N00174.AR.001954
NSWC INDIAN HEAD
5090.3a

VALIDATED DATA PACKAGE, 76552, 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 29, 2015

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

Attn: Ed Corack

Title: Report of Data: Case 76552

Project: CTO JU11 112G02622 NSF Indian Head, MD

Contract #: Prime contract # for DoD: Navy CLEAN. N62467-08-D-1001
Subcontract # 1045497, Work Release # 08-JU11

Dear Mr. Corack:

Six water samples were received June 2, 2015, at 3.0°C. Written results for the requested analysis are provided on this June 29, 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: 13

Sample receipt information

ARF: 76552

Project: CTO JU11 112G02622 NSF Indian Head, MD

Sample Receipt Information:

The water samples were received on June 2, 2015, at 3.0C. The samples were assigned Analytical Request Form (ARF) number 76552. The sample numbers and requested analysis were compared to the chain of custody. No exception was encountered.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
S67-GWX7-060115	AZ16963	WATER	06/01/15	06/02/15
S67-GWY7-060115	AZ16964	WATER	06/01/15	06/02/15
S67-GWZ7-060115	AZ16965	WATER	06/01/15	06/02/15
S67-GWA7-060115	AZ16966	WATER	06/01/15	06/02/15
S67-GWZ9-060115	AZ16967	WATER	06/01/15	06/02/15
S67-GWX7P-060115	AZ16968	WATER	06/01/15	06/02/15

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 curve and sample S67-GWZ9-060115. 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:

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

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

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 internal standards were within the 50%D acceptance criteria.

Summary:

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

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO. 76552 3.0
QUOTE NO.
COC Number 088455

CLIENT INFORMATION (REPORT TO BE SENT TO:)

COMPANY: Tetra Tech
ADDRESS: 5700 Lake Wright Dr. Suite 309
CITY: Norfolk STATE: VA ZIP: 23502
ATTENTION: Ed Corack
PHONE: 757-466-4908 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: NSF-Indian Head Site 67
PROJECT NO.: 112G02622 LOCATION: Site 67
PROJECT MANAGER: Ed Corack
e-mail: Ed.Corack@tetratech.com
PHONE: 757-466-4908 FAX: —

CLIENT BILLING INFORMATION

BILL TO: See Contract PO#:
ADDRESS:
CITY: STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX: _____ DAYS *
HARD COPY: _____ DAYS *
EDD: _____ DAYS *
PREAPPROVED TAT: ☒ YES ☐ NO 24 hour
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

☐ RESULTS ONLY ☐ USEPA CLP
☐ RESULTS + QC ☐ New York State ASP "B"
☐ New Jersey REDUCED ☐ New York State ASP "A"
☐ New Jersey CLP ☒ Other See SOW
☐ EDD FORMAT _____

ANALYSIS

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	1 Perchlorate	2	3	4	5	6	7	8	9	COMMENTS
								E									← Specify Preservatives A-HCl B-HNO_3 C-H_2SO_4 D-NaOH E-ICE F-Other
1.	S67-GWX7-060115	GW		X	6-1-15	1552	1	1									*24 HR TAT
2.	S67-GWY7-060115	GW		X	6-1-15	1627	1	1									
3.	S67-GWZ7-060115	GW		X	6-1-15	1410	1	1									
4.	S67-GWA7-060115	GW		X	6-1-15	1310	1	1									
5.	S67-GWZ9-060115	GW		X	6-1-15	1205	1	1									
6.	S67-GWX7P-060115	GW		X	6-1-15	1552	1	1									
7.																	
8.																	
9.																	
10.																	

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. Jacob Birkett	6-1-15 1800	1. FedEx
RELINQUISHED BY: 2.	DATE/TIME: ~~6/2/15 09:50~~	RECEIVED BY: ~~2. Hang Zo~~ YL 6/2/15
RELINQUISHED BY: 3.	DATE/TIME: 6/2/15 09:50	RECEIVED FOR LAB BY: 3. Hang Zo

Conditions of bottles or coolers at receipt: ☐ Compliant ☐ Non Compliant Cooler Temp. _____
MeOH extraction requires an additional 4 oz jar for percent solid.
Comments: Ice in Cooler?: _____

Page 1 of 1

SHIPPED VIA: CLIENT: ☐ HAND DELIVERED ☐ OVERNIGHT
CHEMTECH: ☐ PICKED UP ☐ OVERNIGHT

Shipment Complete: ☐ YES ☐ NO

Revision 8/2007

WHITE - CHEMTECH COPY FOR RETURN TO CLIENT 4 YELLOW - CHEMTECH COPY PINK - SAMPLER COPY

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-GWX7-060115
Sample Collection Date: 06/01/15

ARF: 76552
APPL ID: AZ16963
QCG: #6850-150602A-197656

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	14	6.0	4.00	2.00	ug/L	06/02/15	06/03/15

Quant Method: QTLMFL2
Run #: T603_011.D
Instrument: AGIL_6460
Sequence: TQ060315
Dilution Factor: 10
Initials: MP

Printed: 06/29/15 12:02:22 PM
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-GWY7-060115
Sample Collection Date: 06/01/15

ARF: 76552
APPL ID: AZ16964
QCG: #6850-150602A-197656

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	17	6.0	4.00	2.00	ug/L	06/02/15	06/03/15

Quant Method: QTLMFL2
Run #: T603_013.D
Instrument: AGIL_6460
Sequence: TQ060315
Dilution Factor: 10
Initials: MP

Printed: 06/29/15 12:02:22 PM
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-GWZ7-060115
Sample Collection Date: 06/01/15

ARF: 76552
APPL ID: AZ16965
QCG: #6850-150602A-197656

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	150	60	40.0	20.0	ug/L	06/02/15	06/03/15

Quant Method: QTLMFL2
Run #: T603_020.D
Instrument: AGIL_6460
Sequence: TQ060315
Dilution Factor: 100
Initials: MP

Printed: 06/29/15 12:02:22 PM
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-GWA7-060115
Sample Collection Date: 06/01/15

ARF: 76552
APPL ID: AZ16966
QCG: #6850-150602A-197656

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	13	6.0	4.00	2.00	ug/L	06/02/15	06/03/15

Quant Method: QTLMFL2
Run #: T603_018.D
Instrument: AGIL_6460
Sequence: TQ060315
Dilution Factor: 10
Initials: MP

Printed: 06/29/15 12:02:22 PM
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-GWZ9-060115
Sample Collection Date: 06/01/15

ARF: 76552
APPL ID: AZ16967
QCG: #6850-150602A-197656

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	41	6.0	4.00	2.00	ug/L	06/02/15	06/03/15

Quant Method: QTLMFL2
Run #: T603_022.D
Instrument: AGIL_6460
Sequence: TQ060315
Dilution Factor: 10
Initials: MP

Printed: 06/29/15 12:02:22 PM
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-GWX7P-060115
Sample Collection Date: 06/01/15

ARF: 76552
APPL ID: AZ16968
QCG: #6850-150602A-197656

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	13	6.0	4.00	2.00	ug/L	06/02/15	06/03/15

Quant Method: QTLMFL2
Run #: T603_009.D
Instrument: AGIL_6460
Sequence: TQ060315
Dilution Factor: 10
Initials: MP

Printed: 06/29/15 12:02:22 PM
APPL-F1-SC-NoMC-REG MDLs

Method Blank
Perchlorate

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150602W-16963 - 197656**
Batch ID: #6850-150602A

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	06/02/15	06/02/15

Quant Method: QTLMFL2
Run #: T602_007.D
Instrument: AGIL_6460
Sequence: TQ060215
Initials: MP

GC SC-Blank-REG MDLs
Printed: 06/29/15 12:02:25 PM

Laboratory Control Spike Recovery
Perchlorate

APPL ID: **150602W-16963 LCS - 197656**
Batch ID: #6850-150602A

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	0.664	111	80-120

Comments: _____

Primary	SPK
Quant Method :	QTLMFL2
Extraction Date :	06/02/15
Analysis Date :	06/02/15
Instrument :	AGIL_6460
Run :	T602_005.D
Initials :	MP

Printed: 06/29/15 12:02:19 PM
APPL Standard LCS

EPA 6850

Form 4

Blank Summary

Lab Name: APPL, Inc.
Case No: 76552
Matrix: WATER
Blank ID: 150602A-BLK

SDG No: 76552
Date Analyzed: 06/02/15
Instrument: AGIL_6460
Time Analyzed: 1432

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150602A-LCS	Lab Control Spike	T602_005.D	06/02/15 1432
150602A-BLK	Blank	T602_007.D	06/02/15 1432
AZ16968	S67-GWX7P-060115	T603_009.D	06/03/15 1236
AZ16963	S67-GWX7-060115	T603_011.D	06/03/15 1313
AZ16964	S67-GWY7-060115	T603_013.D	06/03/15 1351
AZ16966	S67-GWA7-060115	T603_018.D	06/03/15 1524
AZ16965	S67-GWZ7-060115	T603_020.D	06/03/15 1606
AZ16967	S67-GWZ9-060115	T603_022.D	06/03/15 1643

Comments: Batch: #6850-150602A

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 29, 2015

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

Attn: Ed Corack

Title: Report of Data: Case 76552

Project: CTO JU11 112G02622 NSF Indian Head, MD

Contract #: Prime contract # for DoD: Navy CLEAN. N62467-08-D-1001
Subcontract # 1045497, Work Release # 08-JU11

Dear Mr. Corack:

Six water samples were received June 2, 2015, at 3.0°C. Written results for the requested analysis are provided on this June 29, 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: 155

T:\Case Narratives\Tetra Tech\76552 new NSF Indian Head.doc

Data Validation Package

for

CTO JU11 112G02622 NSF Indian Head

ARF 76552

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SAMPLE RECEIPT INFORMATION

Sample receipt information

ARF: 76552

Project: CTO JU11 112G02622 NSF Indian Head, MD

Sample Receipt Information:

The water samples were received on June 2, 2015, at 3.0C. The samples were assigned Analytical Request Form (ARF) number 76552. The sample numbers and requested analysis were compared to the chain of custody. No exception was encountered.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
S67-GWX7-060115	AZ16963	WATER	06/01/15	06/02/15
S67-GWY7-060115	AZ16964	WATER	06/01/15	06/02/15
S67-GWZ7-060115	AZ16965	WATER	06/01/15	06/02/15
S67-GWA7-060115	AZ16966	WATER	06/01/15	06/02/15
S67-GWZ9-060115	AZ16967	WATER	06/01/15	06/02/15
S67-GWX7P-060115	AZ16968	WATER	06/01/15	06/02/15

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 curve and sample S67-GWZ9-060115. 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:

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

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

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 internal standards were within the 50%D acceptance criteria.

Summary:

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

APPL Inc.
Abbreviations and Flags

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

CHAIN OF CUSTODY,
ARF, CRF, AND
CLIENT COMMUNICATION

APPL - Analysis Request Form

76552

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 # 088455
RAD Screen (Y/N): Y pH (Y/N): N
Turn Around Type: 24 HOURS

Received by: YL
Date Received: 06/02/15 Time: 09:50
Delivered by: FED EX
Shuttle Custody Seals (Y/N): Y Time Zone: -4
Chest Temp(s): 3.0°C
Color: B-Red
Samples Chilled until Placed in Refrig/Freezer: Y
Project Manager: Cynthia Clark
QC Report Type: DVP4/LEDD/MD
Due Date: 06/03/15

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 report and
Summary report (sample & QC results with surrogate & blank summaries) to Amy Thomson (Pittsburgh)
Include original COC with report. NOTHING to Ed in VA office
EDD: TTEC LEDD to http://isg.applications.tetratech.com/LEDDChecker2010/
EDD: email confirm to ed.corack@ amy.thomson@ & tobrena.sedlmyer@tetratech.com
Guidance: DOD QSM v4.2: DOD Forms, LOD Database

Sample Distribution:
Extractions: 6-_HPL6850
LCMS: 6-$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-GWX7-060115	AZ16963W	06/01/15	15:52	$6850
2.	S67-GWY7-060115	AZ16964W	06/01/15	16:27	$6850
3.	S67-GWZ7-060115	AZ16965W	06/01/15	14:10	$6850
4.	S67-GWA7-060115	AZ16966W	06/01/15	13:10	$6850
5.	S67-GWZ9-060115	AZ16967W	06/01/15	12:05	$6850
6.	S67-GWX7P-060115	AZ16968W	06/01/15	15:52	$6850

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

APPL Sample Receipt Form

ARF# **76552**

Sample	Container Type	Count	pH
AZ16963	4 PL 125mL	1	NA
AZ16964	4 PL 125mL	1	NA
AZ16965	4 PL 125mL	1	NA
AZ16966	4 PL 125mL	1	NA
AZ16967	4 PL 125mL	1	NA
AZ16968	4 PL 125mL	1	NA

Sample	Container Type	Count	pH

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax (908) 789-8922
www.chemtech.net

76552 3.0

CHEMTECH PROJECT NO.
QUOTE NO.
COC Number 088455

CLIENT INFORMATION (REPORT TO BE SENT TO:)

COMPANY: Tetra Tech
ADDRESS: 5700 Lake Wright Dr. Suite 309
CITY: Norfolk STATE: VA ZIP: 23502
ATTENTION: Ed Corack
PHONE: 757-466-4908 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: NSF-Indian Head Site 67
PROJECT NO.: 112G02622 LOCATION: Site 67
PROJECT MANAGER: Ed Corack
e-mail: Ed.Corack@tetratech.com
PHONE: 757-466-4908 FAX: —

CLIENT BILLING INFORMATION

BILL TO: See Contract PO#:
ADDRESS:
CITY: STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX: _____ DAYS *
HARD COPY: _____ DAYS *
EDD: _____ DAYS *
PREAPPROVED TAT: ☒ YES ☐ NO 24 hour
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

☐ RESULTS ONLY ☐ USEPA CLP
☐ RESULTS + QC ☐ New York State ASP "B"
☐ New Jersey REDUCED ☐ New York State ASP "A"
☐ New Jersey CLP ☒ Other See SOW
☐ EDD FORMAT _____

ANALYSIS

	1	2	3	4	5	6	7	8	9
Perchlorate									

PRESERVATIVES

	1	2	3	4	5	6	7	8	9
	E								

COMMENTS ← Specify Preservatives
A – HCl B – HNO_3
C – H_2SO_4 D – NaOH
E – ICE F – Other

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	1	2	3	4	5	6	7	8	9	COMMENTS
1.	S67-GWX7-060115	GW		X	6-1-15	1552	1	1									*24 HR TAT
2.	S67-GWY7-060115	GW		X	6-1-15	1627	1	1									
3.	S67-GWZ7-060115	GW		X	6-1-15	1410	1	1									
4.	S67-GWA7-060115	GW		X	6-1-15	1310	1	1									
5.	S67-GWZ9-060115	GW		X	6-1-15	1205	1	1									
6.	S67-GWX7P-060115	GW		X	6-1-15	1552	1	1									
7.																	
8.																	
9.																	
10.																	

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. Jacob Birkett	6-1-15 1800	1. FedEx
RELINQUISHED BY: 2.	DATE/TIME: ~~6/2/15 09:50~~	RECEIVED BY: 2. ~~Hang Zo~~ YL 6/2/15
RELINQUISHED BY: 3.	DATE/TIME: 6/2/15 09:50	RECEIVED FOR LAB BY: 3. Hang Zo

Conditions of bottles or coolers at receipt: ☐ Compliant ☐ Non Compliant
MeOH extraction requires an additional 4 oz jar for percent solid.
Comments:

Cooler Temp. _____
Ice in Cooler?: _____

Page 1 of 1

SHIPPED VIA: CLIENT: ☐ HAND DELIVERED ☐ OVERNIGHT
CHEMTECH: ☐ PICKED UP ☐ OVERNIGHT

Shipment Complete: ☐ YES ☐ NO

Revision 8/2007

WHITE - CHEMTECH COPY FOR RETURN TO CLIENT YELLOW - CHEMTECH COPY PINK - SAMPLER COPY

COOLER RECEIPT FORM **ARF: 76552**

1) Project: CTO JU11 112G02622 NSF Indian Head Date Received: 06/02/15

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: ____

CUSTODY SEAL
DATE 6-1-15
SIGNATURE [redacted]
QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

Chain of custody:

9) YES Was a chain of custody received?

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

Sample Labels:

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

12) YES Did all container labels agree with custody papers?

Sample Containers:

13) YES Were all containers sealed in separate bags?

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

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

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

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

Preservation Hold time:

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

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

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

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

22) NO Were unpreserved VOA Vials received?

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

Notes/Deficiencies:

Personnel receiving samples: YL Second reviewer: JM
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: **150602W-16963 - 197656**
Batch ID: #6850-150602A

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	06/02/15	06/02/15

Quant Method: QTLMFL2
Run #: T602_007.D
Instrument: AGIL_6460
Sequence: TQ060215
Initials: MP

GC SC-Blank-REG MDLs
Printed: 06/23/15 8:02:18 AM

Laboratory Control Spike Recovery
Perchlorate

APPL ID: **150602W-16963 LCS - 197656**
Batch ID: #6850-150602A

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	0.664	111	80-120

Comments: _____

Primary	SPK
Quant Method :	QTLMFL2
Extraction Date :	06/02/15
Analysis Date :	06/02/15
Instrument :	AGIL_6460
Run :	T602_005.D
Initials :	MP

Printed: 06/23/15 8:02:09 AM
APPL Standard LCS

Interferrence Check Sample

Perchlorate EPA 6850 Water

APPL ID: 150602W-16963 ICS-197656
Batch ID: #6850-150602A

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	0.677	112.8%	70-130

Comments:

Quant Method:	QTLMFL2
Extraction Date:	06/02/15
Analysis Date:	06/02/15
Instrument:	AGIL_6560
Run:	T602_019.D
Initials:	RP

EPA 6850

Form 4

Blank Summary

Lab Name: APPL, Inc. SDG No: 76552

Case No: 76552 Date Analyzed: 06/02/15

Matrix: WATER Instrument: AGIL_6460

Blank ID: 150602A-BLK Time Analyzed: 1432

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150602A-LCS	Lab Control Spike	T602_005.D	06/02/15 1432
150602A-BLK	Blank	T602_007.D	06/02/15 1432
AZ16968	S67-GWX7P-060115	T603_009.D	06/03/15 1236
AZ16963	S67-GWX7-060115	T603_011.D	06/03/15 1313
AZ16964	S67-GWY7-060115	T603_013.D	06/03/15 1351
AZ16966	S67-GWA7-060115	T603_018.D	06/03/15 1524
AZ16965	S67-GWZ7-060115	T603_020.D	06/03/15 1606
AZ16967	S67-GWZ9-060115	T603_022.D	06/03/15 1643

Comments: Batch: #6850-150602A

Printed: 06/23/15 8:02:06 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.** **76552**

Lab File ID (Standard): T602_003.d

Instrument ID: Agilent 6460 Triple Quad LC/MS

	PER_IS			
	12_HOUR_STD AVERAGE	6692853		
	UPPER LIMIT RESPONSE	10039280		
	LOWER LIMIT RESPONSE	3346427		
Data File ID:	Sample ID:	Analysis Date and Time	IS AREA COUNT #	IS R.T. #
T602_002.d	PER_CCV 0.0004 ug/ml 05/29/15	6/2/15 13:57	5965792	13.599
T602_003.d	PER_CCV 0.002 ug/ml 05/29/15	6/2/15 14:16	6692853	13.884
T602_005.d	150602WA_LCS-1 1052.6 DF 06/02/15	6/2/15 14:53	5595910	13.823
T602_007.d	15060WBLKA 1052.6 DF 06/02/15	6/2/15 15:31	5925181	13.752
T602_015.d	PER_CCV 0.0004 ug/ml 05/29/15	6/2/15 18:00	5699591	13.569
T602_016.d	PER_CCV 0.002 ug/ml 05/29/15	6/2/15 18:19	6462054	13.65
T602_019.d	150602W_ICSA 1052.6 DF 06/02/15	6/2/15 19:15	4633904	12.438
T602_028.d	PER_CCV 0.0004 ug/ml 05/29/15	6/2/15 22:02	6093426	13.069
T602_029.d	PER_CCV 0.002 ug/ml 05/29/15	6/2/15 22:21	6947403	13.243

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.** **76552**

Lab File ID (Standard): T603_003.d

Instrument ID: Agilent 6460 Triple Quad LC/MS

	PER_IS			
	12_HOUR_STD AVERAGE	6359894		
	UPPER LIMIT RESPONSE	9539841		
	LOWER LIMIT RESPONSE	3179947		
Data File ID:	Sample ID:	Analysis Date and Time	IS AREA COUNT #	IS R.T. #
T603_002.d	PER_CCV 0.0004 ug/ml 05/29/15	6/3/15 10:26	5545586	13.365
T603_003.d	PER_CCV 0.002 ug/ml 05/29/15	6/3/15 10:44	6359894	13.701
T603_009.d	AZ16968_W01 10526.3 DF 06/02/15_6/03	6/3/15 12:36	5440798	13.742
T603_011.d	AZ16963_W01 10526.3 DF 06/02/15_6/03	6/3/15 13:13	5459803	13.783
T603_013.d	AZ16964_W01 10526.3 DF 05/06/25_6/03	6/3/15 13:51	5633595	13.66
T603_015.d	PER_CCV 0.0004 ug/ml 05/29/15	6/3/15 14:28	5423681	13.446
T603_016.d	PER_CCV 0.002 ug/ml 05/29/15	6/3/15 14:47	6342934	14.037
T603_018.d	AZ16966_W01 10526.3 DF 06/02/15_6/03	6/3/15 15:24	5406205	13.538
T603_020.d	AZ16965_W01 105263,2 DF 06/02/15_6/03	6/3/15 16:06	5646042	13.558
T603_022.d	AZ16967_W01 105263.2 DF 06/02/15_6/03	6/3/15 16:43	5842233	13.345
T603_027.d	PER_CCV 0.0004 ug/ml 05/29/15	6/3/15 18:16	5706686	13.069
T603_028.d	PER_CCV 0.002 ug/ml 05/29/15	6/3/15 18:35	6840479	13.273

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 17:15
Sample Name: PER_IS_50:50 0.005 ug/ml 11/11/14
Vial Number: NA
Data File ID: T312_001.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.014	113760	3.1
2)	Perchlorate_85	14.071	36914	

Date Aquired: 03/12/15 17:33
Sample Name: PERCHLORATE 0.0001 ug/ml 11/11/14
Vial Number: NA
Data File ID: T312_002.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.504	237168	3.1
2)	Perchlorate_85	13.541	77486	

Date Aquired: 03/12/15 17:52
Sample Name: PERCHLORATE 0.0002 ug/ml 11/11/14
Vial Number: NA
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
Sample Name: PERCHLORATE 0.0004 ug/ml 11/11/14
Vial Number: NA
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
Sample Name: PERCHLORATE 0.001 ug/ml 11/11/14
Vial Number: NA
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 19:44 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 11/11/14 Data File ID: T312_009.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.912	249406	2.9
2)	Perchlorate_85	13.949	85978	

Page 2 of 4

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	

Date Aquired: 03/12/15 20:40 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 11/11/14 Data File ID: T312_012.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.657	10916	2.0
2)	Perchlorate_85	13.776	5521	

Date Aquired: 03/12/15 20:58 Vial Number: NA
Sample Name: PER_CCV_1 0.0004 ug/ml 11/11/14 Data File ID: T312_013.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.105	1267031	3.1
2)	Perchlorate_85	14.143	410558	

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Date Aquired: 03/12/15 21:17 Vial Number: NA
Sample Name: PER_CCV_1 0.002 ug/ml 11/11/14 Data File ID: T312_014.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.146	6907110	3.3
2)	Perchlorate_85	14.122	2093567	

Date Aquired: 03/12/15 21:36 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 11/11/14 Data File ID: T312_015.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.36	64783	9.6
2)	Perchlorate_85	13.715	6730	

Page 4 of 4

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: 06/02/15 13:39 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/29/15 Data File ID: T602_001.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.524	3614	1.8
2)	Perchlorate_85	13.531	2010	

Date Aquired: 06/02/15 13:57 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/29/15 Data File ID: T602_002.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.596	584938	3.0
2)	Perchlorate_85	13.643	195324	

Date Aquired: 06/02/15 14:16 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/29/15 Data File ID: T602_003.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.891	3070181	3.3
2)	Perchlorate_85	13.868	939824	

Page 2 of 9

Date Aquired: 06/02/15 14:35 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/29/15 Data File ID: T602_004.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.596	1987	2.2
2)	Perchlorate_85	13.633	895	

Date Aquired: 06/02/15 14:53 Vial Number: NA
Sample Name: 150602WA_LCS-1 1052.6 DF 06/02/15 Data File ID: T602_005.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.789	897401	3.4
2)	Perchlorate_85	13.806	260585	

Date Aquired: 06/02/15 15:12 Vial Number: NA
Sample Name: 150602W_ICSA 1052.6 DF 06/02/15 Data File ID: T602_006.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.658	736902	2.2
2)	Perchlorate_85	12.706	336120	

Date Aquired: 06/02/15 15:31 Vial Number: NA
Sample Name: 15060WBLKA 1052.6 DF 06/02/15 Data File ID: T602_007.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.677	4920	1.1
2)	Perchlorate_85	13.582	4309	

Page 3 of 9

Date Aquired: 06/02/15 15:50 Vial Number: NA
Sample Name: AZ16963_W01 1052.6 DF 06/02/15 Data File ID: T602_008.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.311	19938598	3.5
2)	Perchlorate_85	13.317	5699009	

Date Aquired: 06/02/15 16:08 Vial Number: NA
Sample Name: AZ16964_W01 1052.6 DF 06/02/15 Data File ID: T602_009.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.463	26511506	3.5
2)	Perchlorate_85	13.45	7560311	

Date Aquired: 06/02/15 16:27 Vial Number: NA
Sample Name: AZ16965_W01 1052.6 DF 06/02/15 Data File ID: T602_010.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.72	196985730	3.1
2)	Perchlorate_85	12.716	63488434	

Date Aquired: 06/02/15 16:46 Vial Number: NA
Sample Name: AZ16966_W01 1052.6 DF 06/02/15 Data File ID: T602_011.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.699	21375196	3.6
2)	Perchlorate_85	12.686	5960568	

Page 4 of 9

Date Aquired: 06/02/15 17:04 Vial Number: NA
Sample Name: AZ16967_W01 1052.6 DF 06/02/15 Data File ID: T602_012.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.433	68714987	3.4
2)	Perchlorate_85	13.429	20248619	

Date Aquired: 06/02/15 17:23 Vial Number: NA
Sample Name: AZ16968_W01 1052.6 DF 06/02/15 Data File ID: T602_013.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.28	18078259	3.5
2)	Perchlorate_85	13.287	5123749	

Date Aquired: 06/02/15 17:41 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/29/15 Data File ID: T602_014.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.749	26755	4.0
2)	Perchlorate_85	13.603	6726	

Date Aquired: 06/02/15 18:00 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/29/15 Data File ID: T602_015.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.565	541078	3.0
2)	Perchlorate_85	13.511	181378	

Page 5 of 9

Date Aquired: 06/02/15 18:19 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/29/15 Data File ID: T602_016.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.667	2924651	3.2
2)	Perchlorate_85	13.664	905950	

Date Aquired: 06/02/15 18:37 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/29/15 Data File ID: T602_017.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.759	16029	2.1
2)	Perchlorate_85	13.633	7603	

Date Aquired: 06/02/15 18:56 Vial Number: NA
Sample Name: 150602WA_LCS-1 1052.6 DF 06/02/15 Data File ID: T602_018.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.687	805644	3.0
2)	Perchlorate_85	13.684	264870	

Date Aquired: 06/02/15 19:15 Vial Number: NA
Sample Name: 150602W_ICSA 1052.6 DF 06/02/15 Data File ID: T602_019.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.434	757354	2.9
2)	Perchlorate_85	12.38	258023	

Page 6 of 9

Date Aquired: 06/02/15 19:33 Vial Number: NA
Sample Name: 15060WBLKA 1052.6 DF 06/02/15 Data File ID: T602_020.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.443	6369	1.4
2)	Perchlorate_85	13.521	4649	

Date Aquired: 06/02/15 19:52 Vial Number: NA
Sample Name: AZ16963_W01 1052.6 DF 06/02/15 Data File ID: T602_021.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.443	18928613	3.5
2)	Perchlorate_85	13.44	5466403	

Date Aquired: 06/02/15 20:10 Vial Number: NA
Sample Name: AZ16964_W01 1052.6 DF 06/02/15 Data File ID: T602_022.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.015	27360799	3.4
2)	Perchlorate_85	13.032	7942302	

Date Aquired: 06/02/15 20:29 Vial Number: NA
Sample Name: AZ16965_W01 1052.6 DF 06/02/15 Data File ID: T602_023.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.495	194070301	3.1
2)	Perchlorate_85	12.492	63426068	

Page 7 of 9

Date Aquired: 06/02/15 20:48 Vial Number: NA
Sample Name: AZ16966_W01 1052.6 DF 06/02/15 Data File ID: T602_024.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.465	22527106	3.5
2)	Perchlorate_85	12.461	6505770	

Date Aquired: 06/02/15 21:06 Vial Number: NA
Sample Name: AZ16967_W01 1052.6 DF 06/02/15 Data File ID: T602_025.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.066	72991428	3.3
2)	Perchlorate_85	13.063	22091920	

Date Aquired: 06/02/15 21:25 Vial Number: NA
Sample Name: AZ16968_W01 1052.6 DF 06/02/15 Data File ID: T602_026.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.188	18603437	3.4
2)	Perchlorate_85	13.185	5490562	

Date Aquired: 06/02/15 21:44 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/29/15 Data File ID: T602_027.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.616	5349	0.8
2)	Perchlorate_85	13.491	6860	

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Date Aquired: 06/02/15 22:02 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/29/15 Data File ID: T602_028.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.056	594615	3.0
2)	Perchlorate_85	13.073	196418	

Date Aquired: 06/02/15 22:21 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/29/15 Data File ID: T602_029.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.26	3130019	3.2
2)	Perchlorate_85	13.256	965902	

Date Aquired: 06/02/15 22:39 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/29/15 Data File ID: T602_030.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.708	2029	1.7
2)	Perchlorate_85	13.582	1191	

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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\150603
Instrument Name : TQ (Agilent 6460 Triple Quad LC/MS)
Method File : 6460_ESI_PER_N_NEWER_K'_COLUMN.m
Operator : BA

Date Aquired: 06/03/15 10:07 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/29/15 Data File ID: T603_001.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.606	1306	1.2
2)	Perchlorate_85	13.694	1077	

Date Aquired: 06/03/15 10:26 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/29/15 Data File ID: T603_002.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.321	549449	3.0
2)	Perchlorate_85	13.378	185656	

Date Aquired: 06/03/15 10:44 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/29/15 Data File ID: T603_003.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.718	2931062	3.3
2)	Perchlorate_85	13.725	881769	

Date Aquired: 06/03/15 11:03 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/29/15 Data File ID: T603_004.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.647	9713	0.9
2)	Perchlorate_85	13.776	10683	

Date Aquired: 06/03/15 11:22 Vial Number: NA
Sample Name: AZ16965_W01 105263.2 DF 06/02/15_6/03 Data File ID: T603_005.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.738	197922	2.7
2)	Perchlorate_85	13.766	74495	

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Date Aquired: 06/03/15 11:40 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 06/03/15 Data File ID: T603_006.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.8	23410	2.3
2)	Perchlorate_85	13.643	10268	

Date Aquired: 06/03/15 11:59 Vial Number: NA
Sample Name: AZ16967_W01 105263.2 DF 06/02/15_6/03 Data File ID: T603_007.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.687	95720	2.5
2)	Perchlorate_85	13.725	38414	

Date Aquired: 06/03/15 12:18 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 06/03/15 Data File ID: T603_008.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.728	9098	0.4
2)	Perchlorate_85	13.755	21738	

Date Aquired: 06/03/15 12:36 Vial Number: NA
Sample Name: AZ16960_W01 10526.3 DF 06/02/15_6/03 Data File ID: T603_009.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.738	1729326	3.4
2)	Perchlorate_85	13.745	511514	

Page 2 of 15

Date Aquired: 06/03/15 12:55 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 06/03/15 Data File ID: T603_010.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.718	16783	3.9
2)	Perchlorate_85	13.776	4273	

Date Aquired: 06/03/15 13:13 Vial Number: NA
Sample Name: AZ16963_W01 10526.3 DF 06/02/15_6/03 Data File ID: T603_011.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.769	1813433	3.3
2)	Perchlorate_85	13.776	552804	

Date Aquired: 06/03/15 13:32 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 06/03/15 Data File ID: T603_012.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.708	20020	1.7
2)	Perchlorate_85	13.715	11796	

Date Aquired: 06/03/15 13:51 Vial Number: NA
Sample Name: AZ16964_W01 10526.3 DF 05/06/25_6/03 Data File ID: T603_013.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.677	2370118	3.4
2)	Perchlorate_85	13.684	691280	

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Date Aquired: 06/03/15 14:09 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/29/15 Data File ID: T603_014.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.708	20968	5.3
2)	Perchlorate_85	13.654	3943	

Date Aquired: 06/03/15 14:28 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/29/15 Data File ID: T603_015.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.484	562585	3.1
2)	Perchlorate_85	13.429	179334	

Date Aquired: 06/03/15 14:47 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/29/15 Data File ID: T603_016.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.054	2920575	3.3
2)	Perchlorate_85	14.041	876230	

Date Aquired: 06/03/15 15:05 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/29/15 Data File ID: T603_017.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.698	7381	0.5
2)	Perchlorate_85	13.684	13892	

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Date Aquired: 06/03/15 15:24 Vial Number: NA
Sample Name: AZ16966_W01 10526.3 DF 06/02/15_6/03 Data File ID: T603_018.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.555	1713424	3.3
2)	Perchlorate_85	13.521	515800	

Date Aquired: 06/03/15 15:47 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 06/03/15 Data File ID: T603_019.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.738	37152	8.0
2)	Perchlorate_85	13.755	4618	

Date Aquired: 06/03/15 16:06 Vial Number: NA
Sample Name: AZ16965_W01 105263,2 DF 06/02/15_6/03 Data File ID: T603_020.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.555	2052507	3.3
2)	Perchlorate_85	13.572	627827	

Date Aquired: 06/03/15 16:25 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 06/03/15 Data File ID: T603_021.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.912	22975	2.6
2)	Perchlorate_85	13.694	8898	

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Date Aquired: 06/03/15 16:43 Vial Number: NA
Sample Name: AZ16967_W01 105263.2 DF 06/02/15_6/03 Data File ID: T603_022.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.362	580713	3.1
2)	Perchlorate_85	13.348	189142	

Date Aquired: 06/03/15 17:02 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 06/03/15 Data File ID: T603_023.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.575	25771	6.3
2)	Perchlorate_85	13.776	4074	

Date Aquired: 06/03/15 17:21 Vial Number: NA
Sample Name: 150603WA_LCS-1 1052.6 DF 06/03/15 Data File ID: T603_024.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.779	754586	3.2
2)	Perchlorate_85	13.755	238053	

Date Aquired: 06/03/15 17:39 Vial Number: NA
Sample Name: 150603W_ICSA 1052.6 DF 06/03/15 Data File ID: T603_025.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.607	687383	2.6
2)	Perchlorate_85	12.574	265911	

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Date Aquired: 06/03/15 17:58 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/29/15 Data File ID: T603_026.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.851	3848	0.7
2)	Perchlorate_85	13.674	5646	

Date Aquired: 06/03/15 18:16 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/29/15 Data File ID: T603_027.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.086	585148	2.8
2)	Perchlorate_85	13.093	205870	

Date Aquired: 06/03/15 18:35 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/29/15 Data File ID: T603_028.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.29	3139503	3.3
2)	Perchlorate_85	13.297	948549	

Date Aquired: 06/03/15 18:54 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/29/15 Data File ID: T603_029.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.779	7855	4.2
2)	Perchlorate_85	13.786	1867	

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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-GWX7-060115
Sample Collection Date: 06/01/15

ARF: 76552
APPL ID: AZ16963
QCG: #6850-150602A-197656

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	14	6.0	4.00	2.00	ug/L	06/02/15	06/03/15

Quant Method: QTLMFL2
Run #: T603_011.D
Instrument: AGIL_6460
Sequence: TQ060315
Dilution Factor: 10
Initials: MP

Printed: 06/19/15 7:51:55 AM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T603_011.d

Date Injected : 06/03/15

Time Injected : 13:13

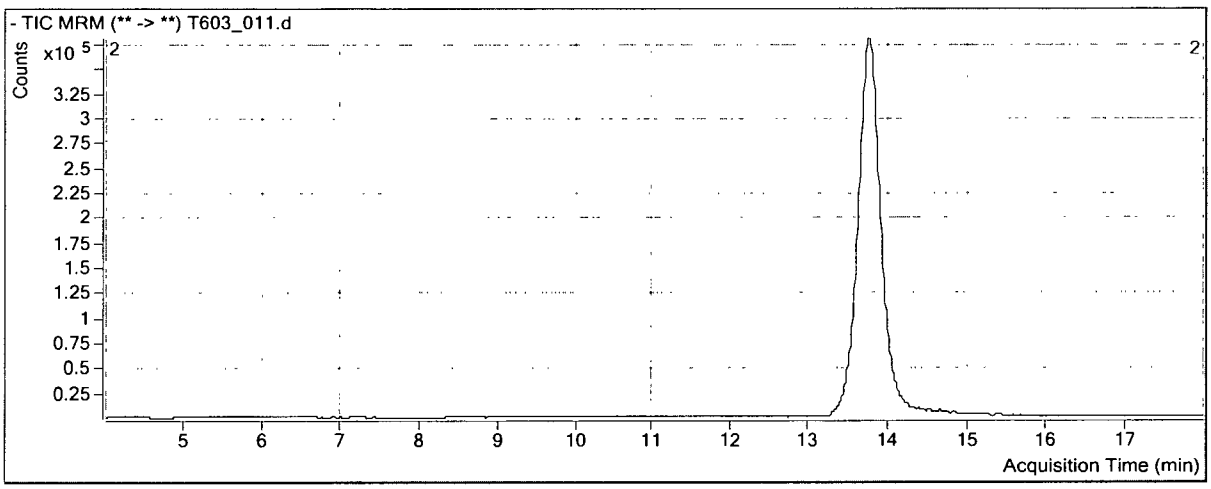
Sample ID : AZ16963_W01 10526.3 DF 06/02/15_6/03

Client ID : S67-GWX7-060115

Retention Time	Area Count Response	Compound_ID Product Ion	
13.783	5459803	PER_IS_89	
13.769	1813433	Perchlorate_83	(1813433 * 0.0050) / (1.27 * 5459803.00) * 10526.30 = 13.761928 ppb
13.776	552804	Perchlorate_85	(552804 * 0.0050) / (0.39 * 5459803.00) * 10526.30 = 13.607919 ppb

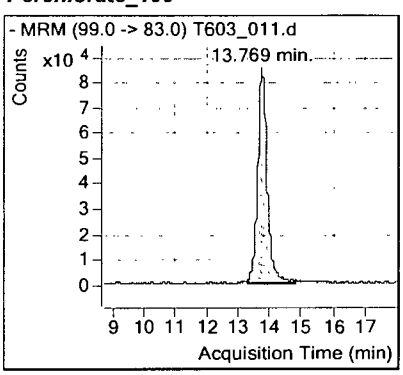
Quantitative Analysis Sample Report

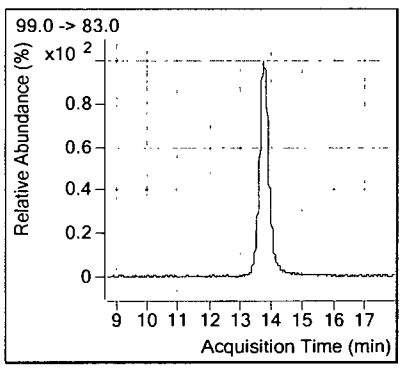
Batch Data Path	D:\MassHunter\Data\150603\QuantResults\150603_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T603_011.d	**Sample Name**	AZ16963_W01 10526.3 DF 06/02/15_6/03
Sample Type	Sample	**Acq_Date**	06/03/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	13:13
ClientID	S67-GWX7-060115	**Inj Vol**	20

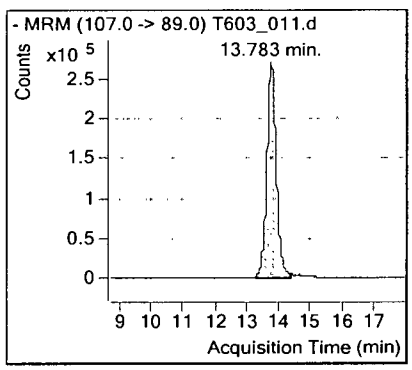


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.769	1813433	5459803
Perchlorate_102	PER_IS_108	13.776	552804	5459803

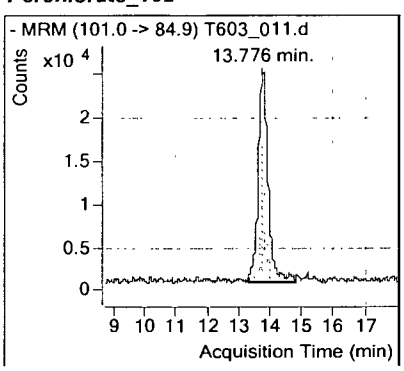
Perchlorate_100

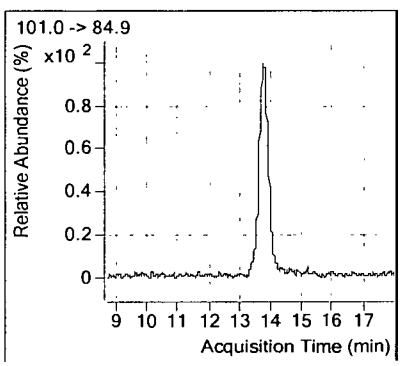


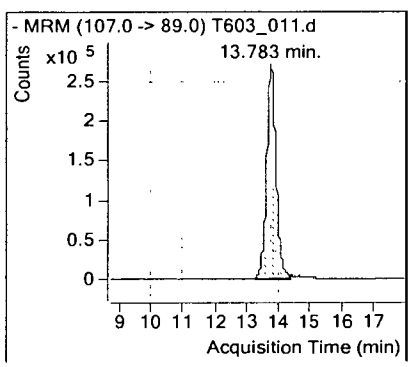




Perchlorate_102







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-GWY7-060115
Sample Collection Date: 06/01/15

ARF: 76552
APPL ID: AZ16964
QCG: #6850-150602A-197656

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	17	6.0	4.00	2.00	ug/L	06/02/15	06/03/15

Quant Method: QTLMFL2
Run #: T603_013.D
Instrument: AGIL_6460
Sequence: TQ060315
Dilution Factor: 10
Initials: MP

Printed: 06/17/15 2:34:38 PM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T603_013.d

Date Injected : 06/03/15

Time Injected : 13:51

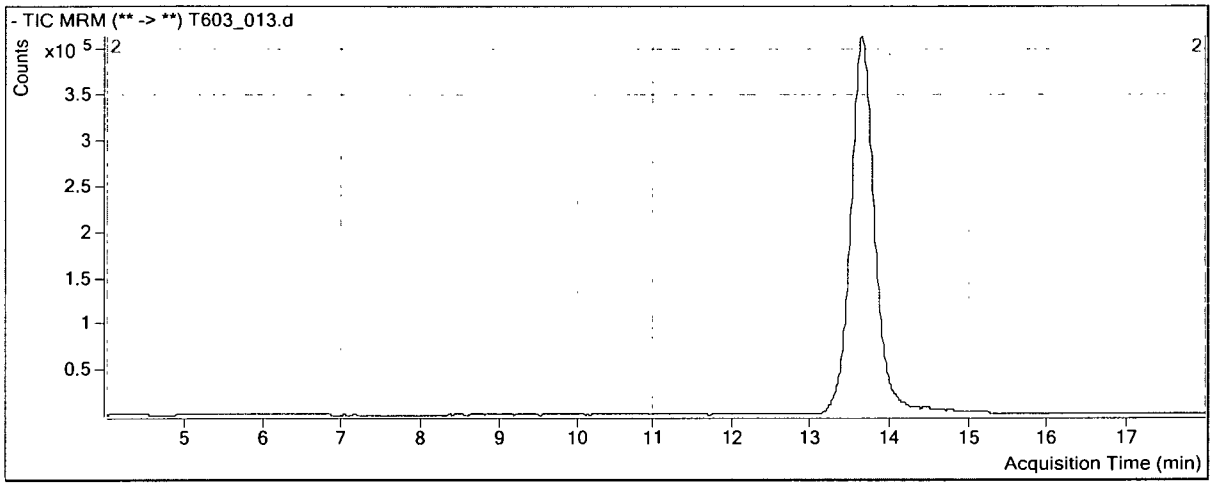
Sample ID : AZ16964_W01 10526.3 DF 05/06/25_6/03

Client ID : S67-GWY7-060115

Retention Time	Area Count Response	Compound_ID Product Ion	
13.600	5633595	PER_IS_89	
13.677	2370118	Perchlorate_83	(2370118 * 0.0050) / (1.27 * 5633595.00) * 10526.30 = 17.431674 ppb
13.684	691280	Perchlorate_85	(691280 * 0.0050) / (0.39 * 5633595.00) * 10526.30 = 16.491718 ppb

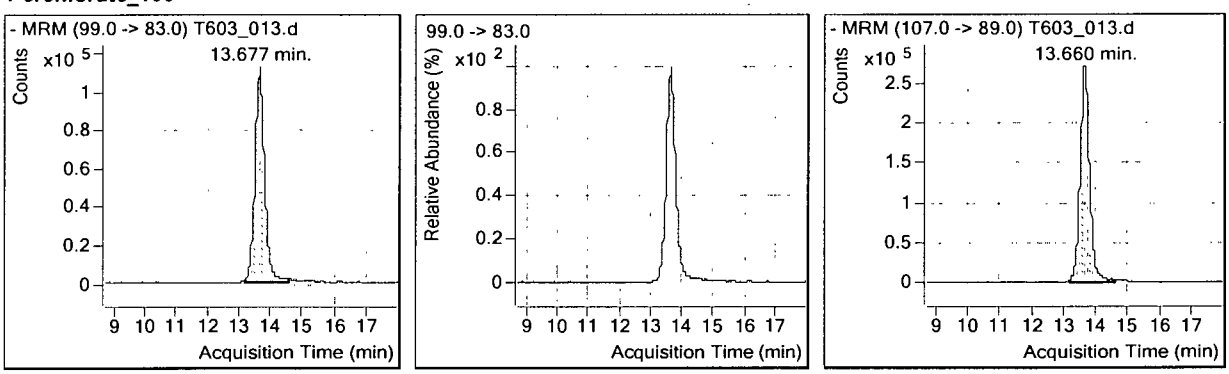
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150603\QuantResults\150603_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T603_013.d	**Sample Name**	AZ16964_W01 10526.3 DF 05/06/25_6/03
Sample Type	Sample	**Acq_Date**	06/03/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	13:51
ClientID	S67-GWY7-060115	**Inj Vol**	20

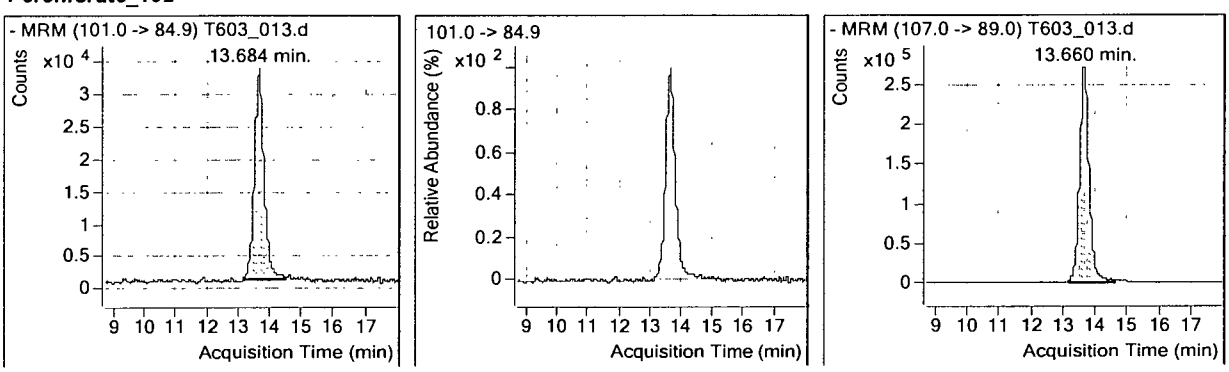


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.677	2370118	5633595
Perchlorate_102	PER_IS_108	13.684	691280	5633595

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-GWZ7-060115
Sample Collection Date: 06/01/15

ARF: 76552
APPL ID: AZ16965
QCG: #6850-150602A-197656

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	150	60	40.0	20.0	ug/L	06/02/15	06/03/15

Quant Method: QTLMFL2
Run #: T603_020.D
Instrument: AGIL_6460
Sequence: TQ060315
Dilution Factor: 100
Initials: MP

Printed: 06/17/15 2:34:38 PM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T603_020.d

Date Injected : 06/03/15

Time Injected : 16:06

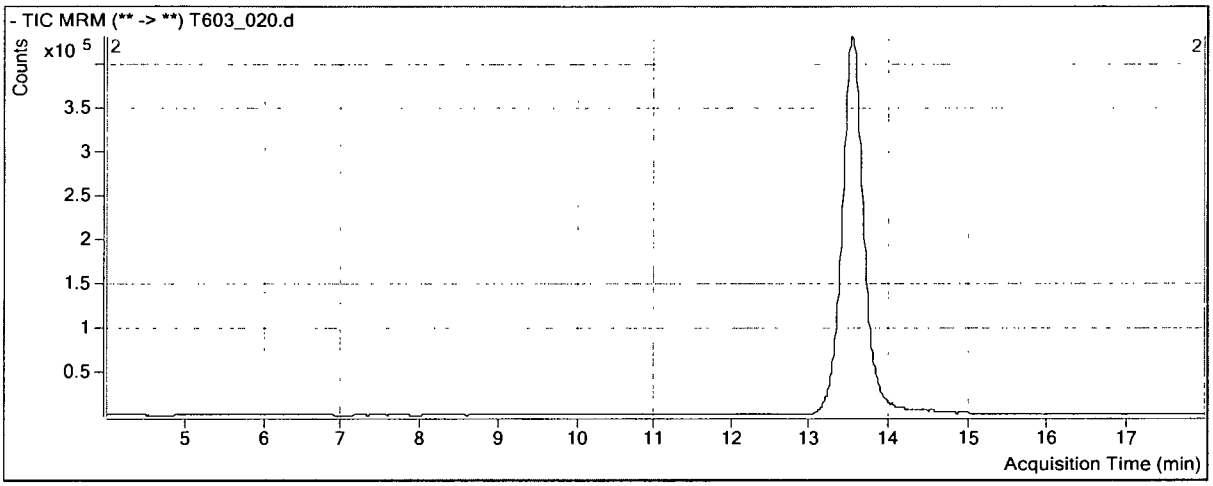
Sample ID : AZ16965_W01 105263.2 DF 06/02/15_6/03

Client ID : S67-GWZ7-060115

Retention Time	Area Count Response	Compound_ID Product Ion	
13.558	5646042	PER_IS_89	
13.555	2052507	Perchlorate_83	(2052507 * 0.0050) / (1.27 * 5646042.00) * 105263.20 = 150.624669 ppb
13.572	627827	Perchlorate_85	(627827 * 0.0050) / (0.39 * 5646042.00) * 105263.20 = 149.449418 ppb

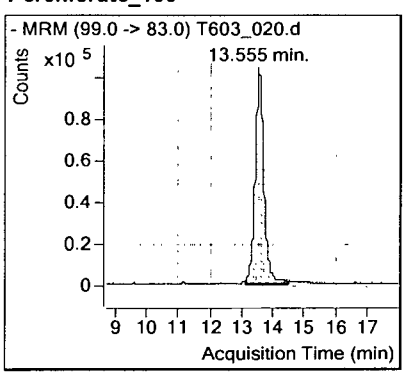
Quantitative Analysis Sample Report

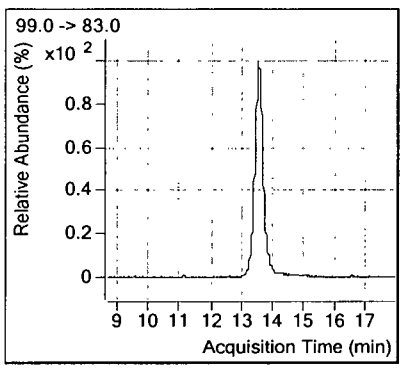
Batch Data Path	D:\MassHunter\Data\150603\QuantResults\150603_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T603_020.d	**Sample Name**	AZ16965_W01 105263.2 DF 06/02/15_6/03
Sample Type	Sample	**Acq_Date**	06/03/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	16:06
ClientID	S67-GWZ7-060115	**Inj Vol**	20

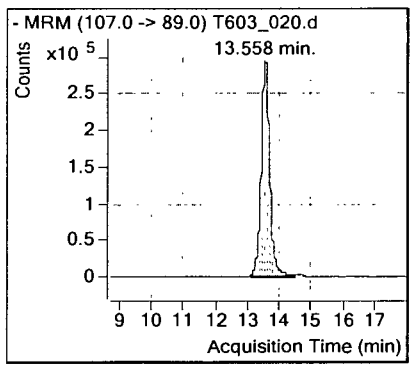


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.555	2052507	5646042
Perchlorate_102	PER_IS_108	13.572	627827	5646042

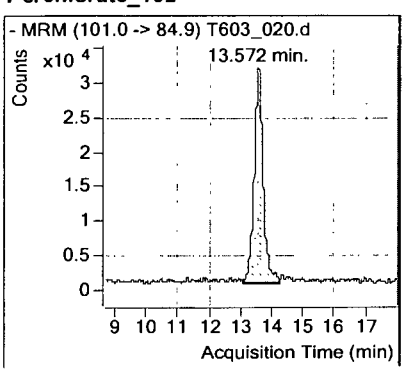
Perchlorate_100

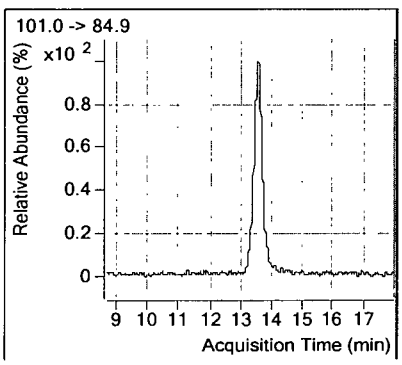


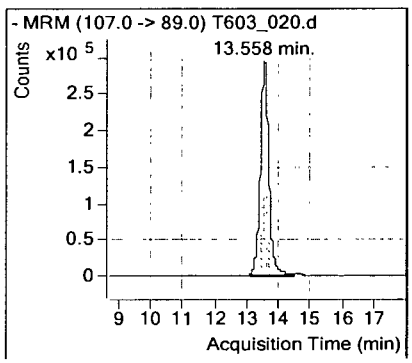




Perchlorate_102







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-GWA7-060115
Sample Collection Date: 06/01/15

ARF: 76552
APPL ID: AZ16966
QCG: #6850-150602A-197656

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	13	6.0	4.00	2.00	ug/L	06/02/15	06/03/15

Quant Method: QTLMFL2
Run #: T603_018.D
Instrument: AGIL_6460
Sequence: TQ060315
Dilution Factor: 10
Initials: MP

Printed: 06/17/15 2:34:38 PM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T603_018.d

Date Injected : 06/03/15

Time Injected : 15:24

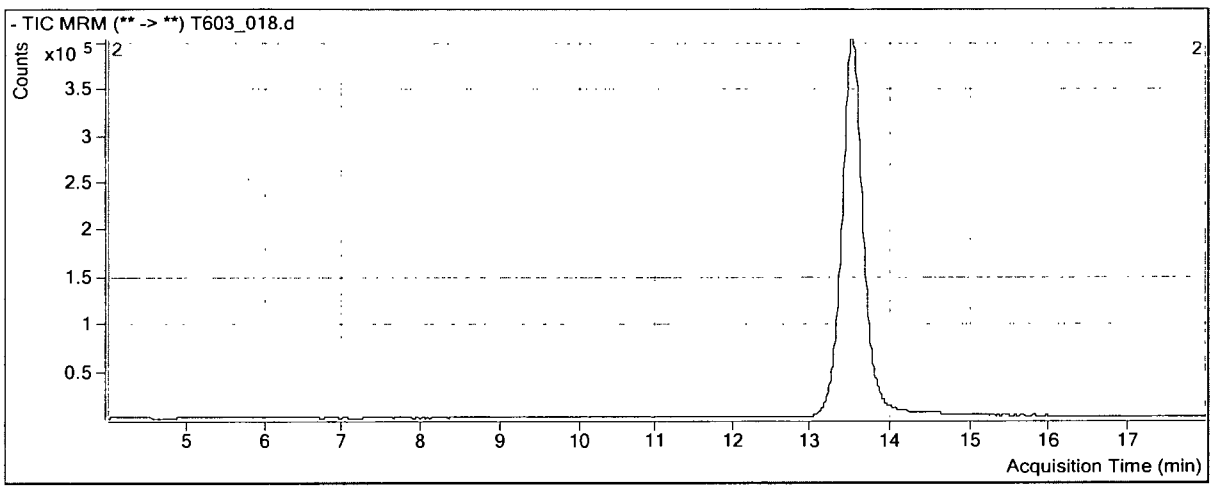
Sample ID : AZ16966_W01 10526.3 DF 06/02/15_6/03

Client ID : S67-GWA7-060115

Retention Time	Area Count Response	Compound_ID Product Ion		
13.538	5406205	PER_IS_89		
13.555	1713424	Perchlorate_83	(1713424 * 0.0050) / (1.27 * 5406205.00) * 10526.30 =	13.131885 ppb
13.521	515800	Perchlorate_85	(515800 * 0.0050) / (0.39 * 5406205.00) * 10526.30 =	12.822903 ppb

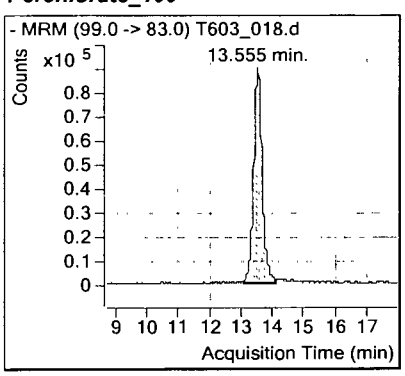
Quantitative Analysis Sample Report

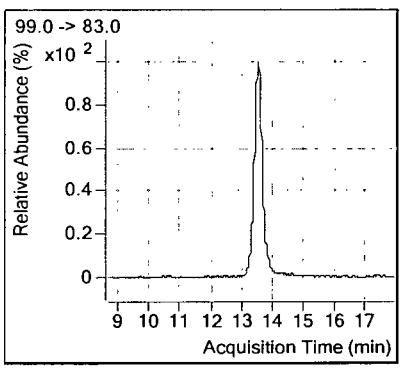
Batch Data Path	D:\MassHunter\Data\150603\QuantResults\150603_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T603_018.d	**Sample Name**	AZ16966_W01 10526.3 DF 06/02/15_6/03
Sample Type	Sample	**Acq_Date**	06/03/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	15:24
ClientID	S67-GWA7-060115	**Inj Vol**	20

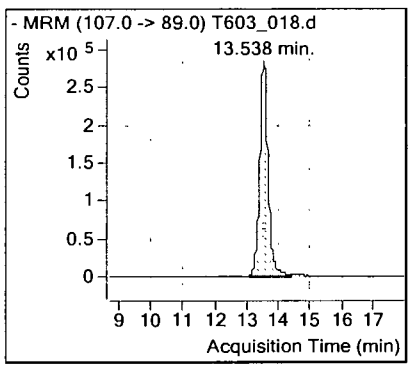


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.555	1713424	5406205
Perchlorate_102	PER_IS_108	13.521	515800	5406205

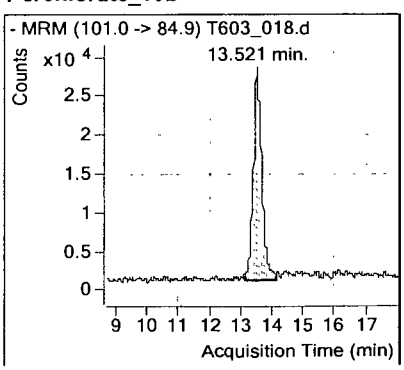
Perchlorate_100

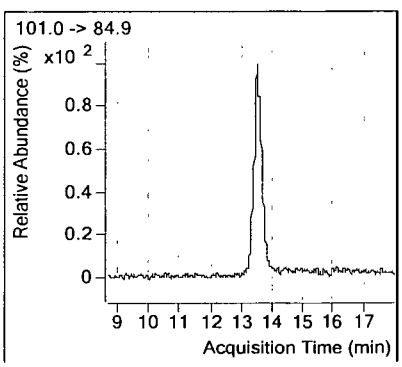


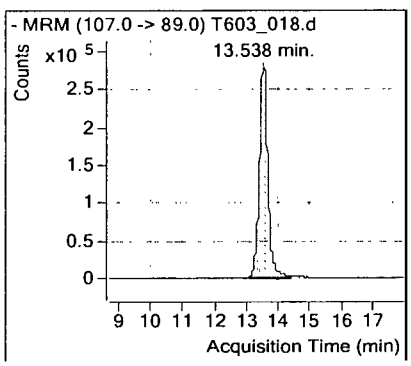




Perchlorate_102







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-GWZ9-060115
Sample Collection Date: 06/01/15

ARF: 76552
APPL ID: AZ16967
QCG: #6850-150602A-197656

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	41	6.0	4.00	2.00	ug/L	06/02/15	06/03/15

Quant Method: QTLMFL2
Run #: T603_022.D
Instrument: AGIL_6460
Sequence: TQ060315
Dilution Factor: 10
Initials: MP

Printed: 06/17/15 2:34:38 PM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T603_022.d

Date Injected : 06/03/15

Time Injected : 16:43

Sample ID : AZ16967_W01 105263.2 DF 06/02/15_6/03

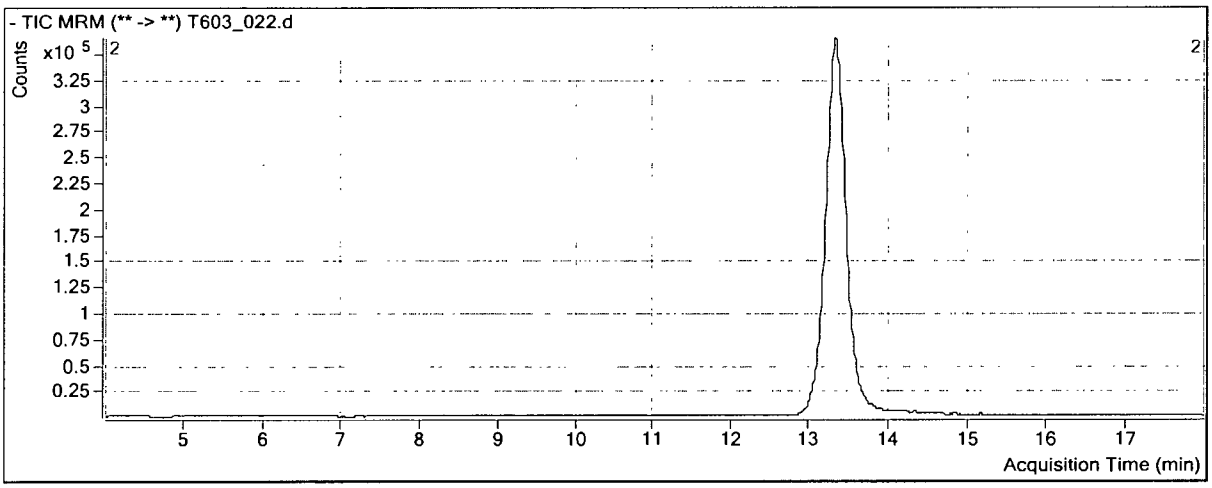
Client ID : S67-GWZ9-060115

Retention Time		Area Count Response	Compound_ID Product Ion				
13.345		5842233	PER_IS_89				
13.362		580713	Perchlorate_83	(580713 * 0.0050) / (1.27 * 5842233.00) *	105263.20 =	41.184921	ppb
13.348	*	189142	Perchlorate_85	(189142 * 0.0050) / (0.39 * 5842233.00) *	105263.20 =	43.511840	ppb

* MANUAL INTEGRAION

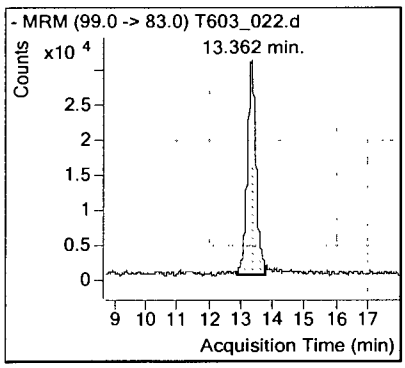
Quantitative Analysis Sample Report

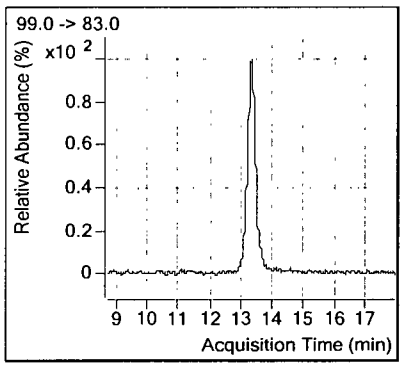
Batch Data Path	D:\MassHunter\Data\150603\QuantResults\150603_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T603_022.d	**Sample Name**	AZ16967_W01 105263.2 DF 06/02/15_6/03
Sample Type	Sample	**Acq_Date**	06/03/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	16:43
ClientID	S67-GWZ9-060115	**Inj Vol**	20

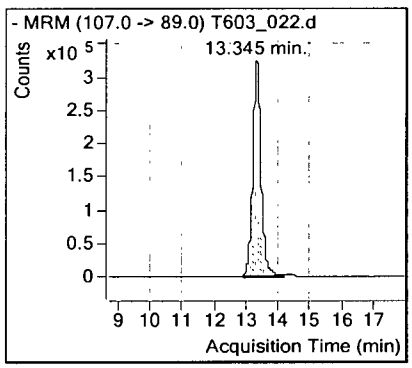


Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108		13.362	580713	5842233	
Perchlorate_102	PER_IS_108	*	13.348	189142	5842233	* MANUAL INT

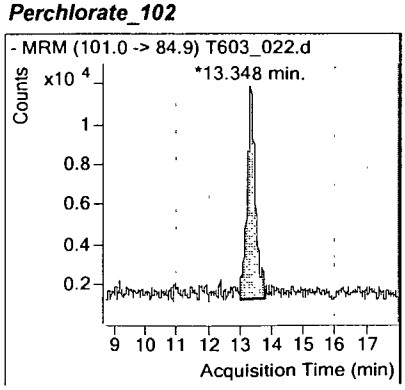
Perchlorate_100

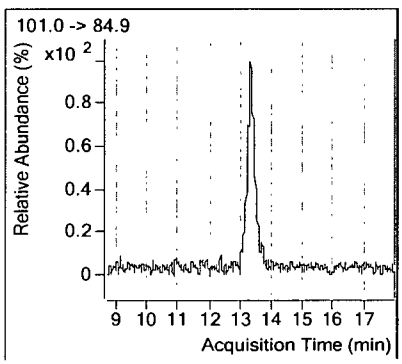


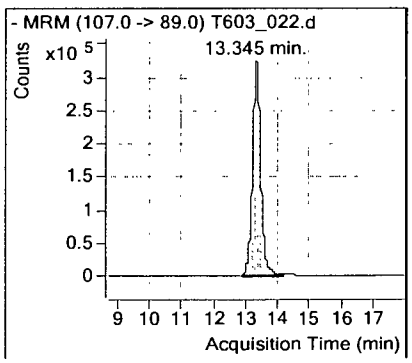


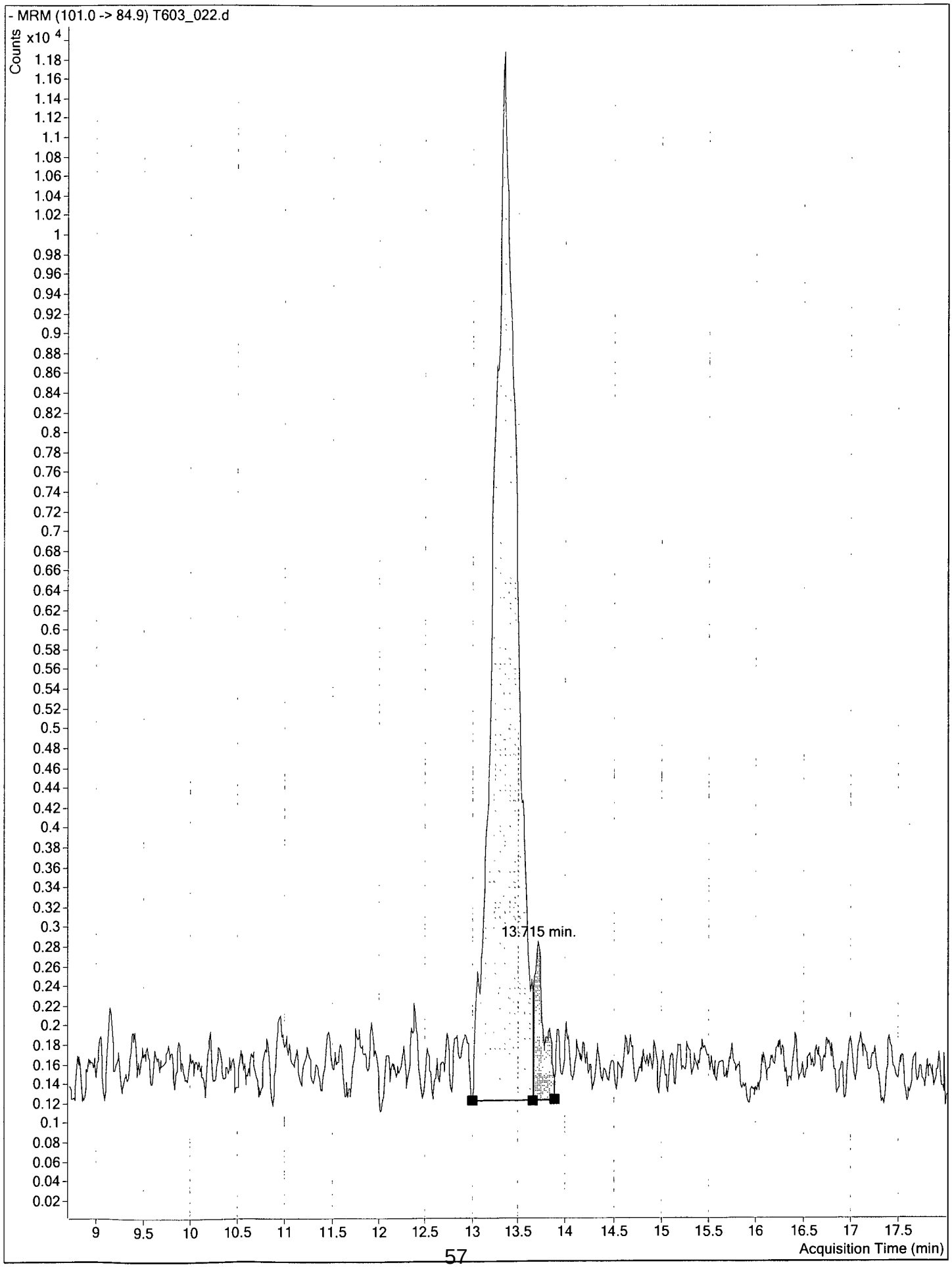


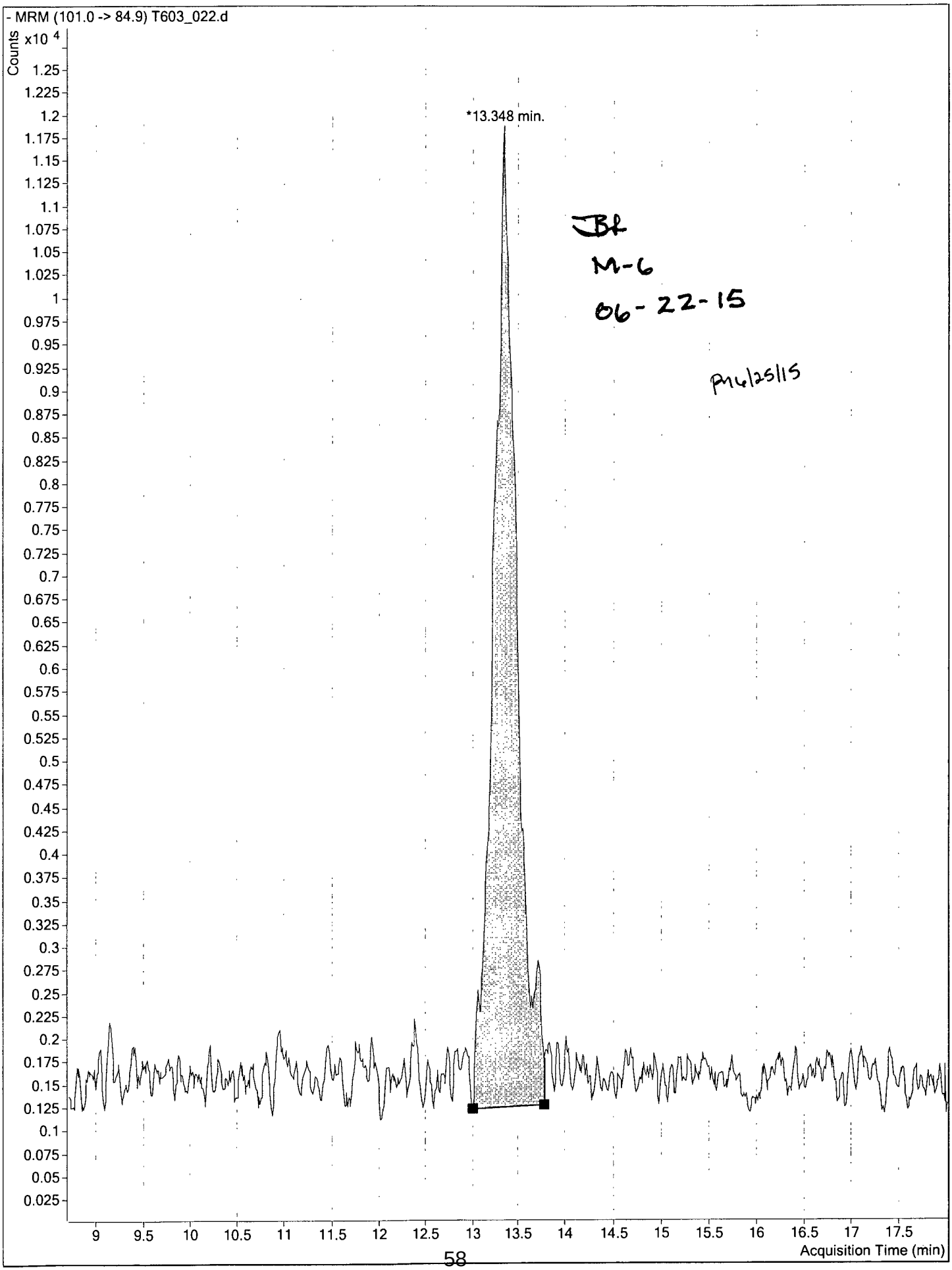
Perchlorate_102








- MRM (101.0 -> 84.9) T603_022.d
Counts
x10 4
13.715 min.
Acquisition Time (min)


- MRM (101.0 -> 84.9) T603_022.d
Counts
x10 4
*13.348 min.
JBf
M-6
06-22-15
PM 6/25/15
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-GWX7P-060115
Sample Collection Date: 06/01/15

ARF: 76552
APPL ID: AZ16968
QCG: #6850-150602A-197656

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	13	6.0	4.00	2.00	ug/L	06/02/15	06/03/15

Quant Method: QTLMFL2
Run #: T603_009.D
Instrument: AGIL_6460
Sequence: TQ060315
Dilution Factor: 10
Initials: MP

Printed: 06/17/15 2:34:38 PM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T603_009.d

Date Injected : 06/03/15

Time Injected : 12:36

6/17/15 DH

A216968

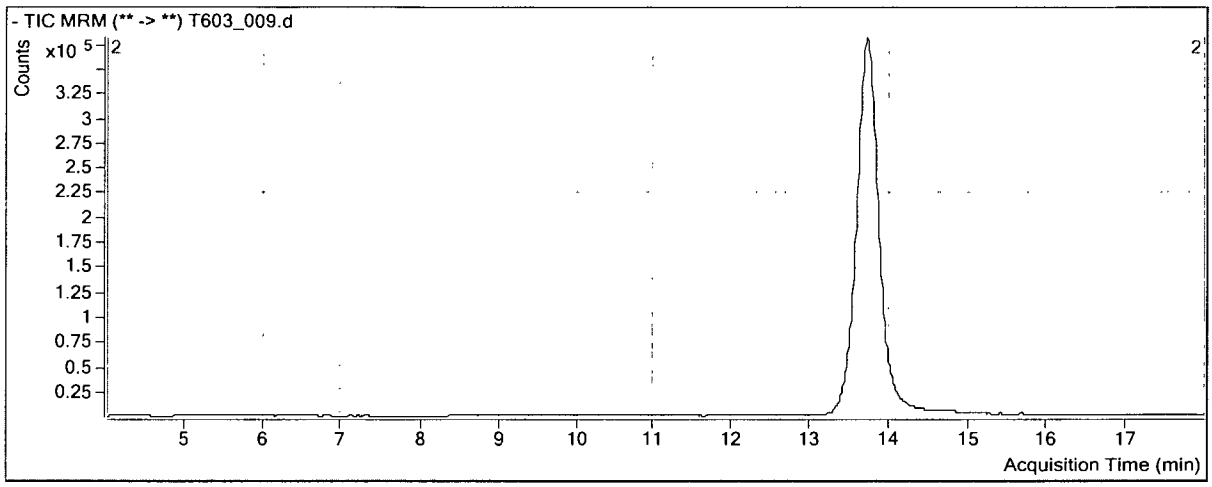
Sample ID : ~~AZ16960~~_W01 10526.3 DF 06/02/15_6/03

Client ID : 49MW-10D

Retention Time	Area Count Response	Compound_ID Product Ion	
13.742	5440798	PER_IS_89	
13.738	1729326	Perchlorate_83	(1729326 * 0.0050) / (1.27 * 5440798.00) * 10526.30 = 13.169492 ppb
13.745	511514	Perchlorate_85	(511514 * 0.0050) / (0.39 * 5440798.00) * 10526.30 = 12.635500 ppb

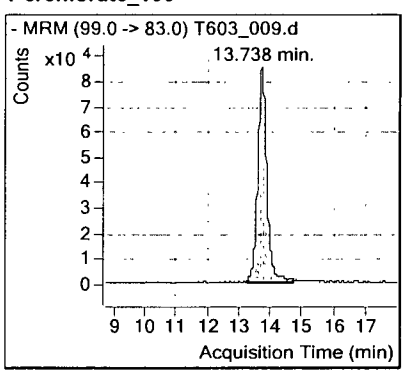
Quantitative Analysis Sample Report

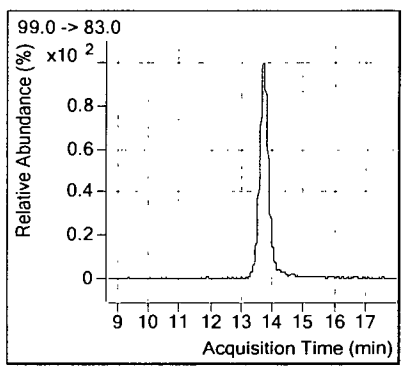
Batch Data Path	D:\MassHunter\Data\150603\QuantResults\150603_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba AZ 16968 6/17/15 HP
Data File	T603_009.d	**Sample Name**	~~AZ16960~~_W01 10526.3 DF 06/02/15_6/03
Sample Type	Sample	**Acq_Date**	06/03/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	12:36
ClientID	49MW-10D	**Inj Vol**	20

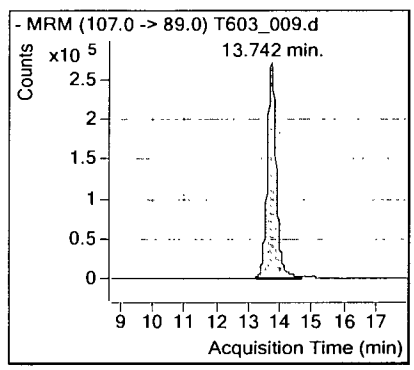


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.738	1729326	5440798
Perchlorate_102	PER_IS_108	13.745	511514	5440798

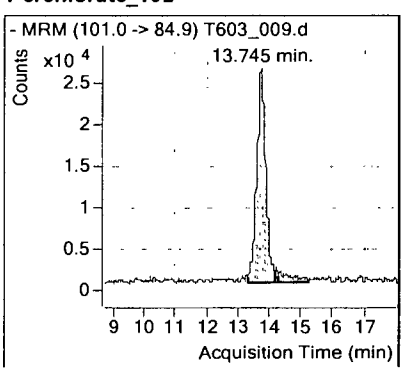
Perchlorate_100

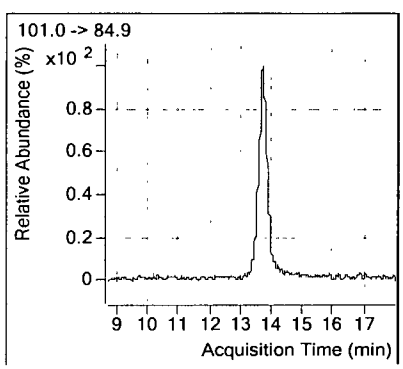


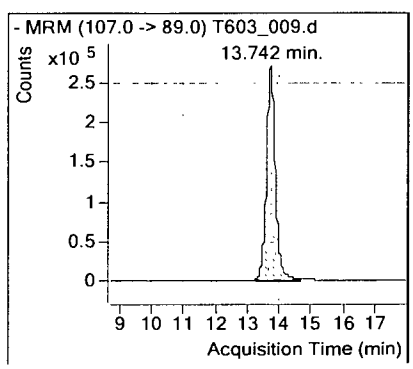




Perchlorate_102







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	IRSD
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_002.d

Date Injected : 03/12/15

Time Injected : 17:33

Sample ID : PERCHLORATE 0.0001 ug/ml 11/11/14

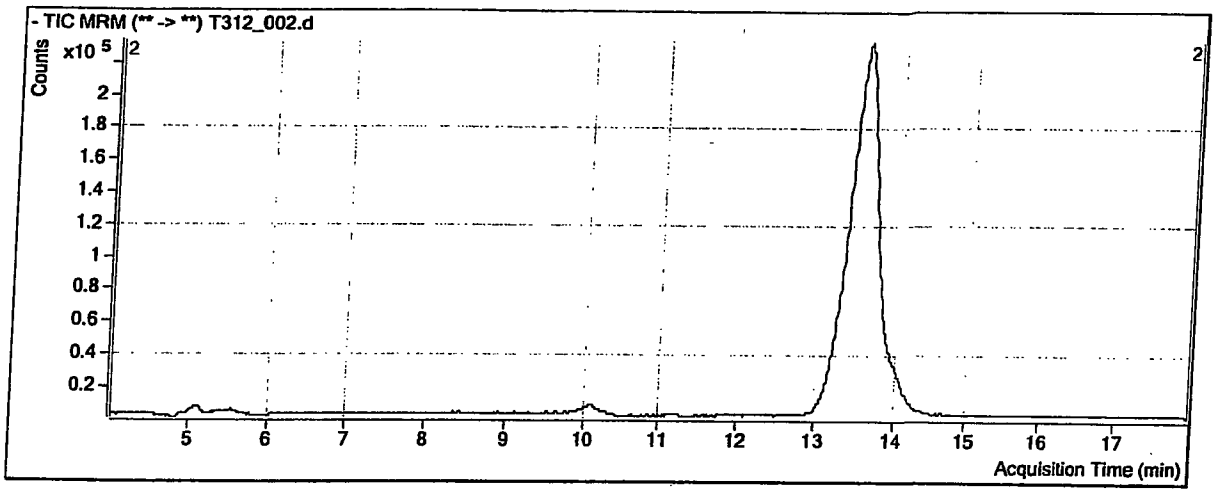
Client ID : NA

Retention Time		Area Count Response	Compound_ID Product Ion
13.548		5980396	PER_IS_89
13.504	*	237168	Perchlorate_83
13.541	*	77486	Perchlorate_85

* MANUAL INTEGRAION

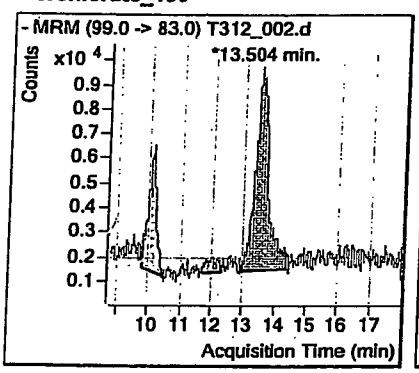
Quantitative Analysis Sample Report

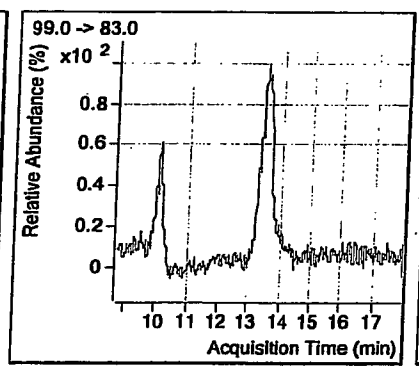
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_002.d	**Sample Name**	PERCHLORATE 0.0001 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	17:33
ClientID	NA	**Inj Vol**	20

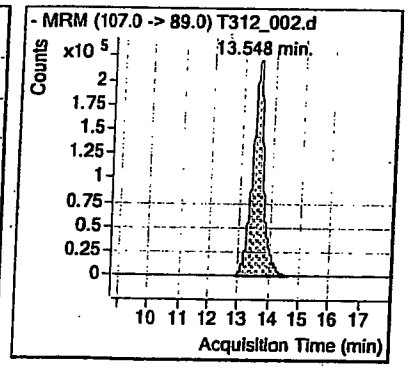


Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108	*	13.504	237168	5980396	* MANUAL INT
Perchlorate_102	PER_IS_108	*	13.541	77486	5980396	* MANUAL INT

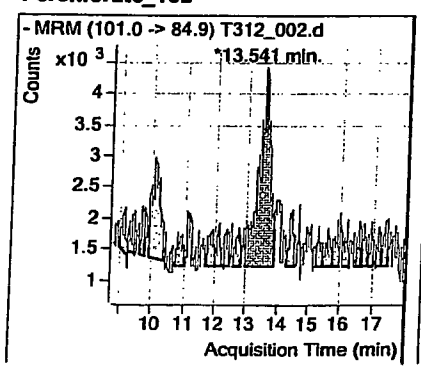
Perchlorate_100

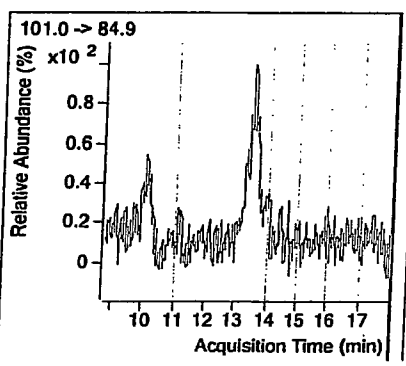


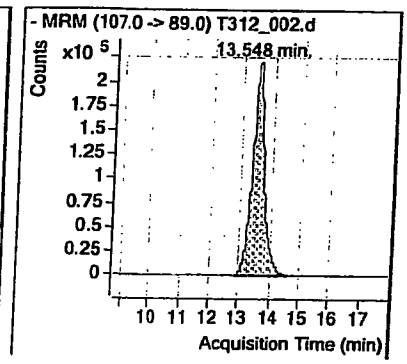


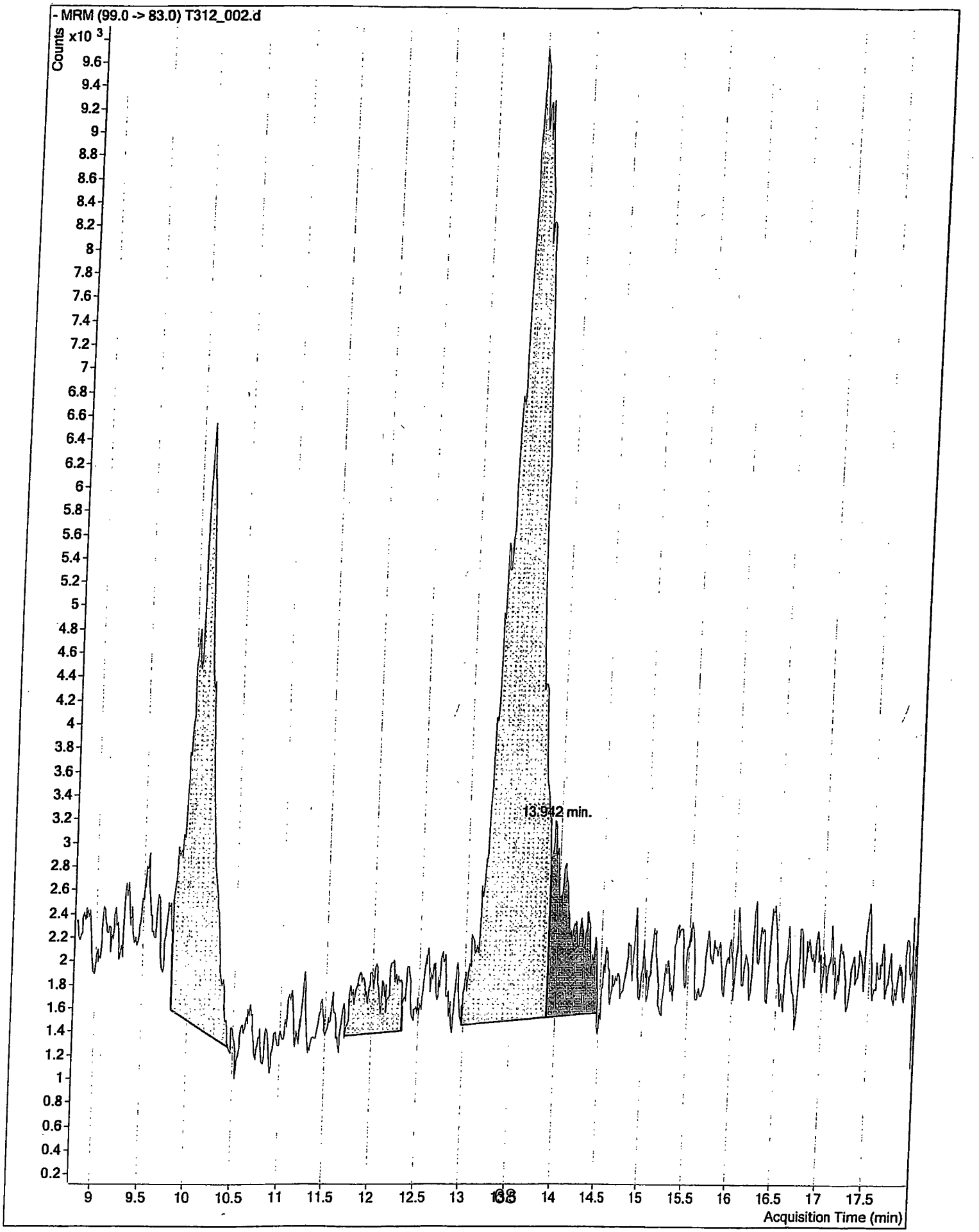


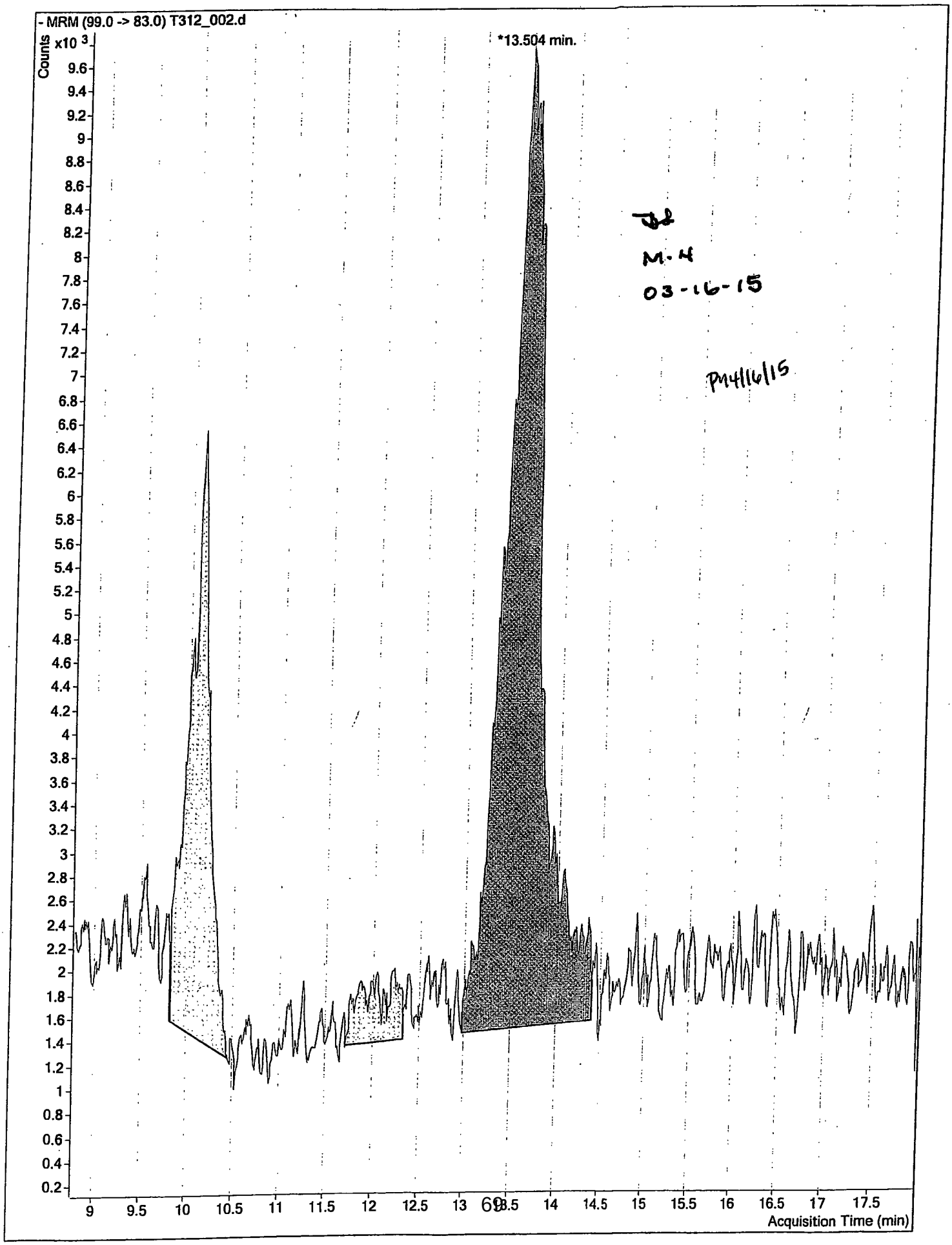
Perchlorate_102

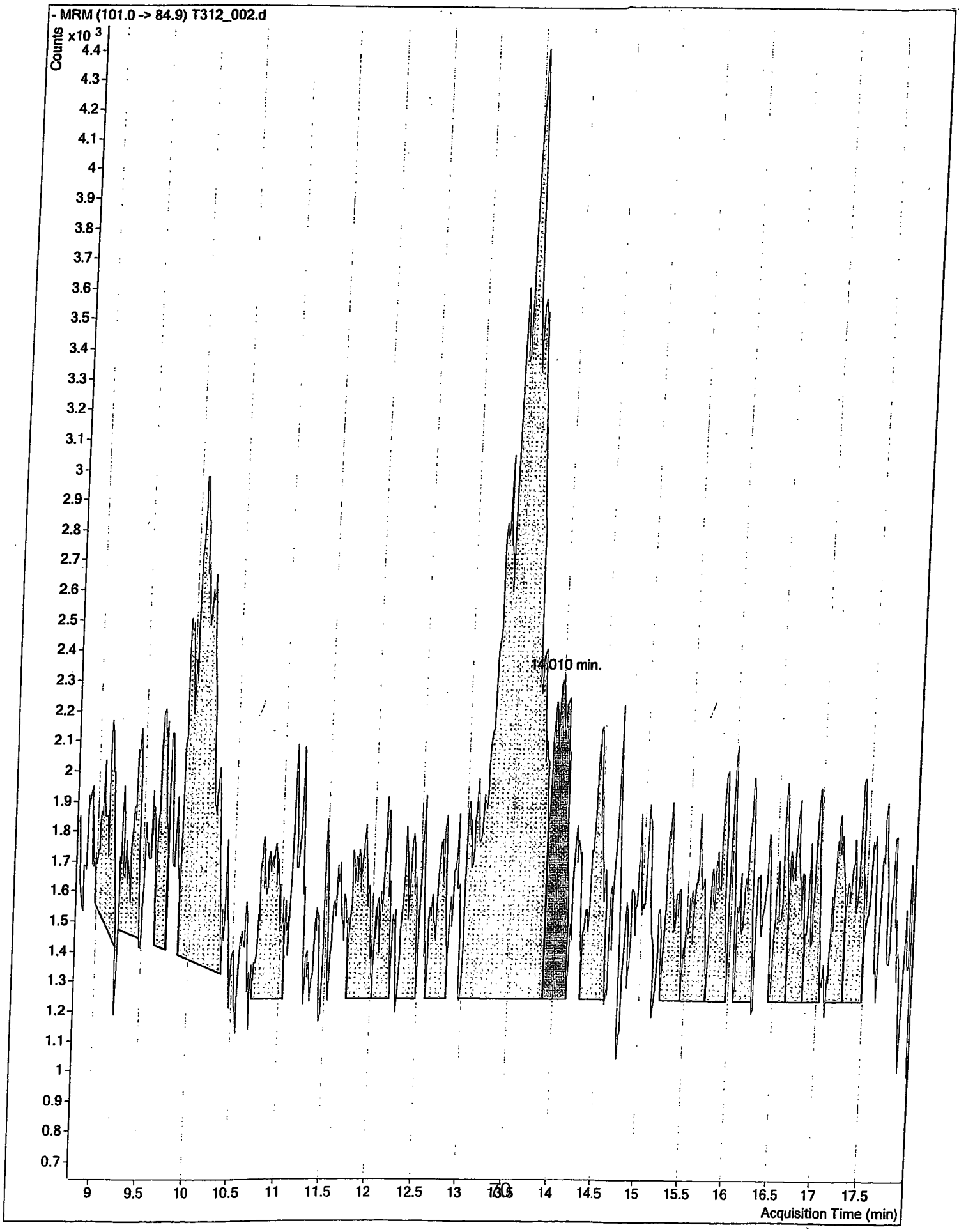


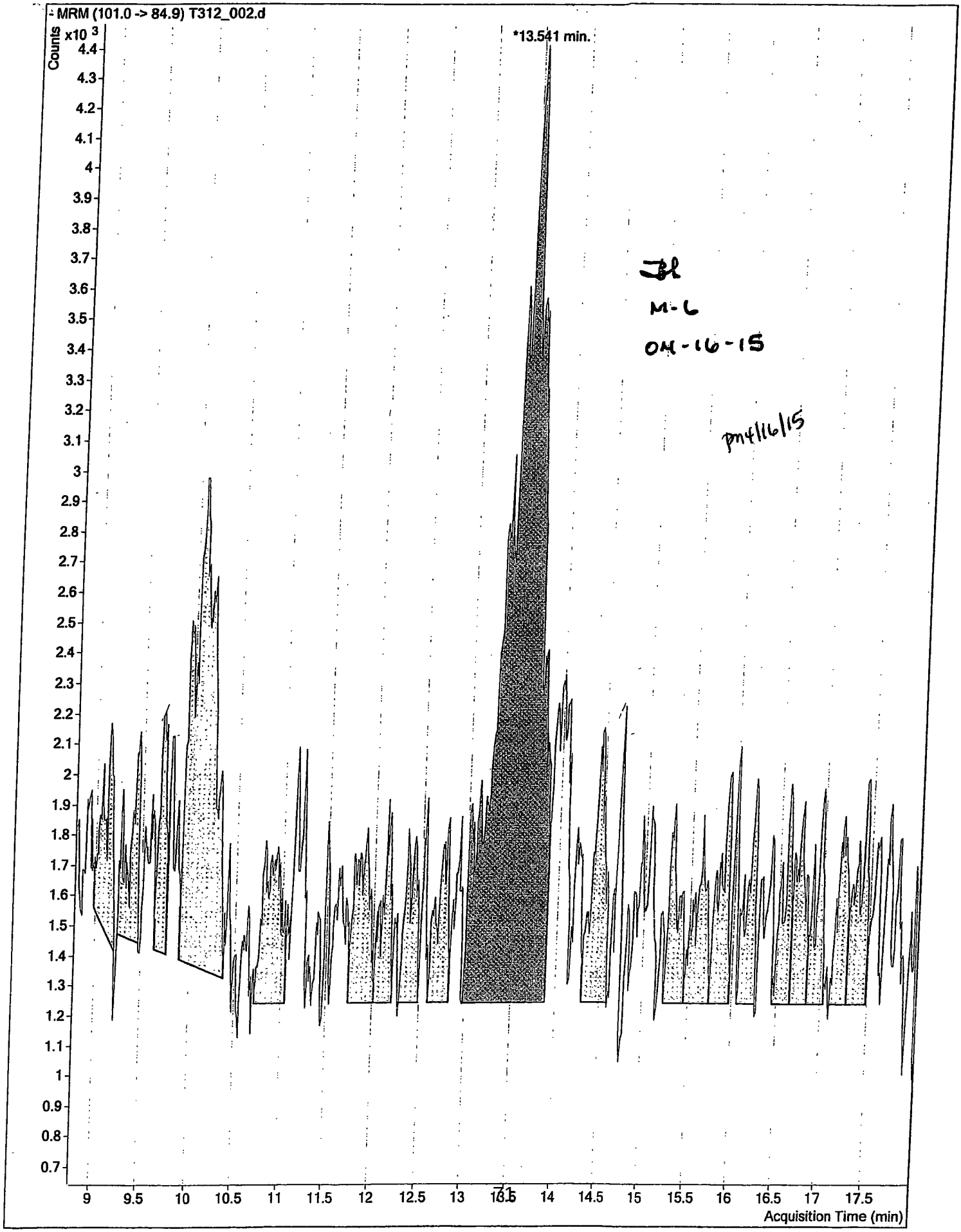





- MRM (99.0 -> 83.0) T312_002.d
Counts
x10 3
9.6
9.4
9.2
9
8.8
8.6
8.4
8.2
8
7.8
7.6
7.4
7.2
7
6.8
6.6
6.4
6.2
6
5.8
5.6
5.4
5.2
5
4.8
4.6
4.4
4.2
4
3.8
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
13.942 min.
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
16.5
17
17.5
Acquisition Time (min)


- MRM (99.0 -> 83.0) T312_002.d
Counts x10 3
*13.504 min.
Acquisition Time (min)
M-4
03-16-15
PM 4/16/15


- MRM (101.0 -> 84.9) T312_002.d
Counts
x10 3
4.4
4.3
4.2
4.1
4
3.9
3.8
3.7
3.6
3.5
3.4
3.3
3.2
3.1
3
2.9
2.8
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
14.010 min.
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
16.5
17
17.5
Acquisition Time (min)


MRM (101.0 -> 84.9) T312_002.d
Counts
x10 3
*13.541 min.
Acquisition Time (min)
JL
M-L
OM-16-15
pm 4/16/15

Data File ID: T312_004.d

Date Injected : 03/12/15

Time Injected : 18:11

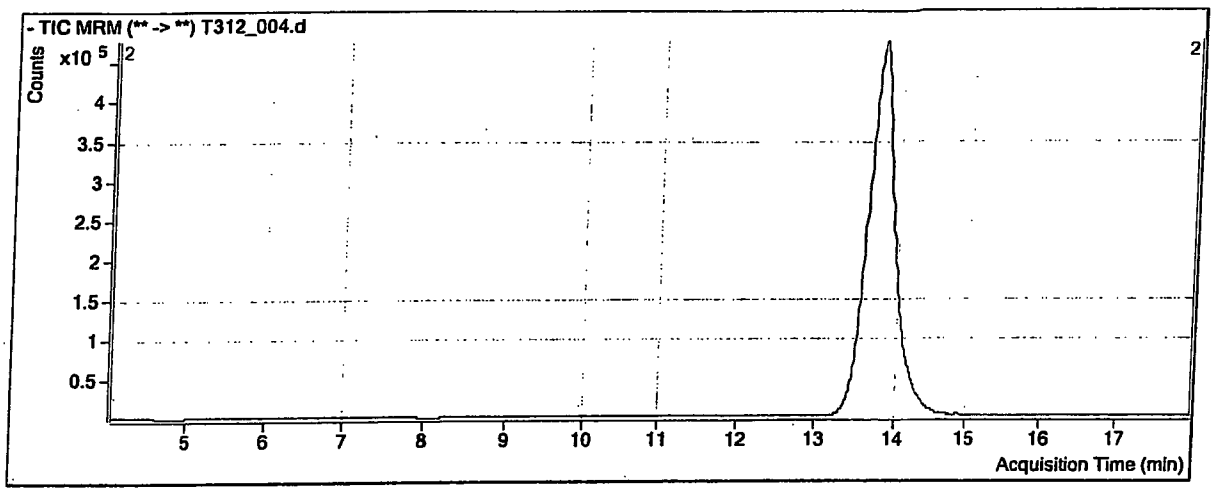
Sample ID : PERCHLORATE 0.0004 ug/ml 11/11/14

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

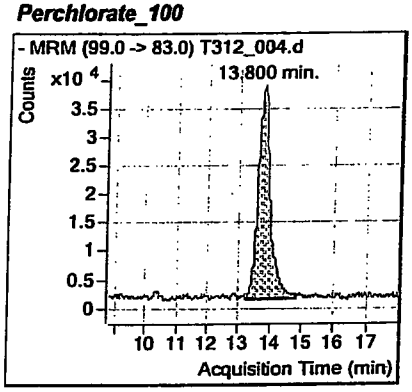
Quantitative Analysis Sample Report

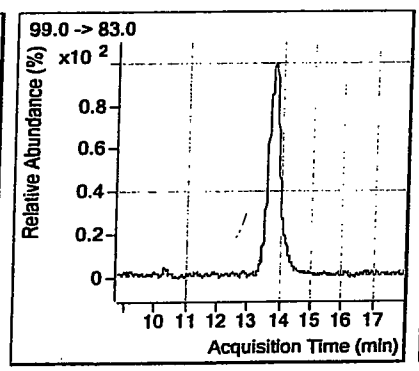
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_004.d	**Sample Name**	PERCHLORATE 0.0004 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:11
ClientID	NA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

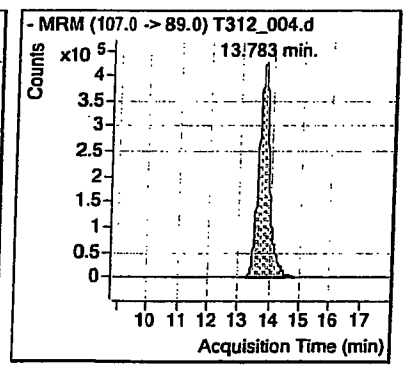


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.800	1023403	10671196
Perchlorate_102	PER_IS_108	13.827	337305	10671196

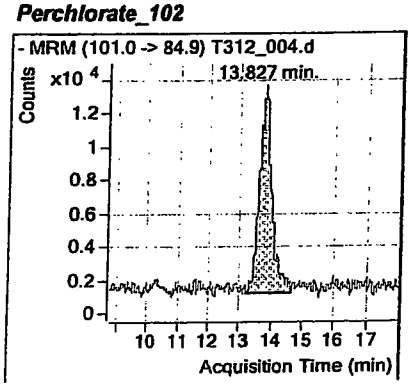
Perchlorate_100

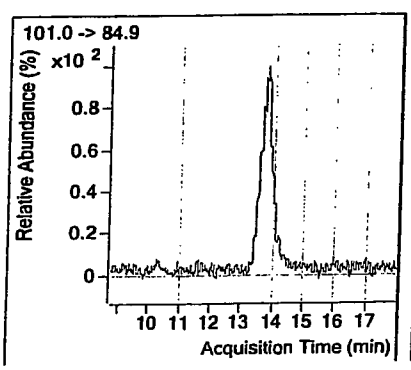


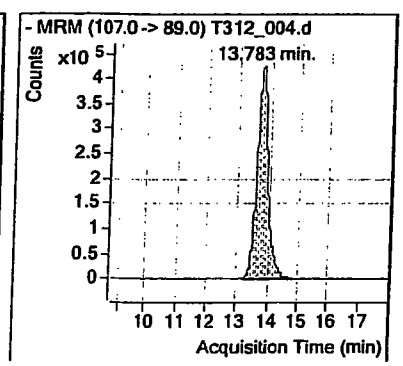




Perchlorate_102







Data File ID: T312_005.d

Date Injected : 03/12/15

Time Injected : 18:29

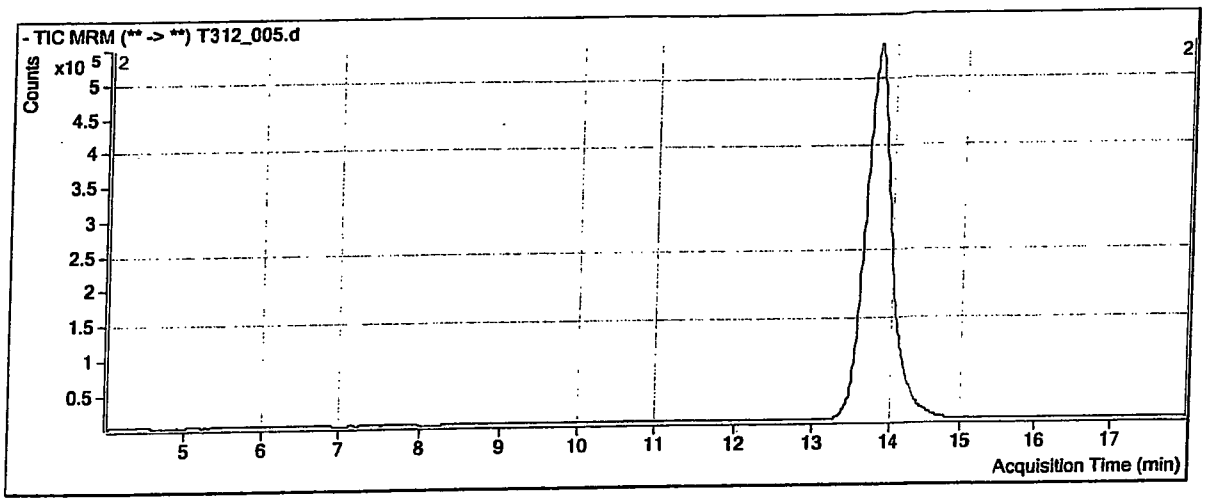
Sample ID : PERCHLORATE 0.001 ug/ml 11/11/14

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

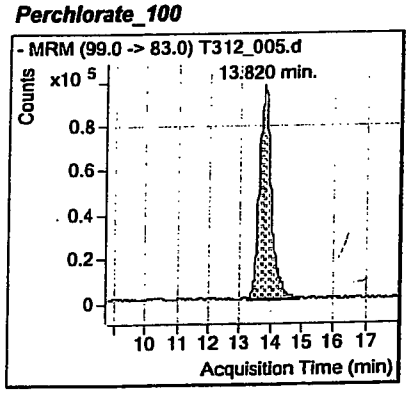
Quantitative Analysis Sample Report

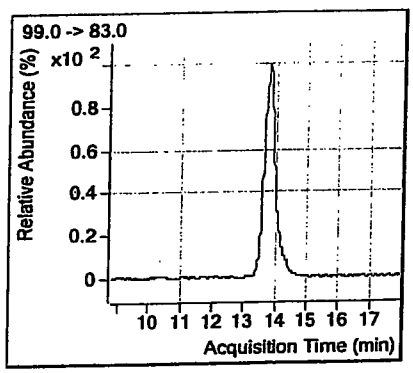
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_005.d	**Sample Name**	PERCHLORATE 0.001 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:29
ClientID	NA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

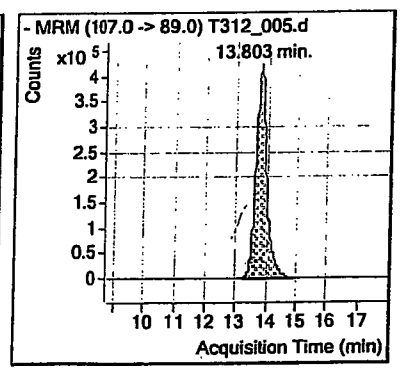


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.820	2483393	10651968
Perchlorate_102	PER_IS_108	13.827	781617	10651968

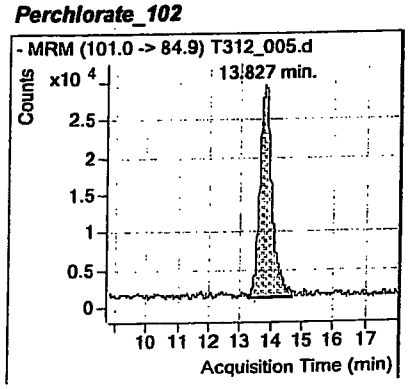
Perchlorate_100

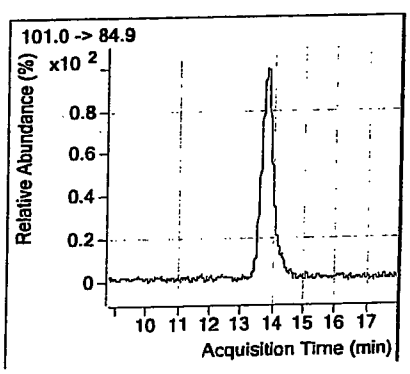


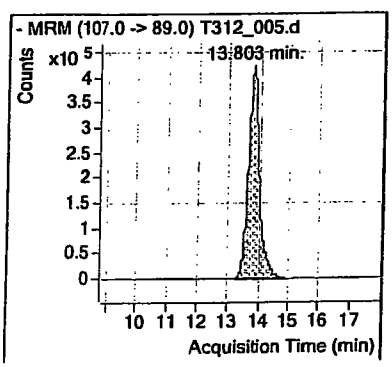




Perchlorate_102







Data File ID: T312_006.d

Date Injected : 03/12/15

Time Injected : 18:48

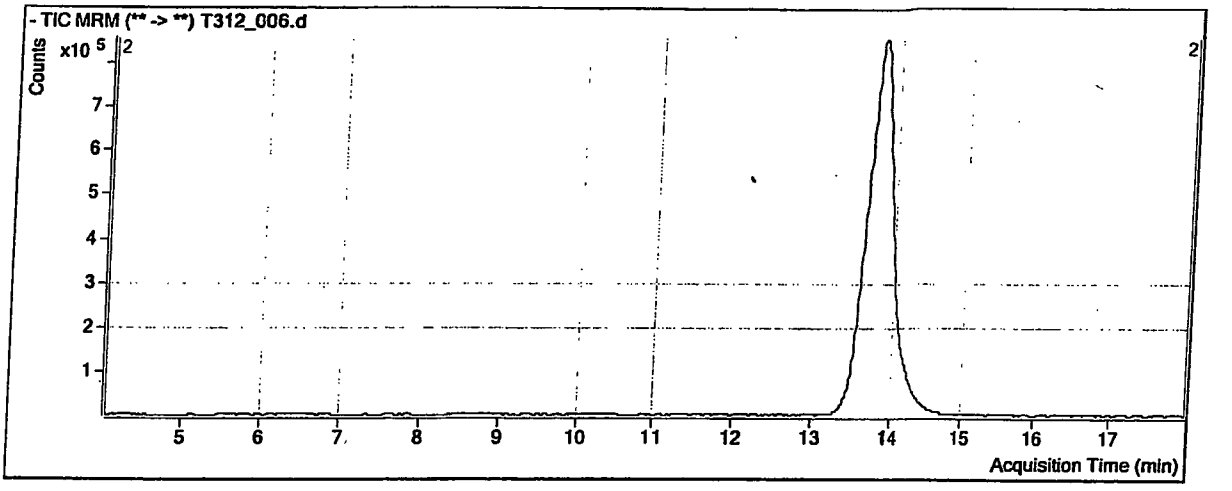
Sample ID : PERCHLORATE 0.002 ug/ml 11/11/14

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

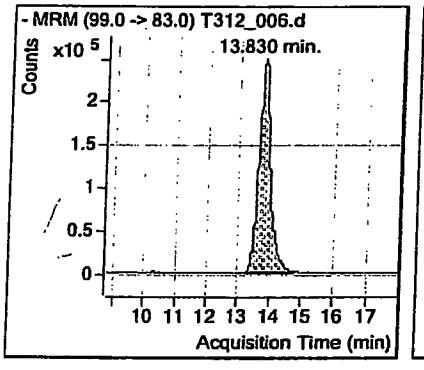
Quantitative Analysis Sample Report

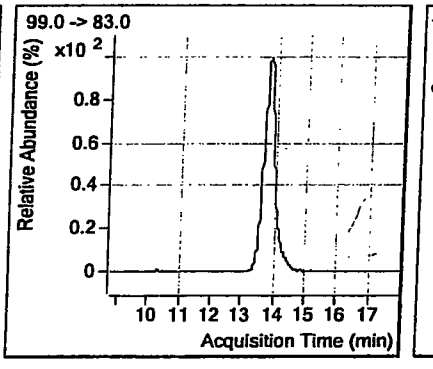
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_006.d	**Sample Name**	PERCHLORATE 0.002 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:48
ClientID	NA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

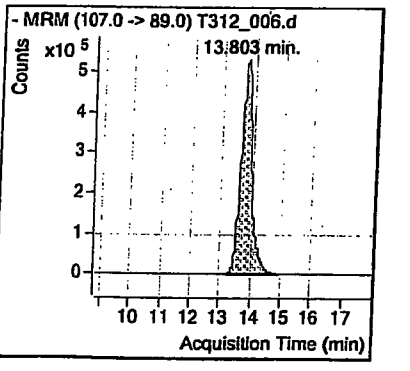


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.830	6351752	13529952
Perchlorate_102	PER_IS_108	13.817	1920912	13529952

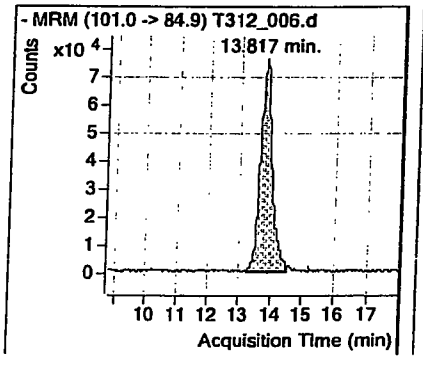
Perchlorate_100

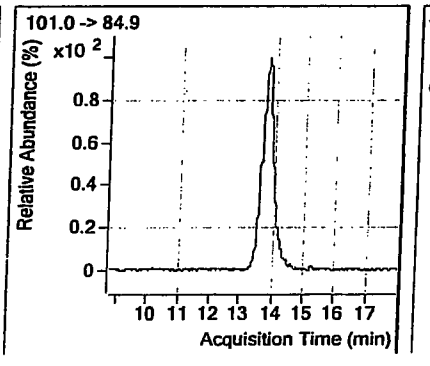


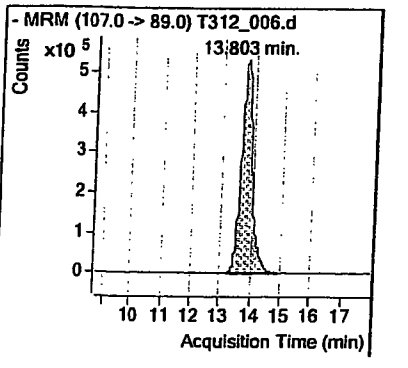




Perchlorate_102







Data File ID: T312_007.d

Date Injected : 03/12/15

Time Injected : 19:07

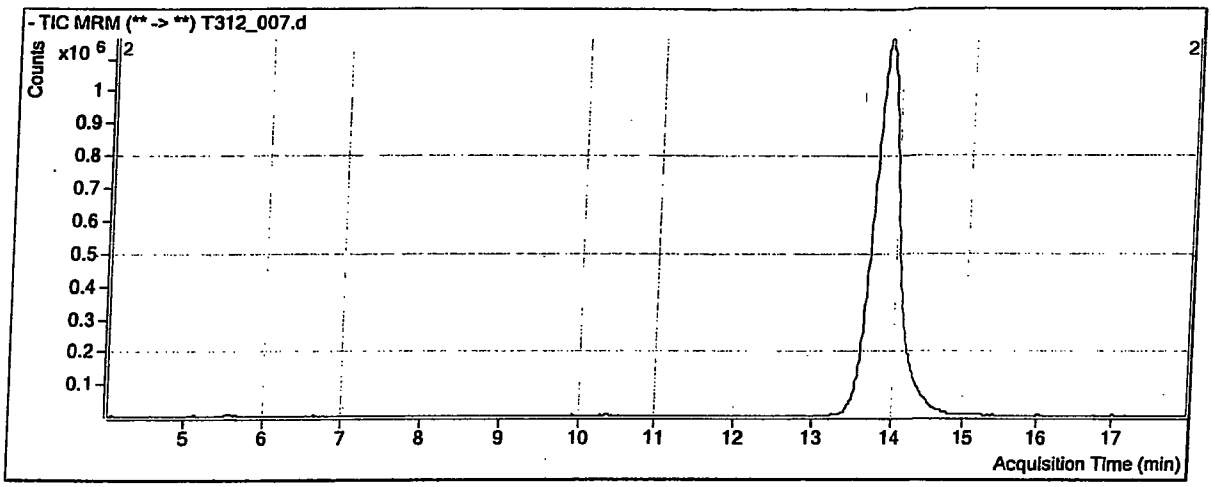
Sample ID : PERCHLORATE 0.005 ug/ml 11/11/14

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

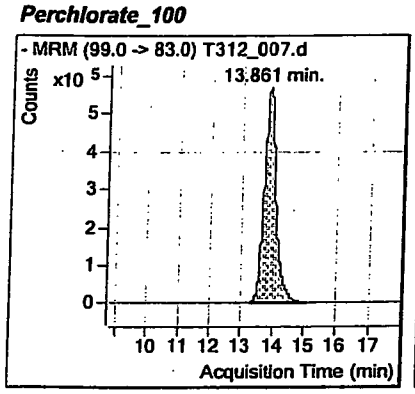
Quantitative Analysis Sample Report

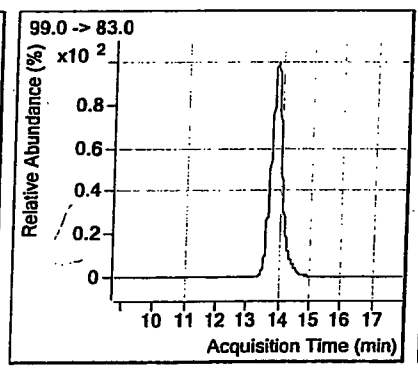
Batch-Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_007.d	**Sample Name**	PERCHLORATE 0.005 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	19:07
ClientID	NA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

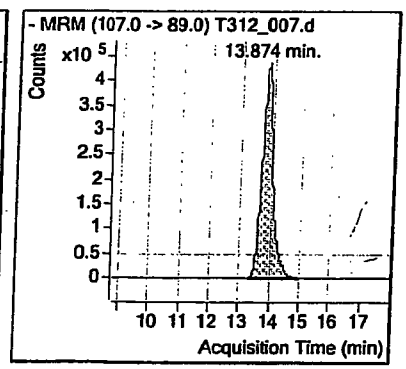


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.861	14499255	11028880
Perchlorate_102	PER_IS_108	13.878	4209044	11028880

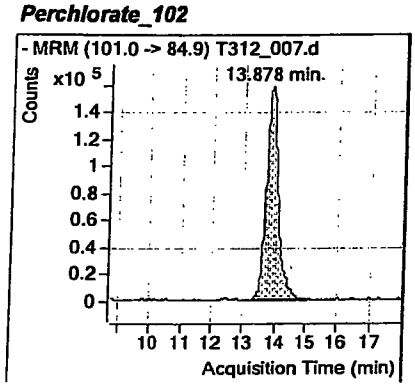
Perchlorate_100

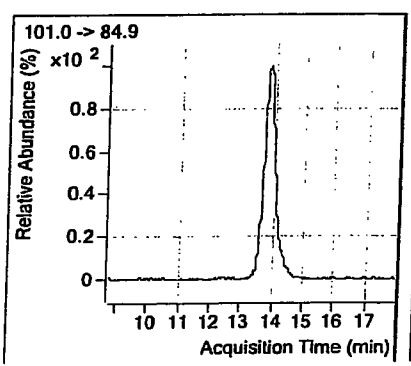


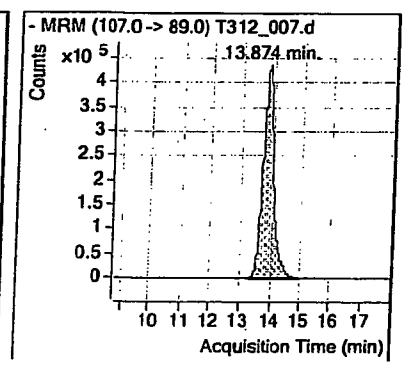




Perchlorate_102







Data File ID: T312_008.d

Date Injected : 03/12/15

Time Injected : 19:25

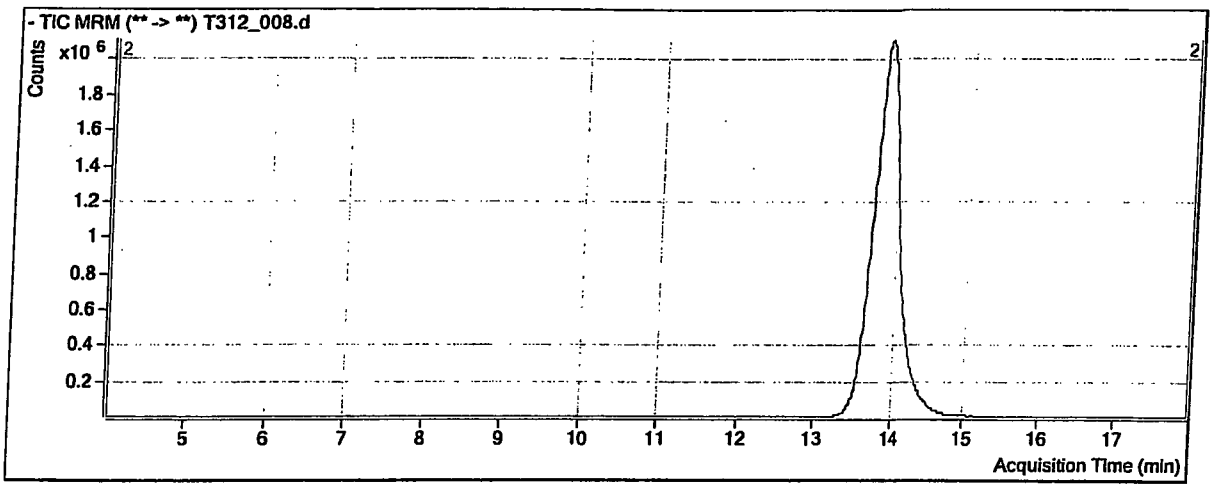
Sample ID : PERCHLORATE 0.010 ug/ml 08/27/14

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

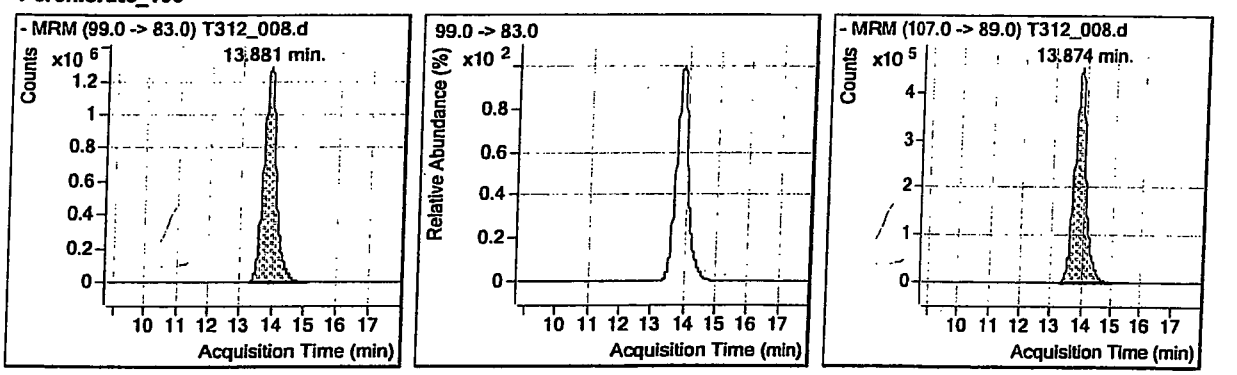
Quantitative Analysis Sample Report

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

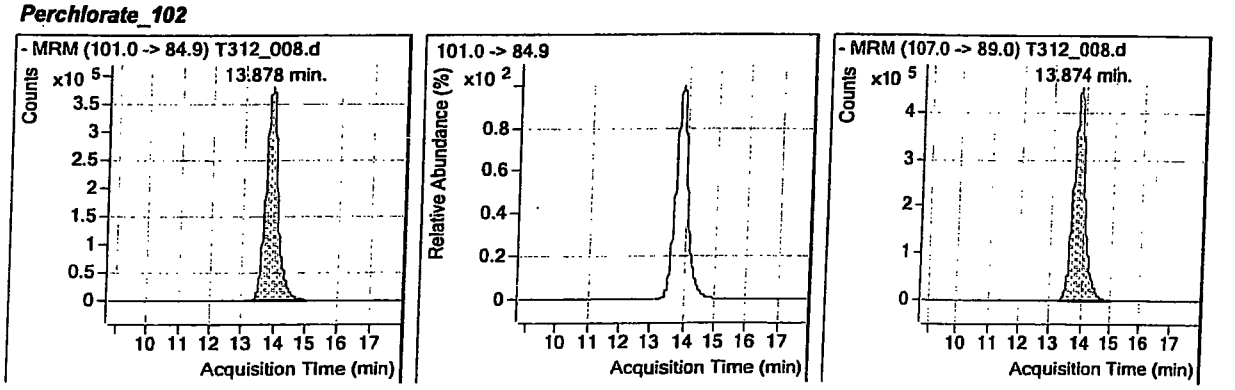


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.881	34223790	11973072
Perchlorate_102	PER_IS_108	13.878	9985270	11973072

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

:LE ID : TQCK1210.RFB

Data File ID: T312_010.d

Date Injected : 03/12/15

Time Injected : 20:02

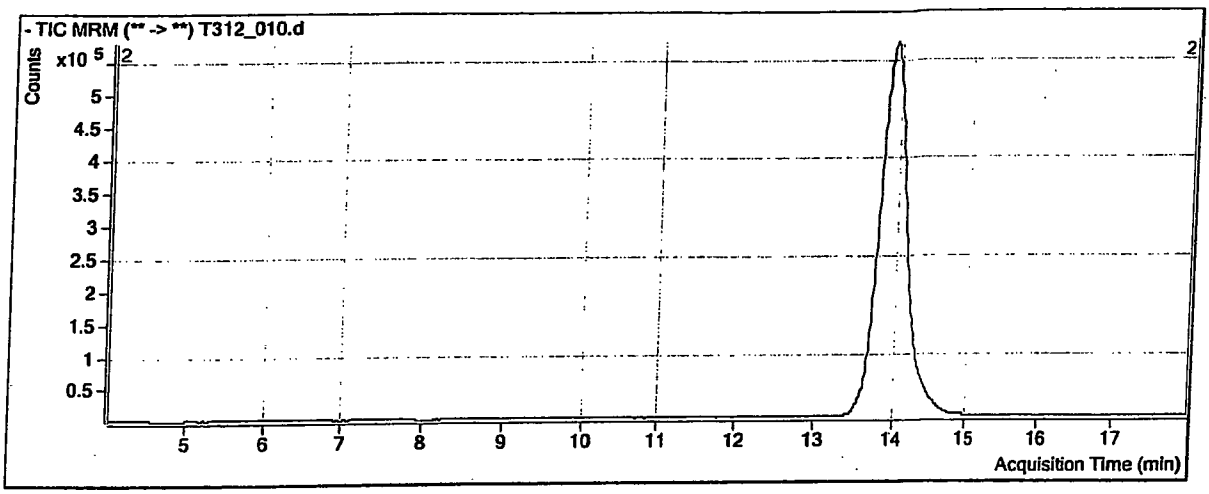
Sample ID : PER_SS 0.0004 ug/ml 11/11/14

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

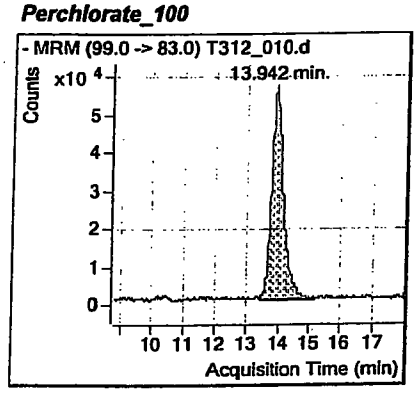
Quantitative Analysis Sample Report

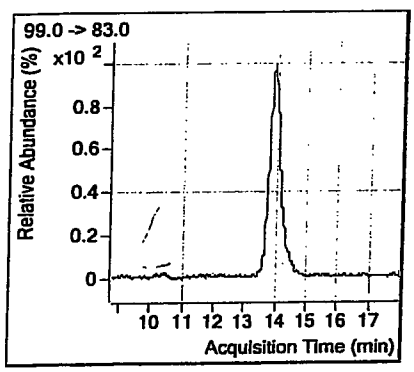
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_010.d	**Sample Name**	PER_SS 0.0004 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	20:02
ClientID	NA	**Inj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

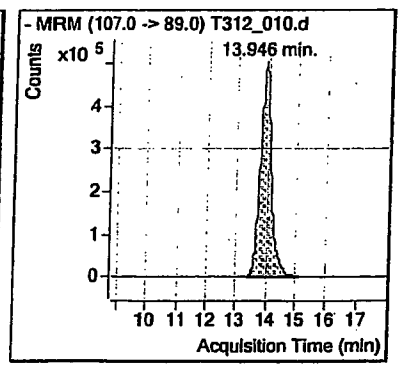


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.942	1472839	12977621
Perchlorate_102	PER_IS_108	13.959	440675	12977621

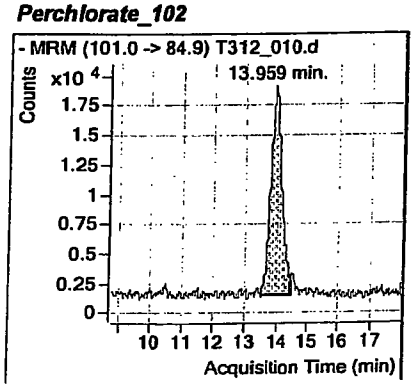
Perchlorate_100

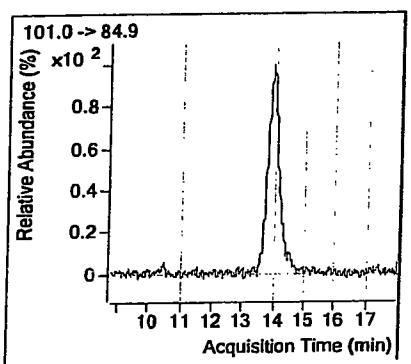


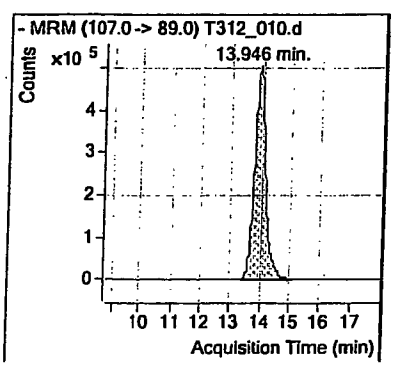




Perchlorate_102







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

ILE 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

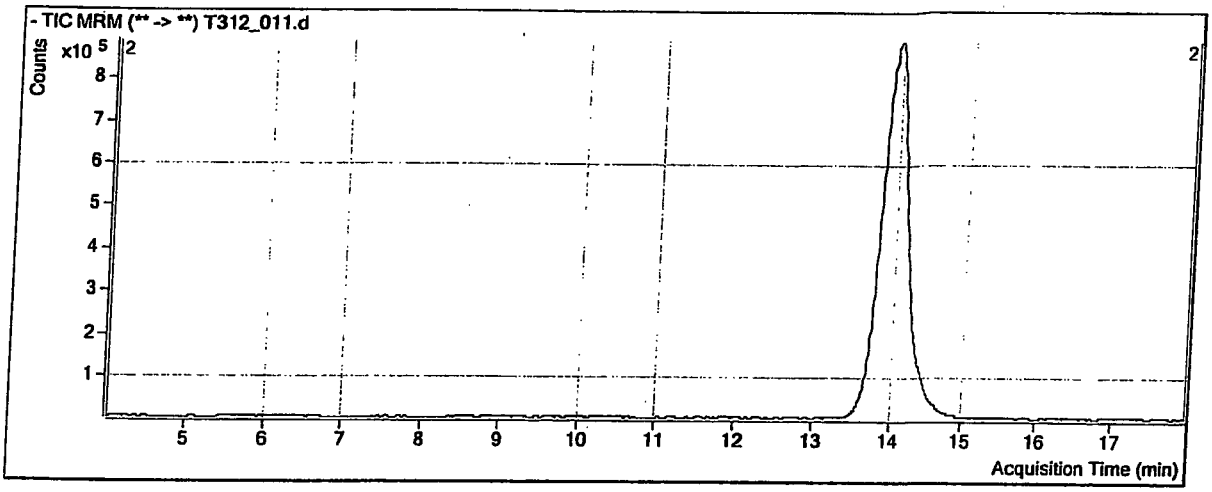
Client ID : NA

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

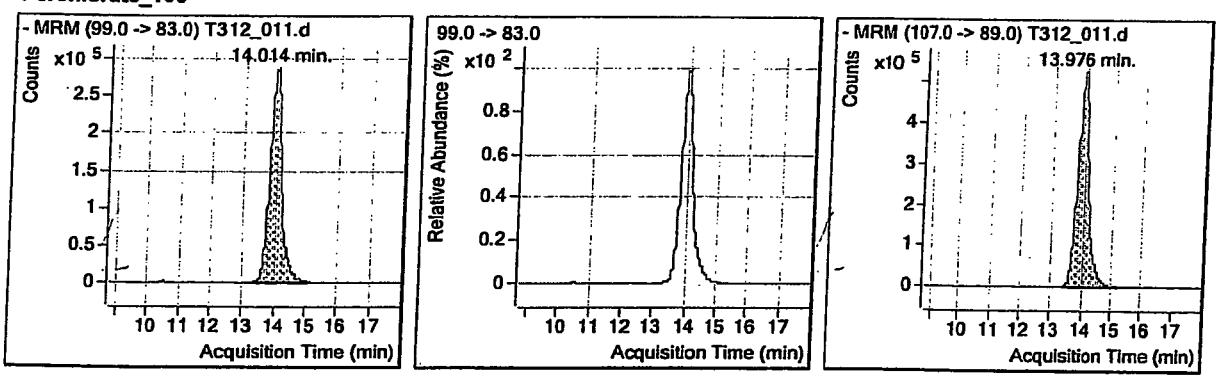
Batch Data Path D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin

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

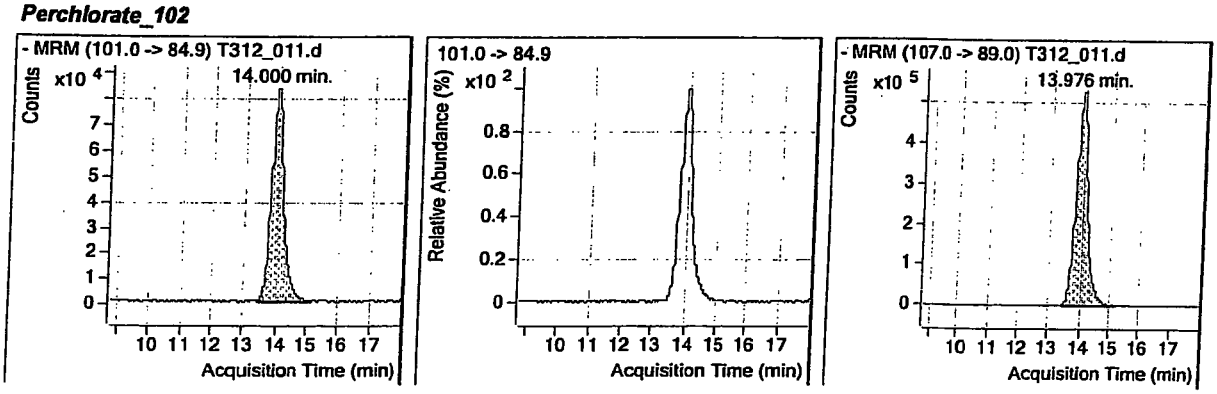


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.014	7468678	13747369
Perchlorate_102	PER_IS_108	14.000	2222387	13747369

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector 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

ILE ID : TQCK1213.RF8

Data File ID: T312_013.d

Date Injected : 03/12/15

Time Injected : 20:58

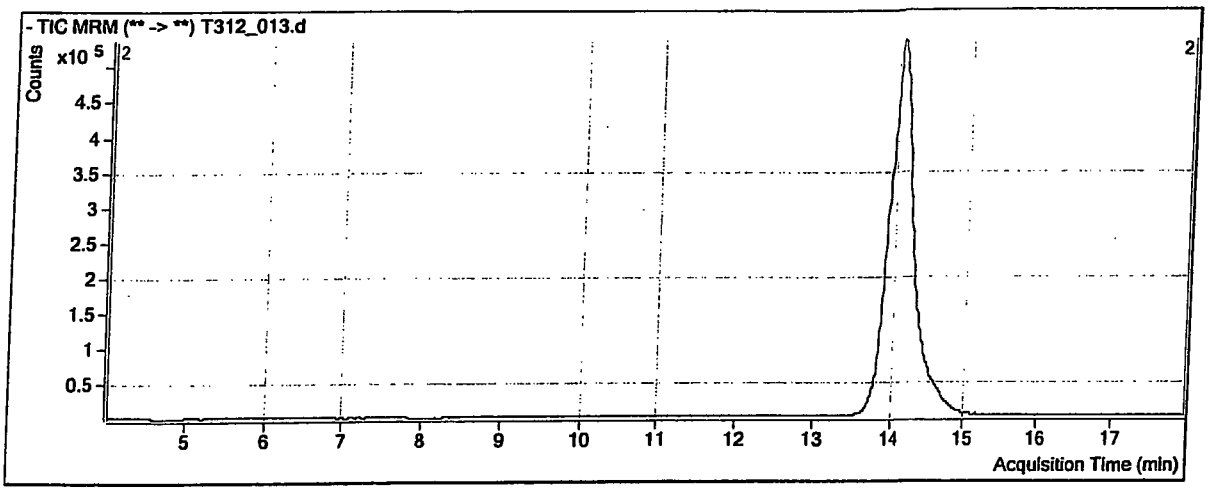
Sample ID : PER_CCV_1 0.0004 ug/ml 11/11/14

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

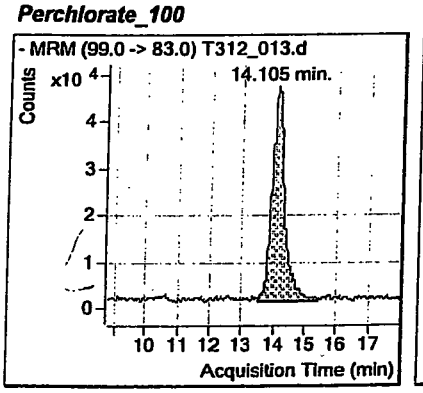
Quantitative Analysis Sample Report

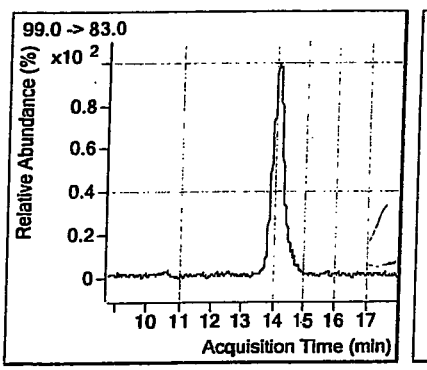
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_013.d	**Sample Name**	PER_CCV_1 0.0004 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	20:58
ClientID	NA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

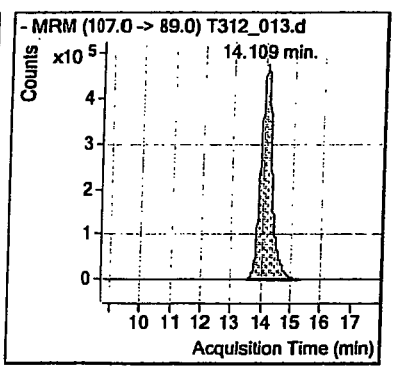


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.105	1267031	12323795
Perchlorate_102	PER_IS_108	14.143	410558	12323795

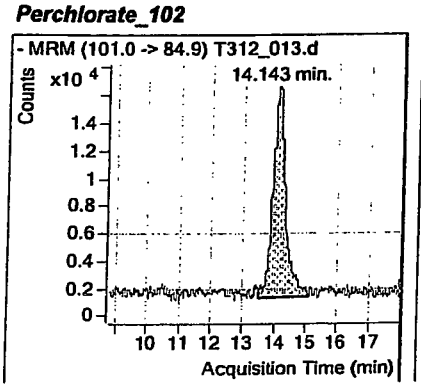
Perchlorate_100

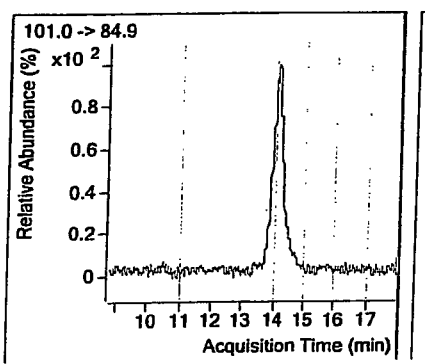


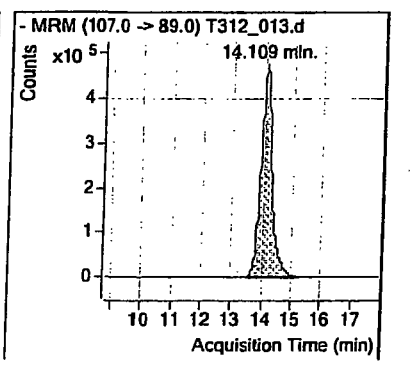




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T312_014.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: 21:17 Standard Id: PER_CCV_1 (Standard) 0.002 ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	13.50	13.40	13.60	1.270255	14.15	1.271875	N	0.1
Perchlorate_85	13.54	13.44	13.64	0.391605	14.12	0.385509	N	1.6

ILE ID : TQCK1214.RFB

Data File ID: T312_014.d

Date Injected : 03/12/15

Time Injected : 21:17

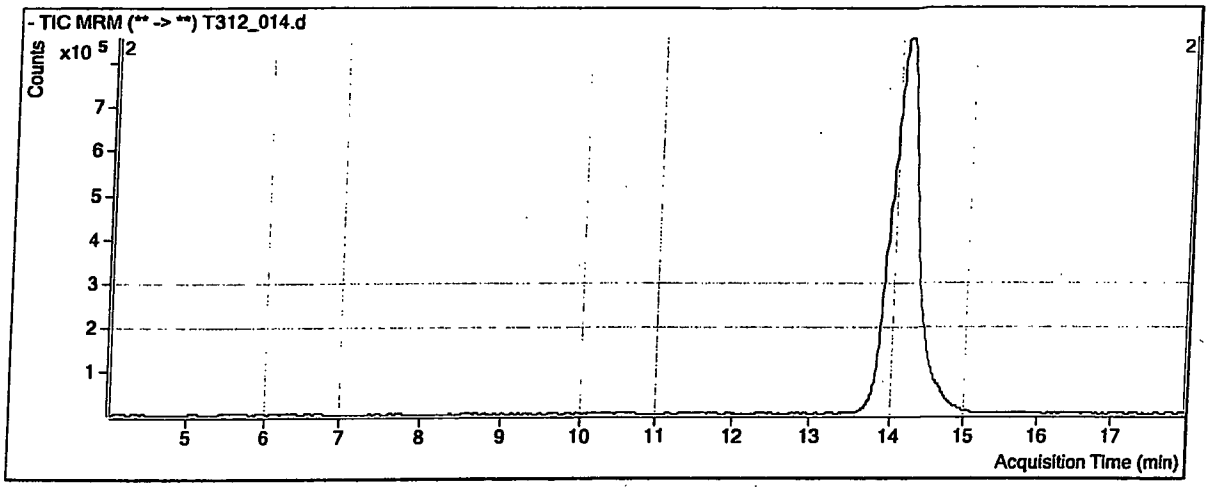
Sample ID : PER_CCV_1 0.002 ug/ml 11/11/14

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
14.139	13576634	PER_IS_89
14.146	6907110	Perchlorate_83
14.122	2093567	Perchlorate_85

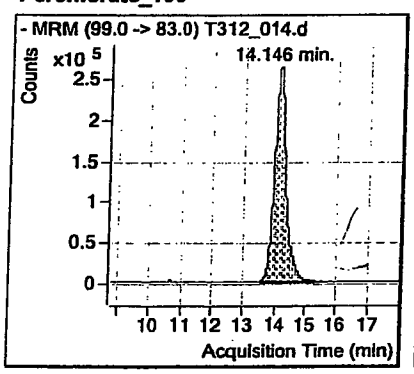
Quantitative Analysis Sample Report

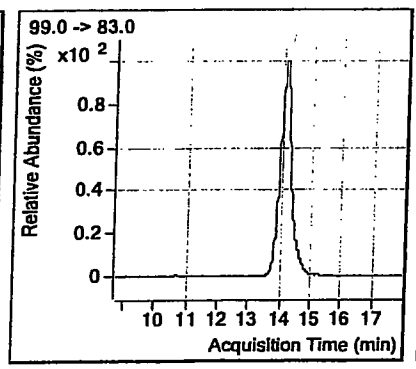
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_014.d	**Sample Name**	PER_CCV_1 0.002 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	21:17
ClientID	NA	**Inj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

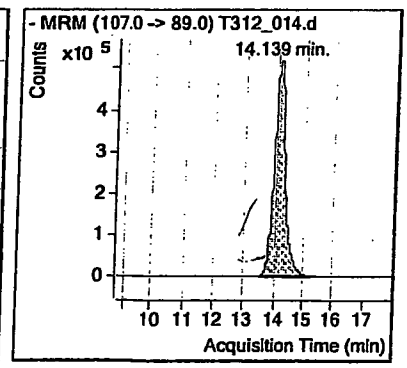


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.146	6907110	13576634
Perchlorate_102	PER_IS_108	14.122	2093567	13576634

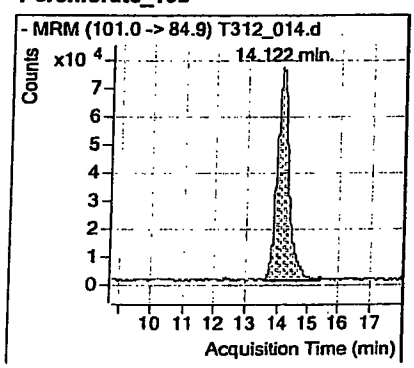
Perchlorate_100

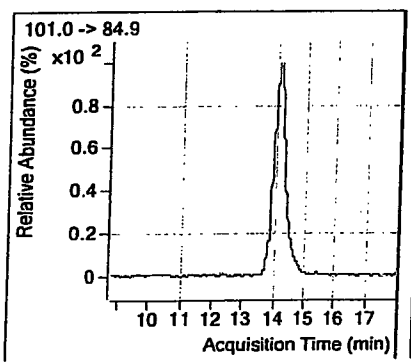


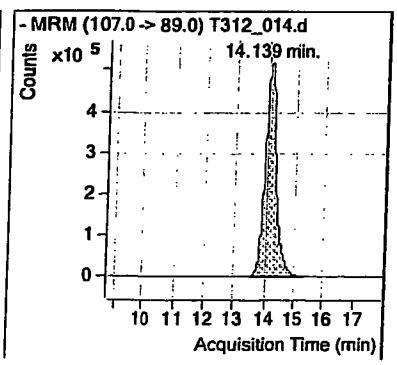




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T602_002.d

Date (s) of Analysis From:03/12/15 To:06/02/15 Time (s) of Analysis From:17:52 To:13:39	Date of Analysis: 06/02/15 Time of Analysis: 13:57 Standard Id: PER_CCV (Standard) 0.0004ug/ml

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	13.79	13.69	13.89	1.270255	13.60	1.225608	N	3.5
Perchlorate_85	13.70	13.60	13.80	0.391605	13.64	0.409258	N	4.5

FILE ID : TQCK0202.RFB

Data File ID: T602_002.d

Date Injected : 06/02/15

Time Injected : 13:57

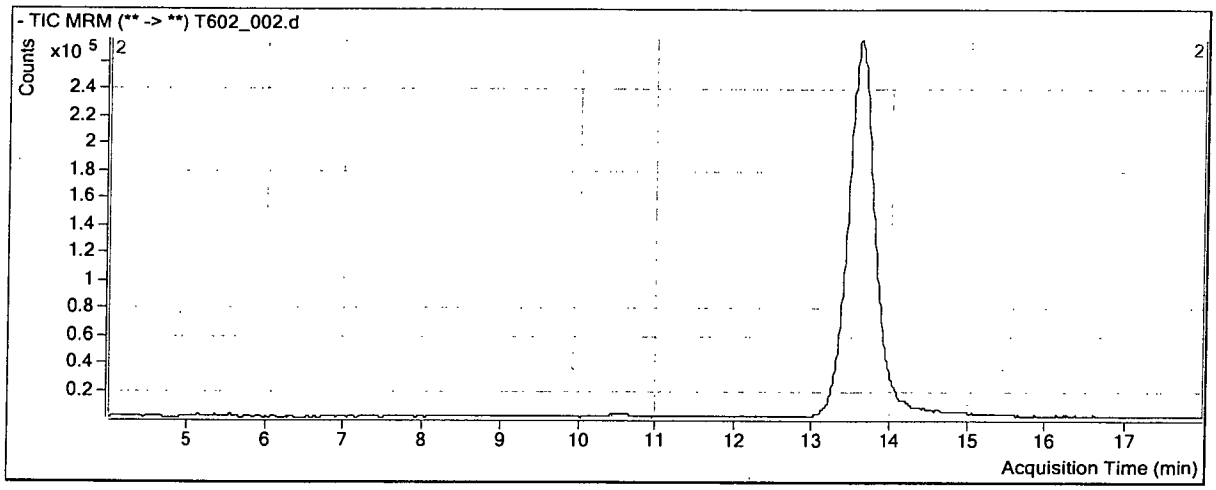
Sample ID : PER_CCV 0.0004 ug/ml 05/29/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.599	5965792	PER_IS_89
13.596	584938	Perchlorate_83
13.643	195324	Perchlorate_85

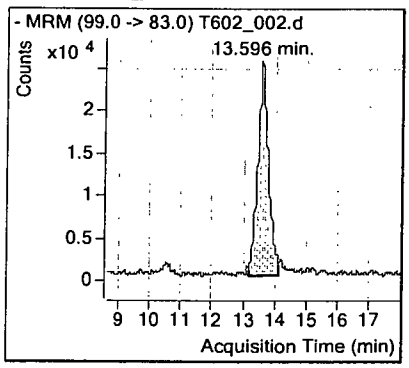
Quantitative Analysis Sample Report

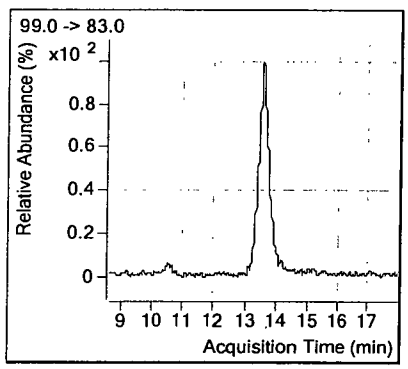
Batch Data Path	D:\MassHunter\Data\150602\QuantResults\150602_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T602_002.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/29/15
Sample Type	Sample	**Acq_Date**	06/02/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	13:57
ClientID	NA	**Inj Vol**	20

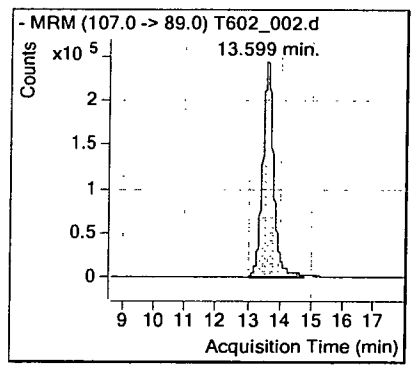


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.596	584938	5965792
Perchlorate_102	PER_IS_108	13.643	195324	5965792

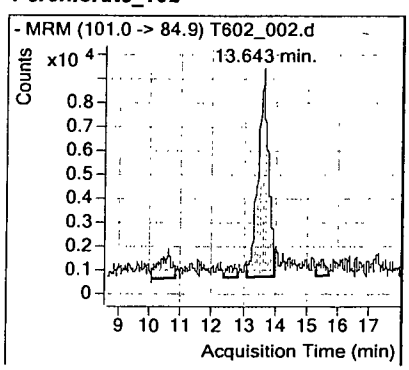
Perchlorate_100

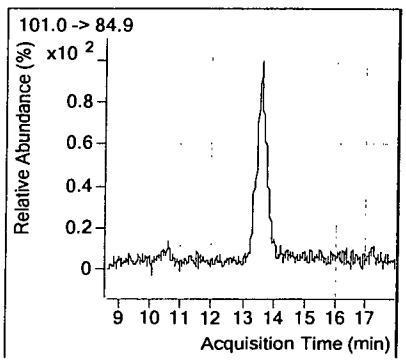


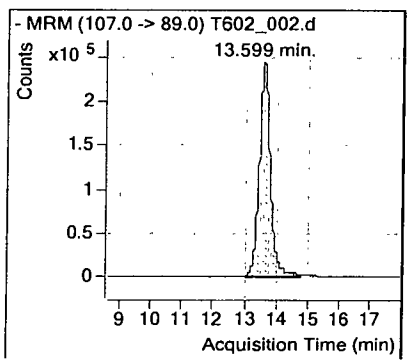




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T602_003.d

	Date (s) of Analysis From:03/12/15 To:06/02/15 Time (s) of Analysis From:17:52 To:13:39				Date of Analysis: 06/02/15 Time of Analysis: 14:16 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	13.89	1.146813	N	9.7
Perchlorate_85	13.70	13.60	13.80	0.391605	13.87	0.351055	N	10.4

FILE ID : TQCK0203.RFB

Data File ID: T602_003.d

Date Injected : 06/02/15

Time Injected : 14:16

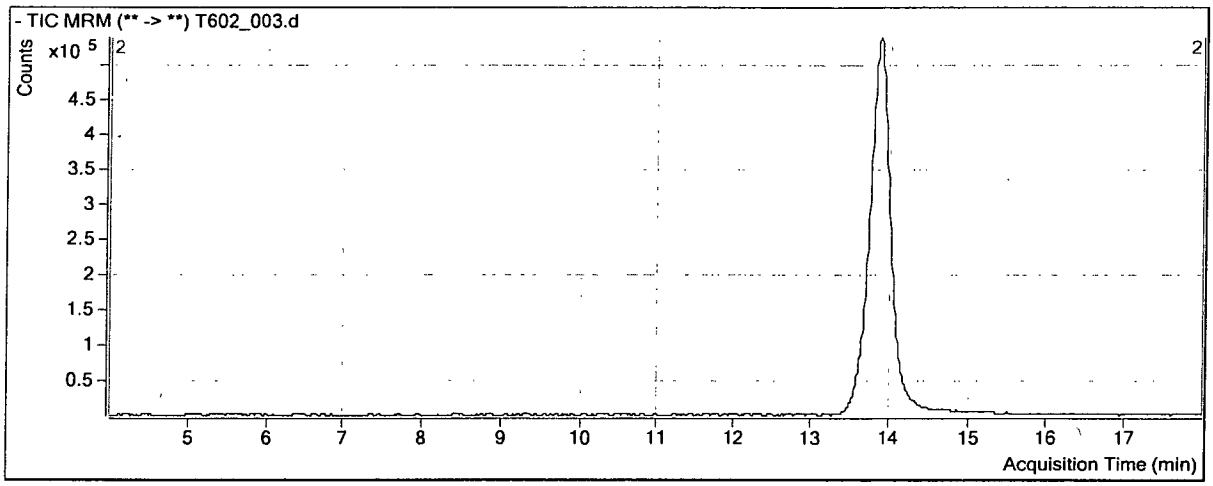
Sample ID : PER_CCV 0.002 ug/ml 05/29/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.884	6692853	PER_IS_89
13.891	3070181	Perchlorate_83
13.868	939824	Perchlorate_85

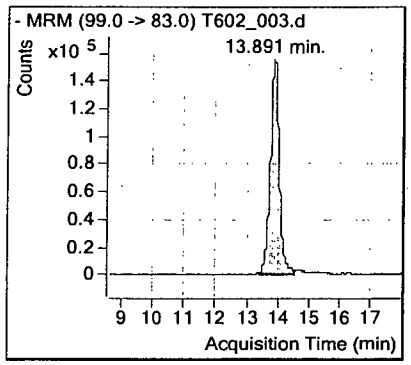
Quantitative Analysis Sample Report

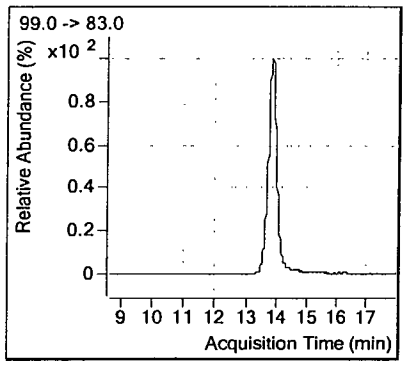
Batch Data Path	D:\MassHunter\Data\150602\QuantResults\150602_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T602_003.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/29/15
Sample Type	Sample	**Acq_Date**	06/02/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	14:16
ClientID	NA	**Inj Vol**	20

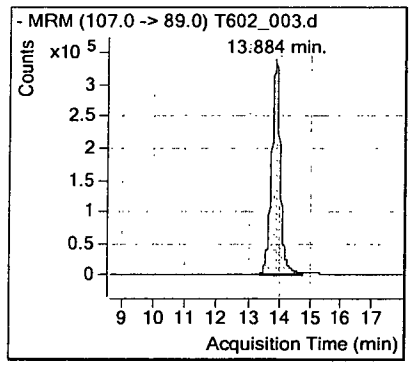


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.891	3070181	6692853
Perchlorate_102	PER_IS_108	13.868	939824	6692853

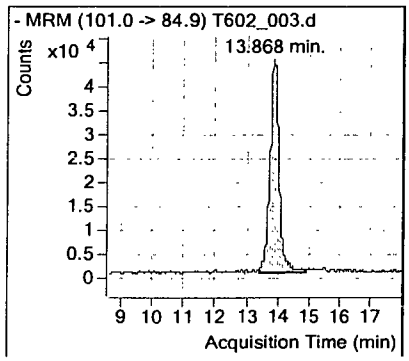
Perchlorate_100

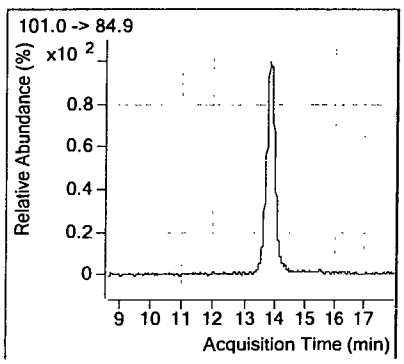


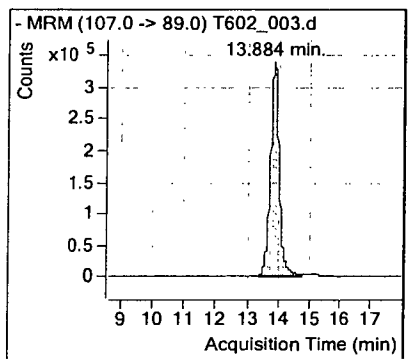




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T602_015.d

Date (s) of Analysis From:03/12/15 To:06/02/15 Time (s) of Analysis From:17:52 To:17:23	Date of Analysis: 06/02/15 Time of Analysis: 18:00 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	13.56	1.186660	N	6.6
Perchlorate_85	13.70	13.60	13.80	0.391605	13.51	0.397787	N	1.6

FILE ID : TQCK0215.RFB

Data File ID: T602_015.d

Date Injected : 06/02/15

Time Injected : 18:00

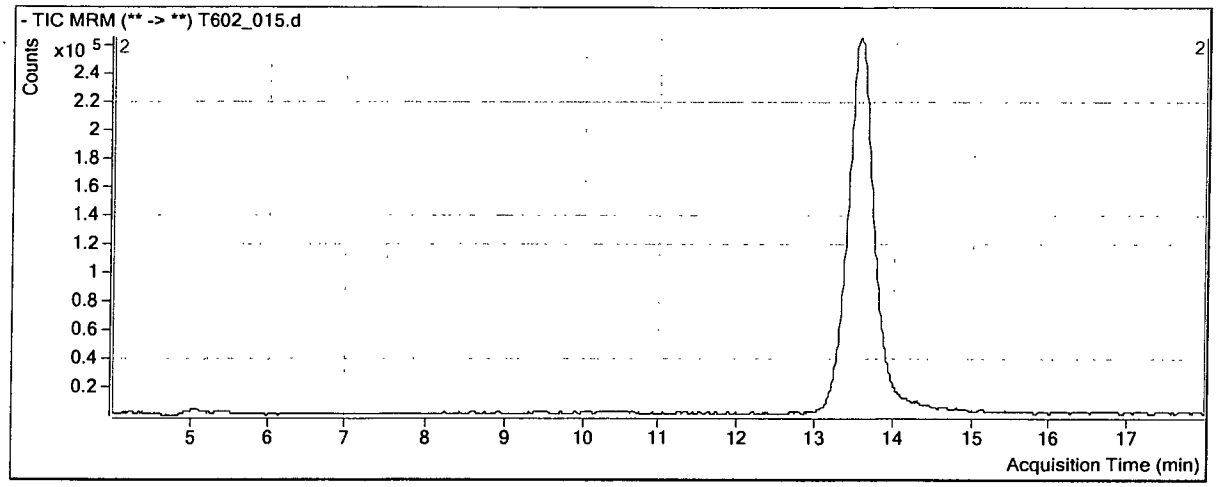
Sample ID : PER_CCV 0.0004 ug/ml 05/29/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.569	5699591	PER_IS_89
13.565	541078	Perchlorate_83
13.511	181378	Perchlorate_85

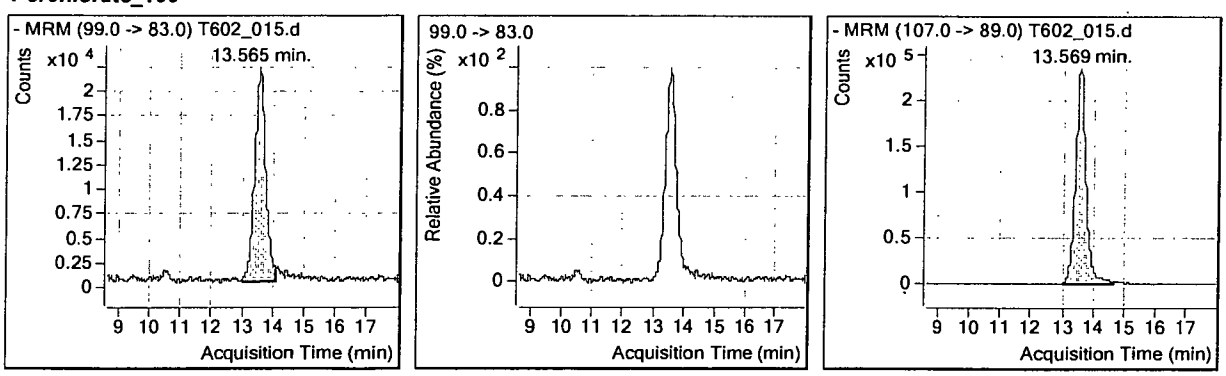
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150602\QuantResults\150602_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T602_015.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/29/15
Sample Type	Sample	**Acq_Date**	06/02/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:00
ClientID	NA	**Inj Vol**	20

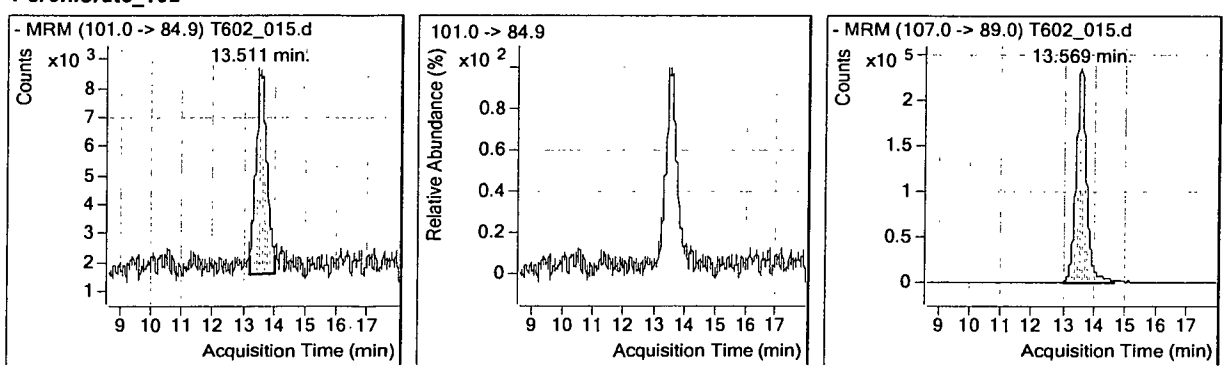


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.565	541078	5699591
Perchlorate_102	PER_IS_108	13.511	181378	5699591

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T602_016.d

	Date (s) of Analysis From:03/12/15 To:06/02/15 Time (s) of Analysis From:17:52 To:17:23				Date of Analysis: 06/02/15 Time of Analysis: 18:19 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	13.67	1.131471	N	10.9
Perchlorate_85	13.70	13.60	13.80	0.391605	13.66	0.350488	N	10.5

FILE ID : TQCK0216.RFB

Data File ID: T602_016.d

Date Injected : 06/02/15

Time Injected : 18:19

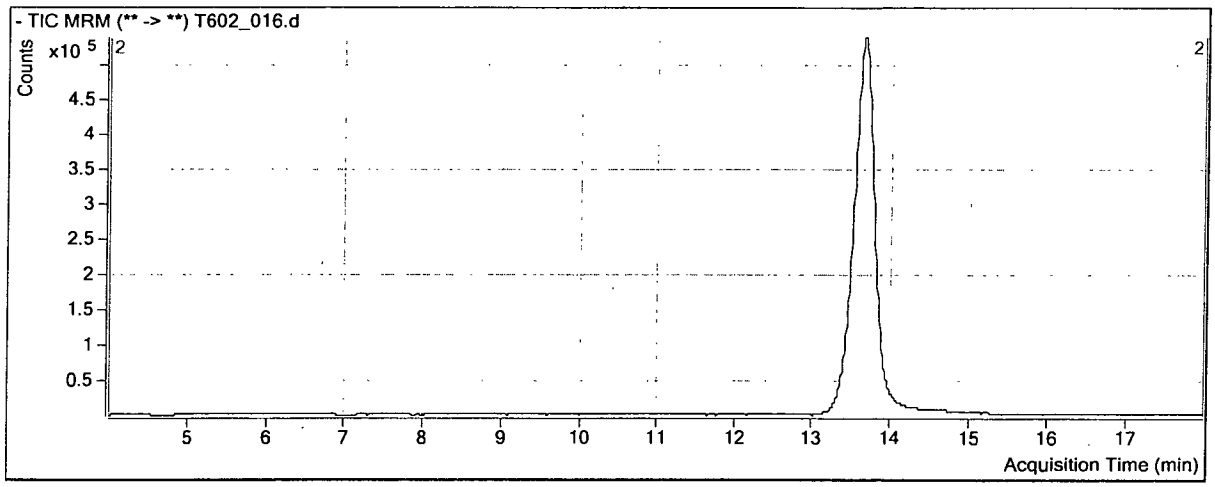
Sample ID : PER_CCV 0.002 ug/ml 05/29/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.600	6462054	PER_IS_89
13.667	2924651	Perchlorate_83
13.664	905950	Perchlorate_85

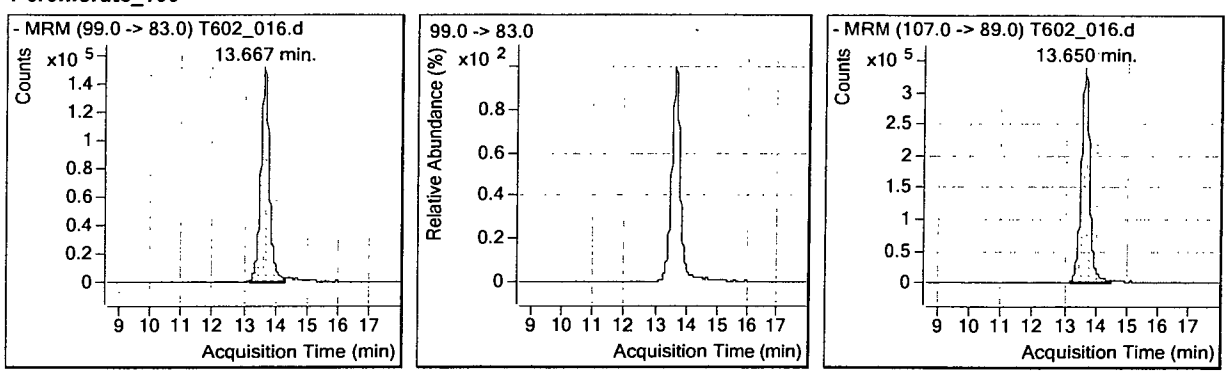
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150602\QuantResults\150602_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T602_016.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/29/15
Sample Type	Sample	**Acq_Date**	06/02/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:19
ClientID	NA	**Inj Vol**	20

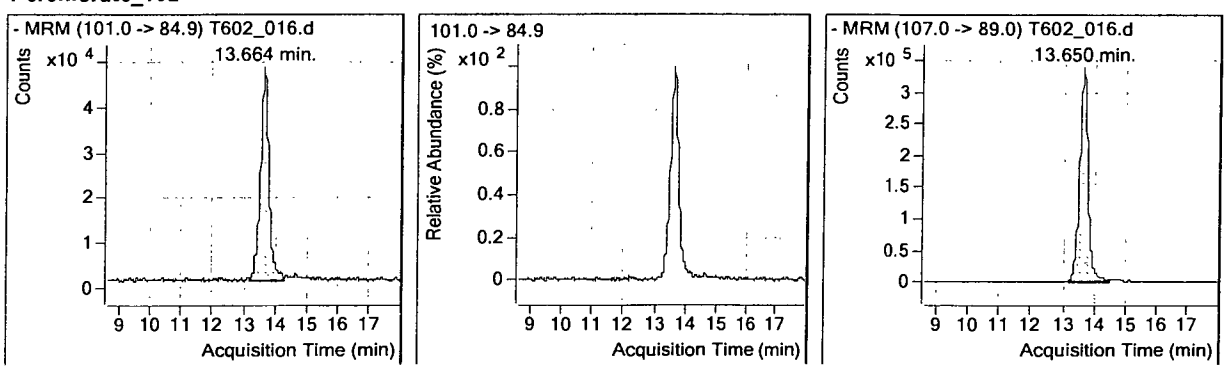


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.667	2924651	6462054
Perchlorate_102	PER_IS_108	13.664	905950	6462054

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T602_028.d

	Date (s) of Analysis From:03/12/15 To:06/02/15 Time (s) of Analysis From:17:52 To:21:25				Date of Analysis: 06/02/15 Time of Analysis: 22:02 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	13.06	1.219788	N	4.0
Perchlorate_85	13.70	13.60	13.80	0.391605	13.07	0.402930	N	2.9

FILE ID : TQCK0228.RFB

Data File ID: T602_028.d

Date Injected : 06/02/15

Time Injected : 22:02

Sample ID : PER_CCV 0.0004 ug/ml 05/29/15

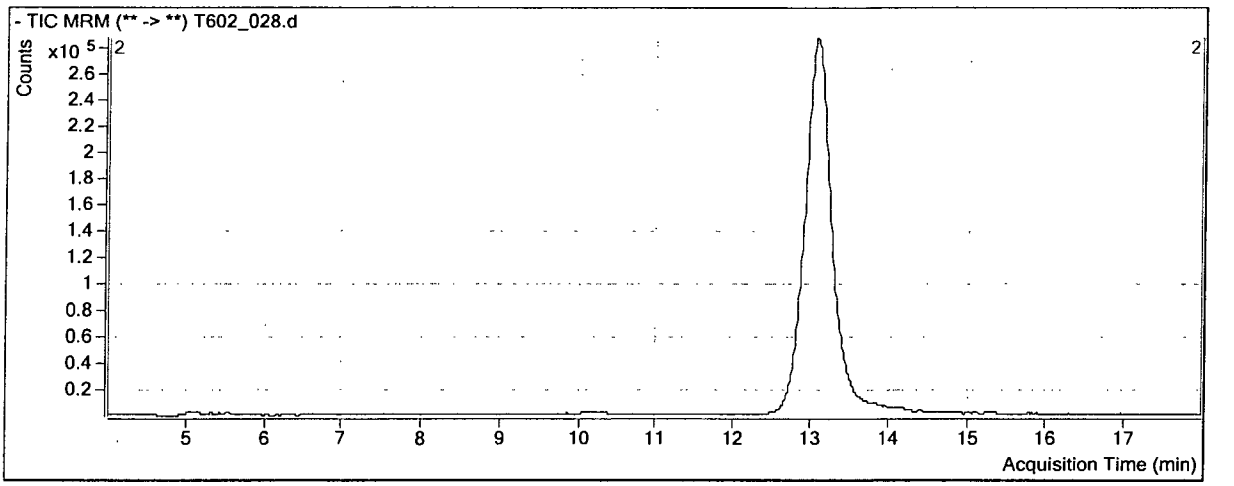
Client ID : NA

Retention Time		Area Count Response	Compound_ID Product Ion
13.069		6093426	PER_IS_89
13.056		594615	Perchlorate_83
13.073	*	196418	Perchlorate_85

* MANUAL INTEGRAION

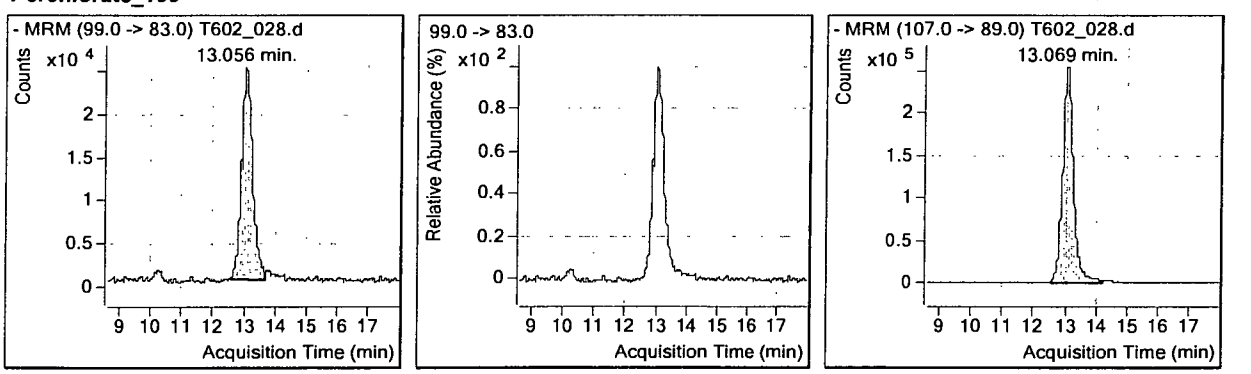
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150602\QuantResults\150602_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T602_028.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/29/15
Sample Type	Sample	**Acq_Date**	06/02/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	22:02
ClientID	NA	**Inj Vol**	20

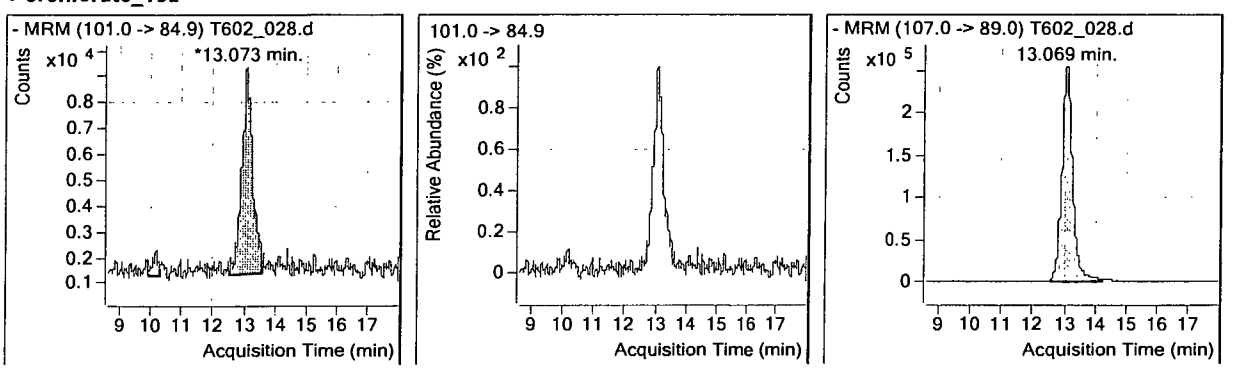


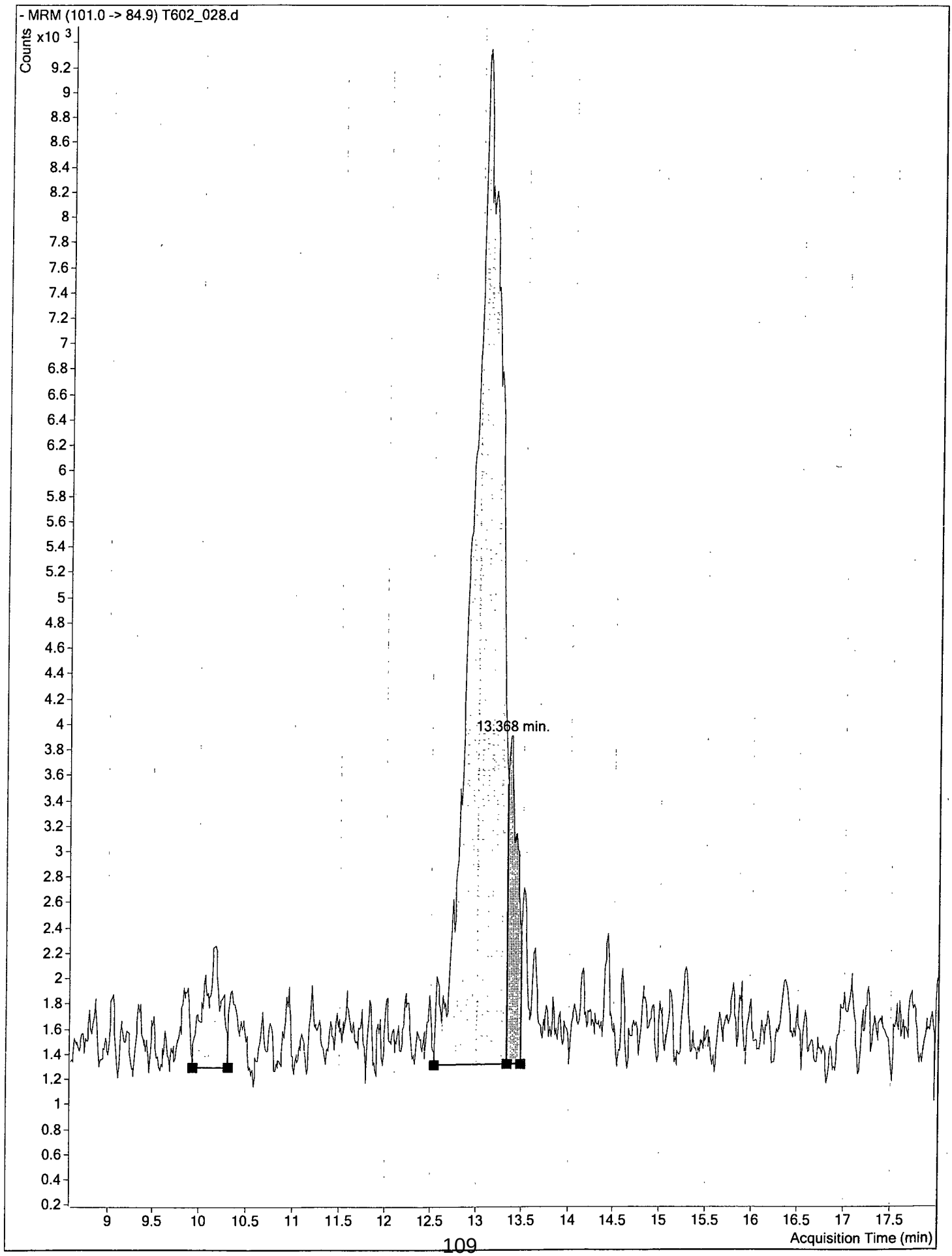
Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108		13.056	594615	6093426	
Perchlorate_102	PER_IS_108	*	13.073	196418	6093426	* MANUAL INT

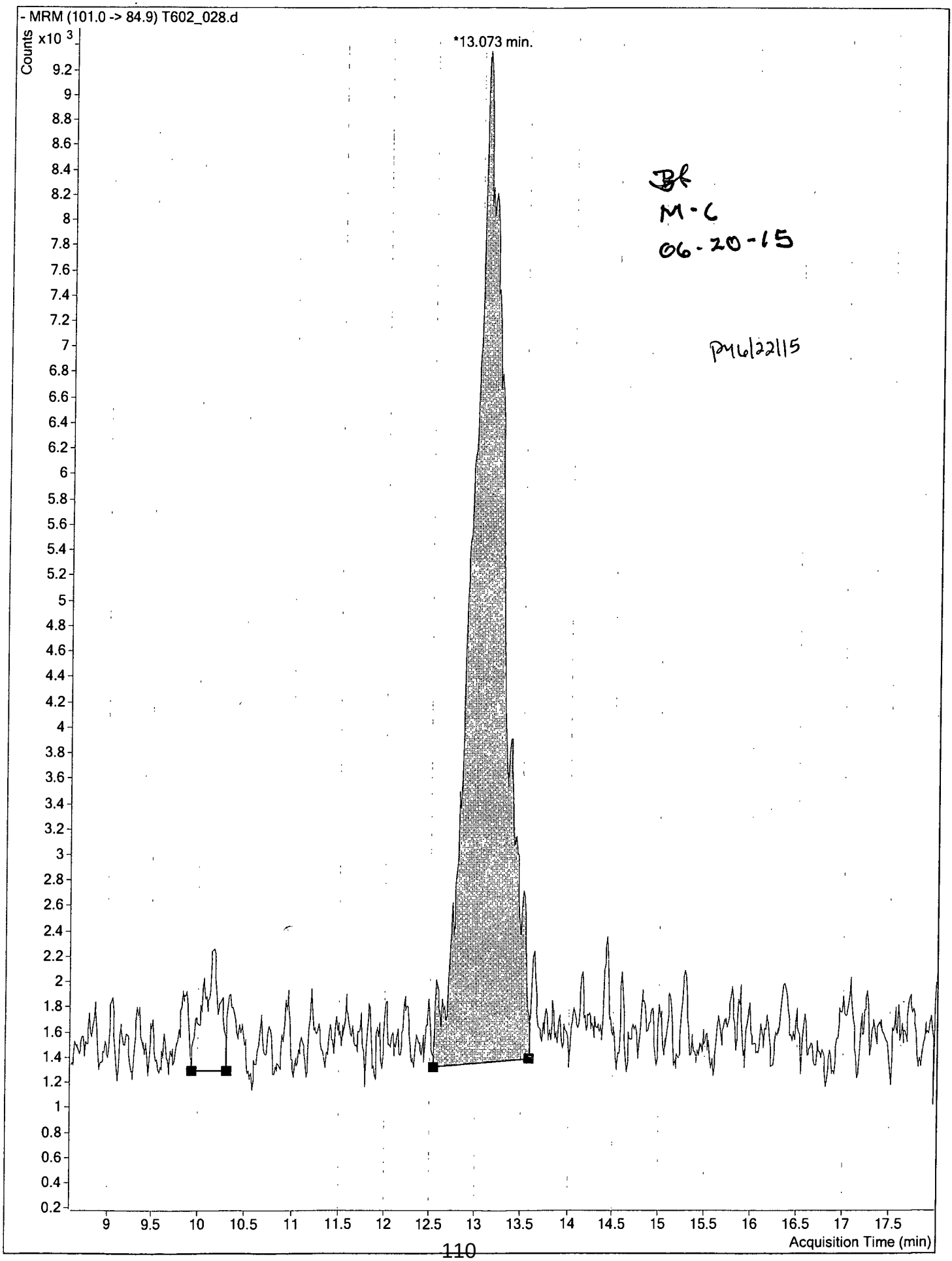
Perchlorate_100



Perchlorate_102




- MRM (101.0 -> 84.9) T602_028.d
Counts
x10 3
13.368 min.
Acquisition Time (min)


- MRM (101.0 -> 84.9) T602_028.d
Counts
x10 3
*13.073 min.
Acquisition Time (min)
BF
M-C
06-20-15
PM6/22/15

CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T602_029.d

	Date (s) of Analysis From:03/12/15 To:06/02/15 Time (s) of Analysis From:17:52 To:21:25				Date of Analysis: 06/02/15 Time of Analysis: 22:21 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	13.26	1.126327	N	11.3
Perchlorate_85	13.70	13.60	13.80	0.391605	13.26	0.347577	N	11.2

FILE ID : TQCK0229.RFB

Data File ID: T602_029.d

Date Injected : 06/02/15

Time Injected : 22:21

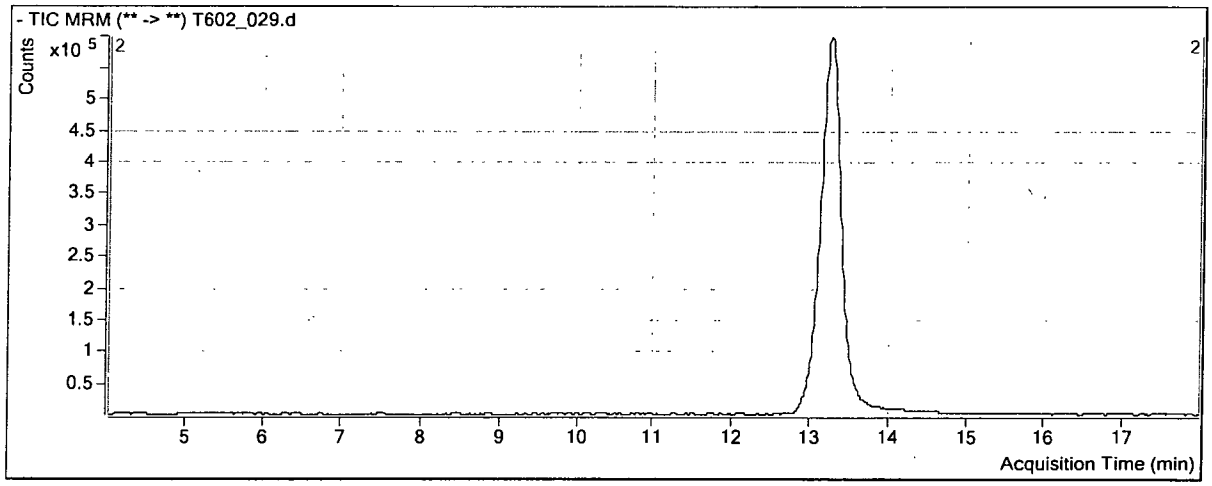
Sample ID : PER_CCV 0.002 ug/ml 05/29/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.243	6947403	PER_IS_89
13.200	3130019	Perchlorate_83
13.256	965902	Perchlorate_85

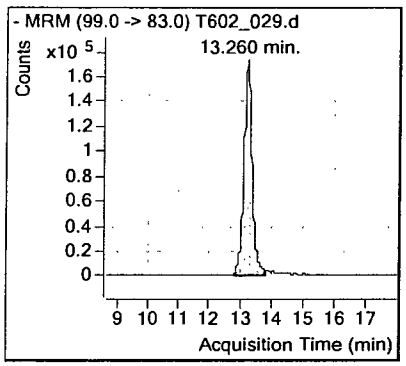
Quantitative Analysis Sample Report

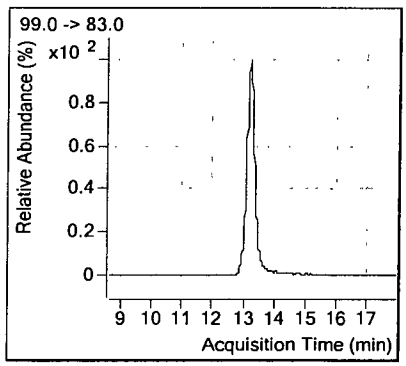
Batch Data Path	D:\MassHunter\Data\150602\QuantResults\150602_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T602_029.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/29/15
Sample Type	Sample	**Acq_Date**	06/02/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	22:21
ClientID	NA	**Inj Vol**	20

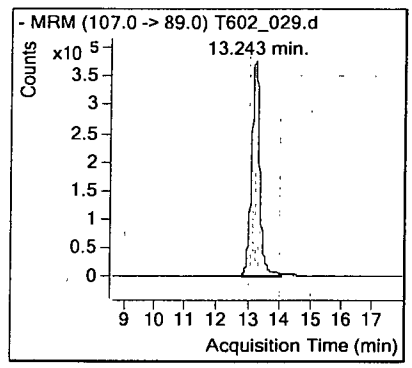


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.260	3130019	6947403
Perchlorate_102	PER_IS_108	13.256	965902	6947403

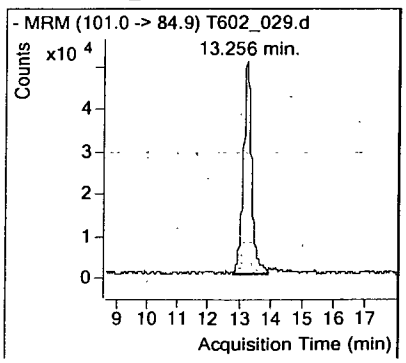
Perchlorate_100

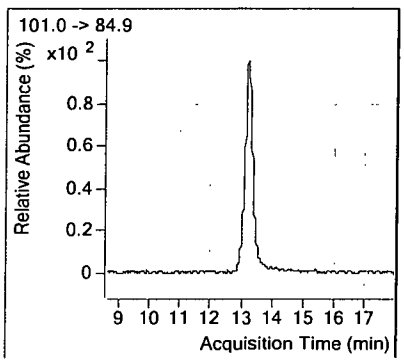


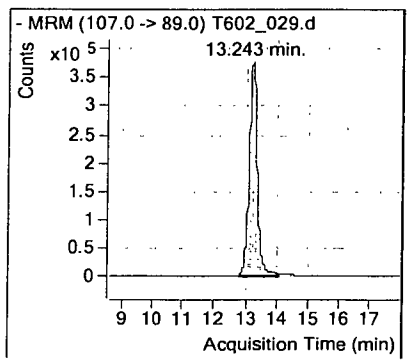




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T603_002.d

	Date (s) of Analysis From:03/12/15 To:06/03/15 Time (s) of Analysis From:17:52 To:10:07				Date of Analysis: 06/03/15 Time of Analysis: 10:26 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	13.32	1.238483	N	2.5
Perchlorate_85	13.70	13.60	13.80	0.391605	13.38	0.418477	N	6.9

FILE ID : TQCK0302.RFB

Data File ID: T603_002.d

Date Injected : 06/03/15

Time Injected : 10:26

Sample ID : PER_CCV 0.0004 ug/ml 05/29/15

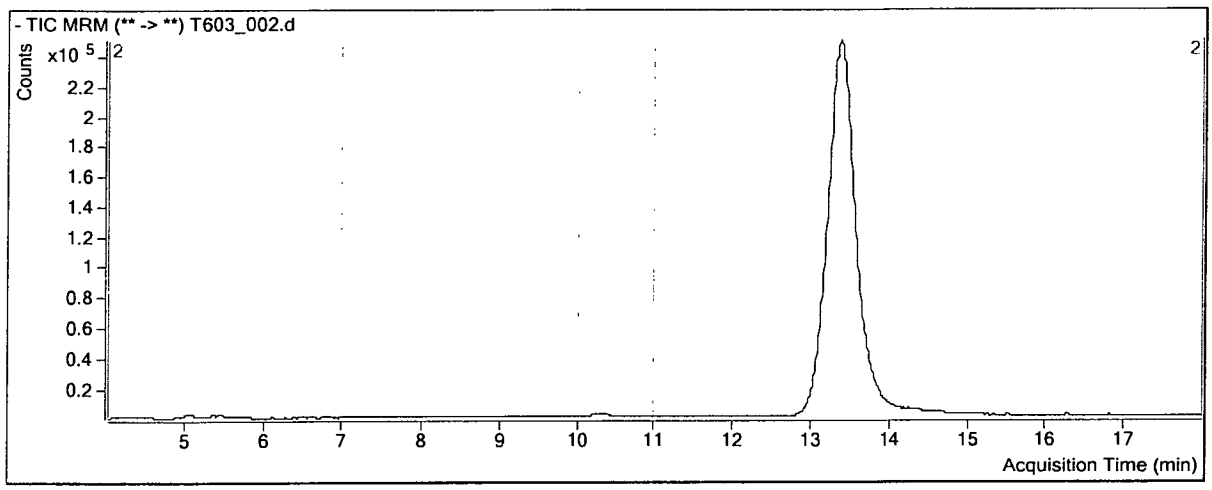
Client ID : NA

Retention Time		Area Count Response	Compound_ID Product Ion
13.365		5545586	PER_IS_89
13.321		549449	Perchlorate_83
13.378	*	185656	Perchlorate_85

* MANUAL INTEGRAION

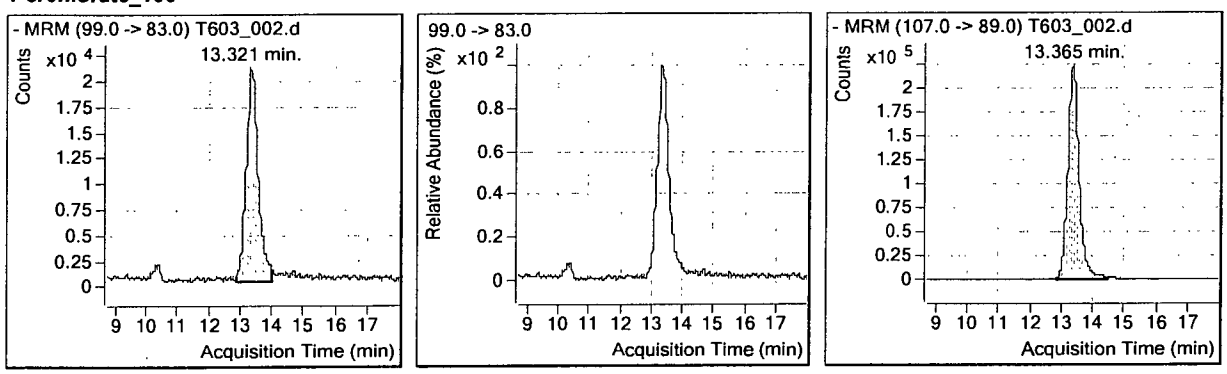
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150603\QuantResults\150603_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T603_002.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/29/15
Sample Type	Sample	**Acq_Date**	06/03/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	10:26
ClientID	NA	**Inj Vol**	20

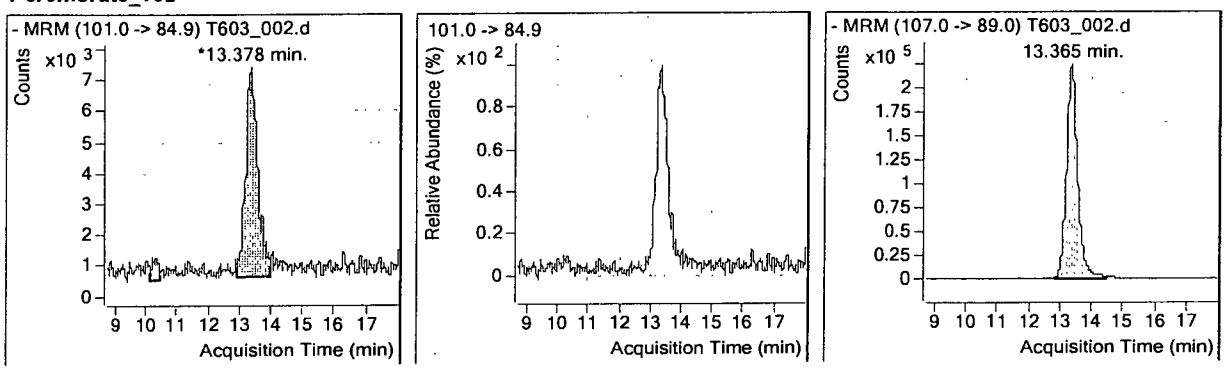


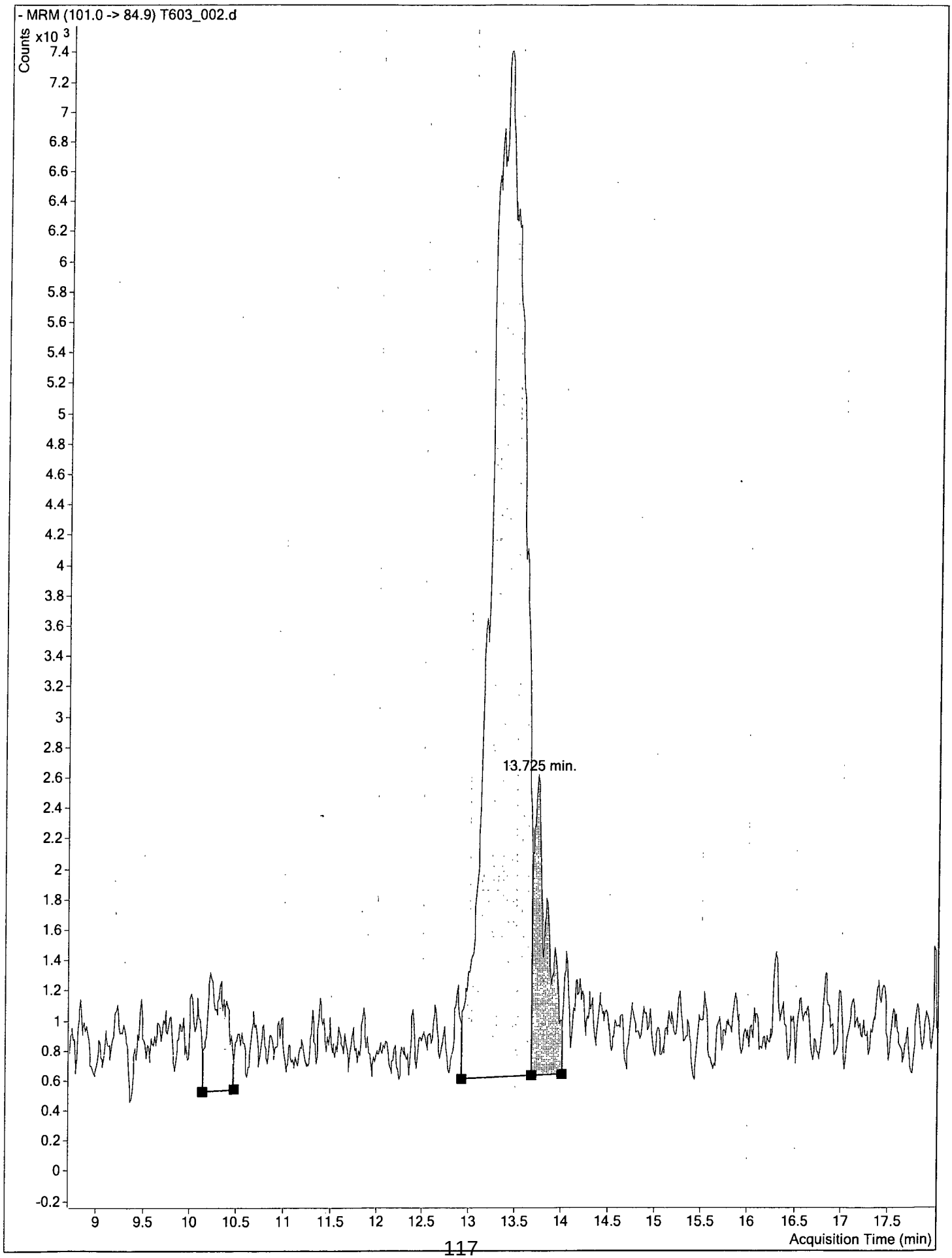
Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108		13.321	549449	5545586	
Perchlorate_102	PER_IS_108	*	13.378	185656	5545586	* MANUAL INT

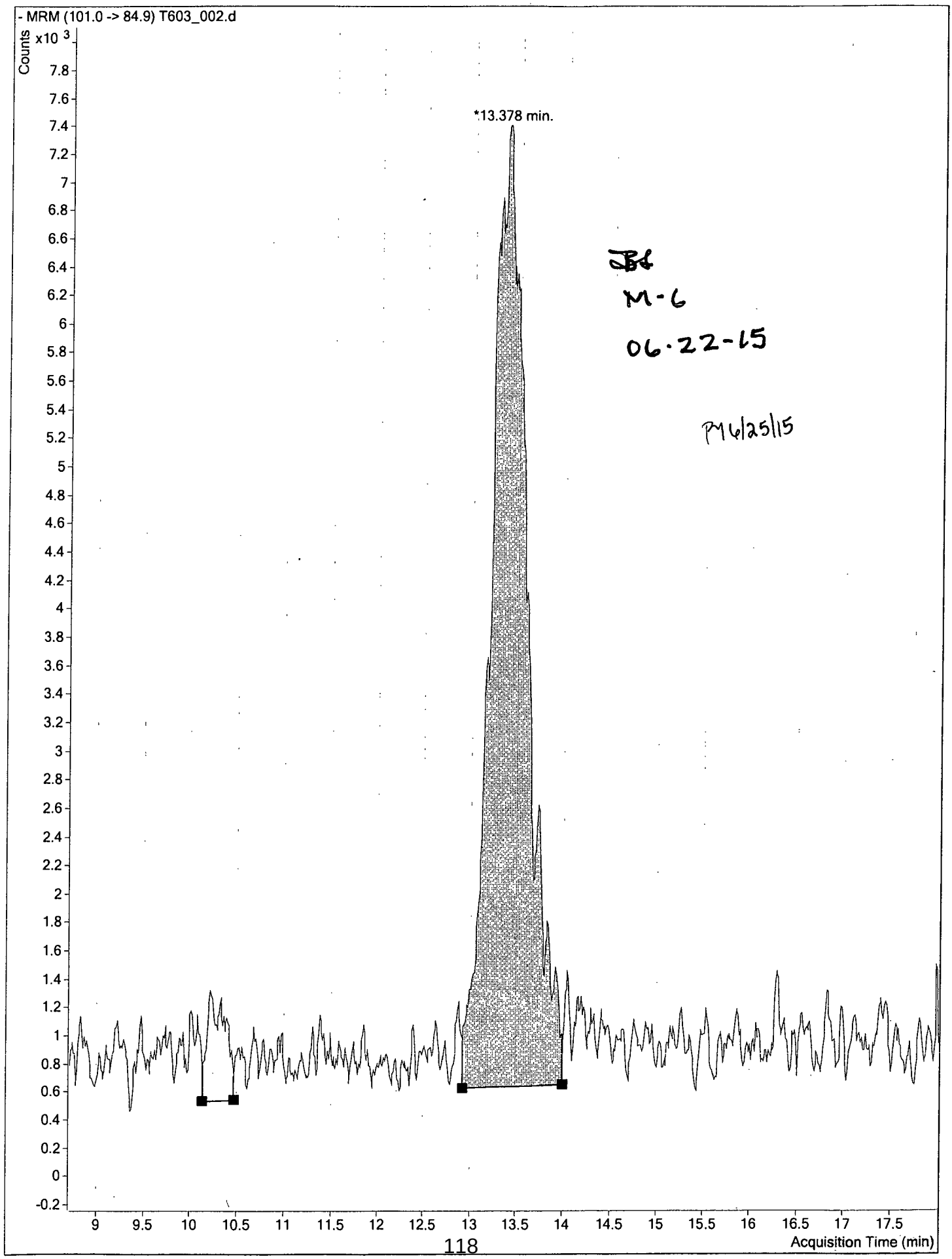
Perchlorate_100



Perchlorate_102




- MRM (101.0 -> 84.9) T603_002.d
Counts
x10 3
13.725 min.
Acquisition Time (min)


- MRM (101.0 -> 84.9) T603_002.d
Counts
x10 3
*13.378 min.
Acquisition Time (min)
M-6
06-22-15
PM 6/25/15

CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T603_003.d

	Date (s) of Analysis From:03/12/15 To:06/03/15 Time (s) of Analysis From:17:52 To:10:07				Date of Analysis: 06/03/15 Time of Analysis: 10:44 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	13.72	1.152166	N	9.3
Perchlorate_85	13.70	13.60	13.80	0.391605	13.73	0.346613	N	11.5

FILE ID : TQCK0303.RFB

Data File ID: T603_003.d

Date Injected : 06/03/15

Time Injected : 10:44

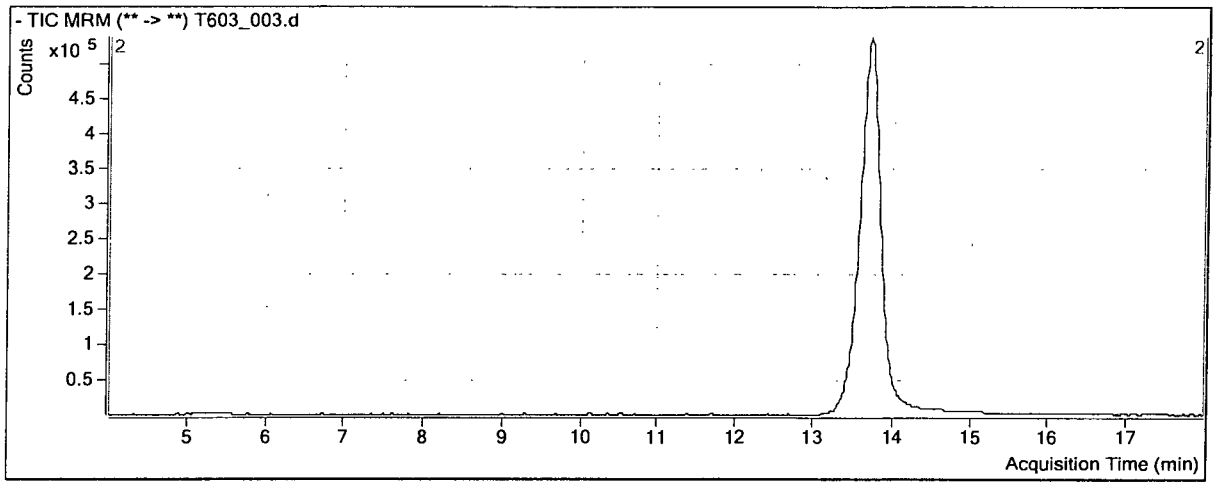
Sample ID : PER_CCV 0.002 ug/ml 05/29/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.701	6359894	PER_IS_89
13.718	2931062	Perchlorate_83
13.725	881769	Perchlorate_85

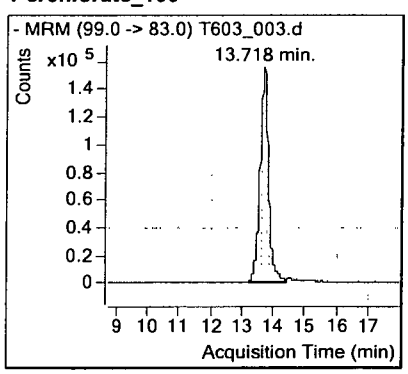
Quantitative Analysis Sample Report

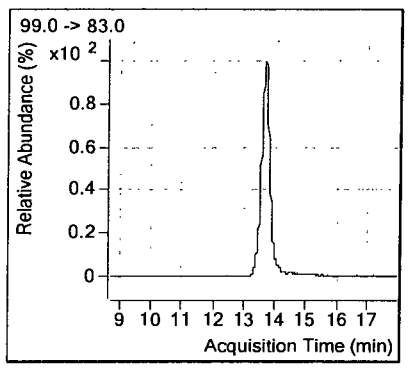
Batch Data Path	D:\MassHunter\Data\150603\QuantResults\150603_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T603_003.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/29/15
Sample Type	Sample	**Acq_Date**	06/03/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	10:44
ClientID	NA	**Inj Vol**	20

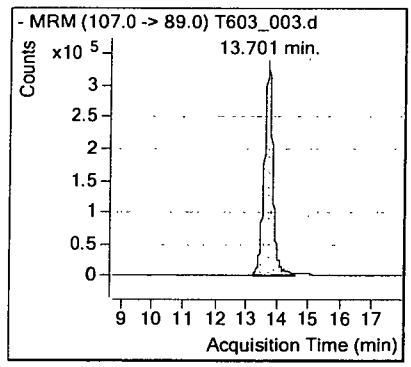


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.718	2931062	6359894
Perchlorate_102	PER_IS_108	13.725	881769	6359894

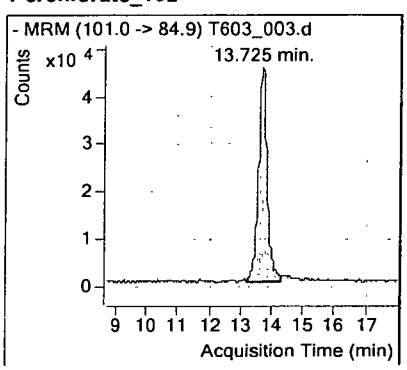
Perchlorate_100

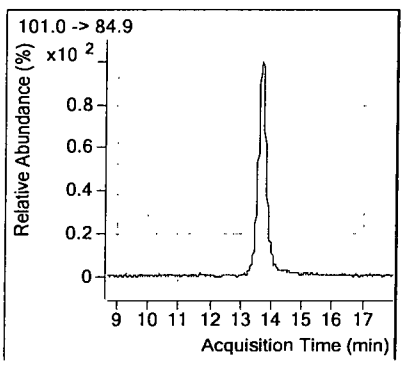


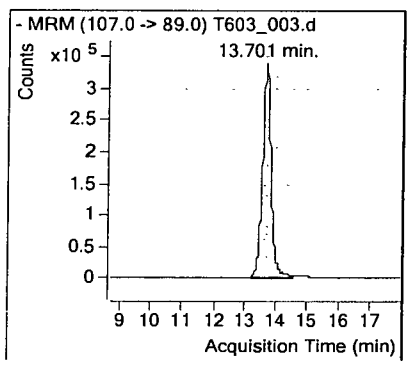




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T603_015.d

	Date (s) of Analysis From:03/12/15 To:06/03/15 Time (s) of Analysis From:17:52 To:13:51				Date of Analysis: 06/03/15 Time of Analysis: 14:28 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	13.48	1.296594	N	2.1
Perchlorate_85	13.70	13.60	13.80	0.391605	13.43	0.413312	N	5.5

FILE ID : TQCK0315.RFB

Data File ID: T603_015.d

Date Injected : 06/03/15

Time Injected : 14:28

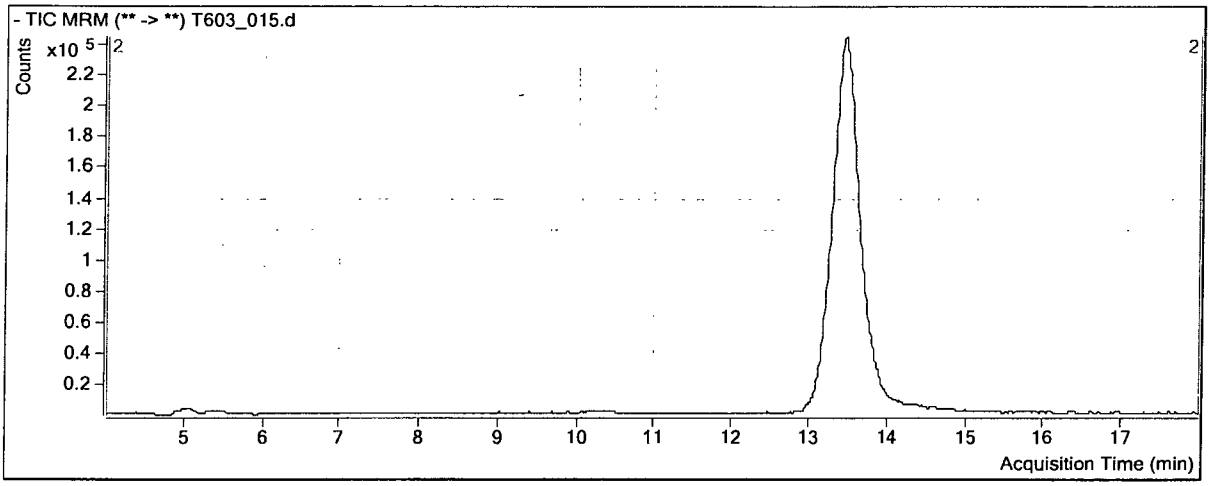
Sample ID : PER_CCV 0.0004 ug/ml 05/29/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.446	5423681	PER_IS_89
13.484	562585	Perchlorate_83
13.429	179334	Perchlorate_85

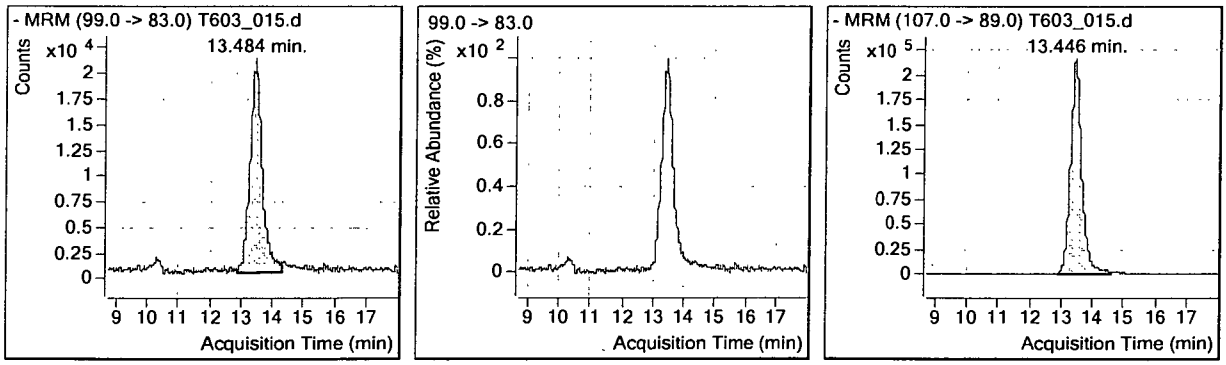
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150603\QuantResults\150603_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T603_015.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/29/15
Sample Type	Sample	**Acq_Date**	06/03/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	14:28
ClientID	NA	**Inj Vol**	20

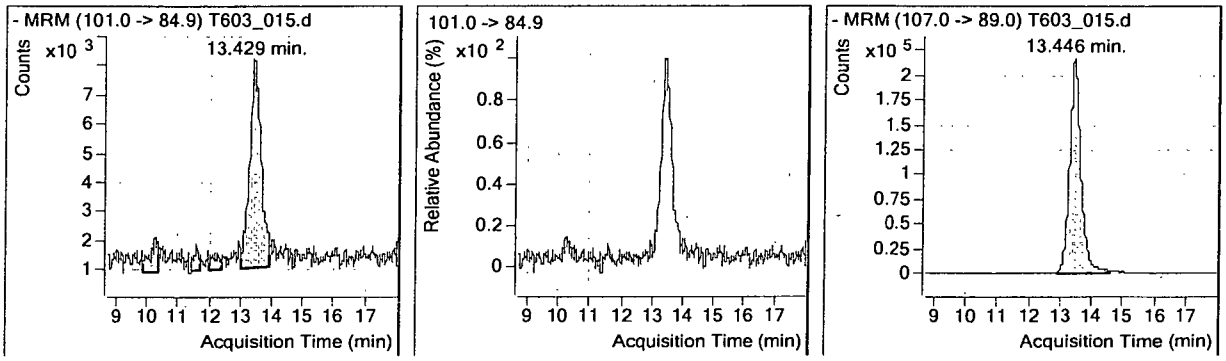


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.484	562585	5423681
Perchlorate_102	PER_IS_108	13.429	179334	5423681

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T603_016.d

Date (s) of Analysis From:03/12/15 To:06/03/15 Time (s) of Analysis From:17:52 To:13:51	Date of Analysis: 06/03/15 Time of Analysis: 14:47 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	14.05	1.151114	N	9.4
Perchlorate_85	13.70	13.60	13.80	0.391605	14.04	0.345357	N	11.8

FILE ID : TQCK0316.RFB

Data File ID: T603_016.d

Date Injected : 06/03/15

Time Injected : 14:47

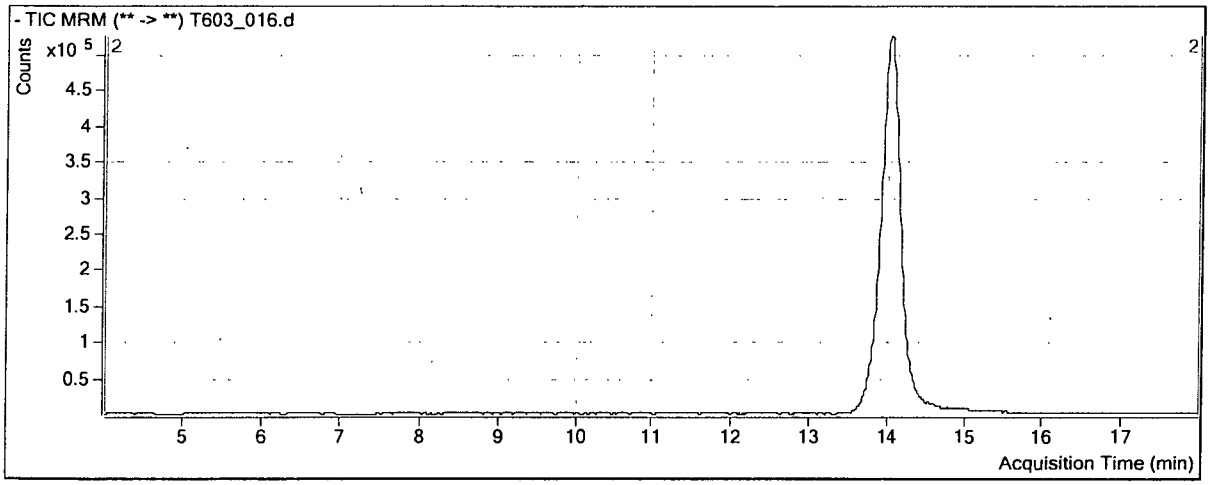
Sample ID : PER_CCV 0.002 ug/ml 05/29/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
14.037	6342934	PER_IS_89
14.054	2920575	Perchlorate_83
14.041	876230	Perchlorate_85

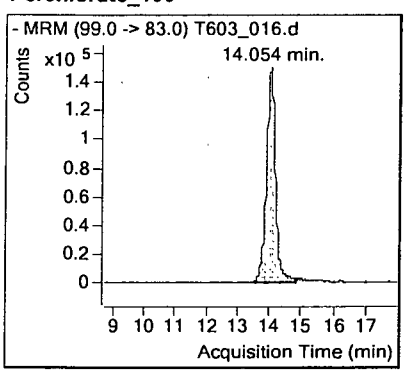
Quantitative Analysis Sample Report

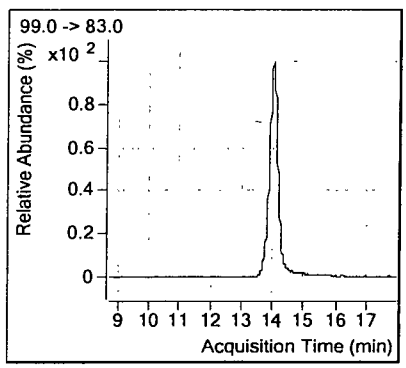
Batch Data Path	D:\MassHunter\Data\150603\QuantResults\150603_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T603_016.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/29/15
Sample Type	Sample	**Acq_Date**	06/03/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	14:47
ClientID	NA	**Inj Vol**	20

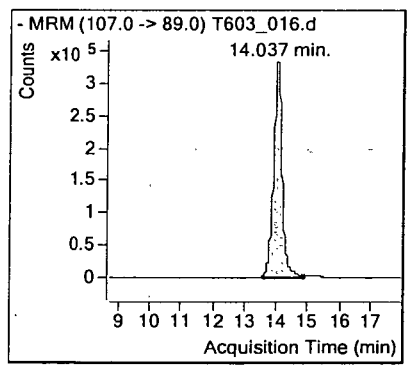


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.054	2920575	6342934
Perchlorate_102	PER_IS_108	14.041	876230	6342934

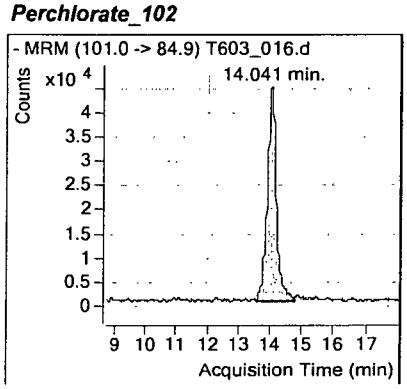
Perchlorate_100

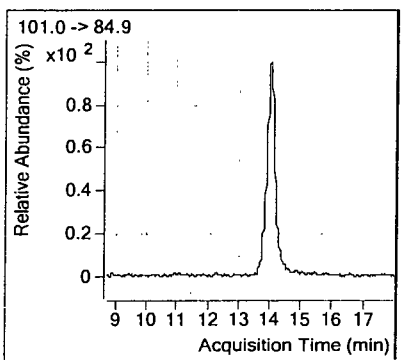


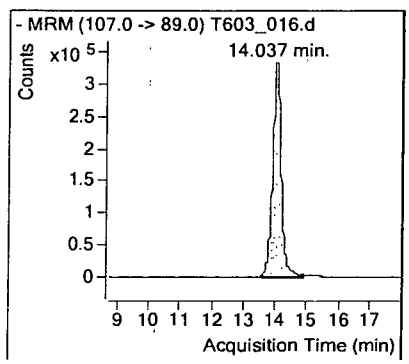




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T603_027.d

	Date (s) of Analysis From:03/12/15 To:06/03/15 Time (s) of Analysis From:17:52 To:17:39				Date of Analysis: 06/03/15 Time of Analysis: 18:16 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	13.09	1.281716	N	0.9
Perchlorate_85	13.70	13.60	13.80	0.391605	13.09	0.450940	N	15.2

FILE ID : TQCK0327.RFB

Data File ID: T603_027.d

Date Injected : 06/03/15

Time Injected : 18:16

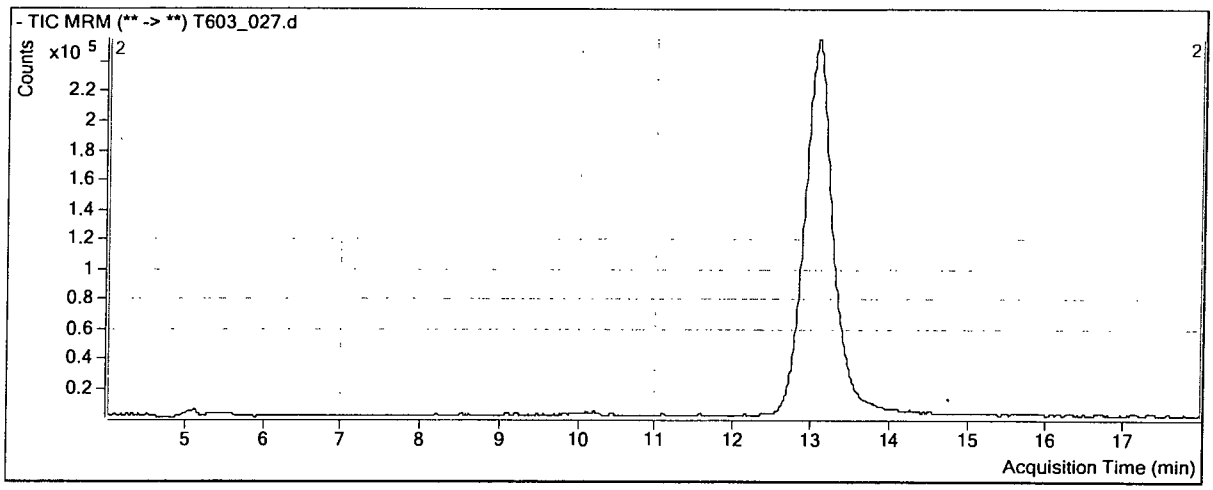
Sample ID : PER_CCV 0.0004 ug/ml 05/29/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.069	5706686	PER_IS_89
13.086	585148	Perchlorate_83
13.093	205870	Perchlorate_85

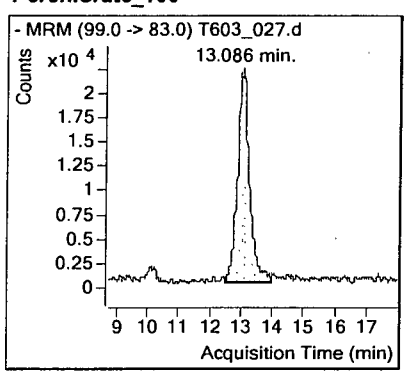
Quantitative Analysis Sample Report

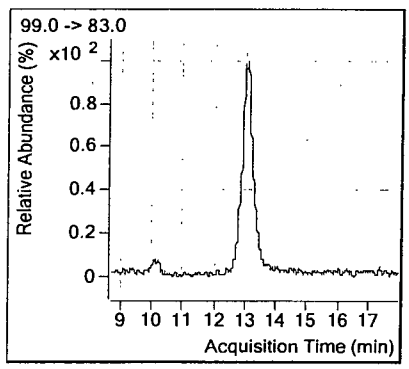
Batch Data Path	D:\MassHunter\Data\150603\QuantResults\150603_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T603_027.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/29/15
Sample Type	Sample	**Acq_Date**	06/03/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:16
ClientID	NA	**Inj Vol**	20

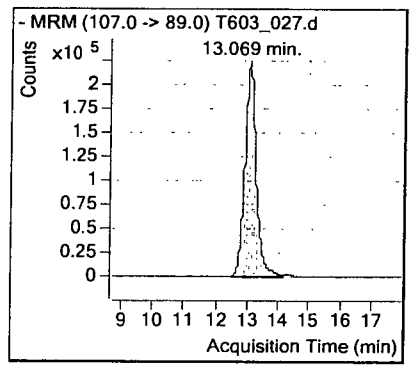


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.086	585148	5706686
Perchlorate_102	PER_IS_108	13.093	205870	5706686

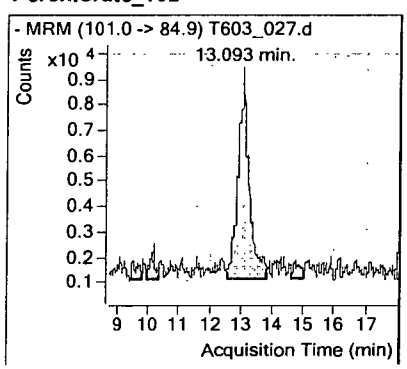
Perchlorate_100

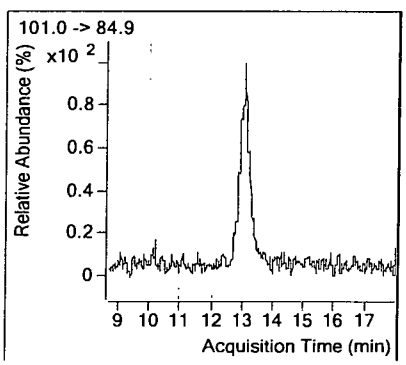


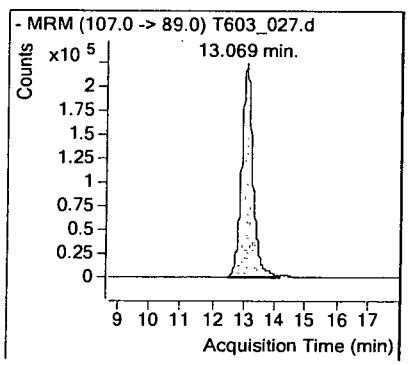




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T603_028.d

	Date (s) of Analysis From:03/12/15 To:06/03/15 Time (s) of Analysis From:17:52 To:17:39				Date of Analysis: 06/03/15 Time of Analysis: 18:35 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	13.29	1.147399	N	9.7
Perchlorate_85	13.70	13.60	13.80	0.391605	13.30	0.346668	N	11.5

FILE ID : TQCK0328.RFB

Data File ID: T603_028.d

Date Injected : 06/03/15

Time Injected : 18:35

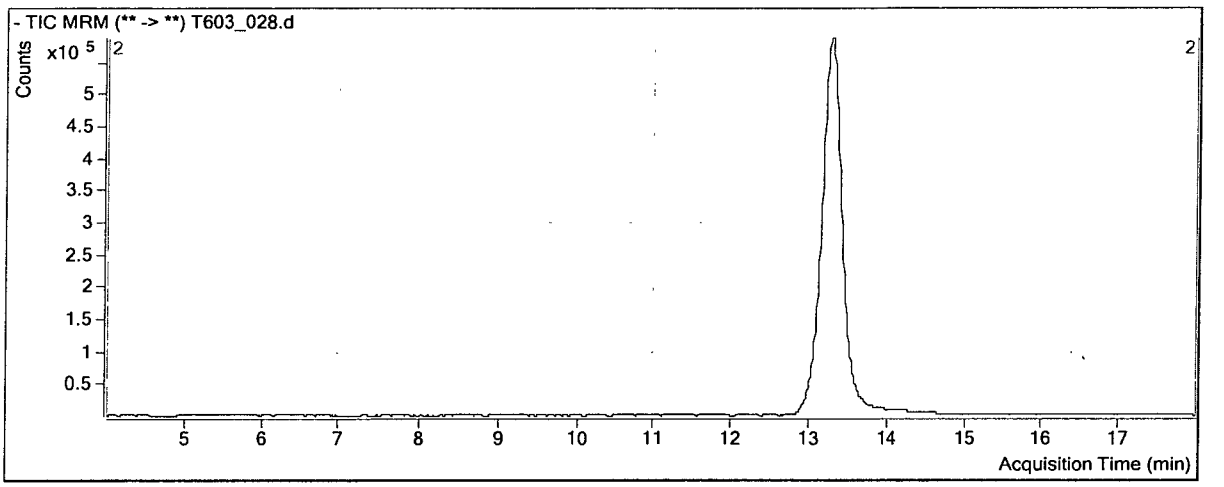
Sample ID : PER_CCV 0.002 ug/ml 05/29/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.273	6840479	PER_IS_89
13.200	3139503	Perchlorate_83
13.297	948549	Perchlorate_85

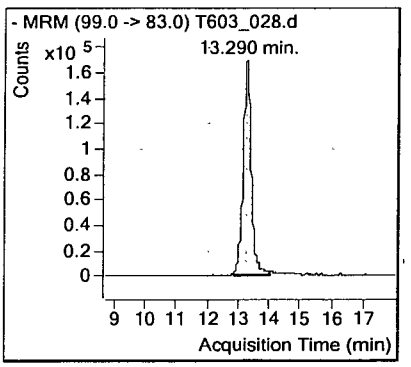
Quantitative Analysis Sample Report

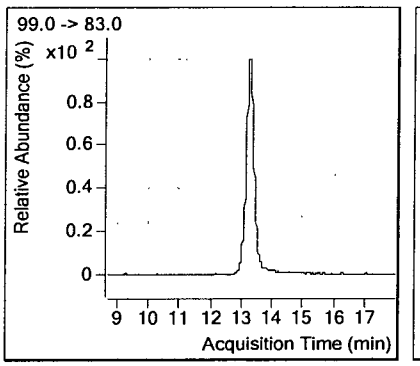
Batch Data Path	D:\MassHunter\Data\150603\QuantResults\150603_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T603_028.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/29/15
Sample Type	Sample	**Acq_Date**	06/03/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:35
ClientID	NA	**Inj Vol**	20

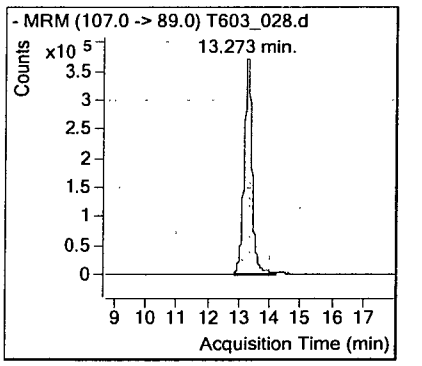


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.290	3139503	6840479
Perchlorate_102	PER_IS_108	13.297	948549	6840479

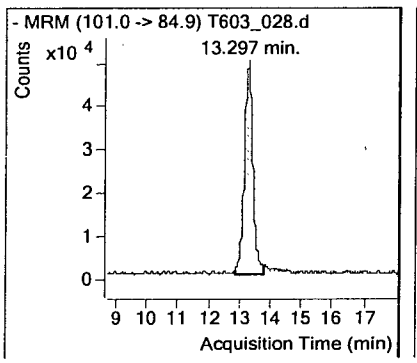
Perchlorate_100

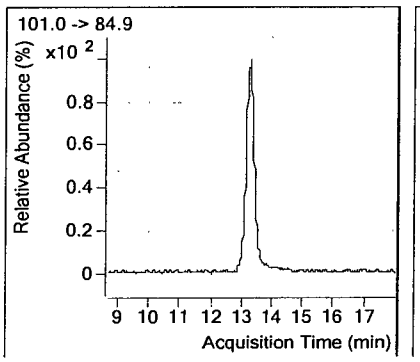


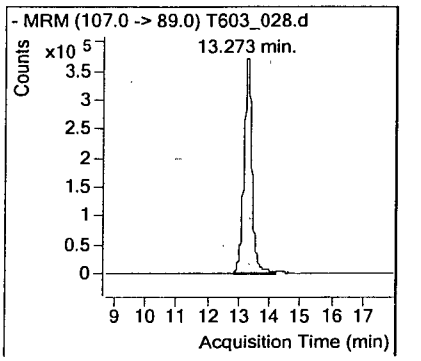




Perchlorate_102







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: **150602W-16963 - 197656**
Batch ID: #6850-150602A

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	06/02/15	06/02/15

Quant Method: QTLMFL2
Run #: T602_007.D
Instrument: AGIL_6460
Sequence: TQ060215
Initials: MP

GC SC-Blank-REG MDLs
Printed: 06/23/15 8:02:18 AM

Data File ID: T602_007.d

Date Injected : 06/02/15

Time Injected : 15:31

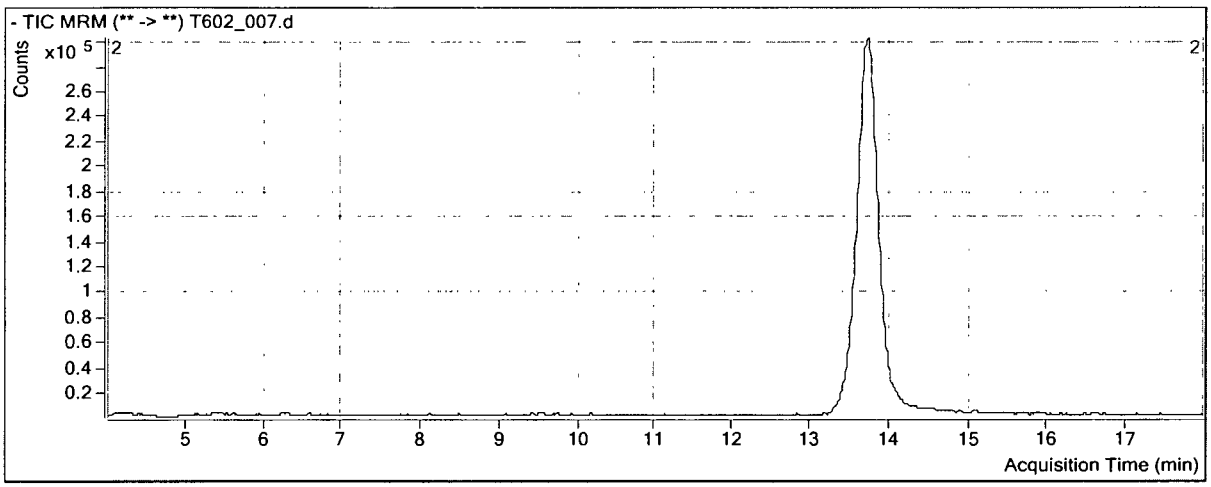
Sample ID : 15060WBLKA 1052.6 DF 06/02/15

Client ID : LAB_CNTL_W_BLKA

Retention Time	Area Count Response	Compound_ID Product Ion		
13.752	5925181	PER_IS_89		
13.677	4920	Perchlorate_83	(4920 * 0.0050) / (1.27 * 5925181.00) * 1052.60 =	0.003440 ppb
13.582	4309	Perchlorate_85	(4309 * 0.0050) / (0.39 * 5925181.00) * 1052.60 =	0.009774 ppb

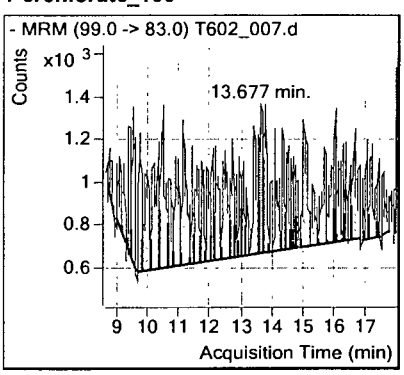
Quantitative Analysis Sample Report

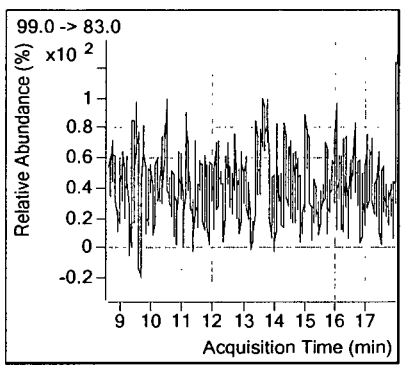
Batch Data Path	D:\MassHunter\Data\150602\QuantResults\150602_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T602_007.d	**Sample Name**	15060WBLKA 1052.6 DF 06/02/15
Sample Type	Sample	**Acq_Date**	06/02/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	15:31
ClientID	LAB_CNTL_W_BLKA	**Inj Vol**	20

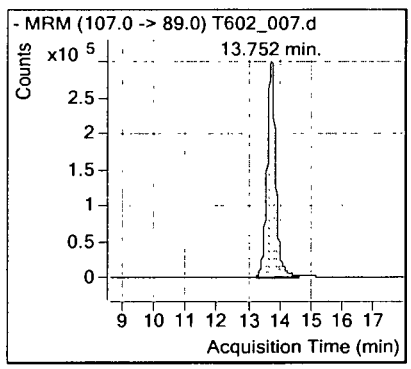


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.677	4920	5925181
Perchlorate_102	PER_IS_108	13.582	4309	5925181

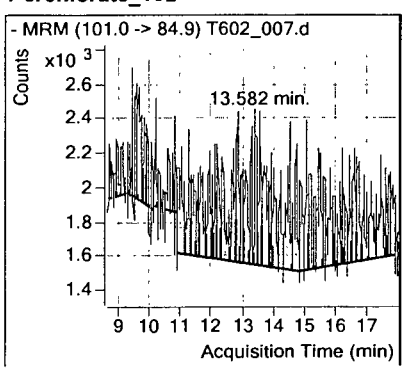
Perchlorate_100

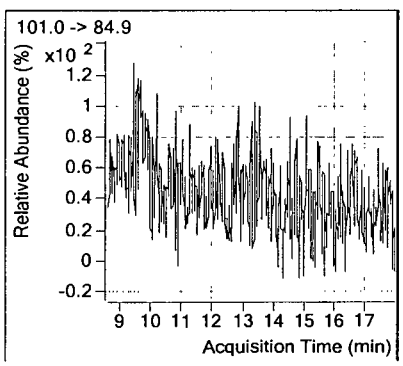


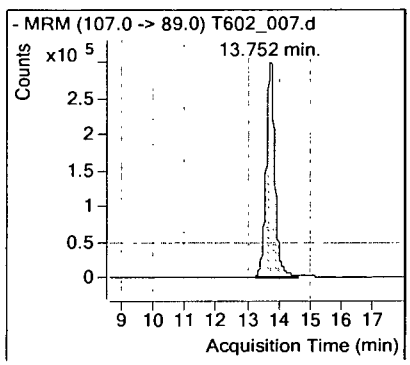




Perchlorate_102







Laboratory Control Spike Recovery
Perchlorate

APPL ID: **150602W-16963 LCS - 197656**
Batch ID: #6850-150602A

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	0.664	111	80-120

Comments: _____

Primary	SPK
Quant Method :	QTLMFL2
Extraction Date :	06/02/15
Analysis Date :	06/02/15
Instrument :	AGIL_6460
Run :	T602_005.D
Initials :	MP

Printed: 06/23/15 8:02:12 AM
APPL Standard LCS

Data File ID: T602_005.d

Date Injected : 06/02/15

Time Injected : 14:53

Sample ID : 150602WA_LCS-1 1052.6 DF 06/02/15

Client ID : LAB_CNTL_W_SPKA

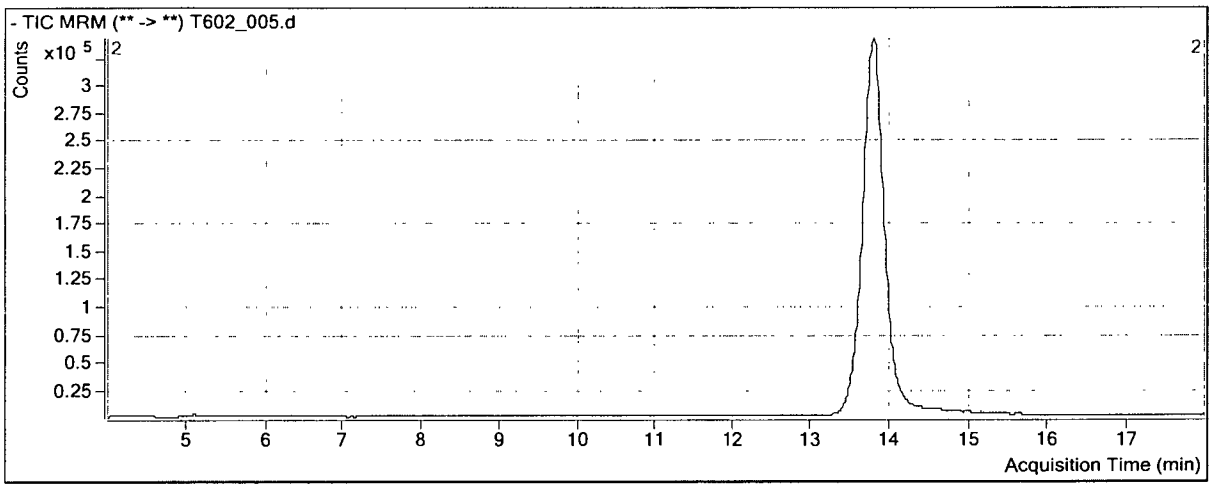
Retention Time	Area Count Response	Compound_ID Product Ion		
13.823	5595910	PER_IS_89		
13.789	897401	Perchlorate_83	(897401 * 0.0050) / (1.27 * 5595910.00) * 1052.60 =	0.664444 ppb
13.806	260585	Perchlorate_85	(260585 * 0.0050) / (0.39 * 5595910.00) * 1052.60 =	0.625841 ppb

$$\frac{(1052.6)(897401)(0.005)}{(1.270255)(5595910)} = 0.664444$$

6/29/15
KH

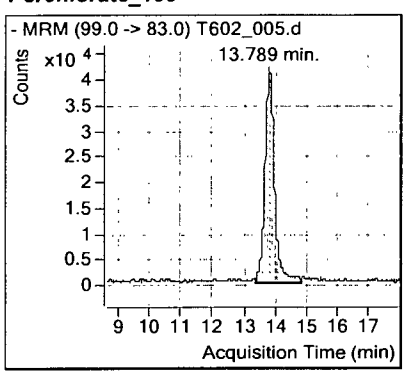
Quantitative Analysis Sample Report

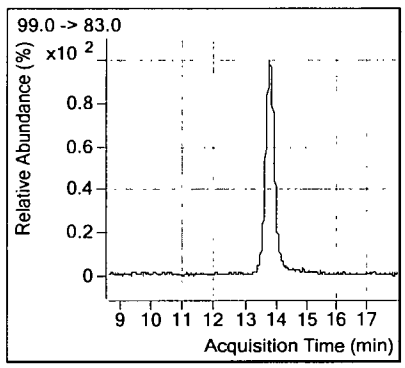
Batch Data Path	D:\MassHunter\Data\150602\QuantResults\150602_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T602_005.d	**Sample Name**	150602WA_LCS-1 1052.6 DF 06/02/15
Sample Type	Sample	**Acq_Date**	06/02/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	14:53
ClientID	LAB_CNTL_W_SPKA	**Inj Vol**	20

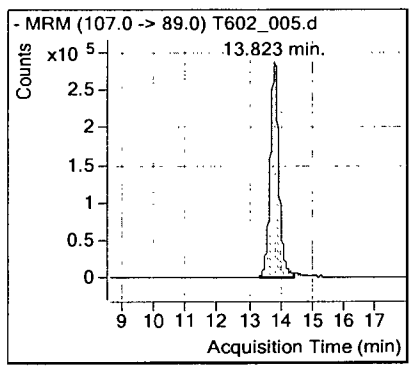


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.789	897401	5595910
Perchlorate_102	PER_IS_108	13.806	260585	5595910

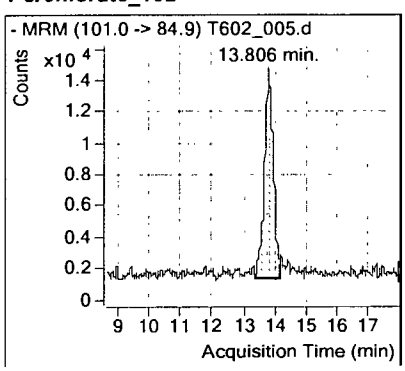
Perchlorate_100

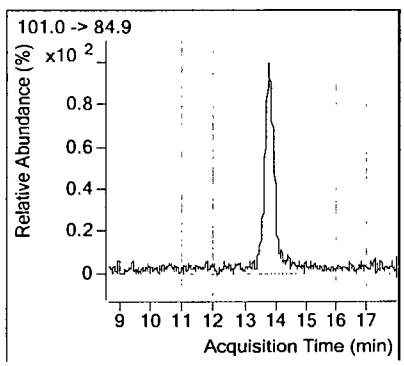


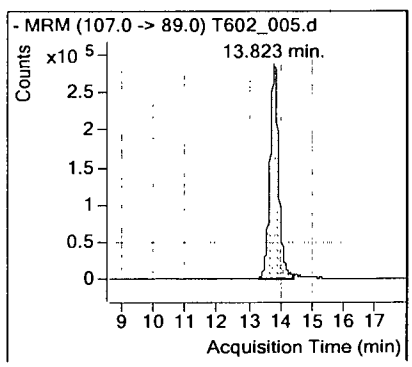




Perchlorate_102







Interferrence Check Sample

Perchlorate EPA 6850 Water

APPL ID: 150602W-16963 ICS-197656
Batch ID: #6850-150602A

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	0.677	112.8%	70-130

Comments:

Quant Method:	QTLMFL2
Extraction Date:	06/02/15
Analysis Date:	06/02/15
Instrument:	AGIL_6560
Run:	T602_019.D
Initials:	RP

Data File ID: T602_019.d

Date Injected : 06/02/15

Time Injected : 19:15

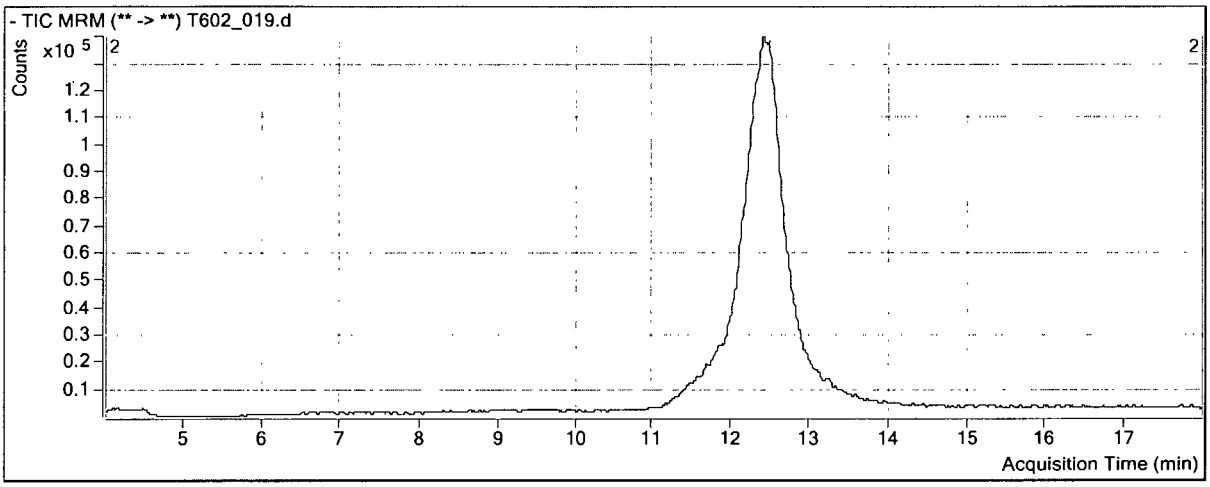
Sample ID : 150602W_ICSA 1052.6 DF 06/02/15

Client ID : LAB_CNTL_W_ICSA

Retention Time	Area Count Response	Compound_ID Product Ion		
12.438	4633904	PER_IS_89		
12.434	757354	Perchlorate_83	(757354 * 0.0050) / (1.27 * 4633904.00) * 1052.60 =	0.677165 ppb
12.300	258023	Perchlorate_85	(258023 * 0.0050) / (0.39 * 4633904.00) * 1052.60 =	0.748336 ppb

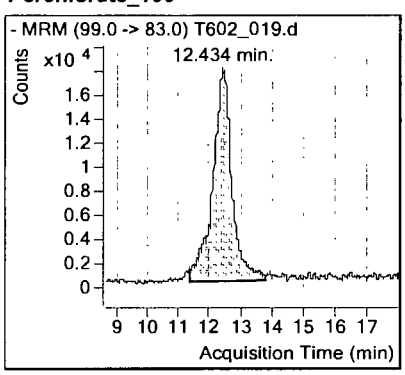
Quantitative Analysis Sample Report

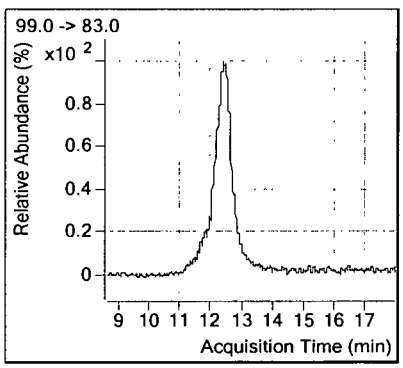
Batch Data Path	D:\MassHunter\Data\150602\QuantResults\150602_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T602_019.d	**Sample Name**	150602W_ICSA 1052.6 DF 06/02/15
Sample Type	Sample	**Acq_Date**	06/02/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	19:15
ClientID	LAB_CNTL_W_ICSA	**Inj Vol**	20

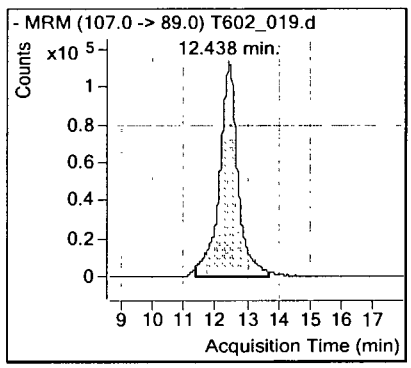


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.434	757354	4633904
Perchlorate_102	PER_IS_108	12.380	258023	4633904

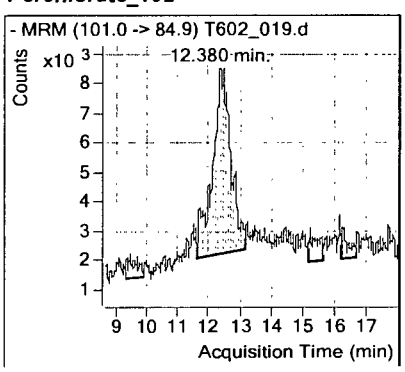
Perchlorate_100

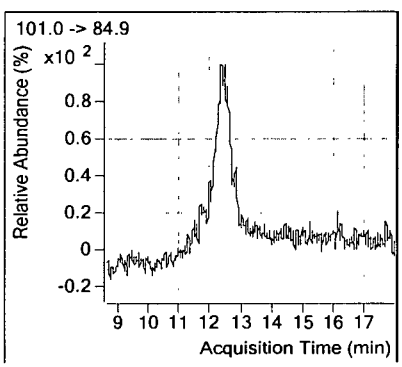


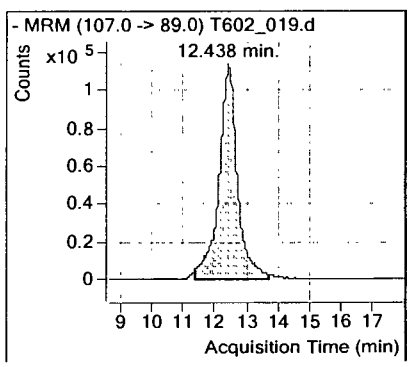




Perchlorate_102







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	SOLVENT LOT #	DATE INITIALS
Scav_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: 3h
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-H20
that had previously received
0.050 ml 025I $^{18}O_4$ 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-H20
that had previously received
0.050 ml 025I $^{18}O_4$ 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	SOLVENT LOT#	DATE/ INITIALS
PER IS 0.005 µg/ml 04-20-15:							JL 04-21-15
02SI $^{18}O_4$ Perchlorate 100 µg/L 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. ID. LOT #	DATE INITIALS

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

PER. CCV 0.0004 µg/ml 05:07-15: JL
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.

VOCS STANDARD PREP LOG# 105 PAGE 103

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

NOTE: THE FOLLOWING DOCUMENTATION WAS PERFORMED AS DATED: JR 06-19-15 — JR 06-19-15

PER_CCV ~~0.004~~ 0.0004 JR µg/ml 05-29-15: — JR 05-29-15

PER_SS 0.010 µg/ml 08-28-14 took 0.040 ml and added to 0.910 ml Laboratory Source DI_H20 that had received 0.050 ml 02SI $^{18}O_4$ Perchlorate 100 µg/L lot 1074176-35163

PER_CCV 0.002 µg/ml 05-29-15:
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 05-29-15:
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 2-2 ml vials that were full.

LC/MS STANDARD PREP LOG# 105 PAGE# 104

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL'N LOT #	DATE/ INITIALS
NOTE: THE FOLLOWING DOCUMENTATION							JK
WAS PERFORMED AS DATED: JK 06-26-15							06-26-15
PER_IS_50:50 0.005µg/ml 06-03-15:							JK
Combined 10.000 ml Laboratory							06-03-15
Source DI_H2O with 10.000 ml							
Burdick & Jackson Acetonitrile							
lot DL308. Withdrew 1.000 ml							
and then delivered 1.000 ml							
02SI $^{18}O_4$ Perchlorate 100µg/L							
lot 107416-35163							
AZ16965_W01 10526.3 DF 06-02-15_6/3:							
AZ16965_W01 1052.6 DF 06-02-15							
TOOK 0.050 ml AND ADDED TO							
0.450 ml PER_IS_50:50 0.005µg/ml							
06-03-15							
AZ16965_W01 105263.2 DF 06-02-15_6/3:							
AZ16965_W01 10526.3 DF 06-02-15_6/3							
TOOK 0.050 ml AND ADDED TO							
0.450 ml PER_IS_50:50 0.005µg/ml							
06-03-15							
AZ16967_W01 10526.3 DF 06-02-15_6/3:							
AZ16967_W01 1052.6 DF 06-02-15							
TOOK 0.050 ml AND ADDED TO							
0.450 ml PER_IS_50:50 0.005µg/ml							
06-03-15							

LC/MS STANDARD PREP LOG# 105 PAGE 105

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL'EN. LOT#	DATE INITIAL

NOTE: THE FOLLOWING DOCUMENTATION WAS PERFORMED AS DATED: JBL 06-26-15 — JBL 06-26-15

AZ16967_WO1 105263.2 DF 06-02-15_6/3: — JBL
AZ16967_WO1 10526.3 DF 06-02-15_6/3 — 06-03-15
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005 µg/ml 06-03-15

AZ16960_WO1 10526.3 DF 06-0~~3~~2-15_6/3: JBL
AZ16960_WO1 1052.6 DF 06-0~~3~~2-15 JBL TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005 µg/ml 06-03-15

AZ16963_WO1 10526.3 DF 06-02-15_6/3:
AZ16963_WO1 1052.6 DF 06-02-15
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005 µg/ml 06-03-15

AZ16964_WO1 10526.3 DF 06-02-15_6/3;
AZ16964_WO1 1052.6 DF 06-02-15
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005 µg/ml 06-03-15

AZ16966_WO1 10526.3 DF 06-02-15_6/3:
AZ16966_WO1 1052.6 DF 06-02-15
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005 µg/ml 06-03-15

I C/MS STANDARD PREP LOG# 105 PAGE# 106

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL'EN. LOT #	DATE/ INITIALS
NOTE: THE FOLLOWING DOCUMENTATION							JK
WAS PERFORMED AS DATED: JK						06-26-15	06-26-15
AZ16965_W01 1052631.6 DF 06-02-15_6/3:							JK
AZ16965_W01 105263.2 DF 06-02-15_6/3							06-03-15
TOOK 0.050 ml AND ADDED TO							
0.450 ml PER_IS_50:50 0.005µg/ml							
06-03-15							
AZ16967_W01 1052631.6 DF 06-02-15_6/3							
AZ16967_W01 105263.2 DF 06-02-15_6/3							
TOOK 0.050 ml AND ADDED TO							
0.450 ml PER_IS_50:50 0.005µg/ml							
06-03-15							

_HPL6850

Organic Extraction Worksheet

Method	EPA 6850 HPLC Perchlorate Extraction	Extraction Set	150602A	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:	06/02/15 11:40
Spiked ID 8			Ext. End Time:	06/02/15 11:43
			GC Requires Extract By:	

pH1			Water Bath Temp Criteria	
pH2				
pH3				

Spiked By: CFM **Date** 06/02/15 11:38:00 AM **Witnessed By:** DL **Date** 06/02/15 11:38:00 AM

	Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
1	150602A Blk				NA	NA equip	5ML	5ML	NA	06/02/15 11:40	
2	150602A LCS-1		0.030	1	NA	NA equip	5ML	5ML	NA	06/02/15 11:40	
3	150602A ICS		0.030/0.060	1/2	NA	NA equip	5ML	5ML	NA	06/02/15 11:40	
4	AZ16963	AZ16963W01			NA	NA equip	5ML	5ML	NA	06/02/15 11:40	76552 - 24 HOUR RUSH
5	AZ16964	AZ16964W01			NA	NA equip	5ML	5ML	NA	06/02/15 11:40	76552 - 24 HOUR RUSH
6	AZ16965	AZ16965W01			NA	NA equip	5ML	5ML	NA	06/02/15 11:40	76552 - 24 HOUR RUSH
7	AZ16966	AZ16966W01			NA	NA equip	5ML	5ML	NA	06/02/15 11:40	76552 - 24 HOUR RUSH
8	AZ16967	AZ16967W01			NA	NA equip	5ML	5ML	NA	06/02/15 11:40	76552 - 24 HOUR RUSH
9	AZ16968	AZ16968W01			NA	NA equip	5ML	5ML	NA	06/02/15 11:40	76552 - 24 HOUR RUSH

PM 6/2/15

Solvent and Lot#	
DI WATER	6-2-15

Extraction COC Transfer	
Extraction lab employee Initials	CFM
GC analyst's initials	PM
Date	6/2/15
Time	12:40
Refrigerator	NA

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

Modified	06/02/15 11:43:52 AM

Reviewed By: PM **Date** 6/2/15

METHOD 6850 INJECTION LOG: 03/12/15, 06/02/15, 06/03/15

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 05/29/15	T602_002.d	06/02/15 13:57
PER_CCV 0.002 ug/ml 05/29/15	T602_003.d	06/02/15 14:16
150602WA_LCS-1 1052.6 DF 06/02/15	T602_005.d	06/02/15 14:53
15060WBLKA 1052.6 DF 06/02/15	T602_007.d	06/02/15 15:31
PER_CCV 0.0004 ug/ml 05/29/15	T602_015.d	06/02/15 18:00
PER_CCV 0.002 ug/ml 05/29/15	T602_016.d	06/02/15 18:19
150602W_ICSA 1052.6 DF 06/02/15	T602_019.d	06/02/15 19:15
PER_CCV 0.0004 ug/ml 05/29/15	T602_028.d	06/02/15 22:02
PER_CCV 0.002 ug/ml 05/29/15	T602_029.d	06/02/15 22:21
PER_CCV 0.0004 ug/ml 05/29/15	T603_002.d	06/03/15 10:26
PER_CCV 0.002 ug/ml 05/29/15	T603_003.d	06/03/15 10:44
AZ16968_W01 10526.3 DF 06/02/15_6/03	T603_009.d	06/03/15 12:36
AZ16963_W01 10526.3 DF 06/02/15_6/03	T603_011.d	06/03/15 13:13
AZ16964_W01 10526.3 DF 05/06/25_6/03	T603_013.d	06/03/15 13:51
PER_CCV 0.0004 ug/ml 05/29/15	T603_015.d	06/03/15 14:28
PER_CCV 0.002 ug/ml 05/29/15	T603_016.d	06/03/15 14:47
AZ16966_W01 10526.3 DF 06/02/15_6/03	T603_018.d	06/03/15 15:24
AZ16965_W01 105263,2 DF 06/02/15_6/03	T603_020.d	06/03/15 16:06
AZ16967_W01 105263.2 DF 06/02/15_6/03	T603_022.d	06/03/15 16:43
PER_CCV 0.0004 ug/ml 05/29/15	T603_027.d	06/03/15 18:16
PER_CCV 0.002 ug/ml 05/29/15	T603_028.d	06/03/15 18:35