N00174.AR.001957
NSWC INDIAN HEAD
5090.3a

VALIDATED DATA PACKAGE, 76398, NSWC INDIAN HEAD MD
6/29/2015
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

June 9, 2015

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

Attn: Ed Corack

Title: Report of Data: Case 76398

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:

Ten water samples were received May 12, 2015, in good condition. Written results for the requested analyses are provided on this June 9, 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/ab
Enclosure
cc: File

Number of pages in this report: 1

Sample receipt information

ARF: 76398

Project: CTO JU11 112G02622 NSF Indian Head, MD

Sample Receipt Information:

The sample group was received on May 12, 2015, at 3.0°C. The samples were assigned Analytical Request Form (ARF) number 76398. The sample numbers and requested analysis were compared to the chain of custody and email communication. A collection time discrepancy was noted and reported to the client. No other exception was encountered.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
S67-GW-D1-051115	AZ16226	WATER	05/11/15	05/12/15
S67-GW-C1-051115	AZ16227	WATER	05/11/15	05/12/15
S67-GW-B1-051115	AZ16228	WATER	05/11/15	05/12/15
S67-GW-A1-051115	AZ16229	WATER	05/11/15	05/12/15
S67-GW-BB2-051115	AZ16230	WATER	05/11/15	05/12/15
S57-MW034-051115	AZ16231	WATER	05/11/15	05/12/15
S57-MW033-051115	AZ16232	WATER	05/11/15	05/12/15
S57-MW032-051115	AZ16233	WATER	05/11/15	05/12/15
S57-MW022-051115	AZ16234	WATER	05/11/15	05/12/15
S67-GW-A1P-051115	AZ16237	WATER	05/11/15	05/12/15

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 ICS and in sample S67-GW-D1-051115. 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 met acceptance criteria.

Blanks:

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

Spikes:

A Laboratory Control Spike (LCS) was prepared using DI water. The LCS recovery met acceptance criteria.

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

No sample was designated by the client for MS/MSD analysis.

Internal Standards:

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

Summary:

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

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
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-GW-D1-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16226
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	0.22 J	0.60	0.400	0.200	ug/L	05/12/15	05/12/15

J = Estimated value.

Quant Method: QTLMFL2
Run #: T512_031.D
Instrument: AGIL_6460
Sequence: TQ051215
Dilution Factor: 1
Initials: MP

Printed: 06/09/15 11:03:53 AM
APPL-F1-SC-NoMC-REG MDLs

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
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-GW-C1-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16227
QCG: #6850-150512A-196913

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	05/12/15	05/12/15

J = Estimated value.

Quant Method: QTLMFL2
Run #: T512_032.D
Instrument: AGIL_6460
Sequence: TQ051215
Dilution Factor: 1
Initials: MP

Printed: 06/09/15 11:03:53 AM
APPL-F1-SC-NoMC-REG MDLs

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
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-GW-B1-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16228
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	12	6.0	4.00	2.00	ug/L	05/12/15	05/14/15

Quant Method: QTLMFL2
Run #: T514_011.D
Instrument: AGIL_6460
Sequence: TQ051215
Dilution Factor: 10
Initials: MP

Printed: 06/09/15 11:03:53 AM
APPL-F1-SC-NoMC-REG MDLs

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
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-GW-A1-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16229
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	1100	60	40.0	20.0	ug/L	05/12/15	05/13/15

Quant Method: QTLMFL2
Run #: T512_104.D
Instrument: AGIL_6460
Sequence: TQ051215
Dilution Factor: 100
Initials: MP

Printed: 06/09/15 11:03:53 AM
APPL-F1-SC-NoMC-REG MDLs

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
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-GW-BB2-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16230
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	4900	600	400.0	200.0	ug/L	05/12/15	05/14/15

Quant Method:	QTLMFL2
Run #:	T514_006.D
Instrument:	AGIL_6460
Sequence:	TQ051215
Dilution Factor:	1000
Initials:	MP

Printed: 06/09/15 11:03:53 AM
APPL-F1-SC-NoMC-REG MDLs

Perchlorate

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

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S57-MW034-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16231
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	430	60	40.0	20.0	ug/L	05/12/15	05/15/15

Quant Method: QTLMFL2
Run #: T514_076.D
Instrument: AGIL_6460
Sequence: TQ051215
Dilution Factor: 100
Initials: MP

Printed: 06/09/15 11:03:53 AM
APPL-F1-SC-NoMC-REG MDLs

Perchlorate

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

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S57-MW033-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16232
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	0.400 U	0.60	0.400	0.200	ug/L	05/12/15	05/13/15

Quant Method: QTLMFL2
Run #: T512_065.D
Instrument: AGIL_6460
Sequence: TQ051215
Dilution Factor: 1
Initials: MP

Printed: 06/09/15 11:03:53 AM
APPL-F1-SC-NoMC-REG MDLs

Perchlorate

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

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S57-MW032-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16233
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	5.3	0.60	0.400	0.200	ug/L	05/12/15	05/13/15

Quant Method: QTLMFL2
Run #: T512_066.D
Instrument: AGIL_6460
Sequence: TQ051215
Dilution Factor: 1
Initials: MP

Printed: 06/09/15 11:03:53 AM
APPL-F1-SC-NoMC-REG MDLs

Perchlorate

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

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S57-MW022-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16234
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	0.400 U	0.60	0.400	0.200	ug/L	05/12/15	05/13/15

Quant Method: QTLMFL2
Run #: T512_067.D
Instrument: AGIL_6460
Sequence: TQ051215
Dilution Factor: 1
Initials: MP

Printed: 06/09/15 11:03:53 AM
APPL-F1-SC-NoMC-REG MDLs

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
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-GW-A1P-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16237
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	950	60	40.0	20.0	ug/L	05/12/15	05/13/15

Quant Method: QTLMFL2
Run #: T512_101.D
Instrument: AGIL_6460
Sequence: TQ051215
Dilution Factor: 100
Initials: MP

Printed: 06/09/15 11:03:53 AM
APPL-F1-SC-NoMC-REG MDLs

Method Blank
Perchlorate

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150512W-16226 - 196913**
Batch ID: #6850-150512A

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	05/12/15	05/12/15

Quant Method: QTLMFL2
Run #: T512_029.D
Instrument: AGIL_6460
Sequence: TQ051215
Initials: MP

GC SC-Blank-REG MDLs
Printed: 06/09/15 11:03:56 AM

Laboratory Control Spike Recovery
Perchlorate

APPL ID: **150512W-16226 LCS - 196913**
Batch ID: #6850-150512A

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	0.599	99.8	80-120

Comments:

Primary	SPK
Quant Method :	QTLMFL2
Extraction Date :	05/12/15
Analysis Date :	05/12/15
Instrument :	AGIL_6460
Run :	T512_027.D
Initials :	MP

Printed: 06/09/15 11:03:58 AM
APPL Standard LCS

EPA 6850

Form 4

Blank Summary

Lab Name: APPL, Inc. SDG No: 76398

Case No: 76398 Date Analyzed: 05/12/15

Matrix: WATER Instrument: AGIL_6460

Blank ID: 150512A-BLK Time Analyzed: 1617

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150512A-LCS	Lab Control Spike	T512_027.D	05/12/15 1537
150512A-BLK	Blank	T512_029.D	05/12/15 1617
AZ16226	S67-GW-D1-051115	T512_031.D	05/12/15 1702
AZ16227	S67-GW-C1-051115	T512_032.D	05/12/15 1721
AZ16232	S57-MW033-051115	T512_065.D	05/13/15 0336
AZ16233	S57-MW032-051115	T512_066.D	05/13/15 0354
AZ16234	S57-MW022-051115	T512_067.D	05/13/15 0413
AZ16237	S67-GW-A1P-051115	T512_101.D	05/13/15 1502
AZ16229	S67-GW-A1-051115	T512_104.D	05/13/15 1557
AZ16230	S67-GW-BB2-051115	T514_006.D	05/14/15 1131
AZ16228	S67-GW-B1-051115	T514_011.D	05/14/15 1313
AZ16231	S57-MW034-051115	T514_076.D	05/15/15 1637

Comments: Batch: #6850-150512A

Printed: 06/09/15 11:04:00 AM
Form 4, Blank Summary

APPL LABS

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

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

CHAIN OF CUSTODY RECORD

3.0

76398

C.O.C. 48701

Report to: PLEASE PRINT

Company Name: TetraTech Phone: 757-466-4908

Address: 5700 Lake Wright Dr. Suite 309
Norfolk, VA 23502 Fax:

Attn: Ed Corack

Invoice to: PLEASE PRINT

Company Name: See Contract Phone:

Address: Fax:

Attn:

Project Name/Number: NSF-Indian Head Site 67 112G02622 CTO-JU11

Purchase Order Number:

Sampler (Print): Jacob Birkett

Sampler (Signature):

Date Shipped: 5-11-15

Carrier: FedEx

Waybill No.: 8992-5262-6809

Comments:

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Matrix: Sed.	Matrix: Soil		Perchlorate	PAHs Phthalates	Total Metals	Diss. Metals	Energetics	Perchlorate	TOC	Anions	Methane				
S67-GW-D1-051115	GW-D1	5-11-15	1140	ET	1	1				1												Rush 24 HR TAT
S67-GW-C1-051115	GW-C1	5-11-15	1216	ET	1	1				1												" "
S67-GW-B1-051115	GW-B1	5-11-15	1310	ET	1	1				1												" "
S67-GW-A1-051115	GW-A1	5-11-15	1340	ET	1	1				1												" "
S67-GW-BB2-051115	GW-BB2	5-11-15	1408	ET	1	1				1												" "
S57-MW034-051115	MW34	5-11-15	1300	ET	1	1				1												" "
S57-MW033-051115	MW33	5-11-15	1355	ET	1	1				1												" "
S57-MW032-051115	MW32	5-11-15	1455	ET	1	1				1												" "
S57-MW022-051115	MW22	5-11-15	1550	ET	1	1				1												" "
S67-MW012-051115	MW12	5-11-15	1640	ET	12	12				1	2	1	1	2		1	1	3				Standard TAT
S67-MW011-051115	MW11	5-11-15	1650	ET	12	12				1	2	1	1	2		1	1	3				Std TAT
S67-GW-A1P-051115	GW-A1	5-11-15	1340	ET	1	1				1												~~Rush 24 HR TAT~~

Shuttle Temperature:

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

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

Relinquished by sampler: Jacob Birkett	Date 5-11-15	Time 1830	Received by: FedEx	Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:	Relinquished by:	Date 5/12/15	Time 09:40	Received at lab by: Jang Zo

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

See reverse side for Container Preservative and Sampling Information

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

June 9, 2015

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

Attn: Ed Corack

Title: Report of Data: Case 76398

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:

Ten water samples were received May 12, 2015, in good condition. Written results for the requested analyses are provided on this June 9, 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/ab
Enclosure
cc: File

Number of pages in this report: 213

Data Validation Package

for

CTO JU11 112G02622 NSF Indian Head

ARF 76398

TABLE OF CONTENTS

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SAMPLE RECEIPT INFORMATION

Sample receipt information

ARF: 76398

Project: CTO JU11 112G02622 NSF Indian Head, MD

Sample Receipt Information:

The sample group was received on May 12, 2015, at 3.0°C. The samples were assigned Analytical Request Form (ARF) number 76398. The sample numbers and requested analysis were compared to the chain of custody and email communication. A collection time discrepancy was noted and reported to the client. No other exception was encountered.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
S67-GW-D1-051115	AZ16226	WATER	05/11/15	05/12/15
S67-GW-C1-051115	AZ16227	WATER	05/11/15	05/12/15
S67-GW-B1-051115	AZ16228	WATER	05/11/15	05/12/15
S67-GW-A1-051115	AZ16229	WATER	05/11/15	05/12/15
S67-GW-BB2-051115	AZ16230	WATER	05/11/15	05/12/15
S57-MW034-051115	AZ16231	WATER	05/11/15	05/12/15
S57-MW033-051115	AZ16232	WATER	05/11/15	05/12/15
S57-MW032-051115	AZ16233	WATER	05/11/15	05/12/15
S57-MW022-051115	AZ16234	WATER	05/11/15	05/12/15
S67-GW-A1P-051115	AZ16237	WATER	05/11/15	05/12/15

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 ICS and in sample S67-GW-D1-051115. 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 met acceptance criteria.

Blanks:

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

Spikes:

A Laboratory Control Spike (LCS) was prepared using DI water. The LCS recovery met acceptance criteria.

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

No sample was designated by the client for MS/MSD analysis.

Internal Standards:

The area counts of the sample Internal Standards were compared to the average IS area counts of the initial calibration. All I.S. 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

76398

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 # 48701
RAD Screen (Y/N): Y pH (Y/N): N
Turn Around Type: 24 HOURS

Received by: YL
Date Received: 05/12/15 Time: 09:40
Delivered by: FED EX
Shuttle Custody Seals (Y/N): Y Time Zone: -4
Chest Temp(s): 3.0°C
Color: G-Blue
Samples Chilled until Placed in Refrig/Freezer: Y
Project Manager: Cynthia Clark
QC Report Type: DVP4/LEDD/MD
Due Date: 05/13/15

Comments:
login to ed.corack@ & 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/
Guidance: DOD QSM v4.2: DOD Forms, LOD Database
Collection time discrepancy noted.

Sample Distribution:
Extractions: 10-_HPL6850
LCMS: 10-$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-GW-D1-051115	AZ16226W	05/11/15	11:40	$6850
2.	S67-GW-C1-051115	AZ16227W	05/11/15	12:16	$6850
3.	S67-GW-B1-051115	AZ16228W	05/11/15	13:10	$6850
4.	S67-GW-A1-051115	AZ16229W	05/11/15	13:40	$6850
5.	S67-GW-BB2-051115	AZ16230W	05/11/15	14:08	$6850
6.	S57-MW034-051115	AZ16231W	05/11/15	13:00	$6850
7.	S57-MW033-051115	AZ16232W	05/11/15	13:55	$6850

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

8.	S57-MW032-051115	AZ16233W	05/11/15	14:55	$6850
9.	S57-MW022-051115	AZ16234W	05/11/15	15:50	$6850
10.	S67-GW-A1P-051115	AZ16237W	05/11/15	13:40	$6850

APPL Sample Receipt Form

ARF# **76398**

Sample	Container Type	Count	pH
AZ16226	4 PL 125mL	1	NA
AZ16227	4 PL 125mL	1	NA
AZ16228	4 PL 125mL	1	NA
AZ16229	4 PL 125mL	1	NA
AZ16230	4 PL 125mL	1	NA
AZ16231	4 PL 125mL	1	NA
AZ16232	4 PL 125mL	1	NA
AZ16233	4 PL 125mL	1	NA
AZ16234	4 PL 125mL	1	NA
AZ16237	4 PL 125mL	1	NA

Sample	Container Type	Count	pH

APPL LABS

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

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

CHAIN OF CUSTODY RECORD

3.0

76398

C.O.C. 48701

Report to: PLEASE PRINT

Company Name: TetraTech Phone: 757-466-4908

Address: 5700 Lake Wright Dr. Suite 309
Norfolk, VA 23502 Fax:

Attn: Ed Corack

Invoice to: PLEASE PRINT

Company Name: See Contract Phone:

Address: Fax:

Attn:

Project Name/Number: NSF-Indian Head Site 67 112G02622 CTO-JU11

Purchase Order Number:

Sampler (Print): Jacob Birkett

Sampler (Signature):

Date Shipped: 5-11-15

Carrier: FedEx

Waybill No.: 8992-5262-6209

Comments:

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Matrix: Sed.	Matrix: Soil		Analysis Requested/Method Number: Perchlorate	PAHs Phthalates	Total Metals	Diss. Metals	Energetics	Perchlorate	TOC	Anions	Methane				Comments
S67-GW-D1-051115	GW-D1	5-11-15	1140	ET	1	1				1												Rush 24 HR TAT
S67-GW-C1-051115	GW-C1	5-11-15	1216	ET	1	1				1												" "
S67-GW-B1-051115	GW-B1	5-11-15	1310	ET	1	1				1												" "
S67-GW-A1-051115	GW-A1	5-11-15	1340	ET	1	1				1												" "
S67-GW-BB2-051115	GW-BB2	5-11-15	1408	ET	1	1				1												" "
S57-MW034-051115	MW34	5-11-15	1300	ET	1	1				1												" "
S57-MW033-051115	MW33	5-11-15	1355	ET	1	1				1												" "
S57-MW032-051115	MW32	5-11-15	1455	ET	1	1				1												" "
S57-MW022-051115	MW22	5-11-15	1550	ET	1	1				1												" "
S67-MW012-051115	MW12	5-11-15	1640	ET	12	12				1	2	1	1	2		1	1	3				Standard TAT
S67-MW011-051115	MW11	5-11-15	1650	ET	12	12				1	2	1	1	2		1	1	3				Std TAT
S67-GW-A1P-051115	GW-A1	5-11-15	1340	ET	1	1				1												Rush 24 HR TAT

Shuttle Temperature:

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

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

Relinquished by:	Date	Time	Received by:	Relinquished by:	Date	Time	Received by:
Jacob Birkett	5-11-15	1830	FedEx				
Relinquished by:	Date	Time	Received by:	Relinquished by:	Date 5/12/15	Time 09:40	Received at lab by: Yang Zo

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

See reverse side for Container Preservative and Sampling Information

COOLER RECEIPT FORM **ARF: 76398**

1) Project: CTO JU11 112G02622 NSF Indian Head Date Received: 05/12/15

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: 3.0 2: _____ 3: _____ 4: _____ 5: _____ 6: _____
7: _____ 8: _____ 9: _____ 10: _____ 11: _____ 12: _____

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) YE/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: _____

CUSTODY SEAL
DATE 5-11-15
SIGNATURE [redacted]
QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

Notes/Deficiencies:
SAMPLE " S57-MW022-05115 " COC HAS A COLLECTION TIME OF 15:50, CONTAINER HAS A COLLECTION TIME OF 15:55, WE USED COC COLLECTION TIME.

Personnel receiving samples: BB Second reviewer: YL
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: **150512W-16226 - 196913**
Batch ID: #6850-150512A

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	05/12/15	05/12/15

Quant Method: QTLMFL2
Run #: T512_029.D
Instrument: AGIL_6460
Sequence: TQ051215
Initials: MP

GC SC-Blank-REG MDLs
Printed: 05/13/15 11:50:06 AM

Laboratory Control Spike Recovery
Perchlorate

APPL ID: **150512W-16226 LCS - 196913**
Batch ID: #6850-150512A

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	0.599	99.8	80-120

Comments:

Primary	SPK
Quant Method :	QTLMFL2
Extraction Date :	05/12/15
Analysis Date :	05/12/15
Instrument :	AGIL_6460
Run :	T512_027.D
Initials :	MP

Printed: 05/13/15 11:50:01 AM
APPL Standard LCS

Interferrence Check Sample

Perchlorate EPA 6850 Water

APPL ID: 150512W-16226 ICS-196913
Batch ID: #6850-150512A

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	0.558	93.0%	70-130

Comments:

Quant Method:	QTLMFL2
Extraction Date:	05/12/15
Analysis Date:	05/12/15
Instrument:	AGIL_6560
Run:	T512_028.D
Initials:	RP

EPA 6850

Form 4

Blank Summary

Lab Name: APPL, Inc.
Case No: 76398
Matrix: WATER
Blank ID: 150512A-BLK

SDG No: 76398
Date Analyzed: 05/12/15
Instrument: AGIL_6460
Time Analyzed: 1617

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150512A-LCS	Lab Control Spike	T512_027.D	05/12/15 1537
150512A-BLK	Blank	T512_029.D	05/12/15 1617
AZ16226	S67-GW-D1-051115	T512_031.D	05/12/15 1702
AZ16227	S67-GW-C1-051115	T512_032.D	05/12/15 1721
AZ16232	S57-MW033-051115	T512_065.D	05/13/15 0336
AZ16233	S57-MW032-051115	T512_066.D	05/13/15 0354
AZ16234	S57-MW022-051115	T512_067.D	05/13/15 0413
AZ16237	S67-GW-A1P-051115	T512_101.D	05/13/15 1502
AZ16229	S67-GW-A1-051115	T512_104.D	05/13/15 1557
AZ16230	S67-GW-BB2-051115	T514_006.D	05/14/15 1131
AZ16228	S67-GW-B1-051115	T514_011.D	05/14/15 1313
AZ16231	S57-MW034-051115	T514_076.D	05/15/15 1637

Comments: Batch: #6850-150512A

Printed: 06/09/15 8:11:42 AM
Form 4, Blank Summary

INTERNAL STANDARD AREA AND RT SUMMARY

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

Lab File ID (Standard): T312_003-_008.d

Instrument ID: Agilent 6460 Triple Quad LC/MS

	PER_IS			
	12_HOUR_STD AVERAGE	11032021		
	UPPER LIMIT RESPONSE	16548032		
	LOWER LIMIT RESPONSE	5516011		
Data File ID:	Sample ID:	Analysis Date and Time	IS AREA COUNT #	IS R.T. #
T312_003.d	PERCHLORATE 0.0002 ug/ml 11/11/14	3/12/15 17:52	8337058	13.732
T312_004.d	PERCHLORATE 0.0004 ug/ml 11/11/14	3/12/15 18:11	10671196	13.783
T312_005.d	PERCHLORATE 0.001 ug/ml 11/11/14	3/12/15 18:29	10651968	13.803
T312_006.d	PERCHLORATE 0.002 ug/ml 11/11/14	3/12/15 18:48	13529952	13.803
T312_007.d	PERCHLORATE 0.005 ug/ml 11/11/14	3/12/15 19:07	11028880	13.874
T312_008.d	PERCHLORATE 0.010 ug/ml 08/27/14	3/12/15 19:25	11973072	13.874
T312_010.d	PER_SS 0.0004 ug/ml 11/11/14	3/12/15 20:02	12977621	13.946
T312_011.d	PER_SS 0.002 ug/ml 11/11/14	3/12/15 20:21	13747369	13.976
T312_013.d	PER_CCV_1 0.0004 ug/ml 11/11/14	3/12/15 20:58	12323795	14.109
T312_014.d	PER_CCV_1 0.002 ug/ml 11/11/14	3/12/15 21:17	13576634	14.139

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.** **76398**

Lab File ID (Standard): T512_003.d

Instrument ID: Agilent 6460 Triple Quad LC/MS

	PER_IS			
	12_HOUR_STD AVERAGE	4906019		
	UPPER LIMIT RESPONSE	7359029		
	LOWER LIMIT RESPONSE	2453010		
Data File ID:	Sample ID:	Analysis Date and Time	IS AREA COUNT #	IS R.T. #
T512_002.d	PER_CCV 0.0004 ug/ml 05/07/15	5/12/15 7:51	4374131	14.007
T512_003.d	PER_CCV 0.002 ug/ml 05/07/15	5/12/15 8:10	4906019	13.935
T512_024.d	PER_CCV 0.0004 ug/ml 05/07/15	5/12/15 14:41	4120838	13.813
T512_025.d	PER_CCV 0.002 ug/ml 05/07/15	5/12/15 14:59	4766152	13.589
T512_027.d	150512WA_LCS-1 1052.6 DF 05/12/15	5/12/15 15:37	4309588	13.742
T512_028.d	150512W_ICSA 1052.6 DF 05/12/15	5/12/15 15:57	3818635	12.855
T512_029.d	150512WBLKA 1052.6 DF 05/12/15	5/12/15 16:17	4755283	13.935
T512_031.d	AZ16226_W01 1052.6 DF 05/12/15	5/12/15 17:02	4317534	12.621
T512_032.d	AZ16227_W01 1052.6 DF 05/12/15	5/12/15 17:21	4394520	12.835
T512_036.d	PER_CCV 0.0004 ug/ml 05/07/15	5/12/15 18:36	4044824	13.62
T512_037.d	PER_CCV 0.002 ug/ml 05/07/15	5/12/15 18:54	4679515	13.64
T512_060.d	PER_CCV 0.0004 ug/ml 05/07/15	5/13/15 2:03	3243820	14.241
T512_061.d	PER_CCV 0.002 ug/ml 05/07/15	5/13/15 2:21	3712101	14.282
T512_065.d	AZ16232_W01 1052.6 DF 05/12/15	5/13/15 3:36	3508285	13.62
T512_066.d	AZ16233_W01 1052.6 DF 05/12/15	5/13/15 3:54	2924880	13.803
T512_067.d	AZ16234_W01 1052.6 DF 05/12/15	5/13/15 4:13	3386288	12.682
T512_072.d	PER_CCV 0.0004 ug/ml 05/07/15	5/13/15 5:46	3399672	14.486
T512_073.d	PER_CCV 0.002 ug/ml 05/07/15	5/13/15 6:05	3902565	14.475
T512_096.d	PER_CCV 0.0004 ug/ml 05/07/15	5/13/15 13:13	3494473	13.232
T512_097.d	PER_CCV 0.002 ug/ml 05/07/15	5/13/15 13:32	4018197	13.569
T512_101.d	AZ16237_W01 105263.2 DF 05/12/15_5/13	5/13/15 15:02	3352934	12.998
T512_104.d	AZ16229_W01 105263.2 DF 05/12/15_5/13	5/13/15 15:57	3552318	12.988
T512_107.d	PER_CCV 0.0004 ug/ml 05/07/15	5/13/15 17:07	3548765	13.324
T512_108.d	PER_CCV 0.002 ug/ml 05/07/15	5/13/15 17:26	4131546	13.212

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.** **76398**

Lab File ID (Standard): T514_003.d

Instrument ID: Agilent 6460 Triple Quad LC/MS

	PER_IS			
	12_HOUR_STD AVERAGE	3957948		
	UPPER LIMIT RESPONSE	5936922		
	LOWER LIMIT RESPONSE	1978974		
Data File ID:	Sample ID:	Analysis Date and Time	IS AREA COUNT #	IS R.T. #
T514_002.d	PER_CCV 0.0004 ug/ml 05/07/15	5/14/15 10:07	3384496	13.528
T514_003.d	PER_CCV 0.002 ug/ml 05/07/15	5/14/15 10:26	3957948	13.548
T514_006.d	AZ16230_W01 1052631.6 DF 05/12/15_5/14	5/14/15 11:31	3233557	13.395
T514_011.d	AZ16228_W01 10526.3 DF 05/12/15_5/14	5/14/15 13:13	4031668	12.529
T514_016.d	PER_CCV 0.0004 ug/ml 05/07/15	5/14/15 14:46	3701407	13.202
T514_017.d	PER_CCV 0.002 ug/ml 05/07/15	5/14/15 15:05	4266748	13.12
T514_072.d	PER_CCV 0.0004 ug/ml 05/07/15	5/15/15 15:10	4038059	13.477
T514_073.d	PER_CCV 0.002 ug/ml 05/07/15	5/15/15 15:29	4908539	13.406
T514_076.d	AZ16231_W01 105263.2 DF 05/12/15_5/15	5/15/15 16:37	4237001	13.141
T514_078.d	PER_CCV 0.0004 ug/ml 05/07/15	5/15/15 17:15	4118063	13.365
T514_079.d	PER_CCV 0.002 ug/ml 05/07/15	5/15/15 17:33	4779607	13.477

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\150312
Instrument Name : TQ (Agilent 6460 Triple Quad LC/MS)
Method File : 6460_ESI_PER_N_NEWER_K'_COLUMN.m
Operator : BA

Date Aquired: 03/12/15 17:52 Vial Number: NA
Sample Name: PERCHLORATE 0.0002 ug/ml 11/11/14 Data File ID: T312_003.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.789	446712	3.1
2)	Perchlorate_85	13.704	144754	

Date Aquired: 03/12/15 18:11 Vial Number: NA
Sample Name: PERCHLORATE 0.0004 ug/ml 11/11/14 Data File ID: T312_004.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.8	1023403	3.0
2)	Perchlorate_85	13.827	337305	

Date Aquired: 03/12/15 18:29 Vial Number: NA
Sample Name: PERCHLORATE 0.001 ug/ml 11/11/14 Data File ID: T312_005.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.82	2483393	3.2
2)	Perchlorate_85	13.827	781617	

Date Aquired: 03/12/15 18:48 Vial Number: NA
Sample Name: PERCHLORATE 0.002 ug/ml 11/11/14 Data File ID: T312_006.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.83	6351752	3.3
2)	Perchlorate_85	13.817	1920912	

Date Aquired: 03/12/15 19:07 Vial Number: NA
Sample Name: PERCHLORATE 0.005 ug/ml 11/11/14 Data File ID: T312_007.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.861	14499255	3.4
2)	Perchlorate_85	13.878	4209044	

Date Aquired: 03/12/15 19:25 Vial Number: NA
Sample Name: PERCHLORATE 0.010 ug/ml 08/27/14 Data File ID: T312_008.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.881	34223790	3.4
2)	Perchlorate_85	13.878	9985270	

Date Aquired: 03/12/15 20:02 Vial Number: NA
Sample Name: PER_SS 0.0004 ug/ml 11/11/14 Data File ID: T312_010.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.942	1472839	3.3
2)	Perchlorate_85	13.959	440675	

Date Aquired: 03/12/15 20:21 Vial Number: NA
Sample Name: PER_SS 0.002 ug/ml 11/11/14 Data File ID: T312_011.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.014	7468678	3.4
2)	Perchlorate_85	14	2222387	

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\150512
Instrument Name : TQ (Agilent 6460 Triple Quad LC/MS)
Method File : 6460_ESI_PER_N_NEWER_K'_COLUMN.m
Operator : BA

Date Aquired: 05/12/15 7:32 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T512_001.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.248	55111	16.3
2)	Perchlorate_85	13.939	3382	

Date Aquired: 05/12/15 7:51 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T512_002.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.024	503072	3.2
2)	Perchlorate_85	14.031	159436	

Date Aquired: 05/12/15 8:10 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T512_003.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.942	2324805	3.4
2)	Perchlorate_85	13.939	682523	

Date Aquired: 05/12/15 8:28 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T512_004.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.83	56137	1.8
2)	Perchlorate_85	13.878	31048	

Date Aquired: 05/12/15 8:47 Vial Number: NA
Sample Name: AZ16055_W01 1052631.6 DF 05/07/15_5/11 Data File ID: T512_005.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.667	188957	3.2
2)	Perchlorate_85	13.694	58504	

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Date Aquired: 05/12/15 9:06 Vial Number: NA
Sample Name: AZ16055_W01 105263.2 DF 05/07/15_5/11 Data File ID: T512_006.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.198	1018832	3.0
2)	Perchlorate_85	13.175	344109	

Date Aquired: 05/12/15 9:24 Vial Number: NA
Sample Name: AZ16055_W01 10526.3 DF 05/07/15_5/11 Data File ID: T512_007.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.73	5472383	3.4
2)	Perchlorate_85	12.726	1632035	

Date Aquired: 05/12/15 9:43 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 05/10/15 Data File ID: T512_008.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.942	2978	1.9
2)	Perchlorate_85	14.061	1570	

Date Aquired: 05/12/15 10:02 Vial Number: NA
Sample Name: AZ16056_W01 1052631.6 DF 05/07/15_5/11 Data File ID: T512_009.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.708	2657056	3.3
2)	Perchlorate_85	13.715	800065	

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Date Aquired: 05/12/15 10:20 Vial Number: NA
Sample Name: AZ16056_W01 105263.2 DF 05/07/15_5/11 Data File ID: T512_010.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.086	27328927	3.4
2)	Perchlorate_85	13.103	8068620	

Date Aquired: 05/12/15 10:39 Vial Number: NA
Sample Name: AZ16056_W01 10526.3 DF 05/07/15_5/11 Data File ID: T512_011.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.424	141975604	3.1
2)	Perchlorate_85	12.421	45637143	

Date Aquired: 05/12/15 10:57 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T512_012.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.769	53371	33.3
2)	Perchlorate_85	14.051	1605	

Date Aquired: 05/12/15 11:16 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T512_013.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.708	502640	3.0
2)	Perchlorate_85	13.715	167292	

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Date Aquired: 05/12/15 11:35 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T512_014.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.698	2352197	3.3
2)	Perchlorate_85	13.705	720720	

Date Aquired: 05/12/15 11:53 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T512_015.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.728	54063	2.3
2)	Perchlorate_85	13.715	23332	

Date Aquired: 05/12/15 12:12 Vial Number: NA
Sample Name: AZ16055_W01 1052631.6 DF 05/07/15_5/11 Data File ID: T512_016.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.565	192742	2.7
2)	Perchlorate_85	13.531	72722	

Date Aquired: 05/12/15 12:30 Vial Number: NA
Sample Name: AZ16055_W01 105263.2 DF 05/07/15_5/11 Data File ID: T512_017.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.852	978901	2.8
2)	Perchlorate_85	12.818	343516	

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Date Aquired: 05/12/15 12:49 Vial Number: NA
Sample Name: AZ16055_W01 10526.3 DF 05/07/15_5/11 Data File ID: T512_018.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.404	6859471	3.4
2)	Perchlorate_85	12.4	1998939	

Date Aquired: 05/12/15 13:08 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 05/10/15 Data File ID: T512_019.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.105	1493	1.1
2)	Perchlorate_85	13.949	1323	

Date Aquired: 05/12/15 13:26 Vial Number: NA
Sample Name: AZ16056_W01 1052631.6 DF 05/07/15_5/11 Data File ID: T512_020.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.637	2484224	3.3
2)	Perchlorate_85	13.633	746339	

Date Aquired: 05/12/15 13:45 Vial Number: NA
Sample Name: AZ16056_W01 105263.2 DF 05/07/15_5/11 Data File ID: T512_021.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.913	27706961	3.4
2)	Perchlorate_85	12.9	8121237	

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Date Aquired: 05/12/15 14:04 Vial Number: NA
Sample Name: AZ16056_W01 10526.3 DF 05/07/15_5/11 Data File ID: T512_022.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.373	142288714	3.1
2)	Perchlorate_85	12.36	45549708	

Date Aquired: 05/12/15 14:22 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T512_023.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.596	59465	2.2
2)	Perchlorate_85	13.572	27205	

Date Aquired: 05/12/15 14:41 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T512_024.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.81	445546	3.0
2)	Perchlorate_85	13.817	149445	

Date Aquired: 05/12/15 14:59 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T512_025.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.586	2273891	3.3
2)	Perchlorate_85	13.572	688478	

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Date Aquired: 05/12/15 15:18 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T512_026.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.677	41768	12.2
2)	Perchlorate_85	14.092	3415	

Date Aquired: 05/12/15 15:37 Vial Number: NA
Sample Name: 150512WA_LCS-1 1052.6 DF 05/12/15 Data File ID: T512_027.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.769	623312	3.0
2)	Perchlorate_85	13.725	208822	

Date Aquired: 05/12/15 15:57 Vial Number: NA
Sample Name: 150512W_ICSA 1052.6 DF 05/12/15 Data File ID: T512_028.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.934	514351	3.0
2)	Perchlorate_85	12.951	171061	

Date Aquired: 05/12/15 16:17 Vial Number: NA
Sample Name: 150512WBLKA 1052.6 DF 05/12/15 Data File ID: T512_029.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.065	3486	0.7
2)	Perchlorate_85	14.051	5238	

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Date Aquired: 05/12/15 16:44 Vial Number: NA
Sample Name: AZ16200_W01 1052.6 DF 05/12/15 Data File ID: T512_030.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.973	28010	2.2
2)	Perchlorate_85	13.898	12987	

Date Aquired: 05/12/15 17:02 Vial Number: NA
Sample Name: AZ16226_W01 1052.6 DF 05/12/15 Data File ID: T512_031.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.648	234088	3.1 ✓
2)	Perchlorate_85	12.574	76366	

PM 6/9/15

Date Aquired: 05/12/15 17:21 Vial Number: NA
Sample Name: AZ16227_W01 1052.6 DF 05/12/15 Data File ID: T512_032.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.801	289829	3.0 ✓
2)	Perchlorate_85	12.869	95928	

PM 6/9/15

Date Aquired: 05/12/15 17:40 Vial Number: NA
Sample Name: AZ16228_W01 1052.6 DF 05/12/15 Data File ID: T512_033.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.067	14990612	3.5 ✓
2)	Perchlorate_85	12.105	4261915	

PM 6/9/15

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Date Aquired: 05/12/15 17:58 Vial Number: NA
Sample Name: AZ16229_W01 1052.6 DF 05/12/15 Data File ID: T512_034.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.139	488049203	2.7 ✓ PM 4/1/15
2)	Perchlorate_85	12.105	182329726	

Date Aquired: 05/12/15 18:17 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T512_035.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.932	64612	2.4
2)	Perchlorate_85	13.878	27280	

Date Aquired: 05/12/15 18:36 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T512_036.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.606	464615	3.1
2)	Perchlorate_85	13.613	150783	

Date Aquired: 05/12/15 18:54 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T512_037.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.647	2190808	3.2
2)	Perchlorate_85	13.633	678751	

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Date Aquired: 05/13/15 1:25 Vial Number: NA
Sample Name: AZ16229_W01 1052.6 DF 05/12/15 Data File ID: T512_058.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.434	476515014	2.7
2)	Perchlorate_85	12.451	174388939	

✓ PM 6/9/15

Date Aquired: 05/13/15 1:44 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T512_059.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.207	50023	2.4
2)	Perchlorate_85	14.245	21011	

Date Aquired: 05/13/15 2:03 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T512_060.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.238	381885	3.1
2)	Perchlorate_85	14.245	122034	

Date Aquired: 05/13/15 2:21 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T512_061.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.258	1761024	3.4
2)	Perchlorate_85	14.275	517465	

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Date Aquired: 05/13/15 2:40 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T512_062.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.136	34833	10.7
2)	Perchlorate_85	13.959	3245	

Date Aquired: 05/13/15 2:58 Vial Number: NA
Sample Name: AZ16230_W01 1052.6 DF 05/12/15 Data File ID: T512_063.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.006	980852142	2.3
2)	Perchlorate_85	11.983	426108150	

PMG 9/15

Date Aquired: 05/13/15 3:17 Vial Number: NA
Sample Name: AZ16231_W01 1052.6 DF 05/12/15 Data File ID: T512_064.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.516	324202923	3.0
2)	Perchlorate_85	12.533	108808462	

PMG 9/15

Date Aquired: 05/13/15 3:36 Vial Number: NA
Sample Name: AZ16232_W01 1052.6 DF 05/12/15 Data File ID: T512_065.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.402	21873	10.3
2)	Perchlorate_85	13.868	2118	

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Date Aquired: 05/13/15 3:54 Vial Number: NA
Sample Name: AZ16233_W01 1052.6 DF 05/12/15 Data File ID: T512_066.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.769	3769837	3.3 ✓
2)	Perchlorate_85	13.796	1131820	

pm 4/9/15

Date Aquired: 05/13/15 4:13 Vial Number: NA
Sample Name: AZ16234_W01 1052.6 DF 05/12/15 Data File ID: T512_067.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.963	2875	1.9
2)	Perchlorate_85	14.122	1549	

Date Aquired: 05/13/15 4:32 Vial Number: NA
Sample Name: AZ16235_W04 1052.6 DF 05/12/15 Data File ID: T512_068.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.677	15310713	3.5 ✓
2)	Perchlorate_85	13.674	4406661	

pm 4/9/15

Date Aquired: 05/13/15 4:50 Vial Number: NA
Sample Name: AZ16236_W04 1052.6 DF 05/12/15 Data File ID: T512_069.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.382	87515439	3.2 ✓
2)	Perchlorate_85	13.389	27011121	

pm 4/9/15

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Date Aquired: 05/13/15 5:09 Vial Number: NA
Sample Name: AZ16237_W01 1052.6 DF 05/12/15 Data File ID: T512_070.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.587	522111097	2.7
2)	Perchlorate_85	12.563	193221789	

PM 6/9/15

Date Aquired: 05/13/15 5:27 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T512_071.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.513	57479	2.1
2)	Perchlorate_85	14.397	27760	

PM 6/9/15

Date Aquired: 05/13/15 5:46 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T512_072.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.472	384165	3.1
2)	Perchlorate_85	14.479	122721	

PM 6/9/15

Date Aquired: 05/13/15 6:05 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T512_073.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.492	1883174	3.4
2)	Perchlorate_85	14.499	549926	

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Date Aquired: 05/13/15 12:36 Vial Number: NA
Sample Name: AZ16144_S04 9233.6 DF 05/12/15 Data File ID: T512_094.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.188	703468	3.1
2)	Perchlorate_85	13.205	224543	

pm 6/9/15

Date Aquired: 05/13/15 12:55 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T512_095.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.198	45040	1.9
2)	Perchlorate_85	13.165	23469	

Date Aquired: 05/13/15 13:13 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T512_096.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.249	411944	3.0
2)	Perchlorate_85	13.307	135924	

Date Aquired: 05/13/15 13:32 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T512_097.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.565	1930329	3.2
2)	Perchlorate_85	13.582	611481	

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Date Aquired: 05/13/15 13:50 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T512_098.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.127	46741	21.9
2)	Perchlorate_85	14.102	2131	

Date Aquired: 05/13/15 14:14 Vial Number: NA
Sample Name: AY16237_W01 10526315.8 DF 05/12/15_5/13 Data File ID: T512_099.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.525	69502	2.5
2)	Perchlorate_85	13.542	27859	

PM 6/9/15

Date Aquired: 05/13/15 14:43 Vial Number: NA
Sample Name: AZ16237_W01 1052631.6 DF 05/12/15_5/13 Data File ID: T512_100.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.626	511891	3.0
2)	Perchlorate_85	13.654	173021	

PM 6/9/15

Date Aquired: 05/13/15 15:02 Vial Number: NA
Sample Name: AZ16237_W01 105263.2 DF 05/12/15_5/13 Data File ID: T512_101.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.015	7662202	3.5
2)	Perchlorate_85	13.012	2216254	

PM 6/9/15

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Date Aquired: 05/13/15 15:20 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 05/10/15 Data File ID: T512_102.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.942	14995	1.5
2)	Perchlorate_85	13.735	10081	

Date Aquired: 05/13/15 15:39 Vial Number: NA
Sample Name: AZ16229_W01 1052631.6 DF 05/12/15_5/13 Data File ID: T512_103.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.525	1131011	3.3
2)	Perchlorate_85	13.531	343568	

PM 6/9/15

Date Aquired: 05/13/15 15:57 Vial Number: NA
Sample Name: AZ16229_W01 105263.2 DF 05/12/15_5/13 Data File ID: T512_104.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.005	9249708	3.5
2)	Perchlorate_85	13.001	2652288	

PM 6/9/15

Date Aquired: 05/13/15 16:16 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 05/10/15 Data File ID: T512_105.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.014	3995	1.1
2)	Perchlorate_85	13.969	3700	

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Date Aquired: 05/13/15 16:49 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T512_106.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.657	48510	2.8
2)	Perchlorate_85	13.664	17363	

Date Aquired: 05/13/15 17:07 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T512_107.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.331	419051	3.2
2)	Perchlorate_85	13.307	130544	

Date Aquired: 05/13/15 17:26 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T512_108.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.239	1970410	3.3
2)	Perchlorate_85	13.215	604033	

Date Aquired: 05/13/15 17:44 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T512_109.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.351	46659	2.8
2)	Perchlorate_85	13.266	16726	

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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\150514
Instrument Name : TQ (Agilent 6460 Triple Quad LC/MS)
Method File : 6460_ESI_PER_N_NEWER_K'_COLUMN.m
Operator : BA

Date Aquired: 05/14/15 9:49 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T514_001.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.596	40726	1.9
2)	Perchlorate_85	13.654	21199	

Date Aquired: 05/14/15 10:07 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T514_002.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.535	402839	3.2
2)	Perchlorate_85	13.541	126192	

Date Aquired: 05/14/15 10:26 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T514_003.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.555	1898195	3.2
2)	Perchlorate_85	13.531	585205	

Date Aquired: 05/14/15 10:45 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T514_004.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.474	37420	2.5
2)	Perchlorate_85	13.358	15017	

Date Aquired: 05/14/15 11:12 Vial Number: NA
Sample Name: AZ16230_W01 10526315.8 DF 05/12/15_5/14 Data File ID: T514_005.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.423	440229	2.8
2)	Perchlorate_85	13.46	157764	

PM 6/9/15

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Date Aquired: 05/14/15 11:31 Vial Number: NA
Sample Name: AZ16230_W01 1052631.6 DF 05/12/15_5/14 Data File ID: T514_006.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.392	3846481	3.4
2)	Perchlorate_85	13.419	1145733	

PM 6/9/15

Date Aquired: 05/14/15 11:49 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 05/10/15 Data File ID: T514_007.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.3	17783	1.5
2)	Perchlorate_85	13.48	11809	

Date Aquired: 05/14/15 12:17 Vial Number: NA
Sample Name: AZ16236_W01 1052631.6 DF 05/12/15_5/14 Data File ID: T514_008.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.311	189537	2.9
2)	Perchlorate_85	13.338	64619	

PM 6/9/15

Date Aquired: 05/14/15 12:36 Vial Number: NA
Sample Name: AZ16236_W01 105263.2 DF 05/12/15_5/14 Data File ID: T514_009.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.423	1096522	3.2
2)	Perchlorate_85	13.399	341231	

PM 6/9/15

Page 2 of 20

Date Aquired: 05/14/15 12:55 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 05/14/15 Data File ID: T514_010.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.402	27832	1.7
2)	Perchlorate_85	13.328	16688	

Date Aquired: 05/14/15 13:13 Vial Number: NA
Sample Name: AZ16228_W01 10526.3 DF 05/12/15_5/14 Data File ID: T514_011.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.546	1201836	3.1
2)	Perchlorate_85	12.553	385931	

PM 6/9/15

Date Aquired: 05/14/15 13:32 Vial Number: NA
Sample Name: AZ16231_W01 10526.3 DF 05/12/15_5/14 Data File ID: T514_012.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.414	55610564	3.3
2)	Perchlorate_85	12.411	16769617	

PM 6/9/15

Date Aquired: 05/14/15 13:50 Vial Number: NA
Sample Name: AZ16233_W01 105263.2 DF 05/12/15_5/14 Data File ID: T514_013.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.148	88870	2.5
2)	Perchlorate_85	13.226	36096	

PM 6/9/15

Page 3 of 20

Date Aquired: 05/14/15 14:09 Vial Number: NA
Sample Name: AZ16233_W01 10526.3 DF 05/12/15_5/14 Data File ID: T514_014.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.249	458564	3.0 ✓ PM 6/9/15
2)	Perchlorate_85	13.277	153742	

Date Aquired: 05/14/15 14:28 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T514_015.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.29	52941	2.5
2)	Perchlorate_85	13.409	21570	

Date Aquired: 05/14/15 14:46 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T514_016.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.209	420437	3.2
2)	Perchlorate_85	13.246	131038	

Date Aquired: 05/14/15 15:05 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T514_017.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.127	2033268	3.2
2)	Perchlorate_85	13.134	643386	

Page 4 of 20

Date Aquired: 05/15/15 14:33 Vial Number: NA
Sample Name: AZ16231_W01 105263.2 DF 05/12/15_5/15 Data File ID: T514_070.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.086	5255575	3.4
2)	Perchlorate_85	13.083	1534975	

PM 6/9/15

Date Aquired: 05/15/15 14:51 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T514_071.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.229	55491	2.0
2)	Perchlorate_85	13.266	27220	

Date Aquired: 05/15/15 15:10 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T514_072.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.535	450074	2.9
2)	Perchlorate_85	13.501	157454	

Date Aquired: 05/15/15 15:29 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T514_073.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.412	2337620	3.4
2)	Perchlorate_85	13.419	695091	

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Date Aquired: 05/15/15 15:47 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T514_074.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.28	55414	2.2
2)	Perchlorate_85	13.409	24769	

Date Aquired: 05/15/15 16:19 Vial Number: NA
Sample Name: AZ16231_W01 1052631.6 DF 05/12/15_5/15 Data File ID: T514_075.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.188	475411	3.2
2)	Perchlorate_85	13.175	150789	

✓ PM 6/9/15

Date Aquired: 05/15/15 16:37 Vial Number: NA
Sample Name: AZ16231_W01 105263.2 DF 05/12/15_5/15 Data File ID: T514_076.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.147	4435884	3.4
2)	Perchlorate_85	13.154	1318472	

✓ PM 6/9/15

Date Aquired: 05/15/15 16:56 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T514_077.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.239	52651	2.2
2)	Perchlorate_85	13.317	23648	

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Date Aquired: 05/15/15 17:15 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T514_078.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.372	458669	2.9
2)	Perchlorate_85	13.368	159377	

Date Aquired: 05/15/15 17:33 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T514_079.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.494	2267096	3.2
2)	Perchlorate_85	13.48	701659	

Date Aquired: 05/15/15 17:52 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T514_080.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.677	45670	12.9
2)	Perchlorate_85	13.399	3528	

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EPA METHOD 6850
Perchlorate
LC/MS

Sample Data

APPL, INC.

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
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-GW-D1-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16226
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	0.22 J	0.60	0.400	0.200	ug/L	05/12/15	05/12/15

J = Estimated value.

Quant Method: QTLMFL2
Run #: T512_031.D
Instrument: AGIL_6460
Sequence: TQ051215
Dilution Factor: 1
Initials: MP

Printed: 05/13/15 11:50:10 AM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T512_031.d

Date Injected : 05/12/15

Time Injected : 17:02

Sample ID : AZ16226_W01 1052.6 DF 05/12/15

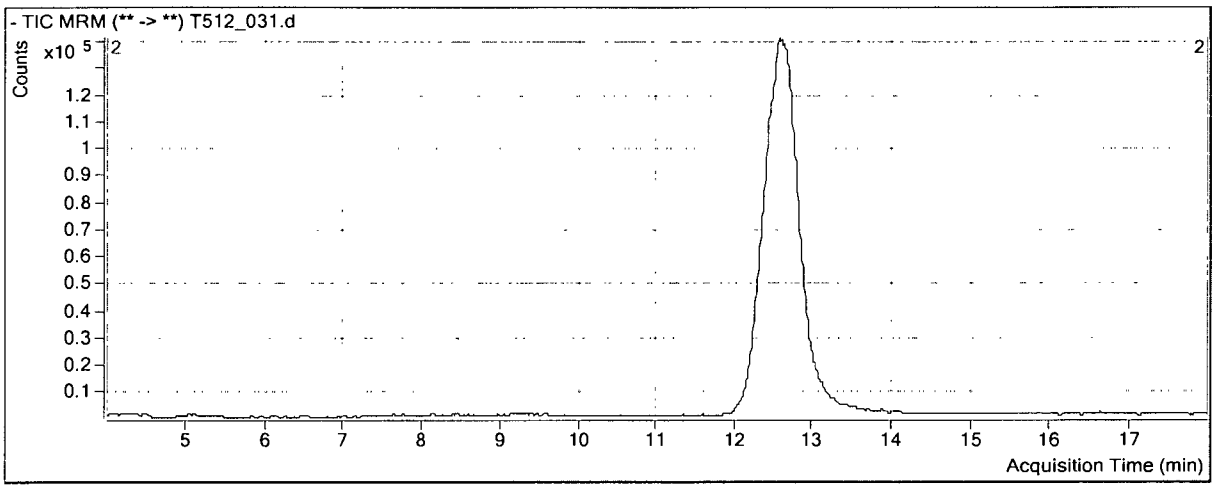
Client ID : S67-GW-D1-051115

Retention Time		Area Count Response	Compound_ID Product Ion				
12.621		4317534	PER_IS_89				
12.648		234088	Perchlorate_83	(234088 * 0.0050) / (1.27 * 4317534.00) *	1052.60 =	0.224639 ppb
12.574	*	76366	Perchlorate_85	(76366 * 0.0050) / (0.39 * 4317534.00) *	1052.60 =	0.237711 ppb

* MANUAL INTEGRAION

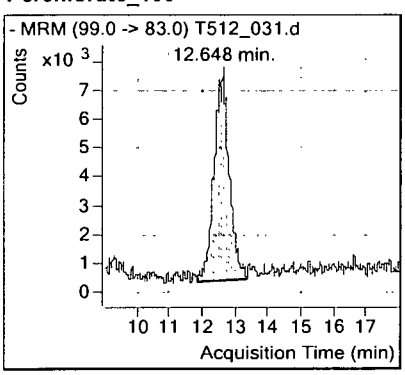
Quantitative Analysis Sample Report

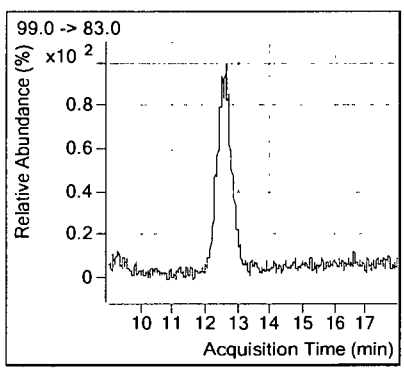
Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_031.d	**Sample Name**	AZ16226_W01 1052.6 DF 05/12/15
Sample Type	Sample	**Acq_Date**	05/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	17:02
ClientID	S67-GW-D1-051115	**Inj Vol**	20

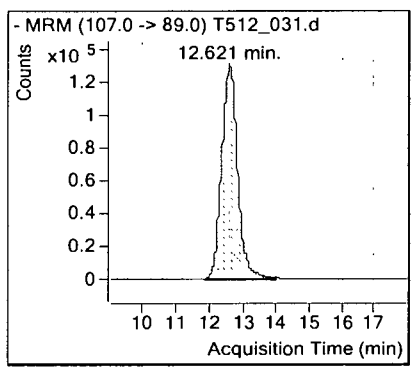


Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108		12.648	234088	4317534	
Perchlorate_102	PER_IS_108	*	12.574	76366	4317534	* MANUAL INT

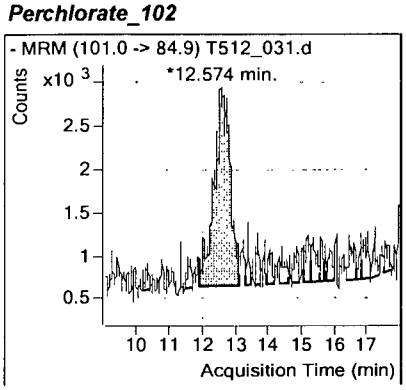
Perchlorate_100

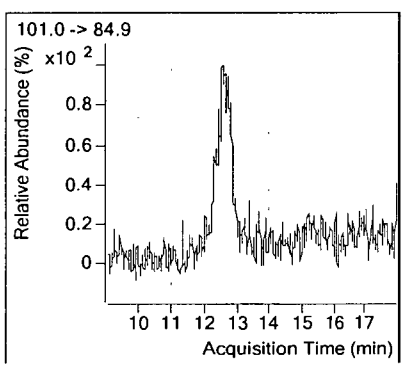


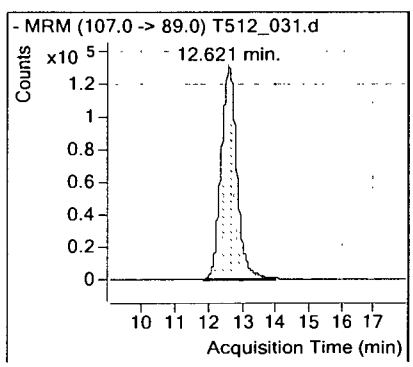


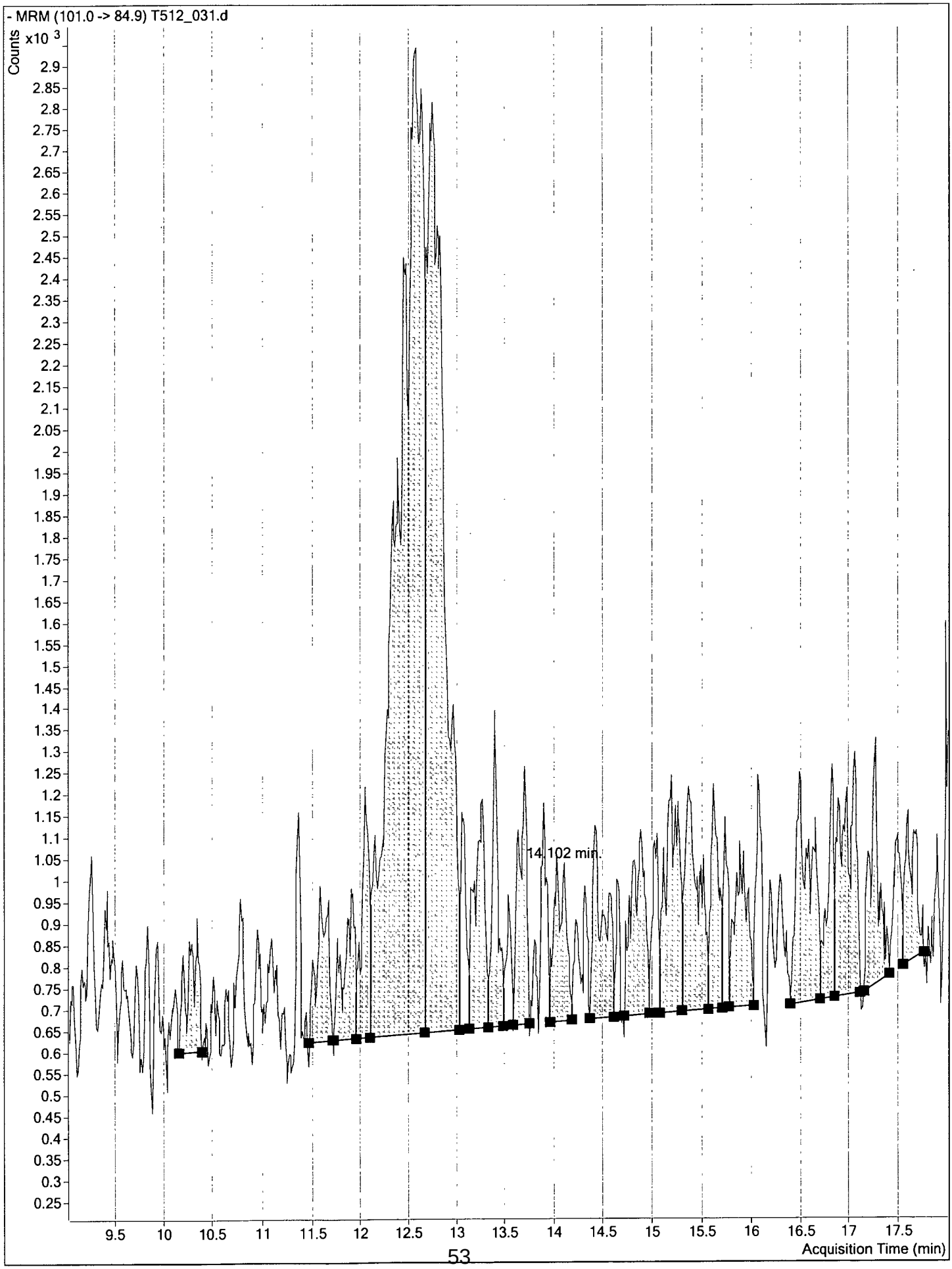


Perchlorate_102





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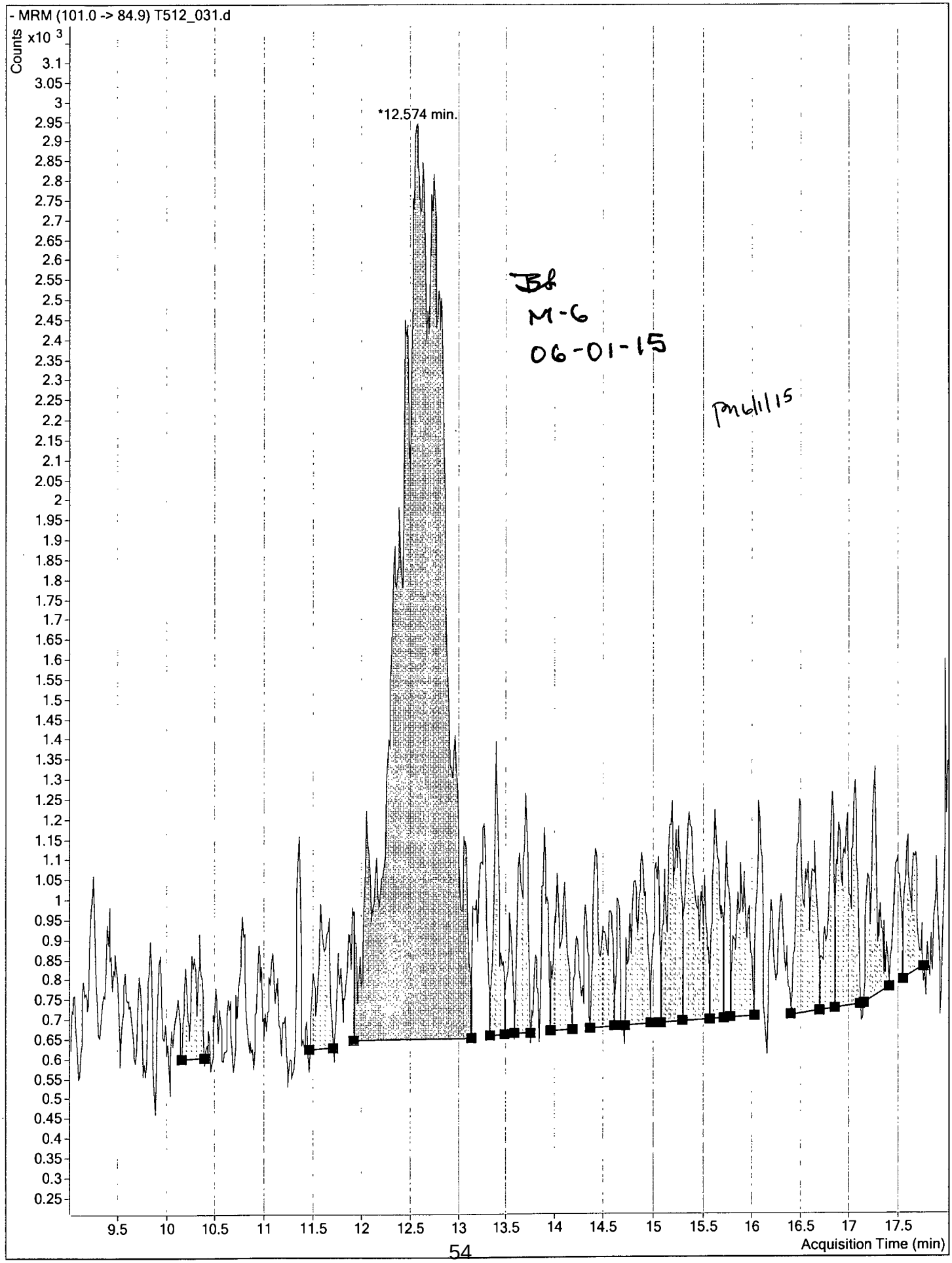
Counts
x10 3
14.102 min.
Acquisition Time (min)


- MRM (101.0 -> 84.9) T512_031.d
Counts
x10 3
*12.574 min.
M-6
06-01-15
Acquisition Time (min)

Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
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-GW-C1-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16227
QCG: #6850-150512A-196913

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	05/12/15	05/12/15

J = Estimated value.

Quant Method:	QTLMFL2
Run #:	T512_032.D
Instrument:	AGIL_6460
Sequence:	TQ051215
Dilution Factor:	1
Initials:	MP

Printed: 05/13/15 11:50:11 AM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T512_032.d

Date Injected : 05/12/15

Time Injected : 17:21

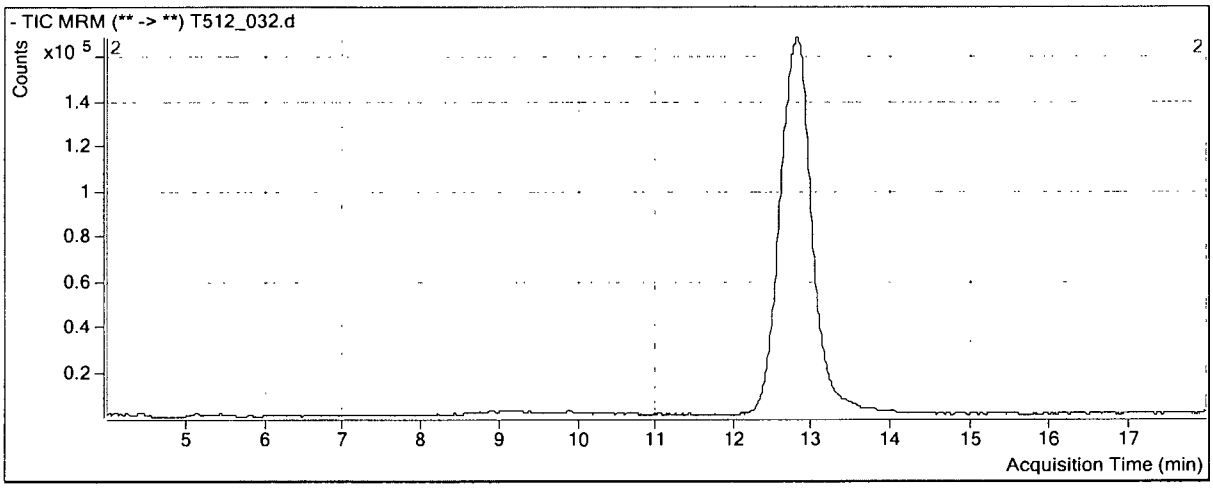
Sample ID : AZ16227_W01 1052.6 DF 05/12/15

Client ID : S67-GW-C1-051115

Retention Time	Area Count Response	Compound_ID Product Ion				
12.835	4394520	PER_IS_89				
12.801	289829	Perchlorate_83	(289829 * 0.0050) / (1.27 * 4394520.00) *	1052.60 =	0.273258 ppb
12.869	95928	Perchlorate_85	(95928 * 0.0050) / (0.39 * 4394520.00) *	1052.60 =	0.293372 ppb

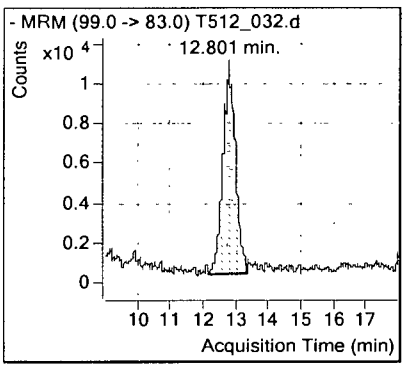
Quantitative Analysis Sample Report

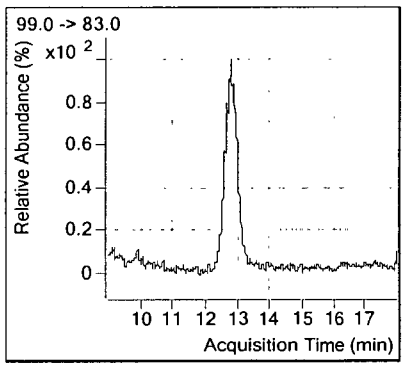
Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_032.d	**Sample Name**	AZ16227_W01 1052.6 DF 05/12/15
Sample Type	Sample	**Acq_Date**	05/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	17:21
ClientID	S67-GW-C1-051115	**Inj Vol**	20

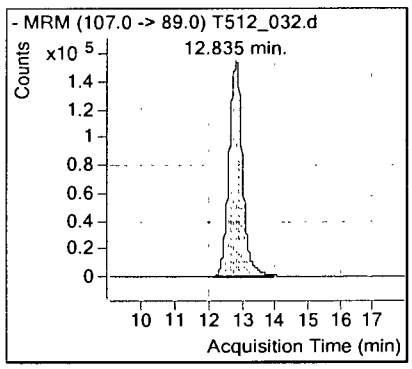


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.801	289829	4394520
Perchlorate_102	PER_IS_108	12.869	95928	4394520

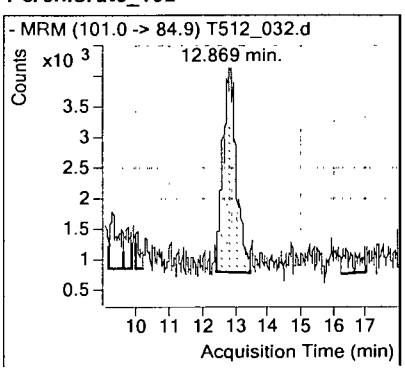
Perchlorate_100

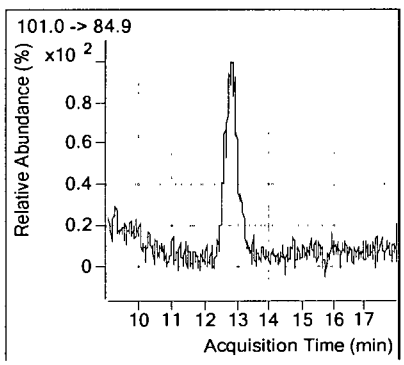


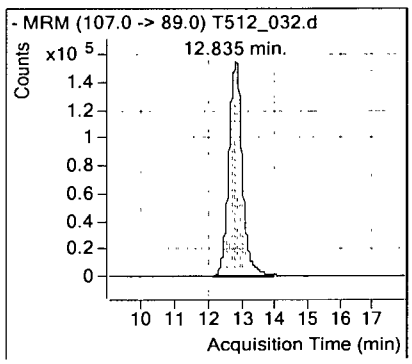




Perchlorate_102







Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
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-GW-B1-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16228
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	12	6.0	4.00	2.00	ug/L	05/12/15	05/14/15

Quant Method: QTLMFL2
Run #: T514_011.D
Instrument: AGIL_6460
Sequence: TQ051215
Dilution Factor: 10
Initials: MP

Printed: 06/09/15 8:11:56 AM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T514_011.d

Date Injected : 05/14/15

Time Injected : 13:13

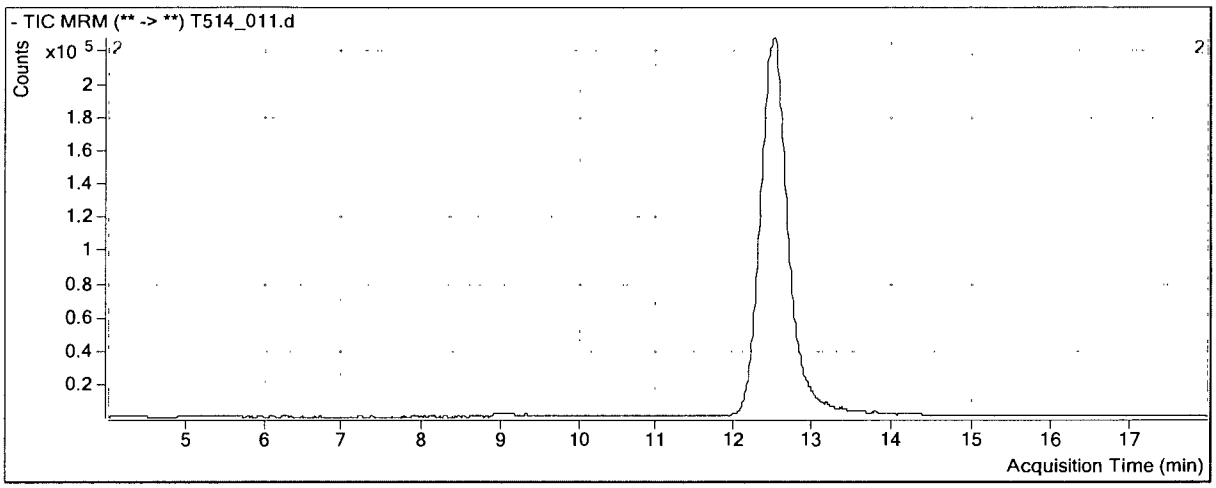
Sample ID : AZ16228_W01 10526.3 DF 05/12/15_5/14

Client ID : S67-GW-B1-051115

Retention Time	Area Count Response	Compound_ID Product Ion				
12.529	4031668	PER_IS_89				
12.546	1201836	Perchlorate_83	(1201836 * 0.0050) / (1.27 * 4031668.00) *	10526.30 =	12.351372 ppb	
12.553	385931	Perchlorate_85	(385931 * 0.0050) / (0.39 * 4031668.00) *	10526.30 =	12.865374 ppb	

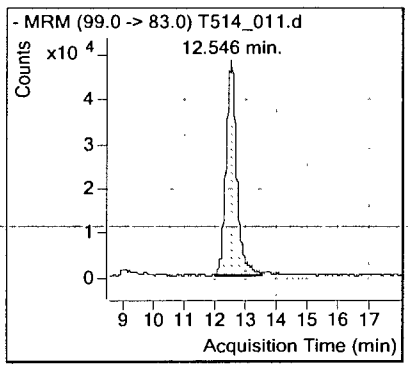
Quantitative Analysis Sample Report

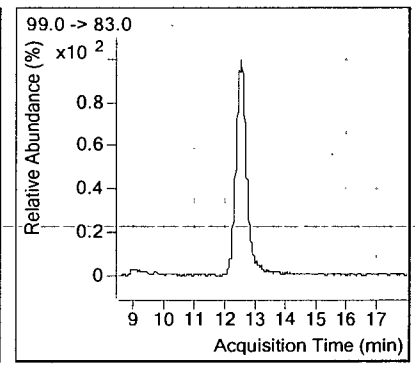
Batch Data Path	D:\MassHunter\Data\150514\QuantResults\150514_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T514_011.d	**Sample Name**	AZ16228_W01 10526.3 DF 05/12/15_5/14
Sample Type	Sample	**Acq_Date**	05/14/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	13:13
ClientID	S67-GW-B1-051115	**Inj Vol**	20

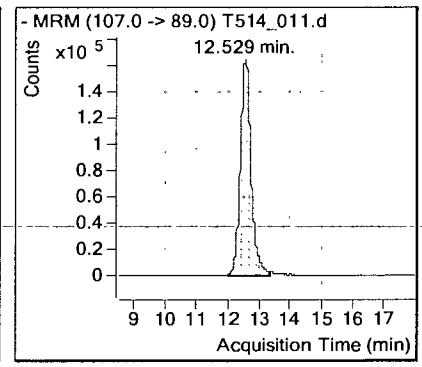


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.546	1201836	4031668
Perchlorate_102	PER_IS_108	12.553	385931	4031668

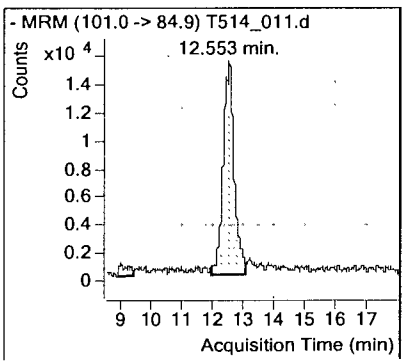
Perchlorate_100

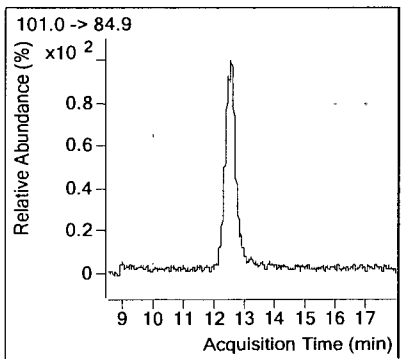


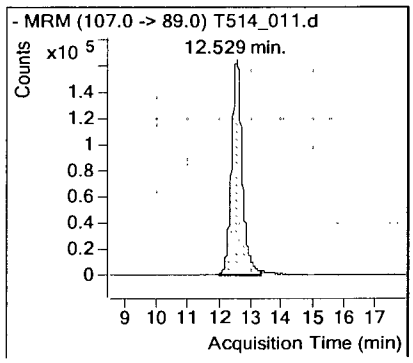




Perchlorate_102







Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
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-GW-A1-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16229
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	1100	60	40.0	20.0	ug/L	05/12/15	05/13/15

Quant Method: QTLMFL2
Run #: T512_104.D
Instrument: AGIL_6460
Sequence: TQ051215
Dilution Factor: 100
Initials: MP

Printed: 06/09/15 8:11:56 AM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T512_104.d

Date Injected : 05/13/15

Time Injected : 15:57

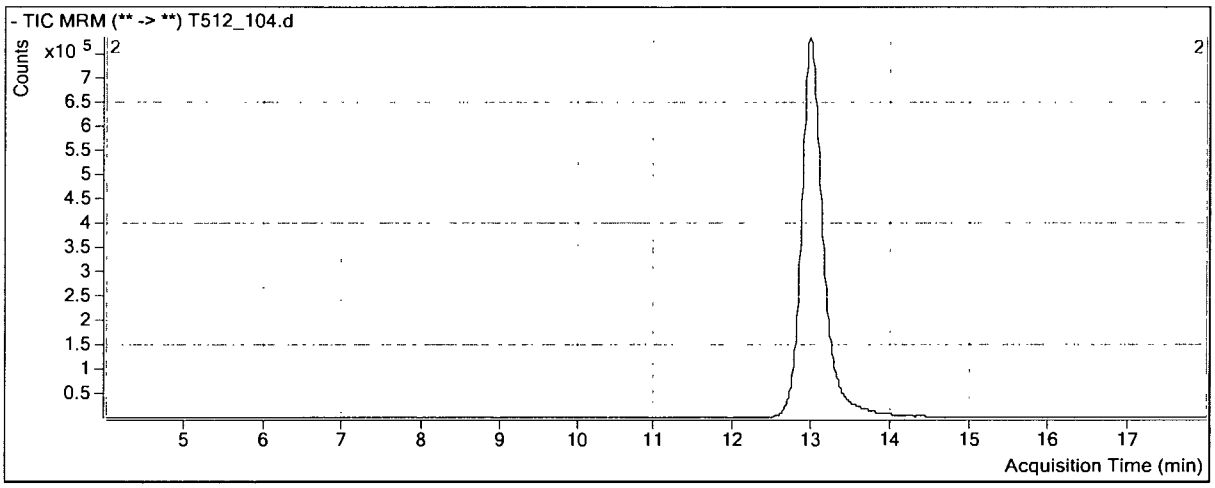
Sample ID : AZ16229_W01 105263.2 DF 05/12/15_5/13

Client ID : S67-GW-A1-051115

Retention Time	Area Count Response	Compound_ID Product Ion	
12.988	3552318	PER_IS_89	
13.005	9249708	Perchlorate_83	(9249708 * 0.0050) / (1.27 * 3552318.00) * 105263.20 = 1078.876543 ppb
13.001	2652288	Perchlorate_85	(2652288 * 0.0050) / (0.39 * 3552318.00) * 105263.20 = 1003.476459 ppb

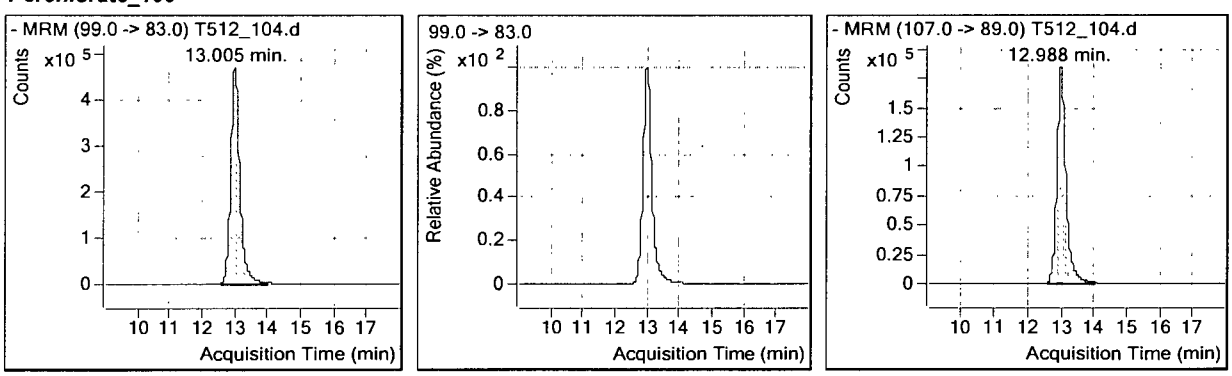
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A4_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_104.d	**Sample Name**	AZ16229_W01 105263.2 DF 05/12/15_5/13
Sample Type	Sample	**Acq_Date**	05/13/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	15:57
ClientID	S67-GW-A1-051115	**Inj Vol**	20

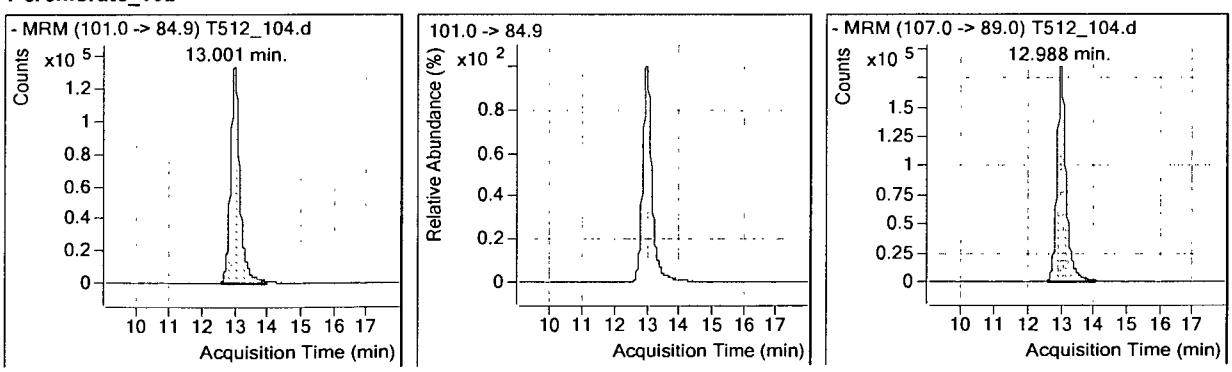


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.005	9249708	3552318
Perchlorate_102	PER_IS_108	13.001	2652288	3552318

Perchlorate_100



Perchlorate_102



Perchlorate

Tetra Tech
5700 Lake Wright Dr, Ste 309
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-GW-BB2-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16230
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	4900	600	400.0	200.0	ug/L	05/12/15	05/14/15

Quant Method:	QTLMFL2
Run #:	T514_006.D
Instrument:	AGIL_6460
Sequence:	TQ051215
Dilution Factor:	1000
Initials:	MP

Printed: 06/09/15 8:11:56 AM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T514_006.d

Date Injected : 05/14/15

Time Injected : 11:31

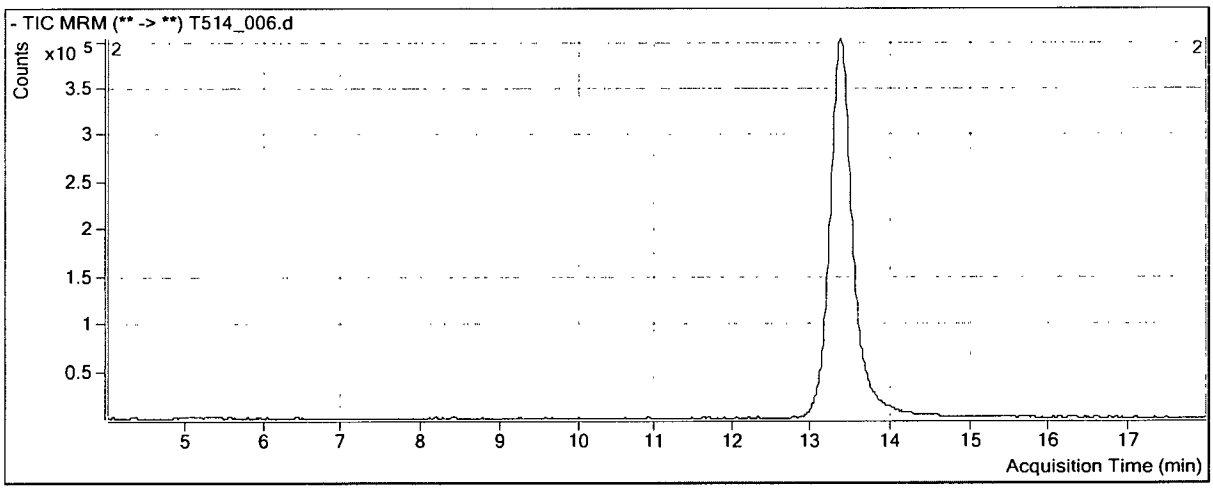
Sample ID : AZ16230_W01 1052631.6 DF 05/12/15_5/14

Client ID : S67-GW-BB2-051115

Retention Time	Area Count Response	Compound_ID Product Ion		
13.395	3233557	PER_IS_89		
13.392	3846481	Perchlorate_83	(3846481 * 0.0050) / (1.27 * 3233557.00) * 1052631.60 =	4928.769062 ppb
13.419	1145733	Perchlorate_85	(1145733 * 0.0050) / (0.39 * 3233557.00) * 1052631.60 =	4762.128177 ppb

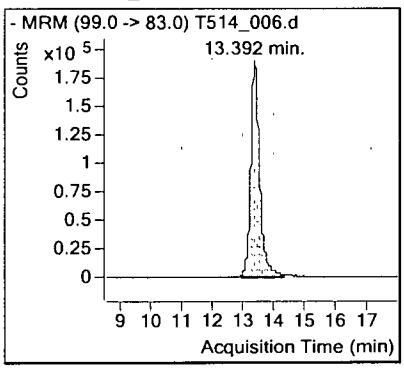
Quantitative Analysis Sample Report

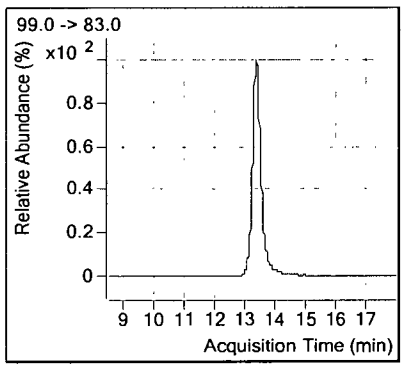
Batch Data Path	D:\MassHunter\Data\150514\QuantResults\150514_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T514_006.d	**Sample Name**	AZ16230_W01 1052631.6 DF 05/12/15_5/14
Sample Type	Sample	**Acq_Date**	05/14/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	11:31
ClientID	S67-GW-BB2-051115	**Inj Vol**	20

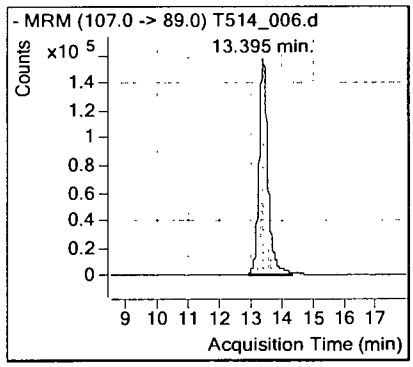


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.392	3846481	3233557
Perchlorate_102	PER_IS_108	13.419	1145733	3233557

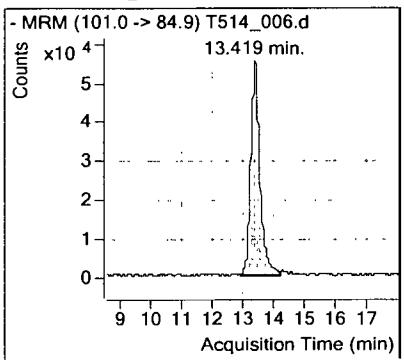
Perchlorate_100

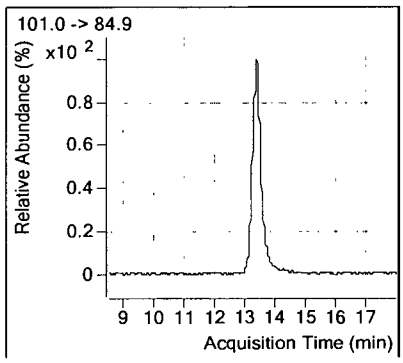


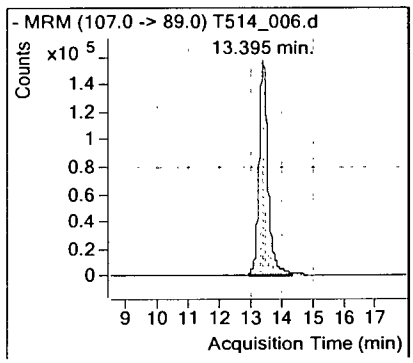




Perchlorate_102







Perchlorate

Tetra Tech
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APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S57-MW034-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16231
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	430	60	40.0	20.0	ug/L	05/12/15	05/15/15

Quant Method: QTLMFL2
Run #: T514_076.D
Instrument: AGIL_6460
Sequence: TQ051215
Dilution Factor: 100
Initials: MP

Printed: 06/09/15 8:11:57 AM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T514_076.d

Date Injected : 05/15/15

Time Injected : 16:37

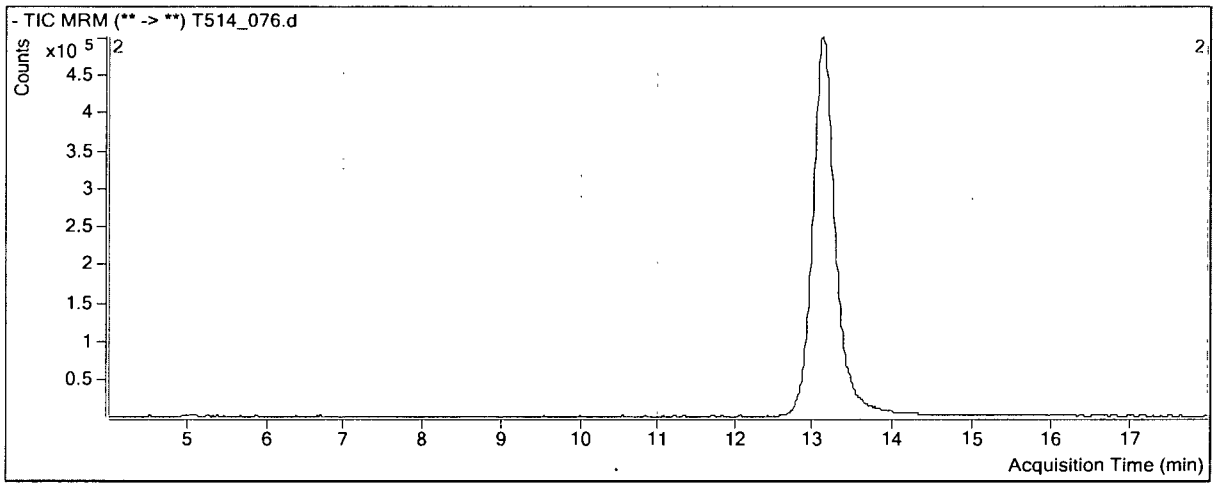
Sample ID : AZ16231_W01 105263.2 DF 05/12/15_5/15

Client ID : S57-MW034-051115

Retention Time	Area Count Response	Compound_ID Product Ion				
13.141	4237001	PER_IS_89				
13.147	4435884	Perchlorate_83	(4435884 * 0.0050) / (1.27 * 4237001.00) *	105263.20 =	433.787645	ppb
13.154	1318472	Perchlorate_85	(1318472 * 0.0050) / (0.39 * 4237001.00) *	105263.20 =	418.225674	ppb

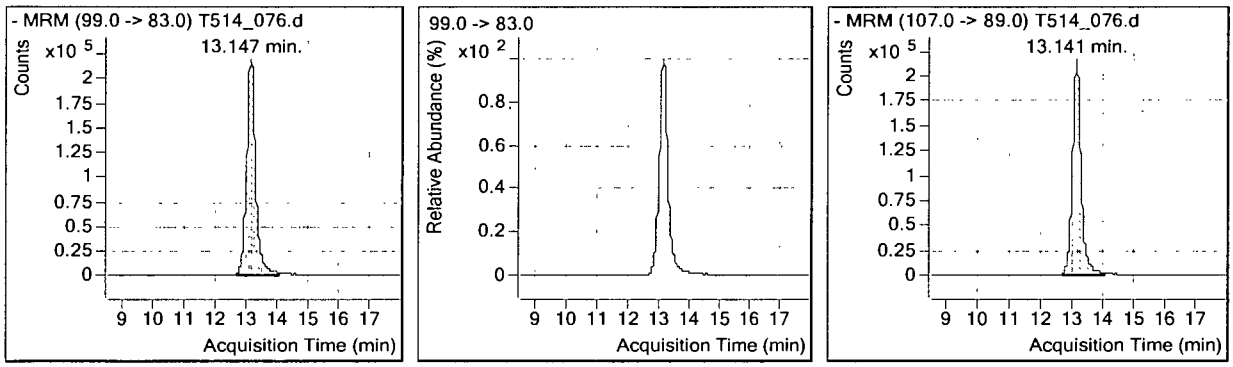
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150514\QuantResults\150514_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T514_076.d	**Sample Name**	AZ16231_W01 105263.2 DF 05/12/15_5/15
Sample Type	Sample	**Acq_Date**	05/15/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	16:37
ClientID	S57-MW034-051115	**Inj Vol**	20

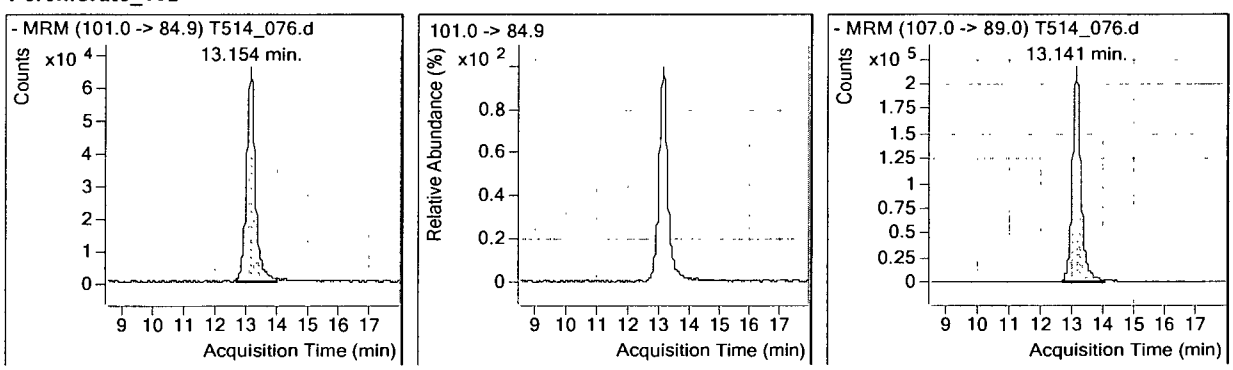


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.147	4435884	4237001
Perchlorate_102	PER_IS_108	13.154	1318472	4237001

Perchlorate_100



Perchlorate_102



Perchlorate

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APPL Inc.
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Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S57-MW033-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16232
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	0.400 U	0.60	0.400	0.200	ug/L	05/12/15	05/13/15

Quant Method: QTLMFL2
Run #: T512_065.D
Instrument: AGIL_6460
Sequence: TQ051215
Dilution Factor: 1
Initials: MP

Printed: 05/13/15 11:50:11 AM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T512_065.d

Date Injected : 05/13/15

Time Injected : 3:36

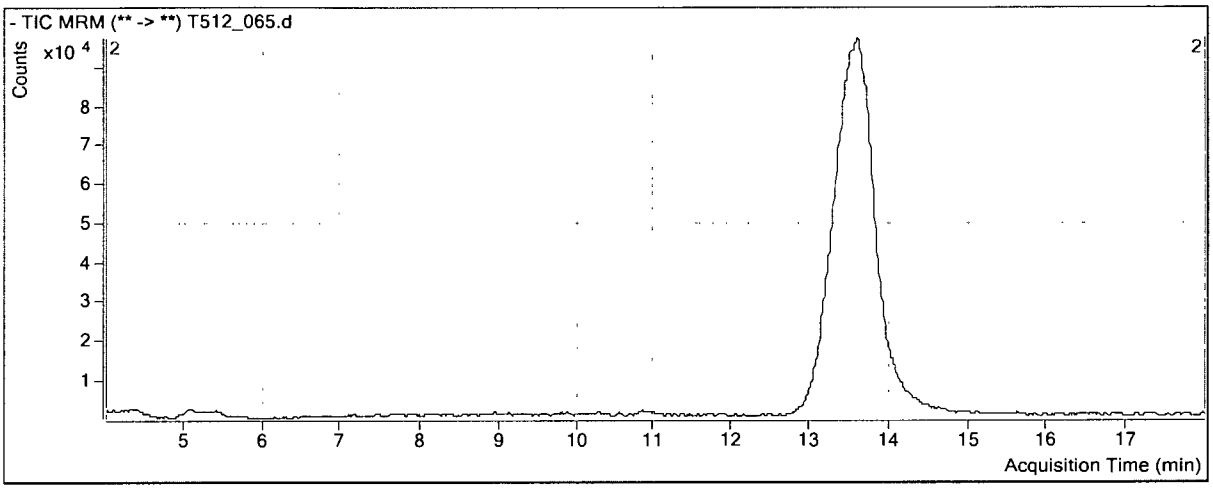
Sample ID : AZ16232_W01 1052.6 DF 05/12/15

Client ID : S57-MW033-051115

Retention Time	Area Count Response	Compound_ID Product Ion				
13.62	3508285	PER_IS_89				
13.402	21873	Perchlorate_83	(21873 * 0.0050) / (1.27 * 3508285.00) *	1052.60 =	0.025832 ppb
13.868	2118	Perchlorate_85	(2118 * 0.0050) / (0.39 * 3508285.00) *	1052.60 =	0.008114 ppb

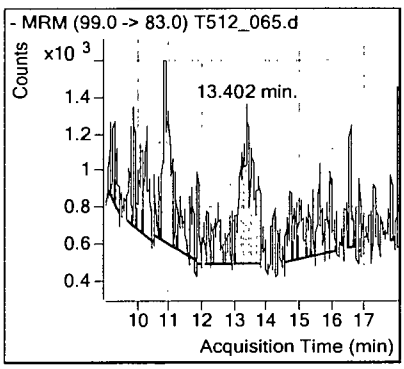
Quantitative Analysis Sample Report

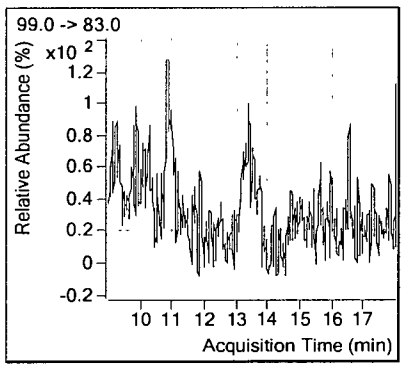
Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_065.d	**Sample Name**	AZ16232_W01 1052.6 DF 05/12/15
Sample Type	Sample	**Acq_Date**	05/13/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	3:36
ClientID	S57-MW033-051115	**Inj Vol**	20

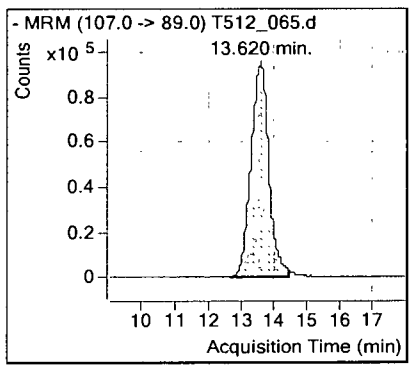


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.402	21873	3508285
Perchlorate_102	PER_IS_108	13.868	2118	3508285

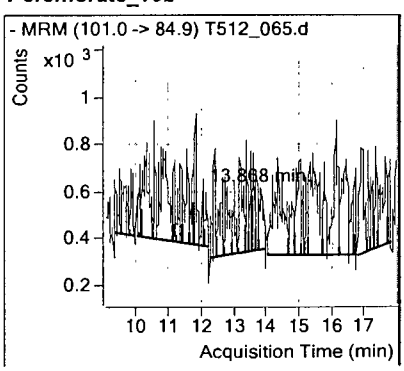
Perchlorate_100

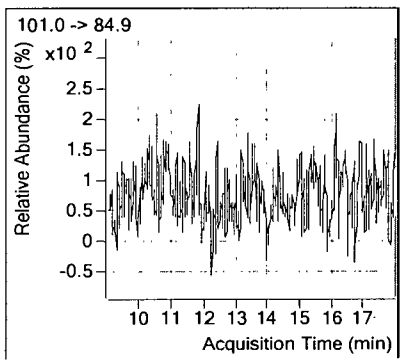


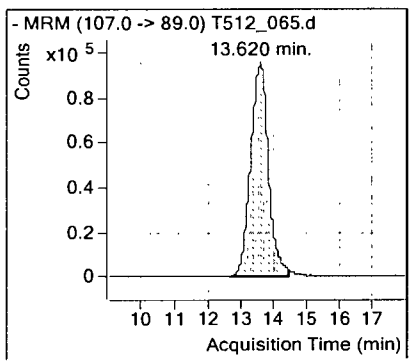




Perchlorate_102







Perchlorate

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

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S57-MW032-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16233
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	5.3	0.60	0.400	0.200	ug/L	05/12/15	05/13/15

Quant Method: QTLMFL2
Run #: T512_066.D
Instrument: AGIL_6460
Sequence: TQ051215
Dilution Factor: 1
Initials: MP

Printed: 05/13/15 11:50:11 AM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T512_066.d

Date Injected : 05/13/15

Time Injected : 3:54

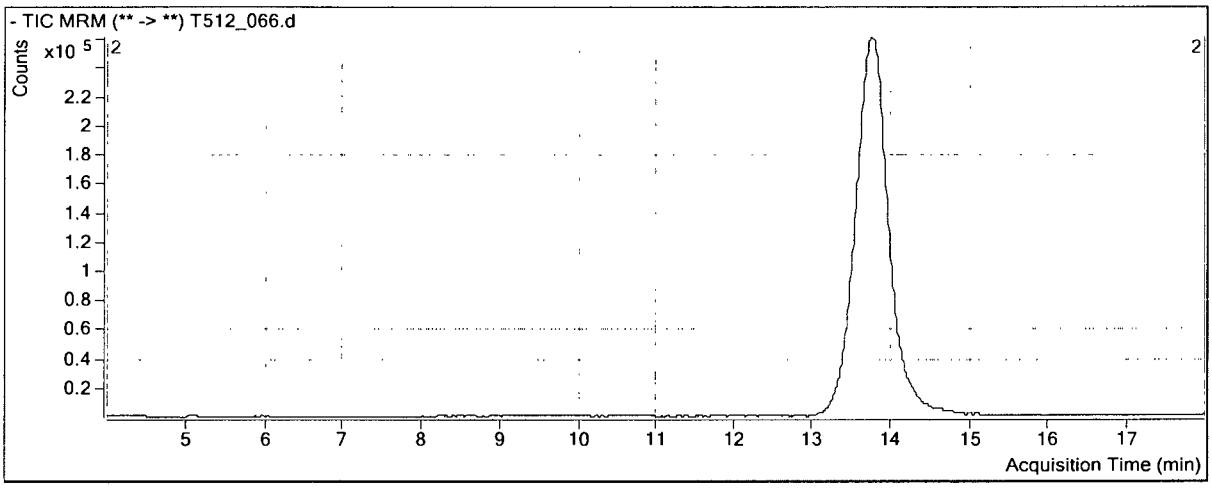
Sample ID : AZ16233_W01 1052.6 DF 05/12/15

Client ID : S57-MW032-051115

Retention Time	Area Count Response	Compound_ID Product Ion				
13.803	2924880	PER_IS_89				
13.769	3769837	Perchlorate_83	(3769837 * 0.0050) / (1.27 * 2924880.00) *	1052.60 =	5.340192 ppb	
13.796	1131820	Perchlorate_85	(1131820 * 0.0050) / (0.39 * 2924880.00) *	1052.60 =	5.200612 ppb	

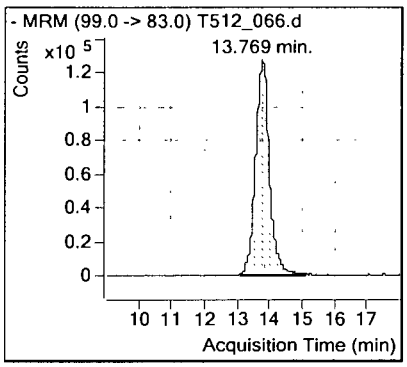
Quantitative Analysis Sample Report

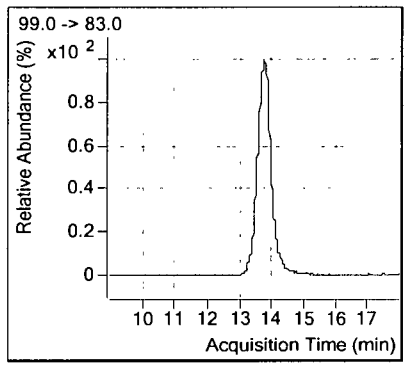
Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_066.d	**Sample Name**	AZ16233_W01 1052.6 DF 05/12/15
Sample Type	Sample	**Acq_Date**	05/13/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	3:54
ClientID	S57-MW032-051115	**Inj Vol**	20

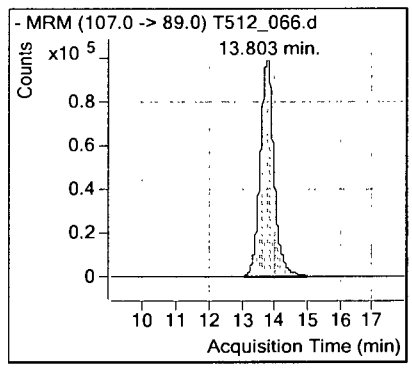


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.769	3769837	2924880
Perchlorate_102	PER_IS_108	13.796	1131820	2924880

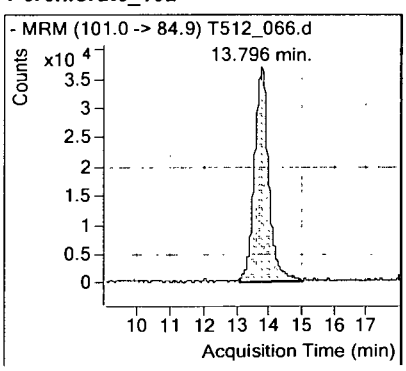
Perchlorate_100

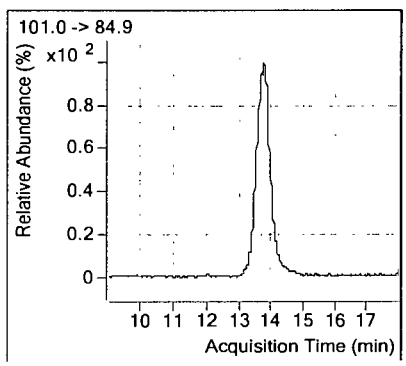


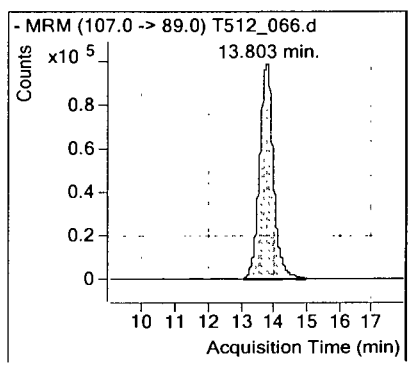




Perchlorate_102







Perchlorate

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APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S57-MW022-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16234
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	0.400 U	0.60	0.400	0.200	ug/L	05/12/15	05/13/15

Quant Method: QTLMFL2
Run #: T512_067.D
Instrument: AGIL_6460
Sequence: TQ051215
Dilution Factor: 1
Initials: MP

Printed: 05/13/15 11:50:11 AM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T512_067.d

Date Injected : 05/13/15

Time Injected : 4:13

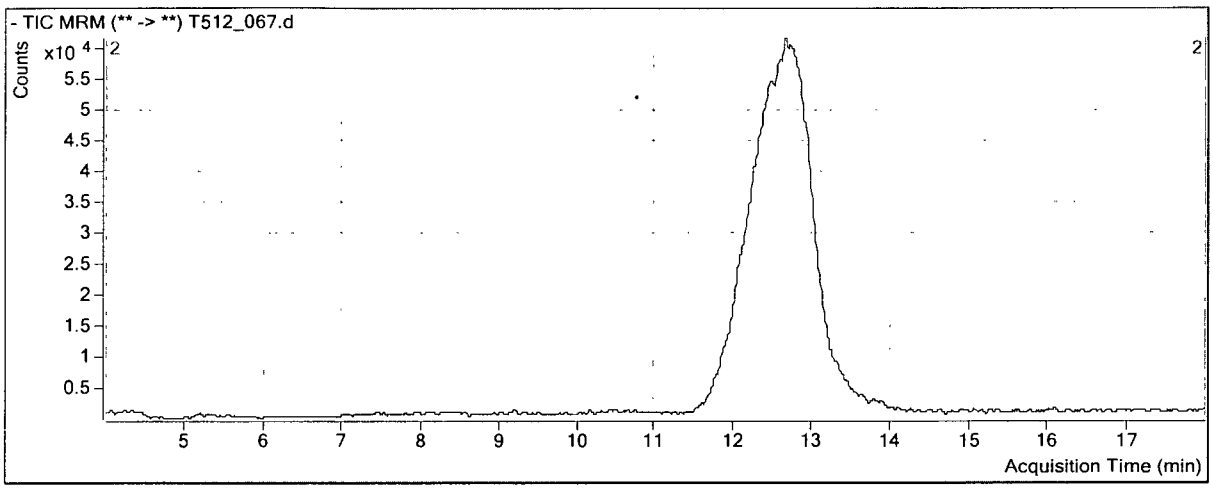
Sample ID : AZ16234_W01 1052.6 DF 05/12/15

Client ID : S57-MW022-051115

Retention Time	Area Count Response	Compound_ID Product Ion				
12.682	3386288	PER_IS_89				
13.963	2875	Perchlorate_83	(2875 * 0.0050) / (1.27 * 3386288.00) *	1052.60 =	0.003518 ppb
14.122	1549	Perchlorate_85	(1549 * 0.0050) / (0.39 * 3386288.00) *	1052.60 =	0.006148 ppb

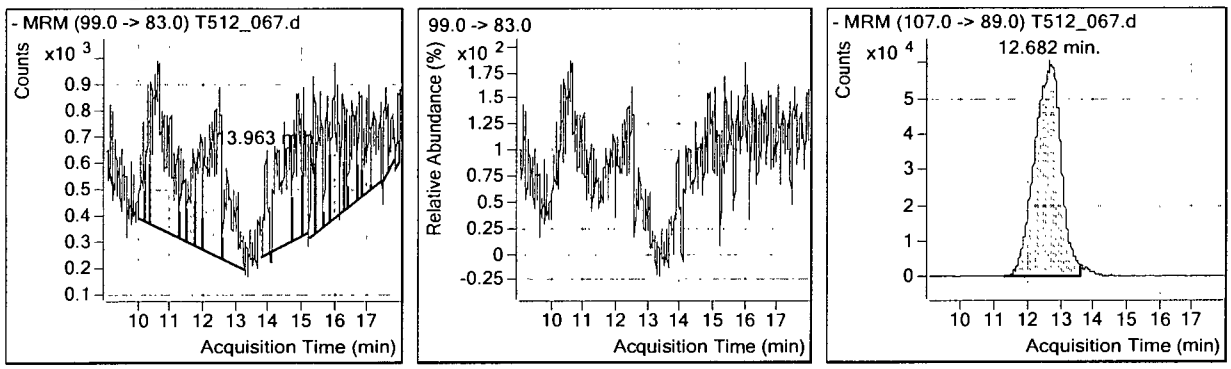
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_067.d	**Sample Name**	AZ16234_W01 1052.6 DF 05/12/15
Sample Type	Sample	**Acq_Date**	05/13/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	4:13
ClientID	S57-MW022-051115	**Inj Vol**	20

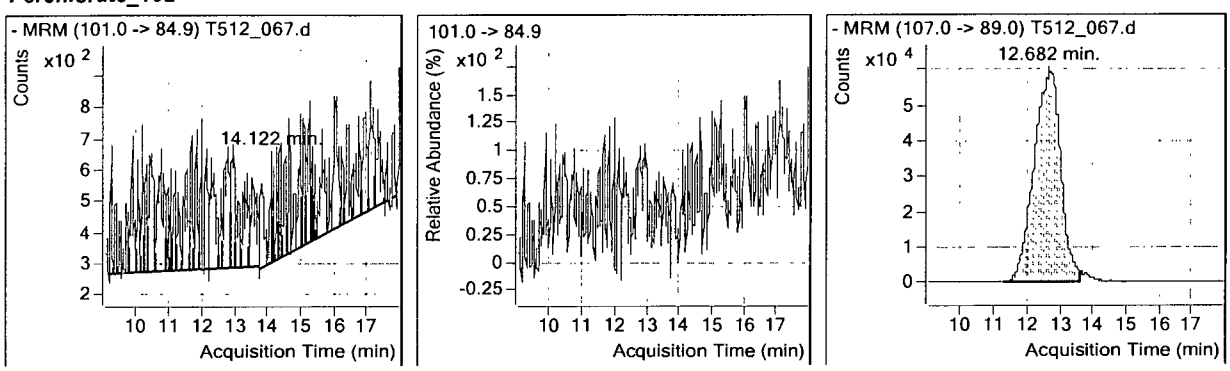


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.963	2875	3386288
Perchlorate_102	PER_IS_108	14.122	1549	3386288

Perchlorate_100



Perchlorate_102



Perchlorate

Tetra Tech
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APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S67-GW-A1P-051115
Sample Collection Date: 05/11/15

ARF: 76398
APPL ID: AZ16237
QCG: #6850-150512A-196913

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	950	60	40.0	20.0	ug/L	05/12/15	05/13/15

Quant Method: QTLMFL2
Run #: T512_101.D
Instrument: AGIL_6460
Sequence: TQ051215
Dilution Factor: 100
Initials: MP

Printed: 06/09/15 8:11:57 AM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T512_101.d

Date Injected : 05/13/15

Time Injected : 15:02

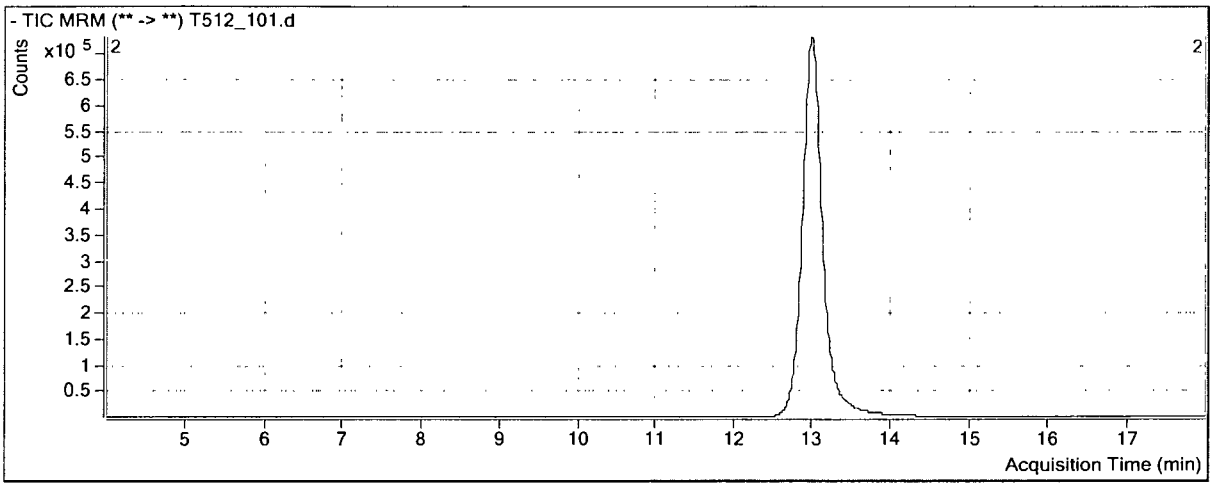
Sample ID : AZ16237_W01 105263.2 DF 05/12/15_5/13

Client ID : S67-GW-A1P-051115

Retention Time	Area Count Response	Compound_ID Product Ion				
12.998	3352934	PER_IS_89				
13.015	7662202	Perchlorate_83	(7662202 * 0.0050) / (1.27 * 3352934.00) *	105263.20 =	946.856482	ppb
13.012	2216254	Perchlorate_85	(2216254 * 0.0050) / (0.39 * 3352934.00) *	105263.20 =	888.367930	ppb

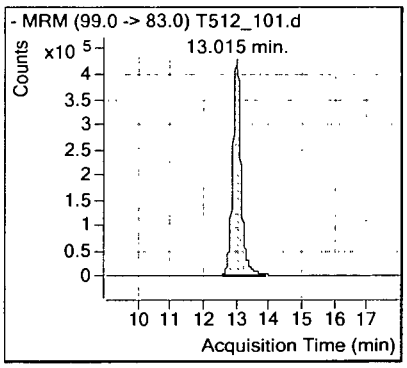
Quantitative Analysis Sample Report

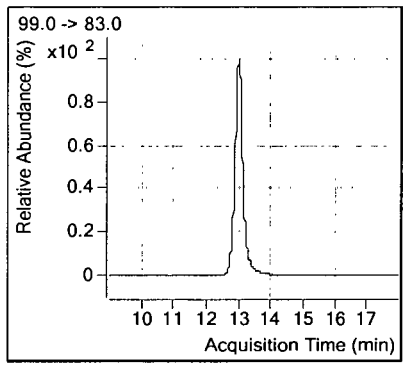
Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A4_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_101.d	**Sample Name**	AZ16237_W01 105263.2 DF 05/12/15_5/13
Sample Type	Sample	**Acq_Date**	05/13/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	15:02
ClientID	S67-GW-A1P-051115	**Inj Vol**	20

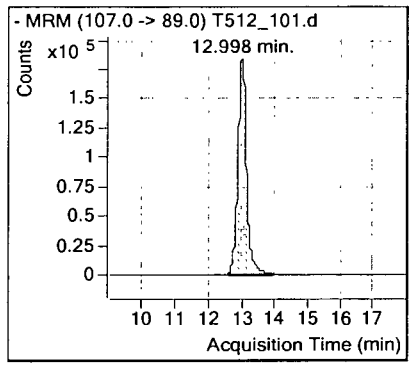


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.015	7662202	3352934
Perchlorate_102	PER_IS_108	13.012	2216254	3352934

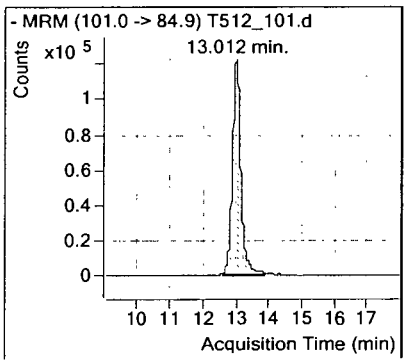
Perchlorate_100

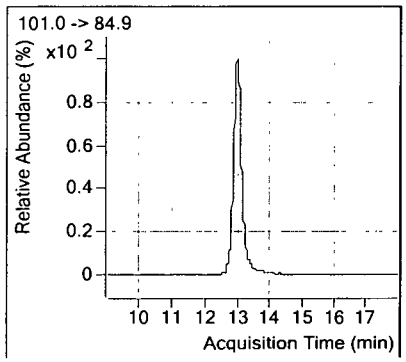


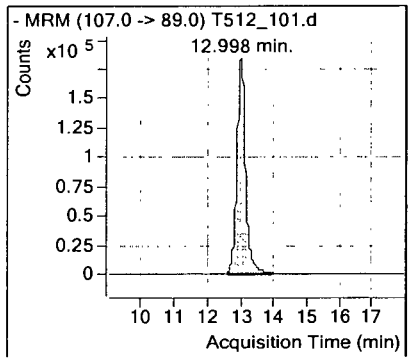




Perchlorate_102







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	1.339537	1.198791	1.165697	1.173646	1.314663	1.429198	1.270255	8.44
Perchlorate_85	0.434068	0.395112	0.366889	0.354937	0.381638	0.416989	0.391605	7.67

FILE ID : TQ0312A.FRB

Perchlorate_83

RESPONSE FACTOR CALCULATIONS - AREA COUNTS

DATA FILES : T312_003.d - T312_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
446712.00	0.0002	8337058.00	0.0050	1.339537	5.45	8.44
1023403.00	0.0004	10671196.00	0.0050	1.198791	5.63	
2483393.00	0.0010	10651968.00	0.0050	1.165697	8.23	
6351752.00	0.0020	13529952.00	0.0050	1.173646	7.61	
14499255.00	0.0050	11028880.00	0.0050	1.314663	3.50	
34223790.00	0.0100	11973072.00	0.0050	1.429198	12.51	

The Average Response Factor = 1.270255

Perchlorate_85

RESPONSE FACTOR CALCULATIONS - AREA COUNTS

DATA FILES : T312_003.d - T312_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
144754.00	0.0002	8337058.00	0.0050	0.434068	10.84	7.67
337305.00	0.0004	10671196.00	0.0050	0.395112	0.90	
781617.00	0.0010	10651968.00	0.0050	0.366889	6.31	
1920912.00	0.0020	13529952.00	0.0050	0.354937	9.36	
4209044.00	0.0050	11028880.00	0.0050	0.381638	2.55	
9985270.00	0.0100	11973072.00	0.0050	0.416989	6.48	

The Average Response Factor = 0.391605

Data File ID: T312_003.d

Date Injected : 03/12/15

Time Injected : 17:52

Sample ID : PERCHLORATE 0.0002 ug/ml 11/11/14

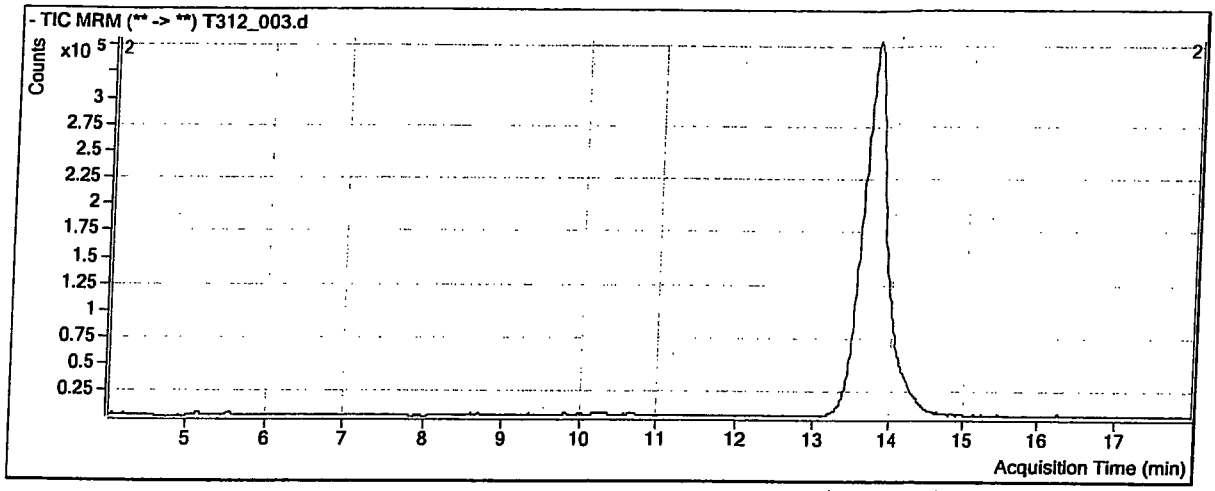
Client ID : NA

Retention Time		Area Count Response	Compound_ID Product Ion
13.732		8337058	PER_IS_89
13.789	*	446712	Perchlorate_83
13.704		144754	Perchlorate_85

* MANUAL INTEGRAION

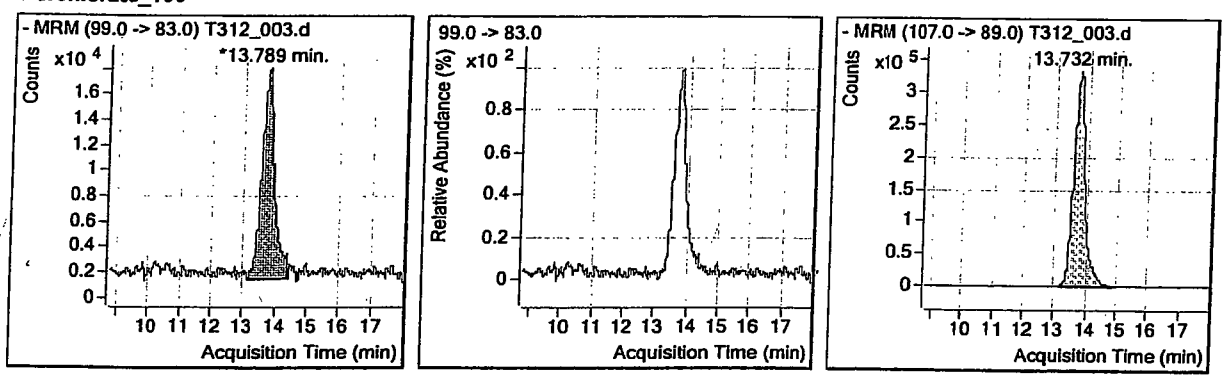
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_003.d	**Sample Name**	PERCHLORATE 0.0002 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	17:52
ClientID	NA	**Inj Vol**	20

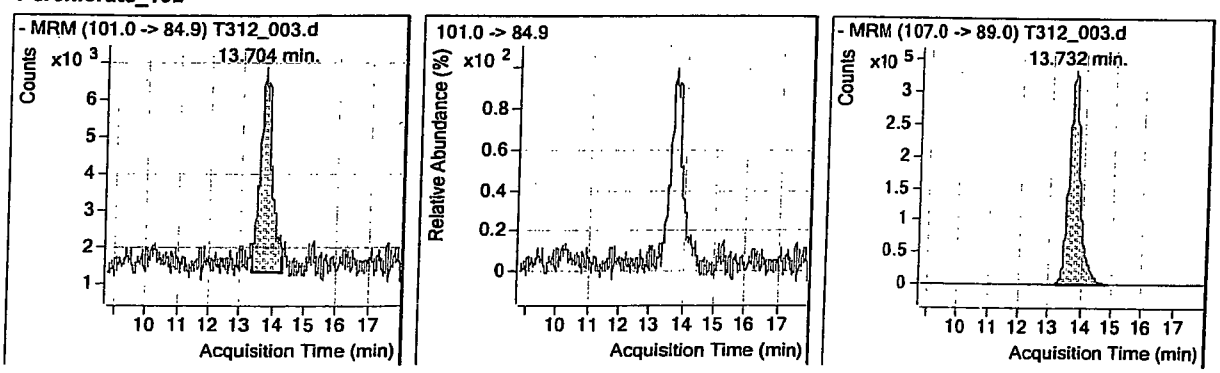


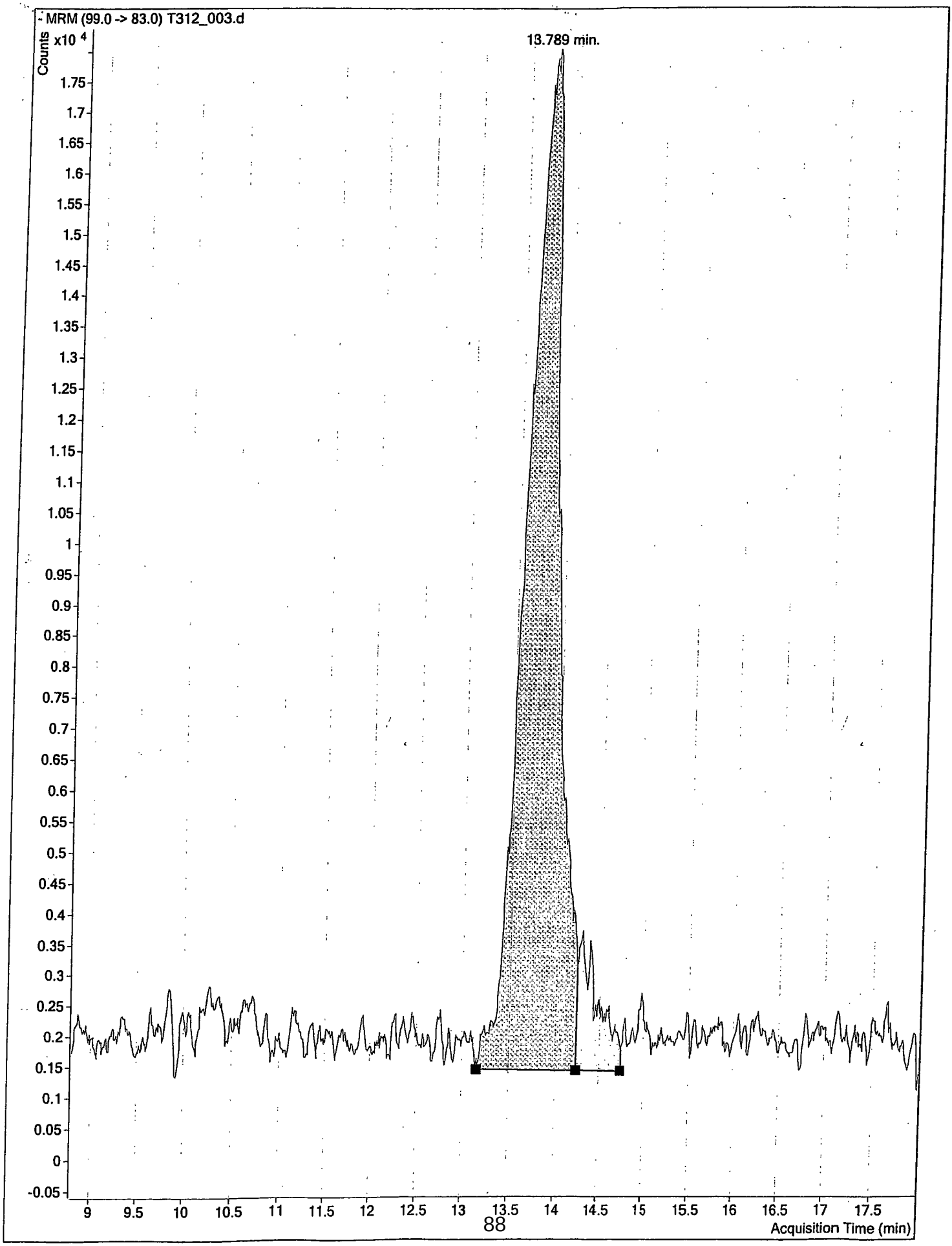
Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108	*	13.789	446712	8337058	* MANUAL INT
Perchlorate_102	PER_IS_108		13.704	144754	8337058	

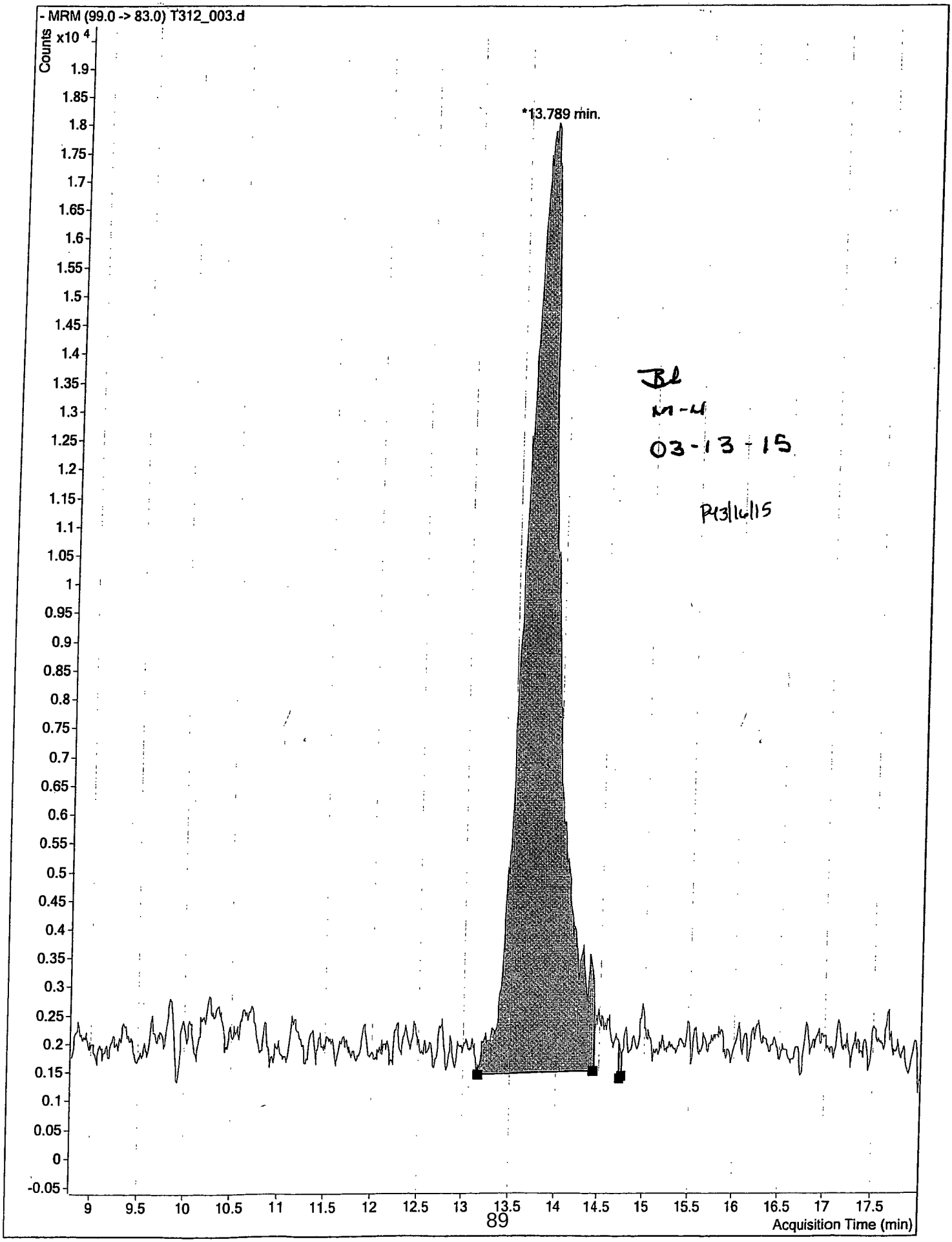
Perchlorate_100



Perchlorate_102




- MRM (99.0 -> 83.0) T312_003.d
Counts
x10 4
13.789 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
-0.05
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) T312_003.d
Counts
x10 4
*13.789 min.
Acquisition Time (min)
JBl
M-4
03-13-15
P(3/16/15

Data File ID: T312_004.d

Date Injected : 03/12/15

Time Injected : 18:11

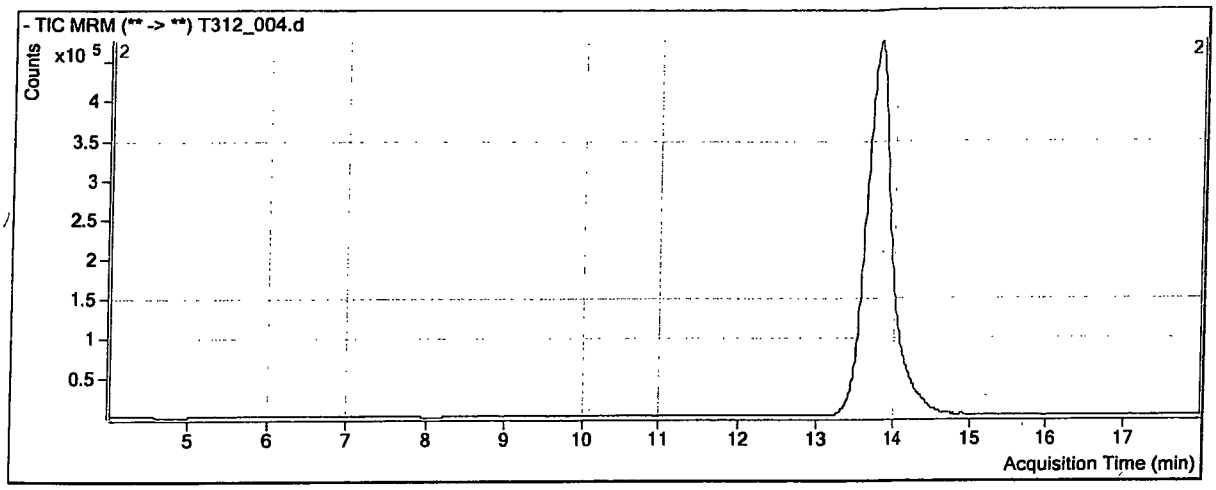
Sample ID : PERCHLORATE 0.0004 ug/ml 11/11/14

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.783	10671196	PER_IS_89
13.8	1023403	Perchlorate_83
13.827	337305	Perchlorate_85

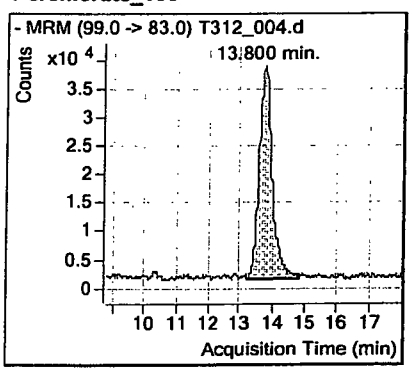
Quantitative Analysis Sample Report

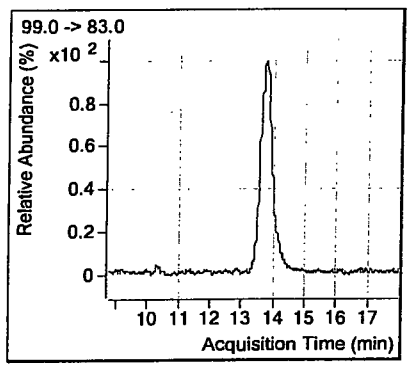
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_004.d	**Sample Name**	PERCHLORATE 0.0004 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:11
ClientID	NA	**Inj Vol**	20

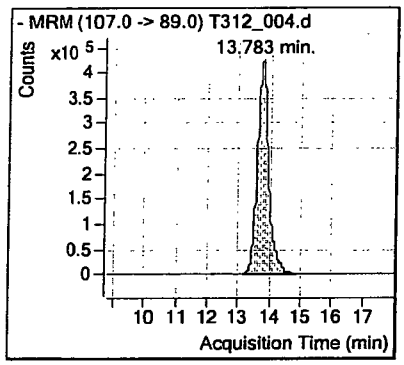


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.800	1023403	10671196
Perchlorate_102	PER_IS_108	13.827	337305	10671196

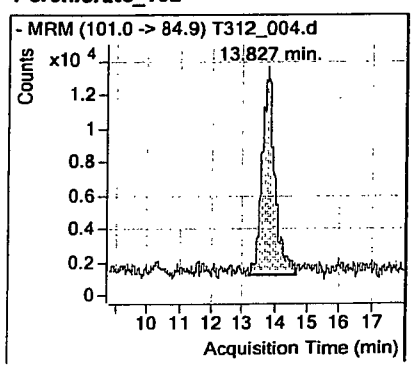
Perchlorate_100

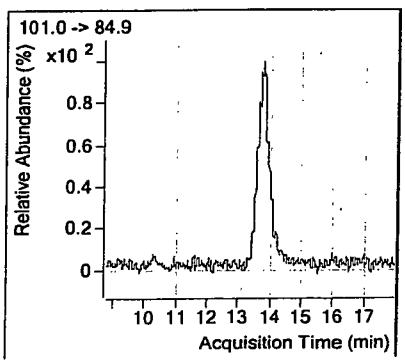


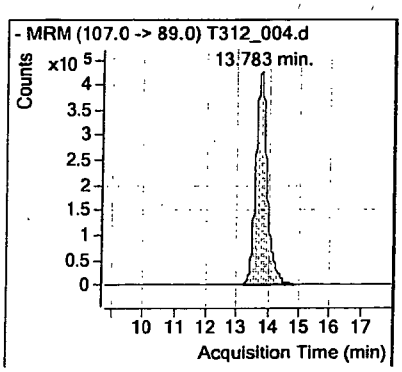




Perchlorate_102







Data File ID: T312_005.d

Date Injected : 03/12/15

Time Injected : 18:29

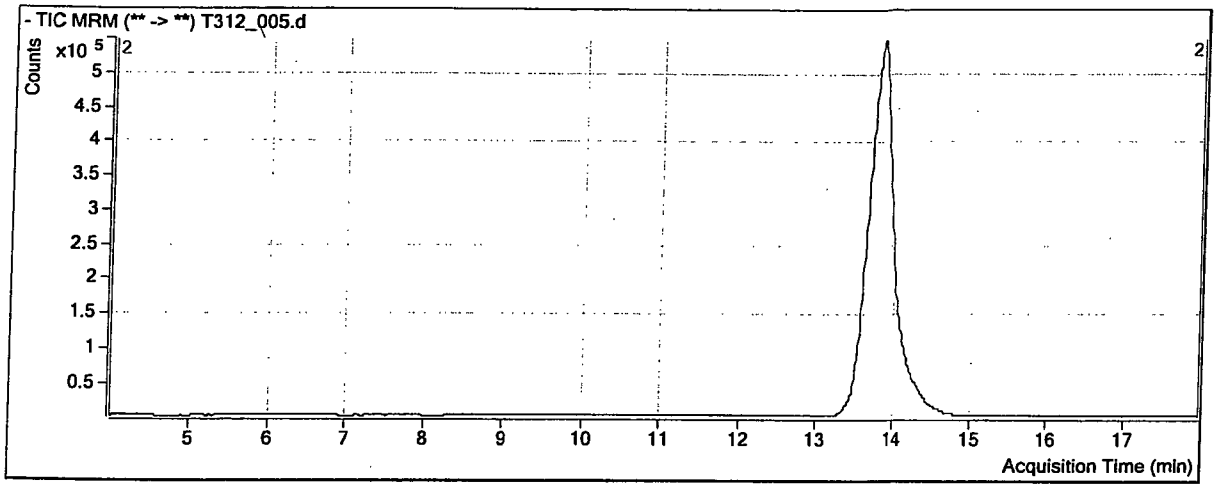
Sample ID : PERCHLORATE 0.001 ug/ml 11/11/14

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.803	10651968	PER_IS_89
13.82	2483393	Perchlorate_83
13.827	781617	Perchlorate_85

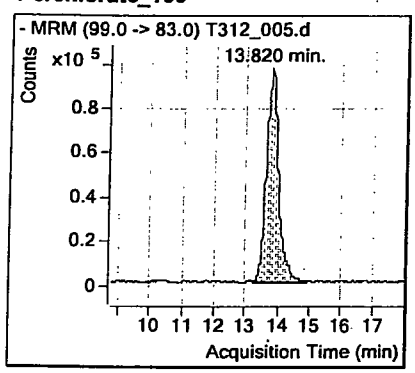
Quantitative Analysis Sample Report

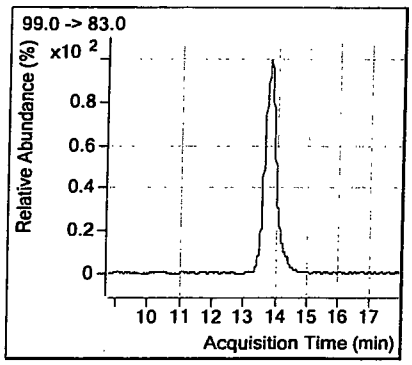
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_005.d	**Sample Name**	PERCHLORATE 0.001 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:29
ClientID	NA	**Inj Vol**	20

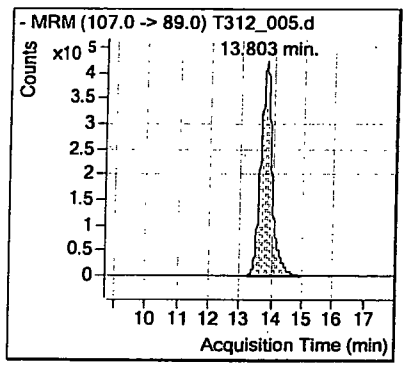


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.820	2483393	10651968
Perchlorate_102	PER_IS_108	13.827	781617	10651968

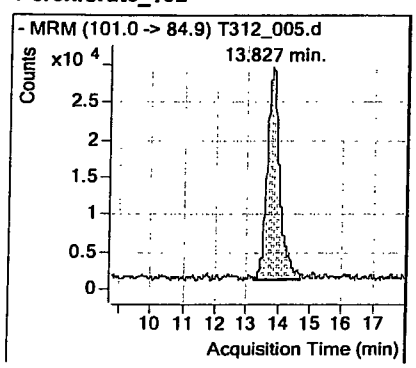
Perchlorate_100

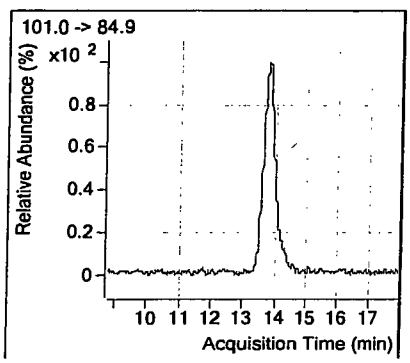


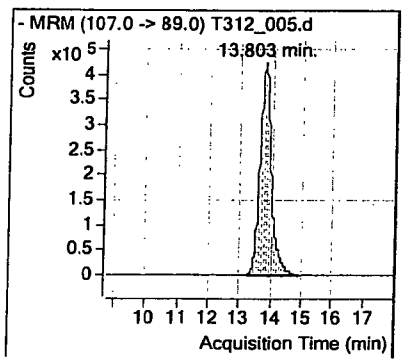




Perchlorate_102







Data File ID: T312_006.d

Date Injected : 03/12/15

Time Injected : 18:48

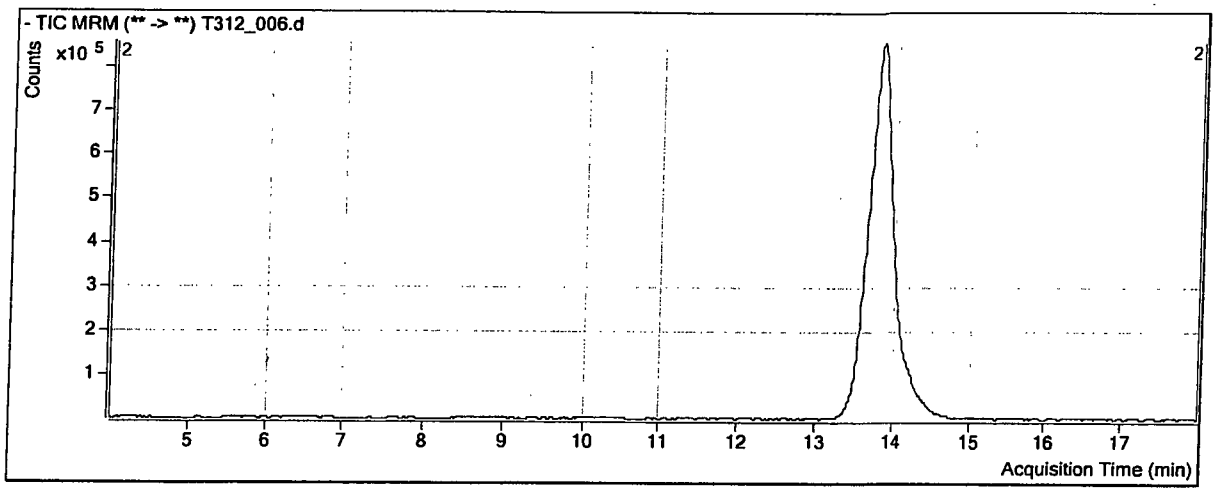
Sample ID : PERCHLORATE 0.002 ug/ml 11/11/14

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.803	13529952	PER_IS_89
13.83	6351752	Perchlorate_83
13.817	1920912	Perchlorate_85

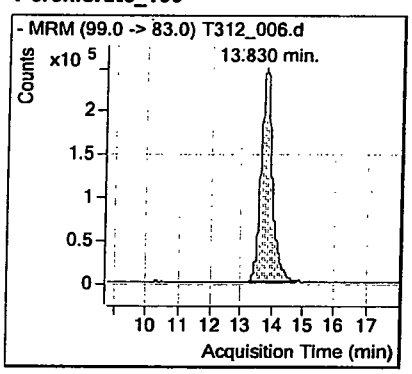
Quantitative Analysis Sample Report

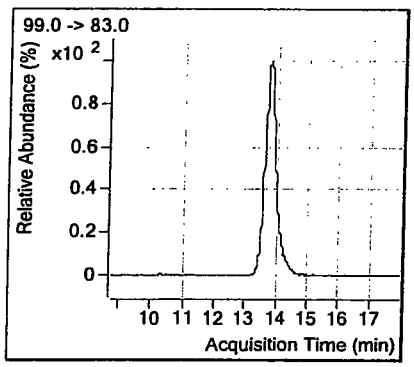
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_006.d	**Sample Name**	PERCHLORATE 0.002 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:48
ClientID	NA	**Inj Vol**	20

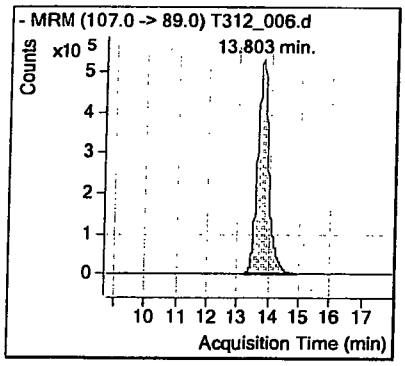


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.830	6351752	13529952
Perchlorate_102	PER_IS_108	13.817	1920912	13529952

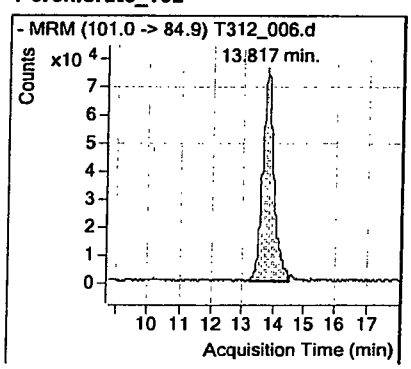
Perchlorate_100

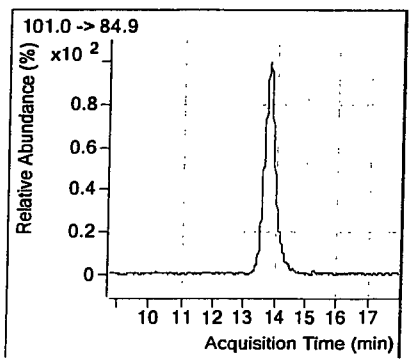


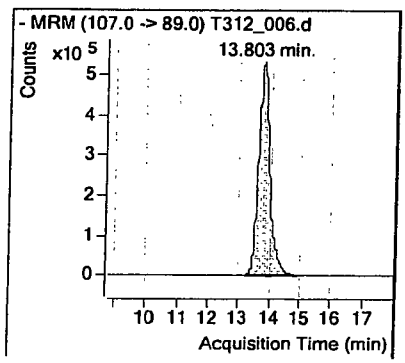




Perchlorate_102







Data File ID: T312_007.d

Date Injected : 03/12/15

Time Injected : 19:07

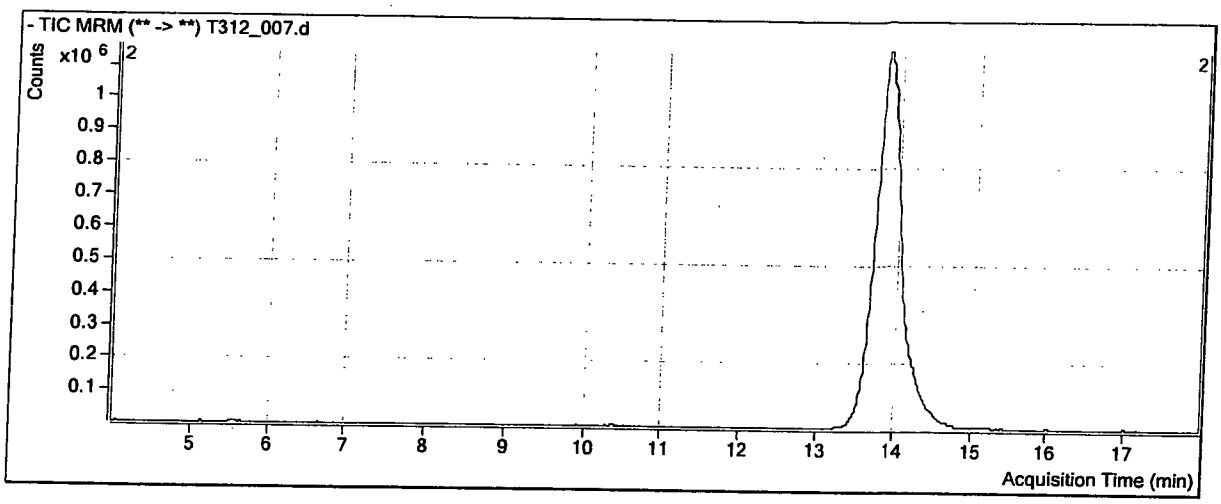
Sample ID : PERCHLORATE 0.005 ug/ml 11/11/14

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.874	11028880	PER_IS_89
13.861	14499255	Perchlorate_83
13.878	4209044	Perchlorate_85

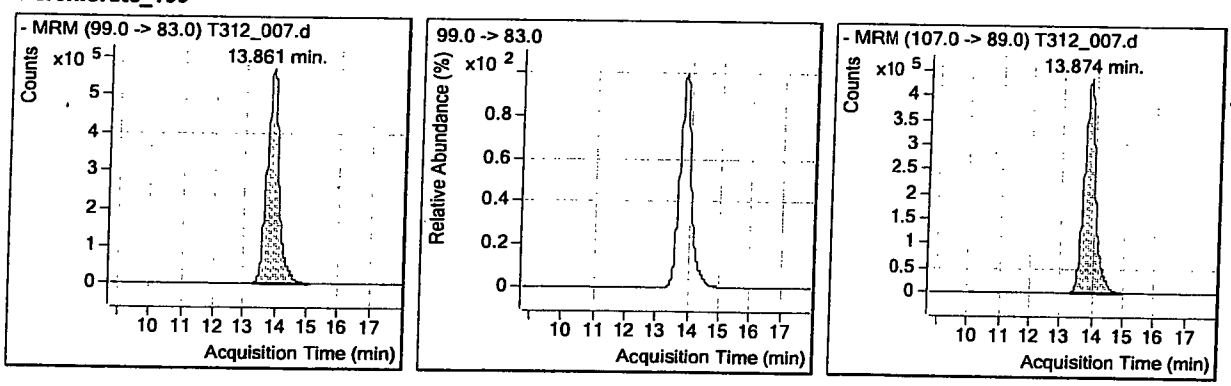
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_007.d	**Sample Name**	PERCHLORATE 0.005 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	19:07
ClientID	NA	**Inj Vol**	20

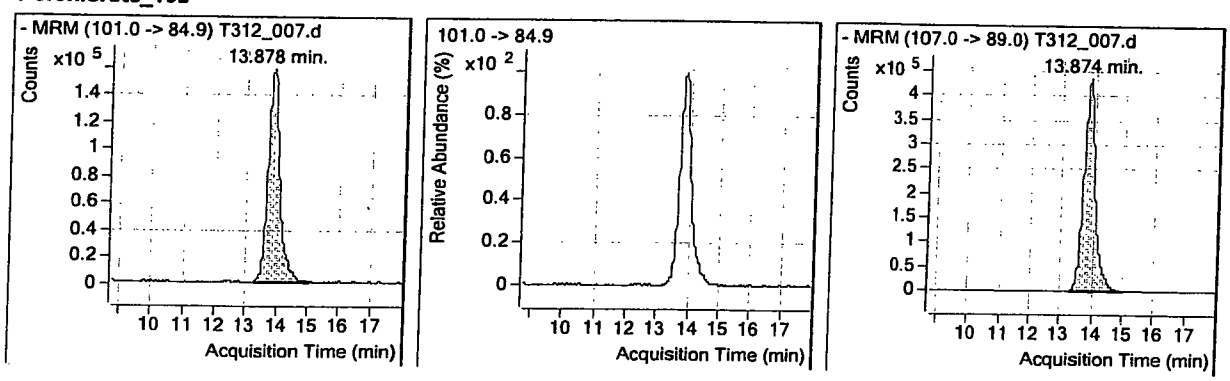


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.861	14499255	11028880
Perchlorate_102	PER_IS_108	13.878	4209044	11028880

Perchlorate_100



Perchlorate_102



Data File ID: T312_008.d

Date Injected : 03/12/15

Time Injected : 19:25

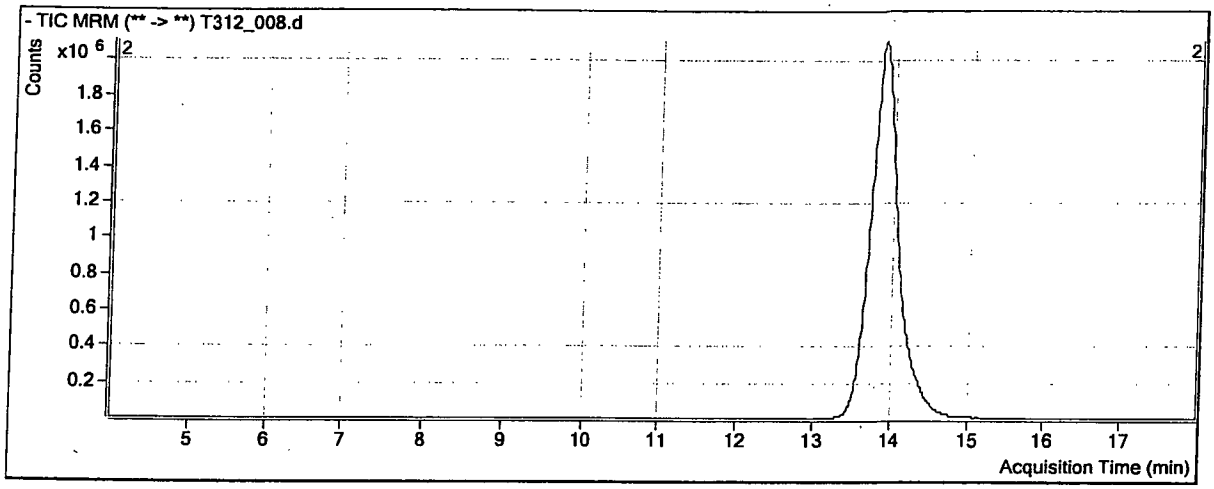
Sample ID : PERCHLORATE 0.010 ug/ml 08/27/14

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.874	11973072	PER_IS_89
13.881	34223790	Perchlorate_83
13.878	9985270	Perchlorate_85

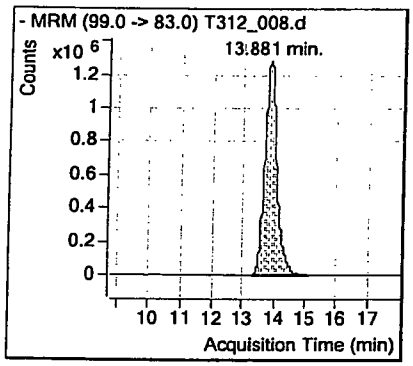
Quantitative Analysis Sample Report

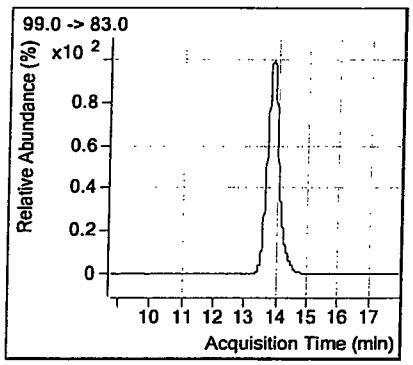
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_008.d	**Sample Name**	PERCHLORATE 0.010 ug/ml 08/27/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	19:25
ClientID	NA	**Inj Vol**	20

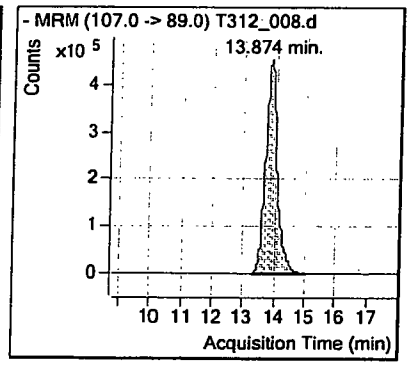


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.881	34223790	11973072
Perchlorate_102	PER_IS_108	13.878	9985270	11973072

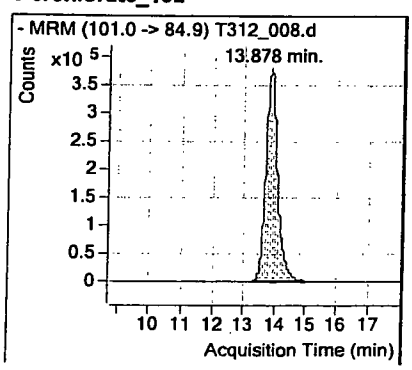
Perchlorate_100

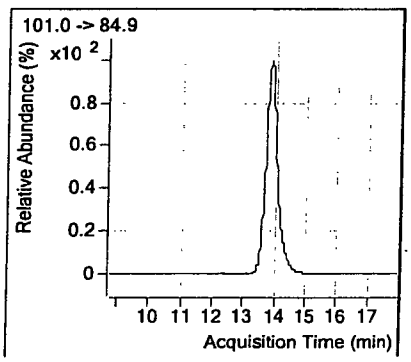


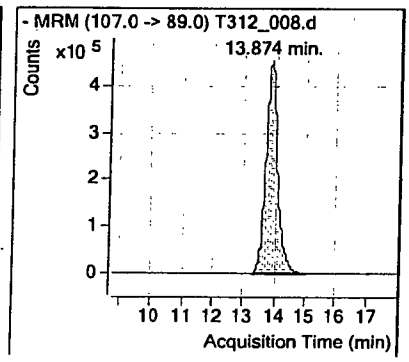




Perchlorate_102







SECOND SOURCE CALIBRATION VERIFICATION SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T312_010.d

	Date (s) of Analysis From:03/12/15 To:03/12/15 Time (s) of Analysis From:17:33 To:19:44				Date of Analysis: 03/12/15 Time of Analysis: 20:02 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	13.50	13.40	13.60	1.270255	13.94	1.418633	N	11.7
Perchlorate_85	13.54	13.44	13.64	0.391605	13.96	0.424457	N	8.4

FILE ID : TQCK1210.RFB

Data File ID: T312_010.d

Date Injected : 03/12/15

Time Injected : 20:02

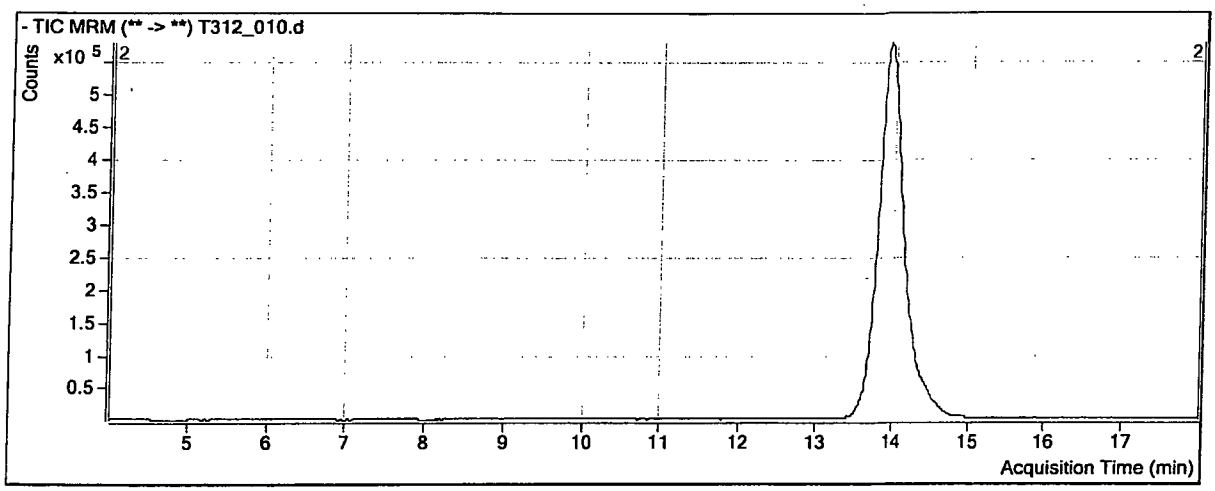
Sample ID : PER_SS 0.0004 ug/ml 11/11/14

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.946	12977621	PER_IS_89
13.942	1472839	Perchlorate_83
13.959	440675	Perchlorate_85

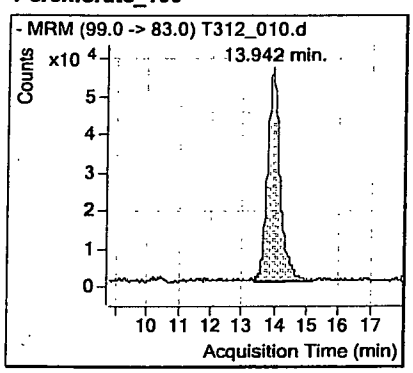
Quantitative Analysis Sample Report

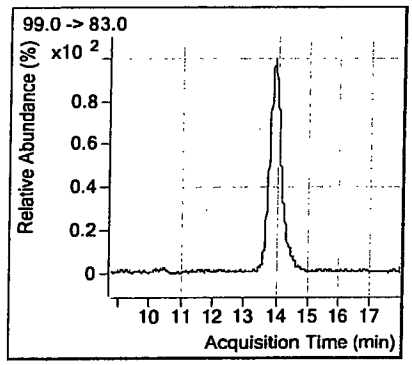
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_010.d	**Sample Name**	PER_SS 0.0004 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	20:02
ClientID	NA	**Inj Vol**	20

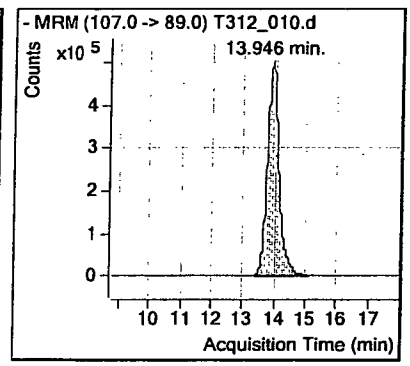


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.942	1472839	12977621
Perchlorate_102	PER_IS_108	13.959	440675	12977621

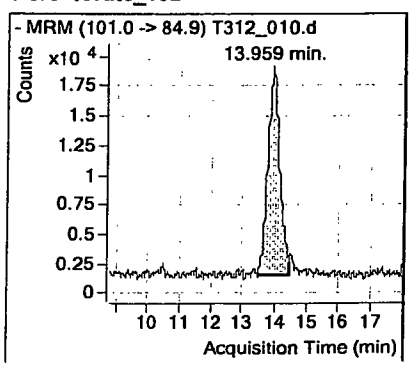
Perchlorate_100

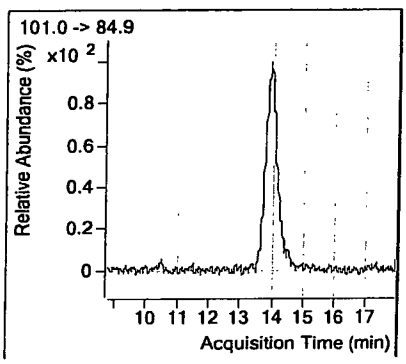


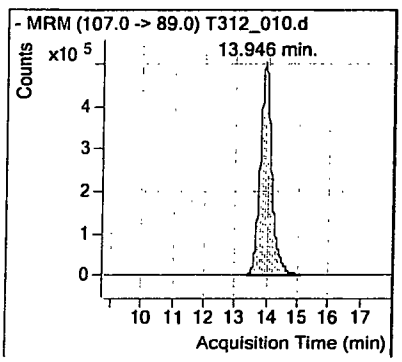




Perchlorate_102







SECOND SOURCE CALIBRATION VERIFICATION SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T312_011.d

	Date (s) of Analysis From:03/12/15 To:03/12/15 Time (s) of Analysis From:17:33 To:19:44				Date of Analysis: 03/12/15 Time of Analysis: 20:21 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	13.50	13.40	13.60	1.270255	14.01	1.358201	N	6.9
Perchlorate_85	13.54	13.44	13.64	0.391605	14.00	0.404148	N	3.2

FILE ID : TQCK1211.RFB

Data File ID: T312_011.d

Date Injected : 03/12/15

Time Injected : 20:21

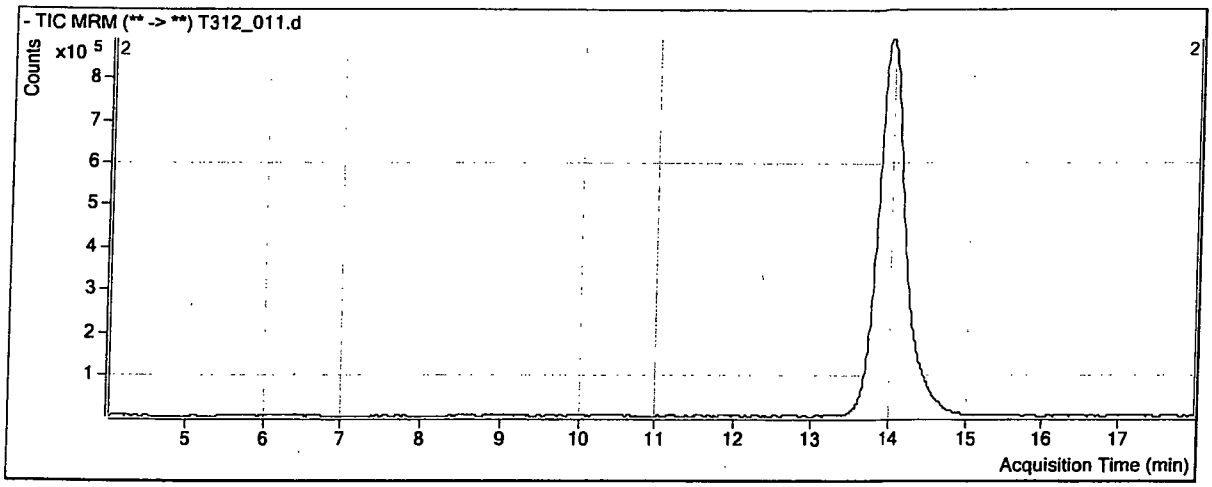
Sample ID : PER_SS 0.002 ug/ml 11/11/14

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.976	13747369	PER_IS_89
14.014	7468678	Perchlorate_83
14.000	2222387	Perchlorate_85

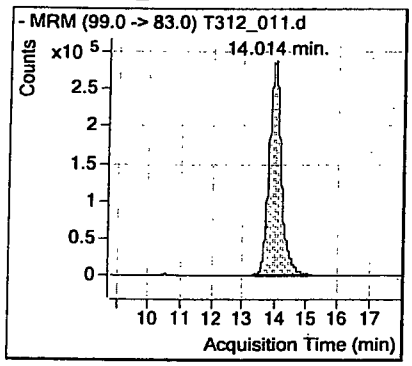
Quantitative Analysis Sample Report

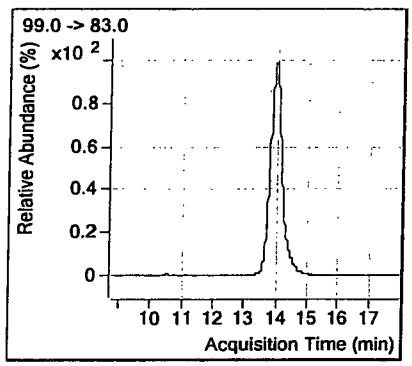
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_011.d	**Sample Name**	PER_SS 0.002 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	20:21
ClientID	NA	**Inj Vol**	20

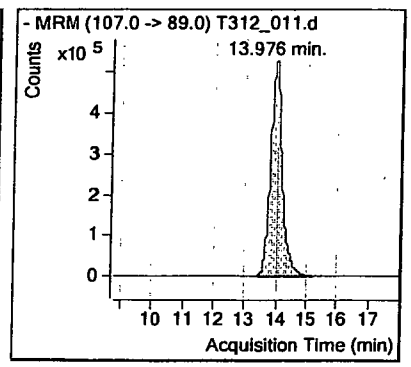


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.014	7468678	13747369
Perchlorate_102	PER_IS_108	14.000	2222387	13747369

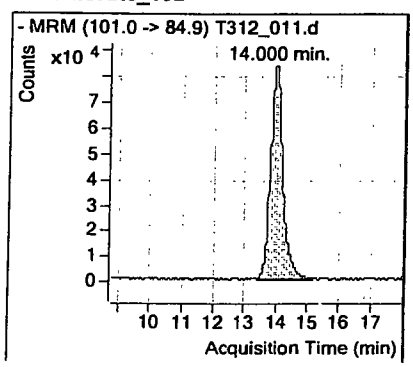
Perchlorate_100

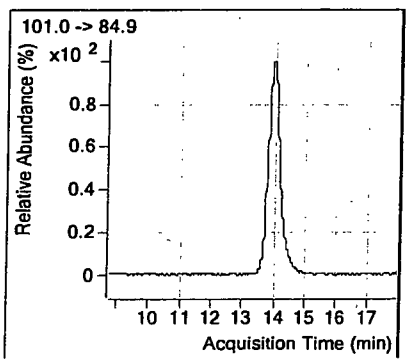


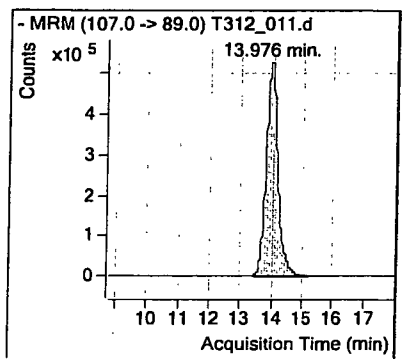




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

.ab Name: APPL Inc.

)etector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T312_013.d

	Date (s) of Analysis From:03/12/15 To:03/12/15 Time (s) of Analysis From:17:33 To:20:40				Date of Analysis: 03/12/15 Time of Analysis: 20:58 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	13.50	13.40	13.60	1.270255	14.10	1.285147	N	1.2
Perchlorate_85	13.54	13.44	13.64	0.391605	14.14	0.416428	N	6.3

:LE ID : TQCK1213.RFB

Data File ID: T312_013.d

Date Injected : 03/12/15

Time Injected : 20:58

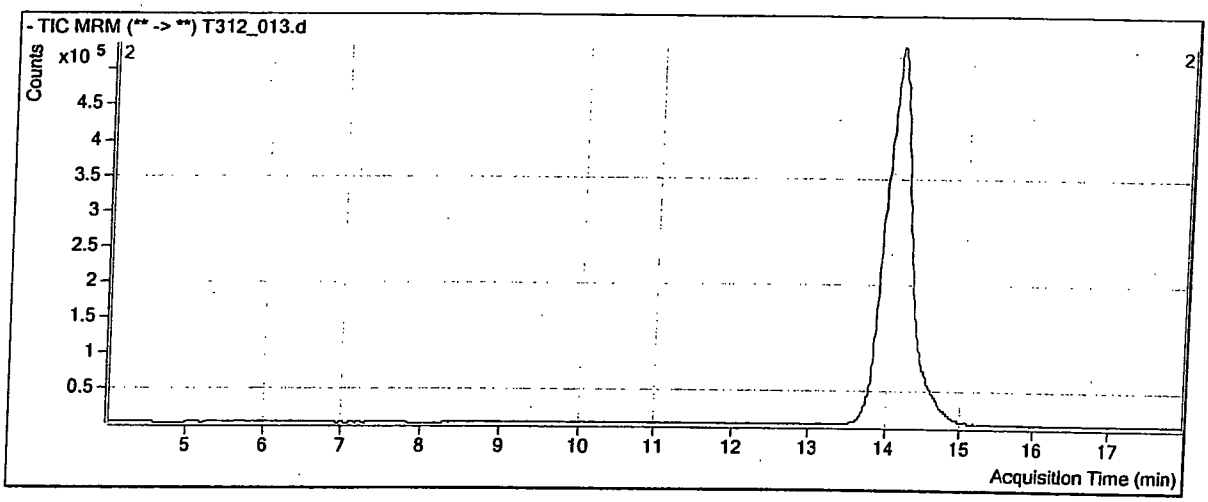
Sample ID : PER_CCV_1 0.0004 ug/ml 11/11/14

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
14.109	12323795	PER_IS_89
14.105	1267031	Perchlorate_83
14.143	410558	Perchlorate_85

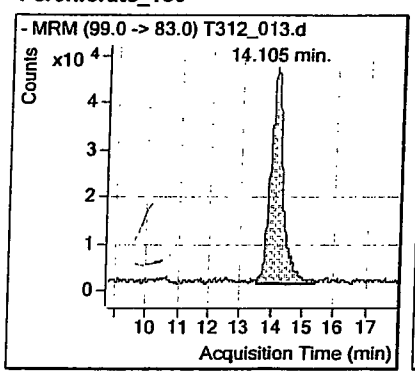
Quantitative Analysis Sample Report

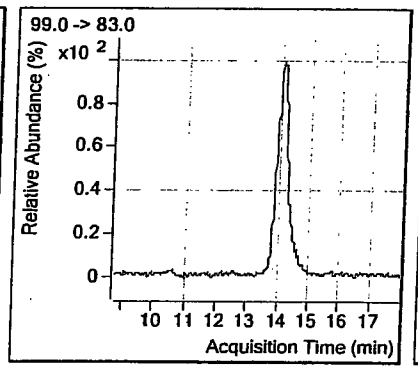
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_013.d	**Sample Name**	PER_CCV_1 0.0004 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	20:58
ClientID	NA	**Inj Vol**	20

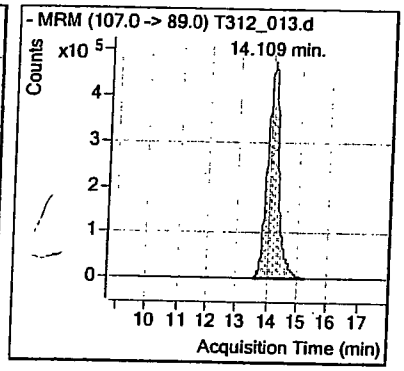


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.105	1267031	12323795
Perchlorate_102	PER_IS_108	14.143	410558	12323795

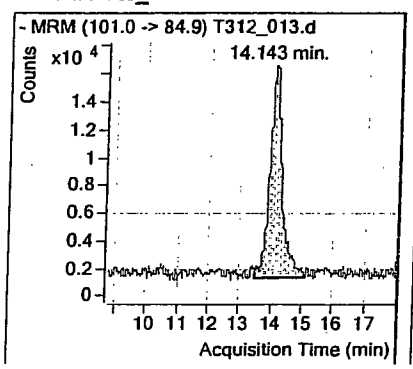
Perchlorate_100

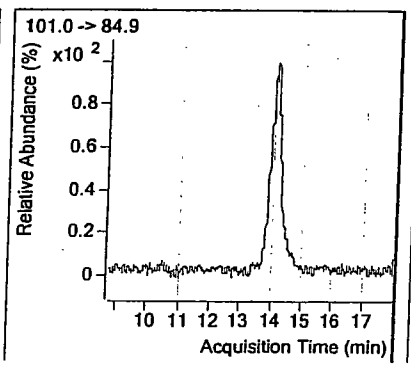


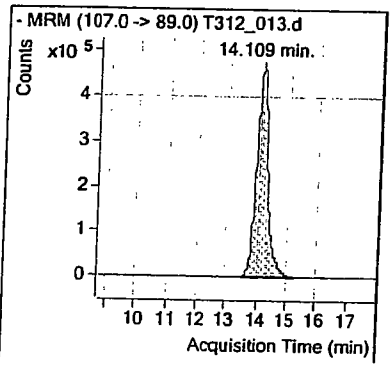




Perchlorate_102

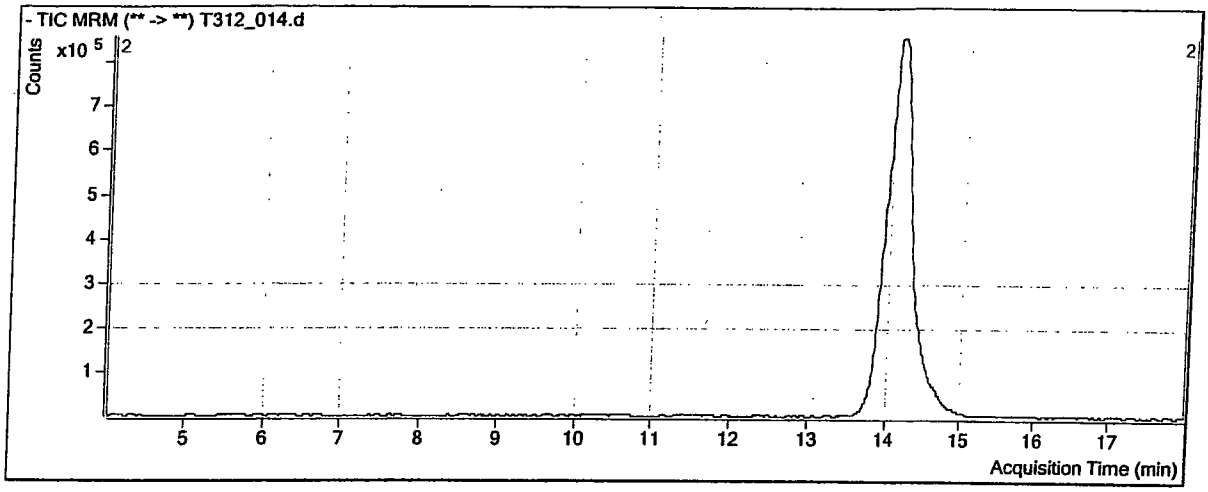






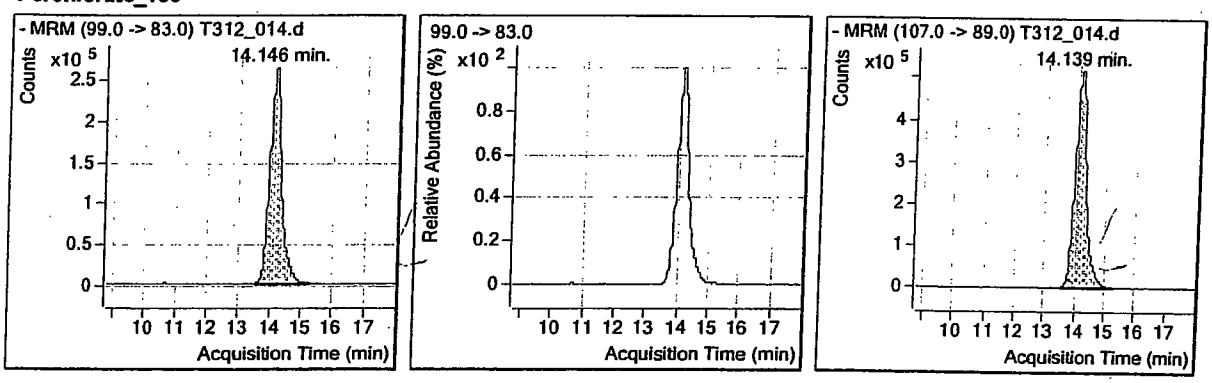
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_014.d	**Sample Name**	PER_CCV_1 0.002 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	21:17
ClientID	NA	**Inj Vol**	20

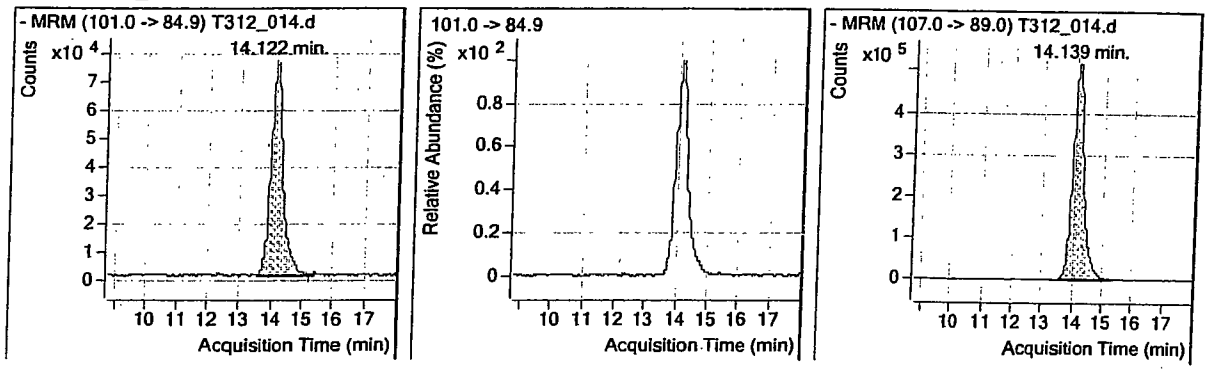


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.146	6907110	13576634
Perchlorate_102	PER_IS_108	14.122	2093567	13576634

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T512_002.d

	Date (s) of Analysis From:03/12/15 To:05/12/15 Time (s) of Analysis From:17:52 To:7:32				Date of Analysis: 05/12/15 Time of Analysis: 7:51 Standard Id: PER_CCV (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	13.79	13.69	13.89	1.270255	14.02	1.437634	N	13.2
Perchlorate_85	13.70	13.60	13.80	0.391605	14.03	0.455622	N	16.3

FILE ID : TQCK1202.RFB

Data File ID: T512_002.d

Date Injected : 05/12/15

Time Injected : 7:51

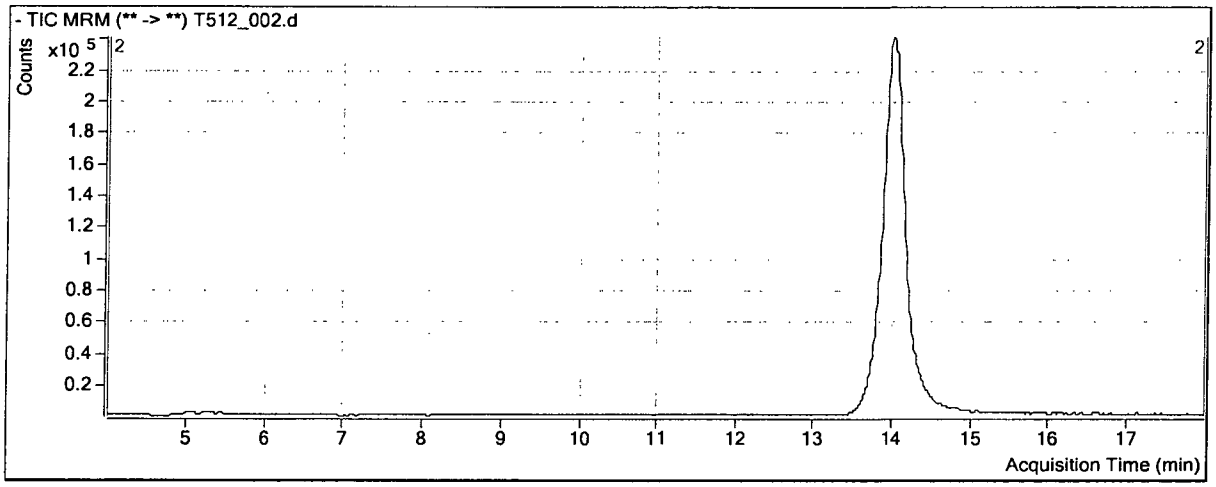
Sample ID : PER_CCV 0.0004 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
14.007	4374131	PER_IS_89
14.024	503072	Perchlorate_83
14.031	159436	Perchlorate_85

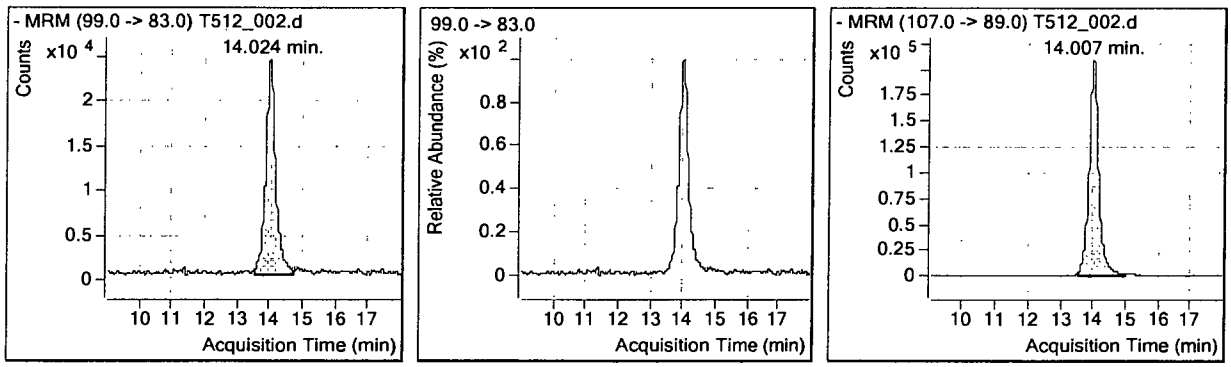
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_002.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	7:51
ClientID	NA	**Inj Vol**	20

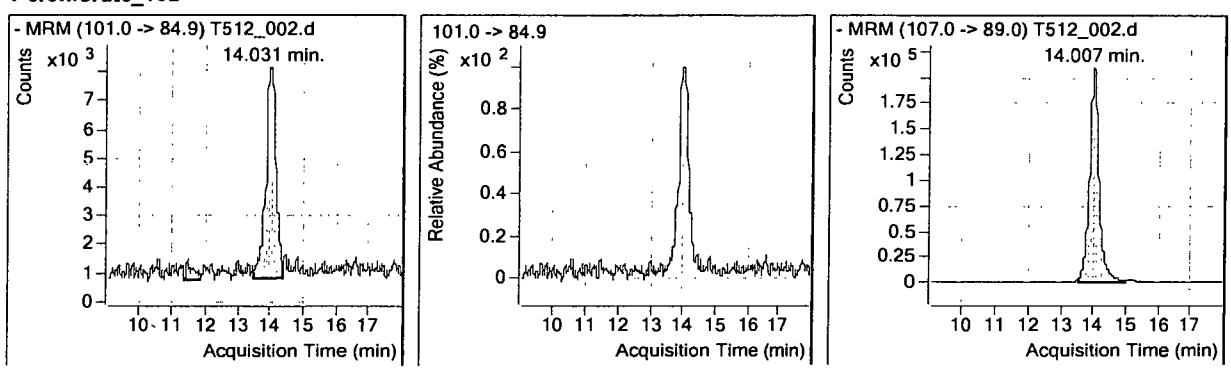


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.024	503072	4374131
Perchlorate_102	PER_IS_108	14.031	159436	4374131

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T512_003.d

	Date (s) of Analysis From:03/12/15 To:05/12/15 Time (s) of Analysis From:17:52 To:7:32				Date of Analysis: 05/12/15 Time of Analysis: 8:10 Standard Id: PER_CCV (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	13.79	13.69	13.89	1.270255	13.94	1.184670	N	6.7
Perchlorate_85	13.70	13.60	13.80	0.391605	13.94	0.347799	N	11.2

FILE ID : TQCK1203.RFB

Data File ID: T512_003.d

Date Injected : 05/12/15

Time Injected : 8:10

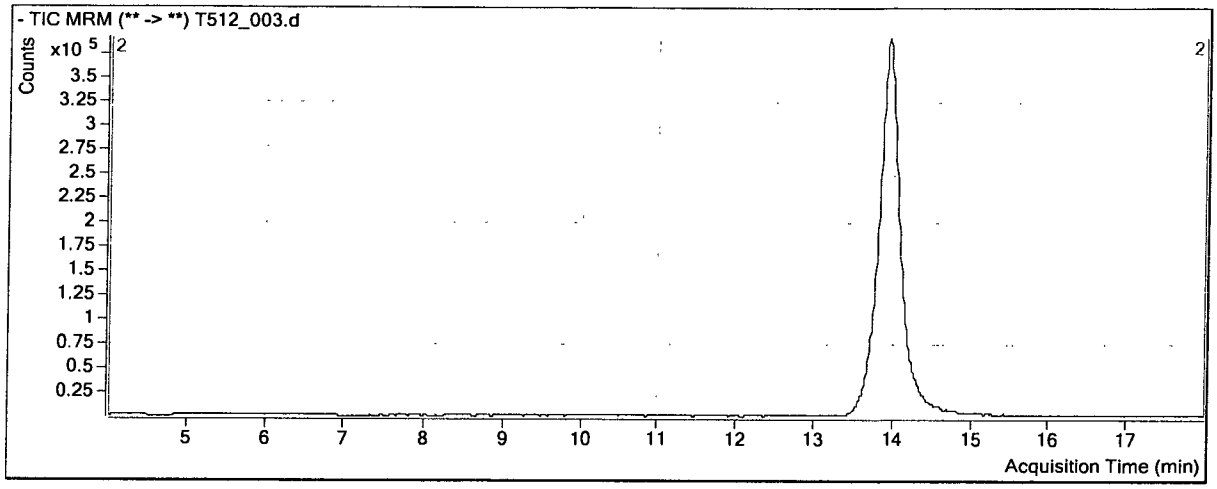
Sample ID : PER_CCV 0.002 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.935	4906019	PER_IS_89
13.942	2324805	Perchlorate_83
13.939	682523	Perchlorate_85

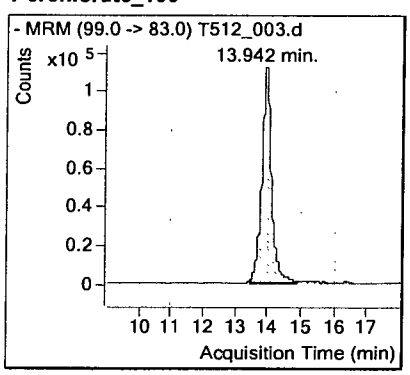
Quantitative Analysis Sample Report

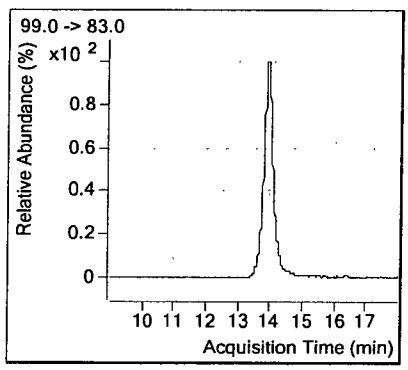
Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_003.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	8:10
ClientID	NA	**Inj Vol**	20

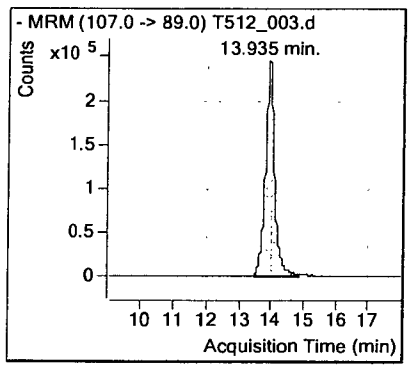


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.942	2324805	4906019
Perchlorate_102	PER_IS_108	13.939	682523	4906019

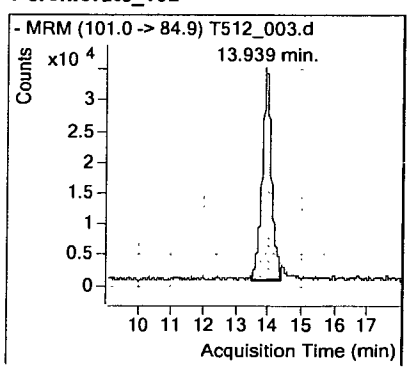
Perchlorate_100

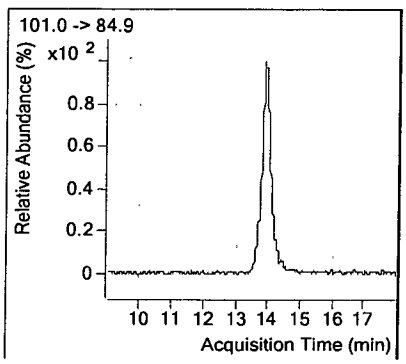


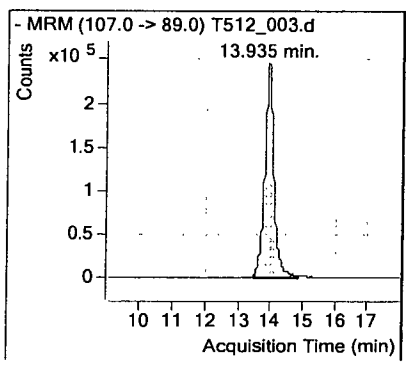




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T512_024.d

	Date (s) of Analysis From:03/12/15 To:05/12/15 Time (s) of Analysis From:17:52 To:14:04				Date of Analysis: 05/12/15 Time of Analysis: 14:41 Standard Id: PER CCV (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	13.79	13.69	13.89	1.270255	13.81	1.351503	N	6.4
Perchlorate_85	13.70	13.60	13.80	0.391605	13.82	0.453321	N	15.8

FILE ID : TQCK1224.RFB

Data File ID: T512_024.d

Date Injected : 05/12/15

Time Injected : 14:41

Sample ID : PER_CCV 0.0004 ug/ml 05/07/15

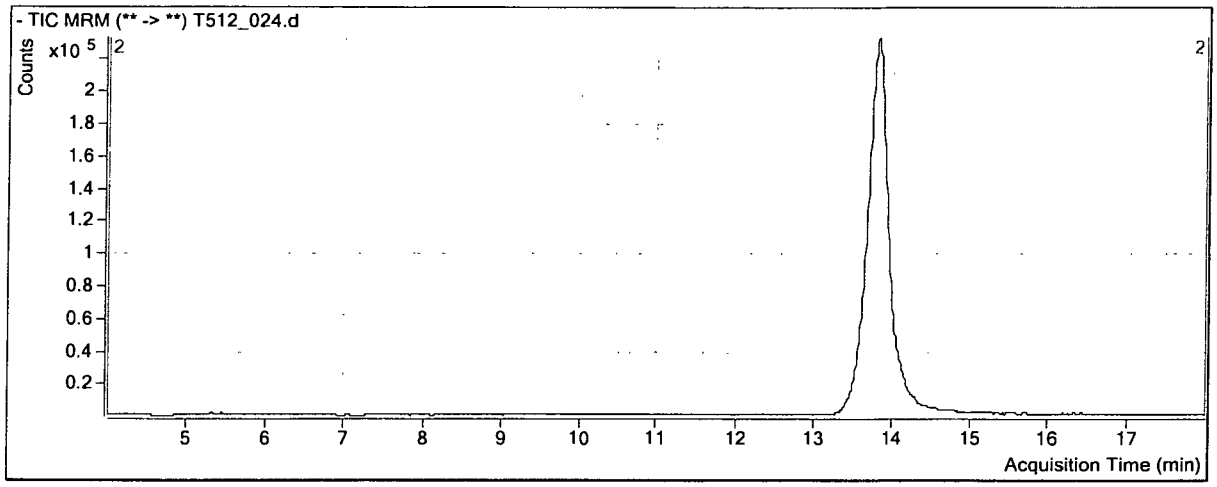
Client ID : NA

Retention Time		Area Count Response	Compound_ID Product Ion
13.813		4120838	PER_IS_89
13.81	*	445546	Perchlorate_83
13.817		149445	Perchlorate_85

* MANUAL INTEGRAION

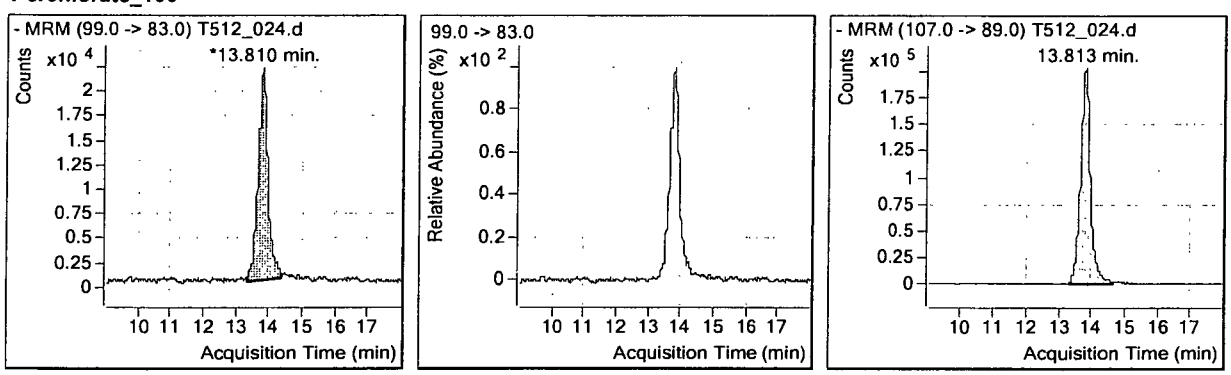
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_024.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	14:41
ClientID	NA	**Inj Vol**	20

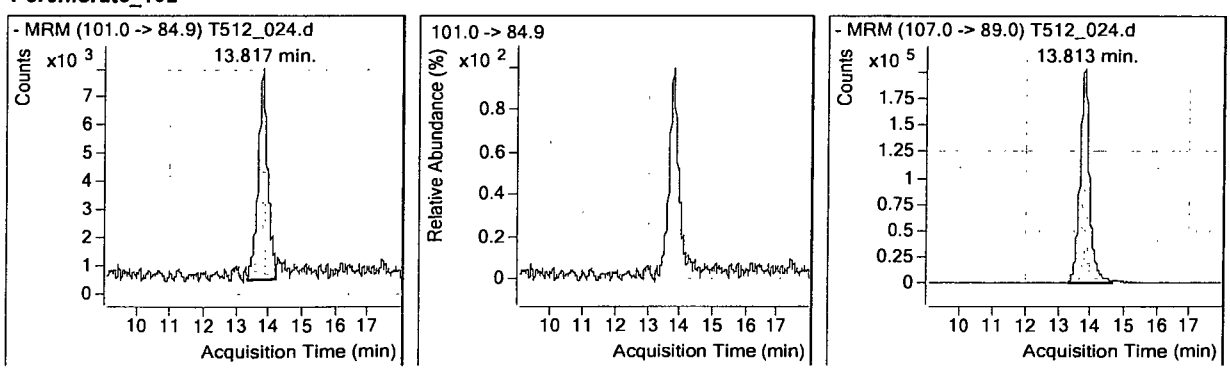


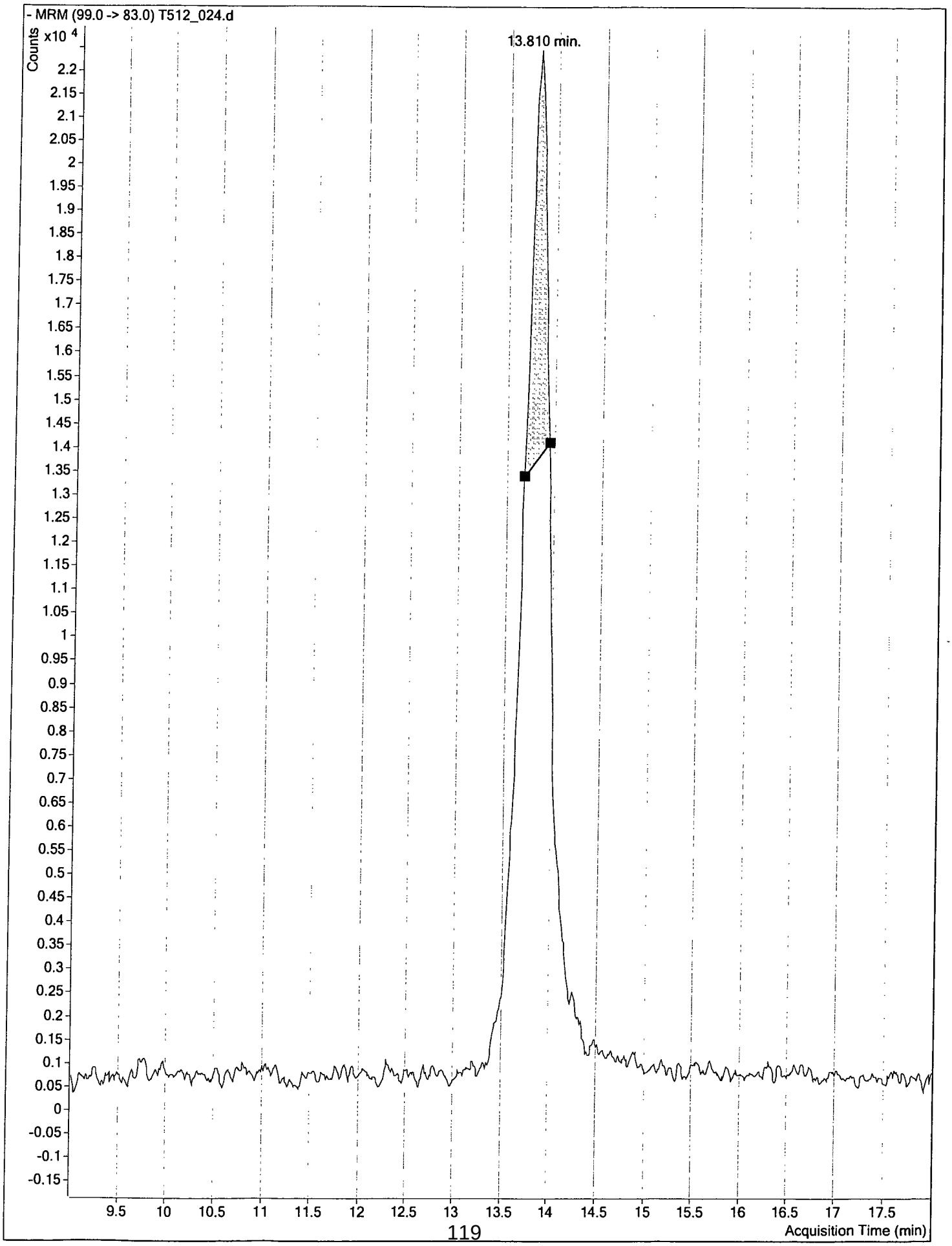
Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108	*	13.810	445546	4120838	* MANUAL INT
Perchlorate_102	PER_IS_108		13.817	149445	4120838	

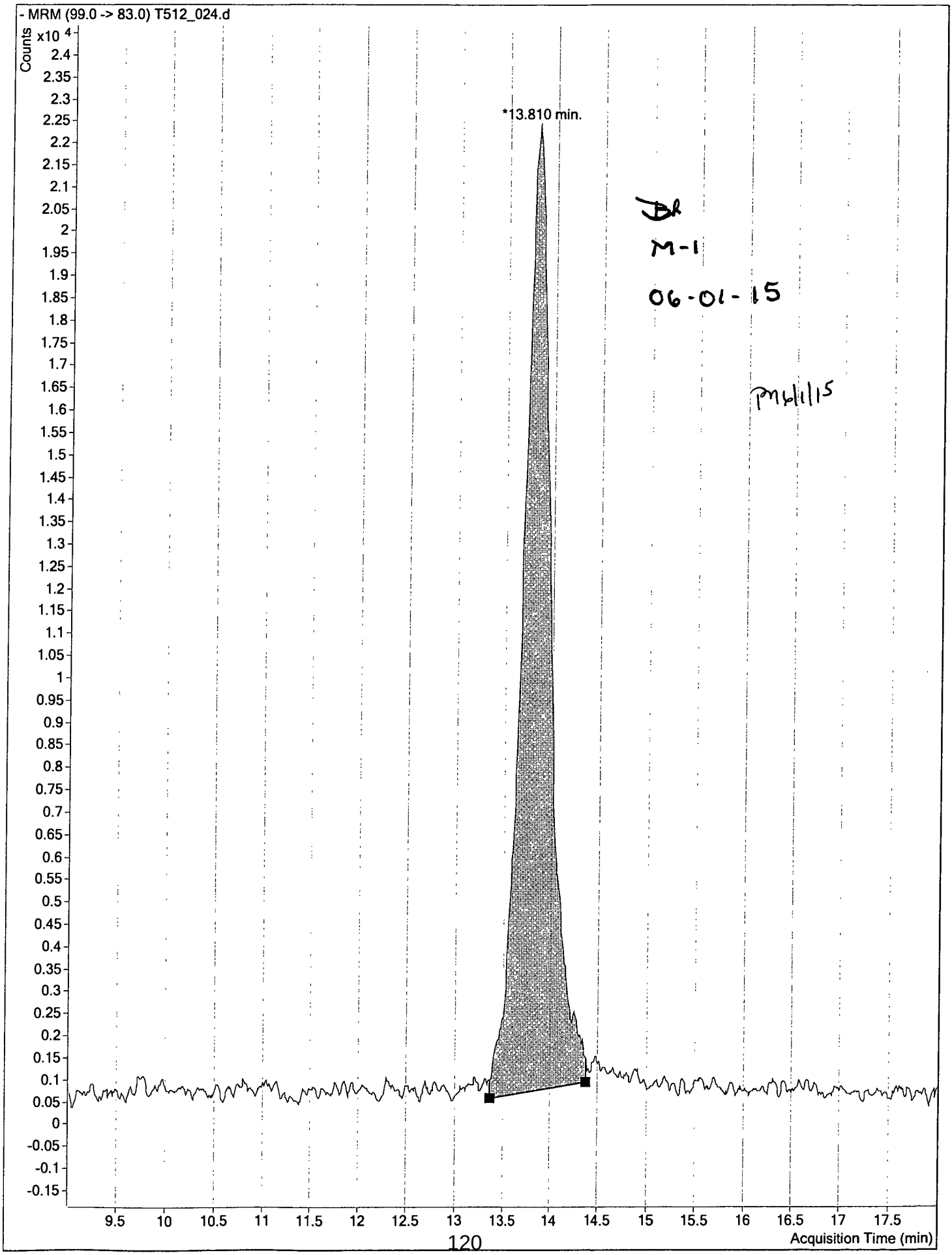
Perchlorate_100



Perchlorate_102




- MRM (99.0 -> 83.0) T512_024.d
Counts
x10 4
13.810 min.
Acquisition Time (min)


- MRM (99.0 -> 83.0) T512_024.d
Counts
x10 4
*13.810 min.
Acquisition Time (min)
M-1
06-01-15
PM 6/1/15

CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T512_025.d

	Date (s) of Analysis From:03/12/15 To:05/12/15 Time (s) of Analysis From:17:52 To:14:04				Date of Analysis: 05/12/15 Time of Analysis: 14:59 Standard Id: PER CCV (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	13.79	13.69	13.89	1.270255	13.59	1.192729	N	6.1
Perchlorate_85	13.70	13.60	13.80	0.391605	13.57	0.361129	N	7.8

FILE ID : TQCK1225.RFB

Data File ID: T512_025.d

Date Injected : 05/12/15

Time Injected : 14:59

Sample ID : PER_CCV 0.002 ug/ml 05/07/15

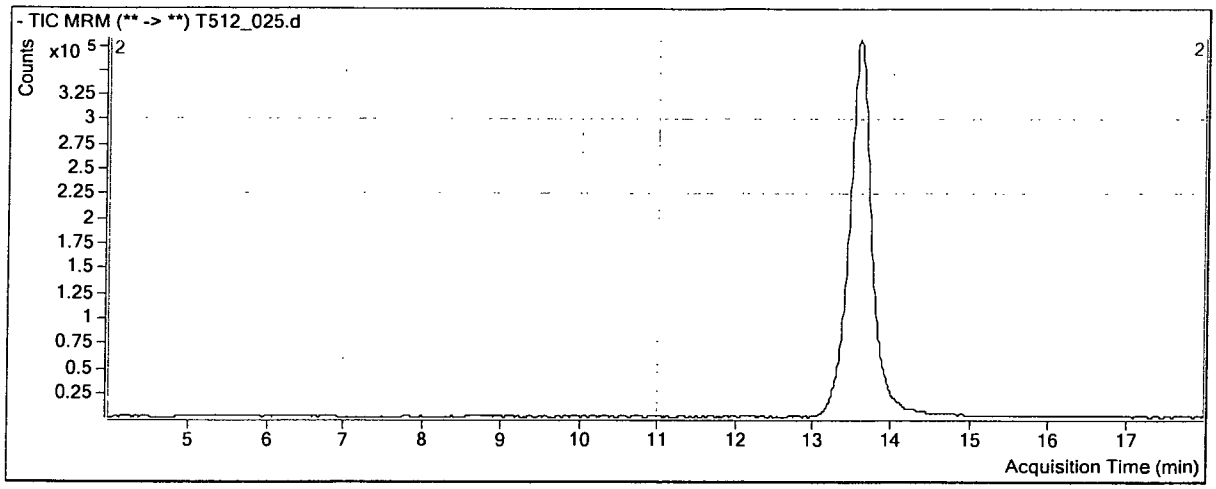
Client ID : NA

Retention Time		Area Count Response	Compound_ID Product Ion
13.589		4766152	PER_IS_89
13.586		2273891	Perchlorate_83
13.572	*	688478	Perchlorate_85

* MANUAL INTEGRAION

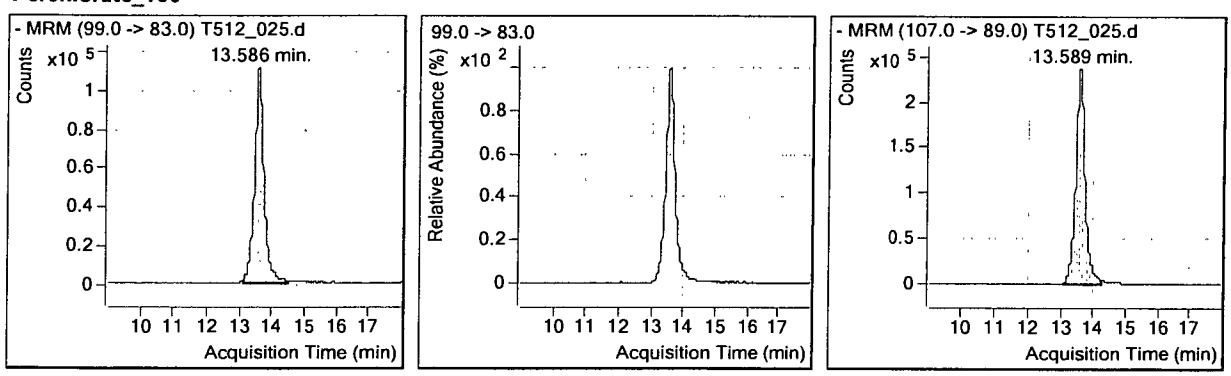
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_025.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	14:59
ClientID	NA	**Inj Vol**	20

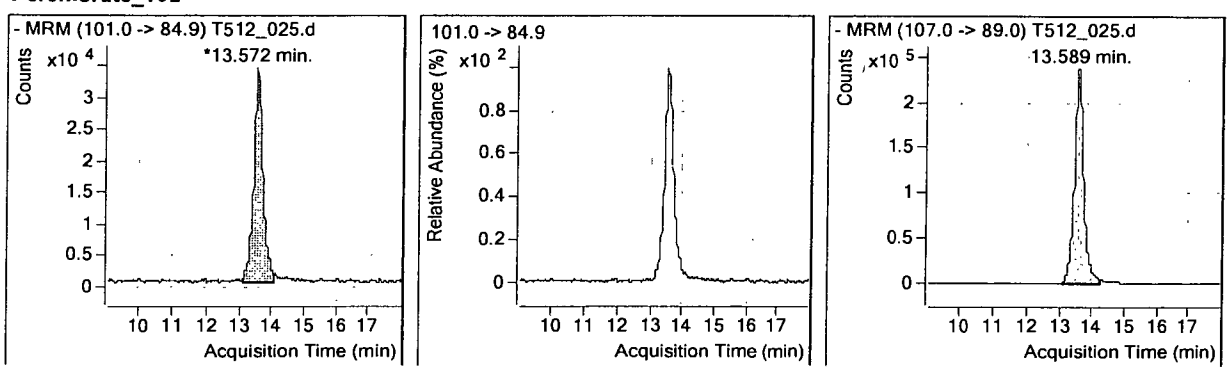


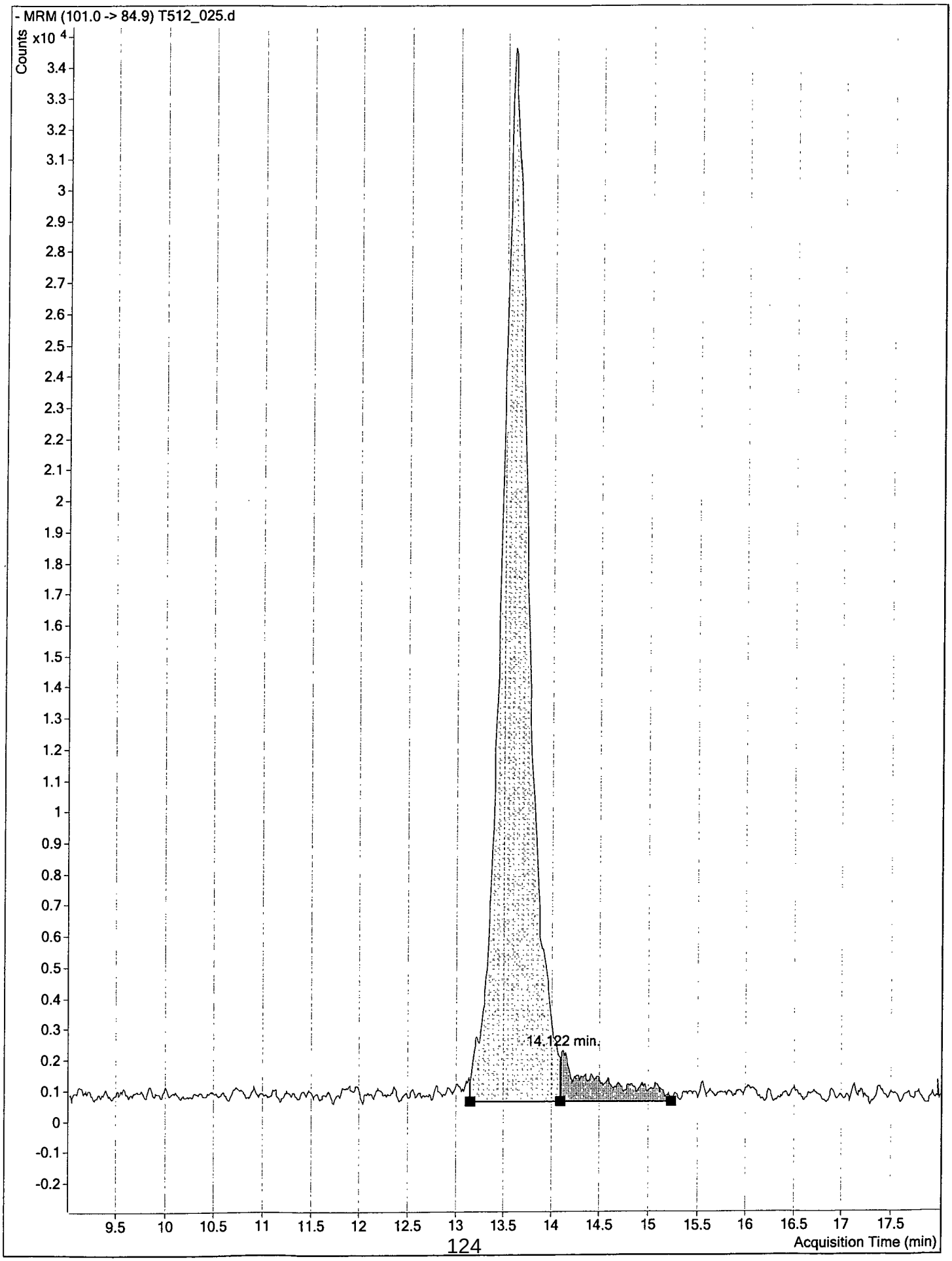
Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108		13.586	2273891	4766152	
Perchlorate_102	PER_IS_108	*	13.572	688478	4766152	* MANUAL INT

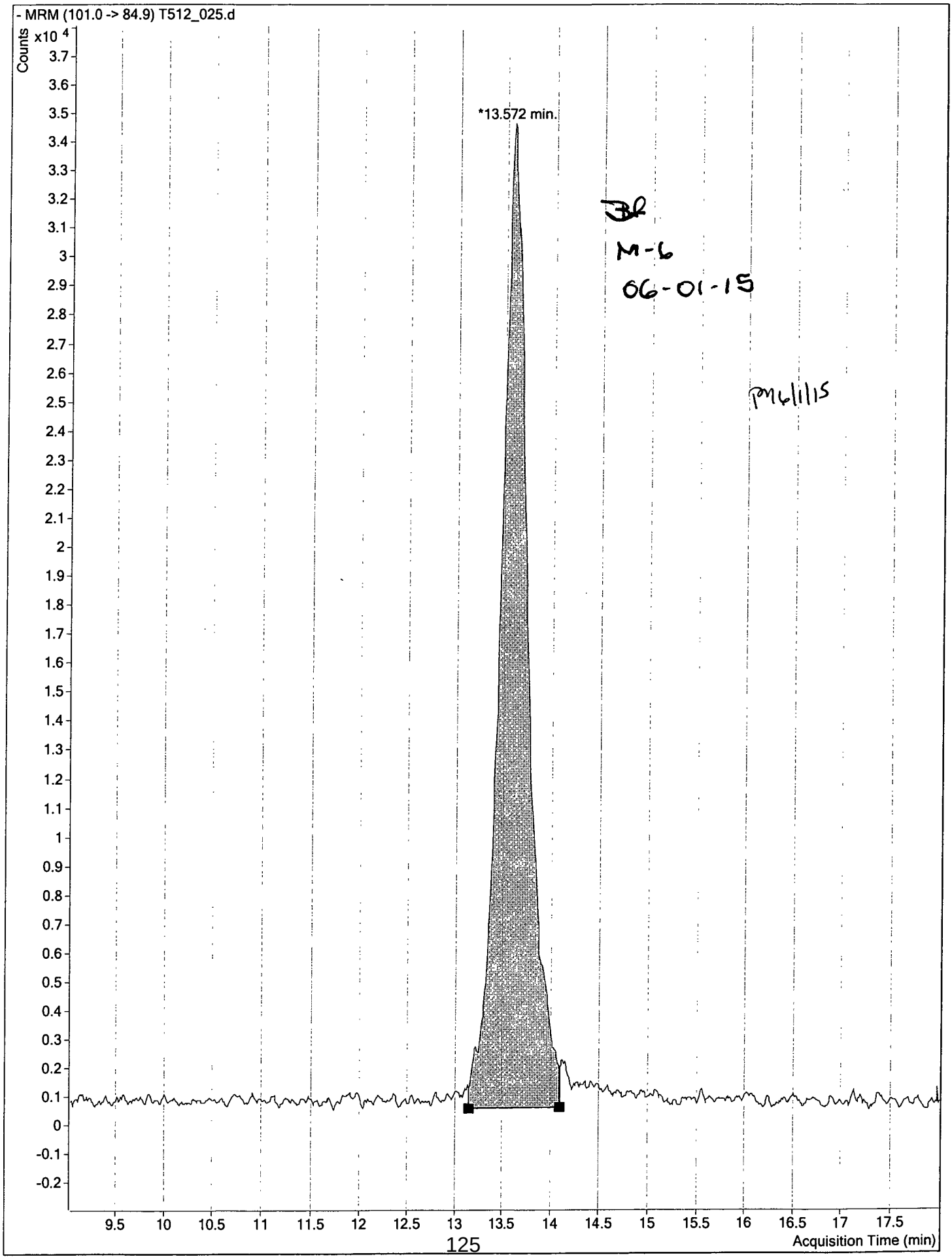
Perchlorate_100



Perchlorate_102




- MRM (101.0 -> 84.9) T512_025.d
Counts
x10 4
14.122 min.
Acquisition Time (min)


- MRM (101.0 -> 84.9) T512_025.d
Counts
x10 4
*13.572 min.
M-6
06-01-15
PM6/1/15
Acquisition Time (min)

CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T512_036.d

	Date (s) of Analysis From:03/12/15 To:05/12/15 Time (s) of Analysis From:17:52 To:17:58				Date of Analysis: 05/12/15 Time of Analysis: 18:36 Standard Id: PER CCV (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	13.79	13.69	13.89	1.270255	13.61	1.435832	N	13.0
Perchlorate_85	13.70	13.60	13.80	0.391605	13.61	0.465975	N	19.0

FILE ID : TQCK1236.RFB

Data File ID: T512_036.d

Date Injected : 05/12/15

Time Injected : 18:36

Sample ID : PER_CCV 0.0004 ug/ml 05/07/15

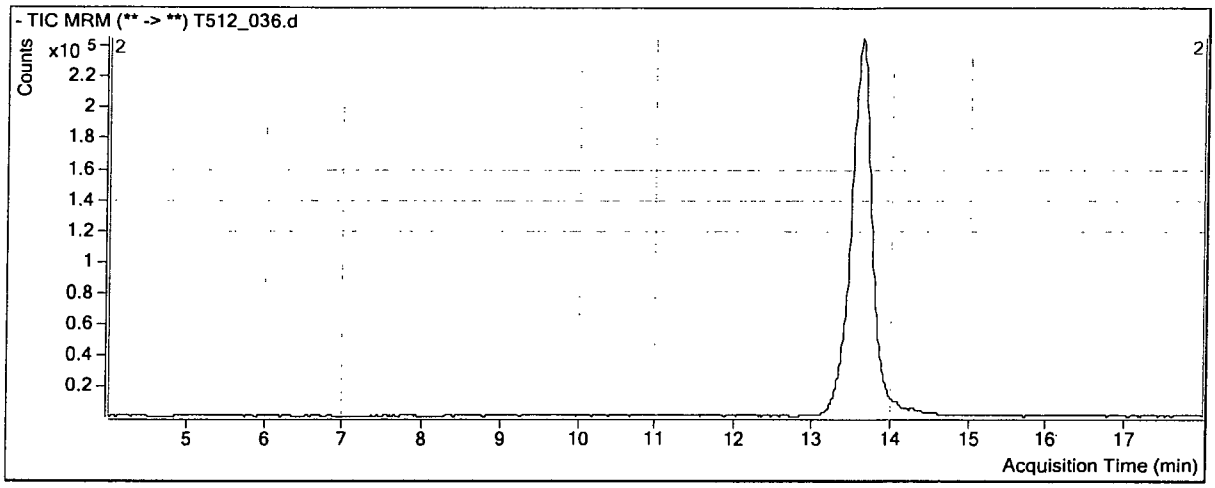
Client ID : NA

Retention Time		Area Count Response	Compound_ID Product Ion
13.62		4044824	PER_IS_89
13.606		464615	Perchlorate_83
13.613	*	150783	Perchlorate_85

* MANUAL INTEGRAION

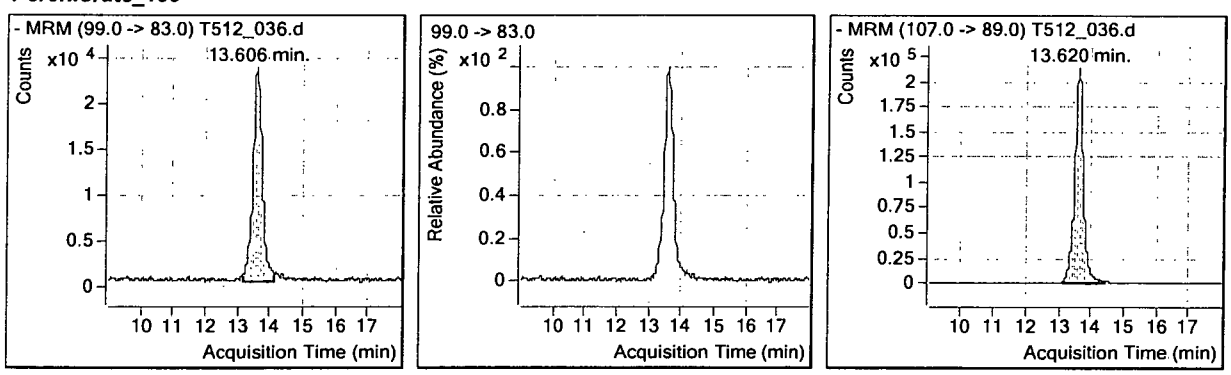
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_036.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:36
ClientID	NA	**Inj Vol**	20

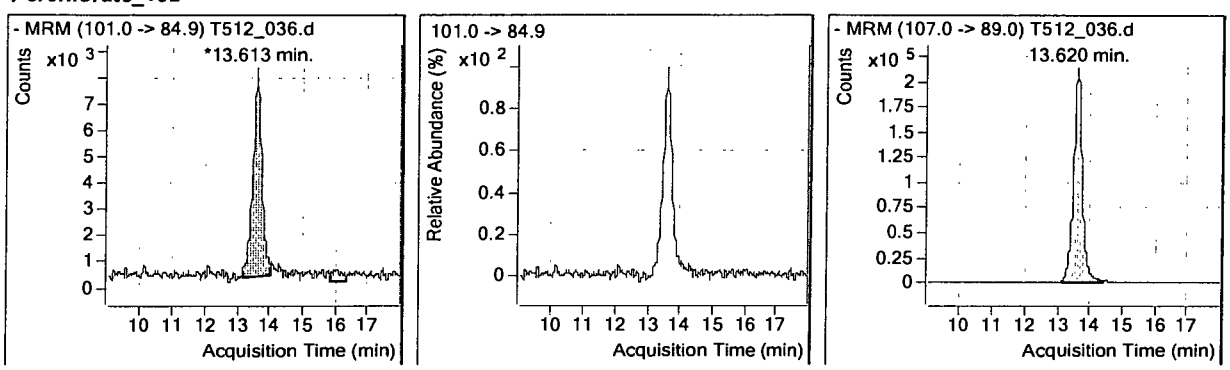


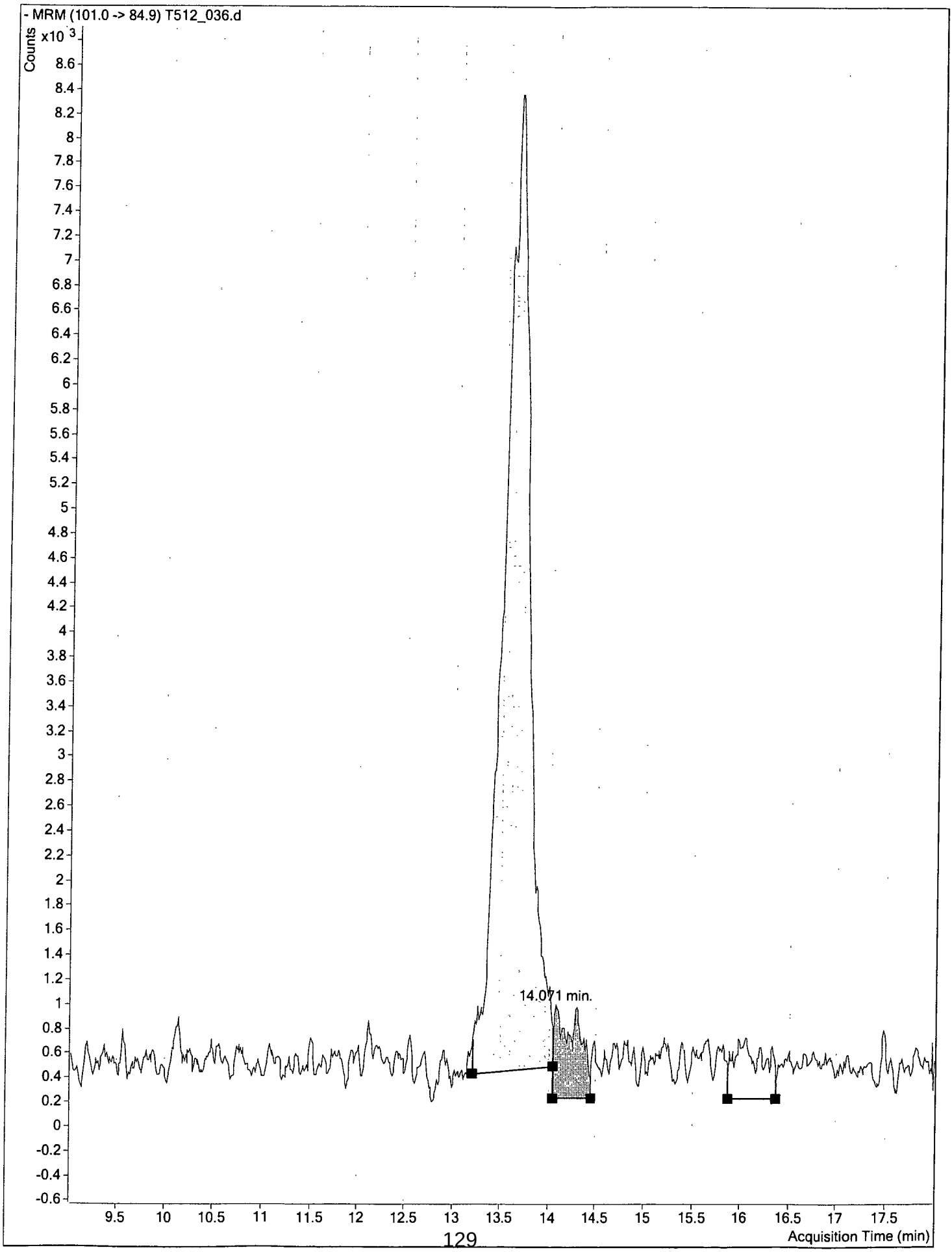
Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108		13.606	464615	4044824	
Perchlorate_102	PER_IS_108	*	13.613	150783	4044824	* MANUAL INT

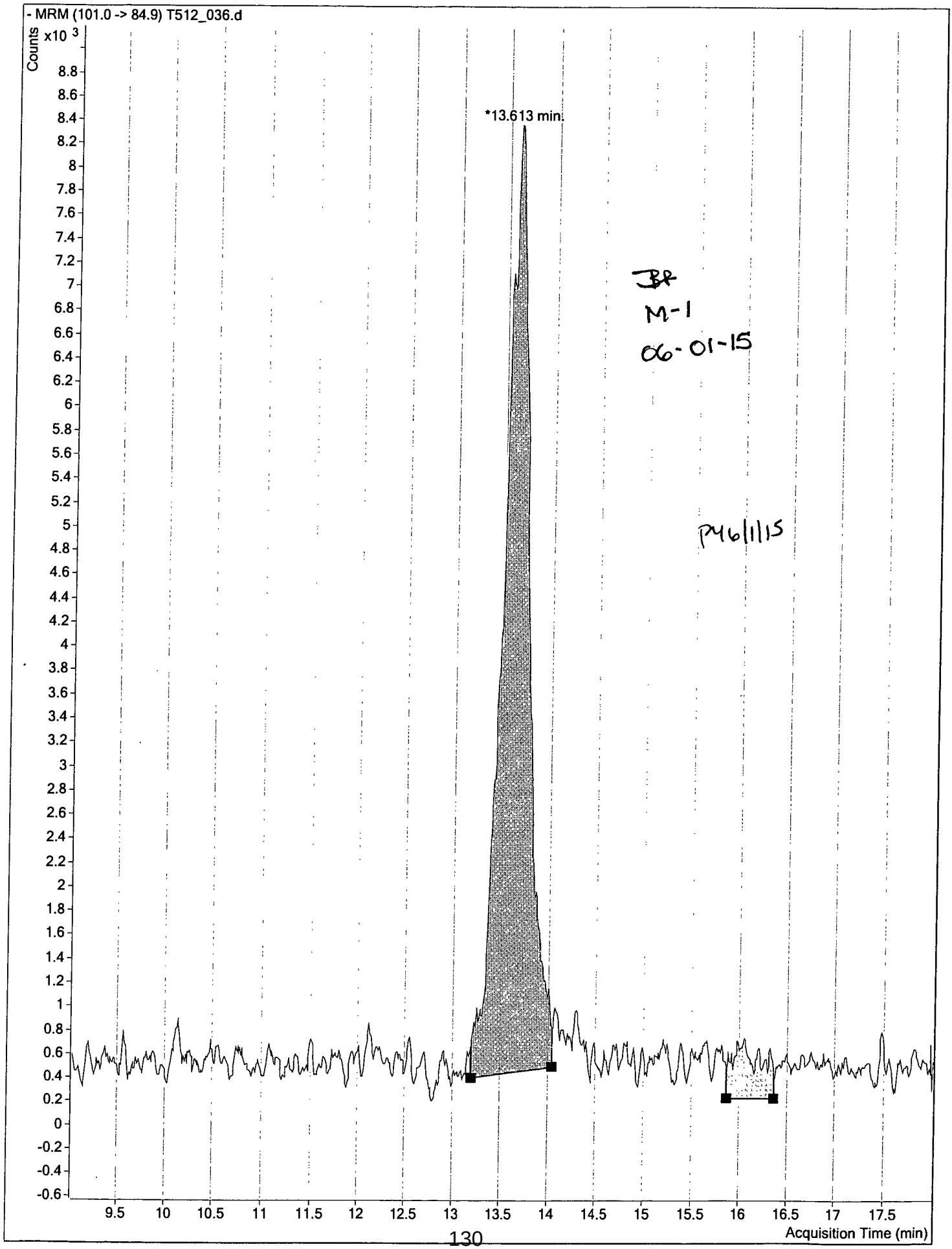
Perchlorate_100



Perchlorate_102




- MRM (101.0 -> 84.9) T512_036.d
Counts
x10 3
14.071 min.
Acquisition Time (min)


- MRM (101.0 -> 84.9) T512_036.d
Counts x10 3
*13.613 min.
JBR
M-1
06-01-15
P46/1/15
Acquisition Time (min)

CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T512_037.d

	Date (s) of Analysis From:03/12/15 To:05/12/15 Time (s) of Analysis From:17:52 To:17:58				Date of Analysis: 05/12/15 Time of Analysis: 18:54 Standard Id: PER_CCV (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	13.79	13.69	13.89	1.270255	13.65	1.170425	N	7.9
Perchlorate_85	13.70	13.60	13.80	0.391605	13.63	0.362618	N	7.4

FILE ID : TQCK1237.RFB

Data File ID: T512_037.d

Date Injected : 05/12/15

Time Injected : 18:54

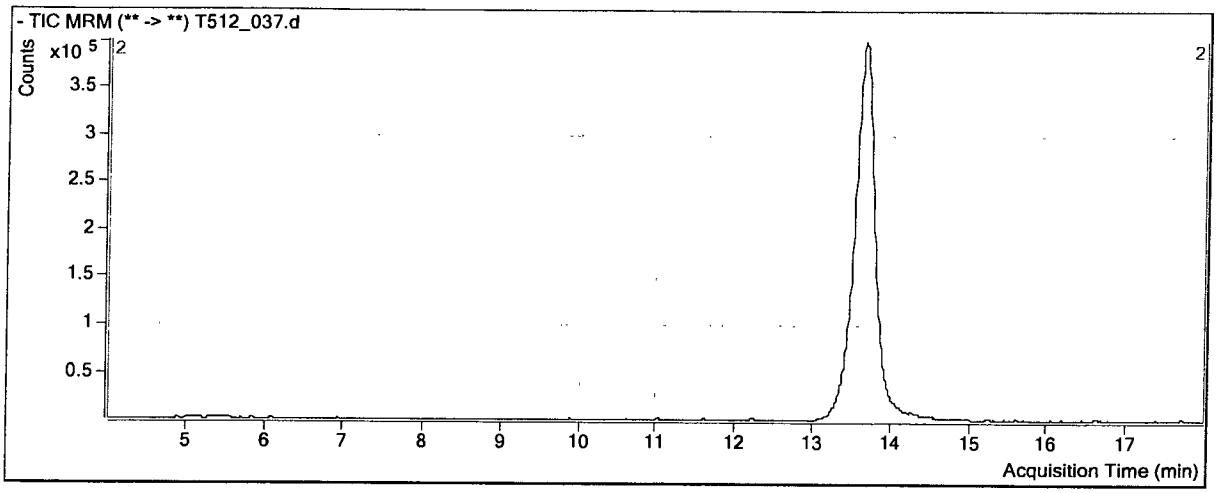
Sample ID : PER_CCV 0.002 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.64	4679515	PER_IS_89
13.647	2190808	Perchlorate_83
13.633	678751	Perchlorate_85

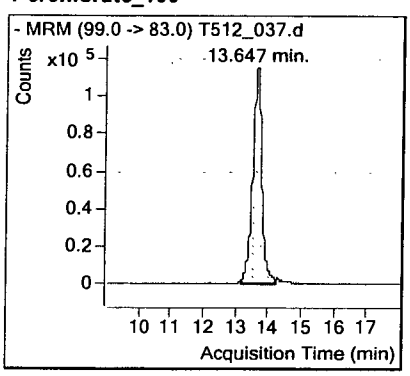
Quantitative Analysis Sample Report

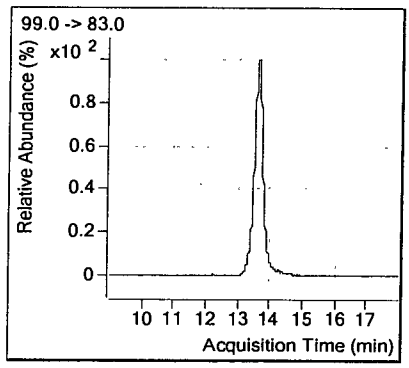
Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_037.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:54
ClientID	NA	**Inj Vol**	20

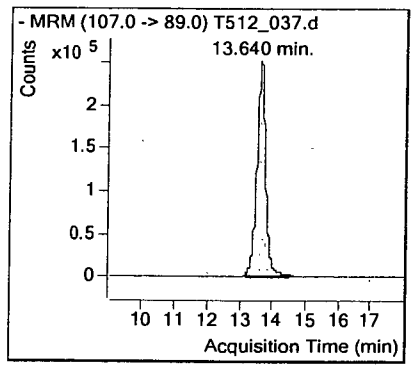


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.647	2190808	4679515
Perchlorate_102	PER_IS_108	13.633	678751	4679515

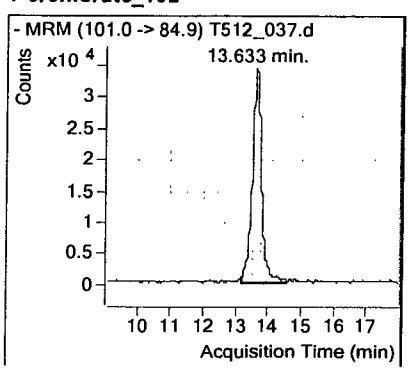
Perchlorate_100

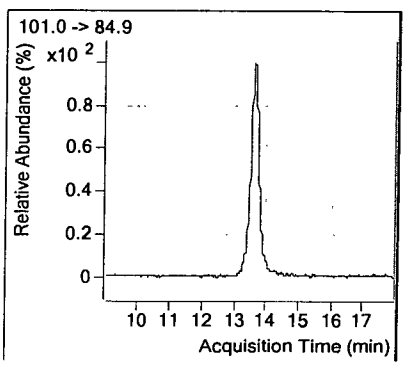


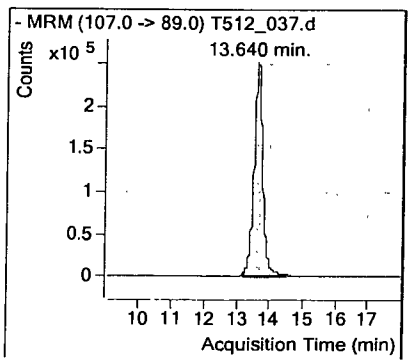




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T512_060.d

	Date (s) of Analysis From:03/12/15 To:05/13/15 Time (s) of Analysis From:17:52 To:1:25				Date of Analysis: 05/13/15 Time of Analysis: 2:03 Standard Id: PER_CCV (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	13.79	13.69	13.89	1.270255	14.24	1.471587	N	15.8
Perchlorate_85	13.70	13.60	13.80	0.391605	14.24	0.470256	N	20.1

FILE ID : TQCK1260.RFB

Data File ID: T512_060.d

Date Injected : 05/13/15

Time Injected : 2:03

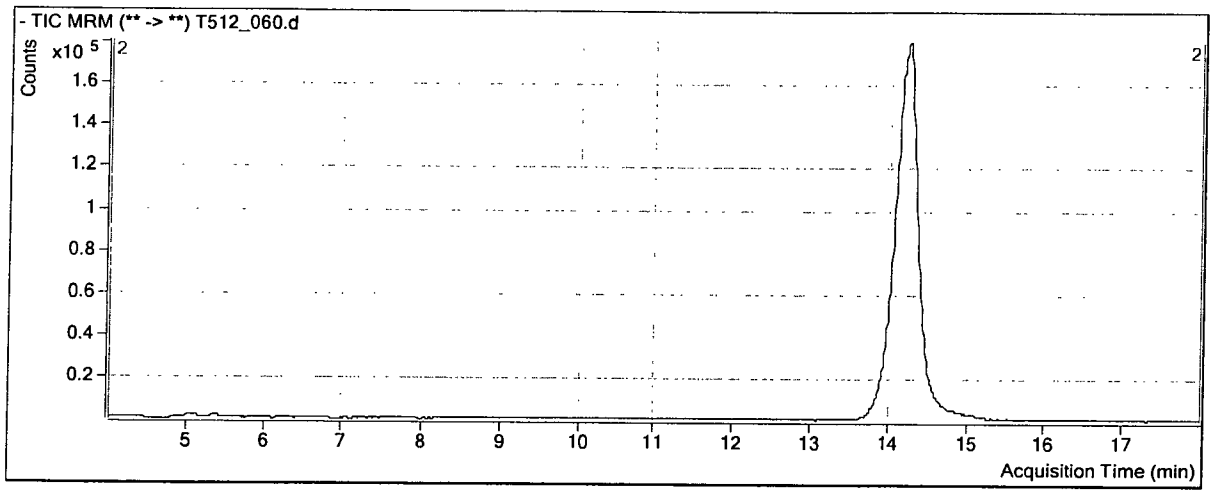
Sample ID : PER_CCV 0.0004 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
14.241	3243820	PER_IS_89
14.238	381885	Perchlorate_83
14.245	122034	Perchlorate_85

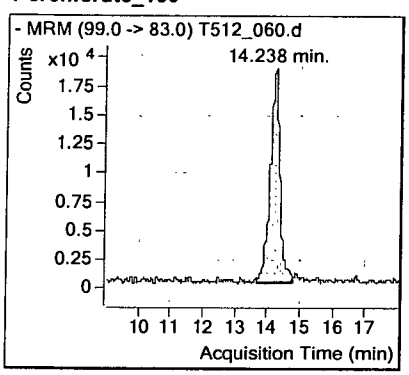
Quantitative Analysis Sample Report

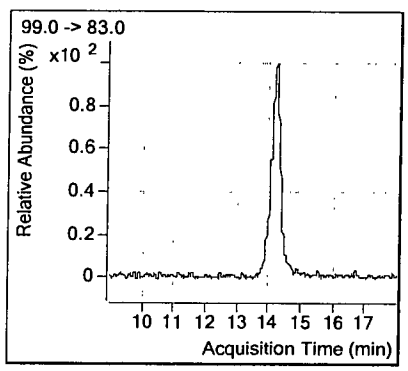
Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_060.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/13/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	2:03
ClientID	NA	**Inj Vol**	20

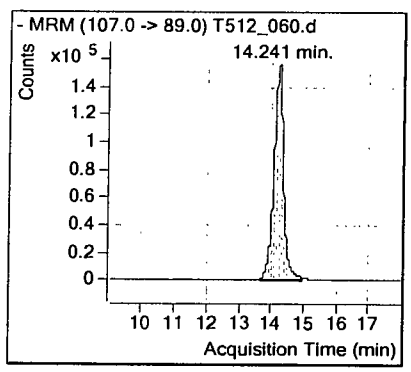


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.238	381885	3243820
Perchlorate_102	PER_IS_108	14.245	122034	3243820

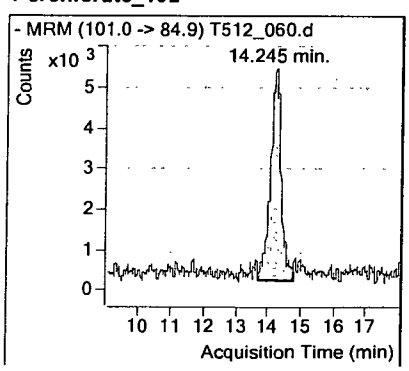
Perchlorate_100

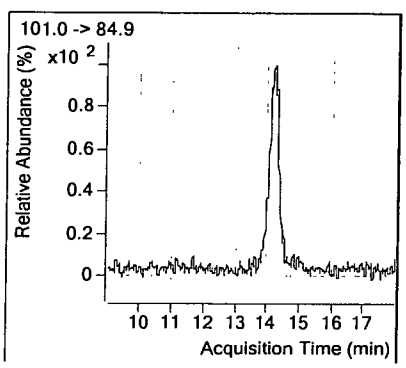


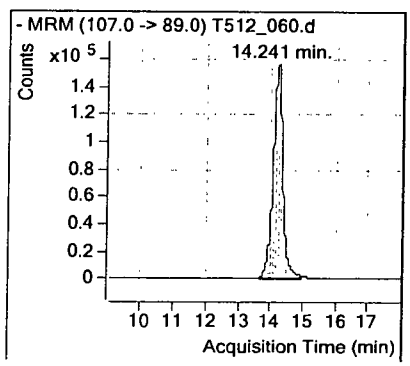




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T512_061.d

	Date (s) of Analysis From:03/12/15 To:05/13/15 Time (s) of Analysis From:17:52 To:1:25				Date of Analysis: 05/13/15 Time of Analysis: 2:21 Standard Id: PER CCV (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	13.79	13.69	13.89	1.270255	14.26	1.186002	N	6.6
Perchlorate_85	13.70	13.60	13.80	0.391605	14.27	0.348499	N	11.0

FILE ID : TQCK1261.RFB

Data File ID: T512_061.d

Date Injected : 05/13/15

Time Injected : 2:21

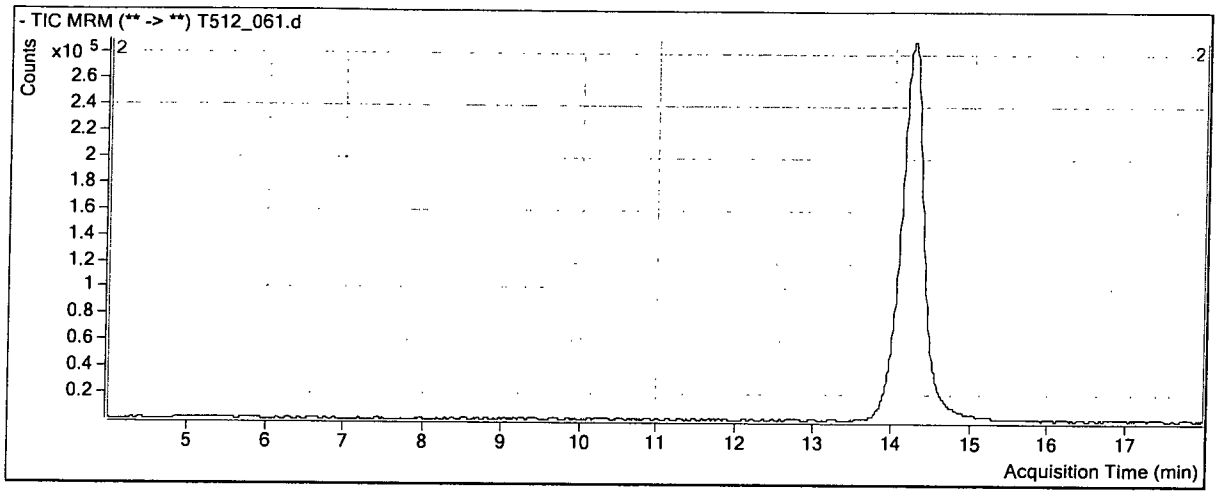
Sample ID : PER_CCV 0.002 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
14.282	3712101	PER_IS_89
14.258	1761024	Perchlorate_83
14.275	517465	Perchlorate_85

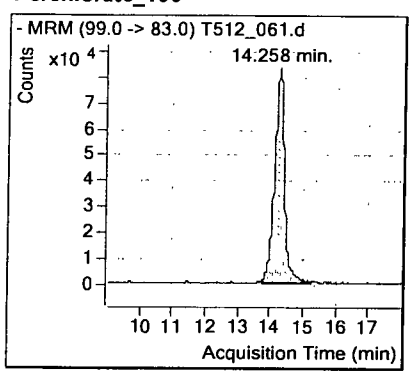
Quantitative Analysis Sample Report

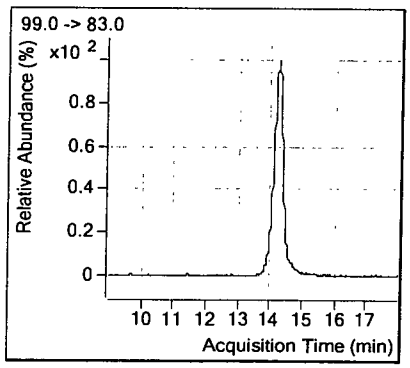
Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_061.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/13/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	2:21
ClientID	NA	**Inj Vol**	20

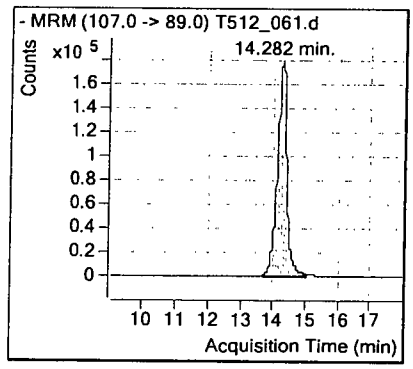


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.258	1761024	3712101
Perchlorate_102	PER_IS_108	14.275	517465	3712101

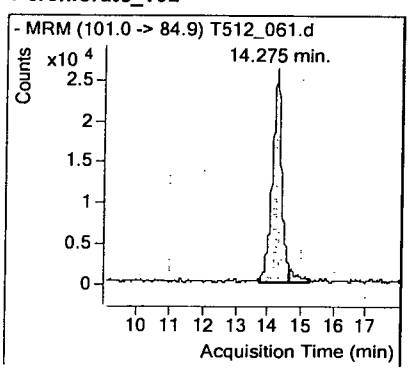
Perchlorate_100

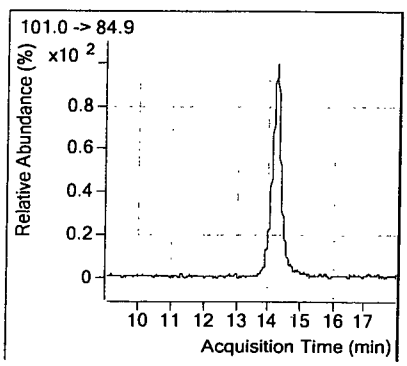


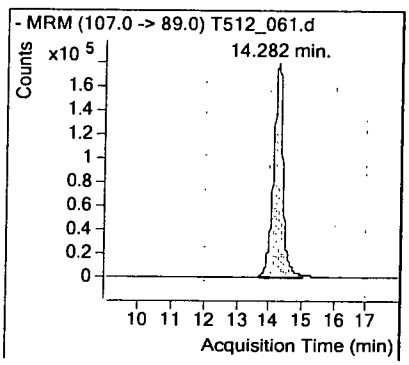




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T512_072.d

	Date (s) of Analysis From:03/12/15 To:05/13/15 Time (s) of Analysis From:17:52 To:5:09				Date of Analysis: 05/13/15 Time of Analysis: 5:46 Standard Id: PER_CCV (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	13.79	13.69	13.89	1.270255	14.47	1.412508	N	11.2
Perchlorate_85	13.70	13.60	13.80	0.391605	14.48	0.451224	N	15.2

FILE ID : TQCK1272.RFB

Data File ID: T512_072.d

Date Injected : 05/13/15

Time Injected : 5:46

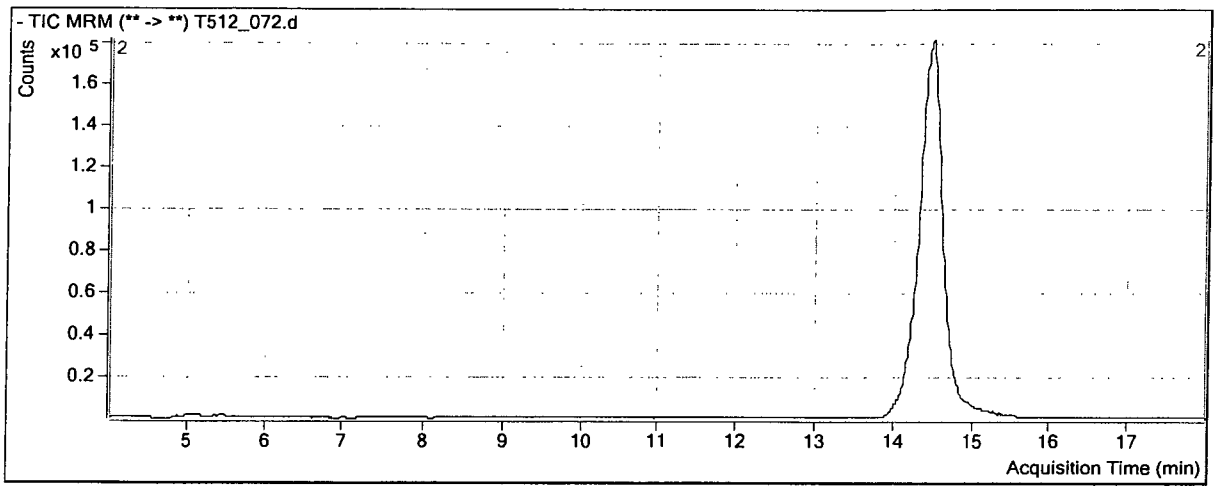
Sample ID : PER_CCV 0.0004 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
14.486	3399672	PER_IS_89
14.472	384165	Perchlorate_83
14.479	122721	Perchlorate_85

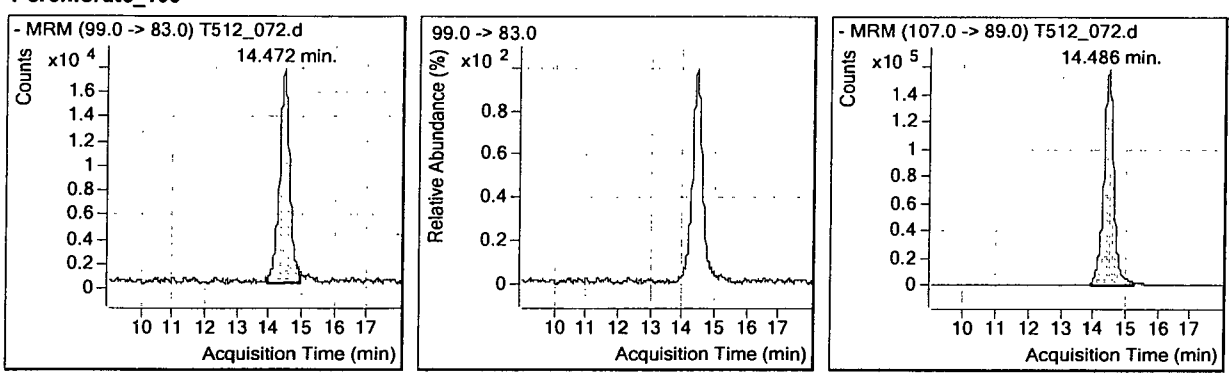
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_072.d	**Sample Name**	PER_CCV 0.0(
Sample Type	Sample	**Acq_Date**	05/13/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	5:46
ClientID	NA	**Inj Vol**	20

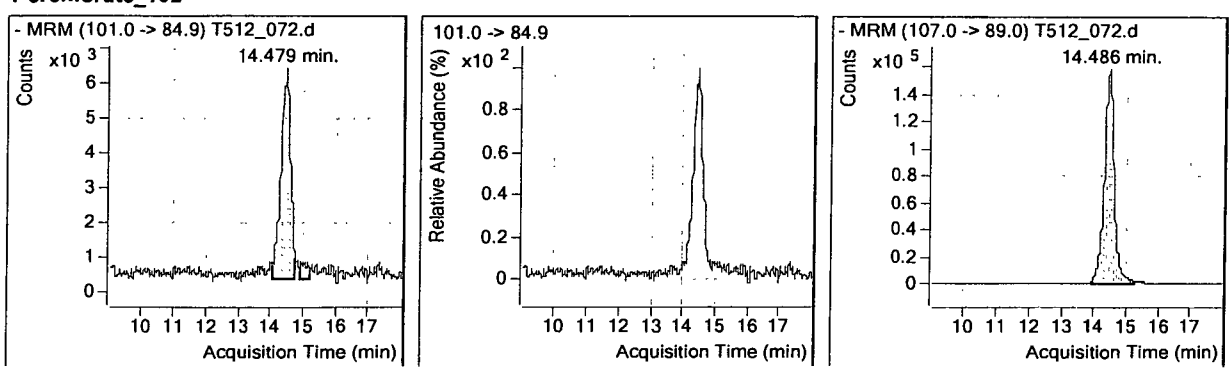


Compound	ISTD	RT	Resp	ISTD RESP
Perchlorate_100	PER_IS_108	14.472	384165	3399672
Perchlorate_102	PER_IS_108	14.479	122721	3399672

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T512_073.d

	Date (s) of Analysis From:03/12/15 To:05/13/15 Time (s) of Analysis From:17:52 To:5:09				Date of Analysis: 05/13/15 Time of Analysis: 6:05 Standard Id: PER_CCV (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	13.79	13.69	13.89	1.270255	14.49	1.206369	N	5.0
Perchlorate_85	13.70	13.60	13.80	0.391605	14.50	0.352285	N	10.0

FILE ID : TQCK1273.RFB

Data File ID: T512_073.d

Date Injected : 05/13/15

Time Injected : 6:05

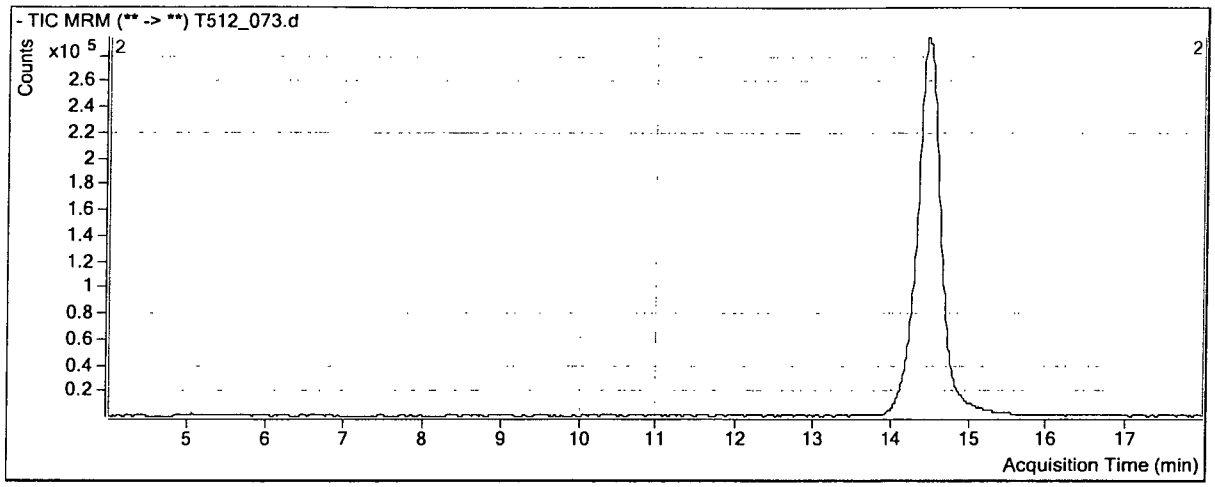
Sample ID : PER_CCV 0.002 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
14.475	3902565	PER_IS_89
14.492	1883174	Perchlorate_83
14.499	549926	Perchlorate_85

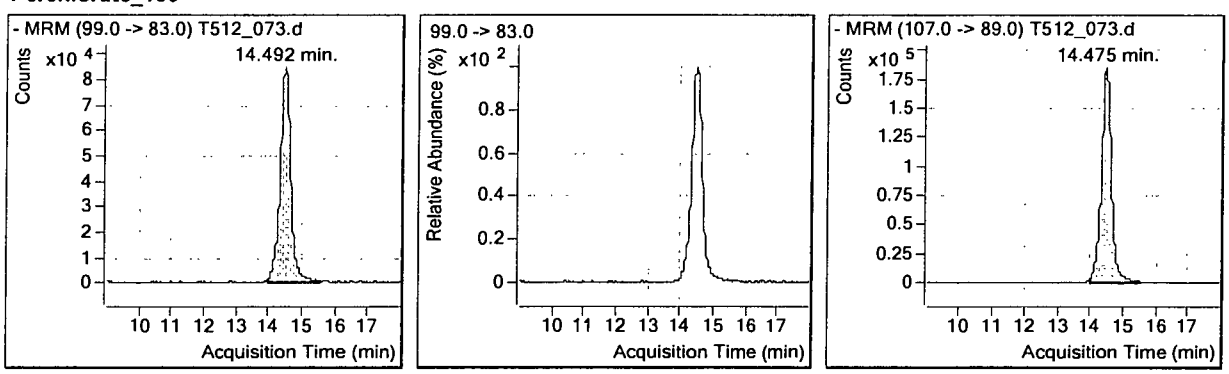
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_073.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/13/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	6:05
ClientID	NA	**Inj Vol**	20

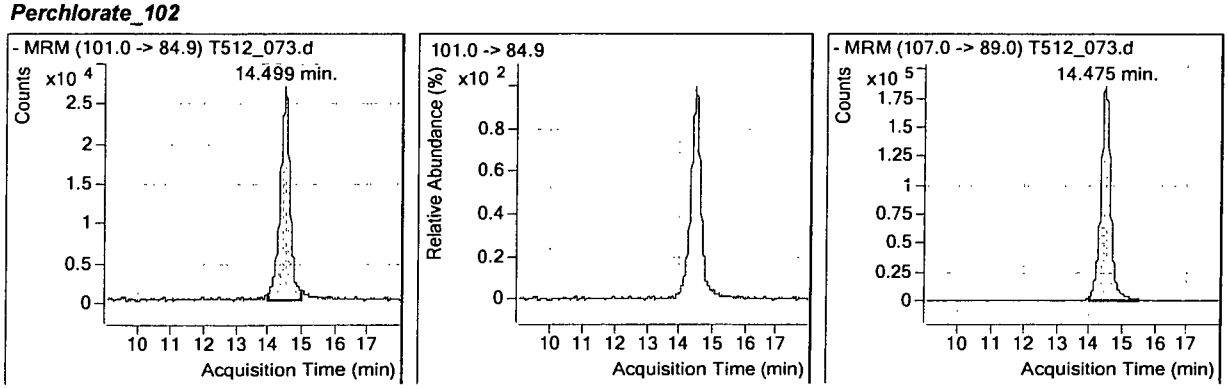


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.492	1883174	3902565
Perchlorate_102	PER_IS_108	14.499	549926	3902565

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T512_096.d

	Date (s) of Analysis From:03/12/15 To:05/13/15 Time (s) of Analysis From:17:52 To:12:36				Date of Analysis: 05/13/15 Time of Analysis: 13:13 Standard Id: PER_CCV (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	13.79	13.69	13.89	1.270255	13.25	1.473556	N	16.0
Perchlorate_85	13.70	13.60	13.80	0.391605	13.31	0.486211	N	24.2

FILE ID : TQCK1296.RFB

Data File ID: T512_096.d

Date Injected : 05/13/15

Time Injected : 13:13

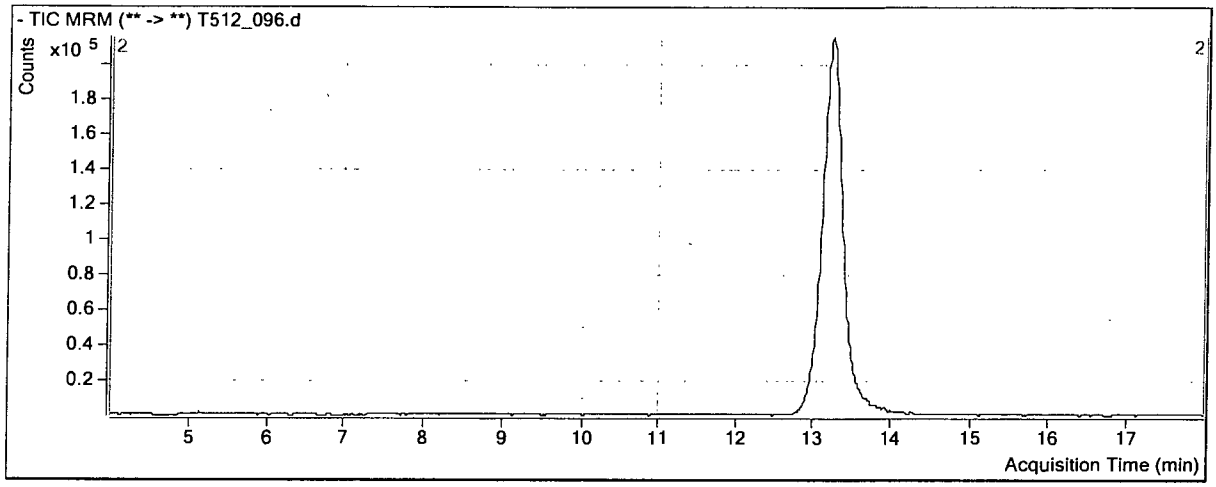
Sample ID : PER_CCV 0.0004 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.232	3494473	PER_IS_89
13.249	411944	Perchlorate_83
13.307	135924	Perchlorate_85

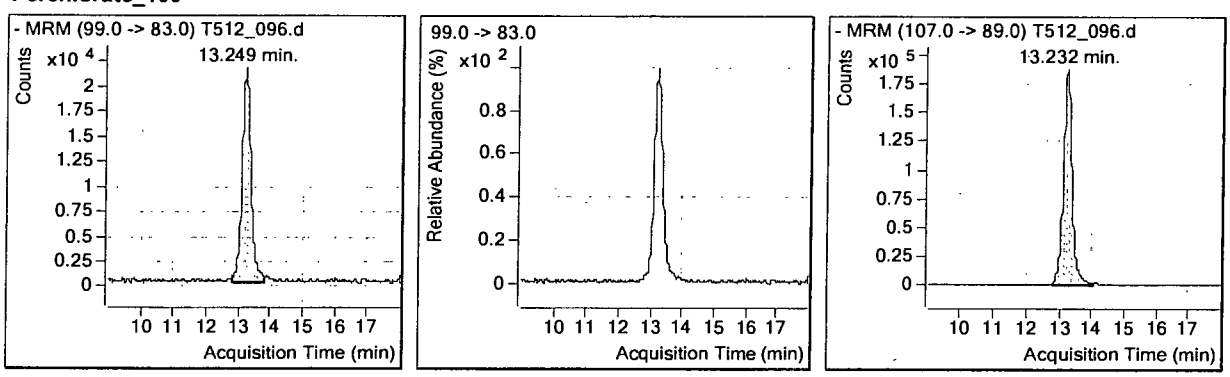
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A3_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_096.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/13/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	13:13
ClientID	NA	**Inj Vol**	20

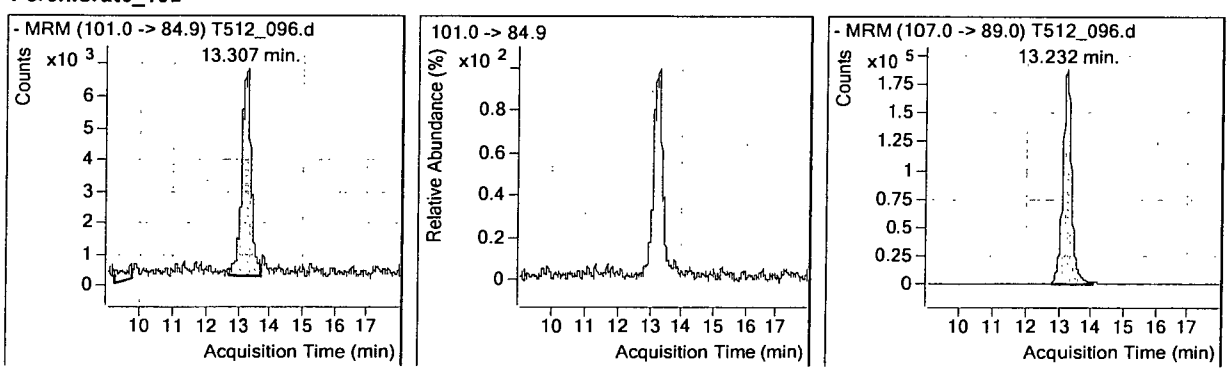


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.249	411944	3494473
Perchlorate_102	PER_IS_108	13.307	135924	3494473

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T512_097.d

	Date (s) of Analysis From:03/12/15 To:05/13/15 Time (s) of Analysis From:17:52 To:12:36				Date of Analysis: 05/13/15 Time of Analysis: 13:32 Standard Id: PER CCV (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	13.79	13.69	13.89	1.270255	13.56	1.200992	N	5.5
Perchlorate_85	13.70	13.60	13.80	0.391605	13.58	0.380445	N	2.8

FILE ID : TQCK1297.RFB

Data File ID: T512_097.d

Date Injected : 05/13/15

Time Injected : 13:32

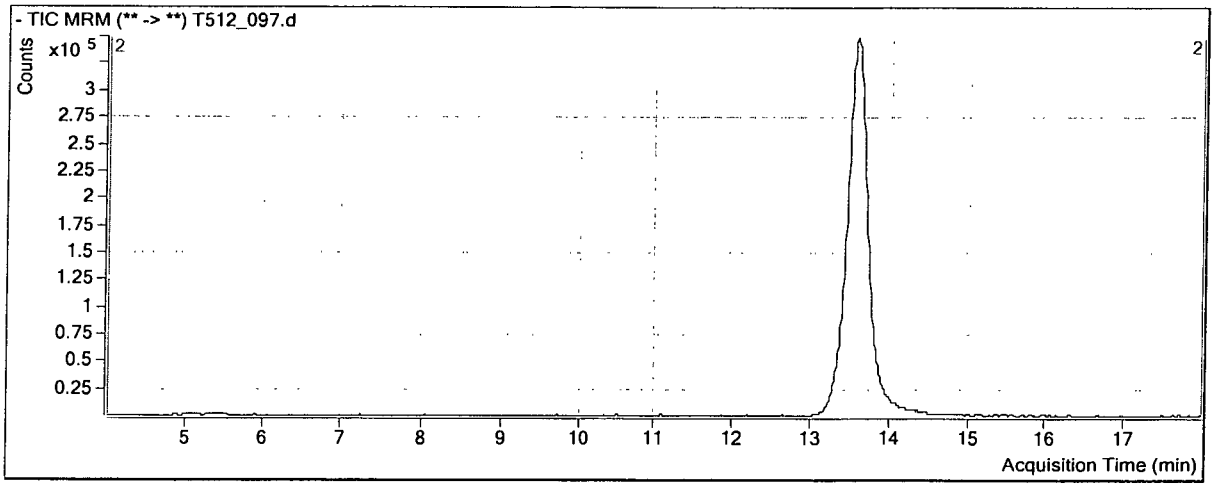
Sample ID : PER_CCV 0.002 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.569	4018197	PER_IS_89
13.565	1930329	Perchlorate_83
13.582	611481	Perchlorate_85

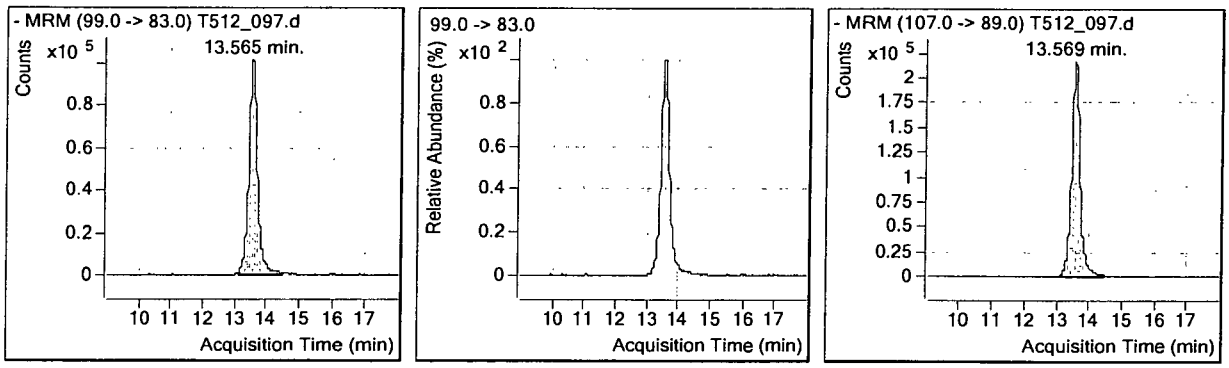
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A3_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_097.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/13/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	13:32
ClientID	NA	**Inj Vol**	20

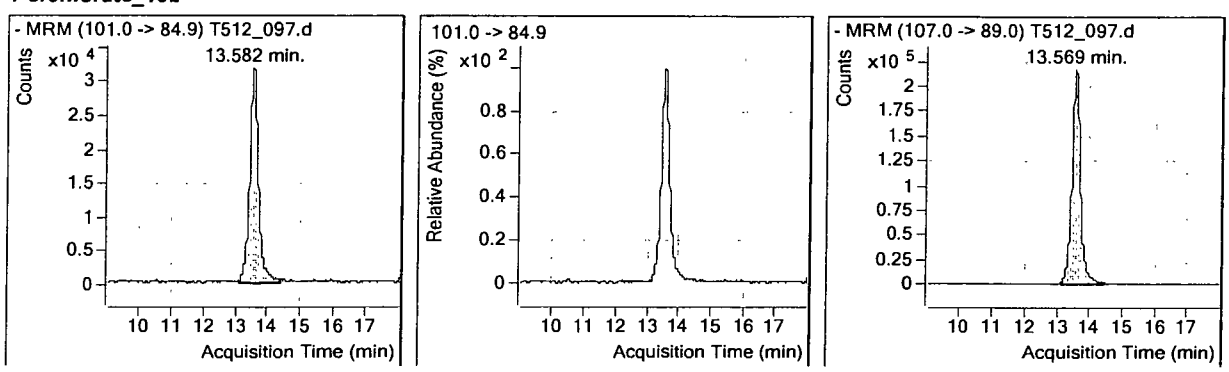


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.565	1930329	4018197
Perchlorate_102	PER_IS_108	13.582	611481	4018197

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T512_107.d

	Date (s) of Analysis From:03/12/15 To:05/13/15 Time (s) of Analysis From:17:52 To:15:57				Date of Analysis: 05/13/15 Time of Analysis: 17:07 Standard Id: PER_CCV (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	13.79	13.69	13.89	1.270255	13.33	1.476045	N	16.2
Perchlorate_85	13.70	13.60	13.80	0.391605	13.31	0.459822	N	17.4

FILE ID : TQCK0712.RFB

Data File ID: T512_107.d

Date Injected : 05/13/15

Time Injected : 17:07

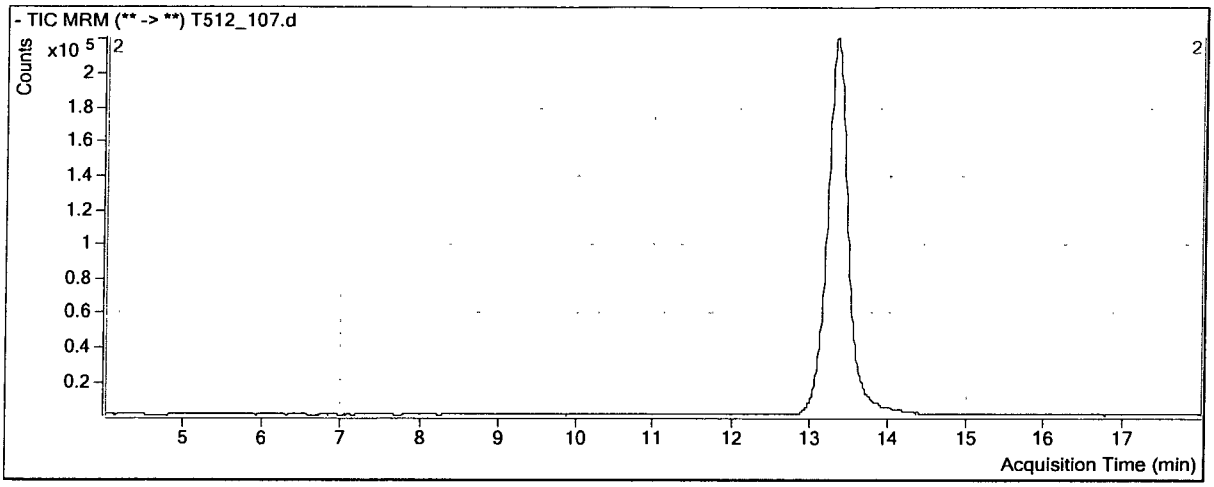
Sample ID : PER_CCV 0.0004 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.324	3548765	PER_IS_89
13.331	419051	Perchlorate_83
13.307	130544	Perchlorate_85

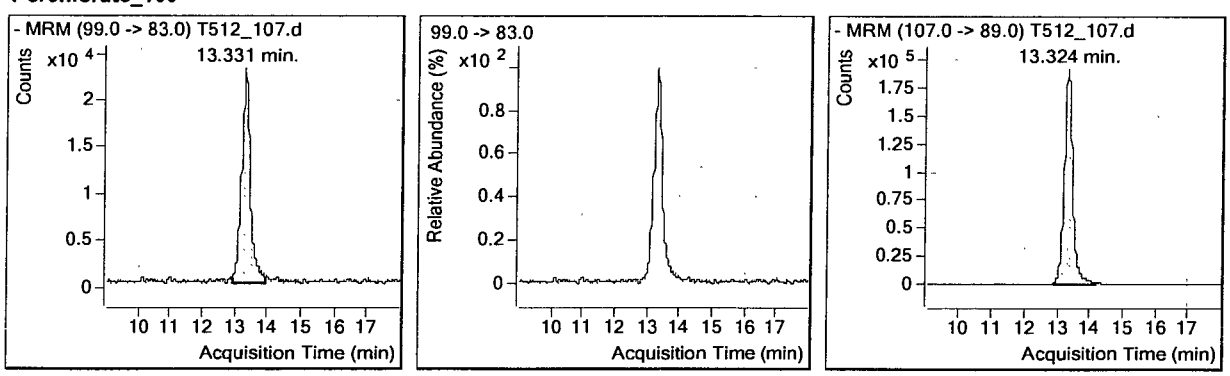
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A4_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_107.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/13/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	17:07
ClientID	NA	**Inj Vol**	20

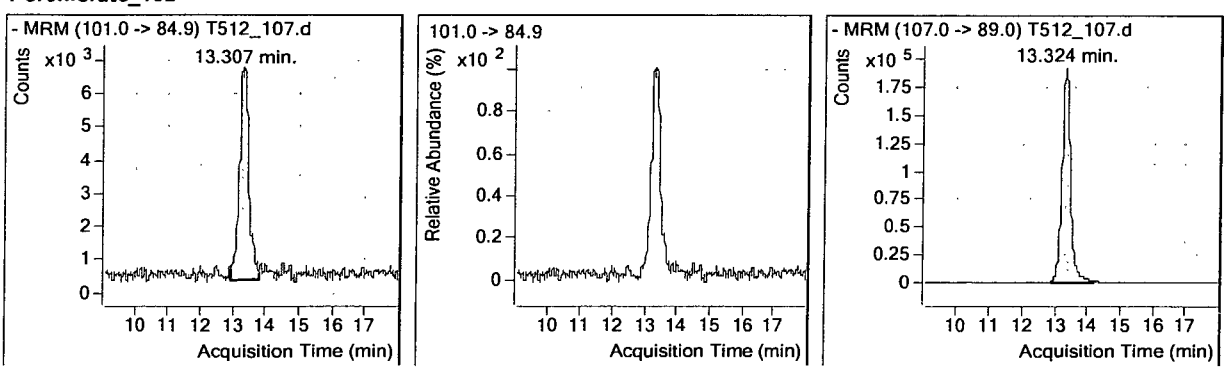


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.331	419051	3548765
Perchlorate_102	PER_IS_108	13.307	130544	3548765

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T512_108.d

	Date (s) of Analysis From:03/12/15 To:05/13/15 Time (s) of Analysis From:17:52 To:15:57				Date of Analysis: 05/13/15 Time of Analysis: 17:26 Standard Id: PER CCV (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	13.79	13.69	13.89	1.270255	13.24	1.192296	N	6.1
Perchlorate_85	13.70	13.60	13.80	0.391605	13.22	0.365501	N	6.7

FILE ID : TQCK0812.RFB

Data File ID: T512_108.d

Date Injected : 05/13/15

Time Injected : 17:26

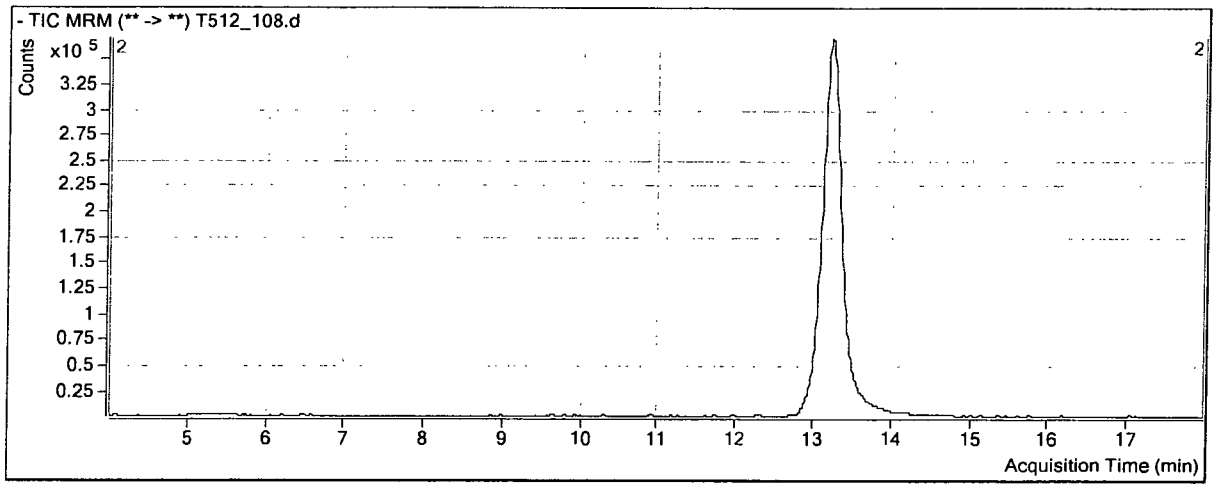
Sample ID : PER_CCV 0.002 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.212	4131546	PER_IS_89
13.239	1970410	Perchlorate_83
13.215	604033	Perchlorate_85

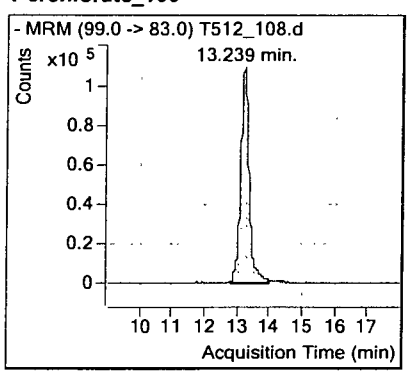
Quantitative Analysis Sample Report

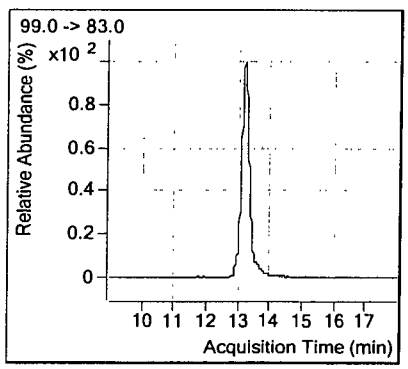
Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A4_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_108.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/13/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	17:26
ClientID	NA	**Inj Vol**	20

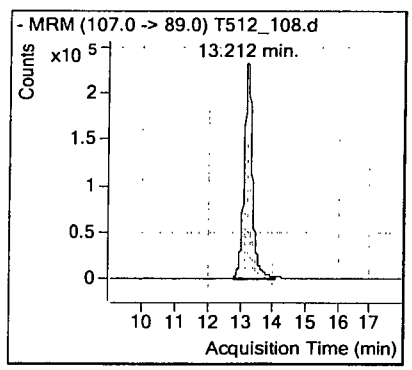


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.239	1970410	4131546
Perchlorate_102	PER_IS_108	13.215	604033	4131546

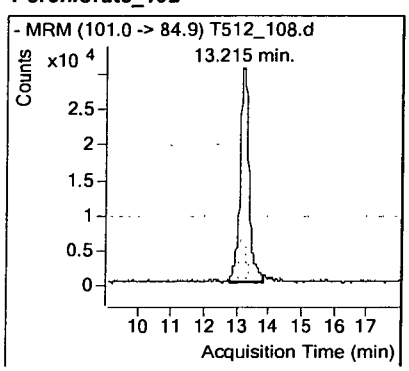
Perchlorate_100

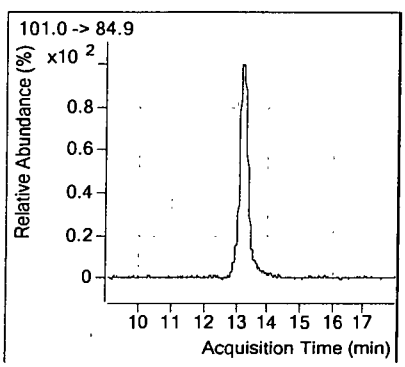


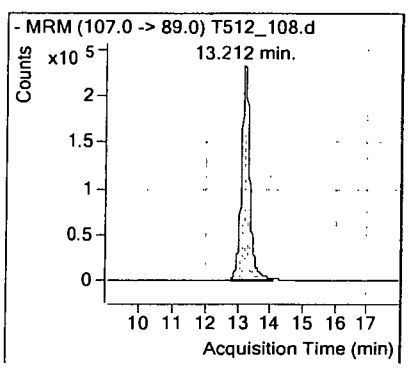




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T514_002.d

Date (s) of Analysis From:03/12/15 To:05/14/15 Time (s) of Analysis From:17:52 To:9:49	Date of Analysis: 05/14/15 Time of Analysis: 10:07 Standard Id: PER_CCV (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	13.79	13.69	13.89	1.270255	13.54	1.487810	N	17.1
Perchlorate_85	13.70	13.60	13.80	0.391605	13.54	0.466066	N	19.0

FILE ID : TQCK1402.RFB

Data File ID: T514_002.d

Date Injected : 05/14/15

Time Injected : 10:07

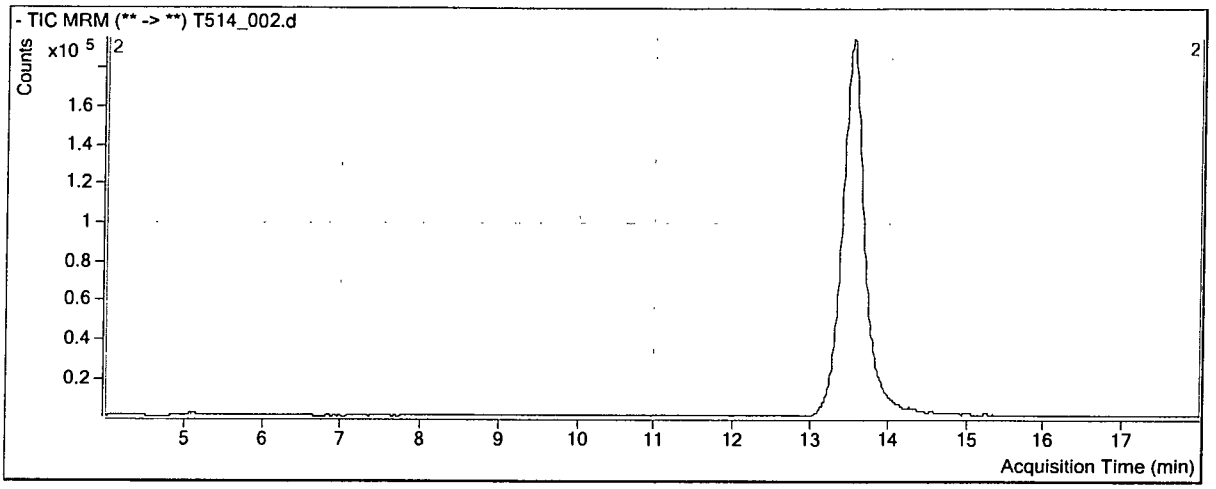
Sample ID : PER_CCV 0.0004 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.528	3384496	PER_IS_89
13.535	402839	Perchlorate_83
13.541	126192	Perchlorate_85

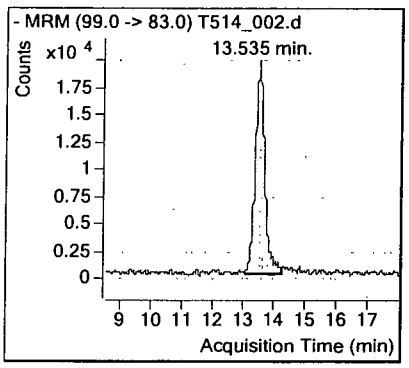
Quantitative Analysis Sample Report

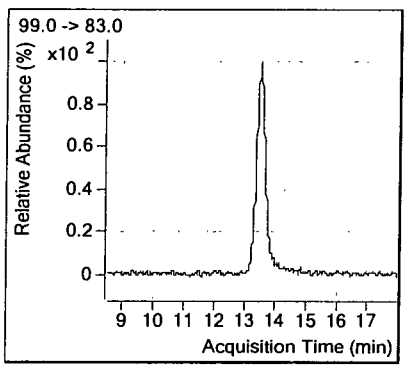
Batch Data Path	D:\MassHunter\Data\150514\QuantResults\150514_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T514_002.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/14/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	10:07
ClientID	NA	**Inj Vol**	20

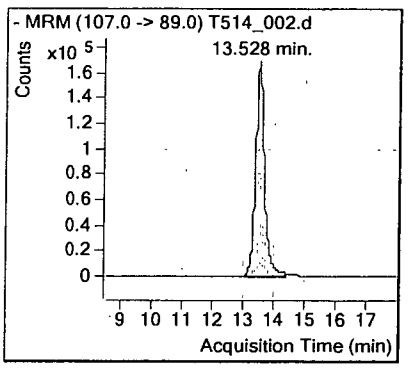


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.535	402839	3384496
Perchlorate_102	PER_IS_108	13.541	126192	3384496

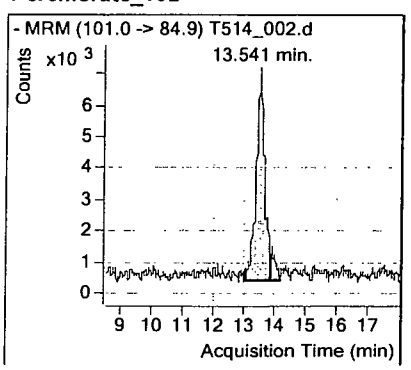
Perchlorate_100

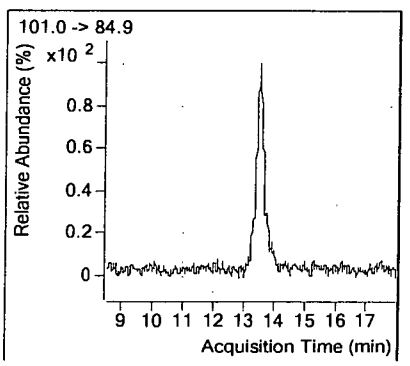


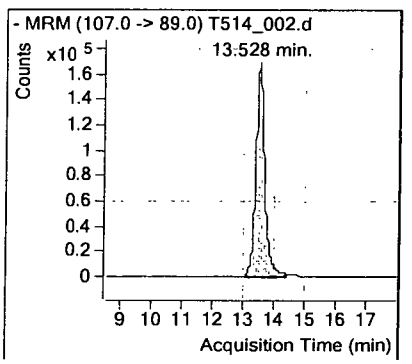




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T514_003.d

	Date (s) of Analysis From:03/12/15 To:05/14/15 Time (s) of Analysis From:17:52 To:9:49				Date of Analysis: 05/14/15 Time of Analysis: 10:26 Standard Id: PER_CCV (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	13.79	13.69	13.89	1.270255	13.56	1.198977	N	5.6
Perchlorate_85	13.70	13.60	13.80	0.391605	13.53	0.369639	N	5.6

FILE ID : TQCK1403.RFB

Data File ID: T514_003.d

Date Injected : 05/14/15

Time Injected : 10:26

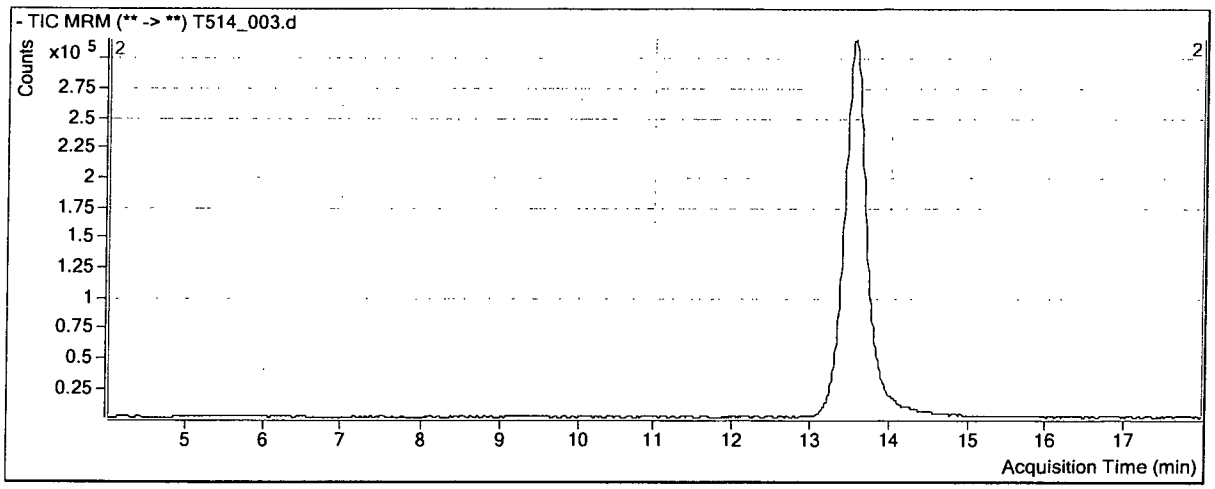
Sample ID : PER_CCV 0.002 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.548	3957948	PER_IS_89
13.555	1898195	Perchlorate_83
13.531	585205	Perchlorate_85

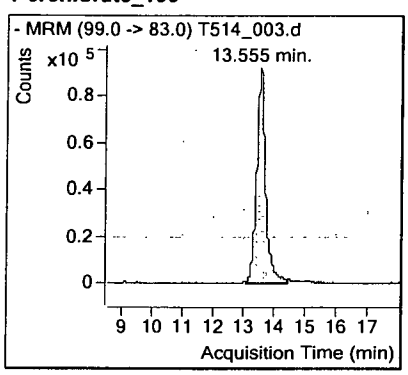
Quantitative Analysis Sample Report

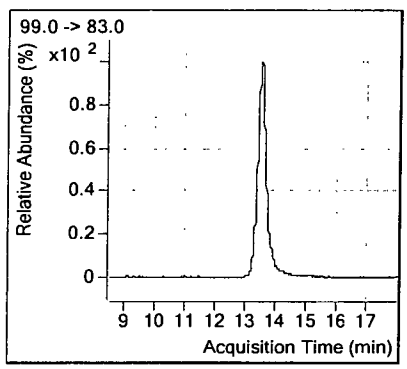
Batch Data Path	D:\MassHunter\Data\150514\QuantResults\150514_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T514_003.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/14/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	10:26
ClientID	NA	**Inj Vol**	20

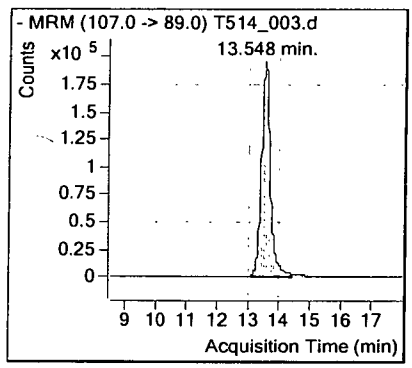


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.555	1898195	3957948
Perchlorate_102	PER_IS_108	13.531	585205	3957948

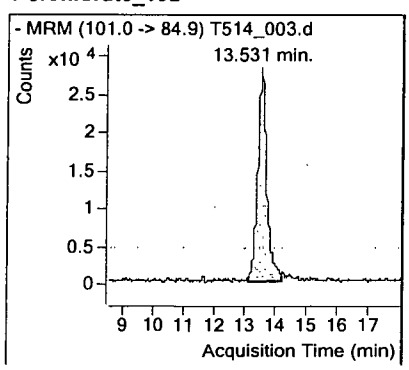
Perchlorate_100

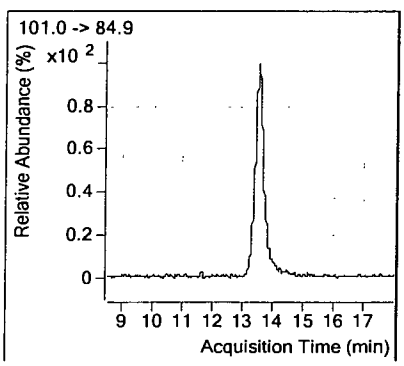


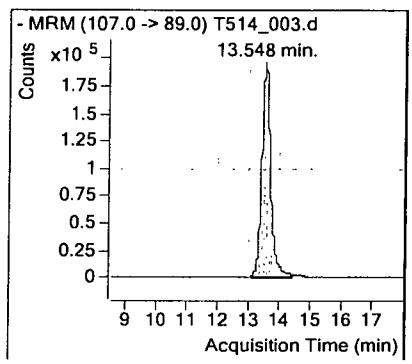




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T514_016.d

	Date (s) of Analysis From:03/12/15 To:05/14/15 Time (s) of Analysis From:17:52 To:14:09				Date of Analysis: 05/14/15 Time of Analysis: 14:46 Standard Id: PER_CCV (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	13.79	13.69	13.89	1.270255	13.21	1.419855	N	11.8
Perchlorate_85	13.70	13.60	13.80	0.391605	13.25	0.442528	N	13.0

FILE ID : TQCK1416.RFB

Data File ID: T514_016.d

Date Injected : 05/14/15

Time Injected : 14:46

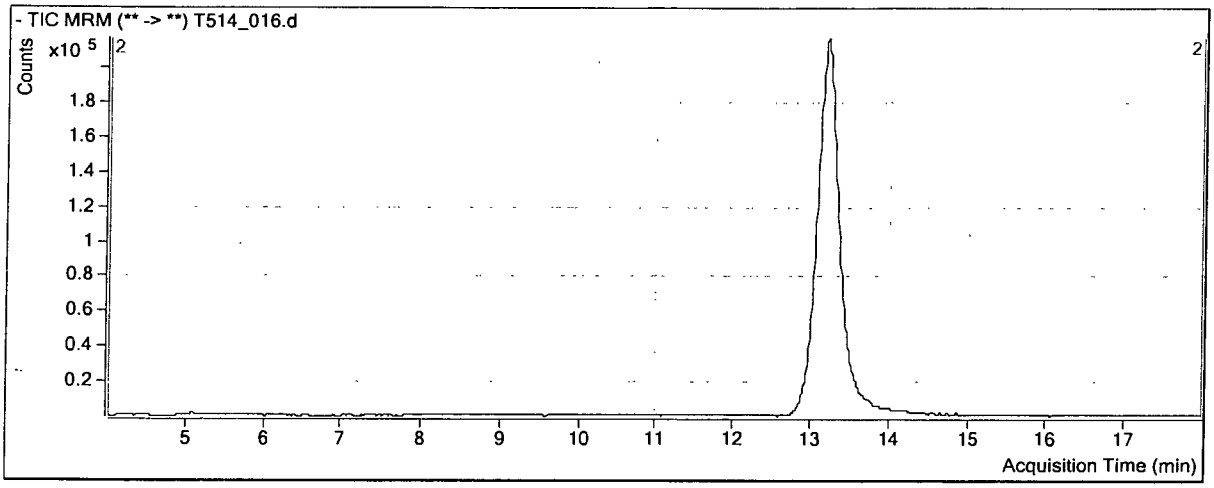
Sample ID : PER_CCV 0.0004 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.202	3701407	PER_IS_89
13.209	420437	Perchlorate_83
13.246	131038	Perchlorate_85

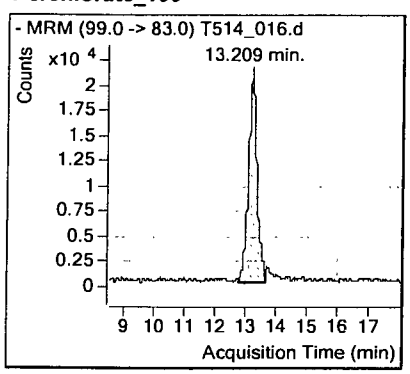
Quantitative Analysis Sample Report

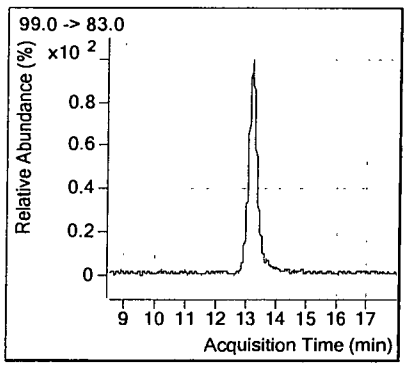
Batch Data Path	D:\MassHunter\Data\150514\QuantResults\150514_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T514_016.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/14/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	14:46
ClientID	NA	**Inj Vol**	20

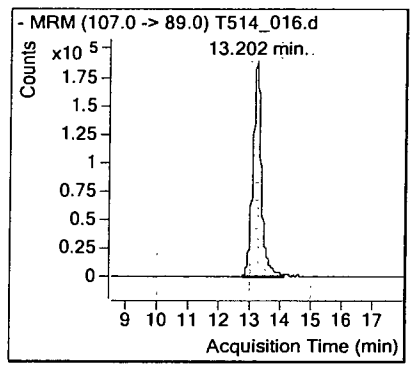


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.209	420437	3701407
Perchlorate_102	PER_IS_108	13.246	131038	3701407

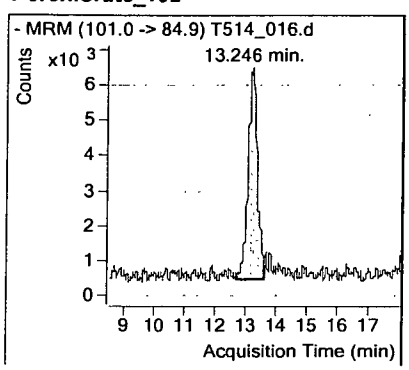
Perchlorate_100

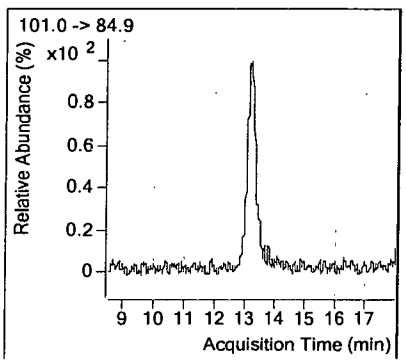


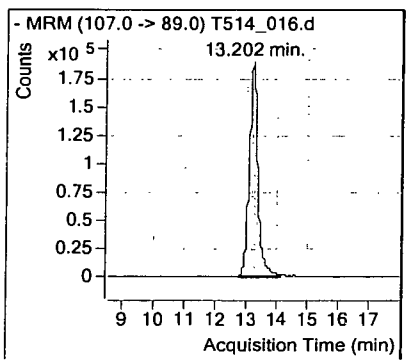




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T514_017.d

	Date (s) of Analysis From:03/12/15 To:05/14/15 Time (s) of Analysis From:17:52 To:14:09				Date of Analysis: 05/14/15 Time of Analysis: 15:05 Standard Id: PER_CCV (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	13.79	13.69	13.89	1.270255	13.13	1.191345	N	6.2
Perchlorate_85	13.70	13.60	13.80	0.391605	13.13	0.376977	N	3.7

FILE ID : TQCK1417.RFB

Data File ID: T514_017.d

Date Injected : 05/14/15

Time Injected : 15:05

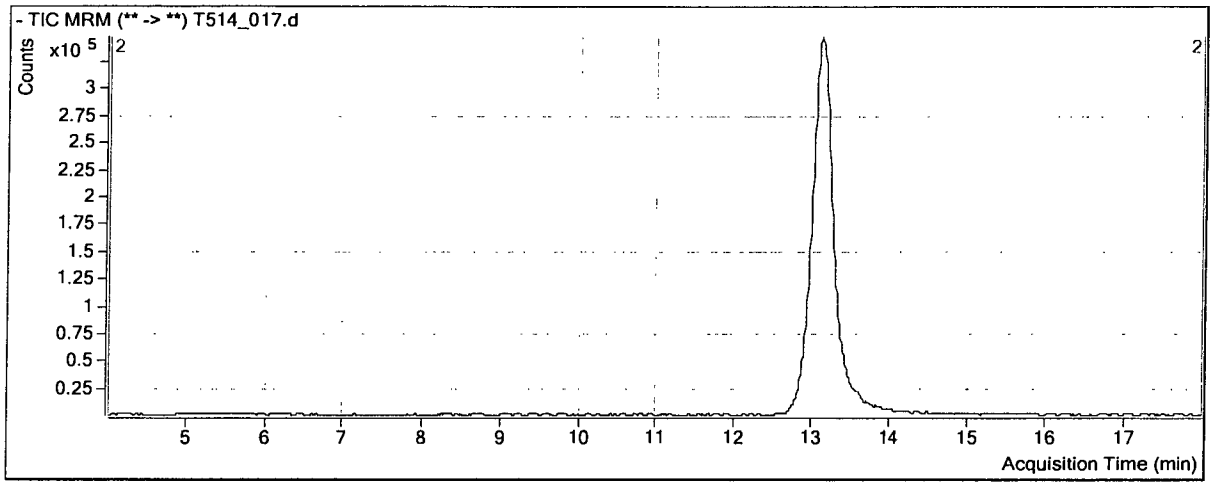
Sample ID : PER_CCV 0.002 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.12	4266748	PER_IS_89
13.127	2033268	Perchlorate_83
13.134	643386	Perchlorate_85

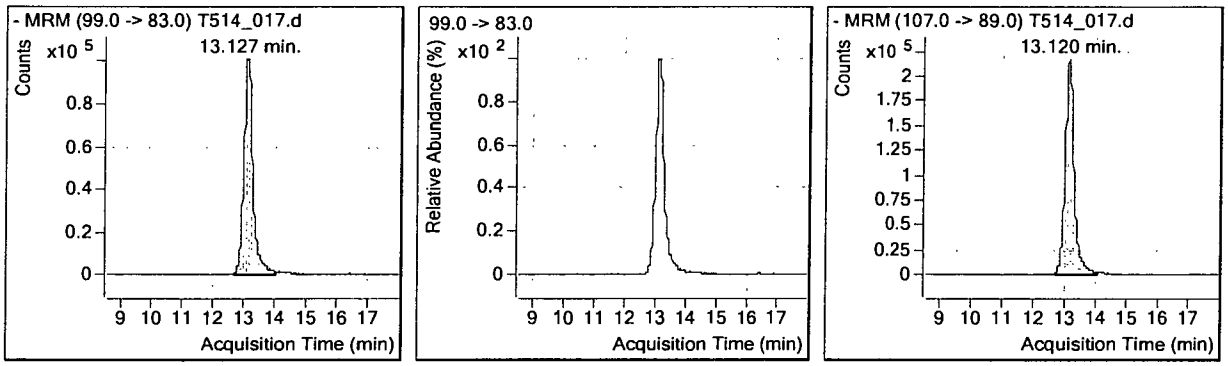
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150514\QuantResults\150514_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T514_017.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/14/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	15:05
ClientID	NA	**Inj Vol**	20

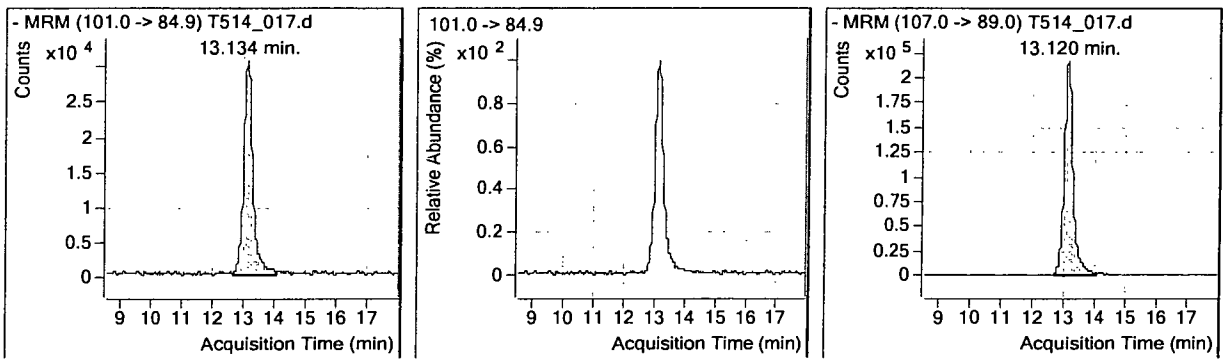


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.127	2033268	4266748
Perchlorate_102	PER_IS_108	13.134	643386	4266748

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T514_072.d

	Date (s) of Analysis From:03/12/15 To:05/15/15 Time (s) of Analysis From:17:52 To:14:33				Date of Analysis: 05/15/15 Time of Analysis: 15:10 Standard Id: PER_CCV (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	13.79	13.69	13.89	1.270255	13.54	1.393225	N	9.7
Perchlorate_85	13.70	13.60	13.80	0.391605	13.50	0.487406	N	24.5

FILE ID : TQCK1472.RFB

Data File ID: T514_072.d

Date Injected : 05/15/15

Time Injected : 15:10

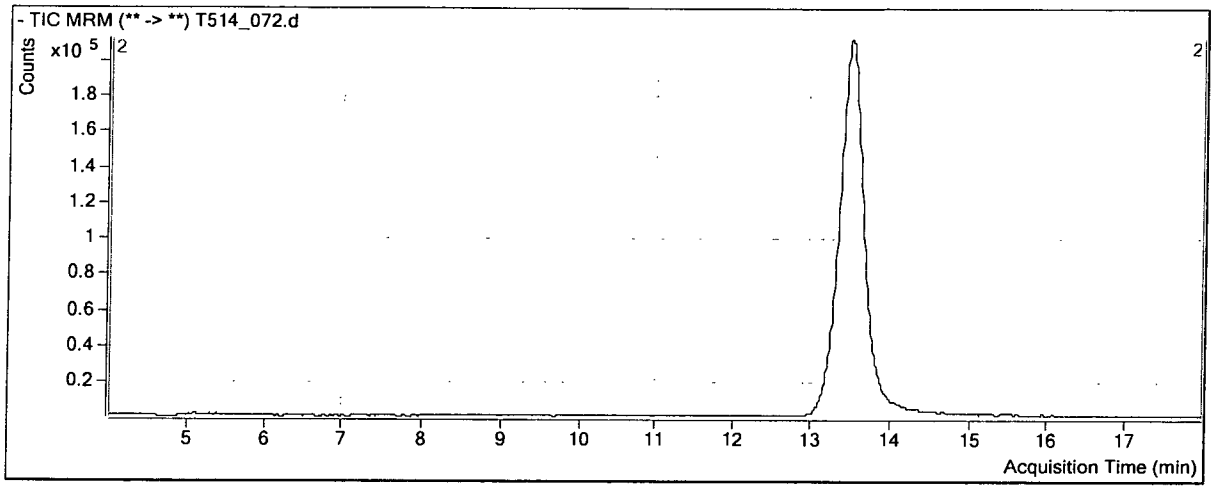
Sample ID : PER_CCV 0.0004 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.477	4038059	PER_IS_89
13.535	450074	Perchlorate_83
13.501	157454	Perchlorate_85

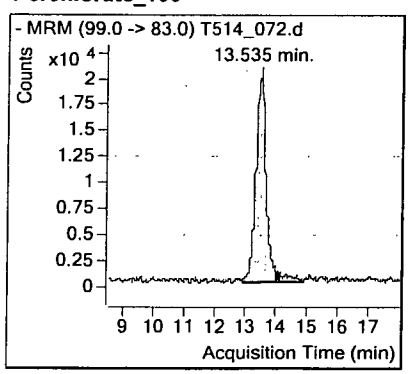
Quantitative Analysis Sample Report

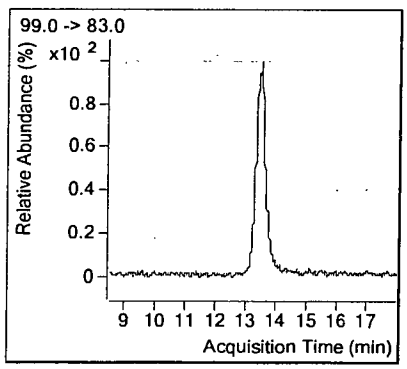
Batch Data Path	D:\MassHunter\Data\150514\QuantResults\150514_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T514_072.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/15/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	15:10
ClientID	NA	**Inj Vol**	20

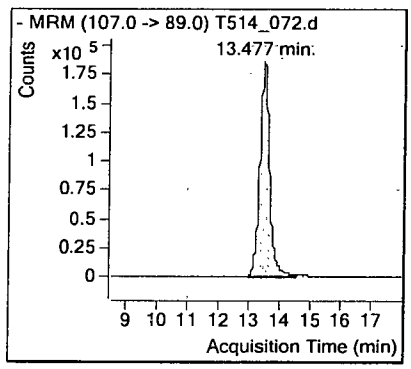


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.535	450074	4038059
Perchlorate_102	PER_IS_108	13.501	157454	4038059

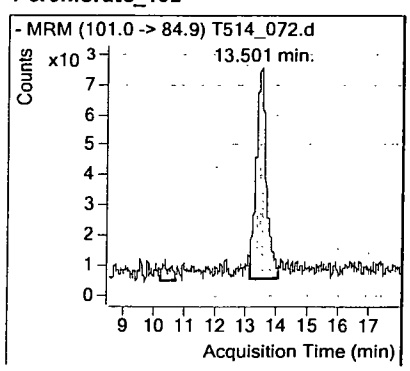
Perchlorate_100

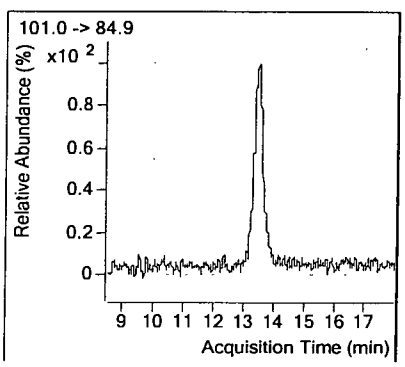


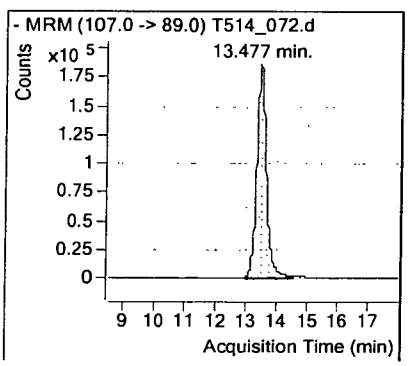




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T514_073.d

	Date (s) of Analysis From:03/12/15 To:05/15/15 Time (s) of Analysis From:17:52 To:14:33				Date of Analysis: 05/15/15 Time of Analysis: 15:29 Standard Id: PER_CCV (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	13.79	13.69	13.89	1.270255	13.41	1.190588	N	6.3
Perchlorate_85	13.70	13.60	13.80	0.391605	13.42	0.354021	N	9.6

FILE ID : TQCK1473.RFB

Data File ID: T514_073.d

Date Injected : 05/15/15

Time Injected : 15:29

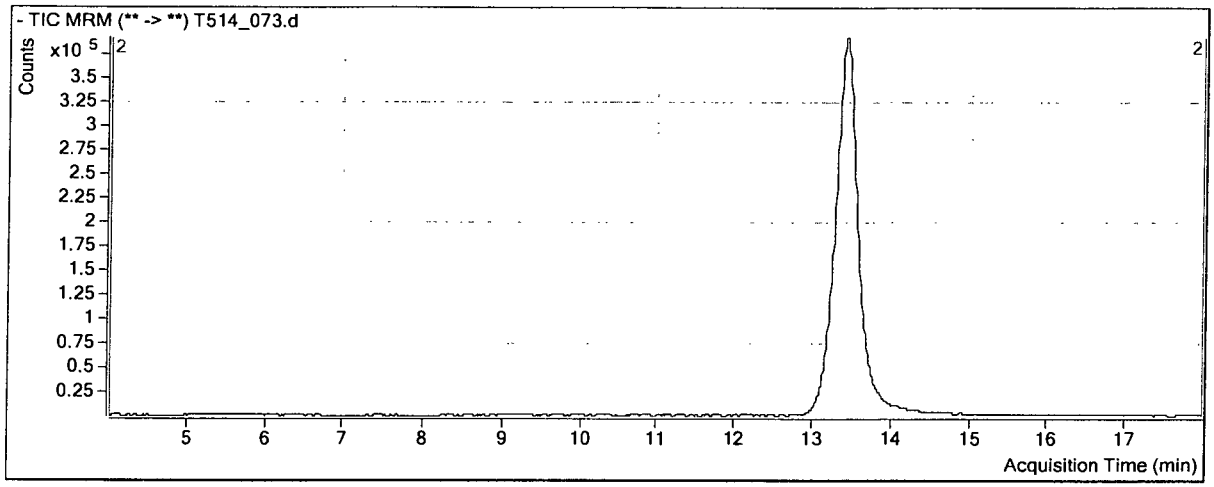
Sample ID : PER_CCV 0.002 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.406	4908539	PER_IS_89
13.412	2337620	Perchlorate_83
13.419	695091	Perchlorate_85

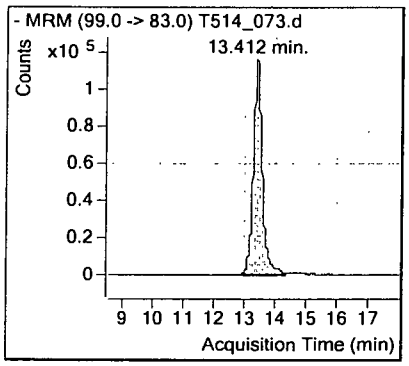
Quantitative Analysis Sample Report

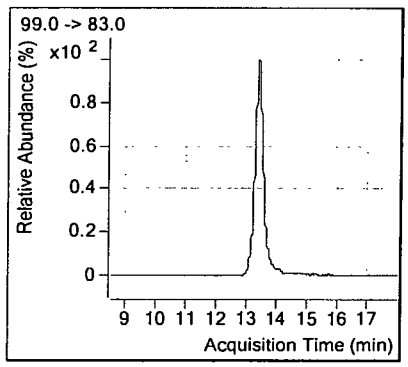
Batch Data Path	D:\MassHunter\Data\150514\QuantResults\150514_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T514_073.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/15/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	15:29
ClientID	NA	**Inj Vol**	20

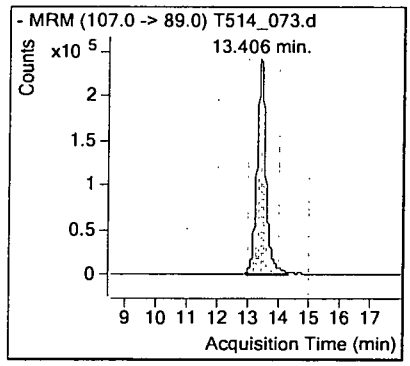


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.412	2337620	4908539
Perchlorate_102	PER_IS_108	13.419	695091	4908539

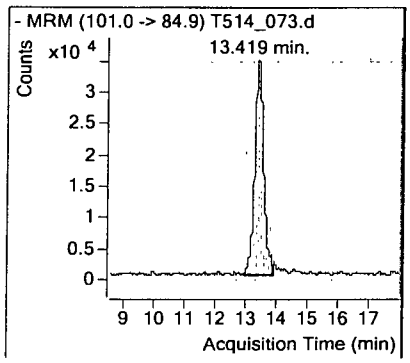
Perchlorate_100

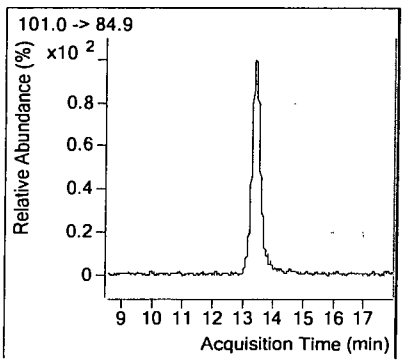


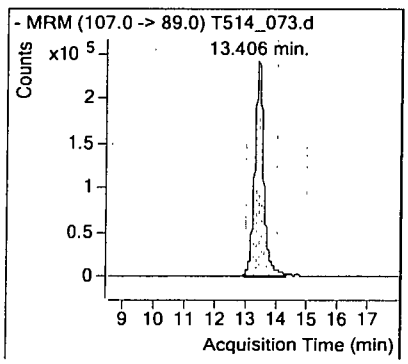




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T514_078.d

	Date (s) of Analysis From:03/12/15 To:05/15/15 Time (s) of Analysis From:17:52 To:16:37				Date of Analysis: 05/15/15 Time of Analysis: 17:15 Standard Id: PER_CCV (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	13.79	13.69	13.89	1.270255	13.37	1.392247	N	9.6
Perchlorate_85	13.70	13.60	13.80	0.391605	13.37	0.483774	N	23.5

FILE ID : TQCK1478.RFB

Data File ID: T514_078.d

Date Injected : 05/15/15

Time Injected : 17:15

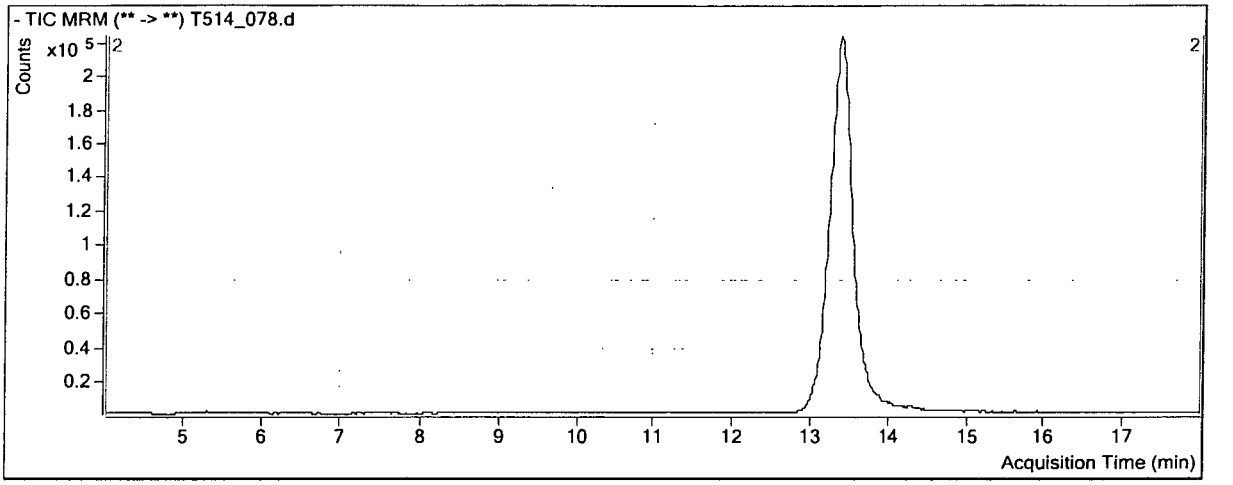
Sample ID : PER_CCV 0.0004 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.365	4118063	PER_IS_89
13.372	458669	Perchlorate_83
13.368	159377	Perchlorate_85

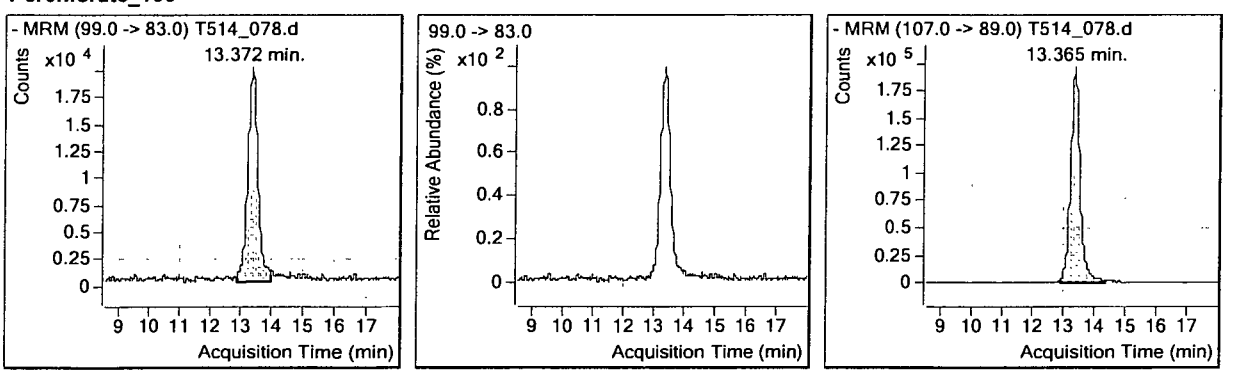
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150514\QuantResults\150514_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T514_078.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/15/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	17:15
ClientID	NA	**Inj Vol**	20

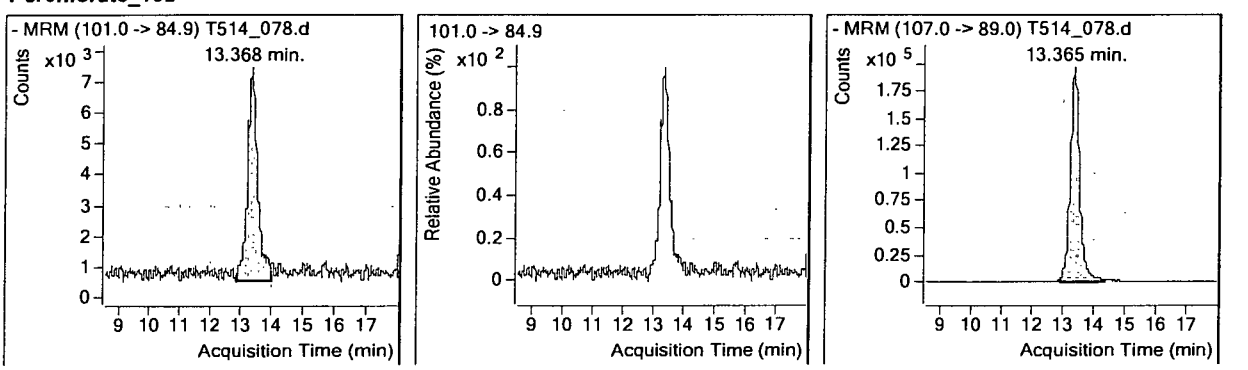


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.372	458669	4118063
Perchlorate_102	PER_IS_108	13.368	159377	4118063

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T514_079.d

	Date (s) of Analysis From:03/12/15 To:05/15/15 Time (s) of Analysis From:17:52 To:16:37				Date of Analysis: 05/15/15 Time of Analysis: 17:33 Standard Id: PER_CCV (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	13.79	13.69	13.89	1.270255	13.49	1.185817	N	6.6
Perchlorate_85	13.70	13.60	13.80	0.391605	13.48	0.367007	N	6.3

FILE ID : TQCK1479.RFB

Data File ID: T514_079.d

Date Injected : 05/15/15

Time Injected : 17:33

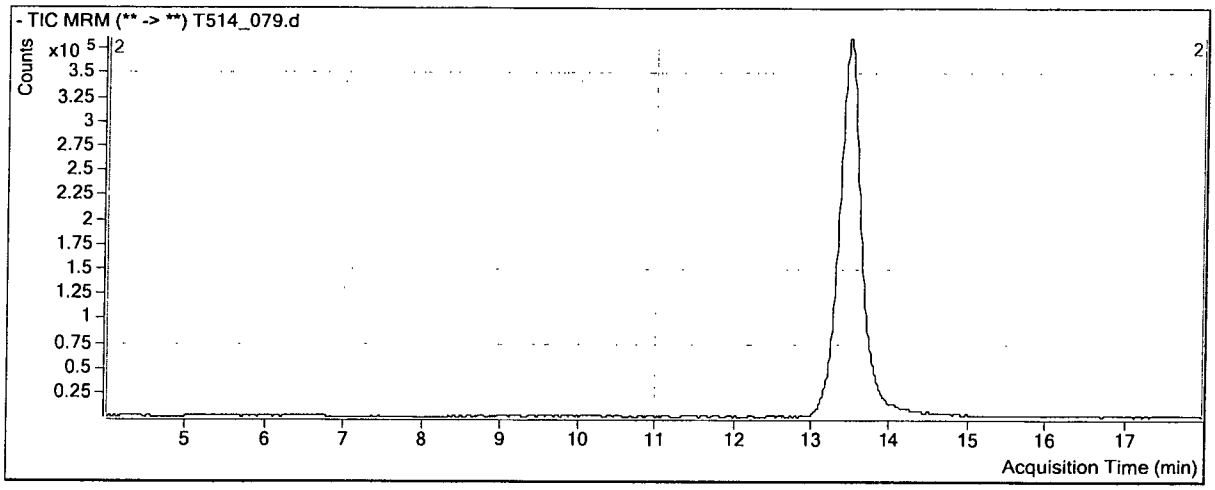
Sample ID : PER_CCV 0.002 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.477	4779607	PER_IS_89
13.494	2267096	Perchlorate_83
13.48	701659	Perchlorate_85

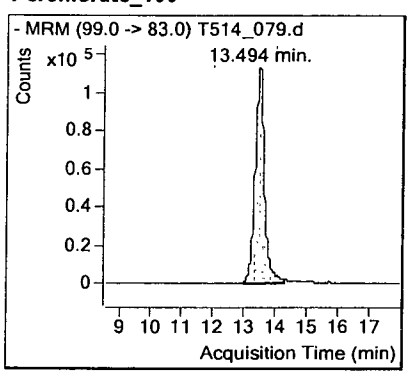
Quantitative Analysis Sample Report

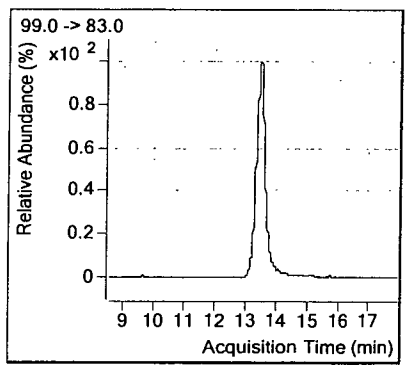
Batch Data Path	D:\MassHunter\Data\150514\QuantResults\150514_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T514_079.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/15/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	17:33
ClientID	NA	**Inj Vol**	20

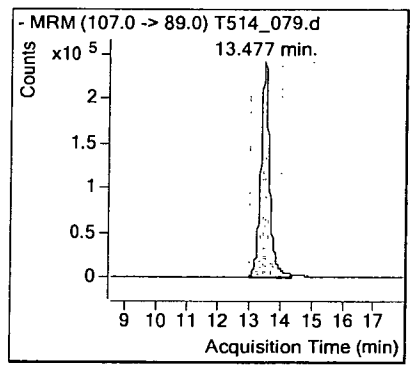


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.494	2267096	4779607
Perchlorate_102	PER_IS_108	13.480	701659	4779607

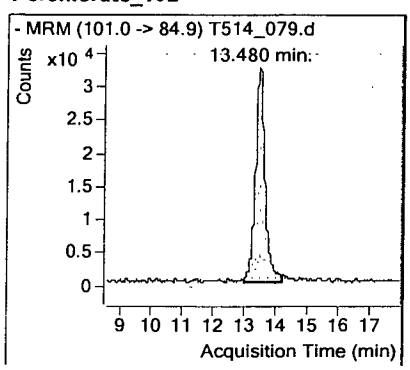
Perchlorate_100

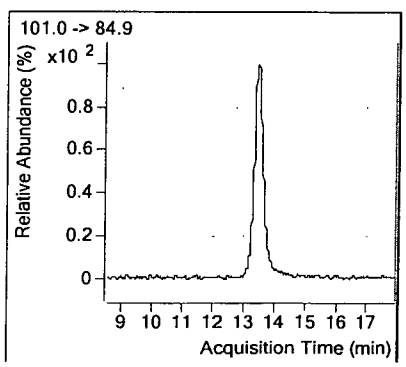


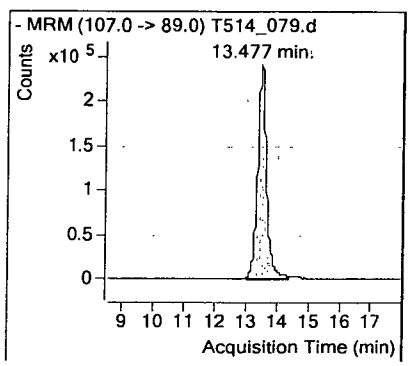




Perchlorate_102







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: **150512W-16226 - 196913**
Batch ID: #6850-150512A

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	05/12/15	05/12/15

Quant Method: QTLMFL2
Run #: T512_029.D
Instrument: AGIL_6460
Sequence: TQ051215
Initials: MP

GC SC-Blank-REG MDLs
Printed: 05/13/15 11:50:06 AM

Data File ID: T512_029.d

Date Injected : 05/12/15

Time Injected : 16:17

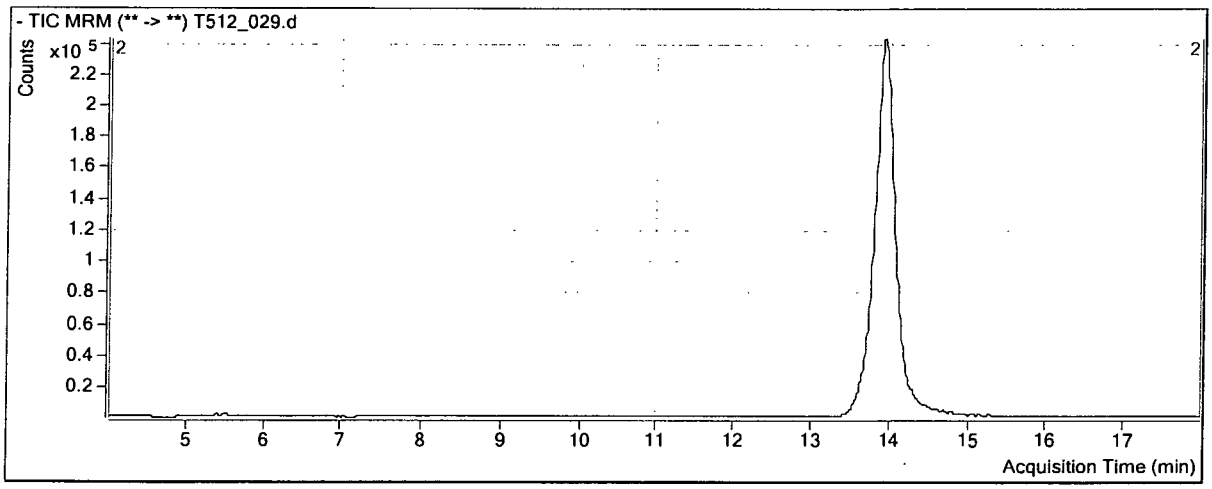
Sample ID : 150512WBLKA 1052.6 DF 05/12/15

Client ID : LAB_CNTL_W_BLKA

Retention Time	Area Count Response	Compound_ID Product Ion				
13.935	4755283	PER_IS_89				
14.065	3486	Perchlorate_83	(3486 * 0.0050) / (1.27 * 4755283.00) *	1052.60 =	0.003037 ppb	
14.051	5238	Perchlorate_85	(5238 * 0.0050) / (0.39 * 4755283.00) *	1052.60 =	0.014804 ppb	

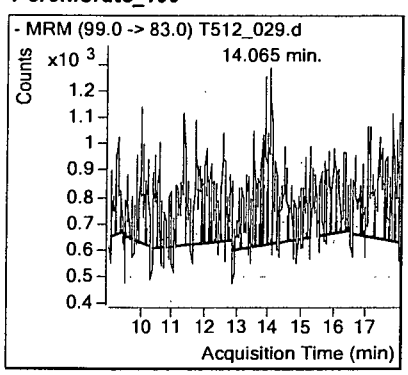
Quantitative Analysis Sample Report

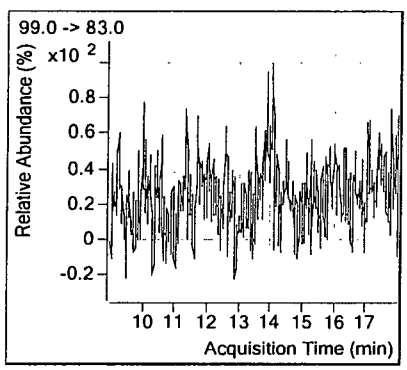
Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_029.d	**Sample Name**	150512WBLKA 1052.6 DF 05/12/15
Sample Type	Sample	**Acq_Date**	05/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	16:17
ClientID	LAB_CNTL_W_BLKA	**Inj Vol**	20

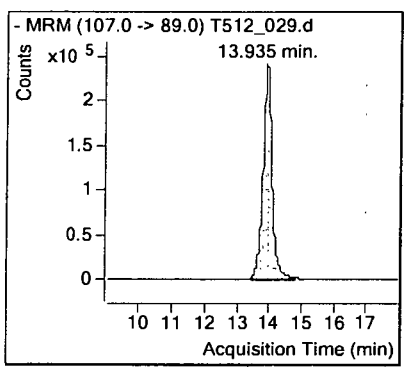


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.065	3486	4755283
Perchlorate_102	PER_IS_108	14.051	5238	4755283

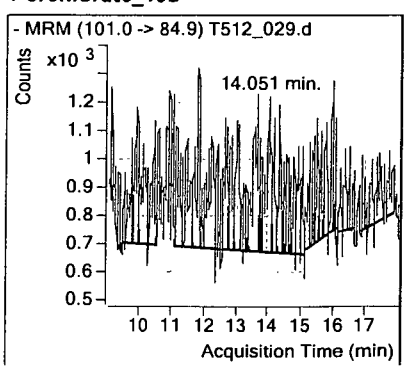
Perchlorate_100

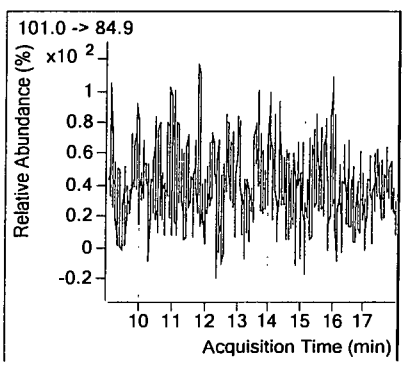


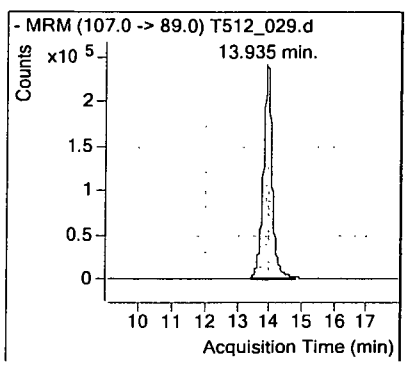




Perchlorate_102







Laboratory Control Spike Recovery
Perchlorate

APPL ID: **150512W-16226 LCS - 196913**
Batch ID: #6850-150512A

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	0.599	99.8	80-120

Comments:

Primary	SPK
Quant Method :	QTLMFL2
Extraction Date :	05/12/15
Analysis Date :	05/12/15
Instrument :	AGIL_6460
Run :	T512_027.D
Initials :	MP

Printed: 05/13/15 11:50:01 AM
APPL Standard LCS

Data File ID: T512_027.d

Date Injected : 05/12/15

Time Injected : 15:37

Sample ID : 150512WA_LCS-1 1052.6 DF 05/12/15

Client ID : LAB_CNTL_W_SPKA

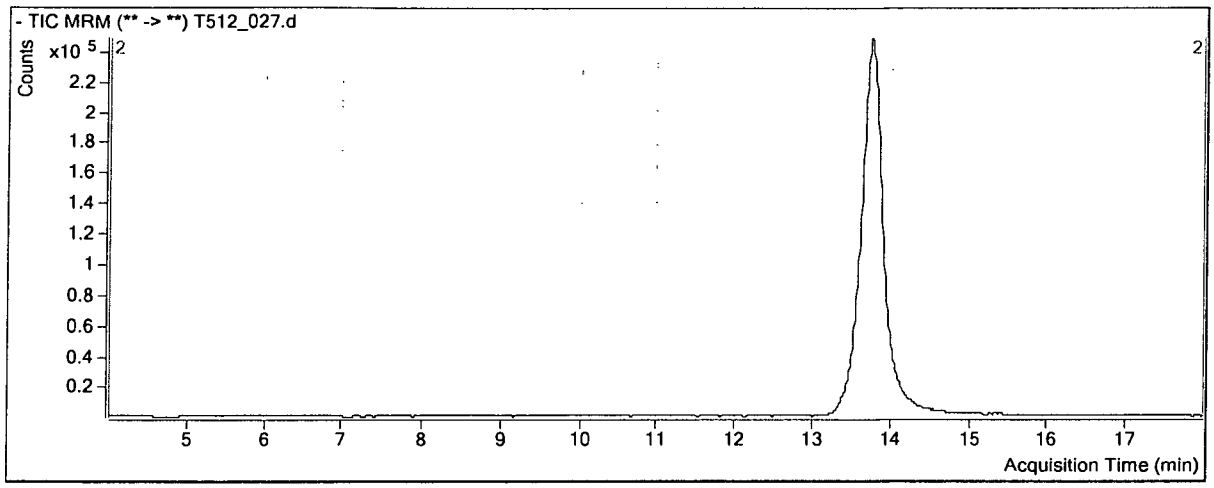
Retention Time	Area Count Response	Compound_ID Product Ion				
13.742	4309588	PER_IS_89				
13.769	623312	Perchlorate_83	(623312 * 0.0050) / (1.27 * 4309588.00) *	1052.60 =	0.599256 ppb
13.725	208822	Perchlorate_85	(208822 * 0.0050) / (0.39 * 4309588.00) *	1052.60 =	0.651217 ppb

$$\frac{(1052.6)(623312)(0.005)}{(1.270255)(4309588)} = 0.599256$$

6/9/15
PM

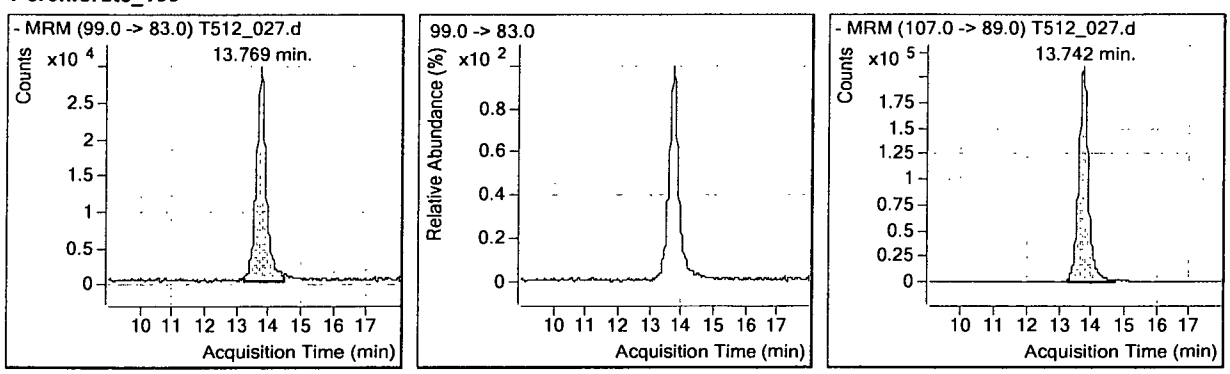
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_027.d	**Sample Name**	150512WA_LCS-1 1052.6 DF 05/12/15
Sample Type	Sample	**Acq_Date**	05/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	15:37
ClientID	LAB_CNTL_W_SPKA	**Inj Vol**	20

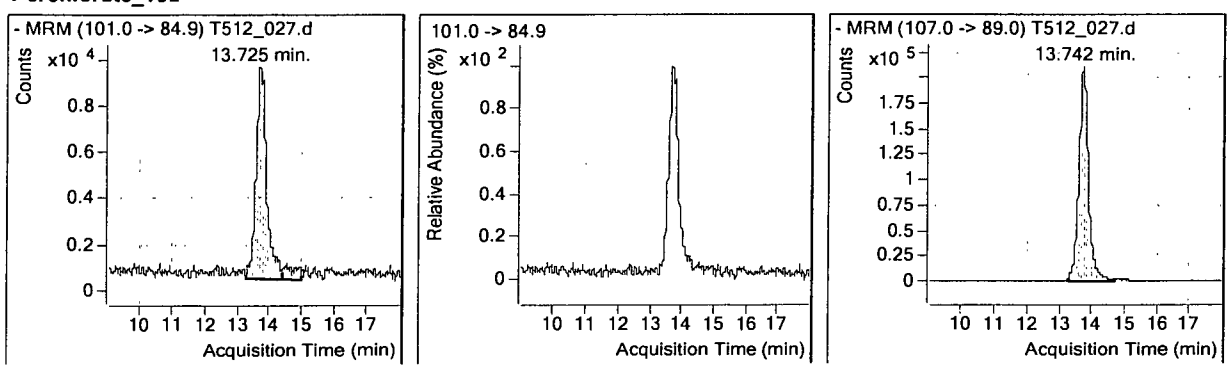


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.769	623312	4309588
Perchlorate_102	PER_IS_108	13.725	208822	4309588

Perchlorate_100



Perchlorate_102



Interferrence Check Sample

Perchlorate EPA 6850 Water

APPL ID: 150512W-16226 ICS-196913
Batch ID: #6850-150512A

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	0.558	93.0%	70-130

Comments:

Quant Method:	QTLMFL2
Extraction Date:	05/12/15
Analysis Date:	05/12/15
Instrument:	AGIL_6560
Run:	T512_028.D
Initials:	RP

Data File ID: T512_028.d

Date Injected : 05/12/15

Time Injected : 15:57

Sample ID : 150512W_ICSA 1052.6 DF 05/12/15

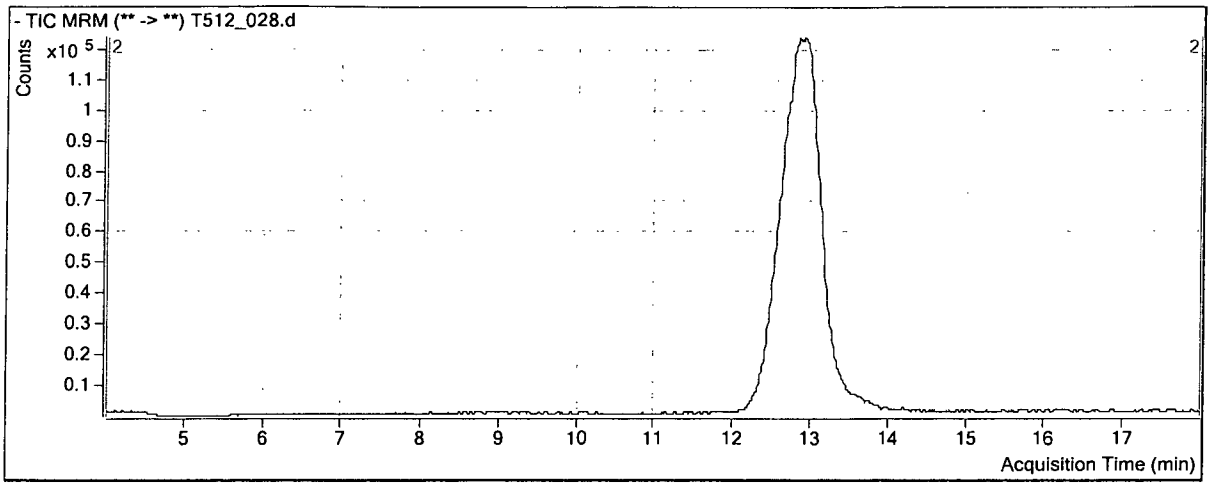
Client ID : LAB_CNTL_W_ICSA

Retention Time		Area Count Response	Compound_ID Product Ion				
12.855		3818635	PER_IS_89				
12.934	*	514351	Perchlorate_83	(514351 * 0.0050) / (1.27 * 3818635.00) *	1052.60 =	0.558077 ppb
12.951	*	171061	Perchlorate_85	(171061 * 0.0050) / (0.39 * 3818635.00) *	1052.60 =	0.602044 ppb

* MANUAL INTEGRAION

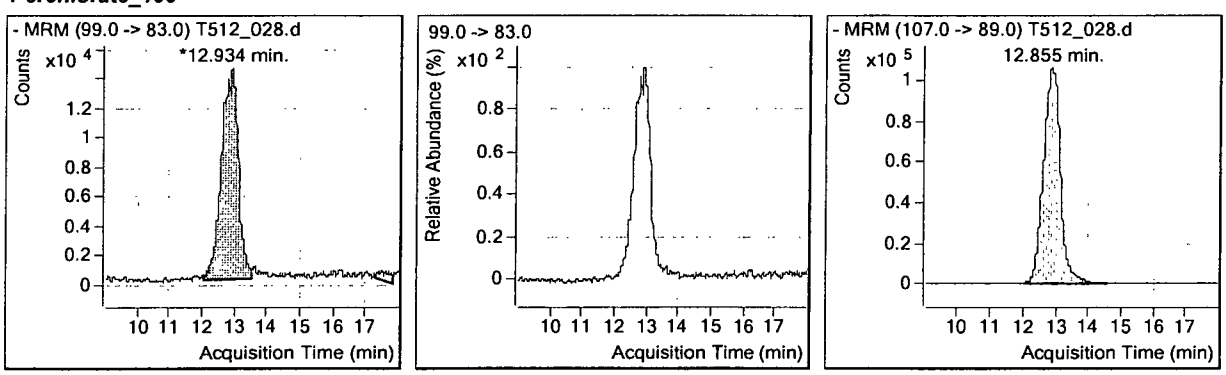
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150512\QuantResults\150512_A2_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T512_028.d	**Sample Name**	150512W_ICSA 1052.6 DF 05/12/15
Sample Type	Sample	**Acq_Date**	05/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	15:57
ClientID	LAB_CNTL_W_ICSA	**Inj Vol**	20

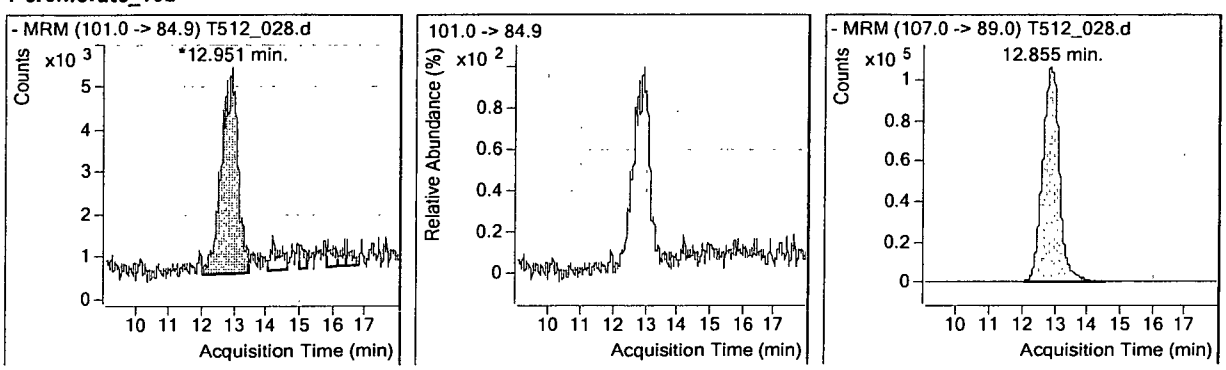


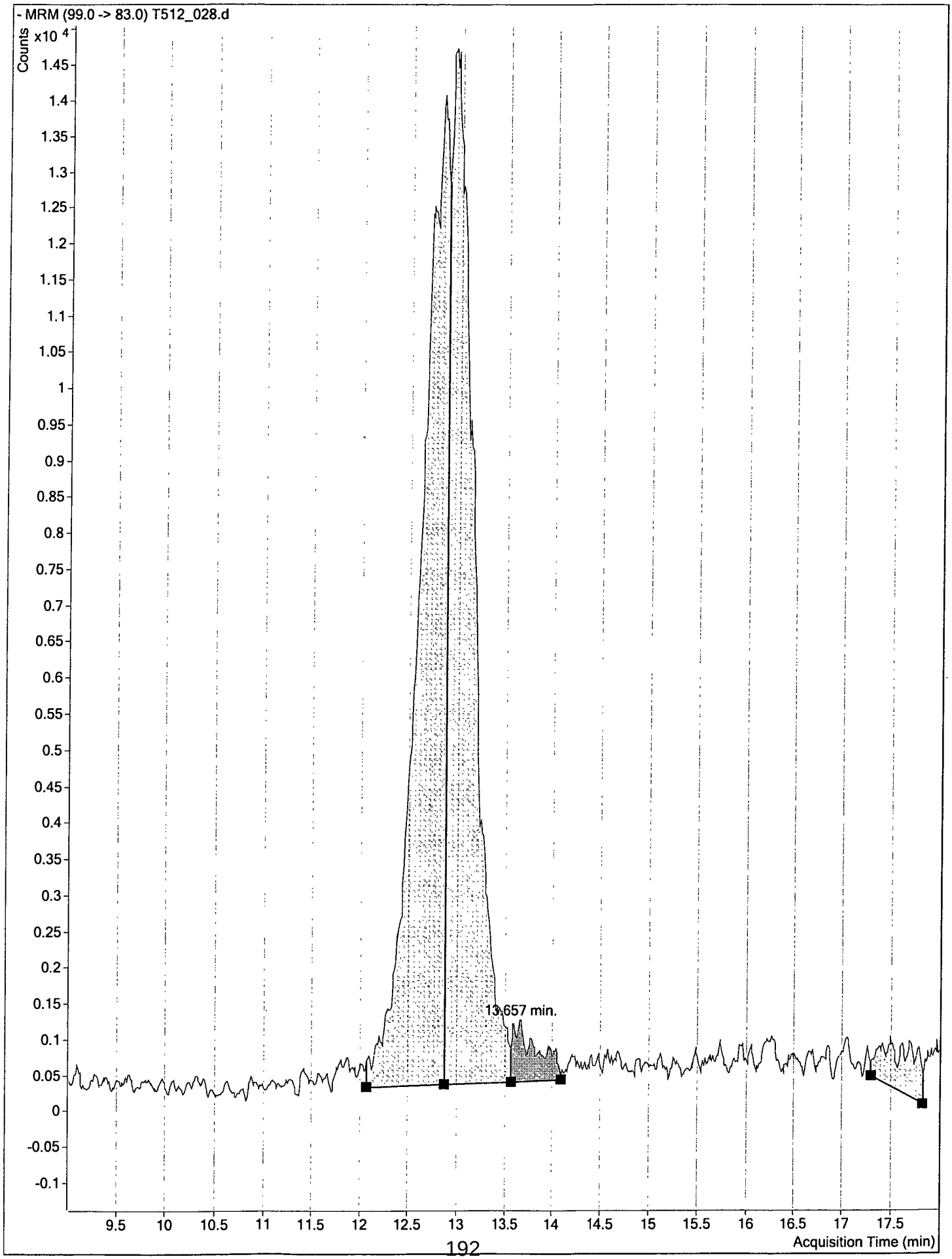
Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108	*	12.934	514351	3818635	* MANUAL INT
Perchlorate_102	PER_IS_108	*	12.951	171061	3818635	* MANUAL INT

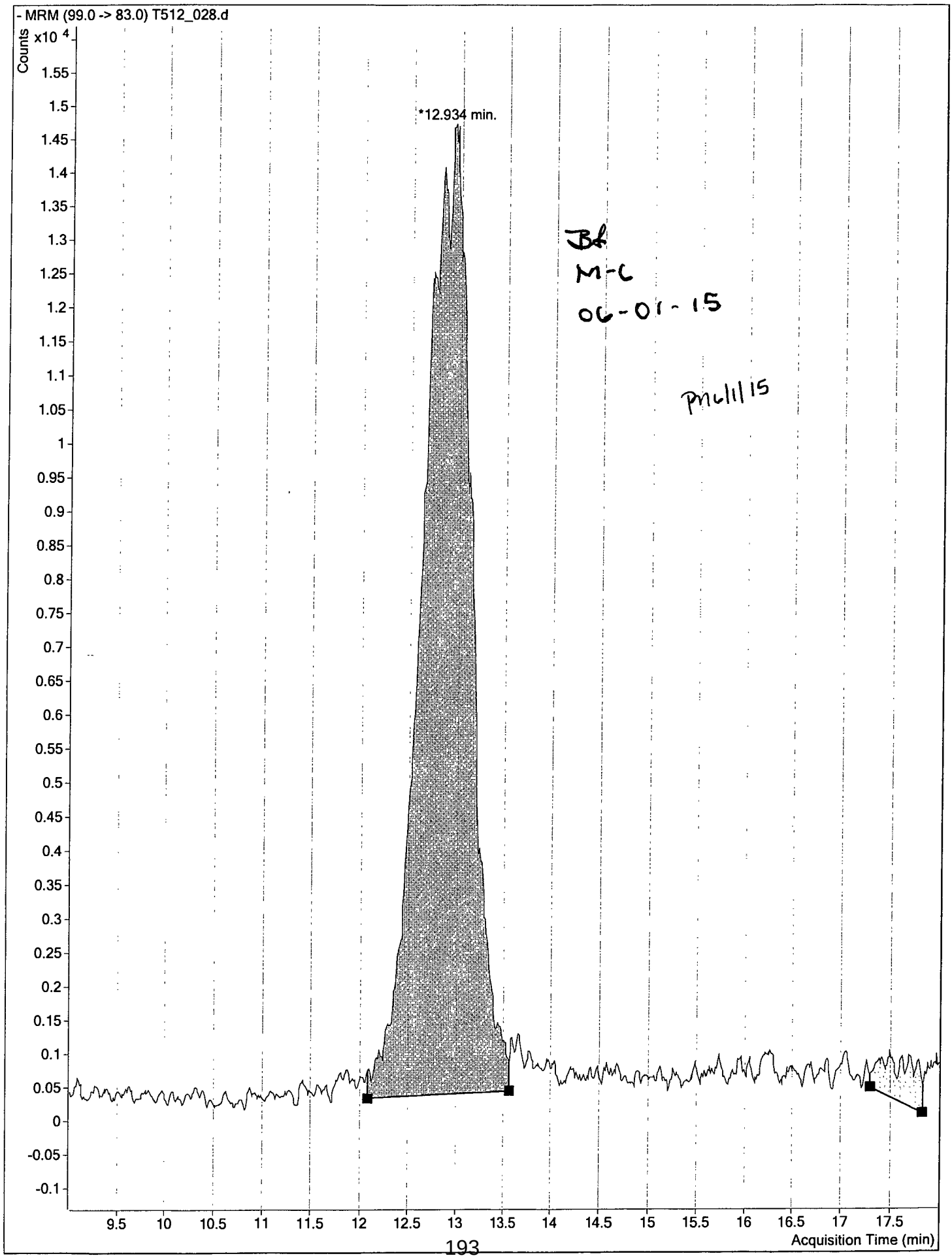
Perchlorate_100

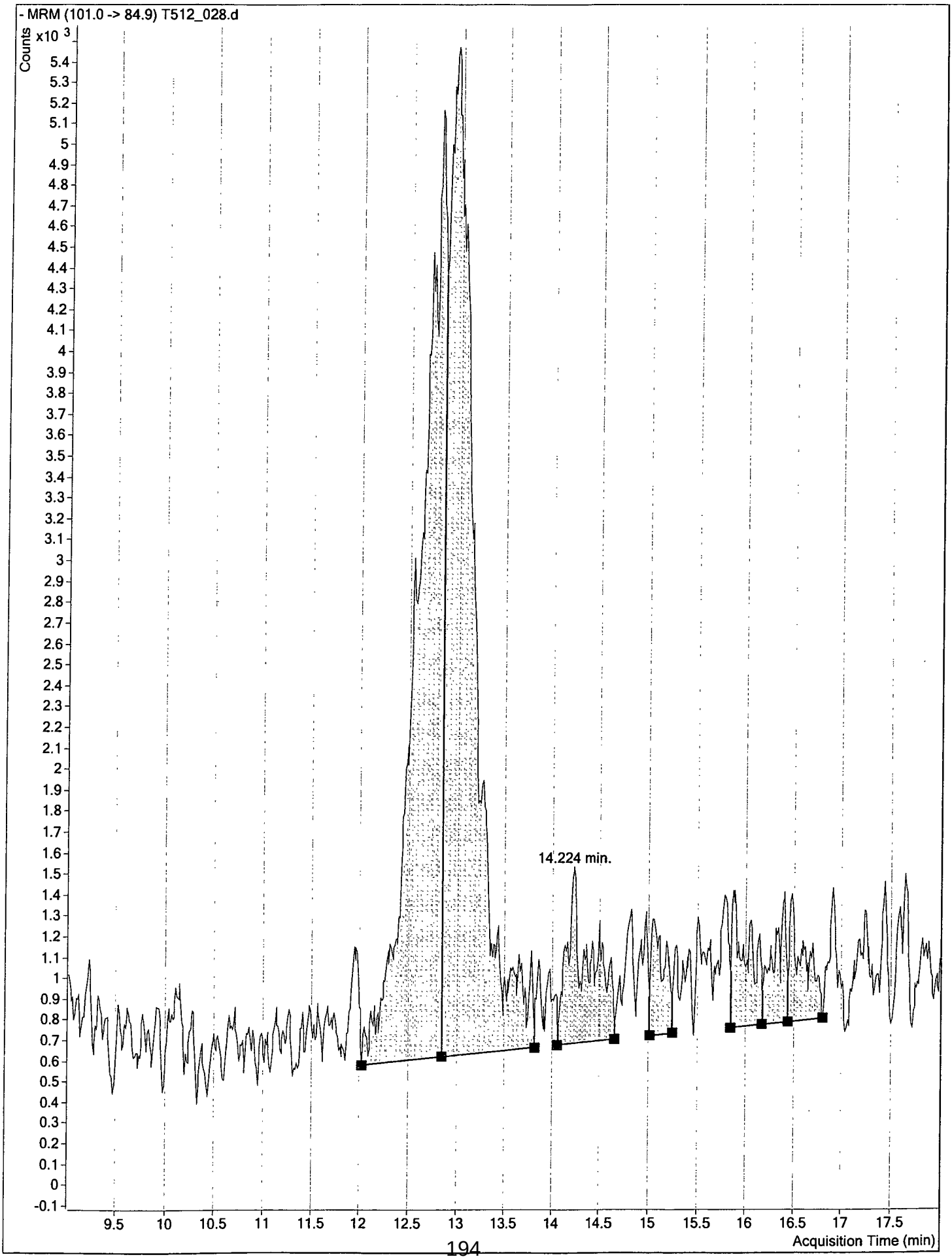


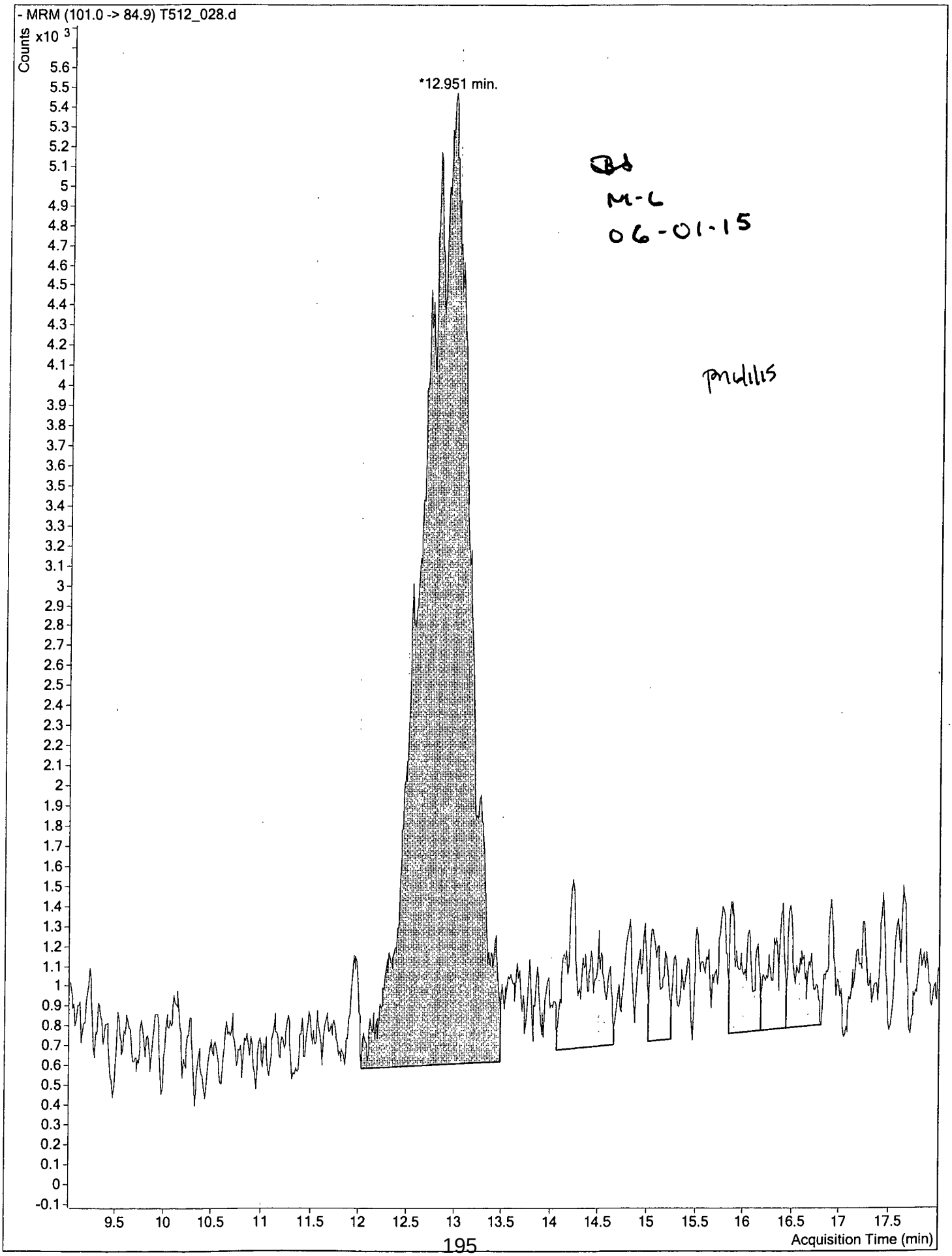
Perchlorate_102




- MRM (99.0 -> 83.0) T512_028.d
Counts
x10 4
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
-0.1
13.657 min.
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) T512_028.d
Counts
x10 4
*12.934 min.
Acquisition Time (min)
Bf
M-C
06-01-15
Pn6/11/15


- MRM (101.0 -> 84.9) T512_028.d
Counts
x10 3
14.224 min.
Acquisition Time (min)


- MRM (101.0 -> 84.9) T512_028.d
Counts
x10 3
*12.951 min.
Acquisition Time (min)
M-L
06-01-15
pmdilis

ACN_H20_50:50 1 DF 08/27/14: Burdick & Jackson Acetonitrile Lot DL308 took 10.000 ml and added to 10.000 ml Laboratory Source DI_H20 Note : Above solution was prepared as needed.
PER_IS_50:50 0.005 ug/ml 11/11/14: Took 19.000 ml ACN_H20_50:50 11/11/14 and added 1.000 ml O2SI 18_O_4 Perchlorate 100 ug/L lot 1059192-33479 Note: Solution prepared as needed.
PERCHLORATE 0.005 ug/ml 11/11/14: PERCHLORATE 0.010 ug/ml 08/28/14 took 0.500 ml and added to 0.500 ml PER_IS_50:50 0.005 ug/ml 11/11/14.
PERCHLORATE 0.002 ug/ml 11/11/14: PERCHLORATE 0.010 ug/ml 08/27/14 took 0.200 ml and added to 0.800 ml PER_IS_50:50 0.005 ug/ml 11/11/14.
PERCHLORATE 0.001 ug/ml 11/11/14: PERCHLORATE 0.010 ug/ml 08/27/14 took 0.100 ml and added to 0.900 ml PER_IS_50:50 0.005 ug/ml 11/11/14.

PERCHLORATE 0.0004 ug/ml 11/11/14: PERCHLORATE 0.010 ug/ml 08/27/14 took 0.040 ml and added to 0.960 ml PER_IS_50:50 0.005 ug/ml 11/11/14.
PERCHLORATE 0.0002 ug/ml 11/11/14: PERCHLORATE 0.010 ug/ml 08/27/14 took 0.020 ml and added to 0.980 ml PER_IS_50:50 0.005 ug/ml 11/11/14.
PERCHLORATE 0.0001 ug/ml 11/11/14: PERCHLORATE 0.010 ug/ml 08/27/14 took 0.010 ml and added to 0.990 ml PER_IS_50:50 0.005 ug/ml 11/11/14.
PER_CCV_1 0.0004 ug/ml 11/11/14: PERCHLORATE 0.010 ug/ml 08/27/14 took 0.040 ml and added to 0.960 ml PER_IS_50:50 0.005 ug/ml 11/11/14.
PER_CCV_1 0.002 ug/ml 11/11/14: PERCHLORATE 0.010 ug/ml 08/27/14 took 0.200 ml and added to 0.800 ml PER_IS_50:50 0.005 ug/ml 11/11/14.
PER_CCV_2 0.0004 ug/ml 11/11/14: PERCHLORATE 0.010 ug/ml 08/27/14 took 0.040 ml and added to 0.960 ml PER_IS_50:50 0.005 ug/ml 11/11/14.

PER_CCV_2 0.002 ug/ml 08/27/14: PERCHLORATE 0.010 ug/ml 08/27/14 took 0.200 ml and added to 0.800 ml PER_IS_50:50 0.005 ug/ml 11/11/14.
PER_CCV_3 0.0004 ug/ml 11/11/14: PERCHLORATE 0.010 ug/ml 08/27/14 took 0.040 ml and added to 0.960 ml PER_IS_50:50 0.005 ug/ml 11/11/14.
PER_CCV_3 0.002 ug/ml 11/11/14: PERCHLORATE 0.010 ug/ml 08/28/14 took 0.200 ml and added to 0.800 ml PER_IS_50:50 0.005 ug/ml 11/11/14.
PER_CCV_4 0.0004 ug/ml 11/11/14: PERCHLORATE 0.010 ug/ml 08/27/14 took 0.040 ml and added to 0.960 ml PER_IS_50:50 0.005 ug/ml 11/11/14.
PER_CCV_4 0.002 ug/ml 11/11/14: PERCHLORATE 0.010 ug/ml 08/27/14 took 0.200 ml and added to 0.800 ml PER_IS_50:50 0.005 ug/ml 11/11/14.
PER_SS 0.0004 ug/ml 11/11/14: PER_SS 0.010 ug/ml 08/28/14 took 0.040 ml and added to 0.960 ml PER_IS_50:50 0.005 ug/ml 11/11/14.
PER_SS 0.002 ug/ml 11/11/14: PER_SS 0.010 ug/ml 08/28/14 took 0.200 ml and added to 0.800 ml PER_IS_50:50 0.005 ug/ml 11/11/14.

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL. SOURCE LOT #	DATE INITIALS
Scan spk 250 ng/ml							
Hexahydro-1,3,5-tris-hydroxyethyltriazine							
	1010	04-10-15	1.24	5.0	250	ACN/DM394	04-17-15
2,2'-thiodiethanol							
	1090	04-10-15	1.15				
2-(1,3,5-Dithiazinan-5-yl) ethanol							
	1020	04-10-15	1.23				

PER_CCV 0.0004 µg/ml 04-20-15: BL
PER_SS 0.010 µg/ml 08-28-14 04-20-15
took 0.040 ml and added to
0.910 ml Laboratory Source DI_H2O
that had previously received
0.050 ml 02SI $^{18}O_4$ Perchlorate
100 µg/L lot 1059192-33479

PER_CCV 0.002 µg/ml 04-20-15:
PER_SS 0.010 µg/ml 08-28-14
took 0.200 ml and added to
0.750 ml Laboratory Source DI_H2O
that had previously received
0.050 ml 02SI $^{18}O_4$ Perchlorate
100 µg/L lot 1059192-33479

040 LC/MS STANDARD PREP LOG# 105 PAGE 40

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL. ENT. LOT#	DATE/ INITIALS
PER IS 0.005 µg/ml 04-20-15:							JL
02SI $^{18}O_4$ Perchlorate 100 µg/L							04-21-15
Lot 1059192-33479 took 0.050 ml and added to 0.950 ml Laboratory Source DI H2O.							
NOTE: Repeated the above process four times in order to prepare 2-2ml vials that were full. The above was performed as dated. JL							

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL. TEN. LOT #	DATE INITIALS

NOTE: THE FOLLOWING DOCUMENTATION WAS PERFORMED AS DATED: 05-19-15 JH

PER. CCV 0.0004 µg/ml 05-07-15: JH
PER. SS 0.010 µg/ml 08-28-14 took 05-07-15
0.040 ml and added to 0.910 ml
Laboratory Source DI-H20 that
had previously received 0.050 ml
02SI $^{18}O_4$ Perchlorate 100 µg/L
lot 1074176-35163

PER. CCV 0.002 µg/ml 05-07-15:
PER. SS 0.010 µg/ml 08-28-14
took 0.200 ml and added to
0.750 ML Laboratory Source
DI-H20 that had previously
received 0.050 ml 02SI $^{18}O_4$
Perchlorate 100 µg/L lot
1074176-35163

PER. IS 0.005 µg/ml 05-07-15:
02SI $^{18}O_4$ Perchlorate 100 µg/L
lot 1074176-35163 took 0.050
ml and added to 0.950 ml
Laboratory Source DI-H20
NOTE: Repeated the above
process four times in order
to prepare 2-2ml vials
that were full.

LC/MS STANDARD PREP LOG# 105 PAGE# 76

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL'EN LOT#	DATE & INITIALS
NOTE: THE FOLLOWING DOCUMENTATION WAS PERFORMED AS DATED: 06-02-15							JL 06-02-15
PER_IS.50:50 0.005µg/ml 05-10-15: COMBINED 10.000 ml Laboratory Source DI_H2O with 10.000 ml Burdick + Jackson Acetonitrile lot DL308. Withdrew 1.000ml and then delivered 1.000 ml 025I $^{18}O_4$ Perchlorate 100µg/L lot 1074176-35163							JL 05-10-15
AZ16057_W01 10526.3 DF 05-07-15_5/10: AZ16057_W01 1052.6 DF 05-07-15 TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS.50:50 0.005µg/ml 05-10-15							
AZ16057_W01 105263.2 DF 05-07-15_5/10: AZ16057_W01 10526.3 DF 05-07-15_5/10 TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS.50:50 0.005µg/ml 05-10-15							
AZ16057_W01 1052631.6 DF 05-07-15_5/10: AZ16057_W01 105263.2 DF 05-07-15_5/10 TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005µg/ml 05-10-15							

ICP/MS STANDARD PREP LOG 105 PAGE 77

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL. ID LOT #	DATE INITIALS

NOTE: THE FOLLOWING DOCUMENTATION WAS PERFORMED AS DATED! 06-02-15 06-02-15

AZ16057_W01 10526315.8 DF 05-07-15_5/10: 06-02-15
AZ16057_W01 1052631.6 DF 05-07-15_5/10 05-10-15
TOOK 0.050 ml AND ADDED TO
0.450 ml PER_IS_50:50 0.005 µg/ml
05-10-15

AZ16059_W01 10526.3 DF 05-07-15_5/10:
AZ16059_W01 1052.6 DF 05-07-15_5/10
TOOK 0.050 ml AND ADDED TO
0.450 ml PER_IS_50:50 0.005 µg/ml
05-10-15

AZ16059_W01 105263.2 DF 05-07-15_5/10:
AZ16059_W01 10526.3 DF 05-07-15_5/10
TOOK 0.050 ml AND ADDED TO
0.450 ml PER_IS_50:50 0.005 µg/ml
05-10-15

AZ16059_W01 1052631.6 DF 05-07-15_5/10:
AZ16059_W01 105263.2 DF 05-07-15_5/10
TOOK 0.050 ml AND ADDED TO
0.450 ml PER_IS_50:50 0.005 µg/ml
05-10-15

AZ16059_W01 10526315.8 DF 05-07-15_5/10:
AZ16059_W01 1052631.6 DF 05-07-15_5/10
TOOK 0.050 ml AND ADDED TO
0.450 ml PER_IS_50:50 0.005 µg/ml
05-10-15

078

LC/MS STANDARD PREP LOG# 105 PAGE# 78

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT #	DATE & INITIALS
NOTE: THE FOLLOWING DOCUMENTATION							JR
WAS PERFORMED AS DATED: JR 06.02.15							06.02.15
AZ16061-W01 10526.3 DF 05-07-15_5/10:							JR
AZ16061-W01 10526 DF 05-07-15							05.10.15
TOOK 0.050 ml AND ADDED TO							
0.450 ml PER_IS_50:50 0.005 µg/ml							
05-10-15							
AZ16061-W01 105263.2 DF 05-07-15_5/10:							
AZ16061-W01 10526.3 DF 05-07-15_5/10							
TOOK 0.050 ml AND ADDED TO							
0.450 ml PER_IS_50:50 0.005 µg/ml							
05-10-15							
AZ16061-W01 1052631.6 DF 05-07-15_5/10:							
AZ16061-W01 105263.2 DF 05-07-15_5/10							
TOOK 0.050 ml AND ADDED TO							
0.450 ml PER_IS_50:50 0.005 µg/ml							
05-10-15							
AZ16061-W01 10526315.8 DF 05-07-15_5/10							
AZ16061-W01 1052631.6 DF 05-07-15_5/10							
TOOK 0.050 ml AND ADDED TO							
0.450 ml PER_IS_50:50 0.005 µg/ml							
05-10-15							

GC/MS STANDARD PREP LOG# 105 PAGE# 79

MATERIAL	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL'N LOT# 079	DATE INITIALS

NOTE: THE FOLLOWING DOCUMENTATION WAS PERFORMED AS DATED: JH 06-02-15 — JH 06-02-15

15 AZ16062-W01 10526.3 DF 05-07-15_5/10: — JH
AZ16062-W01 1052.6 DF 05-07-15_5/10 — 05-10-15
TOOK 0.050 ml AND ADDED TO 0.450
15 ml PER_IS_50:50 0.005µg/ml 05-10-15

AZ16062-W01 105263.2 DF 05-07-15_5/10:
AZ16062-W01 10526.3 DF 05-07-15_5/10
TOOK 0.050 ml AND ADDED TO
0.450 ml PER_IS_50:50 0.005µg/ml 05-10-15

AZ16062-W01 1052631.6 DF 05-07-15_5/10:
AZ16062-W01 105263.2 DF 05-07-15_5/10
~~TOOK 0.450 ml~~ JH 06-02-15 TOOK 0.050 ml
AND ADDED TO 0.450 ml PER_IS_50:50
0.005 µg/ml 05-10-15

AZ16062-W01 10526315.8 DF 05-07-15_5/10:
AZ16062-W01 1052631.6 DF 05-07-15_5/10
TOOK 0.050 ml AND ADDED TO 0.450
ml PER_IS_50:50 0.005µg/ml 05-10-15

AZ16062-W01-MS-1 10526.3 DF 05-07-15.5/10
AZ16062-W01-MS-1 1052.6 DF 05-07-15
TOOK 0.050 ml AND ADDED TO 0.450
ml PER_IS_50:50 0.005µg/ml 05-10-15

080

LC/MS STANDARD PREP LOG# 105 PAGE# 80

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT#	DATE / INITIALS
NOTE: THE FOLLOWING DOCUMENTATION							JB
WAS PERFORMED AS DATED: JB 06-02-15							06-02-15
AZ16062-W01-MS-1		105263.2	DF	05-07-15	5/10		JB
AZ16062-W01-MS-1		10526.3	DF	05-07-15	5/10		05-10
TOOK 0.050 ml AND ADDED TO 0.450							
ml PER IS 50150 0.005 µg/ml 05-10-15							
AZ16062-W01-MS-1		105263.1.6	DF	05-07-15	5/10		
AZ16062-W01-MS-1		105263.2	DF	05-07-15	5/10		
TOOK 0.050 ml AND ADDED TO 0.450							
ml PER IS 50:50 0.005 µg/ml 05-10-15							
AZ16062-W01-MS-1		10526315.8	DF	05-07-15	5/10		
AZ16062-W01-MS-1		1052631.6	DF	05-07-15	5/10		
TOOK 0.050 ml AND ADDED TO 0.450 ml							
PER IS 50:50 0.005 µg/ml 05-10-15							
AZ16062-W01-MSD-1		10526.3	DF	05-07-15	5/10		
AZ16062-W01-MSD-1		1052.6	DF	05-07-15			
TOOK 0.050 ml AND ADDED TO 0.450							
ml PER IS 50:50 0.005 µg/ml 05-10-15							
AZ16062-W01-MSD-1		105263.2	DF	05-07-15	5/10		
AZ16062-W01-MSD-1		10526.3	DF	05-07-15	5/10		
TOOK 0.050 ml AND ADDED TO 0.450							
ml PER IS 50:50 0.005 µg/ml 05-10-15							

VOMS STANDARD PREP LOG 105 PAGE 81

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL. CN. LOT#	DATE INITIALS
						081	

NOTE: THE FOLLOWING DOCUMENTATION WAS PERFORMED AS DATED: JH 06-02-15 — JH 06-02-15

15

AZ16062-W01-MSD-1 1052631.6 DF 05-07-15-5/10 JH
AZ16062-W01-MSD-1 105263.2 DF 05-07-15-5/10 05-10-15
TOOK 0.050 ml AND ADDED TO 0.450
ml PER-IS-50:50 0.005 µg/ml 05-10-15

JH
10-15

AZ16062-W01-MSD-1 10526315.8 DF 05-07-15-5/10
AZ16062-W01-MSD-1 1052631.6 DF
05-07-15-5/10 TOOK 0.050 ml AND ADDED
TO 0.450 ml PER-IS-50:50 0.005 µg/ml
05-10-15

AZ16058-W01 10526.3 DF 05-07-15-5/10:
AZ16058-W01 1052.6 DF 05-07-15-5/10
TOOK 0.050 ml AND ADDED TO 0.450
ml PER-IS-50:50 0.005 µg/ml 05-10-15

AZ16058-W01 105263.2 DF 05-07-15-5/10:
AZ16058-W01 10526.3 DF 05-07-15-5/10
TOOK 0.050 ml AND ADDED TO 0.450
ml PER-IS-50:50 0.005 µg/ml 05-10-15

AZ16058-W01 1052631.6 DF 05-07-15-5/10:
AZ16058-W01 105263.2 DF 05-07-15-5/10
TOOK 0.050 ml AND ADDED TO
0.450 ml PER-IS-50:50 0.005 µg/ml 05-10-15

LC/MS STANDARD PREP LOG# 105 PAGE 82

082

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL'N. LOT #	DATE INITIAL
NOTE! THE FOLLOWING DOCUMENTATION WAS PERFORMED AS DATED JR 06-02-15							JR
							06-02-15
AZ16060_W01 10526.3 DF 05-07-15_5/10:							JR
AZ16060_W01 1052.6 DF 05-07-15							05-10-15
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005µg/ml 05-10-15							
							5/11 JR
AZ16055_W01 10526.3 DF 05-07-15_~~5/10~~:							JR
AZ16055_W01 1052.6 DF 05-07-15							05-10-15
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005µg/ml 05-10-15							
							5/11 JR
AZ16055_W01 105263.2 DF 05-07-15_~~5/10~~:							
AZ16055_W01 10526.3 DF 05-07-15_5/10							
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005µg/ml 05-10-15							
							5/11 JR
AZ16055_W01 1052631.6 DF 05-07-15_~~5/10~~							
AZ16055_W01 105263.2 DF 05-07-15_5/10							
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005µg/ml 05-10-15							
							JR 5/11
AZ16056_W01 10526.3 DF 05-07-15_~~5/10~~:							
AZ16056_W01 1052.6 DF 05-07-15							
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005µg/ml 05-10-15							

LCMS STANDARD PREP LOG# 105 PAGE 83

083

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT#	DATE INITIALS
NOTE: THE FOLLOWING DOCUMENTATION WAS PERFORMED AS DATED ~~JB~~ 06-02-15							JB 06-02-15
AZ16056-W01 105263.2 DF 05-07-15 ~~5/10~~ 5/11: AZ16056-W01 10526.3 DF 05-07-15 ~~5/10~~ 5/11 TOOK 0.050 ml AND ADDED TO 0.450 ml PER IS 50:50 0.005 µg/ml 05-10-15							JB 05-11-15
AZ16056-W01 1052631.6 DF 05-07-15 ~~5/10~~ 5/11: AZ16056-W01 105263.2 DF 05-07-15 ~~5/10~~ 5/11 TOOK 0.050 ml AND ADDED TO 0.450 ml PER IS 50:50 0.005 µg/ml 05-10-15							
AZ16136-W01 H210.4 DF 05-08-15 5/11: AZ16136-W01 1052.6 DF 05-08-15 TOOK 0.050 ml AND ADDED TO 0.150 ml PER IS 50:50 0.005 µg/ml 05-10-15							
AZ16237-W01 ~~1052.6~~ ~~10526.3~~ DF 05-12-15 5/13: AZ16237-W01 1052.6 DF 05-12-15 TOOK 0.050 ml AND ADDED TO 0.450 ml PER IS 50:50 0.005 µg/ml 05-10-15							JB 05-13-15
AZ16237-W01 105263.2 DF 05-12-15 5/13 AZ16237-W01 10526.3 DF 05-12-15 5/13 TOOK 0.050 ml AND ADDED TO 0.450 ml PER IS 50:50 0.005 µg/ml 05-10-15							

084

LC/MS STANDARD PREP LOG# 105 PAGE# 84

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT #	DATE INITIALS

NOTE: THE FOLLOWING DOCUMENTATION WAS PERFORMED AS DATED: JH 06-02-15 JH 06-02-15

AZ16237_W01 1052631.6 DF 05-12-15_5-13 JH
AZ16237_W01 105263.2 DF 05-12-15_5/13 05-13-15
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005 µg/ml 05-10-15

AZ16237_W01 10526315.8 DF 05-12-15_5/13
AZ16237_W01 1052631.6 DF 05-12-15_5/13
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005 µg/ml 05-10-15

AZ16229_W01 10526.3 DF 05-12-15_5/13:
AZ16229_W01 1052.6 DF 05-12-15
TOOK 0.050 ml AND ADDED TO JH ~~0.05~~ 0.450 ml PER_IS_50:50 0.005 µg/ml 05-10-15

AZ16229_W01 105263.2 DF 05-12-15_5/13
AZ16229_W01 10526.3 DF 05-12-15_5/13
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005 µg/ml 05-10-15

VOMS STANDARD PREP LOG# 105 PAGE 85

085

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL. SOL. LOT #	DATE INITIALS
NOTE: THE FOLLOWING DOCUMENTATION							JL
WAS PERFORMED AS DATED JL 06-02-15							06-02-15
AZ16229-W01 1052631.6 DF 05-12-15 5/13:							JL
AZ16229-W01 105263.2 DF 05-12-15 5/13							05-13-15
TOOK 0.050 ml AND ADDED TO 0.450							
ml PER IS 50:50 0.005 µg/ml 05-10-15							

_HPL6850

Organic Extraction Worksheet

Method	EPA 6850 HPLC Perchlorate Extraction	Extraction Set	150512A	Extraction Method	HPL6850	Units	mL

Spiked ID 1	Perchlorate Spike Mix 0.1ppm 8-28-14 EXP 7-31-15		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:	NA
Spiked ID 7			Ext. Start Time:	05/12/15 12:30
Spiked ID 8			Ext. End Time:	05/12/15 13:15
			GC Requires Extract By:	

pH1			Water Bath Temp Criteria	
pH2				
pH3				

Spiked By: CFM **Date** 05/12/15 12:28:00 PM **Witnessed By:** DL **Date** 05/12/15 12:28:00 PM

	Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
1	150512A Blk				NA	NA equip	5ML	5ML	NA	05/12/15 12:30	
2	150512A LCS-1		0.030	1	NA	NA equip	5ML	5ML	NA	05/12/15 12:30	
3	150512A ICS		0.030/0.060	1/2	NA	NA equip	5ML	5ML	NA	05/12/15 12:30	
4	AZ16200	AZ16200W01			NA	NA equip	5ML	5ML	NA	05/12/15 12:30	76390 - STD
5	AZ16226	AZ16226W01			NA	NA equip	5ML	5ML	NA	05/12/15 12:30	76398 - 24 HOUR RUSH
6	AZ16227	AZ16227W01			NA	NA equip	5ML	5ML	NA	05/12/15 12:30	76398 - 24 HOUR RUSH
7	AZ16228	AZ16228W01			NA	NA equip	5ML	5ML	NA	05/12/15 12:30	76398 - 24 HOUR RUSH
8	AZ16229	AZ16229W01			NA	NA equip	5ML	5ML	NA	05/12/15 12:30	76398 - 24 HOUR RUSH
9	AZ16230	AZ16230W01			NA	NA equip	5ML	5ML	NA	05/12/15 12:30	76398 - 24 HOUR RUSH
10	AZ16231	AZ16231W01			NA	NA equip	5ML	5ML	NA	05/12/15 12:30	76398 - 24 HOUR RUSH
11	AZ16232	AZ16232W01			NA	NA equip	5ML	5ML	NA	05/12/15 12:30	76398 - 24 HOUR RUSH
12	AZ16233	AZ16233W01			NA	NA equip	5ML	5ML	NA	05/12/15 12:30	76398 - 24 HOUR RUSH
13	AZ16234	AZ16234W01			NA	NA equip	5ML	5ML	NA	05/12/15 12:30	76398 - 24 HOUR RUSH
14	AZ16235	AZ16235W04			NA	NA equip	5ML	5ML	NA	05/12/15 12:30	76401 - STD
15	AZ16236	AZ16236W04			NA	NA equip	5ML	5ML	NA	05/12/15 12:30	76401 - STD
16	AZ16237	AZ16237W01			NA	NA equip	5ML	5ML	NA	05/12/15 12:30	76398 - 24 HOUR RUSH

vent and Lot#	
llipore Water	5-12-15

Extraction COC Transfer	
Extraction lab employee Initials	CFM
GC analyst's initials	PM
Date	5/12/15
Time	1:30
Refrigerator	NA

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

Modified	05/12/15 1:17:50 PM

Reviewed By: PM **Date** 5/12/15

METHOD 6850 INJECTION LOG: 03/12/15, 05/12/15, 05/14/15

DETECTOR ID: Agilent 6460 Triple Quad LC/MS

SAMPLE INJECTION ID:	DATA FILE ID:	INJECTION DATE/TIME
PERCHLORATE 0.0002 ug/ml 11/11/14	T312_003.d	03/12/15 17:52
PERCHLORATE 0.0004 ug/ml 11/11/14	T312_004.d	03/12/15 18:11
PERCHLORATE 0.001 ug/ml 11/11/14	T312_005.d	03/12/15 18:29
PERCHLORATE 0.002 ug/ml 11/11/14	T312_006.d	03/12/15 18:48
PERCHLORATE 0.005 ug/ml 11/11/14	T312_007.d	03/12/15 19:07
PERCHLORATE 0.010 ug/ml 08/27/14	T312_008.d	03/12/15 19:25
PER_SS 0.0004 ug/ml 11/11/14	T312_010.d	03/12/15 20:02
PER_SS 0.002 ug/ml 11/11/14	T312_011.d	03/12/15 20:21
PER_CCV_1 0.0004 ug/ml 11/11/14	T312_013.d	03/12/15 20:58
PER_CCV_1 0.002 ug/ml 11/11/14	T312_014.d	03/12/15 21:17
PER_CCV 0.0004 ug/ml 05/07/15	T512_002.d	05/12/15 7:51
PER_CCV 0.002 ug/ml 05/07/15	T512_003.d	05/12/15 8:10
PER_CCV 0.0004 ug/ml 05/07/15	T512_024.d	05/12/15 14:41
PER_CCV 0.002 ug/ml 05/07/15	T512_025.d	05/12/15 14:59
150512WA_LCS-1 1052.6 DF 05/12/15	T512_027.d	05/12/15 15:37
150512W_ICSA 1052.6 DF 05/12/15	T512_028.d	05/12/15 15:57
150512WBLKA 1052.6 DF 05/12/15	T512_029.d	05/12/15 16:17
AZ16226_W01 1052.6 DF 05/12/15	T512_031.d	05/12/15 17:02
AZ16227_W01 1052.6 DF 05/12/15	T512_032.d	05/12/15 17:21
PER_CCV 0.0004 ug/ml 05/07/15	T512_036.d	05/12/15 18:36
PER_CCV 0.002 ug/ml 05/07/15	T512_037.d	05/12/15 18:54
PER_CCV 0.0004 ug/ml 05/07/15	T512_060.d	05/13/15 2:03
PER_CCV 0.002 ug/ml 05/07/15	T512_061.d	05/13/15 2:21
AZ16232_W01 1052.6 DF 05/12/15	T512_065.d	05/13/15 3:36
AZ16233_W01 1052.6 DF 05/12/15	T512_066.d	05/13/15 3:54
AZ16234_W01 1052.6 DF 05/12/15	T512_067.d	05/13/15 4:13
PER_CCV 0.0004 ug/ml 05/07/15	T512_072.d	05/13/15 5:46
PER_CCV 0.002 ug/ml 05/07/15	T512_073.d	05/13/15 6:05
PER_CCV 0.0004 ug/ml 05/07/15	T512_096.d	05/13/15 13:13
PER_CCV 0.002 ug/ml 05/07/15	T512_097.d	05/13/15 13:32
AZ16237_W01 105263.2 DF 05/12/15_5/13	T512_101.d	05/13/15 15:02
AZ16229_W01 105263.2 DF 05/12/15_5/13	T512_104.d	05/13/15 15:57
PER_CCV 0.0004 ug/ml 05/07/15	T512_107.d	05/13/15 17:07
PER_CCV 0.002 ug/ml 05/07/15	T512_108.d	05/13/15 17:26
PER_CCV 0.0004 ug/ml 05/07/15	T514_002.d	05/14/15 10:07
PER_CCV 0.002 ug/ml 05/07/15	T514_003.d	05/14/15 10:26
AZ16230_W01 1052631.6 DF 05/12/15_5/14	T514_006.d	05/14/15 11:31
AZ16228_W01 10526.3 DF 05/12/15_5/14	T514_011.d	05/14/15 13:13
PER_CCV 0.0004 ug/ml 05/07/15	T514_016.d	05/14/15 14:46
PER_CCV 0.002 ug/ml 05/07/15	T514_017.d	05/14/15 15:05
PER_CCV 0.0004 ug/ml 05/07/15	T514_072.d	05/15/15 15:10
PER_CCV 0.002 ug/ml 05/07/15	T514_073.d	05/15/15 15:29
AZ16231_W01 105263.2 DF 05/12/15_5/15	T514_076.d	05/15/15 16:37
PER_CCV 0.0004 ug/ml 05/07/15	T514_078.d	05/15/15 17:15
PER_CCV 0.002 ug/ml 05/07/15	T514_079.d	05/15/15 17:33