N00174.AR.002011
NSWC INDIAN HEAD
5090.3a

VALIDATED DATA PACKAGE, 77777, NSWC INDIAN HEAD MD
11/24/2015
APPL LABS

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

Certification Number: CA1312
NELAP Certification number: CA00046
DoD-ELAP Certificate number: 74807

Summary Report

November 24, 2015

Tetra Tech
5700 Lake Wright Drive, Suite 309
Norfolk, Virginia 23502

Attn: Ed Corack

Title: Report of Data: Case 77777

Project: CTO JU11 112G02622 NSF Indian Head, MD

Contract #: Prime contract # for DoD: Navy CLEAN. N62470-08-D-1001
Subcontract: MSA # 1045497, Work Release # 08-JU11

Dear Mr. Corack:

Eight water samples were received November 5, 2015, at 4.0°C. Written results for the requested analysis are provided on this November 24, 2015.

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

If you have any questions or require further information, please contact your APPL Project Manager, Cynthia Clark, cclark@applinc.com, at your convenience. Thank you for choosing APPL, Inc.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC and DoD QSM. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

Sharon Dehmlow, Laboratory Director
APPL, Inc.

SD/rp
Enclosure
cc: File

Number of pages in this report: 16

Sample receipt information

ARF: 77777

Project: CTO JU11 112G02622 NSF Indian Head, MD

Sample Receipt Information:

The samples were received on November 5, 2015, at 4.0°C. The samples were assigned Analytical Request Form (ARF) number 77777. The sample numbers and requested analysis were compared to the chain of custody. Labeling discrepancies were noted and reported to the client. No other exception was encountered.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
S67-GW109-2024	AZ24124	WATER	11/04/15	11/05/15
S67-GW109-2024P	AZ24125	WATER	11/04/15	11/05/15
S67-GW110-2024	AZ24126	WATER	11/04/15	11/05/15
S67-GW111-2731	AZ24127	WATER	11/04/15	11/05/15
S67-GW112-3135	AZ24128	WATER	11/04/15	11/05/15
S67-GW107-3135	AZ24129	WATER	11/04/15	11/05/15
S67-GW108-3135	AZ24130	WATER	11/04/15	11/05/15
S67-GW106-2832	AZ24131	WATER	11/04/15	11/05/15

The samples and blanks were screened for J-value responses between the detection limit (DL) and limit of quantitation (LOQ).

Laboratory control limits generated in house do not meet the control limits listed in DoD QSM 4.2 for all analytes. Laboratory control limits generated for this project meet all control limits listed in the DoD QSM 4.2 except where noted. A copy of our in house generated control limits is available upon request. In addition, a copy of our LOQ control limits, established using 7 data points, are also available upon request.

Only the portion of the injection log relative to these samples is included. A full sequence log is available upon request.

Measurement uncertainty can be reported upon request.

EPA Method 6850

Perchlorate by LC-Mass Spec

Sample Preparation and Analysis Information:

The water samples were prepared according to the method. The samples were analyzed according to EPA Method 6850 using an Agilent 6460 Triple Quad LC/MS. The samples were prepared and analyzed within acceptable hold time.

Manual integrations were performed in accordance to APPL's SOP. Perchlorate was manually integrated in the calibration standards, the samples and the MS/MSD. Chromatograms of before and after manual integration are enclosed.

Quality Control/Assurance

Calibrations:

Calibrations were performed according to the method. All calibration acceptance criteria were met. The second source at 0.002ug/mL exceeded the control limit of 15% at 18.5%. The second source at 0.0004ug/mL met acceptance criteria. The batch was re-analyzed with an acceptable second source. The initial results were reported in the data; the re-analysis raw data are included. The results were similar.

Blanks:

Perchlorate was not detected at or above one-half the limit of quantitation (LOQ) in the method blank.

Spikes:

Laboratory Control Spike (LCS) and Interference Check Sample (I.C.S.) were used for quality assurance. All LCS acceptance criteria were met.

The Interference Check Sample (I.C.S.) was prepared using a mixed anions solution. The ICS recovery met acceptance criteria.

Sample S67-GW110-2024 was designated by the client for MS/MSD analysis. Perchlorate recovered above the upper control limit of 120% at 212% and 180% in the MS/MSD. The Perchlorate concentration in the parent sample was greater than ten times the spike level.

Internal Standards:

The area counts of the sample Internal Standards were compared to the average IS area counts of the initial calibration. All internal standards were within the 50%D acceptance criteria.

Summary:

All data were acceptable. No other analytical exception is noted.

77777 4.0

APPL, Inc.
908 N Temperance Ave
Clovis, CA 93611

Phone: (559) 275-2175
Fax: (559) 275-4422

CHAIN OF CUSTODY RECORD

C.O.C. 42664

Report to: PLEASE PRINT	Invoice to: PLEASE PRINT
Company Name: Tetra Tech Phone: 757-466-4908	Company Name: See Contract Phone:
Address: 5700 Lake Wright Dr. St 309 Norfolk, VA 23502 Fax:	Address: Fax:
Attn: Ed Corack	Attn:

Project Name/Number	Sampler (Print)	Purchase Order Number	Sampler (Signature)
NSF-Indian Head Site 67 112G02622	Jacob Birkett		

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Matrix: Sed.	Matrix: Soil	Analysis Requested/Method Number: Perchlorate	Comments
S67-GW109-2024	TW109	11-4-15	0920	ET	1	1			1	
S67-GW109-2024P	TW109	11-4-15	0921	ET	1	1			1	
S67-GW110-2024	TW110	11-4-15	0950	ET	3	3			3	Run MS/MSD
S67-GW111-2731	TW111	11-4-15	1110	ET	1	1			1	
S67-GW112-3135	TW112	11-4-15	1225	ET	1	1			1	
S67-GW107-3135	TW107	11-4-15	1255	ET	1	1			1	
S67-GW108-3135	TW108	11-4-15	1330	ET	1	1			1	
S67-GW106-2832	TW106	11-4-15	1500	ET	1	1			1	

11-4-2015

Date Shipped: 11-4-2015
Carrier: FedEx
Waybill No.: 8744-3758-5569

Shuttle Temperature:

Turnaround Requested: Check one ☐ Standard 2-3 wk ☐ One week ☒ 24/48 Hrs. (48 hour) ☐ Other

Sample Disposal: ☐ Return to client ☒ Disposal by Lab (30-day retention)

Relinquished by sampler:	Date	Time	Received by:
Jacob Birkett	11-4-15	1730	FedEX
Relinquished by:	Date	Time	Received by:

Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received at lab by:
	11/5/15	09:50	Yang Zu

White: Return to client with report Yellow: Laboratory Copy Pink: Sampler

See reverse side for Container Preservative and Sampling Information

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
Norfolk, VA 23502

Attn: Ed Corack

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Project: CTO JU11 112G02622 NSF Indian Head

ARF: 77777

Sample ID: S67-GW109-2024

APPL ID: AZ24124

Sample Collection Date: 11/04/15

QCG: #6850-151105A-202001

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	5.0	0.60	0.400	0.200	ug/L	11/05/15	11/05/15

Quant Method:	QTLMFL2
Run #:	TY05_019.d
Instrument:	AGIL_6460
Sequence:	TQ110515
Dilution Factor:	1
Initials:	RP

Printed: 11/24/15 2:05:17 PM

APPL-F1-SC-NoMC-REG MDLs-DOD

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
Norfolk, VA 23502

Attn: Ed Corack

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Project: CTO JU11 112G02622 NSF Indian Head

ARF: 77777

Sample ID: S67-GW109-2024P

APPL ID: AZ24125

Sample Collection Date: 11/04/15

QCG: #6850-151105A-202001

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	4.2	0.60	0.400	0.200	ug/L	11/05/15	11/05/15

Quant Method:	QTLMFL2
Run #:	TY05_020.d
Instrument:	AGIL_6460
Sequence:	TQ110515
Dilution Factor:	1
Initials:	RP

Printed: 11/24/15 2:05:17 PM

APPL-F1-SC-NoMC-REG MDLs-DOD

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
Norfolk, VA 23502

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S67-GW110-2024
Sample Collection Date: 11/04/15

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 77777
APPL ID: AZ24126
QCG: #6850-151105A-202001

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	7.4	0.60	0.400	0.200	ug/L	11/05/15	11/05/15

Quant Method:	QTLMFL2
Run #:	TY05_021.d
Instrument:	AGIL_6460
Sequence:	TQ110515
Dilution Factor:	1
Initials:	RP

Printed: 11/24/15 2:05:17 PM
APPL-F1-SC-NoMC-REG MDLs-DOD

Perchlorate

Tetra Tech
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Norfolk, VA 23502

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S67-GW111-2731
Sample Collection Date: 11/04/15

ARF: 77777
APPL ID: AZ24127
QCG: #6850-151105A-202001

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	12	0.60	0.400	0.200	ug/L	11/05/15	11/06/15

Quant Method:	QTLMFL2
Run #:	TY05_028.d
Instrument:	AGIL_6460
Sequence:	TQ110515
Dilution Factor:	1
Initials:	RP

Printed: 11/24/15 2:05:17 PM
APPL-F1-SC-NoMC-REG MDLs-DOD

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
Norfolk, VA 23502

Attn: Ed Corack

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Project: CTO JU11 112G02622 NSF Indian Head

ARF: 77777

Sample ID: S67-GW112-3135

APPL ID: AZ24128

Sample Collection Date: 11/04/15

QCG: #6850-151105A-202001

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	12	0.60	0.400	0.200	ug/L	11/05/15	11/06/15

Quant Method:	QTLMFL2
Run #:	TY05_029.d
Instrument:	AGIL_6460
Sequence:	TQ110515
Dilution Factor:	1
Initials:	RP

Printed: 11/24/15 2:05:17 PM

APPL-F1-SC-NoMC-REG MDLs-DOD

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
Norfolk, VA 23502

Attn: Ed Corack

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Project: CTO JU11 112G02622 NSF Indian Head

ARF: 77777

Sample ID: S67-GW107-3135

APPL ID: AZ24129

Sample Collection Date: 11/04/15

QCG: #6850-151105A-202001

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	0.29 J	0.60	0.400	0.200	ug/L	11/05/15	11/06/15

J = Estimated value.

Quant Method:	QTLMFL2
Run #:	TY05_030.d
Instrument:	AGIL_6460
Sequence:	TQ110515
Dilution Factor:	1
Initials:	RP

Printed: 11/24/15 2:05:17 PM

APPL-F1-SC-NoMC-REG MDLs-DOD

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
Norfolk, VA 23502

Attn: Ed Corack

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Project: CTO JU11 112G02622 NSF Indian Head

ARF: 77777

Sample ID: S67-GW108-3135

APPL ID: AZ24130

Sample Collection Date: 11/04/15

QCG: #6850-151105A-202001

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	0.27 J	0.60	0.400	0.200	ug/L	11/05/15	11/06/15

J = Estimated value.

Quant Method:	QTLMFL2
Run #:	TY05_031.d
Instrument:	AGIL_6460
Sequence:	TQ110515
Dilution Factor:	1
Initials:	RP

Printed: 11/24/15 2:05:17 PM

APPL-F1-SC-NoMC-REG MDLs-DOD

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
Norfolk, VA 23502

Attn: Ed Corack

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Project: CTO JU11 112G02622 NSF Indian Head

ARF: 77777

Sample ID: S67-GW106-2832

APPL ID: AZ24131

Sample Collection Date: 11/04/15

QCG: #6850-151105A-202001

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	1.7	0.60	0.400	0.200	ug/L	11/05/15	11/06/15

Quant Method:	QTLMFL2
Run #:	TY05_032.d
Instrument:	AGIL_6460
Sequence:	TQ110515
Dilution Factor:	1
Initials:	RP

Printed: 11/24/15 2:05:17 PM

APPL-F1-SC-NoMC-REG MDLs-DOD

Method Blank
Perchlorate

Blank Name/QCG: **151105W-24126 - 202001**
Batch ID: #6850-151105A

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	PERCHLORATE	0.400 U	0.60	0.400	0.200	ug/L	11/05/15	11/05/15

Quant Method: QTLMFL2
Run #: TY05_018.d
Instrument: AGIL_6460
Sequence: TQ110515
Initials: RP

GC SC-Blank-REG MDLs-DOD
Printed: 11/24/15 2:05:19 PM

Laboratory Control Spike Recovery

Perchlorate

APPL ID: **151105W-24126 LCS - 202001**
Batch ID: #6850-151105A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
PERCHLORATE	0.600	0.630	105	80-120

Comments: _____

Primary	SPK
Quant Method :	QTLMFL2
Extraction Date :	11/05/15
Analysis Date :	11/05/15
Instrument :	AGIL_6460
Run :	TY05_016.d
Initials :	RP

Printed: 11/24/15 2:05:15 PM
APPL Standard LCS

Matrix Spike Recoveries

Perchlorate

APPL ID: **151105W-24126 MS - 202001**
Batch ID: #6850-151105A
Sample ID: AZ24126
Client ID: S67-GW110-2024

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Lvl ug/L	Matrix Result ug/L	SPK Result ug/L	DUP Result ug/L	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
PERCHLORATE	0.600	7.4	8.67	8.48	212 #	180 #	80-120	2.2	15

= Recovery is outside QC limits.

Comments: _____

Primary	SPK	DUP
Quant Method :	QTLMFL2	QTLMFL2
Extraction Date :	11/05/15	11/05/15
Analysis Date :	11/05/15	11/05/15
Instrument :	AGIL_6460	AGIL_6460
Run :	TY05_022.d	TY05_027.d
Initials :	RP	

Printed: 11/24/15 2:05:12 PM
APPL MSD SCII

EPA 6850

Form 4

Blank Summary

Lab Name: APPL, Inc. SDG No: 77777

Case No: 77777 Date Analyzed: 11/05/15

Matrix: WATER Instrument: AGIL_6460

Blank ID: 151105A-BLK Time Analyzed: 2105

APPL ID.	Client Sample No.	File ID.	Date Analyzed
151105A-LCS	Lab Control Spike	TY05_016.d	11/05/15 2027
151105A-BLK	Blank	TY05_018.d	11/05/15 2105
AZ24124	S67-GW109-2024	TY05_019.d	11/05/15 2123
AZ24125	S67-GW109-2024P	TY05_020.d	11/05/15 2142
AZ24126	S67-GW110-2024	TY05_021.d	11/05/15 2201
151105A-MS	Matrix Spike	TY05_022.d	11/05/15 2219
151105A-MSD	Matrix SpikeD	TY05_027.d	11/05/15 2352
AZ24127	S67-GW111-2731	TY05_028.d	11/06/15 0011
AZ24128	S67-GW112-3135	TY05_029.d	11/06/15 0029
AZ24129	S67-GW107-3135	TY05_030.d	11/06/15 0048
AZ24130	S67-GW108-3135	TY05_031.d	11/06/15 0107
AZ24131	S67-GW106-2832	TY05_032.d	11/06/15 0125

Comments: Batch: #6850-151105A

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

Certification Number: CA1312
NELAP Certification number: CA00046
DoD-ELAP Certificate number: 74807

Data Validatable Report

November 24, 2015

Tetra Tech
5700 Lake Wright Drive, Suite 309
Norfolk, Virginia 23502

Attn: Ed Corack

Title: Report of Data: Case 77777

Project: CTO JU11 112G02622 NSF Indian Head, MD

Contract #: Prime contract # for DoD: Navy CLEAN. N62470-08-D-1001
Subcontract: MSA # 1045497, Work Release # 08-JU11

Dear Mr. Corack:

Eight water samples were received November 5, 2015, at 4.0°C. Written results for the requested analysis are provided on this November 24, 2015.

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

If you have any questions or require further information, please contact your APPL Project Manager, Cynthia Clark, cclark@applinc.com, at your convenience. Thank you for choosing APPL, Inc.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC and DoD QSM. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

Sharon Dehmlow, Laboratory Director
APPL, Inc.

SD/rp
Enclosure
cc: File

Number of pages in this report: 233

Data Validation Package

for

CTO JU11 112G02622 NSF Indian Head

ARF 77777

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SAMPLE RECEIPT INFORMATION

Sample receipt information

ARF: 77777

Project: CTO JU11 112G02622 NSF Indian Head, MD

Sample Receipt Information:

The samples were received on November 5, 2015, at 4.0°C. The samples were assigned Analytical Request Form (ARF) number 77777. The sample numbers and requested analysis were compared to the chain of custody. Labeling discrepancies were noted and reported to the client. No other exception was encountered.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
S67-GW109-2024	AZ24124	WATER	11/04/15	11/05/15
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S67-GW110-2024	AZ24126	WATER	11/04/15	11/05/15
S67-GW111-2731	AZ24127	WATER	11/04/15	11/05/15
S67-GW112-3135	AZ24128	WATER	11/04/15	11/05/15
S67-GW107-3135	AZ24129	WATER	11/04/15	11/05/15
S67-GW108-3135	AZ24130	WATER	11/04/15	11/05/15
S67-GW106-2832	AZ24131	WATER	11/04/15	11/05/15

The samples and blanks were screened for J-value responses between the detection limit (DL) and limit of quantitation (LOQ).

Laboratory control limits generated in house do not meet the control limits listed in DoD QSM 4.2 for all analytes. Laboratory control limits generated for this project meet all control limits listed in the DoD QSM 4.2 except where noted. A copy of our in house generated control limits is available upon request. In addition, a copy of our LOQ control limits, established using 7 data points, are also available upon request.

Only the portion of the injection log relative to these samples is included. A full sequence log is available upon request.

Measurement uncertainty can be reported upon request.

CASE NARRATIVE

EPA Method 6850

Perchlorate by LC-Mass Spec

Sample Preparation and Analysis Information:

The water samples were prepared according to the method. The samples were analyzed according to EPA Method 6850 using an Agilent 6460 Triple Quad LC/MS. The samples were prepared and analyzed within acceptable hold time.

Manual integrations were performed in accordance to APPL's SOP. Perchlorate was manually integrated in the calibration standards, the samples and the MS/MSD. Chromatograms of before and after manual integration are enclosed.

Quality Control/Assurance

Calibrations:

Calibrations were performed according to the method. All calibration acceptance criteria were met. The second source at 0.002ug/mL exceeded the control limit of 15% at 18.5%. The second source at 0.0004ug/mL met acceptance criteria. The batch was re-analyzed with an acceptable second source. The initial results were reported in the data; the re-analysis raw data are included. The results were similar.

Blanks:

Perchlorate was not detected at or above one-half the limit of quantitation (LOQ) in the method blank.

Spikes:

Laboratory Control Spike (LCS) and Interference Check Sample (I.C.S.) were used for quality assurance. All LCS acceptance criteria were met.

The Interference Check Sample (I.C.S.) was prepared using a mixed anions solution. The ICS recovery met acceptance criteria.

Sample S67-GW110-2024 was designated by the client for MS/MSD analysis. Perchlorate recovered above the upper control limit of 120% at 212% and 180% in the MS/MSD. The Perchlorate concentration in the parent sample was greater than ten times the spike level.

Internal Standards:

The area counts of the sample Internal Standards were compared to the average IS area counts of the initial calibration. All internal standards were within the 50%D acceptance criteria.

Summary:

All data were acceptable. No other analytical exception is noted.

APPL Inc.
Abbreviations and Flags

FLAG	DESCRIPTION
#	Recovery or RPD outside control limits
*	Recovery or RPD outside control limits
B	Analyte detected in associated method blank
C1	Reason for correction: wrote incorrect response
C2	Reason for correction: calculated incorrectly
C3	Reason for correction: needs to be rechecked
C4	Reason for correction: data not usable
DO	Diluted out
E	Exceeds linear range
F	Estimated value
G1	Includes a wide range of hydrocarbons which does not match our gasoline standard
G10	Includes a match to hydrocarbon profiles within the range of mineral spirits
G11	Includes a match to hydrocarbon profiles within the range of JP-4
G12	Pattern does not match the gasoline standard; the carbon range for this sample is consistent with JP8
G13	Closely resembles the hydrocarbon profile of aviation gasoline
G14	Analyte concentration may be biased due to carry over
G2	Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline
G3	Includes higher boiling hydrocarbons
G4	Includes dominant peak(s) not indicative of petroleum hydrocarbons
G5	Is mainly dominant peak(s) not indicative of petroleum hydrocarbons
G6	Contains recognizable contaminant peak(s) which has been removed from quantitation
G7	Is mainly a match to hydrocarbons within the range of gasoline
G8	Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline
G9	Includes hydrocarbons within the range of kerosene
J	Estimated value
M	Matrix effect
MI1	Manual integration: integration does not follow baseline
MI2	Manual integration: non-target peak interference
MI3	Manual integration: to split a peak that was integrated as one peak by the computer.
MI4	Manual integration: to integrate a split peak
MI5	Manual integration: the whole peak or part of the peak was not integrated
MI6	Manual integration: computer integrated wrong peak
MI7	Manual integration: other -- (See case narrative)
MDL	Method detection limit
ND	Not detected
NT	Non-target
Q	Acceptance criteria not met
T1 I	Includes wide range of hydrocarbons not indicative of diesel
T1 M	Is mainly wide range of hydrocarbons not necessarily indicative of diesel
T2 I	Includes lower boiling hydrocarbons, i.e. mineral spirits, kerosene, stoddard solvent, white gas
T2 M	Is mainly lower boiling hydrocarbons, i.e. mineral spirits, kerosene, stoddard solvent, white gas
T3 I	Includes higher boiling hydrocarbons, i.e. asphaltene, waster oil, motor oil, or weathered diesel fuel
T3 M	Is mainly higher boiling hydrocarbons, i.e. asphaltene, waster oil, motor oil, or weathered diesel fuel
T4 I	Includes dominant peak(s) not indicative of hydrocarbons
T4 M	Is mainly dominant peak(s) not indicative of hydrocarbons
T5	Contains recognizable contaminant peak(s) which has been removed from quantitation
T6	Is mainly a match to hydrocarbons within range of diesel fuel
T7	Closely resembles the boiling point hydrocarbon profile consistent with diesel fuel
T8	Includes a match to hydrocarbon profiles within range of diesel and kerosene fuel
T9 I	Includes non-diesel hydrocarbons within boiling point range of diesel fuel
T9 M	Is mainly non-diesel hydrocarbons within boiling point range of diesel fuel
U	Not detected
Y	Percent difference between primary and confirmation column > 40%

CHAIN OF CUSTODY,

ARF, CRF, AND

CLIENT COMMUNICATION

APPL - Analysis Request Form 77777

Client: **Tetra Tech**
Address: **5700 Lake Wright Dr, Ste 309**
Norfolk, VA 23502
Attn: **Ed Corack**
Phone: **757-466-4908** Fax: **757-461-4148**
Job: **CTO JU11 112G02622 NSF Indian Head**
PO #: **MSA #1045497 Release #08-CTO JU11**
Chain of Custody (Y/N): **Y** # **42664**
RAD Screen (Y/N): **Y** pH (Y/N): **N**
Turn Around Type: **24 HOURS**

Received by: **YL**
Date Received: **11/05/15** Time: **09:50**
Delivered by: **FED EX**
Shuttle Custody Seals (Y/N): **Y** Time Zone: **-4**
Chest Temp(s): **4.0℃**
Color: **D-Yell**
Samples Chilled until Placed in Refrig/Freezer: **Y**
Project Manager: **Cynthia Clark**
QC Report Type: **DVP4/LEDD/MD**
Due Date: **11/06/15**

Comments:
login to ed.corack@ amy.thomson@ & tobrena.sedlmyer@tetratech.com.
Rush results to Ed; 21 calendar day TAT for final report
1HC DVP4 and summary report & 2 BOOKMARKED CDs of DVP4 and
Summary report (sample & QC results w/surrogate & blank summaries) to Amy Thomson (Pittsburgh)
Include original COC with report. NOTHING to Ed in VA office
EDD: TTEC LEDD to http://isg.applications.tetratech.com/LEDDChecker2010/
EDD: email confirm to ed.corack@ amy.thomson@ & tobrena.sedlmyer@tetratech.com
Guidance: DOD QSM v4.2: DOD Forms, LOD Database
correct TAt to 24hours per email 11/6/15 chc

Sample Distribution:
Extractions: 8-_HPL6850
LCMS: 8-$6850

Charges:

Invoice To:
ACCOUNTS PAYABLE
661 Andersen Dr, Foster Plaza 7
Pittsburgh, PA 15220-2745
invoice in triplicate per SOW

	Client ID	APPL ID	Sampled	Analyses Requested
1.	S67-GW109-2024	AZ24124W	11/04/15 09:20	$6850
2.	S67-GW109-2024P	AZ24125W	11/04/15 09:21	$6850
3.	S67-GW110-2024 ms/msd	AZ24126W	11/04/15 09:50	$6850
4.	S67-GW111-2731	AZ24127W	11/04/15 11:10	$6850
5.	S67-GW112-3135	AZ24128W	11/04/15 12:25	$6850
6.	S67-GW107-3135	AZ24129W	11/04/15 12:55	$6850
7.	S67-GW108-3135	AZ24130W	11/04/15 13:30	$6850

Note: All times, excluding sample collection times, are Pacific Time Zone unless noted otherwise. Collection times are in: -4 UTC

8. S67-GW106-2832 AZ24131W 11/04/15 15:00 $6850

APPL Sample Receipt Form

ARF# 77777

Sample	Container Type	Count	pH
AZ24124	4 PL 125mL	1	NA
AZ24125	4 PL 125mL	1	NA
AZ24126	4 PL 125mL	3	NA
AZ24127	4 PL 125mL	1	NA
AZ24128	4 PL 125mL	1	NA
AZ24129	4 PL 125mL	1	NA
AZ24130	4 PL 125mL	1	NA
AZ24131	4 PL 125mL	1	NA

Sample	Container Type	Count	pH

77777

CHAIN OF CUSTODY RECORD

4.0

APPL, Inc.
908 N Temperance Ave
Clovis, CA 93611
Phone: (559) 275-2175
Fax: (559) 275-4422

C.O.C. 42664

Report to: PLEASE PRINT	Invoice to: PLEASE PRINT
Company Name: Tetra Tech Phone: 757-466-4908	Company Name: See Contract Phone:
Address: 5700 Lake Wright Dr. Si309 Fax:	Address: Fax:
Norfolk, VA 23502	
Attn: Ed Corack	Attn:

Project Name/Number	Sampler (Print)	Purchase Order Number	Sampler (Signature)
NSF-Indian Head Site 67 112G02622	Jacob Birkett		

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Matrix: Sed.	Matrix: Soil	Analysis Requested/Method Number: Perchlorate	Comments
S67-GW109-2024	TW109	11-4-15	0920	ET	1	1			1	
S67-GW109-2024P	TW109	11-4-15	0921	ET	1	1			1	
S67-GW110-2024	TW110	11-4-15	0950	ET	3	3			3	Run MS/MSD
S67-GW111-2731	TW111	11-4-15	1110	ET	1	1			1	
S67-GW112-3135	TW112	11-4-15	1225	ET	1	1			1	
S67-GW107-3135	TW107	11-4-15	1255	ET	1	1			1	
S67-GW108-3135	TW108	11-4-15	1330	ET	1	1			1	
S67-GW106-2832	TW106	11-4-15	1500	ET	1	1			1	

11-4-2015

Date Shipped: 11-4-2015
Carrier: FedEx
Waybill No.: 8744-3758-5569
Comments:

Shuttle Temperature:

Turnaround Requested: Check one ☐ Standard 2-3 wk ☐ One week ☒ 24/48 Hrs. ☐ Other 48 hour

Sample Disposal: ☐ Return to client ☒ Disposal by Lab (30-day retention)

Relinquished by sampler:	Date	Time	Received by:
Jacob Birkett	11-4-15	1730	FedEX
Relinquished by:	Date	Time	Received by:

Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received at lab by:
	11/5/15	09:50	Yang Jin

White: Return to client with report Yellow: Laboratory Copy Pink: Sampler

See reverse side for Container Preservative and Sampling Information

COOLER RECEIPT FORM **ARF: 77777**

1) Project: CTO JU11 112G02622 NSF Indian Head Date Received: 11/05/15

2) Coolers: Number of Coolers: 1

3) YES Were custody seals present and intact?
How many? 2 Name/Date on seal? See below

4) YES Was there a shipping slip? Carrier name: FED EX

5) Type of packing in cooler: __ bubble wrap __ popcorn __ foam X plastic bags
X wet ice __ dry ice __ no ice __ other

6) YES Were cooler temperatures acceptable?

7) Serial number of certified NIST thermometer use J5297

8) Cooler temp(s): In °C
1: 4.0 2: ____ 3: ____ 4: ____ 5: ____ 6: ____
7: ____ 8: ____ 9: ____ 10: ____ 11: ____ 12: ____

CUSTODY SEAL
DATE 11-4-2015
SIGNATURE

Chain of custody:

9) YES Was a chain of custody received?

10) YES Were the custody papers complete/signed in the appropriate places?

Sample Labels:

11) YES Were all sample labels complete (sample ID, date/time of sampling, etc.)?

12) YES/NO Did all container labels agree with custody papers?

Sample Containers:

13) YES Were all containers sealed in separate bags?

14) YES Did all containers arrive in good condition:(unbroken, no leakage, no cracked/broken lids)?

15) YES Were correct containers and preservatives used for the tests indicated?

16) YES Was a sufficient amount of sample sent for tests indicated?

17) NA Were bubbles present in volatile samples?
If yes, the following were received with air bubbles:
Larger than a pea: ____
Smaller than a pea: ____

Preservation Hold time:

18) Yes Was a sufficient amount of holding time remaining to analyze the samples?

19) NA Was the pH taken of all non-VOA preserved samples and written on the sample container?

20) NA Was the pH of acid preserved non-VOA samples < 2?

21) NA Was the pH of sodium hydroxide preserved samples for Cyanide > 12 and Sulfide >9?

22) NO Were unpreserved VOA Vials received?

23) NA Are unpreserved VOA vials noted in the ADD TEST FIELD on the ARF?
pH strip lot number: ____
Lab notified if pH was not adequate: ____

Notes/Deficiencies:

COC listed ID as S67-GW109-2024P but label has ID as S67-GW109-2024 missing "P", collection time and date matches. Similar with Sample S67-GW107-3135, label is missing suffix "3135".

Personnel receiving samples: YL Second reviewer: TK
Personnel labeling samples: ____
Project manager notified: ____ Date/Time of notification ____
Name of client notified: ____ Date/Time of notification ____

EPA METHOD 6850
Perchlorate
LC/MS

APPL, INC.

EPA METHOD 6850
Perchlorate
LC/MS

QC Summary

APPL, INC.

Method Blank
Perchlorate

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **151105W-24126 - 202001**
Batch ID: #6850-151105A

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	PERCHLORATE	0.400 U	0.60	0.400	0.200	ug/L	11/05/15	11/05/15

Quant Method: QTLMFL2
Run #: TY05_018.d
Instrument: AGIL_6460
Sequence: TQ110515
Initials: RP

GC SC-Blank-REG MDLs-DOD
Printed: 11/06/15 11:54:59 AM

Laboratory Control Spike Recovery
Perchlorate

APPL ID: **151105W-24126 LCS - 202001**
Batch ID: #6850-151105A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
PERCHLORATE	0.600	0.630	105	80-120

Comments: _____

Primary	SPK
Quant Method :	QTLMFL2
Extraction Date :	11/05/15
Analysis Date :	11/05/15
Instrument :	AGIL_6460
Run :	TY05_016.d
Initials :	RP

Printed: 11/24/15 7:31:53 AM
APPL Standard LCS

Matrix Spike Recoveries

Perchlorate

APPL ID: **151105W-24126 MS - 202001**
Batch ID: #6850-151105A
Sample ID: AZ24126
Client ID: S67-GW110-2024

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Lvl ug/L	Matrix Result ug/L	SPK Result ug/L	DUP Result ug/L	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
PERCHLORATE	0.600	7.4	8.67	8.48	212 #	180 #	80-120	2.2	15

= Recovery is outside QC limits.

Comments: _____

Primary	SPK	DUP
Quant Method :	QTLMFL2	QTLMFL2
Extraction Date :	11/05/15	11/05/15
Analysis Date :	11/05/15	11/05/15
Instrument :	AGIL_6460	AGIL_6460
Run :	TY05_022.d	TY05_027.d
Initials :	RP	

Printed: 11/24/15 7:31:49 AM
APPL MSD SCII

Interferrence Check Sample

Perchlorate EPA 6850 Water

APPL ID: 151105W-24126 ICS-202001
Batch ID: #6850-151105A

APPL Inc.
908 N. Temperance Ave.
Clovis, CA 93711

Compound Name	Spike Level ug/L	Spk Result ug/L	SPK% Recovery	Recovery Limits
Perchlorate	0.600	0.716	119.3%	70-130

Comments:

Quant Method:	QTLMFL2
Extraction Date:	11/05/15
Analysis Date:	11/05/15
Instrument:	AGIL_6560
Run:	TY05_017.D
Initials:	RP

Interferrence Check Sample

Perchlorate EPA 6850 Water

APPL ID: 151105W-24126 ICS-202001
Batch ID: #6850-151105A

APPL Inc.
908 N. Temperance Ave.
Clovis, CA 93711

Compound Name	Spike Level ug/L	Spk Result ug/L	SPK% Recovery	Recovery Limits
Perchlorate	0.600	0.594	99.0%	70-130

Comments:

Quant Method:	QTLMFL2
Extraction Date:	11/05/15
Analysis Date:	11/07/15
Instrument:	AGIL_6560
Run:	TY07_017.D
Initials:	RP

EPA 6850

Form 4

Blank Summary

Lab Name: APPL, Inc. SDG No: 77777

Case No: 77777 Date Analyzed: 11/05/15

Matrix: WATER Instrument: AGIL_6460

Blank ID: 151105A-BLK Time Analyzed: 2105

APPL ID.	Client Sample No.	File ID.	Date Analyzed
151105A-LCS	Lab Control Spike	TY05_016.d	11/05/15 2027
151105A-BLK	Blank	TY05_018.d	11/05/15 2105
AZ24124	S67-GW109-2024	TY05_019.d	11/05/15 2123
AZ24125	S67-GW109-2024P	TY05_020.d	11/05/15 2142
AZ24126	S67-GW110-2024	TY05_021.d	11/05/15 2201
151105A-MS	Matrix Spike	TY05_022.d	11/05/15 2219
151105A-MSD	Matrix SpikeD	TY05_027.d	11/05/15 2352
AZ24127	S67-GW111-2731	TY05_028.d	11/06/15 0011
AZ24128	S67-GW112-3135	TY05_029.d	11/06/15 0029
AZ24129	S67-GW107-3135	TY05_030.d	11/06/15 0048
AZ24130	S67-GW108-3135	TY05_031.d	11/06/15 0107
AZ24131	S67-GW106-2832	TY05_032.d	11/06/15 0125

Comments: Batch: #6850-151105A

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc. **SDG No.** **77777**

Lab File ID (Standard): TY05_003 - 008.d

Instrument ID: Agilent 6460 Triple Quad LC/MS

	PER_IS			
	12_HOUR_STD AVERAGE	6066436		
	UPPER LIMIT RESPONSE	9099655		
	LOWER LIMIT RESPONSE	3033218		
Data File ID:	Sample ID:	Analysis Date and Time	IS AREA COUNT #	IS R.T. #
TY05_003.d	PERCHLORATE 0.0002 ug/ml 08/01/15	11/05/15 16:25	6572435	11.367
TY05_004.d	PERCHLORATE 0.0004 ug/ml 08/01/15	11/05/15 16:44	5926592	11.469
TY05_005.d	PERCHLORATE 0.001 ug/ml 08/01/15	11/05/15 17:03	6733075	11.531
TY05_006.d	PERCHLORATE 0.002 ug/ml 08/01/15	11/05/15 17:21	6852240	11.694
TY05_007.d	PERCHLORATE 0.005 ug/ml 08/01/15	11/05/15 17:40	6310700	11.846
TY05_008.d	PERCHLORATE 0.010 ug/ml 08/01/15	11/05/15 17:58	6204014	11.897
TY05_010.d	PER_SS 0.0004 ug/ml 09/09/15	11/05/15 18:36	5510360	12.111
TY05_011.d	PER_SS 0.002 ug/ml 09/09/15	11/05/15 18:54	4788229	12.203
TY05_013.d	PER_CCV_1 0.0004 ug/ml 08/01/15	11/05/15 19:31	7339471	12.244
TY05_014.d	PER_CCV_1 0.002 ug/ml 08/01/15	11/05/15 19:50	7408821	12.284
TY05_016.d	151105WA_LCS-1 1052.6 DF 11/05/15	11/05/15 20:27	3592558	12.417
TY05_017.d	151105W_ICSA 1052.6 DF 11/05/15	11/05/15 20:46	3022227 *	11.765
TY05_018.d	151105WBLKA 1052.6 DF 11/05/15	11/05/15 21:05	3306665	12.478
TY05_019.d	AZ24124_W01 1052.6 DF 11/05/15	11/05/15 21:23	4300620	12.234
TY05_020.d	AZ24125_W01 1052.6 DF 11/05/15	11/05/15 21:42	4310704	12.305
TY05_021.d	AZ24126_W01 1025.6 DF 11/05/15	11/05/15 22:01	4313490	12.295
TY05_022.d	AZ24126_W01_MS-1 1052.6 DF 11/05/15	11/05/15 22:19	4116029	12.325
TY05_024.d	PER_CCV_3 0.0004 ug/ml 08/01/15	11/05/15 22:56	4912996	12.611
TY05_025.d	PER_CCV_3 0.002 ug/ml 08/01/15	11/05/15 23:15	4298420	12.6
TY05_027.d	AZ24126_W01_MSD-1 1052.6 DF 11/05/15	11/05/15 23:52	4267325	12.376
TY05_028.d	AZ24127_W01 1052.6 DF 11/05/15	11/06/15 0:11	4253292	12.335
TY05_029.d	AZ24128_W01 1052.6 DF 11/05/15	11/06/15 0:29	4330802	12.356
TY05_030.d	AZ24129_W01 1052.6 DF 11/05/15	11/06/15 0:48	4481941	12.672
TY05_031.d	AZ24130_W01 1052.6 DF 11/05/15	11/06/15 1:07	4032138	12.702
TY05_032.d	AZ24131_W01 1052.6 DF 11/05/15	11/06/15 1:25	4358889	12.519
TY05_034.d	PER_CCV_3 0.0004 ug/ml 08/01/15	11/06/15 2:03	4942609	12.753
TY05_035.d	PER_CCV_3 0.002 ug/ml 08/01/15	11/06/15 2:21	4357376	12.763

AREA UPPER LIMIT = +50% of internal standard average
AREA LOWER LIMIT = -50% of internal standard average
Column used to flag values outside QC limits
* Values outside of QC limits

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc. **SDG No.** **77777**

Lab File ID (Standard): TY07_003 - 008.d

Instrument ID: Agilent 6460 Triple Quad LC/MS

	PER_IS			
	12_HOUR_STD AVERAGE	5285396		
	UPPER LIMIT RESPONSE	7928093		
	LOWER LIMIT RESPONSE	2642698		
Data File ID:	Sample ID:	Analysis Date and Time	IS AREA COUNT #	IS R.T. #
TY07_003.d	PERCHLORATE 0.0002 ug/ml 11/07/15	11/07/15 14:14	5402351	12.672
TY07_004.d	PERCHLORATE 0.0004 ug/ml 11/07/15	11/07/15 14:33	4108491	12.672
TY07_005.d	PERCHLORATE 0.001 ug/ml 11/07/15	11/07/15 14:51	5078523	12.641
TY07_006.d	PERCHLORATE 0.002 ug/ml 11/07/15	11/07/15 15:10	5944762	12.641
TY07_007.d	PERCHLORATE 0.005 ug/ml 11/07/15	11/07/15 15:29	5991866	12.641
TY07_008.d	PERCHLORATE 0.010 ug/ml 08/01/15	11/07/15 15:47	5186380	12.641
TY07_010.d	PER_SS 0.0004 ug/ml 11/06/15	11/07/15 16:25	5269548	12.753
TY07_011.d	PER_SS 0.002 ug/ml 11/06/15	11/07/15 16:43	5916199	12.784
TY07_013.d	PER_CCV_1 0.002 ug/ml 11/07/15	11/07/15 17:21	5064306	12.947
TY07_014.d	PER_CCV_1 0.0004 ug/ml 11/07/15	11/07/15 17:39	5052506	12.988
TY07_016.d	151105WA_LCS-1 1052.6 DF 11/05/15	11/07/15 18:16	4511712	13.11
TY07_017.d	151105W_ICSA 1052.6 DF 11/05/15	11/07/15 18:35	4428574	12.305
TY07_018.d	151105WBLKA 1052.6 DF 11/05/15	11/07/15 18:54	4263499	13.089
TY07_019.d	AZ24124_W01 1052.6 DF 11/05/15	11/07/15 19:12	3322603	12.937
TY07_020.d	AZ24125_W01 1052.6 DF 11/05/15	11/07/15 19:31	3643733	12.896
TY07_021.d	AZ24126_W01 1025.6 DF 11/05/15	11/07/15 19:50	3857924	12.875
TY07_022.d	AZ24126_W01_MS-1 1052.6 DF 11/05/15	11/07/15 20:08	3626714	12.875
TY07_024.d	PER_CCV_2 0.0004 ug/ml 11/07/15	11/07/15 20:46	5141467	13.242
TY07_025.d	PER_CCV_2 0.002 ug/ml 11/07/15	11/07/15 21:04	5162338	13.273
TY07_027.d	AZ24126_W01_MSD-1 1052.6 DF 11/05/15	11/07/15 21:41	3875582	12.988
TY07_028.d	AZ24127_W01 1052.6 DF 11/05/15	11/07/15 22:00	3893290	12.977
TY07_029.d	AZ24128_W01 1052.6 DF 11/05/15	11/07/15 22:19	4000428	13.018
TY07_030.d	AZ24129_W01 1052.6 DF 11/05/15	11/07/15 22:37	4756957	13.314
TY07_031.d	AZ24130_W01 1052.6 DF 11/05/15	11/07/15 22:56	4110100	13.314
TY07_032.d	AZ24131_W01 1052.6 DF 11/05/15	11/07/15 23:15	3647899	13.151
TY07_034.d	PER_CCV_2 0.0004 ug/ml 11/07/15	11/07/15 23:52	5224237	13.426
TY07_035.d	PER_CCV_2 0.002 ug/ml 11/07/15	11/08/15 0:10	5239196	13.385

AREA UPPER LIMIT = +50% of internal standard average
AREA LOWER LIMIT = -50% of internal standard average
Column used to flag values outside QC limits
* Values outside of QC limits

Perchlorate LC/MS Ion Ratio Report

acceptable ratio is between 2.3 and 3.8 (DoD Perchlorate Handbook, 2006)

Data File Path : D:\masshunter\data\151105
Instrument Name : TQ (Agilent 6460 Triple Quad LC/MS)
Method File : 6460_ESI_PER_N_NEWER_K'_COLUMN.m
Operator : BA

Date Aquired: 11/05/15 15:48 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 08/01/15 Data File ID: TY05_001.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	11.252	2074	1.6
2)	Perchlorate_85	11.279	1319	

Date Aquired: 11/05/15 16:07 Vial Number: NA
Sample Name: PERCHLORATE 0.0001 ug/ml 08/01/15 Data File ID: TY05_002.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	11.313	136621	3.0
2)	Perchlorate_85	11.259	44953	

Date Aquired: 11/05/15 16:25 Vial Number: NA
Sample Name: PERCHLORATE 0.0002 ug/ml 08/01/15 Data File ID: TY05_003.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	11.354	270055	2.8
2)	Perchlorate_85	11.351	96341	

Date Aquired: 11/05/15 16:44 Vial Number: NA
Sample Name: PERCHLORATE 0.0004 ug/ml 08/01/15 Data File ID: TY05_004.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	11.456	582117	3.2
2)	Perchlorate_85	11.473	182661	

Date Aquired: 11/05/15 17:03 Vial Number: NA
Sample Name: PERCHLORATE 0.001 ug/ml 08/01/15 Data File ID: TY05_005.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	11.527	1670167	3.3
2)	Perchlorate_85	11.534	502836	

Date Aquired: 11/05/15 17:21 Vial Number: NA
Sample Name: PERCHLORATE 0.002 ug/ml 08/01/15 Data File ID: TY05_006.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	11.711	3437488	3.6
2)	Perchlorate_85	11.717	967267	

Date Aquired: 11/05/15 17:40 Vial Number: NA
Sample Name: PERCHLORATE 0.005 ug/ml 08/01/15 Data File ID: TY05_007.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	11.843	8810970	3.7
2)	Perchlorate_85	11.84	2410758	

Date Aquired: 11/05/15 17:58 Vial Number: NA
Sample Name: PERCHLORATE 0.010 ug/ml 08/01/15 Data File ID: TY05_008.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	11.904	18756827	3.6
2)	Perchlorate_85	11.911	5176008	

Date Aquired: 11/05/15 18:17 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 08/01/15 Data File ID: TY05_009.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	11.323	5694	0.8
2)	Perchlorate_85	11.391	7295	

Date Aquired: 11/05/15 18:36 Vial Number: NA
Sample Name: PER_SS 0.0004 ug/ml 09/09/15 Data File ID: TY05_010.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.108	636827	3.3
2)	Perchlorate_85	12.115	194453	

Date Aquired: 11/05/15 18:54 Vial Number: NA
Sample Name: PER_SS 0.002 ug/ml 09/09/15 Data File ID: TY05_011.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.2	2911264	3.6
2)	Perchlorate_85	12.196	806283	

Date Aquired: 11/05/15 19:13 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 08/01/15 Data File ID: TY05_012.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	11.344	13154	5.1
2)	Perchlorate_85	11.279	2587	

Date Aquired: 11/05/15 19:31 Vial Number: NA
Sample Name: PER_CCV_1 0.0004 ug/ml 08/01/15 Data File ID: TY05_013.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.281	738540	3.2
2)	Perchlorate_85	12.257	232771	

Date Aquired: 11/05/15 19:50 Vial Number: NA
Sample Name: PER_CCV_1 0.002 ug/ml 08/01/15 Data File ID: TY05_014.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.291	4073441	3.6
2)	Perchlorate_85	12.267	1142376	

Date Aquired: 11/05/15 20:09 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 08/01/15 Data File ID: TY05_015.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	11.242	5388	1.0
2)	Perchlorate_85	11.31	5577	

Date Aquired: 11/05/15 20:27 Vial Number: NA
Sample Name: 151105WA_LCS-1 1052.6 DF 11/05/15 Data File ID: TY05_016.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.454	548606	3.3
2)	Perchlorate_85	12.451	168362	

Date Aquired: 11/05/15 20:46 Vial Number: NA
Sample Name: 151105W_ICSA 1052.6 DF 11/05/15 Data File ID: TY05_017.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	11.741	524534	2.6
2)	Perchlorate_85	11.738	205280	

Date Aquired: 11/05/15 21:05 Vial Number: NA
Sample Name: 151105WBLKA 1052.6 DF 11/05/15 Data File ID: TY05_018.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	11.242	9600	2.2
2)	Perchlorate_85	11.187	4445	

Date Aquired: 11/05/15 21:23 Vial Number: NA
Sample Name: AZ24124_W01 1052.6 DF 11/05/15 Data File ID: TY05_019.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.261	5198515	3.5
2)	Perchlorate_85	12.247	1502517	

Date Aquired: 11/05/15 21:42 Vial Number: NA
Sample Name: AZ24125_W01 1052.6 DF 11/05/15 Data File ID: TY05_020.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.291	4414478	3.5
2)	Perchlorate_85	12.308	1250788	

Date Aquired: 11/05/15 22:01 Vial Number: NA
Sample Name: AZ24126_W01 1025.6 DF 11/05/15 Data File ID: TY05_021.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.301	7927711	3.7
2)	Perchlorate_85	12.298	2146450	

Date Aquired: 11/05/15 22:19 Vial Number: NA
Sample Name: AZ24126_W01_MS-1 1052.6 DF 11/05/15 Data File ID: TY05_022.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.332	8651346	3.6
2)	Perchlorate_85	12.329	2406226	

Date Aquired: 11/05/15 22:38 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 08/01/15 Data File ID: TY05_023.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	11.323	9535	1.1
2)	Perchlorate_85	11.167	8378	

Date Aquired: 11/05/15 22:56 Vial Number: NA
Sample Name: PER_CCV_3 0.0004 ug/ml 08/01/15 Data File ID: TY05_024.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.638	450082	3.2
2)	Perchlorate_85	12.594	141216	

Date Aquired: 11/05/15 23:15 Vial Number: NA
Sample Name: PER_CCV_3 0.002 ug/ml 08/01/15 Data File ID: TY05_025.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.607	2217975	3.4
2)	Perchlorate_85	12.594	652360	

Date Aquired: 11/05/15 23:34 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 08/01/15 Data File ID: TY05_026.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	11.201	30849	1.6
2)	Perchlorate_85	11.33	19111	

Date Aquired: 11/05/15 23:52 Vial Number: NA
Sample Name: AZ24126_W01_MSD-1 1052.6 DF 11/05/15 Data File ID: TY05_027.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.373	8770348	3.6
2)	Perchlorate_85	12.39	2431343	

Date Aquired: 11/06/15 0:11 Vial Number: NA
Sample Name: AZ24127_W01 1052.6 DF 11/05/15 Data File ID: TY05_028.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.332	12856003	3.7
2)	Perchlorate_85	12.339	3510903	

Date Aquired: 11/06/15 0:29 Vial Number: NA
Sample Name: AZ24128_W01 1052.6 DF 11/05/15 Data File ID: TY05_029.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.363	12512555	3.6
2)	Perchlorate_85	12.359	3438729	

Date Aquired: 11/06/15 0:48 Vial Number: NA
Sample Name: AZ24129_W01 1052.6 DF 11/05/15 Data File ID: TY05_030.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.699	316032	2.9
2)	Perchlorate_85	12.695	109330	

Date Aquired: 11/06/15 1:07 Vial Number: NA
Sample Name: AZ24130_W01 1052.6 DF 11/05/15 Data File ID: TY05_031.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.689	266379	3.3
2)	Perchlorate_85	12.757	81617	

Date Aquired: 11/06/15 1:25 Vial Number: NA
Sample Name: AZ24131_W01 1052.6 DF 11/05/15 Data File ID: TY05_032.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.536	1815979	3.5
2)	Perchlorate_85	12.502	525688	

Date Aquired: 11/06/15 1:44 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 08/01/15 Data File ID: TY05_033.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	11.232	13910	2.2
2)	Perchlorate_85	11.187	6251	

Date Aquired: 11/06/15 2:03 Vial Number: NA
Sample Name: PER_CCV_3 0.0004 ug/ml 08/01/15 Data File ID: TY05_034.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.719	462413	3.3
2)	Perchlorate_85	12.736	140827	

Date Aquired: 11/06/15 2:21 Vial Number: NA
Sample Name: PER_CCV_3 0.002 ug/ml 08/01/15 Data File ID: TY05_035.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.77	2290336	3.3
2)	Perchlorate_85	12.757	701332	

Date Aquired: 11/06/15 2:40 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 08/01/15 Data File ID: TY05_036.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	11.497	23249	1.6
2)	Perchlorate_85	11.014	14447	

Date Aquired: 11/06/15 2:58 Vial Number: NA
Sample Name: 151105WA_LCS-1 1052.6 DF 11/05/15 Data File ID: TY05_037.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.872	616633	3.3
2)	Perchlorate_85	12.858	189516	

Perchlorate LC/MS Ion Ratio Report

acceptable ratio is between 2.3 and 3.8 (DoD Perchlorate Handbook, 2006)

Data File Path : D:\masshunter\data\151107
Instrument Name : TQ (Agilent 6460 Triple Quad LC/MS)
Method File : 6460_ESI_PER_N_NEWER_K'_COLUMN.m
Operator : BA

Date Aquired: 11/07/15 13:37 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 11/07/15 Data File ID: TY07_001.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.811	5996	1.4
2)	Perchlorate_85	12.777	4136	

Date Aquired: 11/07/15 13:56 Vial Number: NA
Sample Name: PERCHLORATE 0.0001 ug/ml 11/07/15 Data File ID: TY07_002.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.536	149725	2.3
2)	Perchlorate_85	12.522	65419	

Date Aquired: 11/07/15 14:14 Vial Number: NA
Sample Name: PERCHLORATE 0.0002 ug/ml 11/07/15 Data File ID: TY07_003.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.699	268654	2.7
2)	Perchlorate_85	12.675	99052	

Date Aquired: 11/07/15 14:33 Vial Number: NA
Sample Name: PERCHLORATE 0.0004 ug/ml 11/07/15 Data File ID: TY07_004.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.678	552262	3.4
2)	Perchlorate_85	12.665	163598	

Date Aquired: 11/07/15 14:51 Vial Number: NA
Sample Name: PERCHLORATE 0.001 ug/ml 11/07/15 Data File ID: TY07_005.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.638	1362972	3.3
2)	Perchlorate_85	12.655	411129	

Date Aquired: 11/07/15 15:10 Vial Number: NA
Sample Name: PERCHLORATE 0.002 ug/ml 11/07/15 Data File ID: TY07_006.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.658	2837952	3.5
2)	Perchlorate_85	12.655	812314	

Date Aquired: 11/07/15 15:29 Vial Number: NA
Sample Name: PERCHLORATE 0.005 ug/ml 11/07/15 Data File ID: TY07_007.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.638	7583783	3.6
2)	Perchlorate_85	12.644	2106695	

Date Aquired: 11/07/15 15:47 Vial Number: NA
Sample Name: PERCHLORATE 0.010 ug/ml 08/01/15 Data File ID: TY07_008.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.658	15583461	3.6
2)	Perchlorate_85	12.644	4346083	

Date Aquired: 11/07/15 16:06 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 11/07/15 Data File ID: TY07_009.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.75	9195	1.4
2)	Perchlorate_85	12.777	6433	

Date Aquired: 11/07/15 16:25 Vial Number: NA
Sample Name: PER_SS 0.0004 ug/ml 11/06/15 Data File ID: TY07_010.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.76	554749	3.1
2)	Perchlorate_85	12.757	178224	

Date Aquired: 11/07/15 16:43 Vial Number: NA
Sample Name: PER_SS 0.002 ug/ml 11/06/15 Data File ID: TY07_011.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.801	2886613	3.4
2)	Perchlorate_85	12.787	841454	

Date Aquired: 11/07/15 17:02 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 11/07/15 Data File ID: TY07_012.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.729	19169	1.2
2)	Perchlorate_85	12.838	15694	

Date Aquired: 11/07/15 17:21 Vial Number: NA
Sample Name: PER_CCV_1 0.002 ug/ml 11/07/15 Data File ID: TY07_013.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.943	2758115	3.4
2)	Perchlorate_85	12.96	813430	

Date Aquired: 11/07/15 17:39 Vial Number: NA
Sample Name: PER_CCV_1 0.0004 ug/ml 11/07/15 Data File ID: TY07_014.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.984	506407	3.3
2)	Perchlorate_85	13.021	153984	

Date Aquired: 11/07/15 17:58 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 11/07/15 Data File ID: TY07_015.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.821	16537	2.9
2)	Perchlorate_85	12.746	5722	

Date Aquired: 11/07/15 18:16 Vial Number: NA
Sample Name: 151105WA_LCS-1 1052.6 DF 11/05/15 Data File ID: TY07_016.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.106	671146	3.3
2)	Perchlorate_85	13.134	204584	

Date Aquired: 11/07/15 18:35 Vial Number: NA
Sample Name: 151105W_ICSA 1052.6 DF 11/05/15 Data File ID: TY07_017.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.291	685901	3.0
2)	Perchlorate_85	12.257	230526	

Date Aquired: 11/07/15 18:54 Vial Number: NA
Sample Name: 151105WBLKA 1052.6 DF 11/05/15 Data File ID: TY07_018.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.862	4625	0.6
2)	Perchlorate_85	12.726	7703	

Date Aquired: 11/07/15 19:12 Vial Number: NA
Sample Name: AZ24124_W01 1052.6 DF 11/05/15 Data File ID: TY07_019.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.933	3997935	3.5
2)	Perchlorate_85	12.971	1141966	

Date Aquired: 11/07/15 19:31 Vial Number: NA
Sample Name: AZ24125_W01 1052.6 DF 11/05/15 Data File ID: TY07_020.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.882	3779134	3.7
2)	Perchlorate_85	12.899	1034069	

Date Aquired: 11/07/15 19:50 Vial Number: NA
Sample Name: AZ24126_W01 1025.6 DF 11/05/15 Data File ID: TY07_021.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.872	6996330	3.6
2)	Perchlorate_85	12.869	1947874	

Date Aquired: 11/07/15 20:08 Vial Number: NA
Sample Name: AZ24126_W01_MS-1 1052.6 DF 11/05/15 Data File ID: TY07_022.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.862	7751884	3.8
2)	Perchlorate_85	12.889	2065670	

Date Aquired: 11/07/15 20:27 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 11/07/15 Data File ID: TY07_023.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.801	13327	4.7
2)	Perchlorate_85	12.94	2845	

Date Aquired: 11/07/15 20:46 Vial Number: NA
Sample Name: PER_CCV_2 0.0004 ug/ml 11/07/15 Data File ID: TY07_024.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.28	510406	3.2
2)	Perchlorate_85	13.276	161021	

Date Aquired: 11/07/15 21:04 Vial Number: NA
Sample Name: PER_CCV_2 0.002 ug/ml 11/07/15 Data File ID: TY07_025.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.29	2893143	3.5
2)	Perchlorate_85	13.286	833495	

Date Aquired: 11/07/15 21:23 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 11/07/15 Data File ID: TY07_026.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.658	10485	10.3
2)	Perchlorate_85	12.767	1020	

Date Aquired: 11/07/15 21:41 Vial Number: NA
Sample Name: AZ24126_W01_MSD-1 1052.6 DF 11/05/15 Data File ID: TY07_027.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.004	7908149	3.6
2)	Perchlorate_85	13.001	2183213	

Date Aquired: 11/07/15 22:00 Vial Number: NA
Sample Name: AZ24127_W01 1052.6 DF 11/05/15 Data File ID: TY07_028.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.974	11803067	3.6
2)	Perchlorate_85	13.001	3248163	

Date Aquired: 11/07/15 22:19 Vial Number: NA
Sample Name: AZ24128_W01 1052.6 DF 11/05/15 Data File ID: TY07_029.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.035	11447498	3.7
2)	Perchlorate_85	13.032	3118094	

Date Aquired: 11/07/15 22:37 Vial Number: NA
Sample Name: AZ24129_W01 1052.6 DF 11/05/15 Data File ID: TY07_030.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.331	306714	3.4
2)	Perchlorate_85	13.348	90960	

Date Aquired: 11/07/15 22:56 Vial Number: NA
Sample Name: AZ24130_W01 1052.6 DF 11/05/15 Data File ID: TY07_031.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.341	276808	3.8
2)	Perchlorate_85	13.276	73567	

Date Aquired: 11/07/15 23:15 Vial Number: NA
Sample Name: AZ24131_W01 1052.6 DF 11/05/15 Data File ID: TY07_032.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.178	1495591	3.3
2)	Perchlorate_85	13.164	451268	

Date Aquired: 11/07/15 23:33 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 11/07/15 Data File ID: TY07_033.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.811	11224	9.8
2)	Perchlorate_85	12.838	1147	

Date Aquired: 11/07/15 23:52 Vial Number: NA
Sample Name: PER_CCV_2 0.0004 ug/ml 11/07/15 Data File ID: TY07_034.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.422	521521	3.6
2)	Perchlorate_85	13.398	145020	

Date Aquired: 11/08/15 0:10 Vial Number: NA
Sample Name: PER_CCV_2 0.002 ug/ml 11/07/15 Data File ID: TY07_035.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.381	2931499	3.6
2)	Perchlorate_85	13.368	823990	

Date Aquired: 11/08/15 0:29 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 11/07/15 Data File ID: TY07_036.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.872	4258	3.7
2)	Perchlorate_85	12.4	1152	

Date Aquired: 11/08/15 0:48 Vial Number: NA
Sample Name: 151105WA_LCS-1 1052.6 DF 11/05/15 Data File ID: TY07_037.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.402	684125	3.5
2)	Perchlorate_85	13.449	197037	

EPA METHOD 6850
Perchlorate
LC/MS

Sample Data

APPL, INC.

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
Norfolk, VA 23502

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S67-GW109-2024
Sample Collection Date: 11/04/15

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 77777
APPL ID: AZ24124
QCG: #6850-151105A-202001

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	5.0	0.60	0.400	0.200	ug/L	11/05/15	11/05/15

Quant Method:	QTLMFL2
Run #:	TY05_019.d
Instrument:	AGIL_6460
Sequence:	TQ110515
Dilution Factor:	1
Initials:	RP

Printed: 11/24/15 7:32:00 AM
APPL-F1-SC-NoMC-REG MDLs-DOD

Data File ID: TY05_019.d

Date Injected : 11/05/15

Time Injected : 21:23

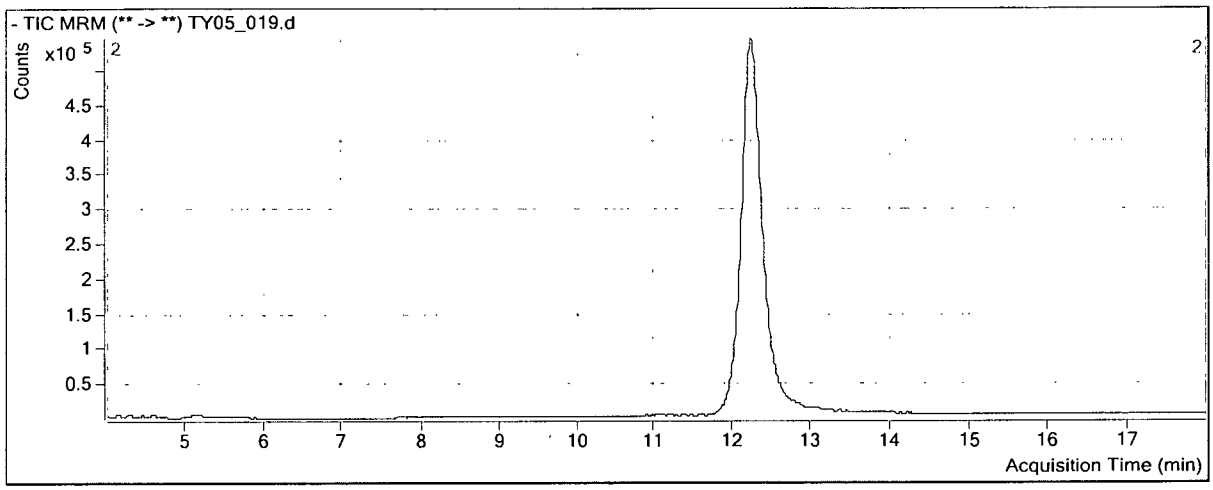
Sample ID : AZ24124_W01 1052.6 DF 11/05/15

Client ID : S67-GW109-2024

Retention Time	Area Count Response	Compound_ID Product Ion		
12.234	4300620	PER_IS_89		
12.261	5198515	Perchlorate_83	(5198515 * 0.0050) / (1.28 * 4300620.00) * 1052.60 =	4.984926 ppb
12.247	1502517	Perchlorate_85	(1502517 * 0.0050) / (0.38 * 4300620.00) * 1052.60 =	4.844784 ppb

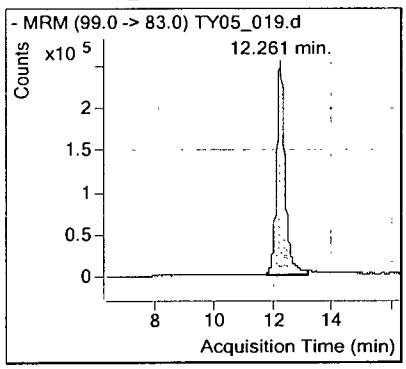
Quantitative Analysis Sample Report

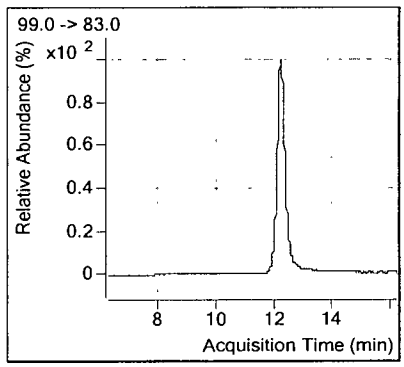
Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_019.d	**Sample Name**	AZ24124_W01 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	21:23
ClientID	S67-GW109-2024	**Inj Vol**	20

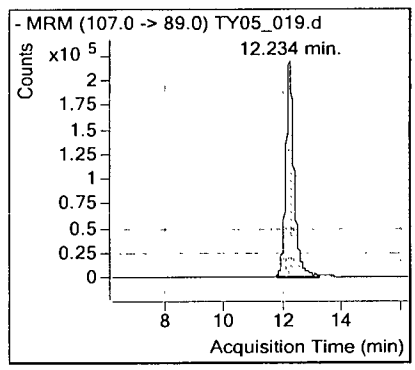


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.261	5198515	4300620
Perchlorate_102	PER_IS_108	12.247	1502517	4300620

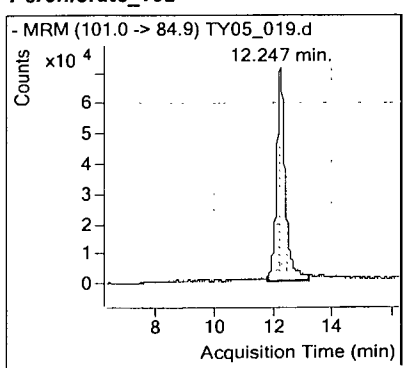
Perchlorate_100

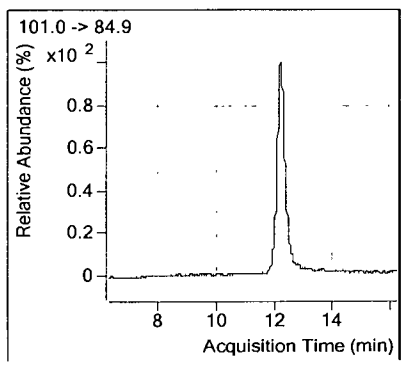


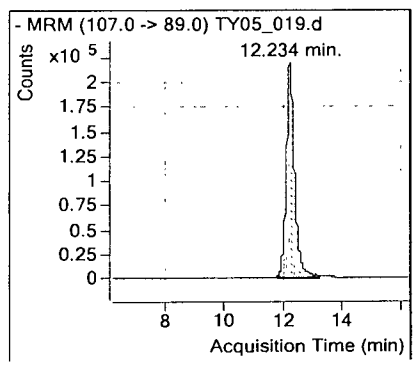




Perchlorate_102







Data File ID: TY07_019.d

Date Injected : 11/07/15

Time Injected : 19:12

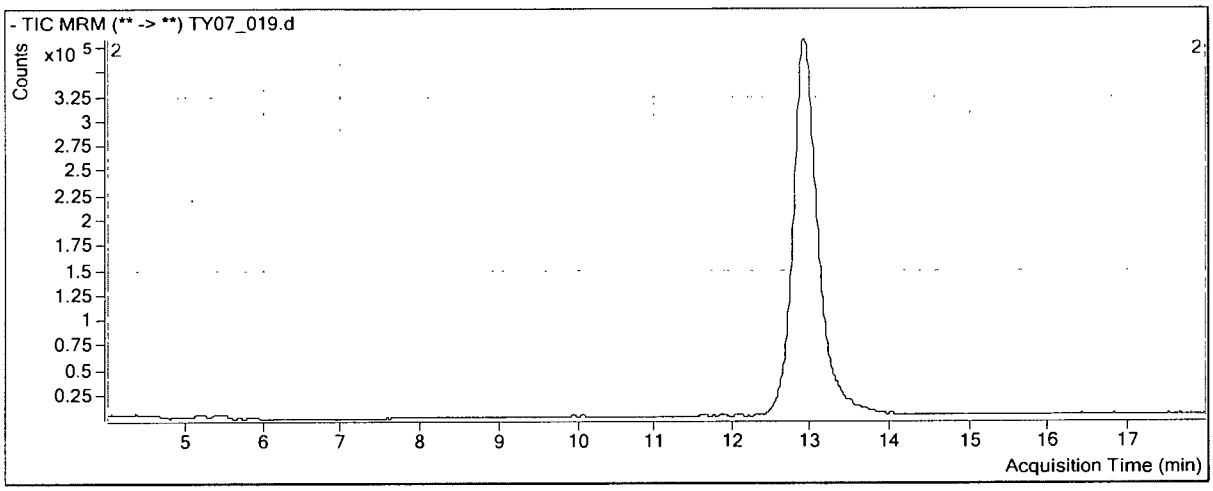
Sample ID : AZ24124_W01 1052.6 DF 11/05/15

Client ID : S67-GW109-2024

Retention Time	Area Count Response	Compound_ID Product Ion		
12.937	3322603	PER_IS_89		
12.933	3997935	Perchlorate_83	(3997935 * 0.0050) / (1.37 * 3322603.00) * 1052.60 =	4.618570 ppb
12.971	1141966	Perchlorate_85	(1141966 * 0.0050) / (0.41 * 3322603.00) * 1052.60 =	4.388551 ppb

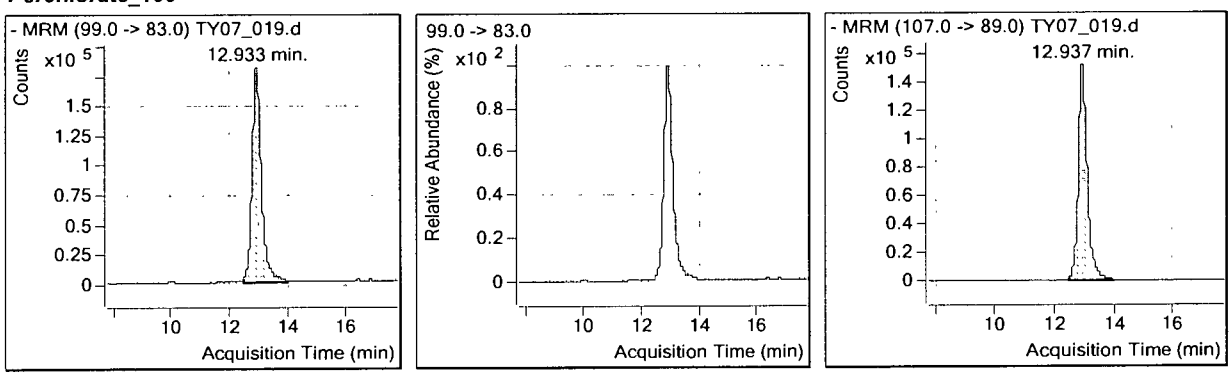
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_019.d	**Sample Name**	AZ24124_W01 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	19:12
ClientID	S67-GW109-2024	**Inj Vol**	20

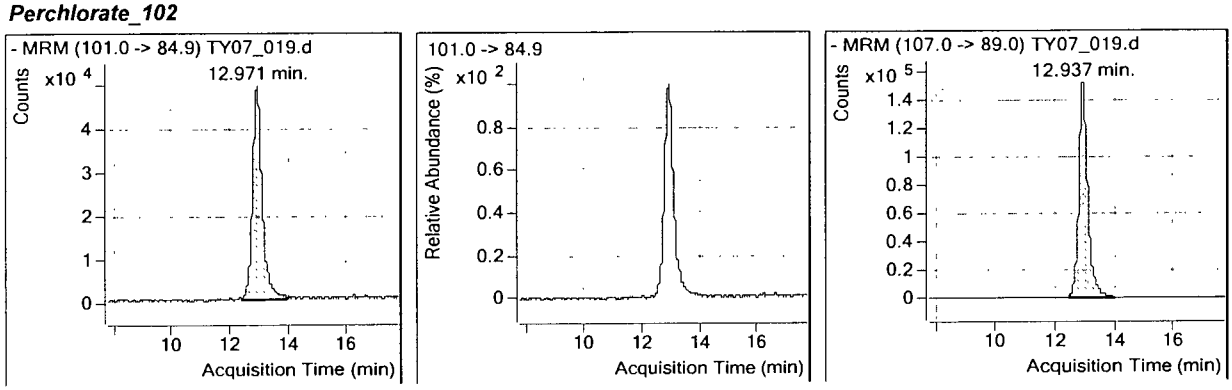


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.933	3997935	3322603
Perchlorate_102	PER_IS_108	12.971	1141966	3322603

Perchlorate_100



Perchlorate_102



Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
Norfolk, VA 23502

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S67-GW109-2024P
Sample Collection Date: 11/04/15

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 77777
APPL ID: AZ24125
QCG: #6850-151105A-202001

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	4.2	0.60	0.400	0.200	ug/L	11/05/15	11/05/15

Quant Method:	QTLMFL2
Run #:	TY05_020.d
Instrument:	AGIL_6460
Sequence:	TQ110515
Dilution Factor:	1
Initials:	RP

Printed: 11/24/15 7:32:00 AM
APPL-F1-SC-NoMC-REG MDLs-DOD

Data File ID: TY05_020.d

Date Injected : 11/05/15

Time Injected : 21:42

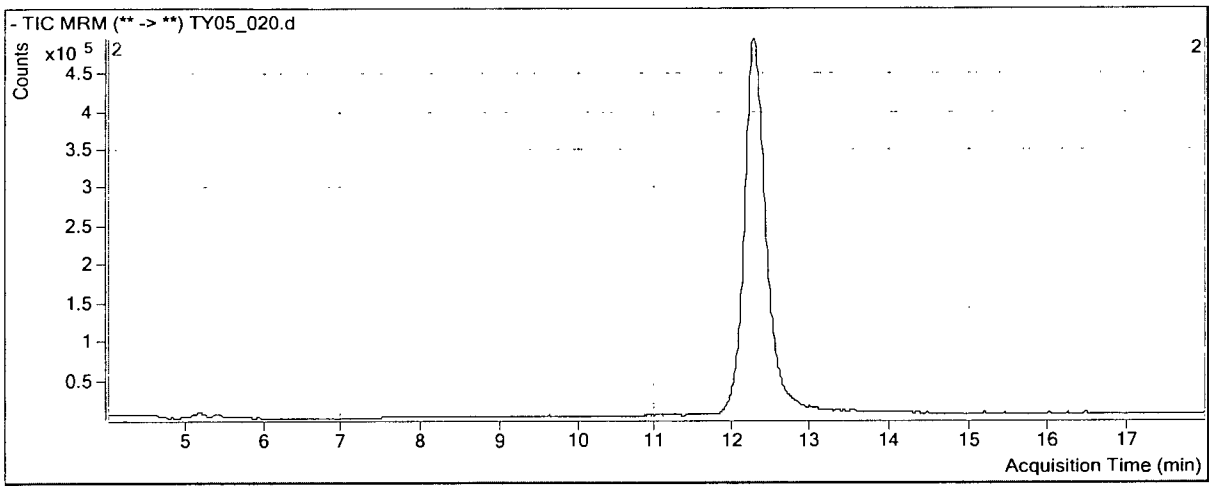
Sample ID : AZ24125_W01 1052.6 DF 11/05/15

Client ID : S67-GW109-2024P

Retention Time	Area Count Response	Compound_ID Product Ion		
12.305	4310704	PER_IS_89		
12.291	4414478	Perchlorate_83	(4414478 * 0.0050) / (1.28 * 4310704.00) * 1052.60 =	4.223200 ppb
12.308	1250788	Perchlorate_85	(1250788 * 0.0050) / (0.38 * 4310704.00) * 1052.60 =	4.023663 ppb

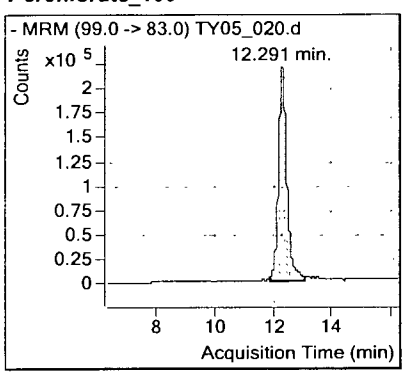
Quantitative Analysis Sample Report

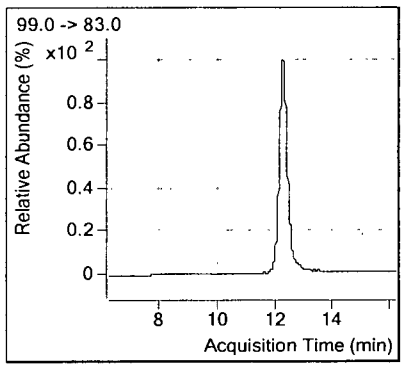
Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_020.d	**Sample Name**	AZ24125_W01 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	21:42
ClientID	S67-GW109-2024P	**Inj Vol**	20

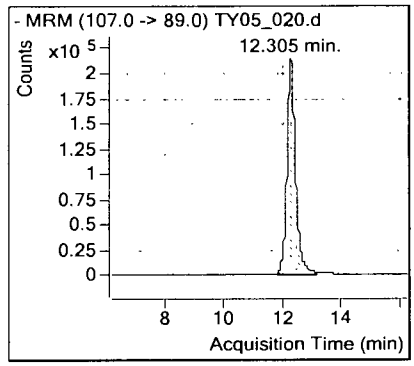


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.291	4414478	4310704
Perchlorate_102	PER_IS_108	12.308	1250788	4310704

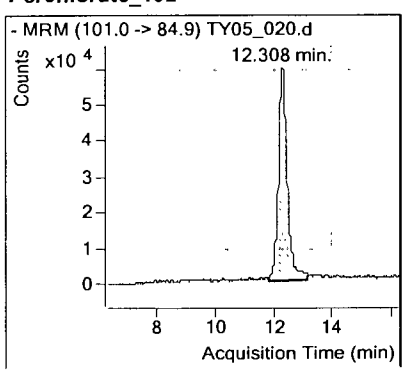
Perchlorate_100

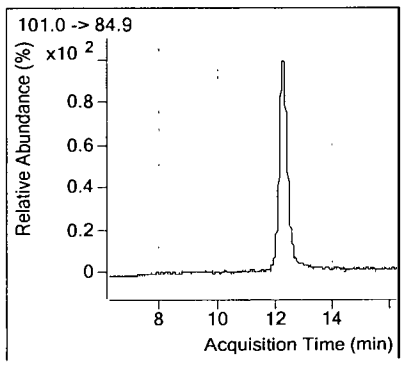


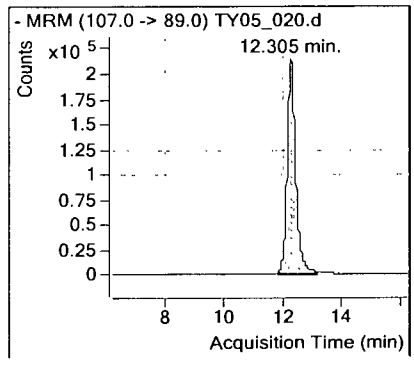




Perchlorate_102







Data File ID: TY07_020.d

Date Injected : 11/07/15

Time Injected : 19:31

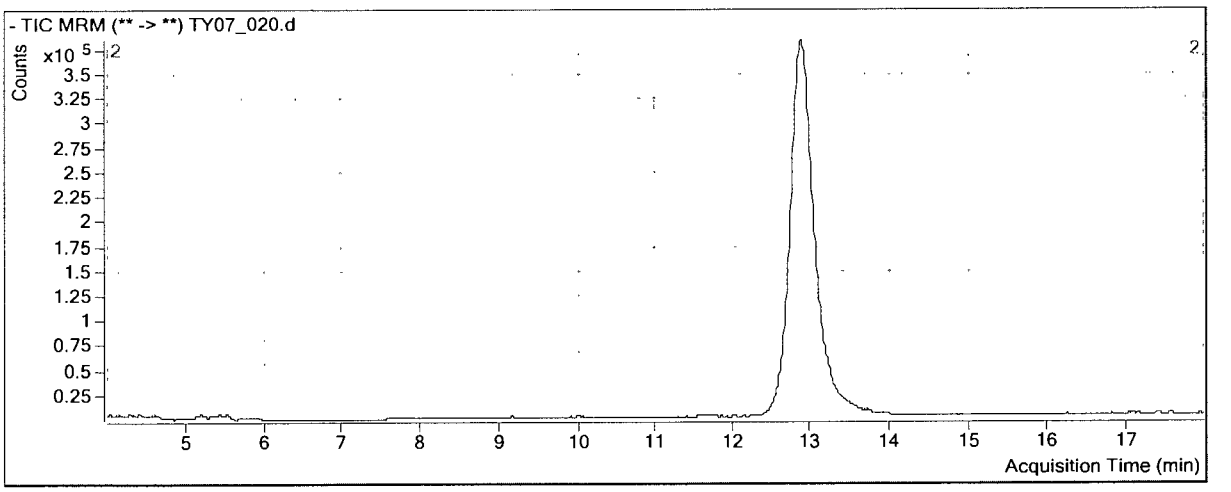
Sample ID : AZ24125_W01 1052.6 DF 11/05/15

Client ID : S67-GW109-2024P

Retention Time	Area Count Response	Compound_ID Product Ion	
12.896	3643733	PER_IS_89	
12.882	3779134	Perchlorate_83	(3779134 * 0.0050) / (1.37 * 3643733.00) * 1052.60 = 3.981035 ppb
12.899	1034069	Perchlorate_85	(1034069 * 0.0050) / (0.41 * 3643733.00) * 1052.60 = 3.623677 ppb

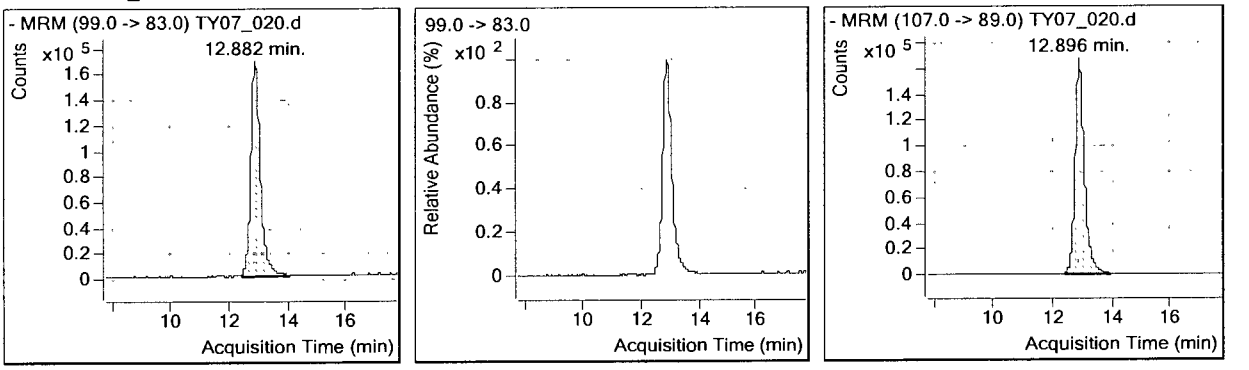
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_020.d	**Sample Name**	AZ24125_W01 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	19:31
ClientID	S67-GW109-2024P	**Inj Vol**	20

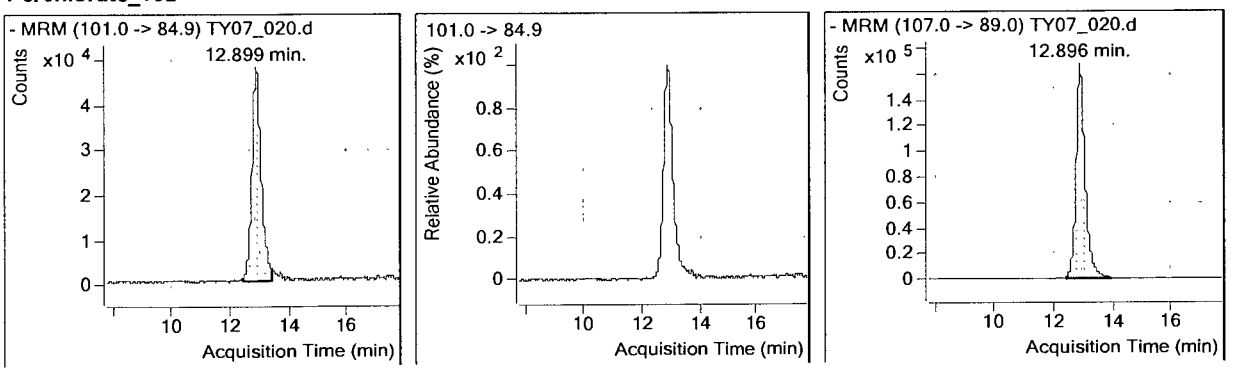


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.882	3779134	3643733
Perchlorate_102	PER_IS_108	12.899	1034069	3643733

Perchlorate_100



Perchlorate_102



Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
Norfolk, VA 23502

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S67-GW110-2024
Sample Collection Date: 11/04/15

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 77777
APPL ID: AZ24126
QCG: #6850-151105A-202001

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	7.4	0.60	0.400	0.200	ug/L	11/05/15	11/05/15

Quant Method:	QTLMFL2
Run #:	TY05_021.d
Instrument:	AGIL_6460
Sequence:	TQ110515
Dilution Factor:	1
Initials:	RP

Printed: 11/24/15 7:32:00 AM
APPL-F1-SC-NoMC-REG MDLs-DOD

Data File ID: TY05_021.d

Date Injected : 11/05/15

Time Injected : 22:01

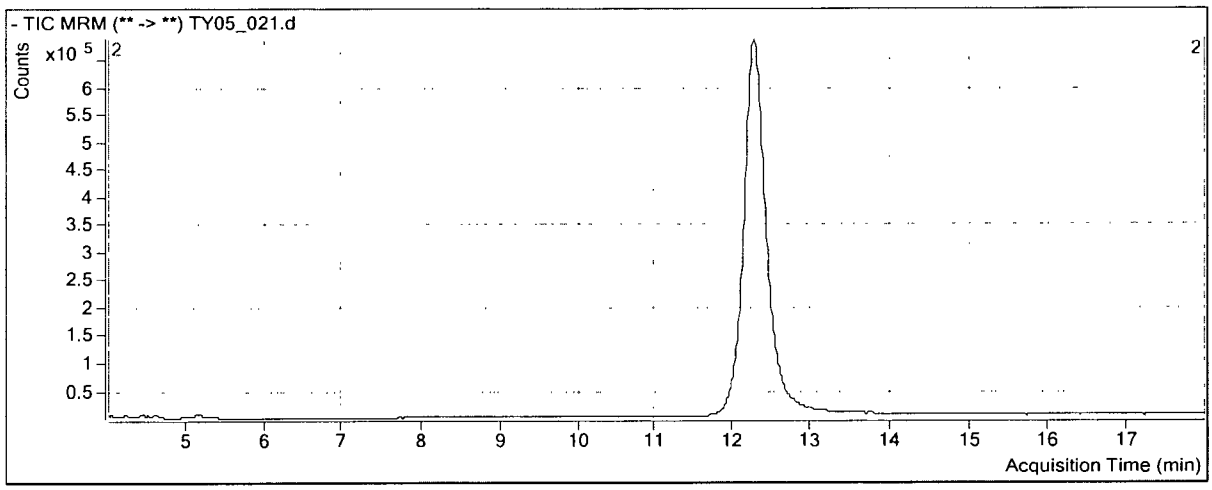
Sample ID : AZ24126_W01 1025.6 DF 11/05/15

Client ID : S67-GW110-2024

Retention Time	Area Count Response	Compound_ID Product Ion		
12.295	4313490	PER_IS_89		
12.301	7927711	Perchlorate_83	(7927711 * 0.0050) / (1.28 * 4313490.00) * 1025.60 =	7.384892 ppb
12.298	2146450	Perchlorate_85	(2146450 * 0.0050) / (0.38 * 4313490.00) * 1025.60 =	6.723459 ppb

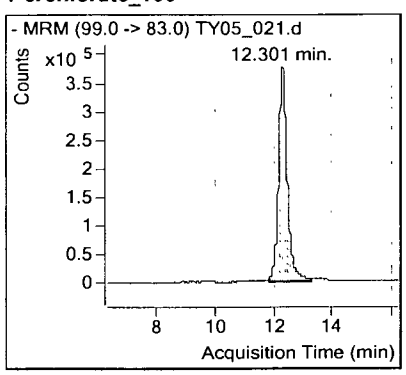
Quantitative Analysis Sample Report

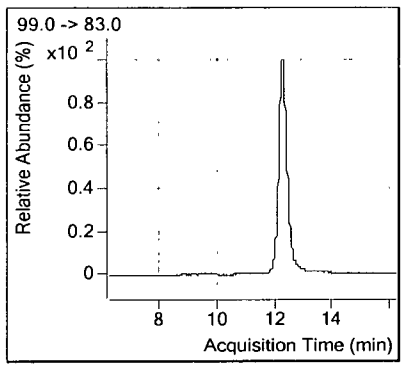
Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_021.d	**Sample Name**	AZ24126_W01 1025.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	22:01
ClientID	S67-GW110-2024	**Inj Vol**	20

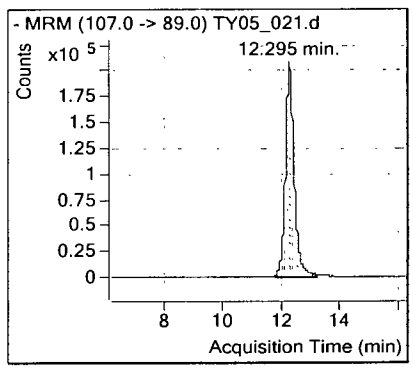


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.301	7927711	4313490
Perchlorate_102	PER_IS_108	12.298	2146450	4313490

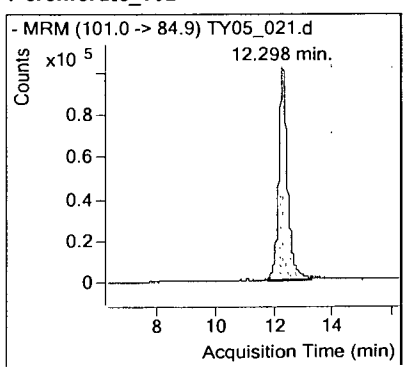
Perchlorate_100

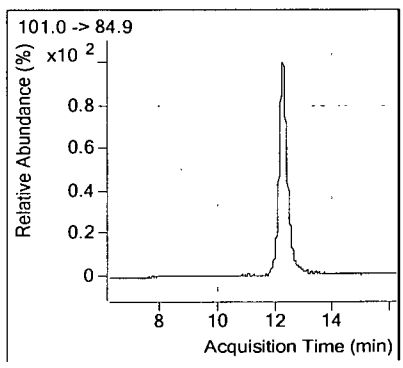


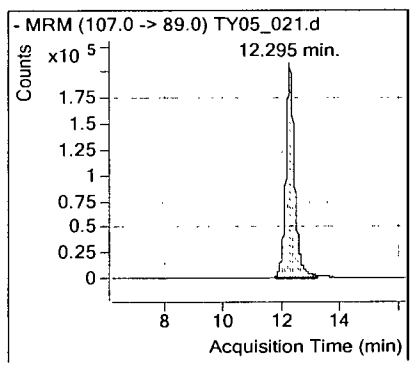




Perchlorate_102







Data File ID: TY07_021.d

Date Injected : 11/07/15

Time Injected : 19:50

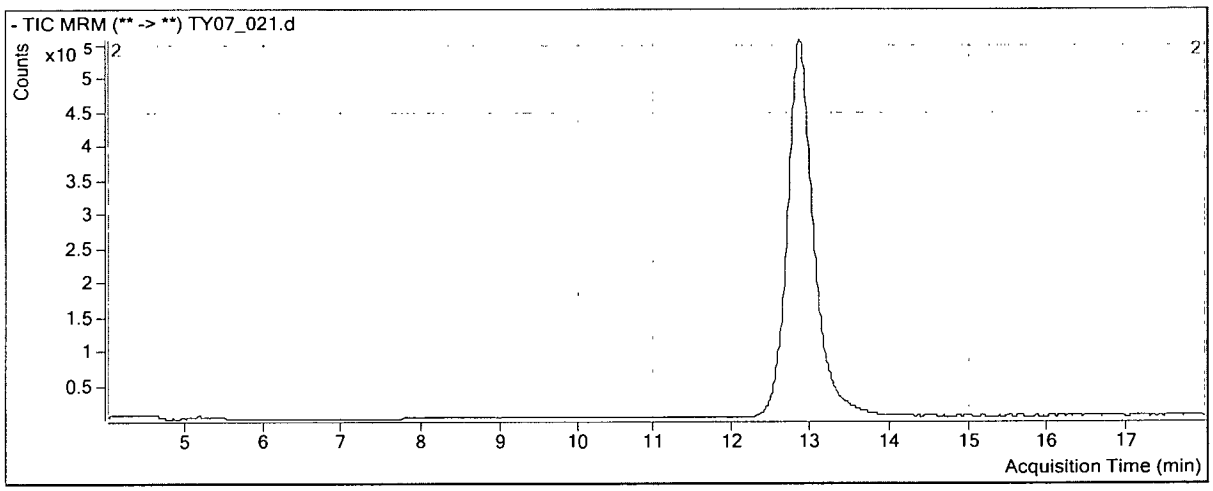
Sample ID : AZ24126_W01 1025.6 DF 11/05/15

Client ID : S67-GW110-2024

Retention Time	Area Count Response	Compound_ID Product Ion		
12.875	3857924	PER_IS_89		
12.872	6996330	Perchlorate_83	(6996330 * 0.0050) / (1.37 * 3857924.00) * 1025.60 =	6.782371 ppb
12.869	1947874	Perchlorate_85	(1947874 * 0.0050) / (0.41 * 3857924.00) * 1025.60 =	6.281571 ppb

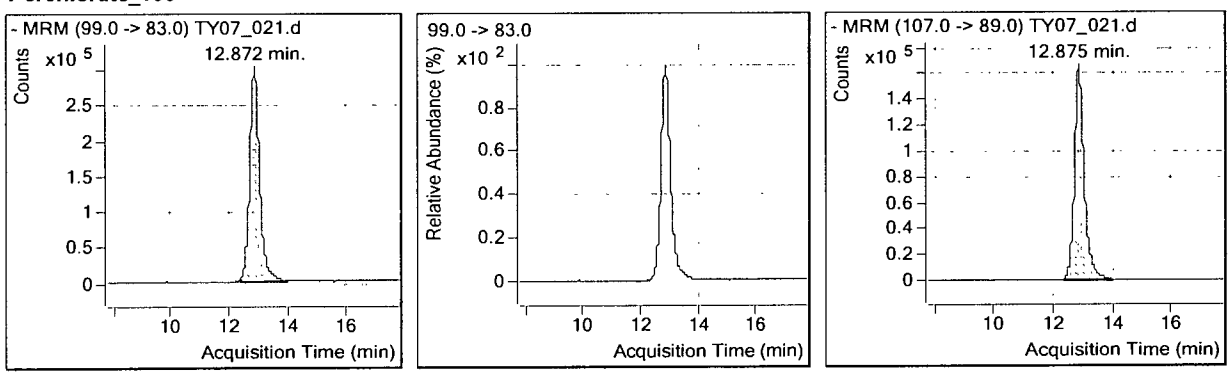
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_021.d	**Sample Name**	AZ24126_W01 1025.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	19:50
ClientID	S67-GW110-2024	**Inj Vol**	20

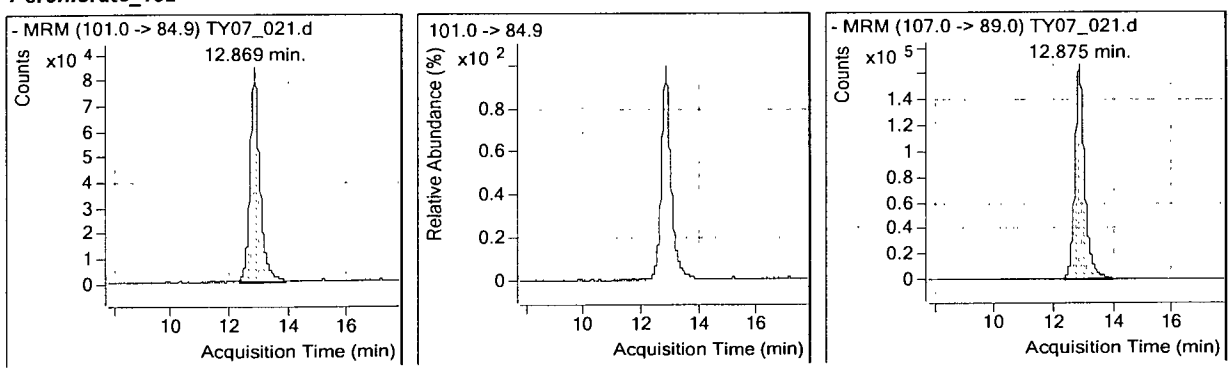


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.872	6996330	3857924
Perchlorate_102	PER_IS_108	12.869	1947874	3857924

Perchlorate_100



Perchlorate_102



Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
Norfolk, VA 23502

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S67-GW111-2731
Sample Collection Date: 11/04/15

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 77777
APPL ID: AZ24127
QCG: #6850-151105A-202001

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	12	0.60	0.400	0.200	ug/L	11/05/15	11/06/15

Quant Method:	QTLMFL2
Run #:	TY05_028.d
Instrument:	AGIL_6460
Sequence:	TQ110515
Dilution Factor:	1
Initials:	RP

Printed: 11/24/15 7:32:00 AM
APPL-F1-SC-NoMC-REG MDLs-DOD

Data File ID: TY05_028.d

Date Injected : 11/06/15

Time Injected : 0:11

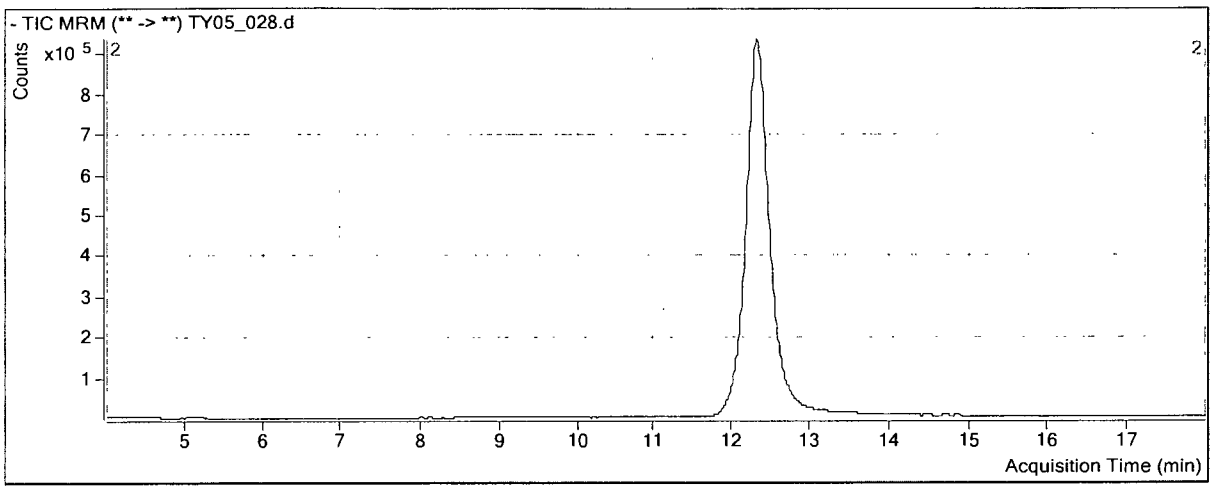
Sample ID : AZ24127_W01 1052.6 DF 11/05/15

Client ID : S67-GW111-2731

Retention Time	Area Count Response	Compound_ID Product Ion	
12.335	4253292	PER_IS_89	
12.332	12856003	Perchlorate_83	(12856003 * 0.0050) / (1.28 * 4253292.00) * 1052.60 = 12.464971 ppb
12.339	3510903	Perchlorate_85	(3510903 * 0.0050) / (0.38 * 4253292.00) * 1052.60 = 11.446685 ppb

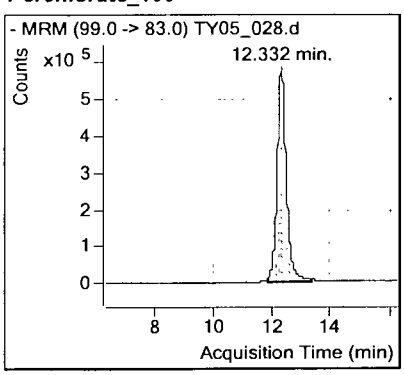
Quantitative Analysis Sample Report

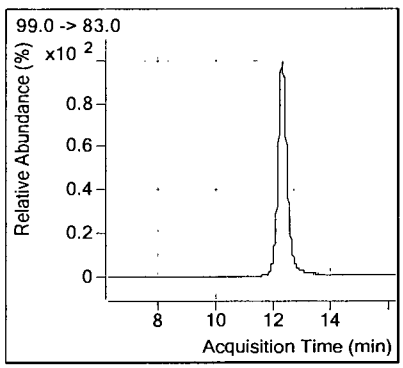
Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_028.d	**Sample Name**	AZ24127_W01 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/06/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	0:11
ClientID	S67-GW111-2731	**Inj Vol**	20

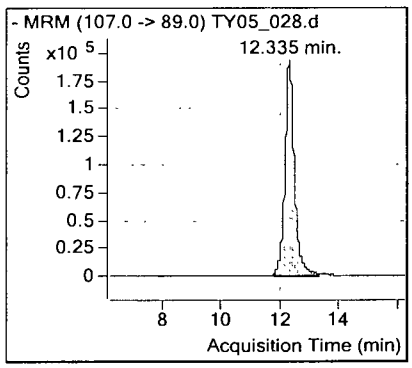


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.332	12856003	4253292
Perchlorate_102	PER_IS_108	12.339	3510903	4253292

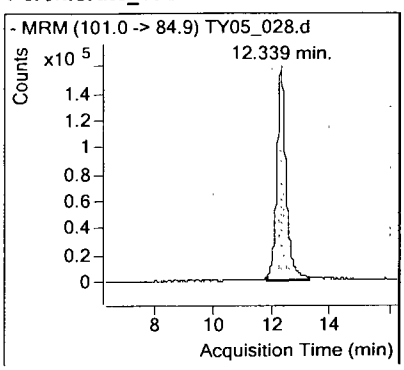
Perchlorate_100

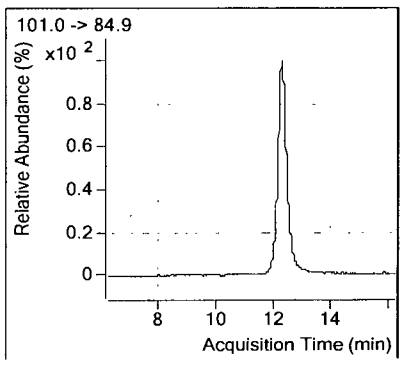


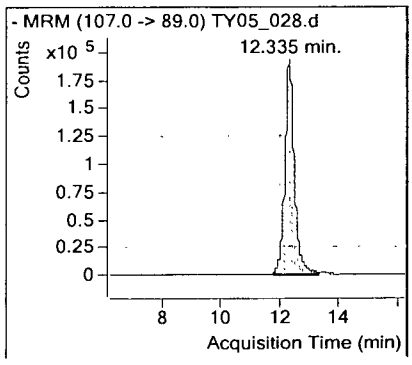




Perchlorate_102







Data File ID: TY07_028.d

Date Injected : 11/07/15

Time Injected : 22:00

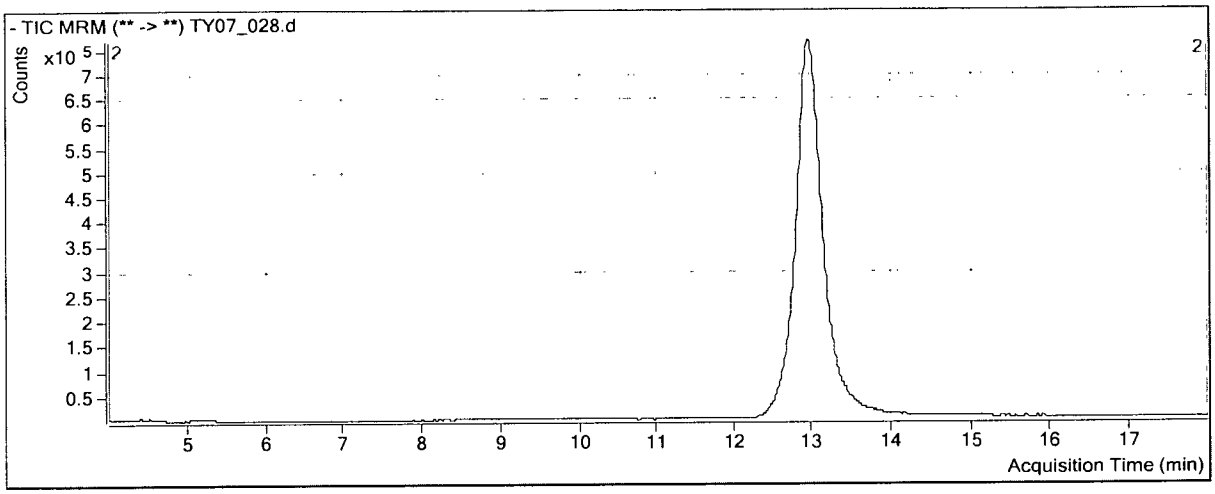
Sample ID : AZ24127_W01 1052.6 DF 11/05/15

Client ID : S67-GW111-2731

Retention Time	Area Count Response	Compound_ID Product Ion	
12.977	3893290	PER_IS_89	
12.974	11803067	Perchlorate_83	(11803067 * 0.0050) / (1.37 * 3893290.00) * 1052.60 = 11.636661 ppb
13.001	3248163	Perchlorate_85	(3248163 * 0.0050) / (0.41 * 3893290.00) * 1052.60 = 10.652892 ppb

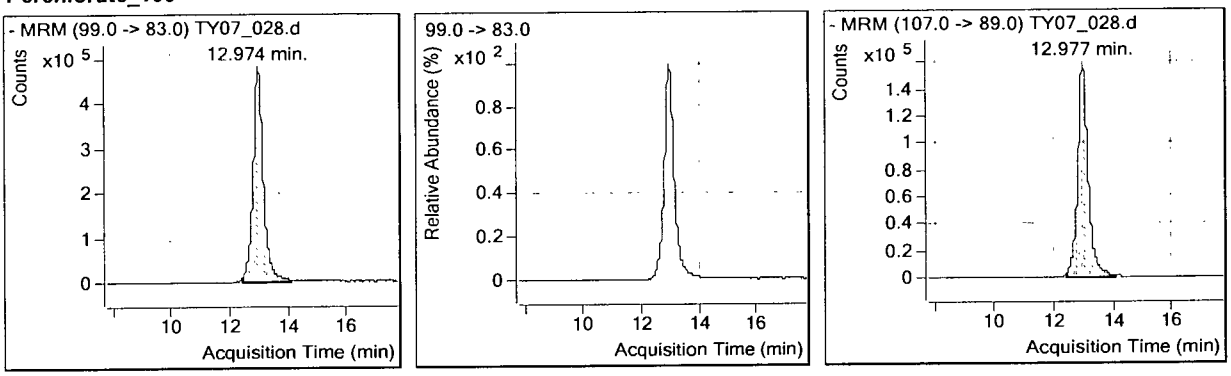
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_028.d	**Sample Name**	AZ24127_W01 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	22:00
ClientID	S67-GW111-2731	**Inj Vol**	20

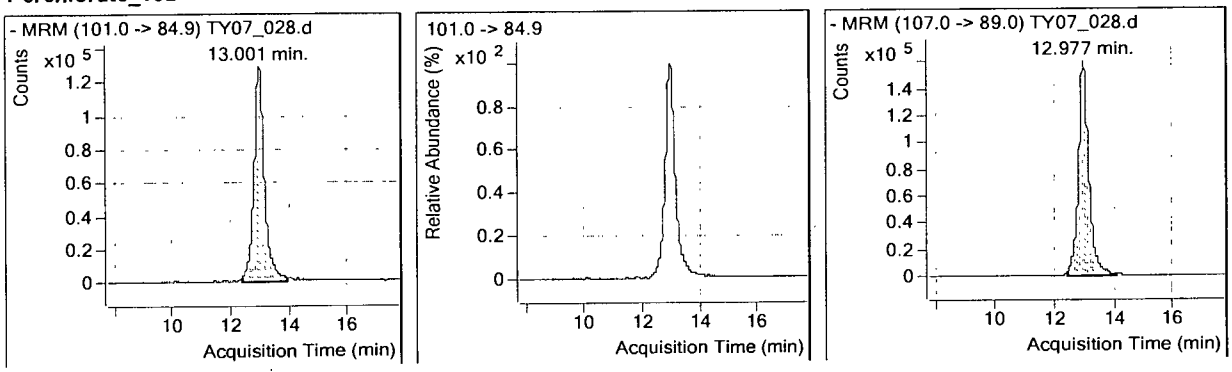


Compound	ISTD	RT	Resp	ISTD RESP
Perchlorate_100	PER_IS_108	12.974	11803067	3893290
Perchlorate_102	PER_IS_108	13.001	3248163	3893290

Perchlorate_100



Perchlorate_102



Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
Norfolk, VA 23502

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S67-GW112-3135
Sample Collection Date: 11/04/15

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 77777
APPL ID: AZ24128
QCG: #6850-151105A-202001

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	12	0.60	0.400	0.200	ug/L	11/05/15	11/06/15

Quant Method:	QTLMFL2
Run #:	TY05_029.d
Instrument:	AGIL_6460
Sequence:	TQ110515
Dilution Factor:	1
Initials:	RP

Printed: 11/24/15 7:32:00 AM
APPL-F1-SC-NoMC-REG MDLs-DOD

Data File ID: TY05_029.d

Date Injected : 11/06/15

Time Injected : 0:29

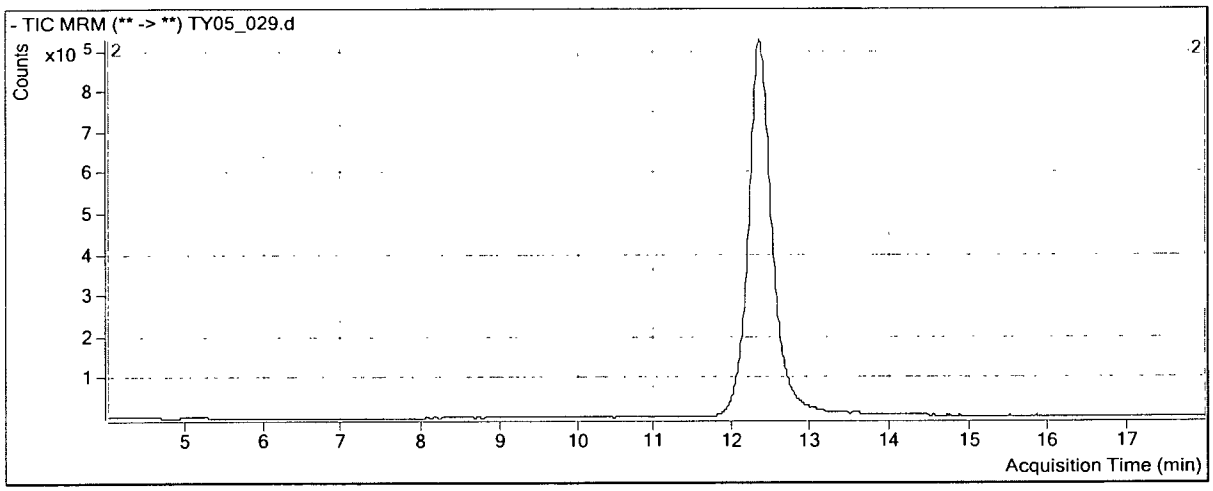
Sample ID : AZ24128_W01 1052.6 DF 11/05/15

Client ID : S67-GW112-3135

Retention Time	Area Count Response	Compound_ID Product Ion	
12.356	4330802	PER_IS_89	
12.363	12512555	Perchlorate_83	(12512555 * 0.0050) / (1.28 * 4330802.00) * 1052.60 = 11.914839 ppb
12.359	3438729	Perchlorate_85	(3438729 * 0.0050) / (0.38 * 4330802.00) * 1052.60 = 11.010720 ppb

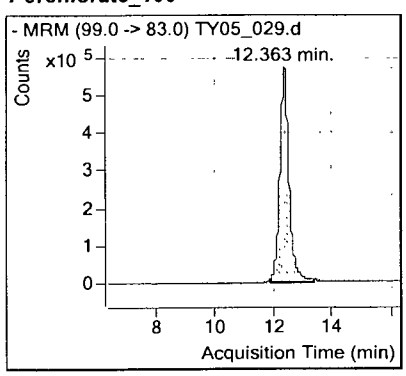
Quantitative Analysis Sample Report

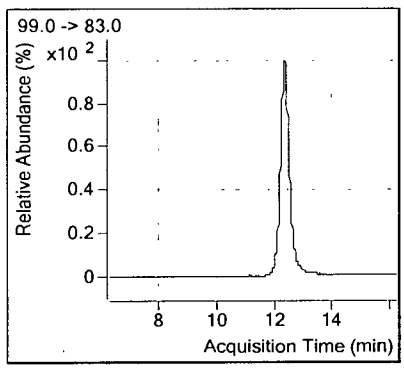
Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_029.d	**Sample Name**	AZ24128_W01 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/06/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	0:29
ClientID	S67-GW112-3135	**Inj Vol**	20

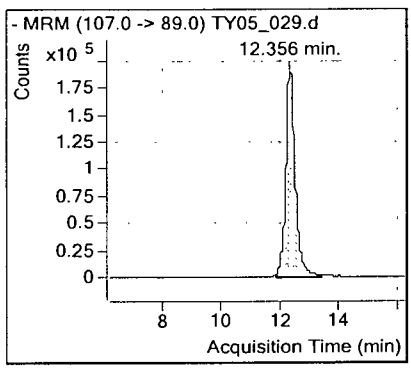


Compound	ISTD	RT	Resp	ISTD RESP
Perchlorate_100	PER_IS_108	12.363	12512555	4330802
Perchlorate_102	PER_IS_108	12.359	3438729	4330802

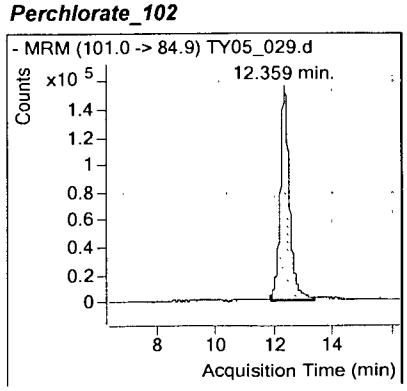
Perchlorate_100

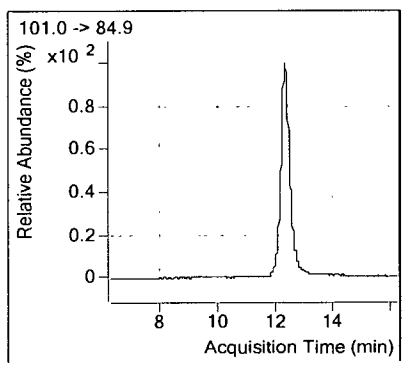


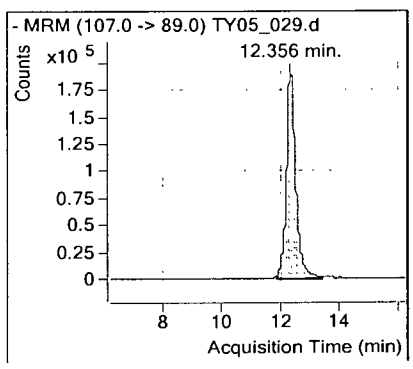




Perchlorate_102







Data File ID: TY07_029.d

Date Injected : 11/07/15

Time Injected : 22:19

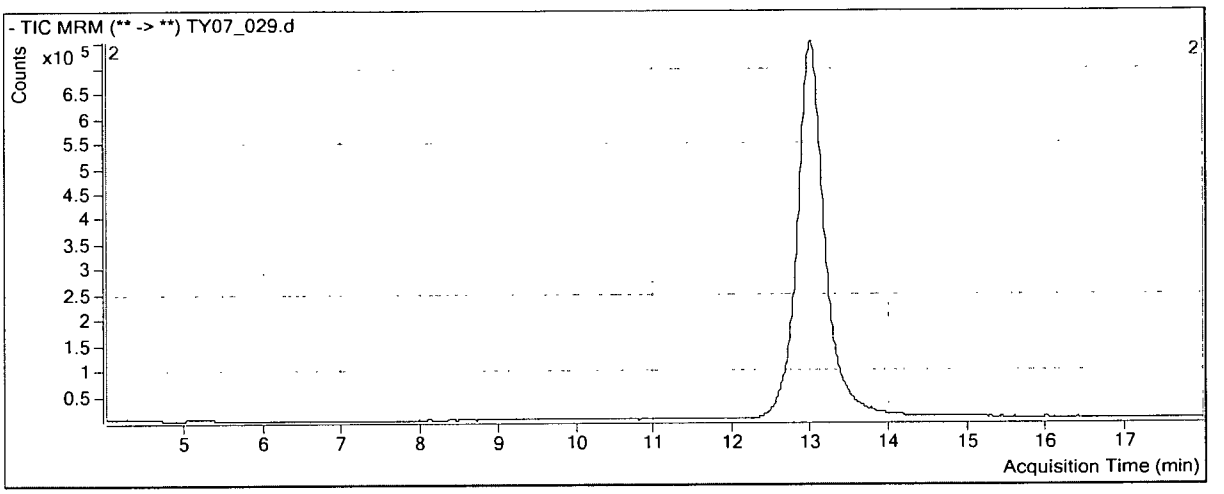
Sample ID : AZ24128_W01 1052.6 DF 11/05/15

Client ID : S67-GW112-3135

Retention Time	Area Count Response	Compound_ID Product Ion	
13.018	4000428	PER_IS_89	
13.035	11447498	Perchlorate_83	(11447498 * 0.0050) / (1.37 * 4000428.00) * 1052.60 = 10.983844 ppb
13.032	3118094	Perchlorate_85	(3118094 * 0.0050) / (0.41 * 4000428.00) * 1052.60 = 9.952432 ppb

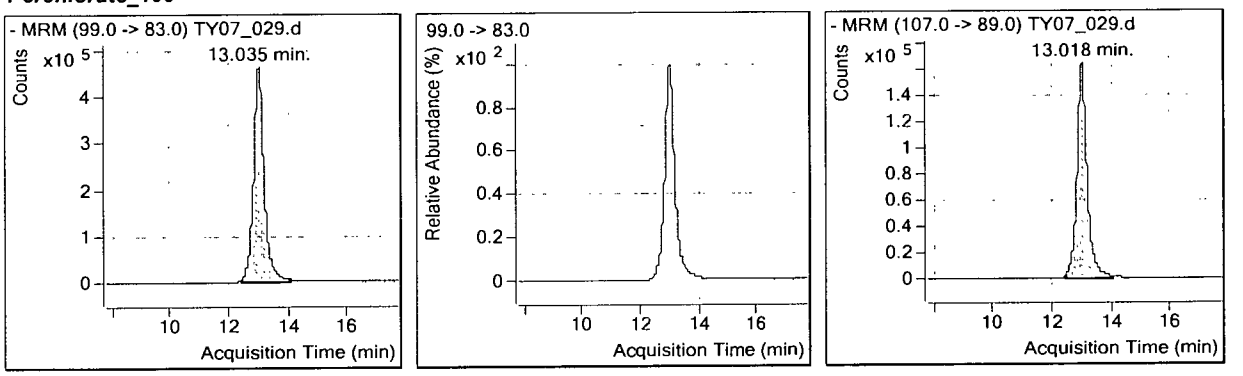
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_029.d	**Sample Name**	AZ24128_W01 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	22:19
ClientID	S67-GW112-3135	**Inj Vol**	20

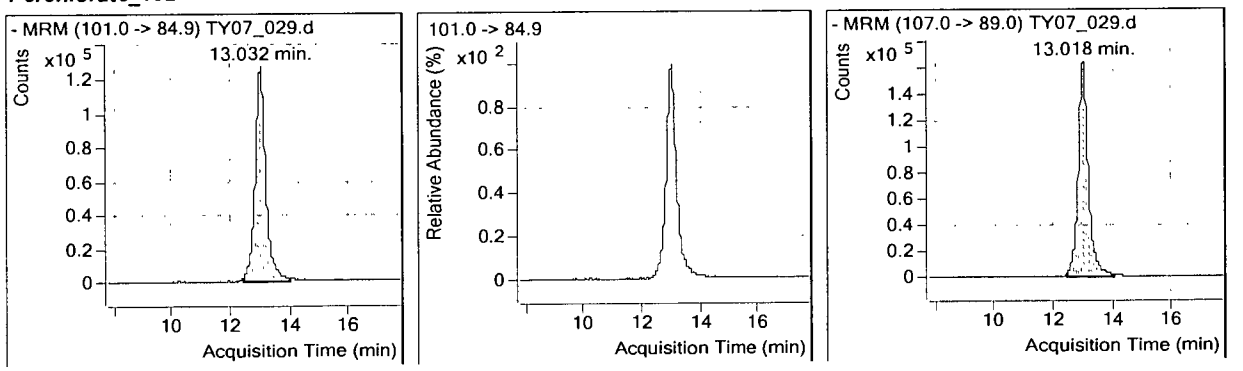


Compound	ISTD	RT	Resp	ISTD RESP
Perchlorate_100	PER_IS_108	13.035	11447498	4000428
Perchlorate_102	PER_IS_108	13.032	3118094	4000428

Perchlorate_100



Perchlorate_102



Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
Norfolk, VA 23502

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S67-GW107-3135
Sample Collection Date: 11/04/15

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 77777
APPL ID: AZ24129
QCG: #6850-151105A-202001

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	0.29 J	0.60	0.400	0.200	ug/L	11/05/15	11/06/15

J = Estimated value.

Quant Method:	QTLMFL2
Run #:	TY05_030.d
Instrument:	AGIL_6460
Sequence:	TQ110515
Dilution Factor:	1
Initials:	RP

Printed: 11/24/15 7:32:00 AM
APPL-F1-SC-NoMC-REG MDLs-DOD

Data File ID: TY05_030.d

Date Injected : 11/06/15

Time Injected : 0:48

Sample ID : AZ24129_W01 1052.6 DF 11/05/15

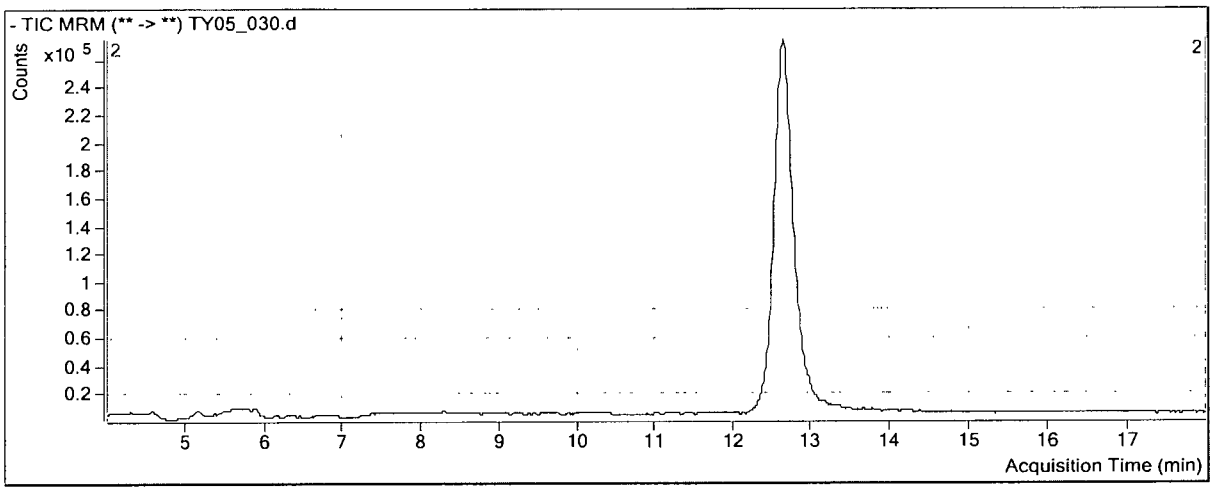
Client ID : S67-GW107-3135

Retention Time		Area Count Response	Compound_ID Product Ion		
12.672		4481941	PER_IS_89		
12.699	*	316032	Perchlorate_83	(316032 * 0.0050) / (1.28 * 4481941.00) * 1052.60 =	0.290787 ppb
12.695	*	109330	Perchlorate_85	(109330 * 0.0050) / (0.38 * 4481941.00) * 1052.60 =	0.338267 ppb

* MANUAL INTEGRAION

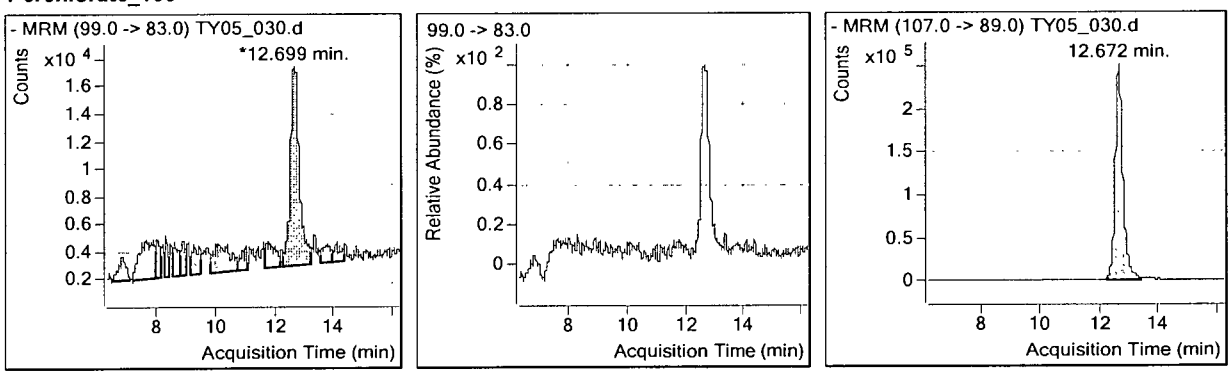
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_030.d	**Sample Name**	AZ24129_W01 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/06/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	0:48
ClientID	S67-GW107-3135	**Inj Vol**	20

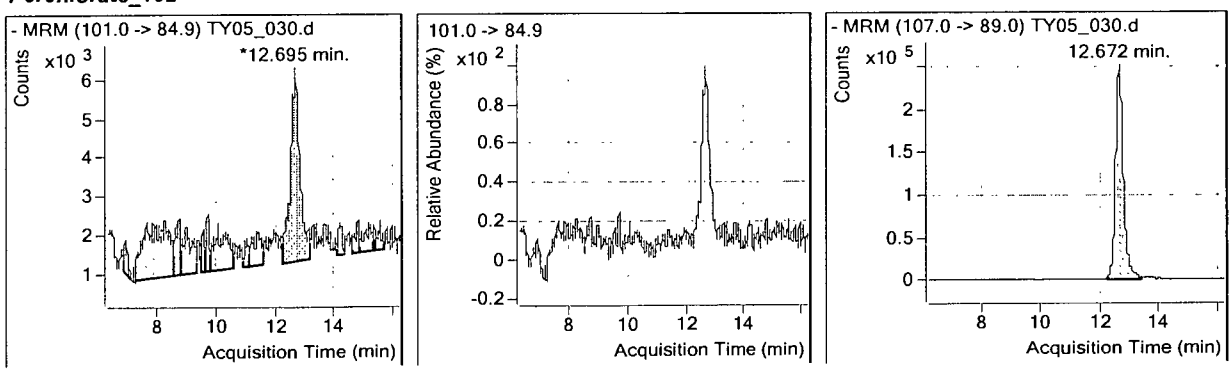


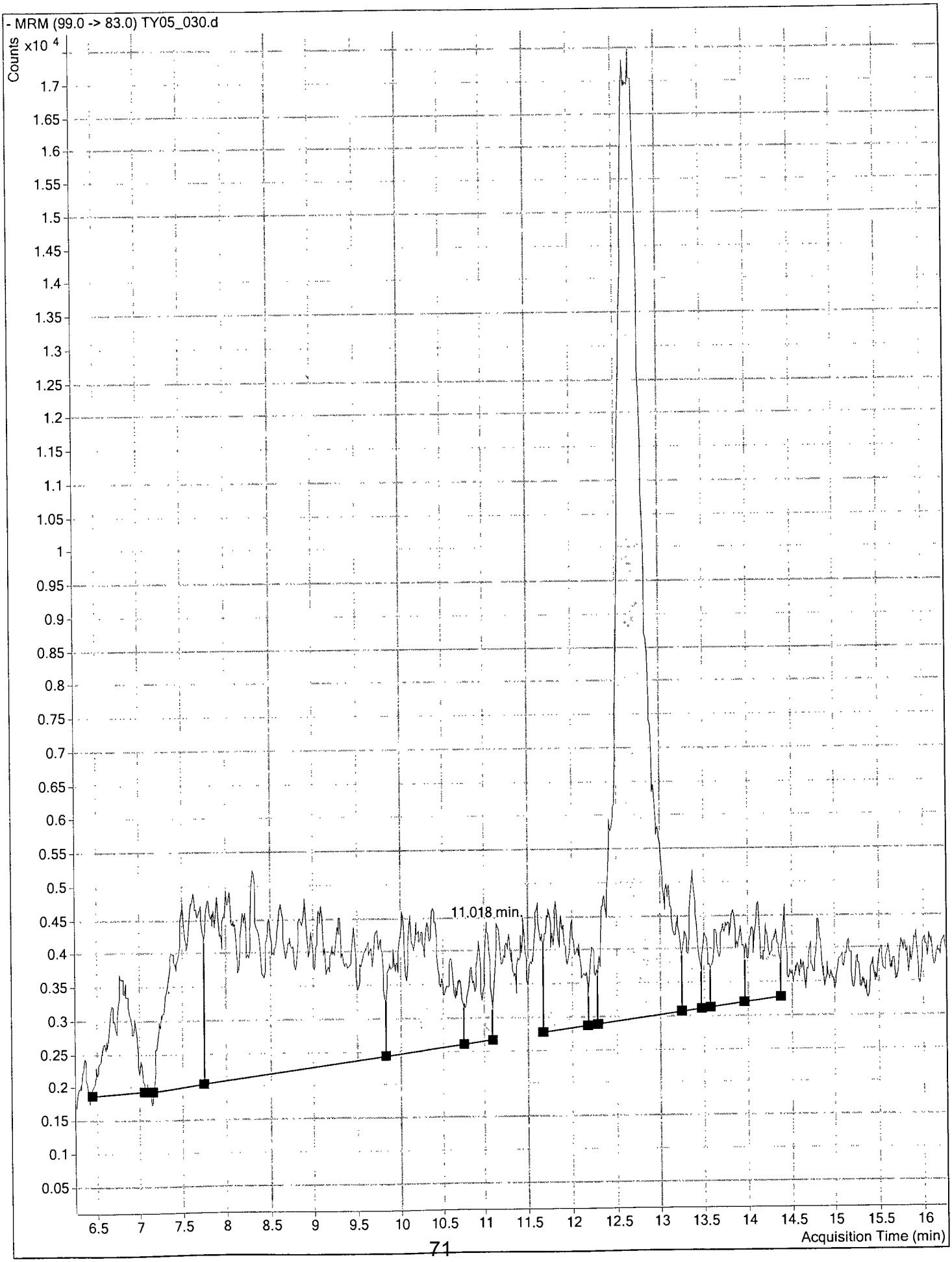
Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108	*	12.699	316032	4481941	* MANUAL INT
Perchlorate_102	PER_IS_108	*	12.695	109330	4481941	* MANUAL INT

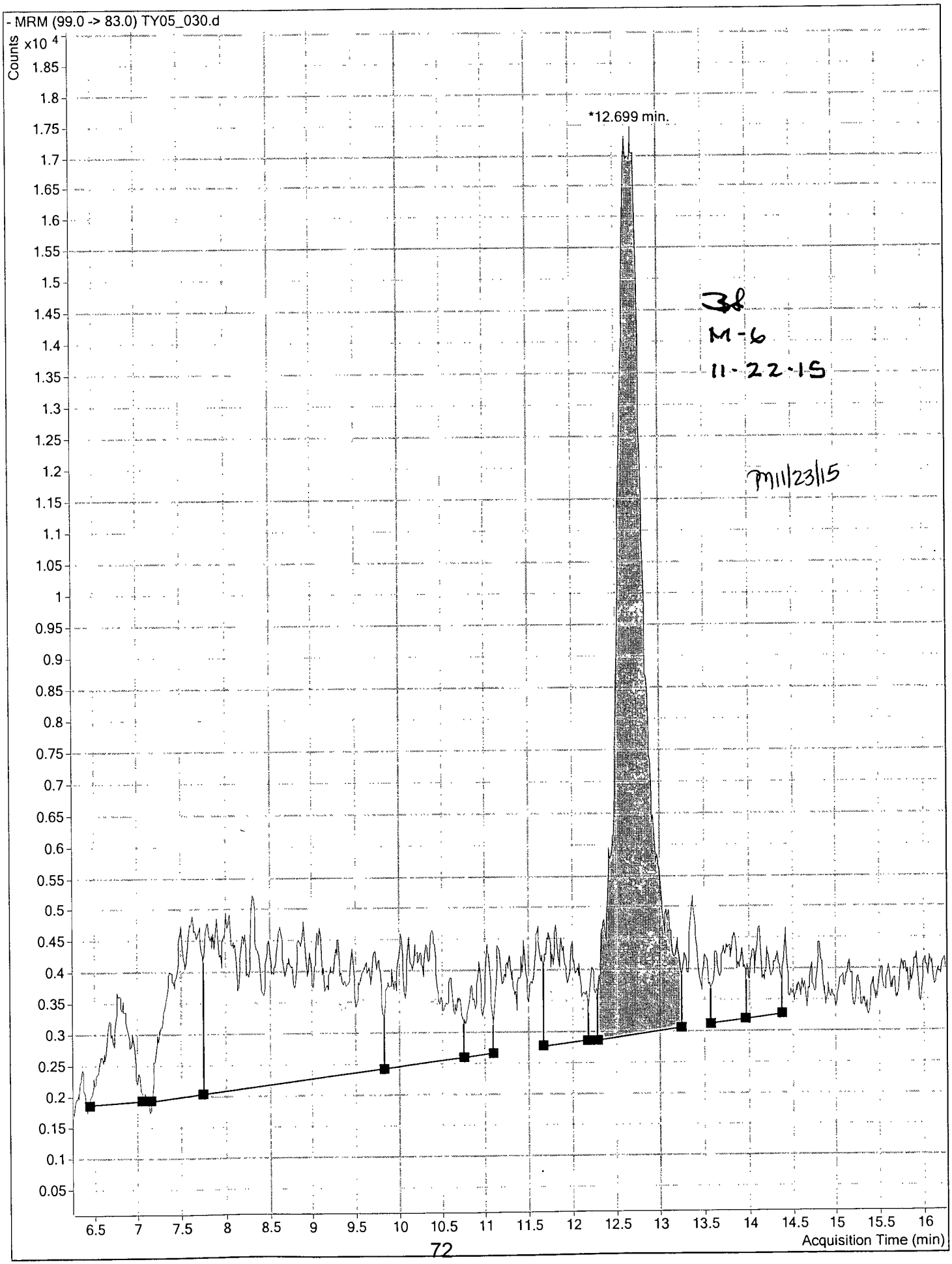
Perchlorate_100

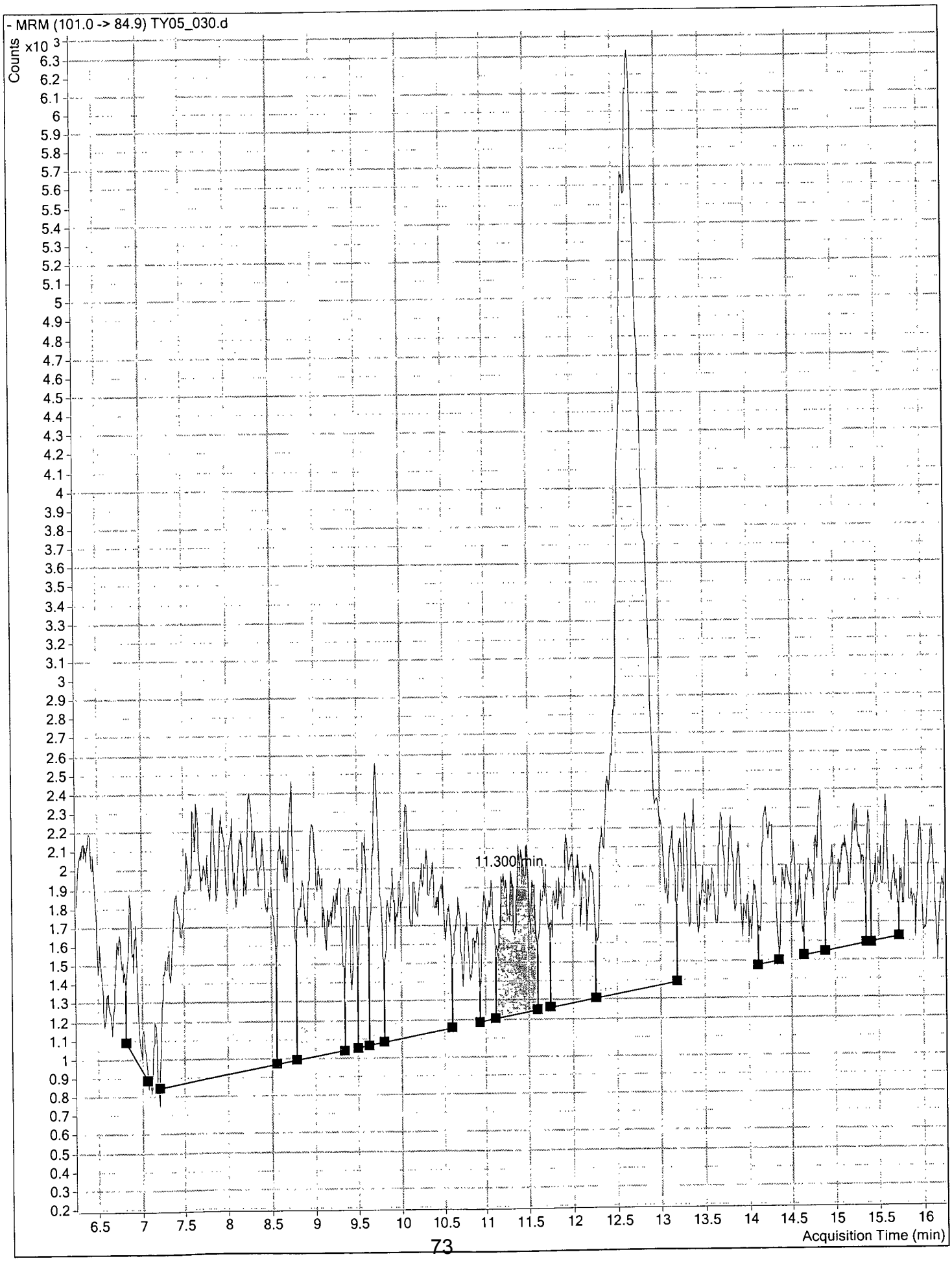


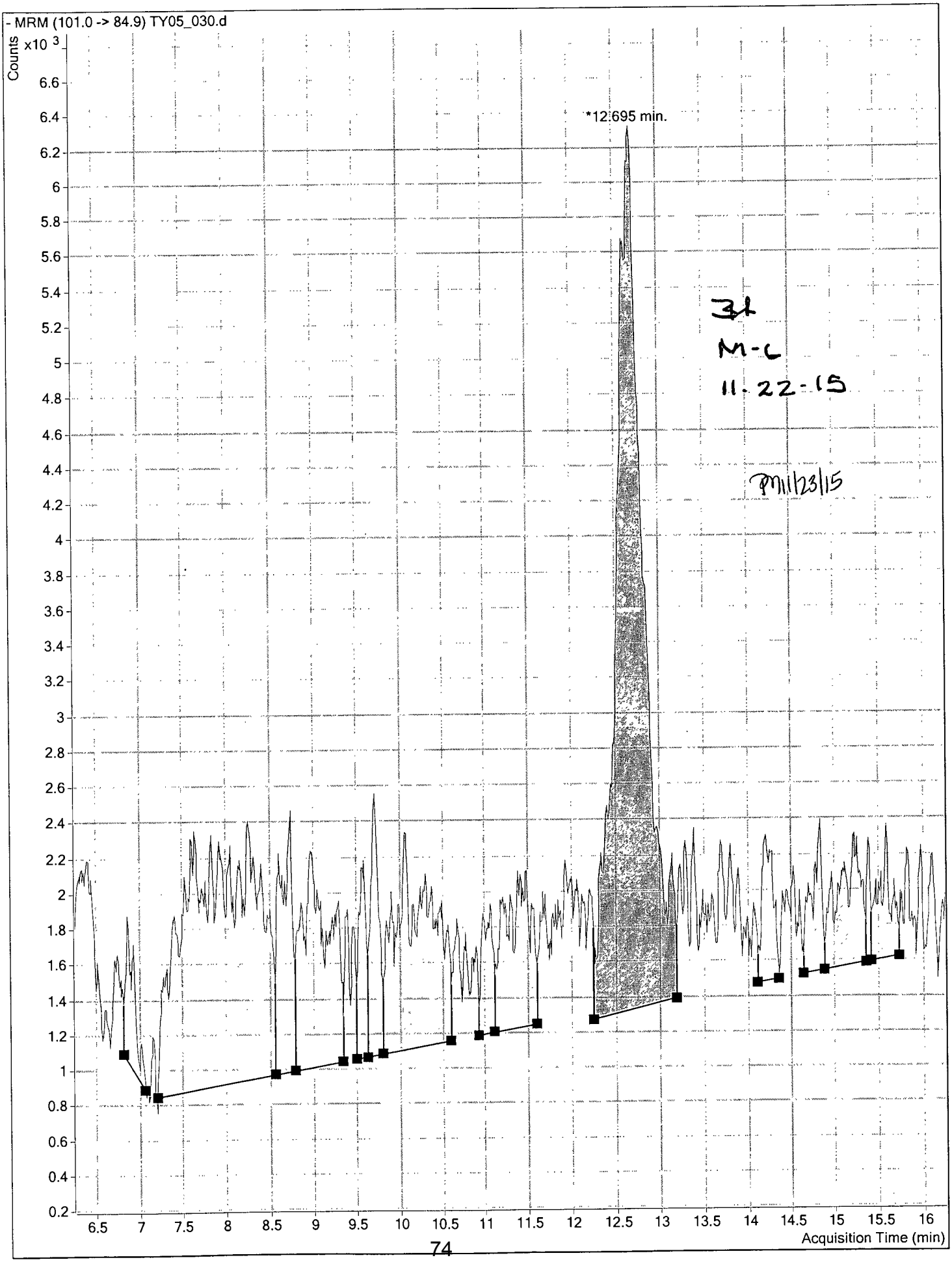
Perchlorate_102




- MRM (99.0 -> 83.0) TY05_030.d
Counts
x10 4
1.7
1.65
1.6
1.55
1.5
1.45
1.4
1.35
1.3
1.25
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
11.018 min
6.5
7
7.5
8
8.5
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
Acquisition Time (min)


- MRM (99.0 -> 83.0) TY05_030.d
Counts
x10 4
*12.699 min.
38
M-6
11-22-15
JM11/23/15
Acquisition Time (min)


- MRM (101.0 -> 84.9) TY05_030.d
Counts
x10 3
11.300 min.
Acquisition Time (min)



3d
M-C
11.22-15

PM 11/23/15

Data File ID: TY07_030.d

Date Injected : 11/07/15

Time Injected : 22:37

Sample ID : AZ24129_W01 1052.6 DF 11/05/15

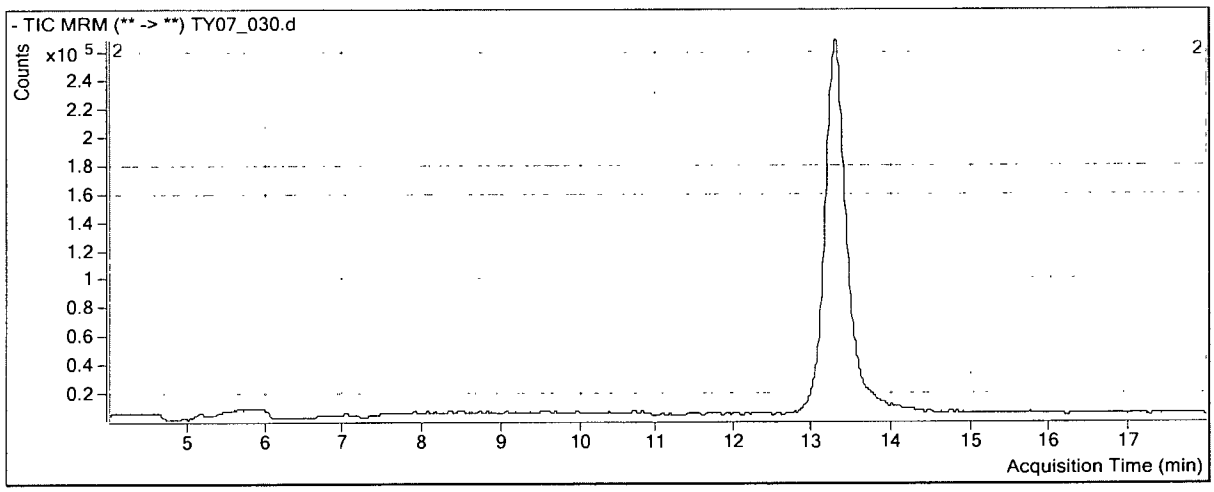
Client ID : S67-GW107-3135

Retention Time		Area Count Response	Compound_ID Product Ion	
13.314		4756957	PER_IS_89	
13.331		306714	Perchlorate_83	(306714 * 0.0050) / (1.37 * 4756957.00) * 1052.60 = 0.247488 ppb
13.348	*	90960	Perchlorate_85	(90960 * 0.0050) / (0.41 * 4756957.00) * 1052.60 = 0.244156 ppb

* MANUAL INTEGRAION

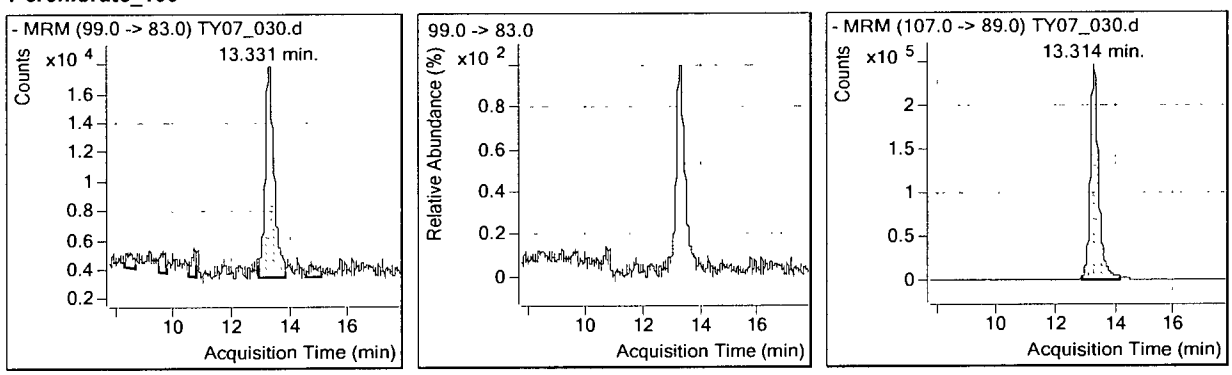
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_030.d	**Sample Name**	AZ24129_W01 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	22:37
ClientID	S67-GW107-3135	**Inj Vol**	20

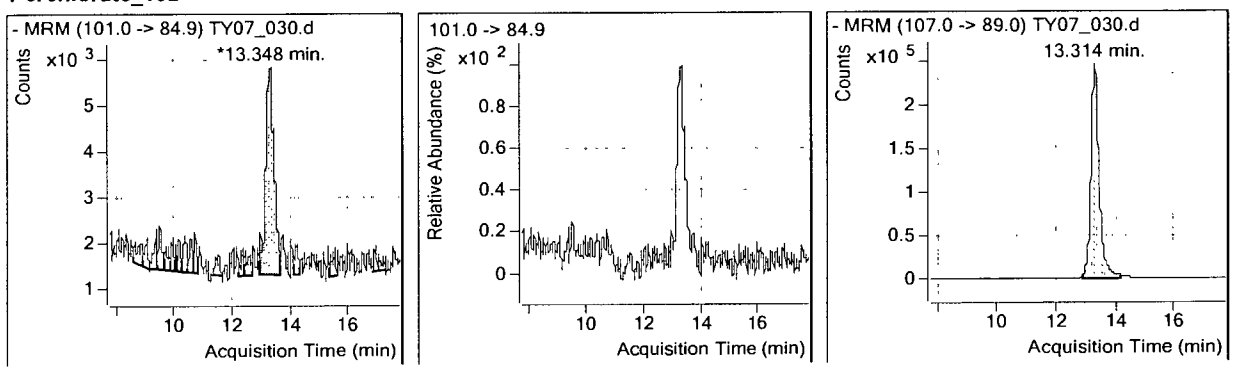


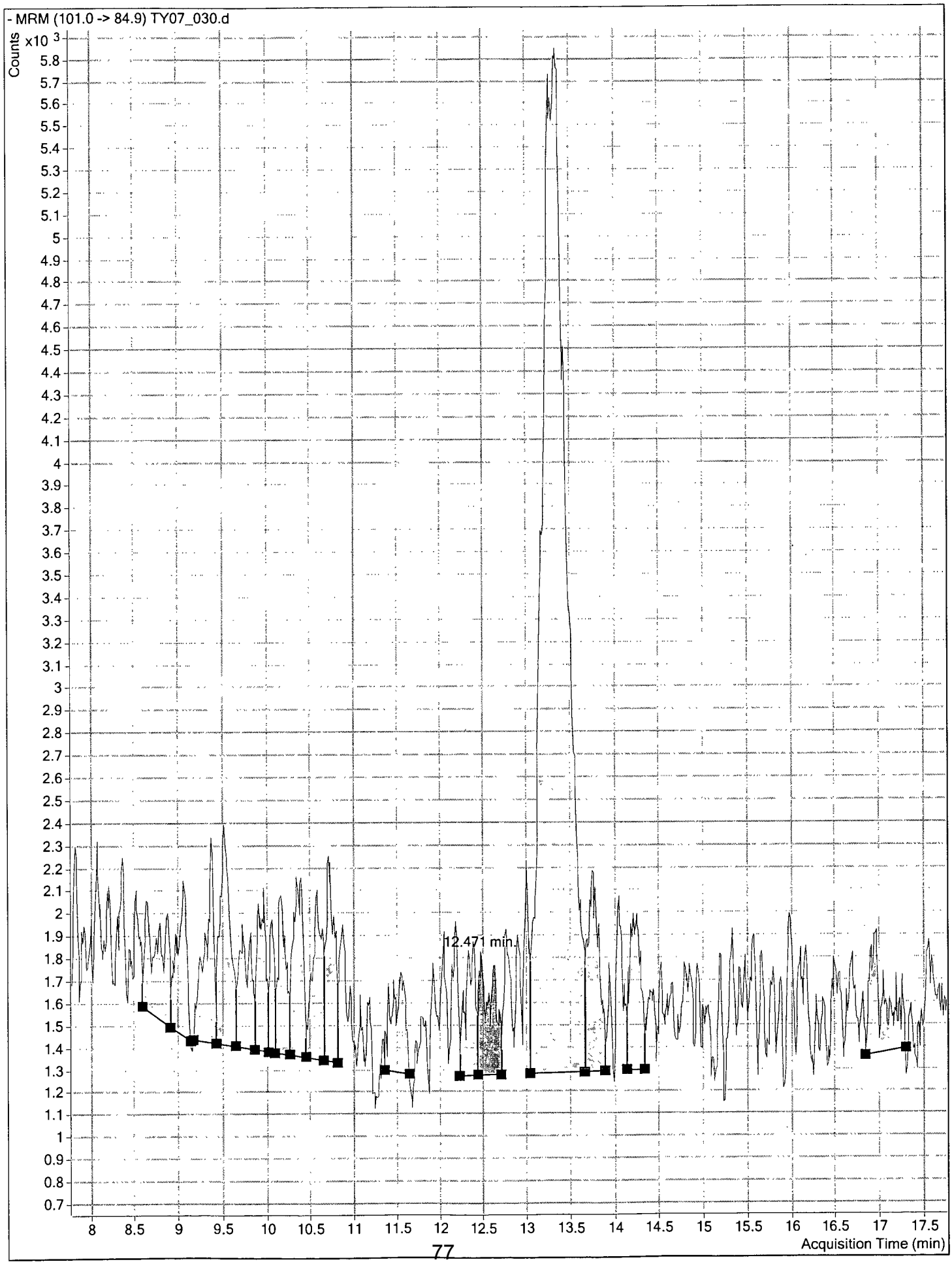
Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108		13.331	306714	4756957	
Perchlorate_102	PER_IS_108	*	13.348	90960	4756957	* MANUAL INT

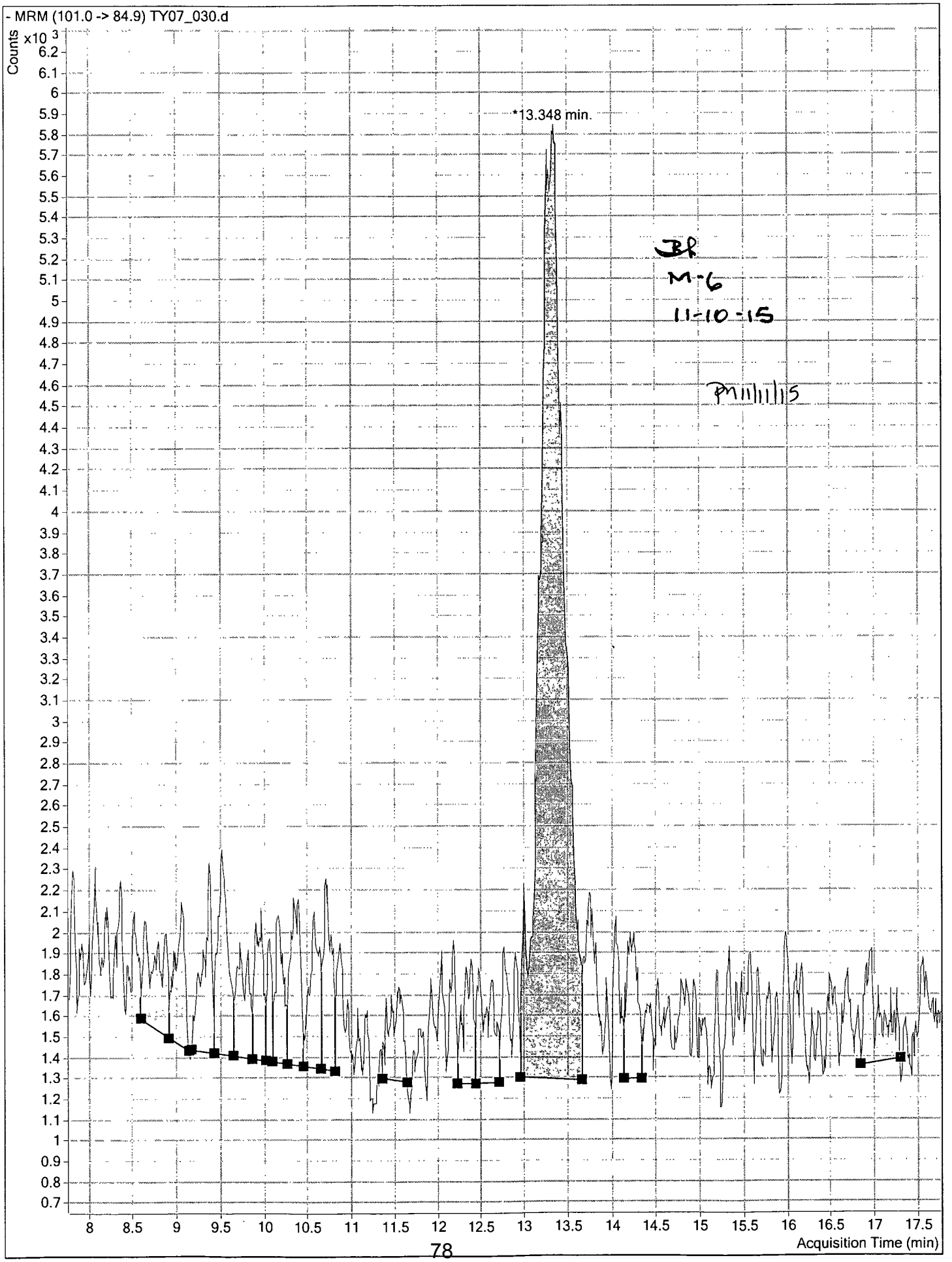
Perchlorate_100



Perchlorate_102




- MRM (101.0 -> 84.9) TY07_030.d
Counts
x10 3
5.8
5.7
5.6
5.5
5.4
5.3
5.2
5.1
5
4.9
4.8
4.7
4.6
4.5
4.4
4.3
4.2
4.1
4
3.9
3.8
3.7
3.6
3.5
3.4
3.3
3.2
3.1
3
2.9
2.8
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
12.471 min
8
8.5
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
16.5
17
17.5
Acquisition Time (min)


- MRM (101.0 -> 84.9) TY07_030.d
Counts
x10 3
*13.348 min.
BP
M-6
11-10-15
Acquisition Time (min)

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
Norfolk, VA 23502

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S67-GW108-3135
Sample Collection Date: 11/04/15

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 77777
APPL ID: AZ24130
QCG: #6850-151105A-202001

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	0.27 J	0.60	0.400	0.200	ug/L	11/05/15	11/06/15

J = Estimated value.

Quant Method:	QTLMFL2
Run #:	TY05_031.d
Instrument:	AGIL_6460
Sequence:	TQ110515
Dilution Factor:	1
Initials:	RP

Printed: 11/24/15 7:32:00 AM
APPL-F1-SC-NoMC-REG MDLs-DOD

Data File ID: TY05_031.d

Date Injected : 11/06/15

Time Injected : 1:07

Sample ID : AZ24130_W01 1052.6 DF 11/05/15

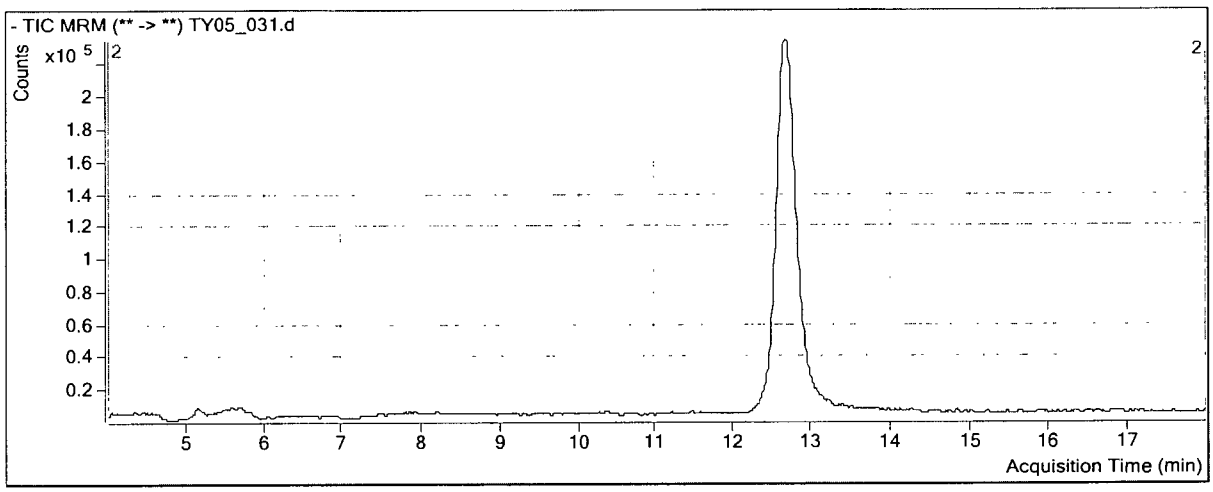
Client ID : S67-GW108-3135

Retention Time		Area Count Response	Compound_ID Product Ion		
12.702		4032138	PER_IS_89		
12.689	*	266379	Perchlorate_83	(266379 * 0.0050) / (1.28 * 4032138.00) * 1052.60 =	0.272443 ppb
12.757	*	81617	Perchlorate_85	(81617 * 0.0050) / (0.38 * 4032138.00) * 1052.60 =	0.280693 ppb

* MANUAL INTEGRAION

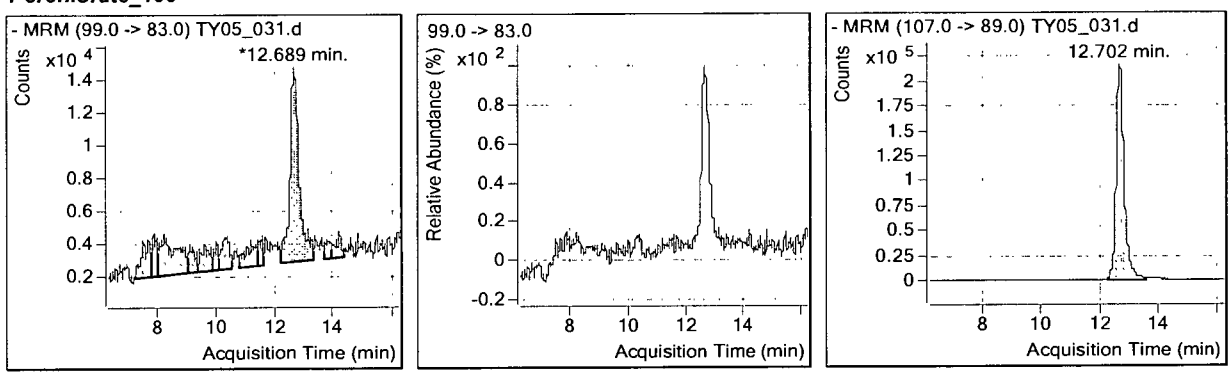
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_031.d	**Sample Name**	AZ24130_W01 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/06/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	1:07
ClientID	S67-GW108-3135	**Inj Vol**	20

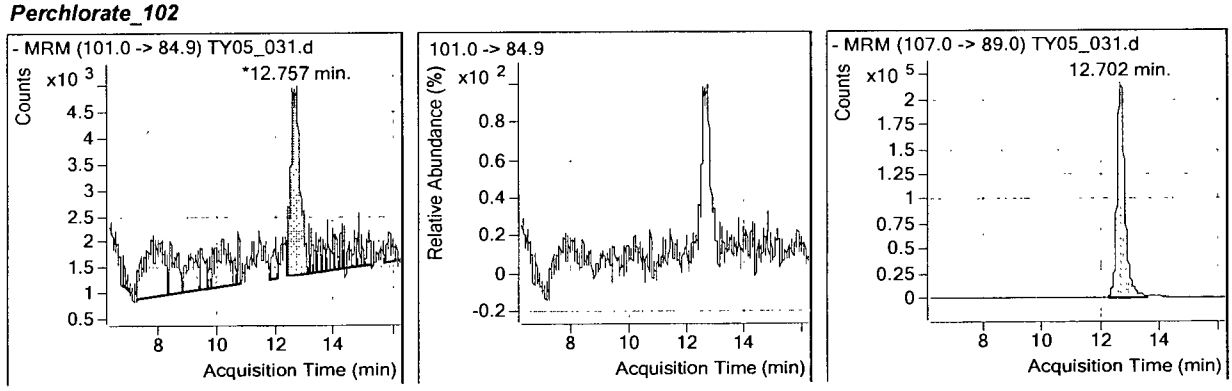


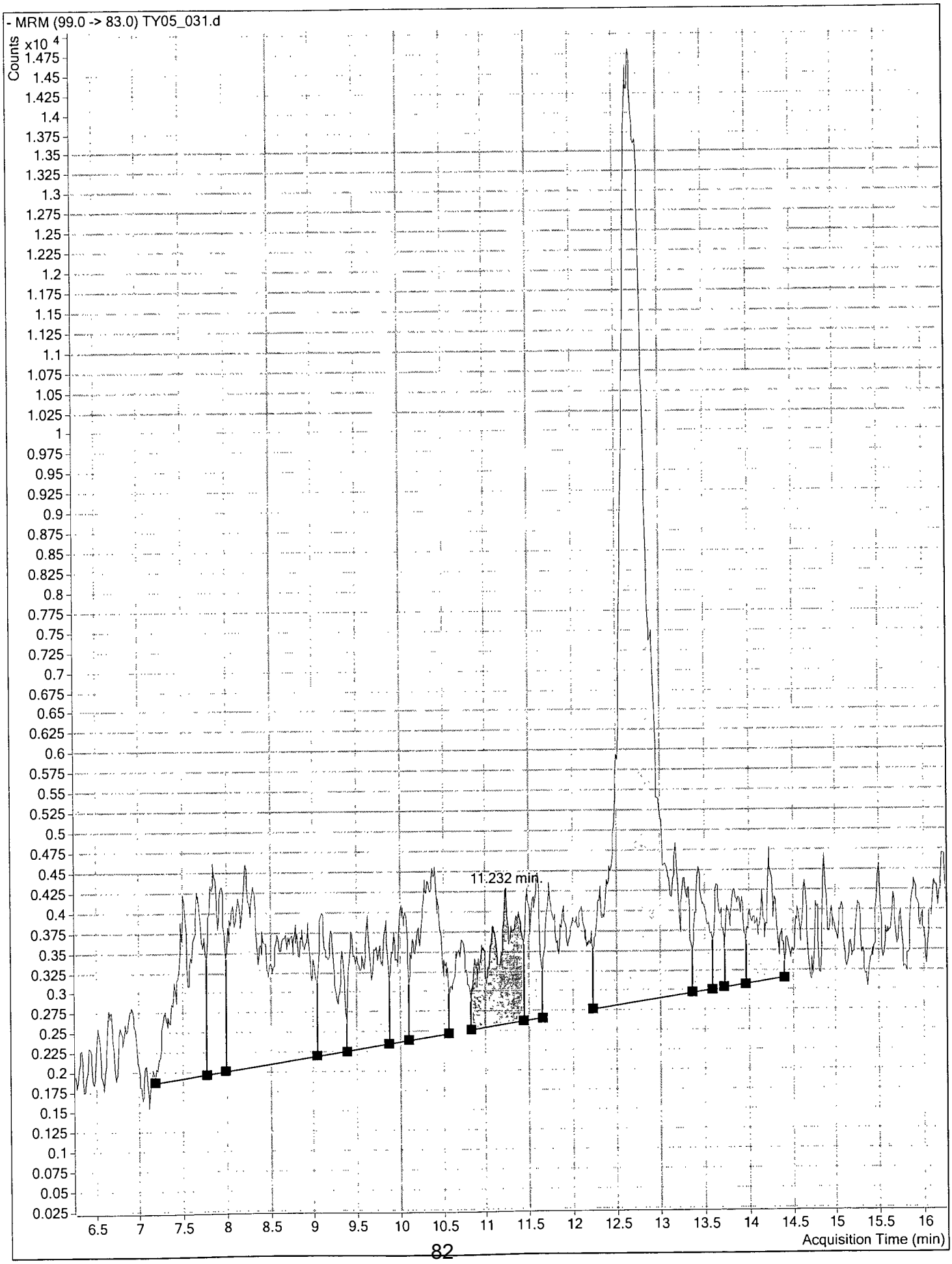
Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108	*	12.689	266379	4032138	* MANUAL INT
Perchlorate_102	PER_IS_108	*	12.757	81617	4032138	* MANUAL INT

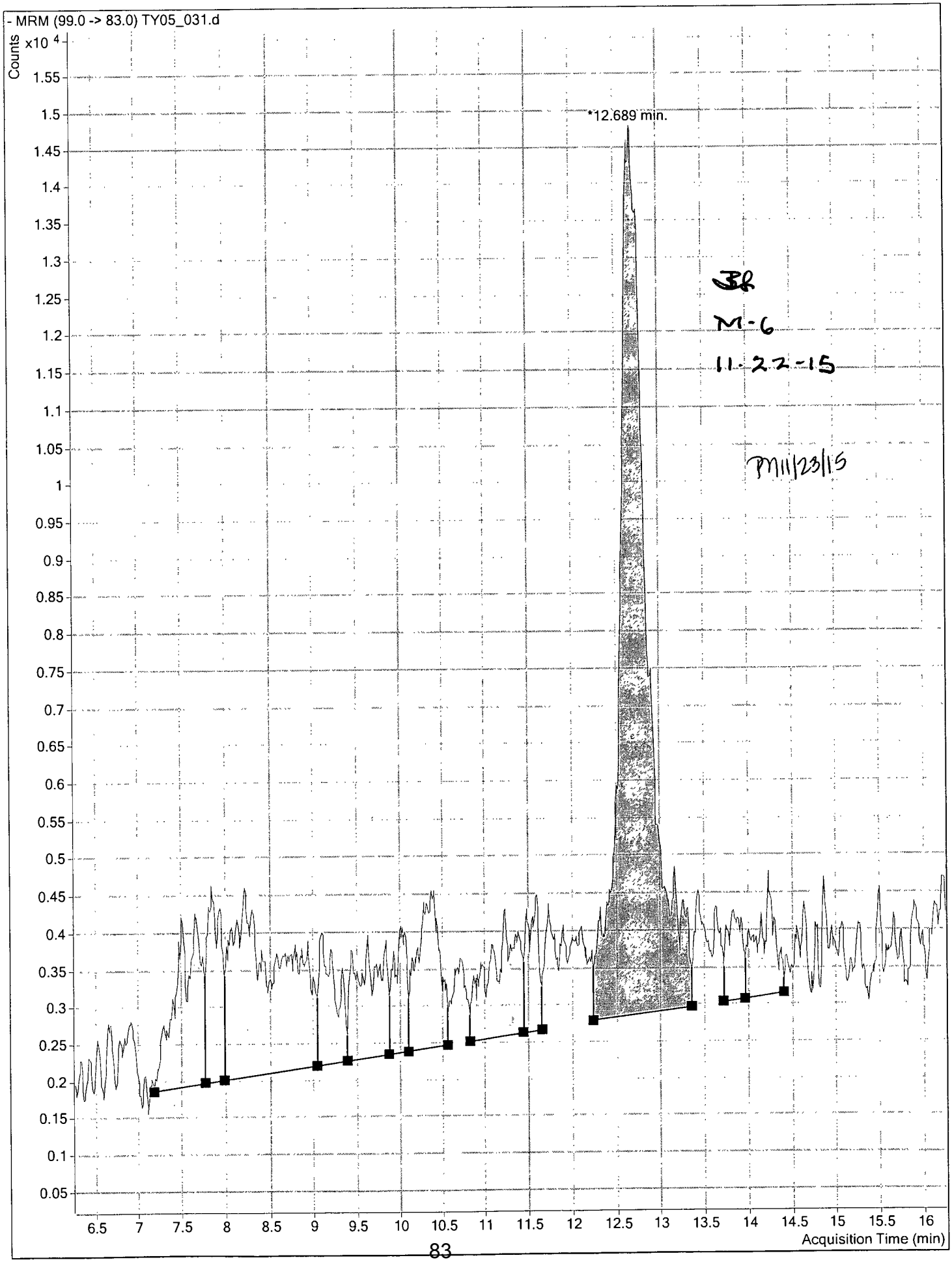
Perchlorate_100

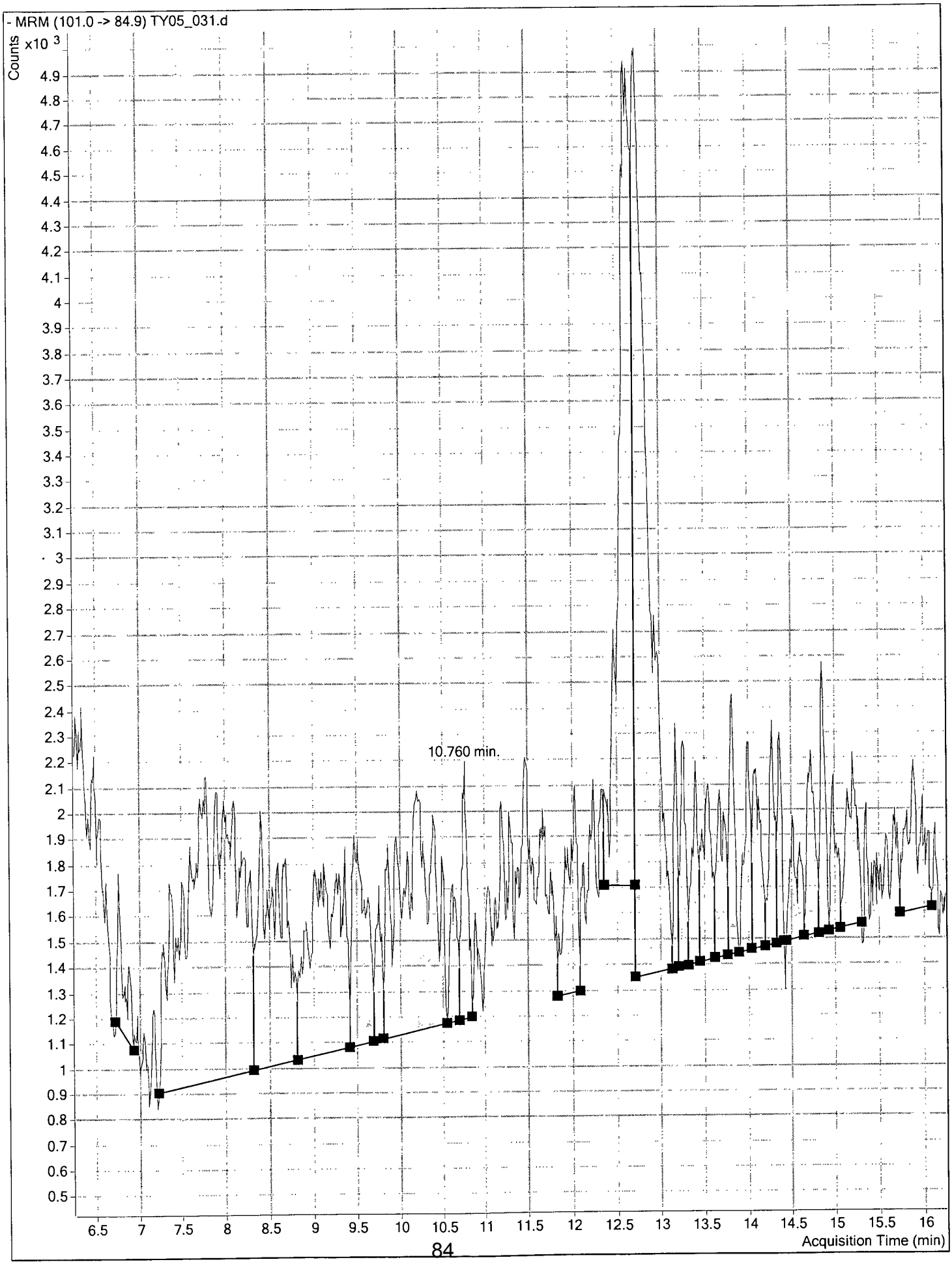


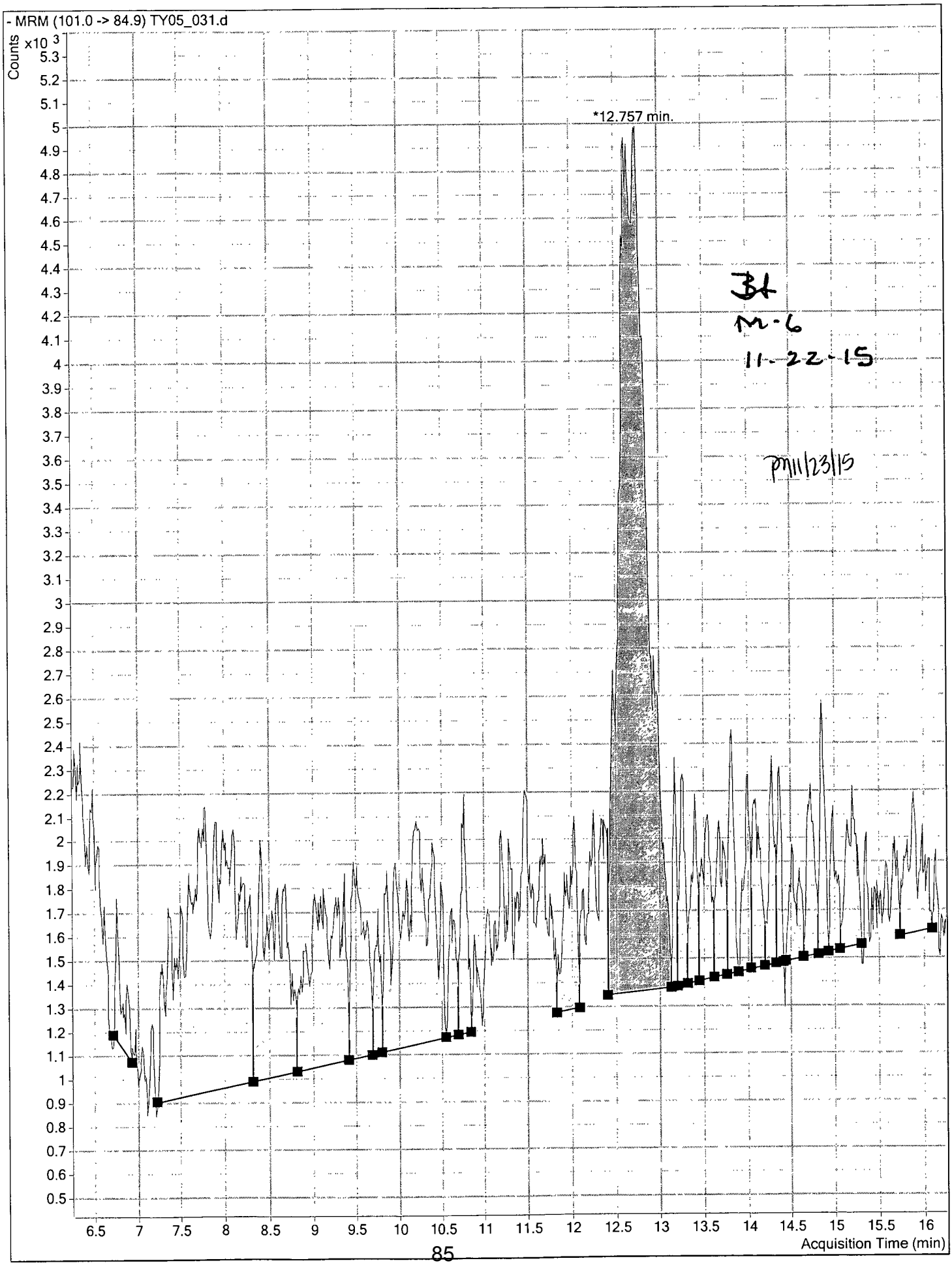
Perchlorate_102




- MRM (99.0 -> 83.0) TY05_031.d
Counts
x10 4
1.475
1.45
1.425
1.4
1.375
1.35
1.325
1.3
1.275
1.25
1.225
1.2
1.175
1.15
1.125
1.1
1.075
1.05
1.025
1
0.975
0.95
0.925
0.9
0.875
0.85
0.825
0.8
0.775
0.75
0.725
0.7
0.675
0.65
0.625
0.6
0.575
0.55
0.525
0.5
0.475
0.45
0.425
0.4
0.375
0.35
0.325
0.3
0.275
0.25
0.225
0.2
0.175
0.15
0.125
0.1
0.075
0.05
0.025
11.232 min
6.5
7
7.5
8
8.5
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
Acquisition Time (min)


- MRM (99.0 -> 83.0) TY05_031.d
Counts
x10 4
*12.689 min.
3R
M-6
11-22-15
PM 11/23/15
Acquisition Time (min)


- MRM (101.0 -> 84.9) TY05_031.d
Counts
x10 3
4.9
4.8
4.7
4.6
4.5
4.4
4.3
4.2
4.1
4
3.9
3.8
3.7
3.6
3.5
3.4
3.3
3.2
3.1
3
2.9
2.8
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
10.760 min.
6.5
7
7.5
8
8.5
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
Acquisition Time (min)


- MRM (101.0 -> 84.9) TY05_031.d
Counts
x10 3
*12.757 min.
Acquisition Time (min)
3A
M-6
11-22-15
PM 11/23/15

Data File ID: TY07_031.d

Date Injected : 11/07/15

Time Injected : 22:56

Sample ID : AZ24130_W01 1052.6 DF 11/05/15

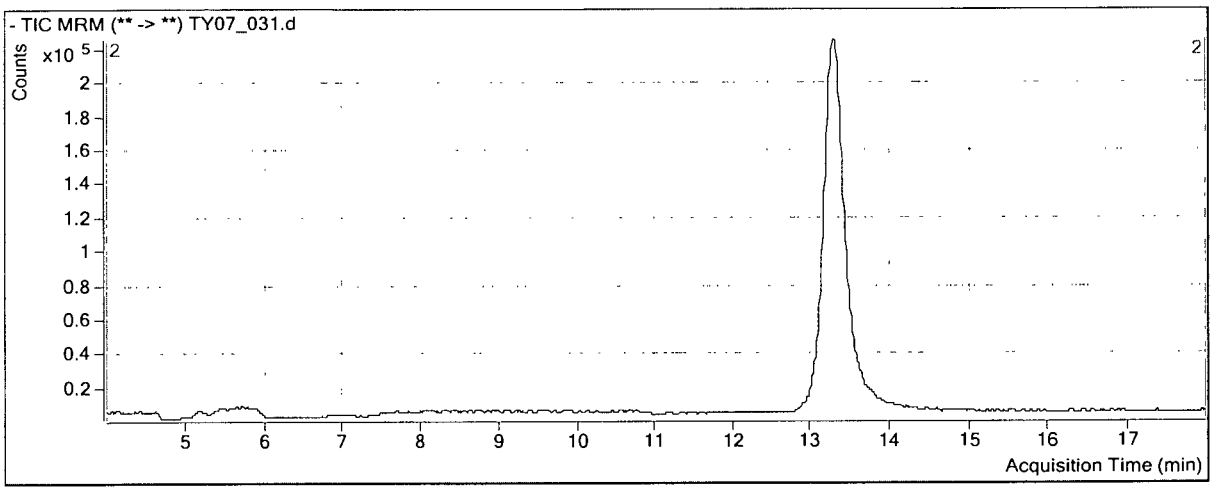
Client ID : S67-GW108-3135

Retention Time		Area Count Response	Compound_ID Product Ion	
13.314		4110100	PER_IS_89	
13.341	*	276808	Perchlorate_83	(276808 * 0.0050) / (1.37 * 4110100.00) * 1052.60 = 0.258509 ppb
13.276	*	73567	Perchlorate_85	(73567 * 0.0050) / (0.41 * 4110100.00) * 1052.60 = 0.228548 ppb

* MANUAL INTEGRAION

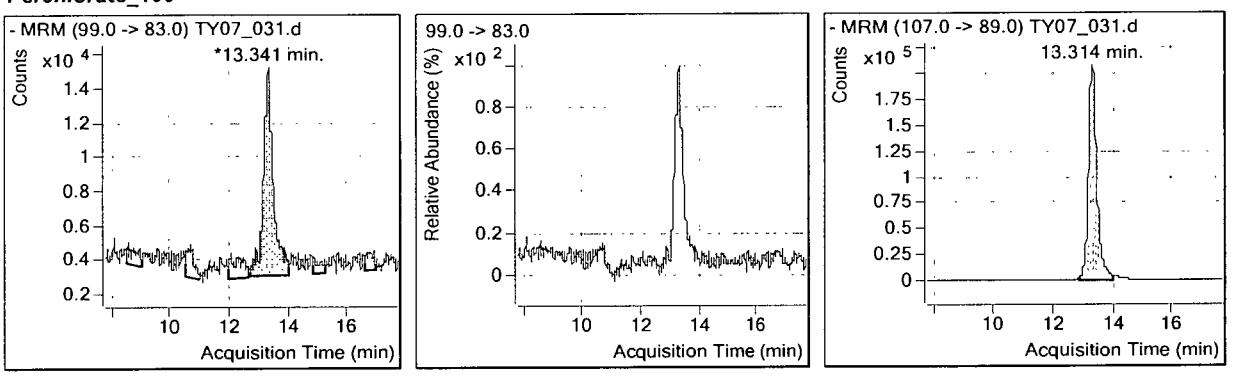
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_031.d	**Sample Name**	AZ24130_W01 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	22:56
ClientID	S67-GW108-3135	**Inj Vol**	20

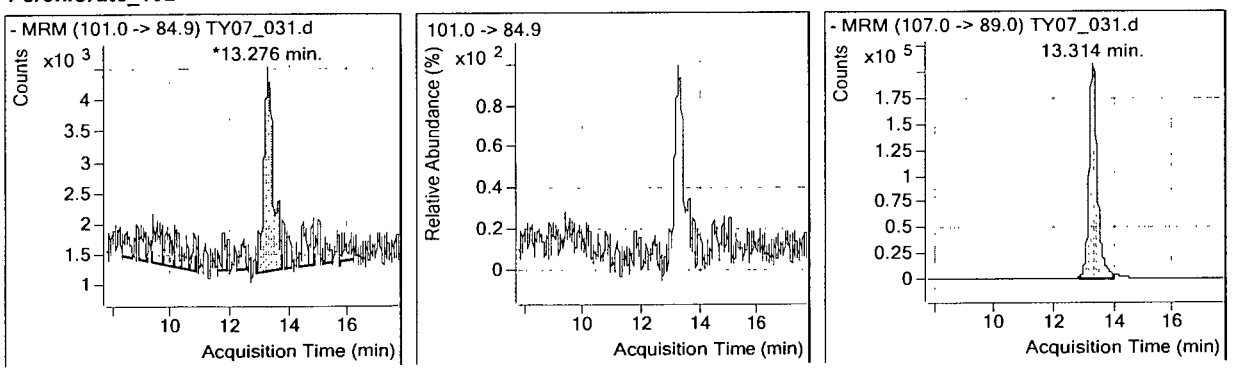


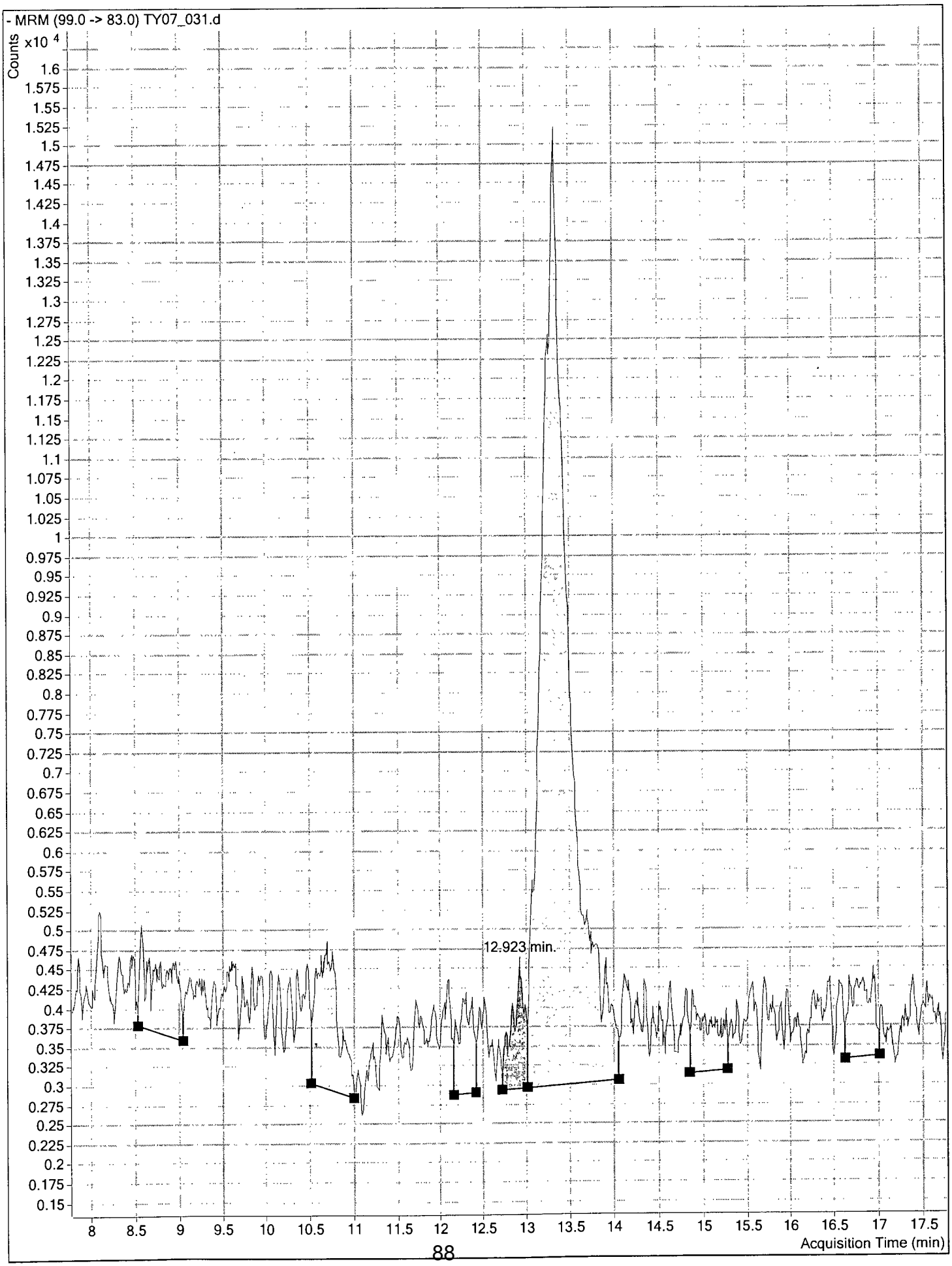
Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108	*	13.341	276808	4110100	* MANUAL INT
Perchlorate_102	PER_IS_108	*	13.276	73567	4110100	* MANUAL INT

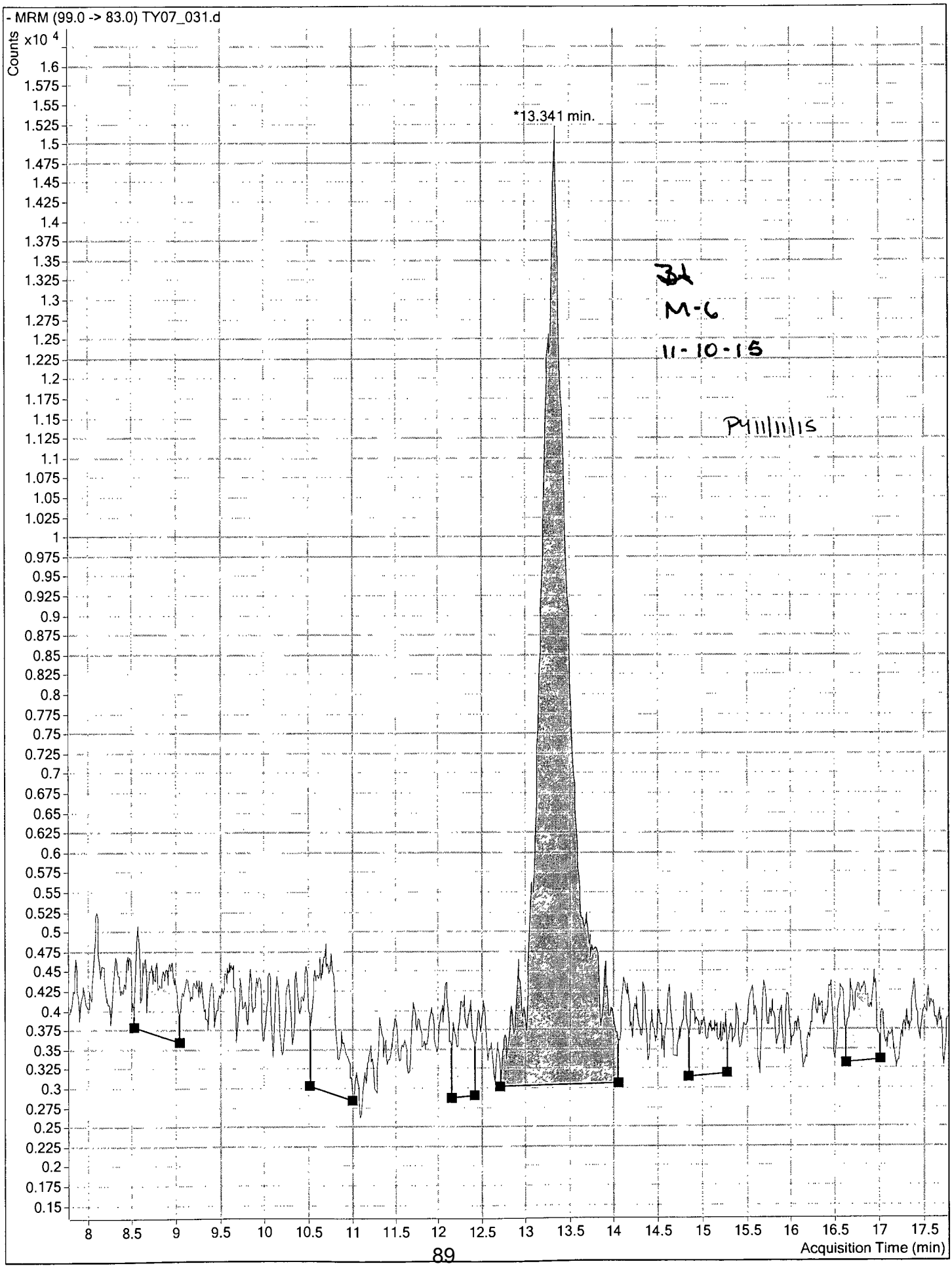
Perchlorate_100

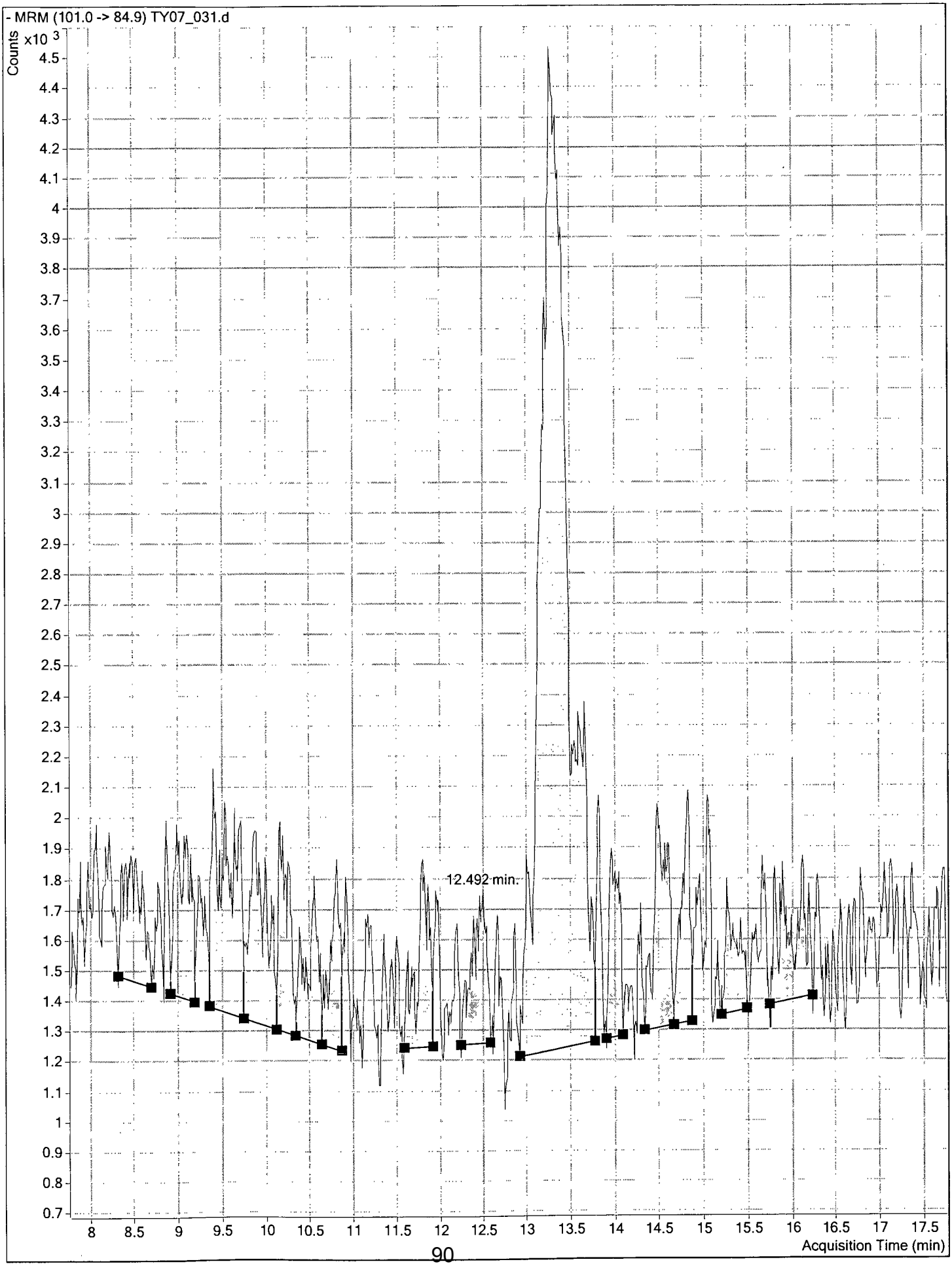


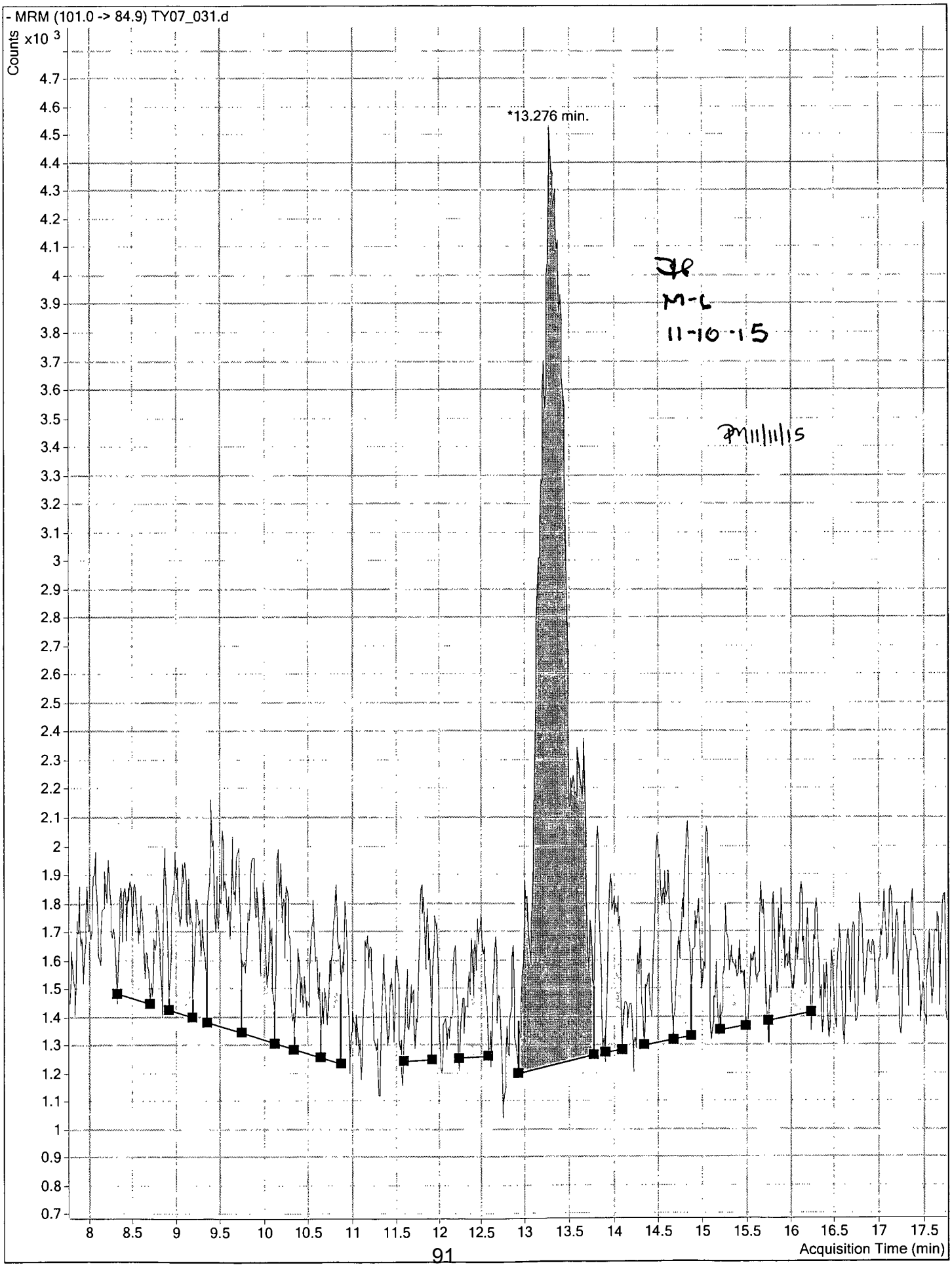
Perchlorate_102




- MRM (99.0 -> 83.0) TY07_031.d
Counts
x10 4
1.6
1.575
1.55
1.525
1.5
1.475
1.45
1.425
1.4
1.375
1.35
1.325
1.3
1.275
1.25
1.225
1.2
1.175
1.15
1.125
1.1
1.075
1.05
1.025
1
0.975
0.95
0.925
0.9
0.875
0.85
0.825
0.8
0.775
0.75
0.725
0.7
0.675
0.65
0.625
0.6
0.575
0.55
0.525
0.5
0.475
0.45
0.425
0.4
0.375
0.35
0.325
0.3
0.275
0.25
0.225
0.2
0.175
0.15
12.923 min.
8
8.5
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
16.5
17
17.5
Acquisition Time (min)


- MRM (99.0 -> 83.0) TY07_031.d
Counts
x10 4
*13.341 min.
3d
M-6
11-10-15
Phillips
Acquisition Time (min)


- MRM (101.0 -> 84.9) TY07_031.d
Counts
x10 3
4.5
4.4
4.3
4.2
4.1
4
3.9
3.8
3.7
3.6
3.5
3.4
3.3
3.2
3.1
3
2.9
2.8
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
12.492 min
8
8.5
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
16.5
17
17.5
Acquisition Time (min)


- MRM (101.0 -> 84.9) TY07_031.d
Counts
x10 3
*13.276 min.
JR
M-L
11-10-15
Acquisition Time (min)

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
Norfolk, VA 23502

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S67-GW106-2832
Sample Collection Date: 11/04/15

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 77777
APPL ID: AZ24131
QCG: #6850-151105A-202001

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	1.7	0.60	0.400	0.200	ug/L	11/05/15	11/06/15

Quant Method:	QTLMFL2
Run #:	TY05_032.d
Instrument:	AGIL_6460
Sequence:	TQ110515
Dilution Factor:	1
Initials:	RP

Printed: 11/24/15 7:32:00 AM
APPL-F1-SC-NoMC-REG MDLs-DOD

Data File ID: TY05_032.d

Date Injected : 11/06/15

Time Injected : 1:25

Sample ID : AZ24131_W01 1052.6 DF 11/05/15

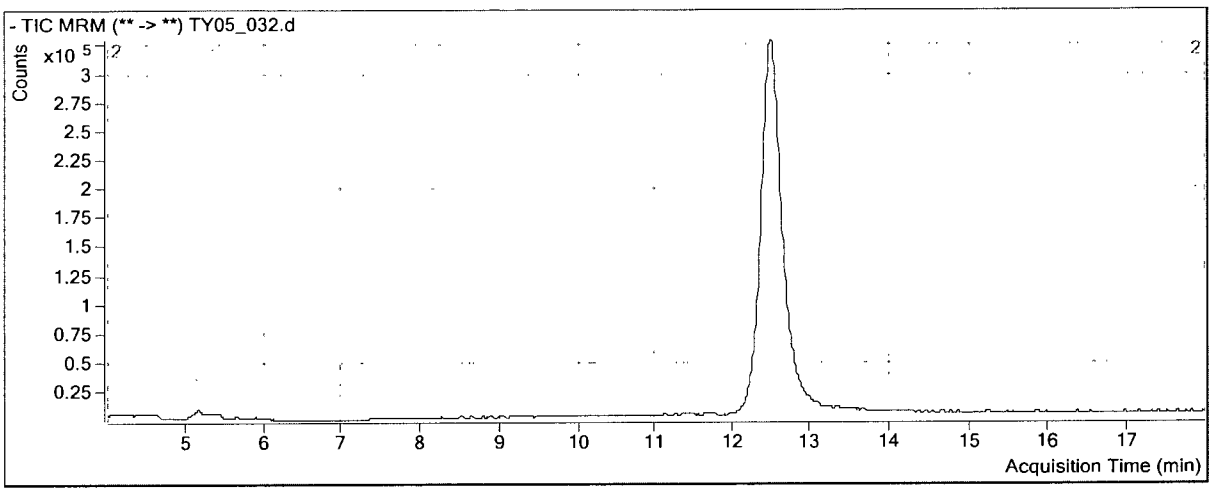
Client ID : S67-GW106-2832

Retention Time		Area Count Response	Compound_ID Product Ion		
12.519		4358889	PER_IS_89		
12.536		1815979	Perchlorate_83	(1815979 * 0.0050) / (1.28 * 4358889.00) * 1052.60 =	1.718088 ppb
12.502	*	525688	Perchlorate_85	(525688 * 0.0050) / (0.38 * 4358889.00) * 1052.60 =	1.672393 ppb

* MANUAL INTEGRAION

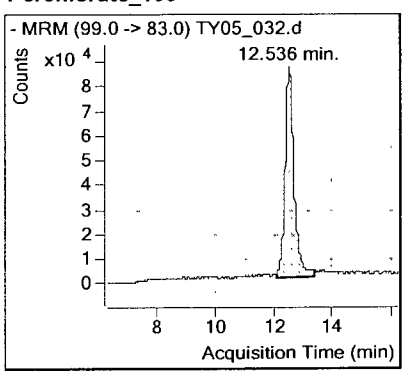
Quantitative Analysis Sample Report

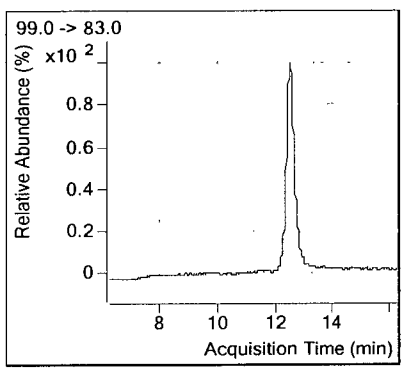
Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_032.d	**Sample Name**	AZ24131_W01 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/06/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	1:25
ClientID	S67-GW106-2832	**Inj Vol**	20

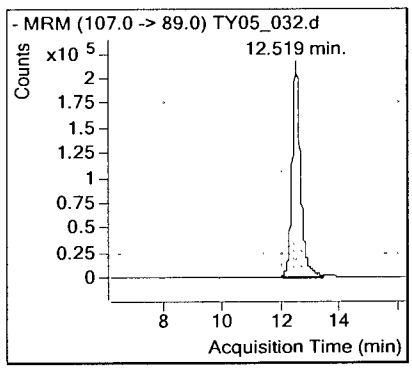


Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108		12.536	1815979	4358889	
Perchlorate_102	PER_IS_108	*	12.502	525688	4358889	* MANUAL INT

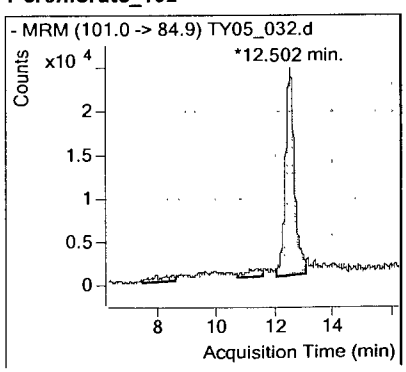
Perchlorate_100

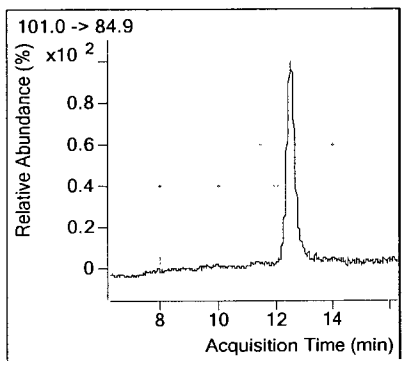


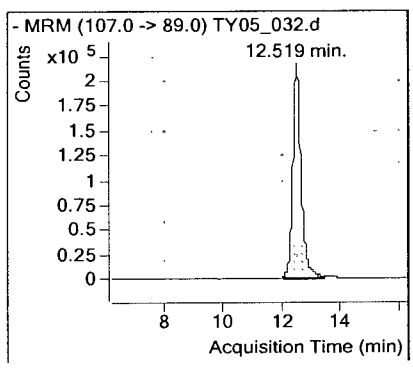


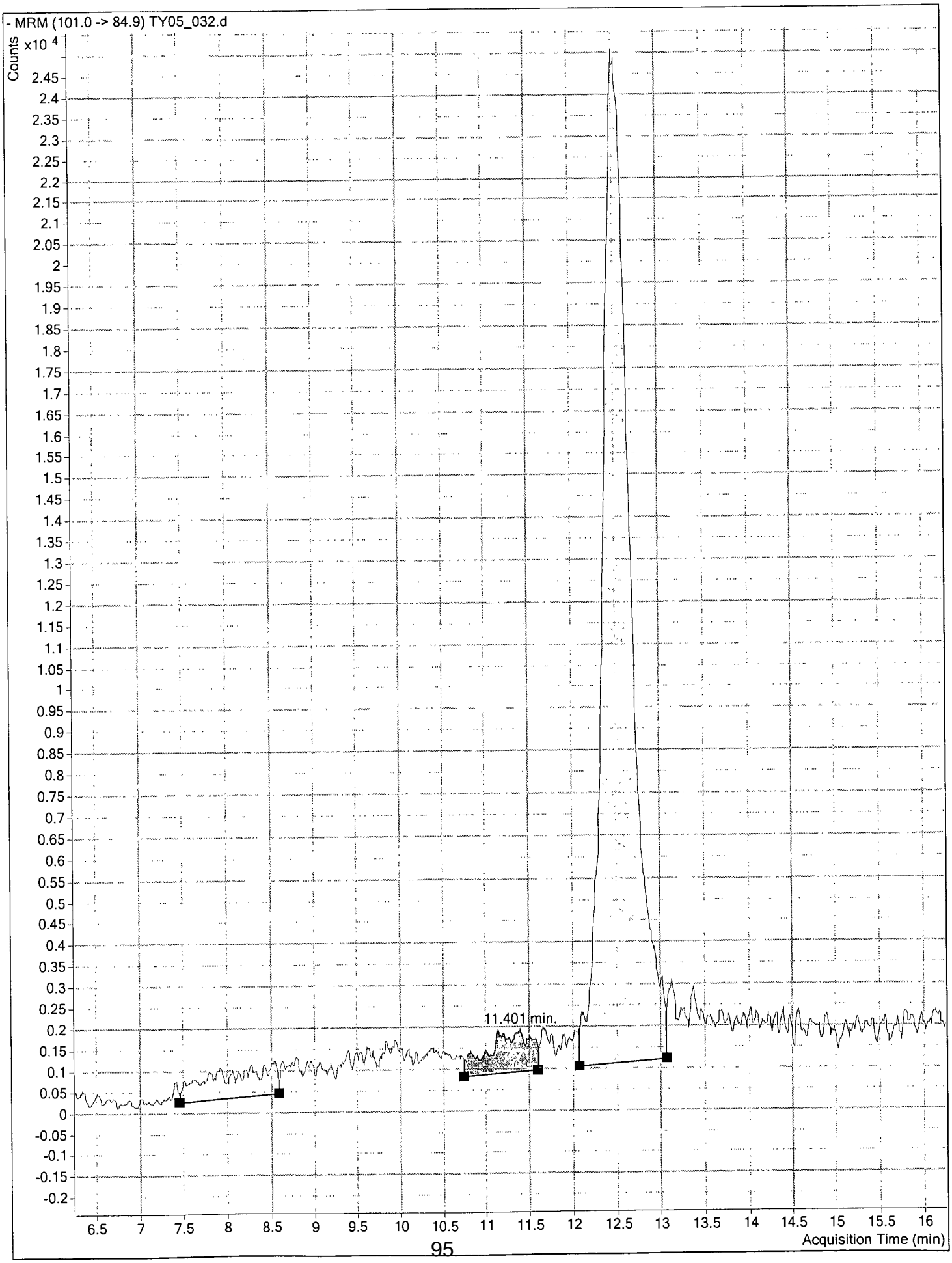


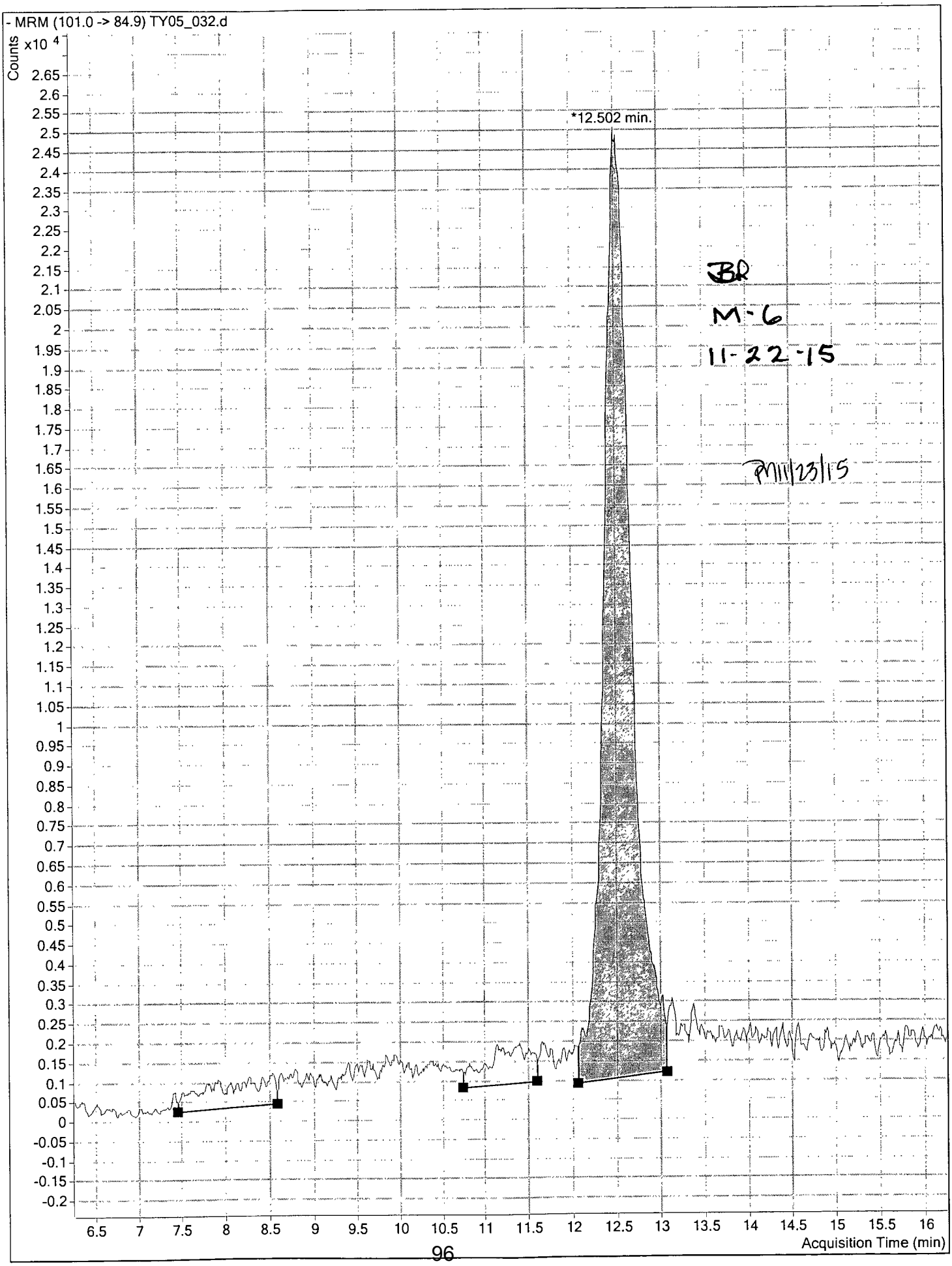
Perchlorate_102








- MRM (101.0 -> 84.9) TY05_032.d
Counts
x10 4
11.401 min.
Acquisition Time (min)


- MRM (101.0 -> 84.9) TY05_032.d
Counts
x10 4
*12.502 min.
BR
M-6
11-22-15
PM 11/23/15
Acquisition Time (min)

Data File ID: TY07_032.d

Date Injected : 11/07/15

Time Injected : 23:15

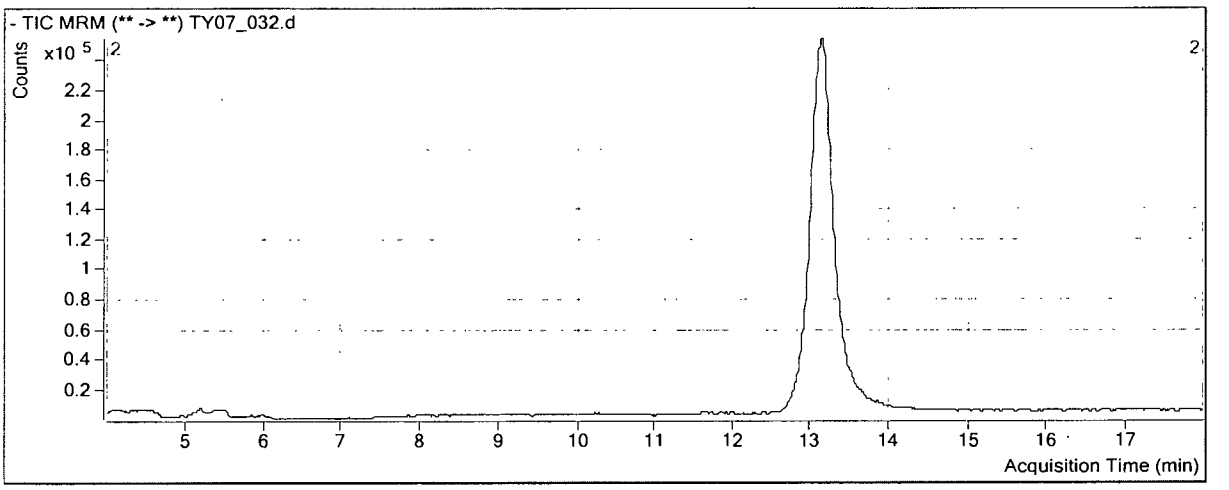
Sample ID : AZ24131_W01 1052.6 DF 11/05/15

Client ID : S67-GW106-2832

Retention Time	Area Count Response	Compound_ID Product Ion		
13.151	3647899	PER_IS_89		
13.178	1495591	Perchlorate_83	(1495591 * 0.0050) / (1.37 * 3647899.00) * 1052.60 =	1.573694 ppb
13.164	451268	Perchlorate_85	(451268 * 0.0050) / (0.41 * 3647899.00) * 1052.60 =	1.579567 ppb

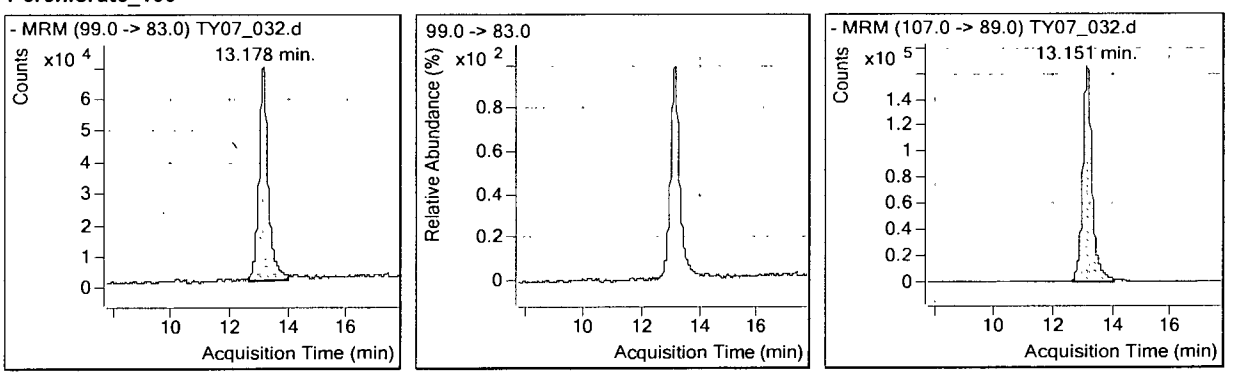
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_032.d	**Sample Name**	AZ24131_W01 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	23:15
ClientID	S67-GW106-2832	**Inj Vol**	20

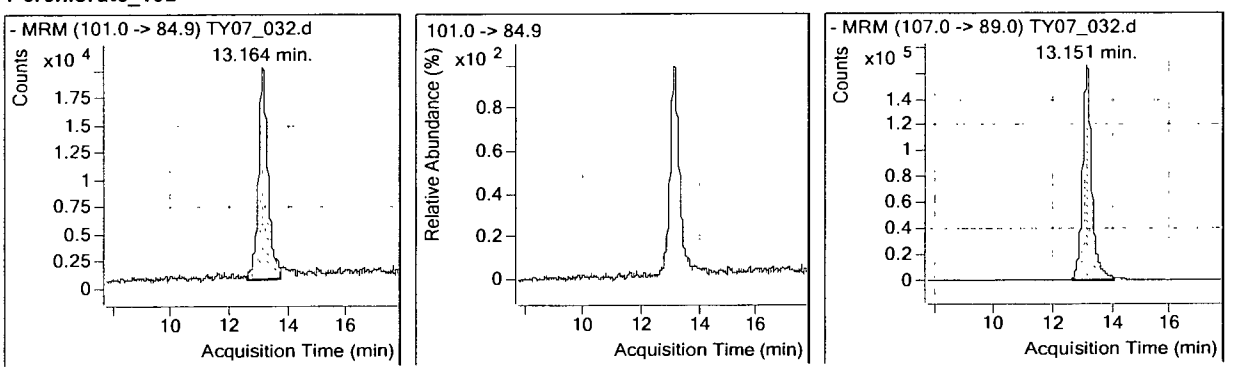


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.178	1495591	3647899
Perchlorate_102	PER_IS_108	13.164	451268	3647899

Perchlorate_100



Perchlorate_102



EPA METHOD 6850
Perchlorate
LC/MS

Calibration Data

APPL, INC.

METHOD 6850 CALIBRATION SUMMARY

Lab Name: APPL Inc. DETECTOR ID : Agilent 6460 Triple Quad LC/MS

Average Relative Response Factor Summary

Analyte Id:	R.R.F.#1 PERCHLORATE 0.0002 PPM	R.R.F.#2 PERCHLORATE 0.0004 PPM	R.R.F.#3 PERCHLORATE 0.001 PPM	R.R.F.#4 PERCHLORATE 0.002 PPM	R.R.F.#5 PERCHLORATE 0.005 PPM	R.R.F.#6 PERCHLORATE 0.010 PPM	AVERAGE REL.RESP. FACTOR	%RSD RRF
Perchlorate_83	1.027226	1.227765	1.240271	1.254148	1.396195	1.511669	1.276212	12.92
Perchlorate_85	0.366459	0.385257	0.373407	0.352902	0.382011	0.417150	0.379531	5.74

FILE ID : TQ1105A.FRB

Perchlorate_83

RESPONSE FACTOR CALCULATIONS - AREA COUNTS

DATA FILES : TY05_003.d - TY05_008.d

The Data points that were Read Were

Standard Response	Standard Concentration µg/ml	Internal Standard Response	Internal Standard Concentration µg/ml	Response Factor	RPD	%RSD
270055.00	0.0002	6572435.00	0.0050	1.027226	19.51	12.92
582117.00	0.0004	5926592.00	0.0050	1.227765	3.80	
1670167.00	0.0010	6733075.00	0.0050	1.240271	2.82	
3437488.00	0.0020	6852240.00	0.0050	1.254148	1.73	
8810970.00	0.0050	6310700.00	0.0050	1.396195	9.40	
18756827.00	0.0100	6204014.00	0.0050	1.511669	18.45	

The Average Response Factor = 1.276212

Perchlorate_85

RESPONSE FACTOR CALCULATIONS - AREA COUNTS

DATA FILES : TY05_003.d - TY05_008.d

The Data points that were Read Were

Standard Response	Standard Concentration µg/ml	Internal Standard Response	Internal Standard Concentration µg/ml	Response Factor	RPD	%RSD
96341.00	0.0002	6572435.00	0.0050	0.366459	3.44	5.74
182661.00	0.0004	5926592.00	0.0050	0.385257	1.51	
502836.00	0.0010	6733075.00	0.0050	0.373407	1.61	
967267.00	0.0020	6852240.00	0.0050	0.352902	7.02	
2410758.00	0.0050	6310700.00	0.0050	0.382011	0.65	
5176008.00	0.0100	6204014.00	0.0050	0.417150	9.91	

The Average Response Factor = 0.379531

Data File ID: TY05_003.d

Date Injected : 11/05/15

Time Injected : 16:25

Sample ID : PERCHLORATE 0.0002 ug/ml 08/01/15

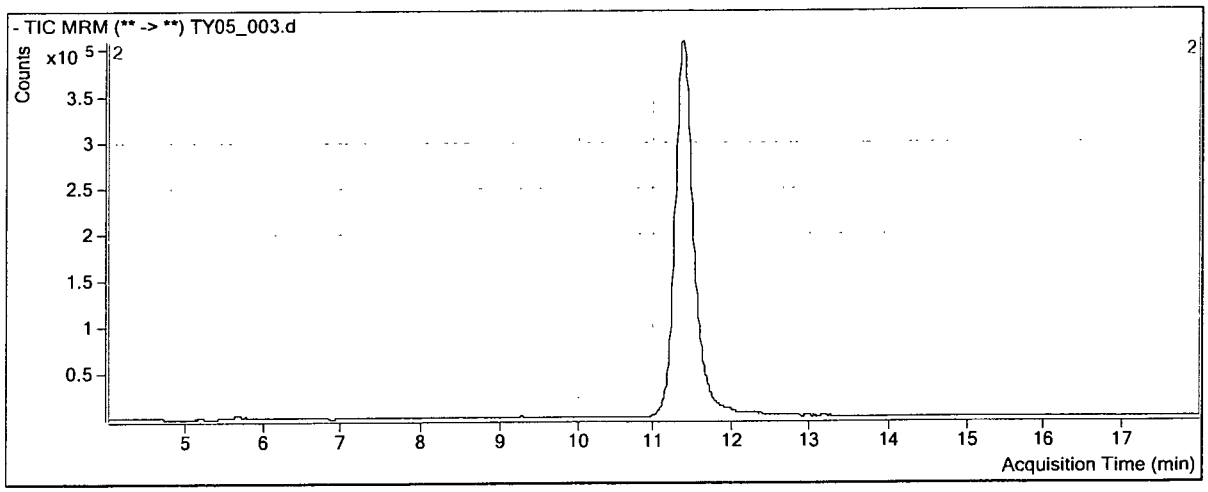
Client ID : NA

Retention Time		Area Count Response	Compound_ID Product Ion
11.367		6572435	PER_IS_89
11.354	*	270055	Perchlorate_83
11.351		96341	Perchlorate_85

* MANUAL INTEGRAION

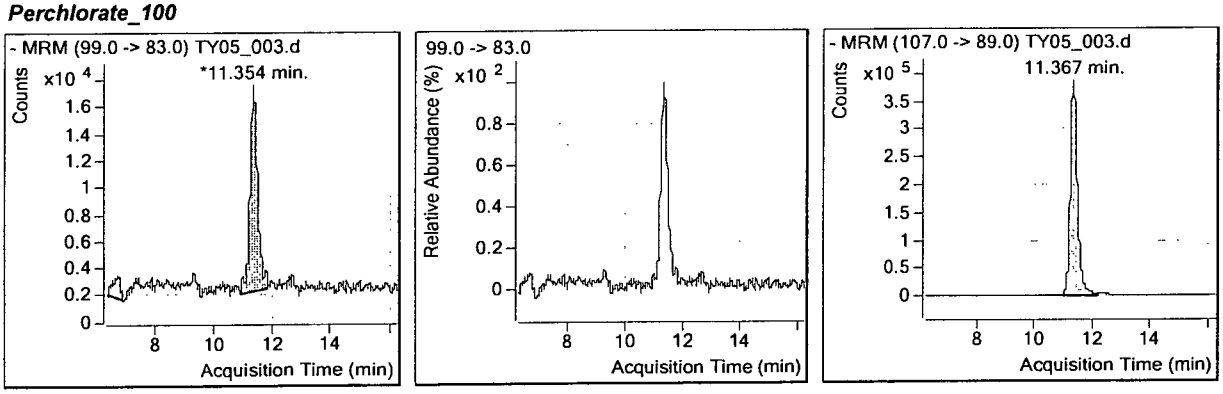
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_003.d	**Sample Name**	PERCHLORATE 0.0002 ug/ml 08/01/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	16:25
ClientID	NA	**Inj Vol**	20

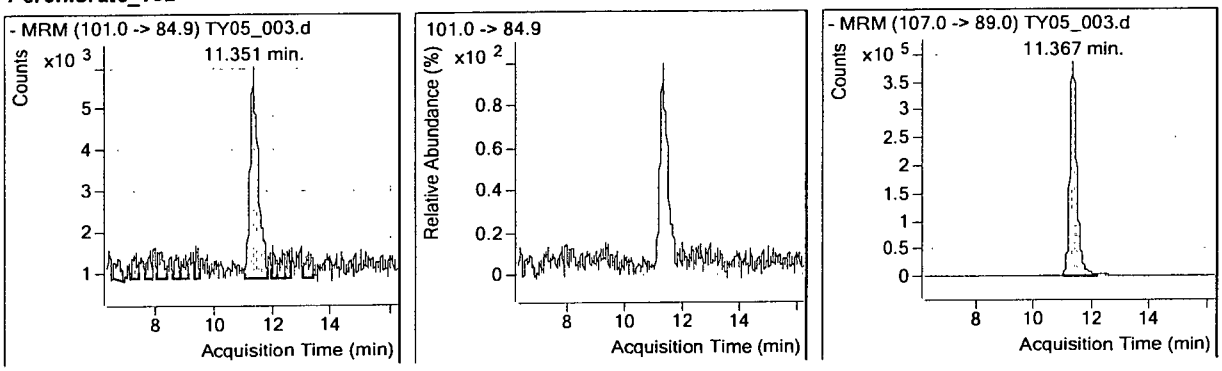


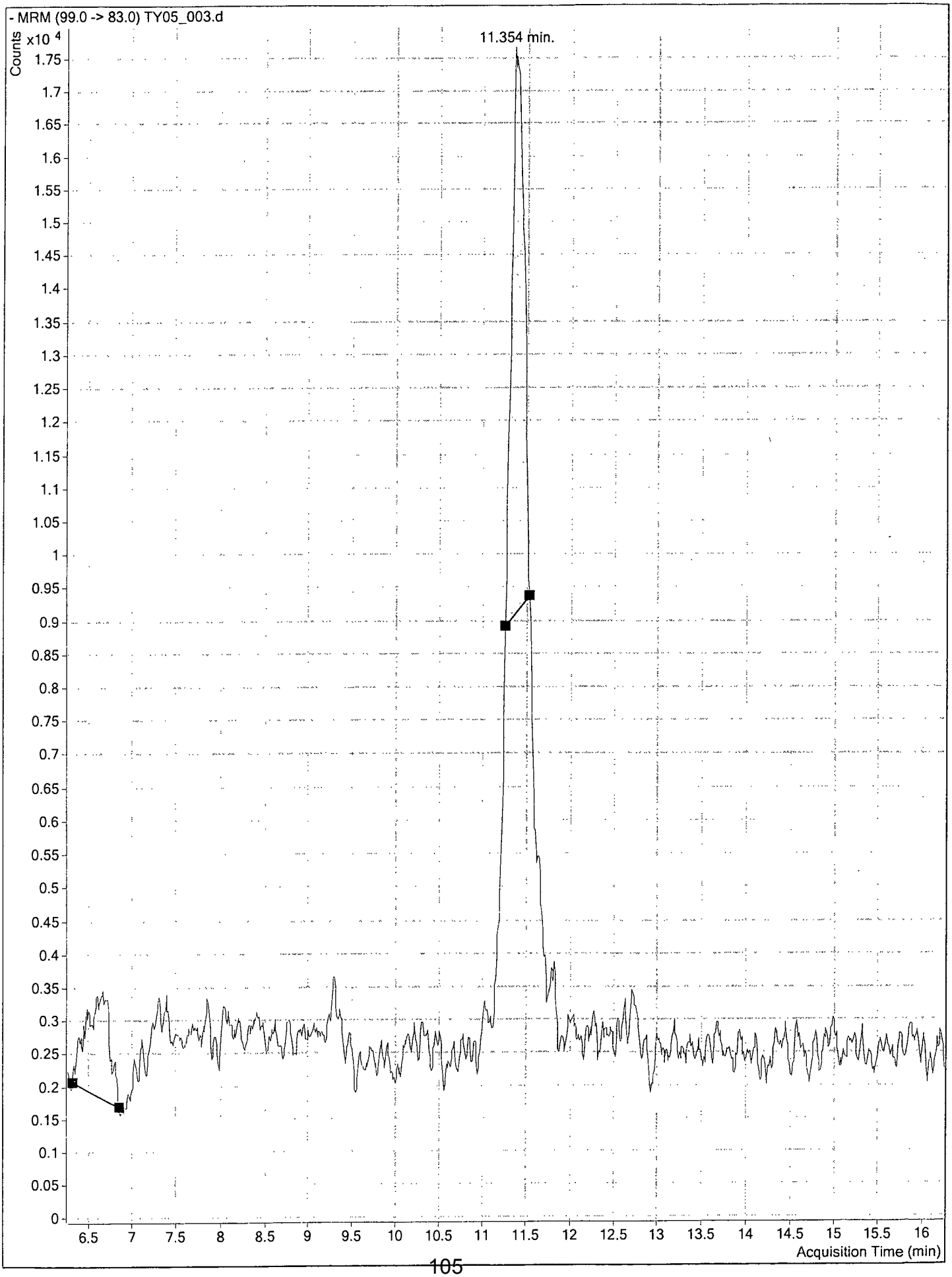
Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108	*	11.354	270055	6572435	* MANUAL INT
Perchlorate_102	PER_IS_108		11.351	96341	6572435	

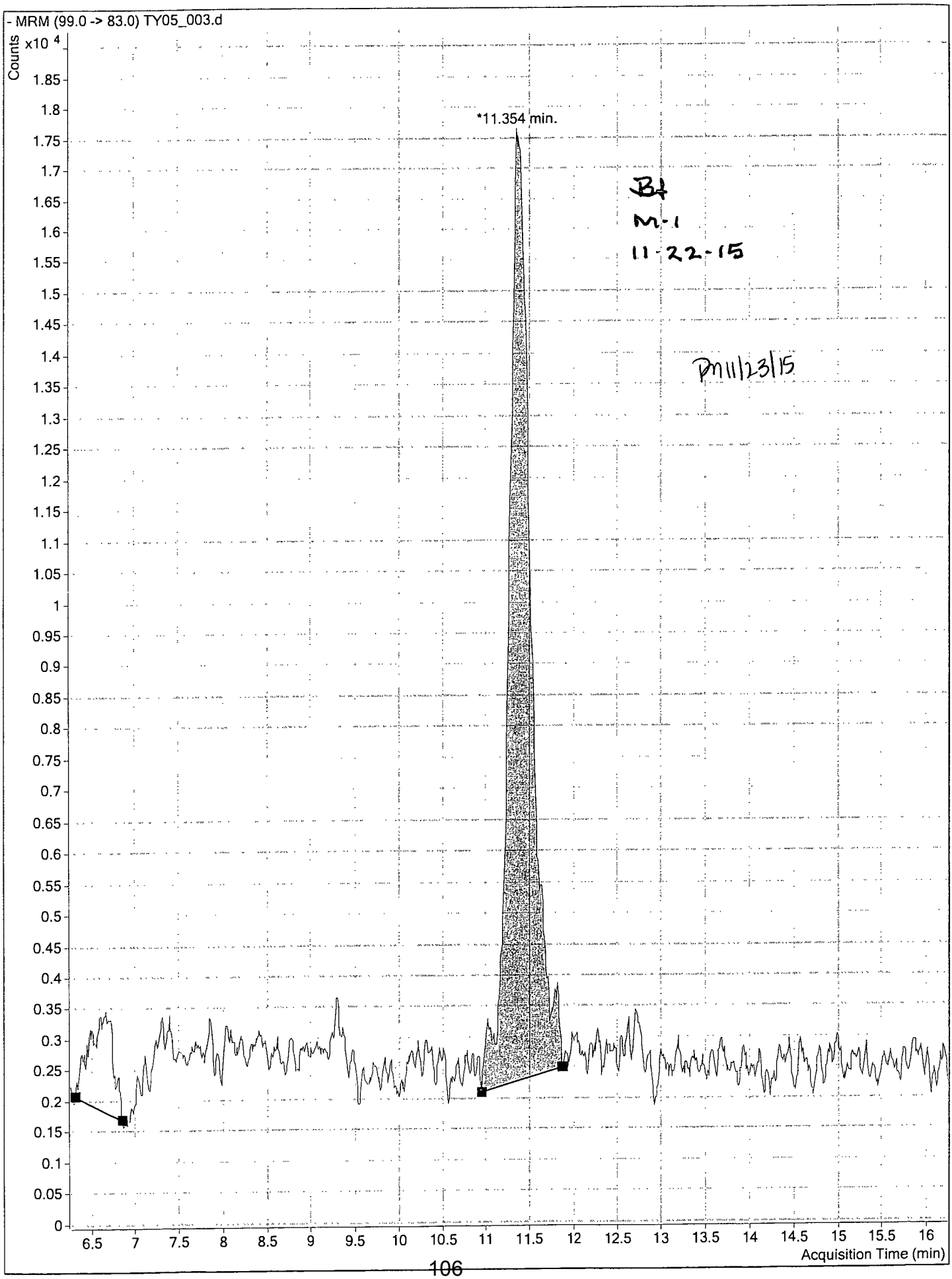
Perchlorate_100



Perchlorate_102




- MRM (99.0 -> 83.0) TY05_003.d
Counts
x10 4
11.354 min.
1.75
1.7
1.65
1.6
1.55
1.5
1.45
1.4
1.35
1.3
1.25
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
6.5
7
7.5
8
8.5
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
Acquisition Time (min)



BL
M-1
11-22-15

DM 11/23/15

Data File ID: TY05_004.d

Date Injected : 11/05/15

Time Injected : 16:44

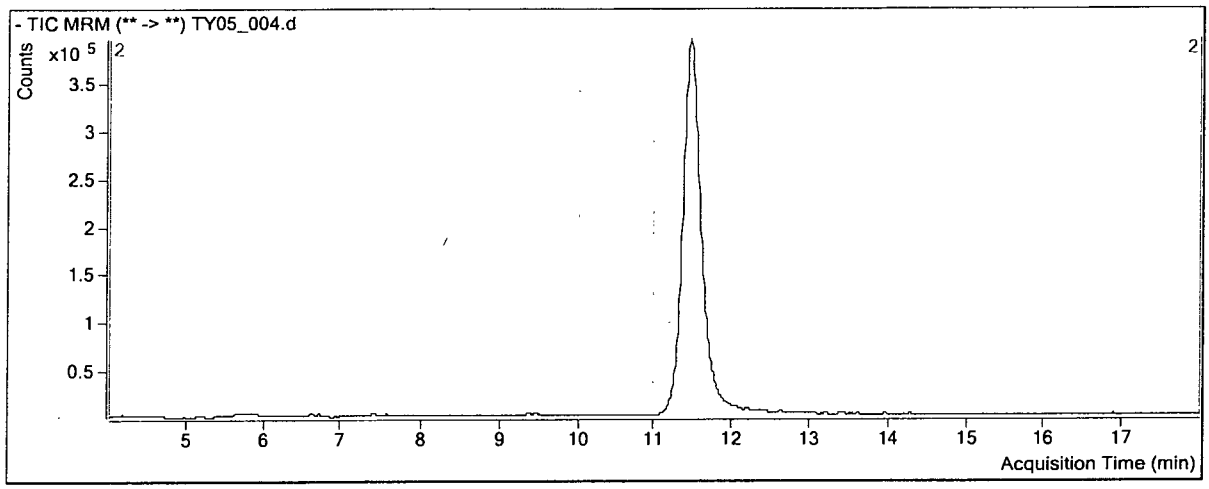
Sample ID : PERCHLORATE 0.0004 ug/ml 08/01/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
11.469	5926592	PER_IS_89
11.456	582117	Perchlorate_83
11.473	182661	Perchlorate_85

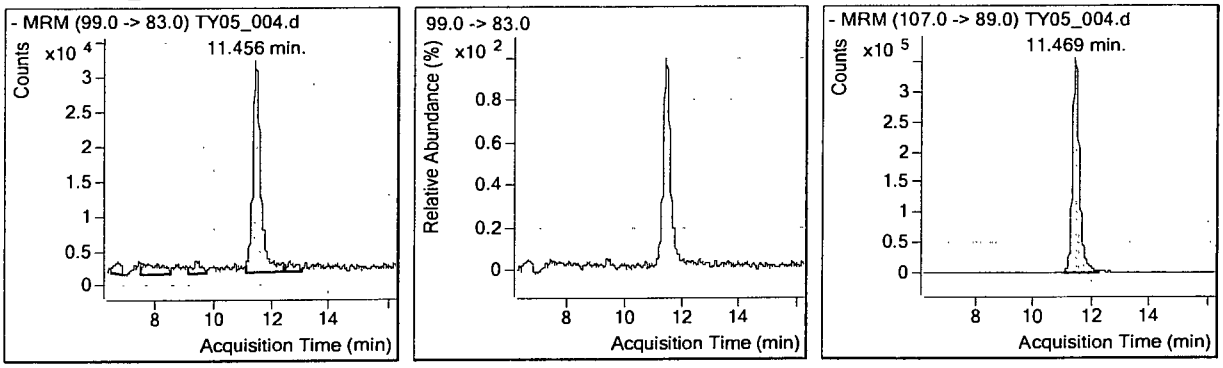
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_004.d	**Sample Name**	PERCHLORATE 0.0004 ug/ml 08/01/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	16:44
ClientID	NA	**Inj Vol**	20

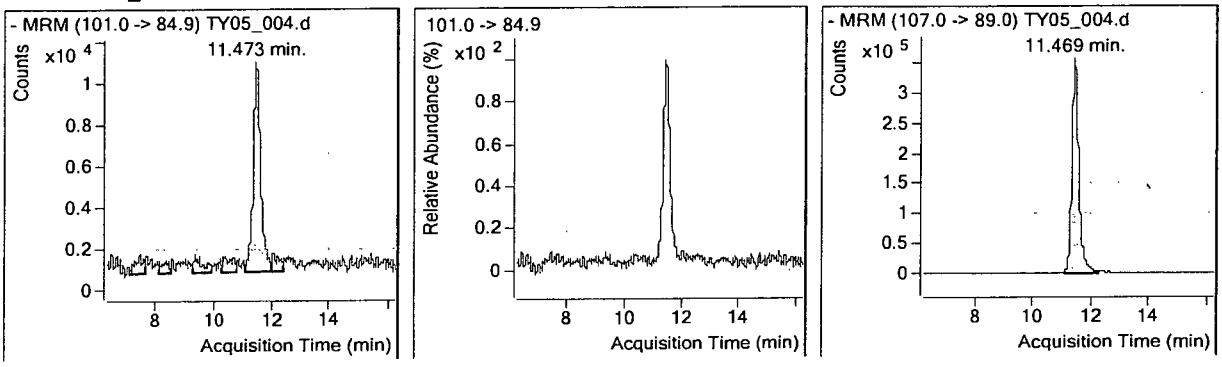


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	11.456	582117	5926592
Perchlorate_102	PER_IS_108	11.473	182661	5926592

Perchlorate_100



Perchlorate_102



Data File ID: TY05_005.d

Date Injected : 11/05/15

Time Injected : 17:03

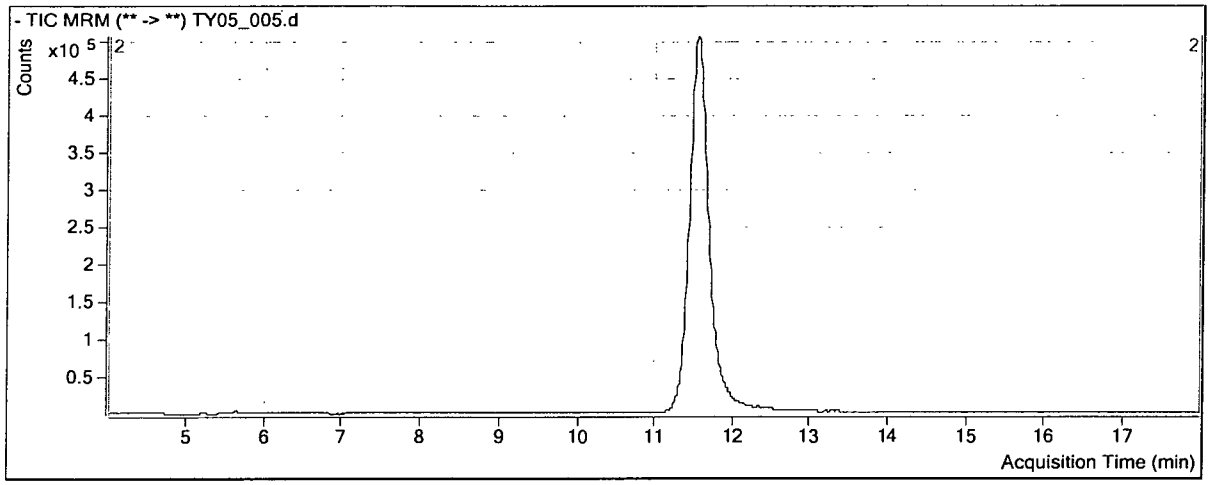
Sample ID : PERCHLORATE 0.001 ug/ml 08/01/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
11.531	6733075	PER_IS_89
11.527	1670167	Perchlorate_83
11.534	502836	Perchlorate_85

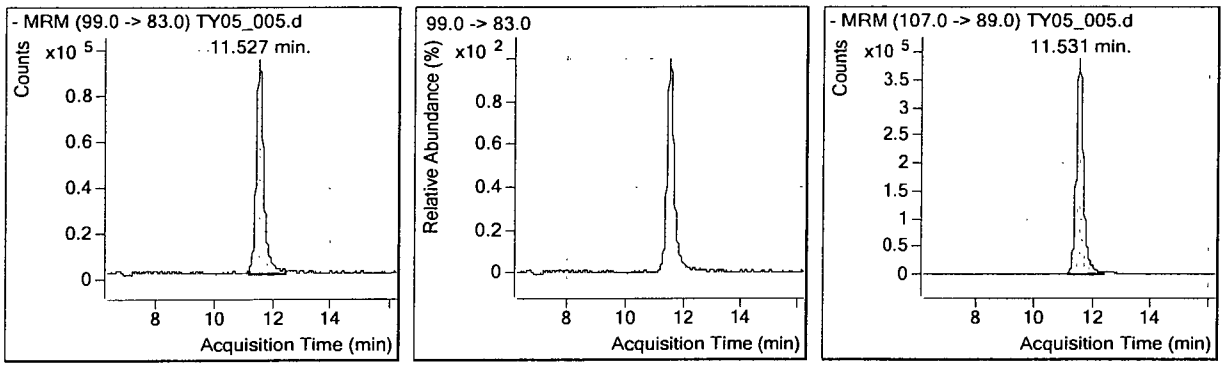
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_005.d	**Sample Name**	PERCHLORATE 0.001 ug/ml 08/01/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	17:03
ClientID	NA	**Inj Vol**	20

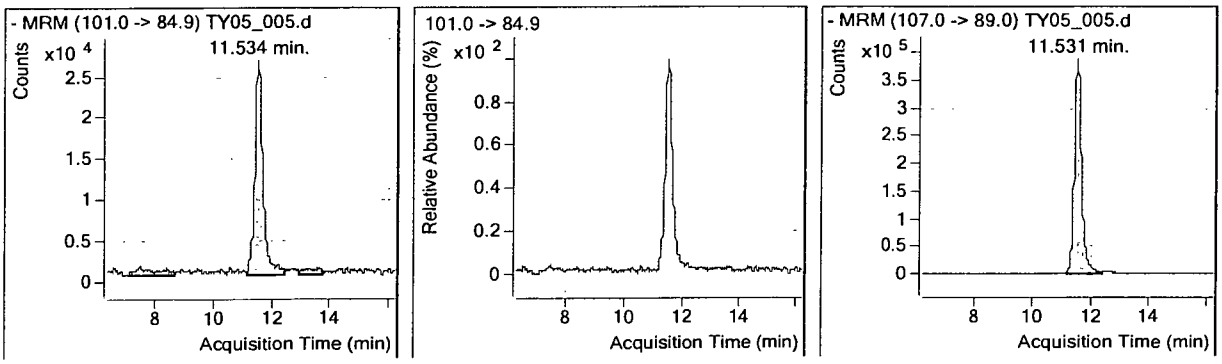


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	11.527	1670167	6733075
Perchlorate_102	PER_IS_108	11.534	502836	6733075

Perchlorate_100



Perchlorate_102



Data File ID: TY05_006.d

Date Injected : 11/05/15

Time Injected : 17:21

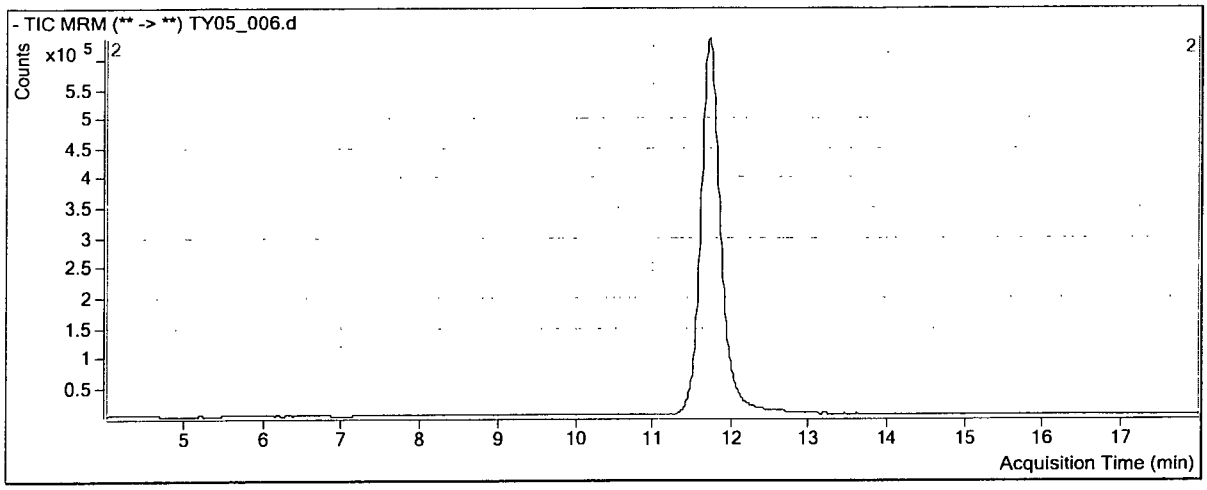
Sample ID : PERCHLORATE 0.002 ug/ml 08/01/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
11.694	6852240	PER_IS_89
11.711	3437488	Perchlorate_83
11.717	967267	Perchlorate_85

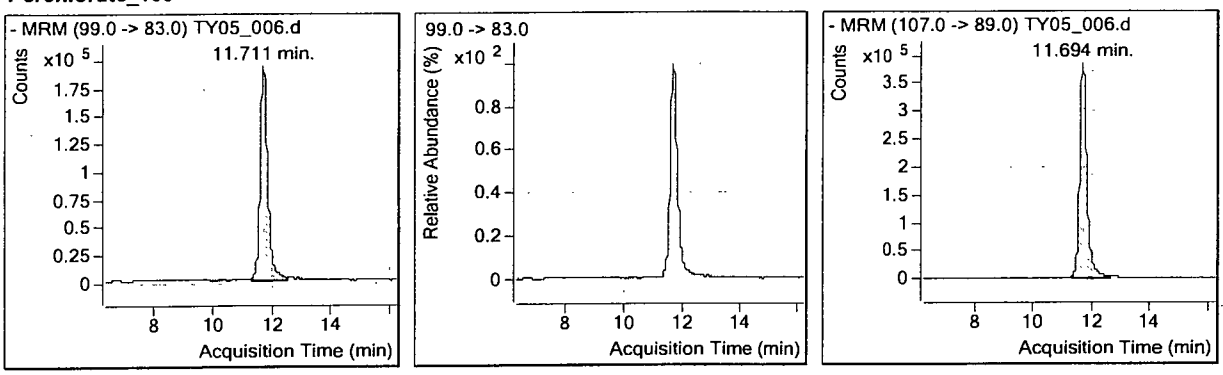
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_006.d	**Sample Name**	PERCHLORATE 0.002 ug/ml 08/01/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	17:21
ClientID	NA	**Inj Vol**	20

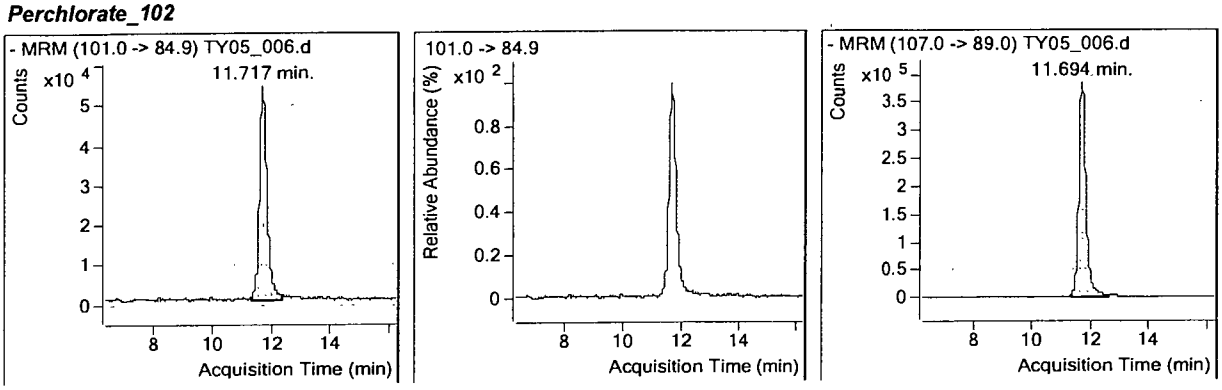


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	11.711	3437488	6852240
Perchlorate_102	PER_IS_108	11.717	967267	6852240

Perchlorate_100



Perchlorate_102



Data File ID: TY05_007.d

Date Injected : 11/05/15

Time Injected : 17:40

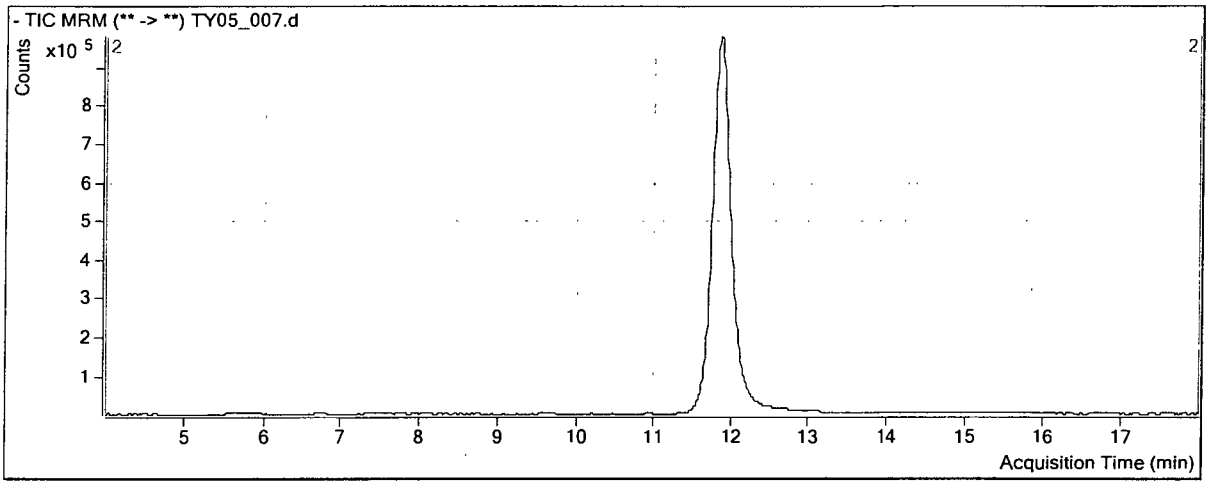
Sample ID : PERCHLORATE 0.005 ug/ml 08/01/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
11.846	6310700	PER_IS_89
11.843	8810970	Perchlorate_83
11.800	2410758	Perchlorate_85

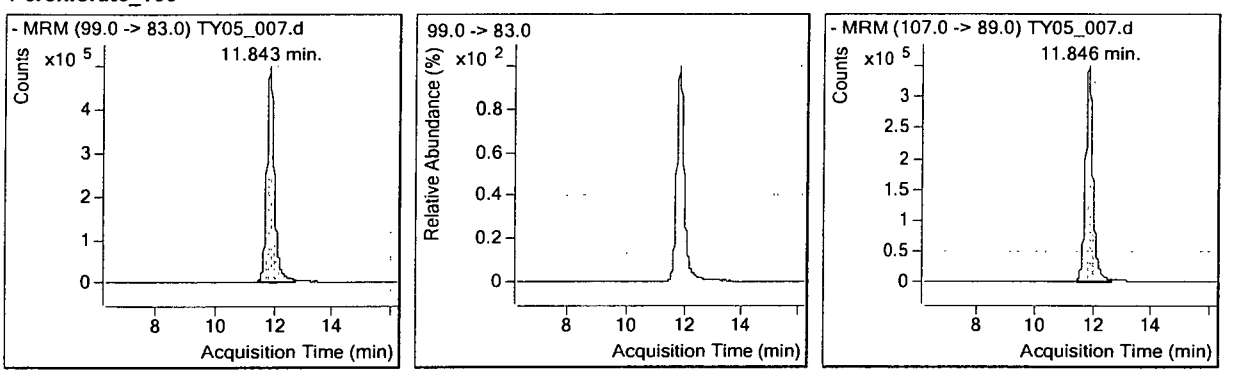
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_007.d	**Sample Name**	PERCHLORATE 0.005 ug/ml 08/01/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	17:40
ClientID	NA	**Inj Vol**	20

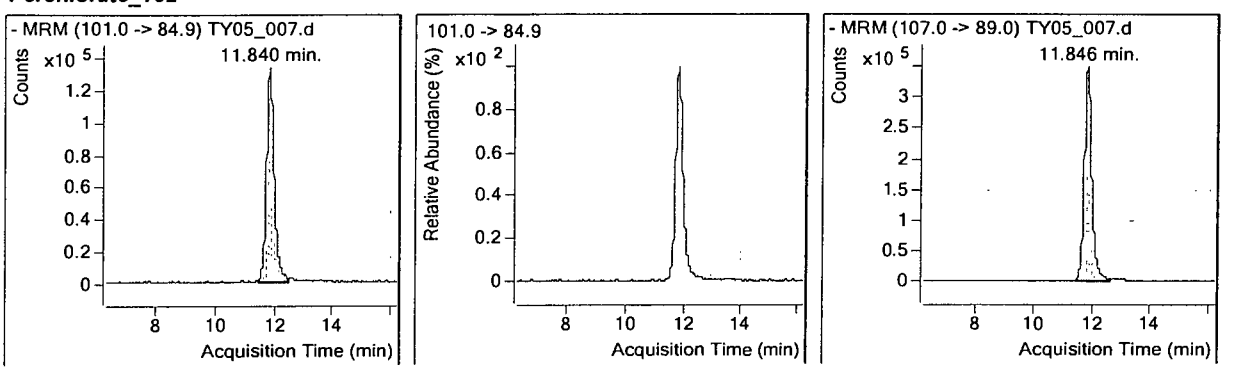


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	11.843	8810970	6310700
Perchlorate_102	PER_IS_108	11.840	2410758	6310700

Perchlorate_100



Perchlorate_102



Data File ID: TY05_008.d

Date Injected : 11/05/15

Time Injected : 17:58

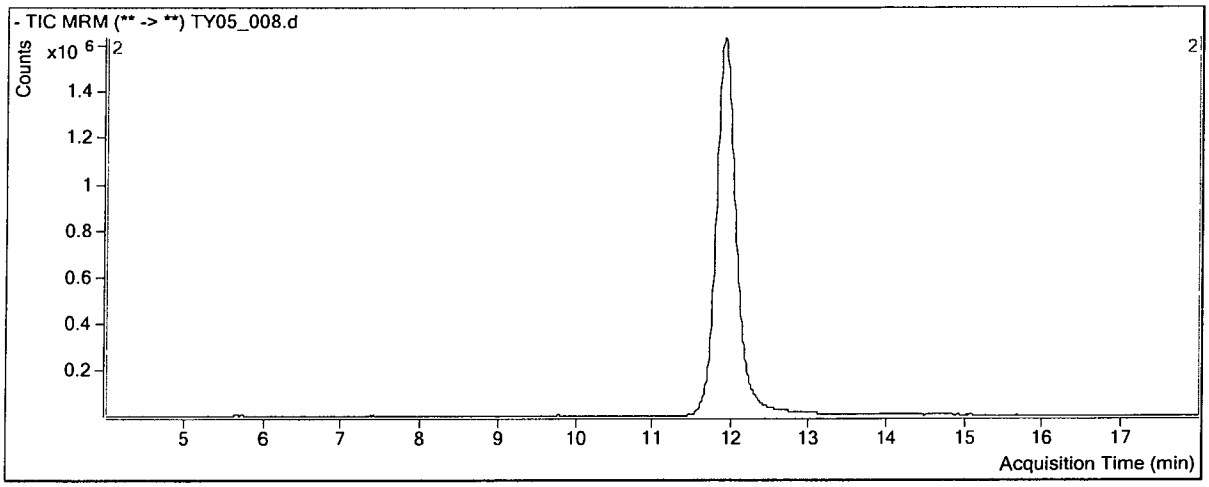
Sample ID : PERCHLORATE 0.010 ug/ml 08/01/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
11.897	6204014	PER_IS_89
11.904	18756827	Perchlorate_83
11.911	5176008	Perchlorate_85

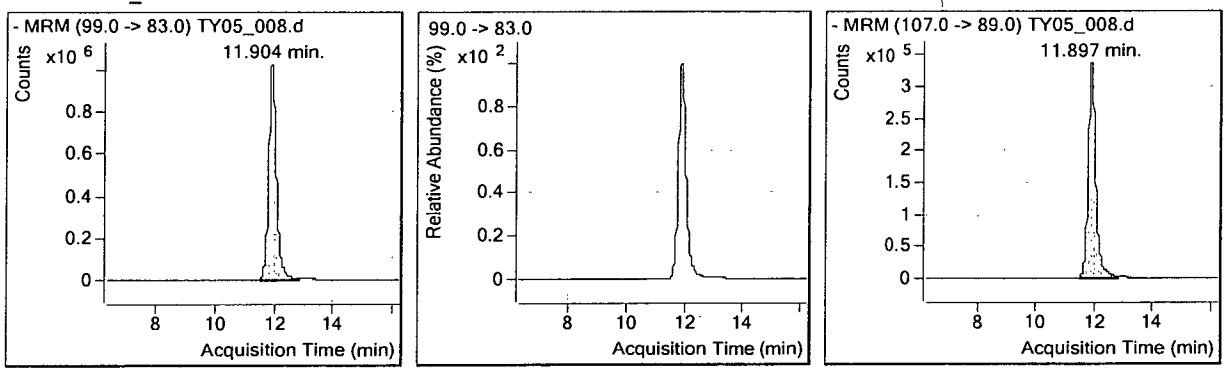
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_008.d	**Sample Name**	PERCHLORATE 0.010 ug/ml 08/01/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	17:58
ClientID	NA	**Inj Vol**	20

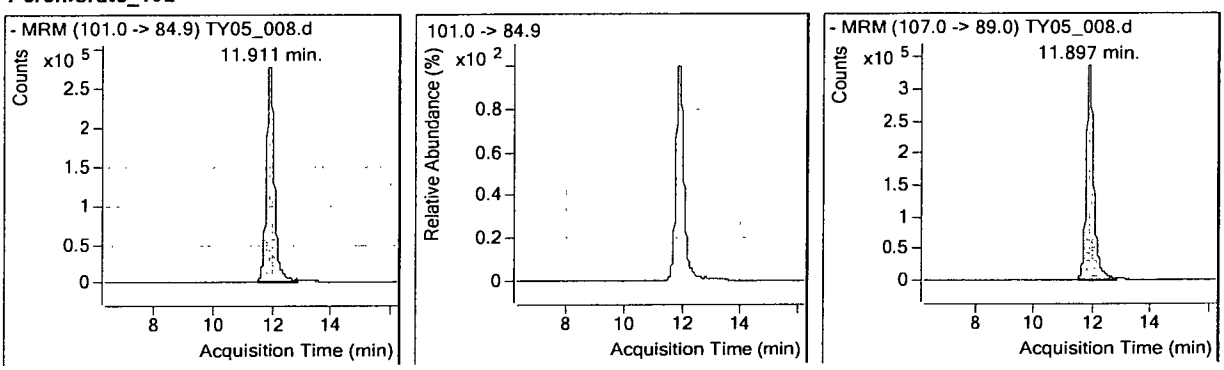


Compound	ISTD	RT	Resp	ISTD RESP
Perchlorate_100	PER_IS_108	11.904	18756827	6204014
Perchlorate_102	PER_IS_108	11.911	5176008	6204014

Perchlorate_100



Perchlorate_102



SECOND SOURCE CALIBRATION VERIFICATION SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: TY05_010.d

	Date (s) of Analysis From:11/05/15 To:11/05/15 Time (s) of Analysis From:16:07 To:18:17				Date of Analysis: 11/05/15 Time of Analysis: 18:36 Standard Id: PER_SS (Standard) 0.0004ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	11.31	11.21	11.41	1.282783	12.11	1.444613	N	12.6
Perchlorate_85	11.26	11.16	11.36	0.387463	12.12	0.441108	N	13.8

FILE ID : TQCK0510.RFB

Data File ID: TY05_010.d

Date Injected : 11/05/15

Time Injected : 18:36

Sample ID : PER_SS 0.0004 ug/ml 09/09/15

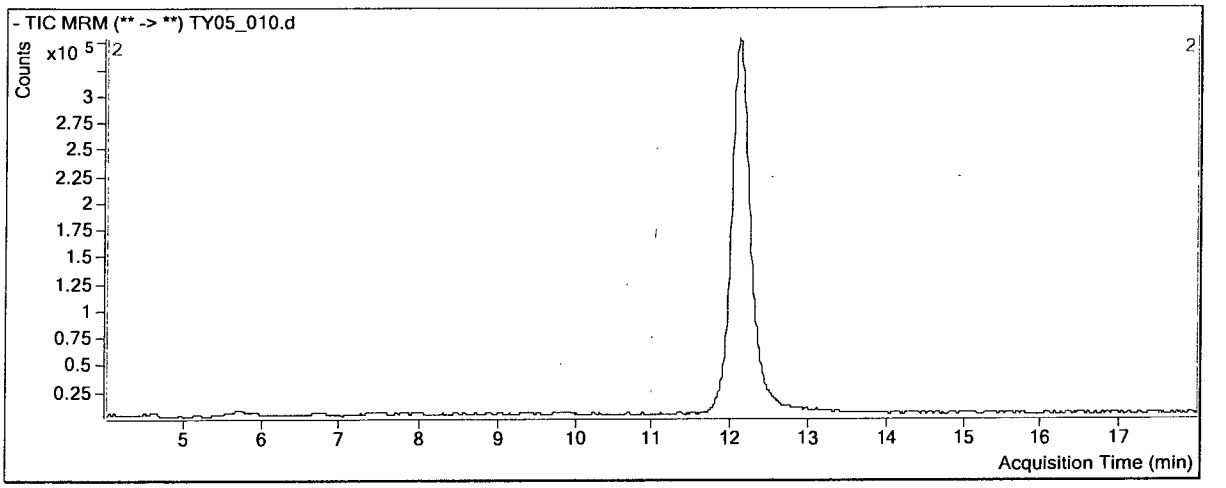
Client ID : NA

Retention Time		Area Count Response	Compound_ID Product Ion
12.111		5510360	PER_IS_89
12.108		636827	Perchlorate_83
12.115	*	194453	Perchlorate_85

* MANUAL INTEGRAION

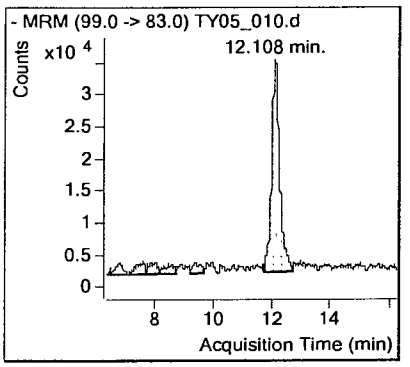
Quantitative Analysis Sample Report

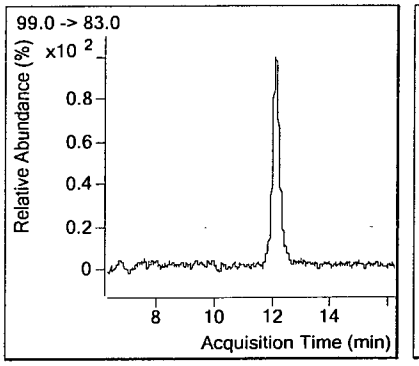
Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_010.d	**Sample Name**	PER_SS 0.0004 ug/ml 09/09/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:36
ClientID	NA	**Inj Vol**	20

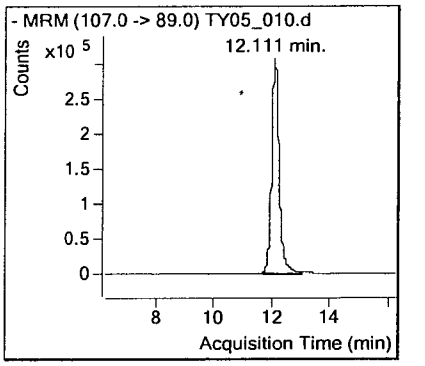


Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108		12.108	636827	5510360	
Perchlorate_102	PER_IS_108	*	12.115	194453	5510360	* MANUAL INT

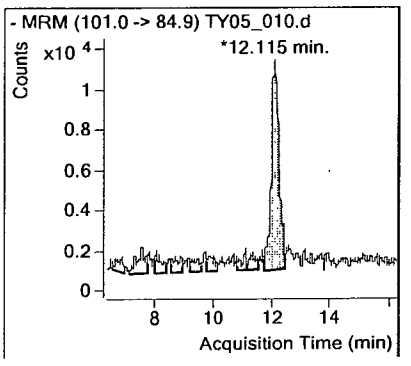
Perchlorate_100

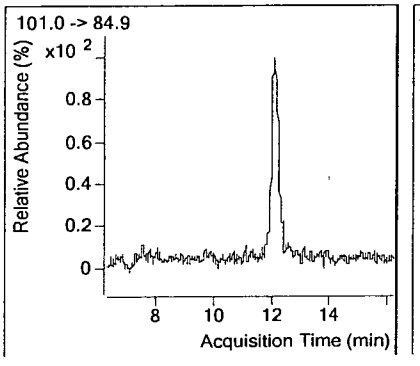


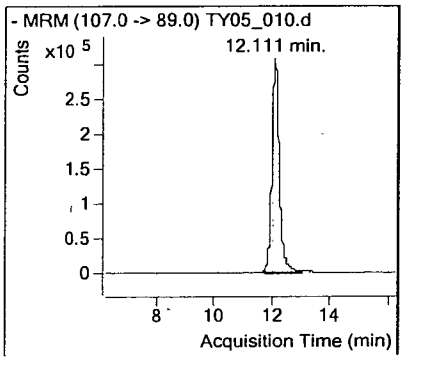


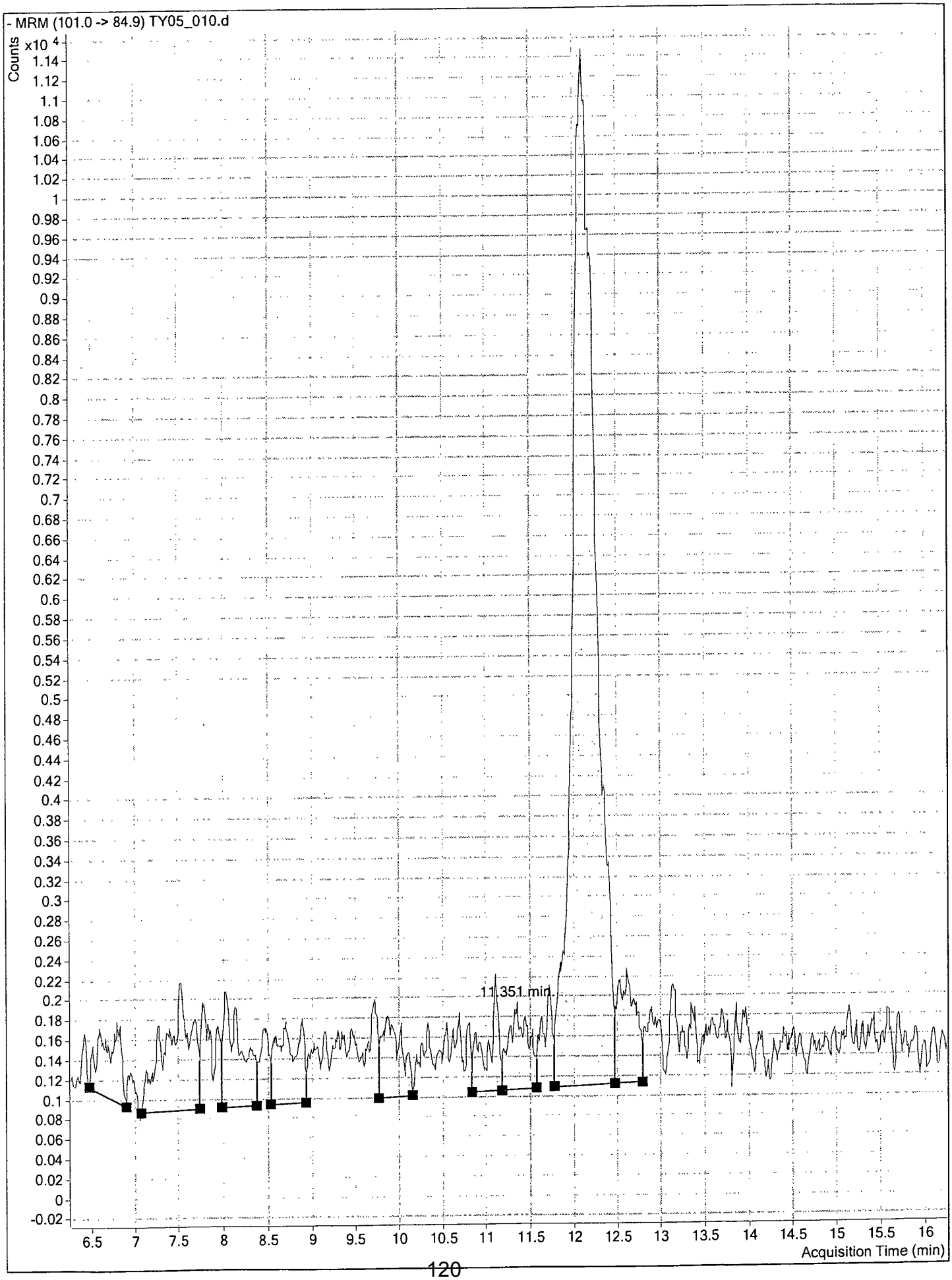


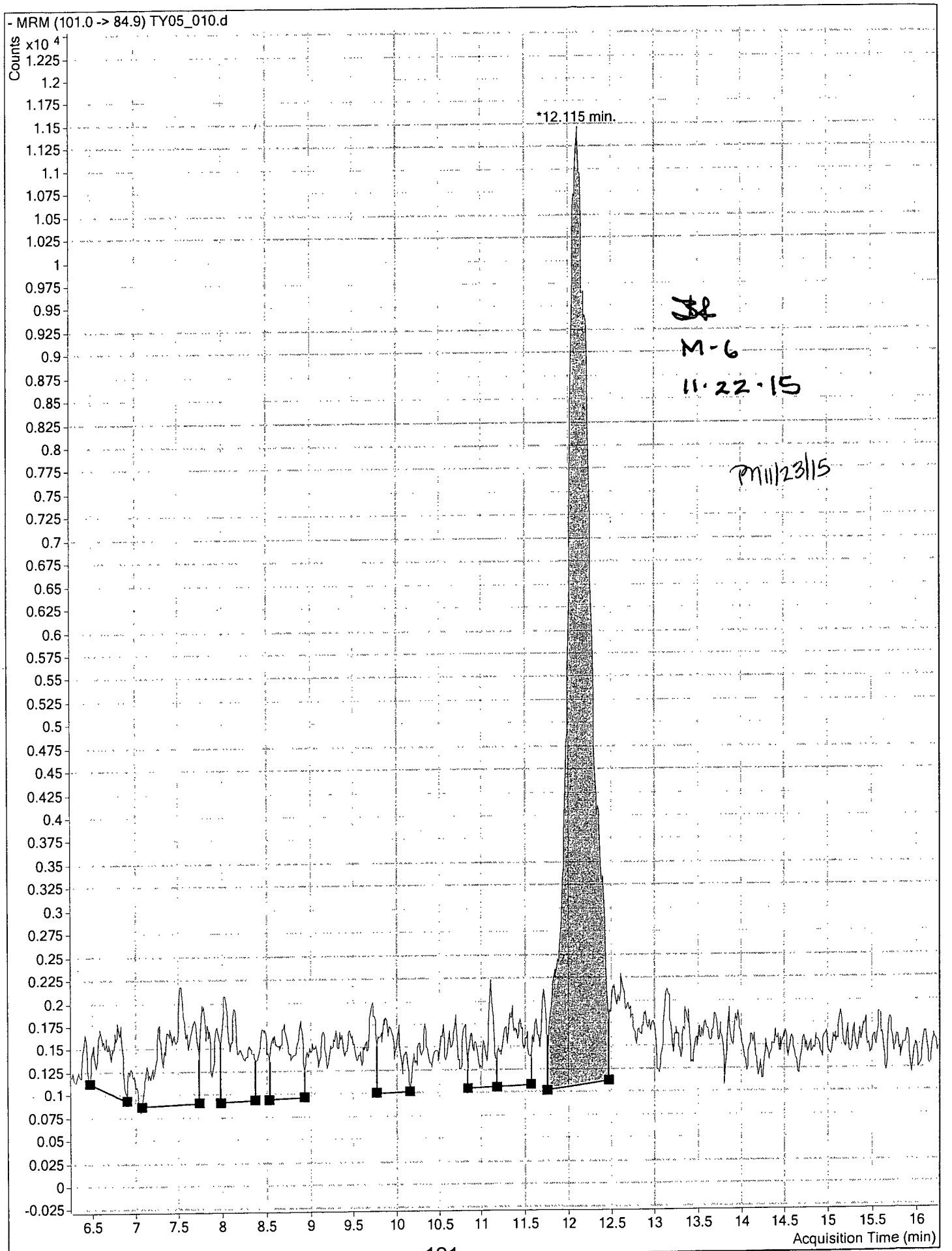
Perchlorate_102








- MRM (101.0 -> 84.9) TY05_010.d
Counts
x10 4
1.14
1.12
1.1
1.08
1.06
1.04
1.02
1
0.98
0.96
0.94
0.92
0.9
0.88
0.86
0.84
0.82
0.8
0.78
0.76
0.74
0.72
0.7
0.68
0.66
0.64
0.62
0.6
0.58
0.56
0.54
0.52
0.5
0.48
0.46
0.44
0.42
0.4
0.38
0.36
0.34
0.32
0.3
0.28
0.26
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.02
11.351 min
6.5
7
7.5
8
8.5
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
Acquisition Time (min)


- MRM (101.0 -> 84.9) TY05_010.d
Counts
x10 4
*12.115 min.
JR
M-6
11.22.15
PM 11/23/15
Acquisition Time (min)

SECOND SOURCE CALIBRATION VERIFICATION SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: TY05_011.d

	Date (s) of Analysis From:11/05/15 To:11/05/15 Time (s) of Analysis From:16:07 To:18:17				Date of Analysis: 11/05/15 Time of Analysis: 18:54 Standard Id: PER_SS (Standard) 0.002 ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	11.31	11.21	11.41	1.282783	12.20	1.520011	N	18.5
Perchlorate_85	11.26	11.16	11.36	0.387463	12.20	0.420971	N	8.6

FILE ID : TQCK0511.RFB

Data File ID: TY05_011.d

Date Injected : 11/05/15

Time Injected : 18:54

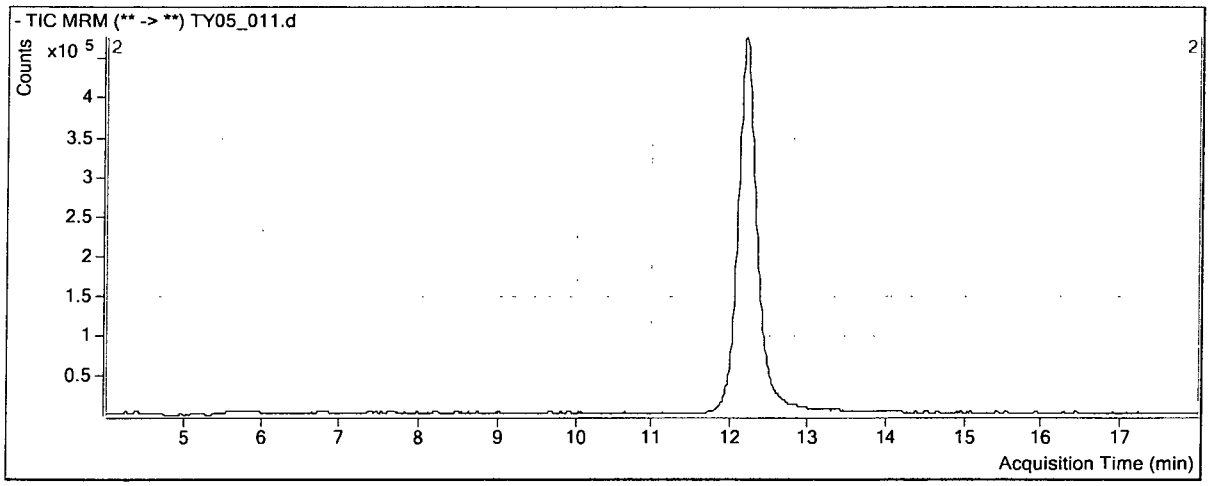
Sample ID : PER_SS 0.002 ug/ml 09/09/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
12.203	4788229	PER_IS_89
12.000	2911264	Perchlorate_83
12.196	806283	Perchlorate_85

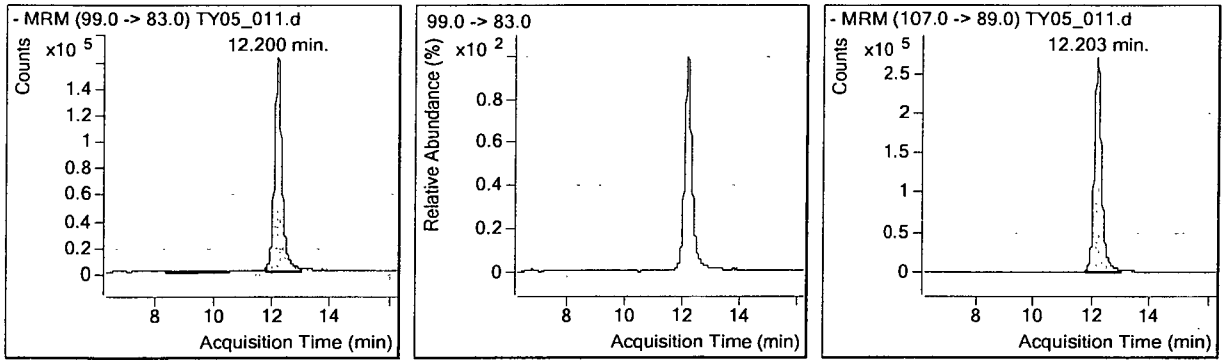
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_011.d	**Sample Name**	PER_SS 0.002 ug/ml 09/09/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:54
ClientID	NA	**Inj Vol**	20

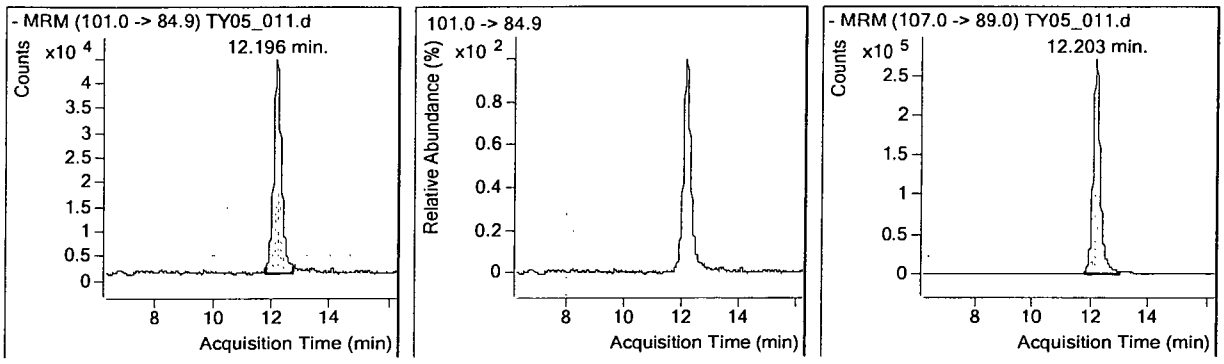


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.200	2911264	4788229
Perchlorate_102	PER_IS_108	12.196	806283	4788229

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: TY05_013.d

	Date (s) of Analysis From:11/05/15 To:11/05/15 Time (s) of Analysis From:16:07 To:19:13				Date of Analysis: 11/05/15 Time of Analysis: 19:31 Standard Id: PER_CCV_1 (Standard) 0.0004ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	11.31	11.21	11.41	1.282783	12.28	1.257822	N	1.9
Perchlorate_85	11.26	11.16	11.36	0.387463	12.26	0.396437	N	2.3

FILE ID : TQCK0513.RFB

Data File ID: TY05_013.d

Date Injected : 11/05/15

Time Injected : 19:31

Sample ID : PER_CCV_1 0.0004 ug/ml 08/01/15

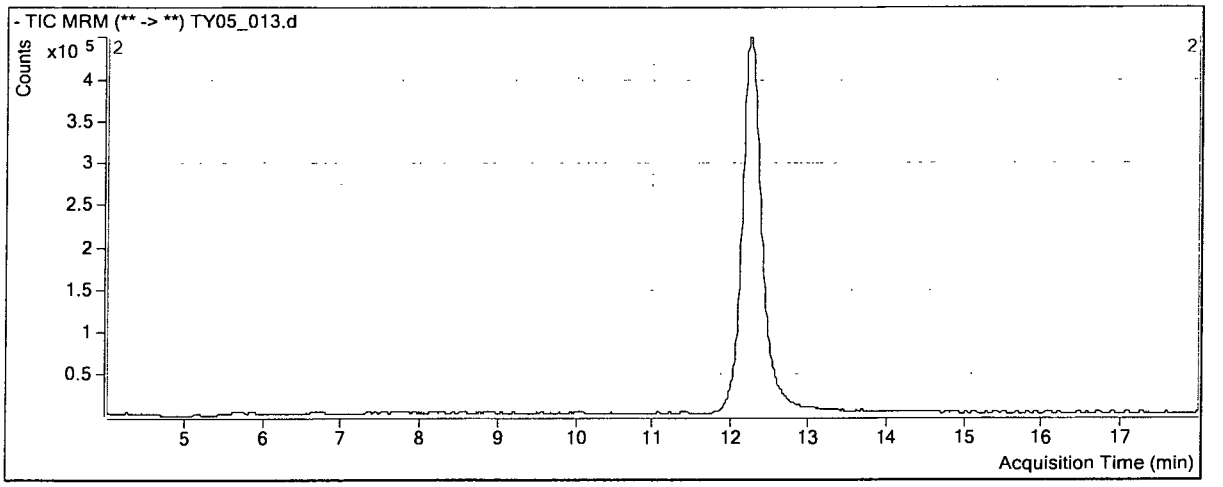
Client ID : NA

Retention Time		Area Count Response	Compound_ID Product Ion
12.244		7339471	PER_IS_89
12.281		738540	Perchlorate_83
12.257	*	232771	Perchlorate_85

* MANUAL INTEGRAION

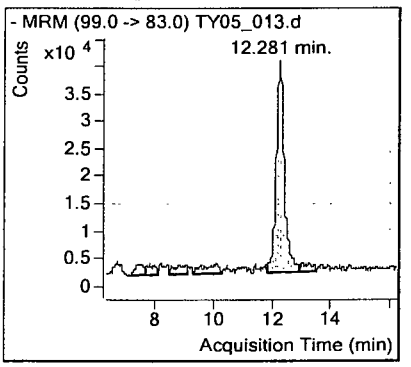
Quantitative Analysis Sample Report

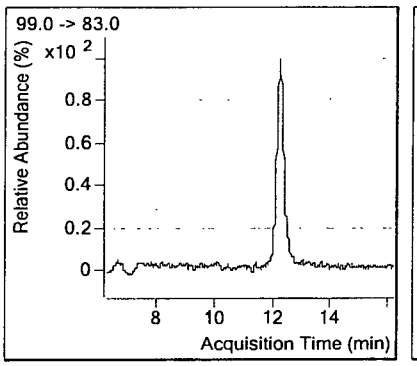
Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_013.d	**Sample Name**	PER_CCV_1 0.0004 ug/ml 08/01/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	19:31
ClientID	NA	**Inj Vol**	20

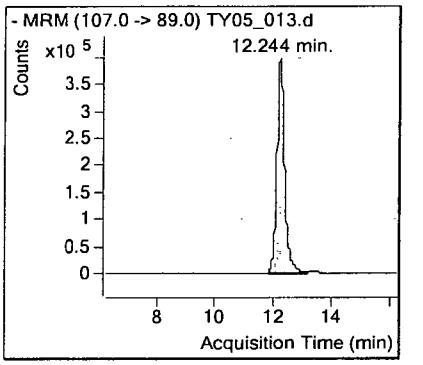


Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108		12.281	738540	7339471	
Perchlorate_102	PER_IS_108	*	12.257	232771	7339471	* MANUAL INT

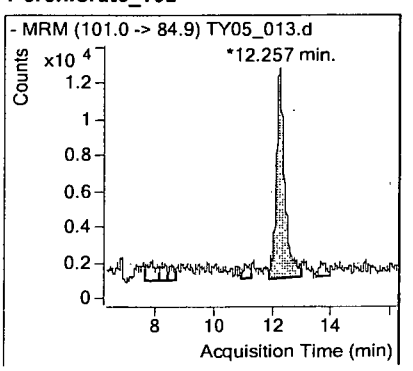
Perchlorate_100

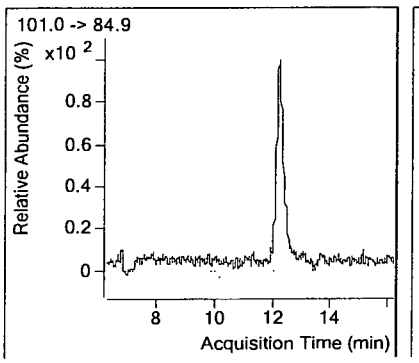


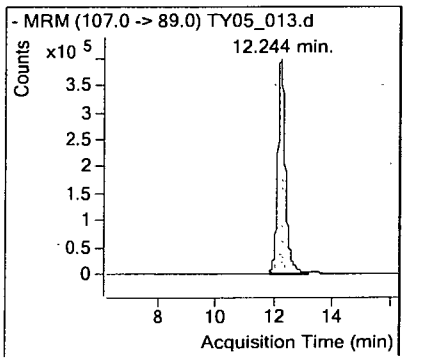


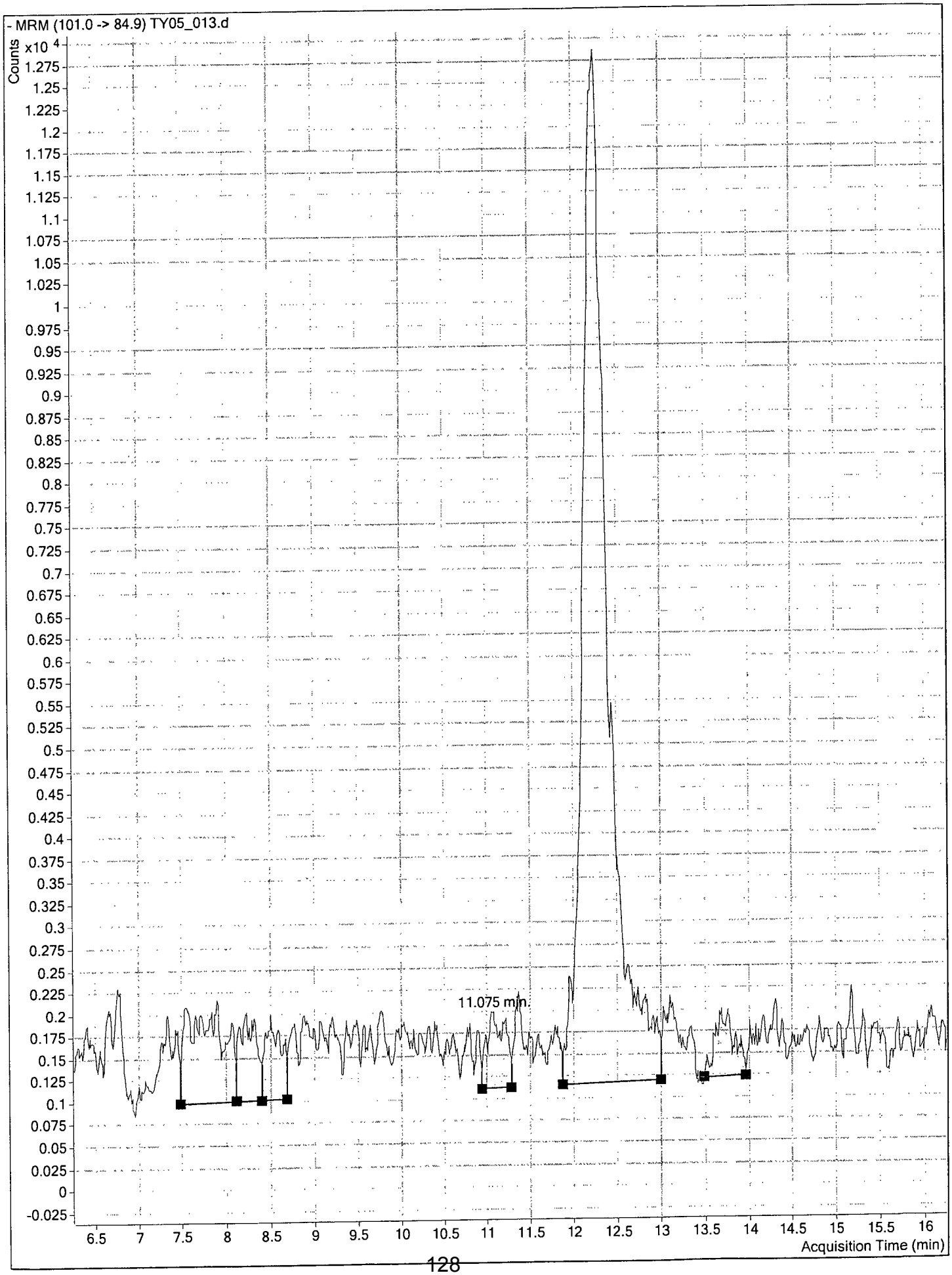


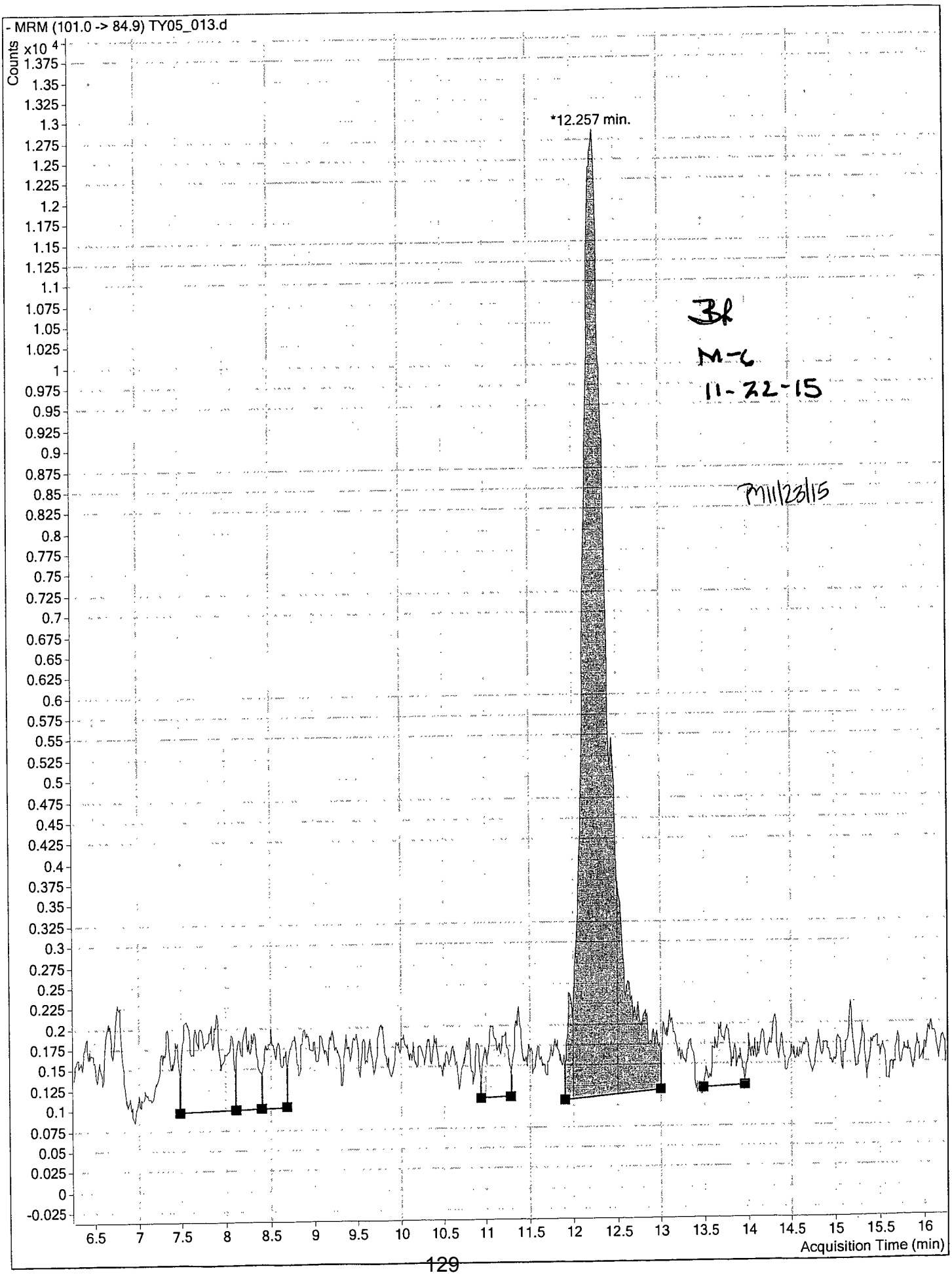
Perchlorate_102








- MRM (101.0 -> 84.9) TY05_013.d
Counts
x10 4
11.075 min
Acquisition Time (min)


- MRM (101.0 -> 84.9) TY05_013.d
Counts
x10 4
*12.257 min.
3f
M-6
11-22-15
M11/23/15
Acquisition Time (min)

CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: TY05_014.d

	Date (s) of Analysis From:11/05/15 To:11/05/15 Time (s) of Analysis From:16:07 To:19:13				Date of Analysis: 11/05/15 Time of Analysis: 19:50 Standard Id: PER_CCV_1 (Standard) 0.002 ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	11.31	11.21	11.41	1.282783	12.29	1.374524	N	7.2
Perchlorate_85	11.26	11.16	11.36	0.387463	12.27	0.385478	N	0.5

FILE ID : TQCK0514.RFB

Data File ID: TY05_014.d

Date Injected : 11/05/15

Time Injected : 19:50

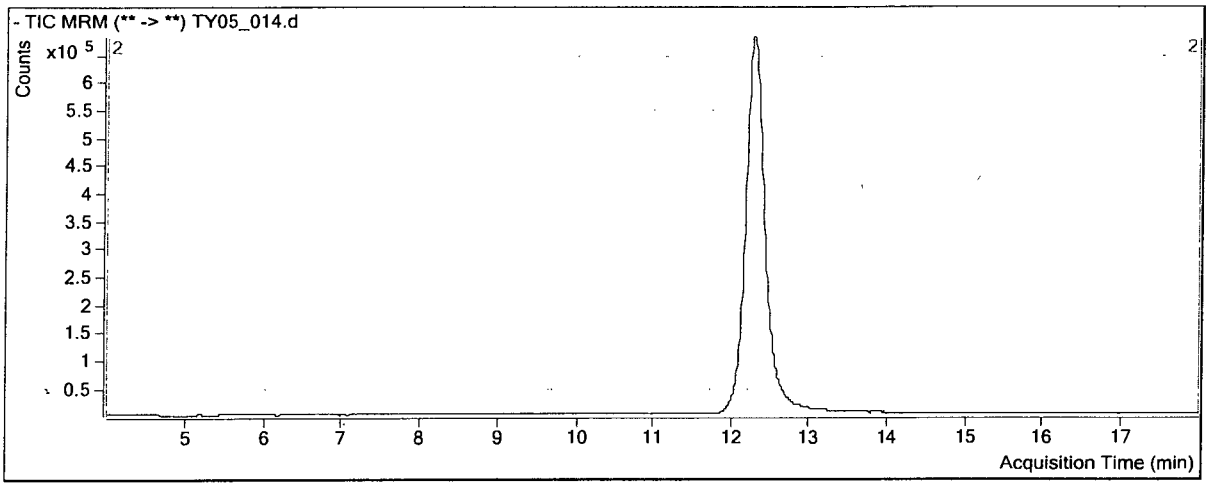
Sample ID : PER_CCV_1 0.002 ug/ml 08/01/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
12.284	7408821	PER_IS_89
12.291	4073441	Perchlorate_83
12.267	1142376	Perchlorate_85

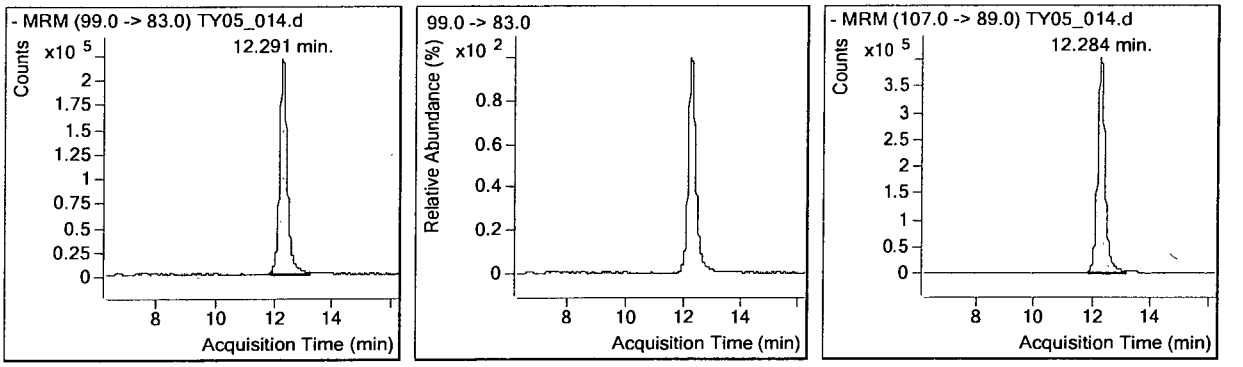
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_014.d	**Sample Name**	PER_CCV_1 0.002 ug/ml 08/01/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	19:50
ClientID	NA	**Inj Vol**	20

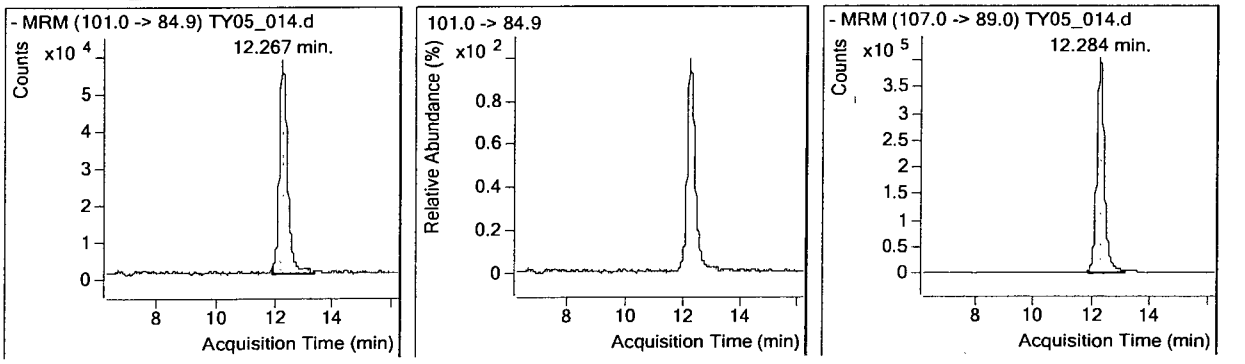


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.291	4073441	7408821
Perchlorate_102	PER_IS_108	12.267	1142376	7408821

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: TY05_024.d

	Date (s) of Analysis From:11/05/15 To:11/05/15 Time (s) of Analysis From:16:07 To:22:19				Date of Analysis: 11/05/15 Time of Analysis: 22:56 Standard Id: PER_CCV_3 (Standard) 0.0004ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	11.31	11.21	11.41	1.282783	12.64	1.145131	N	10.7
Perchlorate_85	11.26	11.16	11.36	0.387463	12.59	0.359292	N	7.3

FILE ID : TQCK0524.RFB

Data File ID: TY05_024.d

Date Injected : 11/05/15

Time Injected : 22:56

Sample ID : PER_CCV_3 0.0004 ug/ml 08/01/15

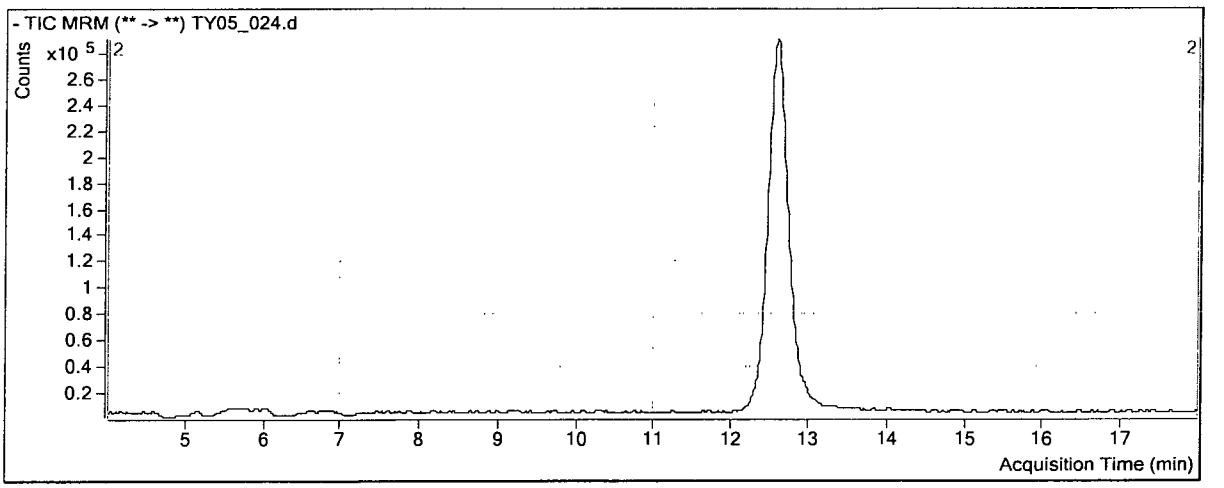
Client ID : NA

Retention Time		Area Count Response	Compound_ID Product Ion
12.611		4912996	PER_IS_89
12.638	*	450082	Perchlorate_83
12.594	*	141216	Perchlorate_85

* MANUAL INTEGRAION

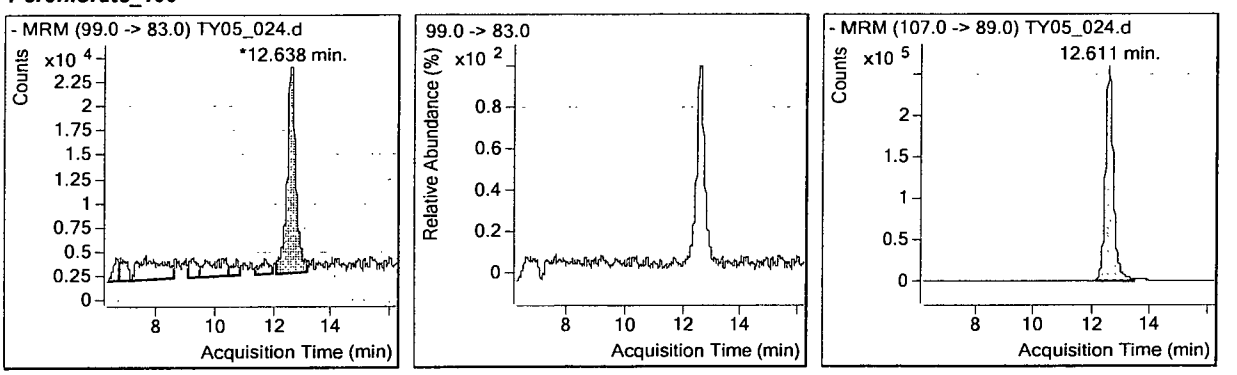
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_024.d	**Sample Name**	PER_CCV_3 0.0004 ug/ml 08/01/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	22:56
ClientID	NA	**Inj Vol**	20

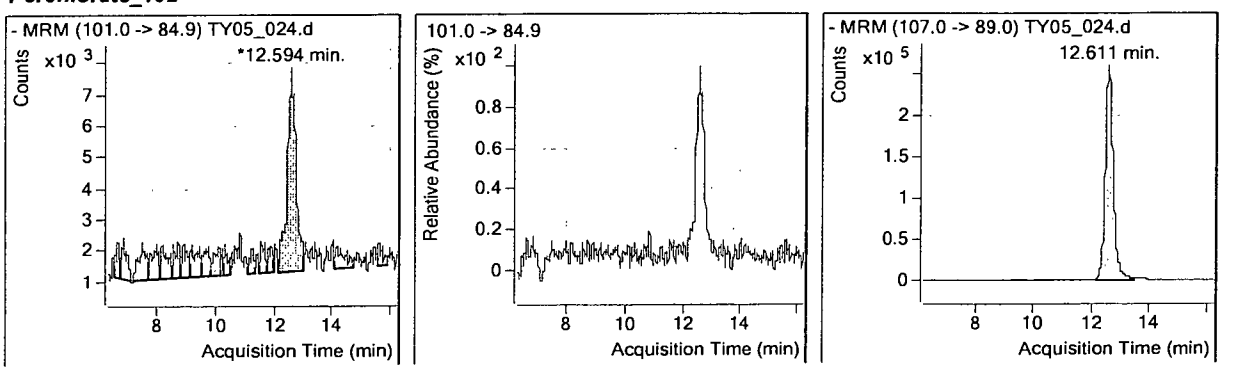


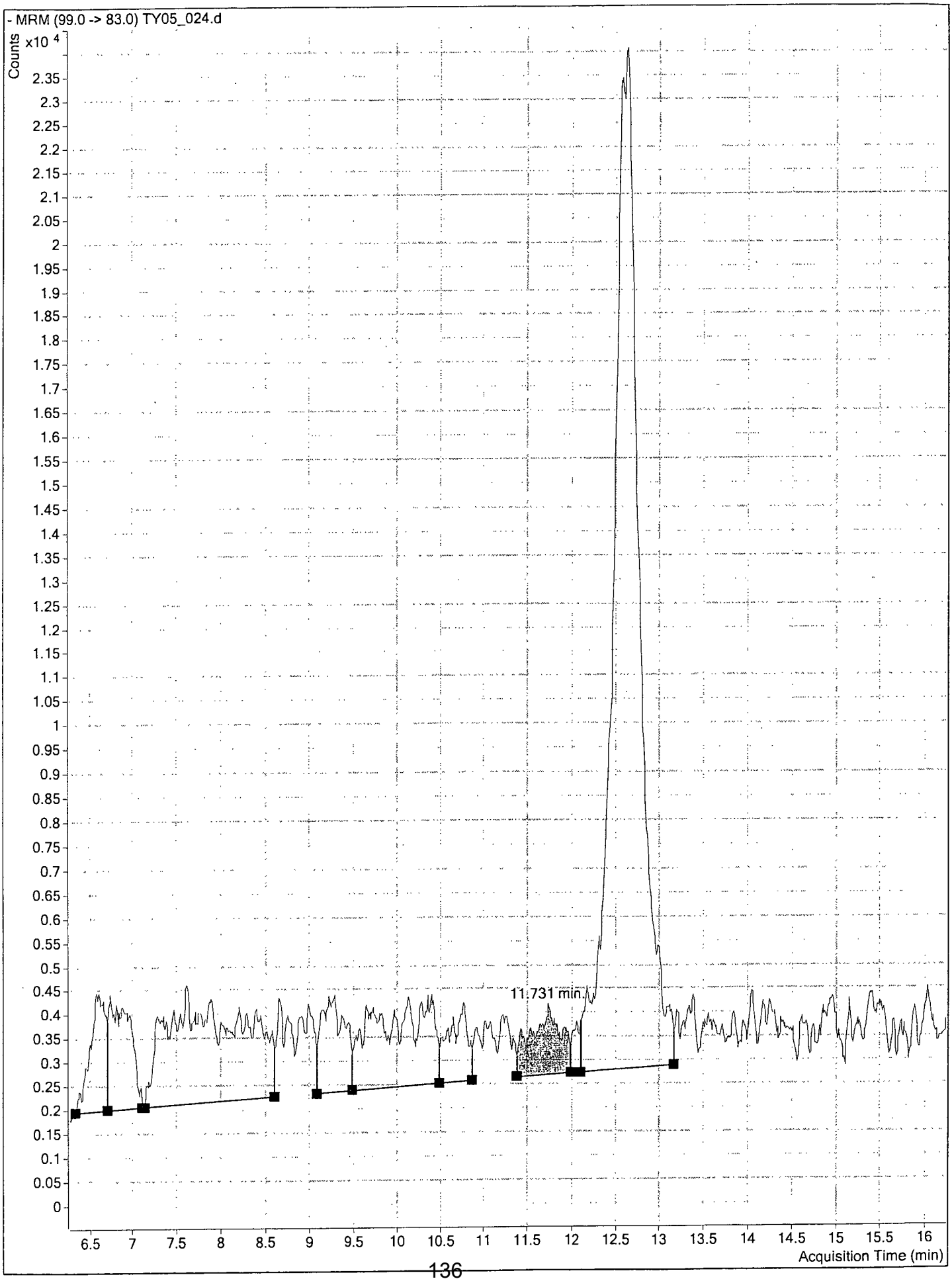
Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108	*	12.638	450082	4912996	* MANUAL INT
Perchlorate_102	PER_IS_108	*	12.594	141216	4912996	* MANUAL INT

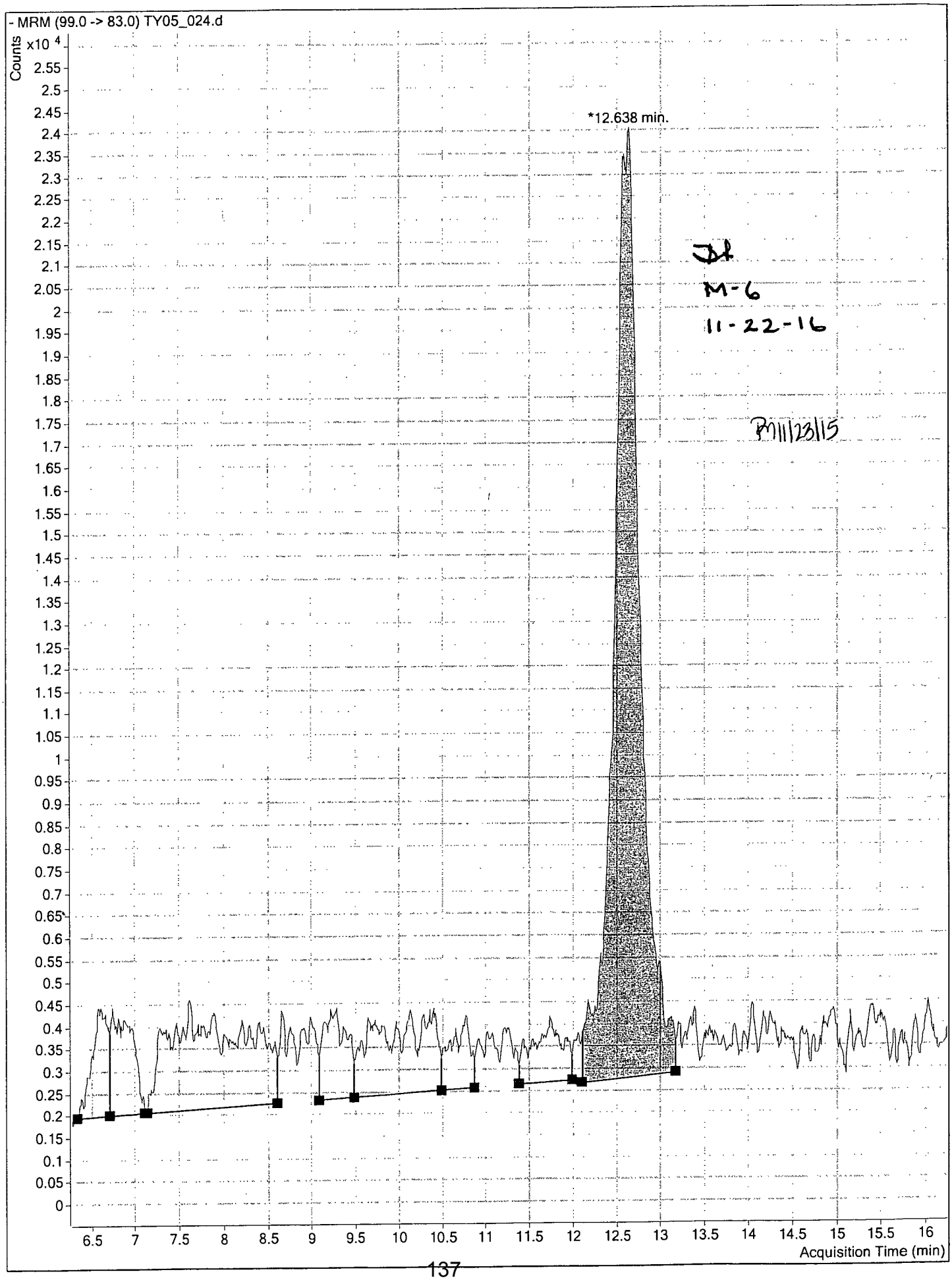
Perchlorate_100

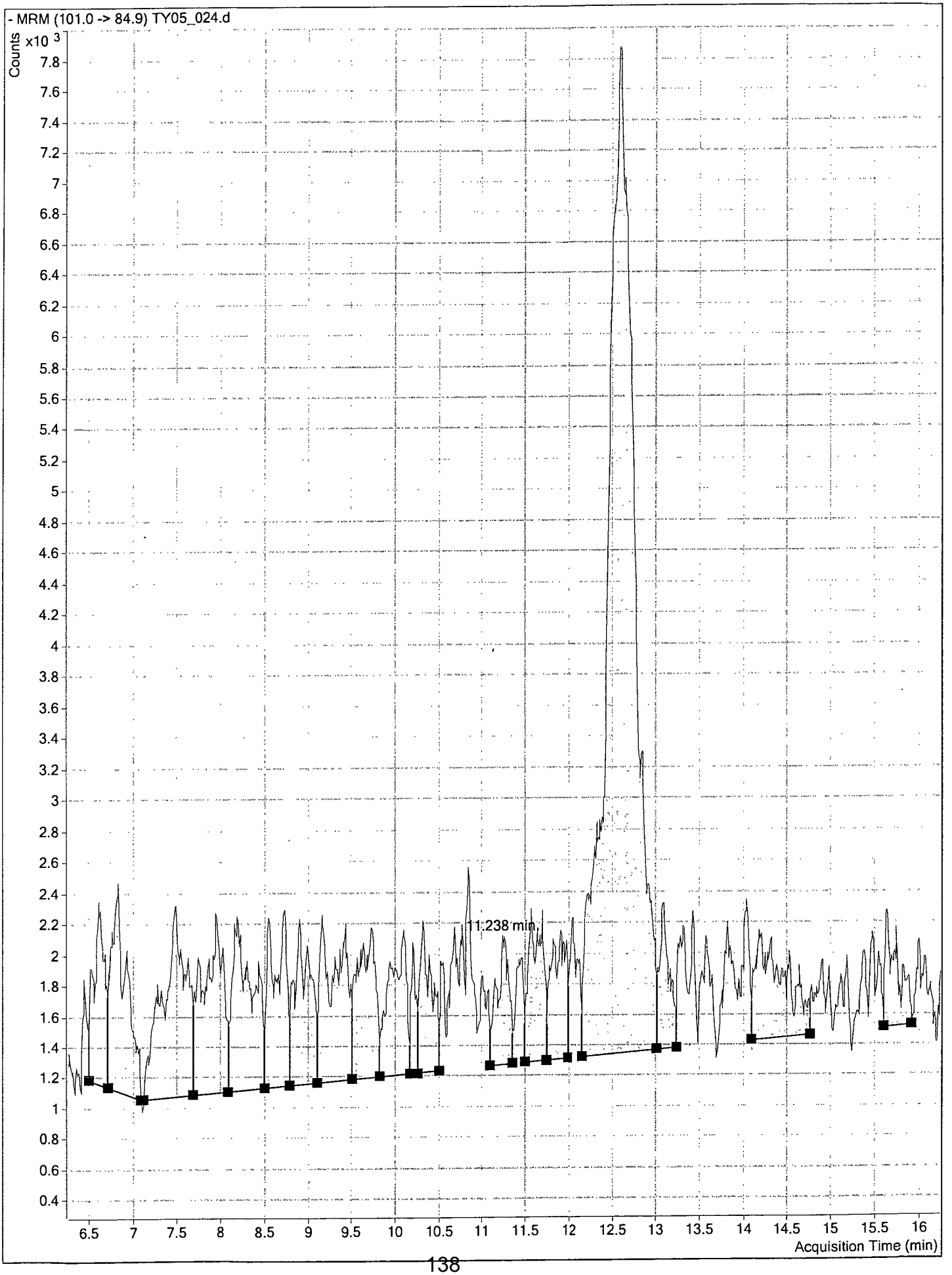


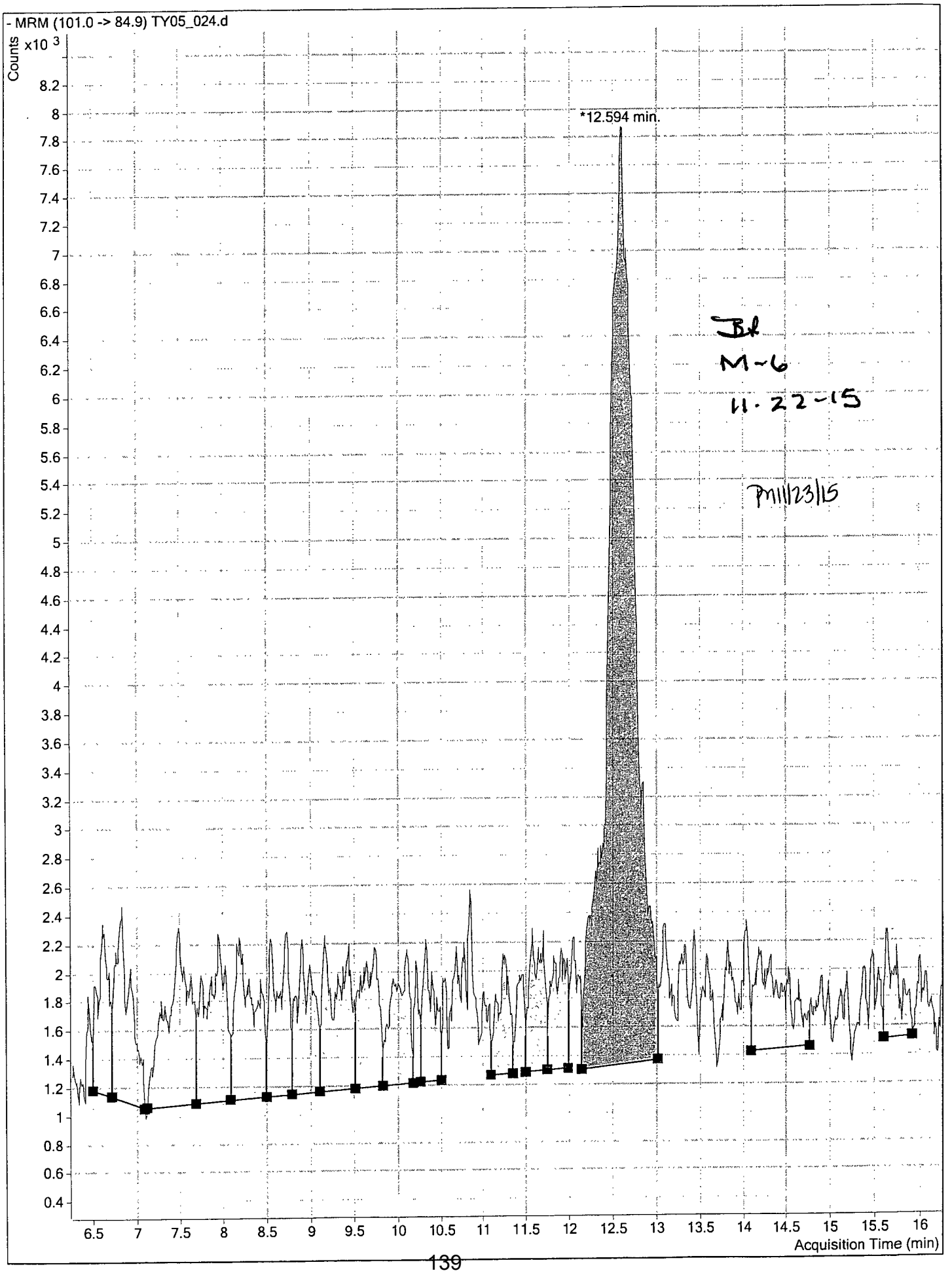
Perchlorate_102




- MRM (99.0 -> 83.0) TY05_024.d
Counts
x10 4
2.35
2.3
2.25
2.2
2.15
2.1
2.05
2
1.95
1.9
1.85
1.8
1.75
1.7
1.65
1.6
1.55
1.5
1.45
1.4
1.35
1.3
1.25
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
11.731 min
6.5
7
7.5
8
8.5
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
Acquisition Time (min)


- MRM (99.0 -> 83.0) TY05_024.d
Counts
x10 4
*12.638 min.
JL
M-6
11-22-16
PM 11/23/15
Acquisition Time (min)


- MRM (101.0 -> 84.9) TY05_024.d
Counts
x10 3
7.8
7.6
7.4
7.2
7
6.8
6.6
6.4
6.2
6
5.8
5.6
5.4
5.2
5
4.8
4.6
4.4
4.2
4
3.8
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
11.238 min
6.5
7
7.5
8
8.5
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
Acquisition Time (min)


- MRM (101.0 -> 84.9) TY05_024.d
Counts
x10 3
*12.594 min.
JH
M-6
11.22-15
PM 11/23/15
Acquisition Time (min)

CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: TY05_025.d

	Date (s) of Analysis From:11/05/15 To:11/05/15 Time (s) of Analysis From:16:07 To:22:19				Date of Analysis: 11/05/15 Time of Analysis: 23:15 Standard Id: PER_CCV_3 (Standard) 0.002 ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	11.31	11.21	11.41	1.282783	12.61	1.289994	N	0.6
Perchlorate_85	11.26	11.16	11.36	0.387463	12.59	0.379418	N	2.1

FILE ID : TQCK0525.RFB

Data File ID: TY05_025.d

Date Injected : 11/05/15

Time Injected : 23:15

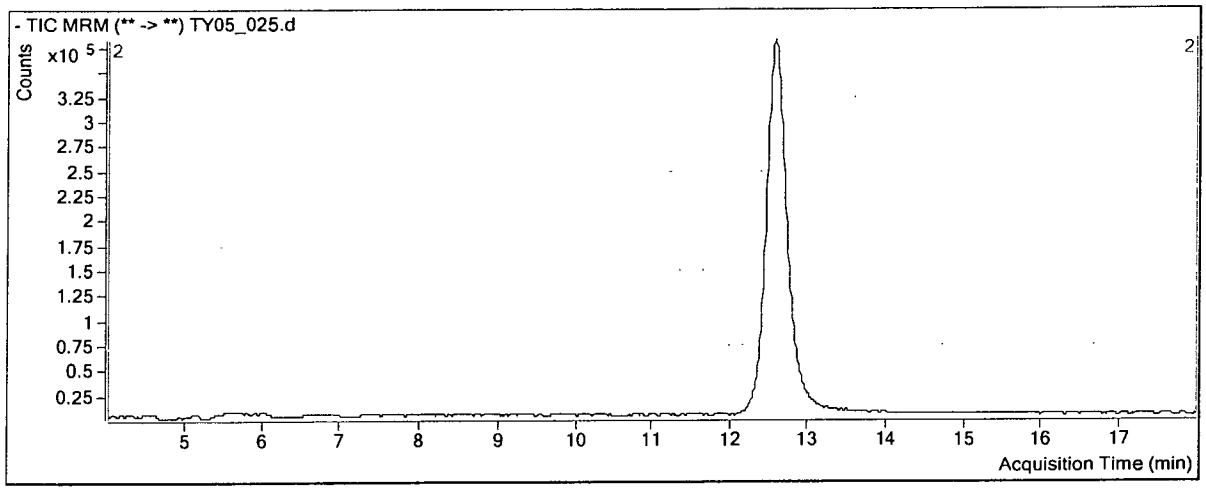
Sample ID : PER_CCV_3 0.002 ug/ml 08/01/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
12.000	4298420	PER_IS_89
12.607	2217975	Perchlorate_83
12.594	652360	Perchlorate_85

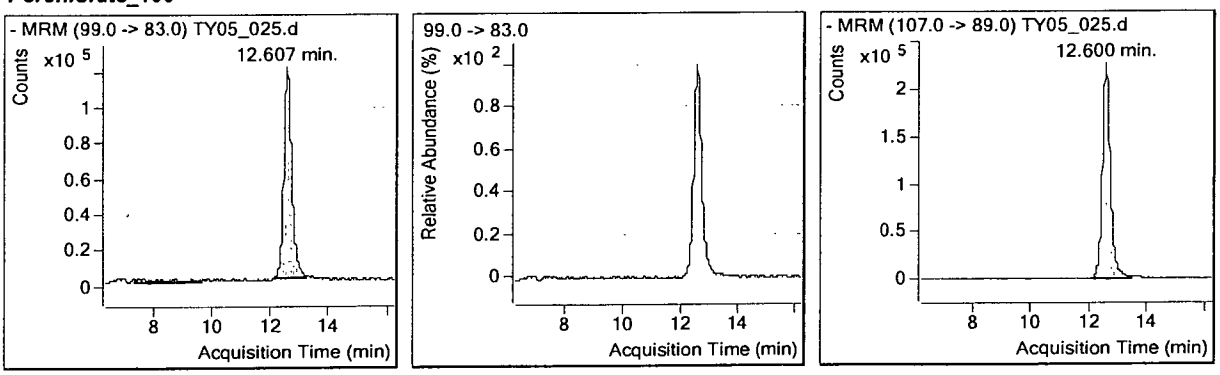
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_025.d	**Sample Name**	PER_CCV_3 0.002 ug/ml 08/01/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	23:15
ClientID	NA	**Inj Vol**	20

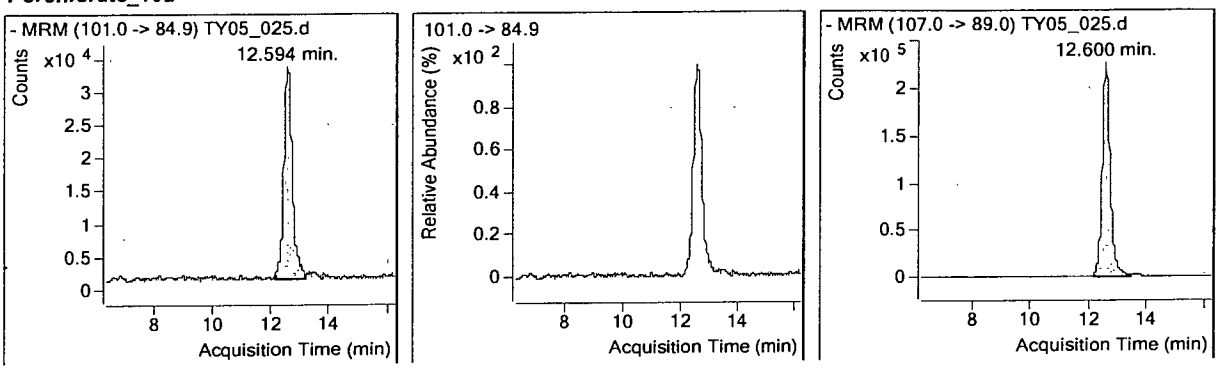


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.607	2217975	4298420
Perchlorate_102	PER_IS_108	12.594	652360	4298420

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: TY05_034.d

	Date (s) of Analysis From:11/05/15 To:11/06/15 Time (s) of Analysis From:16:07 To:01:25				Date of Analysis: 11/06/15 Time of Analysis: 02:03 Standard Id: PER_CCV_3 (Standard) 0.0004ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	11.31	11.21	11.41	1.282783	12.72	1.169456	N	8.8
Perchlorate_85	11.26	11.16	11.36	0.387463	12.74	0.356156	N	8.1

FILE ID : TQCK0534.RFB

Data File ID: TY05_034.d

Date Injected : 11/06/15

Time Injected : 2:03

Sample ID : PER_CCV_3 0.0004 ug/ml 08/01/15

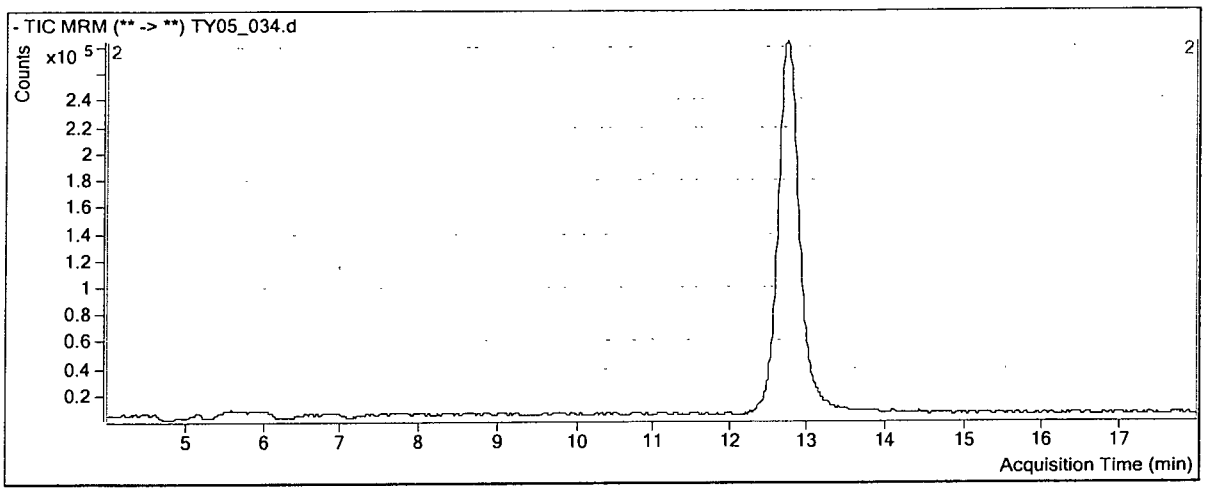
Client ID : NA

Retention Time		Area Count Response	Compound_ID Product Ion
12.753		4942609	PER_IS_89
12.719	*	462413	Perchlorate_83
12.736	*	140827	Perchlorate_85

* MANUAL INTEGRAION

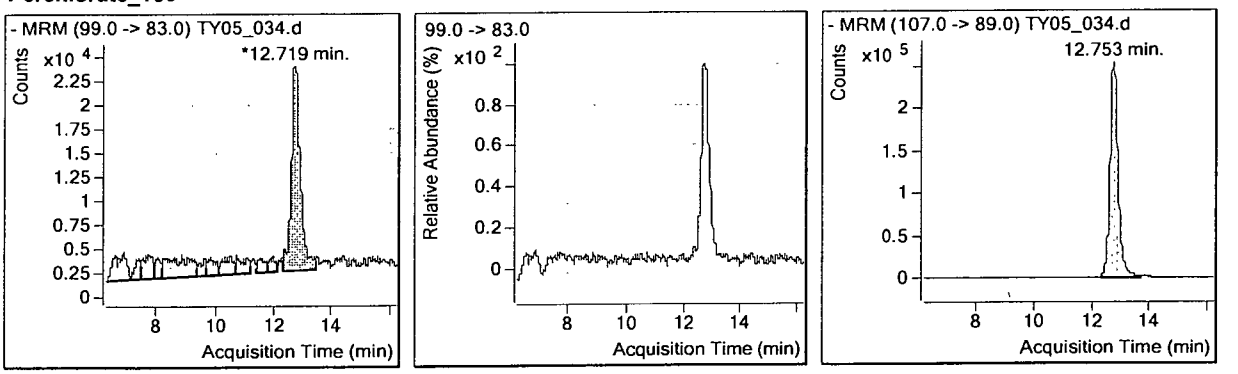
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_034.d	**Sample Name**	PER_CCV_3 0.0004 ug/ml 08/01/15
Sample Type	Sample	**Acq_Date**	11/06/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	2:03
ClientID	NA	**Inj Vol**	20

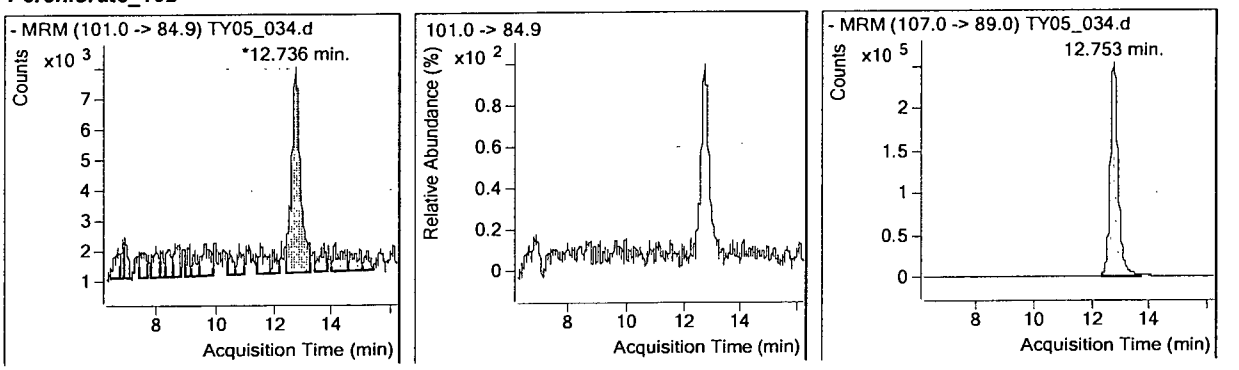


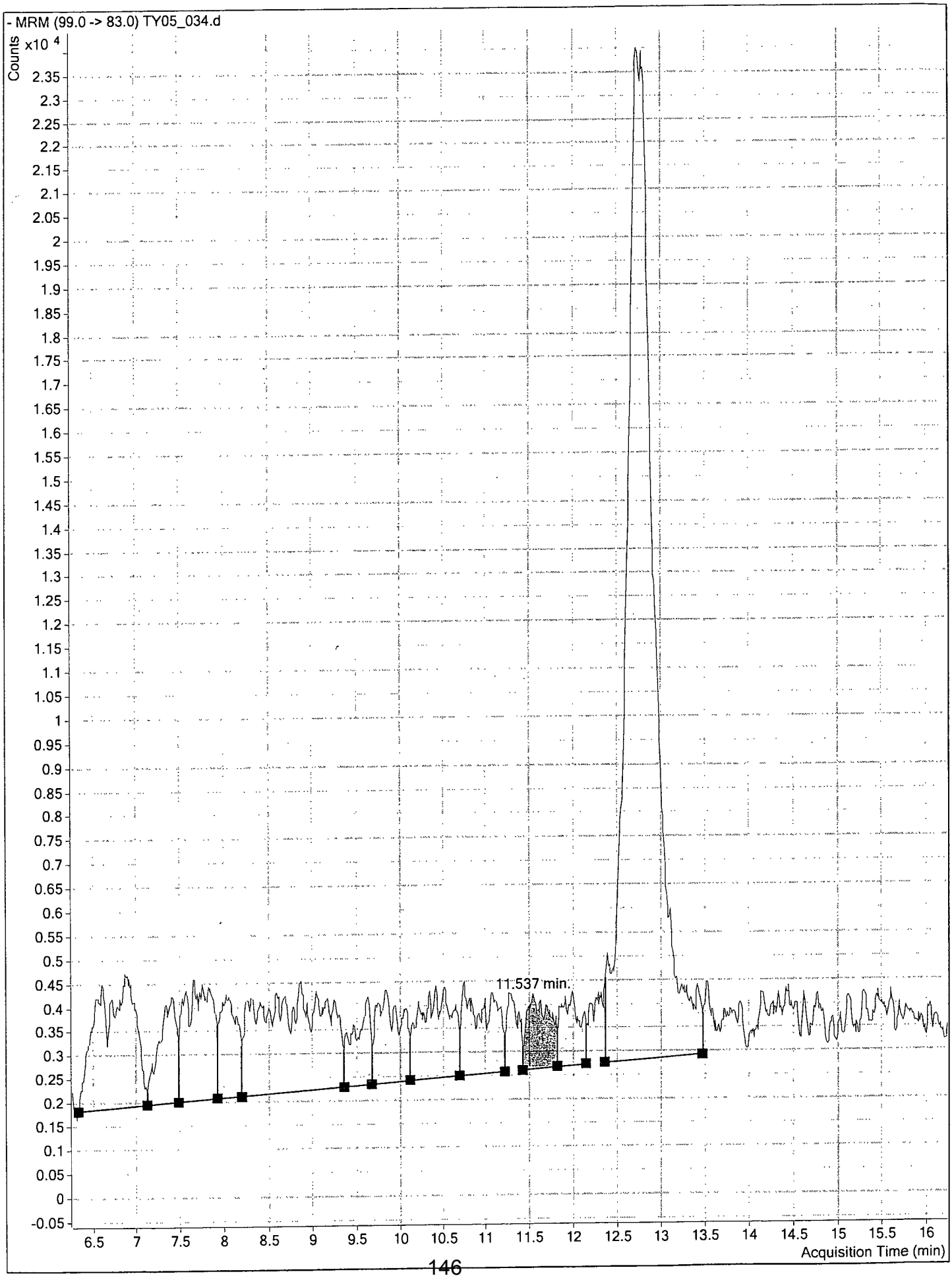
Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108	*	12.719	462413	4942609	* MANUAL INT
Perchlorate_102	PER_IS_108	*	12.736	140827	4942609	* MANUAL INT

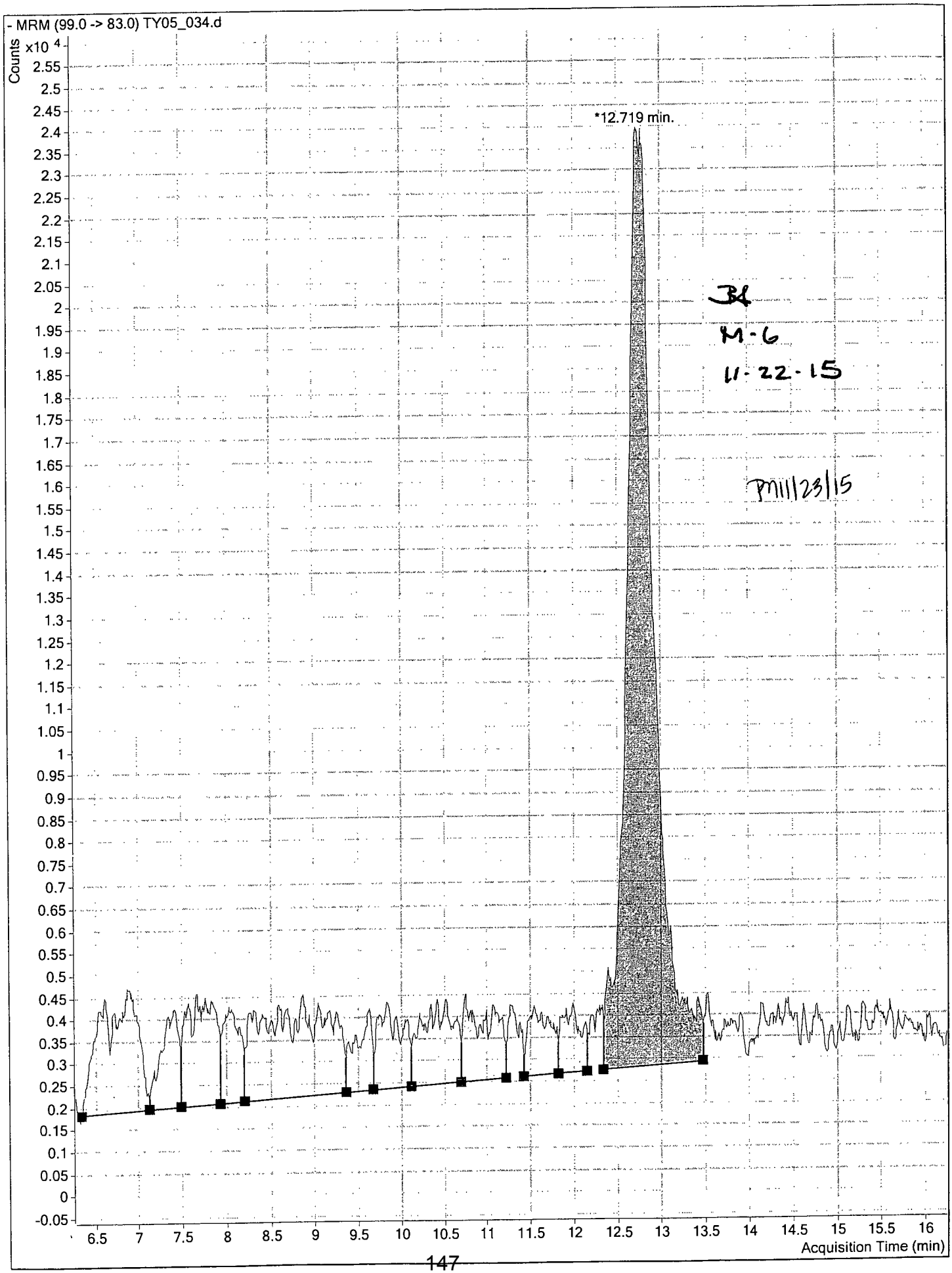
Perchlorate_100

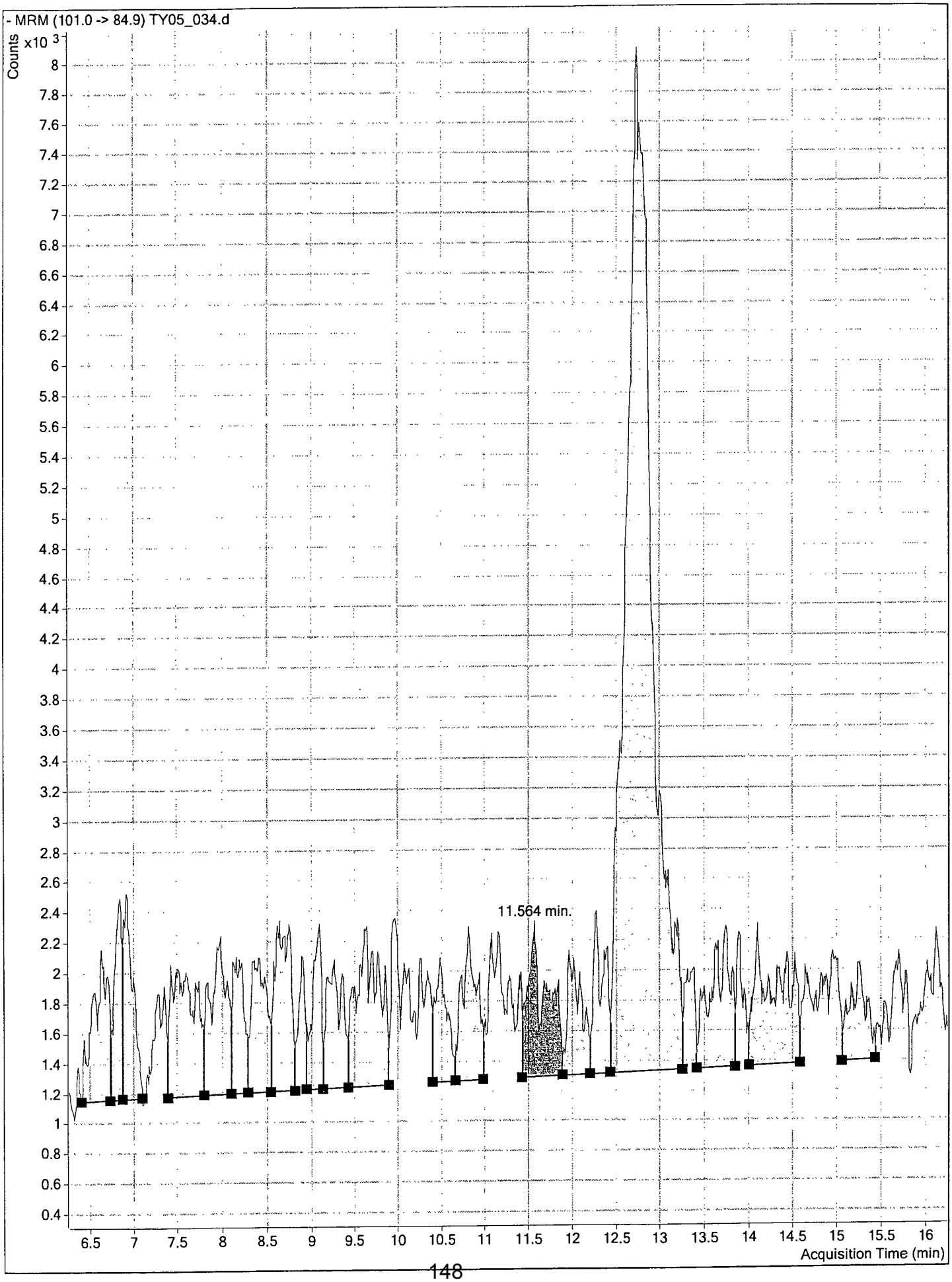


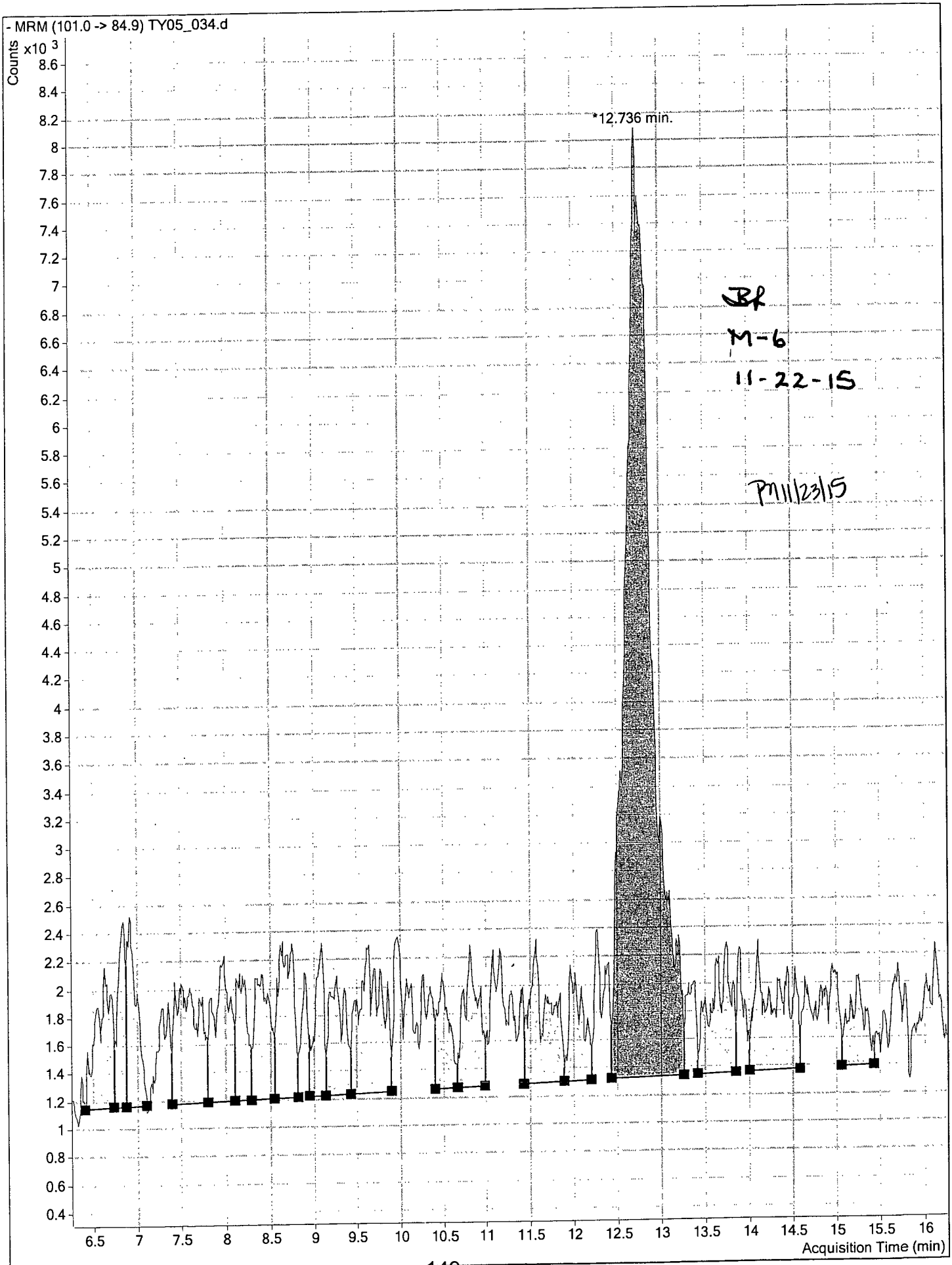
Perchlorate_102




- MRM (99.0 -> 83.0) TY05_034.d
Counts
x10 4
2.35
2.3
2.25
2.2
2.15
2.1
2.05
2
1.95
1.9
1.85
1.8
1.75
1.7
1.65
1.6
1.55
1.5
1.45
1.4
1.35
1.3
1.25
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.05
11.537 min.
6.5
7
7.5
8
8.5
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
Acquisition Time (min)


- MRM (99.0 -> 83.0) TY05_034.d
Counts
x10 4
*12.719 min.
JH
M-6
11-22-15
PM 11/23/15
Acquisition Time (min)


- MRM (101.0 -> 84.9) TY05_034.d
Counts x10 3
8
7.8
7.6
7.4
7.2
7
6.8
6.6
6.4
6.2
6
5.8
5.6
5.4
5.2
5
4.8
4.6
4.4
4.2
4
3.8
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
11.564 min.
6.5
7
7.5
8
8.5
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
Acquisition Time (min)


- MRM (101.0 -> 84.9) TY05_034.d
Counts
x10 3
*12.736 min.
Acquisition Time (min)
JBR
M-6
11-22-15
PM 11/23/15

CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: TY05_035.d

	Date (s) of Analysis From:11/05/15 To:11/06/15 Time (s) of Analysis From:16:07 To:01:25				Date of Analysis: 11/06/15 Time of Analysis: 02:21 Standard Id: PER_CCV_3 (Standard) 0.002 ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	11.31	11.21	11.41	1.282783	12.77	1.314057	N	2.4
Perchlorate_85	11.26	11.16	11.36	0.387463	12.76	0.402382	N	3.9

FILE ID : TQCK0535.RFB

Data File ID: TY05_035.d

Date Injected : 11/06/15

Time Injected : 2:21

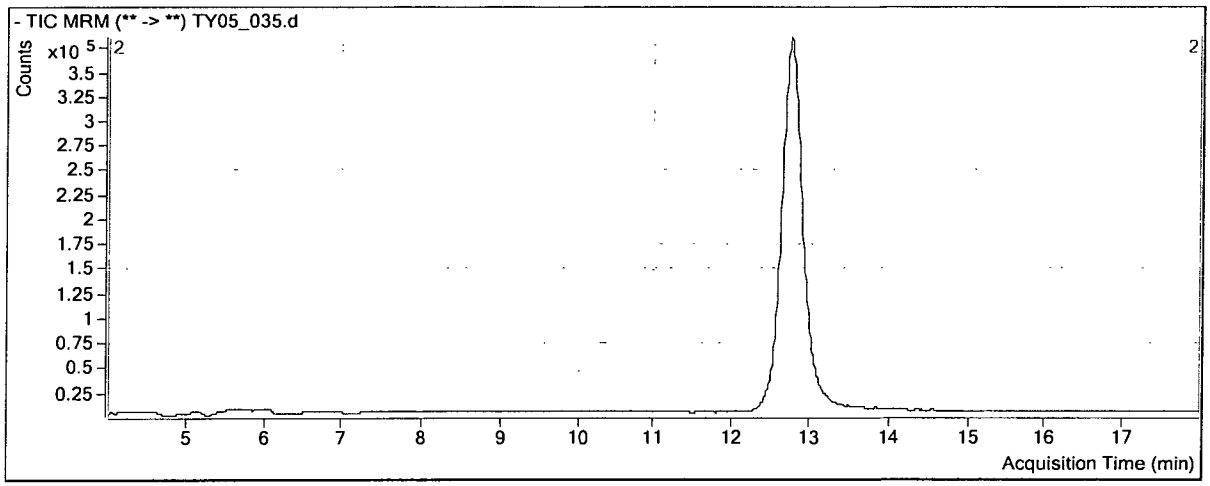
Sample ID : PER_CCV_3 0.002 ug/ml 08/01/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
12.763	4357376	PER_IS_89
12.700	2290336	Perchlorate_83
12.757	701332	Perchlorate_85

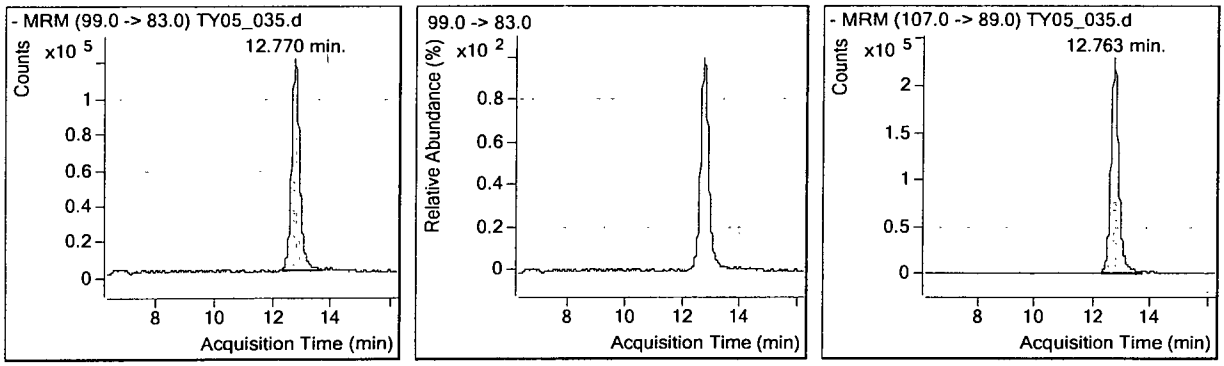
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_035.d	**Sample Name**	PER_CCV_3 0.002 ug/ml 08/01/15
Sample Type	Sample	**Acq_Date**	11/06/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	2:21
ClientID	NA	**Inj Vol**	20

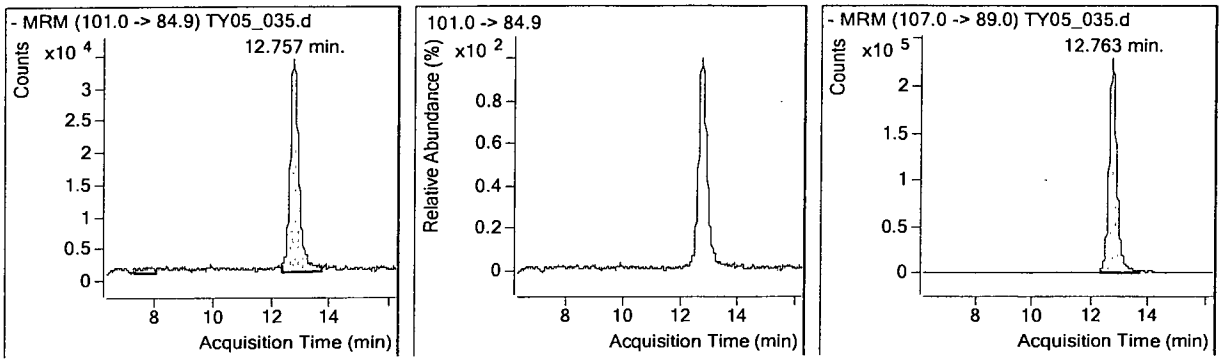


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.770	2290336	4357376
Perchlorate_102	PER_IS_108	12.757	701332	4357376

Perchlorate_100



Perchlorate_102



METHOD 6850 CALIBRATION SUMMARY

Lab Name: APPL Inc. DETECTOR ID : Agilent 6460 Triple Quad LC/MS

Average Relative Response Factor Summary

Analyte Id:	R.R.F.#1 PERCHLORATE 0.0002 PPM	R.R.F.#2 PERCHLORATE 0.0004 PPM	R.R.F.#3 PERCHLORATE 0.001 PPM	R.R.F.#4 PERCHLORATE 0.002 PPM	R.R.F.#5 PERCHLORATE 0.005 PPM	R.R.F.#6 PERCHLORATE 0.010 PPM	AVERAGE REL.RESP. FACTOR	%RSD RRF
Perchlorate_83	1.243227	1.680246	1.341898	1.193467	1.265680	1.502345	1.371144	13.55
Perchlorate_85	0.458375	0.497744	0.404772	0.341609	0.351592	0.418990	0.412180	14.64

FILE ID : TQ1107A.FRB

Perchlorate_83

RESPONSE FACTOR CALCULATIONS - AREA COUNTS

DATA FILES : TY07_003.d - TY07_008.d

The Data points that were Read Were

Standard Response	Standard Concentration µg/ml	Internal Standard Response	Internal Standard Concentration µg/ml	Response Factor	RPD	%RSD
268654.00	0.0002	5402351.00	0.0050	1.243227	9.33	13.55
552262.00	0.0004	4108491.00	0.0050	1.680246	22.54	
1362972.00	0.0010	5078523.00	0.0050	1.341898	2.13	
2837952.00	0.0020	5944762.00	0.0050	1.193467	12.96	
7583783.00	0.0050	5991866.00	0.0050	1.265680	7.69	
15583461.00	0.0100	5186380.00	0.0050	1.502345	9.57	

The Average Response Factor = 1.371144

Perchlorate_85

RESPONSE FACTOR CALCULATIONS - AREA COUNTS

DATA FILES : TY07_003.d - TY07_008.d

The Data points that were Read Were

Standard Response	Standard Concentration µg/ml	Internal Standard Response	Internal Standard Concentration µg/ml	Response Factor	RPD	%RSD
99052.00	0.0002	5402351.00	0.0050	0.458375	11.21	14.64
163598.00	0.0004	4108491.00	0.0050	0.497744	20.76	
411129.00	0.0010	5078523.00	0.0050	0.404772	1.80	
812314.00	0.0020	5944762.00	0.0050	0.341609	17.12	
2106695.00	0.0050	5991866.00	0.0050	0.351592	14.70	
4346083.00	0.0100	5186380.00	0.0050	0.418990	1.65	

The Average Response Factor = 0.412180

Data File ID: TY07_003.d

Date Injected : 11/07/15

Time Injected : 14:14

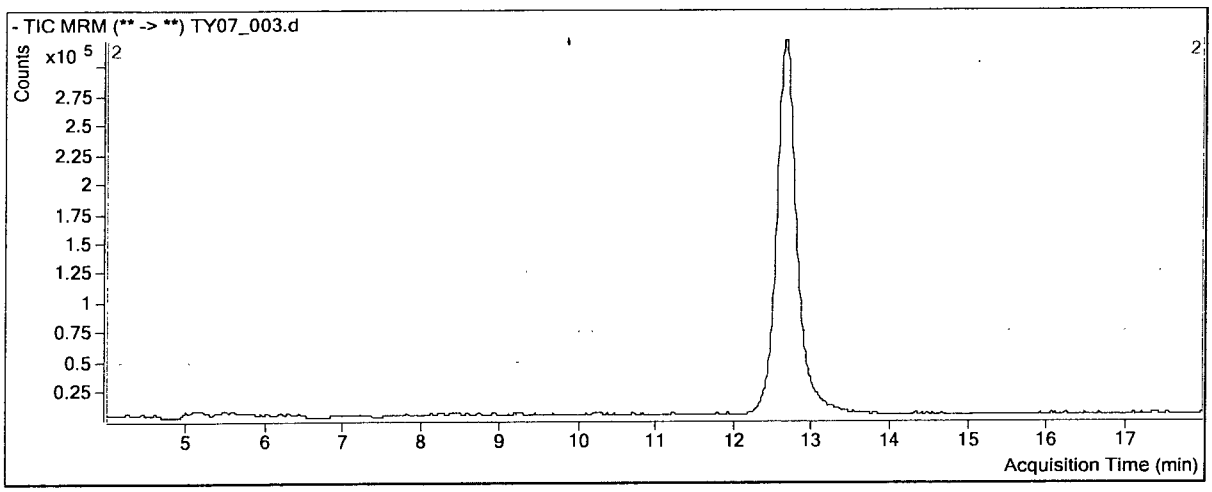
Sample ID : PERCHLORATE 0.0002 ug/ml 11/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
12.672	5402351	PER_IS_89
12.699	268654	Perchlorate_83
12.675	99052	Perchlorate_85

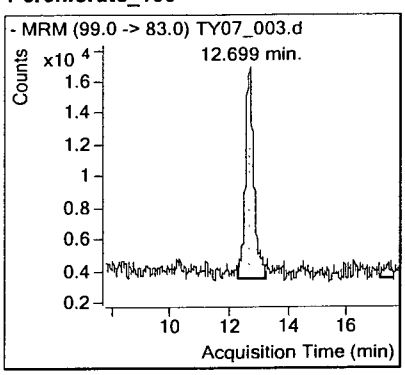
Quantitative Analysis Sample Report

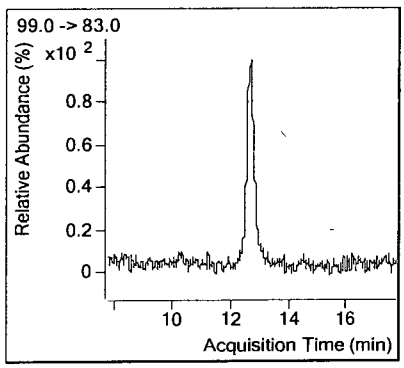
Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_003.d	**Sample Name**	PERCHLORATE 0.0002 ug/ml 11/07/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	14:14
ClientID	NA	**Inj Vol**	20

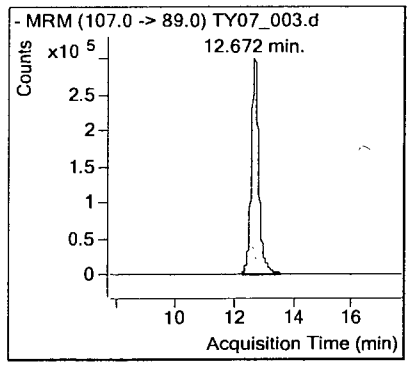


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.699	268654	5402351
Perchlorate_102	PER_IS_108	12.675	99052	5402351

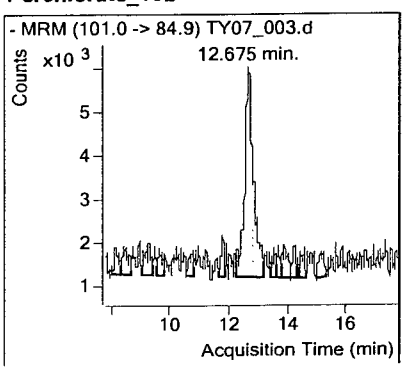
Perchlorate_100

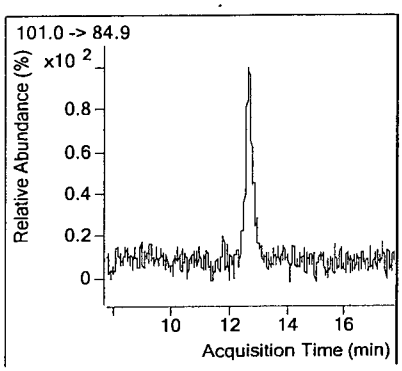


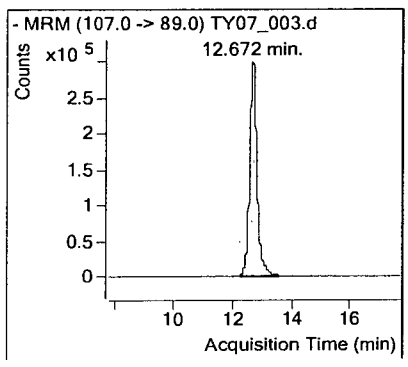




Perchlorate_102







Data File ID: TY07_004.d

Date Injected : 11/07/15

Time Injected : 14:33

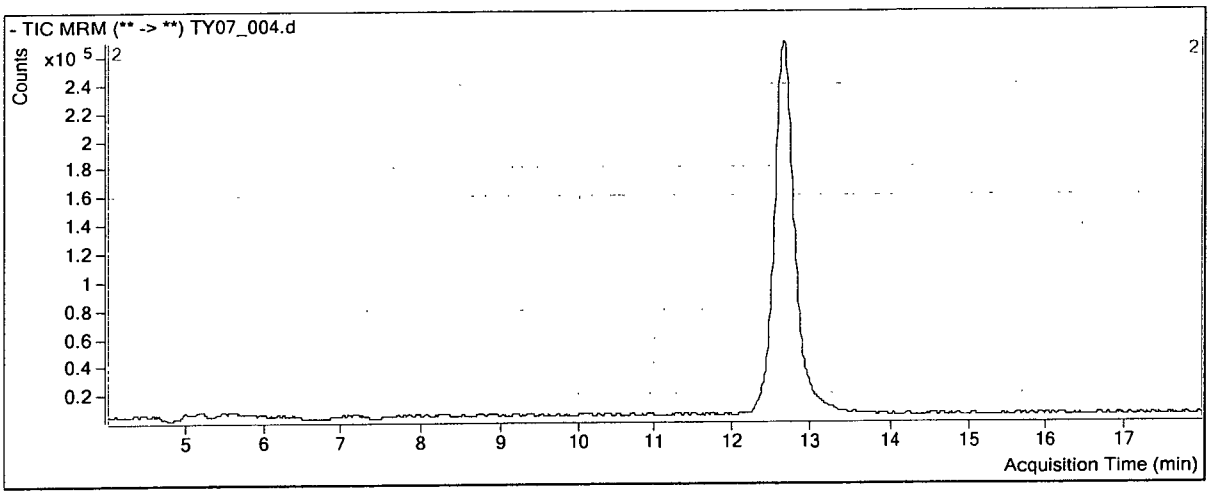
Sample ID : PERCHLORATE 0.0004 ug/ml 11/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
12.672	4108491	PER_IS_89
12.678	552262	Perchlorate_83
12.665	163598	Perchlorate_85

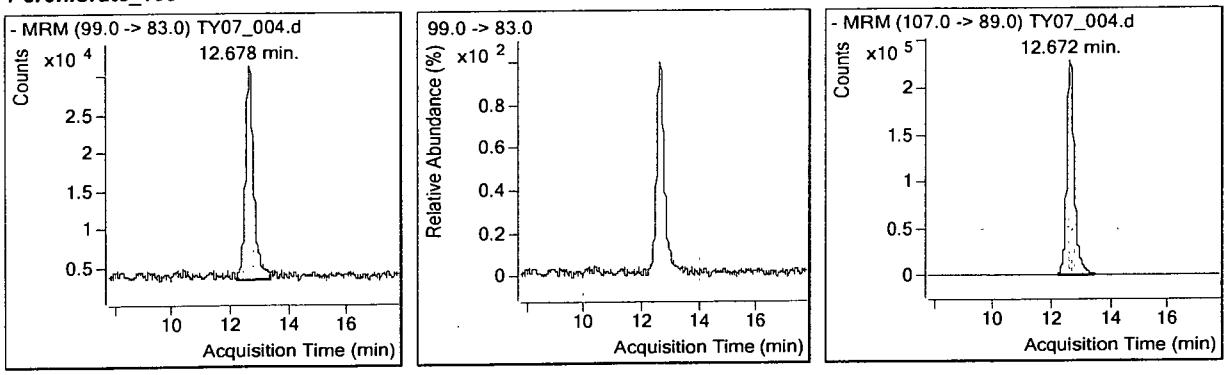
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_004.d	**Sample Name**	PERCHLORATE 0.0004 ug/ml 11/07/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	14:33
ClientID	NA	**Inj Vol**	20

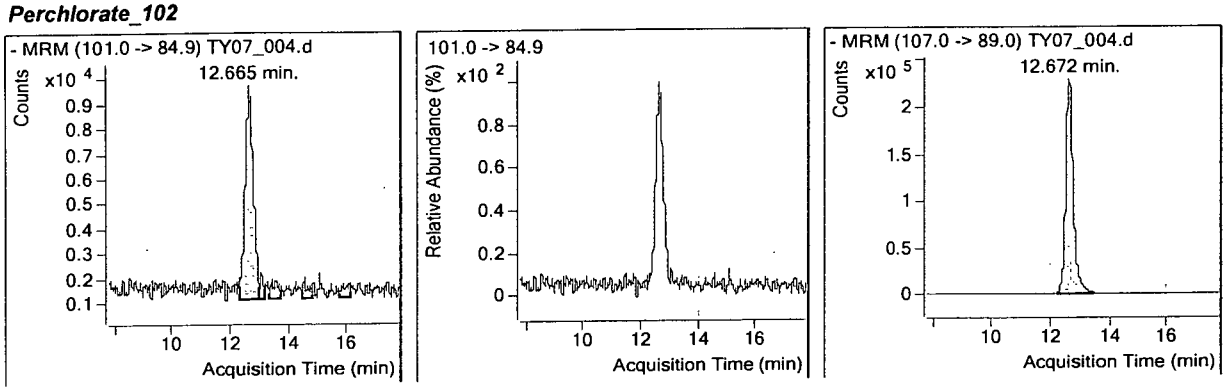


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.678	552262	4108491
Perchlorate_102	PER_IS_108	12.665	163598	4108491

Perchlorate_100



Perchlorate_102



Data File ID: TY07_005.d

Date Injected : 11/07/15

Time Injected : 14:51

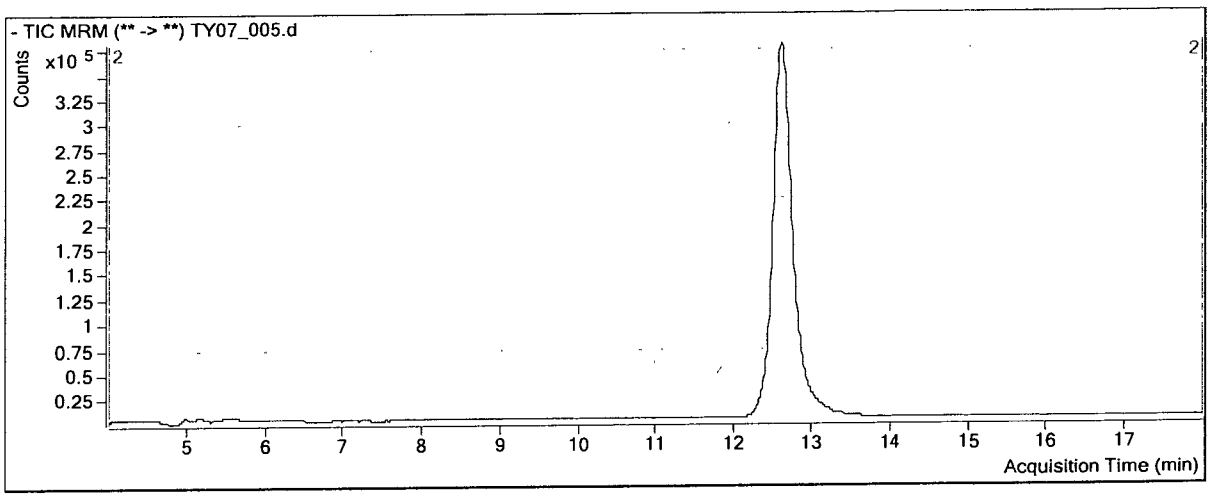
Sample ID : PERCHLORATE 0.001 ug/ml 11/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
12.641	5078523	PER_IS_89
12.638	1362972	Perchlorate_83
12.655	411129	Perchlorate_85

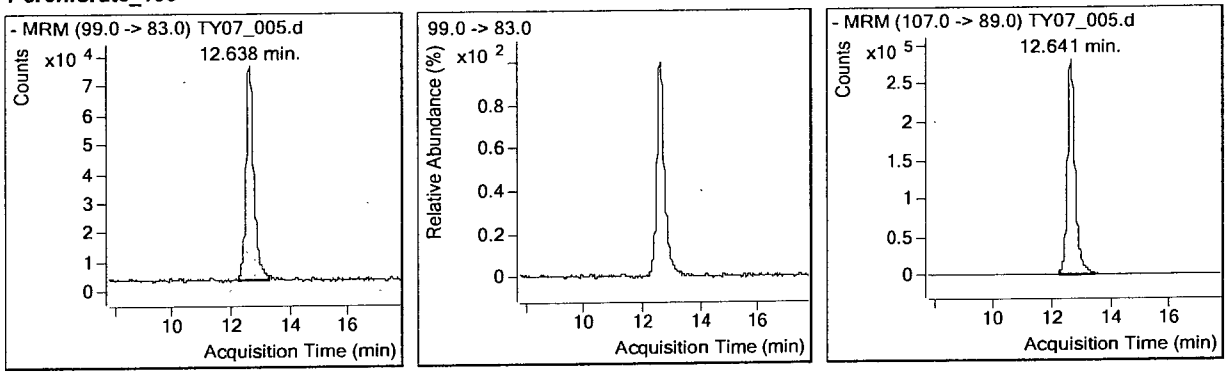
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_005.d	**Sample Name**	PERCHLORATE 0.001 ug/ml 11/07/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	14:51
ClientID	NA	**Inj Vol**	20

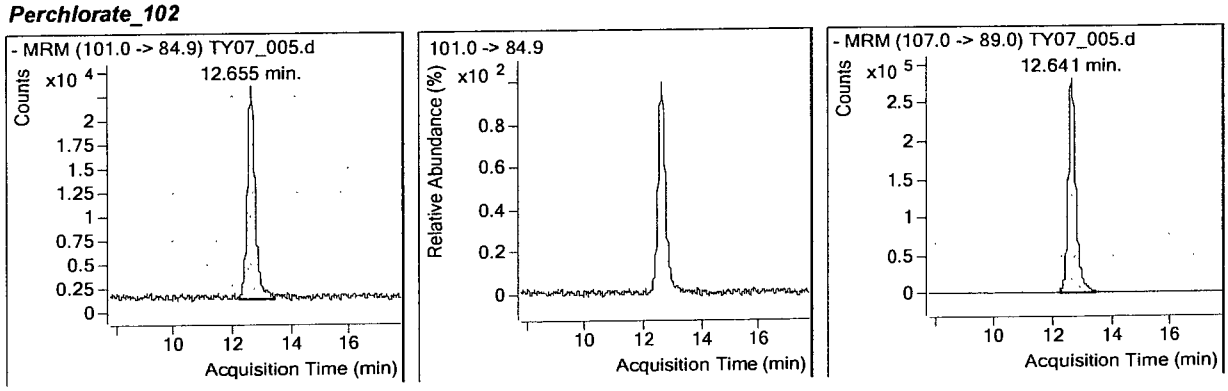


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.638	1362972	5078523
Perchlorate_102	PER_IS_108	12.655	411129	5078523

Perchlorate_100



Perchlorate_102



Data File ID: TY07_006.d

Date Injected : 11/07/15

Time Injected : 15:10

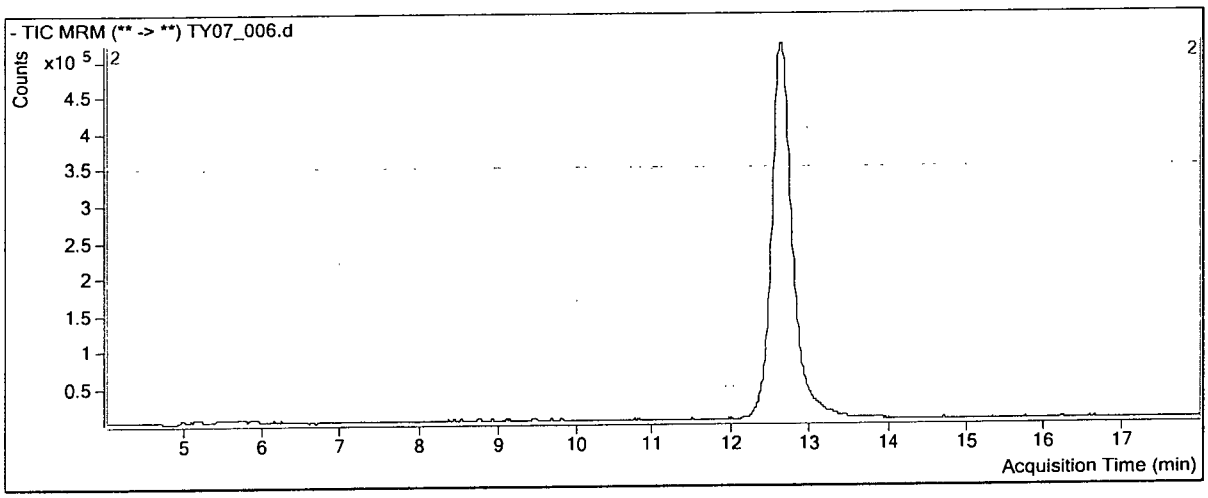
Sample ID : PERCHLORATE 0.002 ug/ml 11/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
12.641	5944762	PER_IS_89
12.658	2837952	Perchlorate_83
12.655	812314	Perchlorate_85

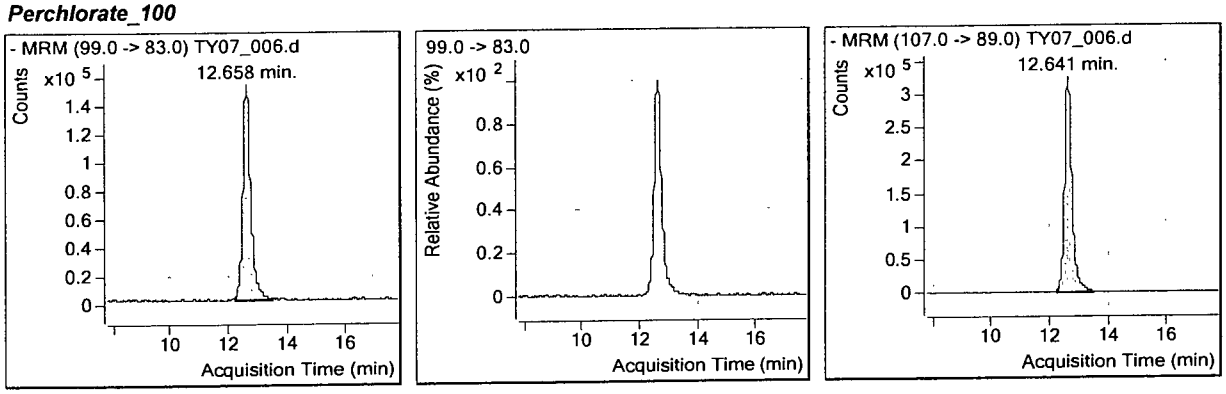
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_006.d	**Sample Name**	PERCHLORATE 0.002 ug/ml 11/07/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	15:10
ClientID	NA	**Inj Vol**	20

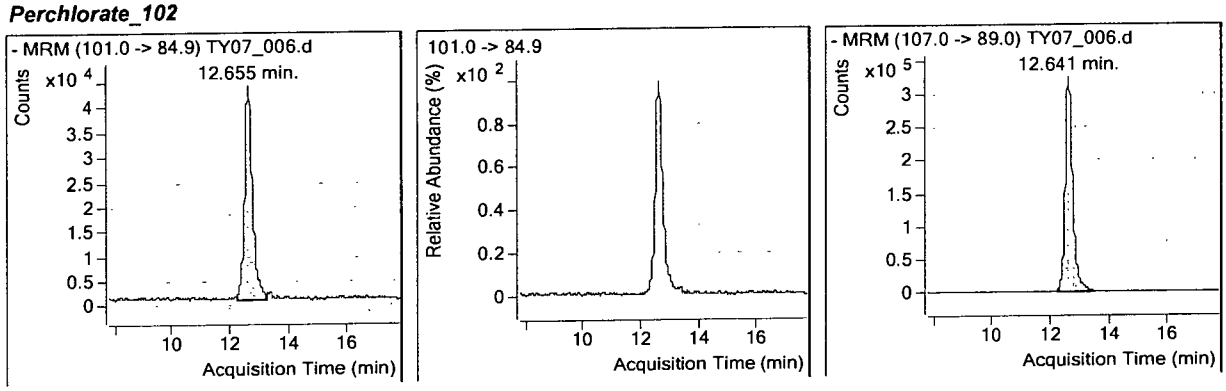


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.658	2837952	5944762
Perchlorate_102	PER_IS_108	12.655	812314	5944762

Perchlorate_100



Perchlorate_102



Data File ID: TY07_007.d

Date Injected : 11/07/15

Time Injected : 15:29

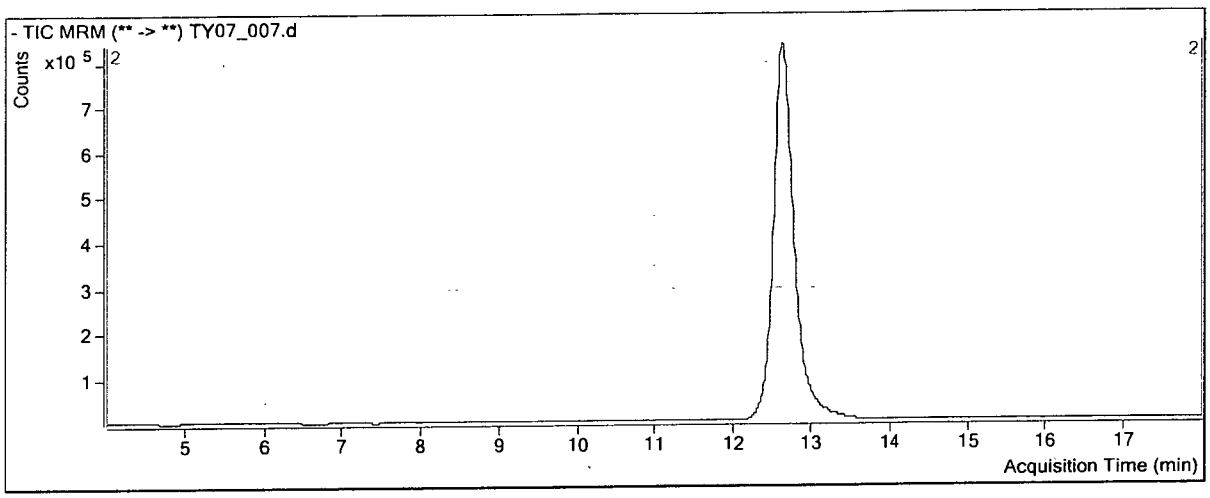
Sample ID : PERCHLORATE 0.005 ug/ml 11/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
12.641	5991866	PER_IS_89
12.638	7583783	Perchlorate_83
12.644	2106695	Perchlorate_85

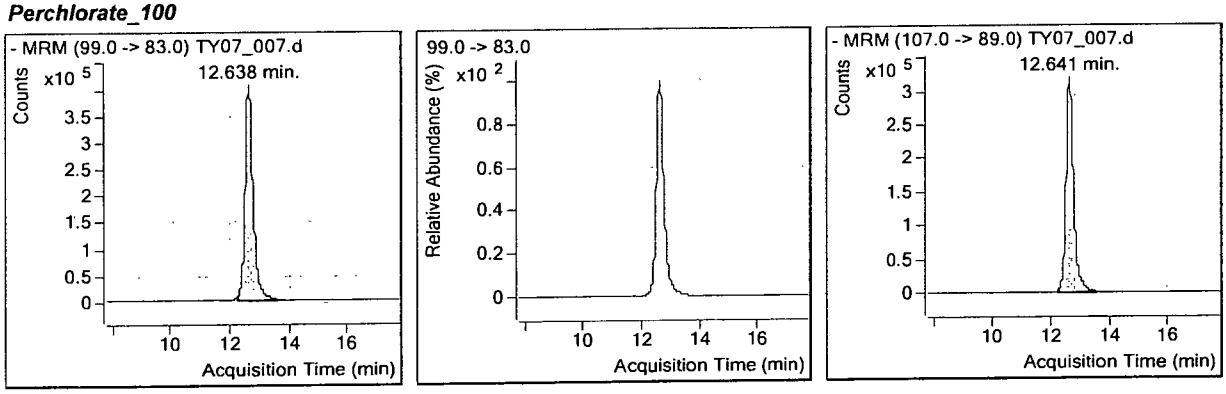
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_007.d	**Sample Name**	PERCHLORATE 0.005 ug/ml 11/07/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	15:29
ClientID	NA	**Inj Vol**	20

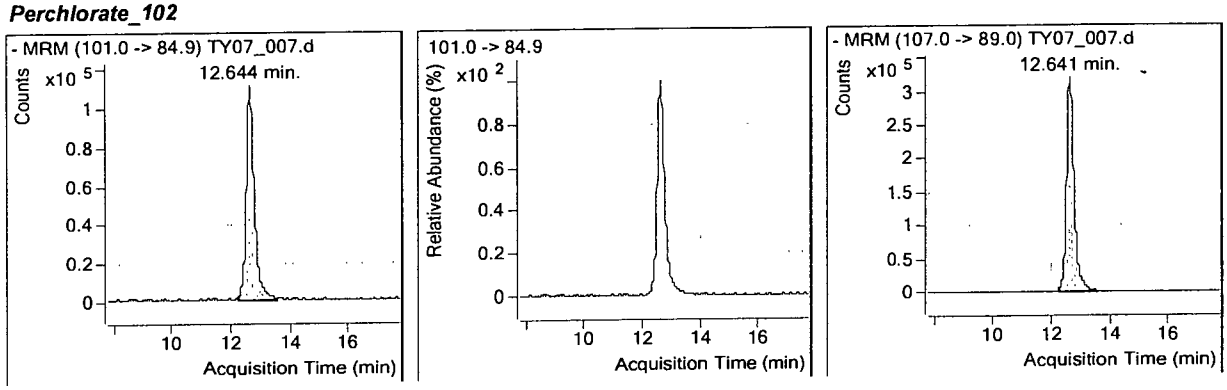


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.638	7583783	5991866
Perchlorate_102	PER_IS_108	12.644	2106695	5991866

Perchlorate_100



Perchlorate_102



Data File ID: TY07_008.d

Date Injected : 11/07/15

Time Injected : 15:47

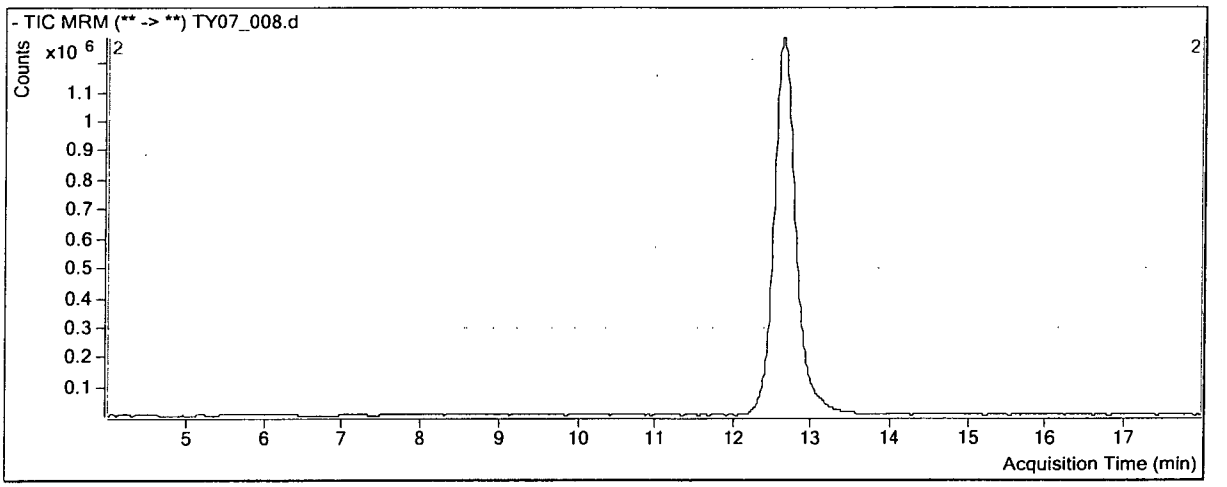
Sample ID : PERCHLORATE 0.010 ug/ml 08/01/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
12.641	5186380	PER_IS_89
12.658	15583461	Perchlorate_83
12.644	4346083	Perchlorate_85

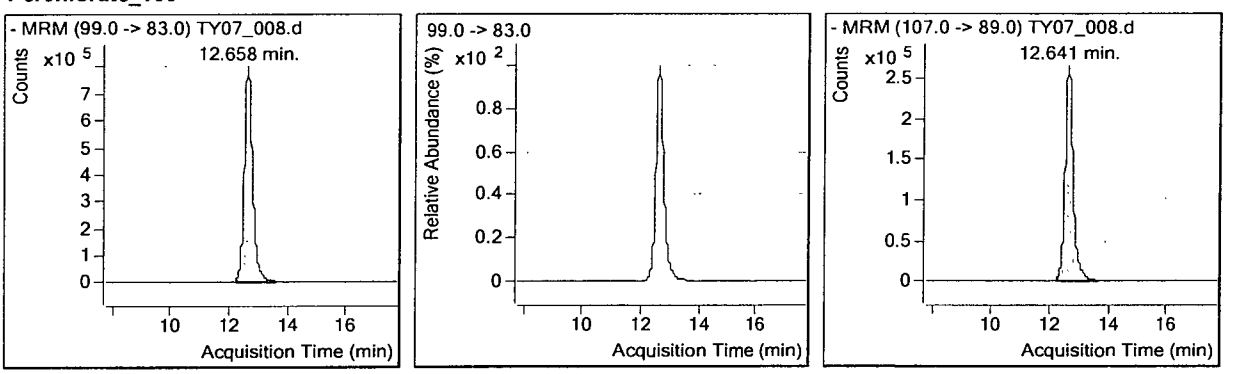
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_008.d	**Sample Name**	PERCHLORATE 0.010 ug/ml 08/01/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	15:47
ClientID	NA	**Inj Vol**	20

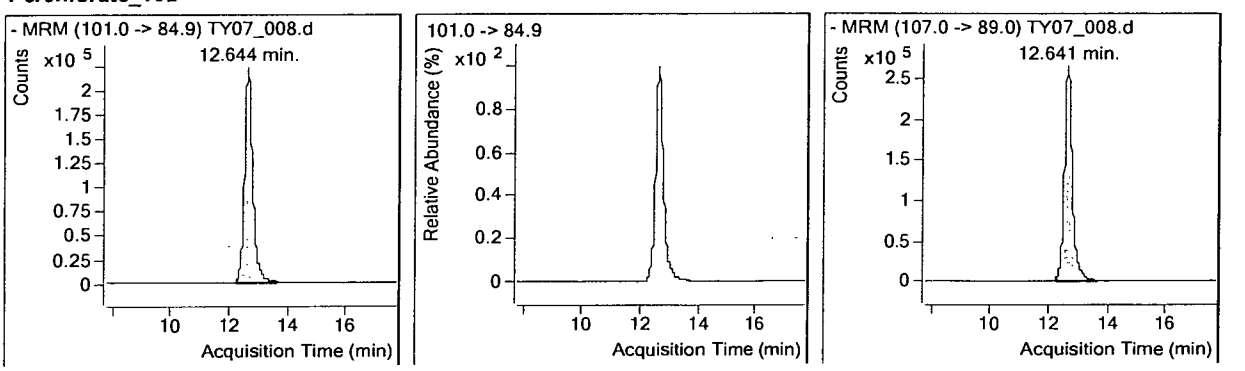


Compound	ISTD	RT	Resp	ISTD RESP
Perchlorate_100	PER_IS_108	12.658	15583461	5186380
Perchlorate_102	PER_IS_108	12.644	4346083	5186380

Perchlorate_100



Perchlorate_102



SECOND SOURCE CALIBRATION VERIFICATION SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: TY07_010.d

	Date (s) of Analysis From:11/07/15 To:11/07/15 Time (s) of Analysis From:14:14 To:16:06				Date of Analysis: 11/07/15 Time of Analysis: 16:25 Standard Id: PER_SS (Standard) 0.0004ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	12.70	12.60	12.80	1.371144	12.76	1.315931	N	4.0
Perchlorate_85	12.67	12.57	12.78	0.412180	12.76	0.422769	N	2.6

FILE ID : TQCK0710.RFB

Data File ID: TY07_010.d

Date Injected : 11/07/15

Time Injected : 16:25

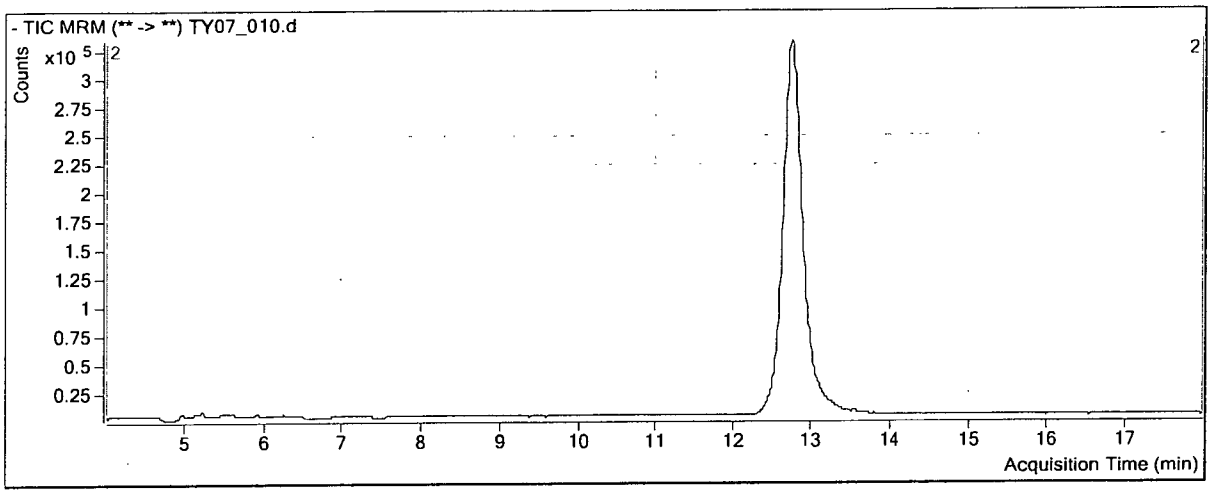
Sample ID : PER_SS 0.0004 ug/ml 11/06/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
12.753	5269548	PER_IS_89
12.700	554749	Perchlorate_83
12.757	178224	Perchlorate_85

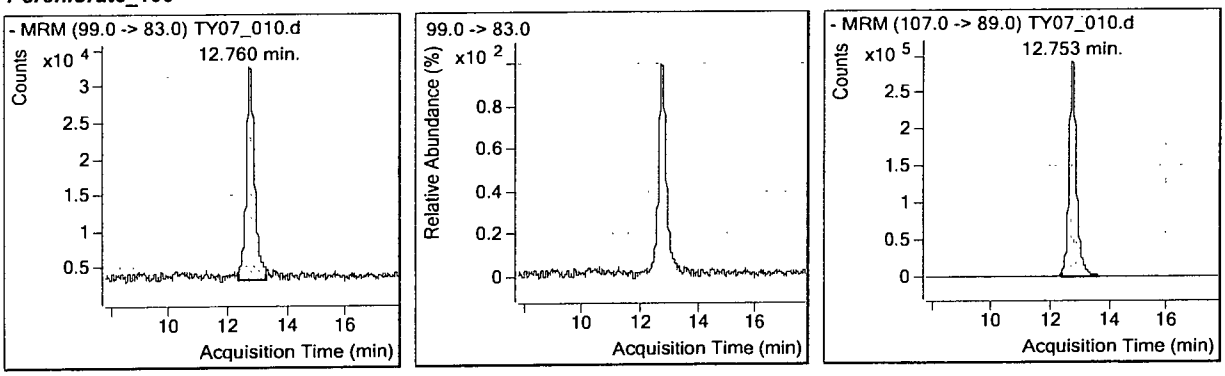
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_010.d	**Sample Name**	PER_SS 0.0004 ug/ml 11/06/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	16:25
ClientID	NA	**Inj Vol**	20

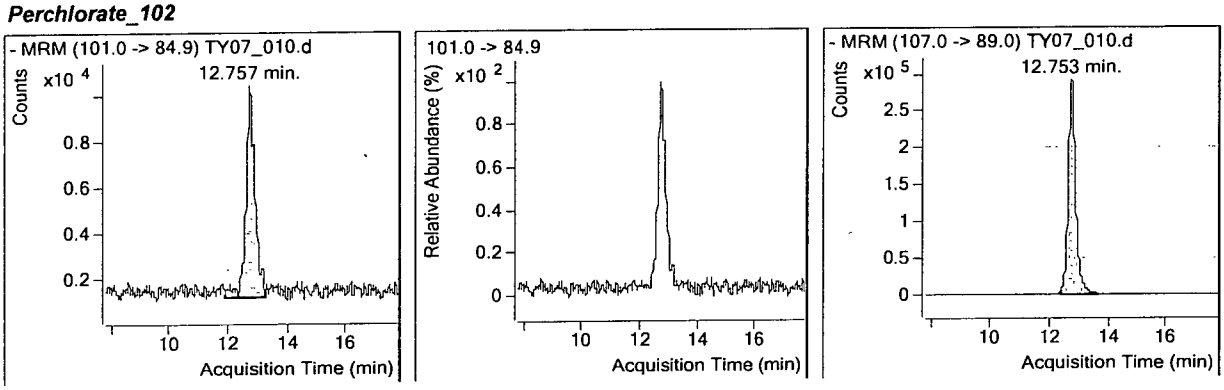


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.760	554749	5269548
Perchlorate_102	PER_IS_108	12.757	178224	5269548

Perchlorate_100



Perchlorate_102



SECOND SOURCE CALIBRATION VERIFICATION SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: TY07_011.d

	Date (s) of Analysis From:11/07/15 To:11/07/15 Time (s) of Analysis From:14:14 To:16:06				Date of Analysis: 11/07/15 Time of Analysis: 16:43 Standard Id: PER_SS (Standard) 0.002 ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	12.70	12.60	12.80	1.371144	12.80	1.219792	N	11.0
Perchlorate_85	12.67	12.57	12.78	0.412180	12.79	0.355572	N	13.7

FILE ID : TQCK0711.RFB

Data File ID: TY07_011.d

Date Injected : 11/07/15

Time Injected : 16:43

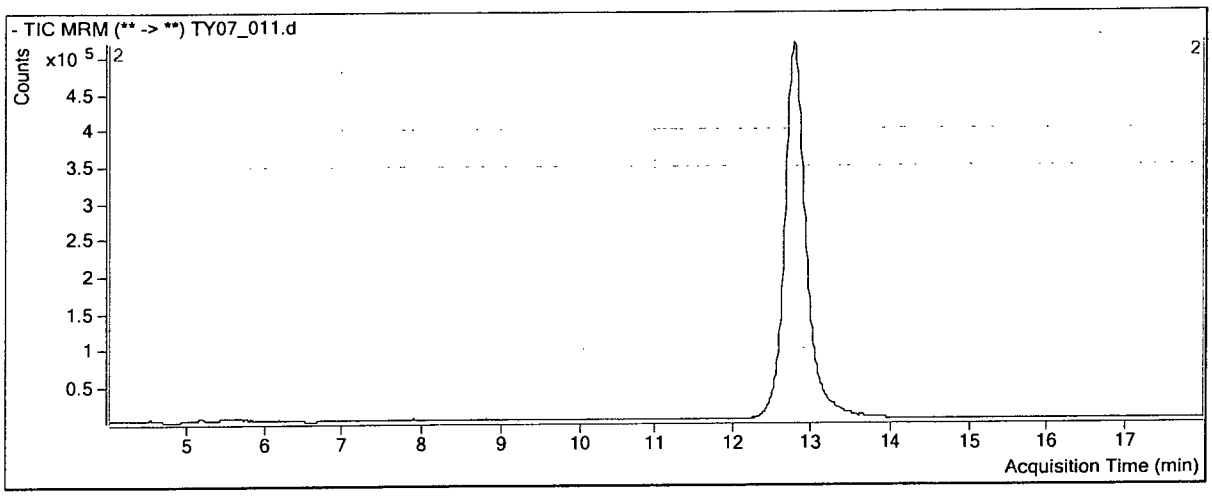
Sample ID : PER_SS 0.002 ug/ml 11/06/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
12.784	5916199	PER_IS_89
12.801	2886613	Perchlorate_83
12.787	841454	Perchlorate_85

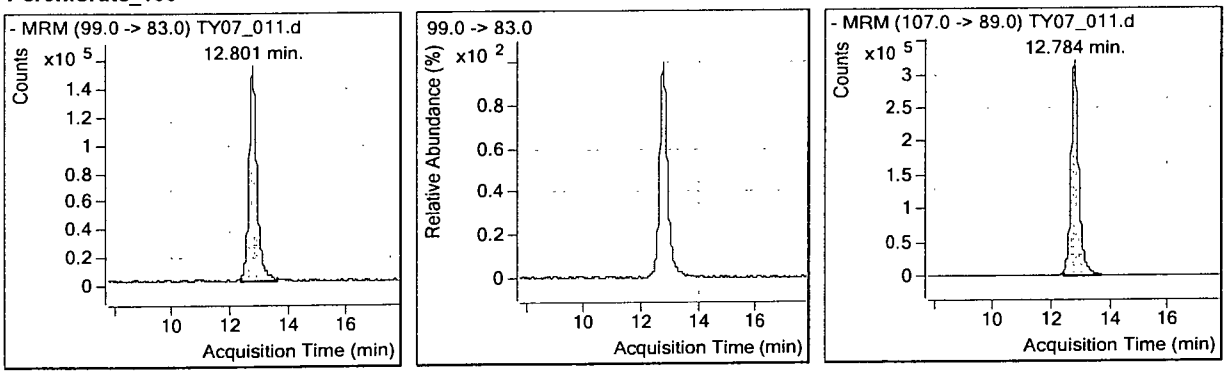
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_011.d	**Sample Name**	PER_SS 0.002 ug/ml 11/06/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	16:43
ClientID	NA	**Inj Vol**	20

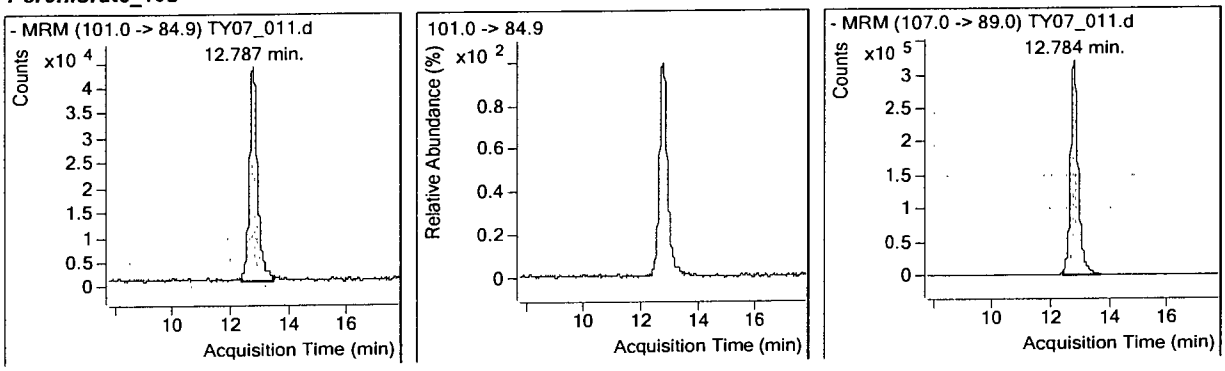


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.801	2886613	5916199
Perchlorate_102	PER_IS_108	12.787	841454	5916199

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: TY07_013.d

	Date (s) of Analysis From:11/07/15 To:11/07/15 Time (s) of Analysis From:14:14 To:17:02				Date of Analysis: 11/07/15 Time of Analysis: 17:21 Standard Id: PER_CCV_1 (Standard) 0.002 ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	12.70	12.60	12.80	1.371144	12.94	1.361546	N	0.7
Perchlorate_85	12.67	12.57	12.78	0.412180	12.96	0.401551	N	2.6

FILE ID : TQCK0713.RFB

Data File ID: TY07_013.d

Date Injected : 11/07/15

Time Injected : 17:21

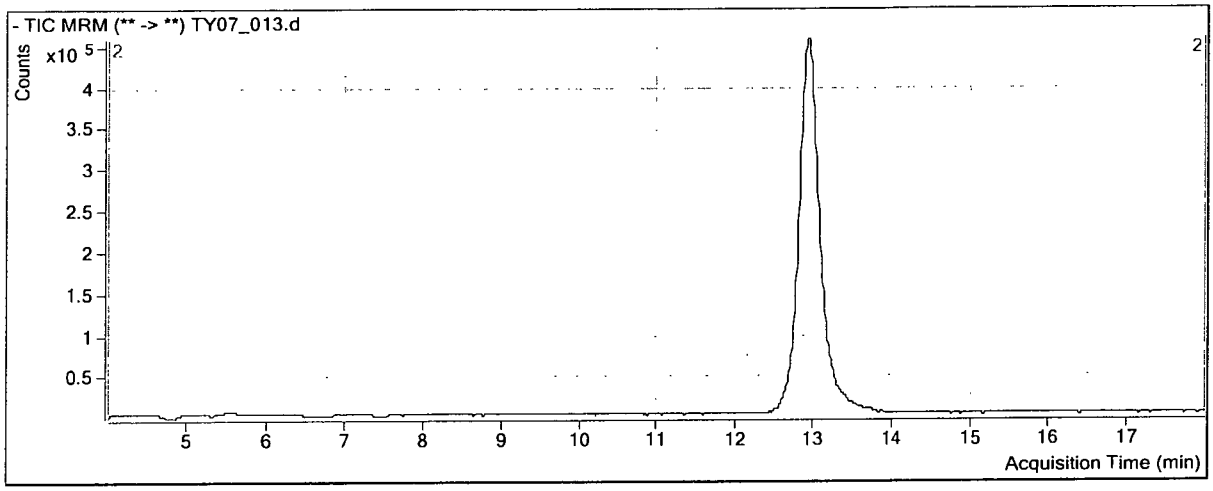
Sample ID : PER_CCV_1 0.002 ug/ml 11/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
12.947	5064306	PER_IS_89
12.943	2758115	Perchlorate_83
12.900	813430	Perchlorate_85

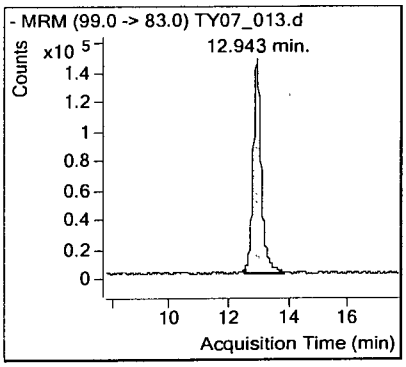
Quantitative Analysis Sample Report

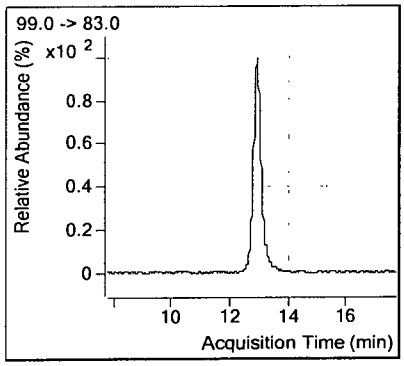
Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_013.d	**Sample Name**	PER_CCV_1 0.002 ug/ml 11/07/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	17:21
ClientID	NA	**Inj Vol**	20

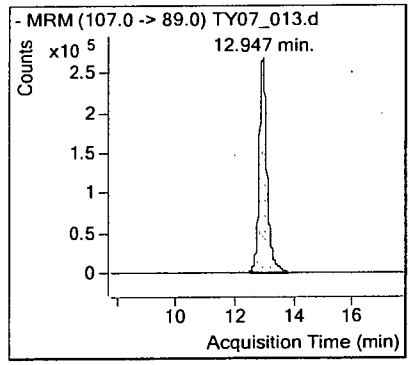


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.943	2758115	5064306
Perchlorate_102	PER_IS_108	12.960	813430	5064306

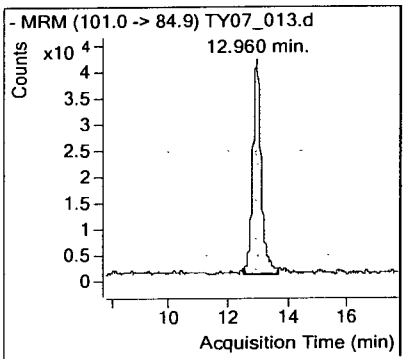
Perchlorate_100

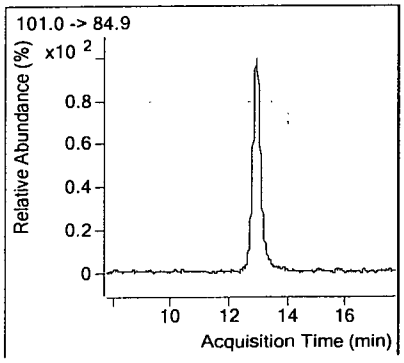


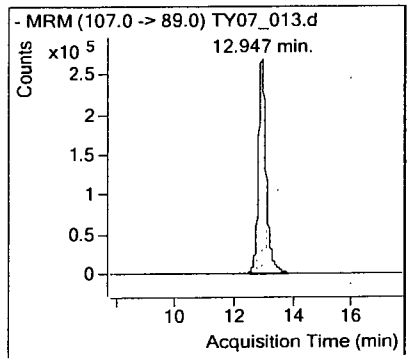




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: TY07_014.d

	Date (s) of Analysis From:11/07/15 To:11/07/15 Time (s) of Analysis From:14:14 To:17:02				Date of Analysis: 11/07/15 Time of Analysis: 17:39 Standard Id: PER_CCV_1 (Standard) 0.0004ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	12.70	12.60	12.80	1.371144	12.98	1.252861	N	8.6
Perchlorate_85	12.67	12.57	12.78	0.412180	13.02	0.380959	N	7.6

FILE ID : TQCK0714.RFB

Data File ID: TY07_014.d

Date Injected : 11/07/15

Time Injected : 17:39

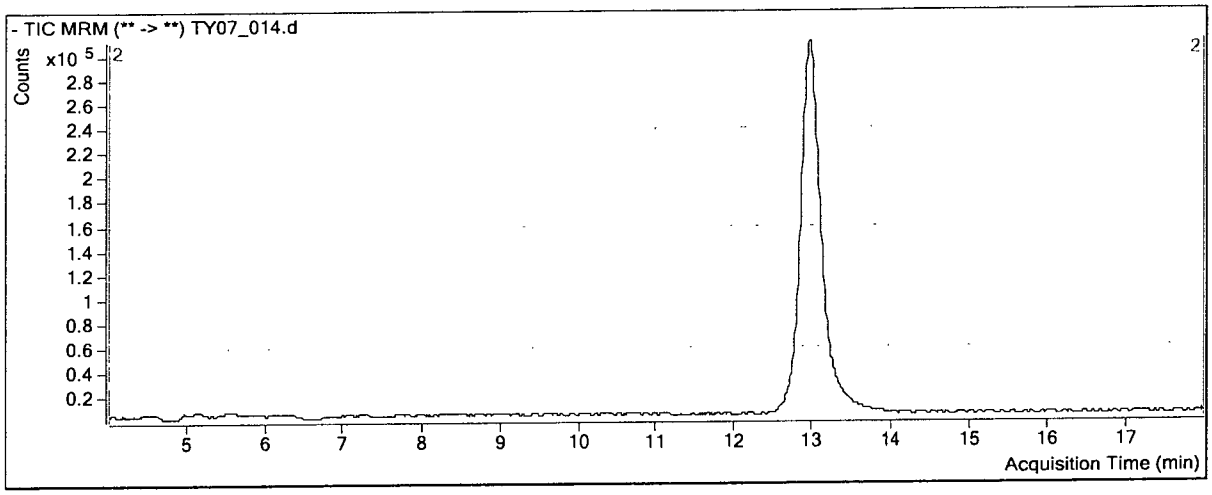
Sample ID : PER_CCV_1 0.0004 ug/ml 11/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
12.988	5052506	PER_IS_89
12.984	506407	Perchlorate_83
13.021	153984	Perchlorate_85

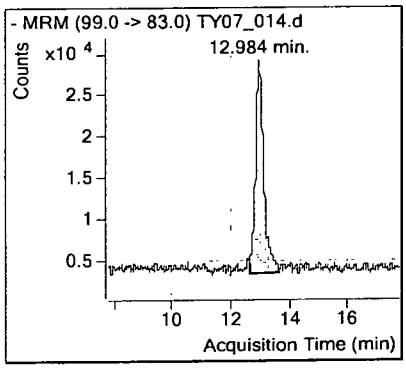
Quantitative Analysis Sample Report

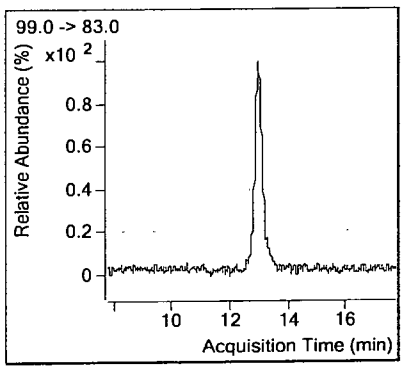
Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_014.d	**Sample Name**	PER_CCV_1 0.0004 ug/ml 11/07/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	17:39
ClientID	NA	**Inj Vol**	20

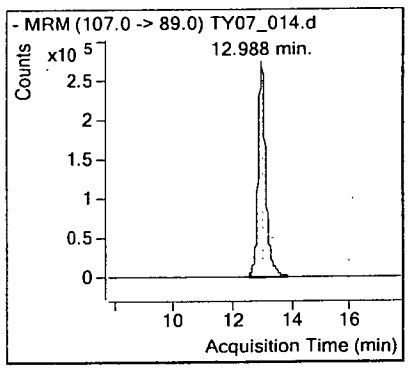


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.984	506407	5052506
Perchlorate_102	PER_IS_108	13.021	153984	5052506

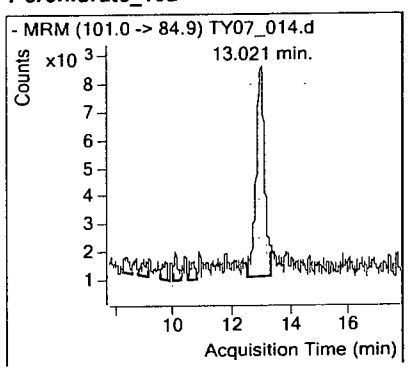
Perchlorate_100

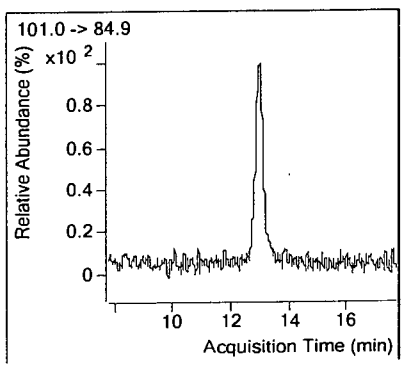


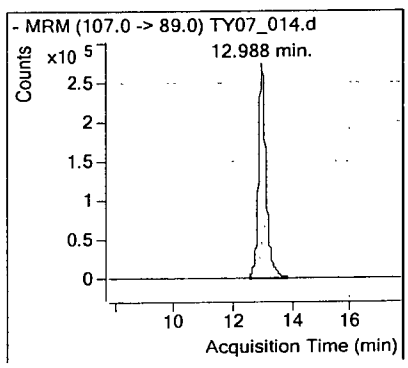




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: TY07_024.d

	Date (s) of Analysis From:11/07/15 To:11/07/15 Time (s) of Analysis From:14:14 To:20:08				Date of Analysis: 11/07/15 Time of Analysis: 20:46 Standard Id: PER_CCV_2 (Standard) 0.0004ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	12.70	12.60	12.80	1.371144	13.28	1.240906	N	9.5
Perchlorate_85	12.67	12.57	12.78	0.412180	13.28	0.391476	N	5.0

FILE ID : TQCK0724.RFB

Data File ID: TY07_024.d

Date Injected : 11/07/15

Time Injected : 20:46

Sample ID : PER_CCV_2 0.0004 ug/ml 11/07/15

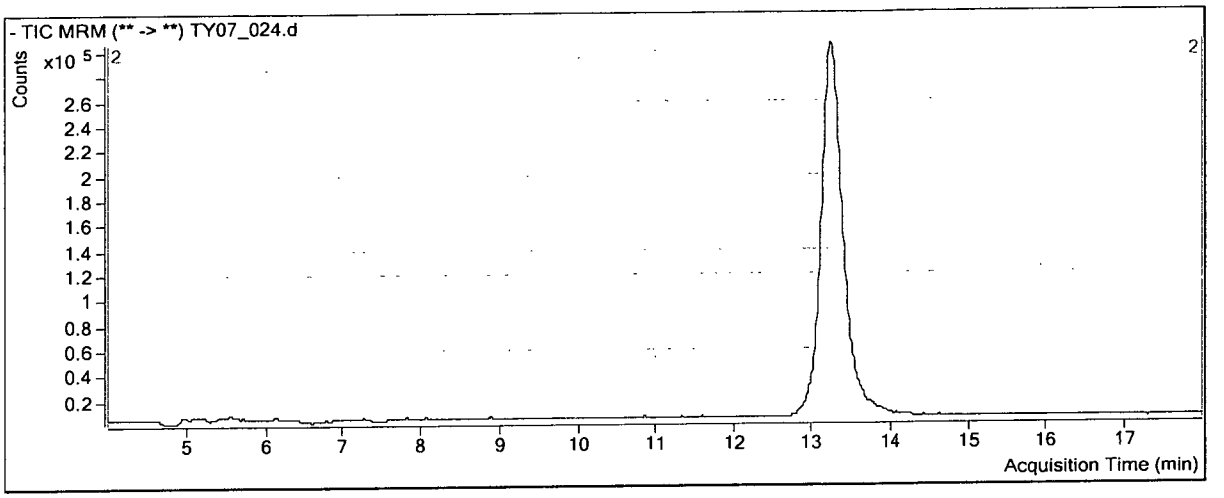
Client ID : NA

Retention Time		Area Count Response	Compound_ID Product Ion
13.242		5141467	PER_IS_89
13.200		510406	Perchlorate_83
13.276	*	161021	Perchlorate_85

* MANUAL INTEGRAION

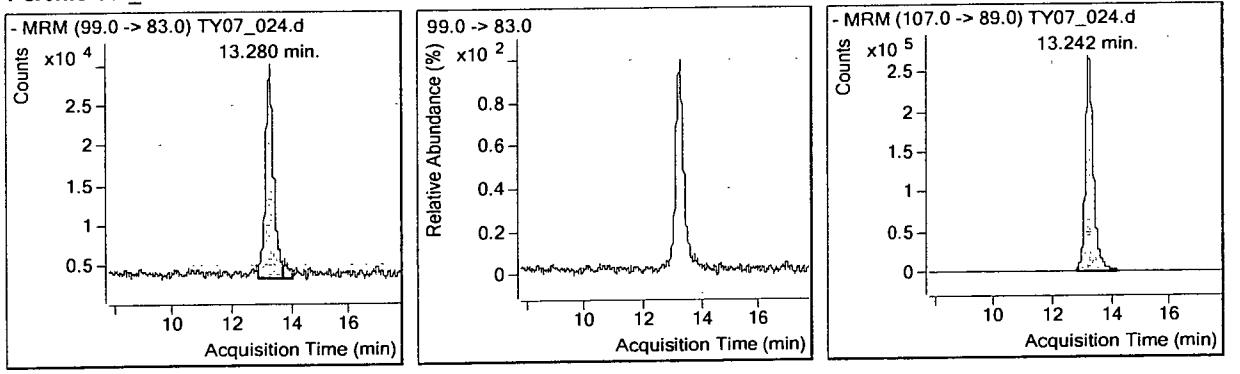
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_024.d	**Sample Name**	PER_CCV_2 0.0004 ug/ml 11/07/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	20:46
ClientID	NA	**Inj Vol**	20

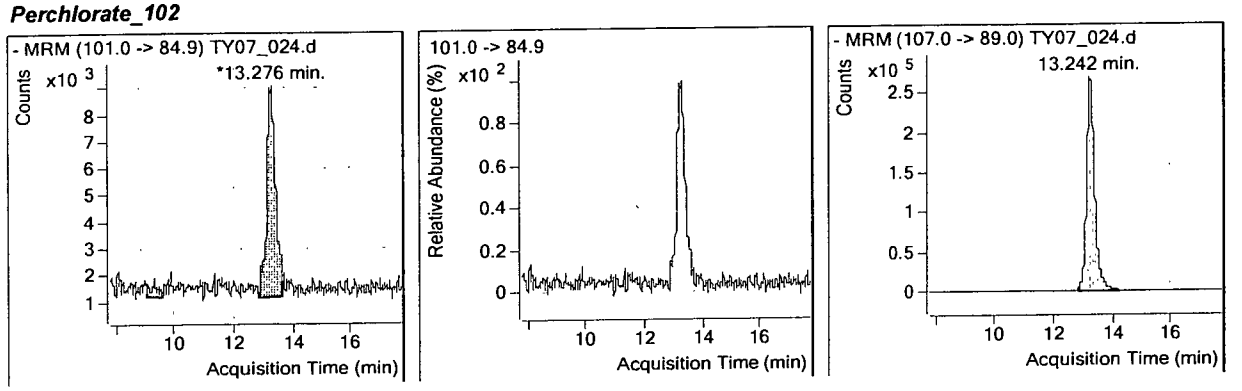


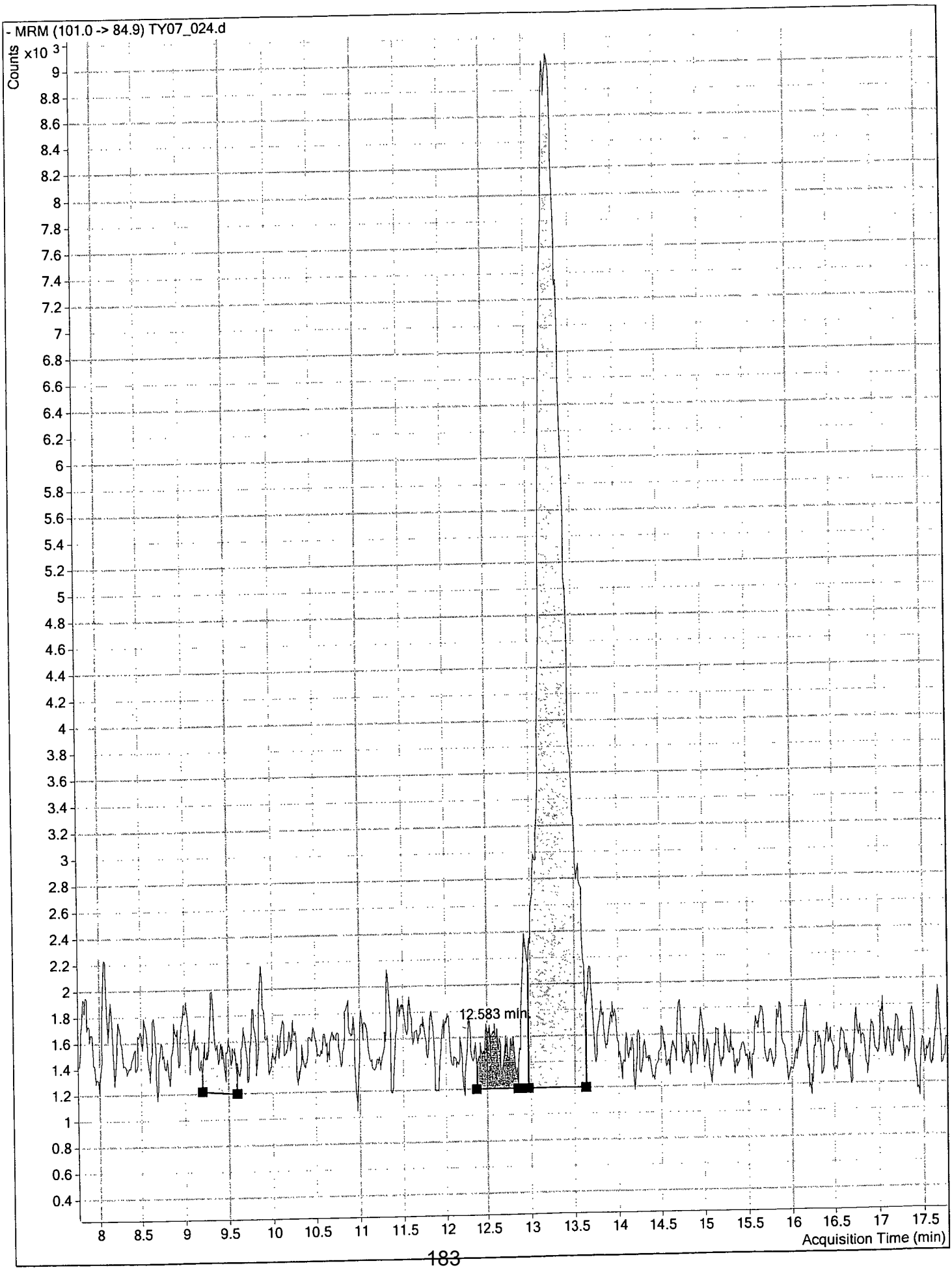
Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108		13.280	510406	5141467	
Perchlorate_102	PER_IS_108	*	13.276	161021	5141467	* MANUAL INT

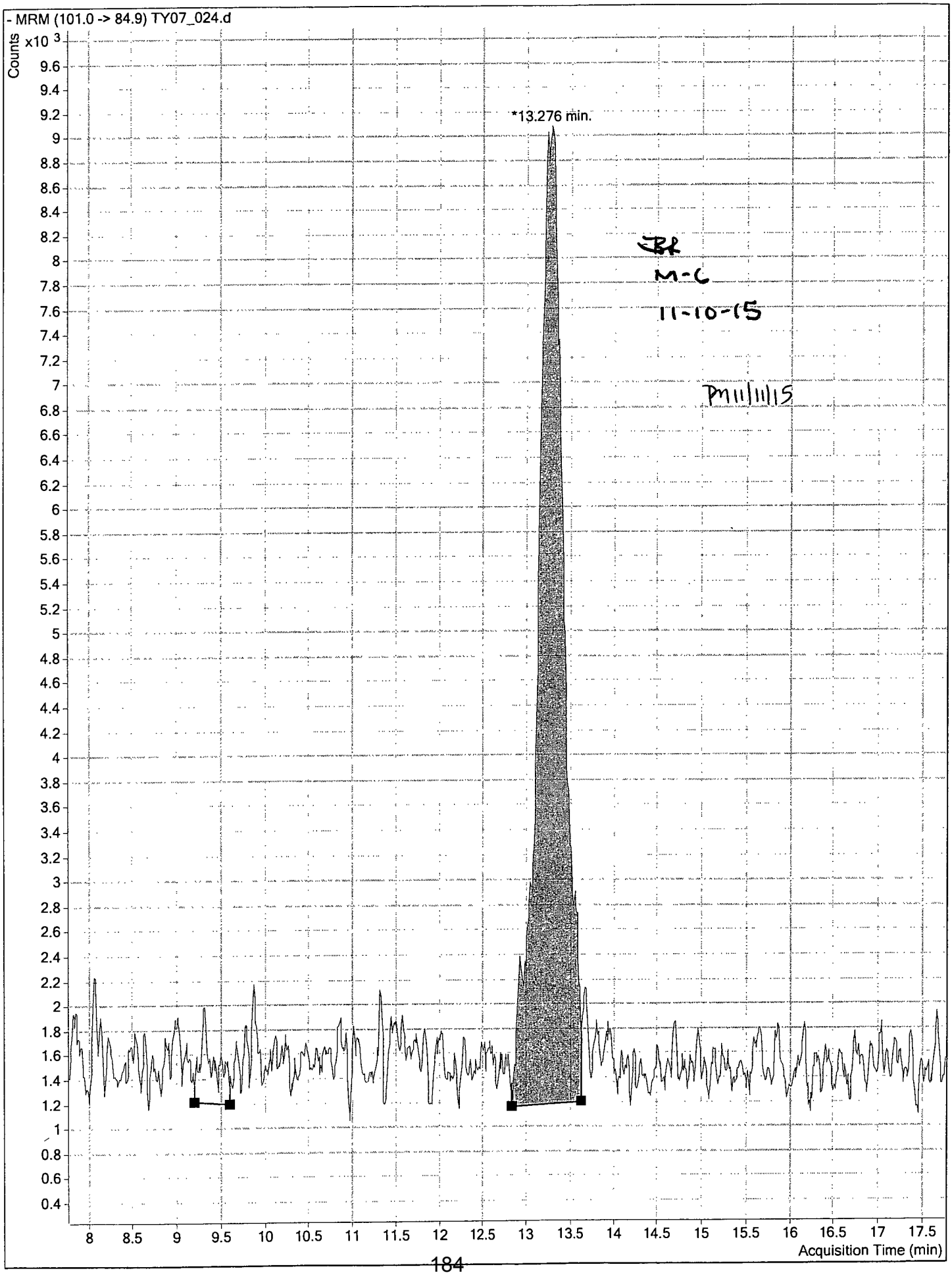
Perchlorate_100



Perchlorate_102




- MRM (101.0 -> 84.9) TY07_024.d
Counts
x10 3
12.583 min
Acquisition Time (min)


- MRM (101.0 -> 84.9) TY07_024.d
Counts
x10 3
*13.276 min.
JBR
M-C
11-10-15
PM1/11/15
Acquisition Time (min)

CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: TY07_025.d

	Date (s) of Analysis From:11/07/15 To:11/07/15 Time (s) of Analysis From:14:14 To:20:08				Date of Analysis: 11/07/15 Time of Analysis: 21:04 Standard Id: PER_CCV_2 (Standard) 0.002 ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	12.70	12.60	12.80	1.371144	13.29	1.401082	N	2.2
Perchlorate_85	12.67	12.57	12.78	0.412180	13.29	0.403642	N	2.1

FILE ID : TQCK0725.RFB

Data File ID: TY07_025.d

Date Injected : 11/07/15

Time Injected : 21:04

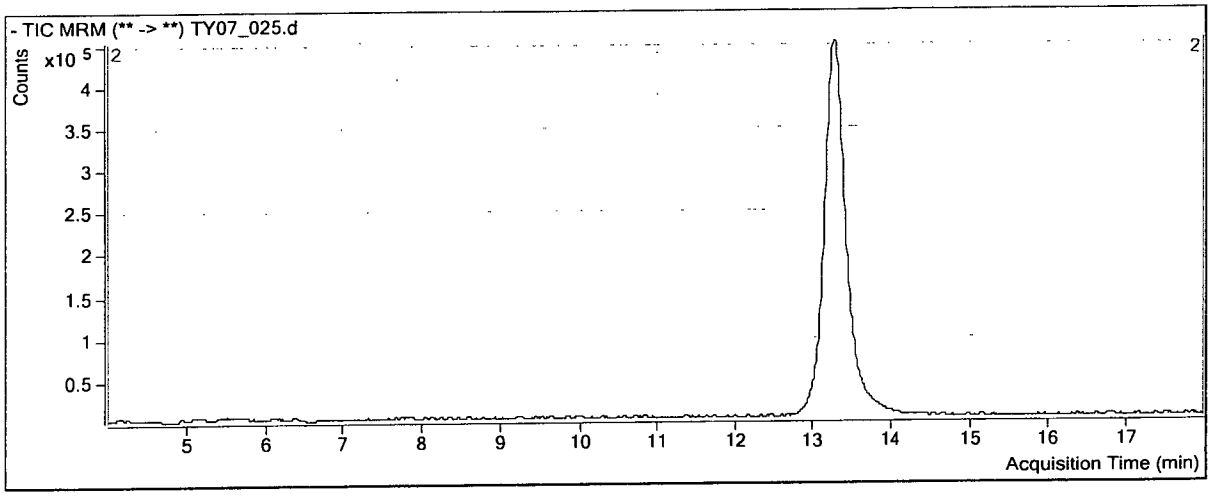
Sample ID : PER_CCV_2 0.002 ug/ml 11/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.273	5162338	PER_IS_89
13.200	2893143	Perchlorate_83
13.286	833495	Perchlorate_85

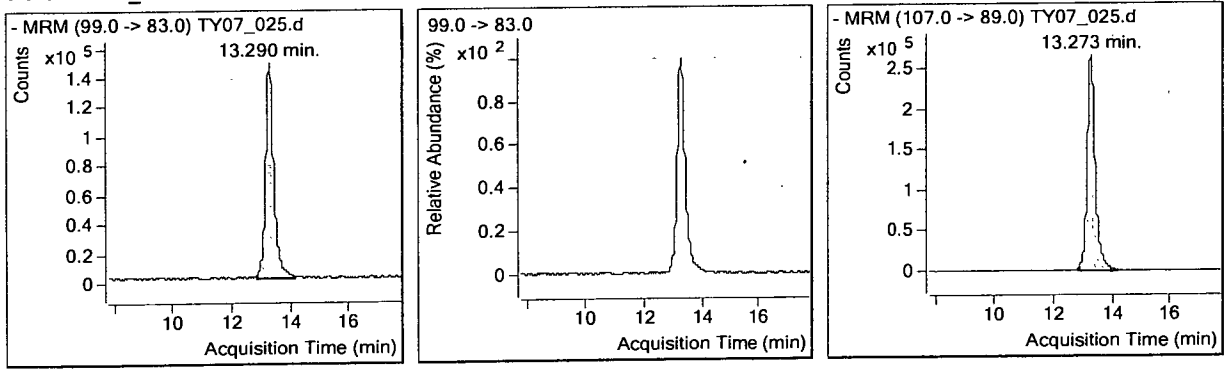
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_025.d	**Sample Name**	PER_CCV_2 0.002 ug/ml 11/07/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	21:04
ClientID	NA	**Inj Vol**	20

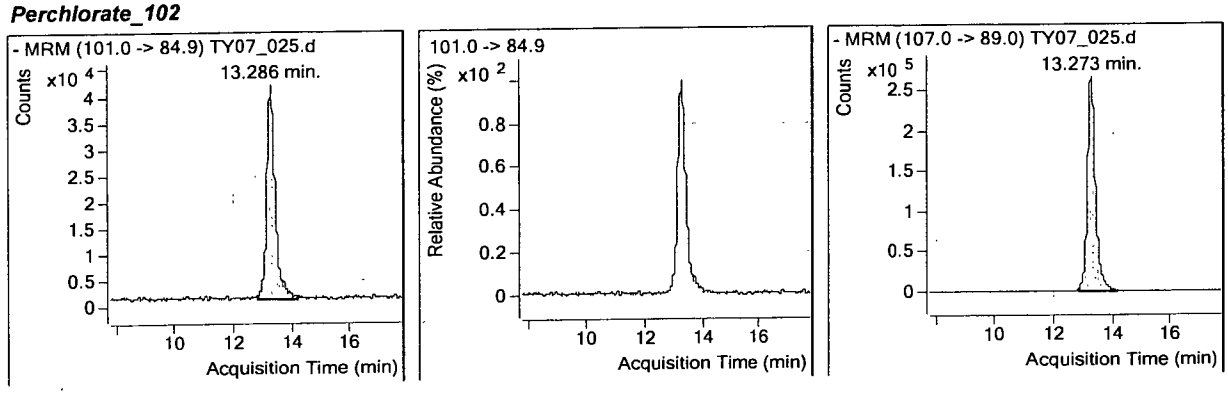


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.290	2893143	5162338
Perchlorate_102	PER_IS_108	13.286	833495	5162338

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: TY07_034.d

	Date (s) of Analysis From:11/07/15 To:11/07/15 Time (s) of Analysis From:14:14 To:23:15				Date of Analysis: 11/07/15 Time of Analysis: 23:52 Standard Id: PER_CCV_2 (Standard) 0.0004ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	12.70	12.60	12.80	1.371144	13.42	1.247840	N	9.0
Perchlorate_85	12.67	12.57	12.78	0.412180	13.40	0.346988	N	15.8

FILE ID : TQCK0734.RFB

Data File ID: TY07_034.d

Date Injected : 11/07/15

Time Injected : 23:52

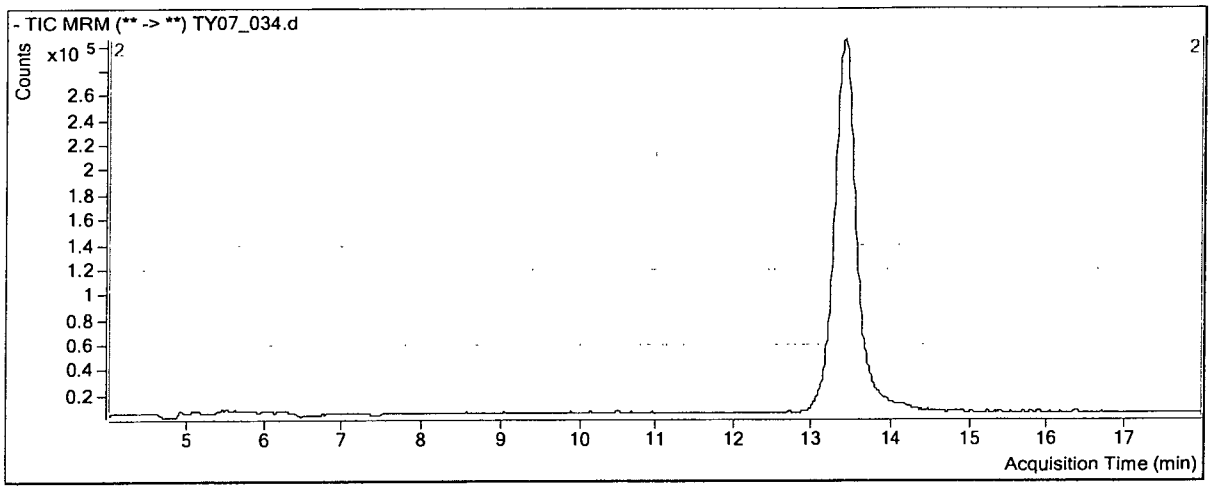
Sample ID : PER_CCV_2 0.0004 ug/ml 11/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.426	5224237	PER_IS_89
13.422	521521	Perchlorate_83
13.398	145020	Perchlorate_85

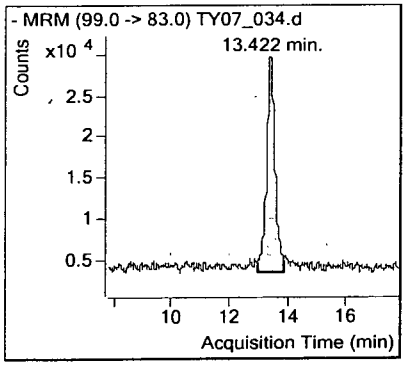
Quantitative Analysis Sample Report

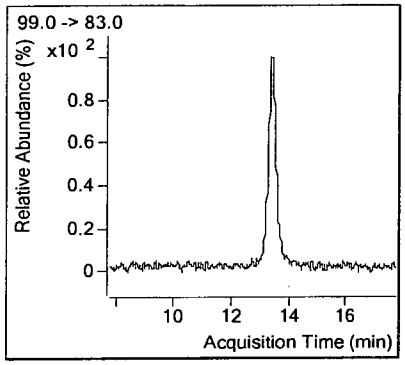
Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_034.d	**Sample Name**	PER_CCV_2 0.0004 ug/ml 11/07/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	23:52
ClientID	NA	**Inj Vol**	20

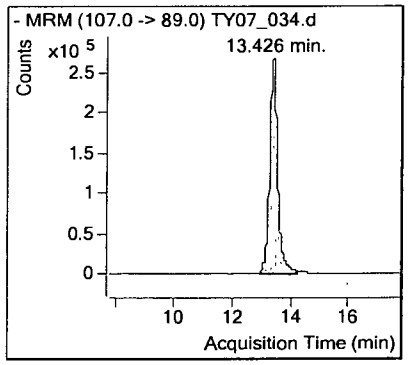


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.422	521521	5224237
Perchlorate_102	PER_IS_108	13.398	145020	5224237

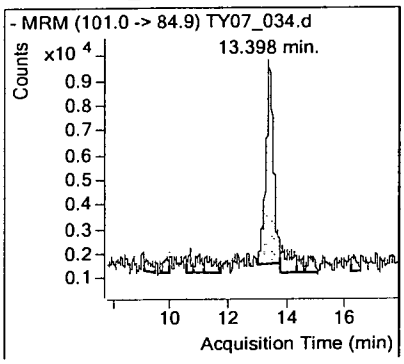
Perchlorate_100

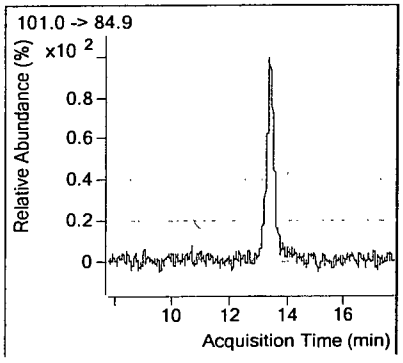


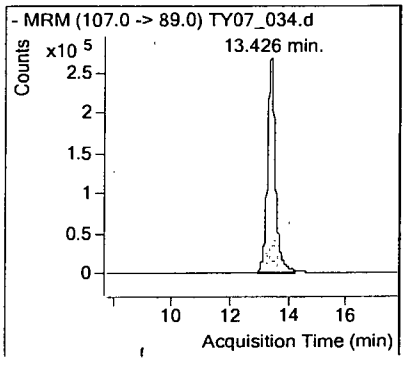




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: TY07_035.d

	Date (s) of Analysis From:11/07/15 To:11/07/15 Time (s) of Analysis From:14:14 To:23:15				Date of Analysis: 11/08/15 Time of Analysis: 0:10 Standard Id: PER_CCV_2 (Standard) 0.002 ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	12.70	12.60	12.80	1.371144	13.38	1.398831	N	2.0
Perchlorate_85	12.67	12.57	12.78	0.412180	13.37	0.393185	N	4.6

FILE ID : TQCK0735.RFB

Data File ID: TY07_035.d

Date Injected : 11/08/15

Time Injected : 0:10

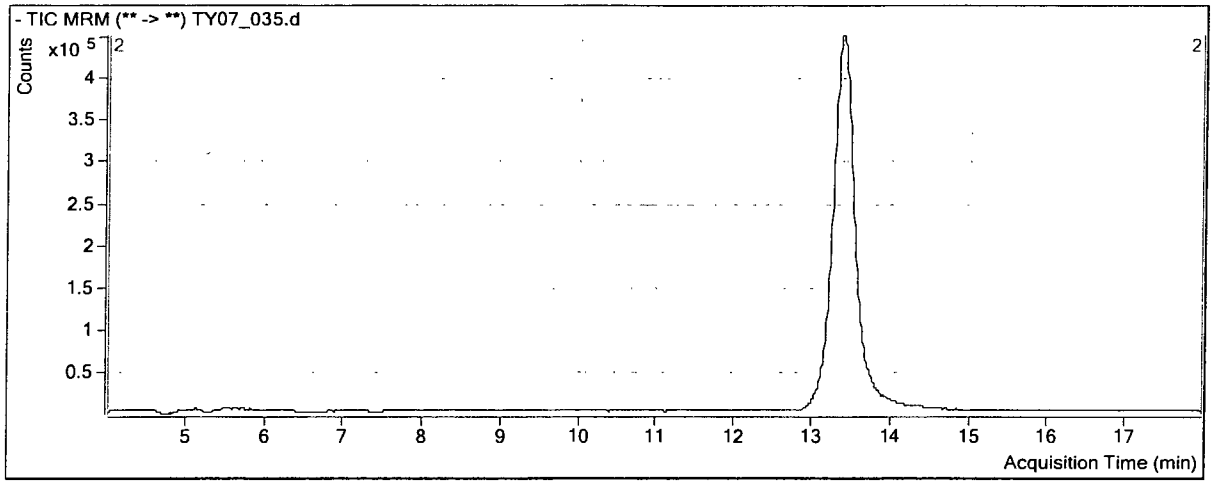
Sample ID : PER_CCV_2 0.002 ug/ml 11/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.385	5239196	PER_IS_89
13.381	2931499	Perchlorate_83
13.368	823990	Perchlorate_85

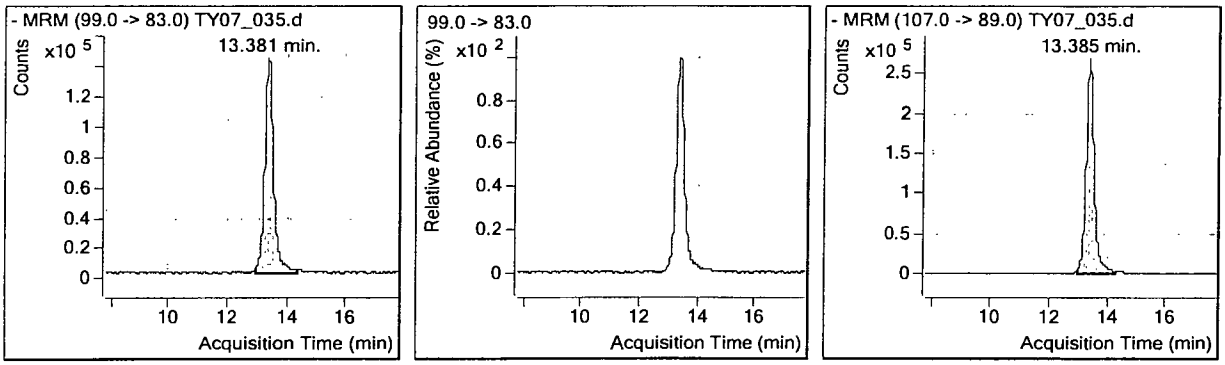
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_035.d	**Sample Name**	PER_CCV_2 0.002 ug/ml 11/07/15
Sample Type	Sample	**Acq_Date**	11/08/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	0:10
ClientID	NA	**Inj Vol**	20

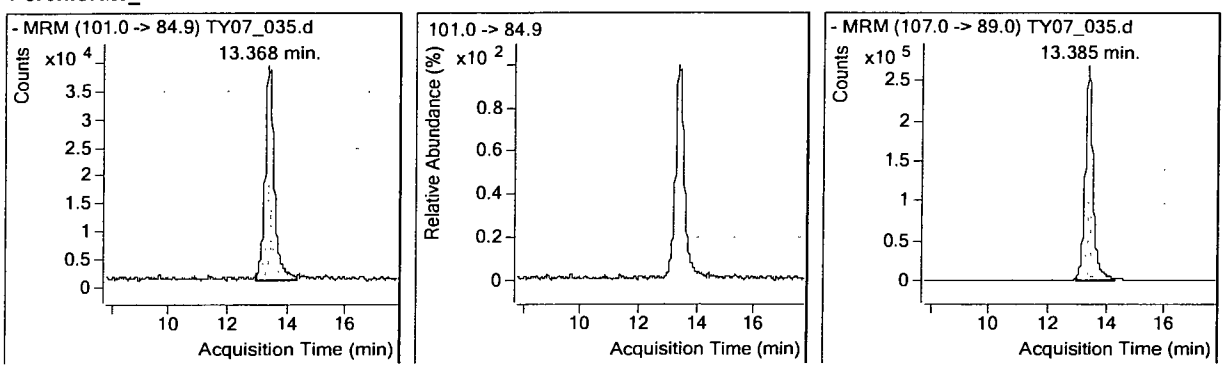


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.381	2931499	5239196
Perchlorate_102	PER_IS_108	13.368	823990	5239196

Perchlorate_100



Perchlorate_102



EPA METHOD 6850
Perchlorate
LC/MS

Raw Data

APPL, INC.

Method Blank
Perchlorate

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **151105W-24126 - 202001**
Batch ID: #6850-151105A

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	PERCHLORATE	0.400 U	0.60	0.400	0.200	ug/L	11/05/15	11/05/15

Quant Method: QTLMFL2
Run #: TY05_018.d
Instrument: AGIL_6460
Sequence: TQ110515
Initials: RP

GC SC-Blank-REG MDLs-DOD
Printed: 11/06/15 11:55:00 AM

Data File ID: TY05_018.d

Date Injected : 11/05/15

Time Injected : 21:05

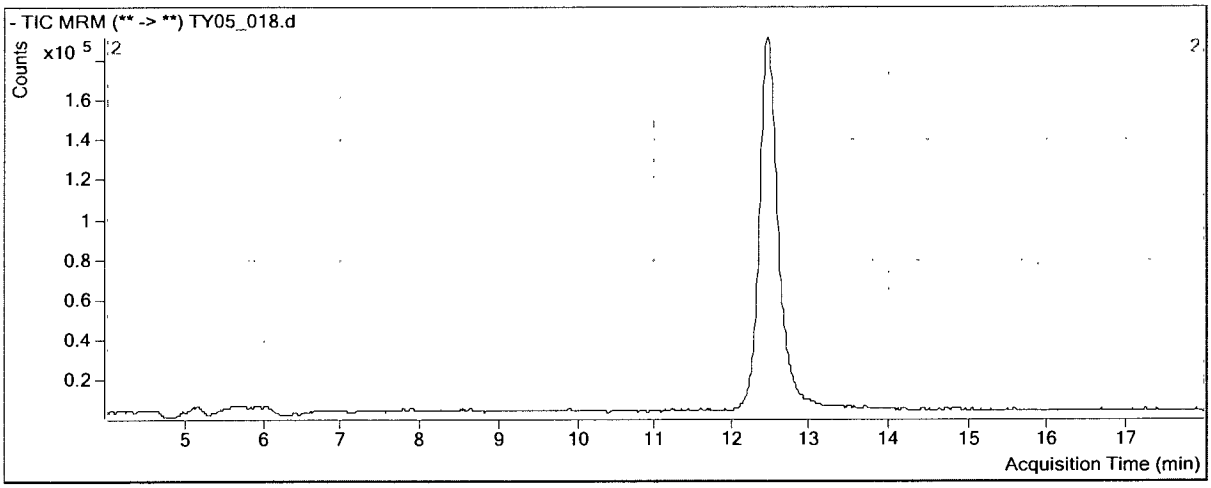
Sample ID : 151105WBLKA 1052.6 DF 11/05/15

Client ID : LAB_CNTL_W_BLKA

Retention Time	Area Count Response	Compound_ID Product Ion		
12.478	3306665	PER_IS_89		
11.242	9600	Perchlorate_83	(9600 * 0.0050) / (1.28 * 3306665.00) * 1052.60 =	0.011973 ppb
11.187	4445	Perchlorate_85	(4445 * 0.0050) / (0.38 * 3306665.00) * 1052.60 =	0.018641 ppb

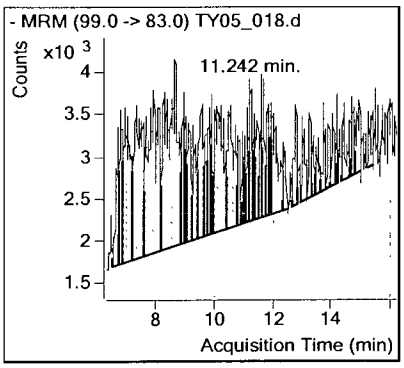
Quantitative Analysis Sample Report

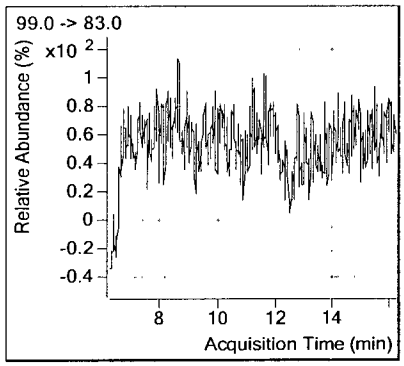
Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_018.d	**Sample Name**	151105WBLKA 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	21:05
ClientID	LAB_CNTL_W_BLKA	**Inj Vol**	20

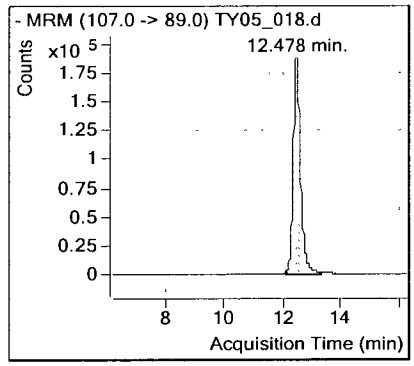


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	11.242	9600	3306665
Perchlorate_102	PER_IS_108	11.187	4445	3306665

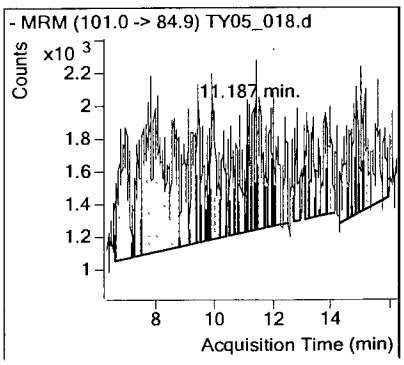
Perchlorate_100

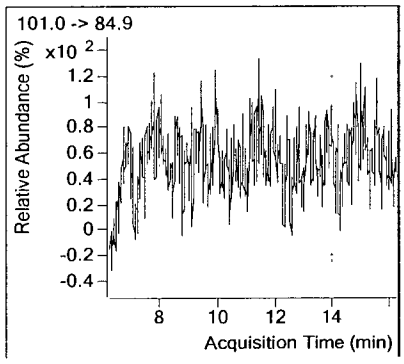


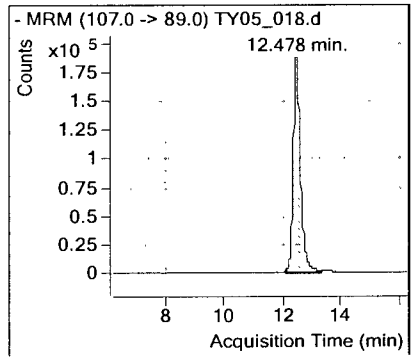




Perchlorate_102







Data File ID: TY07_018.d

Date Injected : 11/07/15

Time Injected : 18:54

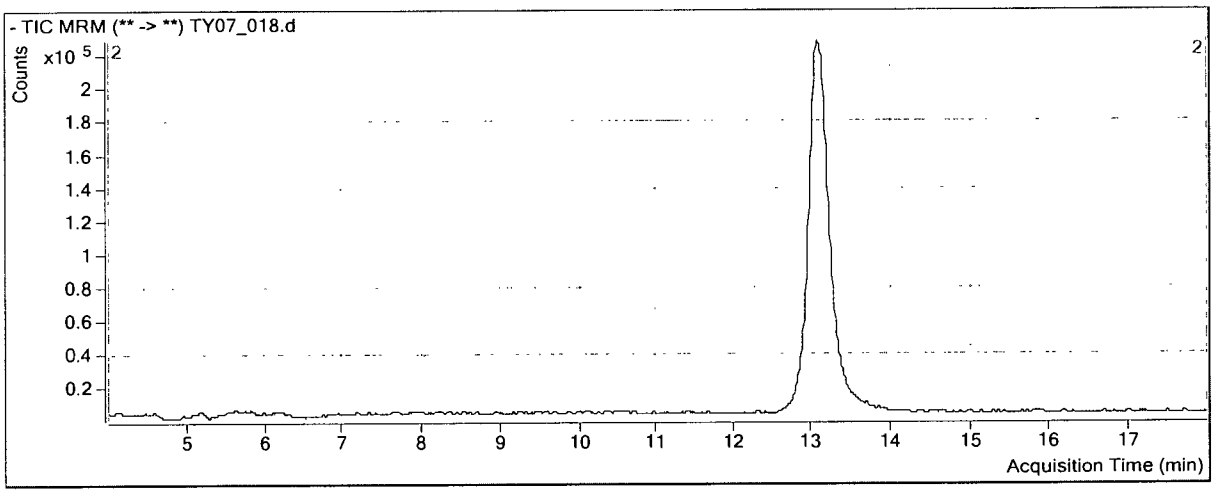
Sample ID : 151105WBLKA 1052.6 DF 11/05/15

Client ID : LAB_CNTL_W_BLKA

Retention Time	Area Count Response	Compound_ID Product Ion		
13.089	4263499	PER_IS_89		
12.862	4625	Perchlorate_83	(4625 * 0.0050) / (1.37 * 4263499.00) * 1052.60 =	0.004164 ppb
12.726	7703	Perchlorate_85	(7703 * 0.0050) / (0.41 * 4263499.00) * 1052.60 =	0.023070 ppb

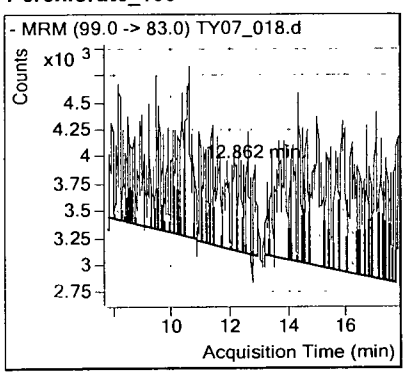
Quantitative Analysis Sample Report

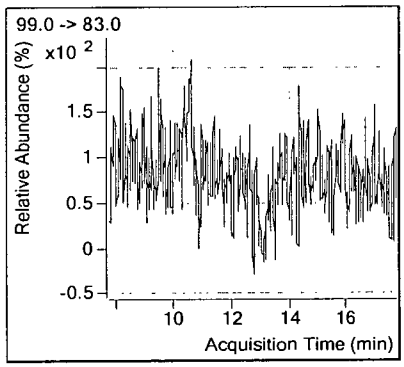
Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_018.d	**Sample Name**	151105WBLKA 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:54
ClientID	LAB_CNTL_W_BLKA	**Inj Vol**	20

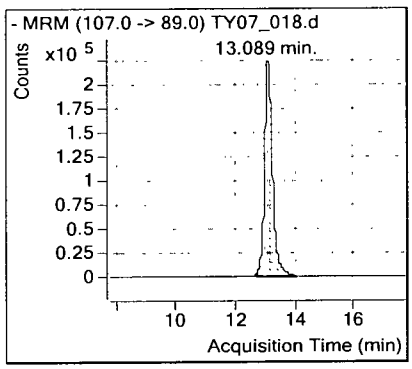


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.862	4625	4263499
Perchlorate_102	PER_IS_108	12.726	7703	4263499

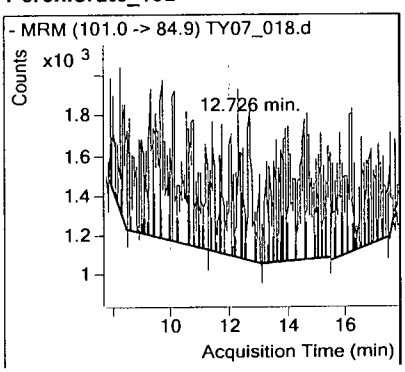
Perchlorate_100

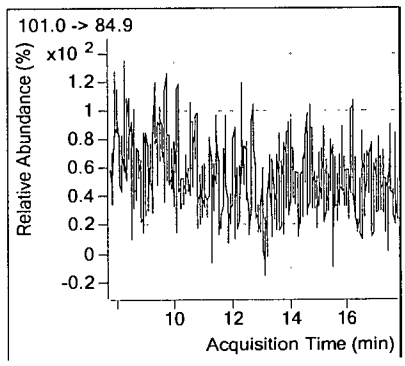


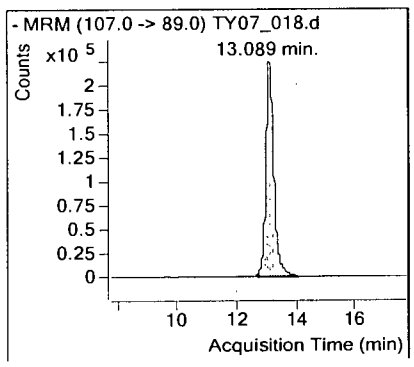




Perchlorate_102







Laboratory Control Spike Recovery
Perchlorate

APPL ID: **151105W-24126 LCS - 202001**
Batch ID: #6850-151105A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
PERCHLORATE	0.600	0.630	105	80-120

Comments: _____

Primary	SPK
Quant Method :	QTLMFL2
Extraction Date :	11/05/15
Analysis Date :	11/05/15
Instrument :	AGIL_6460
Run :	TY05_016.d
Initials :	RP

Printed: 11/24/15 7:31:53 AM
APPL Standard LCS

Data File ID: TY05_016.d

Date Injected : 11/05/15

Time Injected : 20:27

Sample ID : 151105WA_LCS-1 1052.6 DF 11/05/15

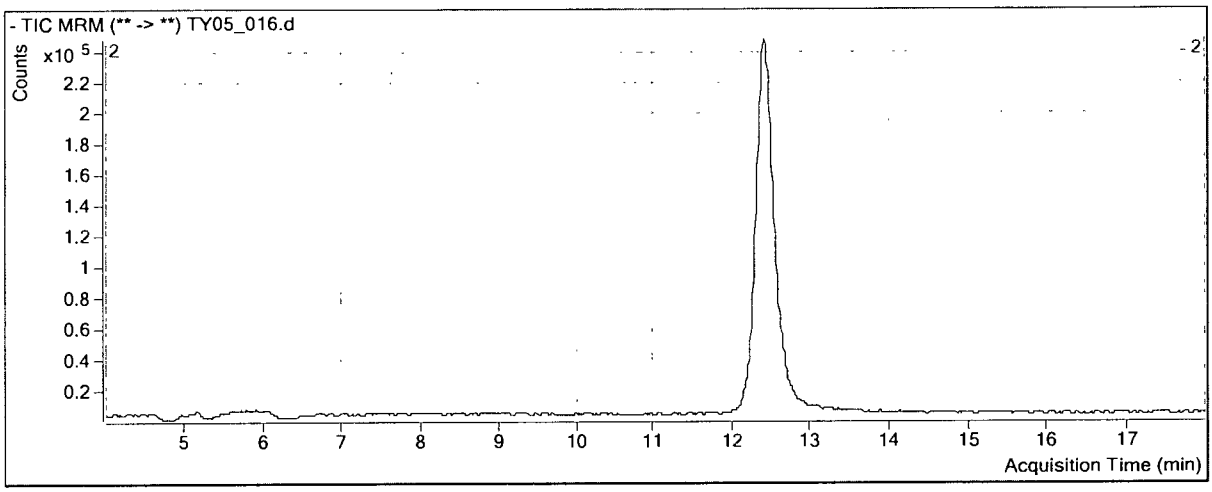
Client ID : LAB_CNTL_W_SPKA

Retention Time		Area Count Response	Compound_ID Product Ion		
12.417		3592558	PER_IS_89		
12.454		548606	Perchlorate_83	(548606 * 0.0050) / (1.28 * 3592558.00) * 1052.60 =	0.629749 ppb
12.451	*	168362	Perchlorate_85	(168362 * 0.0050) / (0.38 * 3592558.00) * 1052.60 =	0.649870 ppb

* MANUAL INTEGRAION

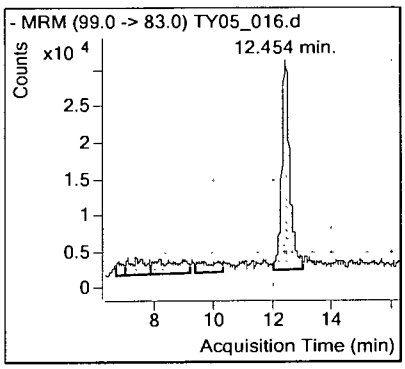
Quantitative Analysis Sample Report

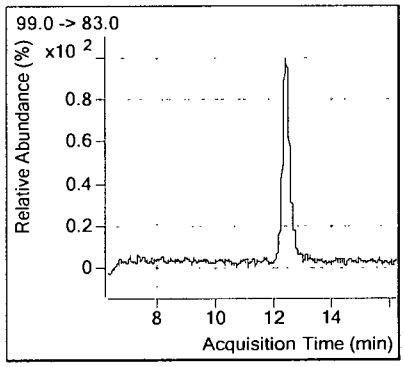
Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_016.d	**Sample Name**	151105WA_LCS-1 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	20:27
ClientID	LAB_CNTL_W_SPKA	**Inj Vol**	20

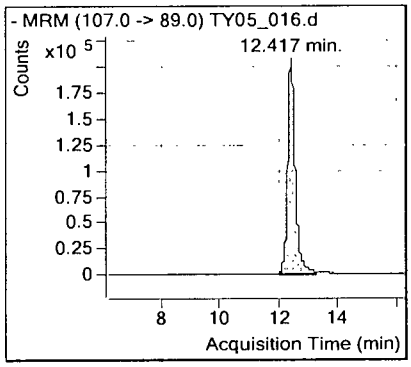


Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108		12.454	548606	3592558	
Perchlorate_102	PER_IS_108	*	12.451	168362	3592558	* MANUAL INT

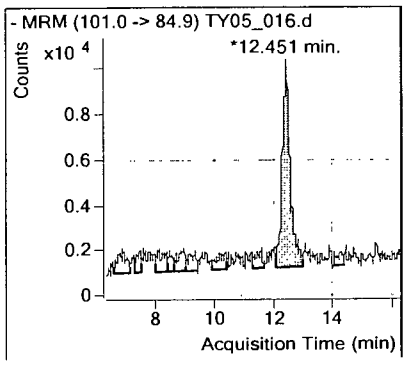
Perchlorate_100

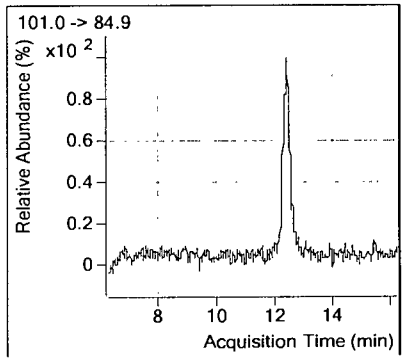


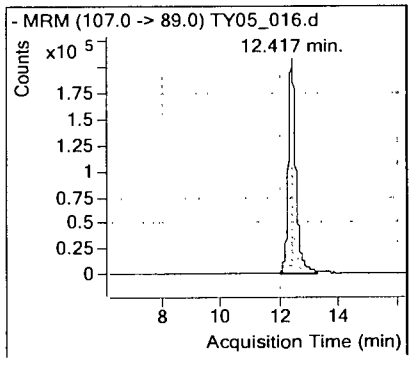


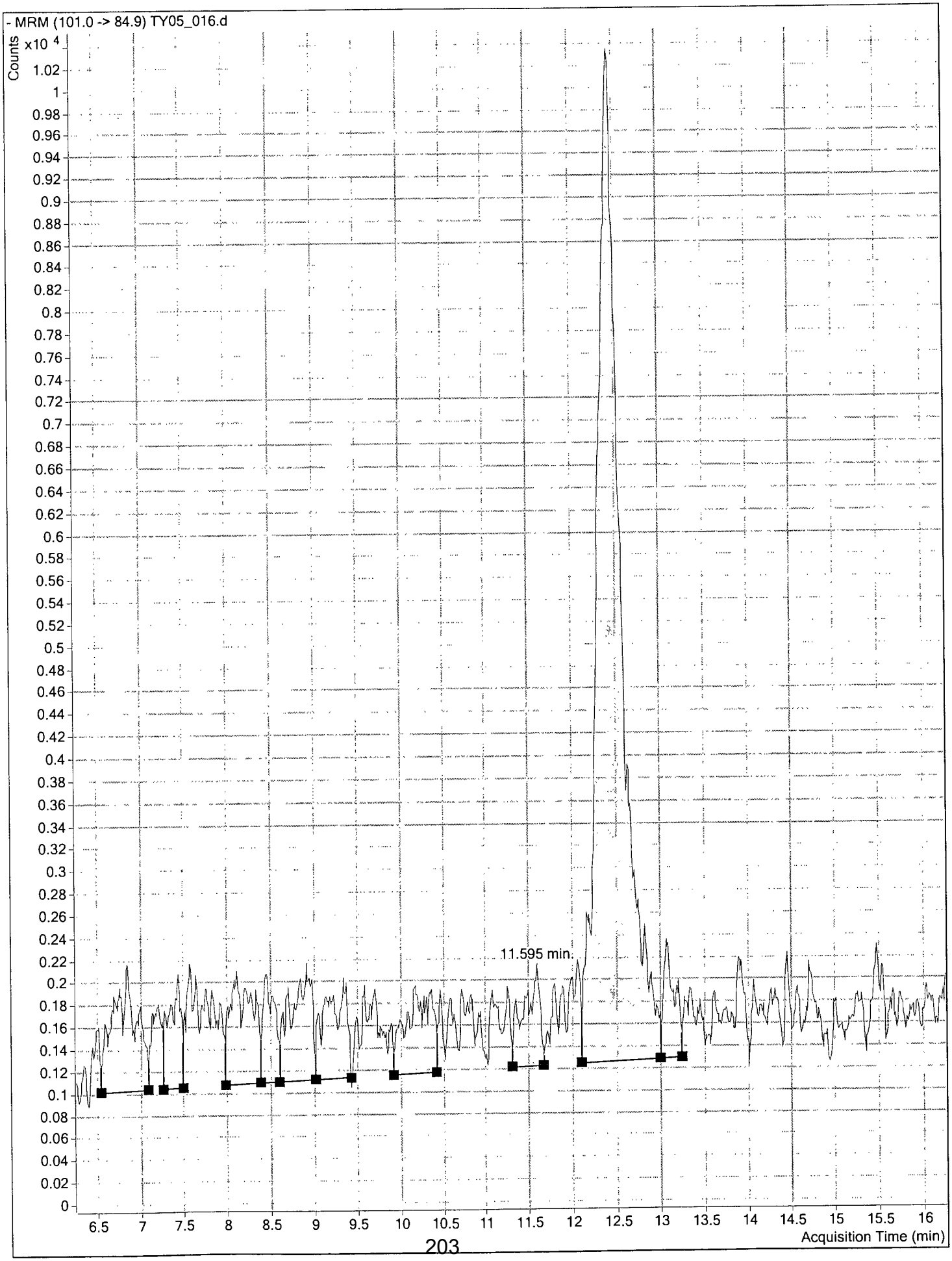


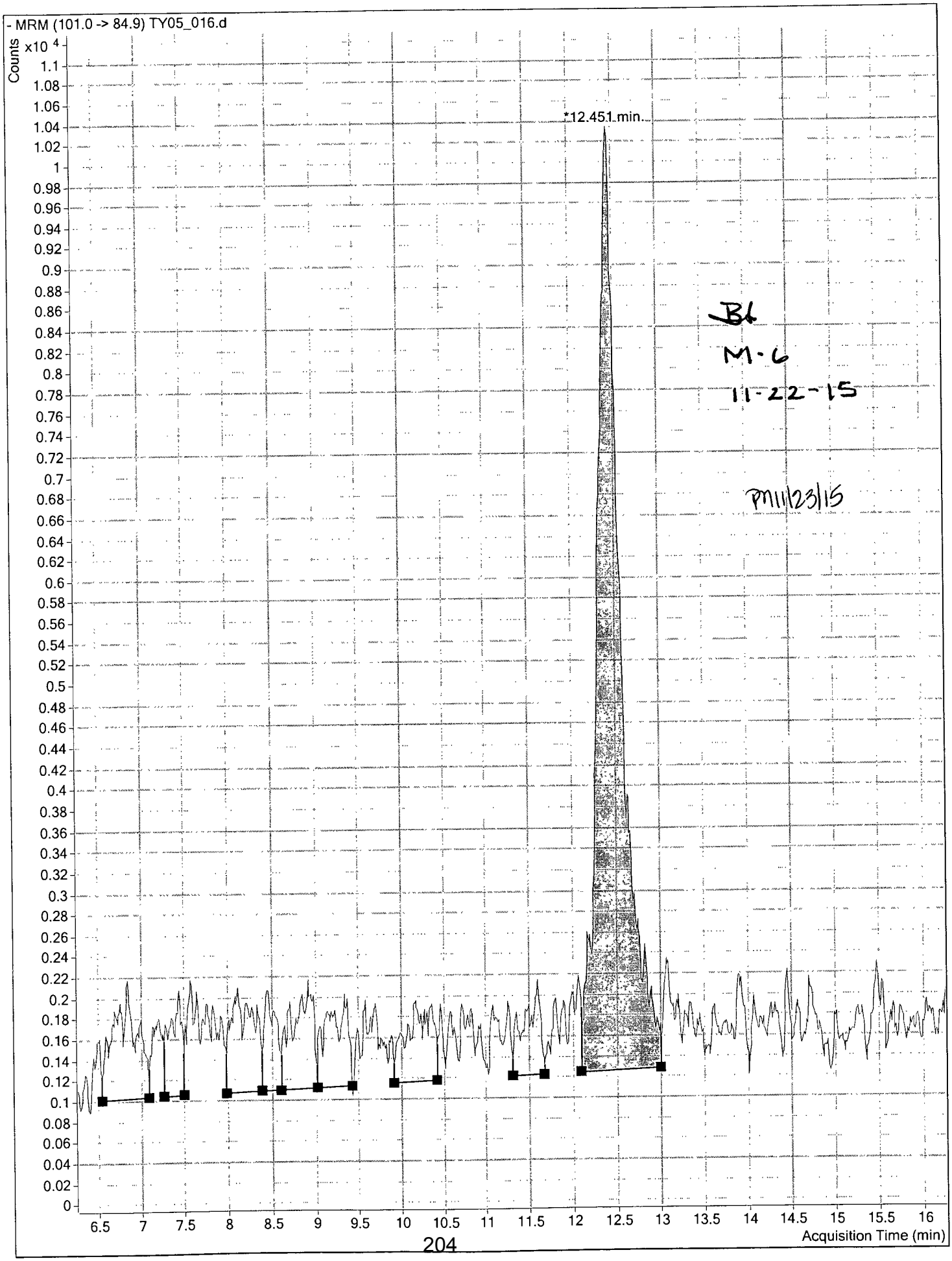
Perchlorate_102








- MRM (101.0 -> 84.9) TY05_016.d
Counts
x10 4
1.02
1
0.98
0.96
0.94
0.92
0.9
0.88
0.86
0.84
0.82
0.8
0.78
0.76
0.74
0.72
0.7
0.68
0.66
0.64
0.62
0.6
0.58
0.56
0.54
0.52
0.5
0.48
0.46
0.44
0.42
0.4
0.38
0.36
0.34
0.32
0.3
0.28
0.26
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
11.595 min
6.5
7
7.5
8
8.5
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
Acquisition Time (min)


- MRM (101.0 -> 84.9) TY05_016.d
Counts
x10 4
*12.451 min
BL
M-6
11-22-15
PM 11/23/15
Acquisition Time (min)

Data File ID: TY07_016.d

Date Injected : 11/07/15

Time Injected : 18:16

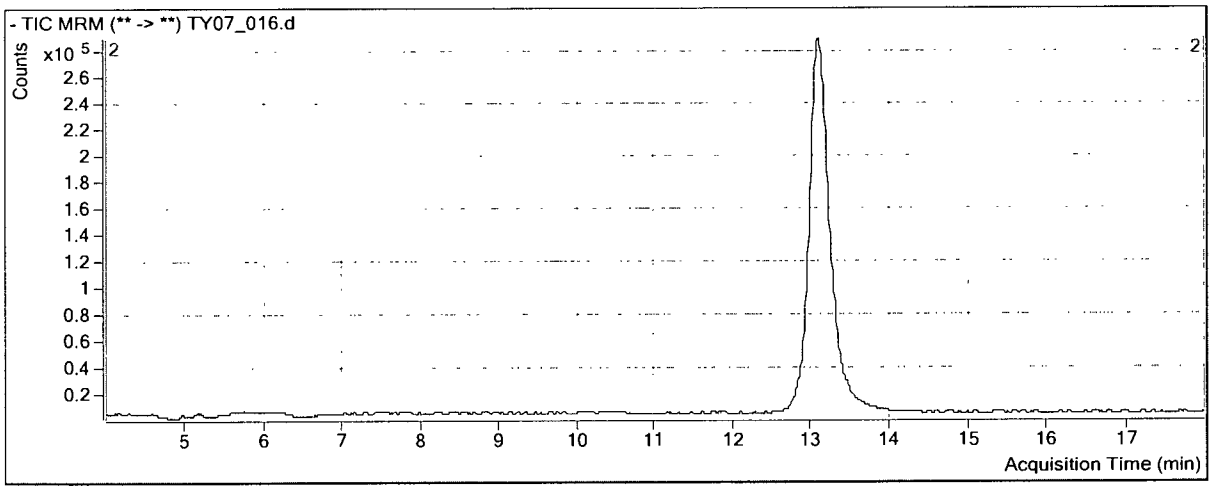
Sample ID : 151105WA_LCS-1 1052.6 DF 11/05/15

Client ID : LAB_CNTL_W_SPKA

Retention Time	Area Count Response	Compound_ID Product Ion		
13.100	4511712	PER_IS_89		
13.106	671146	Perchlorate_83	(671146 * 0.0050) / (1.37 * 4511712.00) * 1052.60 =	0.570987 ppb
13.134	204584	Perchlorate_85	(204584 * 0.0050) / (0.41 * 4511712.00) * 1052.60 =	0.578998 ppb

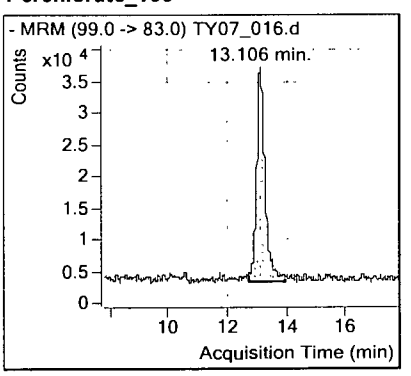
Quantitative Analysis Sample Report

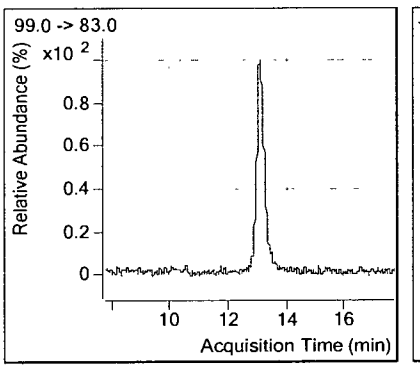
Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_016.d	**Sample Name**	151105WA_LCS-1 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:16
ClientID	LAB_CNTL_W_SPKA	**Inj Vol**	20

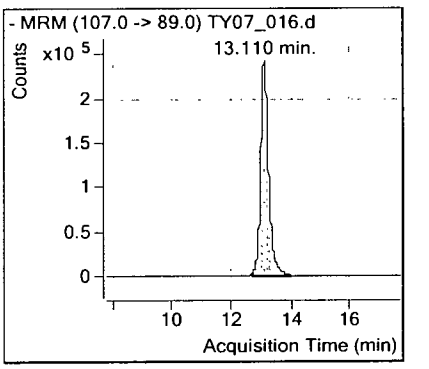


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.106	671146	4511712
Perchlorate_102	PER_IS_108	13.134	204584	4511712

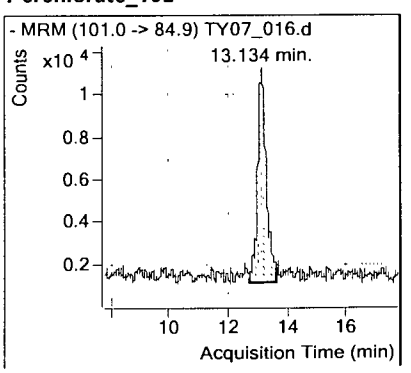
Perchlorate_100

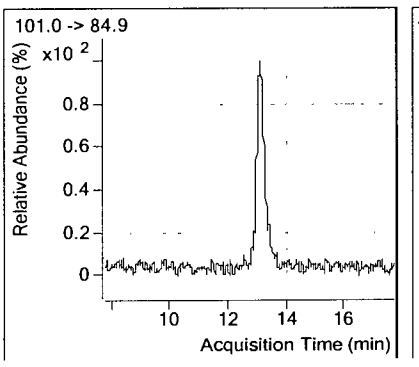


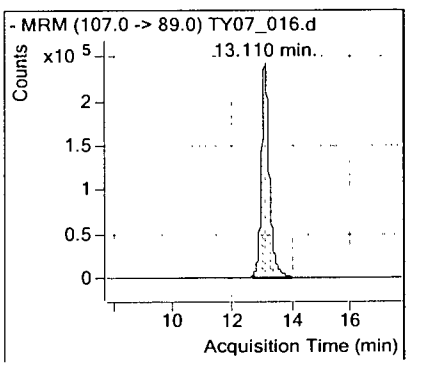




Perchlorate_102







Matrix Spike Recoveries

Perchlorate

APPL ID: **151105W-24126 MS - 202001**
Batch ID: #6850-151105A
Sample ID: AZ24126
Client ID: S67-GW110-2024

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Lvl ug/L	Matrix Result ug/L	SPK Result ug/L	DUP Result ug/L	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
PERCHLORATE	0.600	7.4	8.67	8.48	212 #	180 #	80-120	2.2	15

= Recovery is outside QC limits.

Comments: _____

Primary	SPK	DUP
Quant Method :	QTLMFL2	QTLMFL2
Extraction Date :	11/05/15	11/05/15
Analysis Date :	11/05/15	11/05/15
Instrument :	AGIL_6460	AGIL_6460
Run :	TY05_022.d	TY05_027.d
Initials :	RP	

Printed: 11/24/15 7:31:50 AM
APPL MSD SCII

Data File ID: TY05_022.d

Date Injected : 11/05/15

Time Injected : 22:19

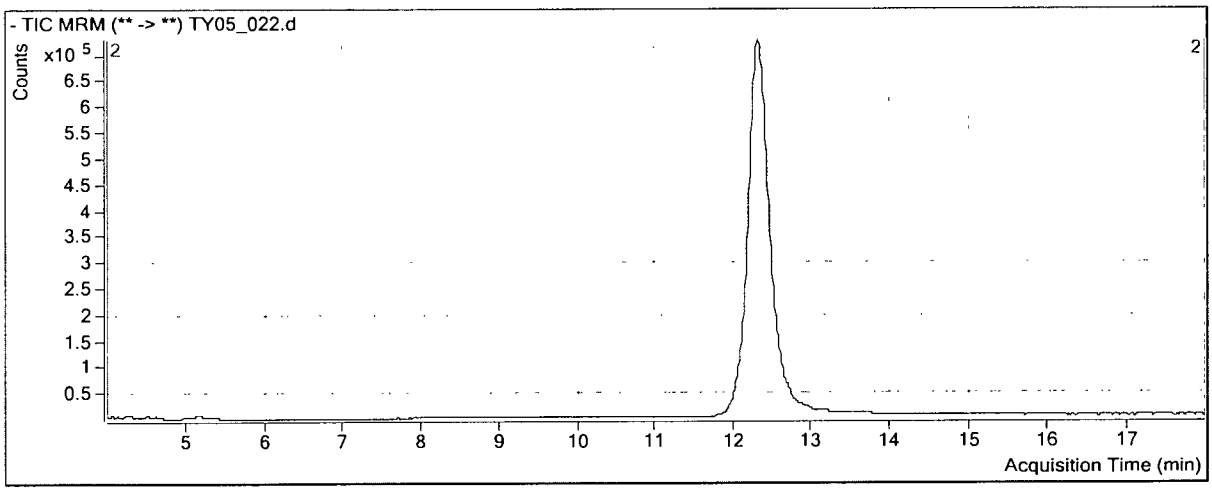
Sample ID : AZ24126_W01_MS-1 1052.6 DF 11/05/15

Client ID : S67-GW110-2024_MS-1

Retention Time	Area Count Response	Compound_ID Product Ion		
12.325	4116029	PER_IS_89		
12.332	8651346	Perchlorate_83	(8651346 * 0.0050) / (1.28 * 4116029.00) * 1052.60 =	8.667937 ppb
12.329	2406226	Perchlorate_85	(2406226 * 0.0050) / (0.38 * 4116029.00) * 1052.60 =	8.106700 ppb

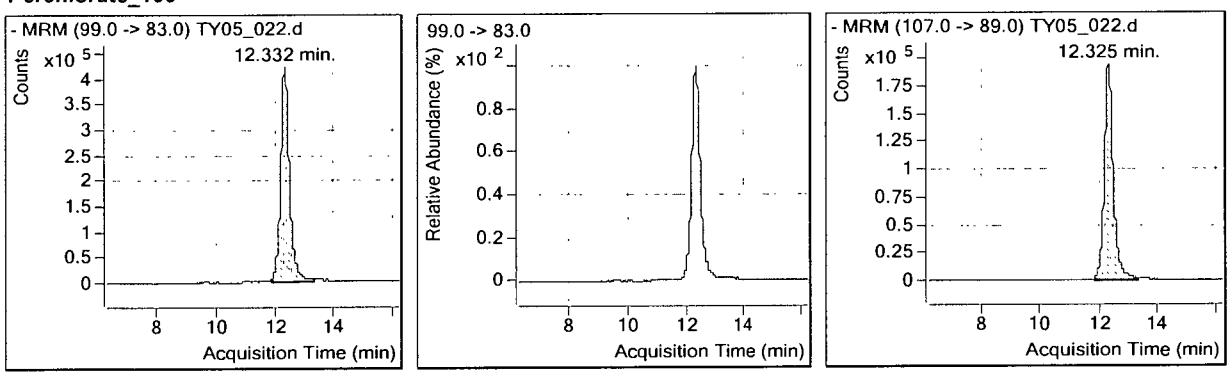
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_022.d	**Sample Name**	AZ24126_W01_MS-1 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	22:19
ClientID	S67-GW110-2024_MS-1	**Inj Vol**	20

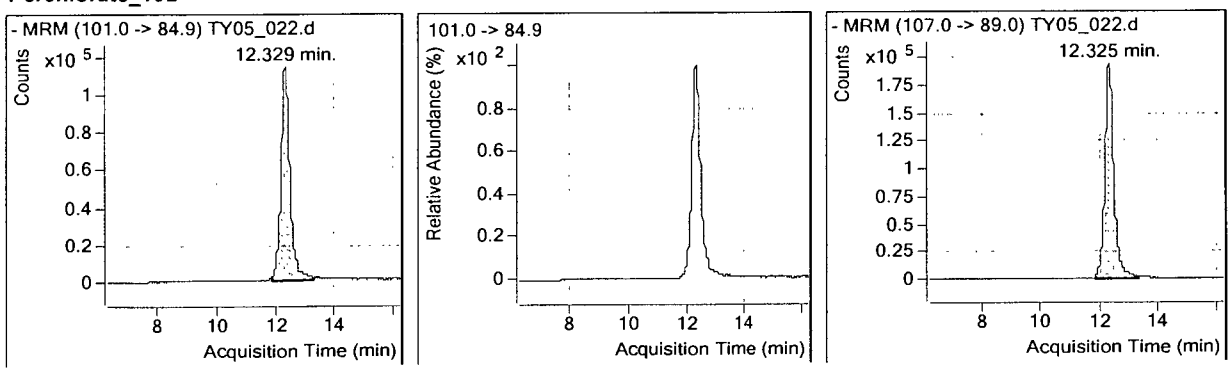


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.332	8651346	4116029
Perchlorate_102	PER_IS_108	12.329	2406226	4116029

Perchlorate_100



Perchlorate_102



Data File ID: TY05_027.d

Date Injected : 11/05/15

Time Injected : 23:52

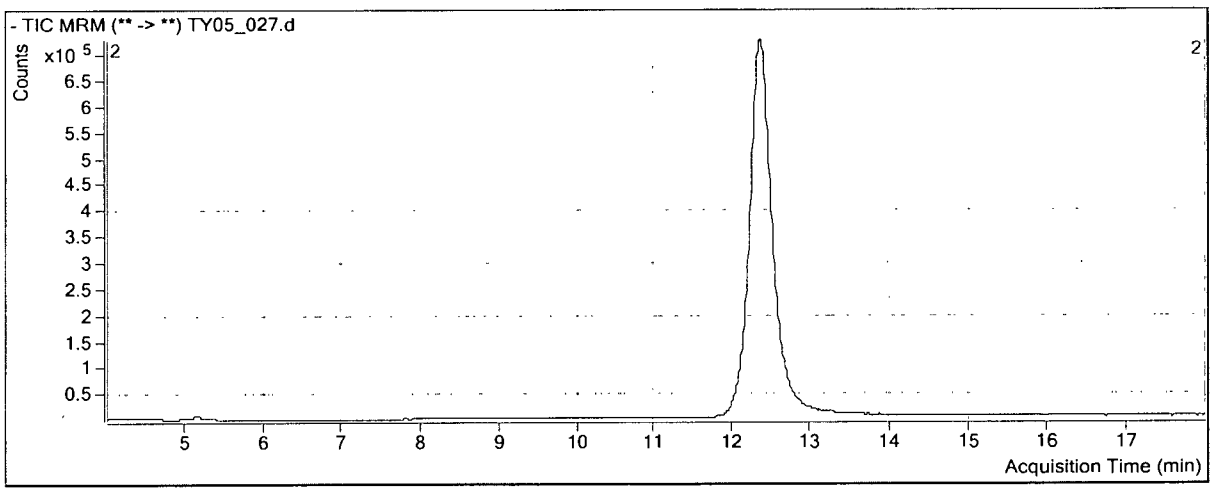
Sample ID : AZ24126_W01_MSD-1 1052.6 DF 11/05/15

Client ID : S67-GW110-2024_MSD-1

Retention Time	Area Count Response	Compound_ID Product Ion		
12.376	4267325	PER_IS_89		
12.373	8770348	Perchlorate_83	(8770348 * 0.0050) / (1.28 * 4267325.00) * 1052.60 =	8.475622 ppb
12.300	2431343	Perchlorate_85	(2431343 * 0.0050) / (0.38 * 4267325.00) * 1052.60 =	7.900901 ppb

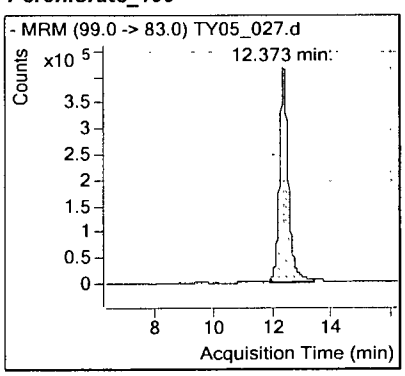
Quantitative Analysis Sample Report

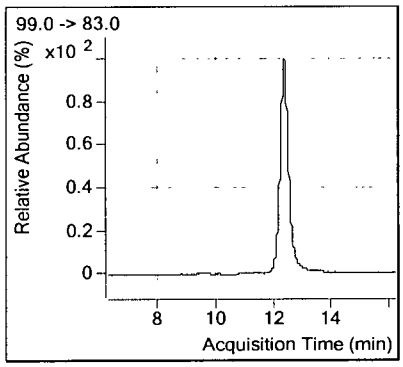
Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_027.d	**Sample Name**	AZ24126_W01_MSD-1 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	23:52
ClientID	S67-GW110-2024_MSD-1	**Inj Vol**	20

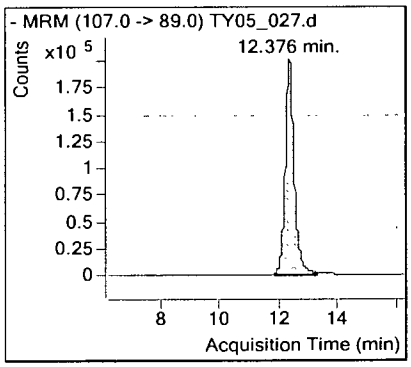


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.373	8770348	4267325
Perchlorate_102	PER_IS_108	12.390	2431343	4267325

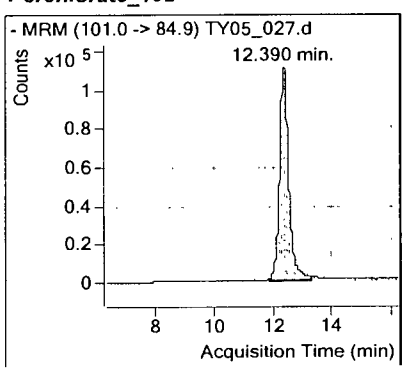
Perchlorate_100

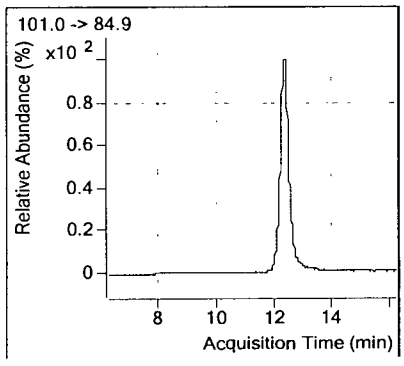


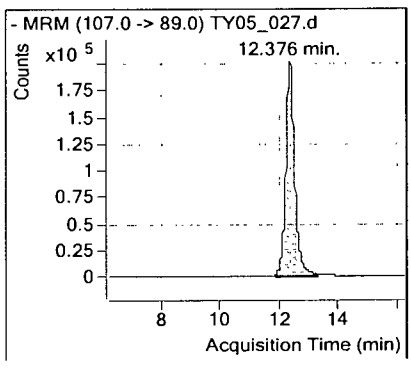




Perchlorate_102







Data File ID: TY07_022.d

Date Injected : 11/07/15

Time Injected : 20:08

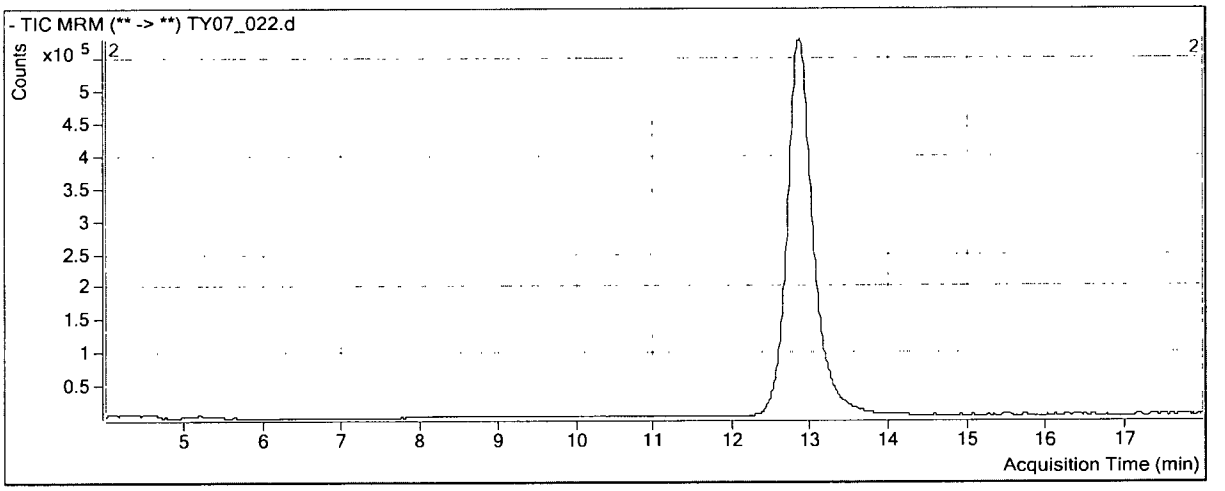
Sample ID : AZ24126_W01_MS-1 1052.6 DF 11/05/15

Client ID : S67-GW110-2024_MS-1

Retention Time	Area Count Response	Compound_ID Product Ion		
12.875	3626714	PER_IS_89		
12.862	7751884	Perchlorate_83	(7751884 * 0.0050) / (1.37 * 3626714.00) * 1052.60 =	8.204351 ppb
12.889	2065670	Perchlorate_85	(2065670 * 0.0050) / (0.41 * 3626714.00) * 1052.60 =	7.272673 ppb

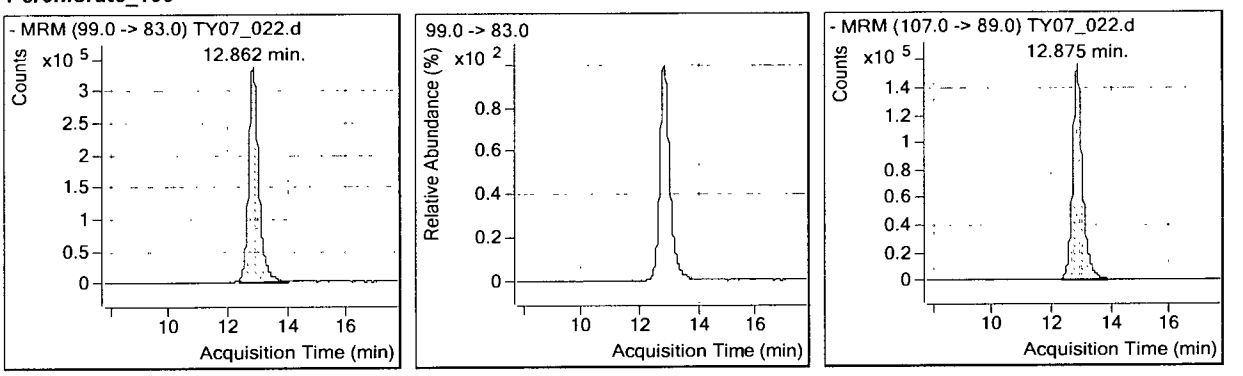
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_022.d	**Sample Name**	AZ24126_W01_MS-1 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	20:08
ClientID	S67-GW110-2024_MS-1	**Inj Vol**	20

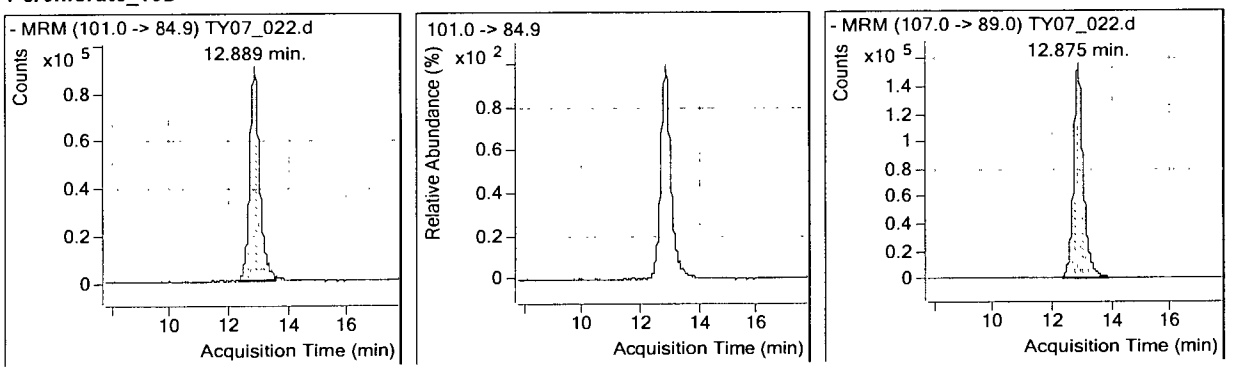


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.862	7751884	3626714
Perchlorate_102	PER_IS_108	12.889	2065670	3626714

Perchlorate_100



Perchlorate_102



Data File ID: TY07_027.d

Date Injected : 11/07/15

Time Injected : 21:41

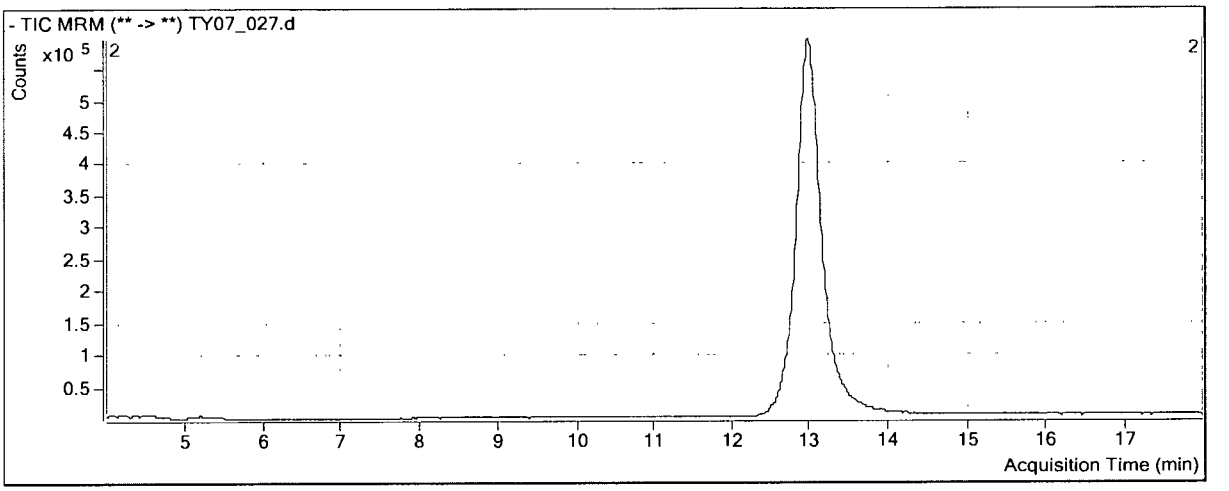
Sample ID : AZ24126_W01_MSD-1 1052.6 DF 11/05/15

Client ID : S67-GW110-2024_MSD-1

Retention Time	Area Count Response	Compound_ID Product Ion		
12.988	3875582	PER_IS_89		
13.004	7908149	Perchlorate_83	(7908149 * 0.0050) / (1.37 * 3875582.00) * 1052.60 =	7.832279 ppb
13.001	2183213	Perchlorate_85	(2183213 * 0.0050) / (0.41 * 3875582.00) * 1052.60 =	7.192927 ppb

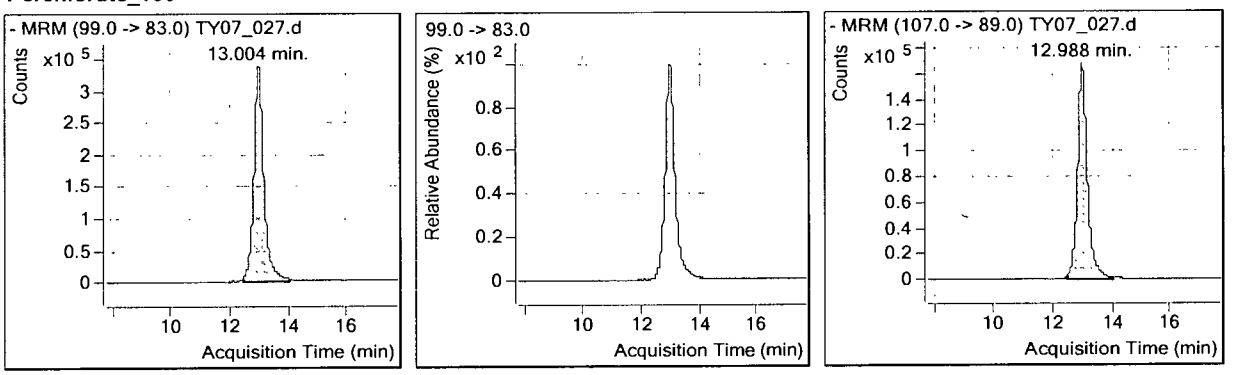
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_027.d	**Sample Name**	AZ24126_W01_MSD-1 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	21:41
ClientID	S67-GW110-2024_MSD-1	**Inj Vol**	20

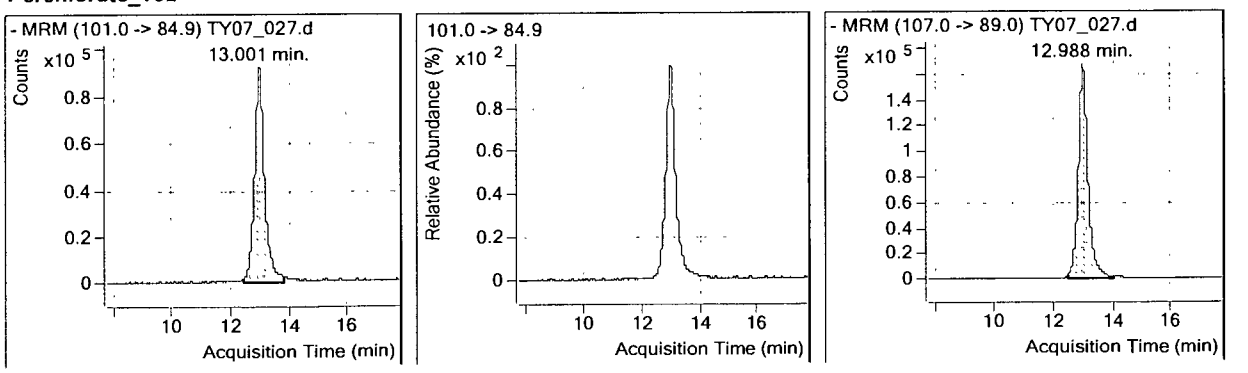


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.004	7908149	3875582
Perchlorate_102	PER_IS_108	13.001	2183213	3875582

Perchlorate_100



Perchlorate_102



Interferrence Check Sample

Perchlorate EPA 6850 Water

APPL ID: 151105W-24126 ICS-202001
Batch ID: #6850-151105A

APPL Inc.
908 N. Temperance Ave.
Clovis, CA 93711

Compound Name	Spike Level ug/L	Spk Result ug/L	SPK% Recovery	Recovery Limits
Perchlorate	0.600	0.716	119.3%	70-130

Comments:

Quant Method:	QTLMFL2
Extraction Date:	11/05/15
Analysis Date:	11/05/15
Instrument:	AGIL_6560
Run:	TY05_017.D
Initials:	RP

Data File ID: TY05_017.d

Date Injected : 11/05/15

Time Injected : 20:46

Sample ID : 151105W_ICSA 1052.6 DF 11/05/15

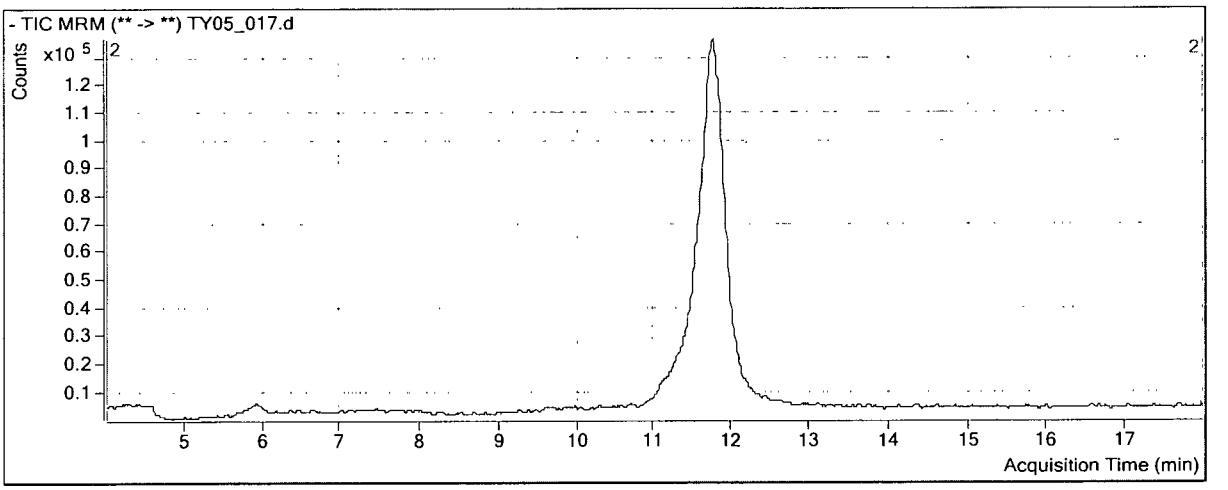
Client ID : LAB_CNTL_W_ICSA

Retention Time		Area Count Response	Compound_ID Product Ion		
11.765		3022227	PER_IS_89		
11.741		524534	Perchlorate_83	(524534 * 0.0050) / (1.28 * 3022227.00) * 1052.60 =	0.715743 ppb
11.738	*	205280	Perchlorate_85	(205280 * 0.0050) / (0.38 * 3022227.00) * 1052.60 =	0.941902 ppb

* MANUAL INTEGRAION

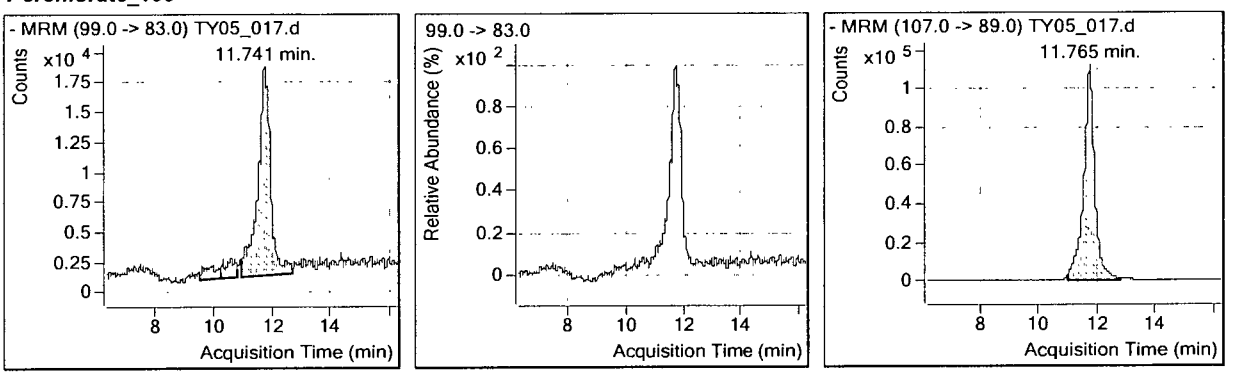
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151105\QuantResults\151105_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY05_017.d	**Sample Name**	151105W_ICSA 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/05/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	20:46
ClientID	LAB_CNTL_W_ICSA	**Inj Vol**	20

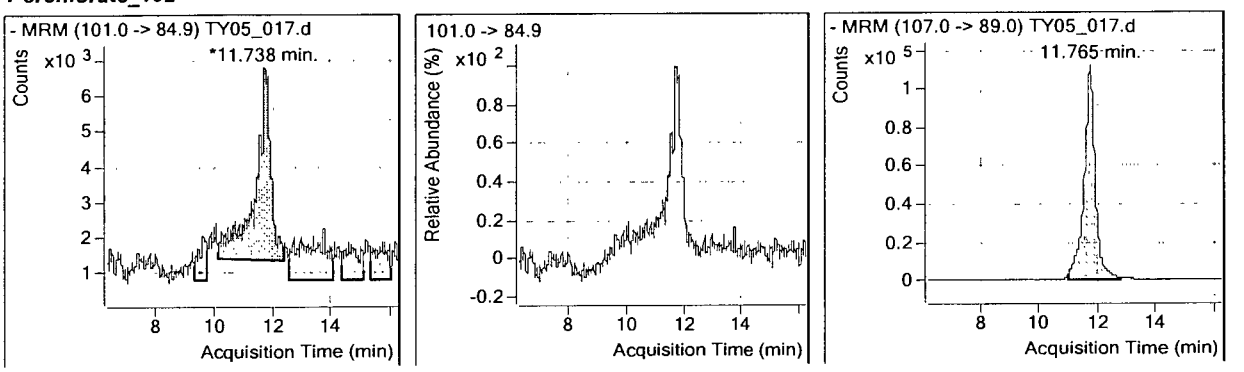


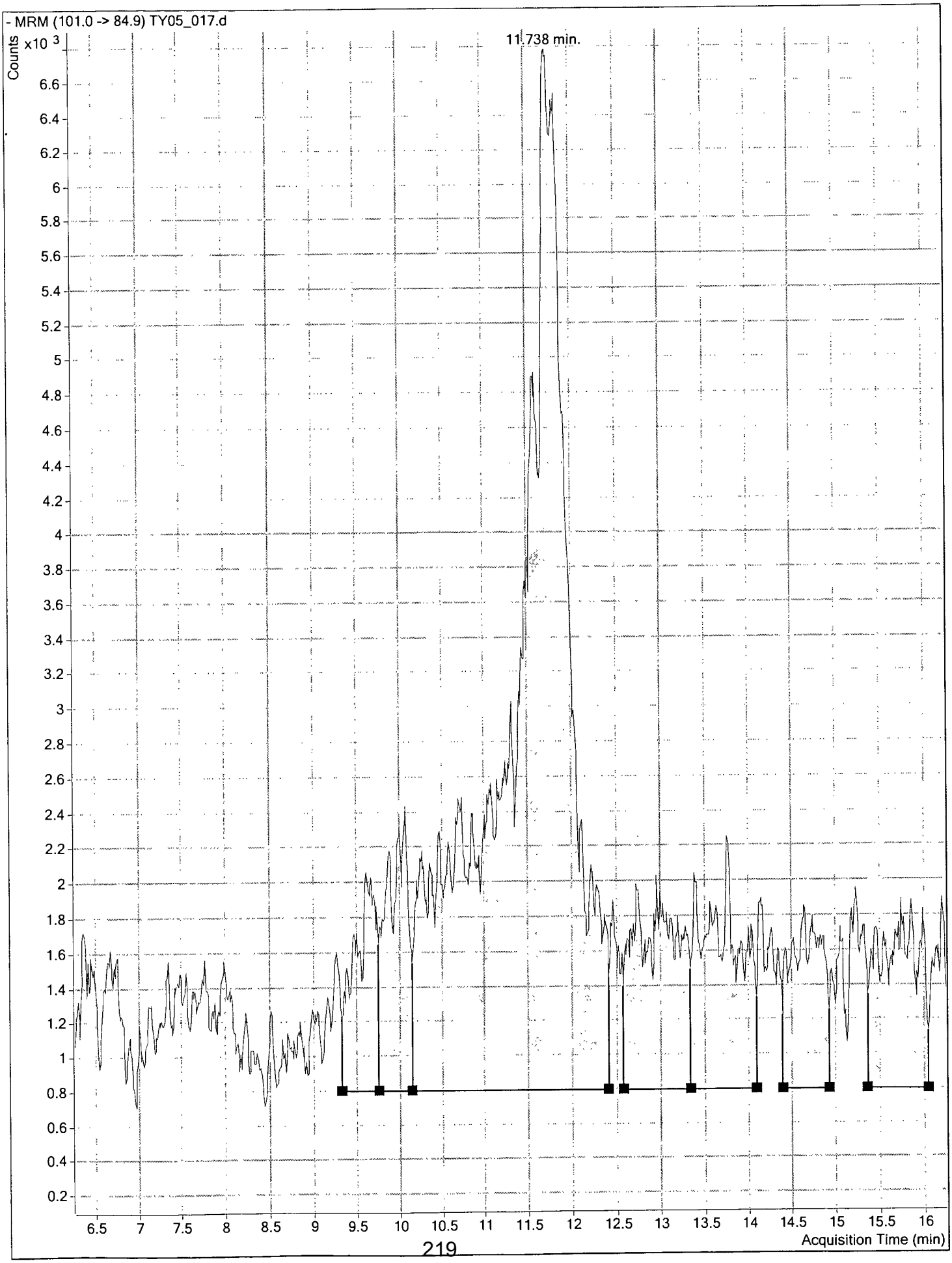
Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108		11.741	524534	3022227	
Perchlorate_102	PER_IS_108	*	11.738	205280	3022227	* MANUAL INT

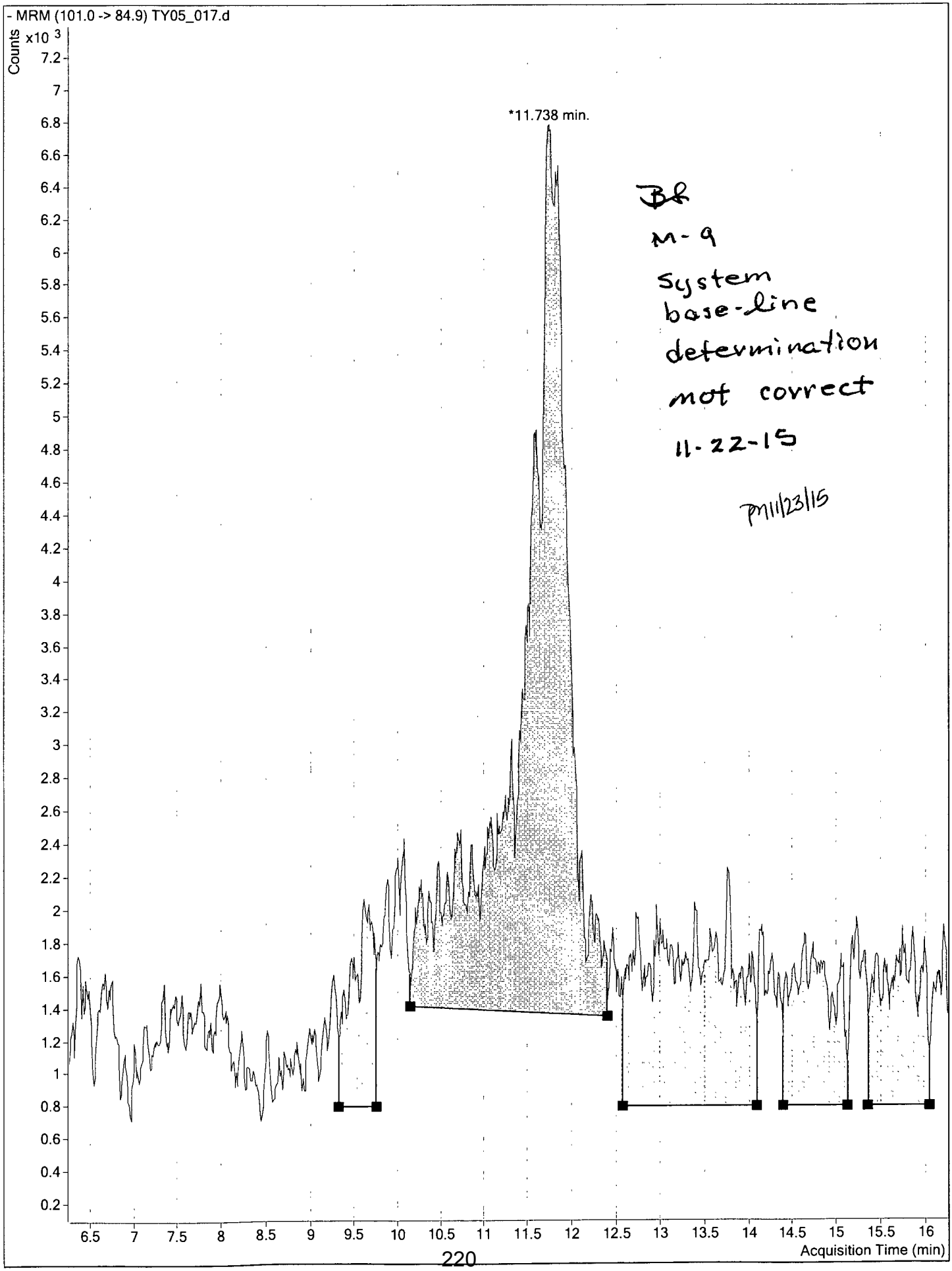
Perchlorate_100



Perchlorate_102




- MRM (101.0 -> 84.9) TY05_017.d
Counts
x10 3
11.738 min.
6.6
6.4
6.2
6
5.8
5.6
5.4
5.2
5
4.8
4.6
4.4
4.2
4
3.8
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
6.5
7
7.5
8
8.5
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
Acquisition Time (min)


- MRM (101.0 -> 84.9) TY05_017.d
Counts
x10 3
*11.738 min.
Acquisition Time (min)
BR
M-9
system
base-line
determination
not correct
11-22-15
PM 11/23/15

Interferrence Check Sample

Perchlorate EPA 6850 Water

APPL ID: 151105W-24126 ICS-202001
Batch ID: #6850-151105A

APPL Inc.
908 N. Temperance Ave.
Clovis, CA 93711

Compound Name	Spike Level ug/L	Spk Result ug/L	SPK% Recovery	Recovery Limits
Perchlorate	0.600	0.594	99.0%	70-130

Comments:

Quant Method:	QTLMFL2
Extraction Date:	11/05/15
Analysis Date:	11/07/15
Instrument:	AGIL_6560
Run:	TY07_017.D
Initials:	RP

Data File ID: TY07_017.d

Date Injected : 11/07/15

Time Injected : 18:35

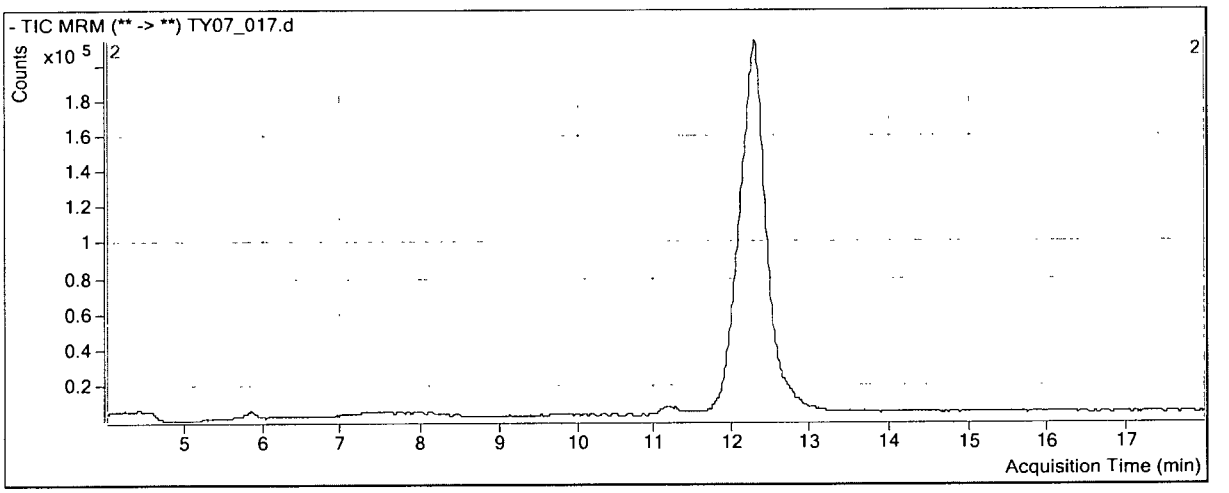
Sample ID : 151105W_ICSA 1052.6 DF 11/05/15

Client ID : LAB_CNTL_W_ICSA

Retention Time	Area Count Response	Compound_ID Product Ion		
12.305	4428574	PER_IS_89		
12.291	685901	Perchlorate_83	(685901 * 0.0050) / (1.37 * 4428574.00) * 1052.60 =	0.594494 ppb
12.257	230526	Perchlorate_85	(230526 * 0.0050) / (0.41 * 4428574.00) * 1052.60 =	0.664664 ppb

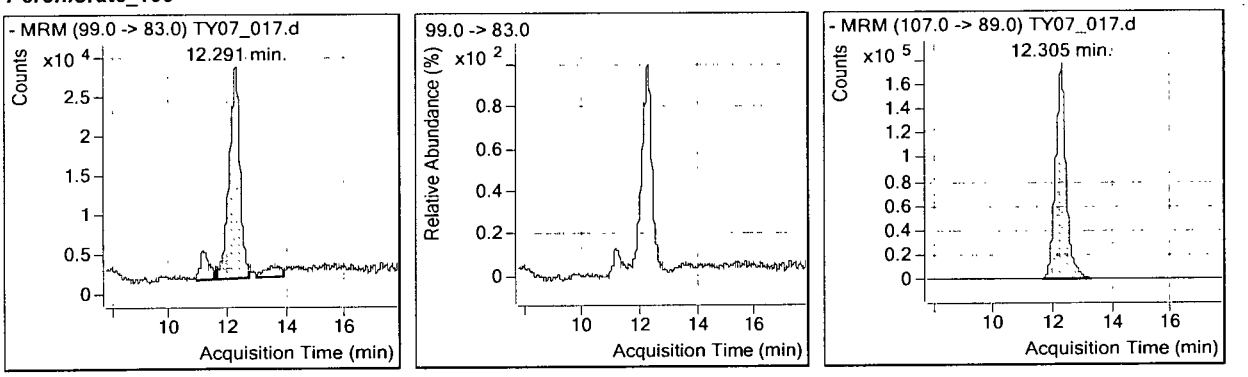
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\151107\QuantResults\151107_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	TY07_017.d	**Sample Name**	151105W_ICSA 1052.6 DF 11/05/15
Sample Type	Sample	**Acq_Date**	11/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:35
ClientID	LAB_CNTL_W_ICSA	**Inj Vol**	20

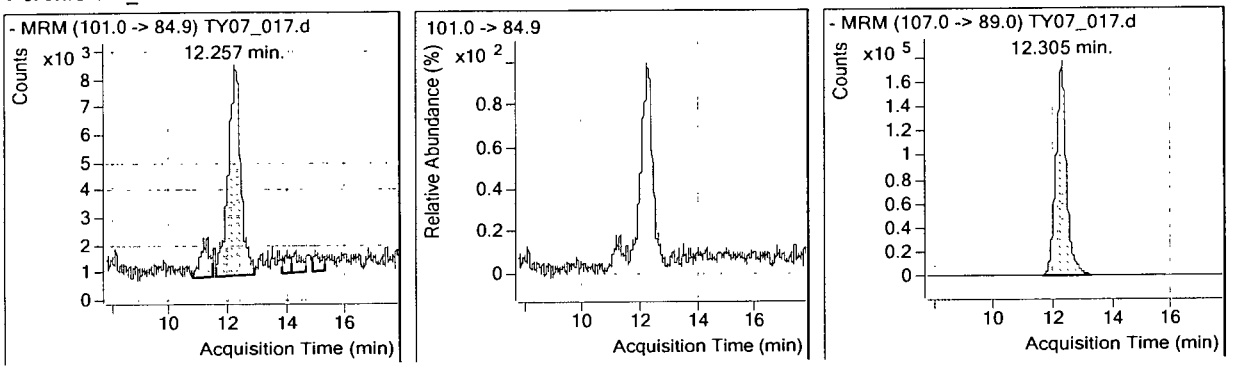


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.291	685901	4428574
Perchlorate_102	PER_IS_108	12.257	230526	4428574

Perchlorate_100



Perchlorate_102



LCMS STANDARD PREP LOG# 105 PAGE 118

STANDARD	INITIAL CONC	SOURCE	DATE	ALIQUOT	FINAL VOLUME	FINAL CNC	SOL'N LOT #	DATE/ INITIALS
NOTE: THE FOLLOWING DOCUMENTATION WAS PERFORMED AS DATED:								JH 08.06.15 08.06.15

ACN_H20_50:50 1 DF 08/01/15:

Burdick & Jackson Acetonitrile Lot DM931 took 10.000 ml and added to 10.000 ml Laboratory Source DI_H20

Note : Above solution was prepared as needed.

JH 08-01-15

PER_IS_50:50 0.005 ug/ml 08/01/15:

Took 19.000 ml ACN_H20_50:50 and added 1.000 ml O2SI 18_O_4 Perchlorate 100 ug/L lot 1074176-35164

Note: Solution prepared as needed.

PERCHLORATE 1.0 ug/ml 08/01/15:

PERCHLORATE 10 ug/ml O2SI LOT 1074374-35165 took 0.100 ml and added to 0.900 ml Laboratory Source DI_H20.

PERCHLORATE 0.010 ug/ml 08/01/15

PERCHLORATE 1.0 ug/ml 08/01/15 took 0.100 ml and added to 9.400 ml ACN_H20 50:50 1 DF 08/01/15 that had received 0.500 ml O2SI 18_O_4 Perchlorate 100 ug/L lot 1074176-35164.

PERCHLORATE 0.005 ug/ml 08/01/15:

PERCHLORATE 0.010 ug/ml 08/01/14 took 0.500'ml and added to 0.500 ml PER_IS_50:50 0.005 ug/ml 08/01/15.

LCMS STANDARD PREP LOG# 105 PAGE 119

	INITIAL CONC	SOURCE, DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL'N. LOT #	DATE/ INITIALS
STANDARD							
NOTE: THE FOLLOWING DOCUMENTATION WAS PERFORMED AS DATED:							JR 08.06.15 08.06.15
PERCHLORATE 0.002 ug/ml 08/01/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.200 ml and added to 0.800 ml PER_IS_50:50 0.005 ug/ml 08/01/15.							JR 08-01-15
PERCHLORATE 0.001 ug/ml 08/01/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.100 ml and added to 0.900 ml PER_IS_50:50 0.005 ug/ml 08/01/15.							
PERCHLORATE 0.0004 ug/ml 08/01/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.040 ml and added to 0.960 ml PER_IS_50:50 0.005 ug/ml 08/01/15.							
PERCHLORATE 0.0002 ug/ml 08/01/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.020 ml and added to 0.980 ml PER_IS_50:50 0.005 ug/ml 08/01/15.							
PERCHLORATE 0.0001 ug/ml 08/01/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.010 ml and added to 0.990 ml PER_IS_50:50 0.005 ug/ml 08/01/15.							
PER_SS 1.0 ug/ml 08/01/15 PERCHLORATE_SS O2SI 10 ug/ml lot 1074375-35166 took 0.100 ml and added to 0.900 ml Laboratory Source DI_H2O.							

LC/MS STANDARD PREP LOG# 105 PAGE# 120

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL'N. LOT #	DATE/ INITIALS
NOTE: THE FOLLOWING DOCUMENTATION WAS PERFORMED AS DATED: JA 08-06-15							JA 08-06-15
PER_CCV_1 0.0004 ug/ml 08/01/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.040 ml and added to 0.960 ml PER_IS_50:50 0.005 ug/ml 08/01/15.							JA 08-01-15
PER_CCV_1 0.002 ug/ml 08/01/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.200 ml and added to 0.800 ml PER_IS_50:50 0.005 ug/ml 08/01/15.							
PER_CCV_2 0.0004 ug/ml 08/01/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.040 ml and added to 0.960 ml PER_IS_50:50 0.005 ug/ml 08/01/15.							
PER_CCV_2 0.002 ug/ml 08/01/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.200 ml and added to 0.800 ml PER_IS_50:50 0.005 ug/ml 08/01/15.							
PER_CCV_3 0.0004 ug/ml 08/01/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.040 ml and added to 0.960 ml PER_IS_50:50 0.005 ug/ml 08/01/15.							
PER_CCV_3 0.002 ug/ml 08/01/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.200 ml and added to 0.800 ml PER_IS_50:50 0.005 ug/ml 08/01/15.							

001

NOTE: THE FOLLOWING DOCUMENTATION JR
WAS PERFORMED AS DATED: JR 08-06-15 08-06-15

PER_SS 0.010 ug/ml 08/01/15: PER_SS 1.0 ug/ml 08/01/15 took 0.100 ml and added to 9.400 ml ACN_H20 50:50 1 DF 08/01/15 that had received 0.500 ml O2SI 18_O_4 Perchlorate 100 ug/L lot 1074176-35164.
PER_SS 0.0004 ug/ml 08/01/15: PER_SS 0.010 ug/ml 08/01/15 took 0.040 ml and added to 0.960 ml PER_IS_50:50 0.005 ug/ml 08/01/15.
PER_SS 0.002 ug/ml 08/01/15: PER_SS 0.010 ug/ml 08/01/15 took 0.200 ml and added to 0.800 ml PER_IS_50:50 0.005 ug/ml 08/01/15.

PER_SS 0.0004 ug/ml 09/09/15: PER_SS 0.010 ug/ml 08/01/15 took 0.040 ml and added to 0.960 ml PER_IS_50:50 0.005 ug/ml 08/01/15.
PER_SS 0.002 ug/ml 09/09/15: PER_SS 0.010 ug/ml 08/01/15 took 0.200 ml and added to 0.800 ml PER_IS_50:50 0.005 ug/ml 08/01/15.
PER_SS 0.0004 ug/ml 11/06/15: PER_SS 0.010 ug/ml 08/01/15 took 0.040 ml and added to 0.960 ml PER_IS_50:50 0.005 ug/ml 08/01/15. NOTE: Performed the above process two times and combined the aliquotes into one injection vial.
PER_SS 0.002 ug/ml 11/06/15: PER_SS 0.010 ug/ml 08/01/15 took 0.200 ml and added to 0.800 ml PER_IS_50:50 0.005 ug/ml 08/01/15. NOTE: Performed the above process two times and combined the aliquotes into one injection vial.
ACN_H20_50:50 1 DF 11/07/15: Laboratory Source DI_H2O took 10.000 ml and combined with 10.000 ml Burdick & Jackson Acetonitrile Lot DM931 NOTE : Solution prepared as needed.
PER_IS_50:50 0.005 ug/ml 11/07/15: ACN_H20_50:50 1 DF 11/07/15 from a volume of 20.000 ml removed 1.000 ml and then delivered 1.000 ML O2SI 18_O4 PERCHLORATE 100 ug/L Lot 1074176-35164 NOTE : Solution prepared as needed.

PERCHLORATE 0.005 ug/ml 11/07/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.500 ml and added to 0.500 ml PER_IS_50:50 0.005 ug/ml 11/07/15 NOTE: Performed the above process two times and combined the aliquotes into one injection vial.
PERCHLORATE 0.002 ug/ml 11/07/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.200 ml and added to 0.800 ml PER_IS_50:50 0.005 ug/ml 11/07/15 NOTE: Performed the above process two times and combined the aliquotes into one injection vial.
PERCHLORATE 0.001 ug/ml 11/07/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.100 ml and added to 0.900 ml PER_IS_50:50 0.005 ug/ml 11/07/15 NOTE: Performed the above process two times and combined the aliquotes into one injection vial.
PERCHLORATE 0.0004 ug/ml 11/07/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.040 ml and added to 0.960 ml PER_IS_50:50 0.005 ug/ml 11/07/15 NOTE: Performed the above process two times and combined the aliquotes into one injection vial.
PERCHLORATE 0.0002 ug/ml 11/07/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.020 ml and added to 0.980 ml PER_IS_50:50 0.005 ug/ml 11/07/15 NOTE: Performed the above process two times and combined the aliquotes into one injection vial.
PERCHLORATE 0.0001 ug/ml 11/07/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.010 ml and added to 0.990 ml PER_IS_50:50 0.005 ug/ml 11/07/15 NOTE: Performed the above process two times and combined the aliquotes into one injection vial.

PER_CCV_1 0.0004 ug/ml 11/07/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.040 ml and added to 0.960 ml PER_IS_50:50 0.005 ug/ml 11/07/15 NOTE: Performed the above process two times and combined the aliquotes into one injection vial.
PER_CCV_1 0.002 ug/ml 11/07/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.200 ml and added to 0.800 ml PER_IS_50:50 0.005 ug/ml 11/07/15 NOTE: Performed the above process two times and combined the aliquotes into one injection vial.
PER_CCV_2 0.0004 ug/ml 11/07/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.040 ml and added to 0.960 ml PER_IS_50:50 0.005 ug/ml 11/07/15 NOTE: Performed the above process two times and combined the aliquotes into one injection vial.
PER_CCV_2 0.002 ug/ml 11/07/15: PERCHLORATE 0.010 ug/ml 08/01/15 took 0.200 ml and added to 0.800 ml PER_IS_50:50 0.005 ug/ml 11/07/15 NOTE: Performed the above process two times and combined the aliquotes into one injection vial.

_HPL6850

Organic Extraction Worksheet

Method	EPA 6850 HPLC Perchlorate Extraction	Extraction Set	151105A	Extraction Method	HPL6850	Units	mL

Spiked ID 1	Perchlorate Spike Mix 0.1ppm 7/31/15 EXP 12/01/15		Surrogate ID 1		
Spiked ID 2	Mix Anions 25,000ppm 2-10-15 EXP 2-10-16		Surrogate ID 2		
Spiked ID 3			Surrogate ID 3		
Spiked ID 4			Surrogate ID 4		
Spiked ID 5			Surrogate ID 5		
Spiked ID 6			Sufficient Vol for Matrix QC:	YES	
Spiked ID 7			Ext. Start Time:	11/05/15 11:45	
Spiked ID 8			Ext. End Time:	11/05/15 12:00	
			GC Requires Extract By:		

pH1			Water Bath Temp Criteria	
pH2				
pH3				

Spiked By: CFM **Date** 11/05/15 11:42:00 AM **Witnessed By:** RP **Date** 11/05/15 11:42:00 AM

	Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
1	151105A Blk				NA	NA equip	5ML	5ML	NA	11/05/15 11:45	
2	151105A LCS-1		0.030	1	NA	NA equip	5ML	5ML	NA	11/05/15 11:45	
3	151105A ICS		0.030/0.060	1/2	NA	NA equip	5ML	5ML	NA	11/05/15 11:45	
4	AZ24124	AZ24124W01			NA	NA equip	5ML	5ML	NA	11/05/15 11:45	77777 - 48 HOUR RUSH
5	AZ24125	AZ24125W01			NA	NA equip	5ML	5ML	NA	11/05/15 11:45	77777 - 48 HOUR RUSH
6	AZ24126 MS-1	AZ24126W01	0.030	1	NA	NA equip	5ML	5ML	NA	11/05/15 11:45	77777 - 48 HOUR RUSH
7	AZ24126 MSD-1	AZ24126W01	0.030	1	NA	NA equip	5ML	5ML	NA	11/05/15 11:45	77777 - 48 HOUR RUSH
8	AZ24126	AZ24126W01			NA	NA equip	5ML	5ML	NA	11/05/15 11:45	77777 - 48 HOUR RUSH
9	AZ24127	AZ24127W01			NA	NA equip	5ML	5ML	NA	11/05/15 11:45	77777 - 48 HOUR RUSH
10	AZ24128	AZ24128W01			NA	NA equip	5ML	5ML	NA	11/05/15 11:45	77777 - 48 HOUR RUSH
11	AZ24129	AZ24129W01			NA	NA equip	5ML	5ML	NA	11/05/15 11:45	77777 - 48 HOUR RUSH
12	AZ24130	AZ24130W01			NA	NA equip	5ML	5ML	NA	11/05/15 11:45	77777 - 48 HOUR RUSH
13	AZ24131	AZ24131W01			NA	NA equip	5ML	5ML	NA	11/05/15 11:45	77777 - 48 HOUR RUSH

Solvent and Lot#	
DI WATER	11-5-15

Extraction COC Transfer	
Extraction lab employee Initials	CFM
GC analyst's initials	PY
Date	11/5/15
Time	12:45
Refrigerator	NA

	Technician's Initials
Scanned By	CFM
Sample Preparation	CFM
Extraction	CFM
Concentration	----------

Modified	11/05/15 12:02:15 PM

Reviewed By: PY **Date** 11/5/15

METHOD 6850 INJECTION LOG: 11/05/15

DETECTOR ID: Agilent 6460 Triple Quad LC/MS

SAMPLE INJECTION ID:	DATA FILE ID:	INJECTION DATE/TIME
PERCHLORATE 0.0002 ug/ml 08/01/15	TY05_003.d	11/05/15 16:25
PERCHLORATE 0.0004 ug/ml 08/01/15	TY05_004.d	11/05/15 16:44
PERCHLORATE 0.001 ug/ml 08/01/15	TY05_005.d	11/05/15 17:03
PERCHLORATE 0.002 ug/ml 08/01/15	TY05_006.d	11/05/15 17:21
PERCHLORATE 0.005 ug/ml 08/01/15	TY05_007.d	11/05/15 17:40
PERCHLORATE 0.010 ug/ml 08/01/15	TY05_008.d	11/05/15 17:58
PER_SS 0.0004 ug/ml 09/09/15	TY05_010.d	11/05/15 18:36
PER_SS 0.002 ug/ml 09/09/15	TY05_011.d	11/05/15 18:54
PER_CCV_1 0.0004 ug/ml 08/01/15	TY05_013.d	11/05/15 19:31
PER_CCV_1 0.002 ug/ml 08/01/15	TY05_014.d	11/05/15 19:50
151105WA_LCS-1 1052.6 DF 11/05/15	TY05_016.d	11/05/15 20:27
151105W_ICSA 1052.6 DF 11/05/15	TY05_017.d	11/05/15 20:46
151105WBLKA 1052.6 DF 11/05/15	TY05_018.d	11/05/15 21:05
AZ24124_W01 1052.6 DF 11/05/15	TY05_019.d	11/05/15 21:23
AZ24125_W01 1052.6 DF 11/05/15	TY05_020.d	11/05/15 21:42
AZ24126_W01 1025.6 DF 11/05/15	TY05_021.d	11/05/15 22:01
AZ24126_W01_MS-1 1052.6 DF 11/05/15	TY05_022.d	11/05/15 22:19
PER_CCV_3 0.0004 ug/ml 08/01/15	TY05_024.d	11/05/15 22:56
PER_CCV_3 0.002 ug/ml 08/01/15	TY05_025.d	11/05/15 23:15
AZ24126_W01_MSD-1 1052.6 DF 11/05/15	TY05_027.d	11/05/15 23:52
AZ24127_W01 1052.6 DF 11/05/15	TY05_028.d	11/06/15 0:11
AZ24128_W01 1052.6 DF 11/05/15	TY05_029.d	11/06/15 0:29
AZ24129_W01 1052.6 DF 11/05/15	TY05_030.d	11/06/15 0:48
AZ24130_W01 1052.6 DF 11/05/15	TY05_031.d	11/06/15 1:07
AZ24131_W01 1052.6 DF 11/05/15	TY05_032.d	11/06/15 1:25
PER_CCV_3 0.0004 ug/ml 08/01/15	TY05_034.d	11/06/15 2:03
PER_CCV_3 0.002 ug/ml 08/01/15	TY05_035.d	11/06/15 2:21

METHOD 6850 INJECTION LOG: 11/07/15

DETECTOR ID: Agilent 6460 Triple Quad LC/MS

SAMPLE INJECTION ID:	DATA FILE ID:	INJECTION DATE/TIME
PERCHLORATE 0.0002 ug/ml 11/07/15	TY07_003.d	11/07/15 14:14
PERCHLORATE 0.0004 ug/ml 11/07/15	TY07_004.d	11/07/15 14:33
PERCHLORATE 0.001 ug/ml 11/07/15	TY07_005.d	11/07/15 14:51
PERCHLORATE 0.002 ug/ml 11/07/15	TY07_006.d	11/07/15 15:10
PERCHLORATE 0.005 ug/ml 11/07/15	TY07_007.d	11/07/15 15:29
PERCHLORATE 0.010 ug/ml 08/01/15	TY07_008.d	11/07/15 15:47
PER_SS 0.0004 ug/ml 11/06/15	TY07_010.d	11/07/15 16:25
PER_SS 0.002 ug/ml 11/06/15	TY07_011.d	11/07/15 16:43
PER_CCV_1 0.002 ug/ml 11/07/15	TY07_013.d	11/07/15 17:21
PER_CCV_1 0.0004 ug/ml 11/07/15	TY07_014.d	11/07/15 17:39
151105WA_LCS-1 1052.6 DF 11/05/15	TY07_016.d	11/07/15 18:16
151105W_ICSA 1052.6 DF 11/05/15	TY07_017.d	11/07/15 18:35
151105WBLKA 1052.6 DF 11/05/15	TY07_018.d	11/07/15 18:54
AZ24124_W01 1052.6 DF 11/05/15	TY07_019.d	11/07/15 19:12
AZ24125_W01 1052.6 DF 11/05/15	TY07_020.d	11/07/15 19:31
AZ24126_W01 1025.6 DF 11/05/15	TY07_021.d	11/07/15 19:50
AZ24126_W01_MS-1 1052.6 DF 11/05/15	TY07_022.d	11/07/15 20:08
PER_CCV_2 0.0004 ug/ml 11/07/15	TY07_024.d	11/07/15 20:46
PER_CCV_2 0.002 ug/ml 11/07/15	TY07_025.d	11/07/15 21:04
AZ24126_W01_MSD-1 1052.6 DF 11/05/15	TY07_027.d	11/07/15 21:41
AZ24127_W01 1052.6 DF 11/05/15	TY07_028.d	11/07/15 22:00
AZ24128_W01 1052.6 DF 11/05/15	TY07_029.d	11/07/15 22:19
AZ24129_W01 1052.6 DF 11/05/15	TY07_030.d	11/07/15 22:37
AZ24130_W01 1052.6 DF 11/05/15	TY07_031.d	11/07/15 22:56
AZ24131_W01 1052.6 DF 11/05/15	TY07_032.d	11/07/15 23:15
PER_CCV_2 0.0004 ug/ml 11/07/15	TY07_034.d	11/07/15 23:52
PER_CCV_2 0.002 ug/ml 11/07/15	TY07_035.d	11/08/15 0:10