N00174.AR.001953
NSWC INDIAN HEAD
5090.3a

VALIDATED DATA PACKAGE, 76375, NSWC INDIAN HEAD MD
6/26/2015
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 4, 2015

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

Attn: Ed Corack

Title: Report of Data: Case 76375

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:

Two water samples were received May 8, 2015, in good condition. Written results for the requested analyses are provided on this June 4, 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: 9

Sample receipt information

ARF: 76375

Project: CTO JU11 112G02622 NSF Indian Head, MD

Sample Receipt Information:

The sample group was received on May 8, 2015, at 3.0°C. The samples were assigned Analytical Request Form (ARF) number 76375. 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-GW-E1-050715	AZ16135	WATER	5/7/2015	5/8/2015
S67-GW-F1-050715	AZ16136	WATER	5/7/2015	5/8/2015

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

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

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

Measurement uncertainty can be reported upon request.

EPA Method 6850

Perchlorate by LC-Mass Spec

Sample Preparation and Analysis Information:

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

Manual integrations were performed in accordance to APPL's SOP. Perchlorate was manually integrated in the calibration standards, the sample S67-GW-E1-050715 and the ICS. Chromatograms of before and after manual integration are enclosed.

Quality Control/Assurance

Calibrations:

Calibrations were performed according to the method. All calibration acceptance criteria were met. The second source met acceptance criteria.

Blanks:

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

Spikes:

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

An Interference Check Sample (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 I.S. were within the 50%D acceptance criteria.

Summary:

All data were acceptable. No analytical exception is noted.

Perchlorate

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

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S67-GW-E1-050715
Sample Collection Date: 05/07/15

ARF: 76375
APPL ID: AZ16135
QCG: #6850-150508A-196786

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	0.22 J	0.60	0.400	0.200	ug/L	05/08/15	05/08/15

J = Estimated value.

Quant Method: QTLMFL2
Run #: T507_081.D
Instrument: AGIL_6460
Sequence: TQ050715
Dilution Factor: 1
Initials: MP

Printed: 06/04/15 2:30:42 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-GW-F1-050715
Sample Collection Date: 05/07/15

ARF: 76375
APPL ID: AZ16136
QCG: #6850-150508A-196786

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	24	2.4	1.60	0.80	ug/L	05/08/15	05/11/15

Quant Method: QTLMFL2
Run #: T510_067.D
Instrument: AGIL_6460
Sequence: TQ050715
Dilution Factor: 4
Initials: MP

Printed: 06/04/15 2:30:42 PM
APPL-F1-SC-NoMC-REG MDLs

Method Blank
Perchlorate

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150508W-16135 - 196786**
Batch ID: #6850-150508A

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	PERCHLORATE	0.400 U	0.60	0.400	0.200	ug/L	05/08/15	05/08/15

Quant Method: QTLMFL2
Run #: T507_080.D
Instrument: AGIL_6460
Sequence: TQ050715
Initials: MP

GC SC-Blank-REG MDLs
Printed: 06/04/15 2:30:45 PM

Laboratory Control Spike Recovery
Perchlorate

APPL ID: **150508W-16135 LCS - 196786**
Batch ID: #6850-150508A

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	0.604	101	80-120

Comments: _____

Primary	SPK
Quant Method :	QTLMFL2
Extraction Date :	05/08/15
Analysis Date :	05/08/15
Instrument :	AGIL_6460
Run :	T507_078.D
Initials :	MP

Printed: 06/04/15 2:30:47 PM
APPL Standard LCS

EPA 6850

Form 4

Blank Summary

Lab Name: APPL, Inc.
SDG No: 76375
Case No: 76375
Date Analyzed: 05/08/15
Matrix: WATER
Instrument: AGIL_6460
Blank ID: 150508A-BLK
Time Analyzed: 2048

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150508A-LCS	Lab Control Spike	T507_078.D	05/08/15 2011
150508A-BLK	Blank	T507_080.D	05/08/15 2048
AZ16135	S67-GW-E1-050715	T507_081.D	05/08/15 2106
AZ16136	S67-GW-F1-050715	T510_067.D	05/11/15 1248

Comments: Batch: #6850-150508A

CHEMTECH

CHAIN OF CUSTODY RECORD

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

CHEMTECH PROJECT NO. 76375 3.0
QUOTE NO.
COC Number 088451

CLIENT INFORMATION

REPORT TO BE SENT TO:

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

CLIENT PROJECT INFORMATION

PROJECT NAME: NSF-Indian Head Site 67
PROJECT NO.: CTO-JU11 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
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 _____
☒ EDD FORMAT _____

ANALYSIS

1 Perchlorate (24 Hr TAT) 2 PAHs, Phthalates 3 Metals 4 Energetics 5 Perchlorate 6 pH 7 TOC 8 9

PRESERVATIVES / 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
								E	E	E	E	E	E	E			← Specify Preservatives
1.	S67-GW-E1-050715	GW		X	5-7-15	0920	1	1									Rush 24 HR TAT
2.	S67-GW-F1-050715	GW		X	5-7-15	0950	1	1									Rush 24 HR TAT
3.	S67-SS030-0001	SO		X	5-7-15	1035	3		←		2	→	←	1 →			
4.	S67-SS030P-0001	SO		X	5-7-15	1035	3		←		2	→	←	1 →			
5.	S67-SB030-0607	SO		X	5-7-15	1100	2		←		2	→	←	1 →	3	5-7-15	
6.	S67-SS032-0001	SO		X	5-7-15	1420	3		←		2	→	←	1 →			
7.	S67-SB032-0607	SO		X	5-7-15	1440	2		←		2	→					
8.																	
9.																	
10.																	

5-7-15

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

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. Jacob Birkett	5-7-15 1800	1. FedEx
RELINQUISHED BY: 2.	DATE/TIME:	RECEIVED BY: 2.
RELINQUISHED BY: 3.	DATE/TIME: 5/8/15 11:00	RECEIVED FOR LAB BY: 3. Young Zn

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 YELLOW - CHEMTECH COPY PINK - SAMPLER COPY

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 4, 2015

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

Attn: Ed Corack

Title: Report of Data: Case 76375

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:

Two water samples were received May 8, 2015, in good condition. Written results for the requested analyses are provided on this June 4, 2015.

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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: 140

T:\Case Narratives\Tetra Tech\76375 new NSF Indian Head.doc

Data Validation Package

for

CTO JU11 112G02622 NSF Indian Head

ARF 76375

TABLE OF CONTENTS

LABORATORY NAME: *APPL, Inc.*

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QC Summary	14
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SAMPLE RECEIPT INFORMATION

Sample receipt information

ARF: 76375

Project: CTO JU11 112G02622 NSF Indian Head, MD

Sample Receipt Information:

The sample group was received on May 8, 2015, at 3.0°C. The samples were assigned Analytical Request Form (ARF) number 76375. 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
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The samples and blanks were screened for J-value responses between the detection limit (DL) and limit of quantitation (LOQ).

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

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

Measurement uncertainty can be reported upon request.

CASE NARRATIVE

EPA Method 6850

Perchlorate by LC-Mass Spec

Sample Preparation and Analysis Information:

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

Manual integrations were performed in accordance to APPL's SOP. Perchlorate was manually integrated in the calibration standards, the sample S67-GW-E1-050715 and the ICS. Chromatograms of before and after manual integration are enclosed.

Quality Control/Assurance

Calibrations:

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

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

An 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 I.S. were within the 50%D acceptance criteria.

Summary:

All data were acceptable. No 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

76375

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 # 088451
RAD Screen (Y/N): Y pH (Y/N): N
Turn Around Type: 24 HOURS

Received by: YL
Date Received: 05/08/15 Time: 11:00
Delivered by: FED EX
Shuttle Custody Seals (Y/N): Y Time Zone: -4
Chest Temp(s): 3.0°C
Color: E-Brn
Samples Chilled until Placed in Refrig/Freezer: Y
Project Manager: Cynthia Clark
QC Report Type: DVP4/LEDD/MD
Due Date: 05/11/15

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

Sample Distribution:
Extractions: 2-_HPL6850
LCMS: 2-$6850

Charges:

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

	Client ID	APPL ID	Sampled		Analyses Requested
1.	S67-GW-E1-050715	AZ16135W	05/07/15	09:20	$6850
2.	S67-GW-F1-050715	AZ16136W	05/07/15	09:50	$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# **76375**

Sample	Container Type	Count	pH
AZ16135	4 PL 125mL	1	NA
AZ16136	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

CHEMTECH PROJECT NO. 76375 3.0
QUOTE NO.
COC Number 088451

CLIENT INFORMATION (REPORT TO BE SENT TO:)

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

CLIENT PROJECT INFORMATION

PROJECT NAME: NSF-Indian Head Site 67
PROJECT NO.: 112G02622 (GO-JUII) 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
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 _____
☒ EDD FORMAT _____

ANALYSIS

1 Perchlorate (24 Hr TAT)
2 PAHs, Phthalates
3 Metals
4 Energetics
5 Perchlorate
6 pH
7 TOC
8
9

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
								PRESERVATIVES									
								E	E	E	E	E	E	E			— Specify Preservatives A-HCl B-HNO_3 C-H_2SO_4 D-NaOH E-ICE F-Other
1.	S67-GW-E1-050715	GW		X	5-7-15	0920	1	1									Rush 24 HR TAT
2.	S67-GW-F1-050715	GW		X	5-7-15	0950	1	1									Rush 24 HR TAT
3.	S67-SS030-0001	SO		X	5-7-15	1035	3		←		2	→	← 1	→			
4.	S67-SS030P-0001	SO		X	5-7-15	1035	3		←		2	→	← 1	→			
5.	S67-SB030-0607	SO		X	5-7-15	1100	2		←		2	→	~~← 1 →~~			5-7-15	
6.	S67-SS032-0001	SO		X	5-7-15	1420	3		←		2	→	← 1	→			
7.	S67-SB032-0607	SO		X	5-7-15	1440	2		←		2	→					
8.																	
9.																	
10.																	

5-7-15

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

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. Jacob Birkett	5-7-15 1800	1. FedEx
RELINQUISHED BY: 2.	DATE/TIME:	RECEIVED BY: 2.
RELINQUISHED BY: 3.	DATE/TIME: 5/8/15 11:00	RECEIVED FOR LAB BY: 3. Young Lu

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: 76375**

1) Project: CTO JU11 112G02622 NSF Indian Head Date Received: 05/08/15

2) Coolers: Number of Coolers: 1

3) YES Were custody seals present and intact?
How many? 2 Name/Date on seal? SEE ARF CRF # 76380

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

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

6) YES Were cooler temperatures acceptable?

7) Serial number of certified NIST thermometer use J5297

8) Cooler temp(s): In °C
1: 3.0 2: ____ 3: ____ 4: ____ 5: ____ 6: ____
7: ____ 8: ____ 9: ____ 10: ____ 11: ____ 12: ____

Chain of custody:

9) YES Was a chain of custody received?

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

Sample Labels:

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

12) 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: BB Second reviewer: YL
Personnel labeling samples: ____
Project manager notified: ____ Date/Time of notification ____
Name of client notified: ____ Date/Time of notification ____

EPA METHOD 6850
Perchlorate
LC/MS

APPL, INC.

EPA METHOD 6850
Perchlorate
LC/MS

QC Summary

APPL, INC.

Method Blank
Perchlorate

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150508W-16135 - 196786**
Batch ID: #6850-150508A

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	PERCHLORATE	0.400 U	0.60	0.400	0.200	ug/L	05/08/15	05/08/15

Quant Method: QTLMFL2
Run #: T507_080.D
Instrument: AGIL_6460
Sequence: TQ050715
Initials: MP

GC SC-Blank-REG MDLs
Printed: 05/11/15 11:27:43 AM

Laboratory Control Spike Recovery
Perchlorate

APPL ID: **150508W-16135 LCS - 196786**
Batch ID: #6850-150508A

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	0.604	101	80-120

Comments: _____

Primary	SPK
Quant Method :	QTLMFL2
Extraction Date :	05/08/15
Analysis Date :	05/08/15
Instrument :	AGIL_6460
Run :	T507_078.D
Initials :	MP

Printed: 05/11/15 11:27:46 AM
APPL Standard LCS

Interferrence Check Sample

Perchlorate EPA 6850 Water

APPL ID: 150508W-16135 ICS-196786
Batch ID: #6850-150508A

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	0.593	98.8%	70-130

Comments:

Quant Method:	QTLMFL2
Extraction Date:	05/08/15
Analysis Date:	05/08/15
Instrument:	AGIL_6560
Run:	T507_079.D
Initials:	RP

EPA 6850

Form 4

Blank Summary

Lab Name: APPL, Inc. SDG No: 76375

Case No: 76375 Date Analyzed: 05/08/15

Matrix: WATER Instrument: AGIL_6460

Blank ID: 150508A-BLK Time Analyzed: 2048

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150508A-LCS	Lab Control Spike	T507_078.D	05/08/15 2011
150508A-BLK	Blank	T507_080.D	05/08/15 2048
AZ16135	S67-GW-E1-050715	T507_081.D	05/08/15 2106
AZ16136	S67-GW-F1-050715	T510_067.D	05/11/15 1248

Comments: Batch: #6850-150508A

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.** **76375**

Lab File ID (Standard): T0507_003.d

Instrument ID: Agilent 6460 Triple Quad LC/MS

	PER_IS			
	12_HOUR_STD AVERAGE	4431200		
	UPPER LIMIT RESPONSE	6646800		
	LOWER LIMIT RESPONSE	2215600		
Data File ID:	Sample ID:	Analysis Date and Time	IS AREA COUNT #	IS R.T. #
T507_002.d	PER_CCV 0.0004 ug/ml 05/07/15	5/7/15 20:21	3778394	14.638
T507_003.d	PER_CCV 0.002 ug/ml 05/07/15	5/7/15 20:40	4431200	14.649
T507_070.d	PER_CCV 0.0004 ug/ml 05/07/15	5/8/15 17:42	3519327	13.681
T507_071.d	PER_CCV 0.002 ug/ml 05/07/15	5/8/15 18:00	4130110	13.803
T507_078.d	150508WA_LCS-1 1052.6 DF 05/08/15	5/8/15 20:11	3779372	14.037
T507_079.d	150508W_ICSA 1052.6 DF 05/08/15	5/8/15 20:29	3183346	12.917
T507_080.d	150508WBLKA 1052.6 DF 05/08/15	5/8/15 20:48	4053614	14.221
T507_081.d	AZ16135_W01 1052.6 DF 05/08/15	5/8/15 21:06	4023017	13.406
T507_084.d	PER_CCV 0.0004 ug/ml 05/07/15	5/8/15 22:02	3747806	14.323
T507_085.d	PER_CCV 0.002 ug/ml 05/07/15	5/8/15 22:21	4367777	14.363

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.** **76375**

Lab File ID (Standard): T510_003.d

Instrument ID: Agilent 6460 Triple Quad LC/MS

	PER_IS			
	12_HOUR_STD AVERAGE	5205304		
	UPPER LIMIT RESPONSE	7807956		
	LOWER LIMIT RESPONSE	2602652		
Data File ID:	Sample ID:	Analysis Date and Time	IS AREA COUNT #	IS R.T. #
T510_002.d	PER_CCV 0.0004 ug/ml 05/07/15	5/10/15 16:04	4535385	13.273
T510_003.d	PER_CCV 0.002 ug/ml 05/07/15	5/10/15 16:23	5205304	13.273
T510_059.d	PER_CCV 0.0004 ug/ml 05/07/15	5/11/15 9:57	4430607	13.497
T510_060.d	PER_CCV 0.002 ug/ml 05/07/15	5/11/15 10:16	5217587	13.497
T510_067.d	AZ16136_W01 4210.5 DF 05/08/15_5/11	5/11/15 12:48	4191468	12.825
T510_069.d	PER_CCV 0.0004 ug/ml 05/07/15	5/11/15 13:25	3986206	13.793
T510_070.d	PER_CCV 0.002 ug/ml 05/07/15	5/11/15 13:44	4649258	13.762

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

Perchlorate LC/MS Ion Ratio Report
acceptable ratio is between 2.3 and 3.8 (DoD Perchlorate Handbook, 2006)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Perchlorate LC/MS Ion Ratio Report

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

Data File Path : D:\masshunter\data\150507
Instrument Name : TQ (Agilent 6460 Triple Quad LC/MS)
Method File : 6460_ESI_PER_N_NEWER_K'_COLUMN.m
Operator : BA

Date Aquired: 05/07/15 20:03 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T507_001.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.564	29448	4.4
2)	Perchlorate_85	14.632	6709	

Date Aquired: 05/07/15 20:21 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T507_002.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.605	422921	3.0
2)	Perchlorate_85	14.632	139898	

Date Aquired: 05/07/15 20:40 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T507_003.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.666	2012121	3.3
2)	Perchlorate_85	14.642	615024	

Date Aquired: 05/07/15 20:59 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T507_004.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.666	48651	6.2
2)	Perchlorate_85	14.591	7803	

Date Aquired: 05/07/15 21:17 Vial Number: NA
Sample Name: AZ15994_W01 105263.2 DF 05/06/15_5/6 Data File ID: T507_005.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.564	30146	6.3
2)	Perchlorate_85	14.672	4789	

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Date Aquired: 05/08/15 17:42 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T507_070.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.677	401419	3.0
2)	Perchlorate_85	13.715	134106	

Date Aquired: 05/08/15 18:00 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T507_071.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.82	2003979	3.2
2)	Perchlorate_85	13.827	626958	

Date Aquired: 05/08/15 18:19 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T507_072.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.891	52144	12.9
2)	Perchlorate_85	14.754	4041	

Date Aquired: 05/08/15 18:37 Vial Number: NA
Sample Name: 150508WA_LCS-1 1052.6 DF 05/08/15 Data File ID: T507_073.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.901	562280	3.2
2)	Perchlorate_85	13.908	177926	

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Date Aquired: 05/08/15 18:56 Vial Number: NA
Sample Name: 150508W_ICSA 1052.6 DF 05/08/15 Data File ID: T507_074.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.72	490749	3.1
2)	Perchlorate_85	12.716	160775	

Date Aquired: 05/08/15 19:15 Vial Number: NA
Sample Name: 150508WBLKA 1052.6 DF 05/08/15 Data File ID: T507_075.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.554	450	0.4
2)	Perchlorate_85	14.693	1232	

Date Aquired: 05/08/15 19:33 Vial Number: NA
Sample Name: AZ16135_W01 1052.6 DF 05/08/15 Data File ID: T507_076.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.086	201260	2.6
2)	Perchlorate_85	13.052	76111	

Date Aquired: 05/08/15 19:52 Vial Number: NA
Sample Name: AZ16136_W01 1052.6 DF 05/08/15 Data File ID: T507_077.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.72	17551297	3.4
2)	Perchlorate_85	12.716	5104759	

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Date Aquired: 05/08/15 20:11 Vial Number: NA
Sample Name: 150508WA_LCS-1 1052.6 DF 05/08/15 Data File ID: T507_078.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.065	550957	3.2
2)	Perchlorate_85	14.071	171260	

Date Aquired: 05/08/15 20:29 Vial Number: NA
Sample Name: 150508W_ICSA 1052.6 DF 05/08/15 Data File ID: T507_079.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.903	455782	2.8
2)	Perchlorate_85	12.828	161743	

Date Aquired: 05/08/15 20:48 Vial Number: NA
Sample Name: 150508WBLKA 1052.6 DF 05/08/15 Data File ID: T507_080.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.635	2451	1.6
2)	Perchlorate_85	14.622	1531	

Date Aquired: 05/08/15 21:06 Vial Number: NA
Sample Name: AZ16135_W01 1052.6 DF 05/08/15 Data File ID: T507_081.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.392	214365	2.5
2)	Perchlorate_85	13.389	86301	

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Date Aquired: 05/08/15 21:25 Vial Number: NA
Sample Name: AZ16136_W01 1052.6 DF 05/08/15 Data File ID: T507_082.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.005	17857958	3.5
2)	Perchlorate_85	12.991	5169822	

Date Aquired: 05/08/15 21:44 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T507_083.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.268	41697	1.9
2)	Perchlorate_85	14.357	21599	

Date Aquired: 05/08/15 22:02 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T507_084.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.35	430191	3.0
2)	Perchlorate_85	14.326	145038	

Date Aquired: 05/08/15 22:21 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T507_085.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	14.35	2070390	3.3
2)	Perchlorate_85	14.377	625785	

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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\150510
Instrument Name : TQ (Agilent 6460 Triple Quad LC/MS)
Method File : 6460_ESI_PER_N_NEWER_K'_COLUMN.m
Operator : BA

Date Aquired: 05/10/15 15:45 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T510_001.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.26	47757	4.2
2)	Perchlorate_85	13.327	11340	

Date Aquired: 05/10/15 16:04 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T510_002.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.29	532392	3.1
2)	Perchlorate_85	13.277	172328	

Date Aquired: 05/10/15 16:23 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T510_003.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.27	2476367	3.2
2)	Perchlorate_85	13.266	766140	

Date Aquired: 05/10/15 16:41 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T510_004.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.3	55663	4.1
2)	Perchlorate_85	13.307	13743	

Date Aquired: 05/10/15 17:04 Vial Number: NA
Sample Name: AZ16057_W01 10526315.8 DF 05/07/15_5/10 Data File ID: T510_005.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.311	643216	2.9
2)	Perchlorate_85	13.307	224283	

Page 1 of 18

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\150510
Instrument Name : TQ (Agilent 6460 Triple Quad LC/MS)
Method File : 6460_ESI_PER_N_NEWER_K'_COLUMN.m
Operator : BA

Date Aquired: 05/10/15 15:45 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T510_001.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.26	47757	4.2
2)	Perchlorate_85	13.327	11340	

Date Aquired: 05/10/15 16:04 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T510_002.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.29	532392	3.1
2)	Perchlorate_85	13.277	172328	

Date Aquired: 05/10/15 16:23 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T510_003.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.27	2476367	3.2
2)	Perchlorate_85	13.266	766140	

Date Aquired: 05/10/15 16:41 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T510_004.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.3	55663	4.1
2)	Perchlorate_85	13.307	13743	

Date Aquired: 05/10/15 17:04 Vial Number: NA
Sample Name: AZ16057_W01 10526315.8 DF 05/07/15_5/10 Data File ID: T510_005.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.311	643216	2.9
2)	Perchlorate_85	13.307	224283	

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Date Aquired: 05/11/15 9:39 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T510_058.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.789	45874	5.2
2)	Perchlorate_85	13.114	8820	

Date Aquired: 05/11/15 9:57 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T510_059.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.504	493955	2.9
2)	Perchlorate_85	13.48	171827	

Date Aquired: 05/11/15 10:16 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T510_060.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.504	2455278	3.2
2)	Perchlorate_85	13.48	777664	

Date Aquired: 05/11/15 10:34 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T510_061.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.667	55903	14.3
2)	Perchlorate_85	13.338	3905	

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Date Aquired: 05/11/15 10:58 Vial Number: NA
Sample Name: AZ16058_W01 10526.3 DF 05/07/15_5/10 Data File ID: T510_062.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.628	12990802	3.5
2)	Perchlorate_85	12.635	3752026	

Date Aquired: 05/11/15 11:33 Vial Number: NA
Sample Name: AZ16060_W01 10526.3 DF 05/07/15_5/10 Data File ID: T510_063.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.791	12205010	3.4
2)	Perchlorate_85	12.787	3559883	

Date Aquired: 05/11/15 11:52 Vial Number: NA
Sample Name: PER_IS_50:50 0.005 ug/ml 05/10/15 Data File ID: T510_064.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.8	26999	17.1
2)	Perchlorate_85	13.266	1583	

Date Aquired: 05/11/15 12:10 Vial Number: NA
Sample Name: AZ16136_W01 4210.5 DF 05/08/15_5/11 Data File ID: T510_065.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.781	7883750	3.4
2)	Perchlorate_85	12.788	2322771	

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Date Aquired: 05/11/15 12:29 Vial Number: NA
Sample Name: AZ16136_W01 4210.5 DF 05/08/15_5/11 Data File ID: T510_066.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.781	6470553	3.3
2)	Perchlorate_85	12.767	1976234	

Date Aquired: 05/11/15 12:48 Vial Number: NA
Sample Name: AZ16136_W01 4210.5 DF 05/08/15_5/11 Data File ID: T510_067.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	12.832	6092124	3.3
2)	Perchlorate_85	12.818	1872909	

Date Aquired: 05/11/15 13:06 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T510_068.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.81	44910	19.3
2)	Perchlorate_85	13.266	2329	

Date Aquired: 05/11/15 13:25 Vial Number: NA
Sample Name: PER_CCV 0.0004 ug/ml 05/07/15 Data File ID: T510_069.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.81	469898	2.9
2)	Perchlorate_85	13.796	161954	

Page 17 of 18

Date Aquired: 05/11/15 13:44 Vial Number: NA
Sample Name: PER_CCV 0.002 ug/ml 05/07/15 Data File ID: T510_070.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.779	2176780	3.4
2)	Perchlorate_85	13.755	648232	

Date Aquired: 05/11/15 14:02 Vial Number: NA
Sample Name: PER_IS 0.005 ug/ml 05/07/15 Data File ID: T510_071.d

#	NAME	Ret Time	Target Response	Ratio
1)	Perchlorate_83	13.779	50410	17.2
2)	Perchlorate_85	13.226	2939	

Page 18 of 18

EPA METHOD 6850
Perchlorate
LC/MS

Sample Data

APPL, INC.

Perchlorate

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

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S67-GW-E1-050715
Sample Collection Date: 05/07/15

ARF: 76375
APPL ID: AZ16135
QCG: #6850-150508A-196786

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	0.22 J	0.60	0.400	0.200	ug/L	05/08/15	05/08/15

J = Estimated value.

Quant Method:	QTLMFL2
Run #:	T507_081.D
Instrument:	AGIL_6460
Sequence:	TQ050715
Dilution Factor:	1
Initials:	MP

Printed: 05/11/15 11:27:44 AM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T507_081.d

Date Injected : 05/08/15

Time Injected : 21:06

Sample ID : AZ16135_W01 1052.6 DF 05/08/15

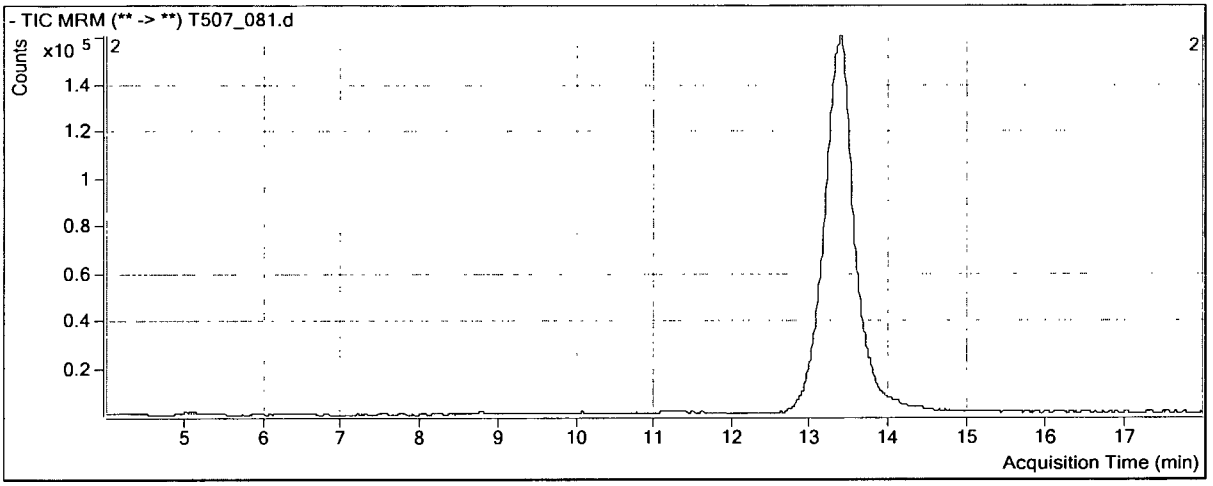
Client ID : S67-GW-E1-050715

Retention Time		Area Count Response	Compound_ID Product Ion				
13.406		4023017	PER_IS_89				
13.392		214365	Perchlorate_83	(214365 * 0.0050) / (1.27 * 4023017.00) *	1052.60 =	0.220772	ppb
13.389	*	86301	Perchlorate_85	(86301 * 0.0050) / (0.39 * 4023017.00) *	1052.60 =	0.288303	ppb

* MANUAL INTEGRAION

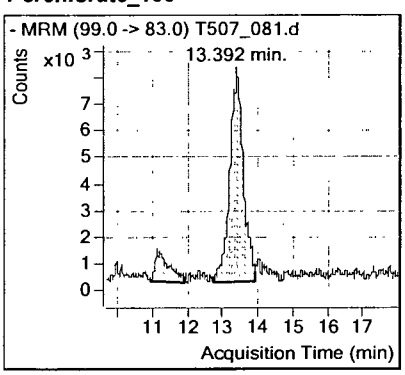
Quantitative Analysis Sample Report

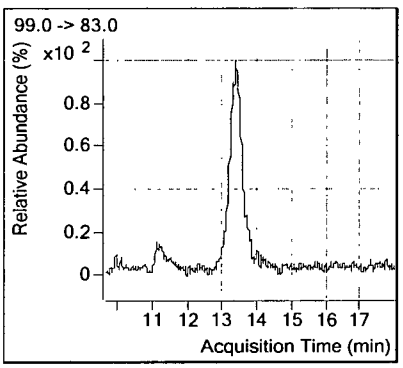
Batch Data Path	D:\MassHunter\Data\150507\QuantResults\150507_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T507_081.d	**Sample Name**	AZ16135_W01 1052.6 DF 05/08/15
Sample Type	Sample	**Acq_Date**	05/08/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	21:06
ClientID	S67-GW-E1-050715	**Inj Vol**	20

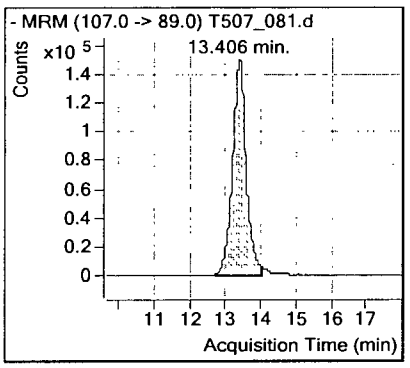


Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108		13.392	214365	4023017	
Perchlorate_102	PER_IS_108	*	13.389	86301	4023017	* MANUAL INT

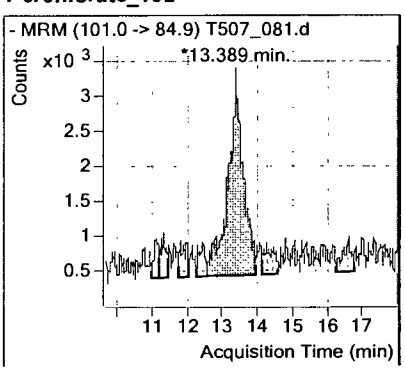
Perchlorate_100

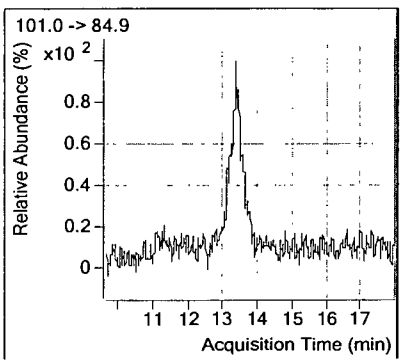


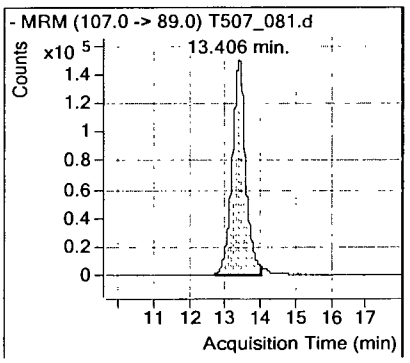


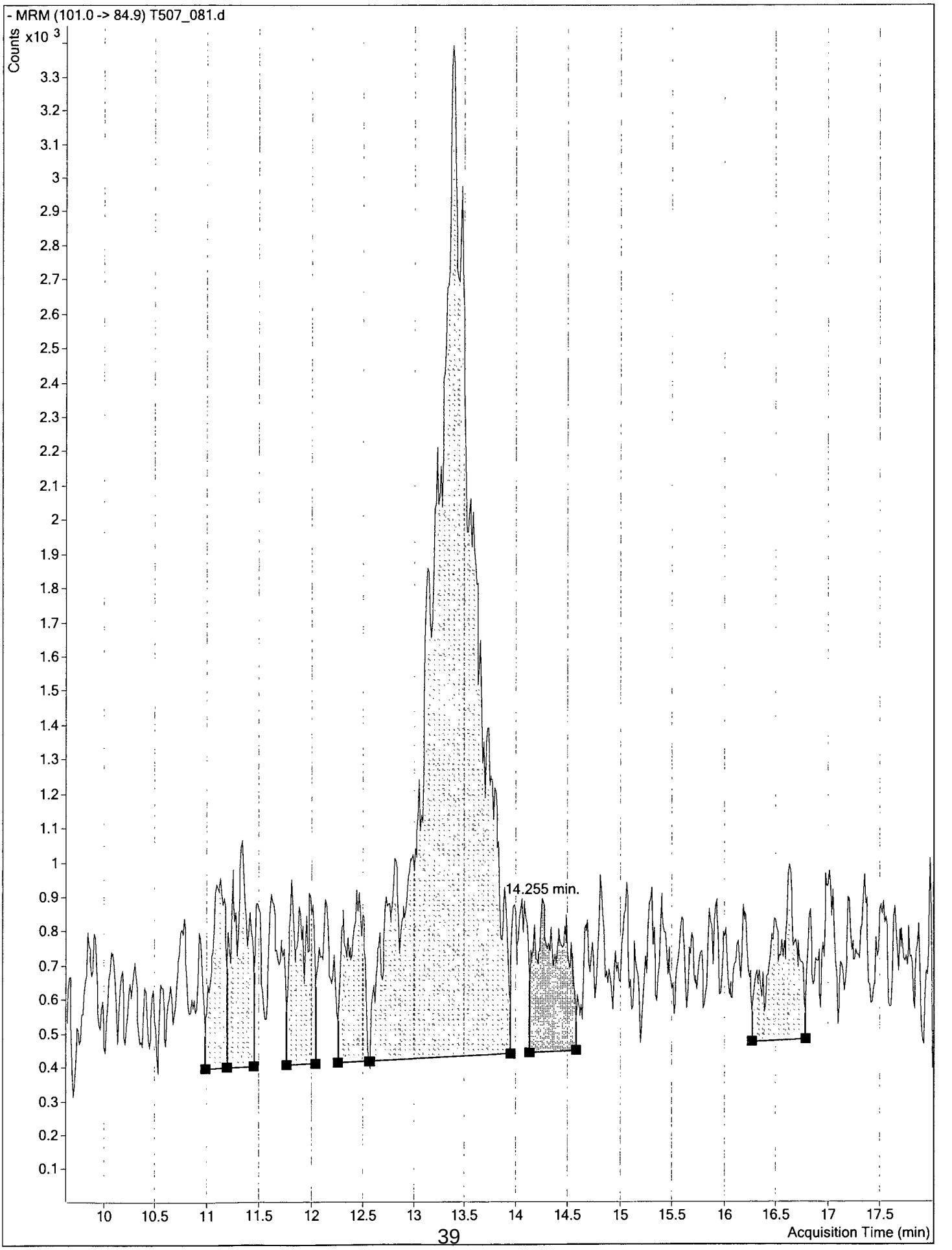


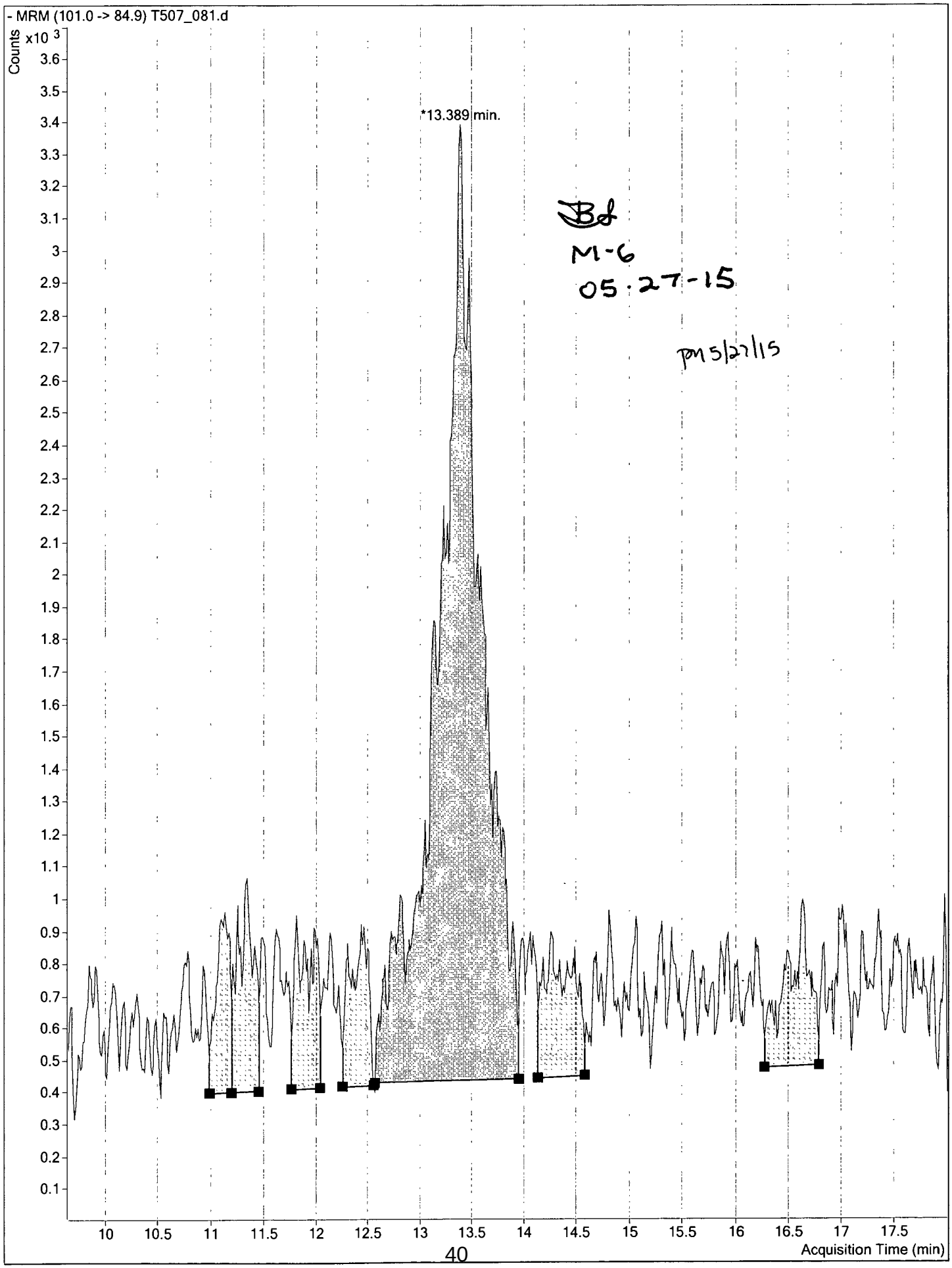
Perchlorate_102








- MRM (101.0 -> 84.9) T507_081.d
Counts
x10 3
3.3
3.2
3.1
3
2.9
2.8
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
14.255 min.
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) T507_081.d
Counts
x10 3
*13.389 min.
Acquisition Time (min)
M-6
05.27-15
pm 5/27/15

Perchlorate

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

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Ed Corack
Project: CTO JU11 112G02622 NSF Indian Head
Sample ID: S67-GW-F1-050715
Sample Collection Date: 05/07/15

ARF: 76375
APPL ID: AZ16136
QCG: #6850-150508A-196786

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 6850	PERCHLORATE	24	2.4	1.60	0.80	ug/L	05/08/15	05/11/15

Quant Method: QTLMFL2
Run #: T510_067.D
Instrument: AGIL_6460
Sequence: TQ050715
Dilution Factor: 4
Initials: MP

Printed: 06/04/15 1:29:35 PM
APPL-F1-SC-NoMC-REG MDLs

Data File ID: T510_067.d

Date Injected : 05/11/15

Time Injected : 12:48

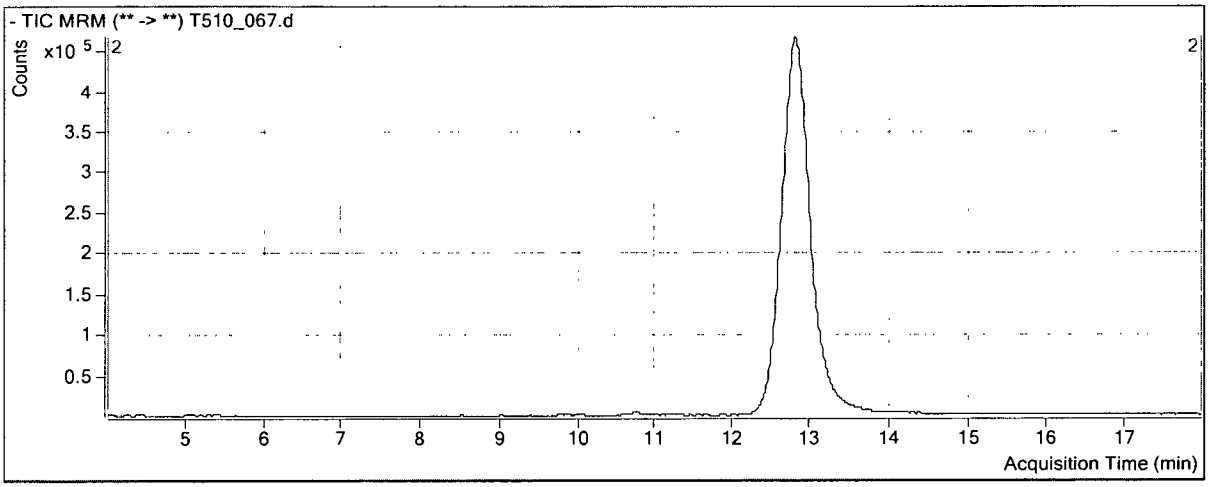
Sample ID : AZ16136_W01 4210.5 DF 05/08/15_5/11

Client ID : S67-GW-F1-050715

Retention Time	Area Count Response	Compound_ID Product Ion				
12.825	4191468	PER_IS_89				
12.832	6092124	Perchlorate_83	(6092124 * 0.0050) / (1.27 * 4191468.00) *	4210.50 =	24.088804	ppb
12.818	1872909	Perchlorate_85	(1872909 * 0.0050) / (0.39 * 4191468.00) *	4210.50 =	24.021823	ppb

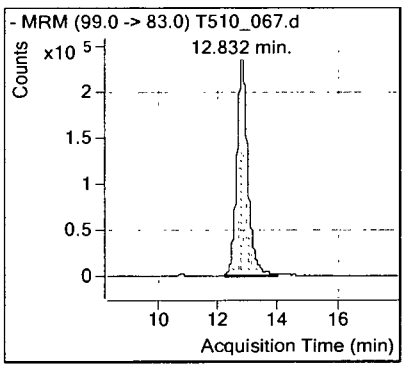
Quantitative Analysis Sample Report

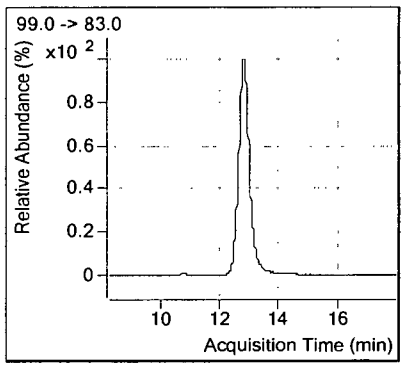
Batch Data Path	D:\MassHunter\Data\150510\QuantResults\150510_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T510_067.d	**Sample Name**	AZ16136_W01 4210.5 DF 05/08/15_5/11
Sample Type	Sample	**Acq_Date**	05/11/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	12:48
ClientID	S67-GW-F1-050715	**Inj Vol**	20

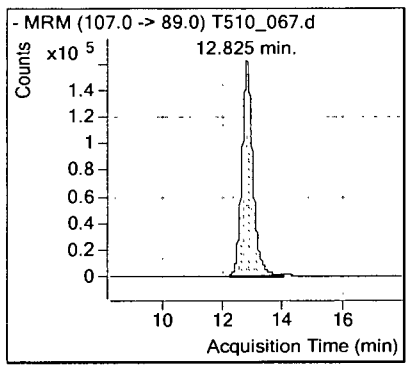


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.832	6092124	4191468
Perchlorate_102	PER_IS_108	12.818	1872909	4191468

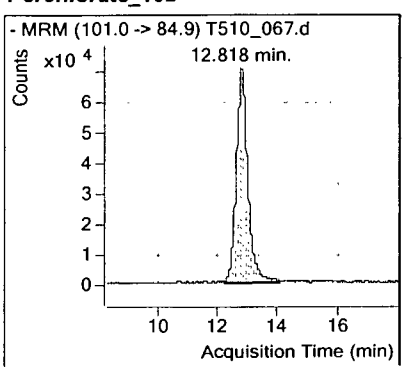
Perchlorate_100

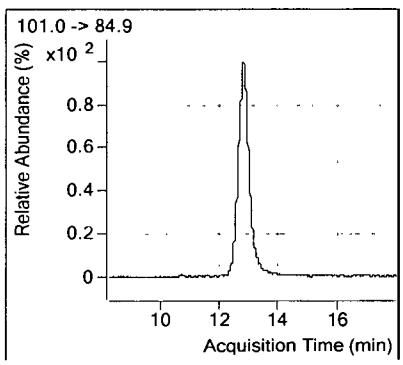


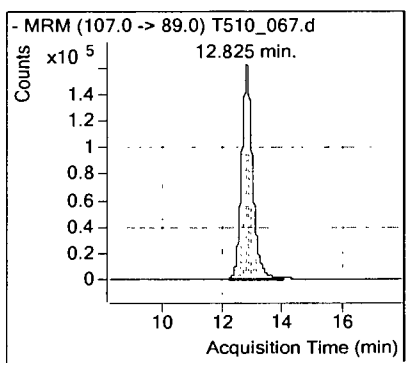




Perchlorate_102







EPA METHOD 6850
Perchlorate
LC/MS

Calibration Data

APPL, INC.

METHOD 6850 CALIBRATION SUMMARY

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

Average Relative Response Factor Summary

Analyte Id:	R.R.F.#1 PERCHLORATE 0.0002 PPM	R.R.F.#2 PERCHLORATE 0.0004 PPM	R.R.F.#3 PERCHLORATE 0.001 PPM	R.R.F.#4 PERCHLORATE 0.002 PPM	R.R.F.#5 PERCHLORATE 0.005 PPM	R.R.F.#6 PERCHLORATE 0.010 PPM	AVERAGE REL.RESP. FACTOR	%RSD RRF
Perchlorate_83	1.339537	1.198791	1.165697	1.173646	1.314663	1.429198	1.270255	8.44
Perchlorate_85	0.434068	0.395112	0.366889	0.354937	0.381638	0.416989	0.391605	7.67

FILE ID : TQ0312A.FRB

Perchlorate_83

RESPONSE FACTOR CALCULATIONS - AREA COUNTS

DATA FILES : T312_003.d - T312_008.d

The Data points that were Read Were

Standard Response	Standard Concentration µg/ml	Internal Standard Response	Internal Standard Concentration µg/ml	Response Factor	RPD	%RSD
446712.00	0.0002	8337058.00	0.0050	1.339537	5.45	8.44
1023403.00	0.0004	10671196.00	0.0050	1.198791	5.63	
2483393.00	0.0010	10651968.00	0.0050	1.165697	8.23	
6351752.00	0.0020	13529952.00	0.0050	1.173646	7.61	
14499255.00	0.0050	11028880.00	0.0050	1.314663	3.50	
34223790.00	0.0100	11973072.00	0.0050	1.429198	12.51	

The Average Response Factor = 1.270255

Perchlorate_85

RESPONSE FACTOR CALCULATIONS - AREA COUNTS

DATA FILES : T312_003.d - T312_008.d

The Data points that were Read Were

Standard Response	Standard Concentration µg/ml	Internal Standard Response	Internal Standard Concentration µg/ml	Response Factor	RPD	%RSD
144754.00	0.0002	8337058.00	0.0050	0.434068	10.84	7.67
337305.00	0.0004	10671196.00	0.0050	0.395112	0.90	
781617.00	0.0010	10651968.00	0.0050	0.366889	6.31	
1920912.00	0.0020	13529952.00	0.0050	0.354937	9.36	
4209044.00	0.0050	11028880.00	0.0050	0.381638	2.55	
9985270.00	0.0100	11973072.00	0.0050	0.416989	6.48	

The Average Response Factor = 0.391605

Data File ID: T312_003.d

Date Injected : 03/12/15

Time Injected : 17:52

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

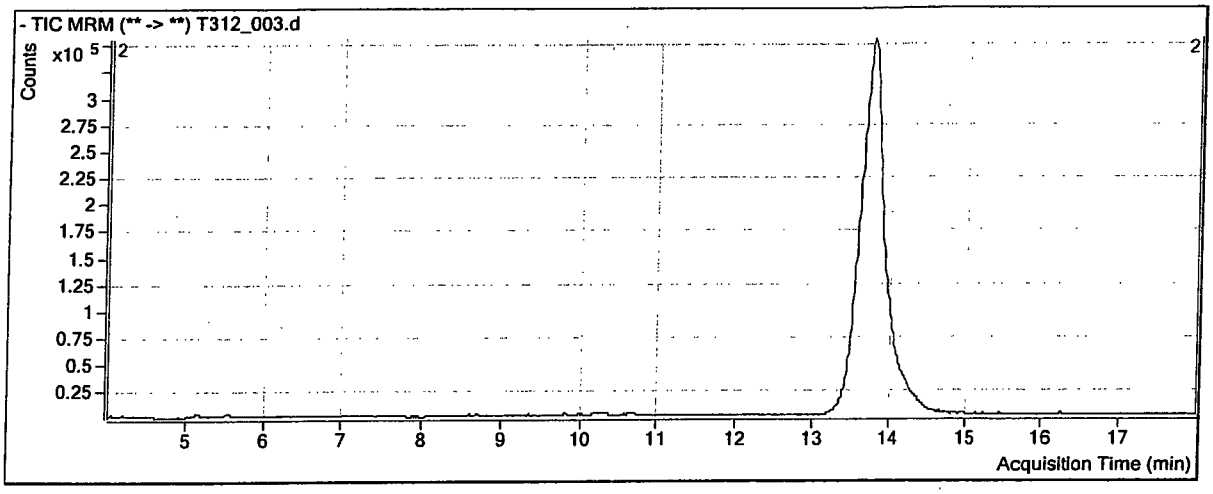
Client ID : NA

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

* MANUAL INTEGRAION

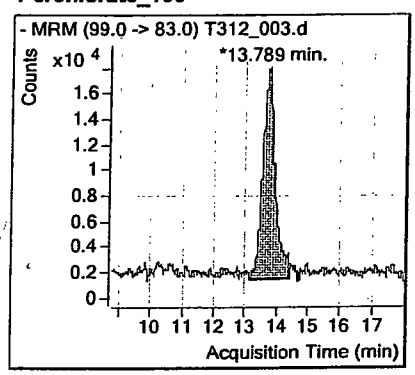
Quantitative Analysis Sample Report

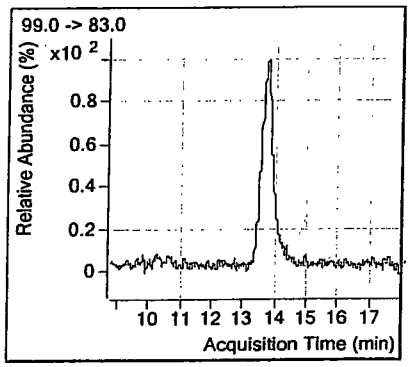
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_003.d	**Sample Name**	PERCHLORATE 0.0002 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	17:52
ClientID	NA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

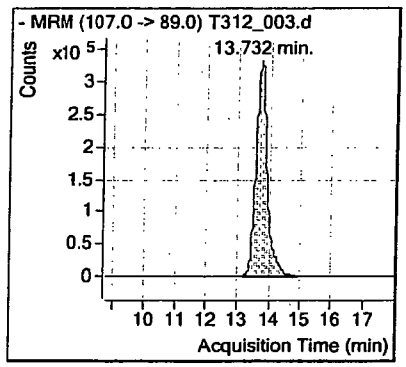


Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108	*	13.789	446712	8337058	* MANUAL INT
Perchlorate_102	PER_IS_108		13.704	144754	8337058	

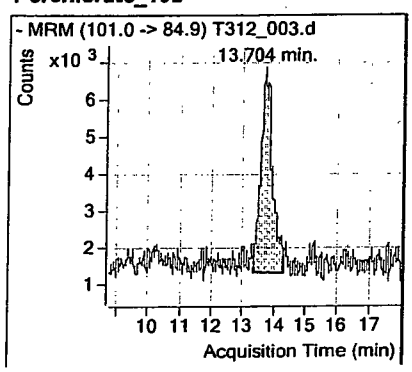
Perchlorate_100

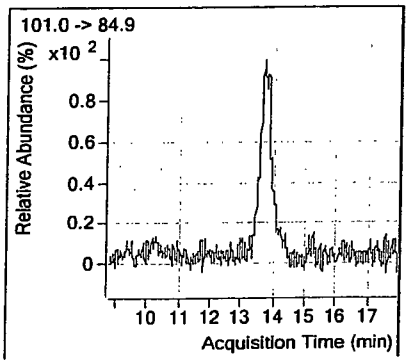


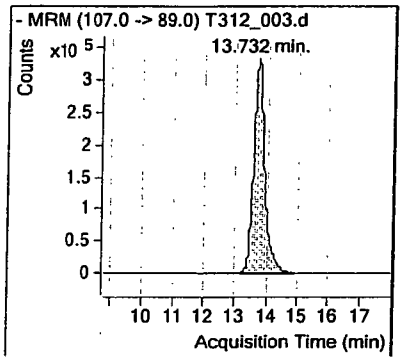


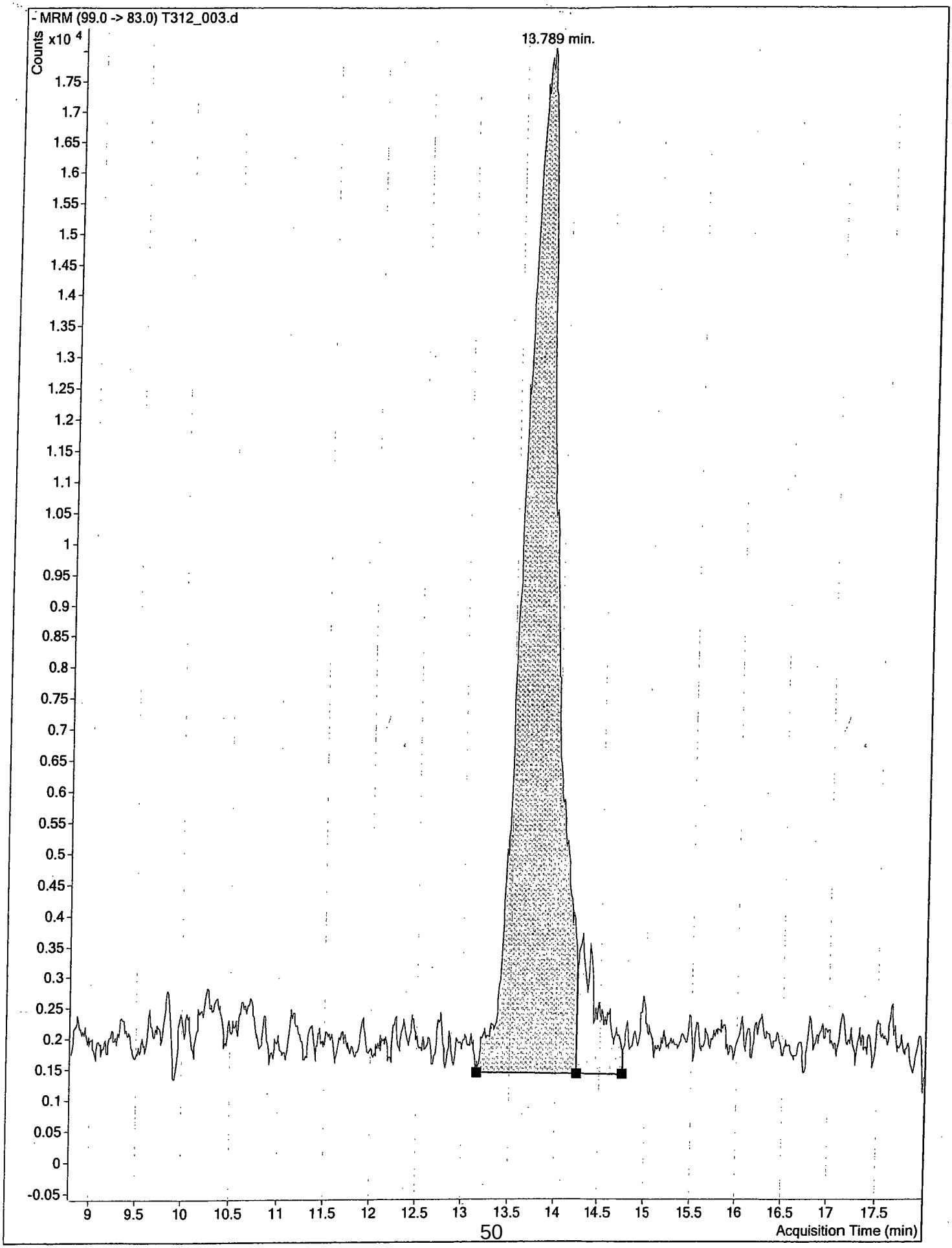


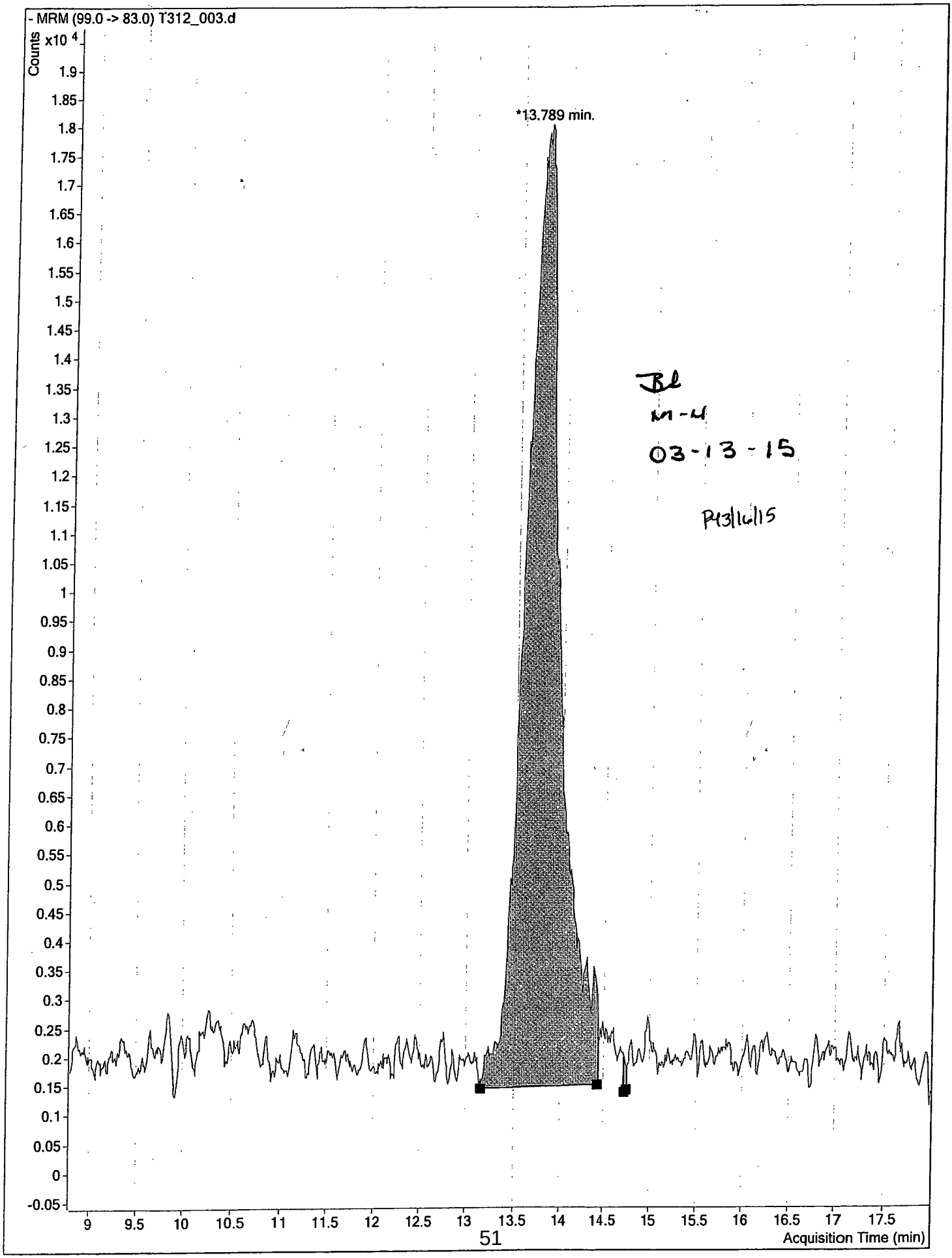
Perchlorate_102








- MRM (99.0 -> 83.0) T312_003.d
Counts
x10 4
13.789 min.
1.75
1.7
1.65
1.6
1.55
1.5
1.45
1.4
1.35
1.3
1.25
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.05
9
9.5
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
16.5
17
17.5
Acquisition Time (min)


- MRM (99.0 -> 83.0) T312_003.d
Counts
x10 4
*13.789 min.
Acquisition Time (min)
JBl
M-4
03-13-15
P13/16/15

Data File ID: T312_004.d

Date Injected : 03/12/15

Time Injected : 18:11

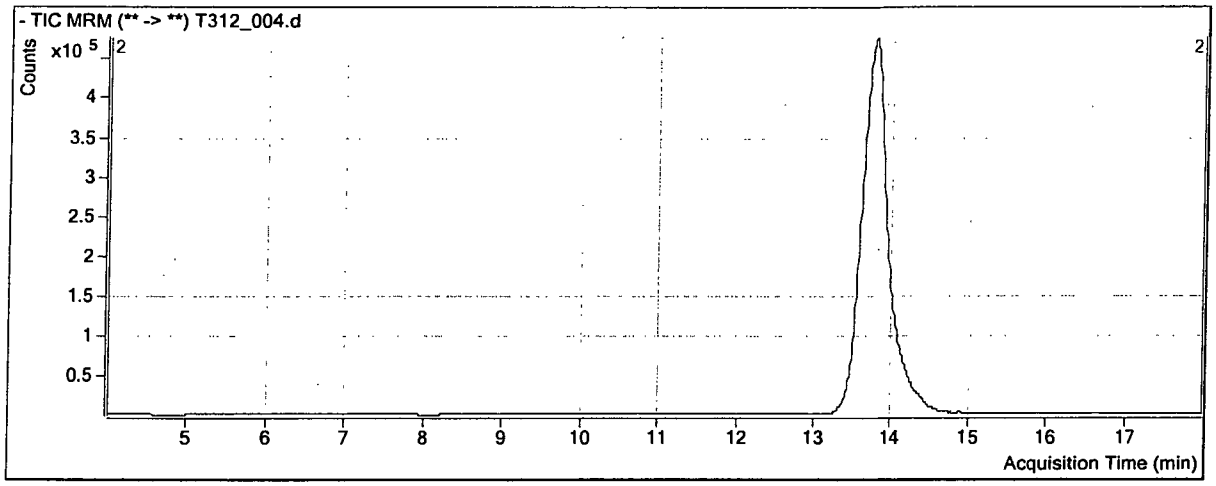
Sample ID : PERCHLORATE 0.0004 ug/ml 11/11/14

Client ID : NA

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

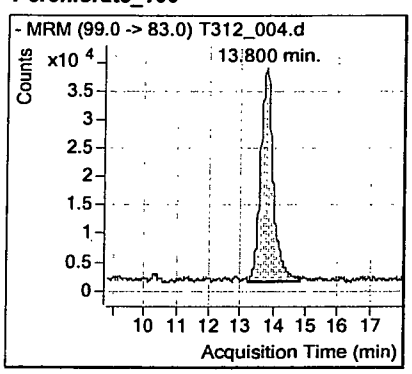
Quantitative Analysis Sample Report

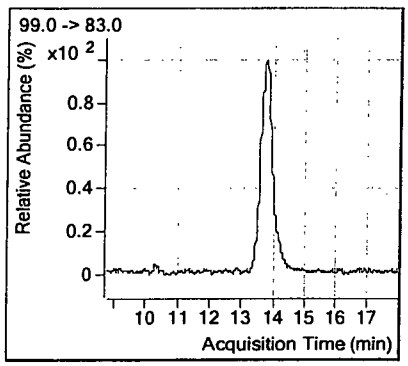
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_004.d	**Sample Name**	PERCHLORATE 0.0004 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:11
ClientID	NA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

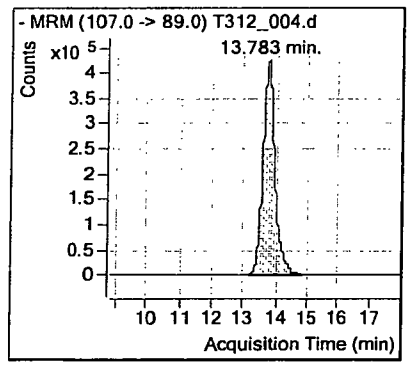


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.800	1023403	10671196
Perchlorate_102	PER_IS_108	13.827	337305	10671196

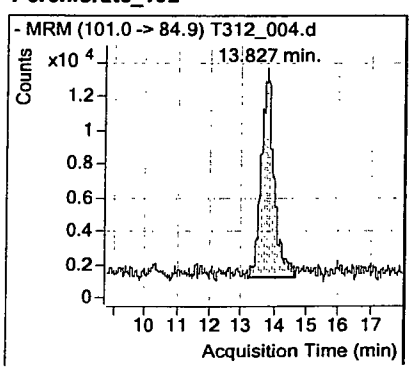
Perchlorate_100

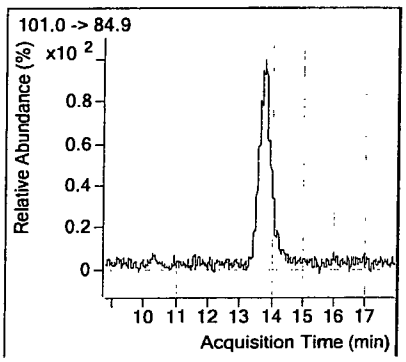


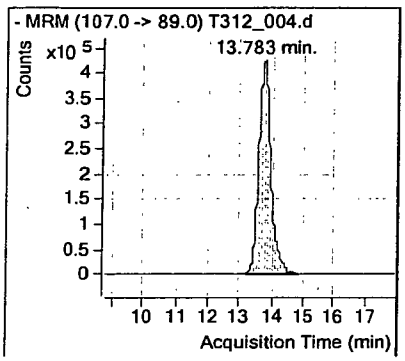




Perchlorate_102







Data File ID: T312_005.d

Date Injected : 03/12/15

Time Injected : 18:29

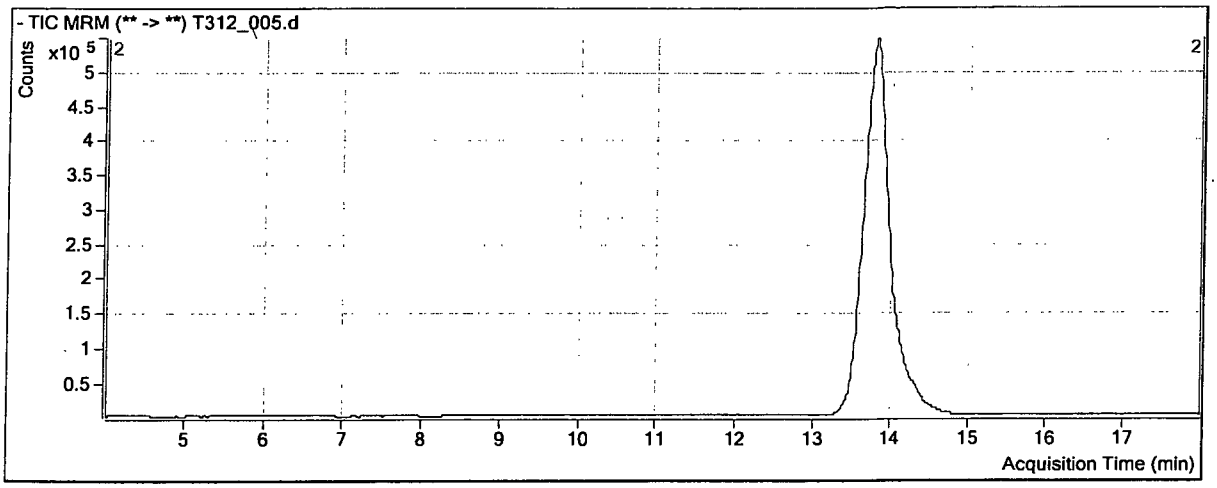
Sample ID : PERCHLORATE 0.001 ug/ml 11/11/14

Client ID : NA

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

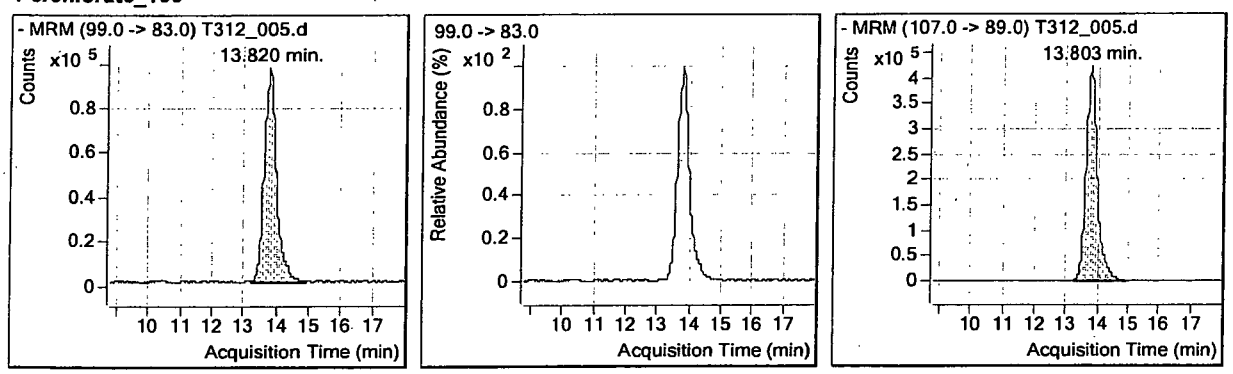
Quantitative Analysis Sample Report

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

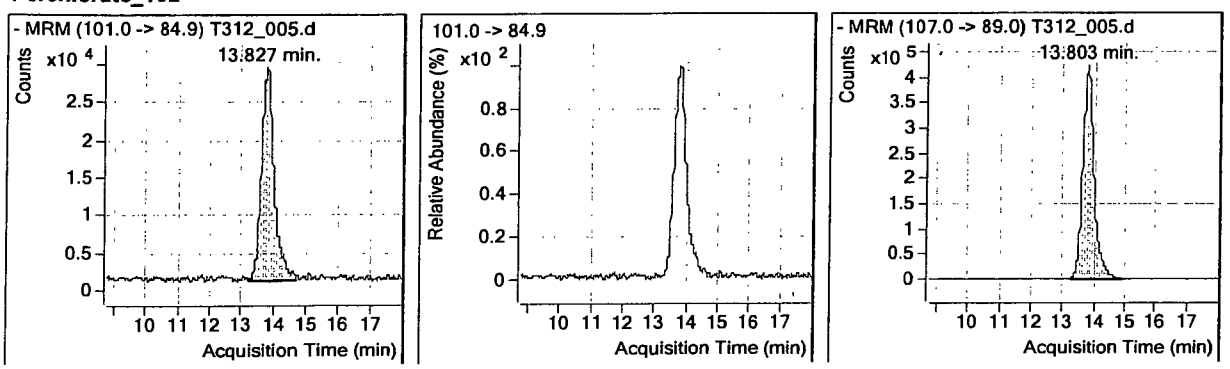


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.820	2483393	10651968
Perchlorate_102	PER_IS_108	13.827	781617	10651968

Perchlorate_100



Perchlorate_102



Data File ID: T312_006.d

Date Injected : 03/12/15

Time Injected : 18:48

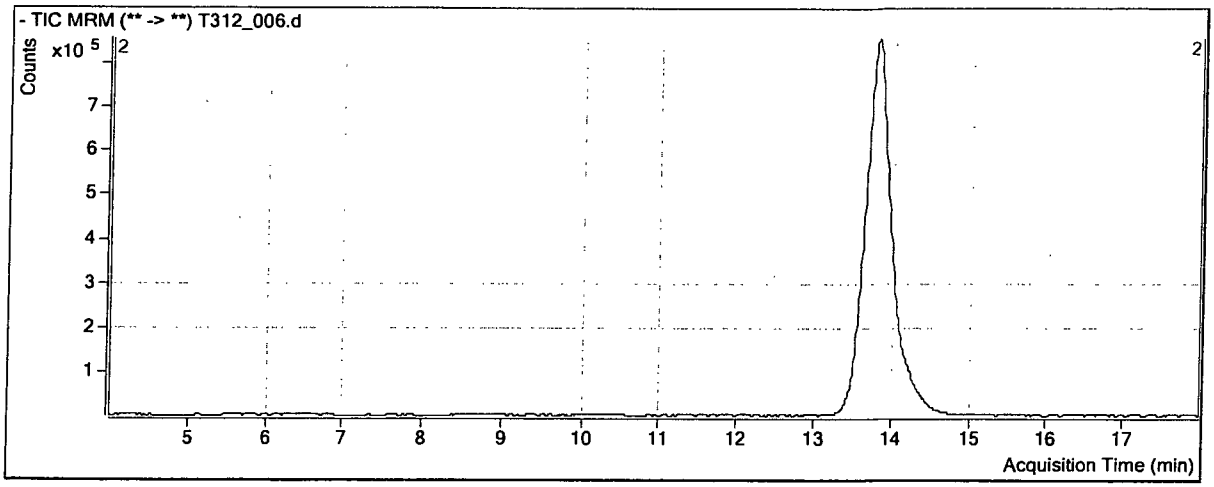
Sample ID : PERCHLORATE 0.002 ug/ml 11/11/14

Client ID : NA

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

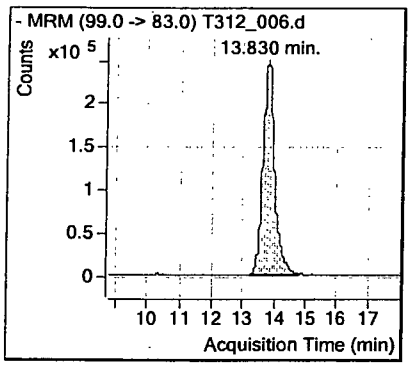
Quantitative Analysis Sample Report

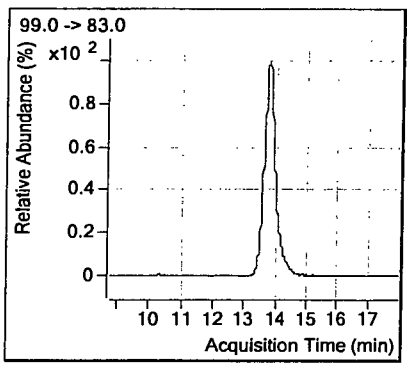
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_006.d	**Sample Name**	PERCHLORATE 0.002 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:48
ClientID	NA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

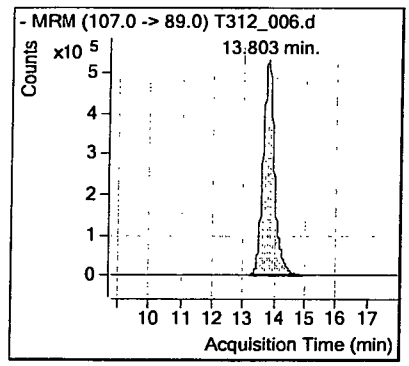


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.830	6351752	13529952
Perchlorate_102	PER_IS_108	13.817	1920912	13529952

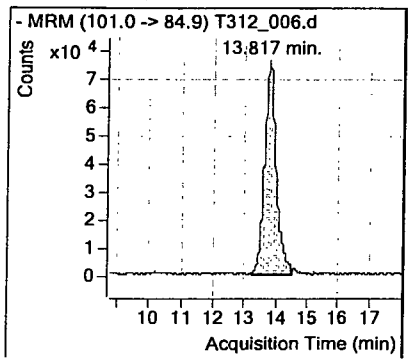
Perchlorate_100

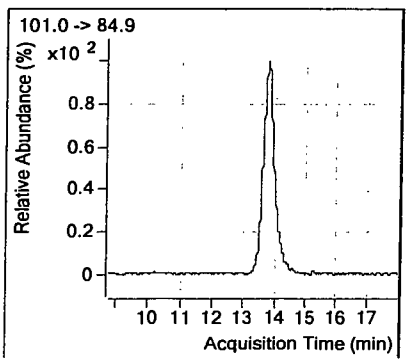


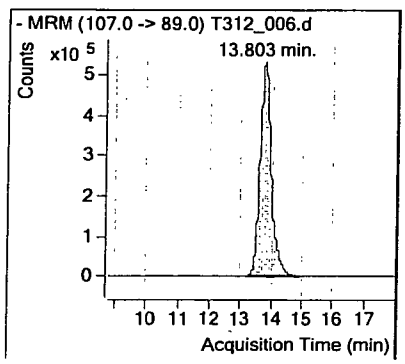




Perchlorate_102







Data File ID: T312_007.d

Date Injected : 03/12/15

Time Injected : 19:07

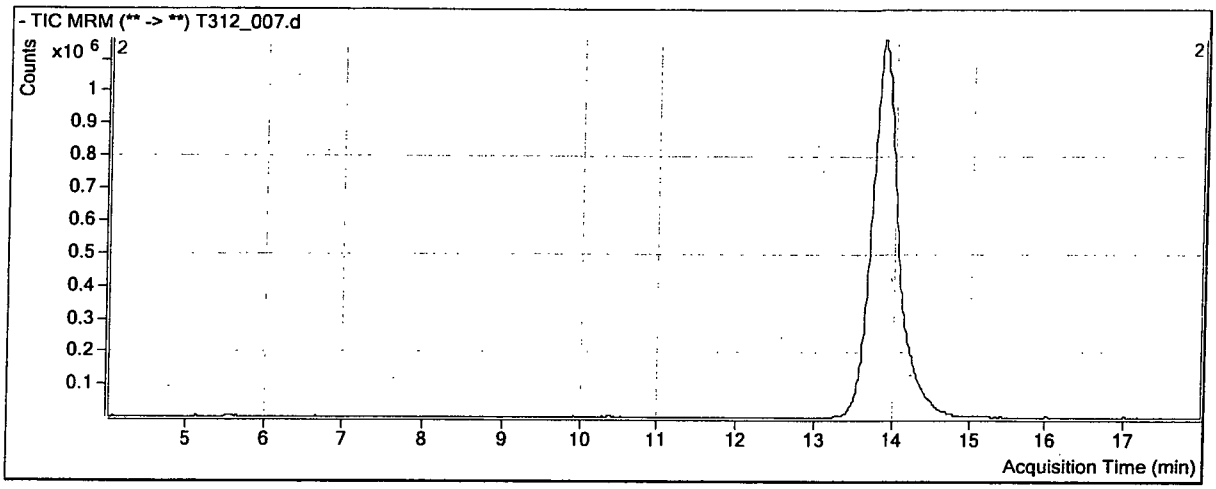
Sample ID : PERCHLORATE 0.005 ug/ml 11/11/14

Client ID : NA

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

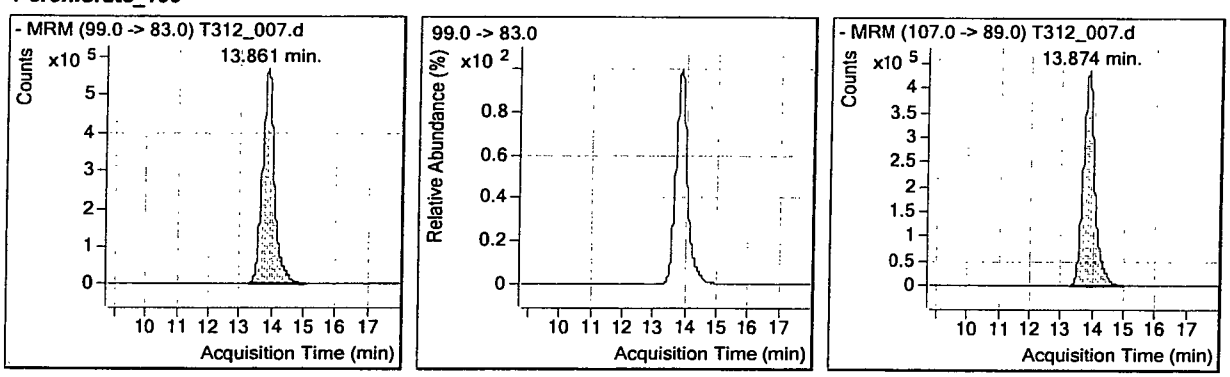
Quantitative Analysis Sample Report

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

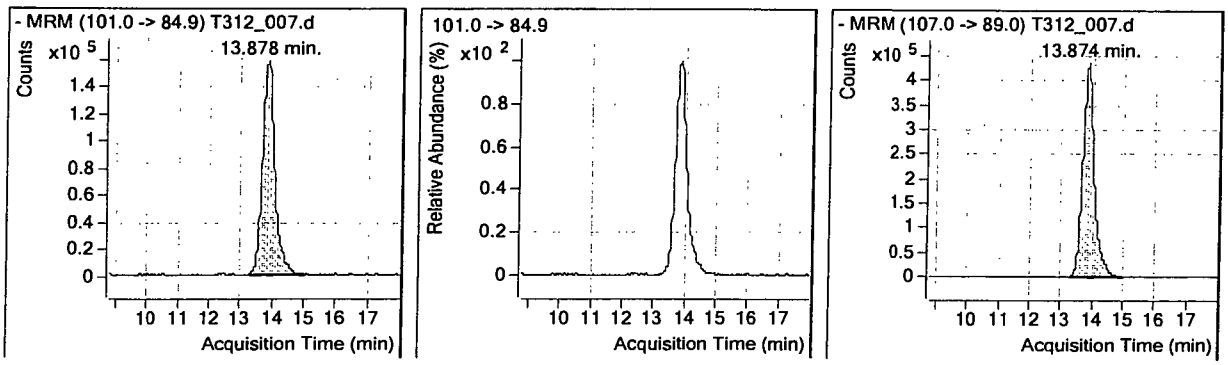


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.861	14499255	11028880
Perchlorate_102	PER_IS_108	13.878	4209044	11028880

Perchlorate_100



Perchlorate_102



Data File ID: T312_008.d

Date Injected : 03/12/15

Time Injected : 19:25

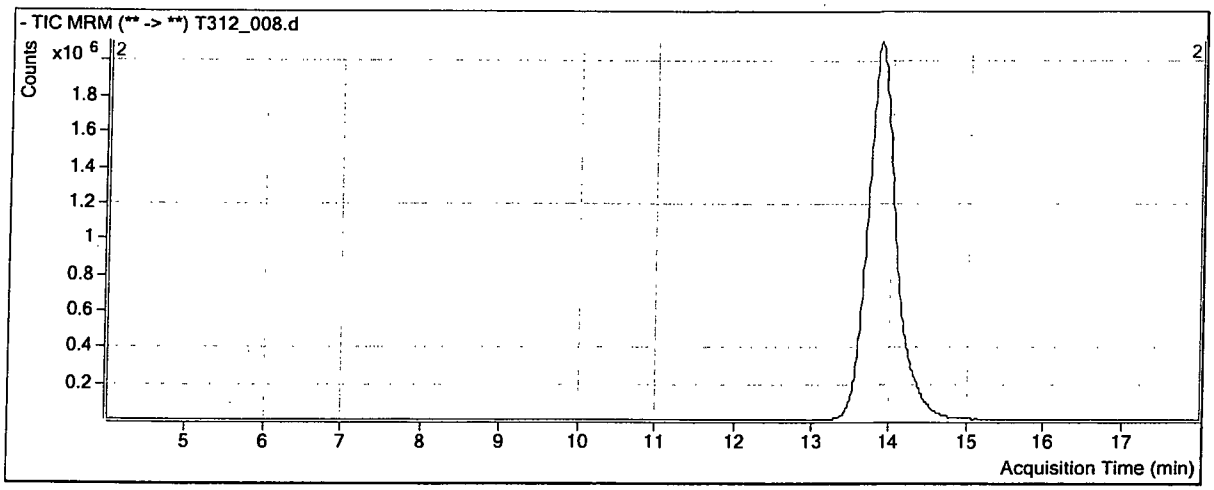
Sample ID : PERCHLORATE 0.010 ug/ml 08/27/14

Client ID : NA

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

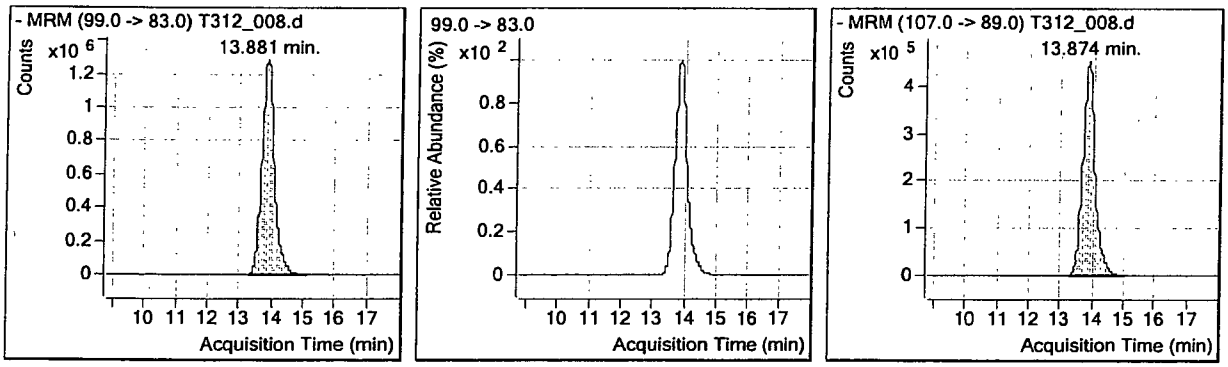
Quantitative Analysis Sample Report

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

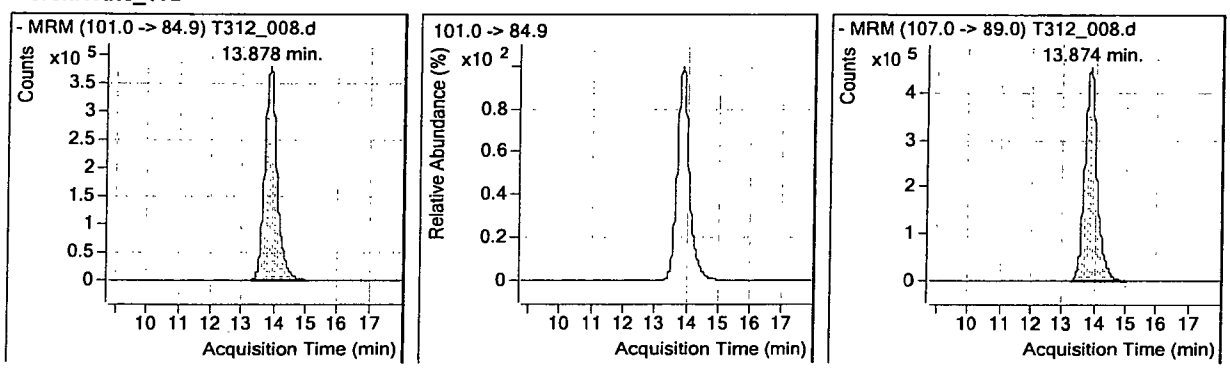


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.881	34223790	11973072
Perchlorate_102	PER_IS_108	13.878	9985270	11973072

Perchlorate_100



Perchlorate_102



SECOND SOURCE CALIBRATION VERIFICATION SUMMARY FORM

Lab Name: APPL Inc.

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

	Date (s) of Analysis From:03/12/15 To:03/12/15 Time (s) of Analysis From:17:33 To:19:44				Date of Analysis: 03/12/15 Time of Analysis: 20:02 Standard Id: PER_SS (Standard) 0.0004ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	13.50	13.40	13.60	1.270255	13.94	1.418633	N	11.7
Perchlorate_85	13.54	13.44	13.64	0.391605	13.96	0.424457	N	8.4

FILE ID : TQCK1210.RFB

Data File ID: T312_010.d

Date Injected : 03/12/15

Time Injected : 20:02

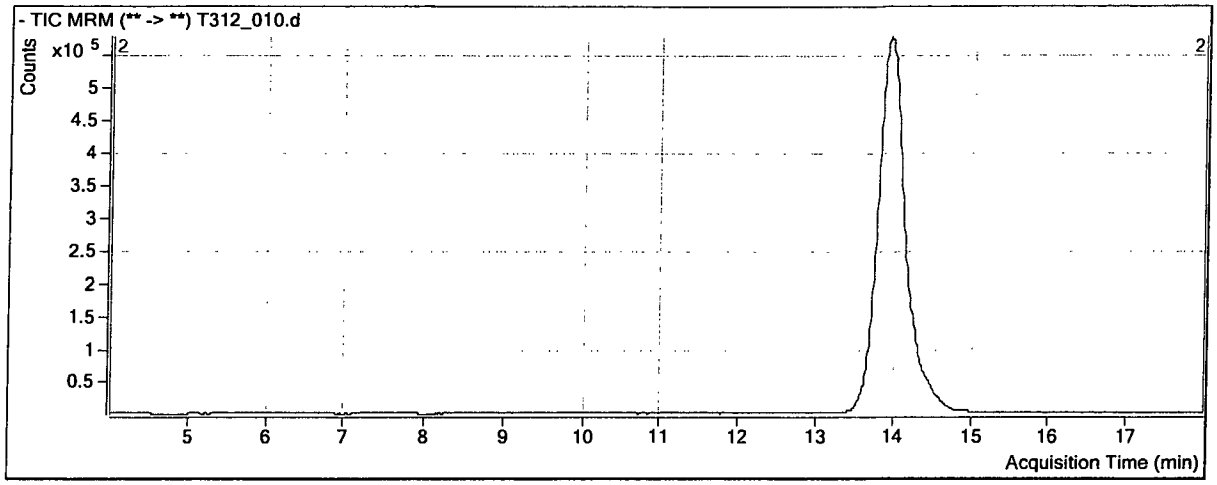
Sample ID : PER_SS 0.0004 ug/ml 11/11/14

Client ID : NA

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

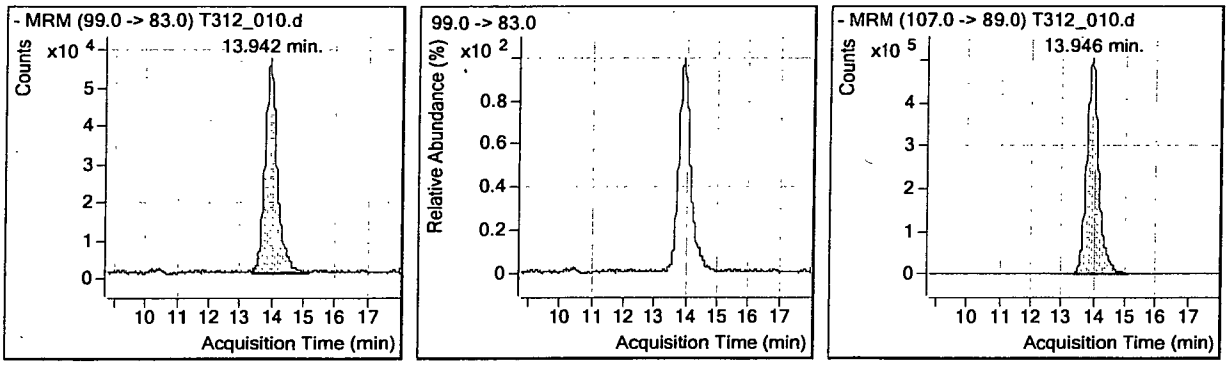
Quantitative Analysis Sample Report

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

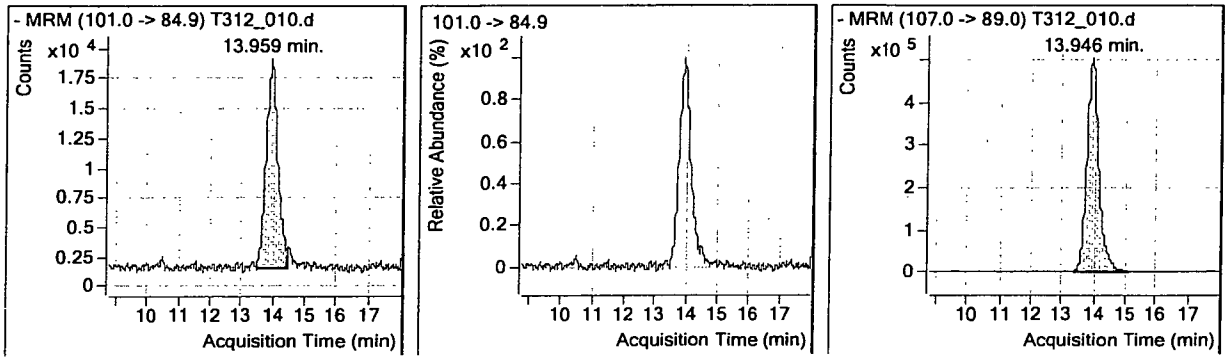


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.942	1472839	12977621
Perchlorate_102	PER_IS_108	13.959	440675	12977621

Perchlorate_100



Perchlorate_102



SECOND SOURCE CALIBRATION VERIFICATION SUMMARY FORM

Lab Name: APPL Inc.

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

	Date (s) of Analysis From:03/12/15 To:03/12/15 Time (s) of Analysis From:17:33 To:19:44				Date of Analysis: 03/12/15 Time of Analysis: 20:21 Standard Id: PER_SS (Standard) 0.002 ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	13.50	13.40	13.60	1.270255	14.01	1.358201	N	6.9
Perchlorate_85	13.54	13.44	13.64	0.391605	14.00	0.404148	N	3.2

FILE ID : TQCK1211.RFB

Data File ID: T312_011.d

Date Injected : 03/12/15

Time Injected : 20:21

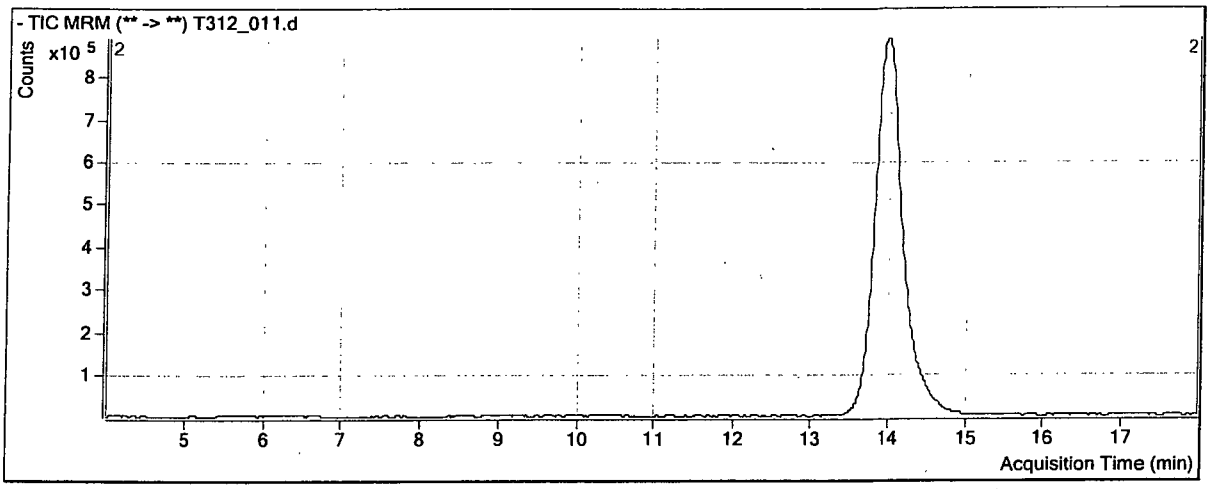
Sample ID : PER_SS 0.002 ug/ml 11/11/14

Client ID : NA

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

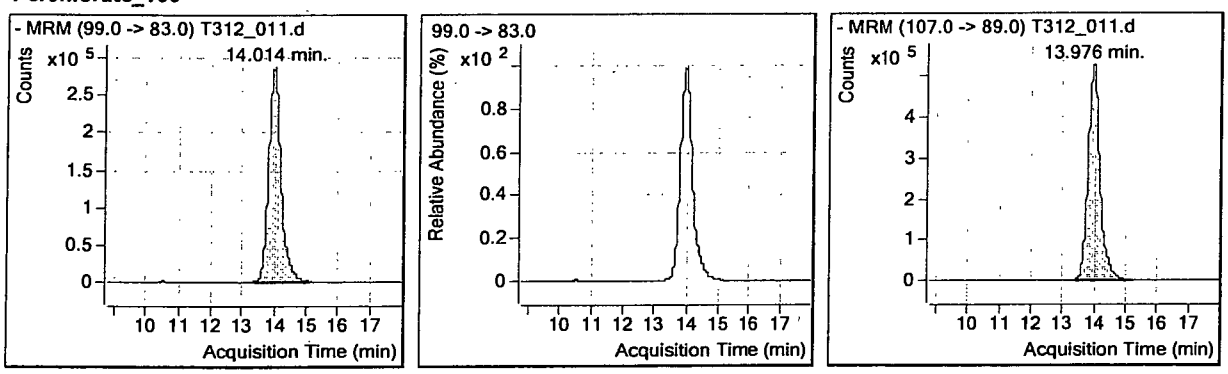
Quantitative Analysis Sample Report

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

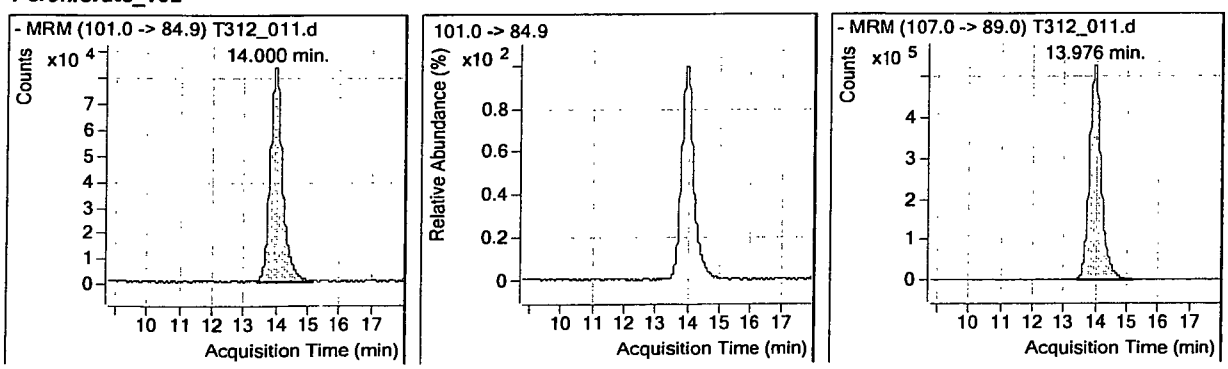


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.014	7468678	13747369
Perchlorate_102	PER_IS_108	14.000	2222387	13747369

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

.ab Name: APPL Inc.

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

	Date (s) of Analysis From:03/12/15 To:03/12/15 Time (s) of Analysis From:17:33 To:20:40				Date of Analysis: 03/12/15 Time of Analysis: 20:58 Standard Id: PER_CCV_1 (Standard) 0.0004ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	13.50	13.40	13.60	1.270255	14.10	1.285147	N	1.2
Perchlorate_85	13.54	13.44	13.64	0.391605	14.14	0.416428	N	6.3

:LE ID : TQCK1213.RFB

Data File ID: T312_013.d

Date Injected : 03/12/15

Time Injected : 20:58

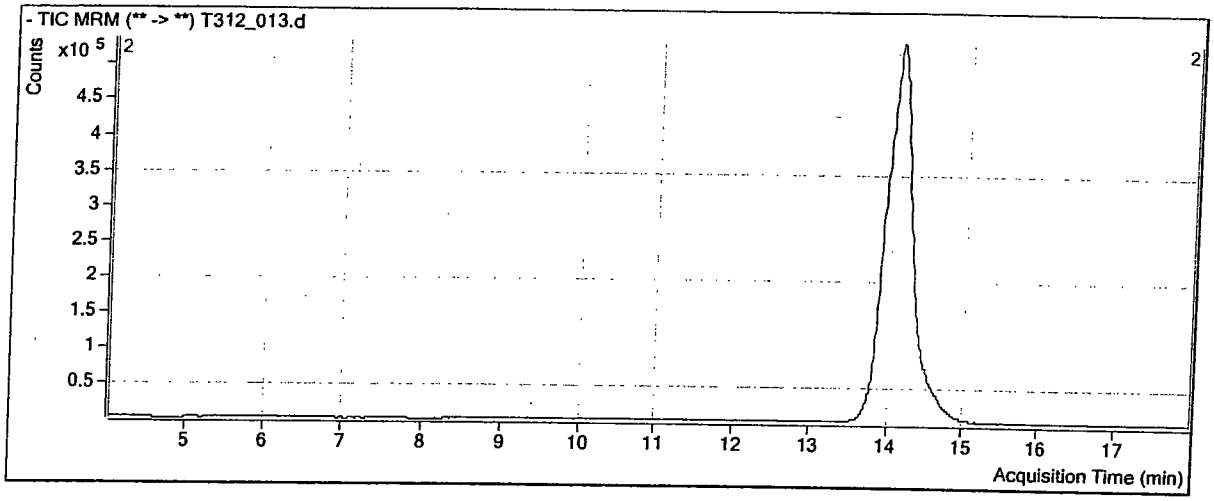
Sample ID : PER_CCV_1 0.0004 ug/ml 11/11/14

Client ID : NA

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

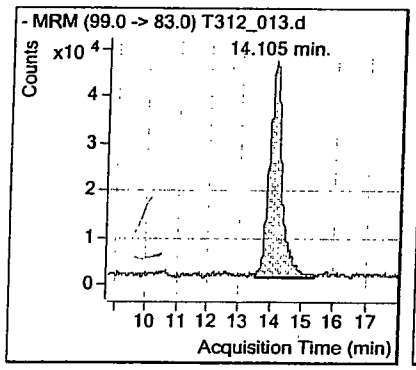
Quantitative Analysis Sample Report

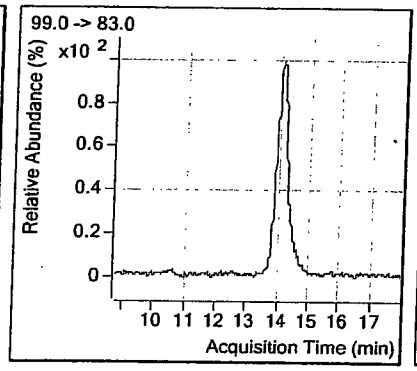
Batch Data Path	D:\MassHunter\Data\150312\QuantResults\150312_A1_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T312_013.d	**Sample Name**	PER_CCV_1 0.0004 ug/ml 11/11/14
Sample Type	Sample	**Acq_Date**	03/12/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	20:58
ClientID	NA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

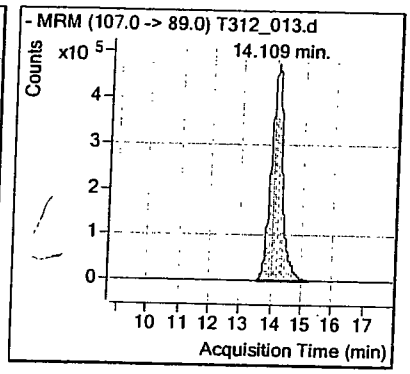


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.105	1267031	12323795
Perchlorate_102	PER_IS_108	14.143	410558	12323795

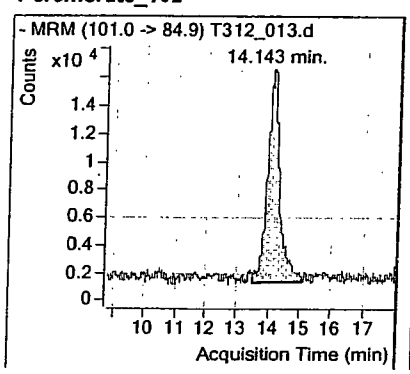
Perchlorate_100

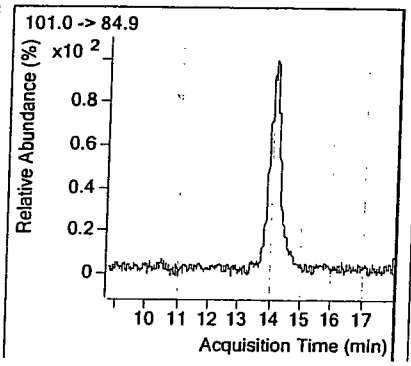


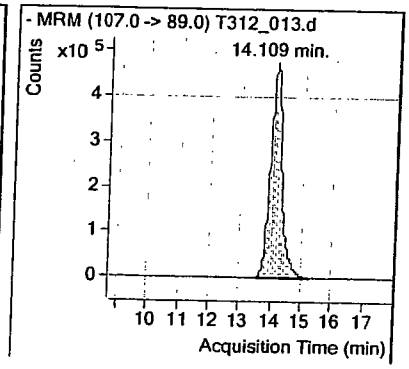




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

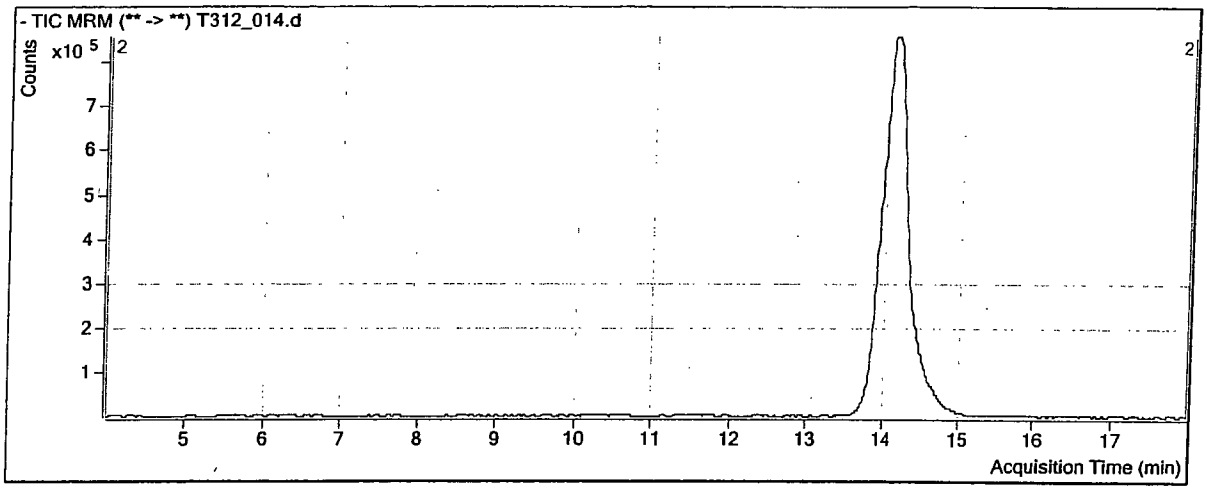
Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T312_014.d

	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

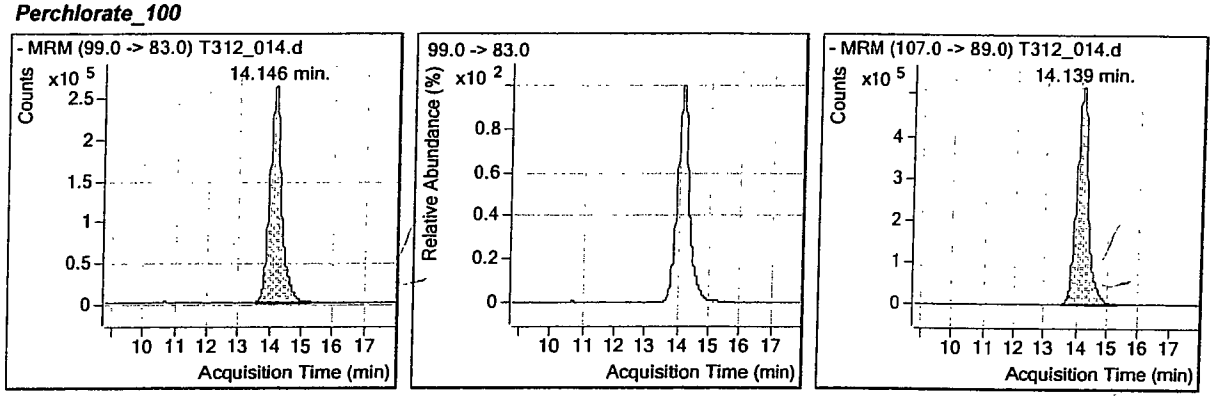
Quantitative Analysis Sample Report

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

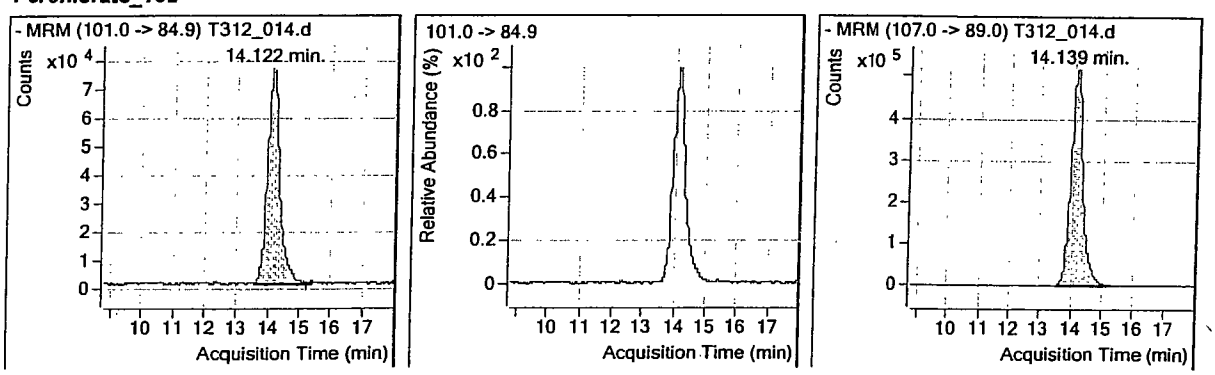


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.146	6907110	13576634
Perchlorate_102	PER_IS_108	14.122	2093567	13576634

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T507_002.d

	Date (s) of Analysis From:03/12/15 To:05/07/15 Time (s) of Analysis From:17:52 To:20:03				Date of Analysis: 05/07/15 Time of Analysis: 20:21 Standard Id: PER_CCV (Standard) 0.0004ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	13.79	13.69	13.89	1.270255	14.60	1.399143	N	10.1
Perchlorate_85	13.70	13.60	13.80	0.391605	14.63	0.462822	N	18.2

FILE ID : TQCK0702.RFB

Data File ID: T507_002.d

Date Injected : 05/07/15

Time Injected : 20:21

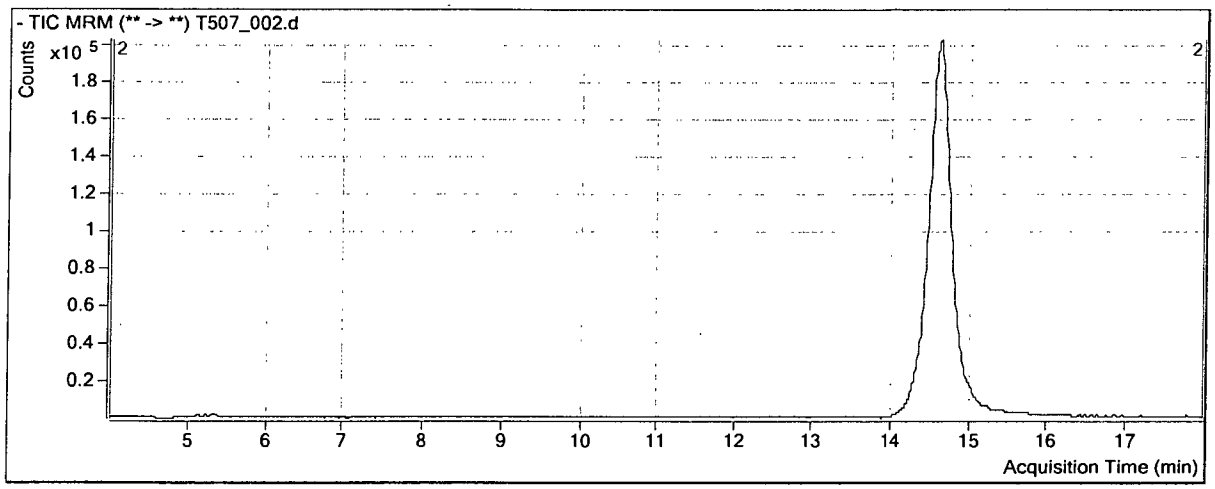
Sample ID : PER_CCV 0.0004 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
14.638	3778394	PER_IS_89
14.605	422921	Perchlorate_83
14.632	139898	Perchlorate_85

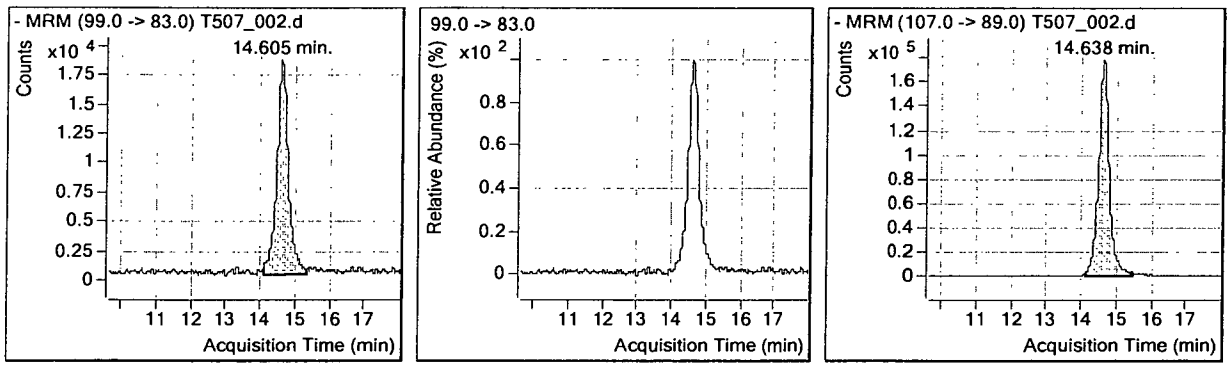
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150507\QuantResults\150507_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T507_002.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	20:21
ClientID	NA	**Inj Vol**	20

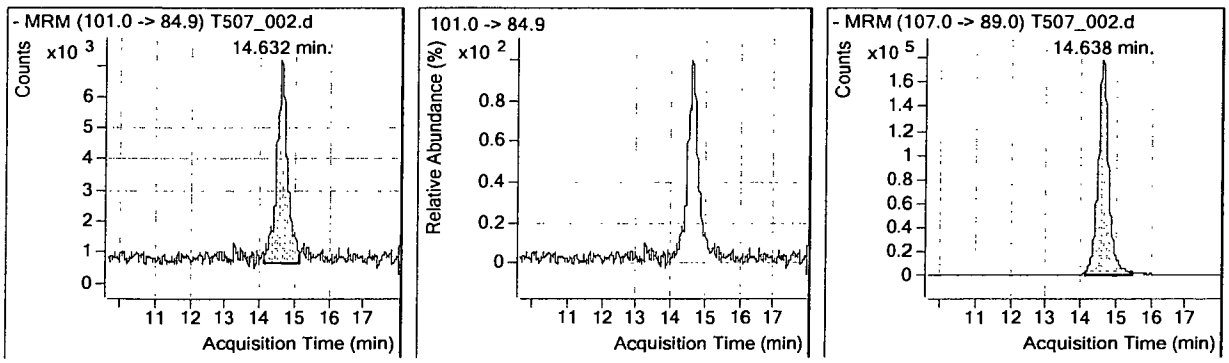


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.605	422921	3778394
Perchlorate_102	PER_IS_108	14.632	139898	3778394

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T507_003.d

	Date (s) of Analysis From:03/12/15 To:05/07/15 Time (s) of Analysis From:17:52 To:20:03				Date of Analysis: 05/07/15 Time of Analysis: 20:40 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	14.67	1.135201	N	10.6
Perchlorate_85	13.70	13.60	13.80	0.391605	14.64	0.346985	N	11.4

FILE ID : TQCK0703.RFB

Data File ID: T507_003.d

Date Injected : 05/07/15

Time Injected : 20:40

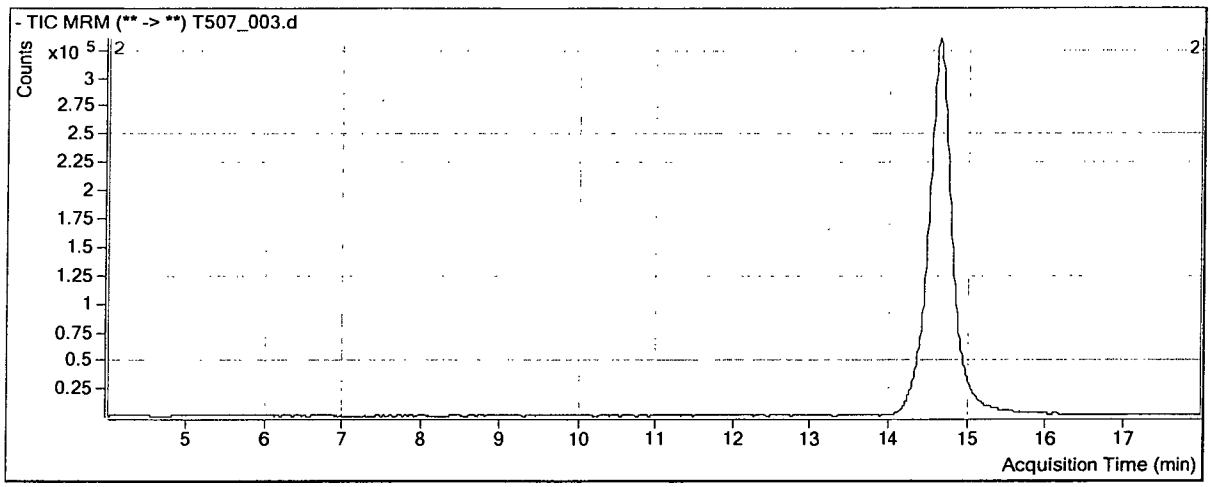
Sample ID : PER_CCV 0.002 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
14.649	4431200	PER_IS_89
14.666	2012121	Perchlorate_83
14.642	615024	Perchlorate_85

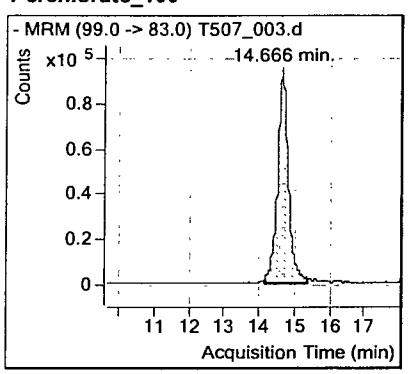
Quantitative Analysis Sample Report

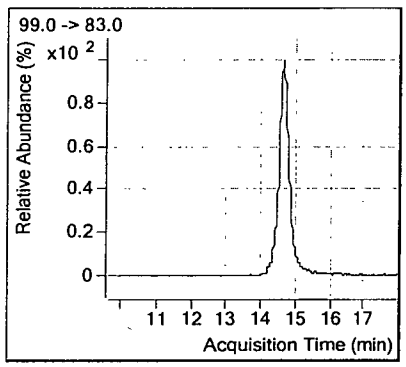
Batch Data Path	D:\MassHunter\Data\150507\QuantResults\150507_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T507_003.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/07/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	20:40
ClientID	NA	**Inj Vol**	20

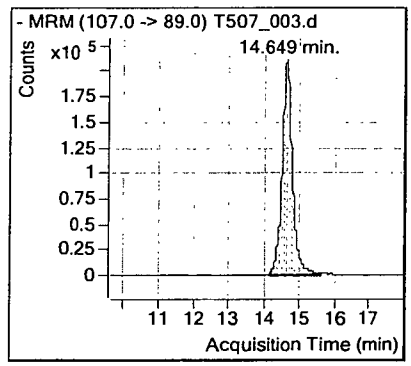


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.666	2012121	4431200
Perchlorate_102	PER_IS_108	14.642	615024	4431200

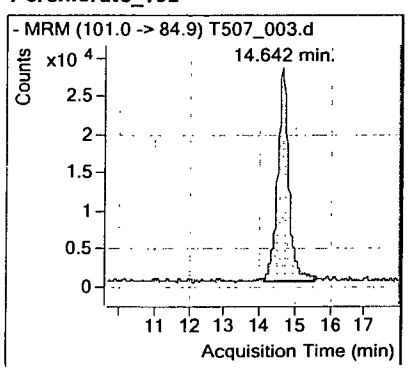
Perchlorate_100

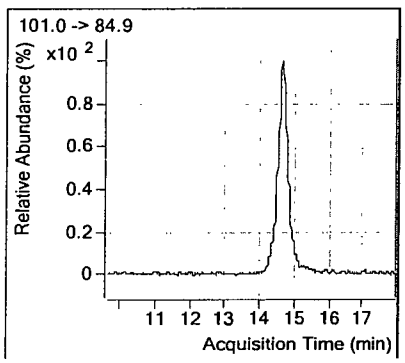


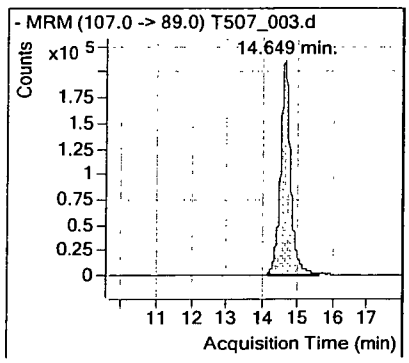




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T507_070.d

	Date (s) of Analysis From:03/12/15 To:05/08/15 Time (s) of Analysis From:17:52 To:17:04				Date of Analysis: 05/08/15 Time of Analysis: 17:42 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	13.68	1.425766	N	12.2
Perchlorate_85	13.70	13.60	13.80	0.391605	13.71	0.476320	N	21.6

FILE ID : TQCK0770.RFB

Data File ID: T507_070.d

Date Injected : 05/08/15

Time Injected : 17:42

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

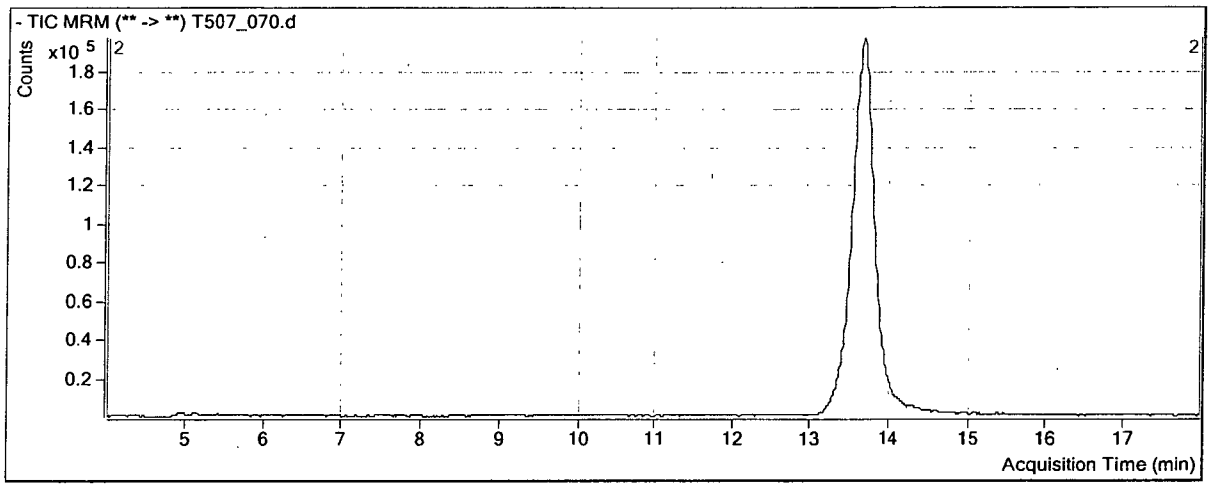
Client ID : NA

Retention Time		Area Count Response	Compound_ID Product Ion
13.681		3519327	PER_IS_89
13.677		401419	Perchlorate_83
13.715	*	134106	Perchlorate_85

* MANUAL INTEGRAION

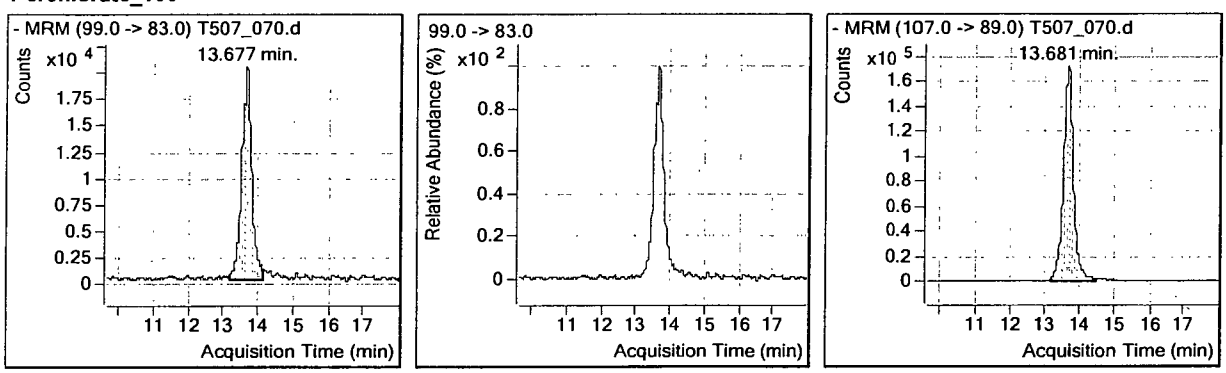
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150507\QuantResults\150507_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T507_070.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/08/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	17:42
ClientID	NA	**Inj Vol**	20

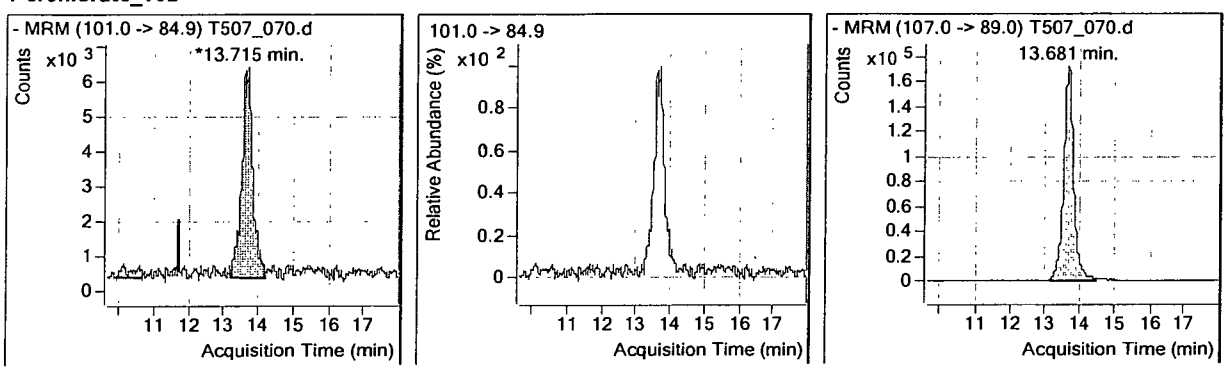


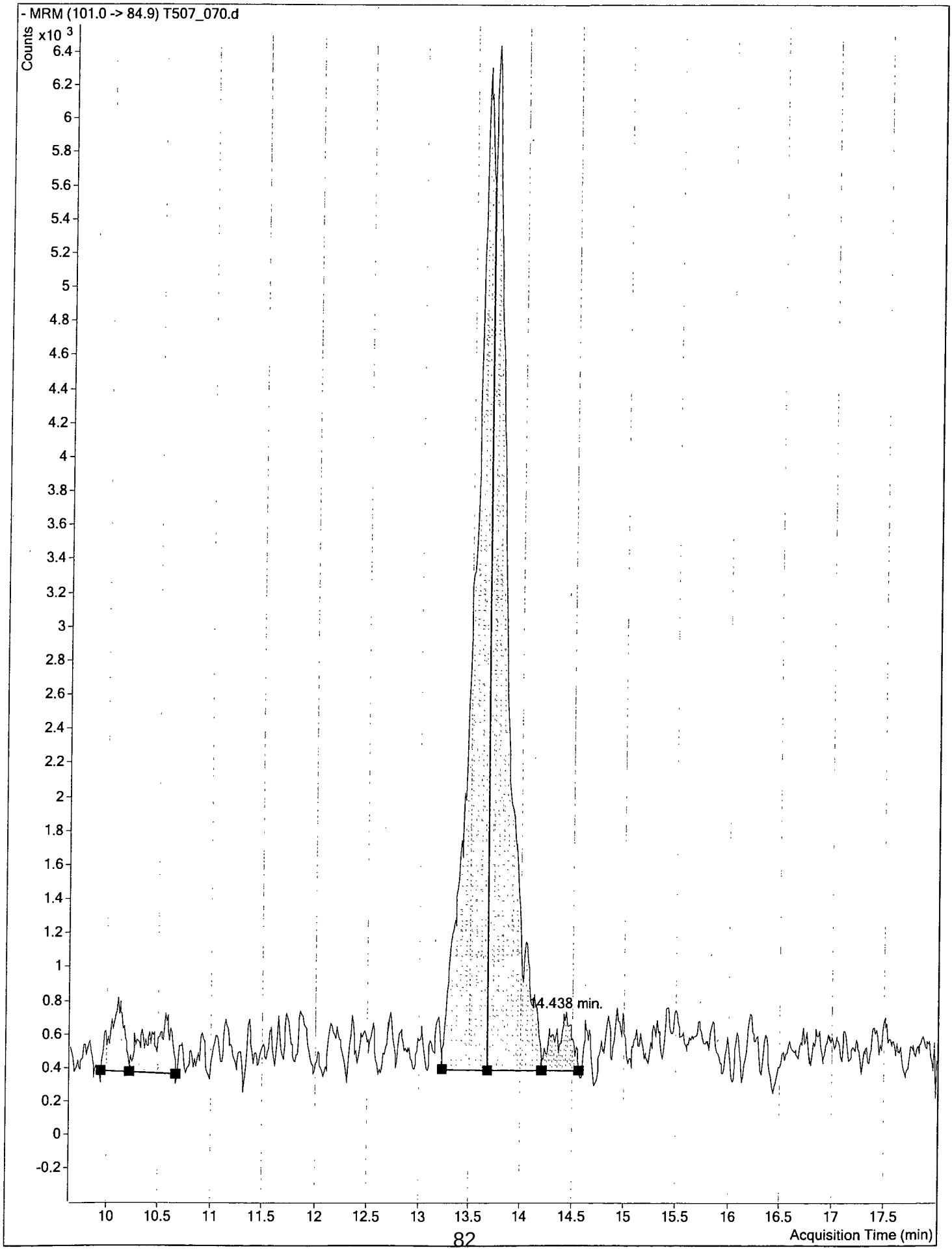
Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108		13.677	401419	3519327	
Perchlorate_102	PER_IS_108	*	13.715	134106	3519327	* MANUAL INT

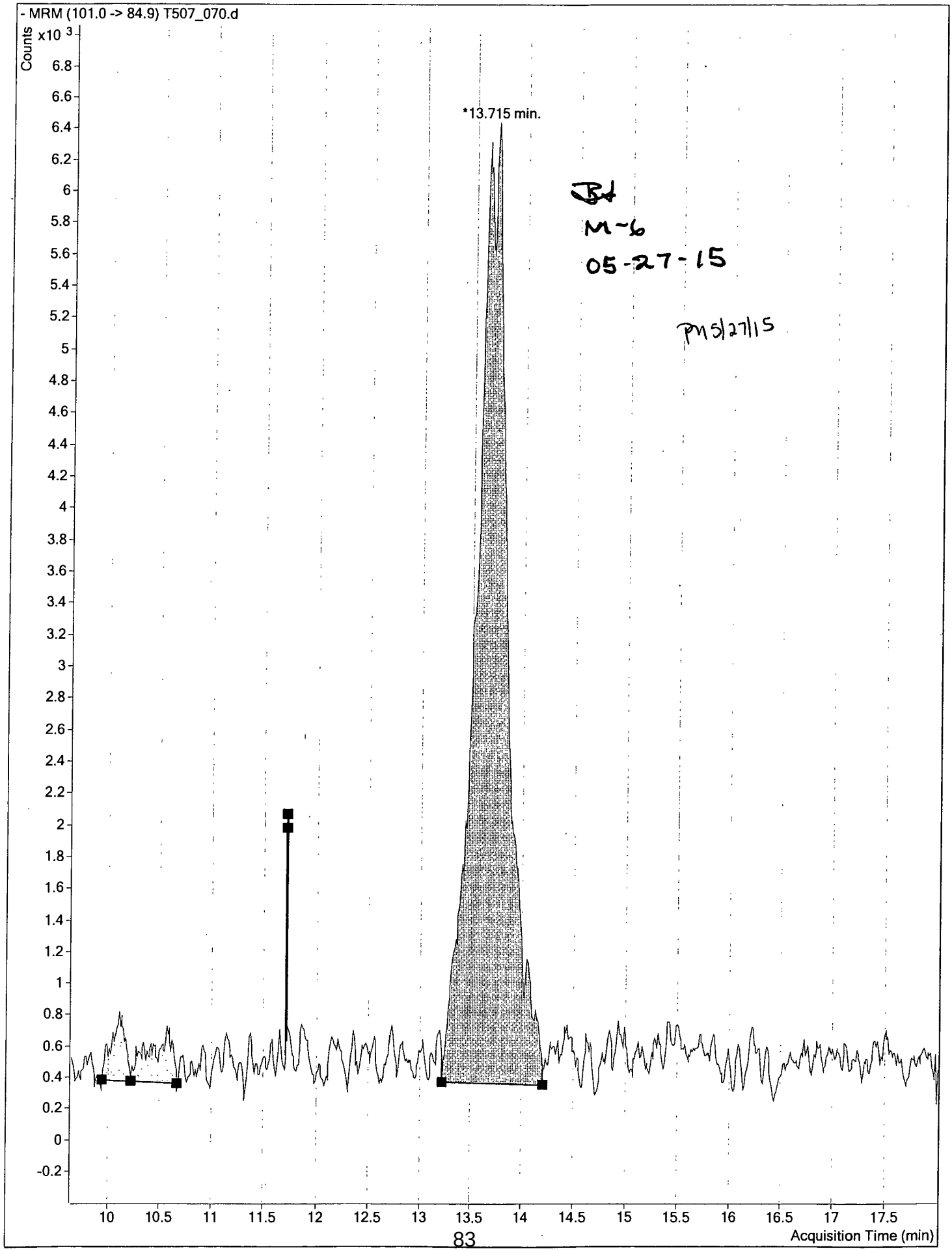
Perchlorate_100



Perchlorate_102




- MRM (101.0 -> 84.9) T507_070.d
Counts
x10 3
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
0
-0.2
14.438 min.
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) T507_070.d
Counts
x10 3
*13.715 min.
M-6
05-27-15
PM 5/27/15
Acquisition Time (min)

CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T507_071.d

	Date (s) of Analysis From:03/12/15 To:05/08/15 Time (s) of Analysis From:17:52 To:17:04				Date of Analysis: 05/08/15 Time of Analysis: 18:00 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	13.82	1.213030	N	4.5
Perchlorate_85	13.70	13.60	13.80	0.391605	13.83	0.379504	N	3.1

FILE ID : TQCK0771.RFB

Data File ID: T507_071.d

Date Injected : 05/08/15

Time Injected : 18:00

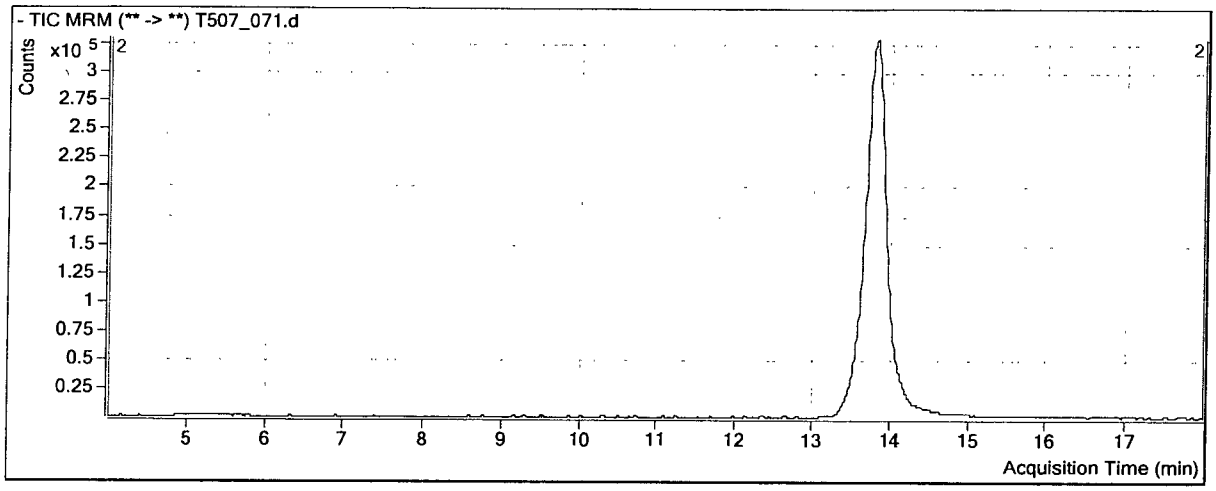
Sample ID : PER_CCV 0.002 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.803	4130110	PER_IS_89
13.82	2003979	Perchlorate_83
13.827	626958	Perchlorate_85

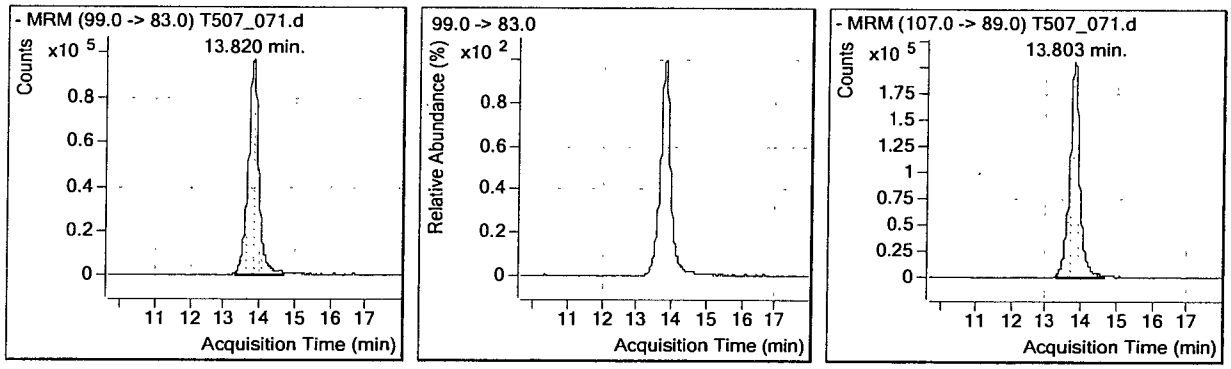
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150507\QuantResults\150507_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T507_071.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/08/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	18:00
ClientID	NA	**Inj Vol**	20

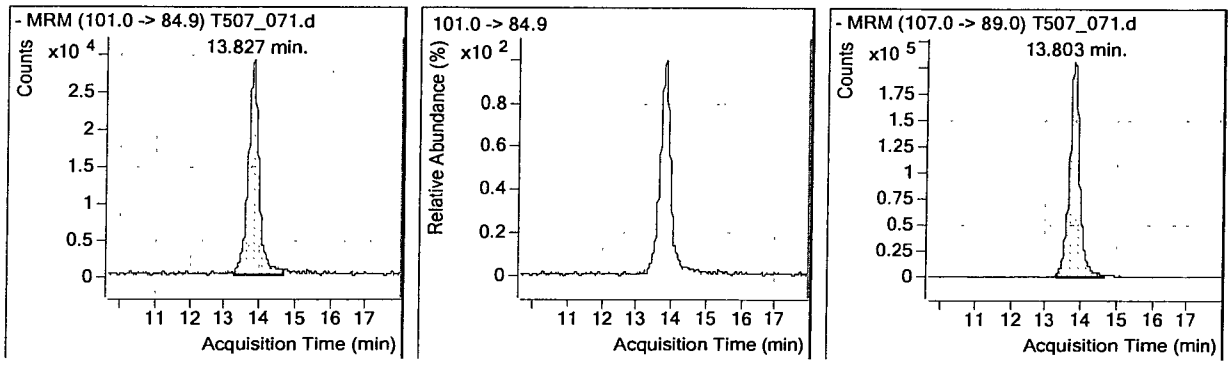


Compound	ISTD	RT	Resp	ISTD_RESP
Perchlorate_100	PER_IS_108	13.820	2003979	4130110
Perchlorate_102	PER_IS_108	13.827	626958	4130110

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T507_084.d

	Date (s) of Analysis From:03/12/15 To:05/08/15 Time (s) of Analysis From:17:52 To:21:25				Date of Analysis: 05/08/15 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	14.35	1.434809	N	13.0
Perchlorate_85	13.70	13.60	13.80	0.391605	14.33	0.483743	N	23.5

FILE ID : TQCK0784.RFB

Data File ID: T507_084.d

Date Injected : 05/08/15

Time Injected : 22:02

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

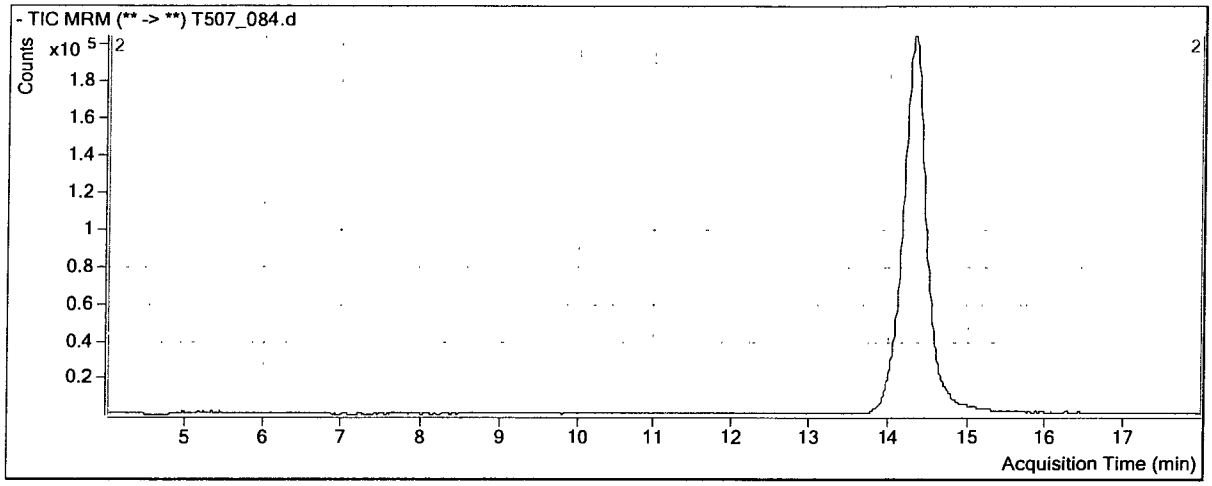
Client ID : NA

Retention Time		Area Count Response	Compound_ID Product Ion
14.323		3747806	PER_IS_89
14.35	*	430191	Perchlorate_83
14.326		145038	Perchlorate_85

* MANUAL INTEGRAION

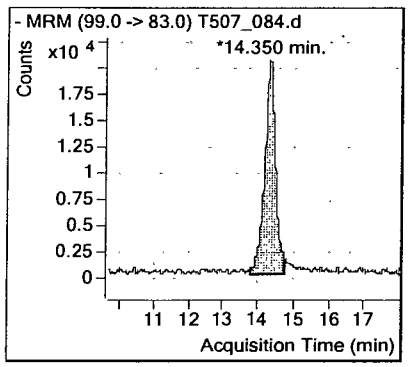
Quantitative Analysis Sample Report

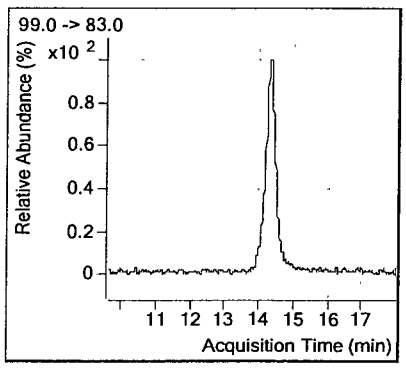
Batch Data Path	D:\MassHunter\Data\150507\QuantResults\150507_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T507_084.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/08/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	22:02
ClientID	NA	**Inj Vol**	20

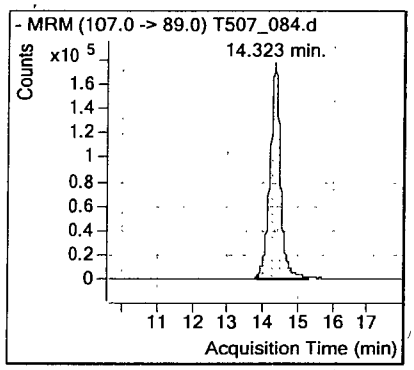


Compound	ISTD		RT	Resp	ISTD Resp	
Perchlorate_100	PER_IS_108		14.350	430191	3747806	
Perchlorate_102	PER_IS_108	*	14.326	145038	3747806	* MANUAL INT

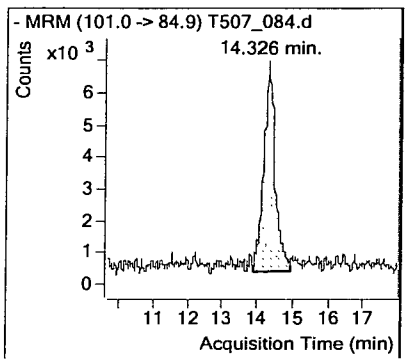
Perchlorate_100

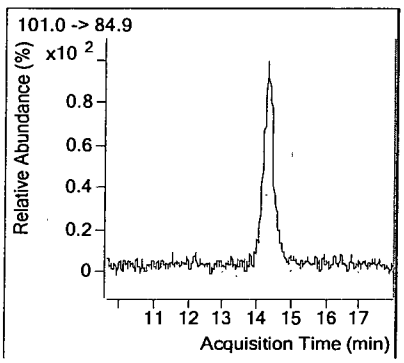


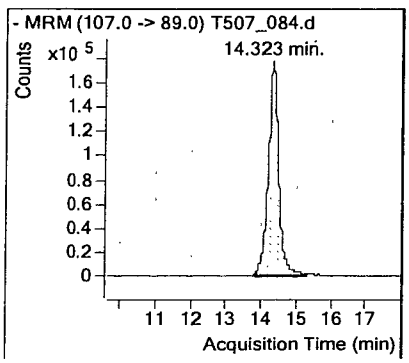


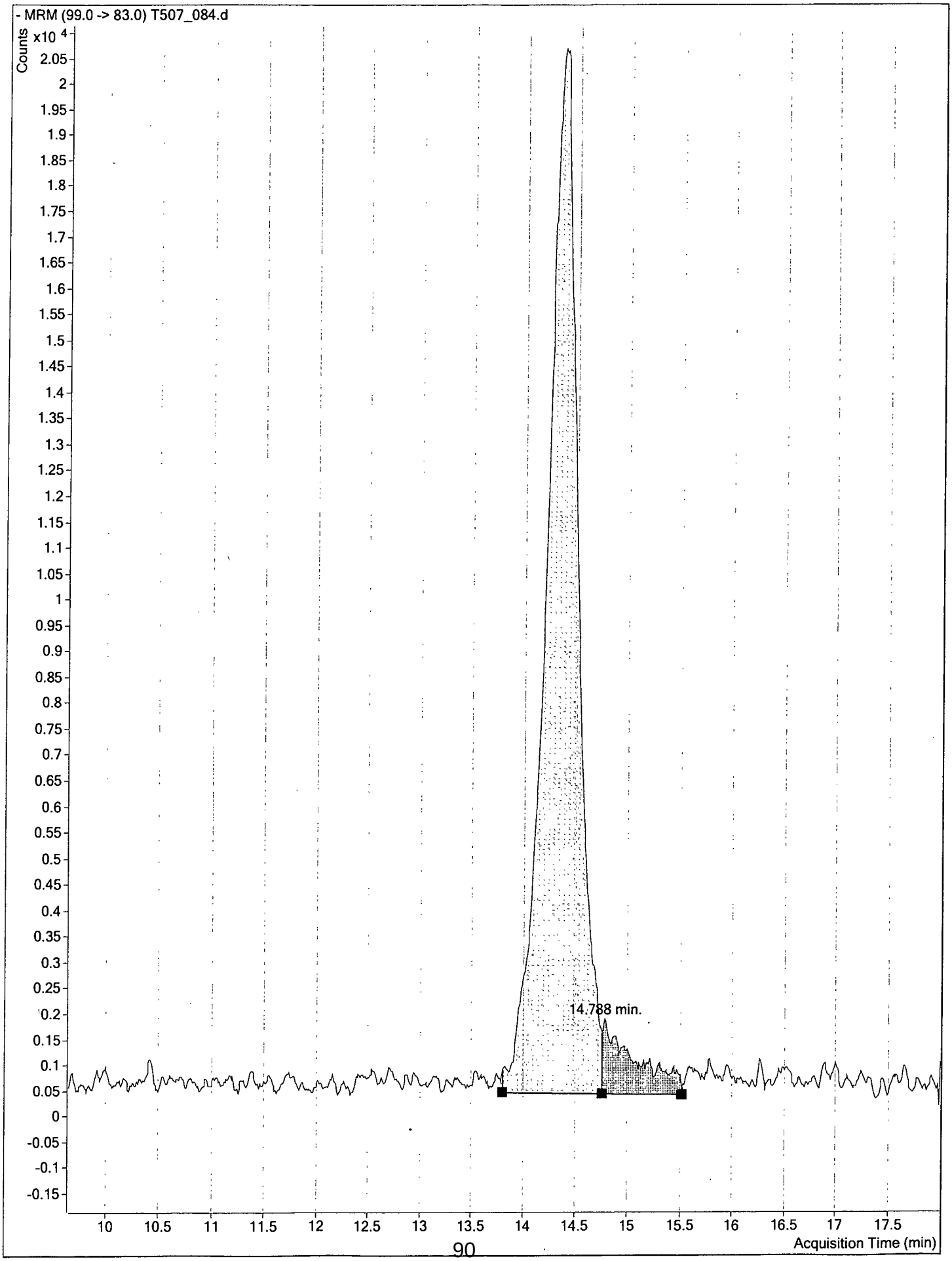


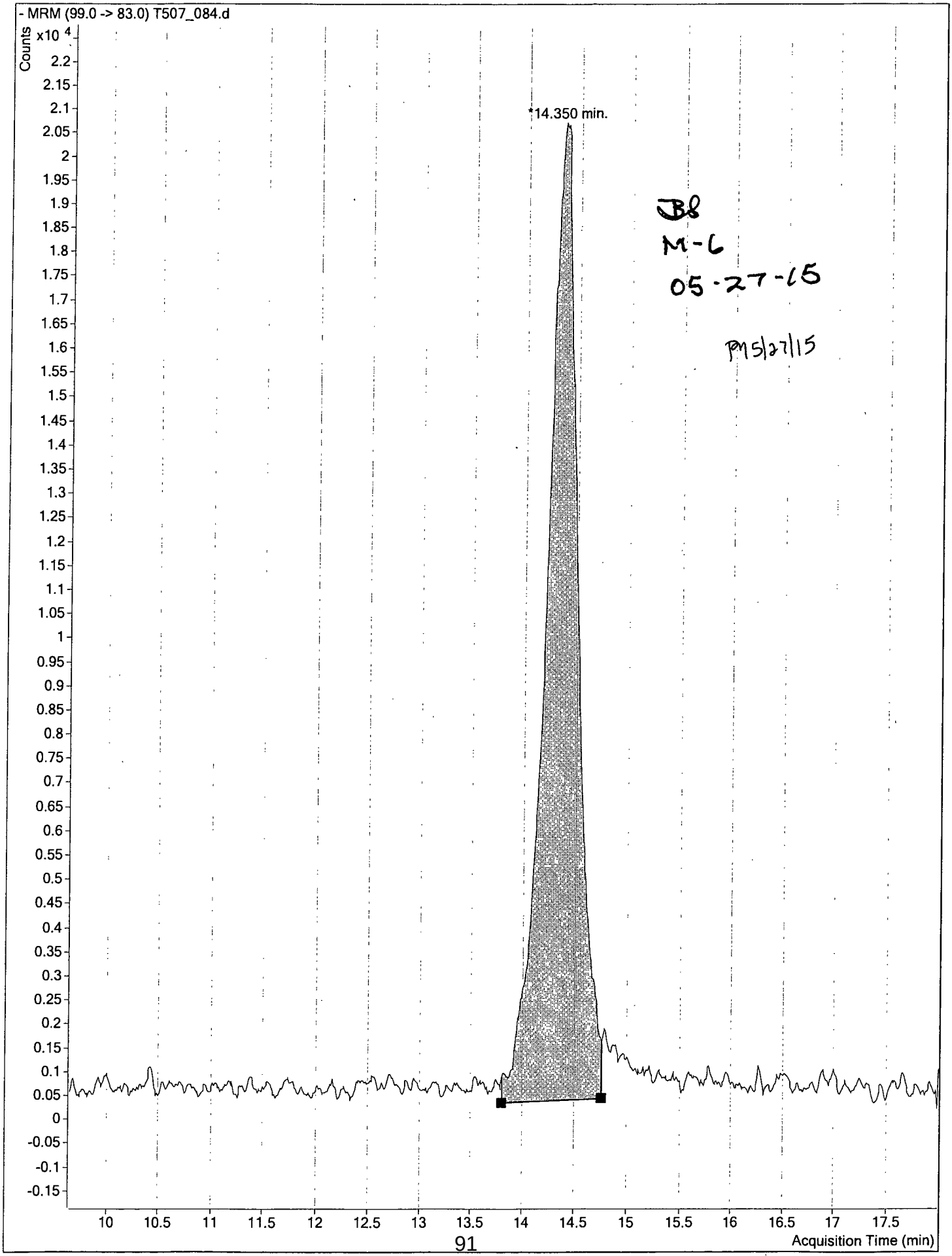
Perchlorate_102








- MRM (99.0 -> 83.0) T507_084.d
Counts
x10 4
14.788 min.
Acquisition Time (min)


- MRM (99.0 -> 83.0) T507_084.d
Counts
x10 4
*14.350 min.
JB
M-6
05-27-15
PM 5/27/15
Acquisition Time (min)

CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T507_085.d

	Date (s) of Analysis From:03/12/15 To:05/08/15 Time (s) of Analysis From:17:52 To:21:25				Date of Analysis: 05/08/15 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	14.35	1.185036	N	6.7
Perchlorate_85	13.70	13.60	13.80	0.391605	14.38	0.358183	N	8.5

FILE ID : TQCK0785.RFB

Data File ID: T507_085.d

Date Injected : 05/08/15

Time Injected : 22:21

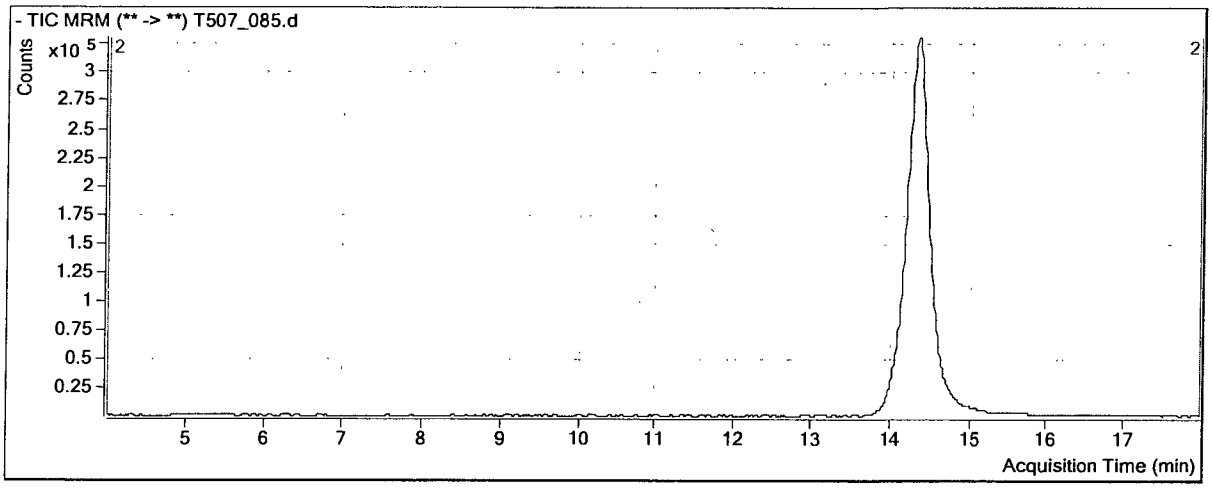
Sample ID : PER_CCV 0.002 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
14.363	4367777	PER_IS_89
14.35	2070390	Perchlorate_83
14.377	625785	Perchlorate_85

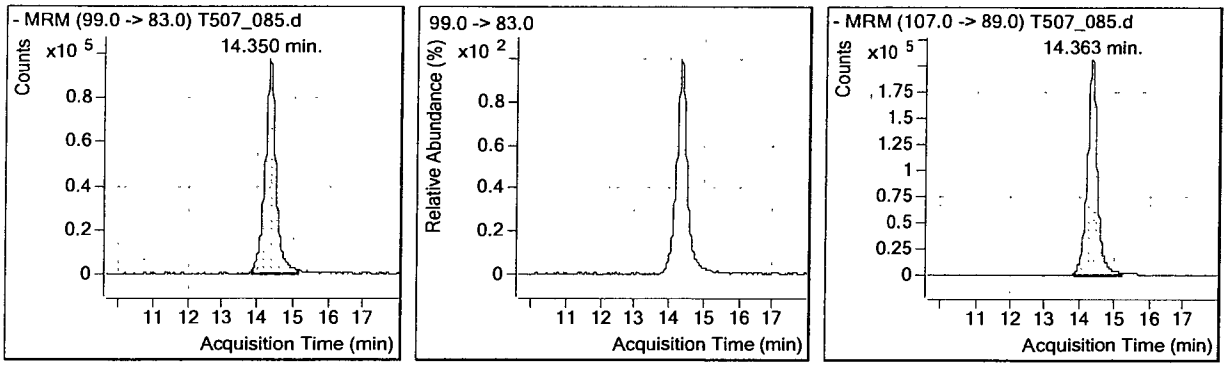
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150507\QuantResults\150507_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T507_085.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/08/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	22:21
ClientID	NA	**Inj Vol**	20

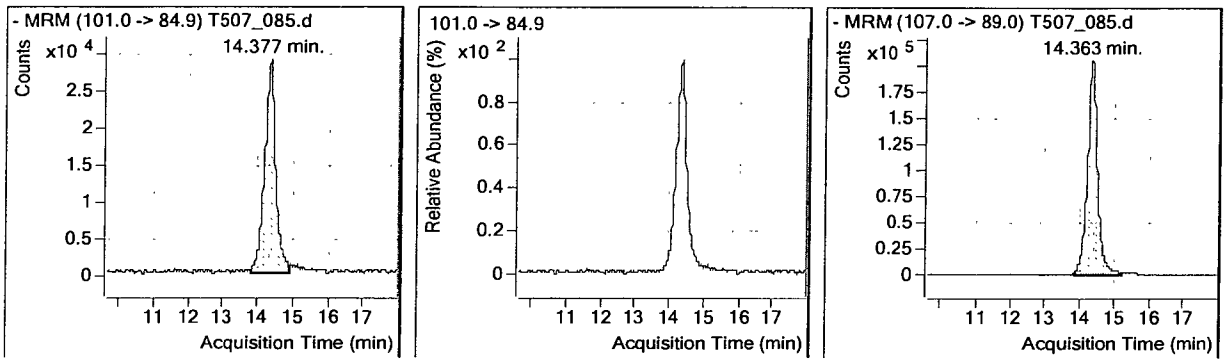


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.350	2070390	4367777
Perchlorate_102	PER_IS_108	14.377	625785	4367777

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T510_002.d

	Date (s) of Analysis From:03/12/15 To:05/10/15 Time (s) of Analysis From:17:52 To:15:45				Date of Analysis: 05/10/15 Time of Analysis: 16:04 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	13.29	1.467329	N	15.5
Perchlorate_85	13.70	13.60	13.80	0.391605	13.28	0.474954	N	21.3

FILE ID : TQCK1002.RFB

Data File ID: T510_002.d

Date Injected : 05/10/15

Time Injected : 16:04

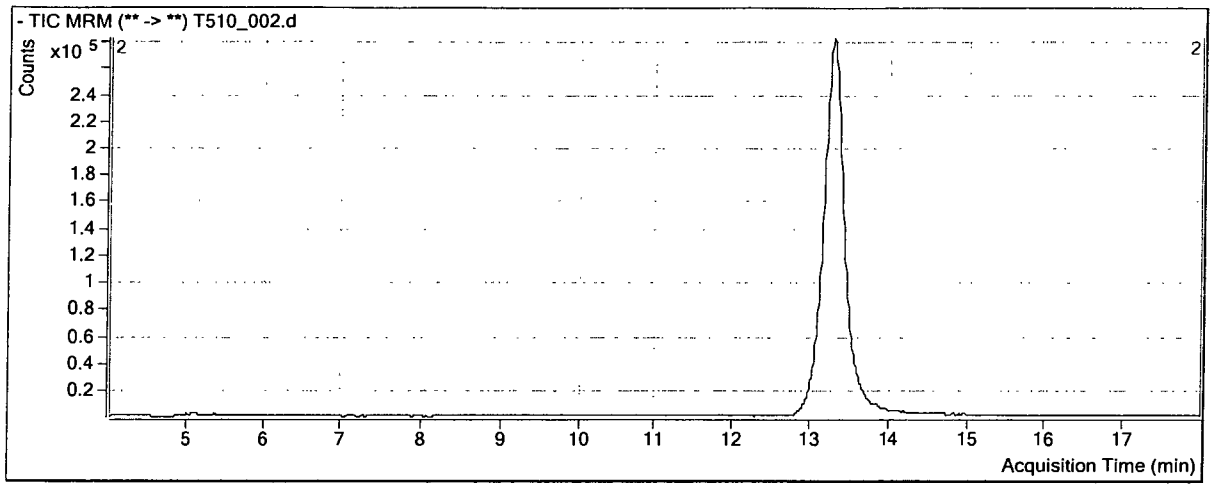
Sample ID : PER_CCV 0.0004 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.273	4535385	PER_IS_89
13.29	532392	Perchlorate_83
13.277	172328	Perchlorate_85

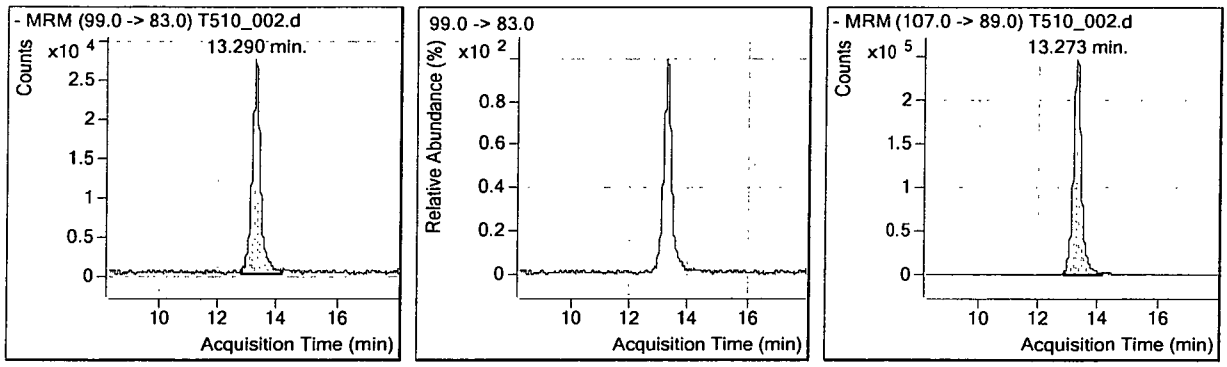
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150510\QuantResults\150510_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T510_002.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/10/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	16:04
ClientID	NA	**Inj Vol**	20

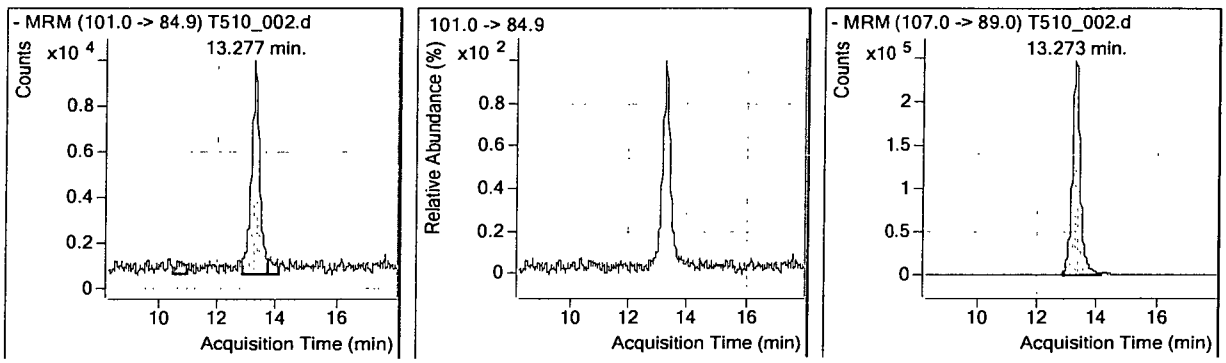


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.290	532392	4535385
Perchlorate_102	PER_IS_108	13.277	172328	4535385

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T510_003.d

	Date (s) of Analysis From:03/12/15 To:05/10/15 Time (s) of Analysis From:17:52 To:15:45				Date of Analysis: 05/10/15 Time of Analysis: 16:23 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	13.27	1.189348	N	6.4
Perchlorate_85	13.70	13.60	13.80	0.391605	13.27	0.367961	N	6.0

FILE ID : TQCK1003.RFB

Data File ID: T510_003.d

Date Injected : 05/10/15

Time Injected : 16:23

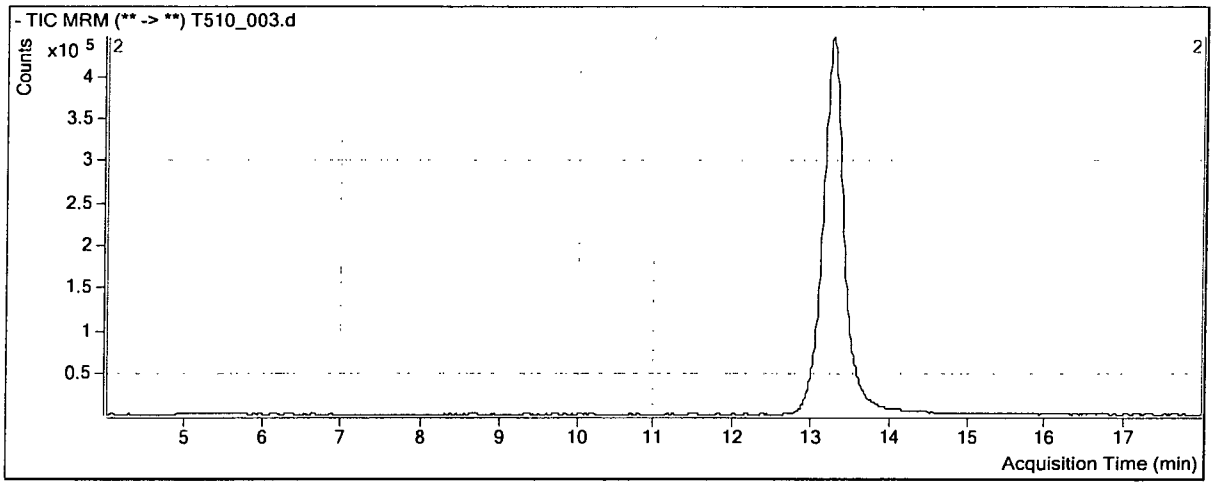
Sample ID : PER_CCV 0.002 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.273	5205304	PER_IS_89
13.27	2476367	Perchlorate_83
13.266	766140	Perchlorate_85

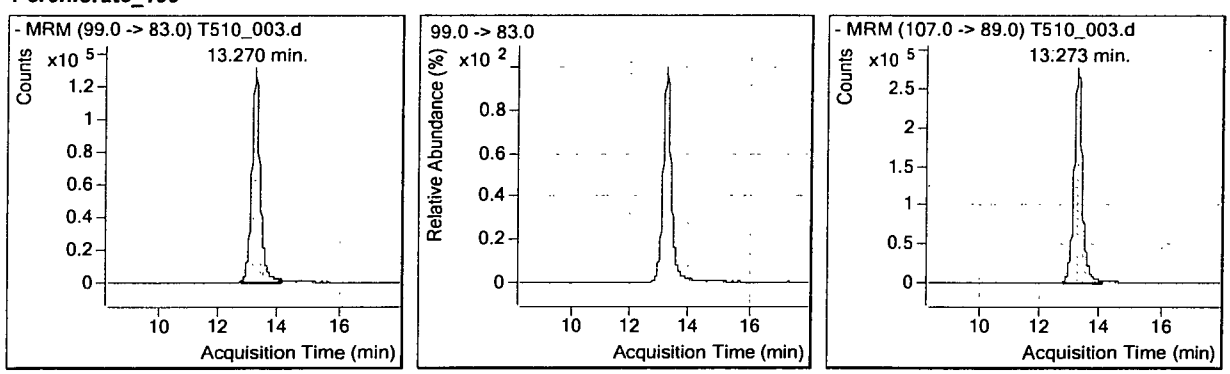
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150510\QuantResults\150510_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T510_003.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/10/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	16:23
ClientID	NA	**Inj Vol**	20

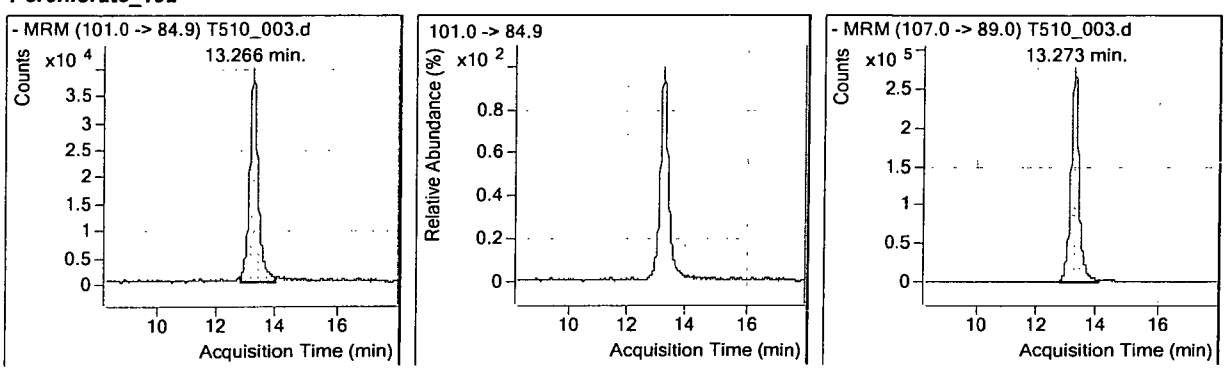


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.270	2476367	5205304
Perchlorate_102	PER_IS_108	13.266	766140	5205304

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T510_059.d

	Date (s) of Analysis From:03/12/15 To:05/11/15 Time (s) of Analysis From:17:52 To:9:20				Date of Analysis: 05/11/15 Time of Analysis: 9:57 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	13.50	1.393587	N	9.7
Perchlorate_85	13.70	13.60	13.80	0.391605	13.48	0.484773	N	23.8

FILE ID : TQCK1059.RFB

Data File ID: T510_059.d

Date Injected : 05/11/15

Time Injected : 9:57

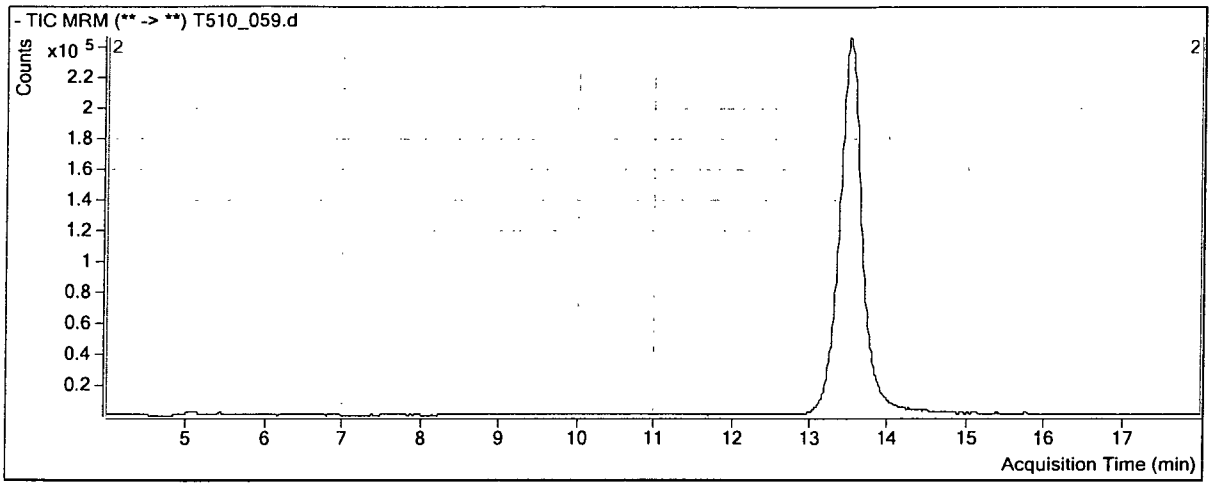
Sample ID : PER_CCV 0.0004 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.497	4430607	PER_IS_89
13.504	493955	Perchlorate_83
13.48	171827	Perchlorate_85

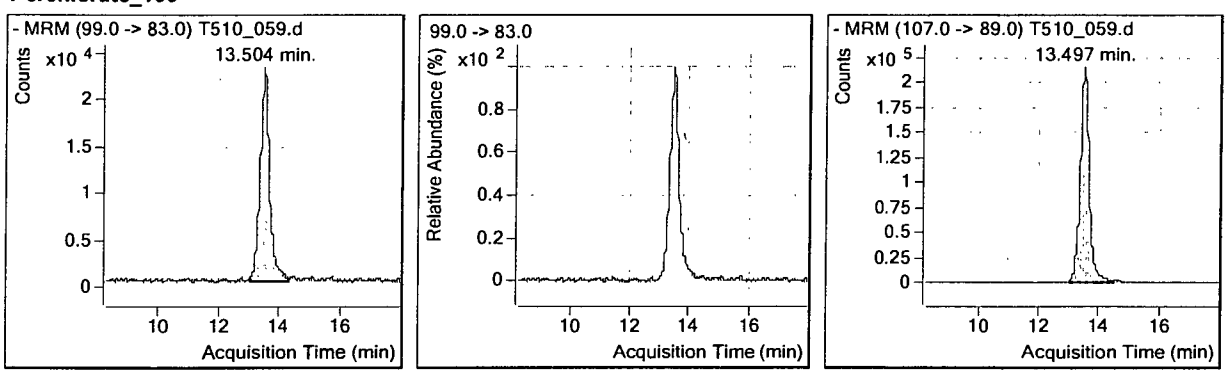
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150510\QuantResults\150510_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T510_059.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/11/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	9:57
ClientID	NA	**Inj Vol**	20

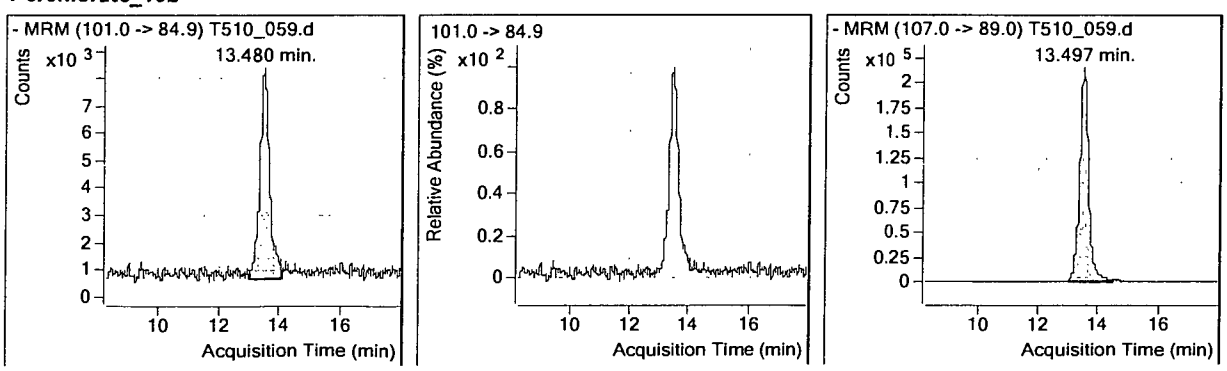


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.504	493955	4430607
Perchlorate_102	PER_IS_108	13.480	171827	4430607

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T510_060.d

	Date (s) of Analysis From:03/12/15 To:05/11/15 Time (s) of Analysis From:17:52 To:9:20				Date of Analysis: 05/11/15 Time of Analysis: 10:16 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	13.50	1.176443	N	7.4
Perchlorate_85	13.70	13.60	13.80	0.391605	13.48	0.372617	N	4.8

FILE ID : TQCK1060.RFB

Data File ID: T510_060.d

Date Injected : 05/11/15

Time Injected : 10:16

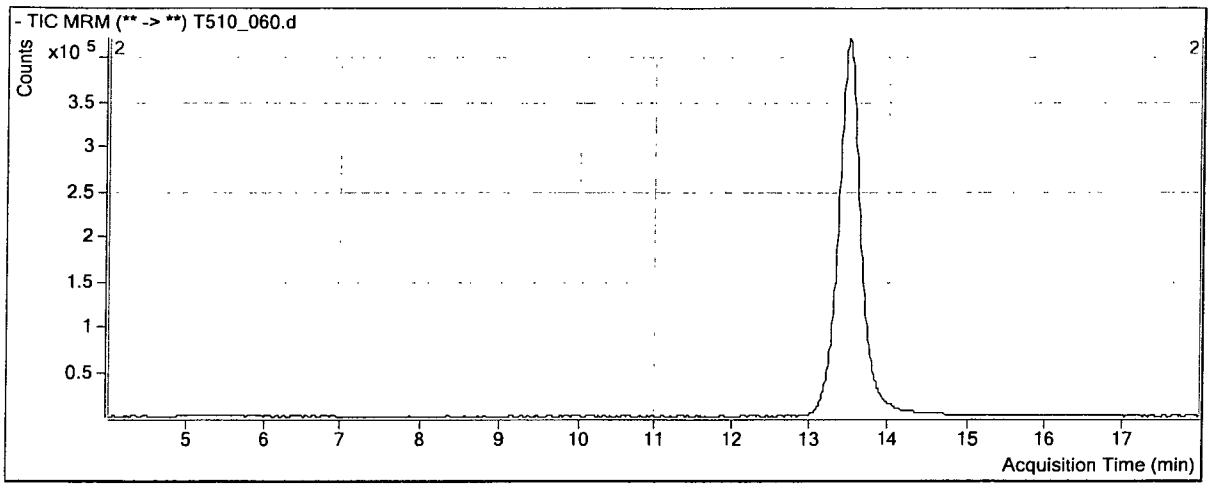
Sample ID : PER_CCV 0.002 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.497	5217587	PER_IS_89
13.504	2455278	Perchlorate_83
13.48	777664	Perchlorate_85

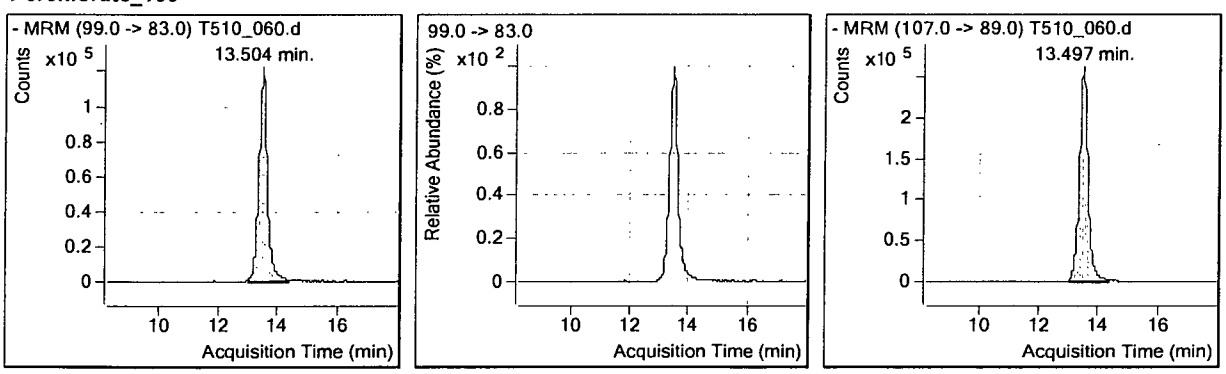
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150510\QuantResults\150510_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T510_060.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/11/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	10:16
ClientID	NA	**Inj Vol**	20

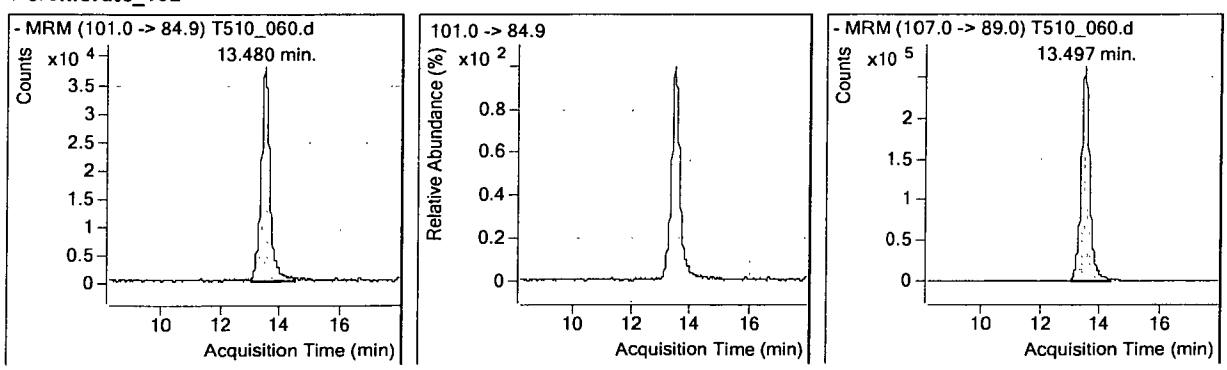


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.504	2455278	5217587
Perchlorate_102	PER_IS_108	13.480	777664	5217587

Perchlorate_100



Perchlorate_102



CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T510_069.d

	Date (s) of Analysis From:03/12/15 To:05/11/15 Time (s) of Analysis From:17:52 To:12:48				Date of Analysis: 05/11/15 Time of Analysis: 13:25 Standard Id: PER_CCV (Standard) 0.0004ug/ml			
COMPOUND	RT	RT WINDOW FROM	TO	AVERAGE RELATIVE RESPONSE FACTOR	RT	CALCULATED RELATIVE RESPONSE FACTOR	QNT Y/N	%D
Perchlorate_83	13.79	13.69	13.89	1.270255	13.81	1.473513	N	16.0
Perchlorate_85	13.70	13.60	13.80	0.391605	13.80	0.507858	N	29.7

FILE ID : TQCK1069.RFB

Data File ID: T510_069.d

Date Injected : 05/11/15

Time Injected : 13:25

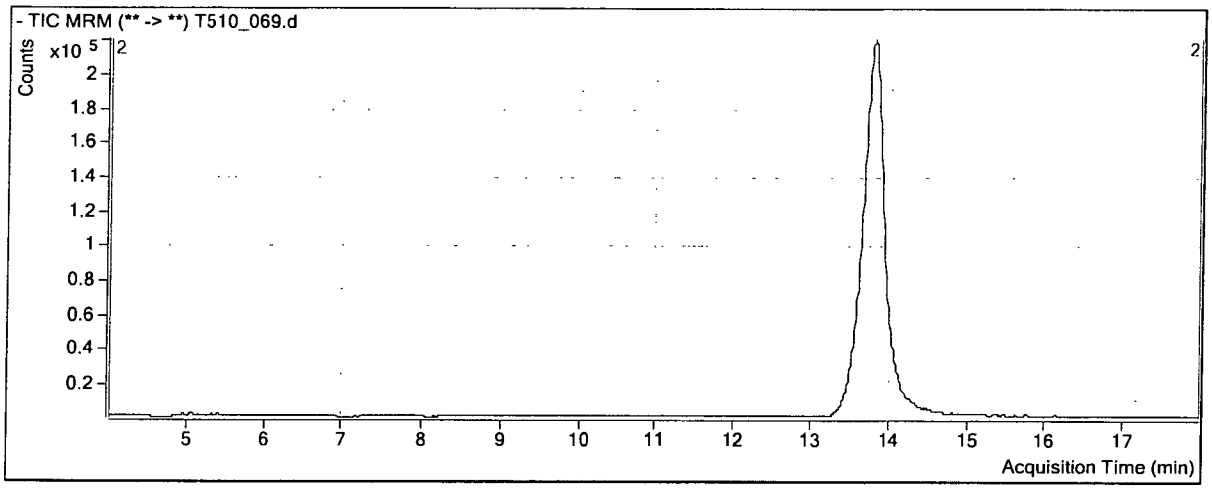
Sample ID : PER_CCV 0.0004 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.793	3986206	PER_IS_89
13.81	469898	Perchlorate_83
13.796	161954	Perchlorate_85

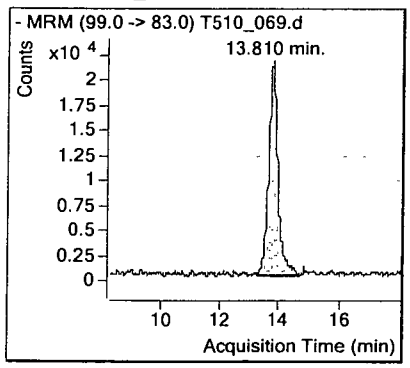
Quantitative Analysis Sample Report

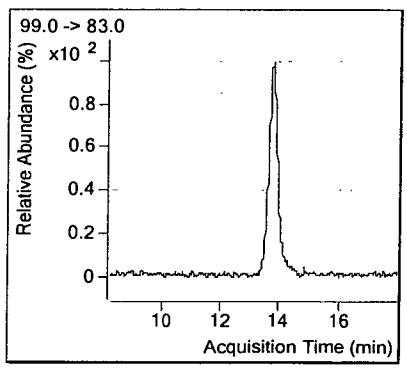
Batch Data Path	D:\MassHunter\Data\150510\QuantResults\150510_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T510_069.d	**Sample Name**	PER_CCV 0.0004 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/11/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	13:25
ClientID	NA	**Inj Vol**	20

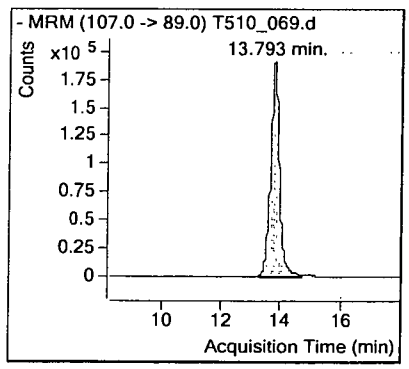


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.810	469898	3986206
Perchlorate_102	PER_IS_108	13.796	161954	3986206

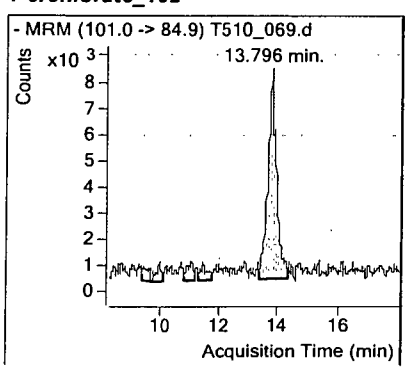
Perchlorate_100

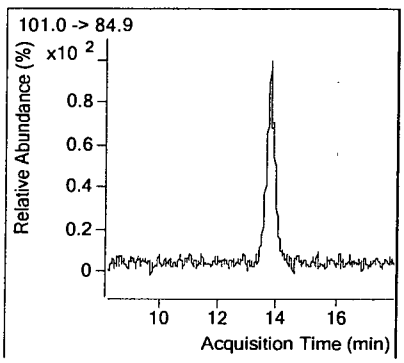


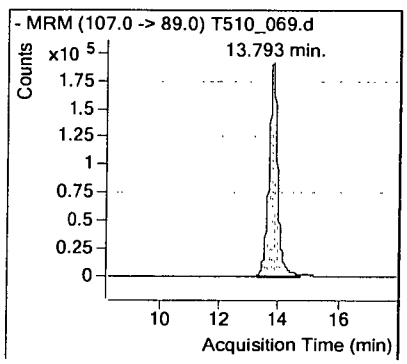




Perchlorate_102







CONTINUING CALIBRATION CHECK SUMMARY FORM

Lab Name: APPL Inc.

Detector ID: Agilent 6460 Triple Quad LC/MS DATA FILE ID: T510_070.d

	Date (s) of Analysis From:03/12/15 To:05/11/15 Time (s) of Analysis From:17:52 To:12:48				Date of Analysis: 05/11/15 Time of Analysis: 13:44 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	13.78	1.170499	N	7.9
Perchlorate_85	13.70	13.60	13.80	0.391605	13.76	0.348567	N	11.0

FILE ID : TQCK1070.RFB

Data File ID: T510_070.d

Date Injected : 05/11/15

Time Injected : 13:44

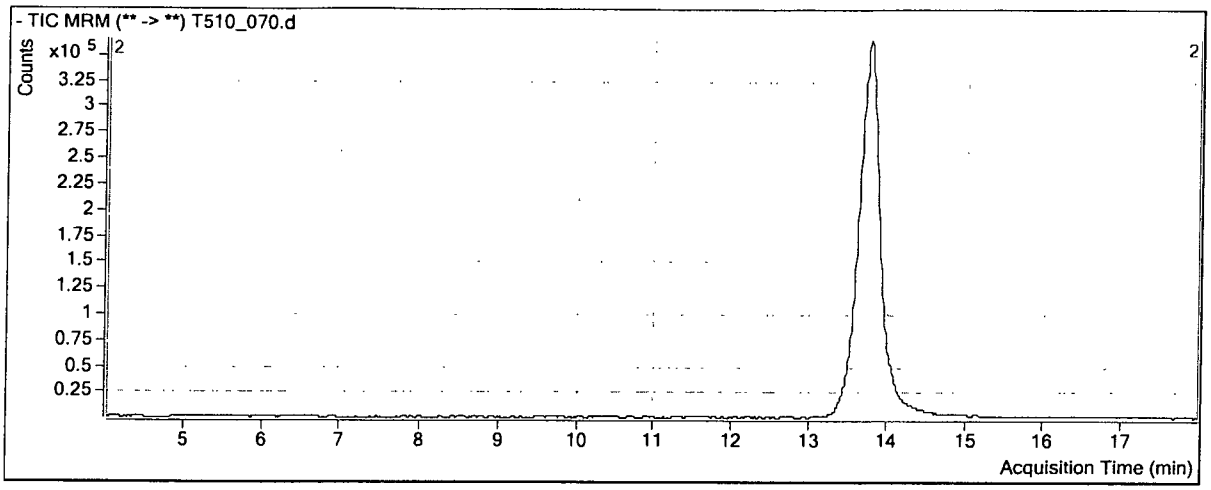
Sample ID : PER_CCV 0.002 ug/ml 05/07/15

Client ID : NA

Retention Time	Area Count Response	Compound_ID Product Ion
13.762	4649258	PER_IS_89
13.779	2176780	Perchlorate_83
13.755	648232	Perchlorate_85

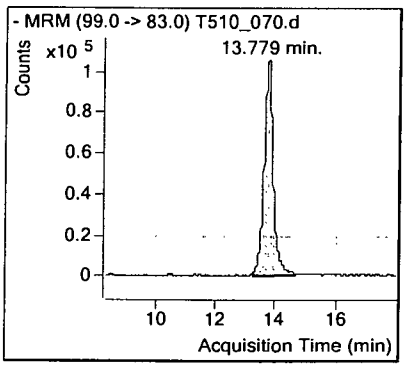
Quantitative Analysis Sample Report

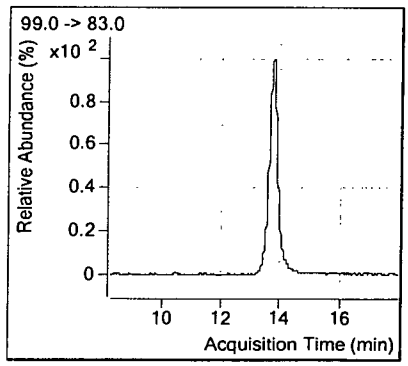
Batch Data Path	D:\MassHunter\Data\150510\QuantResults\150510_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T510_070.d	**Sample Name**	PER_CCV 0.002 ug/ml 05/07/15
Sample Type	Sample	**Acq_Date**	05/11/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	13:44
ClientID	NA	**Inj Vol**	20

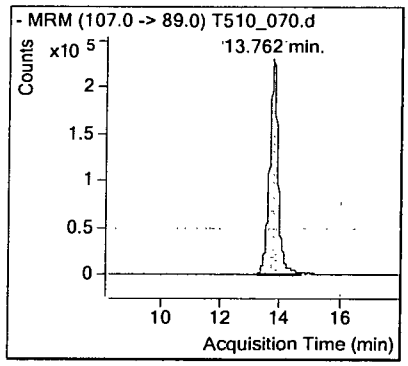


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	13.779	2176780	4649258
Perchlorate_102	PER_IS_108	13.755	648232	4649258

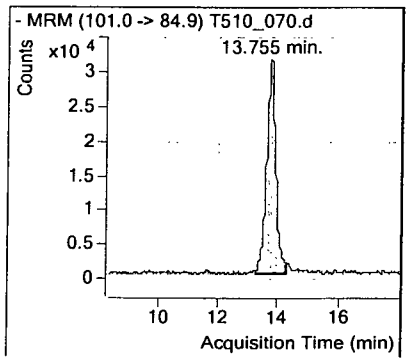
Perchlorate_100

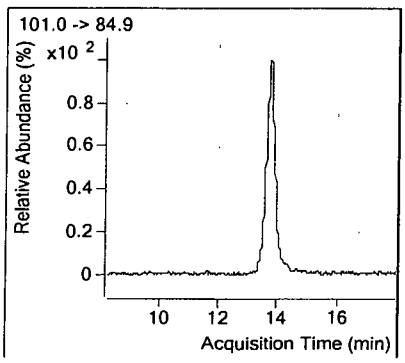


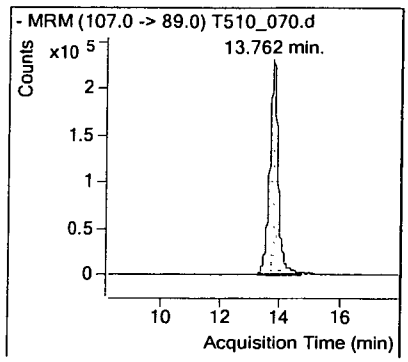




Perchlorate_102







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: **150508W-16135 - 196786**
Batch ID: #6850-150508A

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	PERCHLORATE	0.400 U	0.60	0.400	0.200	ug/L	05/08/15	05/08/15

Quant Method: QTLMFL2
Run #: T507_080.D
Instrument: AGIL_6460
Sequence: TQ050715
Initials: MP

GC SC-Blank-REG MDLs
Printed: 05/11/15 11:27:43 AM

Data File ID: T507_080.d

Date Injected : 05/08/15

Time Injected : 20:48

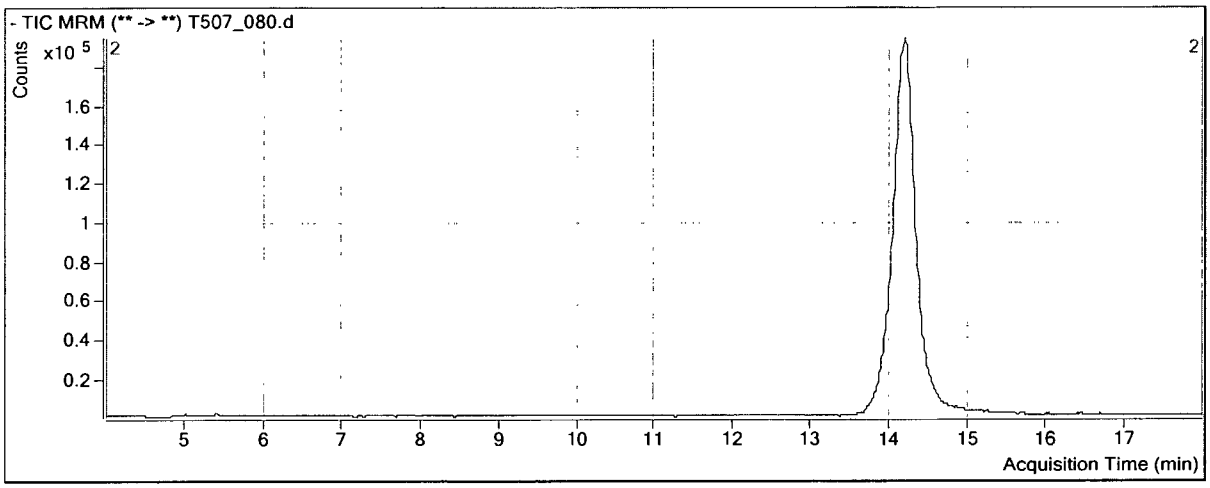
Sample ID : 150508WBLKA 1052.6 DF 05/08/15

Client ID : LAB_CNTL_W_BLKA

Retention Time	Area Count Response	Compound_ID Product Ion				
14.221	4053614	PER_IS_89				
14.635	2451	Perchlorate_83	(2451 * 0.0050) / (1.27 * 4053614.00) *	1052.60 =	0.002505 ppb	
14.622	1531	Perchlorate_85	(1531 * 0.0050) / (0.39 * 4053614.00) *	1052.60 =	0.005076 ppb	

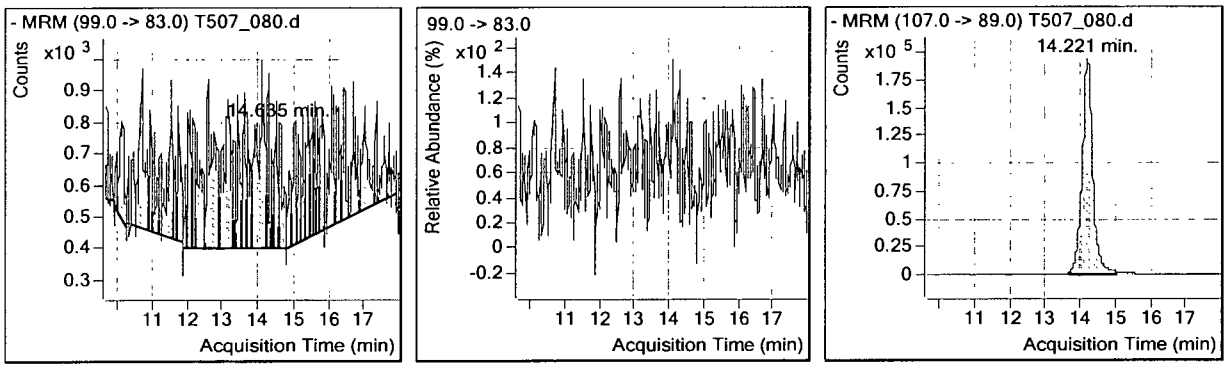
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150507\QuantResults\150507_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T507_080.d	**Sample Name**	150508WBLKA 1052.6 DF 05/08/15
Sample Type	Sample	**Acq_Date**	05/08/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	20:48
ClientID	LAB_CNTL_W_BLKA	**Inj Vol**	20

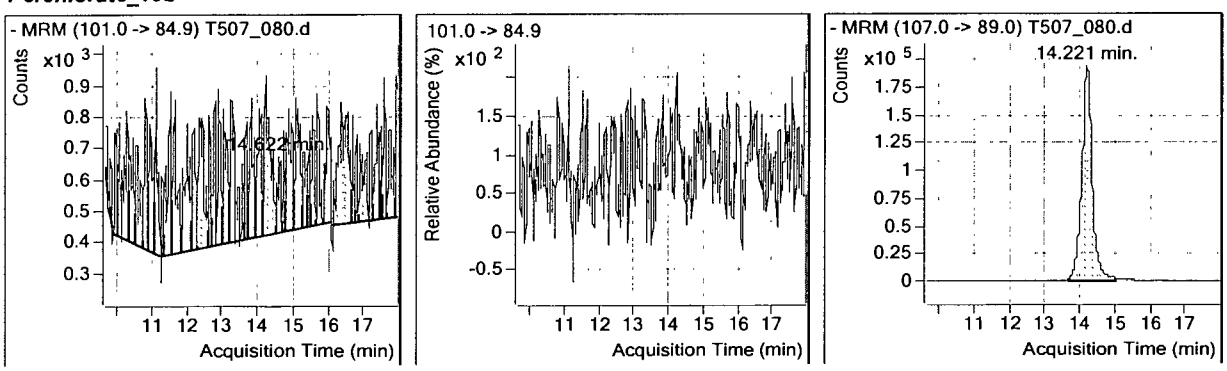


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.635	2451	4053614
Perchlorate_102	PER_IS_108	14.622	1531	4053614

Perchlorate_100



Perchlorate_102



Laboratory Control Spike Recovery
Perchlorate

APPL ID: **150508W-16135 LCS - 196786**
Batch ID: #6850-150508A

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	0.604	101	80-120

Comments:

Primary	SPK
Quant Method :	QTLMFL2
Extraction Date :	05/08/15
Analysis Date :	05/08/15
Instrument :	AGIL_6460
Run :	T507_078.D
Initials :	MP

Printed: 05/11/15 11:27:46 AM
APPL Standard LCS

Data File ID: T507_078.d

Date Injected : 05/08/15

Time Injected : 20:11

Sample ID : 150508WA_LCS-1 1052.6 DF 05/08/15

Client ID : LAB_CNTL_W_SPKA

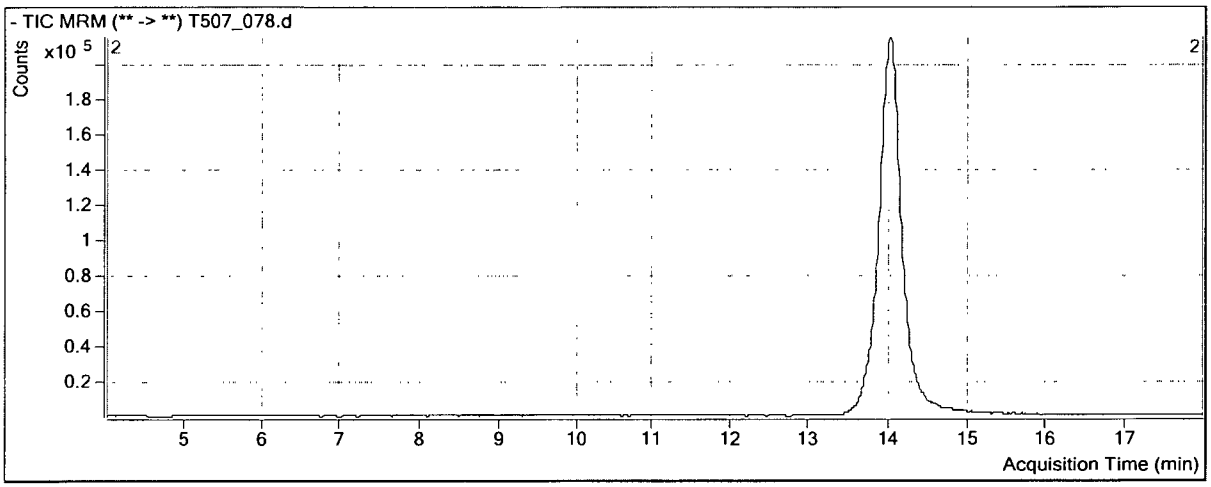
Retention Time	Area Count Response	Compound_ID Product Ion				
14.037	3779372	PER_IS_89				
14.065	550957	Perchlorate_83	(550957 * 0.0050) / (1.27 * 3779372.00) *	1052.60 =	0.604005 ppb	
14.071	171260	Perchlorate_85	(171260 * 0.0050) / (0.39 * 3779372.00) *	1052.60 =	0.609006 ppb	

$$\frac{(1052.6)(550957)(0.005)}{(1.270255)(3779372)} = 0.604005$$

4/4/15
JM

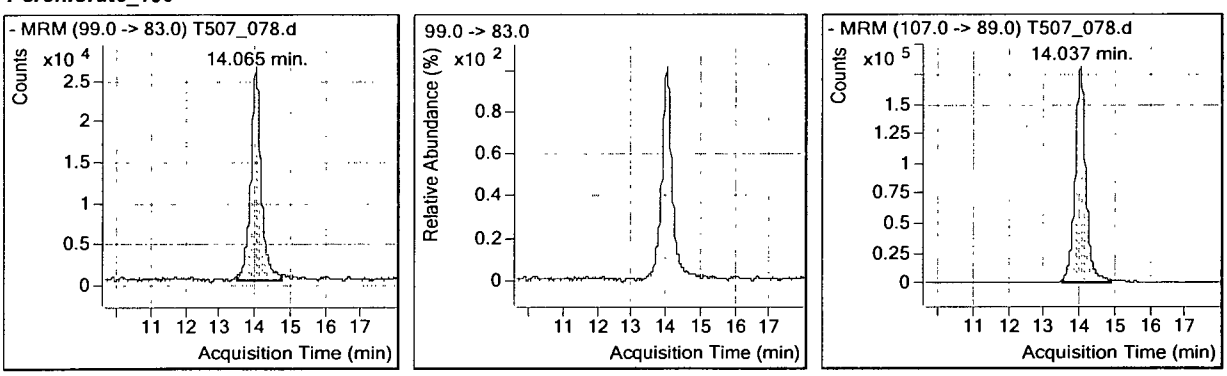
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150507\QuantResults\150507_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T507_078.d	**Sample Name**	150508WA_LCS-1 1052.6 DF 05/08/15
Sample Type	Sample	**Acq_Date**	05/08/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	20:11
ClientID	LAB_CNTL_W_SPKA	**Inj Vol**	20

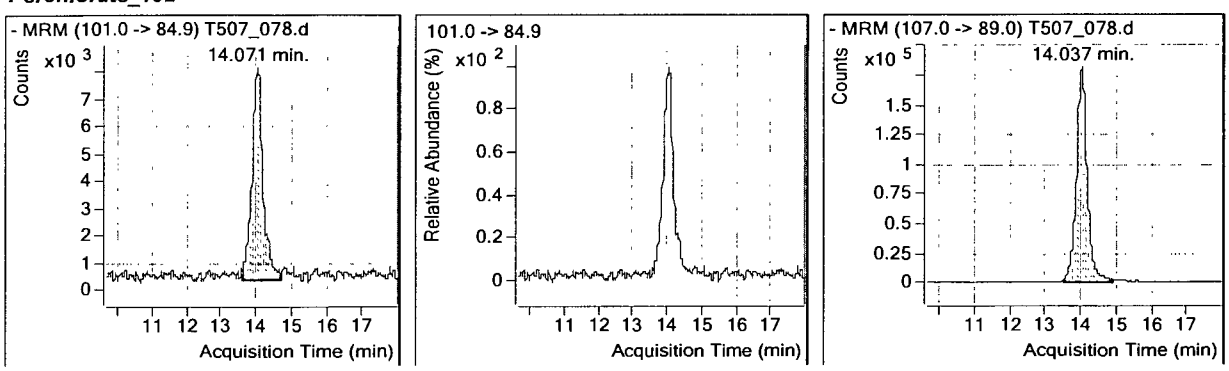


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	14.065	550957	3779372
Perchlorate_102	PER_IS_108	14.071	171260	3779372

Perchlorate_100



Perchlorate_102



Interferrence Check Sample

Perchlorate EPA 6850 Water

APPL ID: 150508W-16135 ICS-196786
Batch ID: #6850-150508A

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	0.593	98.8%	70-130

Comments:

Quant Method:	QTLMFL2
Extraction Date:	05/08/15
Analysis Date:	05/08/15
Instrument:	AGIL_6560
Run:	T507_079.D
Initials:	RP

Data File ID: T507_079.d

Date Injected : 05/08/15

Time Injected : 20:29

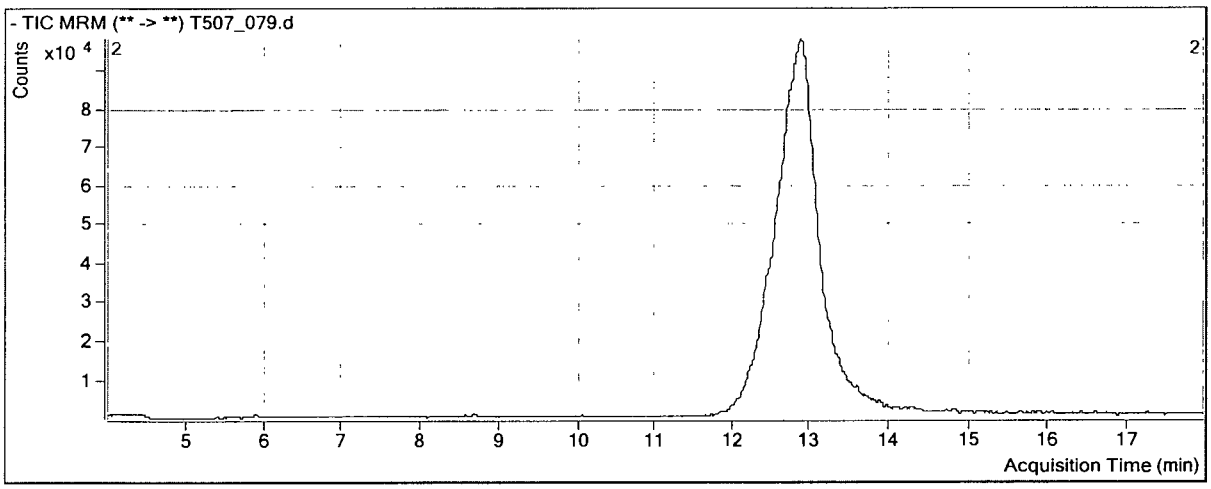
Sample ID : 150508W_ICSA 1052.6 DF 05/08/15

Client ID : LAB_CNTL_W_ICSA

Retention Time	Area Count Response	Compound_ID Product Ion				
12.917	3183346	PER_IS_89				
12.903	455782	Perchlorate_83	(455782 * 0.0050) / (1.27 * 3183346.00) *	1052.60 =	0.593220 ppb	
12.828	161743	Perchlorate_85	(161743 * 0.0050) / (0.39 * 3183346.00) *	1052.60 =	0.682852 ppb	

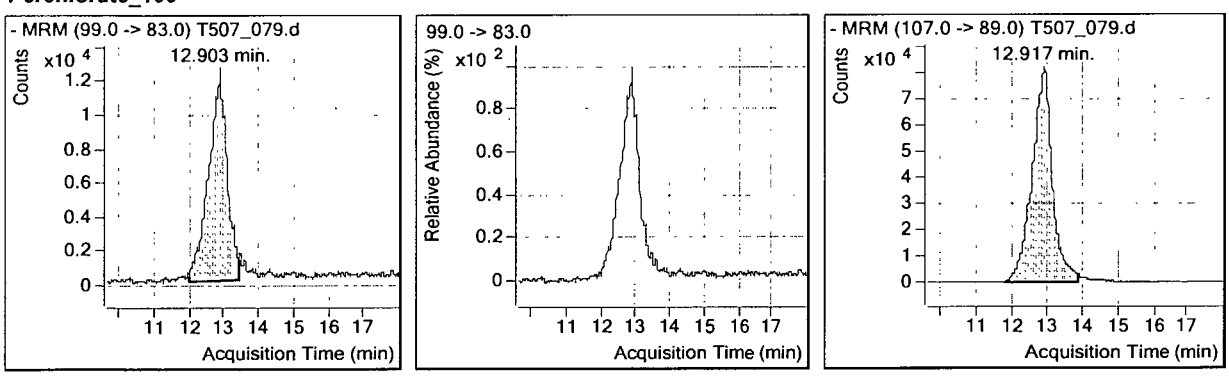
Quantitative Analysis Sample Report

Batch Data Path	D:\MassHunter\Data\150507\QuantResults\150507_A_MI.batch.bin		
Instrument	LCMS QQQ	**Operator**	ba
Data File	T507_079.d	**Sample Name**	150508W_ICSA 1052.6 DF 05/08/15
Sample Type	Sample	**Acq_Date**	05/08/15
Acq Method	6460_ESI_PER_N_NEWER_K'_COLUMN.m	**Acq Time**	20:29
ClientID	LAB_CNTL_W_ICSA	**Inj Vol**	20

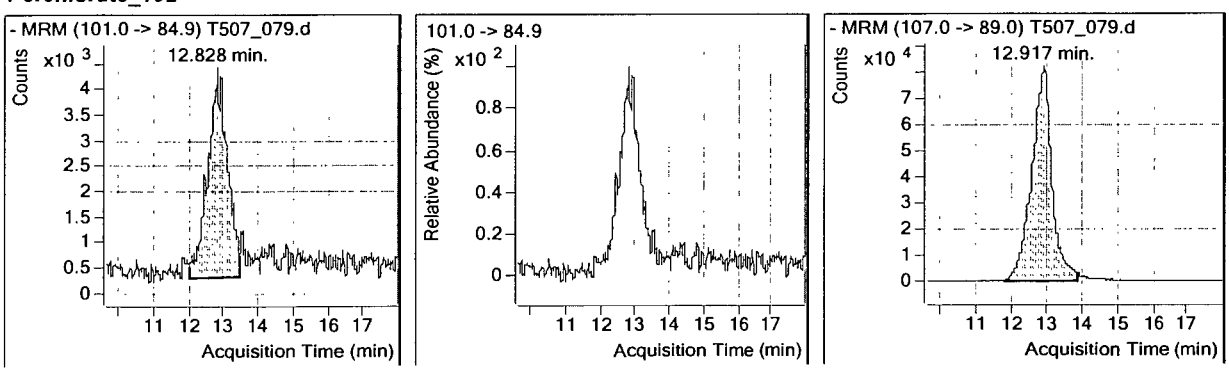


Compound	ISTD	RT	Resp	ISTD Resp
Perchlorate_100	PER_IS_108	12.903	455782	3183346
Perchlorate_102	PER_IS_108	12.828	161743	3183346

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.

LC/MS STANDARD PREP LOG# 100 PAGE# 21

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

PER_CCV 0.0004 µg/ml 04-20-15: BL 04-20-15
PER_SS 0.010 µg/ml 08-28-14
took 0.040 ml and added to
0.910 ml Laboratory Source DI-H2O
that had previously received
0.050 ml 02SI $^{18}O_4$ Perchlorate
100 µg/L lot 1059192-33479

PER_CCV 0.002 µg/ml 04-20-15:
PER_SS 0.010 µg/ml 08-28-14
took 0.200 ml and added to
0.750 ml Laboratory Source DI-H2O
that had previously received
0.050 ml 02SI $^{18}O_4$ Perchlorate
100 µg/L lot 1059192-33479

040 LC/MS STANDARD PREP LOG# 105 PAGE 40

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

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

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

PER. CCV 0.0004 µg/ml 05:07-15: JJ
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.

076

LC/MS STANDARD PREP LOG# 105 PAGE# 76

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

GC/MS STANDARD PREP LOG 105 PAGE 77

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

NOTE: THE FOLLOWING DOCUMENTATION 3/6
WAS PERFORMED AS DATED: 06-02-15 06-02-15

AZ16057_W01 10526315.8 DF 05-07-15_5/10: 3/6
AZ16057_W01 1052631.6 DF 05-07-15_5/10 05-10-15
TOOK 0.050 ml AND ADDED TO
0.450 ml PER_IS_50:50 0.005 µg/ml
05-10-15

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

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

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

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

078

LC/MS STANDARD PREP LOG# 105 PAGE# 78

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT#	DATE/ INITIALS
NOTE: THE FOLLOWING DOCUMENTATION							JR
WAS PERFORMED AS DATED: JR 06.02.15							06.02.15
AZ16061-W01 10526.3 DF 05-07-15_5/10:							JR
AZ16061-W01 10526 DF 05-07-15							05.10.15
TOOK 0.050 ml AND ADDED TO							
0.450 ml PER_IS_50:50 0.005 µg/ml							
05-10-15							
AZ16061-W01 105263.2 DF 05-07-15_5/10:							
AZ16061-W01 10526.3 DF 05-07-15_5/10							
TOOK 0.050 ml AND ADDED TO							
0.450 ml PER_IS_50:50 0.005 µg/ml							
05-10-15							
AZ16061-W01 10526316 DF 05-07-15_5/10:							
AZ16061-W01 105263.2 DF 05-07-15_5/10							
TOOK 0.050 ml AND ADDED TO							
0.450 ml PER_IS_50:50 0.005 µg/ml							
05-10-15							
AZ16061-W01 10526315.8 DF 05-07-15_5/10							
AZ16061-W01 10526316 DF 05-07-15_5/10							
TOOK 0.050 ml AND ADDED TO							
0.450 ml PER_IS_50:50 0.005 µg/ml							
05-10-15							

LC/MS STANDARD PREP LOG# 105 PAGE 79

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL. EN LOT # 079	DATE INITIALS

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

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

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

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

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

AZ16062-W01-MS-1 10526.3 DF 05-07-15_5/10
AZ16062-W01-MS-1 1052.6 DF 05-07-15
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005µg/ml 05-10-15

080

LC/MS STANDARD PREP LOG# 105 PAGE# 80

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT#	DATE INITIALS
NOTE: THE FOLLOWING DOCUMENTATION WAS PERFORMED AS DATED: JB 06-02-15							JB 06-02-15
AZ16062_W01_MS-1	105263.2	DF		05-07-15	5/10		JB
AZ16062_W01_MS-1	10526.3	DF		05-07-15	5/10		05-10
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005 µg/ml 05-10-15							
AZ16062_W01_MS-1	105263.6	DF		05-07-15	5/10		
AZ16062_W01_MS-1	105263.2	DF		05-07-15	5/10		
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005 µg/ml 05-10-15							
AZ16062_W01_MS-1	10526315.8	DF		05-07-15	5/10		
AZ16062_W01_MS-1	105263.6	DF		05-07-15	5/10		
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005 µg/ml 05-10-15							
AZ16062_W01_MSD-1	10526.3	DF		05-07-15	5/10		
AZ16062_W01_MSD-1	1052.6	DF		05-07-15			
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005 µg/ml 05-10-15							
AZ16062_W01_MSD-1	105263.2	DF		05-07-15	5/10		
AZ16062_W01_MSD-1	10526.3	DF		05-07-15	5/10		
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005 µg/ml 05-10-15							

GC/MS STANDARD PREP LOG# 105 PAGE# 81

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

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

15

AZ16062-W01-MSD-1 1052631.6 DF 05-07-15-5/10 JH

JH AZ16062-W01-MSD-1 105263.2 DF 05-07-15-5/10 05-10-15

10/15 TOOK 0.050 ml AND ADDED TO 0.450 ml PER-IS-50:50 0.005 µg/ml 05-10-15

AZ16062-W01-MSD-1 10526315.8 DF 05-07-15-5/10

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

134

AZ16058-W01 10526.3 DF 05-07-15-5/10:

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

AZ16058-W01 105263.2 DF 05-07-15-5/10:

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

AZ16058-W01 1052631.6 DF 05-07-15-5/10:

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

LC/MS STANDARD PREP LOG: 105 PAGE 82

082

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

GCMS STANDARD PREP LOG# 105 PAGE 83

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STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOL. CONC. LOT #	DATE INITIALS
NOTE: THE FOLLOWING DOCUMENTATION							JB
WAS PERFORMED AS DATED ~~JB~~							06-02-15 06-02-15
AZ16056-W01 105263.2 DF 05-07-15 ~~5/10~~ 5/11:							JB
AZ16056-W01 10526.3 DF 05-07-15 5/~~10~~ 11							05-11-15
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005 µg/ml 05-10-15							
AZ16056-W01 1052631.6 DF 05-07-15 ~~5/10~~ 5/11:							
AZ16056-W01 105263.2 DF 05-07-15 5/~~10~~ 11							
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005 µg/ml 05-10-15							
AZ16136-W01 1210.4 DF 05-08-15 5/11:							
AZ16136-W01 1052.6 DF 05-08-15							
TOOK 0.050 ml AND ADDED TO 0.150 ml PER_IS_50150 0.005 µg/ml 05-10-15							
AZ16237-W01 ~~1052.6~~ 10526.3 ~~JB~~ DF 05-12-15 5/13:							JB
AZ16237-W01 1052.6 DF 05-12-15							05-13-15
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005 µg/ml 05-10-15							
AZ16237-W01 105263.2 DF 05-12-15 5/13							
AZ16237-W01 10526.3 DF 05-12-15 5/13							
TOOK 0.050 ml AND ADDED TO 0.450 ml PER_IS_50:50 0.005 µg/ml 05-10-15							

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LC/MS STANDARD PREP LOG# 105 PAGE# 84

STANDARD	INITIAL CONC	SOURCE DATE	AMOUNT	FINAL VOLUME	FINAL CONC	SOLVENT LOT #	DATE & INITIALS

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

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

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

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

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

VOMS STANDARD PREP LOG# 105 PAGE 85

085

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

_HPL6850

Organic Extraction Worksheet

Method	EPA 6850 HPLC Perchlorate Extraction	Extraction Set	150508A	Extraction Method	HPL6850	Units	mL

Spiked ID 1	Perchlorate Spike Mix 0.1ppm 8-28-14 EXP 7-31-15		Surrogate ID 1	
Spiked ID 2	Mix Anions 25,000ppm 2-10-15 EXP 2-10-16		Surrogate ID 2	
Spiked ID 3			Surrogate ID 3	
Spiked ID 4			Surrogate ID 4	
Spiked ID 5			Surrogate ID 5	
Spiked ID 6			Sufficient Vol for Matrix QC:	NA
Spiked ID 7			Ext. Start Time:	05/08/15 13:36
Spiked ID 8			Ext. End Time:	05/08/15 13:38
			GC Requires Extract By:	

pH1			Water Bath Temp Criteria	
pH2				
pH3				

Spiked By: CFM **Date** 05/08/15 1:35:00 PM **Witnessed By:** DL **Date** 05/08/15 1:35:00 PM

	Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
1	150508A Blk				NA	NA equip	5ML	5ML	NA	05/08/15 13:36	
2	150508A LCS-1		0.030	1	NA	NA equip	5ML	5ML	NA	05/08/15 13:36	
3	150508A ICS		0.030/0.060	1/2	NA	NA equip	5ML	5ML	NA	05/08/15 13:36	
4	AZ16135	AZ16135W01			NA	NA equip	5ML	5ML	NA	05/08/15 13:36	76375 - 24 HOURS RUSH
5	AZ16136	AZ16136W01			NA	NA equip	5ML	5ML	NA	05/08/15 13:36	76375 - 24 HOURS RUSH

PY 5/8/15

Solvent and Lot#	
Millipore Water	5-8-15

Extraction COC Transfer	
Extraction lab employee Initials	CFM
GC analyst's initials	PY
Date	5/8/15
Time	14:30
Refrigerator	NA

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

Modified	05/08/15 1:40:35 PM

Reviewed By: PY **Date** 5/8/15

METHOD 6850 INJECTION LOG: 03/12/15, 05/07/15, 05/10/15

DETECTOR ID: Agilent 6460 Triple Quad LC/MS

SAMPLE INJECTION ID:	DATA FILE ID:	INJECTION DATE/TIME
PERCHLORATE 0.0002 ug/ml 11/11/14	T312_003.d	03/12/15 17:52
PERCHLORATE 0.0004 ug/ml 11/11/14	T312_004.d	03/12/15 18:11
PERCHLORATE 0.001 ug/ml 11/11/14	T312_005.d	03/12/15 18:29
PERCHLORATE 0.002 ug/ml 11/11/14	T312_006.d	03/12/15 18:48
PERCHLORATE 0.005 ug/ml 11/11/14	T312_007.d	03/12/15 19:07
PERCHLORATE 0.010 ug/ml 08/27/14	T312_008.d	03/12/15 19:25
PER_SS 0.0004 ug/ml 11/11/14	T312_010.d	03/12/15 20:02
PER_SS 0.002 ug/ml 11/11/14	T312_011.d	03/12/15 20:21
PER_CCV_1 0.0004 ug/ml 11/11/14	T312_013.d	03/12/15 20:58
PER_CCV_1 0.002 ug/ml 11/11/14	T312_014.d	03/12/15 21:17
PER_CCV 0.0004 ug/ml 05/07/15	T507_002.d	05/07/15 20:21
PER_CCV 0.002 ug/ml 05/07/15	T507_003.d	05/07/15 20:40
PER_CCV 0.0004 ug/ml 05/07/15	T507_070.d	05/08/15 17:42
PER_CCV 0.002 ug/ml 05/07/15	T507_071.d	05/08/15 18:00
150508WA_LCS-1 1052.6 DF 05/08/15	T507_078.d	05/08/15 20:11
150508W_ICSA 1052.6 DF 05/08/15	T507_079.d	05/08/15 20:29
150508WBLKA 1052.6 DF 05/08/15	T507_080.d	05/08/15 20:48
AZ16135_W01 1052.6 DF 05/08/15	T507_081.d	05/08/15 21:06
PER_CCV 0.0004 ug/ml 05/07/15	T507_084.d	05/08/15 22:02
PER_CCV 0.002 ug/ml 05/07/15	T507_085.d	05/08/15 22:21
PER_CCV 0.0004 ug/ml 05/07/15	T510_002.d	05/10/15 16:04
PER_CCV 0.002 ug/ml 05/07/15	T510_003.d	05/10/15 16:23
PER_CCV 0.0004 ug/ml 05/07/15	T510_059.d	05/11/15 9:57
PER_CCV 0.002 ug/ml 05/07/15	T510_060.d	05/11/15 10:16
AZ16136_W01 4210.5 DF 05/08/15_5/11	T510_067.d	05/11/15 12:48
PER_CCV 0.0004 ug/ml 05/07/15	T510_069.d	05/11/15 13:25
PER_CCV 0.002 ug/ml 05/07/15	T510_070.d	05/11/15 13:44