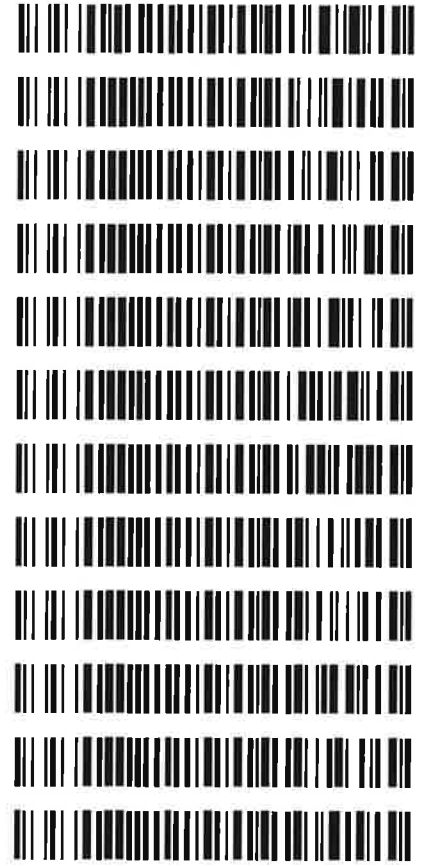


Worklist: 2960

<u>LAB CASE</u>	<u>ITEM</u>	<u>TASK ID</u>	<u>DESCRIPTION</u>
M2019-0518	4	142147	AM 27 Blood THC Quant by LC-QQQ
P2019-0331	1	142148	AM 27 Blood THC Quant by LC-QQQ
P2019-0347	1	142149	AM 27 Blood THC Quant by LC-QQQ
P2019-0393	1	142150	AM 27 Blood THC Quant by LC-QQQ
P2019-0394	3	142151	AM 27 Blood THC Quant by LC-QQQ
P2019-0401	1	142158	AM 27 Blood THC Quant by LC-QQQ
P2019-0420	1	142152	AM 27 Blood THC Quant by LC-QQQ
P2019-0446	1	142153	AM 27 Blood THC Quant by LC-QQQ
P2019-0447	1	142154	AM 27 Blood THC Quant by LC-QQQ
P2019-0448	1	142155	AM 27 Blood THC Quant by LC-QQQ
P2019-0449	1	142156	AM 27 Blood THC Quant by LC-QQQ
P2019-0451	1	142157	AM 27 Blood THC Quant by LC-QQQ



TS

AM# 27: Quantitation of THC and Metabolites in Blood by LC-MS/MS

Extraction Date: 02/27/19
Plate lot#: 0539404

Analyst: Tamara Salazar
Plate Expiration: 09/10/19

Mobile phase A: 0.1% Formic Acid in LCMS Water
MTBE LCMS Methanol

Mobile phase B: 0.1% Formic acid in Acetonitrile
Hexane

Blank Blood Lot: Hemostat 445283-1
LCMS-QQQ ID: 59740

Column: UCT Selectra DA 100 x 2.1mm 3um

Pre-Analytic:

- 1. Check levels of mobile phases and needle wash refill as needed. Ensure waste is not full.
- 2. Ensure correct column is installed and begin mobile phase flow allow to equilibrate ~ 30 minutes.
- 3. Create worklist: Data Path: _____

Analytic:

- 1. Remove standards, plate, controls, and samples from cold storage. Allow to reach room temperature.
- 2. Pipette **1000µL blood (calibrated pipette) Pipette ID: 27** in wells of analytical (standards) plate.
- 3. Place on shaking incubator at ambient temp., 900rpm for 15 minutes. *Shaker ID: 067105*
- 4. Pipette **500µL 0.1% formic acid in water** in wells of analytical plate.
- 5. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
- 6. Transfer **800µL of blood+acid** mixture to corresponding wells of SLE+ plate.
- 7. Apply positive pressure for approx. 10-15 seconds (or until no liquid remains on top of sorbent). **(Load at 85-100 PSI- Selector to the right)** Manifold ID: 067104
- 8. Wait 5 minutes.
- 9. Add **2.25mL MTBE. (Add in 3 increments of 750uL)**
- 10. Wait 5 minutes.
- 11. Apply positive pressure for approx. 15 seconds. **(10-15 PSI- Selector to the left).**
- 12. Add **2.25mL Hexane. (Add in 3 increments of 750uL)**
- 13. Wait 5 minutes.
- 14. Apply positive pressure for approx. 15 seconds. **(10-15 PSI- Selector to the left).**
- 15. Remove plate containing eluate. Place on SPE Dry and evaporate to dryness at approx. 35°C. *SPE Dry ID: 067103*
- 16. Reconstitute in **100µL 100% MeOH** and heat seal plate with foil. Place in autosampler and run worklist.

Post-Analytic

- 1. Create batch and process data.
Worklist path: *C:\MassHunter\Data\2019\AM 27\022719 THCQ TS SP*
Batch Name: THCQ TS
- 2. Make any necessary integration changes, Curve weighting of Linear 1/x with r² values ≥0.98 for each analyte
- 3. RT +/- 3% or 0.100 min, whichever is greater, +/- 20% Accuracy for greater than (+/- 30% for 10ng/ml or less). Ion ratios must be within +/- 20% of the averaged calibrators
- 4. Case sample response for THC and OH-THC 3ng/mL (quantitative), Carboxy-THC: 10ng/mL (qualitative only) will be reported. Samples with a THC or OH-THC response over 50 ng/mL will be reported out as greater than 50 ng/mL.
- 5. Did all QCs pass for each analyte? Y / N
- 6. Enter QCs into control charting.
- 7. Central File Packet to include: LIMS Worklist, Method Checklist, Calibration and Control Reports

COMMENTS: *Curves Limited: THC-COOH: 10-100*

TS



Idaho State Police Forensic Services

AM #27 Quantitative Analysis of THC and Metabolites in Blood by LCMS-QQQ

Methanol External Control Solution (Lot: WS020419)

*10 ul of 1mg/mL THC, 100 ul of 100 ug/mL THC-OH, C-THC in 9790 ul MeOH
Approximate concentration 1ug/mL.*

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>	<i>Expiration Date</i>
Methanol (LCMS)	Fisher	184782	
THC	Cerilliant	FE04231406	04/30/2019
C-THC	Cerilliant	FE07171501	09/31/2020
THC-OH	Cerilliant	FE01121503	01/31/2020
Prepared:	02/04/19		
Prepared By:	Tamara Salazar		
Expires:	04/30/2019		

Blood External Control Solution (Lot: 020419)

*100 ul of methanol external control solution was added to 9900 ul of blood.
Approximately 10ng/mL of each compound.*

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>
Negative Blood	Hemostat	445283-1
Methanol External Control Solution	-	WS020419
Prepared:	02/04/19	
Prepared by:	Tamara Salazar	
Expires:	04/30/2019	

TS

ISP FORENSICS - Pocatello Instrument # 59740

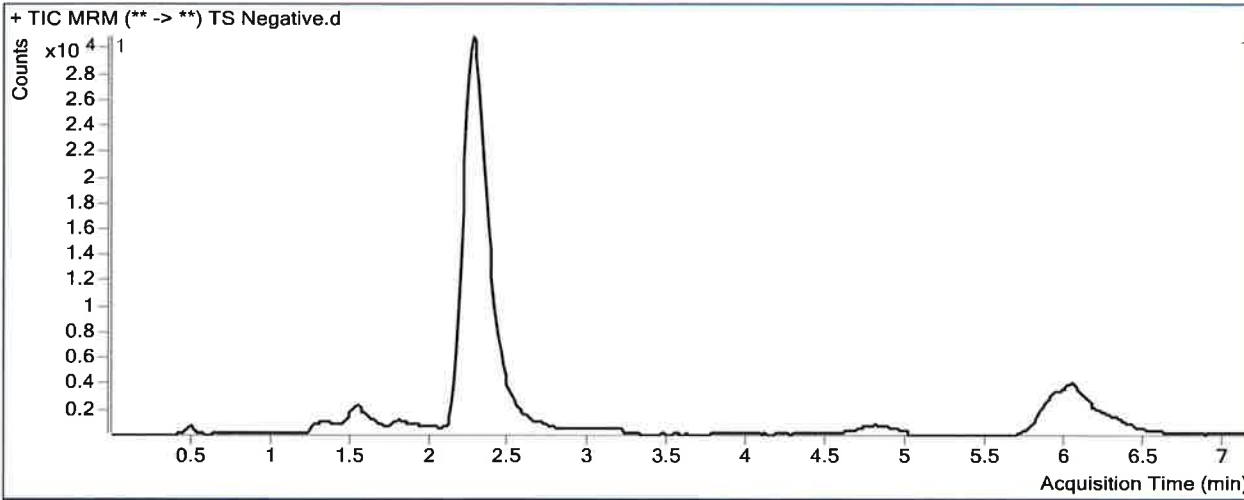
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2019\AM 27\022719 THCQ TS SP\QuantResults\THCQ TS.batch.bin
Analysis Time 2/28/2019 12:33 PM **Analyst Name** datastor
Report Time 2/28/2019 12:37 PM **Reporter Name** datastor
Last Calib Update 2/28/2019 12:33 PM **Batch State** Processed

Analysis Info

Acq Time 2019-02-27 19:42 **Data File** TS Negative.d
Sample Type Sample **Sample Name** TS Negative
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-H5 **Sample Info**
Inj Vol -1 **Comment** Hemostat 445283-1

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-COOH	THC-COOH-D9	2.365	5840	82651	0.0707	3.3647 <10 TS

TS

ISP FORENSICS - Pocatello Instrument # 59740

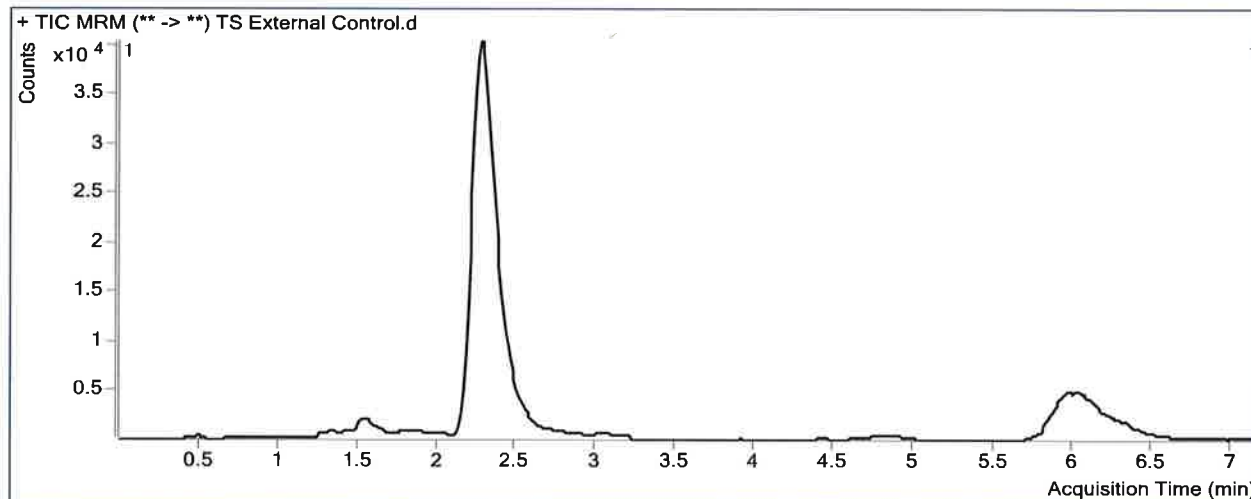
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2019\AM 27\022719 THCQ TS SP\QuantResults\THCQ TS.batch.bin
Analysis Time 2/28/2019 12:33 PM **Analyst Name** datastor
Report Time 2/28/2019 12:37 PM **Reporter Name** datastor
Last Calib Update 2/28/2019 12:33 PM **Batch State** Processed

Analysis Info

Acq Time 2019-02-27 20:05 **Data File** TS External Control.d
Sample Type Sample **Sample Name** TS External Control
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-G5 **Sample Info**
Inj Vol -1 **Comment** Hemostat 445283-1 + WS020419

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.279	21251	311013	0.0683	7.8617
THC-COOH	THC-COOH-D9	2.379	15476	93746	0.1651	8.2723
THC	THC-D3	6.065	7059	111266	0.0634	7.1909

TS

ISP FORENSICS - Pocatello Instrument # 59740

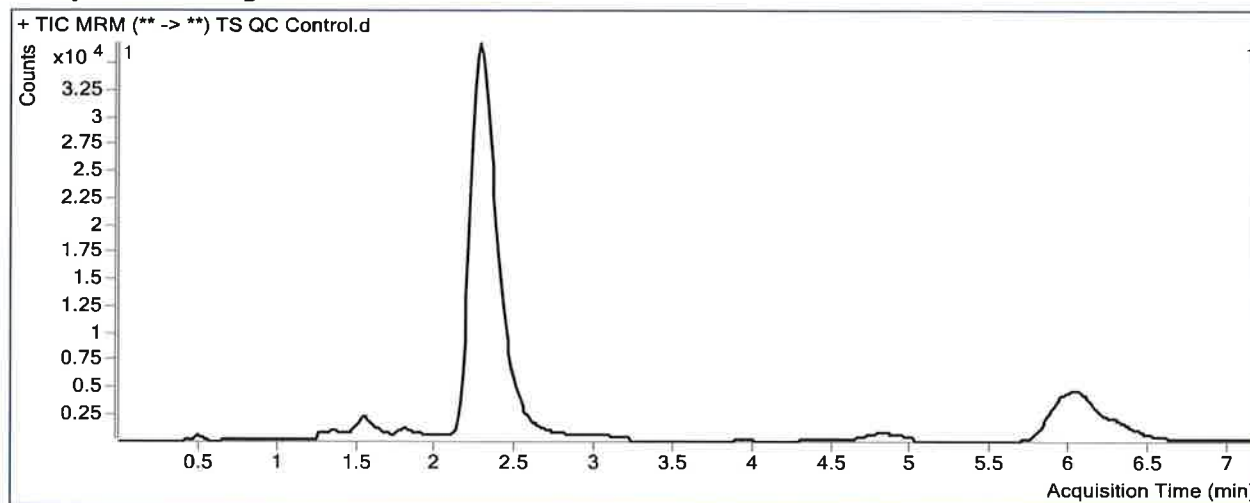
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2019\AM 27\022719 THCQ TS SP\QuantResults\THCQ TS.batch.bin
Analysis Time 2/28/2019 12:33 PM **Analyst Name** datastor
Report Time 2/28/2019 12:36 PM **Reporter Name** datastor
Last Calib Update 2/28/2019 12:33 PM **Batch State** Processed

Analysis Info

Acq Time 2019-02-27 19:18 **Data File** TS QC Control.d
Sample Type QC **Sample Name** TS QC Control
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-A6 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.279	11669	302024	0.0386	4.5961
THC-COOH	THC-COOH-D9	2.365	18809	92999	0.2022	10.2034
THC	THC-D3	6.079	4485	109864	0.0408	4.7548

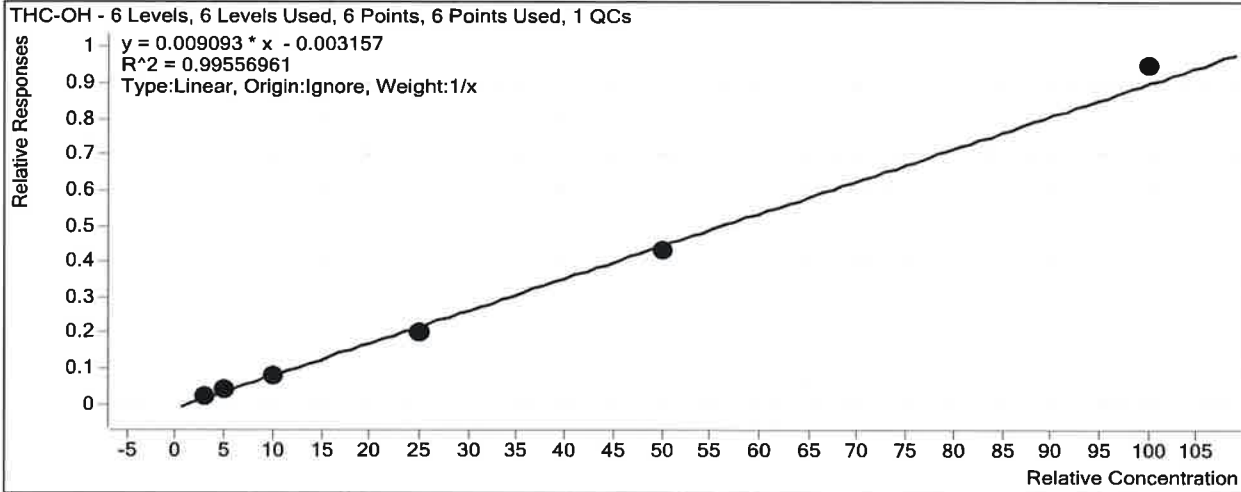
TS

ISP Forensics Calibration Curve Report

Batch Data Path C:\MassHunter\Data\2019\AM 27\022719 THCQ TS SP\QuantResults\THCQ TS.batch.bin

Last Calib Update 2/28/2019 12:33 PM **Analyst Name** ISP TOX

Target Compound *THC-OH*
Internal Standard *THC-OH-D3*



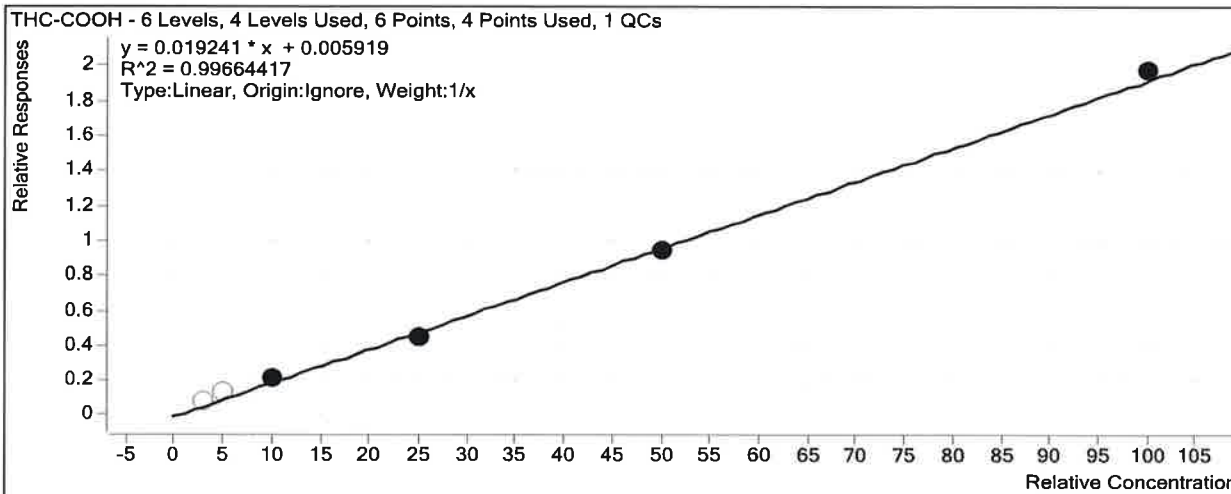
Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
TS Cal 1-3ng	1	<input checked="" type="checkbox"/>	3	3.3	109.4
TS Cal 2-5ng	2	<input checked="" type="checkbox"/>	5	5.2	104.9
TS QC Control	2	<input checked="" type="checkbox"/>	5	4.6	91.9
TS Cal 3-10ng	3	<input checked="" type="checkbox"/>	10	9.6	95.5
TS Cal 4-25ng	4	<input checked="" type="checkbox"/>	25	22.5	90.1
TS Cal 5-50ng	5	<input checked="" type="checkbox"/>	50	47.7	95.4
TS Cal 6-100ng	6	<input checked="" type="checkbox"/>	100	104.7	104.7

TS

ISP Forensics Calibration Curve Report

Batch Data Path C:\MassHunter\Data\2019\AM 27\022719 THCQ TS SP\QuantResults\THCQ TS.batch.bin
Last Calib Update 2/28/2019 12:33 PM **Analyst Name** ISP TOX

Target Compound *THC-COOH*
Internal Standard *THC-COOH-D9*



Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
TS Cal 1-3ng	1	<input type="checkbox"/>	3	4.4	145.5
TS Cal 2-5ng	2	<input type="checkbox"/>	5	6.9	137.7
TS QC Control	2	<input checked="" type="checkbox"/>	5	10.2	204.1
TS Cal 3-10ng	3	<input checked="" type="checkbox"/>	10	10.8	108.0
TS Cal 4-25ng	4	<input checked="" type="checkbox"/>	25	22.9	91.6
TS Cal 5-50ng	5	<input checked="" type="checkbox"/>	50	49.1	98.2
TS Cal 6-100ng	6	<input checked="" type="checkbox"/>	100	102.2	102.2

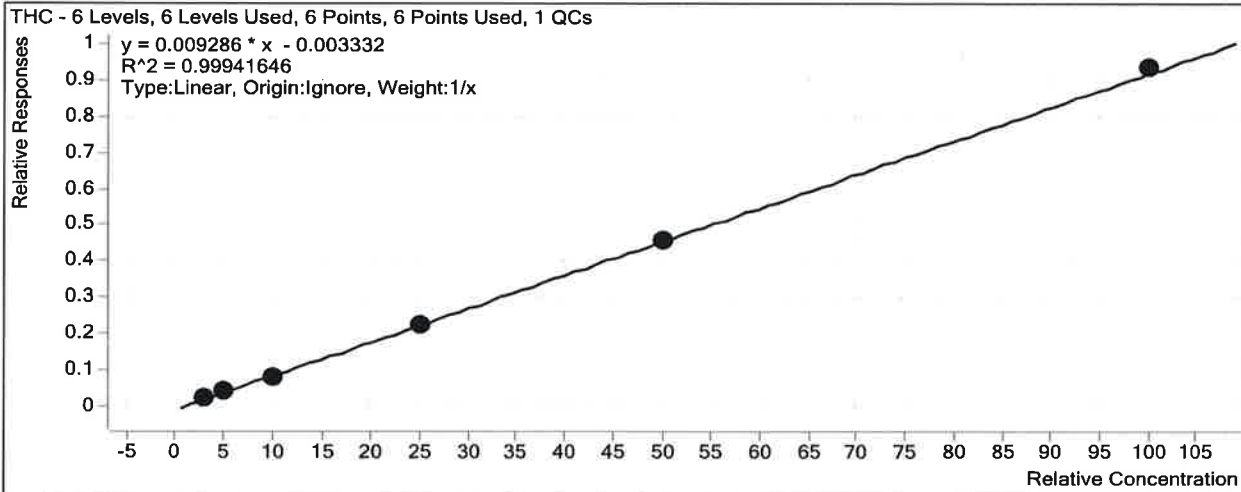
ISP Forensics Calibration Curve Report

TS

Batch Data Path C:\MassHunter\Data\2019\AM 27\022719 THCQ TS SP\QuantResults\THCQ TS.batch.bin

Last Calib Update 2/28/2019 12:33 PM **Analyst Name** ISP TOX

Target Compound *THC*
Internal Standard *THC-D3*



Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
TS Cal 1-3ng	1	<input checked="" type="checkbox"/>	3	3.2	106.7
TS Cal 2-5ng	2	<input checked="" type="checkbox"/>	5	5.0	100.9
TS QC Control	2	<input checked="" type="checkbox"/>	5	4.8	95.1
TS Cal 3-10ng	3	<input checked="" type="checkbox"/>	10	9.3	92.7
TS Cal 4-25ng	4	<input checked="" type="checkbox"/>	25	24.9	99.6
TS Cal 5-50ng	5	<input checked="" type="checkbox"/>	50	49.5	99.1
TS Cal 6-100ng	6	<input checked="" type="checkbox"/>	100	101.1	101.1

15

ISP FORENSICS - Pocatello Instrument # 59740

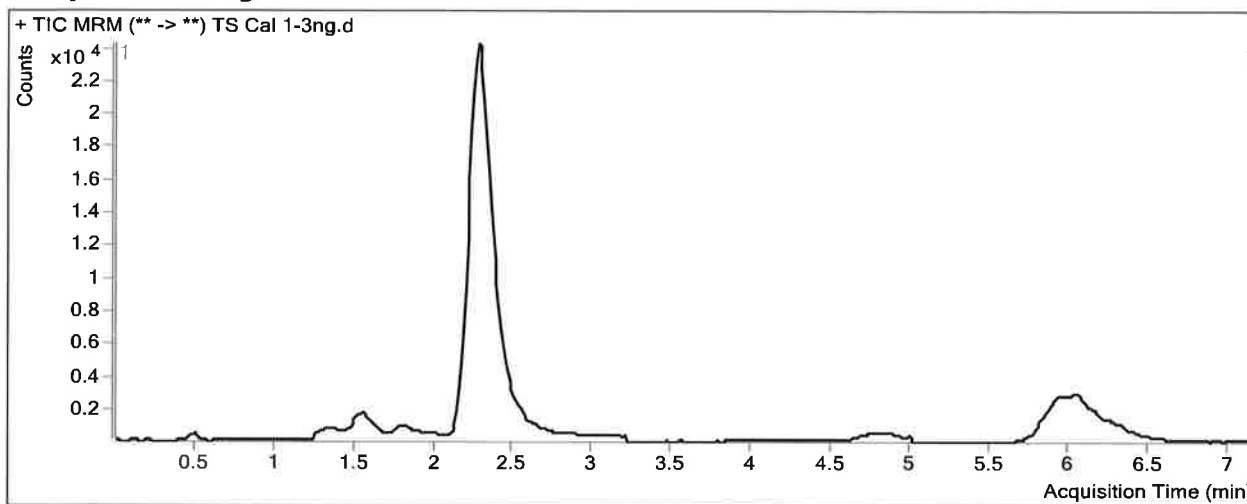
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2019\AM 27\022719 THCQ TS SP\QuantResults\THCQ TS.batch.bin
Analysis Time 2/28/2019 12:33 PM **Analyst Name** datastor
Report Time 2/28/2019 12:36 PM **Reporter Name** datastor
Last Calib Update 2/28/2019 12:33 PM **Batch State** Processed

Analysis Info

Acq Time 2019-02-27 17:55 **Data File** TS Cal 1-3ng.d
Sample Type Calibration **Sample Name** TS Cal 1-3ng
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-G6 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.279	5224	195816	0.0267	3.2813
THC-COOH	THC-COOH-D9	2.379	5371	59742	0.0899	4.3647
THC	THC-D3	6.079	1933	73233	0.0264	3.2017

15

ISP FORENSICS - Pocatello Instrument # 59740

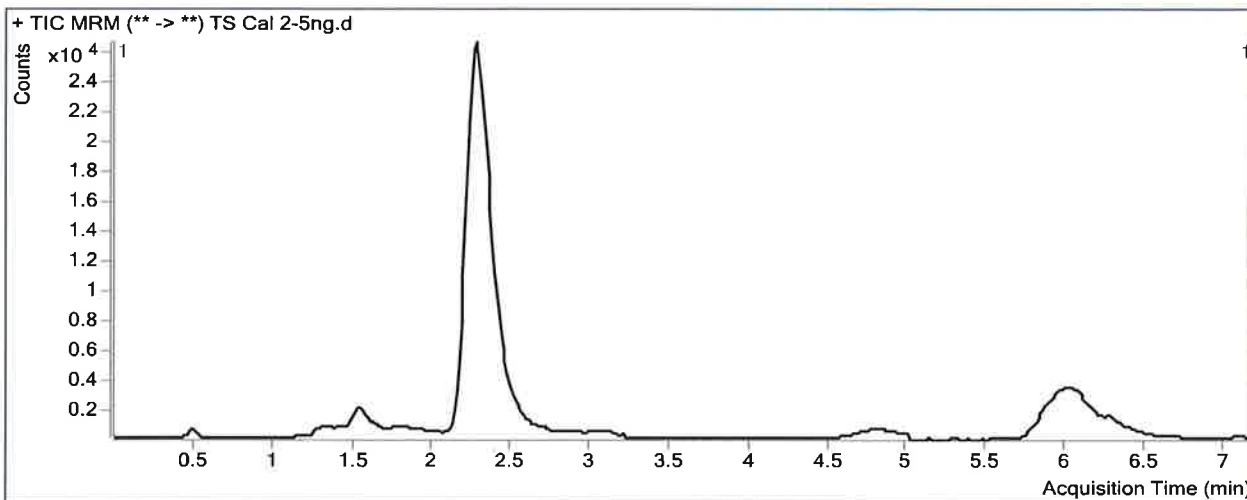
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2019\AM 27\022719 THCQ TS SP\QuantResults\THCQ TS.batch.bin
Analysis Time 2/28/2019 12:33 PM **Analyst Name** datastor
Report Time 2/28/2019 12:36 PM **Reporter Name** datastor
Last Calib Update 2/28/2019 12:33 PM **Batch State** Processed

Analysis Info

Acq Time 2019-02-27 18:07 **Data File** TS Cal 2-5ng.d
Sample Type Calibration **Sample Name** TS Cal 2-5ng
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-F6 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.292	9675	217278	0.0445	5.2443
THC-COOH	THC-COOH-D9	2.365	9495	68614	0.1384	6.8843
THC	THC-D3	5.985	3543	81447	0.0435	5.0429

ISP FORENSICS - Pocatello Instrument # 59740

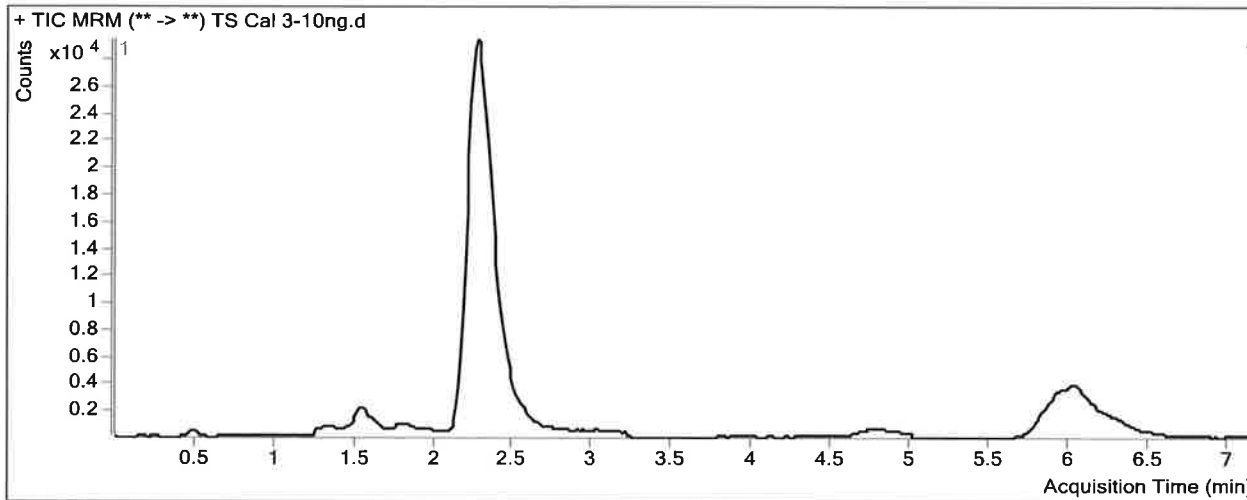
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2019\AM 27\022719 THCQ TS SP\QuantResults\THCQ TS.batch.bin
Analysis Time 2/28/2019 12:33 PM **Analyst Name** datastor
Report Time 2/28/2019 12:36 PM **Reporter Name** datastor
Last Calib Update 2/28/2019 12:33 PM **Batch State** Processed

Analysis Info

Acq Time 2019-02-27 18:19 **Data File** TS Cal 3-10ng.d
Sample Type Calibration **Sample Name** TS Cal 3-10ng
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-E6 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.265	19265	230107	0.0837	9.5546
THC-COOH	THC-COOH-D9	2.379	15875	74269	0.2138	10.8016
THC	THC-D3	6.065	6985	84392	0.0828	9.2720

13

ISP FORENSICS - Pocatello Instrument # 59740

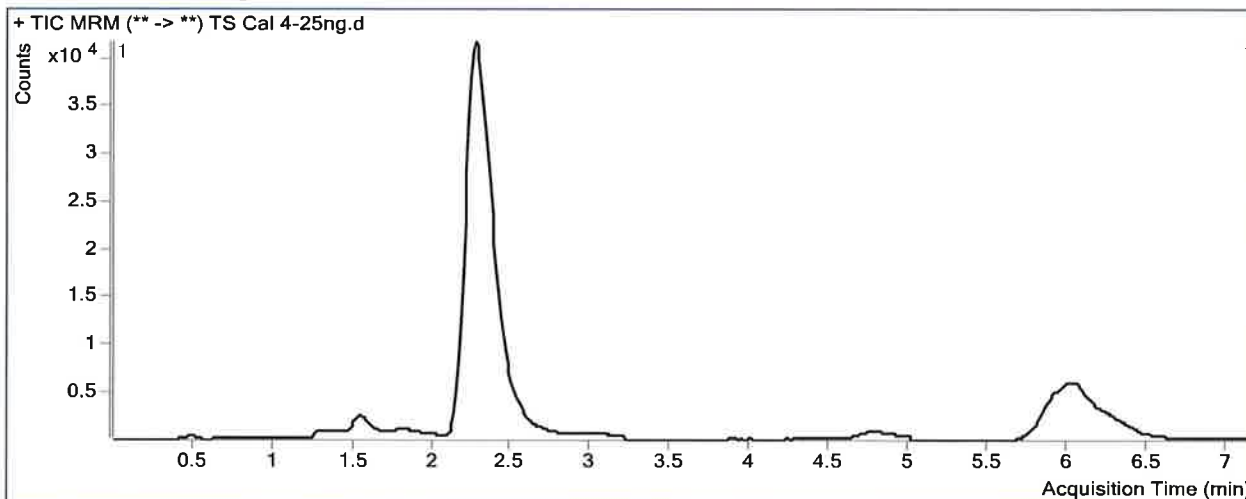
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2019\AM 27\022719 THCQ TS SP\QuantResults\THCQ TS.batch.bin
Analysis Time 2/28/2019 12:33 PM **Analyst Name** datastor
Report Time 2/28/2019 12:36 PM **Reporter Name** datastor
Last Calib Update 2/28/2019 12:33 PM **Batch State** Processed

Analysis Info

Acq Time 2019-02-27 18:30 **Data File** TS Cal 4-25ng.d
Sample Type Calibration **Sample Name** TS Cal 4-25ng
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-D6 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.279	57655	285848	0.2017	22.5292
THC-COOH	THC-COOH-D9	2.365	40376	90461	0.4463	22.8891
THC	THC-D3	6.039	25072	110055	0.2278	24.8923

15

ISP FORENSICS - Pocatello Instrument # 59740

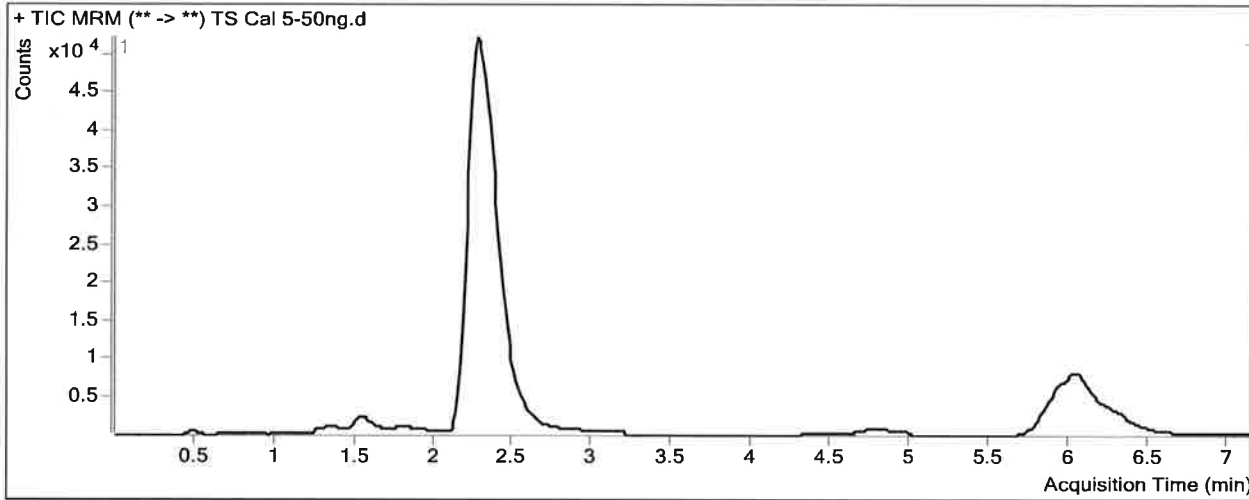
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2019\AM 27\022719 THCQ TS SP\QuantResults\THCQ TS.batch.bin
Analysis Time 2/28/2019 12:33 PM **Analyst Name** datastor
Report Time 2/28/2019 12:36 PM **Reporter Name** datastor
Last Calib Update 2/28/2019 12:33 PM **Batch State** Processed

Analysis Info

Acq Time 2019-02-27 18:42 **Data File** TS Cal 5-50ng.d
Sample Type Calibration **Sample Name** TS Cal 5-50ng
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-C6 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.279	125634	291882	0.4304	47.6843
THC-COOH	THC-COOH-D9	2.365	89862	94489	0.9510	49.1187
THC	THC-D3	6.052	51248	112223	0.4567	49.5368

15

ISP FORENSICS - Pocatello Instrument # 59740

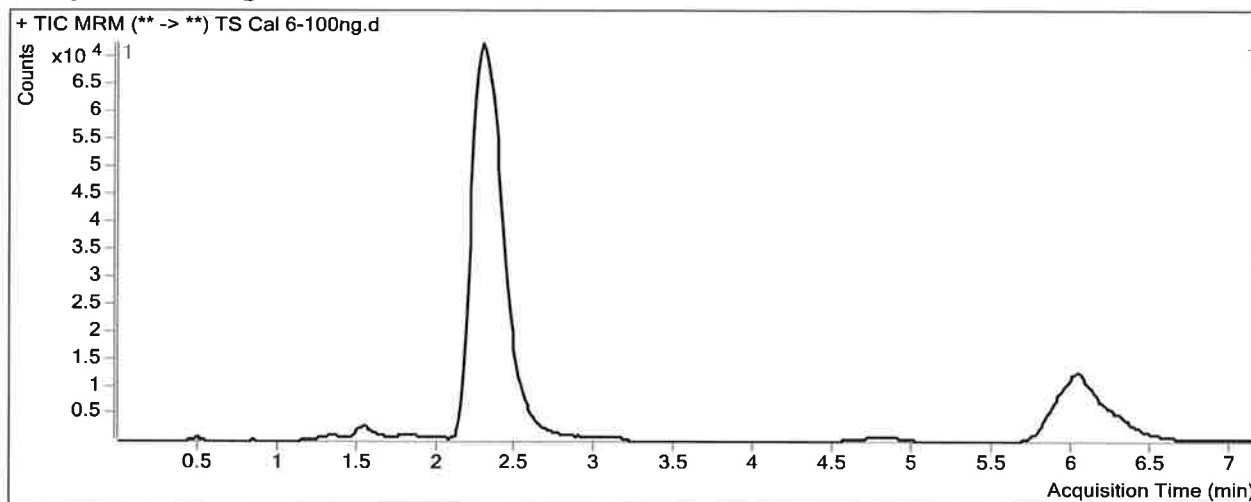
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2019\AM 27\022719 THCQ TS SP\QuantResults\THCQ TS.batch.bin
Analysis Time 2/28/2019 12:33 PM **Analyst Name** datastor
Report Time 2/28/2019 12:36 PM **Reporter Name** datastor
Last Calib Update 2/28/2019 12:33 PM **Batch State** Processed

Analysis Info

Acq Time 2019-02-27 18:54 **Data File** TS Cal 6-100ng.d
Sample Type Calibration **Sample Name** TS Cal 6-100ng
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-B6 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.279	283312	298563	0.9489	104.7063
THC-COOH	THC-COOH-D9	2.379	179156	90840	1.9722	102.1906
THC	THC-D3	6.039	106672	114083	0.9350	101.0542