated after 42.500000 minutes
MID Window end time was 42.500000 minutes
MID Window terminated after 47.500000 minutes
MID Window end time was 47.500000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.500000 minutes
MID Window end time was 57.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune
```

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0177	BMASS	312.9834
BQUAD	1.5000	CAPIL	0.0000	CAPTSET	0.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	16.0000	ECORR	1.0003	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2096.1908
ELEN	-45.0000	EMULT	1699.0000	ENS	148.0000
ENSBR	1.5000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	178.0000	EXSBR	2.1000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	11.7000
FQUADGAIN	0.0000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0146	FVINLET	0.0765	FVSRC	0.0519
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	740.0000
LENS_SYM	9.5000	LM	375.8364	LMII	500.0000
LMASS	312.9834	LKM	425.9770	MASS	312.9834
MDAC	3521566.1548	MRANGE	1307.4725	NSAM	200.0000
NSCAN	2701.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	0.0000	PSAM	10.0000
PUSHER	-8.3000	RECURR	0.8987	RELEN	0.0000
RES	10468.9548	RPUSHER	-8.1685	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	730.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	0.0000	SLOW	60.0000	SS	2.0000
SW	0.1080	TANAL	0.0000	TCURR	0.0000
TD	30.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	312.9834	XLENS_POT	906.0000
XLENS_SYM	9.5000	YLENS_POT	750.0000	YLENS_SYM	0.0000

Source Gauge: 1.5e-005 mbar
Analyzer Penning: 7.2e-008 mbar
Pirani Analyse: 1.4e-002 mbar
Pirani Source: 5.2e-002 mbar
Pirani Inlet System: 7.6e-002 mbar

Scantype is electric

Sourcemode is EI POS

MID Time Window 1: Resolution is 10105.
MID Time Window 2: Resolution is 10100.
MID Time Window 3: Resolution is 9703.
MID Time Window 4: Resolution is 10335.
MID Time Window 5: Resolution is 10468.

Amplifier Offset: 94.

*** File closed Fri May 16 11:24:55 2014
***

User: finnigan
Host: knx-alpha5.stl-inc.com
Class: knx-alpha5.stl-inc.com
Job: d3140516w1.log

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS1	Prep Batch		Lot No	
Data File	/20140516i/d3140516i1.d	Prep Date		SDG No	
Analysis ID	161063	Prep Exp Date		Date Received	
Analysis Date	5/16/2014	Matrix	UNKNOWN	Date Sampled	
Analysis Time	14:26	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D2A	Dil Factor	1.00	Code	F8o
Analyst	MSD				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)	DL (ng/mL)
2,3,7,8-TCDD	31:52	58419	6758	1.000	0.500	0.593855	118.77	0.593855	0.00714
Total TCDD				1.000		0.593855		0.593855	0.00714
2,3,7,8-TCDF	29:45	94252	10099	1.000	0.500	0.582659	116.53	0.582659	0.00612
Total TCDF				1.000		0.582659		0.582659	0.00612
1,2,3,7,8-PeCDD	41:01	218335	51679	1.000	2.500	2.808756	112.35	2.808756	0.00435
Total PeCDD				1.000		2.808756		2.808756	0.00435
1,2,3,7,8-PeCDF	39:17	386206	79916	1.000	2.500	3.138644	125.55	3.138644	0.00708
2,3,4,7,8-PeCDF	40:30	362721	86394	1.000	2.500	2.919823	116.79	2.919823	0.00631
Total PeCDF				1.000		6.058467		6.058467	0.00667
1,2,3,4,7,8-HxCDD	45:15	272843	69525	1.000	2.500	3.057223	122.29	3.057223	0.0137
1,2,3,6,7,8-HxCDD	45:22	274472	61555	1.000	2.500	3.006991	120.28	3.006991	0.0148
1,2,3,7,8,9-HxCDD	45:45	279855	66117	1.000	2.500	3.100486	124.02	3.100486	0.0143
Total HxCDD				1.000		9.164700		9.164700	0.0143
1,2,3,4,7,8-HxCDF	44:11	436963	116387	1.000	2.500	3.572645	142.91	3.572645	0.00834
1,2,3,6,7,8-HxCDF	44:19	513945	121201	1.000	2.500	3.532091	141.28	3.532091	0.00742
2,3,4,6,7,8-HxCDF	45:04	459683	116713	1.000	2.500	3.407524	136.30	3.407524	0.00785
1,2,3,7,8,9-HxCDF	46:01	409546	89640	1.000	2.500	3.478171	139.13	3.478171	0.01000
Total HxCDF				1.000		13.990431		13.990431	0.00830
1,2,3,4,6,7,8-HpCDD	50:11	243953	46103	1.000	2.500	2.943818	117.75	2.943818	0.00905
Total HpCDD				1.000		2.943818		2.943818	0.00905
1,2,3,4,6,7,8-HpCDF	48:27	424345	87249	1.000	2.500	4.010145	160.41	4.010145	0.00629
1,2,3,4,7,8,9-HpCDF	50:48	320609	62354	1.000	2.500	3.556948	142.28	3.556948	0.00796
Total HpCDF				1.000		7.567093		7.567093	0.00702
OCDD	54:17	484960	112573	1.000	5.000	7.138705	142.77	7.138705	0.00997
OCDF	54:26	595918	138954	1.000	5.000	5.773681	115.47	5.773681	0.00773
13C-2,3,7,8-TCDD	31:48	9837250	1015595	1.000	100.0	104.846834	104.85	104.846834	0.0771
13C-2,3,7,8-TCDF	29:43	16176185	1797938	1.000	100.0	172.408120	172.41	172.408120	0.0184
13C-1,2,3,7,8-PeCDD	41:00	7773369	1839796	1.000	100.0	82.849692	82.85	82.849692	0.0229
13C-1,2,3,7,8-PeCDF	39:16	12304867	2542479	1.000	100.0	131.147053	131.15	131.147053	0.127
13C-2,3,4,7,8-PeCDF	40:29	12422707	2852922	1.000	100.0	132.403009	132.40	132.403009	0.127
13C-1,2,3,4,7,8-HxCDD	45:13	8924538	2221398	1.000	100.0	89.923937	89.92	89.923937	0.0197
13C-1,2,3,6,7,8-HxCDD	45:21	9127795	2054990	1.000	100.0	91.971961	91.97	91.971961	0.0197
13C-1,2,3,4,7,8-HxCDF	44:10	12230797	3148165	1.000	100.0	123.237911	123.24	123.237911	0.0447
13C-1,2,3,6,7,8-HxCDF	44:18	14550731	3539449	1.000	100.0	146.613642	146.61	146.613642	0.0447
13C-2,3,4,6,7,8-HxCDF	45:03	13490234	3342478	1.000	100.0	135.928039	135.93	135.928039	0.0447
13C-1,2,3,7,8,9-HxCDF	46:00	11774751	2625413	1.000	100.0	118.642777	118.64	118.642777	0.0447
13C-1,2,3,4,6,7,8-HpCDD	50:10	8286959	1546279	1.000	100.0	83.499670	83.50	83.499670	0.0111
13C-1,2,3,4,6,7,8-HpCDF	48:26	10581787	2226493	1.000	100.0	106.622432	106.62	106.622432	0.0359
13C-1,2,3,4,7,8,9-HpCDF	50:47	9013598	1759645	1.000	100.0	90.821309	90.82	90.821309	0.0359
13C-OCDD	54:16	13586778	3158699	1.000	200.0	136.900820	68.45	136.900820	0.0304
13C-OCDF	54:25	20642568	4913815	1.000	200.0	207.995191	104.00	207.995191	0.0251
37Cl4-2,3,7,8-TCDD	31:52	59486	6802	1.000	0.500	0.634010	126.80	0.634010	0.00705
13C-1,2,3,4-TCDD	31:16	9382496	992763	1.000	100.0	100.000000	100.00	100.000000	0.0771
13C-1,2,3,7,8,9-HxCDD	45:44	9924541	2305089	1.000	100.0	100.000000	100.00	100.000000	0.0197

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS1	Prep Batch		Lot No	
Data File	/20140516i/d3140516i1.	Prep Date		SDG No	
Analysis ID	161063	Prep Exp Date		Date Received	
Analysis Date	05/16/14 14:26	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	43	68	17	27	0.63 *	/	
	2,3,7,8-TCDF	29:45	00:00	0	40350	53902	4525	5574	0.75	ABV/ABB	M
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	113	70	45	28	1.61 *	/	
	13C-2,3,7,8-TCDF	29:43	00:00	0	7170614	9005571	815718	982220	0.80	AVV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	30	43	12	17	0.71	/	
	2,3,7,8-TCDD	31:52	00:00	0	24083	34336	2881	3877	0.70	ABV/AVV	M
328					327.8847		327.8847				
	Noise	00:00	00:00	0	70		28				
	37Cl4-2,3,7,8-TCDD	31:52	00:00	0	59486		6802			ABV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	665	100	266	40	6.65 *	/	
	13C-1,2,3,4-TCDD	31:16	00:00	0	4185008	5197488	433800	558963	0.81	ABV/AVV	
	13C-2,3,7,8-TCDD	31:48	00:00	0	4420747	5416503	467891	547704	0.82	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	80	100	32	40	0.80 *	/	
	1,2,3,7,8-PeCDF	39:17	00:00	0	233100	153106	48732	31184	1.52	ABV/AVV	M
	2,3,4,7,8-PeCDF	40:30	00:00	0	218847	143874	51835	34559	1.52	ABV/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	713	545	285	218	1.31 *	/	
	13C-1,2,3,7,8-PeCDF	39:16	00:00	0	7581999	4722868	1554527	987952	1.61	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:29	00:00	0	7576670	4846037	1741985	1110937	1.56	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	45	35	18	14	1.29 *	/	
	1,2,3,7,8-PeCDD	41:01	00:00	0	139286	79049	31933	19746	1.76	ABV/ABV	M
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	108	120	43	48	0.90 *	/	
	13C-1,2,3,7,8-PeCDD	41:00	00:00	0	4779846	2993523	1137566	702230	1.60	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	103	160	41	64	0.64 *	/	
	1,2,3,4,7,8-HxCDF	44:11	00:00	0	244562	192401	65331	51056	1.27	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:19	00:00	0	279677	234268	66707	54494	1.19	AVV/AVB	M
	2,3,4,6,7,8-HxCDF	45:04	00:00	0	254887	204796	65859	50854	1.24	ABV/AVV	M
	1,2,3,7,8,9-HxCDF	46:01	00:00	0	227936	181610	50394	39246	1.26	ABV/AVV	M
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	330	700	132	280	0.47	/	
	13C-1,2,3,4,7,8-HxCDF	44:10	00:00	0	4263839	7966958	1078872	2069293	0.54	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:18	00:00	0	5039325	9511406	1227679	2311770	0.53	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:03	00:00	0	4658684	8831550	1155366	2187112	0.53	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:00	00:00	0	4059343	7715408	920529	1704884	0.53	AVV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS1	Prep Batch		Lot No	
Data File	/20140516i/d314051611.	Prep Date		SDG No	
Analysis ID	161063	Prep Exp Date		Date Received	
Analysis Date	05/16/14 14:26	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

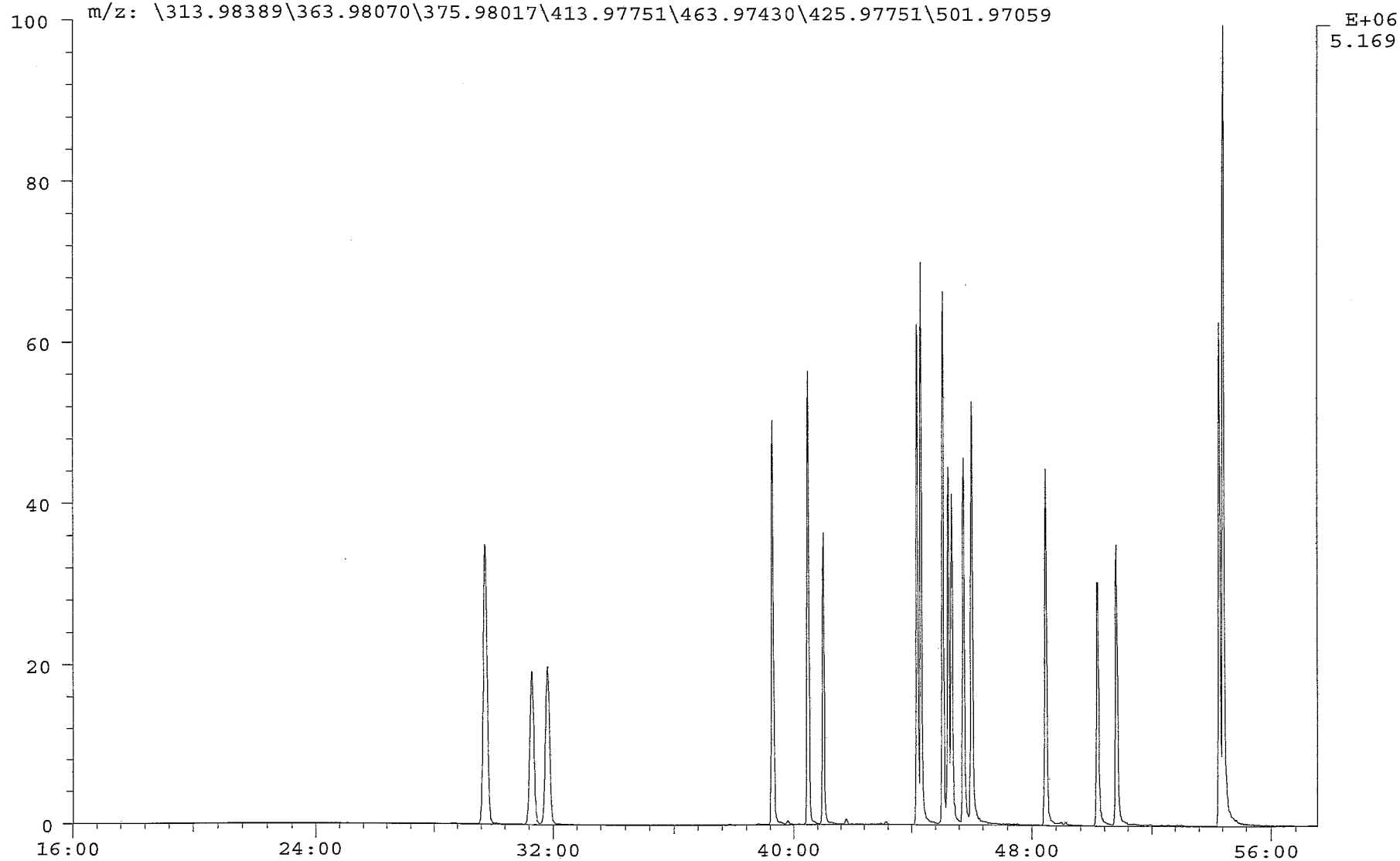
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	195	110	78	44	1.77 *	/	
	1,2,3,4,7,8-HxCDD	45:15	00:00	0	149486	123357	37513	32012	1.21	ABV/ABV	M
	1,2,3,6,7,8-HxCDD	45:22	00:00	0	152756	121716	34347	27208	1.26	AVV/AVV	M
	1,2,3,7,8,9-HxCDD	45:45	00:00	0	157823	122032	36635	29482	1.29	AVV/AVV	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	215	240	86	96	0.90 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:13	00:00	0	5010937	3913601	1236931	984467	1.28	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:21	00:00	0	5112665	4015130	1156609	898381	1.27	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	45:44	00:00	0	5538506	4386035	1274767	1030322	1.26	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	83	58	33	23	1.43 *	/	
	1,2,3,4,6,7,8-HpCDF	48:27	00:00	0	215937	208408	44019	43230	1.04	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	50:48	00:00	0	164173	156436	32136	30218	1.05	ABV/ABV	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	243	585	97	234	0.41	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:26	00:00	0	3345868	7235919	702703	1523790	0.46	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:47	00:00	0	2788917	6224681	541212	1218433	0.45	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	68	73	27	29	0.93	/	
	1,2,3,4,6,7,8-HpCDD	50:11	00:00	0	123365	120588	23413	22690	1.02	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	128	128	51	51	1.00	/	
	13C-1,2,3,4,6,7,8-HpCDD	50:10	00:00	0	4257176	4029783	792662	753617	1.06	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	88	103	35	41	0.85	/	
	OCDF	54:26	00:00	0	281560	314358	67050	71904	0.90	ABV/ABV	M
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	188	390	75	156	0.48 *	/	
	13C-OCDF	54:25	00:00	0	9871731	10770837	2332545	2581270	0.92	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	83	75	33	30	1.10 *	/	
	OCDD	54:17	00:00	0	221004	263956	51304	61269	0.84	ABV/ABV	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	388	313	155	125	1.24 *	/	
	13C-OCDD	54:16	00:00	0	6457178	7129600	1488979	1669720	0.91	ABV/ABV	

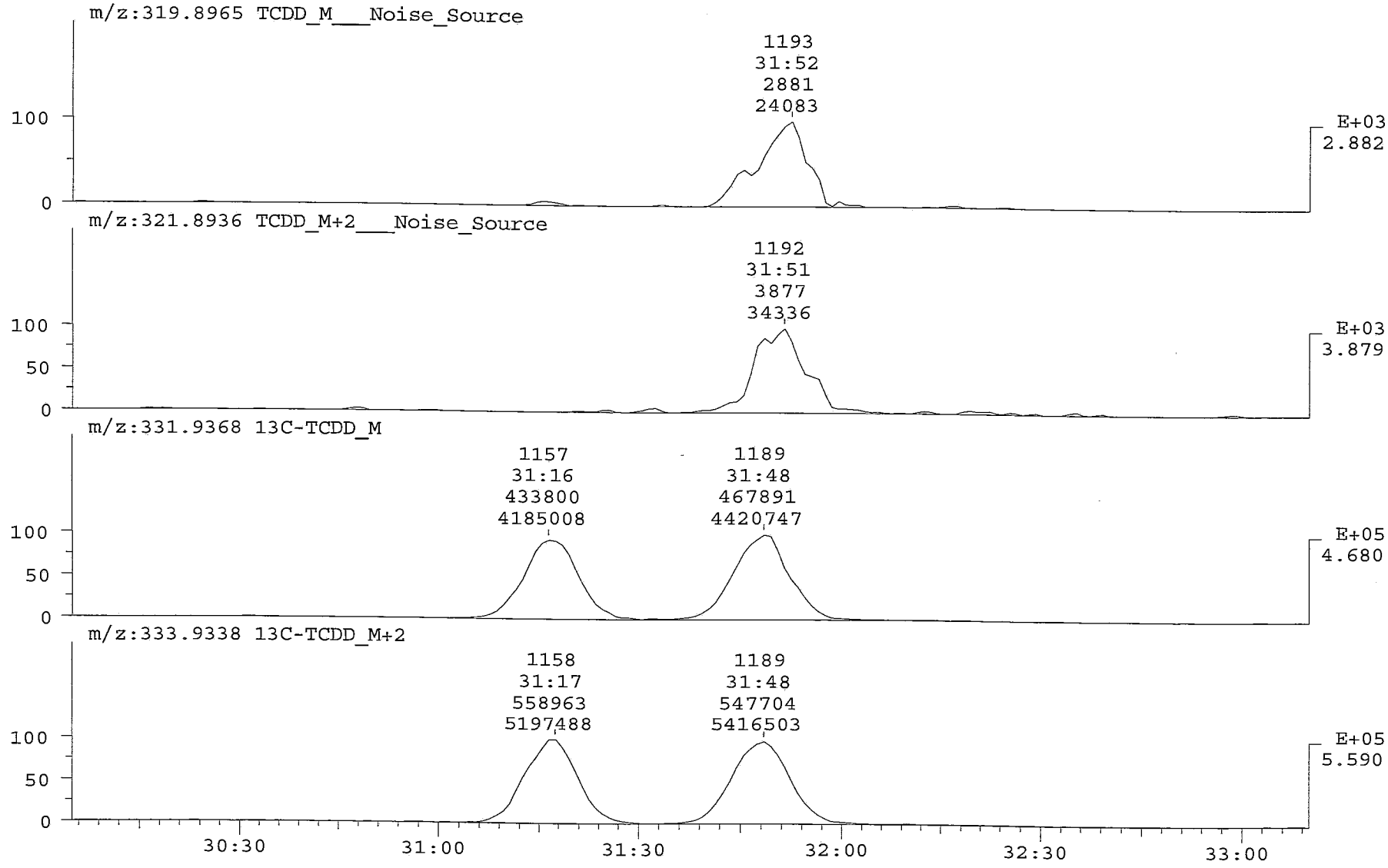
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

CHRO: d3140516i1 16-May-14 Elapse: 54:17 2494
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 238 > 2680 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

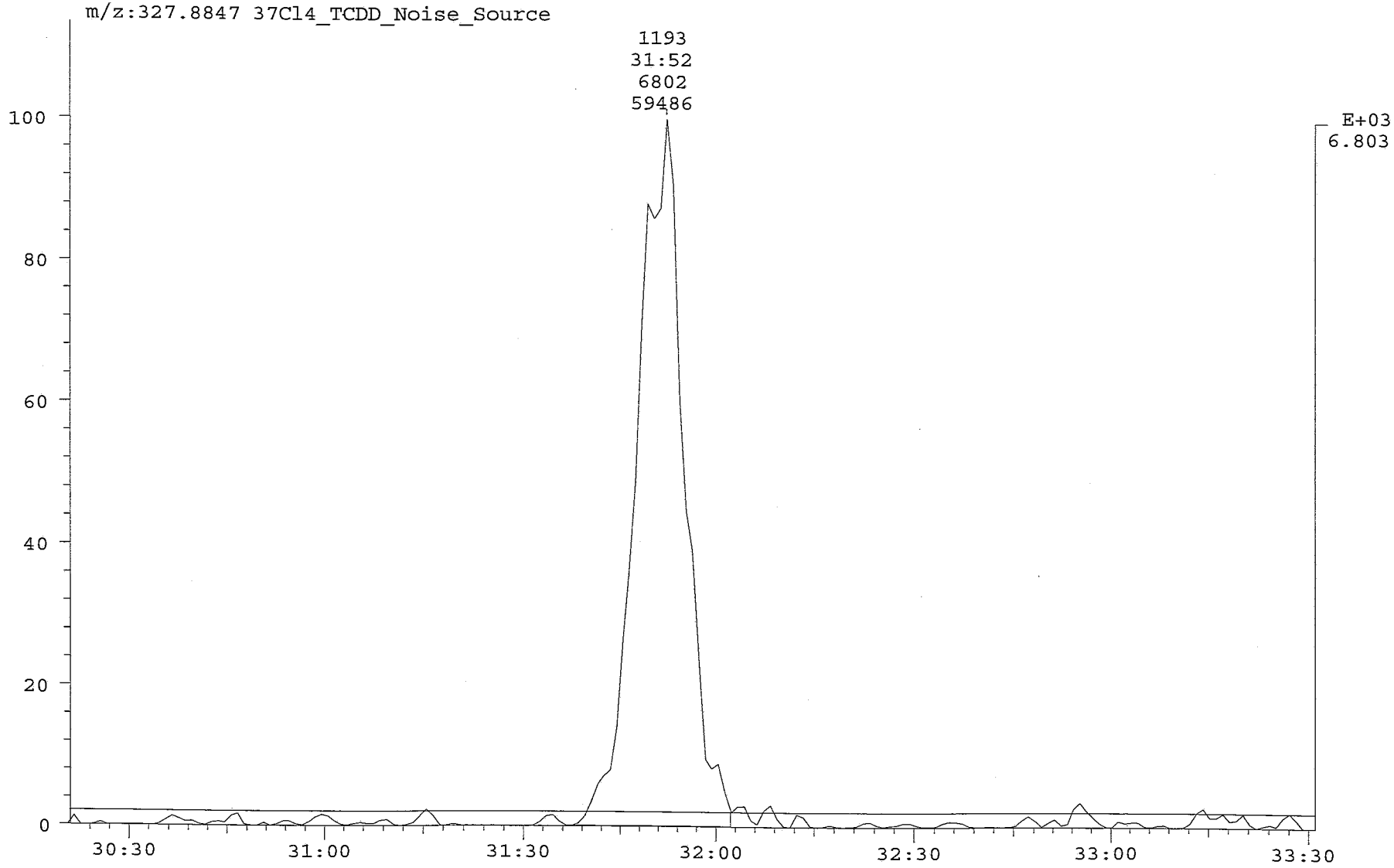
Int, Calc MSD 5-19-14
QC Kh 5/19/14



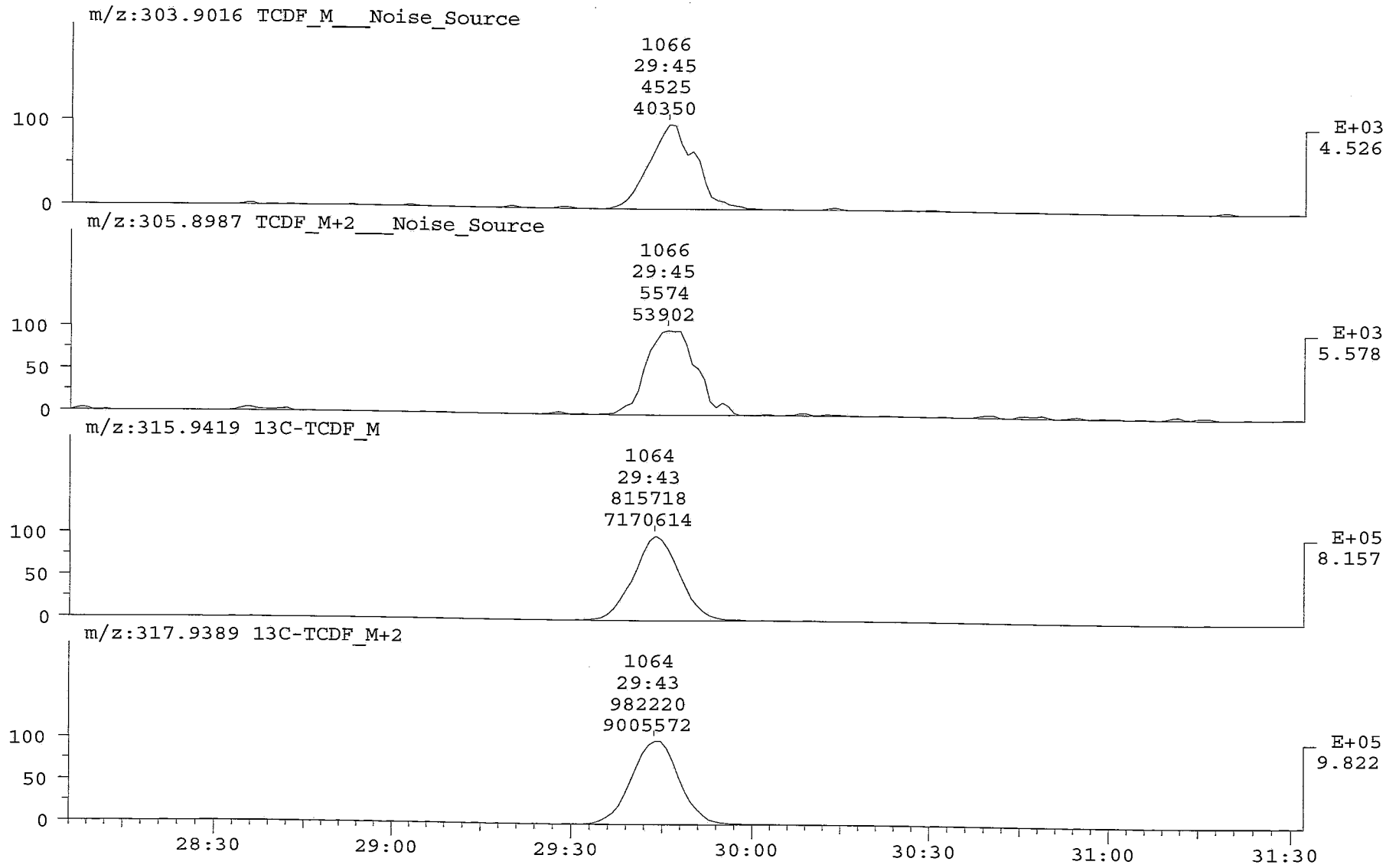
CHRO: d3140516i1 16-May-14 Elapse: 31:37 1178
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1085 > 1271 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



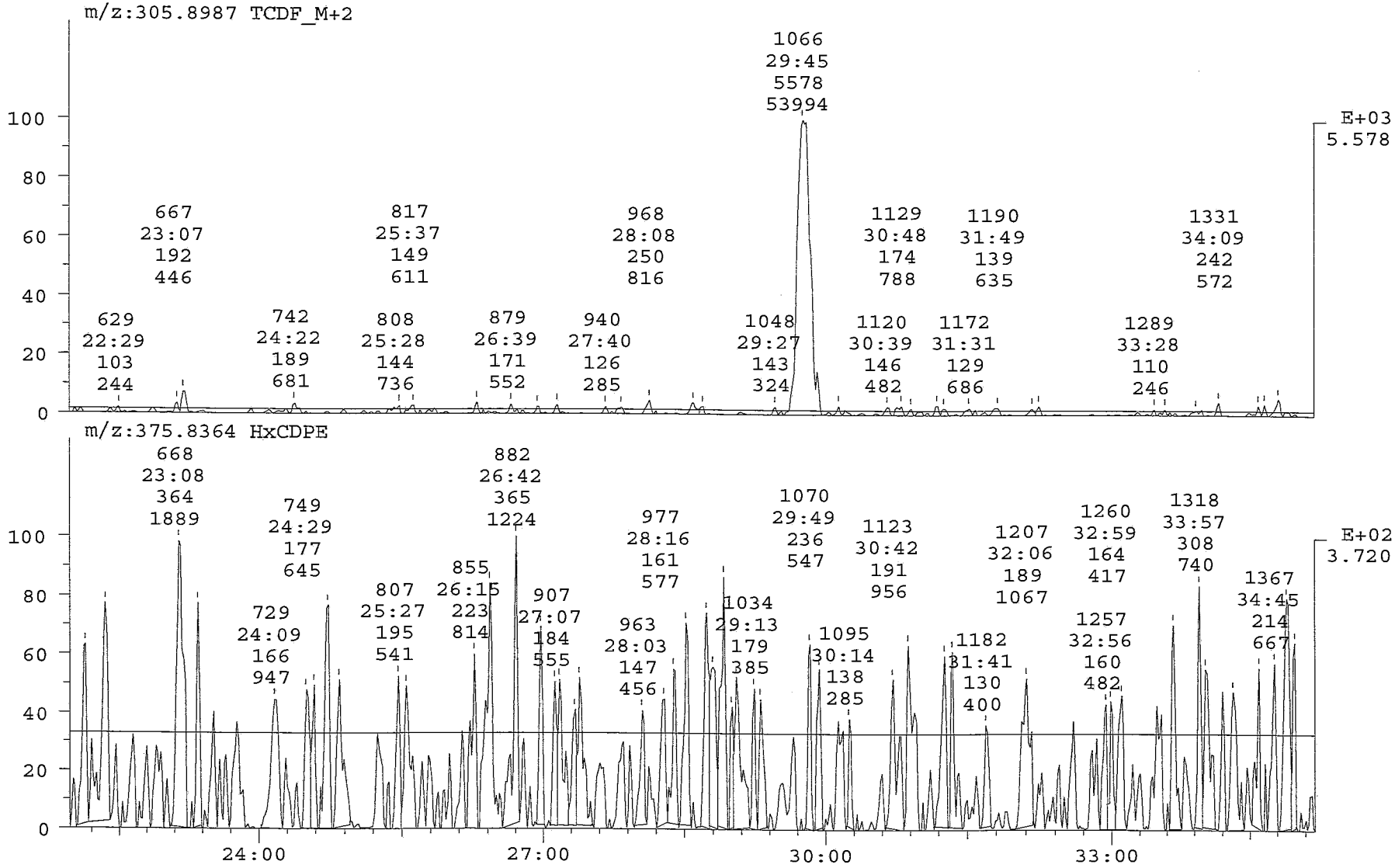
CHRO: d3140516i1 16-May-14 Elapse: 31:53 1194
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1101 > 1292 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



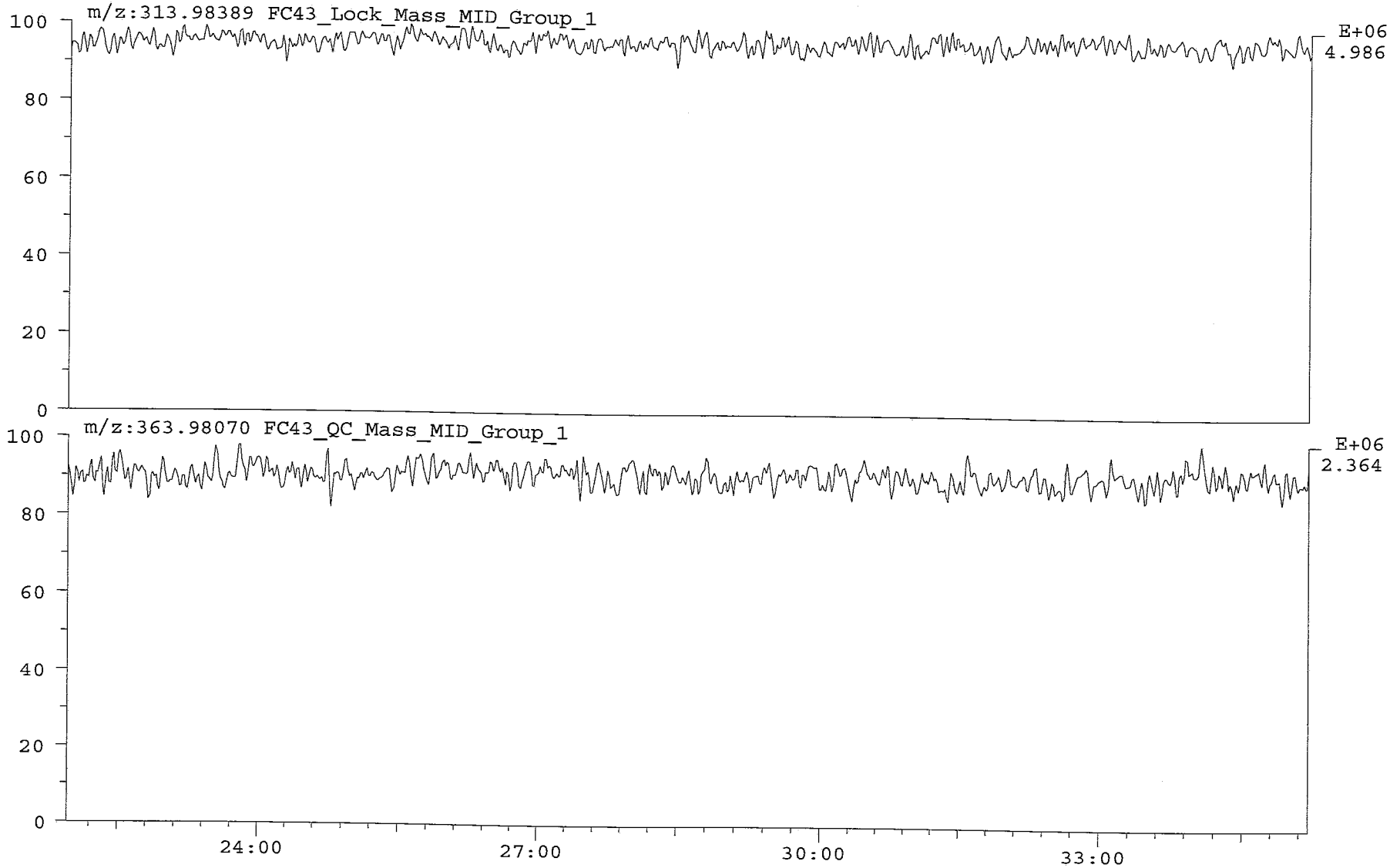
CHRO: d3140516i1 16-May-14 Elapse: 29:45 1066
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 966 > 1173 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



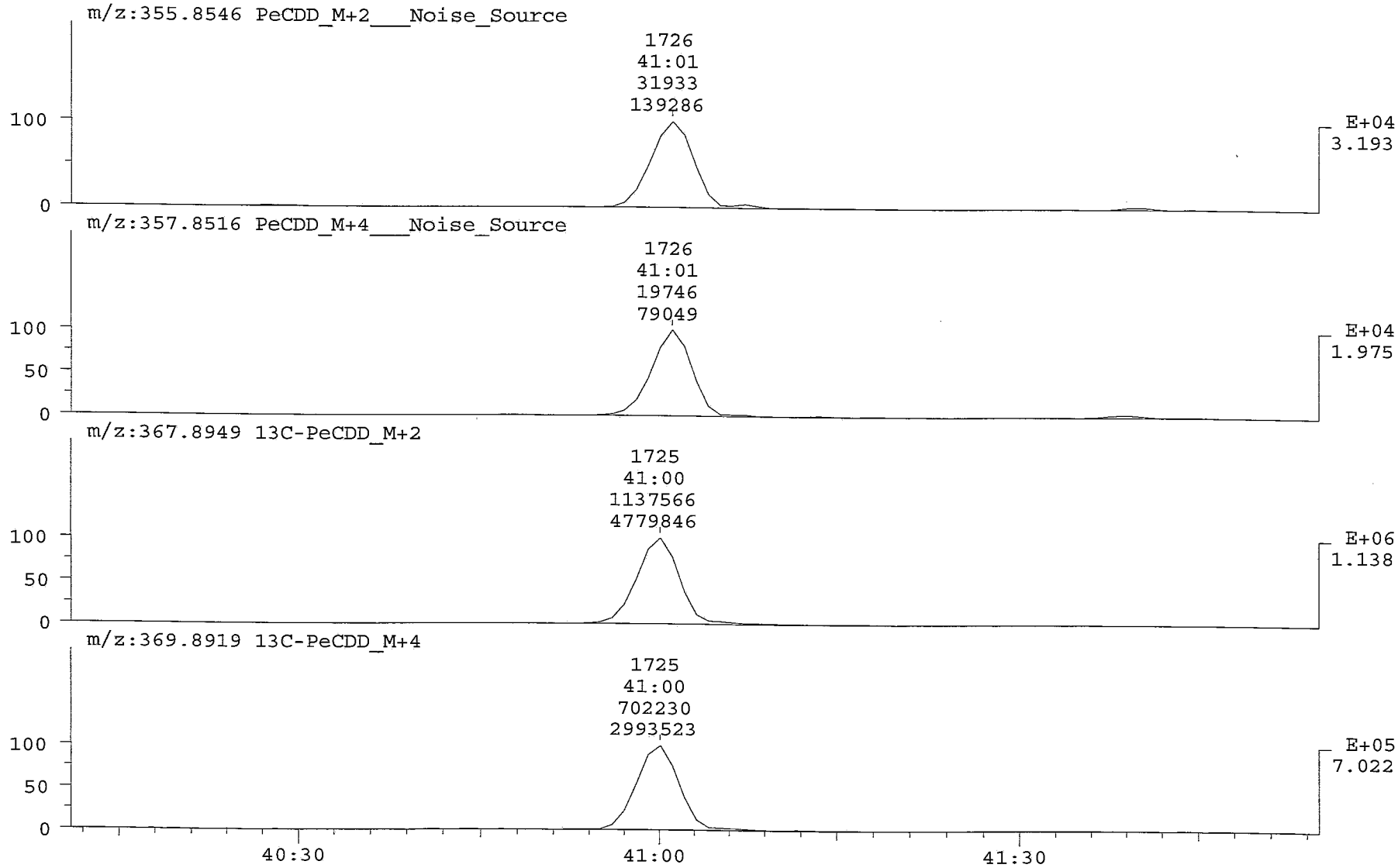
CHRO: d3140516i1 16-May-14 Elapse: 29:45 1066
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 597 > 1393 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



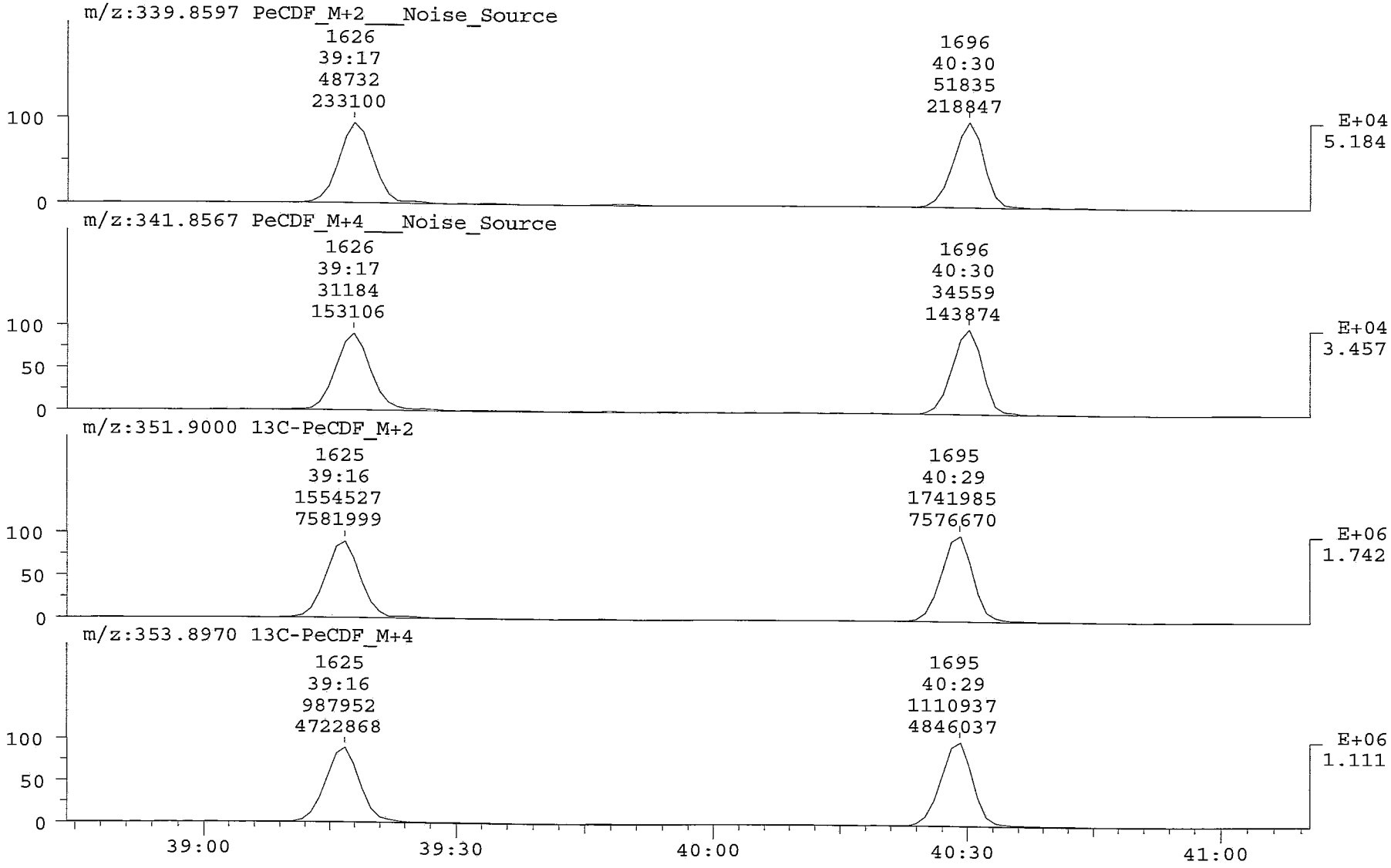
CHRO: d3140516i1 16-May-14 Elapse: 29:45 1066
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 597 > 1393 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



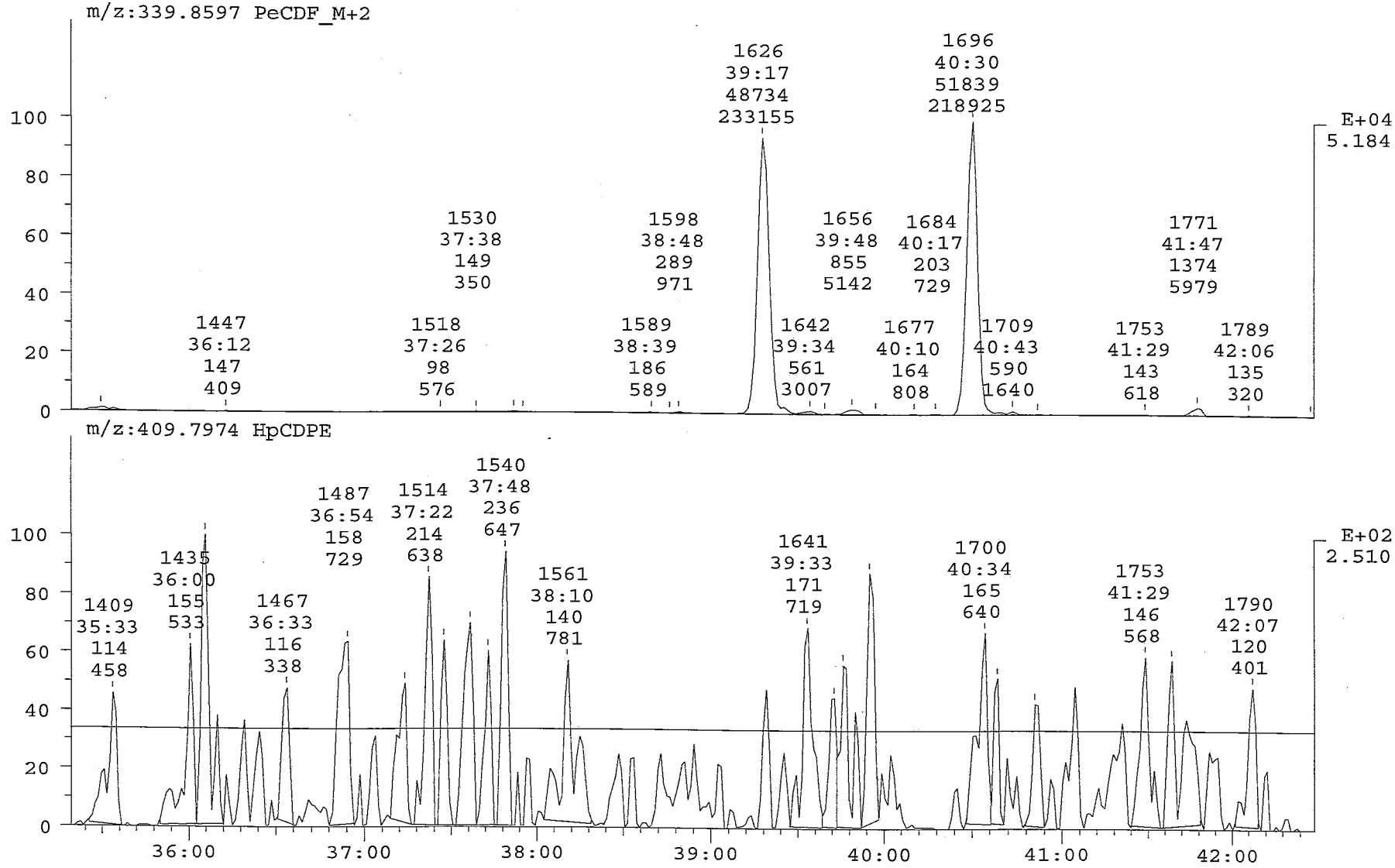
CHRO: d3140516i1 16-May-14 Elapse: 41:00 1725
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1678 > 1778 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



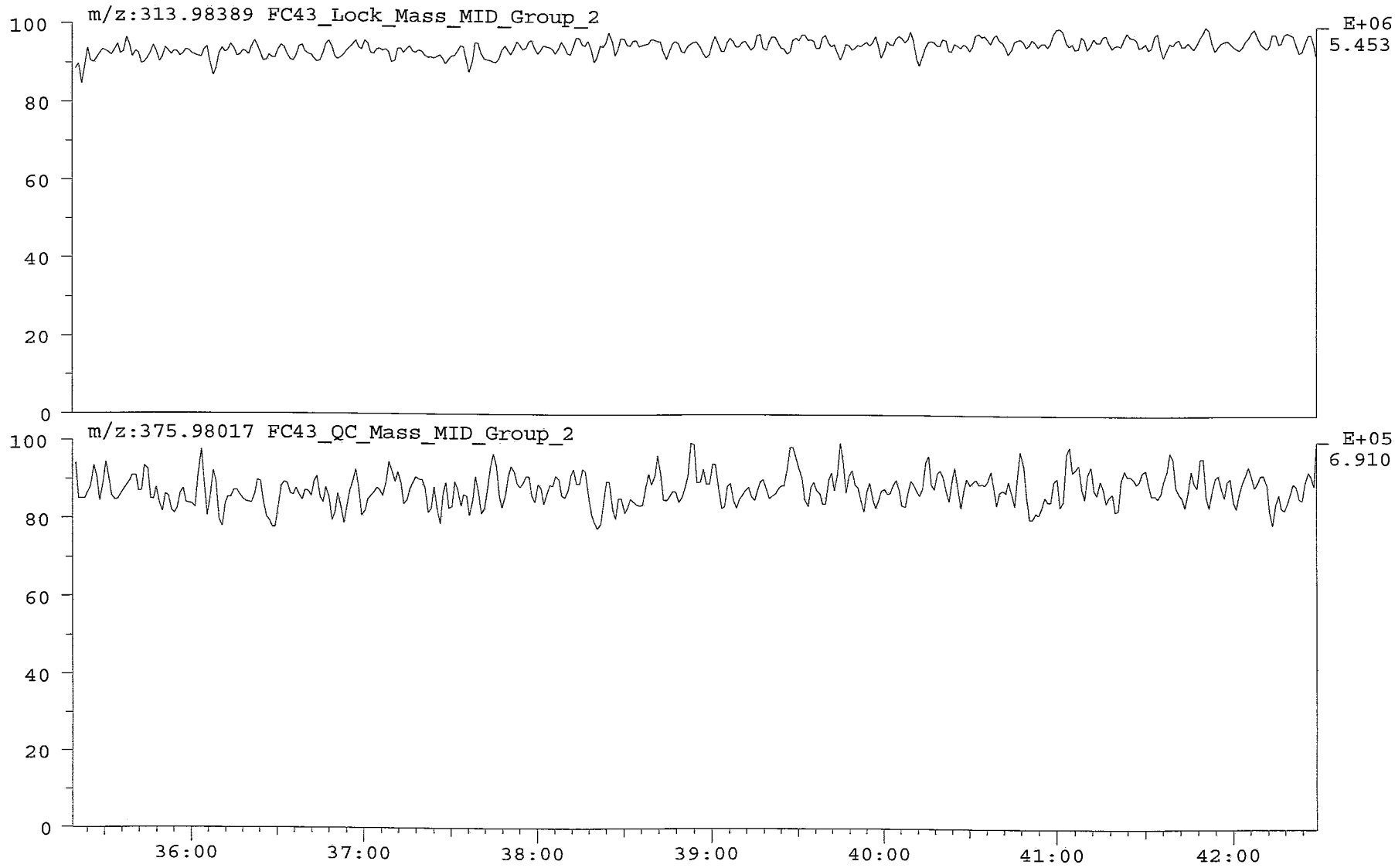
CHRO: d3140516i1 16-May-14 Elapse: 39:57 1664
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1593 > 1735 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



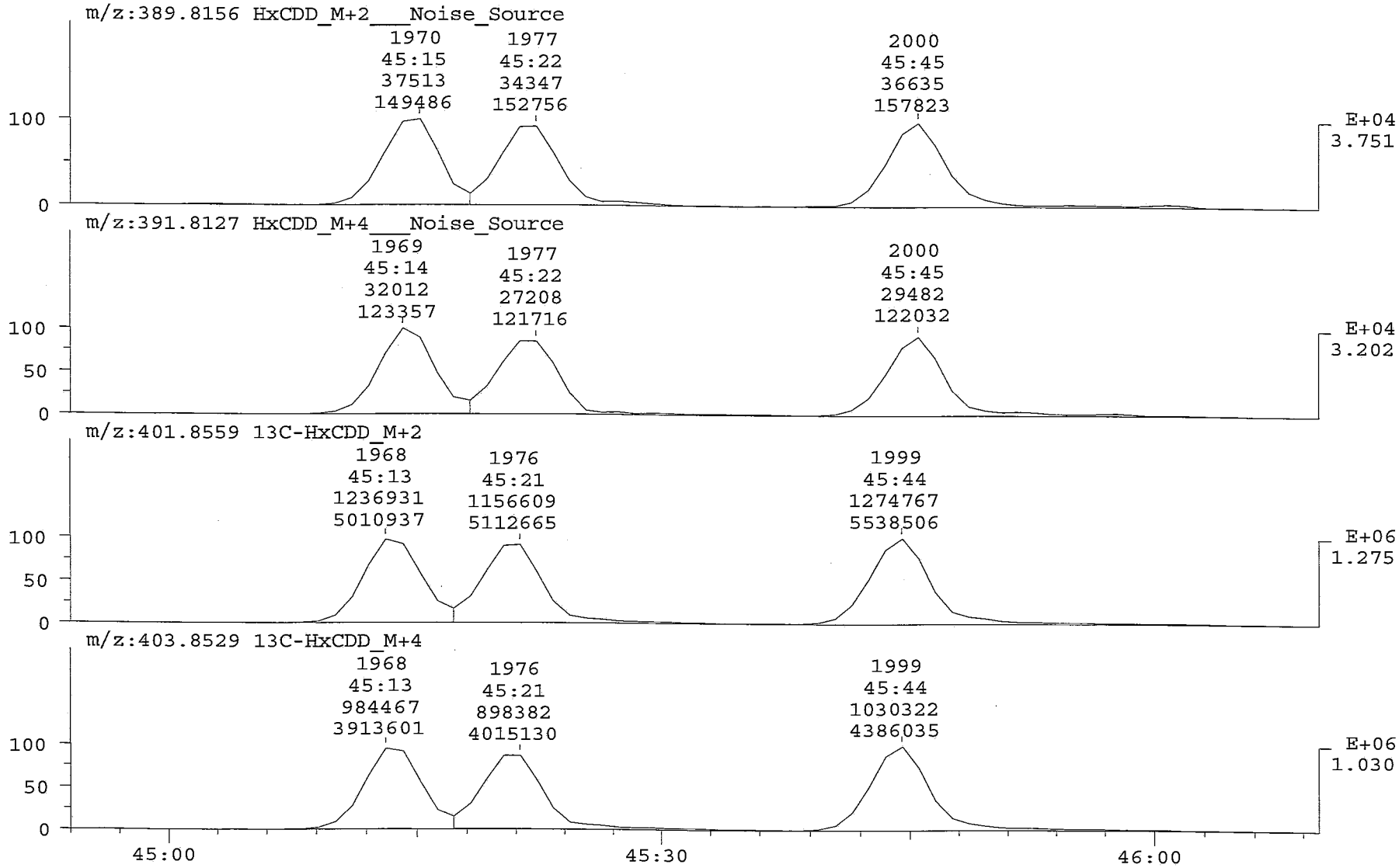
CHRO: d3140516i1 16-May-14 Elapse: 39:57 1664
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1396 > 1811 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



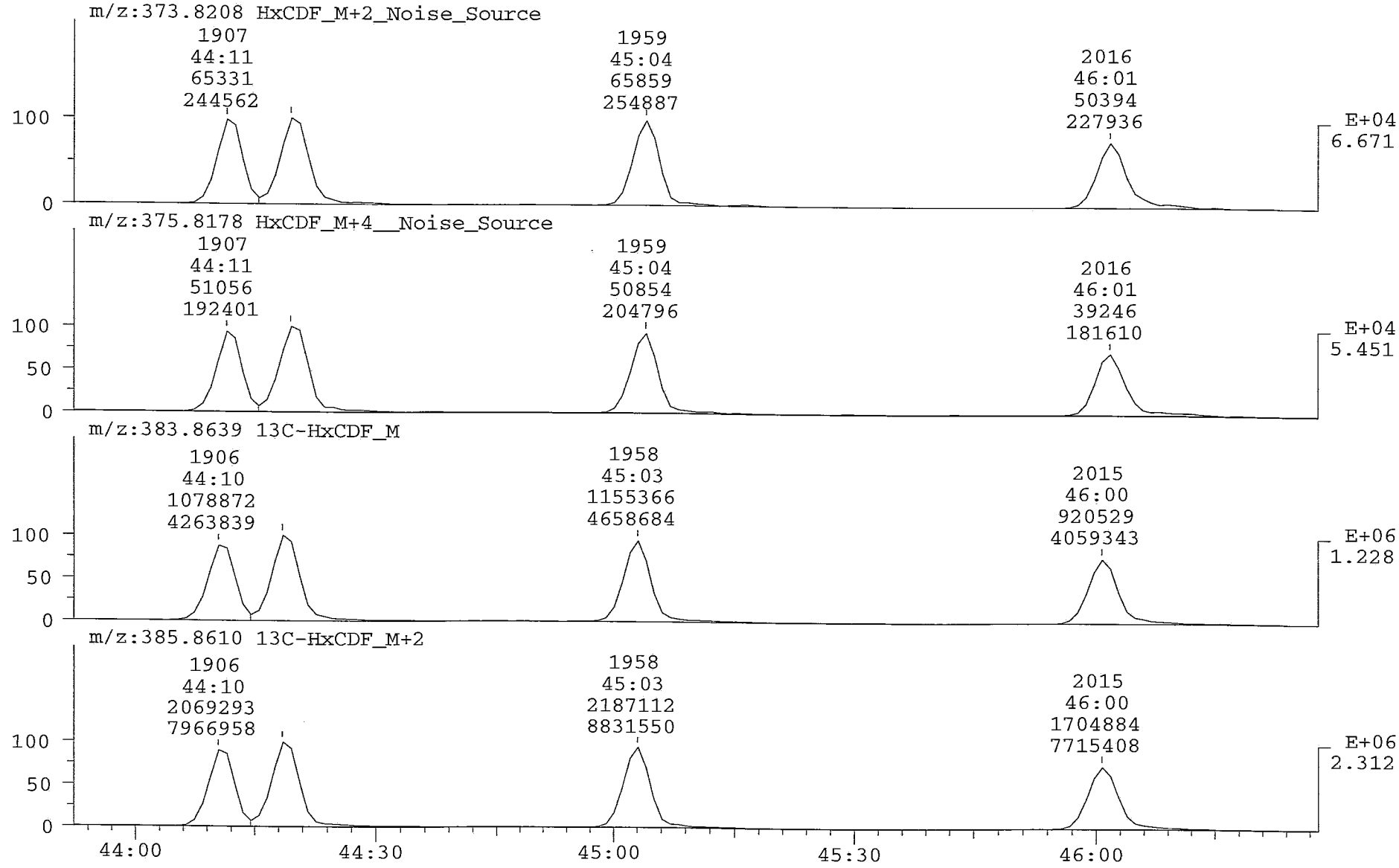
```
CHRO:  d3140516i1                                16-May-14  Elapse:  39:57      1664
Samp:  WO=4104:74cs1 Meth=F8o Dil=1                         Start :  14:26:26   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  ICAL CS1
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1396 > 1811            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  0, 0.0
Disp:  Height  Area
```



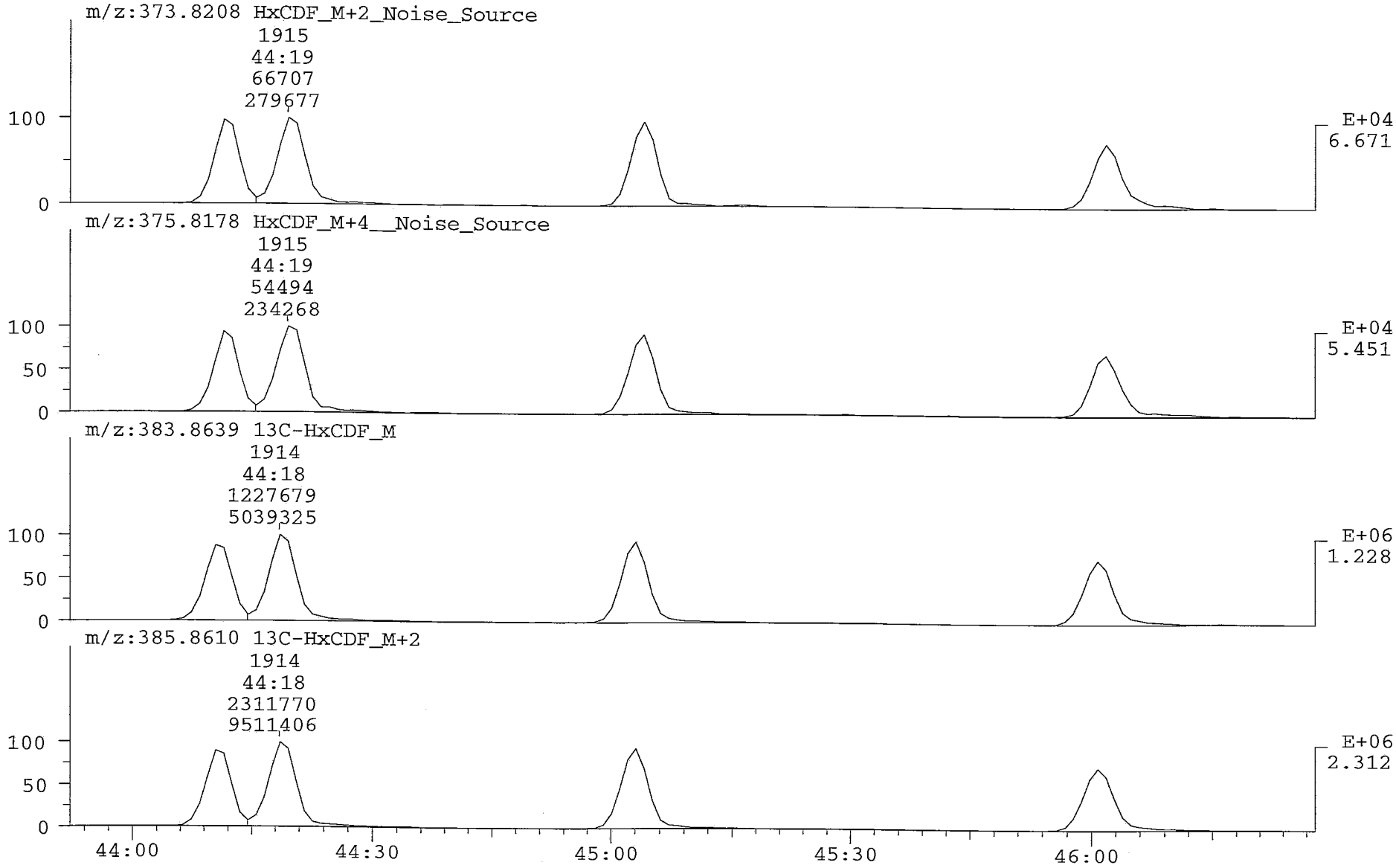
```
CHRO:  d3140516i1                                16-May-14   Elapse:  45:32      1987
Samp:  WO=4104:74cs1 Meth=F8o Dil=1                          Start :  14:26:26   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                   Study :  ICAL CS1
Oper:  MSD                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1949 > 2024             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  2, 5.0
Disp:  Height  Area
```



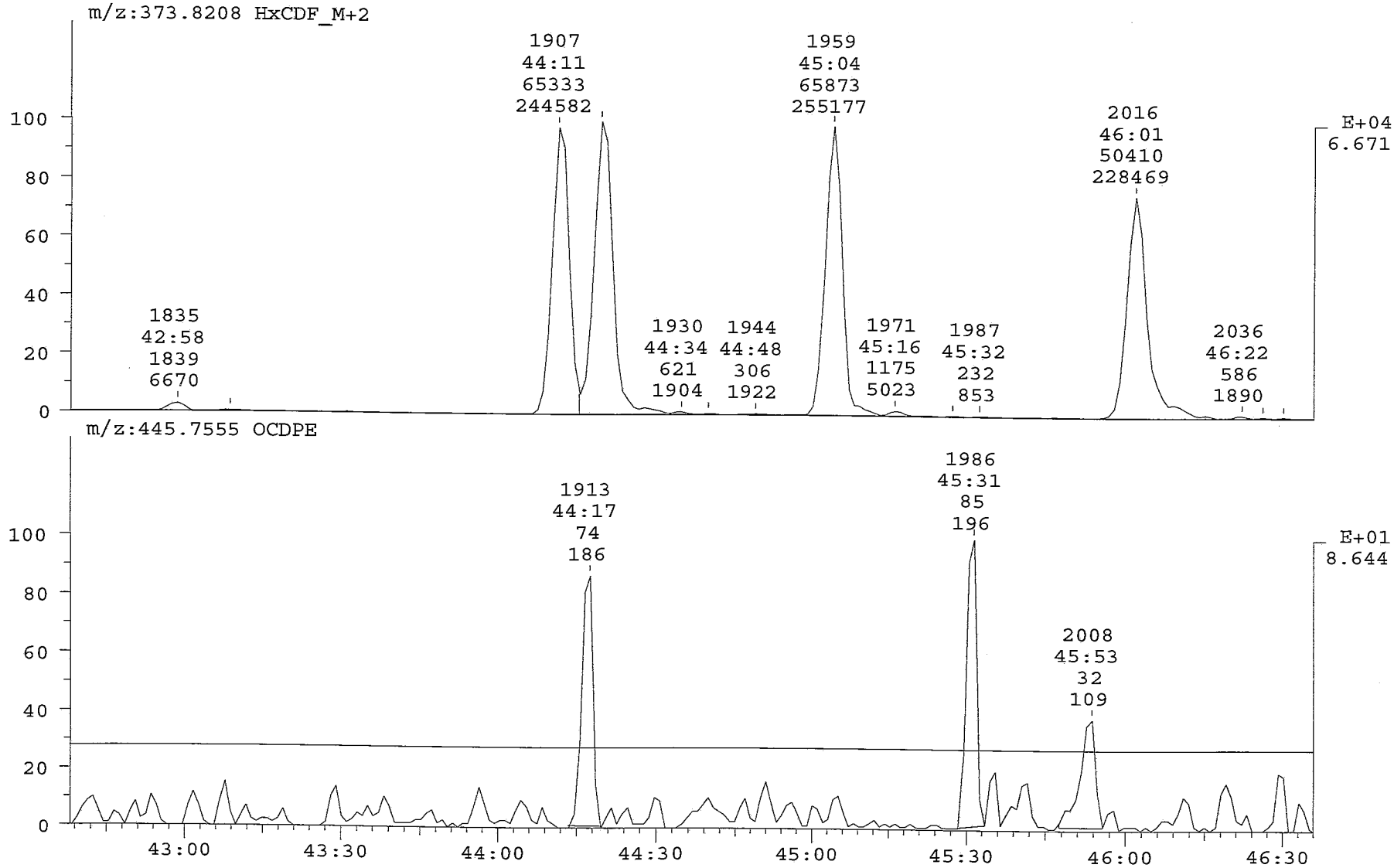
CHRO: d3140516i1 16-May-14 Elapse: 54:26 2502
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1888 > 2042 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



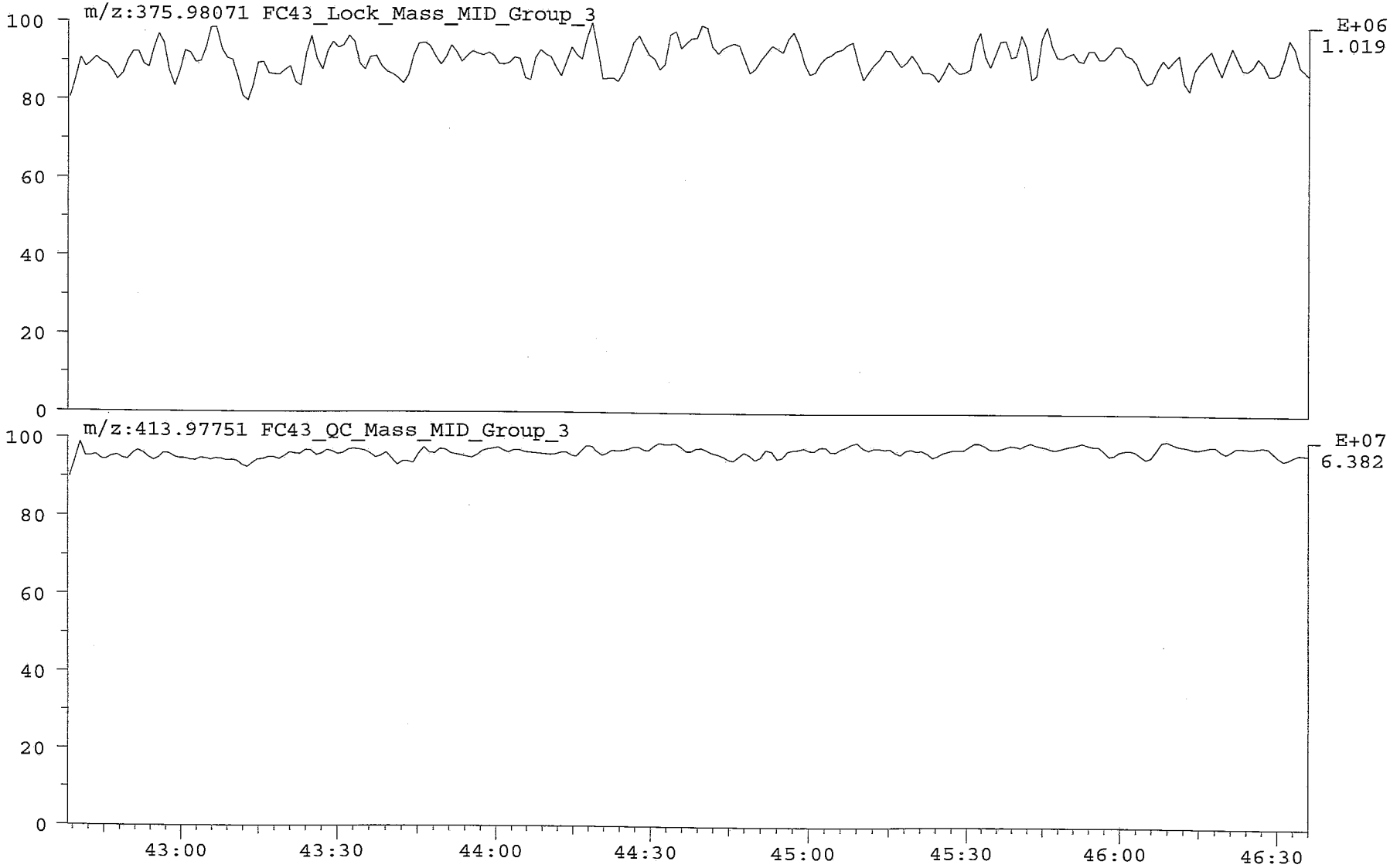
CHRO: d3140516i1 16-May-14 Elapse: 44:20 1916
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1913 > 1919 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



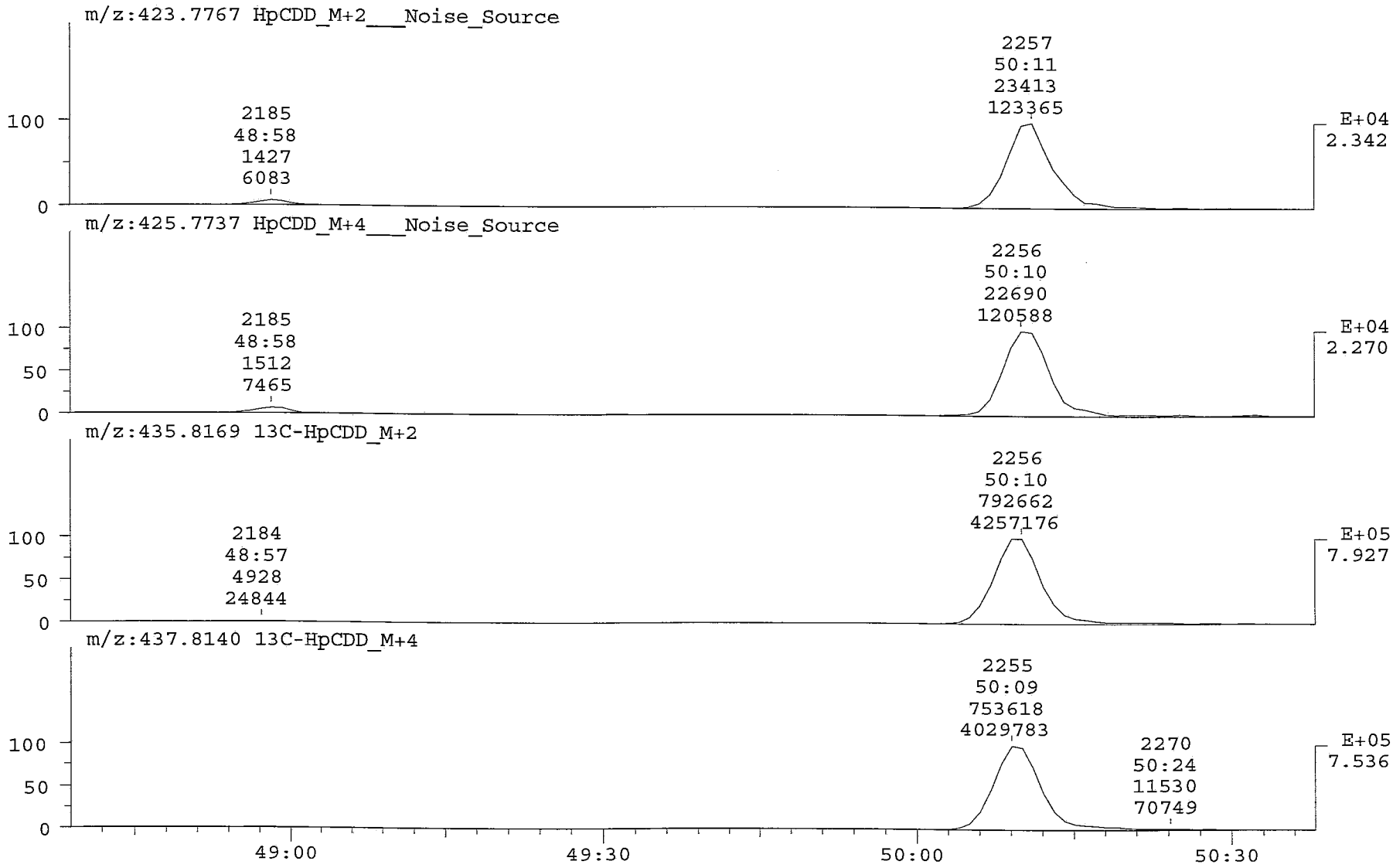
CHRO: d3140516i1 16-May-14 Elapse: 44:19 1915
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1815 > 2050 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



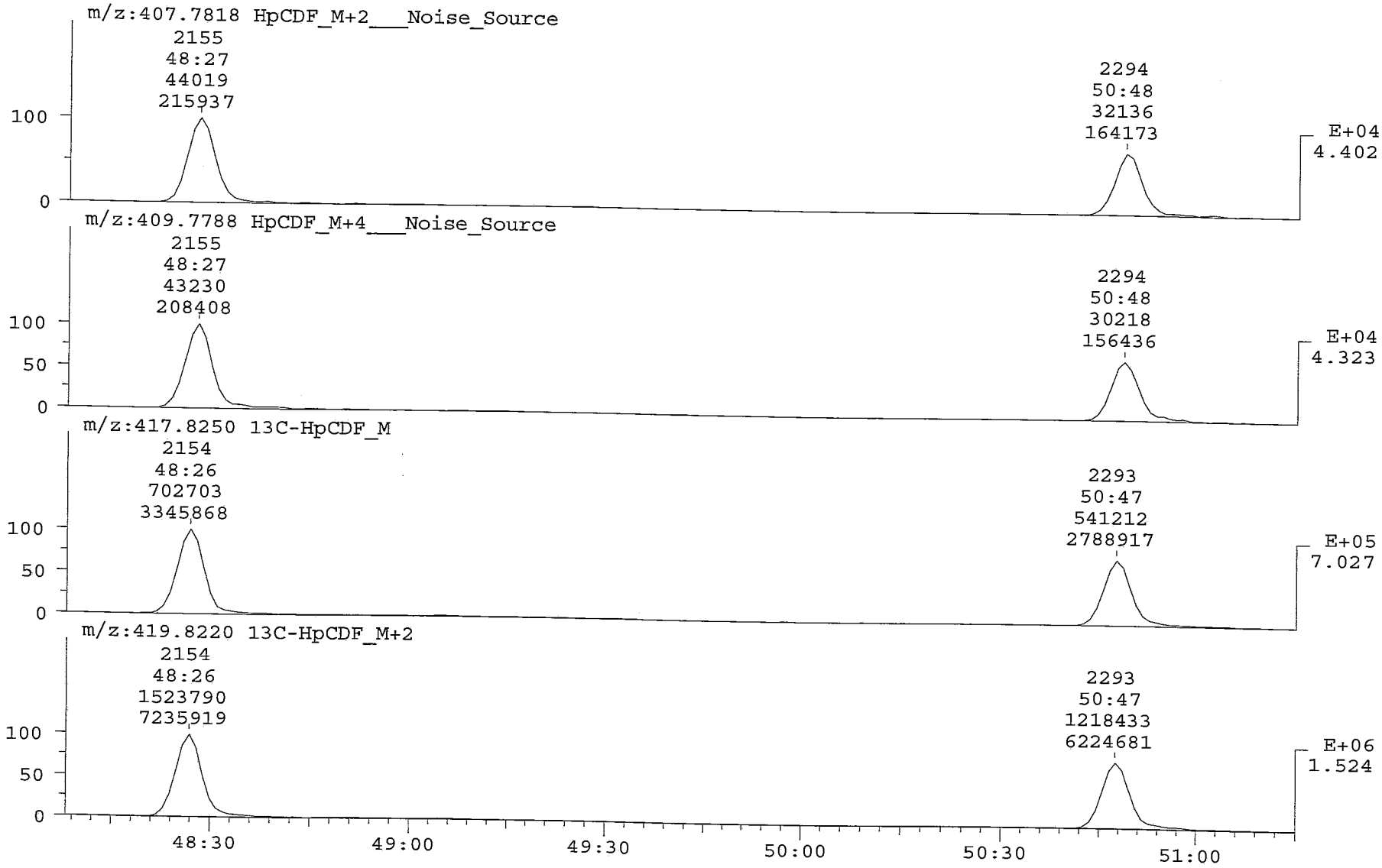
CHRO: d3140516i1 16-May-14 Elapse: 44:19 1915
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1815 > 2050 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



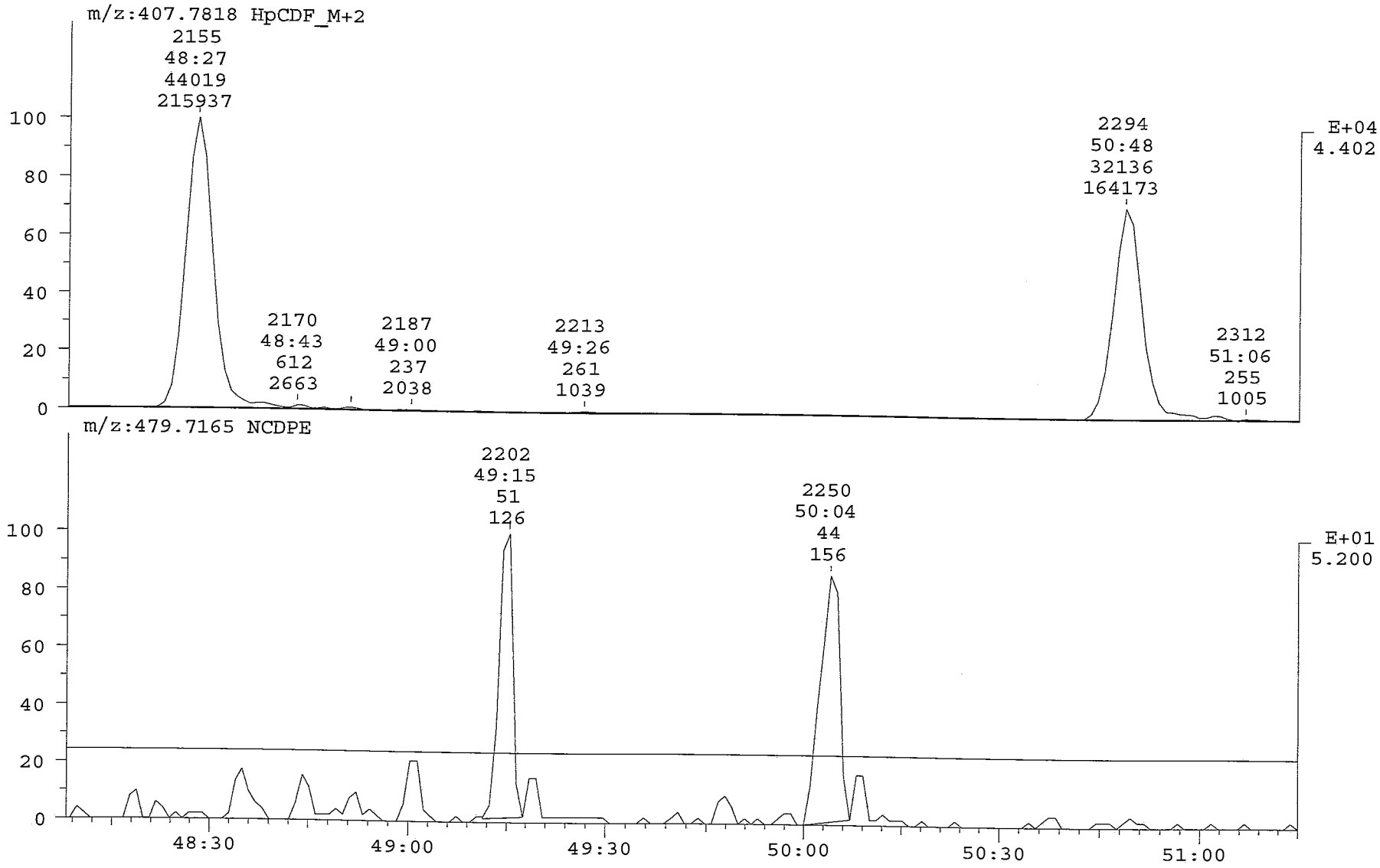
```
CHRO:  d3140516i1                                16-May-14   Elapse:  44:19      1915
Samp:  WO=4104:74cs1 Meth=F8o Dil=1                          Start :  14:26:26   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                   Study :  ICAL CS1
Oper:  MSD                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2166 > 2284             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  -2, 5.0
Disp:  Height  Area
```



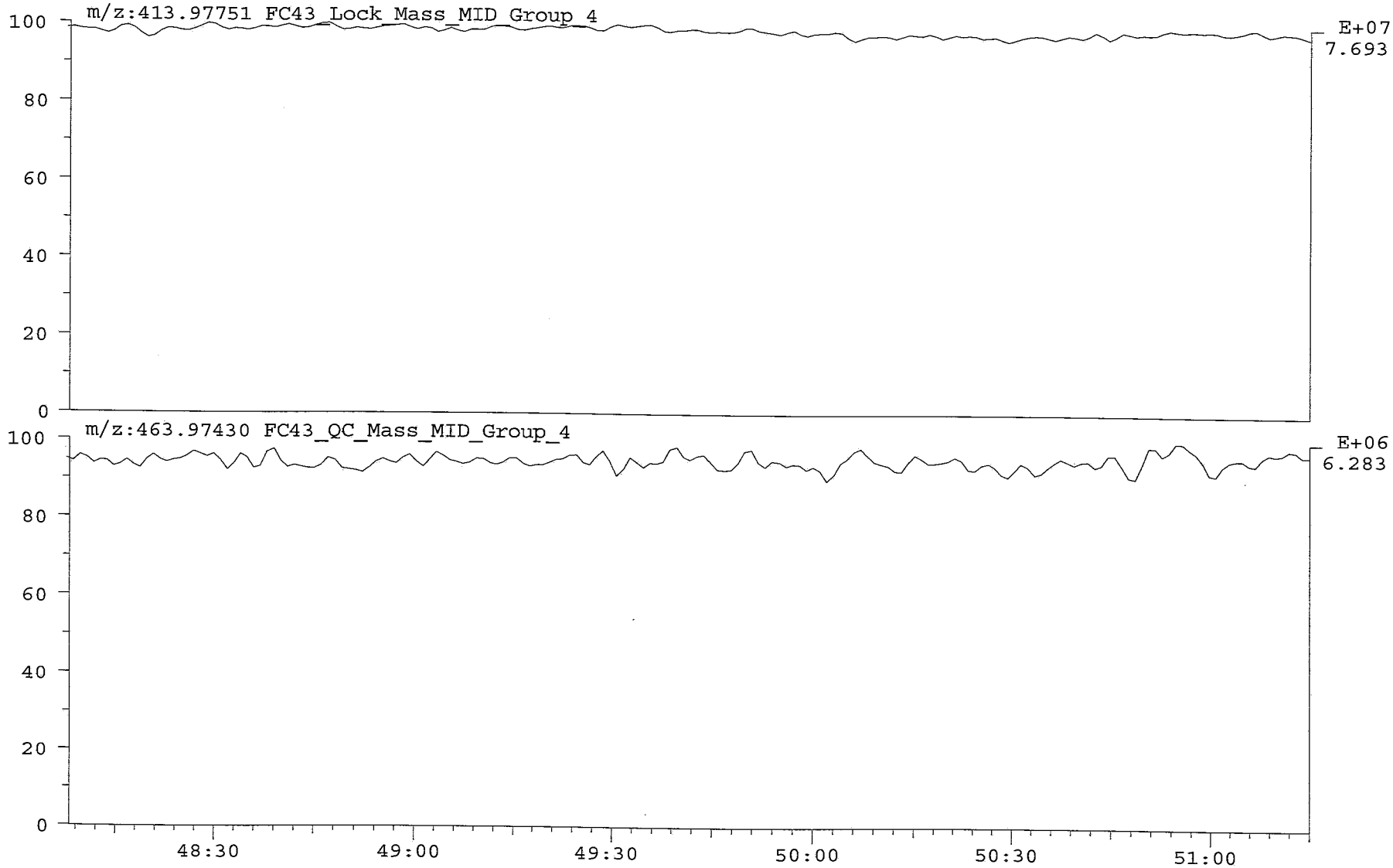
CHRO: d3140516i1 16-May-14 Elapse: 49:40 2227
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2135 > 2320 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



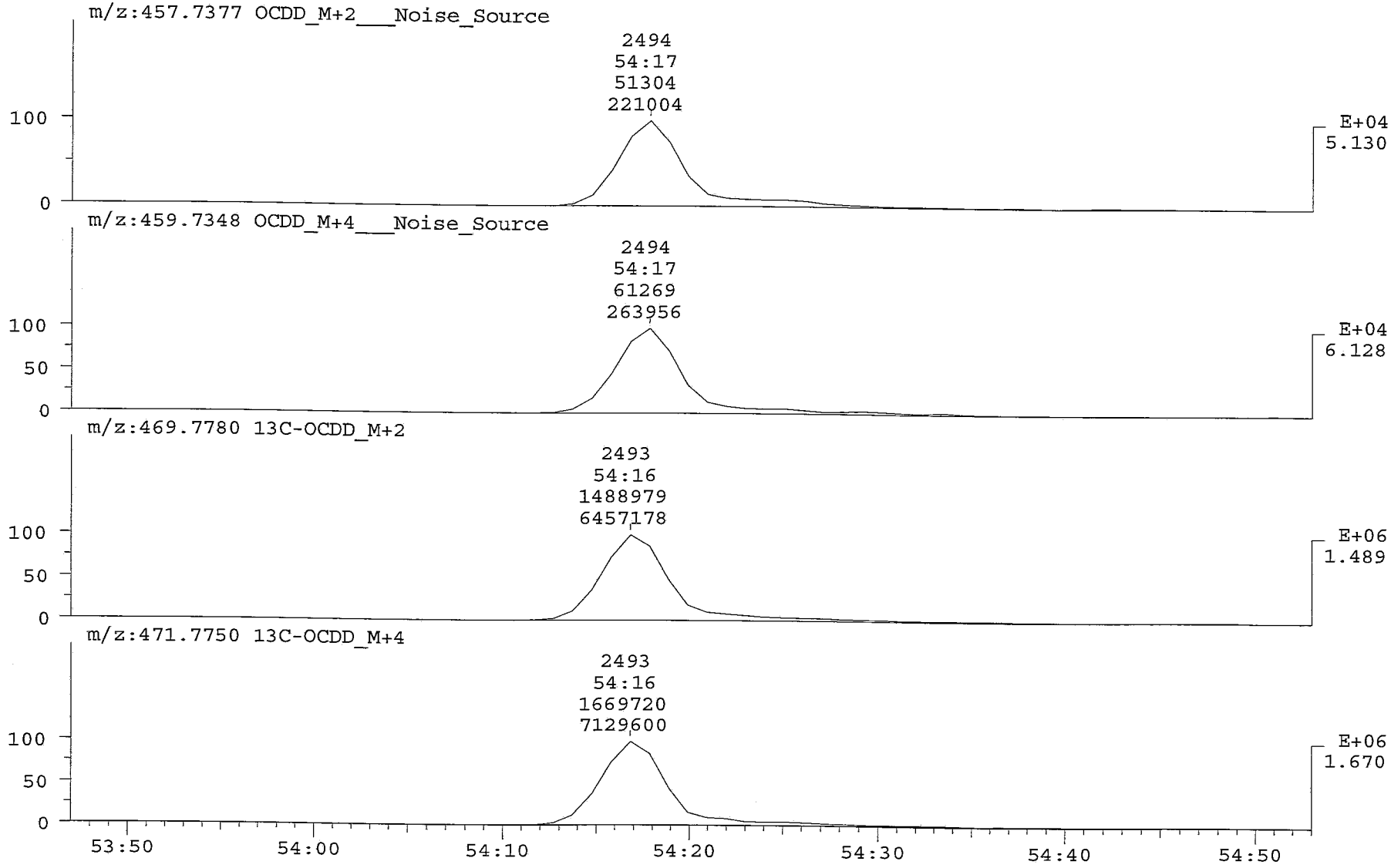
CHRO: d3140516i1 16-May-14 Elapse: 49:40 2227
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2135 > 2320 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



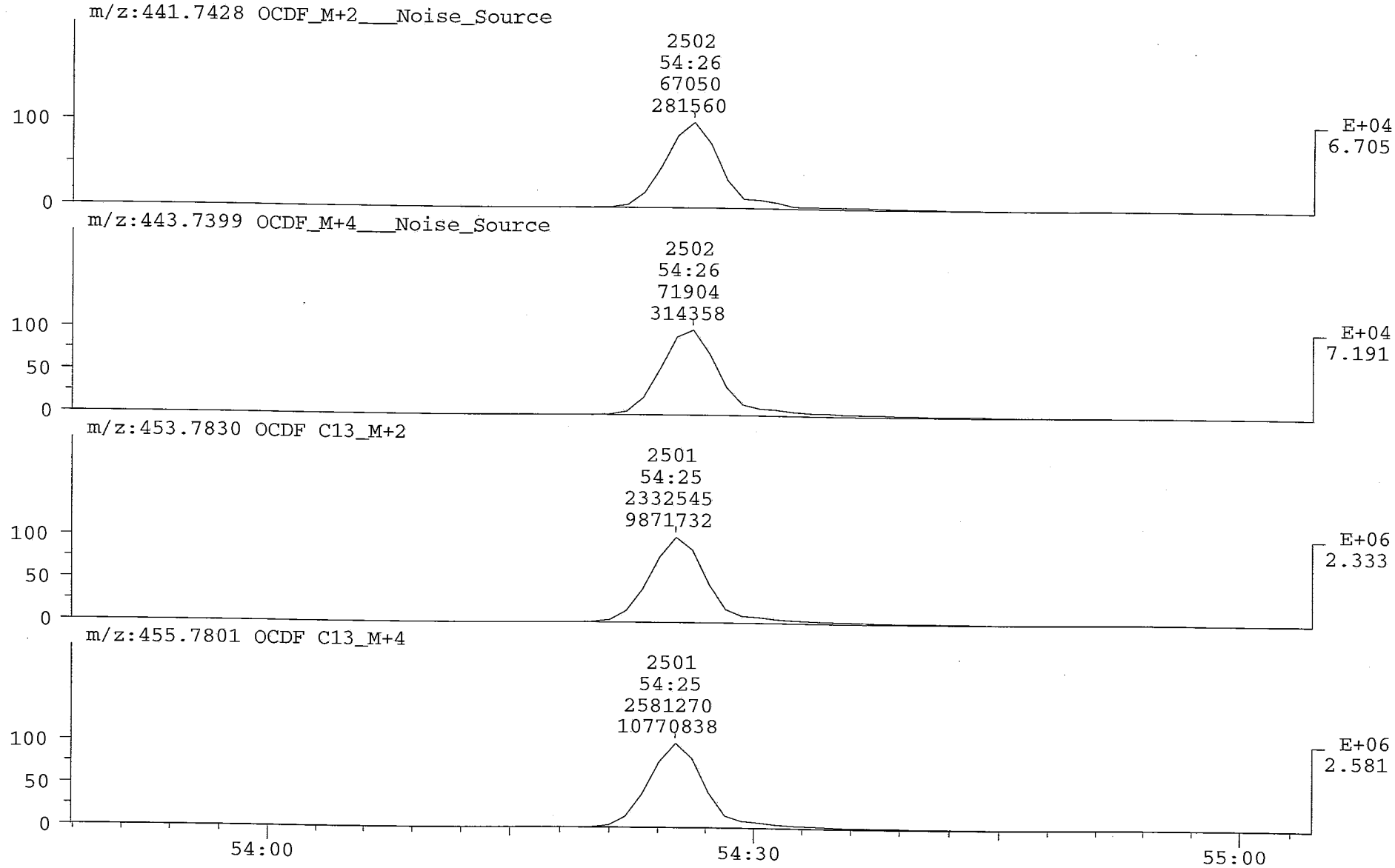
CHRO: d3140516i1 16-May-14 Elapse: 49:40 2227
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2135 > 2320 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



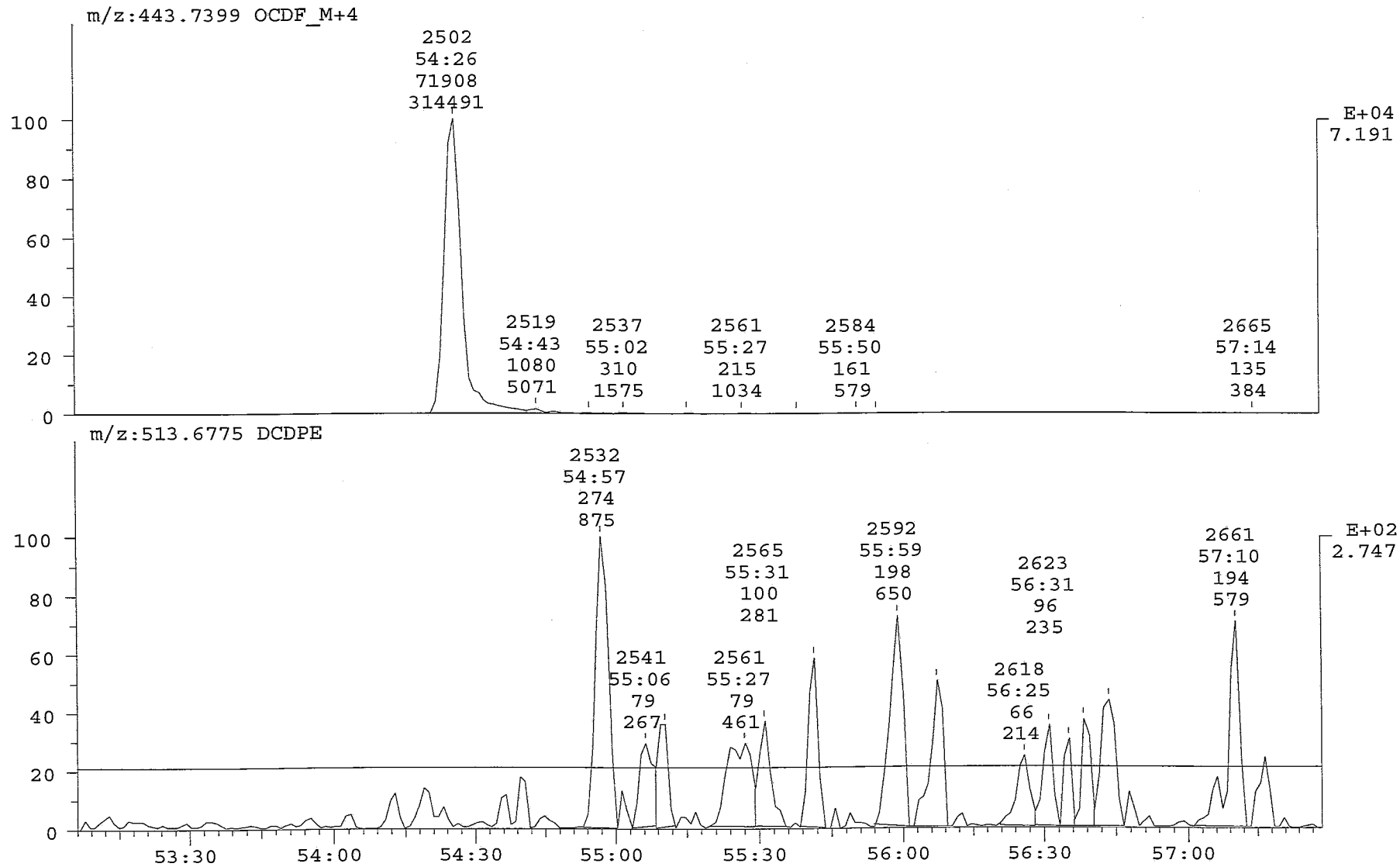
CHRO: d3140516i1 16-May-14 Elapse: 54:16 2493
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2464 > 2528 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



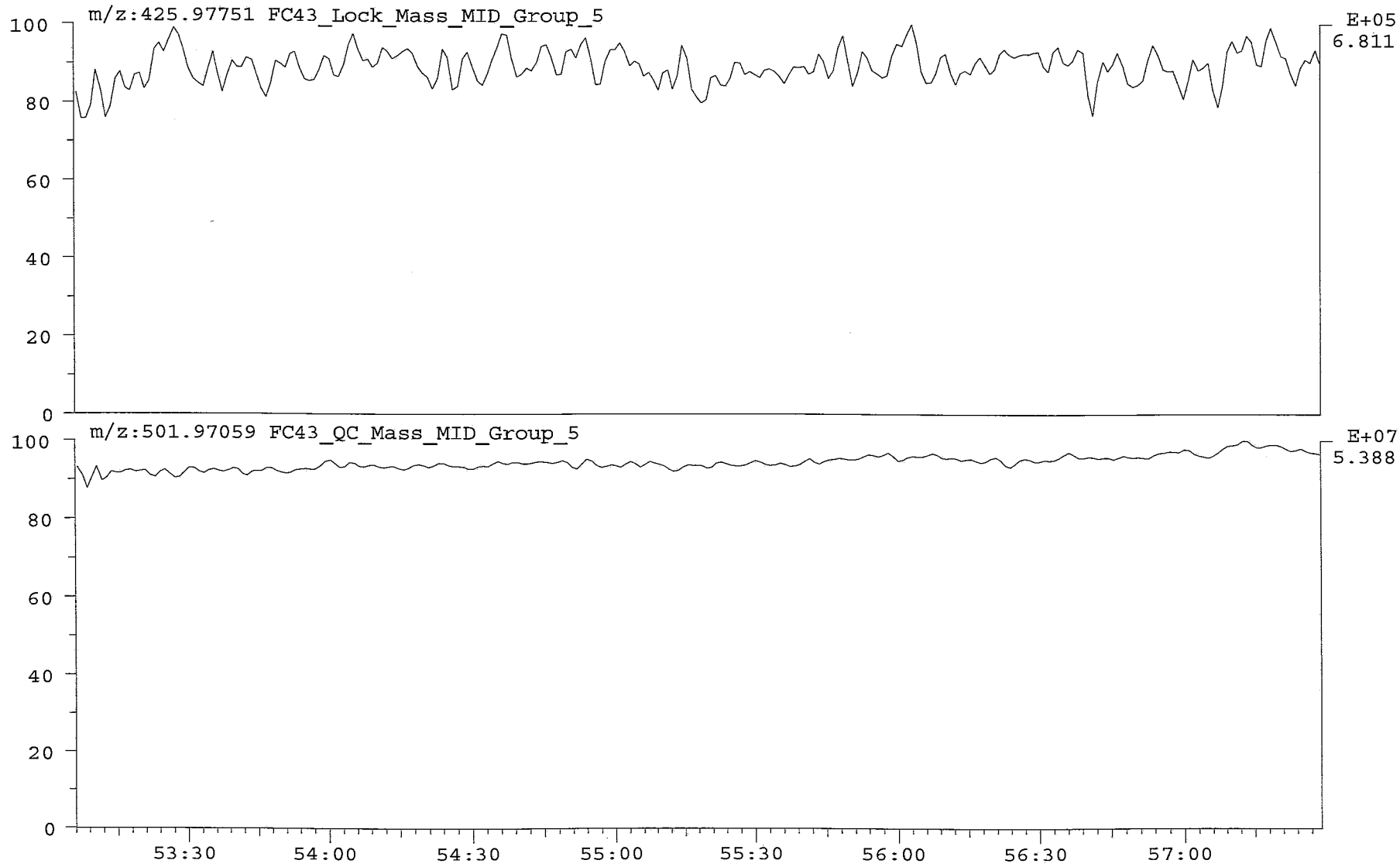
CHRO: d3140516i1 16-May-14 Elapse: 44:20 1916
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 14:26:26 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS1
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2465 > 2539 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d3140516i1                          16-May-14   Elapse:  54:26      2502
Samp:  WO=4104:74cs1 Meth=F8o Dil=1                    Start :  14:26:26   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                             Study :  ICAL CS1
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2425 > 2679       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d3140516i1                                16-May-14  Elapse:  54:26      2502
Samp:  WO=4104:74cs1 Meth=F8o Dil=1                         Start :  14:26:26   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  ICAL CS1
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2425 > 2679            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Fri May 16 14:28:33 2014 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - D5FBM84J

Analysis started at: 16-May-14 14:28:32

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence :

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:13 min	35:13 min	0.99 sec
# 2	35:13 min	7:16 min	42:30 min	1.00 sec
# 3	42:30 min	5:00 min	47:30 min	1.00 sec
# 4	47:30 min	5:30 min	53:00 min	1.00 sec
# 5	53:00 min	4:30 min	57:30 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	122
305.8987		1	1	122
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	122
321.8936		1	1	122
327.8847		1	1	122
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	122

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7

```
   375.9802     20  1        7
   409.7974      1  1      146
  Window # 3
       mass F  int  gr  time (ms)
   373.8208      1  1      146
   375.8178      1  1      146
   375.9802 l   20  1        7
   375.9802     20  1        7
   383.8639      5  1       29
   385.8610      5  1       29
   389.8158      1  1      146
   391.8127      1  1      146
   401.8559      5  1       29
   403.8529      5  1       29
   413.9770 c   20  1        7
   413.9770     20  1        7
   445.7555      1  1      146
  Window # 4
       mass F  int  gr  time (ms)
   407.7817      1  1      146
   409.7788      1  1      146
   413.9770 l   20  1        7
   413.9770     20  1        7
   417.8250      5  1       29
   419.8220      5  1       29
   423.7767      1  1      146
   425.7737      1  1      146
   435.8169      5  1       29
   437.8140      5  1       29
   463.9738 c   20  1        7
   463.9738     20  1        7
   479.7165      1  1      146
  Window # 5
       mass F  int  gr  time (ms)
   425.9770 l   20  1        7
   425.9770     20  1        7
   441.7428      1  1      146
   443.7399      1  1      146
   453.7830      5  1       29
   455.7801      5  1       29
   457.7377      1  1      146
   459.7348      1  1      146
   469.7780      5  1       29
   471.7750      5  1       29
   501.9706 c   20  1        7
   501.9706     20  1        7
   513.6775      1  1      146

MID Window terminated after 35.233333 minutes
MID Window end time was 35.220000 minutes
MID Window terminated after 42.500000 minutes
MID Window end time was 42.500000 minutes
MID Window terminated after 47.500000 minutes
MID Window end time was 47.500000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.500000 minutes
MID Window end time was 57.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune
```

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0177	BMASS	313.4834
BQUAD	1.5000	CAPIL	0.0000	CAPTSET	0.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	16.0000	ECORR	1.0003	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2096.1908
ELEN	-45.0000	EMULT	1699.0000	ENS	148.0000
ENSBR	1.5000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	178.0000	EXSBR	2.1000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	11.7000
FQUADGAIN	0.0000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0142	FVINLET	0.0765	FVSRC	0.0516
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	740.0000
LENS_SYM	9.5000	LM	375.8364	LMII	500.0000
LMASS	313.4834	LKM	425.9770	MASS	313.4834
MDAC	3525633.8688	MRANGE	1307.4725	NSAM	200.0000
NSCAN	2702.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	0.0000	PSAM	10.0000
PUSHER	-8.3000	RECURR	0.8947	RELEN	0.0000
RES	11287.9758	RPUSHER	-8.2418	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	730.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	0.0000	SLOW	60.0000	SS	2.0000
SW	0.1590	TANAL	0.0000	TCURR	0.0000
TD	30.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	313.4834	XLENS_POT	906.0000
XLENS_SYM	9.5000	YLENS_POT	750.0000	YLENS_SYM	0.0000

Source Gauge: 1.5e-005 mbar
Analyzer Penning: 7.4e-008 mbar
Pirani Analyse: 1.4e-002 mbar
Pirani Source: 5.2e-002 mbar
Pirani Inlet System: 7.6e-002 mbar

Scantype is electric

Sourcemode is EI POS

MID Time Window 1: Resolution is 9899.
MID Time Window 2: Resolution is 9085.
MID Time Window 3: Resolution is 10055.
MID Time Window 4: Resolution is 10067.
MID Time Window 5: Resolution is 11287.

Amplifier Offset: 94.

*** File closed Fri May 16 15:26:05 2014
***

User: finnigan
Host: knx-alpha5.stl-inc.com
Class: knx-alpha5.stl-inc.com
Job: d3140516i1.log

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS2	Prep Batch		Lot No	
Data File	/20140516i/d314051 6i2.d	Prep Date		SDG No	
Analysis ID	161064	Prep Exp Date		Date Received	
Analysis Date	5/16/2014	Matrix	UNKNOWN	Date Sampled	
Analysis Time	15:26	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D2A	Dil Factor	1.00	Code	F8o
Analyst	MSD				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)	DL (ng/mL)
2,3,7,8-TCDD	31:52	227656	23326	1.000	2.000	2.465041	123.25	2.465041	0.0114
Total TCDD				1.000		2.465041		2.465041	0.0114
2,3,7,8-TCDF	29:46	328308	37255	1.000	2.000	2.159533	107.98	2.159533	0.00861
Total TCDF				1.000		2.159533		2.159533	0.00861
1,2,3,7,8-PeCDD	41:01	744387	178999	1.000	10.00	10.542783	105.43	10.542783	0.00754
Total PeCDD				1.000		10.542783		10.542783	0.00754
1,2,3,7,8-PeCDF	39:17	1325567	276610	1.000	10.00	11.844749	118.45	11.844749	0.0128
2,3,4,7,8-PeCDF	40:30	1253802	284061	1.000	10.00	10.951503	109.52	10.951503	0.0115
Total PeCDF				1.000		22.796253		22.796253	0.0121
1,2,3,4,7,8-HxCDD	45:14	909977	237244	1.000	10.00	11.226503	112.27	11.226503	0.0310
1,2,3,6,7,8-HxCDD	45:21	983468	225780	1.000	10.00	11.801767	118.02	11.801767	0.0333
1,2,3,7,8,9-HxCDD	45:45	1031143	233443	1.000	10.00	12.545203	125.45	12.545203	0.0321
Total HxCDD				1.000		35.573473		35.573473	0.0321
1,2,3,4,7,8-HxCDF	44:11	1505700	404076	1.000	10.00	13.495027	134.95	13.495027	0.0185
1,2,3,6,7,8-HxCDF	44:19	1714213	419606	1.000	10.00	12.644753	126.45	12.644753	0.0160
2,3,4,6,7,8-HxCDF	45:04	1536254	372289	1.000	10.00	12.268881	122.69	12.268881	0.0179
1,2,3,7,8,9-HxCDF	46:01	1432893	318664	1.000	10.00	12.860081	128.60	12.860081	0.0216
Total HxCDF				1.000		51.268743		51.268743	0.0183
1,2,3,4,6,7,8-HpCDD	50:10	840208	162551	1.000	10.00	11.240110	112.40	11.240110	0.0112
Total HpCDD				1.000		11.240110		11.240110	0.0112
1,2,3,4,6,7,8-HpCDF	48:27	1477102	299368	1.000	10.00	15.035265	150.35	15.035265	0.0152
1,2,3,4,7,8,9-HpCDF	50:48	1145480	224258	1.000	10.00	14.044864	140.45	14.044864	0.0190
Total HpCDF				1.000		29.080129		29.080129	0.0169
OCDD	54:17	1529581	354785	1.000	20.00	23.959859	119.80	23.959859	0.0280
OCDF	54:26	2147113	505282	1.000	20.00	22.629534	113.15	22.629534	0.0142
13C-2,3,7,8-TCDD	31:48	9235383	968908	1.000	100.0	106.609762	106.61	106.609762	0.119
13C-2,3,7,8-TCDF	29:43	15202729	1712481	1.000	100.0	175.494543	175.49	175.494543	0.0386
13C-1,2,3,7,8-PeCDD	41:00	7060631	1691476	1.000	100.0	81.505249	81.51	81.505249	0.0241
13C-1,2,3,7,8-PeCDF	39:16	11191178	2302775	1.000	100.0	129.186718	129.19	129.186718	0.0677
13C-2,3,4,7,8-PeCDF	40:29	11448675	2559972	1.000	100.0	132.159166	132.16	132.159166	0.0677
13C-1,2,3,4,7,8-HxCDD	45:13	8105614	2053667	1.000	100.0	89.645318	89.65	89.645318	0.0658
13C-1,2,3,6,7,8-HxCDD	45:20	8333227	1913934	1.000	100.0	92.162640	92.16	92.162640	0.0658
13C-1,2,3,4,7,8-HxCDF	44:10	11157443	2938443	1.000	100.0	123.397503	123.40	123.397503	0.0594
13C-1,2,3,6,7,8-HxCDF	44:18	13556714	3381230	1.000	100.0	149.932619	149.93	149.932619	0.0594
13C-2,3,4,6,7,8-HxCDF	45:03	12521549	3029976	1.000	100.0	138.484048	138.48	138.484048	0.0594
13C-1,2,3,7,8,9-HxCDF	46:00	11142177	2514847	1.000	100.0	123.228666	123.23	123.228666	0.0594
13C-1,2,3,4,6,7,8-HpCDD	50:09	7475087	1444994	1.000	100.0	82.671905	82.67	82.671905	0.0105
13C-1,2,3,4,6,7,8-HpCDF	48:26	9824250	1983866	1.000	100.0	108.652844	108.65	108.652844	0.0368
13C-1,2,3,4,7,8,9-HpCDF	50:47	8155864	1591676	1.000	100.0	90.201066	90.20	90.201066	0.0368
13C-OCDD	54:16	12767863	2965162	1.000	200.0	141.208197	70.60	141.208197	0.0494
13C-OCDF	54:24	18976202	4537989	1.000	200.0	209.870302	104.94	209.870302	0.0354
37Cl4-2,3,7,8-TCDD	31:52	209272	21005	1.000	2.000	2.415757	120.79	2.415757	0.00971
13C-1,2,3,4-TCDD	31:16	8662793	953074	1.000	100.0	100.000000	100.00	100.000000	0.119
13C-1,2,3,7,8,9-HxCDD	45:44	9041871	2070421	1.000	100.0	100.000000	100.00	100.000000	0.0658

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PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS2	Prep Batch		Lot No	
Data File	/20140516i/d3140516i2.	Prep Date		SDG No	
Analysis ID	161064	Prep Exp Date		Date Received	
Analysis Date	05/16/14 15:26	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	60	88	24	35	0.69	/	
	2,3,7,8-TCDF	29:46	00:00	0	147146	181162	16692	20563	0.81	ABV/AVV	M
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	185	183	74	73	1.01 *	/	
	13C-2,3,7,8-TCDF	29:43	00:00	0	6807132	8395597	771028	941453	0.81	AVV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	40	70	16	28	0.57 *	/	
	2,3,7,8-TCDD	31:52	00:00	0	104937	122719	10704	12622	0.86	AVB/ABV	M
328					327.8847		327.8847				
	Noise	00:00	00:00	0	93		37				
	37Cl4-2,3,7,8-TCDD	31:52	00:00	0	209272		21005			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	640	495	256	198	1.29 *	/	
	13C-1,2,3,4-TCDD	31:16	00:00	0	3899456	4763337	421119	531955	0.82	AVV/ABV	
	13C-2,3,7,8-TCDD	31:48	00:00	0	4179185	5056198	440304	528604	0.83	AVB/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	135	160	54	64	0.84 *	/	
	1,2,3,7,8-PeCDF	39:17	00:00	0	839590	485977	173829	102781	1.73	ABV/AVV	M
	2,3,4,7,8-PeCDF	40:30	00:00	0	768742	485060	176770	107291	1.58	ABV/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	385	260	154	104	1.48	/	
	13C-1,2,3,7,8-PeCDF	39:16	00:00	0	6865805	4325373	1415970	886805	1.59	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:29	00:00	0	6953027	4495648	1553372	1006600	1.55	AVV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	73	55	29	22	1.32 *	/	
	1,2,3,7,8-PeCDD	41:01	00:00	0	457132	287255	109341	69658	1.59	ABV/ABV	M
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	90	140	36	56	0.64 *	/	
	13C-1,2,3,7,8-PeCDD	41:00	00:00	0	4375128	2685503	1046951	644525	1.63	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	250	293	100	117	0.85 *	/	
	1,2,3,4,7,8-HxCDF	44:11	00:00	0	832801	672899	223230	180846	1.24	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:19	00:00	0	970230	743983	236310	183296	1.30	AVV/AVV	M
	2,3,4,6,7,8-HxCDF	45:04	00:00	0	867724	668530	213392	158897	1.30	AVV/AVV	M
	1,2,3,7,8,9-HxCDF	46:01	00:00	0	795332	637561	175832	142832	1.25	ABV/ABV	M
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	430	800	172	320	0.54	/	
	13C-1,2,3,4,7,8-HxCDF	44:10	00:00	0	3870688	7286755	1007052	1931391	0.53	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:18	00:00	0	4727029	8829685	1201438	2179792	0.54	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:03	00:00	0	4406121	8115428	1068190	1961786	0.54	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:00	00:00	0	3946237	7195940	878014	1636833	0.55	AVV/AVV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

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PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS2	Prep Batch		Lot No	
Data File	/20140516i/d3140516i2.	Prep Date		SDG No	
Analysis ID	161064	Prep Exp Date		Date Received	
Analysis Date	05/16/14 15:26	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

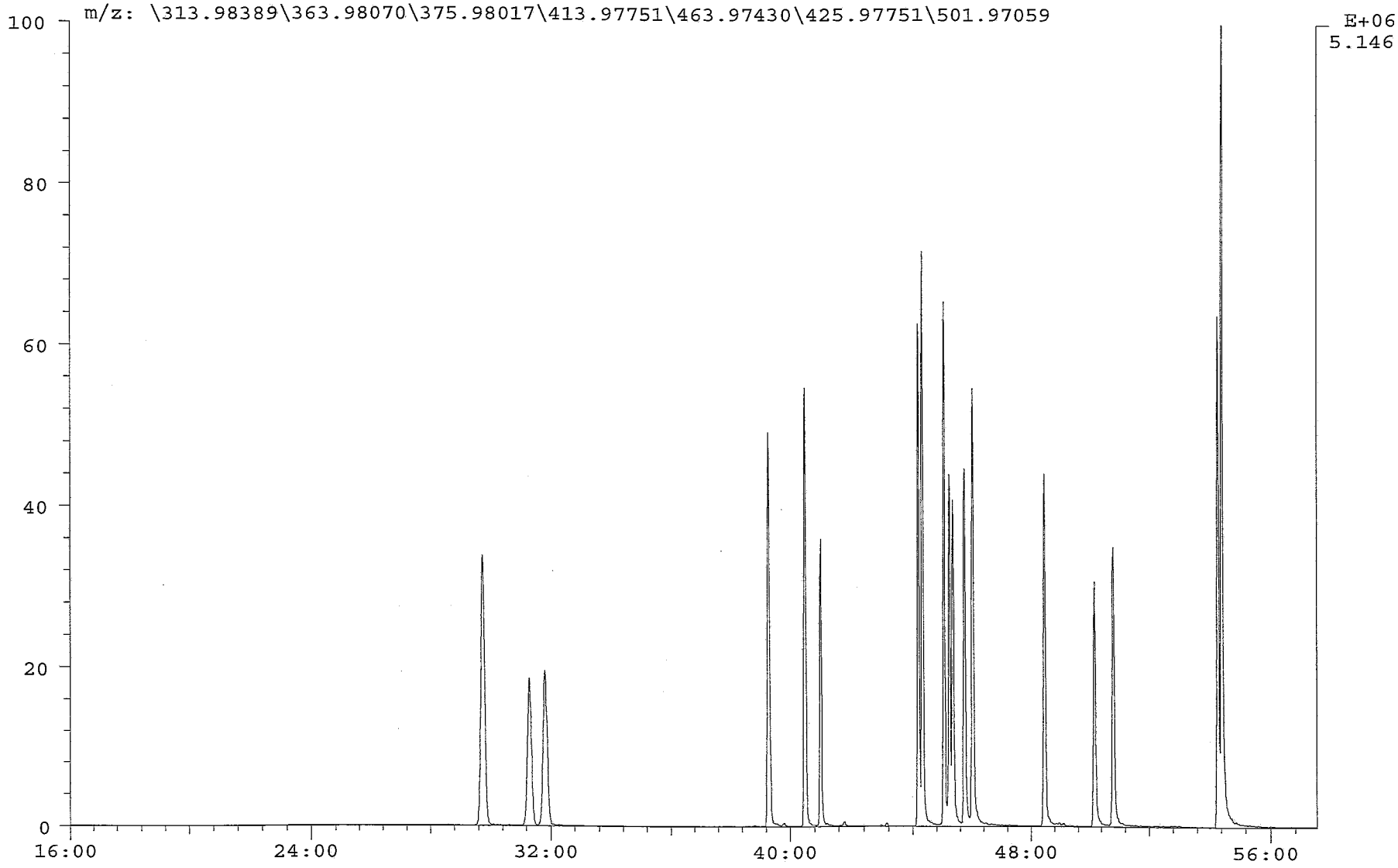
Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	360	278	144	111	1.30	/	
	1,2,3,4,7,8-HxCDD	45:14	00:00	0	516199	393778	131543	105701	1.31	ABV/ABV	M
	1,2,3,6,7,8-HxCDD	45:21	00:00	0	535799	447669	124415	101365	1.20	AVV/AVV	M
	1,2,3,7,8,9-HxCDD	45:45	00:00	0	578920	452223	131188	102255	1.28	AVV/AVV	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	1130	233	452	93	4.86 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:13	00:00	0	4522066	3583548	1127705	925962	1.26	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:20	00:00	0	4544801	3788426	1047487	866447	1.20	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	45:44	00:00	0	5018005	4023866	1146347	924074	1.25	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	155	148	62	59	1.05	/	
	1,2,3,4,6,7,8-HpCDF	48:27	00:00	0	751622	725480	153226	146142	1.04	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	50:48	00:00	0	585407	560073	116065	108193	1.05	ABV/ABV	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	283	480	113	192	0.59 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:26	00:00	0	3144111	6680139	629788	1354078	0.47	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:47	00:00	0	2615294	5540570	504727	1086949	0.47	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	53	110	21	44	0.48 *	/	
	1,2,3,4,6,7,8-HpCDD	50:10	00:00	0	425268	414940	80947	81604	1.02	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	118	100	47	40	1.18	/	
	13C-1,2,3,4,6,7,8-HpCDD	50:09	00:00	0	3903460	3571627	754411	690583	1.09	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	150	173	60	69	0.87	/	
	OCDF	54:26	00:00	0	1037918	1109195	243499	261783	0.94	ABV/ABV	M
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	208	525	83	210	0.40 *	/	
	13C-OCDF	54:24	00:00	0	9114702	9861500	2180058	2357931	0.92	ABV/AVV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	175	240	70	96	0.73 *	/	
	OCDD	54:17	00:00	0	729507	800074	169634	185151	0.91	ABV/ABV	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	713	310	285	124	2.30 *	/	
	13C-OCDD	54:16	00:00	0	6126449	6641414	1426721	1538441	0.92	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

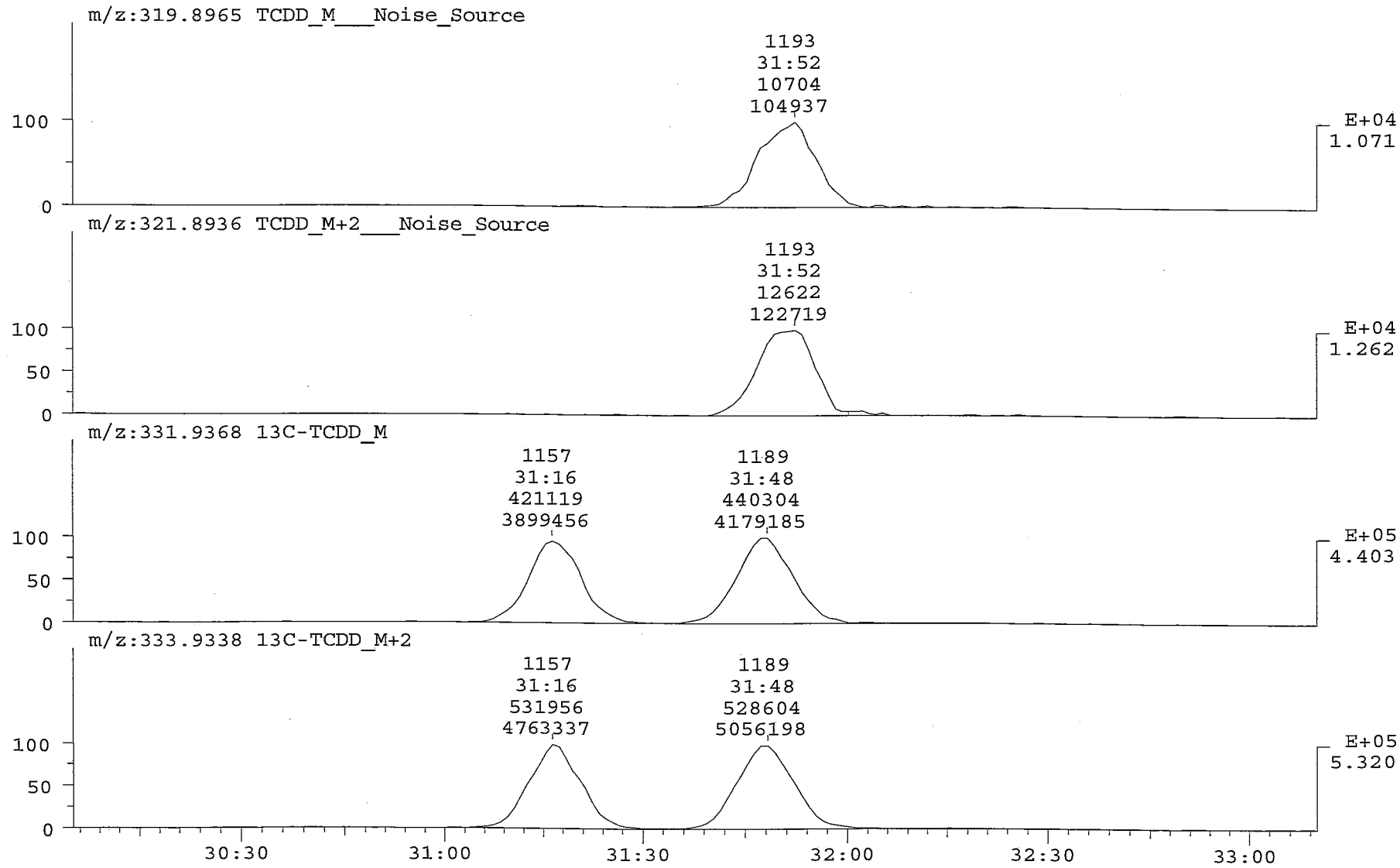
Int, Calc MD 5-19-14

QC Ku 5/19/14

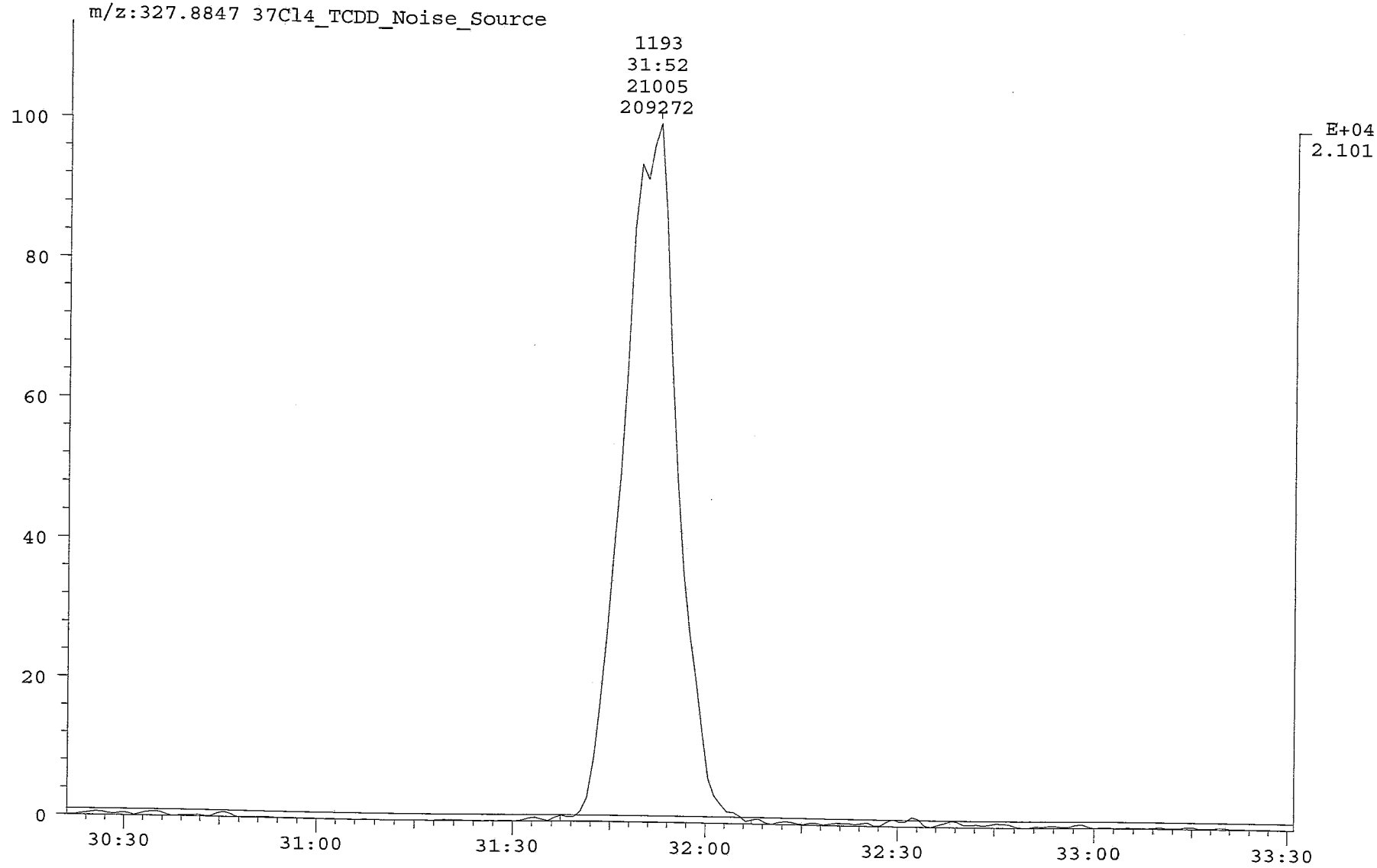
CHRO:	d3140516i2	16-May-14	Elapse:	54:25	2502
Samp:	WO=4104:74cs2 Meth=F8o Dil=1		Start :	15:26:10	2680
Comm:	Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2				
Mode:	EI ESI + Q1MS UP LR		Study :	ICAL CS2	
Oper:	MSD		Inlet :	LC	
Peak:	100.00 ppm	Label wndw: 238 > 2680	Masses:	303 > 514	
Area:	5, 0.50, 0	Baseline : 100, 3	Label :	0, 0.0	
Disp:	Height Area				



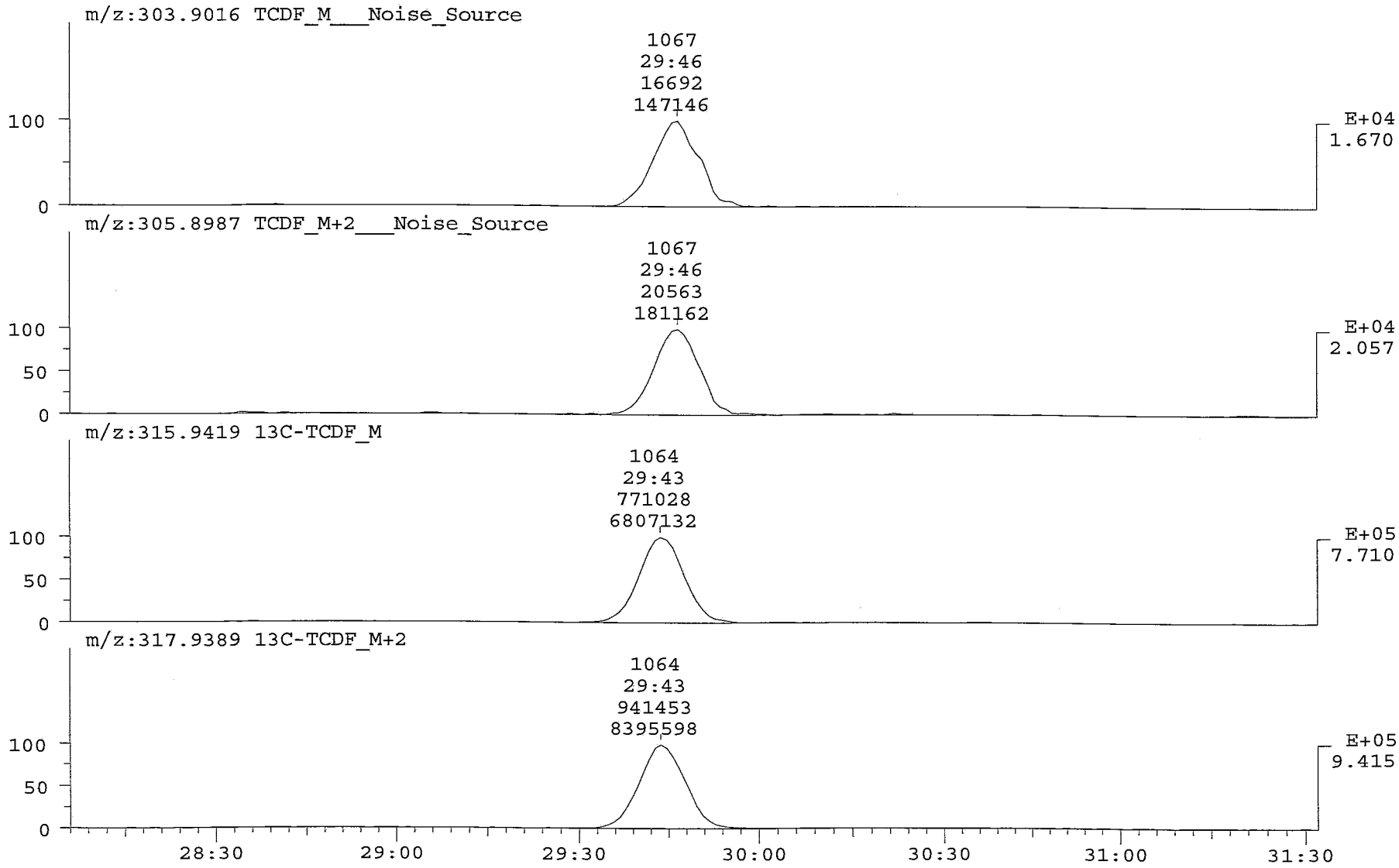
CHRO: d3140516i2 16-May-14 Elapse: 31:37 1178
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 15:26:10 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS2
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1085 > 1271 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



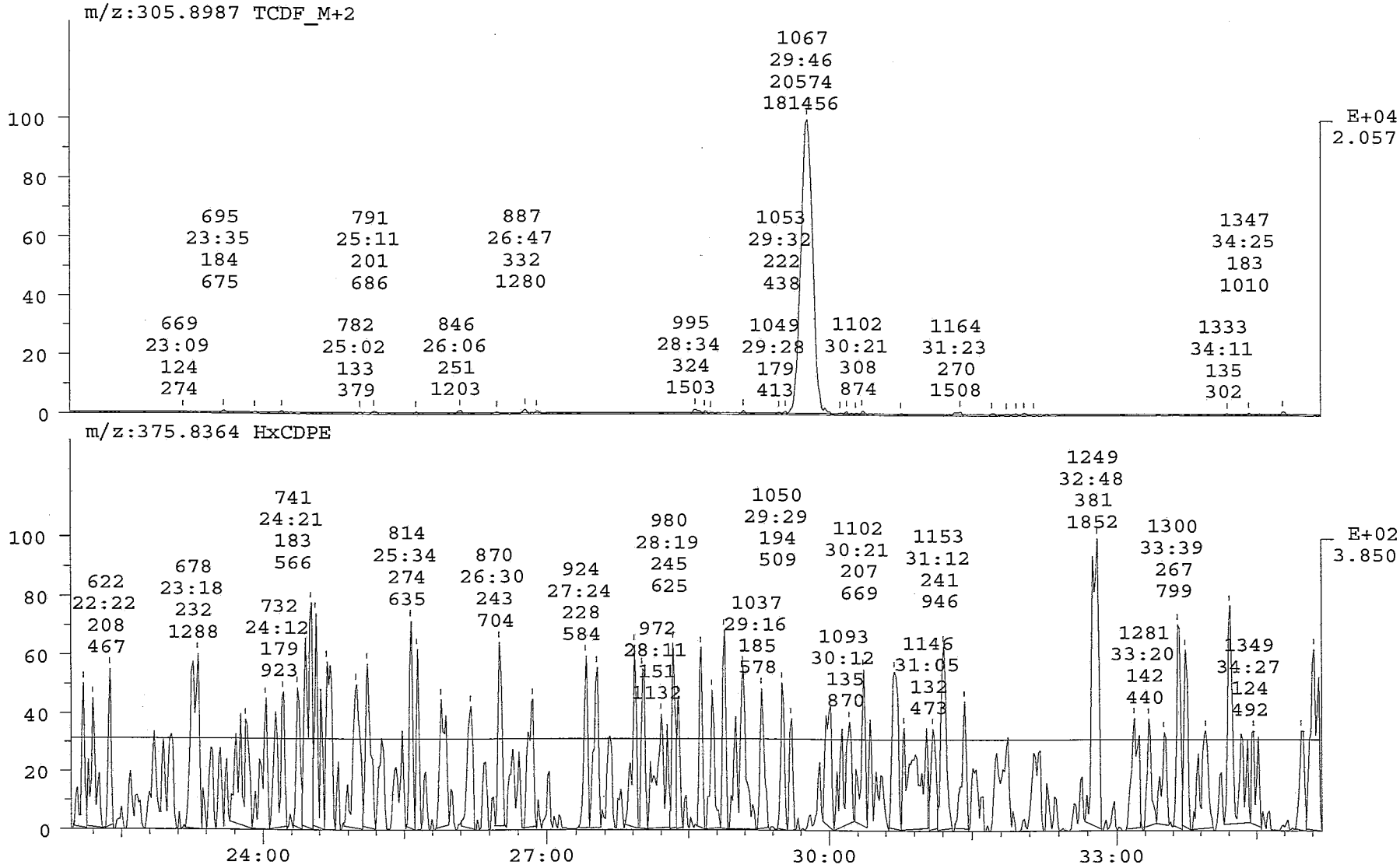
CHRO: d3140516i2 16-May-14 Elapse: 31:53 1194
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 15:26:10 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS2
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1101 > 1292 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



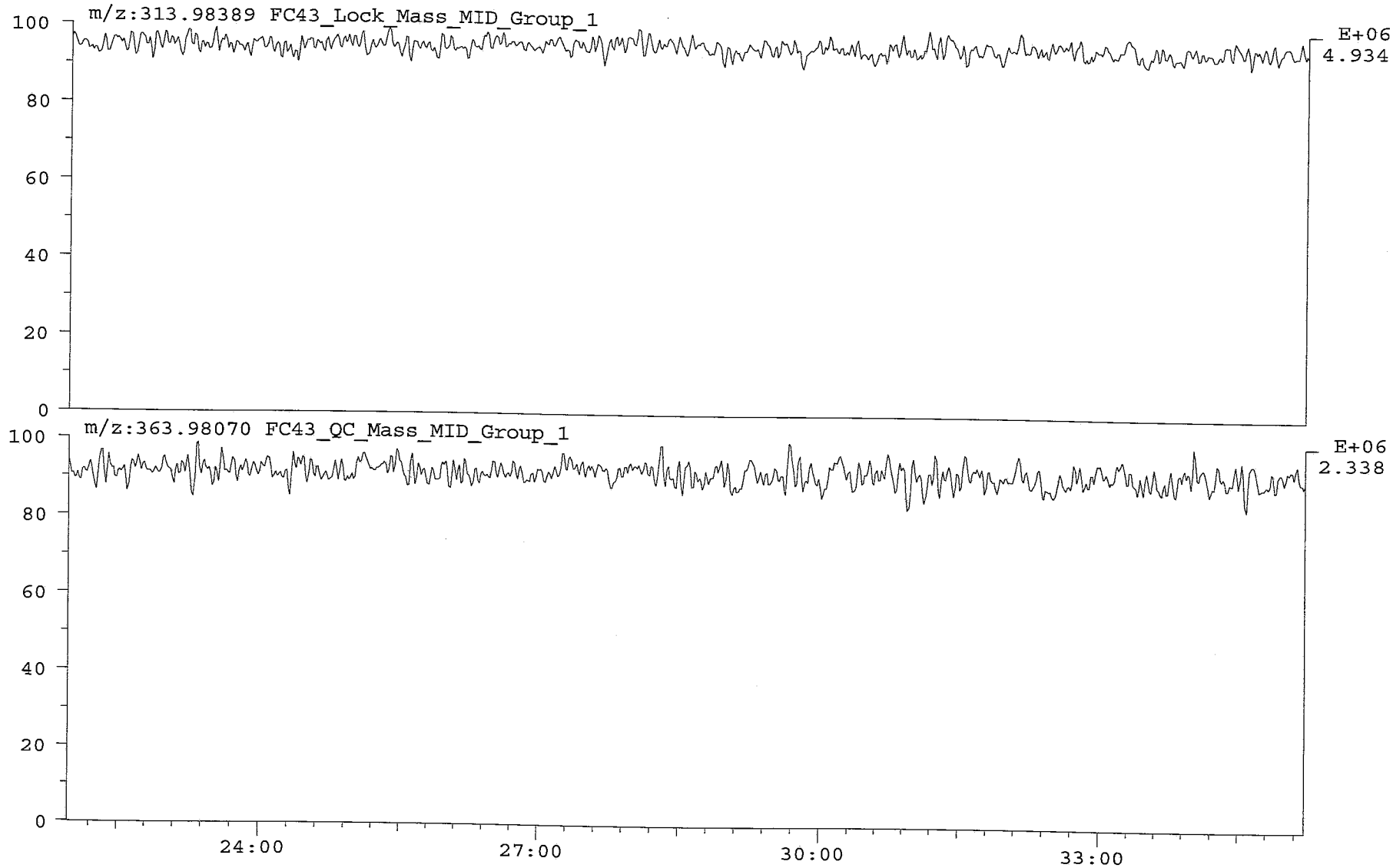
CHRO: d3140516i2 16-May-14 Elapse: 29:45 1066
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 15:26:10 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS2
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 966 > 1173 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



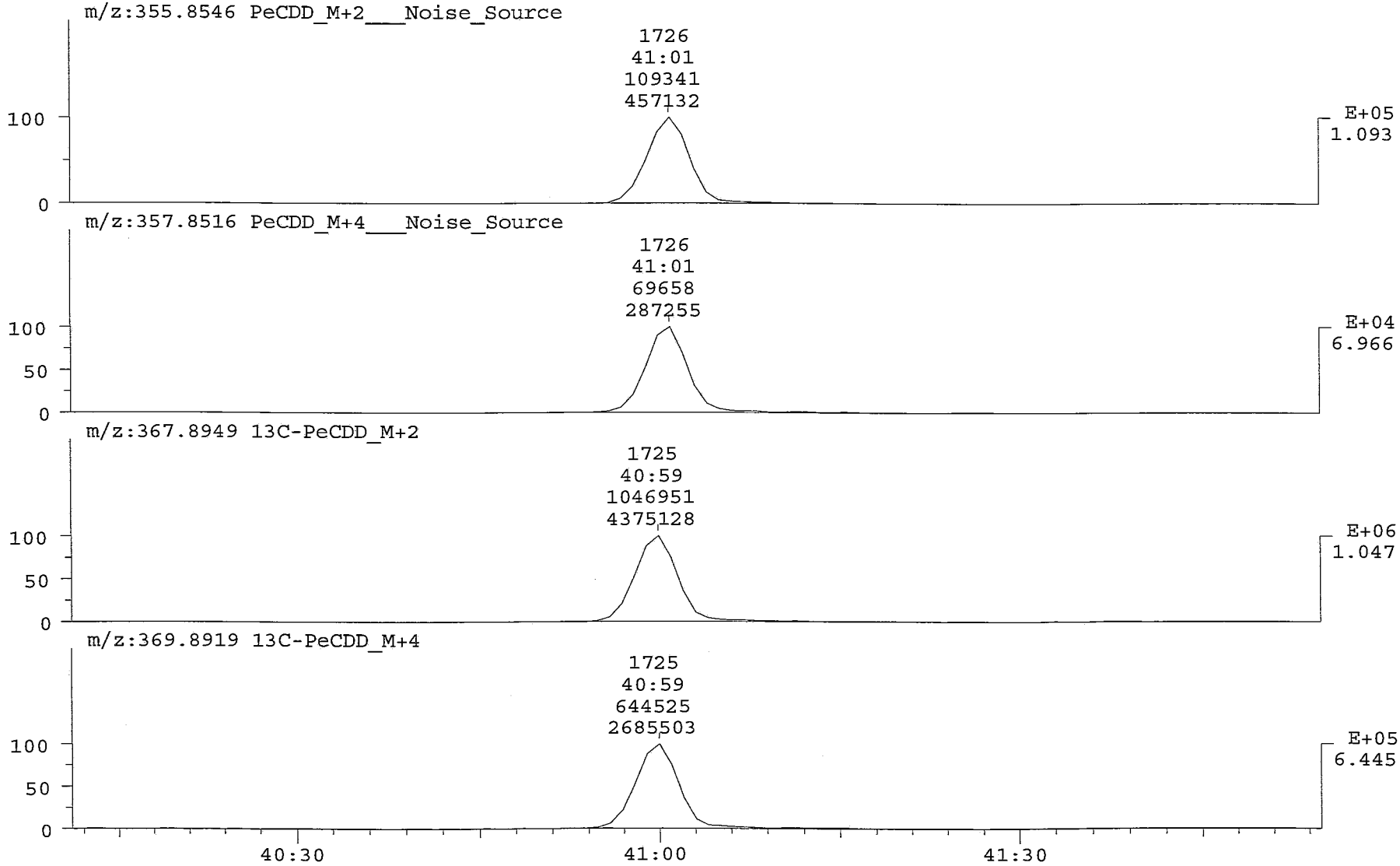
CHRO: d3140516i2 16-May-14 Elapse: 29:45 1066
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 15:26:10 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS2
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 597 > 1393 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



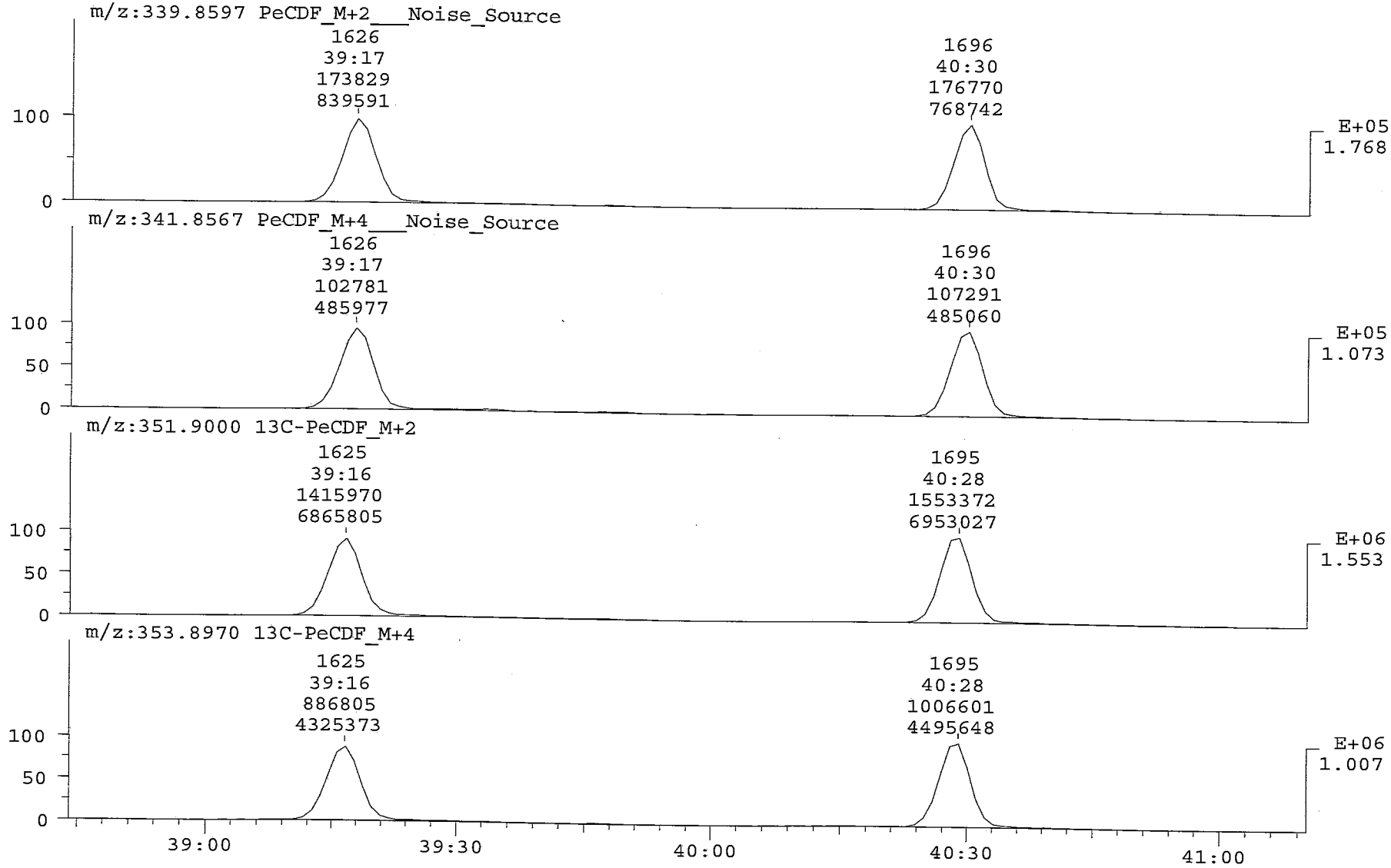
CHRO: d3140516i2 16-May-14 Elapse: 29:45 1066
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 15:26:10 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS2
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 597 > 1393 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



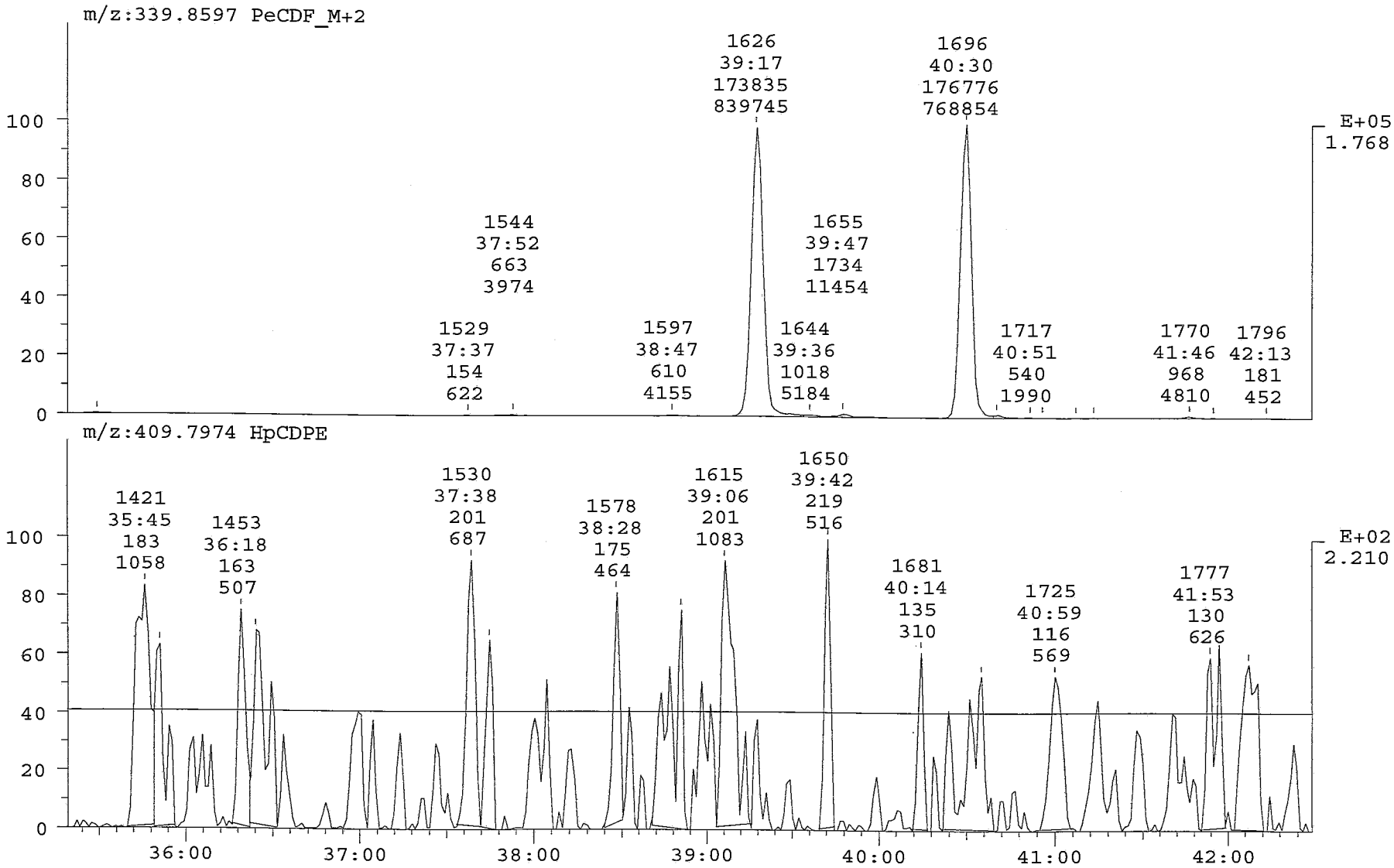
```
CHRO:  d3140516i2                          16-May-14  Elapse:  40:59      1725
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                   Start :  15:26:10   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                            Study :  ICAL CS2
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1678 > 1778      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



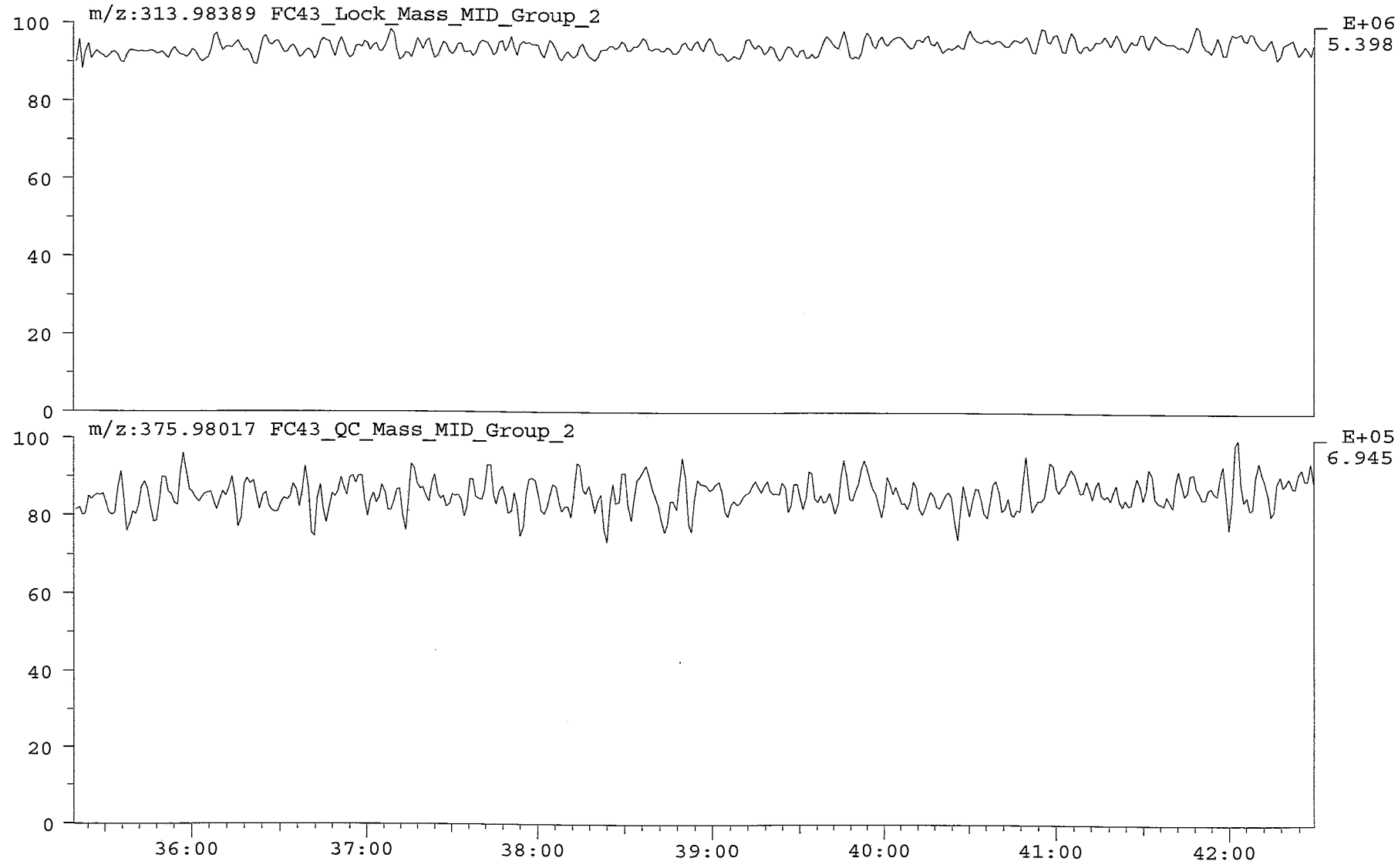
CHRO: d3140516i2 16-May-14 Elapse: 39:56 1664
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 15:26:10 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS2
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1593 > 1735 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



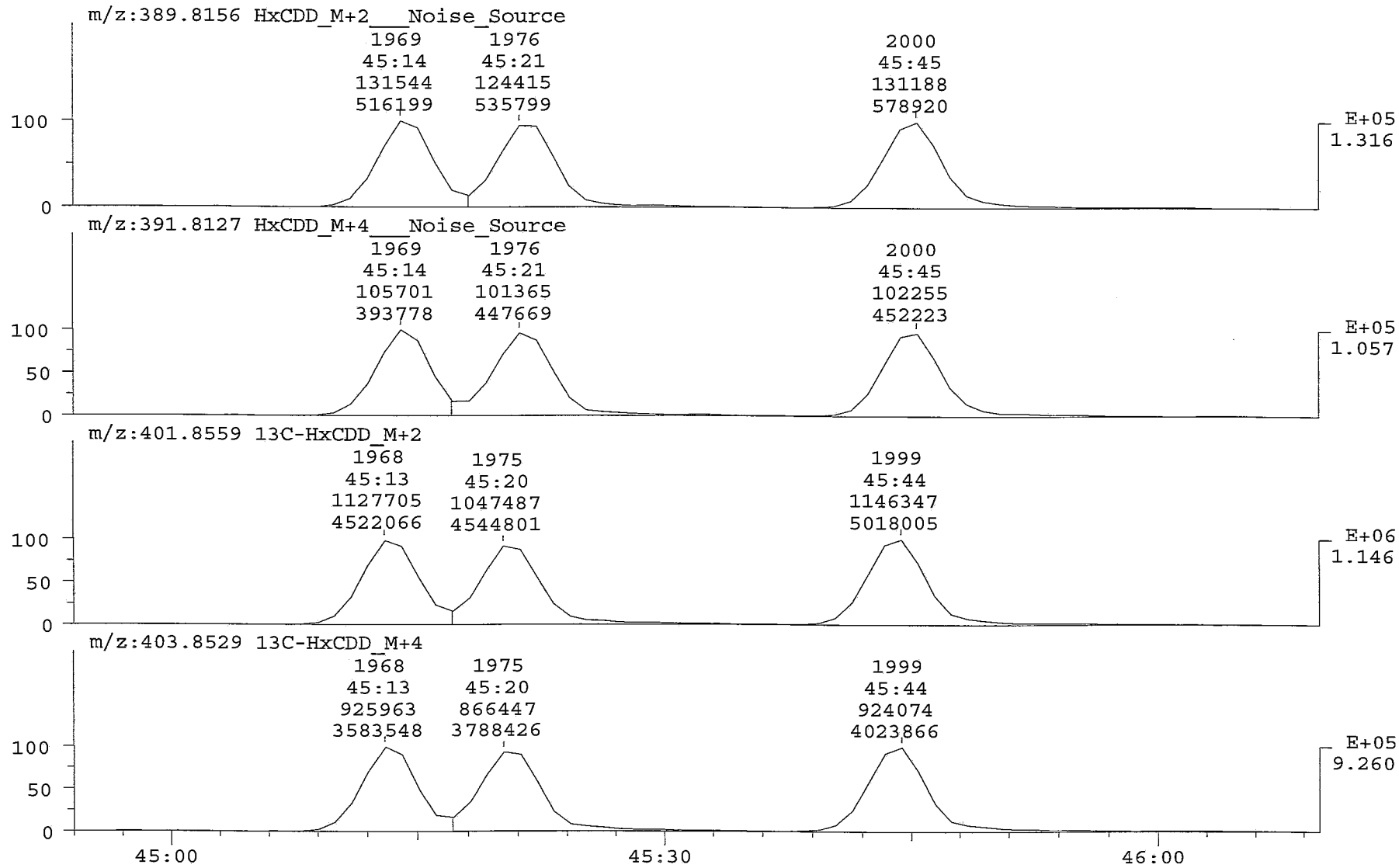
```
CHRO:  d3140516i2                                  16-May-14  Elapse:  39:56      1664
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                           Start :  15:26:10   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                    Study :  ICAL CS2
Oper:  MSD                                                    Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1396 > 1811              Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                   Label :  -2, 5.0
Disp:  Height  Area
```



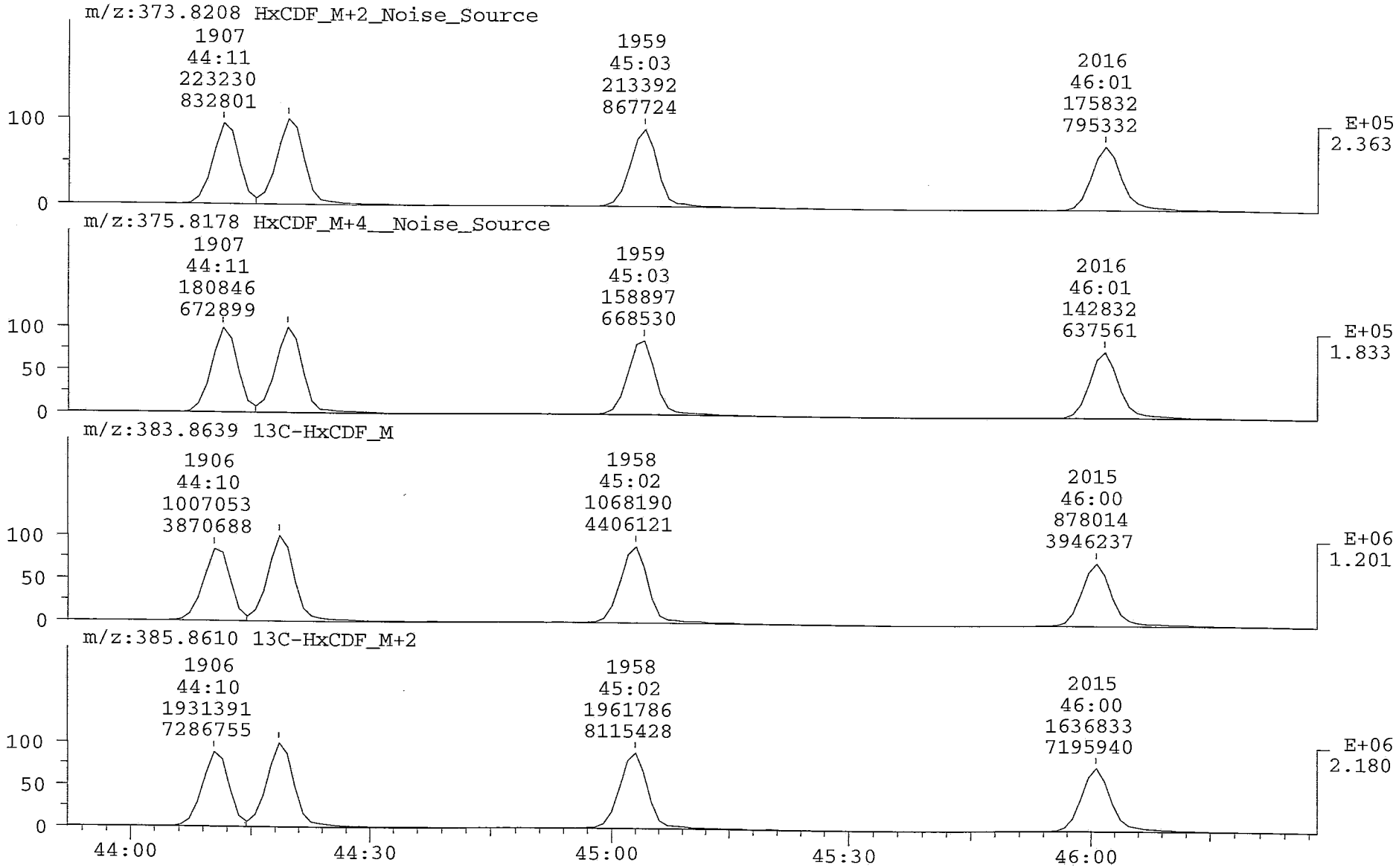
CHRO: d3140516i2 16-May-14 Elapse: 39:56 1664
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 15:26:10 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS2
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1396 > 1811 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



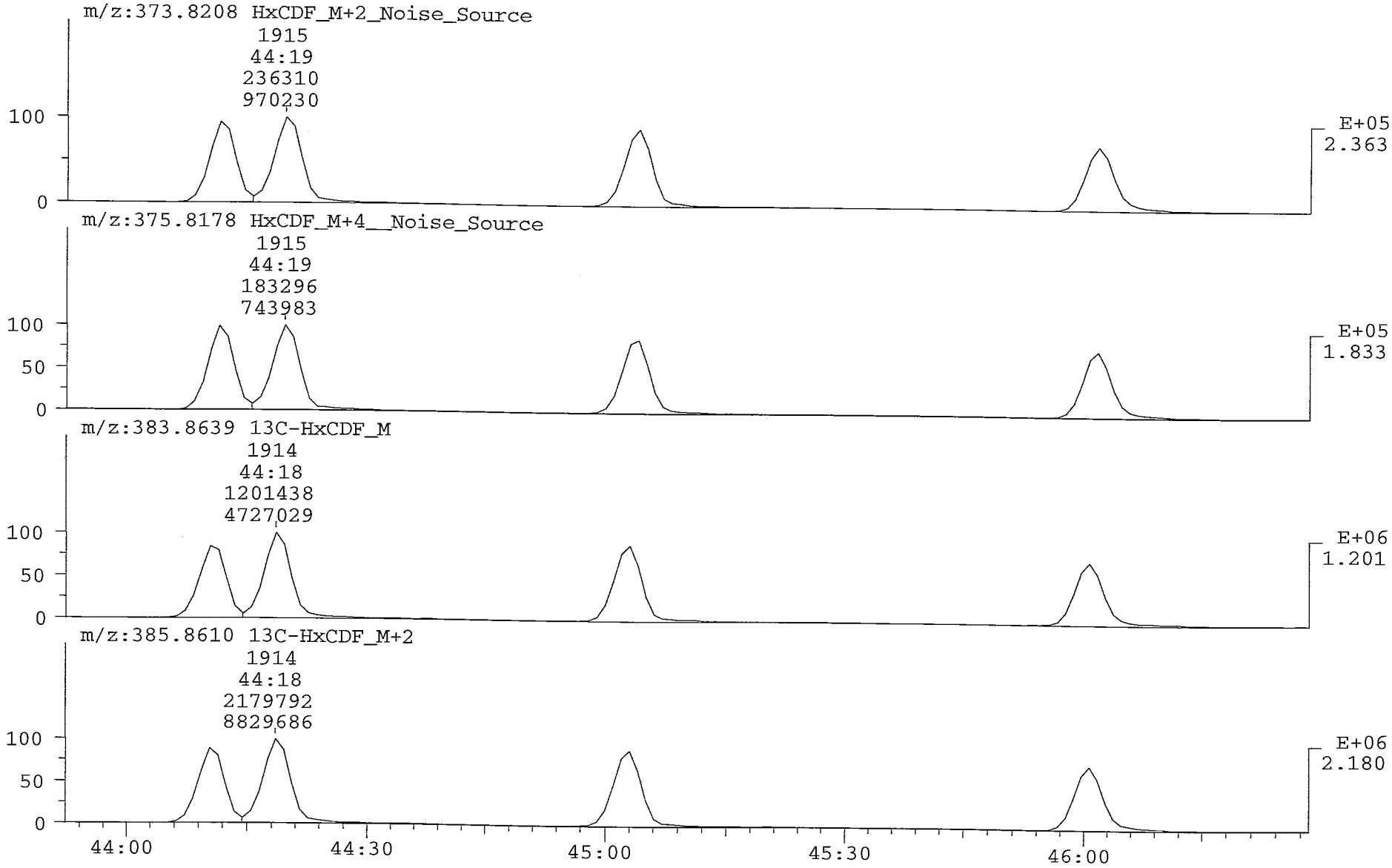
CHRO: d3140516i2 16-May-14 Elapse: 45:32 1987
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 15:26:10 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS2
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1949 > 2024 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



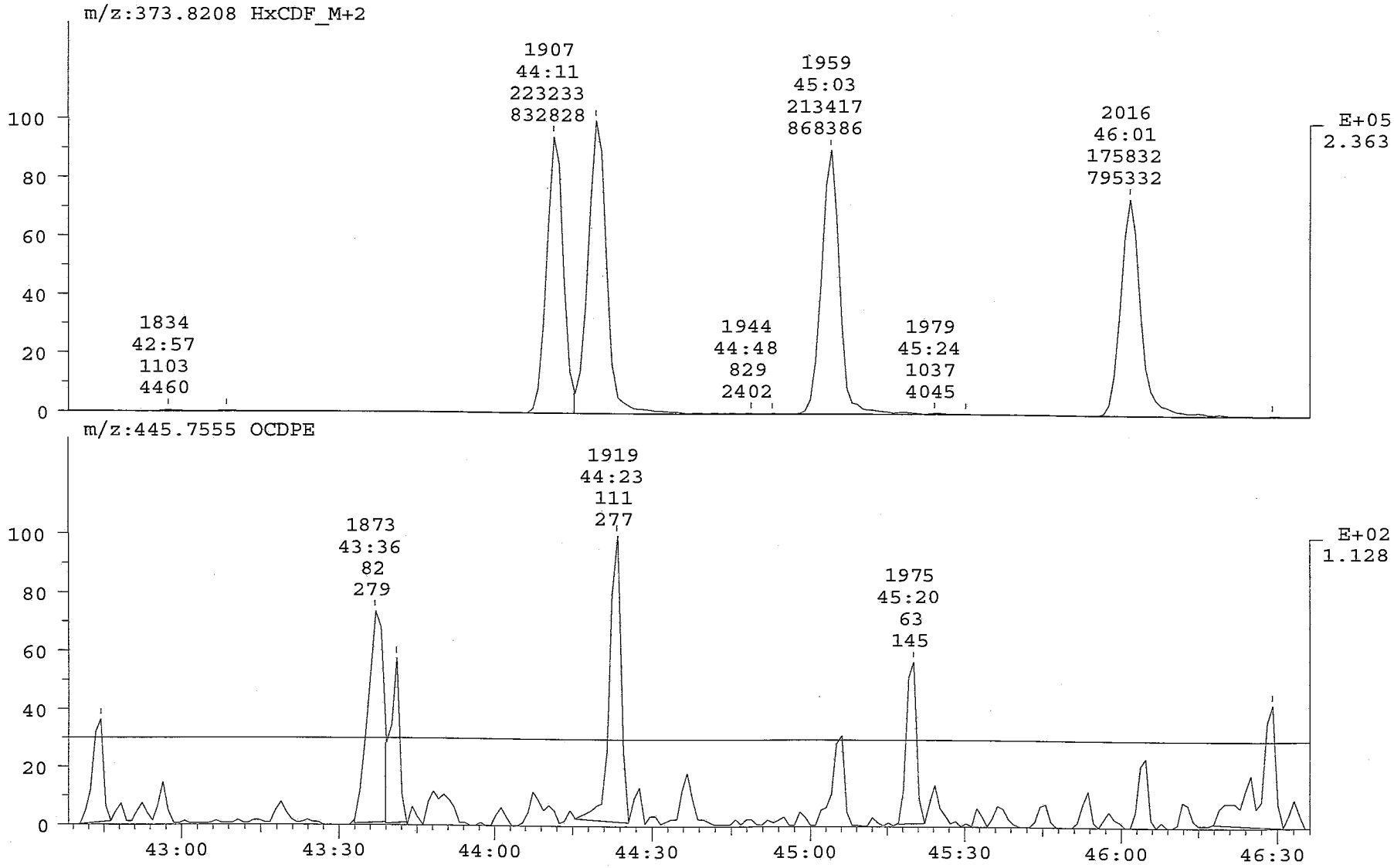
CHRO: d3140516i2 16-May-14 Elapse: 44:20 1916
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 15:26:10 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS2
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1888 > 2042 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



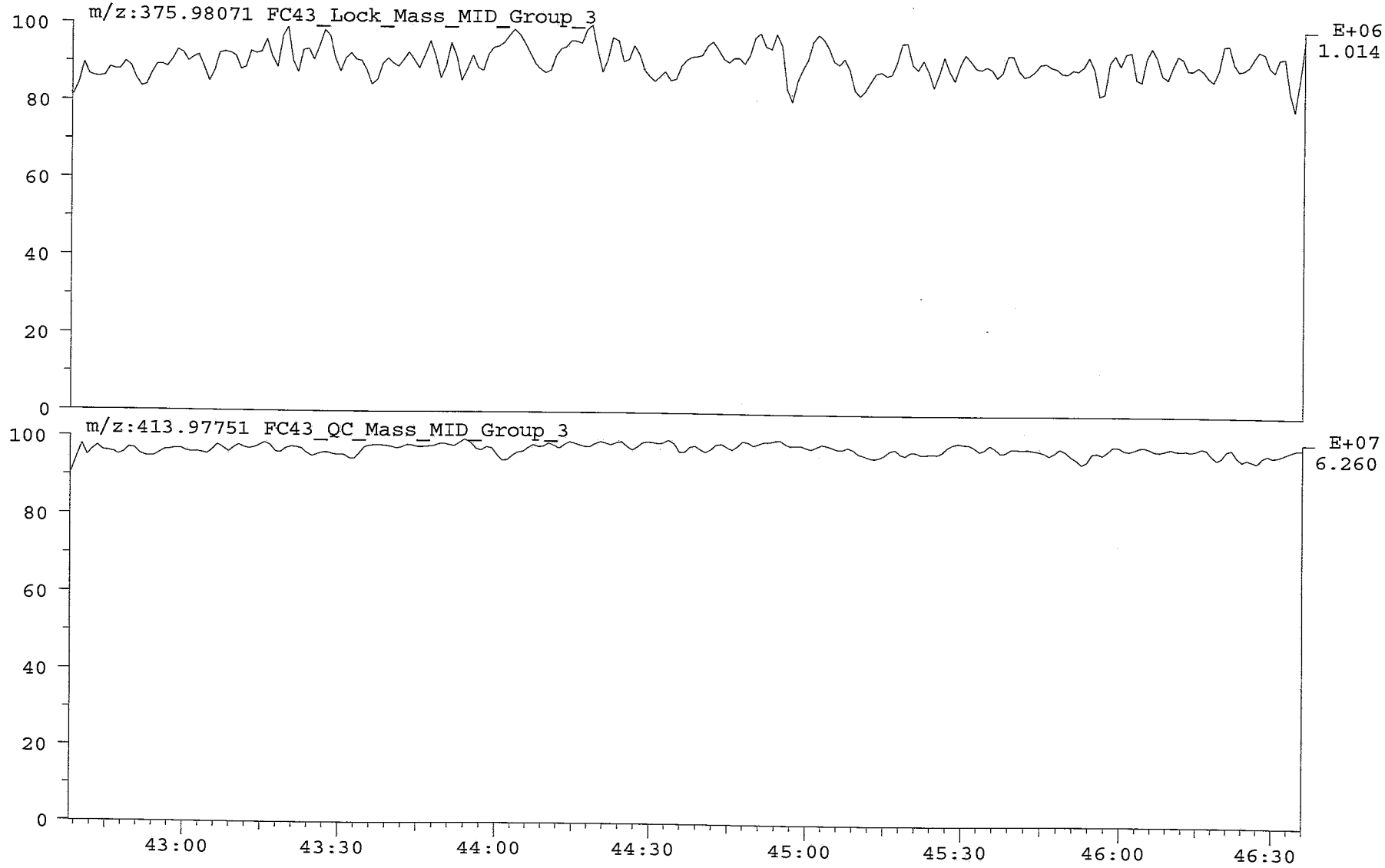
CHRO: d3140516i2 16-May-14 Elapse: 44:21 1917
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 15:26:10 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS2
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1914 > 1920 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



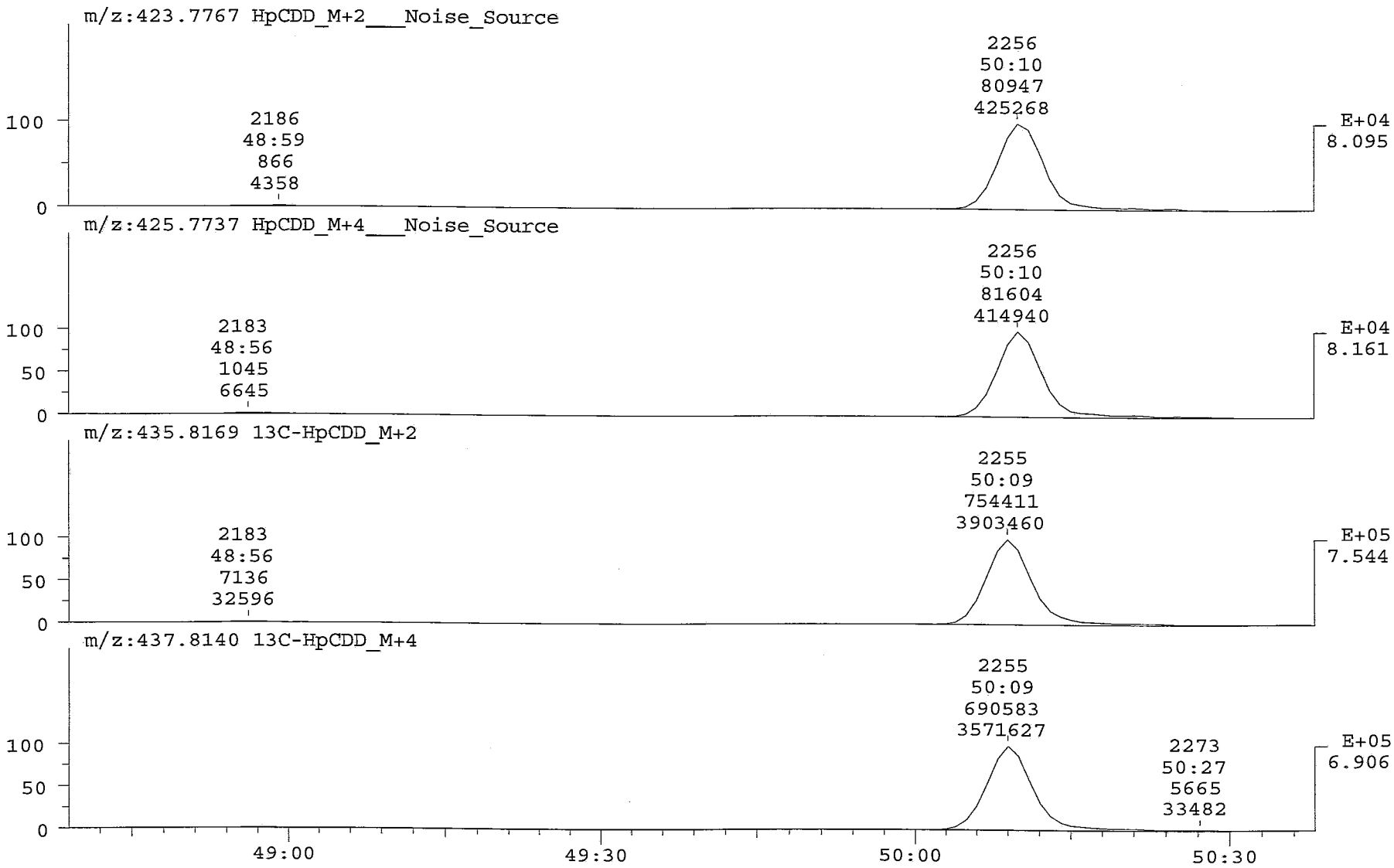
CHRO: d3140516i2 16-May-14 Elapse: 44:20 1916
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 15:26:10 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS2
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1815 > 2050 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



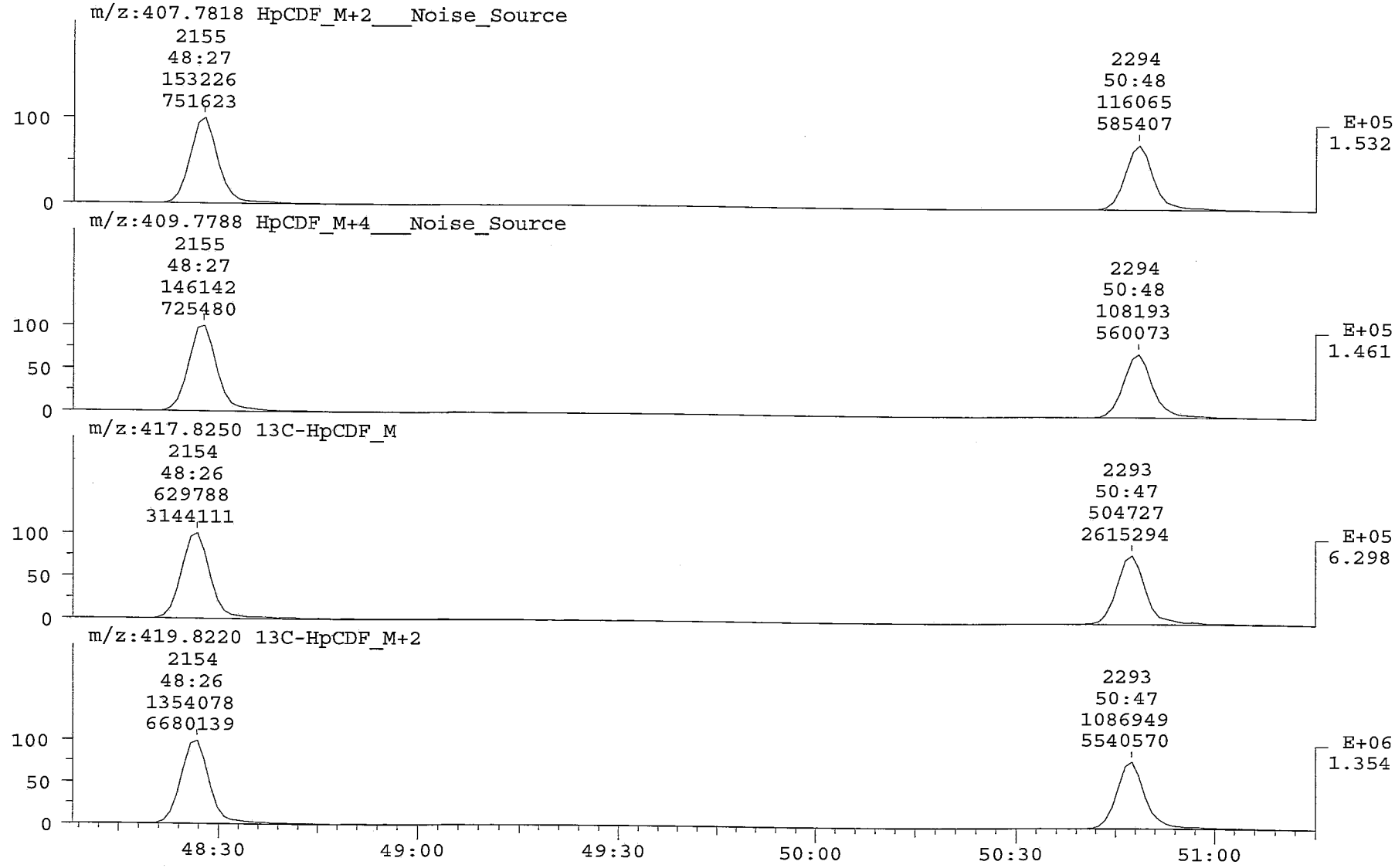
CHRO: d3140516i2 16-May-14 Elapse: 44:20 1916
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 15:26:10 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS2
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1815 > 2050 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



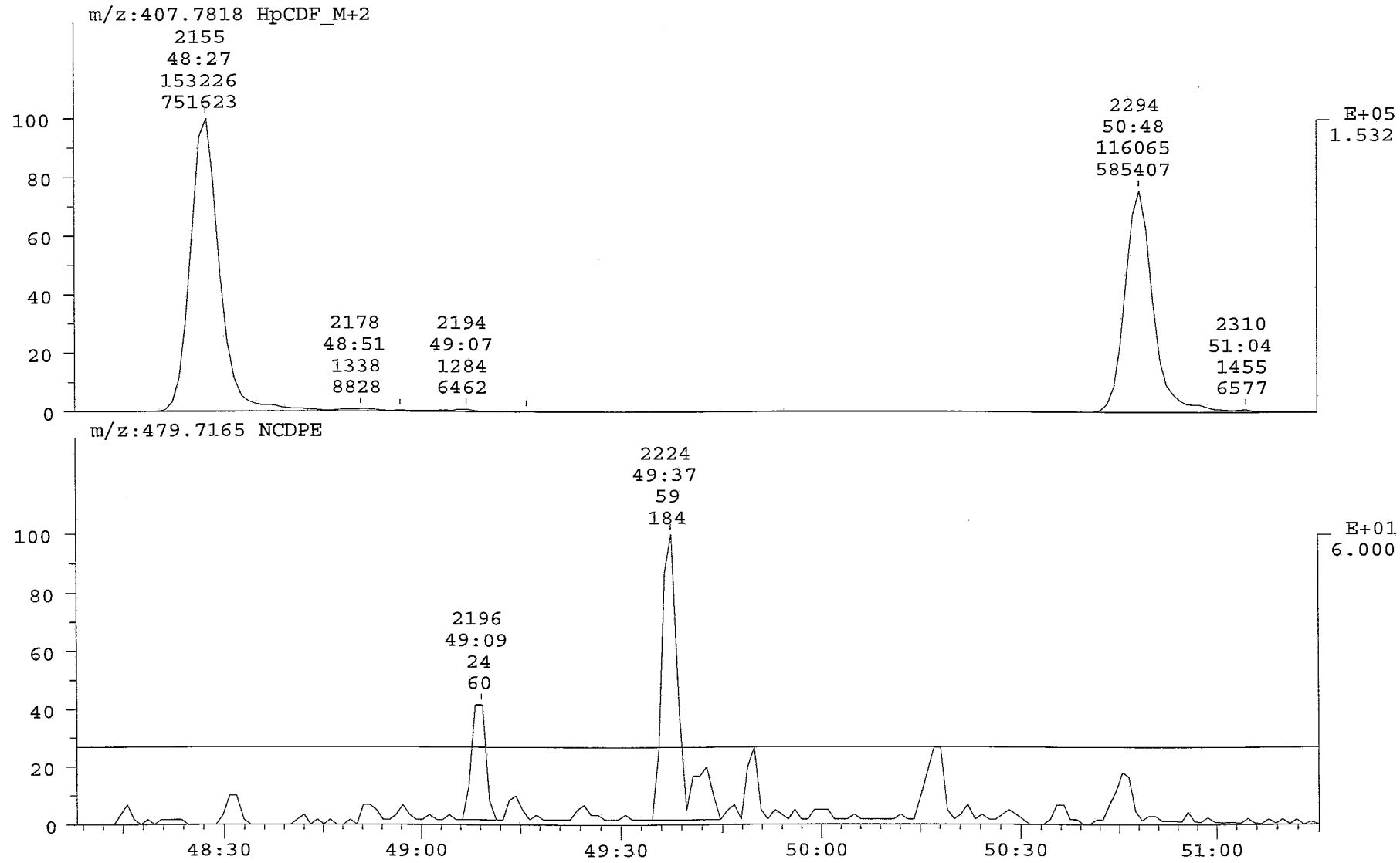
```
CHRO:  d3140516i2                                16-May-14  Elapse:  44:20      1916
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                         Start :  15:26:10   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  ICAL CS2
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2166 > 2284            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



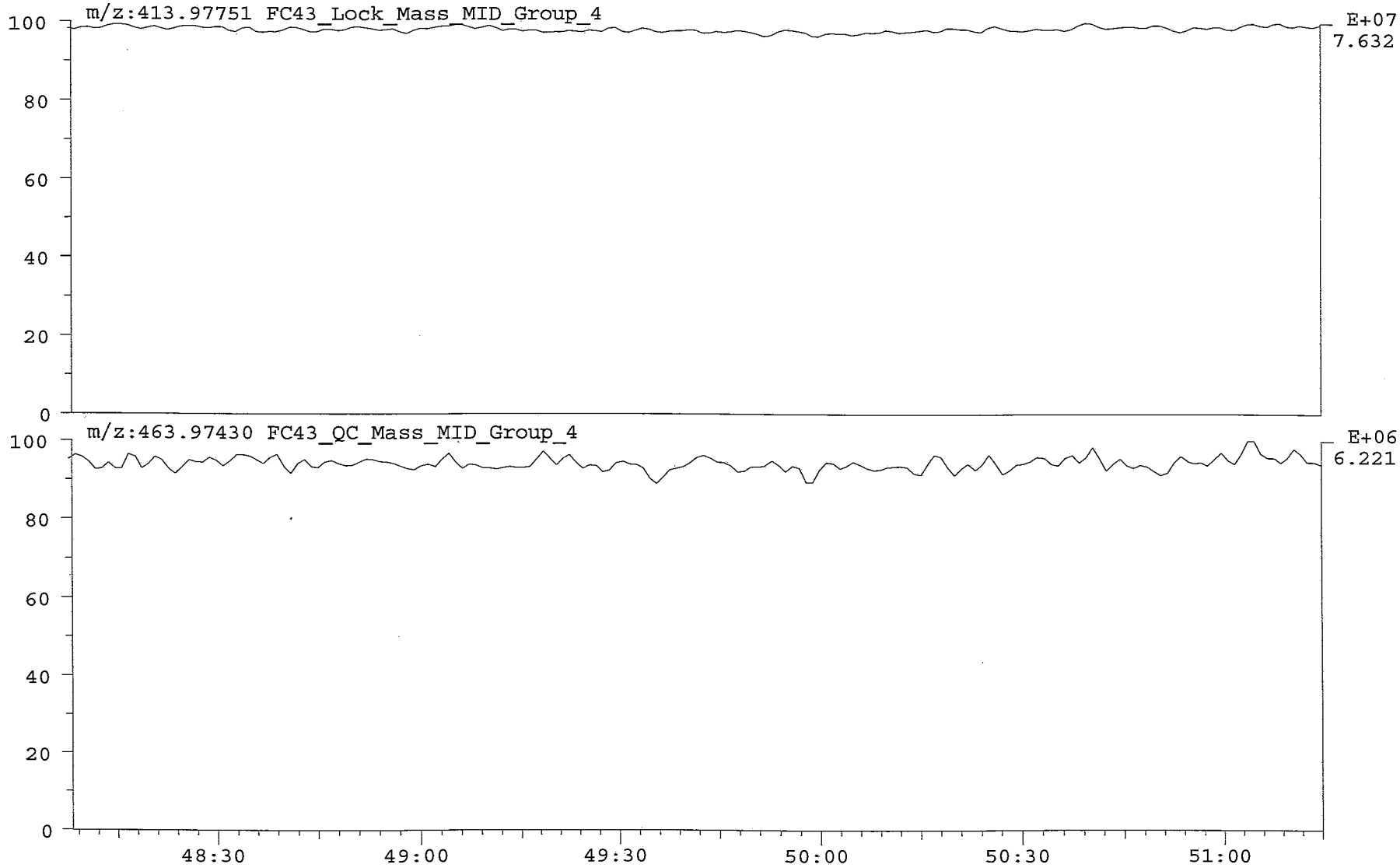
CHRO: d3140516i2 16-May-14 Elapse: 49:40 2227
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 15:26:10 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS2
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2135 > 2320 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



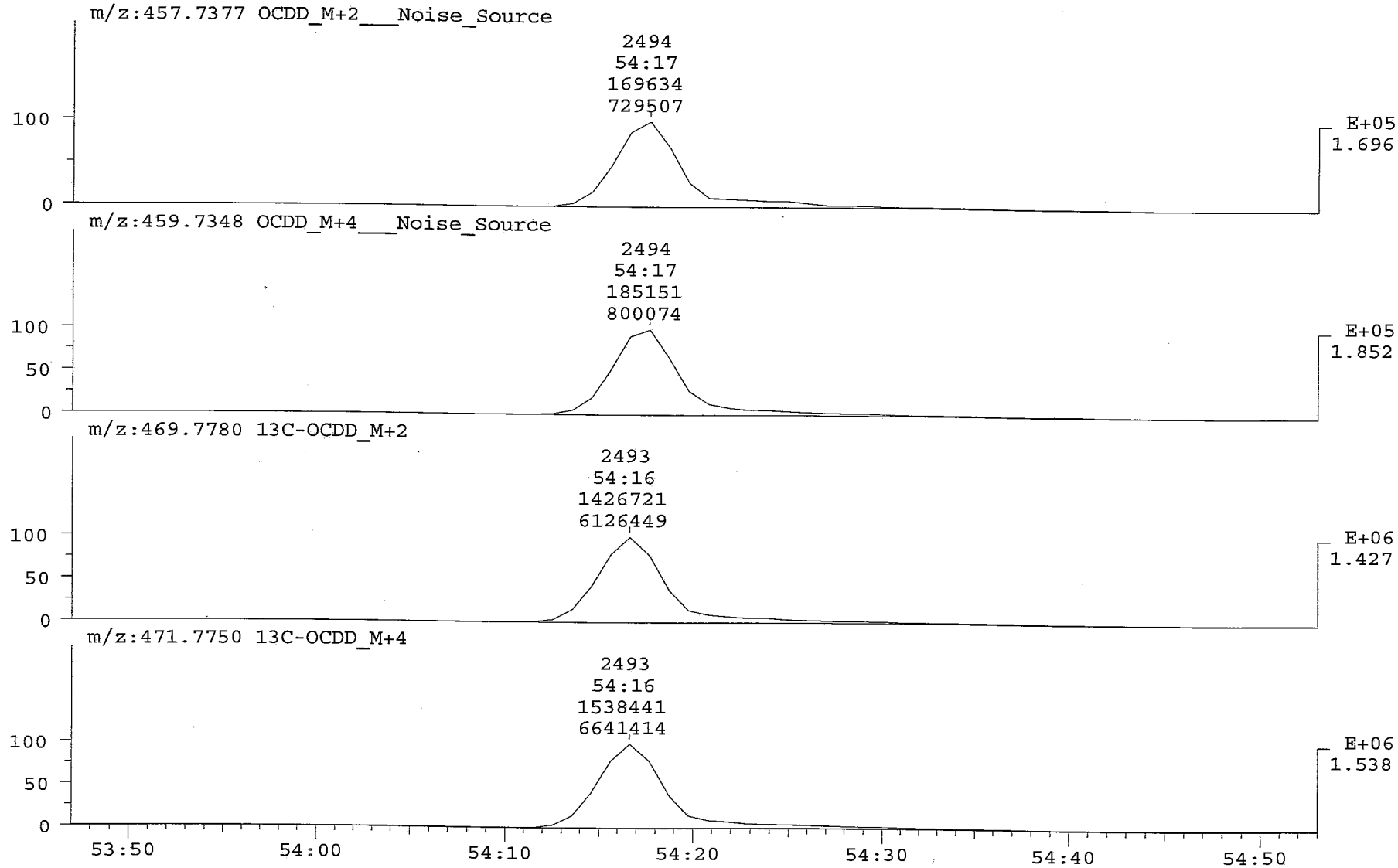
```
CHRO:  d3140516i2                          16-May-14   Elapse:  49:40      2227
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                    Start :  15:26:10   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                             Study :  ICAL CS2
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2135 > 2320       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



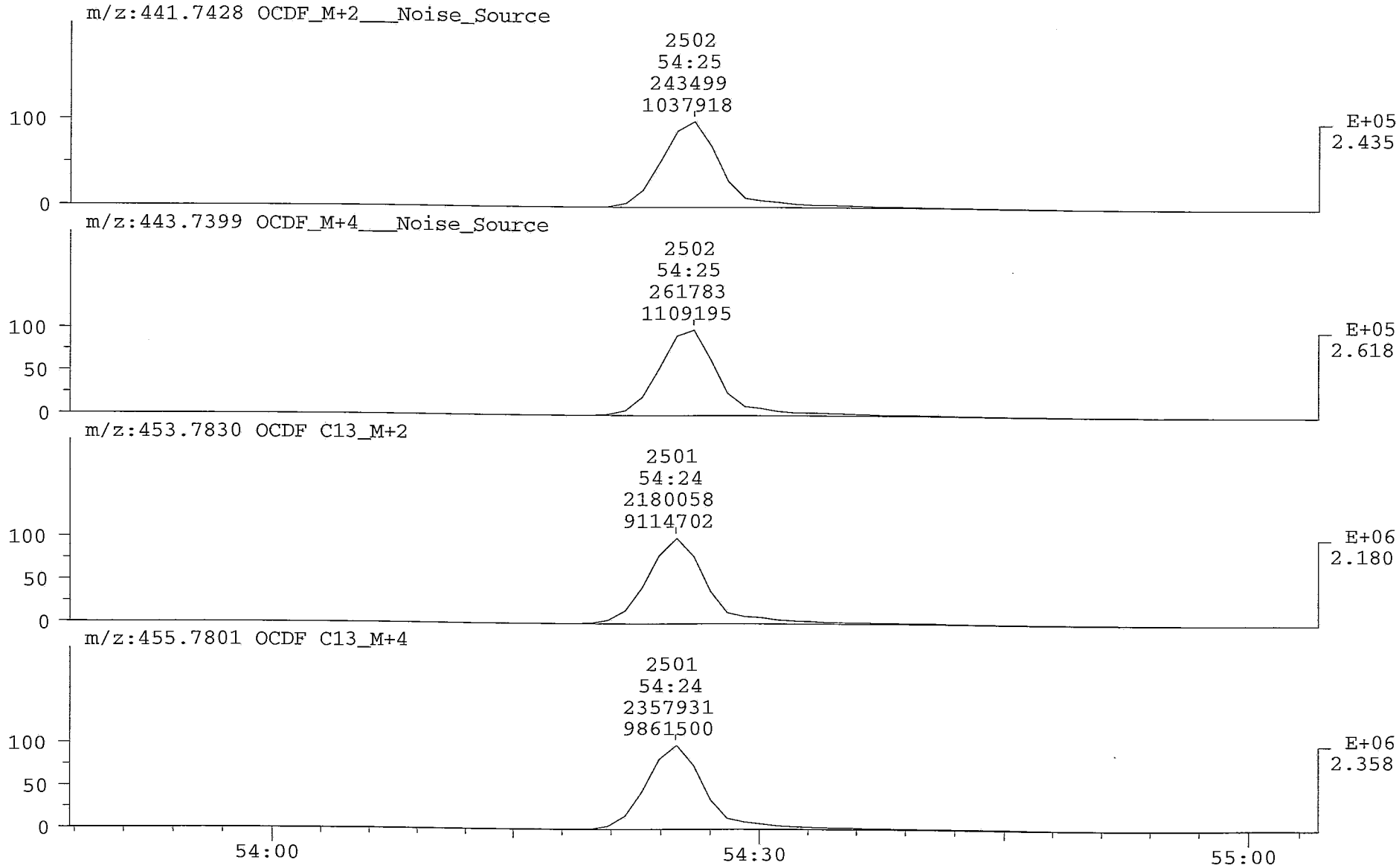
CHRO: d3140516i2 16-May-14 Elapse: 49:40 2227
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 15:26:10 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS2
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2135 > 2320 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



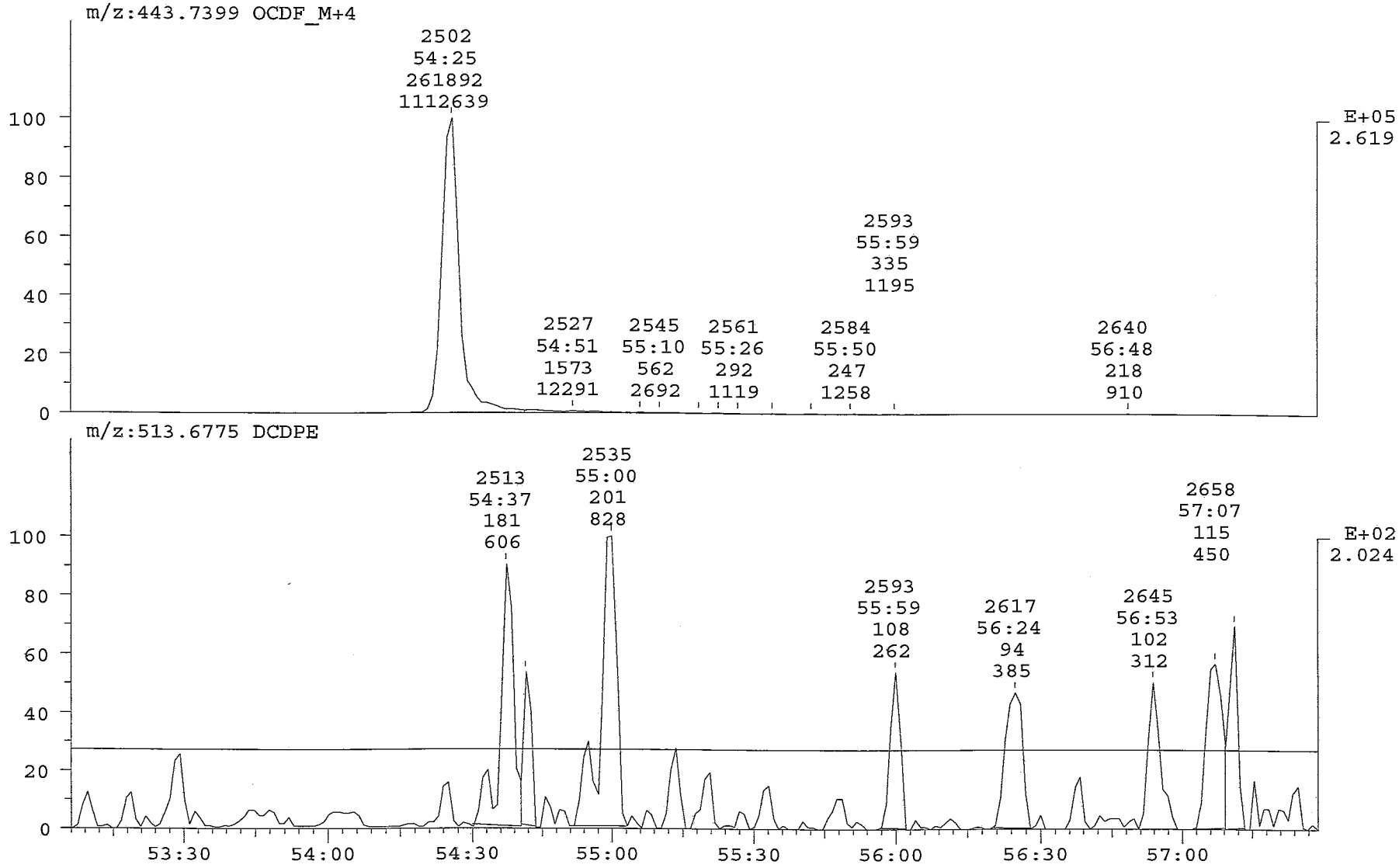
CHRO: d3140516i2 16-May-14 Elapse: 54:16 2493
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 15:26:10 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS2
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2464 > 2528 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



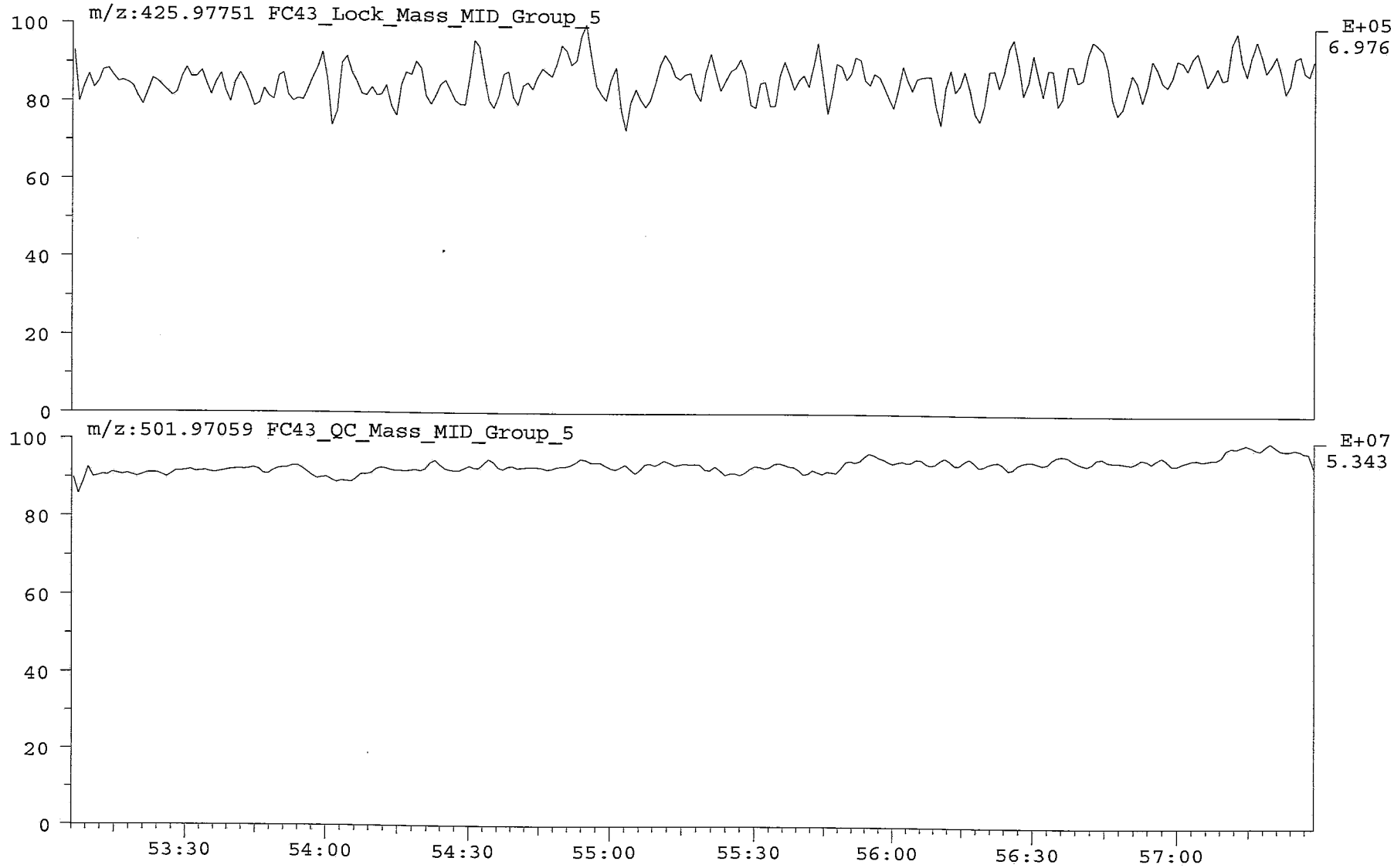
```
CHRO:  d3140516i2                                16-May-14   Elapse:  44:21      1917
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                          Start :  15:26:10   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                   Study :  ICAL CS2
Oper:  MSD                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2465 > 2539             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d3140516i2                                16-May-14  Elapse:  54:25      2502
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                         Start :  15:26:10   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  ICAL CS2
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2425 > 2679            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d3140516i2 16-May-14 Elapse: 54:25 2502
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 15:26:10 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS2
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2425 > 2679 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Fri May 16 15:30:17 2014 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - D5FBM84J

Analysis started at: 16-May-14 15:30:16

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence :

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:13 min	35:13 min	0.99 sec
# 2	35:13 min	7:16 min	42:30 min	1.00 sec
# 3	42:30 min	5:00 min	47:30 min	1.00 sec
# 4	47:30 min	5:30 min	53:00 min	1.00 sec
# 5	53:00 min	4:30 min	57:30 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	122
305.8987		1	1	122
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	122
321.8936		1	1	122
327.8847		1	1	122
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	122

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7

```
  375.9802     20  1        7
  409.7974      1  1      146
 Window # 3
      mass F  int  gr  time (ms)
  373.8208      1  1      146
  375.8178      1  1      146
  375.9802 l   20  1        7
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 35.233333 minutes
MID Window end time was 35.220000 minutes
MID Window terminated after 42.500000 minutes
MID Window end time was 42.500000 minutes
MID Window terminated after 47.500000 minutes
MID Window end time was 47.500000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.500000 minutes
MID Window end time was 57.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune
```

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0177	BMASS	312.9834
BQUAD	1.5000	CAPIL	0.0000	CAPTSET	0.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	16.0000	ECORR	1.0003	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2096.1908
ELEN	-45.0000	EMULT	1699.0000	ENS	148.0000
ENSBR	1.5000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	178.0000	EXSBR	2.1000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	11.7000
FQUADGAIN	0.0000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0143	FVINLET	0.0756	FVSRC	0.0513
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	740.0000
LENS_SYM	9.5000	LM	375.8364	LMII	500.0000
LMASS	312.9834	LKM	425.9770	MASS	312.9834
MDAC	3521566.1548	MRANGE	1307.4725	NSAM	200.0000
NSCAN	2701.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	0.0000	PSAM	10.0000
PUSHER	-8.3000	RECURR	0.9016	RELEN	0.0000
RES	11627.8076	RPUSHER	-8.1685	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	730.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	0.0000	SLOW	60.0000	SS	2.0000
SW	0.1590	TANAL	0.0000	TCURR	0.0000
TD	30.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	312.9834	XLENS_POT	906.0000
XLENS_SYM	9.5000	YLENS_POT	750.0000	YLENS_SYM	0.0000

```
Source Gauge:          1.5e-005 mbar
Analyzer Penning:      7.4e-008 mbar
Pirani Analyse:        1.4e-002 mbar
Pirani Source:         5.1e-002 mbar
Pirani Inlet System:   7.6e-002 mbar

Scantype is electric

Sourcemode is EI POS

MID Time Window 1: Resolution is 10192.
MID Time Window 2: Resolution is 10263.
MID Time Window 3: Resolution is 10329.
MID Time Window 4: Resolution is 10071.
MID Time Window 5: Resolution is 11627.

Amplifier Offset: 94.


*** File closed Fri May 16 16:27:49 2014
  ***
```

User: finnigan
Host: knx-alpha5.stl-inc.com
Class: knx-alpha5.stl-inc.com
Job: d3140516i2.log

TestAmerica
Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS3	Prep Batch		Lot No	
Data File	/20140516i/d314051613.d	Prep Date		SDG No	
Analysis ID	161065	Prep Exp Date		Date Received	
Analysis Date	5/16/2014	Matrix	UNKNOWN	Date Sampled	
Analysis Time	16:27	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D2A	Dil Factor	1.00	Code	F8o
Analyst	MSD				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)	DL (ng/mL)
2,3,7,8-TCDD	31:50	1101386	115235	1.000	10.00	11.509047	115.09	11.509047	0.0163
Total TCDD				1.000		11.509047		11.509047	0.0163
2,3,7,8-TCDF	29:45	1699233	195124	1.000	10.00	10.774520	107.75	10.774520	0.0172
Total TCDF				1.000		10.774520		10.774520	0.0172
1,2,3,7,8-PeCDD	41:01	3812805	914070	1.000	50.00	50.633529	101.27	50.633529	0.0122
Total PeCDD				1.000		50.633529		50.633529	0.0122
1,2,3,7,8-PeCDF	39:17	6932228	1425205	1.000	50.00	57.142975	114.29	57.142975	0.0195
2,3,4,7,8-PeCDF	40:30	6441535	1508506	1.000	50.00	53.310470	106.62	53.310470	0.0175
Total PeCDF				1.000		110.453445		110.453445	0.0184
1,2,3,4,7,8-HxCDD	45:14	4725369	1222675	1.000	50.00	55.850837	111.70	55.850837	0.0531
1,2,3,6,7,8-HxCDD	45:22	5023898	1198424	1.000	50.00	56.350180	112.70	56.350180	0.0562
1,2,3,7,8,9-HxCDD	45:45	5066888	1177216	1.000	50.00	58.319893	116.64	58.319893	0.0546
Total HxCDD				1.000		170.520910		170.520910	0.0546
1,2,3,4,7,8-HxCDF	44:12	7685750	2045019	1.000	50.00	66.369511	132.74	66.369511	0.0273
1,2,3,6,7,8-HxCDF	44:20	8904860	2132015	1.000	50.00	61.870112	123.74	61.870112	0.0244
2,3,4,6,7,8-HxCDF	45:03	7946335	1985464	1.000	50.00	61.392831	122.79	61.392831	0.0263
1,2,3,7,8,9-HxCDF	46:01	7079472	1554398	1.000	50.00	61.698778	123.40	61.698778	0.0341
Total HxCDF				1.000		251.331231		251.331231	0.0276
1,2,3,4,6,7,8-HpCDD	50:10	4253592	813024	1.000	50.00	55.632166	111.26	55.632166	0.0274
Total HpCDD				1.000		55.632166		55.632166	0.0274
1,2,3,4,6,7,8-HpCDF	48:27	7349923	1480615	1.000	50.00	72.972536	145.95	72.972536	0.0337
1,2,3,4,7,8,9-HpCDF	50:49	5706538	1107277	1.000	50.00	67.522606	135.05	67.522606	0.0424
Total HpCDF				1.000		140.495142		140.495142	0.0376
OCDD	54:17	7615980	1720950	1.000	100.0	120.215574	120.22	120.215574	0.0267
OCDF	54:25	10615799	2512993	1.000	100.0	109.960683	109.96	109.960683	0.0254
13C-2,3,7,8-TCDD	31:47	9569741	953568	1.000	100.0	105.375357	105.38	105.375357	0.141
13C-2,3,7,8-TCDF	29:43	15770847	1755210	1.000	100.0	173.657639	173.66	173.657639	0.0247
13C-1,2,3,7,8-PeCDD	40:59	7530198	1804967	1.000	100.0	82.917322	82.92	82.917322	0.0102
13C-1,2,3,7,8-PeCDF	39:16	12131374	2526787	1.000	100.0	133.582284	133.58	133.582284	0.0829
13C-2,3,4,7,8-PeCDF	40:28	12083058	2818913	1.000	100.0	133.050262	133.05	133.050262	0.0829
13C-1,2,3,4,7,8-HxCDD	45:13	8460695	2206359	1.000	100.0	89.334854	89.33	89.334854	0.0347
13C-1,2,3,6,7,8-HxCDD	45:21	8915496	2084919	1.000	100.0	94.137011	94.14	94.137011	0.0347
13C-1,2,3,4,7,8-HxCDF	44:11	11580242	3092858	1.000	100.0	122.273552	122.27	122.273552	0.0415
13C-1,2,3,6,7,8-HxCDF	44:19	14392830	3469432	1.000	100.0	151.971129	151.97	151.971129	0.0415
13C-2,3,4,6,7,8-HxCDF	45:02	12943425	3209365	1.000	100.0	136.667140	136.67	136.667140	0.0415
13C-1,2,3,7,8,9-HxCDF	46:00	11474250	2479243	1.000	100.0	121.154403	121.15	121.154403	0.0415
13C-1,2,3,4,6,7,8-HpCDD	50:09	7645922	1459521	1.000	100.0	80.731823	80.73	80.731823	0.0145
13C-1,2,3,4,6,7,8-HpCDF	48:26	10072177	2059567	1.000	100.0	106.350183	106.35	106.350183	0.0311
13C-1,2,3,4,7,8,9-HpCDF	50:47	8451300	1637508	1.000	100.0	89.235654	89.24	89.235654	0.0311
13C-OCDD	54:17	12670538	2809481	1.000	200.0	133.785778	66.89	133.785778	0.0522
13C-OCDF	54:25	19308354	4452086	1.000	200.0	203.873203	101.94	203.873203	0.0187
37Cl4-2,3,7,8-TCDD	31:50	1067218	110042	1.000	10.00	11.751465	117.51	11.751465	0.0163
13C-1,2,3,4-TCDD	31:16	9081574	983490	1.000	100.0	100.000000	100.00	100.000000	0.141
13C-1,2,3,7,8,9-HxCDD	45:44	9470766	2161400	1.000	100.0	100.000000	100.00	100.000000	0.0347

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS3	Prep Batch		Lot No	
Data File	/20140516i/d314051613.	Prep Date		SDG No	
Analysis ID	161065	Prep Exp Date		Date Received	
Analysis Date	05/16/14 16:27	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	173	130	69	52	1.33 *	/	
	2,3,7,8-TCDF	29:45	00:00	0	749516	949717	84903	110221	0.79	ABV/AVV	M
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	68	175	27	70	0.39 *	/	
	13C-2,3,7,8-TCDF	29:43	00:00	0	7036755	8734092	770696	984514	0.81	AVV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	78	78	31	31	1.00 *	/	
	2,3,7,8-TCDD	31:50	00:00	0	480050	621336	49163	66072	0.77	AVV/AVV	M
328					327.8847		327.8847				
	Noise	00:00	00:00	0	160		64				
	37Cl4-2,3,7,8-TCDD	31:50	00:00	0	1067218		110042			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	613	778	245	311	0.79	/	
	13C-1,2,3,4-TCDD	31:16	00:00	0	4053937	5027637	419777	563713	0.81	AVV/ABV	
	13C-2,3,7,8-TCDD	31:47	00:00	0	4282003	5287738	424369	529199	0.81	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	228	265	91	106	0.86 *	/	
	1,2,3,7,8-PeCDF	39:17	00:00	0	4266646	2665582	875648	549557	1.60	ABV/ABV	M
	2,3,4,7,8-PeCDF	40:30	00:00	0	3945467	2496068	920103	588403	1.58	AVV/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	548	268	219	107	2.05 *	/	
	13C-1,2,3,7,8-PeCDF	39:16	00:00	0	7404091	4727283	1556913	969874	1.57	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:28	00:00	0	7384754	4698304	1733173	1085740	1.57	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	138	83	55	33	1.67	/	
	1,2,3,7,8-PeCDD	41:01	00:00	0	2323428	1489377	552506	361564	1.56	ABV/ABV	M
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	43	58	17	23	0.74 *	/	
	13C-1,2,3,7,8-PeCDD	40:59	00:00	0	4625703	2904495	1112241	692726	1.59	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	413	433	165	173	0.95 *	/	
	1,2,3,4,7,8-HxCDF	44:12	00:00	0	4282893	3402857	1155797	889222	1.26	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:20	00:00	0	4896001	4008859	1180704	951311	1.22	AVV/AVV	M
	2,3,4,6,7,8-HxCDF	45:03	00:00	0	4417630	3528705	1098268	887196	1.25	AVV/AVV	M
	1,2,3,7,8,9-HxCDF	46:01	00:00	0	3947854	3131618	857134	697264	1.26	ABV/ABV	M
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	393	505	157	202	0.78 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:11	00:00	0	3987253	7592989	1057470	2035388	0.53	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:19	00:00	0	5015889	9376941	1223036	2246396	0.53	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:02	00:00	0	4612964	8330461	1142762	2066603	0.55	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:00	00:00	0	4006099	7468151	860518	1618725	0.54	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS3	Prep Batch		Lot No	
Data File	/20140516i/d314051613.	Prep Date		SDG No	
Analysis ID	161065	Prep Exp Date		Date Received	
Analysis Date	05/16/14 16:27	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

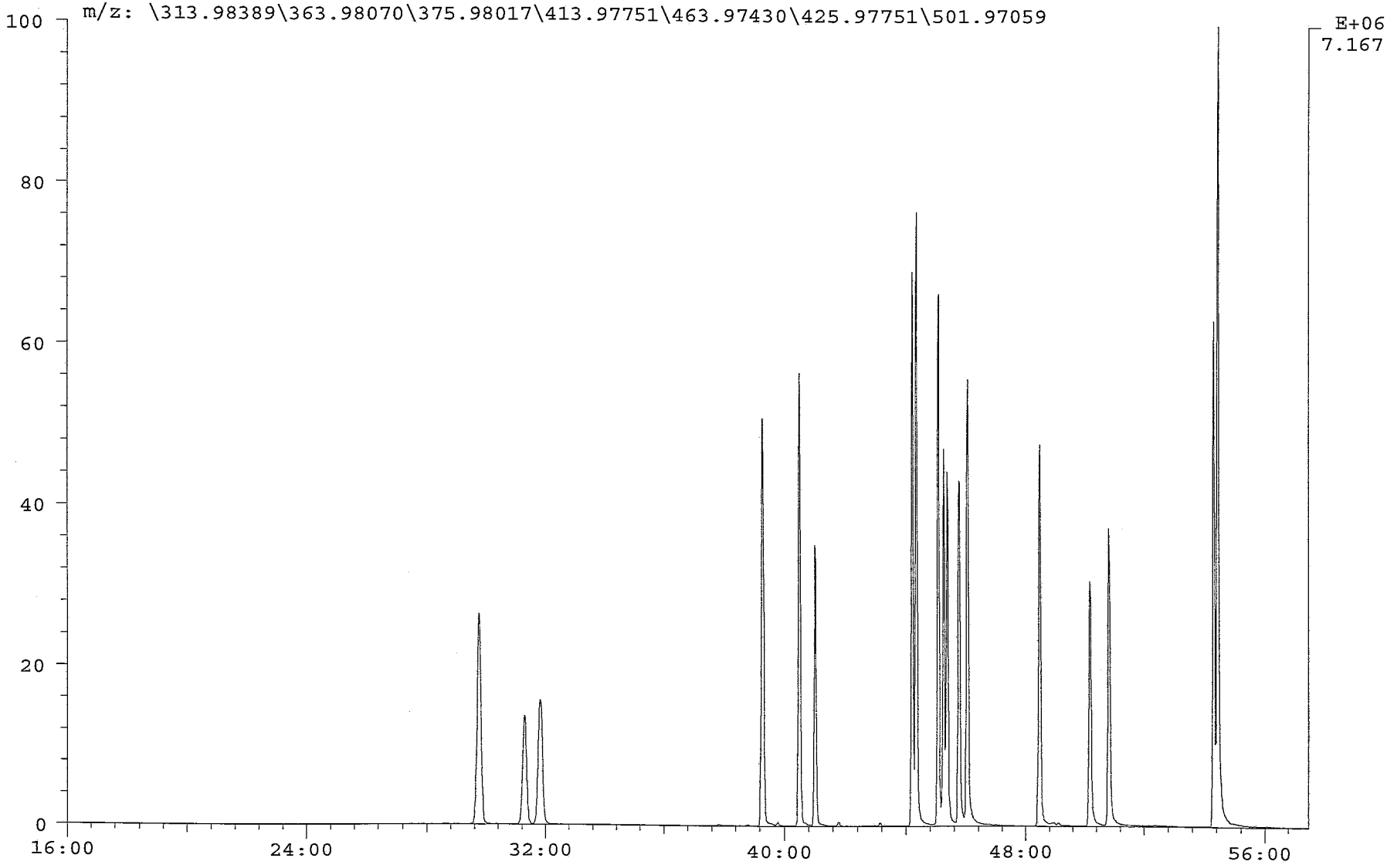
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	675	498	270	199	1.36	/	
	1,2,3,4,7,8-HxCDD	45:14	00:00	0	2643810	2081559	694413	528262	1.27	ABV/ABV	M
	1,2,3,6,7,8-HxCDD	45:22	00:00	0	2806649	2217249	670484	527940	1.27	AVV/AVV	M
	1,2,3,7,8,9-HxCDD	45:45	00:00	0	2836815	2230073	662841	514375	1.27	AVV/AVV	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	563	188	225	75	3.00 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:13	00:00	0	4686386	3774309	1213123	993236	1.24	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:21	00:00	0	4971163	3944333	1147364	937555	1.26	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	45:44	00:00	0	5276184	4194582	1211991	949409	1.26	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	370	325	148	130	1.14	/	
	1,2,3,4,6,7,8-HpCDF	48:27	00:00	0	3770927	3578996	751272	729343	1.05	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	50:49	00:00	0	2944850	2761688	567043	540234	1.07	ABV/ABV	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	233	440	93	176	0.53 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:26	00:00	0	3060100	7012077	633555	1426012	0.44	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:47	00:00	0	2635217	5816083	504046	1133462	0.45	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	188	213	75	85	0.88	/	
	1,2,3,4,6,7,8-HpCDD	50:10	00:00	0	2179573	2074019	416951	396073	1.05	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	225	88	90	35	2.57 *	/	
	13C-1,2,3,4,6,7,8-HpCDD	50:09	00:00	0	4002472	3643450	763572	695949	1.10	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	248	318	99	127	0.78	/	
	OCDF	54:25	00:00	0	5063939	5551860	1187675	1325318	0.91	ABV/ABV	M
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	113	293	45	117	0.38 *	/	
	13C-OCDF	54:25	00:00	0	9143779	10164575	2100714	2351372	0.90	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	223	153	89	61	1.46 *	/	
	OCDD	54:17	00:00	0	3596961	4019019	798272	922678	0.89	ABV/ABV	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	710	418	284	167	1.70 *	/	
	13C-OCDD	54:17	00:00	0	6041297	6629241	1343325	1466156	0.91	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

CHRO: d3140516i3 16-May-14 Elapse: 54:25 2502
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 16:27:52 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS3
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 238 > 2680 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

Int, Calc WD5-19-14
QC Kh 5/19/14



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CHRO:  d3140516i3                          16-May-14   Elapse:  31:37      1178
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                    Start :  16:27:52   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                             Study :  ICAL CS3
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1085 > 1271       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```

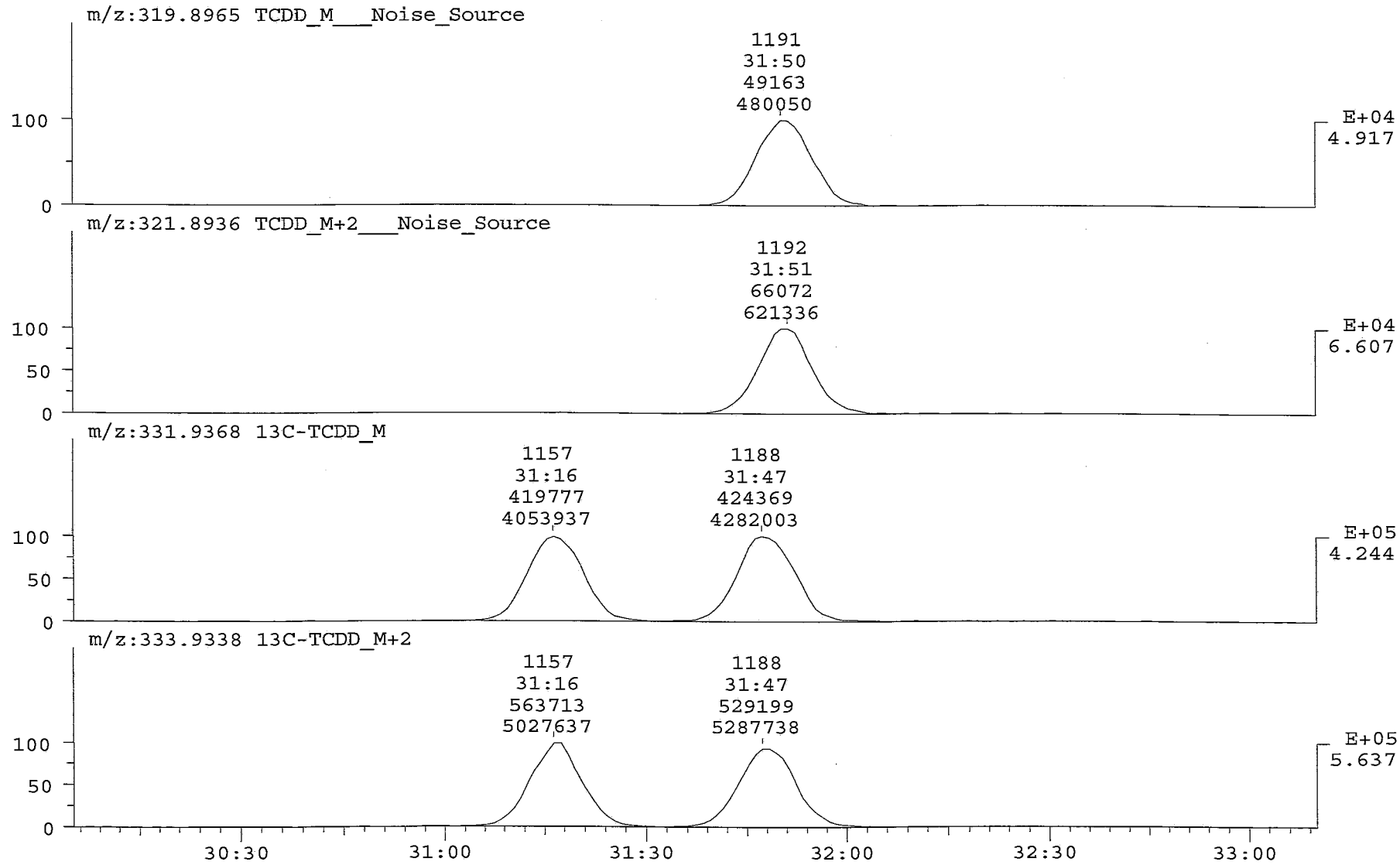

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CHRO:  d3140516i3                                16-May-14   Elapse:  31:53      1194
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                          Start :  16:27:52   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                   Study :  ICAL CS3
Oper:  MSD                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1101 > 1292             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  -2, 5.0
Disp:  Height  Area
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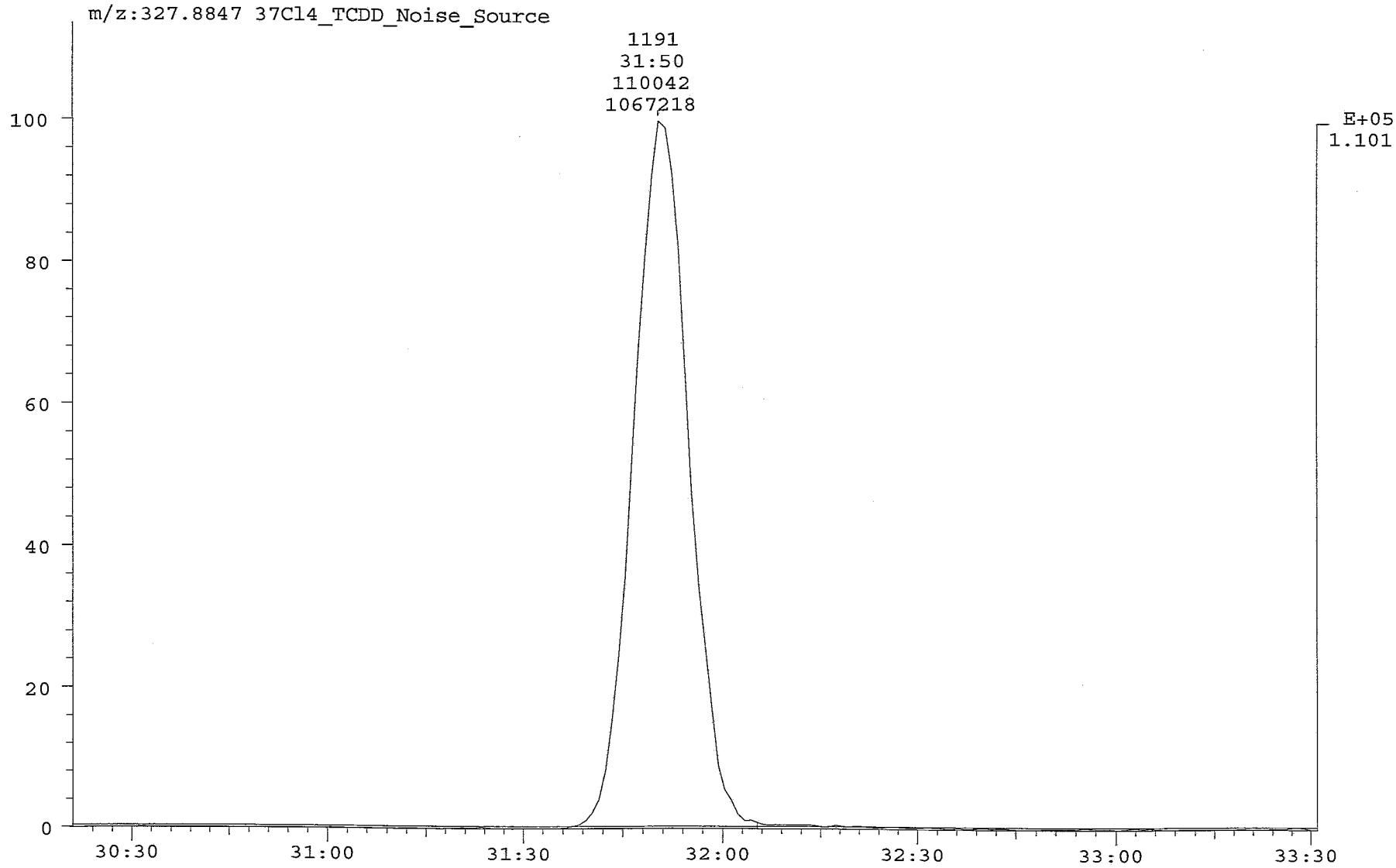

```
CHRO:  d3140516i3                          16-May-14  Elapse:  29:45      1066
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                   Start :  16:27:52   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                            Study :  ICAL CS3
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   966 > 1173       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
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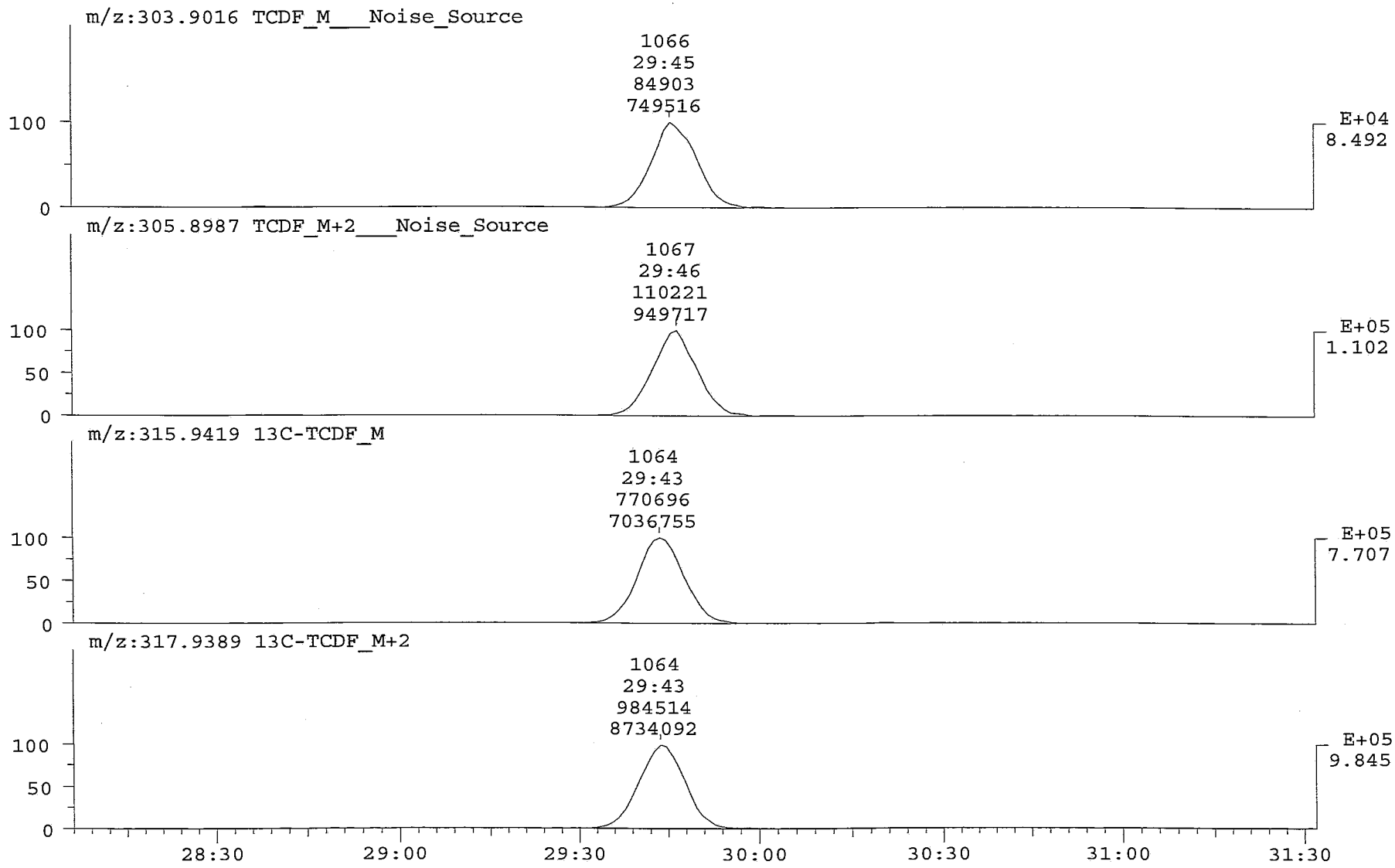
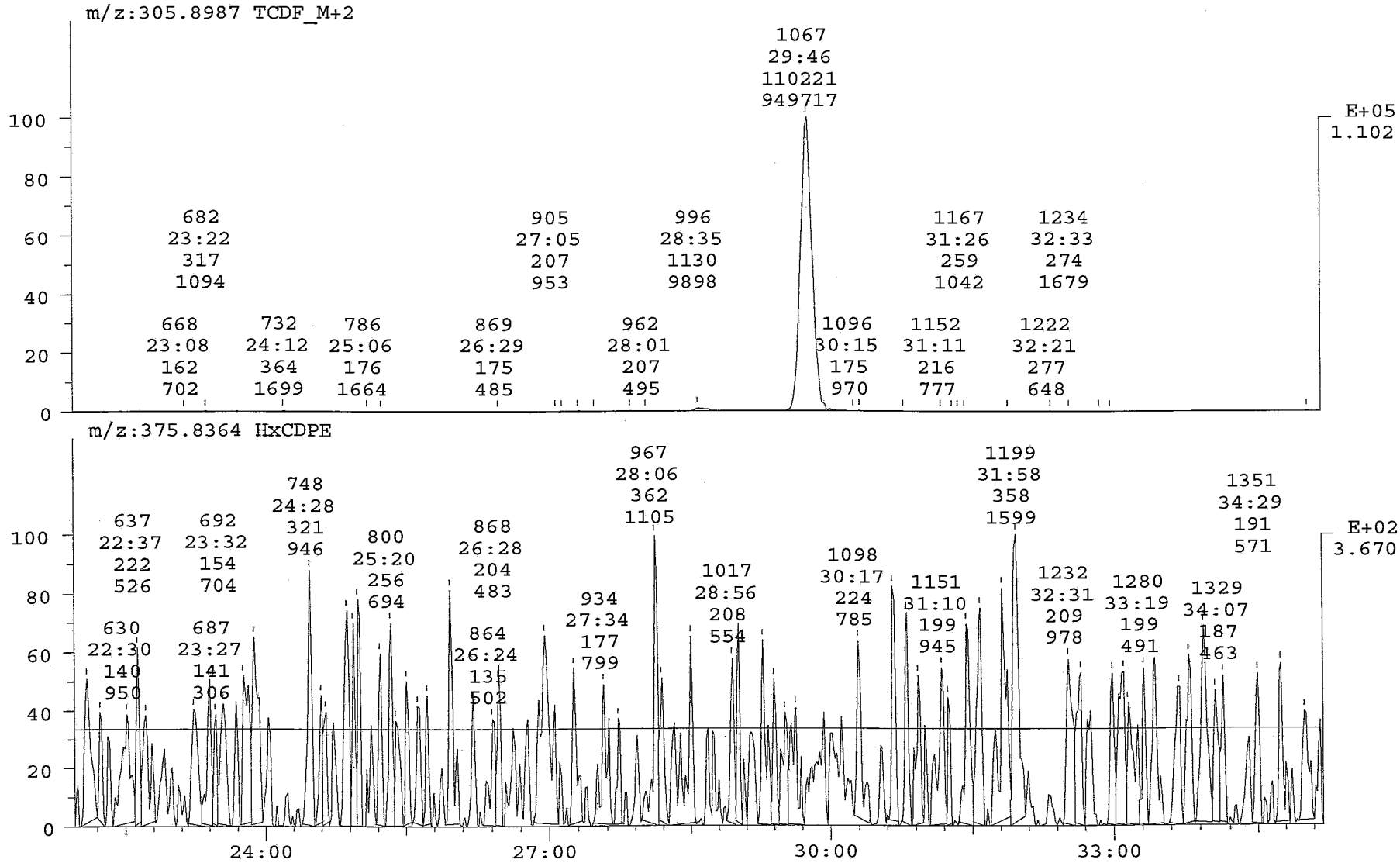
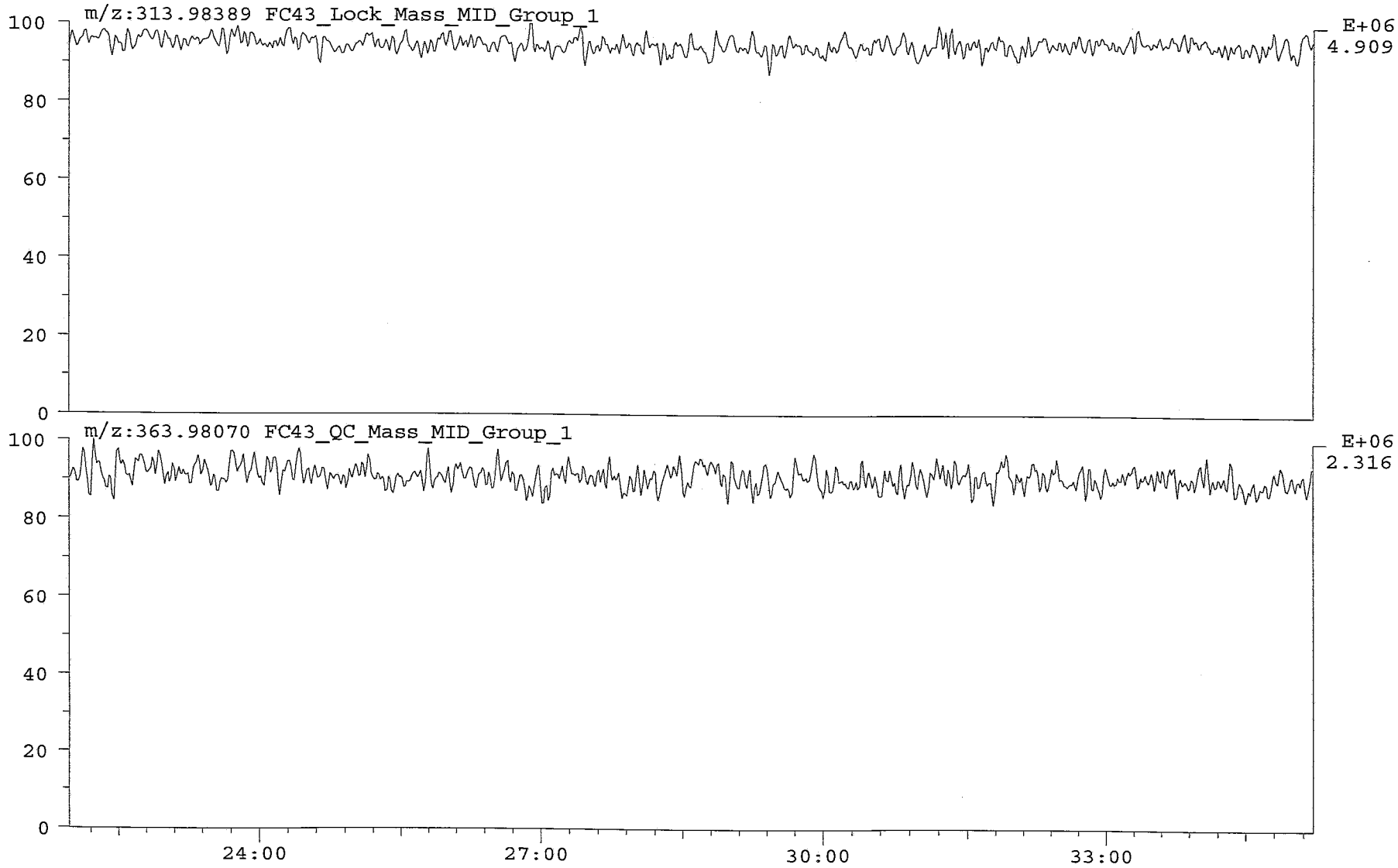


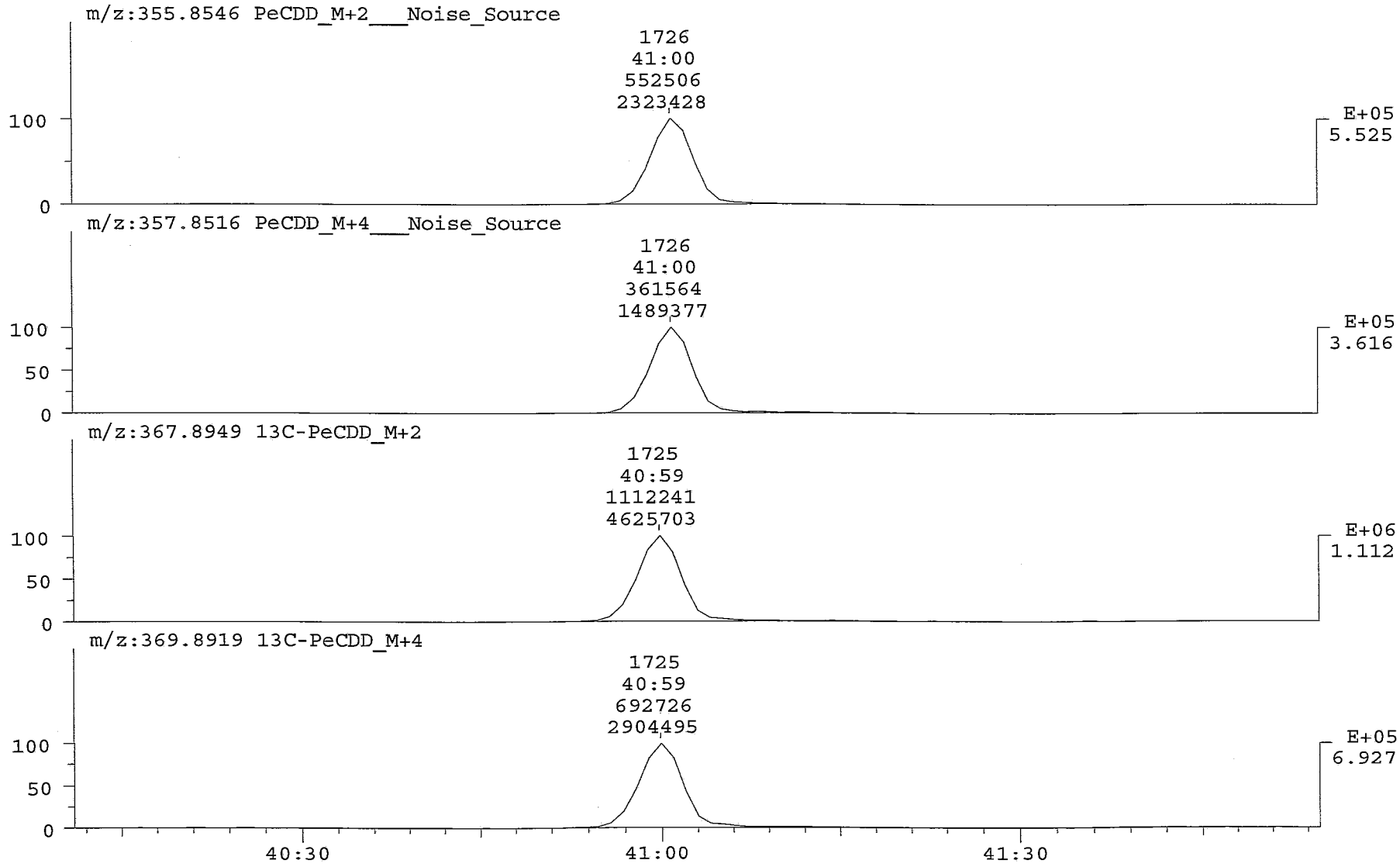
CHRO: d3140516i3 16-May-14 Elapse: 29:45 1066
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 16:27:52 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS3
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 597 > 1393 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



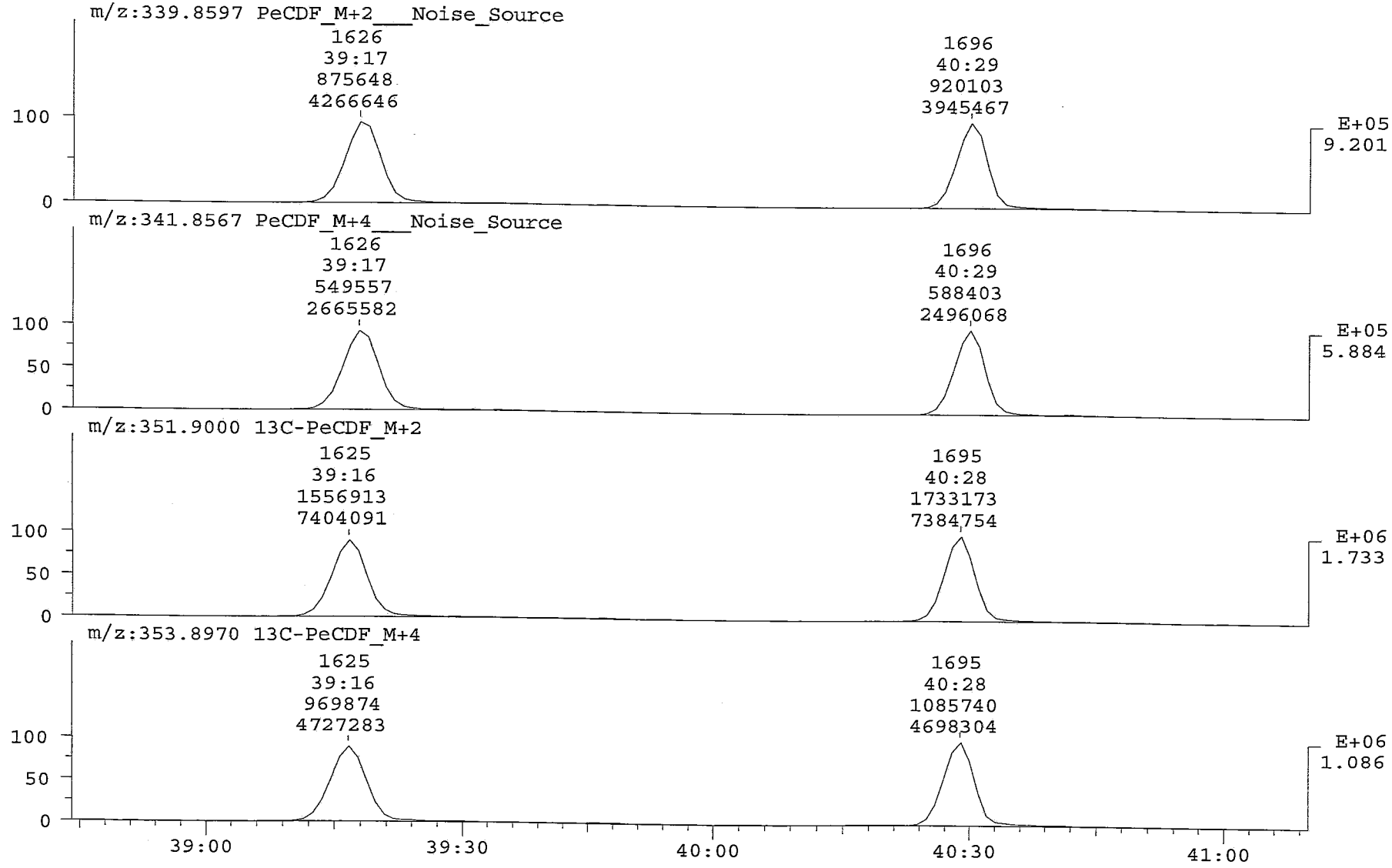
CHRO: d3140516i3 16-May-14 Elapse: 29:45 1066
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 16:27:52 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS3
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 597 > 1393 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



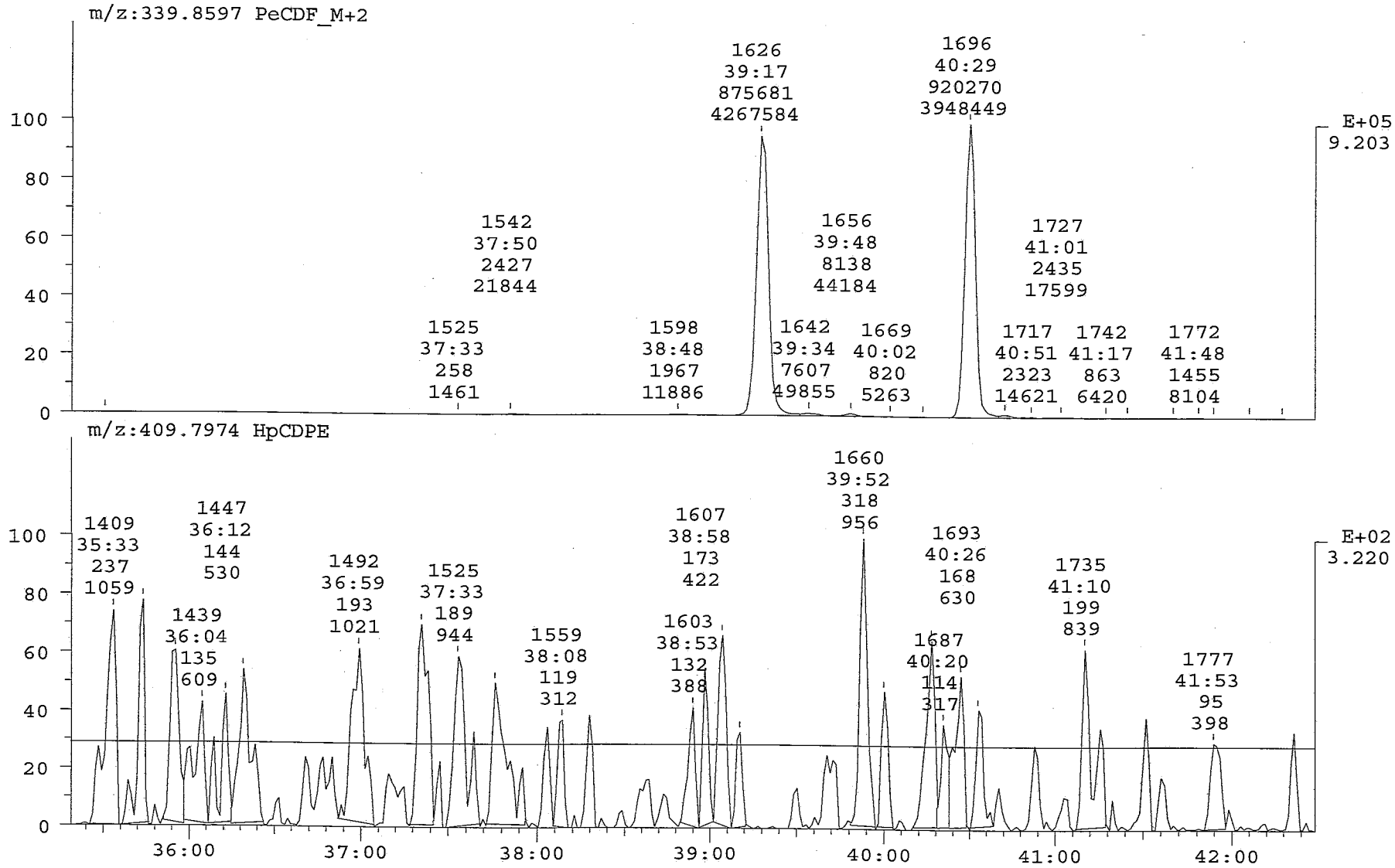
```
CHRO:  d3140516i3                          16-May-14   Elapse:  40:59      1725
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                    Start :  16:27:52   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                             Study :  ICAL CS3
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1678 > 1778       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```



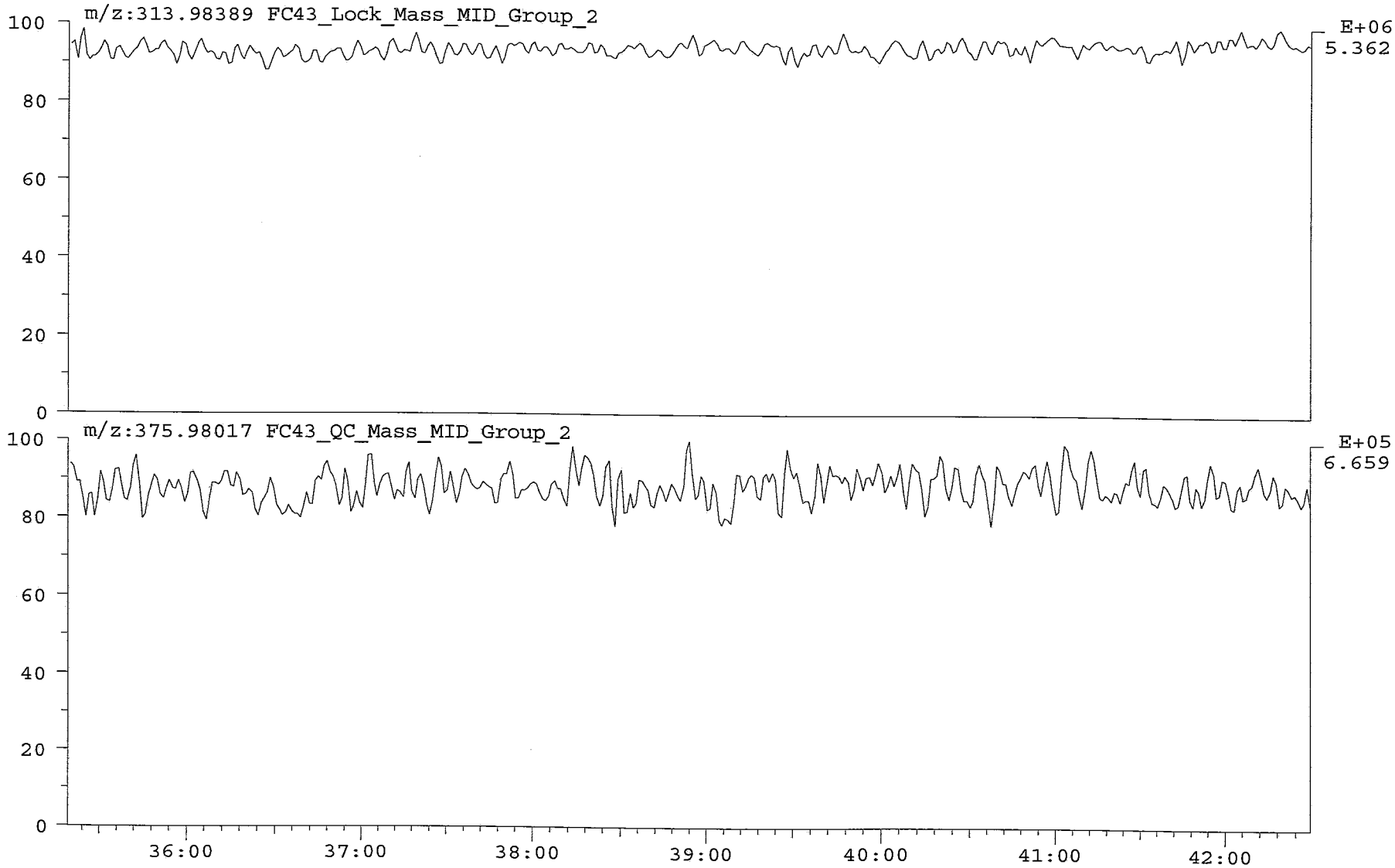
CHRO: d3140516i3 16-May-14 Elapse: 39:56 1664
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 16:27:52 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS3
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1593 > 1735 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



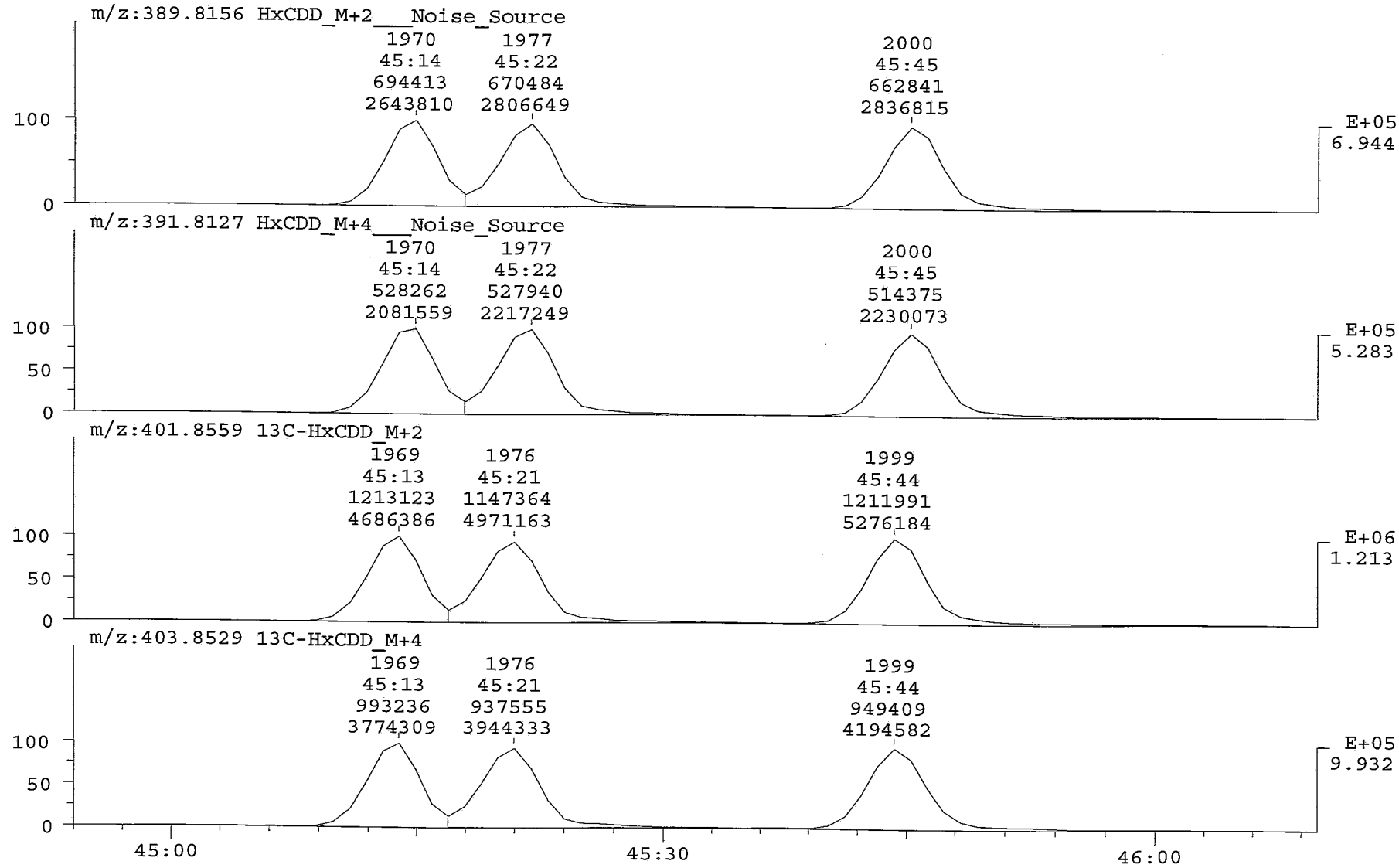
CHRO: d3140516i3 16-May-14 Elapse: 39:56 1664
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 16:27:52 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS3
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1396 > 1811 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



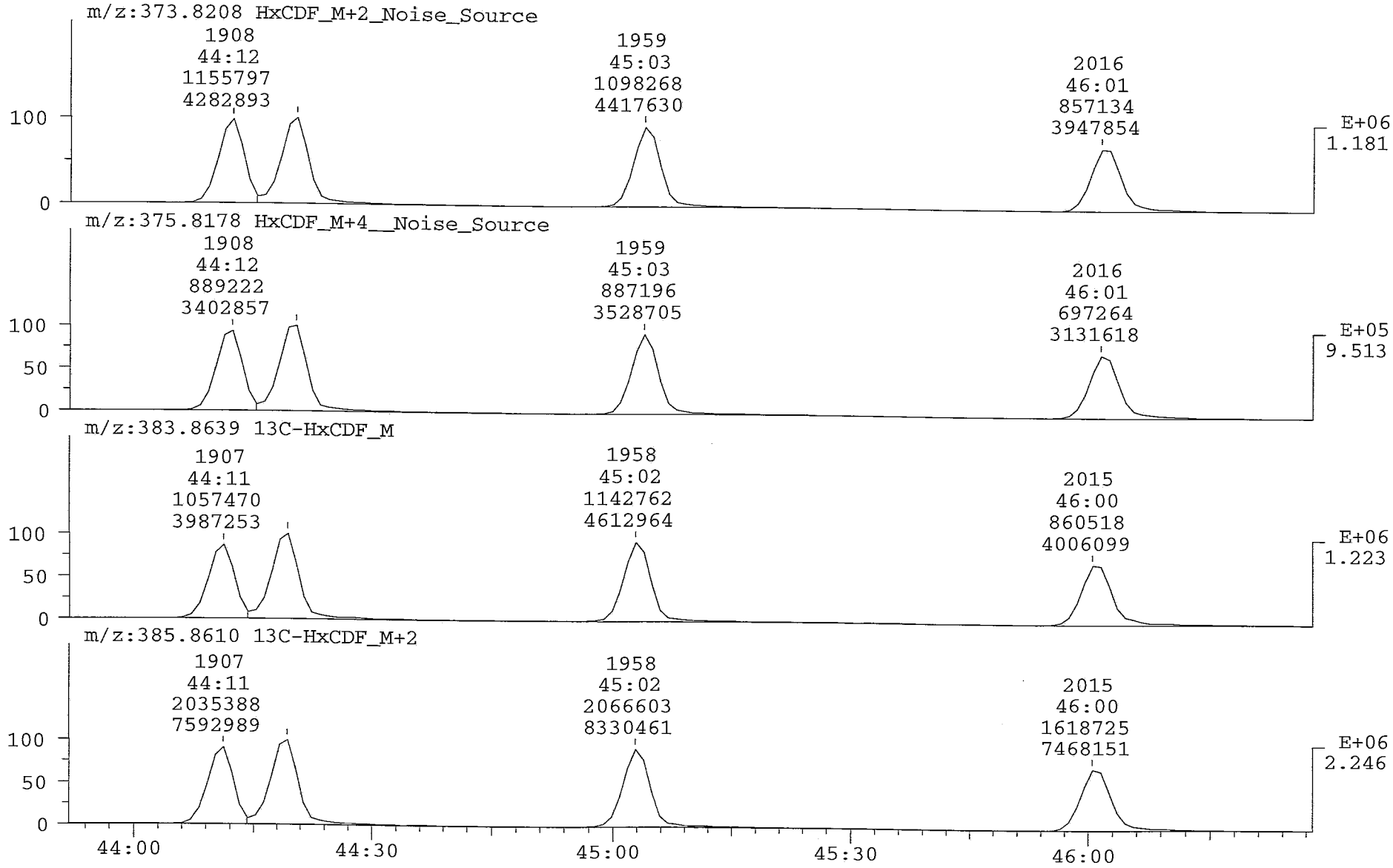
CHRO: d3140516i3 16-May-14 Elapse: 39:56 1664
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 16:27:52 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS3
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1396 > 1811 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



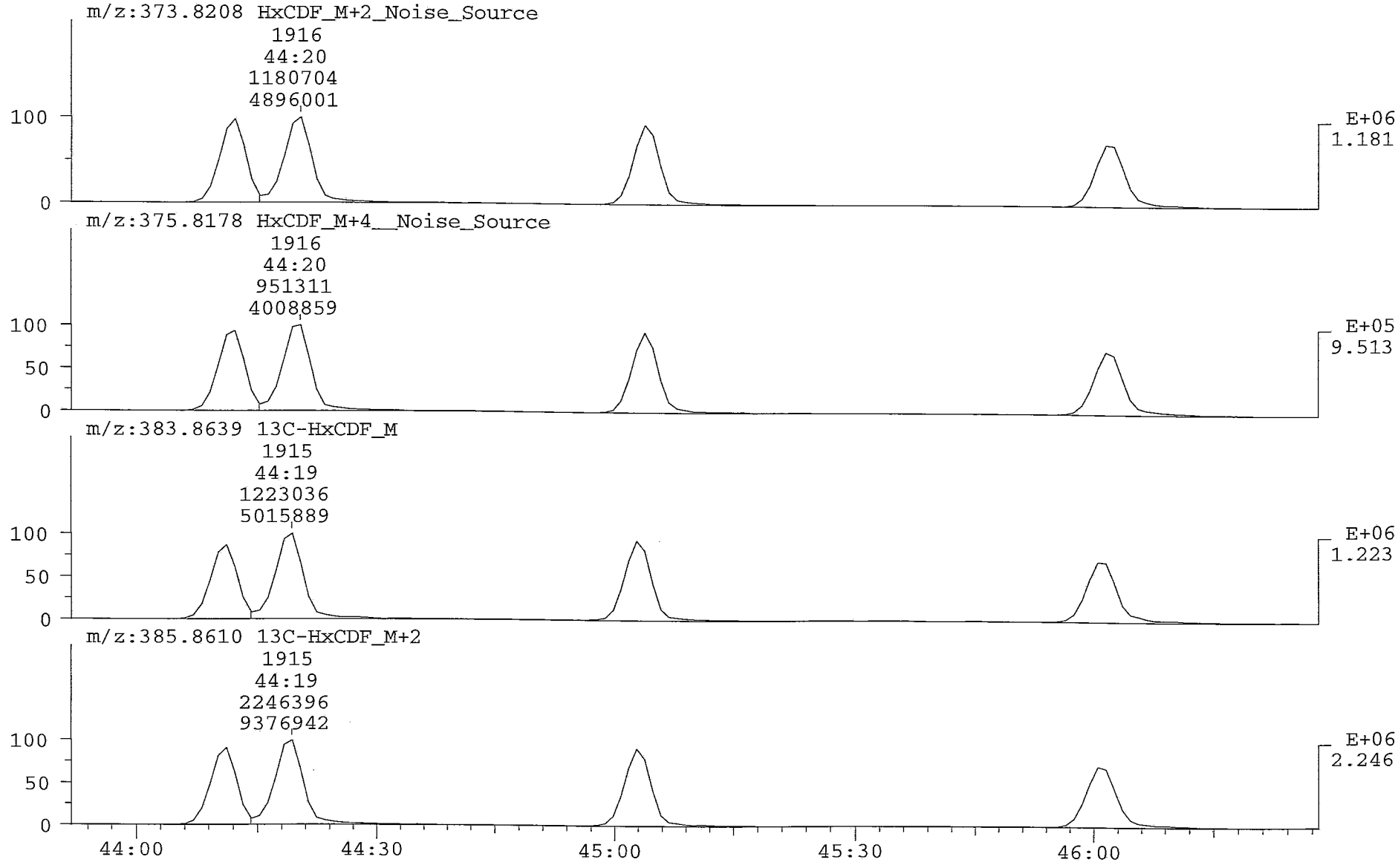
CHRO: d3140516i3 16-May-14 Elapse: 45:32 1987
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 16:27:52 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS3
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1949 > 2024 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



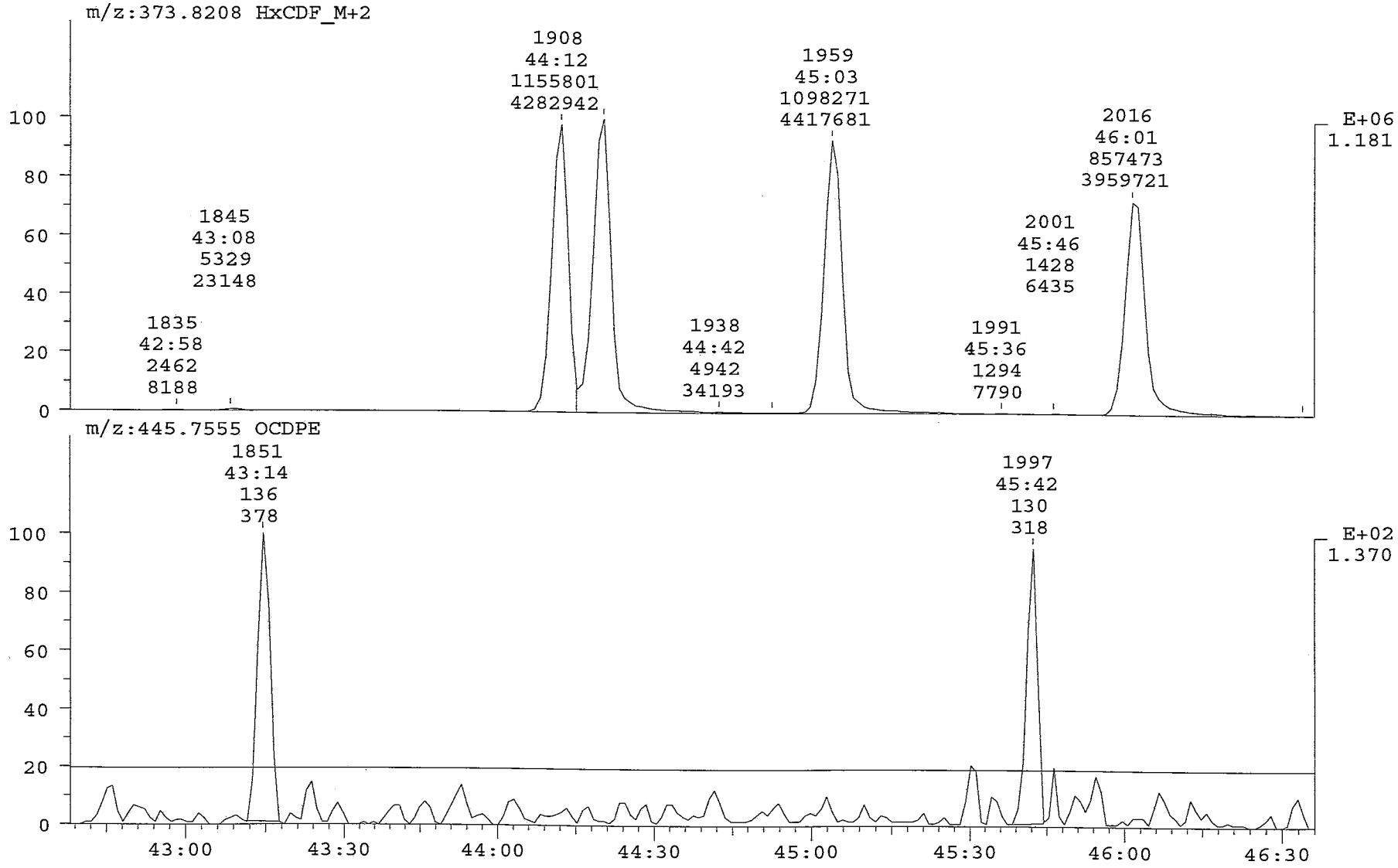
CHRO: d3140516i3 16-May-14 Elapse: 44:21 1917
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 16:27:52 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS3
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1888 > 2042 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



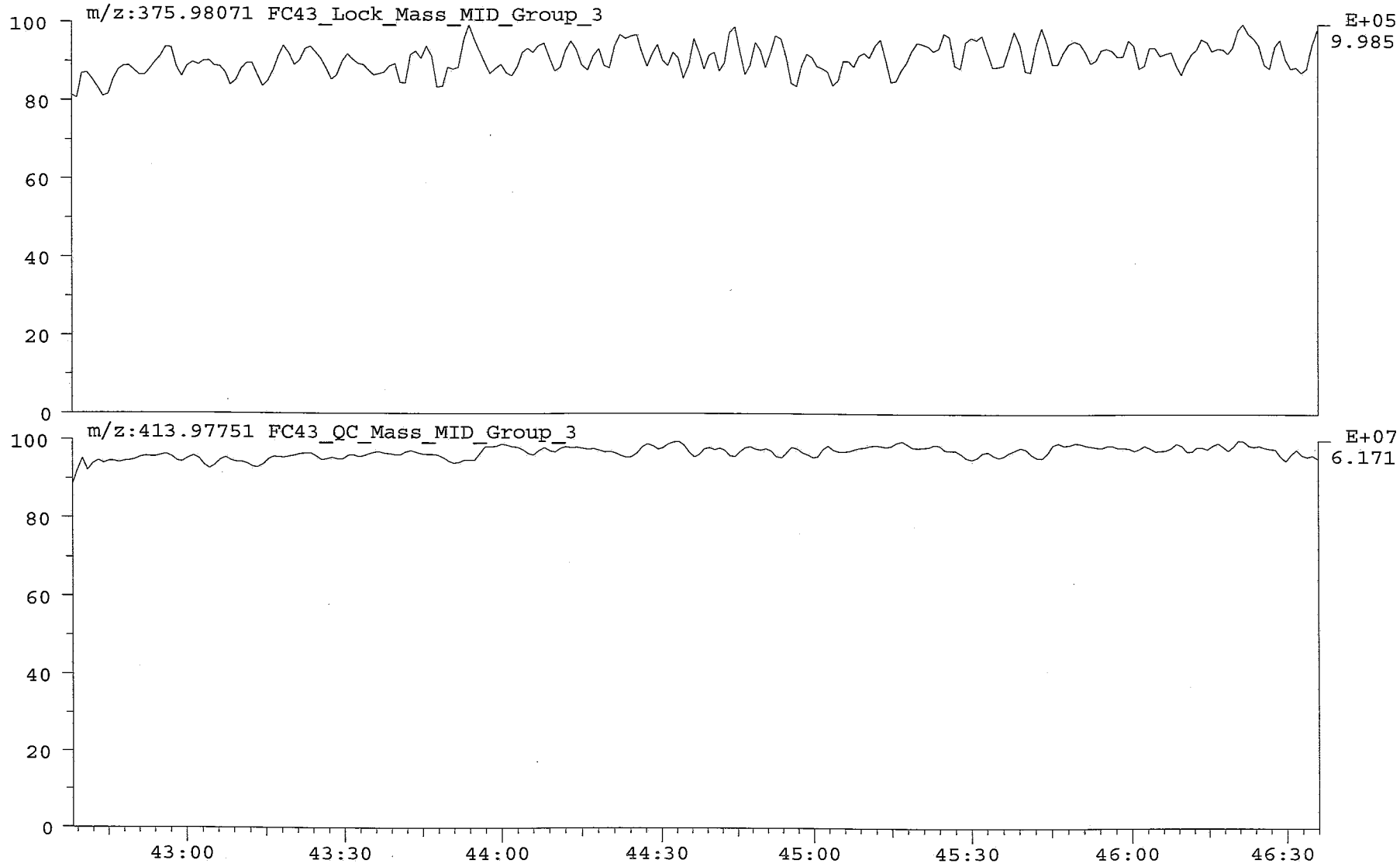
CHRO: d3140516i3 16-May-14 Elapse: 44:21 1917
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 16:27:52 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS3
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1914 > 1920 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



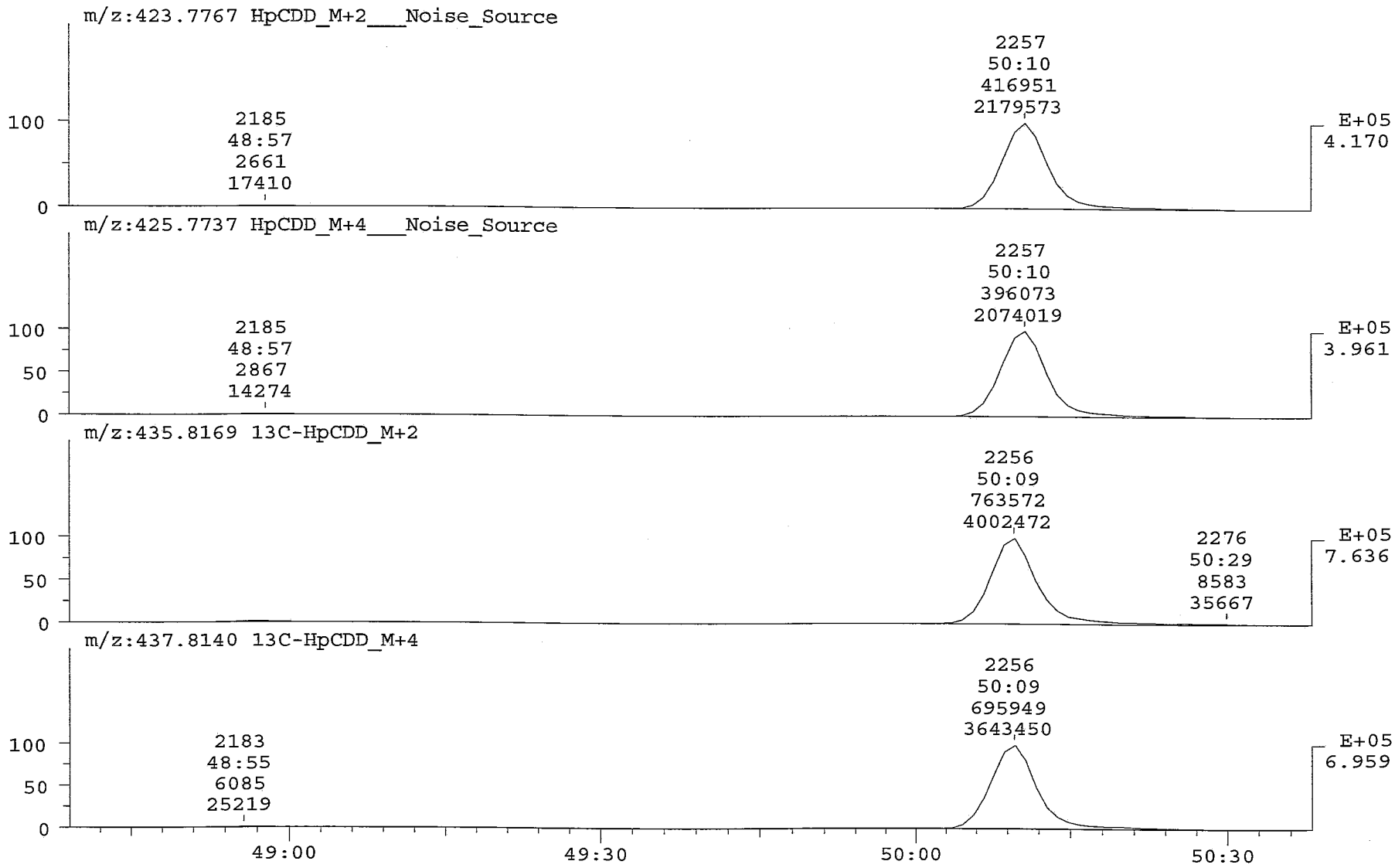
```
CHRO:  d3140516i3                                  16-May-14   Elapse:  44:20      1916
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                            Start :  16:27:52   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                     Study :  ICAL CS3
Oper:  MSD                                                     Inlet :  LC
Peak:  100.00  ppm      Label wndw:   1815 > 2050              Masses:  303 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3                   Label :  -2, 5.0
Disp:  Height  Area
```



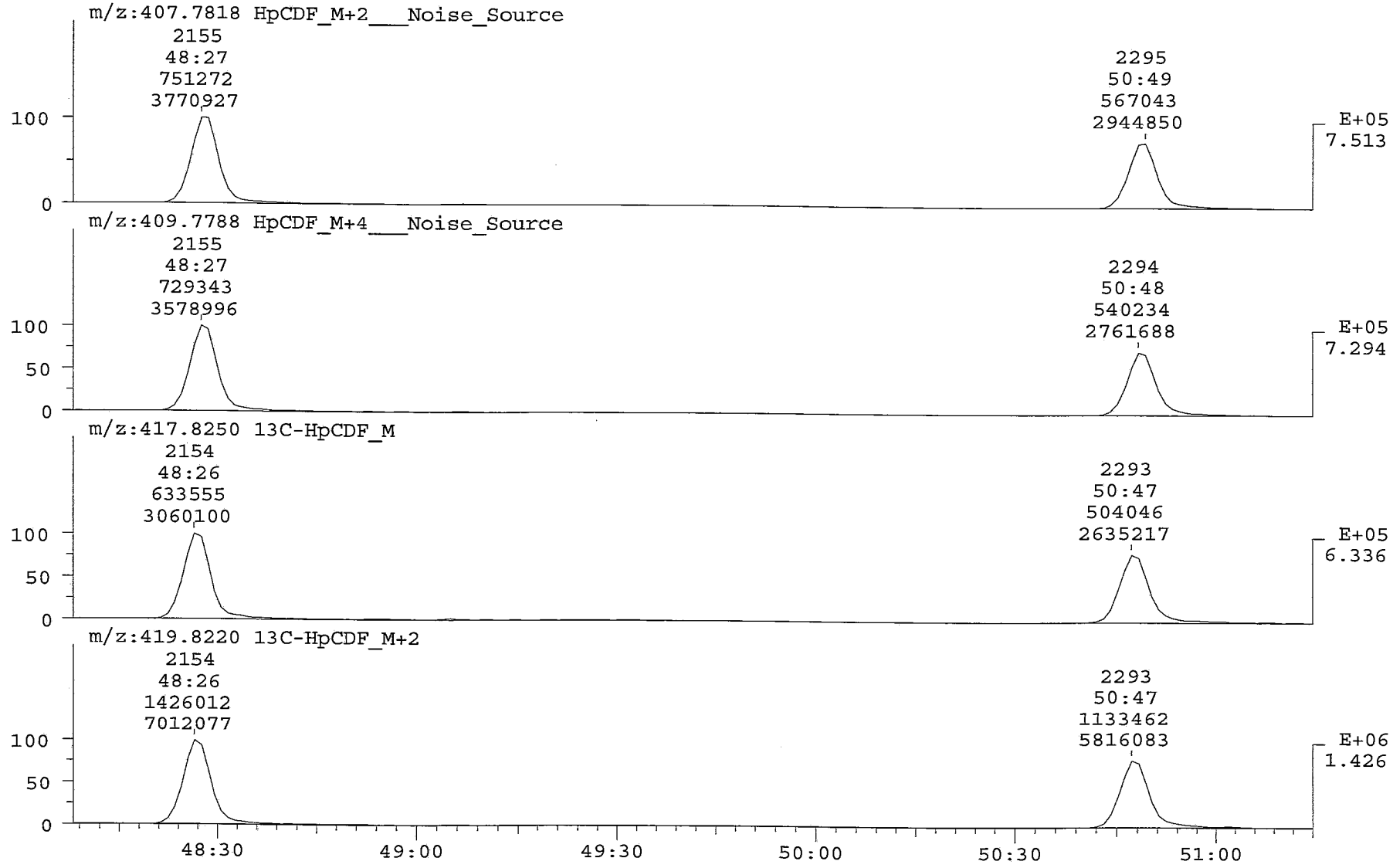
CHRO: d3140516i3 16-May-14 Elapse: 44:20 1916
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 16:27:52 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS3
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1815 > 2050 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



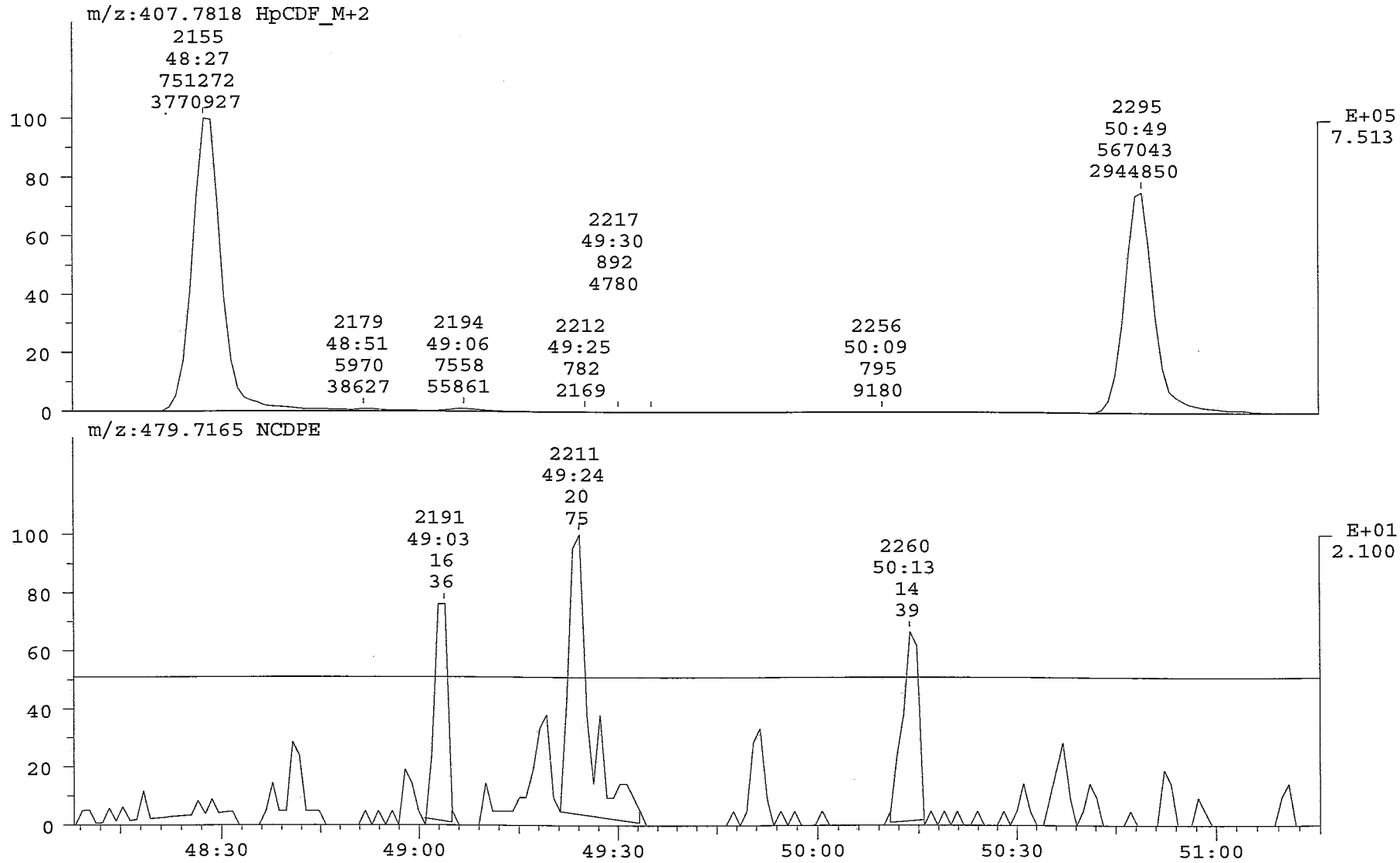
```
CHRO:  d3140516i3                                16-May-14  Elapse:  44:20      1916
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                         Start :  16:27:52   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  ICAL CS3
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2166 > 2284            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



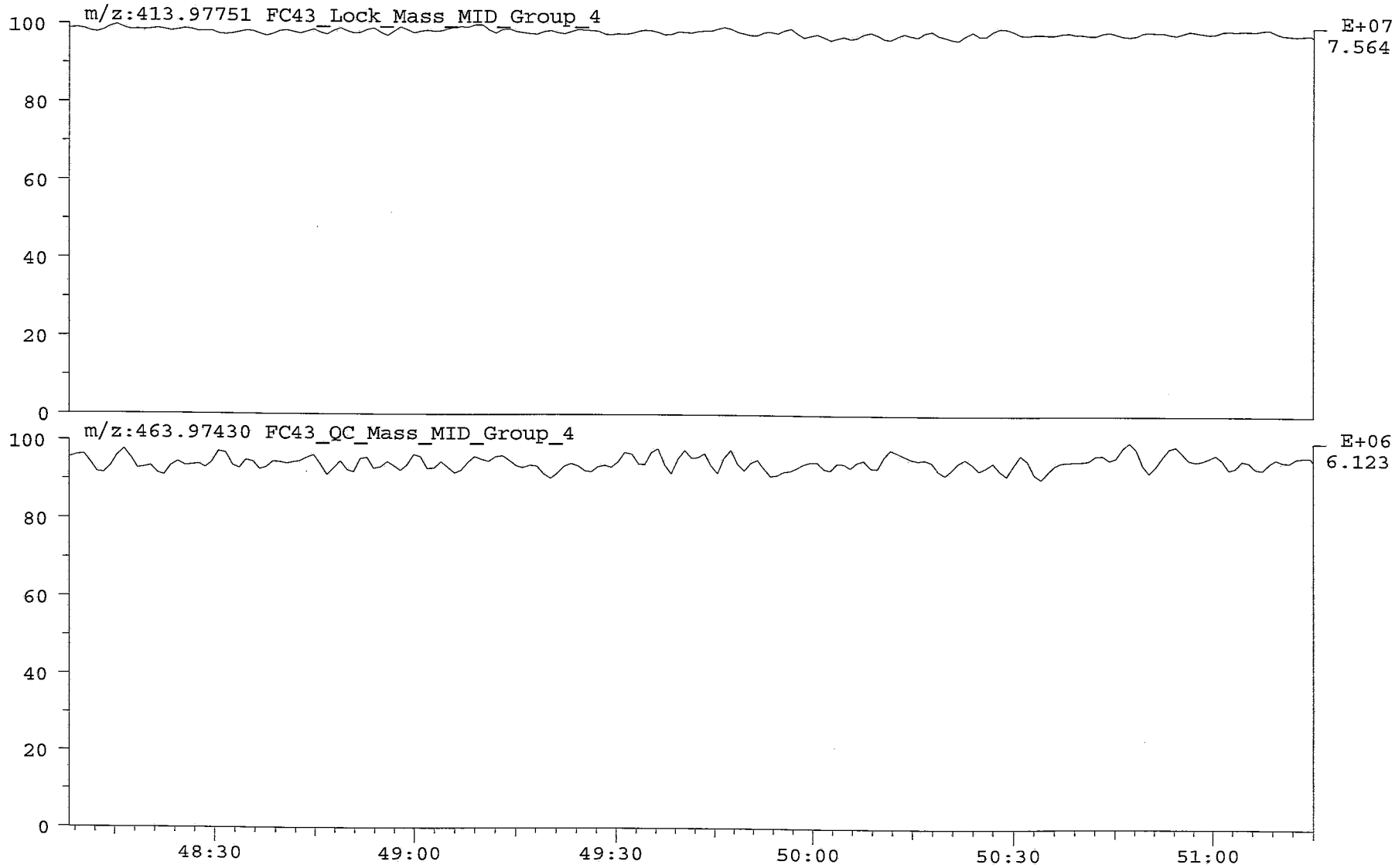
CHRO: d3140516i3 16-May-14 Elapse: 49:41 2228
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 16:27:52 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS3
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2136 > 2321 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



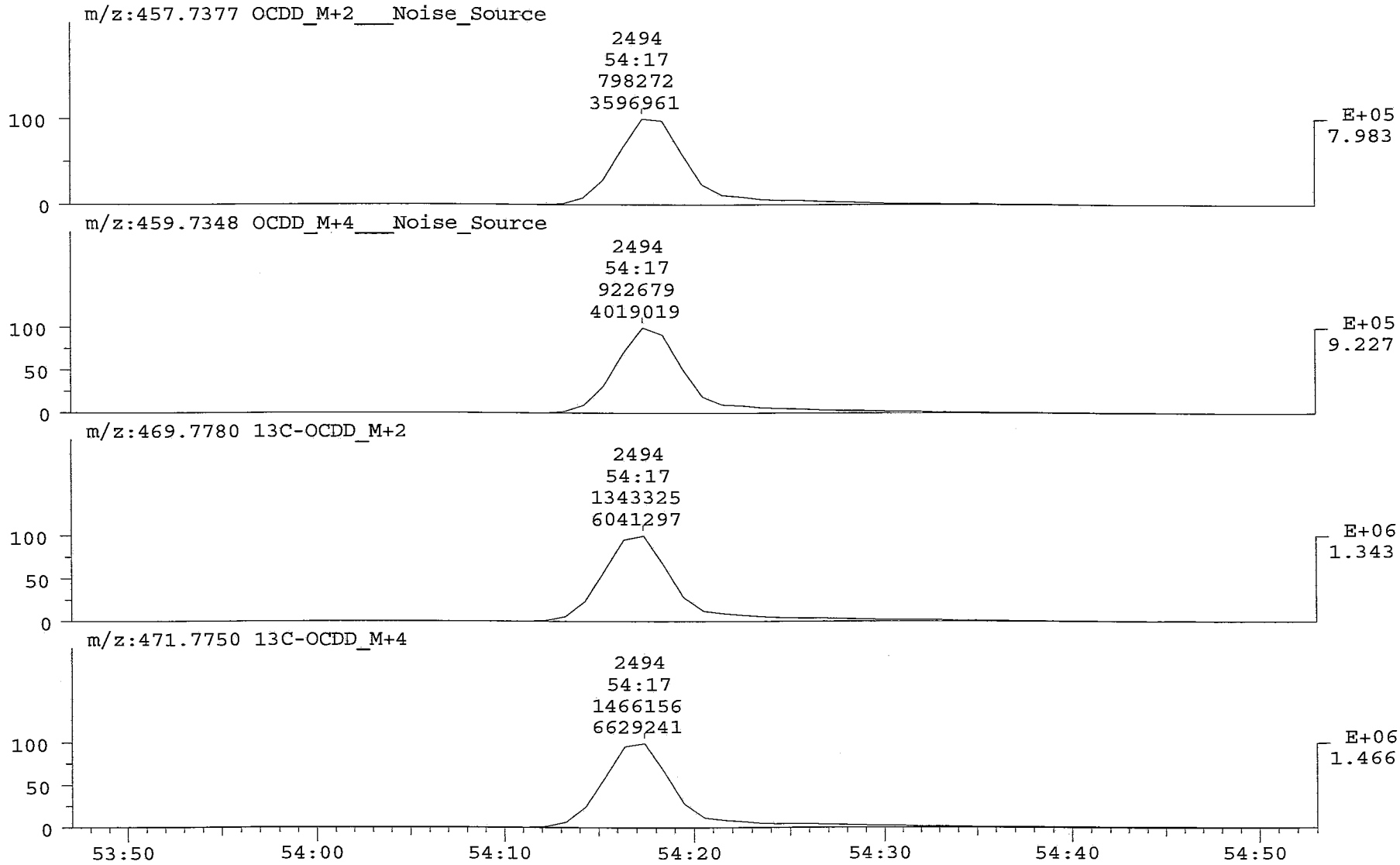
```
CHRO:  d3140516i3                          16-May-14  Elapse:  49:41      2228
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                   Start :  16:27:52   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                            Study :  ICAL CS3
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2136 > 2321      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



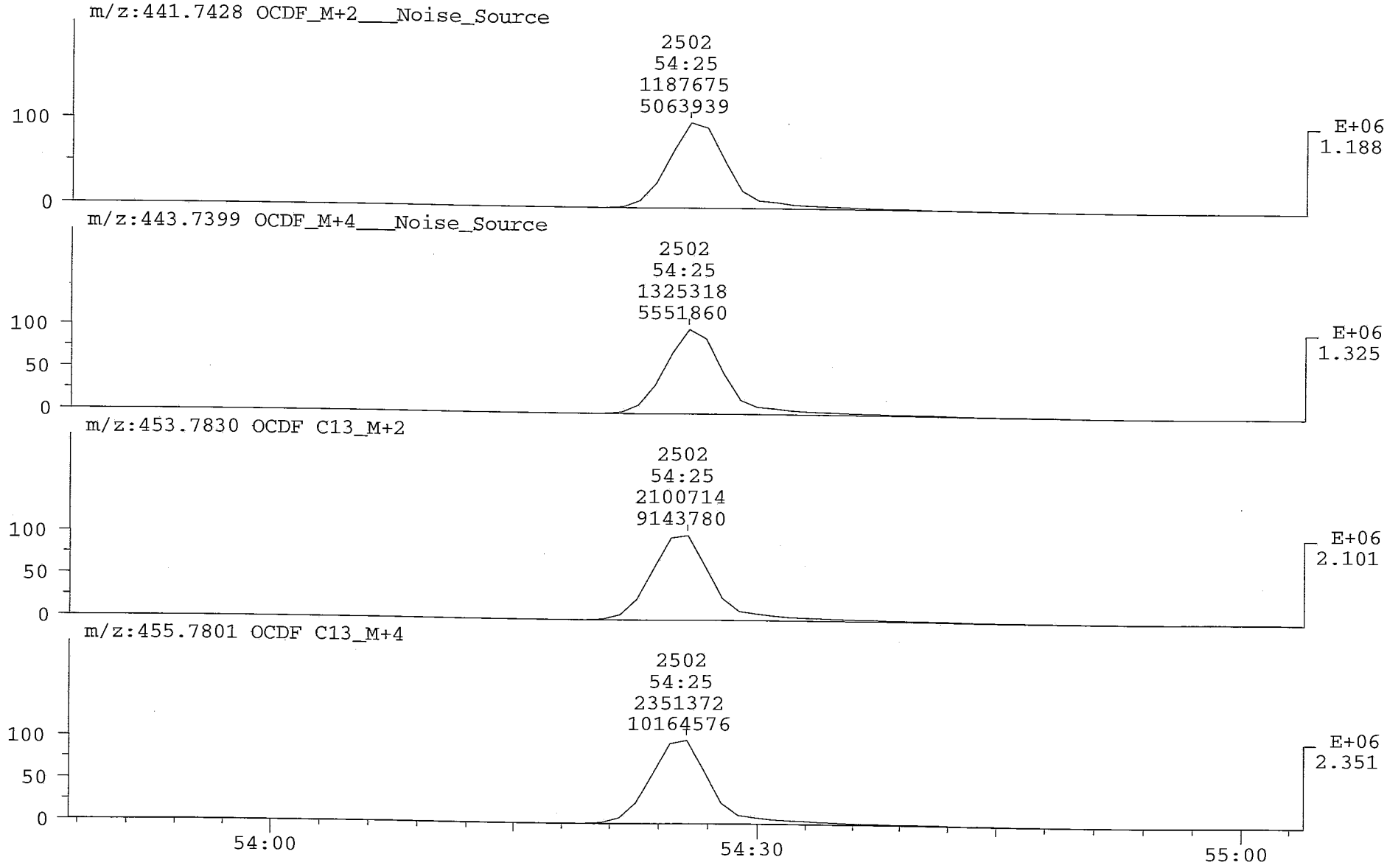
CHRO: d3140516i3 16-May-14 Elapse: 49:41 2228
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 16:27:52 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS3
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2136 > 2321 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



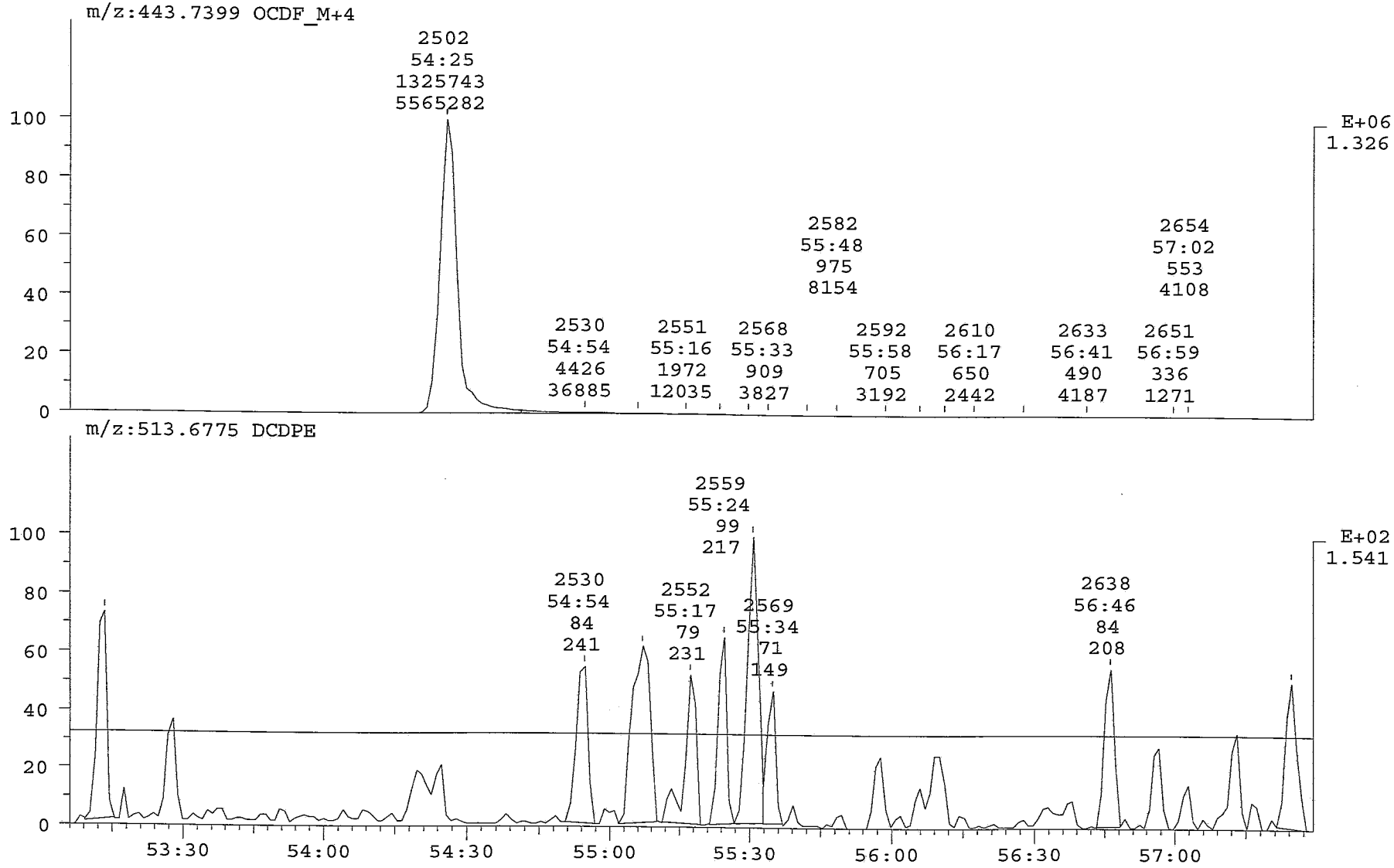
```
CHRO:  d3140516i3                          16-May-14   Elapse:  54:17      2494
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                    Start :  16:27:52   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                             Study :  ICAL CS3
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2465 > 2528       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



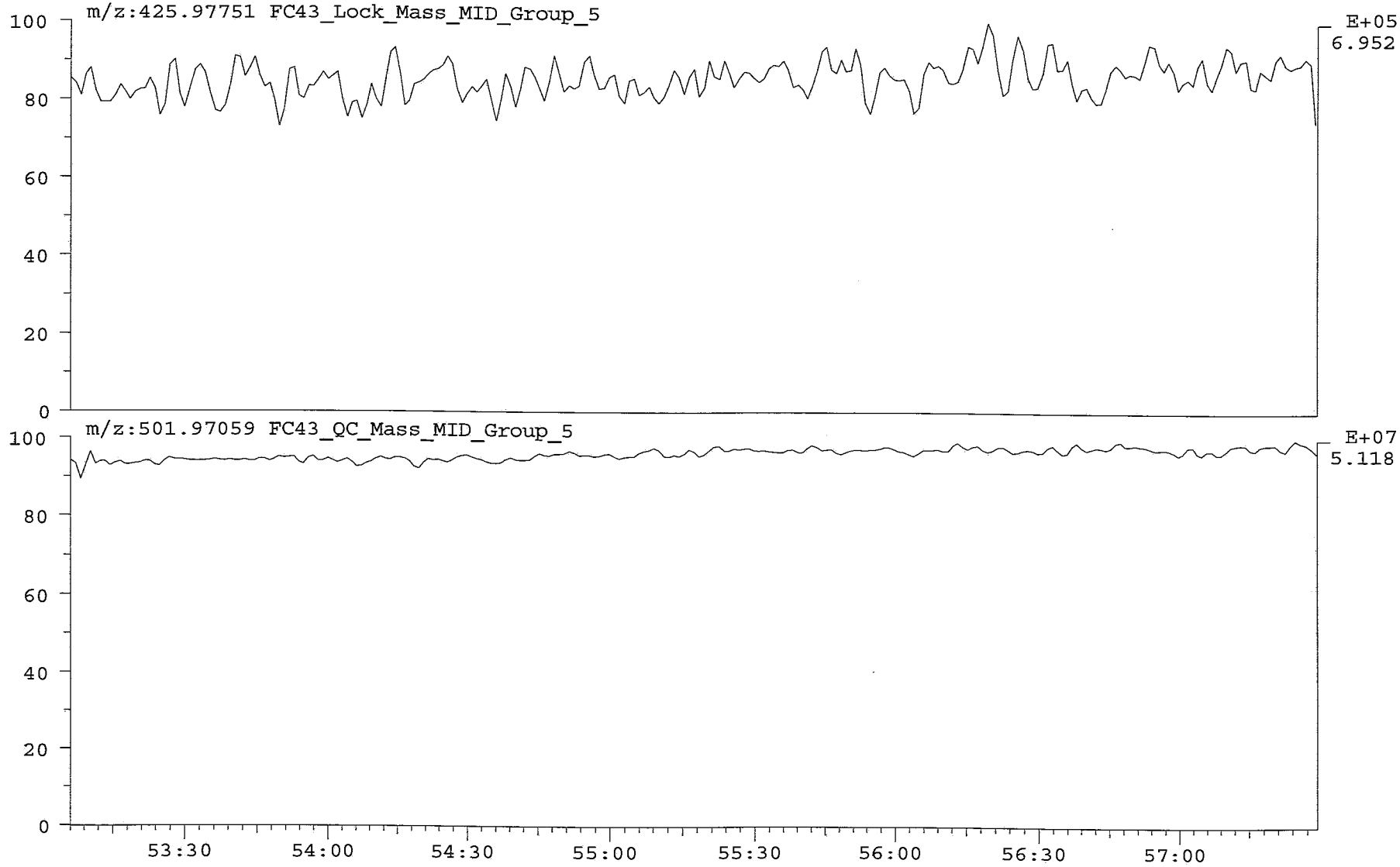
CHRO: d3140516i3 16-May-14 Elapse: 44:21 1917
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 16:27:52 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS3
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2465 > 2539 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d3140516i3 16-May-14 Elapse: 54:25 2502
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 16:27:52 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS3
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2425 > 2679 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d3140516i3 16-May-14 Elapse: 54:25 2502
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 16:27:52 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS3
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2425 > 2679 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Fri May 16 16:32:03 2014 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - D5FBM84J

Analysis started at: 16-May-14 16:32:02

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence :

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:13 min	35:13 min	0.99 sec
# 2	35:13 min	7:16 min	42:30 min	1.00 sec
# 3	42:30 min	5:00 min	47:30 min	1.00 sec
# 4	47:30 min	5:30 min	53:00 min	1.00 sec
# 5	53:00 min	4:30 min	57:30 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	122
305.8987		1	1	122
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	122
321.8936		1	1	122
327.8847		1	1	122
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	122

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7

```
 375.9802     20  1        7
 409.7974      1  1      146
Window # 3
     mass F  int  gr  time (ms)
 373.8208      1  1      146
 375.8178      1  1      146
 375.9802 l   20  1        7
 375.9802     20  1        7
 383.8639      5  1       29
 385.8610      5  1       29
 389.8158      1  1      146
 391.8127      1  1      146
 401.8559      5  1       29
 403.8529      5  1       29
 413.9770 c   20  1        7
 413.9770     20  1        7
 445.7555      1  1      146
Window # 4
     mass F  int  gr  time (ms)
 407.7817      1  1      146
 409.7788      1  1      146
 413.9770 l   20  1        7
 413.9770     20  1        7
 417.8250      5  1       29
 419.8220      5  1       29
 423.7767      1  1      146
 425.7737      1  1      146
 435.8169      5  1       29
 437.8140      5  1       29
 463.9738 c   20  1        7
 463.9738     20  1        7
 479.7165      1  1      146
Window # 5
     mass F  int  gr  time (ms)
 425.9770 l   20  1        7
 425.9770     20  1        7
 441.7428      1  1      146
 443.7399      1  1      146
 453.7830      5  1       29
 455.7801      5  1       29
 457.7377      1  1      146
 459.7348      1  1      146
 469.7780      5  1       29
 471.7750      5  1       29
 501.9706 c   20  1        7
 501.9706     20  1        7
 513.6775      1  1      146

MID Window terminated after 35.233333 minutes
MID Window end time was 35.220000 minutes
MID Window terminated after 42.500000 minutes
MID Window end time was 42.500000 minutes
MID Window terminated after 47.500000 minutes
MID Window end time was 47.500000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.500000 minutes
MID Window end time was 57.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune
```

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0177	BMASS	312.4834
BQUAD	1.5000	CAPIL	0.0000	CAPTSET	0.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	16.0000	ECORR	1.0003	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2096.1908
ELEN	-45.0000	EMULT	1699.0000	ENS	148.0000
ENSBR	1.5000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	178.0000	EXSBR	2.1000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	11.7000
FQUADGAIN	0.0000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0143	FVINLET	0.0760	FVSRC	0.0513
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	740.0000
LENS_SYM	9.5000	LM	375.8364	LMII	500.0000
LMASS	312.4834	LKM	425.9770	MASS	312.4834
MDAC	3517495.3319	MRANGE	1307.4725	NSAM	200.0000
NSCAN	2701.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	0.0000	PSAM	10.0000
PUSHER	-8.3000	RECURR	0.9006	RELEN	0.0000
RES	10760.5374	RPUSHER	-8.2125	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	730.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	0.0000	SLOW	60.0000	SS	2.0000
SW	0.1590	TANAL	0.0000	TCURR	0.0000
TD	30.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	312.4834	XLENS_POT	906.0000
XLENS_SYM	9.5000	YLENS_POT	750.0000	YLENS_SYM	0.0000

Source Gauge: 1.5e-005 mbar
Analyzer Penning: 7.4e-008 mbar
Pirani Analyse: 1.4e-002 mbar
Pirani Source: 5.1e-002 mbar
Pirani Inlet System: 7.6e-002 mbar

Scantype is electric

Sourcemode is EI POS

MID Time Window 1: Resolution is 10582.
MID Time Window 2: Resolution is 9667.
MID Time Window 3: Resolution is 10507.
MID Time Window 4: Resolution is 10152.
MID Time Window 5: Resolution is 10760.

Amplifier Offset: 94.

*** File closed Fri May 16 17:29:34 2014 ***

User: finnigan
Host: knx-alpha5.stl-inc.com
Class: knx-alpha5.stl-inc.com
Job: d3140516i3.log

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS4	Prep Batch		Lot No	
Data File	/20140516i/d314051614.d	Prep Date		SDG No	
Analysis ID	161066	Prep Exp Date		Date Received	
Analysis Date	5/16/2014	Matrix	UNKNOWN	Date Sampled	
Analysis Time	17:29	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D2A	Dil Factor	1.00	Code	F8o
Analyst	MSD				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)	DL (ng/mL)
2,3,7,8-TCDD	31:49	4254690	434666	1.000	40.00	45.314255	113.29	45.314255	0.0216
Total TCDD				1.000		45.314255		45.314255	0.0216
2,3,7,8-TCDF	29:44	6576277	732567	1.000	40.00	42.728146	106.82	42.728146	0.0227
Total TCDF				1.000		42.728146		42.728146	0.0227
1,2,3,7,8-PeCDD	40:58	15849469	3799520	1.000	200.0	200.124839	100.06	200.124839	0.0237
Total PeCDD				1.000		200.124839		200.124839	0.0237
1,2,3,7,8-PeCDF	39:15	28131836	5798607	1.000	200.0	229.943696	114.97	229.943696	0.0378
2,3,4,7,8-PeCDF	40:27	26401671	6180445	1.000	200.0	212.523259	106.26	212.523259	0.0334
Total PeCDF				1.000		442.466955		442.466955	0.0355
1,2,3,4,7,8-HxCDD	45:12	19597626	4906215	1.000	200.0	220.065709	110.03	220.065709	0.118
1,2,3,6,7,8-HxCDD	45:19	20780460	4850671	1.000	200.0	217.414244	108.71	217.414244	0.118
1,2,3,7,8,9-HxCDD	45:43	21510288	5056220	1.000	200.0	233.005193	116.50	233.005193	0.118
Total HxCDD				1.000		670.485146		670.485146	0.118
1,2,3,4,7,8-HxCDF	44:10	31655244	8270437	1.000	200.0	262.435966	131.22	262.435966	0.0644
1,2,3,6,7,8-HxCDF	44:17	36338147	8944025	1.000	200.0	242.410054	121.21	242.410054	0.0550
2,3,4,6,7,8-HxCDF	45:01	32807282	8246404	1.000	200.0	246.265825	123.13	246.265825	0.0609
1,2,3,7,8,9-HxCDF	45:59	30099012	6793785	1.000	200.0	249.430493	124.72	249.430493	0.0741
Total HxCDF				1.000		1000.54234		1000.54234	0.0629
1,2,3,4,6,7,8-HpCDD	50:08	17853210	3431007	1.000	200.0	216.966501	108.48	216.966501	0.0301
Total HpCDD				1.000		216.966501		216.966501	0.0301
1,2,3,4,6,7,8-HpCDF	48:25	30711521	6354162	1.000	200.0	289.225949	144.61	289.225949	0.0635
1,2,3,4,7,8,9-HpCDF	50:46	24308561	4766357	1.000	200.0	270.071326	135.04	270.071326	0.0797
Total HpCDF				1.000		559.297275		559.297275	0.0707
OCDD	54:16	33829891	7746263	1.000	400.0	463.060170	115.77	463.060170	0.0608
OCDF	54:23	47295380	11257371	1.000	400.0	426.017320	106.50	426.017320	0.0424
13C-2,3,7,8-TCDD	31:46	9389297	985356	1.000	100.0	107.744358	107.74	107.744358	0.104
13C-2,3,7,8-TCDF	29:41	15390972	1673695	1.000	100.0	176.614970	176.61	176.614970	0.0240
13C-1,2,3,7,8-PeCDD	40:57	7919791	1901528	1.000	100.0	90.881437	90.88	90.881437	0.0238
13C-1,2,3,7,8-PeCDF	39:14	12234228	2511962	1.000	100.0	140.390601	140.39	140.390601	0.109
13C-2,3,4,7,8-PeCDF	40:26	12422956	2843926	1.000	100.0	142.556298	142.56	142.556298	0.109
13C-1,2,3,4,7,8-HxCDD	45:11	8905352	2210342	1.000	100.0	89.428404	89.43	89.428404	0.0434
13C-1,2,3,6,7,8-HxCDD	45:18	9558003	2217636	1.000	100.0	95.982388	95.98	95.982388	0.0434
13C-1,2,3,4,7,8-HxCDF	44:09	12062083	3104753	1.000	100.0	121.128601	121.13	121.128601	0.0466
13C-1,2,3,6,7,8-HxCDF	44:16	14990363	3633579	1.000	100.0	150.534671	150.53	150.534671	0.0466
13C-2,3,4,6,7,8-HxCDF	45:00	13321898	3281627	1.000	100.0	133.779785	133.78	133.779785	0.0466
13C-1,2,3,7,8,9-HxCDF	45:58	12067094	2699068	1.000	100.0	121.178922	121.18	121.178922	0.0466
13C-1,2,3,4,6,7,8-HpCDD	50:07	8228556	1554766	1.000	100.0	82.631953	82.63	82.631953	0.00861
13C-1,2,3,4,6,7,8-HpCDF	48:24	10618522	2193687	1.000	100.0	106.632222	106.63	106.632222	0.0287
13C-1,2,3,4,7,8,9-HpCDF	50:44	9000793	1746933	1.000	100.0	90.386832	90.39	90.386832	0.0287
13C-OCDD	54:15	14611445	3410926	1.000	200.0	146.729540	73.36	146.729540	0.0414
13C-OCDF	54:23	22203501	5290490	1.000	200.0	222.969699	111.48	222.969699	0.0279
37Cl4-2,3,7,8-TCDD	31:48	4238505	440476	1.000	40.00	48.637827	121.59	48.637827	0.0130
13C-1,2,3,4-TCDD	31:14	8714421	926197	1.000	100.0	100.000000	100.00	100.000000	0.104
13C-1,2,3,7,8,9-HxCDD	45:42	9958080	2294063	1.000	100.0	100.000000	100.00	100.000000	0.0434

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS4	Prep Batch		Lot No	
Data File	/20140516i/d314051614.	Prep Date		SDG No	
Analysis ID	161066	Prep Exp Date		Date Received	
Analysis Date	05/16/14 17:29	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	130	250	52	100	0.52 *	/	
	2,3,7,8-TCDF	29:44	00:00	0	2912615	3663662	328515	404052	0.80	AVV/AVV	M
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	158	65	63	26	2.42 *	/	
	13C-2,3,7,8-TCDF	29:41	00:00	0	6903367	8487605	752069	921626	0.81	ABV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	85	128	34	51	0.67	/	
	2,3,7,8-TCDD	31:49	00:00	0	1886247	2368443	191982	242684	0.80	AVV/AVV	M
328					327.8847		327.8847				
	Noise	00:00	00:00	0	120		48				
	37Cl4-2,3,7,8-TCDD	31:48	00:00	0	4238505		440476			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	263	705	105	282	0.37 *	/	
	13C-1,2,3,4-TCDD	31:14	00:00	0	3917900	4796521	414055	512142	0.82	AVV/ABV	
	13C-2,3,7,8-TCDD	31:46	00:00	0	4247548	5141749	446499	538857	0.83	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	573	378	229	151	1.52	/	
	1,2,3,7,8-PeCDF	39:15	00:00	0	17241720	10890116	3553800	2244807	1.58	ABV/ABV	M
	2,3,4,7,8-PeCDF	40:27	00:00	0	16205468	10196203	3807713	2372732	1.59	AVV/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	465	545	186	218	0.85 *	/	
	13C-1,2,3,7,8-PeCDF	39:14	00:00	0	7502532	4731696	1540566	971396	1.59	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:26	00:00	0	7629525	4793431	1738249	1105677	1.59	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	248	203	99	81	1.22 *	/	
	1,2,3,7,8-PeCDD	40:58	00:00	0	9654715	6194754	2312789	1486731	1.56	ABV/ABV	M
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	113	108	45	43	1.05 *	/	
	13C-1,2,3,7,8-PeCDD	40:57	00:00	0	4884259	3035532	1175096	726432	1.61	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	983	1018	393	407	0.97 *	/	
	1,2,3,4,7,8-HxCDF	44:10	00:00	0	17549020	14106224	4595177	3675260	1.24	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:17	00:00	0	20207346	16130801	4912855	4031170	1.25	AVV/AVV	M
	2,3,4,6,7,8-HxCDF	45:01	00:00	0	18262272	14545010	4596150	3650254	1.26	AVV/AVV	M
	1,2,3,7,8,9-HxCDF	45:59	00:00	0	16709898	13389114	3750925	3042860	1.25	ABV/ABV	M
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	295	775	118	310	0.38 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:09	00:00	0	4182680	7879403	1106545	1998208	0.53	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:16	00:00	0	5281220	9709143	1289476	2344103	0.54	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:00	00:00	0	4610079	8711819	1143968	2137659	0.53	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	45:58	00:00	0	4206432	7860662	927411	1771657	0.54	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS4	Prep Batch		Lot No	
Data File	/20140516i/d314051614.	Prep Date		SDG No	
Analysis ID	161066	Prep Exp Date		Date Received	
Analysis Date	05/16/14 17:29	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

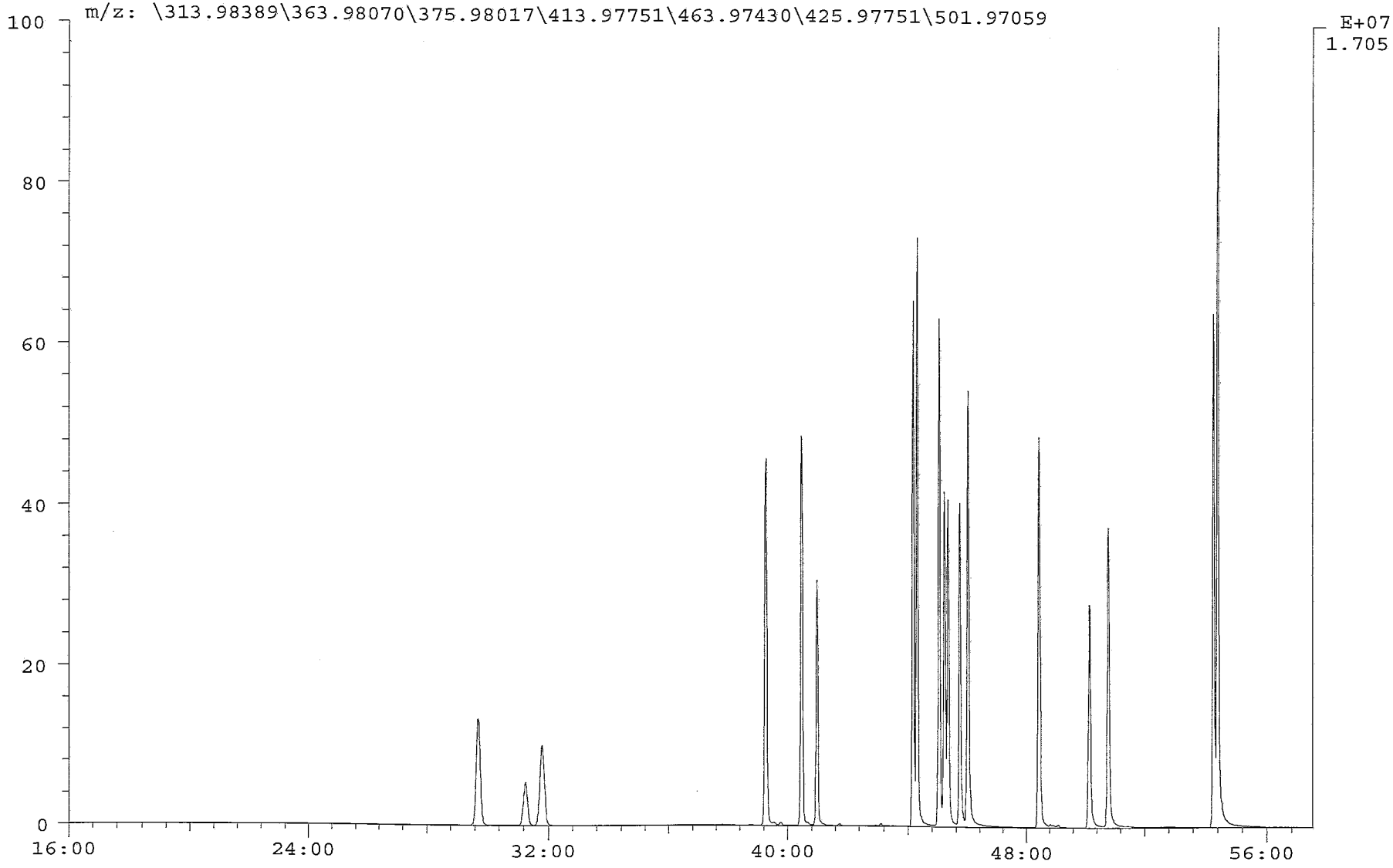
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	1220	1395	488	558	0.87 *	/	
	1,2,3,4,7,8-HxCDD	45:12	00:00	0	10857440	8740186	2724358	2181857	1.24	ABV/ABV	M
	1,2,3,6,7,8-HxCDD	45:19	00:00	0	11628410	9152050	2734106	2116565	1.27	AVV/AVV	M
	1,2,3,7,8,9-HxCDD	45:43	00:00	0	11991001	9519287	2824350	2231870	1.26	AVV/AVV	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	503	493	201	197	1.02 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:11	00:00	0	4996550	3908802	1233701	976641	1.28	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:18	00:00	0	5325149	4232854	1220291	997345	1.26	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	45:42	00:00	0	5535683	4422397	1286082	1007981	1.25	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	620	773	248	309	0.80 *	/	
	1,2,3,4,6,7,8-HpCDF	48:25	00:00	0	15690301	15021220	3230879	3123283	1.04	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	50:46	00:00	0	12430676	11877885	2421042	2345315	1.05	ABV/ABV	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	180	478	72	191	0.38	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:24	00:00	0	3342381	7276141	691469	1502218	0.46	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:44	00:00	0	2802992	6197801	553117	1193816	0.45	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	208	260	83	104	0.80 *	/	
	1,2,3,4,6,7,8-HpCDD	50:08	00:00	0	9196758	8656452	1780529	1650478	1.06	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	83	115	33	46	0.72 *	/	
	13C-1,2,3,4,6,7,8-HpCDD	50:07	00:00	0	4306682	3921874	813419	741347	1.10	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	610	513	244	205	1.19 *	/	
	OCDF	54:23	00:00	0	22612236	24683144	5303999	5953372	0.92	ABV/ABV	M
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	243	398	97	159	0.61 *	/	
	13C-OCDF	54:23	00:00	0	10559572	11643929	2517326	2773164	0.91	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	460	578	184	231	0.80	/	
	OCDD	54:16	00:00	0	16044391	17785500	3708201	4038062	0.90	ABV/ABV	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	410	540	164	216	0.76	/	
	13C-OCDD	54:15	00:00	0	7000817	7610628	1633056	1777870	0.92	ABV/ABV	

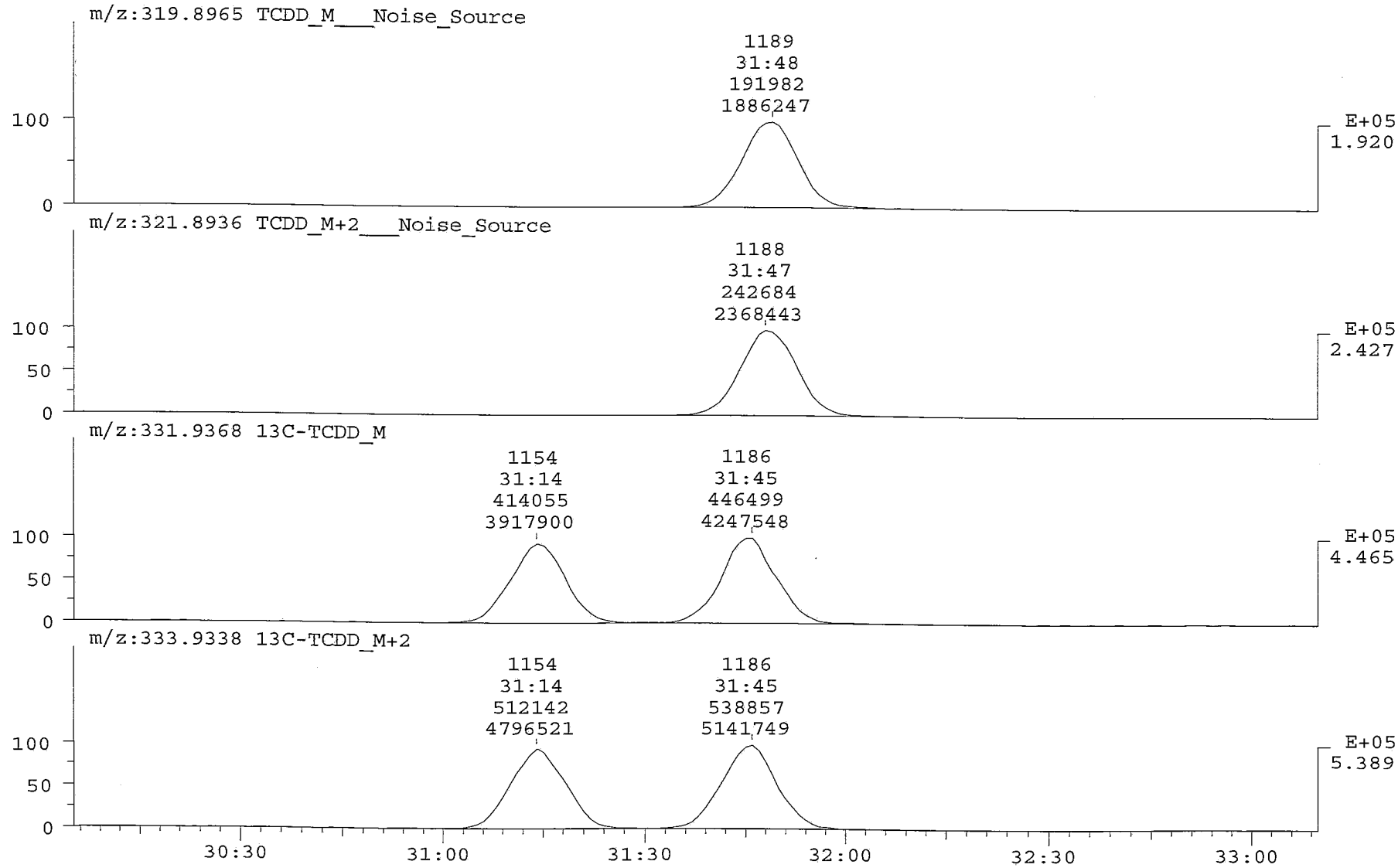
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

CHRO: d3140516i4 16-May-14 Elapse: 54:26 2502
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 17:29:38 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS4
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 237 > 2680 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

Int, Calc MSD 5-19-14
QC Kln 5/19/14



CHRO: d3140516i4 16-May-14 Elapse: 31:37 1177
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 17:29:38 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS4
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1085 > 1270 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



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CHRO:  d3140516i4                          16-May-14   Elapse:  31:52      1193
Samp:  WO=4104:74cs4 Meth=F8o Dil=1                    Start :  17:29:38   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                             Study :  ICAL CS4
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1101 > 1291       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```
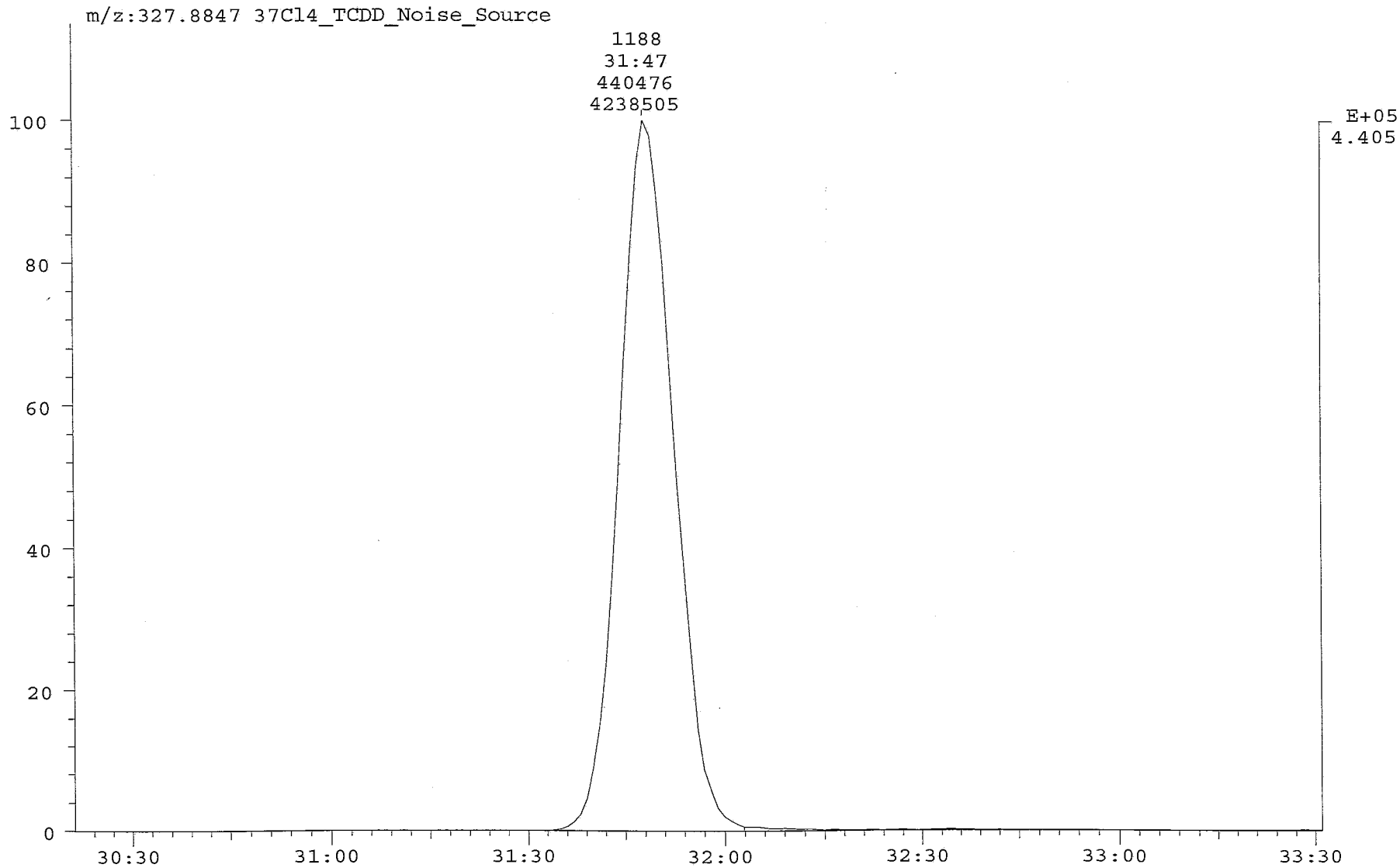
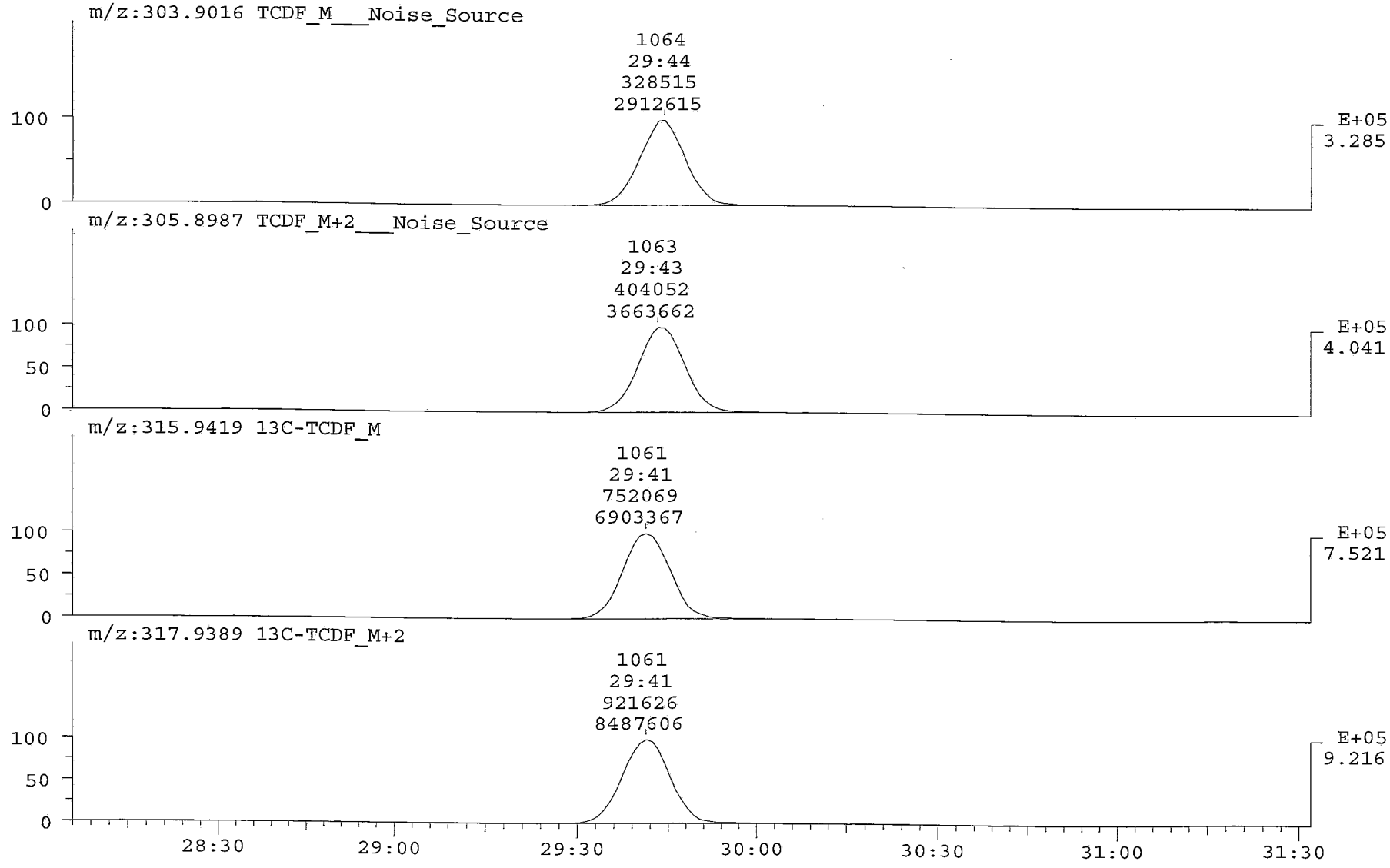
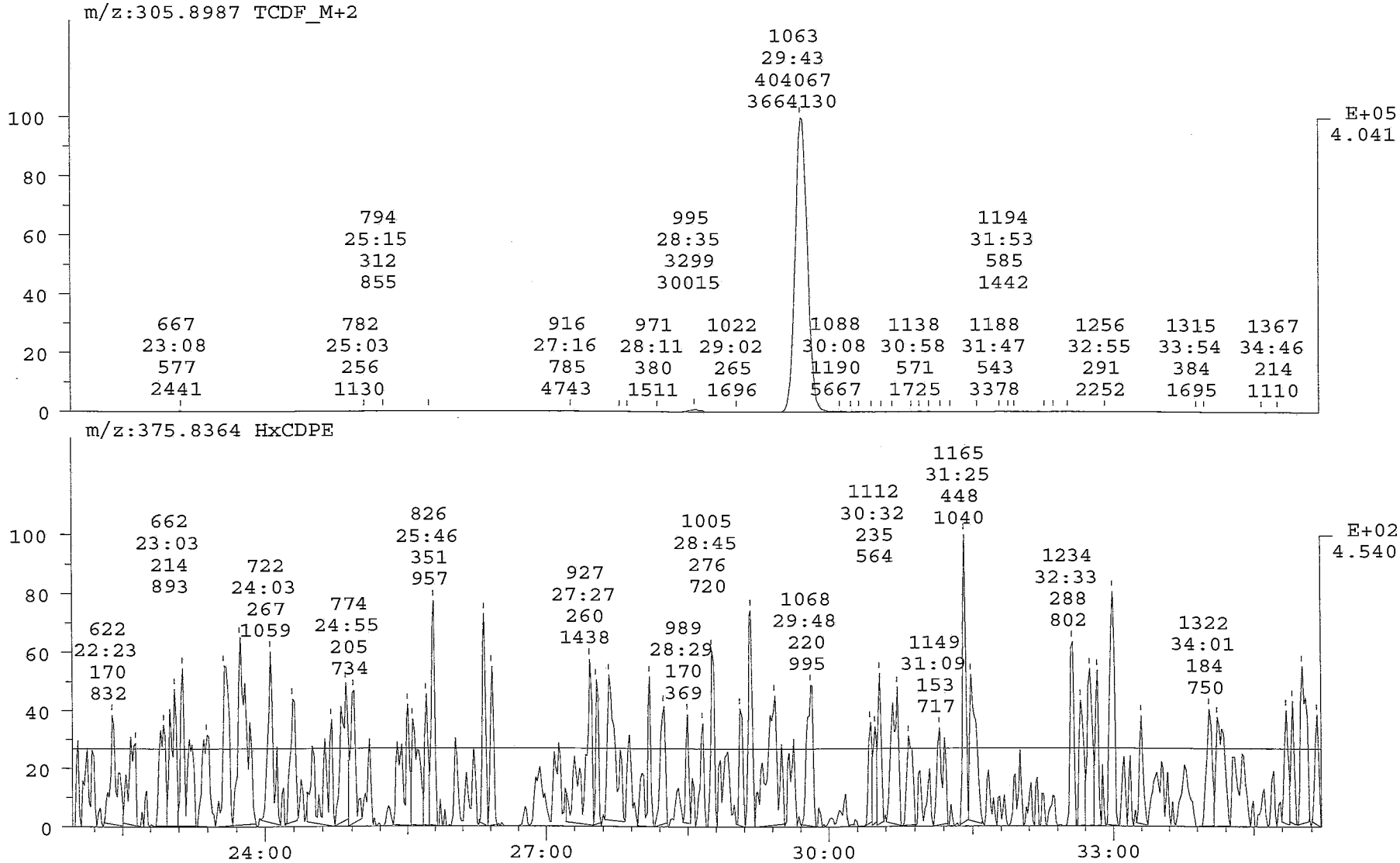



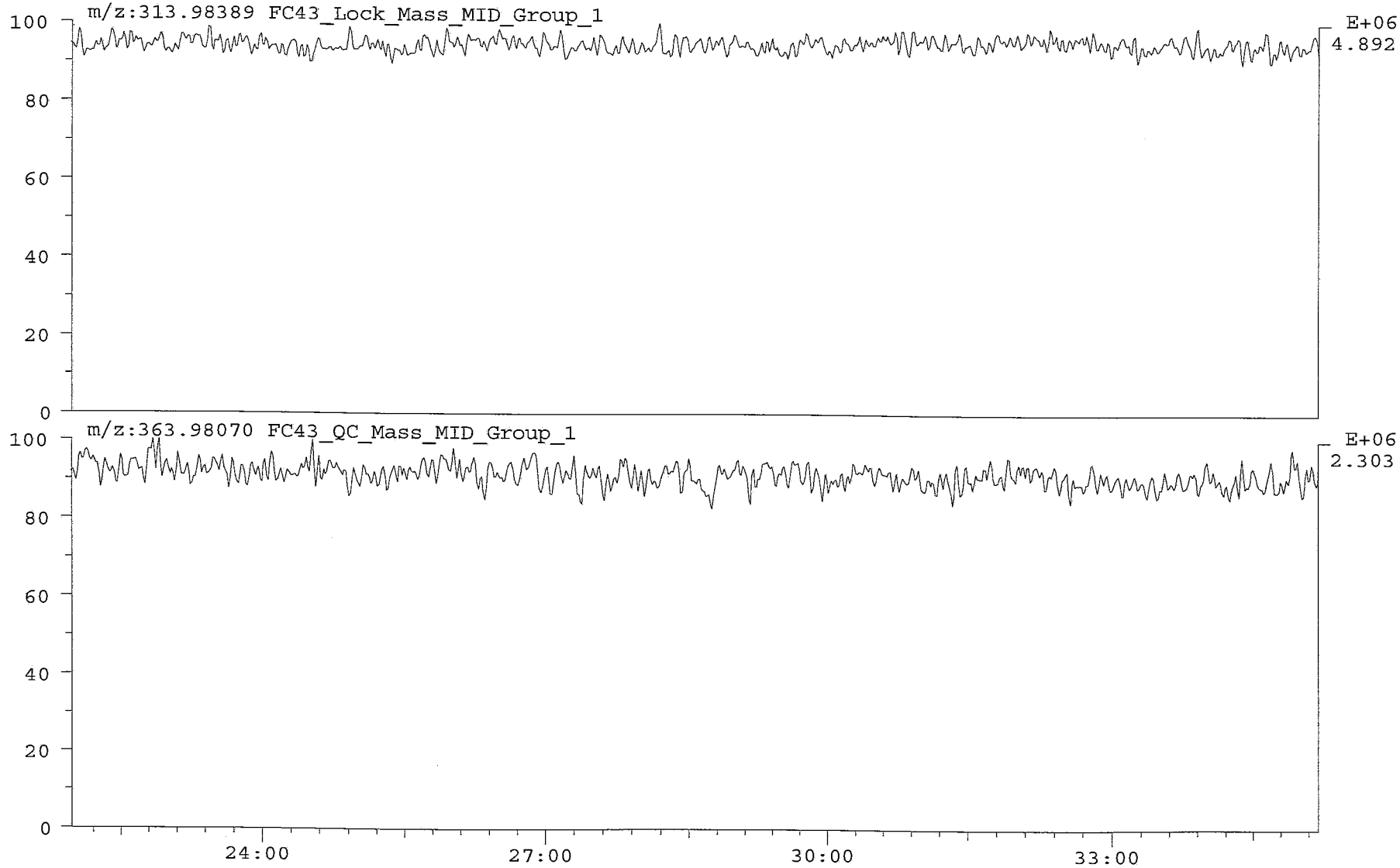
CHRO: d3140516i4 16-May-14 Elapse: 29:46 1066
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 17:29:38 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS4
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 965 > 1172 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



CHRO: d3140516i4 16-May-14 Elapse: 29:46 1066
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 17:29:38 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS4
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 596 > 1393 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d3140516i4 16-May-14 Elapse: 29:46 1066
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 17:29:38 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS4
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 596 > 1393 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



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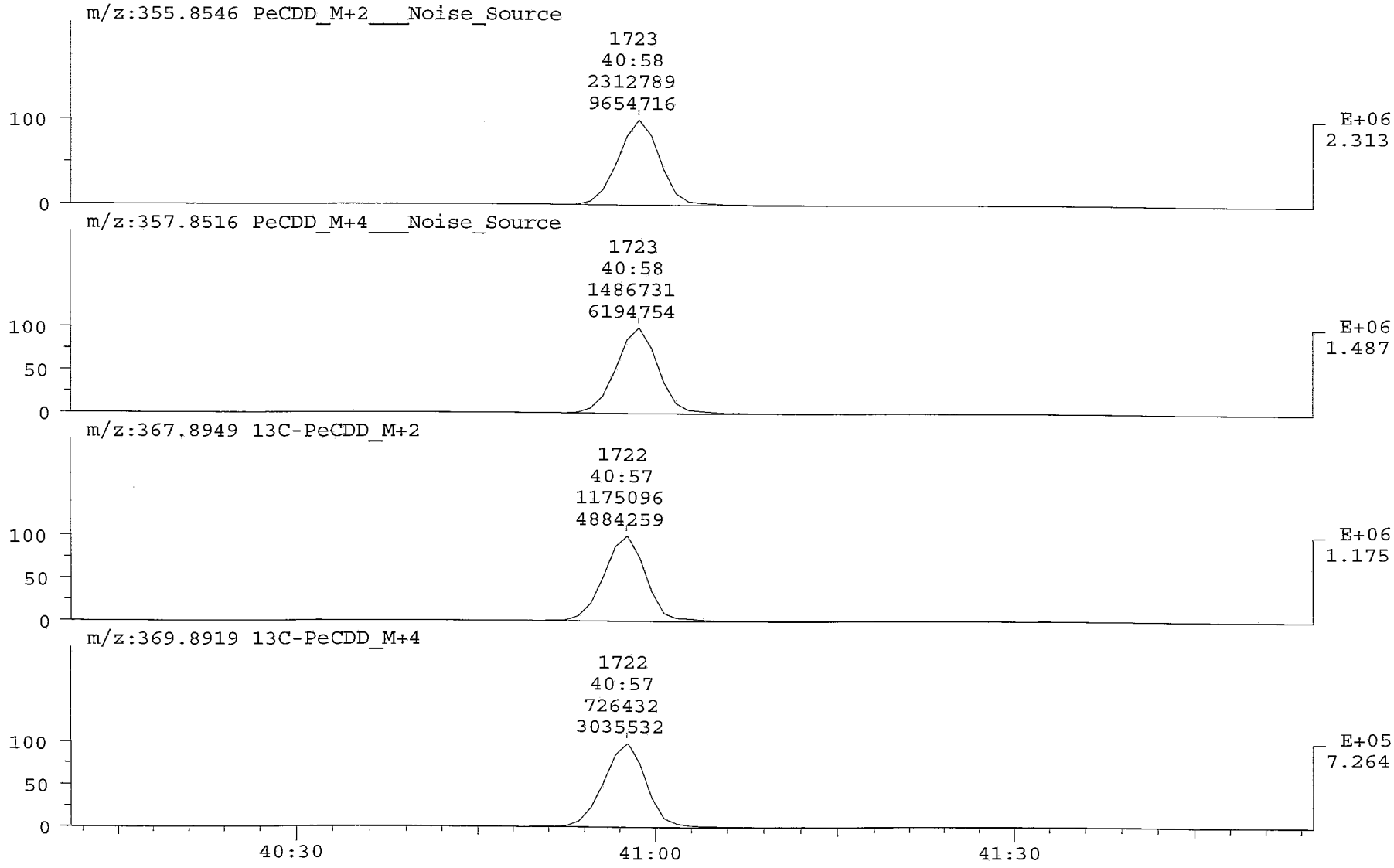
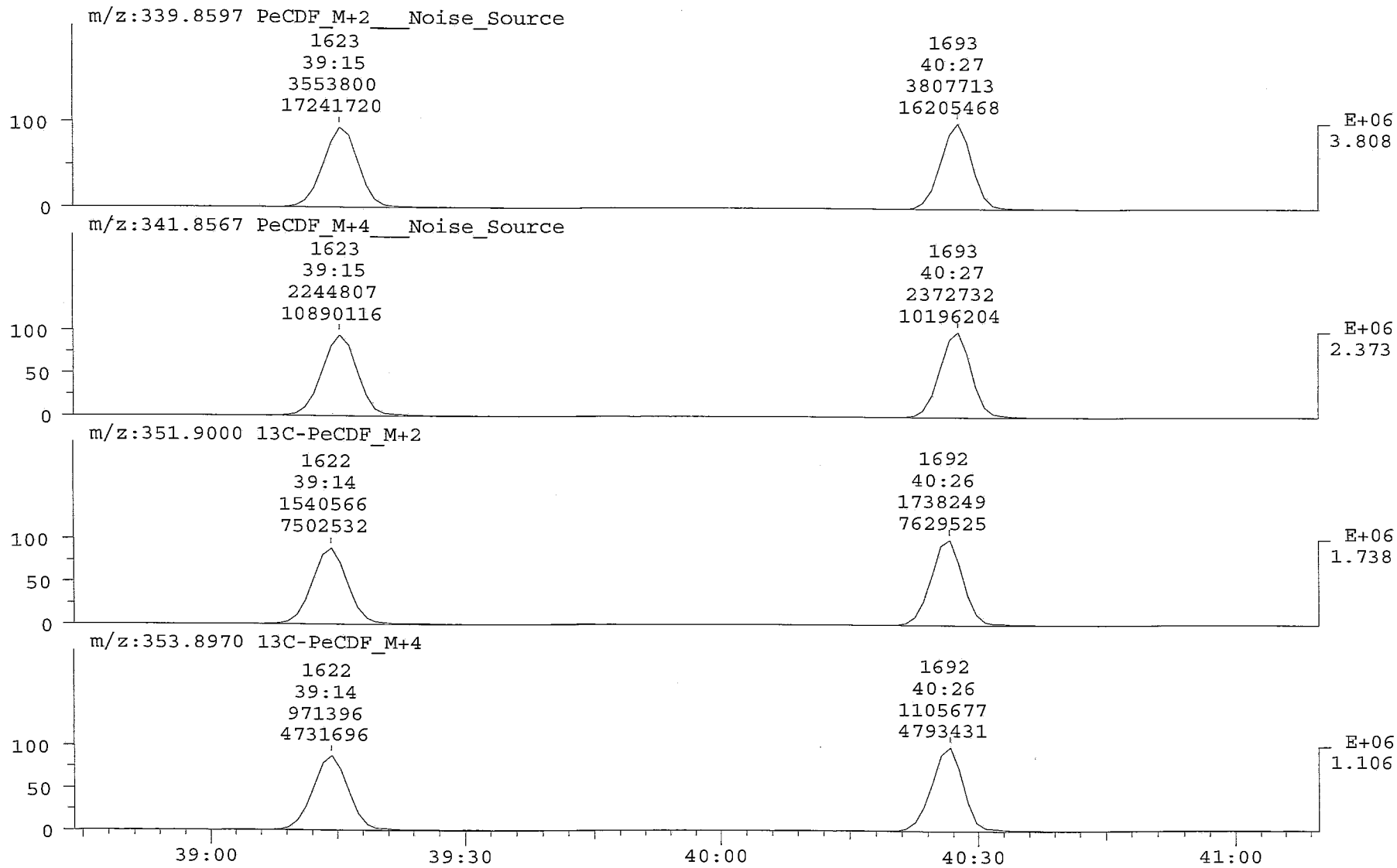
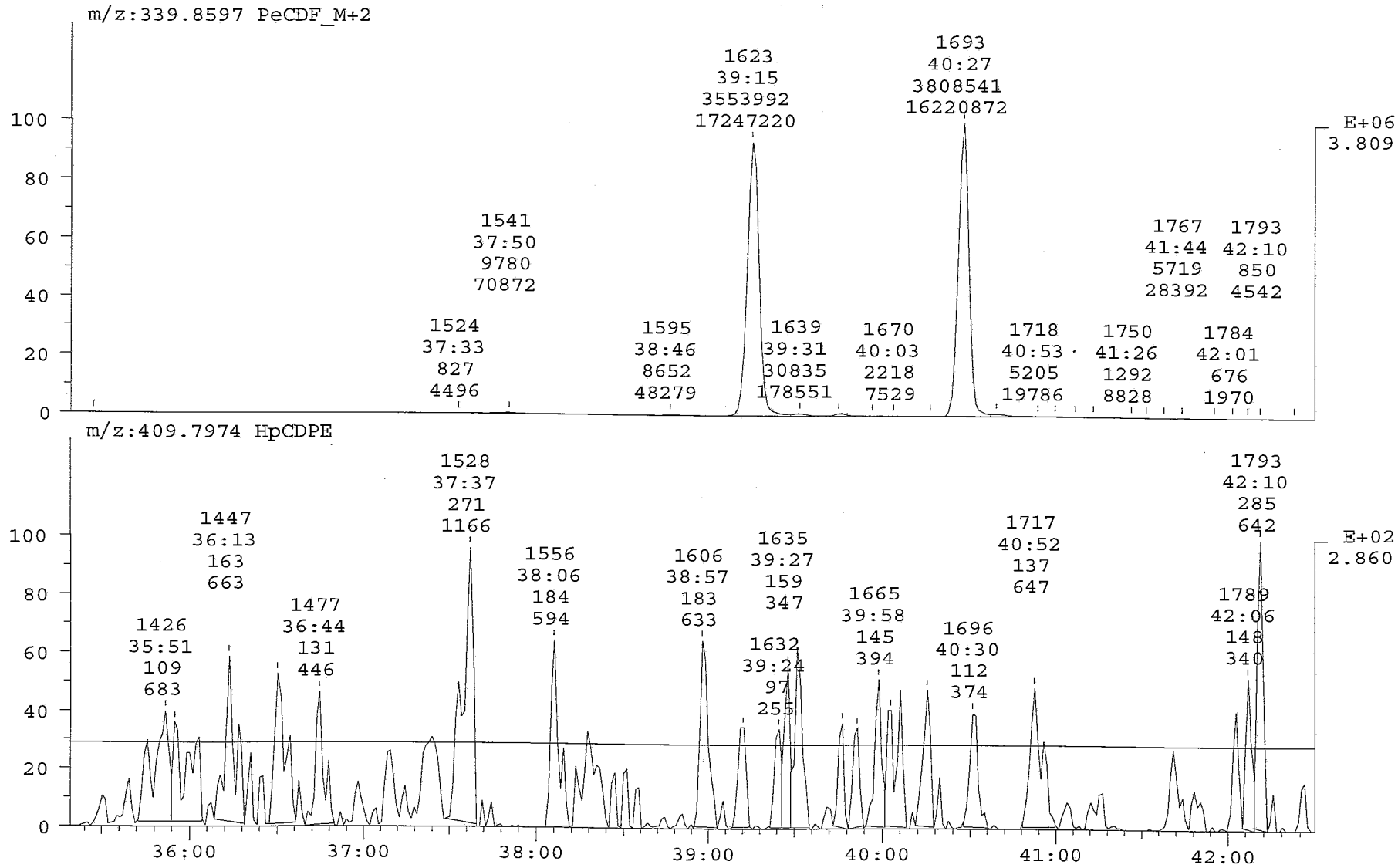
CHRO:  d3140516i4                                16-May-14  Elapse:  40:59      1724
Samp:  WO=4104:74cs4 Meth=F8o Dil=1                         Start :  17:29:38   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  ICAL CS4
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1677 > 1778            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  2, 5.0
Disp:  Height  Area
```



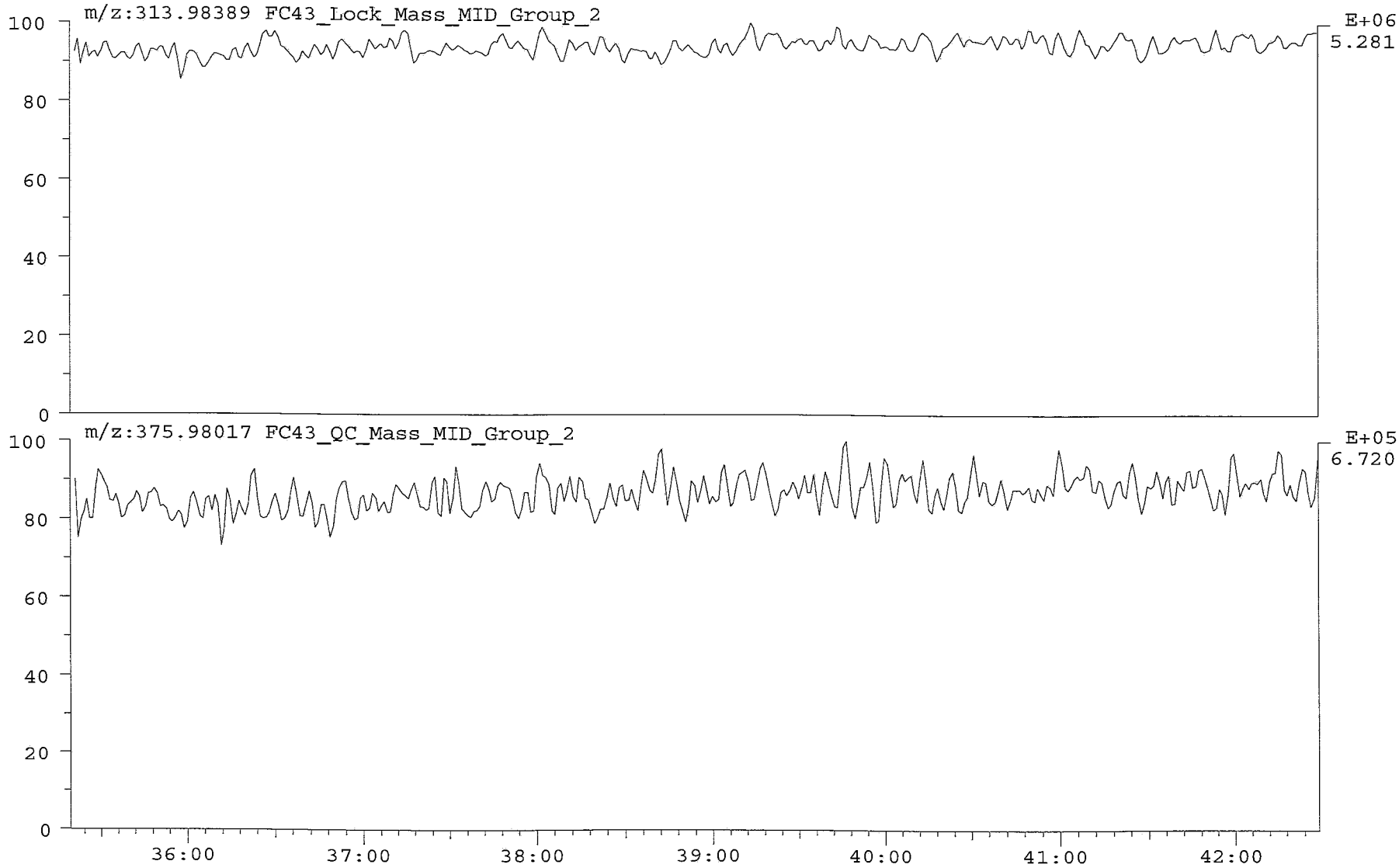
```
CHRO:  d3140516i4                                16-May-14  Elapse:  39:56      1663
Samp:  WO=4104:74cs4 Meth=F8o Dil=1                         Start :  17:29:38   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  ICAL CS4
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1593 > 1734            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  2, 5.0
Disp:  Height  Area
```



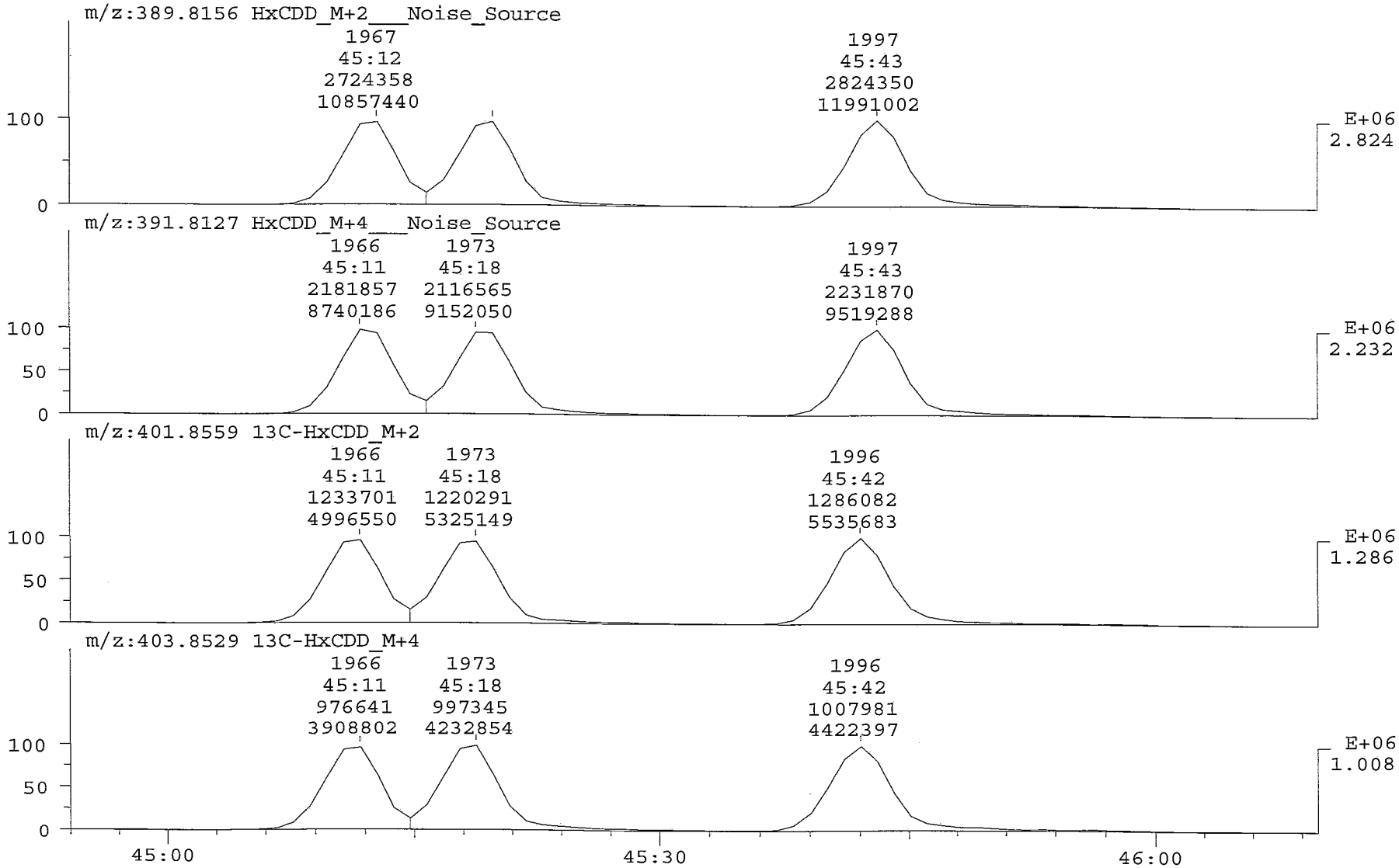
CHRO: d3140516i4 16-May-14 Elapse: 39:56 1663
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 17:29:38 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS4
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1396 > 1810 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



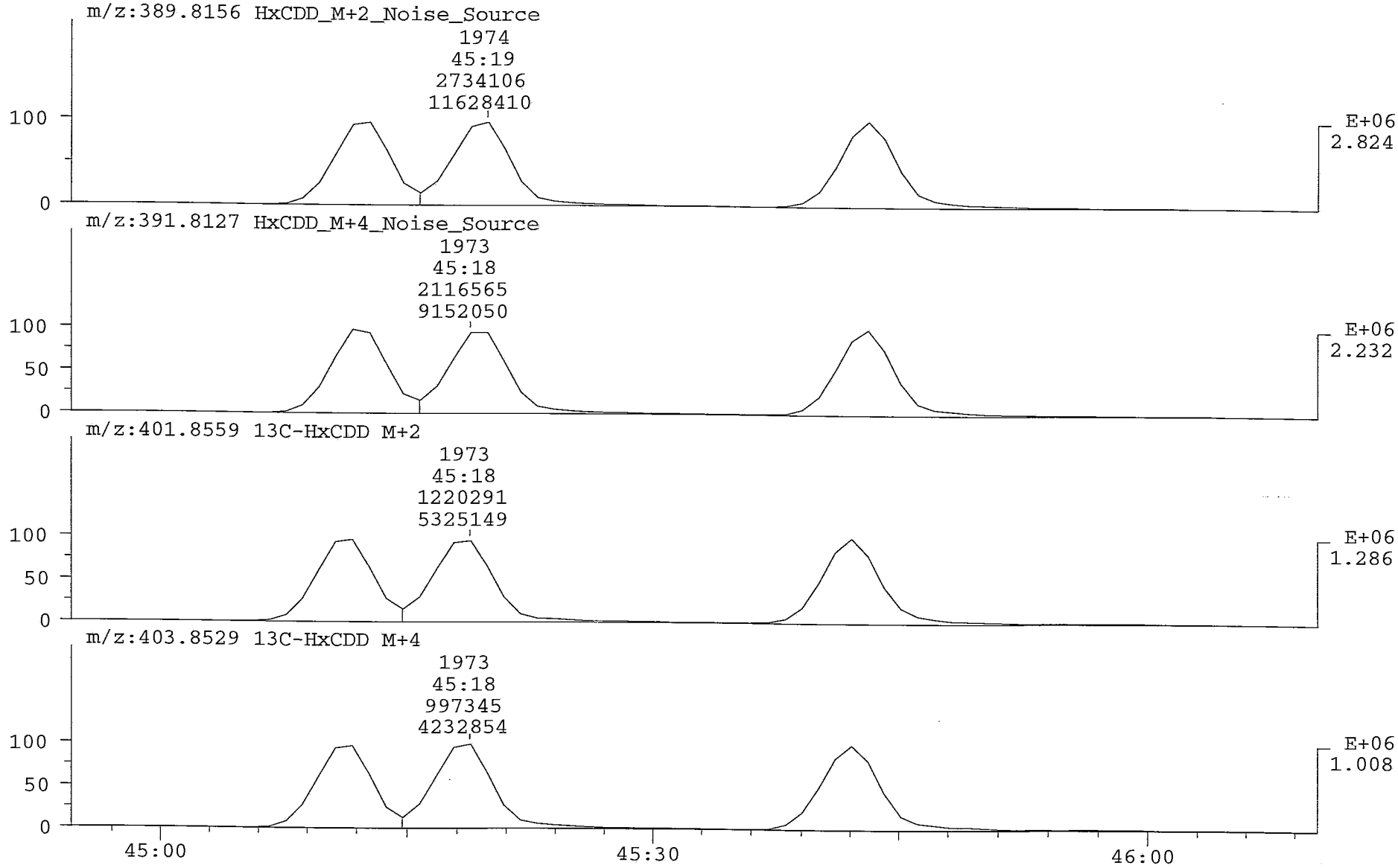
```
CHRO:  d3140516i4                          16-May-14   Elapse:  39:56      1663
Samp:  WO=4104:74cs4 Meth=F8o Dil=1                    Start :  17:29:38   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                             Study :  ICAL CS4
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1396 > 1810       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  0, 0.0
Disp:  Height  Area
```



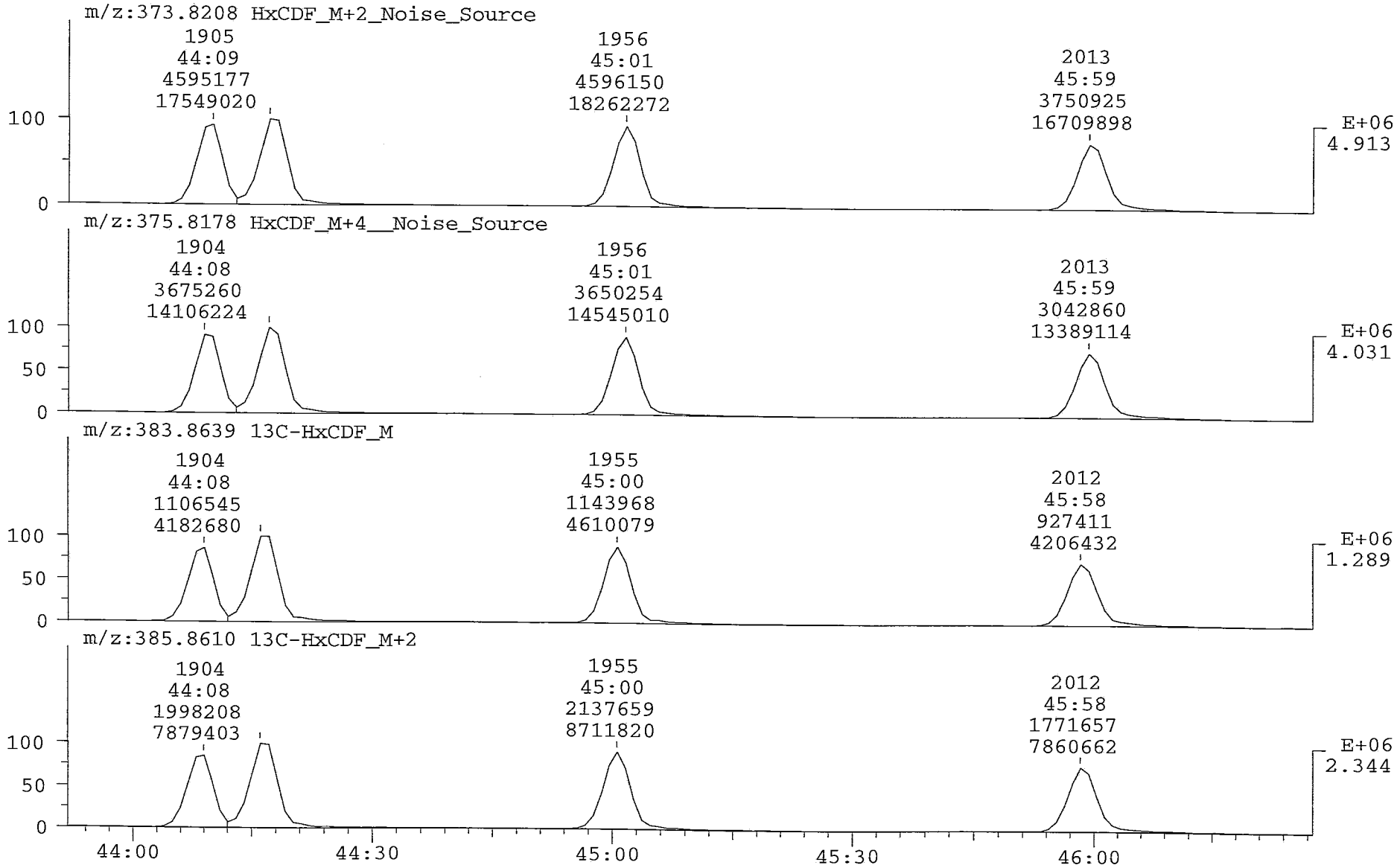
```
CHRO:  d3140516i4                                16-May-14   Elapse:  45:31      1986
Samp:  WO=4104:74cs4 Meth=F8o Dil=1                          Start :  17:29:38   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                   Study :  ICAL CS4
Oper:  MSD                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1949 > 2024             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  2, 5.0
Disp:  Height  Area
```



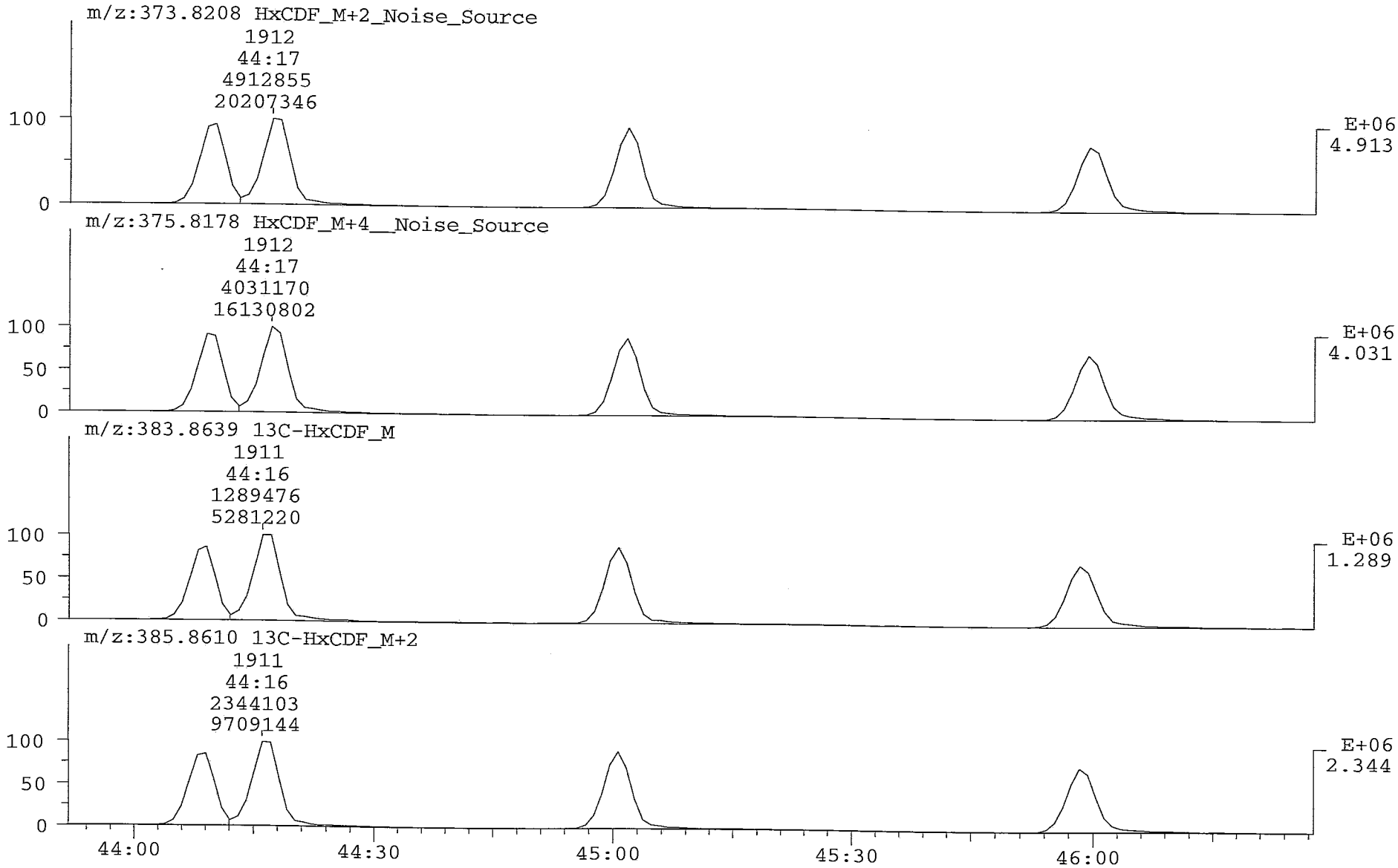
```
CHRO:  d3140516i4                                16-May-14  Elapse:  45:19      1974
Samp:  WO=4104:74cs4 Meth=F8o Dil=1                         Start :  17:29:38   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  ICAL CS4
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1971 > 1977            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



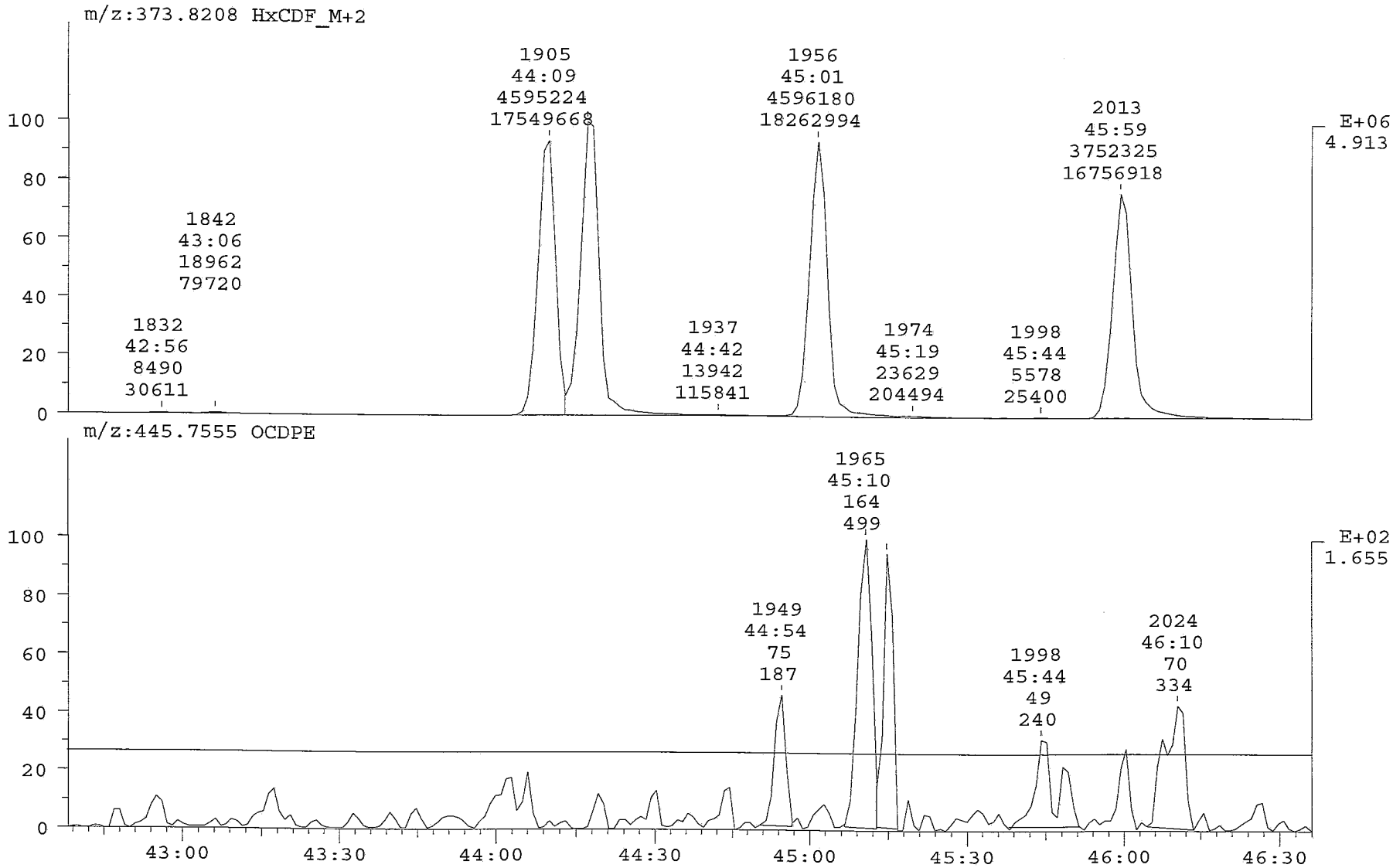
CHRO: d3140516i4 16-May-14 Elapse: 45:19 1974
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 17:29:38 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS4
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1887 > 2041 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



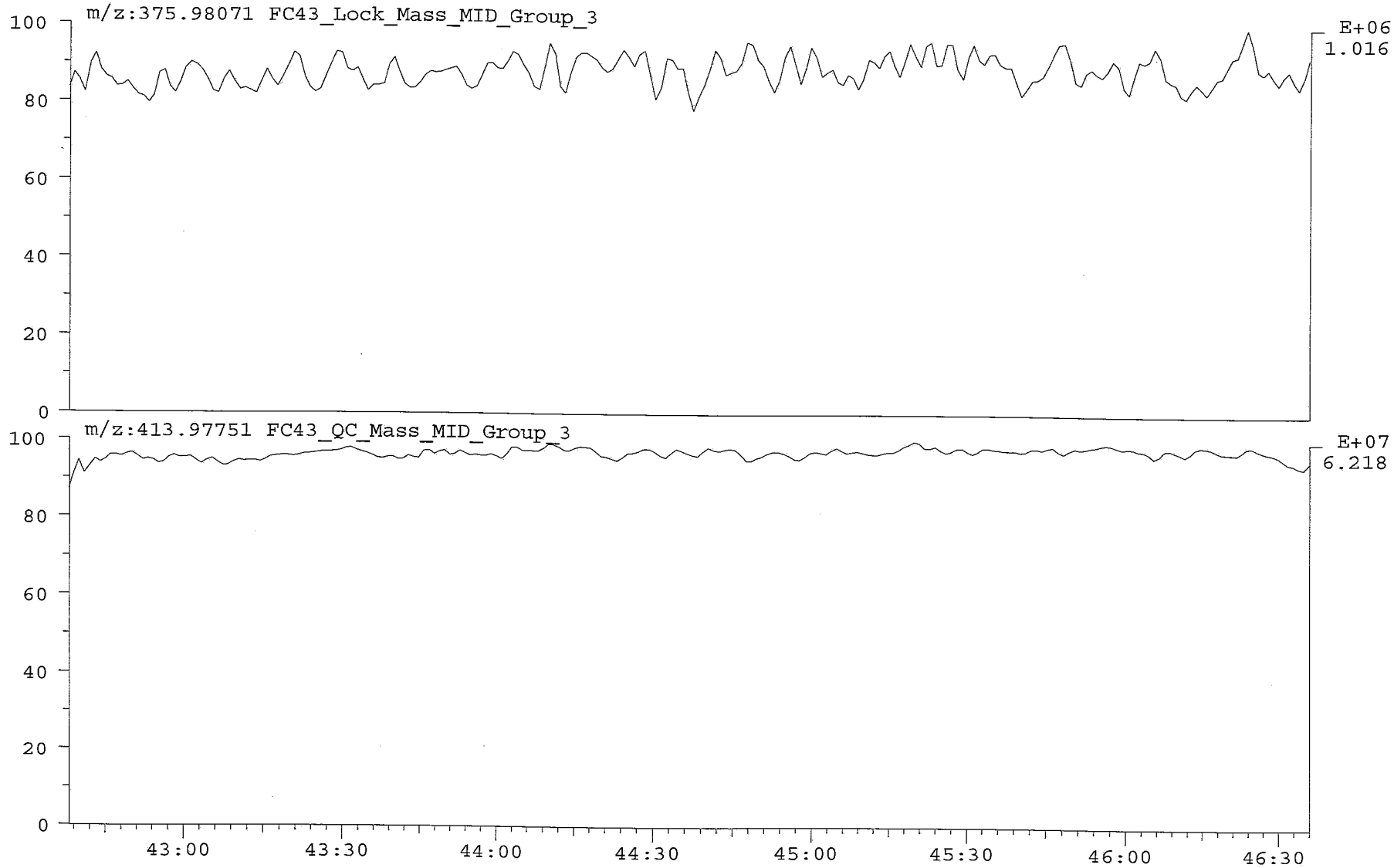
CHRO: d3140516i4 16-May-14 Elapse: 44:19 1914
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 17:29:38 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS4
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1911 > 1917 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



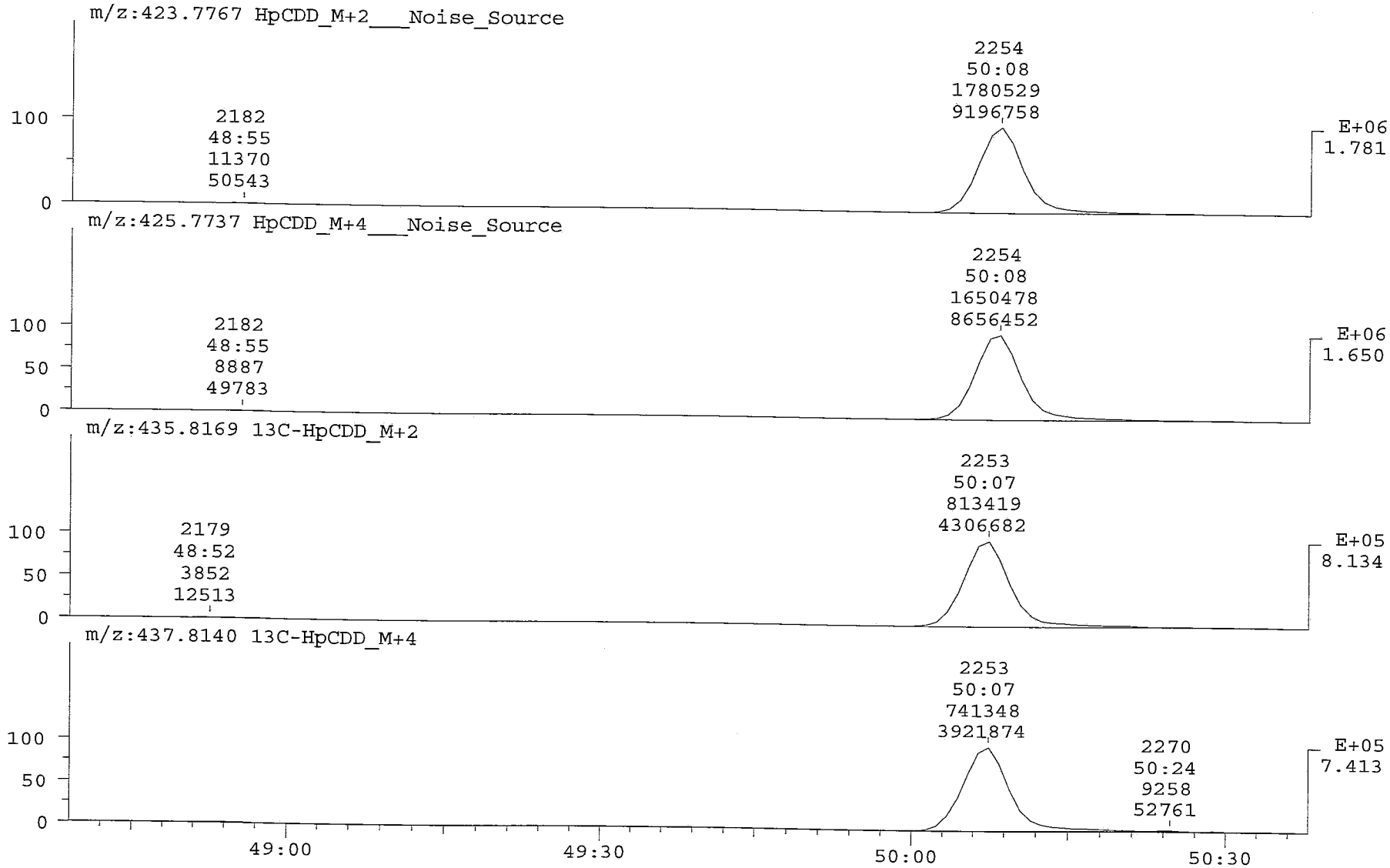
CHRO: d3140516i4 16-May-14 Elapse: 44:20 1915
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 17:29:38 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS4
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1814 > 2049 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



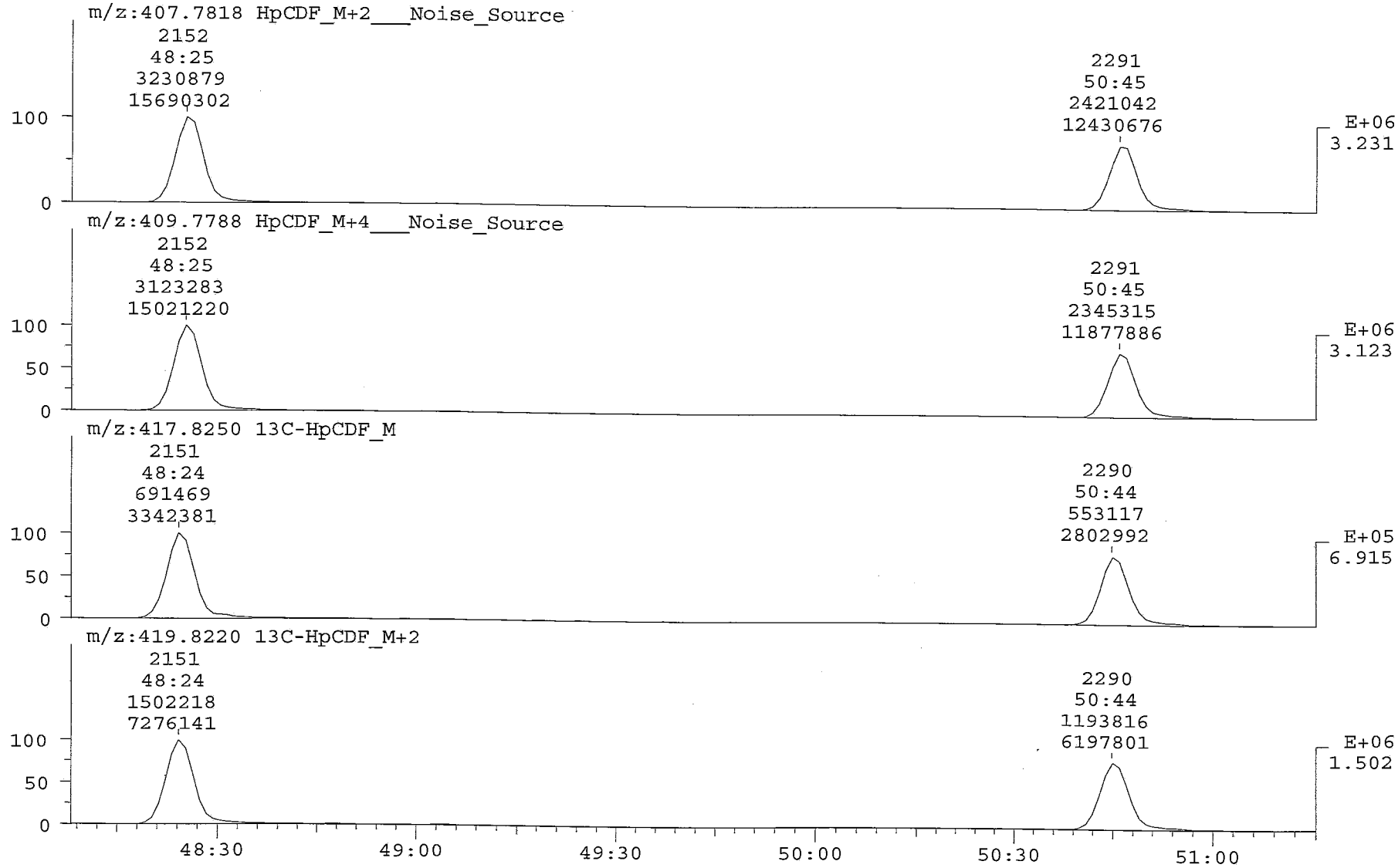
```
CHRO:  d3140516i4                                  16-May-14   Elapse:   44:20       1915
Samp:  WO=4104:74cs4 Meth=F8o Dil=1                            Start :   17:29:38    2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                     Study :   ICAL CS4
Oper:  MSD                                                     Inlet :   LC
Peak:  100.00  ppm      Label wndw:   1814 > 2049              Masses:   303 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3                   Label :   0, 0.0
Disp:  Height  Area
```



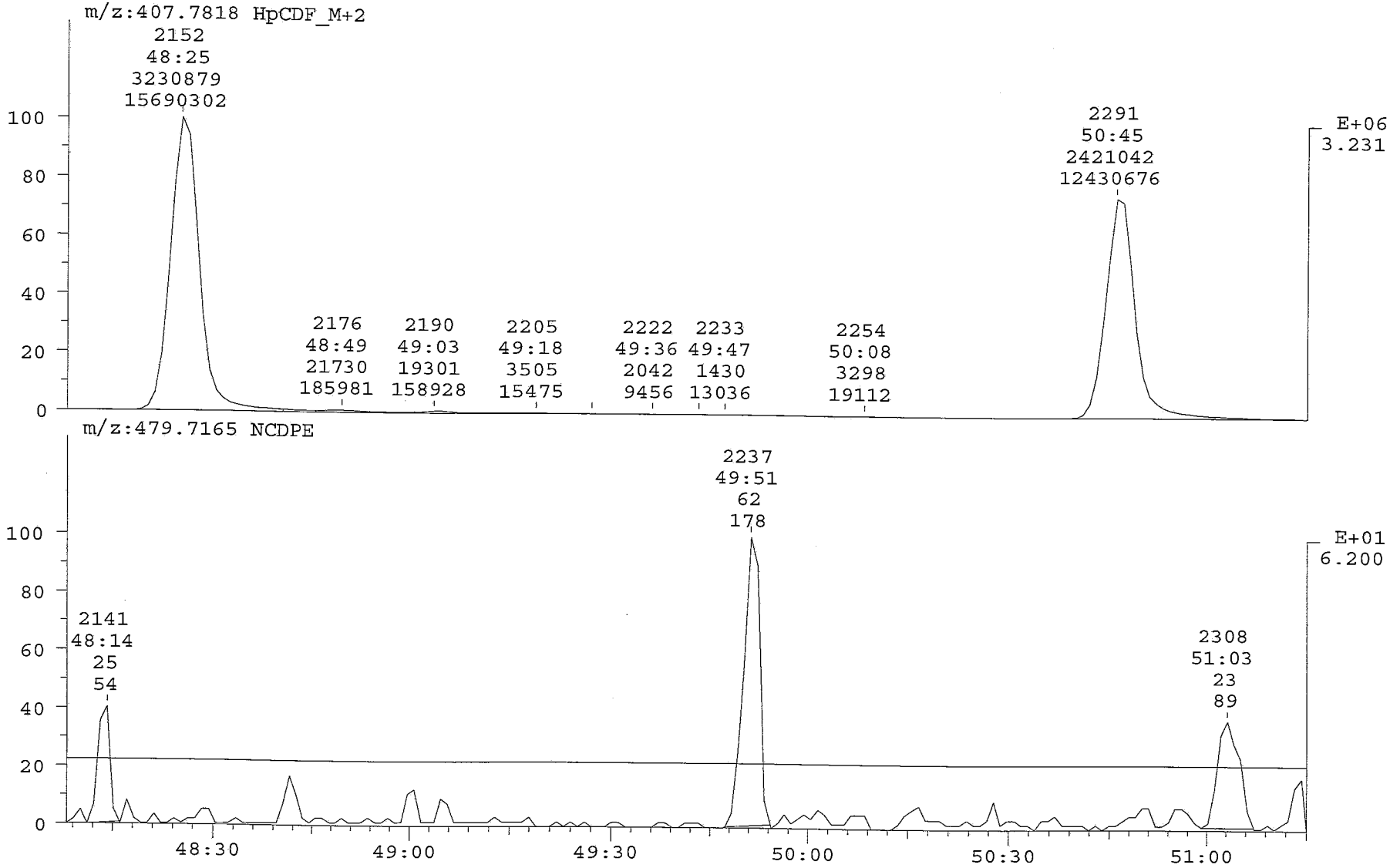
CHRO: d3140516i4 16-May-14 Elapse: 44:20 1915
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 17:29:38 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS4
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2166 > 2283 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



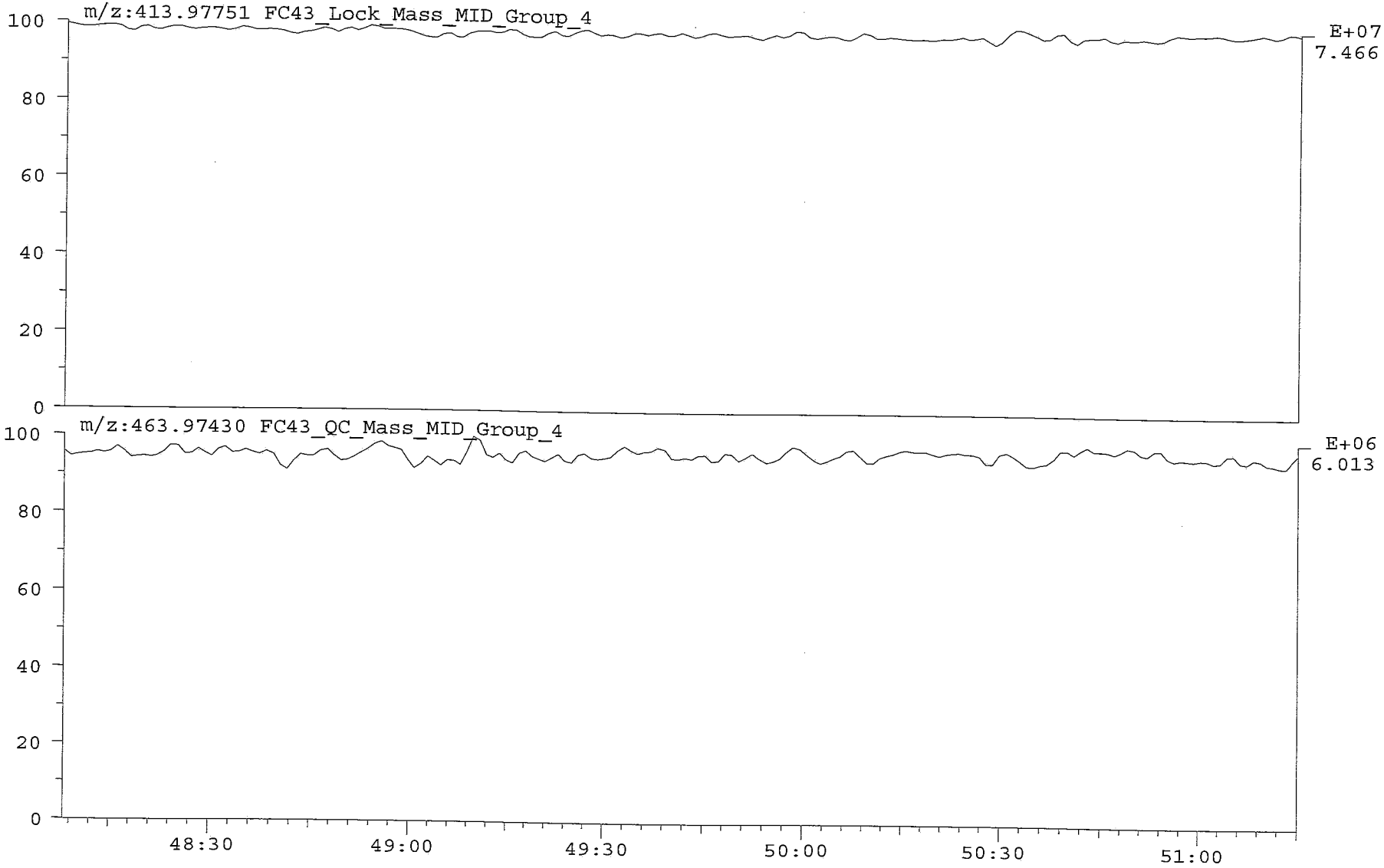
CHRO: d3140516i4 16-May-14 Elapse: 49:41 2227
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 17:29:38 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS4
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2135 > 2320 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d3140516i4 16-May-14 Elapse: 49:41 2227
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 17:29:38 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS4
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2135 > 2320 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d3140516i4 16-May-14 Elapse: 49:41 2227
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 17:29:38 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS4
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2135 > 2320 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

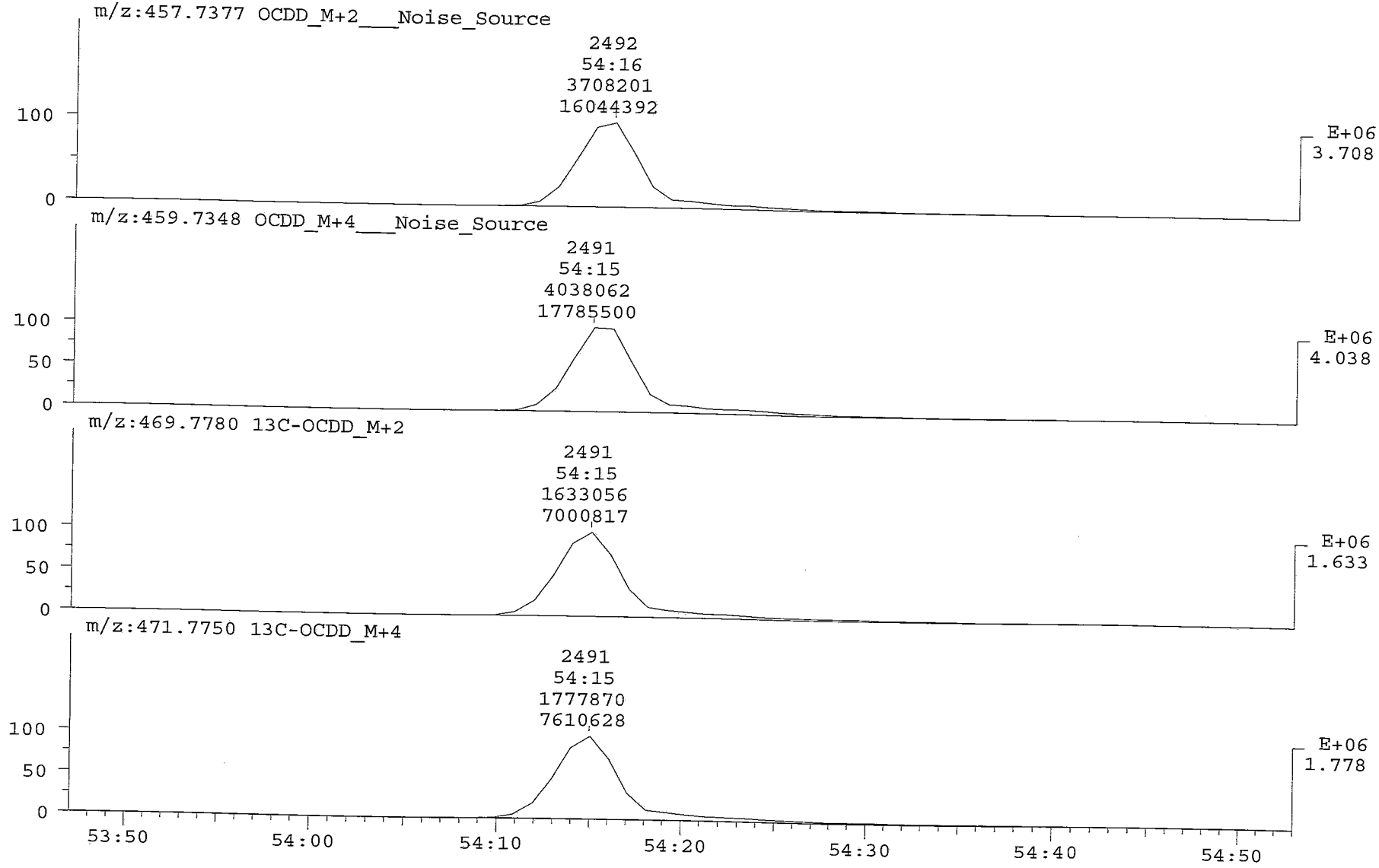


CHRO: d3140516i4
Samp: WO=4104:74cs4 Meth=F8o Dil=1
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

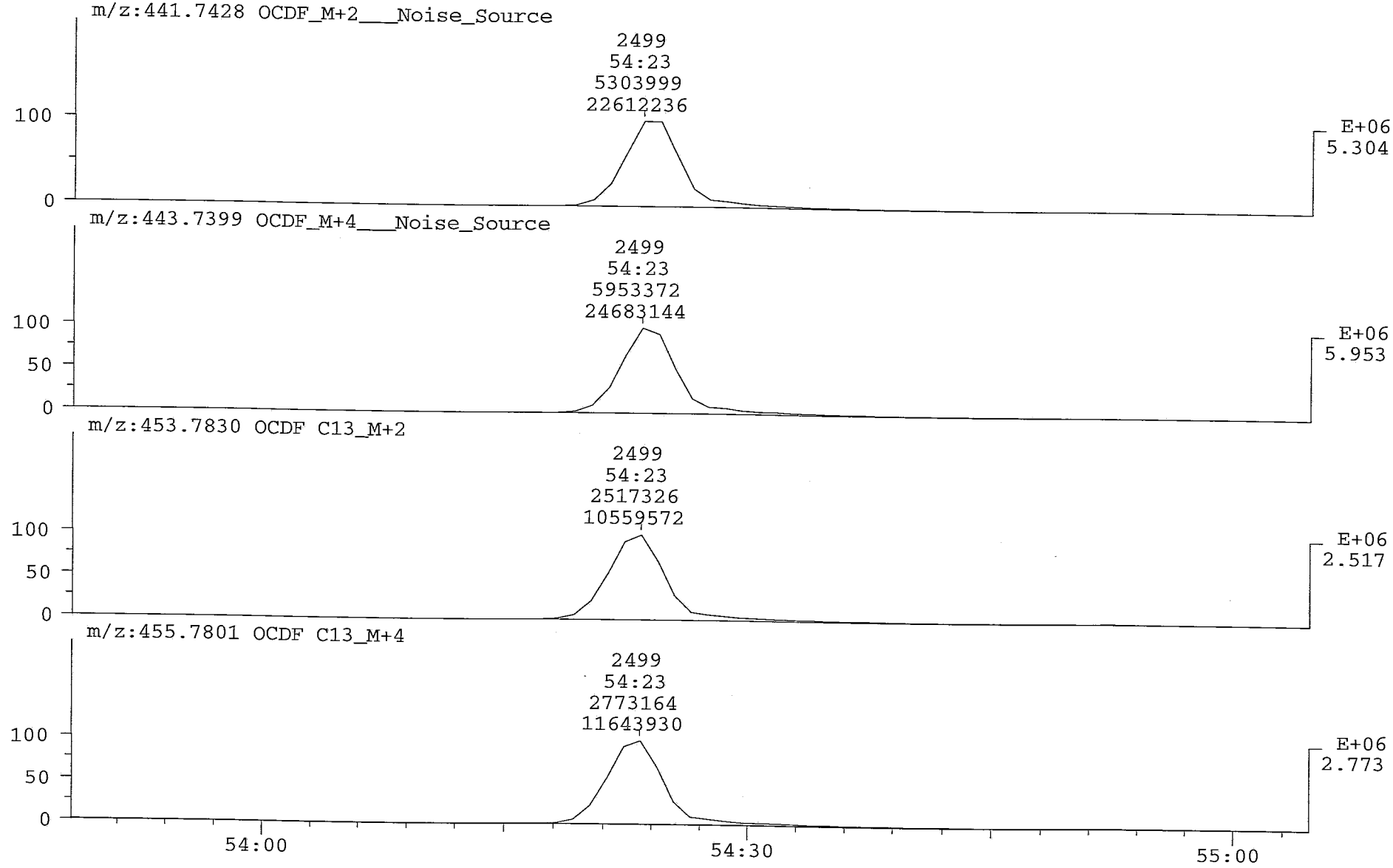
Label wndw: 2464 > 2528
Baseline : 100, 3

16-May-14

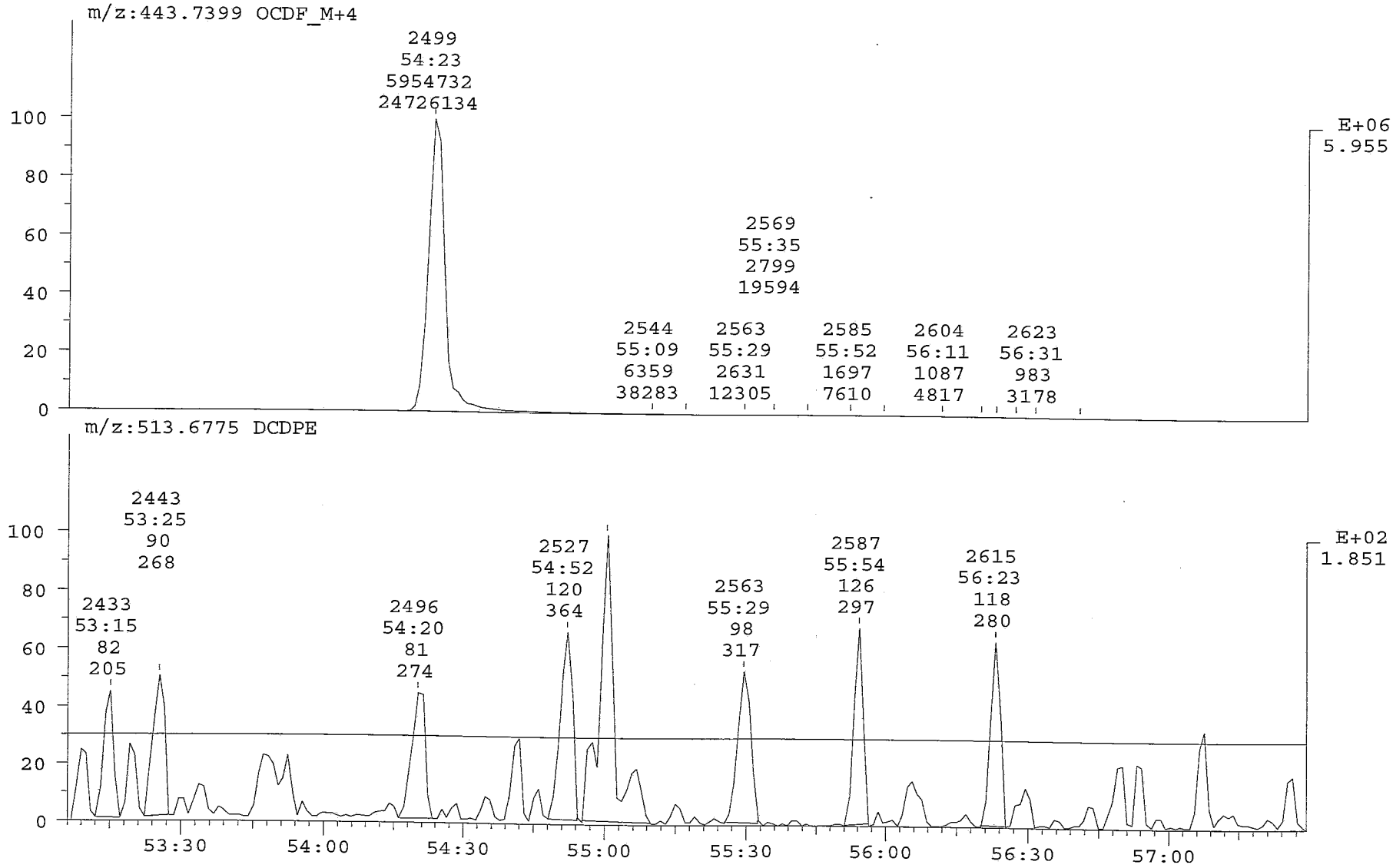
Elapse: 54:17 2493
Start : 17:29:38 2680
Study : ICAL CS4
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



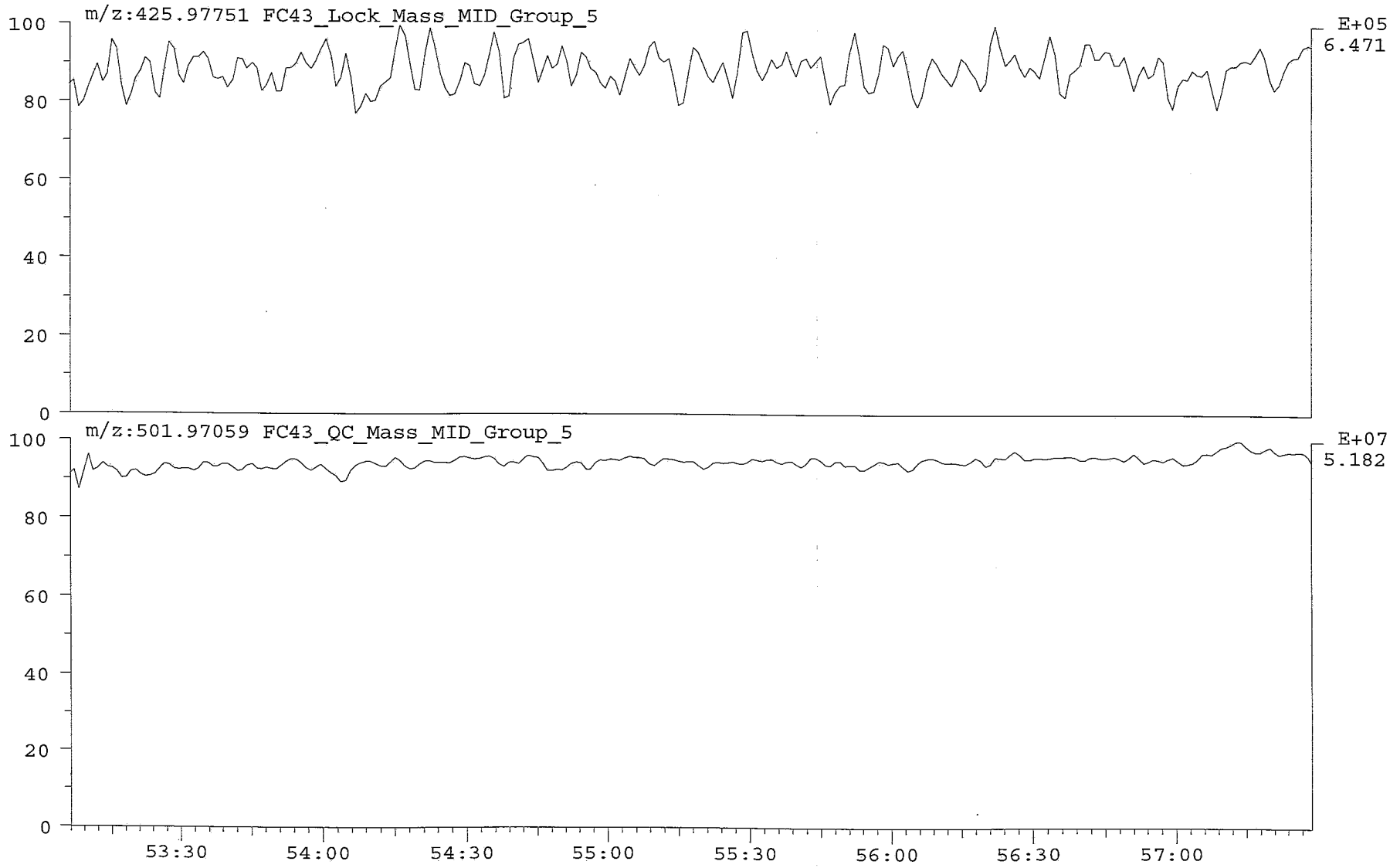
CHRO: d3140516i4 16-May-14 Elapse: 44:19 1914
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 17:29:38 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS4
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2465 > 2539 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d3140516i4 16-May-14 Elapse: 54:26 2502
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 17:29:38 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS4
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2424 > 2679 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d3140516i4                                16-May-14   Elapse:  54:26      2502
Samp:  WO=4104:74cs4 Meth=F8o Dil=1                          Start :  17:29:38   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                   Study :  ICAL CS4
Oper:  MSD                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2424 > 2679             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Fri May 16 17:33:50 2014 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - D5FBM84J

Analysis started at: 16-May-14 17:33:49

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence :

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:13 min	35:13 min	0.99 sec
# 2	35:13 min	7:16 min	42:30 min	1.00 sec
# 3	42:30 min	5:00 min	47:30 min	1.00 sec
# 4	47:30 min	5:30 min	53:00 min	1.00 sec
# 5	53:00 min	4:30 min	57:30 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	122
305.8987		1	1	122
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	122
321.8936		1	1	122
327.8847		1	1	122
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	122

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7

```
  375.9802     20  1        7
  409.7974      1  1      146
 Window # 3
      mass F  int  gr  time (ms)
  373.8208      1  1      146
  375.8178      1  1      146
  375.9802 l   20  1        7
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 35.233333 minutes
MID Window end time was 35.220000 minutes
MID Window terminated after 42.500000 minutes
MID Window end time was 42.500000 minutes
MID Window terminated after 47.500000 minutes
MID Window end time was 47.500000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.500000 minutes
MID Window end time was 57.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune
```

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0177	BMASS	311.9834
BQUAD	1.5000	CAPIL	0.0000	CAPTSET	0.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	16.0000	ECORR	1.0003	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2096.1908
ELEN	-45.0000	EMULT	1699.0000	ENS	148.0000
ENSBR	1.5000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	178.0000	EXSBR	2.1000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	11.7000
FQUADGAIN	0.0000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0143	FVINLET	0.0769	FVSRC	0.0519
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	740.0000
LENS_SYM	9.5000	LM	375.8364	LMII	500.0000
LMASS	311.9834	LKM	425.9770	MASS	311.9834
MDAC	3513421.3932	MRANGE	1307.4725	NSAM	200.0000
NSCAN	2701.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	0.0000	PSAM	10.0000
PUSHER	-8.3000	RECURR	0.8991	RELEN	0.0000
RES	9834.2451	RPUSHER	-8.1978	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	730.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	0.0000	SLOW	60.0000	SS	2.0000
SW	0.1590	TANAL	0.0000	TCURR	0.0000
TD	30.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	311.9834	XLENS_POT	906.0000
XLENS_SYM	9.5000	YLENS_POT	750.0000	YLENS_SYM	0.0000

Source Gauge: 1.6e-005 mbar
Analyzer Penning: 7.5e-008 mbar
Pirani Analyse: 1.4e-002 mbar
Pirani Source: 5.2e-002 mbar
Pirani Inlet System: 7.8e-002 mbar

Scantype is electric

Sourcemode is EI POS

MID Time Window 1: Resolution is 10095.
MID Time Window 2: Resolution is 9760.
MID Time Window 3: Resolution is 10294.
MID Time Window 4: Resolution is 9604.
MID Time Window 5: Resolution is 9834.

Amplifier Offset: 94.

*** File closed Fri May 16 18:31:21 2014
***

User: finnigan
Host: knx-alpha5.stl-inc.com
Class: knx-alpha5.stl-inc.com
Job: d3140516i4.log

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS5	Prep Batch		Lot No	
Data File	/20140516i/d3140516i5.d	Prep Date		SDG No	
Analysis ID	161067	Prep Exp Date		Date Received	
Analysis Date	5/16/2014	Matrix	UNKNOWN	Date Sampled	
Analysis Time	18:31	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D2A	Dil Factor	1.00	Code	F8o
Analyst	MSD				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)	DL (ng/mL)
2,3,7,8-TCDD	31:50	23845429	2475013	1.000	200.0	230.186653	115.09	230.186653	0.0341
Total TCDD				1.000		230.186653		230.186653	0.0341
2,3,7,8-TCDF	29:46	35522884	3955625	1.000	200.0	211.466520	105.73	211.466520	0.0473
Total TCDF				1.000		211.466520		211.466520	0.0473
1,2,3,7,8-PeCDD	41:00	97740364	24484896	1.000	1000	1045.17632	104.52	1045.17632	0.0370
Total PeCDD				1.000		1045.17632		1045.17632	0.0370
1,2,3,7,8-PeCDF	39:17	171392392	36386150	1.000	1000	1203.03349	120.30	1203.03349	0.0492
2,3,4,7,8-PeCDF	40:29	161393296	39255511	1.000	1000	1131.25013	113.13	1131.25013	0.0434
Total PeCDF				1.000		2334.28363		2334.28363	0.0461
1,2,3,4,7,8-HxCDD	45:14	125671992	33712785	1.000	1000	1135.94531	113.59	1135.94531	0.117
1,2,3,6,7,8-HxCDD	45:21	128804020	32926756	1.000	1000	1134.43868	113.44	1134.43868	0.120
1,2,3,7,8,9-HxCDD	45:45	137439336	34049752	1.000	1000	1226.19566	122.62	1226.19566	0.118
Total HxCDD				1.000		3496.57964		3496.57964	0.118
1,2,3,4,7,8-HxCDF	44:12	205219312	56129850	1.000	1000	1400.99497	140.10	1400.99497	0.0688
1,2,3,6,7,8-HxCDF	44:20	230302160	59456756	1.000	1000	1262.55241	126.26	1262.55241	0.0588
2,3,4,6,7,8-HxCDF	45:03	207554552	54569528	1.000	1000	1288.16306	128.82	1288.16306	0.0655
1,2,3,7,8,9-HxCDF	46:02	192014872	45701230	1.000	1000	1267.58956	126.76	1267.58956	0.0780
Total HxCDF				1.000		5219.30000		5219.30000	0.0671
1,2,3,4,6,7,8-HpCDD	50:11	113834340	22791342	1.000	1000	1104.79916	110.48	1104.79916	0.0520
Total HpCDD				1.000		1104.79916		1104.79916	0.0520
1,2,3,4,6,7,8-HpCDF	48:28	196882800	43347358	1.000	1000	1472.44092	147.24	1472.44092	0.0748
1,2,3,4,7,8,9-HpCDF	50:49	159404416	34229385	1.000	1000	1388.37682	138.84	1388.37682	0.0932
Total HpCDF				1.000		2860.81775		2860.81775	0.0830
OCDD	54:18	230381248	59389318	1.000	2000	2460.70730	123.04	2460.70730	0.0659
OCDF	54:26	327498192	85902548	1.000	2000	2292.10015	114.61	2292.10015	0.0479
13C-2,3,7,8-TCDD	31:48	10359171	1063612	1.000	100.0	109.011225	109.01	109.011225	0.0847
13C-2,3,7,8-TCDF	29:43	16798349	1875974	1.000	100.0	176.771732	176.77	176.771732	0.0322
13C-1,2,3,7,8-PeCDD	40:59	9351567	2285420	1.000	100.0	98.408046	98.41	98.408046	0.0237
13C-1,2,3,7,8-PeCDF	39:16	14246685	2963605	1.000	100.0	149.920161	149.92	149.920161	0.0745
13C-2,3,4,7,8-PeCDF	40:28	14266809	3357904	1.000	100.0	150.131929	150.13	150.131929	0.0745
13C-1,2,3,4,7,8-HxCDD	45:13	11063208	2903111	1.000	100.0	88.066291	88.07	88.066291	0.0295
13C-1,2,3,6,7,8-HxCDD	45:20	11353987	2826430	1.000	100.0	90.380974	90.38	90.380974	0.0295
13C-1,2,3,4,7,8-HxCDF	44:11	14648112	3966677	1.000	100.0	116.603149	116.60	116.603149	0.0274
13C-1,2,3,6,7,8-HxCDF	44:19	18240998	4637302	1.000	100.0	145.203546	145.20	145.203546	0.0274
13C-2,3,4,6,7,8-HxCDF	45:02	16112444	4161616	1.000	100.0	128.259649	128.26	128.259649	0.0274
13C-1,2,3,7,8,9-HxCDF	46:01	15148032	3496735	1.000	100.0	120.582655	120.58	120.582655	0.0274
13C-1,2,3,4,6,7,8-HpCDD	50:10	10303623	1986985	1.000	100.0	82.019777	82.02	82.019777	0.00881
13C-1,2,3,4,6,7,8-HpCDF	48:27	13371185	2890666	1.000	100.0	106.438446	106.44	106.438446	0.0216
13C-1,2,3,4,7,8,9-HpCDF	50:48	11481351	2320281	1.000	100.0	91.394828	91.39	91.394828	0.0216
13C-OCDD	54:17	18724799	4572366	1.000	200.0	149.054740	74.53	149.054740	0.0106
13C-OCDF	54:25	28576255	7197506	1.000	200.0	227.475139	113.74	227.475139	0.0132
37Cl4-2,3,7,8-TCDD	31:50	23419980	2454259	1.000	200.0	246.452221	123.23	246.452221	0.0315
13C-1,2,3,4-TCDD	31:16	9502848	1023790	1.000	100.0	100.000000	100.00	100.000000	0.0847
13C-1,2,3,7,8,9-HxCDD	45:44	12562364	2978044	1.000	100.0	100.000000	100.00	100.000000	0.0295

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS5	Prep Batch		Lot No	
Data File	/20140516i/d314051615.	Prep Date		SDG No	
Analysis ID	161067	Prep Exp Date		Date Received	
Analysis Date	05/16/14 18:31	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	263	625	105	250	0.42 *	/	
	2,3,7,8-TCDF	29:46	00:00	0	15675050	19847834	1738923	2216702	0.79	AVV/AVV	M
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	165	165	66	66	1.00 *	/	
	13C-2,3,7,8-TCDF	29:43	00:00	0	7418721	9379628	841148	1034826	0.79	AVV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	243	120	97	48	2.02 *	/	
	2,3,7,8-TCDD	31:50	00:00	0	10616808	13228621	1108139	1366874	0.80	AVV/AVV	M
328					327.8847		327.8847				
	Noise	00:00	00:00	0	323		129				
	37Cl4-2,3,7,8-TCDD	31:50	00:00	0	23419980		2454259			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	523	345	209	138	1.51 *	/	
	13C-1,2,3,4-TCDD	31:16	00:00	0	4262259	5240589	455811	567979	0.81	AVV/AVV	
	13C-2,3,7,8-TCDD	31:48	00:00	0	4602493	5756678	474106	589506	0.80	AVB/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	865	593	346	237	1.46	/	
	1,2,3,7,8-PeCDF	39:17	00:00	0	105562768	65829624	22331370	14054780	1.60	ABV/ABV	M
	2,3,4,7,8-PeCDF	40:29	00:00	0	99408192	61985104	24212884	15042627	1.60	ABV/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	425	338	170	135	1.26 *	/	
	13C-1,2,3,7,8-PeCDF	39:16	00:00	0	8743910	5502775	1824876	1138729	1.59	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:28	00:00	0	8807856	5458953	2063251	1294653	1.61	AVV/AVV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	345	500	138	200	0.69 *	/	
	1,2,3,7,8-PeCDD	41:00	00:00	0	60020652	37719712	14997726	9487170	1.59	ABV/ABV	M
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	163	80	65	32	2.03 *	/	
	13C-1,2,3,7,8-PeCDD	40:59	00:00	0	5778893	3572674	1417788	867632	1.62	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	1343	1385	537	554	0.97 *	/	
	1,2,3,4,7,8-HxCDF	44:12	00:00	0	114146424	91072888	31683904	24445946	1.25	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:20	00:00	0	128163440	102138720	33330908	26125848	1.25	AVV/AVB	M
	2,3,4,6,7,8-HxCDF	45:03	00:00	0	115234360	92320192	30191430	24378098	1.25	AVV/AVV	M
	1,2,3,7,8,9-HxCDF	46:02	00:00	0	106933248	85081624	25725338	19975892	1.26	ABV/ABV	M
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	343	473	137	189	0.72 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:11	00:00	0	5120012	9528100	1381721	2584956	0.54	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:19	00:00	0	6395747	11845251	1630538	3006764	0.54	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:02	00:00	0	5520704	10591740	1449717	2711899	0.52	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:01	00:00	0	5344676	9803356	1233693	2263042	0.55	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS5	Prep Batch		Lot No	
Data File	/20140516i/d314051615.	Prep Date		SDG No	
Analysis ID	161067	Prep Exp Date		Date Received	
Analysis Date	05/16/14 18:31	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

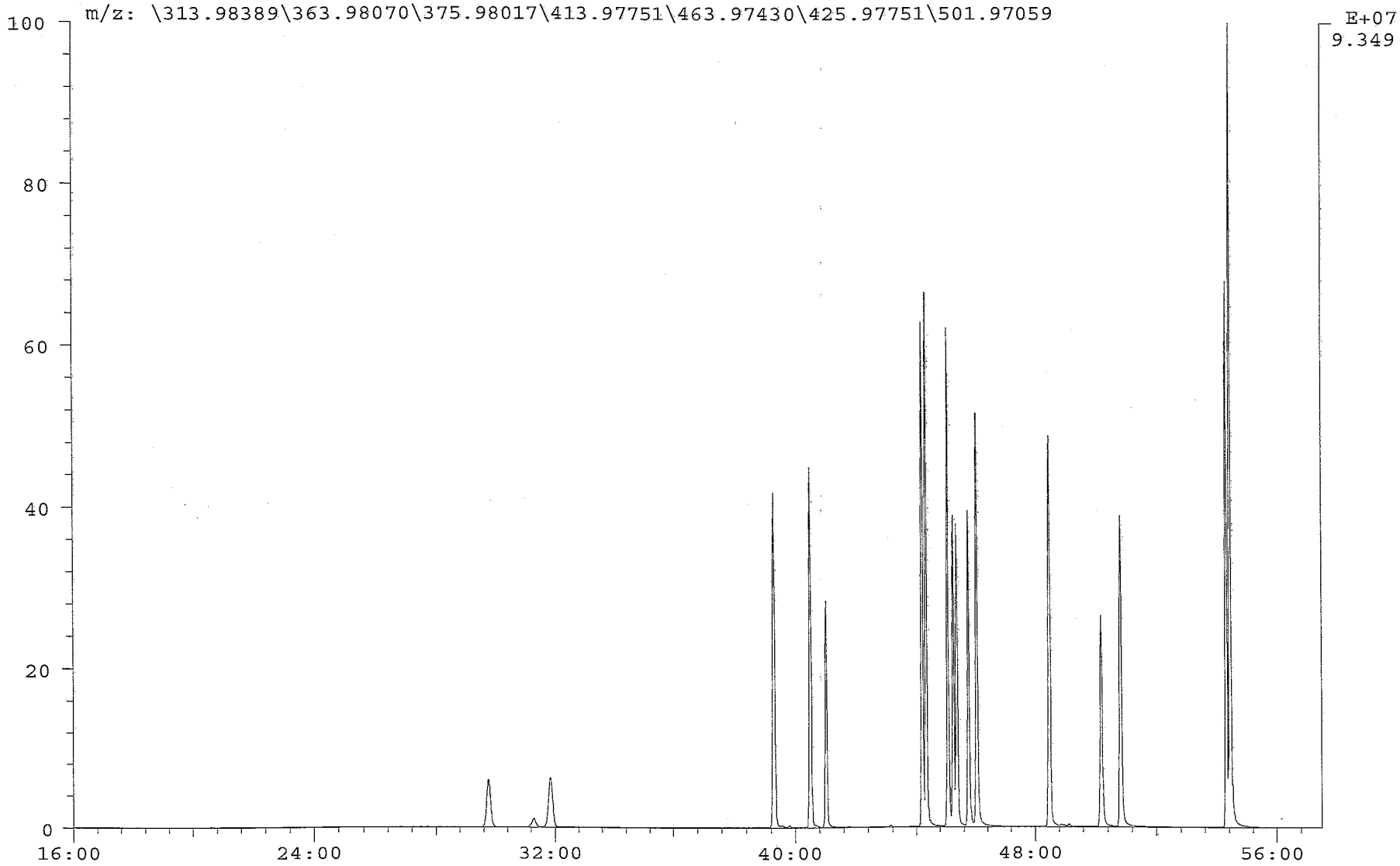
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	1170	2218	468	887	0.53 *	/	
	1,2,3,4,7,8-HxCDD	45:14	00:00	0	70152720	55519272	19062062	14650723	1.26	ABV/ABV	M
	1,2,3,6,7,8-HxCDD	45:21	00:00	0	72003384	56800636	18510344	14416412	1.27	AVV/AVV	M
	1,2,3,7,8,9-HxCDD	45:45	00:00	0	76639280	60800056	18917986	15131766	1.26	AVV/AVV	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	648	230	259	92	2.82 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:13	00:00	0	6161351	4901857	1615891	1287220	1.26	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:20	00:00	0	6382771	4971216	1595203	1231227	1.28	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	45:44	00:00	0	7076362	5486002	1667075	1310969	1.29	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	1163	1000	465	400	1.16	/	
	1,2,3,4,6,7,8-HpCDF	48:28	00:00	0	100120792	96762008	22125580	21221778	1.03	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	50:49	00:00	0	81374240	78030176	17482212	16747173	1.04	ABV/ABV	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	290	353	116	141	0.82 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:27	00:00	0	4205041	9166144	919129	1971537	0.46	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:48	00:00	0	3578888	7902463	722827	1597454	0.45	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	508	525	203	210	0.97	/	
	1,2,3,4,6,7,8-HpCDD	50:11	00:00	0	58398388	55435952	11598165	11193177	1.05	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	100	163	40	65	0.62 *	/	
	13C-1,2,3,4,6,7,8-HpCDD	50:10	00:00	0	5322179	4981444	1021807	965178	1.07	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	1005	718	402	287	1.40 *	/	
	OCDF	54:26	00:00	0	155482832	172015360	41037392	44865156	0.90	ABV/ABV	M
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	168	225	67	90	0.74 *	/	
	13C-OCDF	54:25	00:00	0	13471258	15104997	3402044	3795462	0.89	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	698	810	279	324	0.86	/	
	OCDD	54:18	00:00	0	108408504	121972744	27927218	31462100	0.89	ABV/ABV	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	163	153	65	61	1.07 *	/	
	13C-OCDD	54:17	00:00	0	8979474	9745325	2191129	2381237	0.92	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

CHRO: d3140516i5 16-May-14 Elapse: 54:26 2502
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 18:31:27 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS5
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 237 > 2680 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

Int, Calc RLID 5-19-14
QC Ku 5/19/14



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CHRO:  d3140516i5                          16-May-14  Elapse:  31:37      1177
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                   Start :  18:31:27   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                            Study :  ICAL CS5
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1085 > 1270      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```
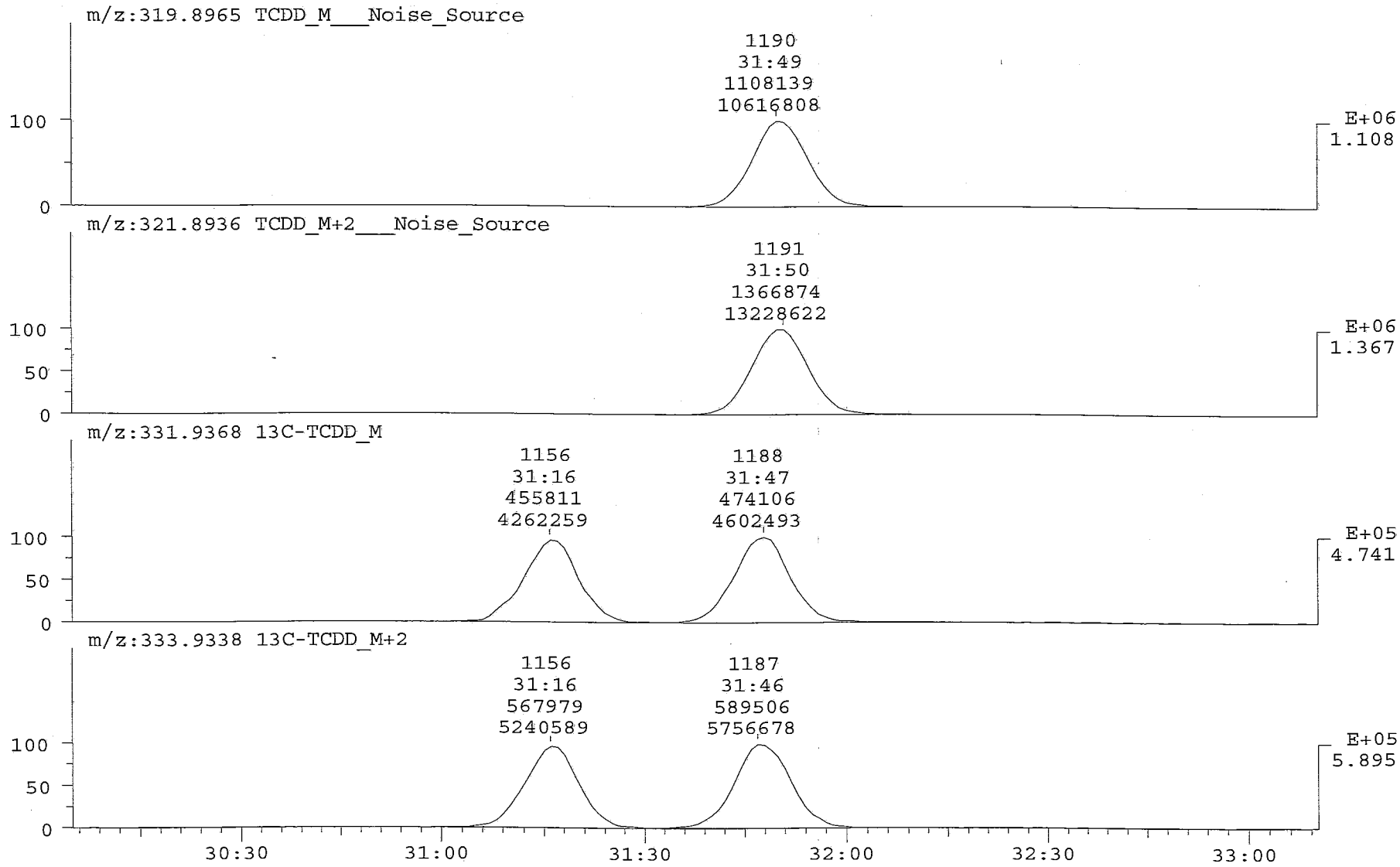
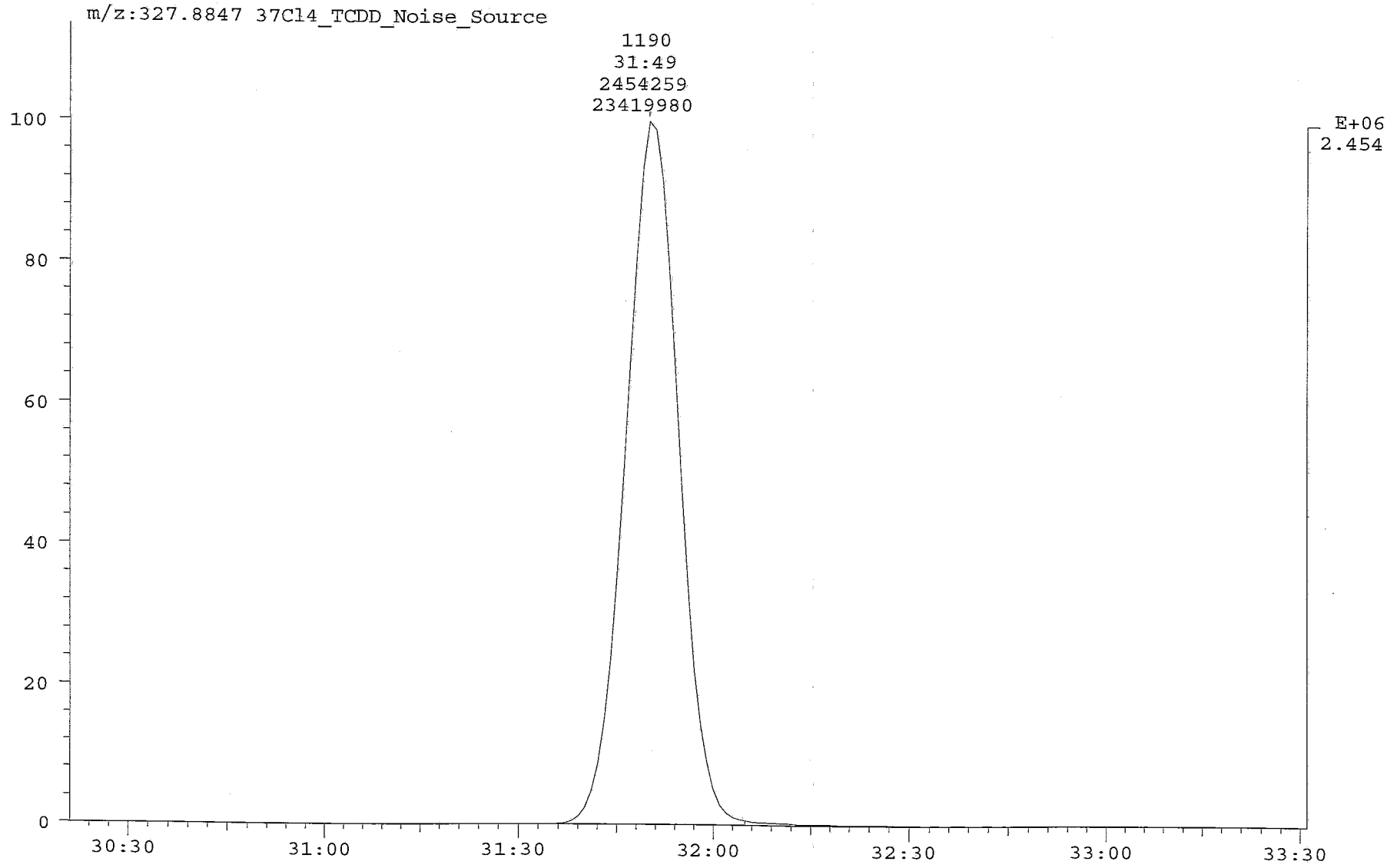
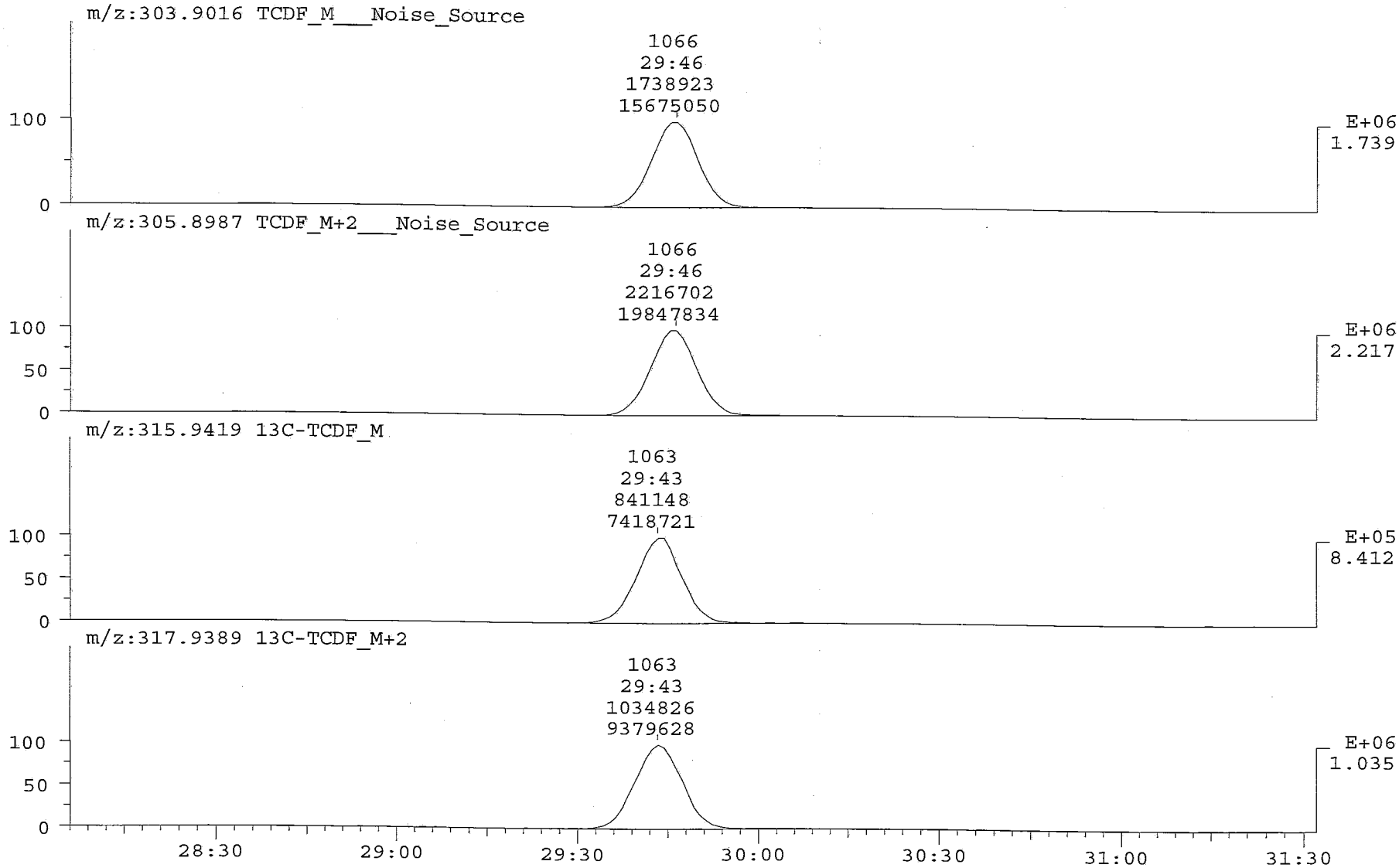



CHRO: d3140516i5 16-May-14 Elapse: 31:52 1193
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 18:31:27 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS5
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1101 > 1291 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d3140516i5 16-May-14 Elapse: 29:46 1066
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 18:31:27 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS5
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 965 > 1172 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



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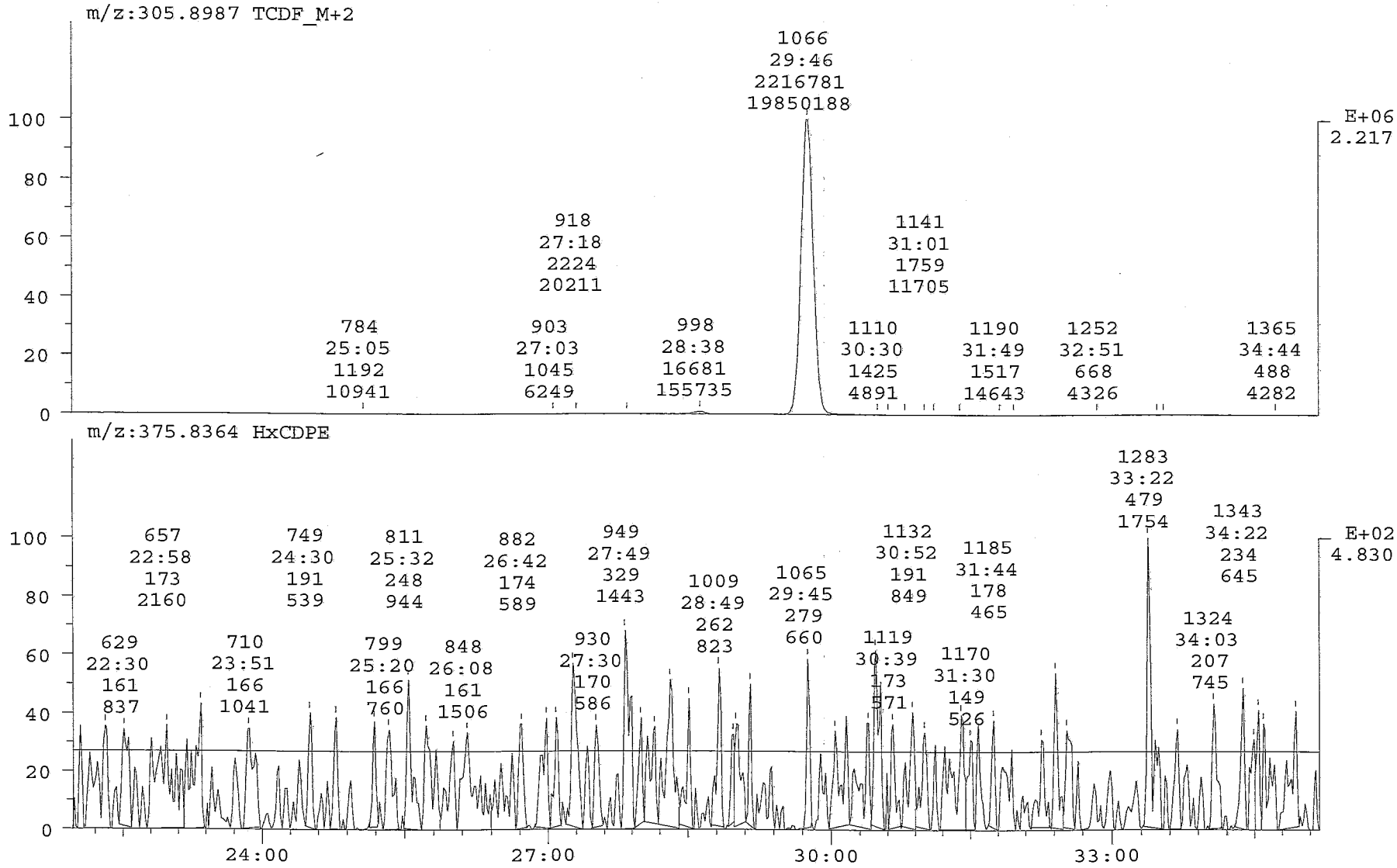
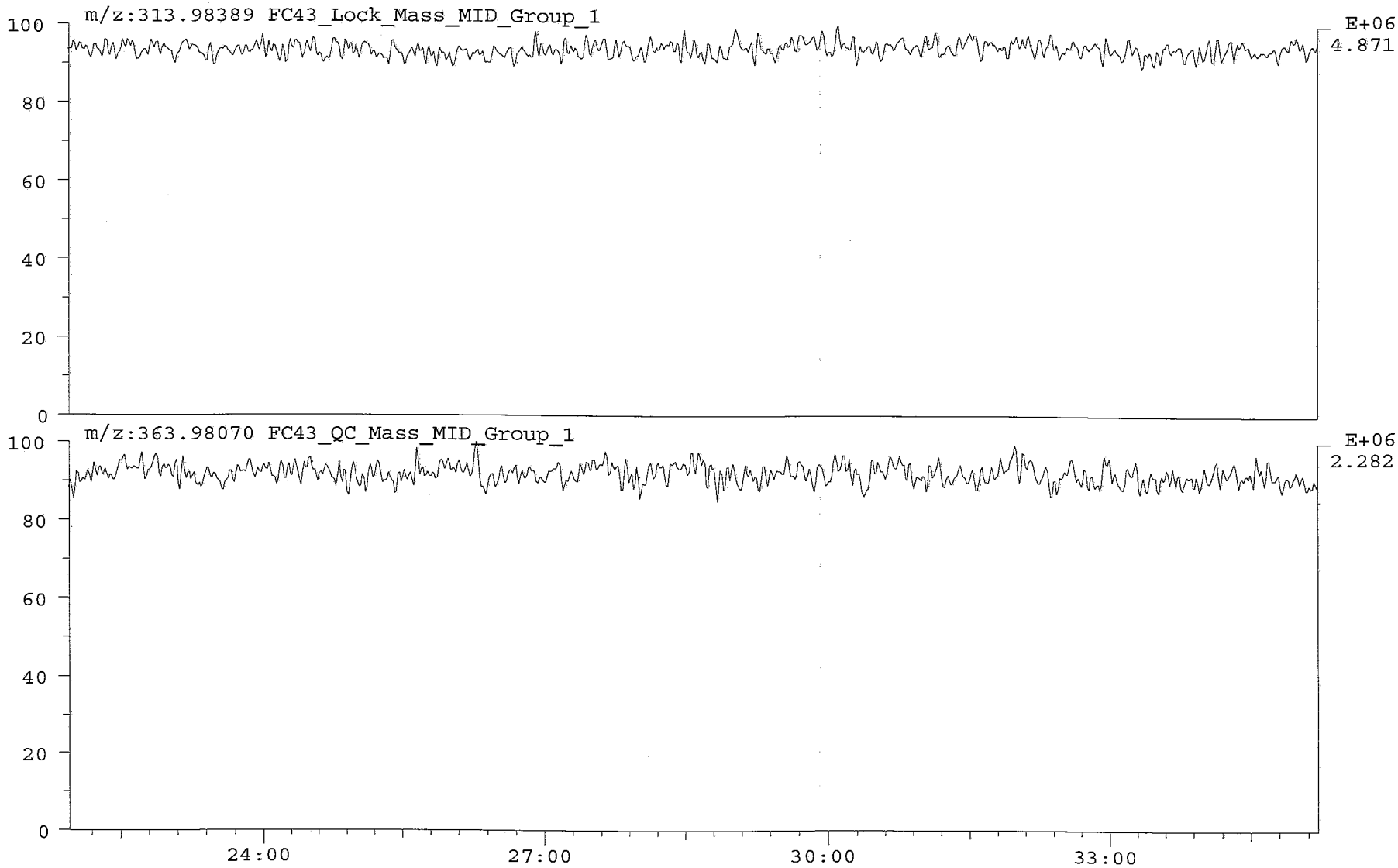
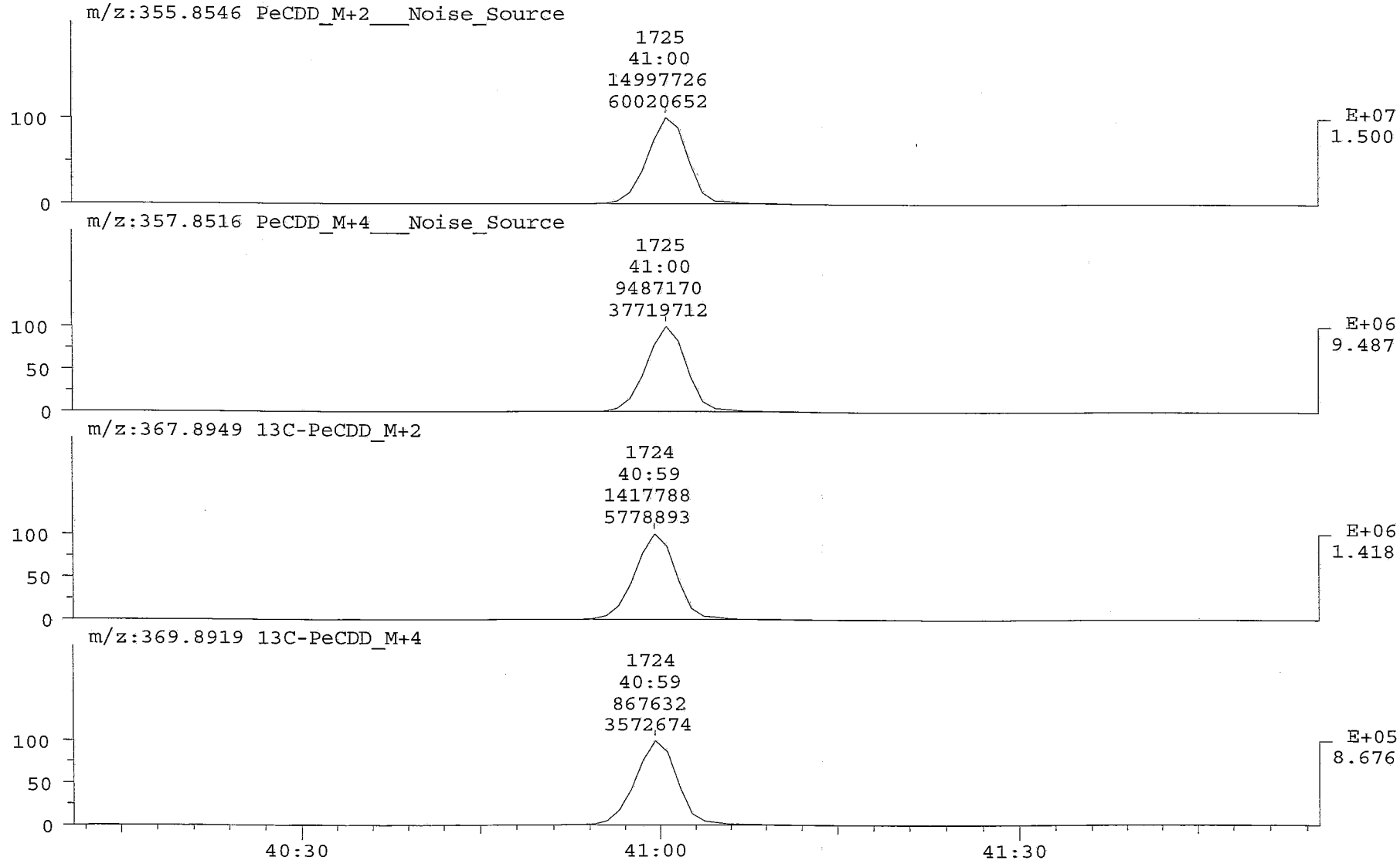
CHRO:  d3140516i5                                  16-May-14  Elapse:  29:46      1066
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                           Start :  18:31:27   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                    Study :  ICAL CS5
Oper:  MSD                                                    Inlet :  LC
Peak:  100.00  ppm     Label wndw:   596 > 1393               Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                   Label :  -2, 5.0
Disp:  Height  Area
```



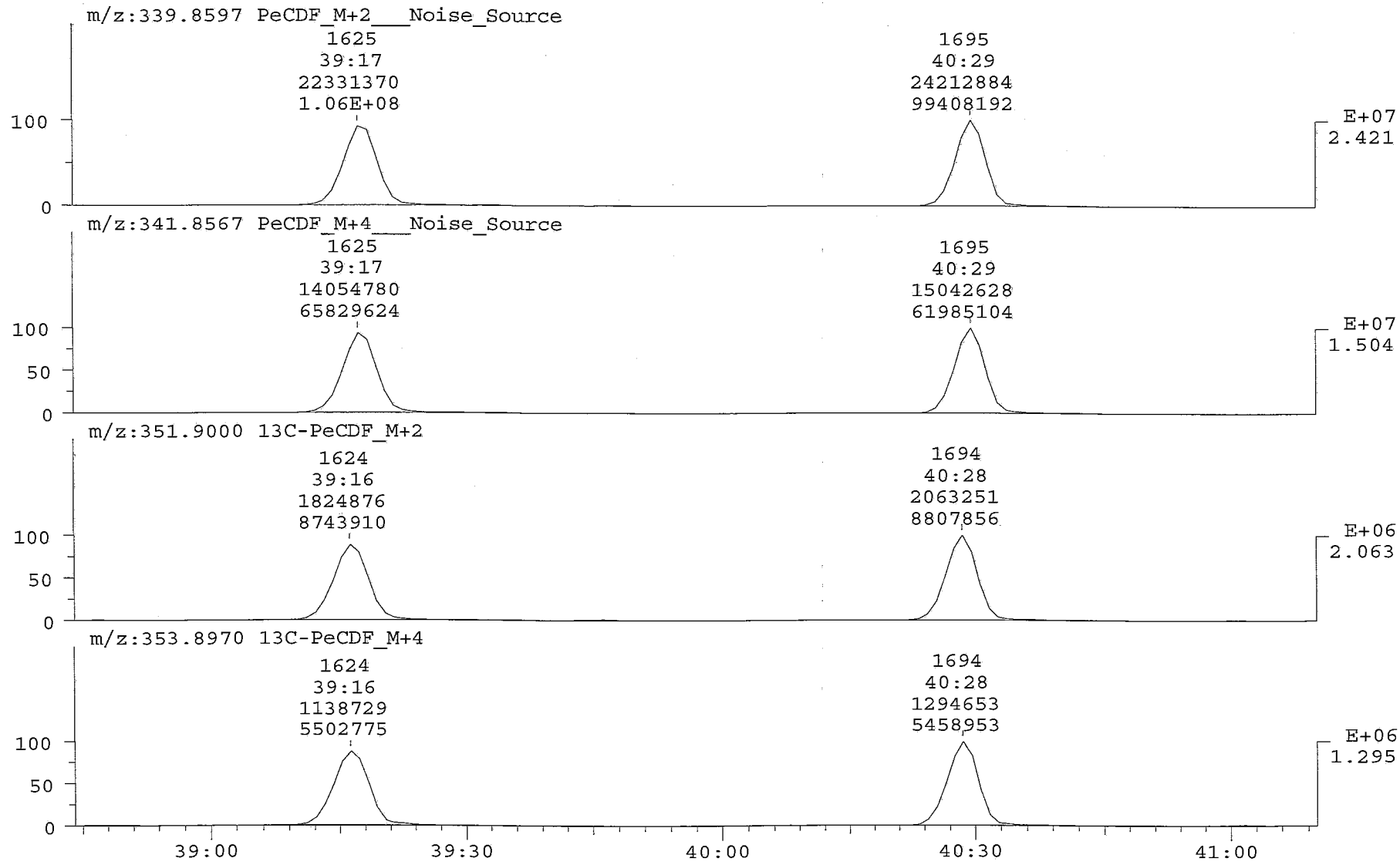
```
CHRO:  d3140516i5                                16-May-14  Elapse:  29:46      1066
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                         Start :  18:31:27   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  ICAL CS5
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   596 > 1393             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  0, 0.0
Disp:  Height  Area
```



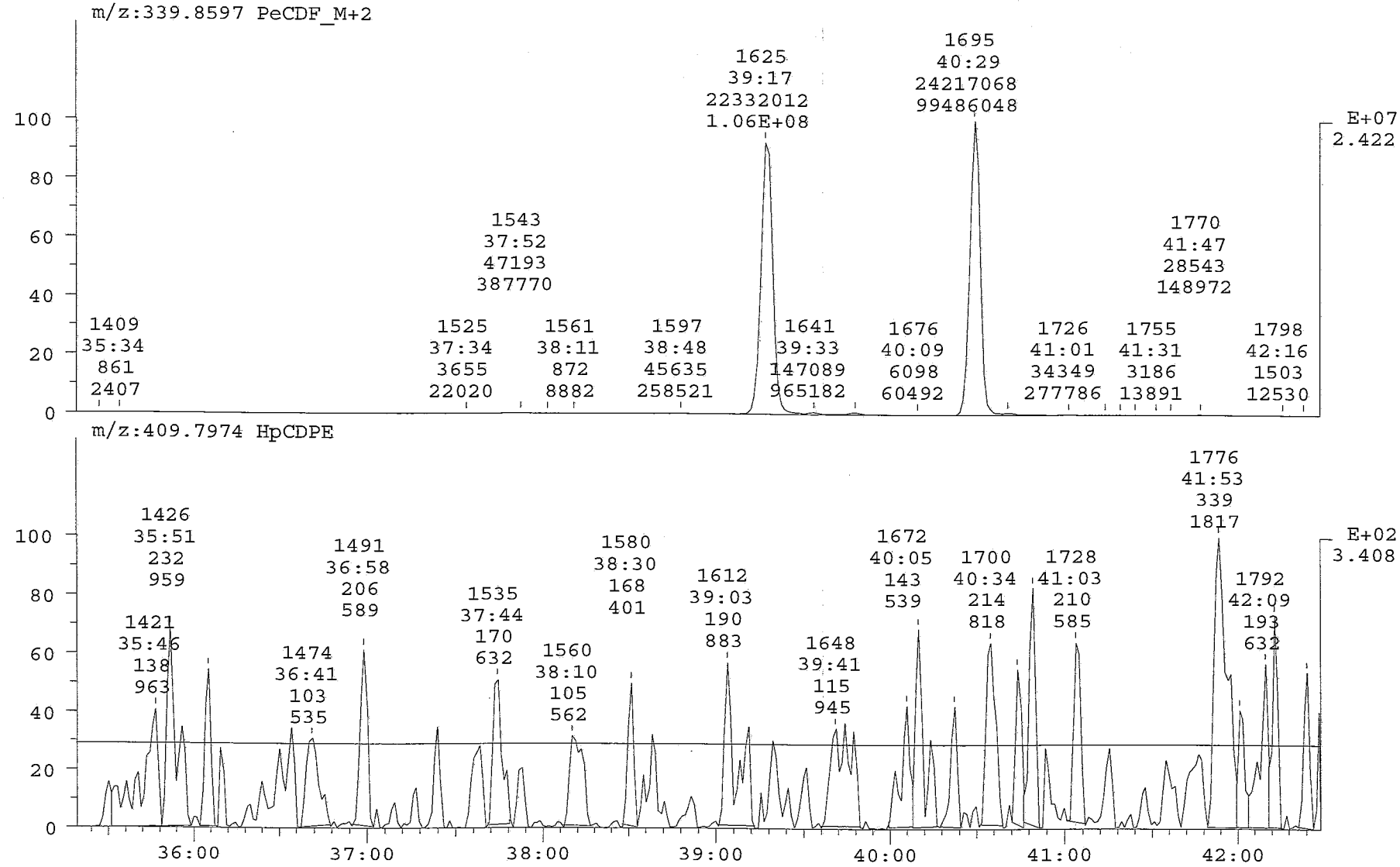
```
CHRO:  d3140516i5                              16-May-14  Elapse:  40:59      1724
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                       Start :  18:31:27   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                Study :  ICAL CS5
Oper:  MSD                                                Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1677 > 1778          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  2, 5.0
Disp:  Height  Area
```



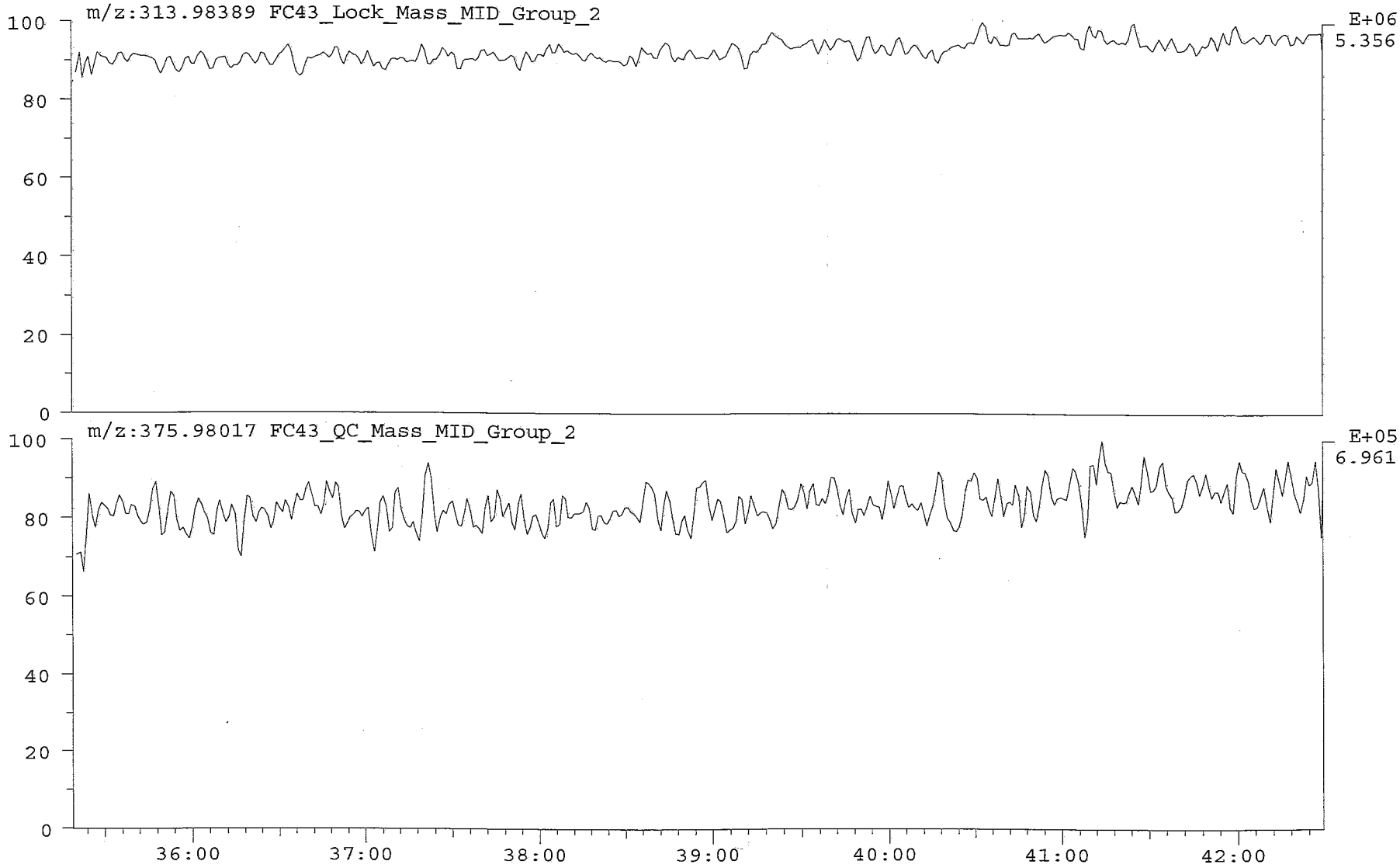
```
CHRO:  d3140516i5                                16-May-14   Elapse:  39:56      1663
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                          Start :  18:31:27   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                   Study :  ICAL CS5
Oper:  MSD                                                   Inlet :  LC
Peak:  100.00  ppm      Label wndw:   1593 > 1734            Masses:  303 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3                 Label :  2, 5.0
Disp:  Height  Area
```



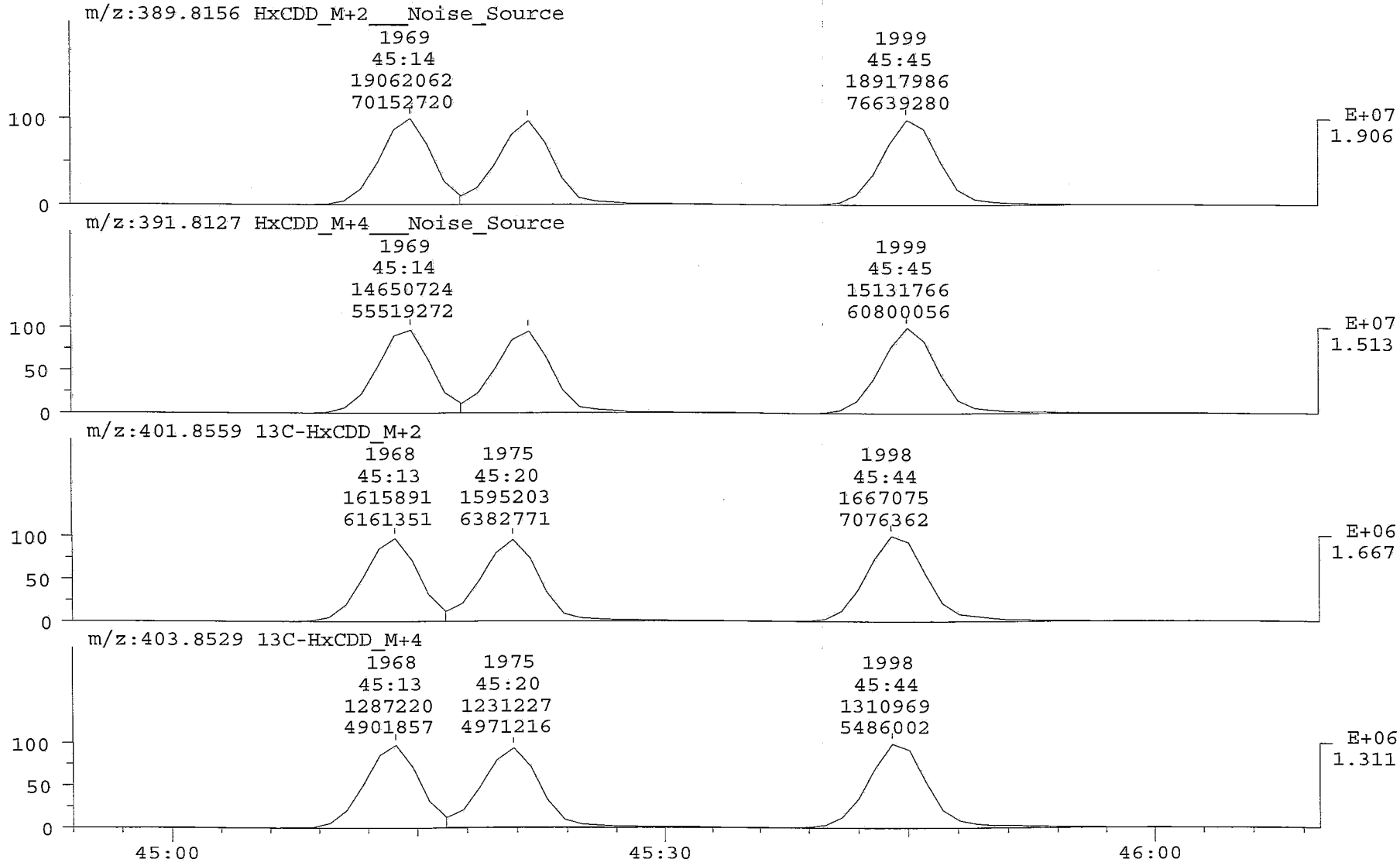
CHRO: d3140516i5 16-May-14 Elapse: 39:56 1663
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 18:31:27 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS5
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1396 > 1811 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



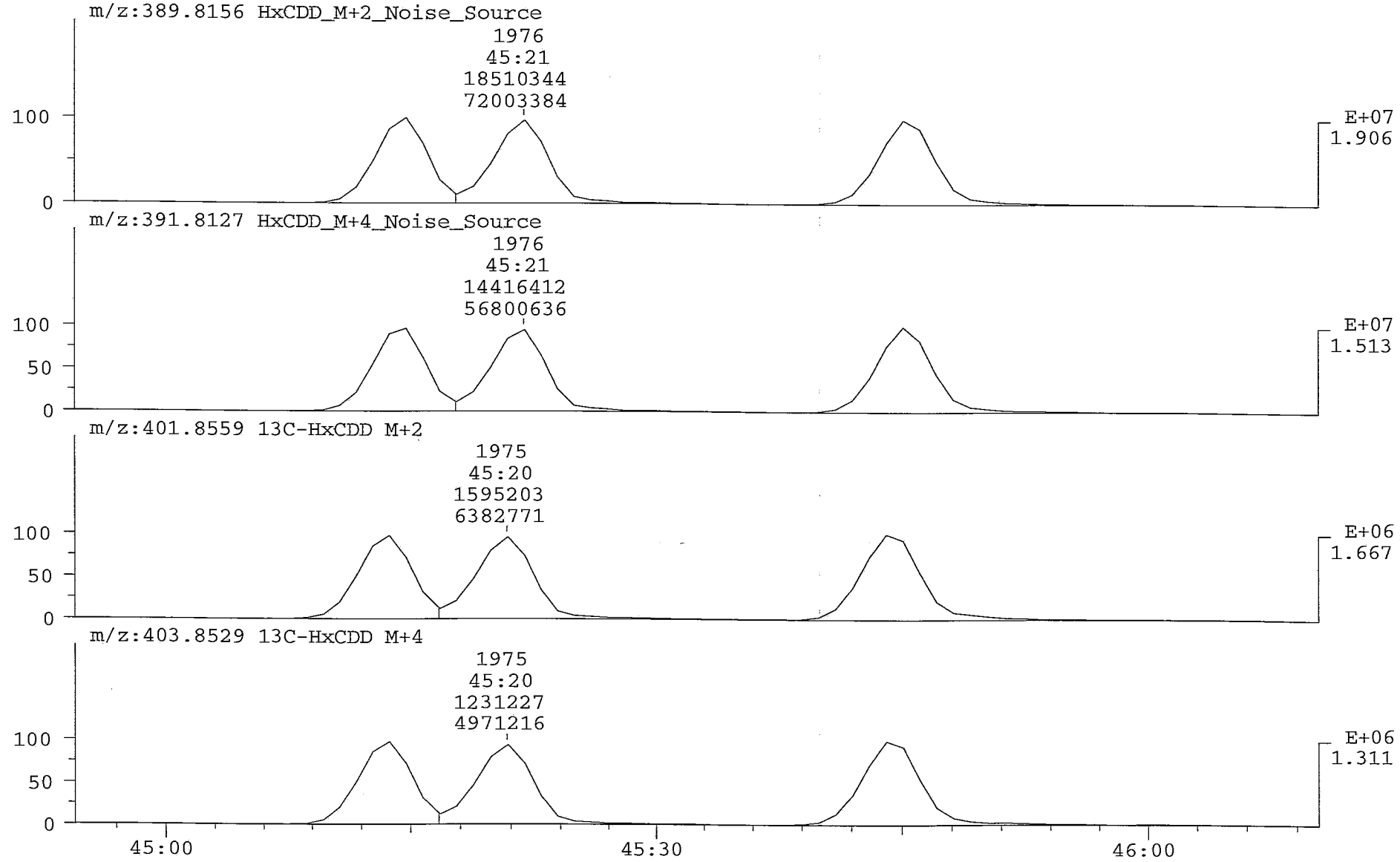
CHRO: d3140516i5 16-May-14 Elapse: 39:56 1663
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 18:31:27 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS5
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1396 > 1811 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



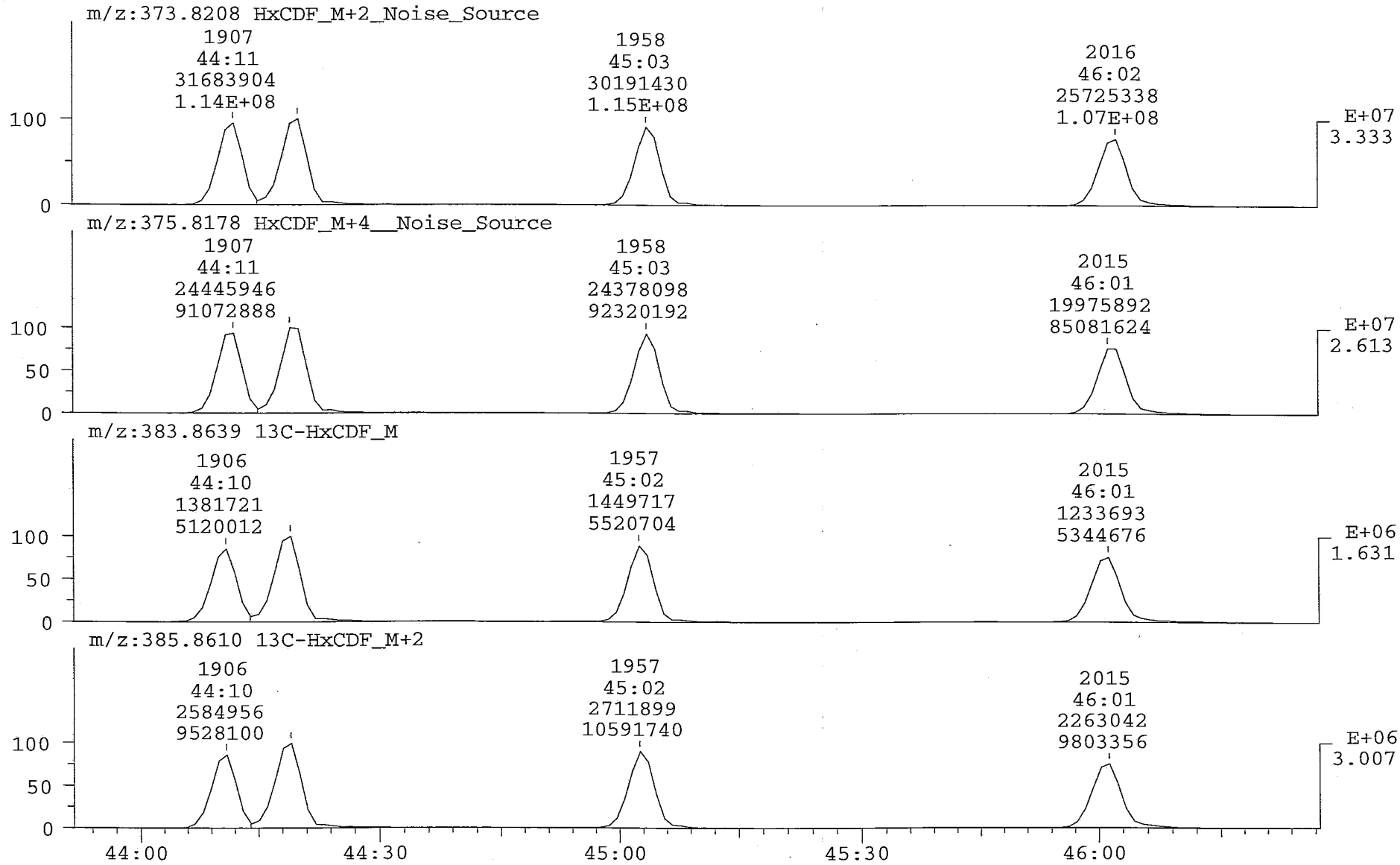
```
CHRO:  d3140516i5                                16-May-14  Elapse:  45:31      1986
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                         Start :  18:31:27   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  ICAL CS5
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1949 > 2024            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  2, 5.0
Disp:  Height  Area
```



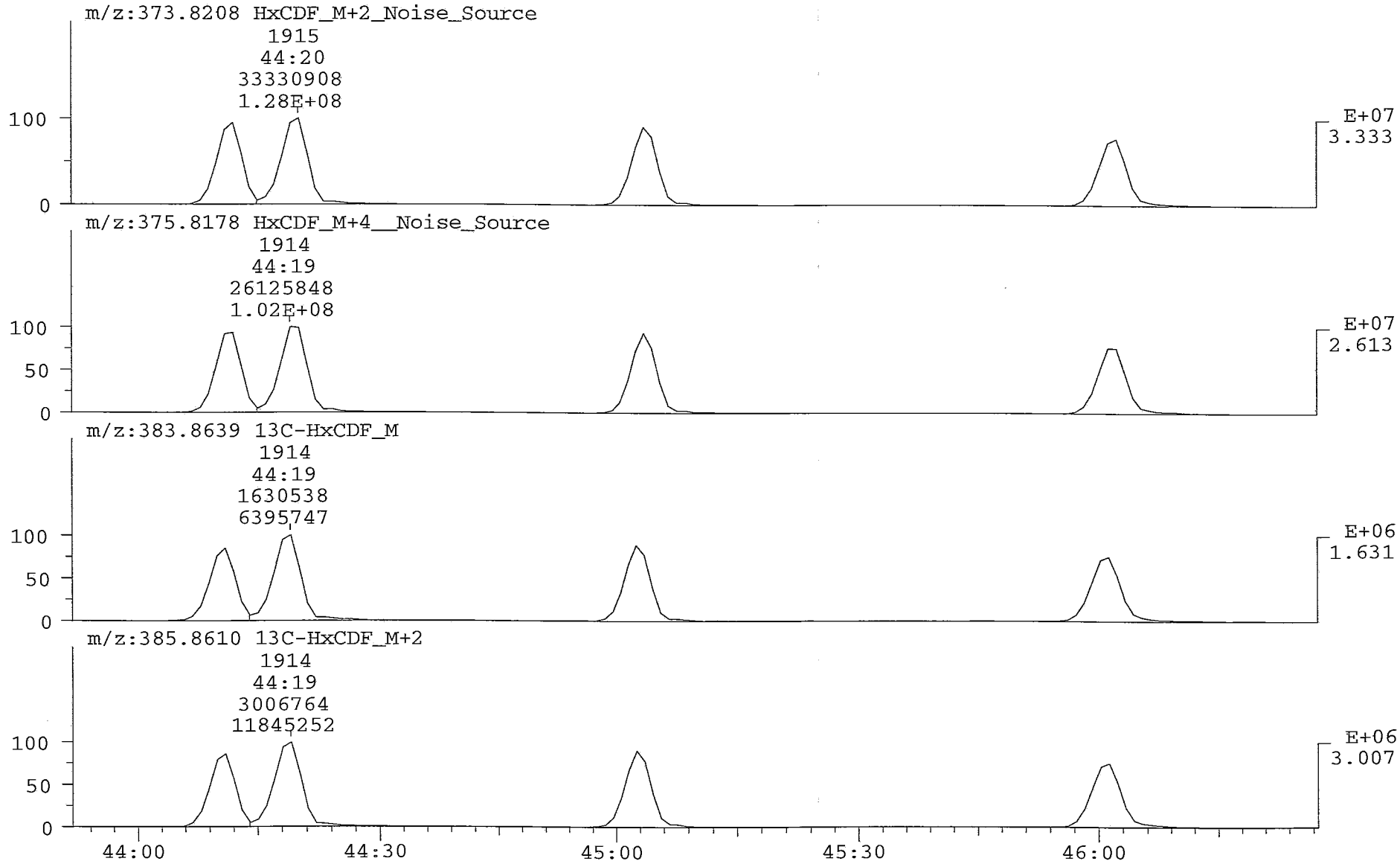
```
CHRO:  d3140516i5                                16-May-14  Elapse:  45:21      1976
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                         Start :  18:31:27   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  ICAL CS5
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1973 > 1979            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



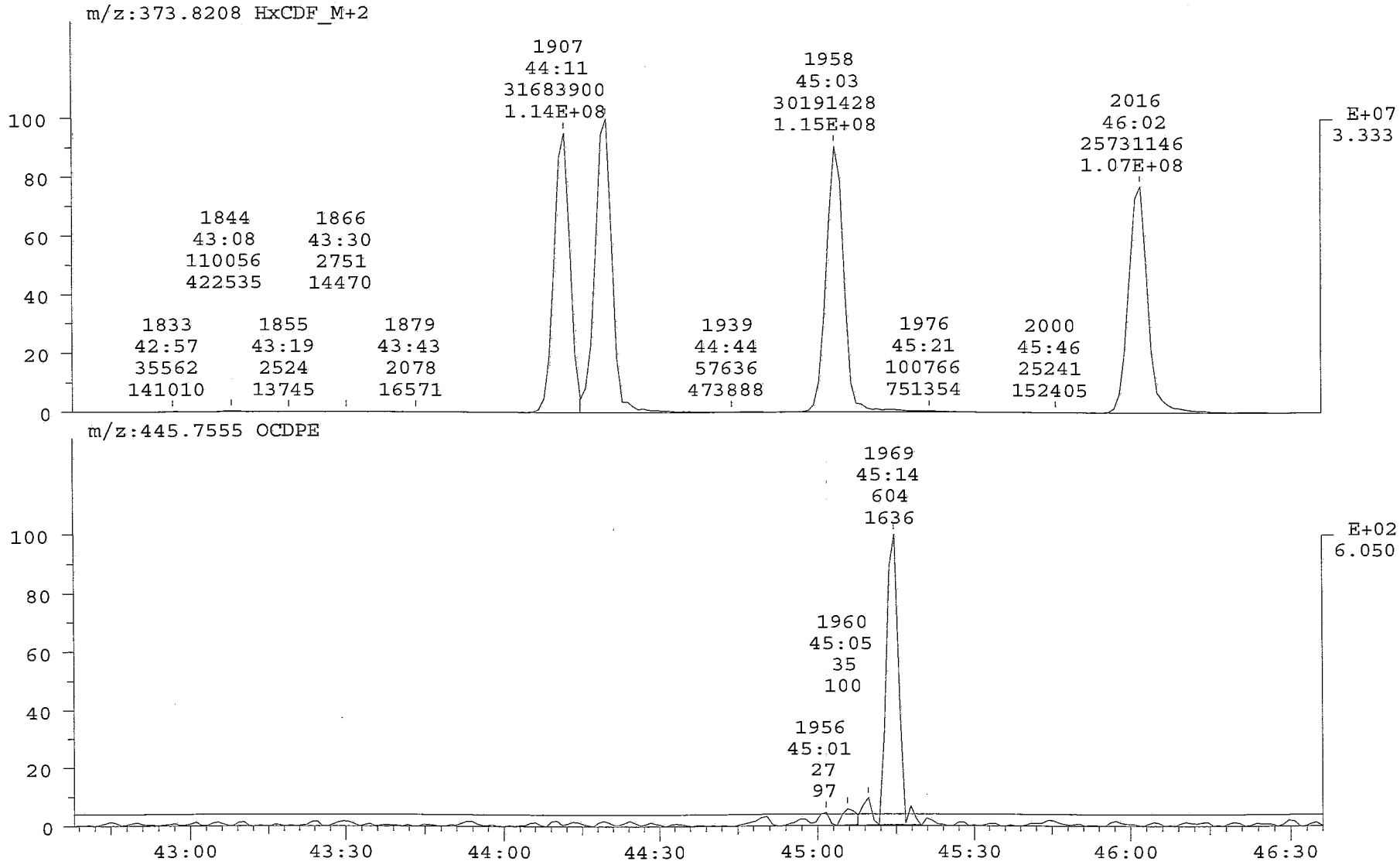
CHRO: d3140516i5 16-May-14 Elapse: 45:21 1976
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 18:31:27 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS5
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1887 > 2041 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



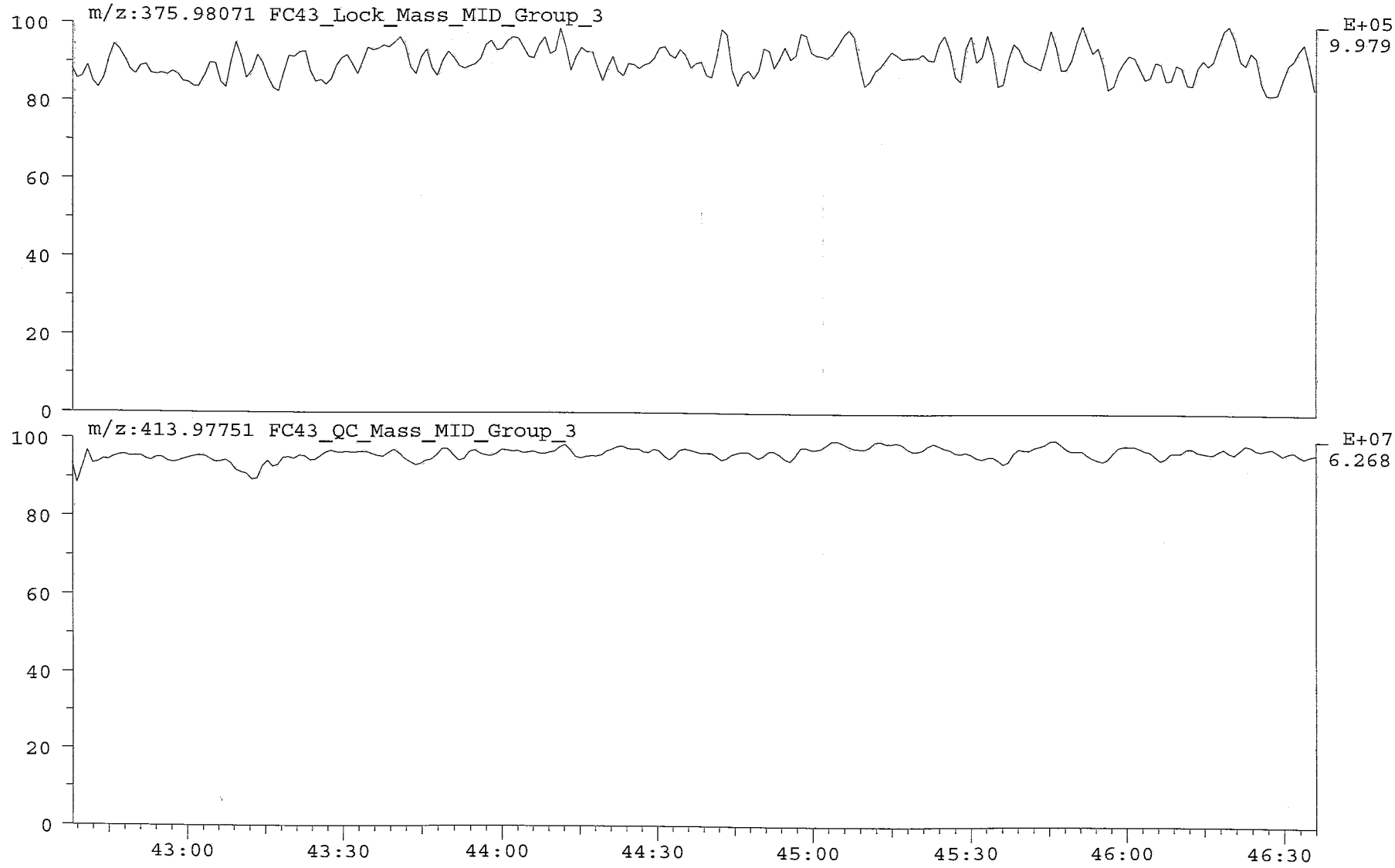
CHRO: d3140516i5 16-May-14 Elapse: 44:20 1915
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 18:31:27 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS5
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1912 > 1918 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



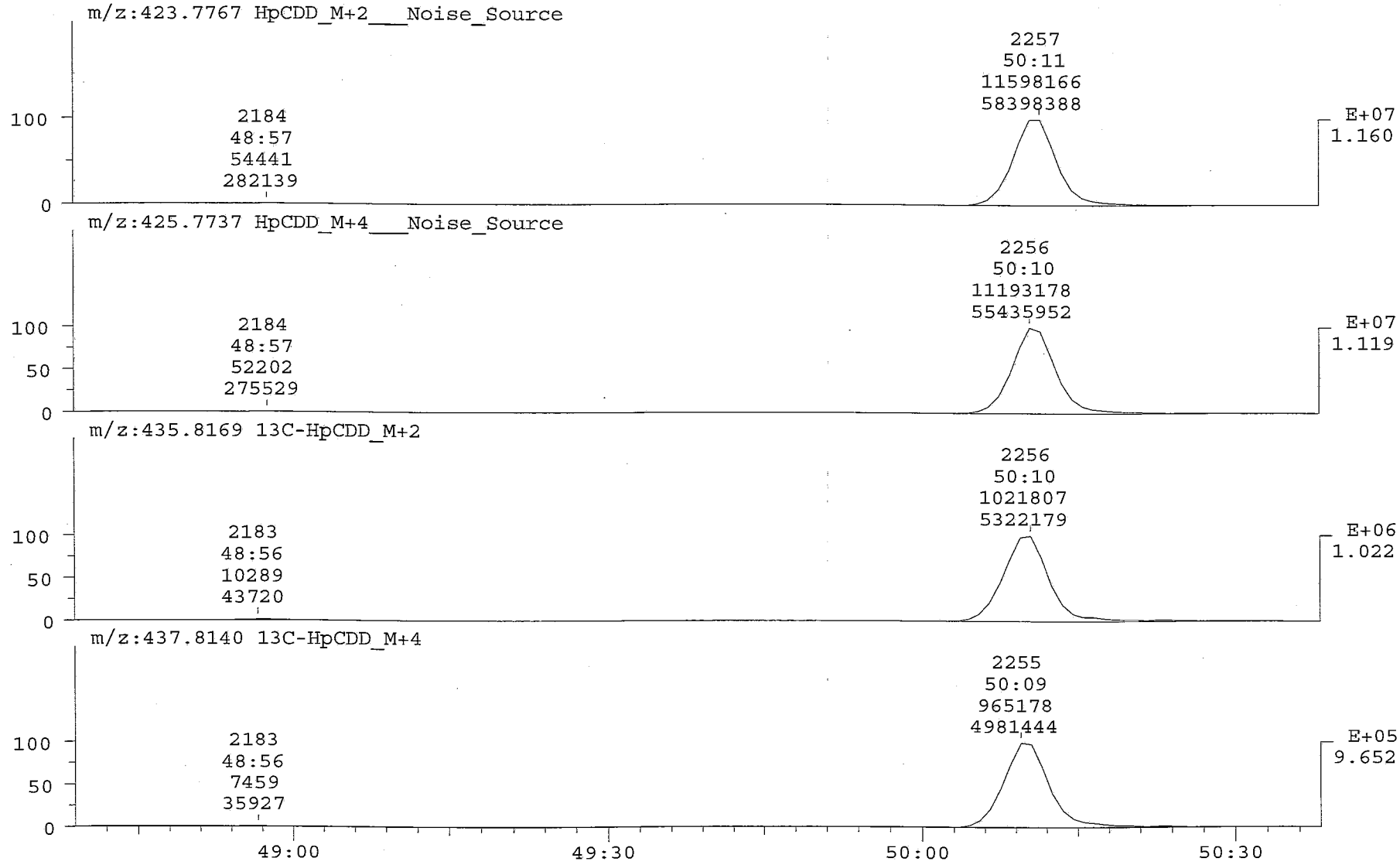
CHRO: d3140516i5 16-May-14 Elapse: 44:20 1915
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 18:31:27 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS5
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1814 > 2049 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



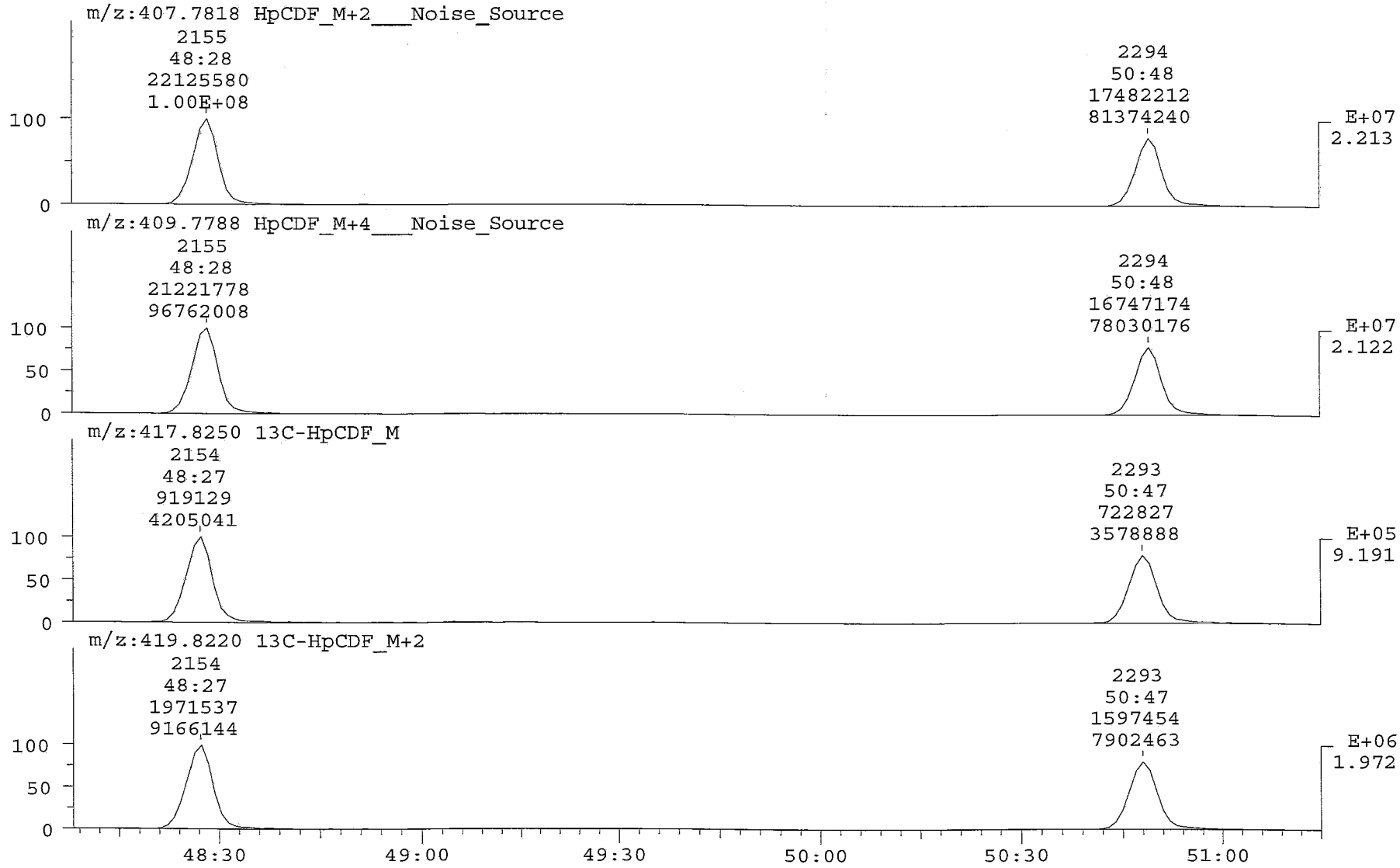
```
CHRO:  d3140516i5                                16-May-14  Elapse:  44:20      1915
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                         Start :  18:31:27   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  ICAL CS5
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1814 > 2049            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  0, 0.0
Disp:  Height  Area
```



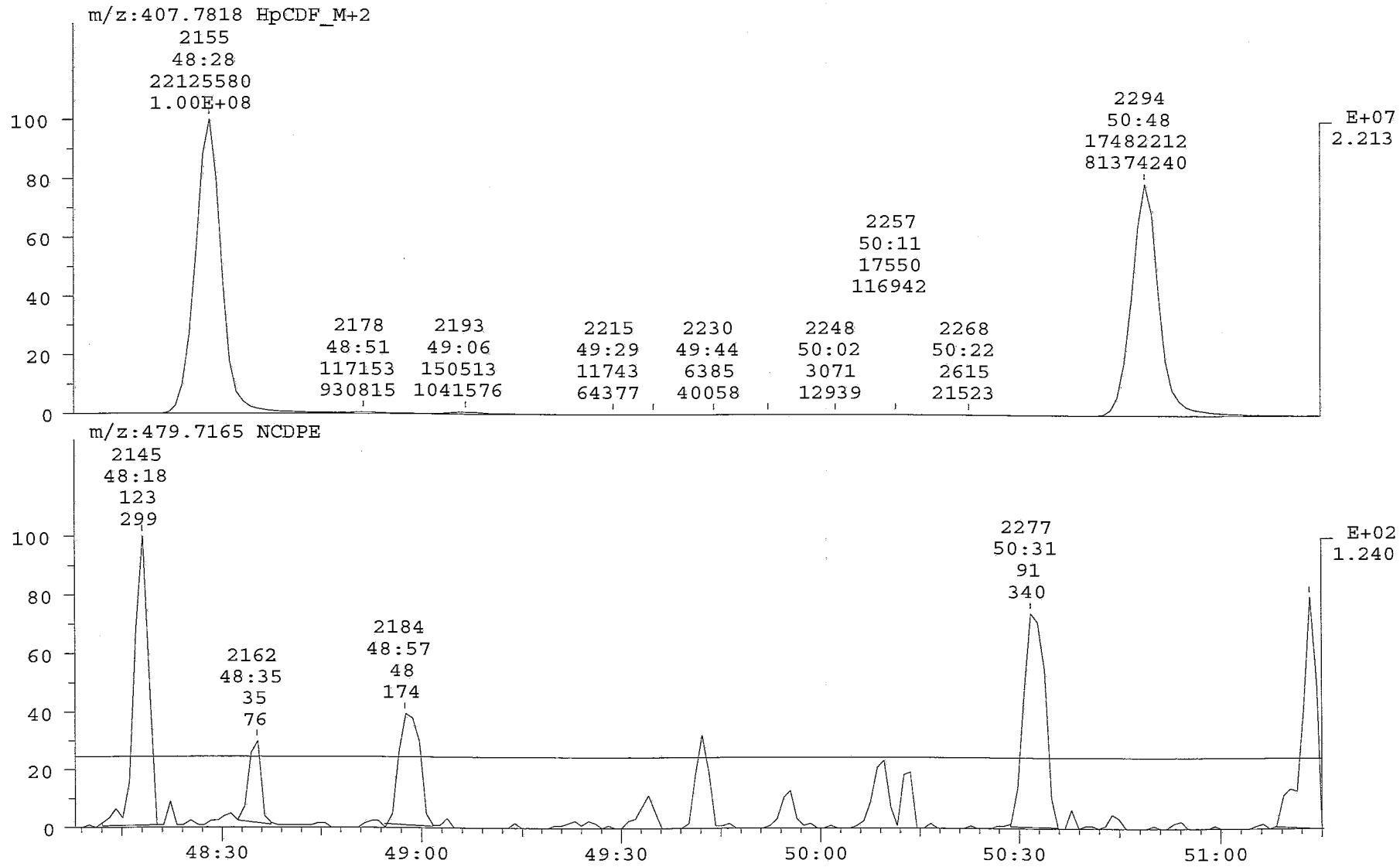
```
CHRO:  d3140516i5                                16-May-14   Elapse:  44:20      1915
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                          Start :  18:31:27   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                   Study :  ICAL CS5
Oper:  MSD                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2166 > 2283             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  -2, 5.0
Disp:  Height  Area
```



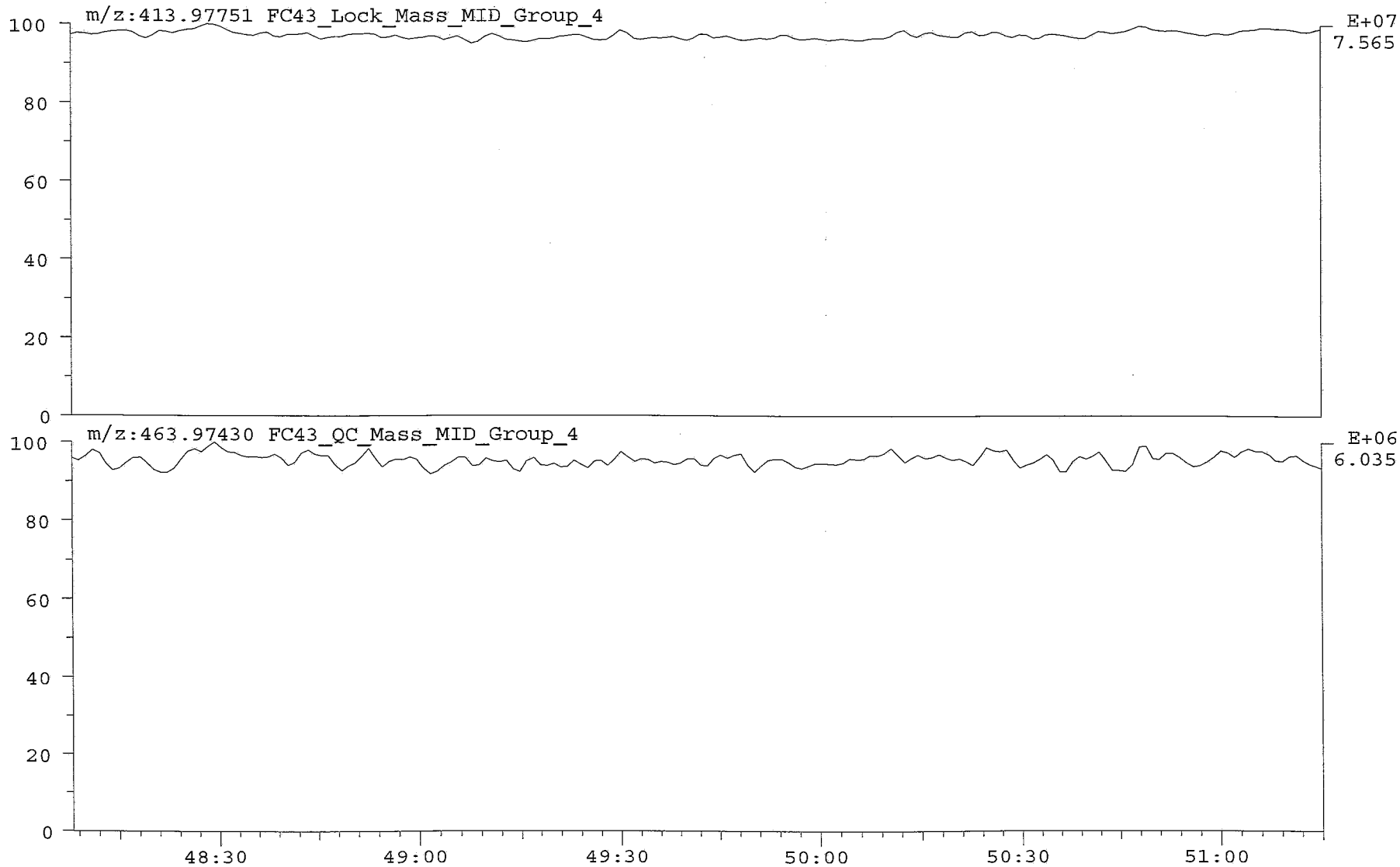
CHRO: d3140516i5 16-May-14 Elapse: 49:41 2227
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 18:31:27 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS5
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2135 > 2320 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



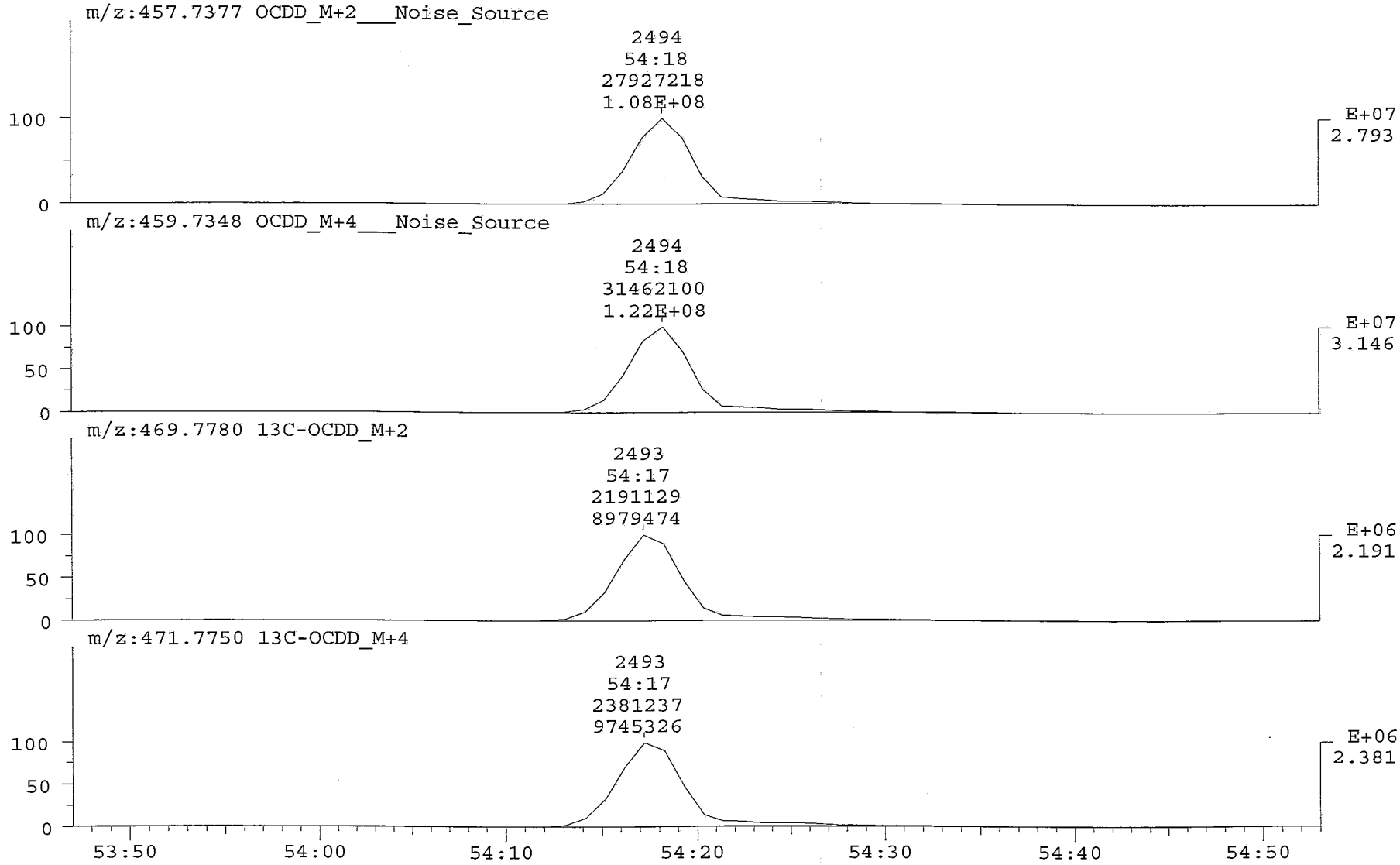
```
CHRO:  d3140516i5                                16-May-14  Elapse:  49:41      2227
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                         Start :  18:31:27   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  ICAL CS5
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2135 > 2320            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



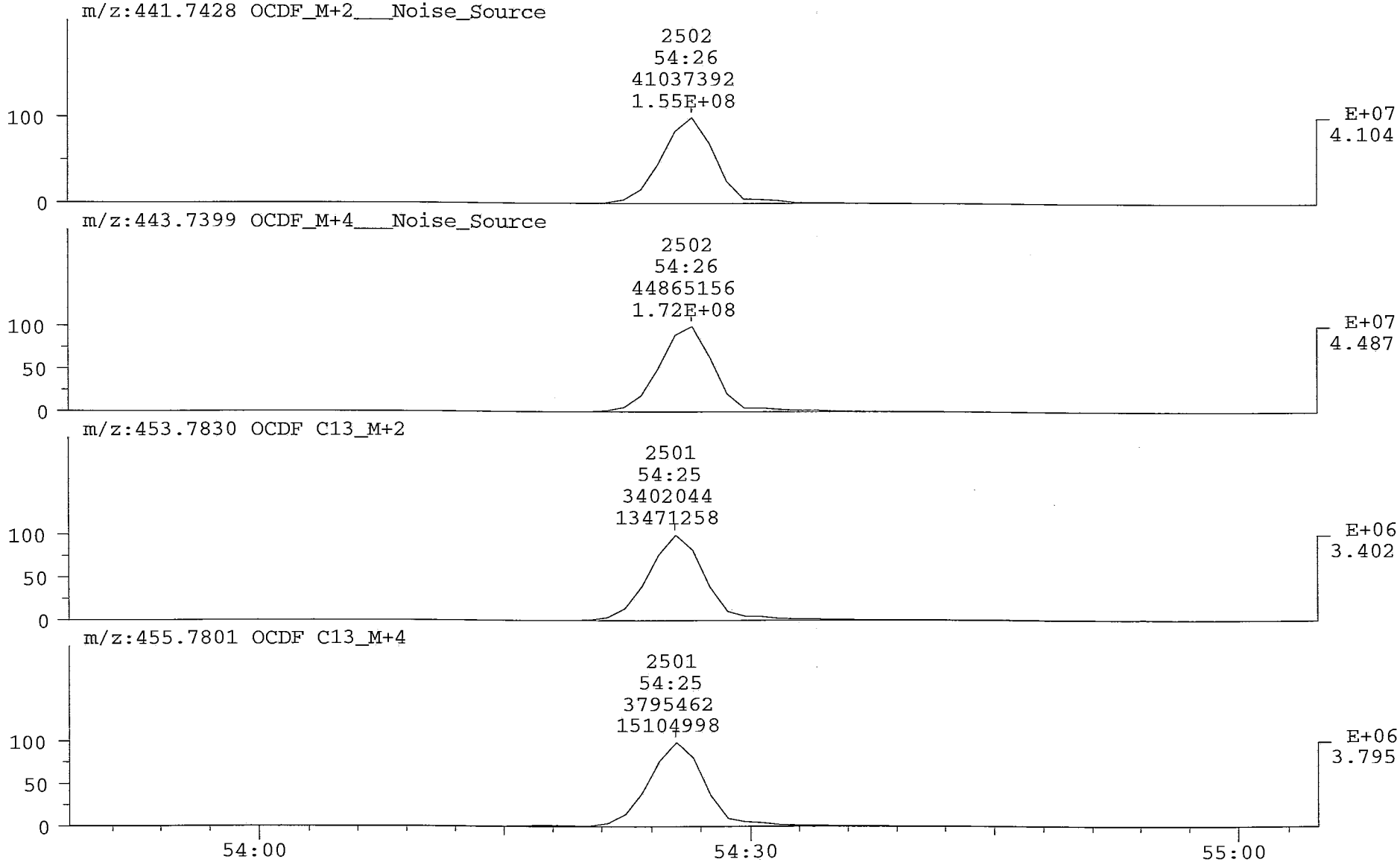
```
CHRO:  d3140516i5                          16-May-14  Elapse:  49:41      2227
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                   Start :  18:31:27   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                            Study :  ICAL CS5
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2135 > 2320      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



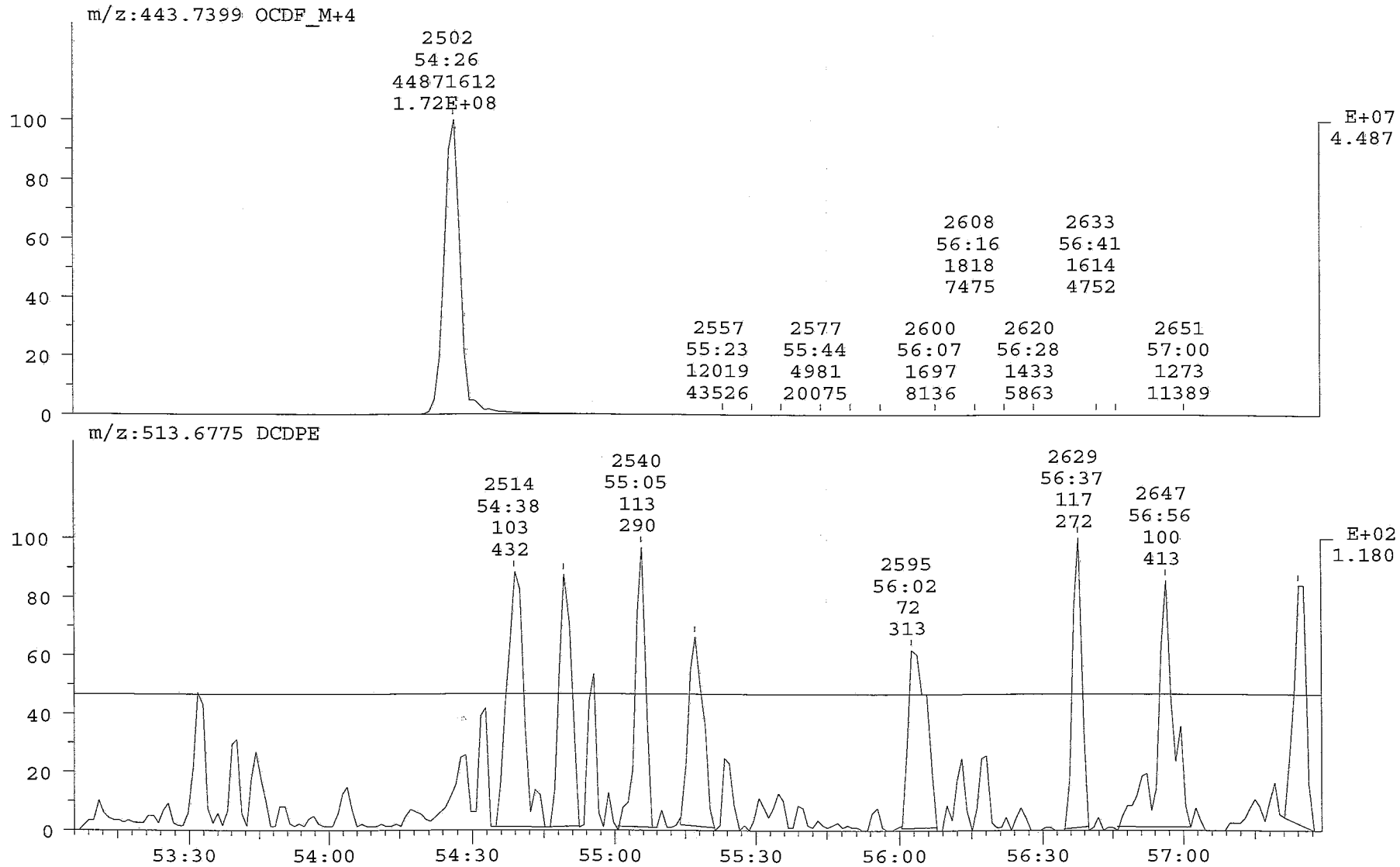
```
CHRO:  d3140516i5                          16-May-14   Elapse:  54:17      2493
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                    Start :  18:31:27   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                             Study :  ICAL CS5
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2464 > 2528       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



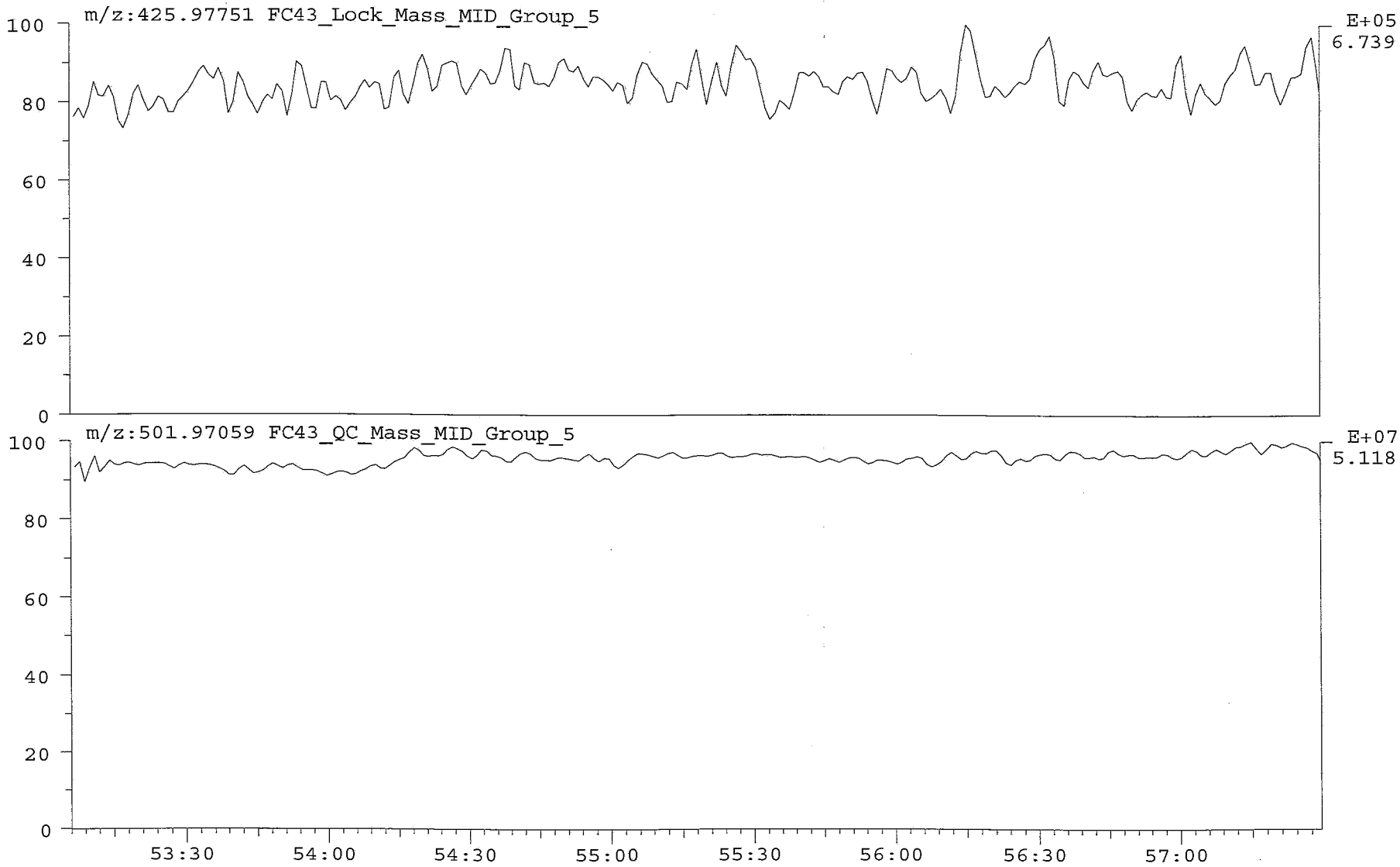
CHRO: d3140516i5 16-May-14 Elapse: 44:20 1915
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 18:31:27 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : ICAL CS5
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2465 > 2539 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d3140516i5                          16-May-14   Elapse:  54:26      2502
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                    Start :  18:31:27   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                             Study :  ICAL CS5
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2425 > 2679       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d3140516i5                          16-May-14   Elapse:  54:26      2502
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                    Start :  18:31:27   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                             Study :  ICAL CS5
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2425 > 2679       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Fri May 16 18:35:32 2014 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - D5FBM84J

Analysis started at: 16-May-14 18:35:32

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence :

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:13 min	35:13 min	0.99 sec
# 2	35:13 min	7:16 min	42:30 min	1.00 sec
# 3	42:30 min	5:00 min	47:30 min	1.00 sec
# 4	47:30 min	5:30 min	53:00 min	1.00 sec
# 5	53:00 min	4:30 min	57:30 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	122
305.8987		1	1	122
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	122
321.8936		1	1	122
327.8847		1	1	122
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	122

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7

```
  375.9802     20  1        7
  409.7974      1  1      146
 Window # 3
      mass F  int  gr  time (ms)
  373.8208      1  1      146
  375.8178      1  1      146
  375.9802 l   20  1        7
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 35.233333 minutes
MID Window end time was 35.220000 minutes
MID Window terminated after 42.500000 minutes
MID Window end time was 42.500000 minutes
MID Window terminated after 47.500000 minutes
MID Window end time was 47.500000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.500000 minutes
MID Window end time was 57.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune
```

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0177	BMASS	311.4834
BQUAD	1.5000	CAPIL	0.0000	CAPTSET	0.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	16.0000	ECORR	1.0003	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2096.1908
ELEN	-45.0000	EMULT	1699.0000	ENS	148.0000
ENSBR	1.5000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	178.0000	EXSBR	2.1000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	11.7000
FQUADGAIN	0.0000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0145	FVINLET	0.0773	FVSRC	0.0522
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	740.0000
LENS_SYM	9.5000	LM	375.8364	LMII	500.0000
LMASS	311.4834	LKM	425.9770	MASS	311.4834
MDAC	3509344.3697	MRANGE	1307.4725	NSAM	200.0000
NSCAN	2701.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	0.0000	PSAM	10.0000
PUSHER	-8.3000	RECURR	0.9021	RELEN	0.0000
RES	9395.4897	RPUSHER	-8.1538	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	730.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	0.0000	SLOW	60.0000	SS	2.0000
SW	0.1590	TANAL	0.0000	TCURR	0.0000
TD	30.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	311.4834	XLENS_POT	906.0000
XLENS_SYM	9.5000	YLENS_POT	750.0000	YLENS_SYM	0.0000

```
Source Gauge:          1.5e-005 mbar
Analyzer Penning:      7.5e-008 mbar
Pirani Analyse:        1.4e-002 mbar
Pirani Source:         5.2e-002 mbar
Pirani Inlet System:   7.7e-002 mbar

Scantype is electric

Sourcemode is EI POS

MID Time Window 1: Resolution is 9803.
MID Time Window 2: Resolution is 10543.
MID Time Window 3: Resolution is 9988.
MID Time Window 4: Resolution is 10062.
MID Time Window 5: Resolution is 9395.

Amplifier Offset: 94.


*** File closed Fri May 16 19:33:04 2014
 ***
```

User: finnigan
Host: knx-alpha5.stl-inc.com
Class: knx-alpha5.stl-inc.com
Job: d3140516i5.log

Second Source CCV

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:76	Prep Batch		Lot No	
Data File	/20140516i/d3140516ss.d	Prep Date		SDG No	
Analysis ID	161069	Prep Exp Date		Date Received	
Analysis Date	5/16/2014	Matrix	UNKNOWN	Date Sampled	
Analysis Time	20:36	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D2A	Dil Factor	1.00	Code	F8o
Analyst	MSD				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)		DL (ng/mL)
2,3,7,8-TCDD	31:52	1420324	142279	1.171	10.00	9.336393	93.36 ✓	9.336393	E	0.0215
Total TCDD				1.171		9.336393		9.336393	E	0.0215
2,3,7,8-TCDF	29:47	2336934	250727	1.090	10.00	9.806953	98.07 ✓	9.806953	E	0.00791
Total TCDF				1.090		9.806953		9.806953	E	0.00791
1,2,3,7,8-PeCDD	41:01	5076331	1168133	1.047	50.00	51.664168	103.33 ✓	51.664168	E	0.0208
Total PeCDD				1.047		51.664168		51.664168	E	0.0208
1,2,3,7,8-PeCDF	39:18	8776058	1805847	1.187	50.00	44.224631	88.45 ✓	44.224631	E	0.0189
2,3,4,7,8-PeCDF	40:29	8944807	2038854	1.105	50.00	50.157594	100.32 ✓	50.157594	E	0.0183
Total PeCDF				1.146		94.382225		94.382225	E	0.0185
1,2,3,4,7,8-HxCDD	45:15	6383658	1648913	1.140	50.00	47.074465	94.15 ✓	47.074465	E	0.0498
1,2,3,6,7,8-HxCDD	45:22	6678710	1638712	1.146	50.00	44.111250	88.22 ✓	44.111250	E	0.0484
1,2,3,7,8,9-HxCDD	45:45	6609708	1551255	1.210	50.00	43.499049	87.00 ✓	43.499049	E	0.0464
Total HxCDD				1.166		134.684764		134.684764	E	0.0482
1,2,3,4,7,8-HxCDF	44:12	9905232	2690636	1.364	50.00	44.281298	88.56 ✓	44.281298	E	0.0182
1,2,3,6,7,8-HxCDF	44:20	11570310	2856886	1.278	50.00	46.233598	92.47 ✓	46.233598	E	0.0180
2,3,4,6,7,8-HxCDF	45:03	10737878	2655617	1.267	50.00	46.743417	93.49 ✓	46.743417	E	0.0195
1,2,3,7,8,9-HxCDF	46:02	9225845	2011571	1.285	50.00	44.915024	89.83 ✓	44.915024	E	0.0252
Total HxCDF				1.299		182.173337		182.173337	E	0.0199
1,2,3,4,6,7,8-HpCDD	50:10	5639629	1073805	1.121	50.00	48.872534	97.75 ✓	48.872534	E	0.0220
Total HpCDD				1.121		48.872534		48.872534	E	0.0220
1,2,3,4,6,7,8-HpCDF	48:28	10097170	2047760	1.497	50.00	45.689023	91.38 ✓	45.689023	E	0.0146
1,2,3,4,7,8,9-HpCDF	50:49	7793467	1552827	1.383	50.00	49.517465	99.03 ✓	49.517465	E	0.0210
Total HpCDF				1.440		95.206488		95.206488	E	0.0174
OCDD	54:18	10283667	2340062	1.243	100.0	88.892873	88.89 ✓	88.892873	E	0.0275
OCDF	54:25	14148549	3331555	1.119	100.0	117.023320	117.02 ✓	117.023320	E	0.0199
13C-2,3,7,8-TCDD	31:48	12991431	1322049	1.067	100.0	108.742132	108.74 ✓	108.742132		0.0995
13C-2,3,7,8-TCDF	29:44	21869529	2408757	1.750	100.0	111.635985	111.64 ✓	111.635985		0.0114
13C-1,2,3,7,8-PeCDD	40:59	9382314	2199513	0.873	100.0	95.986645	95.99 ✓	95.986645		0.0230
13C-1,2,3,7,8-PeCDF	39:16	16716476	3367790	1.368	100.0	109.116685	109.12 ✓	109.116685		0.0374
13C-2,3,4,7,8-PeCDF	40:28	16144219	3736517	1.381	100.0	104.454048	104.45 ✓	104.454048		0.0371
13C-1,2,3,4,7,8-HxCDD	45:14	11897851	3090862	0.893	100.0	103.854087	103.85 ✓	103.854087		0.0554
13C-1,2,3,6,7,8-HxCDD	45:21	13208270	3161646	0.929	100.0	110.767443	110.77 ✓	110.767443		0.0533
13C-1,2,3,4,7,8-HxCDF	44:11	16401577	4477128	1.213	100.0	105.349418	105.35 ✓	105.349418		0.0377
13C-1,2,3,6,7,8-HxCDF	44:19	19584068	4835621	1.489	100.0	102.531871	102.53 ✓	102.531871		0.0307
13C-2,3,4,6,7,8-HxCDF	45:02	18124557	4510909	1.346	100.0	104.918932	104.92 ✓	104.918932		0.0339
13C-1,2,3,7,8,9-HxCDF	46:01	15982481	3432147	1.210	100.0	102.972092	102.97 ✓	102.972092		0.0378
13C-1,2,3,4,6,7,8-HpCDD	50:09	10296083	1950793	0.823	100.0	97.481478	97.48 ✓	97.481478		0.0162
13C-1,2,3,4,6,7,8-HpCDF	48:26	14761512	2966443	1.069	100.0	107.572657	107.57 ✓	107.572657		0.0224
13C-1,2,3,4,7,8,9-HpCDF	50:48	11377818	2234835	0.904	100.0	98.075494	98.08 ✓	98.075494		0.0265
13C-OCDD	54:17	18611333	4268968	0.708	200.0	204.950608	102.48 ✓	204.950608		0.0582
13C-OCDF	54:25	21601849	5070667	1.072	200.0	157.010927	78.51 ✓	157.010927		0.0310
37Cl4-2,3,7,8-TCDD	31:52	1421488	147301	1.220	10.00	10.409098	104.09 ✓	10.409098	E	0.00755
13C-1,2,3,4-TCDD	31:17	11194984	1167740	1.000	100.0	100.000000	100.00	100.000000		0.106
13C-1,2,3,7,8,9-HxCDD	45:44	12831928	2954532	1.000	100.0	100.000000	100.00	100.000000		0.0495

KCh 5/19/14

MD 5-19-14

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:76	Prep Batch		Lot No	
Data File	/20140516i/d3140516ss.	Prep Date		SDG No	
Analysis ID	161069	Prep Exp Date		Date Received	
Analysis Date	05/16/14 20:36	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	105	103	42	41	1.02 *	/	
	2,3,7,8-TCDF	29:47	29:46	1	1030853	1306081	108940	141787	0.79	ABV/AVV	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	113	120	45	48	0.94 *	/	
	13C-2,3,7,8-TCDF	29:44	29:44	0	9727994	12141535	1056198	1352559	0.80	ABV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	150	183	60	73	0.82	/	
	2,3,7,8-TCDD	31:52	31:52	0	626116	794208	60503	81776	0.79	AVV/AVV	D
328					327.8847		327.8847				
	Noise	00:00	00:00	0	108		43				
	37Cl4-2,3,7,8-TCDD	31:52	31:51	1	1421488		147301			AVV	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	938	303	375	121	3.10 *	/	
	13C-1,2,3,4-TCDD	31:17	31:17	0	5033628	6161356	530122	637618	0.82	AVV/AVV	
	13C-2,3,7,8-TCDD	31:48	31:48	0	5791287	7200144	584821	737228	0.80	AVB/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	395	360	158	144	1.10 *	/	
	1,2,3,7,8-PeCDF	39:18	39:17	1	5400872	3375186	1116286	689561	1.60	ABV/ABV	
	2,3,4,7,8-PeCDF	40:29	40:29	0	5469015	3475792	1239337	799517	1.57	ABV/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	355	243	142	97	1.46	/	
	13C-1,2,3,7,8-PeCDF	39:16	39:16	0	10218767	6497709	2060716	1307074	1.57	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:28	40:28	0	9945820	6198399	2299404	1437113	1.60	AVV/AVV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	270	210	108	84	1.29 *	/	
	1,2,3,7,8-PeCDD	41:01	41:00	1	3086488	1989843	702852	465281	1.55	ABV/ABV	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	173	63	69	25	2.76 *	/	
	13C-1,2,3,7,8-PeCDD	40:59	40:59	0	5769689	3612625	1350463	849050	1.60	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	535	578	214	231	0.93 *	/	
	1,2,3,4,7,8-HxCDF	44:12	44:11	1	5487346	4417886	1497353	1193283	1.24	ABV/ABV	
	1,2,3,6,7,8-HxCDF	44:20	44:19	1	6433563	5136747	1603909	1252977	1.25	AVV/AVV	
	2,3,4,6,7,8-HxCDF	45:03	45:03	0	5969592	4768286	1463560	1192057	1.25	AVV/AVV	
	1,2,3,7,8,9-HxCDF	46:02	46:01	1	5096364	4129481	1111303	900268	1.23	ABV/ABV	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	438	913	175	365	0.48	/	
	13C-1,2,3,4,7,8-HxCDF	44:11	44:10	1	5595254	10806323	1529230	2947898	0.52	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:19	44:18	1	6761006	12823062	1682513	3153108	0.53	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:02	45:02	0	6347140	11777417	1564675	2946234	0.54	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:01	46:00	1	5501257	10481224	1176954	2255193	0.52	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:76	Prep Batch		Lot No	
Data File	/20140516i/d3140516ss.	Prep Date		SDG No	
Analysis ID	161069	Prep Exp Date		Date Received	
Analysis Date	05/16/14 20:36	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

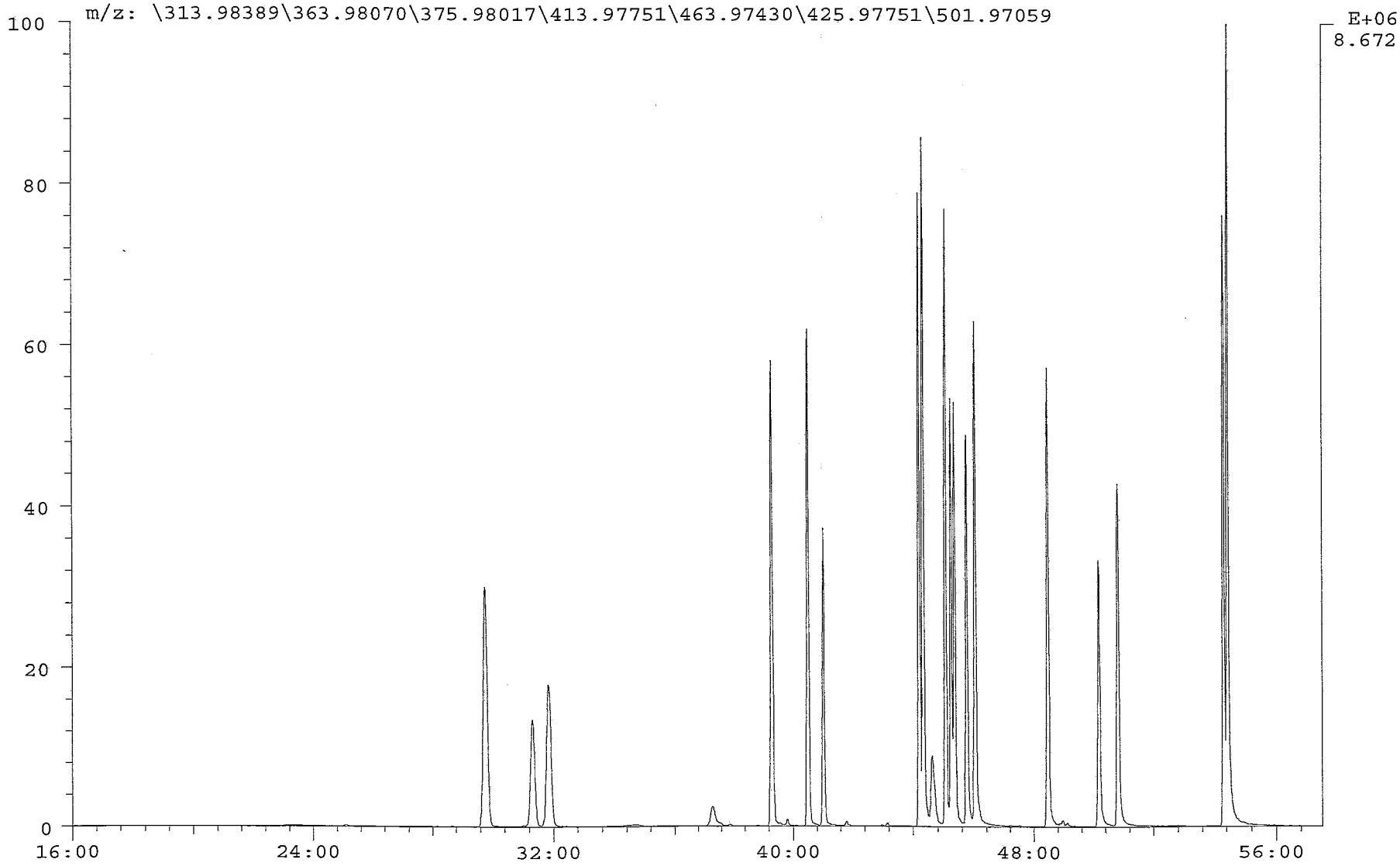
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration Flags
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43	
	Noise	00:00	00:00	0	1013	743	405	297	1.36	/
	1,2,3,4,7,8-HxCDD	45:15	45:14	1	3548611	2835047	924891	724022	1.25	ABV/ABV
	1,2,3,6,7,8-HxCDD	45:22	45:21	1	3707352	2971358	905827	732885	1.25	AVV/AVV
	1,2,3,7,8,9-HxCDD	45:45	45:45	0	3685469	2924239	860170	691085	1.26	AVV/AVV
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43	
	Noise	00:00	00:00	0	723	740	289	296	0.98 *	/
	13C-1,2,3,4,7,8-HxCDD	45:14	45:13	1	6635154	5262697	1716326	1374536	1.26	ABV/ABV
	13C-1,2,3,6,7,8-HxCDD	45:21	45:20	1	7412064	5796206	1762558	1399088	1.28	AVV/AVV
	13C-1,2,3,7,8,9-HxCDD	45:44	45:44	0	7137568	5694360	1645616	1308916	1.25	AVV/AVV
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20	
	Noise	00:00	00:00	0	325	325	130	130	1.00	/
	1,2,3,4,6,7,8-HpCDF	48:28	48:28	0	5190708	4906462	1050105	997655	1.06	ABV/ABV
	1,2,3,4,7,8,9-HpCDF	50:49	50:49	0	3990251	3803216	797997	754830	1.05	ABV/ABV
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51	
	Noise	00:00	00:00	0	325	383	130	153	0.85 *	/
	13C-1,2,3,4,6,7,8-HpCDF	48:26	48:27	-1	4599704	10161808	916654	2049789	0.45	ABV/ABV
	13C-1,2,3,4,7,8,9-HpCDF	50:48	50:48	0	3666994	7710824	716789	1518046	0.48	ABV/ABV
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20	
	Noise	00:00	00:00	0	165	315	66	126	0.52 *	/
	1,2,3,4,6,7,8-HpCDD	50:10	50:11	-1	2897896	2741733	549574	524231	1.06	ABV/ABV
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20	
	Noise	00:00	00:00	0	198	198	79	79	1.00	/
	13C-1,2,3,4,6,7,8-HpCDD	50:09	50:10	-1	5347881	4948202	1007574	943219	1.08	ABV/ABV
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02	
	Noise	00:00	00:00	0	320	245	128	98	1.31 *	/
	OCDF	54:25	54:26	-1	6734117	7414432	1569956	1761599	0.91	ABV/ABV
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02	
	Noise	00:00	00:00	0	573	410	229	164	1.40 *	/
	13C-OCDF	54:25	54:25	0	10221503	11380346	2420260	2650407	0.90	ABV/ABV
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02	
	Noise	00:00	00:00	0	428	303	171	121	1.41 *	/
	OCDD	54:18	54:18	0	4902714	5380953	1099255	1240807	0.91	ABV/ABV
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02	
	Noise	00:00	00:00	0	845	373	338	149	2.27 *	/
	13C-OCDD	54:17	54:17	0	8860107	9751226	2054543	2214425	0.91	ABV/ABV

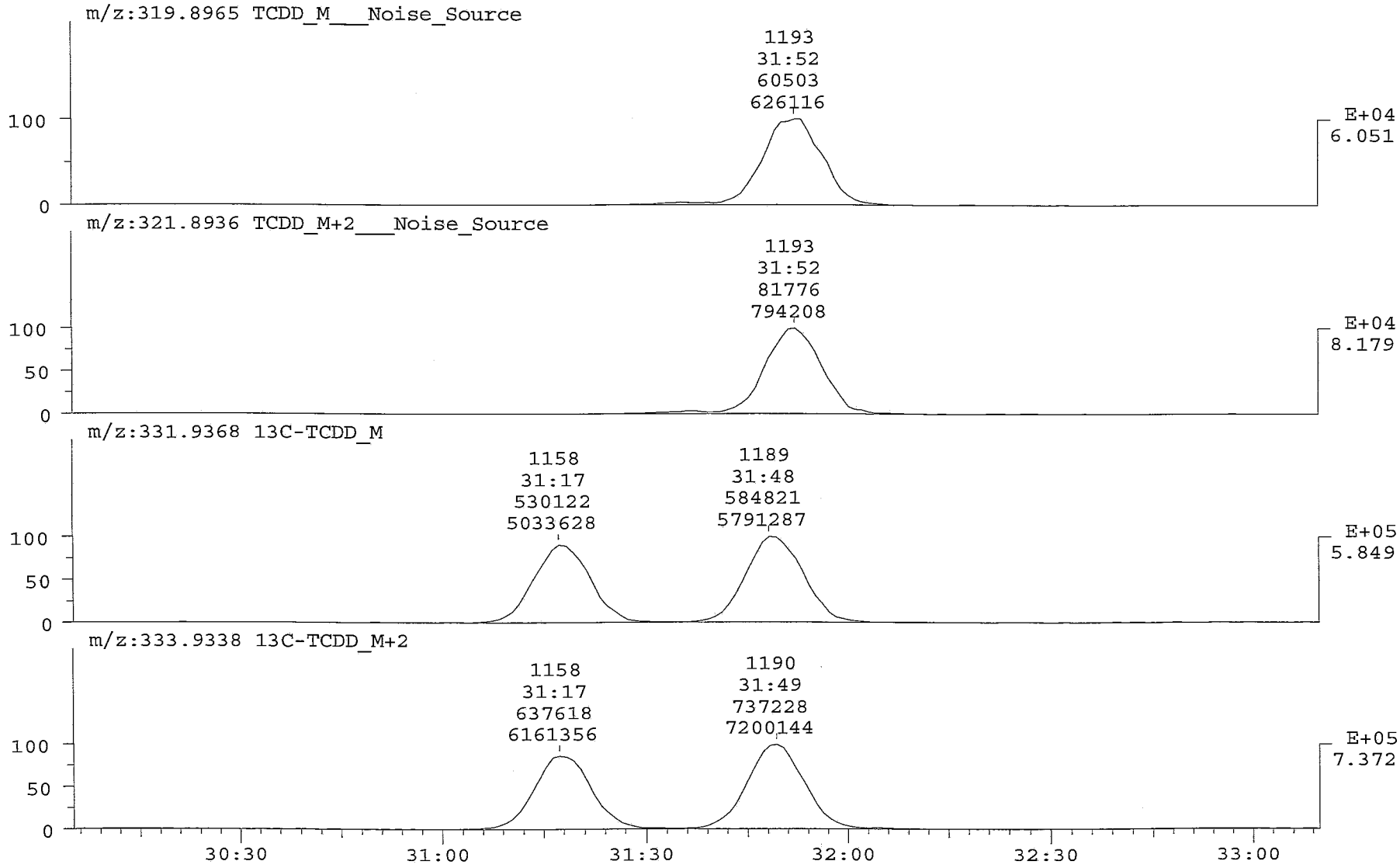
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

CHRO: d3140516ss 16-May-14 Elapse: 44:19 1915
Samp: WO=4104:76 Meth=F8o Dil=1 Start : 20:36:20 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : 2nd Source
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 238 > 2680 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

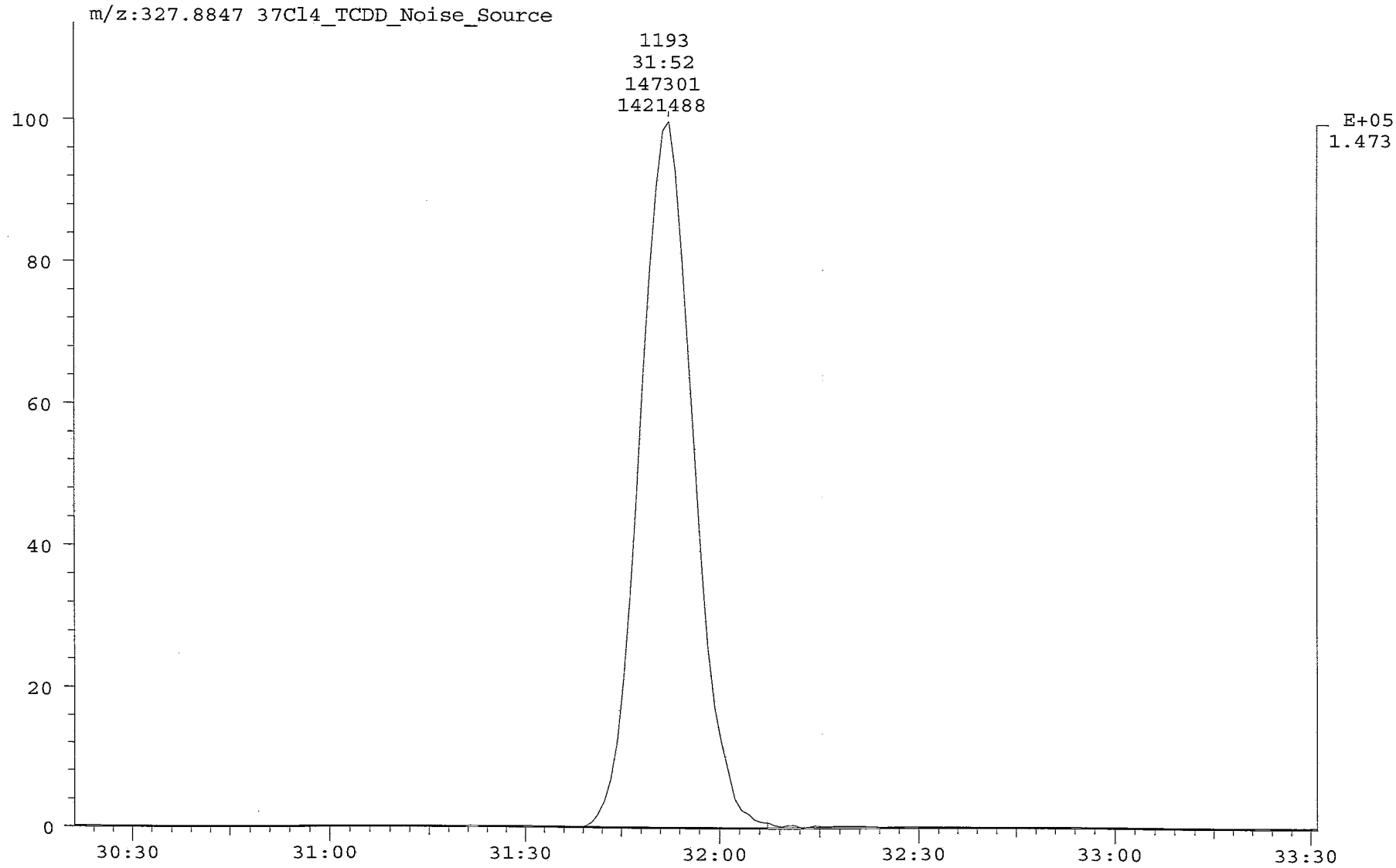
Int, Calc MLD 5-19-14
QC KL 5/19/14



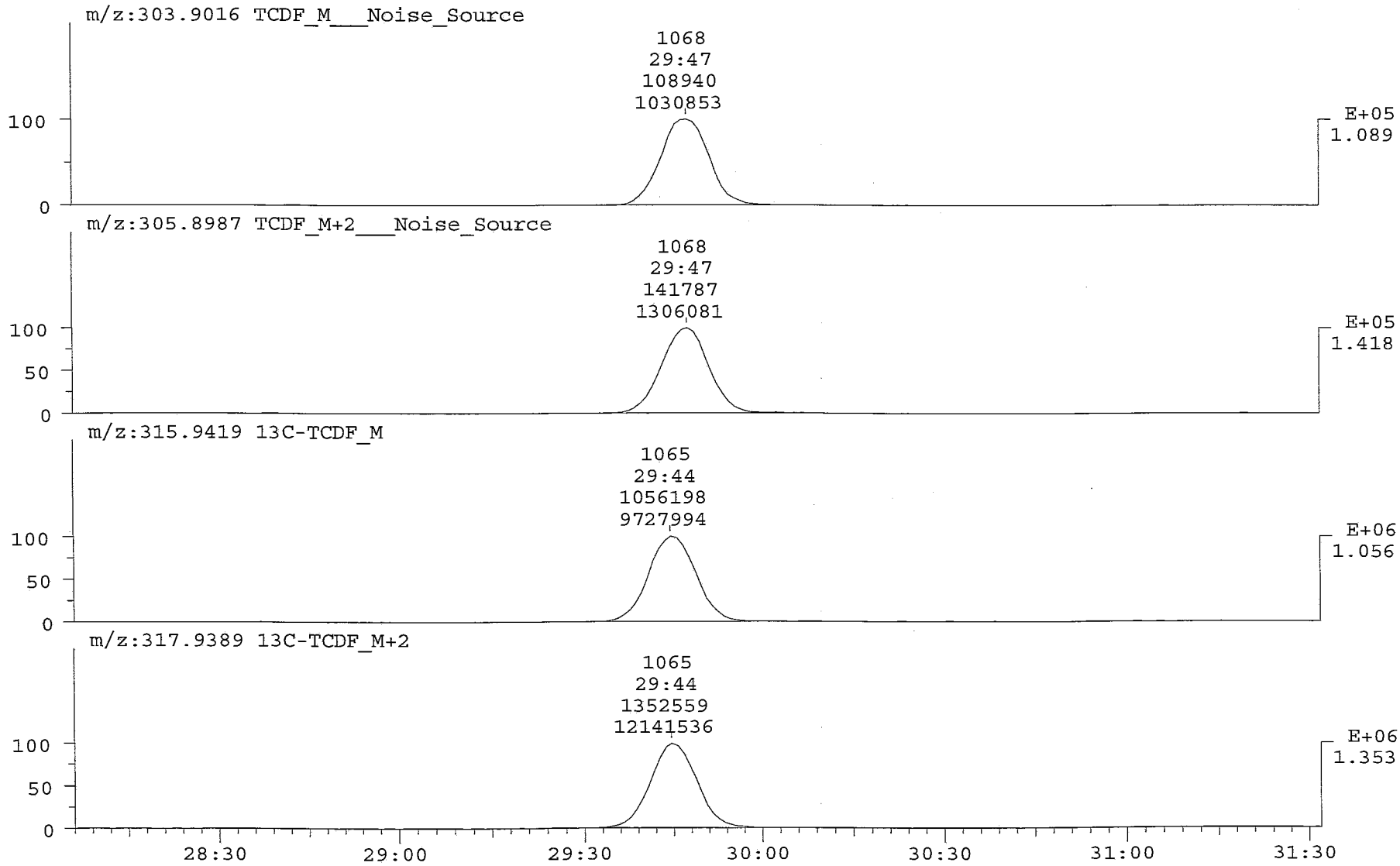
```
CHRO:  d3140516ss                          16-May-14   Elapse:  31:37      1178
Samp:  WO=4104:76 Meth=F8o Dil=1                       Start :  20:36:20   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                             Study :  2nd Source
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1085 > 1271       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```



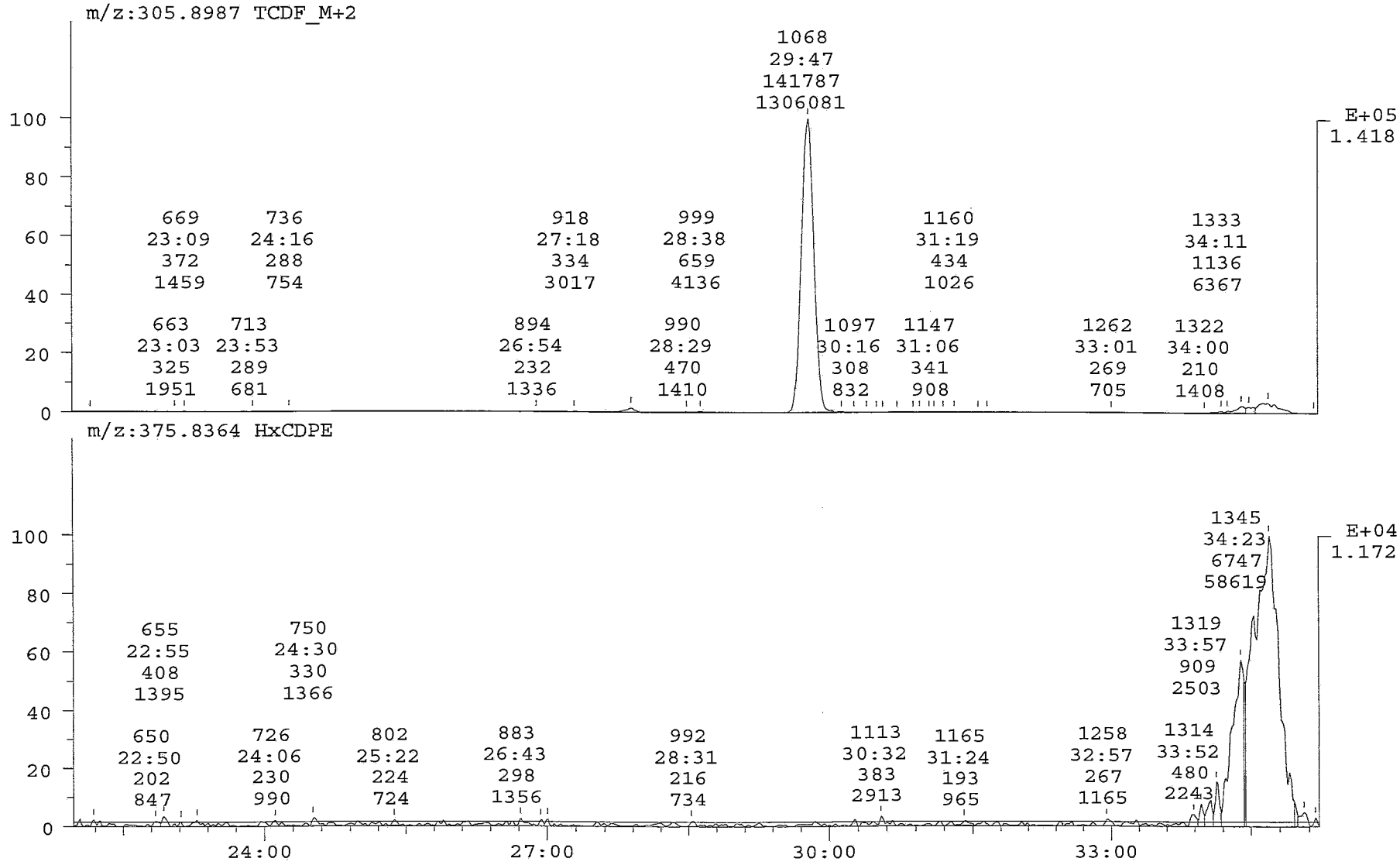
```
CHRO:  d3140516ss                                16-May-14  Elapse:  31:53      1194
Samp:  WO=4104:76 Meth=F8o Dil=1                            Start :  20:36:20   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  2nd Source
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1101 > 1292            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



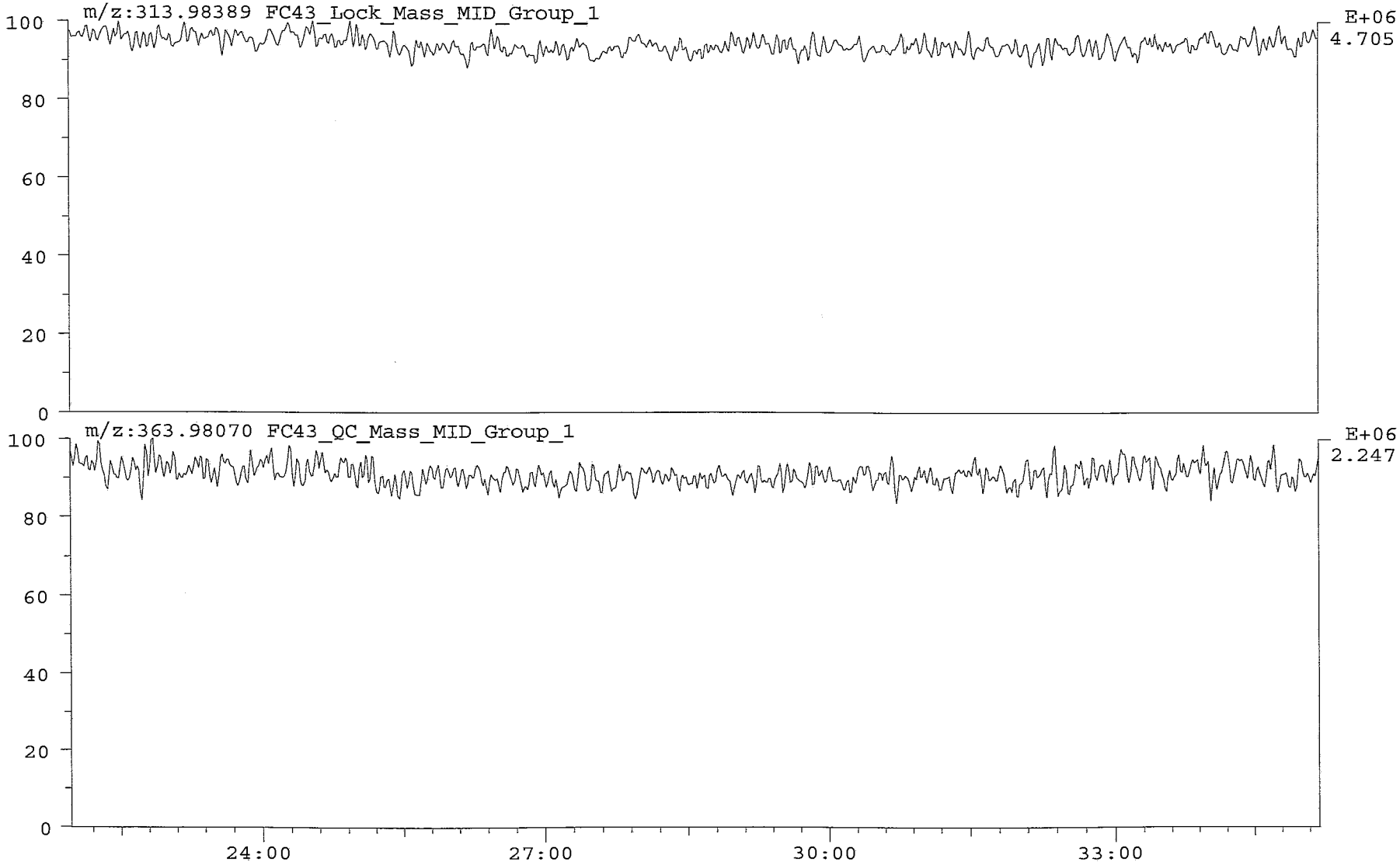
```
CHRO:  d3140516ss                          16-May-14  Elapse:  29:45      1066
Samp:  WO=4104:76 Meth=F8o Dil=1                      Start :  20:36:20   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                            Study :  2nd Source
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   966 > 1173       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



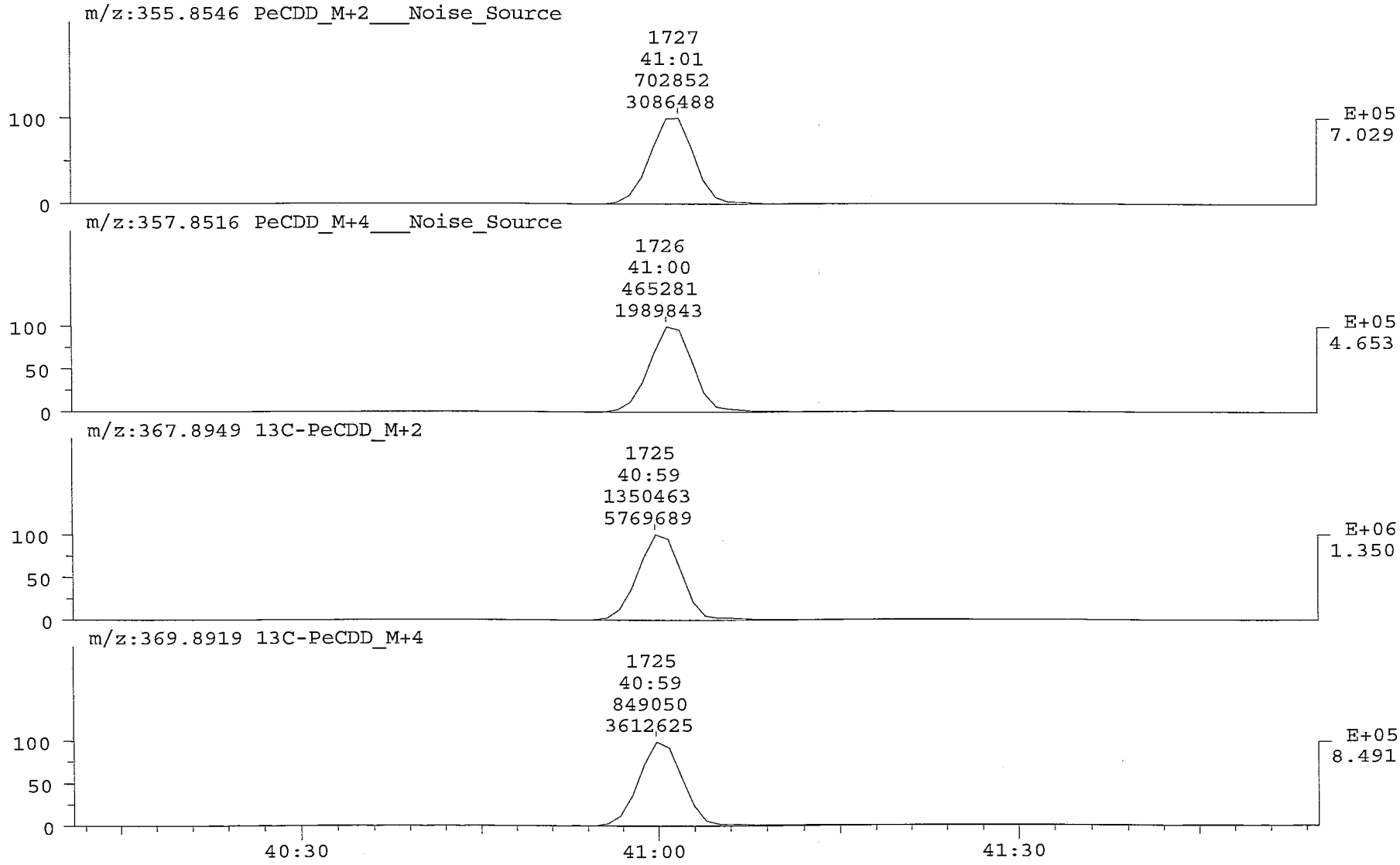
CHRO: d3140516ss 16-May-14 Elapse: 29:45 1066
Samp: WO=4104:76 Meth=F8o Dil=1 Start : 20:36:20 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : 2nd Source
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 597 > 1393 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



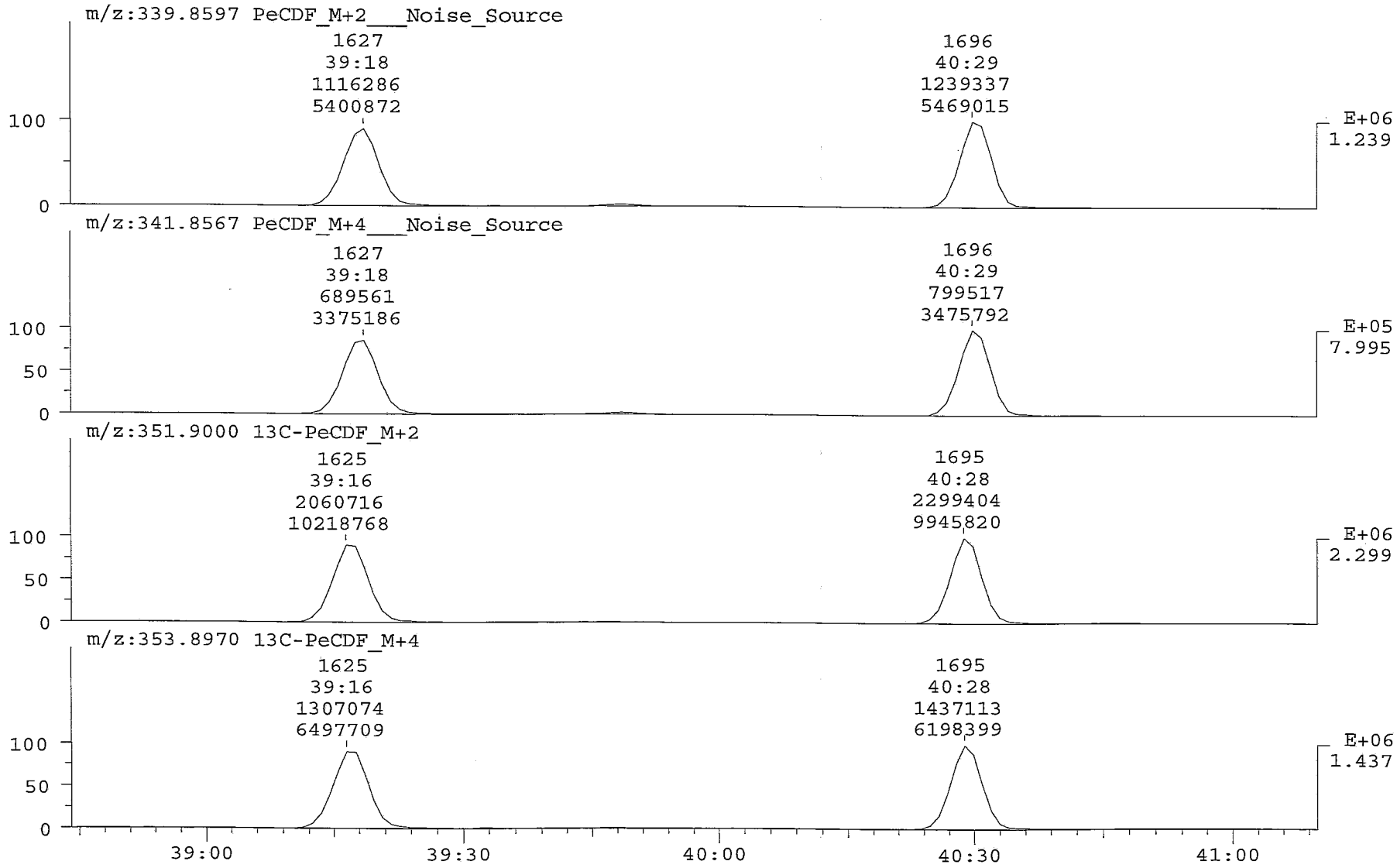
CHRO: d3140516ss 16-May-14 Elapse: 29:45 1066
Samp: WO=4104:76 Meth=F8o Dil=1 Start : 20:36:20 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : 2nd Source
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 597 > 1393 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



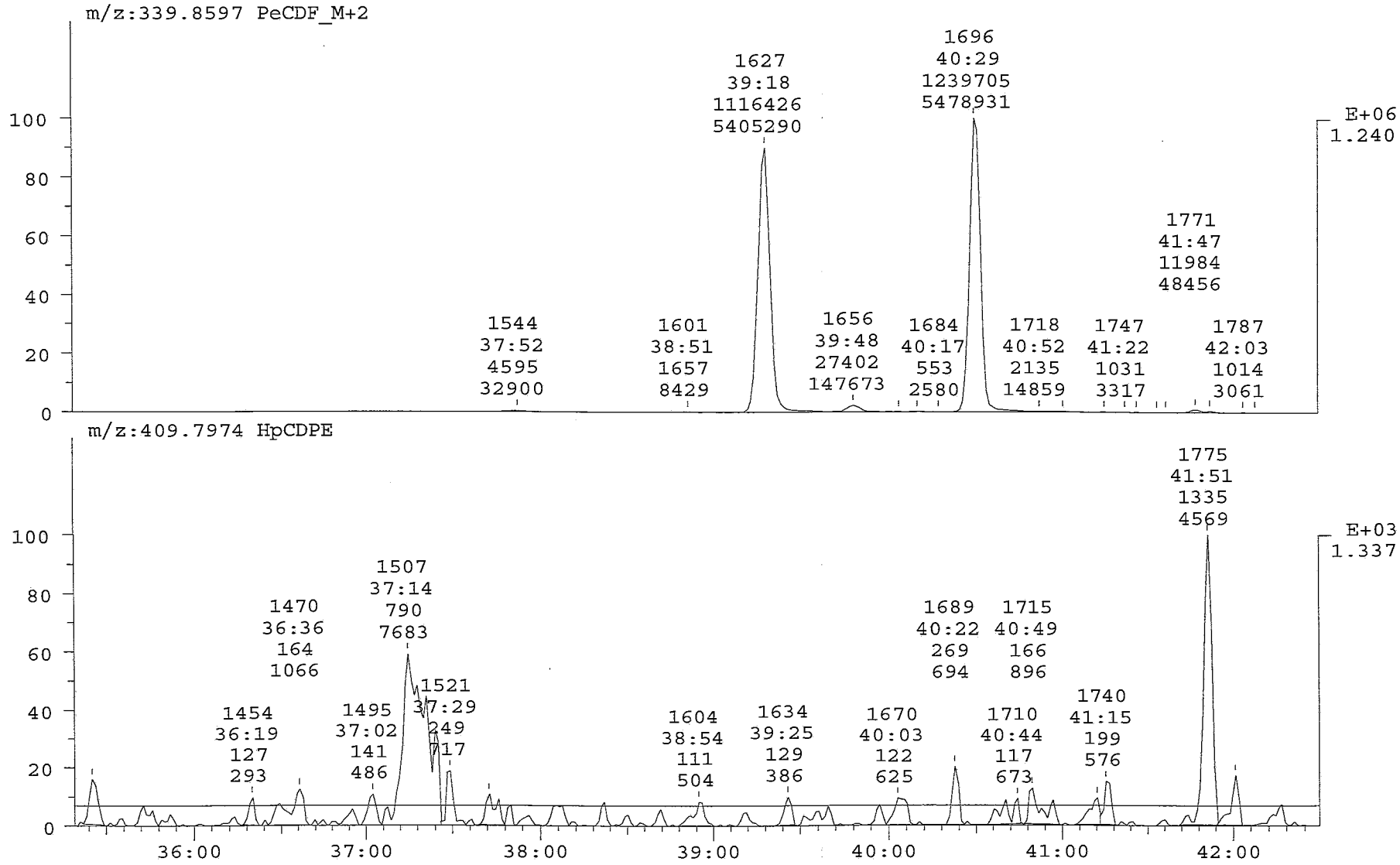
```
CHRO:  d3140516ss                          16-May-14   Elapse:  40:59      1725
Samp:  WO=4104:76 Meth=F8o Dil=1                       Start :  20:36:20   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                             Study :  2nd Source
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1678 > 1778       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```



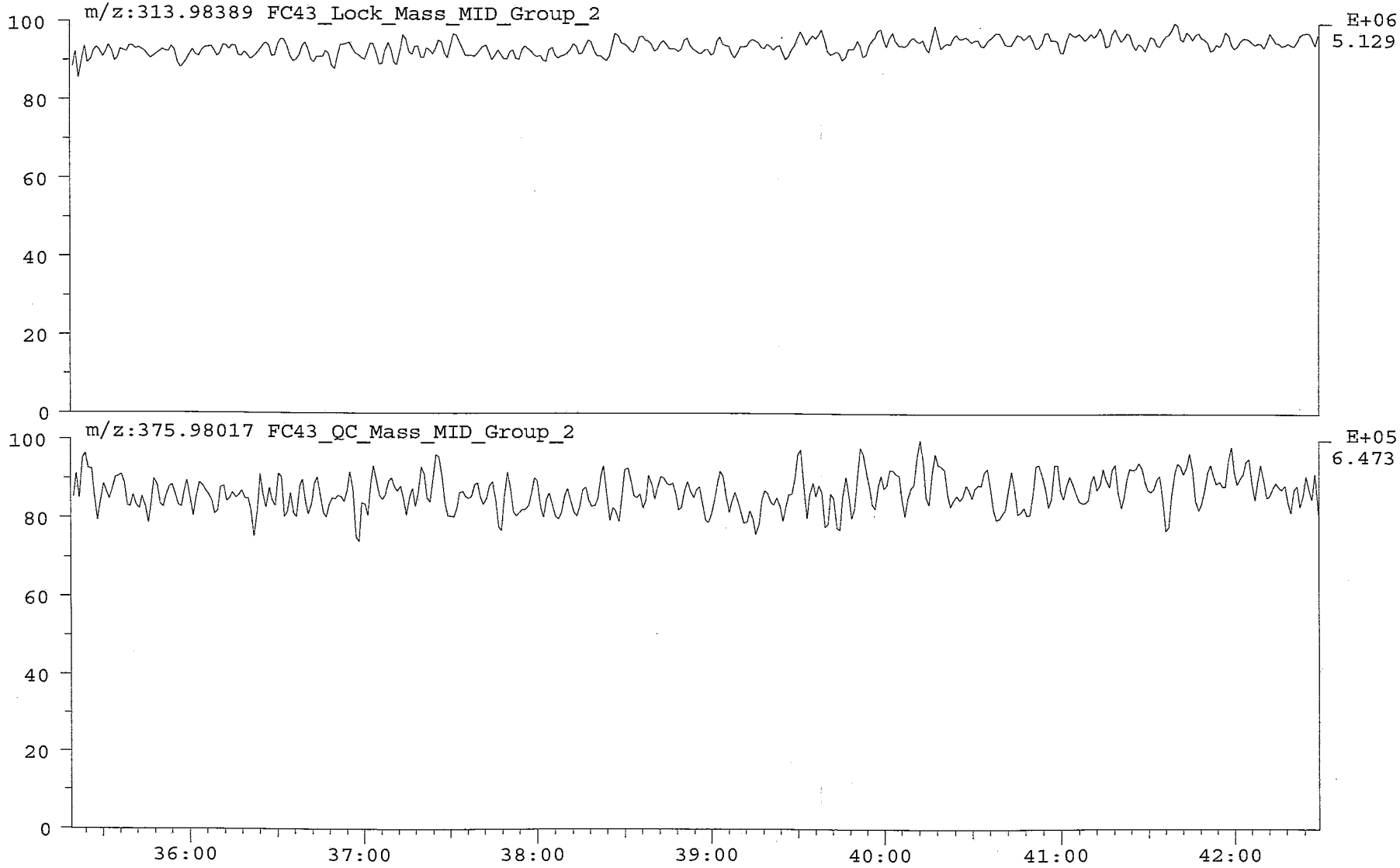
```
CHRO:  d3140516ss                                16-May-14  Elapse:  39:56      1664
Samp:  WO=4104:76 Meth=F8o Dil=1                            Start :  20:36:20   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  2nd Source
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1594 > 1735            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  2, 5.0
Disp:  Height  Area
```



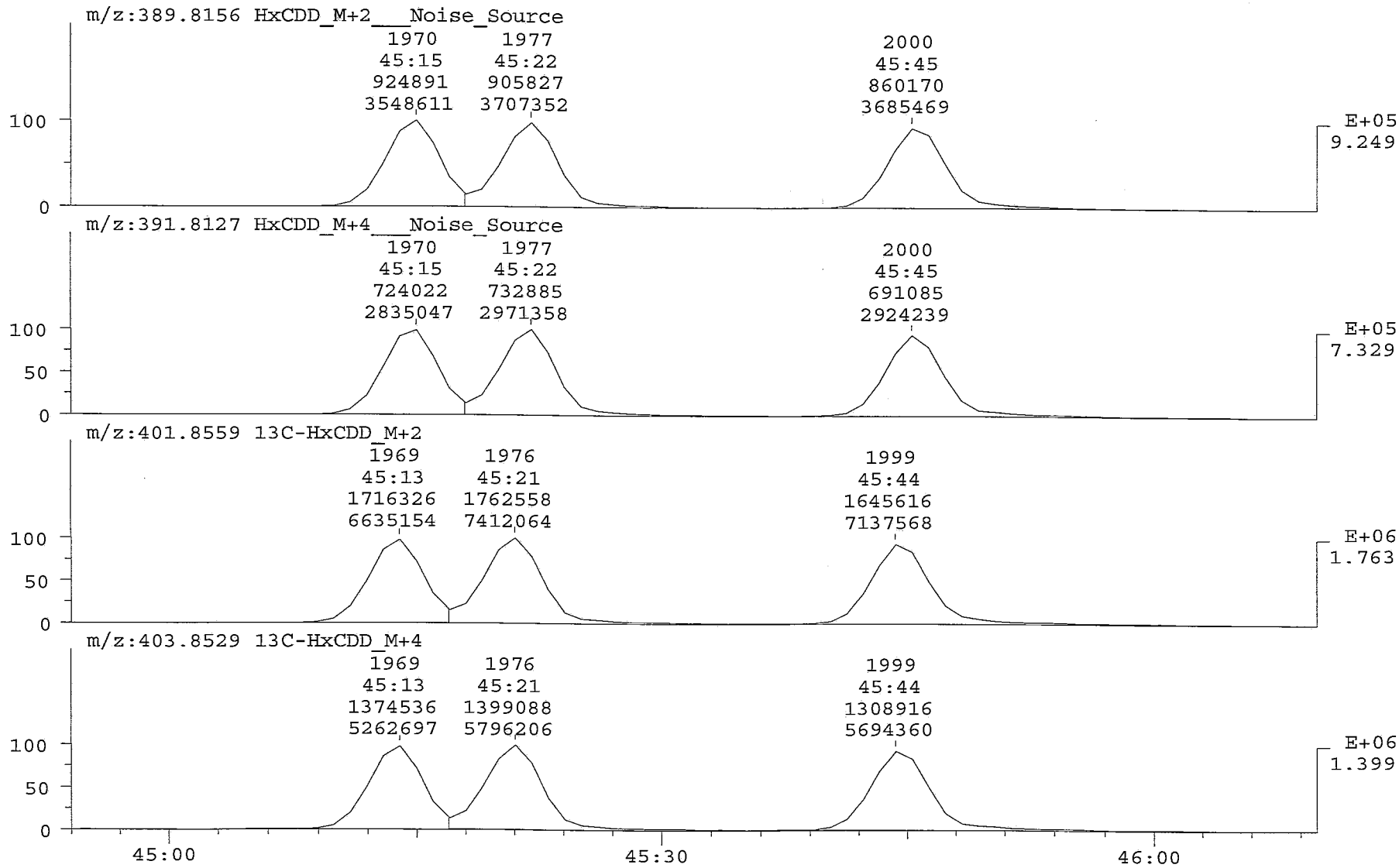
```
CHRO:  d3140516ss                                16-May-14   Elapse:  39:56      1664
Samp:  WO=4104:76 Meth=F8o Dil=1                             Start :  20:36:20   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                   Study :  2nd Source
Oper:  MSD                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1396 > 1811             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  -2, 5.0
Disp:  Height  Area
```



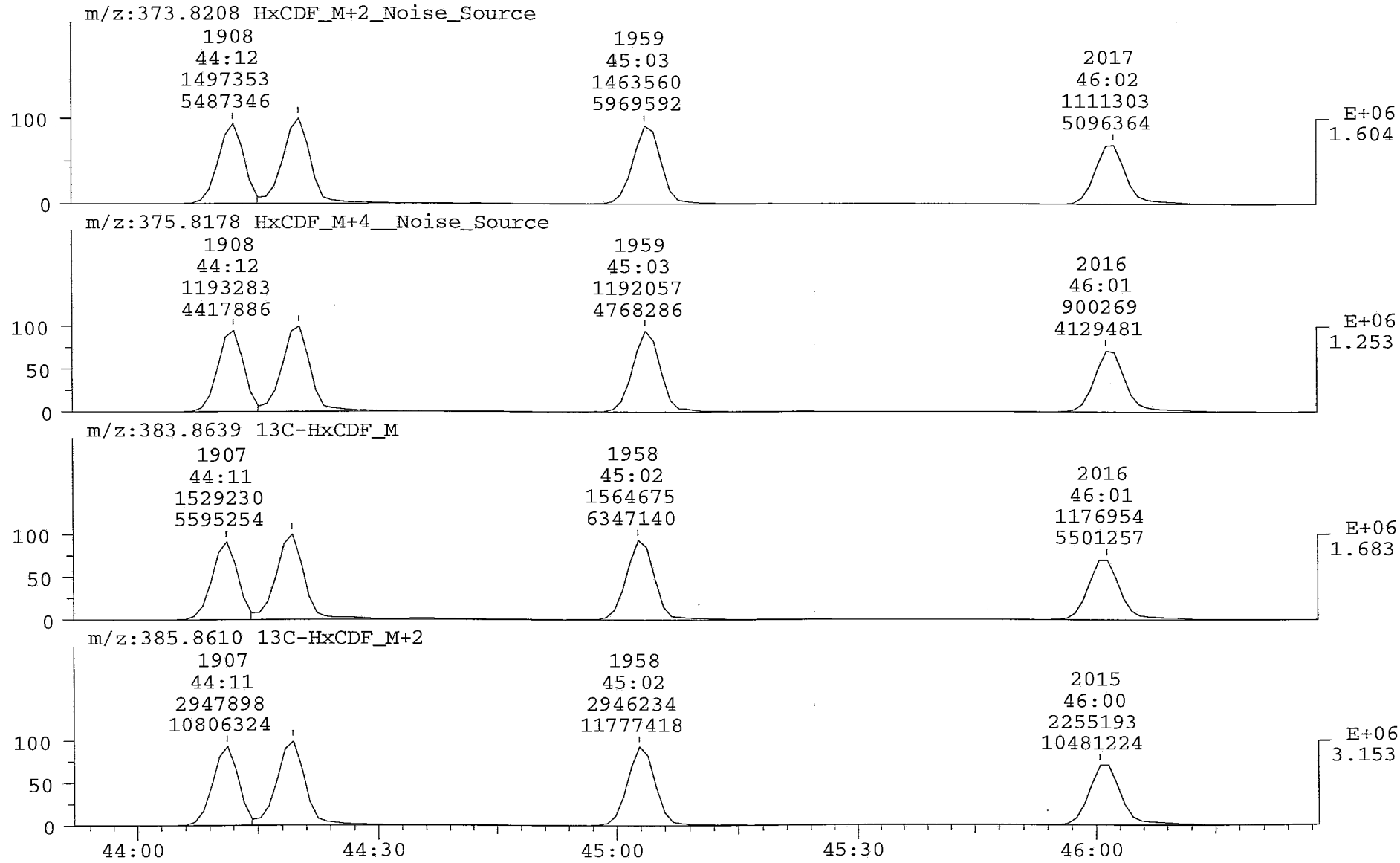
```
CHRO:  d3140516ss                              16-May-14   Elapse:  39:56      1664
Samp:  WO=4104:76 Meth=F8o Dil=1                           Start :  20:36:20   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                 Study :  2nd Source
Oper:  MSD                                                 Inlet :  LC
Peak:  100.00  ppm      Label wndw:   1396 > 1811          Masses:  303 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



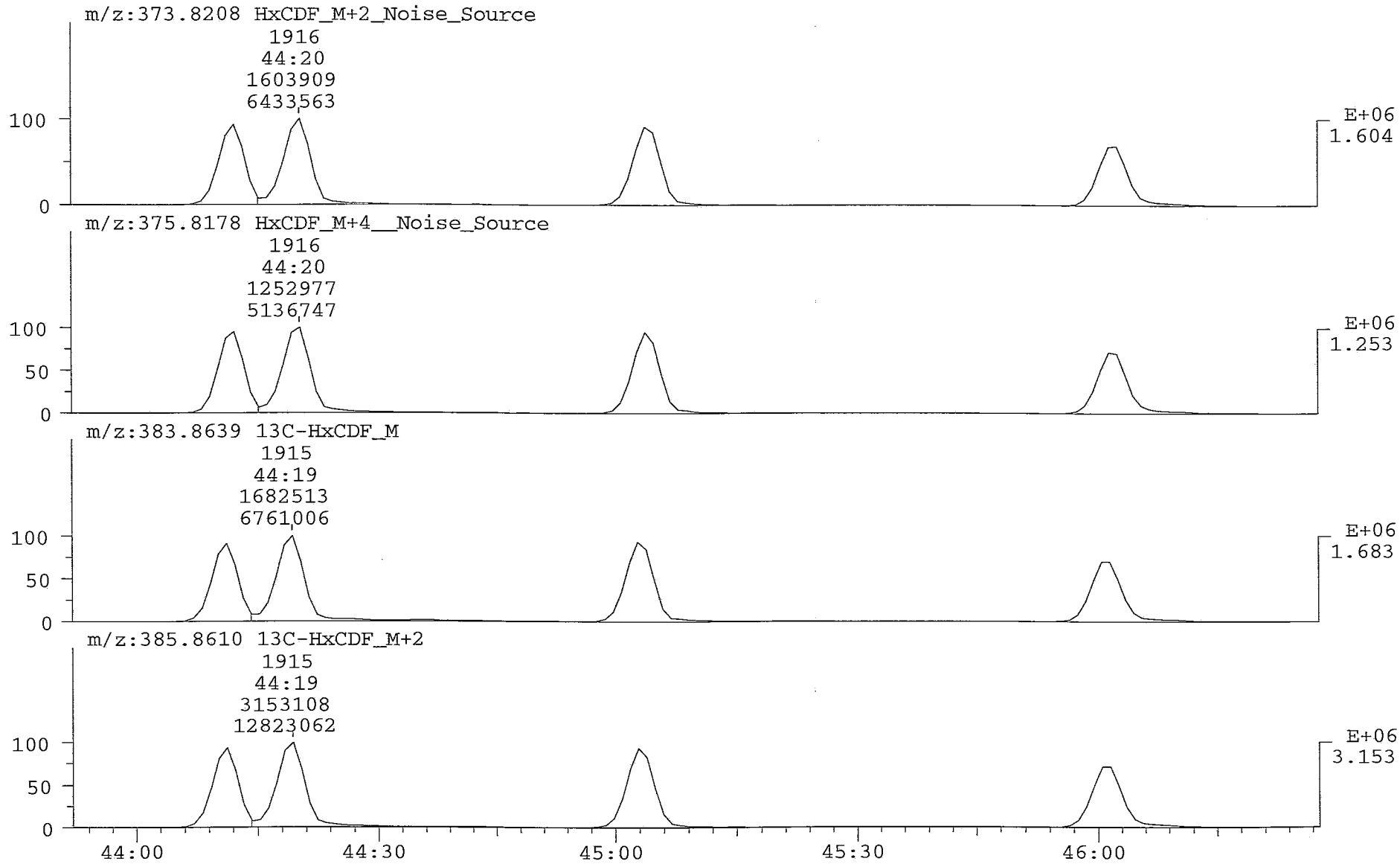
CHRO: d3140516ss 16-May-14 Elapse: 45:32 1987
Samp: WO=4104:76 Meth=F8o Dil=1 Start : 20:36:20 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : 2nd Source
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1949 > 2024 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



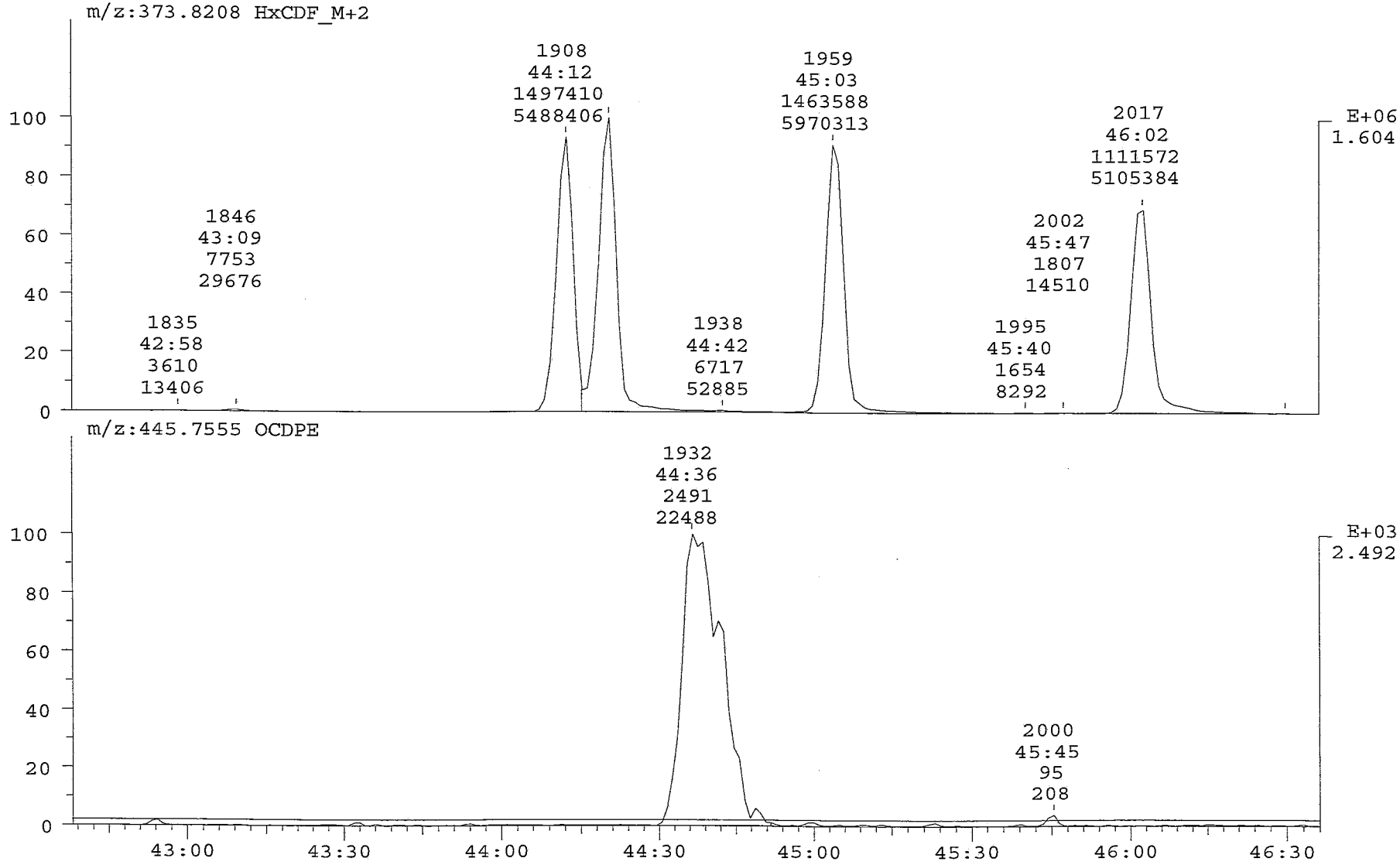
CHRO: d3140516ss 16-May-14 Elapse: 54:25 2502
Samp: WO=4104:76 Meth=F8o Dil=1 Start : 20:36:20 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : 2nd Source
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1888 > 2042 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



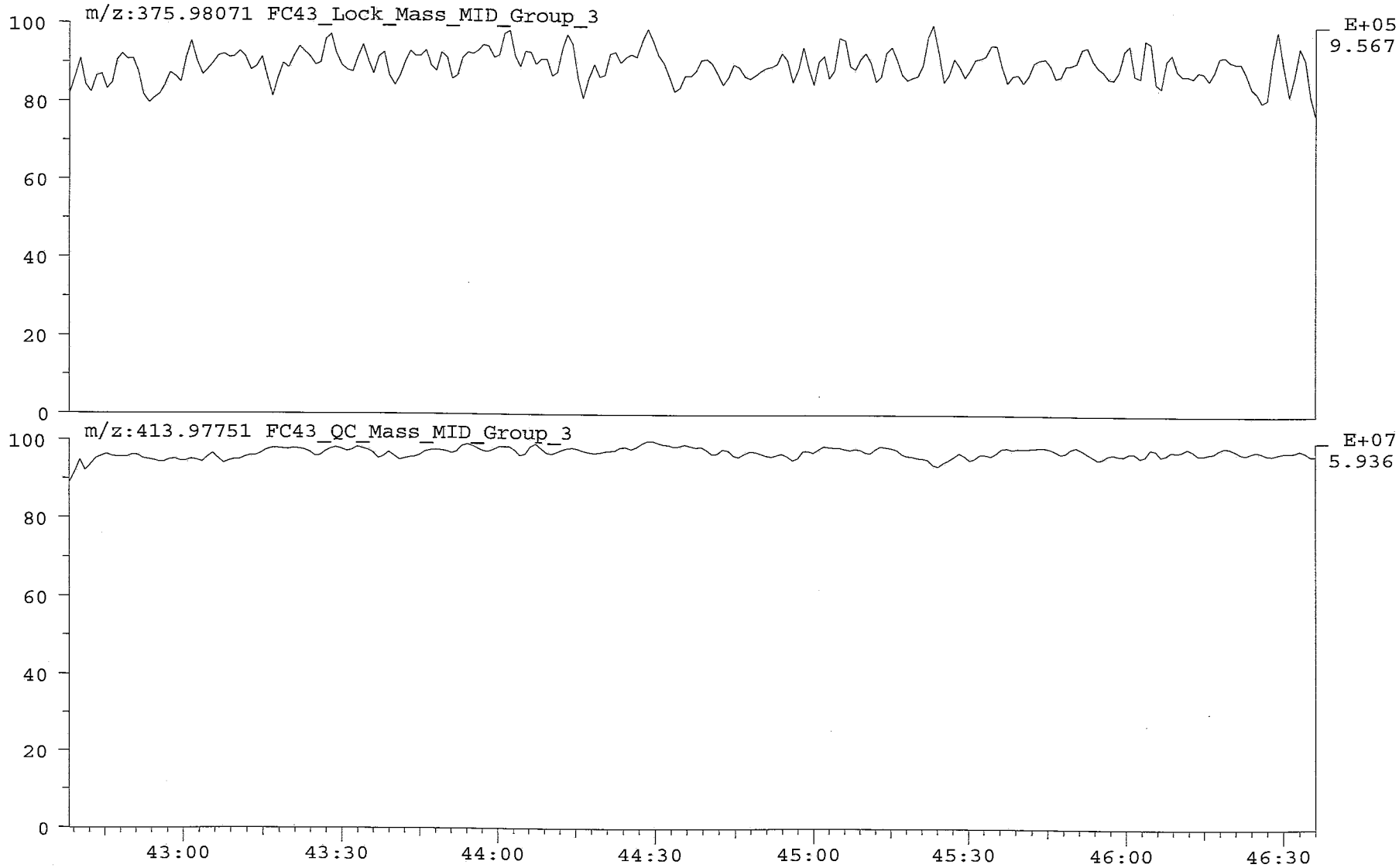
CHRO: d3140516ss 16-May-14 Elapse: 44:21 1917
Samp: WO=4104:76 Meth=F8o Dil=1 Start : 20:36:20 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : 2nd Source
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1914 > 1920 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



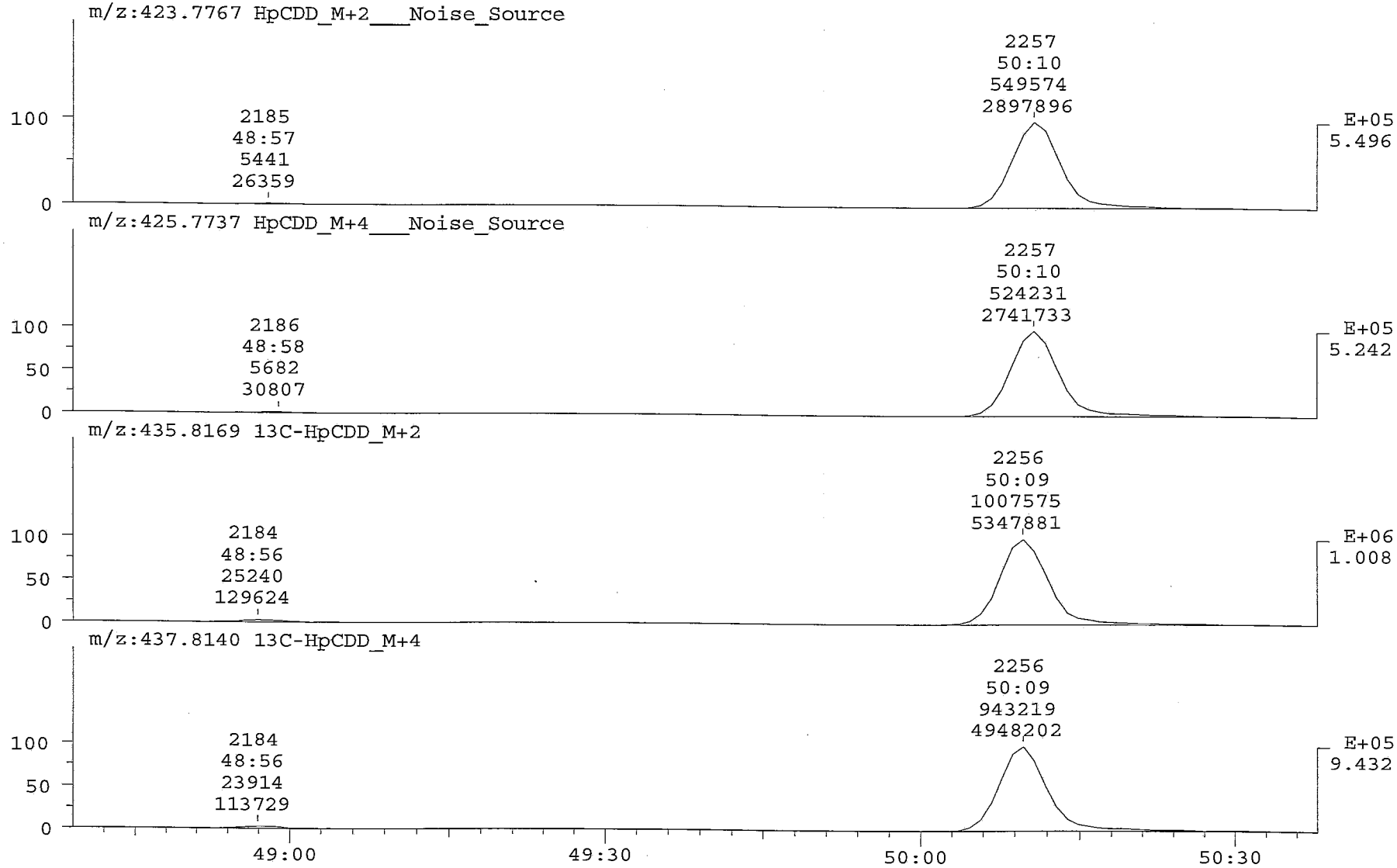
```
CHRO:  d3140516ss                                16-May-14  Elapse:  44:20      1916
Samp:  WO=4104:76 Meth=F8o Dil=1                            Start :  20:36:20   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  2nd Source
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1815 > 2050            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



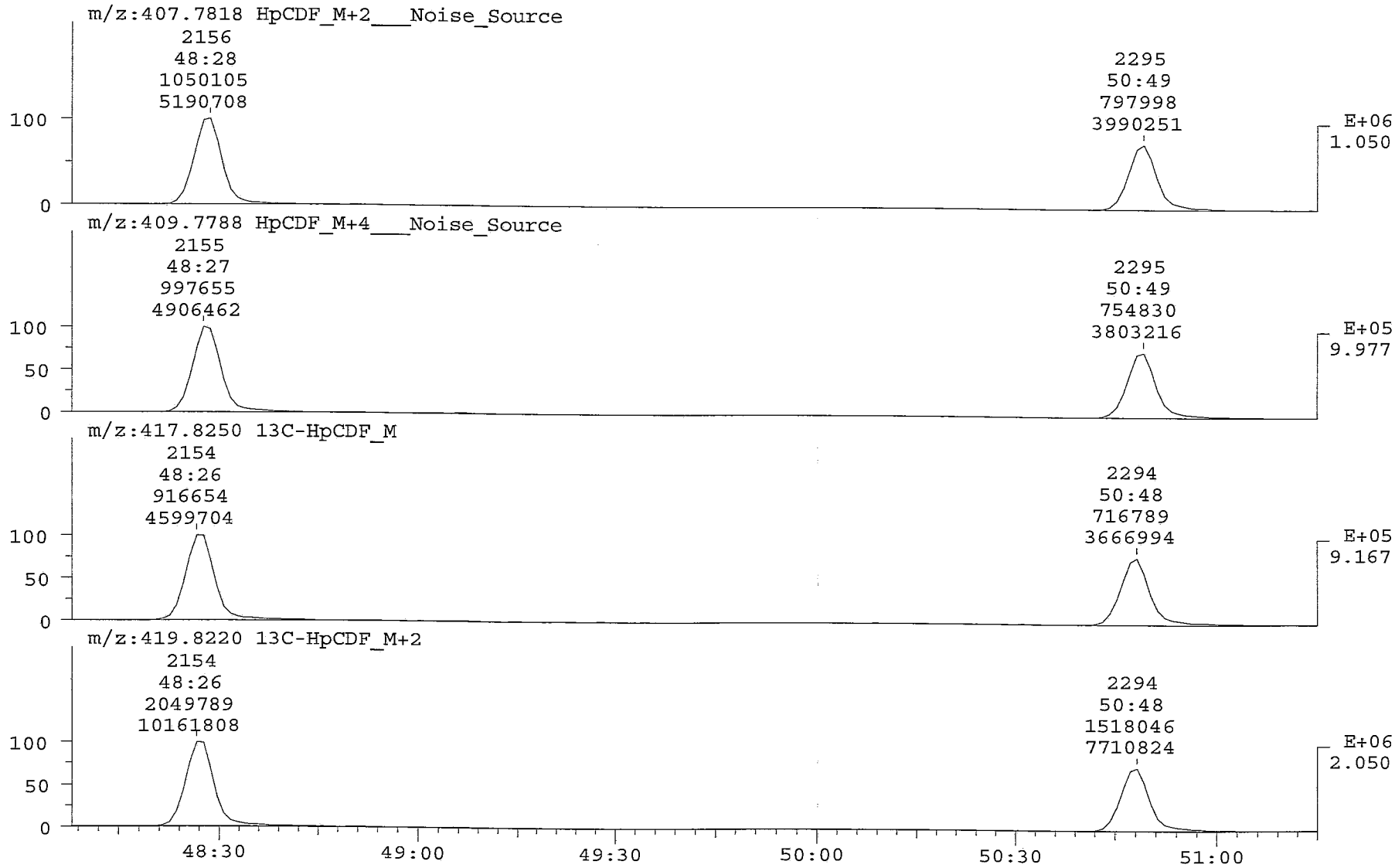
CHRO: d3140516ss 16-May-14 Elapse: 44:20 1916
Samp: WO=4104:76 Meth=F8o Dil=1 Start : 20:36:20 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : 2nd Source
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1815 > 2050 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



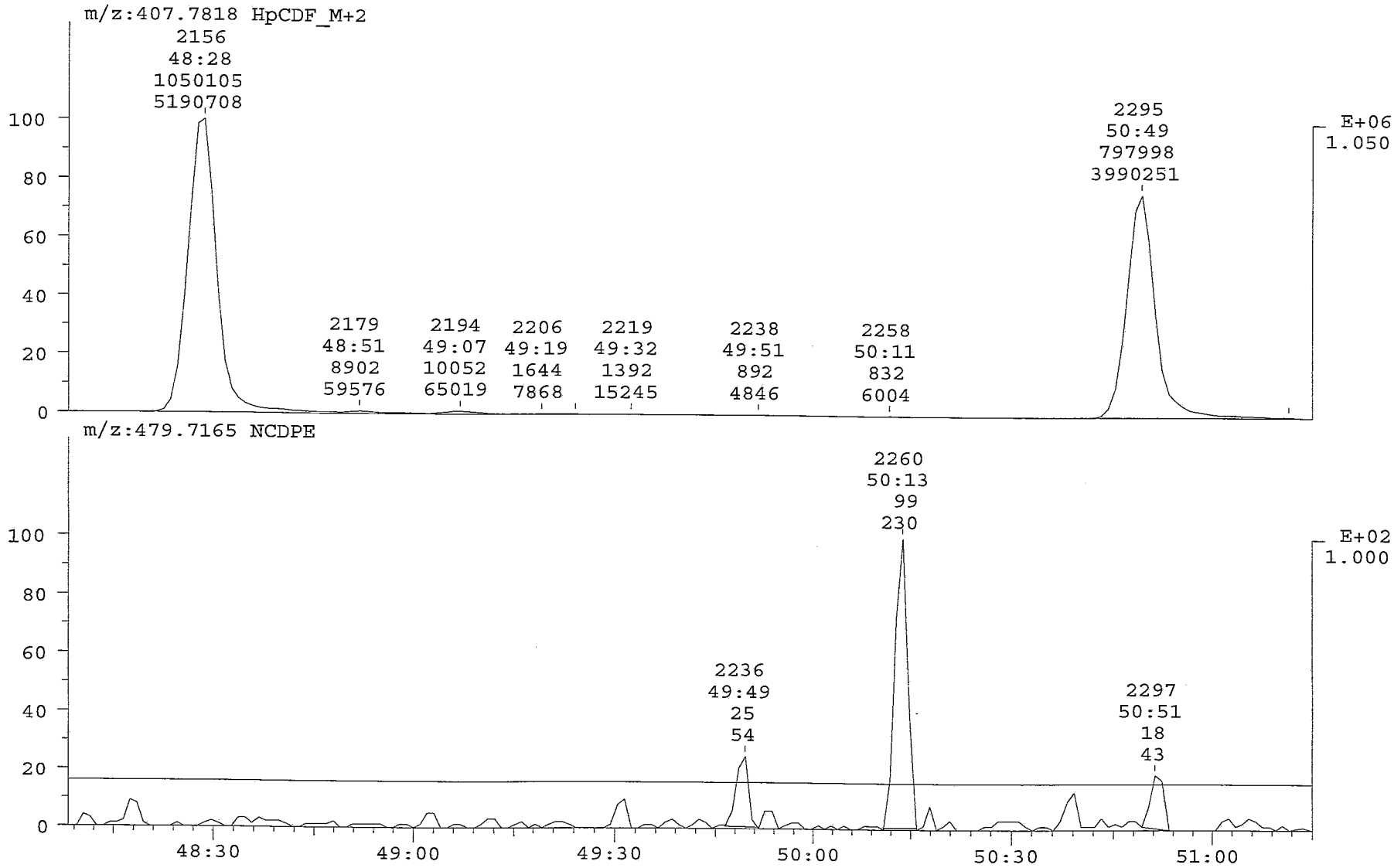
CHRO: d3140516ss 16-May-14 Elapse: 44:20 1916
Samp: WO=4104:76 Meth=F8o Dil=1 Start : 20:36:20 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : 2nd Source
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2166 > 2284 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



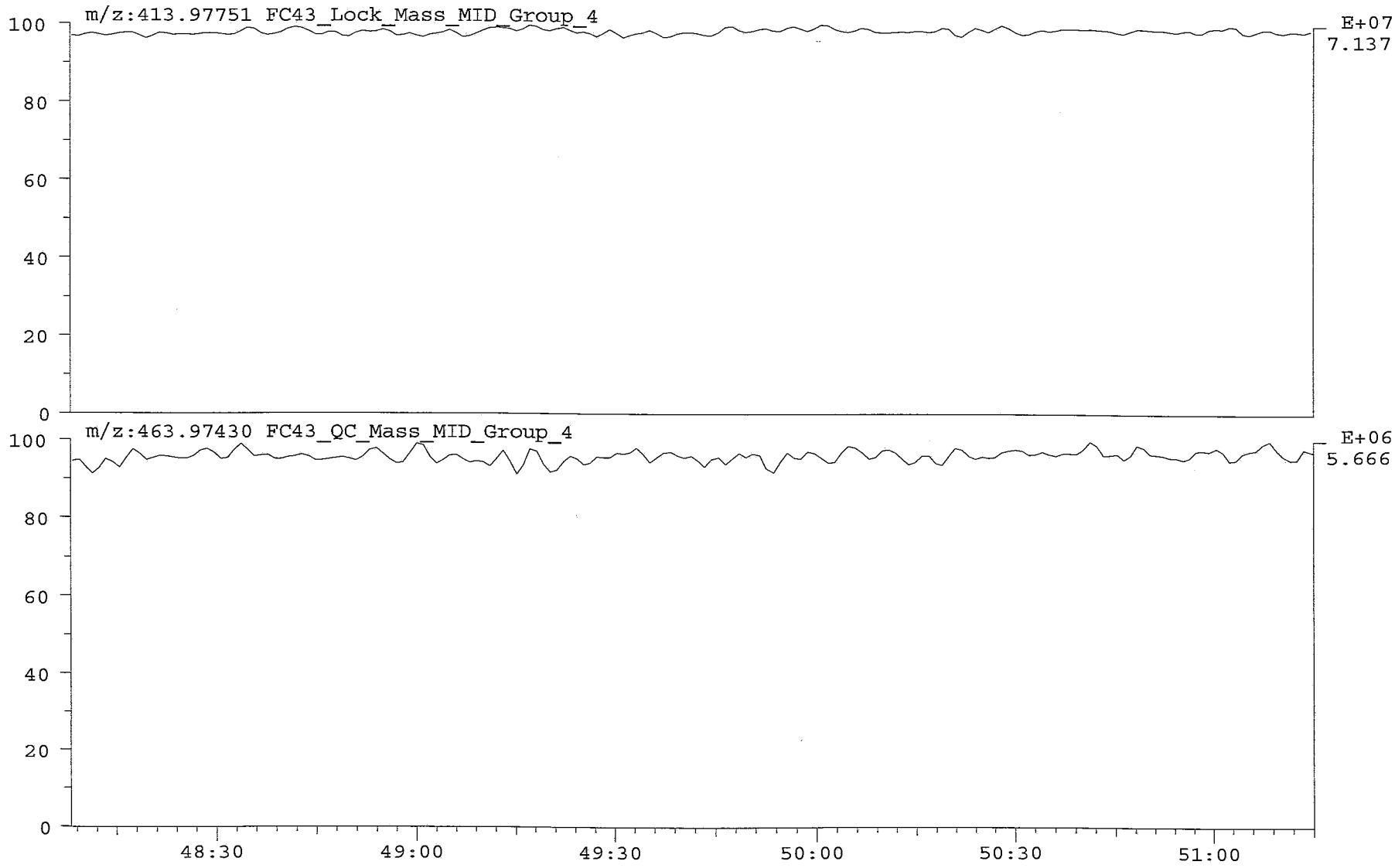
CHRO: d3140516ss 16-May-14 Elapse: 49:41 2228
Samp: WO=4104:76 Meth=F8o Dil=1 Start : 20:36:20 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : 2nd Source
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2136 > 2320 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



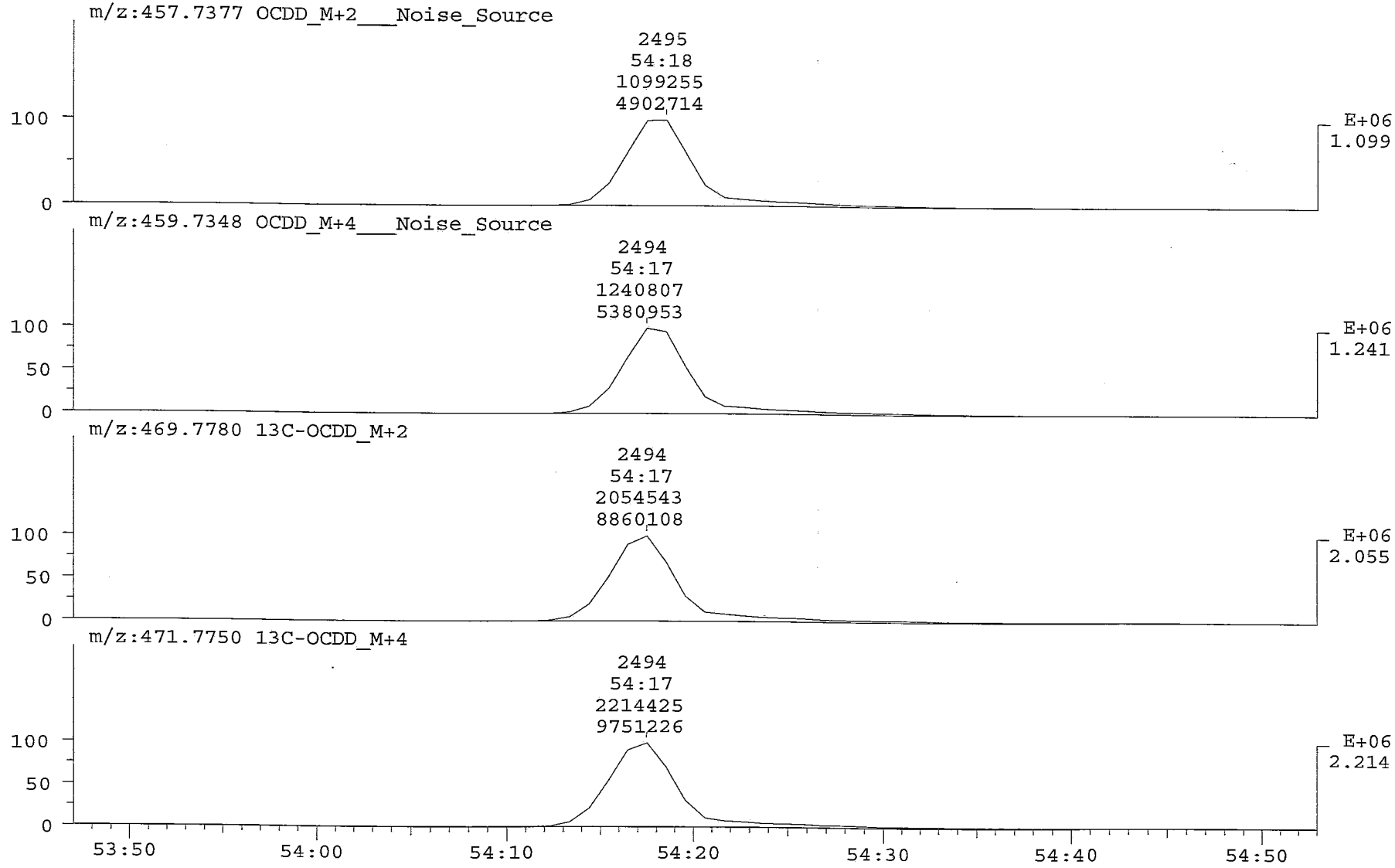
CHRO: d3140516ss 16-May-14 Elapse: 49:41 2228
Samp: WO=4104:76 Meth=F8o Dil=1 Start : 20:36:20 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : 2nd Source
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2136 > 2320 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



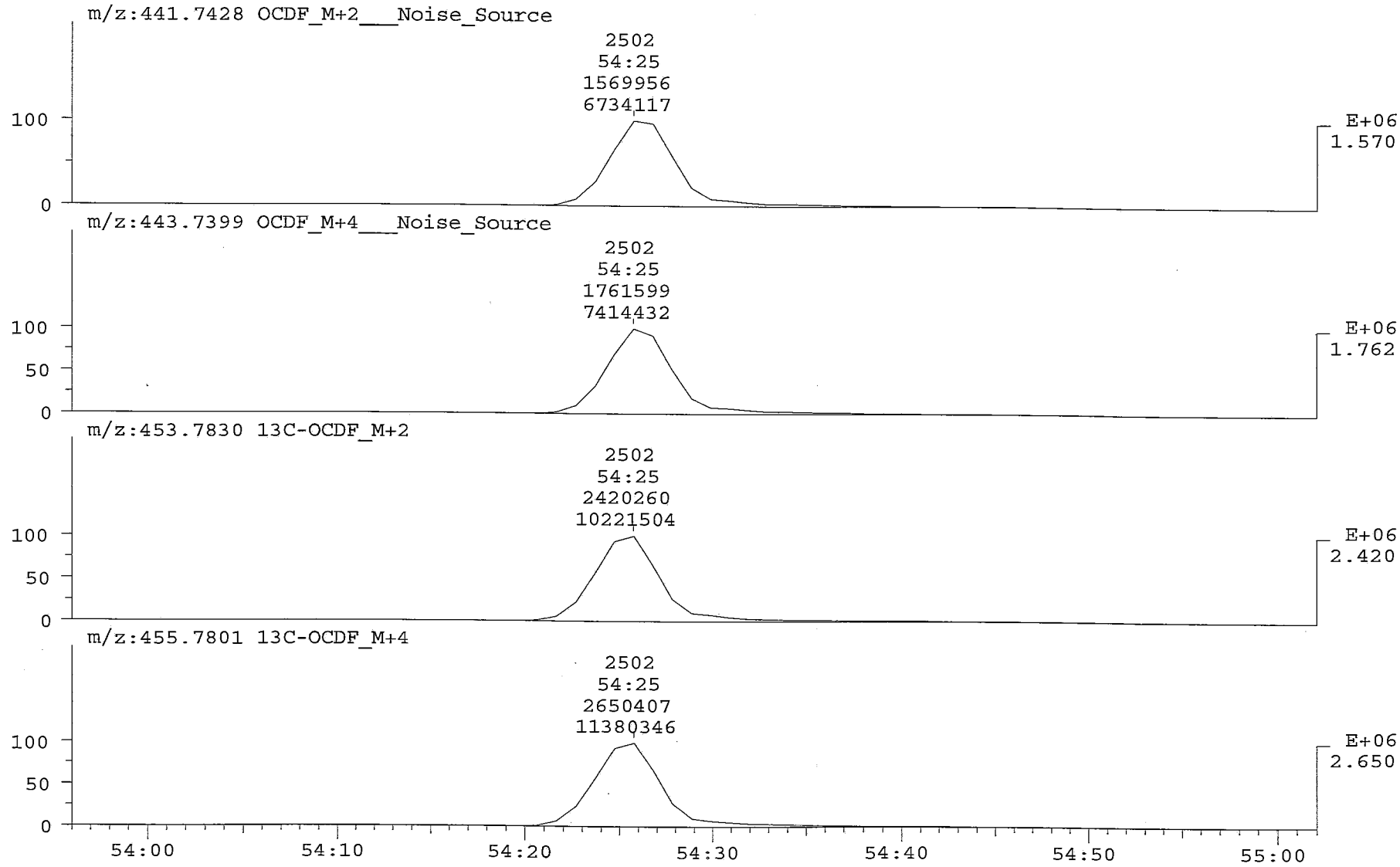
```
CHRO:  d3140516ss                          16-May-14   Elapse:  49:41      2228
Samp:  WO=4104:76 Meth=F8o Dil=1                       Start :  20:36:20   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                             Study :  2nd Source
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2136 > 2320       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  0, 0.0
Disp:  Height  Area
```



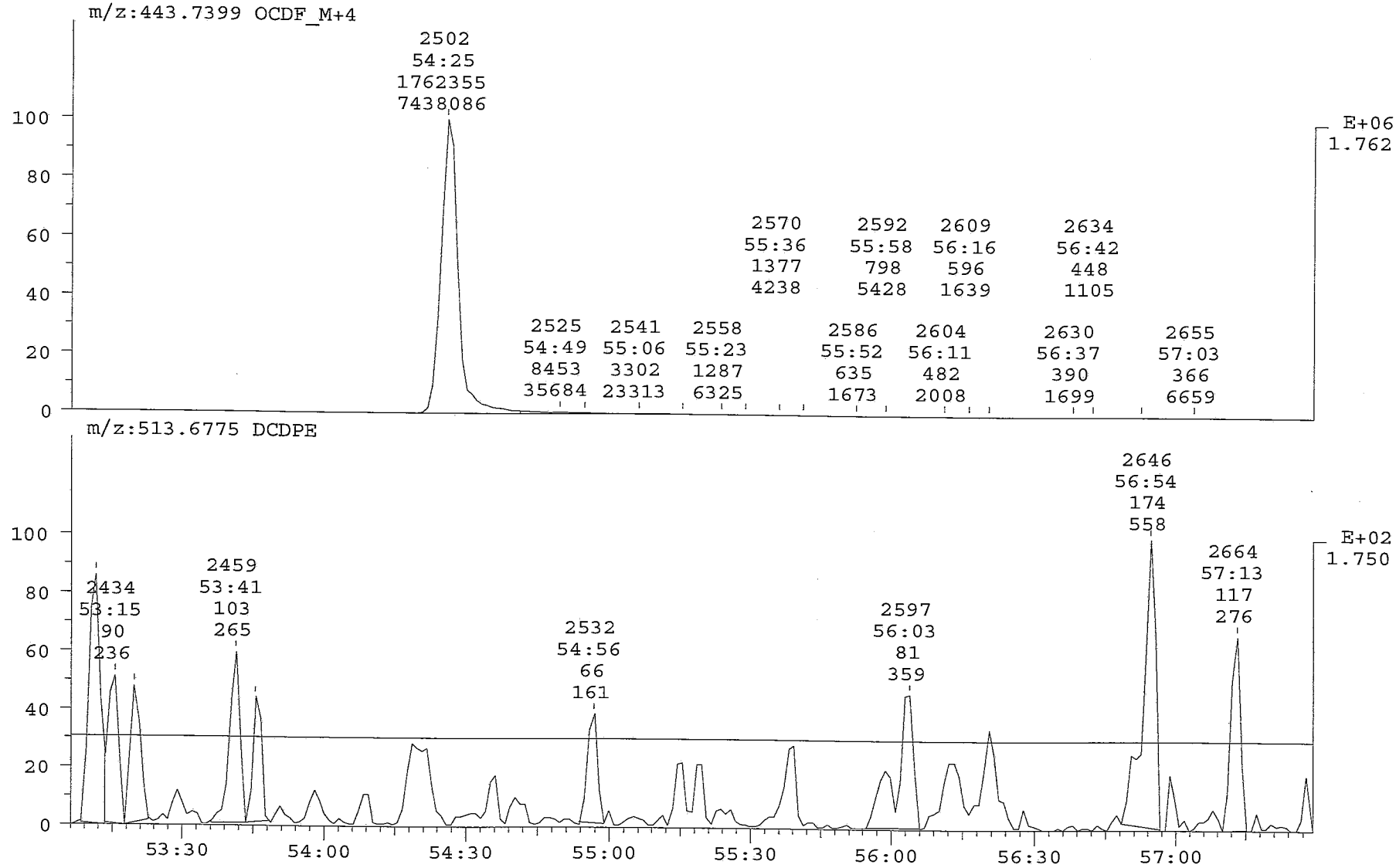
CHRO: d3140516ss 16-May-14 Elapse: 54:17 2494
Samp: WO=4104:76 Meth=F8o Dil=1 Start : 20:36:20 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : 2nd Source
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2464 > 2528 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



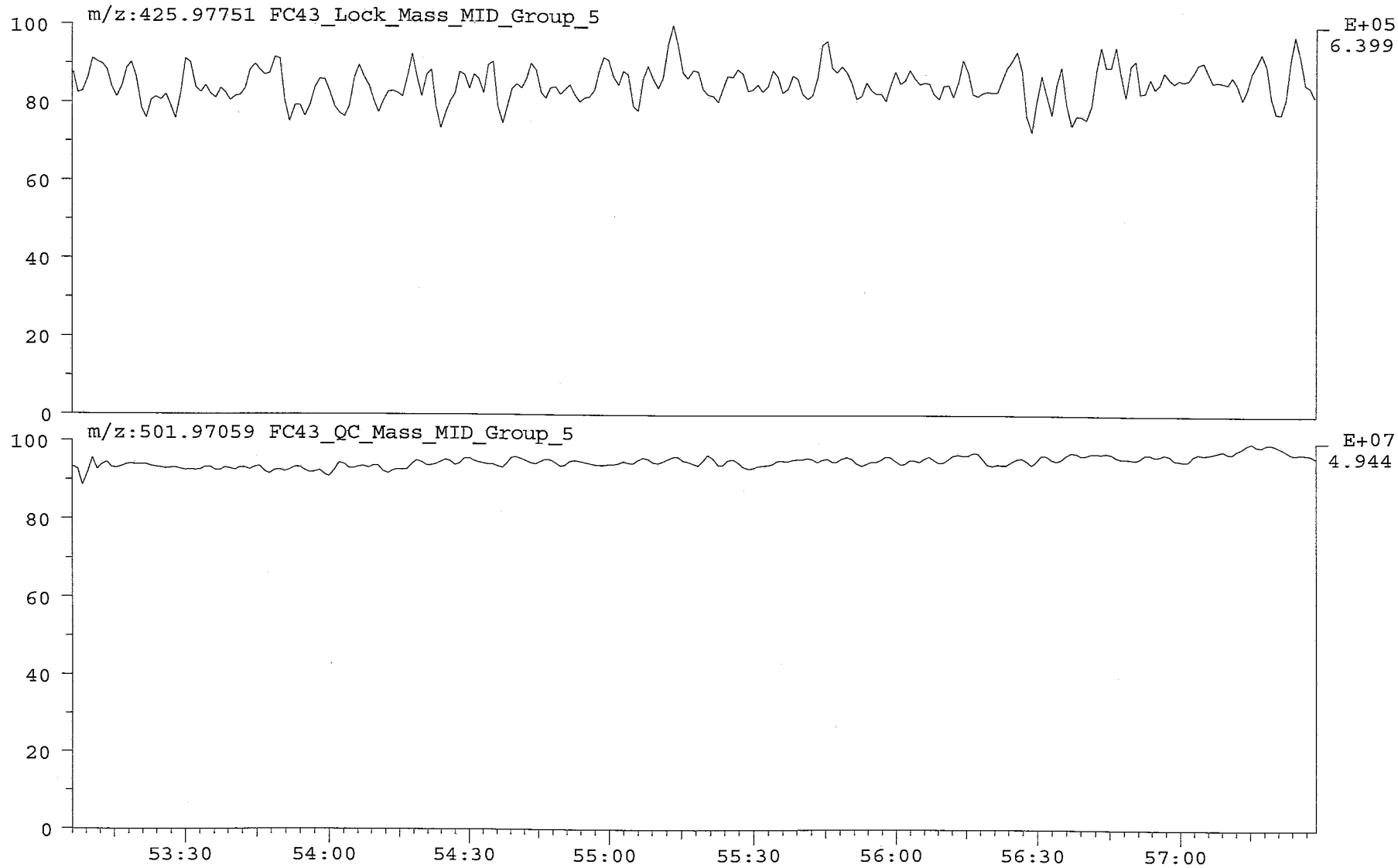
```
CHRO:  d3140516ss                                16-May-14  Elapse:  54:25      2502
Samp:  WO=4104:76 Meth=F8o Dil=1                            Start :  20:36:20   2680
Comm:  Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  2nd Source
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2473 > 2537            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d3140516ss 16-May-14 Elapse: 54:25 2502
Samp: WO=4104:76 Meth=F8o Dil=1 Start : 20:36:20 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : 2nd Source
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2425 > 2679 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d3140516ss 16-May-14 Elapse: 54:25 2502
Samp: WO=4104:76 Meth=F8o Dil=1 Start : 20:36:20 2680
Comm: Inst=d2a/1182082 Batch=20140516i Ccal=D3140515S2
Mode: EI ESI + Q1MS UP LR Study : 2nd Source
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2425 > 2679 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Fri May 16 20:40:56 2014 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - D5FBM84J

Analysis started at: 16-May-14 20:40:55

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence :

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:13 min	35:13 min	0.99 sec
# 2	35:13 min	7:16 min	42:30 min	1.00 sec
# 3	42:30 min	5:00 min	47:30 min	1.00 sec
# 4	47:30 min	5:30 min	53:00 min	1.00 sec
# 5	53:00 min	4:30 min	57:30 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	122
305.8987		1	1	122
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	122
321.8936		1	1	122
327.8847		1	1	122
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	122

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7

```
  375.9802     20  1          7
  409.7974      1  1        146
 Window # 3
      mass F  int  gr  time (ms)
  373.8208      1  1        146
  375.8178      1  1        146
  375.9802 l   20  1          7
  375.9802     20  1          7
  383.8639      5  1         29
  385.8610      5  1         29
  389.8158      1  1        146
  391.8127      1  1        146
  401.8559      5  1         29
  403.8529      5  1         29
  413.9770 c   20  1          7
  413.9770     20  1          7
  445.7555      1  1        146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1        146
  409.7788      1  1        146
  413.9770 l   20  1          7
  413.9770     20  1          7
  417.8250      5  1         29
  419.8220      5  1         29
  423.7767      1  1        146
  425.7737      1  1        146
  435.8169      5  1         29
  437.8140      5  1         29
  463.9738 c   20  1          7
  463.9738     20  1          7
  479.7165      1  1        146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1          7
  425.9770     20  1          7
  441.7428      1  1        146
  443.7399      1  1        146
  453.7830      5  1         29
  455.7801      5  1         29
  457.7377      1  1        146
  459.7348      1  1        146
  469.7780      5  1         29
  471.7750      5  1         29
  501.9706 c   20  1          7
  501.9706     20  1          7
  513.6775      1  1        146

MID Window terminated after 35.233333 minutes
MID Window end time was 35.220000 minutes
MID Window terminated after 42.500000 minutes
MID Window end time was 42.500000 minutes
MID Window terminated after 47.500000 minutes
MID Window end time was 47.500000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.500000 minutes
MID Window end time was 57.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune
```

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0177	BMASS	308.9834
BQUAD	1.5000	CAPIL	0.0000	CAPTSET	0.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	16.0000	ECORR	1.0003	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2096.1908
ELEN	-45.0000	EMULT	1699.0000	ENS	148.0000
ENSBR	1.5000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	178.0000	EXSBR	2.1000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	11.7000
FQUADGAIN	0.0000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0144	FVINLET	0.0773	FVSRC	0.0522
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	740.0000
LENS_SYM	9.5000	LM	375.8364	LMII	500.0000
LMASS	308.9834	LKM	425.9770	MASS	308.9834
MDAC	3488911.8952	MRANGE	1307.4725	NSAM	200.0000
NSCAN	2701.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	0.0000	PSAM	10.0000
PUSHER	-8.3000	RECURR	0.8972	RELEN	0.0000
RES	10684.1186	RPUSHER	-8.1832	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	730.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	0.0000	SLOW	60.0000	SS	2.0000
SW	0.1590	TANAL	0.0000	TCURR	0.0000
TD	30.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	308.9834	XLENS_POT	906.0000
XLENS_SYM	9.5000	YLENS_POT	750.0000	YLENS_SYM	0.0000

```
Source Gauge:          1.5e-005 mbar
Analyzer Penning:      7.5e-008 mbar
Pirani Analyse:        1.4e-002 mbar
Pirani Source:         5.2e-002 mbar
Pirani Inlet System:   7.7e-002 mbar

Scantype is electric

Sourcemode is EI POS

MID Time Window 1: Resolution is 9629.
MID Time Window 2: Resolution is 9297.
MID Time Window 3: Resolution is 10431.
MID Time Window 4: Resolution is 9697.
MID Time Window 5: Resolution is 10684.

Amplifier Offset: 94.


*** File closed Fri May 16 21:38:27 2014
  ***
```

User: finnigan
Host: knx-alpha5.stl-inc.com
Class: knx-alpha5.stl-inc.com
Job: d3140516ss.log

TestAmerica Knoxville Dioxin GC/MS Continuing Calibration Review / Narrative Checklist
Method: 8290/8290A - KNOX-ID-0004-R16

Start Mass Res. ✓:	11:24	Ver Filename:	d316080352	Inst:	D2A
End Mass Res. ✓:	22:11	Win Filename:		ICAL Date:	5-16-14
		Col Perf Filename:			
		End Ver Filename:	d316080353		

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (MAT) and > 10,000 on FC43 m/z 313.9838, 351.9802 and 363.9807? FC43 m/z 313.9838, 351.9802 and 375.9802? FC43 m/z 375.9802, 401.9770 and 413.9770? FC43 m/z 413.9775, 425.9770 and 463.9738? FC43 m/z 425.9775, 463.9743 and 501.9706? (DFS)		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) or 363.9807 (FC43) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer on their respective columns?		✓			✓
7. Was DoD Performance check criteria met? Identification of all first and last eluters of the eight homologue retention time windows and documentation by labeling (F/L) on the chromatogram. Absolute retention times for switching from one homologous series to the next > 10 seconds for all components of the mixture.					✓
8. Were continuing calibrations performed at the beginning and end of the 12-hour period, with successful mass resolution and GC resolution performance checks?		✓			✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 3), quantitation ions (Table 21), and formula (Section 10.2.7)?		✓			✓
10. Are the measured RRFs for each compound within the specified control limits in Table 7 for all PCDDs/PCDFs?		✓			✓
11. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 3?		✓			✓
12. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
13. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP?		✓			✓
14. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
15. Were before/after chromatograms reviewed to determine whether the software and manual integrations were appropriate?.		✓			✓
16. Were manual integrations documented properly?	✓				✓
17. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
18. Does the CCAL folder contain **complete** data in the following order: Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK/FC43 resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards?		✓			✓

Analyst:	**Date:** 8/3/14	**2nd Level Reviewer :**	**Date:** 8-3-16
Comments:		**Comments:**	

TESTAMERICA KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT RUN LOG
Inst: DFS 2

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
8-3-16	11:24	MD	FC43	d21608 03r1	OK	—	Res		Mass Res ck
8-3-16	11:38	MD	4966:40	d31608 03s2	OK	—	Ven		Ven Ok C
8-3-16	12:39	MD	M81161AC	d2tm8116c	ok	H2O	QC		H6G290000-030, 031, 032
8-3-16	13:40	MD	Noname	rinse	ok	—	QC		rinses
8-3-16	13:56	MD	↓	↓	ok	—	QC		↓
8-3-16	14:12	MD	↓	↓	ok	—	QC		↓
8-3-16	14:24	MD	↓	↓	ok	—	QC		↓
8-3-16	14:40	MD	M81161AA	d2tm8116b	ok	H2O	QC		H6G290000-030, 031, 32B
8-3-16	15:42	MD	M81PN1AA	d2tm81pn	ok	H2O	SAW		H6G280404-001
8-3-16	16:43	MD	M81PP1AA	d2tm81pp	ok	H2O	SAW		-002
8-3-16	17:44	MD	M81PQ1AA	d2tm81pq	ok	H2O	SAW		-003
8-3-16	18:45	MD	M81PR1AA	d2tm81pr	ok	H2O	SAW		-004
8-3-16	19:46	MD	M81PT1AA	d2tm81pt	ok	H2O	SAW		-005
8-3-16	20:47	MD	Noname	rinse	ok	—	QC		rinse
8-3-16	20:59	MD	4966:40	d31608 03s3	ok	—	Ven		Ven ok
8-3-16	22:11	MD	FC-43	d21608 03r2	ok	—	Res		Mass Res Check

Read and Understood by: _____ Date: _____

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

CCAL ID: 89445 - D3160803S2

CCAL Filename: d3160803s2

CCAL Sample ID: 4966:40

CCAL Result Dir: /20160803s2/d3160803s2.d

CCAL Date/Time: 08/03/16 11:38

ICAL Date: 05/16/14

Method: IN2o - DX8290_2

Instrument: D2A

Column SN: 1379923

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	10.4	1.171	1.222	4.3	20.0	True
2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	10.9	1.090	1.187	8.9	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	50	1.047	1.046	-0.1	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	50	1.187	1.182	-0.4	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	50	1.105	1.095	-0.9	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	55	1.140	1.247	9.4	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	54	1.146	1.242	8.4	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05-1.43	56	1.210	1.354	11.9	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	53	1.364	1.445	6.0	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	52	1.278	1.337	4.6	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	52	1.267	1.326	4.6	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05-1.43	51	1.285	1.303	1.4	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	54	1.121	1.218	8.7	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.07	0.88-1.20	52	1.497	1.547	3.3	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	51	1.383	1.425	3.0	20.0	True
OCDD	M+2/M+4	0.91	0.76-1.02	99	1.243	1.232	-0.9	20.0	True
OCDF	M+2/M+4	0.92	0.76-1.02	97	1.119	1.089	-2.7	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65-0.89	103	1.067	1.095	2.6	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.81	0.65-0.89	105	1.750	1.829	4.5	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.62	1.32-1.78	99	0.873	0.864	-1.0	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	97	1.368	1.327	-3.0	30.0	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	97	1.381	1.345	-2.5	30.0	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.30	1.05-1.43	102	0.893	0.908	1.7	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	95	0.929	0.887	-4.6	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43-0.59	114	1.213	1.385	14.1	30.0	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43-0.59	107	1.489	1.589	6.7	30.0	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.55	0.43-0.59	110	1.346	1.482	10.1	30.0	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.54	0.43-0.59	108	1.210	1.304	7.8	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88-1.20	112	0.823	0.923	12.2	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37-0.51	115	1.069	1.226	14.6	30.0	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.47	0.37-0.51	119	0.904	1.072	18.5	30.0	True
13C-OCDD	M+2/M+4	0.90	0.76-1.02	213	0.708	0.753	6.4	30.0	True
13C-OCDF	M+2/M+4	0.91	0.76-1.02	225	1.072	1.204	12.3	30.0	True

WW 8.3.16 Qid LL 8-3-16

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

CCAL ID: 89445 - D3160803S2
CCAL Filename: d3160803s2
CCAL Sample ID: 4966:40
CCAL Result Dir: /20160803s2/d3160803s2.d
CCAL Date/Time: 08/03/16 11:38

ICAL Date: 05/16/14
Method: IN2o - DX8290_2
Instrument: D2A
Column SN: 1379923
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	31:51	31:17	-34	1.002	1.002	-	
2,3,7,8-TCDF	29:45	29:15	-30	1.001	1.002	-	
1,2,3,7,8-PeCDD	41:00	40:45	-15	1.000	1.000	-	
1,2,3,7,8-PeCDF	39:17	39:00	-17	1.000	1.001	-	
2,3,4,7,8-PeCDF	40:29	40:14	-15	1.000	1.000	-	
1,2,3,4,7,8-HxCDD	45:14	44:59	-15	1.000	1.000	-	
1,2,3,6,7,8-HxCDD	45:21	45:06	-15	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	45:45	45:28	-17	1.009	1.009	-	
1,2,3,4,7,8-HxCDF	44:11	43:57	-14	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	44:19	44:05	-14	1.000	1.000	-	
2,3,4,6,7,8-HxCDF	45:03	44:48	-15	1.000	1.000	-	
1,2,3,7,8,9-HxCDF	46:01	45:45	-16	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDD	50:10	49:49	-21	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	48:27	48:08	-19	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	50:48	50:27	-21	1.000	1.000	-	
OCDD	54:17	54:01	-16	1.000	1.000	-	
OCDF	54:25	54:09	-16	1.000	1.000	-	
13C-2,3,7,8-TCDD	31:47	31:14	-33	1.017	1.017	-	
13C-2,3,7,8-TCDF	29:43	29:12	-31	0.950	0.951	-	
13C-1,2,3,7,8-PeCDD	40:59	40:44	-15	1.311	1.326	-	
13C-1,2,3,7,8-PeCDF	39:16	38:58	-18	1.256	1.269	-	
13C-2,3,4,7,8-PeCDF	40:28	40:13	-15	1.295	1.309	-	
13C-1,2,3,4,7,8-HxCDD	45:13	44:58	-15	0.989	0.989	-	
13C-1,2,3,6,7,8-HxCDD	45:20	45:05	-15	0.991	0.992	-	
13C-1,2,3,4,7,8-HxCDF	44:10	43:56	-14	0.966	0.967	-	
13C-1,2,3,6,7,8-HxCDF	44:18	44:04	-14	0.969	0.970	-	
13C-2,3,4,6,7,8-HxCDF	45:02	44:47	-15	0.985	0.985	-	
13C-1,2,3,7,8,9-HxCDF	46:00	45:44	-16	1.006	1.006	-	
13C-1,2,3,4,6,7,8-HpCDD	50:09	49:48	-21	1.097	1.096	-	
13C-1,2,3,4,6,7,8-HpCDF	48:26	48:07	-19	1.059	1.059	-	
13C-1,2,3,4,7,8,9-HpCDF	50:47	50:26	-21	1.110	1.110	-	
13C-OCDD	54:16	54:00	-16	1.187	1.188	-	
13C-OCDF	54:24	54:08	-16	1.190	1.191	-	

TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

CCAL ID: 89445 - D3160803S2

WIN Filename: d3160803s2

Method: IN2o - DX8290_2

WIN Sample ID: 4966:40

Instrument: D2A

WIN Result Dir: /20160803s2/d3160803s2.d

Column SN: 1379923

WIN Date/Time: 08/03/16 11:38

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	31:14	25:15	0.8084	34:26	1.1025
Total TCDF	13C-2,3,7,8-TCDF	304	29:12	22:48	0.7808	34:19	1.1752
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	40:44	37:52	0.9296	41:24	1.0164
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	38:58	35:02	0.8991	41:31	1.0654
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	45:05	43:25	0.9630	45:28	1.0085
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	43:56	42:43	0.9723	45:53	1.0444
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	49:48	48:37	0.9762	49:49	1.0003
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	48:07	48:08	1.0003	50:27	1.0485
OCDD	13C-OCDD	458	54:00	54:01	1.0003	54:01	1.0003
OCDF	13C-OCDF	442	54:08	54:09	1.0003	54:09	1.0003

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89446 - D3160803S2
CCAL Filename: d3160803s2
CCAL Sample ID: 4966:40
CCAL Result Dir: /20160803s2/d3160803s2.d
CCAL Date/Time: 08/03/16 11:38

ICAL Date: 05/16/14
Method: 9Ao - DX8290A
Instrument: D2A
Column SN: 1379923
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	10.4	1.171	1.222	4.3	20.0	True
2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	10.9	1.090	1.187	8.9	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	50	1.047	1.046	-0.1	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	50	1.187	1.182	-0.4	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	50	1.105	1.095	-0.9	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	55	1.140	1.247	9.4	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	54	1.146	1.242	8.4	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05-1.43	56	1.210	1.354	11.9	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	53	1.364	1.445	6.0	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	52	1.278	1.337	4.6	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	52	1.267	1.326	4.6	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05-1.43	51	1.285	1.303	1.4	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	54	1.121	1.218	8.7	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.07	0.88-1.20	52	1.497	1.547	3.3	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	51	1.383	1.425	3.0	20.0	True
OCDD	M+2/M+4	0.91	0.76-1.02	99	1.243	1.232	-0.9	20.0	True
OCDF	M+2/M+4	0.92	0.76-1.02	97	1.119	1.089	-2.7	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65-0.89	103	1.067	1.095	2.6	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.81	0.65-0.89	105	1.750	1.829	4.5	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.62	1.32-1.78	99	0.873	0.864	-1.0	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	97	1.368	1.327	-3.0	30.0	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	97	1.381	1.345	-2.5	30.0	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.30	1.05-1.43	102	0.893	0.908	1.7	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	95	0.929	0.887	-4.6	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43-0.59	114	1.213	1.385	14.1	30.0	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43-0.59	107	1.489	1.589	6.7	30.0	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.55	0.43-0.59	110	1.346	1.482	10.1	30.0	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.54	0.43-0.59	108	1.210	1.304	7.8	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88-1.20	112	0.823	0.923	12.2	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37-0.51	115	1.069	1.226	14.6	30.0	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.47	0.37-0.51	119	0.904	1.072	18.5	30.0	True
13C-OCDD	M+2/M+4	0.90	0.76-1.02	213	0.708	0.753	6.4	30.0	True
13C-OCDF	M+2/M+4	0.91	0.76-1.02	225	1.072	1.204	12.3	30.0	True

WD 8.3.16

QCd 8-3-16

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89446 - D3160803S2
CCAL Filename: d3160803s2
CCAL Sample ID: 4966:40
CCAL Result Dir: /20160803s2/d3160803s2.d
CCAL Date/Time: 08/03/16 11:38

ICAL Date: 05/16/14
Method: 9Ao - DX8290A
Instrument: D2A
Column SN: 1379923
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	31:51	31:17	-34	1.002	1.002	-	
2,3,7,8-TCDF	29:45	29:15	-30	1.001	1.002	-	
1,2,3,7,8-PeCDD	41:00	40:45	-15	1.000	1.000	-	
1,2,3,7,8-PeCDF	39:17	39:00	-17	1.000	1.001	-	
2,3,4,7,8-PeCDF	40:29	40:14	-15	1.000	1.000	-	
1,2,3,4,7,8-HxCDD	45:14	44:59	-15	1.000	1.000	-	
1,2,3,6,7,8-HxCDD	45:21	45:06	-15	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	45:45	45:28	-17	1.009	1.009	-	
1,2,3,4,7,8-HxCDF	44:11	43:57	-14	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	44:19	44:05	-14	1.000	1.000	-	
2,3,4,6,7,8-HxCDF	45:03	44:48	-15	1.000	1.000	-	
1,2,3,7,8,9-HxCDF	46:01	45:45	-16	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDD	50:10	49:49	-21	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	48:27	48:08	-19	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	50:48	50:27	-21	1.000	1.000	-	
OCDD	54:17	54:01	-16	1.000	1.000	-	
OCDF	54:25	54:09	-16	1.000	1.000	-	
13C-2,3,7,8-TCDD	31:47	31:14	-33	1.017	1.017	-	
13C-2,3,7,8-TCDF	29:43	29:12	-31	0.950	0.951	-	
13C-1,2,3,7,8-PeCDD	40:59	40:44	-15	1.311	1.326	-	
13C-1,2,3,7,8-PeCDF	39:16	38:58	-18	1.256	1.269	-	
13C-2,3,4,7,8-PeCDF	40:28	40:13	-15	1.295	1.309	-	
13C-1,2,3,4,7,8-HxCDD	45:13	44:58	-15	0.989	0.989	-	
13C-1,2,3,6,7,8-HxCDD	45:20	45:05	-15	0.991	0.992	-	
13C-1,2,3,4,7,8-HxCDF	44:10	43:56	-14	0.966	0.967	-	
13C-1,2,3,6,7,8-HxCDF	44:18	44:04	-14	0.969	0.970	-	
13C-2,3,4,6,7,8-HxCDF	45:02	44:47	-15	0.985	0.985	-	
13C-1,2,3,7,8,9-HxCDF	46:00	45:44	-16	1.006	1.006	-	
13C-1,2,3,4,6,7,8-HpCDD	50:09	49:48	-21	1.097	1.096	-	
13C-1,2,3,4,6,7,8-HpCDF	48:26	48:07	-19	1.059	1.059	-	
13C-1,2,3,4,7,8,9-HpCDF	50:47	50:26	-21	1.110	1.110	-	
13C-OCDD	54:16	54:00	-16	1.187	1.188	-	
13C-OCDF	54:24	54:08	-16	1.190	1.191	-	

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89446 - D3160803S2

WIN Filename: d3160803s2

WIN Sample ID: 4966:40

WIN Result Dir: /20160803s2/d3160803s2.d

WIN Date/Time: 08/03/16 11:38

Method: 9Ao - DX8290A

Instrument: D2A

Column SN: 1379923

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	31:14	25:15	0.8084	34:26	1.1025
Total TCDF	13C-2,3,7,8-TCDF	304	29:12	22:48	0.7808	34:19	1.1752
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	40:44	37:52	0.9296	41:24	1.0164
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	38:58	35:02	0.8991	41:31	1.0654
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	45:05	43:25	0.9630	45:28	1.0085
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	43:56	42:43	0.9723	45:53	1.0444
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	49:48	48:37	0.9762	49:49	1.0003
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	48:07	48:08	1.0003	50:27	1.0485
OCDD	13C-OCDD	458	54:00	54:01	1.0003	54:01	1.0003
OCDF	13C-OCDF	442	54:08	54:09	1.0003	54:09	1.0003

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:40	Prep Batch		Lot No	
Data File	/20160803s2/d3160803s2.d	Prep Date		SDG No	
Analysis ID	180006	Prep Exp Date		Date Received	
Analysis Date	8/3/2016	Matrix	UNKNOWN	Date Sampled	
Analysis Time	11:38	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D2A	Dil Factor	1.00	Code	F8o
Analyst	MSD				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)		DL (ng/mL)
2,3,7,8-TCDD	31:17	1140360	116382	1.171	10.00	10.431973	104.32	10.431973	E	0.0259
Total TCDD		4938283	553149	1.171		55.607212		55.607212	E	0.0259
2,3,7,8-TCDF	29:15	1850958	205160	1.090	10.00	10.892534	108.93	10.892534	E	0.0118
Total TCDF		3581602	467947	1.090		31.969577		31.969577	E	0.0118
1,2,3,7,8-PeCDD	40:45	3855739	925144	1.047	50.00	49.955086	99.91	49.955086	E	0.0128
Total PeCDD		7745722	1607334	1.047		150.308924		150.308924	E	0.0128
1,2,3,7,8-PeCDF	39:00	6686797	1357213	1.187	50.00	49.789174	99.58	49.789174	E	0.0141
2,3,4,7,8-PeCDF	40:14	6278552	1443264	1.105	50.00	49.546705	99.09	49.546705	E	0.0134
Total PeCDF		11642964	2166541	1.146		188.524135		188.524135	E	0.0137
1,2,3,4,7,8-HxCDD	44:59	5315360	1428035	1.140	50.00	54.703275	109.41	54.703275	E	0.0159
1,2,3,6,7,8-HxCDD	45:06	5175270	1314568	1.146	50.00	54.194723	108.39	54.194723	E	0.0169
1,2,3,7,8,9-HxCDD	45:28	5705385	1422183	1.210	50.00	55.925767	111.85	55.925767	E	0.0155
Total HxCDD		5742262	1618518	1.166		223.282156		223.282156	E	0.0161
1,2,3,4,7,8-HxCDF	43:57	9397273	2617493	1.364	50.00	52.979897	105.96	52.979897	E	0.0129
1,2,3,6,7,8-HxCDF	44:05	9975753	2557128	1.278	50.00	52.308953	104.62	52.308953	E	0.0132
2,3,4,6,7,8-HxCDF	44:48	9227226	2407191	1.267	50.00	52.304930	104.61	52.304930	E	0.0139
1,2,3,7,8,9-HxCDF	45:45	7981597	1958633	1.285	50.00	50.688036	101.38	50.688036	E	0.0170
Total HxCDF		16233124	4221916	1.299		300.707043		300.707043	E	0.0141
1,2,3,4,6,7,8-HpCDD	49:49	5282173	1038649	1.121	50.00	54.340455	108.68	54.340455	E	0.0230
Total HpCDD		5278963	1116219	1.121		108.647887		108.647887	E	0.0230
1,2,3,4,6,7,8-HpCDF	48:08	8904850	1974524	1.497	50.00	51.658830	103.32	51.658830	E	0.0123
1,2,3,4,7,8,9-HpCDF	50:27	7170225	1482021	1.383	50.00	51.493858	102.99	51.493858	E	0.0162
Total HpCDF				1.440		103.152687		103.152687	E	0.0141
OCDD	54:01	8714360	2211164	1.243	100.0	99.083257	99.08	99.083257	E	0.0150
OCDF	54:09	12317572	3110763	1.119	100.0	97.266338	97.27	97.266338	E	0.0117
13C-2,3,7,8-TCDD	31:14	9335212	974206	1.067	100.0	102.593189	102.59	102.593189		0.0226
13C-2,3,7,8-TCDF	29:12	15595336	1769103	1.750	100.0	104.523275	104.52	104.523275		0.00972
13C-1,2,3,7,8-PeCDD	40:44	7370168	1789046	0.873	100.0	98.999211	99.00	98.999211		0.0123
13C-1,2,3,7,8-PeCDF	38:58	11313388	2321561	1.368	100.0	96.960001	96.96	96.960001		0.0178
13C-2,3,4,7,8-PeCDF	40:13	11471692	2615847	1.381	100.0	97.451653	97.45	97.451653		0.0177
13C-1,2,3,4,7,8-HxCDD	44:58	8525182	2321690	0.893	100.0	101.664655	101.66	101.664655		0.0132
13C-1,2,3,6,7,8-HxCDD	45:05	8330647	2168653	0.929	100.0	95.445661	95.45	95.445661		0.0127
13C-1,2,3,4,7,8-HxCDF	43:56	13005649	3668828	1.213	100.0	114.127375	114.13	114.127375		0.0143
13C-1,2,3,6,7,8-HxCDF	44:04	14924001	3829554	1.489	100.0	106.746221	106.75	106.746221		0.0117
13C-2,3,4,6,7,8-HxCDF	44:47	13918676	3672162	1.346	100.0	110.076763	110.08	110.076763		0.0129
13C-1,2,3,7,8,9-HxCDF	45:44	12252198	2951611	1.210	100.0	107.845148	107.85	107.845148		0.0144
13C-1,2,3,4,6,7,8-HpCDD	49:48	8673127	1728161	0.823	100.0	112.185582	112.19	112.185582		0.00716
13C-1,2,3,4,6,7,8-HpCDF	48:07	11513970	2543531	1.069	100.0	114.632407	114.63	114.632407		0.0229
13C-1,2,3,4,7,8,9-HpCDF	50:26	10066165	2092749	0.904	100.0	118.543251	118.54	118.543251		0.0270
13C-OCDD	54:00	14149192	3705367	0.708	200.0	212.870086	106.44	212.870086		0.0236
13C-OCDF	54:08	22626323	5902938	1.072	200.0	224.679889	112.34	224.679889		0.0139
37Cl4-2,3,7,8-TCDD	31:17	1056356	109961	1.220	10.00	10.156258	101.56	10.156258	E	0.0155
13C-1,2,3,4-TCDD	30:43	8526484	911410	1.000	100.0	100.000000	100.00	100.000000		0.0241
13C-1,2,3,7,8,9-HxCDD	45:27	9392488	2331559	1.000	100.0	100.000000	100.00	100.000000		0.0118

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:40	Prep Batch		Lot No	
Data File	/20160803s2/d3160803s2	Prep Date		SDG No	
Analysis ID	180006	Prep Exp Date		Date Received	
Analysis Date	08/03/16 11:38	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	98	130	39	52	0.75	/	
	Unidentified	22:48	00:00	0	873246	1087610	127151	161012	0.80	ABV/ABV	
	2,3,7,8-TCDF	29:15	29:11	4	823923	1027035	90123	115037	0.80	AVV/AVV	M
	Unidentified	34:19	00:00	0	719980	900766	79370	100414	0.80	AVV/ABV	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	83	73	33	29	1.14 *	/	
	13C-2,3,7,8-TCDF	29:12	29:09	3	6996911	8598425	794900	974203	0.81	AVV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	158	138	63	55	1.15 *	/	
	Unidentified	25:15	00:00	0	450629	562190	60557	74450	0.80	ABV/ABV	
	Unidentified	30:45	00:00	0	431086	534487	45584	57770	0.81	ABV/ABV	
	Unidentified	31:01	00:00	0	426140	512391	44092	55042	0.83	AVV/AVB	
	2,3,7,8-TCDD	31:17	31:22	-5	500157	640203	51541	64841	0.78	AVV/AVV	M
	Unidentified	31:47	00:00	0	467665	573849	46359	57791	0.81	AVV/AVV	
	Unidentified	34:26	00:00	0	431502	548344	48580	62924	0.79	ABV/ABV	
328					327.8847		327.8847				
	Noise	00:00	00:00	0	173		69				
	37Cl4-2,3,7,8-TCDD	31:17	31:20	-3	1056356		109961			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	130	90	52	36	1.44 *	/	
	13C-1,2,3,4-TCDD	30:43	30:45	-2	3843549	4682935	419502	491908	0.82	AVV/AVV	
	13C-2,3,7,8-TCDD	31:14	31:17	-3	4189207	5146005	438586	535620	0.81	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	233	155	93	62	1.50	/	
	Unidentified	35:02	00:00	0	3662719	2300597	491197	315099	1.59	ABB/ABB	
	1,2,3,7,8-PeCDF	39:00	38:58	2	4117002	2569795	839073	518140	1.60	ABV/AVV	
	2,3,4,7,8-PeCDF	40:14	40:11	3	3861407	2417145	890785	552479	1.60	ABV/ABV	M
	Unidentified	41:31	00:00	0	3498363	2181285	833004	527241	1.60	ABV/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	130	93	52	37	1.41	/	
	13C-1,2,3,7,8-PeCDF	38:58	38:57	1	6937948	4375440	1430976	890585	1.59	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:13	40:10	3	7079861	4391831	1629818	986029	1.61	AVV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	130	110	52	44	1.18 *	/	
	Unidentified	37:52	00:00	0	2283456	1453059	373993	232112	1.57	ABV/ABV	
	1,2,3,7,8-PeCDD	40:45	40:43	2	2356110	1499629	562283	362861	1.57	ABV/ABV	
	Unidentified	41:24	00:00	0	2454481	1554726	605091	396138	1.58	ABB/ABB	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	68	30	27	12	2.25 *	/	
	13C-1,2,3,7,8-PeCDD	40:44	40:42	2	4560541	2809627	1108278	680768	1.62	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	315	330	126	132	0.95 *	/	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:40	Prep Batch		Lot No	
Data File	/20160803s2/d3160803s2	Prep Date		SDG No	
Analysis ID	180006	Prep Exp Date		Date Received	
Analysis Date	08/03/16 11:38	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Unidentified	42:43	00:00	0	4922415	3887964	1363084	1081018	1.27	ABV/ABV	
	1,2,3,4,7,8-HxCDF	43:57	43:55	2	5262757	4134516	1476936	1140557	1.27	ABV/ABV	
	1,2,3,6,7,8-HxCDF	44:05	44:03	2	5588082	4387671	1430042	1127086	1.27	AVV/AVV	
	2,3,4,6,7,8-HxCDF	44:48	44:47	1	5142126	4085100	1323680	1083511	1.26	AVV/AVV	
	1,2,3,7,8,9-HxCDF	45:45	45:46	-1	4437066	3544531	1085816	872817	1.25	ABV/ABV	
	Unidentified	45:53	00:00	0	4127175	3295570	985369	792445	1.25	AVV/AVB	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	153	253	61	101	0.60 *	/	
	13C-1,2,3,4,7,8-HxCDF	43:56	43:54	2	4567657	8437992	1303782	2365046	0.54	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:04	44:02	2	5255601	9668400	1352235	2477319	0.54	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	44:47	44:46	1	4943197	8975479	1306138	2366024	0.55	ABV/AVV	
	13C-1,2,3,7,8,9-HxCDF	45:44	45:45	-1	4318474	7933724	1044553	1907058	0.54	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	230	190	92	76	1.21	/	
	Unidentified	43:25	00:00	0	3226559	2515703	919409	699109	1.28	ABV/ABV	
	1,2,3,4,7,8-HxCDD	44:59	44:58	1	2988217	2327143	810777	617258	1.28	AVV/ABV	
	1,2,3,6,7,8-HxCDD	45:06	45:06	0	2905953	2269317	741644	572924	1.28	AVV/AVV	
	1,2,3,7,8,9-HxCDD	45:28	45:30	-2	3186880	2518505	780660	641523	1.27	AVV/AVV	
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	208	68	83	27	3.07 *	/	
	13C-1,2,3,4,7,8-HxCDD	44:58	44:57	1	4825531	3699651	1319179	1002511	1.30	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:05	45:05	0	4690090	3640557	1225757	942896	1.29	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	45:27	45:29	-2	5253572	4138916	1297247	1034312	1.27	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	220	250	88	100	0.88	/	
	1,2,3,4,6,7,8-HpCDF	48:08	48:11	-3	4595336	4309514	1017217	957307	1.07	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	50:27	50:31	-4	3676665	3493560	752469	729552	1.05	ABV/ABV	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	258	313	103	125	0.82 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:07	48:10	-3	3690928	7823042	815112	1728419	0.47	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:26	50:30	-4	3229451	6836714	674698	1418051	0.47	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	215	230	86	92	0.93	/	
	Unidentified	48:37	00:00	0	2721277	2557686	571104	545115	1.06	ABV/AVV	
	1,2,3,4,6,7,8-HpCDD	49:49	49:54	-5	2706788	2575385	536524	502125	1.05	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	50	88	20	35	0.57 *	/	
	13C-1,2,3,4,6,7,8-HpCDD	49:48	49:53	-5	4495935	4177192	908944	819217	1.08	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	120	268	48	107	0.45 *	/	
	OCDF	54:09	54:06	3	5909731	6407841	1493665	1617098	0.92	ABV/ABV	M
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:40	Prep Batch		Lot No	
Data File	/20160803s2/d3160803s2	Prep Date		SDG No	
Analysis ID	180006	Prep Exp Date		Date Received	
Analysis Date	08/03/16 11:38	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

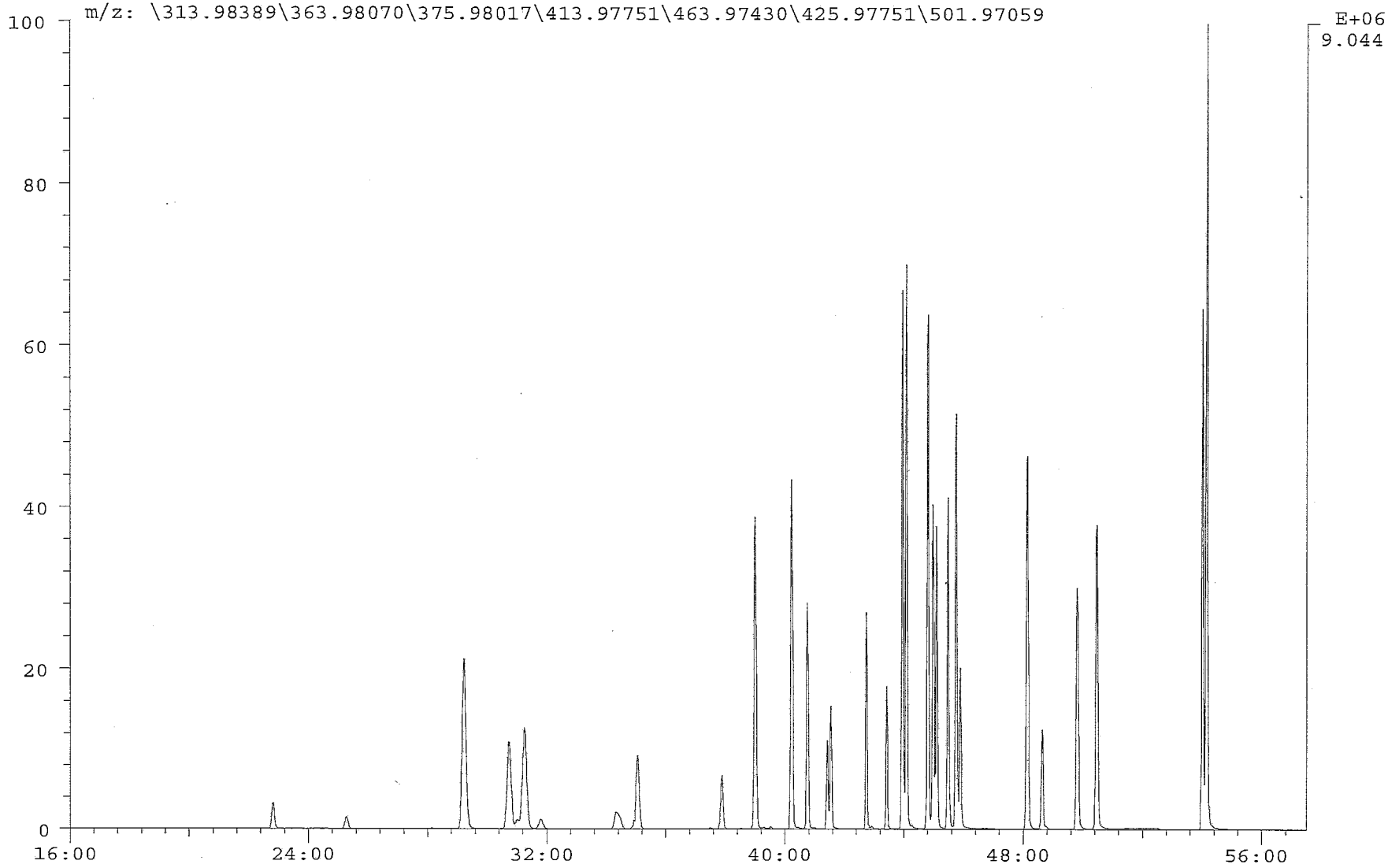
Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	168	180	67	72	0.93	/	
	13C-OCDF	54:08	54:05	3	10756965	11869358	2802385	3100553	0.91	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	188	158	75	63	1.19 *	/	
	OCDD	54:01	53:58	3	4152688	4561672	1063782	1147382	0.91	ABV/ABV	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	238	153	95	61	1.56 *	/	
	13C-OCDD	54:00	53:57	3	6693823	7455369	1751113	1954254	0.90	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int, Calc MID 8.3.16

Qcd LL 8-3-16

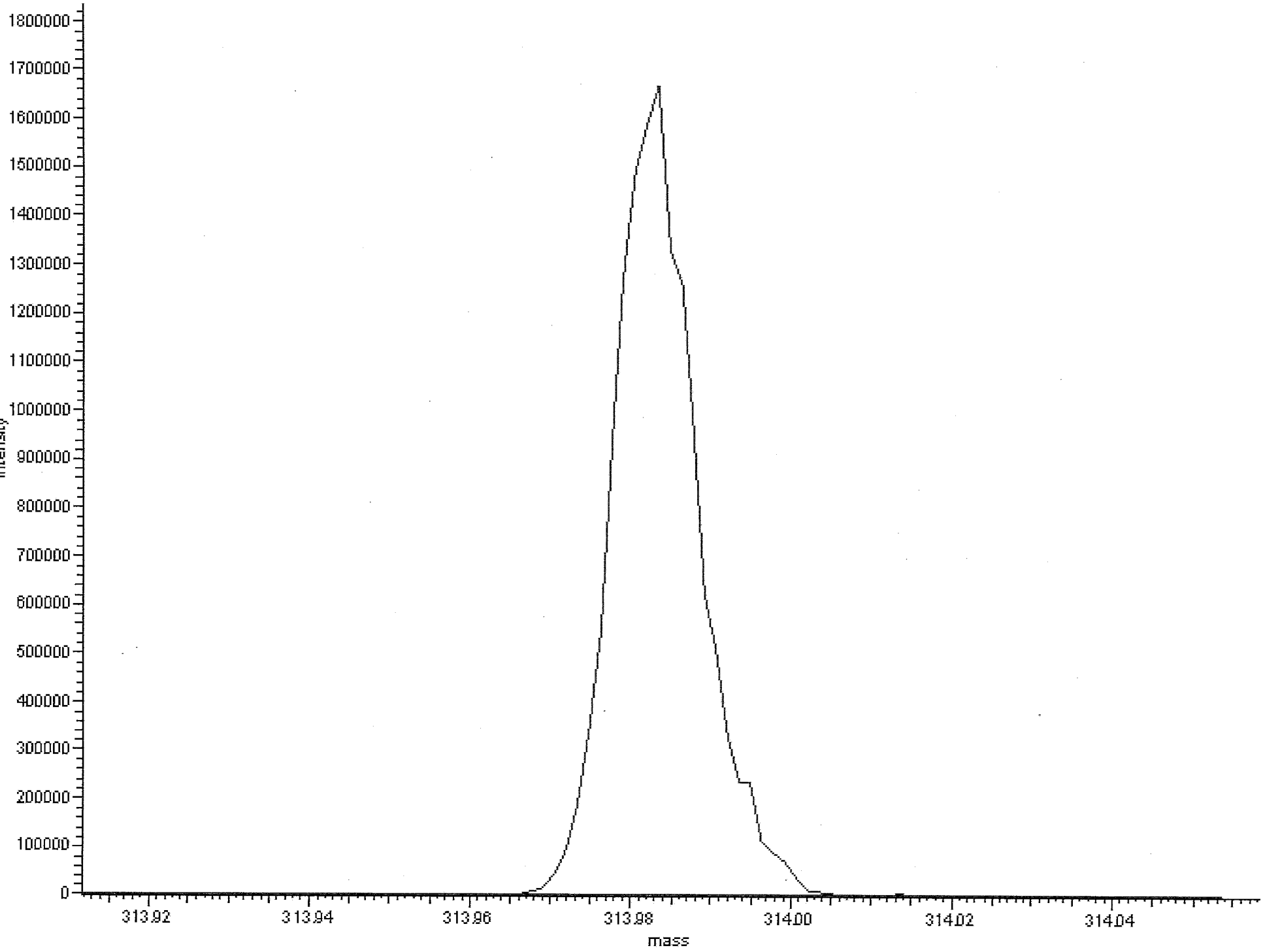
```
CHRO:  d3160803s2                                  03-Aug-16  Elapse:  29:15      1035
Samp:  WO=4966:40 Meth=F8o Dil=1                              Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                                    Study :  Ver/Win
Oper:  MSD                                                    Inlet :  LC
Peak:  100.00  ppm      Label wndw:   238 > 2678              Masses:  303 > 514
Area:  5, 0.50, 0       Baseline  :   100, 3                  Label :  0, 0.0
Disp:  Height  Area
```

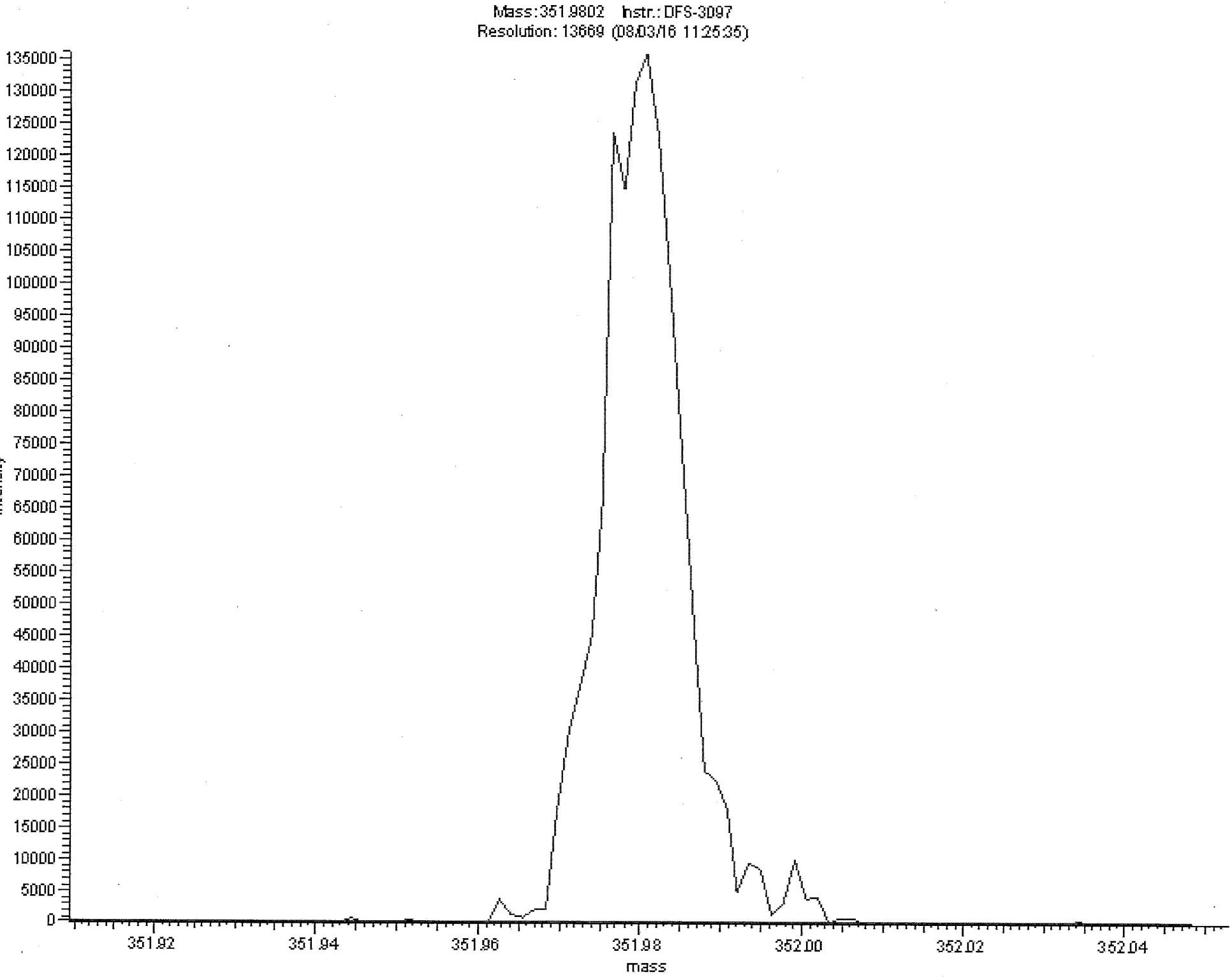


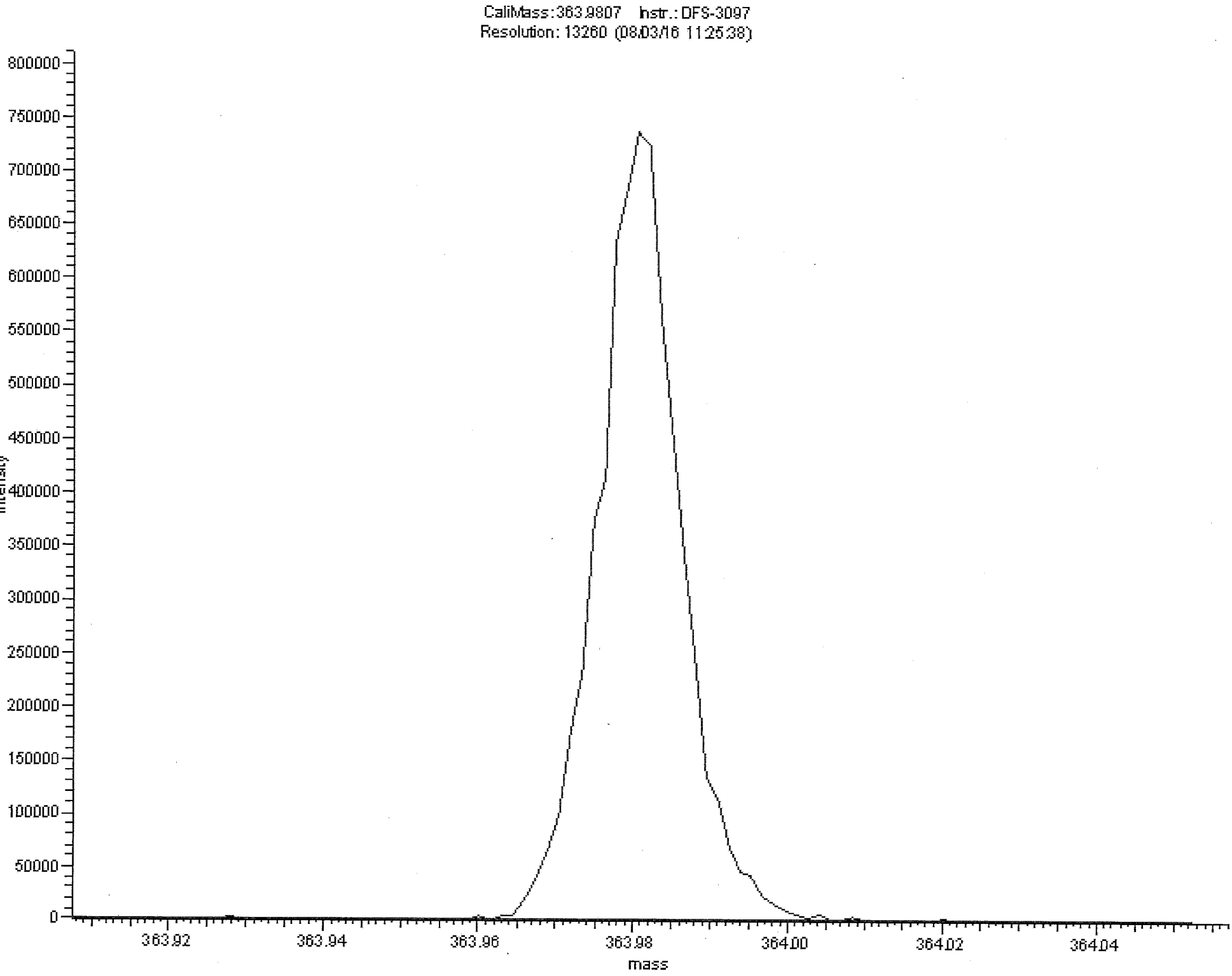
```
Reports
11:31:08:  Peak matching procedure started
11:31:09:
11:31:09:  Reference mass: 313.98336
11:31:10:  Sample mass: 364.0
11:31:10:
11:31:11:  Finding reference mass
11:31:12:  Finding sample mass
11:31:12:
11:31:18:  [1]   363.9774 amu, mean: 363.9774
11:31:20:  [2]   363.9767 amu, mean: 363.9771     SD: 0.54 mmu or: 1.47 ppm
11:31:23:  [3]   363.9767 amu, mean: 363.9769     SD: 0.44 mmu or: 1.21 ppm
11:31:26:  [4]   363.9780 amu, mean: 363.9772     SD: 0.65 mmu or: 1.79 ppm
11:31:29:  [5]   363.9776 amu, mean: 363.9773     SD: 0.60 mmu or: 1.64 ppm
11:31:31:  [6]   363.9771 amu, mean: 363.9773     SD: 0.54 mmu or: 1.49 ppm
11:31:34:  [7]   363.9771 amu, mean: 363.9772     SD: 0.50 mmu or: 1.37 ppm
11:31:37:  [8]   363.9774 amu, mean: 363.9773     SD: 0.47 mmu or: 1.28 ppm
11:31:40:  [9]   363.9780 amu, mean: 363.9773     SD: 0.50 mmu or: 1.38 ppm
11:31:42:  [10]   363.9778 amu, mean: 363.9774     SD: 0.49 mmu or: 1.36 ppm
11:31:43:
11:31:43:  Stop requested. Please wait for procedure to finish.
11:31:43:
```

Signature 8/3/16

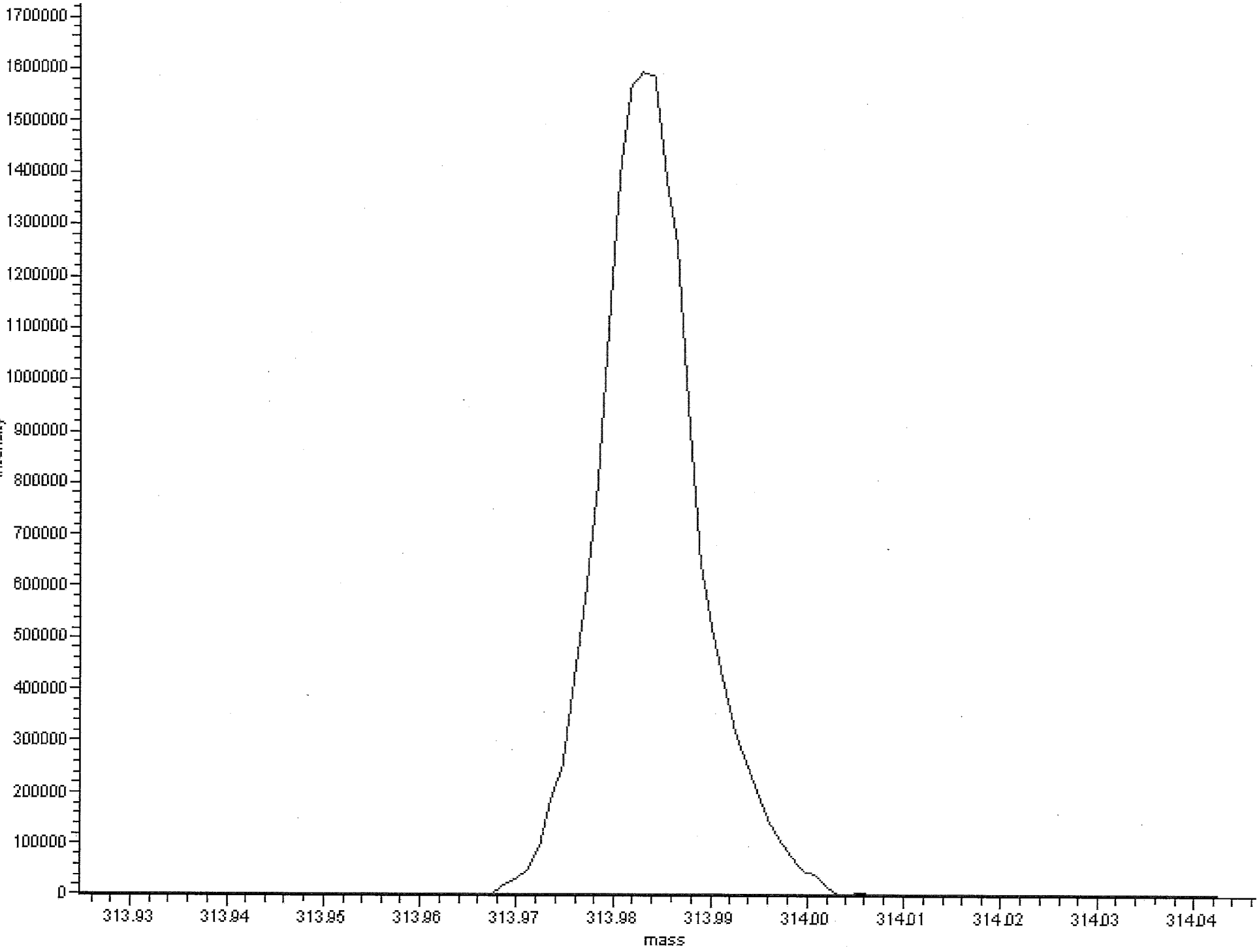
LockMass:313.9838 Instr.: DFS-3097
Resolution: 10884 (08/03/16 11:24:49)



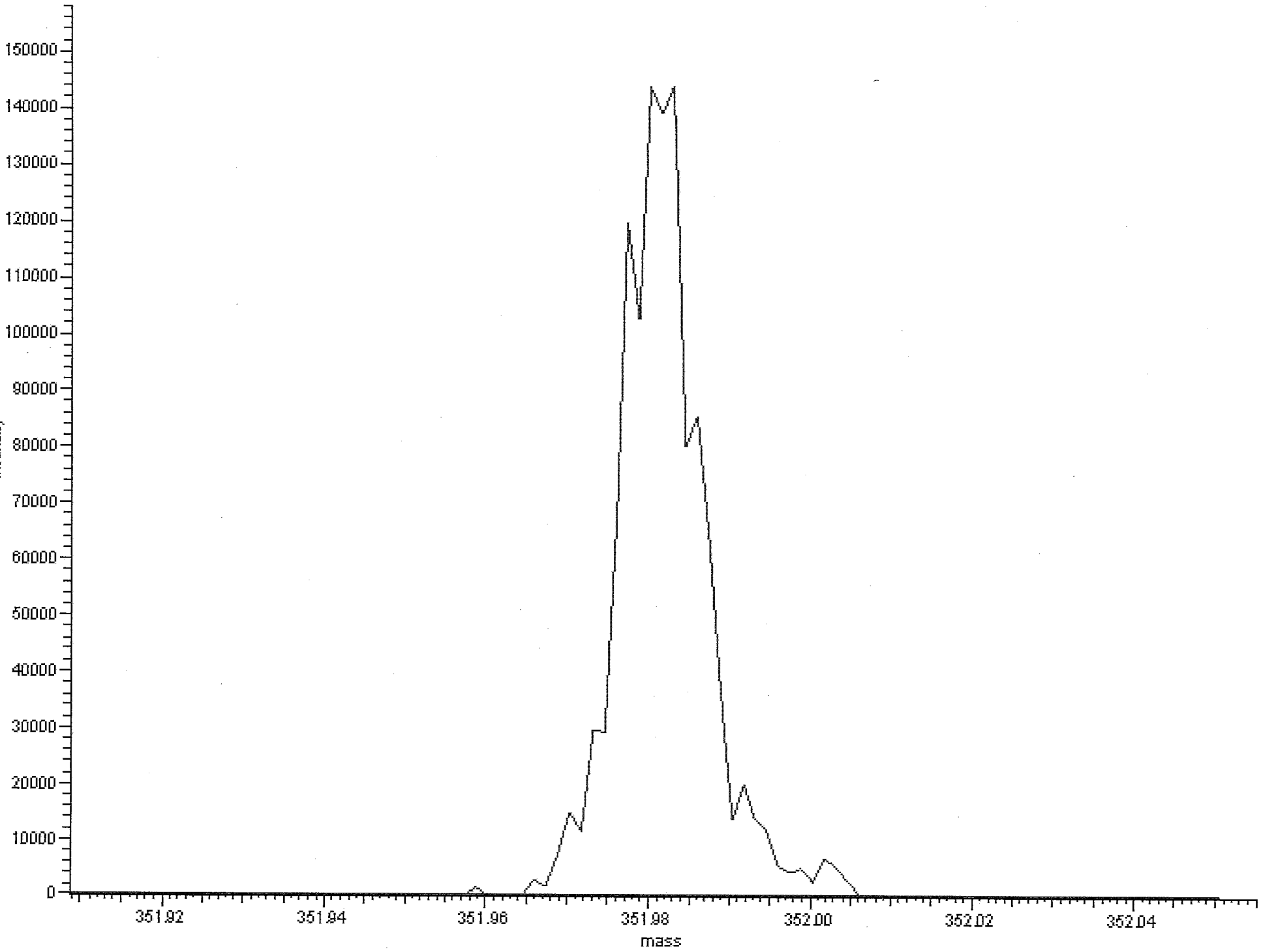

Mass:351.9802 Instr.: DFS-3097
Resolution: 13669 (08/03/16 11:25:35)
135000
130000
125000
120000
115000
110000
105000
100000
95000
90000
85000
80000
75000
70000
65000
60000
55000
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
351.92
351.94
351.96
351.98
352.00
352.02
352.04
mass

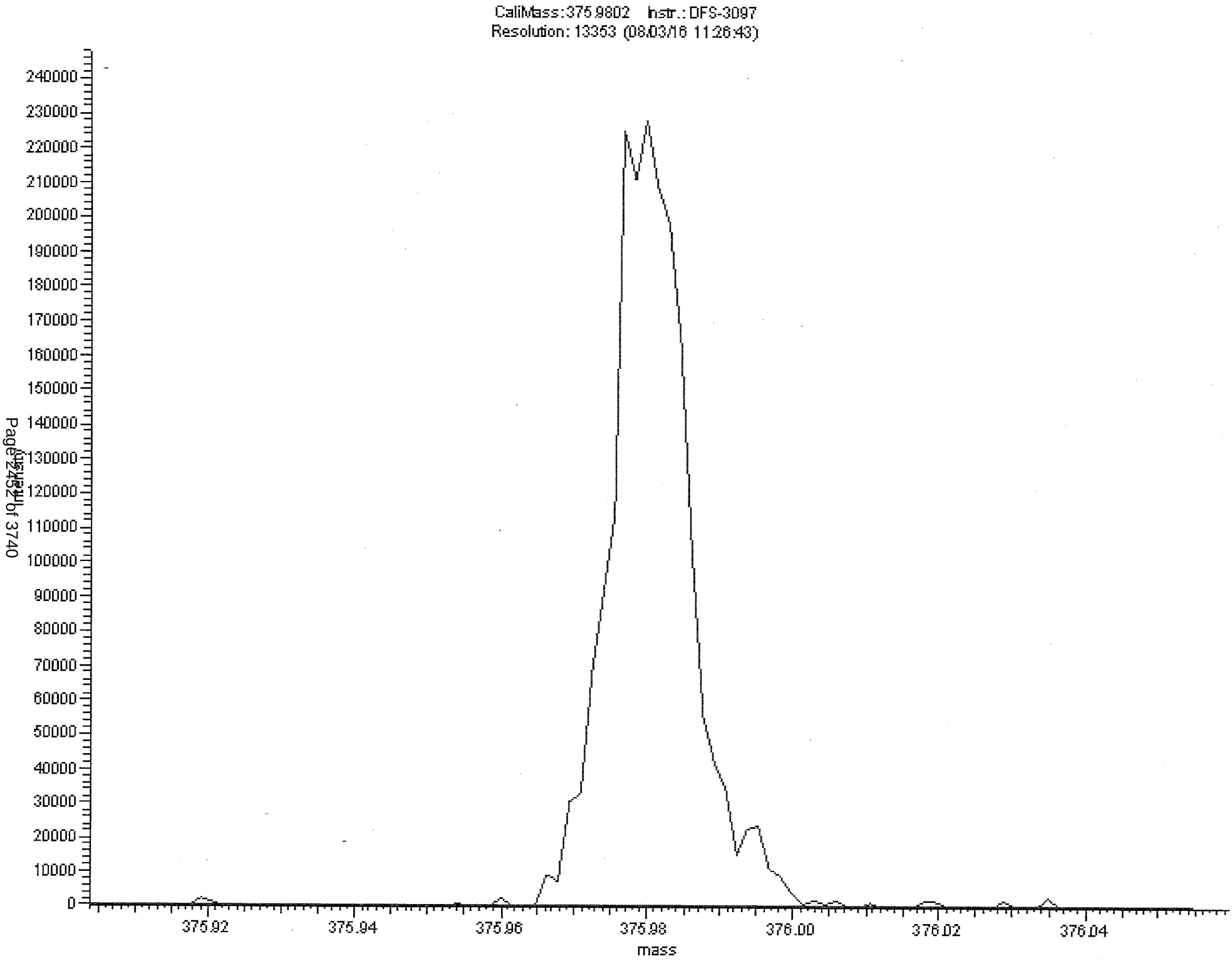

CaliMass:363.9807 Instr.: DFS-3097
Resolution: 13260 (08/03/16 11:25:38)
800000
750000
700000
650000
600000
550000
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
363.92
363.94
363.96
363.98
364.00
364.02
364.04
mass

LockMass:313.9839 Instr.: DFS-3097
Resolution: 13260 (08/03/16 11:25:54)

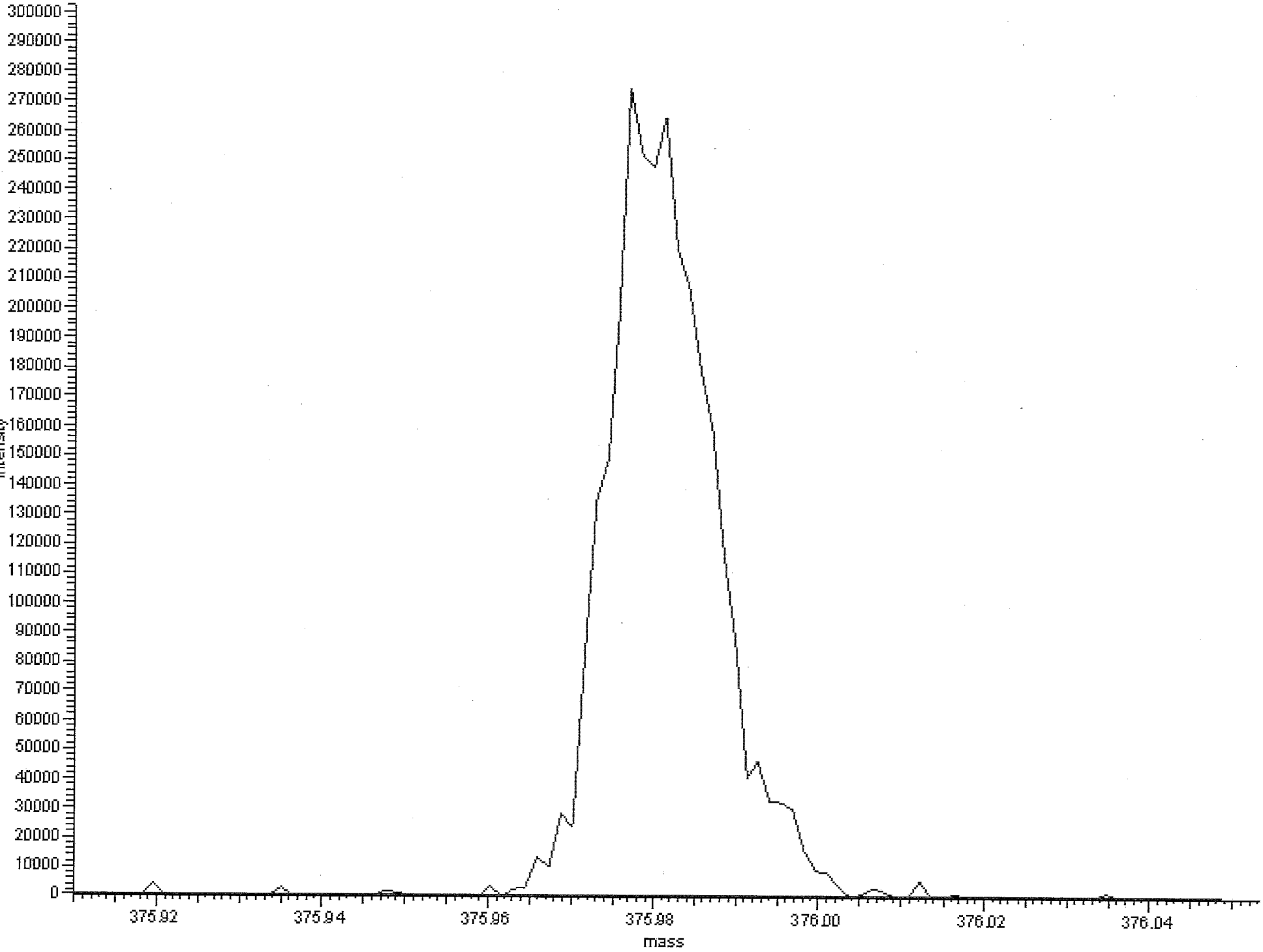


Mass: 351.9802 Instr.: DFS-3097
Resolution: 14842 (08/03/16 11:26:40)

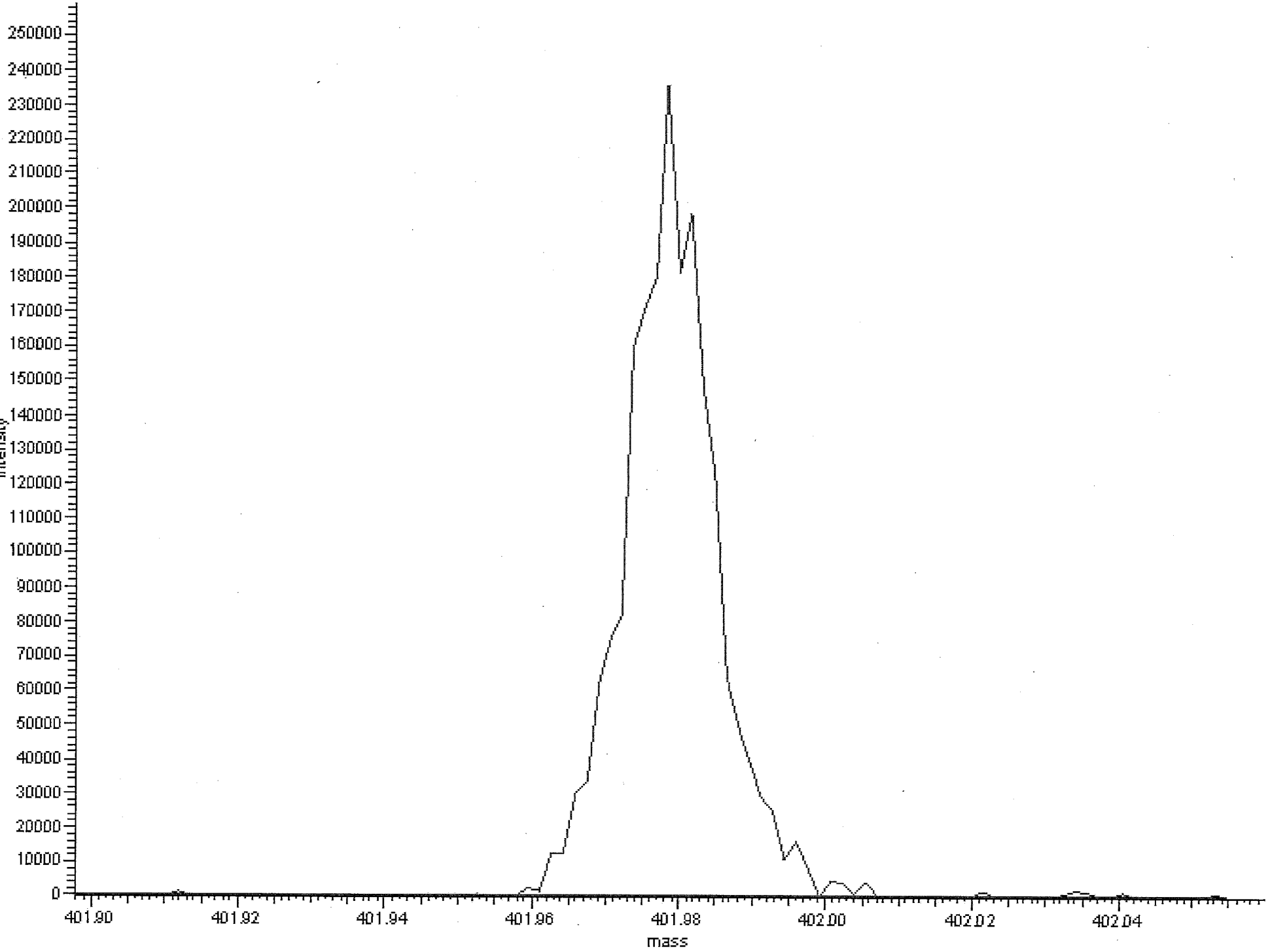



CaliMass:375.9802 Instr.: DFS-3097
Resolution: 13353 (08/03/16 11:26:43)
240000
230000
220000
210000
200000
190000
180000
170000
160000
150000
140000
130000
120000
110000
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
375.92
375.94
375.96
375.98
376.00
376.02
376.04
mass

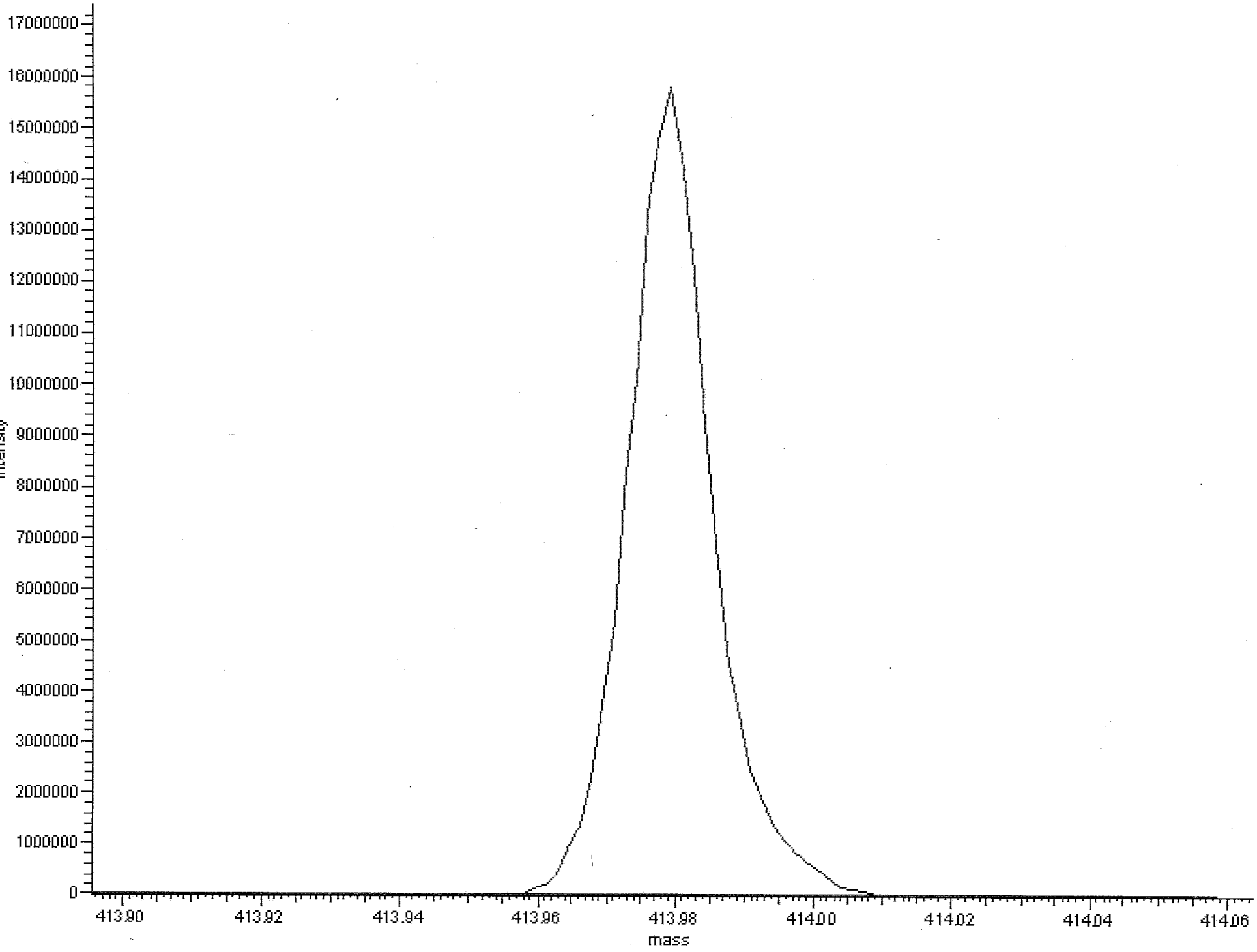
Lock/Mass: 375.9802 Instr.: DFS-3097
Resolution: 13353 (08/03/16 11:26:58)

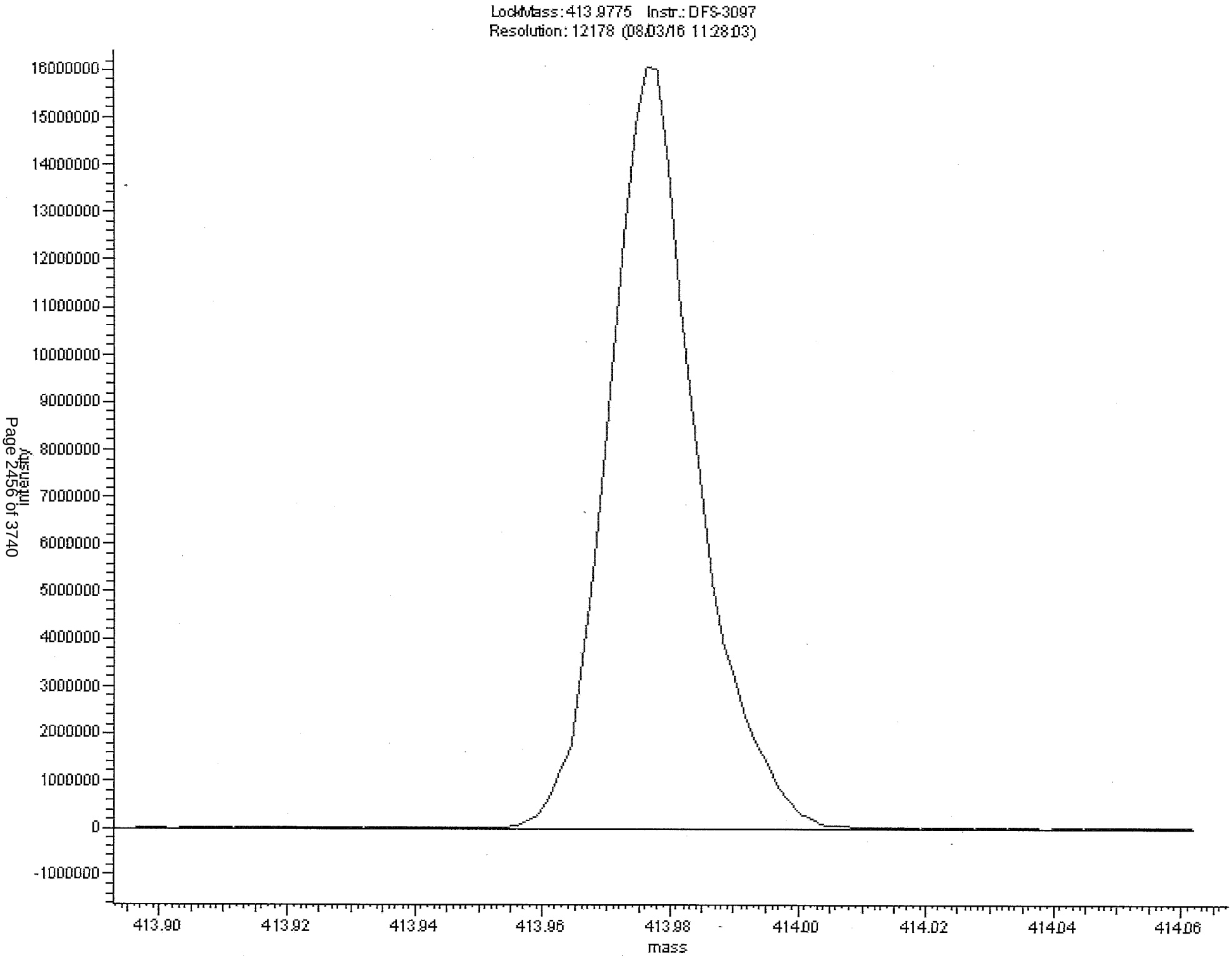


Mass: 401.9770 Instr.: DFS-3097
Resolution: 11712 (08/03/16 11:27:45)

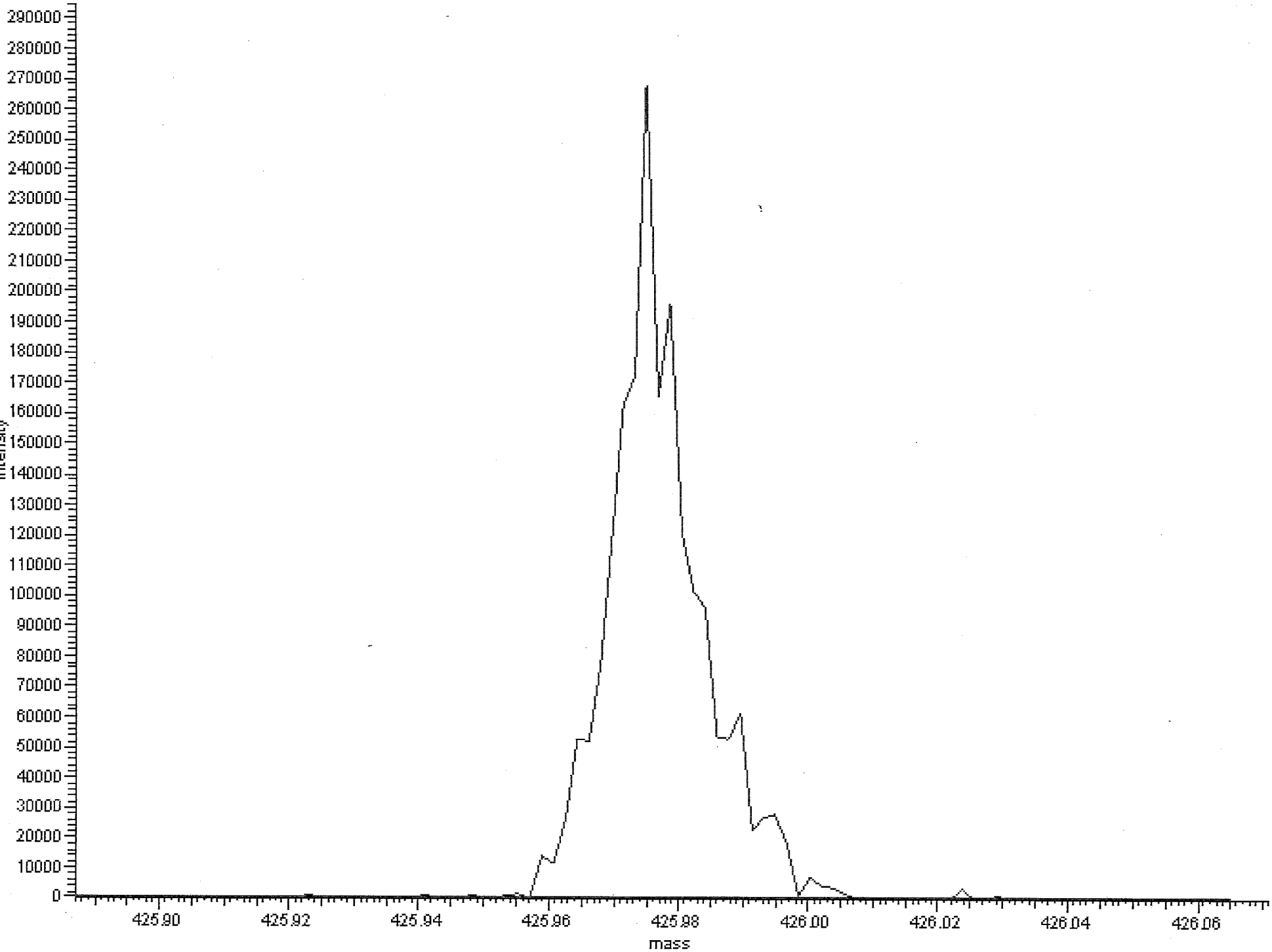


CaliMass:413.9770 Instr.: DFS-3097
Resolution: 12178 (08/03/16 11:27:48)

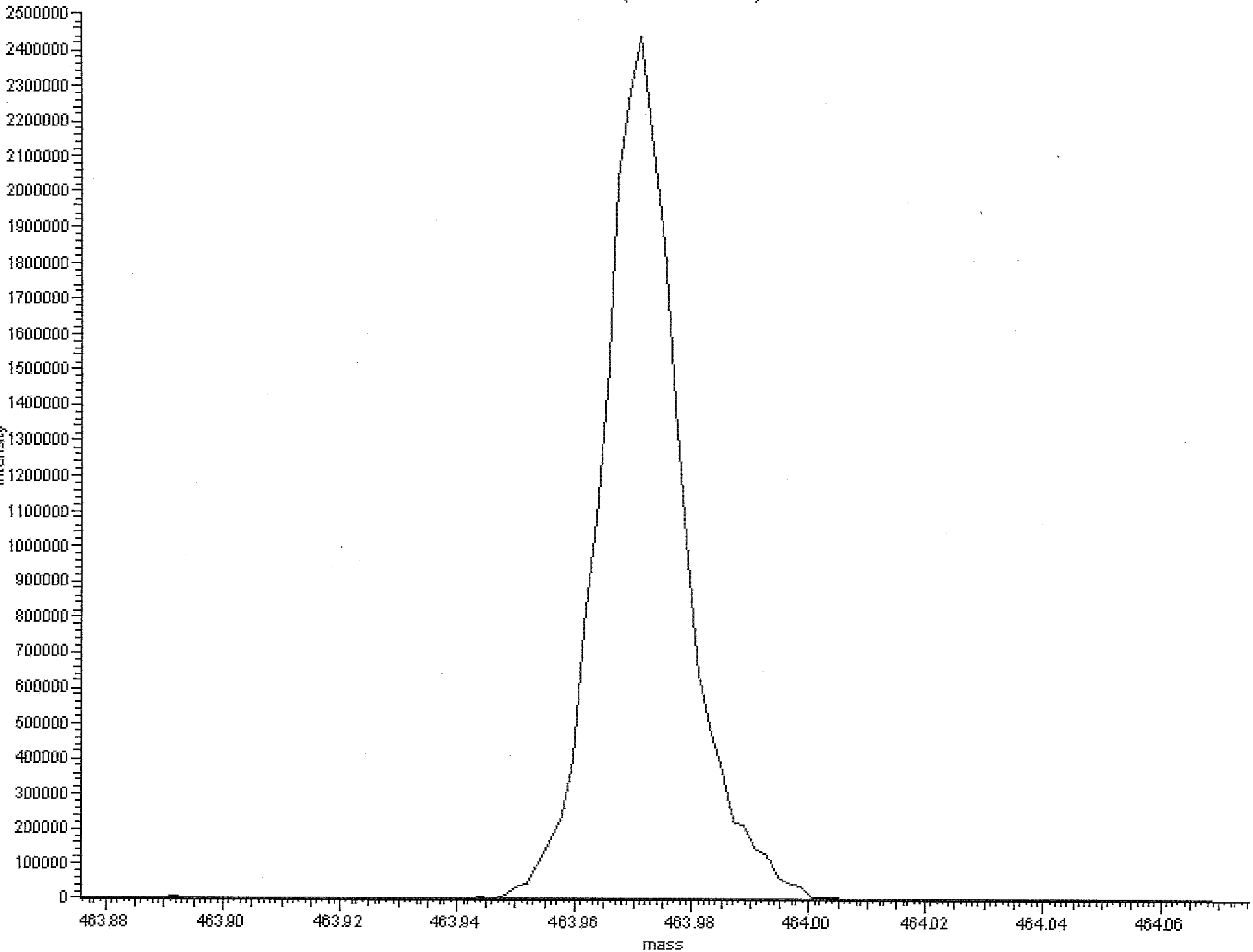


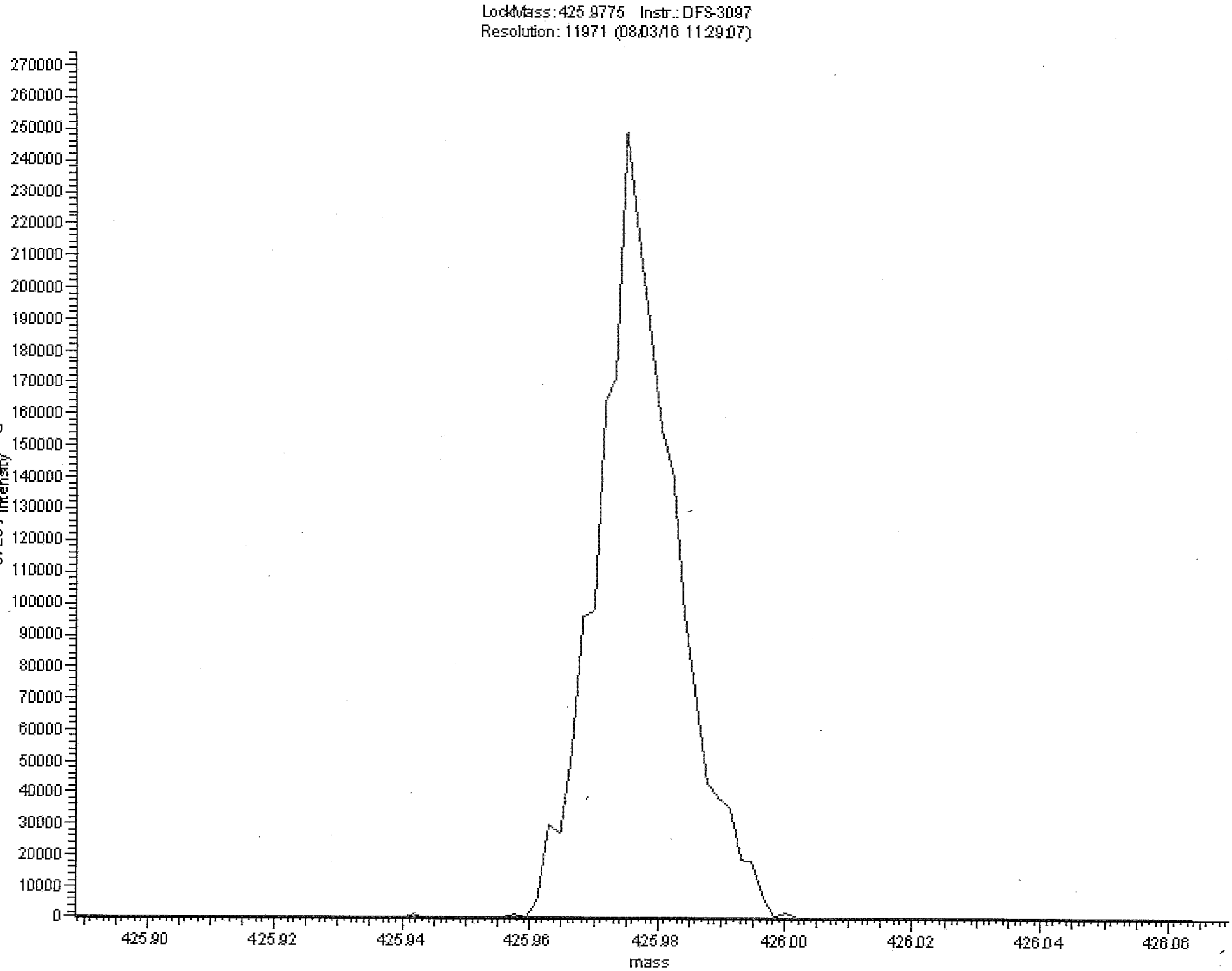

LockMass: 413.9775 Instr.: DFS-3097
Resolution: 12178 (08/03/16 11:28:03)
16000000
15000000
14000000
13000000
12000000
11000000
10000000
9000000
8000000
7000000
6000000
5000000
4000000
3000000
2000000
1000000
0
-1000000
Intensity
413.90
413.92
413.94
413.96
413.98
414.00
414.02
414.04
414.06
mass

Mass: 425.9770 Instr.: DFS-3097
Resolution: 11375 (08/03/16 11:28:49)

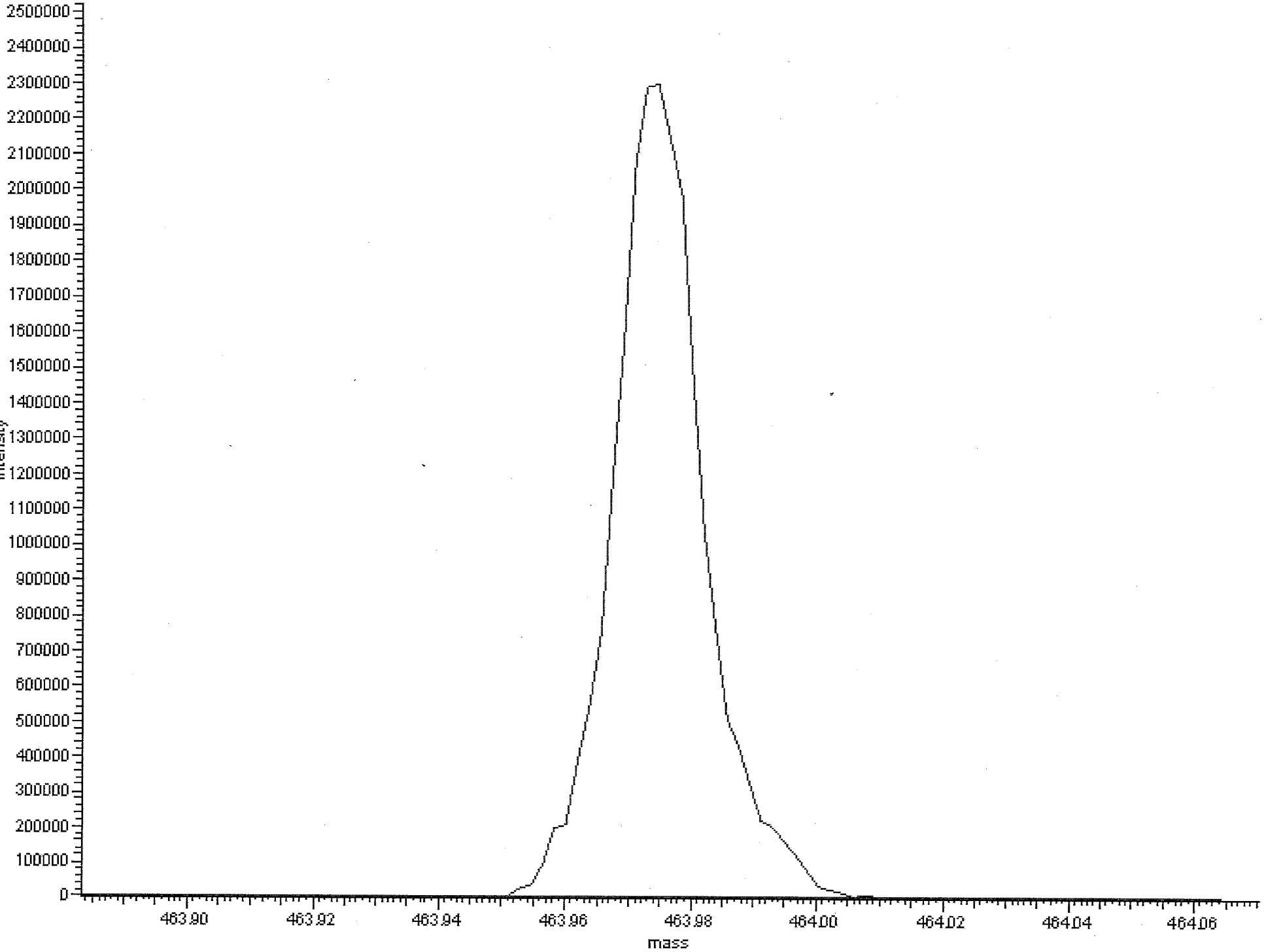


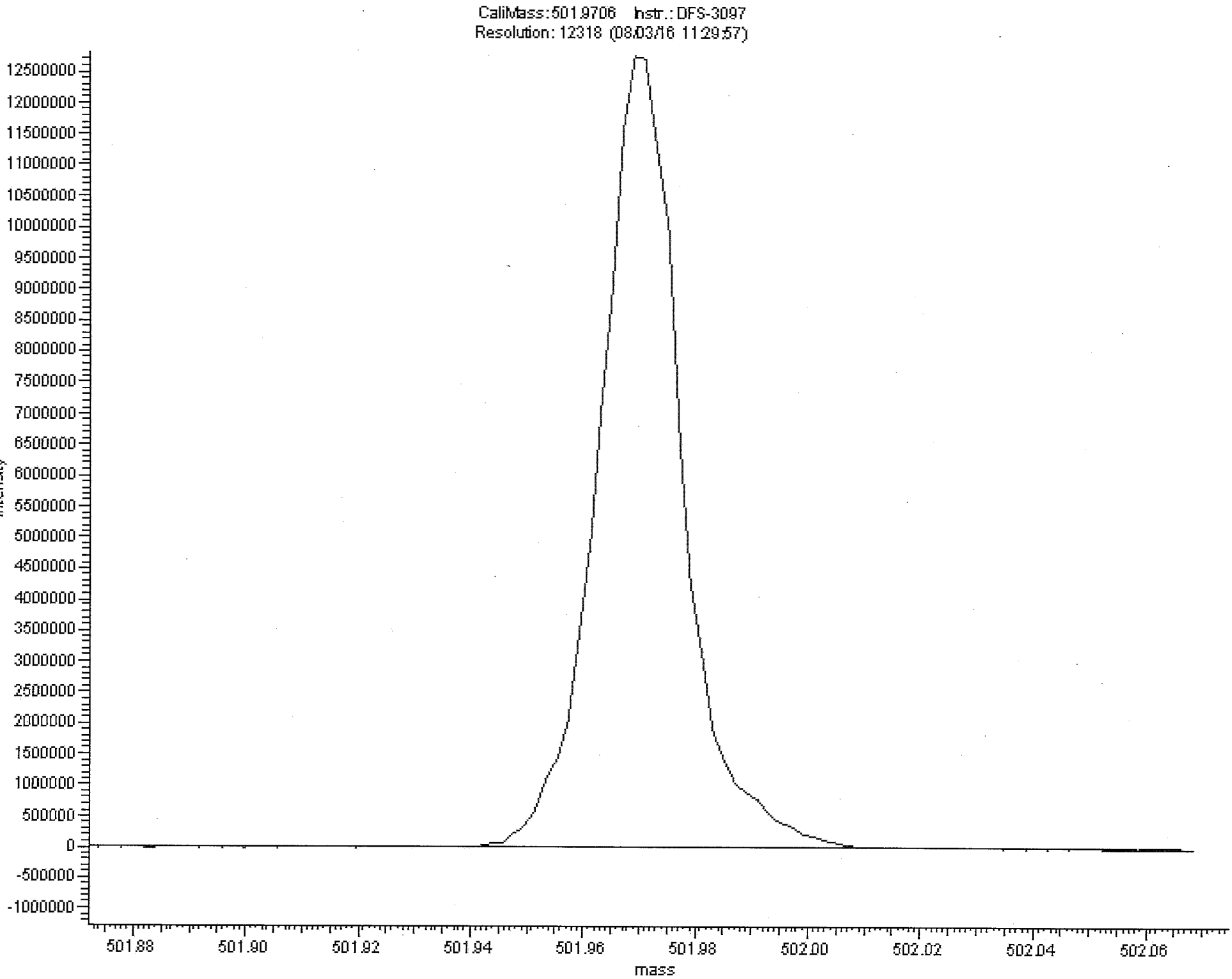
CaliMass: 463.9738 Instr.: DFS-3097
Resolution: 11971 (08/03/16 11:28:52)



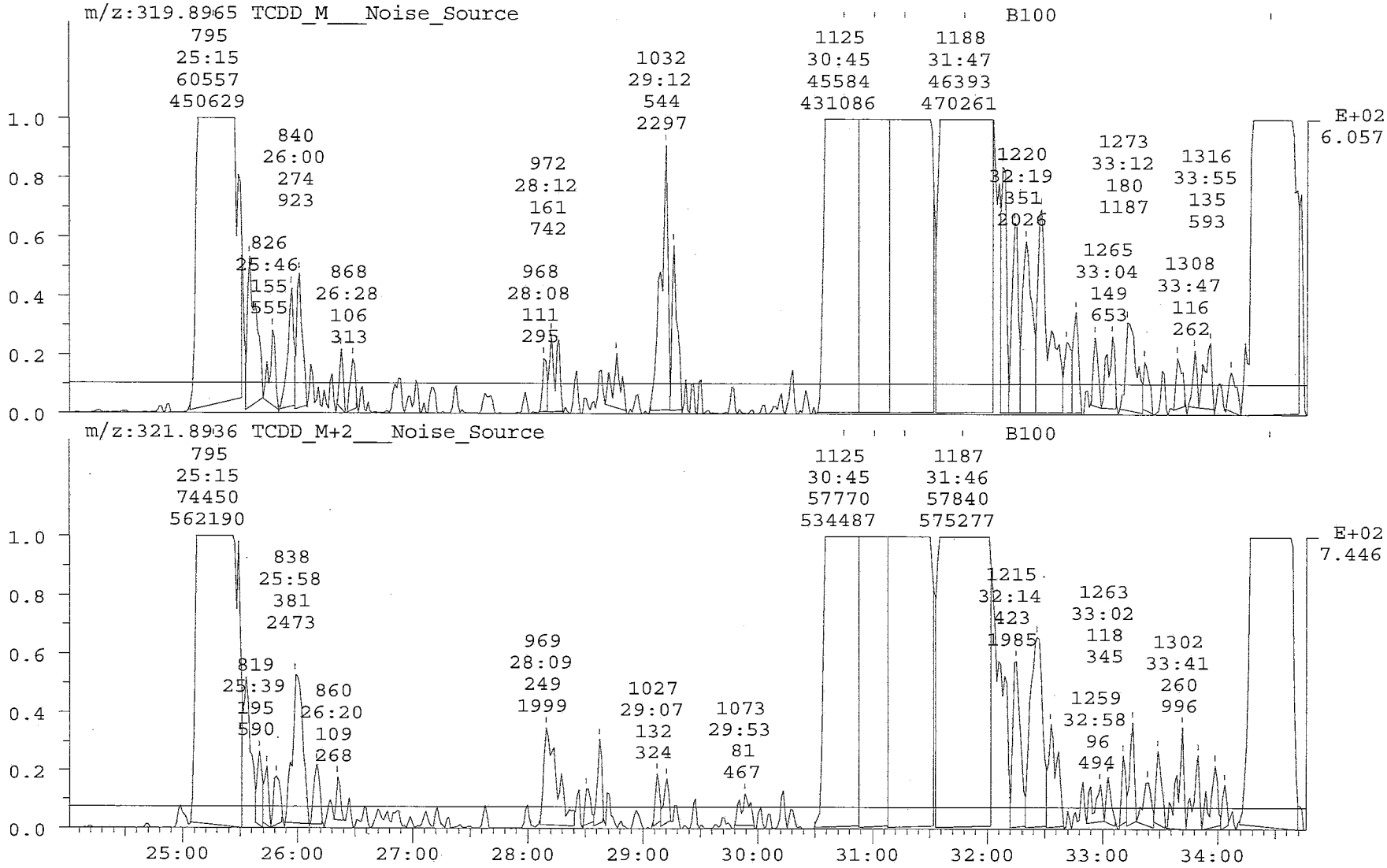

LockMass: 425.9775 Instr.: DFS-3097
Resolution: 11971 (08/03/16 11:29:07)
270000
260000
250000
240000
230000
220000
210000
200000
190000
180000
170000
160000
150000
140000
130000
120000
110000
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
425.90
425.92
425.94
425.96
425.98
426.00
426.02
426.04
426.06
mass

Mass: 463.9743 Instr.: DFS-3097
Resolution: 11582 (08/03/16 11:29:54)

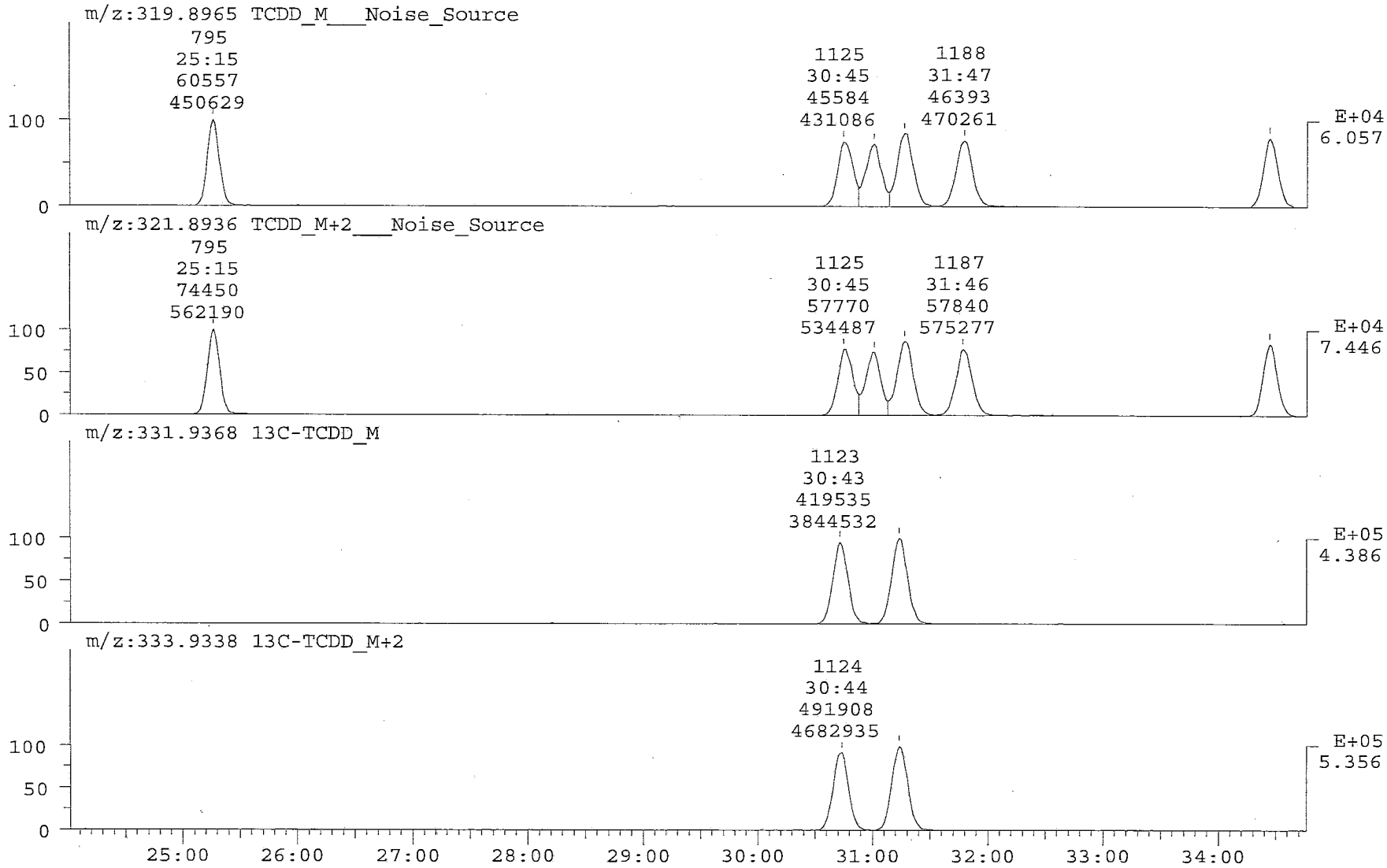



CaliMass:501.9706 Instr.:DFS-3097
Resolution: 12318 (08/03/16 11:29:57)
12500000
12000000
11500000
11000000
10500000
10000000
9500000
9000000
8500000
8000000
7500000
7000000
6500000
6000000
5500000
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
-500000
-1000000
Intensity
501.88
501.90
501.92
501.94
501.96
501.98
502.00
502.02
502.04
502.06
mass

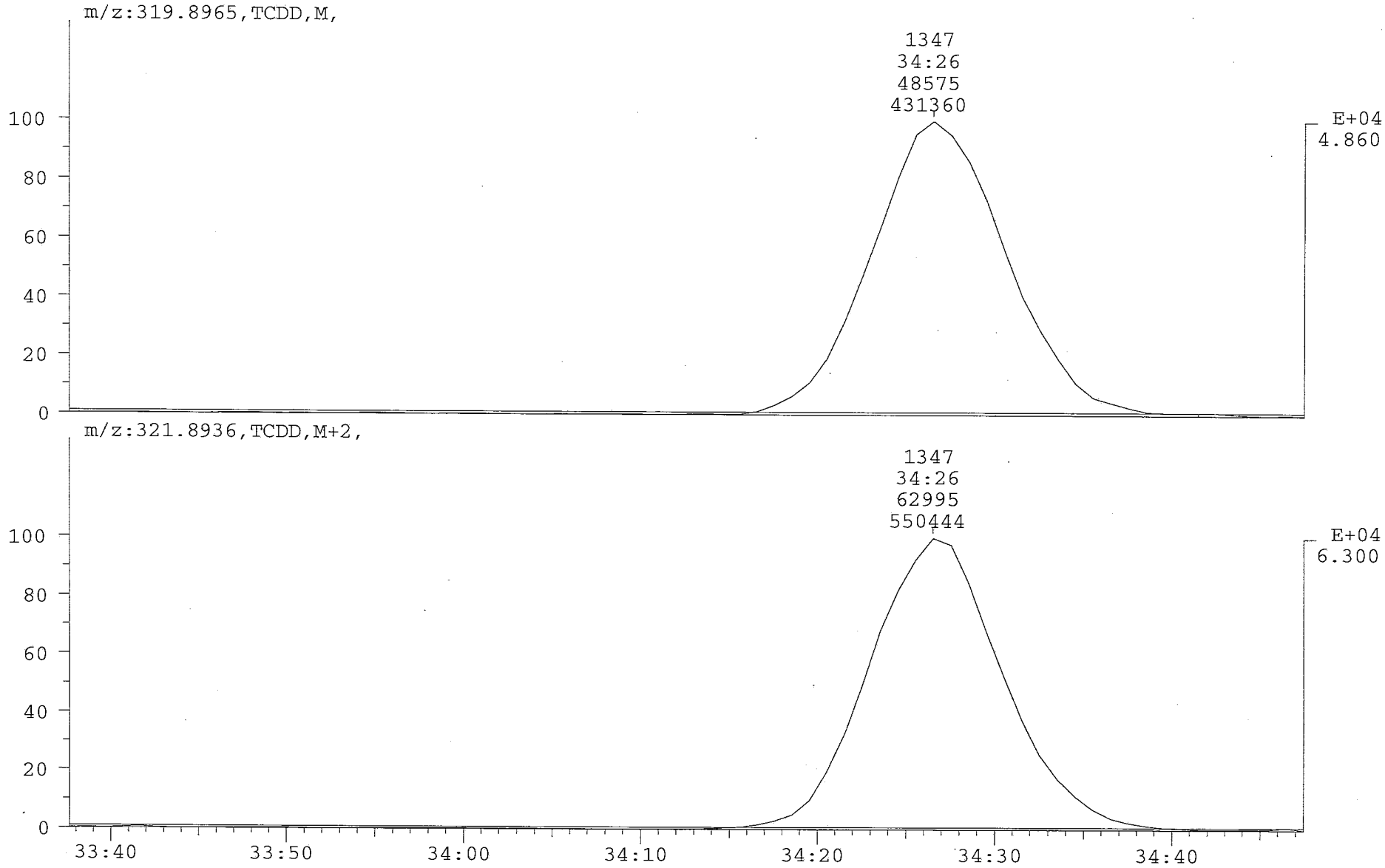
CHRO: d3160803s2 03-Aug-16 Elapse: 29:15 1035
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 11:38:31 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 720 > 1367 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 1.0
Disp: Height Area



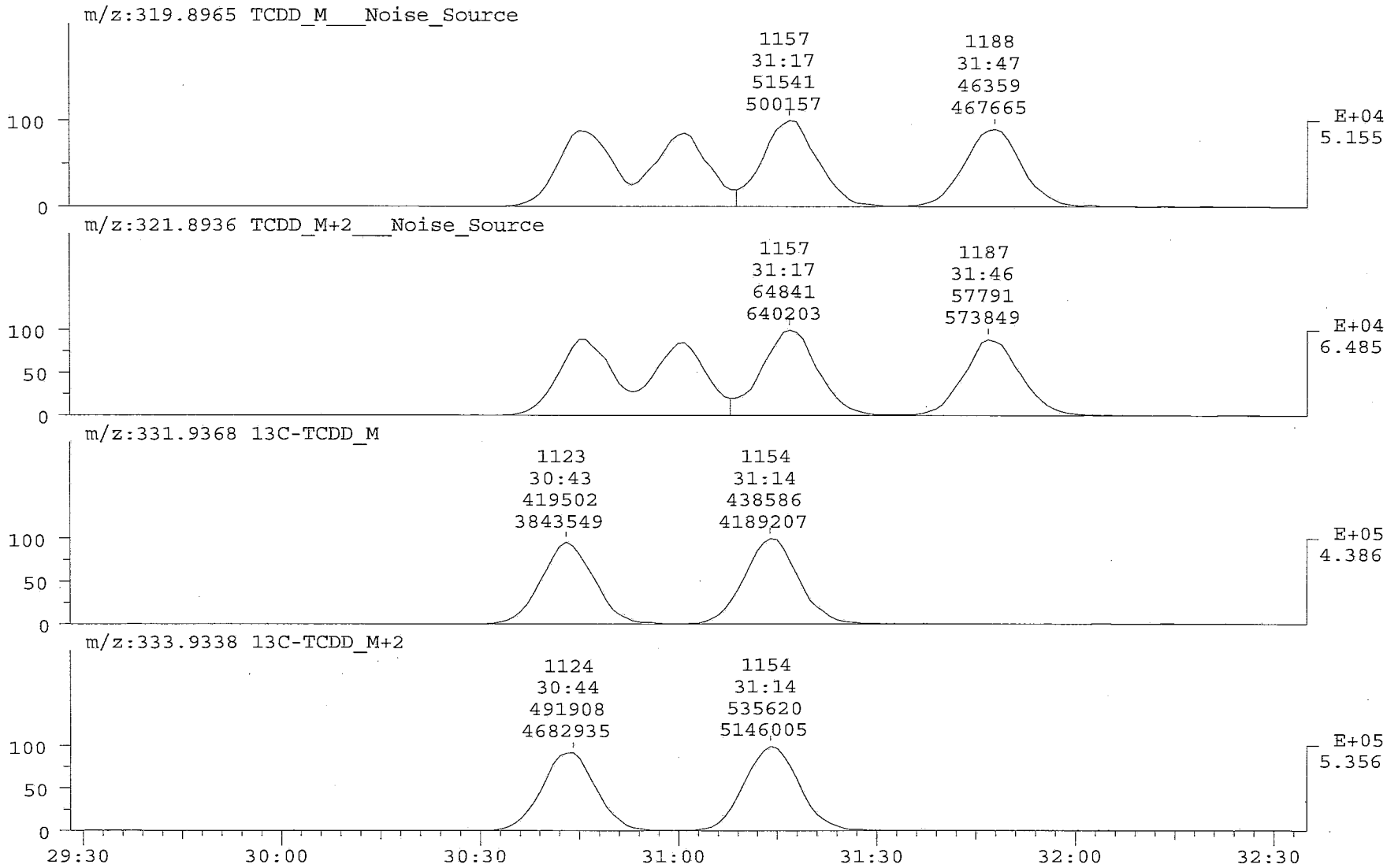
```
CHRO:  d3160803s2                          03-Aug-16  Elapse:  29:15      1035
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   720 > 1367       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



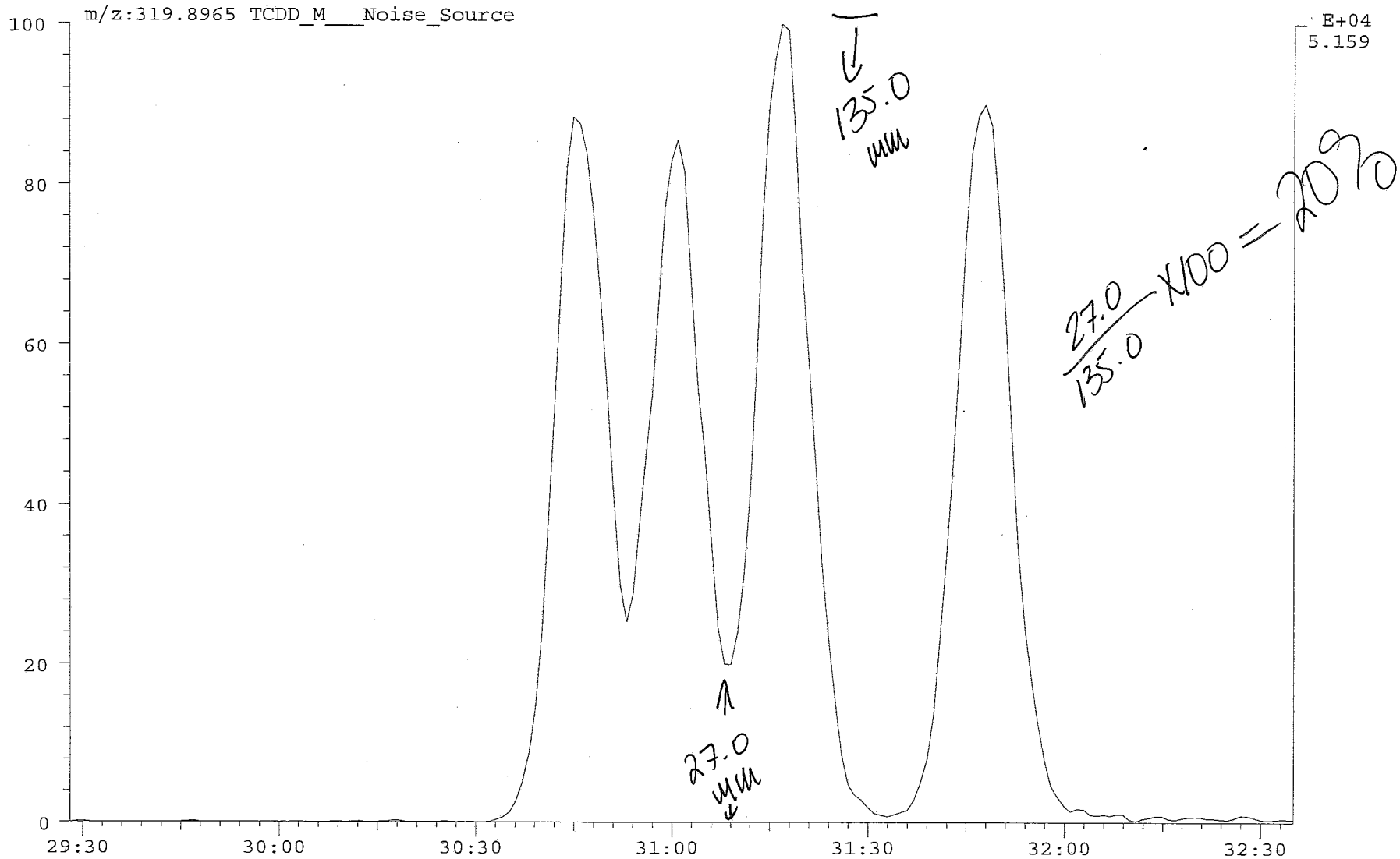
```
CHRO:  d3160803s2                          03-Aug-16   Elapse:  54:08      2483
Samp:  WO=4966:40 Meth=F8o Dil=1                       Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                             Study :  Ver/Win
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1298 > 1368       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



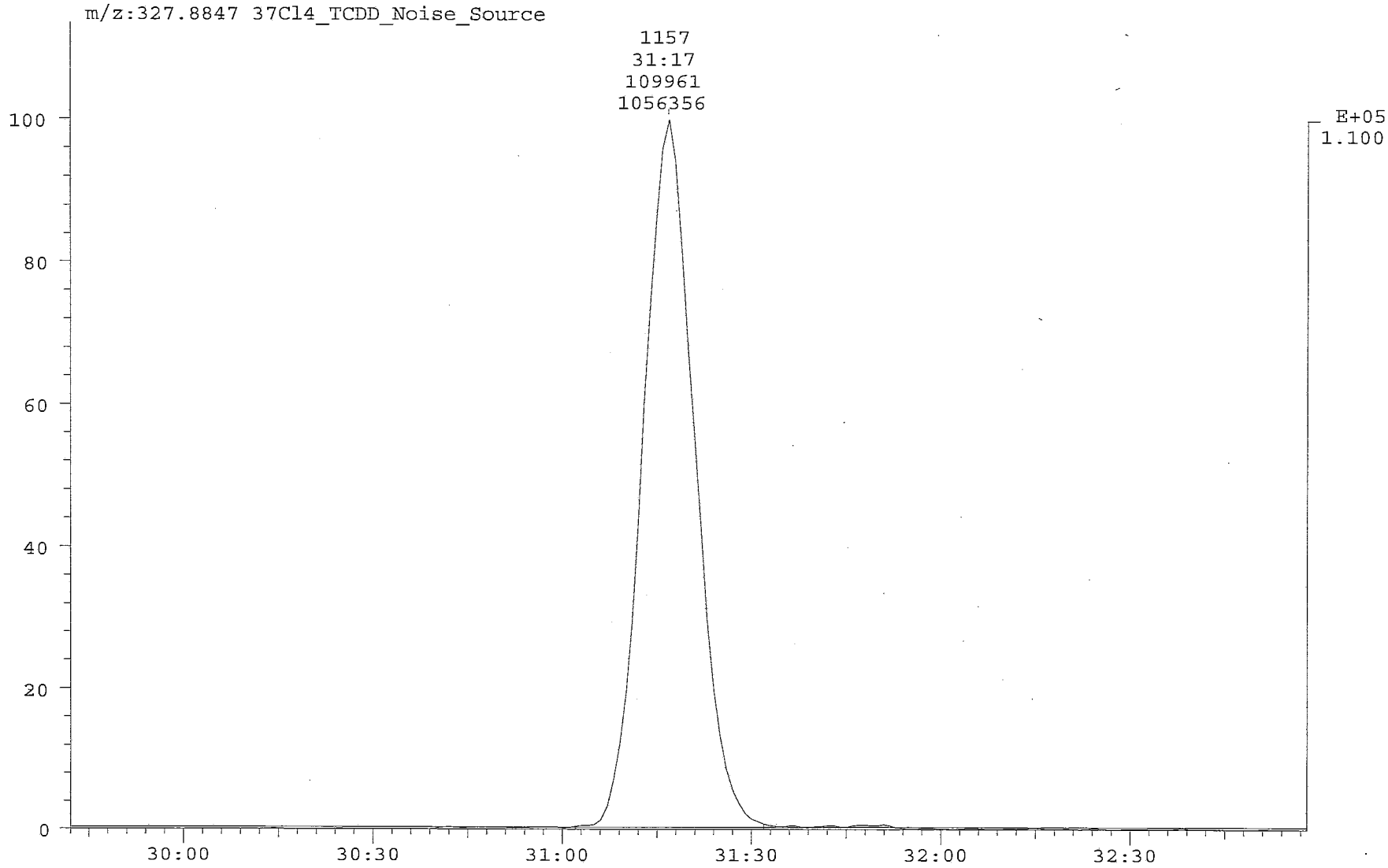
```
CHRO:  d3160803s2                          03-Aug-16  Elapse:  31:01      1141
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1048 > 1235      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



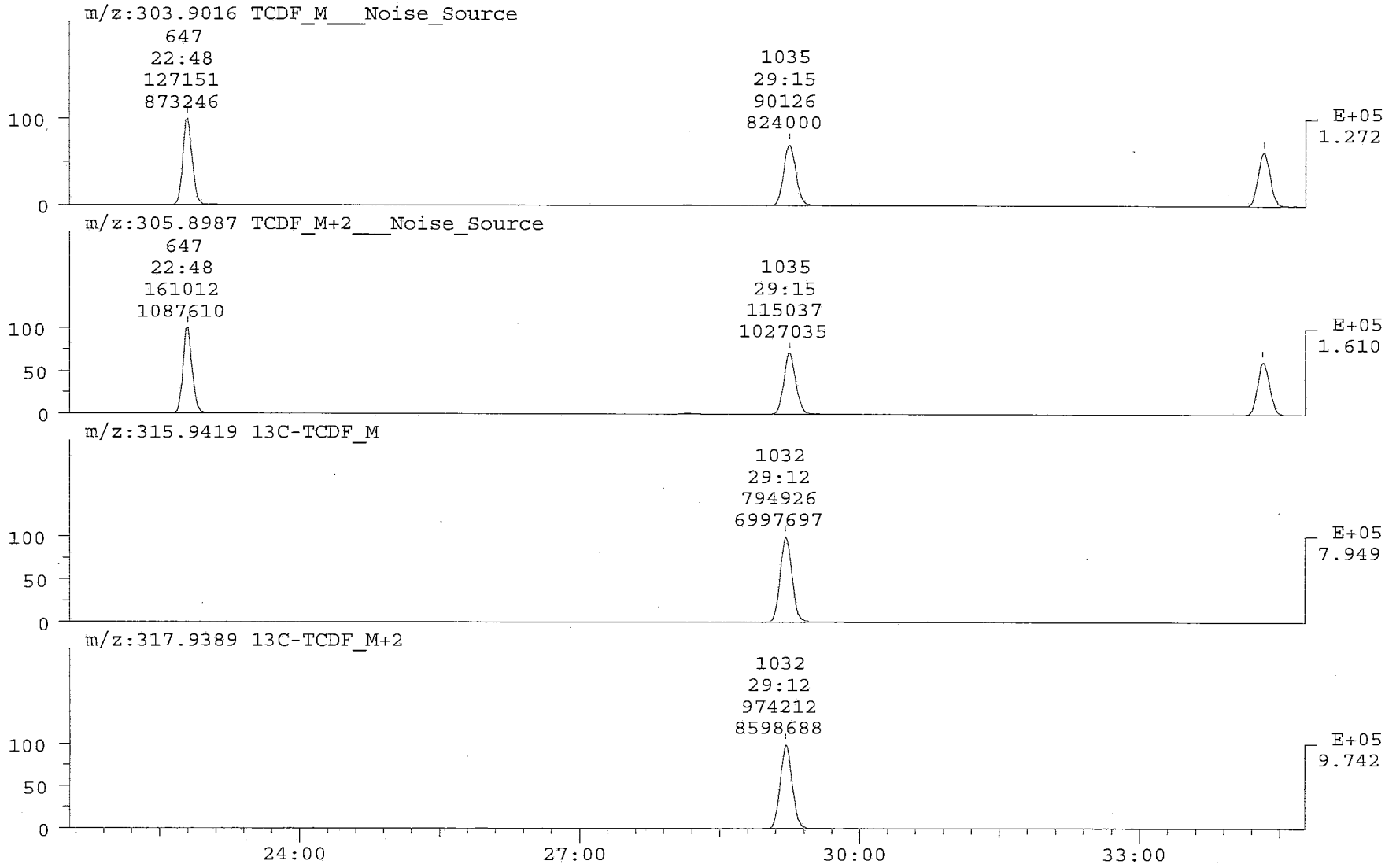
CHRO: d3160803s2 03-Aug-16 Elapse: 31:01 1141
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 11:38:31 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1048 > 1235 Masses: 303 > 514
Area: 5, 0.50, 15 . Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



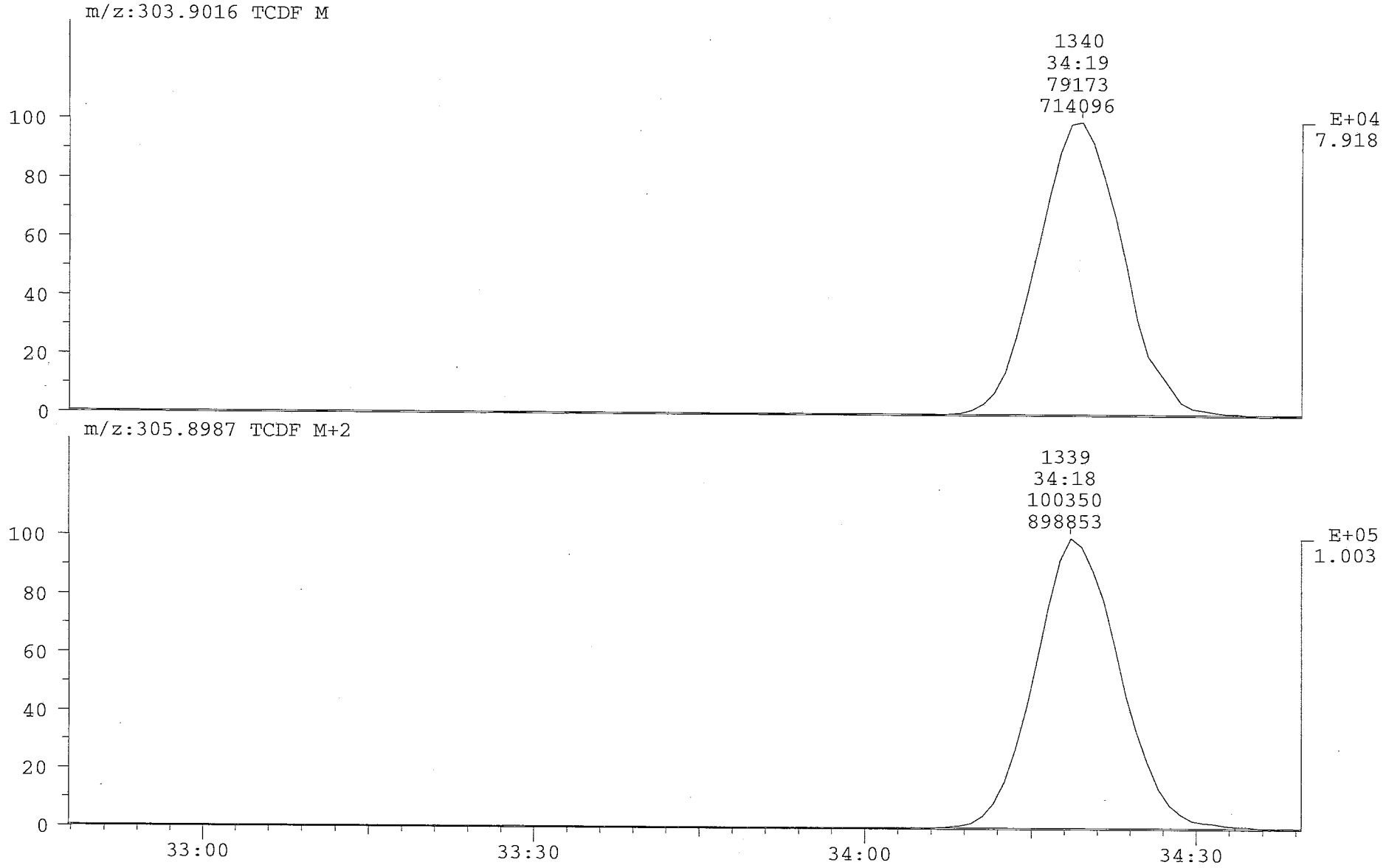
```
CHRO:  d3160803s2                          03-Aug-16  Elapse:  31:17       1157
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  11:38:31    2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1062 > 1258      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



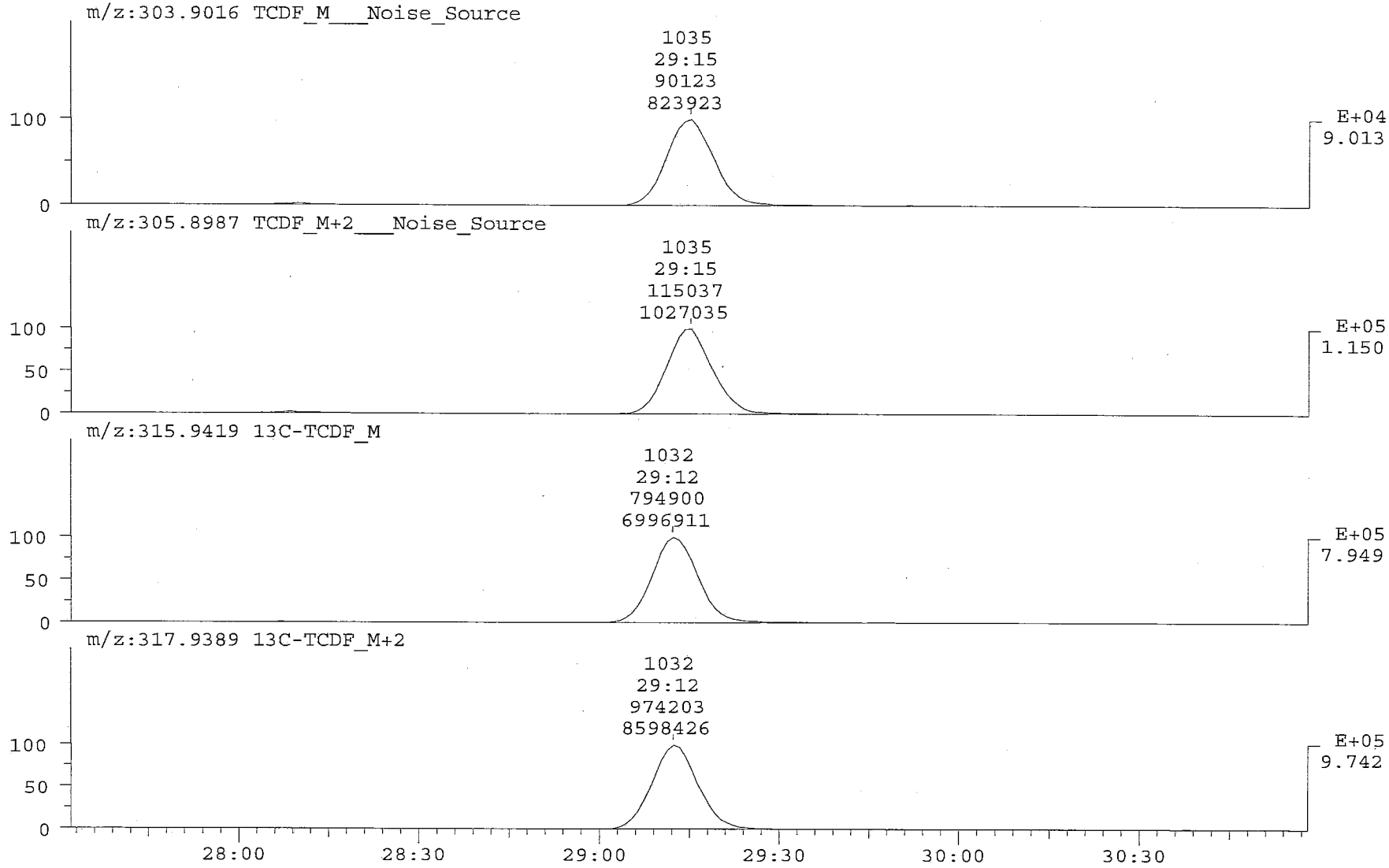
```
CHRO:  d3160803s2                          03-Aug-16  Elapse:  31:17      1157
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   571 > 1367       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



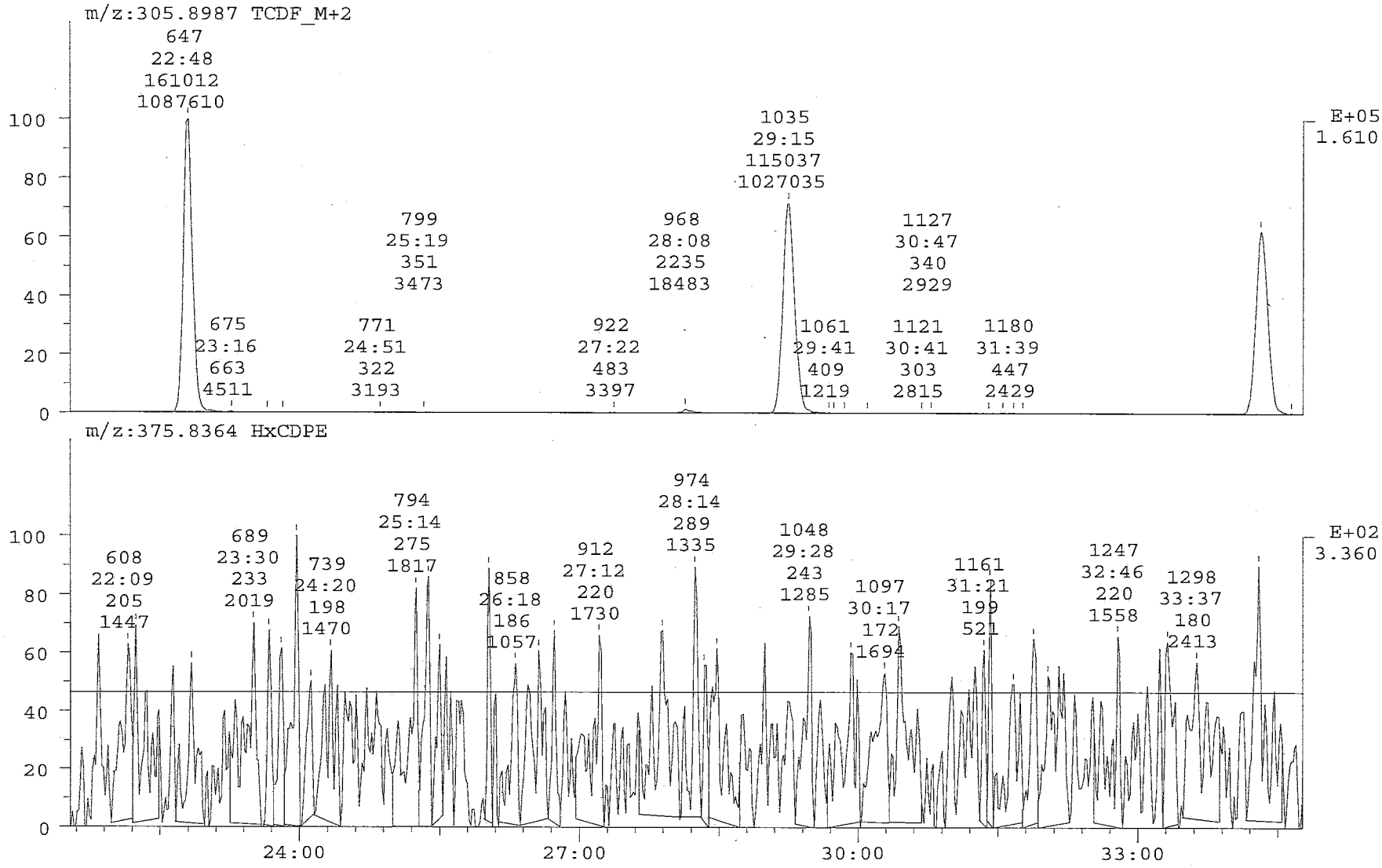
CHRO: d3160803s2 03-Aug-16 Elapse: 54:08 2483
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 11:38:31 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1248 > 1360 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



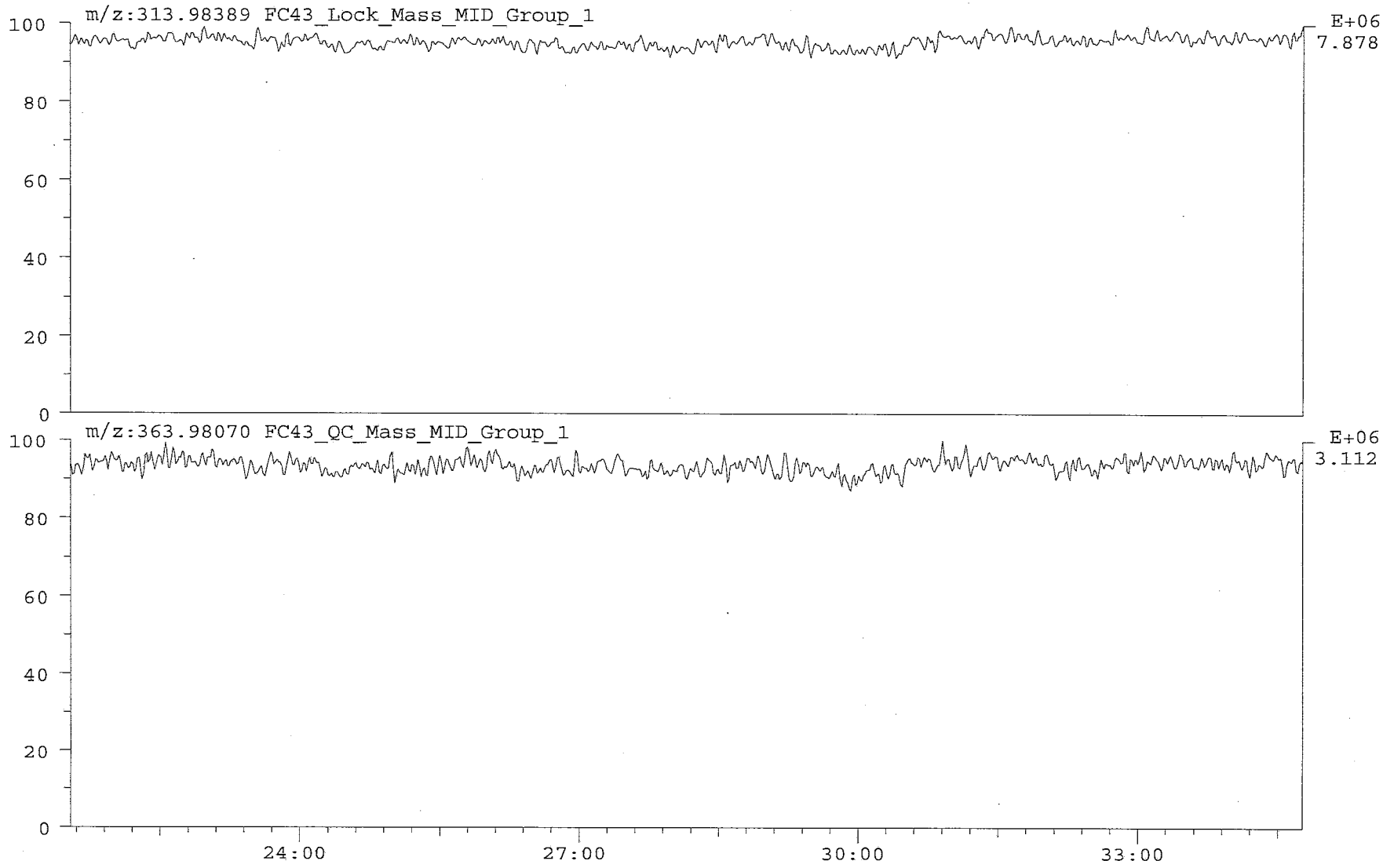
```
CHRO:  d3160803s2                          03-Aug-16  Elapse:  29:12      1032
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   931 > 1138       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



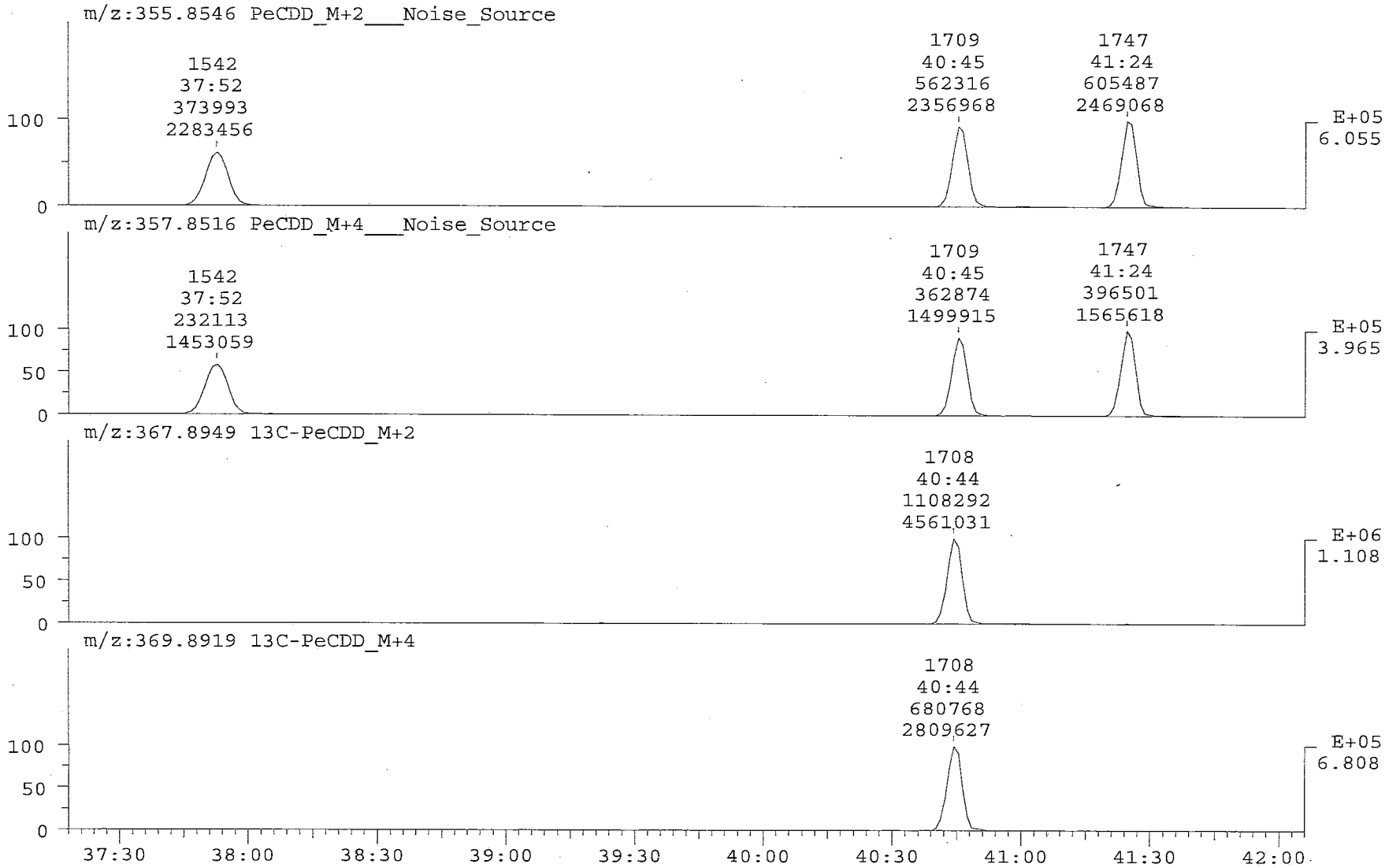
```
CHRO:  d3160803s2                                03-Aug-16  Elapse:  29:12      1032
Samp:  WO=4966:40 Meth=F8o Dil=1                            Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  Ver/Win
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   571 > 1367             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



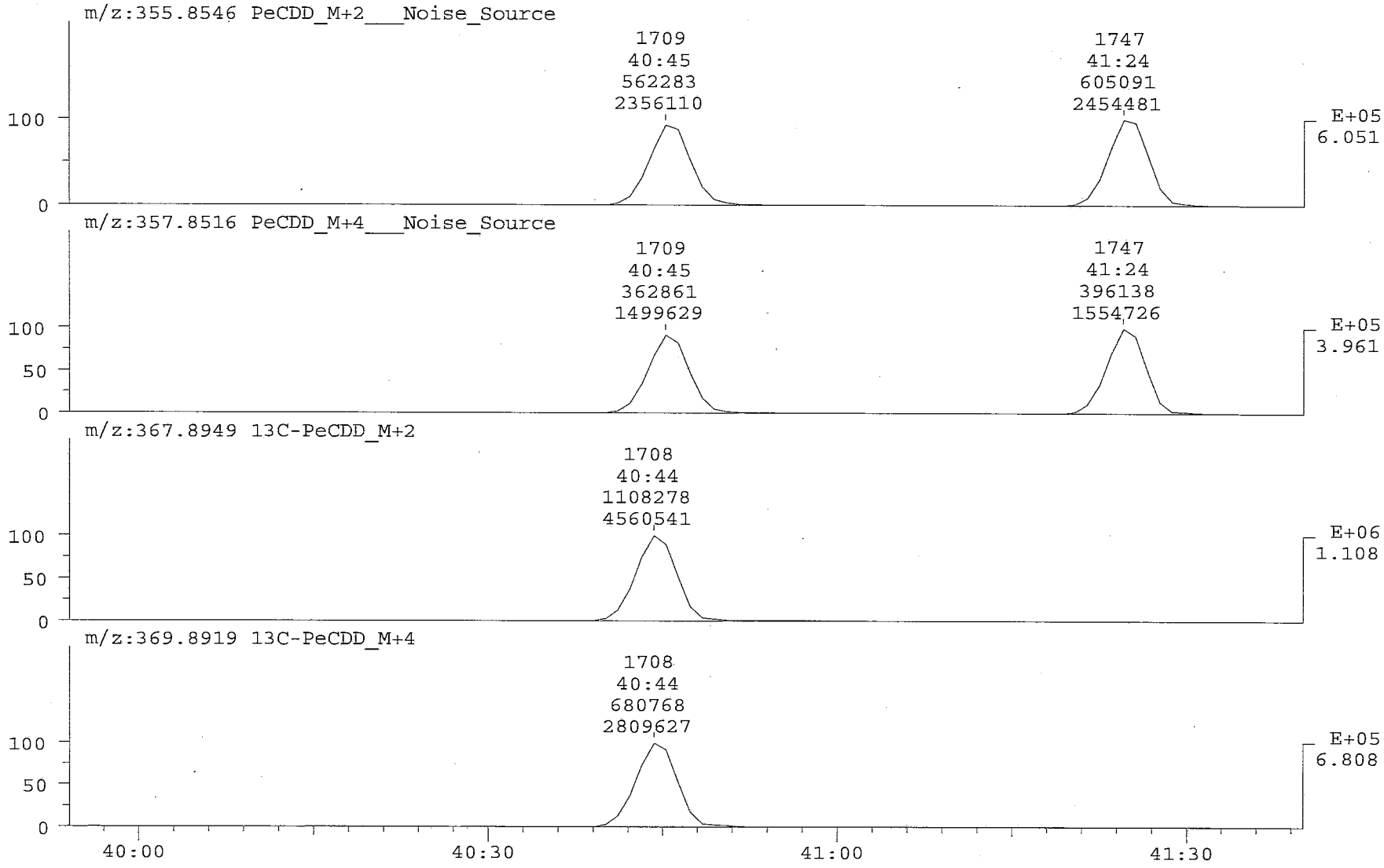
CHRO: d3160803s2 03-Aug-16 Elapse: 29:12 1032
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 11:38:31 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 571 > 1367 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



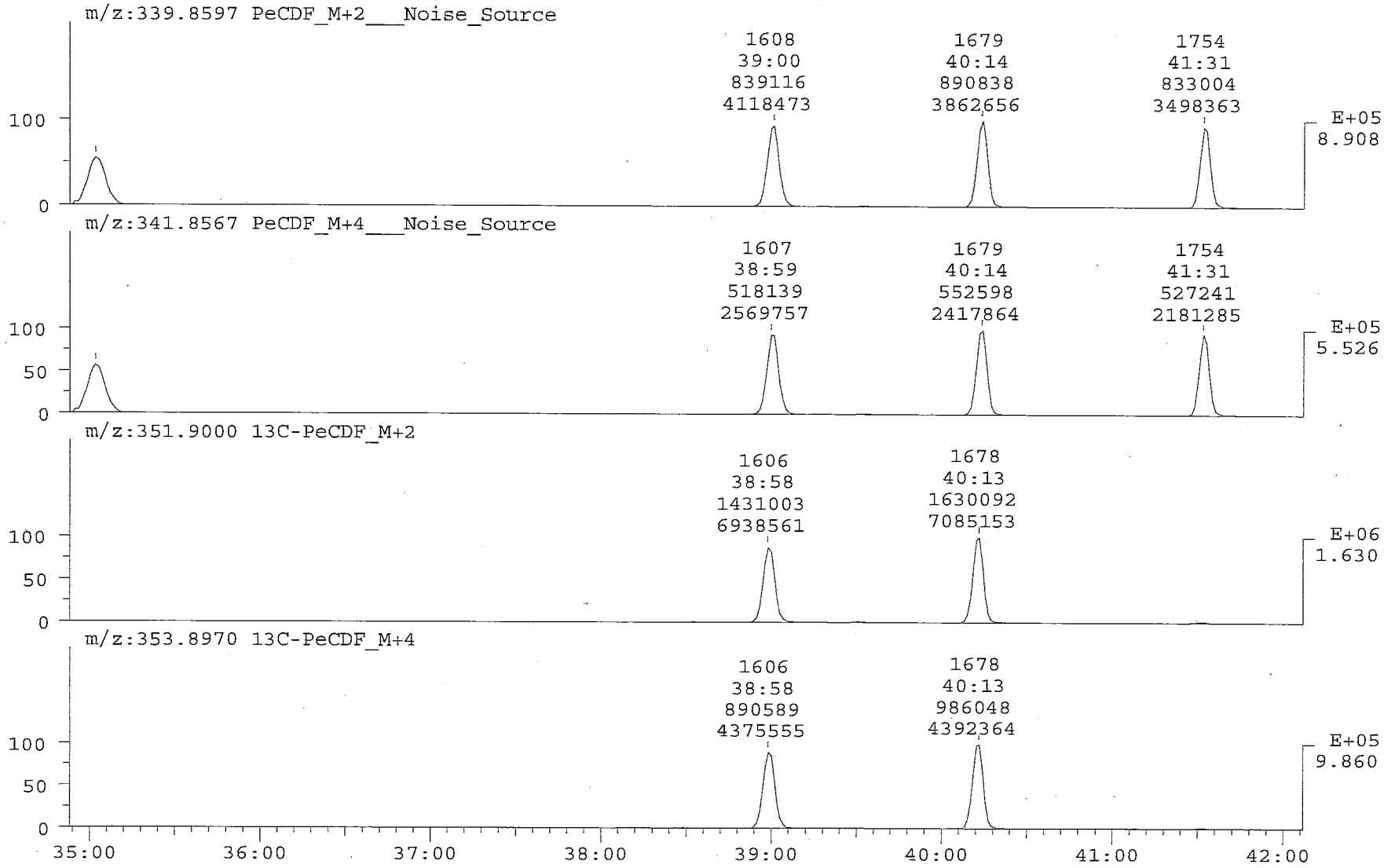
CHRO: d3160803s2 03-Aug-16 Elapse: 29:12 1032
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 11:38:31 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1508 > 1787 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



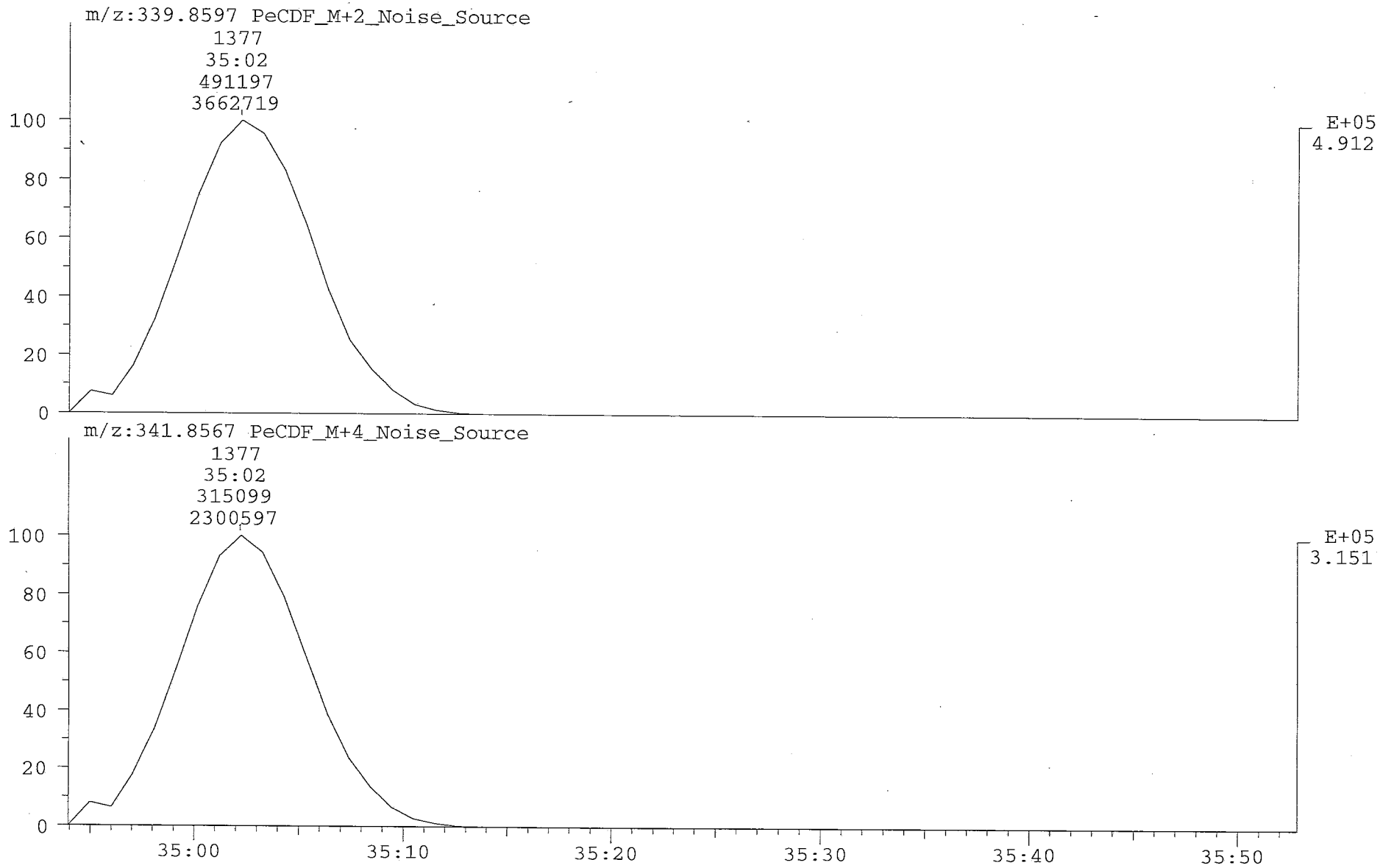
```
CHRO:  d3160803s2                          03-Aug-16  Elapse:  40:44      1708
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1659 > 1762      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



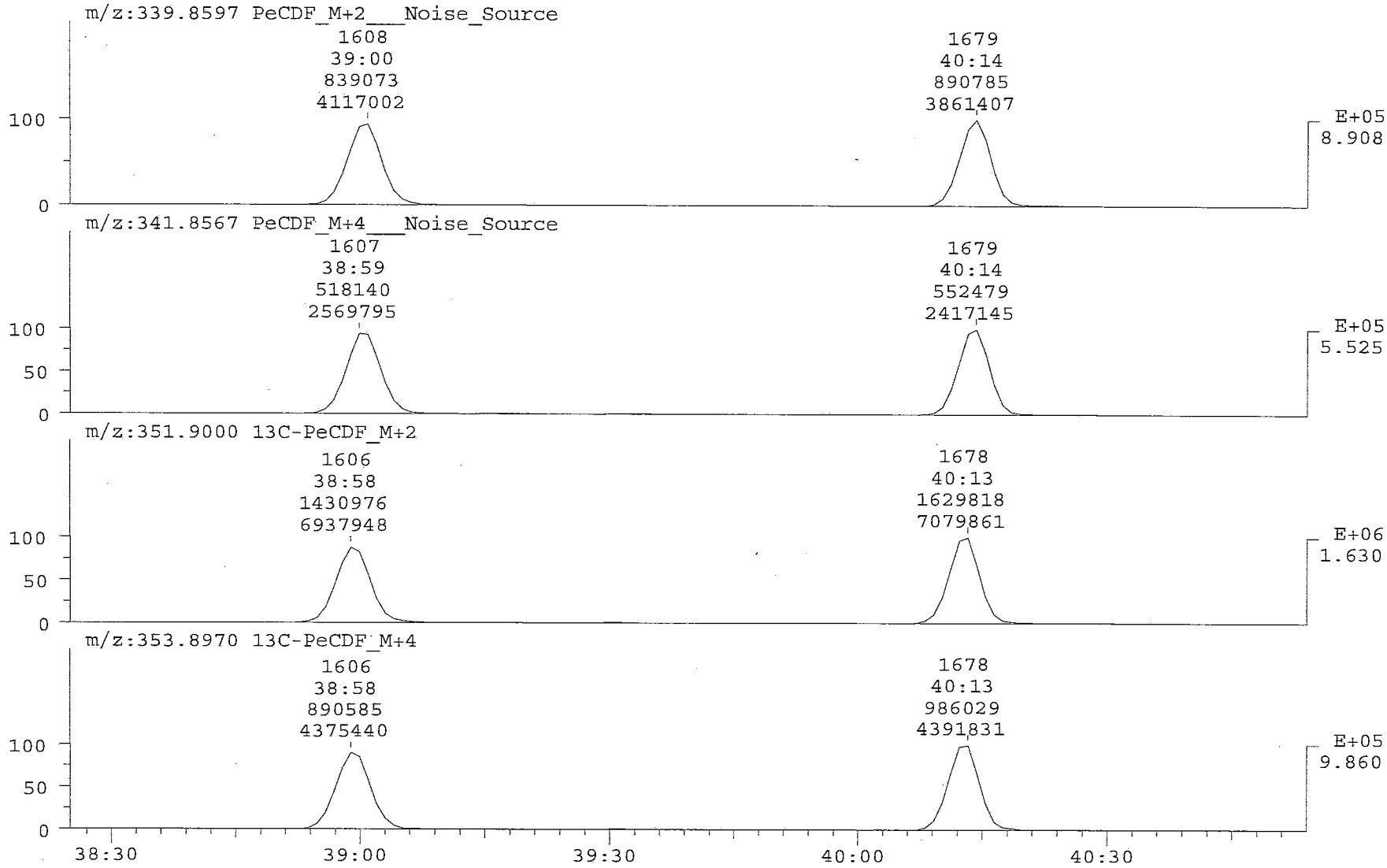
```
CHRO:  d3160803s2                          03-Aug-16  Elapse:  40:44      1708
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1369 > 1788      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



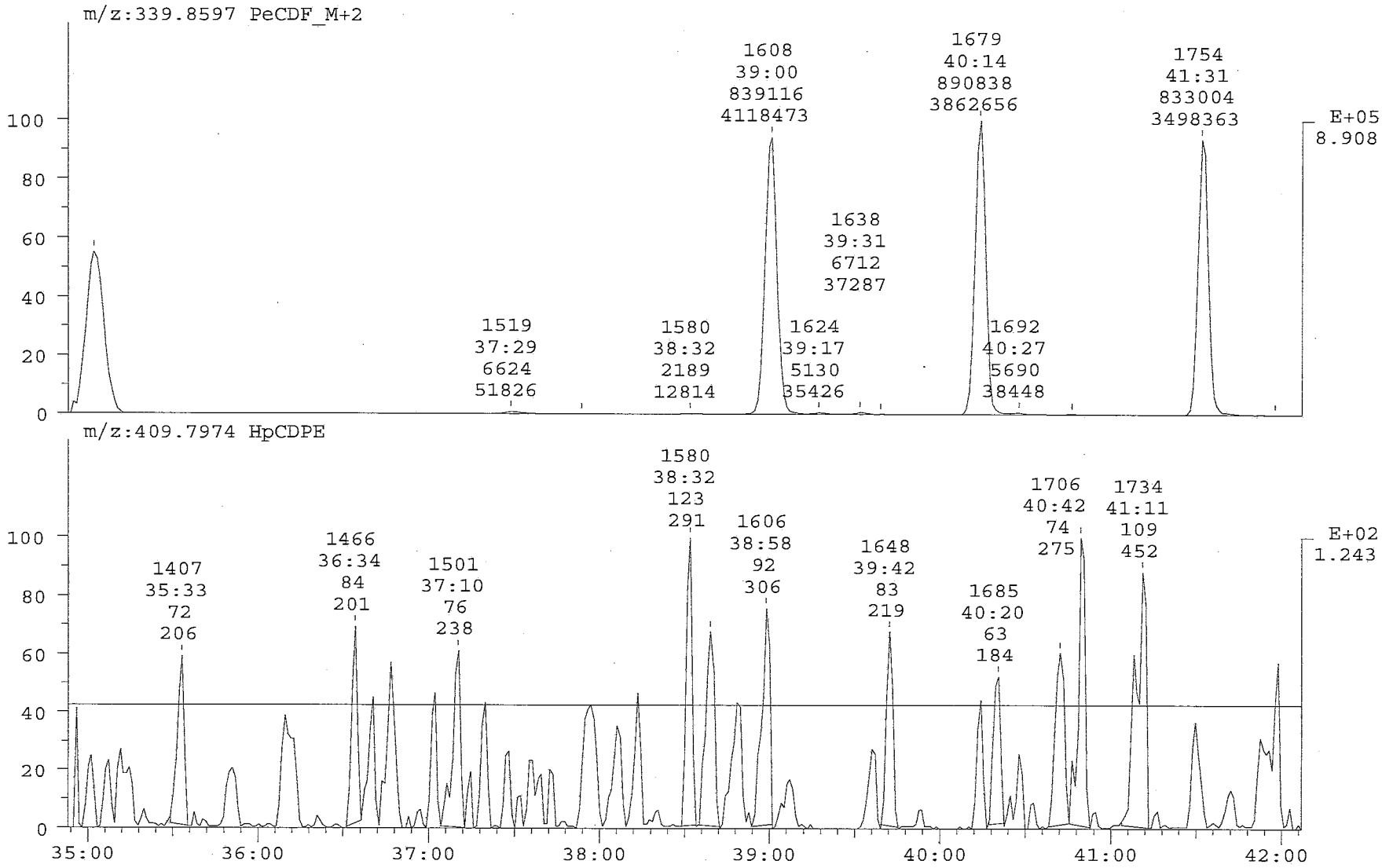
```
CHRO:  d3160803s2                                03-Aug-16   Elapse:  54:08      2483
Samp:  WO=4966:40 Meth=F8o Dil=1                             Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                                   Study :  Ver/Win
Oper:  MSD                                                   Inlet :  LC
Peak:  100.00  ppm      Label wndw:   1369 > 1426            Masses:  303 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



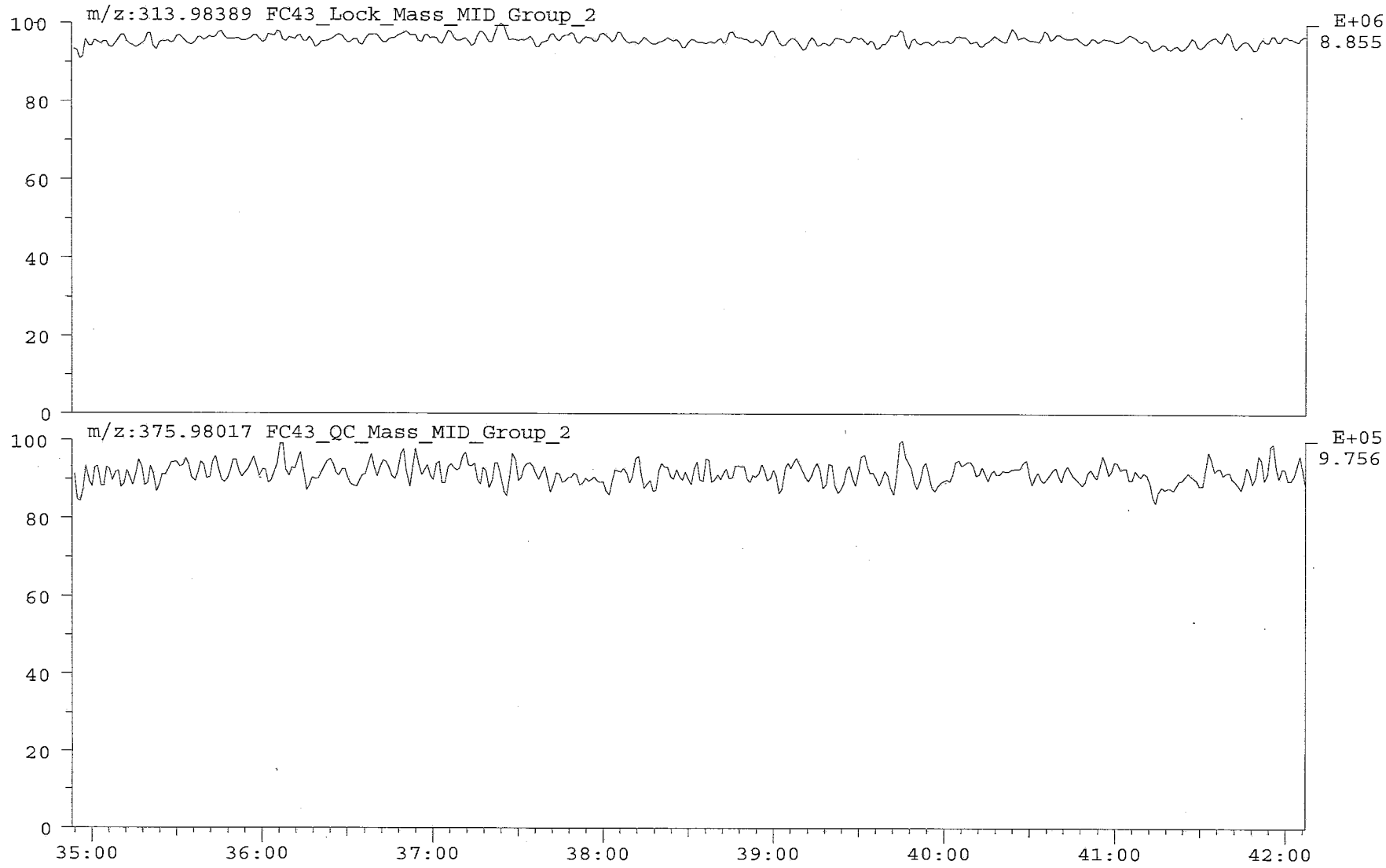
```
CHRO:  d3160803s2                                  03-Aug-16   Elapse:  39:39      1645
Samp:  WO=4966:40 Meth=F8o Dil=1                               Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                                     Study :  Ver/Win
Oper:  MSD                                                     Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1573 > 1717               Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                    Label :  2, 5.0
Disp:  Height  Area
```



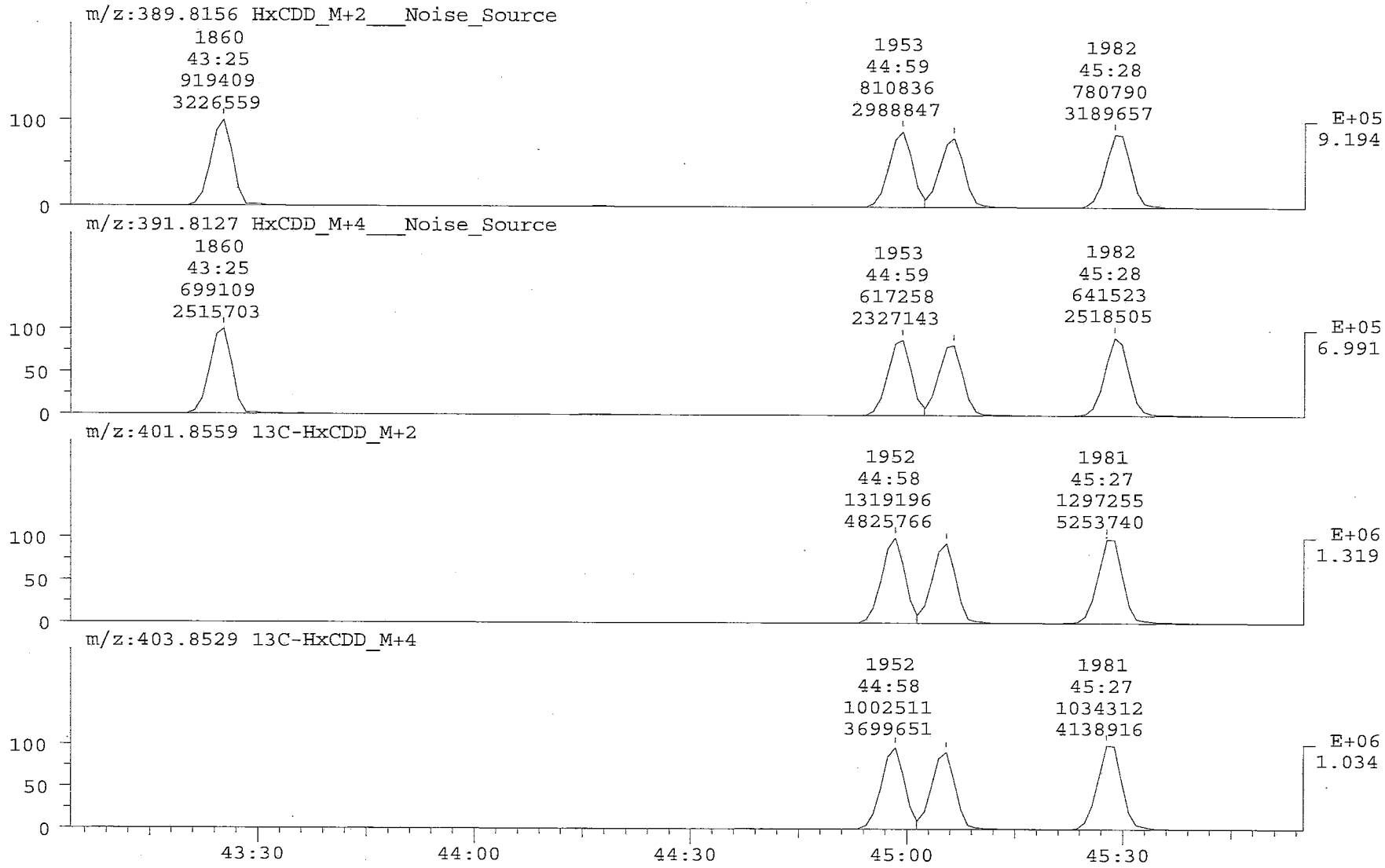
CHRO: d3160803s2 03-Aug-16 Elapse: 39:39 1645
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 11:38:31 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1369 > 1788 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



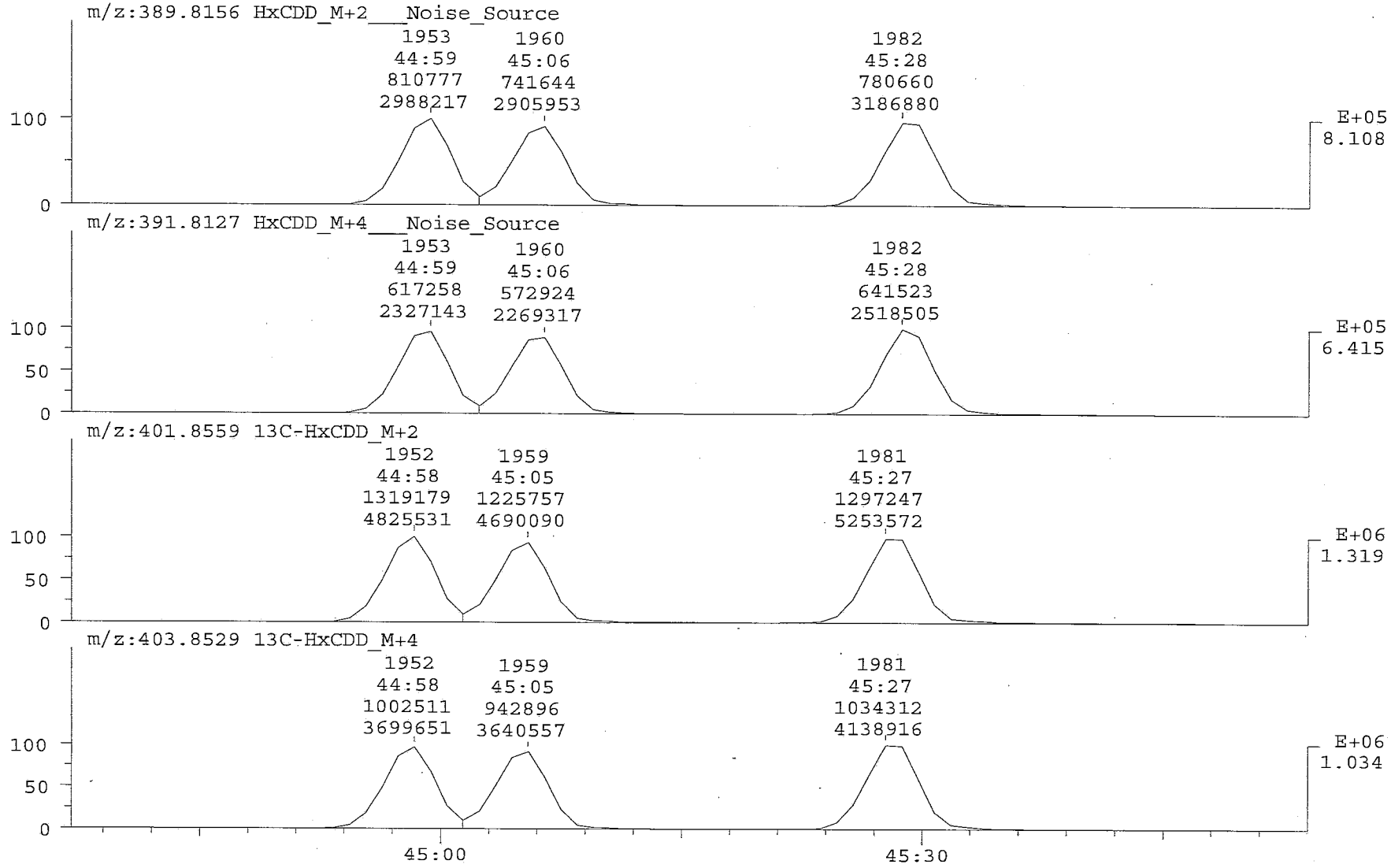
```
CHRO:  d3160803s2                          03-Aug-16  Elapse:  39:39      1645
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1369 > 1788      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



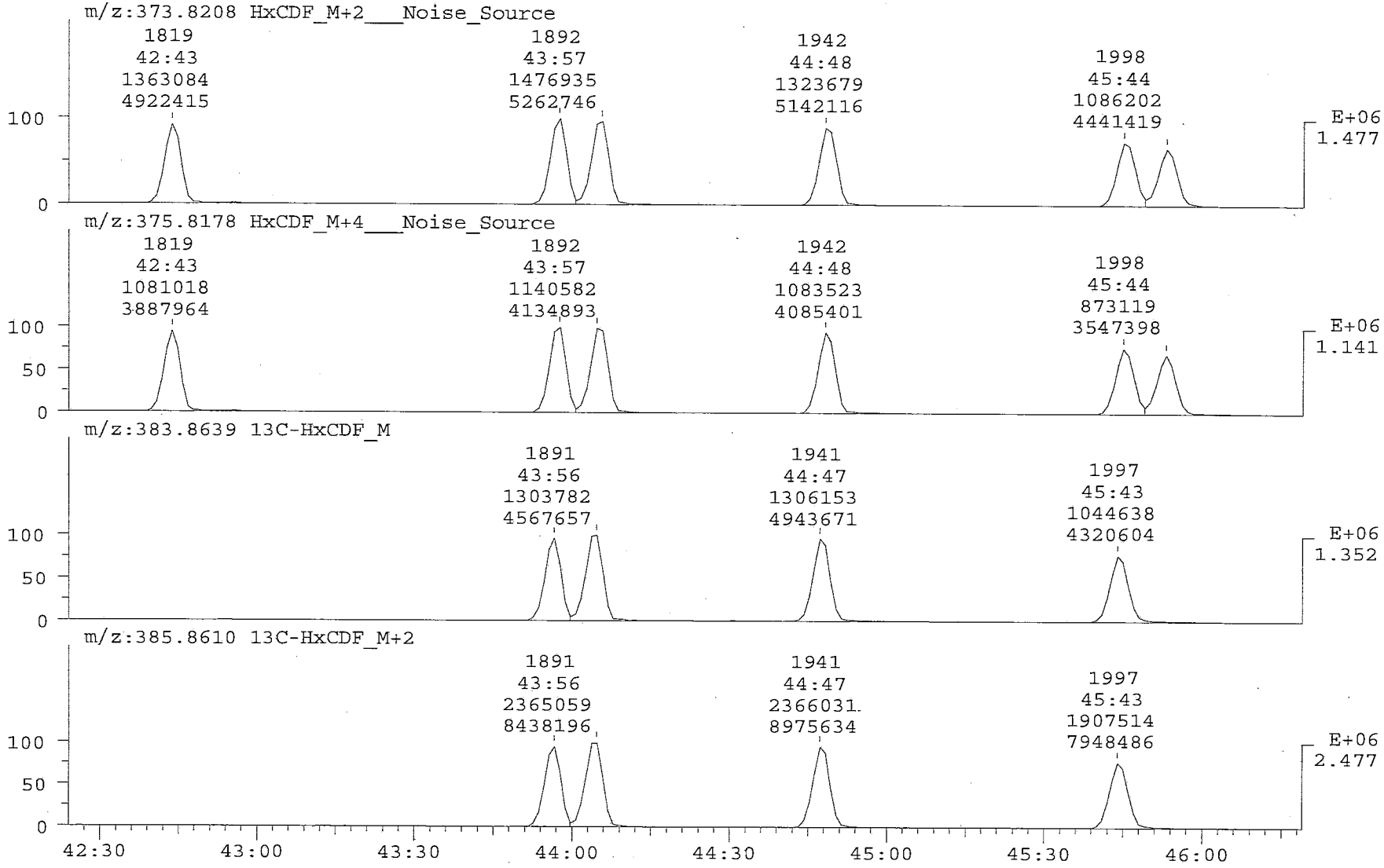
```
CHRO:  d3160803s2                          03-Aug-16  Elapse:  39:39      1645
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1839 > 2008      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



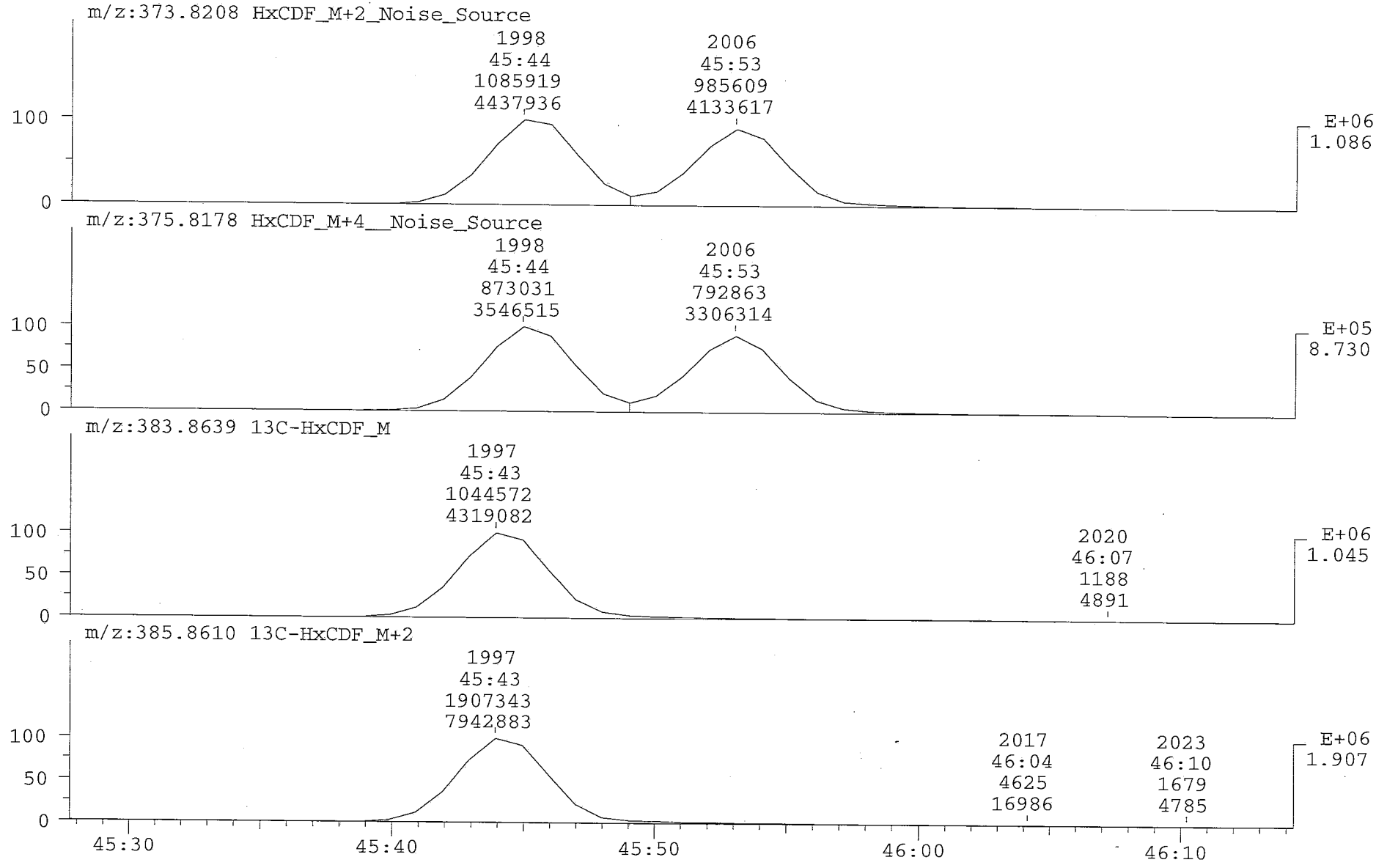
```
CHRO:  d3160803s2                                  03-Aug-16   Elapse:  45:14      1968
Samp:  WO=4966:40 Meth=F8o Dil=1                               Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                                     Study :  Ver/Win
Oper:  MSD                                                     Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1931 > 2007               Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                    Label :  2, 5.0
Disp:  Height  Area
```



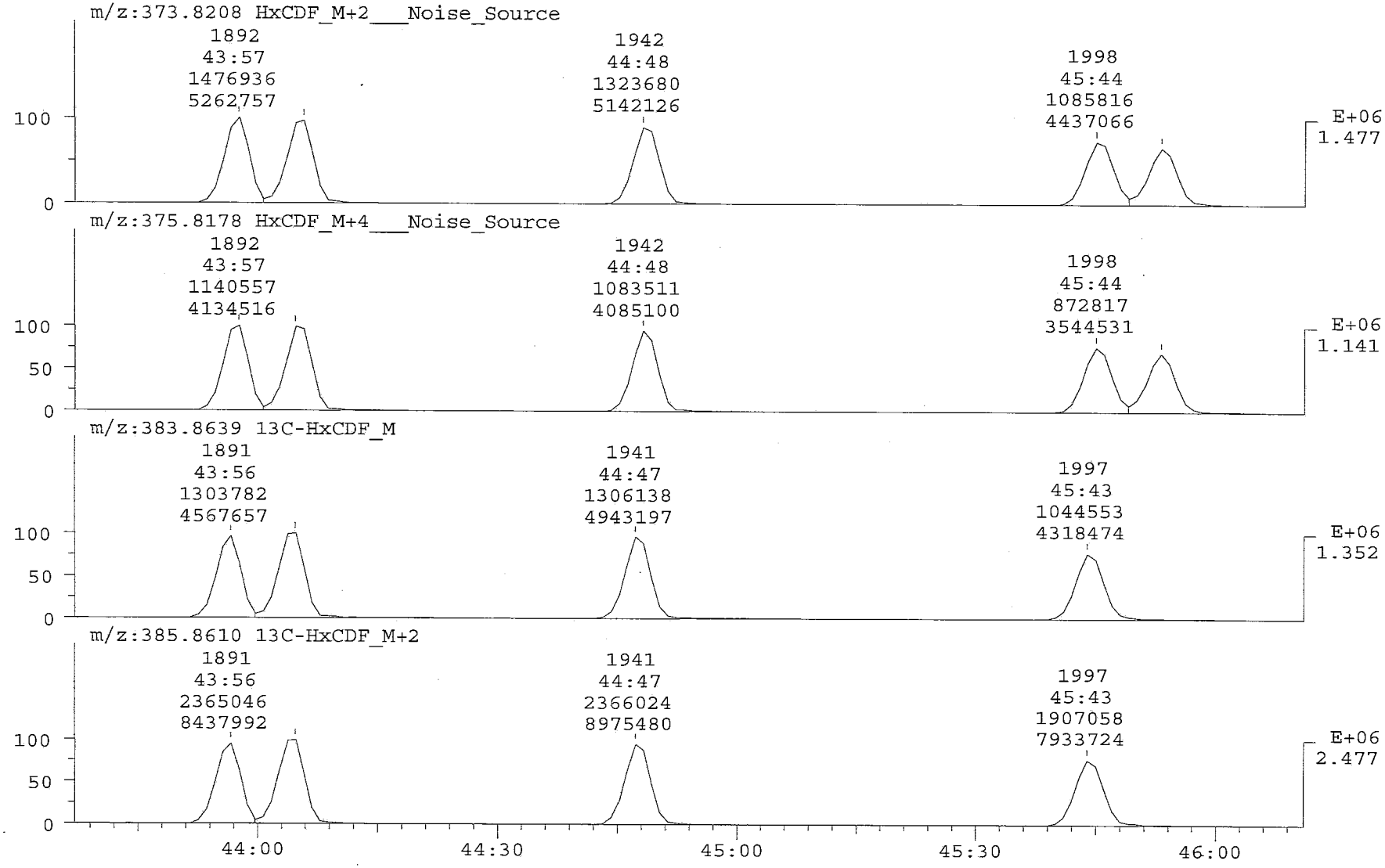
CHRO: d3160803s2 03-Aug-16 Elapse: 45:14 1968
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 11:38:31 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1800 > 2032 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



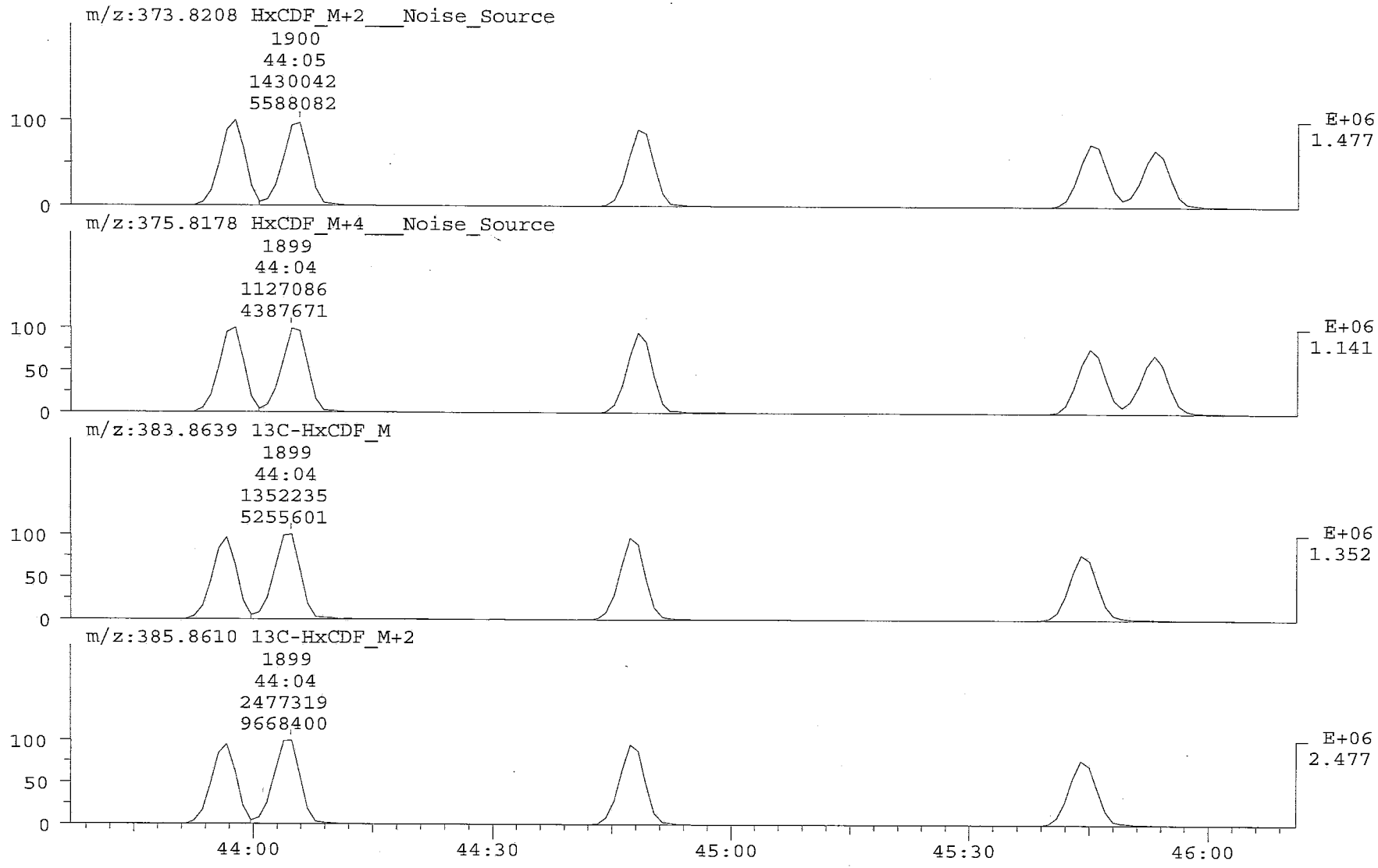
CHRO: d3160803s2 03-Aug-16 Elapse: 54:08 2483
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 11:38:31 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1981 > 2027 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



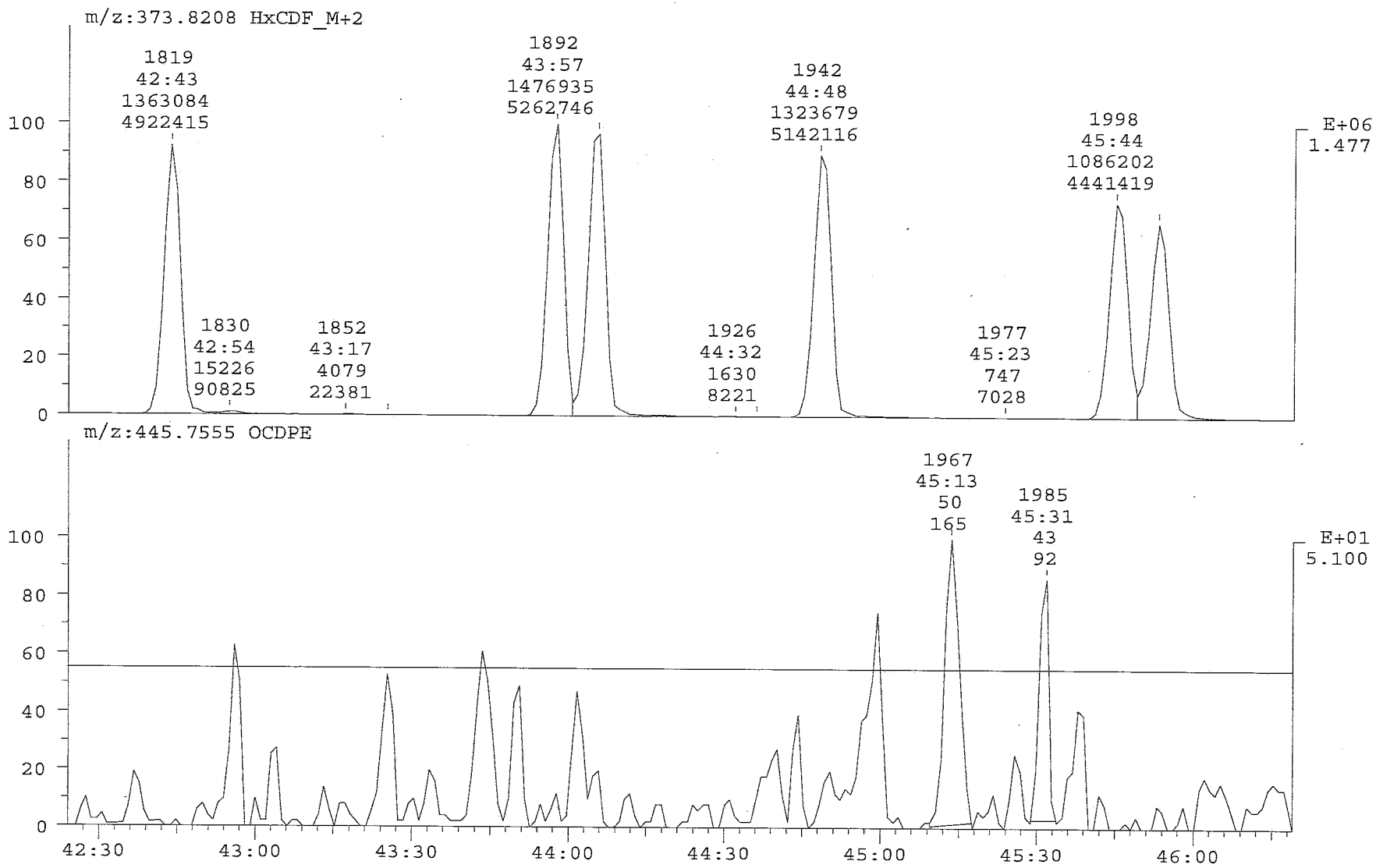
```
CHRO:  d3160803s2                          03-Aug-16  Elapse:  44:54      1948
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1872 > 2024      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



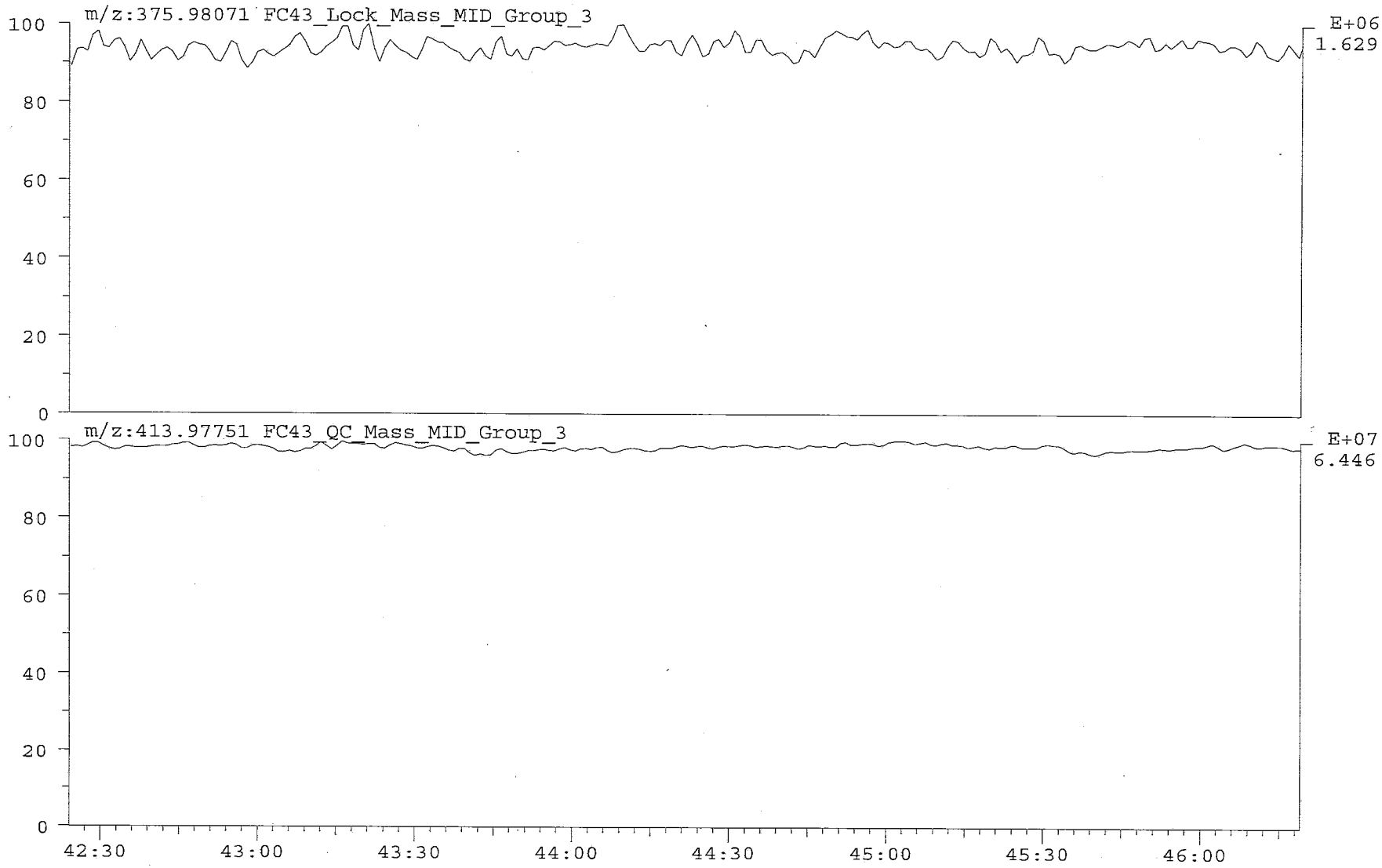
```
CHRO:  d3160803s2                          03-Aug-16  Elapse:  44:04      1899
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1895 > 1903      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



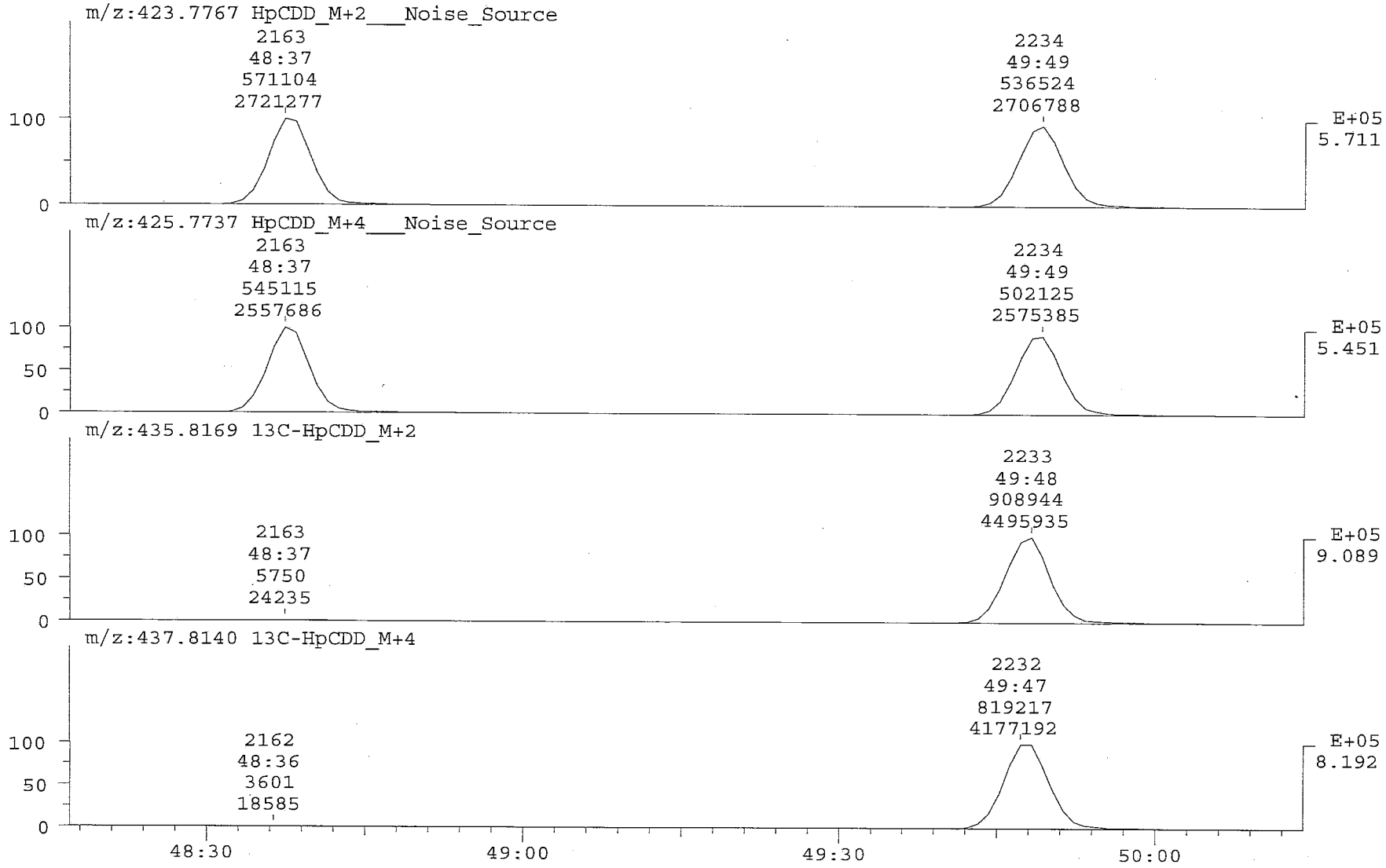
```
CHRO:  d3160803s2                                  03-Aug-16  Elapse:  44:04      1899
Samp:  WO=4966:40 Meth=F8o Dil=1                              Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                                    Study :  Ver/Win
Oper:  MSD                                                    Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1800 > 2032              Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                   Label :  -2, 5.0
Disp:  Height  Area
```



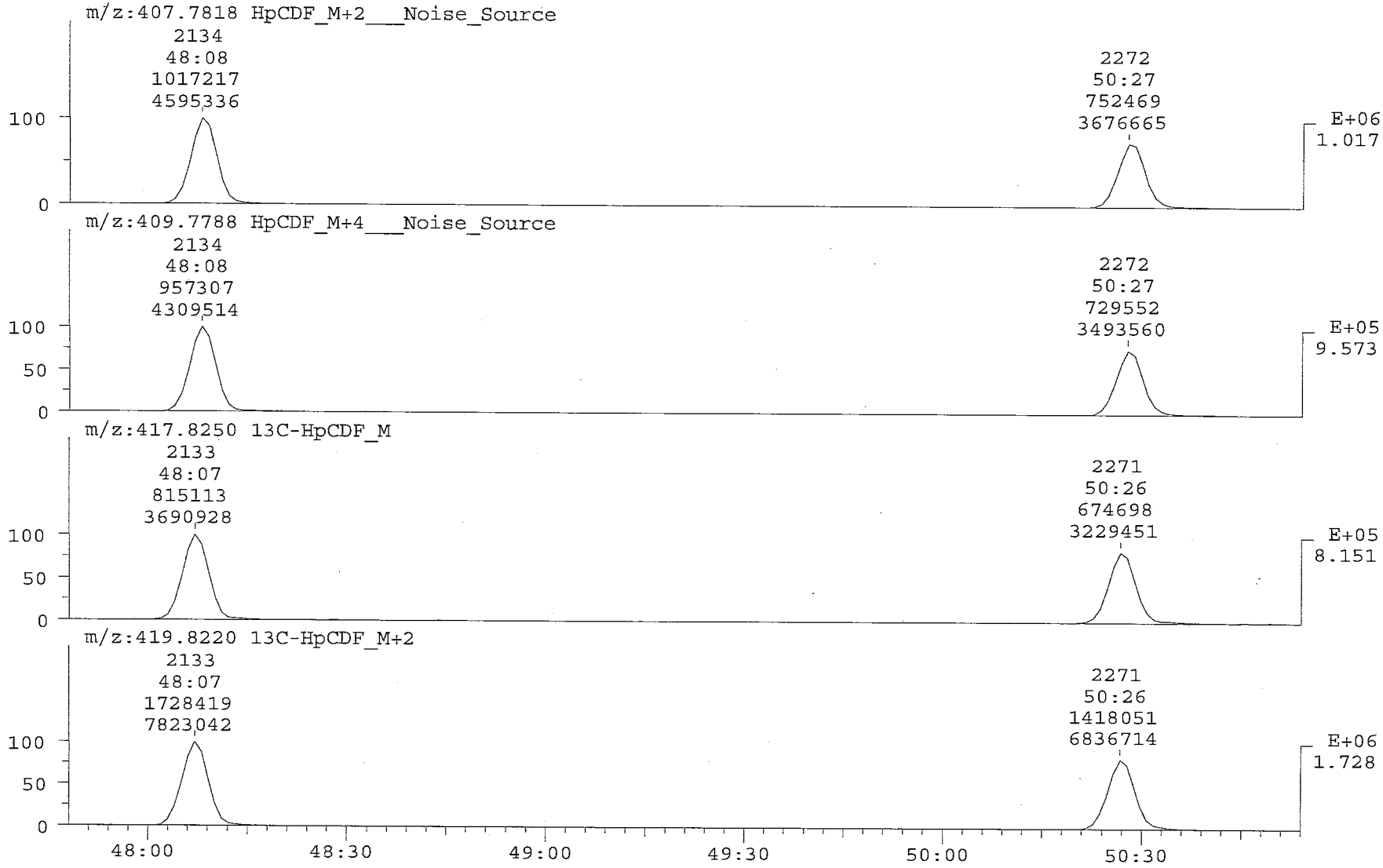
CHRO: d3160803s2 03-Aug-16 Elapse: 44:04 1899
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 11:38:31 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1800 > 2032 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



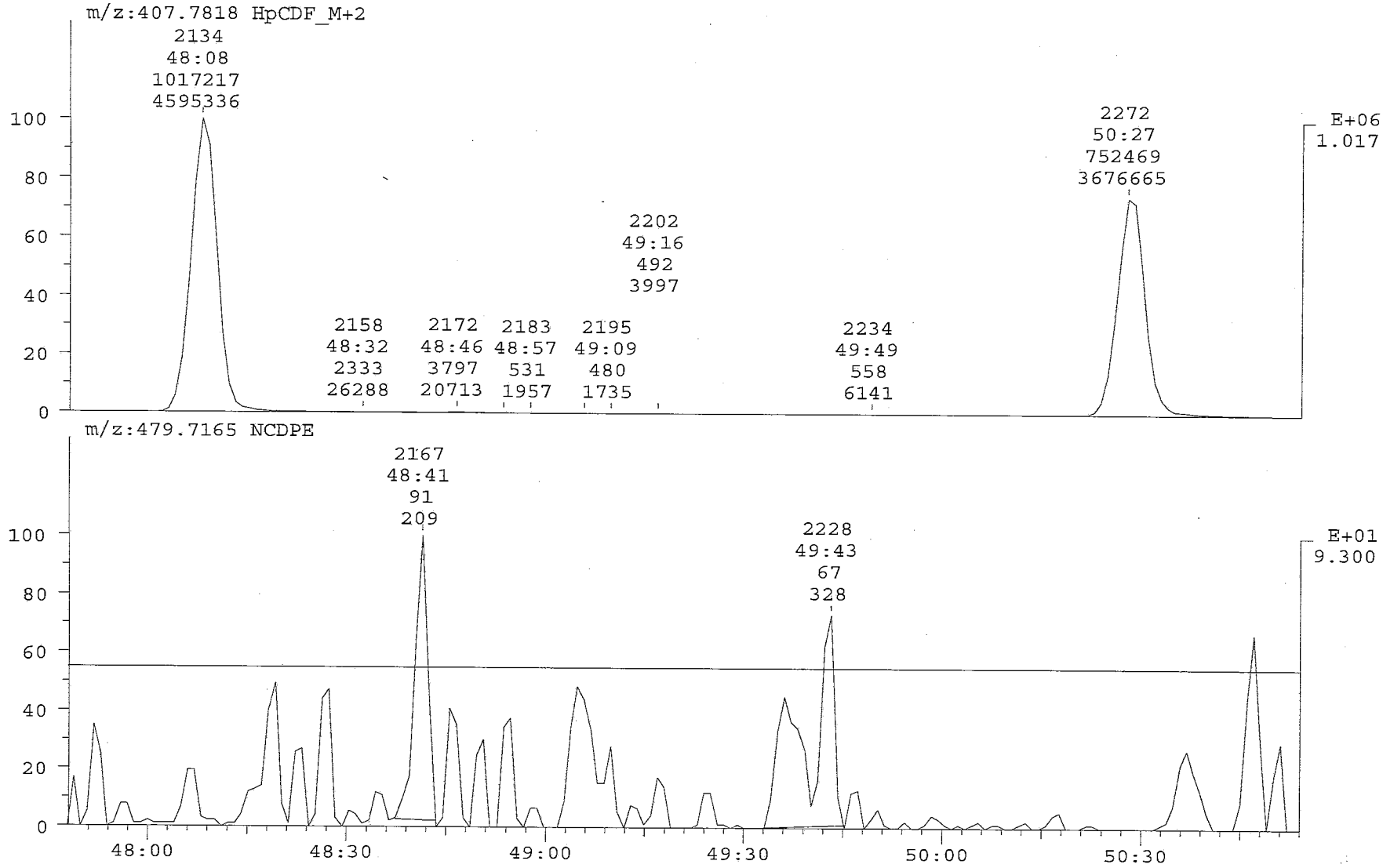
```
CHRO:  d3160803s2                          03-Aug-16  Elapse:  44:04      1899
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2143 > 2258      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



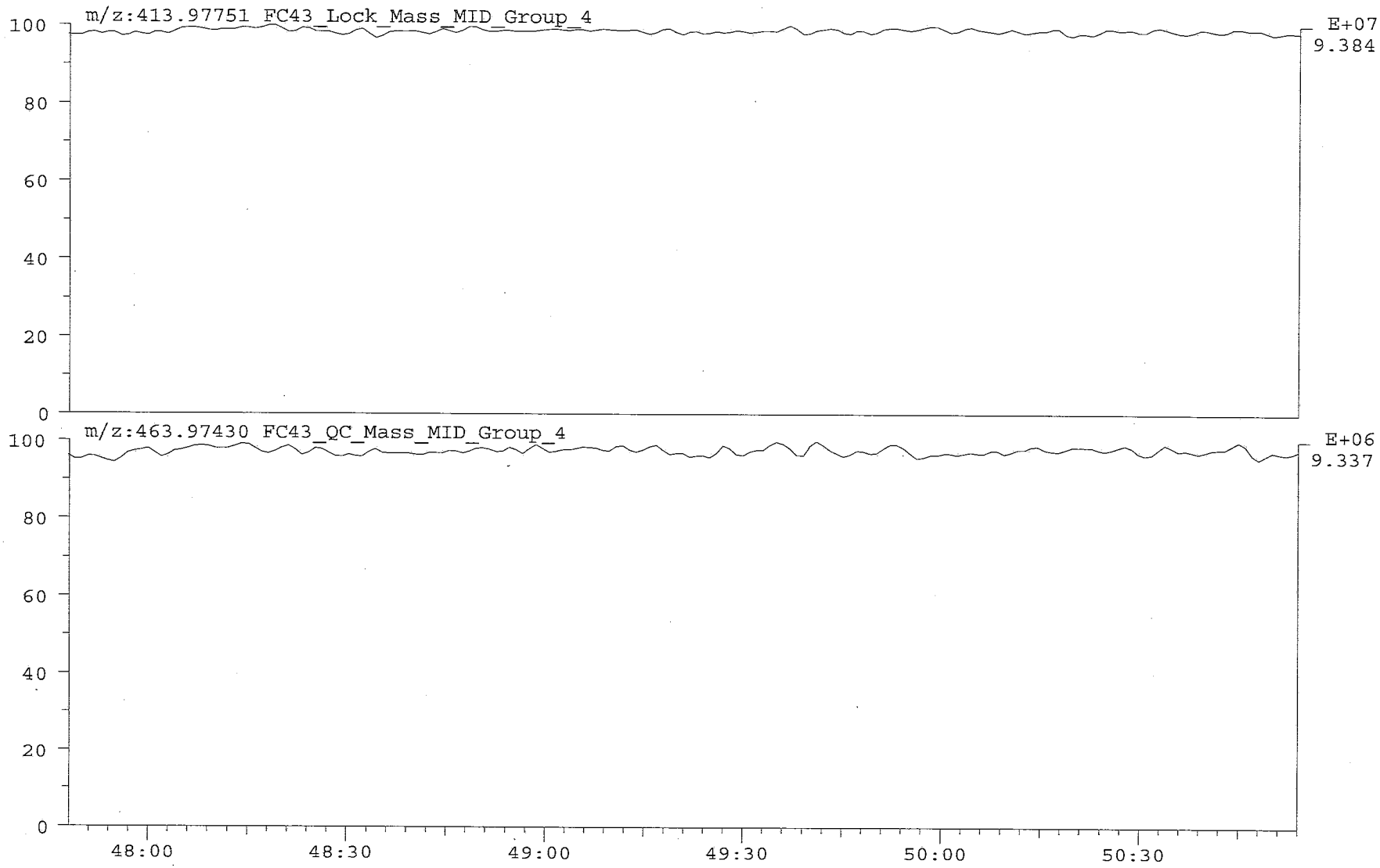
```
CHRO:  d3160803s2                          03-Aug-16  Elapse:  49:20      2206
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2114 > 2298      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



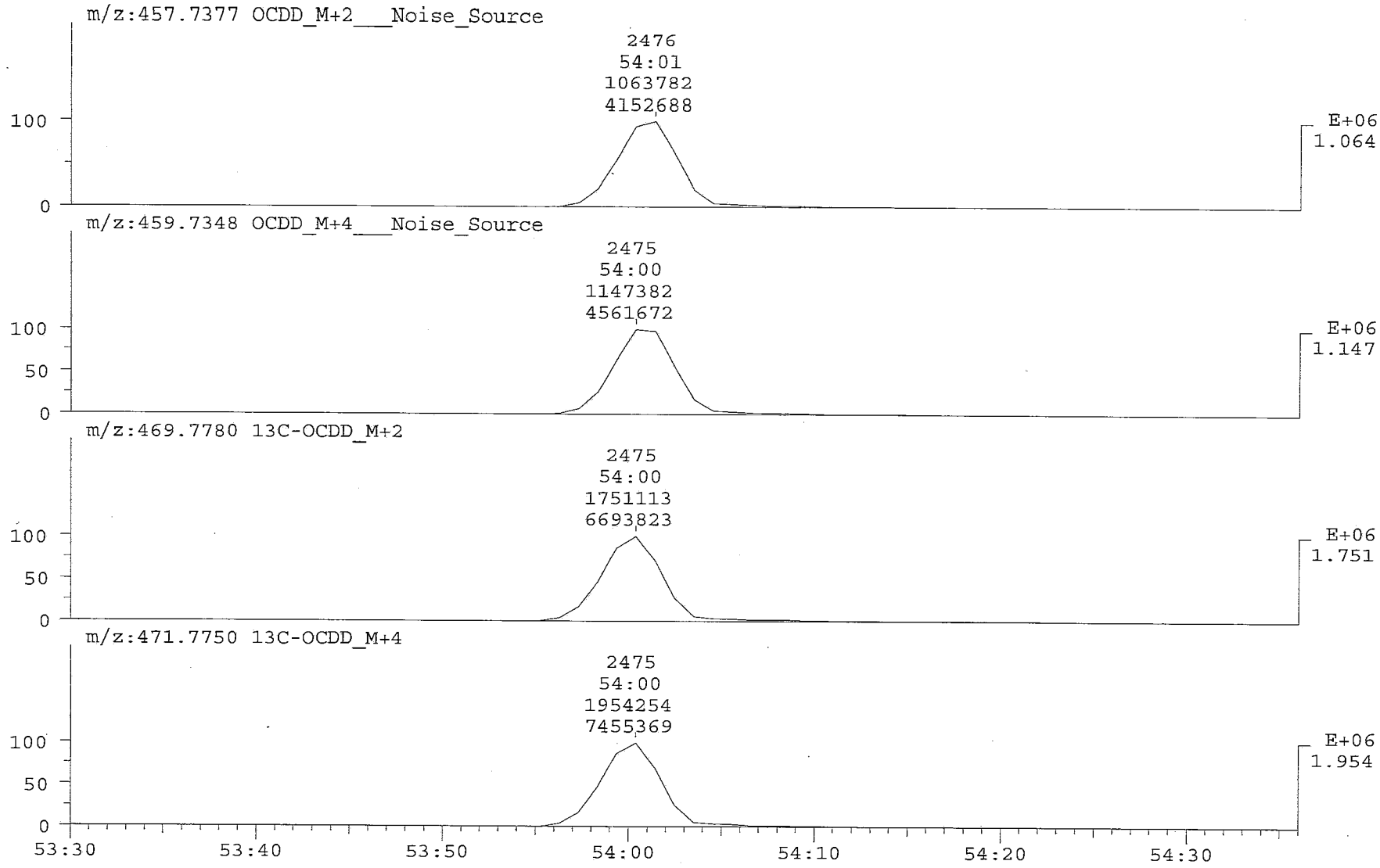
```
CHRO:  d3160803s2                          03-Aug-16  Elapse:  49:20      2206
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:  2114 > 2298       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :  100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



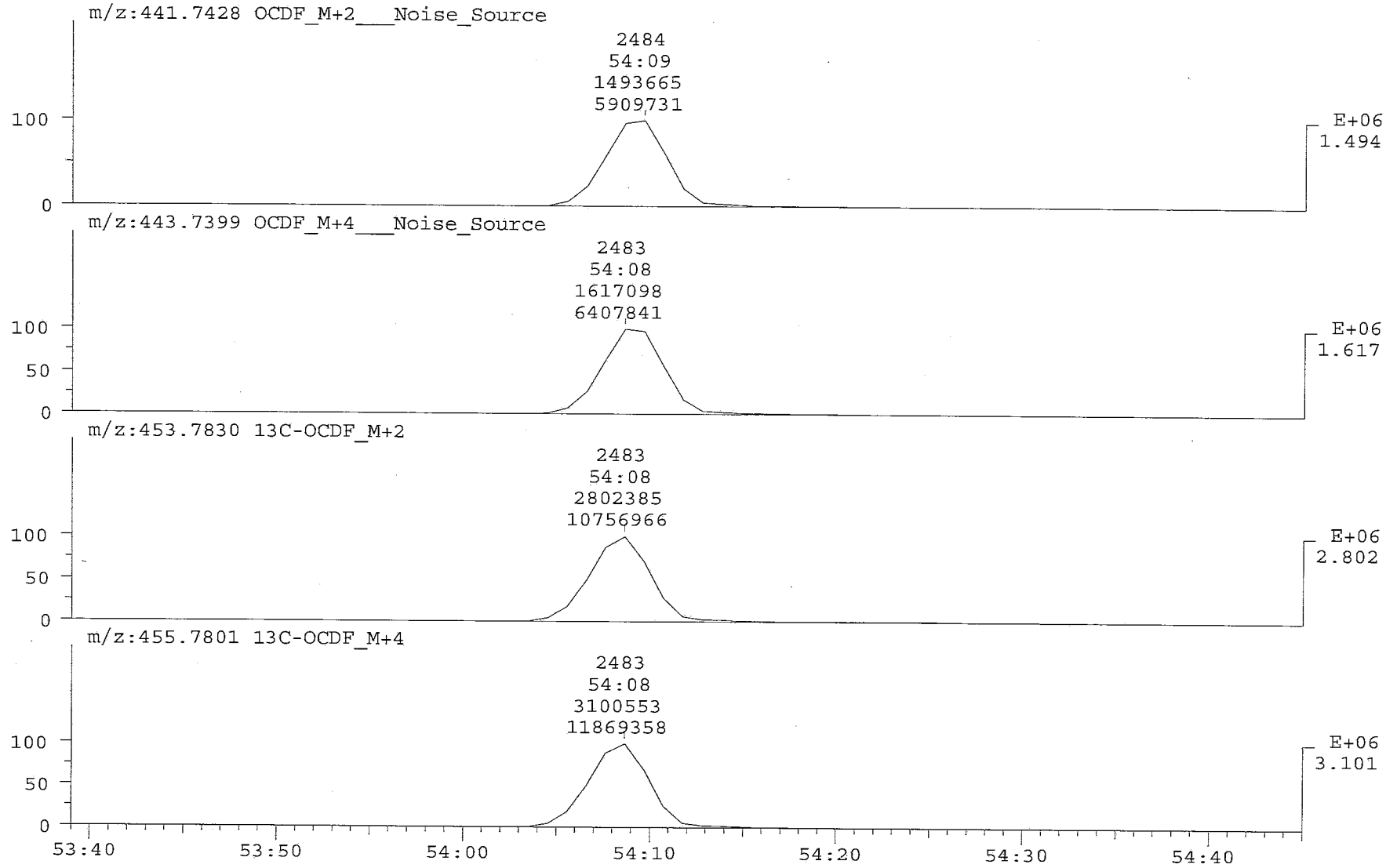
```
CHRO:  d3160803s2                          03-Aug-16  Elapse:  49:20      2206
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2114 > 2298      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



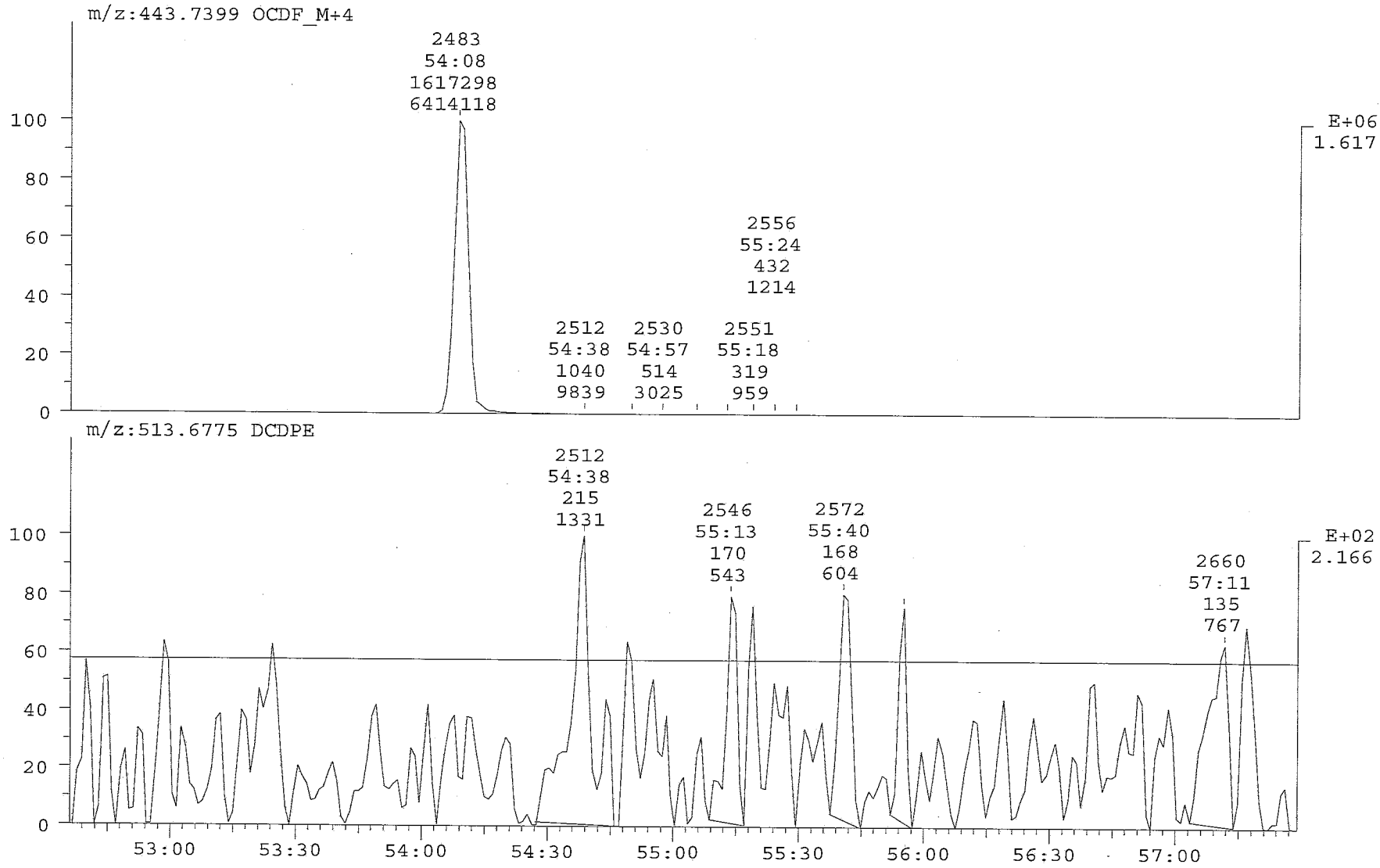
```
CHRO:  d3160803s2                          03-Aug-16  Elapse:  54:00      2475
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  11:38:31   2678
Comm:  Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2446 > 2509      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



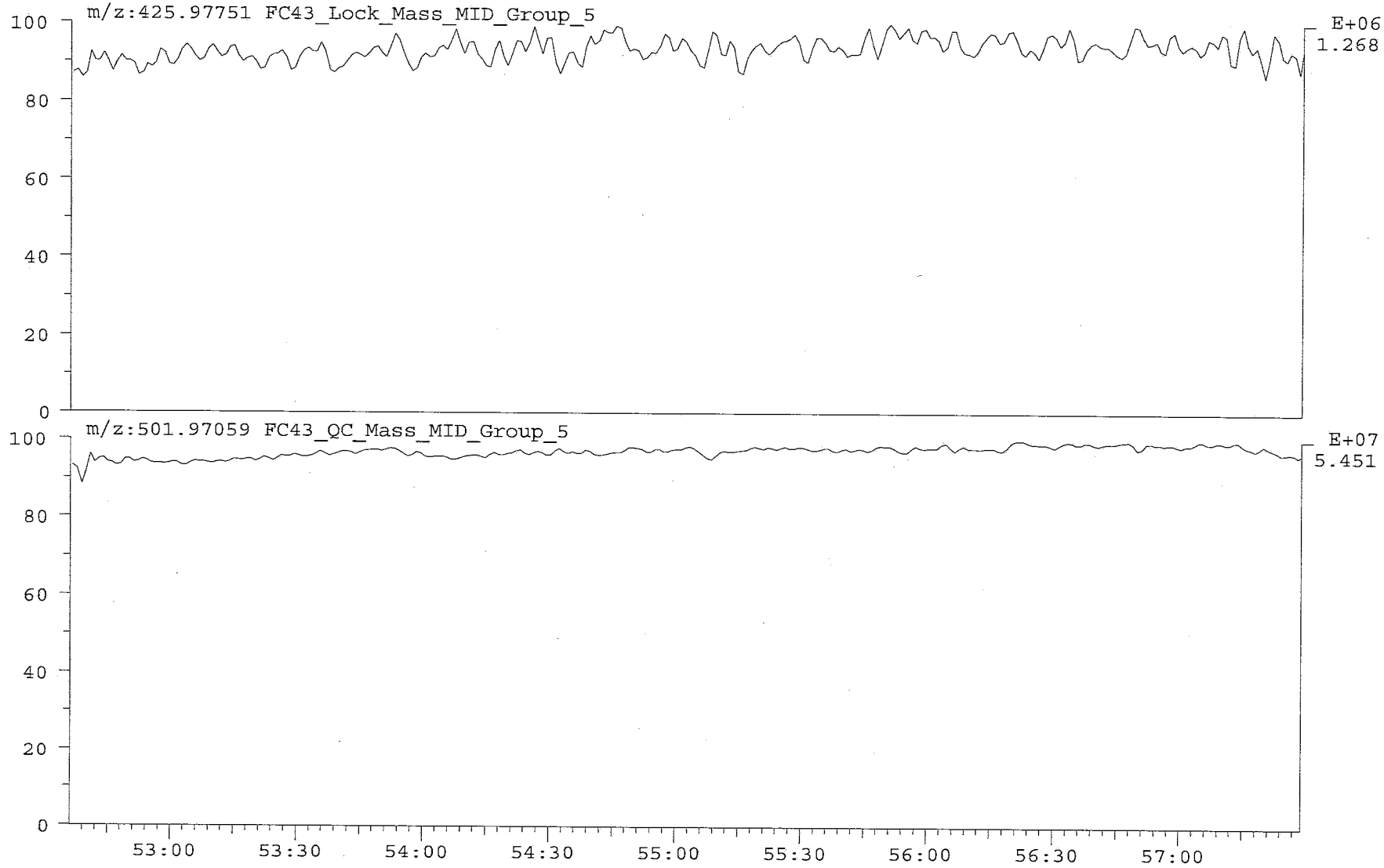
CHRO: d3160803s2 03-Aug-16 Elapse: 54:08 2483
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 11:38:31 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2454 > 2518 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d3160803s2 03-Aug-16 Elapse: 54:08 2483
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 11:38:31 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2394 > 2677 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d3160803s2 03-Aug-16 Elapse: 54:08 2483
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 11:38:31 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2394 > 2677 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Wed Aug 03 11:38:58 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - D5FBM84J

Analysis started at: 03-Aug-16 11:38:57

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence :

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	22:47 min	34:47 min	0.99 sec
# 2	34:47 min	7:21 min	42:08 min	1.00 sec
# 3	42:08 min	4:51 min	47:00 min	1.00 sec
# 4	47:00 min	5:30 min	52:30 min	1.00 sec
# 5	52:30 min	5:00 min	57:30 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	122
305.8987		1	1	122
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	122
321.8936		1	1	122
327.8847		1	1	122
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	122

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7

```
  375.9802     20  1        7
  409.7974      1  1      146
 Window # 3
      mass F  int  gr  time (ms)
  373.8208      1  1      146
  375.8178      1  1      146
  375.9802 l   20  1        7
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 34.800000 minutes
MID Window end time was 34.800000 minutes
MID Window terminated after 42.150000 minutes
MID Window end time was 42.150000 minutes
MID Window terminated after 47.000000 minutes
MID Window end time was 47.000000 minutes
MID Window terminated after 52.500000 minutes
MID Window end time was 52.500000 minutes
MID Window terminated after 57.500000 minutes
MID Window end time was 57.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune
```

DFS - Parameter

ACCU	2000.0000	BCORRS	0.0177	BMASS	306.9834
BQUAD	7.9000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	15.5000	ECORR	1.0007	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2469.0000
ELEN	-45.0000	EMULT	1687.0000	ENS	173.0000
ENSBR	7.9000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	176.0000	EXSBR	2.6000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	14.8000
FQUADGAIN	22.0000	FREQ	200.0000	FSLOPE	36000000.0000
FVANAL	0.0311	FVINLET	0.0284	FVSRC	0.0254
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	696.0000
LENS_SYM	0.0000	LM	375.8364	LMII	500.0000
LMASS	306.9834	LKM	425.9770	MASS	306.9834
MDAC	3488114.8303	MRANGE	1238.2603	NSAM	100.0000
NSCAN	2698.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-4.0000	RECURR	0.9021	RELEN	0.0000
RES	9740.2791	RPUSHER	-3.9487	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	742.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1590	TANAL	0.0000	TCURR	0.0000
TD	30.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	100.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	306.9834	XLENS_POT	930.0000
XLENS_SYM	12.3000	YLENS_POT	806.0000	YLENS_SYM	8.2500

Source Gauge: 1.5e-005 mbar
Analyzer Penning: 8.5e-008 mbar
Pirani Analyse: 3.1e-002 mbar
Pirani Source: 2.6e-002 mbar
Pirani Inlet System: 2.9e-002 mbar

Scantype is electric

Sourcemode is EI POS

MID Time Window 1: Resolution is 10914.
MID Time Window 2: Resolution is 10395.
MID Time Window 3: Resolution is 10249.
MID Time Window 4: Resolution is 10297.
MID Time Window 5: Resolution is 9740.

Amplifier Offset: 94.

*** File closed Wed Aug 03 12:39:29 2016 ***

User: finnigan
Host: knx-alpha5.tai.com
Class: knx-alpha5.tai.com
Job: d3160803s2.log

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

CCAL ID: 89462 - D3160803S3
ICAL Date: 05/16/14
CCAL Filename: d3160803s3
Method: IN2o - DX8290_2
CCAL Sample ID: 4966:40
Instrument: D2A
CCAL Result Dir: /20160803s3/d3160803s3.d
Column SN: 1379923
CCAL Date/Time: 08/03/16 20:59
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.82	0.65-0.89	10.5	1.171	1.229	4.9	20.0	True
2,3,7,8-TCDF	M/M+2	0.81	0.65-0.89	10.8	1.090	1.178	8.1	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	51	1.047	1.062	1.4	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	50	1.187	1.185	-0.2	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	50	1.105	1.105	0.0	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	54	1.140	1.233	8.2	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	54	1.146	1.239	8.1	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	56	1.210	1.344	11.1	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	53	1.364	1.436	5.3	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	52	1.278	1.320	3.3	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	53	1.267	1.334	5.2	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.27	1.05-1.43	51	1.285	1.306	1.6	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	54	1.121	1.204	7.5	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.07	0.88-1.20	51	1.497	1.536	2.6	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.06	0.88-1.20	52	1.383	1.451	4.9	20.0	True
OCDD	M+2/M+4	0.91	0.76-1.02	101	1.243	1.252	0.7	20.0	True
OCDF	M+2/M+4	0.93	0.76-1.02	96	1.119	1.069	-4.5	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	100	1.067	1.066	-0.1	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.82	0.65-0.89	103	1.750	1.794	2.5	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.61	1.32-1.78	94	0.873	0.817	-6.4	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	93	1.368	1.277	-6.7	30.0	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	93	1.381	1.280	-7.3	30.0	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.30	1.05-1.43	100	0.893	0.894	0.1	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.30	1.05-1.43	96	0.929	0.891	-4.2	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43-0.59	111	1.213	1.351	11.4	30.0	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.55	0.43-0.59	106	1.489	1.575	5.8	30.0	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.55	0.43-0.59	107	1.346	1.443	7.2	30.0	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43-0.59	105	1.210	1.268	4.8	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	107	0.823	0.883	7.3	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37-0.51	112	1.069	1.197	12.0	30.0	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.37-0.51	111	0.904	1.008	11.5	30.0	True
13C-OCDD	M+2/M+4	0.91	0.76-1.02	199	0.708	0.703	-0.7	30.0	True
13C-OCDF	M+2/M+4	0.90	0.76-1.02	214	1.072	1.150	7.2	30.0	True

MCD 8/4/16

LK MS 8/4/16 by MCD

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

CCAL ID:	89462 - D3160803S3	ICAL Date:	05/16/14
CCAL Filename:	d3160803s3	Method:	IN2o - DX8290_2
CCAL Sample ID:	4966:40	Instrument:	D2A
CCAL Result Dir:	/20160803s3/d3160803s3.d	Column SN:	1379923
CCAL Date/Time:	08/03/16 20:59	Column Desc:	Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	31:51	31:20	-31	1.002	1.002	-	
2,3,7,8-TCDF	29:45	29:17	-28	1.001	1.001	-	
1,2,3,7,8-PeCDD	41:00	40:47	-13	1.000	1.000	-	
1,2,3,7,8-PeCDF	39:17	39:03	-14	1.000	1.001	-	
2,3,4,7,8-PeCDF	40:29	40:16	-13	1.000	1.000	-	
1,2,3,4,7,8-HxCDD	45:14	45:01	-13	1.000	1.000	-	
1,2,3,6,7,8-HxCDD	45:21	45:08	-13	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	45:45	45:30	-15	1.009	1.008	-	
1,2,3,4,7,8-HxCDF	44:11	43:59	-12	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	44:19	44:06	-13	1.000	1.000	-	
2,3,4,6,7,8-HxCDF	45:03	44:50	-13	1.000	1.000	-	
1,2,3,7,8,9-HxCDF	46:01	45:47	-14	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDD	50:10	49:51	-19	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	48:27	48:10	-17	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	50:48	50:30	-18	1.000	1.000	-	
OCDD	54:17	54:03	-14	1.000	1.000	-	
OCDF	54:25	54:11	-14	1.000	1.000	-	
13C-2,3,7,8-TCDD	31:47	31:17	-30	1.017	1.017	-	
13C-2,3,7,8-TCDF	29:43	29:15	-28	0.950	0.951	-	
13C-1,2,3,7,8-PeCDD	40:59	40:46	-13	1.311	1.325	-	
13C-1,2,3,7,8-PeCDF	39:16	39:00	-16	1.256	1.268	-	
13C-2,3,4,7,8-PeCDF	40:28	40:15	-13	1.295	1.308	-	
13C-1,2,3,4,7,8-HxCDD	45:13	45:00	-13	0.989	0.989	-	
13C-1,2,3,6,7,8-HxCDD	45:20	45:07	-13	0.991	0.992	-	
13C-1,2,3,4,7,8-HxCDF	44:10	43:58	-12	0.966	0.967	-	
13C-1,2,3,6,7,8-HxCDF	44:18	44:05	-13	0.969	0.969	-	
13C-2,3,4,6,7,8-HxCDF	45:02	44:49	-13	0.985	0.985	-	
13C-1,2,3,7,8,9-HxCDF	46:00	45:46	-14	1.006	1.006	-	
13C-1,2,3,4,6,7,8-HpCDD	50:09	49:50	-19	1.097	1.096	-	
13C-1,2,3,4,6,7,8-HpCDF	48:26	48:09	-17	1.059	1.059	-	
13C-1,2,3,4,7,8,9-HpCDF	50:47	50:29	-18	1.110	1.110	-	
13C-OCDD	54:16	54:02	-14	1.187	1.188	-	
13C-OCDF	54:24	54:10	-14	1.190	1.191	-	

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

CCAL ID: 89462 - D3160803S3

WIN Filename: d3160803s3

Method: IN2o - DX8290_2

WIN Sample ID: 4966:40

Instrument: D2A

WIN Result Dir: /20160803s3/d3160803s3.d

Column SN: 1379923

WIN Date/Time: 08/03/16 20:59

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	31:17	25:18	0.8087	34:29	1.1023
Total TCDF	13C-2,3,7,8-TCDF	304	29:15	22:50	0.7806	34:21	1.1744
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	40:46	37:54	0.9297	41:26	1.0164
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	39:00	35:05	0.8996	41:33	1.0654
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	45:07	43:27	0.9631	45:30	1.0085
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	43:58	42:45	0.9723	45:55	1.0444
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	49:50	48:40	0.9766	49:51	1.0003
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	48:09	48:10	1.0003	50:30	1.0488
OCDD	13C-OCDD	458	54:02	54:03	1.0003	54:03	1.0003
OCDF	13C-OCDF	442	54:10	54:11	1.0003	54:11	1.0003

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:40	Prep Batch		Lot No	
Data File	/20160803s3/d3160803s3.d	Prep Date		SDG No	
Analysis ID	180013	Prep Exp Date		Date Received	
Analysis Date	8/3/2016	Matrix	UNKNOWN	Date Sampled	
Analysis Time	20:59	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D2A	Dil Factor	1.00	Code	F8o
Analyst	MSD				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)		DL (ng/mL)
2,3,7,8-TCDD	31:20	1297636	133142	1.171	10.00	10.493380	104.93	10.493380	E	0.0249
Total TCDD		5625970	623929	1.171		55.987987		55.987987	E	0.0249
2,3,7,8-TCDF	29:17	2093753	230506	1.090	10.00	10.812121	108.12	10.812121	E	0.0125
Total TCDF		4117652	538945	1.090		32.075638		32.075638	E	0.0125
1,2,3,7,8-PeCDD	40:47	4294245	1008757	1.047	50.00	50.682681	101.37	50.682681	E	0.0161
Total PeCDD		8554387	1749576	1.047		151.645545		151.645545	E	0.0161
1,2,3,7,8-PeCDF	39:03	7496213	1503680	1.187	50.00	49.907779	99.82	49.907779	E	0.0150
2,3,4,7,8-PeCDF	40:16	7001632	1604893	1.105	50.00	50.010798	100.02	50.010798	E	0.0142
Total PeCDF		13453763	2377780	1.146		192.635197		192.635197	E	0.0145
1,2,3,4,7,8-HxCDD	45:01	5659320	1479609	1.140	50.00	54.085529	108.17	54.085529	E	0.0223
1,2,3,6,7,8-HxCDD	45:08	5668187	1408034	1.146	50.00	54.040846	108.08	54.040846	E	0.0234
1,2,3,7,8,9-HxCDD	45:30	6161362	1499972	1.210	50.00	55.536324	111.07	55.536324	E	0.0216
Total HxCDD		6178500	1668239	1.166		221.501639		221.501639	E	0.0224
1,2,3,4,7,8-HxCDF	43:59	9964354	2714967	1.364	50.00	52.630496	105.26	52.630496	E	0.0150
1,2,3,6,7,8-HxCDF	44:06	10681797	2710289	1.278	50.00	51.649879	103.30	51.649879	E	0.0148
2,3,4,6,7,8-HxCDF	44:50	9885528	2558140	1.267	50.00	52.620161	105.24	52.620161	E	0.0158
1,2,3,7,8,9-HxCDF	45:47	8506196	2062413	1.285	50.00	50.817454	101.63	50.817454	E	0.0198
Total HxCDF		17462043	4467574	1.299		300.595475		300.595475	E	0.0161
1,2,3,4,6,7,8-HpCDD	49:51	5465892	1087968	1.121	50.00	53.725779	107.45	53.725779	E	0.0253
Total HpCDD		5571029	1135672	1.121		108.484979		108.484979	E	0.0253
1,2,3,4,6,7,8-HpCDF	48:10	9450667	1999487	1.497	50.00	51.309511	102.62	51.309511	E	0.0137
1,2,3,4,7,8,9-HpCDF	50:30	7508887	1509275	1.383	50.00	52.431539	104.86	52.431539	E	0.0190
Total HpCDF				1.440		103.741049		103.741049	E	0.0160
OCDD	54:03	9039554	2299790	1.243	100.0	100.683433	100.68	100.683433	E	0.0182
OCDF	54:11	12632965	3263854	1.119	100.0	95.528765	95.53	95.528765	E	0.0138
13C-2,3,7,8-TCDD	31:17	10560541	1078830	1.067	100.0	99.906599	99.91	99.906599		0.0370
13C-2,3,7,8-TCDF	29:15	17772218	1962792	1.750	100.0	102.535338	102.54	102.535338		0.00743
13C-1,2,3,7,8-PeCDD	40:46	8090525	1933206	0.873	100.0	93.550198	93.55	93.550198		0.0108
13C-1,2,3,7,8-PeCDF	39:00	12652698	2545136	1.368	100.0	93.346219	93.35	93.346219		0.0185
13C-2,3,4,7,8-PeCDF	40:15	12674133	2890263	1.381	100.0	92.681628	92.68	92.681628		0.0183
13C-1,2,3,4,7,8-HxCDD	45:00	9180524	2434949	0.893	100.0	100.080885	100.08	100.080885		0.0151
13C-1,2,3,6,7,8-HxCDD	45:07	9150077	2309576	0.929	100.0	95.833983	95.83	95.833983		0.0145
13C-1,2,3,4,7,8-HxCDF	43:58	13882030	3806450	1.213	100.0	111.359715	111.36	111.359715		0.0199
13C-1,2,3,6,7,8-HxCDF	44:05	16184177	4114139	1.489	100.0	105.821811	105.82	105.821811		0.0162
13C-2,3,4,6,7,8-HxCDF	44:49	14822351	3892980	1.346	100.0	107.159863	107.16	107.159863		0.0180
13C-1,2,3,7,8,9-HxCDF	45:46	13024233	3053813	1.210	100.0	104.798748	104.80	104.798748		0.0200
13C-1,2,3,4,6,7,8-HpCDD	49:50	9077467	1798247	0.823	100.0	107.335491	107.34	107.335491		0.00752
13C-1,2,3,4,6,7,8-HpCDF	48:09	12302904	2649473	1.069	100.0	111.971445	111.97	111.971445		0.0179
13C-1,2,3,4,7,8,9-HpCDF	50:29	10353082	2066495	0.904	100.0	111.455056	111.46	111.455056		0.0212
13C-OCDD	54:02	14443931	3619119	0.708	200.0	198.648703	99.32	198.648703		0.0215
13C-OCDF	54:10	23627761	6038066	1.072	200.0	214.481638	107.24	214.481638		0.0196
37Cl4-2,3,7,8-TCDD	31:19	1178475	123472	1.220	10.00	9.753432	97.53	9.753432	E	0.0114
13C-1,2,3,4-TCDD	30:46	9905042	1058182	1.000	100.0	100.000000	100.00	100.000000		0.0395
13C-1,2,3,7,8,9-HxCDD	45:29	10274562	2502822	1.000	100.0	100.000000	100.00	100.000000		0.0135

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:40	Prep Batch		Lot No	
Data File	/20160803s3/d3160803s3	Prep Date		SDG No	
Analysis ID	180013	Prep Exp Date		Date Received	
Analysis Date	08/03/16 20:59	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	90	178	36	71	0.51 *	/	
	Unidentified	22:50	00:00	0	1024666	1264540	151063	182723	0.81	ABV/AVV	
	2,3,7,8-TCDF	29:17	29:14	3	934622	1159131	103936	126570	0.81	AVV/ABV	M
	Unidentified	34:21	00:00	0	813244	1015202	93024	112135	0.80	ABV/ABV	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	83	55	33	22	1.50 *	/	
	13C-2,3,7,8-TCDF	29:15	29:12	3	7988619	9783599	880454	1082338	0.82	AVV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	170	145	68	58	1.17 *	/	
	Unidentified	25:18	00:00	0	513984	667393	66751	86502	0.77	ABV/ABV	
	Unidentified	30:48	00:00	0	485979	602211	53032	65055	0.81	ABV/AVV	
	Unidentified	31:03	00:00	0	470448	618303	49189	64183	0.76	AVV/AVV	
	2,3,7,8-TCDD	31:20	31:24	-4	582869	714767	57250	75892	0.82	AVV/AVV	M
	Unidentified	31:50	00:00	0	521668	656703	51808	66136	0.79	AVV/AVV	
	Unidentified	34:29	00:00	0	487414	601867	54943	66330	0.81	ABV/ABV	
328					327.8847		327.8847				
	Noise	00:00	00:00	0	148		59				
	37Cl4-2,3,7,8-TCDD	31:19	31:23	-4	1178475		123472			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	295	123	118	49	2.41 *	/	
	13C-1,2,3,4-TCDD	30:46	30:48	-2	4433037	5472005	465505	592677	0.81	ABV/AVV	
	13C-2,3,7,8-TCDD	31:17	31:20	-3	4708922	5851619	485182	593648	0.80	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	223	230	89	92	0.97 *	/	
	Unidentified	35:05	00:00	0	4370903	2750504	569121	346984	1.59	ABV/ABV	
	1,2,3,7,8-PeCDF	39:03	39:00	3	4611929	2884284	931644	572036	1.60	ABV/ABV	M
	2,3,4,7,8-PeCDF	40:16	40:13	3	4256385	2745247	979609	625284	1.55	ABV/ABV	M
	Unidentified	41:33	00:00	0	3894727	2437629	893921	567754	1.60	ABV/AVV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	198	70	79	28	2.82 *	/	
	13C-1,2,3,7,8-PeCDF	39:00	38:59	1	7791276	4861422	1562599	982537	1.60	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:15	40:12	3	7798704	4875429	1774482	1115781	1.60	AVV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	210	115	84	46	1.83 *	/	
	Unidentified	37:54	00:00	0	2564297	1643521	417267	272020	1.56	ABV/ABV	
	1,2,3,7,8-PeCDD	40:47	40:45	2	2624773	1669472	612724	396033	1.57	ABV/ABV	
	Unidentified	41:26	00:00	0	2649418	1697151	641270	419019	1.56	ABB/ABB	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	58	43	23	17	1.35	/	
	13C-1,2,3,7,8-PeCDD	40:46	40:44	2	4988411	3102114	1193381	739825	1.61	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	420	358	168	143	1.17	/	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:40	Prep Batch		Lot No	
Data File	/20160803s3/d3160803s3	Prep Date		SDG No	
Analysis ID	180013	Prep Exp Date		Date Received	
Analysis Date	08/03/16 20:59	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Unidentified	42:45	00:00	0	5250793	4127644	1440958	1135428	1.27	ABV/ABV	
	1,2,3,4,7,8-HxCDF	43:59	43:57	2	5555555	4408799	1536605	1178362	1.26	ABV/ABV	
	1,2,3,6,7,8-HxCDF	44:06	44:05	1	5968724	4713073	1501067	1209222	1.27	AVV/AVV	
	2,3,4,6,7,8-HxCDF	44:50	44:49	1	5521001	4364527	1420252	1137888	1.26	AVV/AVV	
	1,2,3,7,8,9-HxCDF	45:47	45:47	0	4765168	3741028	1147396	915017	1.27	ABV/ABV	
	Unidentified	45:55	00:00	0	4529884	3553722	1054708	836480	1.27	AVB/AVV	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	208	398	83	159	0.52	/	
	13C-1,2,3,4,7,8-HxCDF	43:58	43:56	2	4867099	9014931	1333111	2473339	0.54	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:05	44:04	1	5743151	10441026	1459262	2654877	0.55	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	44:49	44:48	1	5246136	9576215	1375275	2517705	0.55	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	45:46	45:46	0	4496191	8528042	1054954	1998859	0.53	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	303	318	121	127	0.95 *	/	
	Unidentified	43:27	00:00	0	3465616	2712884	945945	722294	1.28	ABV/ABV	
	1,2,3,4,7,8-HxCDD	45:01	45:00	1	3187576	2471744	846366	633243	1.29	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:08	45:07	1	3186592	2481595	798958	609076	1.28	AVV/AVV	
	1,2,3,7,8,9-HxCDD	45:30	45:31	-1	3440777	2720585	833461	666511	1.26	AVV/AVV	
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	253	85	101	34	2.97 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:00	44:59	1	5183954	3996570	1385190	1049759	1.30	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:07	45:06	1	5166487	3983590	1300664	1008912	1.30	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	45:29	45:30	-1	5808648	4465914	1415222	1087600	1.30	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	285	258	114	103	1.11	/	
	1,2,3,4,6,7,8-HpCDF	48:10	48:13	-3	4874171	4576496	1025148	974339	1.07	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	50:30	50:34	-4	3866428	3642459	779158	730117	1.06	ABV/ABV	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	228	253	91	101	0.90 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:09	48:12	-3	3922140	8380764	843071	1806402	0.47	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:29	50:33	-4	3277307	7075775	652021	1414474	0.46	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	208	303	83	121	0.69 *	/	
	Unidentified	48:40	00:00	0	2871799	2699230	587724	547948	1.06	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	49:51	49:56	-5	2817483	2648409	558348	529620	1.06	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	75	80	30	32	0.94	/	
	13C-1,2,3,4,6,7,8-HpCDD	49:50	49:55	-5	4665467	4412000	915970	882277	1.06	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	190	275	76	110	0.69 *	/	
	OCDF	54:11	54:08	3	6071885	6561080	1573710	1690144	0.93	ABV/ABV	M
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		

Notes;
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:40	Prep Batch		Lot No	
Data File	/20160803s3/d3160803s3	Prep Date		SDG No	
Analysis ID	180013	Prep Exp Date		Date Received	
Analysis Date	08/03/16 20:59	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

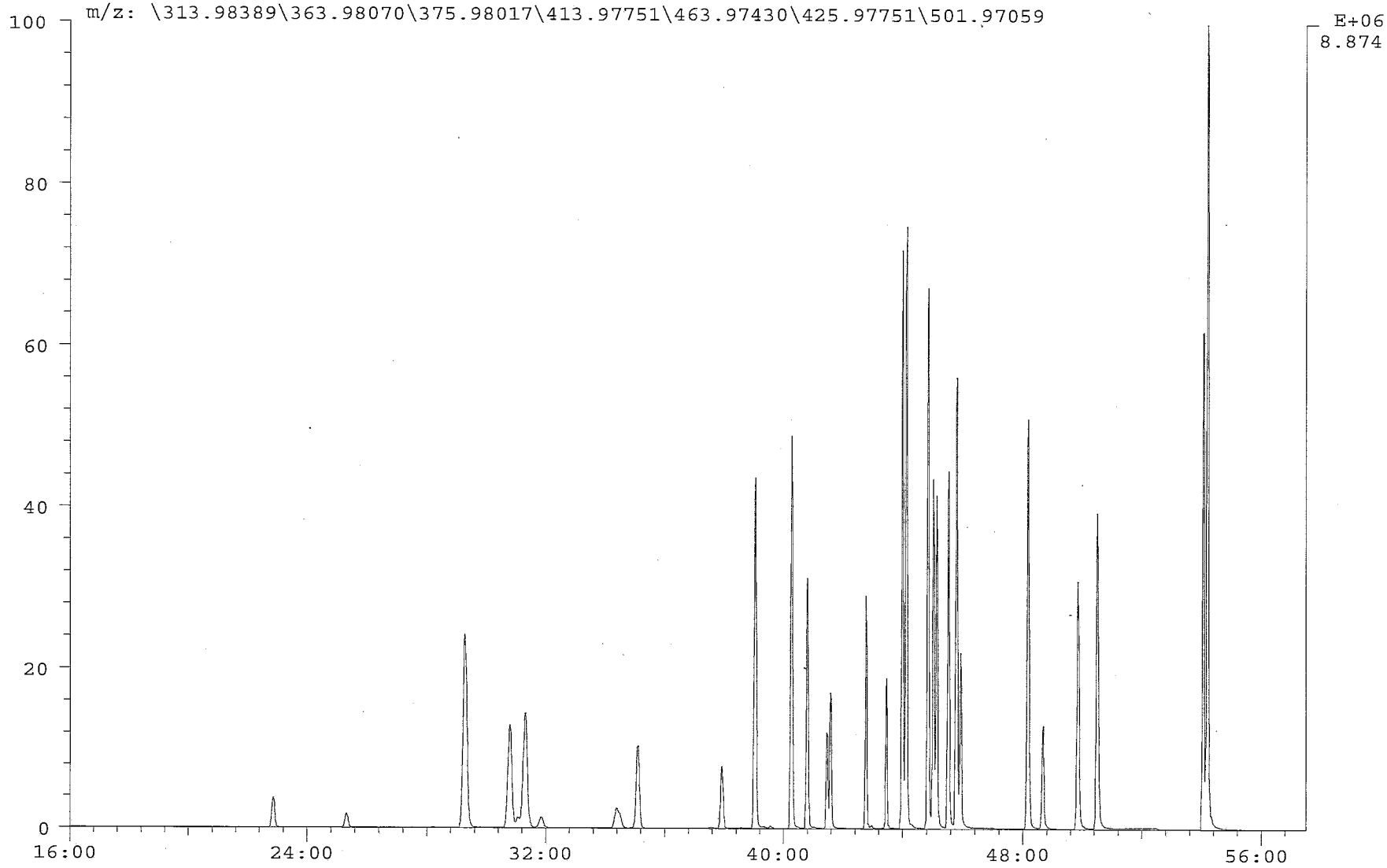
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	218	308	87	123	0.71 *	/	
	13C-OCDF	54:10	54:07	3	11214342	12413419	2863692	3174374	0.90	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	205	205	82	82	1.00	/	
	OCDD	54:03	54:00	3	4305598	4733956	1097616	1202174	0.91	ABV/ABV	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	255	125	102	50	2.04 *	/	
	13C-OCDD	54:02	53:59	3	6863252	7580679	1710732	1908387	0.91	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int / Calc Ln 8-3-16

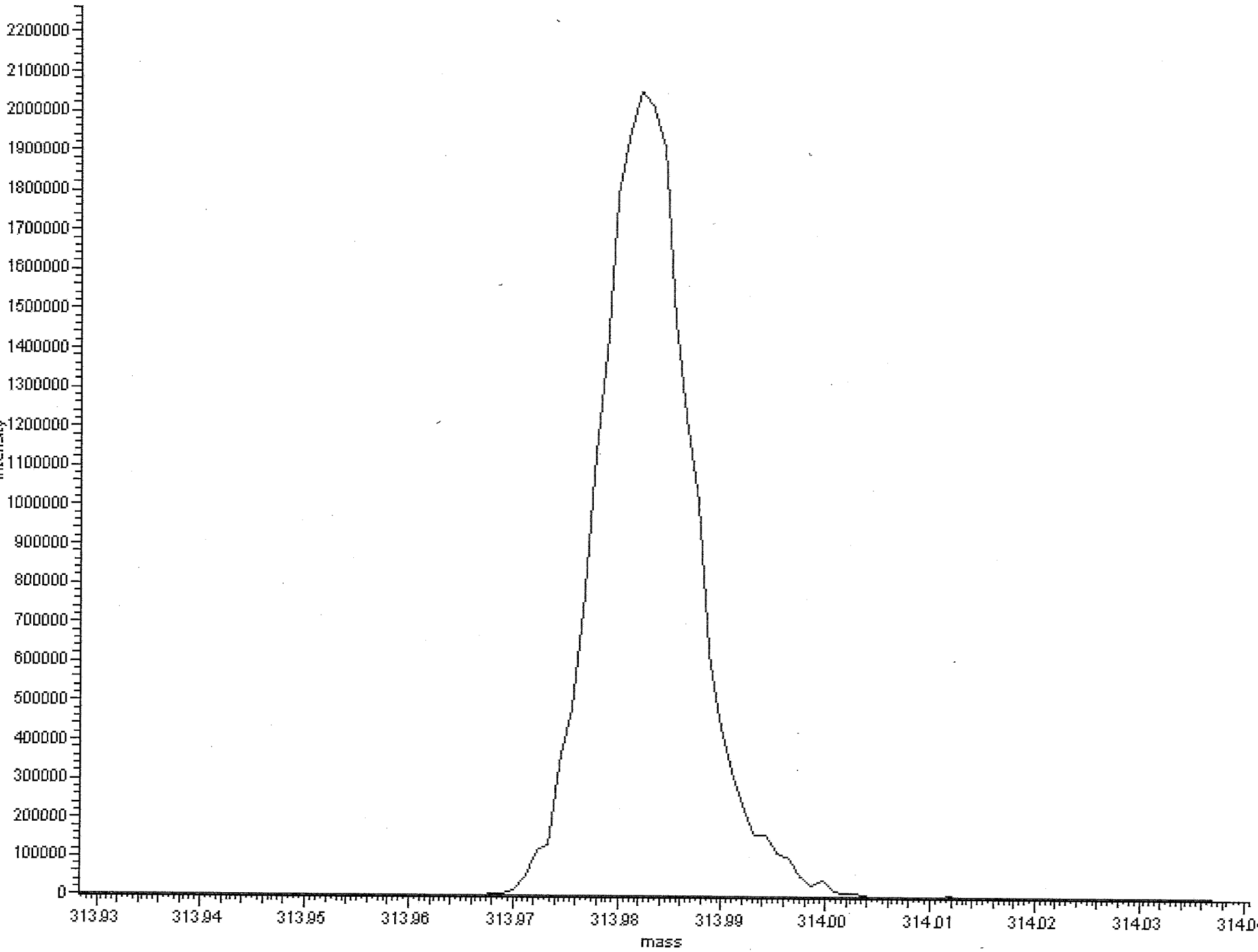
CHRO: d3160803s3 03-Aug-16 Elapse: 54:09 2484
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 237 > 2678 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



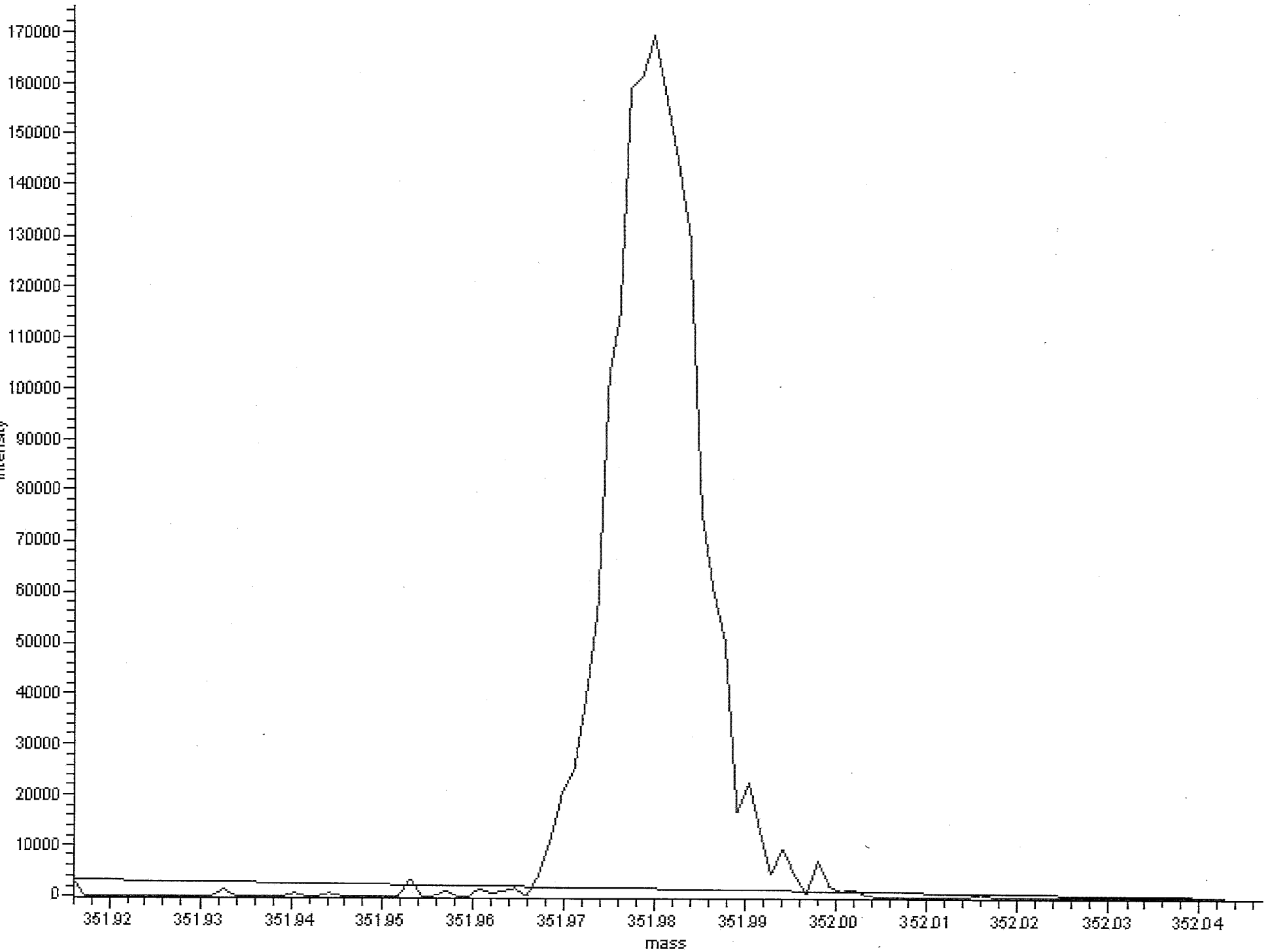
```
Reports
22:19:27:  Peak matching procedure started
22:19:27:
22:19:28:  Reference mass: 313.98336
22:19:28:  Sample mass: 364.0
22:19:29:
22:19:29:  Finding reference mass
22:19:30:  Finding sample mass
22:19:31:
22:19:36:  [1]   363.9794 amu, mean: 363.9794
22:19:39:  [2]   363.9791 amu, mean: 363.9792     SD: 0.21 mmu or: 0.58 ppm
22:19:41:  [3]   363.9786 amu, mean: 363.9790     SD: 0.38 mmu or: 1.04 ppm
22:19:44:  [4]   363.9789 amu, mean: 363.9790     SD: 0.32 mmu or: 0.87 ppm
22:19:47:  [5]   363.9791 amu, mean: 363.9790     SD: 0.28 mmu or: 0.78 ppm
22:19:50:  [6]   363.9791 amu, mean: 363.9790     SD: 0.26 mmu or: 0.70 ppm
22:19:52:  [7]   363.9788 amu, mean: 363.9790     SD: 0.24 mmu or: 0.67 ppm
22:19:55:  [8]   363.9787 amu, mean: 363.9790     SD: 0.24 mmu or: 0.67 ppm
22:19:58:  [9]   363.9789 amu, mean: 363.9790     SD: 0.23 mmu or: 0.62 ppm
22:20:01:  [10]   363.9793 amu, mean: 363.9790     SD: 0.24 mmu or: 0.67 ppm
22:20:03:
22:20:03:  Stop requested. Please wait for procedure to finish.
22:20:03:
22:20:03:  [11]   363.9794 amu, mean: 363.9790     SD: 0.26 mmu or: 0.72 ppm
22:20:05:
22:20:05:  Peakmatching stopped
```

Signature Lh 8-3-16

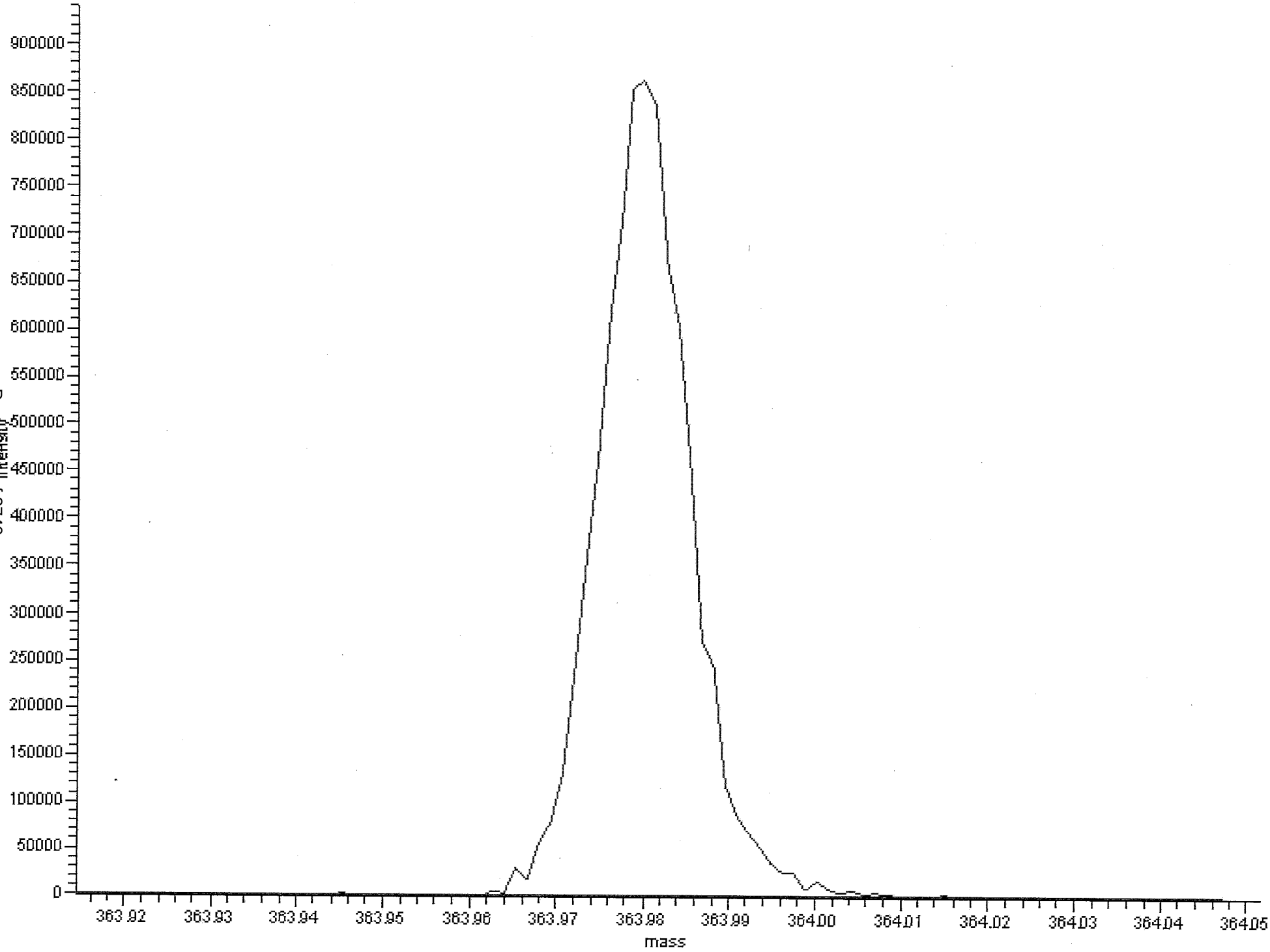
LockMass:313.9838 Instr.: DFS-3097
Resolution: 14145 (08/03/16 22:11:50)



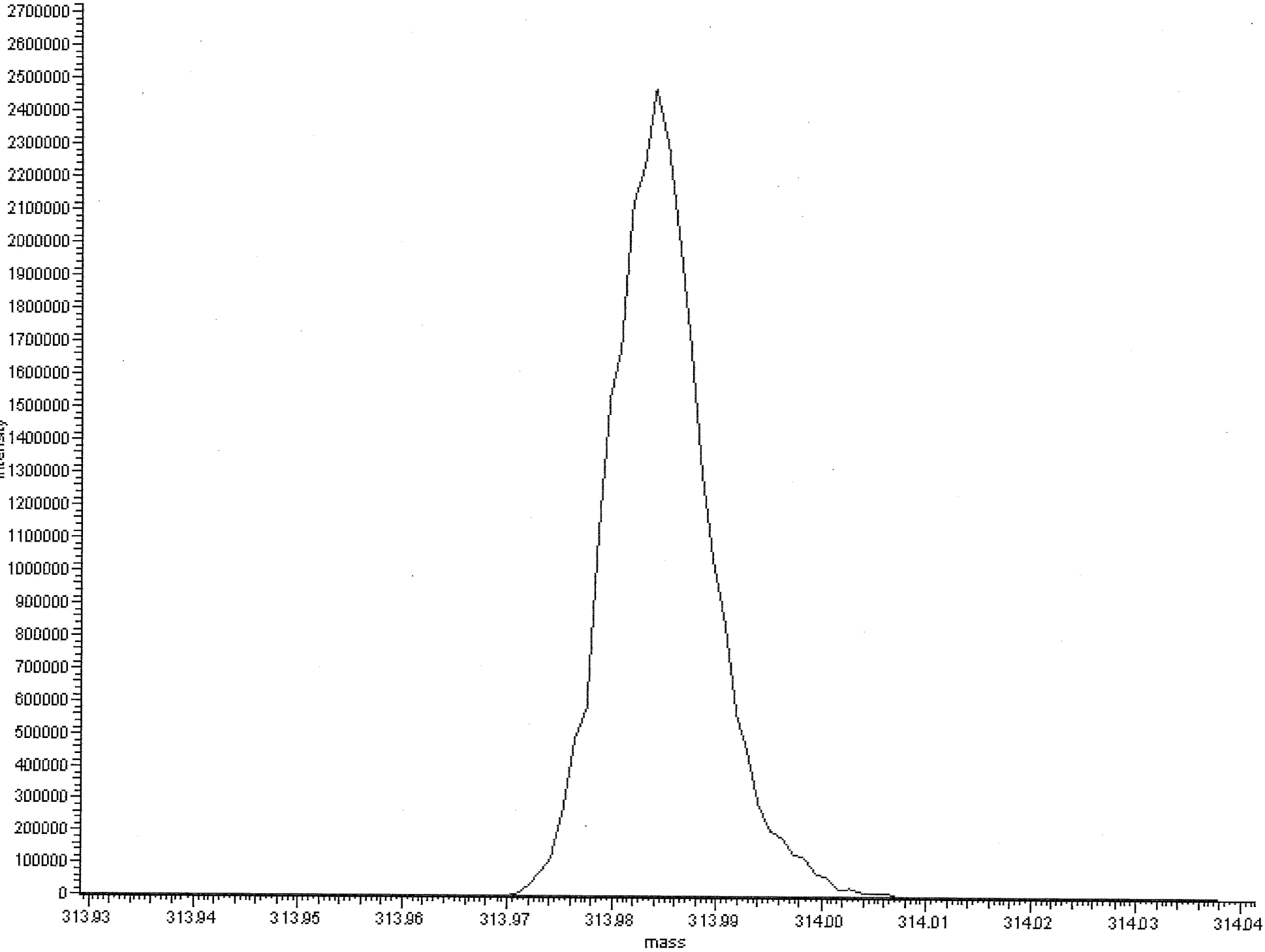
Mass:351.9802 Instr.: DFS-3097
Resolution: 14840 (08/03/16 22:12:37)



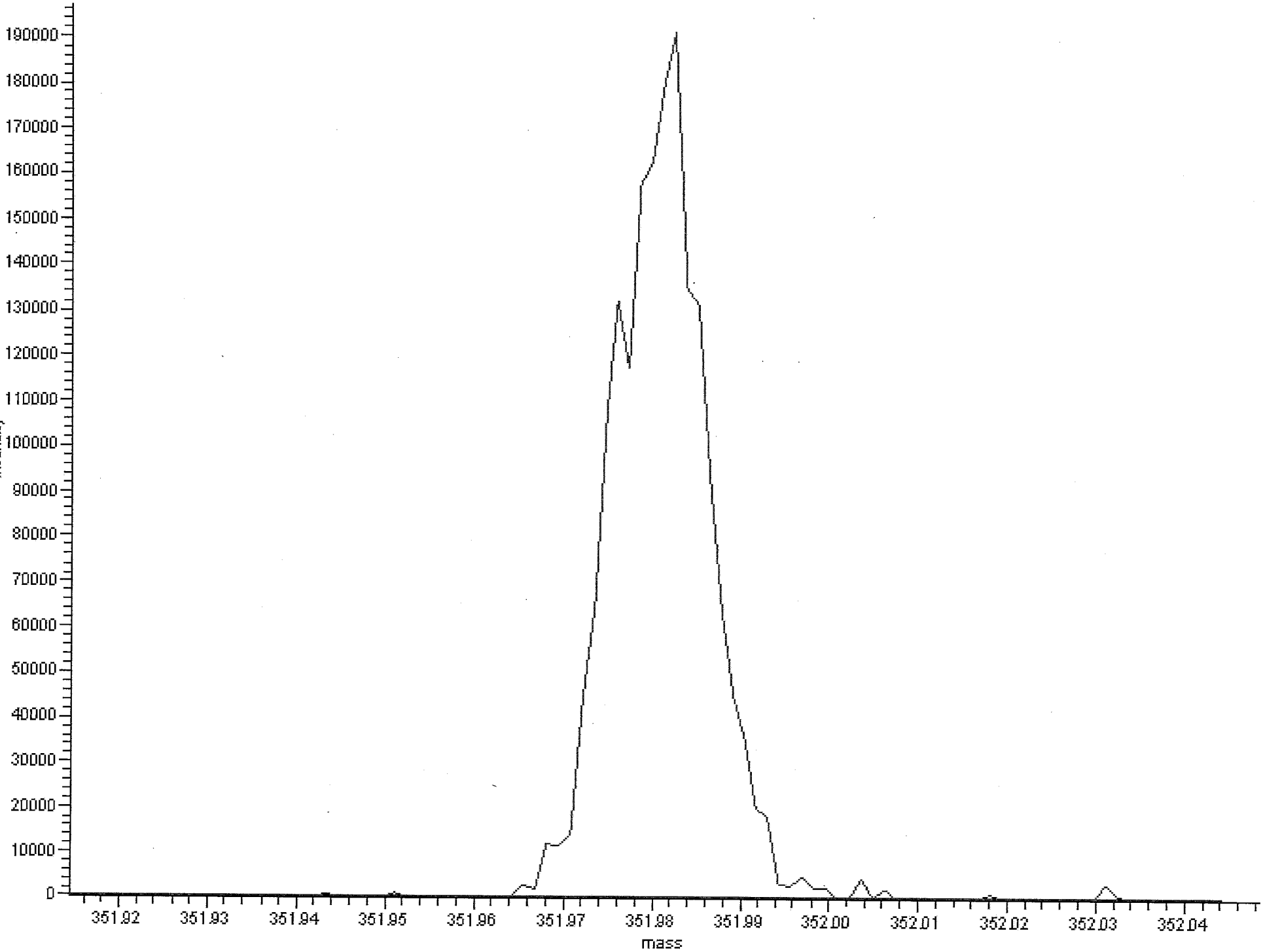
CaliMass: 363.9807 Instr.: DFS-3097
Resolution: 14334 (08/03/16 22:12:40)

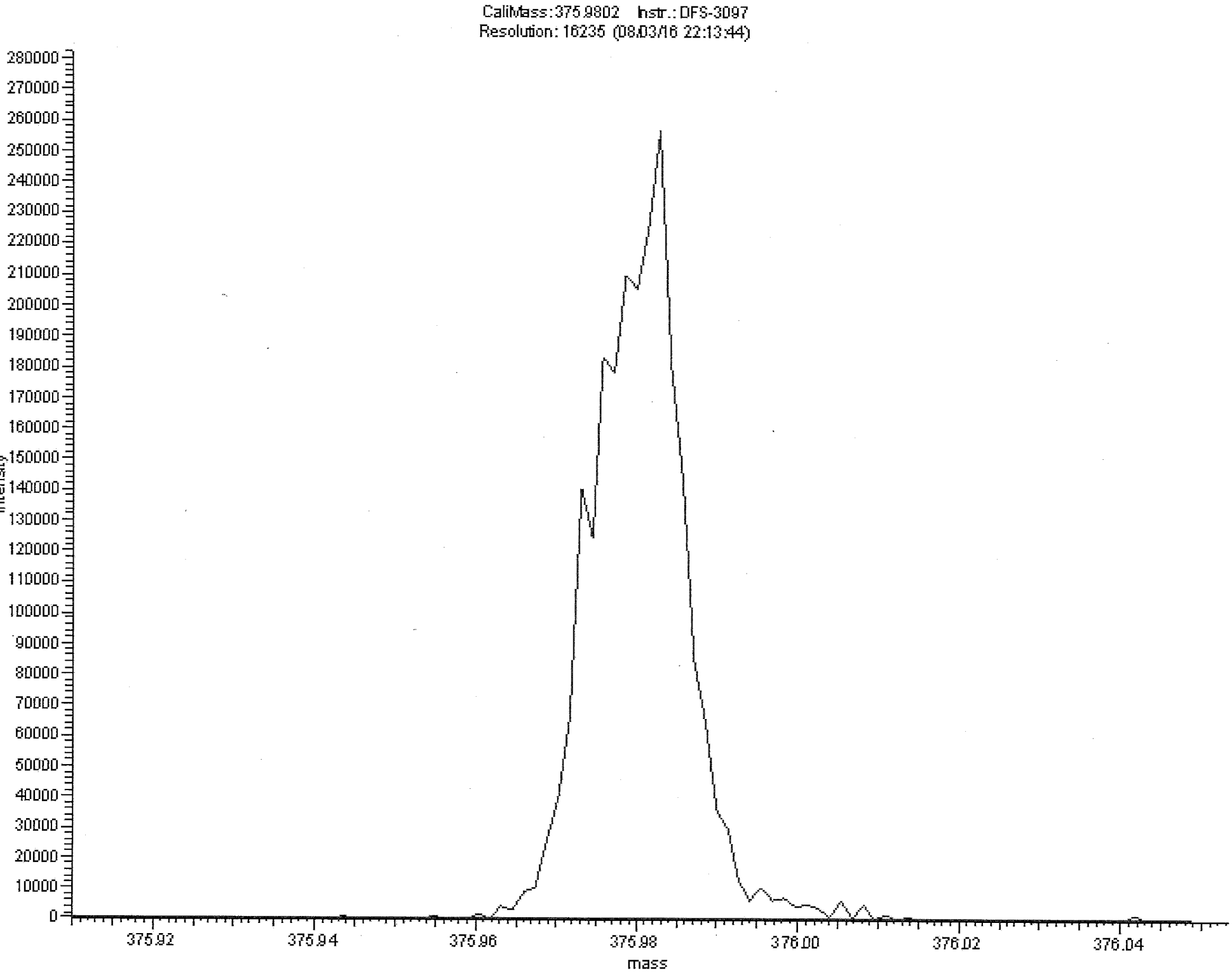


LockMass:313.9839 Instr.: DFS-3097
Resolution: 14334 (08/03/16 22:12:55)

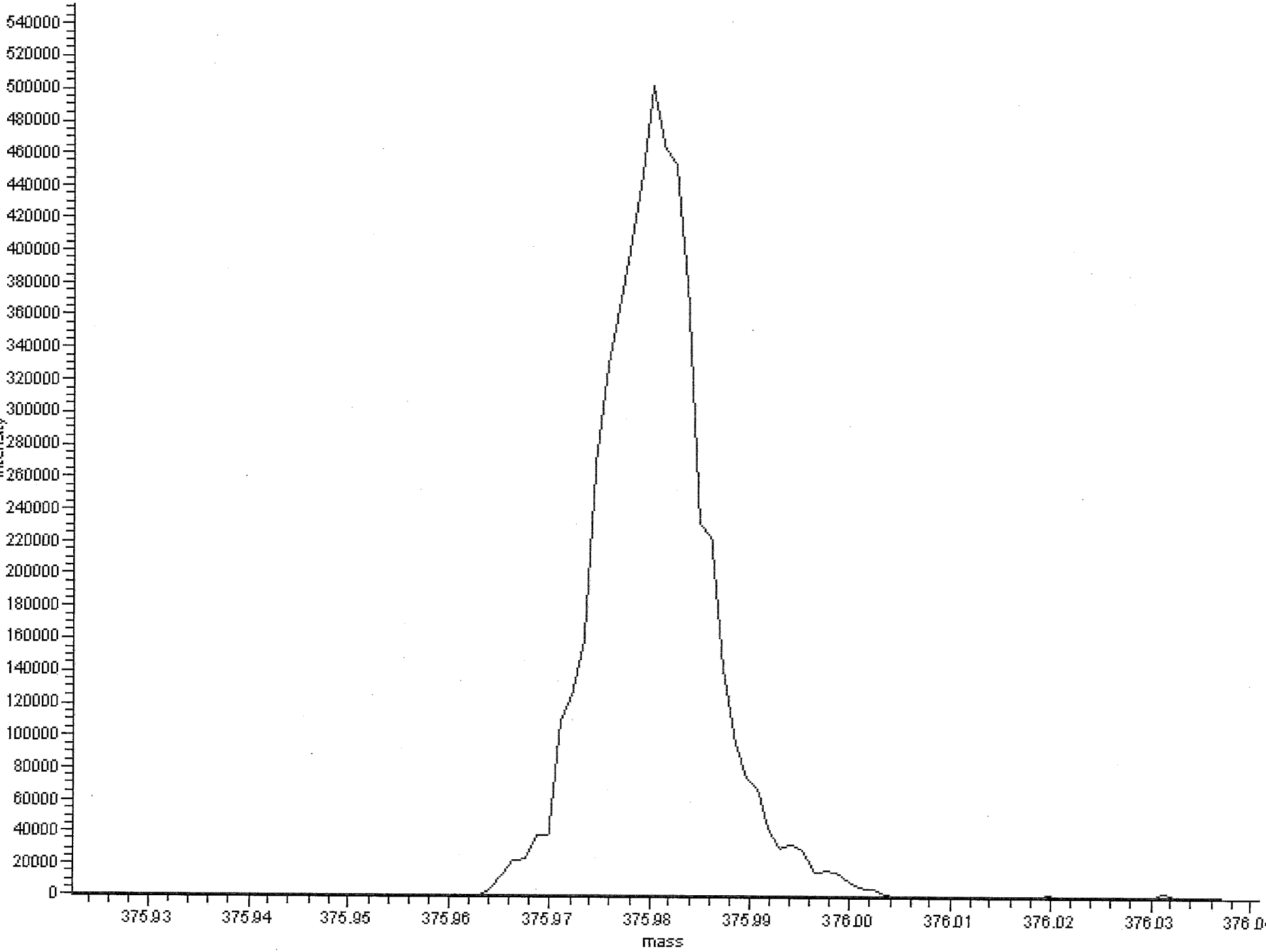


Mass: 351.9802 Instr.: DFS-3097
Resolution: 14329 (08/03/16 22:13:41)

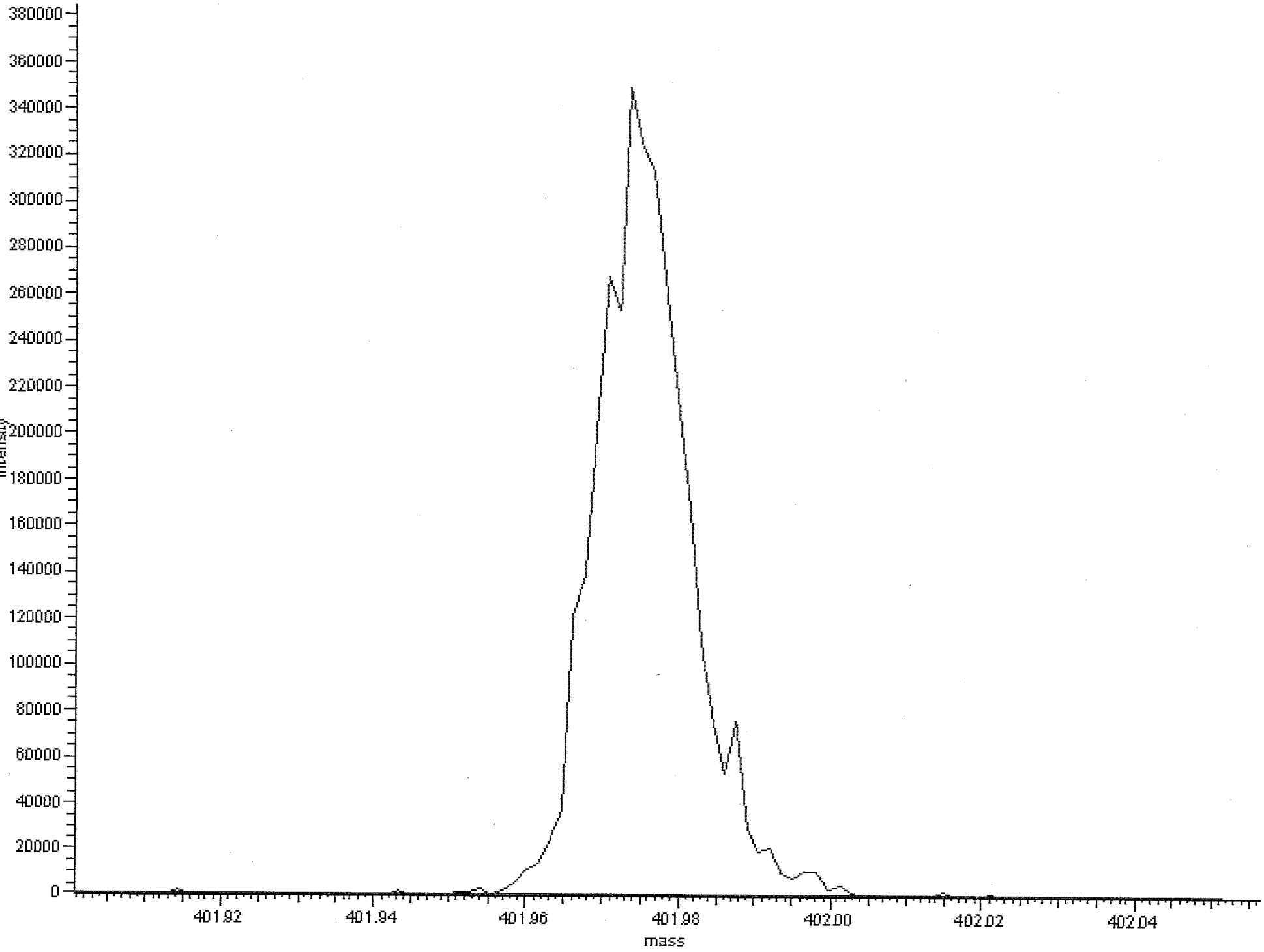


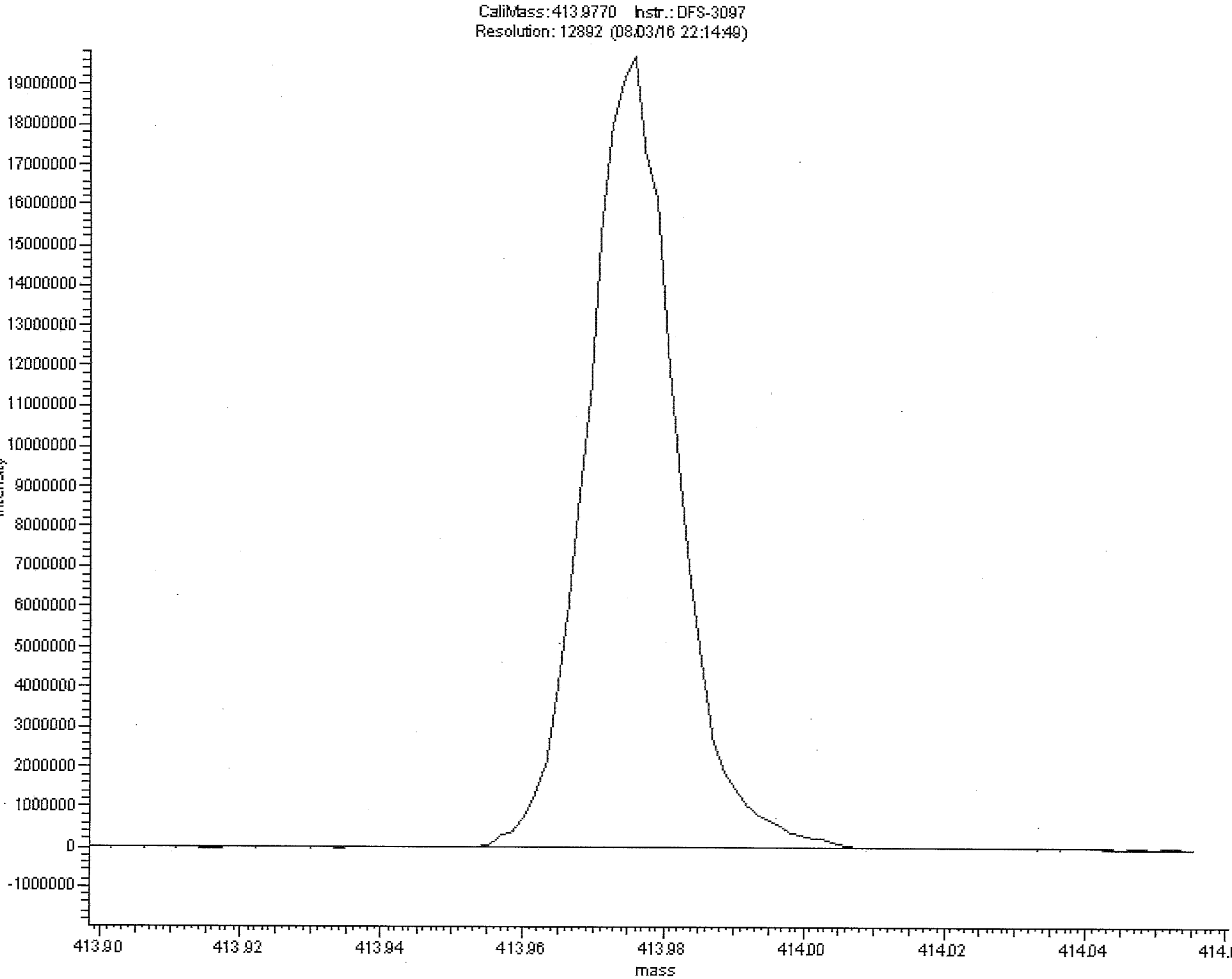

CaliMass: 375.9802 Instr.: DFS-3097
Resolution: 16235 (08/03/16 22:13:44)
280000
270000
260000
250000
240000
230000
220000
210000
200000
190000
180000
170000
160000
150000
140000
130000
120000
110000
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
375.92
375.94
375.96
375.98
376.00
376.02
376.04
mass

LockMass:375.9802 Instr.: DFS-3097
Resolution: 16235 (08/03/16 22:13:59)

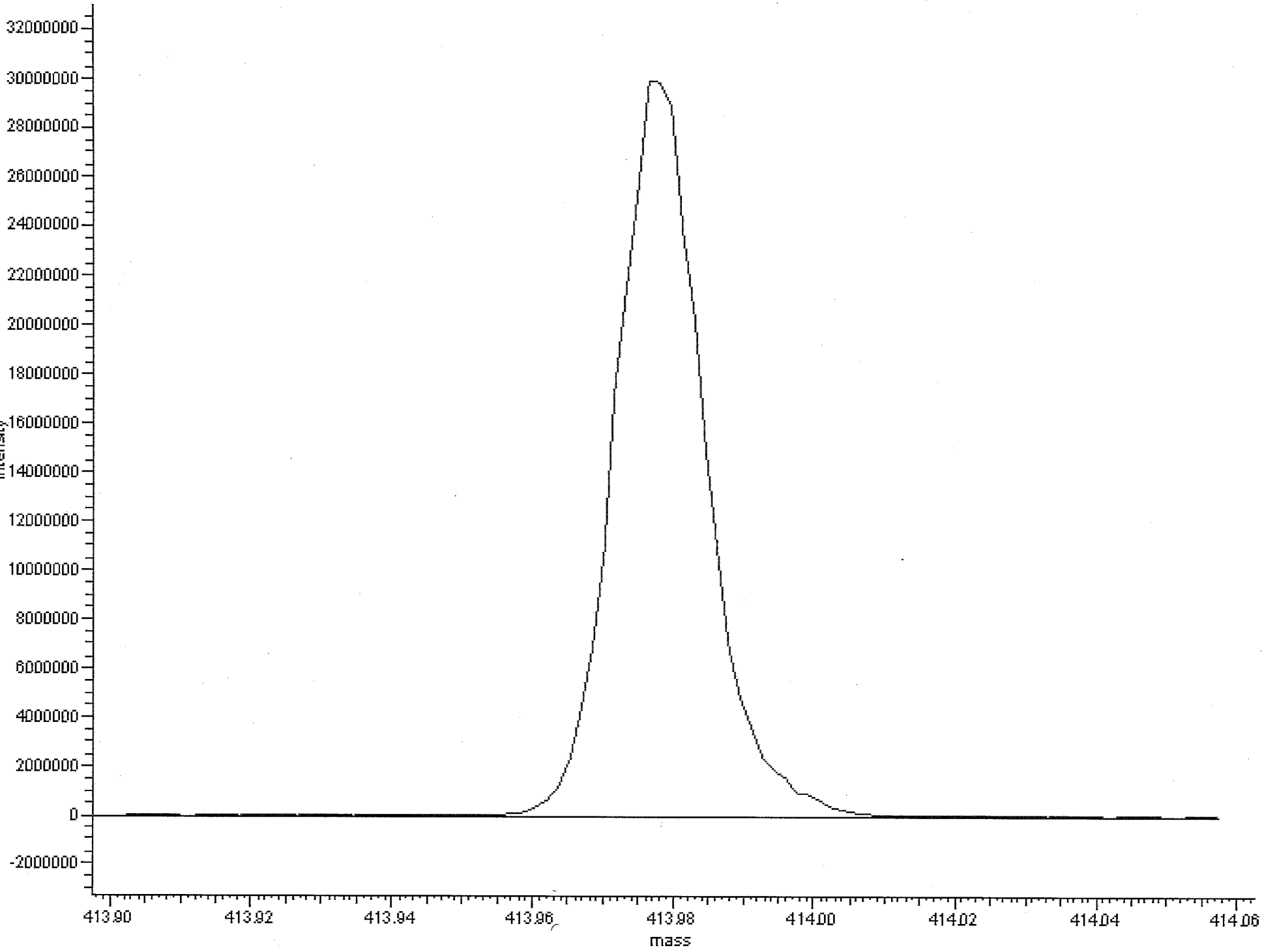


Mass: 401.9770 Instr.: DFS-3097
Resolution: 13354 (08/03/16 22:14:46)

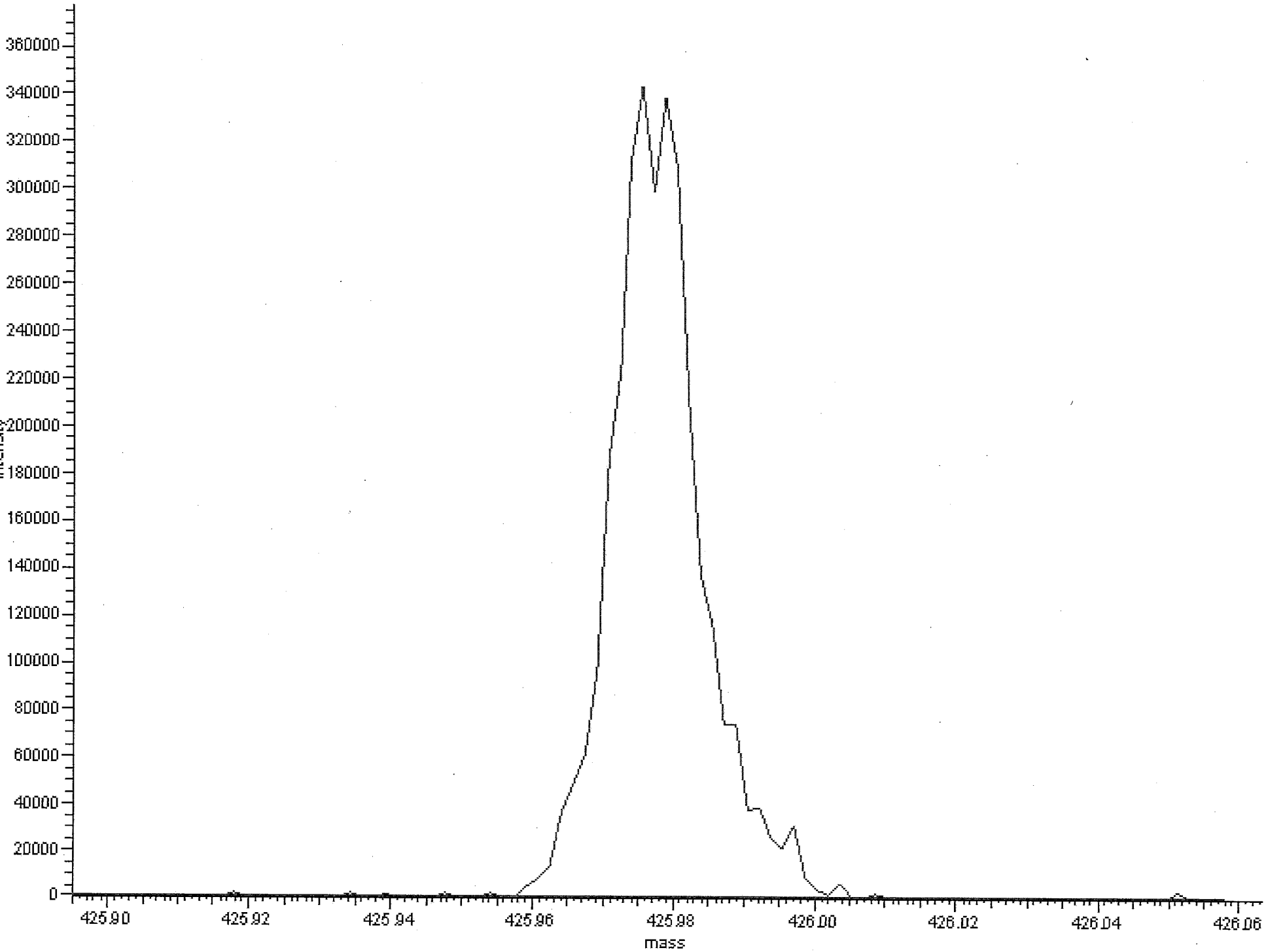


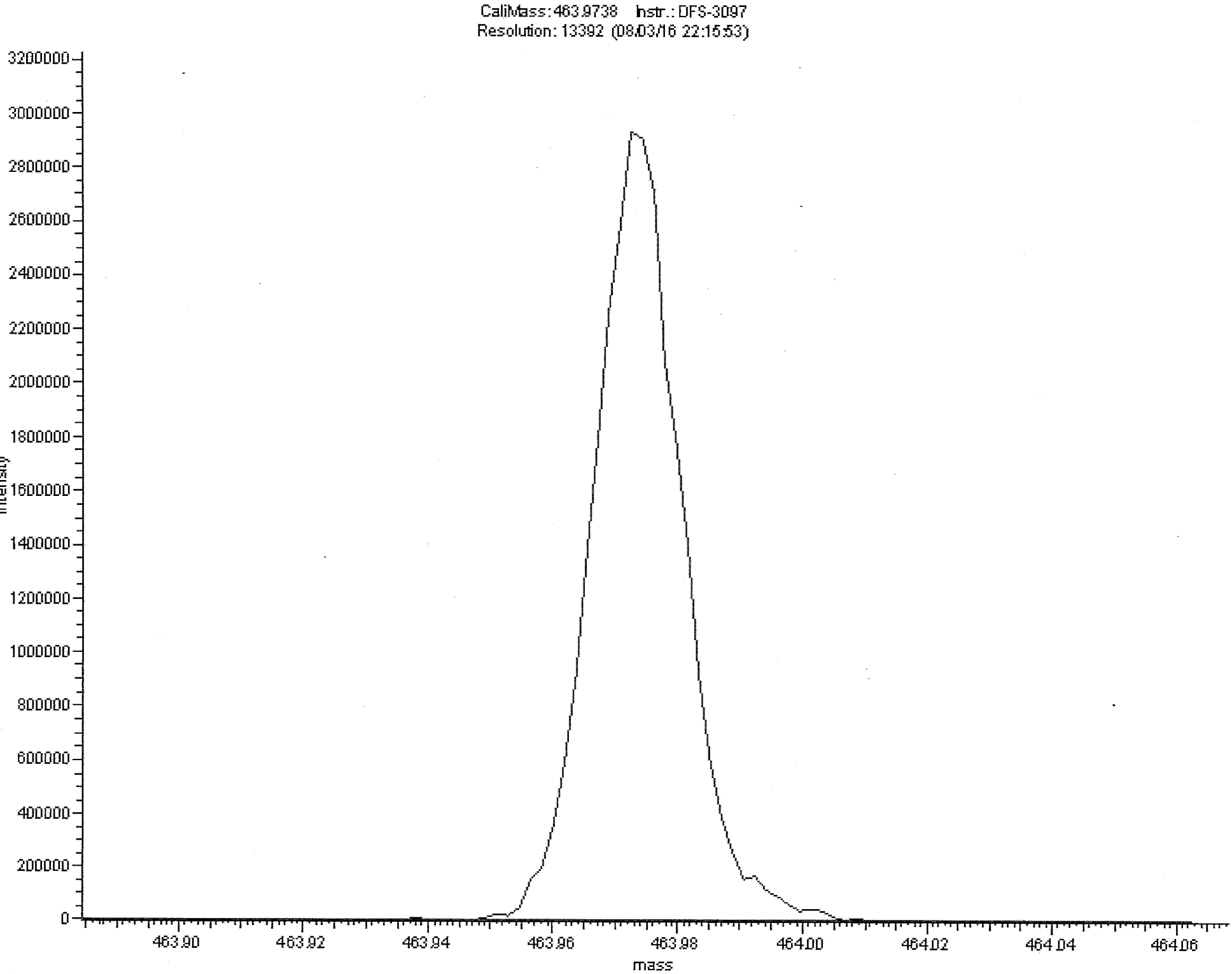

CaliMass: 413.9770 Instr.: DFS-3097
Resolution: 12892 (08/03/16 22:14:49)
Intensity
19000000
18000000
17000000
16000000
15000000
14000000
13000000
12000000
11000000
10000000
9000000
8000000
7000000
6000000
5000000
4000000
3000000
2000000
1000000
0
-1000000
413.90
413.92
413.94
413.96
413.98
414.00
414.02
414.04
414.06
mass

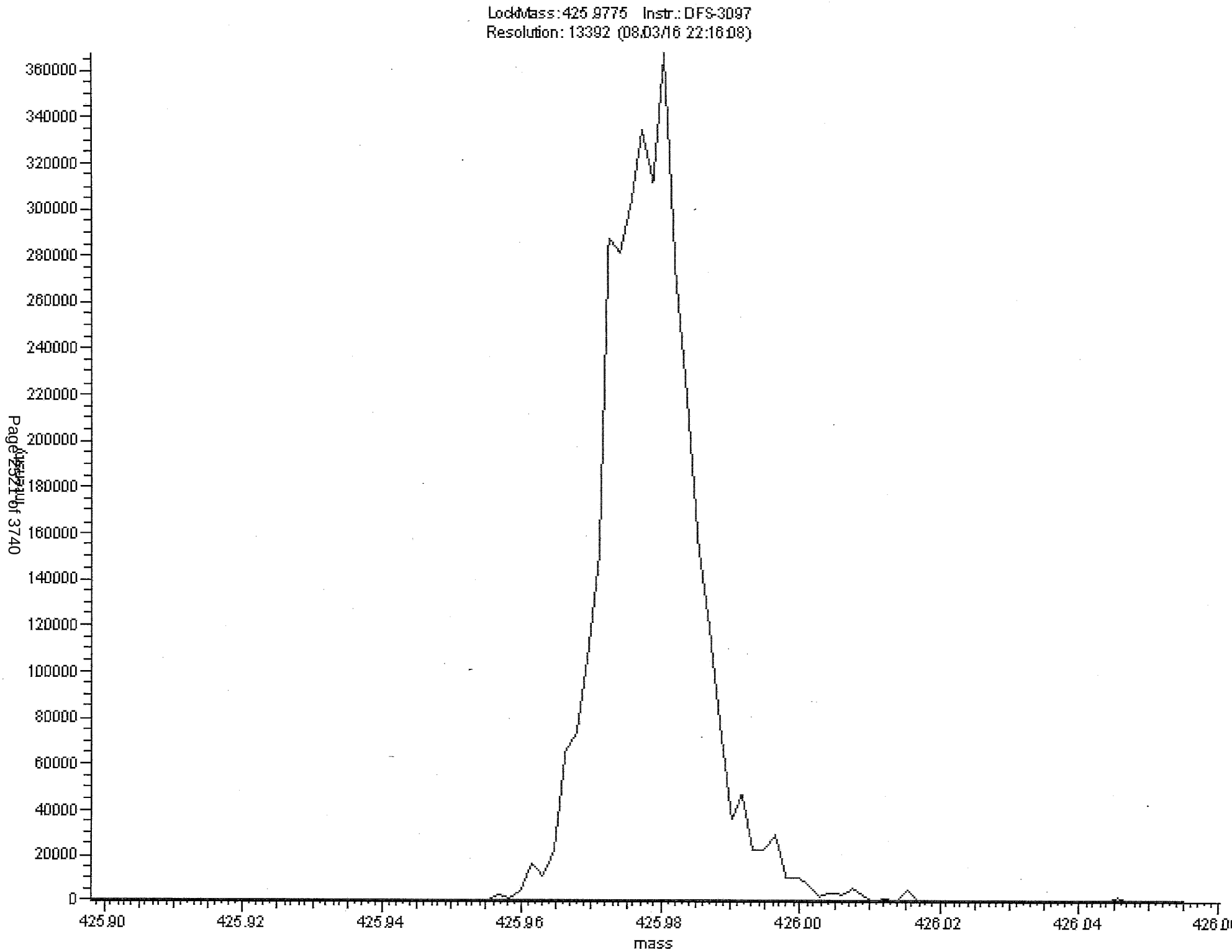
LockMass: 413.9775 Instr.: DFS-3097
Resolution: 12892 (08/03/16 22:15:04)



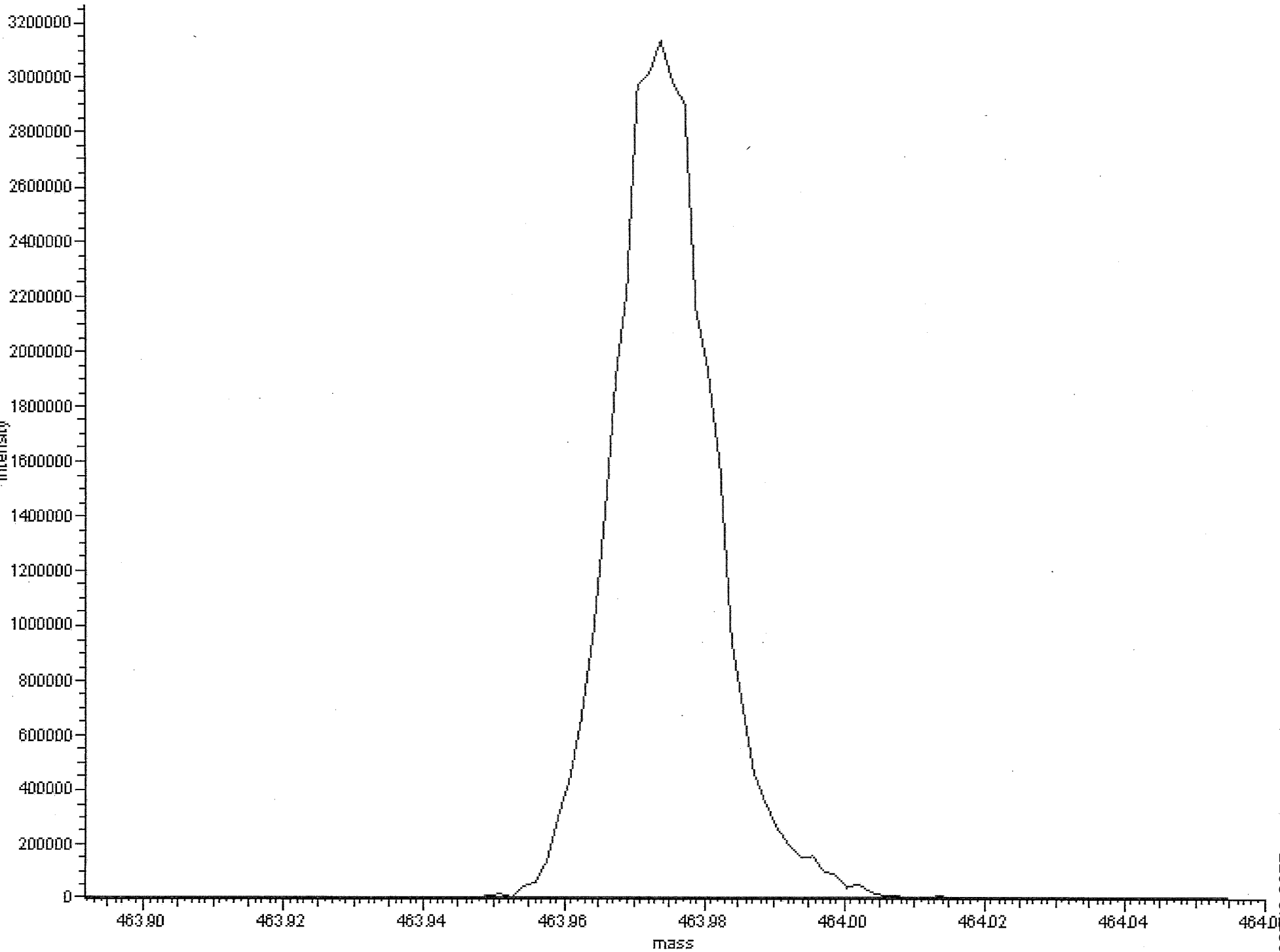
Mass: 425.9770 Instr.: DFS-3097
Resolution: 13415 (08/03/16 22:15:50)



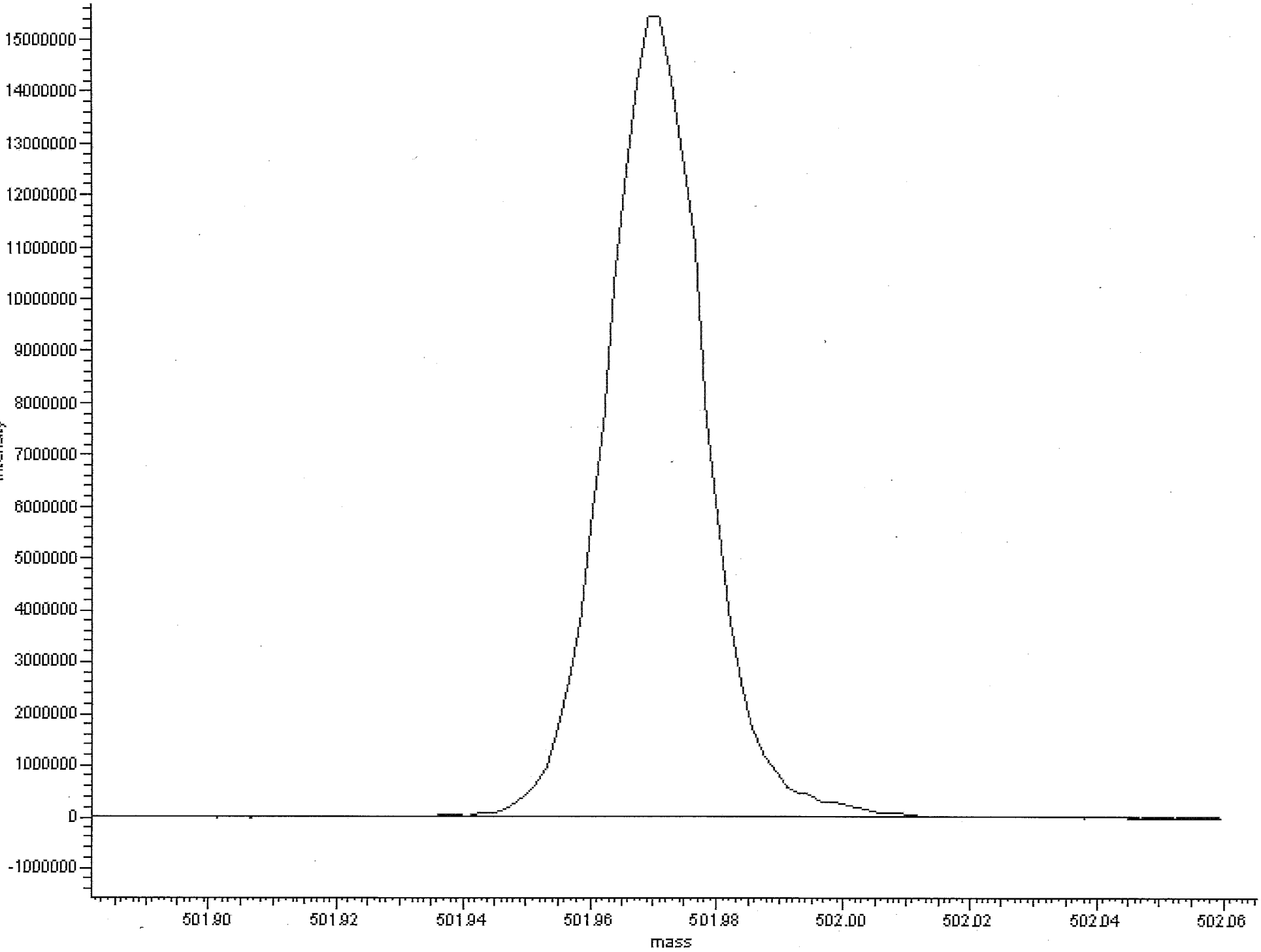

CaliMass: 463.9738 Instr.: DFS-3097
Resolution: 13392 (08/03/16 22:15:53)
3200000
3000000
2800000
2600000
2400000
2200000
2000000
1800000
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
463.90
463.92
463.94
463.96
463.98
464.00
464.02
464.04
464.06
mass


Lockmass: 425.9775 Instr.: DFS-3097
Resolution: 13392 (08/03/16 22:16:08)
360000
340000
320000
300000
280000
260000
240000
220000
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
425.90
425.92
425.94
425.96
425.98
426.00
426.02
426.04
426.06
mass

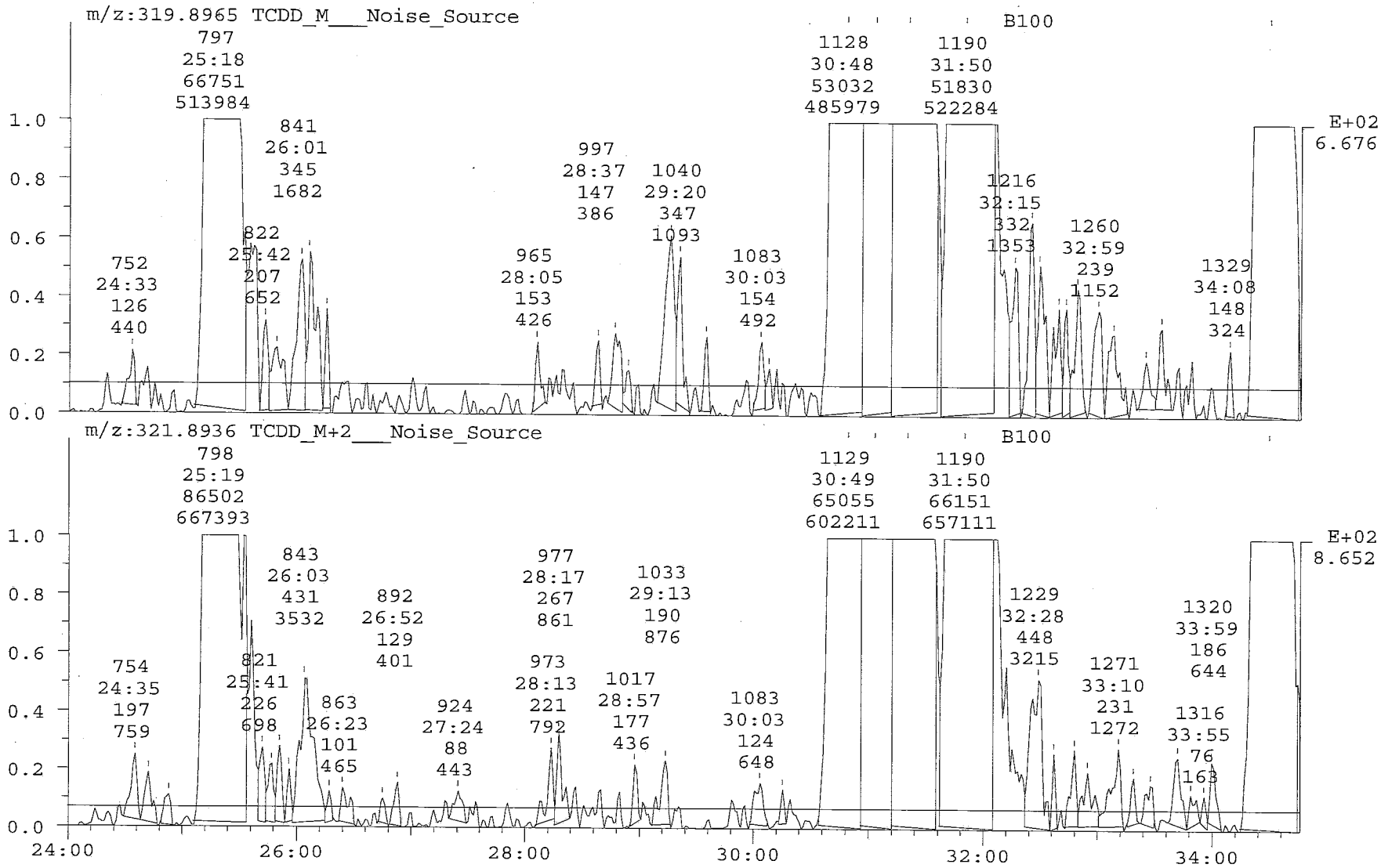
Mass: 463.9743 Instr.: DFS-3097
Resolution: 12664 (08/03/16 22:16:55)



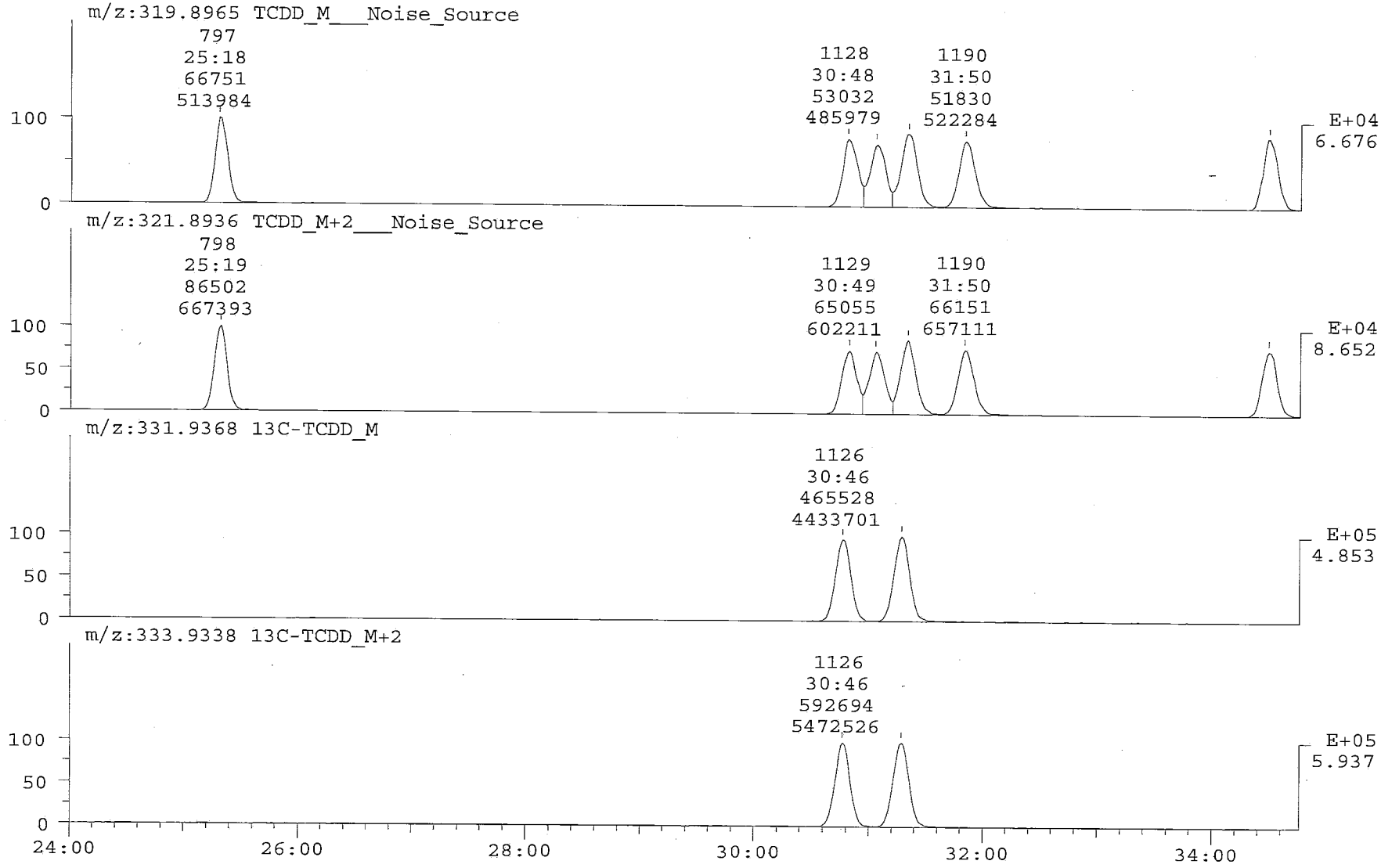
CaliMass: 501.9706 Instr.: DFS-3097
Resolution: 13500 (08/03/16 22:16:58)



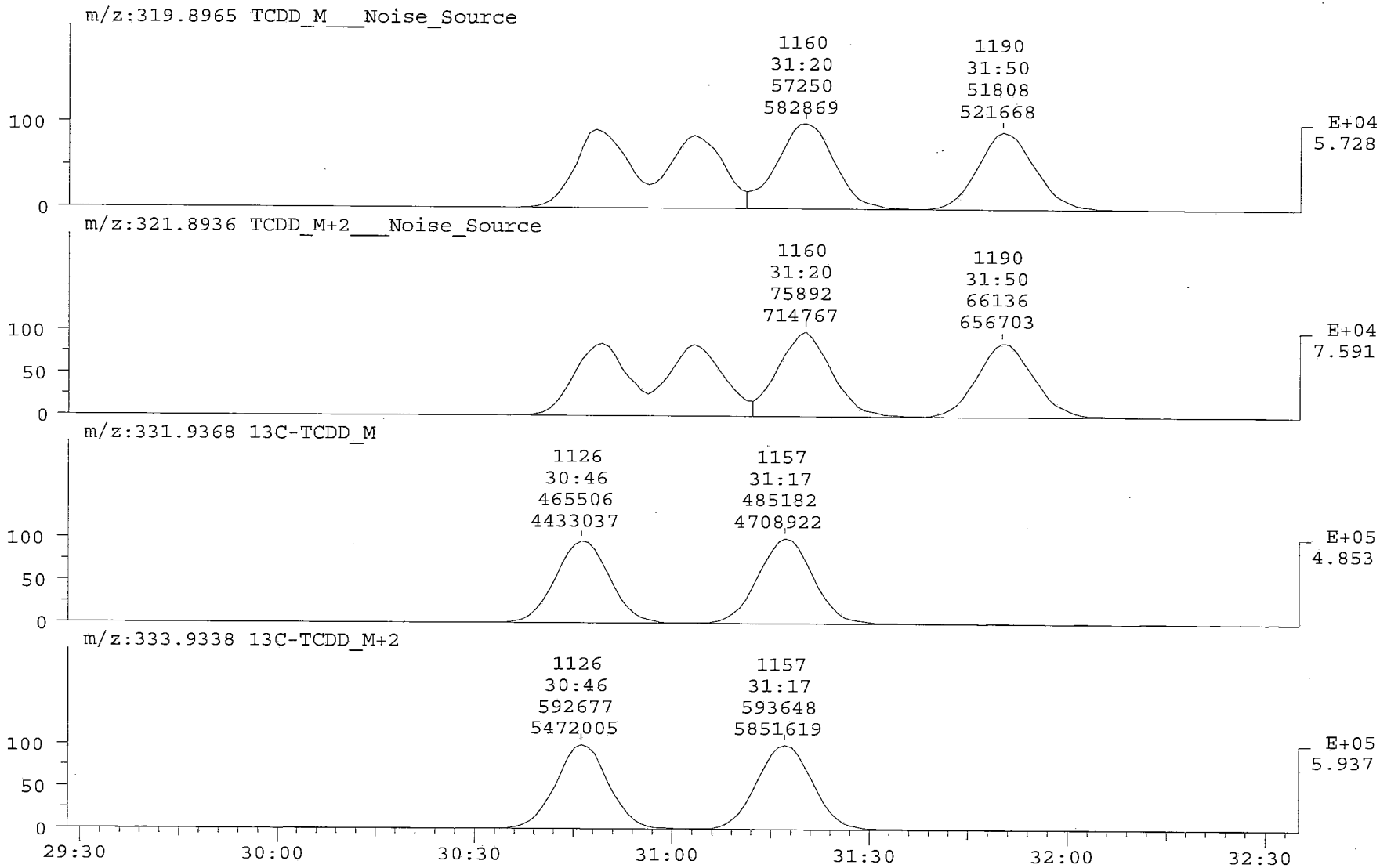
CHRO: d3160803s3 03-Aug-16 Elapse: 54:09 2484
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 719 > 1367 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 1.0
Disp: Height Area



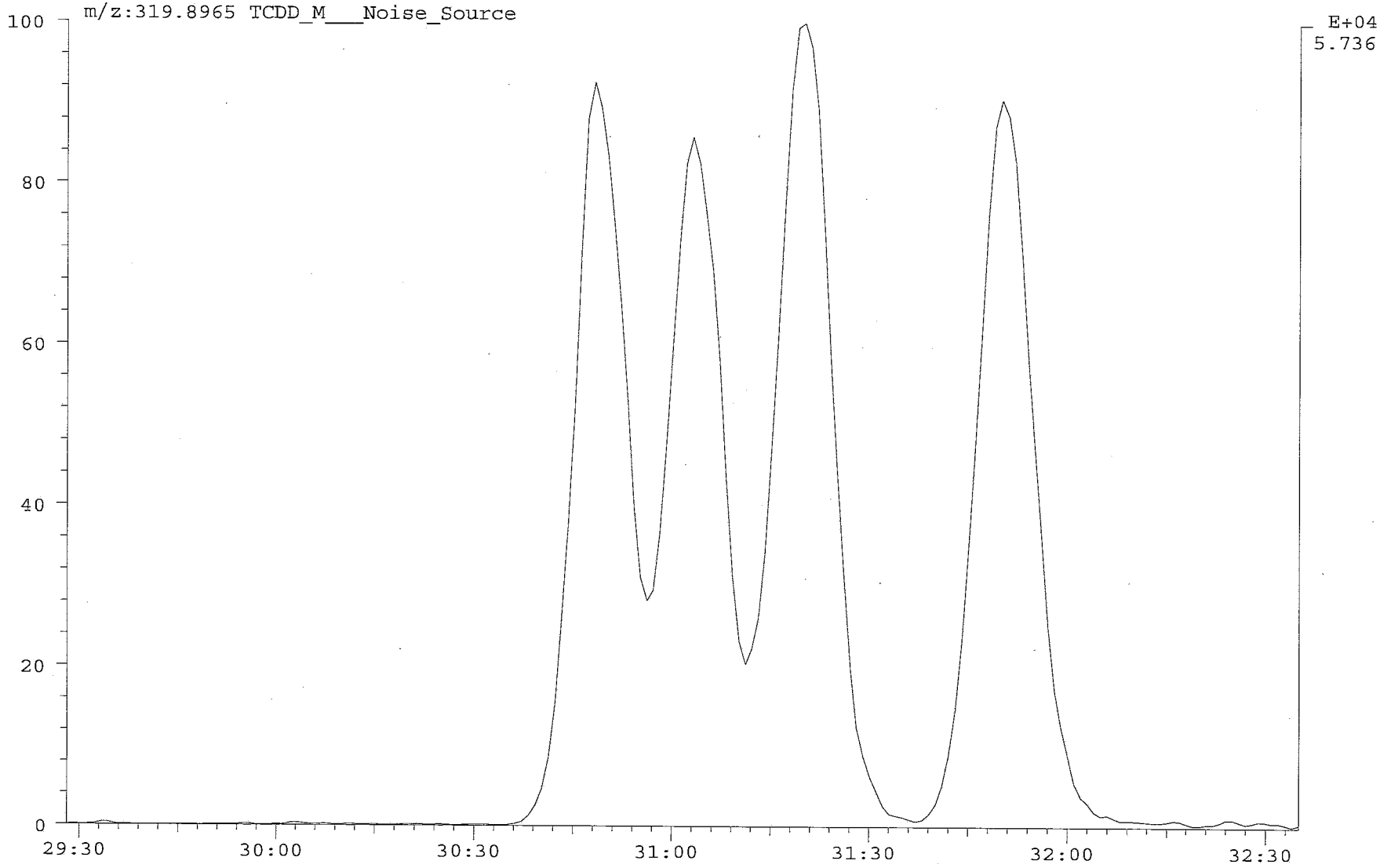
CHRO: d3160803s3 03-Aug-16 Elapse: 54:09 2484
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 719 > 1367 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



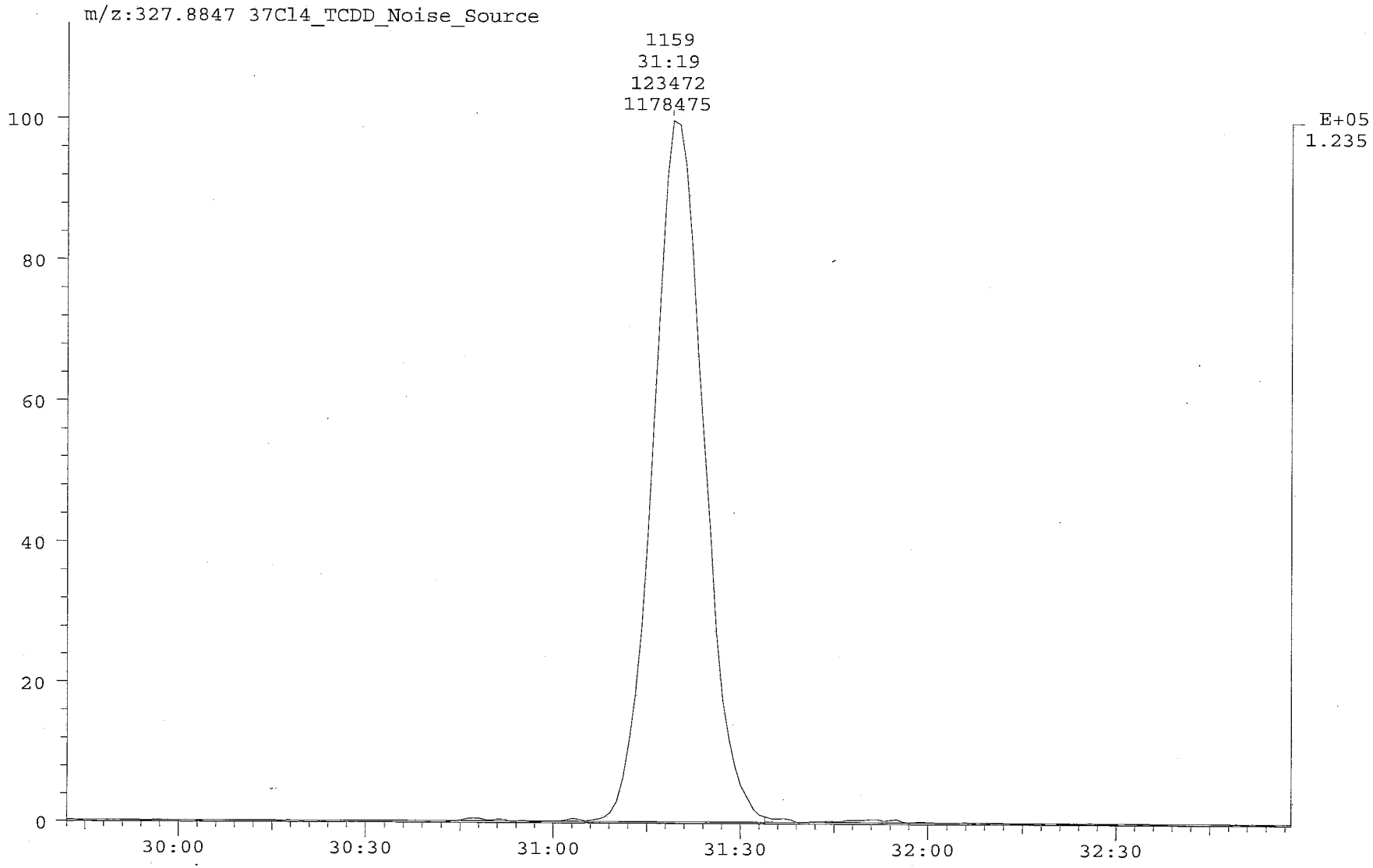
CHRO: d3160803s3 03-Aug-16 Elapse: 31:01 1141
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1048 > 1235 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



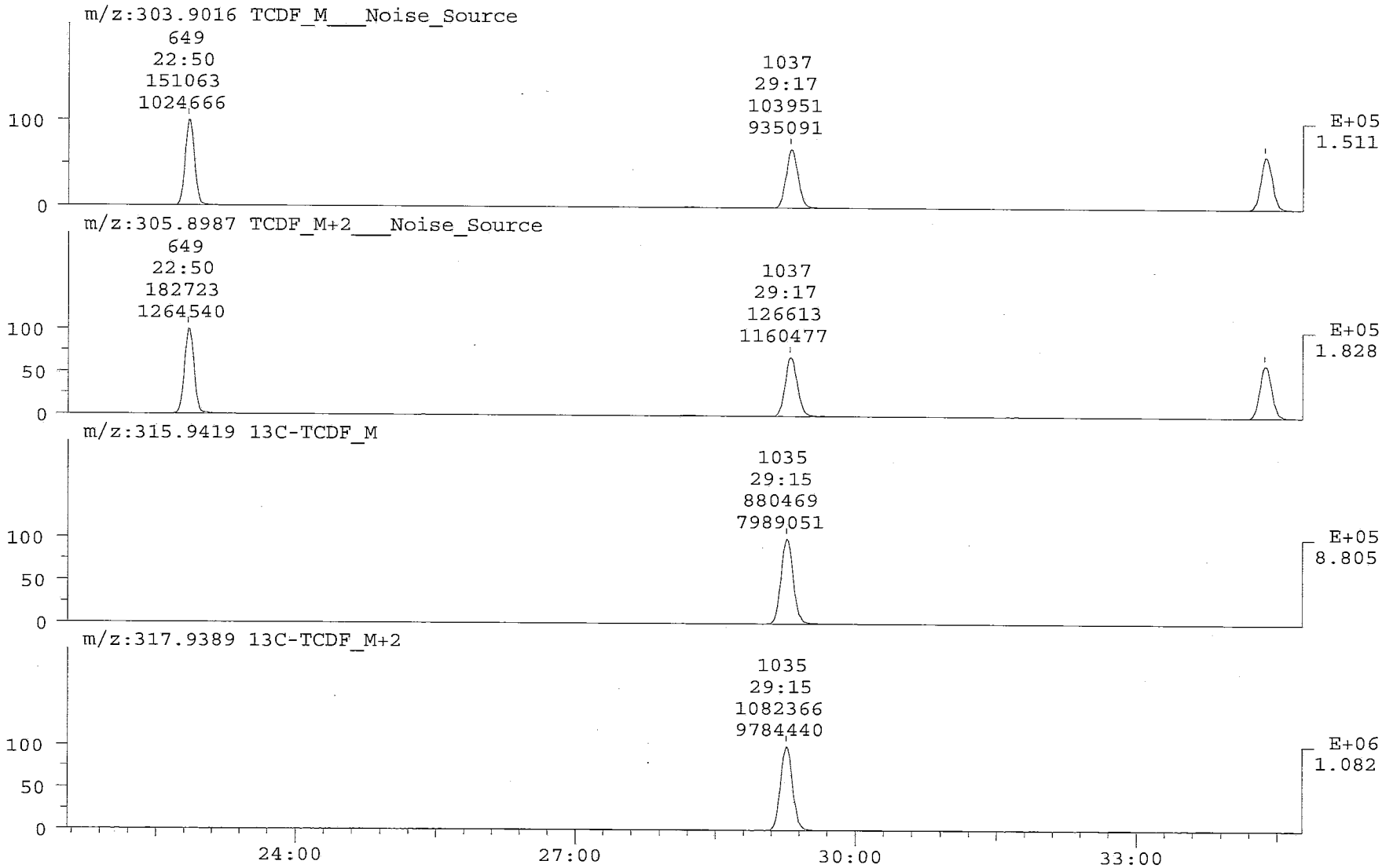
CHRO: d3160803s3 03-Aug-16 Elapse: 31:01 1141
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1048 > 1235 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



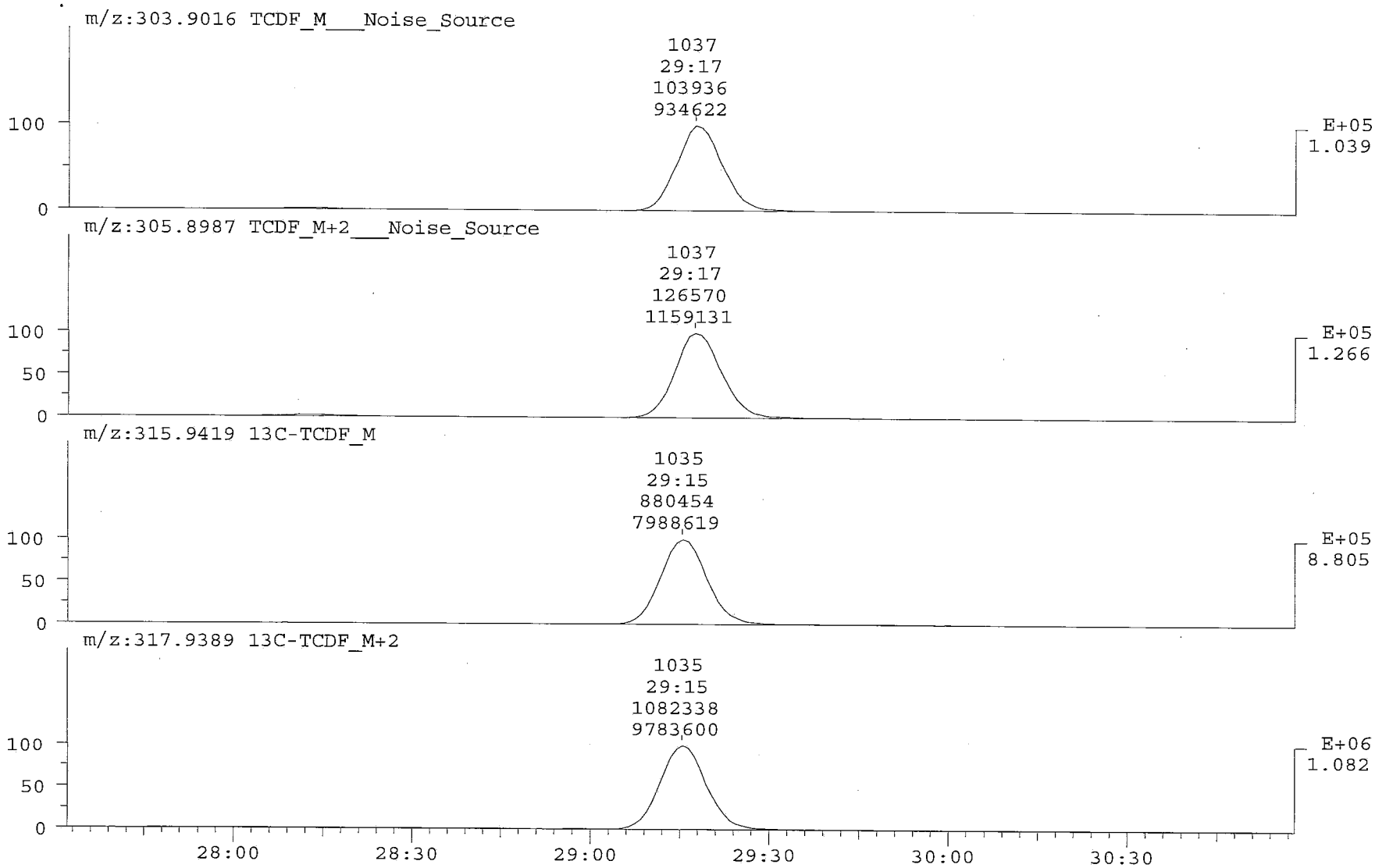
```
CHRO:  d3160803s3                                  03-Aug-16   Elapse:  31:17      1157
Samp:  WO=4966:40 Meth=F8o Dil=1                               Start :  20:59:49   2678
Comm:  Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode:  EI ESI + Q1MS UP LR                                     Study :  Ver/Win
Oper:  MSD                                                     Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1062 > 1258               Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                    Label :  -2, 5.0
Disp:  Height  Area
```



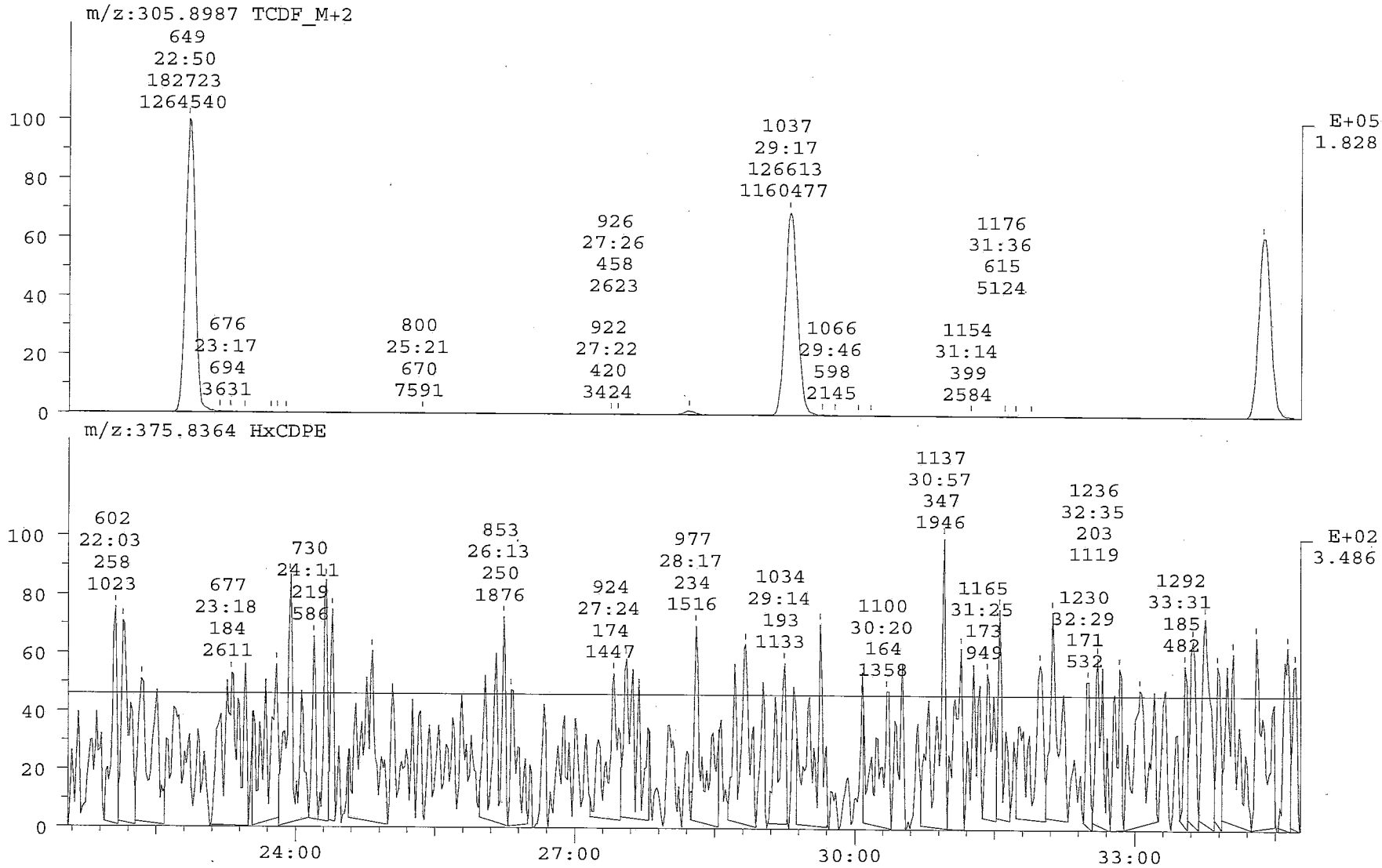
CHRO: d3160803s3 03-Aug-16 Elapse: 31:17 1157
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 571 > 1367 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



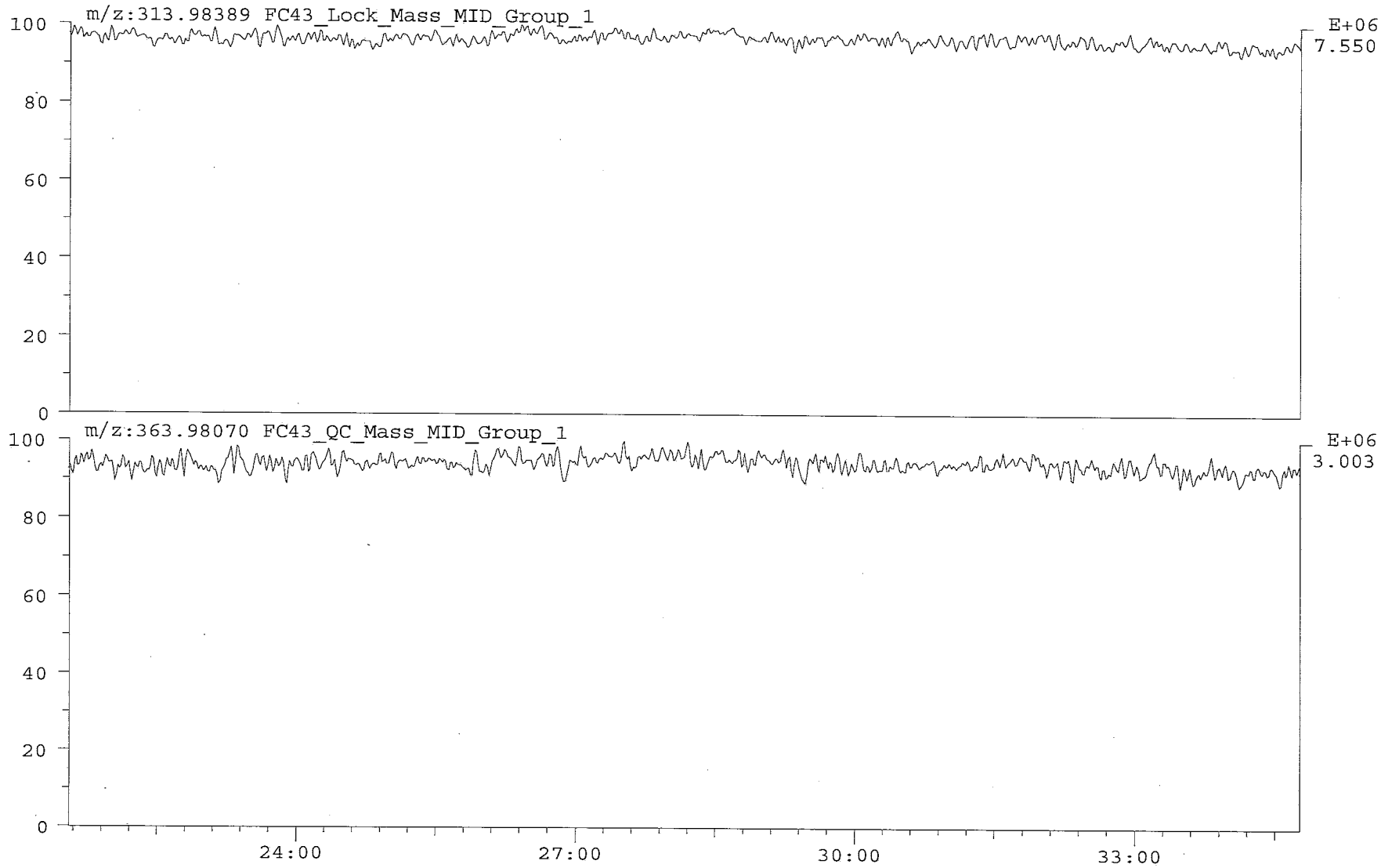
```
CHRO:  d3160803s3                          03-Aug-16  Elapse:  29:12      1032
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  20:59:49   2678
Comm:  Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   931 > 1138       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



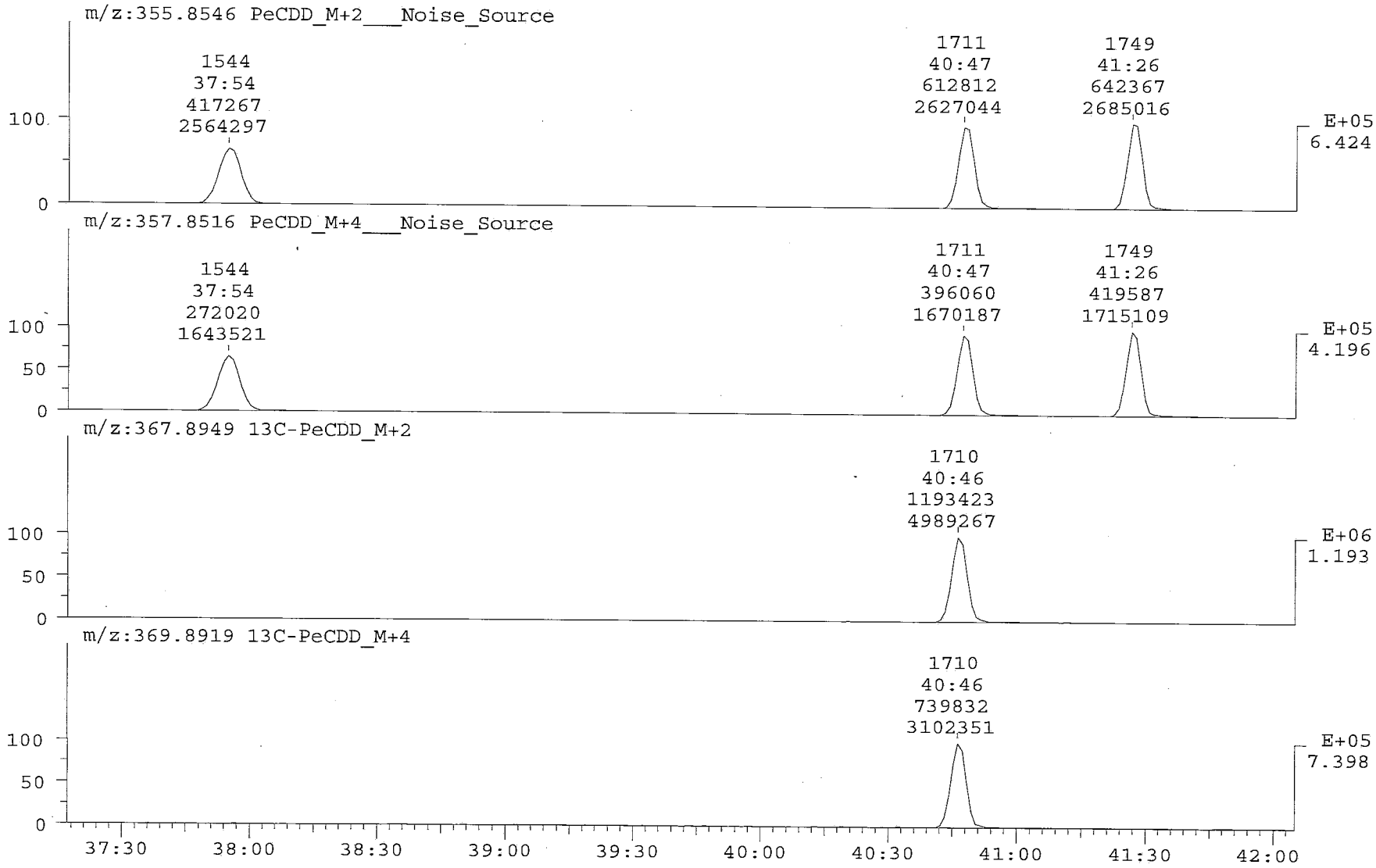
CHRO: d3160803s3 03-Aug-16 Elapse: 29:12 1032
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 571 > 1367 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



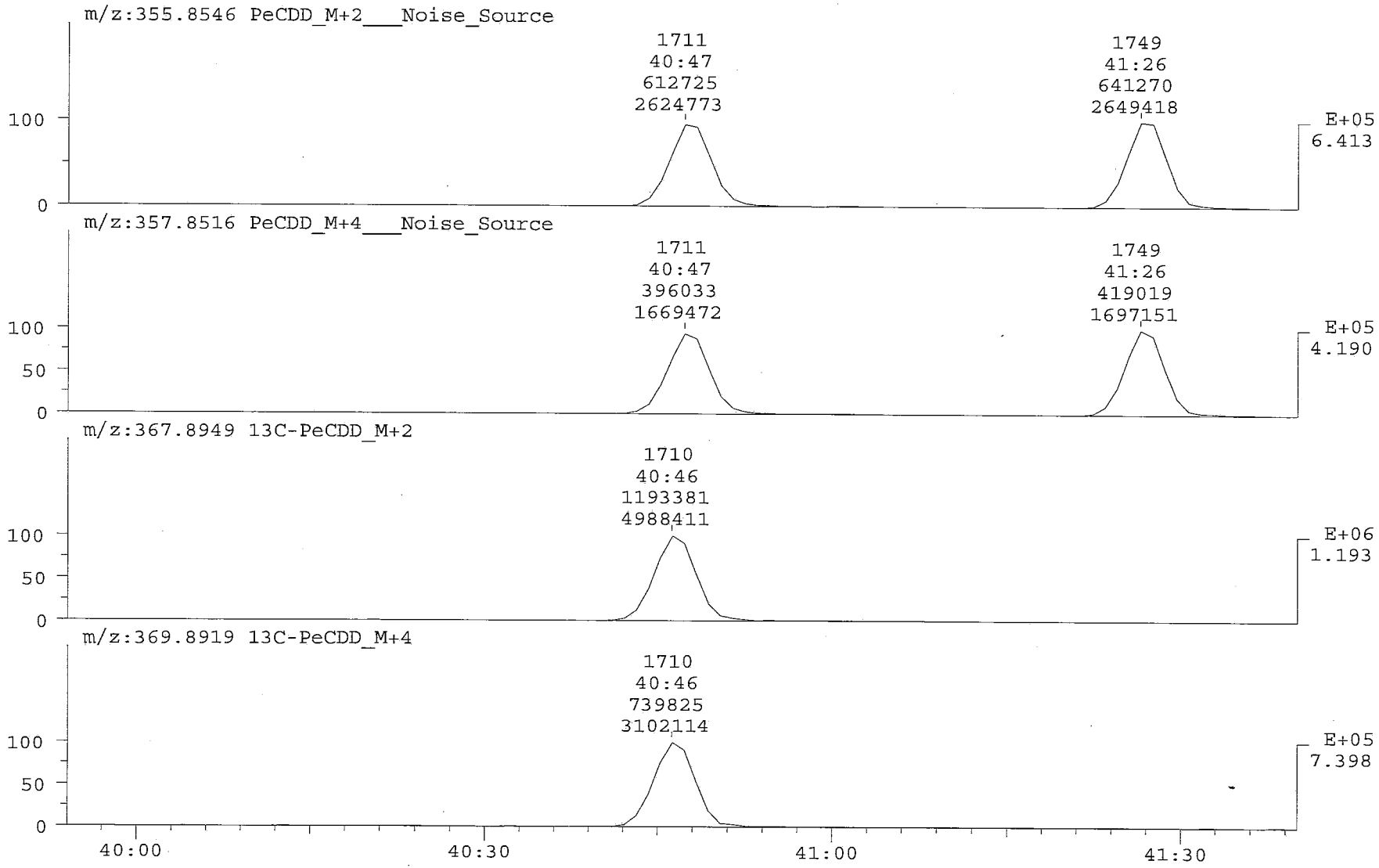
```
CHRO:  d3160803s3                          03-Aug-16  Elapse:  29:12      1032
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  20:59:49   2678
Comm:  Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   571 > 1367       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



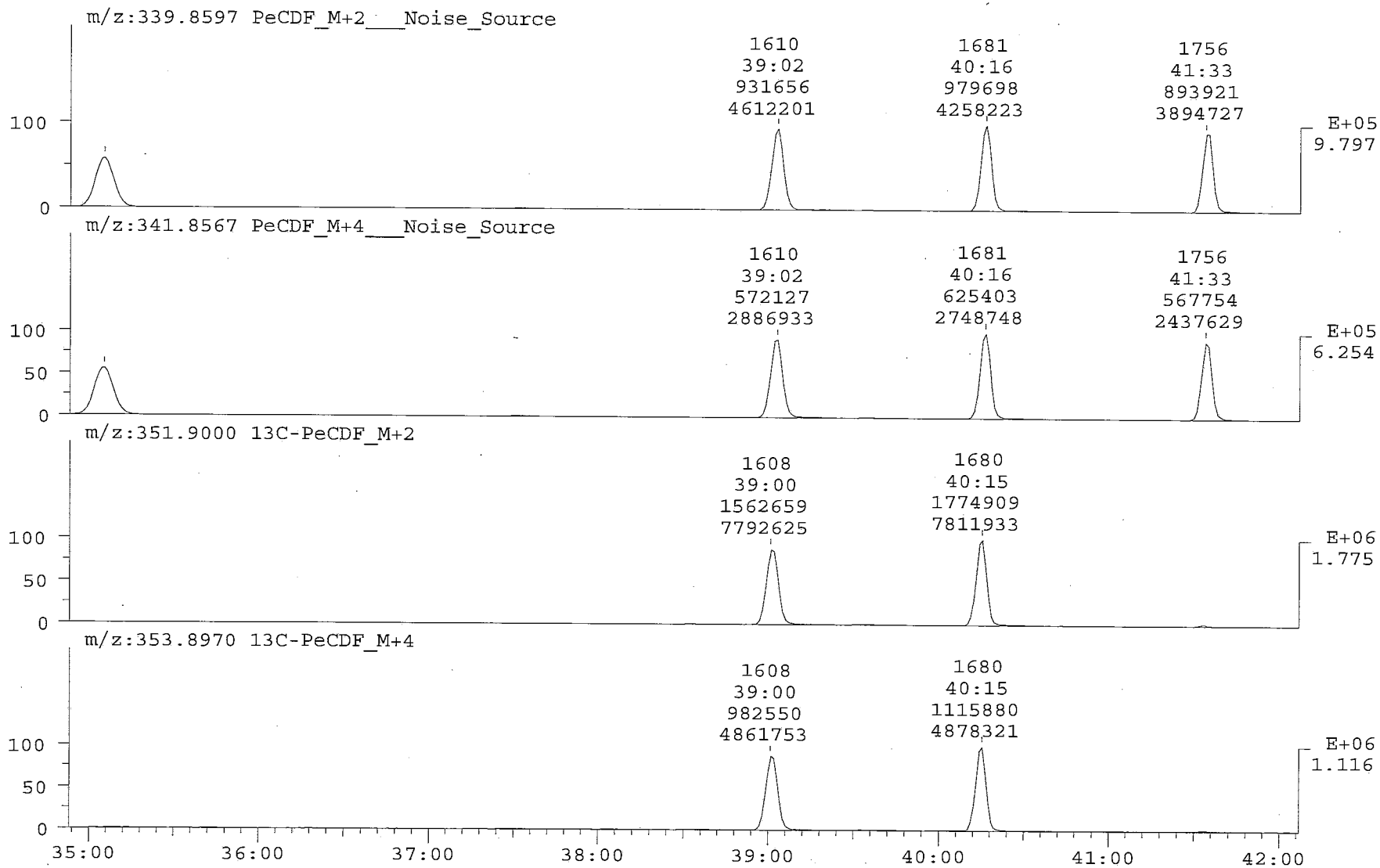
CHRO: d3160803s3 03-Aug-16 Elapse: 29:12 1032
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1507 > 1786 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



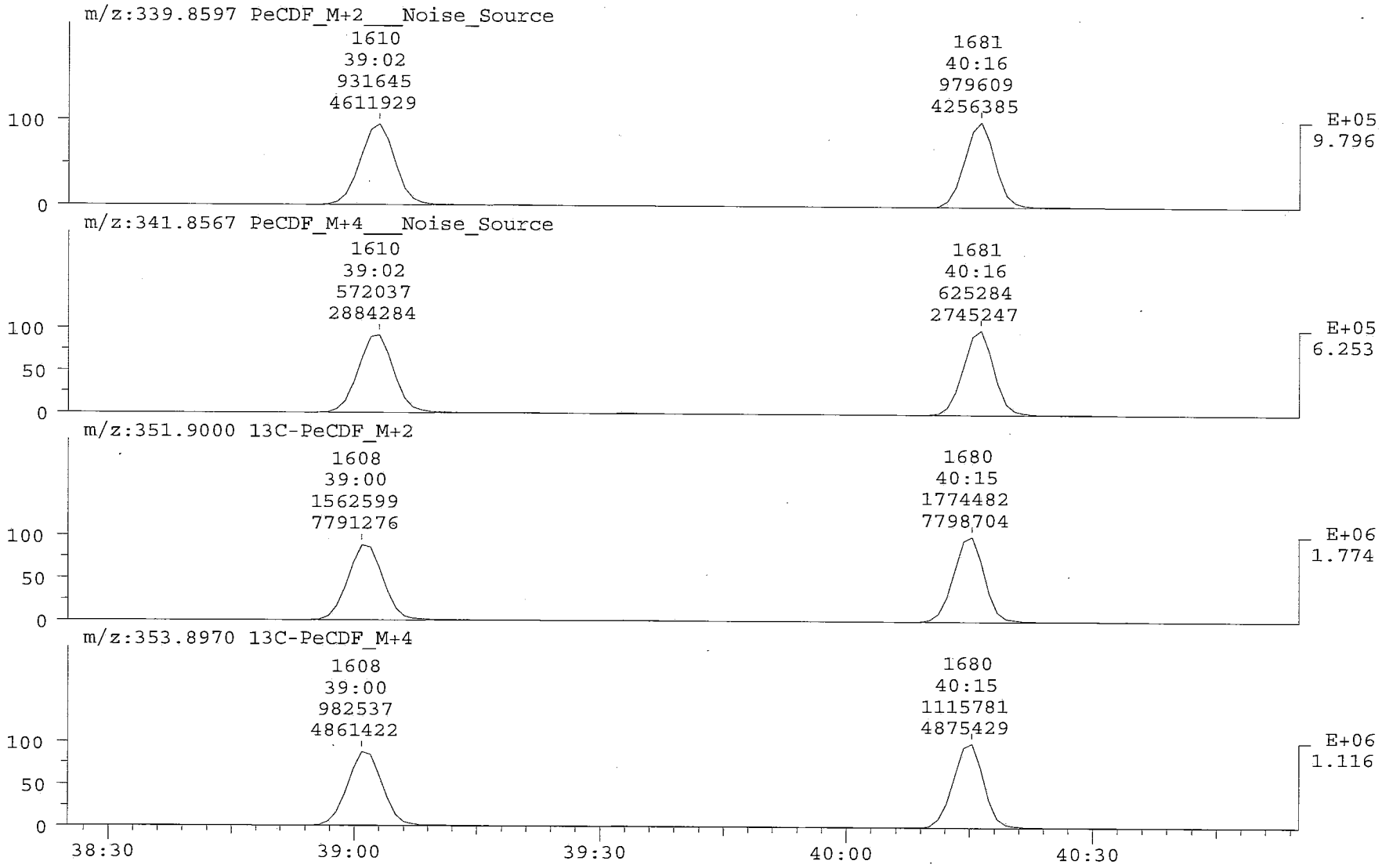
CHRO: d3160803s3 03-Aug-16 Elapse: 40:44 1708
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1659 > 1762 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



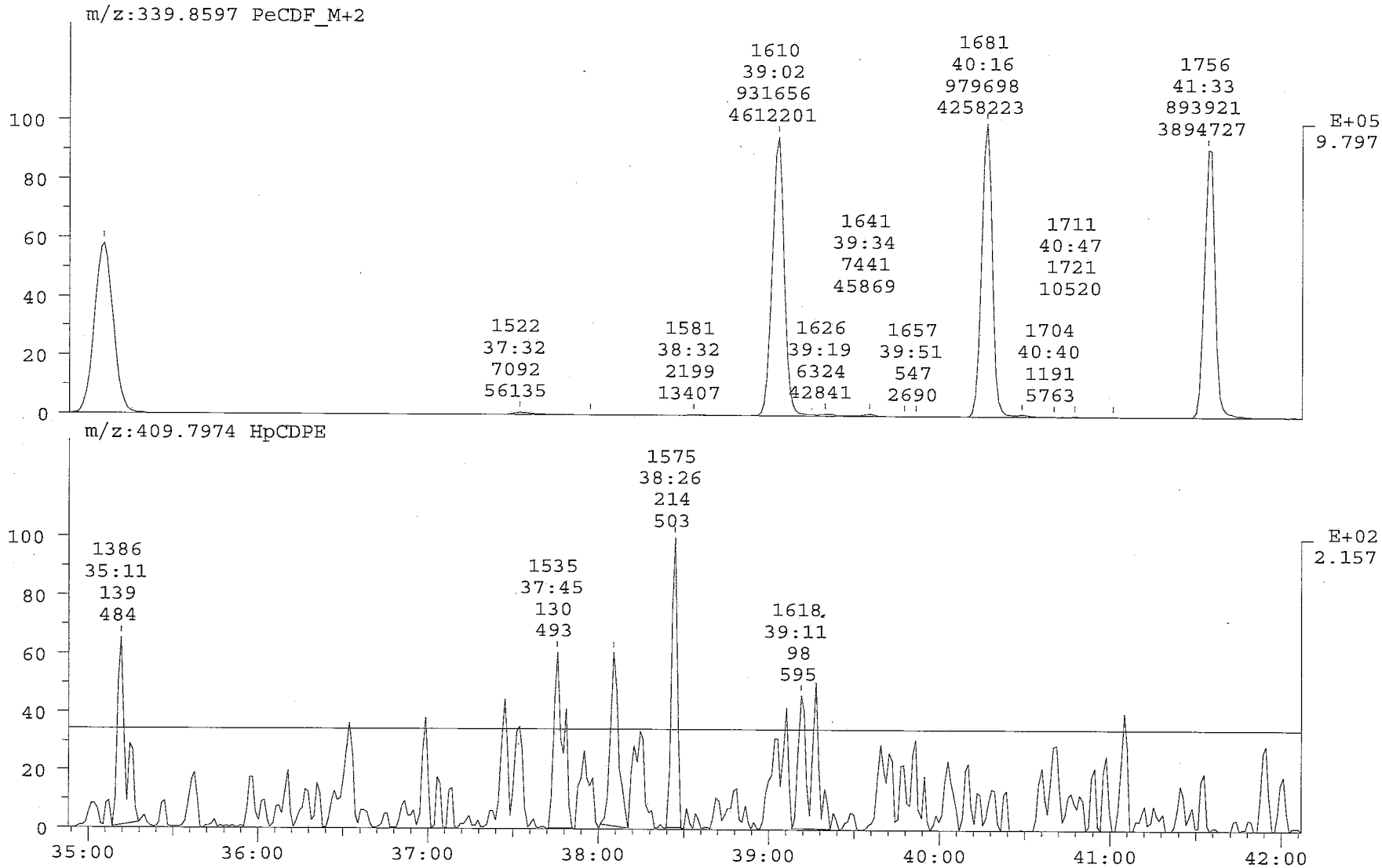
```
CHRO:  d3160803s3                                  03-Aug-16   Elapse:  40:44      1708
Samp:  WO=4966:40 Meth=F8o Dil=1                               Start :  20:59:49   2678
Comm:  Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode:  EI ESI + Q1MS UP LR                                     Study :  Ver/Win
Oper:  MSD                                                     Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1369 > 1788               Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                    Label :  2, 5.0
Disp:  Height  Area
```



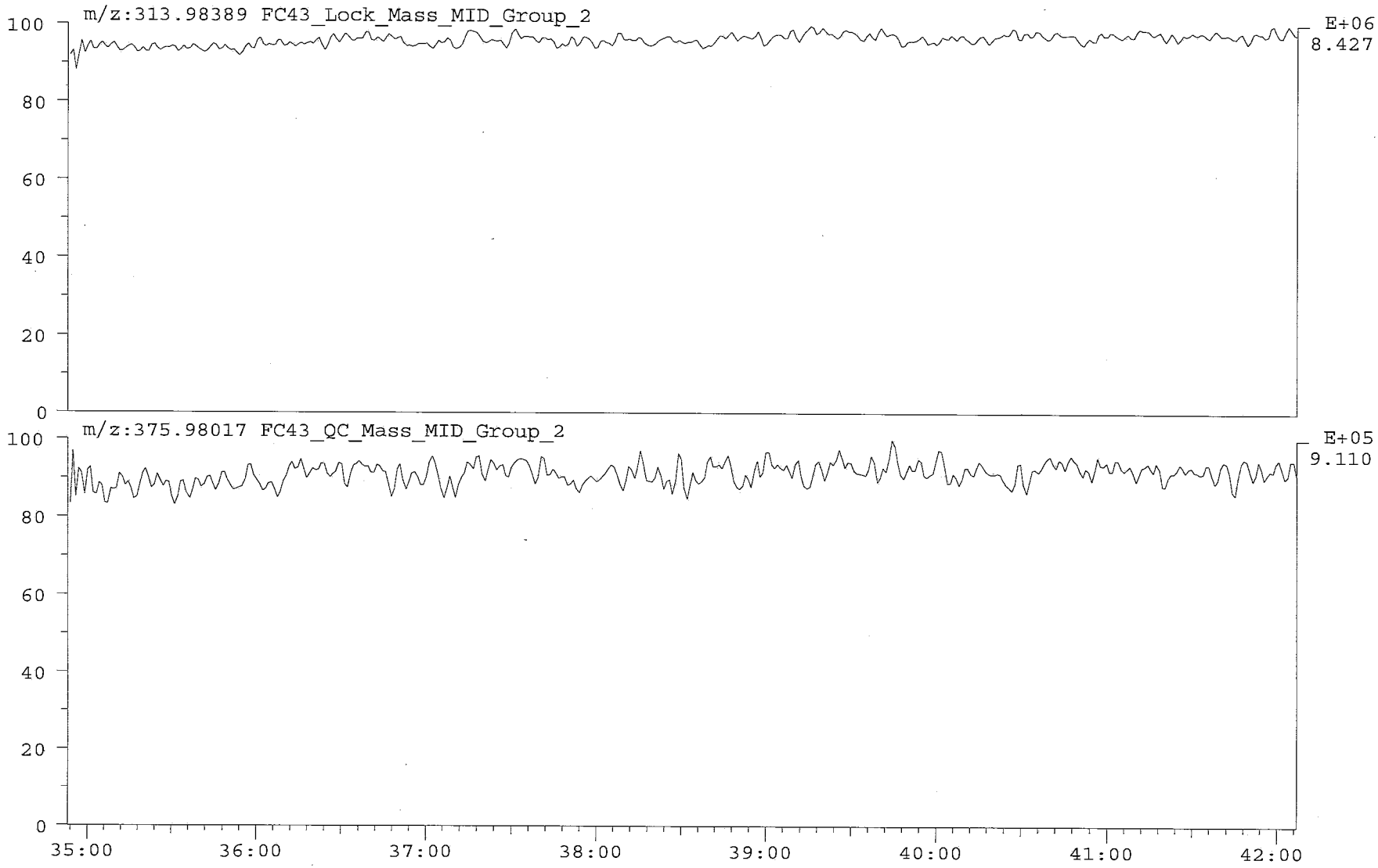
```
CHRO:  d3160803s3                          03-Aug-16  Elapse:  39:40      1646
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  20:59:49   2678
Comm:  Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1573 > 1719      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



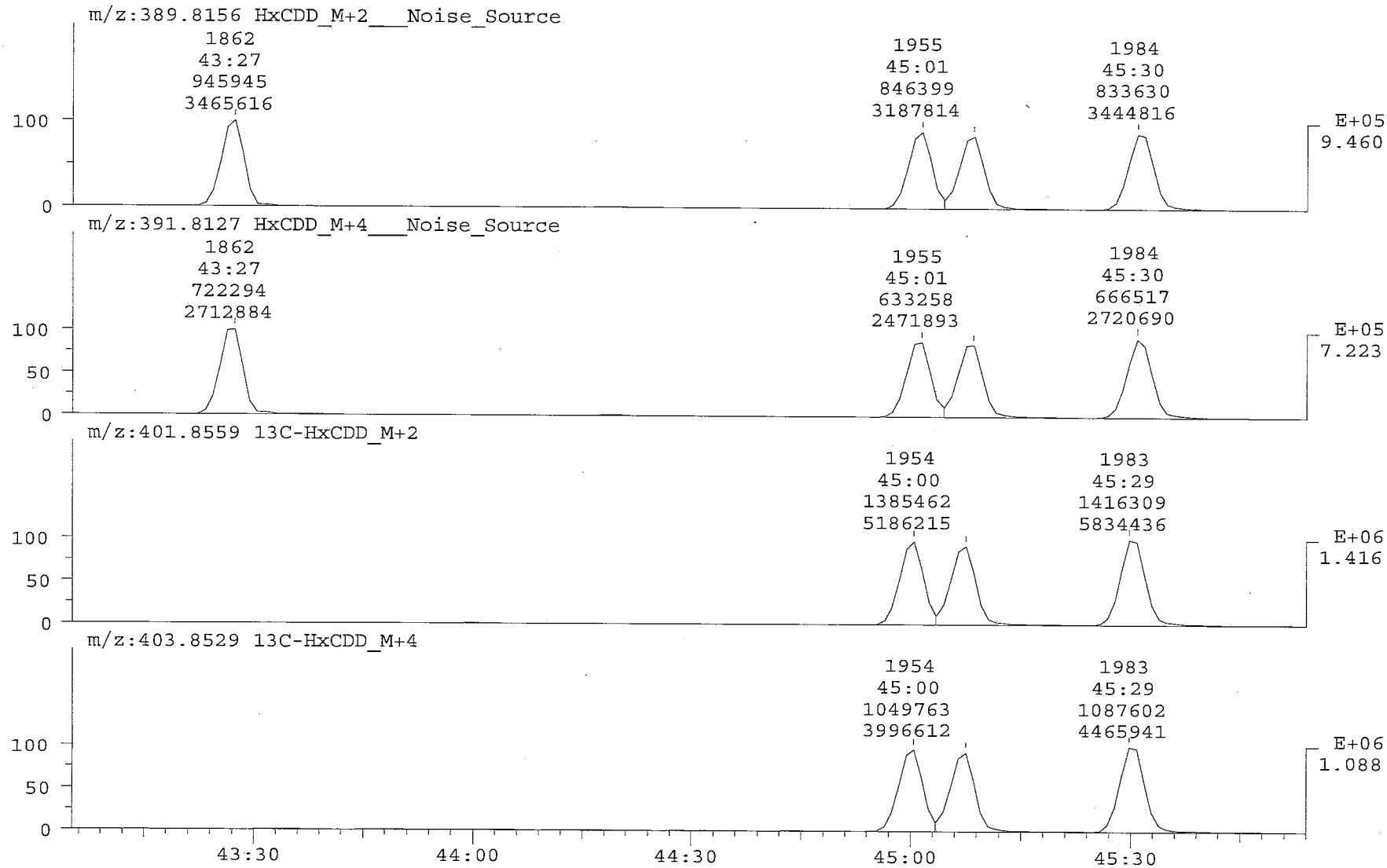
CHRO: d3160803s3 03-Aug-16 Elapse: 39:40 1646
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1369 > 1788 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



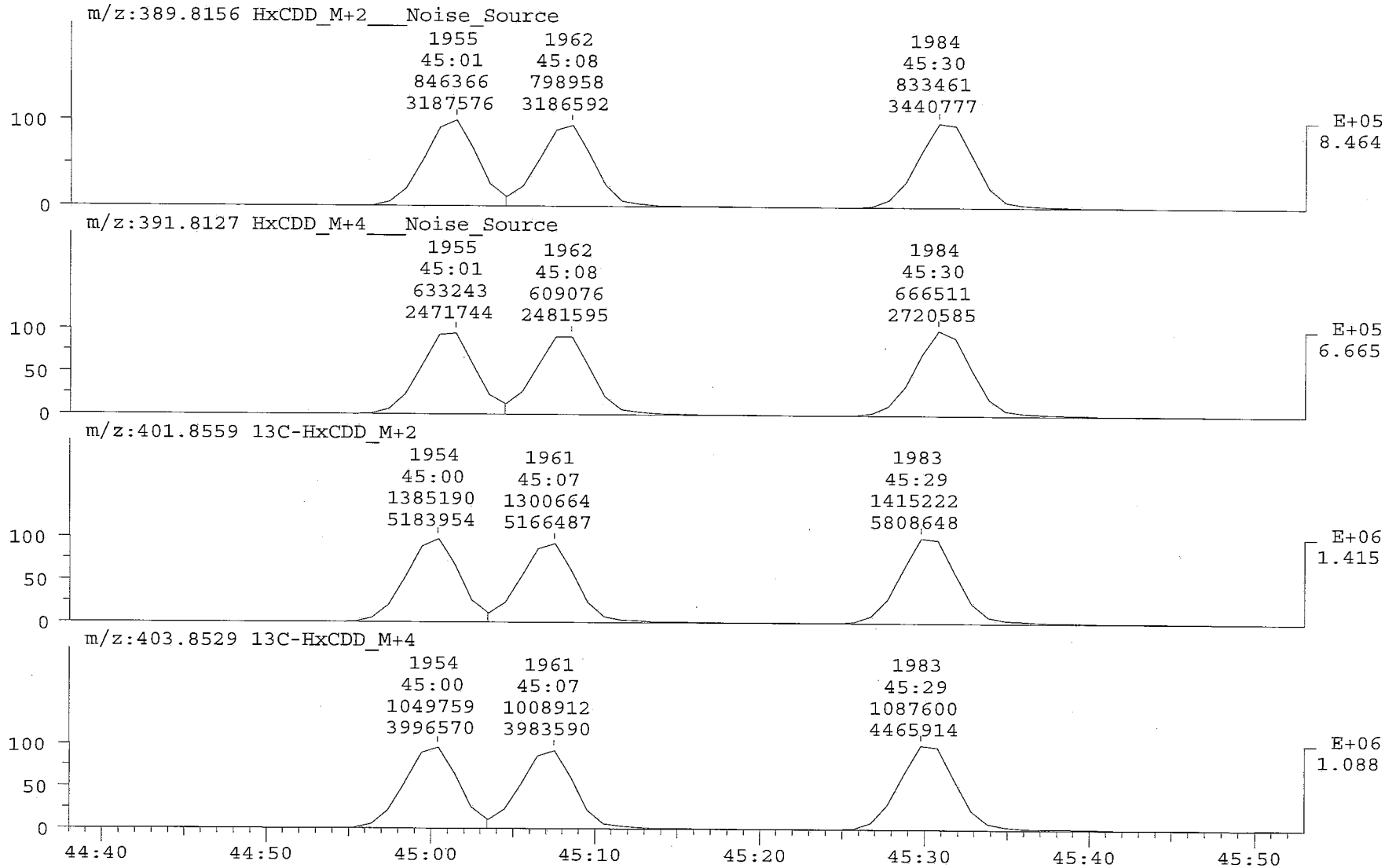
```
CHRO:  d3160803s3                                03-Aug-16  Elapse:  39:40      1646
Samp:  WO=4966:40 Meth=F8o Dil=1                            Start :  20:59:49   2678
Comm:  Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  Ver/Win
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1369 > 1788            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  0, 0.0
Disp:  Height  Area
```



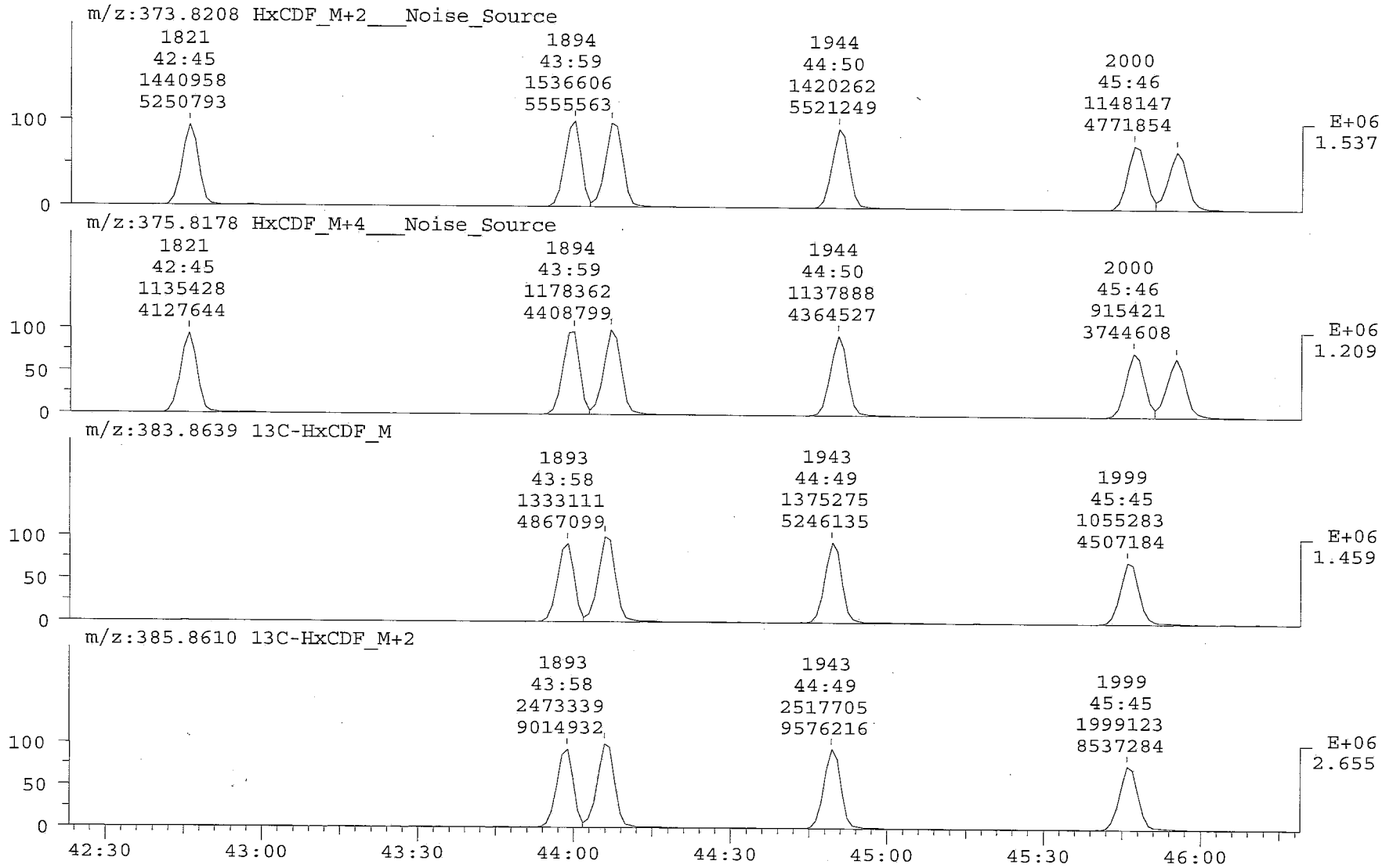
CHRO: d3160803s3 03-Aug-16 Elapse: 39:40 1646
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1840 > 2007 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



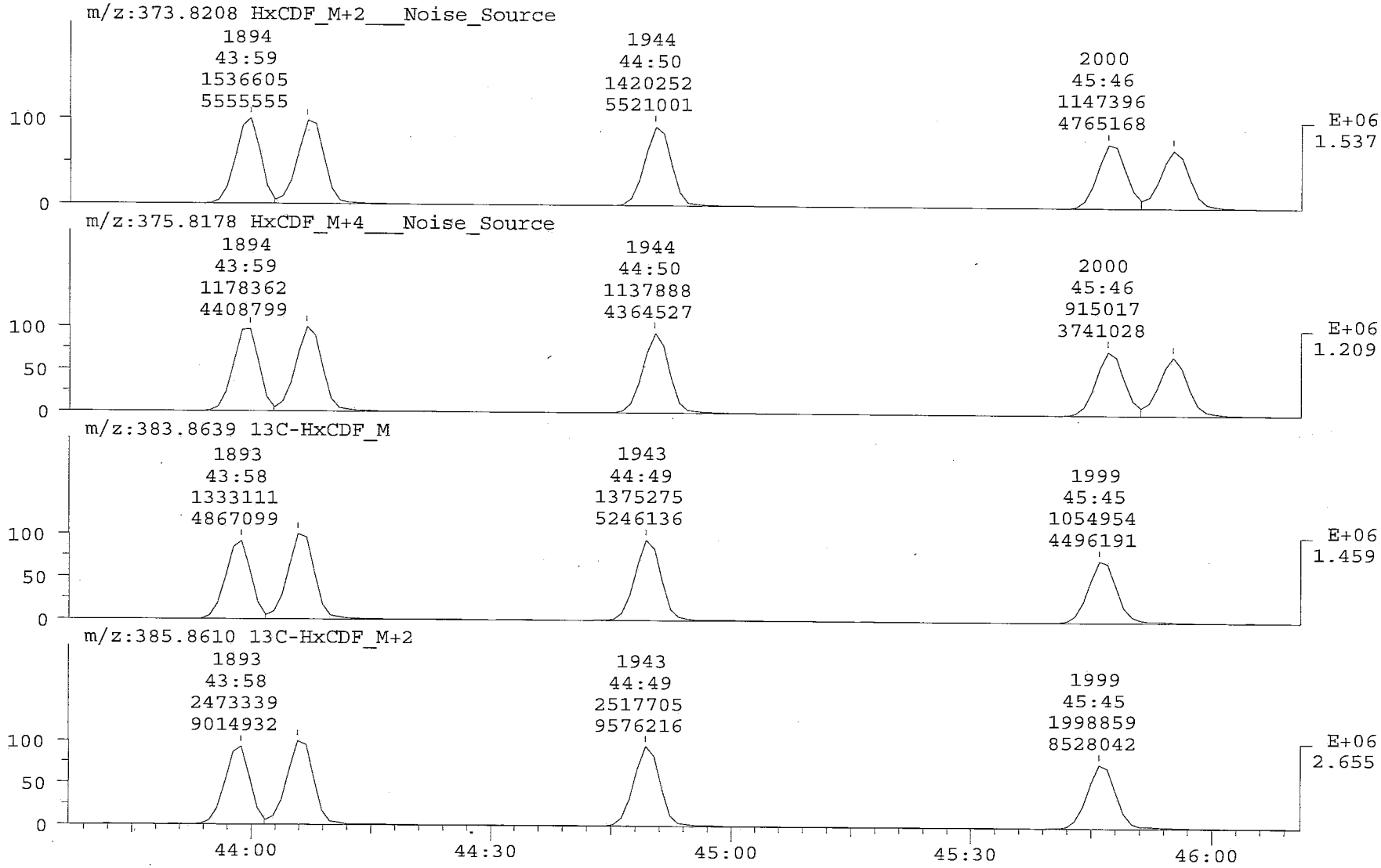
CHRO: d3160803s3 03-Aug-16 Elapse: 45:14 1968
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1932 > 2006 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



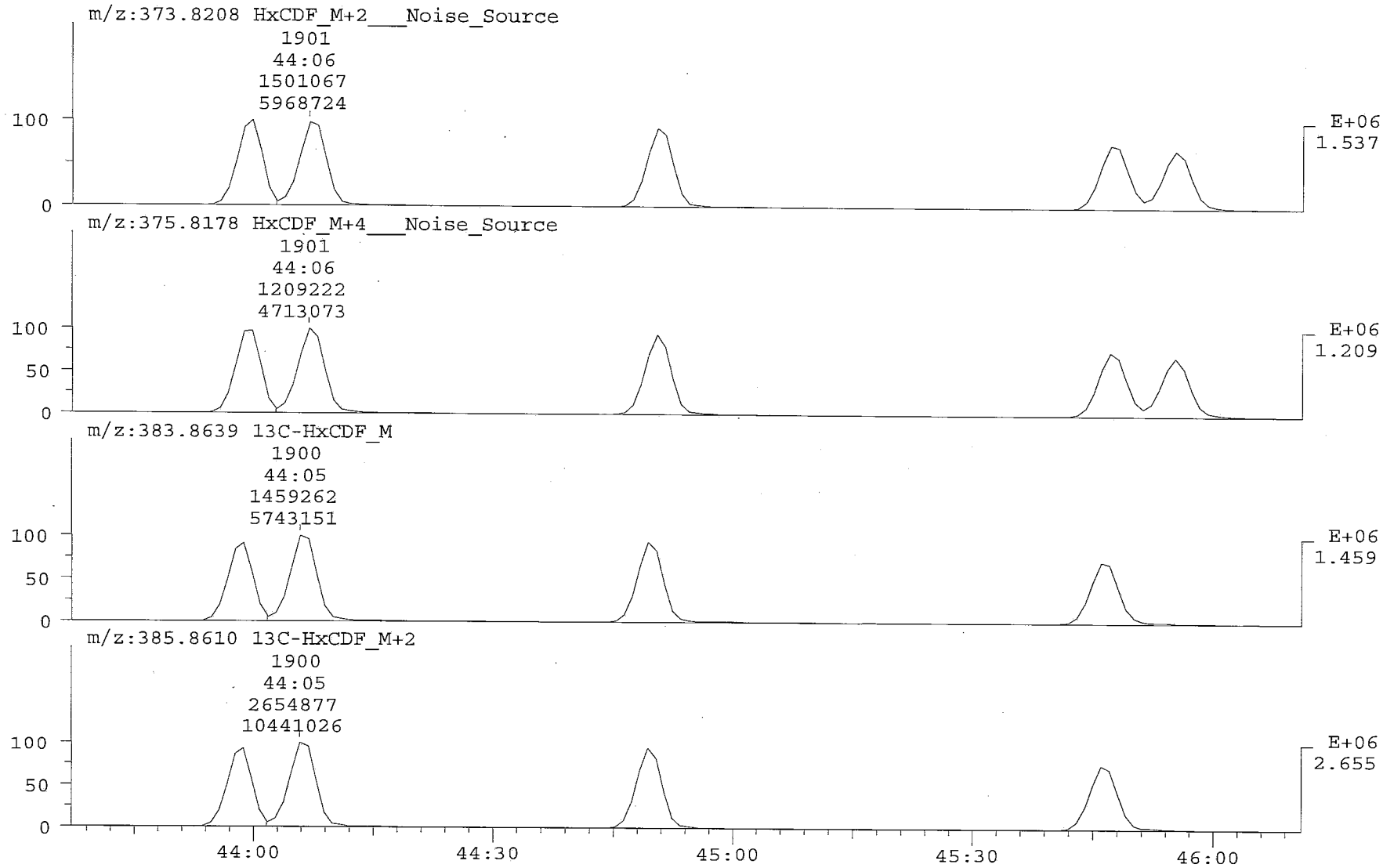
CHRO: d3160803s3 03-Aug-16 Elapse: 45:14 1968
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1799 > 2032 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



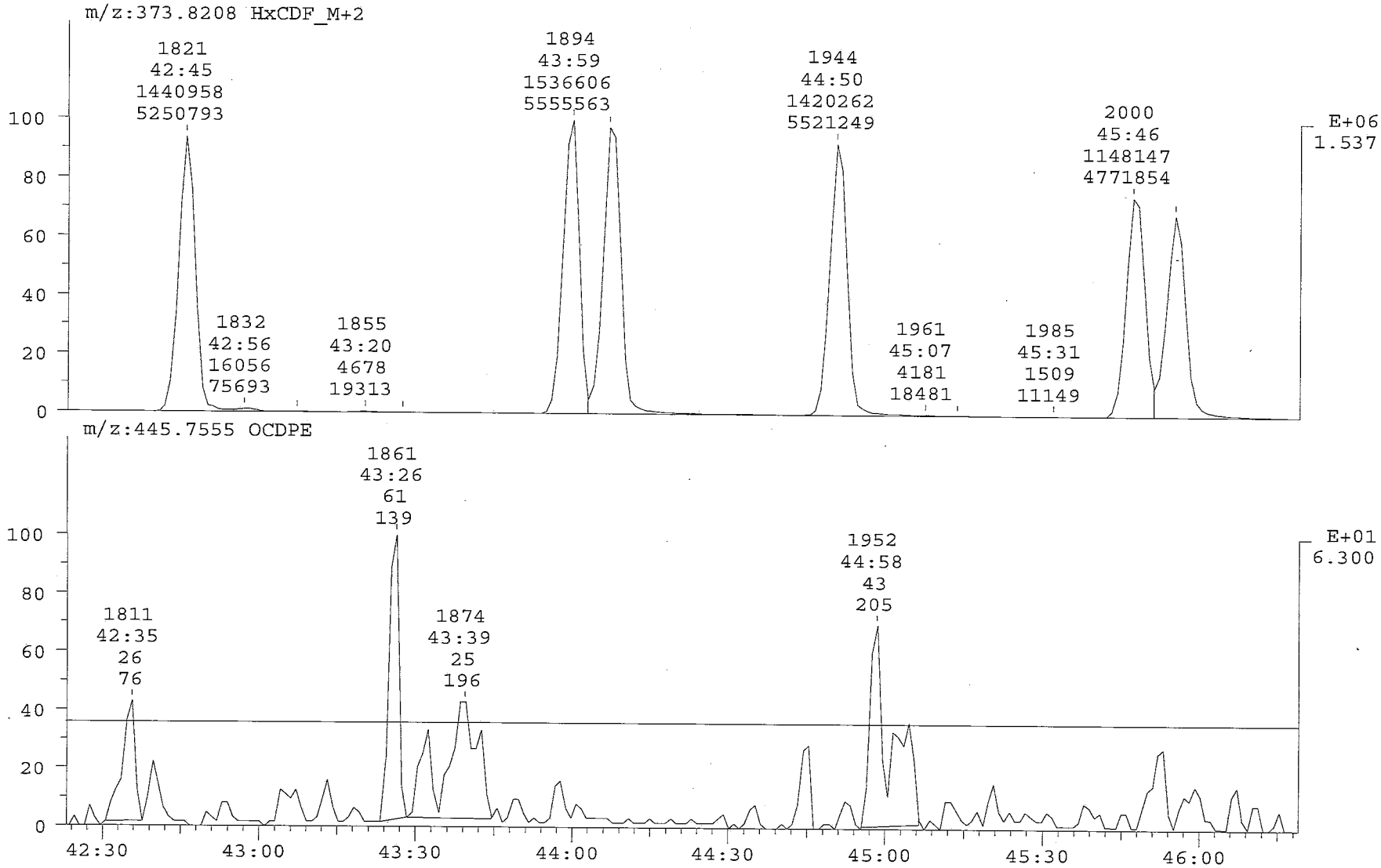
CHRO: d3160803s3 03-Aug-16 Elapse: 44:54 1948
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1872 > 2024 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



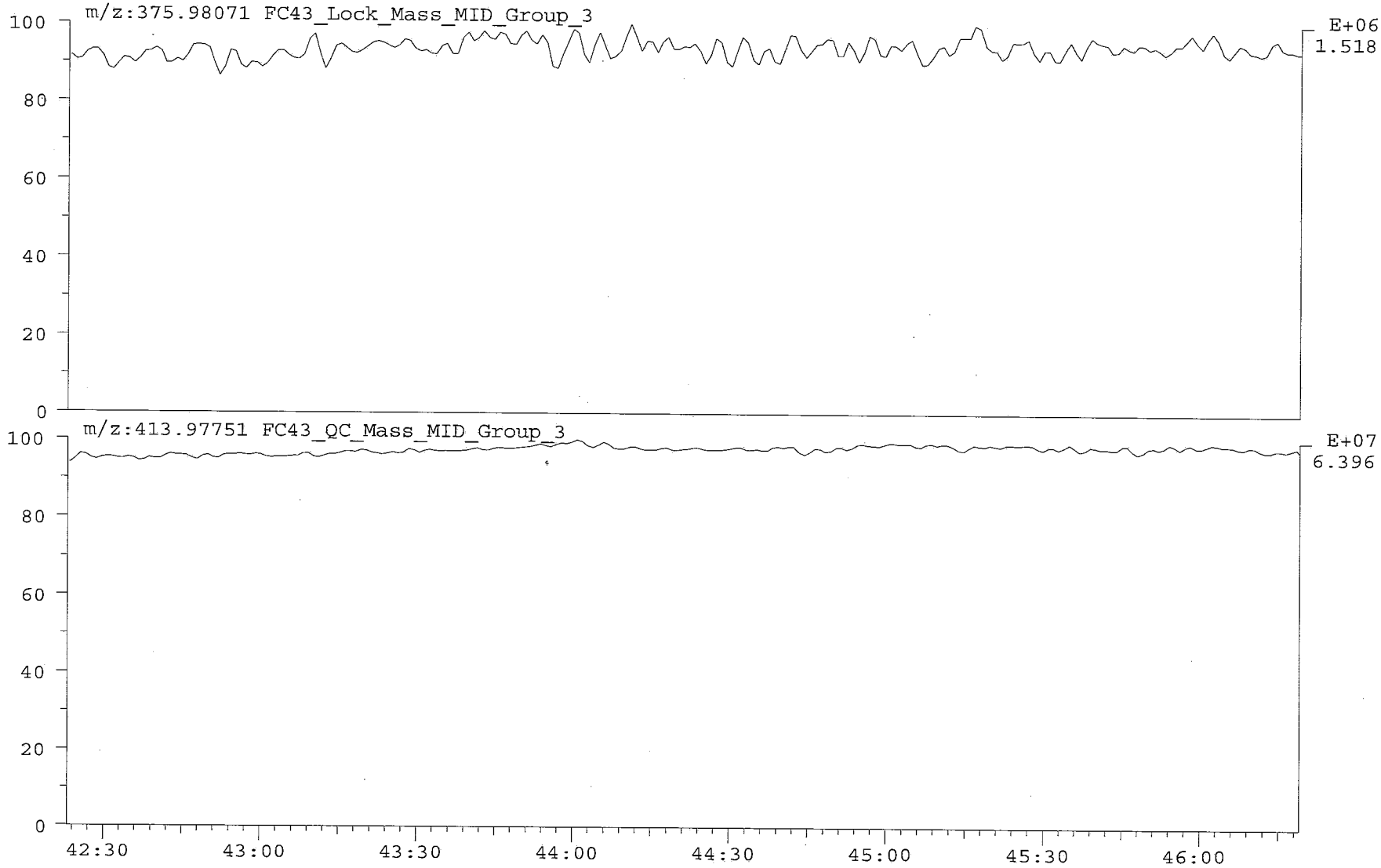
```
CHRO:  d3160803s3                          03-Aug-16  Elapse:  44:04      1899
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  20:59:49   2678
Comm:  Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1895 > 1903      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



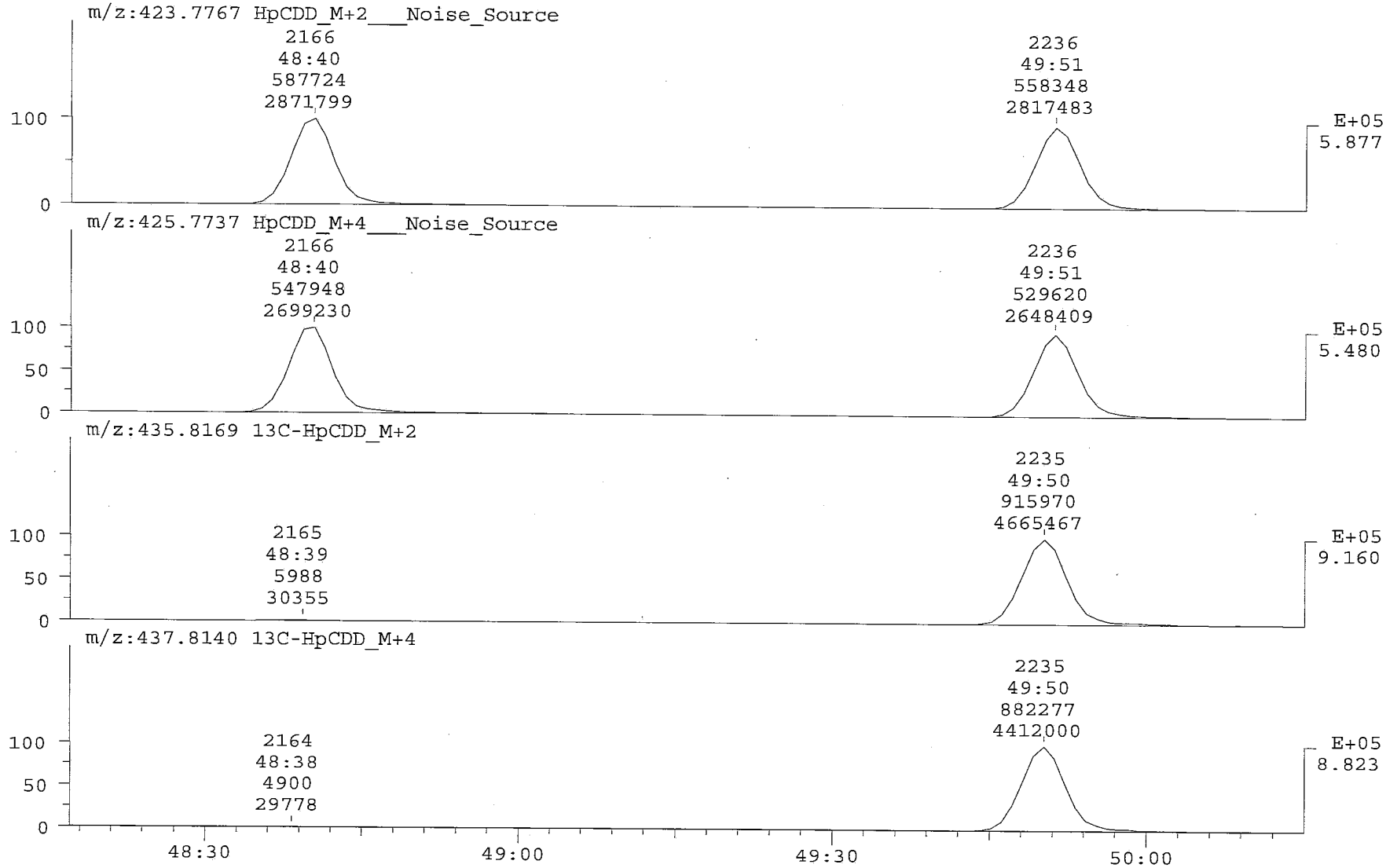
```
CHRO:  d3160803s3                                03-Aug-16  Elapse:  44:04      1899
Samp:  WO=4966:40 Meth=F8o Dil=1                            Start :  20:59:49   2678
Comm:  Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  Ver/Win
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1799 > 2032            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



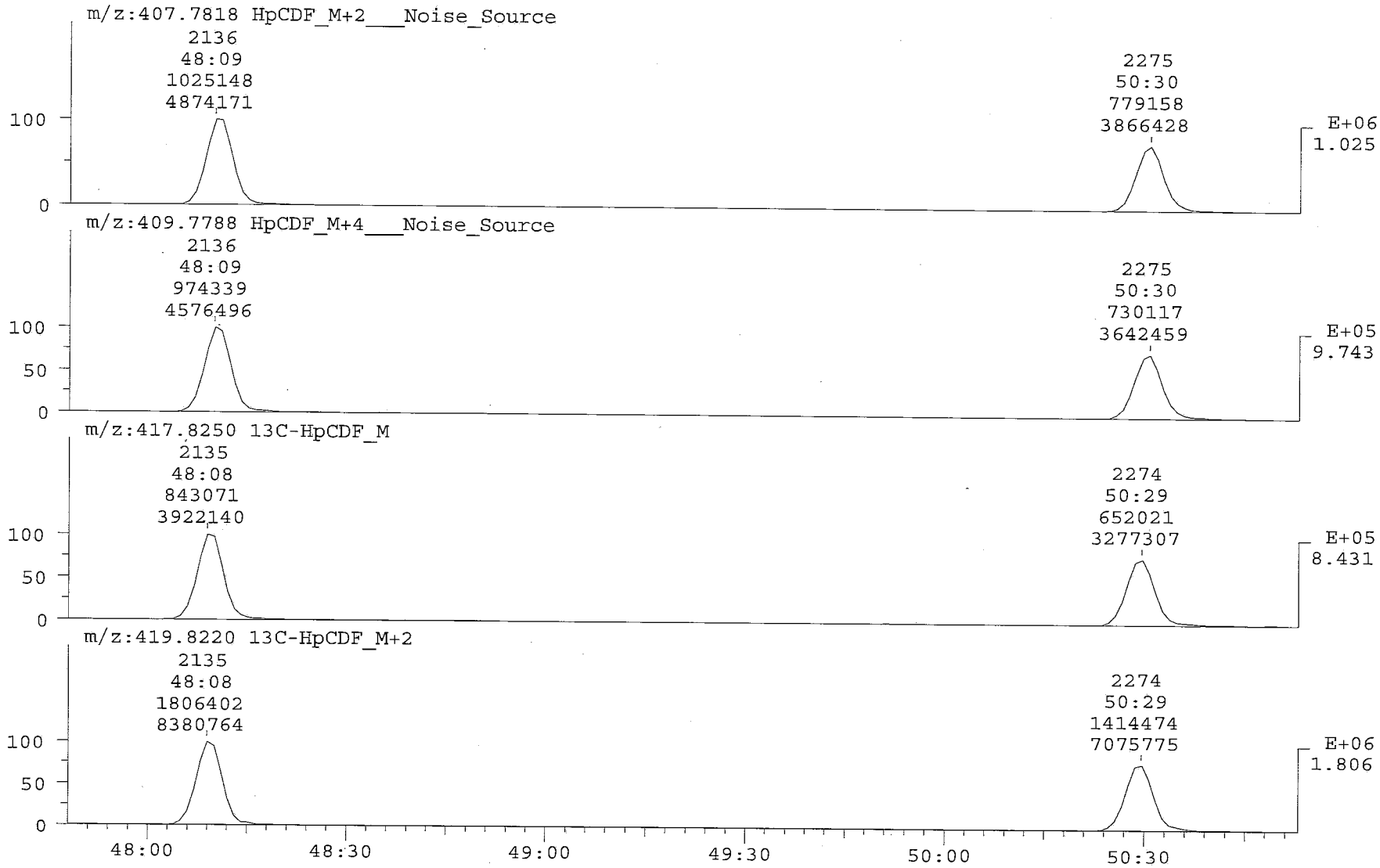
CHRO: d3160803s3 03-Aug-16 Elapse: 44:04 1899
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1799 > 2032 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



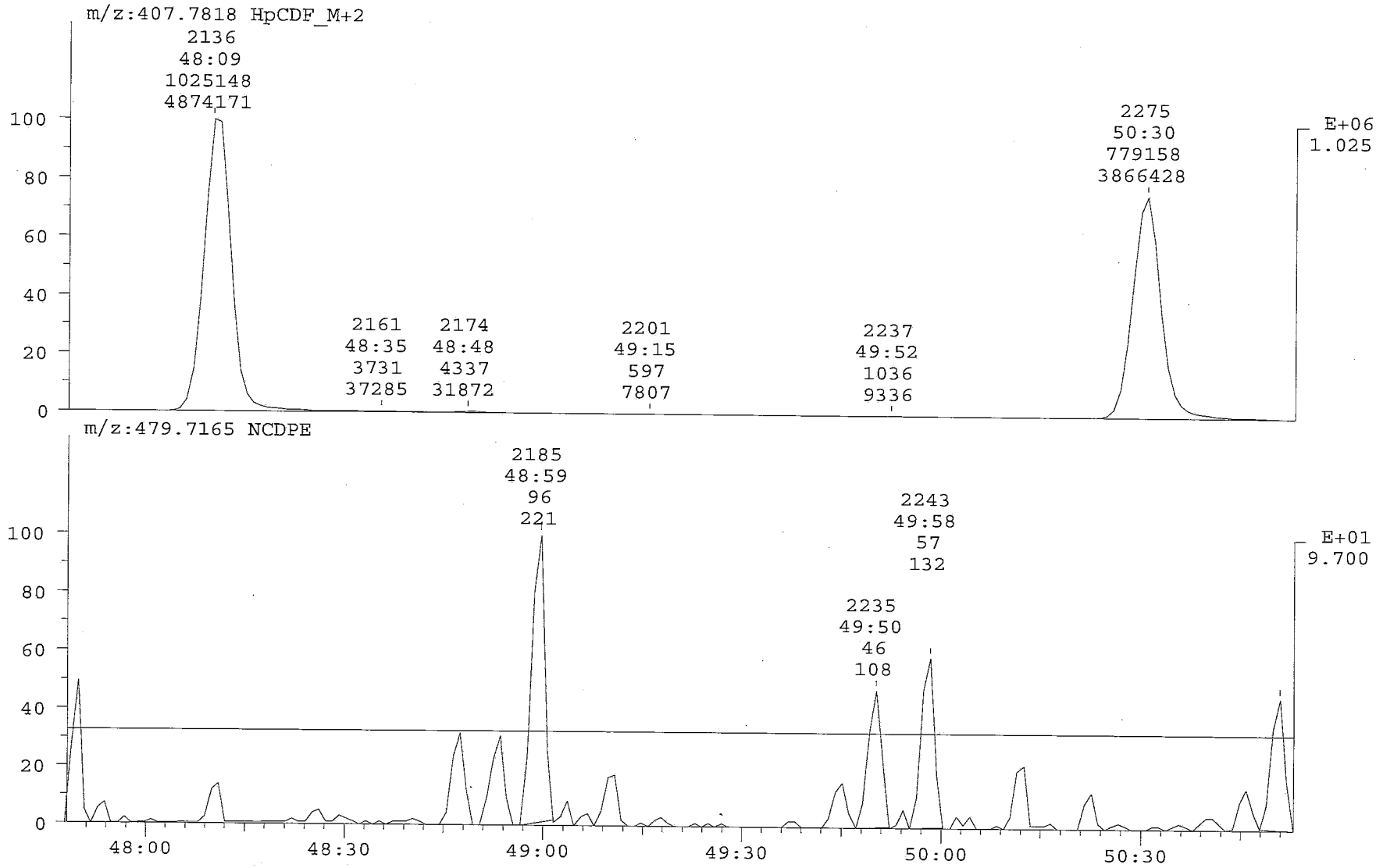
CHRO: d3160803s3 03-Aug-16 Elapse: 44:04 1899
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2143 > 2260 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



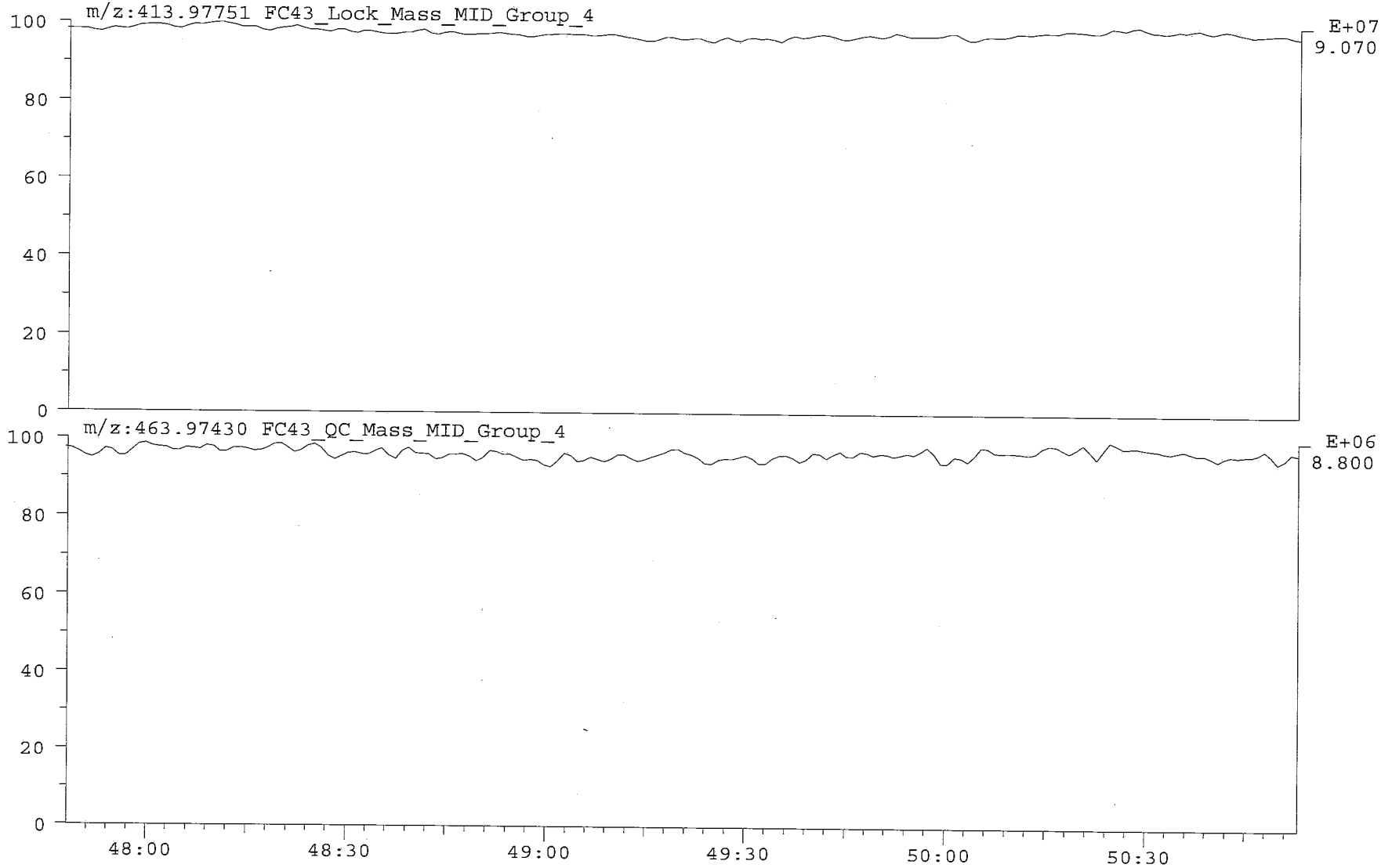
CHRO: d3160803s3 03-Aug-16 Elapse: 49:19 2205
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2114 > 2297 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



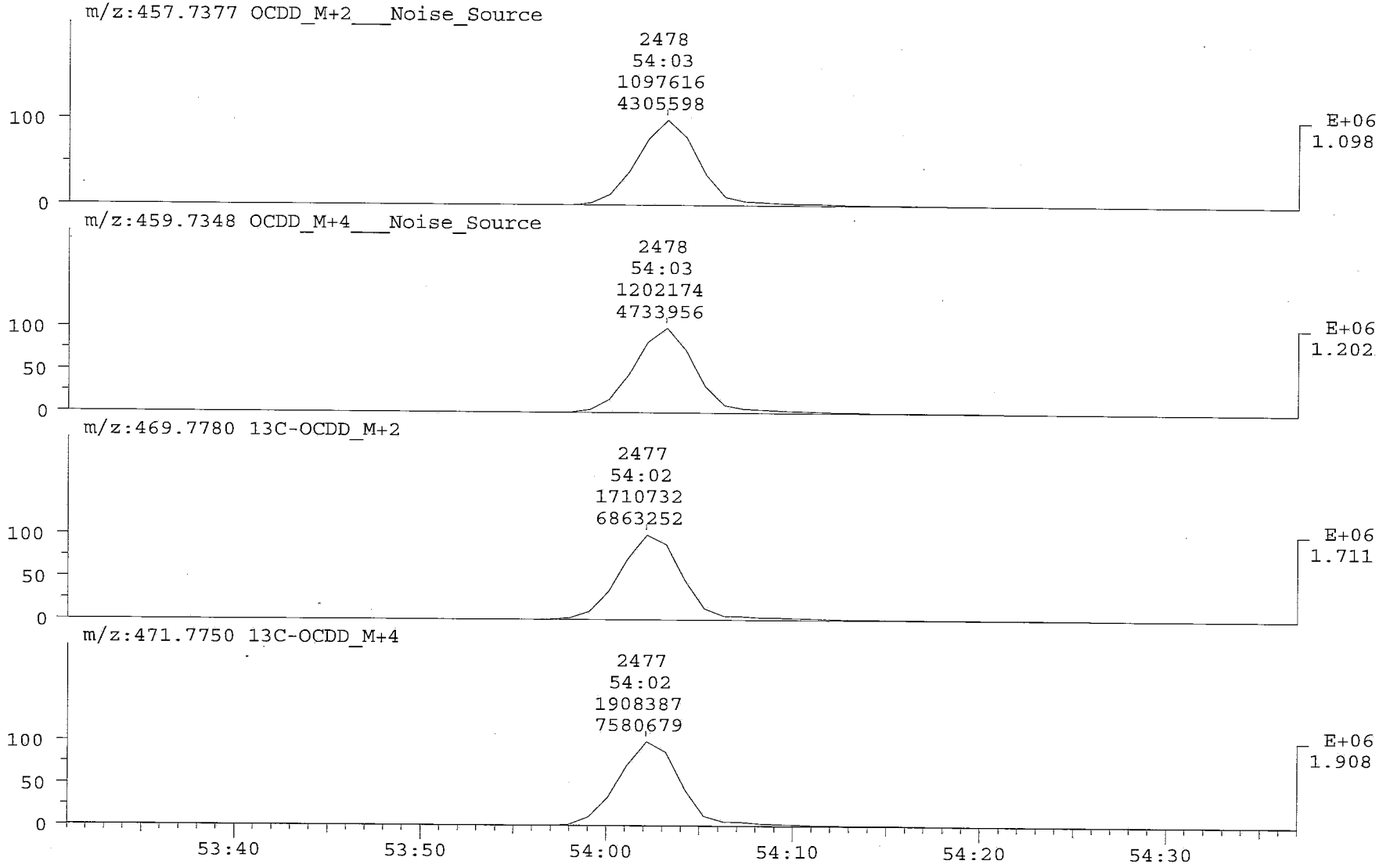
CHRO: d3160803s3 03-Aug-16 Elapse: 49:19 2205
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2114 > 2297 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



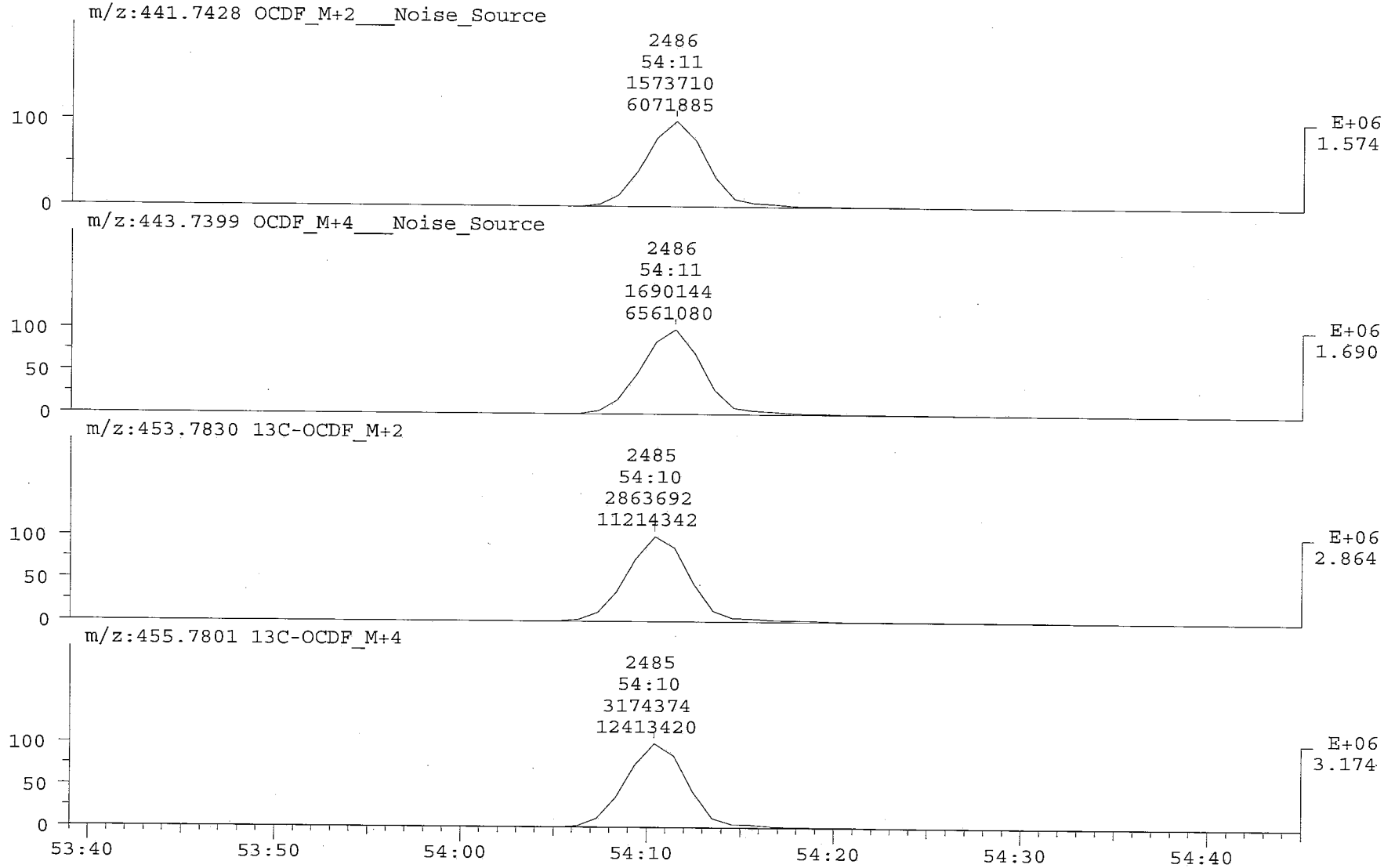
```
CHRO:  d3160803s3                                03-Aug-16  Elapse:  49:19      2205
Samp:  WO=4966:40 Meth=F8o Dil=1                            Start :  20:59:49   2678
Comm:  Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  Ver/Win
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2114 > 2297            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  0, 0.0
Disp:  Height  Area
```



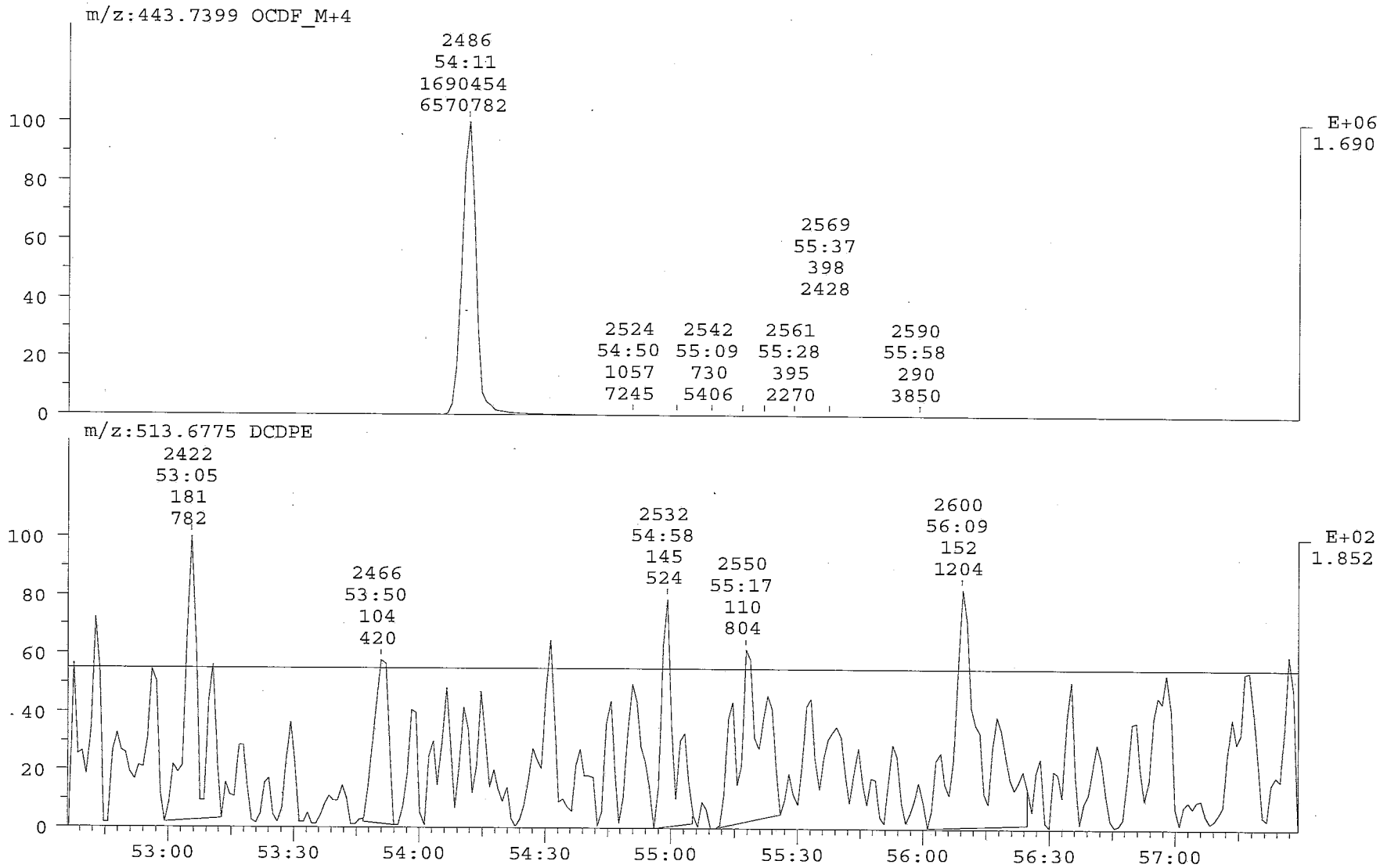
CHRO: d3160803s3 03-Aug-16 Elapse: 54:01 2476
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2447 > 2511 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



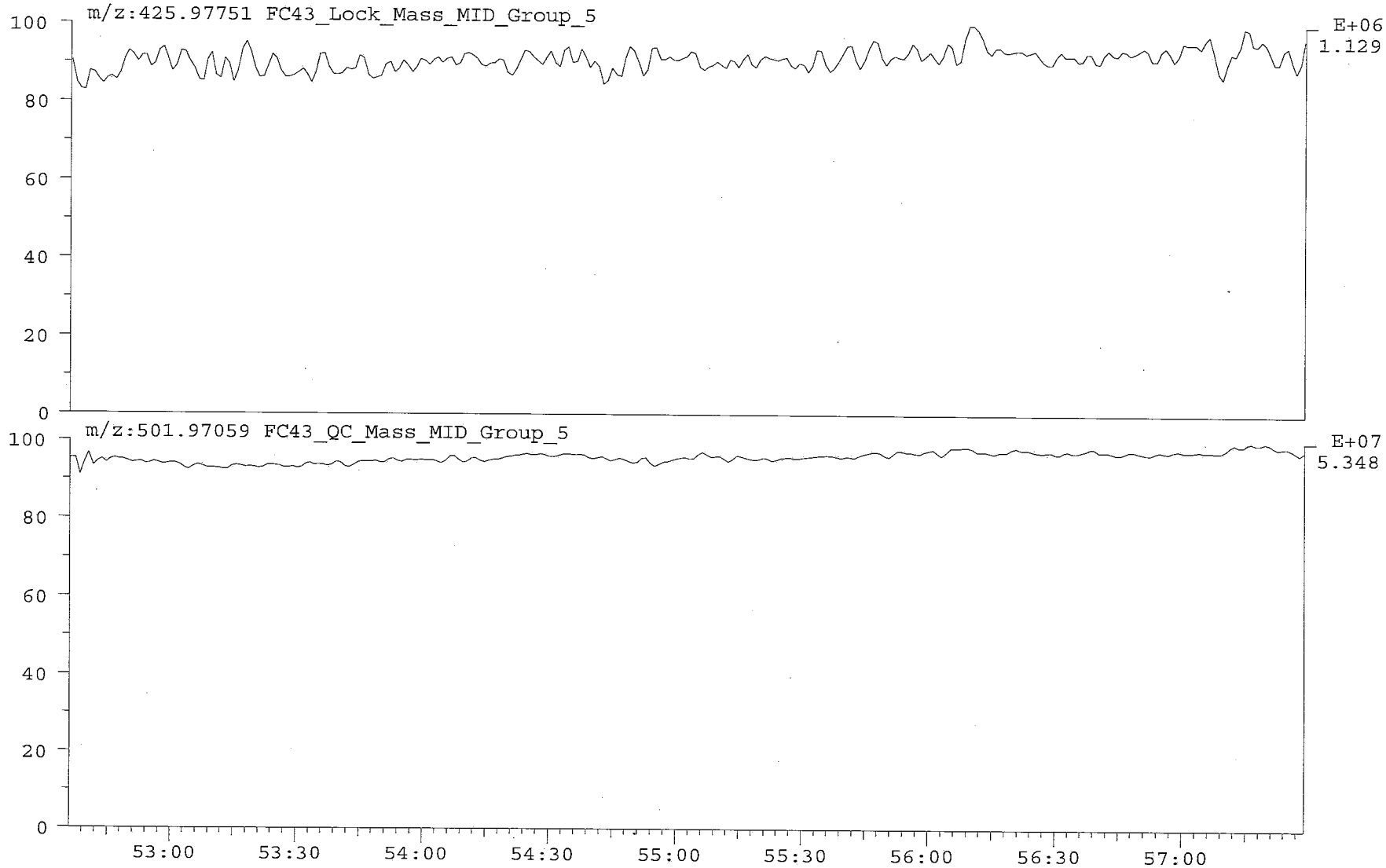
```
CHRO:  d3160803s3                                03-Aug-16  Elapse:  54:09      2484
Samp:  WO=4966:40 Meth=F8o Dil=1                            Start :  20:59:49   2678
Comm:  Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  Ver/Win
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2455 > 2519            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d3160803s3 03-Aug-16 Elapse: 54:09 2484
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2394 > 2677 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d3160803s3 03-Aug-16 Elapse: 54:09 2484
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 20:59:49 2678
Comm: Inst=d2a/1379923 Batch=20160803s3 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2394 > 2677 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Wed Aug 03 21:02:15 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - D5FBM84J

Analysis started at: 03-Aug-16 21:02:14

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence :

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	22:47 min	34:47 min	0.99 sec
# 2	34:47 min	7:21 min	42:08 min	1.00 sec
# 3	42:08 min	4:51 min	47:00 min	1.00 sec
# 4	47:00 min	5:30 min	52:30 min	1.00 sec
# 5	52:30 min	5:00 min	57:30 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	122
305.8987		1	1	122
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	122
321.8936		1	1	122
327.8847		1	1	122
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	122

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7

```
  375.9802     20  1        7
  409.7974      1  1      146
 Window # 3
      mass F  int  gr  time (ms)
  373.8208      1  1      146
  375.8178      1  1      146
  375.9802 l   20  1        7
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 34.800000 minutes
MID Window end time was 34.800000 minutes
MID Window terminated after 42.150000 minutes
MID Window end time was 42.150000 minutes
MID Window terminated after 47.000000 minutes
MID Window end time was 47.000000 minutes
MID Window terminated after 52.500000 minutes
MID Window end time was 52.500000 minutes
MID Window terminated after 57.500000 minutes
MID Window end time was 57.500000 minutes

Tune file name: C:\Xcalibur\system\DFS\MSI\Tune2.DFSTune
```

DFS - Parameter

ACCU	2000.0000	BCORRS	0.0177	BMASS	306.9834
BQUAD	7.9000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	15.5000	ECORR	1.0007	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2469.0000
ELEN	-45.0000	EMULT	1687.0000	ENS	176.0000
ENSBR	7.9000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	176.0000	EXSBR	2.6000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	14.8000
FQUADGAIN	22.0000	FREQ	200.0000	FSLOPE	36000000.0000
FVANAL	0.0313	FVINLET	0.0294	FVSRC	0.0258
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	763.0000
LENS_SYM	0.0000	LM	375.8364	LMII	500.0000
LMASS	306.9834	LKM	425.9770	MASS	306.9834
MDAC	3488114.8303	MRANGE	1238.2603	NSAM	100.0000
NSCAN	2699.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-11.3000	RECURR	0.9016	RELEN	0.0000
RES	10531.0069	RPUSHER	-11.1575	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	766.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0534	TANAL	0.0000	TCURR	0.0000
TD	30.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	100.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	306.9834	XLENS_POT	988.0000
XLENS_SYM	16.5000	YLENS_POT	738.0000	YLENS_SYM	30.8000

```
Source Gauge:          1.5e-005 mbar
Analyzer Penning:      8.5e-008 mbar
Pirani Analyse:        3.1e-002 mbar
Pirani Source:         2.6e-002 mbar
Pirani Inlet System:   2.9e-002 mbar

Scantype is electric

Sourcemode is EI POS

MID Time Window 1: Resolution is 10942.
MID Time Window 2: Resolution is 10706.
MID Time Window 3: Resolution is 11062.
MID Time Window 4: Resolution is 11366.
MID Time Window 5: Resolution is 10531.

Amplifier Offset: 95.


*** File closed Wed Aug 03 21:59:45 2016
 ***
```

User: finnigan
Host: knx-alpha5.tai.com
Class: knx-alpha5.tai.com
Job: d3160803s3.log

TestAmerica Knoxville Dioxin GC/MS Continuing Calibration Review / Narrative Checklist
Method: 8290/8290A - KNOX-ID-0004-R16

Start Mass Res. ✓:	13:46	Ver Filename:	d31608095l	Inst:	D7A
End Mass Res. ✓:	00:43	Win Filename:	↓	ICAL Date:	5-16-14
		Col Perf Filename:			
		End Ver Filename:	d31608095z		

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (MAT) and > 10,000 on FC43 m/z 313.9838, 351.9802 and 363.9807? FC43 m/z 313.9838, 351.9802 and 375.9802? FC43 m/z 375.9802, 401.9770 and 413.9770? FC43 m/z 413.9775, 425.9770 and 463.9738? FC43 m/z 425.9775, 463.9743 and 501.9706? (DFS)		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) or 363.9807 (FC43) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer on their respective columns?		✓			✓
7. Was DoD Performance check criteria met? Identification of all first and last eluters of the eight homologue retention time windows and documentation by labeling (F/L) on the chromatogram. Absolute retention times for switching from one homologous series to the next > 10 seconds for all components of the mixture.	✓				✓
8. Were continuing calibrations performed at the beginning and end of the 12-hour period, with successful mass resolution and GC resolution performance checks?		✓			✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 3), quantitation ions (Table 21), and formula (Section 10.2.7)?		✓			✓
10. Are the measured RRFs for each compound within the specified control limits in Table 7 for all PCDDs/PCDFs?		✓			✓
11. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 3?		✓			✓
12. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
13. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP?		✓			✓
14. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
15. Were before/after chromatograms reviewed to determine whether the software and manual integrations were appropriate?.		✓			✓
16. Were manual integrations documented properly?	✓				✓
17. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
18. Does the CCAL folder contain **complete** data in the following order: Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK/FC43 resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards?		✓			✓

Analyst:	**Date:** 8/9/14	**2nd Level Reviewer :** LK	**Date:** 8-9-16
Comments:		**Comments:**	

ID022R26.doc, 061616

TESTAMERICA KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT RUN LOG
Inst: DFS 2

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
8-4-16	10:54	MLD	Nonane	rinse	ok	—	QC		rinse
8-4-16	11:10	MLD	↓	↓	ok	—	QC		↓
8-4-16	11:28	MLD	FC43	d2160804r2	ok	—	Res		Mass Res Check
8-4-16	11:36	MLD	Nonane	rinse	ok	—	QC		rinses
8-4-16	11:47	MLD	↓	↓	ok	—	QC		↓
8-4-16	12:05	MLD	M81DJ1AA	d2tm81pjba	ok	solid	QC		H6G280000-010B
8-4-16	13:06	MLD	M81NL1AA	d2tm81nl	ok	solid	SAM		H6G280401-006
8-4-16	14:08	MLD	M81NM1AA	d2tm81nm	ok	solid	SAM		-007
8-4-16	15:09	MLD	M81NN1AA	d2tm81nn	ok	solid	SAM		-008
8-4-16	16:10	MLD	M81NP1AA	d2tm81np	ok	solid	SAM		-009
8-4-16	17:11	MLD	M81NQ1AA	d2tm81nq	ok	solid	SAM		-010
8-4-16	18:12	MLD	M81NR1AA	d2tm81nr	ok	solid	SAM		-011
8-4-16	19:13	MLD	M81NT1AA	d2tm81nt	ok	solid	SAM		-012
8-4-16	20:14	MLD	Nonane	rinse	ok	—	QC		rinse
8-4-16	20:30	MLD	M81PJ1AC	d2tm81pjc	ok	solid	QC		H6G280000-010C
8-4-16	21:32	MLD	4966:40	d3160804s3	ok	—	Ver Win		Ver Win
8-4-16	22:45	LK	FC-43	d2160804r3	ok	—	Res		Mass Res Check
8-4-16	22:57	LK	nonane	rinse	ok	—	QC		flush
8-4-16	23:13	LKM	↓	↓	ok	—	QC		↓
8-4-16	23:29	LKM	↓	↓	ok	—	QC		↓
8-4-16	23:45	LKM	↓	↓	ok	—	QC		↓
8-4-16	23:59	LKM	M81PJ1AA	d2tm81pjbb	ok	Solid	QC		System Blank
8-5-16	1:00	LKM	M81NT2AA	d2tm81nt2	OK	Solid	SAM		H6G280401-012
8-5-16	1:51	LK	nonane	rinse	OK	—	QC		flush
8-5-16	2:13	LK	↓	↓	OK	—	QC		↓
8-5-16	2:27	LK	4966:40	d3160805s1	OK	—	Ver		Ver/window
8-5-16	3:39	LK	FC-43	d2160805r1	ok	—	Res		Mass Res Check
8-9-16	13:46	MLD	FC43	d2160809r1	OK	—	Res		↓
8-9-16	13:54	MLD	4966:40	d3160809s1	OK	—	Ver Win		Ver Win
8-9-16	14:54	MLD	Nonane	rinse	OK	—	QC		rinse
8-9-16	15:10	MLD	↓	↓	OK	—	QC		↓
8-9-16	15:16	MLD	↓	↓	OK	—	QC		↓

Read and Understood by: MLD Date: 8-9-16

TESTAMERICA KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT RUN LOG
Inst: DFS 2

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	Lot#/Comments
8.9.16	15:31	MID	Noname	rinse	ok	—	QC		rinse
8.9.16	15:58	MID	M812A1AA	d27m812ab	ok	H2O	QC		supplK
8.9.16	17:00	MID	M81021AA	d27m8102	ok	H2O	AM		H6G290407-001
8.9.16	18:01	MID	M81041AA	d27m8104	ok	H2O	AM		H6G290403.001
8.9.16	19:02	MID	M81061AA	d27m8106	ok	H2O	AM		-002
8.9.16	20:03	MID	M8115 1AA	d27m8115	ok	H2O	AM		H6G290408-016
8.9.16	21:04	MID	M81041AC	d27m8104S	ok	H2O	QC		H6G290403-001S
8.9.16	22:05	MID	M8104 1AD	d27m8104d	ok	H2O	QC		↓ -001D
8.9.16	23:06	MID	Noname	rinse	ok	—	QC		rRinse
8.9.16	23:31	MID	4966:40	d31608092	ok	—	[illegible]		CS3Qu
8-10-16	00:43	LN	FC-43	d21608101r1	ok	—	Ros		MassRosCheck

Read and Understood by: _____ Date: _____

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

CCAL ID: 89653 - D3160809S1
CCAL Filename: d3160809s1
CCAL Sample ID: 4966:40
CCAL Result Dir: /20160809s1/d3160809s1.d
CCAL Date/Time: 08/09/16 13:54

ICAL Date: 05/16/14
Method: IN2o - DX8290_2
Instrument: D2A
Column SN: 1379923
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	8.9	1.171	1.047	-10.6	20.0	True
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	8.3	1.090	0.905	-17.0	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	48	1.047	0.997	-4.8	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32-1.78	46	1.187	1.085	-8.6	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.52	1.32-1.78	45	1.105	0.987	-10.6	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	47	1.140	1.062	-6.8	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.22	1.05-1.43	47	1.146	1.089	-5.0	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	47	1.210	1.129	-6.8	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	44	1.364	1.195	-12.4	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	44	1.278	1.118	-12.5	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	44	1.267	1.128	-11.0	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05-1.43	44	1.285	1.118	-13.0	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88-1.20	46	1.121	1.042	-7.0	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88-1.20	43	1.497	1.287	-14.0	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88-1.20	44	1.383	1.220	-11.8	20.0	True
OCDD	M+2/M+4	0.89	0.76-1.02	89	1.243	1.107	-11.0	20.0	True
OCDF	M+2/M+4	0.90	0.76-1.02	82	1.119	0.913	-18.4	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	95	1.067	1.014	-5.0	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	74	1.750	1.301	-25.7	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.61	1.32-1.78	98	0.873	0.852	-2.4	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	92	1.368	1.253	-8.4	30.0	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32-1.78	92	1.381	1.267	-8.2	30.0	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	108	0.893	0.963	7.9	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	100	0.929	0.928	-0.2	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	100	1.213	1.214	0.1	30.0	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	92	1.489	1.370	-7.9	30.0	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	96	1.346	1.292	-4.1	30.0	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43-0.59	81	1.210	0.975	-19.4	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	103	0.823	0.846	2.8	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	85	1.069	0.914	-14.5	30.0	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.37-0.51	74	0.904	0.674	-25.5	30.0	True
13C-OCDD	M+2/M+4	0.88	0.76-1.02	192	0.708	0.680	-3.9	30.0	True
13C-OCDF	M+2/M+4	0.92	0.76-1.02	171	1.072	0.916	-14.6	30.0	True

JMD 8/9/16

Qod 8-9-16

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

CCAL ID: 89653 - D3160809S1
CCAL Filename: d3160809s1
CCAL Sample ID: 4966:40
CCAL Result Dir: /20160809s1/d3160809s1.d
CCAL Date/Time: 08/09/16 13:54

ICAL Date: 05/16/14
Method: IN2o - DX8290_2
Instrument: D2A
Column SN: 1379923
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	31:51	31:23	-28	1.002	1.002	-	
2,3,7,8-TCDF	29:45	29:19	-26	1.001	1.001	-	
1,2,3,7,8-PeCDD	41:00	40:49	-11	1.000	1.000	-	
1,2,3,7,8-PeCDF	39:17	39:04	-13	1.000	1.000	-	
2,3,4,7,8-PeCDF	40:29	40:17	-12	1.000	1.000	-	
1,2,3,4,7,8-HxCDD	45:14	45:03	-11	1.000	1.000	-	
1,2,3,6,7,8-HxCDD	45:21	45:10	-11	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	45:45	45:34	-11	1.009	1.009	-	
1,2,3,4,7,8-HxCDF	44:11	44:02	-9	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	44:19	44:10	-9	1.000	1.000	-	
2,3,4,6,7,8-HxCDF	45:03	44:53	-10	1.000	1.000	-	
1,2,3,7,8,9-HxCDF	46:01	45:50	-11	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDD	50:10	49:55	-15	1.000	1.001	-	
1,2,3,4,6,7,8-HpCDF	48:27	48:14	-13	1.000	1.001	-	
1,2,3,4,7,8,9-HpCDF	50:48	50:34	-14	1.000	1.000	-	
OCDD	54:17	54:05	-12	1.000	1.000	-	
OCDF	54:25	54:14	-11	1.000	1.000	-	
13C-2,3,7,8-TCDD	31:47	31:19	-28	1.017	1.016	-	
13C-2,3,7,8-TCDF	29:43	29:17	-26	0.950	0.950	-	
13C-1,2,3,7,8-PeCDD	40:59	40:48	-11	1.311	1.324	-	
13C-1,2,3,7,8-PeCDF	39:16	39:03	-13	1.256	1.267	-	
13C-2,3,4,7,8-PeCDF	40:28	40:16	-12	1.295	1.307	-	
13C-1,2,3,4,7,8-HxCDD	45:13	45:02	-11	0.989	0.989	-	
13C-1,2,3,6,7,8-HxCDD	45:20	45:09	-11	0.991	0.991	-	
13C-1,2,3,4,7,8-HxCDF	44:10	44:01	-9	0.966	0.966	-	
13C-1,2,3,6,7,8-HxCDF	44:18	44:09	-9	0.969	0.969	-	
13C-2,3,4,6,7,8-HxCDF	45:02	44:52	-10	0.985	0.985	-	
13C-1,2,3,7,8,9-HxCDF	46:00	45:49	-11	1.006	1.006	-	
13C-1,2,3,4,6,7,8-HpCDD	50:09	49:53	-16	1.097	1.095	-	
13C-1,2,3,4,6,7,8-HpCDF	48:26	48:12	-14	1.059	1.058	-	
13C-1,2,3,4,7,8,9-HpCDF	50:47	50:33	-14	1.110	1.110	-	
13C-OCDD	54:16	54:05	-11	1.187	1.187	-	
13C-OCDF	54:24	54:14	-10	1.190	1.191	-	

TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

CCAL ID: 89653 - D3160809S1

WIN Filename: d3160809s1

Method: IN2o - DX8290_2

WIN Sample ID: 4966:40

Instrument: D2A

WIN Result Dir: /20160809s1/d3160809s1.d

Column SN: 1379923

WIN Date/Time: 08/09/16 13:54

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	31:19	25:20	0.8089	34:31	1.1022
Total TCDF	13C-2,3,7,8-TCDF	304	29:17	22:52	0.7809	34:23	1.1742
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	40:48	37:57	0.9301	41:29	1.0167
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	39:03	35:07	0.8993	41:36	1.0653
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	45:09	43:28	0.9627	45:34	1.0092
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	44:01	42:48	0.9724	45:58	1.0443
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	49:53	48:43	0.9766	49:55	1.0007
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	48:12	48:14	1.0007	50:34	1.0491
OCDD	13C-OCDD	458	54:05	54:05	1.0000	54:05	1.0000
OCDF	13C-OCDF	442	54:14	54:14	1.0000	54:14	1.0000

TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89654 - D3160809S1
CCAL Filename: d3160809s1
CCAL Sample ID: 4966:40
CCAL Result Dir: /20160809s1/d3160809s1.d
CCAL Date/Time: 08/09/16 13:54

ICAL Date: 05/16/14
Method: 9Ao - DX8290A
Instrument: D2A
Column SN: 1379923
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	8.9	1.171	1.047	-10.6	20.0	True
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	8.3	1.090	0.905	-17.0	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	48	1.047	0.997	-4.8	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32-1.78	46	1.187	1.085	-8.6	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.52	1.32-1.78	45	1.105	0.987	-10.6	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	47	1.140	1.062	-6.8	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.22	1.05-1.43	47	1.146	1.089	-5.0	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	47	1.210	1.129	-6.8	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	44	1.364	1.195	-12.4	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	44	1.278	1.118	-12.5	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	44	1.267	1.128	-11.0	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05-1.43	44	1.285	1.118	-13.0	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88-1.20	46	1.121	1.042	-7.0	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88-1.20	43	1.497	1.287	-14.0	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88-1.20	44	1.383	1.220	-11.8	20.0	True
OCDD	M+2/M+4	0.89	0.76-1.02	89	1.243	1.107	-11.0	20.0	True
OCDF	M+2/M+4	0.90	0.76-1.02	82	1.119	0.913	-18.4	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	95	1.067	1.014	-5.0	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	74	1.750	1.301	-25.7	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.61	1.32-1.78	98	0.873	0.852	-2.4	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	92	1.368	1.253	-8.4	30.0	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32-1.78	92	1.381	1.267	-8.2	30.0	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	108	0.893	0.963	7.9	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	100	0.929	0.928	-0.2	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	100	1.213	1.214	0.1	30.0	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	92	1.489	1.370	-7.9	30.0	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	96	1.346	1.292	-4.1	30.0	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43-0.59	81	1.210	0.975	-19.4	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	103	0.823	0.846	2.8	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	85	1.069	0.914	-14.5	30.0	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.37-0.51	74	0.904	0.674	-25.5	30.0	True
13C-OCDD	M+2/M+4	0.88	0.76-1.02	192	0.708	0.680	-3.9	30.0	True
13C-OCDF	M+2/M+4	0.92	0.76-1.02	171	1.072	0.916	-14.6	30.0	True

MMP 8/9/16

QCD 8-9-16

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID:	89654 - D3160809S1	ICAL Date:	05/16/14
CCAL Filename:	d3160809s1	Method:	9Ao - DX8290A
CCAL Sample ID:	4966:40	Instrument:	D2A
CCAL Result Dir:	/20160809s1/d3160809s1.d	Column SN:	1379923
CCAL Date/Time:	08/09/16 13:54	Column Desc:	Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	31:51	31:23	-28	1.002	1.002	-	
2,3,7,8-TCDF	29:45	29:19	-26	1.001	1.001	-	
1,2,3,7,8-PeCDD	41:00	40:49	-11	1.000	1.000	-	
1,2,3,7,8-PeCDF	39:17	39:04	-13	1.000	1.000	-	
2,3,4,7,8-PeCDF	40:29	40:17	-12	1.000	1.000	-	
1,2,3,4,7,8-HxCDD	45:14	45:03	-11	1.000	1.000	-	
1,2,3,6,7,8-HxCDD	45:21	45:10	-11	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	45:45	45:34	-11	1.009	1.009	-	
1,2,3,4,7,8-HxCDF	44:11	44:02	-9	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	44:19	44:10	-9	1.000	1.000	-	
2,3,4,6,7,8-HxCDF	45:03	44:53	-10	1.000	1.000	-	
1,2,3,7,8,9-HxCDF	46:01	45:50	-11	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDD	50:10	49:55	-15	1.000	1.001	-	
1,2,3,4,6,7,8-HpCDF	48:27	48:14	-13	1.000	1.001	-	
1,2,3,4,7,8,9-HpCDF	50:48	50:34	-14	1.000	1.000	-	
OCDD	54:17	54:05	-12	1.000	1.000	-	
OCDF	54:25	54:14	-11	1.000	1.000	-	
13C-2,3,7,8-TCDD	31:47	31:19	-28	1.017	1.016	-	
13C-2,3,7,8-TCDF	29:43	29:17	-26	0.950	0.950	-	
13C-1,2,3,7,8-PeCDD	40:59	40:48	-11	1.311	1.324	-	
13C-1,2,3,7,8-PeCDF	39:16	39:03	-13	1.256	1.267	-	
13C-2,3,4,7,8-PeCDF	40:28	40:16	-12	1.295	1.307	-	
13C-1,2,3,4,7,8-HxCDD	45:13	45:02	-11	0.989	0.989	-	
13C-1,2,3,6,7,8-HxCDD	45:20	45:09	-11	0.991	0.991	-	
13C-1,2,3,4,7,8-HxCDF	44:10	44:01	-9	0.966	0.966	-	
13C-1,2,3,6,7,8-HxCDF	44:18	44:09	-9	0.969	0.969	-	
13C-2,3,4,6,7,8-HxCDF	45:02	44:52	-10	0.985	0.985	-	
13C-1,2,3,7,8,9-HxCDF	46:00	45:49	-11	1.006	1.006	-	
13C-1,2,3,4,6,7,8-HpCDD	50:09	49:53	-16	1.097	1.095	-	
13C-1,2,3,4,6,7,8-HpCDF	48:26	48:12	-14	1.059	1.058	-	
13C-1,2,3,4,7,8,9-HpCDF	50:47	50:33	-14	1.110	1.110	-	
13C-OCDD	54:16	54:05	-11	1.187	1.187	-	
13C-OCDF	54:24	54:14	-10	1.190	1.191	-	

TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89654 - D3160809S1

WIN Filename: d3160809s1

Method: 9Ao - DX8290A

WIN Sample ID: 4966:40

Instrument: D2A

WIN Result Dir: /20160809s1/d3160809s1.d

Column SN: 1379923

WIN Date/Time: 08/09/16 13:54

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	31:19	25:20	0.8089	34:31	1.1022
Total TCDF	13C-2,3,7,8-TCDF	304	29:17	22:52	0.7809	34:23	1.1742
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	40:48	37:57	0.9301	41:29	1.0167
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	39:03	35:07	0.8993	41:36	1.0653
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	45:09	43:28	0.9627	45:34	1.0092
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	44:01	42:48	0.9724	45:58	1.0443
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	49:53	48:43	0.9766	49:55	1.0007
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	48:12	48:14	1.0007	50:34	1.0491
OCDD	13C-OCDD	458	54:05	54:05	1.0000	54:05	1.0000
OCDF	13C-OCDF	442	54:14	54:14	1.0000	54:14	1.0000

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:40	Prep Batch		Lot No	
Data File	/20160809s1/d3160809s1.d	Prep Date		SDG No	
Analysis ID	180144	Prep Exp Date		Date Received	
Analysis Date	8/9/2016	Matrix	UNKNOWN	Date Sampled	
Analysis Time	13:54	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D2A	Dil Factor	1.00	Code	F8o
Analyst	MSD				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)		DL (ng/mL)
2,3,7,8-TCDD	31:23	1954238	197206	1.171	10.00	8.942131	89.42	8.942131	E	0.0166
Total TCDD		9086267	1039847	1.171		50.518742		50.518742	E	0.0166
2,3,7,8-TCDF	29:19	2166701	236000	1.090	10.00	8.302666	83.03	8.302666	E	0.00862
Total TCDF		5254616	680966	1.090		28.438034		28.438034	E	0.00862
1,2,3,7,8-PeCDD	40:49	7825549	1917002	1.047	50.00	47.621250	95.24	47.621250	E	0.00829
Total PeCDD		16345164	3478689	1.047		147.087389		147.087389	E	0.00829
1,2,3,7,8-PeCDF	39:04	12513171	2605417	1.187	50.00	45.678486	91.36	45.678486	E	0.00893
2,3,4,7,8-PeCDF	40:17	11511936	2697268	1.105	50.00	44.684295	89.37	44.684295	E	0.00833
Total PeCDF		22955055	4153911	1.146		176.713551		176.713551	E	0.00860
1,2,3,4,7,8-HxCDD	45:03	7380746	2057708	1.140	50.00	46.604021	93.21	46.604021	E	0.0109
1,2,3,6,7,8-HxCDD	45:10	7284668	1946044	1.146	50.00	47.489489	94.98	47.489489	E	0.0117
1,2,3,7,8,9-HxCDD	45:34	7697265	1984800	1.210	50.00	46.624970	93.25	46.624970	E	0.0107
Total HxCDD		9125735	2546668	1.166		198.128387		198.128387	E	0.0111
1,2,3,4,7,8-HxCDF	44:02	10464002	2854693	1.364	50.00	43.795526	87.59	43.795526	E	0.00793
1,2,3,6,7,8-HxCDF	44:10	11053523	2916776	1.278	50.00	43.755941	87.51	43.755941	E	0.00778
2,3,4,6,7,8-HxCDF	44:53	10507677	2706915	1.267	50.00	44.496635	88.99	44.496635	E	0.00853
1,2,3,7,8,9-HxCDF	45:50	7863029	2034479	1.285	50.00	43.509563	87.02	43.509563	E	0.0113
Total HxCDF		18863872	5034303	1.299		258.588836		258.588836	E	0.00870
1,2,3,4,6,7,8-HpCDD	49:55	6361998	1299100	1.121	50.00	46.488680	92.98	46.488680	E	0.0117
Total HpCDD		6329909	1383253	1.121		92.742878		92.742878	E	0.0117
1,2,3,4,6,7,8-HpCDF	48:14	8483889	1867082	1.497	50.00	42.981152	85.96	42.981152	E	0.00766
1,2,3,4,7,8,9-HpCDF	50:34	5926676	1271526	1.383	50.00	44.096862	88.19	44.096862	E	0.0116
Total HpCDF				1.440		87.078014		87.078014	E	0.00928
OCDD	54:05	10854226	2851074	1.243	100.0	89.013965	89.01	89.013965	E	0.0164
OCDF	54:14	12066445	3281789	1.119	100.0	81.601541	81.60	81.601541	E	0.00529
13C-2,3,7,8-TCDD	31:19	18663156	1938797	1.067	100.0	94.992223	94.99	94.992223		0.0113
13C-2,3,7,8-TCDF	29:17	23950165	2689292	1.750	100.0	74.342199	74.34	74.342199		0.0102
13C-1,2,3,7,8-PeCDD	40:48	15691465	3799358	0.873	100.0	97.617225	97.62	97.617225		0.00699
13C-1,2,3,7,8-PeCDF	39:03	23076245	4739289	1.368	100.0	91.595406	91.60	91.595406		0.00882
13C-2,3,4,7,8-PeCDF	40:16	23322560	5463694	1.381	100.0	91.758556	91.76	91.758556		0.00874
13C-1,2,3,4,7,8-HxCDD	45:02	13895084	3853859	0.893	100.0	107.886815	107.89	107.886815		0.0145
13C-1,2,3,6,7,8-HxCDD	45:09	13381814	3569229	0.929	100.0	99.823619	99.82	99.823619		0.0139
13C-1,2,3,4,7,8-HxCDF	44:01	17519002	4806301	1.213	100.0	100.093995	100.09	100.093995		0.0105
13C-1,2,3,6,7,8-HxCDF	44:09	19768754	5232373	1.489	100.0	92.063483	92.06	92.063483		0.00852
13C-2,3,4,6,7,8-HxCDF	44:52	18631548	4812280	1.346	100.0	95.937308	95.94	95.937308		0.00942
13C-1,2,3,7,8,9-HxCDF	45:49	14061603	3569927	1.210	100.0	80.586501	80.59	80.586501		0.0105
13C-1,2,3,4,6,7,8-HpCDD	49:53	12210478	2548794	0.823	100.0	102.833559	102.83	102.833559		0.00668
13C-1,2,3,4,6,7,8-HpCDF	48:12	13184388	2922713	1.069	100.0	85.463988	85.46	85.463988		0.00784
13C-1,2,3,4,7,8,9-HpCDF	50:33	9716060	2089514	0.904	100.0	74.497867	74.50	74.497867		0.00928
13C-OCDD	54:05	19617205	5247901	0.708	200.0	192.159115	96.08	192.159115		0.00967
13C-OCDF	54:14	26419976	7179821	1.072	200.0	170.814014	85.41	170.814014		0.00388
37Cl4-2,3,7,8-TCDD	31:23	1949822	199338	1.220	10.00	8.682144	86.82	8.682144	E	0.00886
13C-1,2,3,4-TCDD	30:49	18410321	1967269	1.000	100.0	100.000000	100.00	100.000000		0.0121
13C-1,2,3,7,8,9-HxCDD	45:33	14425796	3726545	1.000	100.0	100.000000	100.00	100.000000		0.0129

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:40	Prep Batch		Lot No	
Data File	/20160809s1/d3160809s1	Prep Date		SDG No	
Analysis ID	180144	Prep Exp Date		Date Received	
Analysis Date	08/09/16 13:54	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	130	123	52	49	1.06 *	/	
	Unidentified	22:52	00:00	0	1305091	1664891	184741	239200	0.78	ABV/ABV	
	2,3,7,8-TCDF	29:19	29:17	2	944654	1222047	103469	132531	0.77	AVV/AVV	
	Unidentified	34:23	00:00	0	1000847	1283787	113598	143427	0.78	ABV/AVV	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	150	203	60	81	0.74	/	
	13C-2,3,7,8-TCDF	29:17	29:15	2	10588459	13361706	1210693	1478599	0.79	AVV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	185	193	74	77	0.96 *	/	
	Unidentified	25:20	00:00	0	878044	1107013	116212	149360	0.79	ABV/ABV	
	Unidentified	30:51	00:00	0	788192	1013401	85212	109765	0.78	ABV/ABV	
	Unidentified	31:06	00:00	0	699391	898097	73837	95199	0.78	AVV/AVB	
	2,3,7,8-TCDD	31:23	31:27	-4	857627	1096611	88004	109202	0.78	AVV/AVV	M
	Unidentified	31:53	00:00	0	848090	1077794	86349	112395	0.79	AVV/AVV	
	Unidentified	34:31	00:00	0	768670	1007575	91171	120347	0.76	ABB/ABB	
328					327.8847		327.8847				
	Noise	00:00	00:00	0	213		85				
	37Cl4-2,3,7,8-TCDD	31:23	31:26	-3	1949822		199338			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	190	48	76	19	4.00 *	/	
	13C-1,2,3,4-TCDD	30:49	30:51	-2	8206100	10204221	876073	1091196	0.80	AVV/AVV	
	13C-2,3,7,8-TCDD	31:19	31:22	-3	8206164	10456992	842572	1096225	0.78	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	275	228	110	91	1.21 *	/	
	Unidentified	35:07	00:00	0	7700401	5027056	987820	636144	1.53	ABV/ABV	
	1,2,3,7,8-PeCDF	39:04	39:03	1	7552280	4960891	1580869	1024548	1.52	AVV/AVV	
	2,3,4,7,8-PeCDF	40:17	40:16	1	6942001	4569935	1627023	1070245	1.52	ABV/ABV	
	Unidentified	41:36	00:00	0	6139295	4088303	1523797	1006150	1.50	ABV/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	148	90	59	36	1.64	/	
	13C-1,2,3,7,8-PeCDF	39:03	39:02	1	14201702	8874543	2904711	1834578	1.60	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:16	40:15	1	14424901	8897659	3375683	2088011	1.62	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	173	158	69	63	1.10 *	/	
	Unidentified	37:57	00:00	0	4868147	3117297	801985	515893	1.56	ABV/ABV	
	1,2,3,7,8-PeCDD	40:49	40:47	2	4771297	3054252	1171848	745154	1.56	ABV/ABV	
	Unidentified	41:29	00:00	0	5078539	3281181	1313066	847745	1.55	ABB/ABB	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	68	53	27	21	1.29 *	/	
	13C-1,2,3,7,8-PeCDD	40:48	40:46	2	9681410	6010055	2346642	1452716	1.61	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	263	258	105	103	1.02 *	/	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:40	Prep Batch		Lot No	
Data File	/20160809s1/d3160809s1	Prep Date		SDG No	
Analysis ID	180144	Prep Exp Date		Date Received	
Analysis Date	08/09/16 13:54	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Unidentified	42:48	00:00	0	6292930	5159408	1798015	1446457	1.22	ABV/ABV	
	1,2,3,4,7,8-HxCDF	44:02	44:00	2	5808387	4655615	1603238	1251455	1.25	ABV/ABV	
	1,2,3,6,7,8-HxCDF	44:10	44:08	2	6075883	4977640	1610309	1306467	1.22	AVV/AVV	
	2,3,4,6,7,8-HxCDF	44:53	44:52	1	5777538	4730139	1499541	1207374	1.22	AVV/AVV	
	1,2,3,7,8,9-HxCDF	45:50	45:50	0	4369920	3493109	1128782	905697	1.25	ABV/ABV	
	Unidentified	45:58	00:00	0	4027756	3383778	988515	801316	1.19	AVB/AVV	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	193	280	77	112	0.69 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:01	43:59	2	6029887	11489115	1673364	3132937	0.52	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:09	44:07	2	6780640	12988114	1778418	3453955	0.52	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	44:52	44:51	1	6466154	12165394	1671679	3140601	0.53	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	45:49	45:49	0	4856273	9205330	1234653	2335274	0.53	AVV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	258	223	103	89	1.16	/	
	Unidentified	43:28	00:00	0	5050007	4075728	1388772	1157896	1.24	ABV/ABV	
	1,2,3,4,7,8-HxCDD	45:03	45:03	0	4080020	3300726	1149098	908610	1.24	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:10	45:10	0	3999681	3284987	1067652	878392	1.22	AVV/AVV	
	1,2,3,7,8,9-HxCDD	45:34	45:34	0	4288730	3408535	1121689	863111	1.26	AVV/AVV	
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	343	140	137	56	2.45 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:02	45:02	0	7761210	6133874	2146870	1706989	1.27	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:09	45:09	0	7489863	5891951	2003375	1565854	1.27	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	45:33	45:33	0	8008430	6417366	2064551	1661994	1.25	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	180	155	72	62	1.16	/	
	1,2,3,4,6,7,8-HpCDF	48:14	48:16	-2	4290565	4193324	942324	924758	1.02	ABV/ABV	
	1,2,3,4,7,8,9-HpCDF	50:34	50:37	-3	3000254	2926422	649670	621856	1.03	ABV/ABV	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	110	203	44	81	0.54 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:12	48:15	-3	4105009	9079379	907733	2014980	0.45	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:33	50:36	-3	3068109	6647951	657552	1431962	0.46	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	173	163	69	65	1.06	/	
	Unidentified	48:43	00:00	0	3196506	3133403	700878	682375	1.02	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	49:55	49:59	-4	3234421	3127577	662082	637018	1.03	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	93	113	37	45	0.82 *	/	
	13C-1,2,3,4,6,7,8-HpCDD	49:53	49:58	-5	6255764	5954714	1294430	1254364	1.05	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	88	125	35	50	0.70 *	/	
	OCDF	54:14	54:12	2	5726591	6339854	1540245	1741544	0.90	ABV/ABV	
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:40	Prep Batch		Lot No	
Data File	/20160809s1/d3160809s1	Prep Date		SDG No	
Analysis ID	180144	Prep Exp Date		Date Received	
Analysis Date	08/09/16 13:54	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

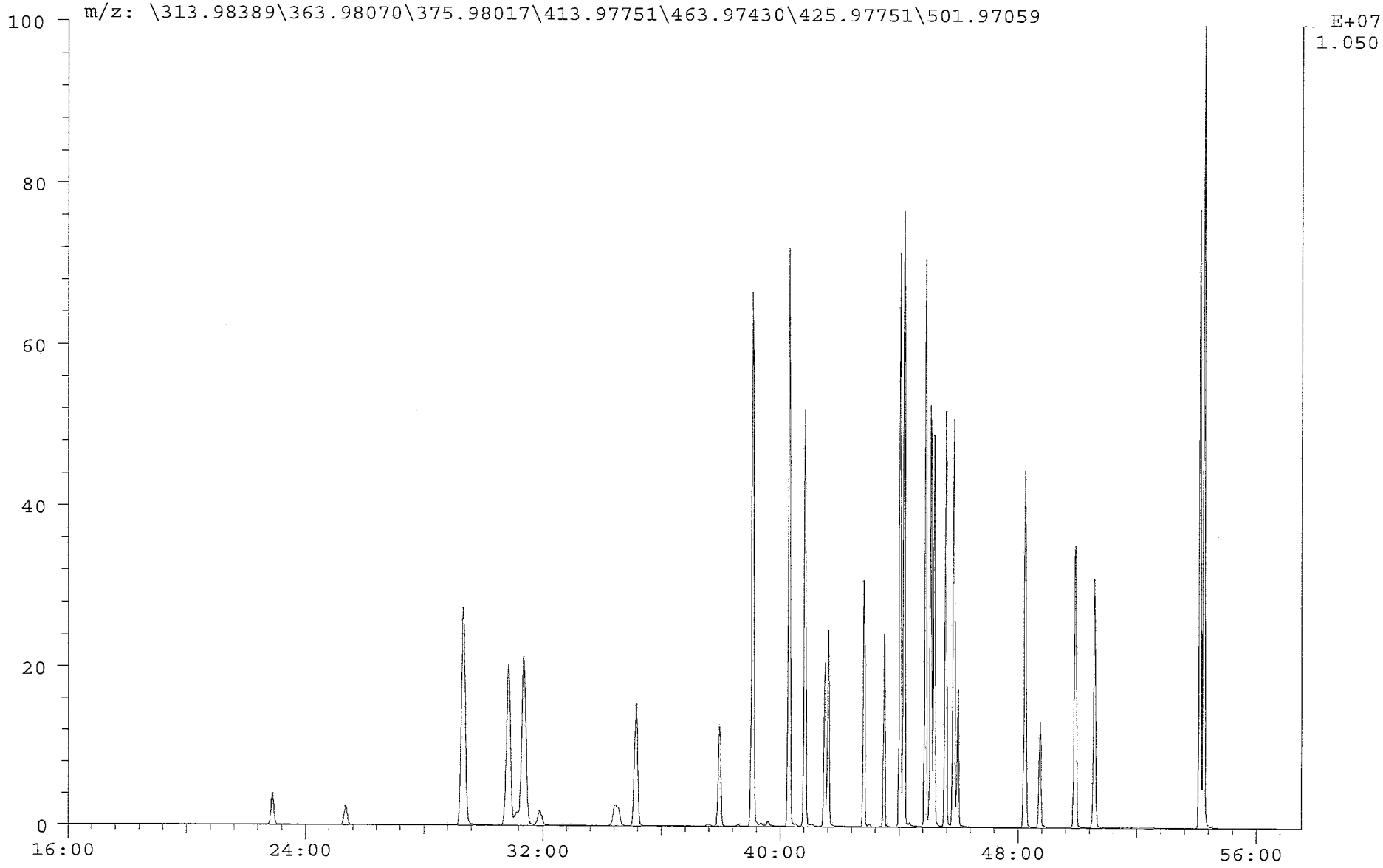
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	65	90	26	36	0.72 *	/	
	13C-OCDF	54:14	54:11	3	12667152	13752824	3435431	3744390	0.92	ABV/ABB	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	433	103	173	41	4.22 *	/	
	OCDD	54:05	54:04	1	5112197	5742029	1321735	1529339	0.89	ABV/ABV	
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	150	105	60	42	1.43 *	/	
	13C-OCDD	54:05	54:03	2	9200773	10416432	2464951	2782950	0.88	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

CHRO: d3160809s1 09-Aug-16 Elapse: 12:04.3 1
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 13:54:21 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 237 > 2678 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

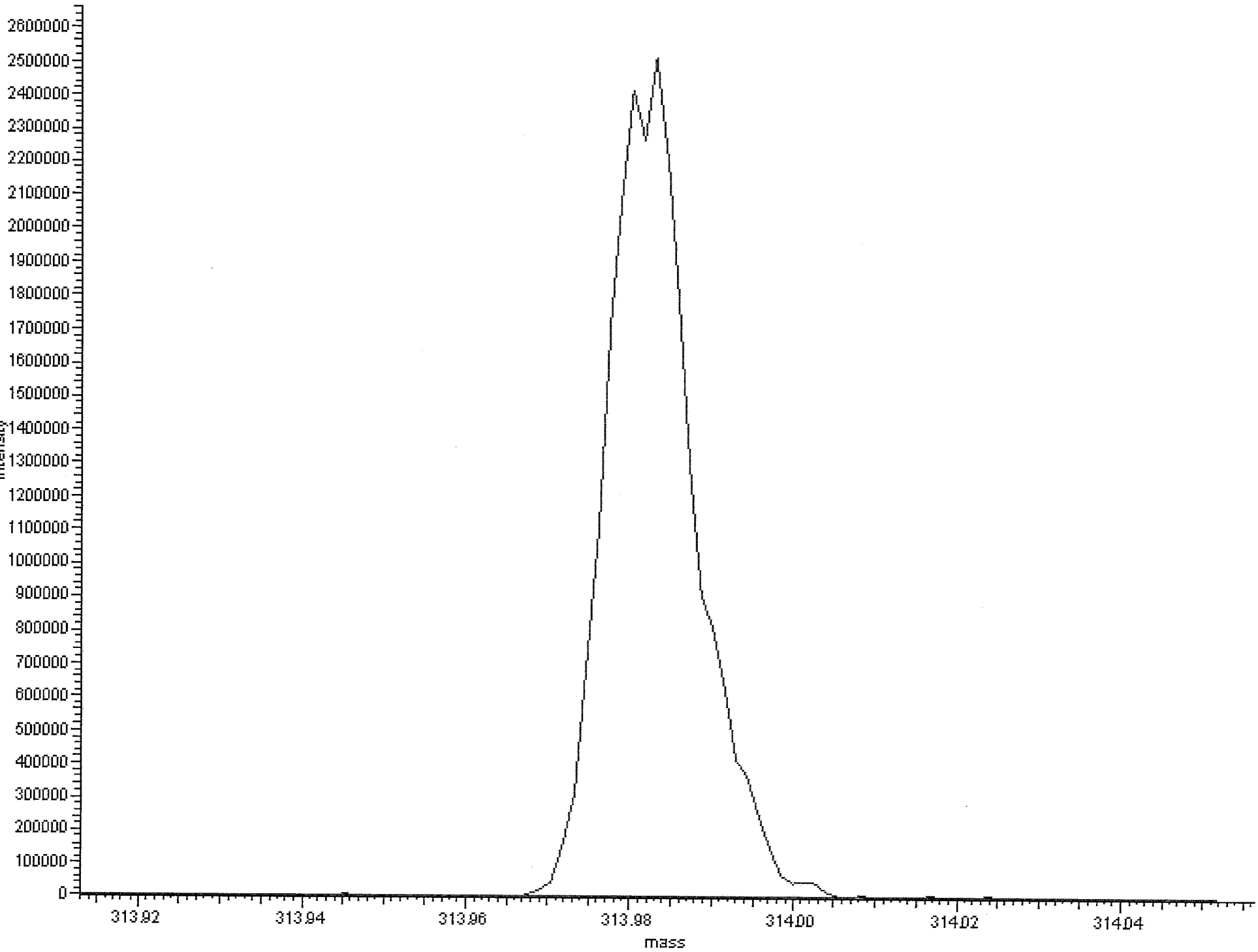
Int, Calc MID 8-9-16
Qid L 8-9-16



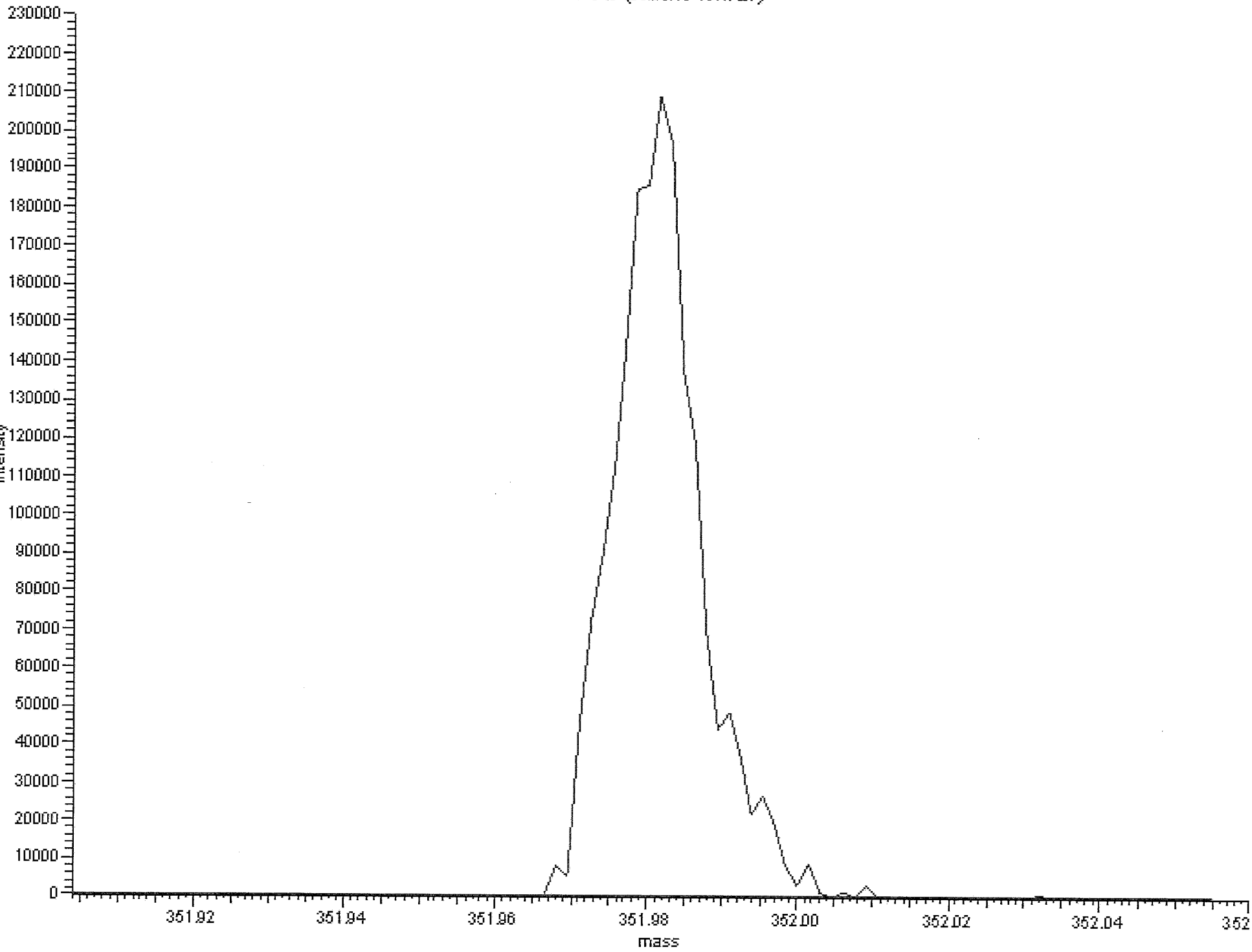
```
Reports
13:53:09:  Peak matching procedure started
13:53:10:
13:53:10:  Reference mass: 313.98336
13:53:11:  Sample mass: 364.0
13:53:11:
13:53:12:  Finding reference mass
13:53:13:  Finding sample mass
13:53:13:
13:53:18:  [1]   363.9786 amu, mean: 363.9786
13:53:21:  [2]   363.9785 amu, mean: 363.9786     SD: 0.02 mmu or: 0.05 ppm
13:53:24:  [3]   363.9783 amu, mean: 363.9785     SD: 0.12 mmu or: 0.34 ppm
13:53:27:  [4]   363.9778 amu, mean: 363.9783     SD: 0.37 mmu or: 1.02 ppm
13:53:29:  [5]   363.9777 amu, mean: 363.9782     SD: 0.41 mmu or: 1.12 ppm
13:53:32:  [6]   363.9792 amu, mean: 363.9784     SD: 0.56 mmu or: 1.53 ppm
13:53:35:  [7]   363.9784 amu, mean: 363.9784     SD: 0.51 mmu or: 1.39 ppm
13:53:38:  [8]   363.9782 amu, mean: 363.9784     SD: 0.47 mmu or: 1.30 ppm
13:53:40:  [9]   363.9776 amu, mean: 363.9783     SD: 0.51 mmu or: 1.40 ppm
13:53:43:  [10]   363.9779 amu, mean: 363.9782     SD: 0.49 mmu or: 1.35 ppm
13:53:43:
13:53:43:  Stop requested. Please wait for procedure to finish.
13:53:43:
```

Signature UMSD 8/9/16

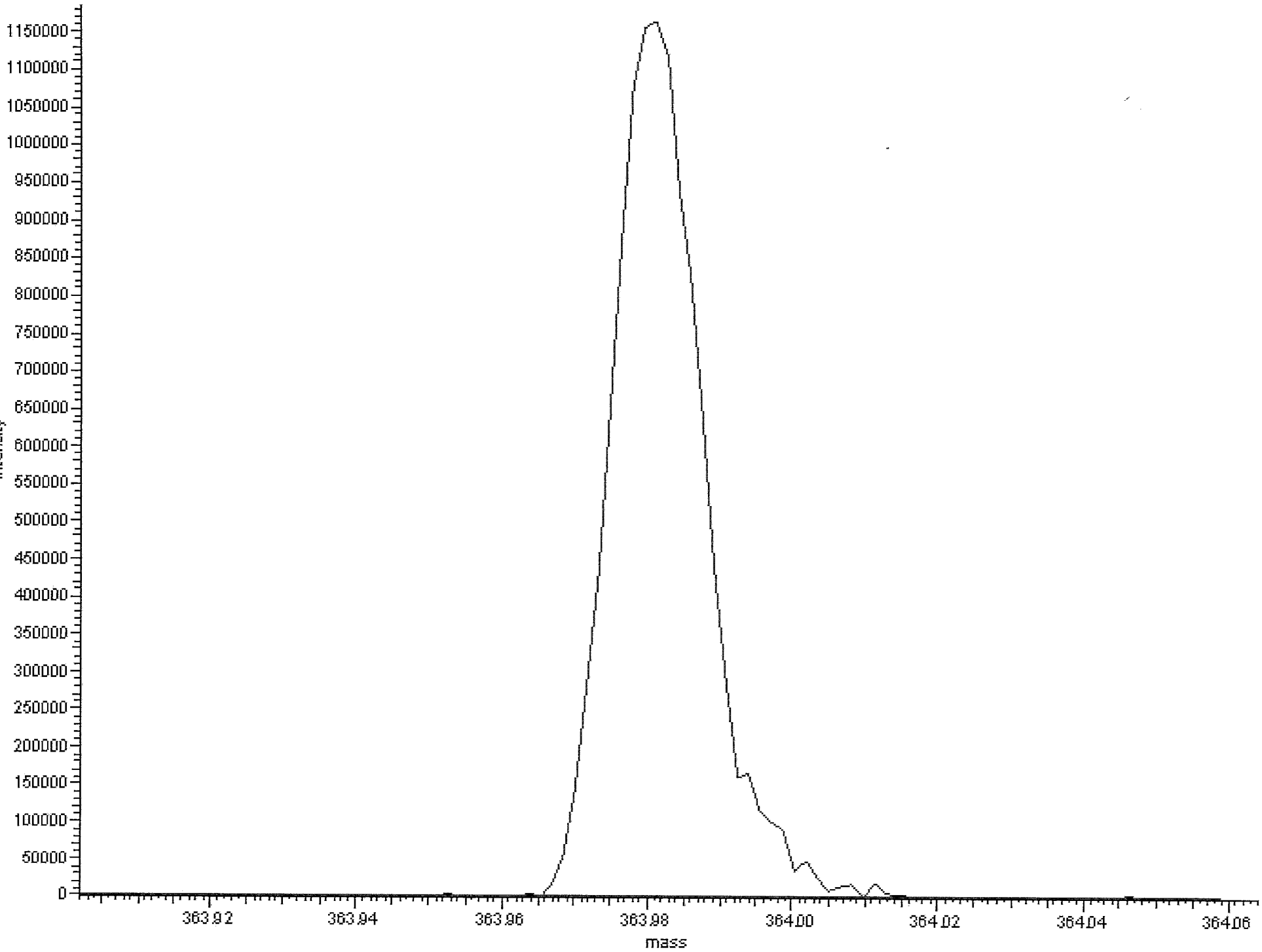
Lockmass: 313.9838 Instr.: DFS-3097
Resolution: 11073 (08/09/16 13:46:40)



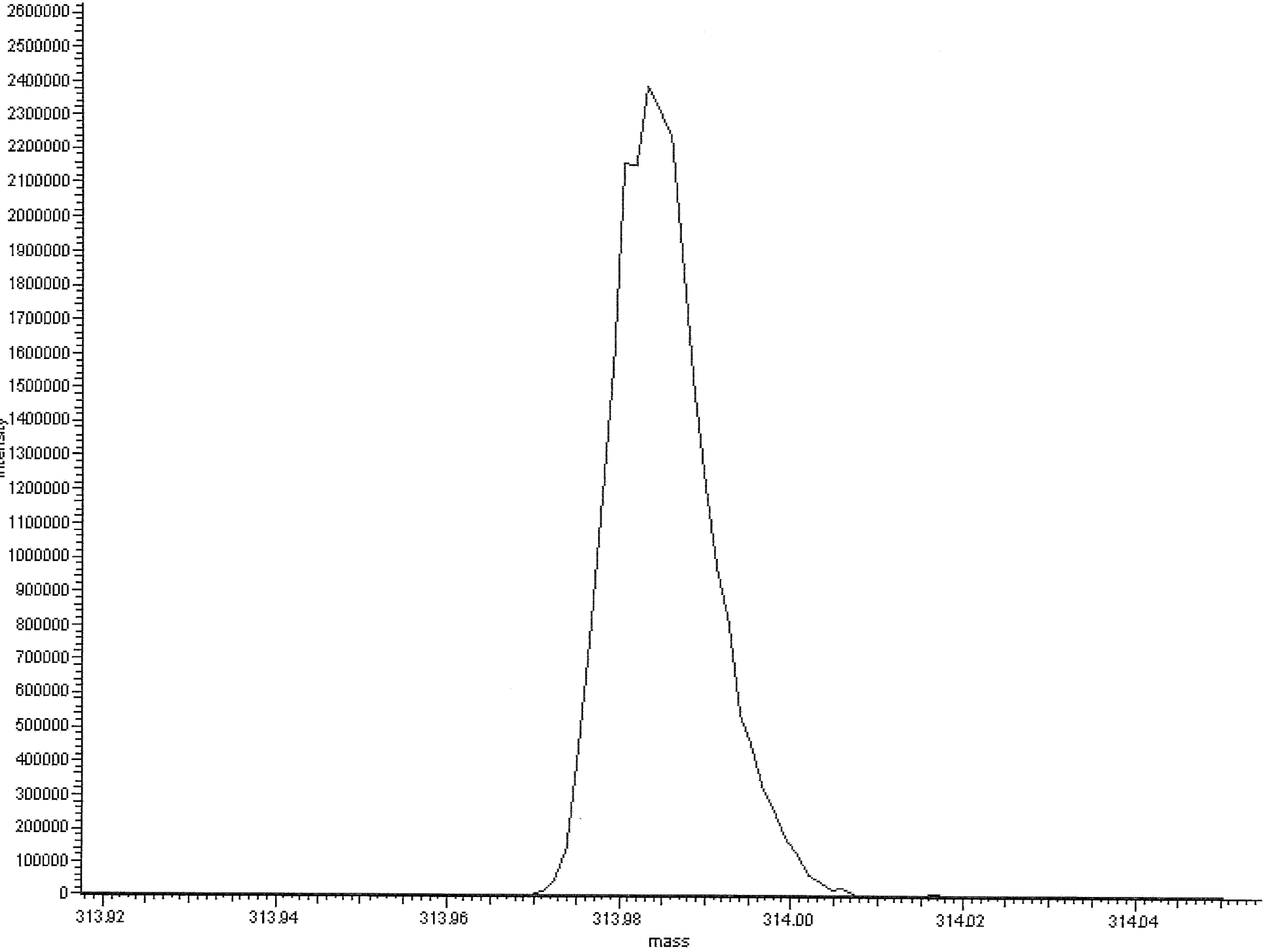
Mass:351.9802 Instr.: DFS-3097
Resolution: 11549 (08/09/16 13:47:27)



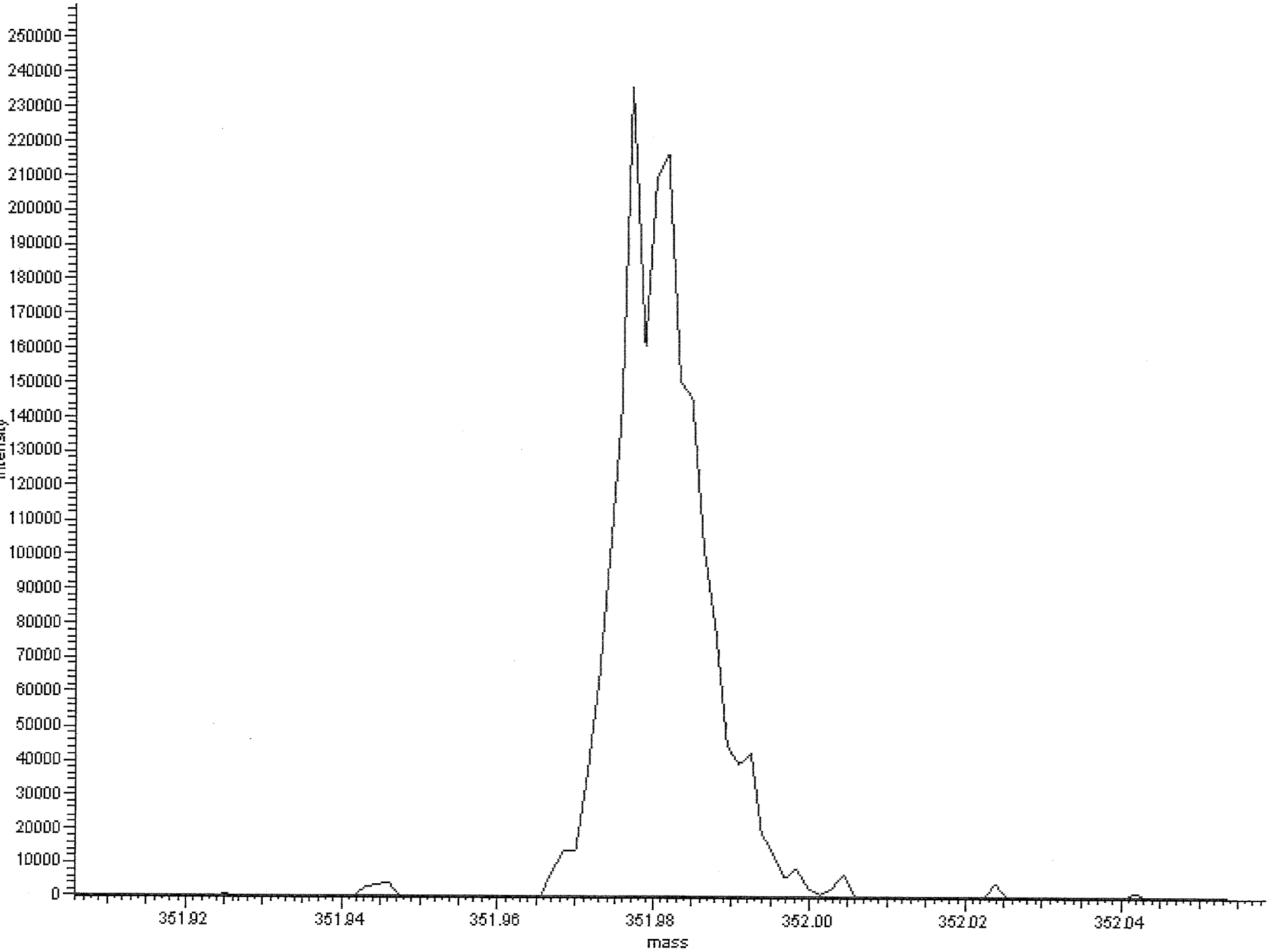
CaliMass: 363.9807 Instr.: DFS-3097
Resolution: 11812 (08/09/16 13:47:30)

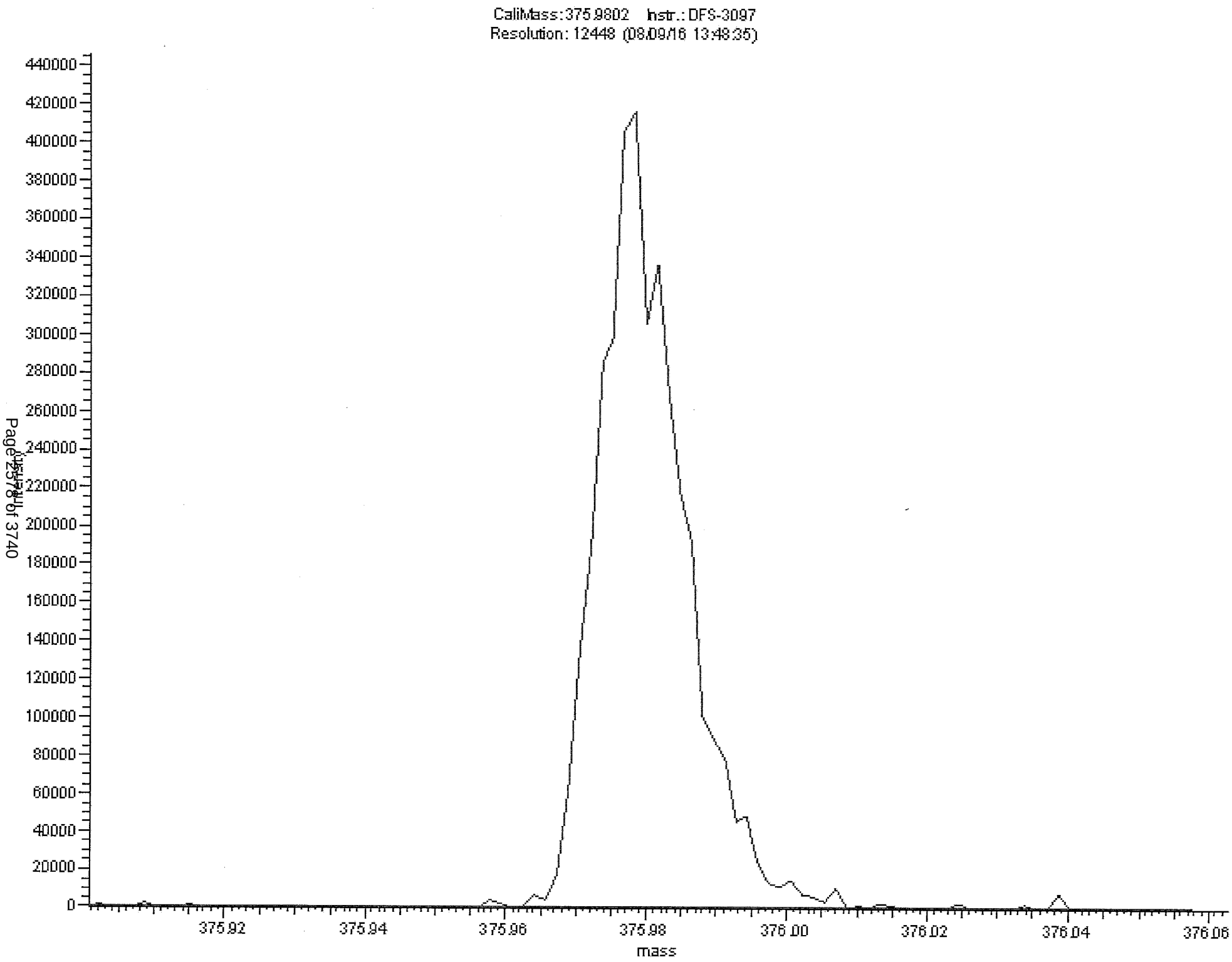


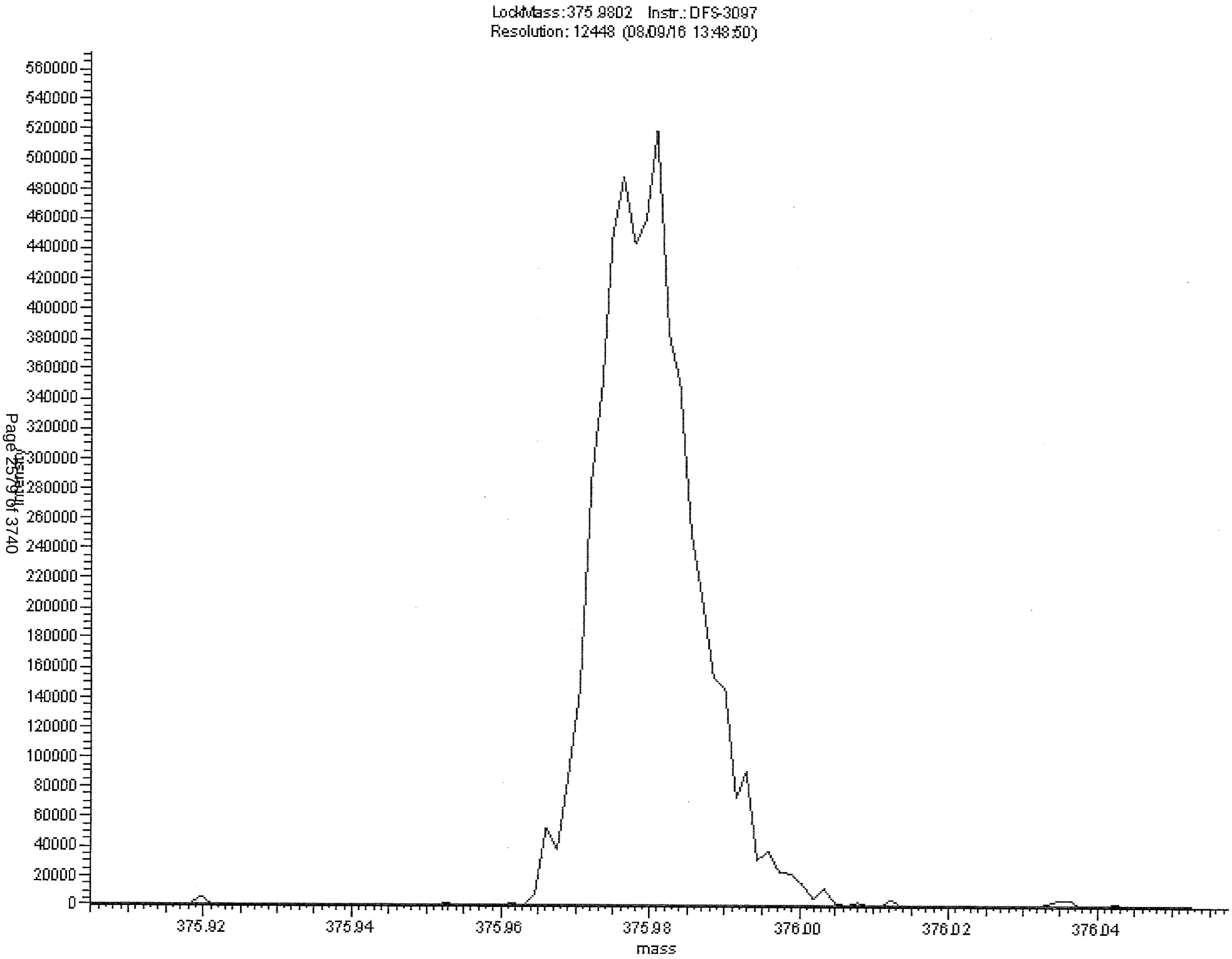
Lock/Mass: 313.9839 Instr.: DFS-3097
Resolution: 11812 (08/09/16 13:47:45)



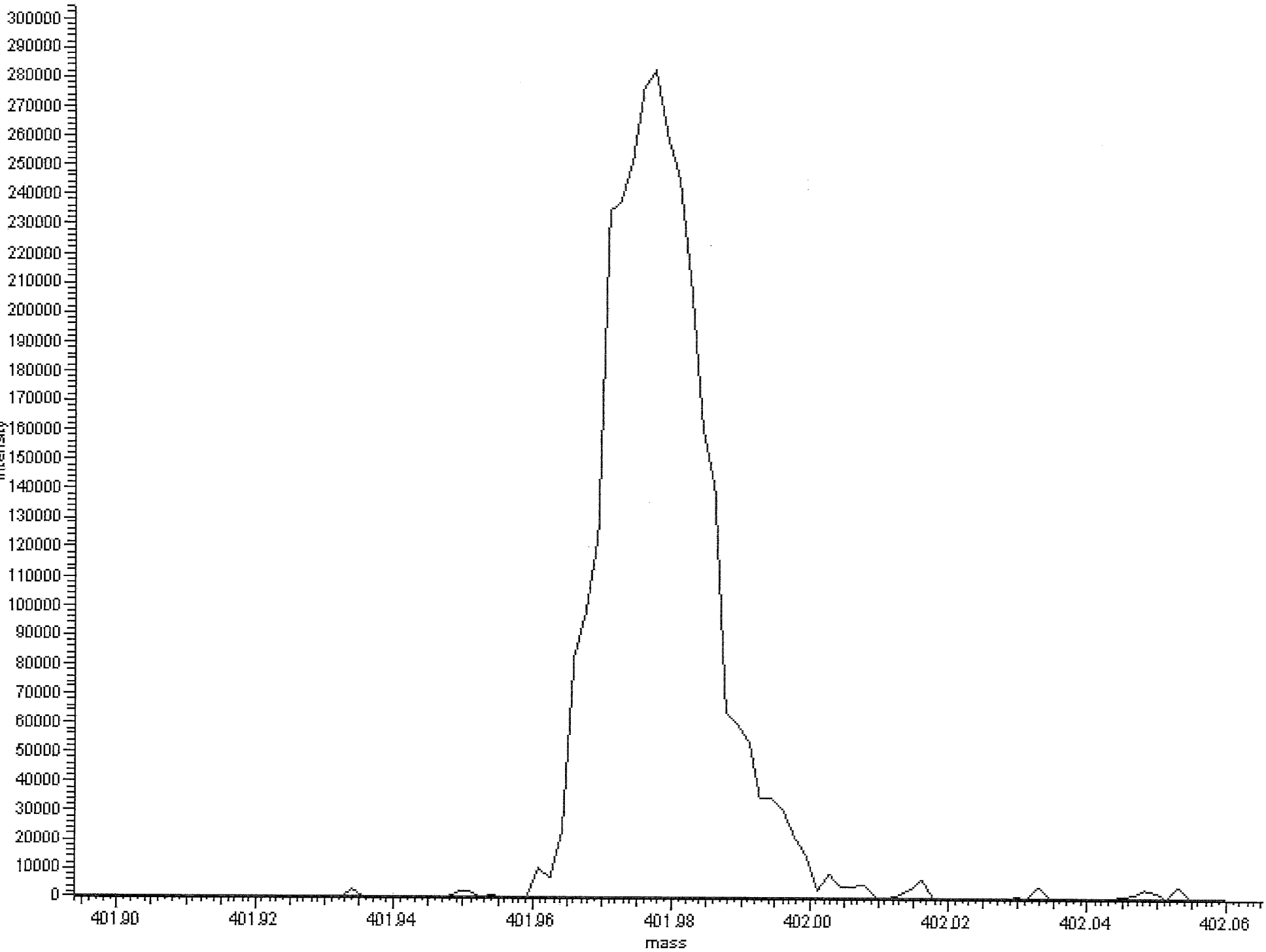
Mass:351.9802 Instr.: DFS-3097
Resolution: 11751 (08/09/16 13:48:32)



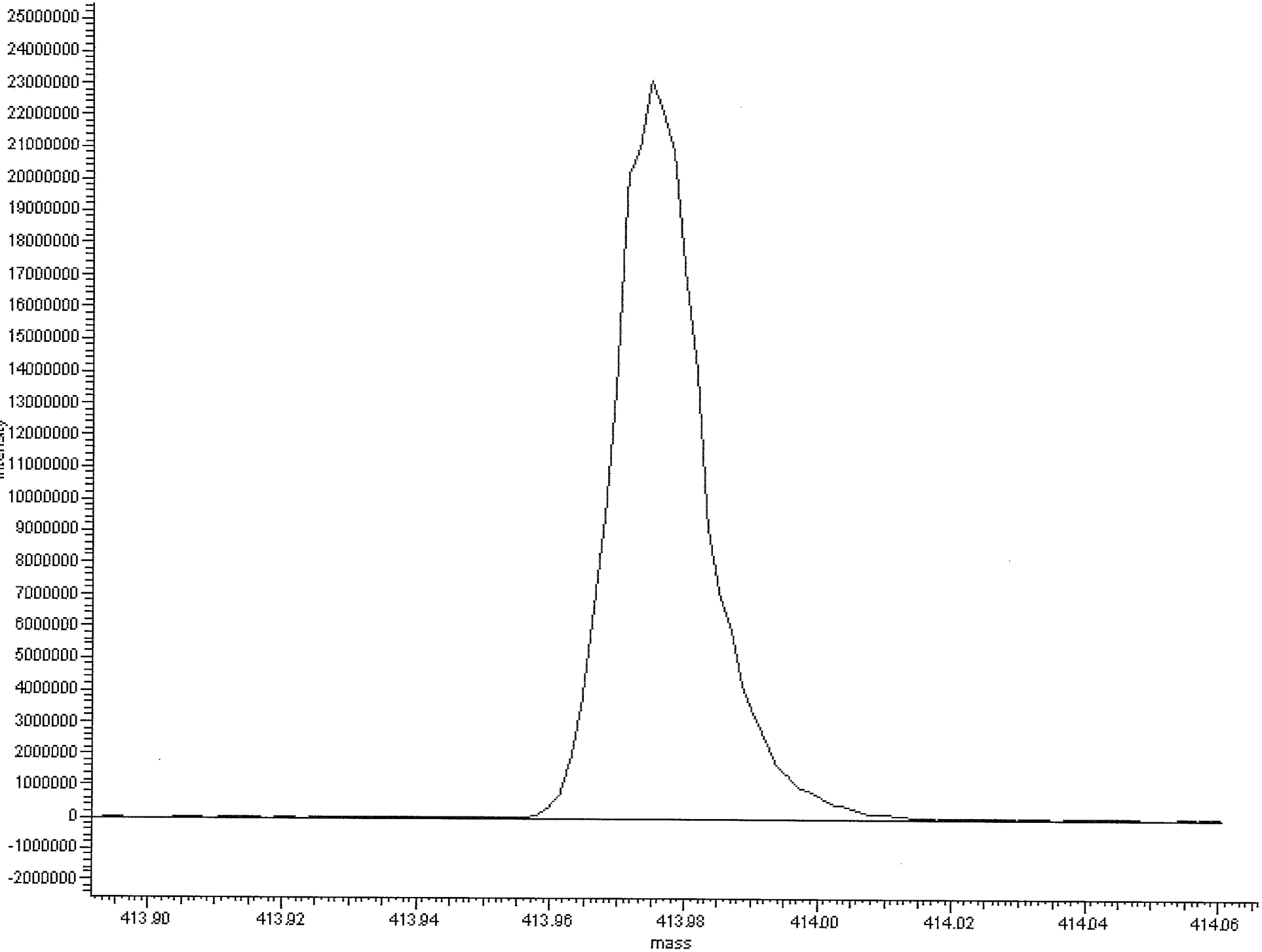

CalibMass:375.9802 Instr.: DFS-3097
Resolution: 12448 (08/09/16 13:48:35)
440000
420000
400000
380000
360000
340000
320000
300000
280000
260000
240000
220000
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
375.92
375.94
375.96
375.98
376.00
376.02
376.04
376.06
mass


LockMass:375.9802 Instr.: DFS-3097
Resolution: 12448 (08/09/16 13:48:50)
560000
540000
520000
500000
480000
460000
440000
420000
400000
380000
360000
340000
320000
300000
280000
260000
240000
220000
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
375.92
375.94
375.96
375.98
376.00
376.02
376.04
mass

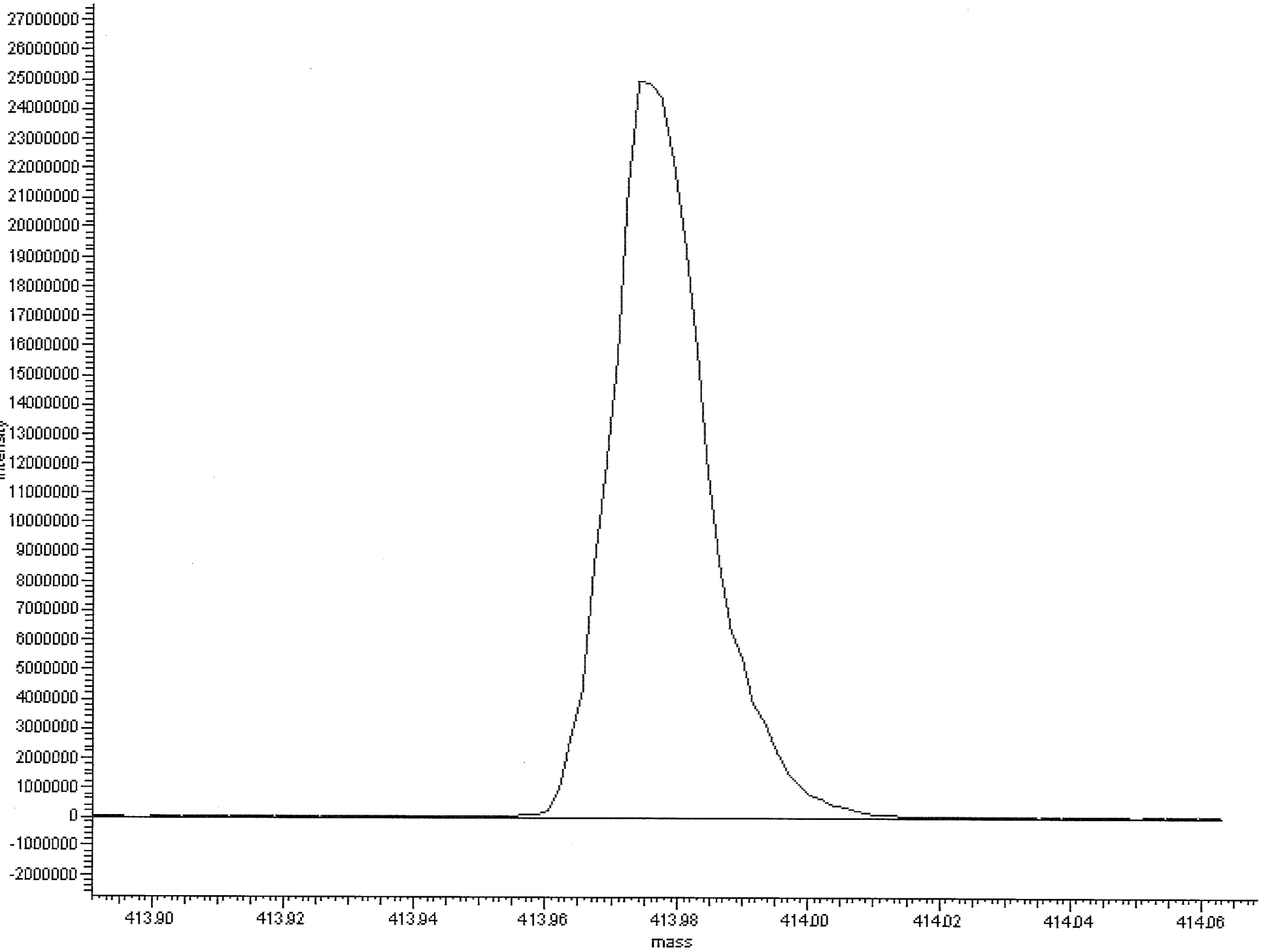
Mass: 401.9770 Instr.: DFS-3097
Resolution: 12038 (08/09/16 13:49:36)



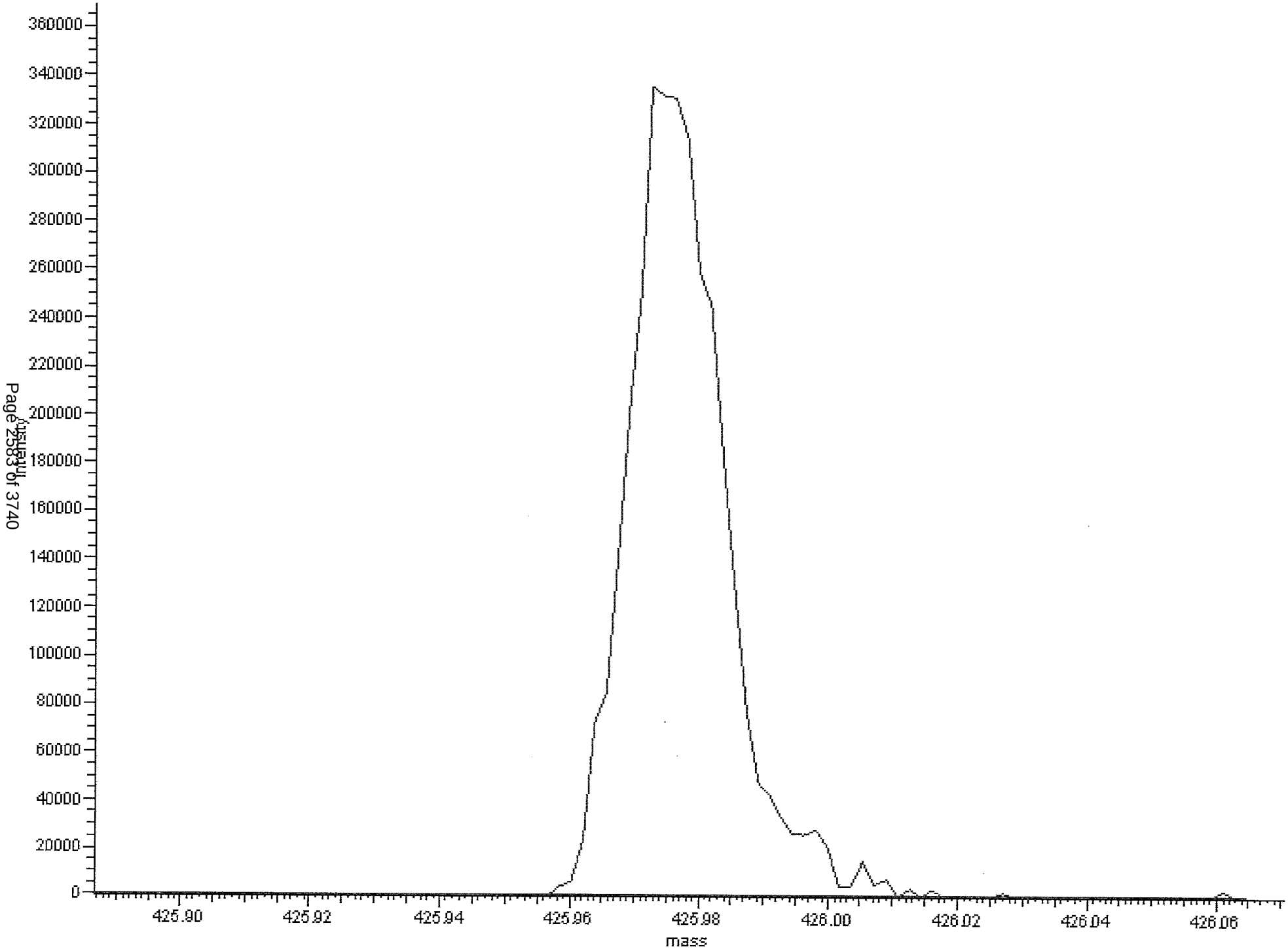
CaliMass: 413.9770 Instr.: DFS-3097
Resolution: 11929 (08/09/16 13:49:39)

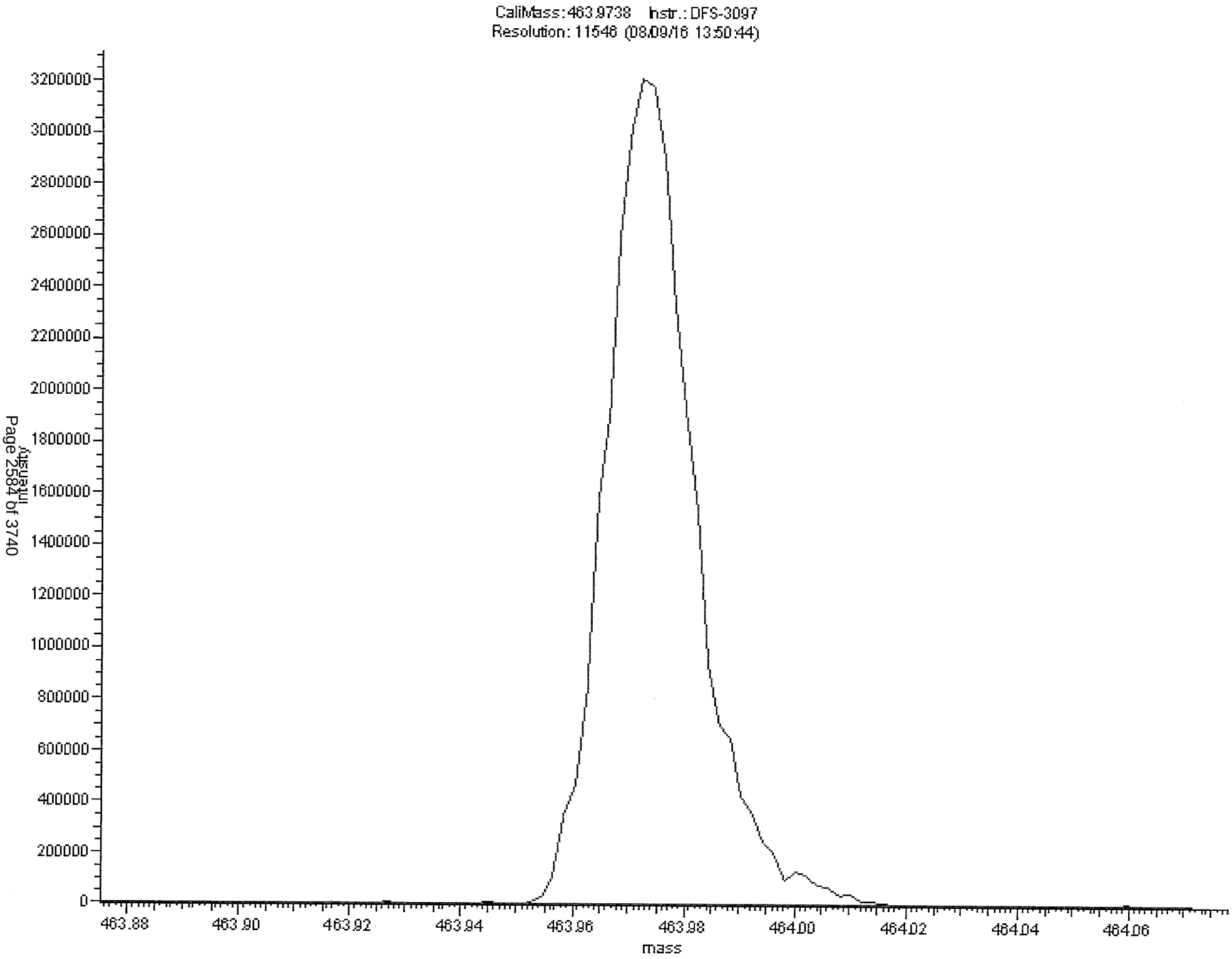


Lock Mass: 413.9775 Instr.: DFS-3097
Resolution: 11929 (08/09/16 13:49:55)

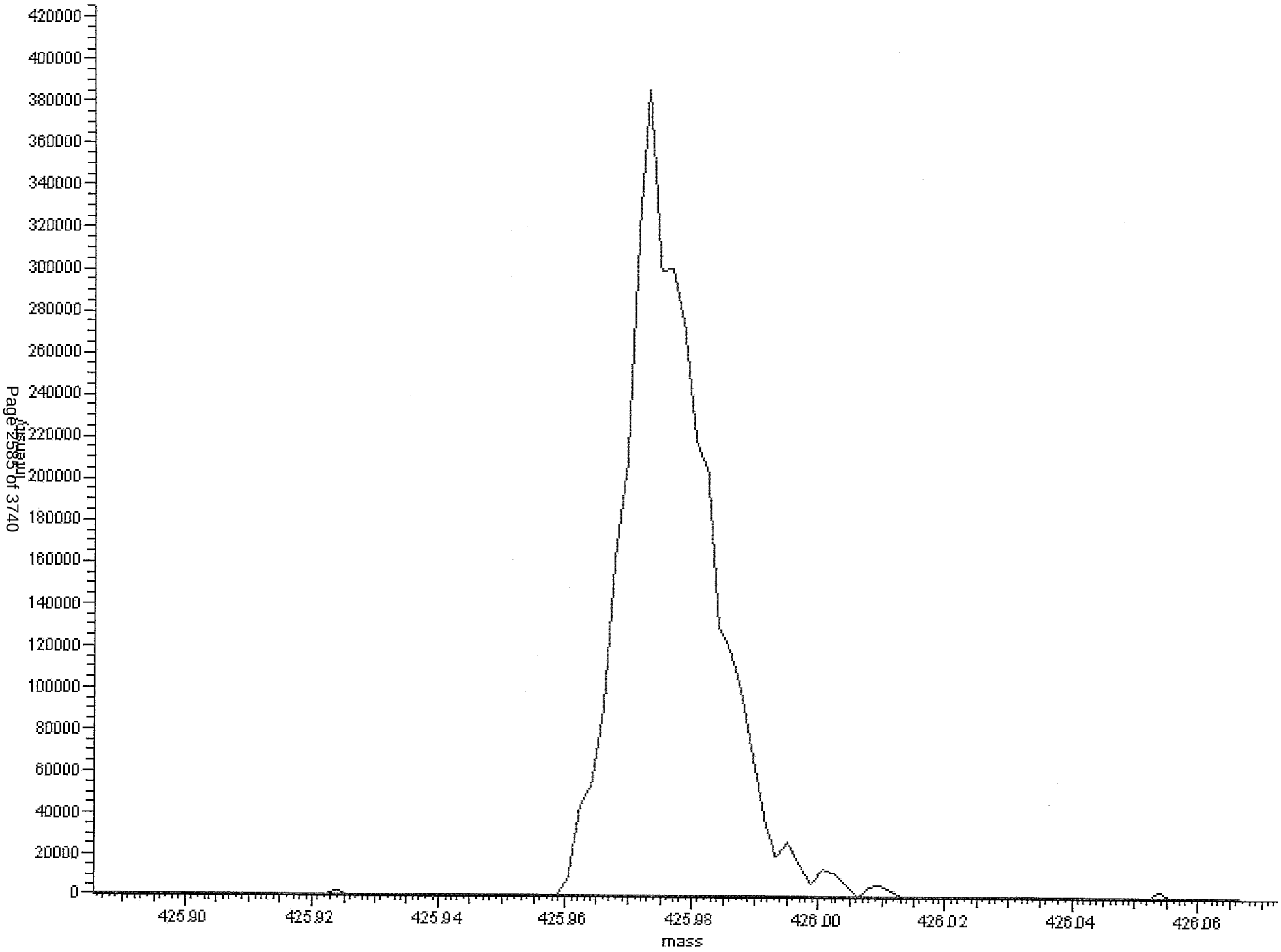


Mass: 425.9770 Instr.: DFS-3097
Resolution: 12300 (08/09/16 13:50:41)

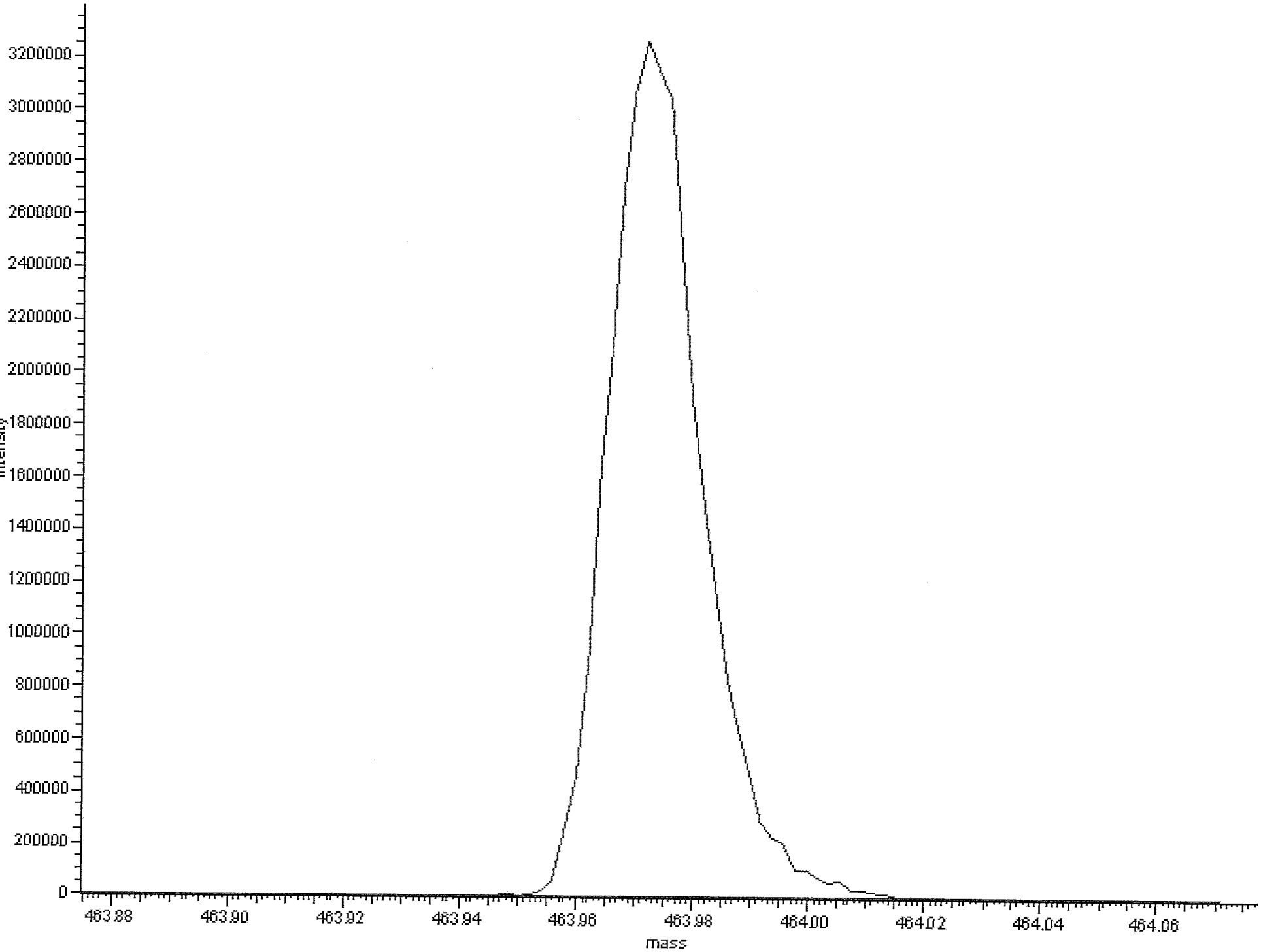



CalibMass: 463.9738 Instr.: DFS-3097
Resolution: 11546 (08/09/16 13:50:44)
3200000
3000000
2800000
2600000
2400000
2200000
2000000
1800000
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
Intensity
463.88
463.90
463.92
463.94
463.96
463.98
464.00
464.02
464.04
464.06
mass

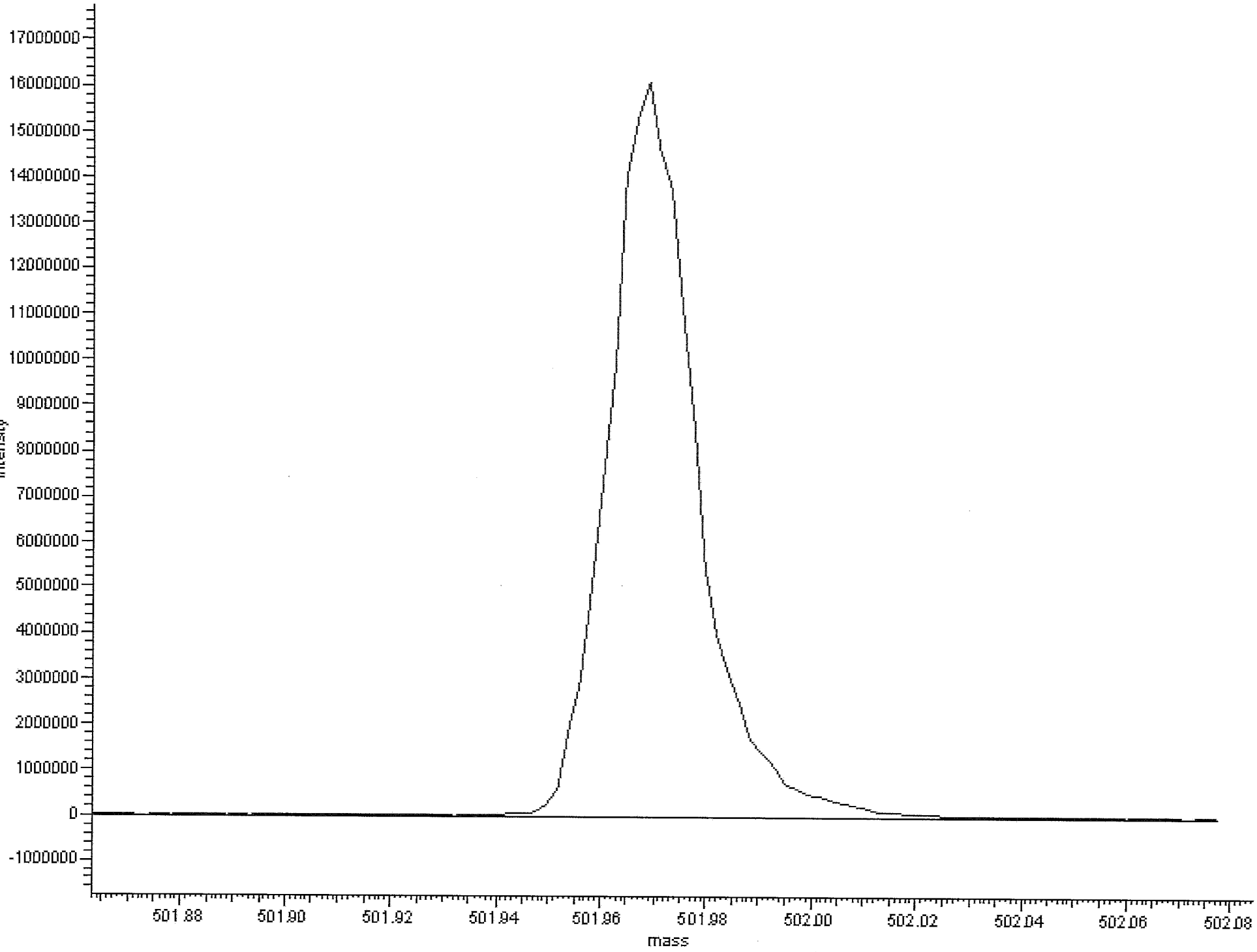
Lock Mass: 425.9775 Instr.: DFS-3097
Resolution: 11546 (08/09/16 13:50:59)



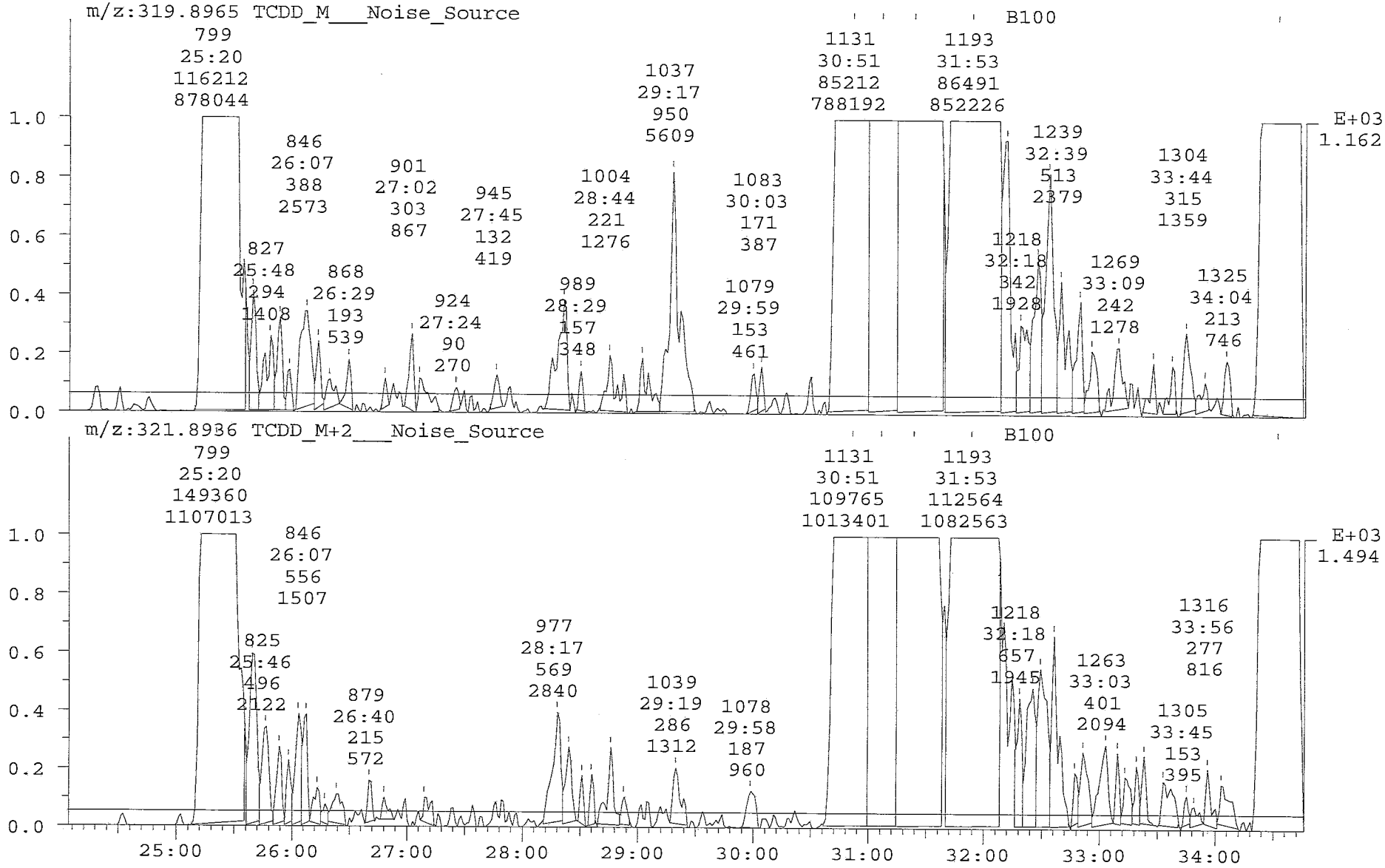
Mass: 463.9743 Instr.: DFS-3097
Resolution: 11897 (08/09/16 13:51:46)



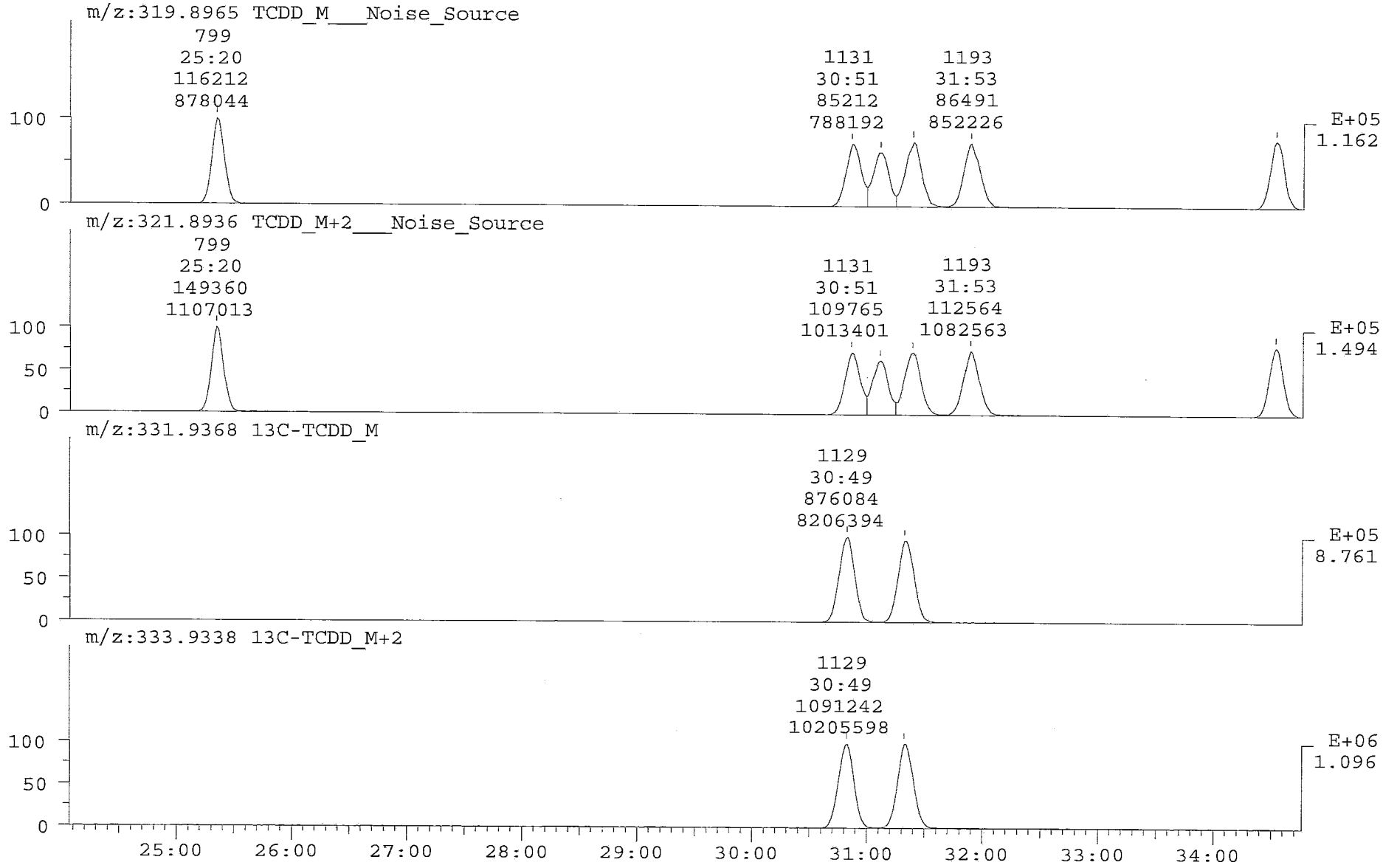
CaliMass:501.9706 Instr.: DFS-3097
Resolution: 11814 (08/09/16 13:51:49)



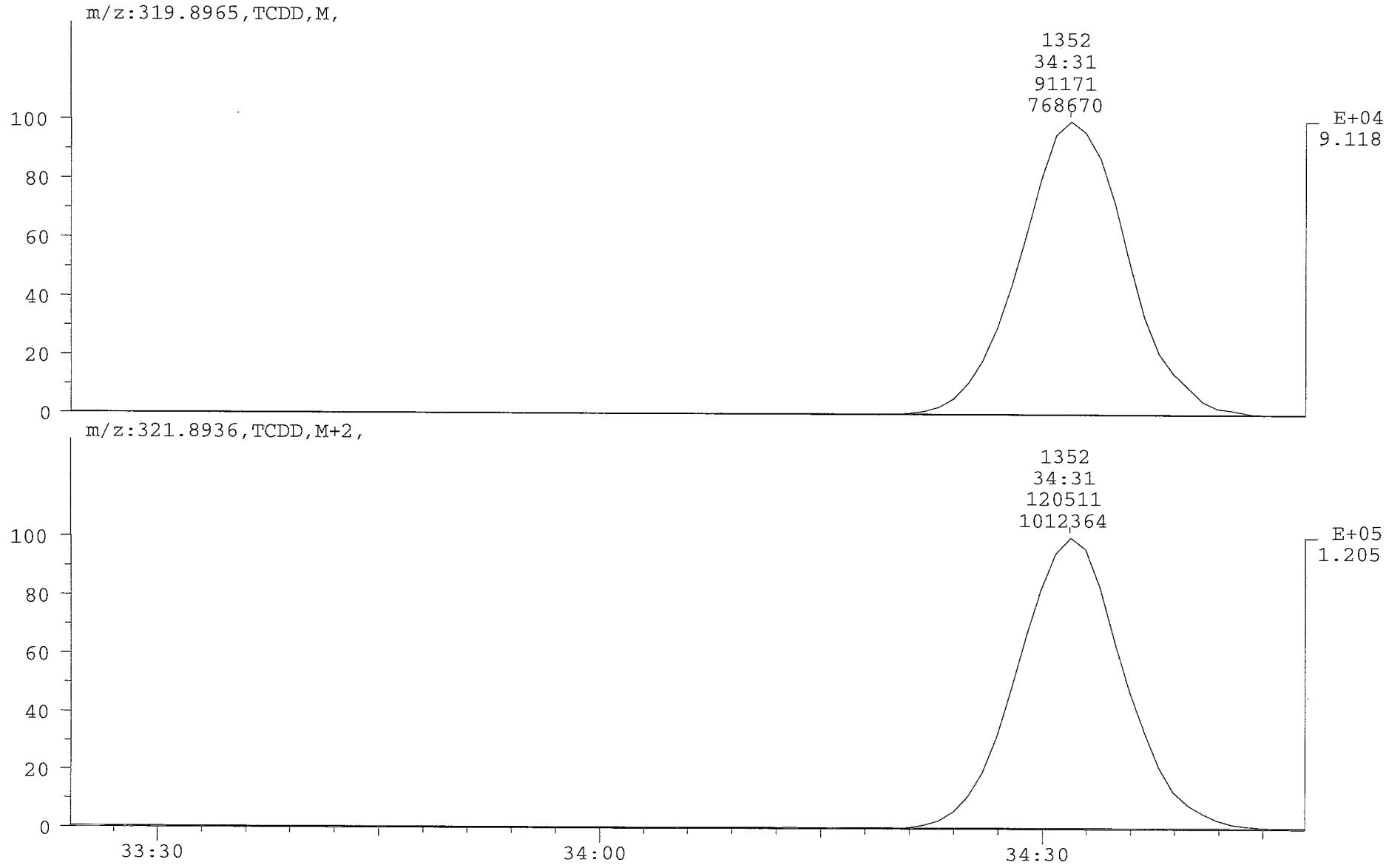
CHRO: d3160809s1 09-Aug-16 Elapse: 12:04.3 1
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 13:54:21 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 723 > 1366 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 1.0
Disp: Height Area



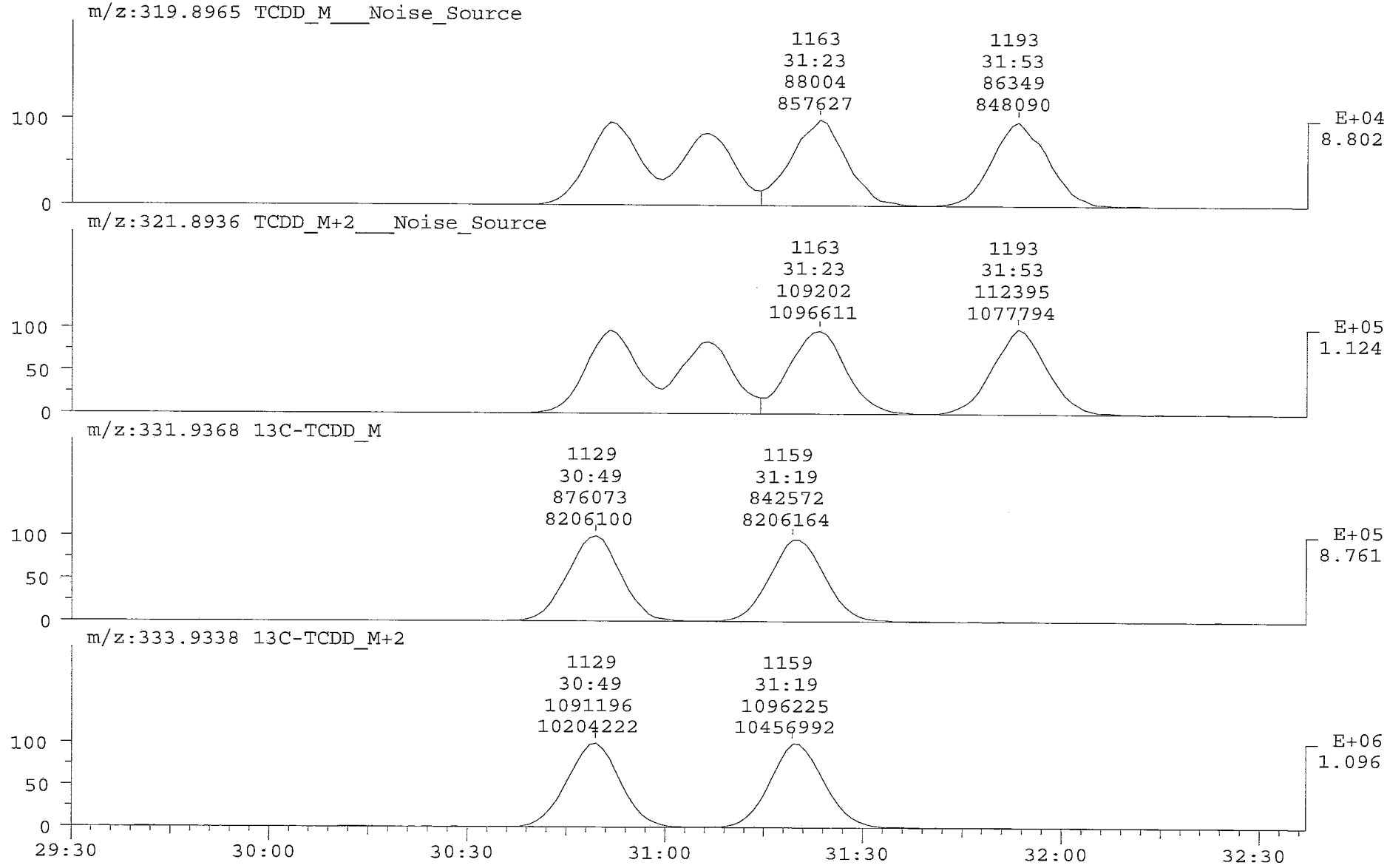
```
CHRO:  d3160809s1                          09-Aug-16   Elapse:  12:04.3        1
Samp:  WO=4966:40 Meth=F8o Dil=1                       Start :  13:54:21    2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                             Study :  Ver/Win
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   723 > 1366        Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```



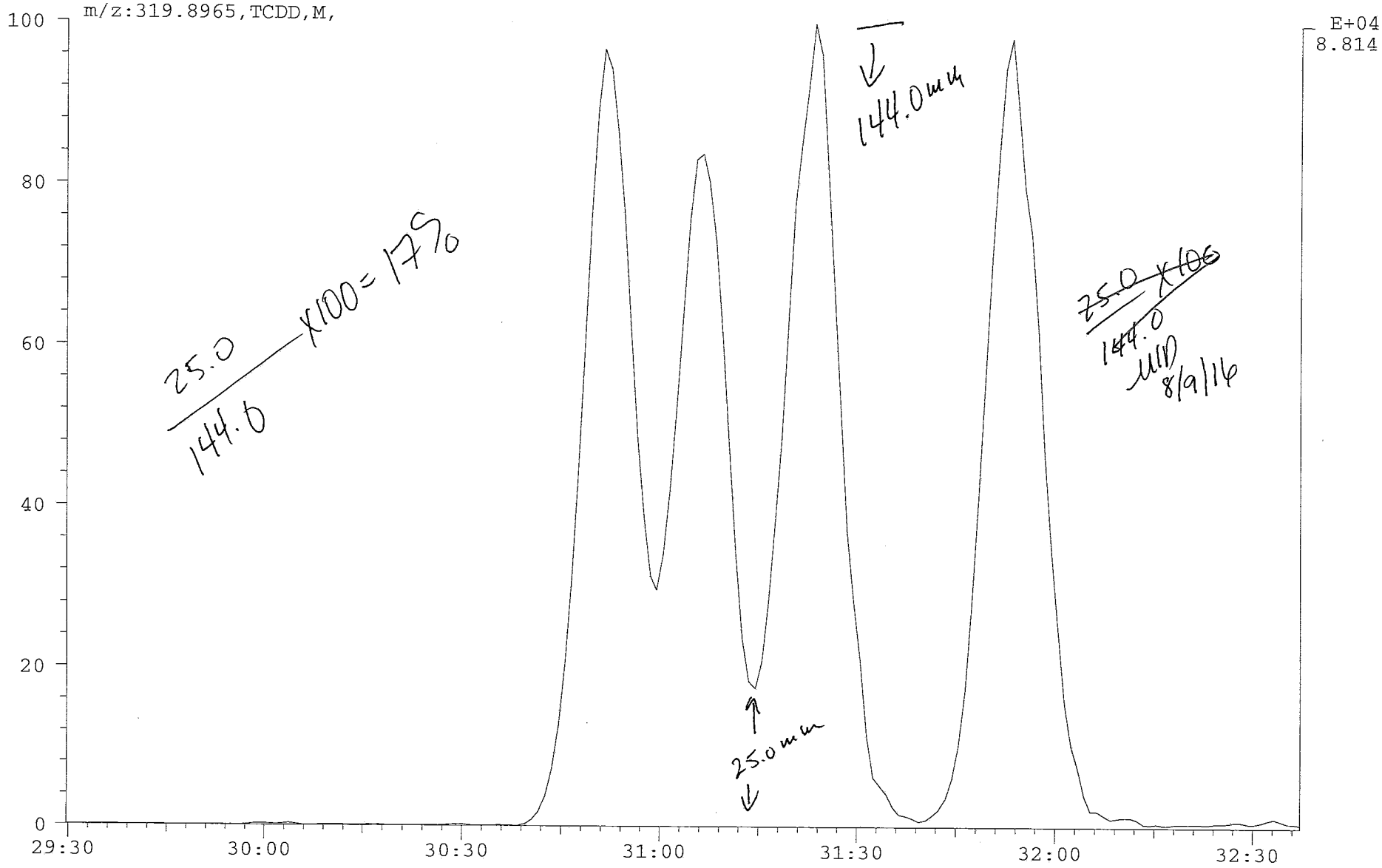
```
CHRO:  d3160809s1                          09-Aug-16  Elapse:  54:10      2484
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1284 > 1368      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



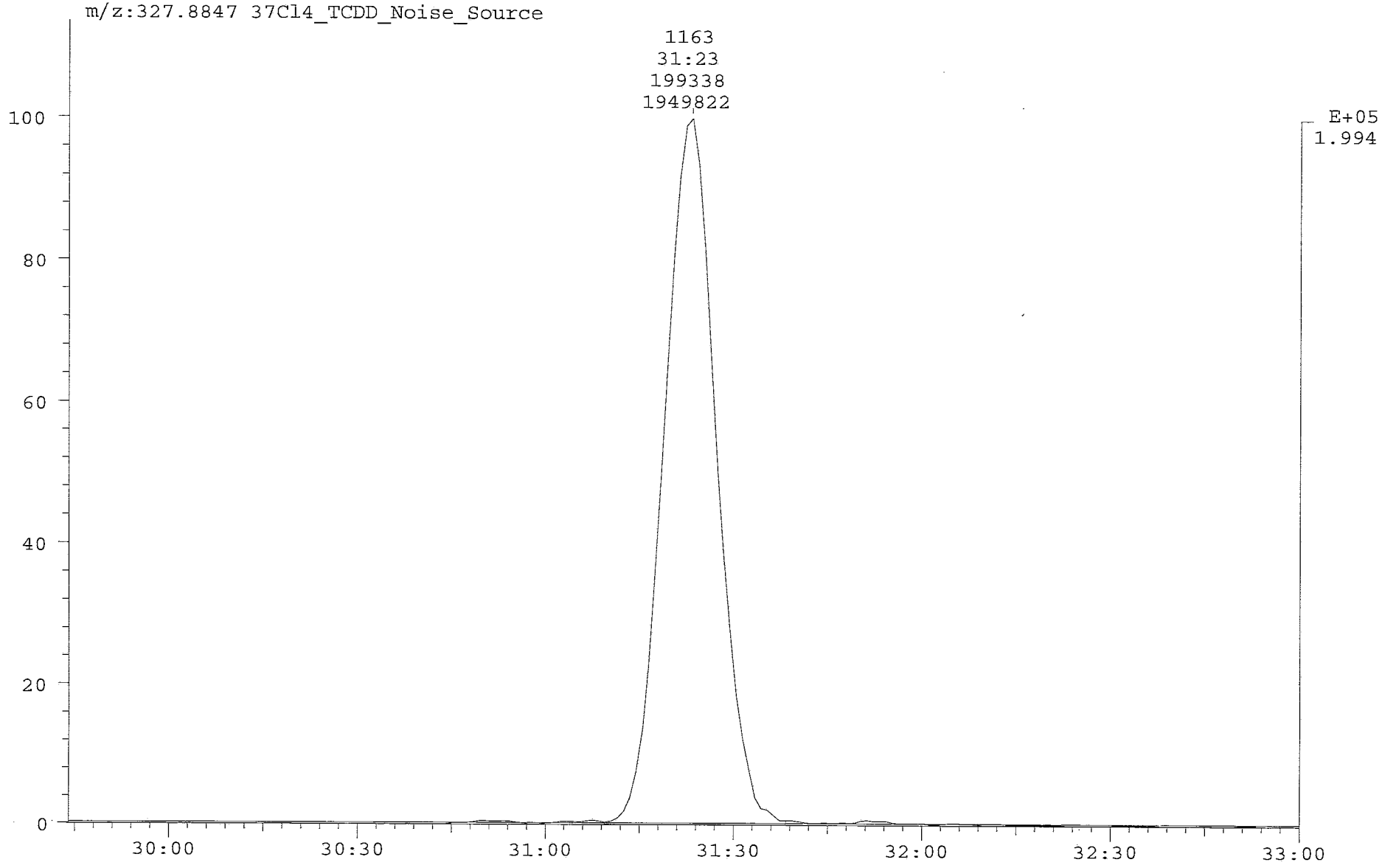
```
CHRO:  d3160809s1                          09-Aug-16   Elapse:  31:03      1143
Samp:  WO=4966:40 Meth=F8o Dil=1                       Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                             Study :  Ver/Win
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1049 > 1237       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```



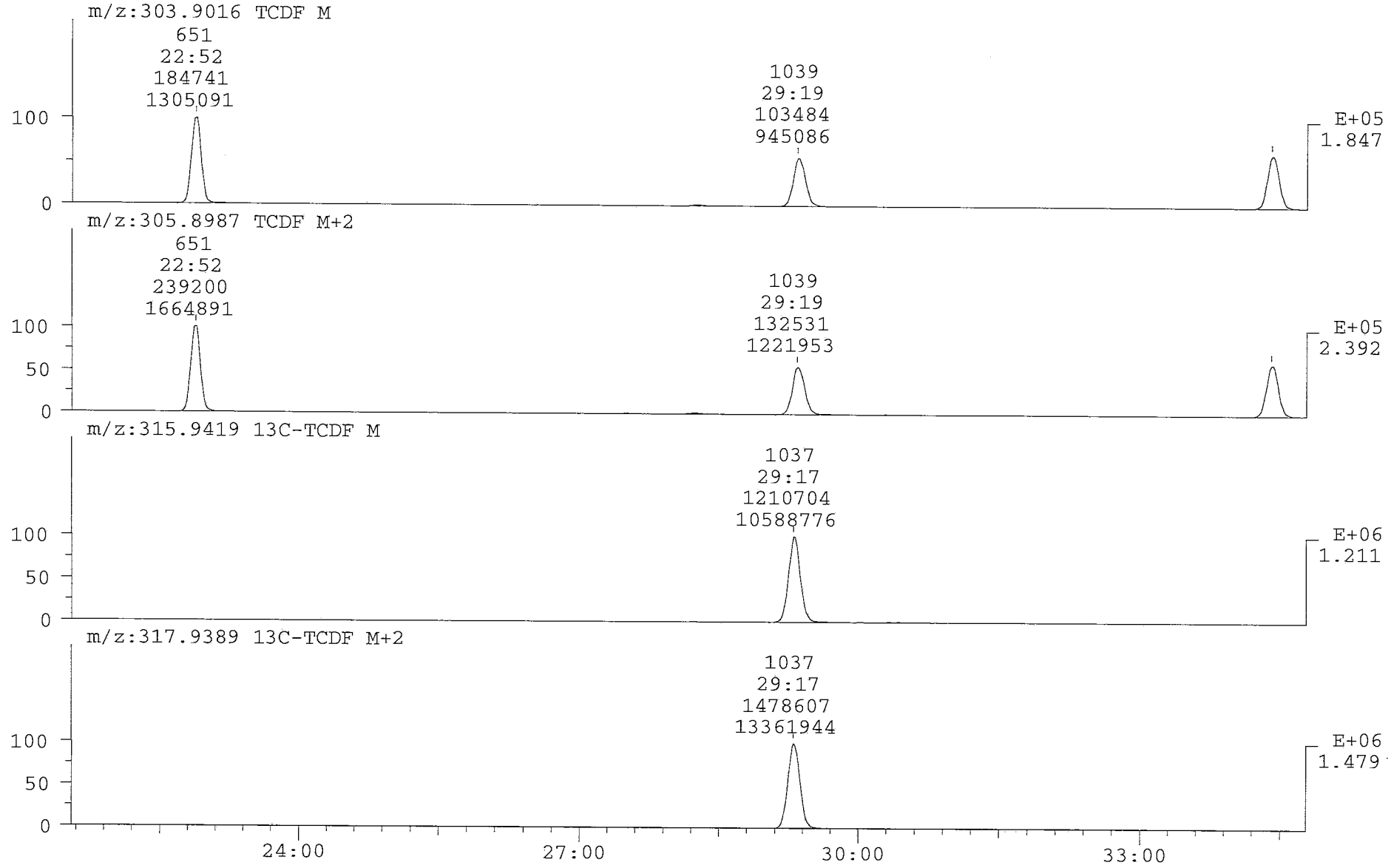
CHRO: d3160809s1 09-Aug-16 Elapse: 54:10 2484
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 13:54:21 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1049 > 1237 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



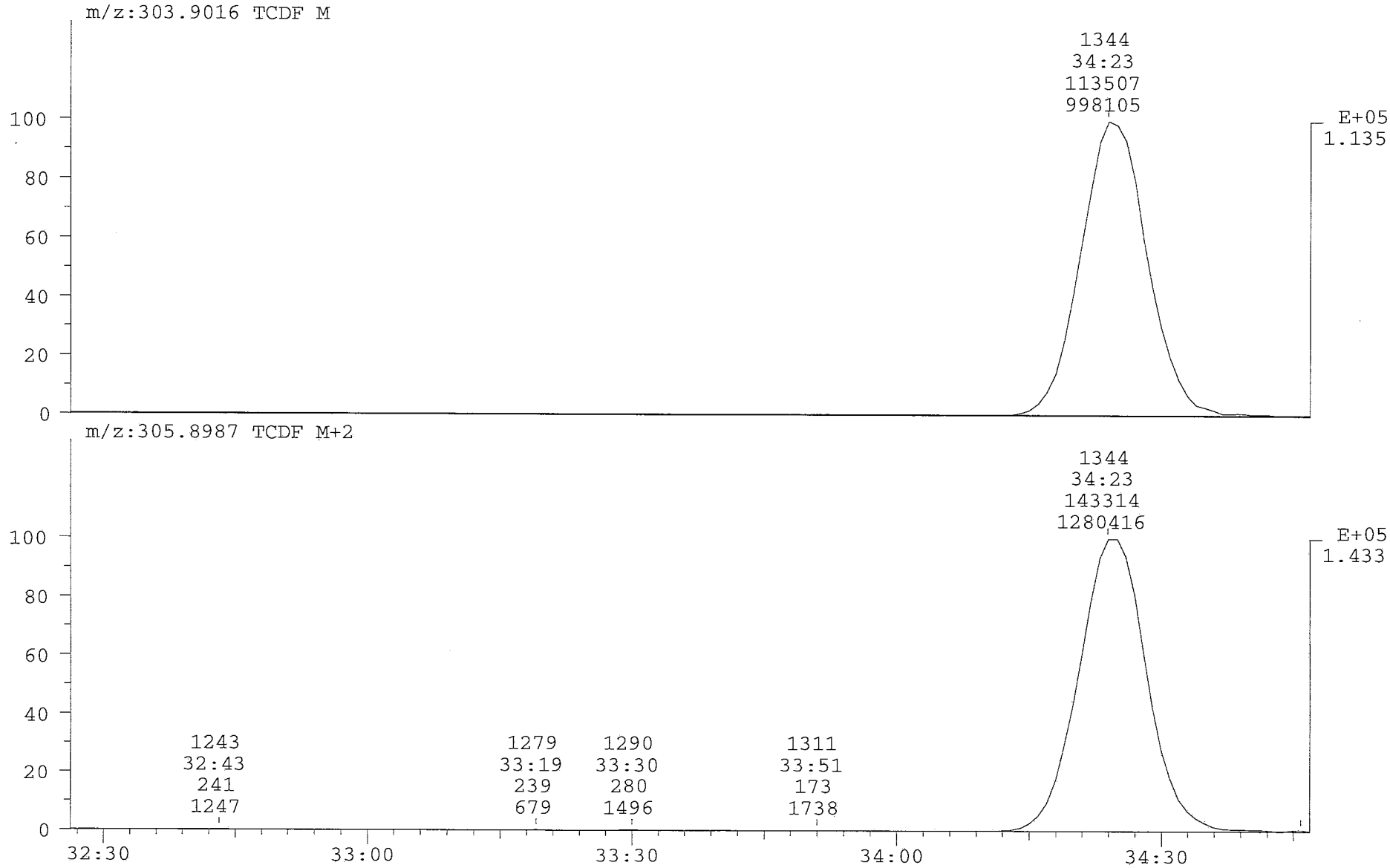
```
CHRO:  d3160809s1                          09-Aug-16   Elapse:  31:19      1159
Samp:  WO=4966:40 Meth=F8o Dil=1                       Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                             Study :  Ver/Win
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1063 > 1260       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



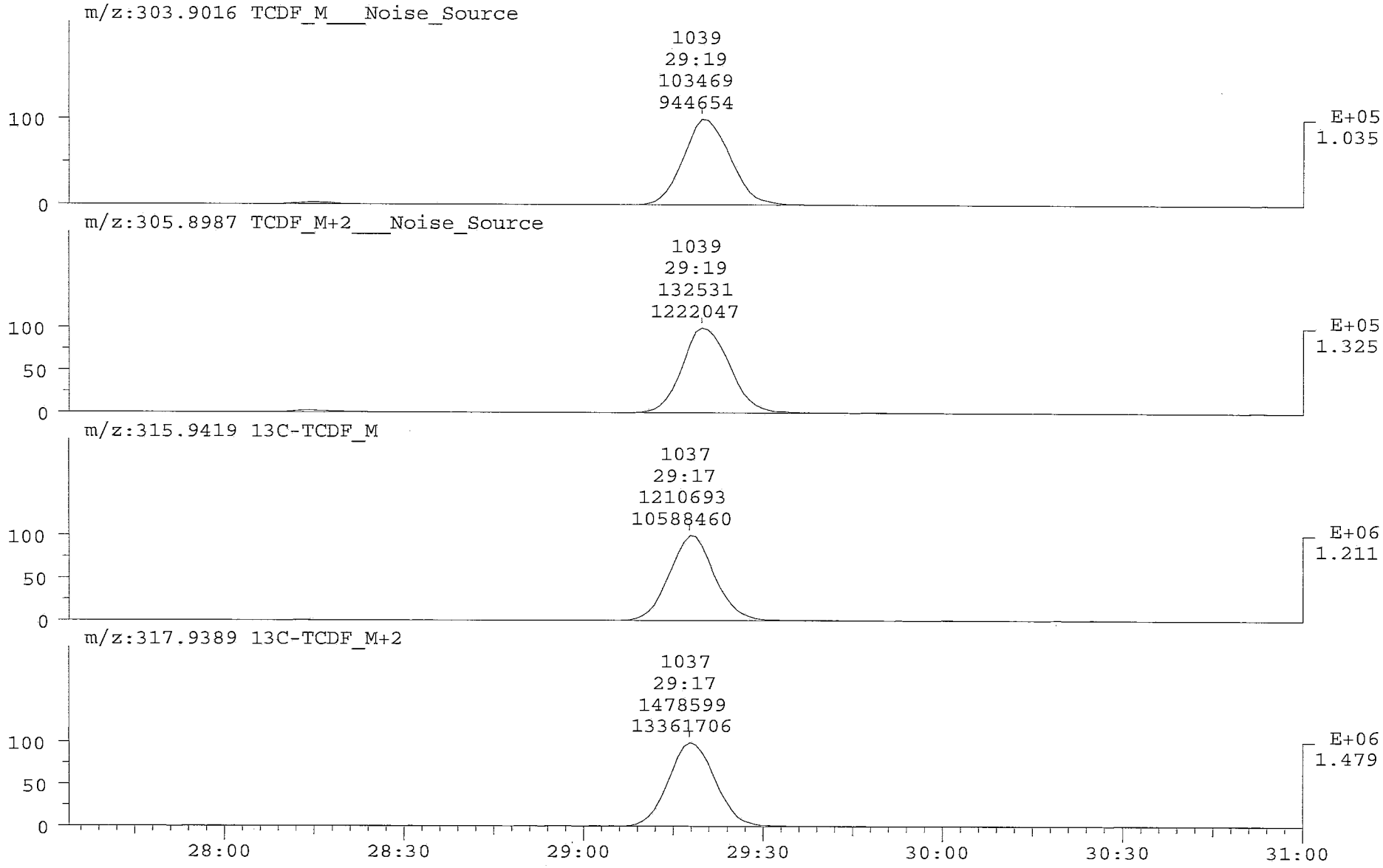
CHRO: d3160809s1 09-Aug-16 Elapse: 54:10 2484
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 13:54:21 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 571 > 1367 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



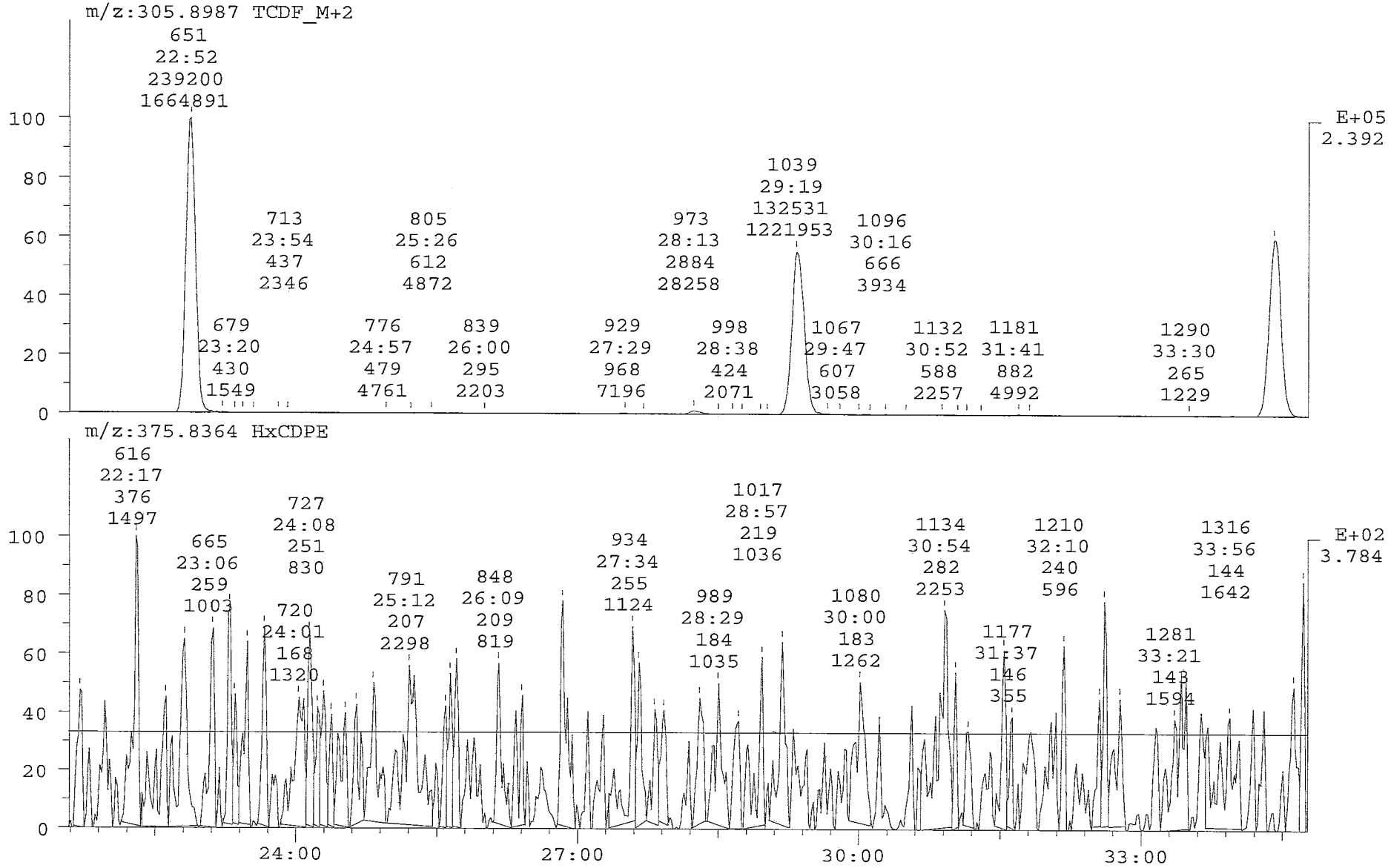
```
CHRO:  d3160809s1                          09-Aug-16   Elapse:  54:10      2484
Samp:  WO=4966:40 Meth=F8o Dil=1                       Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                             Study :  Ver/Win
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1226 > 1367       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



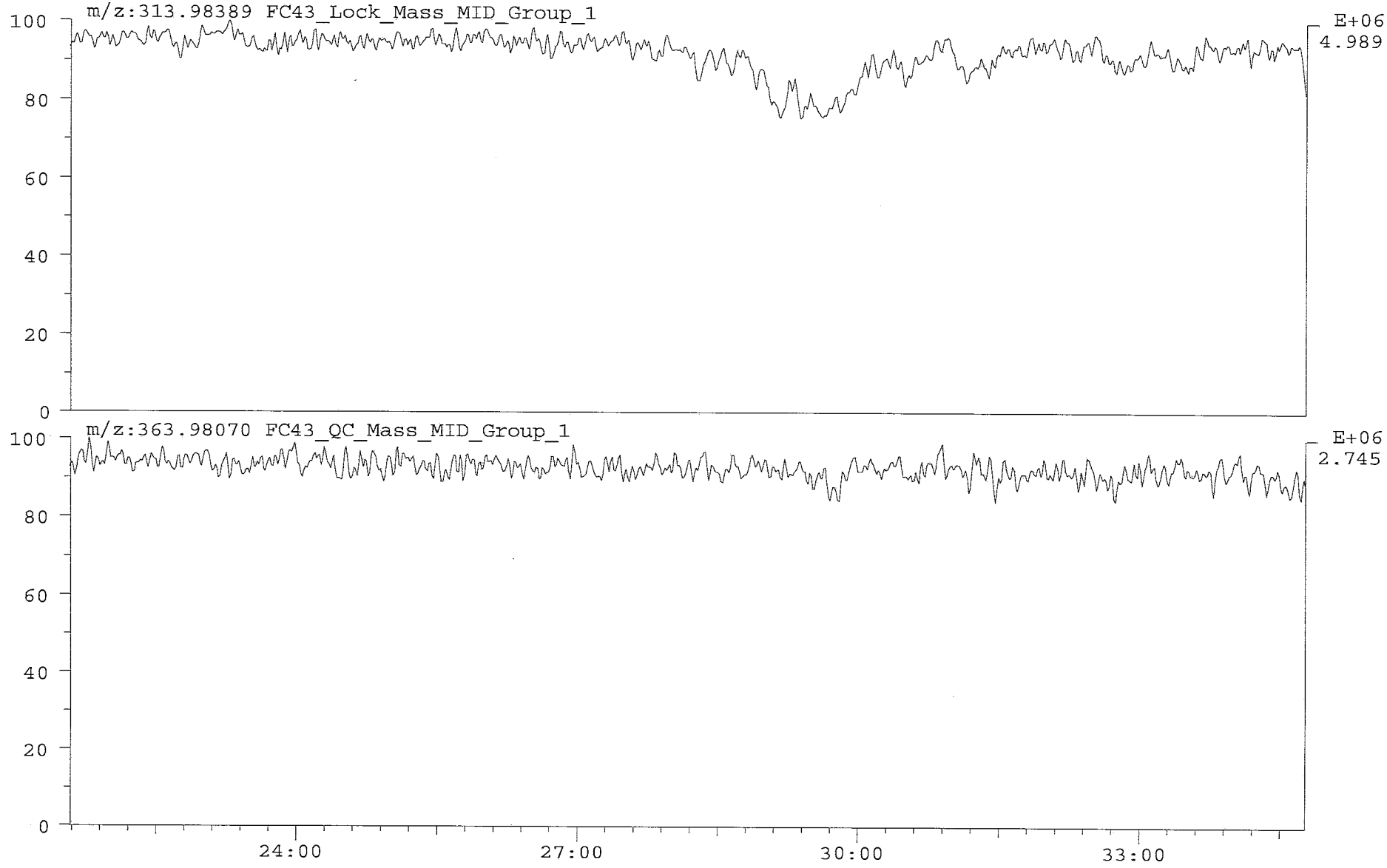
```
CHRO:  d3160809s1                          09-Aug-16  Elapse:  29:13      1033
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   933 > 1140       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



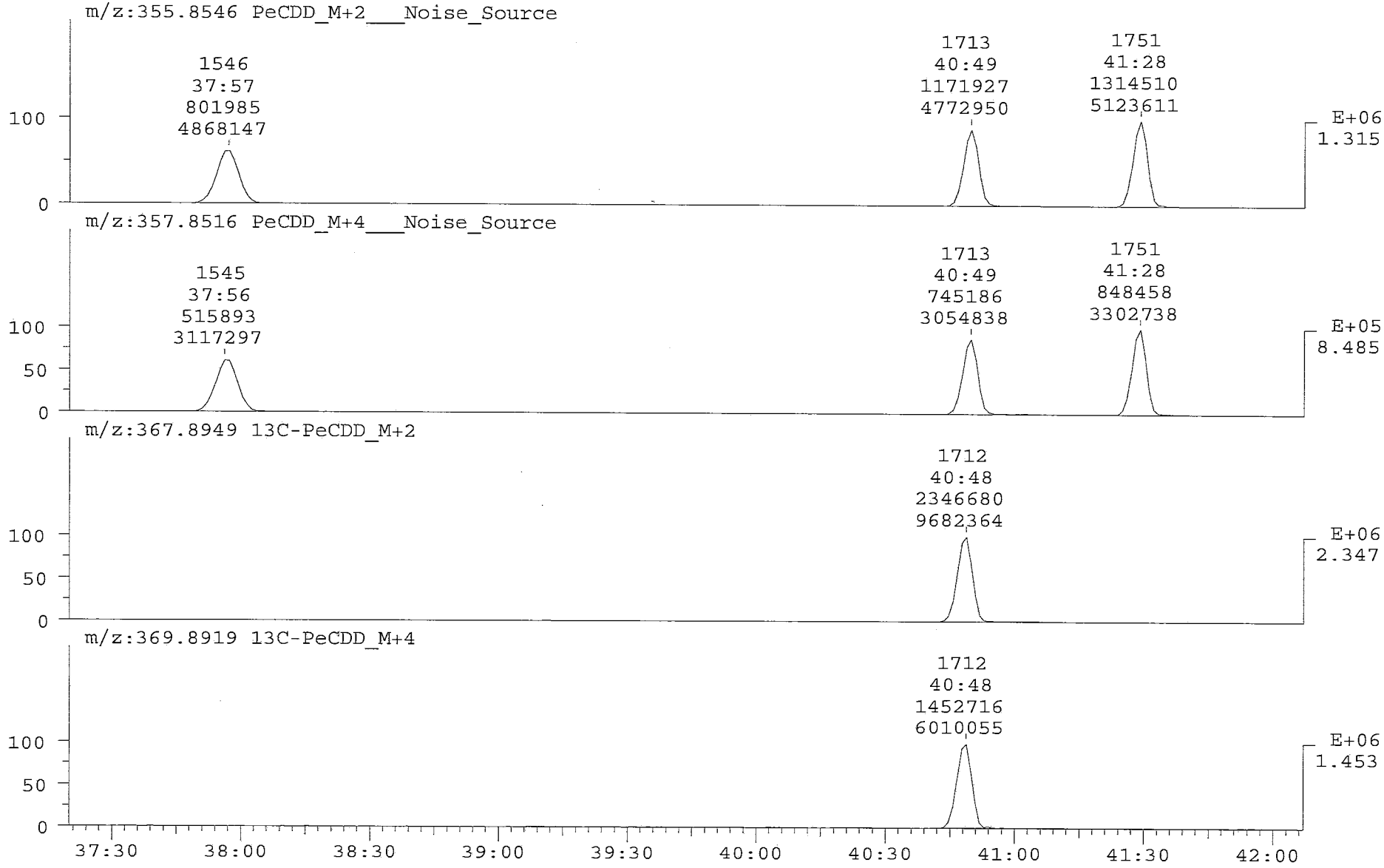
CHRO: d3160809s1 09-Aug-16 Elapse: 29:13 1033
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 13:54:21 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 573 > 1366 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



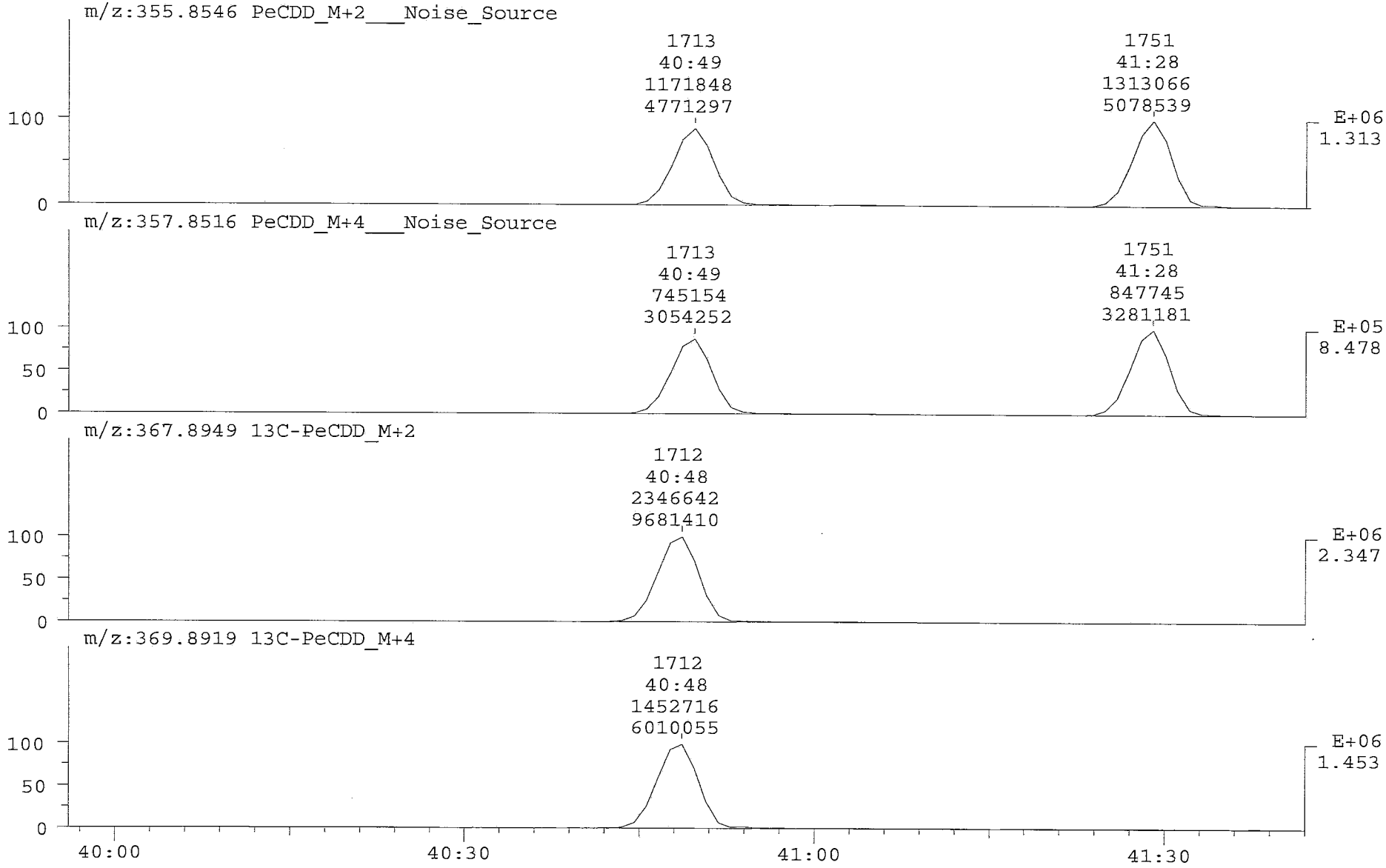
```
CHRO:  d3160809s1                          09-Aug-16  Elapse:  29:13      1033
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   573 > 1366       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



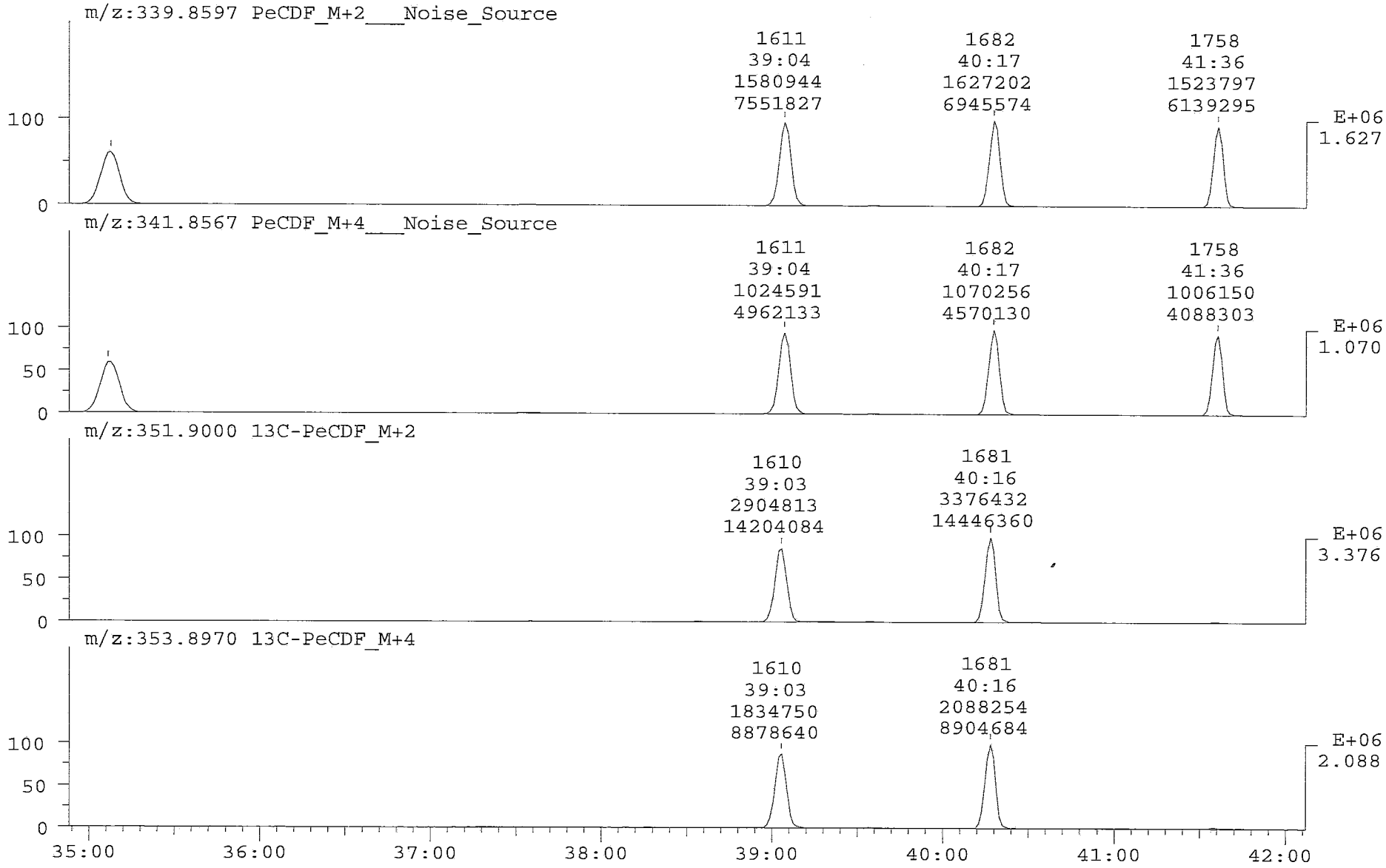
```
CHRO:  d3160809s1                          09-Aug-16   Elapse:  29:13      1033
Samp:  WO=4966:40 Meth=F8o Dil=1                       Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                             Study :  Ver/Win
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1510 > 1788       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```



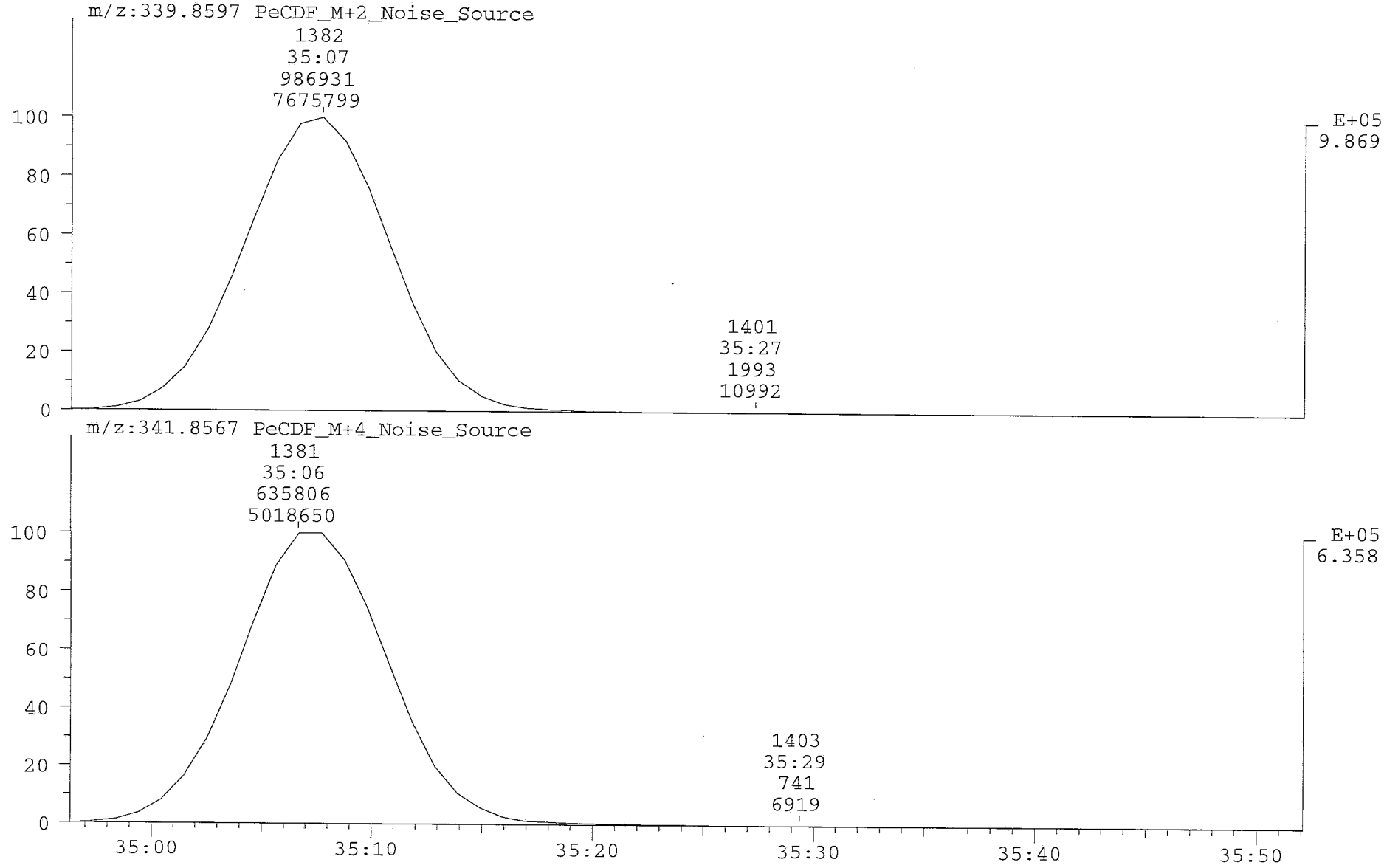
```
CHRO:  d3160809s1                          09-Aug-16   Elapse:  40:45      1709
Samp:  WO=4966:40 Meth=F8o Dil=1                       Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                             Study :  Ver/Win
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1661 > 1764       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```



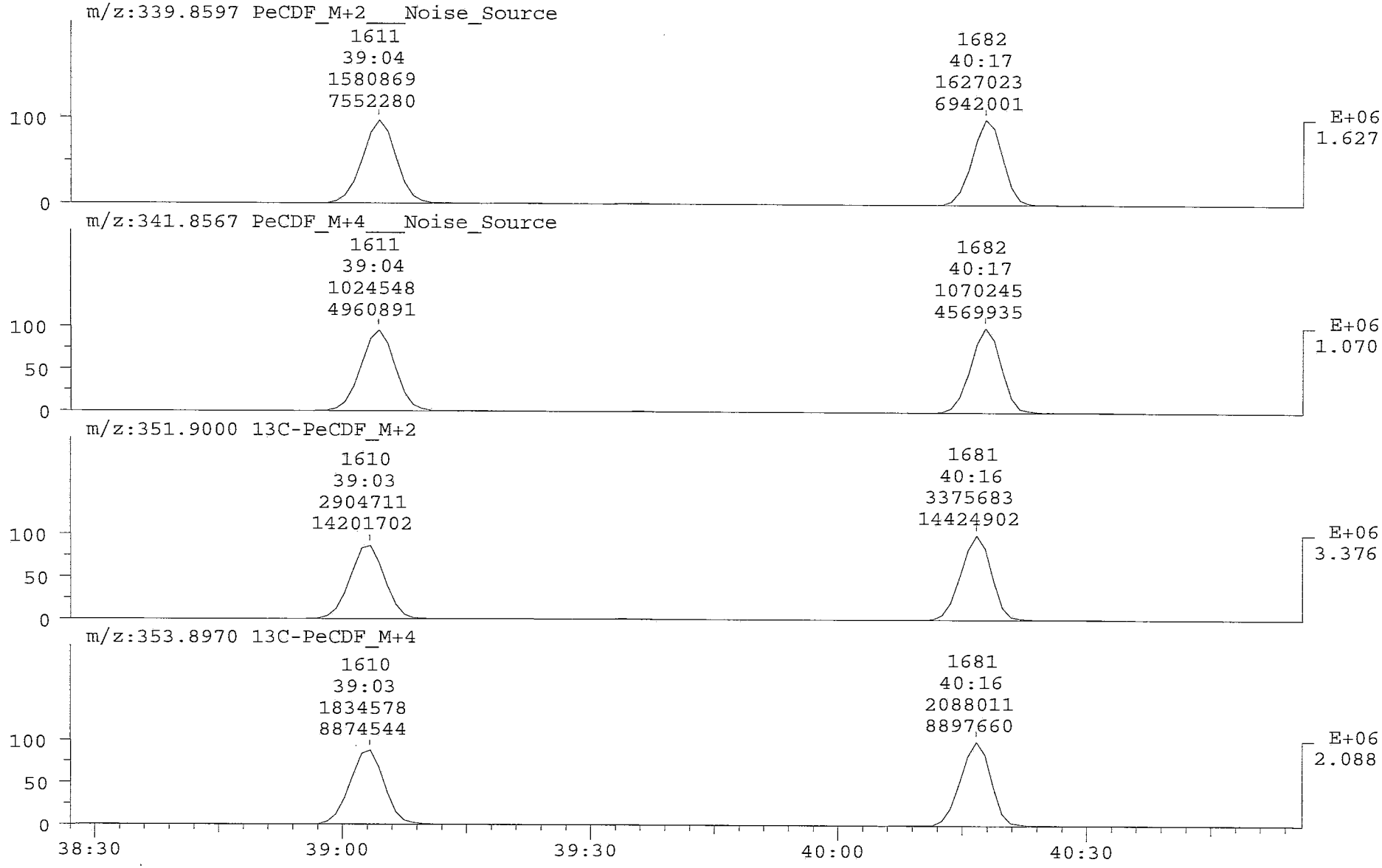
```
CHRO:  d3160809s1                          09-Aug-16   Elapse:  40:45      1709
Samp:  WO=4966:40 Meth=F8o Dil=1                       Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                             Study :  Ver/Win
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1369 > 1788       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```



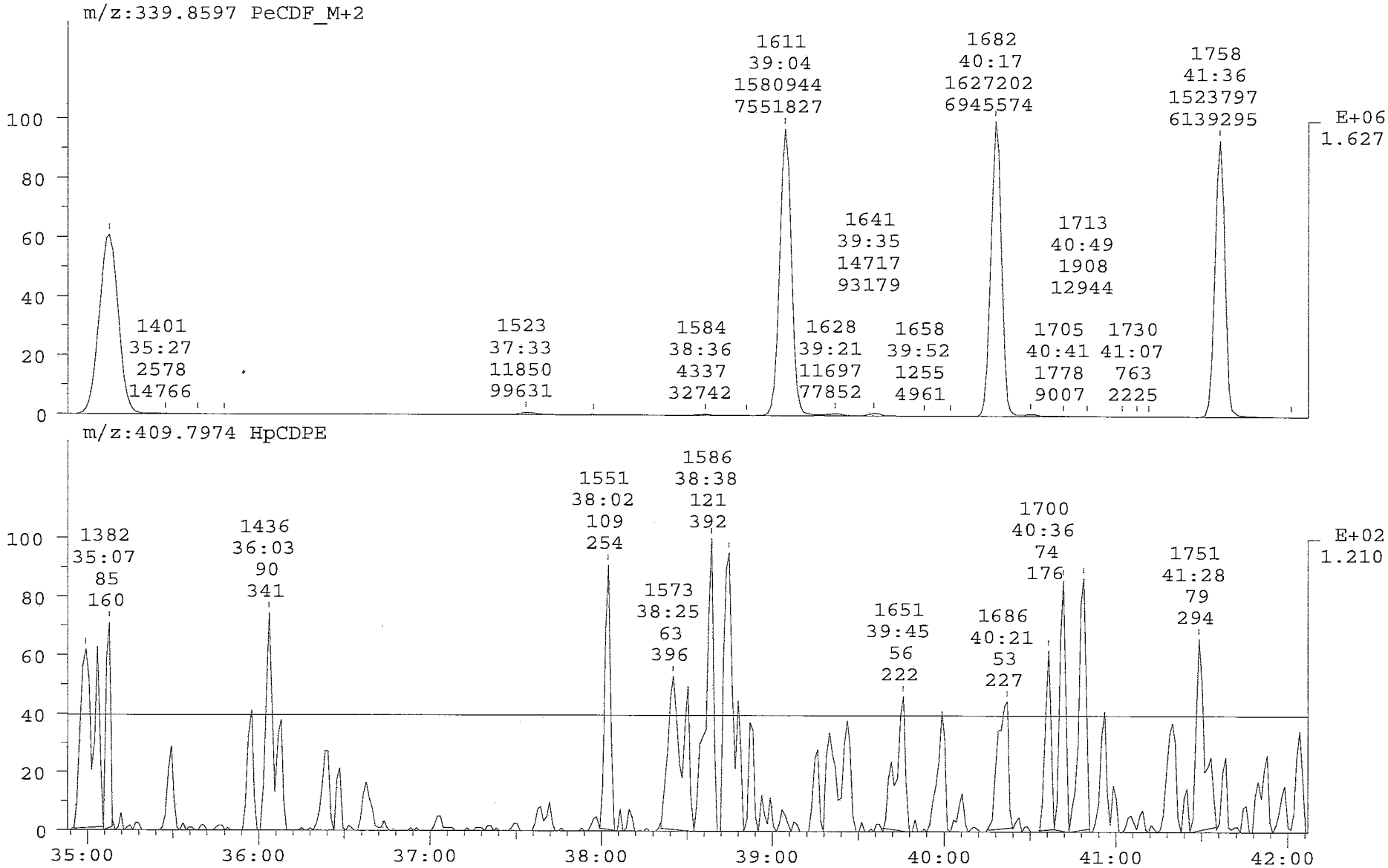
CHRO: d3160809s1 09-Aug-16 Elapse: 54:10 2484
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 13:54:21 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1371 > 1425 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



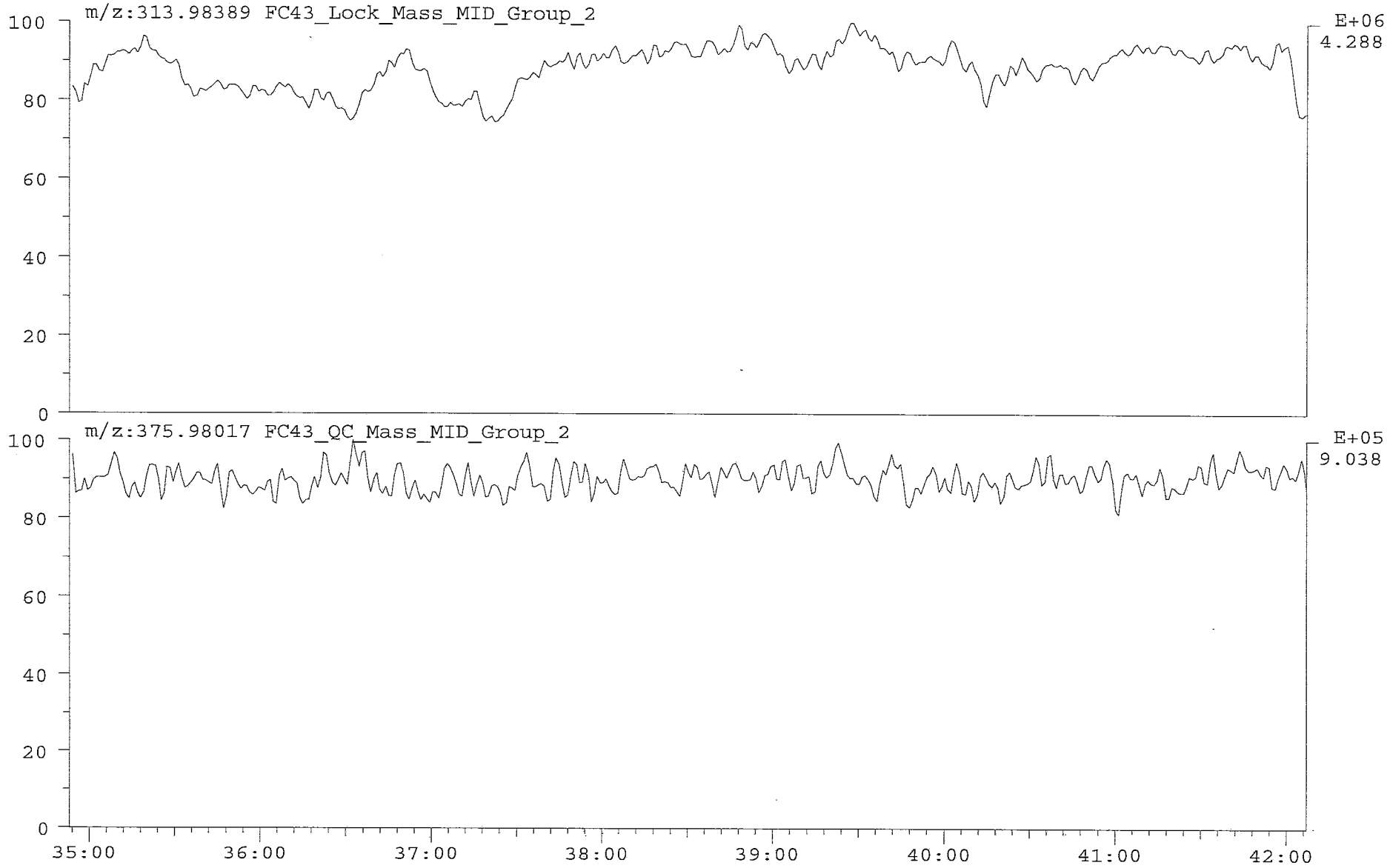
```
CHRO:  d3160809s1                          09-Aug-16   Elapse:  39:41      1647
Samp:  WO=4966:40 Meth=F8o Dil=1                       Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                             Study :  Ver/Win
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1575 > 1719       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```



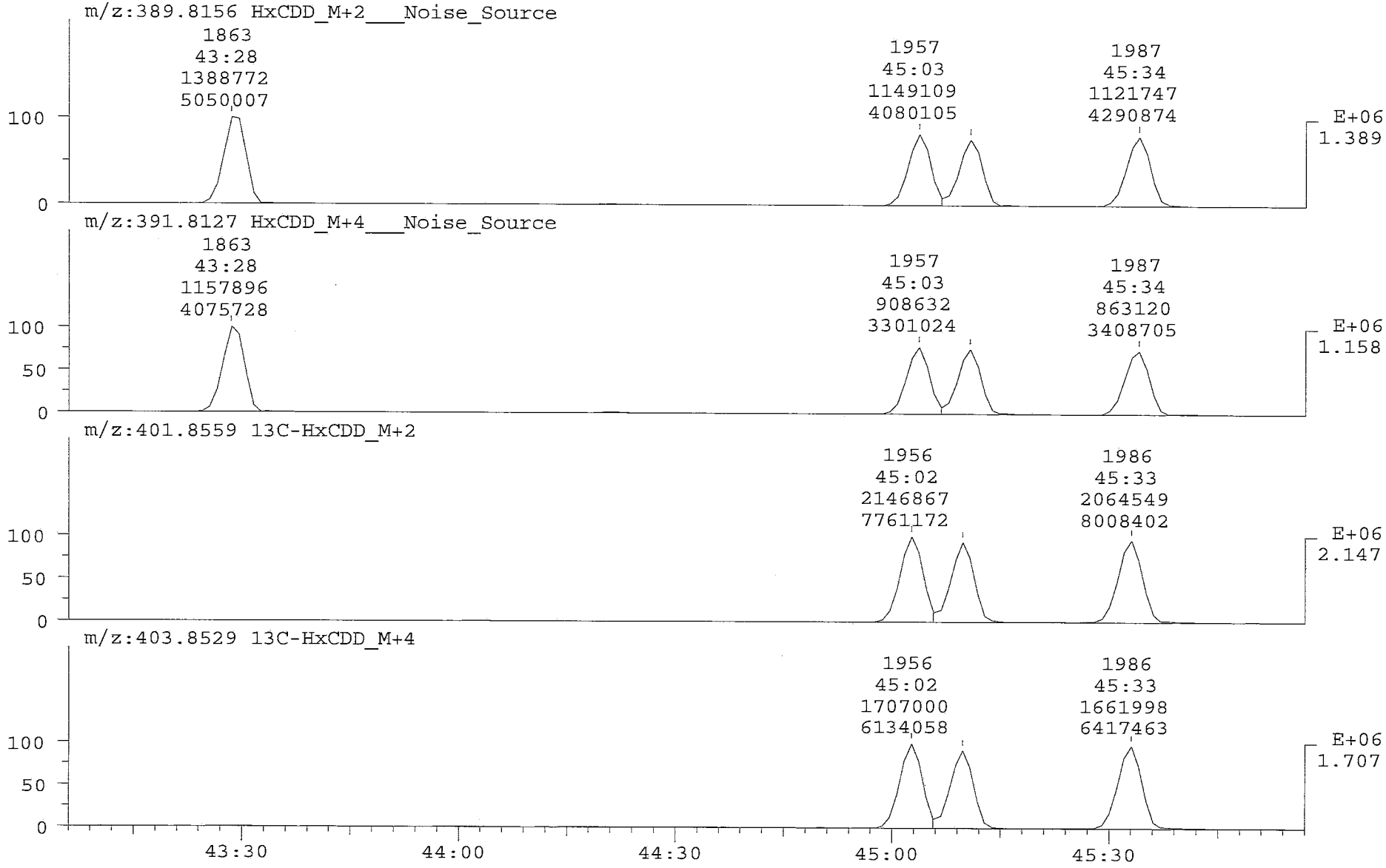
CHRO: d3160809s1 09-Aug-16 Elapse: 39:41 1647
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 13:54:21 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1369 > 1788 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



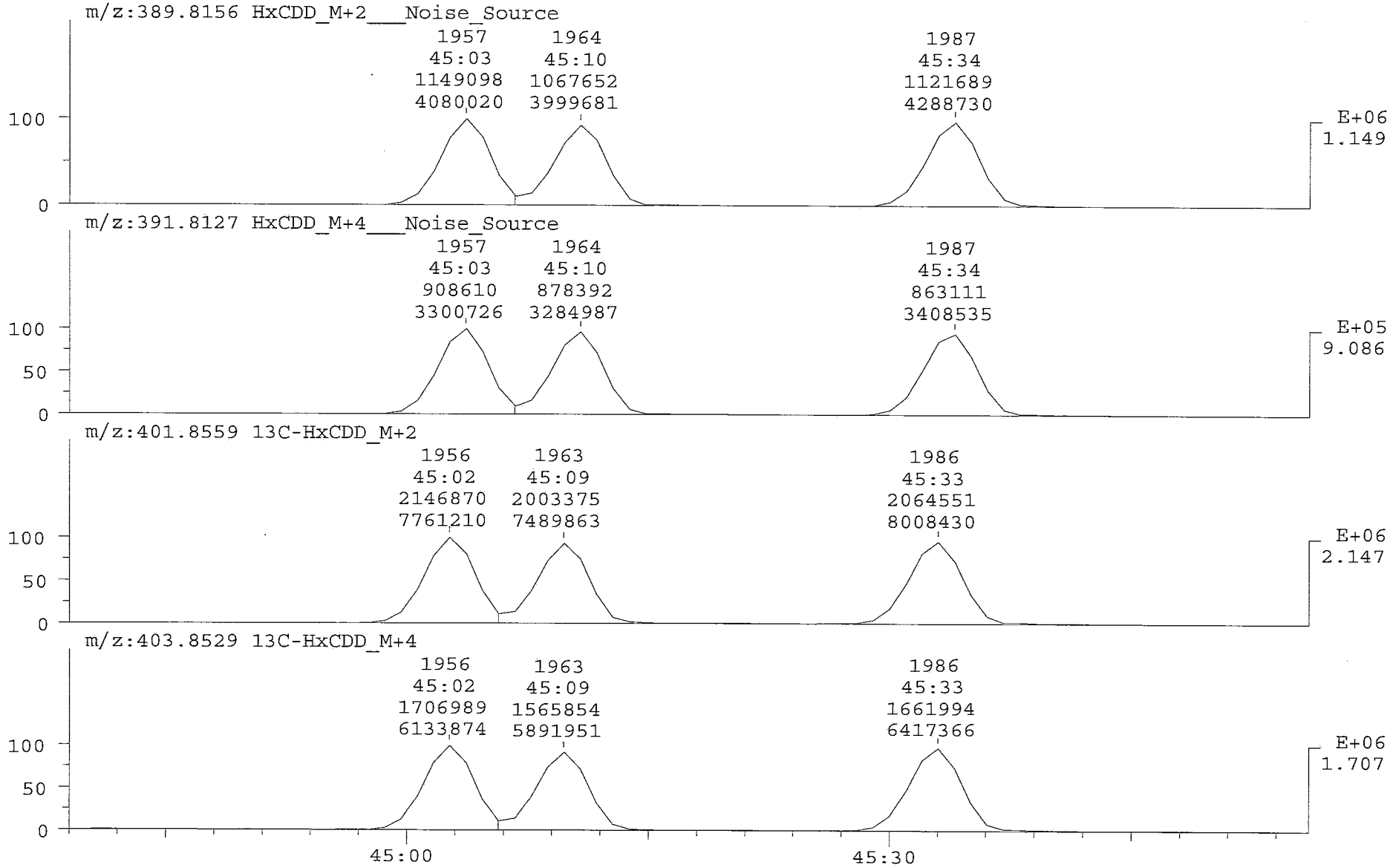
```
CHRO:  d3160809s1                          09-Aug-16  Elapse:  39:41      1647
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1369 > 1788      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



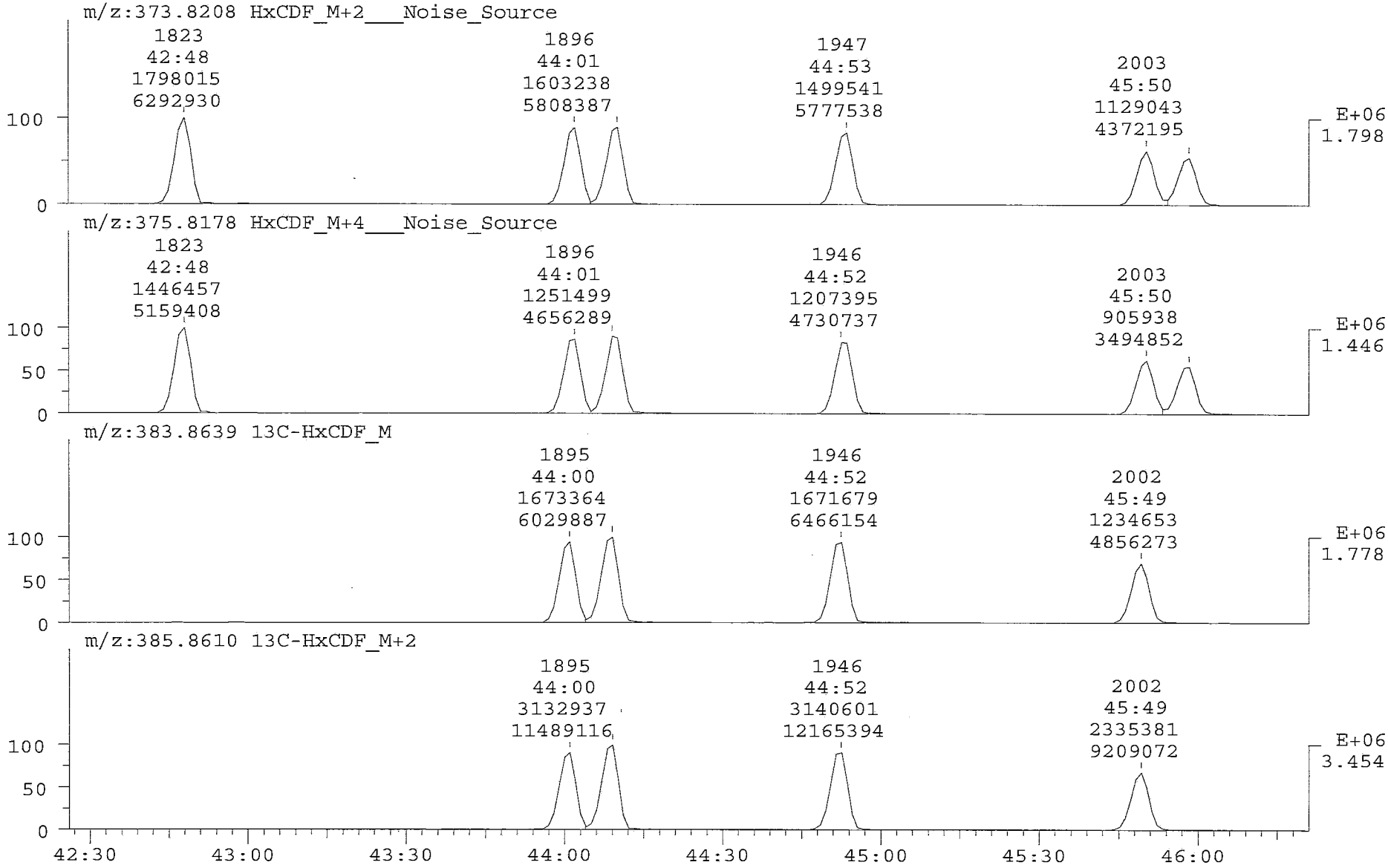
```
CHRO:  d3160809s1                          09-Aug-16   Elapse:  39:41      1647
Samp:  WO=4966:40 Meth=F8o Dil=1                       Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                             Study :  Ver/Win
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1841 > 2010       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```



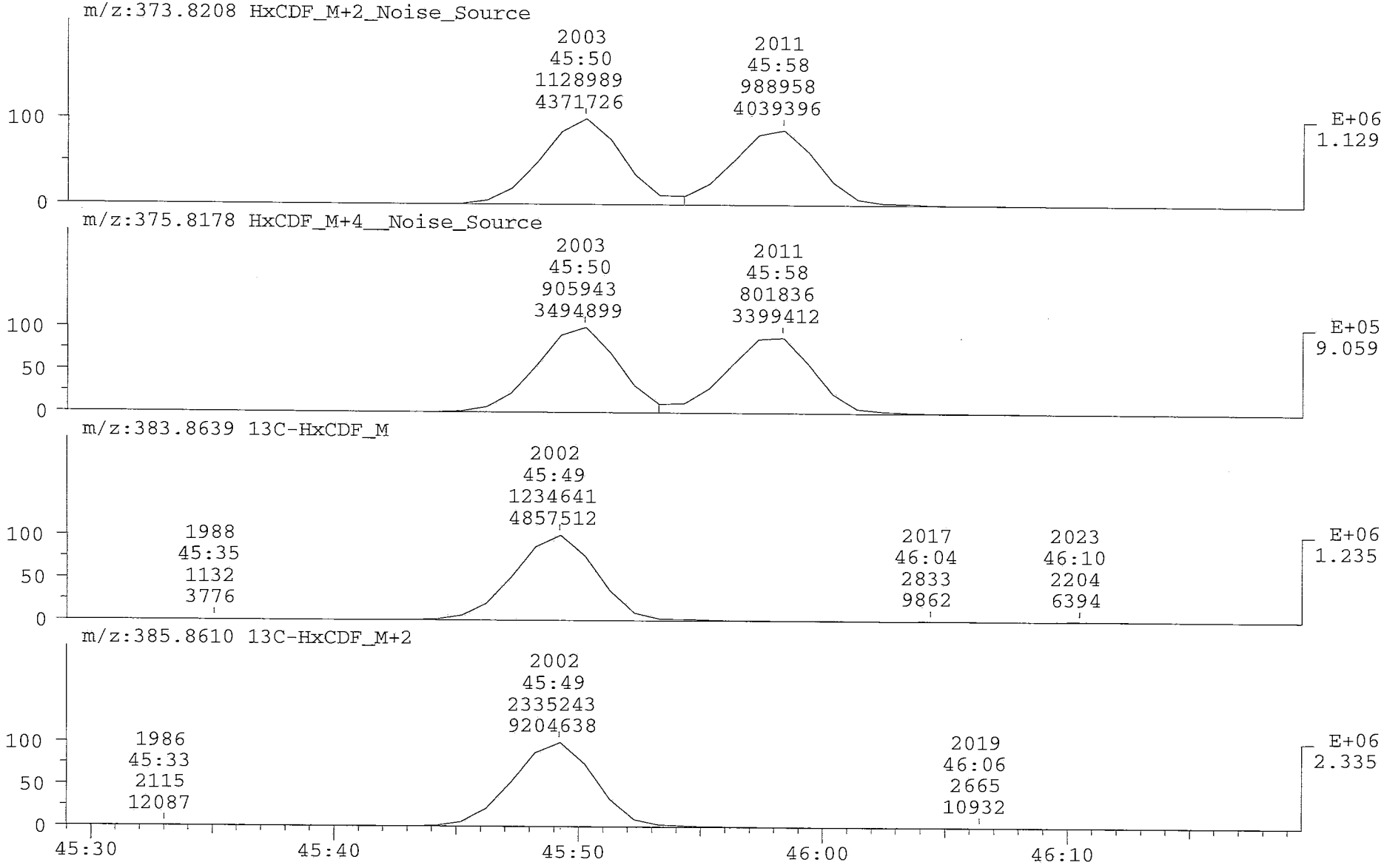
```
CHRO:  d3160809s1                          09-Aug-16   Elapse:  45:16      1970
Samp:  WO=4966:40 Meth=F8o Dil=1                       Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                             Study :  Ver/Win
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1933 > 2009       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```



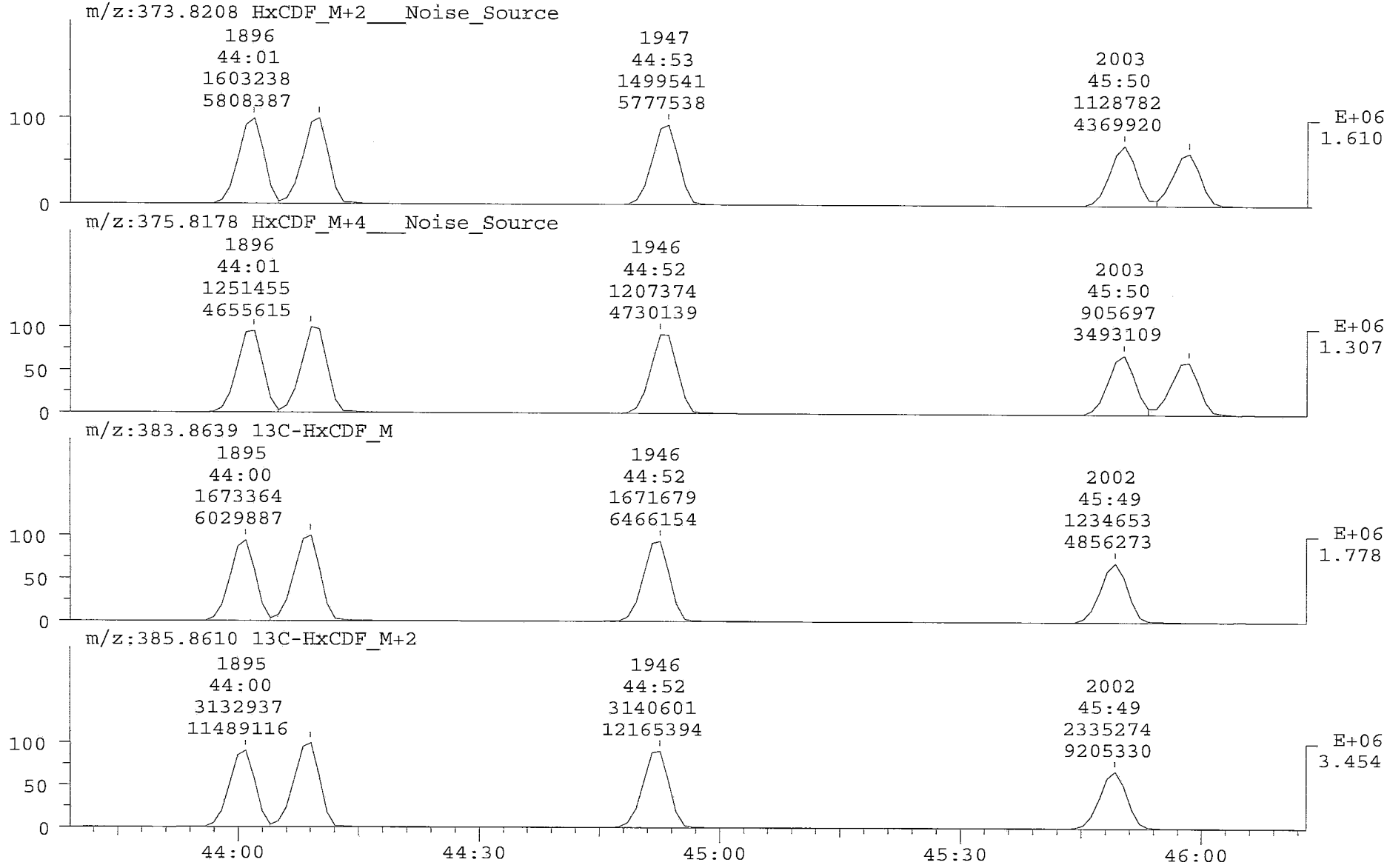
```
CHRO:  d3160809s1                          09-Aug-16   Elapse:  45:16      1970
Samp:  WO=4966:40 Meth=F8o Dil=1                       Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                             Study :  Ver/Win
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1801 > 2033       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```



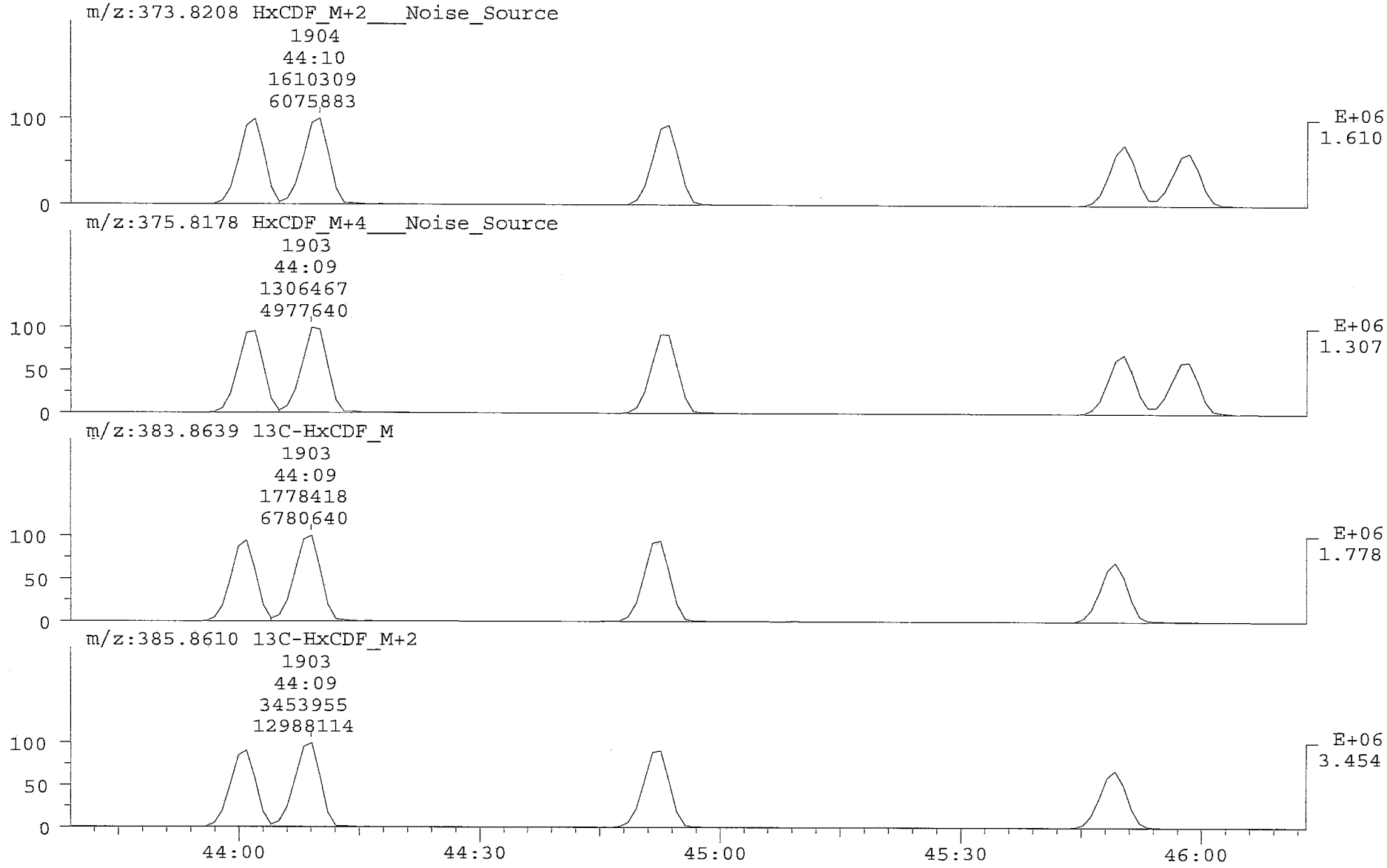
```
CHRO:  d3160809s1                                09-Aug-16  Elapse:  54:10      2484
Samp:  WO=4966:40 Meth=F8o Dil=1                            Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  Ver/Win
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1982 > 2032            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



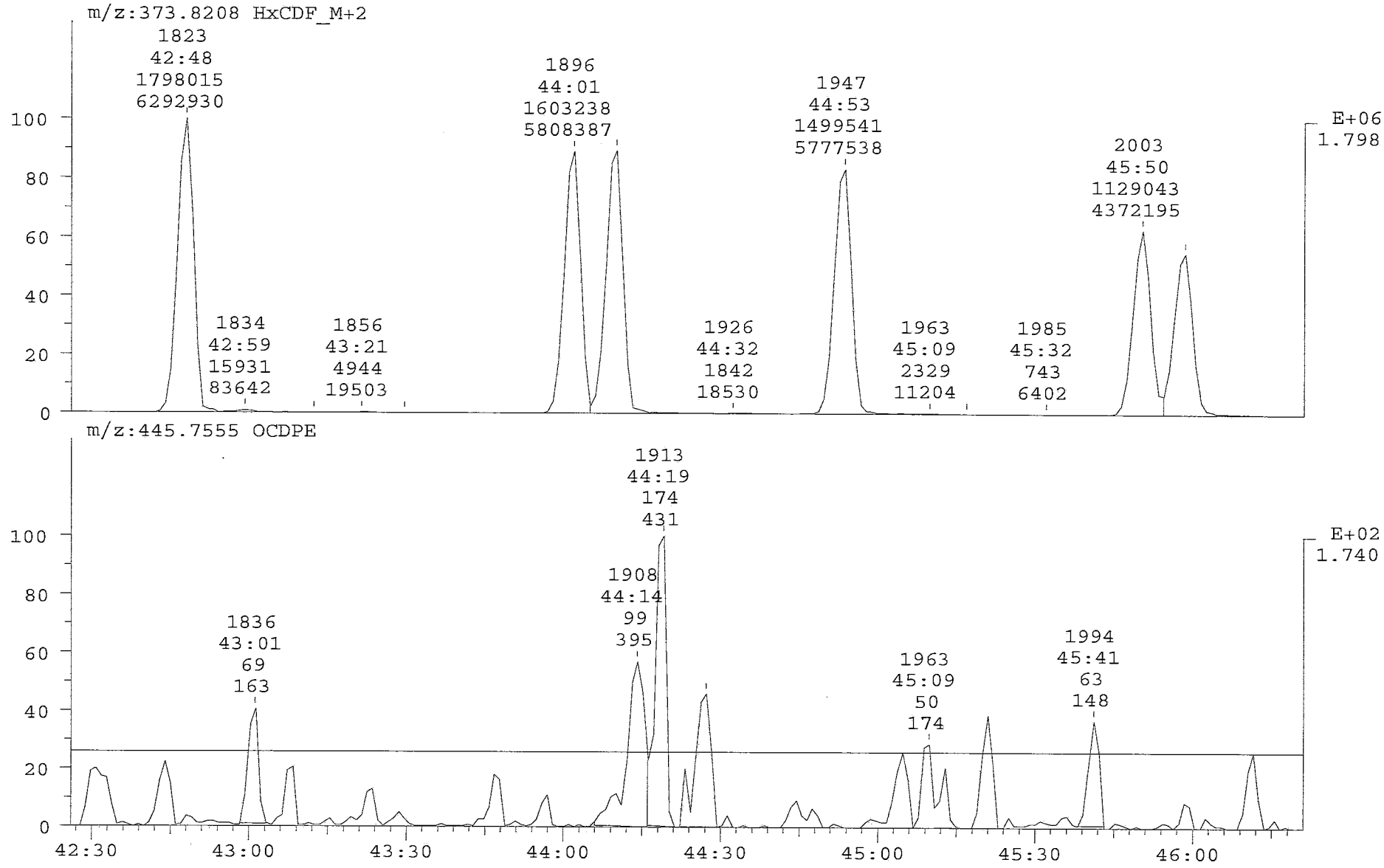
CHRO: d3160809s1 09-Aug-16 Elapse: 44:55 1949
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 13:54:21 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1873 > 2026 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



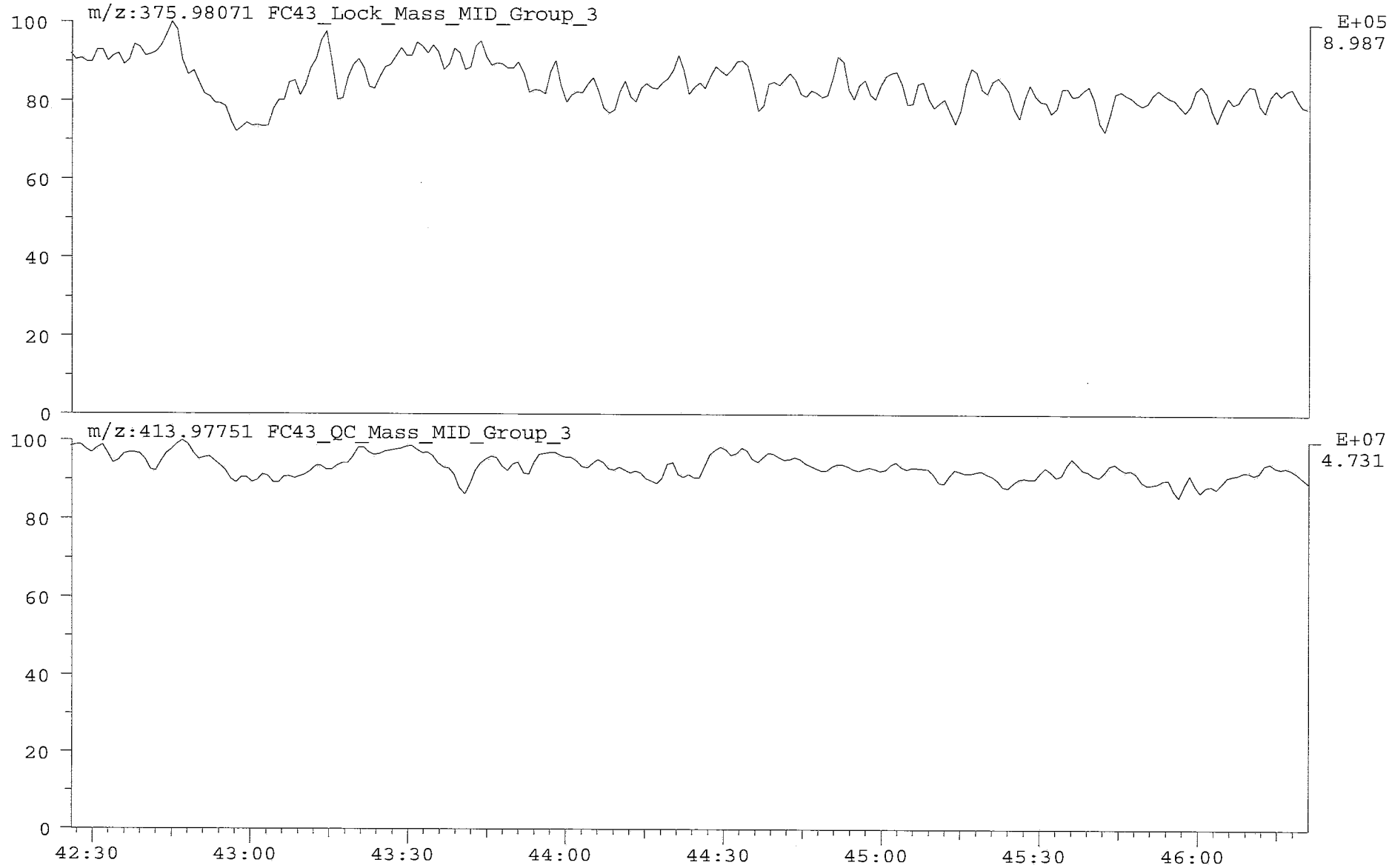
```
CHRO:  d3160809s1                          09-Aug-16  Elapse:  44:07      1901
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1897 > 1905      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



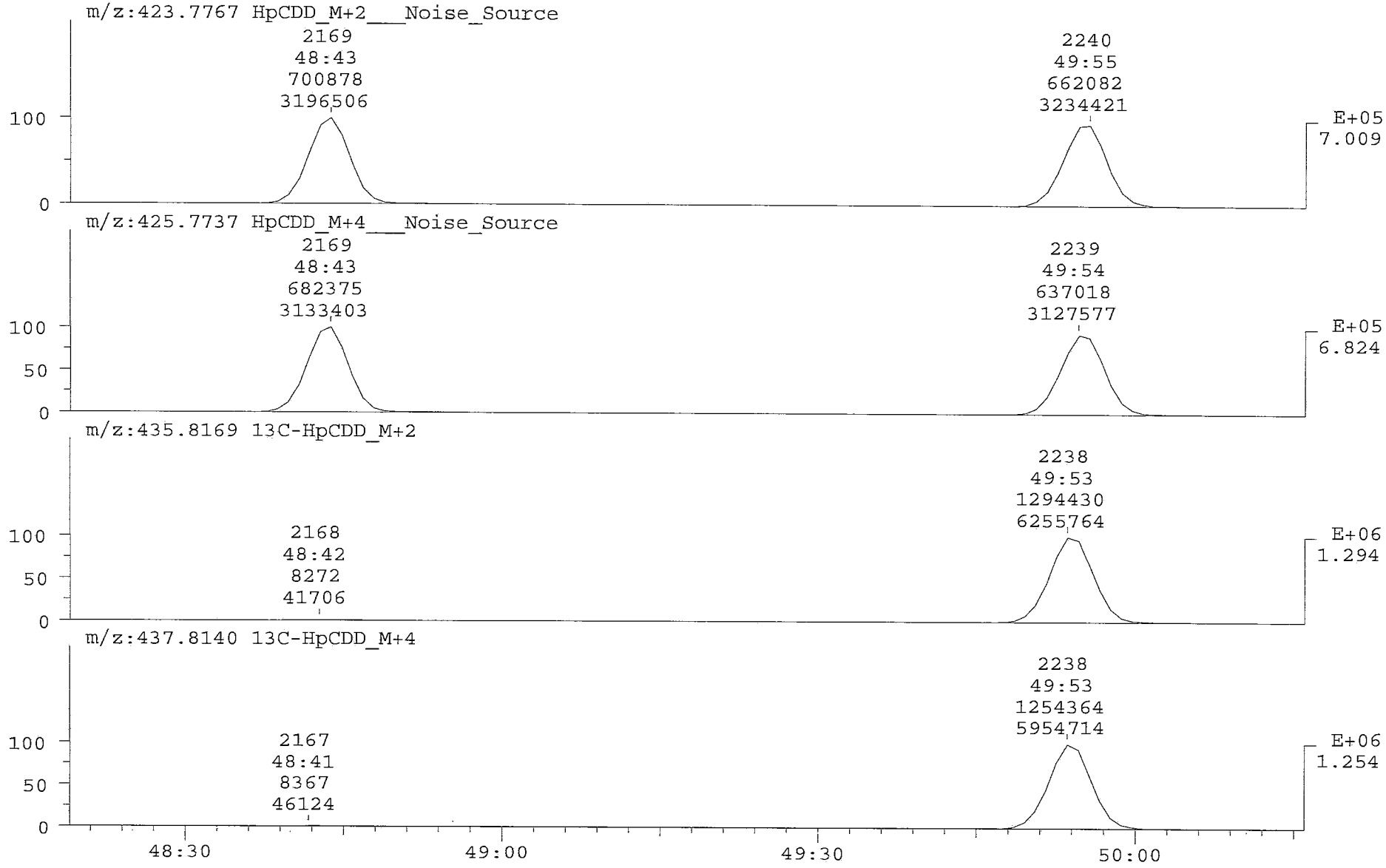
CHRO: d3160809s1 09-Aug-16 Elapse: 44:07 1901
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 13:54:21 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1801 > 2033 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



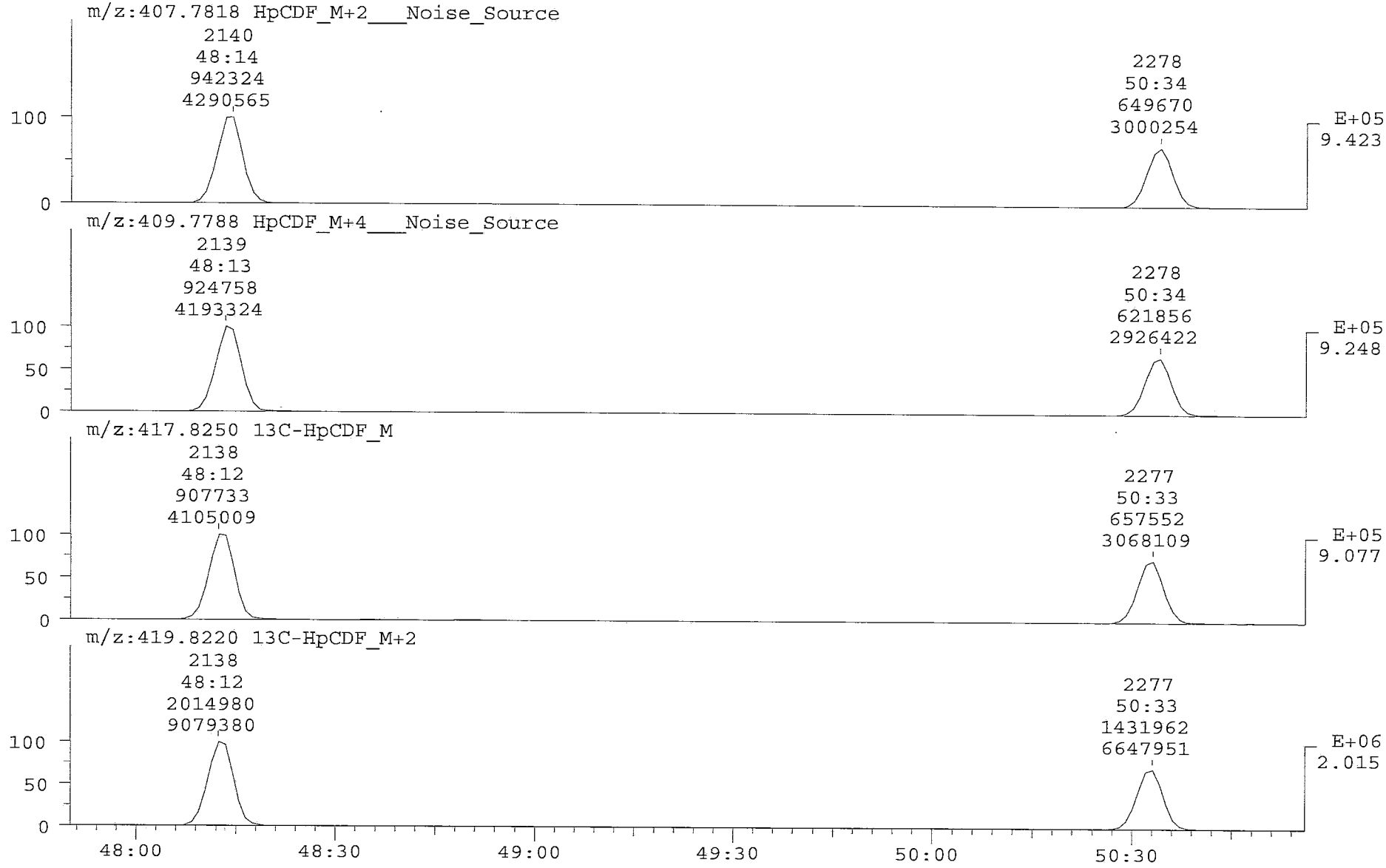
```
CHRO:  d3160809s1                          09-Aug-16   Elapse:  44:07      1901
Samp:  WO=4966:40 Meth=F8o Dil=1                       Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                             Study :  Ver/Win
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1801 > 2033       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  0, 0.0
Disp:  Height  Area
```



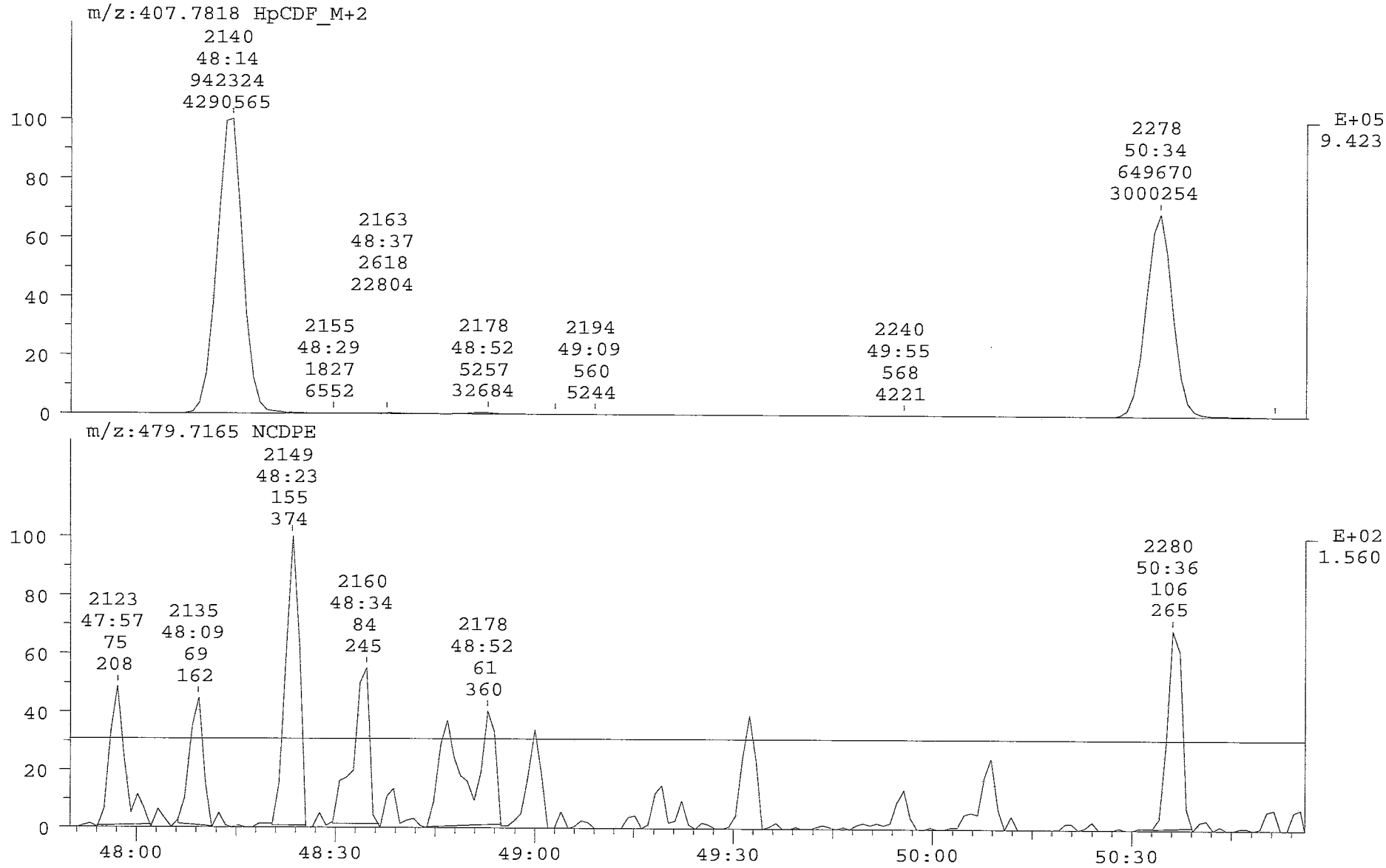
CHRO: d3160809s1 09-Aug-16 Elapse: 44:07 1901
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 13:54:21 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2145 > 2260 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



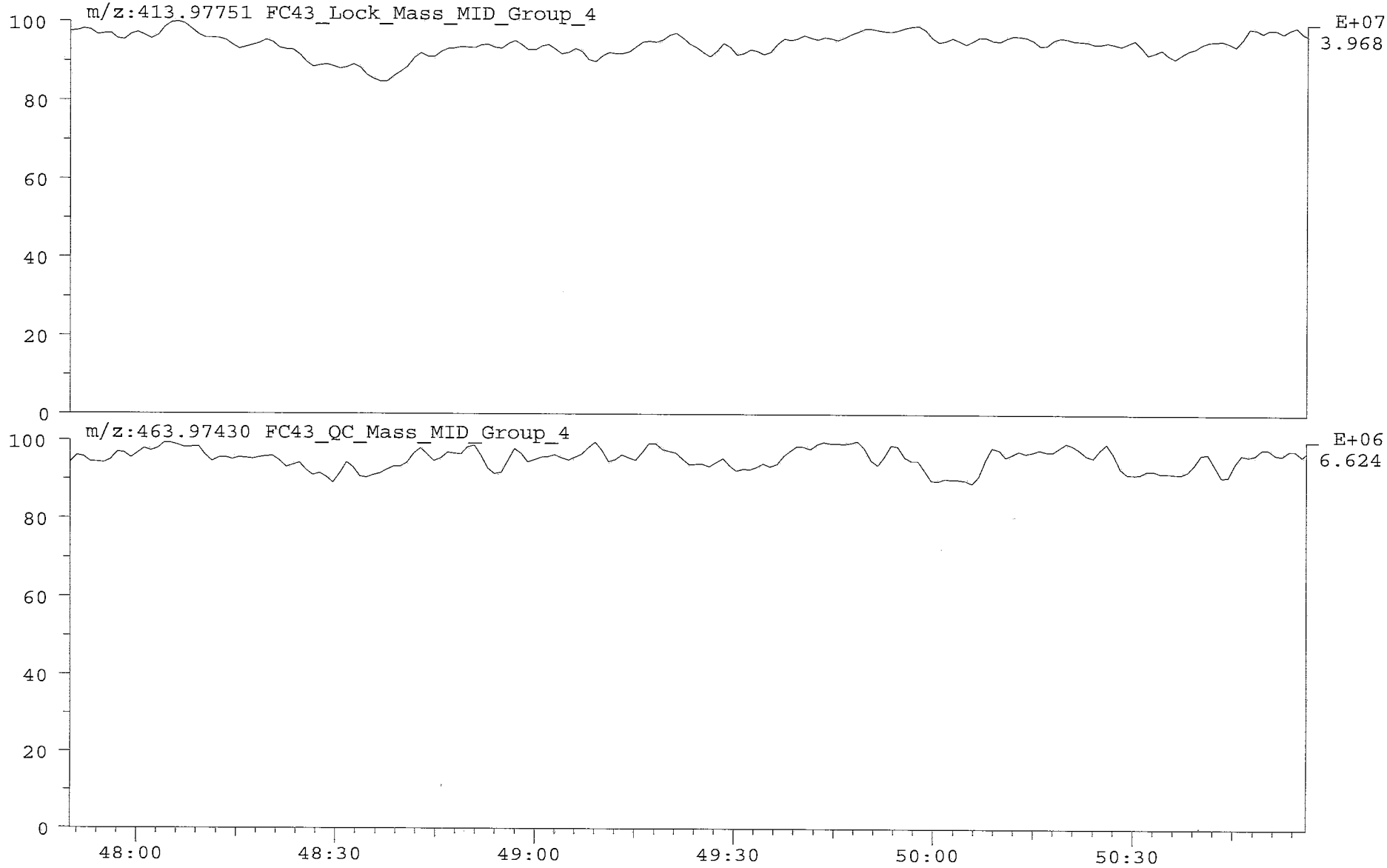
```
CHRO:  d3160809s1                          09-Aug-16   Elapse:  49:23      2208
Samp:  WO=4966:40 Meth=F8o Dil=1                       Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                             Study :  Ver/Win
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2116 > 2300       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



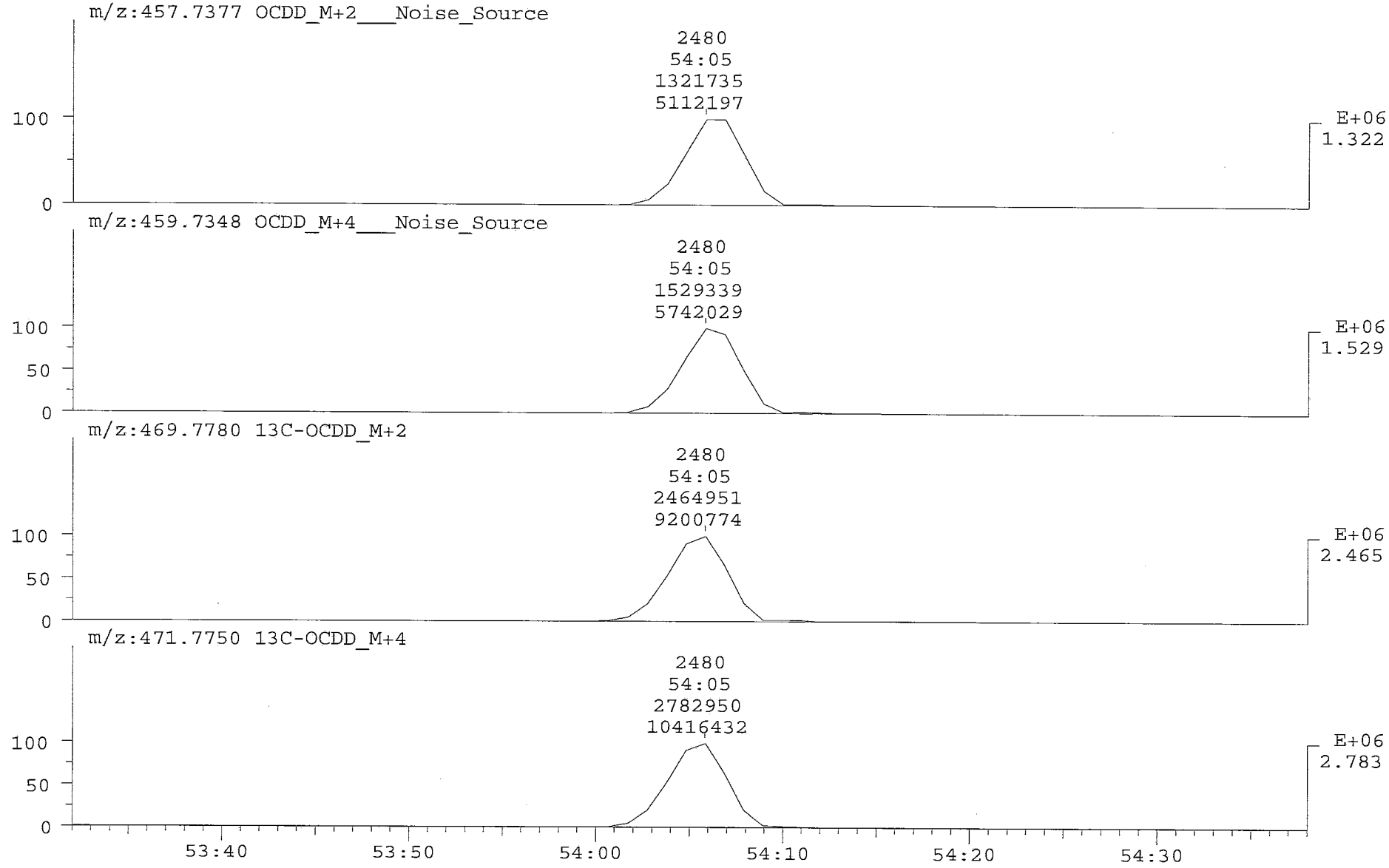
```
CHRO:  d3160809s1                                09-Aug-16  Elapse:  49:23      2208
Samp:  WO=4966:40 Meth=F8o Dil=1                            Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  Ver/Win
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2116 > 2300            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



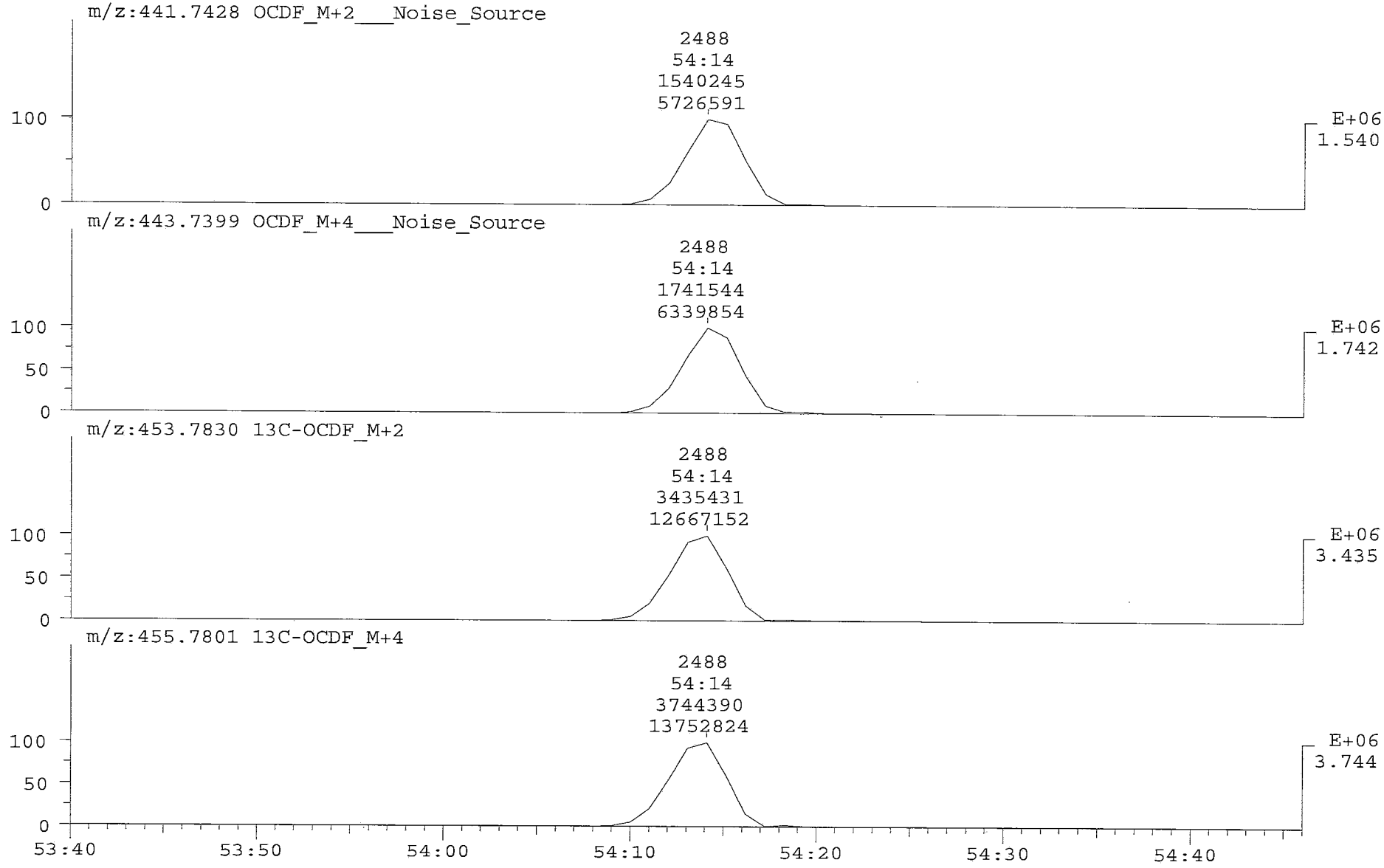
```
CHRO:  d3160809s1                          09-Aug-16   Elapse:  49:23      2208
Samp:  WO=4966:40 Meth=F8o Dil=1                       Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                             Study :  Ver/Win
Oper:  MSD                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2116 > 2300       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  0, 0.0
Disp:  Height  Area
```



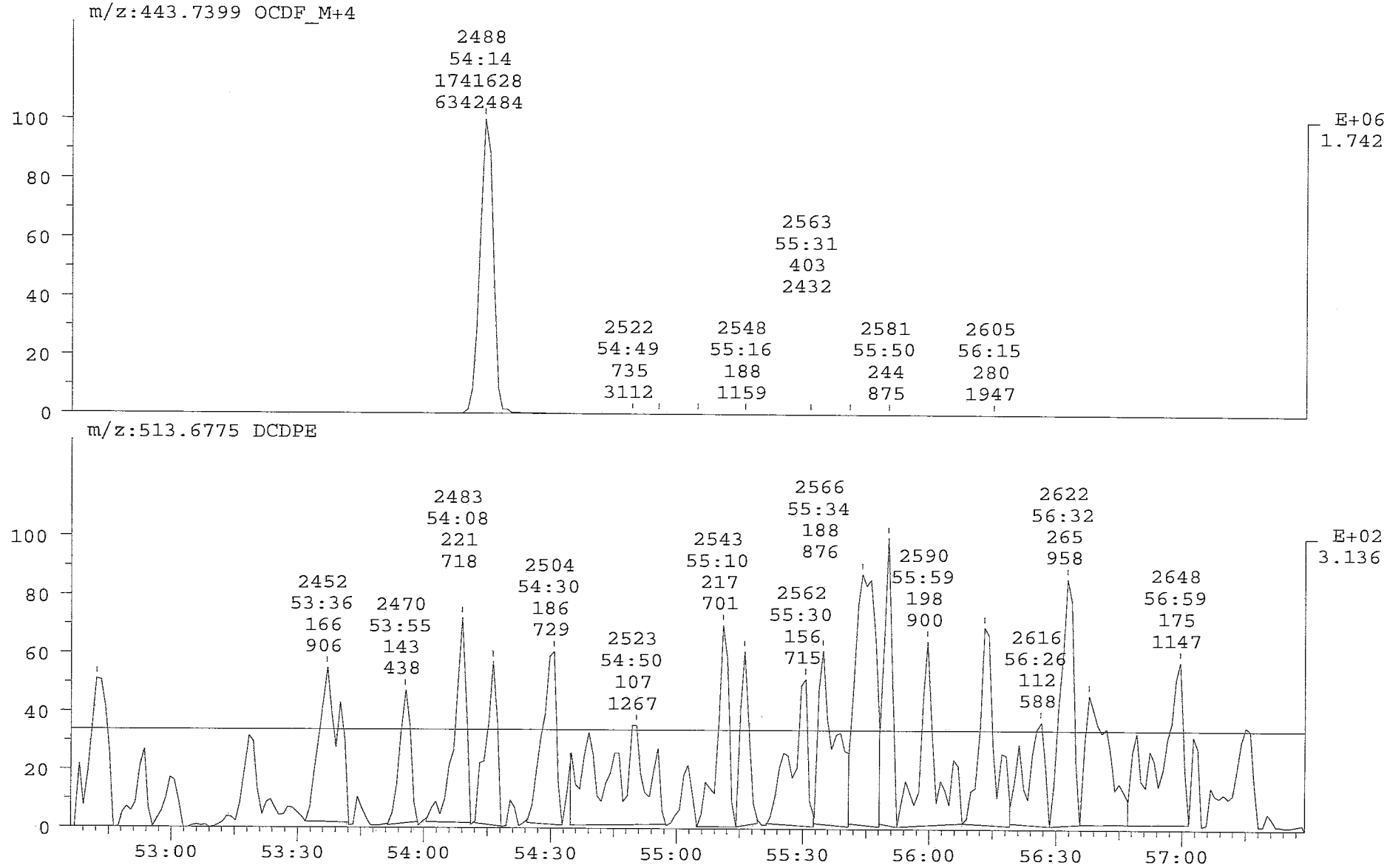
```
CHRO:  d3160809s1                          09-Aug-16  Elapse:  54:01      2476
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2447 > 2511      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



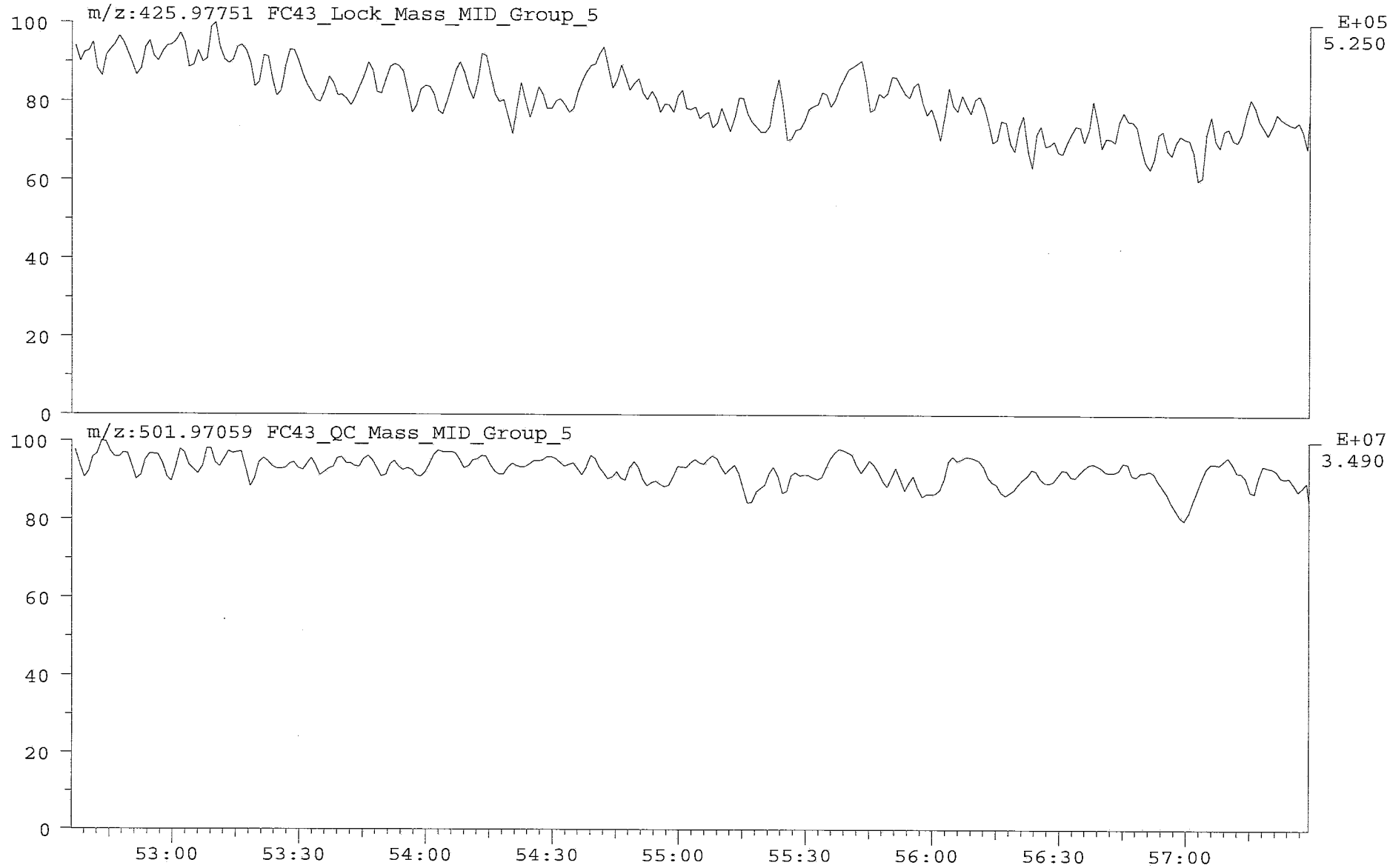
```
CHRO:  d3160809s1                          09-Aug-16  Elapse:  54:10      2484
Samp:  WO=4966:40 Meth=F8o Dil=1                      Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                            Study :  Ver/Win
Oper:  MSD                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2455 > 2519      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d3160809s1                                09-Aug-16  Elapse:  54:10      2484
Samp:  WO=4966:40 Meth=F8o Dil=1                            Start :  13:54:21   2678
Comm:  Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  Ver/Win
Oper:  MSD                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2394 > 2677            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d3160809s1 09-Aug-16 Elapse: 54:10 2484
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 13:54:21 2678
Comm: Inst=d2a/1379923 Batch=20160809s1 Ccal=D3160805S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2394 > 2677 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Tue Aug 09 13:56:11 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - D5FBM84J

Analysis started at: 09-Aug-16 13:56:10

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence :

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	22:47 min	34:47 min	0.99 sec
# 2	34:47 min	7:21 min	42:08 min	1.00 sec
# 3	42:08 min	4:51 min	47:00 min	1.00 sec
# 4	47:00 min	5:30 min	52:30 min	1.00 sec
# 5	52:30 min	5:00 min	57:30 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	122
305.8987		1	1	122
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	122
321.8936		1	1	122
327.8847		1	1	122
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	122

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7

```
  375.9802     20  1        7
  409.7974      1  1      146
 Window # 3
      mass F  int  gr  time (ms)
  373.8208      1  1      146
  375.8178      1  1      146
  375.9802 l   20  1        7
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 34.800000 minutes
MID Window end time was 34.800000 minutes
MID Window terminated after 42.150000 minutes
MID Window end time was 42.150000 minutes
MID Window terminated after 47.000000 minutes
MID Window end time was 47.000000 minutes
MID Window terminated after 52.500000 minutes
MID Window end time was 52.500000 minutes
MID Window terminated after 57.500000 minutes
MID Window end time was 57.500000 minutes

Tune file name: C:\Xcalibur\system\DFS\MSI\Tune2.DFSTune
```

DFS - Parameter

ACCU	2000.0000	BCORRS	0.0177	BMASS	313.4834
BQUAD	7.7500	CAPIL	0.0000	CAPTSET	0.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	15.5000	ECORR	1.0007	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2469.0000
ELEN	-45.0000	EMULT	1687.0000	ENS	168.0000
ENSBR	7.7500	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	155.0000	EXSBR	2.5000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	10.0000	FMII	50.0000	FQUAD	6.1000
FQUADGAIN	22.0000	FREQ	200.0000	FSLOPE	36000000.0000
FVANAL	0.0124	FVINLET	0.0342	FVSRC	0.0309
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	740.0000
LENS_SYM	19.3000	LM	50.0000	LMII	500.0000
LMASS	313.4834	LKM	425.9770	MASS	313.4834
MDAC	3541532.0277	MRANGE	1238.2603	NSAM	100.0000
NSCAN	2701.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	0.0000	PSAM	10.0000
PUSHER	-1.0000	RECURR	0.9026	RELEN	0.0000
RES	11881.2828	RPUSHER	-0.9158	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	728.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	0.0000	SLOW	60.0000	SS	2.0000
SW	0.1020	TANAL	0.0000	TCURR	0.0000
TD	5.0000	TS	3.5343	THRESH	2.0000
TIS	0.2000	TREF	80.0000	TSAM	100.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	313.4834	XLENS_POT	910.0000
XLENS_SYM	13.5000	YLENS_POT	800.0000	YLENS_SYM	0.0000

Source Gauge: 1.4e-005 mbar
Analyzer Penning: 1.0e-007 mbar
Pirani Analyse: 1.3e-002 mbar
Pirani Source: 3.1e-002 mbar
Pirani Inlet System: 3.4e-002 mbar

Scantype is electric

Sourcemode is EI POS

MID Time Window 1: Resolution is 11527.
MID Time Window 2: Resolution is 11702.
MID Time Window 3: Resolution is 11843.
MID Time Window 4: Resolution is 11602.
MID Time Window 5: Resolution is 11881.

Amplifier Offset: 94.

*** File closed Tue Aug 09 14:53:42 2016
***

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User: finnigan
Host: knx-alpha5.tai.com
Class: knx-alpha5.tai.com
Job: d3160809s1.log
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TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89661 - D3160809S2
CCAL Filename: d3160809s2
CCAL Sample ID: 4966:40
CCAL Result Dir: /20160809s2/d3160809s2.d
CCAL Date/Time: 08/09/16 23:31

ICAL Date: 05/16/14
Method: 9Ao - DX8290A
Instrument: D2A
Column SN: 1379923
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.84	0.65-0.89	9.2	1.171	1.071	-8.5	20.0	True
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	9.7	1.090	1.061	-2.6	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.62	1.32-1.78	49	1.047	1.034	-1.2	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.51	1.32-1.78	47	1.187	1.123	-5.4	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	48	1.105	1.067	-3.4	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	56	1.140	1.276	11.9	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	52	1.146	1.200	4.7	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.29	1.05-1.43	55	1.210	1.337	10.5	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	49	1.364	1.333	-2.2	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	49	1.278	1.241	-2.9	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.28	1.05-1.43	49	1.267	1.245	-1.8	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.27	1.05-1.43	49	1.285	1.249	-2.8	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	50	1.121	1.130	0.8	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.08	0.88-1.20	47	1.497	1.392	-7.0	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.09	0.88-1.20	46	1.383	1.281	-7.4	20.0	True
OCDD	M+2/M+4	0.93	0.76-1.02	92	1.243	1.144	-7.9	20.0	True
OCDF	M+2/M+4	0.93	0.76-1.02	89	1.119	1.001	-10.5	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	93	1.067	0.997	-6.6	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.83	0.65-0.89	87	1.750	1.529	-12.6	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	91	0.873	0.797	-8.7	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	92	1.368	1.259	-8.0	30.0	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	91	1.381	1.251	-9.4	30.0	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	94	0.893	0.843	-5.5	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	98	0.929	0.911	-1.9	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	115	1.213	1.397	15.1	30.0	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.55	0.43-0.59	111	1.489	1.656	11.3	30.0	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.55	0.43-0.59	113	1.346	1.523	13.1	30.0	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.54	0.43-0.59	100	1.210	1.207	-0.2	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88-1.20	99	0.823	0.812	-1.3	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37-0.51	108	1.069	1.159	8.4	30.0	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37-0.51	98	0.904	0.882	-2.4	30.0	True
13C-OCDD	M+2/M+4	0.86	0.76-1.02	205	0.708	0.725	2.4	30.0	True
13C-OCDF	M+2/M+4	0.88	0.76-1.02	194	1.072	1.041	-2.9	30.0	True

WD 8.10.16

LKW 8-10-16

TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89661 - D3160809S2
CCAL Filename: d3160809s2
CCAL Sample ID: 4966:40
CCAL Result Dir: /20160809s2/d3160809s2.d
CCAL Date/Time: 08/09/16 23:31

ICAL Date: 05/16/14
Method: 9Ao - DX8290A
Instrument: D2A
Column SN: 1379923
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	31:51	31:17	-34	1.002	1.001	-	
2,3,7,8-TCDF	29:45	29:17	-28	1.001	1.002	-	
1,2,3,7,8-PeCDD	41:00	40:47	-13	1.000	1.001	-	
1,2,3,7,8-PeCDF	39:17	39:02	-15	1.000	1.001	-	
2,3,4,7,8-PeCDF	40:29	40:15	-14	1.000	1.000	-	
1,2,3,4,7,8-HxCDD	45:14	45:01	-13	1.000	1.000	-	
1,2,3,6,7,8-HxCDD	45:21	45:08	-13	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	45:45	45:31	-14	1.009	1.009	-	
1,2,3,4,7,8-HxCDF	44:11	43:59	-12	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	44:19	44:07	-12	1.000	1.000	-	
2,3,4,6,7,8-HxCDF	45:03	44:51	-12	1.000	1.000	-	
1,2,3,7,8,9-HxCDF	46:01	45:48	-13	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDD	50:10	49:53	-17	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	48:27	48:12	-15	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	50:48	50:31	-17	1.000	1.000	-	
OCDD	54:17	54:04	-13	1.000	1.000	-	
OCDF	54:25	54:12	-13	1.000	1.000	-	
13C-2,3,7,8-TCDD	31:47	31:15	-32	1.017	1.017	-	
13C-2,3,7,8-TCDF	29:43	29:14	-29	0.950	0.951	-	
13C-1,2,3,7,8-PeCDD	40:59	40:45	-14	1.311	1.326	-	
13C-1,2,3,7,8-PeCDF	39:16	38:59	-17	1.256	1.268	-	
13C-2,3,4,7,8-PeCDF	40:28	40:14	-14	1.295	1.309	-	
13C-1,2,3,4,7,8-HxCDD	45:13	45:00	-13	0.989	0.989	-	
13C-1,2,3,6,7,8-HxCDD	45:20	45:07	-13	0.991	0.992	-	
13C-1,2,3,4,7,8-HxCDF	44:10	43:58	-12	0.966	0.966	-	
13C-1,2,3,6,7,8-HxCDF	44:18	44:06	-12	0.969	0.969	-	
13C-2,3,4,6,7,8-HxCDF	45:02	44:50	-12	0.985	0.985	-	
13C-1,2,3,7,8,9-HxCDF	46:00	45:47	-13	1.006	1.006	-	
13C-1,2,3,4,6,7,8-HpCDD	50:09	49:52	-17	1.097	1.096	-	
13C-1,2,3,4,6,7,8-HpCDF	48:26	48:11	-15	1.059	1.059	-	
13C-1,2,3,4,7,8,9-HpCDF	50:47	50:30	-17	1.110	1.110	-	
13C-OCDD	54:16	54:03	-13	1.187	1.188	-	
13C-OCDF	54:24	54:11	-13	1.190	1.191	-	

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89661 - D3160809S2

WIN Filename: d3160809s2

WIN Sample ID: 4966:40

WIN Result Dir: /20160809s2/d3160809s2.d

WIN Date/Time: 08/09/16 23:31

Method: 9Ao - DX8290A

Instrument: D2A

Column SN: 1379923

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	31:15	25:16	0.8085	34:28	1.1029
Total TCDF	13C-2,3,7,8-TCDF	304	29:14	22:49	0.7805	34:21	1.1750
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	40:45	37:53	0.9297	41:26	1.0168
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	38:59	35:04	0.8995	41:33	1.0658
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	45:07	43:26	0.9627	45:31	1.0089
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	43:58	42:45	0.9723	45:56	1.0447
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	49:52	48:41	0.9763	49:53	1.0003
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	48:11	48:12	1.0003	50:31	1.0484
OCDD	13C-OCDD	458	54:03	54:04	1.0003	54:04	1.0003
OCDF	13C-OCDF	442	54:11	54:12	1.0003	54:12	1.0003

TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

CCAL ID: 89660 - D3160809S2
CCAL Filename: d3160809s2
CCAL Sample ID: 4966:40
CCAL Result Dir: /20160809s2/d3160809s2.d
CCAL Date/Time: 08/09/16 23:31

ICAL Date: 05/16/14
Method: IN2o - DX8290_2
Instrument: D2A
Column SN: 1379923
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.84	0.65-0.89	9.2	1.171	1.071	-8.5	20.0	True
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	9.7	1.090	1.061	-2.6	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.62	1.32-1.78	49	1.047	1.034	-1.2	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.51	1.32-1.78	47	1.187	1.123	-5.4	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	48	1.105	1.067	-3.4	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	56	1.140	1.276	11.9	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	52	1.146	1.200	4.7	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.29	1.05-1.43	55	1.210	1.337	10.5	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	49	1.364	1.333	-2.2	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	49	1.278	1.241	-2.9	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.28	1.05-1.43	49	1.267	1.245	-1.8	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.27	1.05-1.43	49	1.285	1.249	-2.8	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88-1.20	50	1.121	1.130	0.8	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.08	0.88-1.20	47	1.497	1.392	-7.0	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.09	0.88-1.20	46	1.383	1.281	-7.4	20.0	True
OCDD	M+2/M+4	0.93	0.76-1.02	92	1.243	1.144	-7.9	20.0	True
OCDF	M+2/M+4	0.93	0.76-1.02	89	1.119	1.001	-10.5	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	93	1.067	0.997	-6.6	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.83	0.65-0.89	87	1.750	1.529	-12.6	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32-1.78	91	0.873	0.797	-8.7	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	92	1.368	1.259	-8.0	30.0	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	91	1.381	1.251	-9.4	30.0	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	94	0.893	0.843	-5.5	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	98	0.929	0.911	-1.9	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	115	1.213	1.397	15.1	30.0	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.55	0.43-0.59	111	1.489	1.656	11.3	30.0	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.55	0.43-0.59	113	1.346	1.523	13.1	30.0	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.54	0.43-0.59	100	1.210	1.207	-0.2	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88-1.20	99	0.823	0.812	-1.3	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37-0.51	108	1.069	1.159	8.4	30.0	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37-0.51	98	0.904	0.882	-2.4	30.0	True
13C-OCDD	M+2/M+4	0.86	0.76-1.02	205	0.708	0.725	2.4	30.0	True
13C-OCDF	M+2/M+4	0.88	0.76-1.02	194	1.072	1.041	-2.9	30.0	True

JMP 8/10/14

LR 8-10-16

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

CCAL ID: 89660 - D3160809S2
CCAL Filename: d3160809s2
CCAL Sample ID: 4966:40
CCAL Result Dir: /20160809s2/d3160809s2.d
CCAL Date/Time: 08/09/16 23:31

ICAL Date: 05/16/14
Method: IN2o - DX8290_2
Instrument: D2A
Column SN: 1379923
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	31:51	31:17	-34	1.002	1.001	-	
2,3,7,8-TCDF	29:45	29:17	-28	1.001	1.002	-	
1,2,3,7,8-PeCDD	41:00	40:47	-13	1.000	1.001	-	
1,2,3,7,8-PeCDF	39:17	39:02	-15	1.000	1.001	-	
2,3,4,7,8-PeCDF	40:29	40:15	-14	1.000	1.000	-	
1,2,3,4,7,8-HxCDD	45:14	45:01	-13	1.000	1.000	-	
1,2,3,6,7,8-HxCDD	45:21	45:08	-13	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	45:45	45:31	-14	1.009	1.009	-	
1,2,3,4,7,8-HxCDF	44:11	43:59	-12	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	44:19	44:07	-12	1.000	1.000	-	
2,3,4,6,7,8-HxCDF	45:03	44:51	-12	1.000	1.000	-	
1,2,3,7,8,9-HxCDF	46:01	45:48	-13	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDD	50:10	49:53	-17	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	48:27	48:12	-15	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	50:48	50:31	-17	1.000	1.000	-	
OCDD	54:17	54:04	-13	1.000	1.000	-	
OCDF	54:25	54:12	-13	1.000	1.000	-	
13C-2,3,7,8-TCDD	31:47	31:15	-32	1.017	1.017	-	
13C-2,3,7,8-TCDF	29:43	29:14	-29	0.950	0.951	-	
13C-1,2,3,7,8-PeCDD	40:59	40:45	-14	1.311	1.326	-	
13C-1,2,3,7,8-PeCDF	39:16	38:59	-17	1.256	1.268	-	
13C-2,3,4,7,8-PeCDF	40:28	40:14	-14	1.295	1.309	-	
13C-1,2,3,4,7,8-HxCDD	45:13	45:00	-13	0.989	0.989	-	
13C-1,2,3,6,7,8-HxCDD	45:20	45:07	-13	0.991	0.992	-	
13C-1,2,3,4,7,8-HxCDF	44:10	43:58	-12	0.966	0.966	-	
13C-1,2,3,6,7,8-HxCDF	44:18	44:06	-12	0.969	0.969	-	
13C-2,3,4,6,7,8-HxCDF	45:02	44:50	-12	0.985	0.985	-	
13C-1,2,3,7,8,9-HxCDF	46:00	45:47	-13	1.006	1.006	-	
13C-1,2,3,4,6,7,8-HpCDD	50:09	49:52	-17	1.097	1.096	-	
13C-1,2,3,4,6,7,8-HpCDF	48:26	48:11	-15	1.059	1.059	-	
13C-1,2,3,4,7,8,9-HpCDF	50:47	50:30	-17	1.110	1.110	-	
13C-OCDD	54:16	54:03	-13	1.187	1.188	-	
13C-OCDF	54:24	54:11	-13	1.190	1.191	-	

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

CCAL ID: 89660 - D3160809S2

WIN Filename: d3160809s2

WIN Sample ID: 4966:40

WIN Result Dir: /20160809s2/d3160809s2.d

WIN Date/Time: 08/09/16 23:31

Method: IN2o - DX8290_2

Instrument: D2A

Column SN: 1379923

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	31:15	25:16	0.8085	34:28	1.1029
Total TCDF	13C-2,3,7,8-TCDF	304	29:14	22:49	0.7805	34:21	1.1750
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	40:45	37:53	0.9297	41:26	1.0168
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	38:59	35:04	0.8995	41:33	1.0658
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	45:07	43:26	0.9627	45:31	1.0089
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	43:58	42:45	0.9723	45:56	1.0447
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	49:52	48:41	0.9763	49:53	1.0003
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	48:11	48:12	1.0003	50:31	1.0484
OCDD	13C-OCDD	458	54:03	54:04	1.0003	54:04	1.0003
OCDF	13C-OCDF	442	54:11	54:12	1.0003	54:12	1.0003

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:40	Prep Batch		Lot No	
Data File	/20160809s2/d3160809s2.d	Prep Date		SDG No	
Analysis ID	180152	Prep Exp Date		Date Received	
Analysis Date	8/9/2016	Matrix	UNKNOWN	Date Sampled	
Analysis Time	23:31	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D2A	Dil Factor	1.00	Code	F8o
Analyst	MSD				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)		DL (ng/mL)
2,3,7,8-TCDD	31:17	477935	48395	1.171	10.00	9.150232	91.50	9.150232	E	0.0599
Total TCDD		2311800	251288	1.171		53.410449		53.410449	E	0.0599
2,3,7,8-TCDF	29:17	725846	76412	1.090	10.00	9.736064	97.36	9.736064	E	0.0229
Total TCDF		1495766	186110	1.090		29.799375		29.799375	E	0.0229
1,2,3,7,8-PeCDD	40:47	1843588	429756	1.047	50.00	49.381847	98.76	49.381847	E	0.0261
Total PeCDD		3756999	775271	1.047		150.015801		150.015801	E	0.0261
1,2,3,7,8-PeCDF	39:02	3162647	630669	1.187	50.00	47.310929	94.62	47.310929	E	0.0292
2,3,4,7,8-PeCDF	40:15	2985911	681020	1.105	50.00	48.294660	96.59	48.294660	E	0.0273
Total PeCDF		5748035	1039712	1.146		184.957216		184.957216	E	0.0281
1,2,3,4,7,8-HxCDD	45:01	1903813	518178	1.140	50.00	55.965785	111.93	55.965785	E	0.0328
1,2,3,6,7,8-HxCDD	45:08	1934463	491841	1.146	50.00	52.330787	104.66	52.330787	E	0.0330
1,2,3,7,8,9-HxCDD	45:31	2075648	526504	1.210	50.00	55.230584	110.46	55.230584	E	0.0311
Total HxCDD		2092934	555366	1.166		221.365831		221.365831	E	0.0323
1,2,3,4,7,8-HxCDF	43:59	3295351	891106	1.364	50.00	48.880019	97.76	48.880019	E	0.0291
1,2,3,6,7,8-HxCDF	44:07	3636858	913544	1.278	50.00	48.559163	97.12	48.559163	E	0.0294
2,3,4,6,7,8-HxCDF	44:51	3353867	856865	1.267	50.00	49.102188	98.20	49.102188	E	0.0310
1,2,3,7,8,9-HxCDF	45:48	2668528	667408	1.285	50.00	48.596414	97.19	48.596414	E	0.0407
Total HxCDF		5994226	1529154	1.299		285.355339		285.355339	E	0.0320
1,2,3,4,6,7,8-HpCDD	49:53	1624078	310136	1.121	50.00	50.415826	100.83	50.415826	E	0.0494
Total HpCDD		1798292	377323	1.121		106.239730		106.239730	E	0.0494
1,2,3,4,6,7,8-HpCDF	48:12	2856486	627299	1.497	50.00	46.503075	93.01	46.503075	E	0.0248
1,2,3,4,7,8,9-HpCDF	50:31	2000588	406887	1.383	50.00	46.315422	92.63	46.315422	E	0.0359
Total HpCDF				1.440		92.818498		92.818498	E	0.0295
OCDD	54:04	2935625	728884	1.243	100.0	92.051356	92.05	92.051356	E	0.0309
OCDF	54:12	3689056	921033	1.119	100.0	89.455549	89.46	89.455549	E	0.0229
13C-2,3,7,8-TCDD	31:15	4460519	459752	1.067	100.0	93.422443	93.42	93.422443		0.0583
13C-2,3,7,8-TCDF	29:14	6842080	771139	1.750	100.0	87.393252	87.39	87.393252		0.0131
13C-1,2,3,7,8-PeCDD	40:45	3564889	822099	0.873	100.0	91.258187	91.26	91.258187		0.0174
13C-1,2,3,7,8-PeCDF	38:59	5631171	1123659	1.368	100.0	91.975069	91.98	91.975069		0.0233
13C-2,3,4,7,8-PeCDF	40:14	5597067	1294597	1.381	100.0	90.613669	90.61	90.613669		0.0231
13C-1,2,3,4,7,8-HxCDD	45:00	2984599	822889	0.893	100.0	94.456461	94.46	94.456461		0.0180
13C-1,2,3,6,7,8-HxCDD	45:07	3224823	812520	0.929	100.0	98.053407	98.05	98.053407		0.0173
13C-1,2,3,4,7,8-HxCDF	43:58	4943239	1371673	1.213	100.0	115.119463	115.12	115.119463		0.0409
13C-1,2,3,6,7,8-HxCDF	44:06	5860987	1452062	1.489	100.0	111.254438	111.25	111.254438		0.0333
13C-2,3,4,6,7,8-HxCDF	44:50	5389077	1385723	1.346	100.0	113.107515	113.11	113.107515		0.0368
13C-1,2,3,7,8,9-HxCDF	45:47	4272649	1041917	1.210	100.0	99.807498	99.81	99.807498		0.0410
13C-1,2,3,4,6,7,8-HpCDD	49:52	2874262	550601	0.823	100.0	98.665890	98.67	98.665890		0.00975
13C-1,2,3,4,6,7,8-HpCDF	48:11	4102924	888206	1.069	100.0	108.406453	108.41	108.406453		0.0311
13C-1,2,3,4,7,8,9-HpCDF	50:30	3122617	665414	0.904	100.0	97.591244	97.59	97.591244		0.0368
13C-OCDD	54:03	5130584	1301031	0.708	200.0	204.846782	102.42	204.846782		0.0434
13C-OCDF	54:11	7368166	1893964	1.072	200.0	194.173056	97.09	194.173056		0.0227
37C14-2,3,7,8-TCDD	31:19	455241	44111	1.220	10.00	8.341348	83.41	8.341348	E	0.0270
13C-1,2,3,4-TCDD	30:44	4474026	478474	1.000	100.0	100.000000	100.00	100.000000		0.0622
13C-1,2,3,7,8,9-HxCDD	45:30	3539169	871881	1.000	100.0	100.000000	100.00	100.000000		0.0161

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:40	Prep Batch		Lot No	
Data File	/20160809s2/d3160809s2	Prep Date		SDG No	
Analysis ID	180152	Prep Exp Date		Date Received	
Analysis Date	08/09/16 23:31	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	78	115	31	46	0.67	/	
	Unidentified	22:49	00:00	0	363882	463919	52947	63304	0.78	ABV/AVV	
	2,3,7,8-TCDF	29:17	29:12	5	316222	409624	34116	42296	0.77	ABV/ABV	M
	Unidentified	34:21	00:00	0	287095	380870	29489	40370	0.75	AVV/ABV	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	83	28	33	11	3.00 *	/	
	13C-2,3,7,8-TCDF	29:14	29:10	4	3096784	3745296	360900	410239	0.83	ABV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	138	185	55	74	0.74	/	
	Unidentified	25:16	00:00	0	213677	269137	26500	33416	0.79	ABV/ABV	
	Unidentified	30:47	00:00	0	200376	251170	21568	27626	0.80	ABV/ABV	
	Unidentified	31:03	00:00	0	195682	241277	20086	23316	0.81	AVV/AVV	
	2,3,7,8-TCDD	31:17	31:23	-6	217572	260363	21023	27372	0.84	AVV/AVV	M
	Unidentified	31:50	00:00	0	221470	280713	22299	26607	0.79	AVV/AVV	
	Unidentified	34:28	00:00	0	196046	242252	21737	28133	0.81	ABV/ABV	
328					327.8847		327.8847				
	Noise	00:00	00:00	0	158		63				
	37Cl4-2,3,7,8-TCDD	31:19	31:22	-3	455241		44111			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	193	105	77	42	1.83 *	/	
	13C-1,2,3,4-TCDD	30:44	30:47	-3	2012497	2461529	216341	262133	0.82	AVV/ABV	
	13C-2,3,7,8-TCDD	31:15	31:19	-4	1956935	2503584	209269	250483	0.78	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	213	178	85	71	1.20 *	/	
	Unidentified	35:04	00:00	0	1910809	1230123	246340	159512	1.55	ABV/ABV	
	1,2,3,7,8-PeCDF	39:02	39:00	2	1902212	1260435	376738	253931	1.51	AVV/ABV	
	2,3,4,7,8-PeCDF	40:15	40:13	2	1817825	1168086	415159	265861	1.56	ABV/ABV	
	Unidentified	41:33	00:00	0	1565813	1041290	385177	248683	1.50	ABV/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	90	63	36	25	1.44	/	
	13C-1,2,3,7,8-PeCDF	38:59	38:59	0	3461866	2169305	692076	431583	1.60	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:14	40:12	2	3405072	2191995	787591	507006	1.55	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	123	103	49	41	1.20 *	/	
	Unidentified	37:53	00:00	0	1108406	720848	179764	115359	1.54	ABV/ABV	
	1,2,3,7,8-PeCDD	40:47	40:44	3	1139262	704326	271053	158703	1.62	ABV/ABV	M
	Unidentified	41:26	00:00	0	1173378	754367	293268	186880	1.56	ABV/ABV	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	45	28	18	11	1.64	/	
	13C-1,2,3,7,8-PeCDD	40:45	40:43	2	2173165	1391724	499431	322668	1.56	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	243	303	97	121	0.80 *	/	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:40	Prep Batch		Lot No	
Data File	/20160809s2/d3160809s2	Prep Date		SDG No	
Analysis ID	180152	Prep Exp Date		Date Received	
Analysis Date	08/09/16 23:31	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Unidentified	42:45	00:00	0	1874136	1501705	518184	403968	1.25	ABV/ABV	
	1,2,3,4,7,8-HxCDF	43:59	43:57	2	1813613	1481738	492751	398355	1.22	ABV/ABV	
	1,2,3,6,7,8-HxCDF	44:07	44:05	2	2030246	1606612	511052	402492	1.26	AVV/AVB	
	2,3,4,6,7,8-HxCDF	44:51	44:50	1	1880010	1473857	487897	368968	1.28	AVV/AVV	
	1,2,3,7,8,9-HxCDF	45:48	45:48	0	1491237	1177291	373949	293459	1.27	ABV/ABV	
	Unidentified	45:56	00:00	0	1475128	1143257	347023	259979	1.29	AVV/AVV	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	148	285	59	114	0.52	/	
	13C-1,2,3,4,7,8-HxCDF	43:58	43:56	2	1712107	3231132	479549	892124	0.53	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:06	44:04	2	2069786	3791201	512374	939688	0.55	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	44:50	44:49	1	1921673	3467404	499670	886053	0.55	ABV/AVV	
	13C-1,2,3,7,8,9-HxCDF	45:47	45:47	0	1496626	2776023	363832	678085	0.54	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	165	143	66	57	1.16	/	
	Unidentified	43:26	00:00	0	1184648	908286	310011	245355	1.30	ABV/ABV	
	1,2,3,4,7,8-HxCDD	45:01	45:01	0	1061051	842762	288538	229640	1.26	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:08	45:08	0	1089488	844975	277859	213982	1.29	AVV/AVV	
	1,2,3,7,8,9-HxCDD	45:31	45:32	-1	1171177	904471	296623	229881	1.29	AVV/AVV	
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	103	38	41	15	2.73 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:00	45:00	0	1667535	1317064	463638	359251	1.27	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:07	45:07	0	1807569	1417254	454871	357649	1.28	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	45:30	45:31	-1	1987328	1551841	481328	390553	1.28	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	163	168	65	67	0.97	/	
	1,2,3,4,6,7,8-HpCDF	48:12	48:14	-2	1485911	1370575	326755	300544	1.08	ABV/ABV	
	1,2,3,4,7,8,9-HpCDF	50:31	50:35	-4	1043316	957272	217891	188996	1.09	ABV/ABV	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	95	195	38	78	0.49	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:11	48:13	-2	1309852	2793072	284687	603519	0.47	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:30	50:34	-4	970964	2151653	205912	459502	0.45	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	150	155	60	62	0.97	/	
	Unidentified	48:41	00:00	0	935094	863198	196165	181158	1.08	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	49:53	49:57	-4	835056	789022	161230	148906	1.06	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	43	28	17	11	1.55 *	/	
	13C-1,2,3,4,6,7,8-HpCDD	49:52	49:56	-4	1453100	1421162	286344	264257	1.02	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	133	110	53	44	1.20 *	/	
	OCDF	54:12	54:10	2	1774527	1914529	451301	469732	0.93	ABV/AVV	
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:40	Prep Batch		Lot No	
Data File	/20160809s2/d3160809s2	Prep Date		SDG No	
Analysis ID	180152	Prep Exp Date		Date Received	
Analysis Date	08/09/16 23:31	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D2A	Extract Vol		Method	DX1613B
Analyst	MSD	Diluton Factor	1.00	Code	F8o

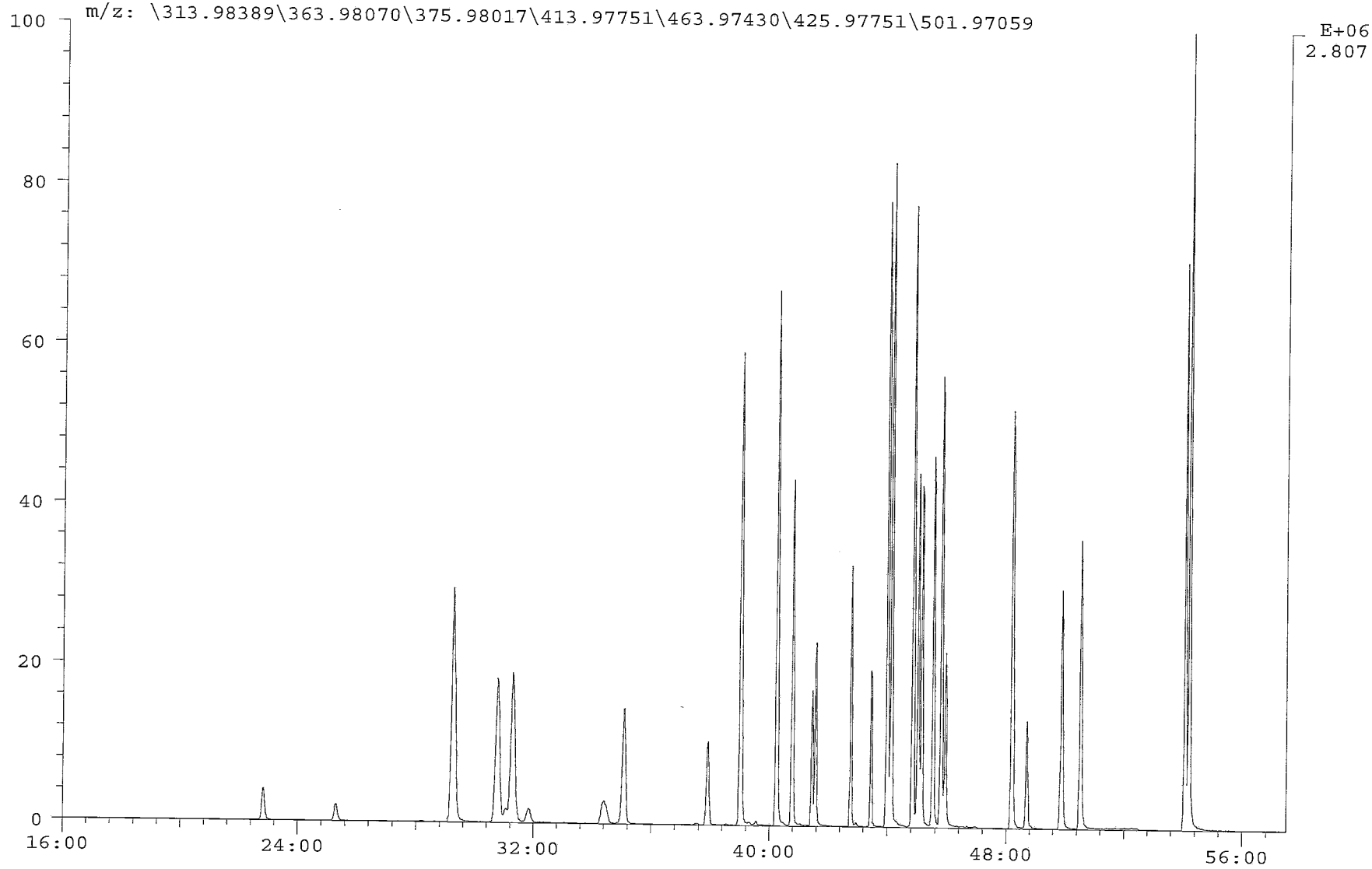
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration Flags
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02	
	Noise	00:00	00:00	0	120	93	48	37	1.30 *	/
	13C-OCDF	54:11	54:09	2	3441920	3926246	873863	1020101	0.88	ABV/ABV
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02	
	Noise	00:00	00:00	0	85	165	34	66	0.52 *	/
	OCDD	54:04	54:02	2	1415626	1519999	361998	366886	0.93	ABV/ABV
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02	
	Noise	00:00	00:00	0	93	175	37	70	0.53 *	/
	13C-OCDD	54:03	54:01	2	2377902	2752682	593581	707450	0.86	ABV/ABV

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

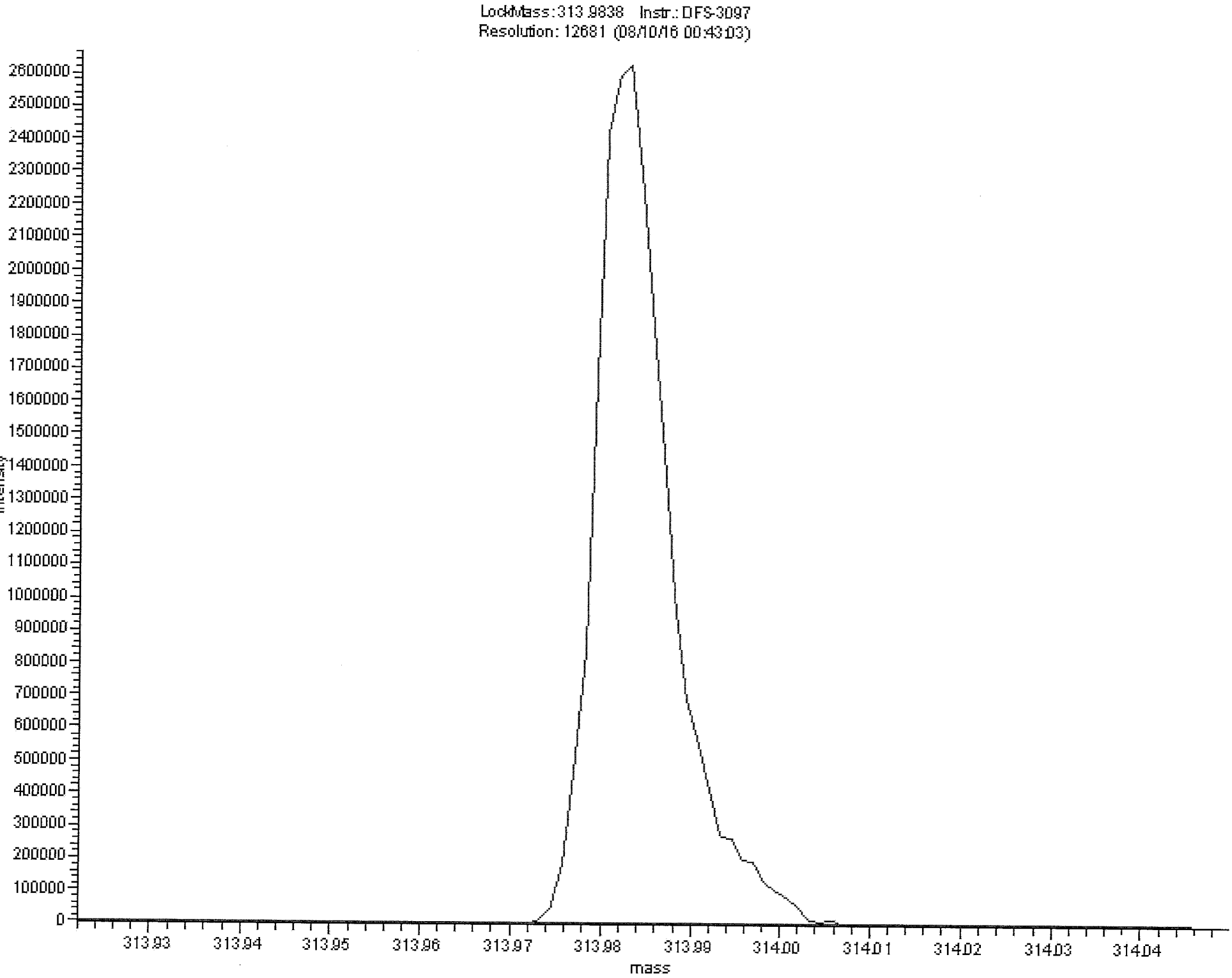
Int/Calc h 8-10-16
QCMED 8-10-16

CHRO: d3160809s2 09-Aug-16 Elapse: 54:13 2488
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 238 > 2677 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

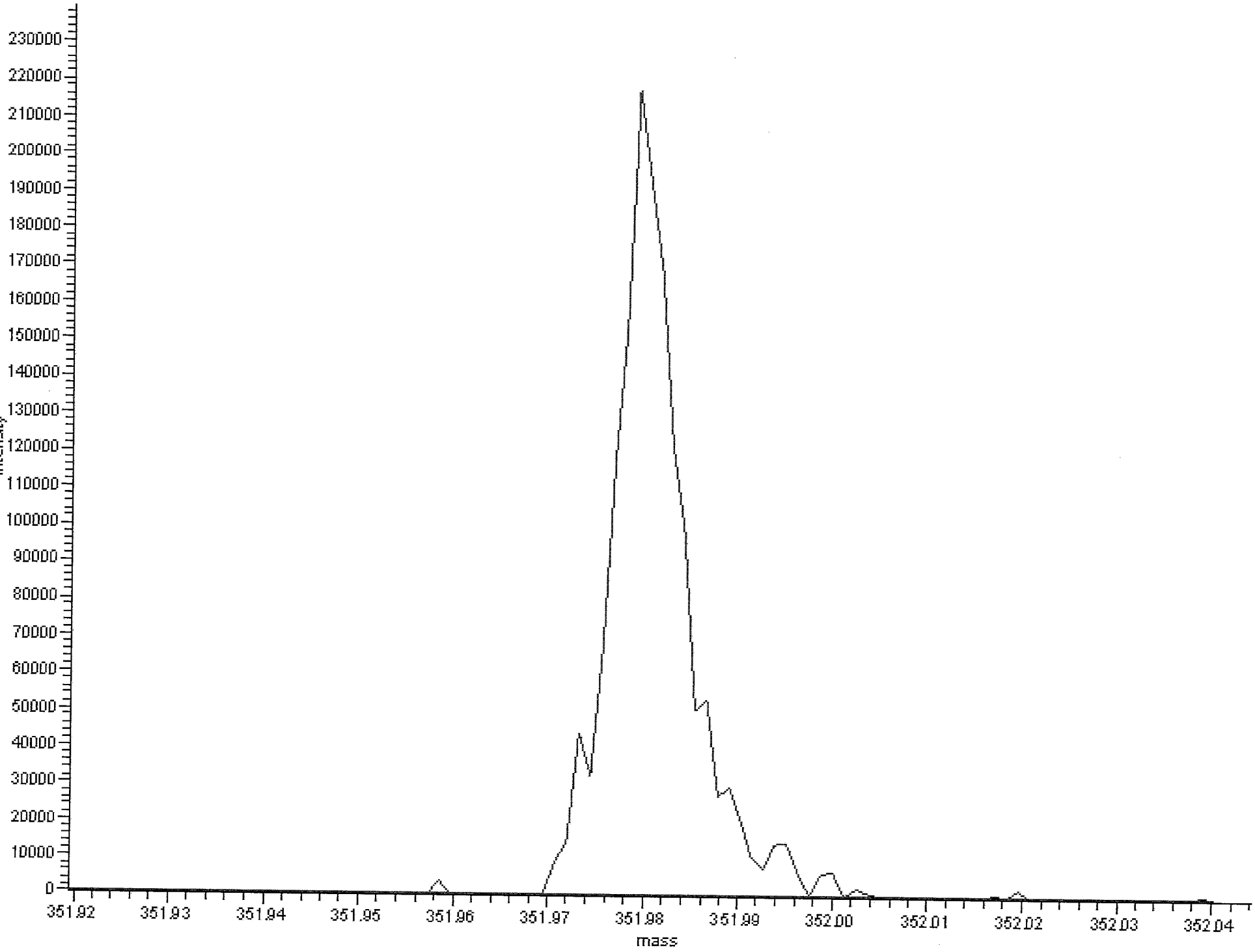


```
Reports
00:50:05:  Peak matching procedure started
00:50:05:
00:50:06:  Reference mass: 313.98336
00:50:06:  Sample mass: 364.0
00:50:07:
00:50:07:  Finding reference mass
00:50:08:  Finding sample mass
00:50:09:
00:50:14:  [1]   363.9787 amu, mean: 363.9787
00:50:17:  [2]   363.9792 amu, mean: 363.9790     SD: 0.38 mmu or: 1.04 ppm
00:50:19:  [3]   363.9786 amu, mean: 363.9788     SD: 0.36 mmu or: 0.99 ppm
00:50:22:  [4]   363.9785 amu, mean: 363.9788     SD: 0.34 mmu or: 0.94 ppm
00:50:25:  [5]   363.9785 amu, mean: 363.9787     SD: 0.32 mmu or: 0.89 ppm
00:50:28:  [6]   363.9787 amu, mean: 363.9787     SD: 0.29 mmu or: 0.80 ppm
00:50:30:  [7]   363.9793 amu, mean: 363.9788     SD: 0.34 mmu or: 0.94 ppm
00:50:33:  [8]   363.9793 amu, mean: 363.9788     SD: 0.37 mmu or: 1.01 ppm
00:50:36:  [9]   363.9776 amu, mean: 363.9787     SD: 0.54 mmu or: 1.49 ppm
00:50:39:  [10]   363.9780 amu, mean: 363.9786     SD: 0.56 mmu or: 1.54 ppm
00:50:41:
00:50:41:  Stop requested. Please wait for procedure to finish.
00:50:41:
00:50:41:  [11]   363.9789 amu, mean: 363.9787     SD: 0.54 mmu or: 1.48 ppm
00:50:44:
00:50:45:  Peakmatching stopped
```

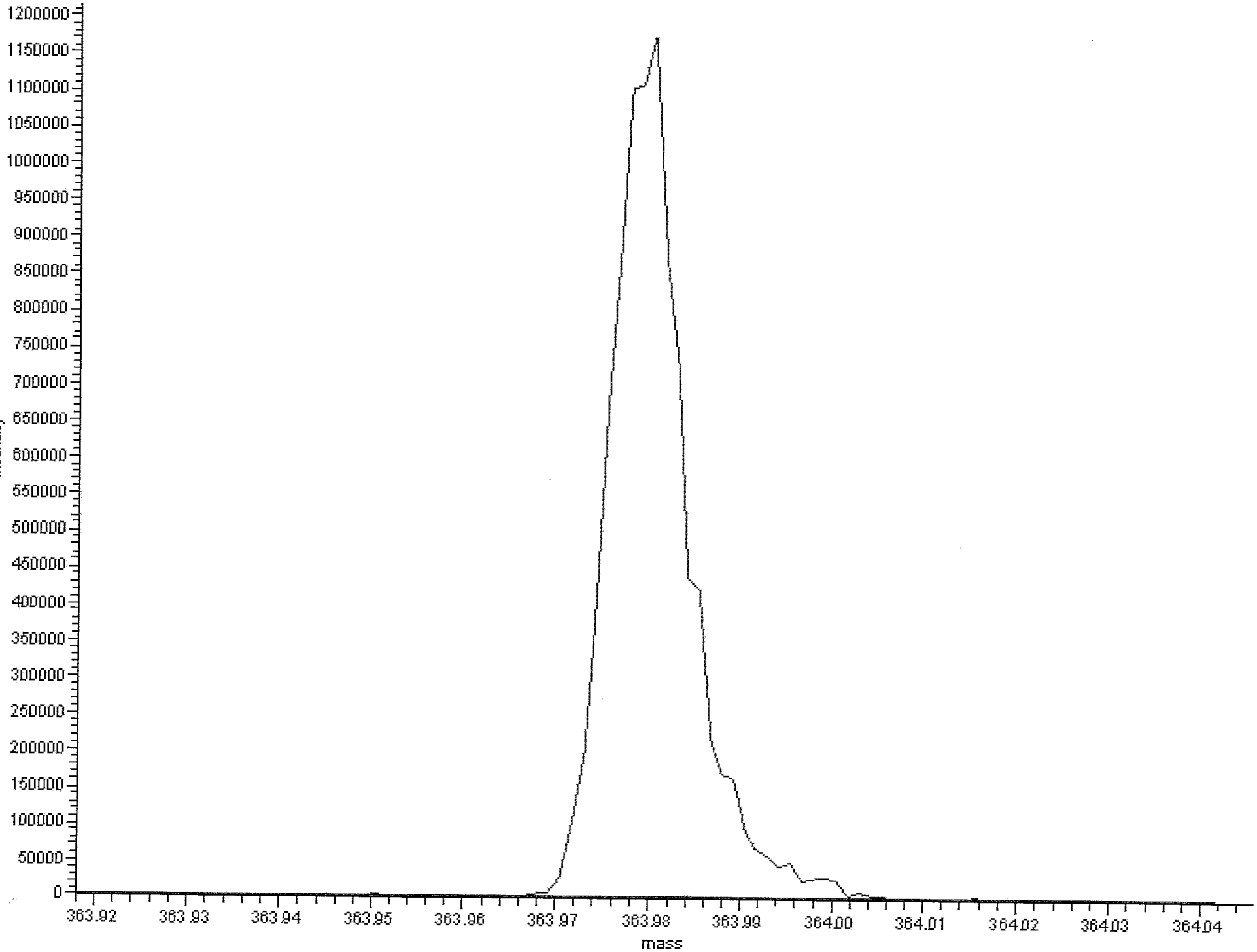
Signature LKM 8-10-16

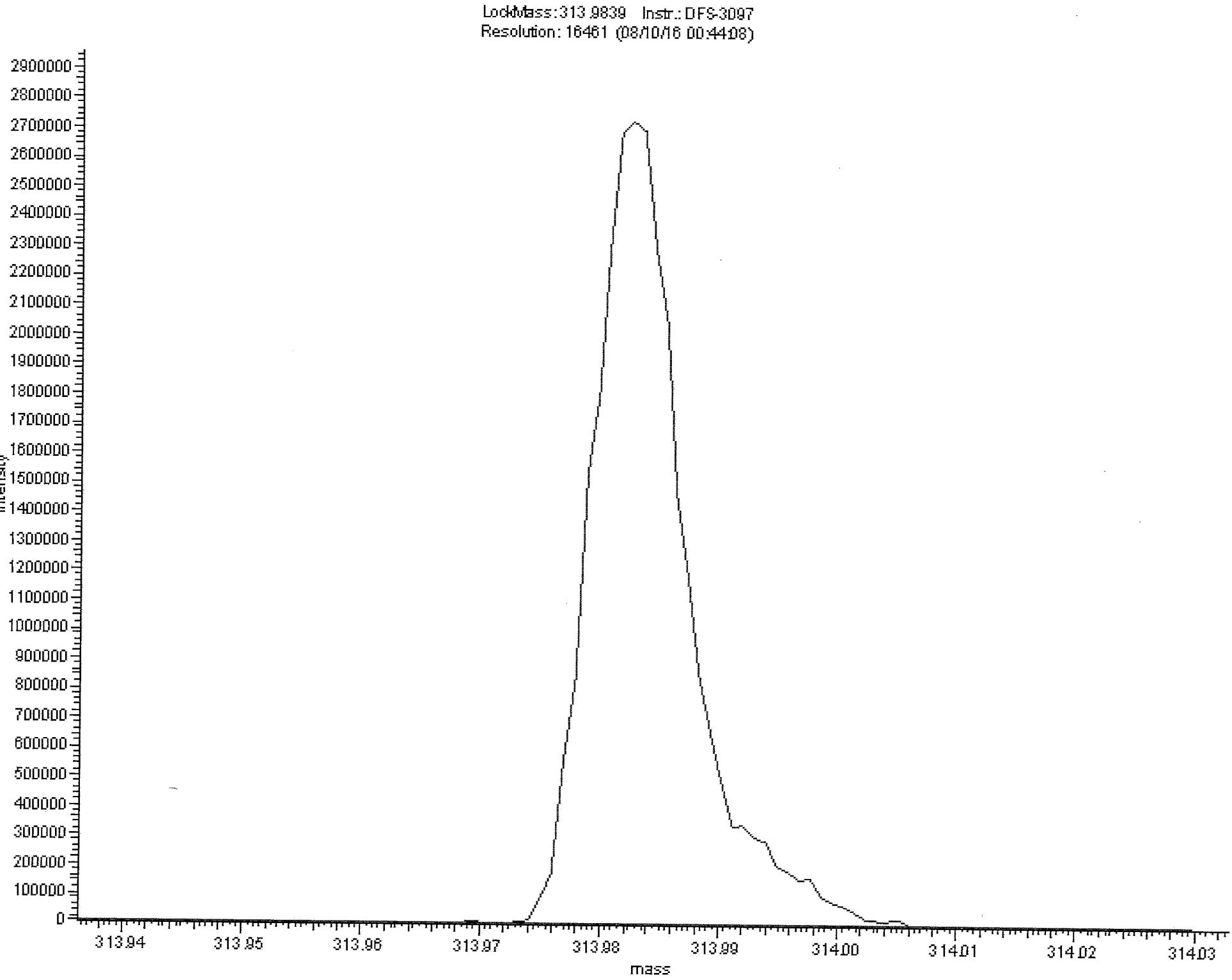

LockMass:313.9838 Instr.: DFS-3097
Resolution: 12681 (08/10/16 00:43:03)
2600000
2500000
2400000
2300000
2200000
2100000
2000000
1900000
1800000
1700000
1600000
1500000
1400000
1300000
1200000
1100000
1000000
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
Intensity
313.93
313.94
313.95
313.96
313.97
313.98
313.99
314.00
314.01
314.02
314.03
314.04
mass

Mass:351.9802 Instr.: DFS-3097
Resolution: 16644 (08/10/16 00:43:50)

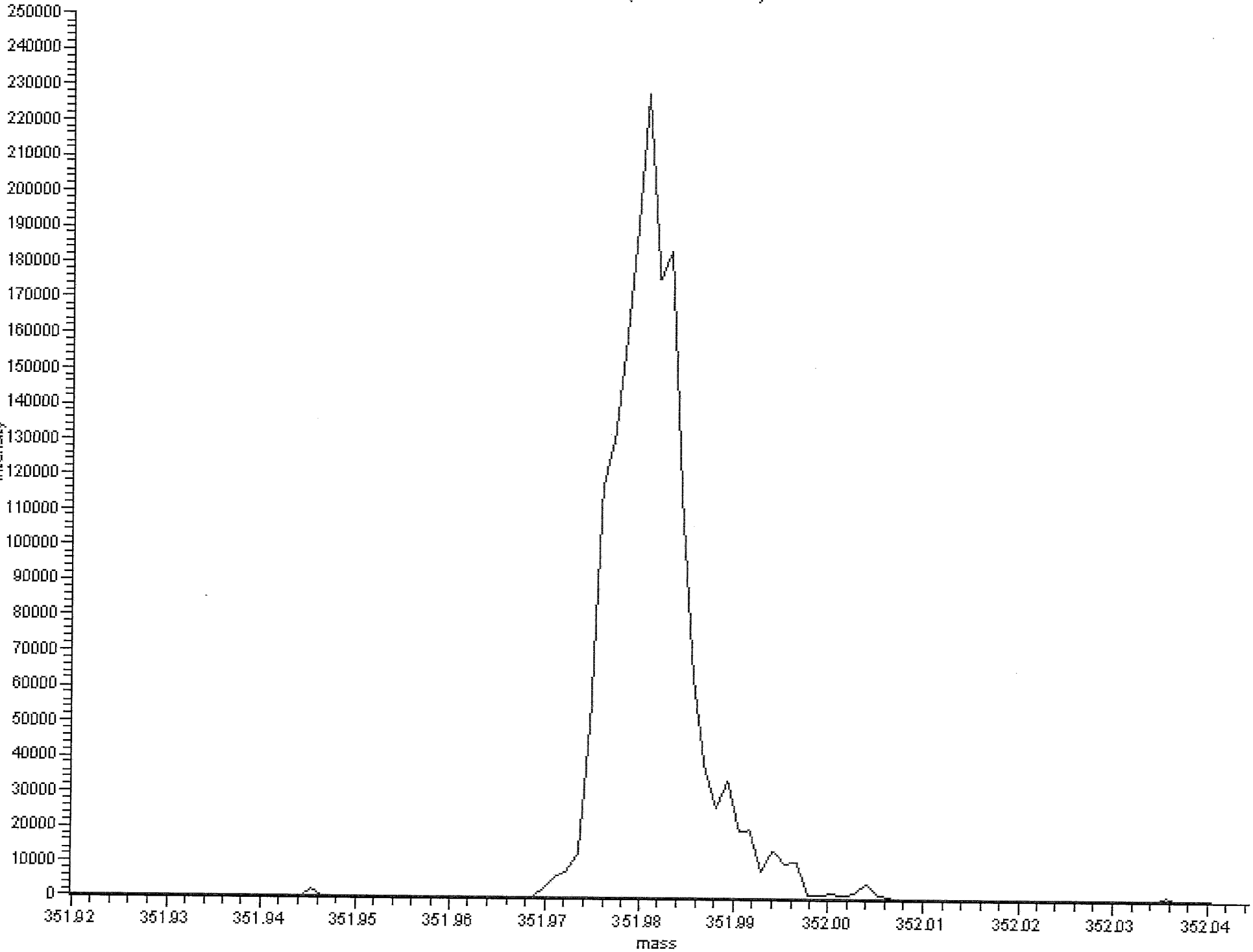


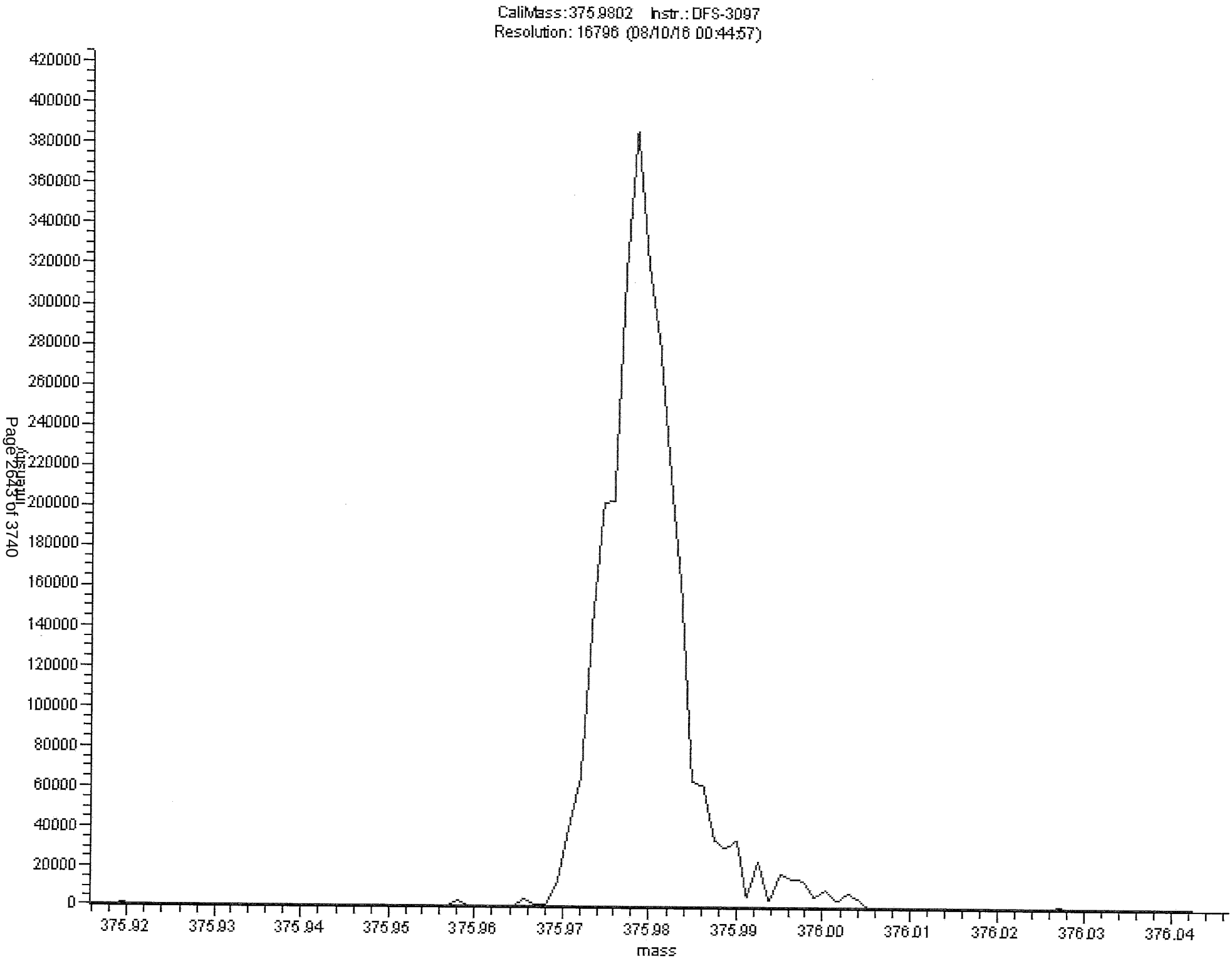
CaliMass: 363.9807 Instr.: DFS-3097
Resolution: 16461 (08/10/16 00:43:53)

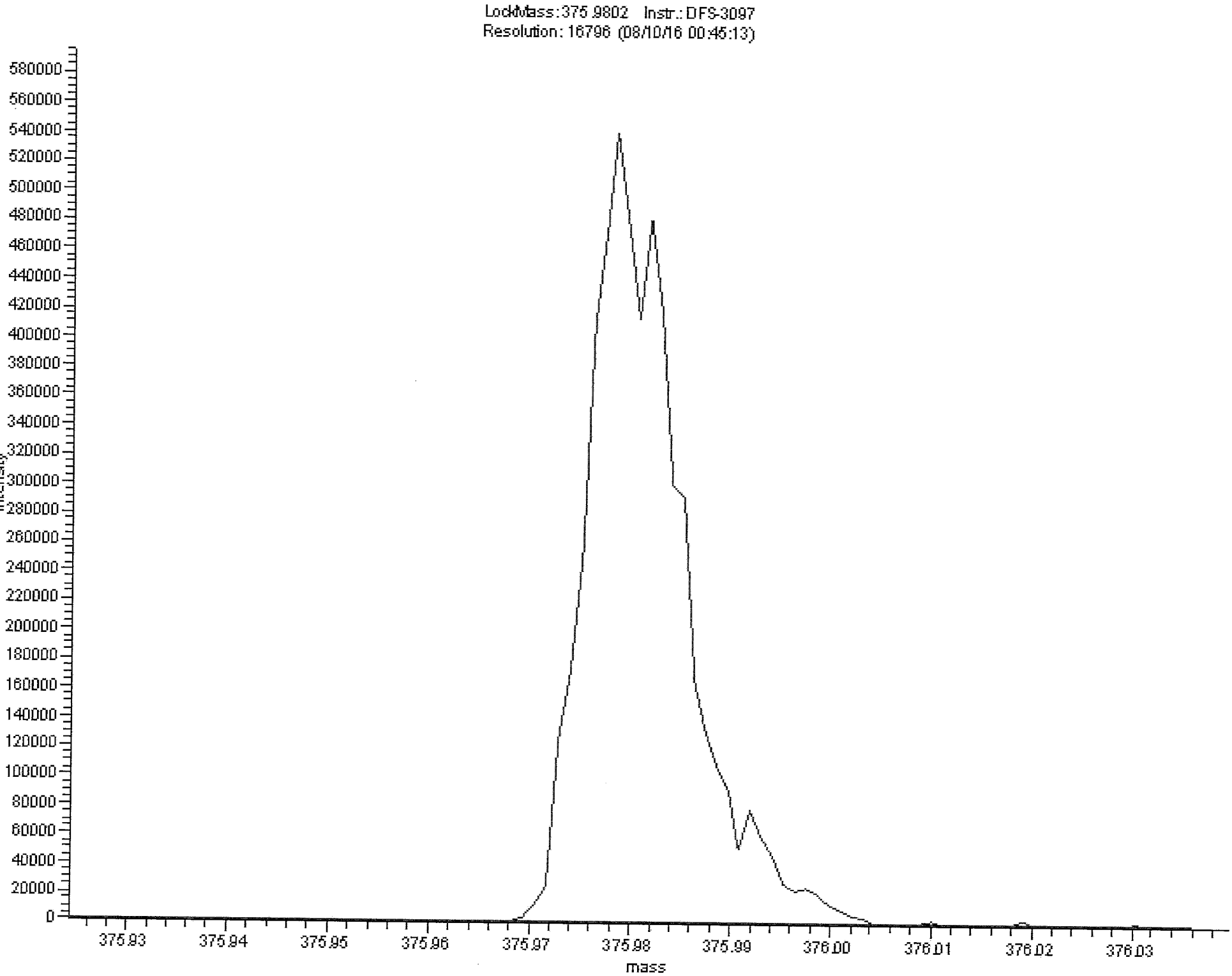



LockMass:313.9839 Instr.: DFS-3097
Resolution: 16461 (08/10/16 00:44:08)
2900000
2800000
2700000
2600000
2500000
2400000
2300000
2200000
2100000
2000000
1900000
1800000
1700000
1600000
1500000
1400000
1300000
1200000
1100000
1000000
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
Intensity
313.94
313.95
313.96
313.97
313.98
313.99
314.00
314.01
314.02
314.03
mass

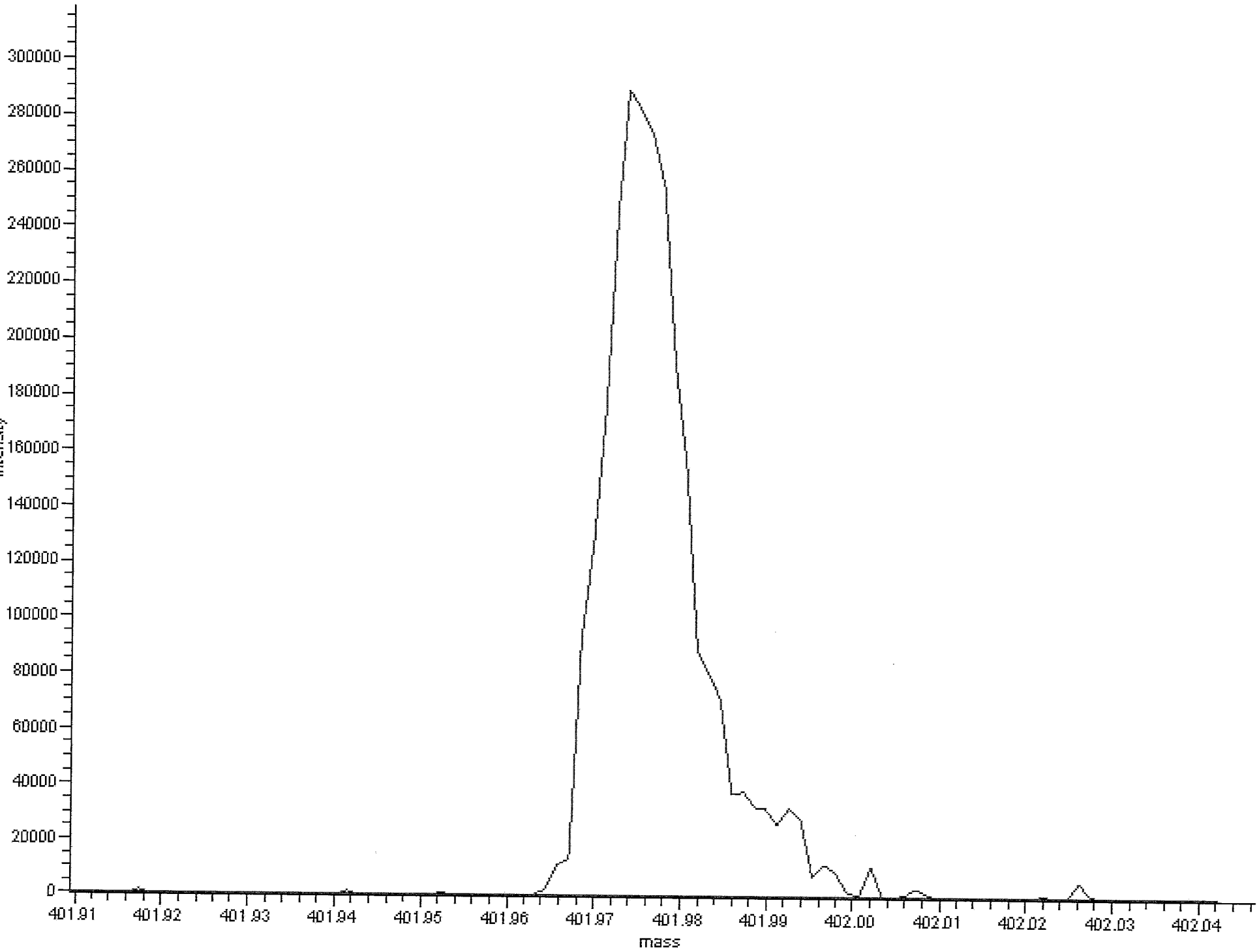
Mass: 351.9802 Instr.: DFS-3097
Resolution: 16113 (08/10/16 00:44:54)

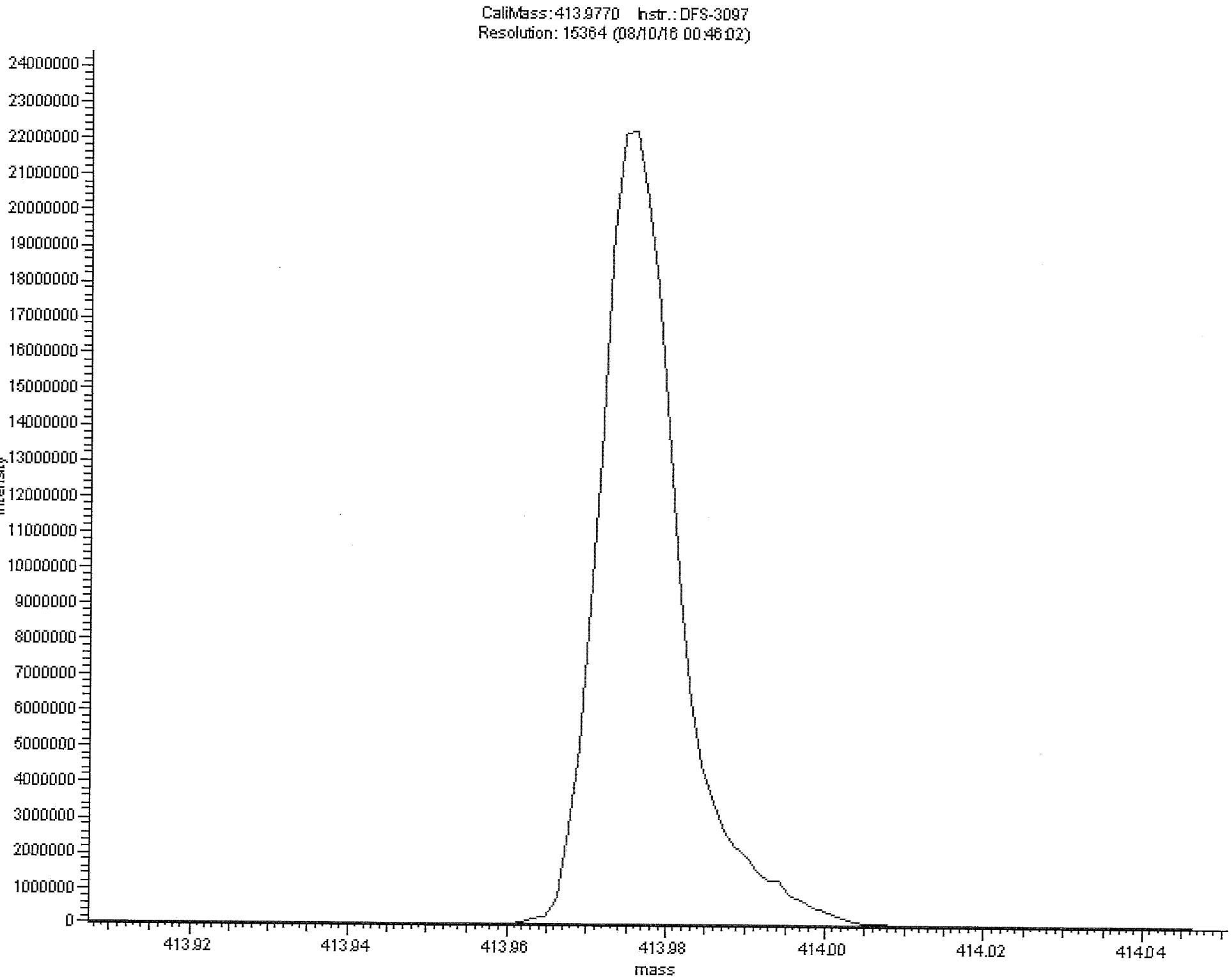


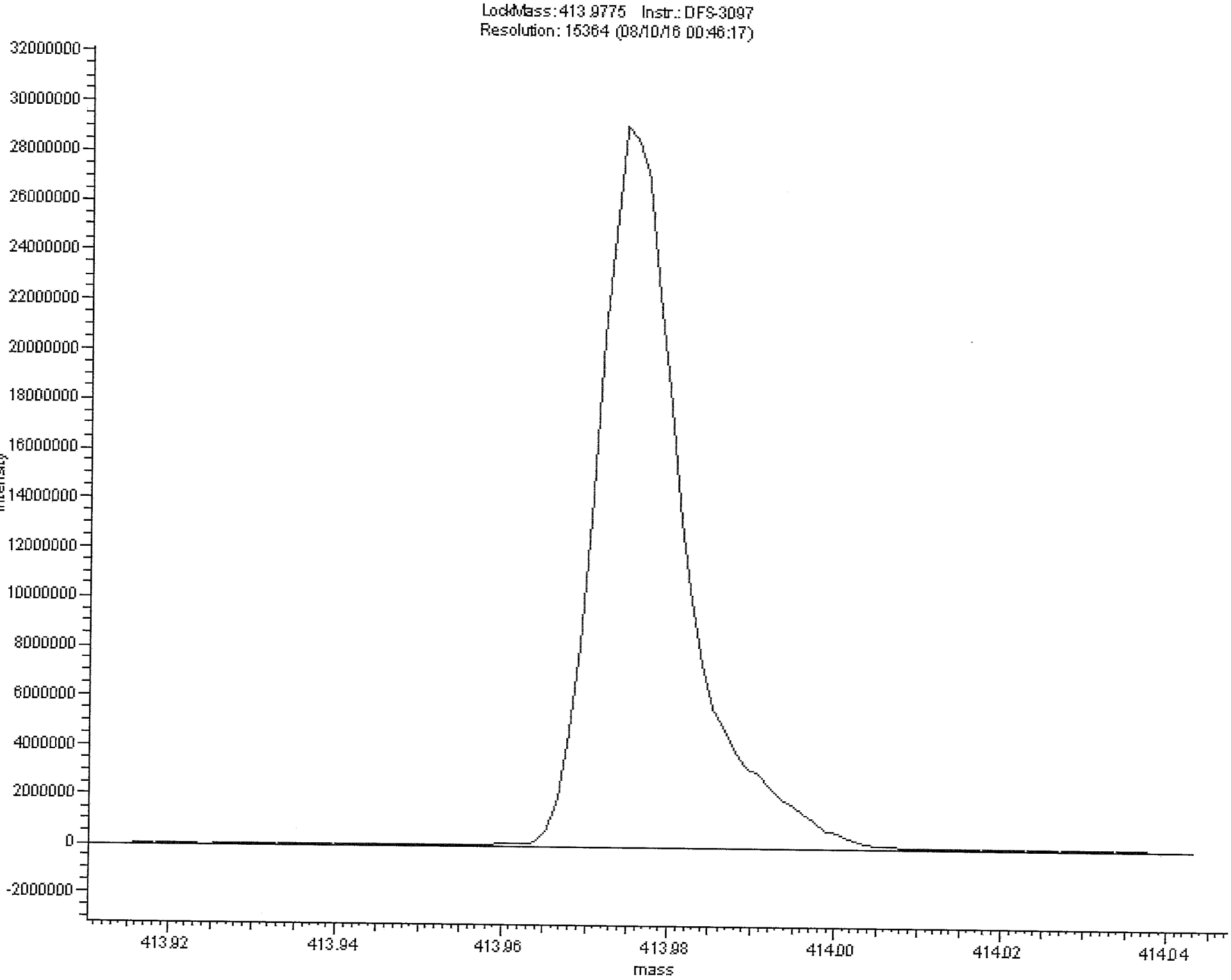

CaliMass:375.9802 Instr.: DFS-3097
Resolution: 16796 (08/10/16 00:44:57)
420000
400000
380000
360000
340000
320000
300000
280000
260000
240000
220000
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
375.92
375.93
375.94
375.95
375.96
375.97
375.98
375.99
376.00
376.01
376.02
376.03
376.04
mass


LockMass:375.9802 Instr.:DFS-3097
Resolution: 16796 (08/10/16 00:45:13)
580000
560000
540000
520000
500000
480000
460000
440000
420000
400000
380000
360000
340000
320000
300000
280000
260000
240000
220000
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
375.93
375.94
375.95
375.96
375.97
375.98
375.99
376.00
376.01
376.02
376.03
mass

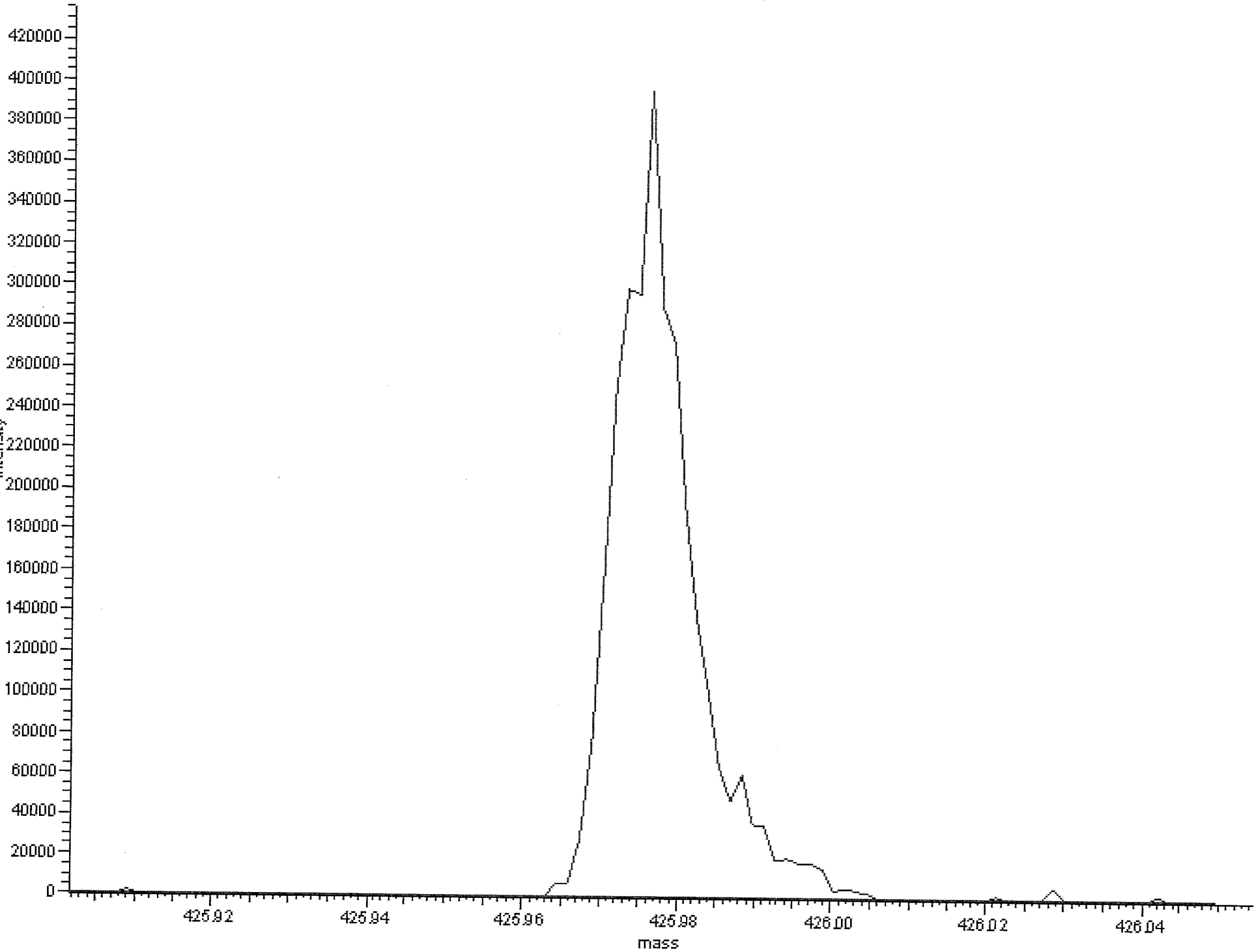
Mass: 401.9770 Instr.: DFS-3097
Resolution: 14183 (08/10/16 00:45:59)

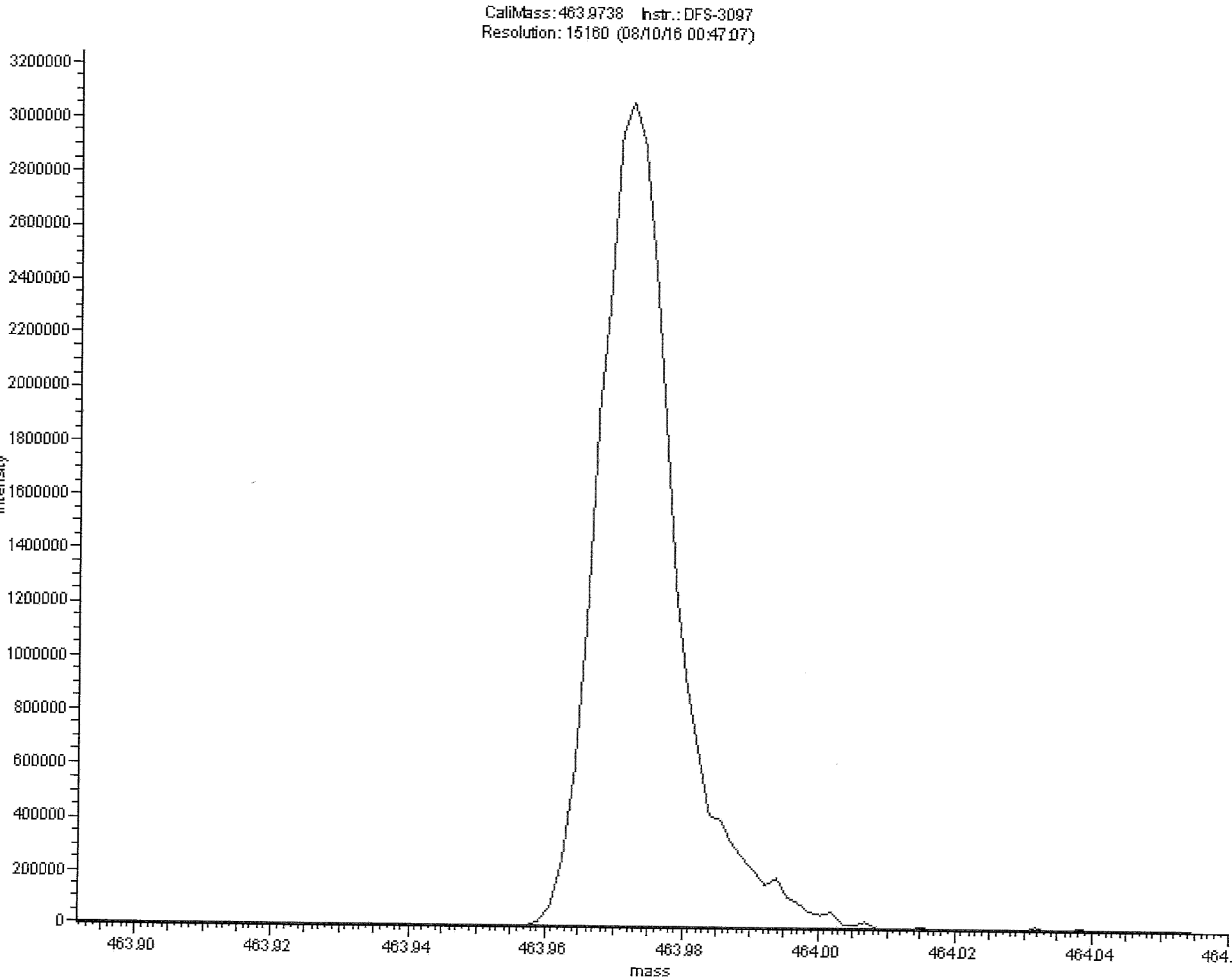



CaliMass: 413.9770 Instr.: DFS-3097
Resolution: 15364 (08/10/16 00:46:02)
24000000
23000000
22000000
21000000
20000000
19000000
18000000
17000000
16000000
15000000
14000000
13000000
12000000
11000000
10000000
9000000
8000000
7000000
6000000
5000000
4000000
3000000
2000000
1000000
0
Intensity
413.92
413.94
413.96
413.98
414.00
414.02
414.04
mass

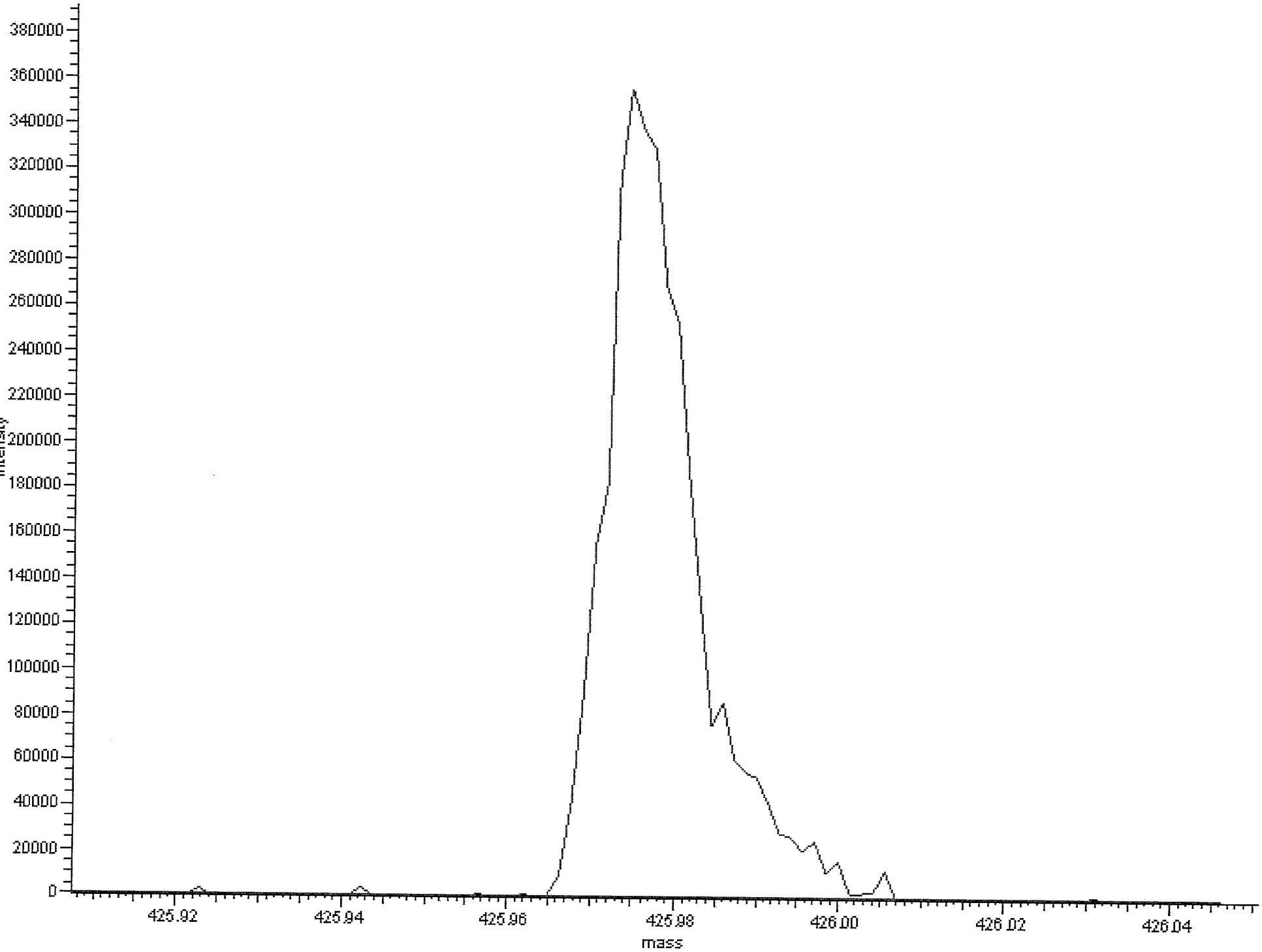

LockMass: 413.9775 Instr.: DFS-3097
Resolution: 15364 (08/10/16 00:46:17)
32000000
30000000
28000000
26000000
24000000
22000000
20000000
18000000
16000000
14000000
12000000
10000000
8000000
6000000
4000000
2000000
0
-2000000
Intensity
413.92
413.94
413.96
413.98
414.00
414.02
414.04
mass

Mass: 425.9770 Instr.: DFS-3097
Resolution: 14775 (08/10/16 00:47:04)

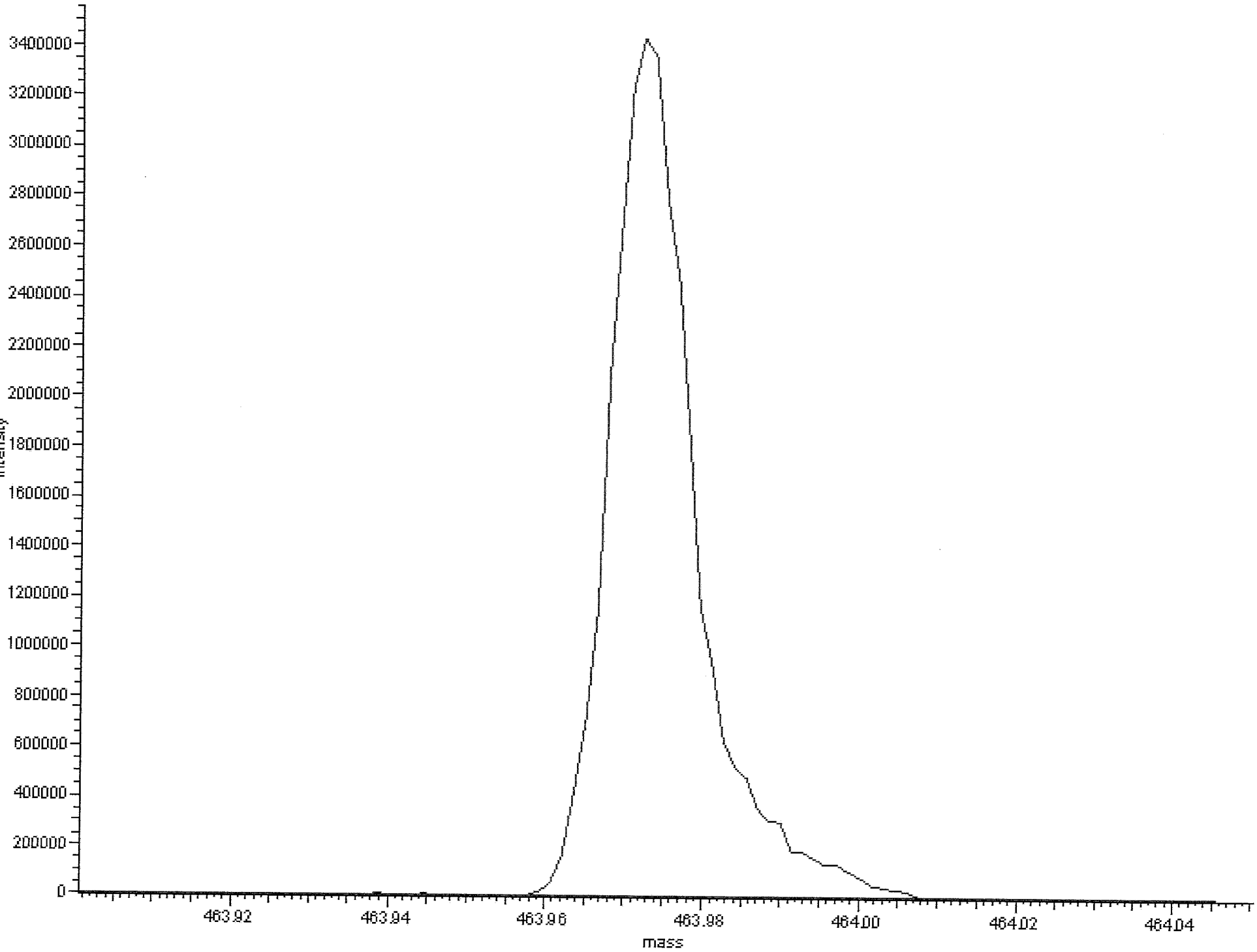


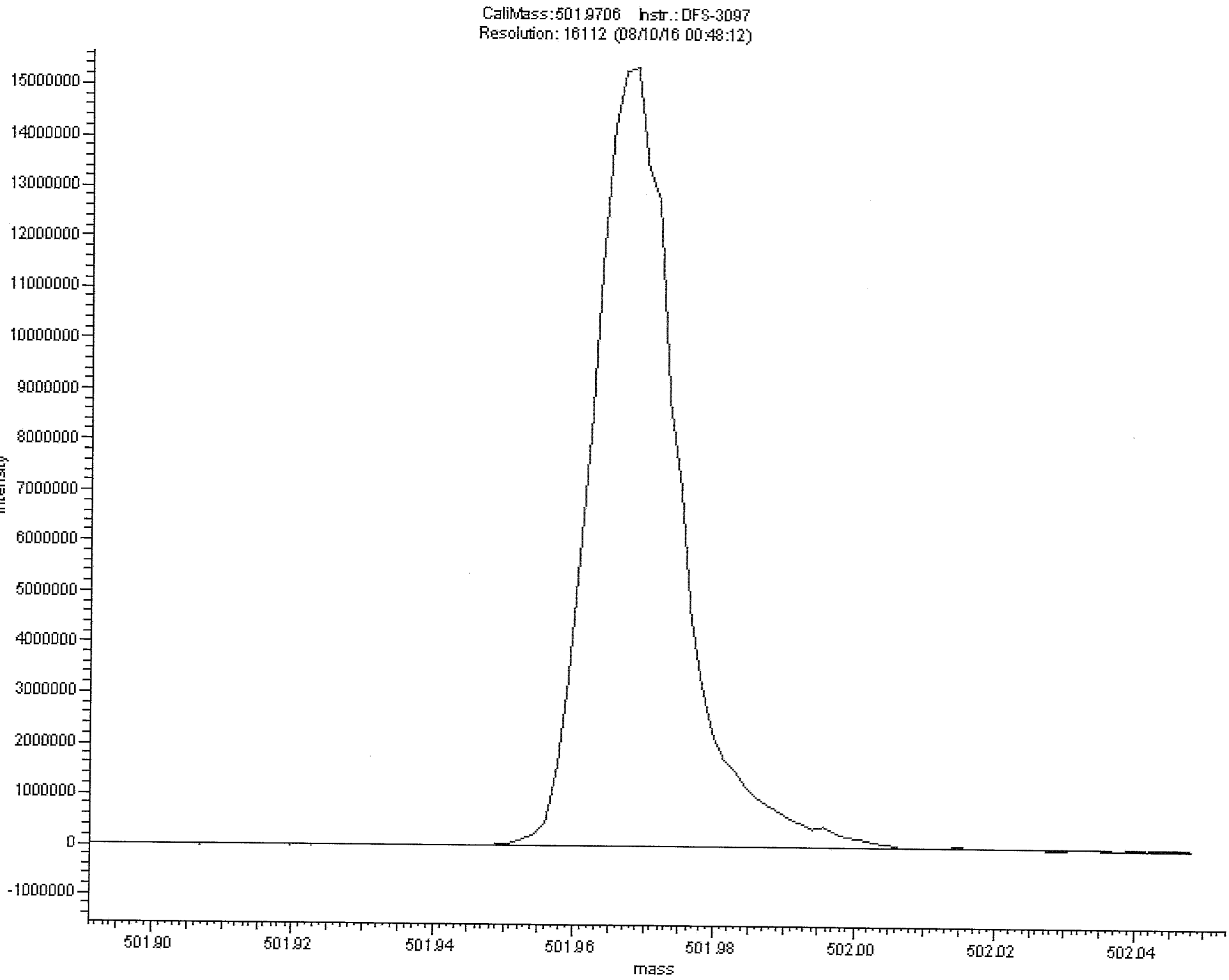

CaliMass: 463.9738 Instr.: DFS-3097
Resolution: 15160 (08/10/16 00:47:07)
3200000
3000000
2800000
2600000
2400000
2200000
2000000
1800000
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
Intensity
463.90
463.92
463.94
463.96
463.98
464.00
464.02
464.04
464.06
mass

LockMass: 425.9775 Instr.: DFS-3097
Resolution: 15160 (08/10/16 00:47:22)

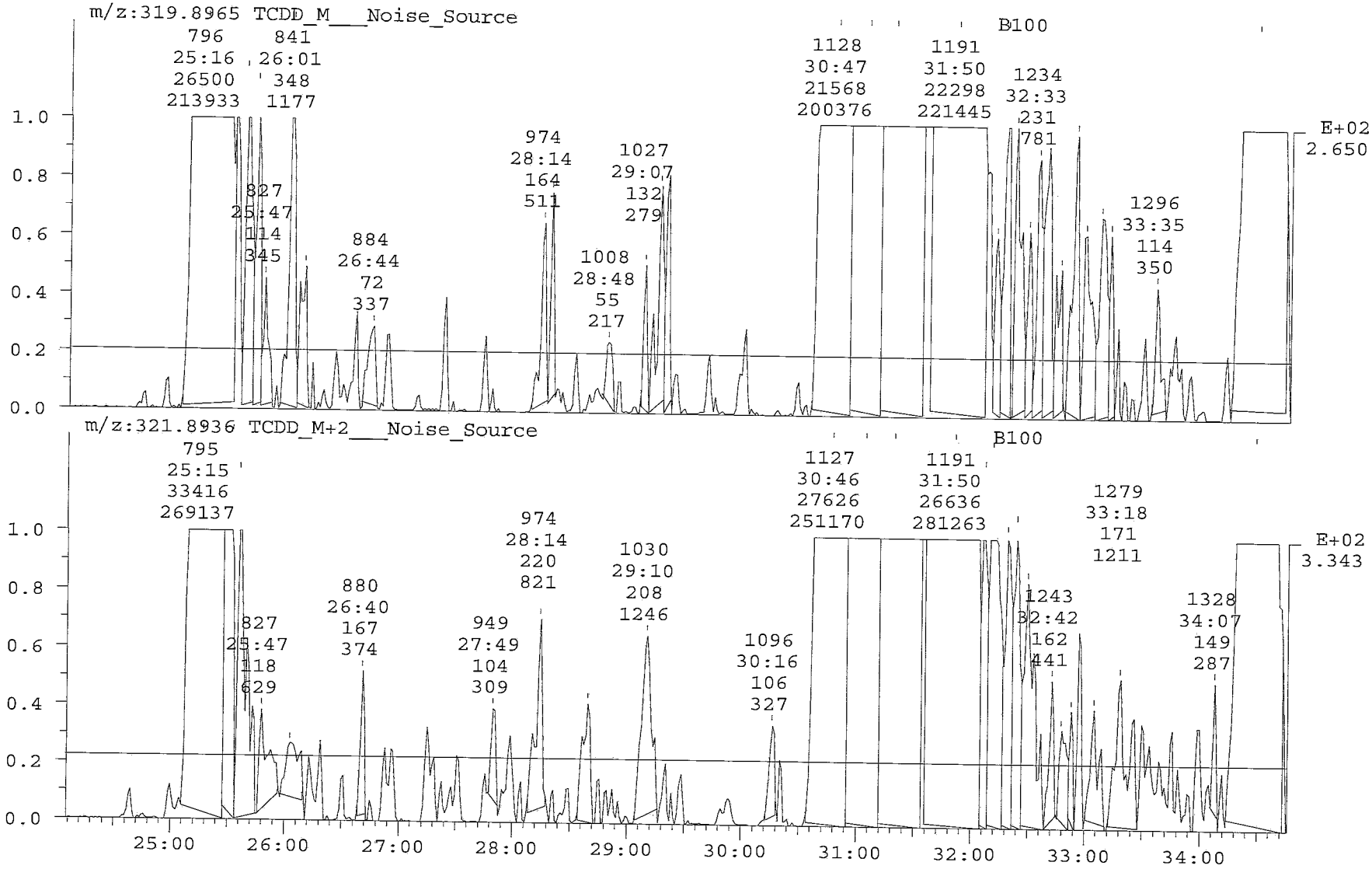


Mass: 463.9743 Instr.: DFS-3097
Resolution: 14914 (08/10/16 00:48:09)

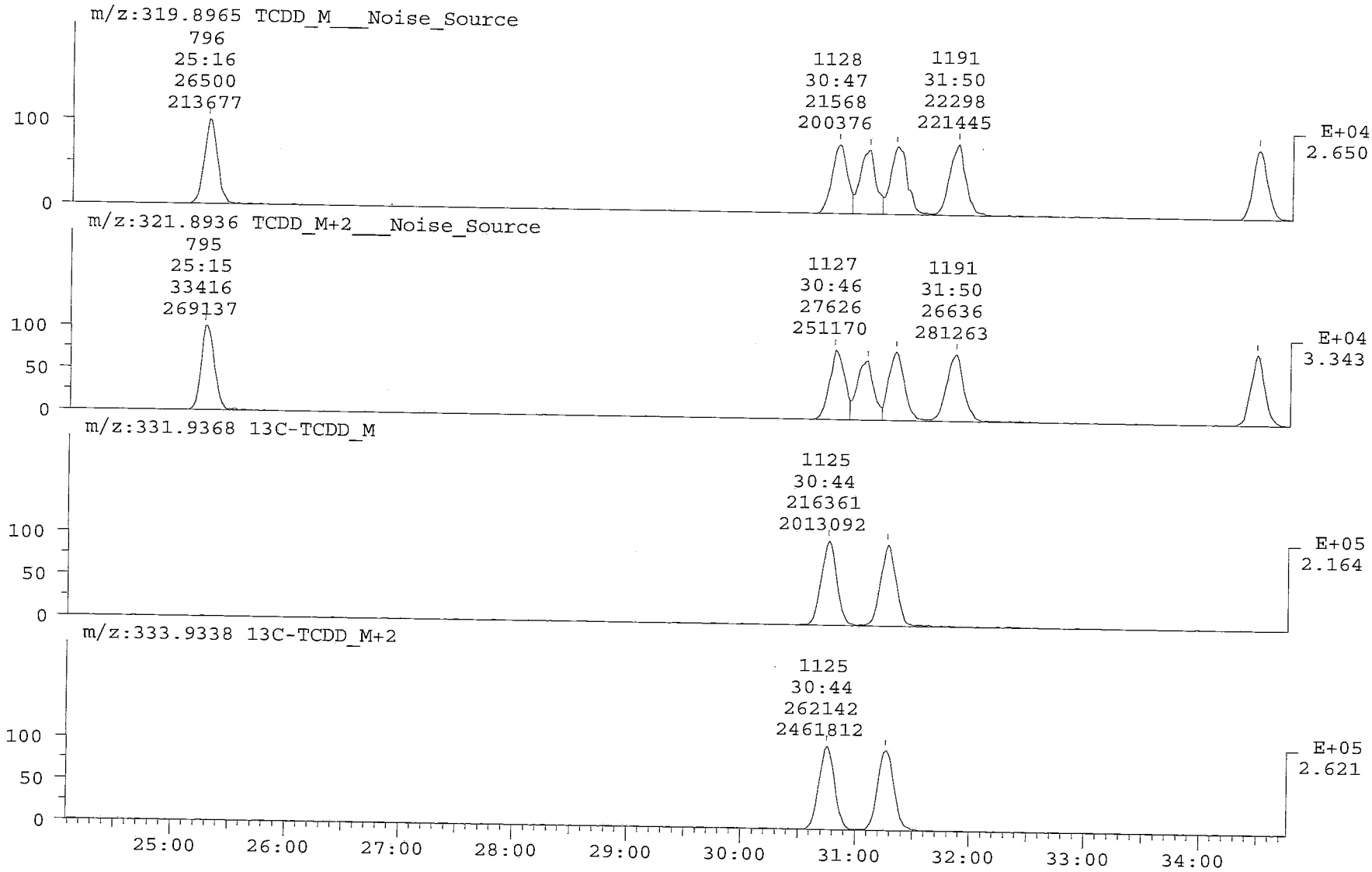



CaliMass:501.9706 Instr.:DFS-3097
Resolution: 16112 (08/10/16 00:48:12)
15000000
14000000
13000000
12000000
11000000
10000000
9000000
8000000
7000000
6000000
5000000
4000000
3000000
2000000
1000000
0
-1000000
Intensity
501.90
501.92
501.94
501.96
501.98
502.00
502.02
502.04
mass

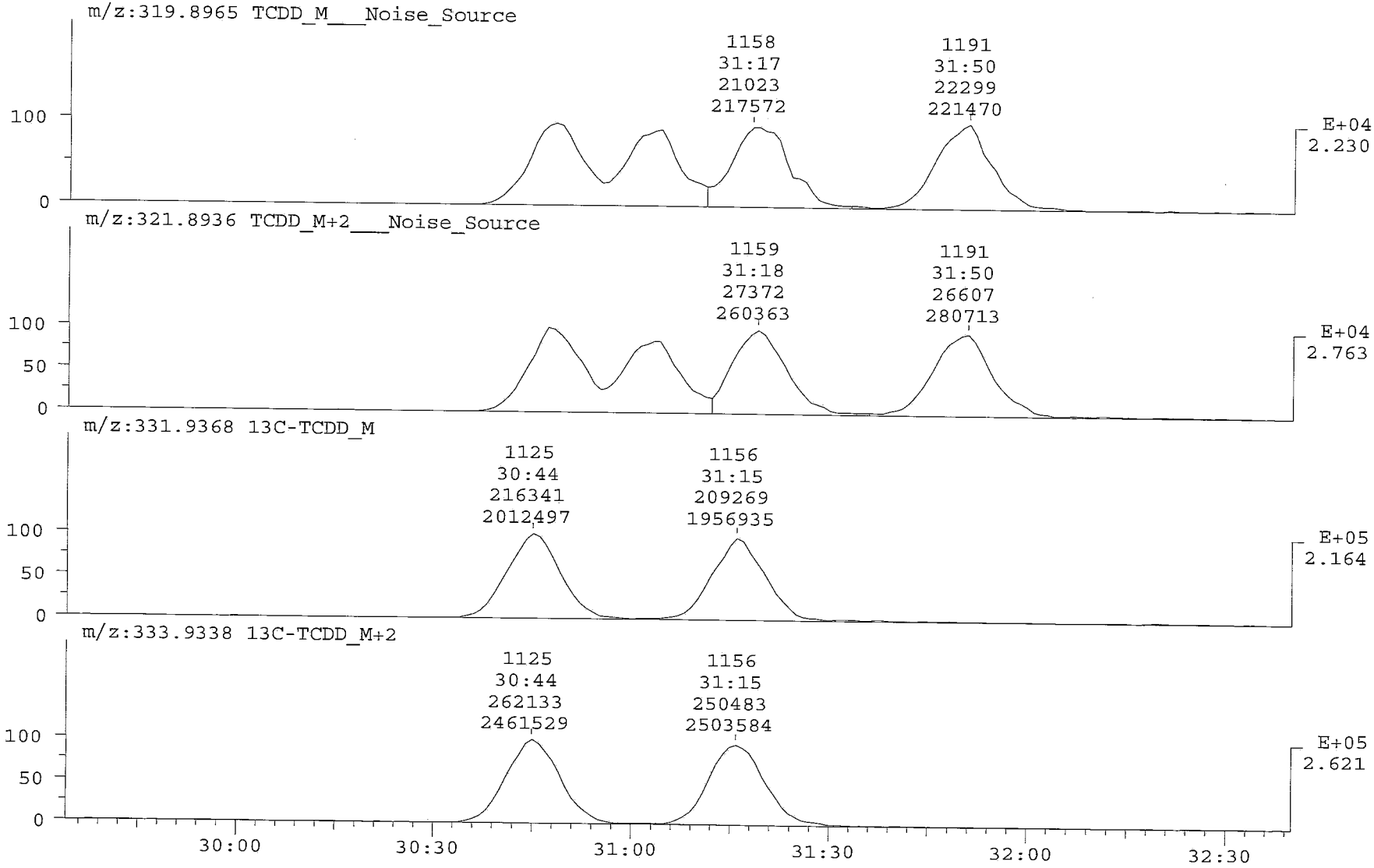
CHRO: d3160809s2 09-Aug-16 Elapse: 54:13 2488
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 724 > 1367 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 1.0
Disp: Height Area



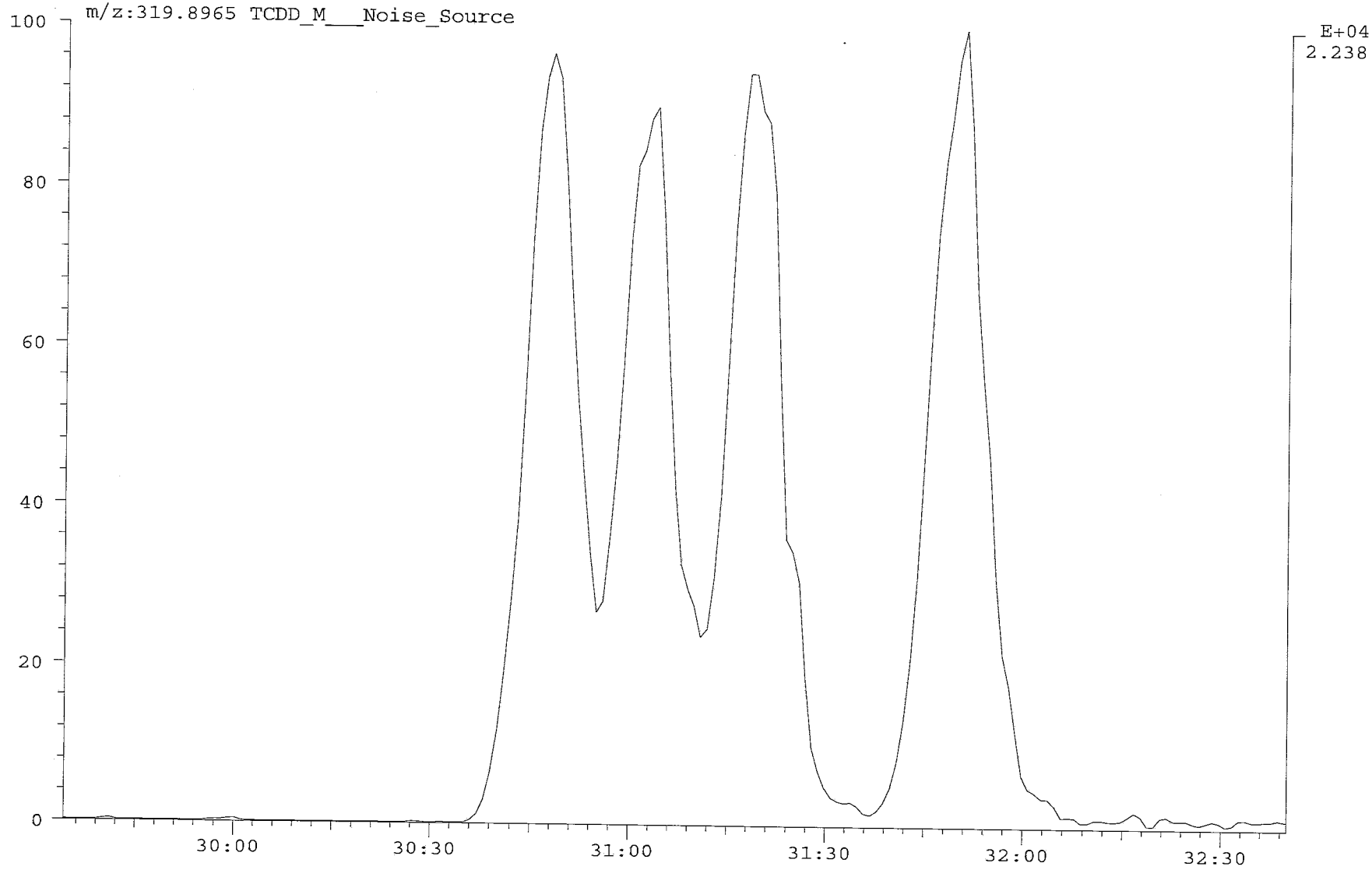
CHRO: d3160809s2 09-Aug-16 Elapse: 54:13 2488
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 724 > 1367 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



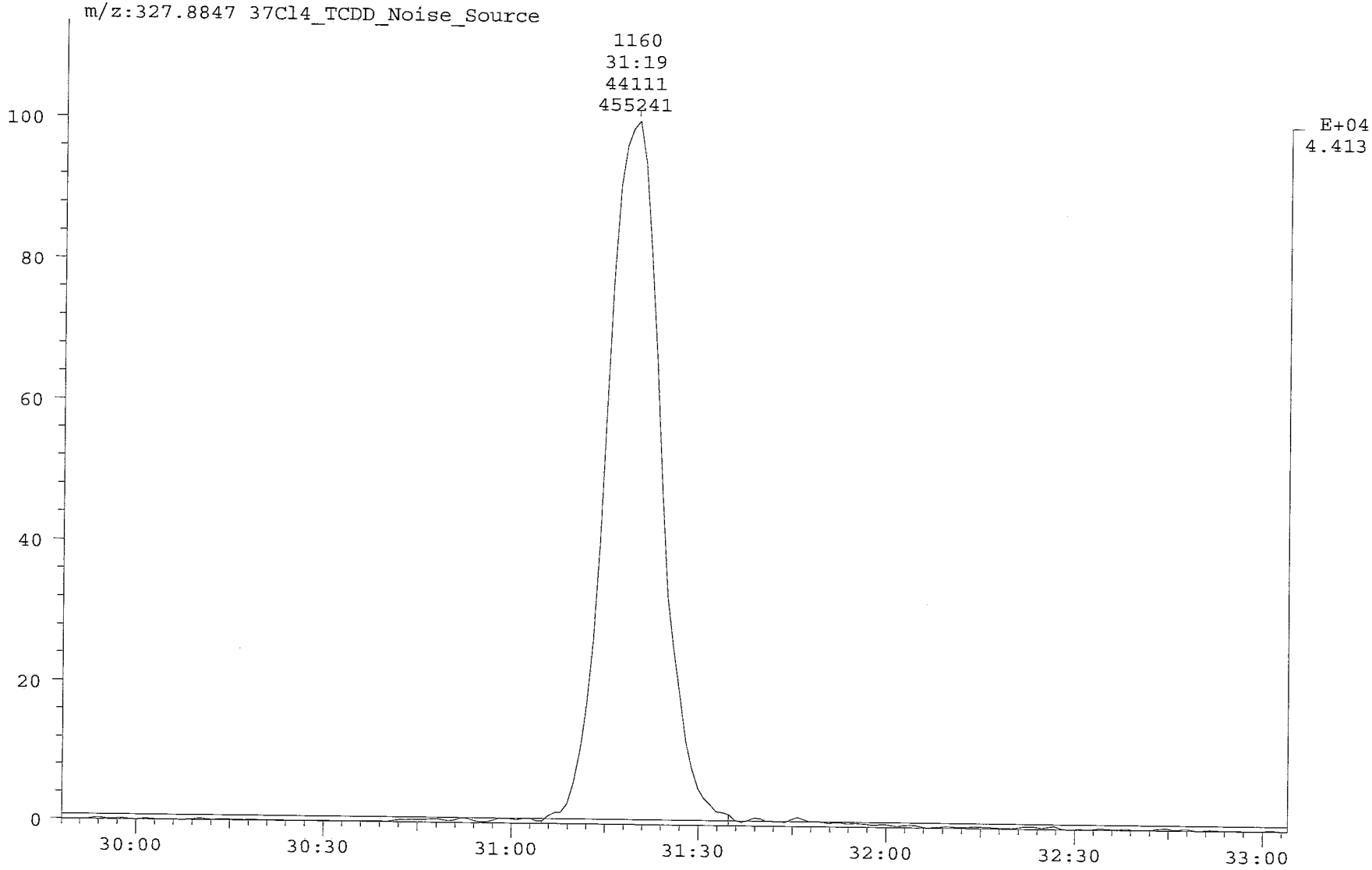
CHRO: d3160809s2 09-Aug-16 Elapse: 31:06 1147
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1054 > 1240 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



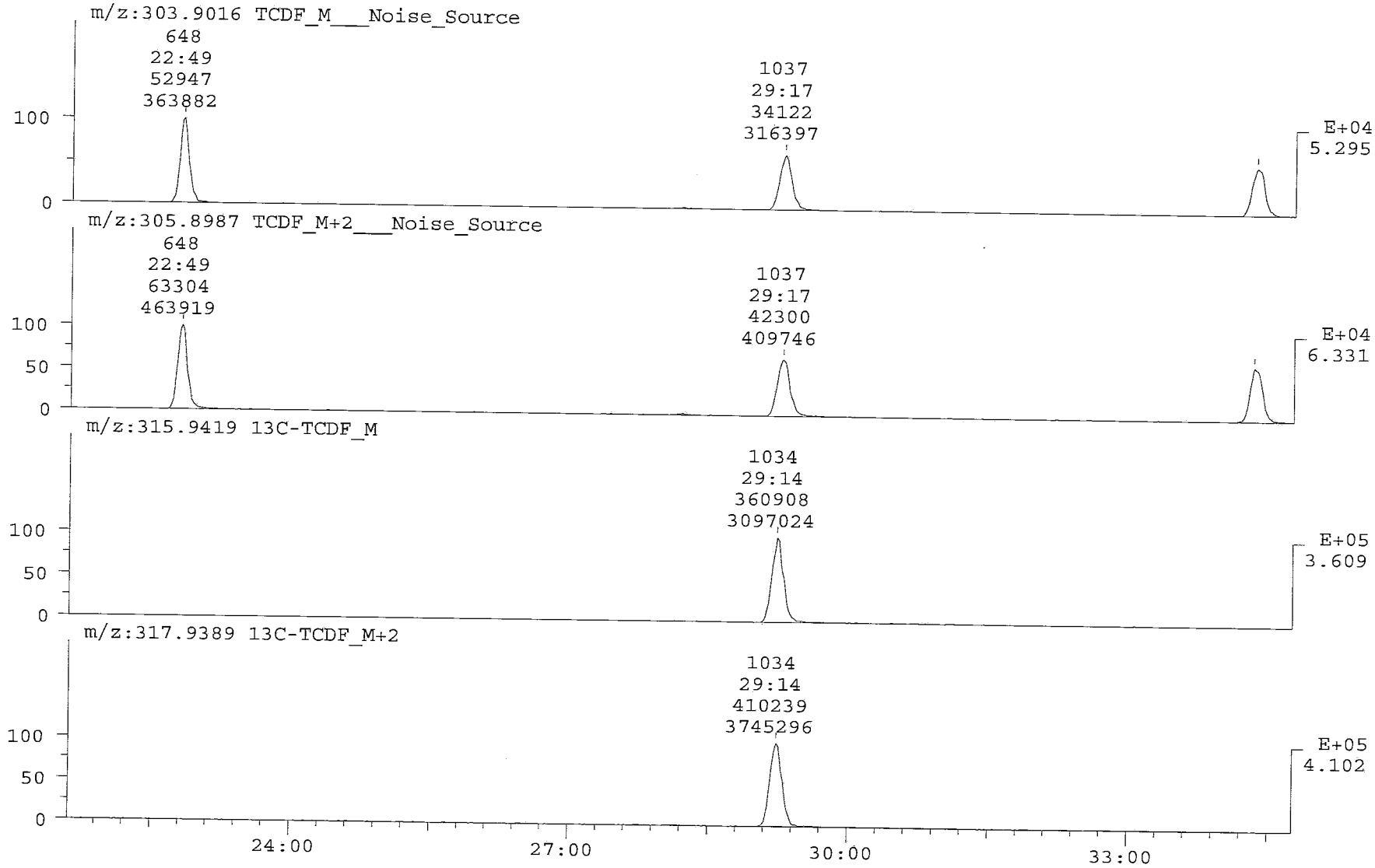
CHRO: d3160809s2 09-Aug-16 Elapse: 31:06 1147
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1054 > 1240 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



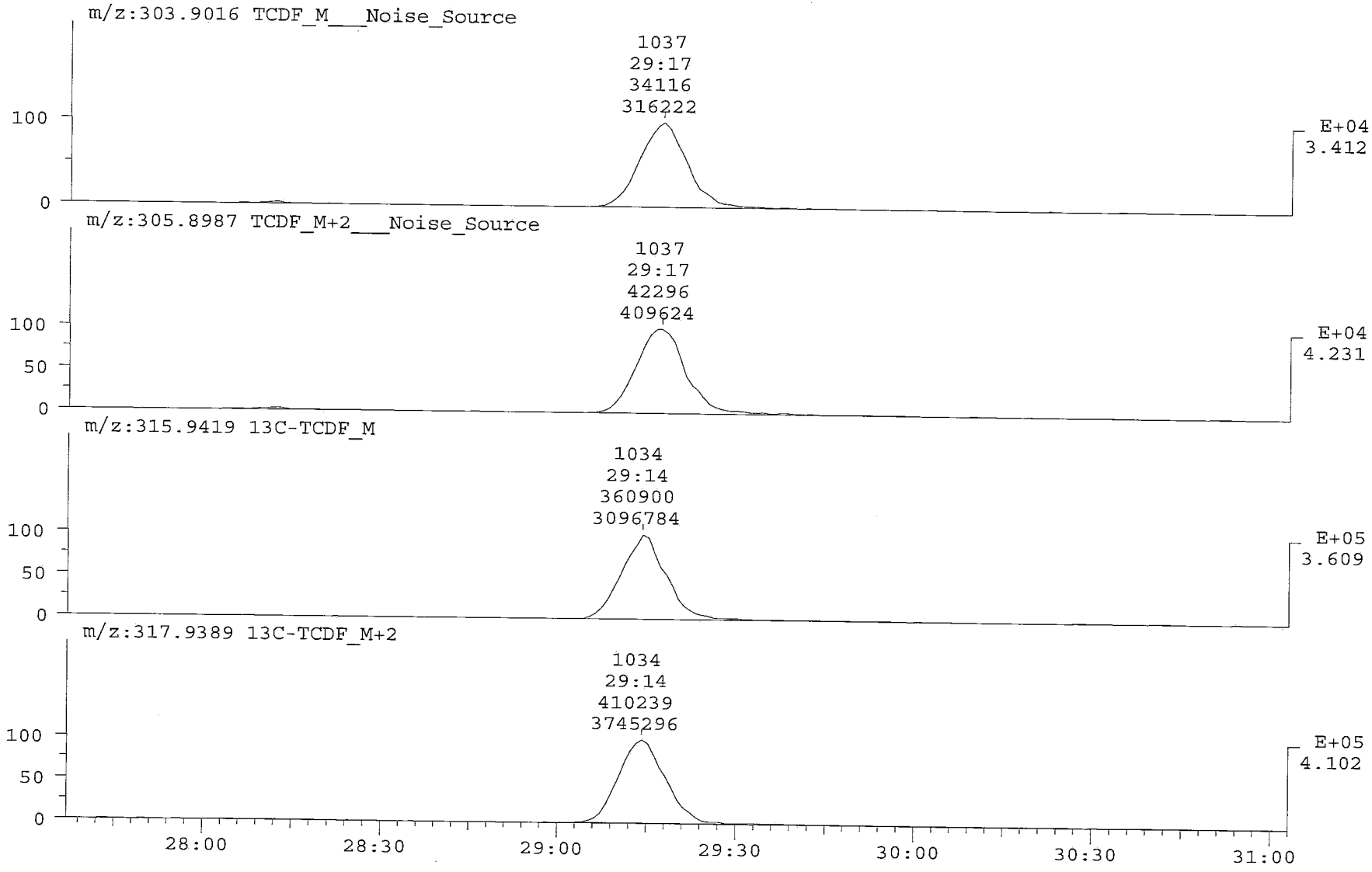
```
CHRO:  d3160809s2                                  09-Aug-16   Elapse:  31:22       1163
Samp:  WO=4966:40 Meth=F8o Dil=1                               Start :  23:31:42    2677
Comm:  Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                     Study :  Ver/Win
Oper:  MSD                                                     Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1068 > 1264               Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                    Label :  -2, 5.0
Disp:  Height  Area
```



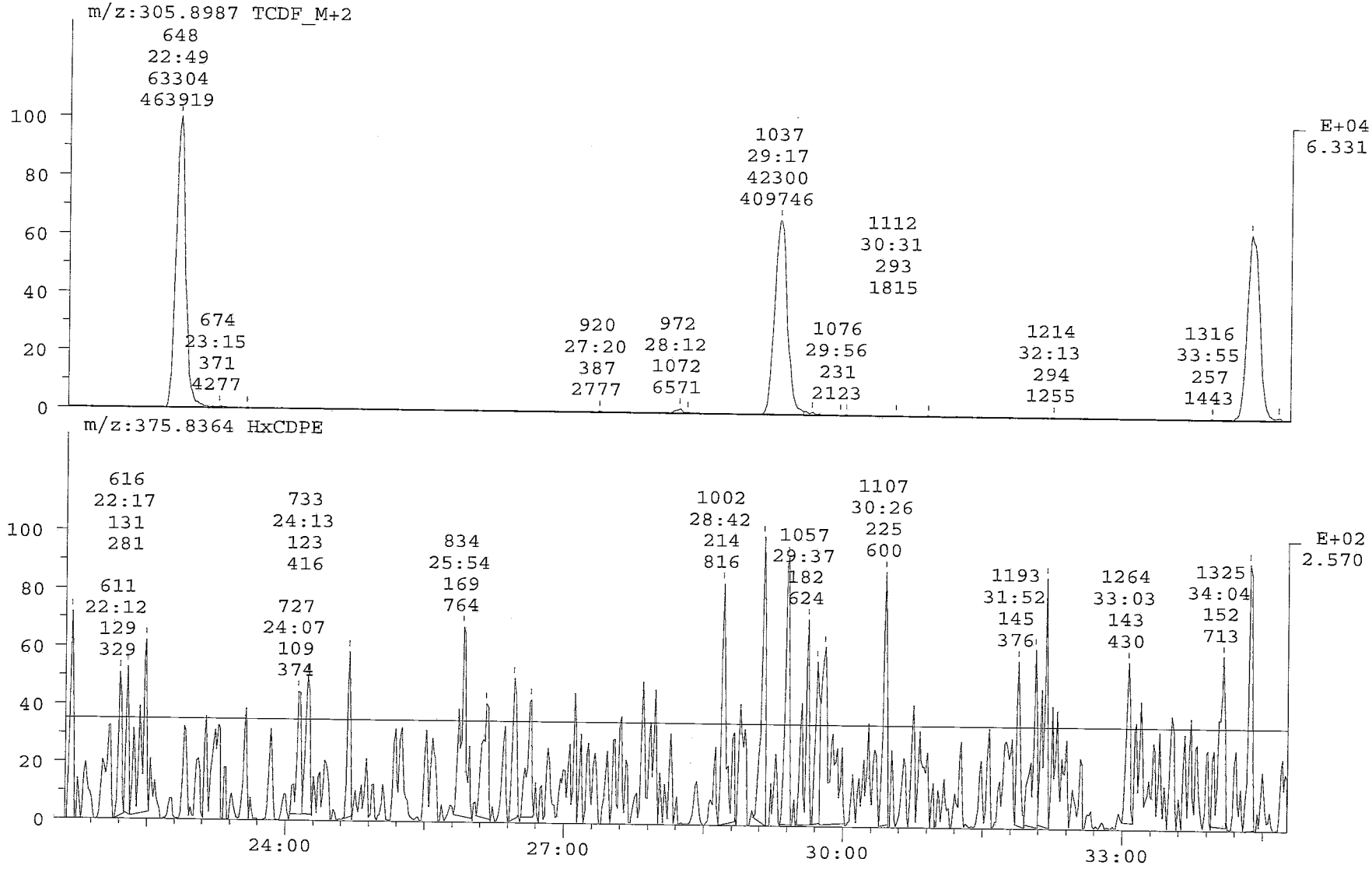
CHRO: d3160809s2 09-Aug-16 Elapse: 31:22 1163
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 576 > 1367 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



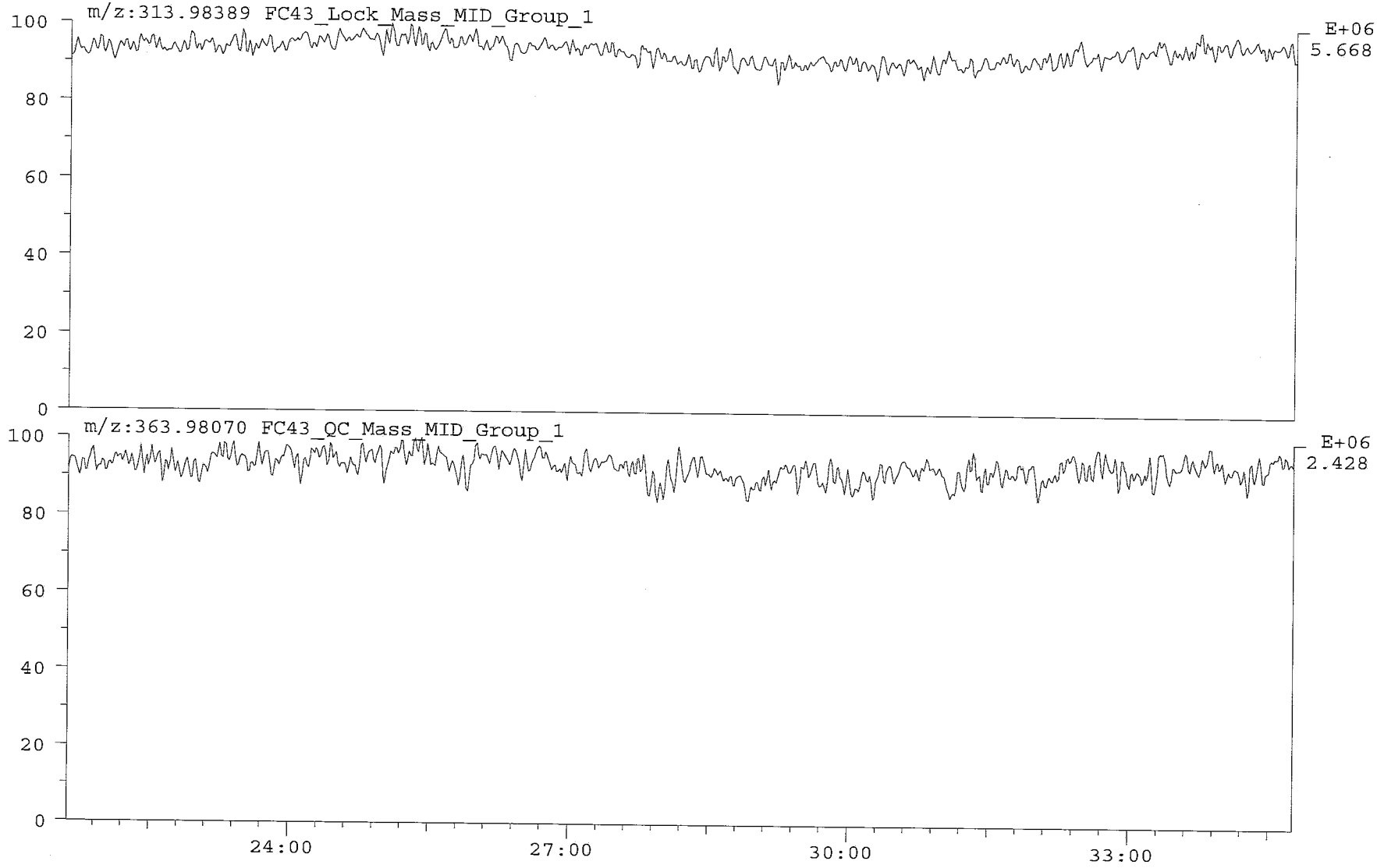
CHRO: d3160809s2 09-Aug-16 Elapse: 29:17 1037
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 937 > 1143 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



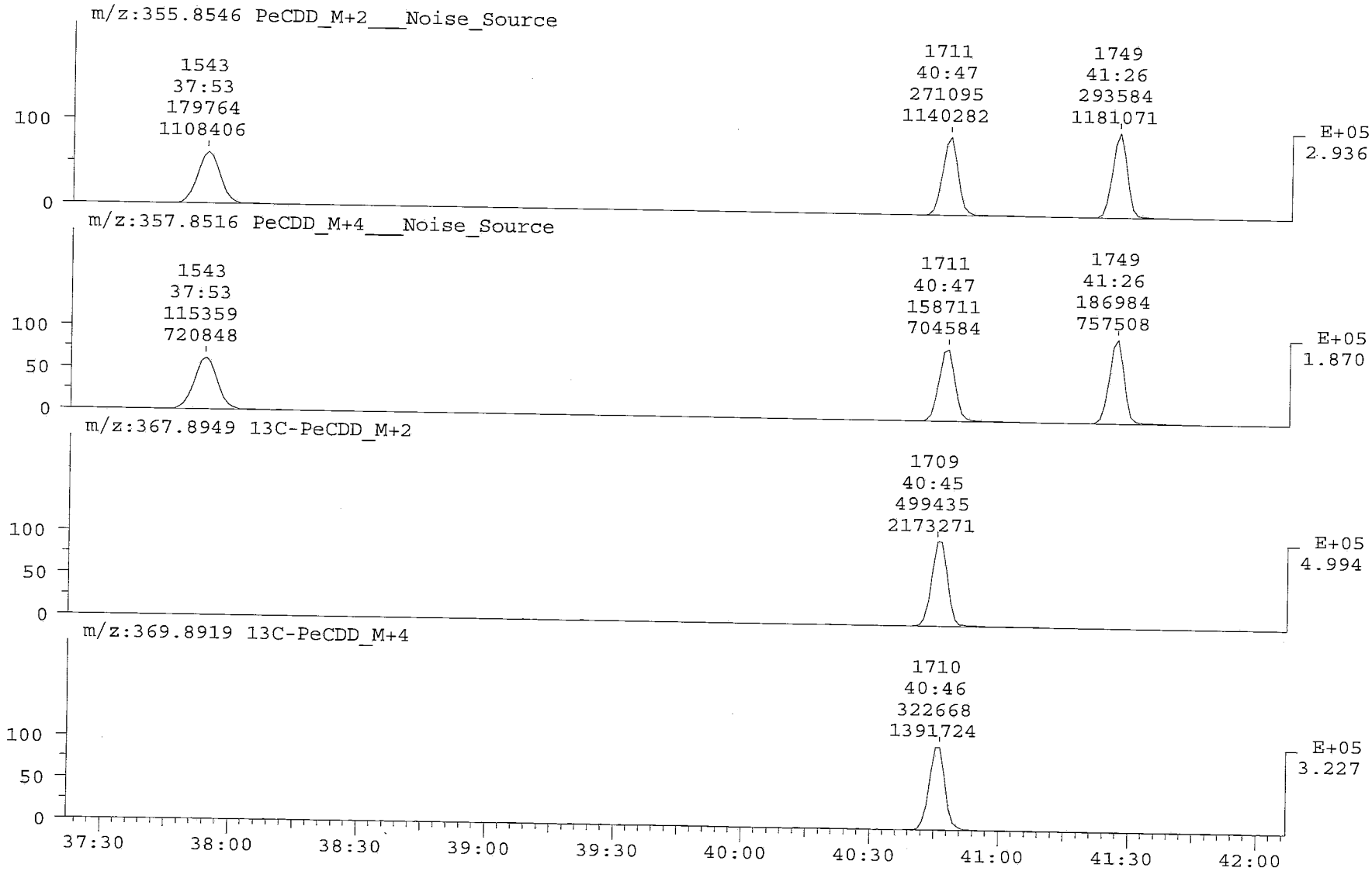
CHRO: d3160809s2 09-Aug-16 Elapse: 29:17 1037
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 576 > 1367 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



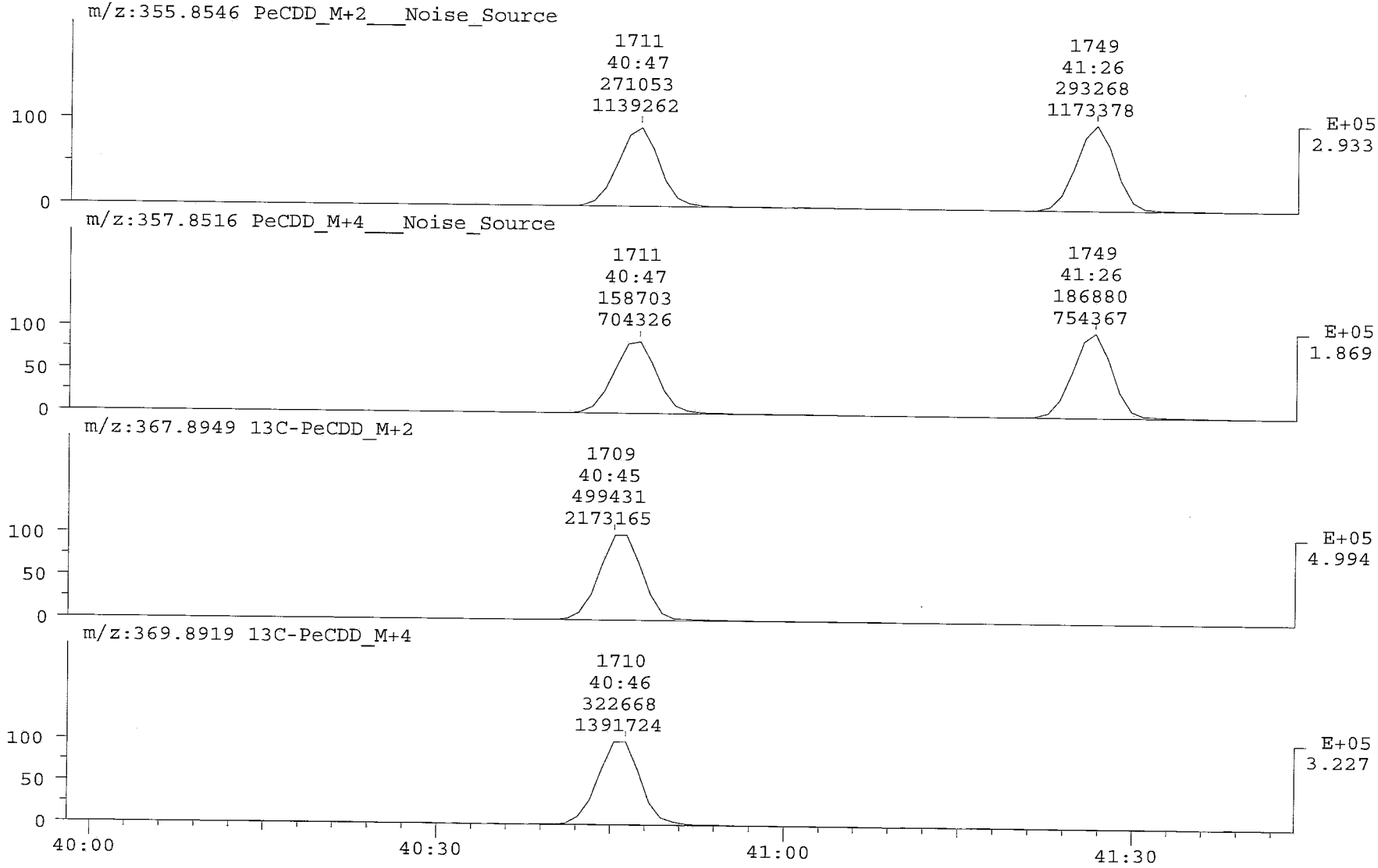
CHRO: d3160809s2 09-Aug-16 Elapse: 29:17 1037
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 576 > 1367 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



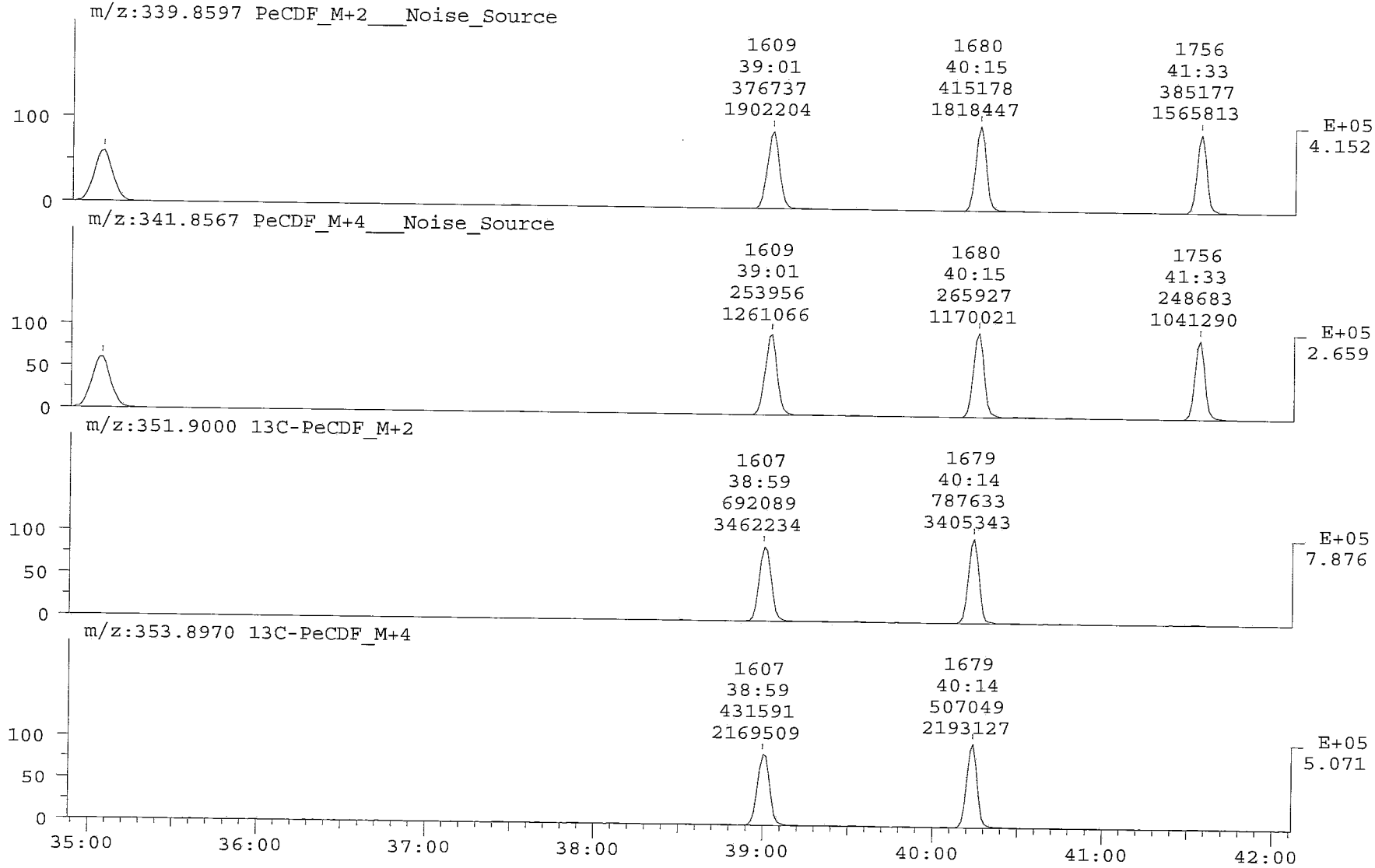
CHRO: d3160809s2 09-Aug-16 Elapse: 29:17 1037
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1512 > 1788 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



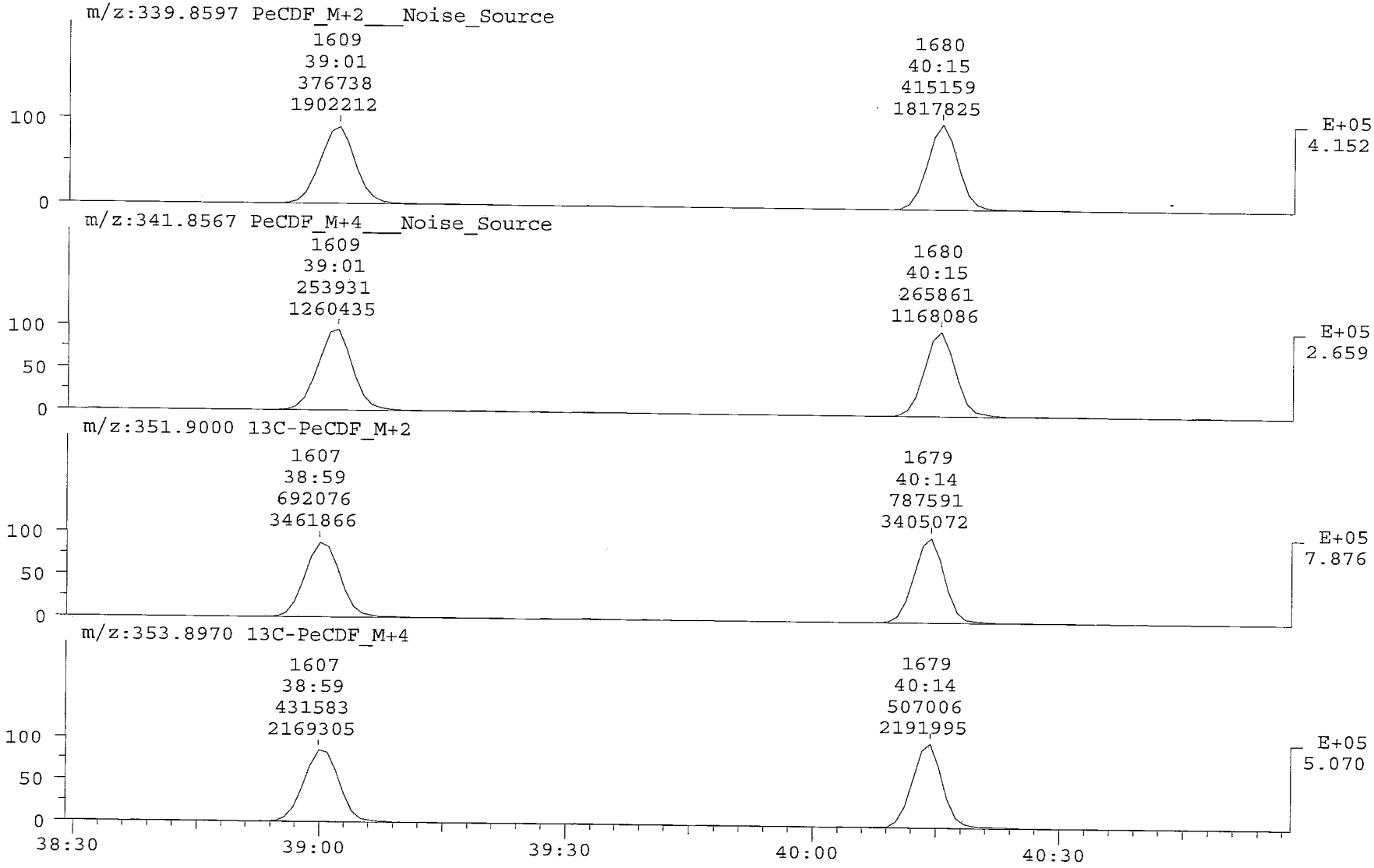
CHRO: d3160809s2 09-Aug-16 Elapse: 40:48 1712
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1663 > 1766 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



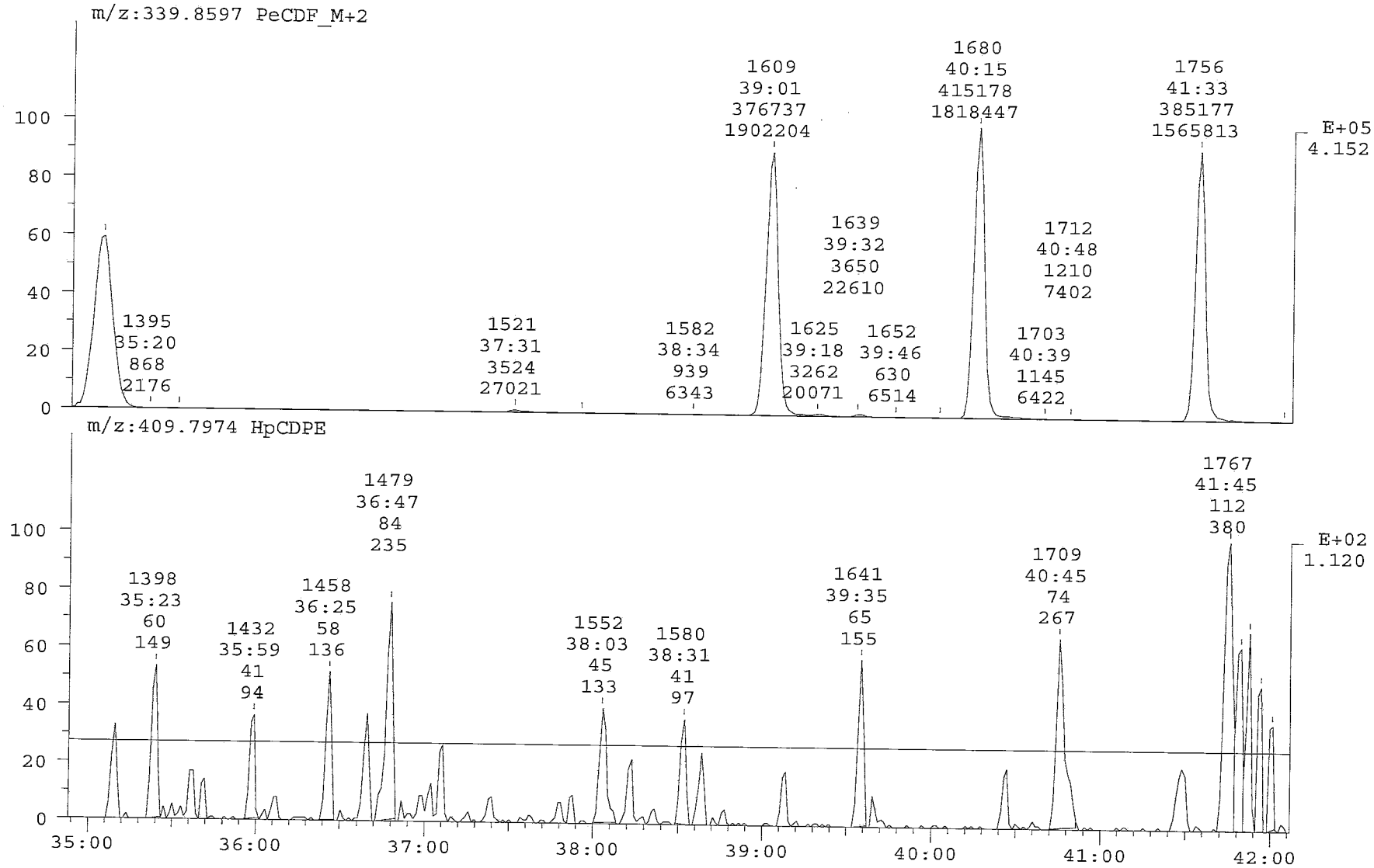
CHRO: d3160809s2 09-Aug-16 Elapse: 40:48 1712
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1369 > 1788 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



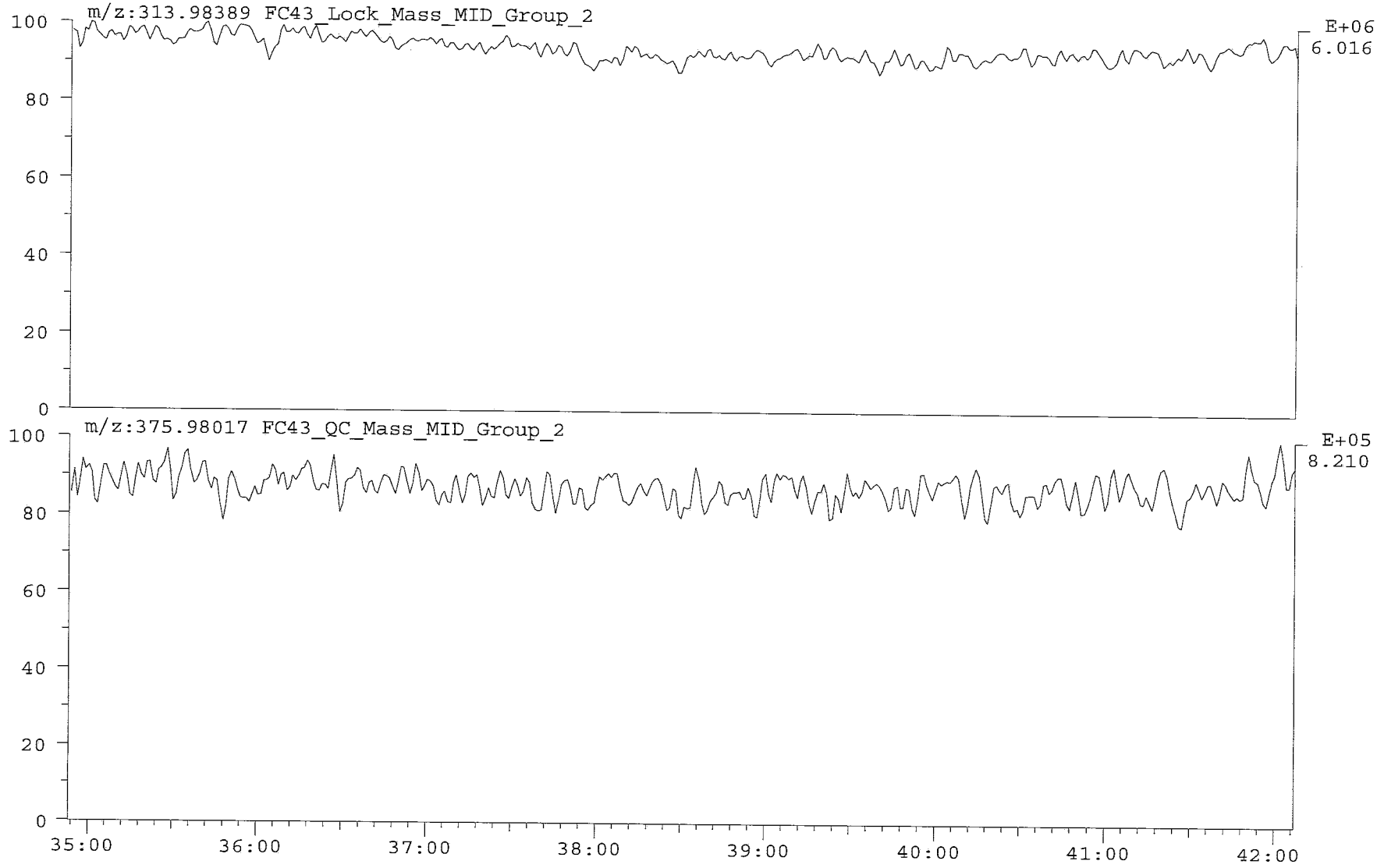
CHRO: d3160809s2 09-Aug-16 Elapse: 39:43 1649
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1577 > 1721 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



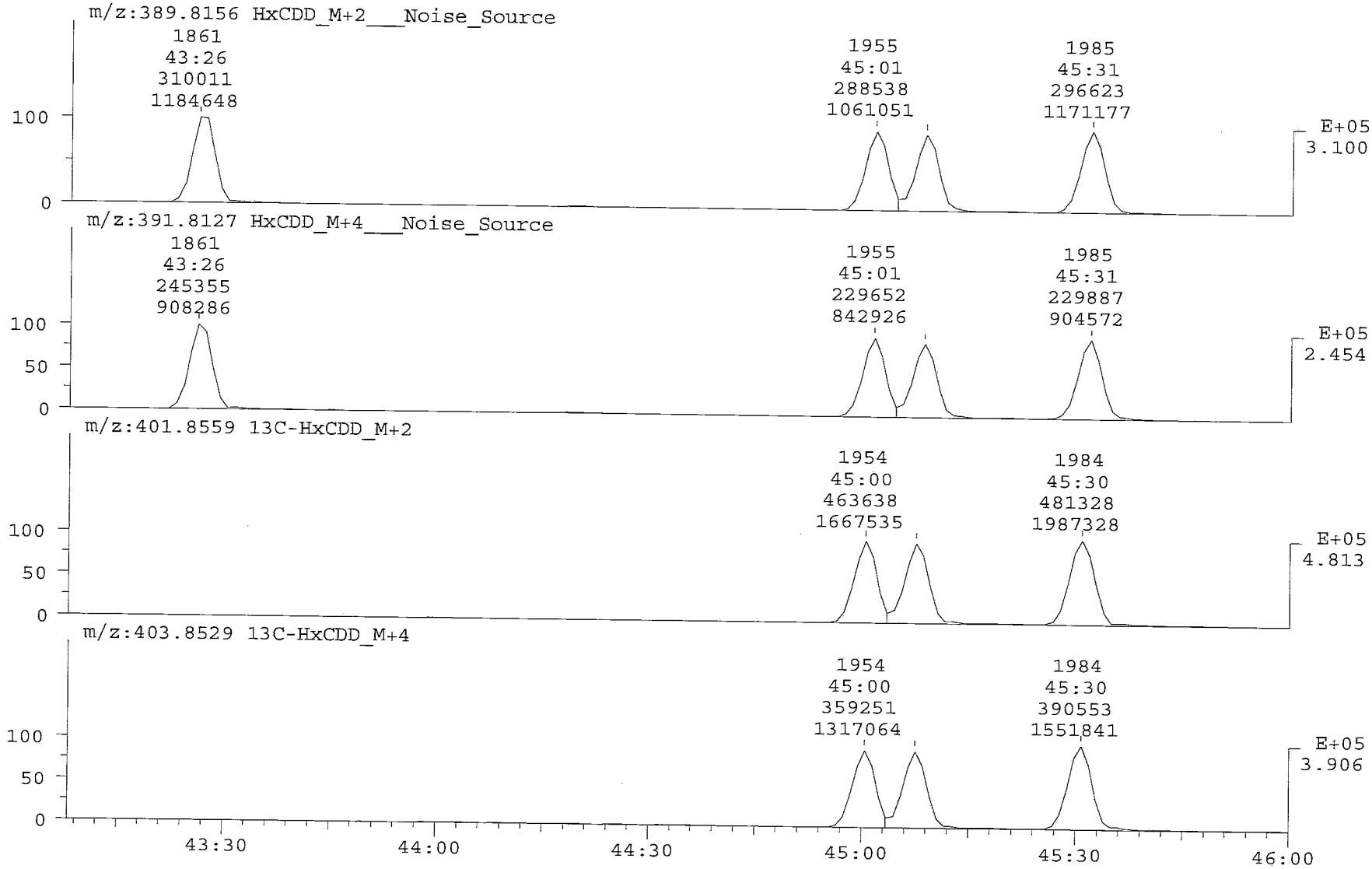
CHRO: d3160809s2 09-Aug-16 Elapse: 39:43 1649
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1369 > 1788 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



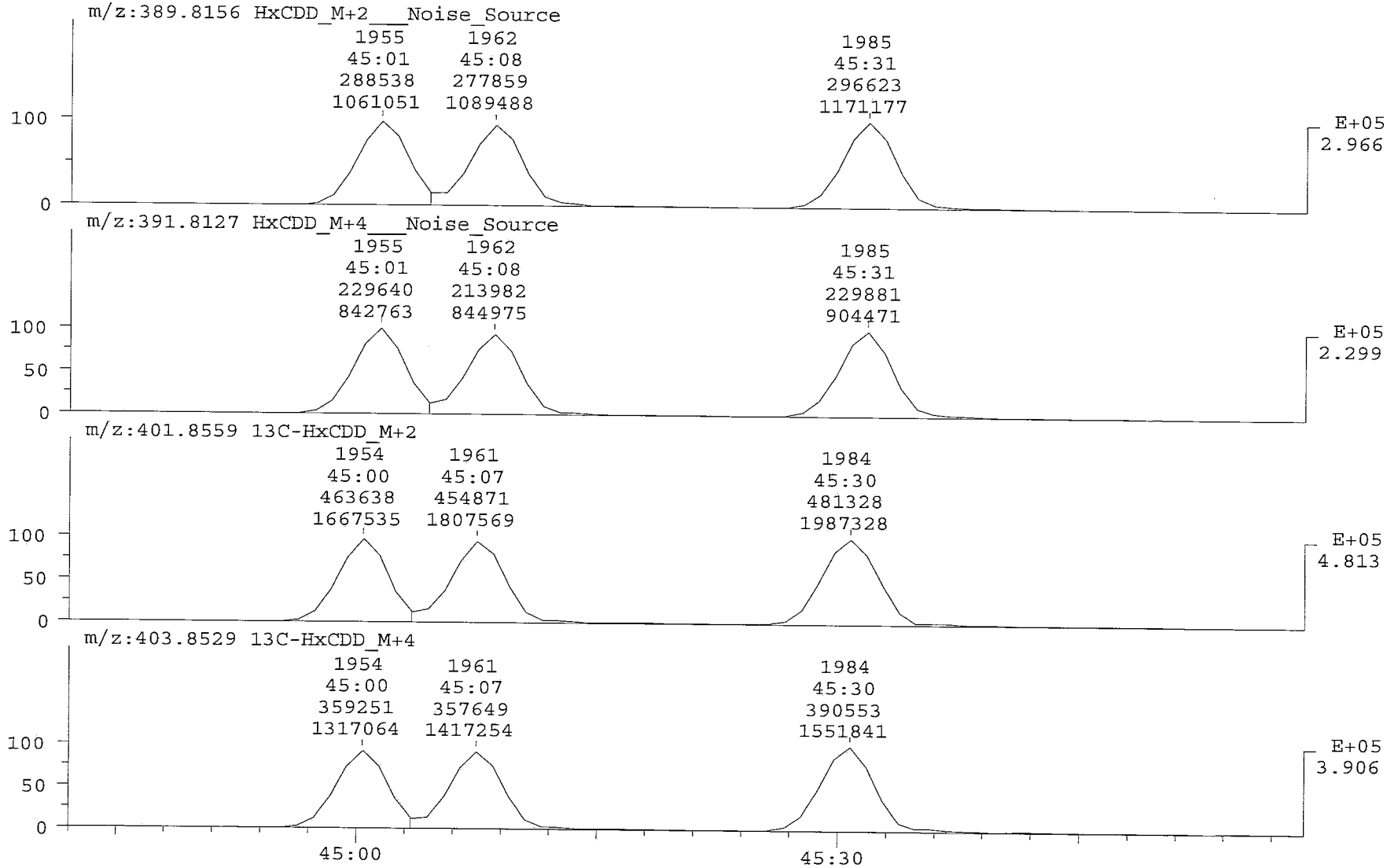
CHRO: d3160809s2 09-Aug-16 Elapse: 39:43 1649
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1369 > 1788 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



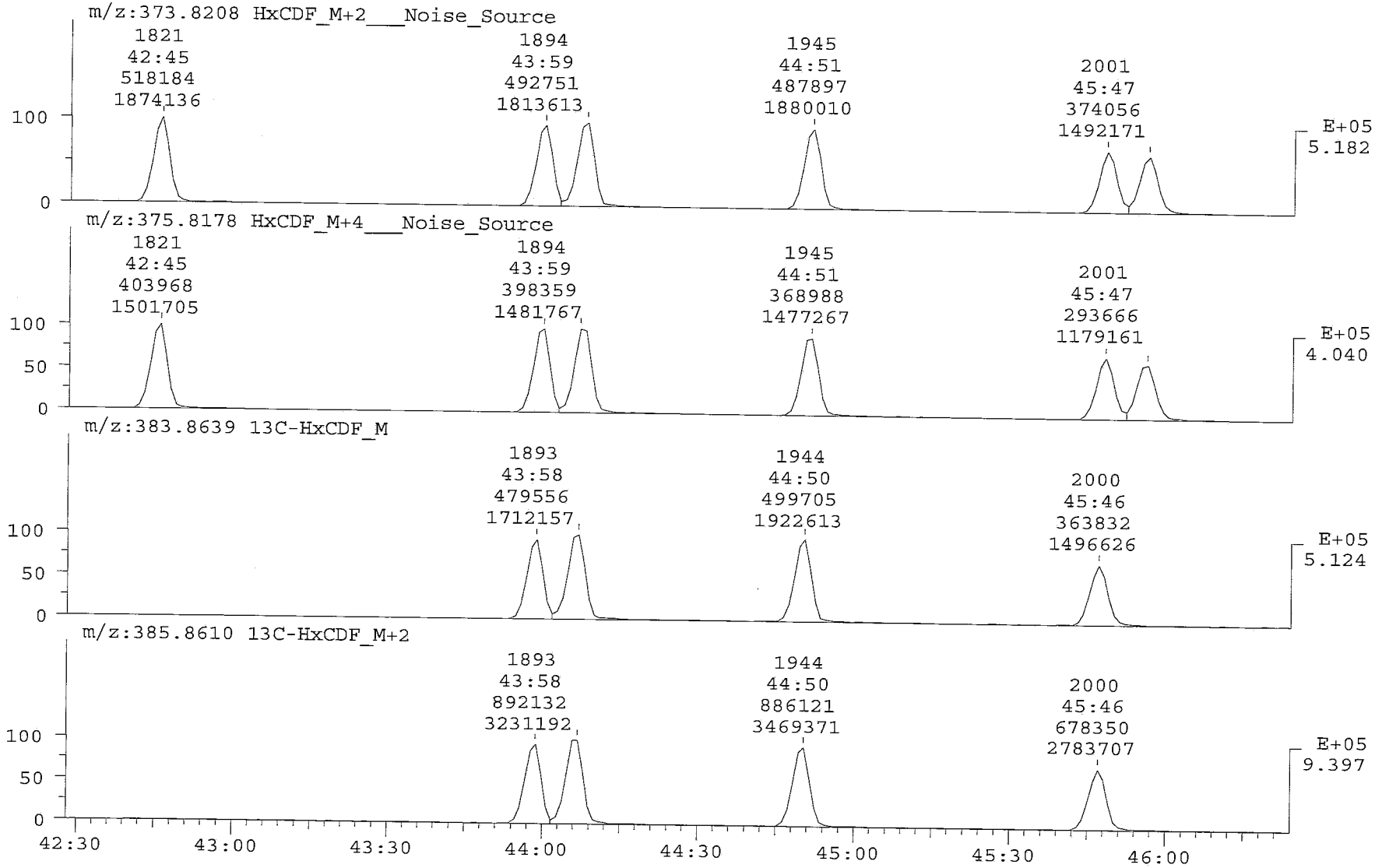
CHRO: d3160809s2 09-Aug-16 Elapse: 39:43 1649
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1843 > 2013 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



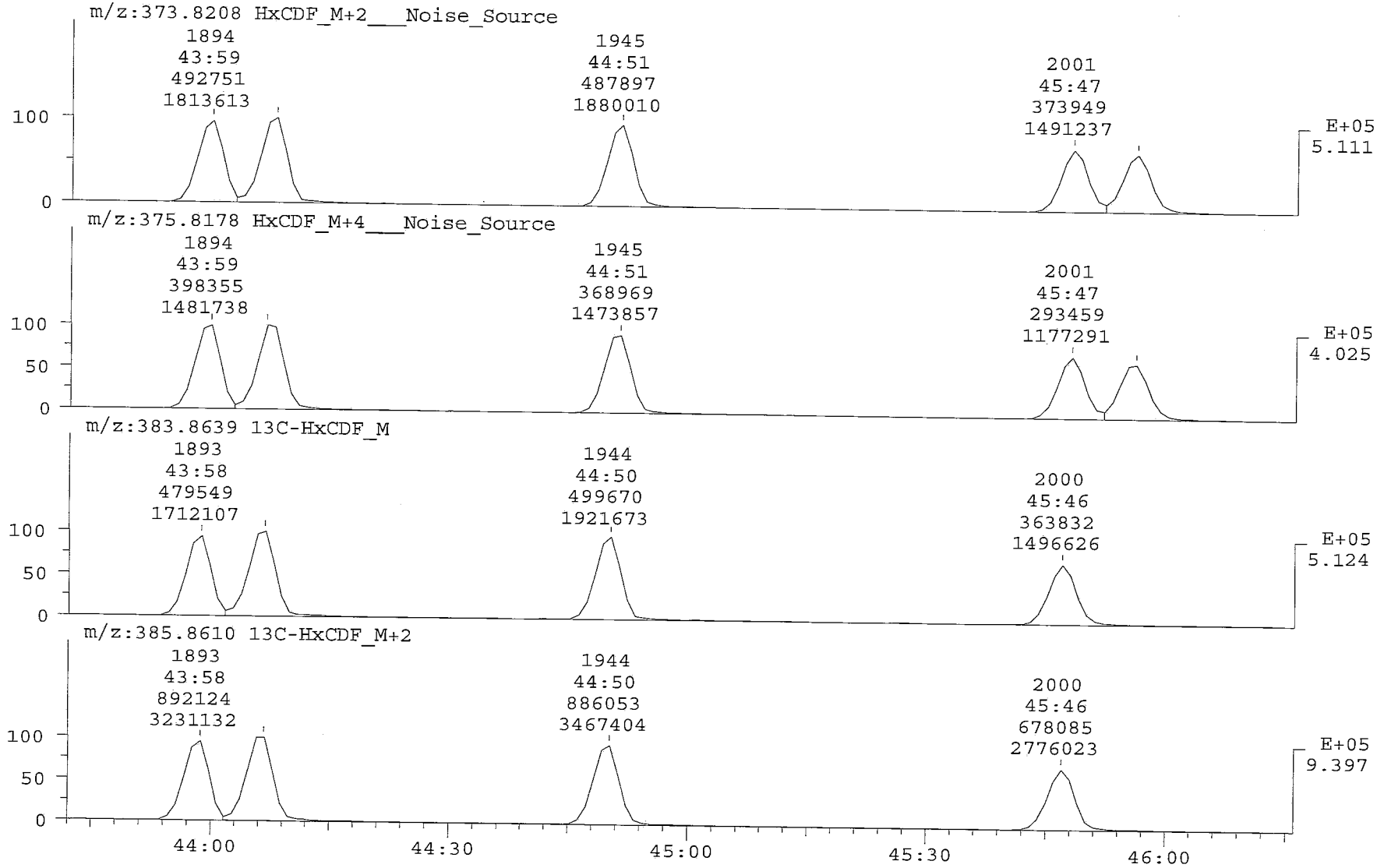
```
CHRO:  d3160809s2                                  09-Aug-16   Elapse:  45:19      1973
Samp:  WO=4966:40 Meth=F8o Dil=1                               Start :  23:31:42   2677
Comm:  Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                     Study :  Ver/Win
Oper:  MSD                                                     Inlet :  LC
Peak:  100.00  ppm      Label wndw:   1936 > 2012              Masses:  303 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3                   Label :  2, 5.0
Disp:  Height  Area
```



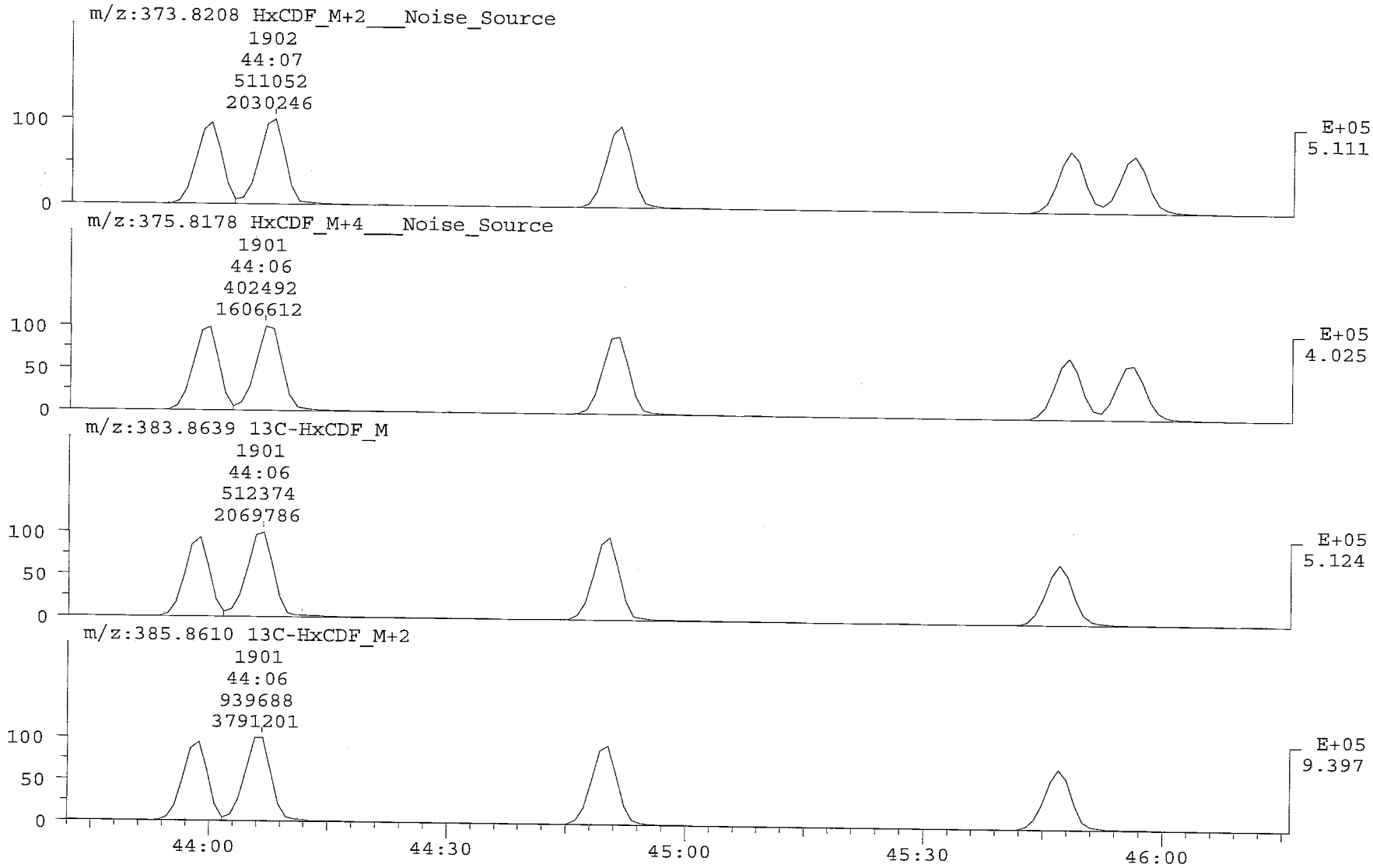
CHRO: d3160809s2 09-Aug-16 Elapse: 45:19 1973
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1804 > 2037 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



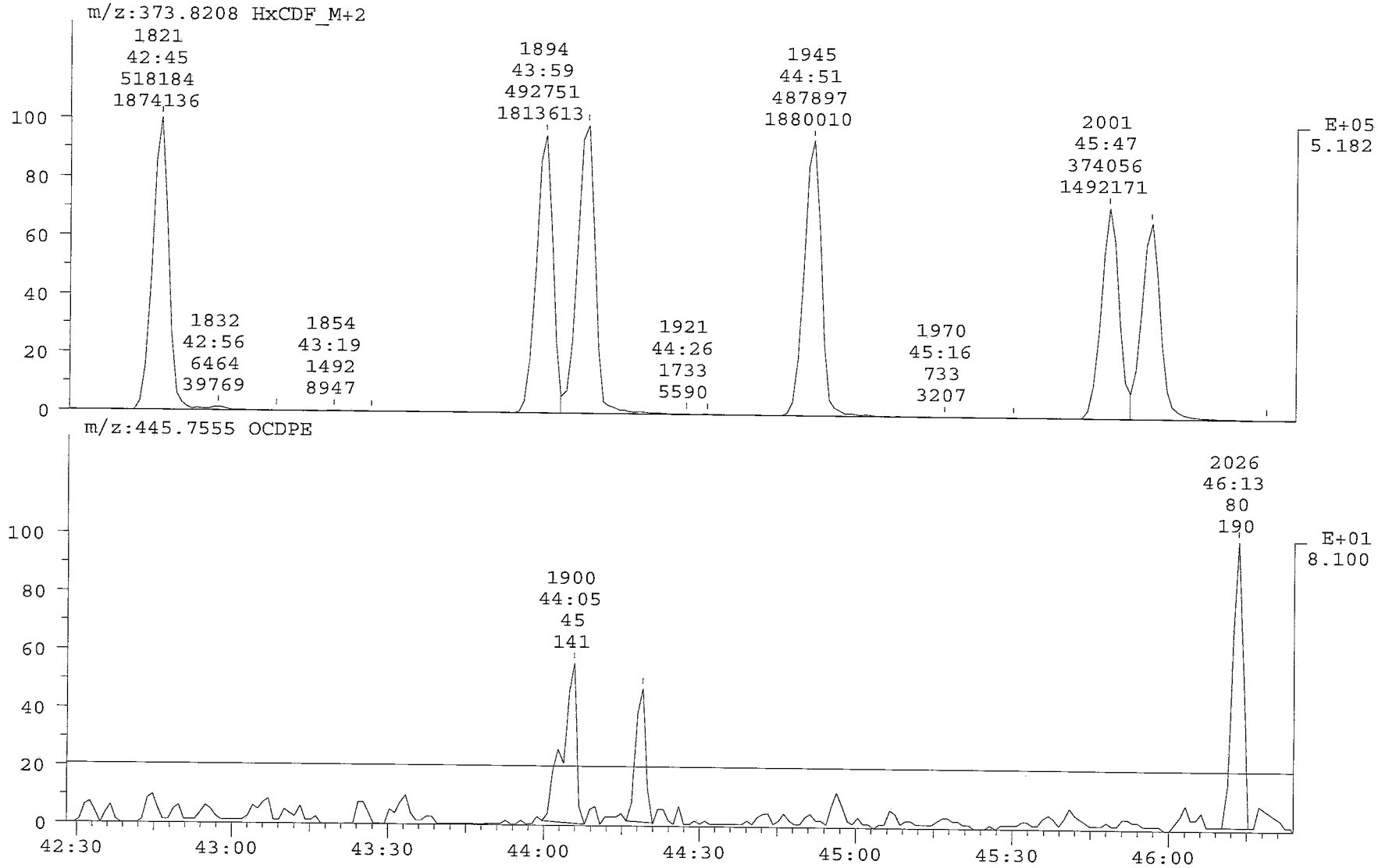
CHRO: d3160809s2 09-Aug-16 Elapse: 44:59 1953
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1877 > 2029 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



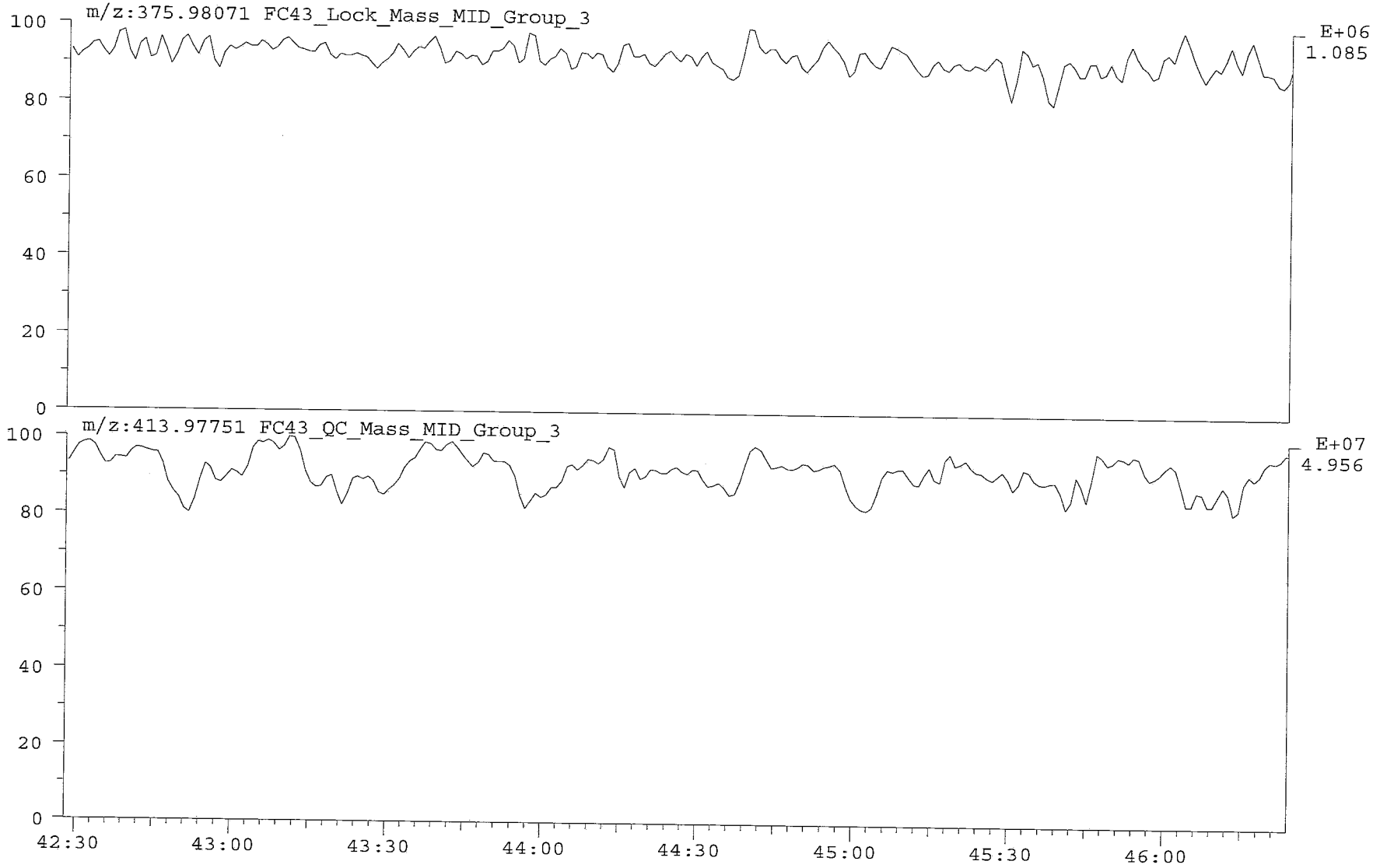
CHRO: d3160809s2 09-Aug-16 Elapse: 44:09 1904
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1900 > 1908 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



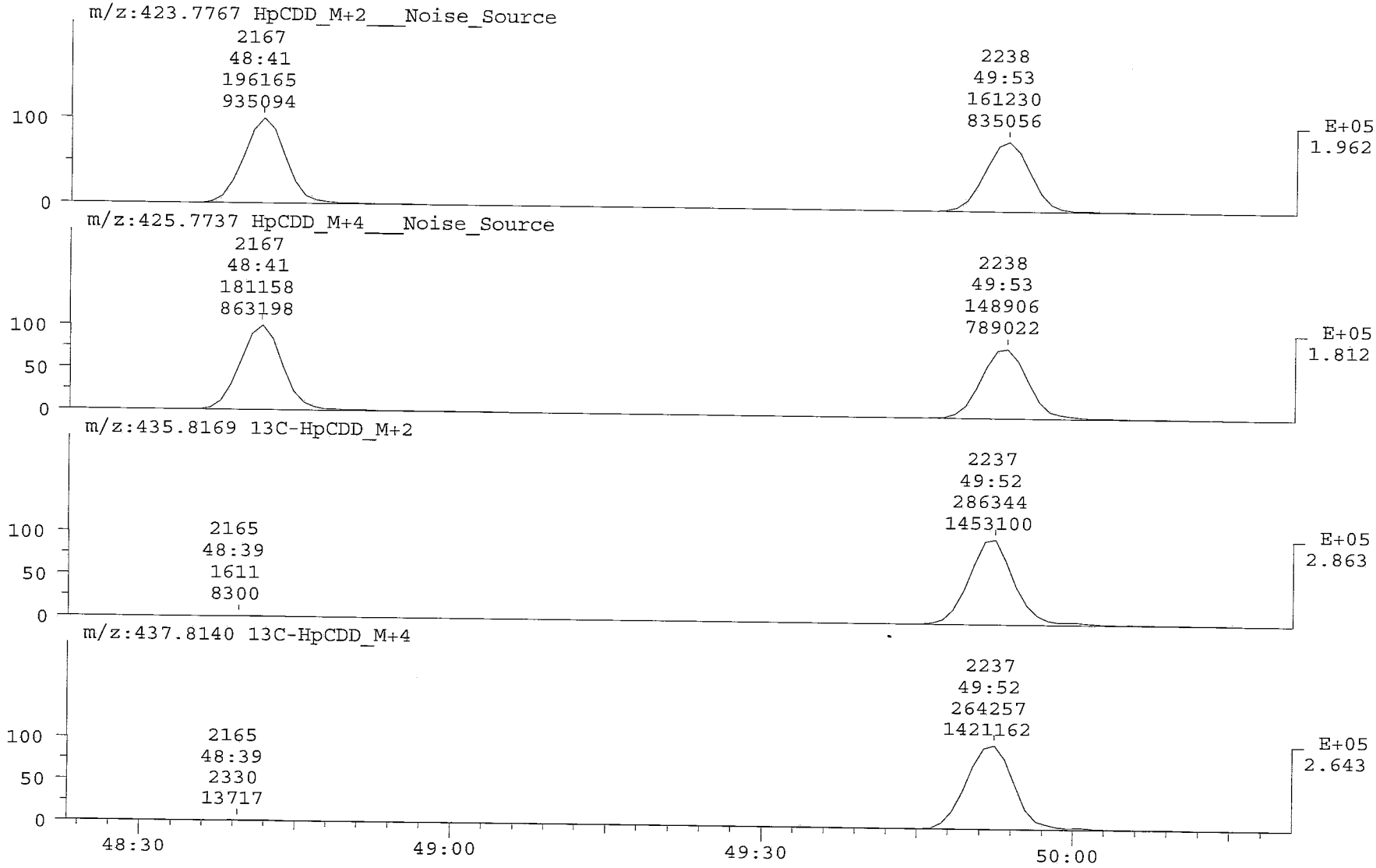
CHRO: d3160809s2 09-Aug-16 Elapse: 44:09 1904
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1804 > 2037 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



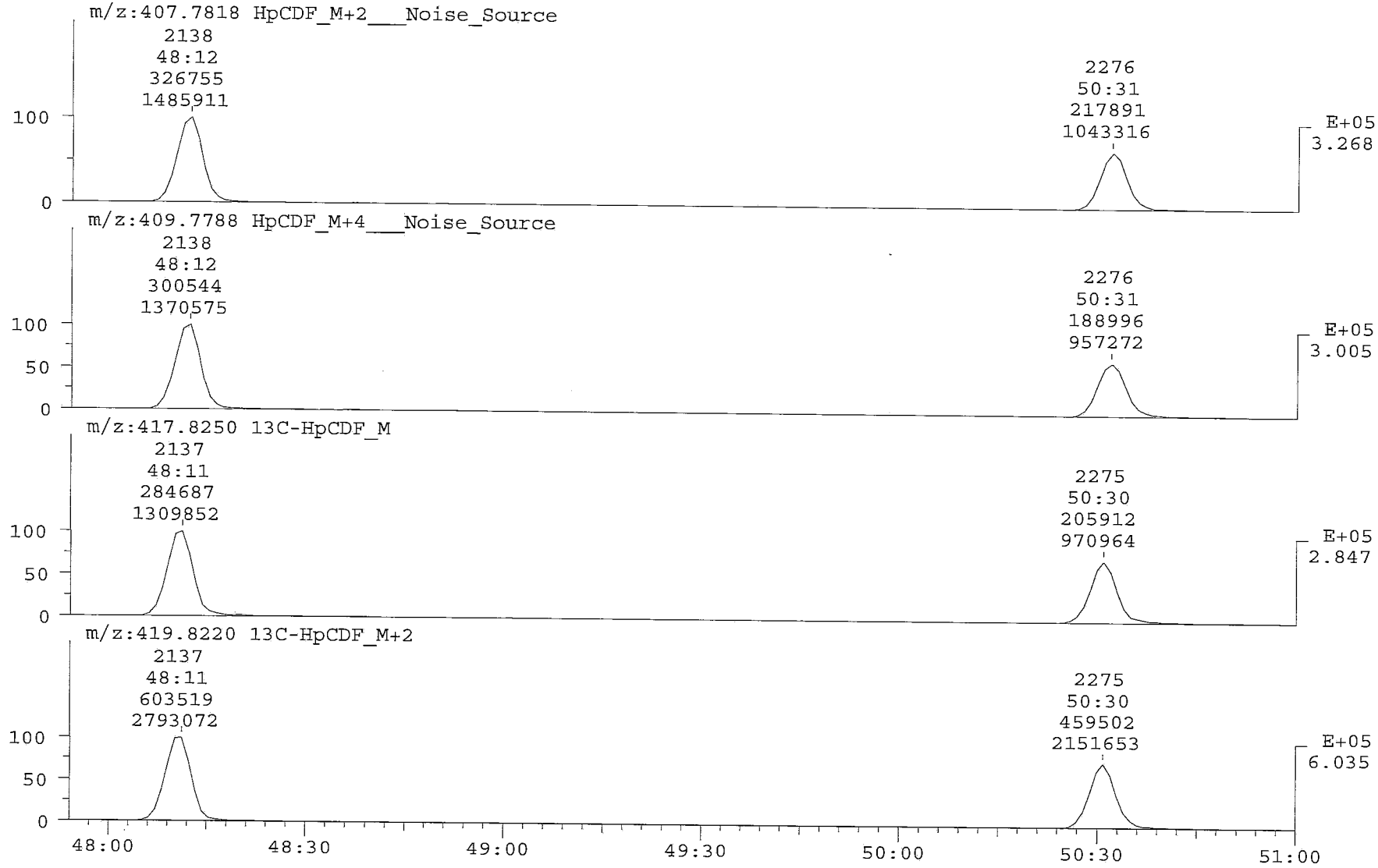
CHRO: d3160809s2 09-Aug-16 Elapse: 44:09 1904
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1804 > 2037 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



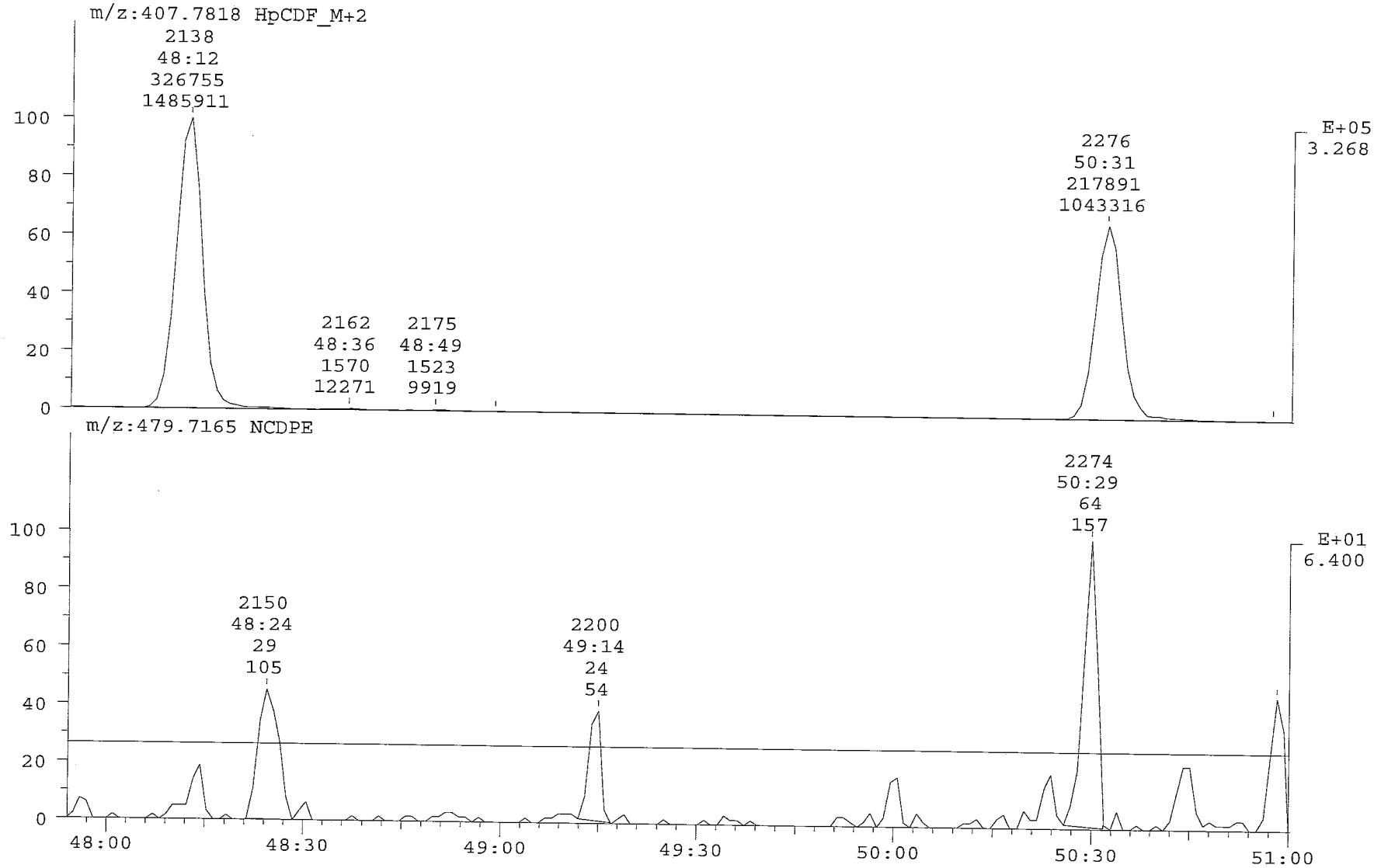
CHRO: d3160809s2 09-Aug-16 Elapse: 44:09 1904
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2149 > 2265 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



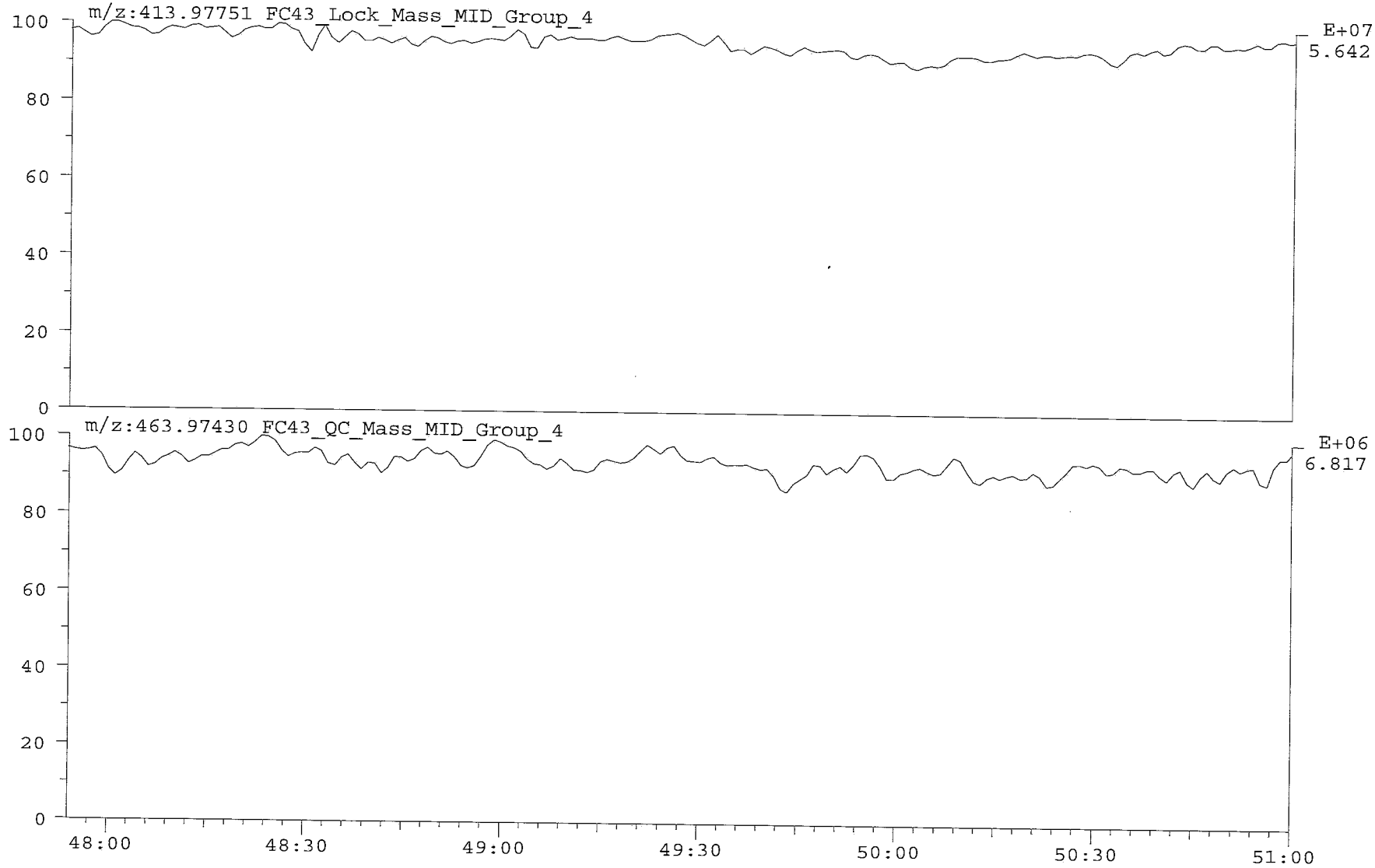
CHRO: d3160809s2 09-Aug-16 Elapse: 49:27 2212
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2120 > 2304 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



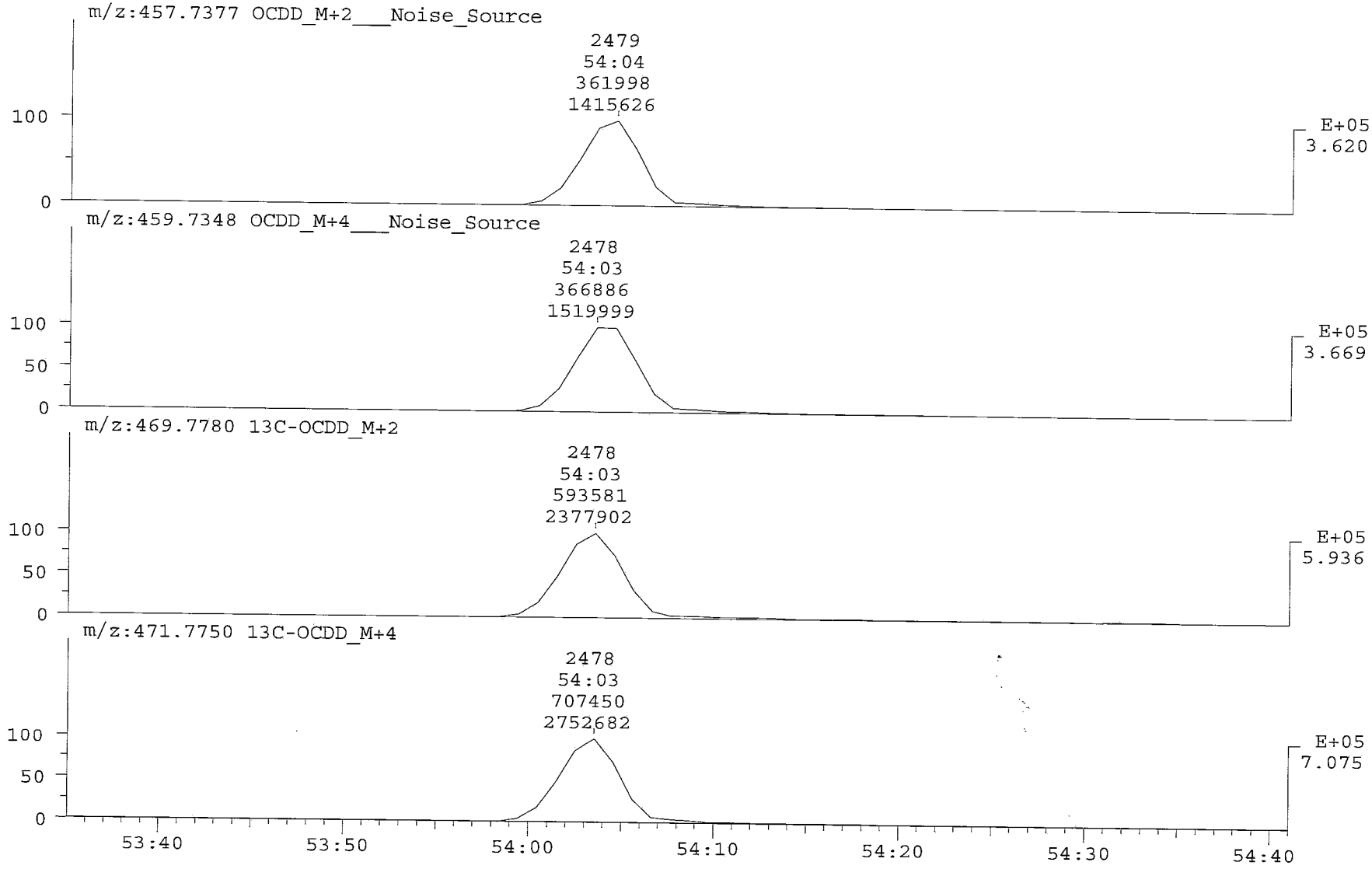
CHRO: d3160809s2 09-Aug-16 Elapse: 49:27 2212
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2120 > 2304 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d3160809s2 09-Aug-16 Elapse: 49:27 2212
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2120 > 2304 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



CHRO: d3160809s2 09-Aug-16 Elapse: 54:04 2479
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2450 > 2514 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



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CHRO:  d3160809s2                                09-Aug-16   Elapse:  54:13       2488
Samp:  WO=4966:40 Meth=F8o Dil=1                             Start :  23:31:42    2677
Comm:  Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                   Study :  Ver/Win
Oper:  MSD                                                   Inlet :  LC
Peak:  100.00  ppm      Label wndw:   2459 > 2523            Masses:  303 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```
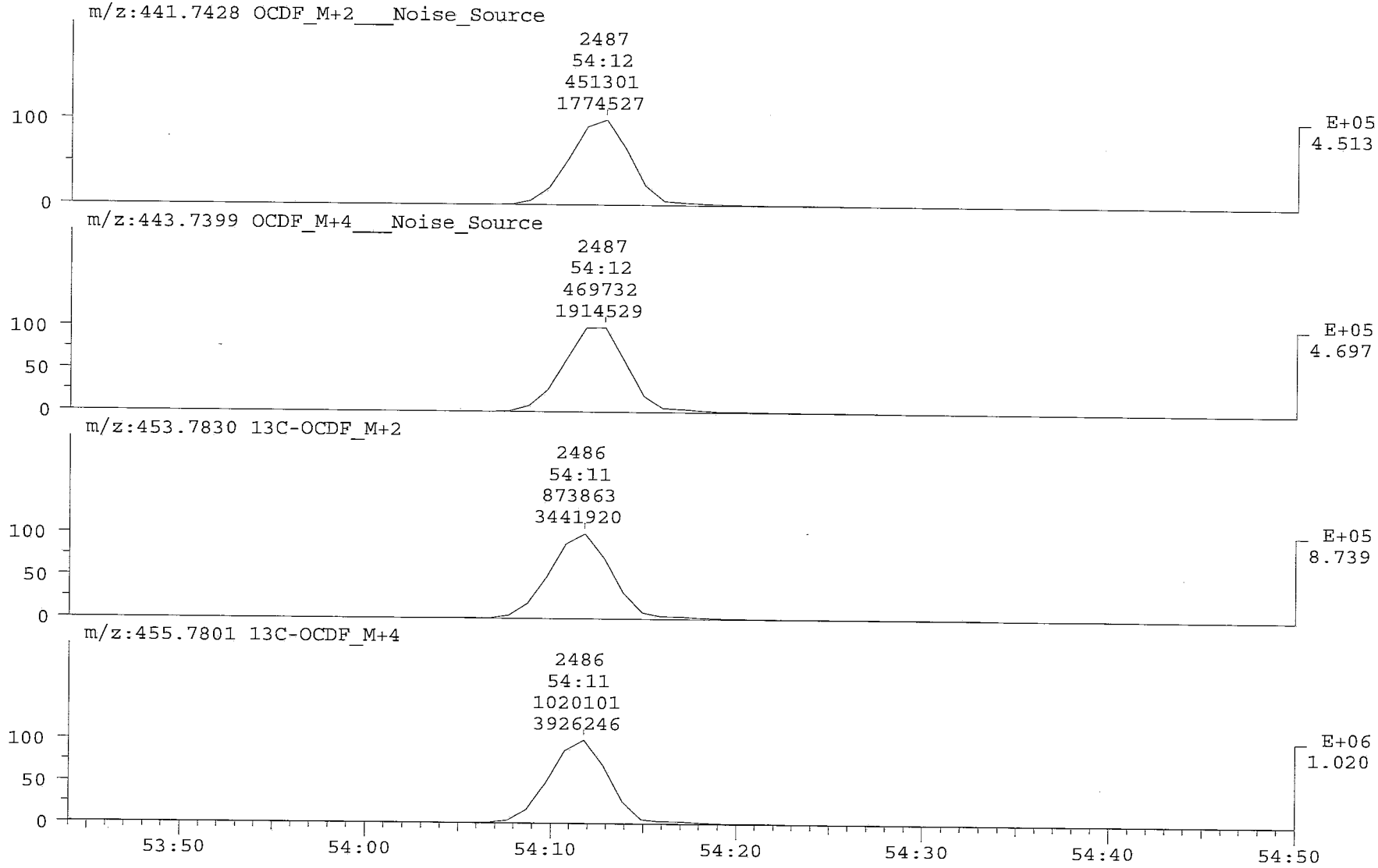
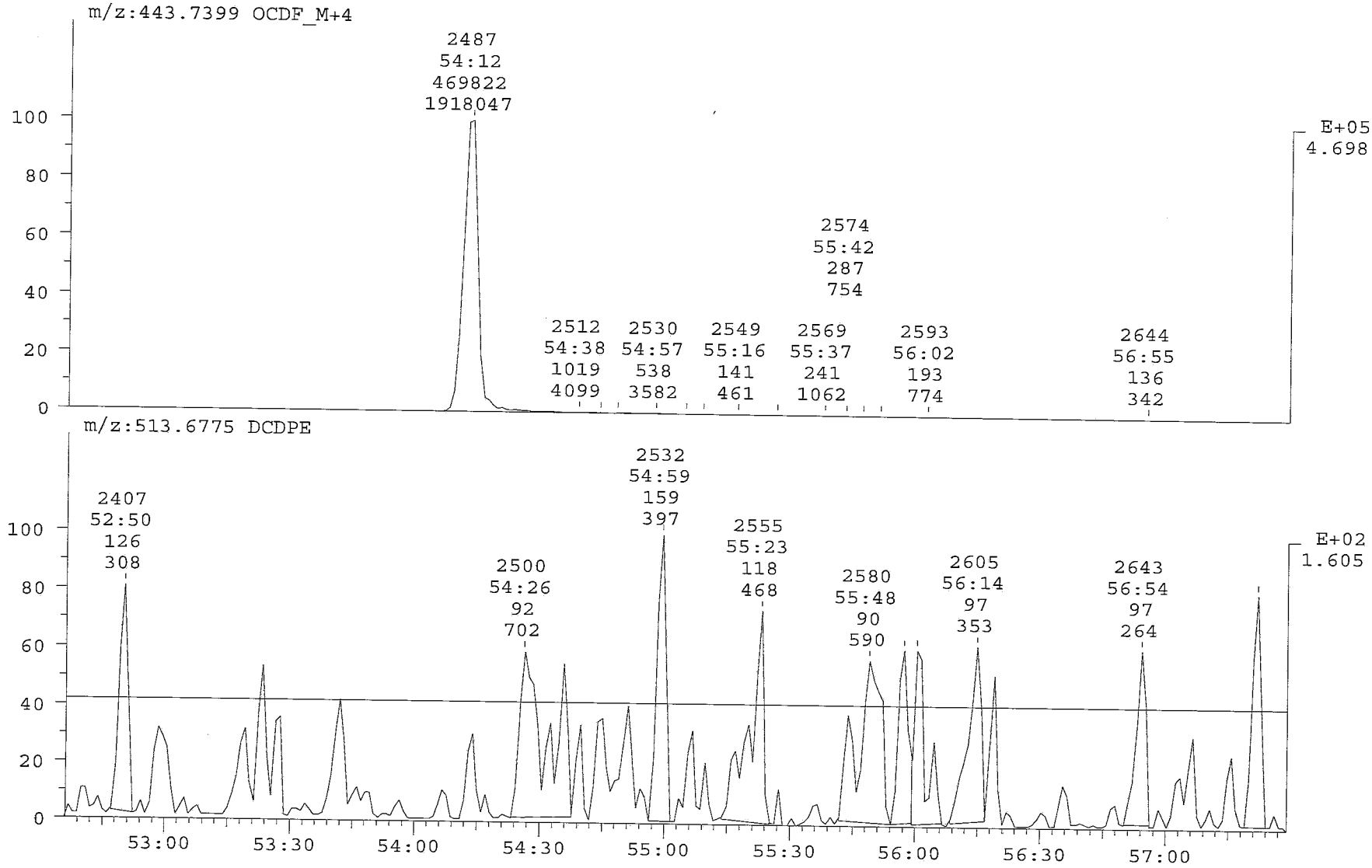
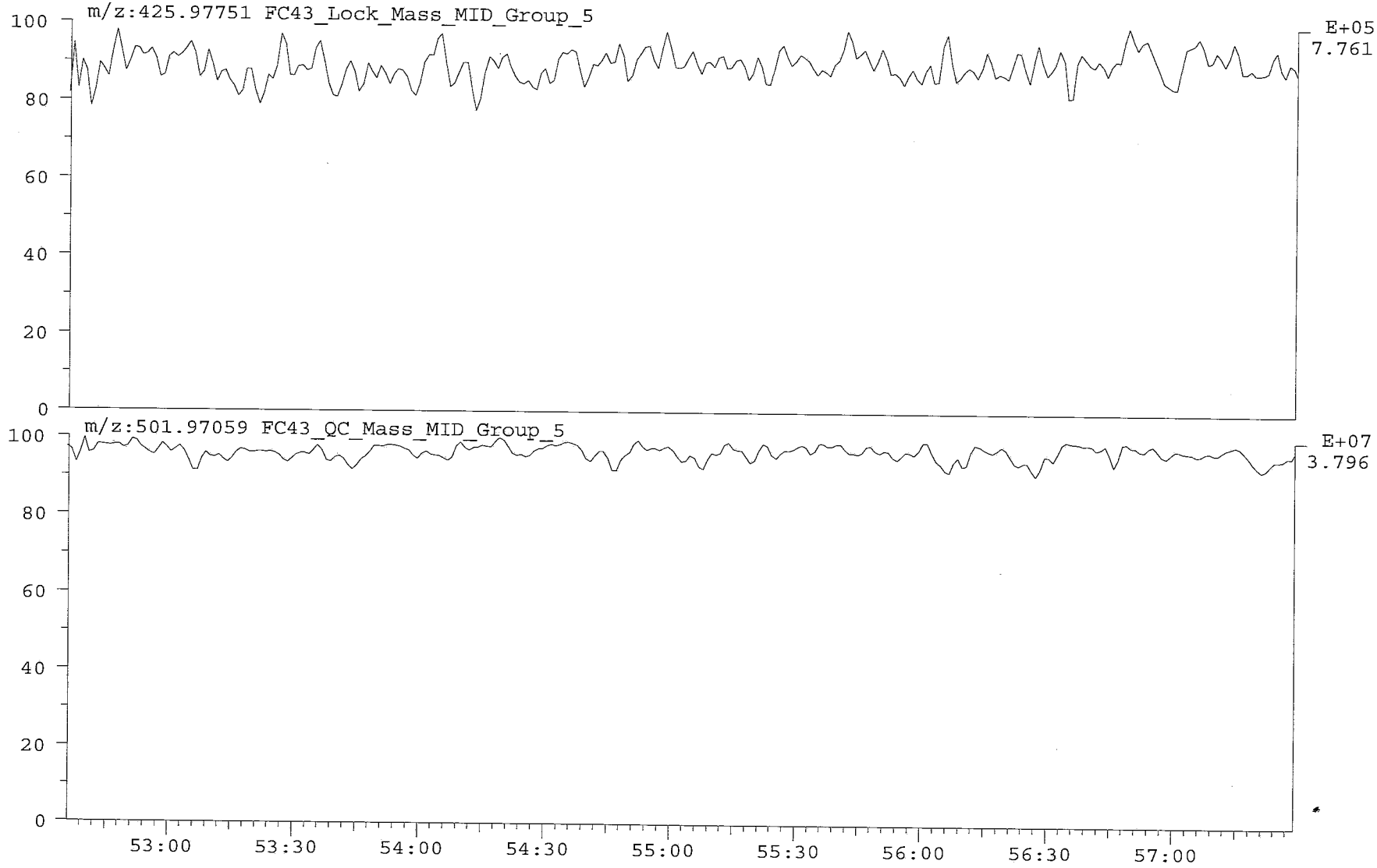



CHRO: d3160809s2 09-Aug-16 Elapse: 54:13 2488
Samp: WO=4966:40 Meth=F8o Dil=1 Start : 23:31:42 2677
Comm: Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode: EI ESI + Q1MS UP LR Study : Ver/Win
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2393 > 2677 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d3160809s2                                  09-Aug-16  Elapse:  54:13       2488
Samp:  WO=4966:40 Meth=F8o Dil=1                              Start :  23:31:42    2677
Comm:  Inst=d2a/1379923 Batch=20160809s2 Ccal=D3160809S1
Mode:  EI ESI + Q1MS UP LR                                    Study :  Ver/Win
Oper:  MSD                                                    Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2393 > 2677              Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                   Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Tue Aug 09 23:33:33 2016 ***

```
Started by                  - Xcalibur
Instrument Internet name    - DFS MS
Instrument model            - DFS MS
Instrument service number   - 0000
Workstation internet name   - D5FBM84J
```

Analysis started at: 09-Aug-16 23:33:32

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence :

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	22:47 min	34:47 min	0.99 sec
# 2	34:47 min	7:21 min	42:08 min	1.00 sec
# 3	42:08 min	4:51 min	47:00 min	1.00 sec
# 4	47:00 min	5:30 min	52:30 min	1.00 sec
# 5	52:30 min	5:00 min	57:30 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	122
305.8987		1	1	122
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	122
321.8936		1	1	122
327.8847		1	1	122
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	122

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7

```
  375.9802     20  1        7
  409.7974      1  1      146
 Window # 3
      mass F  int  gr  time (ms)
  373.8208      1  1      146
  375.8178      1  1      146
  375.9802 l   20  1        7
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 34.800000 minutes
MID Window end time was 34.800000 minutes
MID Window terminated after 42.150000 minutes
MID Window end time was 42.150000 minutes
MID Window terminated after 47.000000 minutes
MID Window end time was 47.000000 minutes
MID Window terminated after 52.500000 minutes
MID Window end time was 52.500000 minutes
MID Window terminated after 57.500000 minutes
MID Window end time was 57.500000 minutes

Tune file name: C:\Xcalibur\system\DFS\MSI\Tune2.DFSTune
```

DFS - Parameter

ACCU	2000.0000	BCORRS	0.0177	BMASS	313.4834
BQUAD	7.7500	CAPIL	0.0000	CAPTSET	0.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	15.5000	ECORR	1.0007	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2469.0000
ELEN	-45.0000	EMULT	1687.0000	ENS	170.0000
ENSBR	7.7500	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	155.0000	EXSBR	2.5000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	10.0000	FMII	50.0000	FQUAD	4.8000
FQUADGAIN	22.0000	FREQ	200.0000	FSLOPE	36000000.0000
FVANAL	0.0137	FVINLET	0.0354	FVSRC	0.0302
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	750.0000
LENS_SYM	19.5000	LM	50.0000	LMII	500.0000
LMASS	313.4834	LKM	425.9770	MASS	313.4834
MDAC	3541532.0277	MRANGE	1238.2603	NSAM	100.0000
NSCAN	2700.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	0.0000	PSAM	10.0000
PUSHER	-2.0000	RECURR	0.8987	RELEN	0.0000
RES	14114.7349	RPUSHER	-1.8974	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	756.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	0.0000	SLOW	60.0000	SS	2.0000
SW	0.1590	TANAL	0.0000	TCURR	0.0000
TD	5.0000	TS	3.5343	THRESH	2.0000
TIS	0.2000	TREF	80.0000	TSAM	100.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	313.4834	XLENS_POT	964.0000
XLENS_SYM	11.2500	YLENS_POT	796.0000	YLENS_SYM	7.0000

Source Gauge: 1.5e-005 mbar
Analyzer Penning: 1.1e-007 mbar
Pirani Analyse: 1.4e-002 mbar
Pirani Source: 3.0e-002 mbar
Pirani Inlet System: 3.5e-002 mbar

Scantype is electric

Sourcemode is EI POS

MID Time Window 1: Resolution is 13759.
MID Time Window 2: Resolution is 13759.
MID Time Window 3: Resolution is 13694.
MID Time Window 4: Resolution is 13010.
MID Time Window 5: Resolution is 14114.

Amplifier Offset: 96.

*** File closed Wed Aug 10 00:31:04 2016
***

User: finnigan
Host: knx-alpha5.tai.com
Class: knx-alpha5.tai.com
Job: d3160809s2.log

TestAmerica Knoxville Dioxin GC/MS Initial Calibration Data Review / Narrative Checklist
Method: 8290/8290A - KNOX-ID-0004-R14

Mass Res. ✓ Date/Time:	4/8/15 23:43	Inst:	D11A	Win Filename:	d1150408w01	Col Perf Filename:	d1150408w01

CS0.5 Filename	CS1 Filename	CS2 Filename	CS3 Filename	CS4 Filename	CS5 Filename
N/A	d1150409i1	d1150409i2	d1150409i3	d1150409i4	d1150409i5

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented before beginning the initial calibration?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (MAT) and > 10,000 on FC43 m/z 313.9838, 351.9802 and 363.9807? FC43 m/z 313.9838, 351.9802 and 375.9802? FC43 m/z 375.9802, 401.9770 and 413.9770? FC43 m/z 413.9775, 425.9770 and 463.9738? FC43 m/z 425.9775, 463.9743 and 501.9706? (DFS)		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) or 363.9807 (FC43) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
5. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer on their respective columns?		✓			✓
6. Was DoD Performance check criteria met? Identification of all first and last eluters of the eight homologue retention time windows and documentation by labeling (F/L) on the chromatogram Absolute retention times for switching from one homologous series to the next ≥ 10 seconds for all components of the mixture.		✓			✓
7. Were the five calibration standard solutions, at the concentrations specified in Table 5 of the SOP, analyzed (6 point calibration used for microwave extractions)?		✓			✓
8. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 3), quantitation ions (Table 21), and formula (Section 10.2.7)?		✓			✓
10. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 3?		✓			✓
11. Are %RSD ≤20% for all unlabeled native analytes?		✓			✓
12. **8290**, are %RSD ≤30% for all labeled internal standards?		✓			✓
13. **8090A**, are %RSD ≤20% for all labeled internal standards?		✓			✓
14. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
15. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP?		✓			✓
16. Was the second source ICV standard analyzed according to Sec 10.2.9 of the SOP?		✓			✓
17. Was DoD ICV Criteria met? (For unlabeled standards, RF within ± 20% D of RF established in the ICAL.For labeled standards, RF within ± 30% D of the mean RF established in ICAL.		✓			✓
1. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
2. Were before/after chromatograms reviewed to determine whether the software and manual integrations were appropriate?		✓			✓
3. Were manual integrations documented properly?	✓				✓
18. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
19. Does the ICAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, Avg. %RSD summary, Ratio summary, Calculation summary, PFK/FC43 resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards, in order from low to high standard, ICV Summary Table, Calculation Summary, and chromatograms?		✓			✓

Analyst: [signature]	Date: 4/9/15	2nd Level Reviewer : [signature]	Date: 4-9-15
Comments:		Comments:	

TestAmerica Knoxville Dioxin GC/MS Initial Calibration Data Review / Narrative Checklist
Method: 1613B - KNOX-ID-0004-R14

Mass Res.✓ Date/Time:	4/8/15 23:43	Inst:	D11A	Win Filename:	d150408w1	Col Perf Filename:	d150408w1

CS0.5 Filename	CS1Filename	CS2 Filename	CS3 Filename	CS4 Filename	CS5 Filename
N/A	d150409i1	d150409i2	d150409i3	d150409i4	d150409i5

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented before beginning the initial calibration?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (MAT) and > 10,000 on FC43 m/z 313.9838, 351.9802 and 363.9807? FC43 m/z 313.9838, 351.9802 and 375.9802? FC43 m/z 375.9802, 401.9770 and 413.9770? FC43 m/z 413.9775, 425.9770 and 463.9738? FC43 m/z 425.9775, 463.9743 and 501.9706? (DFS)		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) or m/z363.9807 (FC43) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
5. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer on their respective columns?		✓			✓
6. Was DoD Performance check criteria met? Identification of all first and last eluters of the eight homologue retention time windows and documentation by labeling (F/L) on the chromatogram Absolute retention times for switching from one homologous series to the next > 10 seconds for all components of the mixture.		✓			✓
7. Were the five calibration standard solutions, at the concentrations specified in Table 5 of the SOP, analyzed (6 point calibration used for microwave extractions)?		✓			✓
8. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 3), quantitation ions (Table 21) and formula (Section 10.2.7)?		✓			✓
10. Is the retention time of $^{13}C_{12}$-1,2,3,4-TCDD >25.0 minutes on the DB/Rtx-5 column (15.0 minutes on the DB/Rtx-225 column)?		✓			✓
11. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 3?		✓			✓
12. Are %RSD ≤20% for all unlabeled native analytes except 1,2,3,7,8,9-HxCDD and OCDF?		✓			✓
13. Are %RSD ≤35% for 1,2,3,7,8,9-HxCDD and OCDF and all labeled internal standards?		✓			✓
14. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
15. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP?		✓			✓
16. Was the second source ICV standard analyzed according to Sec 10.2.9 of the SOP?		✓			✓
17. Was DoD ICV Criteria met? (For unlabeled standards, RF within ± 20% D of RF established in the ICAL.For labeled standards, RF within ± 30% D of the mean RF established in ICAL.		✓			✓
18. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
19. Were before/after chromatograms reviewed to determine whether the software and manual integrations were appropriate?		✓			✓
20. Were manual integrations documented properly?	✓				✓
21. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
22. Does the ICAL folder contain **complete** data in the following order: Data review checklist, a **complete** run log, Avg. %RSD summary, Ratio summary, Calculation summary, PFK/FC43 resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards, in order from low to high standard, ICV Summary Table, Calculation Summary, and chromatograms?		✓			✓

Analyst:	Date: 4/9/15	2nd Level Reviewer :	Date: 4-9-15
Comments:		Comments:	

TESTAMERICA KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT DFS 1

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	GC #	Lot#/Comments
4-8-15	23:43	LKM	FC-43	d1150408r4	ok	—	Res		—	Mass Res Check
4-8-15	23:55	LKM	4966:04	d1150408w1	ok	—	Win		1	Win/Col. Perf
4-9-15	00:56	LKM	nonane	— rinse	OK	—	QC		1	flush
4-9-15	1:11	LKM	↓	— ↓	OK	—	QC		1	↓
4-9-15	1:27	LKM	↓	— ↓	OK	—	QC		1	↓
4-9-15	1:43	LKM	↓	— ↓	OK	—	QC		1	↓
4-9-15	2:00	LKM	4104:74 cs1	d1150409i1	OK	—	ICAL		1	1613/8790 CS1
4-9-15	3:02	LKM	4104:74 cs2	d1150409i2	OK	—	↓		1	↓ CS2
4-9-15	4:03	LKM	4104:74 cs3	d1150409i3	OK	—	↓		1	↓ CS3
4-9-15	5:05	LKM	4104:74 cs4	d1150409i4	OK	—	↓		1	↓ CS4
4-9-15	6:07	LKM	4104:74 cs5	d1150409i5	OK	—	↓		1	↓ CS5
4-9-15	7:09	LKM	nonane	— rinse	OK	—	QC		1	flush
4-9-15	7:25	LKM	↓	— ↓	OK	—	QC		1	↓
4-9-15	7:41	LKM	↓	— ↓	OK	—	QC		1	↓
4-9-15	7:57	LKM	↓	— ↓	OK	—	QC		1	↓
4-9-15	8:14	LKM	4966:05	d1150409ss	OK	—	SS		1	2nd Source
4/9/15	10:21	KLK	FC-43	d1150409r2	OK	—	Res		—	Mass Res Chk.

Read and Understood by:_____ Date: _____

TestAmerica
Knoxville

IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

ICAL ID: 78049 - 20150409I
Date: 04/09/15 02:00
Method: F8o - DX1613B

Instrument: D11A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1259376

Level	Filename	Date/Time	Sample ID	Result Directory
CS1:	d1150409i1	04/09/15 02:00	4104:74CS1	/20150409i/d1150409i1.d
CS2:	d1150409i2	04/09/15 03:02	4104:74CS2	/20150409i/d1150409i2.d
CS3:	d1150409i3	04/09/15 04:03	4104:74CS3	/20150409i/d1150409i3.d
CS4:	d1150409i4	04/09/15 05:05	4104:74CS4	/20150409i/d1150409i4.d
CS5:	d1150409i5	04/09/15 06:07	4104:74CS5	/20150409i/d1150409i5.d

	Response Factors								
Analyte	CS1	CS2	CS3	CS4	CS5	Mean RF	%RSD	Limit	Valid?
2,3,7,8-TCDD	1.188	1.125	1.126	1.126	1.152	1.144	2.4	20.0	True
Total TCDD						1.144	0.0	20.0	True
2,3,7,8-TCDF	1.130	1.062	1.032	1.053	1.050	1.066	3.5	20.0	True
Total TCDF						1.066	0.0	20.0	True
1,2,3,7,8-PeCDD	1.091	1.056	1.053	1.055	1.044	1.060	1.7	20.0	True
Total PeCDD						1.060	0.0	20.0	True
1,2,3,7,8-PeCDF	1.217	1.190	1.160	1.145	1.183	1.179	2.4	20.0	True
2,3,4,7,8-PeCDF	1.179	1.096	1.099	1.081	1.119	1.115	3.4	20.0	True
Total PeCDF						1.147	0.0	20.0	True
1,2,3,4,7,8-HxCDD	1.201	1.156	1.115	1.104	1.080	1.131	4.2	20.0	True
1,2,3,6,7,8-HxCDD	1.158	1.120	1.110	1.099	1.093	1.116	2.3	20.0	True
1,2,3,7,8,9-HxCDD	1.276	1.204	1.185	1.176	1.184	1.205	3.4	35.0	True
Total HxCDD	1.212	1.160	1.136	1.126	1.119	1.151	0.0	20.0	True
1,2,3,4,7,8-HxCDF	1.432	1.329	1.316	1.299	1.375	1.350	4.0	20.0	True
1,2,3,6,7,8-HxCDF	1.294	1.255	1.225	1.177	1.258	1.242	3.5	20.0	True
2,3,4,6,7,8-HxCDF	1.311	1.240	1.220	1.178	1.255	1.241	3.9	20.0	True
1,2,3,7,8,9-HxCDF	1.333	1.275	1.245	1.204	1.252	1.262	3.8	20.0	True
Total HxCDF						1.274	0.0	20.0	True
1,2,3,4,6,7,8-HpCDD	1.208	1.103	1.080	1.112	1.067	1.114	5.0	20.0	True
Total HpCDD						1.114	0.0	20.0	True
1,2,3,4,6,7,8-HpCDF	1.551	1.458	1.433	1.420	1.443	1.461	3.6	20.0	True
1,2,3,4,7,8,9-HpCDF	1.432	1.349	1.363	1.370	1.338	1.370	2.7	20.0	True
Total HpCDF						1.416	0.0	20.0	True
OCDD	1.247	1.210	1.203	1.158	1.197	1.203	2.7	20.0	True
OCDF	1.209	1.123	1.114	1.048	1.177	1.134	5.5	35.0	True
13C-2,3,7,8-TCDD	1.039	1.049	1.074	1.099	1.201	1.093	6.0	35.0	True
13C-2,3,7,8-TCDF	1.734	1.746	1.787	1.787	1.917	1.794	4.1	35.0	True
13C-1,2,3,7,8-PeCDD	0.729	0.722	0.771	0.805	0.973	0.800	12.8	35.0	True
13C-1,2,3,7,8-PeCDF	1.243	1.232	1.306	1.376	1.625	1.356	11.9	35.0	True
13C-2,3,4,7,8-PeCDF	1.233	1.235	1.293	1.350	1.604	1.343	11.4	35.0	True
13C-1,2,3,4,7,8-HxCDD	0.927	0.910	0.924	0.916	0.902	0.916	1.1	35.0	True
13C-1,2,3,6,7,8-HxCDD	0.898	0.930	0.918	0.902	0.883	0.906	2.0	35.0	True
13C-1,2,3,4,7,8-HxCDF	1.303	1.312	1.289	1.237	1.199	1.268	3.8	35.0	True
13C-1,2,3,6,7,8-HxCDF	1.535	1.560	1.531	1.501	1.402	1.506	4.1	35.0	True
13C-2,3,4,6,7,8-HxCDF	1.373	1.396	1.355	1.330	1.266	1.344	3.7	35.0	True
13C-1,2,3,7,8,9-HxCDF	1.202	1.211	1.200	1.210	1.188	1.202	0.8	35.0	True
13C-1,2,3,4,6,7,8-HpCDD	0.717	0.739	0.726	0.714	0.745	0.728	1.9	35.0	True
13C-1,2,3,4,6,7,8-HpCDF	1.011	1.027	1.010	0.994	0.998	1.008	1.3	35.0	True
13C-1,2,3,4,7,8,9-HpCDF	0.799	0.825	0.801	0.805	0.825	0.811	1.6	35.0	True
13C-OCDD	0.560	0.575	0.579	0.616	0.656	0.597	6.5	35.0	True
13C-OCDF	0.884	0.902	0.914	1.001	1.029	0.946	6.8	35.0	True
37Cl4-2,3,7,8-TCDD	1.269	1.170	1.169	1.223	1.336	1.233	5.7	35.0	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	35.0	True
13C-1,2,3,7,8,9-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	35.0	True

TestAmerica
Knoxville

IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

ICAL ID: 78049 - 20150409I
Date: 04/09/15 02:00
Method: F8o - DX1613B

Instrument: D11A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1259376

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d1150409i1	04/09/15	02:00	4104:74CS1	/20150409i/d1150409i1.d
CS2:	d1150409i2	04/09/15	03:02	4104:74CS2	/20150409i/d1150409i2.d
CS3:	d1150409i3	04/09/15	04:03	4104:74CS3	/20150409i/d1150409i3.d
CS4:	d1150409i4	04/09/15	05:05	4104:74CS4	/20150409i/d1150409i4.d
CS5:	d1150409i5	04/09/15	06:07	4104:74CS5	/20150409i/d1150409i5.d

Ion Abundance Ratios

Analyte	M/Z's	CS1	CS2	CS3	CS4	CS5	Ratio Limits	Valid?
2,3,7,8-TCDD	M/M+2	0.77	0.78	0.78	0.79	0.79	0.65-0.89	True
2,3,7,8-TCDF	M/M+2	0.79	0.81	0.78	0.79	0.79	0.65-0.89	True
1,2,3,7,8-PeCDD	M+2/M+4	1.59	1.62	1.56	1.56	1.61	1.32-1.78	True
1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.58	1.57	1.55	1.62	1.32-1.78	True
2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.58	1.58	1.54	1.61	1.32-1.78	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.42	1.19	1.26	1.24	1.27	1.05-1.43	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.29	1.27	1.25	1.27	1.05-1.43	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.21	1.23	1.27	1.25	1.27	1.05-1.43	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.26	1.24	1.25	1.27	1.05-1.43	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.23	1.28	1.25	1.25	1.27	1.05-1.43	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.28	1.24	1.23	1.26	1.05-1.43	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.31	1.25	1.25	1.24	1.28	1.05-1.43	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	1.06	1.05	1.04	1.05	0.88-1.20	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.07	1.08	1.05	1.04	1.04	0.88-1.20	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	1.01	1.05	1.04	1.04	0.88-1.20	True
OCDD	M+2/M+4	0.85	0.92	0.89	0.90	0.89	0.76-1.02	True
OCDF	M+2/M+4	0.88	0.89	0.92	0.91	0.91	0.76-1.02	True
13C-2,3,7,8-TCDD	M/M+2	0.80	0.80	0.80	0.81	0.79	0.65-0.89	True
13C-2,3,7,8-TCDF	M/M+2	0.82	0.81	0.81	0.80	0.80	0.65-0.89	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.63	1.59	1.60	1.58	1.61	1.32-1.78	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.58	1.59	1.59	1.59	1.32-1.78	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.61	1.57	1.60	1.58	1.61	1.32-1.78	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.27	1.28	1.27	1.31	1.05-1.43	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.27	1.27	1.29	1.22	1.05-1.43	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.54	0.54	0.53	0.54	0.43-0.59	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.54	0.53	0.54	0.54	0.43-0.59	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.54	0.53	0.53	0.54	0.54	0.43-0.59	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.53	0.53	0.53	0.54	0.43-0.59	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	1.08	1.05	1.05	1.06	0.88-1.20	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.46	0.46	0.46	0.46	0.37-0.51	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.46	0.45	0.46	0.46	0.37-0.51	True
13C-OCDD	M+2/M+4	0.92	0.91	0.90	0.91	0.91	0.76-1.02	True
13C-OCDF	M+2/M+4	0.90	0.91	0.90	0.91	0.91	0.76-1.02	True
37Cl4-2,3,7,8-TCDD	M							
13C-1,2,3,4-TCDD	M/M+2	0.81	0.81	0.79	0.81	0.80	0.65-0.89	True
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.28	1.26	1.27	1.27	1.05-1.43	True

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IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

ICAL ID: 78049 - 20150409I
Date: 04/09/15 02:00
Method: F8o - DX1613B

Instrument: D11A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1259376

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d115040 9i1	04/09/15	02:00	4104:74CS1	/20150409i/d115040 9i1.d
CS2:	d115040 9i2	04/09/15	03:02	4104:74CS2	/20150409i/d115040 9i2.d
CS3:	d115040 9i3	04/09/15	04:03	4104:74CS3	/20150409i/d115040 9i3.d
CS4:	d115040 9i4	04/09/15	05:05	4104:74CS4	/20150409i/d115040 9i4.d
CS5:	d115040 9i5	04/09/15	06:07	4104:74CS5	/20150409i/d115040 9i5.d

Relative Retention Time

Analyte	CS1	CS2	CS3	CS4	CS5	RRT Limits		Valid?
2,3,7,8-TCDD	1.002	1.002	1.002	1.002	1.002	0.999	-1.002	True
2,3,7,8-TCDF	1.002	1.002	1.001	1.001	1.001	0.999	-1.003	True
1,2,3,7,8-PeCDD	1.000	1.000	1.000	1.000	1.000	0.999	-1.002	True
1,2,3,7,8-PeCDF	1.000	1.000	1.000	1.000	1.000	0.999	-1.002	True
2,3,4,7,8-PeCDF	1.000	1.001	1.001	1.000	1.000	0.999	-1.002	True
1,2,3,4,7,8-HxCDD	1.000	1.000	1.000	1.000	1.000	0.999	-1.001	True
1,2,3,6,7,8-HxCDD	1.000	1.000	1.000	1.000	1.000	0.998	-1.004	True
1,2,3,7,8,9-HxCDD	1.009	1.009	1.009	1.009	1.009	1.000	-1.019	True
1,2,3,4,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	0.999	-1.001	True
1,2,3,6,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	0.997	-1.005	True
2,3,4,6,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	0.999	-1.001	True
1,2,3,7,8,9-HxCDF	1.000	1.000	1.000	1.000	1.000	0.999	-1.001	True
1,2,3,4,6,7,8-HpCDD	1.000	1.000	1.000	1.000	1.000	0.999	-1.001	True
1,2,3,4,6,7,8-HpCDF	1.000	1.001	1.000	1.000	1.000	0.999	-1.001	True
1,2,3,4,7,8,9-HpCDF	1.000	1.000	1.000	1.000	1.000	0.999	-1.001	True
OCDD	1.000	1.000	1.000	1.000	1.000	0.999	-1.001	True
OCDF	1.000	1.000	1.000	1.000	1.000	0.999	-1.008	True
13C-2,3,7,8-TCDD	1.017	1.016	1.017	1.017	1.017	0.976	-1.043	True
13C-2,3,7,8-TCDF	0.951	0.951	0.952	0.951	0.951	0.923	-1.103	True
13C-1,2,3,7,8-PeCDD	1.346	1.345	1.347	1.345	1.344	1.000	-1.567	True
13C-1,2,3,7,8-PeCDF	1.286	1.285	1.286	1.285	1.284	1.000	-1.425	True
13C-2,3,4,7,8-PeCDF	1.328	1.327	1.328	1.327	1.326	1.011	-1.526	True
13C-1,2,3,4,7,8-HxCDD	0.989	0.989	0.989	0.989	0.989	0.977	-1.000	True
13C-1,2,3,6,7,8-HxCDD	0.992	0.992	0.991	0.992	0.992	0.981	-1.003	True
13C-1,2,3,4,7,8-HxCDF	0.966	0.967	0.966	0.967	0.967	0.944	-0.970	True
13C-1,2,3,6,7,8-HxCDF	0.969	0.969	0.969	0.969	0.969	0.949	-0.975	True
13C-2,3,4,6,7,8-HxCDF	0.985	0.985	0.985	0.985	0.985	0.977	-1.047	True
13C-1,2,3,7,8,9-HxCDF	1.006	1.006	1.006	1.006	1.006	0.959	-1.021	True
13C-1,2,3,4,6,7,8-HpCDD	1.094	1.095	1.094	1.095	1.095	1.086	-1.110	True
13C-1,2,3,4,6,7,8-HpCDF	1.058	1.058	1.058	1.058	1.058	1.043	-1.085	True
13C-1,2,3,4,7,8,9-HpCDF	1.109	1.109	1.109	1.109	1.109	1.057	-1.151	True
13C-OCDD	1.189	1.189	1.189	1.189	1.189	1.032	-1.311	True
13C-OCDF	1.192	1.192	1.192	1.192	1.192	1.032	-1.311	True
37Cl4-2,3,7,8-TCDD	1.019	1.018	1.019	1.019	1.018	0.989	-1.052	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	-1.000	True
13C-1,2,3,7,8,9-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	-1.000	True

TestAmerica Knoxville

IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

ICAL ID: 78050 - 20150409I
Date: 04/09/15 02:00
Method: IN2o - DX8290_2

Instrument: D11A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1259376

Level	Filename	Date/Time	Sample ID	Result Directory
CS1:	d1150409i1	04/09/15 02:00	4104:74CS1	/20150409i/d1150409i1.d
CS2:	d1150409i2	04/09/15 03:02	4104:74CS2	/20150409i/d1150409i2.d
CS3:	d1150409i3	04/09/15 04:03	4104:74CS3	/20150409i/d1150409i3.d
CS4:	d1150409i4	04/09/15 05:05	4104:74CS4	/20150409i/d1150409i4.d
CS5:	d1150409i5	04/09/15 06:07	4104:74CS5	/20150409i/d1150409i5.d

	Response Factors								
Analyte	CS1	CS2	CS3	CS4	CS5	Mean RF	%RSD	Limit	Valid?
2,3,7,8-TCDD	1.188	1.125	1.126	1.126	1.152	1.144	2.4	20.0	True
Total TCDD						1.144	0.0	20.0	True
2,3,7,8-TCDF	1.130	1.062	1.032	1.053	1.050	1.066	3.5	20.0	True
Total TCDF						1.066	0.0	20.0	True
1,2,3,7,8-PeCDD	1.091	1.056	1.053	1.055	1.044	1.060	1.7	20.0	True
Total PeCDD						1.060	0.0	20.0	True
1,2,3,7,8-PeCDF	1.217	1.190	1.160	1.145	1.183	1.179	2.4	20.0	True
2,3,4,7,8-PeCDF	1.179	1.096	1.099	1.081	1.119	1.115	3.4	20.0	True
Total PeCDF						1.147	0.0	20.0	True
1,2,3,4,7,8-HxCDD	1.201	1.156	1.115	1.104	1.080	1.131	4.2	20.0	True
1,2,3,6,7,8-HxCDD	1.158	1.120	1.110	1.099	1.093	1.116	2.3	20.0	True
1,2,3,7,8,9-HxCDD	1.276	1.204	1.185	1.176	1.184	1.205	3.4	20.0	True
Total HxCDD						1.151	0.0	20.0	True
1,2,3,4,7,8-HxCDF	1.432	1.329	1.316	1.299	1.375	1.350	4.0	20.0	True
1,2,3,6,7,8-HxCDF	1.294	1.255	1.225	1.177	1.258	1.242	3.5	20.0	True
2,3,4,6,7,8-HxCDF	1.311	1.240	1.220	1.178	1.255	1.241	3.9	20.0	True
1,2,3,7,8,9-HxCDF	1.333	1.275	1.245	1.204	1.252	1.262	3.8	20.0	True
Total HxCDF						1.274	0.0	20.0	True
1,2,3,4,6,7,8-HpCDD	1.208	1.103	1.080	1.112	1.067	1.114	5.0	20.0	True
Total HpCDD						1.114	0.0	20.0	True
1,2,3,4,6,7,8-HpCDF	1.551	1.458	1.433	1.420	1.443	1.461	3.6	20.0	True
1,2,3,4,7,8,9-HpCDF	1.432	1.349	1.363	1.370	1.338	1.370	2.7	20.0	True
Total HpCDF						1.416	0.0	20.0	True
OCDD	1.247	1.210	1.203	1.158	1.197	1.203	2.7	20.0	True
OCDF	1.209	1.123	1.114	1.048	1.177	1.134	5.5	20.0	True
13C-2,3,7,8-TCDD	1.039	1.049	1.074	1.099	1.201	1.093	6.0	30.0	True
13C-2,3,7,8-TCDF	1.734	1.746	1.787	1.787	1.917	1.794	4.1	30.0	True
13C-1,2,3,7,8-PeCDD	0.729	0.722	0.771	0.805	0.973	0.800	12.8	30.0	True
13C-1,2,3,7,8-PeCDF	1.243	1.232	1.306	1.376	1.625	1.356	11.9	30.0	True
13C-2,3,4,7,8-PeCDF	1.233	1.235	1.293	1.350	1.604	1.343	11.4	30.0	True
13C-1,2,3,4,7,8-HxCDD	0.927	0.910	0.924	0.916	0.902	0.916	1.1	30.0	True
13C-1,2,3,6,7,8-HxCDD	0.898	0.930	0.918	0.902	0.883	0.906	2.0	30.0	True
13C-1,2,3,4,7,8-HxCDF	1.303	1.312	1.289	1.237	1.199	1.268	3.8	30.0	True
13C-1,2,3,6,7,8-HxCDF	1.535	1.560	1.531	1.501	1.402	1.506	4.1	30.0	True
13C-2,3,4,6,7,8-HxCDF	1.373	1.396	1.355	1.330	1.266	1.344	3.7	30.0	True
13C-1,2,3,7,8,9-HxCDF	1.202	1.211	1.200	1.210	1.188	1.202	0.8	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	0.717	0.739	0.726	0.714	0.745	0.728	1.9	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	1.011	1.027	1.010	0.994	0.998	1.008	1.3	30.0	True
13C-1,2,3,4,7,8,9-HpCDF	0.799	0.825	0.801	0.805	0.825	0.811	1.6	30.0	True
13C-OCDD	0.560	0.575	0.579	0.616	0.656	0.597	6.5	30.0	True
13C-OCDF	0.884	0.902	0.914	1.001	1.029	0.946	6.8	30.0	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	30.0	True
13C-1,2,3,7,8,9-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	30.0	True

TestAmerica
Knoxville

IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

ICAL ID: 78050 - 20150409I
Date: 04/09/15 02:00
Method: IN2o - DX8290_2

Instrument: D11A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1259376

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d115040 9i1	04/09/15	02:00	4104:74CS1	/20150409i/d115040 9i1.d
CS2:	d115040 9i2	04/09/15	03:02	4104:74CS2	/20150409i/d115040 9i2.d
CS3:	d115040 9i3	04/09/15	04:03	4104:74CS3	/20150409i/d115040 9i3.d
CS4:	d115040 9i4	04/09/15	05:05	4104:74CS4	/20150409i/d115040 9i4.d
CS5:	d115040 9i5	04/09/15	06:07	4104:74CS5	/20150409i/d115040 9i5.d

Ion Abundance Ratios

Analyte	M/Z's	CS1	CS2	CS3	CS4	CS5	Ratio Limits	Valid?
2,3,7,8-TCDD	M/M+2	0.77	0.78	0.78	0.79	0.79	0.65-0.89	True
2,3,7,8-TCDF	M/M+2	0.79	0.81	0.78	0.79	0.79	0.65-0.89	True
1,2,3,7,8-PeCDD	M+2/M+4	1.59	1.62	1.56	1.56	1.61	1.32-1.78	True
1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.58	1.57	1.55	1.62	1.32-1.78	True
2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.58	1.58	1.54	1.61	1.32-1.78	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.42	1.19	1.26	1.24	1.27	1.05-1.43	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.29	1.27	1.25	1.27	1.05-1.43	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.21	1.23	1.27	1.25	1.27	1.05-1.43	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.26	1.24	1.25	1.27	1.05-1.43	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.23	1.28	1.25	1.25	1.27	1.05-1.43	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.28	1.24	1.23	1.26	1.05-1.43	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.31	1.25	1.25	1.24	1.28	1.05-1.43	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	1.06	1.05	1.04	1.05	0.88-1.20	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.07	1.08	1.05	1.04	1.04	0.88-1.20	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	1.01	1.05	1.04	1.04	0.88-1.20	True
OCDD	M+2/M+4	0.85	0.92	0.89	0.90	0.89	0.76-1.02	True
OCDF	M+2/M+4	0.88	0.89	0.92	0.91	0.91	0.76-1.02	True
13C-2,3,7,8-TCDD	M/M+2	0.80	0.80	0.80	0.81	0.79	0.65-0.89	True
13C-2,3,7,8-TCDF	M/M+2	0.82	0.81	0.81	0.80	0.80	0.65-0.89	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.63	1.59	1.60	1.58	1.61	1.32-1.78	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.58	1.59	1.59	1.59	1.32-1.78	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.61	1.57	1.60	1.58	1.61	1.32-1.78	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.27	1.28	1.27	1.31	1.05-1.43	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.27	1.27	1.29	1.22	1.05-1.43	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.54	0.54	0.53	0.54	0.43-0.59	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.54	0.53	0.54	0.54	0.43-0.59	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.54	0.53	0.53	0.54	0.54	0.43-0.59	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.53	0.53	0.53	0.54	0.43-0.59	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	1.08	1.05	1.05	1.06	0.88-1.20	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.46	0.46	0.46	0.46	0.37-0.51	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.46	0.45	0.46	0.46	0.37-0.51	True
13C-OCDD	M+2/M+4	0.92	0.91	0.90	0.91	0.91	0.76-1.02	True
13C-OCDF	M+2/M+4	0.90	0.91	0.90	0.91	0.91	0.76-1.02	True
13C-1,2,3,4-TCDD	M/M+2	0.81	0.81	0.79	0.81	0.80	0.65-0.89	True
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.28	1.26	1.27	1.27	1.05-1.43	True

TestAmerica Knoxville

IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

ICAL ID: 78050 - 20150409I
Date: 04/09/15 02:00
Method: IN2o - DX8290_2

Instrument: D11A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1259376

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d1150409i1	04/09/15	02:00	4104:74CS1	/20150409i/d1150409i1.d
CS2:	d1150409i2	04/09/15	03:02	4104:74CS2	/20150409i/d1150409i2.d
CS3:	d1150409i3	04/09/15	04:03	4104:74CS3	/20150409i/d1150409i3.d
CS4:	d1150409i4	04/09/15	05:05	4104:74CS4	/20150409i/d1150409i4.d
CS5:	d1150409i5	04/09/15	06:07	4104:74CS5	/20150409i/d1150409i5.d

Relative Retention Time

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RRT	Range	Window
2,3,7,8-TCDD	1.002	1.002	1.002	1.002	1.002	1.002	1.002-1.002	0.000
2,3,7,8-TCDF	1.002	1.002	1.001	1.001	1.001	1.001	1.001-1.002	0.001
1,2,3,7,8-PeCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,7,8-PeCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
2,3,4,7,8-PeCDF	1.000	1.001	1.001	1.000	1.000	1.000	1.000-1.001	0.001
1,2,3,4,7,8-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,6,7,8-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,7,8,9-HxCDD	1.009	1.009	1.009	1.009	1.009	1.009	1.009-1.009	0.000
1,2,3,4,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,6,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
2,3,4,6,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,7,8,9-HxCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,4,6,7,8-HpCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,4,6,7,8-HpCDF	1.000	1.001	1.000	1.000	1.000	1.000	1.000-1.001	0.001
1,2,3,4,7,8,9-HpCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
OCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
OCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
13C-2,3,7,8-TCDD	1.017	1.016	1.017	1.017	1.017	1.017	1.016-1.017	0.001
13C-2,3,7,8-TCDF	0.951	0.951	0.952	0.951	0.951	0.951	0.951-0.952	0.001
13C-1,2,3,7,8-PeCDD	1.346	1.345	1.347	1.345	1.344	1.345	1.345-1.347	0.002
13C-1,2,3,7,8-PeCDF	1.286	1.285	1.286	1.285	1.284	1.285	1.285-1.286	0.001
13C-2,3,4,7,8-PeCDF	1.328	1.327	1.328	1.327	1.326	1.327	1.327-1.328	0.001
13C-1,2,3,4,7,8-HxCDD	0.989	0.989	0.989	0.989	0.989	0.989	0.989-0.989	0.000
13C-1,2,3,6,7,8-HxCDD	0.992	0.992	0.991	0.992	0.992	0.992	0.991-0.992	0.001
13C-1,2,3,4,7,8-HxCDF	0.966	0.967	0.966	0.967	0.967	0.967	0.966-0.967	0.001
13C-1,2,3,6,7,8-HxCDF	0.969	0.969	0.969	0.969	0.969	0.969	0.969-0.969	0.000
13C-2,3,4,6,7,8-HxCDF	0.985	0.985	0.985	0.985	0.985	0.985	0.985-0.985	0.000
13C-1,2,3,7,8,9-HxCDF	1.006	1.006	1.006	1.006	1.006	1.006	1.006-1.006	0.000
13C-1,2,3,4,6,7,8-HpCDD	1.094	1.095	1.094	1.095	1.095	1.095	1.094-1.095	0.001
13C-1,2,3,4,6,7,8-HpCDF	1.058	1.058	1.058	1.058	1.058	1.058	1.058-1.058	0.000
13C-1,2,3,4,7,8,9-HpCDF	1.109	1.109	1.109	1.109	1.109	1.109	1.109-1.109	0.000
13C-OCDD	1.189	1.189	1.189	1.189	1.189	1.189	1.189-1.189	0.000
13C-OCDF	1.192	1.192	1.192	1.192	1.192	1.192	1.192-1.192	0.000
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
13C-1,2,3,7,8,9-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000

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IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

ICAL ID: 78051 - 20150409I
Date: 04/09/15 02:00
Method: 9Ao - DX8290A

Instrument: D11A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1259376

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d1150409i1	04/09/15	02:00	4104:74CS1	/20150409i/d1150409i1.d
CS2:	d1150409i2	04/09/15	03:02	4104:74CS2	/20150409i/d1150409i2.d
CS3:	d1150409i3	04/09/15	04:03	4104:74CS3	/20150409i/d1150409i3.d
CS4:	d1150409i4	04/09/15	05:05	4104:74CS4	/20150409i/d1150409i4.d
CS5:	d1150409i5	04/09/15	06:07	4104:74CS5	/20150409i/d1150409i5.d

	Response Factors								
Analyte	CS1	CS2	CS3	CS4	CS5	Mean RF	%RSD	Limit	Valid?
2,3,7,8-TCDD	1.188	1.125	1.126	1.126	1.152	1.144	2.4	20.0	True
Total TCDD						1.144	0.0	20.0	True
2,3,7,8-TCDF	1.130	1.062	1.032	1.053	1.050	1.066	3.5	20.0	True
Total TCDF						1.066	0.0	20.0	True
1,2,3,7,8-PeCDD	1.091	1.056	1.053	1.055	1.044	1.060	1.7	20.0	True
Total PeCDD						1.060	0.0	20.0	True
1,2,3,7,8-PeCDF	1.217	1.190	1.160	1.145	1.183	1.179	2.4	20.0	True
2,3,4,7,8-PeCDF	1.179	1.096	1.099	1.081	1.119	1.115	3.4	20.0	True
Total PeCDF						1.147	0.0	20.0	True
1,2,3,4,7,8-HxCDD	1.201	1.156	1.115	1.104	1.080	1.131	4.2	20.0	True
1,2,3,6,7,8-HxCDD	1.158	1.120	1.110	1.099	1.093	1.116	2.3	20.0	True
1,2,3,7,8,9-HxCDD	1.276	1.204	1.185	1.176	1.184	1.205	3.4	20.0	True
Total HxCDD						1.151	0.0	20.0	True
1,2,3,4,7,8-HxCDF	1.432	1.329	1.316	1.299	1.375	1.350	4.0	20.0	True
1,2,3,6,7,8-HxCDF	1.294	1.255	1.225	1.177	1.258	1.242	3.5	20.0	True
2,3,4,6,7,8-HxCDF	1.311	1.240	1.220	1.178	1.255	1.241	3.9	20.0	True
1,2,3,7,8,9-HxCDF	1.333	1.275	1.245	1.204	1.252	1.262	3.8	20.0	True
Total HxCDF						1.274	0.0	20.0	True
1,2,3,4,6,7,8-HpCDD	1.208	1.103	1.080	1.112	1.067	1.114	5.0	20.0	True
Total HpCDD						1.114	0.0	20.0	True
1,2,3,4,6,7,8-HpCDF	1.551	1.458	1.433	1.420	1.443	1.461	3.6	20.0	True
1,2,3,4,7,8,9-HpCDF	1.432	1.349	1.363	1.370	1.338	1.370	2.7	20.0	True
Total HpCDF						1.416	0.0	20.0	True
OCDD	1.247	1.210	1.203	1.158	1.197	1.203	2.7	20.0	True
OCDF	1.209	1.123	1.114	1.048	1.177	1.134	5.5	20.0	True
13C-2,3,7,8-TCDD	1.039	1.049	1.074	1.099	1.201	1.093	6.0	20.0	True
13C-2,3,7,8-TCDF	1.734	1.746	1.787	1.787	1.917	1.794	4.1	20.0	True
13C-1,2,3,7,8-PeCDD	0.729	0.722	0.771	0.805	0.973	0.800	12.8	20.0	True
13C-1,2,3,7,8-PeCDF	1.243	1.232	1.306	1.376	1.625	1.356	11.9	20.0	True
13C-2,3,4,7,8-PeCDF	1.233	1.235	1.293	1.350	1.604	1.343	11.4	20.0	True
13C-1,2,3,4,7,8-HxCDD	0.927	0.910	0.924	0.916	0.902	0.916	1.1	20.0	True
13C-1,2,3,6,7,8-HxCDD	0.898	0.930	0.918	0.902	0.883	0.906	2.0	20.0	True
13C-1,2,3,4,7,8-HxCDF	1.303	1.312	1.289	1.237	1.199	1.268	3.8	20.0	True
13C-1,2,3,6,7,8-HxCDF	1.535	1.560	1.531	1.501	1.402	1.506	4.1	20.0	True
13C-2,3,4,6,7,8-HxCDF	1.373	1.396	1.355	1.330	1.266	1.344	3.7	20.0	True
13C-1,2,3,7,8,9-HxCDF	1.202	1.211	1.200	1.210	1.188	1.202	0.8	20.0	True
13C-1,2,3,4,6,7,8-HpCDD	0.717	0.739	0.726	0.714	0.745	0.728	1.9	20.0	True
13C-1,2,3,4,6,7,8-HpCDF	1.011	1.027	1.010	0.994	0.998	1.008	1.3	20.0	True
13C-1,2,3,4,7,8,9-HpCDF	0.799	0.825	0.801	0.805	0.825	0.811	1.6	20.0	True
13C-OCDD	0.560	0.575	0.579	0.616	0.656	0.597	6.5	20.0	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	30.0	True
13C-1,2,3,7,8,9-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	30.0	True
13C-OCDF	0.884	0.902	0.914	1.001	1.029	0.946	6.8	20.0	True

TestAmerica
Knoxville

IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

ICAL ID: 78051 - 20150409I
Date: 04/09/15 02:00
Method: 9Ao - DX8290A

Instrument: D11A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1259376

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d1150409i1	04/09/15	02:00	4104:74CS1	/20150409i/d1150409i1.d
CS2:	d1150409i2	04/09/15	03:02	4104:74CS2	/20150409i/d1150409i2.d
CS3:	d1150409i3	04/09/15	04:03	4104:74CS3	/20150409i/d1150409i3.d
CS4:	d1150409i4	04/09/15	05:05	4104:74CS4	/20150409i/d1150409i4.d
CS5:	d1150409i5	04/09/15	06:07	4104:74CS5	/20150409i/d1150409i5.d

Ion Abundance Ratios

Analyte	M/Z's	CS1	CS2	CS3	CS4	CS5	Ratio Limits	Valid?
2,3,7,8-TCDD	M/M+2	0.77	0.78	0.78	0.79	0.79	0.65-0.89	True
2,3,7,8-TCDF	M/M+2	0.79	0.81	0.78	0.79	0.79	0.65-0.89	True
1,2,3,7,8-PeCDD	M+2/M+4	1.59	1.62	1.56	1.56	1.61	1.32-1.78	True
1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.58	1.57	1.55	1.62	1.32-1.78	True
2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.58	1.58	1.54	1.61	1.32-1.78	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.42	1.19	1.26	1.24	1.27	1.05-1.43	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.29	1.27	1.25	1.27	1.05-1.43	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.21	1.23	1.27	1.25	1.27	1.05-1.43	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.26	1.24	1.25	1.27	1.05-1.43	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.23	1.28	1.25	1.25	1.27	1.05-1.43	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.28	1.24	1.23	1.26	1.05-1.43	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.31	1.25	1.25	1.24	1.28	1.05-1.43	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	1.06	1.05	1.04	1.05	0.88-1.20	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.07	1.08	1.05	1.04	1.04	0.88-1.20	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	1.01	1.05	1.04	1.04	0.88-1.20	True
OCDD	M+2/M+4	0.85	0.92	0.89	0.90	0.89	0.76-1.02	True
OCDF	M+2/M+4	0.88	0.89	0.92	0.91	0.91	0.76-1.02	True
13C-2,3,7,8-TCDD	M/M+2	0.80	0.80	0.80	0.81	0.79	0.65-0.89	True
13C-2,3,7,8-TCDF	M/M+2	0.82	0.81	0.81	0.80	0.80	0.65-0.89	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.63	1.59	1.60	1.58	1.61	1.32-1.78	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.58	1.59	1.59	1.59	1.32-1.78	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.61	1.57	1.60	1.58	1.61	1.32-1.78	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.27	1.28	1.27	1.31	1.05-1.43	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.27	1.27	1.29	1.22	1.05-1.43	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.54	0.54	0.53	0.54	0.43-0.59	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.54	0.53	0.54	0.54	0.43-0.59	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.54	0.53	0.53	0.54	0.54	0.43-0.59	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.53	0.53	0.53	0.54	0.43-0.59	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	1.08	1.05	1.05	1.06	0.88-1.20	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.46	0.46	0.46	0.46	0.37-0.51	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.46	0.45	0.46	0.46	0.37-0.51	True
13C-OCDD	M+2/M+4	0.92	0.91	0.90	0.91	0.91	0.76-1.02	True
13C-1,2,3,4-TCDD	M/M+2	0.81	0.81	0.79	0.81	0.80	0.65-0.89	True
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.28	1.26	1.27	1.27	1.05-1.43	True
13C-OCDF	M+2/M+4	0.90	0.91	0.90	0.91	0.91	0.76-1.02	True

TestAmerica
Knoxville

IsoCalc Initial Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

ICAL ID: 78051 - 20150409I
Date: 04/09/15 02:00
Method: 9Ao - DX8290A

Instrument: D11A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1259376

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d115040 9i1	04/09/15	02:00	4104:74CS1	/20150409i/d115040 9i1.d
CS2:	d115040 9i2	04/09/15	03:02	4104:74CS2	/20150409i/d115040 9i2.d
CS3:	d115040 9i3	04/09/15	04:03	4104:74CS3	/20150409i/d115040 9i3.d
CS4:	d115040 9i4	04/09/15	05:05	4104:74CS4	/20150409i/d115040 9i4.d
CS5:	d115040 9i5	04/09/15	06:07	4104:74CS5	/20150409i/d115040 9i5.d

Relative Retention Time

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RRT	Range	Window
2,3,7,8-TCDD	1.002	1.002	1.002	1.002	1.002	1.002	1.002-1.002	0.000
2,3,7,8-TCDF	1.002	1.002	1.001	1.001	1.001	1.001	1.001-1.002	0.001
1,2,3,7,8-PeCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,7,8-PeCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
2,3,4,7,8-PeCDF	1.000	1.001	1.001	1.000	1.000	1.000	1.000-1.001	0.001
1,2,3,4,7,8-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,6,7,8-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,7,8,9-HxCDD	1.009	1.009	1.009	1.009	1.009	1.009	1.009-1.009	0.000
1,2,3,4,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,6,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
2,3,4,6,7,8-HxCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,7,8,9-HxCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,4,6,7,8-HpCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
1,2,3,4,6,7,8-HpCDF	1.000	1.001	1.000	1.000	1.000	1.000	1.000-1.001	0.001
1,2,3,4,7,8,9-HpCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
OCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
OCDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
13C-2,3,7,8-TCDD	1.017	1.016	1.017	1.017	1.017	1.017	1.016-1.017	0.001
13C-2,3,7,8-TCDF	0.951	0.951	0.952	0.951	0.951	0.951	0.951-0.952	0.001
13C-1,2,3,7,8-PeCDD	1.346	1.345	1.347	1.345	1.344	1.345	1.345-1.347	0.002
13C-1,2,3,7,8-PeCDF	1.286	1.285	1.286	1.285	1.284	1.285	1.285-1.286	0.001
13C-2,3,4,7,8-PeCDF	1.328	1.327	1.328	1.327	1.326	1.327	1.327-1.328	0.001
13C-1,2,3,4,7,8-HxCDD	0.989	0.989	0.989	0.989	0.989	0.989	0.989-0.989	0.000
13C-1,2,3,6,7,8-HxCDD	0.992	0.992	0.991	0.992	0.992	0.992	0.991-0.992	0.001
13C-1,2,3,4,7,8-HxCDF	0.966	0.967	0.966	0.967	0.967	0.967	0.966-0.967	0.001
13C-1,2,3,6,7,8-HxCDF	0.969	0.969	0.969	0.969	0.969	0.969	0.969-0.969	0.000
13C-2,3,4,6,7,8-HxCDF	0.985	0.985	0.985	0.985	0.985	0.985	0.985-0.985	0.000
13C-1,2,3,7,8,9-HxCDF	1.006	1.006	1.006	1.006	1.006	1.006	1.006-1.006	0.000
13C-1,2,3,4,6,7,8-HpCDD	1.094	1.095	1.094	1.095	1.095	1.095	1.094-1.095	0.001
13C-1,2,3,4,6,7,8-HpCDF	1.058	1.058	1.058	1.058	1.058	1.058	1.058-1.058	0.000
13C-1,2,3,4,7,8,9-HpCDF	1.109	1.109	1.109	1.109	1.109	1.109	1.109-1.109	0.000
13C-OCDD	1.189	1.189	1.189	1.189	1.189	1.189	1.189-1.189	0.000
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
13C-1,2,3,7,8,9-HxCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000
13C-OCDF	1.192	1.192	1.192	1.192	1.192	1.192	1.192-1.192	0.000

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IsoCalc Initial Calibration Report

TCDD/F in Drinking Water by EPA Method 1613B

ICAL ID: 78052 - 20150409I
Date: 04/09/15 02:00
Method: L1 - DX1613_L

Instrument: D11A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1259376

Level	Filename	Date/Time	Sample ID	Result Directory
CS1:	d115040 9i1	04/09/15 02:00	4104:74CS1	/20150409i/d115040 9i1.d
CS2:	d115040 9i2	04/09/15 03:02	4104:74CS2	/20150409i/d115040 9i2.d
CS3:	d115040 9i3	04/09/15 04:03	4104:74CS3	/20150409i/d115040 9i3.d
CS4:	d115040 9i4	04/09/15 05:05	4104:74CS4	/20150409i/d115040 9i4.d
CS5:	d115040 9i5	04/09/15 06:07	4104:74CS5	/20150409i/d115040 9i5.d

Response Factors

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RF	%RSD	Limit	Valid?
2,3,7,8-TCDD	1.188	1.125	1.126	1.126	1.152	1.144	2.4	20.0	True
2,3,7,8-TCDF	1.130	1.062	1.032	1.053	1.050	1.066	3.5	20.0	True
37Cl4-2,3,7,8-TCDD	1.269	1.170	1.169	1.223	1.336	1.233	5.7	35.0	True
13C-2,3,7,8-TCDD	1.039	1.049	1.074	1.099	1.201	1.093	6.0	35.0	True
13C-2,3,7,8-TCDF	1.734	1.746	1.787	1.787	1.917	1.794	4.1	35.0	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	0.0	True

Kh 4/9/15
KM 4-9-15

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IsoCalc Initial Calibration Report

TCDD/F in Drinking Water by EPA Method 1613B

ICAL ID: 78052 - 20150409I
Date: 04/09/15 02:00
Method: L1 - DX1613_L

Instrument: D11A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1259376

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d1150409i1	04/09/15	02:00	4104:74CS1	/20150409i/d1150409i1.d
CS2:	d1150409i2	04/09/15	03:02	4104:74CS2	/20150409i/d1150409i2.d
CS3:	d1150409i3	04/09/15	04:03	4104:74CS3	/20150409i/d1150409i3.d
CS4:	d1150409i4	04/09/15	05:05	4104:74CS4	/20150409i/d1150409i4.d
CS5:	d1150409i5	04/09/15	06:07	4104:74CS5	/20150409i/d1150409i5.d

Ion Abundance Ratios

Analyte	M/Z's	CS1	CS2	CS3	CS4	CS5	Ratio Limits	Valid?
2,3,7,8-TCDD	M/M+2	0.77	0.78	0.78	0.79	0.79	0.65-0.89	True
2,3,7,8-TCDF	M/M+2	0.79	0.81	0.78	0.79	0.79	0.65-0.89	True
37Cl4-2,3,7,8-TCDD	M							
13C-2,3,7,8-TCDD	M/M+2	0.80	0.80	0.80	0.81	0.79	0.65-0.89	True
13C-2,3,7,8-TCDF	M/M+2	0.82	0.81	0.81	0.80	0.80	0.65-0.89	True
13C-1,2,3,4-TCDD	M/M+2	0.81	0.81	0.79	0.81	0.80	0.65-0.89	True

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IsoCalc Initial Calibration Report

TCDD/F in Drinking Water by EPA Method 1613B

ICAL ID: 78052 - 20150409I
Date: 04/09/15 02:00
Method: L1 - DX1613_L

Instrument: D11A
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um
Column S/N: 1259376

Level	Filename	Date/Time	Sample ID	Result Directory
CS1:	d115040 9i1	04/09/15 02:00	4104:74CS1	/20150409i/d115040 9i1.d
CS2:	d115040 9i2	04/09/15 03:02	4104:74CS2	/20150409i/d115040 9i2.d
CS3:	d115040 9i3	04/09/15 04:03	4104:74CS3	/20150409i/d115040 9i3.d
CS4:	d115040 9i4	04/09/15 05:05	4104:74CS4	/20150409i/d115040 9i4.d
CS5:	d115040 9i5	04/09/15 06:07	4104:74CS5	/20150409i/d115040 9i5.d

Relative Retention Time

Analyte	CS1	CS2	CS3	CS4	CS5	RRT Limits		Valid?
2,3,7,8-TCDD	1.002	1.002	1.002	1.002	1.002	0.999	-1.002	True
2,3,7,8-TCDF	1.002	1.002	1.001	1.001	1.001	0.999	-1.003	True
37Cl4-2,3,7,8-TCDD	1.019	1.018	1.019	1.019	1.018	0.989	-1.052	True
13C-2,3,7,8-TCDD	1.017	1.016	1.017	1.017	1.017	0.976	-1.043	True
13C-2,3,7,8-TCDF	0.951	0.951	0.952	0.951	0.951	0.923	-1.103	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	-1.000	True

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IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:04	Prep Batch		Lot No	
Data File	/20150409i/d1150408w1.d	Prep Date		SDG No	
Analysis ID	169109	Prep Exp Date		Date Received	
Analysis Date	4/8/2015	Matrix	UNKNOWN	Date Sampled	
Analysis Time	23:55	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D11A	Dil Factor	1.00	Code	F8o
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)		DL (ng/mL)
2,3,7,8-TCDD	30:49	566607	58285	1.230	10.00	9.725009	97.25	9.725009	E	0.0405
Total TCDD		2440118	267977	1.230		51.606186		51.606186	E	0.0405
2,3,7,8-TCDF	28:50	828674	91241	1.085	10.00	9.578165	95.78	9.578165	E	0.0181
Total TCDF		1728790	222676	1.085		29.560252		29.560252	E	0.0181
1,2,3,7,8-PeCDD	40:36	1809153	418568	1.115	50.00	47.467695	94.94	47.467695	E	0.0211
Total PeCDD		3487258	682787	1.115		138.964711		138.964711	E	0.0211
1,2,3,7,8-PeCDF	38:48	3422159	676755	1.269	50.00	46.786115	93.57	46.786115	E	0.0188
2,3,4,7,8-PeCDF	40:03	3199510	694964	1.186	50.00	46.645962	93.29	46.645962	E	0.0179
Total PeCDF		6262597	1067146	1.228		181.796702		181.796702	E	0.0183
1,2,3,4,7,8-HxCDD	44:52	2029241	524824	1.171	50.00	47.973274	95.95	47.973274	E	0.0248
1,2,3,6,7,8-HxCDD	44:59	1973706	510263	1.163	50.00	47.851935	95.70	47.851935	E	0.0253
1,2,3,7,8,9-HxCDD	45:22	2111391	524694	1.144	50.00	51.584909	103.17	51.584909	E	0.0256
Total HxCDD		2152926	590531	1.159		199.298987		199.298987	E	0.0252
1,2,3,4,7,8-HxCDF	43:51	3341231	891575	1.329	50.00	49.984100	99.97	49.984100	E	0.0262
1,2,3,6,7,8-HxCDF	43:58	3660455	972309	1.244	50.00	49.528349	99.06	49.528349	E	0.0240
2,3,4,6,7,8-HxCDF	44:42	3255956	852072	1.242	50.00	49.029772	98.06	49.029772	E	0.0268
1,2,3,7,8,9-HxCDF	45:38	2793161	678566	1.250	50.00	48.165862	96.33	48.165862	E	0.0349
Total HxCDF		5790457	1451266	1.266		283.989520		283.989520	E	0.0274
1,2,3,4,6,7,8-HpCDD	49:40	1668990	339918	1.170	50.00	47.417150	94.83	47.417150	E	0.0463
Total HpCDD		1729826	367207	1.170		96.562692		96.562692	E	0.0463
1,2,3,4,6,7,8-HpCDF	48:01	2962586	644173	1.458	50.00	50.347001	100.69	50.347001	E	0.0196
1,2,3,4,7,8,9-HpCDF	50:20	2225159	451513	1.372	50.00	49.529006	99.06	49.529006	E	0.0275
Total HpCDF				1.415		99.876007		99.876007	E	0.0230
OCDD	53:56	2840888	710722	1.233	100.0	97.863899	97.86	97.863899	E	0.0323
OCDF	54:04	4012178	1013728	1.152	100.0	90.928633	90.93	90.928633	E	0.0280
13C-2,3,7,8-TCDD	30:46	4735431	481981	1.130	100.0	92.429065	92.43	92.429065		0.0457
13C-2,3,7,8-TCDF	28:48	7973700	867253	1.951	100.0	90.126833	90.13	90.126833		0.0187
13C-1,2,3,7,8-PeCDD	40:35	3418081	763768	0.761	100.0	99.002142	99.00	99.002142		0.0240
13C-1,2,3,7,8-PeCDF	38:47	5762048	1130492	1.359	100.0	93.485605	93.49	93.485605		0.0322
13C-2,3,4,7,8-PeCDF	40:02	5782055	1274379	1.369	100.0	93.107829	93.11	93.107829		0.0320
13C-1,2,3,4,7,8-HxCDD	44:51	3612156	911060	0.889	100.0	105.881705	105.88	105.881705		0.0284
13C-1,2,3,6,7,8-HxCDD	44:58	3546408	901348	1.064	100.0	86.823639	86.82	86.823639		0.0238
13C-1,2,3,4,7,8-HxCDF	43:50	5030948	1335153	1.289	100.0	101.650700	101.65	101.650700		0.0349
13C-1,2,3,6,7,8-HxCDF	43:57	5942074	1557484	1.785	100.0	86.689910	86.69	86.689910		0.0252
13C-2,3,4,6,7,8-HxCDF	44:41	5348223	1395227	1.496	100.0	93.145166	93.15	93.145166		0.0301
13C-1,2,3,7,8,9-HxCDF	45:37	4637973	1064721	1.250	100.0	96.622251	96.62	96.622251		0.0360
13C-1,2,3,4,6,7,8-HpCDD	49:39	3008228	609030	0.721	100.0	108.687957	108.69	108.687957		0.0274
13C-1,2,3,4,6,7,8-HpCDF	47:59	4036198	876593	1.044	100.0	100.662231	100.66	100.662231		0.0333
13C-1,2,3,4,7,8,9-HpCDF	50:19	3273437	662533	0.838	100.0	101.748033	101.75	101.748033		0.0415
13C-OCDD	53:55	4709248	1168673	0.614	200.0	199.912297	99.96	199.912297		0.0601
13C-OCDF	54:03	7662511	1923977	1.043	200.0	191.361030	95.68	191.361030		0.000000
37Cl4-2,3,7,8-TCDD	30:49	535017	53147	1.376	10.00	8.569973	85.70	8.569973	E	0.0208
13C-1,2,3,4-TCDD	30:17	4535769	479464	1.000	100.0	100.000000	100.00	100.000000		0.0516
13C-1,2,3,7,8,9-HxCDD	45:21	3839350	949477	1.000	100.0	100.000000	100.00	100.000000		0.0253

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:04	Prep Batch		Lot No	
Data File	/20150409i/d1150408w1.	Prep Date		SDG No	
Analysis ID	169109	Prep Exp Date		Date Received	
Analysis Date	04/08/15 23:55	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89	
	Noise	00:00	00:00	0	80	90	32	36	0.89 *	/
	Unidentified	22:30	00:00	0	446872	571867	65898	85499	0.78	ABV/ABV
	2,3,7,8-TCDF	28:50	28:51	-1	367667	461007	40691	50550	0.80	ABV/ABV
	Unidentified	33:53	00:00	0	312987	397064	31823	39456	0.79	AVV/ABV
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89	
	Noise	00:00	00:00	0	98	78	39	31	1.26 *	/
	13C-2,3,7,8-TCDF	28:48	28:49	-1	3549918	4423782	378945	488308	0.80	AVV/AVV
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89	
	Noise	00:00	00:00	0	120	120	48	48	1.00 *	/
	Unidentified	24:56	00:00	0	229090	298310	29790	39063	0.77	ABV/ABV
	Unidentified	30:19	00:00	0	211459	266621	23127	29575	0.79	ABV/AVV
	Unidentified	30:32	00:00	0	203209	256889	20968	27356	0.79	AVV/AVV
	2,3,7,8-TCDD	30:49	30:48	1	249743	316864	25541	32744	0.79	AVV/AVV
	Unidentified	31:19	00:00	0	227483	290591	22280	27956	0.78	AVV/AVV
	Unidentified	34:01	00:00	0	198867	257599	21127	26735	0.77	ABB/ABB
328					327.8847		327.8847			
	Noise	00:00	00:00	0	138		55			
	37Cl4-2,3,7,8-TCDD	30:49	30:49	0	535017		53147			AVV
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89	
	Noise	00:00	00:00	0	138	110	55	44	1.25 *	/
	13C-1,2,3,4-TCDD	30:17	30:16	1	2064741	2471028	219716	259748	0.84	AVV/ABV
	13C-2,3,7,8-TCDD	30:46	30:46	0	2108211	2627220	214367	267614	0.80	AVV/AVV
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78	
	Noise	00:00	00:00	0	140	130	56	52	1.08 *	/
	Unidentified	34:39	00:00	0	2106888	1334342	247529	158938	1.58	ABV/ABV
	1,2,3,7,8-PeCDF	38:48	38:48	0	2095358	1326801	413608	263147	1.58	ABV/ABV
	2,3,4,7,8-PeCDF	40:03	40:03	0	1972108	1227402	423770	271194	1.61	ABV/ABV
	Unidentified	41:23	00:00	0	1722704	1098663	400745	259934	1.57	ABV/ABV
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78	
	Noise	00:00	00:00	0	120	90	48	36	1.33	/
	13C-1,2,3,7,8-PeCDF	38:47	38:47	0	3522979	2239069	689811	440681	1.57	ABV/ABV
	13C-2,3,4,7,8-PeCDF	40:02	40:02	0	3542571	2239484	785846	488533	1.58	AVV/ABV
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78	
	Noise	00:00	00:00	0	90	90	36	36	1.00 *	/
	Unidentified	37:38	00:00	0	1058158	676852	164993	106559	1.56	ABV/ABV
	1,2,3,7,8-PeCDD	40:36	40:36	0	1104182	704971	256908	161660	1.57	ABV/ABV
	Unidentified	41:16	00:00	0	1063460	688788	248058	163177	1.54	ABV/ABV
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78	
	Noise	00:00	00:00	0	50	38	20	15	1.33	/
	13C-1,2,3,7,8-PeCDD	40:35	40:35	0	2109901	1308180	469166	294602	1.61	ABV/ABV
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43	
	Noise	00:00	00:00	0	248	218	99	87	1.14	/

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

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Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:04	Prep Batch		Lot No	
Data File	/20150409i/d1150408w1.	Prep Date		SDG No	
Analysis ID	169109	Prep Exp Date		Date Received	
Analysis Date	04/08/15 23:55	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Unidentified	42:36	00:00	0	1722922	1383568	448759	369700	1.25	ABV/ABV	
	1,2,3,4,7,8-HxCDF	43:51	43:51	0	1852983	1488248	486955	404620	1.25	ABV/ABV	
	1,2,3,6,7,8-HxCDF	43:58	43:59	-1	2034138	1626317	537190	435119	1.25	AVV/AVV	
	2,3,4,6,7,8-HxCDF	44:42	44:42	0	1806806	1449150	471807	380265	1.25	AVV/AVV	
	1,2,3,7,8,9-HxCDF	45:38	45:38	0	1552719	1240442	376799	301767	1.25	ABV/ABV	
	Unidentified	45:46	00:00	0	1500215	1183752	353435	279372	1.27	AVV/AVV	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	163	265	65	106	0.61 *	/	
	13C-1,2,3,4,7,8-HxCDF	43:50	43:50	0	1736686	3294262	461376	873777	0.53	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	43:57	43:58	-1	2074554	3867520	542934	1014550	0.54	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	44:41	44:41	0	1856235	3491988	489872	905355	0.53	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	45:37	45:37	0	1600959	3037014	366821	697900	0.53	AVV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	150	115	60	46	1.30	/	
	Unidentified	43:19	00:00	0	1192618	960308	330440	260091	1.24	ABV/ABV	
	1,2,3,4,7,8-HxCDD	44:52	44:52	0	1130692	898549	290895	233929	1.26	ABV/ABV	
	1,2,3,6,7,8-HxCDD	44:59	44:59	0	1101177	872529	283231	227032	1.26	AVV/AVV	
	1,2,3,7,8,9-HxCDD	45:22	45:22	0	1176800	934591	292935	231759	1.26	AVV/AVV	
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	150	90	60	36	1.67 *	/	
	13C-1,2,3,4,7,8-HxCDD	44:51	44:51	0	2042537	1569619	512178	398882	1.30	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	44:58	44:58	0	1998351	1548057	508245	393103	1.29	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	45:21	45:21	0	2167948	1671402	536460	413017	1.30	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	118	133	47	53	0.89	/	
	1,2,3,4,6,7,8-HpCDF	48:01	48:00	1	1514430	1448156	328248	315925	1.05	ABV/ABV	
	1,2,3,4,7,8,9-HpCDF	50:20	50:20	0	1136813	1088346	229972	221541	1.04	ABV/ABV	
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	158	173	63	69	0.91 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	47:59	47:59	0	1273517	2762681	275455	601138	0.46	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:19	50:19	0	1009484	2263953	206556	455977	0.45	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	115	215	46	86	0.53 *	/	
	Unidentified	48:29	00:00	0	888143	841683	187232	179975	1.06	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	49:40	49:40	0	853273	815717	173463	166455	1.05	ABV/ABV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	78	110	31	44	0.70 *	/	
	13C-1,2,3,4,6,7,8-HpCDD	49:39	49:39	0	1552644	1455584	312457	296573	1.07	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	153	158	61	63	0.97	/	
	OCDF	54:04	54:04	0	1905293	2106885	483362	530366	0.90	ABV/ABV	M
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:04	Prep Batch		Lot No	
Data File	/20150409i/d1150408w1.a	Prep Date		SDG No	
Analysis ID	169109	Prep Exp Date		Date Received	
Analysis Date	04/08/15 23:55	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

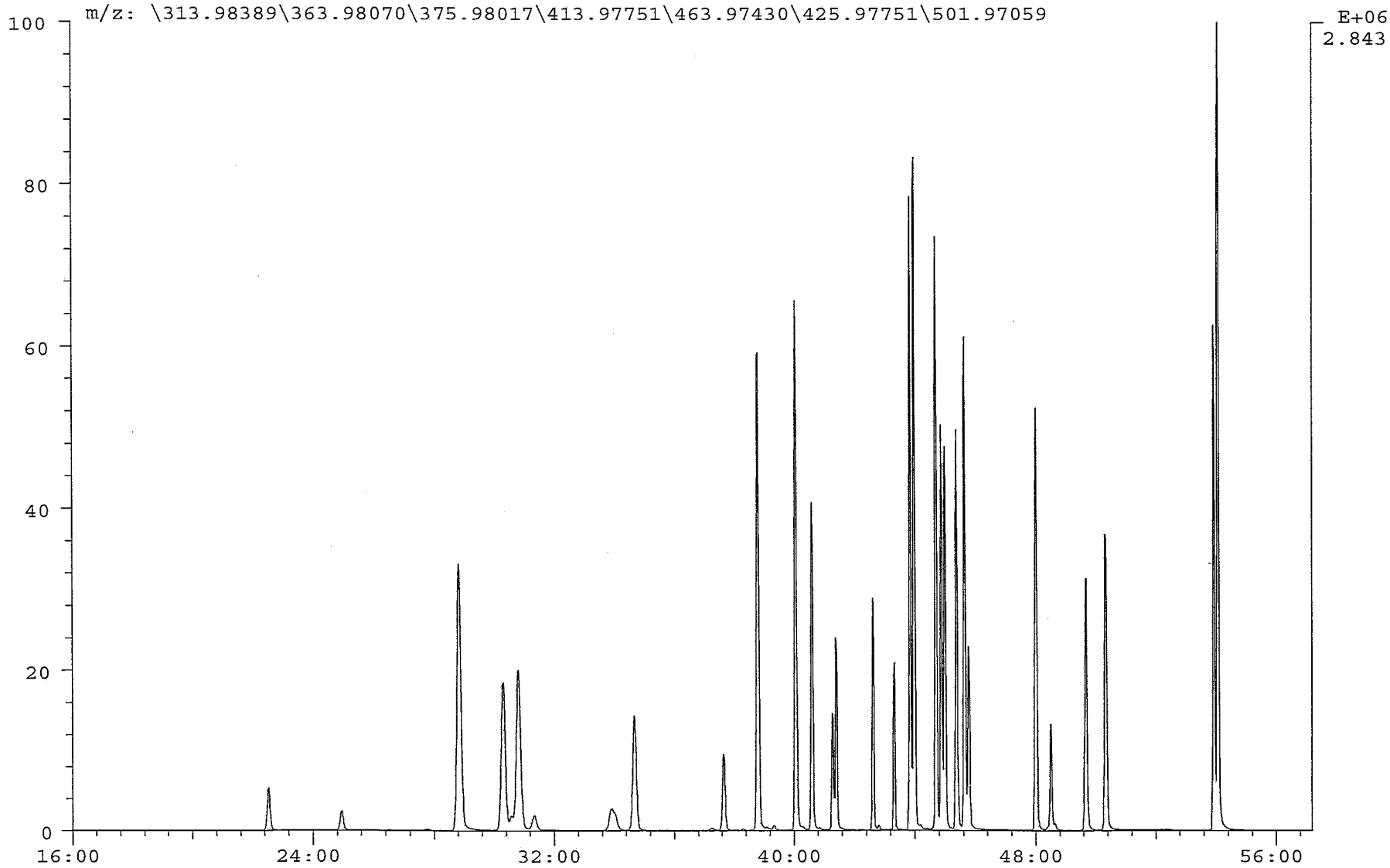
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	0	0	0	0	0.00 *		
	13C-OCDF	54:03	54:03	0	3648643	4013868	919196	1004781	0.91		M
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	100	133	40	53	0.75 *	/	
	OCDD	53:56	53:56	0	1348424	1492464	338122	372600	0.90	ABV/ABV	
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	123	228	49	91	0.54 *	/	
	13C-OCDD	53:55	53:55	0	2239903	2469345	555449	613224	0.91	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int/Calc LKM 4-9-15
QC KM 4/9/15
QC KM 4-9-15

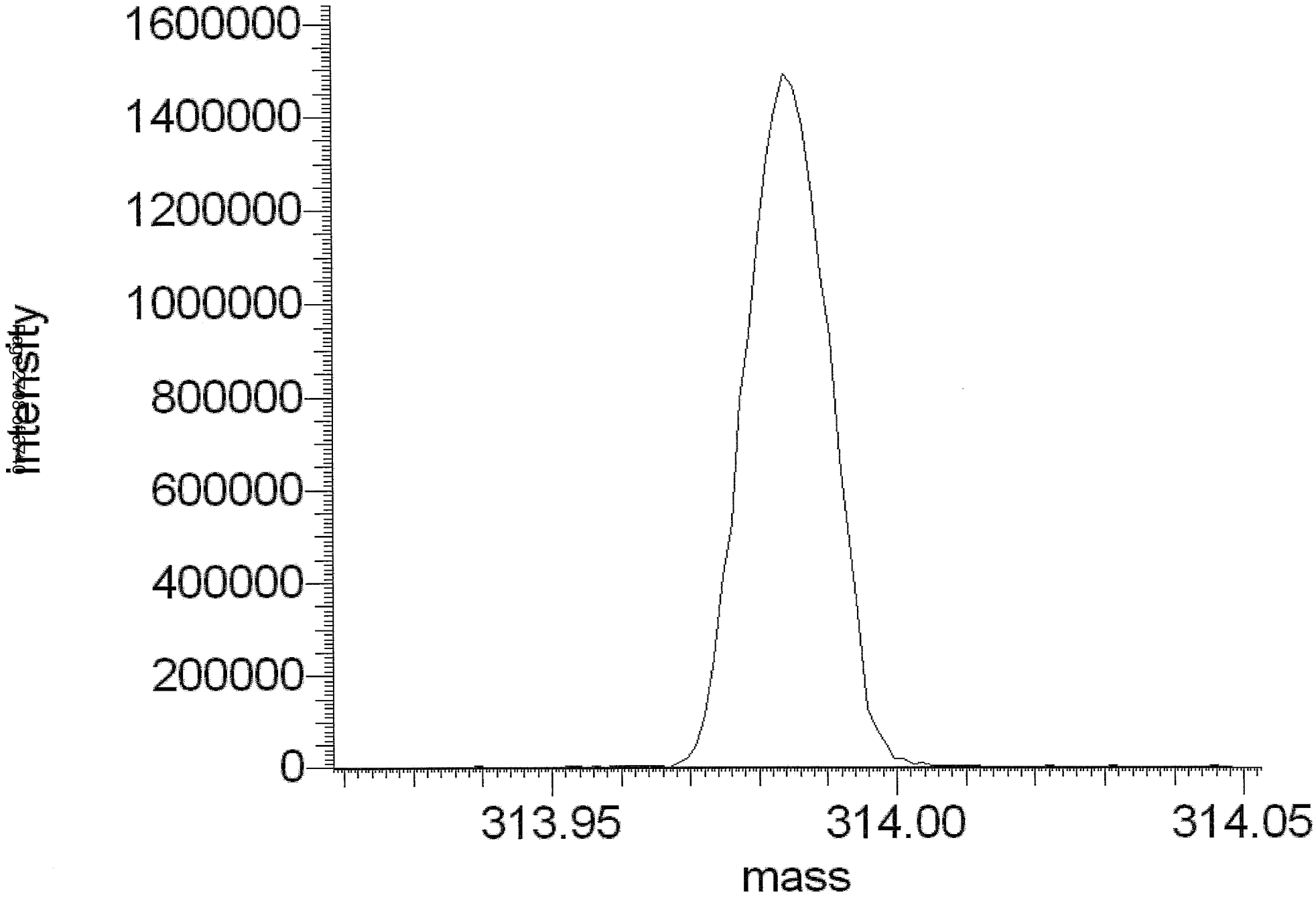
```
CHRO:  d1150408w1                                08-Apr-15  Elapse:  12:03.1        1
Samp:  WO=4966:04 Meth=F8o Dil=1                            Start :  23:55:02    2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   235 > 2641             Masses:  303 > 514
Area:  5, 0.50, 0      Baseline  :   100, 3                 Label :  0, 0.0
Disp:  Height  Area
```

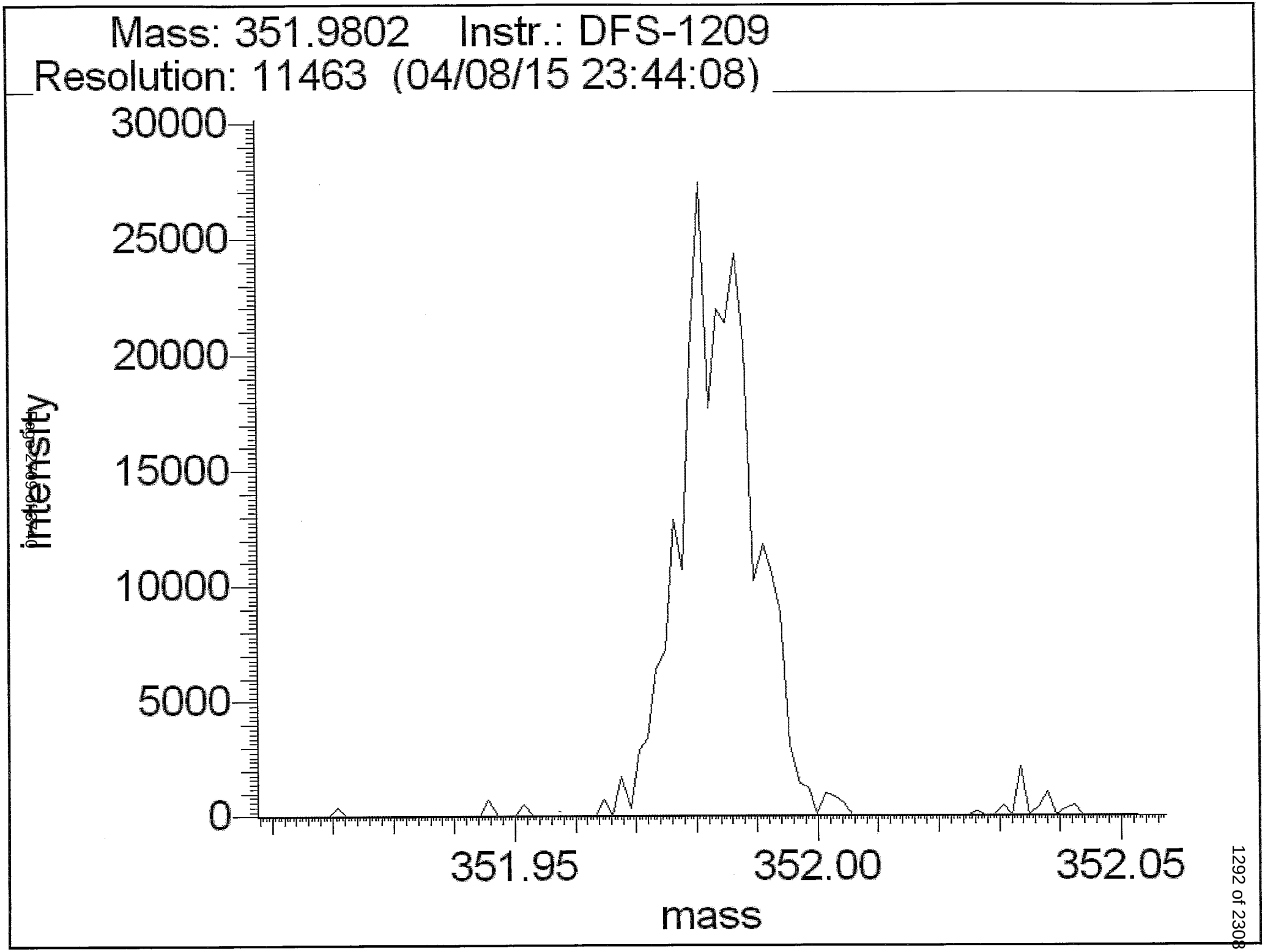


```
Reports
23:51:45:  Peak matching procedure started
23:51:45:
23:51:46:  Reference mass: 313.98336
23:51:46:  Sample mass: 364.0
23:51:47:
23:51:47:  Finding reference mass
23:51:48:  Finding sample mass
23:51:49:
23:51:54:  [1]   363.9785 amu, mean: 363.9785
23:51:58:  [2]   363.9786 amu, mean: 363.9786     SD: 0.02 mmu or: 0.07 ppm
23:52:01:  [3]   363.9795 amu, mean: 363.9789     SD: 0.52 mmu or: 1.44 ppm
23:52:04:  [4]   363.9795 amu, mean: 363.9790     SD: 0.53 mmu or: 1.45 ppm
23:52:07:  [5]   363.9788 amu, mean: 363.9790     SD: 0.47 mmu or: 1.28 ppm
23:52:10:  [6]   363.9789 amu, mean: 363.9790     SD: 0.42 mmu or: 1.16 ppm
23:52:13:  [7]   363.9796 amu, mean: 363.9791     SD: 0.46 mmu or: 1.26 ppm
23:52:16:  [8]   363.9790 amu, mean: 363.9791     SD: 0.43 mmu or: 1.17 ppm
23:52:20:  [9]   363.9783 amu, mean: 363.9790     SD: 0.47 mmu or: 1.30 ppm
23:52:23:  [10]   363.9789 amu, mean: 363.9790     SD: 0.45 mmu or: 1.23 ppm
23:52:26:  [11]   363.9791 amu, mean: 363.9790     SD: 0.43 mmu or: 1.17 ppm
23:52:27:
23:52:27:  Stop requested. Please wait for procedure to finish.
23:52:27:
23:52:29:  [12]   363.9779 amu, mean: 363.9789     SD: 0.51 mmu or: 1.40 ppm
23:52:31:
23:52:31:  Peakmatching stopped
```

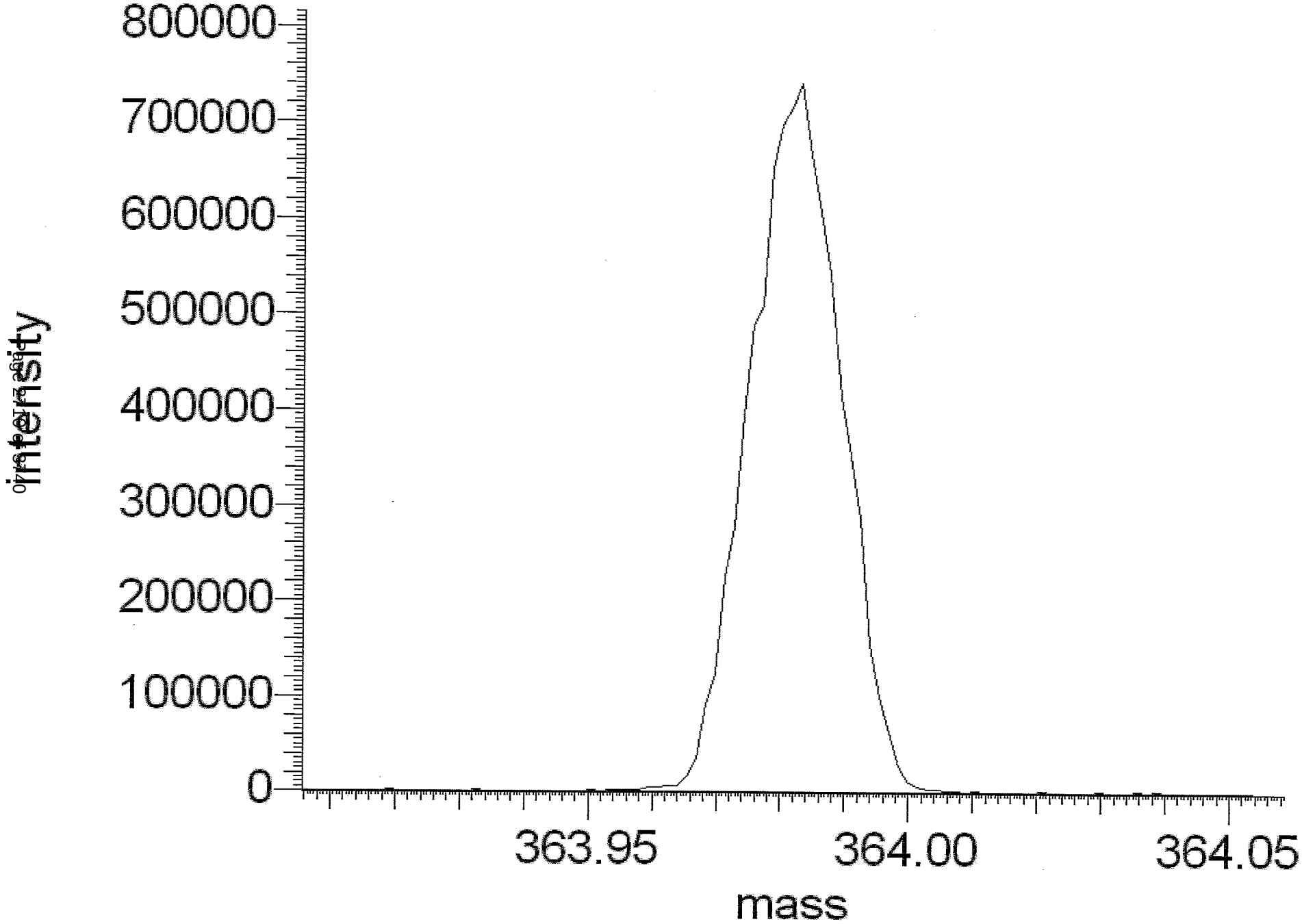
Signature LKM 4-8-15

LockMass: 313.9838 Instr.: DFS-1209
Resolution: 11981 (04/08/15 23:43:22)

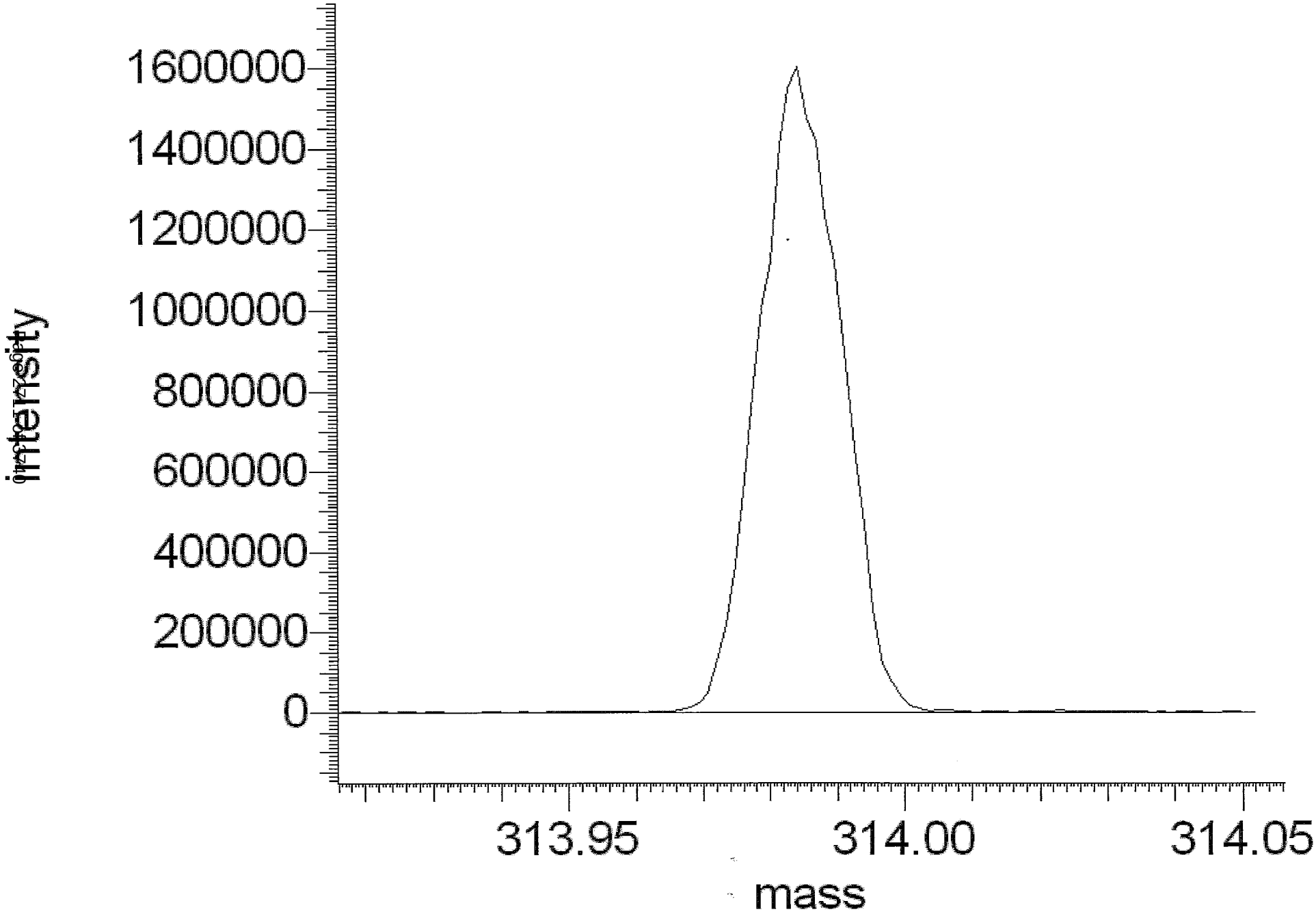



Mass: 351.9802 Instr.: DFS-1209
Resolution: 11463 (04/08/15 23:44:08)
30000
25000
20000
15000
10000
5000
0
intensity
351.95
352.00
352.05
mass

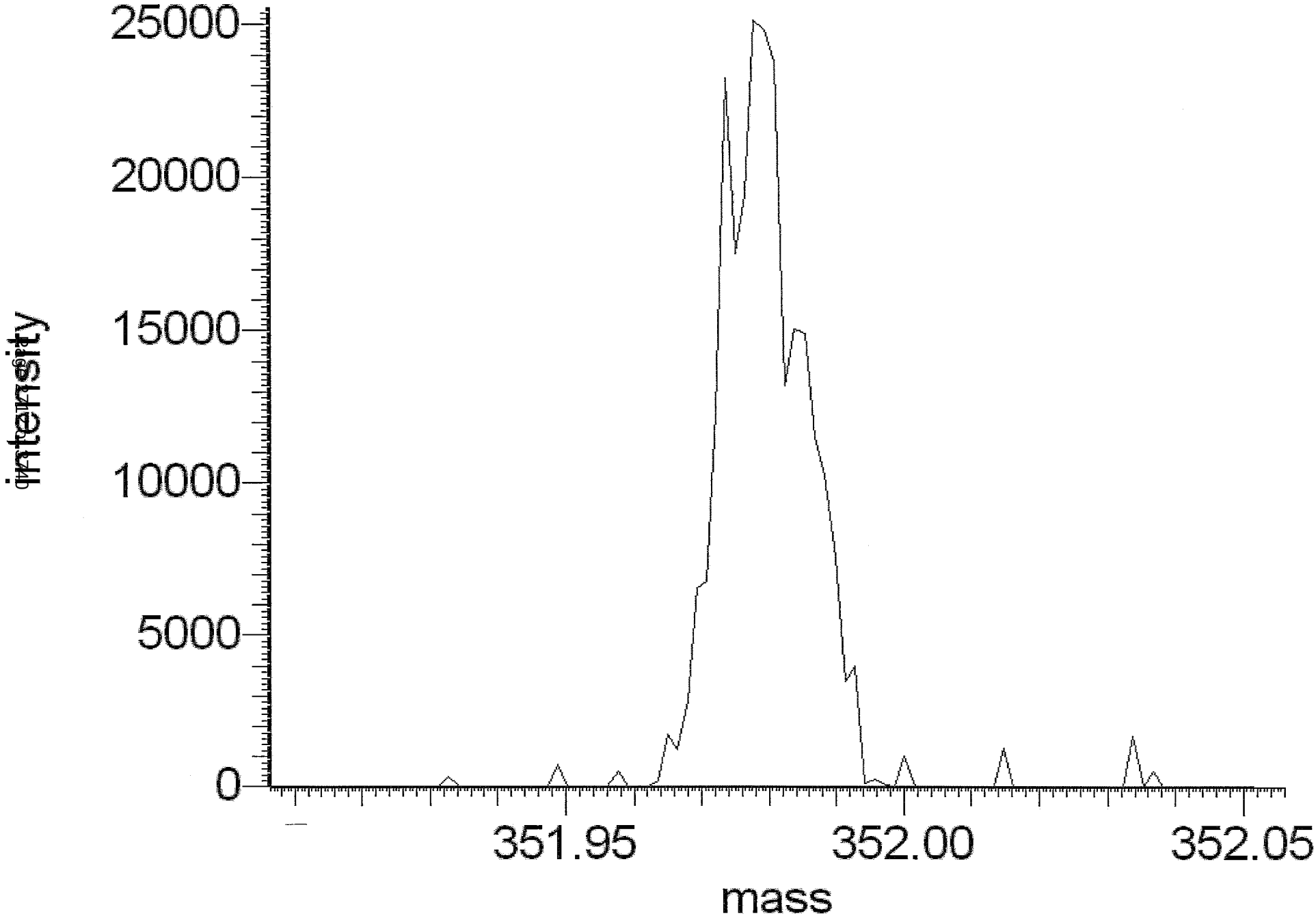
CaliMass: 363.9807 Instr.: DFS-1209
Resolution: 11517 (04/08/15 23:44:11)



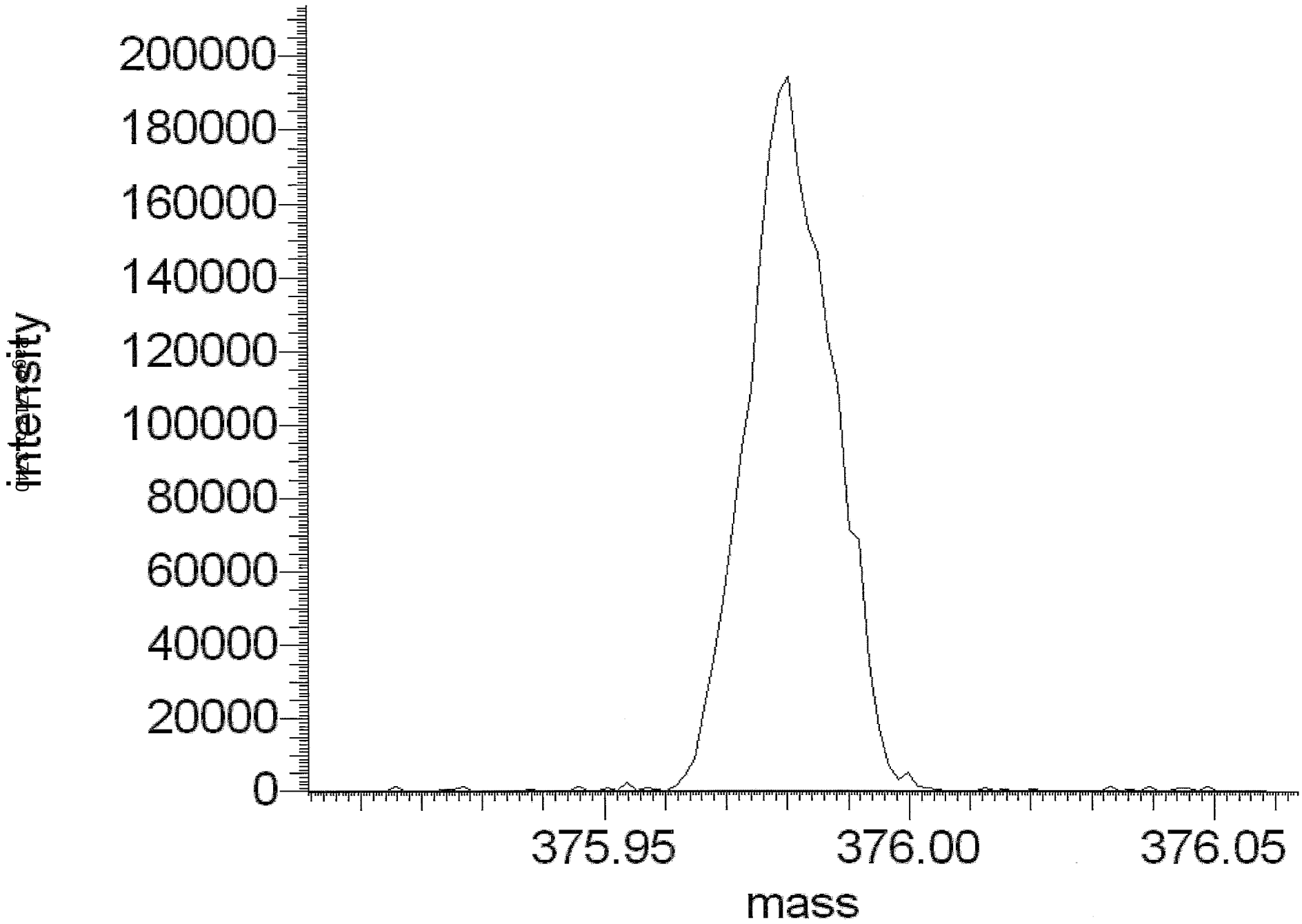
LockMass: 313.9839 Instr.: DFS-1209
Resolution: 11517 (04/08/15 23:44:26)



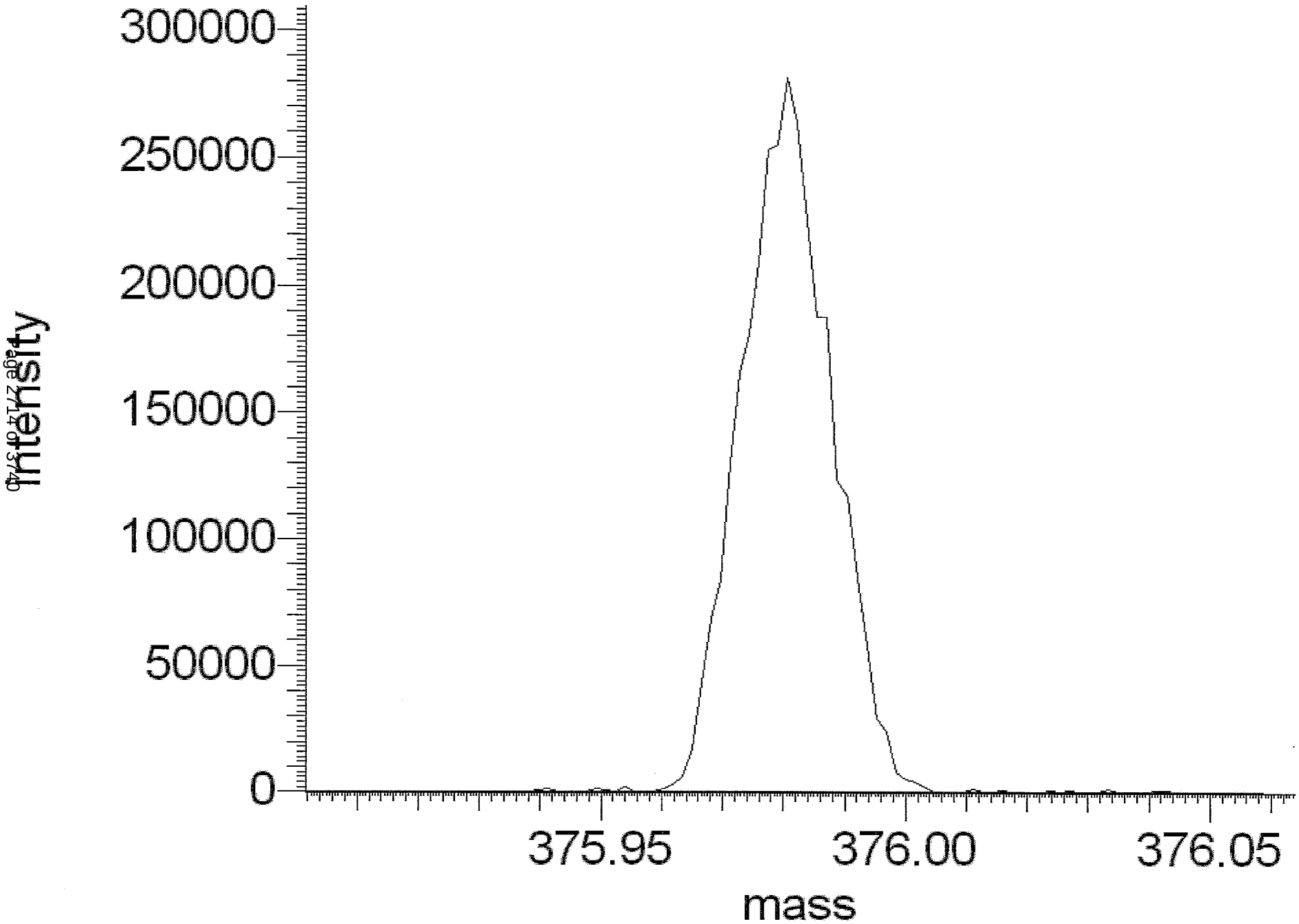
Mass: 351.9802 Instr.: DFS-1209
Resolution: 12835 (04/08/15 23:45:13)



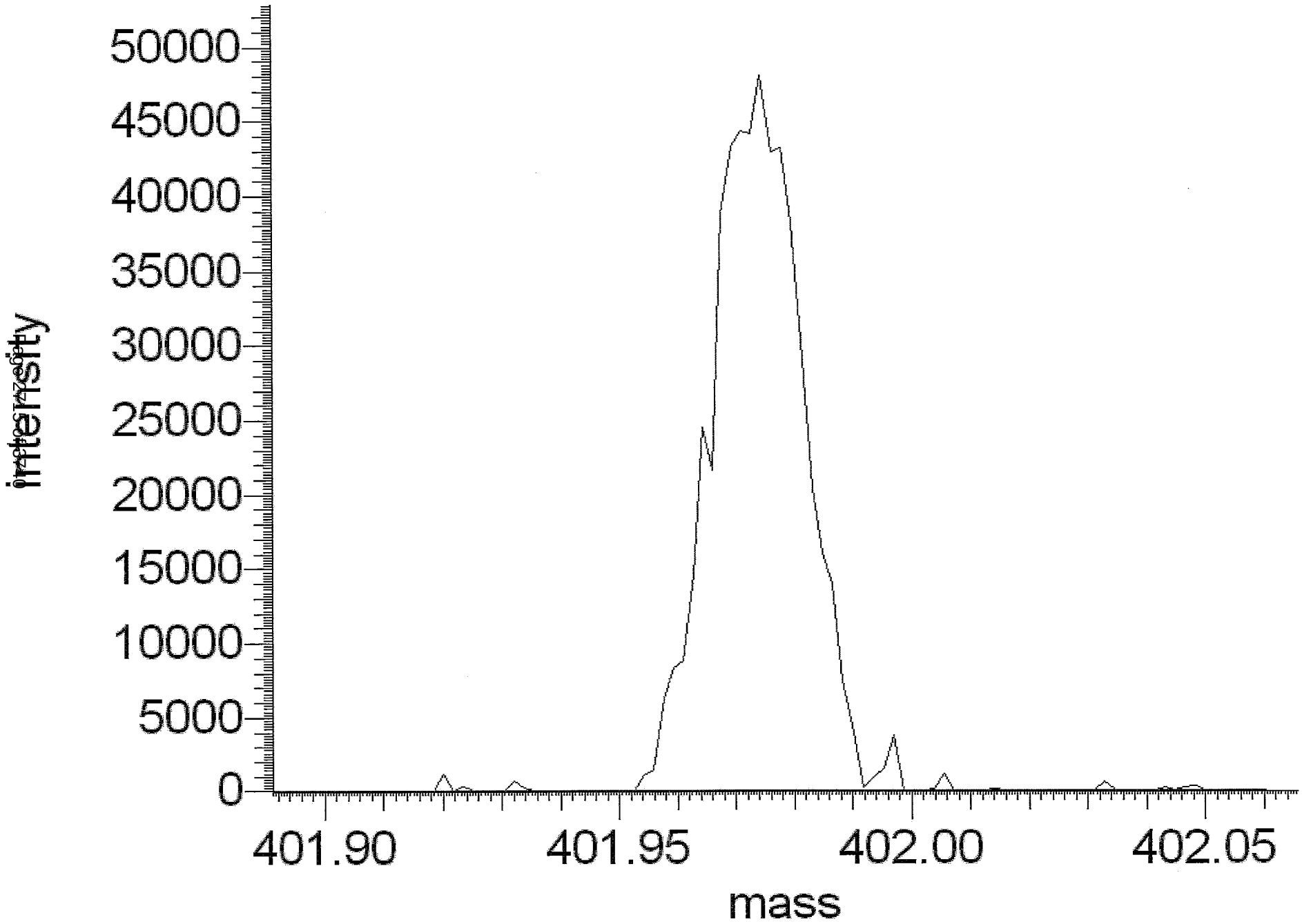
CaliMass: 375.9802 Instr.: DFS-1209
Resolution: 11956 (04/08/15 23:45:16)



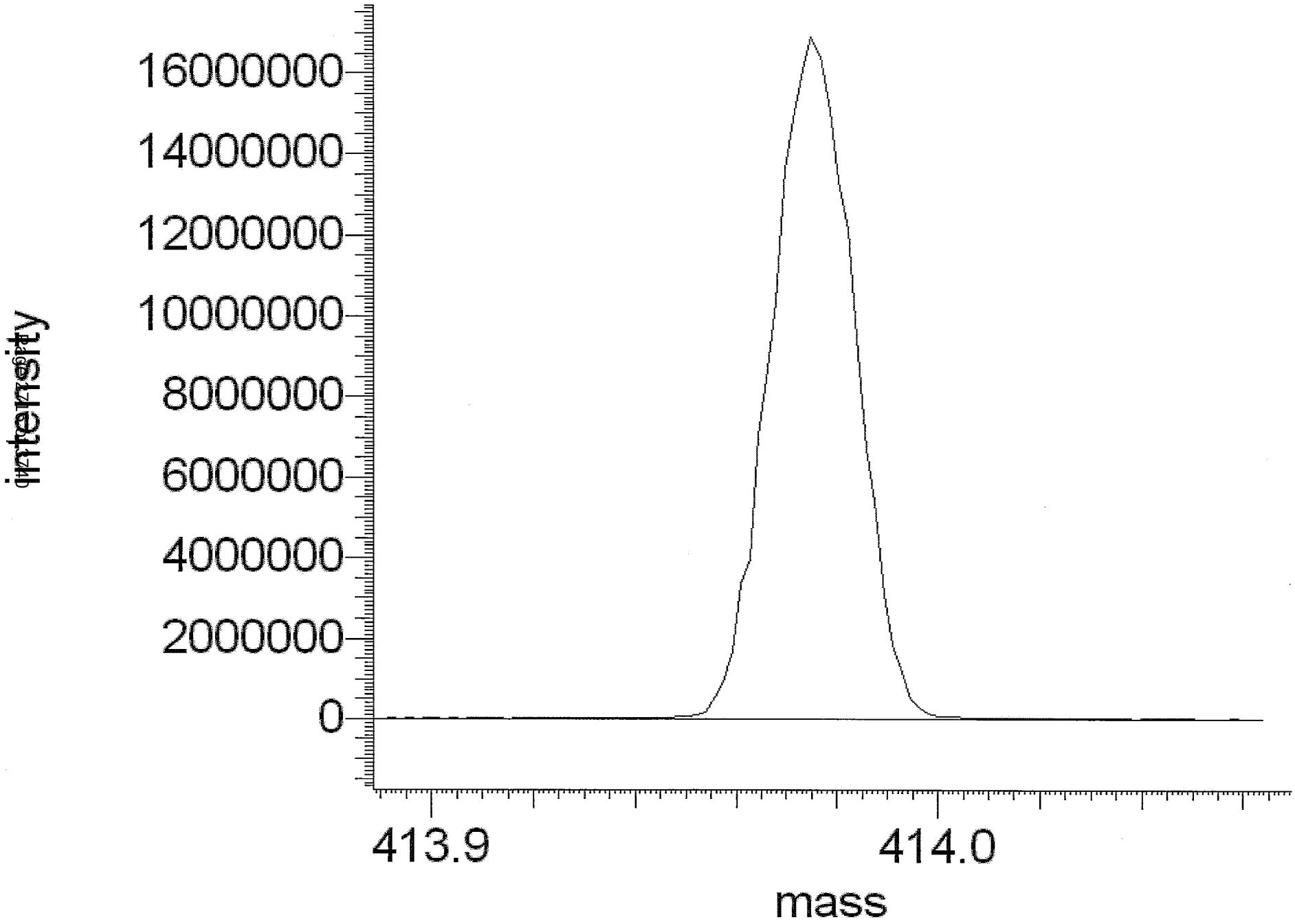
LockMass: 375.9802 Instr.: DFS-1209
Resolution: 11956 (04/08/15 23:45:31)



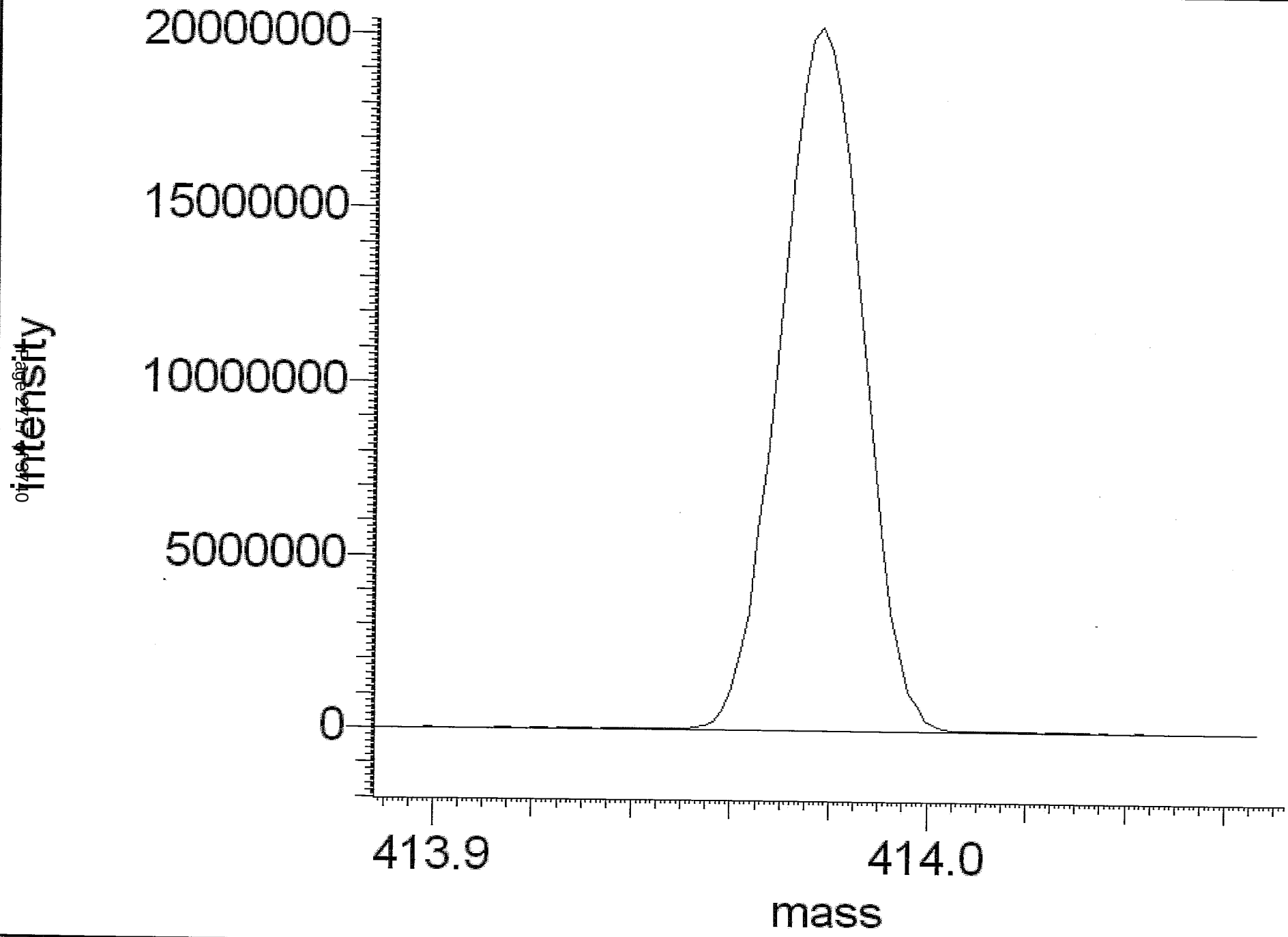
Mass: 401.9770 Instr.: DFS-1209
Resolution: 11178 (04/08/15 23:46:17)



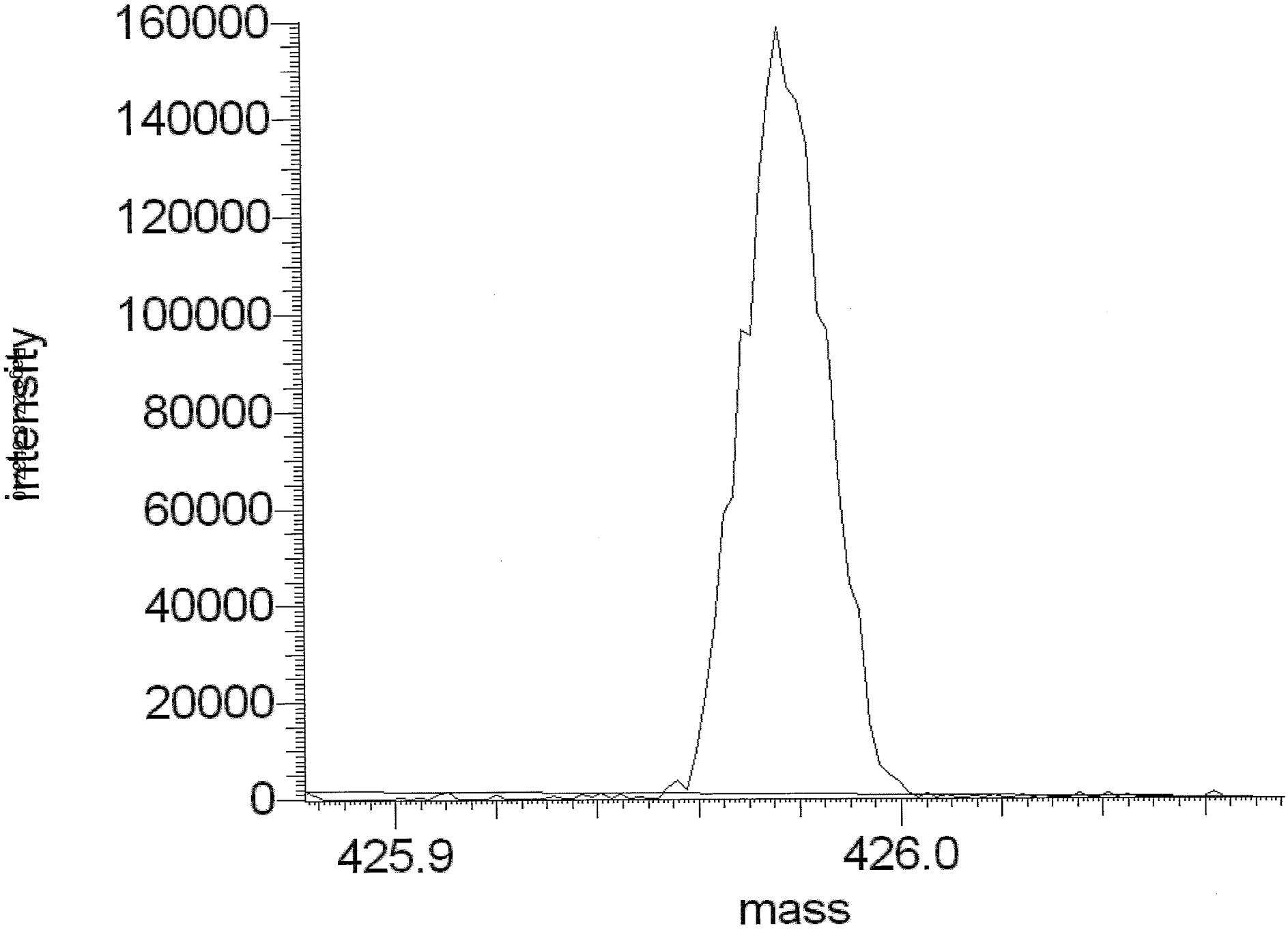
CaliMass: 413.9770 Instr.: DFS-1209
Resolution: 11559 (04/08/15 23:46:20)



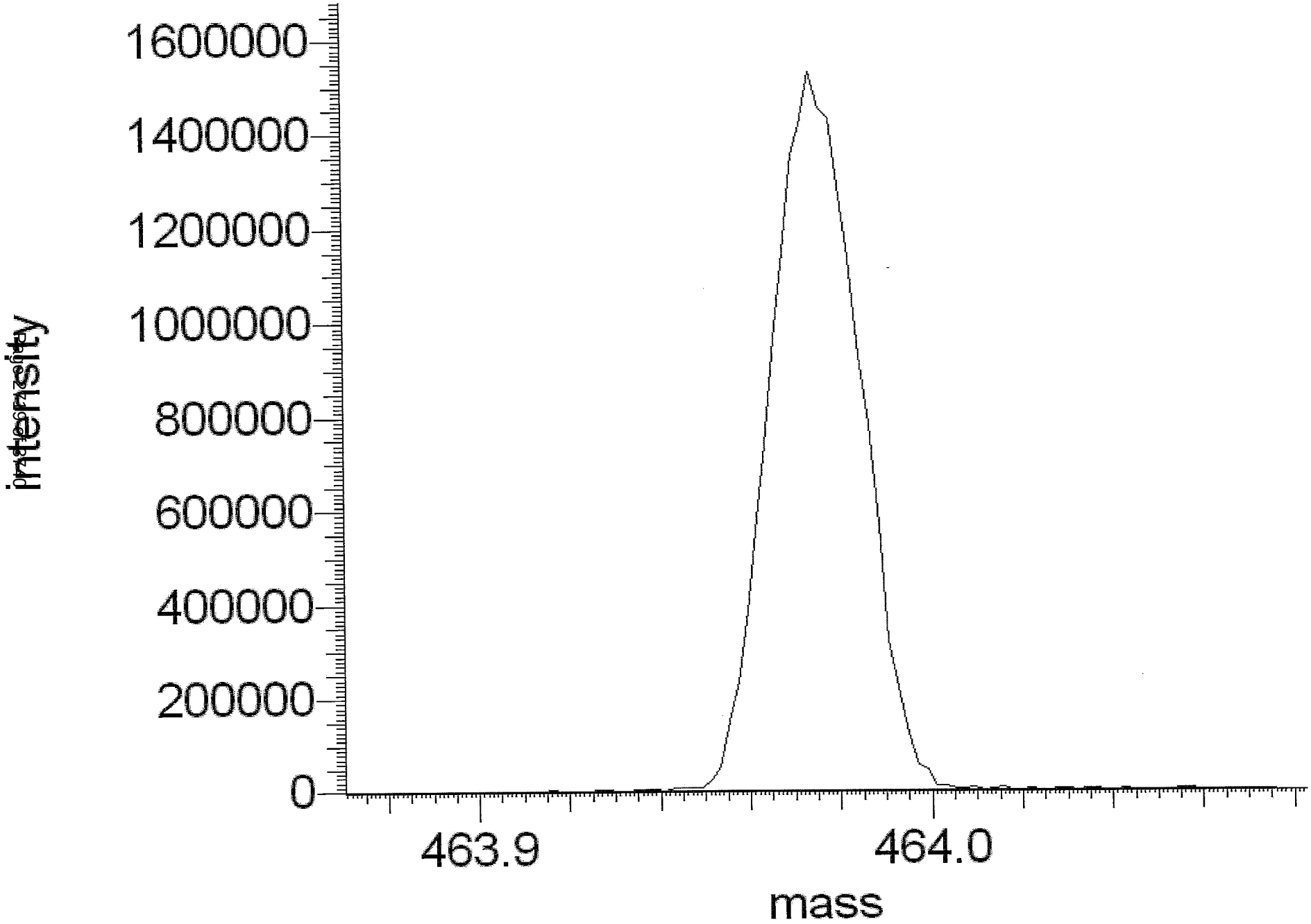
LockMass: 413.9775 Instr.: DFS-1209
Resolution: 11559 (04/08/15 23:46:35)



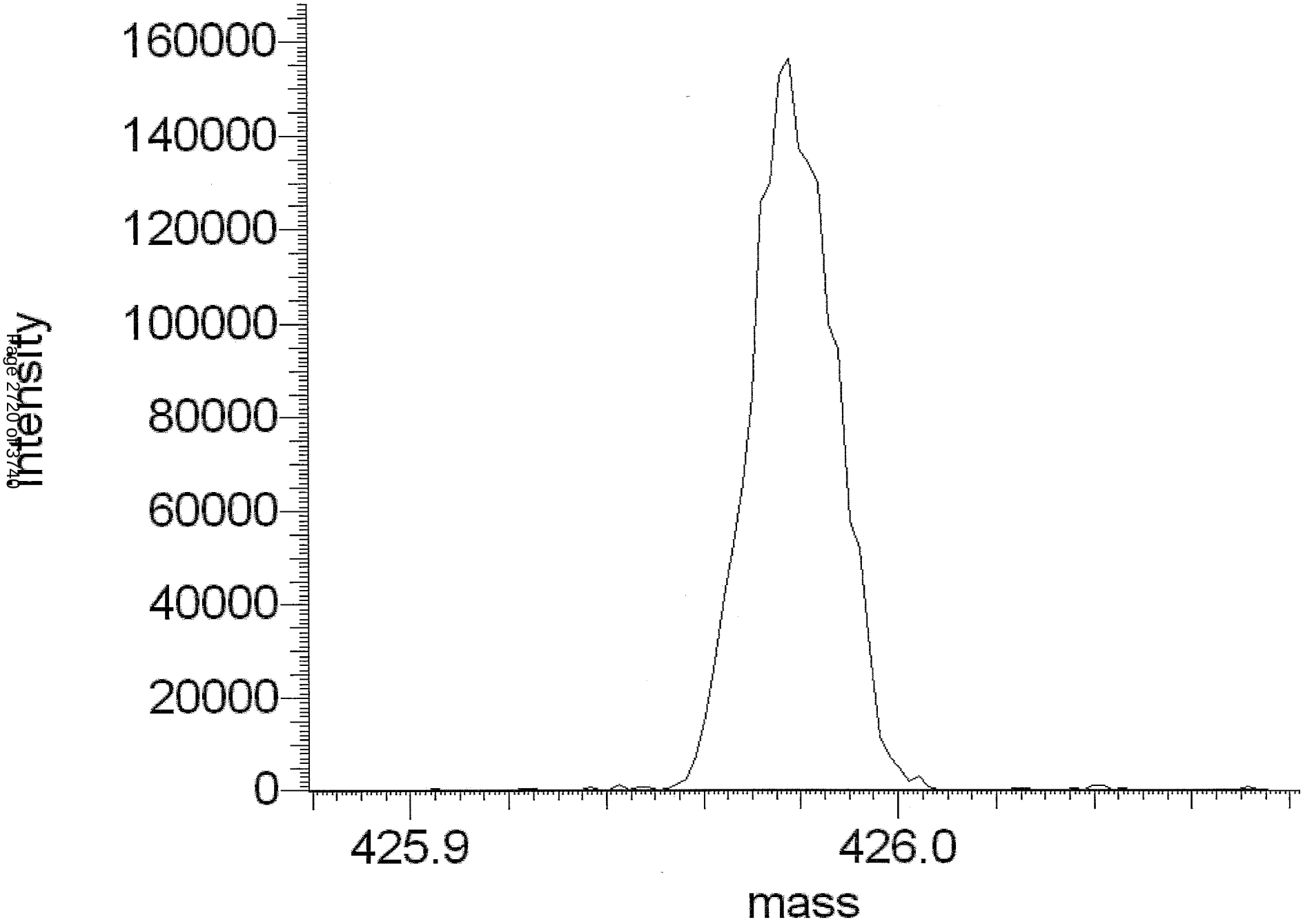
Mass: 425.9770 Instr.: DFS-1209
Resolution: 11065 (04/08/15 23:47:22)

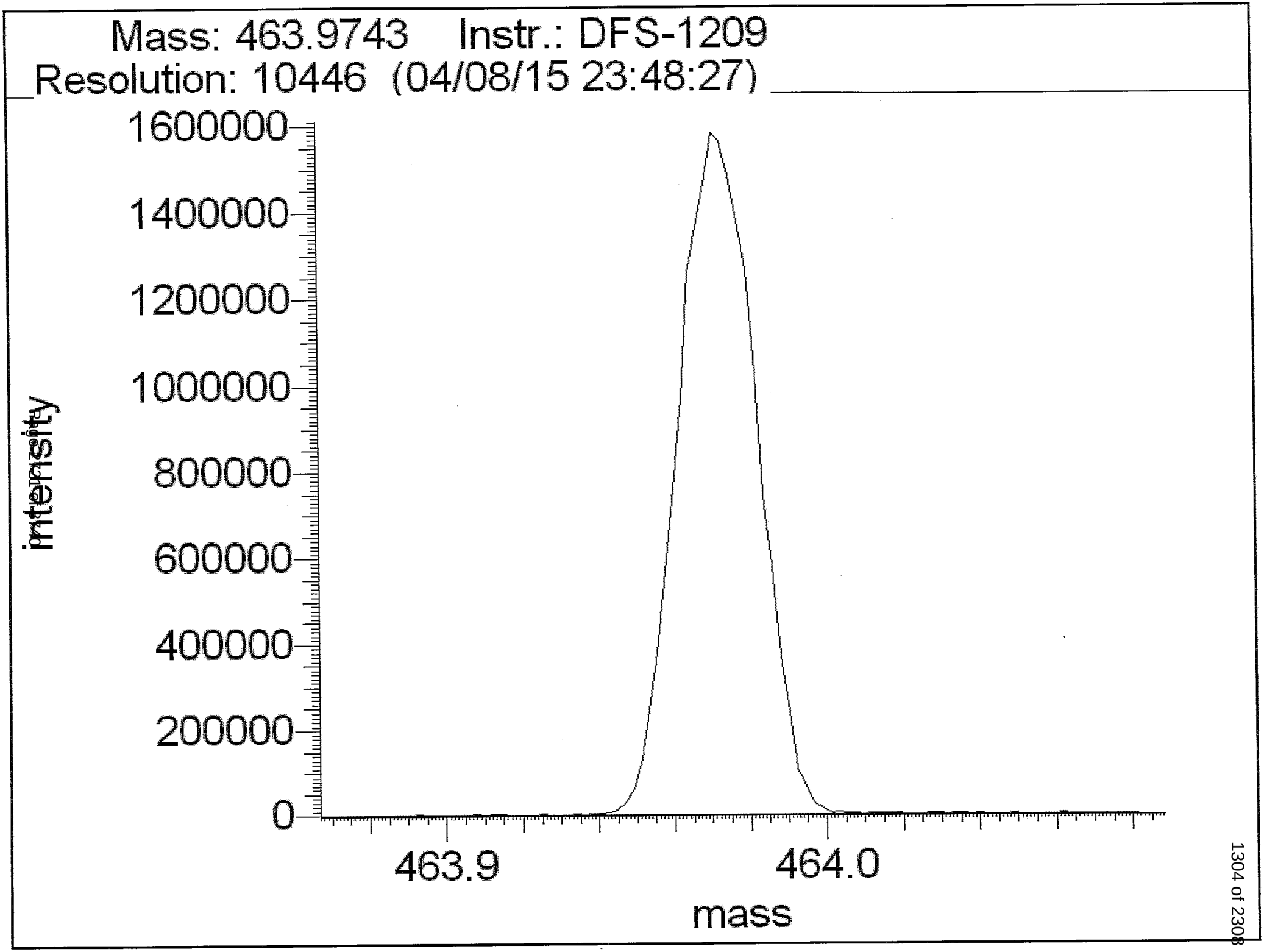


CaliMass: 463.9738 Instr.: DFS-1209
Resolution: 10820 (04/08/15 23:47:25)

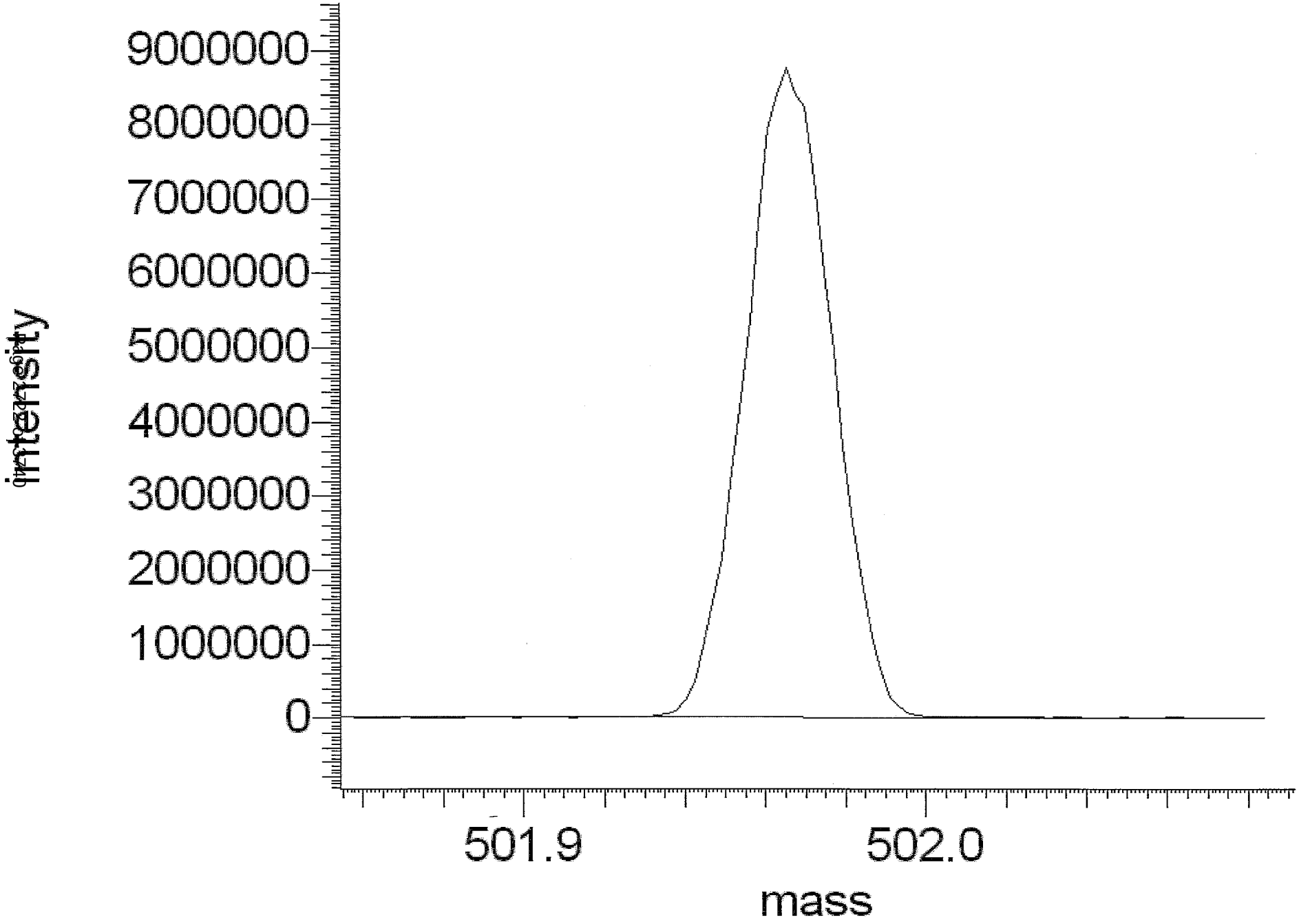


LockMass: 425.9775 Instr.: DFS-1209
Resolution: 10820 (04/08/15 23:47:40)

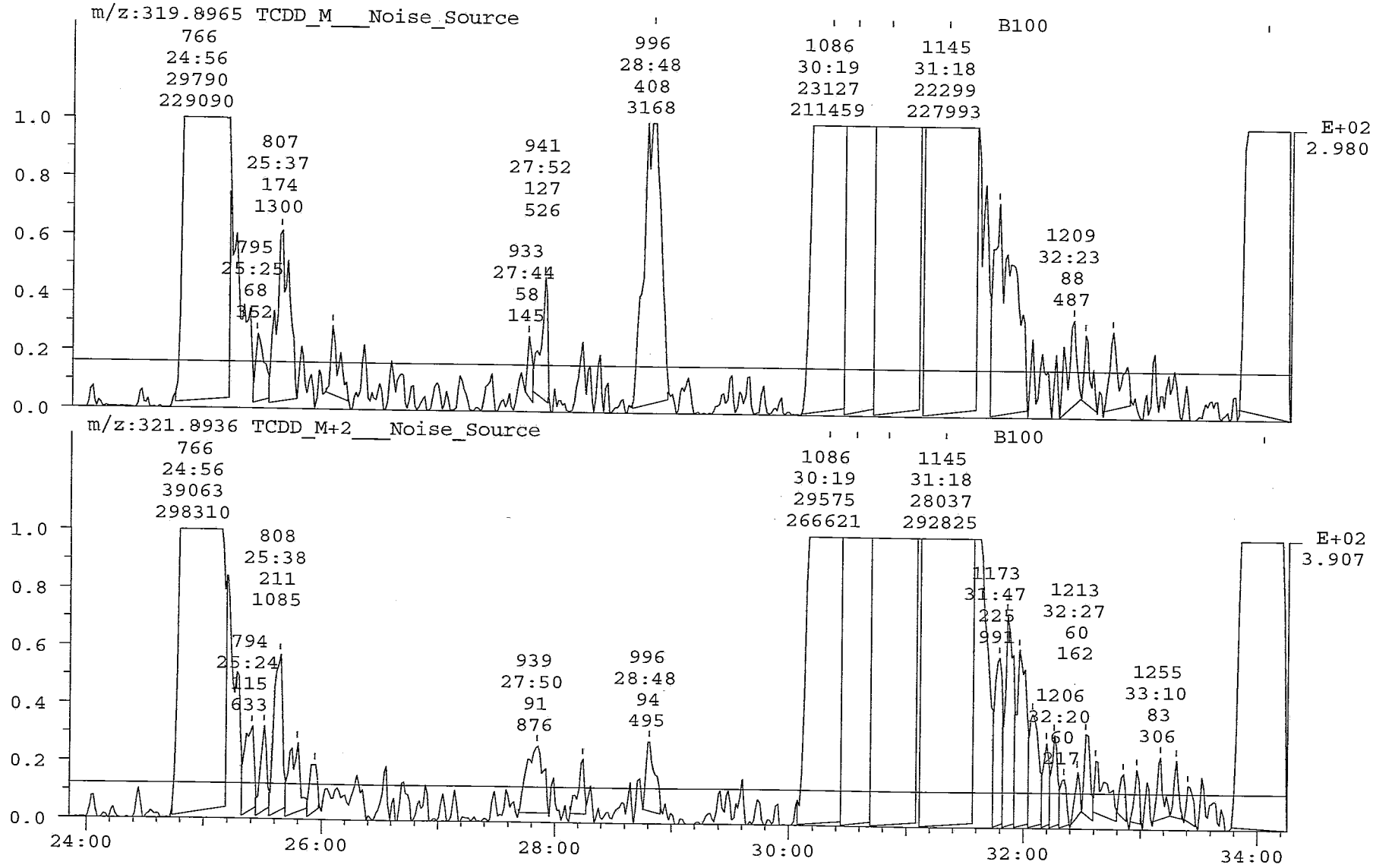



Mass: 463.9743 Instr.: DFS-1209
Resolution: 10446 (04/08/15 23:48:27)
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
intensity
463.9
464.0
mass

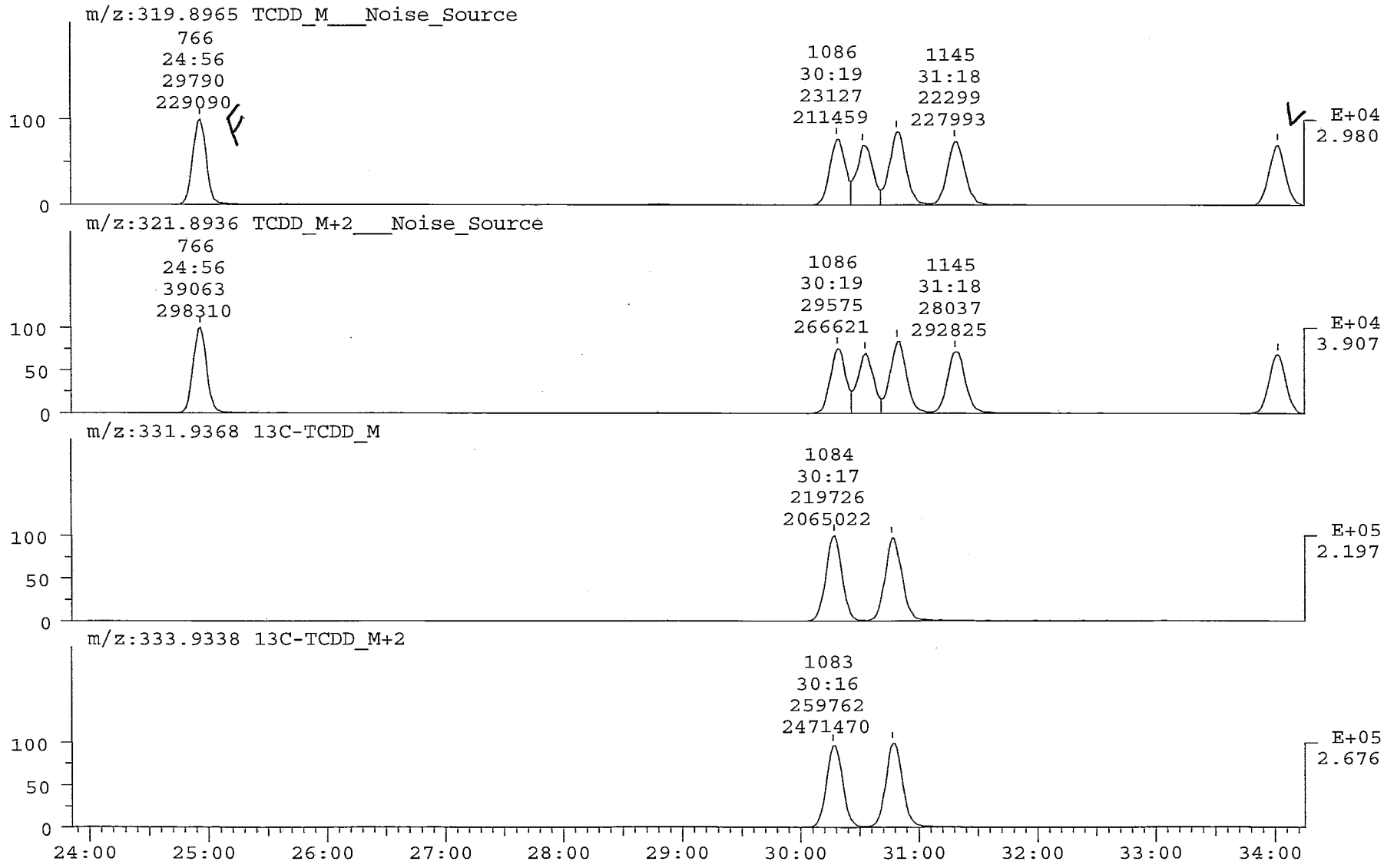
CaliMass: 501.9706 Instr.: DFS-1209
Resolution: 10414 (04/08/15 23:48:30)



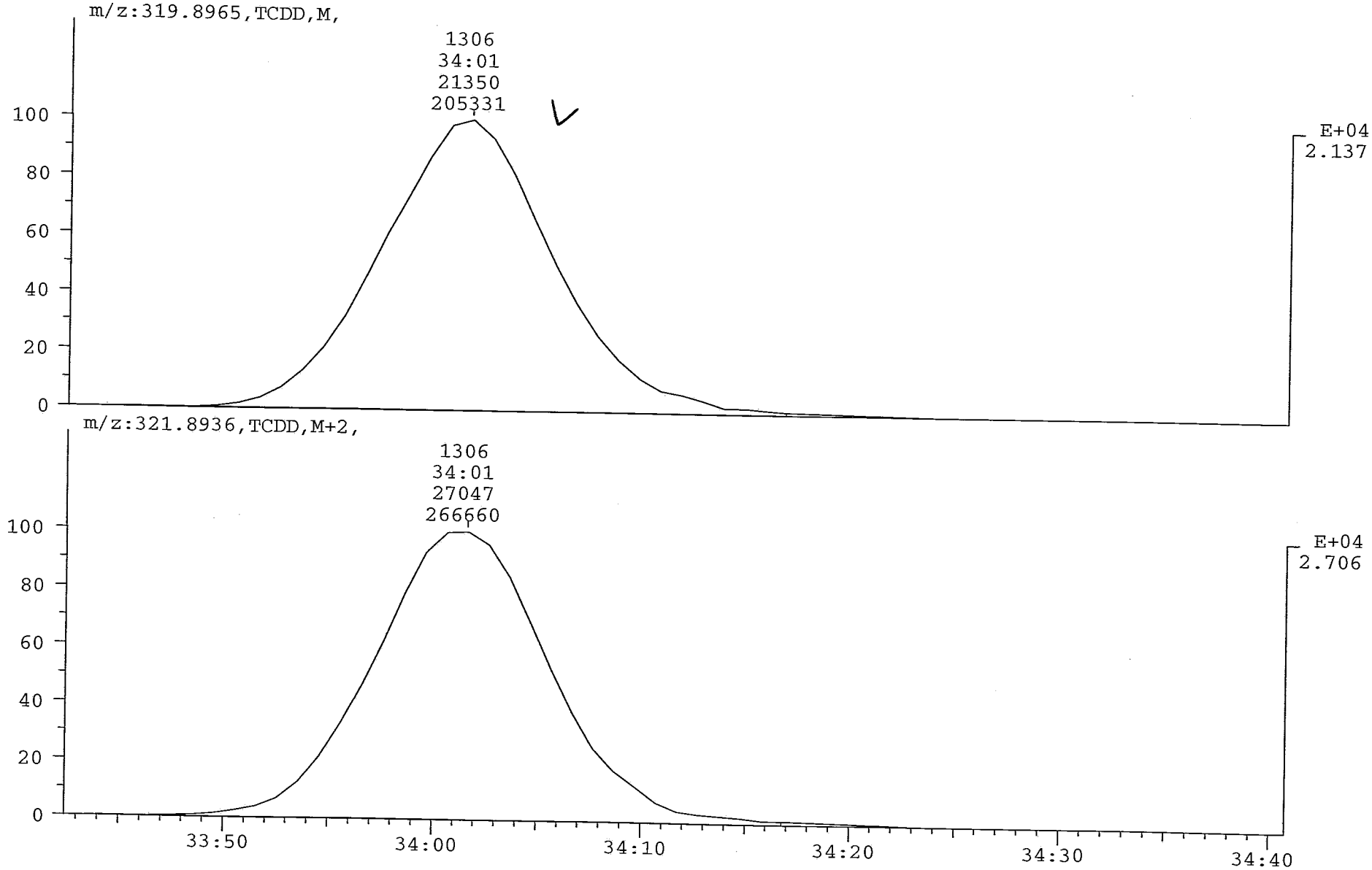
CHRO: d1150408w1 08-Apr-15 Elapse: 12:03.1 1
Samp: WO=4966:04 Meth=F8o Dil=1 Start : 23:55:02 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 702 > 1319 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 1.0
Disp: Height Area



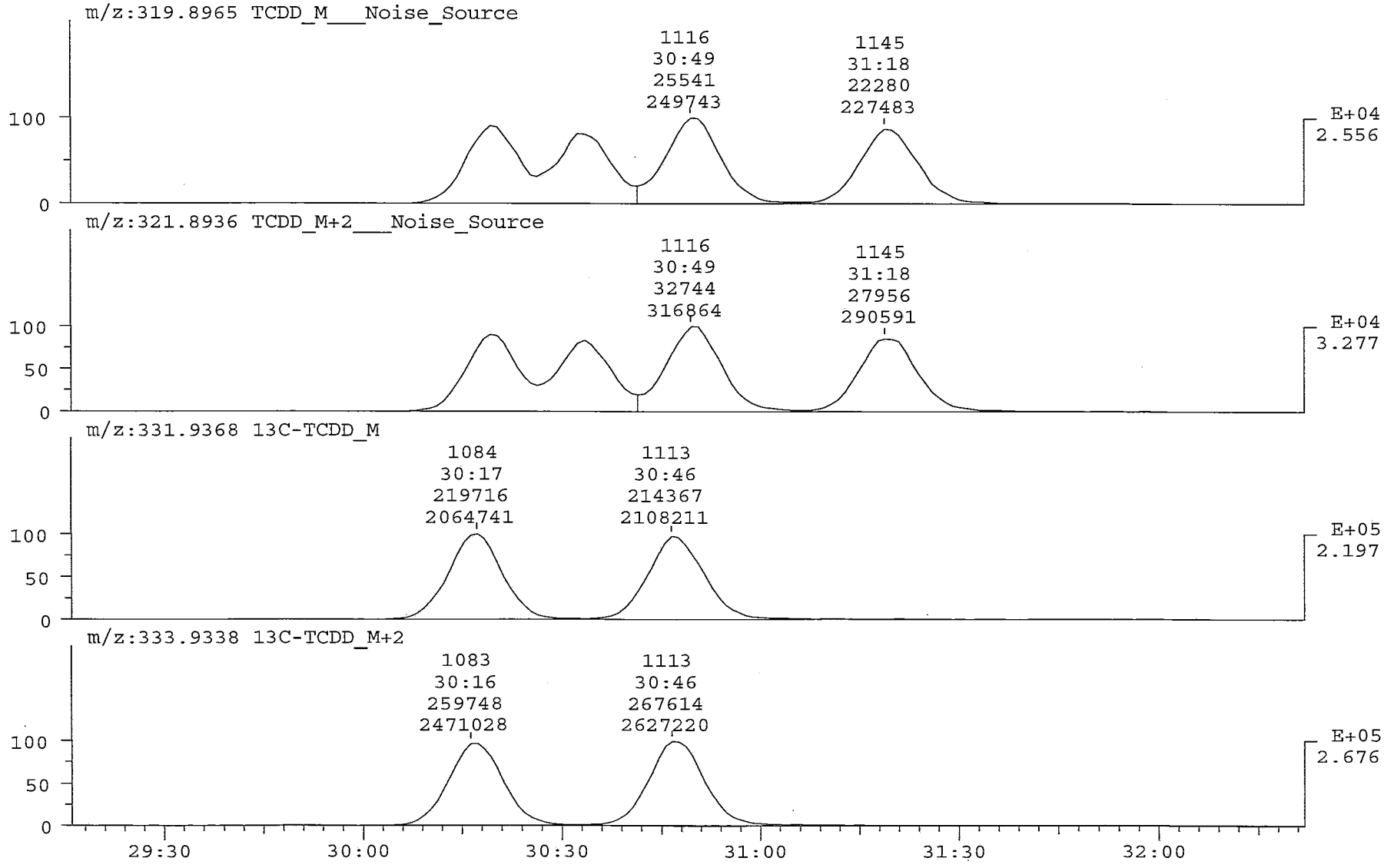
CHRO: d1150408w1 08-Apr-15 Elapse: 12:03.1 1
Samp: WO=4966:04 Meth=F8o Dil=1 Start : 23:55:02 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 702 > 1319 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



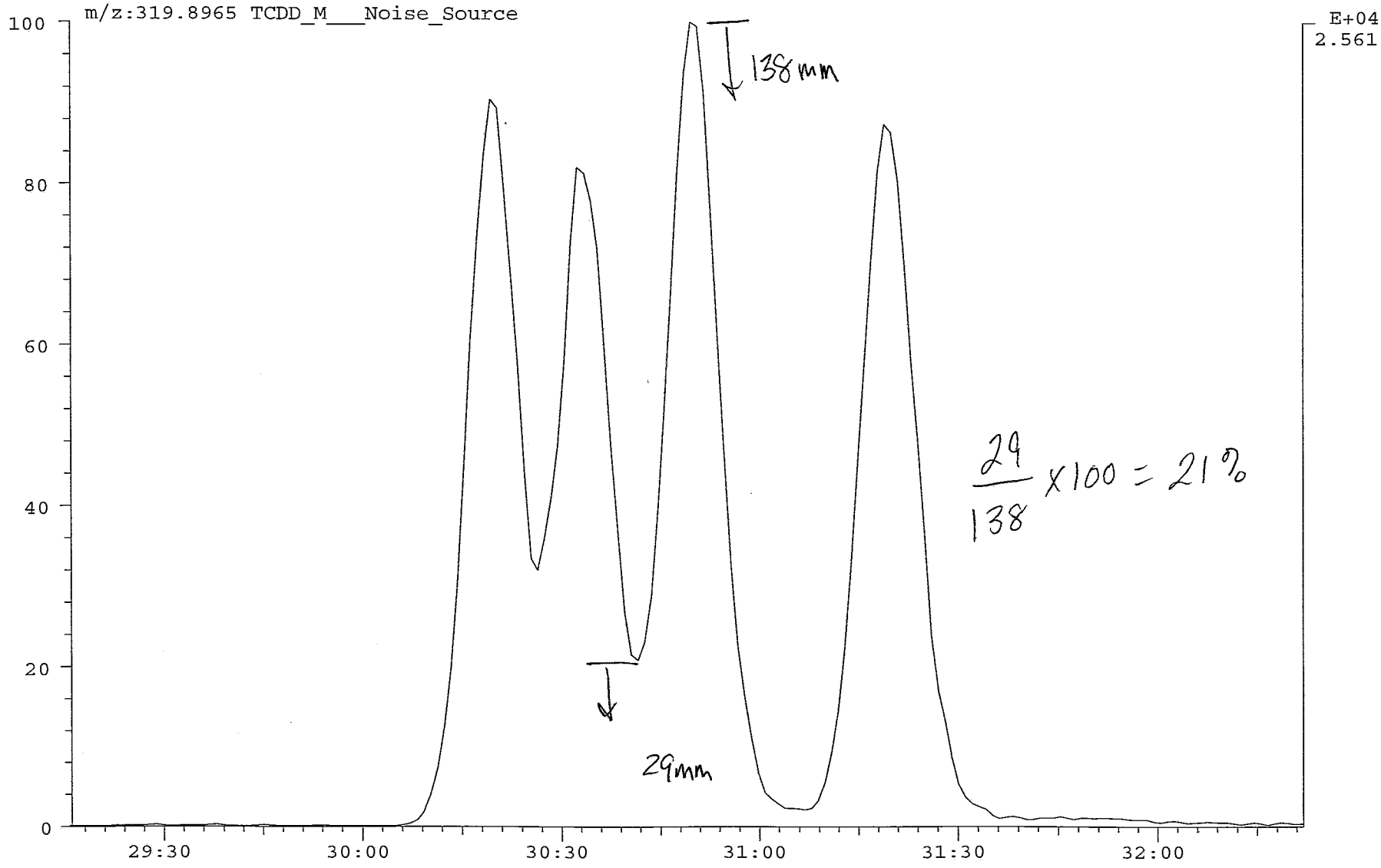
CHRO: d1150408w1 08-Apr-15 Elapse: 54:09 2465
Samp: WO=4966:04 Meth=F8o Dil=1 Start : 23:55:02 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1287 > 1339 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



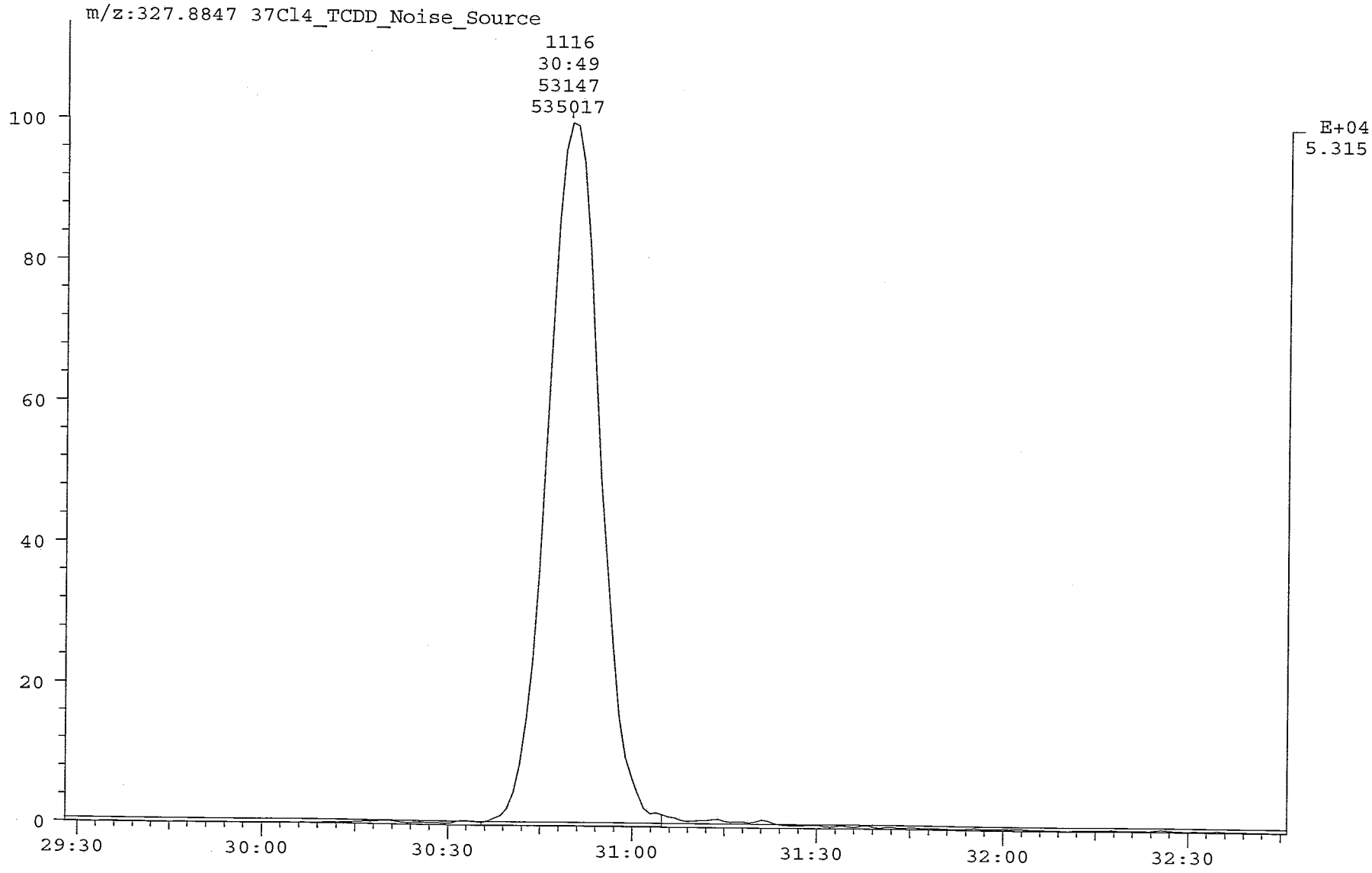
```
CHRO:  d1150408w1                          08-Apr-15  Elapse:  30:48      1115
Samp:  WO=4966:04 Meth=F8o Dil=1                      Start :  23:55:02   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1023 > 1207      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



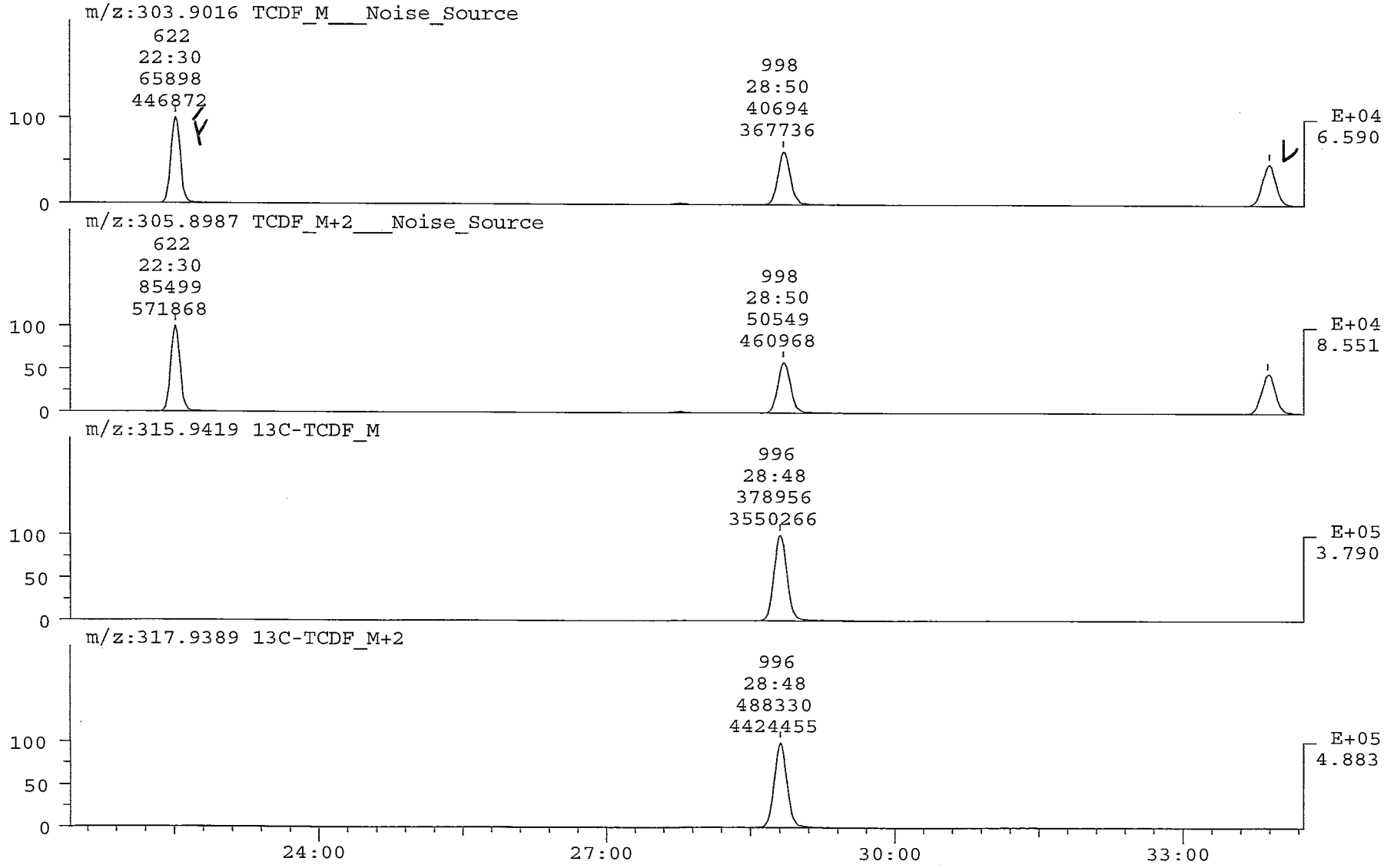
CHRO: d1150408w1 08-Apr-15 Elapse: 30:48 1115
Samp: WO=4966:04 Meth=F8o Dil=1 Start : 23:55:02 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1023 > 1207 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



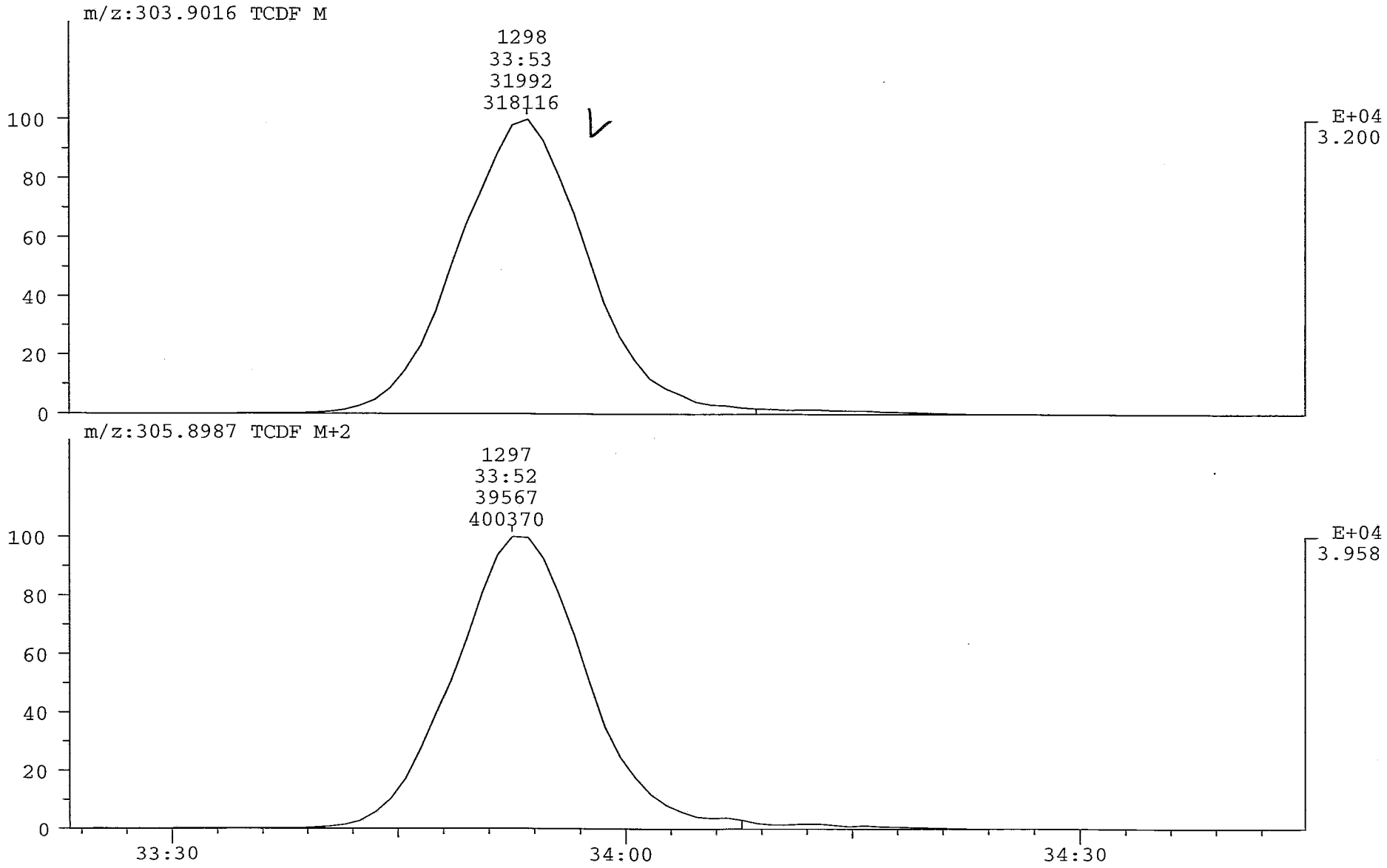
CHRO: d1150408w1 08-Apr-15 Elapse: 31:03 1130
Samp: WO=4966:04 Meth=F8o Dil=1 Start : 23:55:02 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1035 > 1231 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



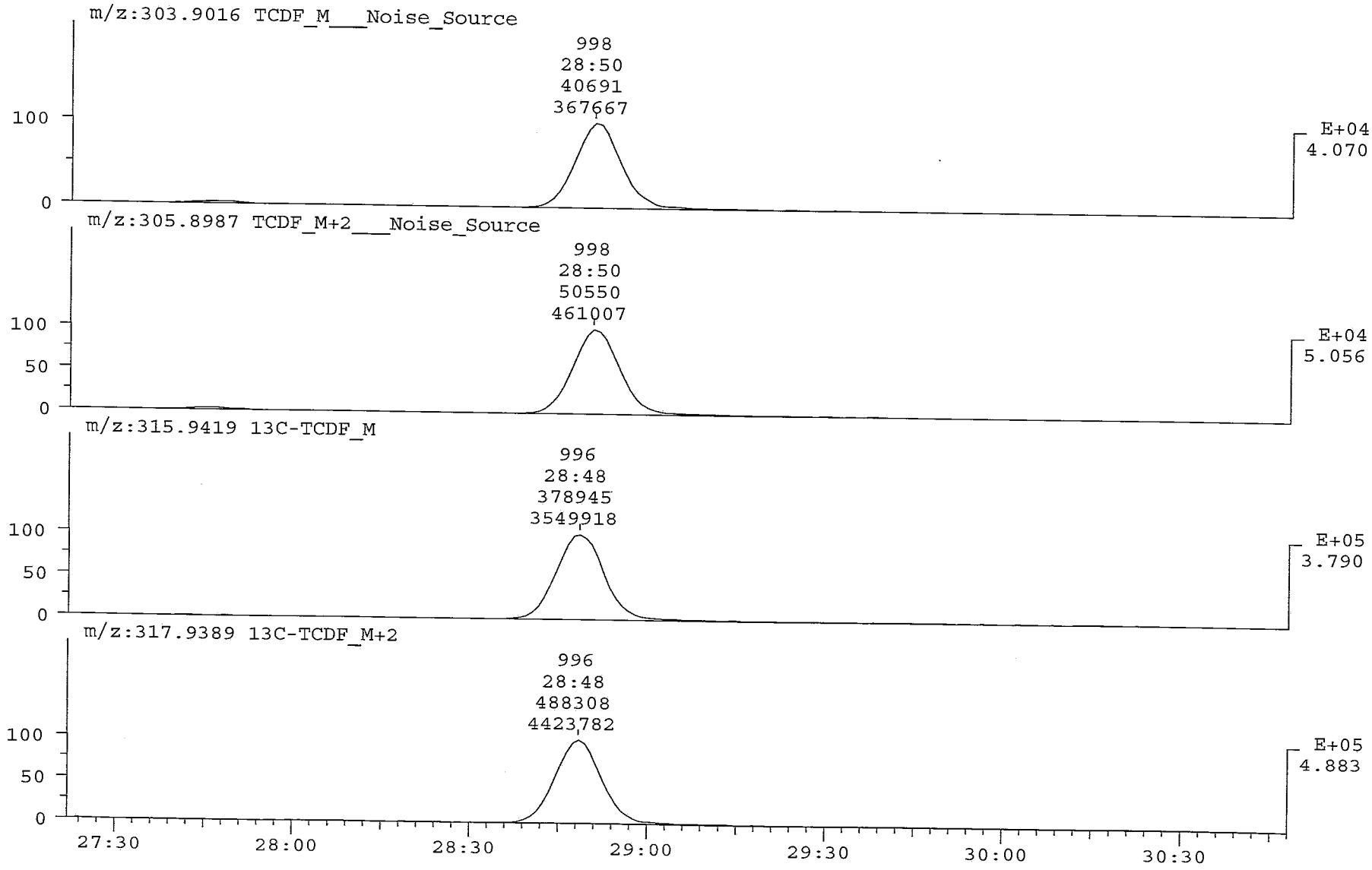
CHRO: d1150408w1 08-Apr-15 Elapse: 31:03 1130
Samp: WO=4966:04 Meth=F8o Dil=1 Start : 23:55:02 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 557 > 1319 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



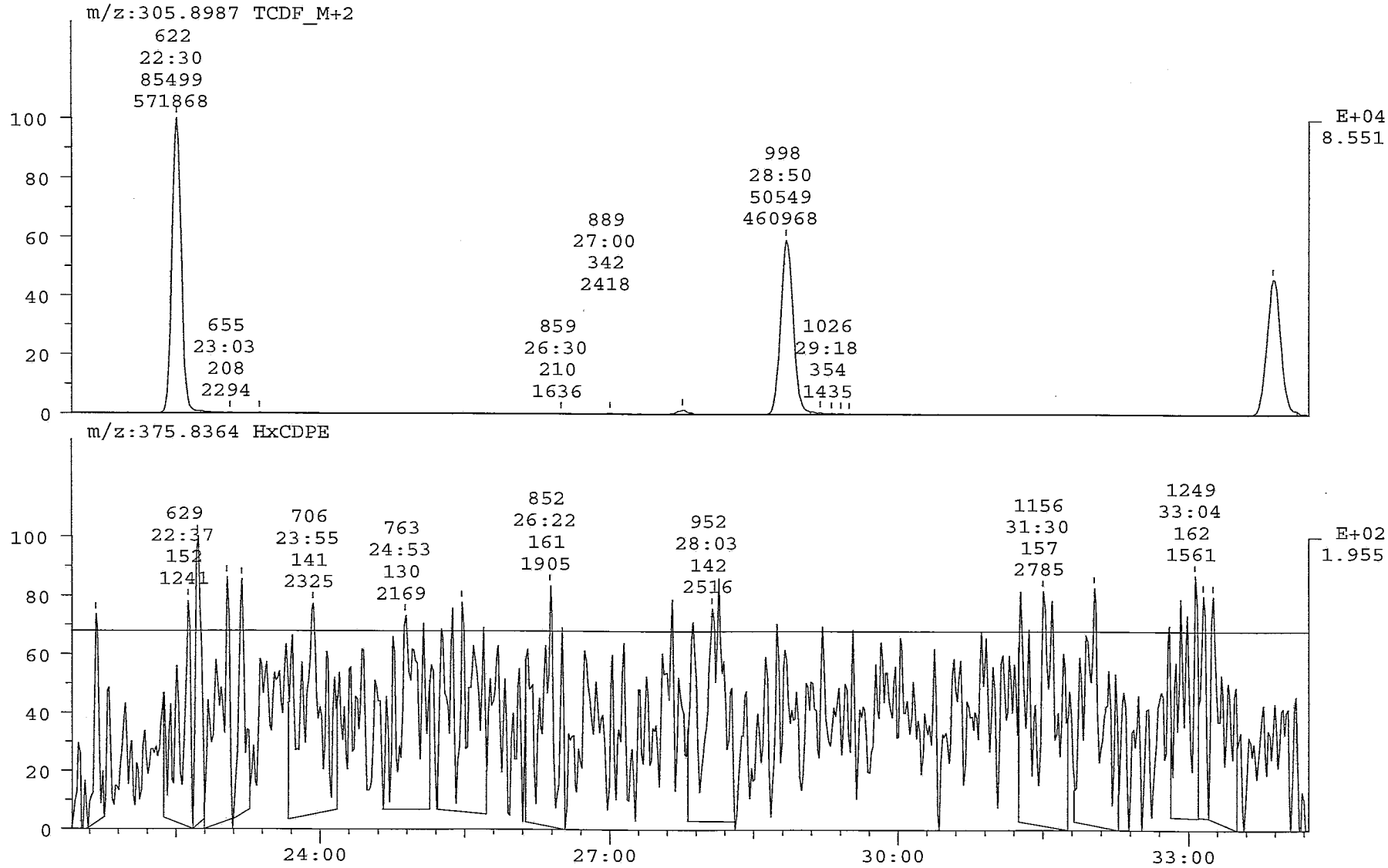
```
CHRO:  d1150408w1                          08-Apr-15  Elapse:  54:09      2465
Samp:  WO=4966:04 Meth=F8o Dil=1                      Start :  23:55:02   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1268 > 1343      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



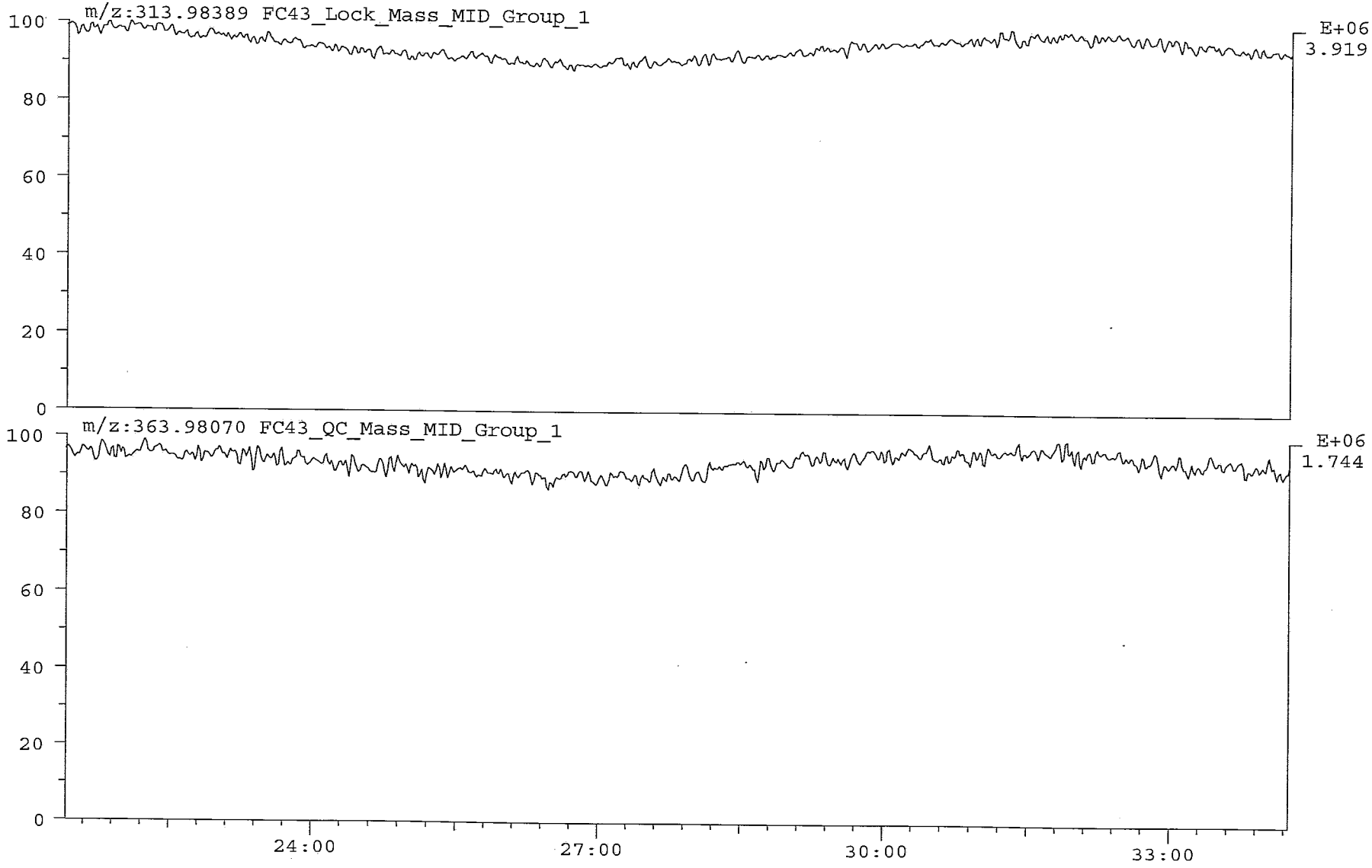
CHRO: d1150408w1 08-Apr-15 Elapse: 29:01 1009
Samp: WO=4966:04 Meth=F8o Dil=1 Start : 23:55:02 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 911 > 1114 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



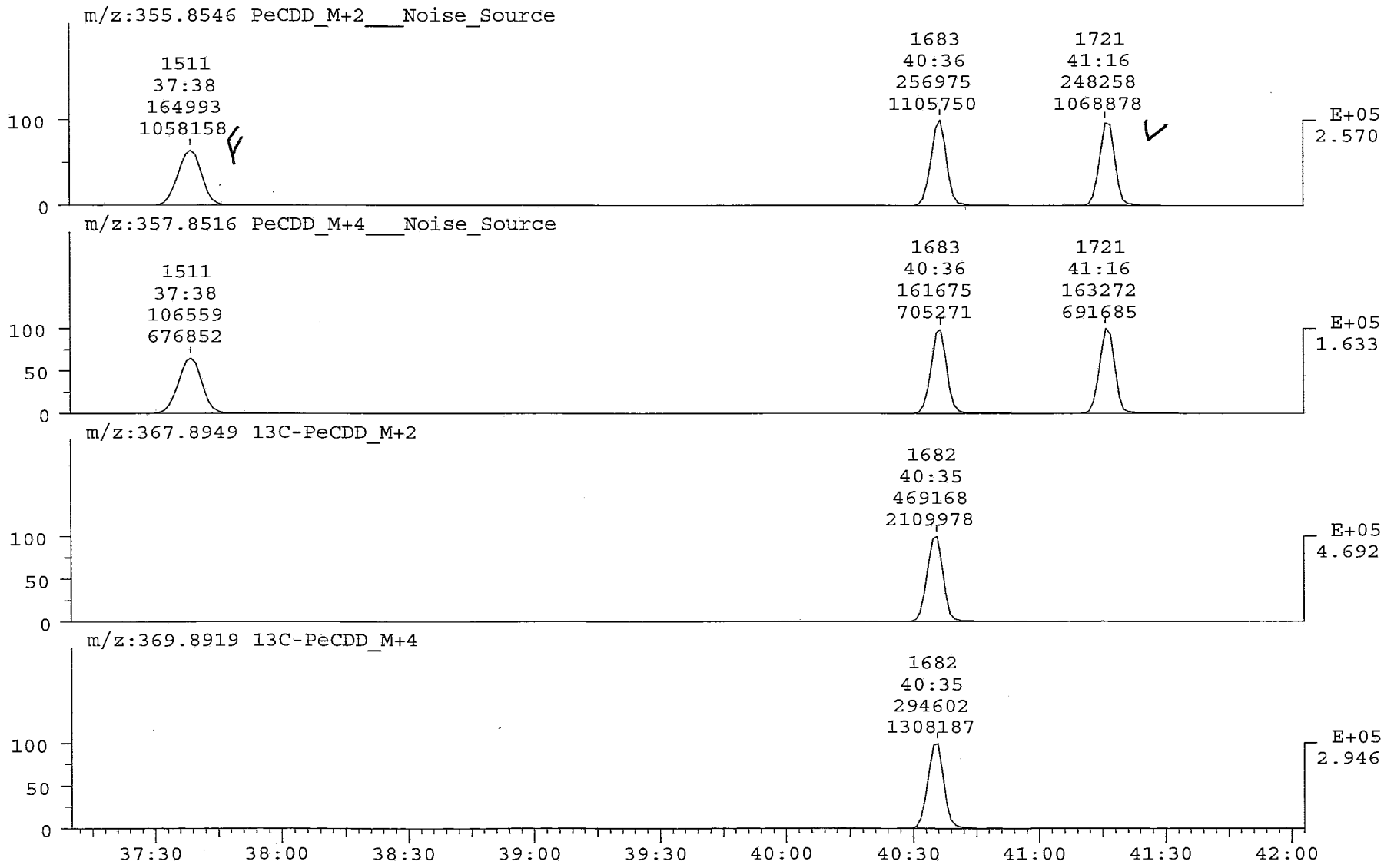
CHRO: d1150408w1 08-Apr-15 Elapse: 29:01 1009
Samp: WO=4966:04 Meth=F8o Dil=1 Start : 23:55:02 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 557 > 1319 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1150408w1 08-Apr-15 Elapse: 29:01 1009
Samp: WO=4966:04 Meth=F8o Dil=1 Start : 23:55:02 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 557 > 1319 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



```
CHRO:  d1150408w1                          08-Apr-15  Elapse:  29:01      1009
Samp:  WO=4966:04 Meth=F8o Dil=1                      Start :  23:55:02   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1483 > 1766      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```

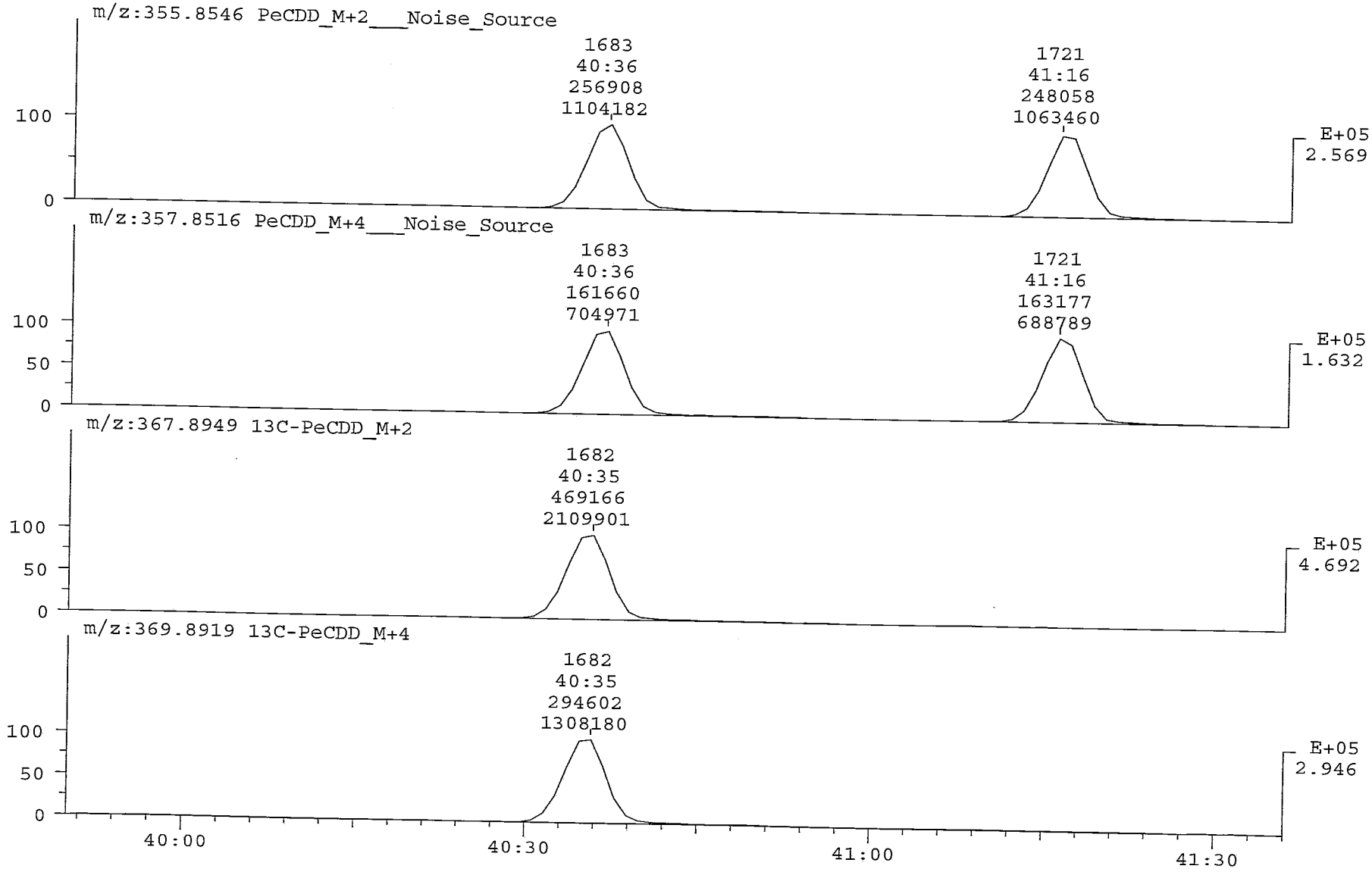


CHRO: d1150408w1
Samp: WO=4966:04 Meth=F8o Dil=1
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR
Oper: LKM
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

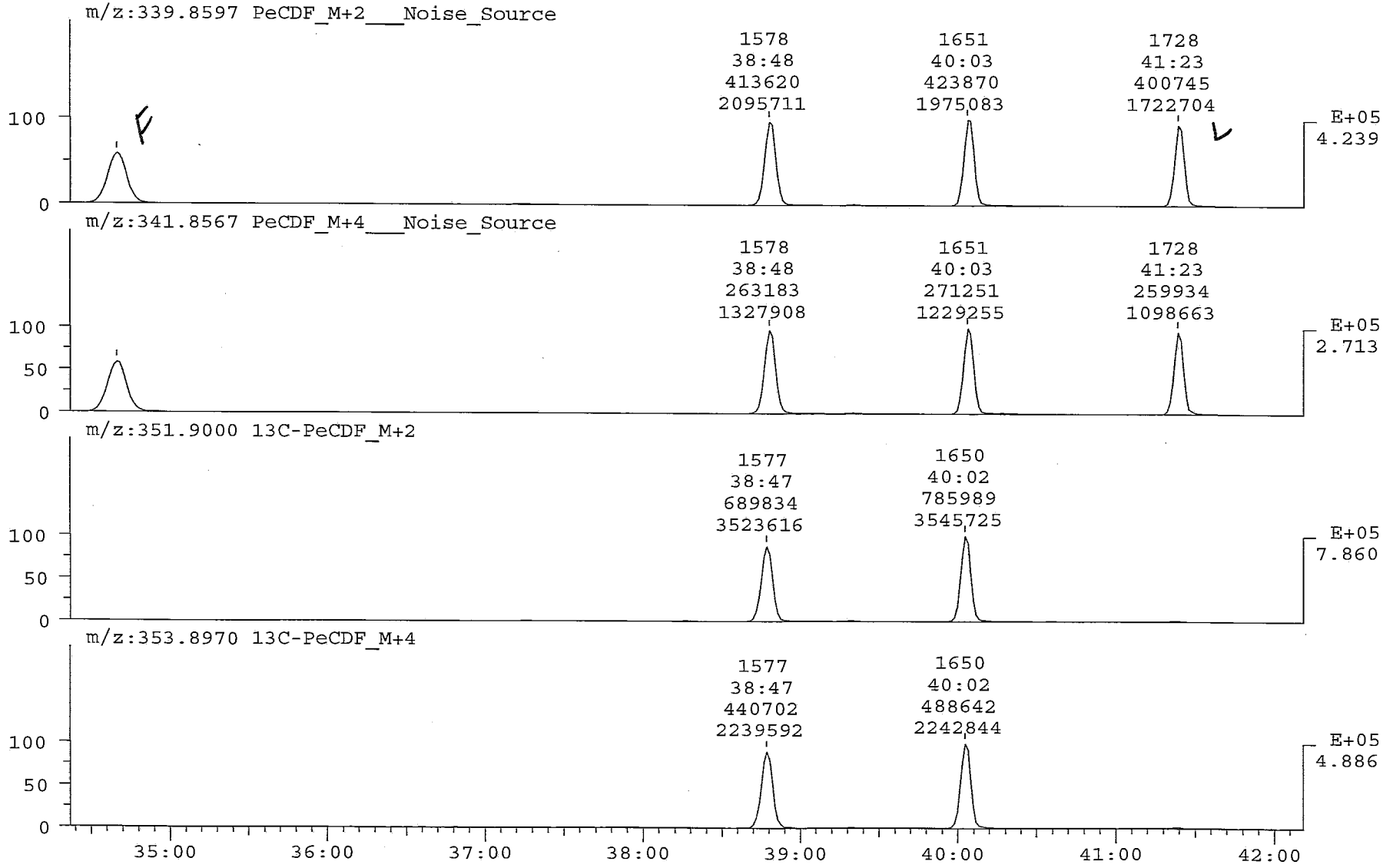
Label wndw: 1638 > 1740
Baseline : 100, 3

08-Apr-15

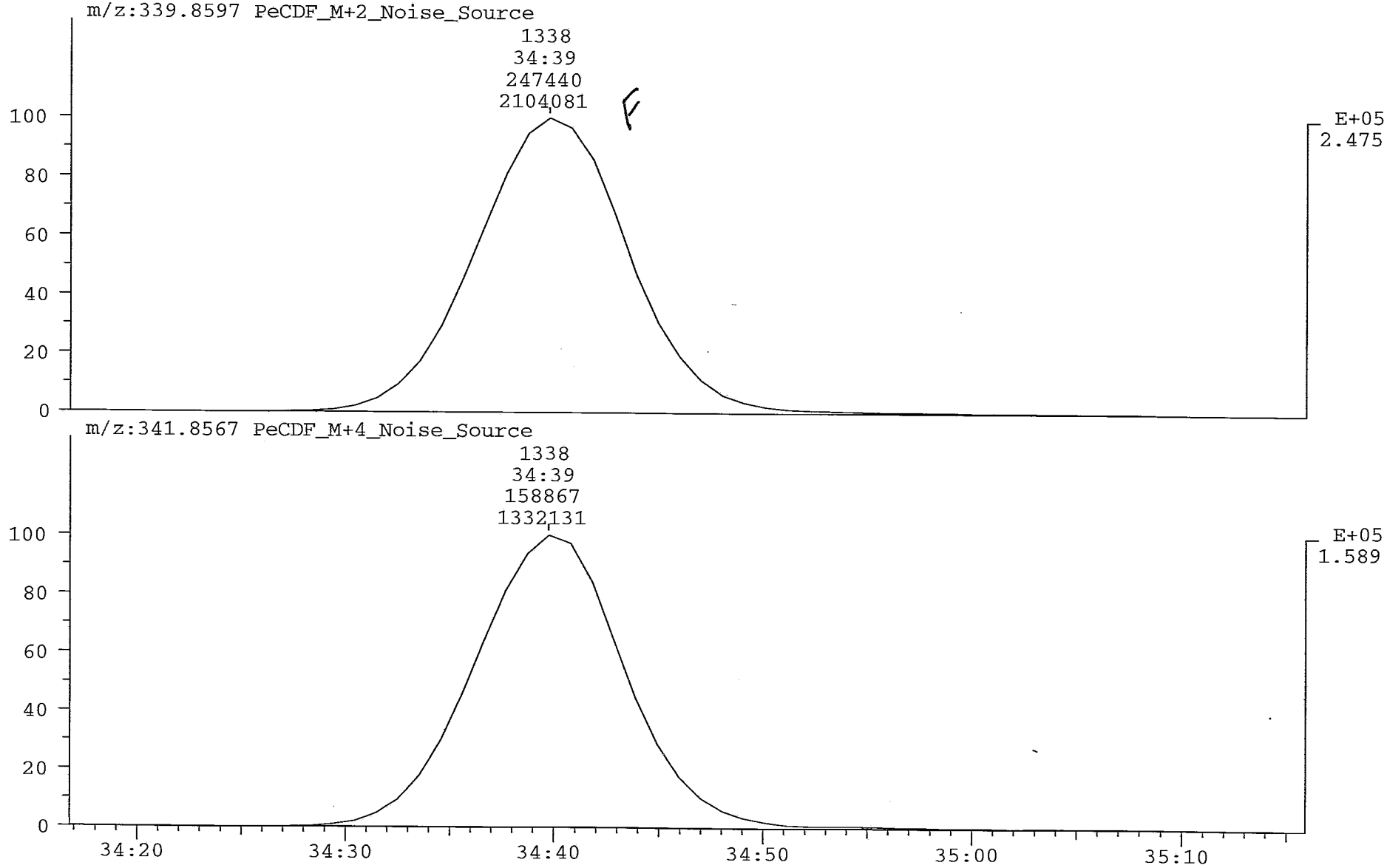
Elapse: 40:39 1686
Start : 23:55:02 2641
Study : VER/WIN
Inlet : LC
Masses: 303 > 514
Label : 2, 5.0



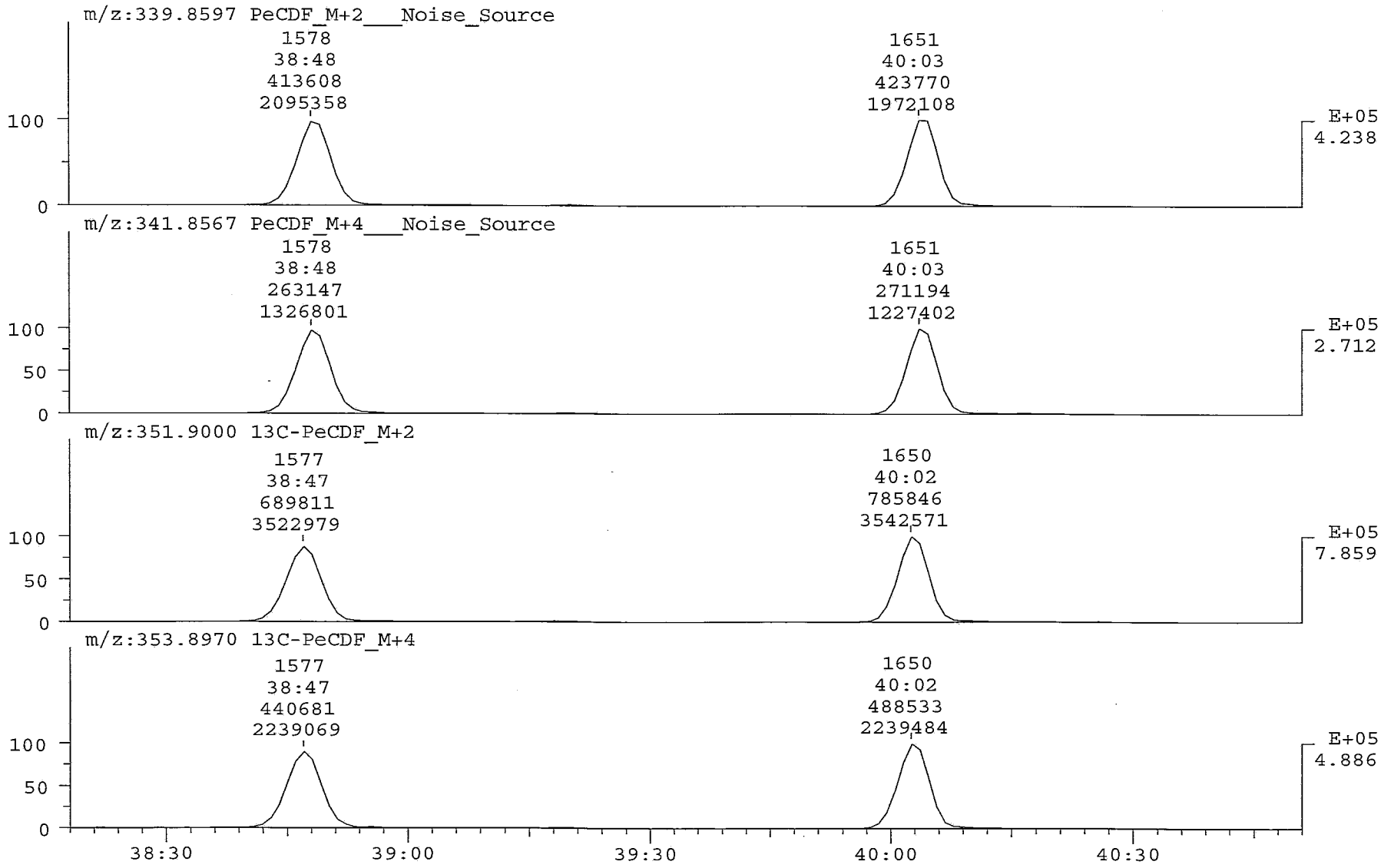
```
CHRO:  d1150408w1                          08-Apr-15  Elapse:  40:39      1686
Samp:  WO=4966:04 Meth=F8o Dil=1                      Start :  23:55:02   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1322 > 1774      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



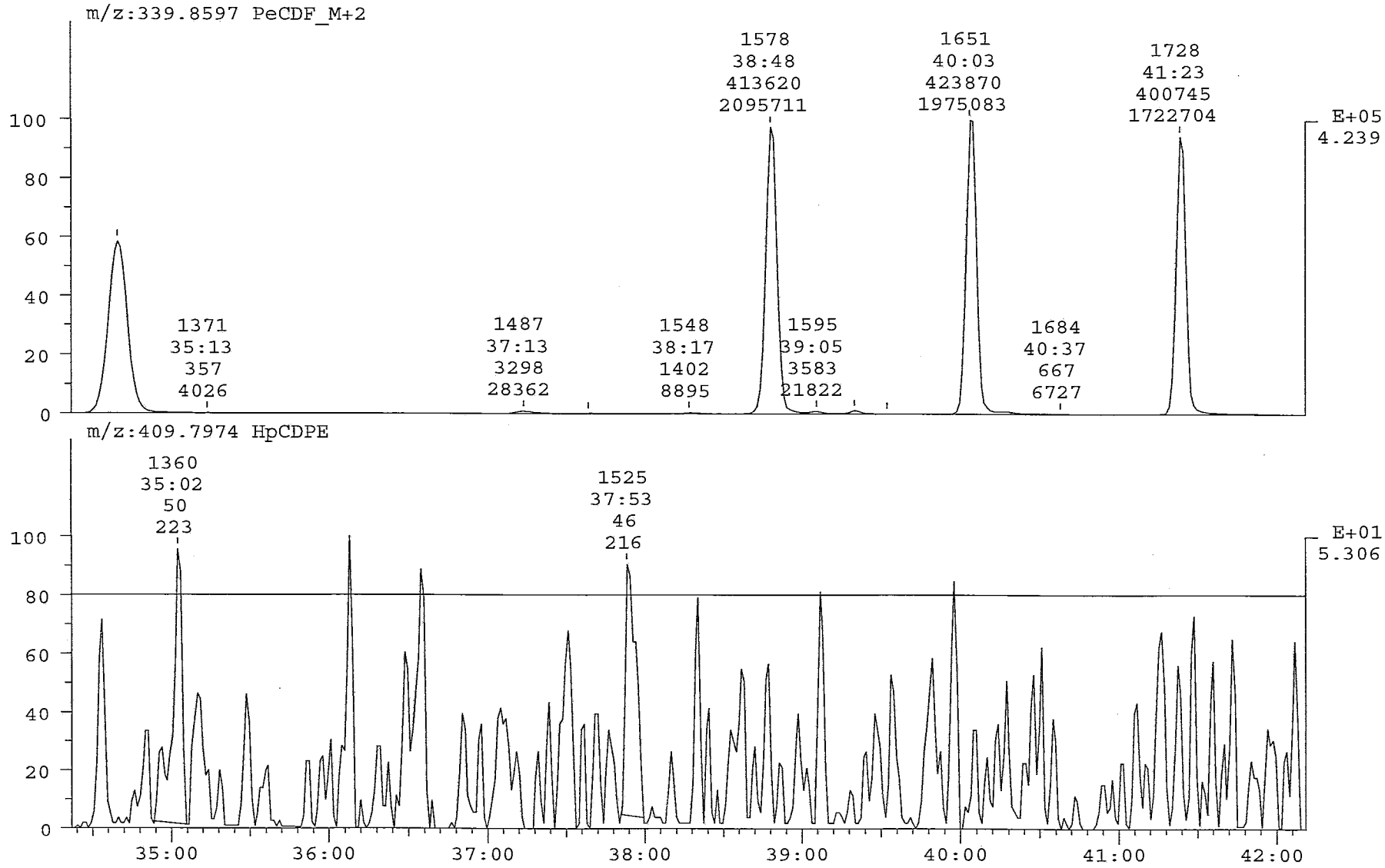
```
CHRO:  d1150408w1                                08-Apr-15   Elapse:  54:09       2465
Samp:  WO=4966:04 Meth=F8o Dil=1                             Start :  23:55:02    2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                                   Study :  VER/WIN
Oper:  LKM                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1321 > 1373             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  2, 5.0
Disp:  Height  Area
```



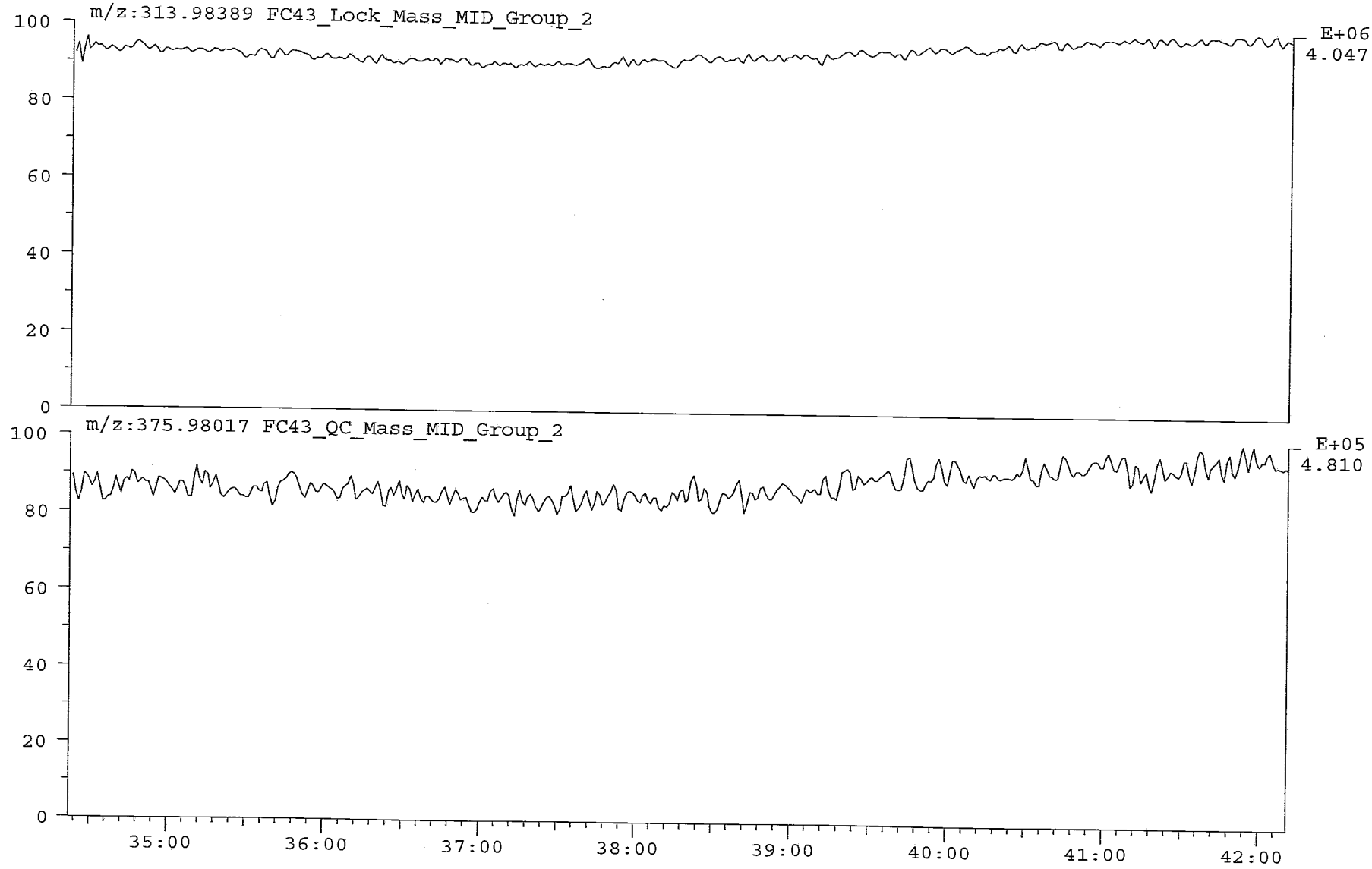
```
CHRO:  d1150408w1                          08-Apr-15  Elapse:  39:33      1622
Samp:  WO=4966:04 Meth=F8o Dil=1                      Start :  23:55:02   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1549 > 1697      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



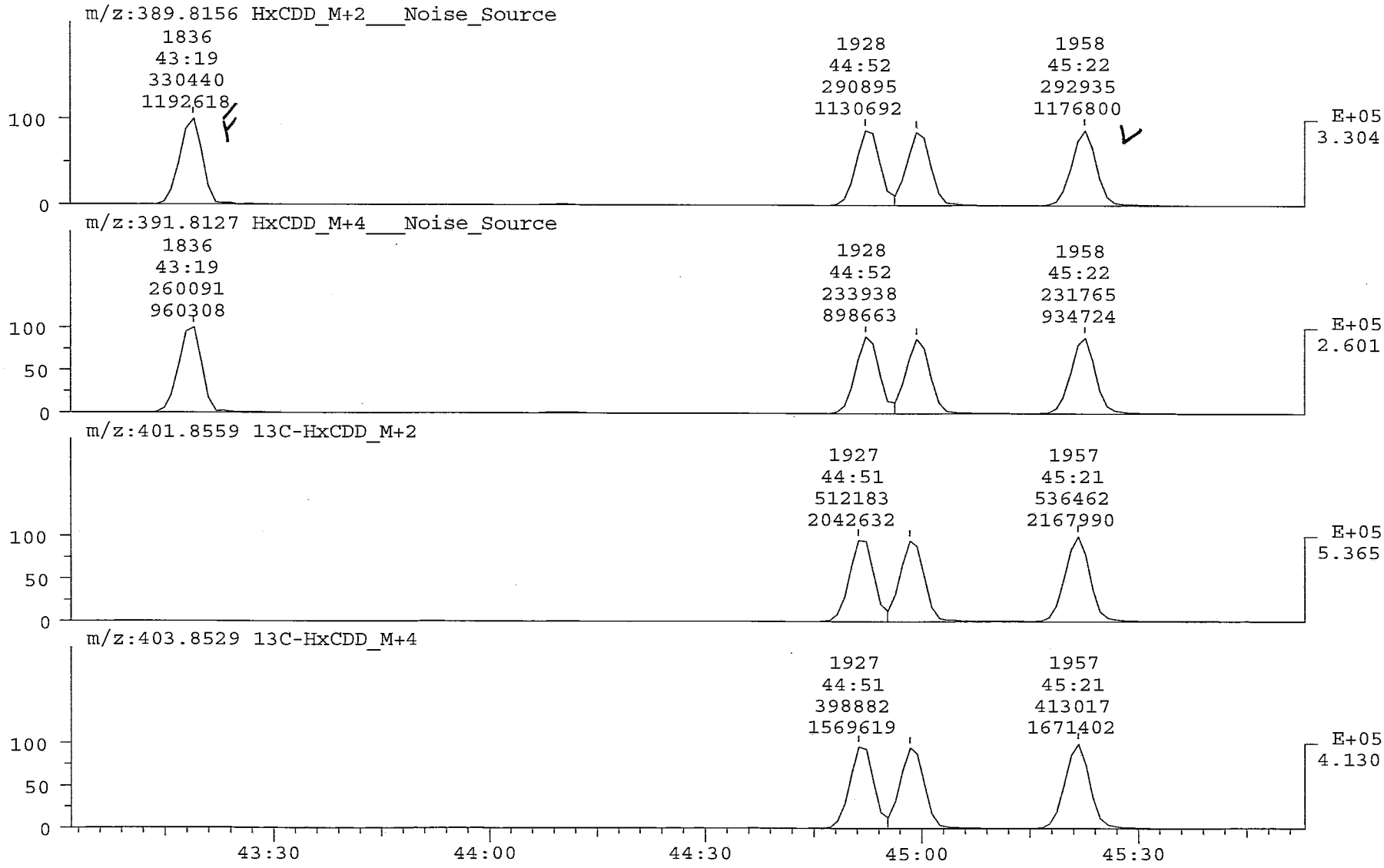
```
CHRO:  d1150408w1                          08-Apr-15  Elapse:  39:33      1622
Samp:  WO=4966:04 Meth=F8o Dil=1                      Start :  23:55:02   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1322 > 1774      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



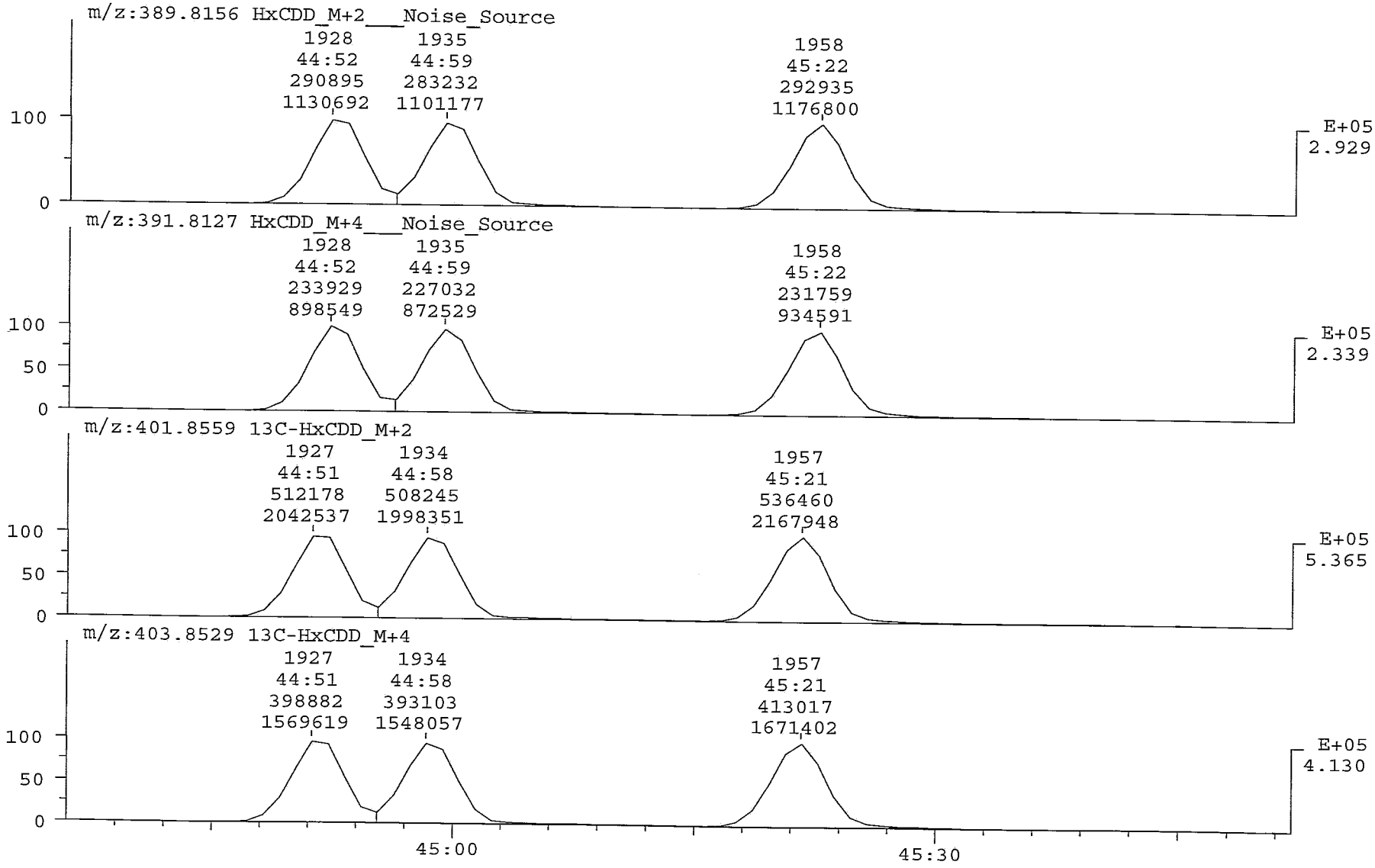
CHRO: d1150408w1 08-Apr-15 Elapse: 39:33 1622
Samp: WO=4966:04 Meth=F8o Dil=1 Start : 23:55:02 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1322 > 1774 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



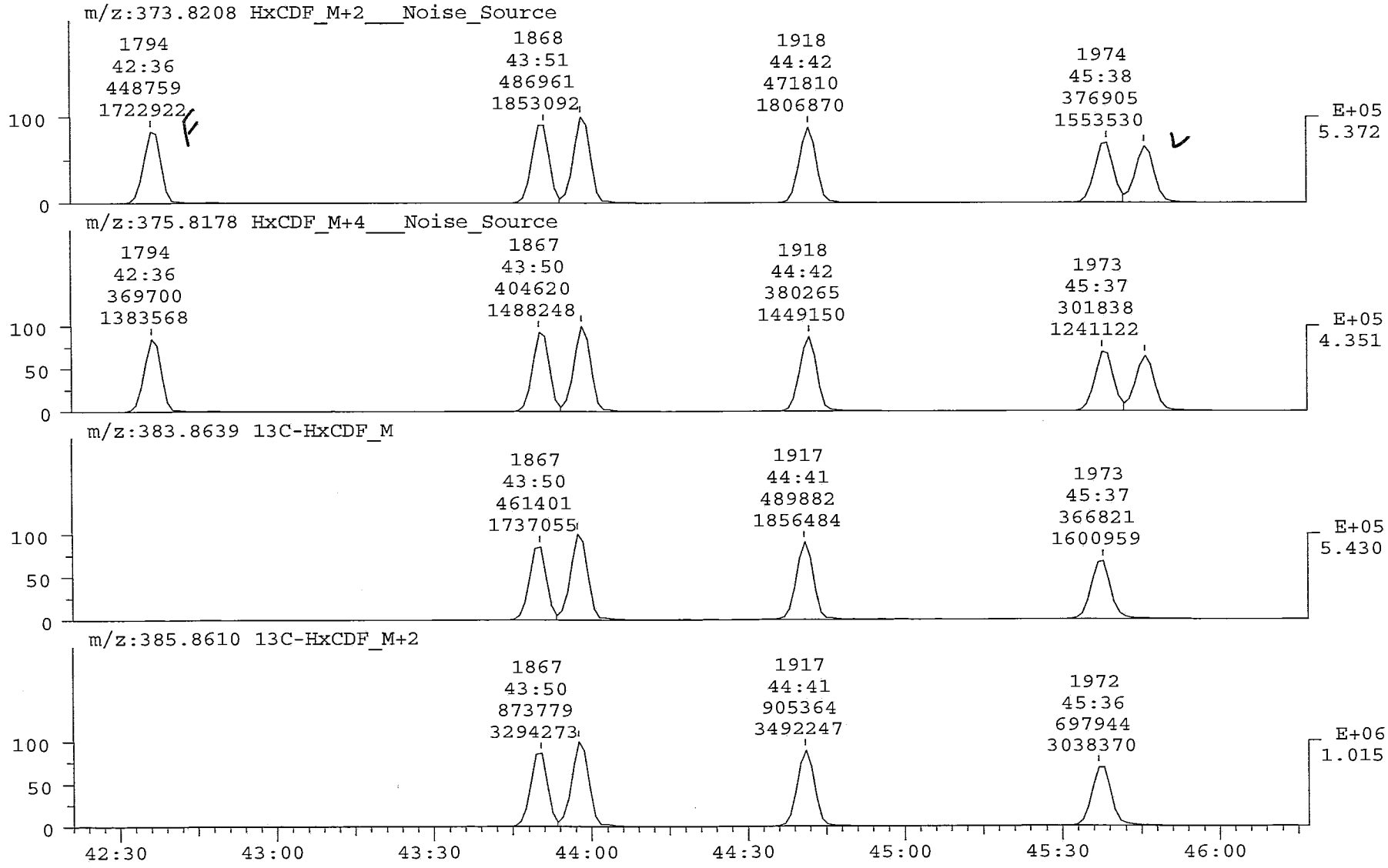
```
CHRO:  d1150408w1                          08-Apr-15  Elapse:  39:33      1622
Samp:  WO=4966:04 Meth=F8o Dil=1                      Start :  23:55:02   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1819 > 1988      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



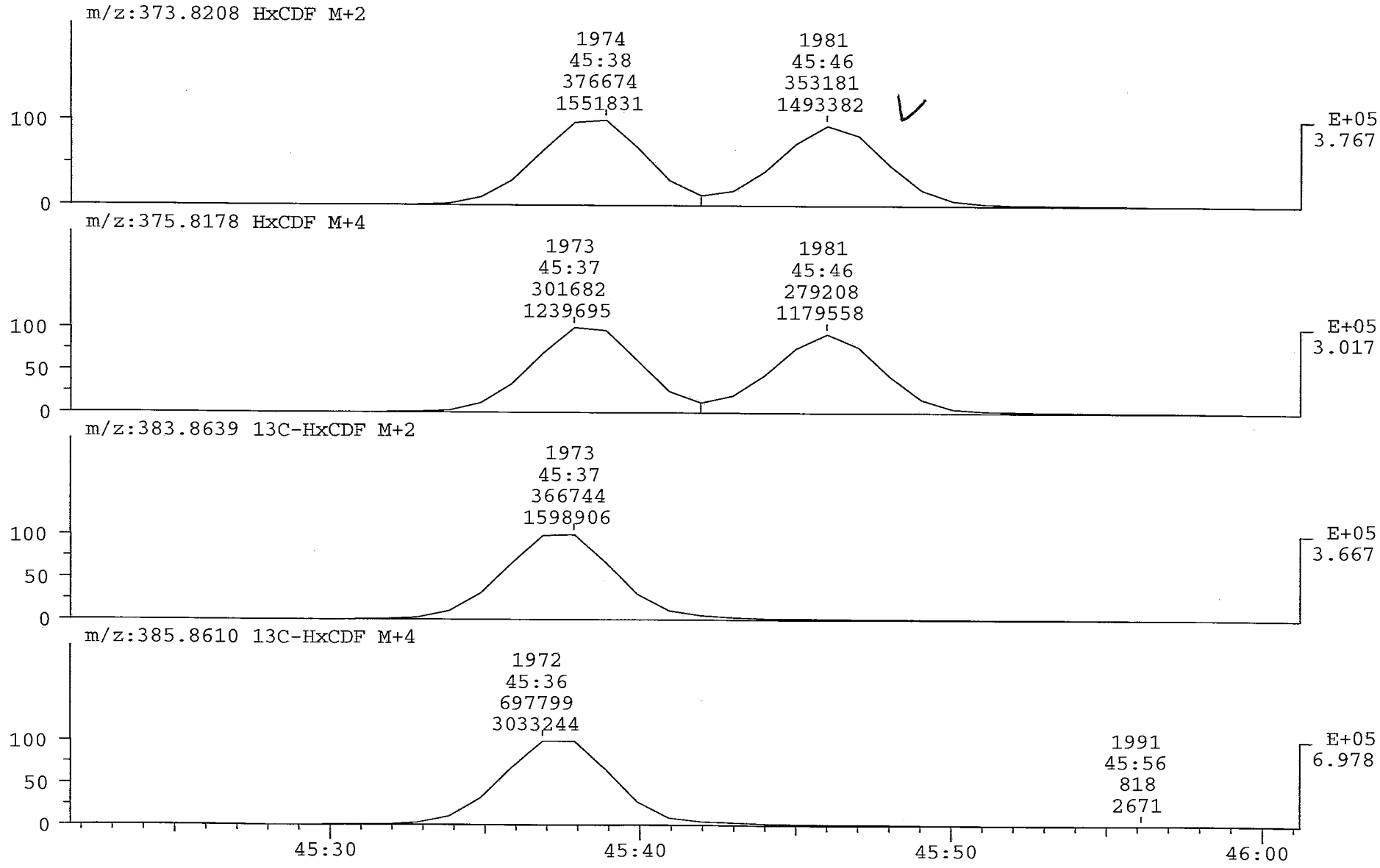
CHRO: d1150408w1 08-Apr-15 Elapse: 45:13 1949
Samp: WO=4966:04 Meth=F8o Dil=1 Start : 23:55:02 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1912 > 1987 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



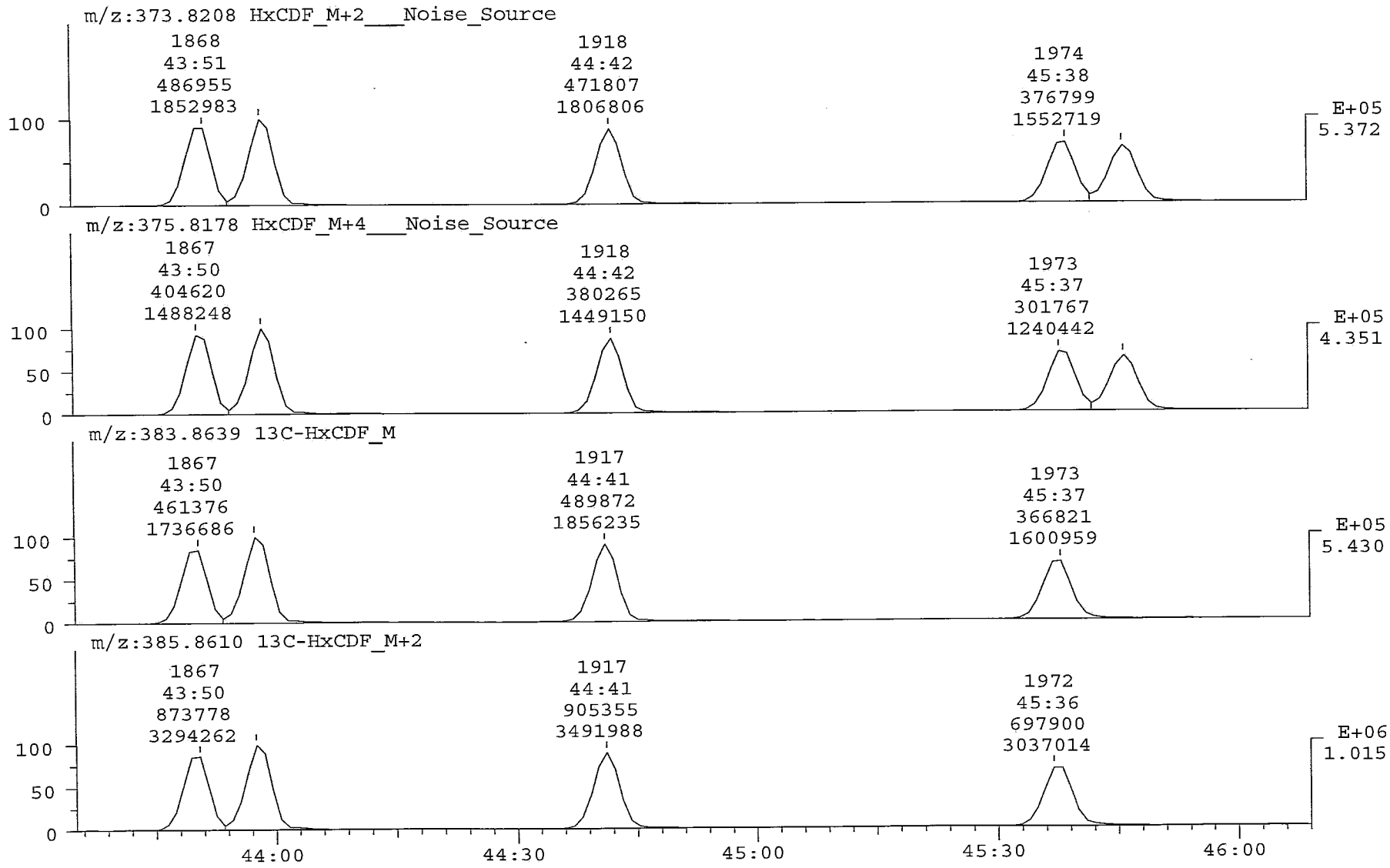
CHRO: d1150408w1 08-Apr-15 Elapse: 45:13 1949
Samp: WO=4966:04 Meth=F8o Dil=1 Start : 23:55:02 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1779 > 2012 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



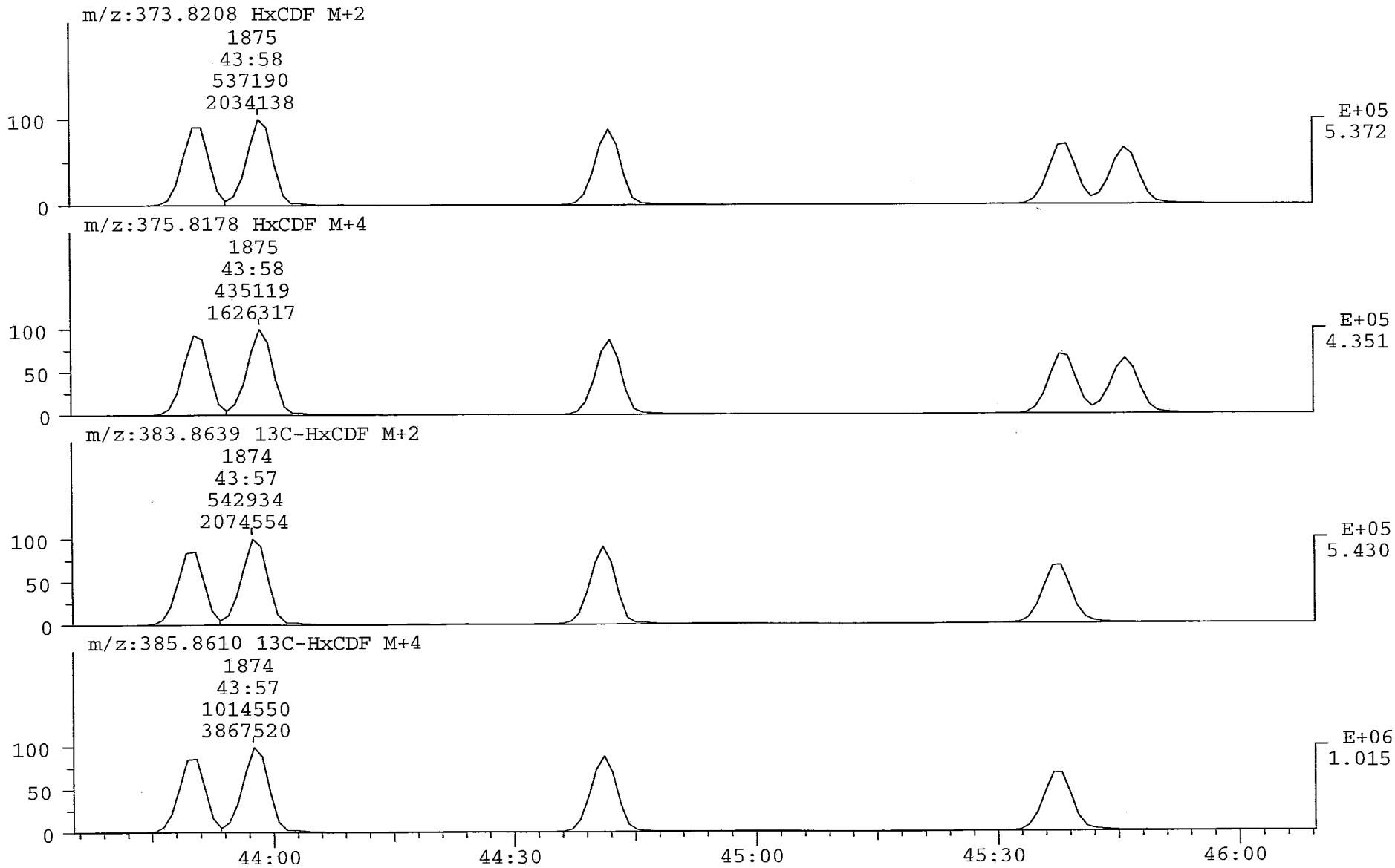
```
CHRO:  d1150408w1                                08-Apr-15  Elapse:  54:09      2465
Samp:  WO=4966:04 Meth=F8o Dil=1                            Start :  23:55:02   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1957 > 1996            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  2, 5.0
Disp:  Height  Area
```



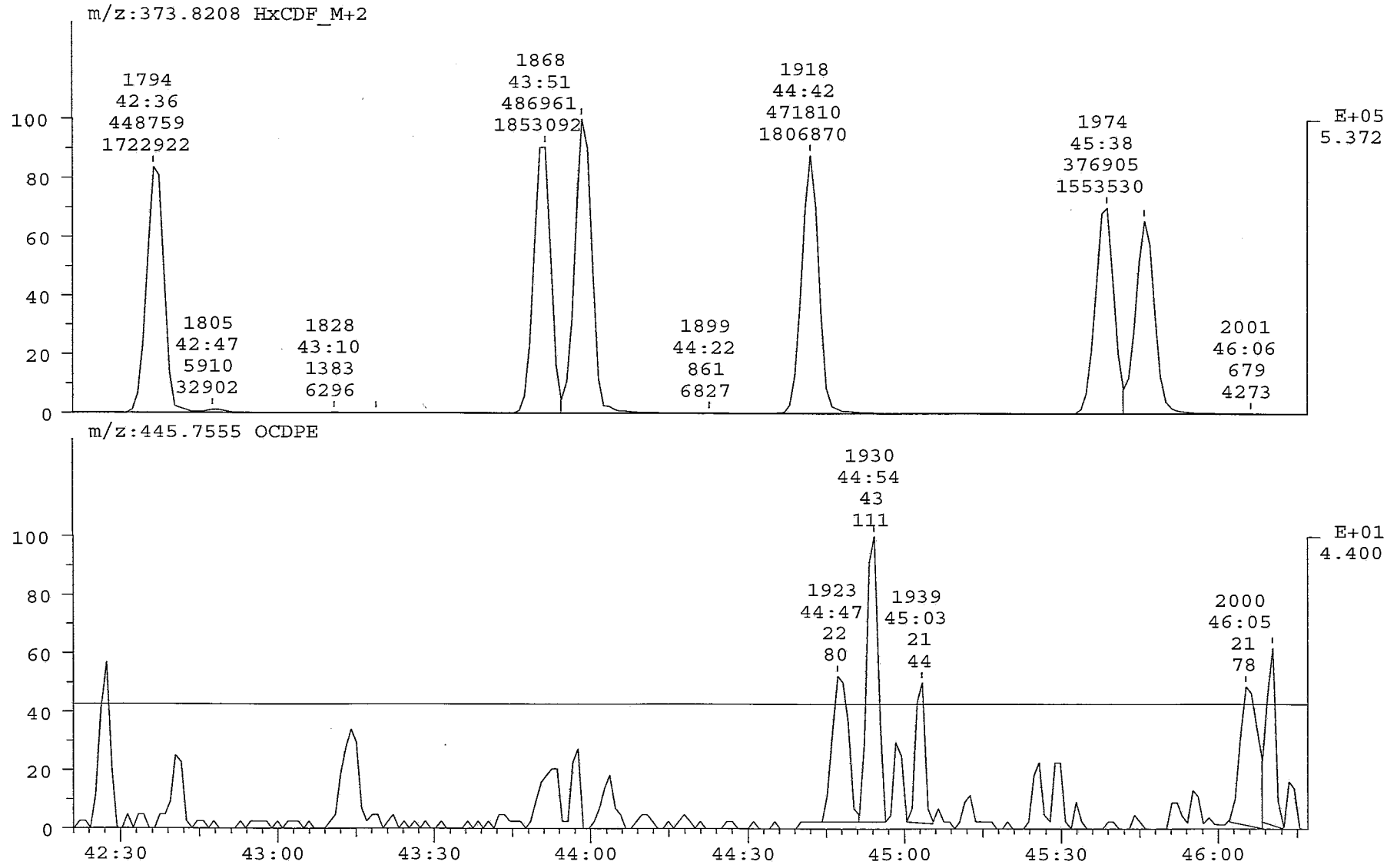
CHRO: d1150408w1 08-Apr-15 Elapse: 44:52 1928
Samp: WO=4966:04 Meth=F8o Dil=1 Start : 23:55:02 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1852 > 2004 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



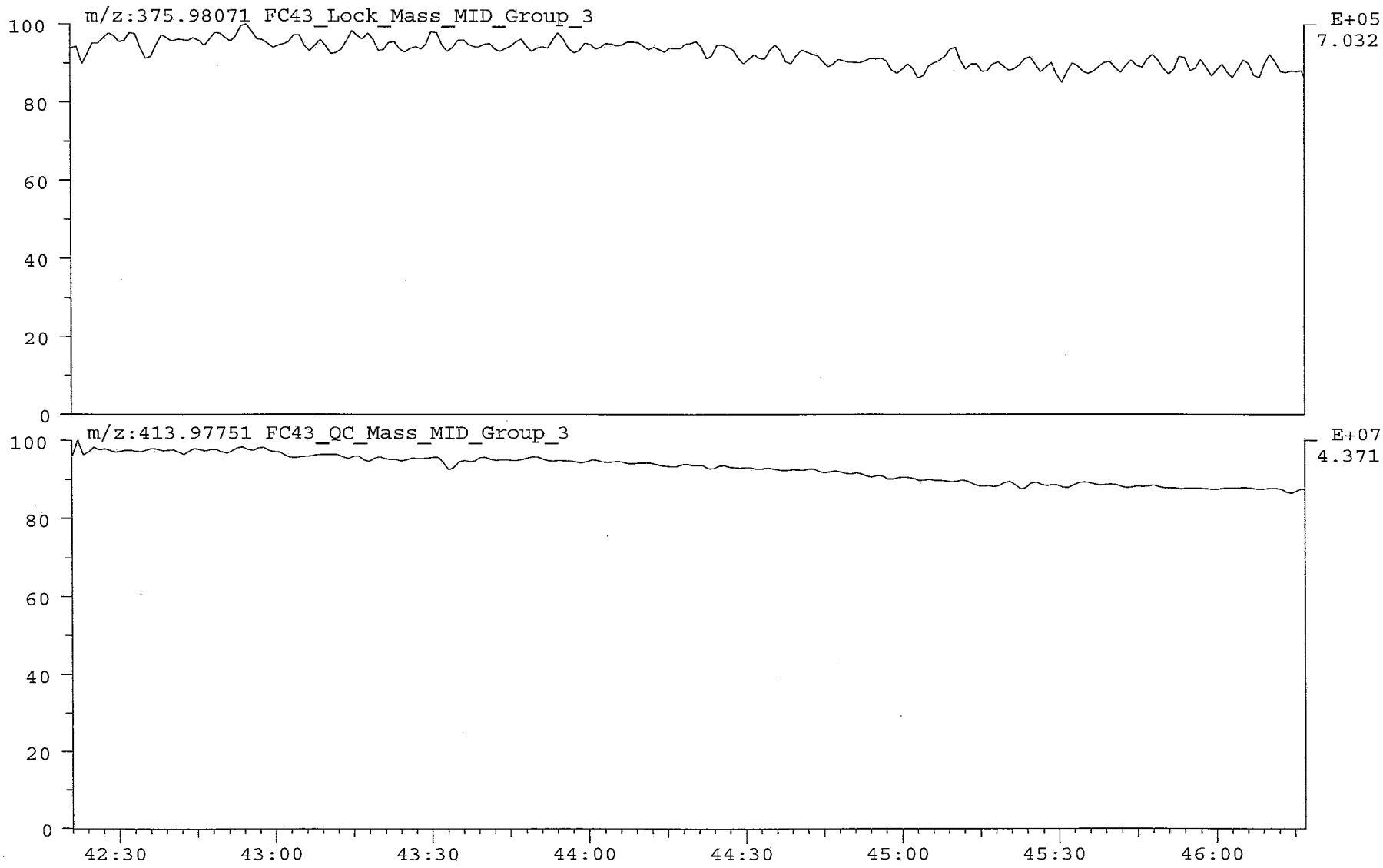
```
CHRO:  d1150408w1                          08-Apr-15  Elapse:  43:58      1875
Samp:  WO=4966:04 Meth=F8o Dil=1                      Start :  23:55:02   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1872 > 1878      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



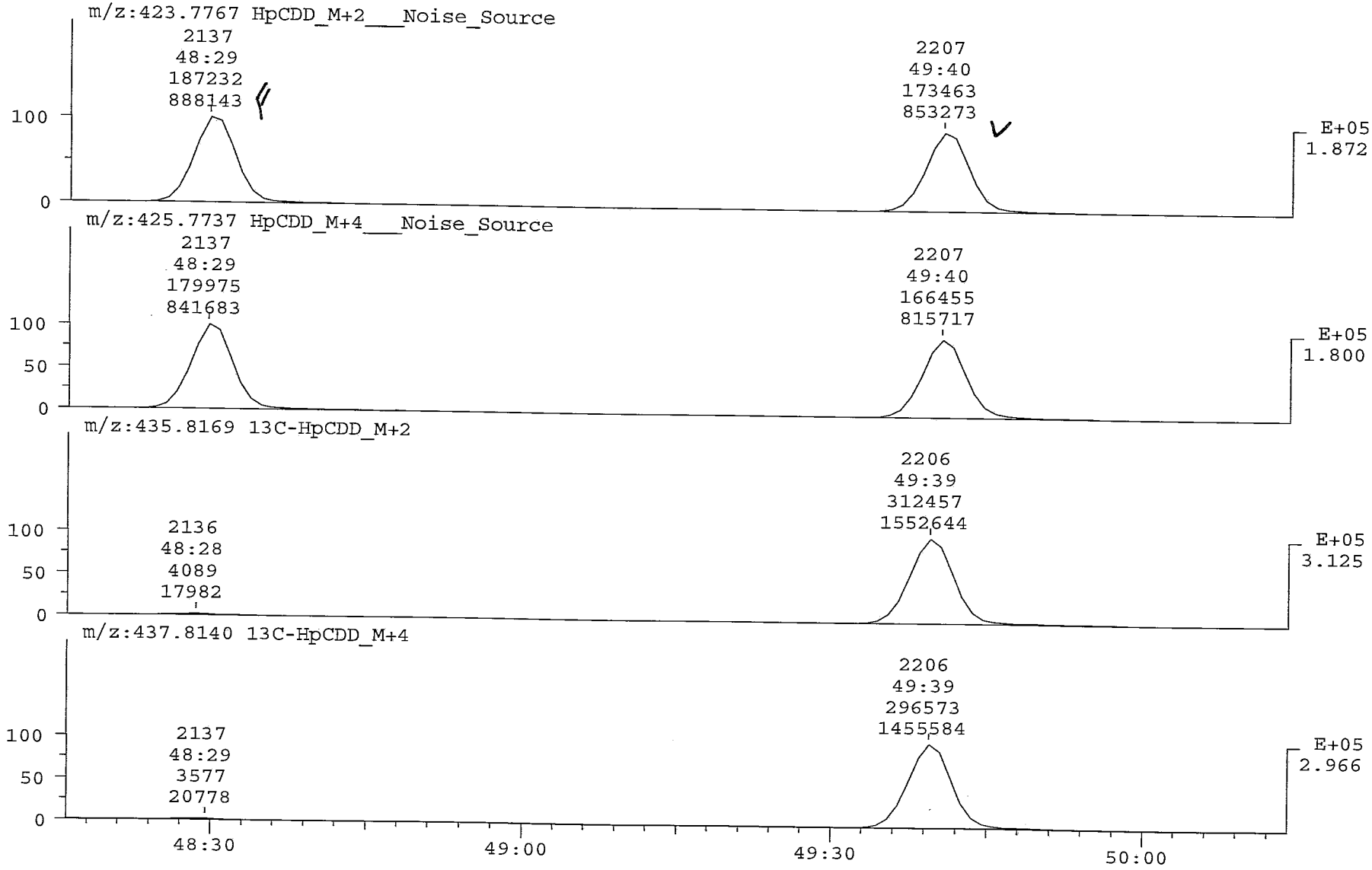
```
CHRO:  d1150408w1                          08-Apr-15  Elapse:  44:02      1879
Samp:  WO=4966:04 Meth=F8o Dil=1                      Start :  23:55:02   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1779 > 2012      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



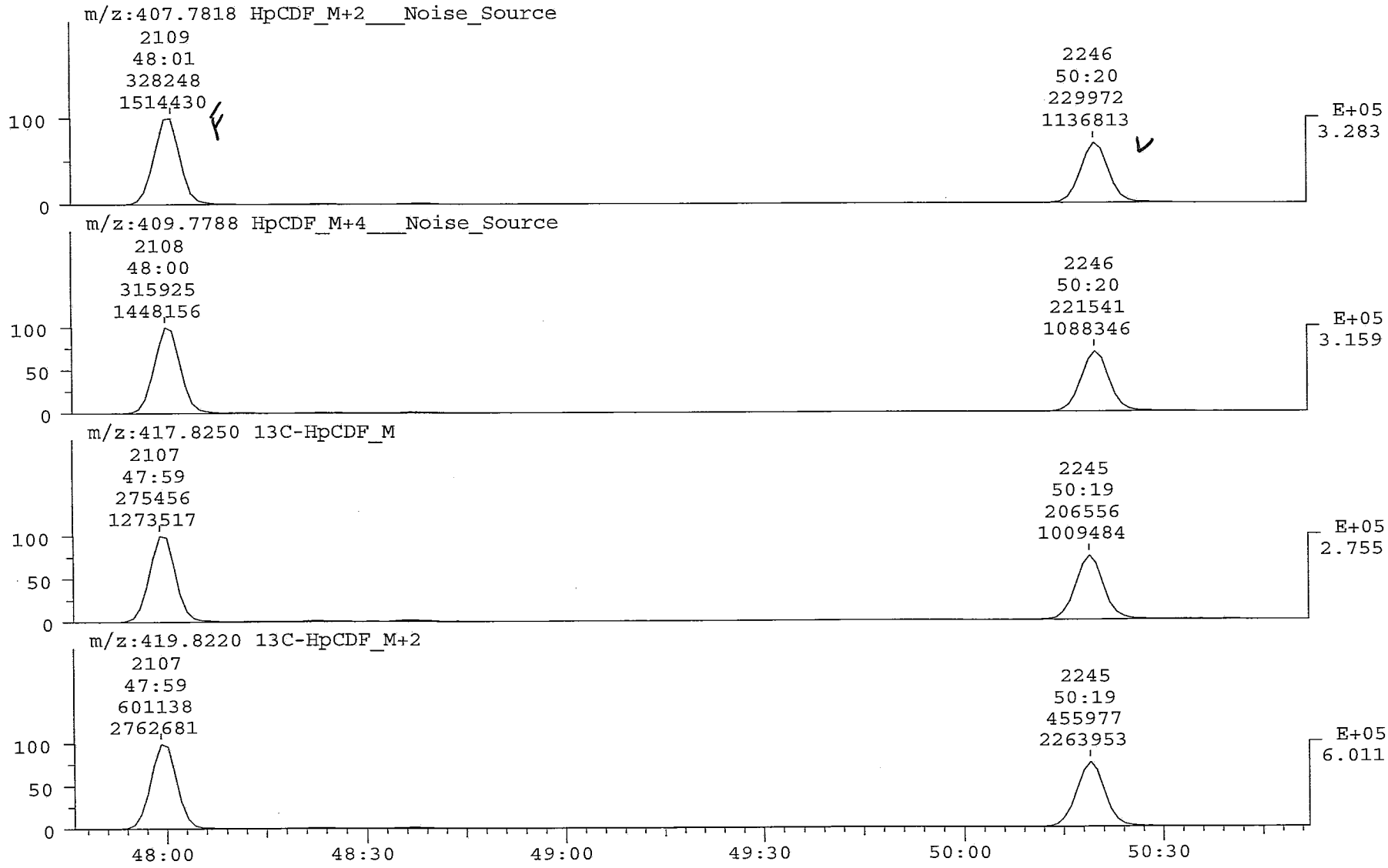
```
CHRO:  d1150408w1                          08-Apr-15  Elapse:  44:02      1879
Samp:  WO=4966:04 Meth=F8o Dil=1                      Start :  23:55:02   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1779 > 2012      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



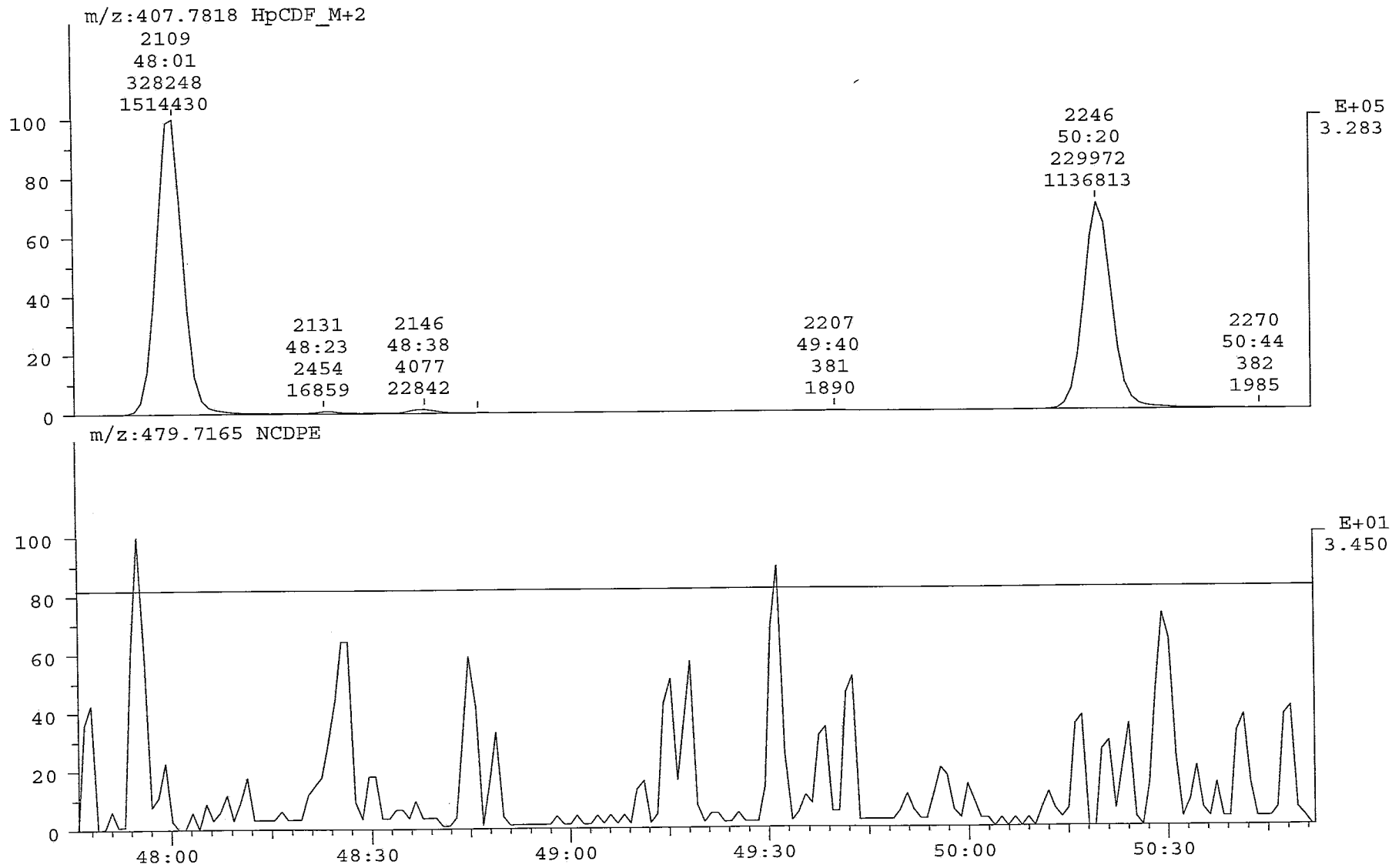
CHRO: d1150408w1 08-Apr-15 Elapse: 44:02 1879
Samp: WO=4966:04 Meth=F8o Dil=1 Start : 23:55:02 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2124 > 2240 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



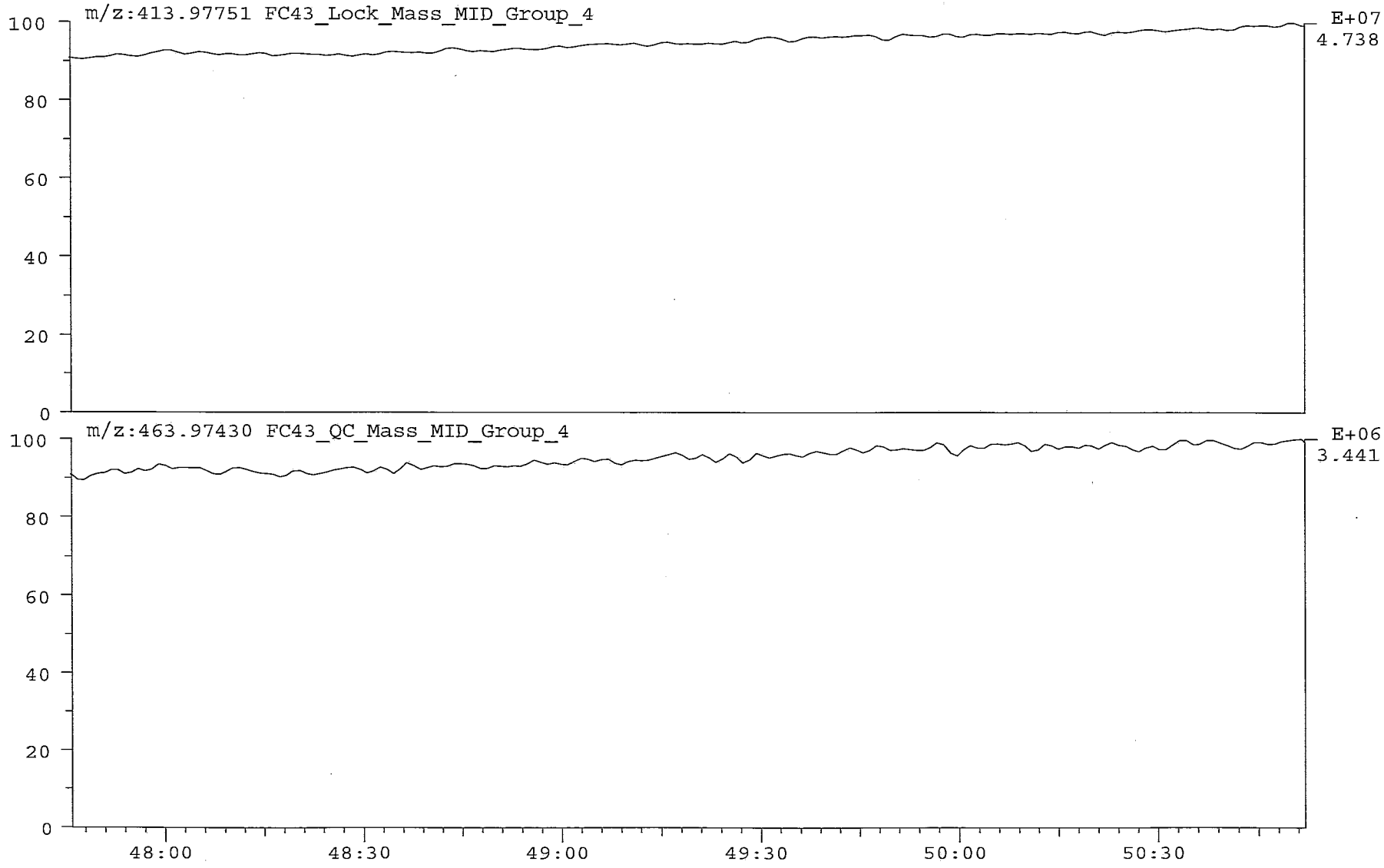
```
CHRO:  d1150408w1                          08-Apr-15  Elapse:  49:19      2186
Samp:  WO=4966:04 Meth=F8o Dil=1                      Start :  23:55:02   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2094 > 2278      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



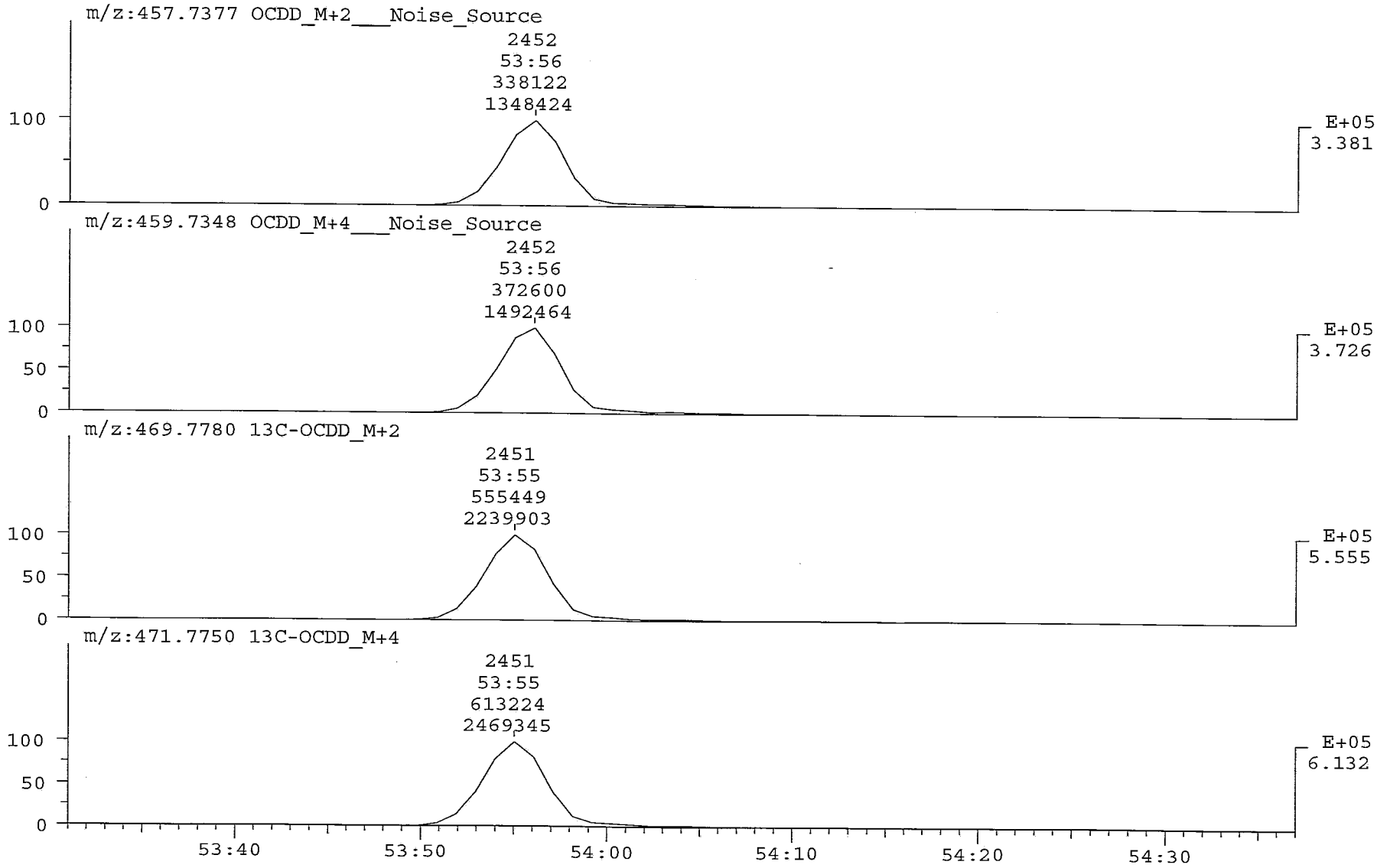
```
CHRO:  d1150408w1                                08-Apr-15  Elapse:  49:19      2186
Samp:  WO=4966:04 Meth=F8o Dil=1                            Start :  23:55:02   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2094 > 2278            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



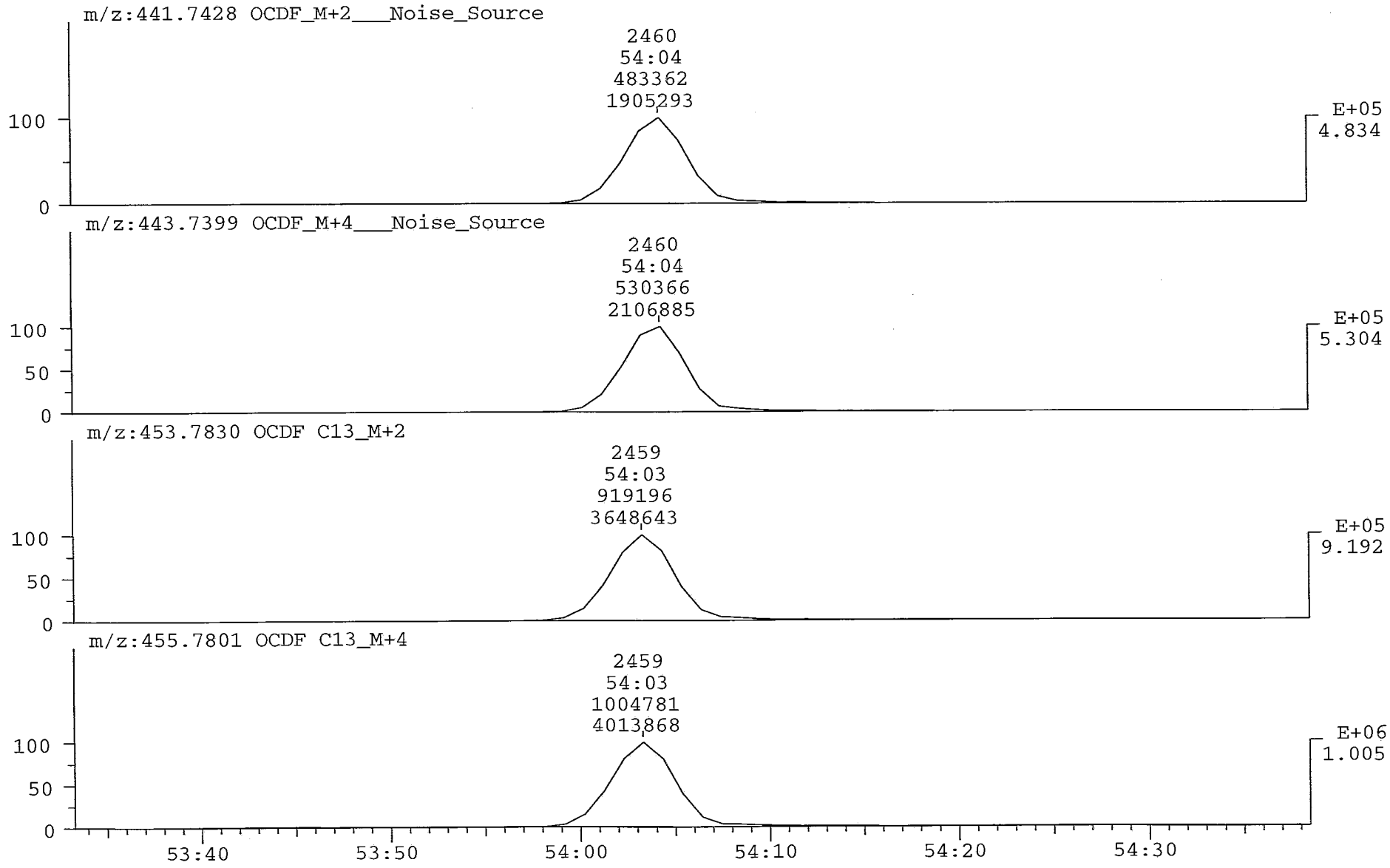
```
CHRO:  d1150408w1                          08-Apr-15  Elapse:  49:19      2186
Samp:  WO=4966:04 Meth=F8o Dil=1                      Start :  23:55:02   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2094 > 2278      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



```
CHRO:  d1150408w1                                08-Apr-15  Elapse:  54:01      2457
Samp:  WO=4966:04 Meth=F8o Dil=1                            Start :  23:55:02   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2428 > 2492            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1150408w1                          08-Apr-15  Elapse:  54:09      2465
Samp:  WO=4966:04 Meth=F8o Dil=1                      Start :  23:55:02   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2430 > 2493      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```

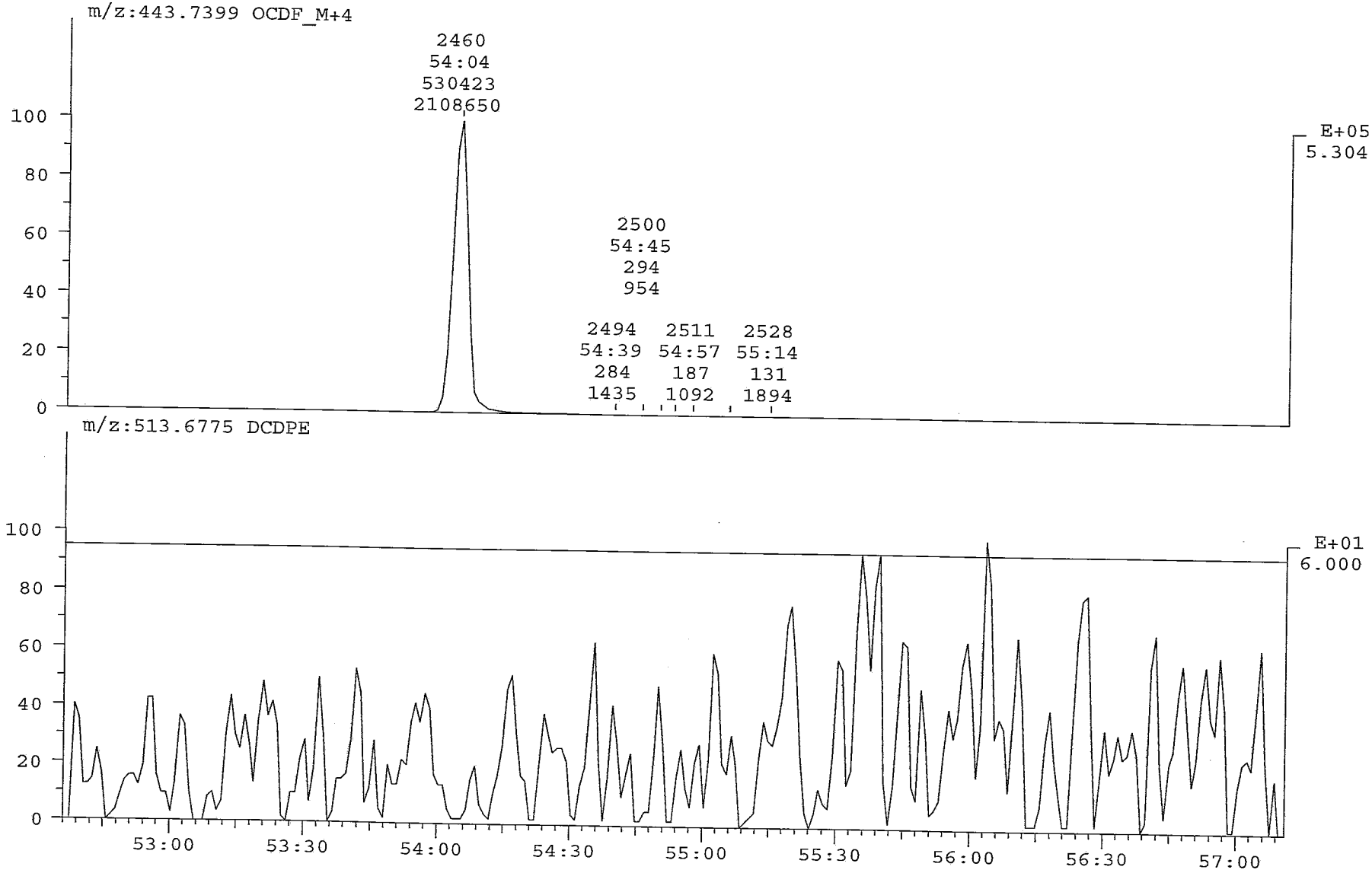


CHRO: d1150408w1
Samp: WO=4966:04 Meth=F8o Dil=1
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR
Oper: LKM
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

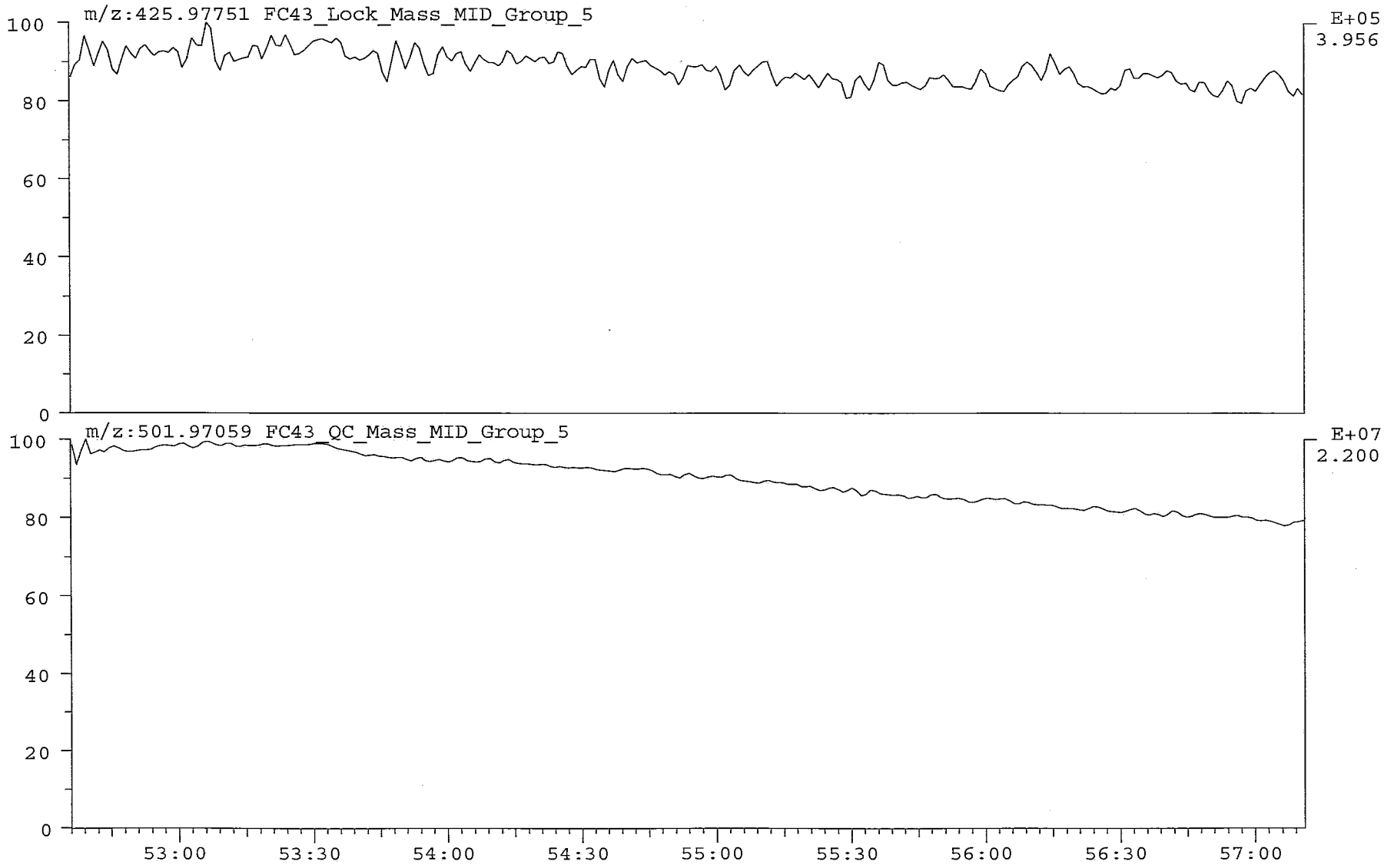
Label wndw: 2375 > 2640
Baseline : 100, 3

08-Apr-15

Elapse: 54:09 2465
Start : 23:55:02 2641
Study : VER/WIN
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



CHRO: d1150408w1 08-Apr-15 Elapse: 54:09 2465
Samp: WO=4966:04 Meth=F8o Dil=1 Start : 23:55:02 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2375 > 2640 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Wed Apr 08 23:57:26 2015 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 08-Apr-15 23:57:24

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 102913KLR_150408235502

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	22:16 min	34:16 min	1.00 sec
# 2	34:16 min	7:55 min	42:12 min	1.00 sec
# 3	42:12 min	4:51 min	47:03 min	1.00 sec
# 4	47:03 min	5:26 min	52:30 min	1.00 sec
# 5	52:30 min	4:42 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

```
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 34.283333 minutes
MID Window end time was 34.280000 minutes
MID Window terminated after 42.200000 minutes
MID Window end time was 42.200000 minutes
MID Window terminated after 47.066667 minutes
MID Window end time was 47.060000 minutes
MID Window terminated after 52.500000 minutes
MID Window end time was 52.500000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          313.4834
 BQUAD            1.1000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE      16.0000   ECORR           1.0001   ECURR            1.0000
 EDAC       7969177.0000   EDACG           0.9995   EDACZ         4144.0190
 ELEN           -45.0000   EMULT        1652.0000   ENS            239.0000
 ENSBR            1.1000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           170.0000   EXSBR           -1.1000
 FDMA      18000000.0000   FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            5.4000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0039	FVINLET	0.0456	FVSRC	0.0474
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	686.0000
LENS_SYM	-6.0000	LM	375.8364	LMII	500.0000
LMASS	313.4834	LKM	425.9770	MASS	313.4834
MDAC	3592108.9072	MRANGE	1252.5112	NSAM	200.0000
NSCAN	2662.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-11.0000	RECURR	0.8982	RELEN	0.0000
RES	9683.0958	RPUSHER	-10.9524	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	710.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1250	TANAL	0.0000	TCURR	0.0000
TD	3.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	313.4834	XLENS_POT	854.0000
XLENS_SYM	8.0000	YLENS_POT	692.0000	YLENS_SYM	-2.0000

```
Source Gauge:          3.5e-005 mbar
Analyzer Penning:      6.2e-008 mbar
Pirani Analyse:        3.9e-003 mbar
Pirani Source:         4.8e-002 mbar
Pirani Inlet System:   4.6e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 10110.
MID Time Window 2: Resolution is 10582.
MID Time Window 3: Resolution is 10277.
MID Time Window 4: Resolution is 10147.
MID Time Window 5: Resolution is 9683.

Amplifier Offset: 88.


*** File closed Thu Apr 09 00:54:38 2015
  ***
```

QUAN: d1150408w1.q0 Entries: 178

Data file(s) used
File: d1150408w1 08-Apr-15
Samp: WO=4966:04 Meth=F8o Dil=1 Start : 23:55:02 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	30:49	250063.	25554.	30:41	31:04	48.	1	1.0	AVV
321.8775	30:49	318232.	32800.	30:41	31:04	48.	1	1.0	AVV
319.8805	24:56	229090.	29790.	24:43	25:11	48.	2	5.0	ABV
319.8805	30:19	211459.	23127.	30:05	30:26	48.	2	5.0	ABV
319.8805	30:32	203209.	20968.	30:26	30:41	48.	2	5.0	AVV
319.8805	30:49	250063.	25554.	30:41	31:04	48.	2	5.0	AVV
319.8805	31:19	227993.	22299.	31:06	31:34	48.	2	5.0	AVV
319.8805	34:01	198867.	21127.	33:48	34:14	48.	2	5.0	ABB
321.8775	24:56	298310.	39063.	24:43	25:11	48.	2	5.0	ABV
321.8775	30:19	266621.	29575.	30:04	30:26	48.	2	5.0	AVV
321.8775	30:33	256889.	27356.	30:26	30:41	48.	2	5.0	AVV
321.8775	30:49	318232.	32800.	30:41	31:04	48.	2	5.0	AVV
321.8775	31:19	292825.	28037.	31:06	31:34	48.	2	5.0	AVV
321.8775	34:01	257599.	26735.	33:46	34:14	48.	2	5.0	ABB
331.9202	30:17	2065022.	219726.	30:02	30:32	55.	2	5.0	AVV
331.9202	30:46	2108386.	214373.	30:33	31:01	55.	2	5.0	AVV
333.9171	30:16	2471470.	259762.	30:01	30:31	44.	2	5.0	AVV
333.9171	30:46	2627886.	267637.	30:32	31:01	44.	2	5.0	AVV
319.8805	30:49	249743.	25541.	30:41	31:04	113.	2	5.0	AVV
319.8805	31:19	227483.	22280.	31:06	31:34	113.	2	5.0	AVV
321.8775	30:49	316864.	32744.	30:41	31:04	110.	2	5.0	AVV
321.8775	31:19	290591.	27956.	31:06	31:34	110.	2	5.0	AVV
331.9202	30:17	2064741.	219716.	30:02	30:32	142.	2	5.0	AVV
331.9202	30:46	2108211.	214367.	30:33	31:01	142.	2	5.0	AVV
333.9171	30:16	2471028.	259748.	30:01	30:31	156.	2	5.0	ABV
333.9171	30:46	2627220.	267614.	30:32	31:01	156.	2	5.0	AVV
327.8683	30:49	535017.	53147.	30:35	31:04	55.	1	1.0	AVV
327.8683	30:49	535017.	53147.	30:35	31:04	55.	2	5.0	AVV
303.8864	22:30	446872.	65898.	22:16	22:45	32.	1	1.0	ABV
305.8834	22:30	571867.	85499.	22:19	22:45	36.	1	1.0	ABV
303.8864	22:30	446872.	65898.	22:16	22:45	32.	2	5.0	ABV
303.8864	28:50	367736.	40694.	28:36	29:05	32.	2	5.0	ABV
303.8864	33:53	312987.	31823.	33:38	34:08	32.	2	5.0	AVV
305.8834	22:30	571867.	85499.	22:19	22:45	36.	2	5.0	ABV
305.8834	28:50	460968.	50549.	28:37	29:05	36.	2	5.0	ABV
305.8834	33:52	397064.	39456.	33:37	34:07	36.	2	5.0	ABV
315.9261	28:48	3550266.	378956.	28:33	29:03	39.	2	5.0	AVV
317.9230	28:48	4424455.	488330.	28:33	29:03	31.	2	5.0	AVV
303.8864	28:50	367667.	40691.	28:36	29:05	48.	2	5.0	ABV
305.8834	28:50	461007.	50550.	28:37	29:05	51.	2	5.0	ABV
315.9261	28:48	3549918.	378945.	28:33	29:03	84.	2	5.0	AVV
317.9230	28:48	4423782.	488308.	28:33	29:03	93.	2	5.0	AVV
355.8368	40:36	1105661.	256975.	40:25	40:47	36.	1	1.0	AVV
357.8337	40:36	705271.	161675.	40:27	40:47	36.	1	1.0	ABV
355.8368	37:38	1058158.	164993.	37:27	37:54	36.	2	5.0	ABV
355.8368	40:36	1105750.	256975.	40:22	40:47	36.	2	5.0	ABV
355.8368	41:16	1068878.	248258.	41:06	41:31	36.	2	5.0	AVV
357.8337	37:38	676852.	106559.	37:28	37:54	36.	2	5.0	ABV
357.8337	40:36	705271.	161675.	40:27	40:47	36.	2	5.0	ABV
357.8337	41:16	691685.	163272.	41:07	41:31	36.	2	5.0	AVV

367.8765	40:35	2109978.	469168.	40:27	40:51	20.	2	5.0 ABV
369.8734	40:35	1308187.	294602.	40:27	40:46	15.	2	5.0 ABV
355.8368	40:36	1104182.	256908.	40:28	40:47	51.	2	5.0 ABV
355.8368	41:16	1063460.	248058.	41:07	41:31	51.	2	5.0 ABV
357.8337	40:36	704971.	161660.	40:27	40:47	60.	2	5.0 ABV
357.8337	41:16	688788.	163177.	41:08	41:31	60.	2	5.0 ABV
367.8765	40:35	2109901.	469166.	40:27	40:51	49.	2	5.0 ABV
369.8734	40:35	1308180.	294602.	40:27	40:46	34.	2	5.0 ABV
339.8427	34:39	2106888.	247529.	34:25	34:55	56.	1	1.0 ABV
341.8396	34:39	1334342.	158938.	34:25	34:55	52.	1	1.0 ABV
339.8427	34:39	2106888.	247529.	34:25	34:55	56.	2	5.0 ABV
339.8427	38:48	2095711.	413620.	38:35	39:02	56.	2	5.0 ABV
339.8427	40:03	1975083.	423870.	39:50	40:19	56.	2	5.0 AVV
339.8427	41:23	1722704.	400745.	41:13	41:38	56.	2	5.0 ABV
341.8396	34:39	1334342.	158938.	34:25	34:55	52.	2	5.0 ABV
341.8396	38:48	1327908.	263183.	38:32	39:02	52.	2	5.0 AVV
341.8396	40:03	1229255.	271251.	39:48	40:15	52.	2	5.0 AVV
341.8396	41:23	1098663.	259934.	41:13	41:38	52.	2	5.0 ABV
351.8824	38:47	3523616.	689834.	38:34	39:01	48.	2	5.0 ABV
351.8824	40:02	3545725.	785989.	39:52	40:18	48.	2	5.0 AVV
353.8793	38:47	2239592.	440702.	38:34	38:59	36.	2	5.0 ABV
353.8793	40:02	2242844.	488642.	39:48	40:18	36.	2	5.0 AVV
339.8427	38:48	2095358.	413608.	38:35	39:02	72.	2	5.0 ABV
339.8427	40:03	1972108.	423770.	39:55	40:19	72.	2	5.0 ABV
341.8396	38:48	1326801.	263147.	38:36	39:02	69.	2	5.0 ABV
341.8396	40:03	1227402.	271194.	39:55	40:15	69.	2	5.0 ABV
351.8824	38:47	3522979.	689811.	38:35	39:01	129.	2	5.0 ABV
351.8824	40:02	3542571.	785846.	39:47	40:18	129.	2	5.0 AVV
353.8793	38:47	2239069.	440681.	38:35	38:59	119.	2	5.0 ABV
353.8793	40:02	2239484.	488533.	39:54	40:18	119.	2	5.0 ABV
389.7961	43:19	1192618.	330440.	43:11	43:34	60.	1	1.0 ABV
391.7931	43:19	960308.	260091.	43:11	43:34	46.	1	1.0 ABV
389.7961	43:19	1192618.	330440.	43:11	43:34	60.	2	5.0 ABV
389.7961	44:52	1130692.	290895.	44:46	44:56	60.	2	5.0 ABV
389.7961	44:59	1101177.	283231.	44:56	45:14	60.	2	5.0 AVV
389.7961	45:22	1176800.	292935.	45:14	45:34	60.	2	5.0 AVV
391.7931	43:19	960308.	260091.	43:11	43:34	46.	2	5.0 ABV
391.7931	44:52	898663.	233938.	44:45	44:56	46.	2	5.0 ABV
391.7931	44:59	872658.	227040.	44:56	45:13	46.	2	5.0 AVV
391.7931	45:22	934723.	231765.	45:13	45:37	46.	2	5.0 AVV
401.8358	44:51	2042632.	512183.	44:42	44:55	60.	2	5.0 ABV
401.8358	44:58	1998424.	508249.	44:55	45:13	60.	2	5.0 AVV
401.8358	45:21	2167990.	536462.	45:15	45:36	60.	2	5.0 AVV
403.8327	44:51	1569619.	398882.	44:44	44:55	36.	2	5.0 ABV
403.8327	44:58	1548057.	393103.	44:55	45:13	36.	2	5.0 AVV
403.8327	45:21	1671402.	413017.	45:14	45:36	36.	2	5.0 AVV
389.7961	44:52	1130692.	290895.	44:46	44:56	85.	2	5.0 ABV
389.7961	44:59	1101177.	283231.	44:56	45:14	85.	2	5.0 AVV
389.7961	45:22	1176800.	292935.	45:14	45:34	85.	2	5.0 AVV
391.7931	44:52	898549.	233929.	44:46	44:56	72.	2	5.0 ABV
391.7931	44:59	872529.	227032.	44:56	45:13	72.	2	5.0 AVV
391.7931	45:22	934591.	231759.	45:13	45:37	72.	2	5.0 AVV
401.8358	44:51	2042537.	512178.	44:43	44:55	89.	2	5.0 ABV
401.8358	44:58	1998351.	508245.	44:55	45:13	89.	2	5.0 AVV
401.8358	45:21	2167948.	536460.	45:15	45:36	89.	2	5.0 AVV
403.8327	44:51	1569619.	398882.	44:44	44:55	81.	2	5.0 ABV
403.8327	44:58	1548057.	393103.	44:55	45:13	81.	2	5.0 AVV
403.8327	45:21	1671402.	413017.	45:14	45:36	81.	2	5.0 AVV
373.8021	43:58	2034240.	537196.	43:54	44:13	99.	1	1.0 AVV
375.7990	43:58	1626317.	435119.	43:54	44:13	87.	1	1.0 AVV
373.8021	42:36	1722922.	448759.	42:29	42:44	99.	2	5.0 ABV
373.8021	43:51	1853092.	486961.	43:42	43:54	99.	2	5.0 ABV
373.8021	43:58	2034240.	537196.	43:54	44:13	99.	2	5.0 AVV
373.8021	44:42	1806870.	471810.	44:31	44:57	99.	2	5.0 AVV
373.8021	45:38	1553530.	376905.	45:30	45:42	99.	2	5.0 ABV
373.8021	45:46	1505449.	353633.	45:42	46:01	99.	2	5.0 AVB
375.7990	42:36	1383568.	369700.	42:23	42:43	87.	2	5.0 ABV

375.7990	43:50	1488248.	404620.	43:43	43:54	87.	2	5.0 ABV
375.7990	43:58	1626317.	435119.	43:54	44:13	87.	2	5.0 AVV
375.7990	44:42	1449150.	380265.	44:30	44:57	87.	2	5.0 AVV
375.7990	45:37	1241122.	301838.	45:30	45:42	87.	2	5.0 ABV
375.7990	45:46	1187166.	279506.	45:42	46:01	87.	2	5.0 AVB
383.8447	43:50	1737055.	461401.	43:40	43:53	65.	2	5.0 ABV
383.8447	43:57	2074969.	542957.	43:53	44:12	65.	2	5.0 AVV
383.8447	44:41	1856484.	489882.	44:29	44:56	65.	2	5.0 AVV
383.8447	45:37	1600959.	366821.	45:30	45:53	65.	2	5.0 AVV
385.8417	43:50	3294273.	873779.	43:41	43:53	106.	2	5.0 ABV
385.8417	43:57	3867583.	1014553.	43:53	44:12	106.	2	5.0 AVV
385.8417	44:41	3492247.	905364.	44:28	44:56	106.	2	5.0 AVV
385.8417	45:36	3038370.	697944.	45:29	45:52	106.	2	5.0 ABV
373.8021	43:51	1852983.	486955.	43:43	43:54	126.	2	5.0 ABV
373.8021	43:58	2034138.	537190.	43:54	44:13	126.	2	5.0 AVV
373.8021	44:42	1806806.	471807.	44:31	44:57	126.	2	5.0 AVV
373.8021	45:38	1552719.	376799.	45:30	45:42	126.	2	5.0 ABV
373.8021	45:46	1500215.	353435.	45:42	46:01	126.	2	5.0 AVV
375.7990	43:50	1488248.	404620.	43:43	43:54	106.	2	5.0 ABV
375.7990	43:58	1626317.	435119.	43:54	44:13	106.	2	5.0 AVV
375.7990	44:42	1449150.	380265.	44:30	44:57	106.	2	5.0 AVV
375.7990	45:37	1240442.	301767.	45:31	45:42	106.	2	5.0 ABV
375.7990	45:46	1183752.	279372.	45:42	46:01	106.	2	5.0 AVV
383.8447	43:50	1736686.	461376.	43:43	43:53	98.	2	5.0 ABV
383.8447	43:57	2074554.	542934.	43:53	44:12	98.	2	5.0 AVV
383.8447	44:41	1856235.	489872.	44:29	44:56	98.	2	5.0 AVV
383.8447	45:37	1600959.	366821.	45:30	45:53	98.	2	5.0 AVV
385.8417	43:50	3294262.	873777.	43:41	43:53	153.	2	5.0 ABV
385.8417	43:57	3867520.	1014550.	43:53	44:12	153.	2	5.0 AVV
385.8417	44:41	3491988.	905355.	44:28	44:56	153.	2	5.0 AVV
385.8417	45:36	3037014.	697900.	45:29	45:52	153.	2	5.0 ABV
423.7555	48:29	888143.	187232.	48:21	48:44	46.	1	1.0 ABV
425.7524	48:29	841683.	179975.	48:22	48:44	86.	1	1.0 ABV
423.7555	48:29	888143.	187232.	48:21	48:44	46.	2	5.0 ABV
423.7555	49:40	853273.	173463.	49:30	49:55	46.	2	5.0 ABV
425.7524	48:29	841683.	179975.	48:22	48:44	86.	2	5.0 ABV
425.7524	49:40	815717.	166455.	49:31	49:55	86.	2	5.0 ABV
435.7951	48:28	17982.	4089.	48:23	48:34	31.	2	5.0 ABV
435.7951	49:39	1552644.	312457.	49:31	49:54	31.	2	5.0 ABV
437.7921	48:29	20778.	3577.	48:23	48:38	44.	2	5.0 ABB
437.7921	49:39	1455584.	296573.	49:29	49:54	44.	2	5.0 ABV
407.7614	48:01	1514430.	328248.	47:52	48:16	47.	1	1.0 ABV
409.7583	48:00	1448156.	315925.	47:52	48:15	53.	1	1.0 ABV
407.7614	48:01	1514430.	328248.	47:52	48:16	47.	2	5.0 ABV
407.7614	50:20	1136813.	229972.	50:09	50:35	47.	2	5.0 ABV
409.7583	48:00	1448156.	315925.	47:52	48:15	53.	2	5.0 ABV
409.7583	50:20	1088346.	221541.	50:09	50:35	53.	2	5.0 ABV
417.8041	47:59	1273517.	275455.	47:50	48:13	63.	2	5.0 ABV
417.8041	50:19	1009484.	206556.	50:10	50:34	63.	2	5.0 ABV
419.8010	47:59	2762681.	601138.	47:51	48:11	69.	2	5.0 ABV
419.8010	50:19	2263953.	455977.	50:03	50:34	69.	2	5.0 ABV
457.7148	53:56	1348424.	338122.	53:48	54:11	40.	1	1.0 ABV
459.7118	53:56	1492464.	372600.	53:48	54:11	53.	1	1.0 ABV
457.7148	53:56	1348424.	338122.	53:48	54:11	40.	2	5.0 ABV
459.7118	53:56	1492464.	372600.	53:48	54:11	53.	2	5.0 ABV
469.7545	53:55	2239903.	555449.	53:47	54:10	49.	2	5.0 ABV
471.7514	53:55	2469345.	613224.	53:47	54:10	91.	2	5.0 ABV
441.7207	54:04	1906422.	483398.	53:52	54:19	61.	1	1.0 ABV
443.7177	54:04	2106906.	530367.	53:52	54:19	63.	1	1.0 ABV
441.7207	54:04	1906422.	483398.	53:52	54:19	61.	2	5.0 ABV
443.7177	54:04	2106906.	530367.	53:52	54:19	63.	2	5.0 ABV

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS1	Prep Batch		Lot No	
Data File	/20150409i/d115040911.d	Prep Date		SDG No	
Analysis ID	169124	Prep Exp Date		Date Received	
Analysis Date	4/9/2015	Matrix	UNKNOWN	Date Sampled	
Analysis Time	02:00	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D11A	Dil Factor	1.00	Code	F8o
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)	DL (ng/mL)
2,3,7,8-TCDD	30:40	34376	3635	1.000	0.500	0.593854	118.77	0.593854	0.0117
Total TCDD				1.000		0.593854		0.593854	0.0117
2,3,7,8-TCDF	28:42	54587	6004	1.000	0.500	0.564807	112.96	0.564807	0.0100
Total TCDF				1.000		0.564807		0.564807	0.0100
1,2,3,7,8-PeCDD	40:34	110764	24847	1.000	2.500	2.727120	109.08	2.727120	0.0119
Total PeCDD				1.000		2.727120		2.727120	0.0119
1,2,3,7,8-PeCDF	38:44	210803	40501	1.000	2.500	3.042744	121.71	3.042744	0.00923
2,3,4,7,8-PeCDF	40:01	202425	43251	1.000	2.500	2.946585	117.86	2.946585	0.00826
Total PeCDF				1.000		5.989329		5.989329	0.00872
1,2,3,4,7,8-HxCDD	44:51	127253	33867	1.000	2.500	3.003291	120.13	3.003291	0.0179
1,2,3,6,7,8-HxCDD	44:58	118914	31448	1.000	2.500	2.895578	115.82	2.895578	0.0185
1,2,3,7,8,9-HxCDD	45:21	133111	32492	1.000	2.500	3.190632	127.63	3.190632	0.0182
Total HxCDD				1.000		9.089501		9.089501	0.0182
1,2,3,4,7,8-HxCDF	43:49	213298	56538	1.000	2.500	3.580559	143.22	3.580559	0.0103
1,2,3,6,7,8-HxCDF	43:57	226875	59839	1.000	2.500	3.234220	129.37	3.234220	0.00872
2,3,4,6,7,8-HxCDF	44:40	205768	54309	1.000	2.500	3.278178	131.13	3.278178	0.0100
1,2,3,7,8,9-HxCDF	45:36	183167	43221	1.000	2.500	3.333679	133.35	3.333679	0.0126
Total HxCDF				1.000		13.426635		13.426635	0.0102
1,2,3,4,6,7,8-HpCDD	49:38	99007	19465	1.000	2.500	3.019256	120.77	3.019256	0.0156
Total HpCDD				1.000		3.019256		3.019256	0.0156
1,2,3,4,6,7,8-HpCDF	47:58	179136	39833	1.000	2.500	3.877612	155.10	3.877612	0.00916
1,2,3,4,7,8,9-HpCDF	50:17	130742	25479	1.000	2.500	3.580659	143.23	3.580659	0.0133
Total HpCDF				1.000		7.458271		7.458271	0.0108
OCDD	53:54	159794	40130	1.000	5.000	6.237107	124.74	6.237107	0.0137
OCDF	54:02	244266	62381	1.000	5.000	6.044818	120.90	6.044818	0.00879
13C-2,3,7,8-TCDD	30:37	5788627	574755	1.000	100.0	103.864440	103.86	103.864440	0.120
13C-2,3,7,8-TCDF	28:39	9664717	1048978	1.000	100.0	173.412525	173.41	173.412525	0.106
13C-1,2,3,7,8-PeCDD	40:33	4061574	900280	1.000	100.0	72.876195	72.88	72.876195	0.0465
13C-1,2,3,7,8-PeCDF	38:43	6928055	1326894	1.000	100.0	124.309021	124.31	124.309021	0.0875
13C-2,3,4,7,8-PeCDF	40:00	6869817	1483052	1.000	100.0	123.264066	123.26	123.264066	0.0875
13C-1,2,3,4,7,8-HxCDD	44:50	4237119	1102304	1.000	100.0	92.688024	92.69	92.688024	0.0552
13C-1,2,3,6,7,8-HxCDD	44:57	4106745	1067118	1.000	100.0	89.836060	89.84	89.836060	0.0552
13C-1,2,3,4,7,8-HxCDF	43:48	5957115	1583681	1.000	100.0	130.313361	130.31	130.313361	0.0592
13C-1,2,3,6,7,8-HxCDF	43:56	7014830	1863683	1.000	100.0	153.451137	153.45	153.451137	0.0592
13C-2,3,4,6,7,8-HxCDF	44:39	6276902	1623746	1.000	100.0	137.308780	137.31	137.308780	0.0592
13C-1,2,3,7,8,9-HxCDF	45:35	5494440	1285310	1.000	100.0	120.192231	120.19	120.192231	0.0592
13C-1,2,3,4,6,7,8-HpCDD	49:37	3279185	640161	1.000	100.0	71.732981	71.73	71.732981	0.0197
13C-1,2,3,4,6,7,8-HpCDF	47:57	4619750	1009451	1.000	100.0	101.058171	101.06	101.058171	0.0377
13C-1,2,3,4,7,8,9-HpCDF	50:16	3651339	697373	1.000	100.0	79.873942	79.87	79.873942	0.0377
13C-OCDD	53:54	5123978	1239510	1.000	200.0	112.088283	56.04	112.088283	0.0356
13C-OCDF	54:02	8081832	1990872	1.000	200.0	176.792069	88.40	176.792069	0.0352
37Cl4-2,3,7,8-TCDD	30:41	35349	3671	1.000	0.500	0.634262	126.85	0.634262	0.00930
13C-1,2,3,4-TCDD	30:07	5573252	591537	1.000	100.0	100.000000	100.00	100.000000	0.120
13C-1,2,3,7,8,9-HxCDD	45:20	4571377	1115112	1.000	100.0	100.000000	100.00	100.000000	0.0552

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS1	Prep Batch		Lot No	
Data File	/20150409i/d115040911.	Prep Date		SDG No	
Analysis ID	169124	Prep Exp Date		Date Received	
Analysis Date	04/09/15 02:00	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	48	58	19	23	0.83	/	
	2,3,7,8-TCDF	28:42	00:00	0	24148	30439	2696	3308	0.79	ABV/ABV	M
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	293	335	117	134	0.87	/	
	13C-2,3,7,8-TCDF	28:39	00:00	0	4341163	5323554	473310	575668	0.82	AVV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	35	33	14	13	1.08 *	/	
	2,3,7,8-TCDD	30:40	00:00	0	14917	19459	1651	1984	0.77	AVV/ABV	M
328					327.8847		327.8847				
	Noise	00:00	00:00	0	55		22				
	37Cl4-2,3,7,8-TCDD	30:41	00:00	0	35349		3671			ABV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	420	290	168	116	1.45 *	/	
	13C-1,2,3,4-TCDD	30:07	00:00	0	2487769	3085483	264253	327284	0.81	ABV/AVV	
	13C-2,3,7,8-TCDD	30:37	00:00	0	2581387	3207240	254793	319962	0.80	AVV/AVV	
	Unidentified	31:08	00:00	0	19290	18433	2229	2439	1.05 *	AVV/AVV	R
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	60	63	24	25	0.96 *	/	
	1,2,3,7,8-PeCDF	38:44	00:00	0	129227	81576	24745	15756	1.58	ABV/ABV	M
	2,3,4,7,8-PeCDF	40:01	00:00	0	124431	77994	26581	16670	1.60	ABV/AVV	M
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	283	235	113	94	1.20 *	/	
	13C-1,2,3,7,8-PeCDF	38:43	00:00	0	4241322	2686733	812865	514029	1.58	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:00	00:00	0	4234612	2635205	909330	573722	1.61	AVV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	68	40	27	16	1.69	/	
	1,2,3,7,8-PeCDD	40:34	00:00	0	68010	42754	15261	9586	1.59	ABV/ABV	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	168	108	67	43	1.56	/	
	13C-1,2,3,7,8-PeCDD	40:33	00:00	0	2518206	1543368	557718	342562	1.63	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	68	95	27	38	0.71 *	/	
	1,2,3,4,7,8-HxCDF	43:49	00:00	0	118472	94826	30785	25753	1.25	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	43:57	00:00	0	125193	101682	33574	26265	1.23	AVV/AVV	M
	2,3,4,6,7,8-HxCDF	44:40	00:00	0	114510	91258	30145	24164	1.25	ABV/AVV	M
	1,2,3,7,8,9-HxCDF	45:36	00:00	0	103912	79255	24423	18798	1.31	ABV/ABV	M
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	295	365	118	146	0.81 *	/	
	13C-1,2,3,4,7,8-HxCDF	43:48	00:00	0	2085520	3871595	551109	1032572	0.54	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	43:56	00:00	0	2447837	4566993	654035	1209648	0.54	AVV/AVV	
	Unidentified	44:13	00:00	0	6990	14000	1831	2960	0.50	AVV/AVV	
	Unidentified	44:21	00:00	0	10606	17913	1312	2604	0.59 *	AVV/AVV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS1	Prep Batch		Lot No	
Data File	/20150409i/d115040 9i1.	Prep Date		SDG No	
Analysis ID	169124	Prep Exp Date		Date Received	
Analysis Date	04/09/15 02:00	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

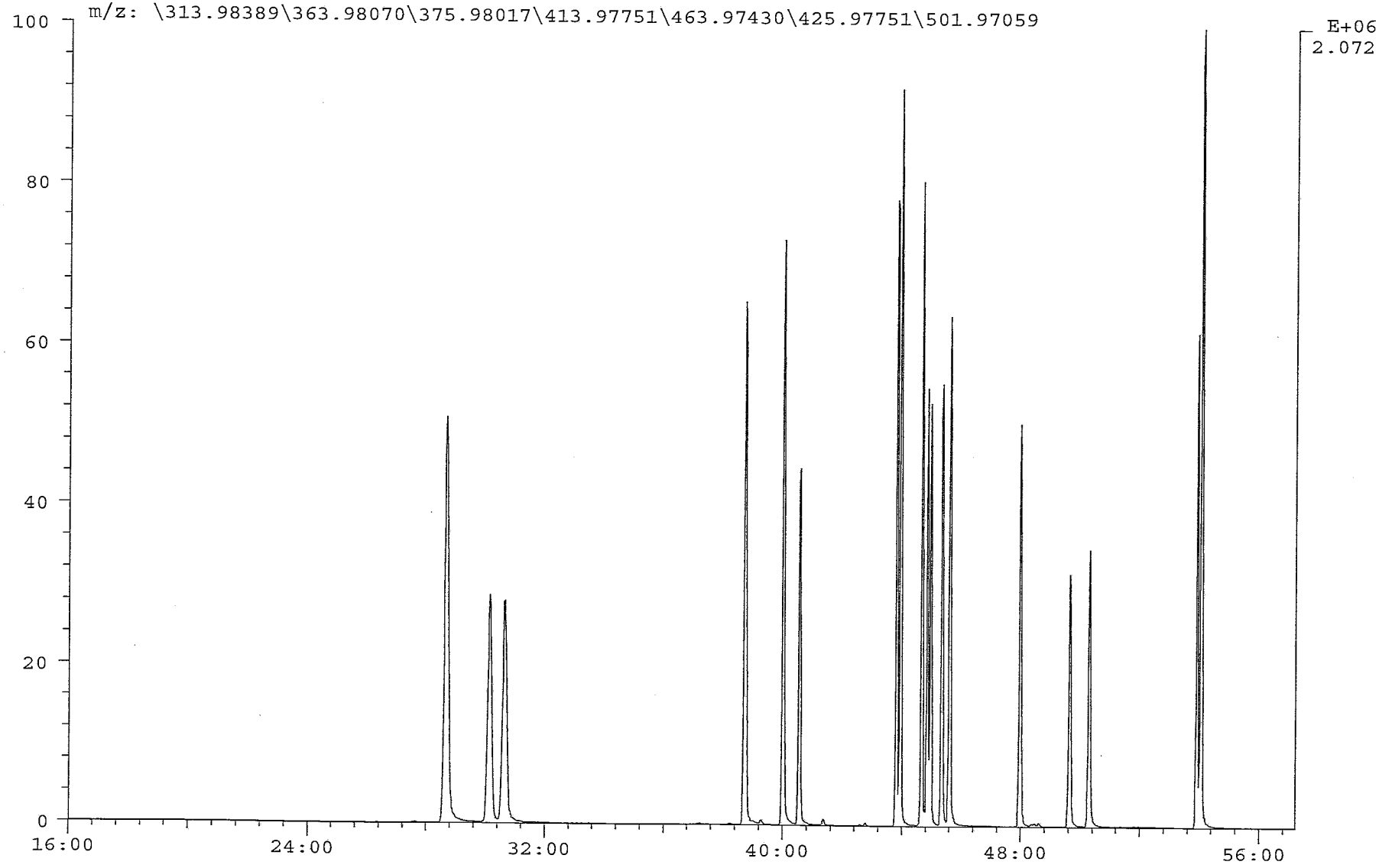
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	13C-2,3,4,6,7,8-HxCDF	44:39	00:00	0	2199429	4077473	573676	1050070	0.54	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	45:35	00:00	0	1889338	3605102	443161	842149	0.52	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	88	110	35	44	0.80 *	/	
	1,2,3,4,7,8-HxCDD	44:51	00:00	0	74570	52683	19379	14488	1.42	ABV/ABV	M
	1,2,3,6,7,8-HxCDD	44:58	00:00	0	65925	52989	17643	13805	1.24	AVB/AVV	M
	1,2,3,7,8,9-HxCDD	45:21	00:00	0	72936	60175	18521	13971	1.21	ABV/AVV	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	328	288	131	115	1.14	/	
	13C-1,2,3,4,7,8-HxCDD	44:50	00:00	0	2374300	1862819	613063	489241	1.27	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	44:57	00:00	0	2281893	1824852	588217	478901	1.25	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	45:20	00:00	0	2556341	2015036	627660	487452	1.27	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	38	55	15	22	0.68 *	/	
	1,2,3,4,6,7,8-HpCDF	47:58	00:00	0	92440	86696	20132	19701	1.07	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	50:17	00:00	0	67117	63625	13164	12315	1.05	ABV/ABB	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	183	238	73	95	0.77 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	47:57	00:00	0	1461224	3158526	318575	690876	0.46	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:16	00:00	0	1150253	2501086	221978	475395	0.46	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	48	53	19	21	0.90	/	
	1,2,3,4,6,7,8-HpCDD	49:38	00:00	0	51267	47740	10190	9275	1.07	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	98	123	39	49	0.80 *	/	
	13C-1,2,3,4,6,7,8-HpCDD	49:37	00:00	0	1702887	1576298	329334	310827	1.08	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	48	40	19	16	1.19 *	/	
	OCDF	54:02	00:00	0	114557	129709	28507	33874	0.88	ABV/ABV	M
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	208	185	83	74	1.12 *	/	
	13C-OCDF	54:02	00:00	0	3836940	4244892	949280	1041592	0.90	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	50	35	20	14	1.43 *	/	
	OCDD	53:54	00:00	0	73650	86144	18543	21587	0.85	ABV/ABV	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	148	250	59	100	0.59 *	/	
	13C-OCDD	53:54	00:00	0	2451631	2672347	595226	644284	0.92	ABV/ABV	

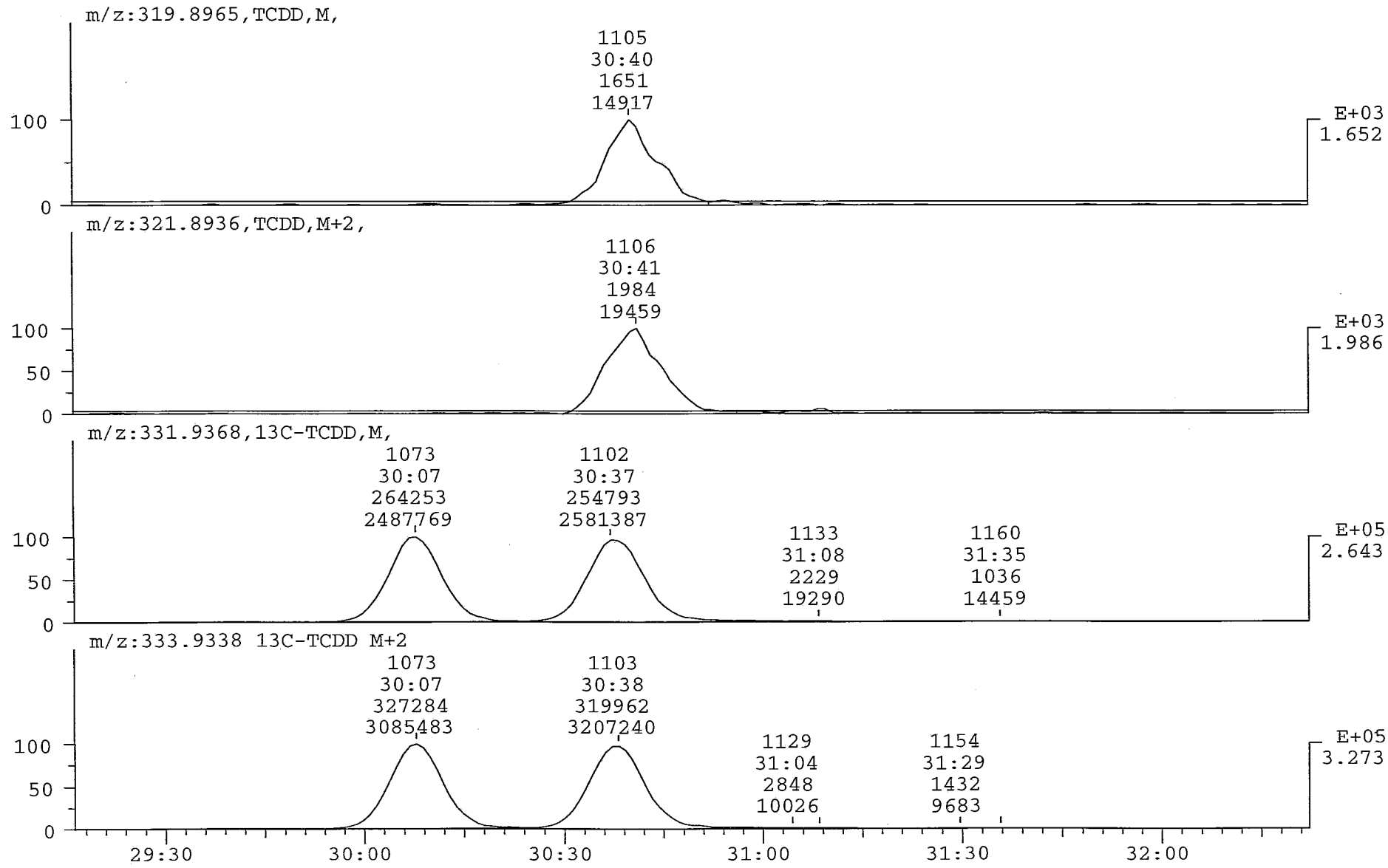
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. Klu 4/9/15
+ Cal.
QCKM 4-9-15

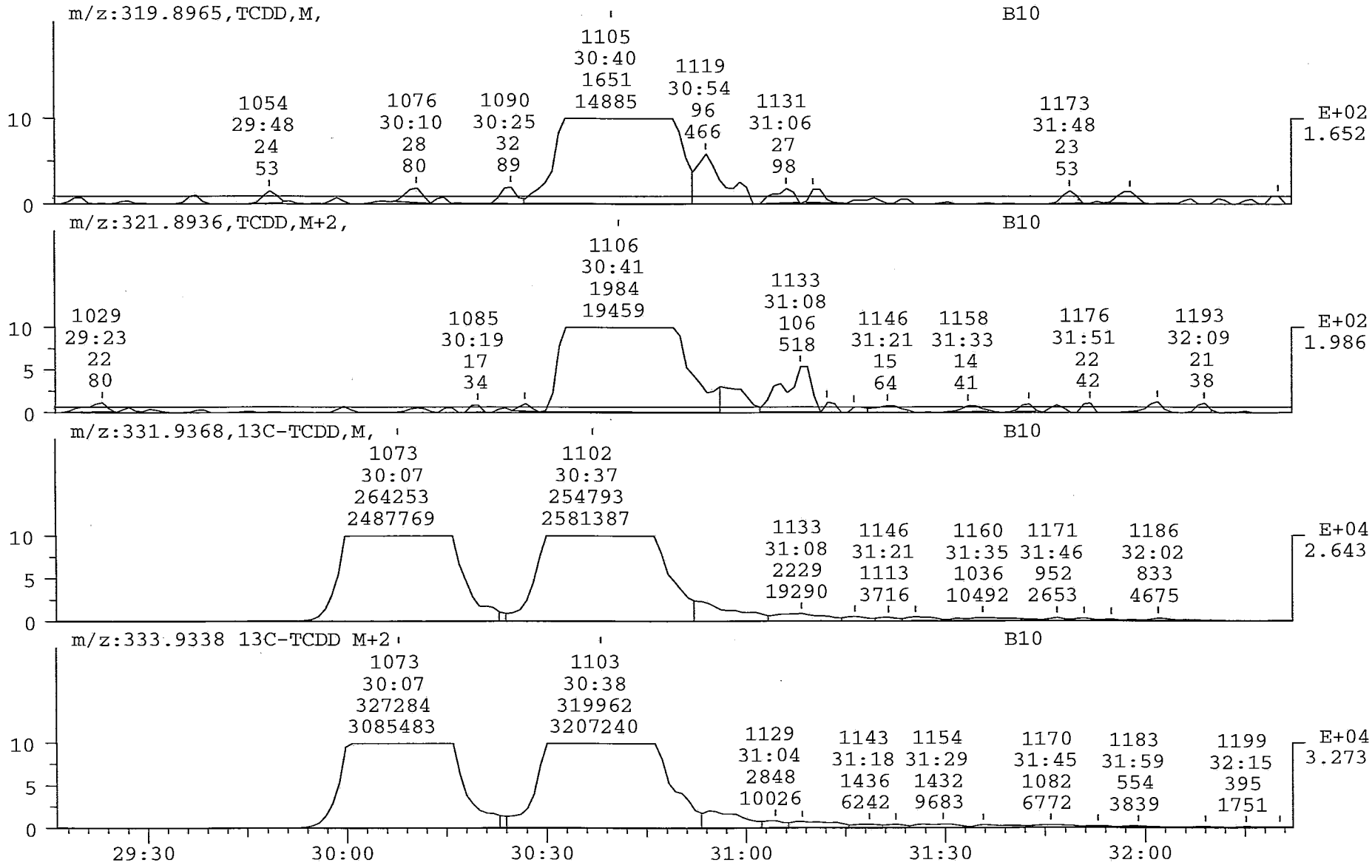
CHRO: d1150409i1 09-Apr-15 Elapse: 54:11 2465
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 02:00:07 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 234 > 2640 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



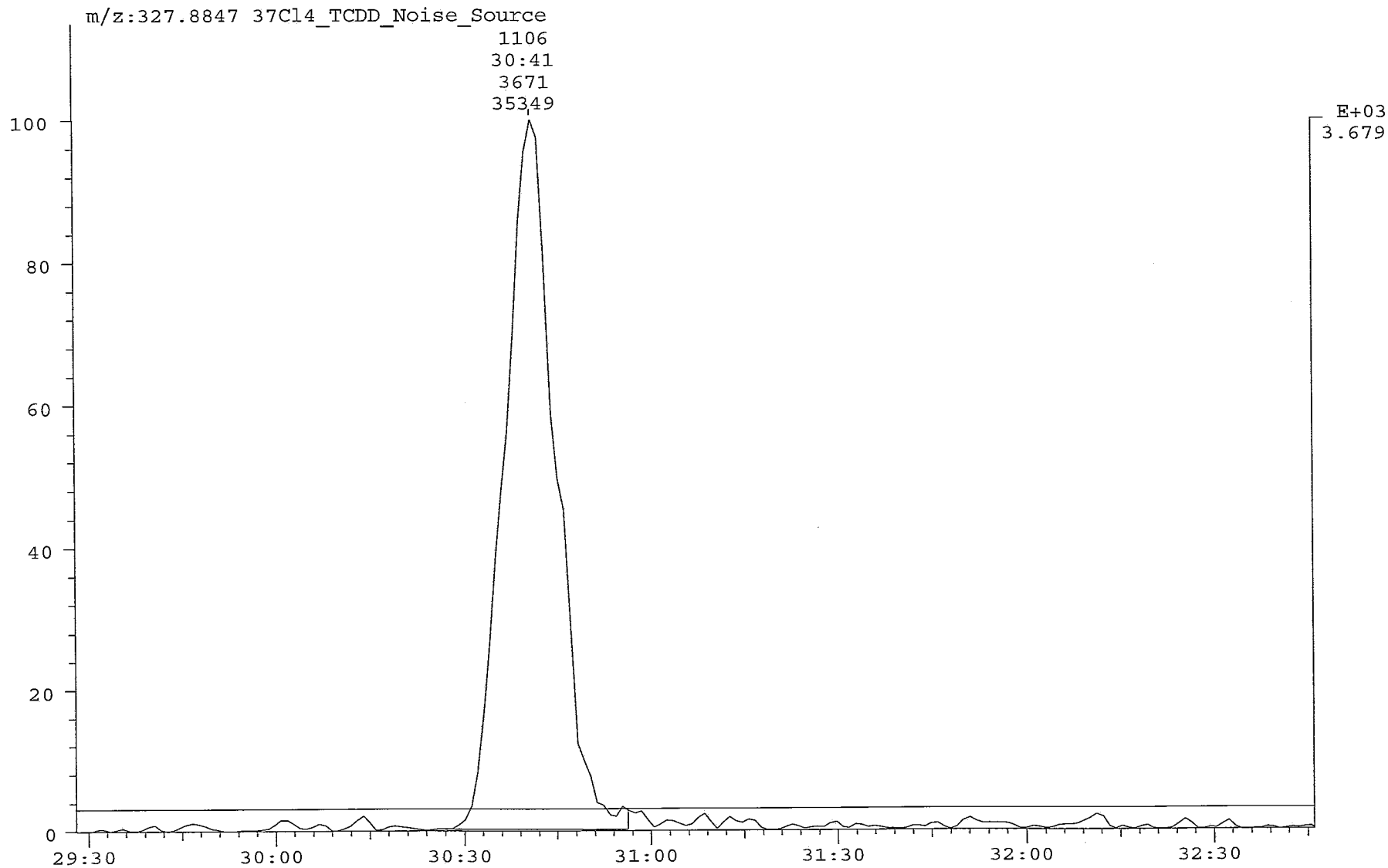
```
CHRO:  d1150409i1                          09-Apr-15   Elapse:  25:03.6      772
Samp:  WO=4104:74cs1 Meth=F8o Dil=1                    Start :  02:00:07    2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                             Study :  1613/8290 ICAL
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1022 > 1206       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



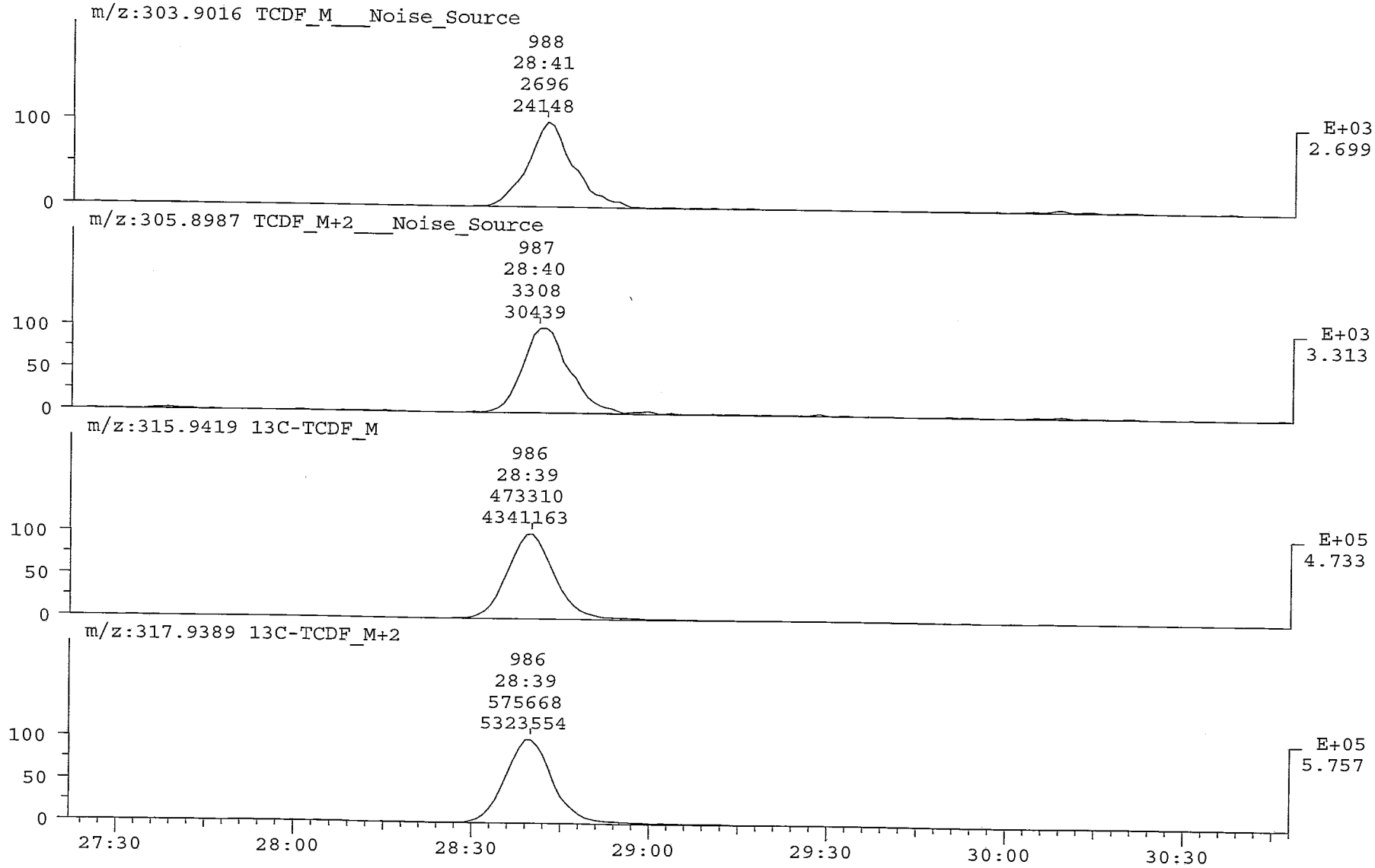
CHRO: d1150409i1 09-Apr-15 Elapse: 25:03.6 772
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 02:00:07 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1022 > 1206 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 1.0
Disp: Height Area



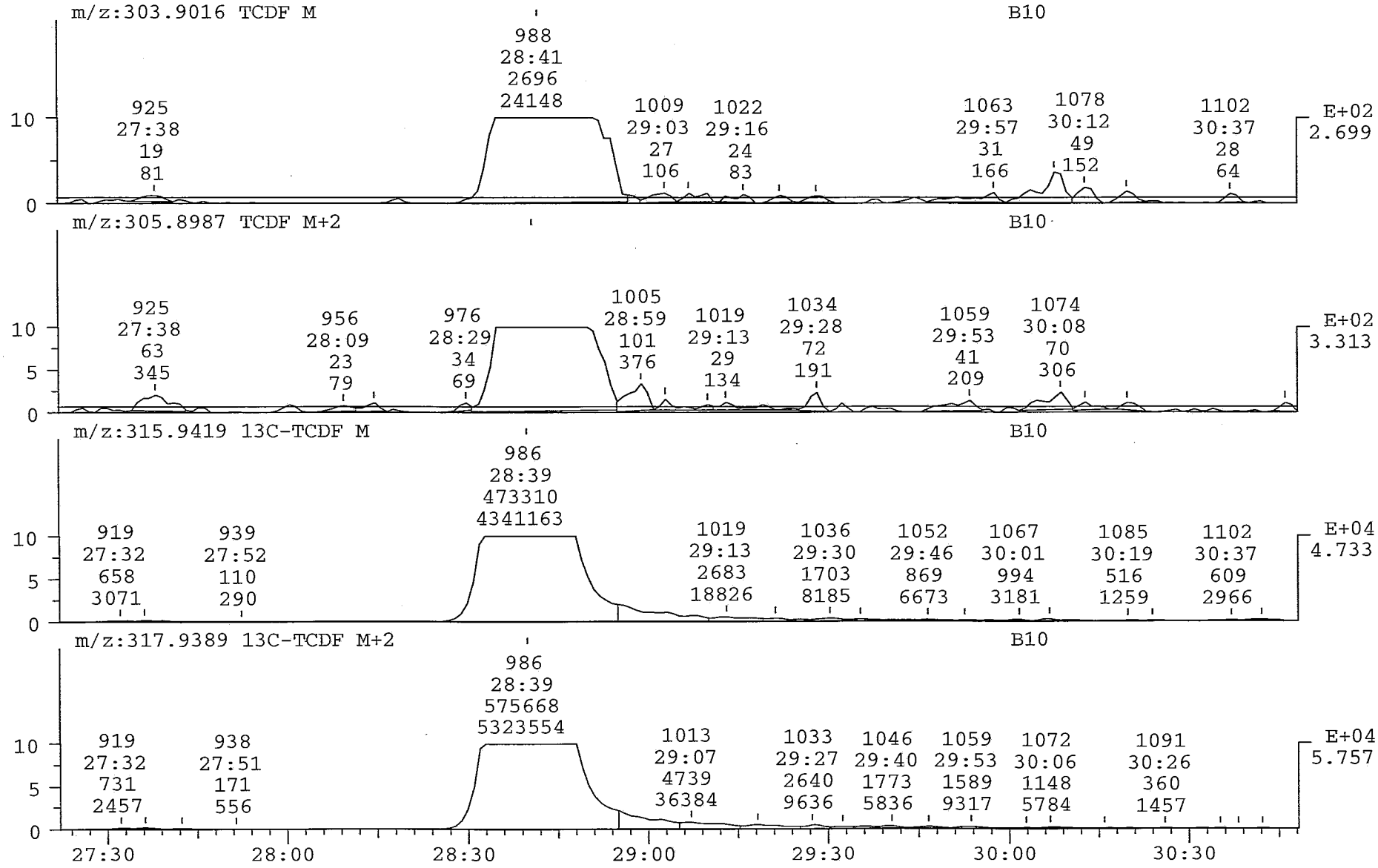
```
CHRO:  d1150409i1                          09-Apr-15  Elapse:  31:04      1129
Samp:  WO=4104:74cs1 Meth=F8o Dil=1                   Start :  02:00:07   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1034 > 1230      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d1150409i1 09-Apr-15 Elapse: 29:02 1008
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 02:00:07 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 909 > 1113 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



```
CHRO:  d1150409i1                          09-Apr-15  Elapse:  43:58      1873
Samp:  WO=4104:74cs1 Meth=F8o Dil=1                   Start :  02:00:07   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   909 > 1113       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 1.0
Disp:  Height  Area
```

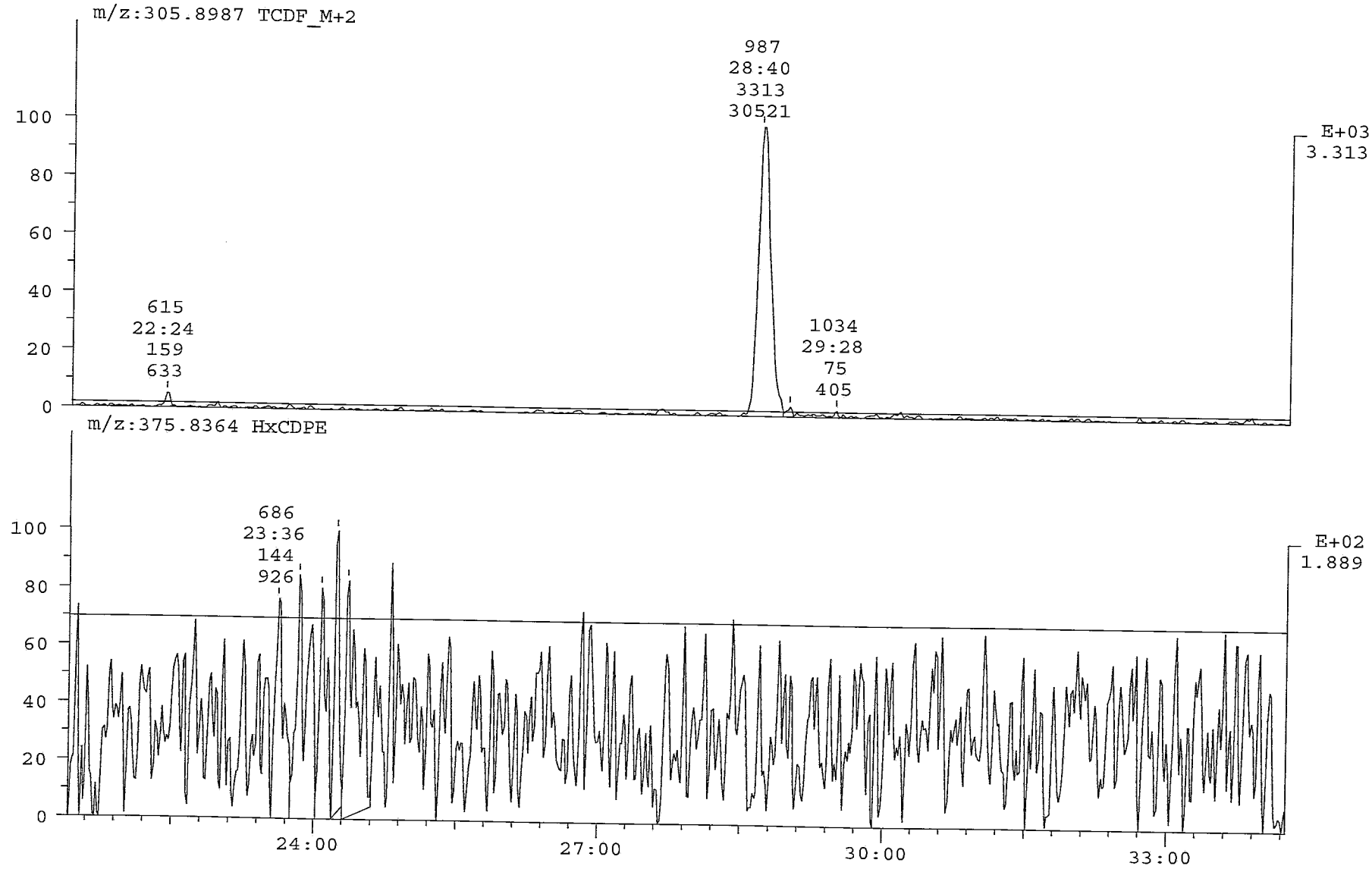


CHRO: d1150409i1
Samp: WO=4104:74cs1 Meth=F8o Dil=1
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR
Oper: LKM
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

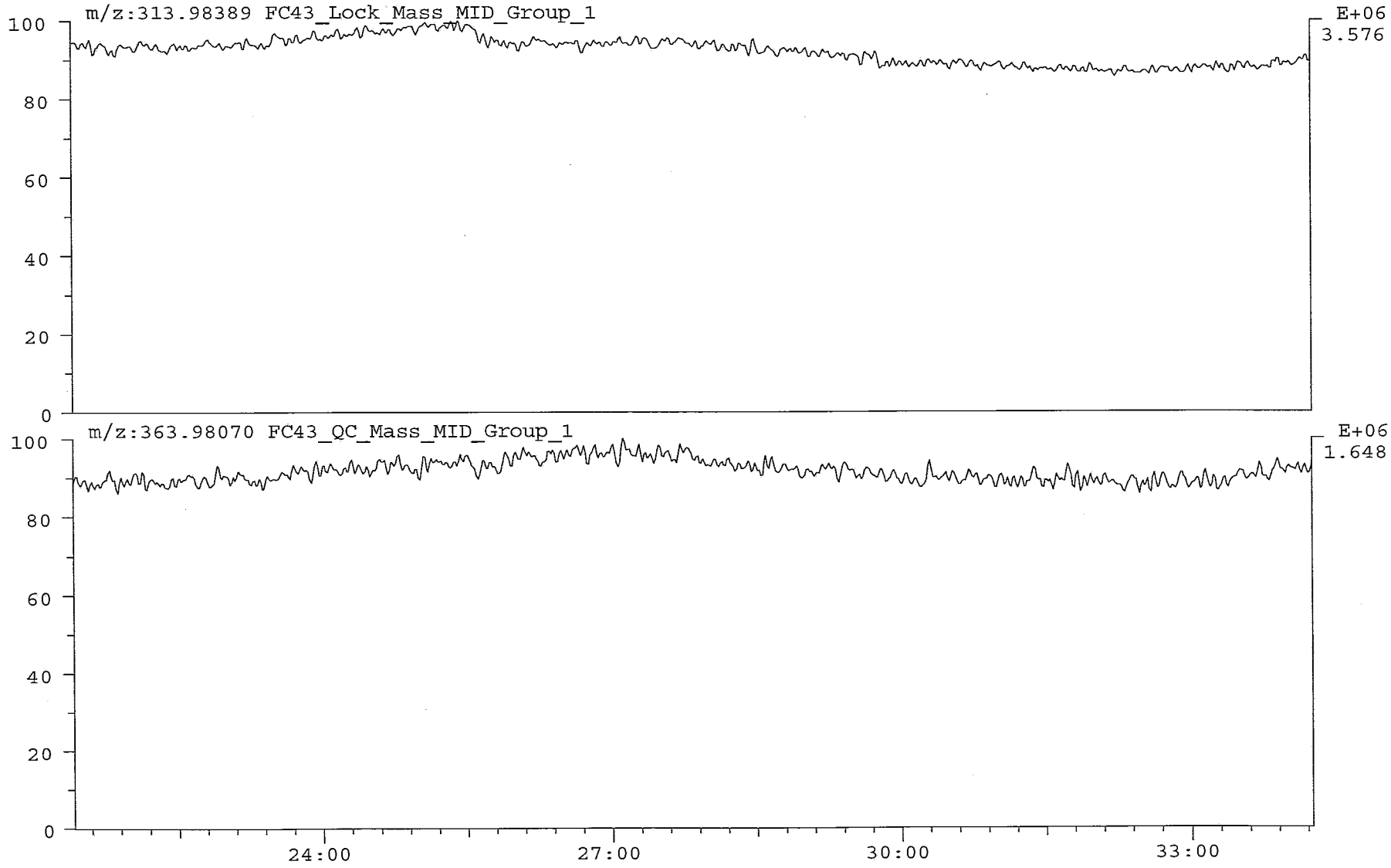
Label wndw: 556 > 1318
Baseline : 100, 3

09-Apr-15

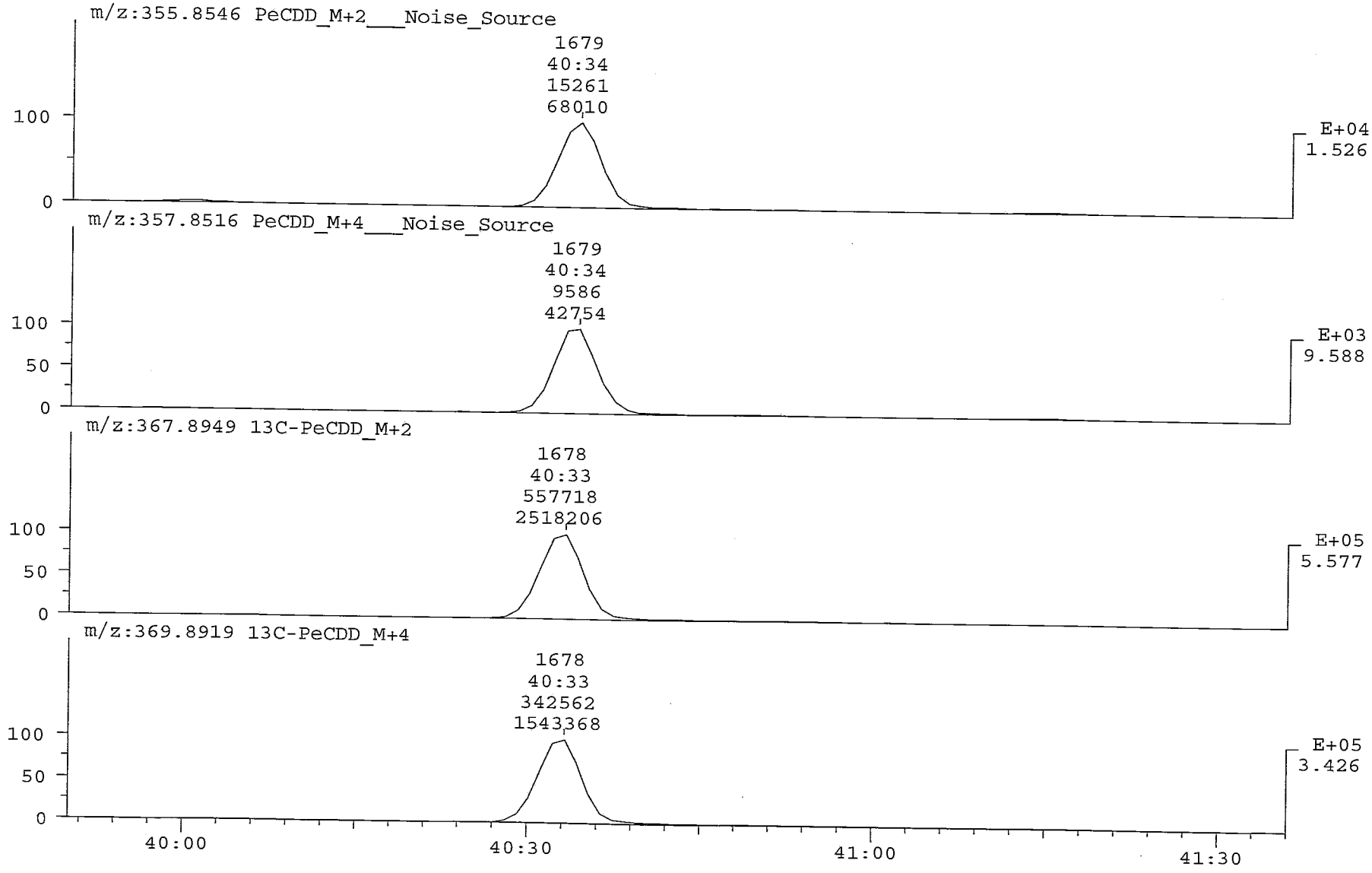
Elapse: 29:02 1008
Start : 02:00:07 2640
Study : 1613/8290 ICAL
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



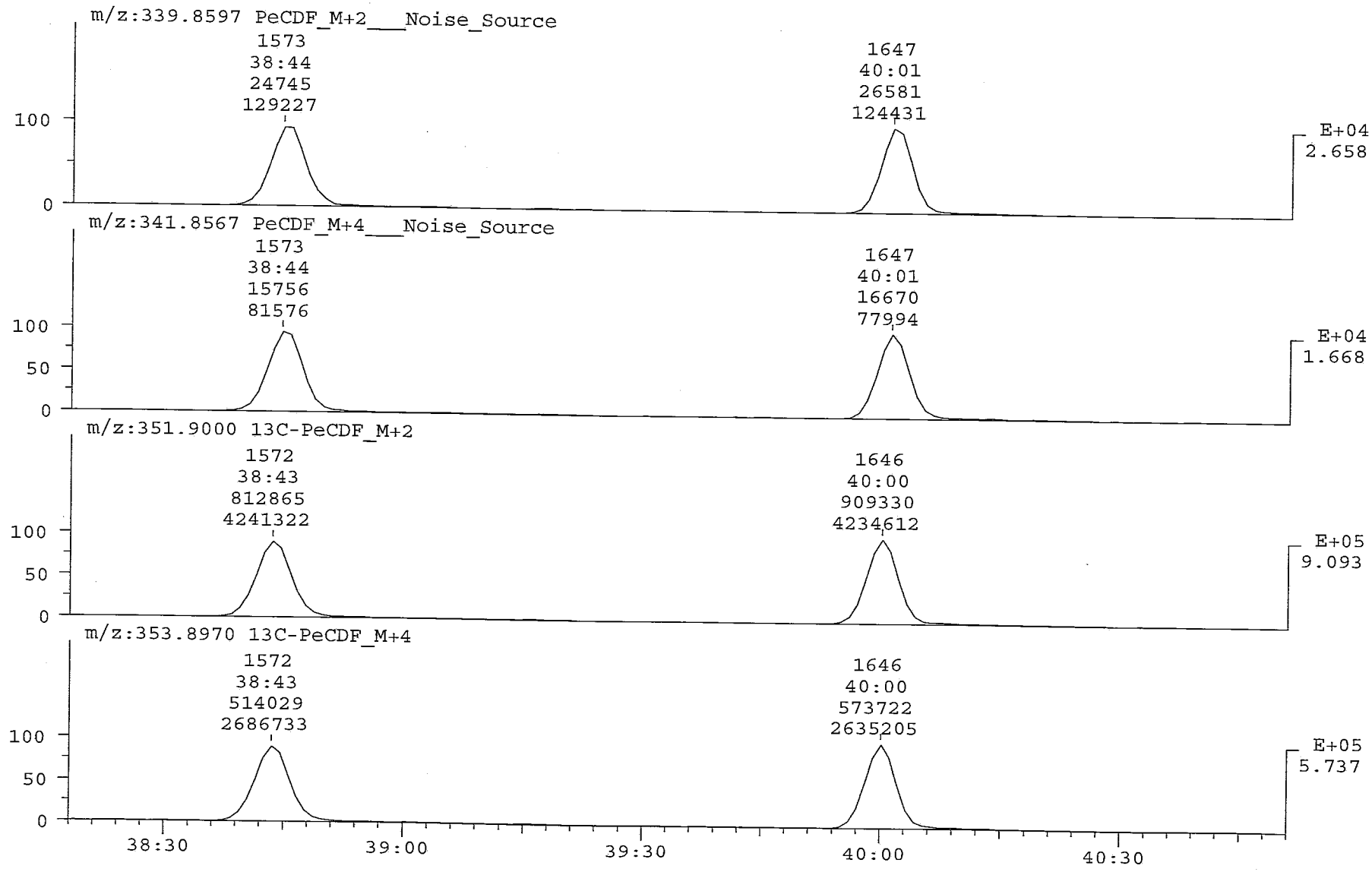
```
CHRO:  d1150409i1                          09-Apr-15  Elapse:  29:02      1008
Samp:  WO=4104:74cs1 Meth=F8o Dil=1                   Start :  02:00:07   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   556 > 1318       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



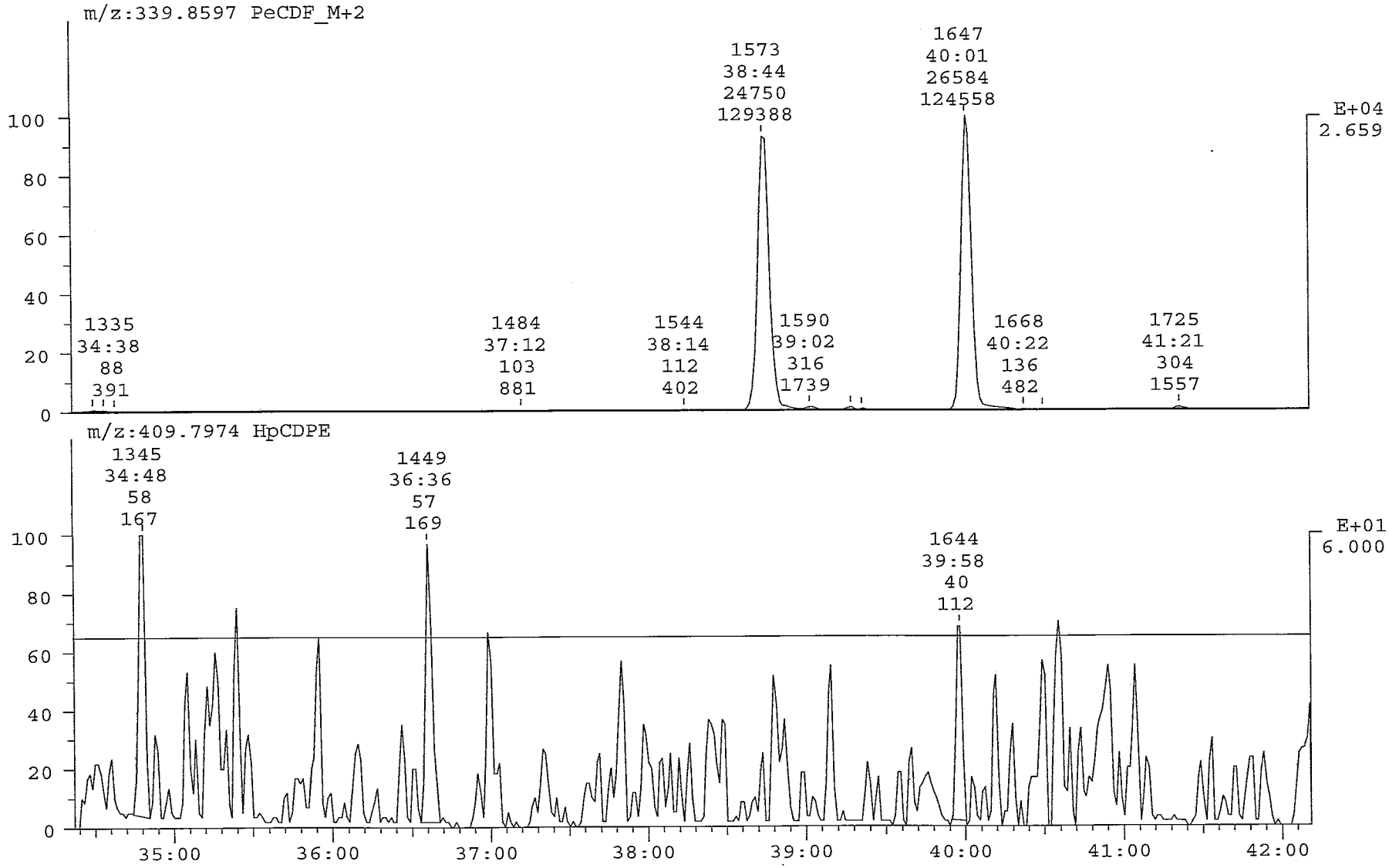
CHRO: d1150409i1 09-Apr-15 Elapse: 40:40 1685
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 02:00:07 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1636 > 1739 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



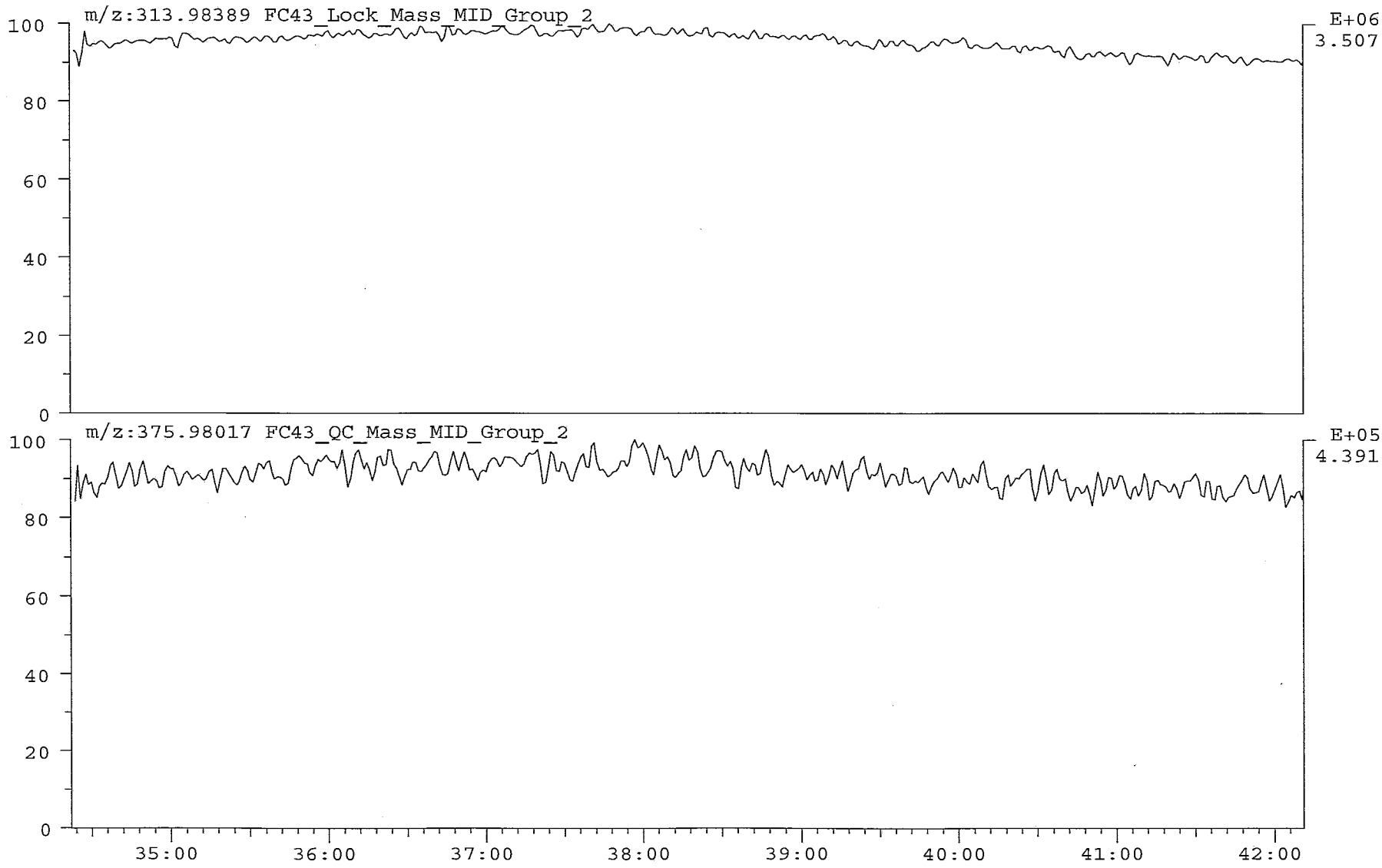
CHRO: d1150409i1 09-Apr-15 Elapse: 39:34 1621
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 02:00:07 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1547 > 1695 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



CHRO: d1150409i1 09-Apr-15 Elapse: 39:34 1621
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 02:00:07 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1321 > 1773 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d1150409i1                          09-Apr-15  Elapse:  39:34      1621
Samp:  WO=4104:74cs1 Meth=F8o Dil=1                   Start :  02:00:07   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1321 > 1773      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```

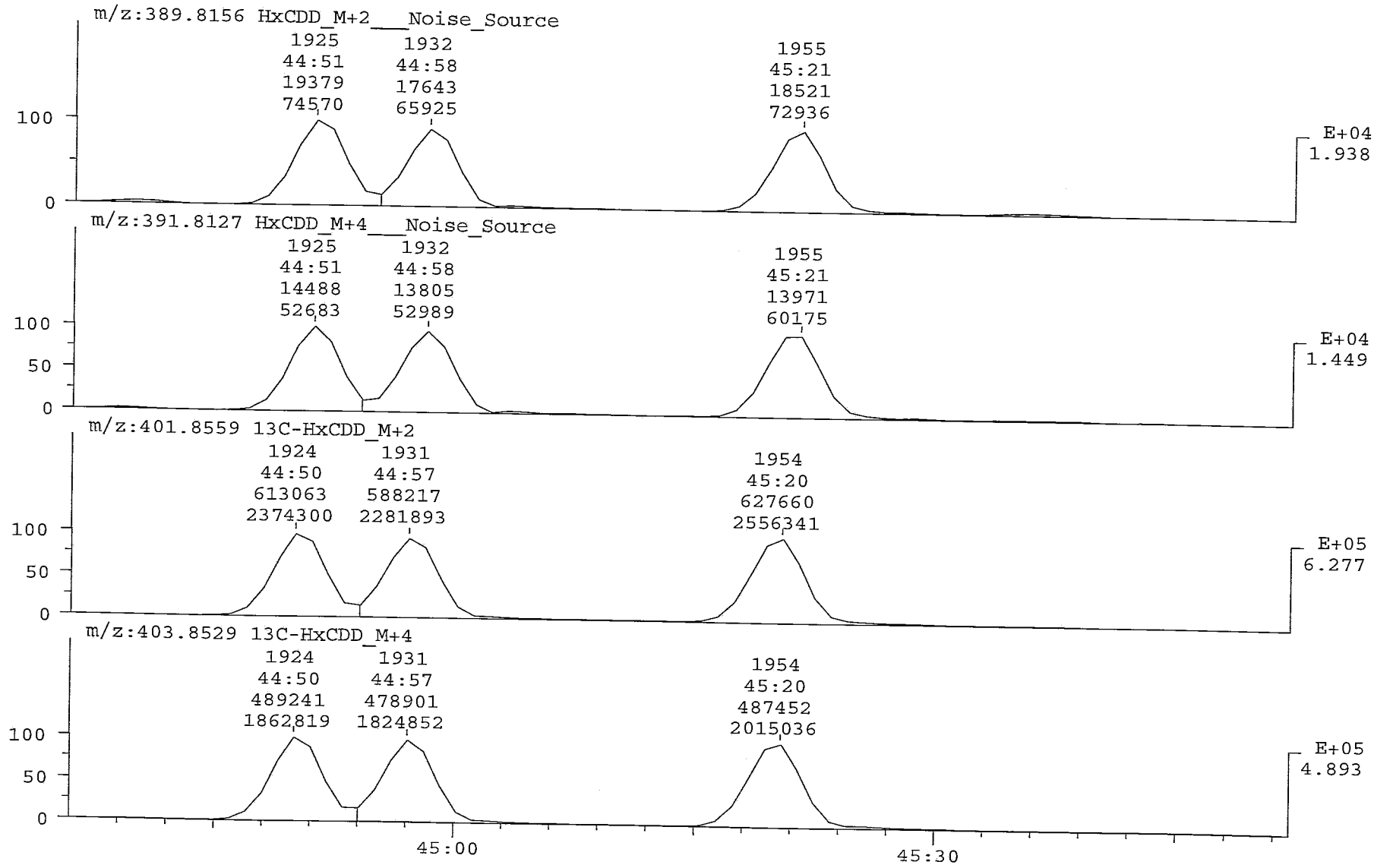


CHRO: d1150409i1
Samp: WO=4104:74cs1 Meth=F8o Dil=1
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR
Oper: LKM
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

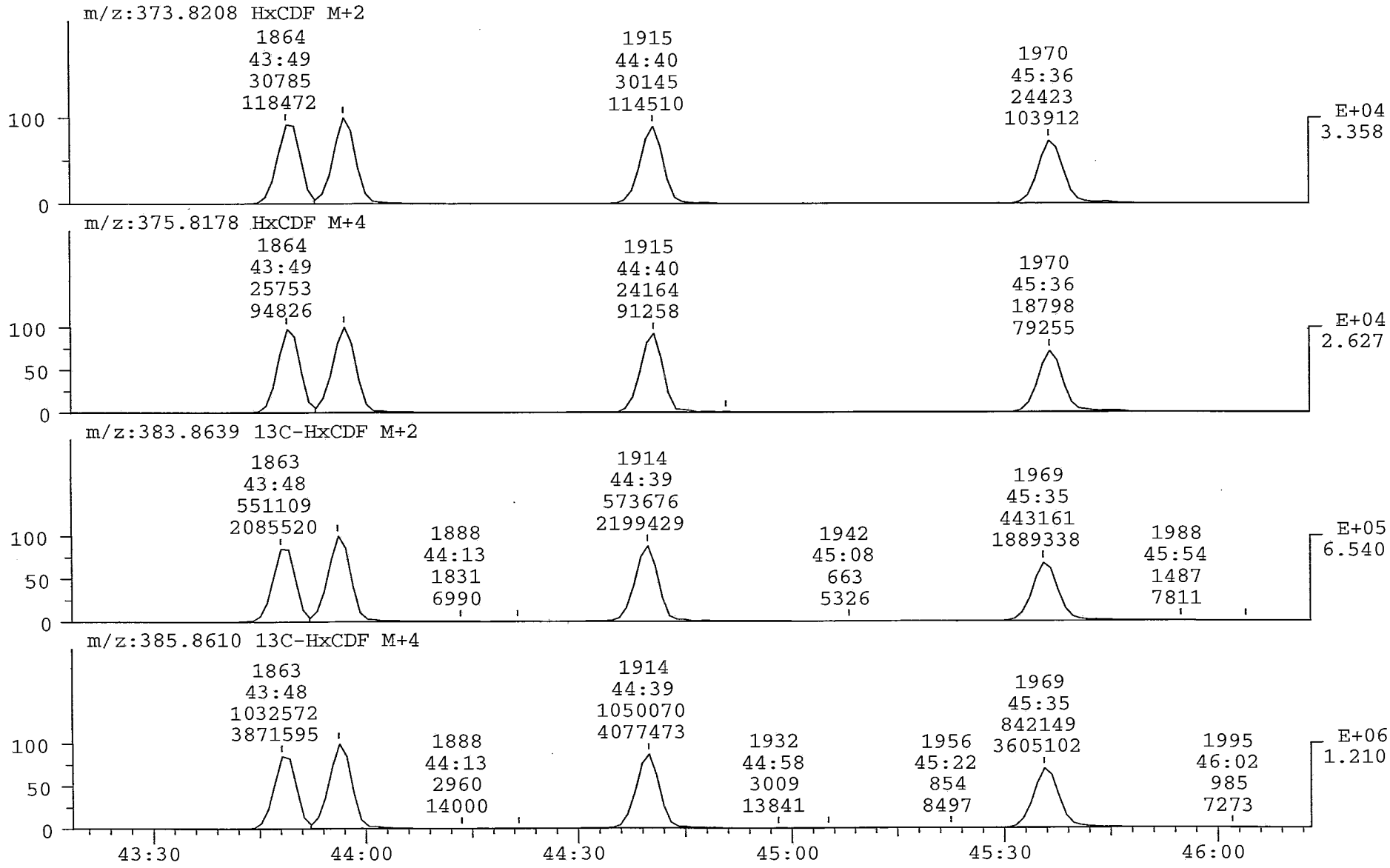
Label wndw: 1910 > 1985
Baseline : 100, 3

09-Apr-15

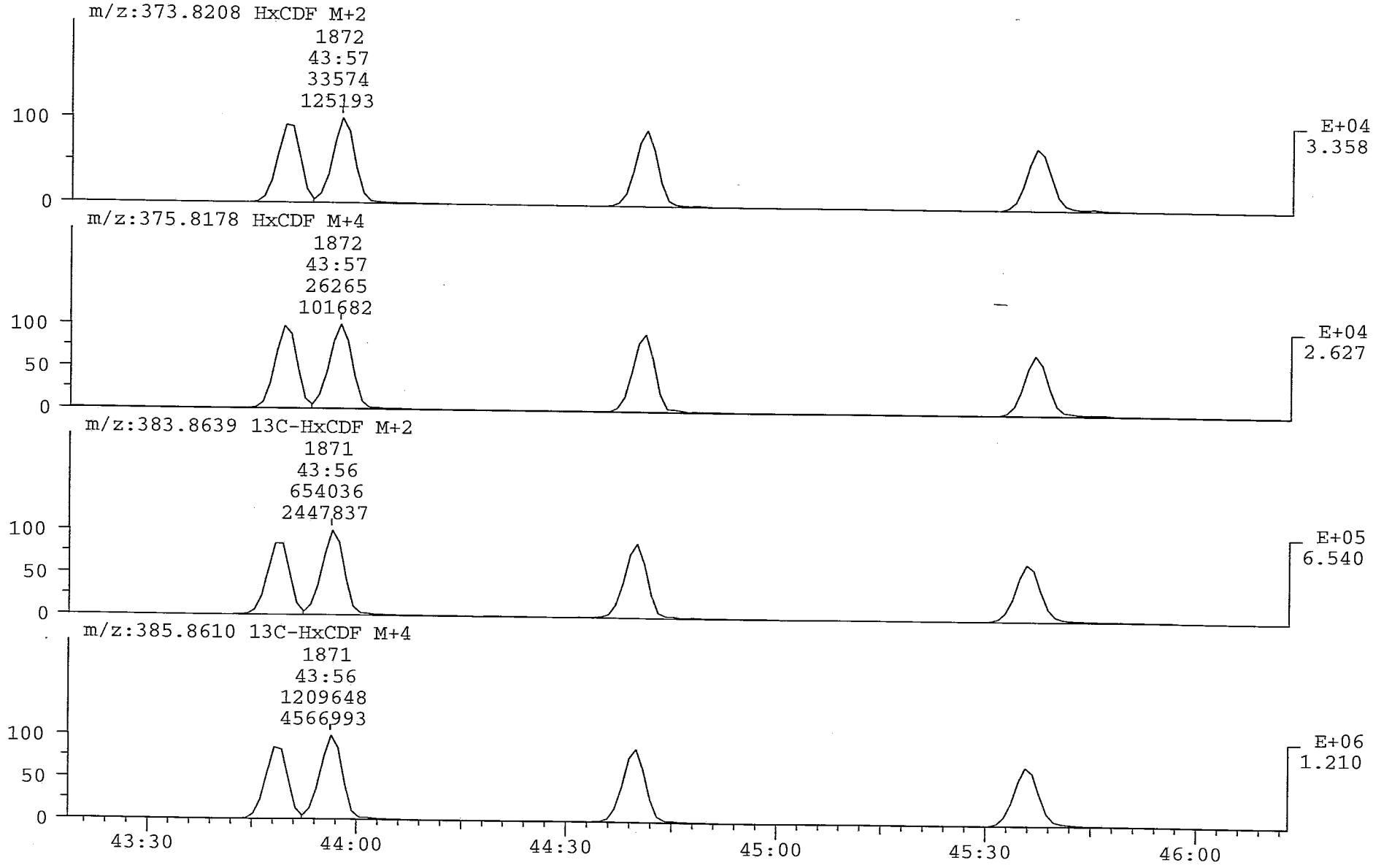
Elapse: 45:14 1948
Start : 02:00:07 2640
Study : 1613/8290 ICAL
Inlet : LC
Masses: 303 > 514
Label : 2, 5.0



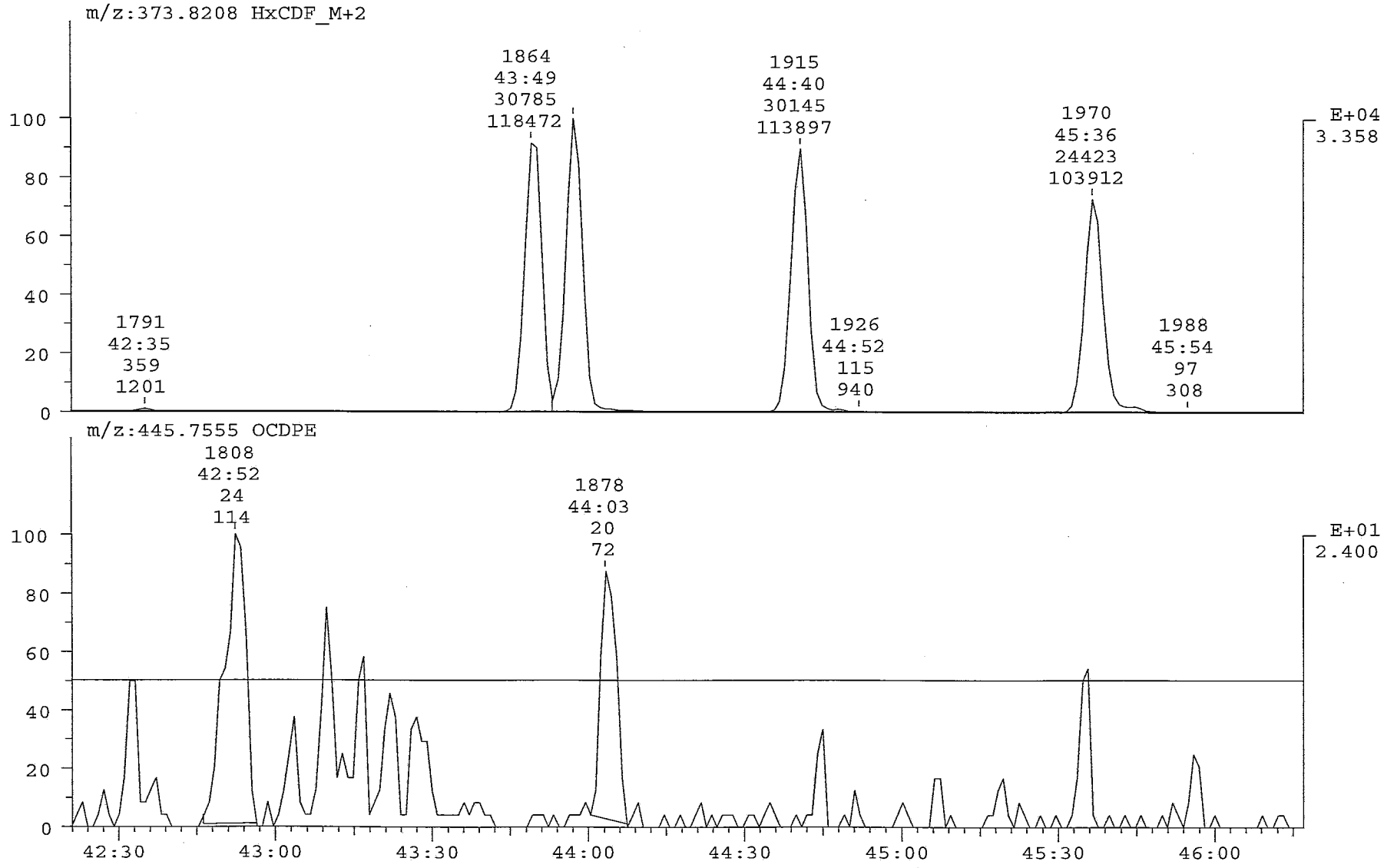
CHRO: d1150409i1 09-Apr-15 Elapse: 25:03.6 772
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 02:00:07 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1834 > 2006 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



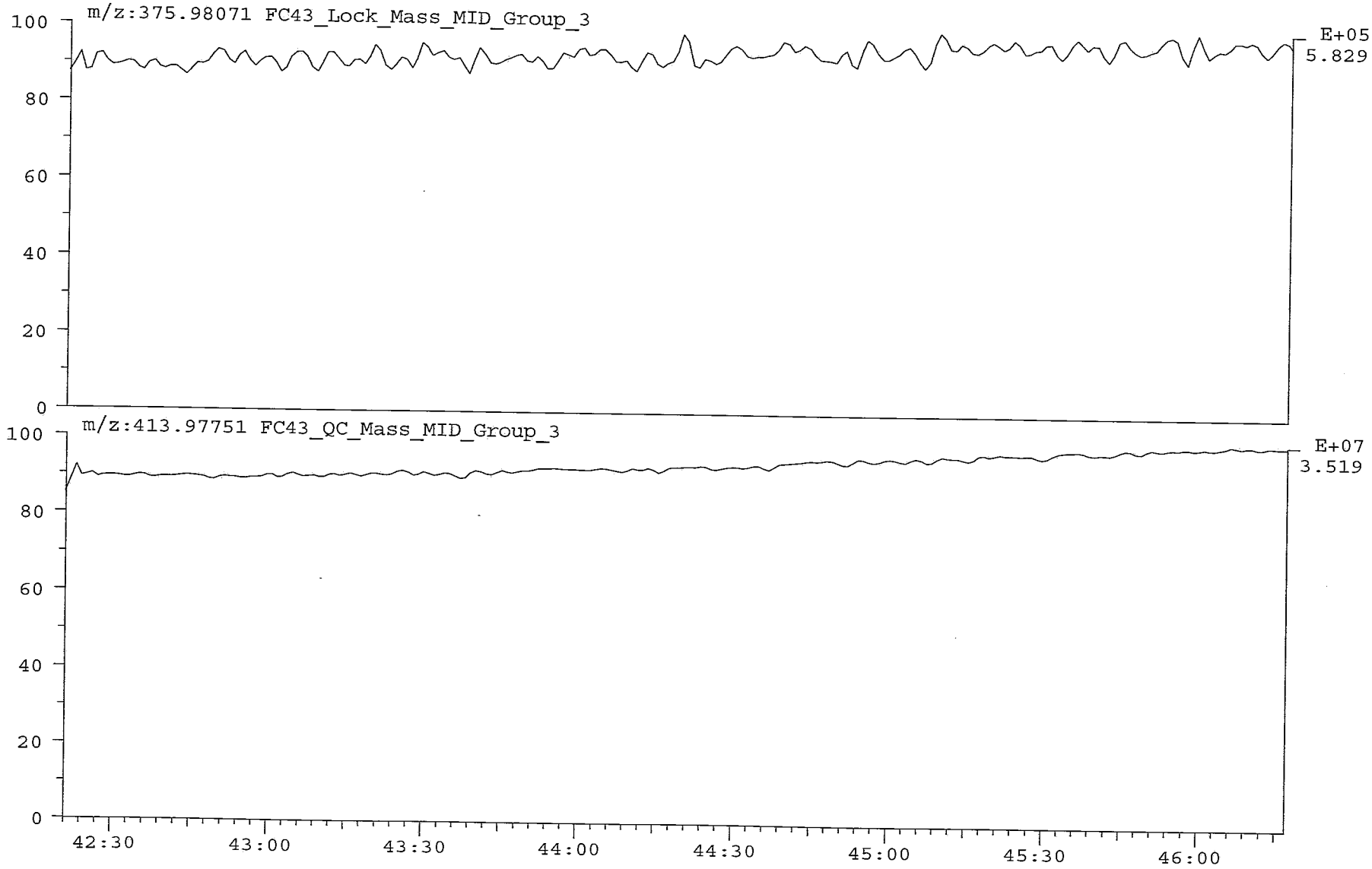
CHRO: d1150409i1 09-Apr-15 Elapse: 43:57 1872
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 02:00:07 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1869 > 1875 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



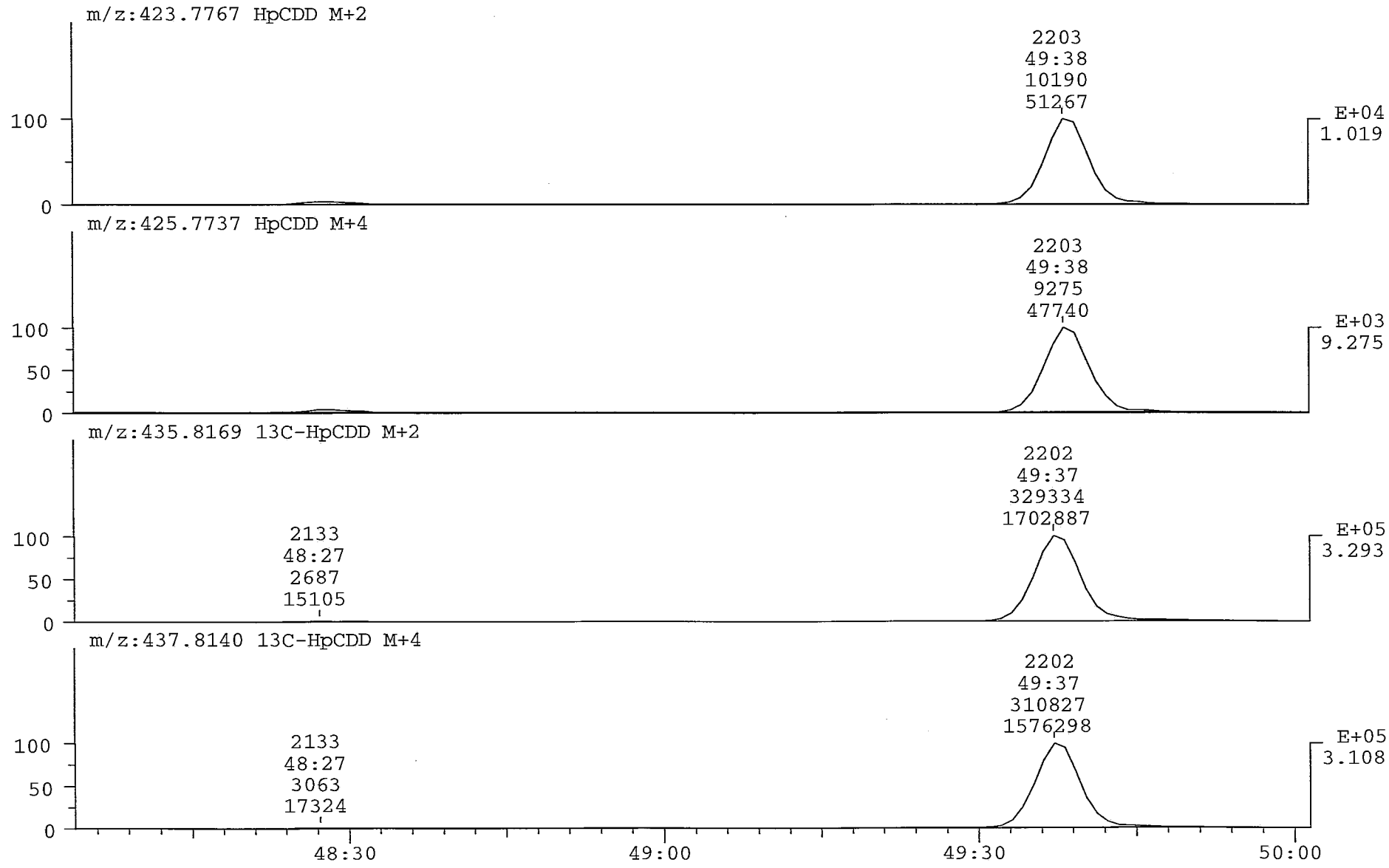
```
CHRO:  d1150409i1                                09-Apr-15  Elapse:  44:03      1878
Samp:  WO=4104:74cs1 Meth=F8o Dil=1                         Start :  02:00:07   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  1613/8290 ICAL
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1777 > 2010            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



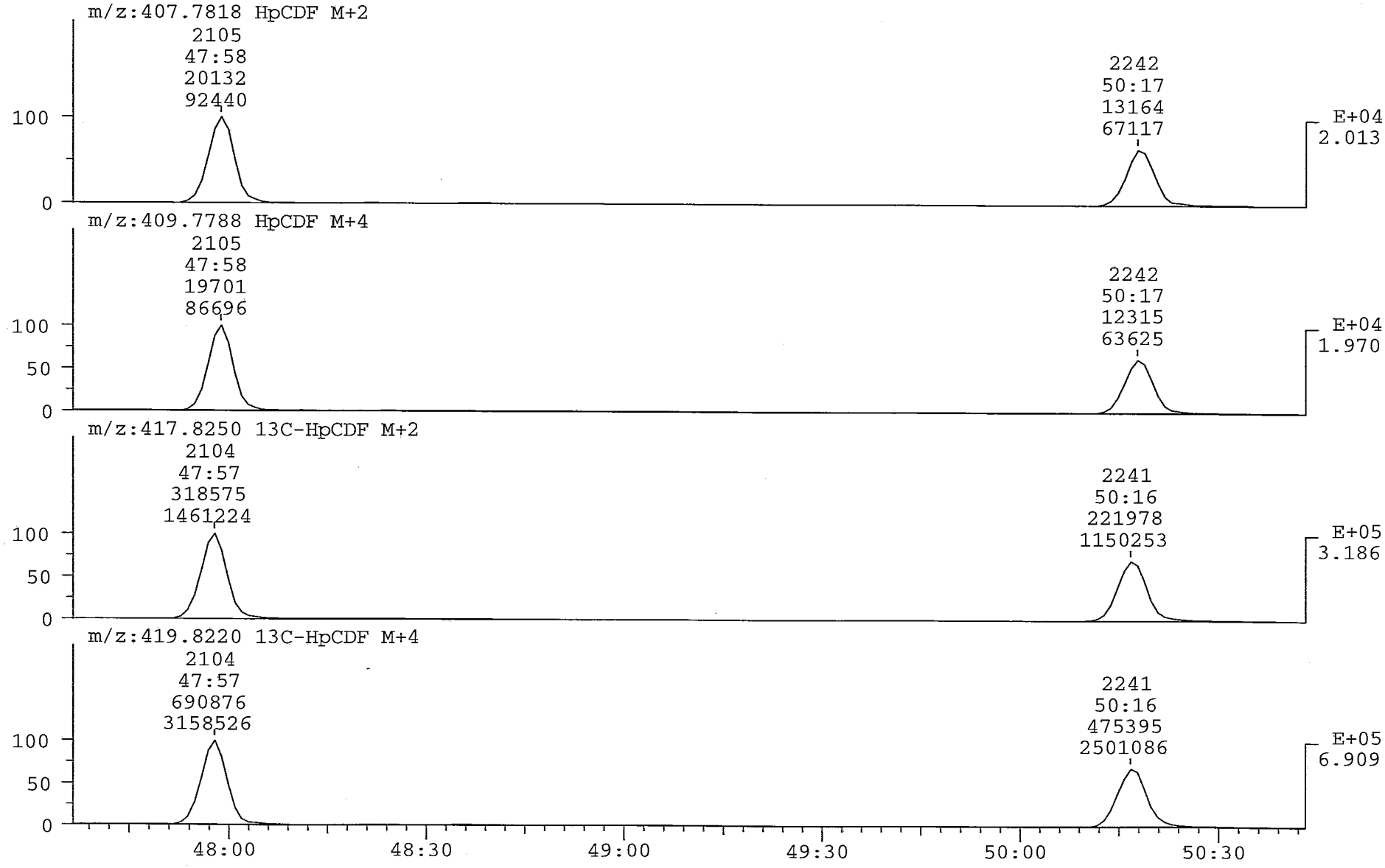
CHRO: d1150409i1 09-Apr-15 Elapse: 44:03 1878
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 02:00:07 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1777 > 2010 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



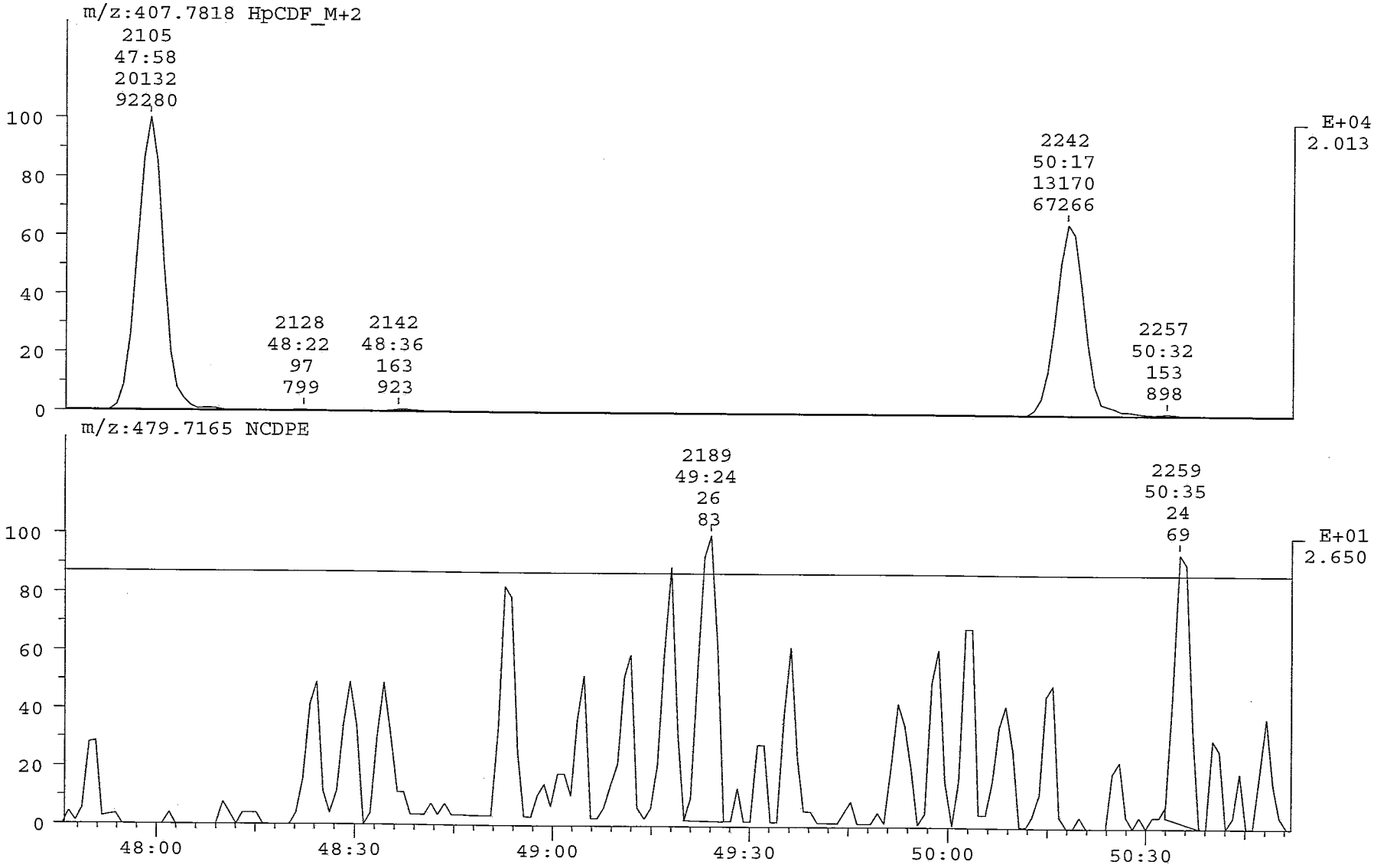
```
CHRO:  d1150409i1                          09-Apr-15   Elapse:  43:58      1873
Samp:  WO=4104:74cs1 Meth=F8o Dil=1                    Start :  02:00:07   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                             Study :  1613/8290 ICAL
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1 > 3000          Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d115040 9i1                          09-Apr-15   Elapse:  43:58      1873
Samp:  WO=4104:74cs1 Meth=F8o Dil=1                     Start :  02:00:07   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                              Study :  1613/8290 ICAL
Oper:  LKM                                              Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2083 > 2267        Masses:  303 > 514
Area:  5, 0.50, 0      Baseline  :   100, 3             Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d1150409i1 09-Apr-15 Elapse: 49:18 2184
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 02:00:07 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2092 > 2276 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area

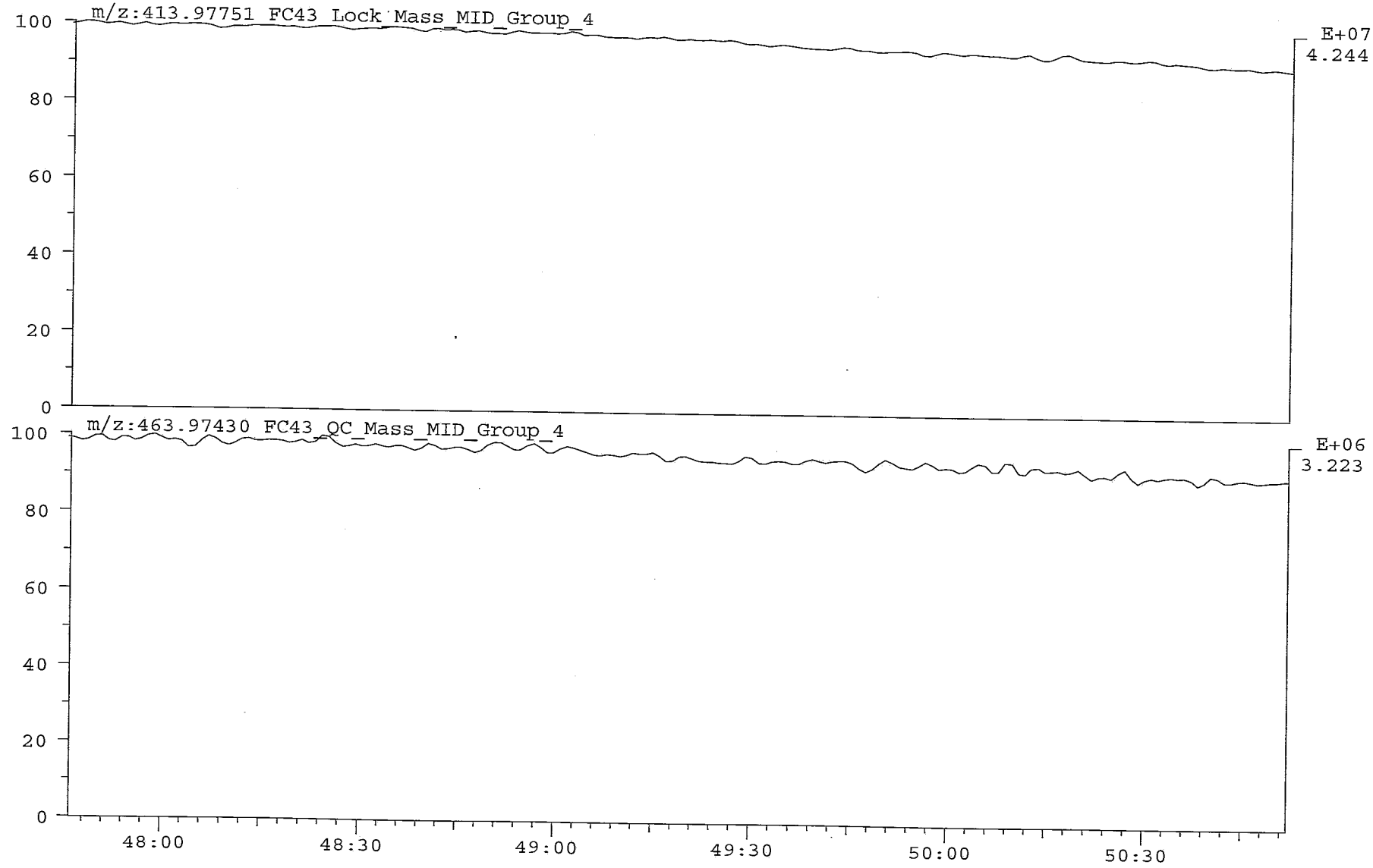


CHRO: d115040911
Samp: WO=4104:74cs1 Meth=F8o Dil=1
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR
Oper: LKM
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

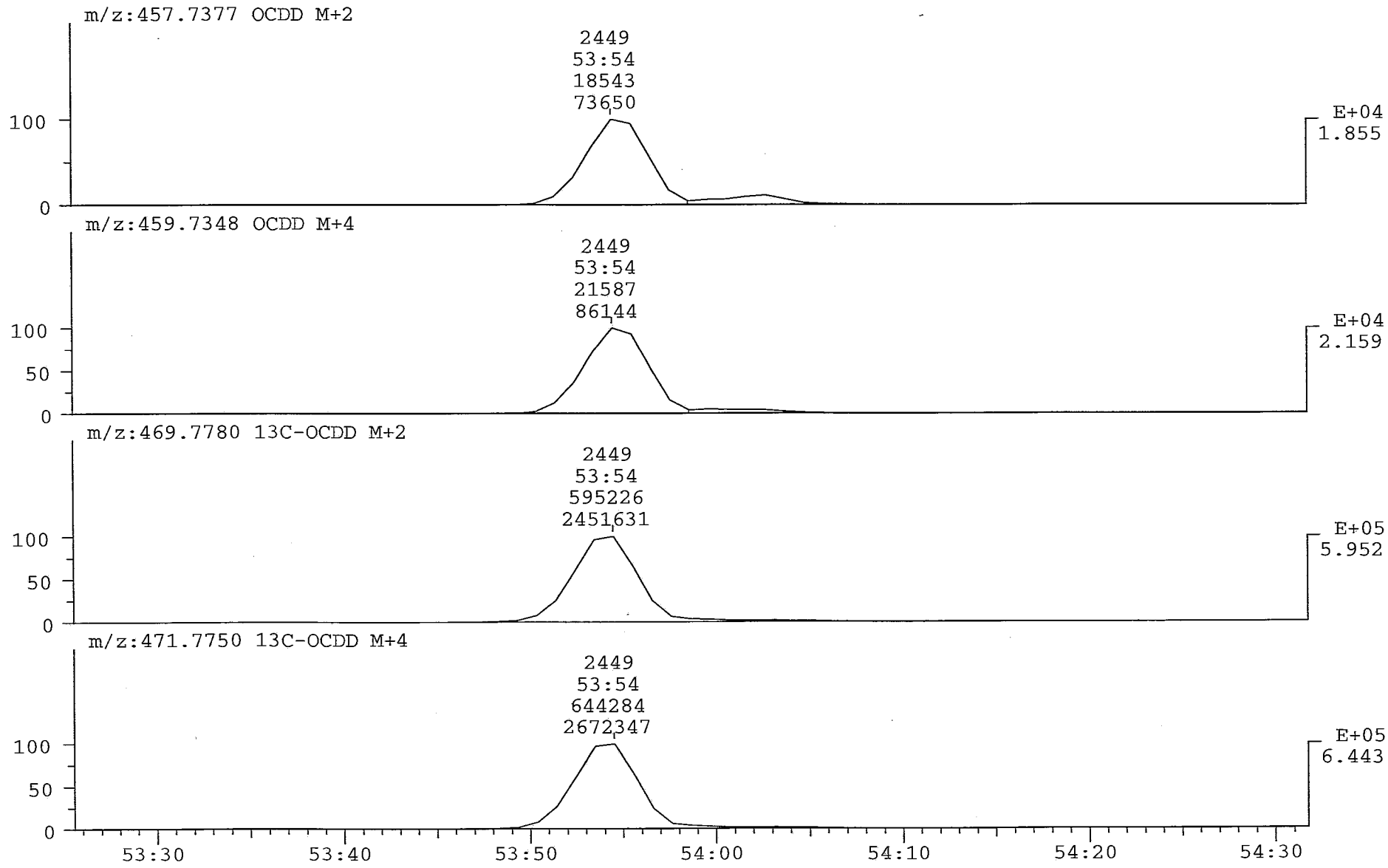
09-Apr-15

Label wndw: 2092 > 2276
Baseline : 100, 3

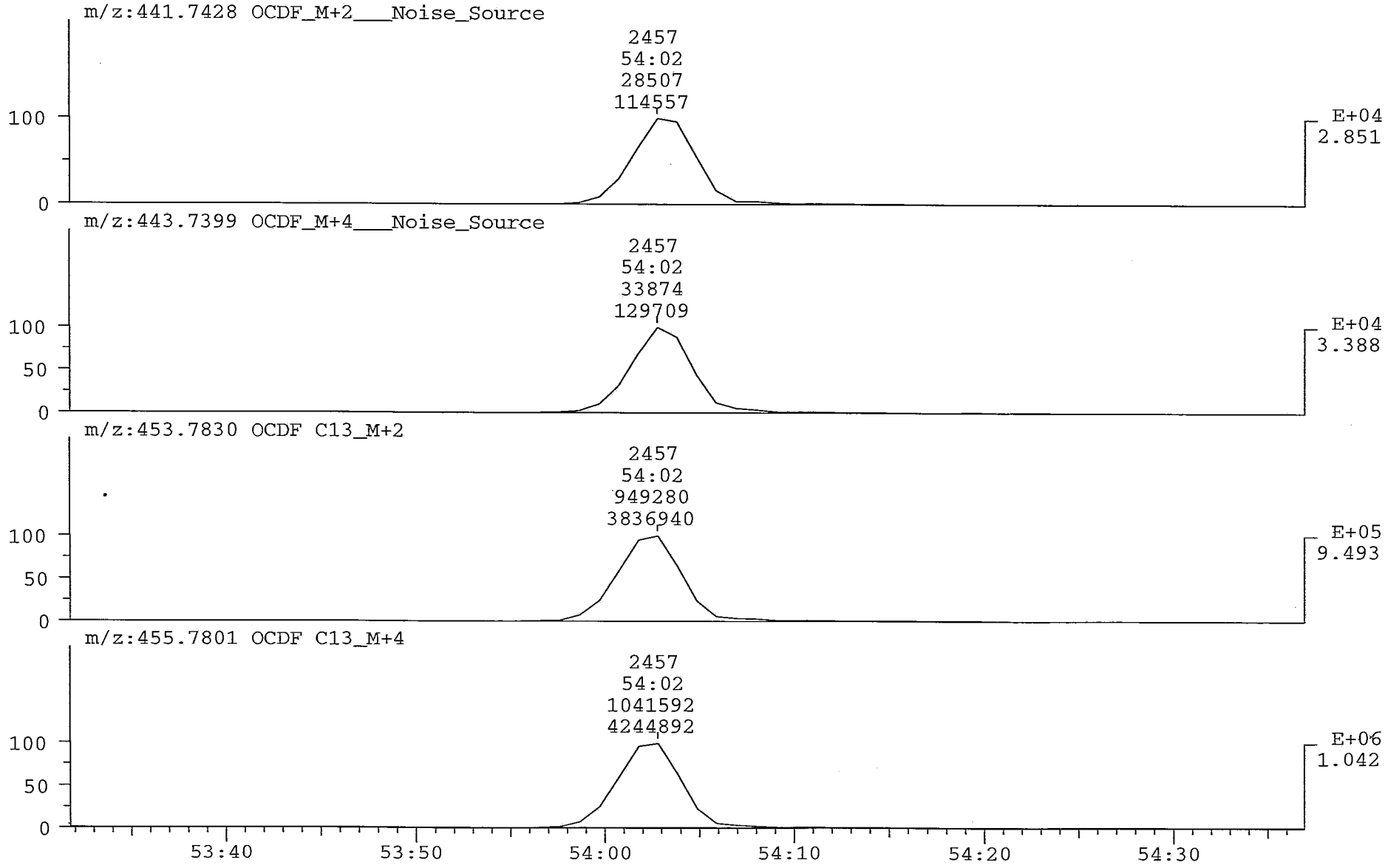
Elapse: 49:18 2184
Start : 02:00:07 2640
Study : 1613/8290 ICAL
Inlet : LC
Masses: 303 > 514
Label : 0, 0.0



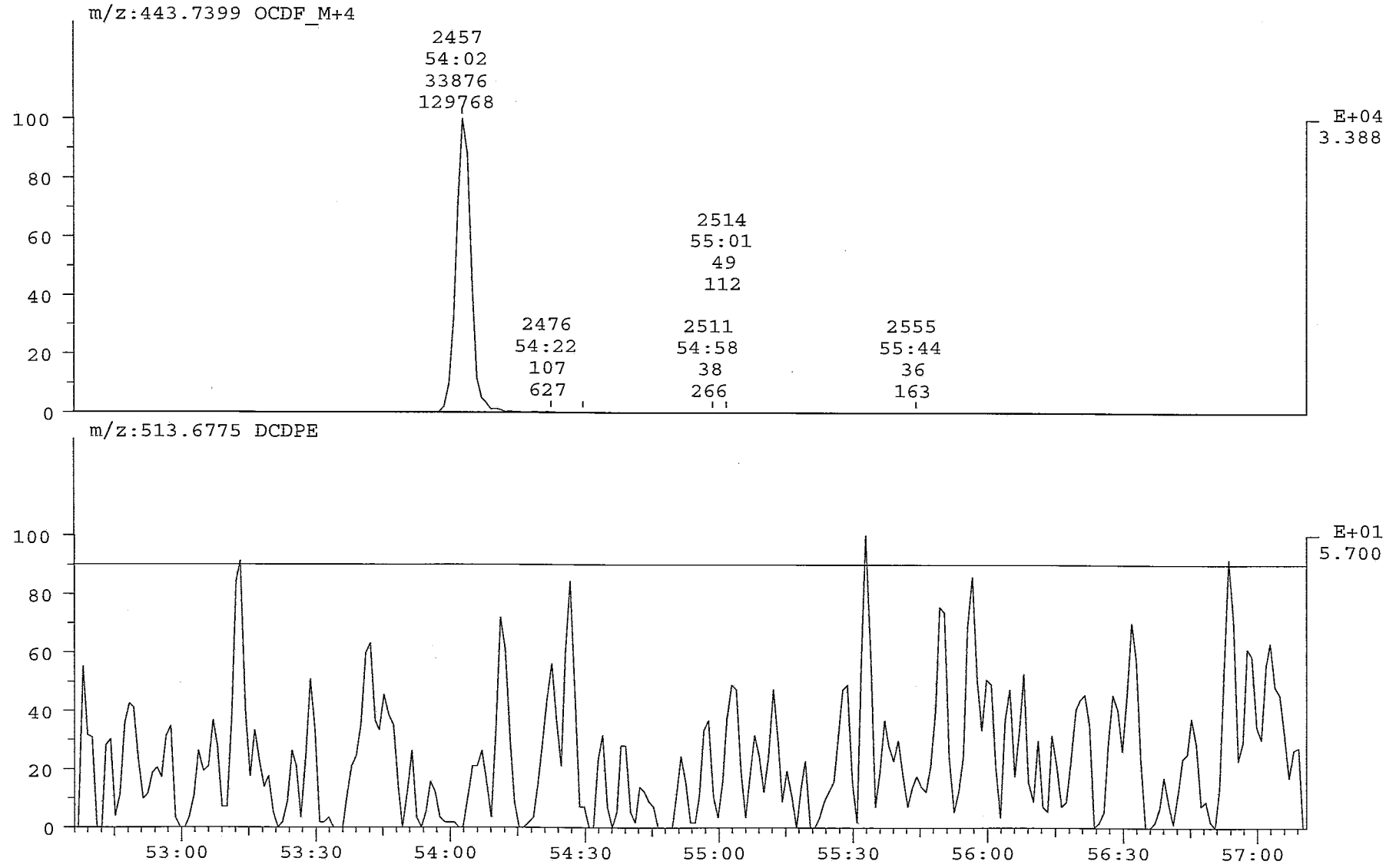
```
CHRO:  d1150409i1                          09-Apr-15   Elapse:  43:58      1873
Samp:  WO=4104:74cs1 Meth=F8o Dil=1                    Start :  02:00:07   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                             Study :  1613/8290 ICAL
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2421 > 2485       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 1            Label :  -2, 5.0
Disp:  Height  Area
```



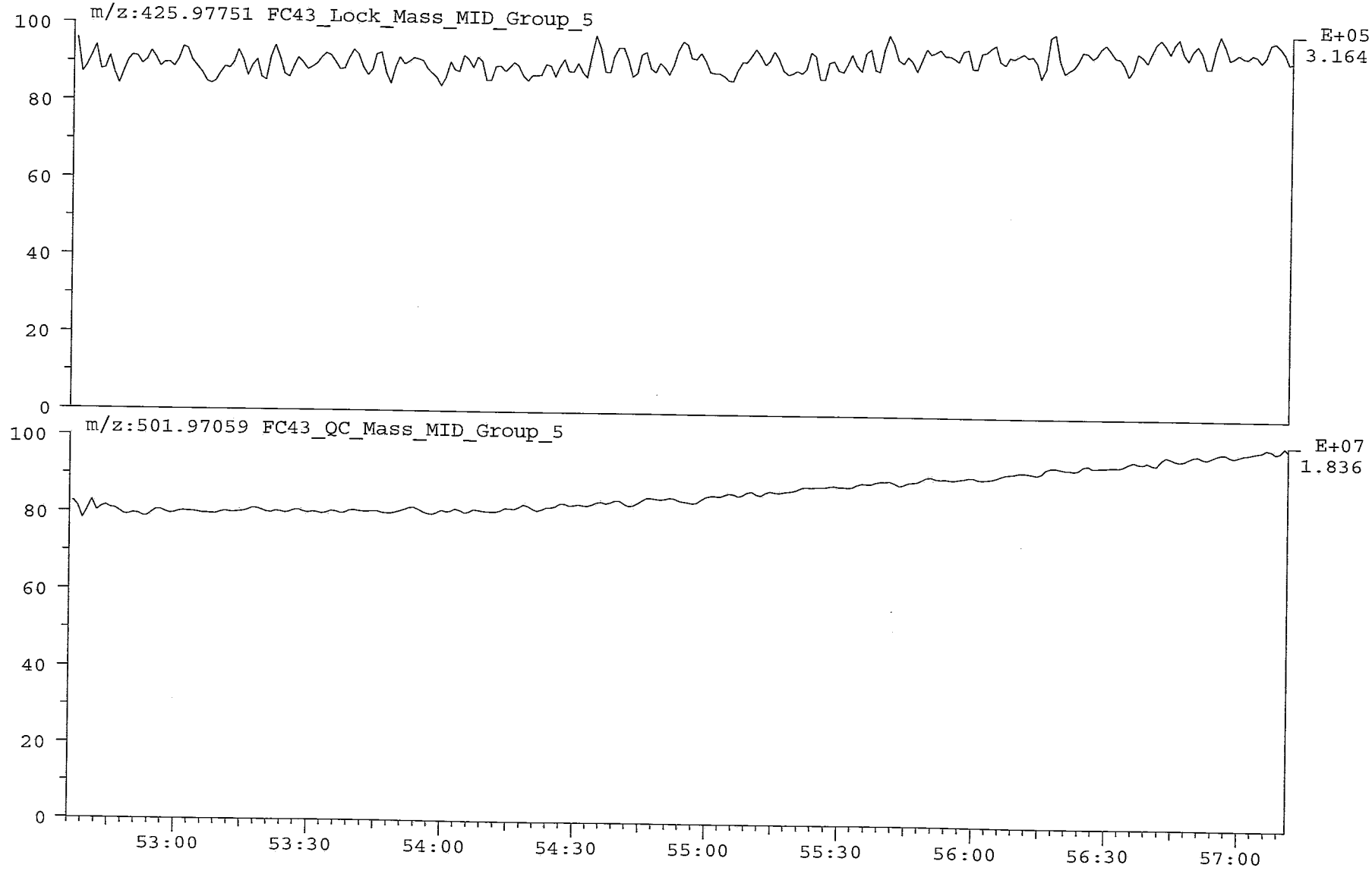
CHRO: d1150409i1 09-Apr-15 Elapse: 43:58 1873
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 02:00:07 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2427 > 2490 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d1150409i1                          09-Apr-15  Elapse:  54:10      2464
Samp:  WO=4104:74cs1 Meth=F8o Dil=1                   Start :  02:00:07   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2374 > 2639      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d1150409i1 09-Apr-15 Elapse: 54:10 2464
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 02:00:07 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2374 > 2639 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



```
*** file opened Thu Apr 09 02:04:48 2015 ***

Started by                - Xcalibur
Instrument Internet name  - DFS MS
Instrument model          - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

  Analysis started at: 09-Apr-15 02:04:48

  Analysis will stop at user request

  Firmware Version: 1.03

  MCAL file name: mcal1.cal

  Sequence : 102913KLR_150409011211

  MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF


  Mid Time Windows:
        Start        Measure      End       Cycletime

  # 1  12:00 min  22:16 min  34:16 min   1.00 sec
  # 2  34:16 min   7:55 min  42:12 min   1.00 sec
  # 3  42:12 min   4:51 min  47:03 min   1.00 sec
  # 4  47:03 min   5:26 min  52:30 min   1.00 sec
  # 5  52:30 min   4:42 min  57:12 min   1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    303.9016     1  1      124
    305.8987     1  1      124
    313.9834 l  20  1        6
    313.9834    20  1        6
    315.9419     5  1       24
    317.9389     5  1       24
    319.8965     1  1      124
    321.8936     1  1      124
    327.8847     1  1      124
    331.9368     5  1       24
    333.9338     5  1       24
    363.9802 c  20  1        6
    363.9802    20  1        6
    375.8364     1  1      124
   Window # 2
        mass F  int  gr  time (ms)
    313.9834 l  20  1        7
    313.9834    20  1        7
    339.8597     1  1      146
    341.8567     1  1      146
    351.9000     5  1       29
    353.8970     5  1       29
    355.8546     1  1      146
    357.8516     1  1      146
    367.8949     5  1       29
    369.8919     5  1       29
    375.9802 c  20  1        7
    375.9802    20  1        7
    409.7974     1  1      146
   Window # 3
        mass F  int  gr  time (ms)
    373.8208     1  1      146
    375.8178     1  1      146
    375.9802 l  20  1        7
```

```
   375.9802     20  1        7
   383.8639      5  1       29
   385.8610      5  1       29
   389.8158      1  1      146
   391.8127      1  1      146
   401.8559      5  1       29
   403.8529      5  1       29
   413.9770 c   20  1        7
   413.9770     20  1        7
   445.7555      1  1      146
  Window # 4
       mass F  int  gr  time (ms)
   407.7817      1  1      146
   409.7788      1  1      146
   413.9770 l   20  1        7
   413.9770     20  1        7
   417.8250      5  1       29
   419.8220      5  1       29
   423.7767      1  1      146
   425.7737      1  1      146
   435.8169      5  1       29
   437.8140      5  1       29
   463.9738 c   20  1        7
   463.9738     20  1        7
   479.7165      1  1      146
  Window # 5
       mass F  int  gr  time (ms)
   425.9770 l   20  1        7
   425.9770     20  1        7
   441.7428      1  1      146
   443.7399      1  1      146
   453.7830      5  1       29
   455.7801      5  1       29
   457.7377      1  1      146
   459.7348      1  1      146
   469.7780      5  1       29
   471.7750      5  1       29
   501.9706 c   20  1        7
   501.9706     20  1        7
   513.6775      1  1      146

MID Window terminated after 34.283333 minutes
MID Window end time was 34.280000 minutes
MID Window terminated after 42.200000 minutes
MID Window end time was 42.200000 minutes
MID Window terminated after 47.066667 minutes
MID Window end time was 47.060000 minutes
MID Window terminated after 52.500000 minutes
MID Window end time was 52.500000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          311.4834
 BQUAD            1.1000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE       16.0000  ECORR           1.0001   ECURR            1.0000
 EDAC       7969177.0000   EDACG           0.9995   EDACZ         4144.0190
 ELEN           -45.0000   EMULT        1652.0000   ENS            239.0000
 ENSBR            1.1000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           170.0000   EXSBR           -1.1000
 FDMA      18000000.0000   FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            5.4000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0039	FVINLET	0.0458	FVSRC	0.0477
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	686.0000
LENS_SYM	-6.0000	LM	375.8364	LMII	500.0000
LMASS	311.4834	LKM	425.9770	MASS	311.4834
MDAC	3575708.1081	MRANGE	1252.5112	NSAM	200.0000
NSCAN	2661.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-11.0000	RECURR	0.8977	RELEN	0.0000
RES	9712.6536	RPUSHER	-10.9817	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	710.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1250	TANAL	0.0000	TCURR	0.0000
TD	3.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	311.4834	XLENS_POT	854.0000
XLENS_SYM	8.0000	YLENS_POT	692.0000	YLENS_SYM	-2.0000

```
Source Gauge:         3.6e-005 mbar
Analyzer Penning:     6.2e-008 mbar
Pirani Analyse:       3.9e-003 mbar
Pirani Source:        4.8e-002 mbar
Pirani Inlet System: 4.6e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 10412.
MID Time Window 2: Resolution is 10353.
MID Time Window 3: Resolution is 10363.
MID Time Window 4: Resolution is 9885.
MID Time Window 5: Resolution is 9712.

Amplifier Offset: 88.


*** File closed Thu Apr 09 03:02:02 2015
  ***
```

QUAN: d1150409i1.q0 Entries: 92

Data file(s) used
File: d1150409i1 09-Apr-15
Samp: WO=4104:74cs1 Meth=F8o Dil=1 Start : 02:00:07 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	30:40	14885.	1651.	30:27	30:52	14.	1	1.0	AVV
321.8775	30:41	19459.	1984.	30:30	30:56	13.	1	1.0	ABV
321.8775	30:41	19459.	1984.	30:30	30:56	13.	2	5.0	ABV
331.9202	30:07	2487769.	264253.	29:52	30:23	168.	2	5.0	ABV
331.9202	30:37	2581387.	254793.	30:24	30:52	168.	2	5.0	AVV
331.9202	31:08	19290.	2229.	31:03	31:14	168.	2	5.0	AVV
333.9171	30:07	3085483.	327284.	29:52	30:23	116.	2	5.0	AVV
333.9171	30:38	3207240.	319962.	30:24	30:53	116.	2	5.0	AVV
327.8683	30:41	35349.	3671.	30:27	30:56	22.	1	1.0	ABV
327.8683	30:41	35349.	3671.	30:27	30:56	22.	2	5.0	ABV
303.8864	28:42	24148.	2696.	28:28	28:57	19.	1	1.0	ABV
305.8834	28:40	30325.	3308.	28:30	28:55	23.	1	1.0	AVV
303.8864	28:42	24148.	2696.	28:28	28:57	19.	2	5.0	ABV
305.8834	28:40	30439.	3308.	28:27	28:56	23.	2	5.0	ABV
315.9261	28:39	4341163.	473310.	28:24	28:55	117.	2	5.0	AVV
317.9230	28:39	5323554.	575668.	28:24	28:55	134.	2	5.0	ABV
355.8368	40:34	67590.	15261.	40:27	40:44	27.	1	1.0	ABV
357.8337	40:34	42754.	9586.	40:27	40:44	16.	1	1.0	ABV
355.8368	40:34	68010.	15261.	40:27	40:49	27.	2	5.0	ABV
357.8337	40:34	42754.	9586.	40:27	40:44	16.	2	5.0	ABV
367.8765	40:33	2518206.	557718.	40:19	40:48	67.	2	5.0	ABV
369.8734	40:33	1543368.	342562.	40:25	40:46	43.	2	5.0	ABV
339.8427	38:44	129227.	24745.	38:35	38:58	24.	1	1.0	ABV
341.8396	38:44	81576.	15756.	38:35	38:59	25.	1	1.0	ABV
339.8427	38:44	129227.	24745.	38:35	38:58	24.	2	5.0	ABV
339.8427	40:01	124431.	26581.	39:52	40:16	24.	2	5.0	ABV
341.8396	38:44	81576.	15756.	38:35	38:59	25.	2	5.0	ABV
341.8396	40:01	77994.	16670.	39:45	40:11	25.	2	5.0	AVV
351.8824	38:43	4241322.	812865.	38:32	38:57	113.	2	5.0	ABV
351.8824	40:00	4234612.	909330.	39:44	40:15	113.	2	5.0	AVV
353.8793	38:43	2686733.	514029.	38:31	38:59	94.	2	5.0	ABV
353.8793	40:00	2635205.	573722.	39:47	40:15	94.	2	5.0	ABV
389.7961	44:51	74570.	19379.	44:45	44:55	35.	1	1.0	ABV
391.7931	45:21	59462.	13971.	45:12	45:31	44.	1	1.0	AVV
389.7961	44:51	74570.	19379.	44:45	44:55	35.	2	5.0	ABV
389.7961	44:58	65925.	17643.	44:55	45:11	35.	2	5.0	AVB
389.7961	45:21	72936.	18521.	45:14	45:30	35.	2	5.0	ABV
391.7931	44:51	52683.	14488.	44:45	44:54	44.	2	5.0	ABV
391.7931	44:58	52989.	13805.	44:54	45:02	44.	2	5.0	AVV
391.7931	45:21	60175.	13971.	45:12	45:36	44.	2	5.0	AVV
401.8358	44:50	2374300.	613063.	44:43	44:54	131.	2	5.0	ABV
401.8358	44:57	2281893.	588217.	44:54	45:12	131.	2	5.0	AVV
401.8358	45:20	2556341.	627660.	45:13	45:35	131.	2	5.0	AVV
403.8327	44:50	1862819.	489241.	44:42	44:54	115.	2	5.0	ABV
403.8327	44:57	1824852.	478901.	44:54	45:12	115.	2	5.0	AVV
403.8327	45:20	2015036.	487452.	45:13	45:35	115.	2	5.0	AVV
373.8021	43:57	125193.	33574.	43:53	44:12	27.	1	1.0	AVV
375.7990	43:57	101376.	26268.	43:53	44:08	38.	1	1.0	AVV
373.8021	43:49	118472.	30785.	43:43	43:53	27.	2	5.0	ABV
373.8021	43:57	125193.	33574.	43:53	44:12	27.	2	5.0	AVV

373.8021	44:40	114510.	30145.	44:32	44:56	27.	2	5.0	ABV
373.8021	45:36	103893.	24423.	45:30	45:51	27.	2	5.0	ABV
375.7990	43:49	94890.	25756.	43:35	43:53	38.	2	5.0	ABV
375.7990	43:57	101738.	26268.	43:53	44:12	38.	2	5.0	AVV
383.8447	43:48	2085522.	551110.	43:41	43:52	118.	2	5.0	ABV
383.8447	43:56	2447839.	654036.	43:52	44:11	118.	2	5.0	AVV
383.8447	44:39	2199430.	573676.	44:28	44:55	118.	2	5.0	AVV
383.8447	45:35	1887811.	443114.	45:26	45:50	118.	2	5.0	ABV
385.8417	43:48	3871438.	1032562.	43:41	43:52	146.	2	5.0	ABV
385.8417	43:56	4566816.	1209638.	43:52	44:11	146.	2	5.0	AVV
385.8417	44:39	4077344.	1050065.	44:28	44:55	146.	2	5.0	AVV
385.8417	45:35	3603100.	842092.	45:28	45:50	146.	2	5.0	ABV
423.7555	49:38	51267.	10190.	49:30	49:53	19.	1	1.0	ABV
425.7524	49:38	47939.	9281.	49:30	49:53	21.	1	1.0	ABV
423.7555	48:28	2003.	343.	48:23	48:33	19.	2	5.0	ABB
423.7555	49:38	51267.	10190.	49:30	49:53	19.	2	5.0	ABV
425.7524	48:27	2502.	426.	48:21	48:33	21.	2	5.0	ABB
425.7524	49:38	47564.	9281.	49:30	49:49	21.	2	5.0	ABV
435.7951	48:27	15032.	2684.	48:21	48:38	39.	2	5.0	ABB
435.7951	49:37	1705108.	329400.	49:29	49:52	39.	2	5.0	ABV
437.7921	48:27	18034.	3062.	48:21	48:42	49.	2	5.0	ABV
437.7921	49:37	1580275.	310950.	49:28	49:52	49.	2	5.0	ABV
407.7614	47:58	92280.	20132.	47:51	48:14	15.	1	1.0	ABV
409.7583	47:58	86696.	19701.	47:51	48:09	22.	1	1.0	ABV
407.7614	47:58	92280.	20132.	47:51	48:14	15.	2	5.0	ABV
407.7614	50:17	67266.	13170.	50:08	50:31	15.	2	5.0	ABV
409.7583	47:58	86696.	19701.	47:51	48:09	22.	2	5.0	ABV
409.7583	50:17	63889.	12326.	50:09	50:33	22.	2	5.0	ABV
417.8041	47:57	1457339.	318583.	47:47	48:13	73.	2	5.0	ABV
417.8041	50:16	1151884.	222028.	50:07	50:32	73.	2	5.0	ABV
419.8010	47:57	3156621.	690876.	47:49	48:13	95.	2	5.0	ABV
419.8010	50:16	2494858.	475489.	50:07	50:32	95.	2	5.0	ABV
457.7148	53:54	73650.	18543.	53:48	53:58	20.	1	1.0	ABV
459.7118	53:54	91966.	21587.	53:48	54:10	14.	1	1.0	ABV
457.7148	53:54	73650.	18543.	53:48	53:58	20.	2	5.0	ABV
459.7118	53:54	91966.	21587.	53:48	54:10	14.	2	5.0	ABV
469.7545	53:54	2458640.	595226.	53:46	54:10	59.	2	5.0	ABV
471.7514	53:54	2679973.	644301.	53:47	54:10	100.	2	5.0	ABV
441.7207	54:02	114416.	28507.	53:56	54:17	19.	1	1.0	AVV
443.7177	54:02	129631.	33873.	53:56	54:17	16.	1	1.0	AVV
441.7207	54:02	114558.	28507.	53:52	54:18	19.	2	5.0	ABV
443.7177	54:02	129694.	33873.	53:51	54:17	16.	2	5.0	ABV

TestAmerica
Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS2	Prep Batch		Lot No	
Data File	/20150409i/d115040912.d	Prep Date		SDG No	
Analysis ID	169125	Prep Exp Date		Date Received	
Analysis Date	4/9/2015	Matrix	UNKNOWN	Date Sampled	
Analysis Time	03:02	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D11A	Dil Factor	1.00	Code	F8o
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)	DL (ng/mL)
2,3,7,8-TCDD	30:40	81333	7919	1.000	2.000	2.249728	112.49	2.249728	0.0330
Total TCDD				1.000		2.249728		2.249728	0.0330
2,3,7,8-TCDF	28:41	127825	13482	1.000	2.000	2.124900	106.24	2.124900	0.0211
Total TCDF				1.000		2.124900		2.124900	0.0211
1,2,3,7,8-PeCDD	40:32	262887	57948	1.000	10.00	10.563362	105.63	10.563362	0.0196
Total PeCDD				1.000		10.563362		10.563362	0.0196
1,2,3,7,8-PeCDF	38:43	505110	95776	1.000	10.00	11.901693	119.02	11.901693	0.0235
2,3,4,7,8-PeCDF	40:00	466403	97417	1.000	10.00	10.957023	109.57	10.957023	0.0213
Total PeCDF				1.000		22.858716		22.858716	0.0224
1,2,3,4,7,8-HxCDD	44:49	292859	75259	1.000	10.00	11.557059	115.57	11.557059	0.0510
1,2,3,6,7,8-HxCDD	44:57	289918	71440	1.000	10.00	11.199635	112.00	11.199635	0.0511
1,2,3,7,8,9-HxCDD	45:19	308463	76716	1.000	10.00	12.043067	120.43	12.043067	0.0510
Total HxCDD				1.000		34.799761		34.799761	0.0510
1,2,3,4,7,8-HxCDF	43:48	485670	133483	1.000	10.00	13.293801	132.94	13.293801	0.0237
1,2,3,6,7,8-HxCDF	43:56	544977	137822	1.000	10.00	12.547409	125.47	12.547409	0.0219
2,3,4,6,7,8-HxCDF	44:38	481634	123139	1.000	10.00	12.395986	123.96	12.395986	0.0242
1,2,3,7,8,9-HxCDF	45:35	430064	99270	1.000	10.00	12.753512	127.54	12.753512	0.0304
Total HxCDF				1.000		50.990708		50.990708	0.0247
1,2,3,4,6,7,8-HpCDD	49:37	226949	44756	1.000	10.00	11.026362	110.26	11.026362	0.0332
Total HpCDD				1.000		11.026362		11.026362	0.0332
1,2,3,4,6,7,8-HpCDF	47:57	416780	87517	1.000	10.00	14.577712	145.78	14.577712	0.0176
1,2,3,4,7,8,9-HpCDF	50:16	309666	59510	1.000	10.00	13.492807	134.93	13.492807	0.0238
Total HpCDF				1.000		28.070520		28.070520	0.0203
OCDD	53:53	387540	96153	1.000	20.00	24.201556	121.01	24.201556	0.0278
OCDF	54:01	563640	142401	1.000	20.00	22.460967	112.30	22.460967	0.0183
13C-2,3,7,8-TCDD	30:36	3615237	363490	1.000	100.0	104.927496	104.93	104.927496	0.243
13C-2,3,7,8-TCDF	28:38	6015578	640410	1.000	100.0	174.594234	174.59	174.594234	0.143
13C-1,2,3,7,8-PeCDD	40:31	2488668	547171	1.000	100.0	72.230313	72.23	72.230313	0.0820
13C-1,2,3,7,8-PeCDF	38:42	4244018	796589	1.000	100.0	123.177037	123.18	123.177037	0.162
13C-2,3,4,7,8-PeCDF	39:58	4256658	880104	1.000	100.0	123.543896	123.54	123.543896	0.162
13C-1,2,3,4,7,8-HxCDD	44:48	2534027	642723	1.000	100.0	91.035963	91.04	91.035963	0.109
13C-1,2,3,6,7,8-HxCDD	44:56	2588638	641066	1.000	100.0	92.997886	93.00	92.997886	0.109
13C-1,2,3,4,7,8-HxCDF	43:47	3653357	1003290	1.000	100.0	131.248354	131.25	131.248354	0.0819
13C-1,2,3,6,7,8-HxCDF	43:55	4343343	1082945	1.000	100.0	156.036385	156.04	156.036385	0.0819
13C-2,3,4,6,7,8-HxCDF	44:37	3885403	980072	1.000	100.0	139.584702	139.58	139.584702	0.0819
13C-1,2,3,7,8,9-HxCDF	45:34	3372122	781979	1.000	100.0	121.144871	121.14	121.144871	0.0819
13C-1,2,3,4,6,7,8-HpCDD	49:36	2058240	398864	1.000	100.0	73.943119	73.94	73.943119	0.0263
13C-1,2,3,4,6,7,8-HpCDF	47:55	2859022	596004	1.000	100.0	102.711542	102.71	102.711542	0.0545
13C-1,2,3,4,7,8,9-HpCDF	50:15	2295045	440301	1.000	100.0	82.450436	82.45	82.450436	0.0545
13C-OCDD	53:52	3202604	792174	1.000	200.0	115.054867	57.53	115.054867	0.0333
13C-OCDF	54:00	5018840	1256303	1.000	200.0	180.303893	90.15	180.303893	0.0267
37Cl4-2,3,7,8-TCDD	30:40	80651	8191	1.000	2.000	2.340789	117.04	2.340789	0.0264
13C-1,2,3,4-TCDD	30:07	3445462	350785	1.000	100.0	100.000000	100.00	100.000000	0.243
13C-1,2,3,7,8,9-HxCDD	45:18	2783545	683878	1.000	100.0	100.000000	100.00	100.000000	0.109

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS2	Prep Batch		Lot No	
Data File	/20150409i/d115040912.	Prep Date		SDG No	
Analysis ID	169125	Prep Exp Date		Date Received	
Analysis Date	04/09/15 03:02	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	65	70	26	28	0.93 *	/	
	2,3,7,8-TCDF	28:41	00:00	0	57172	70653	5999	7483	0.81	ABV/ABV	M
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	255	248	102	99	1.03 *	/	
	13C-2,3,7,8-TCDF	28:38	00:00	0	2700477	3315101	287650	352760	0.81	ABV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	55	65	22	26	0.85	/	
	2,3,7,8-TCDD	30:40	00:00	0	35698	45635	3522	4397	0.78	ABV/ABV	M
328					327.8847		327.8847				
	Noise	00:00	00:00	0	93		37				
	37Cl4-2,3,7,8-TCDD	30:40	00:00	0	80651		8191			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	295	558	118	223	0.53 *	/	
	13C-1,2,3,4-TCDD	30:07	00:00	0	1541835	1903627	157819	192966	0.81	AVV/ABV	
	13C-2,3,7,8-TCDD	30:36	00:00	0	1612029	2003208	160741	202749	0.80	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	105	83	42	33	1.27 *	/	
	1,2,3,7,8-PeCDF	38:43	00:00	0	309193	195917	59005	36771	1.58	ABV/ABV	M
	2,3,4,7,8-PeCDF	40:00	00:00	0	285377	181026	59736	37681	1.58	AVV/AVV	M
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	300	270	120	108	1.11 *	/	
	13C-1,2,3,7,8-PeCDF	38:42	00:00	0	2601429	1642589	482403	314186	1.58	AVV/ABV	
	13C-2,3,4,7,8-PeCDF	39:58	00:00	0	2597598	1659060	537584	342520	1.57	AVV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	70	38	28	15	1.87 *	/	
	1,2,3,7,8-PeCDD	40:32	00:00	0	162571	100316	35612	22336	1.62	ABV/ABV	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	160	128	64	51	1.25 *	/	
	13C-1,2,3,7,8-PeCDD	40:31	00:00	0	1528256	960412	340269	206902	1.59	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	118	120	47	48	0.98 *	/	
	1,2,3,4,7,8-HxCDF	43:48	00:00	0	270552	215118	74889	58594	1.26	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	43:56	00:00	0	305979	238998	76206	61616	1.28	AVV/AVV	M
	2,3,4,6,7,8-HxCDF	44:38	00:00	0	269969	211665	69166	53973	1.28	AVV/AVV	M
	1,2,3,7,8,9-HxCDF	45:35	00:00	0	239072	190992	55274	43996	1.25	ABV/ABV	M
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	233	328	93	131	0.71 *	/	
	13C-1,2,3,4,7,8-HxCDF	43:47	00:00	0	1276568	2376789	349957	653333	0.54	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	43:55	00:00	0	1519274	2824069	380469	702476	0.54	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	44:37	00:00	0	1343047	2542356	342401	637671	0.53	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	45:34	00:00	0	1171765	2200357	272320	509659	0.53	ABV/AVV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS2	Prep Batch		Lot No	
Data File	/20150409i/d1150409i2.	Prep Date		SDG No	
Analysis ID	169125	Prep Exp Date		Date Received	
Analysis Date	04/09/15 03:02	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

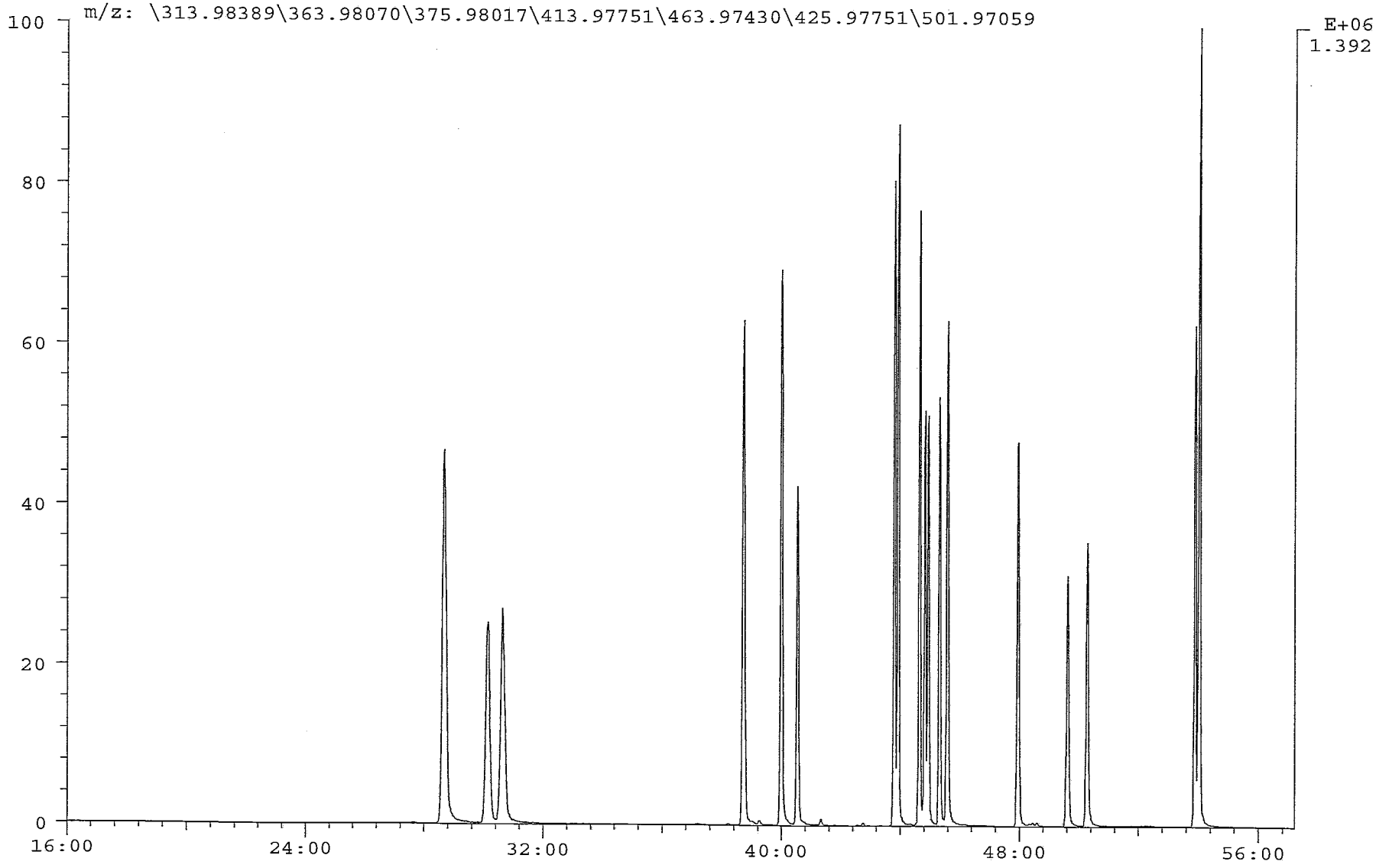
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	160	168	64	67	0.96 *	/	
	1,2,3,4,7,8-HxCDD	44:49	00:00	0	159048	133811	41359	33900	1.19	ABV/ABV	M
	1,2,3,6,7,8-HxCDD	44:57	00:00	0	163403	126515	39975	31465	1.29	AVV/AVV	M
	1,2,3,7,8,9-HxCDD	45:19	00:00	0	169915	138548	42385	34331	1.23	ABV/AVV	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	328	418	131	167	0.78 *	/	
	13C-1,2,3,4,7,8-HxCDD	44:48	00:00	0	1418496	1115531	356664	286059	1.27	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	44:56	00:00	0	1448349	1140289	359698	281368	1.27	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	45:18	00:00	0	1562540	1221005	383067	300811	1.28	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	53	53	21	21	1.00	/	
	1,2,3,4,6,7,8-HpCDF	47:57	00:00	0	216154	200626	45101	42416	1.08	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	50:16	00:00	0	155966	153700	30157	29353	1.01	ABV/ABV	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	170	203	68	81	0.84 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	47:55	00:00	0	901246	1957776	187006	408998	0.46	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:15	00:00	0	720493	1574552	139450	300851	0.46	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	58	75	23	30	0.77 *	/	
	1,2,3,4,6,7,8-HpCDD	49:37	00:00	0	116839	110110	23072	21684	1.06	ABV/AVV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	110	70	44	28	1.57 *	/	
	Unidentified	48:26	00:00	0	12352	10026	2291	2068	1.23 *	ABB/ABB	R
	13C-1,2,3,4,6,7,8-HpCDD	49:36	00:00	0	1066682	991558	205692	193172	1.08	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	48	68	19	27	0.70 *	/	
	OCDF	54:01	00:00	0	264639	299001	67184	75217	0.89	ABV/ABV	M
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	93	90	37	36	1.03 *	/	
	13C-OCDF	54:00	00:00	0	2387516	2631324	596587	659716	0.91	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	45	65	18	26	0.69 *	/	
	OCDD	53:53	00:00	0	185727	201813	45579	50574	0.92	ABV/ABV	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	100	128	40	51	0.78	/	
	13C-OCDD	53:52	00:00	0	1524443	1678161	376598	415576	0.91	ABV/ABV	

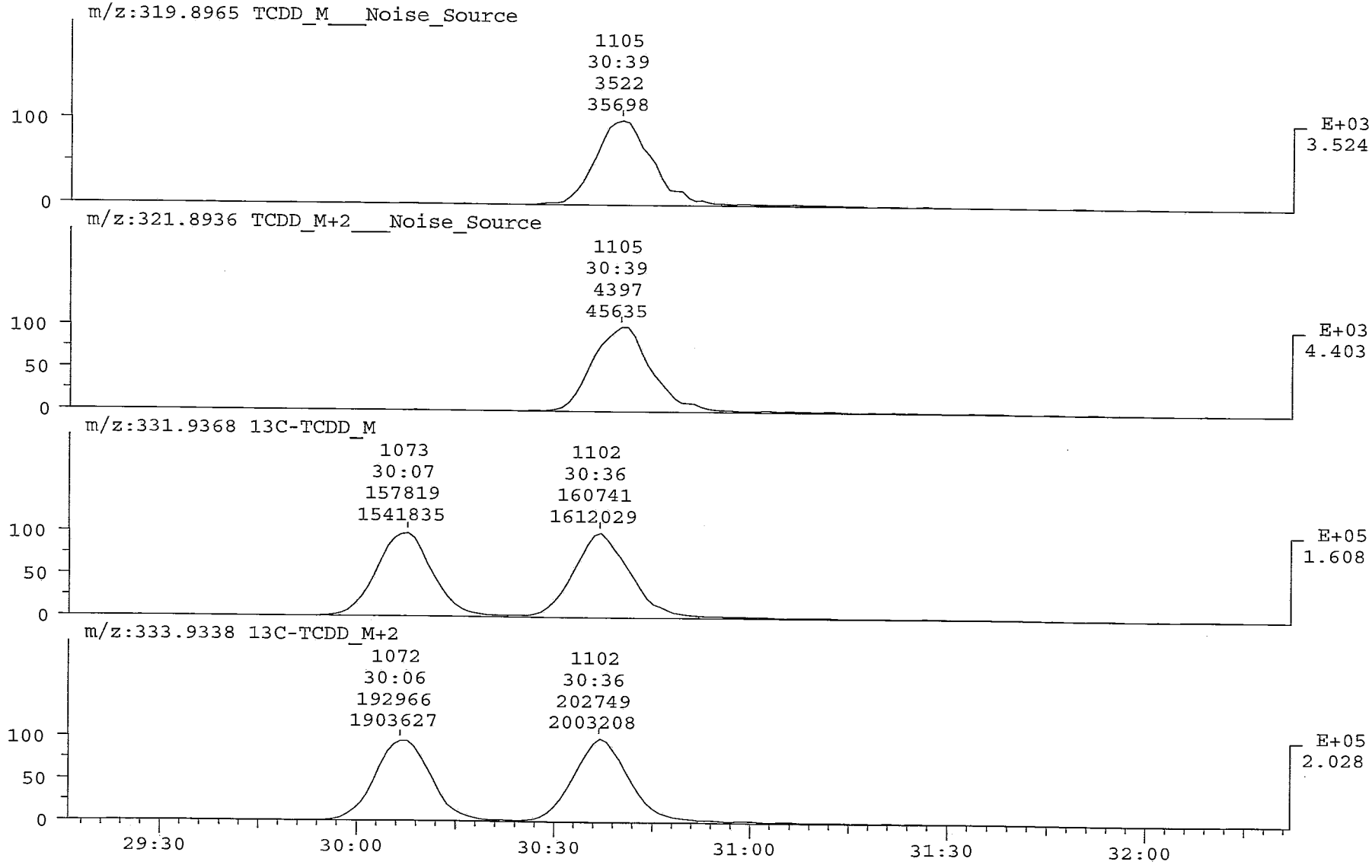
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. Klu 4/9/15
+Calc.
QCLKM 4-9-15

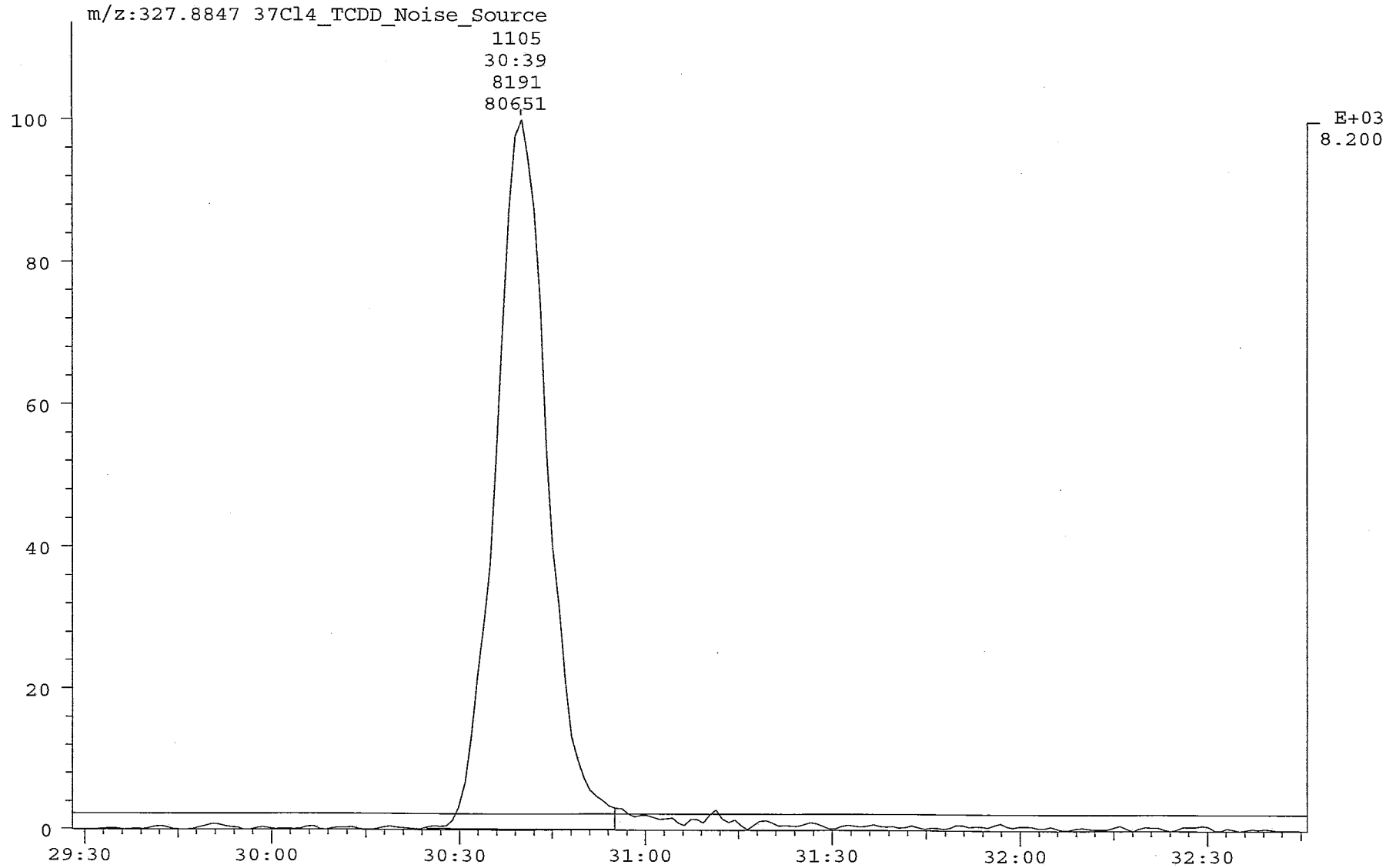
CHRO: d1150409i2 09-Apr-15 Elapse: 54:09 2464
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 03:02:04 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 234 > 2640 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



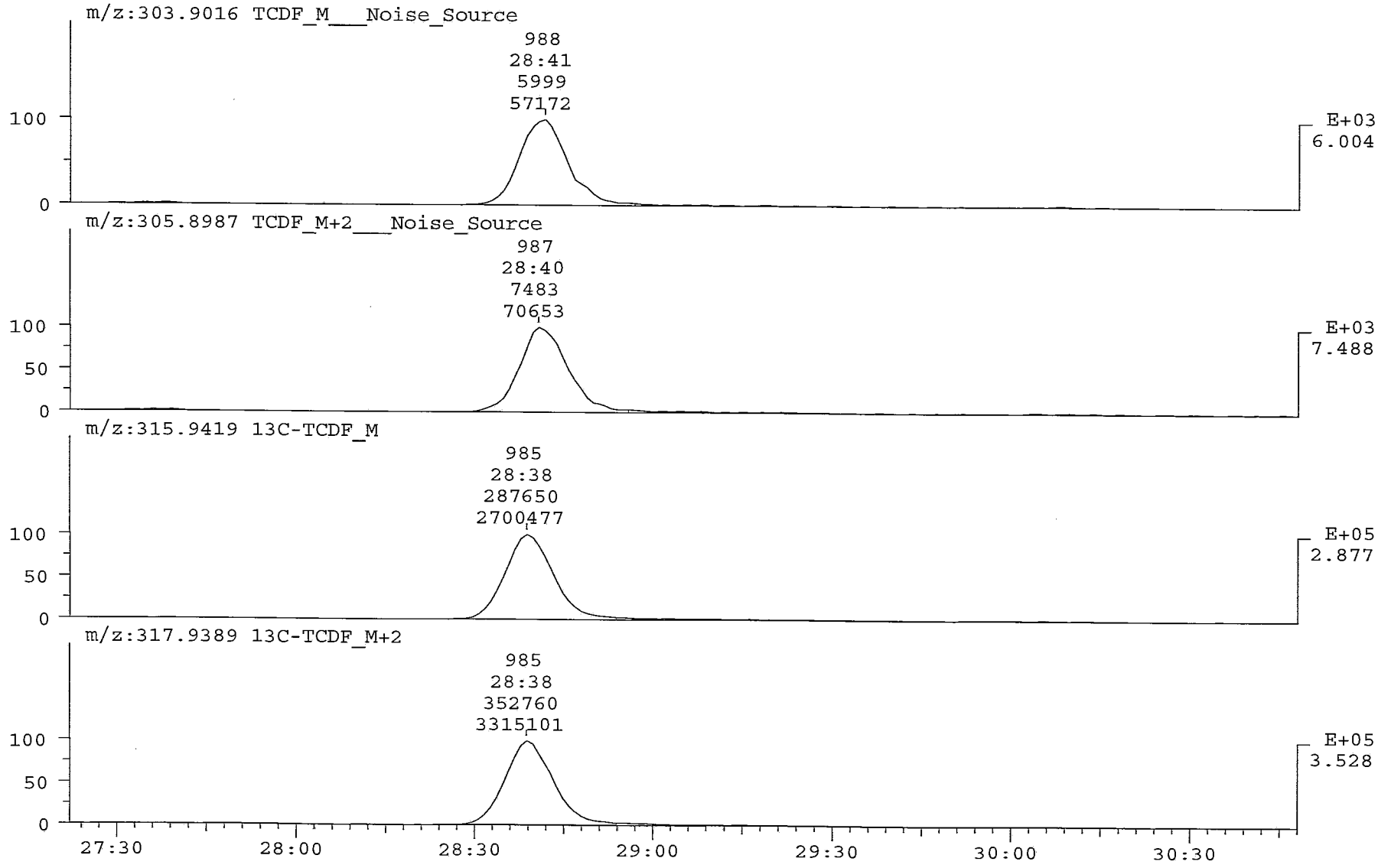
CHRO: d1150409i2 09-Apr-15 Elapse: 30:49 1114
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 03:02:04 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1022 > 1206 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



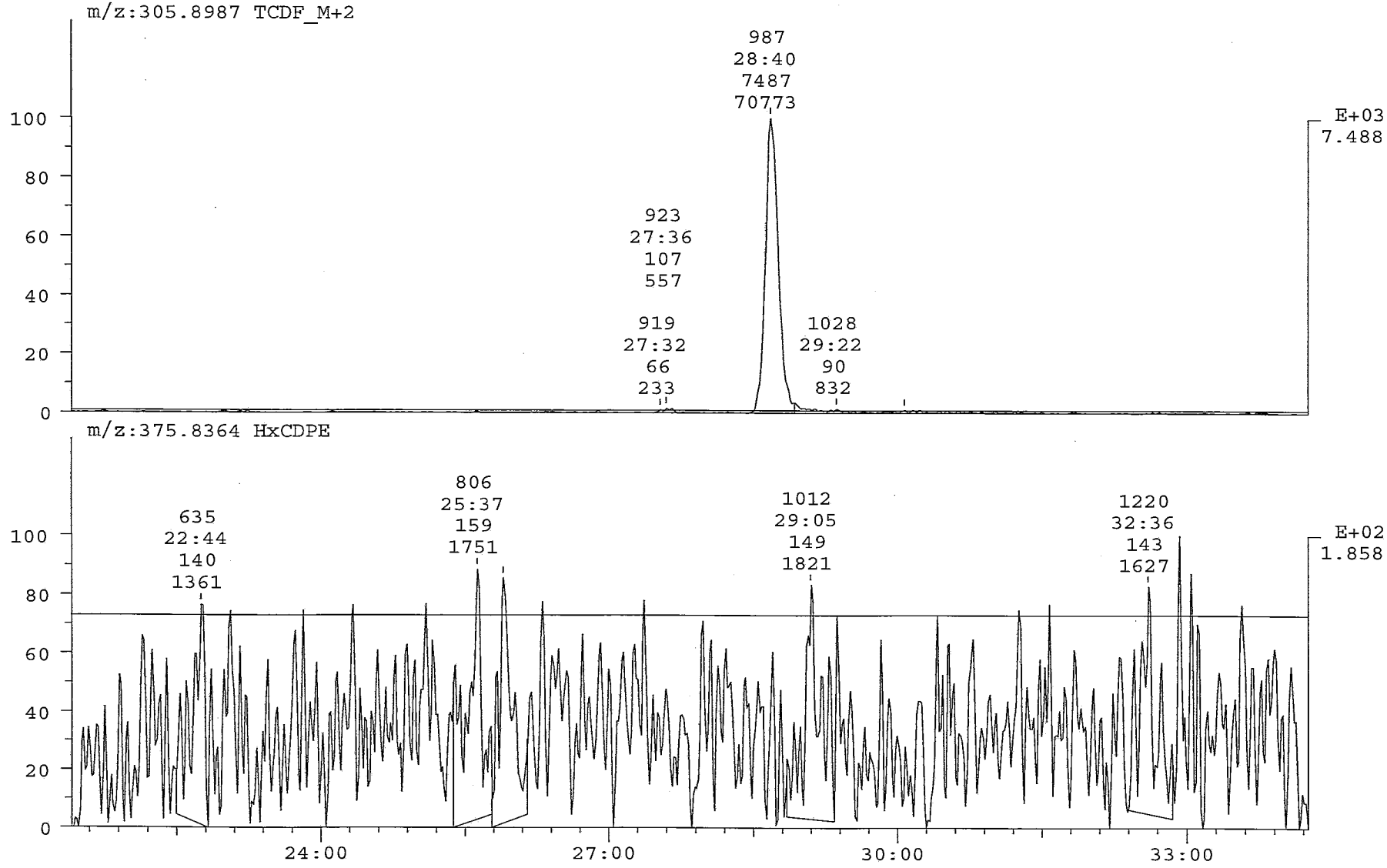
```
CHRO:  d1150409i2                          09-Apr-15   Elapse:  31:04      1129
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                    Start :  03:02:04   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                             Study :  1613/8290 ICAL
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1034 > 1230       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



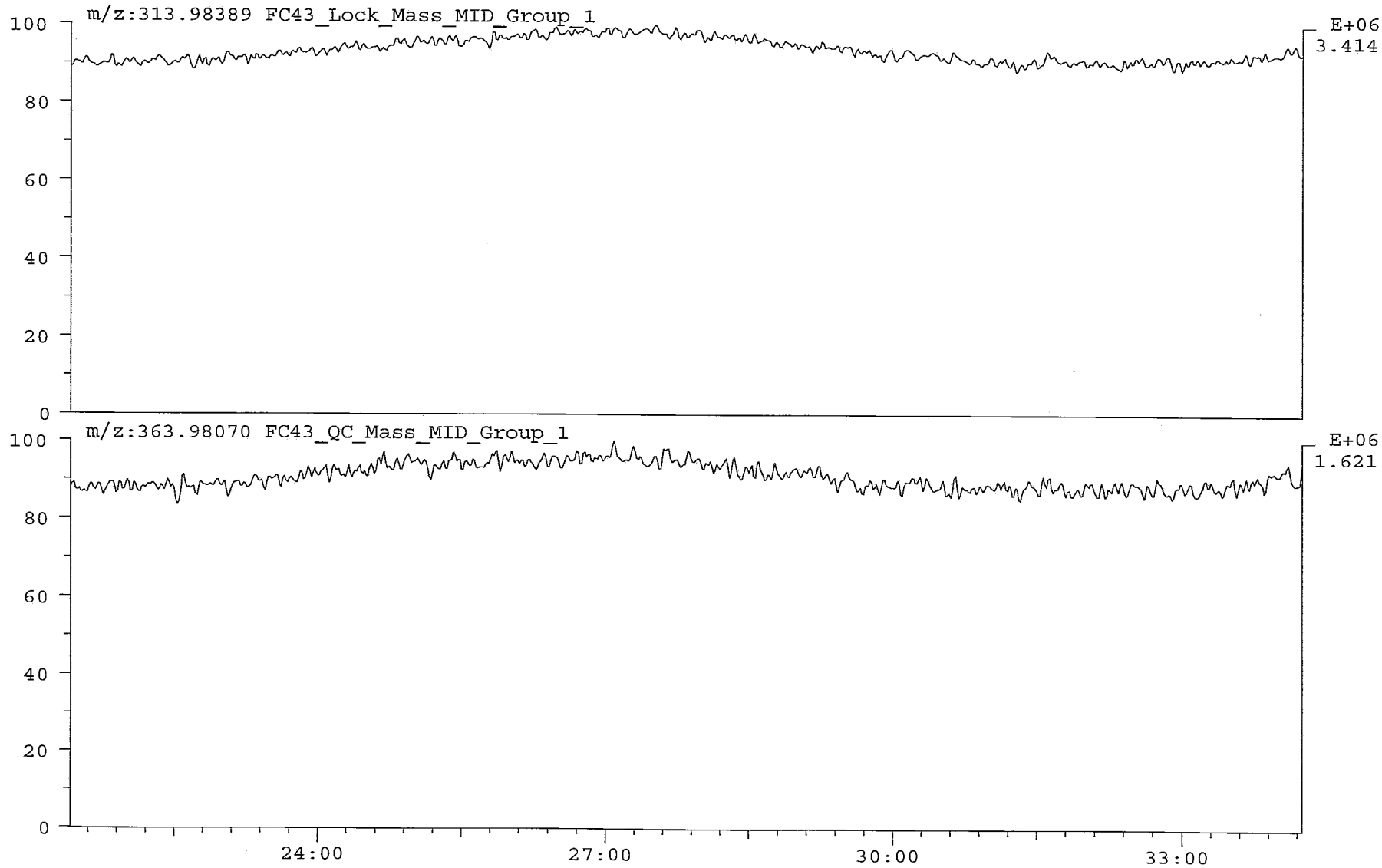
CHRO: d1150409i2 09-Apr-15 Elapse: 29:01 1008
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 03:02:04 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 909 > 1113 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



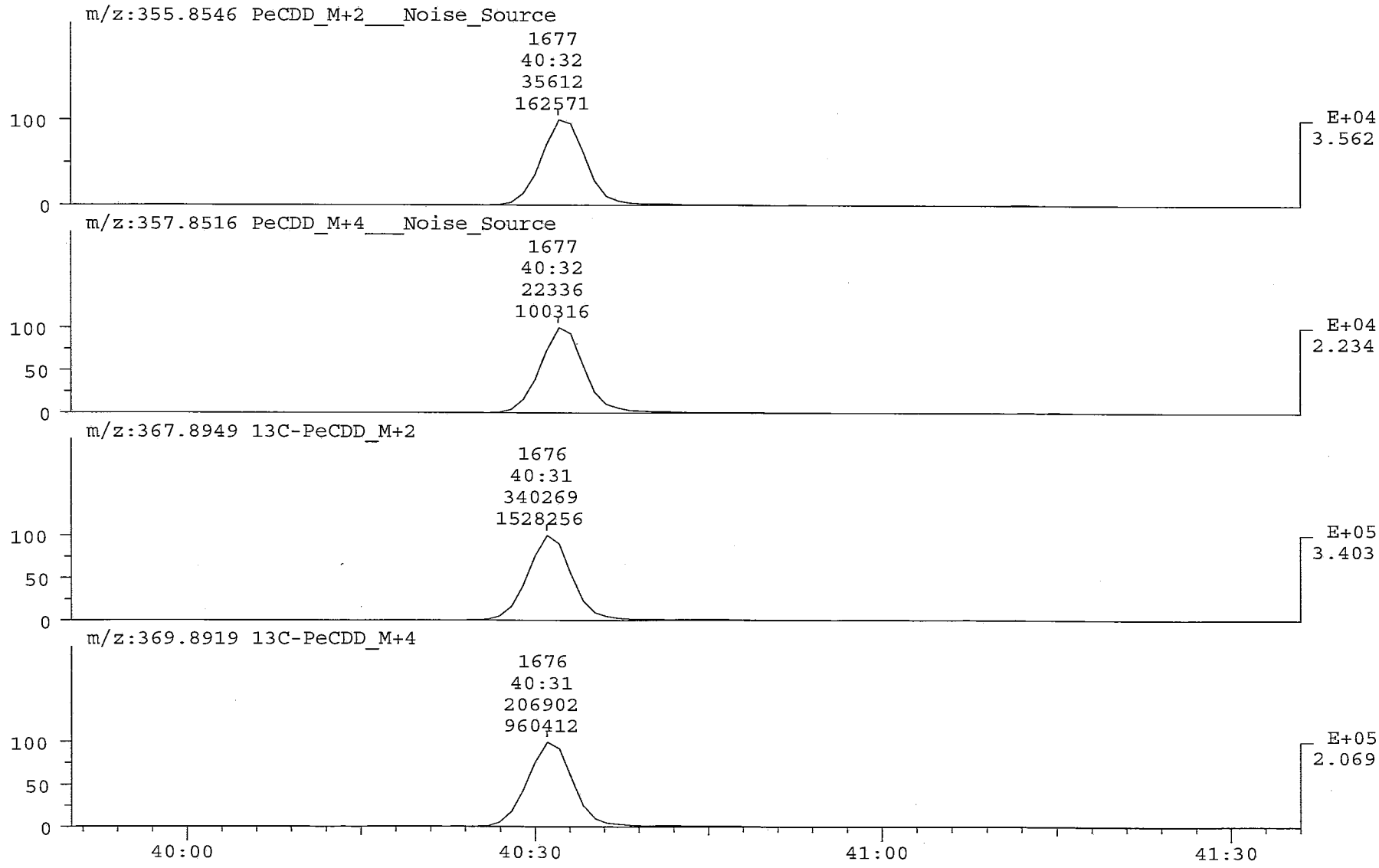
```
CHRO:  d1150409i2                          09-Apr-15  Elapse:  29:01      1008
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                   Start :  03:02:04   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   556 > 1318       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



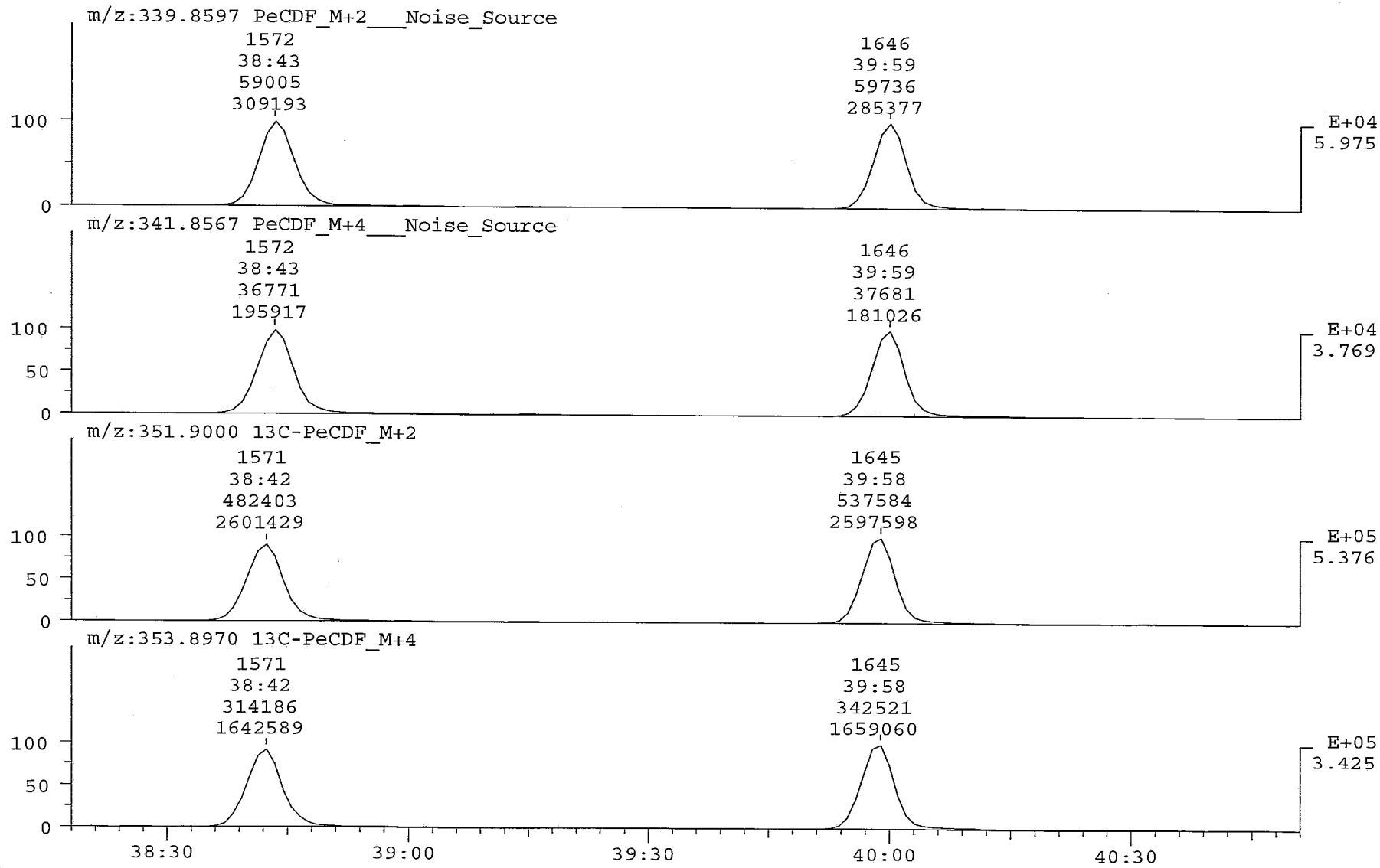
```
CHRO:  d1150409i2                                09-Apr-15  Elapse:  29:01      1008
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                         Start :  03:02:04   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  1613/8290 ICAL
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   556 > 1318             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  0, 0.0
Disp:  Height  Area
```



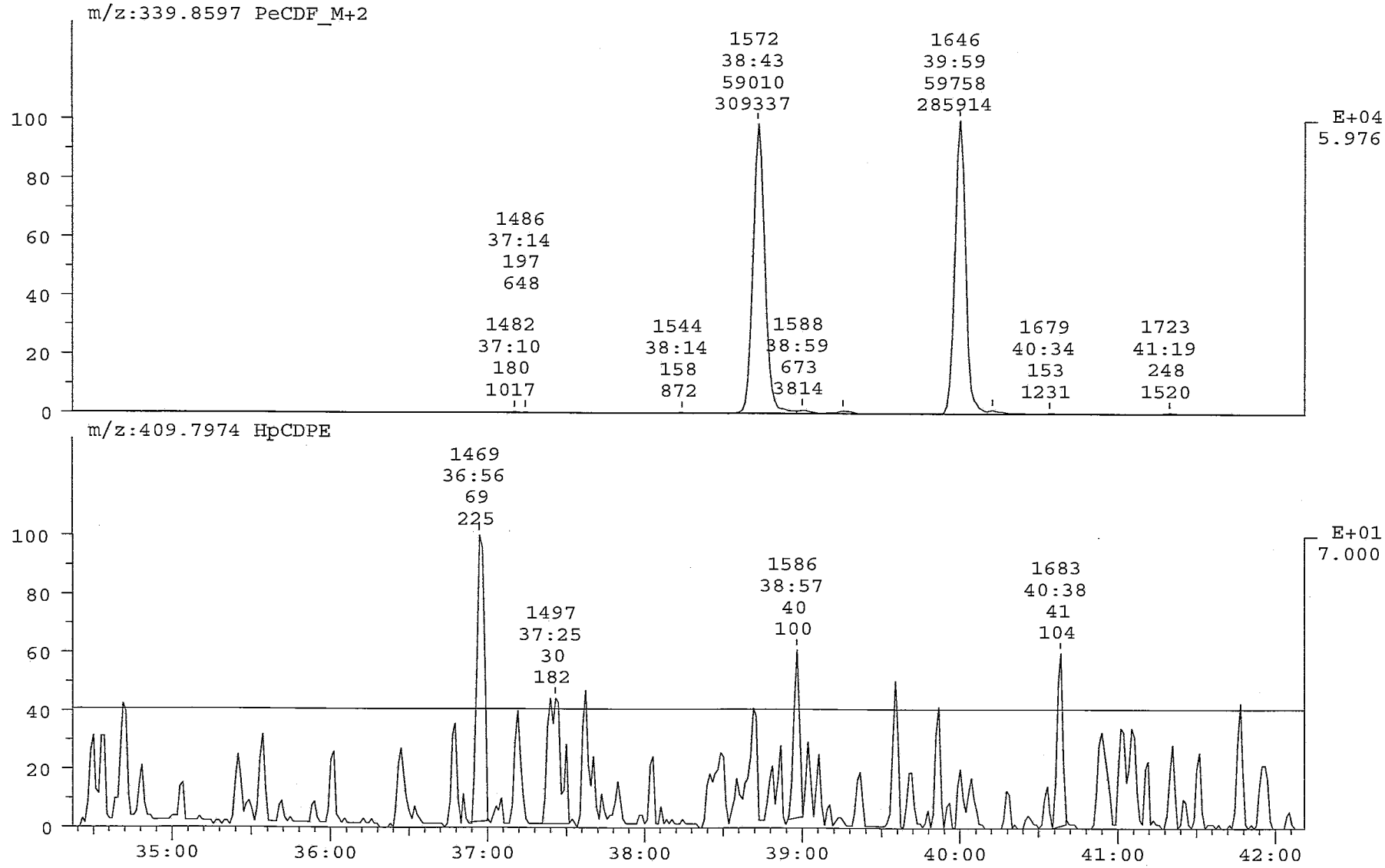
```
CHRO:  d1150409i2                          09-Apr-15   Elapse:  40:40      1685
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                    Start :  03:02:04   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                             Study :  1613/8290 ICAL
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1636 > 1739       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```



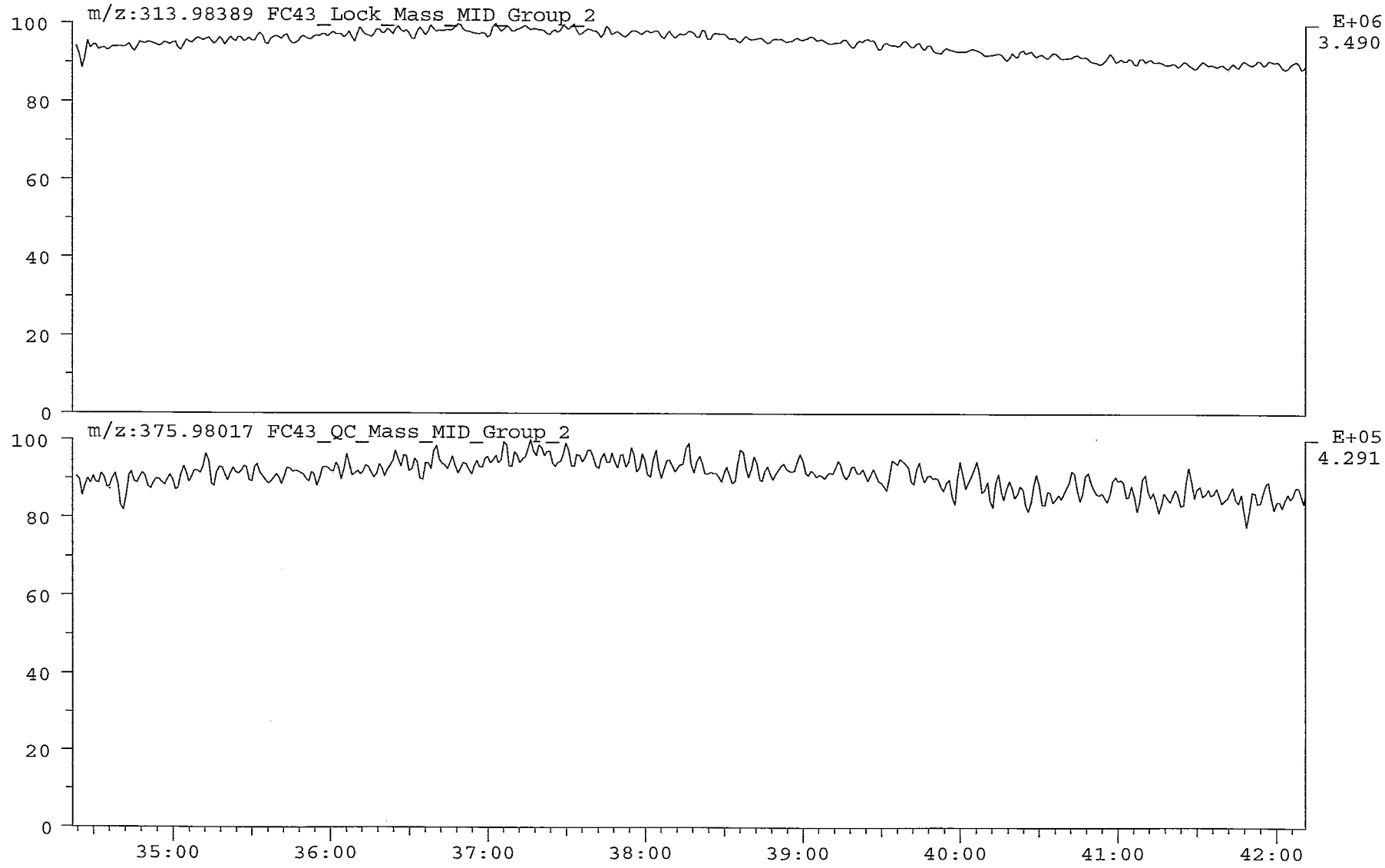
```
CHRO:  d1150409i2                                09-Apr-15  Elapse:  39:34      1621
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                         Start :  03:02:04   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  1613/8290 ICAL
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1548 > 1695            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  2, 5.0
Disp:  Height  Area
```



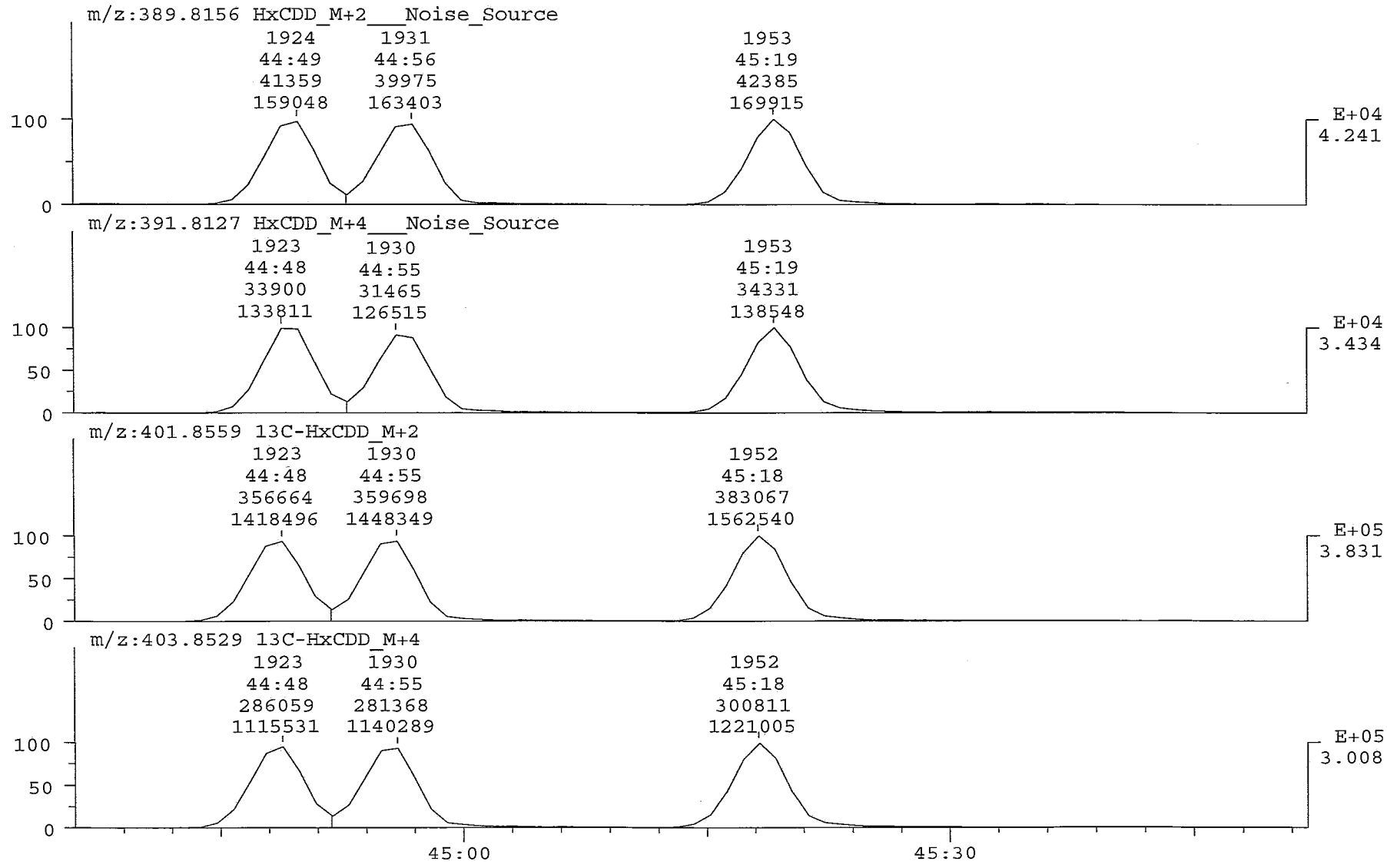
```
CHRO:  d115040 9i2                          09-Apr-15   Elapse:  39:34      1621
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                     Start :  03:02:04   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                              Study :  1613/8290 ICAL
Oper:  LKM                                              Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1321 > 1773        Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3             Label :  -2, 5.0
Disp:  Height  Area
```



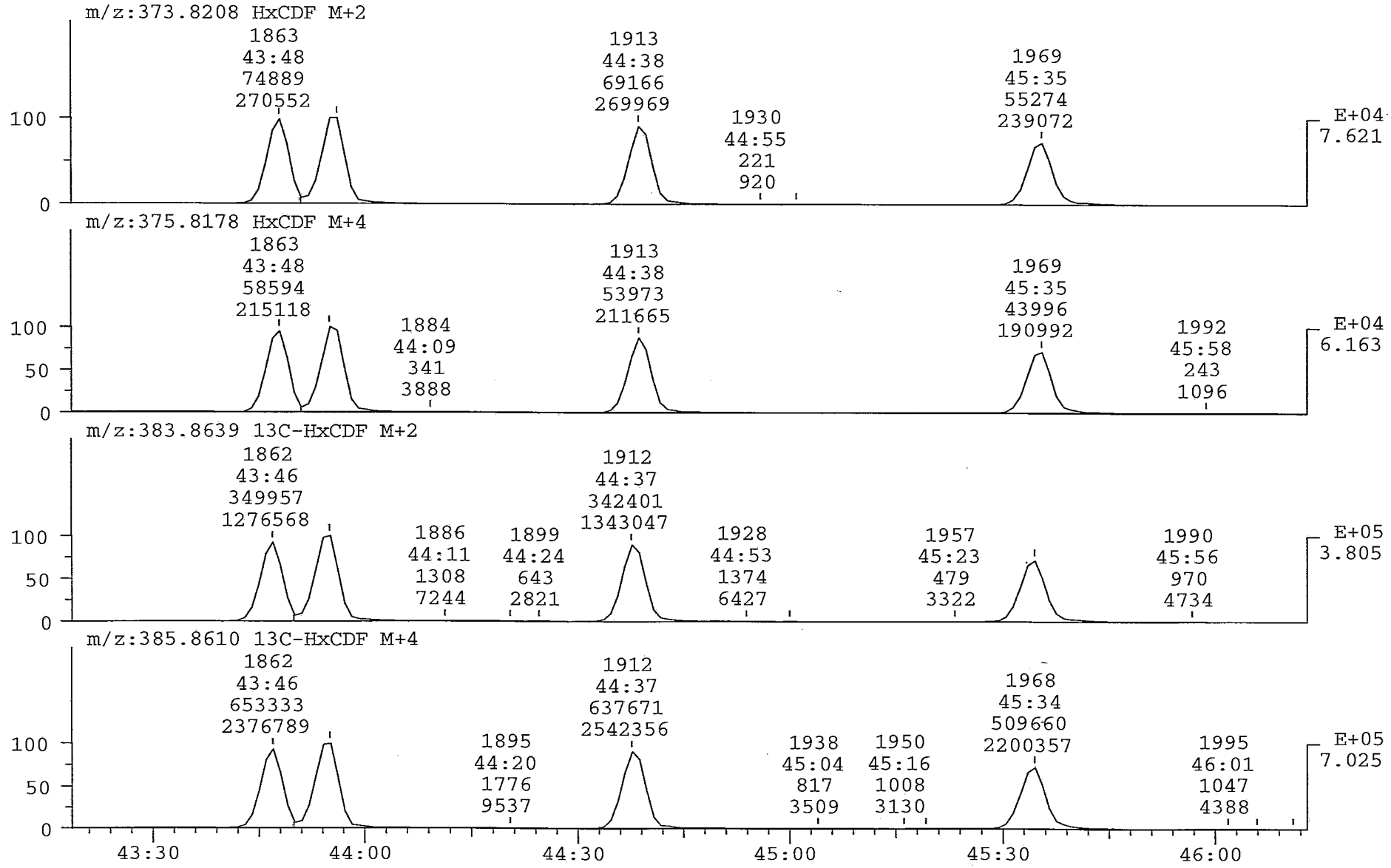
```
CHRO:  d1150409i2                          09-Apr-15   Elapse:  39:34      1621
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                    Start :  03:02:04   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                             Study :  1613/8290 ICAL
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1321 > 1773       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  0, 0.0
Disp:  Height  Area
```



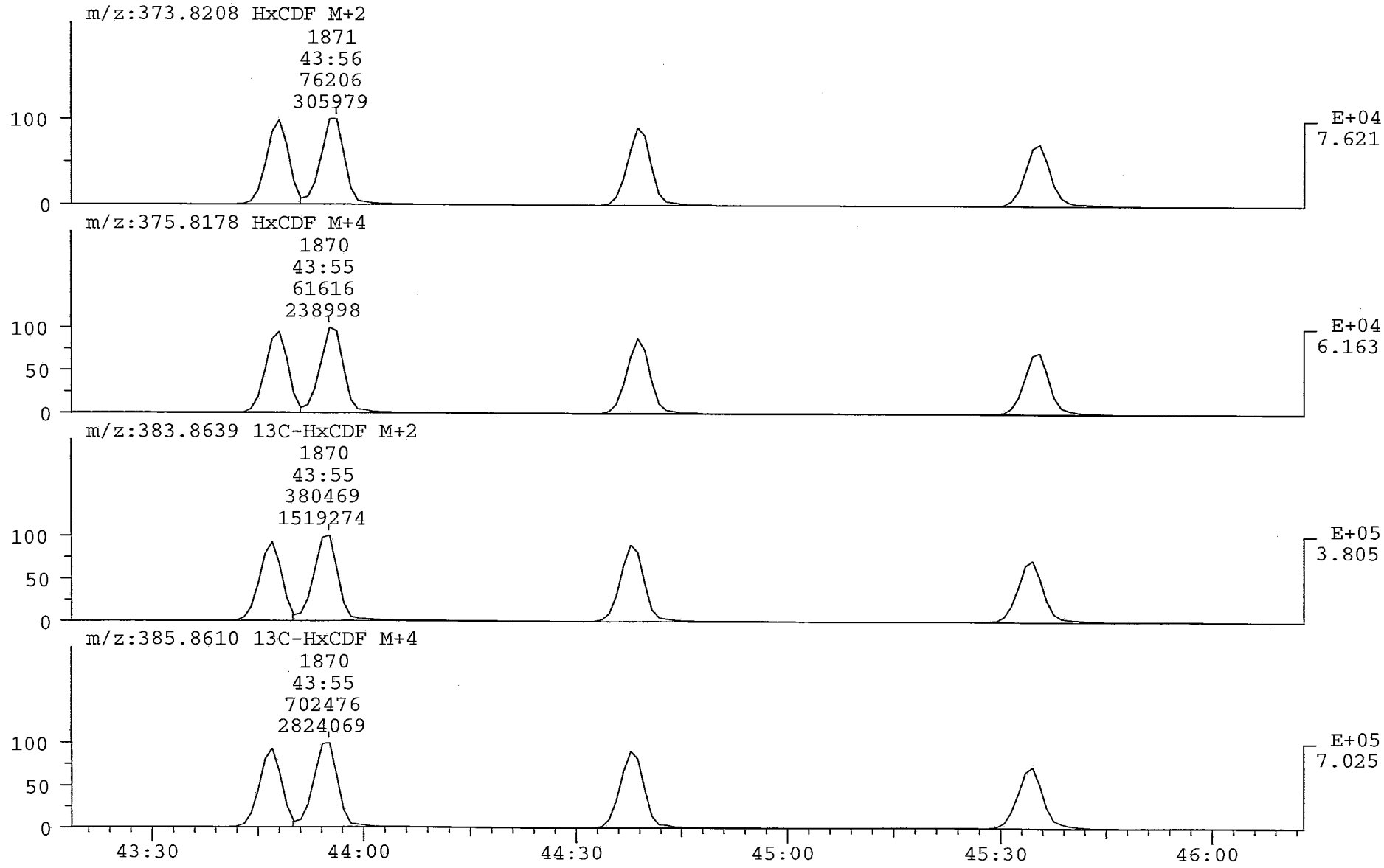
```
CHRO:  d1150409i2                          09-Apr-15  Elapse:  45:14      1948
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                   Start :  03:02:04   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1910 > 1985      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



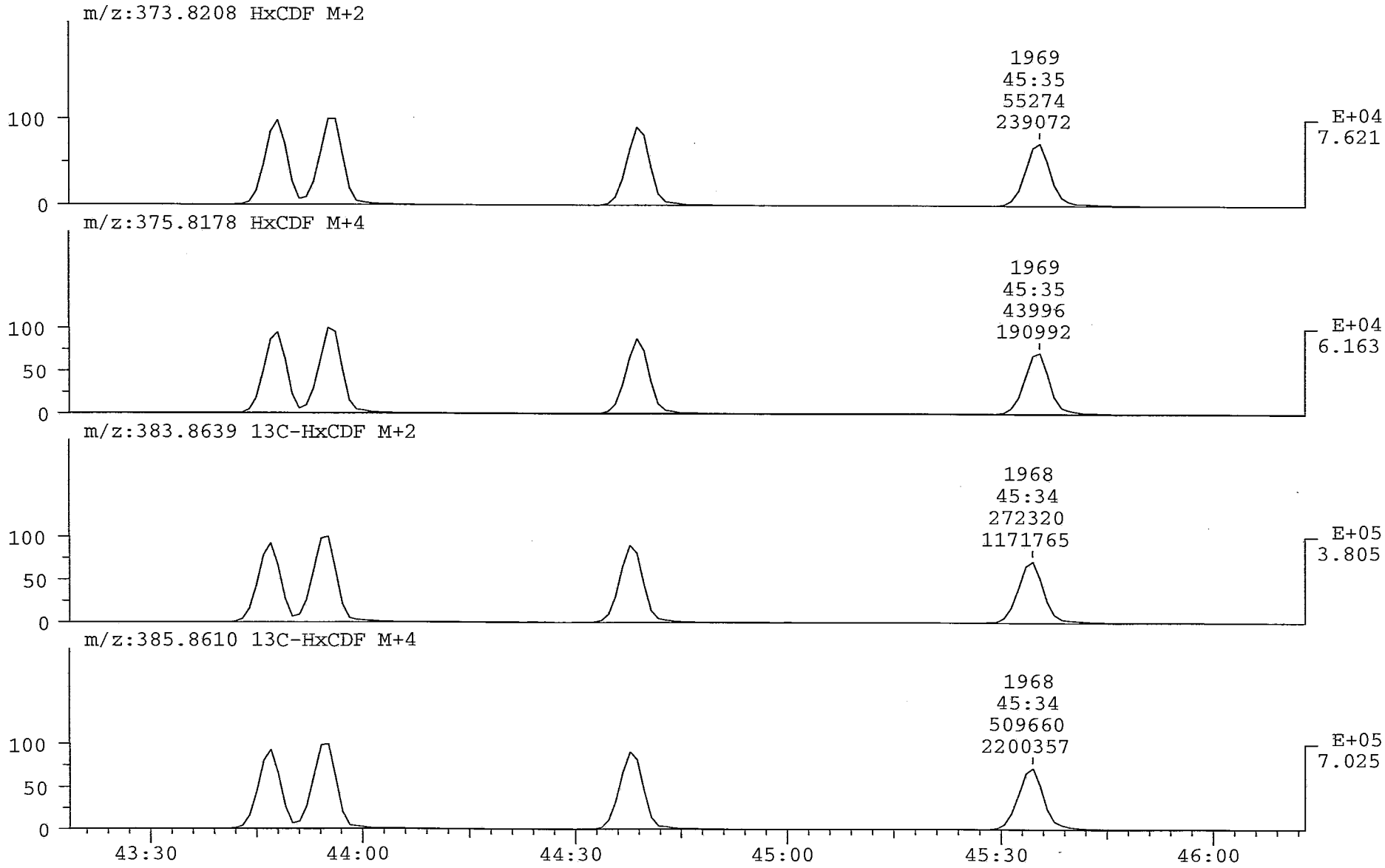
CHRO: d1150409i2 09-Apr-15 Elapse: 43:58 1873
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 03:02:04 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1834 > 2006 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



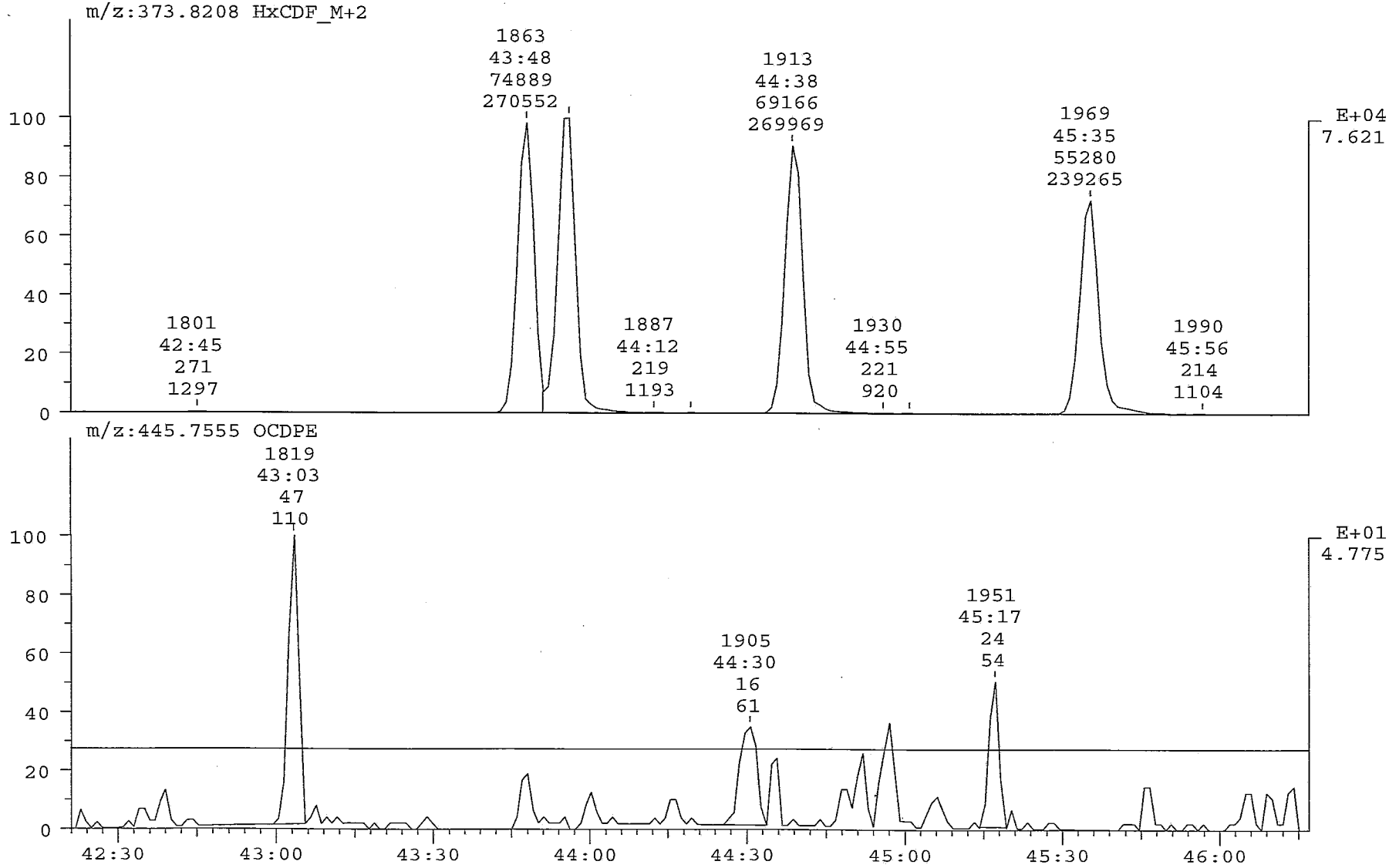
```
CHRO:  d1150409i2                          09-Apr-15  Elapse:  43:56      1871
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                   Start :  03:02:04   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1868 > 1874      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



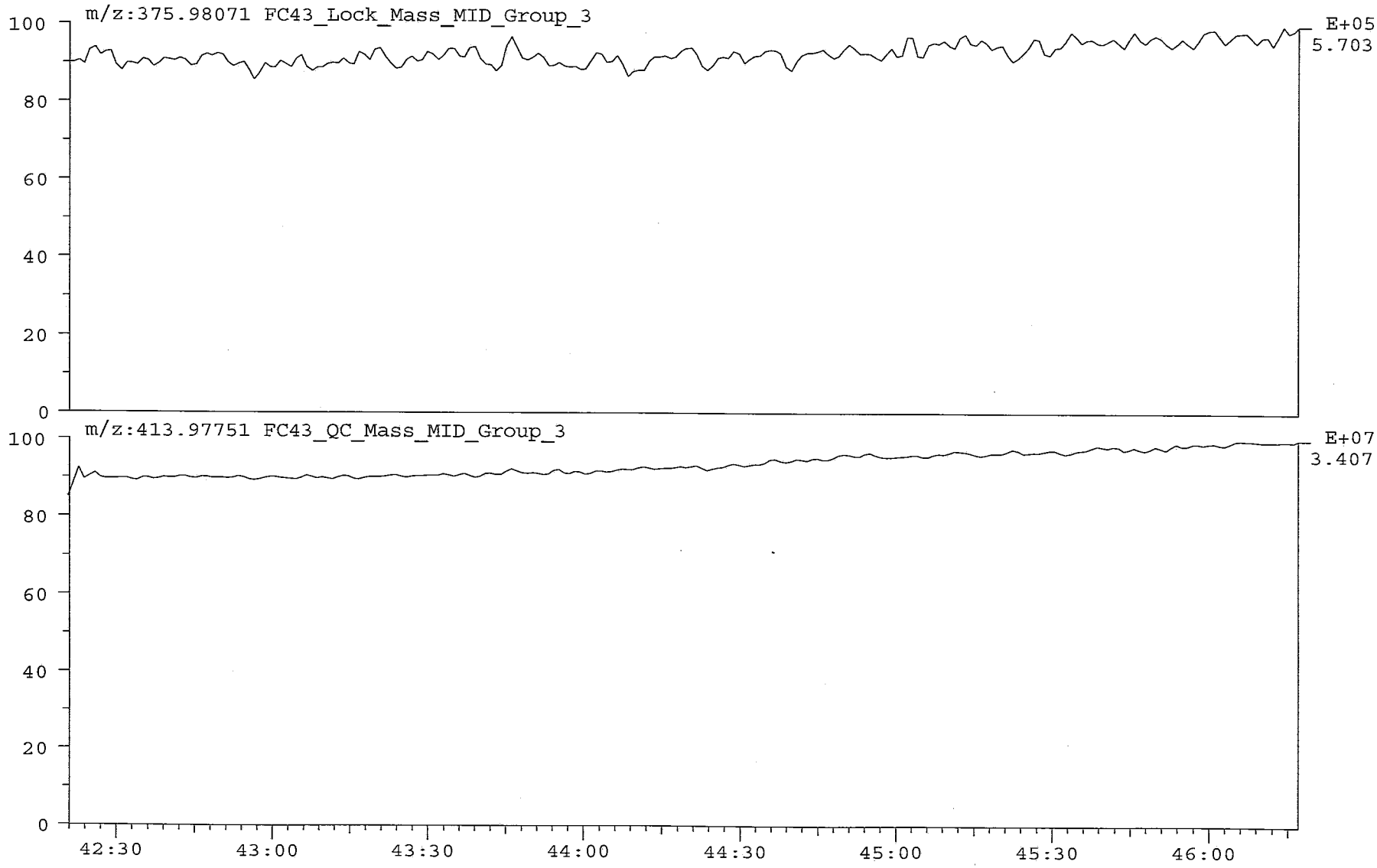
```
CHRO:  d1150409i2                          09-Apr-15  Elapse:  45:35      1969
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                   Start :  03:02:04   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1966 > 1972      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



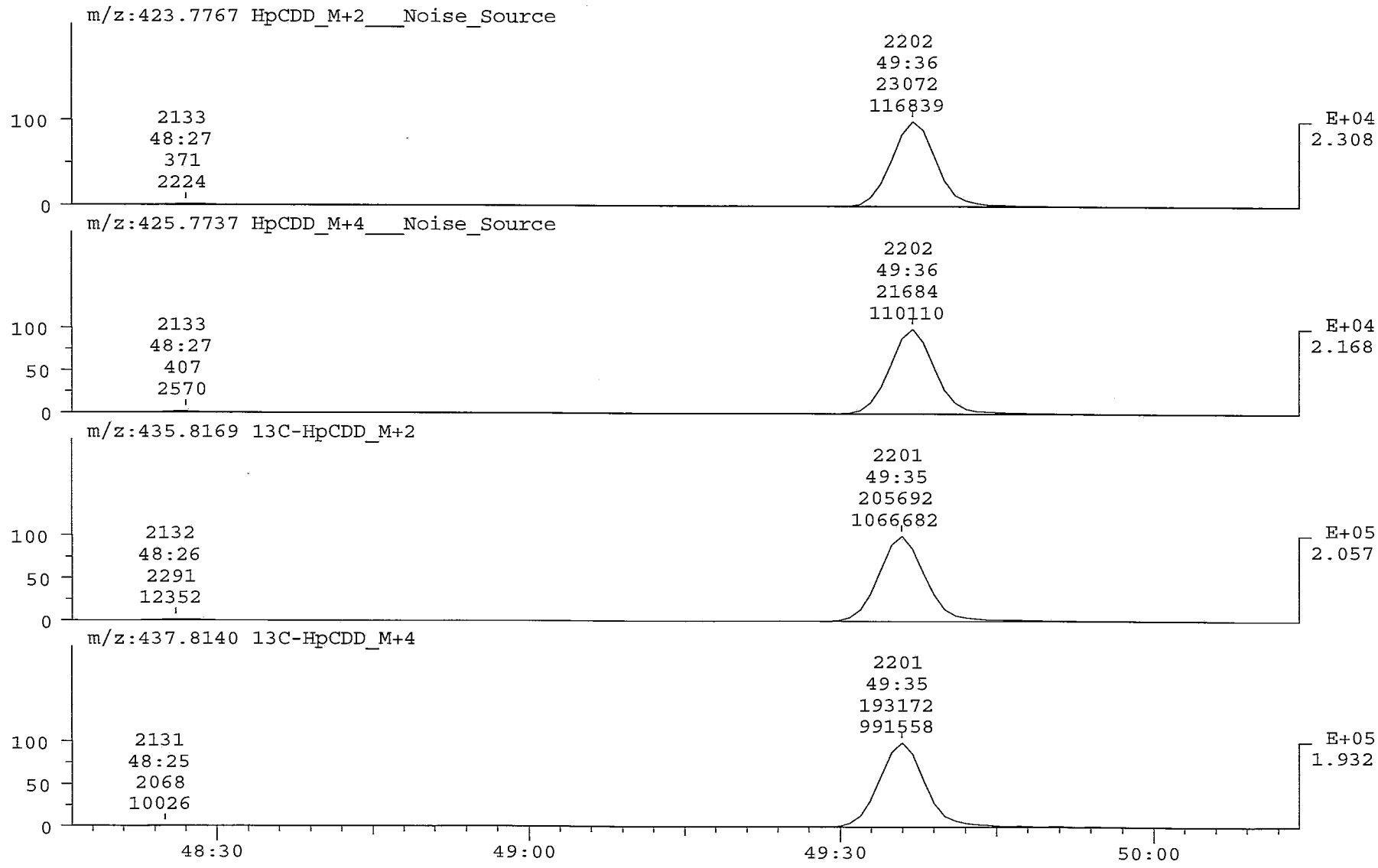
```
CHRO:  d1150409i2                          09-Apr-15   Elapse:  44:03      1878
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                    Start :  03:02:04   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                             Study :  1613/8290 ICAL
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1777 > 2010       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



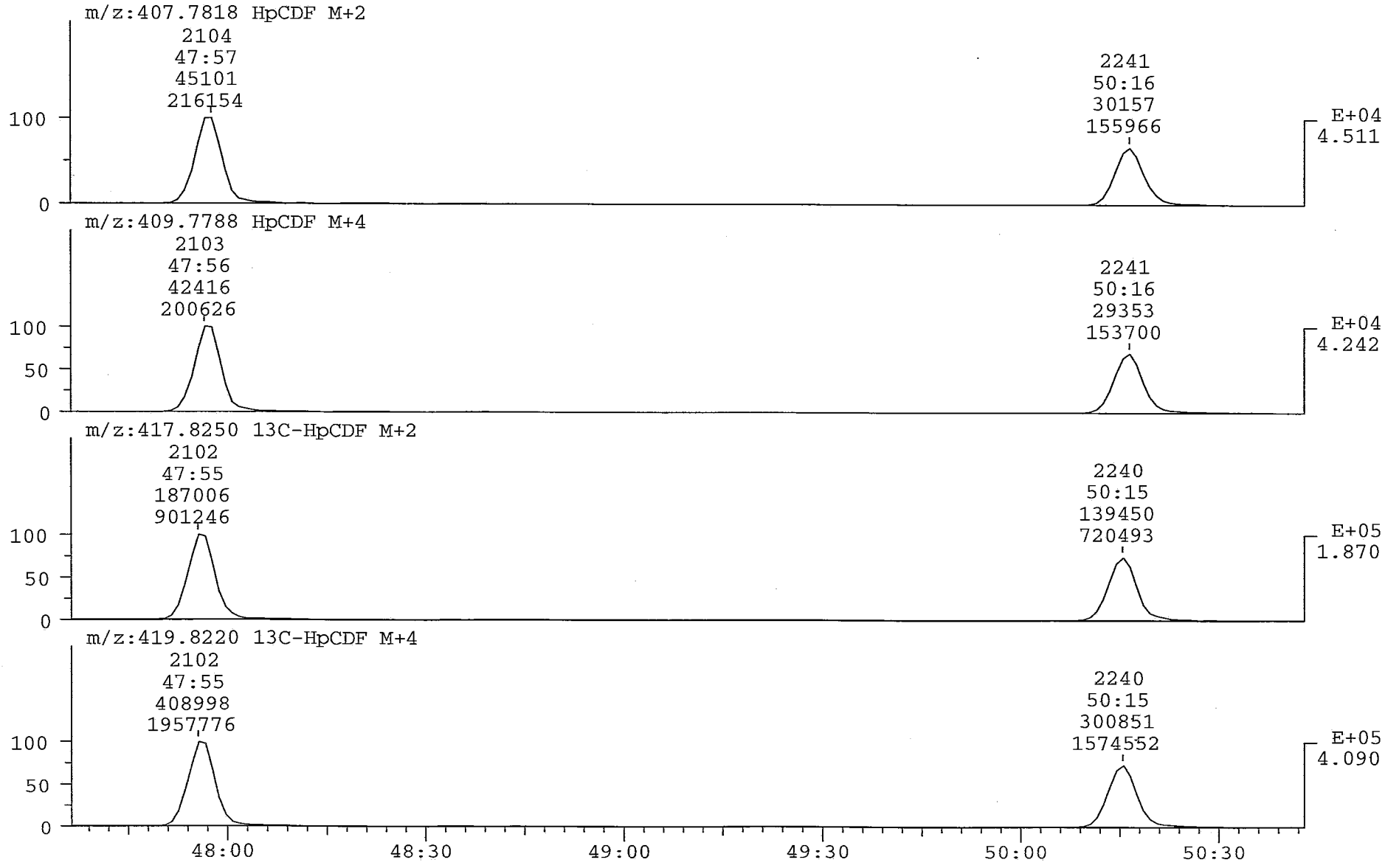
CHRO: d1150409i2 09-Apr-15 Elapse: 44:03 1878
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 03:02:04 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1777 > 2010 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



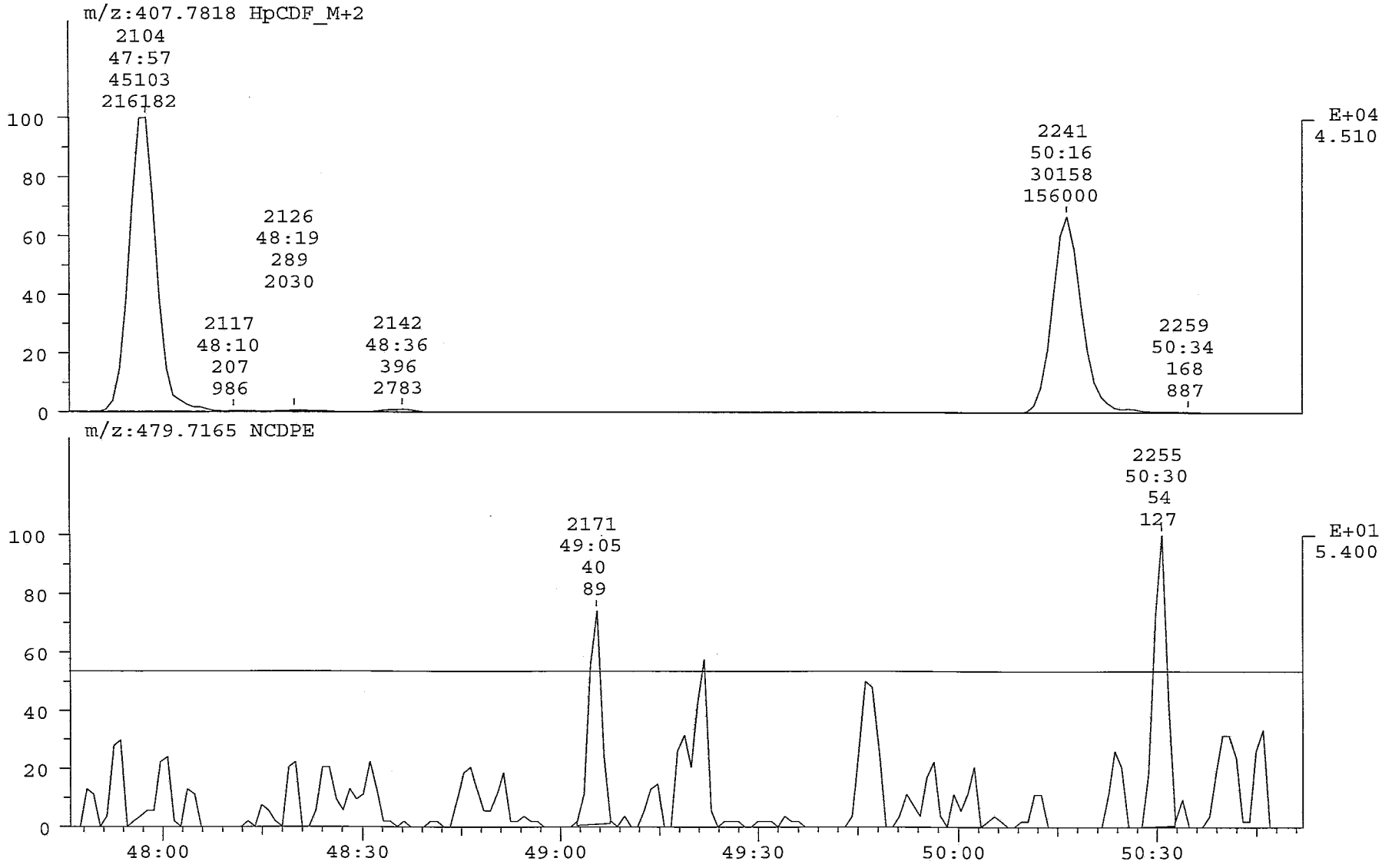
CHRO: d1150409i2 09-Apr-15 Elapse: 44:03 1878
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 03:02:04 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2122 > 2239 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



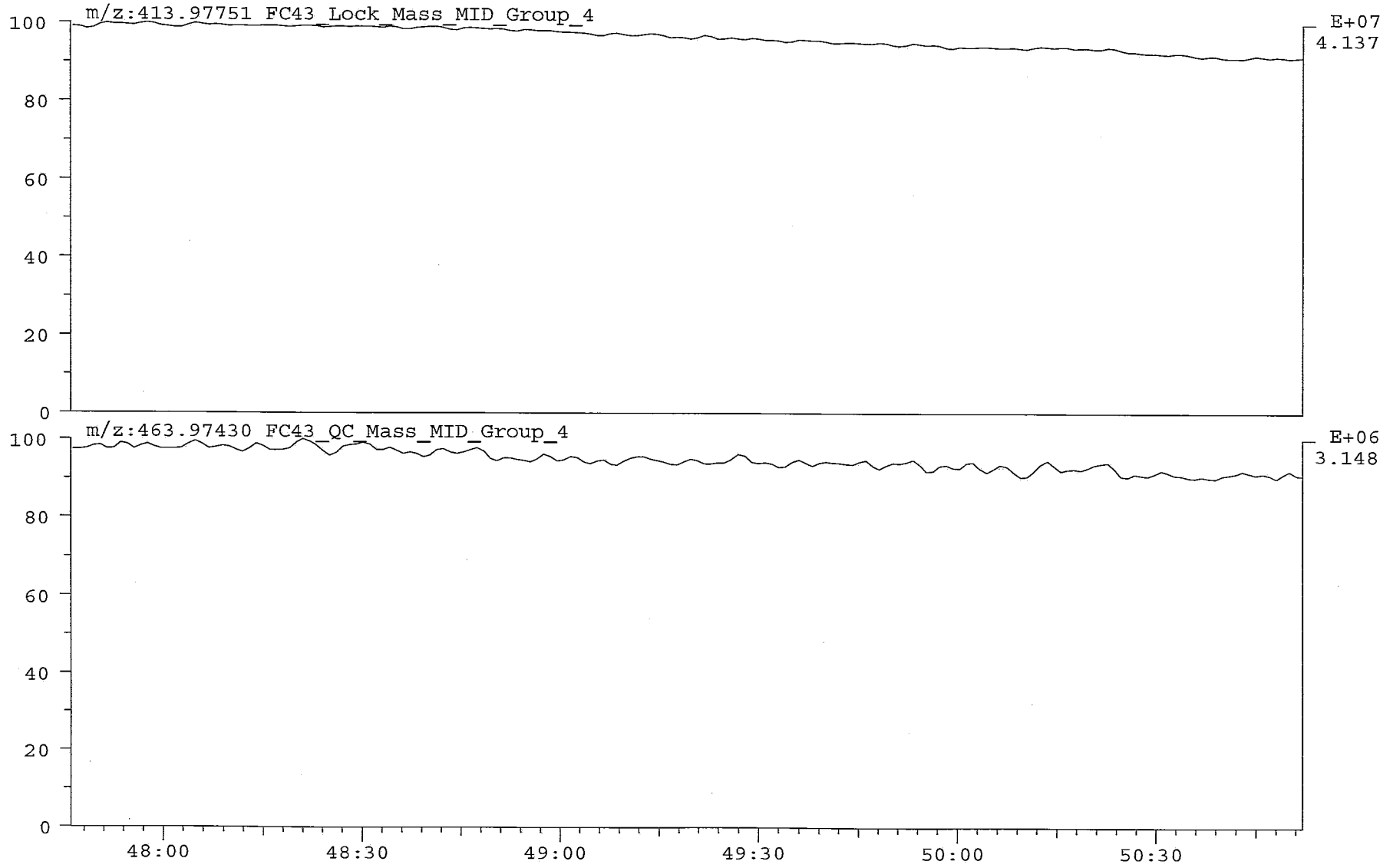
```
CHRO:  d1150409i2                          09-Apr-15  Elapse:  45:35      1969
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                   Start :  03:02:04   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2083 > 2267      Masses:  303 > 514
Area:  5, 0.50, 0      Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



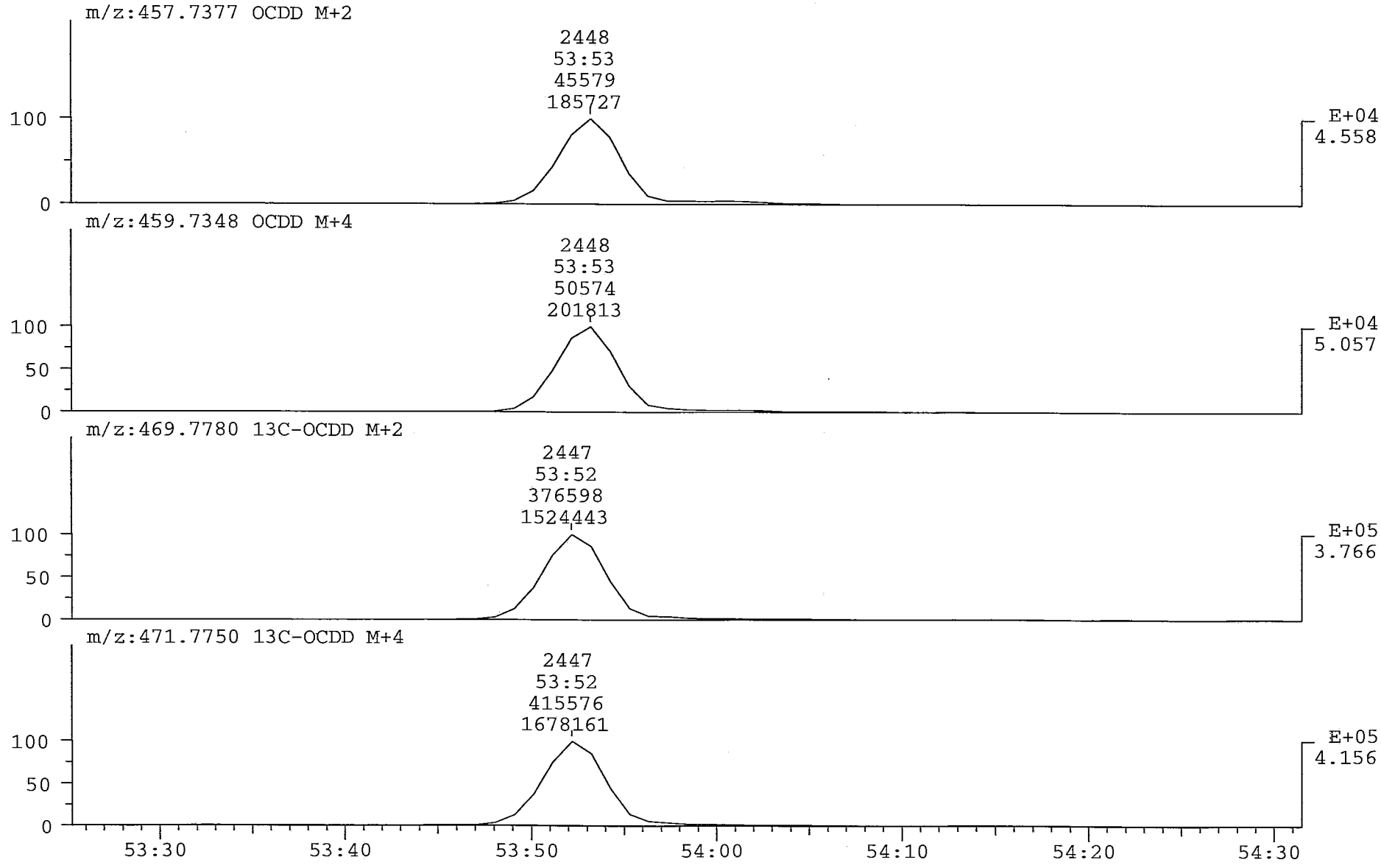
CHRO: d1150409i2 09-Apr-15 Elapse: 49:18 2184
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 03:02:04 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2093 > 2276 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



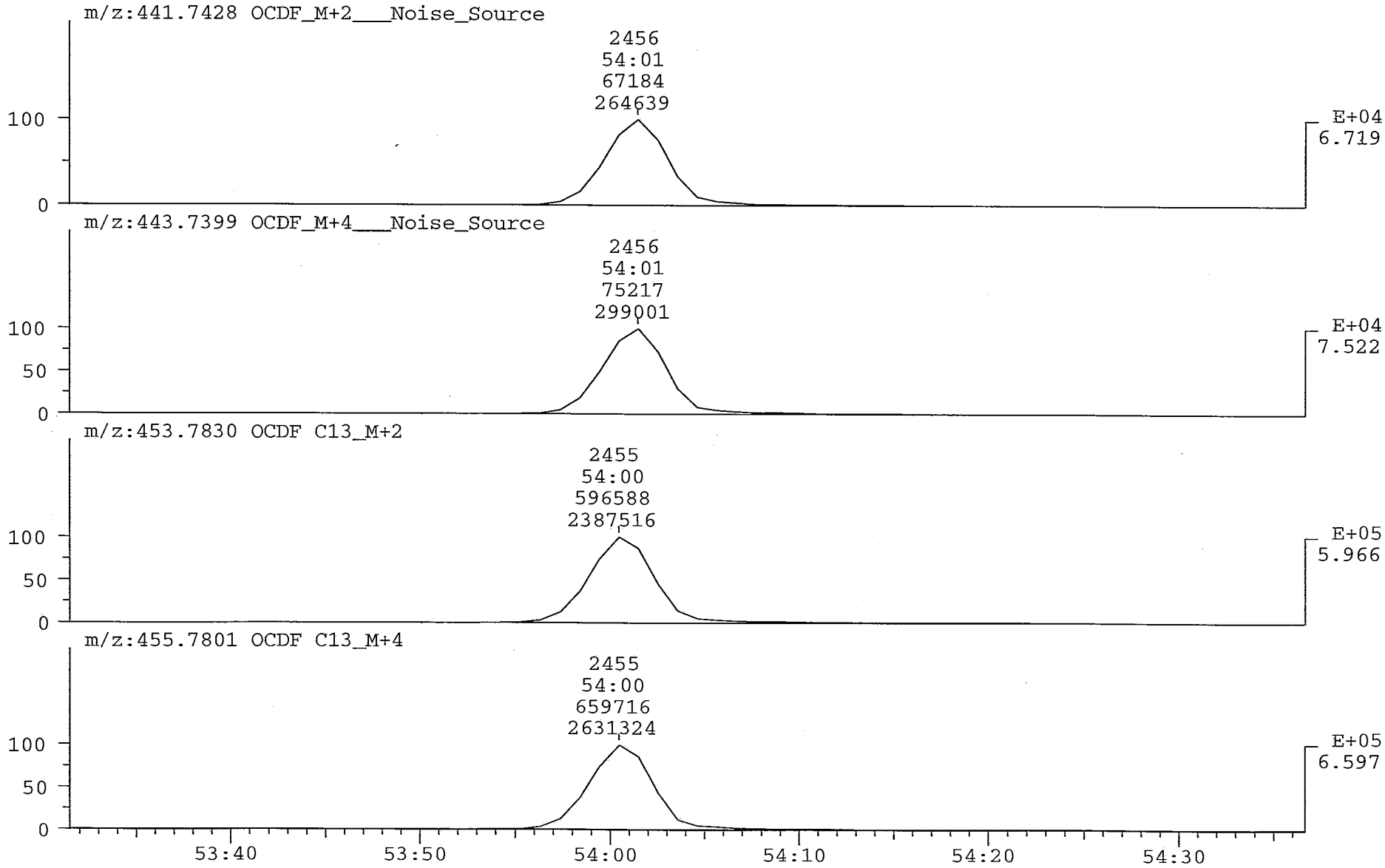
```
CHRO:  d1150409i2                          09-Apr-15   Elapse:  49:18      2184
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                    Start :  03:02:04   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                             Study :  1613/8290 ICAL
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2093 > 2276       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  0, 0.0
Disp:  Height  Area
```



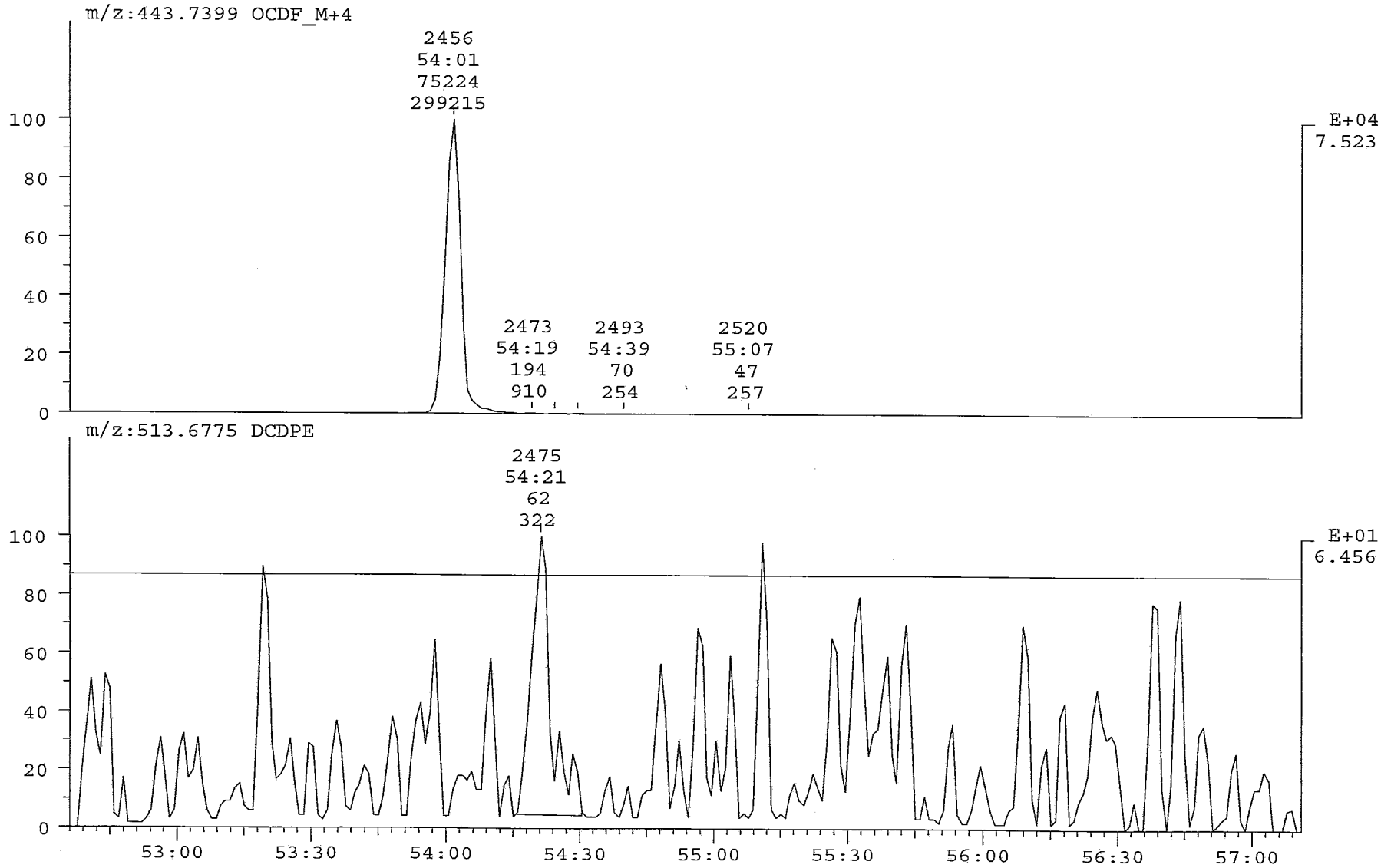
CHRO: d1150409i2 09-Apr-15 Elapse: 45:35 1969
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 03:02:04 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2421 > 2485 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



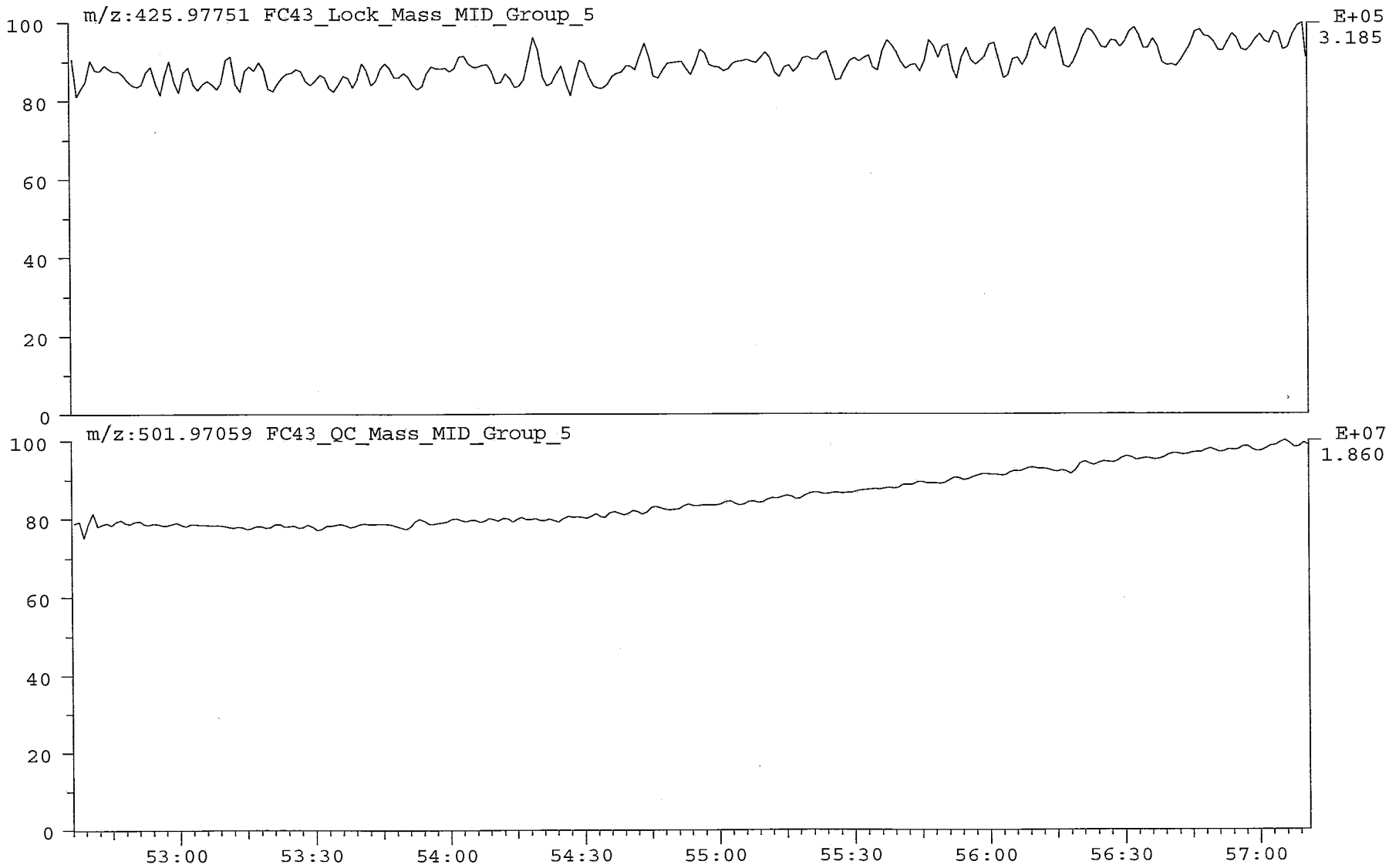
```
CHRO:  d1150409i2                          09-Apr-15  Elapse:  45:35      1969
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                   Start :  03:02:04   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2427 > 2490      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d115040 9i2                          09-Apr-15   Elapse:  54:09      2464
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                     Start :  03:02:04   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                              Study :  1613/8290 ICAL
Oper:  LKM                                              Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2374 > 2639        Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3             Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1150409i2                          09-Apr-15  Elapse:  54:09      2464
Samp:  WO=4104:74cs2 Meth=F8o Dil=1                   Start :  03:02:04   2640
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2374 > 2639      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Thu Apr 09 03:06:30 2015 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 09-Apr-15 03:06:30

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 102913KLR_150409011214

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	22:16 min	34:16 min	1.00 sec
# 2	34:16 min	7:55 min	42:12 min	1.00 sec
# 3	42:12 min	4:51 min	47:03 min	1.00 sec
# 4	47:03 min	5:26 min	52:30 min	1.00 sec
# 5	52:30 min	4:42 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

```
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 34.283333 minutes
MID Window end time was 34.280000 minutes
MID Window terminated after 42.200000 minutes
MID Window end time was 42.200000 minutes
MID Window terminated after 47.066667 minutes
MID Window end time was 47.060000 minutes
MID Window terminated after 52.500000 minutes
MID Window end time was 52.500000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\tune2.DFSTune

DFS - Parameter

 ACCU           1000.0000   BCORRS          0.0169   BMASS          310.9834
 BQUAD             1.1000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR             0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW            -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE       16.0000   ECORR           1.0001   ECURR            1.0000
 EDAC        7969177.0000   EDACG           0.9995   EDACZ         4144.0190
 ELEN            -45.0000   EMULT        1652.0000   ENS            239.0000
 ENSBR             1.1000   ERATIO          1.0000   ESA            679.0600
 ESIPAR            0.0000   EXS           170.0000   EXSBR           -1.1000
 FDMA       18000000.0000   FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            5.4000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0039	FVINLET	0.0456	FVSRC	0.0477
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	686.0000
LENS_SYM	-6.0000	LM	375.8364	LMII	500.0000
LMASS	310.9834	LKM	425.9770	MASS	310.9834
MDAC	3571598.8792	MRANGE	1252.5112	NSAM	200.0000
NSCAN	2661.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-11.0000	RECURR	0.8996	RELEN	0.0000
RES	9494.5156	RPUSHER	-10.9670	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	710.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1250	TANAL	0.0000	TCURR	0.0000
TD	3.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	310.9834	XLENS_POT	854.0000
XLENS_SYM	8.0000	YLENS_POT	692.0000	YLENS_SYM	-2.0000

```
Source Gauge:          3.5e-005 mbar
Analyzer Penning:      6.2e-008 mbar
Pirani Analyse:        3.9e-003 mbar
Pirani Source:         4.7e-002 mbar
Pirani Inlet System:   4.6e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 10350.
MID Time Window 2: Resolution is 10302.
MID Time Window 3: Resolution is 9977.
MID Time Window 4: Resolution is 9843.
MID Time Window 5: Resolution is 9494.

Amplifier Offset: 89.


*** File closed Thu Apr 09 04:03:43 2015
  ***
```

QUAN: d1150409i2.q0 Entries: 92

Data file(s) used
File: d1150409i2 09-Apr-15
Samp: WO=4104:74cs2 Meth=F8o Dil=1 Start : 03:02:04 2640
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	30:40	35698.	3522.	30:25	30:55	22.	1	1.0	ABV
321.8775	30:40	45635.	4397.	30:24	30:55	26.	1	1.0	ABV
319.8805	30:40	35698.	3522.	30:25	30:55	22.	2	5.0	ABV
321.8775	30:40	45635.	4397.	30:24	30:55	26.	2	5.0	ABV
331.9202	30:07	1541835.	157819.	29:52	30:22	118.	2	5.0	AVV
331.9202	30:36	1612029.	160741.	30:22	30:52	118.	2	5.0	AVV
333.9171	30:06	1903627.	192966.	29:51	30:21	223.	2	5.0	ABV
333.9171	30:36	2003208.	202749.	30:23	30:52	223.	2	5.0	AVV
327.8683	30:40	80651.	8191.	30:24	30:55	37.	1	1.0	AVV
327.8683	30:40	80651.	8191.	30:24	30:55	37.	2	5.0	AVV
303.8864	28:41	57172.	5999.	28:27	28:56	26.	1	1.0	ABV
305.8834	28:40	70653.	7483.	28:27	28:55	28.	1	1.0	ABV
303.8864	28:41	57172.	5999.	28:27	28:56	26.	2	5.0	ABV
305.8834	28:40	70653.	7483.	28:27	28:55	28.	2	5.0	ABV
315.9261	28:38	2700477.	287650.	28:24	28:53	102.	2	5.0	ABV
317.9230	28:38	3315101.	352760.	28:23	28:53	99.	2	5.0	AVV
355.8368	40:32	162571.	35612.	40:24	40:47	28.	1	1.0	ABV
357.8337	40:32	100316.	22336.	40:24	40:47	15.	1	1.0	ABV
355.8368	40:32	162571.	35612.	40:24	40:47	28.	2	5.0	ABV
357.8337	40:32	100316.	22336.	40:24	40:47	15.	2	5.0	ABV
367.8765	40:31	1528256.	340269.	40:22	40:46	64.	2	5.0	ABV
369.8734	40:31	960412.	206902.	40:22	40:46	51.	2	5.0	ABV
339.8427	38:43	309193.	59005.	38:33	38:57	42.	1	1.0	ABV
341.8396	38:43	195917.	36771.	38:32	38:58	33.	1	1.0	ABV
339.8427	38:43	309193.	59005.	38:33	38:57	42.	2	5.0	ABV
339.8427	40:00	285377.	59736.	39:45	40:10	42.	2	5.0	AVV
341.8396	38:43	195917.	36771.	38:32	38:58	33.	2	5.0	ABV
341.8396	40:00	181026.	37681.	39:44	40:15	33.	2	5.0	AVV
351.8824	38:42	2601429.	482403.	38:26	38:56	120.	2	5.0	AVV
351.8824	39:58	2597598.	537584.	39:43	40:14	120.	2	5.0	AVV
353.8793	38:42	1642589.	314186.	38:32	38:57	108.	2	5.0	ABV
353.8793	39:58	1659060.	342520.	39:47	40:14	108.	2	5.0	ABV
389.7961	45:19	169915.	42385.	45:13	45:29	64.	1	1.0	ABV
391.7931	45:19	138548.	34331.	45:11	45:34	67.	1	1.0	AVV
389.7961	44:49	159048.	41359.	44:41	44:52	64.	2	5.0	ABV
389.7961	44:57	163403.	39975.	44:52	45:12	64.	2	5.0	AVV
389.7961	45:19	169915.	42385.	45:13	45:29	64.	2	5.0	ABV
391.7931	44:48	133811.	33900.	44:42	44:52	67.	2	5.0	ABV
391.7931	44:56	126515.	31465.	44:52	45:11	67.	2	5.0	AVV
391.7931	45:19	138548.	34331.	45:11	45:34	67.	2	5.0	AVV
401.8358	44:48	1418496.	356664.	44:41	44:51	131.	2	5.0	ABV
401.8358	44:56	1448349.	359698.	44:51	45:11	131.	2	5.0	AVV
401.8358	45:18	1562540.	383067.	45:12	45:33	131.	2	5.0	AVV
403.8327	44:48	1115531.	286059.	44:40	44:51	167.	2	5.0	ABV
403.8327	44:56	1140289.	281368.	44:51	45:08	167.	2	5.0	AVV
403.8327	45:18	1221005.	300811.	45:08	45:32	167.	2	5.0	AVV
373.8021	43:56	305780.	76206.	43:51	44:10	47.	1	1.0	AVV
375.7990	43:55	239059.	61620.	43:51	44:05	48.	1	1.0	AVV
373.8021	43:48	270552.	74889.	43:40	43:51	47.	2	5.0	ABV
373.8021	43:56	305963.	76206.	43:51	44:11	47.	2	5.0	AVV

373.8021	44:38	269898.	69163.	44:29	44:53	47.	2	5.0 AVV
373.8021	45:35	238907.	55265.	45:28	45:50	47.	2	5.0 ABV
375.7990	43:48	215175.	58599.	43:38	43:51	48.	2	5.0 ABV
375.7990	43:55	239059.	61620.	43:51	44:05	48.	2	5.0 AVB
383.8447	43:47	1276568.	349957.	43:39	43:50	93.	2	5.0 ABV
383.8447	43:55	1519274.	380469.	43:50	44:09	93.	2	5.0 AVV
383.8447	44:37	1343047.	342401.	44:28	44:51	93.	2	5.0 AVV
383.8447	45:34	1171757.	272320.	45:26	45:49	93.	2	5.0 ABV
385.8417	43:47	2376141.	653286.	43:38	43:50	131.	2	5.0 ABV
385.8417	43:55	2823259.	702434.	43:50	44:10	131.	2	5.0 AVV
385.8417	44:37	2541855.	637652.	44:25	44:52	131.	2	5.0 AVV
385.8417	45:34	2197300.	509547.	45:25	45:49	131.	2	5.0 ABV
423.7555	49:37	116839.	23072.	49:28	49:52	23.	1	1.0 ABV
425.7524	49:37	109849.	21684.	49:27	49:52	30.	1	1.0 AVV
423.7555	48:27	2224.	371.	48:21	48:34	23.	2	5.0 ABB
423.7555	49:37	116839.	23072.	49:28	49:52	23.	2	5.0 ABV
425.7524	48:27	2570.	407.	48:16	48:42	30.	2	5.0 ABV
425.7524	49:37	110110.	21684.	49:21	49:52	30.	2	5.0 AVV
435.7951	48:26	12352.	2291.	48:18	48:37	44.	2	5.0 ABB
435.7951	49:36	1066682.	205692.	49:26	49:51	44.	2	5.0 ABV
437.7921	48:25	10026.	2068.	48:20	48:36	28.	2	5.0 ABB
437.7921	49:36	991558.	193172.	49:26	49:51	28.	2	5.0 ABV
407.7614	47:57	216182.	45103.	47:49	48:08	21.	1	1.0 ABV
409.7583	47:56	200243.	42416.	47:49	48:11	21.	1	1.0 ABV
407.7614	47:57	216182.	45103.	47:49	48:08	21.	2	5.0 ABV
407.7614	50:16	156000.	30158.	50:08	50:30	21.	2	5.0 ABV
409.7583	47:56	200243.	42416.	47:49	48:11	21.	2	5.0 ABV
409.7583	50:16	153811.	29356.	50:07	50:31	21.	2	5.0 ABV
417.8041	47:55	896690.	186955.	47:47	48:10	68.	2	5.0 ABV
417.8041	50:15	717748.	139484.	50:06	50:30	68.	2	5.0 ABV
419.8010	47:55	1951197.	408997.	47:47	48:10	81.	2	5.0 ABV
419.8010	50:15	1571277.	300846.	50:06	50:30	81.	2	5.0 ABV
457.7148	53:53	185727.	45579.	53:46	54:08	18.	1	1.0 ABV
459.7118	53:53	201813.	50574.	53:46	54:08	26.	1	1.0 ABV
457.7148	53:53	185727.	45579.	53:46	54:08	18.	2	5.0 ABV
459.7118	53:53	201813.	50574.	53:46	54:08	26.	2	5.0 ABV
469.7545	53:52	1524443.	376598.	53:45	54:07	40.	2	5.0 ABV
471.7514	53:52	1678699.	415592.	53:45	54:07	51.	2	5.0 ABV
441.7207	54:01	264836.	67190.	53:51	54:17	19.	1	1.0 ABV
443.7177	54:01	299146.	75222.	53:50	54:16	27.	1	1.0 ABV
441.7207	54:01	264836.	67190.	53:51	54:17	19.	2	5.0 ABV
443.7177	54:01	299146.	75222.	53:50	54:16	27.	2	5.0 ABV

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS3	Prep Batch		Lot No	
Data File	/20150409i/d115040 9i3.d	Prep Date		SDG No	
Analysis ID	169126	Prep Exp Date		Date Received	
Analysis Date	4/9/2015	Matrix	UNKNOWN	Date Sampled	
Analysis Time	04:03	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D11A	Dil Factor	1.00	Code	F8o
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)	DL (ng/mL)
2,3,7,8-TCDD	30:41	605461	61799	1.000	10.00	11.264462	112.64	11.264462	0.0398
Total TCDD				1.000		11.264462		11.264462	0.0398
2,3,7,8-TCDF	28:41	923398	98997	1.000	10.00	10.323393	103.23	10.323393	0.0246
Total TCDF				1.000		10.323393		10.323393	0.0246
1,2,3,7,8-PeCDD	40:34	2030417	467312	1.000	50.00	52.640398	105.28	52.640398	0.0187
Total PeCDD				1.000		52.640398		52.640398	0.0187
1,2,3,7,8-PeCDF	38:44	3789453	726487	1.000	50.00	57.993624	115.99	57.993624	0.0337
2,3,4,7,8-PeCDF	40:01	3554468	772948	1.000	50.00	54.931815	109.86	54.931815	0.0306
Total PeCDF				1.000		112.925439		112.925439	0.0321
1,2,3,4,7,8-HxCDD	44:51	2257903	580581	1.000	50.00	55.727506	111.46	55.727506	0.0636
1,2,3,6,7,8-HxCDD	44:57	2234131	569499	1.000	50.00	55.503478	111.01	55.503478	0.0662
1,2,3,7,8,9-HxCDD	45:21	2392040	603503	1.000	50.00	59.231680	118.46	59.231680	0.0649
Total HxCDD				1.000		170.462664		170.462664	0.0649
1,2,3,4,7,8-HxCDF	43:49	3721817	1008466	1.000	50.00	65.795555	131.59	65.795555	0.0284
1,2,3,6,7,8-HxCDF	43:56	4112041	1090793	1.000	50.00	61.241592	122.48	61.241592	0.0254
2,3,4,6,7,8-HxCDF	44:40	3625387	953727	1.000	50.00	61.002118	122.00	61.002118	0.0280
1,2,3,7,8,9-HxCDF	45:37	3276663	761700	1.000	50.00	62.255105	124.51	62.255105	0.0362
Total HxCDF				1.000		250.294371		250.294371	0.0290
1,2,3,4,6,7,8-HpCDD	49:38	1719357	341774	1.000	50.00	53.977833	107.96	53.977833	0.0322
Total HpCDD				1.000		53.977833		53.977833	0.0322
1,2,3,4,6,7,8-HpCDF	47:58	3175107	690261	1.000	50.00	71.648099	143.30	71.648099	0.0292
1,2,3,4,7,8,9-HpCDF	50:18	2393112	468689	1.000	50.00	68.132156	136.26	68.132156	0.0407
Total HpCDF				1.000		139.780255		139.780255	0.0340
OCDD	53:55	3055580	755094	1.000	100.0	120.250775	120.25	120.250775	0.0364
OCDF	54:03	4469891	1111894	1.000	100.0	111.418562	111.42	111.418562	0.0249
13C-2,3,7,8-TCDD	30:36	5374966	540682	1.000	100.0	107.404975	107.40	107.404975	0.113
13C-2,3,7,8-TCDF	28:39	8944714	954373	1.000	100.0	178.737277	178.74	178.737277	0.126
13C-1,2,3,7,8-PeCDD	40:33	3857146	867284	1.000	100.0	77.075217	77.08	77.075217	0.0443
13C-1,2,3,7,8-PeCDF	38:43	6534258	1267328	1.000	100.0	130.570467	130.57	130.570467	0.143
13C-2,3,4,7,8-PeCDF	39:59	6470691	1395828	1.000	100.0	129.300243	129.30	129.300243	0.143
13C-1,2,3,4,7,8-HxCDD	44:50	4051685	1041179	1.000	100.0	92.355822	92.36	92.355822	0.0745
13C-1,2,3,6,7,8-HxCDD	44:56	4025209	1000508	1.000	100.0	91.752317	91.75	91.752317	0.0745
13C-1,2,3,4,7,8-HxCDF	43:48	5656639	1538476	1.000	100.0	128.939822	128.94	128.939822	0.0537
13C-1,2,3,6,7,8-HxCDF	43:55	6714458	1721661	1.000	100.0	153.052196	153.05	153.052196	0.0537
13C-2,3,4,6,7,8-HxCDF	44:39	5943051	1564456	1.000	100.0	135.468419	135.47	135.468419	0.0537
13C-1,2,3,7,8,9-HxCDF	45:36	5263284	1210191	1.000	100.0	119.973522	119.97	119.973522	0.0537
13C-1,2,3,4,6,7,8-HpCDD	49:37	3185302	621318	1.000	100.0	72.607121	72.61	72.607121	0.0146
13C-1,2,3,4,6,7,8-HpCDF	47:57	4431530	951382	1.000	100.0	101.014169	101.01	101.014169	0.0347
13C-1,2,3,4,7,8,9-HpCDF	50:17	3512456	681089	1.000	100.0	80.064408	80.06	80.064408	0.0347
13C-OCDD	53:54	5082013	1305470	1.000	200.0	115.841554	57.92	115.841554	0.0270
13C-OCDF	54:02	8023602	2050496	1.000	200.0	182.893378	91.45	182.893378	0.0258
37Cl4-2,3,7,8-TCDD	30:40	584924	58888	1.000	10.00	11.688213	116.88	11.688213	0.0183
13C-1,2,3,4-TCDD	30:06	5004392	519243	1.000	100.0	100.000000	100.00	100.000000	0.113
13C-1,2,3,7,8,9-HxCDD	45:20	4387038	1094197	1.000	100.0	100.000000	100.00	100.000000	0.0745

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS3	Prep Batch		Lot No	
Data File	/20150409i/d115040 9i3.	Prep Date		SDG No	
Analysis ID	169126	Prep Exp Date		Date Received	
Analysis Date	04/09/15 04:03	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	123	113	49	45	1.09 *	/	
	2,3,7,8-TCDF	28:41	00:00	0	404013	519385	43038	55959	0.78	ABV/AVV	M
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	325	330	130	132	0.98 *	/	
	13C-2,3,7,8-TCDF	28:39	00:00	0	3998283	4946431	428497	525876	0.81	AVV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	88	128	35	51	0.69	/	
	2,3,7,8-TCDD	30:41	00:00	0	264661	340800	26523	35276	0.78	AVV/AVV	M
328					327.8847		327.8847				
	Noise	00:00	00:00	0	95		38				
	37Cl4-2,3,7,8-TCDD	30:40	00:00	0	584924		58888			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	298	288	119	115	1.03 *	/	
	13C-1,2,3,4-TCDD	30:06	00:00	0	2209138	2795254	229652	289591	0.79	AVV/ABV	
	13C-2,3,7,8-TCDD	30:36	00:00	0	2396717	2978249	243391	297291	0.80	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	240	188	96	75	1.28 *	/	
	1,2,3,7,8-PeCDF	38:44	00:00	0	2316920	1472533	440288	286199	1.57	ABV/ABV	M
	2,3,4,7,8-PeCDF	40:01	00:00	0	2175657	1378811	471673	301275	1.58	ABV/ABV	M
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	510	233	204	93	2.19 *	/	
	13C-1,2,3,7,8-PeCDF	38:43	00:00	0	4012844	2521414	776719	490609	1.59	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	39:59	00:00	0	3980973	2489718	857577	538251	1.60	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	88	75	35	30	1.17 *	/	
	1,2,3,7,8-PeCDD	40:34	00:00	0	1237801	792616	285840	181472	1.56	ABV/ABV	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	123	108	49	43	1.14 *	/	
	13C-1,2,3,7,8-PeCDD	40:33	00:00	0	2375994	1481152	535211	332073	1.60	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	223	215	89	86	1.03 *	/	
	1,2,3,4,7,8-HxCDF	43:49	00:00	0	2062805	1659012	566975	441491	1.24	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	43:56	00:00	0	2287129	1824912	600168	490625	1.25	AVV/AVV	M
	2,3,4,6,7,8-HxCDF	44:40	00:00	0	2010502	1614885	527001	426726	1.24	AVV/AVV	M
	1,2,3,7,8,9-HxCDF	45:37	00:00	0	1823163	1453500	424318	337382	1.25	ABV/ABV	M
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	255	333	102	133	0.77 *	/	
	13C-1,2,3,4,7,8-HxCDF	43:48	00:00	0	1973386	3683253	534677	1003799	0.54	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	43:55	00:00	0	2337122	4377336	598266	1123395	0.53	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	44:39	00:00	0	2067215	3875836	547737	1016719	0.53	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	45:36	00:00	0	1820930	3442354	425935	784256	0.53	ABV/ABV	
	Unidentified	45:57	00:00	0	3659	3963	1144	1550	0.92 *	AVV/AVB	R

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS3	Prep Batch		Lot No	
Data File	/20150409i/d115040 9i3.	Prep Date		SDG No	
Analysis ID	169126	Prep Exp Date		Date Received	
Analysis Date	04/09/15 04:03	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

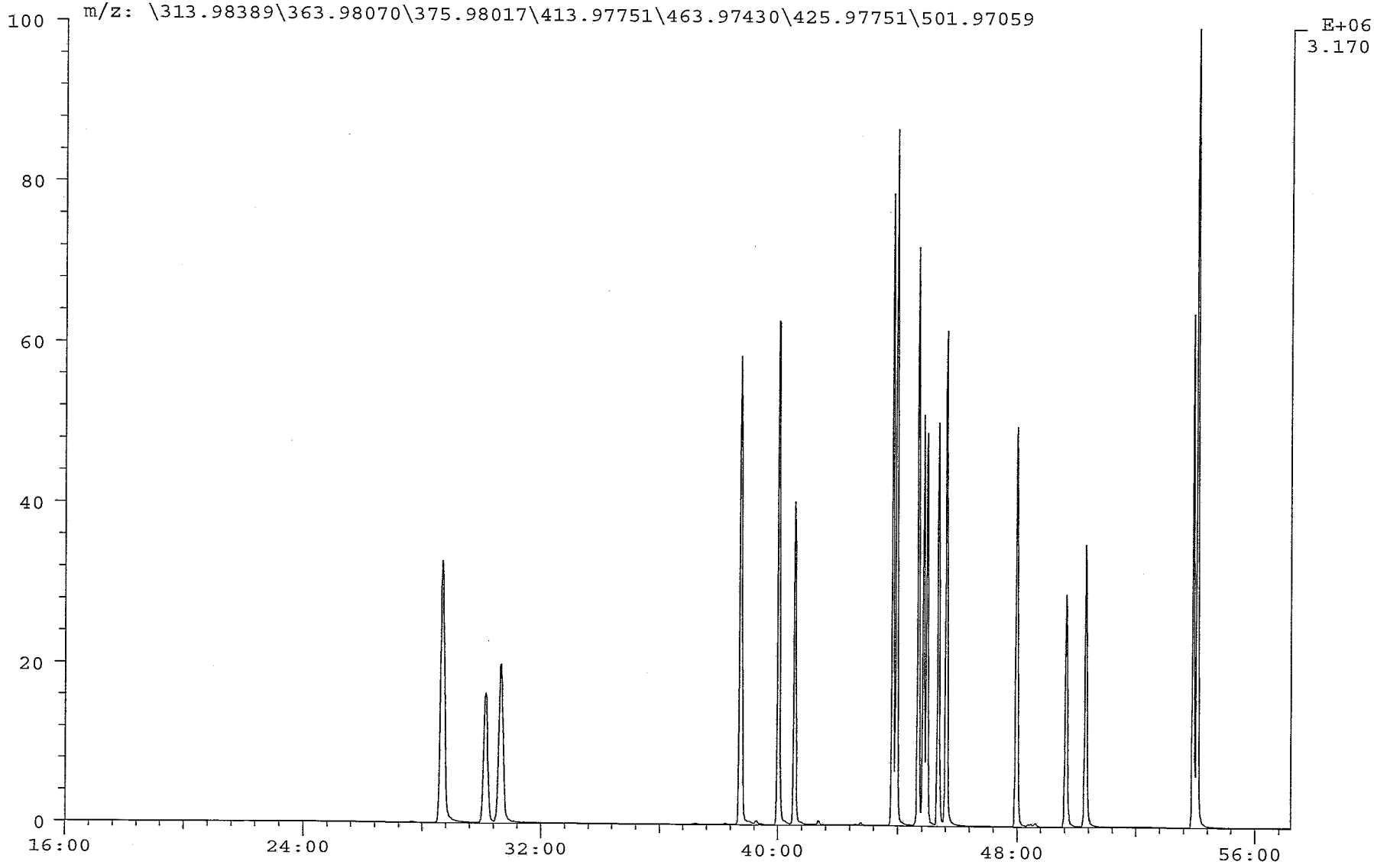
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	478	185	191	74	2.58 *	/	
	1,2,3,4,7,8-HxCDD	44:51	00:00	0	1257325	1000578	322086	258495	1.26	ABV/ABV	M
	1,2,3,6,7,8-HxCDD	44:57	00:00	0	1248503	985628	313291	256208	1.27	AVV/AVV	M
	1,2,3,7,8,9-HxCDD	45:21	00:00	0	1337436	1054604	338314	265189	1.27	AVV/AVV	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	340	475	136	190	0.72 *	/	
	13C-1,2,3,4,7,8-HxCDD	44:50	00:00	0	2277537	1774148	588859	452320	1.28	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	44:56	00:00	0	2252005	1773204	554483	446025	1.27	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	45:20	00:00	0	2446659	1940379	607849	486348	1.26	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	150	128	60	51	1.18	/	
	1,2,3,4,6,7,8-HpCDF	47:58	00:00	0	1624518	1550589	350034	340227	1.05	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	50:18	00:00	0	1226668	1166444	241112	227577	1.05	ABB/ABB	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	155	225	62	90	0.69 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	47:57	00:00	0	1393647	3037883	298564	652818	0.46	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:17	00:00	0	1094277	2418179	210164	470925	0.45	ABB/ABB	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	113	88	45	35	1.29 *	/	
	1,2,3,4,6,7,8-HpCDD	49:38	00:00	0	880940	838417	175799	165975	1.05	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	60	100	24	40	0.60 *	/	
	Unidentified	48:27	00:00	0	17535	17432	3451	3334	1.01	ABB/ABB	
	13C-1,2,3,4,6,7,8-HpCDD	49:37	00:00	0	1631677	1553625	318614	302704	1.05	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	118	138	47	55	0.85	/	
	OCDF	54:03	00:00	0	2143987	2325904	537853	574041	0.92	ABV/ABV	M
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	148	135	59	54	1.09 *	/	
	13C-OCDF	54:02	00:00	0	3806248	4217354	976707	1073789	0.90	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	85	153	34	61	0.56 *	/	
	OCDD	53:55	00:00	0	1442587	1612993	360405	394689	0.89	ABV/ABV	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	108	188	43	75	0.57 *	/	
	13C-OCDD	53:54	00:00	0	2411667	2670346	626367	679103	0.90	ABV/ABV	

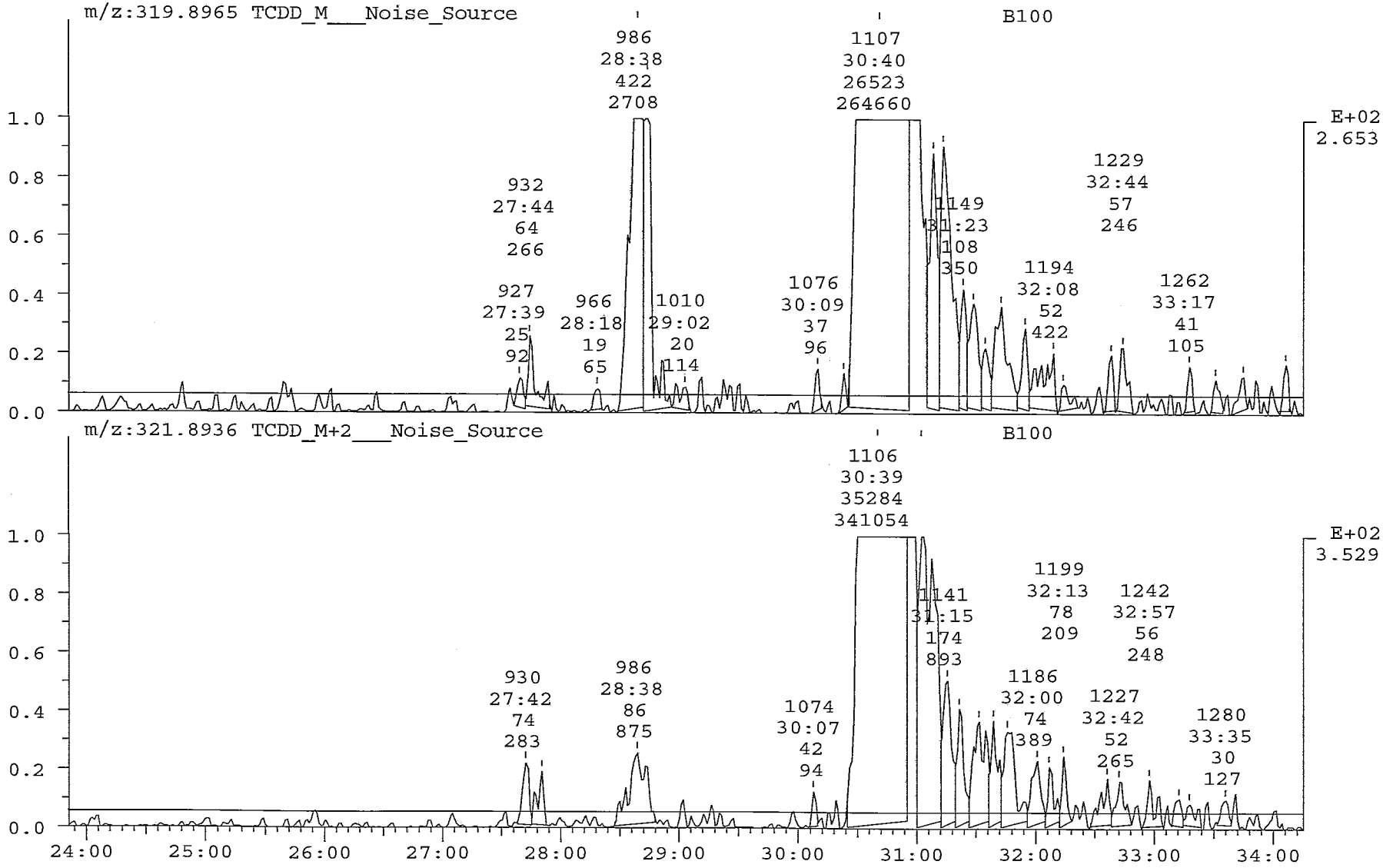
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. KLM 4/9/15
+ Calc.
QC KLM 4-9-15

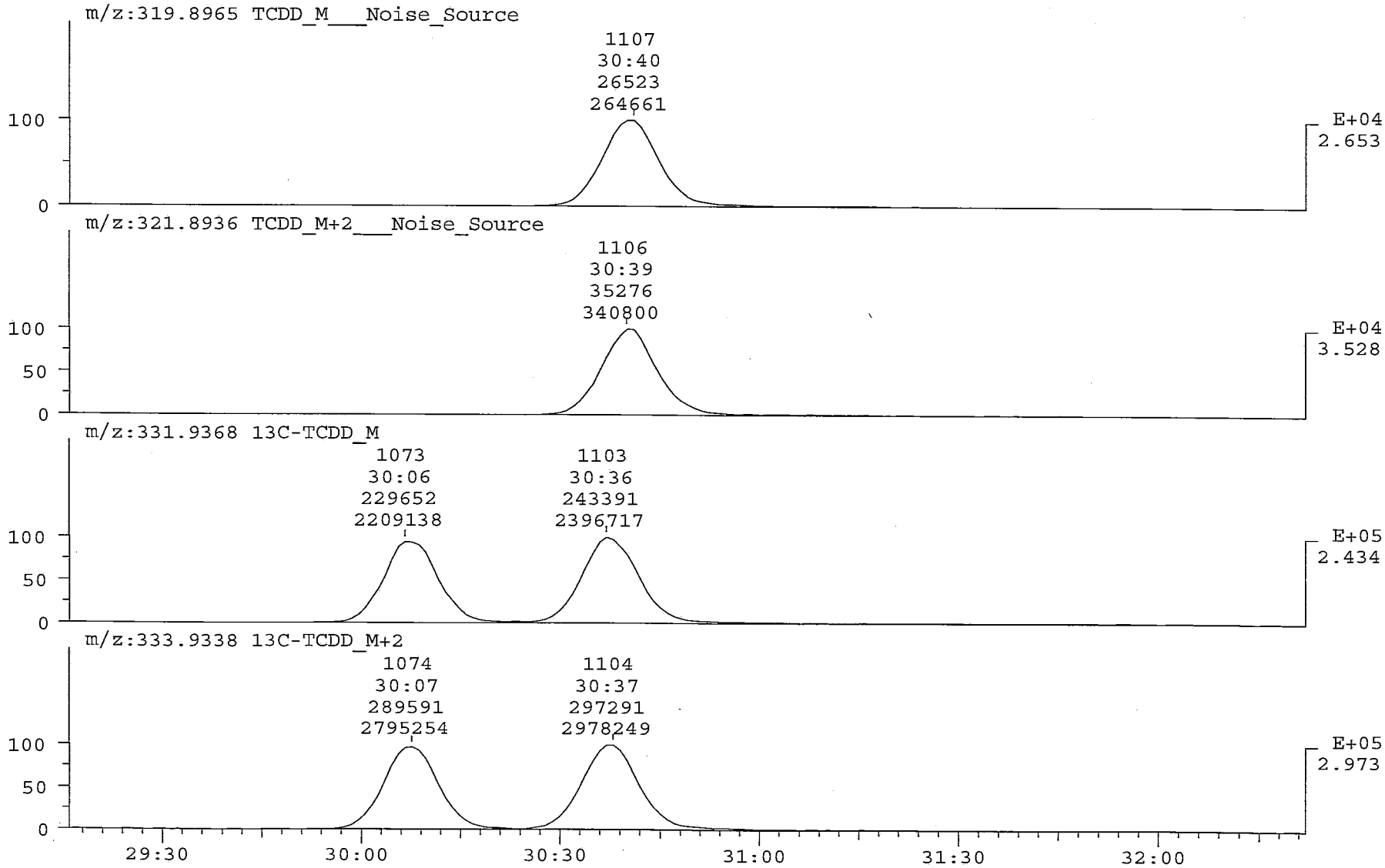
CHRO: d115040 9i3 09-Apr-15 Elapse: 54:08 2464
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 04:03:45 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 235 > 2641 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



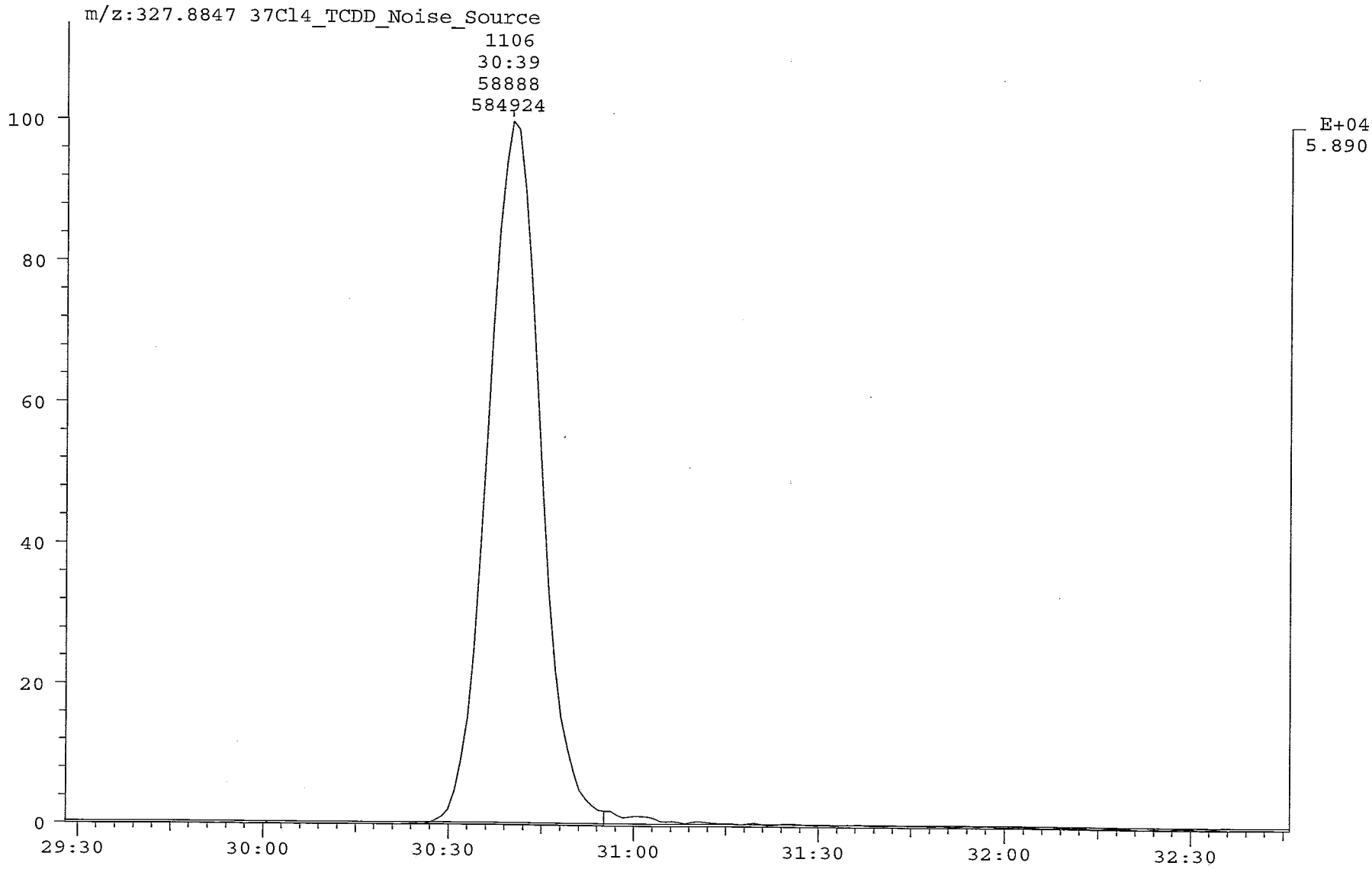
```
CHRO:  d1150409i3                          09-Apr-15   Elapse:  54:08      2464
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                    Start :  04:03:45   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                             Study :  1613/8290 ICAL
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   701 > 1319        Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -3, 1.0
Disp:  Height  Area
```



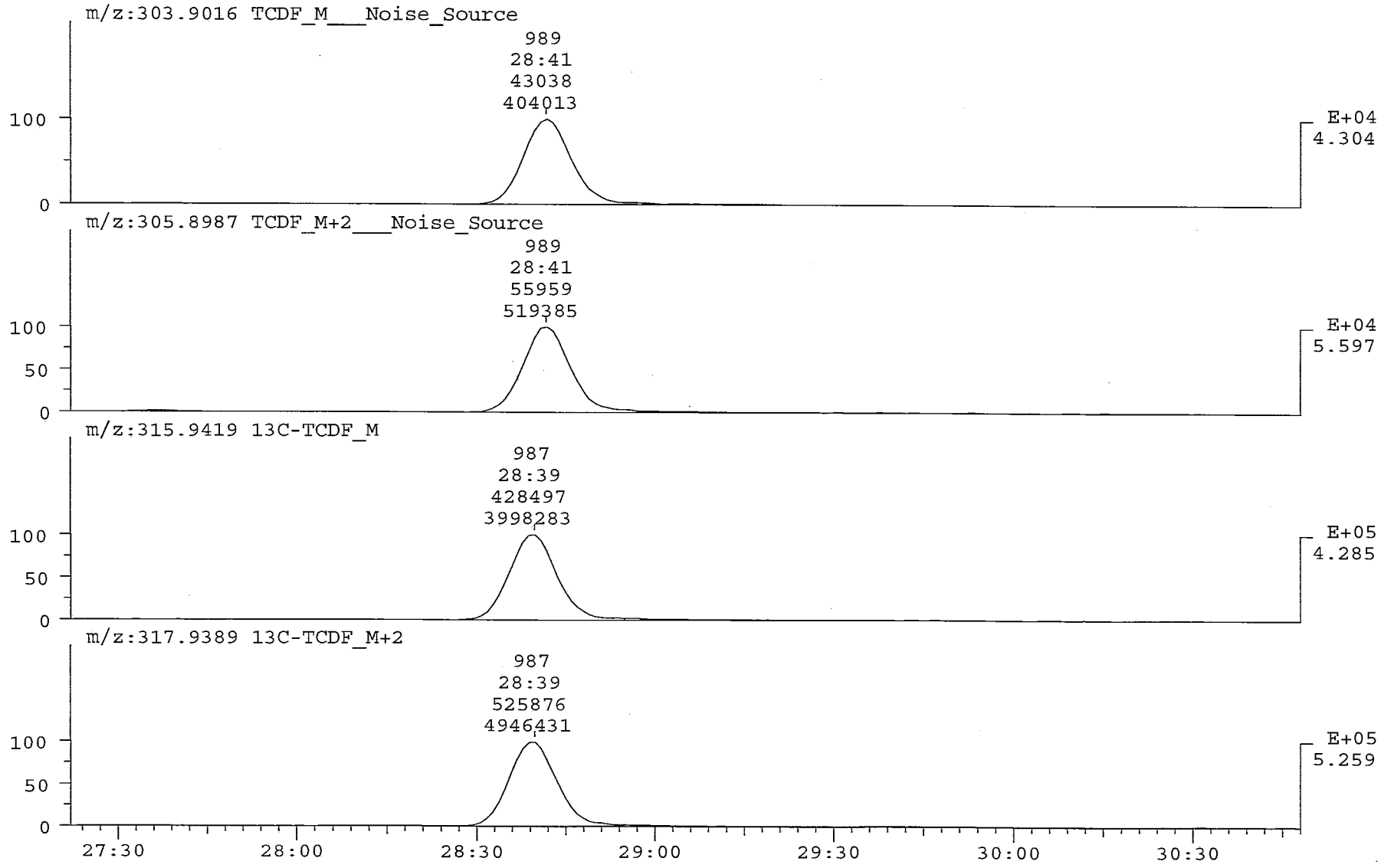
```
CHRO:  d1150409i3                          09-Apr-15  Elapse:  30:49      1115
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                   Start :  04:03:45   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1023 > 1207      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



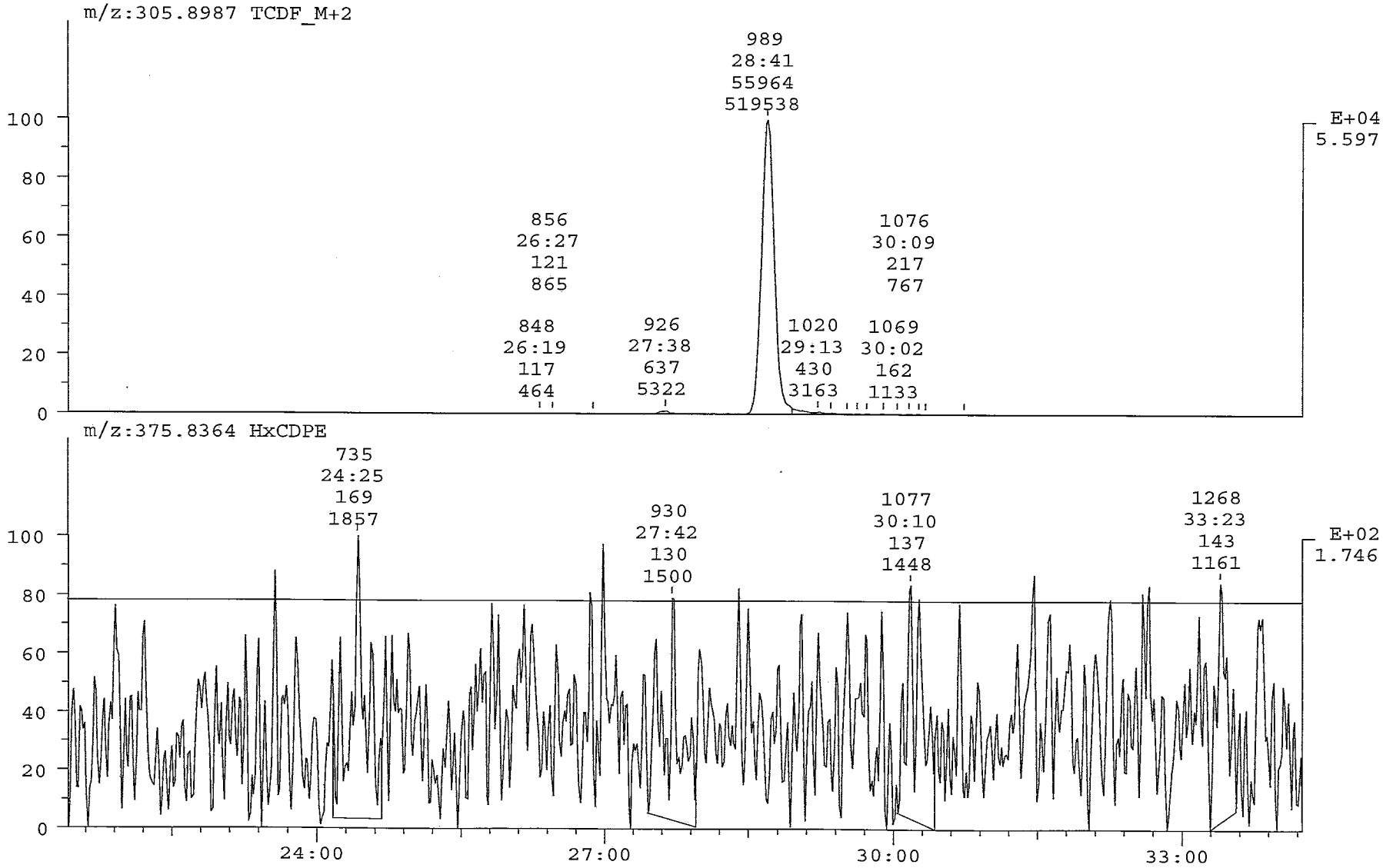
```
CHRO:  d1150409i3                                  09-Apr-15   Elapse:  31:04      1130
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                            Start :  04:03:45   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                                     Study :  1613/8290 ICAL
Oper:  LKM                                                     Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1035 > 1231               Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                    Label :  -2, 5.0
Disp:  Height  Area
```



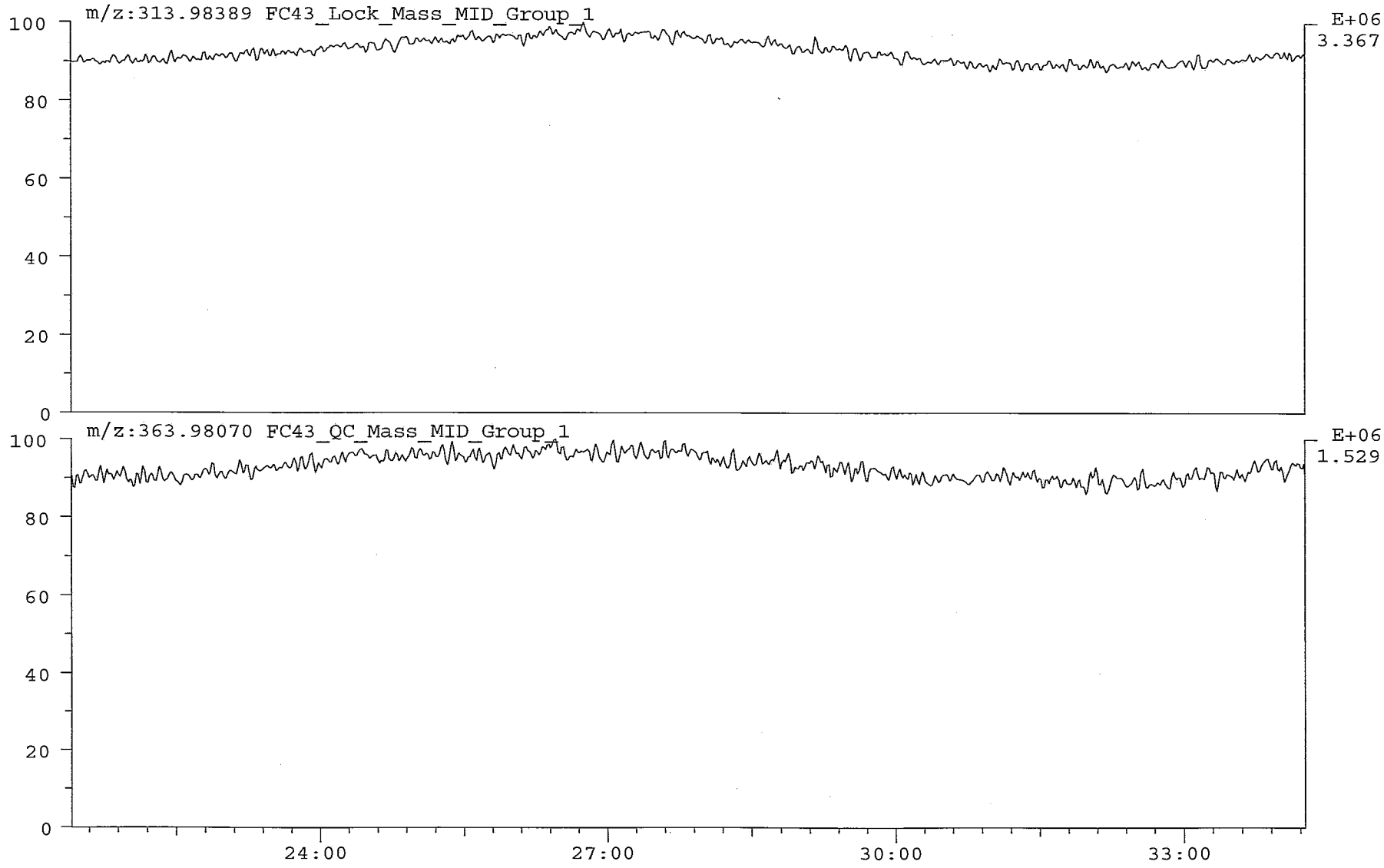
```
CHRO:  d1150409i3                          09-Apr-15  Elapse:  29:01      1009
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                   Start :  04:03:45   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   910 > 1114       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



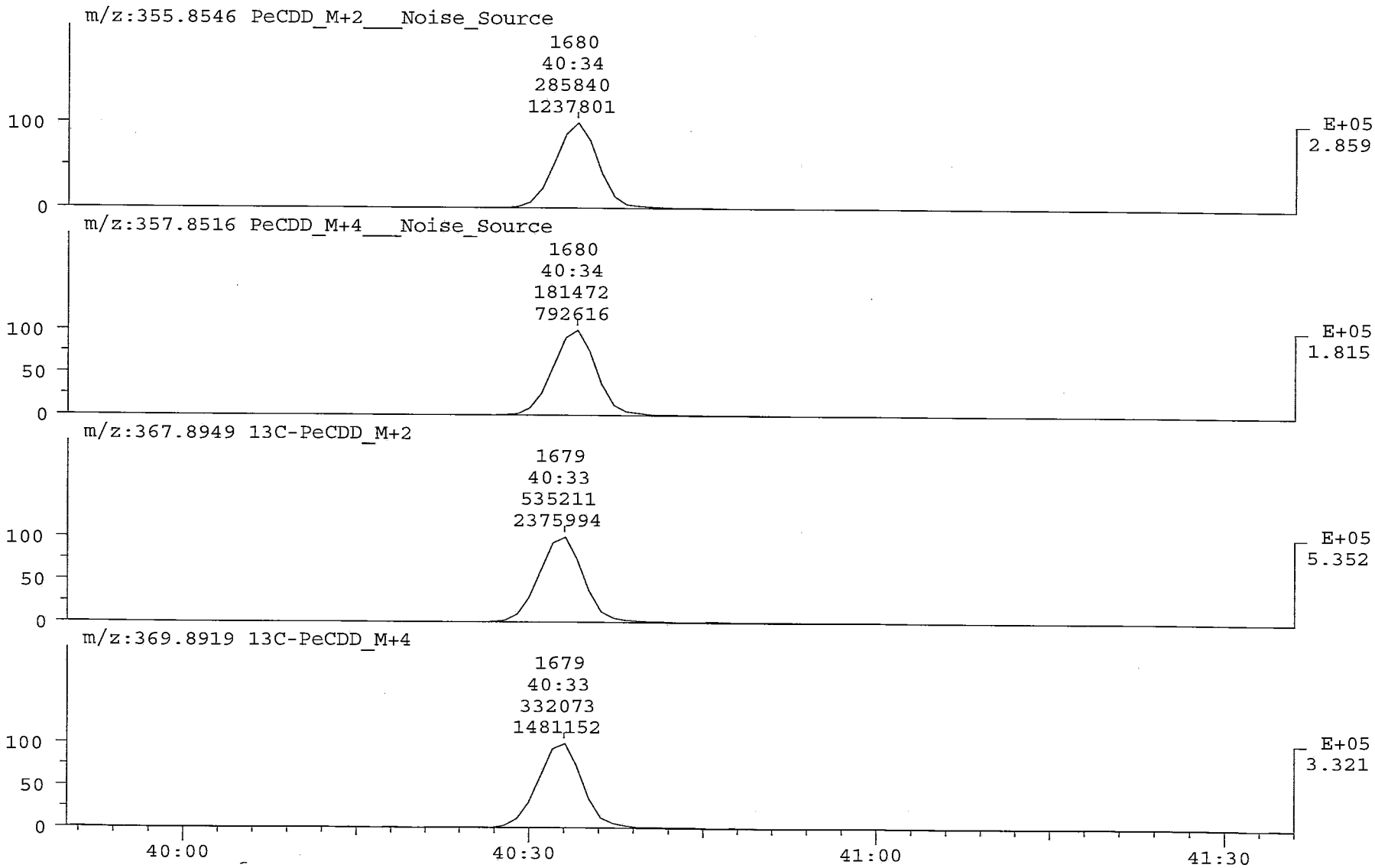
```
CHRO:  d1150409i3                          09-Apr-15  Elapse:  29:01      1009
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                   Start :  04:03:45   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   557 > 1319       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



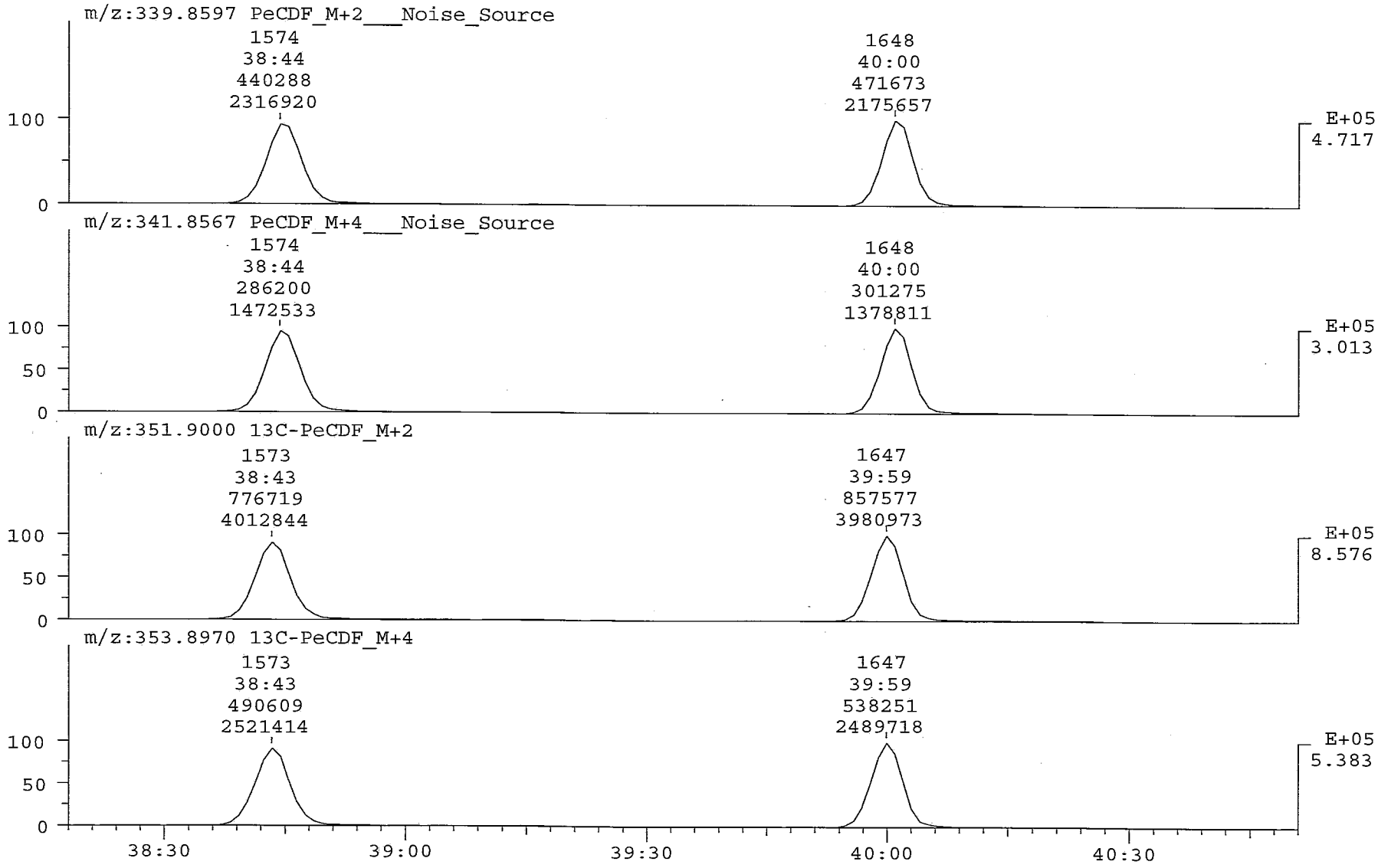
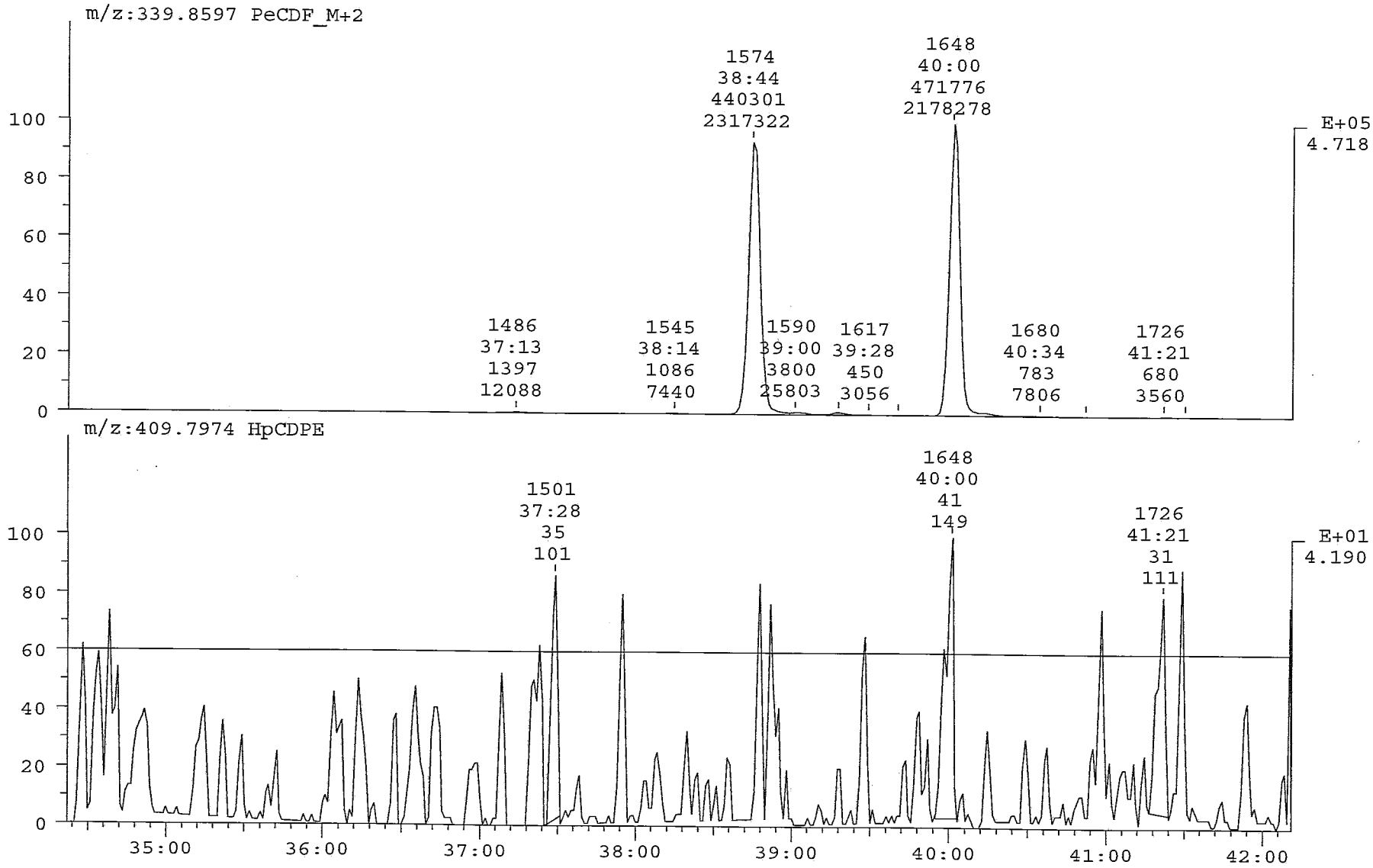
```
CHRO:  d1150409i3                          09-Apr-15   Elapse:  29:01      1009
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                    Start :  04:03:45   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                             Study :  1613/8290 ICAL
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   557 > 1319        Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  0, 0.0
Disp:  Height  Area
```



CHRO: d1150409i3 09-Apr-15 Elapse: 40:40 1686
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 04:03:45 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1637 > 1740 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



```
CHRO:  d1150409i3                          09-Apr-15   Elapse:  39:34      1622
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                    Start :  04:03:45   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                             Study :  1613/8290 ICAL
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1549 > 1696       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```



CHRO: d1150409i3 09-Apr-15 Elapse: 39:34 1622
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 04:03:45 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1321 > 1774 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area