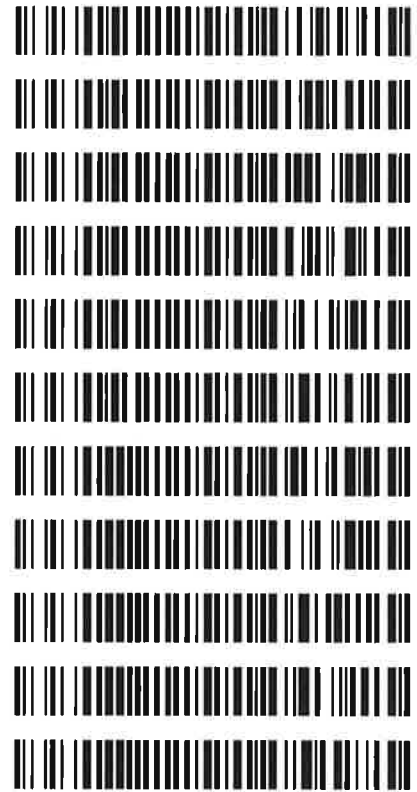


**Worklist: 2699**

<u>LAB CASE</u>	<u>ITEM</u>	<u>TASK ID</u>	<u>DESCRIPTION</u>
M2018-4140	1	127429	AM 27 Blood THC Quant by LC-QQQ
M2018-4314	1	127430	AM 27 Blood THC Quant by LC-QQQ
M2018-4330	1	127431	AM 27 Blood THC Quant by LC-QQQ
M2018-4379	1	127432	AM 27 Blood THC Quant by LC-QQQ
M2018-4429	1	127433	AM 27 Blood THC Quant by LC-QQQ
M2018-4626	2	127434	AM 27 Blood THC Quant by LC-QQQ
P2018-2393	1	127435	AM 27 Blood THC Quant by LC-QQQ
P2018-2623	1	127436	AM 27 Blood THC Quant by LC-QQQ
P2018-2668	1	127437	AM 27 Blood THC Quant by LC-QQQ
P2018-2682	1	127438	AM 27 Blood THC Quant by LC-QQQ
P2018-2690	1	127439	AM 27 Blood THC Quant by LC-QQQ



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

Extraction Date: 09/25/18  
Plate lot#: 0515037

Analyst: Tamara Salazar  
Plate Expiration: 09/28/18

**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:** 361331-1  
**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/urine (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 for blood samples.
- 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\2018\THC Quant\092618 THCQ TS  
Batch Name: 092618 THC Quant
- 2. Make any necessary integration changes, Curve weighting of Linear 1/x with r<sup>2</sup> 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 10-250*



# Idaho State Police Forensic Services

B

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

**Analyst: Tamara Salazar**  
**Extraction Date: 09/25/18**  
**Worklist Number: 2699**

<i>Reagent</i>	<i>Lot Number</i>	<i>Expiration Date</i>	<i>Date in Service</i>	<i>Date Out of Service</i>	<i>Initials</i>
ToxBox THC/THC Metabolite Plate	0515037	09/28/18			
Negative Blood	361331-1		05/25/18		
Methanol External Control Solution	WS020718	02/07/19	02/07/18		
Blood External Control Solution	061718	02/07/19	06/17/18		
Methyl Tert-Butyl Ether (MTBE) 99.9%	A0375555		06/26/17		
Hexanes (ACS)	101642		10/26/17		
Methanol (LCMS Grade)	177145		04/11/18		
Water (LCMS Grade)	182702		06/21/18		
0.1% Formic Acid in Water (Mobile Phase A)	180079		08/24/18		
0.1% Formic Acid in Acetonitrile (Mobile Phase B)	176190		02/08/18		
Needle Rinse--75% LCMS MeOH in LCMS Water	092418		09/24/18		

**Methanol External Control Solution (Lot: WS020718)**

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

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>	<i>Expiration Date</i>
Methanol (LCMS)	Fisher	172516	
THC	Cerilliant	FE04231406	04/30/2019
C-THC	Cayman	0497429	02/08/2019
THC-OH	Cerilliant	FE01121503	01/31/2020
Prepared:	02/07/18		
Prepared By:	Tamara Salazar		
Expires:	02/07/19		

**Blood External Control Solution (Lot: 061718)**

*100 ul of methanol external control solution was added to 9900 ul of blood.*

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>
Negative Blood	Hemostat	361331-1
Methanol External Control Solution		WS020718
Prepared:	06/17/18	
Prepared by:	Tamara Salazar	
Expires:	02/07/19	

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**Needle Rinse (75% LCMS MeOH in LCMS Water) (Lot: 081518)**

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>
MeOH (LCMS Grade)	Fisher	177145
Water (LCMS Grade)	Fisher	182702
Prepared:	09/24/18	
Prepared By:	Tamara Salazar	

15

# ISP FORENSICS - Pocatello Instrument # 59740

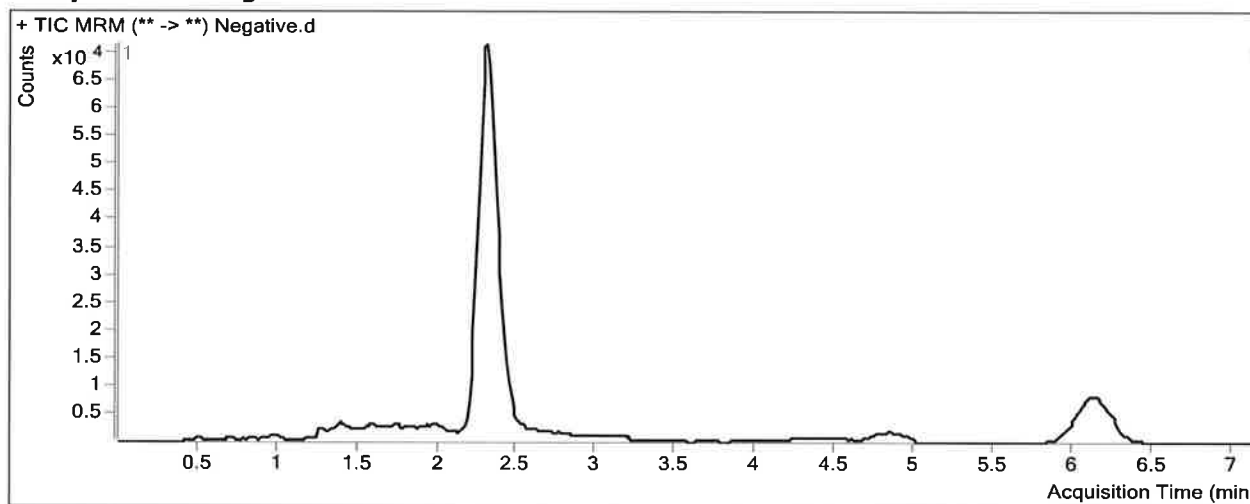
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\092618 THCQ TS\QuantResults\092618 THC Quant.batch.bin  
**Analysis Time** 9/27/2018 3:50 PM **Analyst Name** ISPUser  
**Report Time** 9/27/2018 3:52 PM **Reporter Name** ISPUser  
**Last Calib Update** 9/27/2018 3:50 PM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-09-26 20:03 **Data File** Negative.d  
**Sample Type** Sample **Sample Name** Negative  
**Dilution** 1 **Acq Method** THC Quant 051517 workingmm.m  
**Position** P1-A8 **Sample Info**  
**Inj Vol** -1 **Comment** Hemostat 361331-1

### Sample Chromatogram



### Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.158	2428	458284	0.0053	1.5441
THC-COOH	THC-COOH-D9	2.392	16077	136517	0.1178	0.3739

TS

# ISP FORENSICS - Pocatello Instrument # 59740

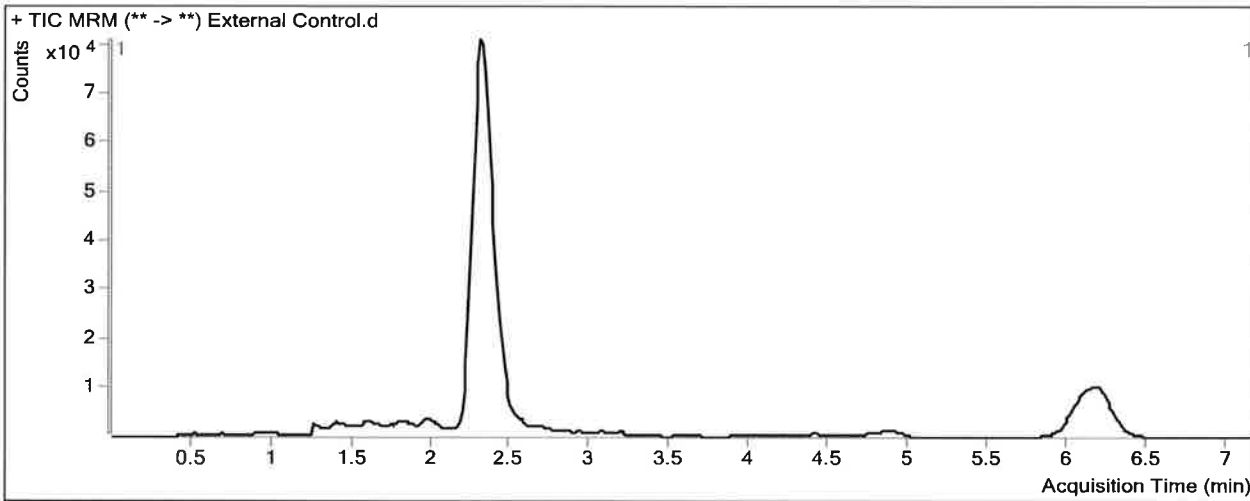
## Cannabinoids Analysis Report

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**Analysis Time** 9/27/2018 3:50 PM **Analyst Name** ISPUser  
**Report Time** 9/27/2018 3:52 PM **Reporter Name** ISPUser  
**Last Calib Update** 9/27/2018 3:50 PM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-09-26 20:27 **Data File** External Control.d  
**Sample Type** Sample **Sample Name** External Control  
**Dilution** 1 **Acq Method** THC Quant 051517 workingmm.m  
**Position** P1-B8 **Sample Info**  
**Inj Vol** -1 **Comment** Hemostat 361331-1 + WS 020718

### Sample Chromatogram



### Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.319	45918	481722	0.0953	9.1195
THC-COOH	THC-COOH-D9	2.419	48831	144999	0.3368	9.3406
THC	THC-D3	6.159	13623	148191	0.0919	7.7976

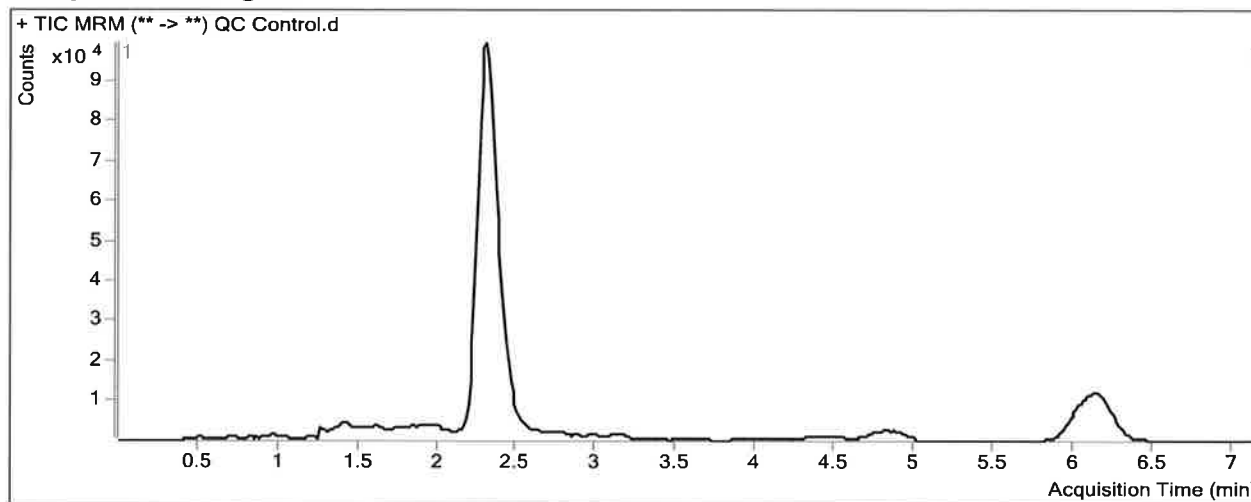
## ISP FORENSICS - Pocatello Instrument # 59740 Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\092618 THCQ TS\QuantResults\092618 THC Quant.batch.bin  
**Analysis Time** 9/27/2018 3:50 PM **Analyst Name** ISPUser  
**Report Time** 9/27/2018 3:52 PM **Reporter Name** ISPUser  
**Last Calib Update** 9/27/2018 3:50 PM **Batch State** Processed

**Analysis Info**

**Acq Time** 2018-09-26 19:39 **Data File** QC Control.d  
**Sample Type** Sample **Sample Name** QC Control  
**Dilution** 1 **Acq Method** THC Quant 051517 workingmm.m  
**Position** P1-H7 **Sample Info**  
**Inj Vol** -1 **Comment**

**Sample Chromatogram**



**Results**

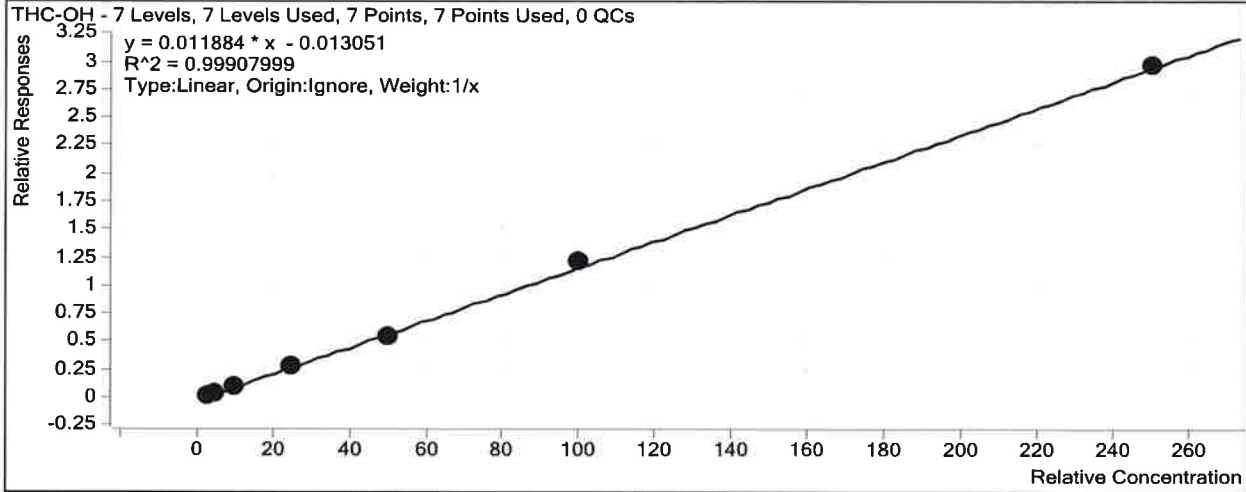
Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.319	57240	572220	0.1000	9.5158
THC-COOH	THC-COOH-D9	2.419	61442	163847	0.3750	10.9057
THC	THC-D3	6.186	19459	168681	0.1154	9.7869

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# ISP Forensics Calibration Curve Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\092618 THCQ TS\QuantResults\092618 THC Quant.batch.bin  
**Last Calib Update** 9/27/2018 3:50 PM **Analyst Name** ISP TOX

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



Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
Cal 1	1	<input checked="" type="checkbox"/>	3	3.3	111.0
Cal 2	2	<input checked="" type="checkbox"/>	5	4.9	97.0
Cal 3	3	<input checked="" type="checkbox"/>	10	9.7	97.4
Cal 4	4	<input checked="" type="checkbox"/>	25	24.2	96.8
Cal 5	5	<input checked="" type="checkbox"/>	50	47.1	94.3
Cal 6	6	<input checked="" type="checkbox"/>	100	103.3	103.3
Cal 7	7	<input checked="" type="checkbox"/>	250	250.5	100.2

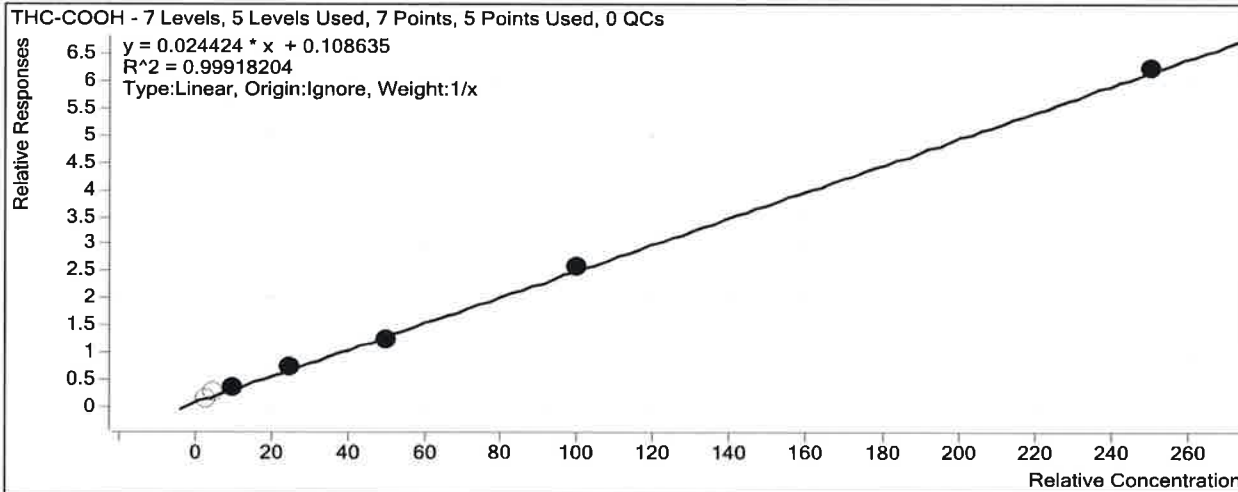


B

# ISP Forensics Calibration Curve Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\092618 THCQ TS\QuantResults\092618 THC Quant.batch.bin  
**Last Calib Update** 9/27/2018 3:50 PM **Analyst Name** ISP TOX

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



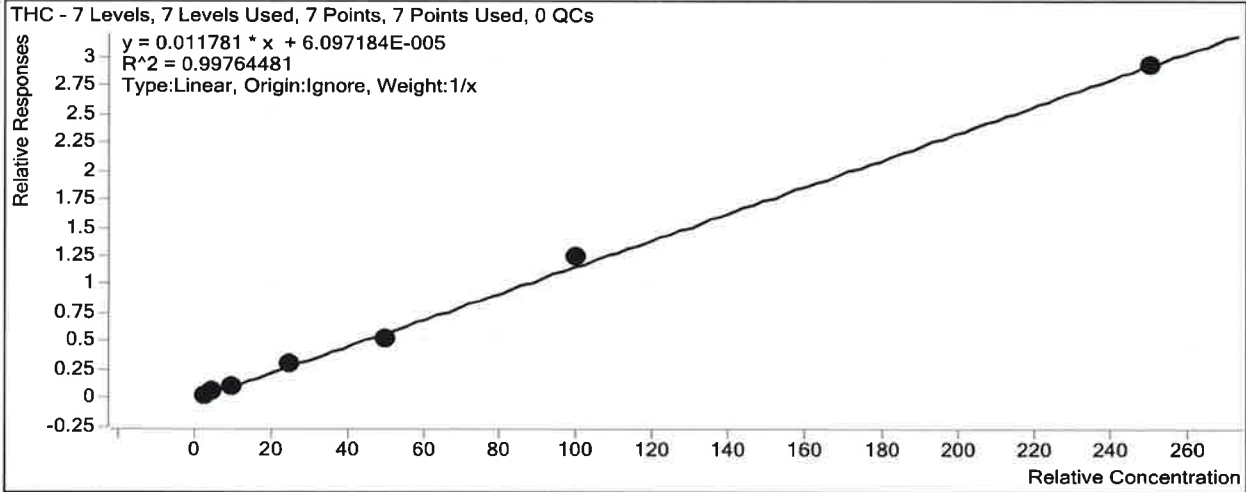
Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
Cal 1	1	<input type="checkbox"/>	3	2.6	88.3
Cal 2	2	<input type="checkbox"/>	5	6.4	127.4
Cal 3	3	<input checked="" type="checkbox"/>	10	10.3	103.4
Cal 4	4	<input checked="" type="checkbox"/>	25	25.3	101.0
Cal 5	5	<input checked="" type="checkbox"/>	50	46.8	93.7
Cal 6	6	<input checked="" type="checkbox"/>	100	101.4	101.4
Cal 7	7	<input checked="" type="checkbox"/>	250	251.1	100.5

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# ISP Forensics Calibration Curve Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\092618 THCQ TS\QuantResults\092618 THC Quant.batch.bin  
**Last Calib Update** 9/27/2018 3:50 PM **Analyst Name** ISP TOX

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



Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
Cal 1	1	<input checked="" type="checkbox"/>	3	2.9	96.2
Cal 2	2	<input checked="" type="checkbox"/>	5	5.5	110.3
Cal 3	3	<input checked="" type="checkbox"/>	10	9.7	96.9
Cal 4	4	<input checked="" type="checkbox"/>	25	25.2	100.9
Cal 5	5	<input checked="" type="checkbox"/>	50	45.2	90.4
Cal 6	6	<input checked="" type="checkbox"/>	100	105.9	105.9
Cal 7	7	<input checked="" type="checkbox"/>	250	248.6	99.4

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# ISP FORENSICS - Pocatello Instrument # 59740

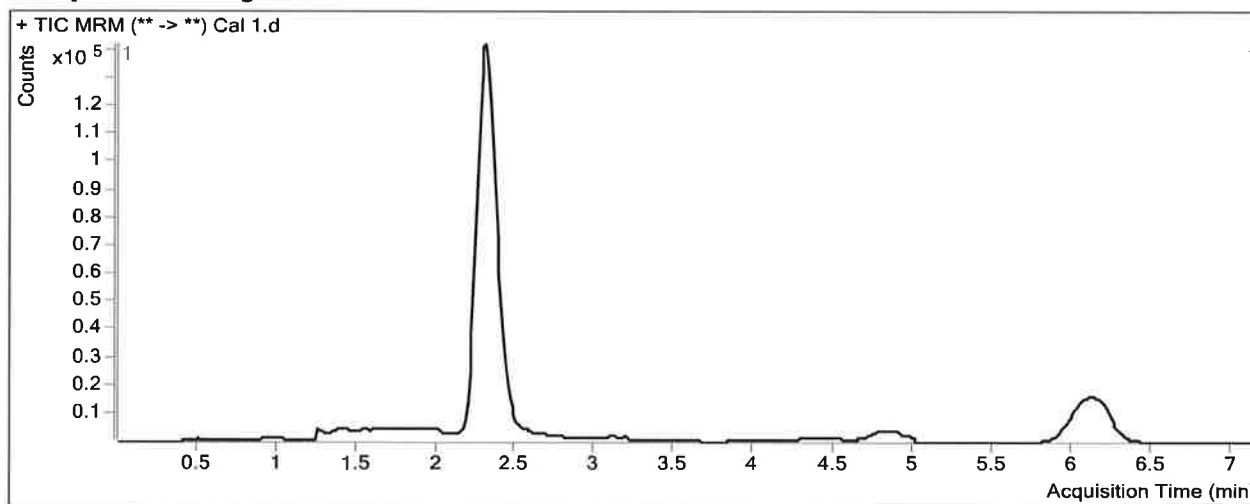
## Cannabinoids Analysis Report

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**Analysis Time** 9/27/2018 3:50 PM **Analyst Name** ISPUser  
**Report Time** 9/27/2018 3:51 PM **Reporter Name** ISPUser  
**Last Calib Update** 9/27/2018 3:50 PM **Batch State** Processed

**Analysis Info**

**Acq Time** 2018-09-26 18:05 **Data File** Cal 1.d  
**Sample Type** Calibration **Sample Name** Cal 1  
**Dilution** 1 **Acq Method** THC Quant 051517 workingmm.m  
**Position** P1-A7 **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	2.305	24270	914755	0.0265	3.3309
THC-COOH	THC-COOH-D9	2.406	43695	252114	0.1733	2.6483
THC	THC-D3	6.159	8829	259181	0.0341	2.8863

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# ISP FORENSICS - Pocatello Instrument # 59740

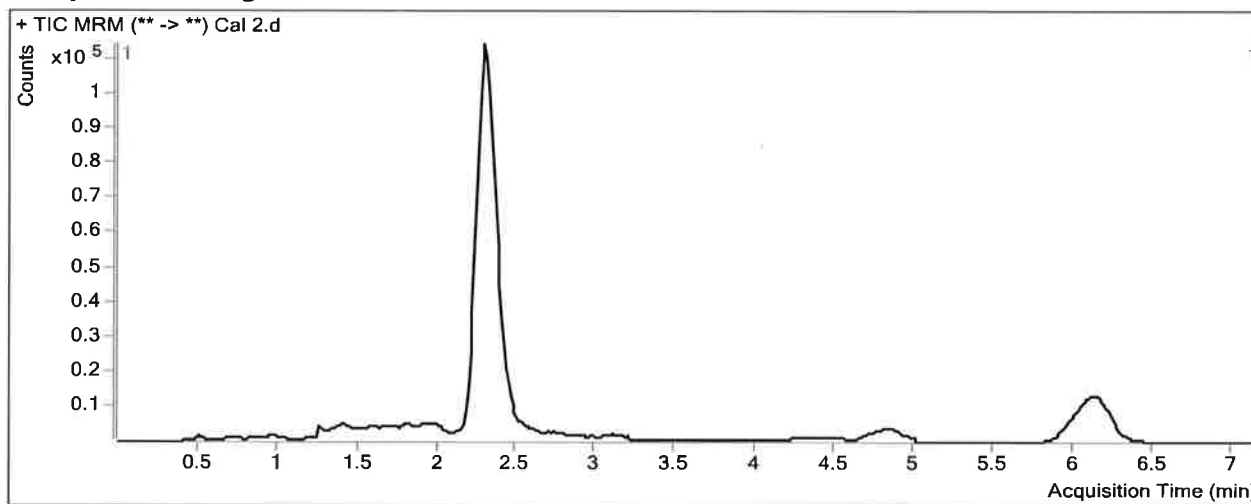
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\092618 THCQ TS\QuantResults\092618 THC Quant.batch.bin  
**Analysis Time** 9/27/2018 3:50 PM **Analyst Name** ISPUser  
**Report Time** 9/27/2018 3:51 PM **Reporter Name** ISPUser  
**Last Calib Update** 9/27/2018 3:50 PM **Batch State** Processed

**Analysis Info**

**Acq Time** 2018-09-26 18:16 **Data File** Cal 2.d  
**Sample Type** Calibration **Sample Name** Cal 2  
**Dilution** 1 **Acq Method** THC Quant 051517 workingmm.m  
**Position** P1-B7 **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	2.305	31567	707906	0.0446	4.8507
THC-COOH	THC-COOH-D9	2.419	52873	200097	0.2642	6.3709
THC	THC-D3	6.159	12923	198684	0.0650	5.5157

TS

# ISP FORENSICS - Pocatello Instrument # 59740

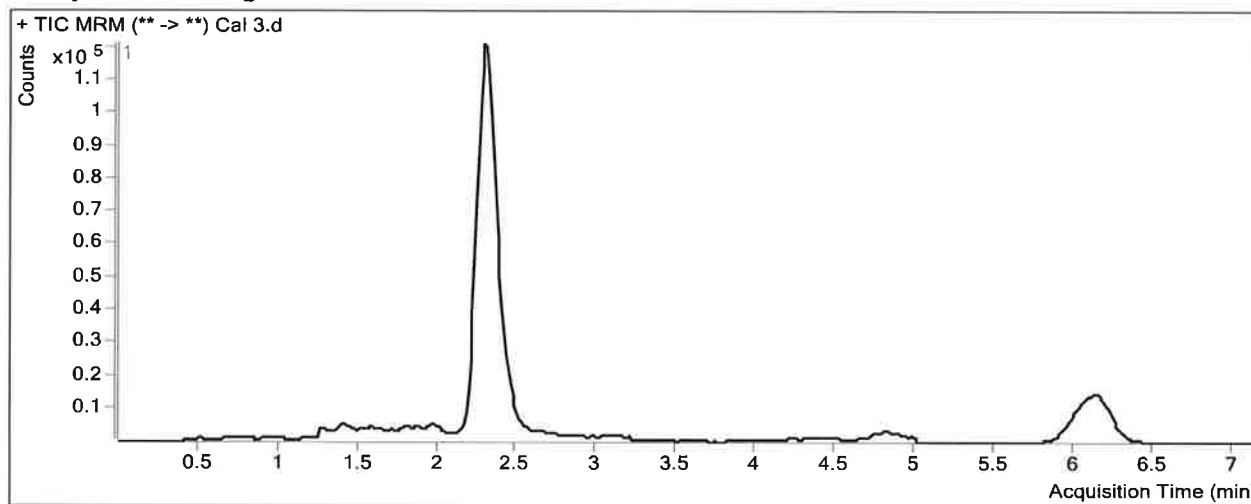
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\092618 THCQ TS\QuantResults\092618 THC Quant.batch.bin  
**Analysis Time** 9/27/2018 3:50 PM **Analyst Name** ISPUser  
**Report Time** 9/27/2018 3:51 PM **Reporter Name** ISPUser  
**Last Calib Update** 9/27/2018 3:50 PM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-09-26 18:28 **Data File** Cal 3.d  
**Sample Type** Calibration **Sample Name** Cal 3  
**Dilution** 1 **Acq Method** THC Quant 051517 workingmm.m  
**Position** P1-C7 **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	2.305	72995	710684	0.1027	9.7414
THC-COOH	THC-COOH-D9	2.406	73916	204636	0.3612	10.3412
THC	THC-D3	6.172	22822	199911	0.1142	9.6850

15

# ISP FORENSICS - Pocatello Instrument # 59740

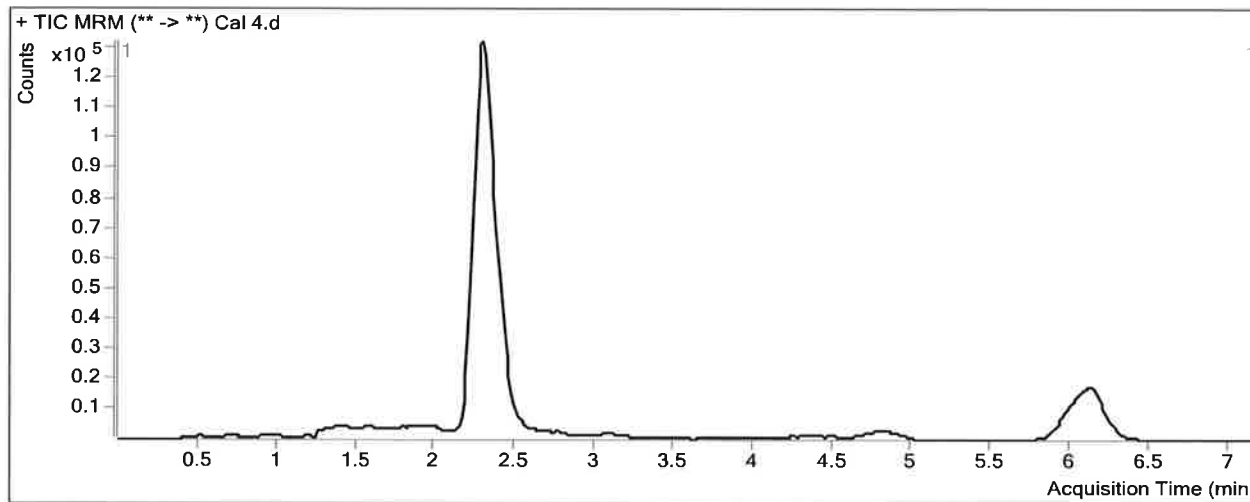
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\092618 THCQ TS\QuantResults\092618 THC Quant.batch.bin  
**Analysis Time** 9/27/2018 3:50 PM **Analyst Name** ISPUser  
**Report Time** 9/27/2018 3:51 PM **Reporter Name** ISPUser  
**Last Calib Update** 9/27/2018 3:50 PM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-09-26 18:40 **Data File** Cal 4.d  
**Sample Type** Calibration **Sample Name** Cal 4  
**Dilution** 1 **Acq Method** THC Quant 051517 workingmm.m  
**Position** P1-D7 **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	2.305	188355	686029	0.2746	24.2023
THC-COOH	THC-COOH-D9	2.392	135209	186379	0.7255	25.2546
THC	THC-D3	6.132	56145	188969	0.2971	25.2143

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# ISP FORENSICS - Pocatello Instrument # 59740

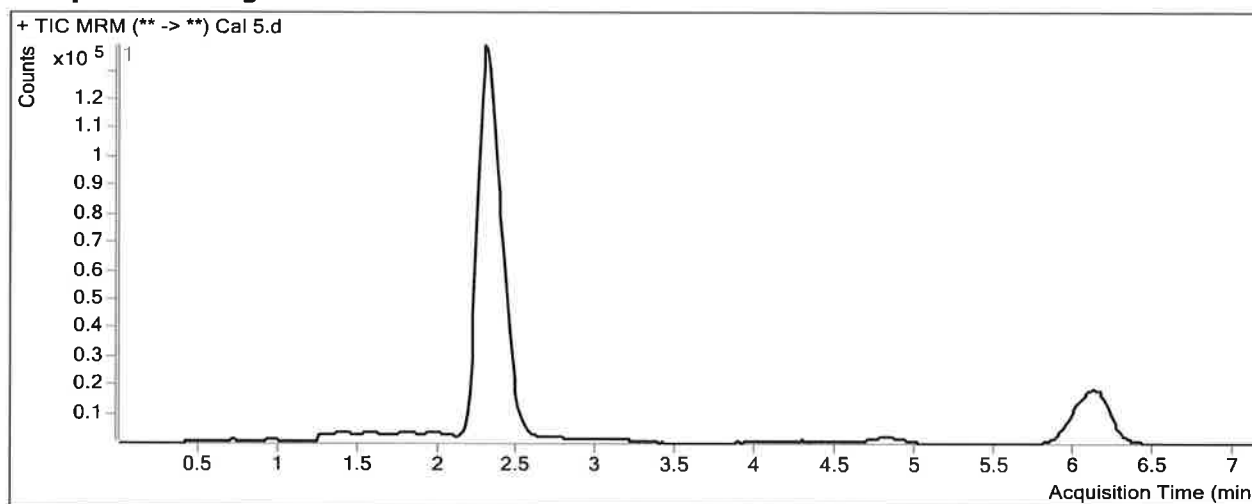
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\092618 THCQ TS\QuantResults\092618 THC Quant.batch.bin  
**Analysis Time** 9/27/2018 3:50 PM **Analyst Name** ISPUser  
**Report Time** 9/27/2018 3:51 PM **Reporter Name** ISPUser  
**Last Calib Update** 9/27/2018 3:50 PM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-09-26 18:52 **Data File** Cal 5.d  
**Sample Type** Calibration **Sample Name** Cal 5  
**Dilution** 1 **Acq Method** THC Quant 051517 workingmm.m  
**Position** P1-E7 **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	2.305	306937	560974	0.5472	47.1409
THC-COOH	THC-COOH-D9	2.406	207644	165742	1.2528	46.8467
THC	THC-D3	6.172	83091	155953	0.5328	45.2188

15

# ISP FORENSICS - Pocatello Instrument # 59740

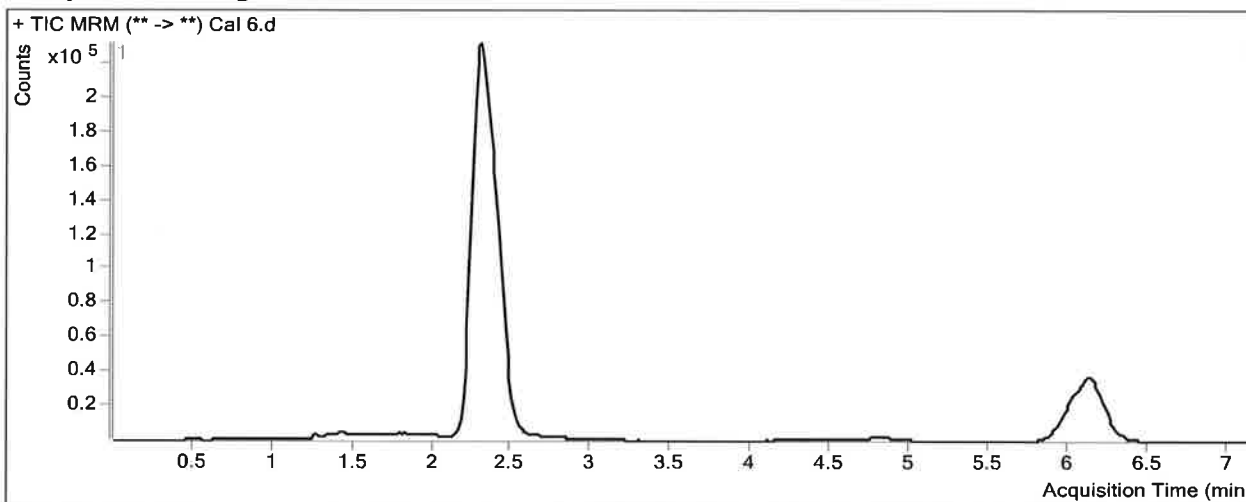
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\092618 THCQ TS\QuantResults\092618 THC Quant.batch.bin  
**Analysis Time** 9/27/2018 3:50 PM **Analyst Name** ISPUser  
**Report Time** 9/27/2018 3:51 PM **Reporter Name** ISPUser  
**Last Calib Update** 9/27/2018 3:50 PM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-09-26 19:04 **Data File** Cal 6.d  
**Sample Type** Calibration **Sample Name** Cal 6  
**Dilution** 1 **Acq Method** THC Quant 051517 workingmm.m  
**Position** P1-F7 **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	2.305	812457	669173	1.2141	103.2664
THC-COOH	THC-COOH-D9	2.406	478089	184892	2.5858	101.4226
THC	THC-D3	6.132	234029	187575	1.2477	105.8973



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# ISP FORENSICS - Pocatello Instrument # 59740

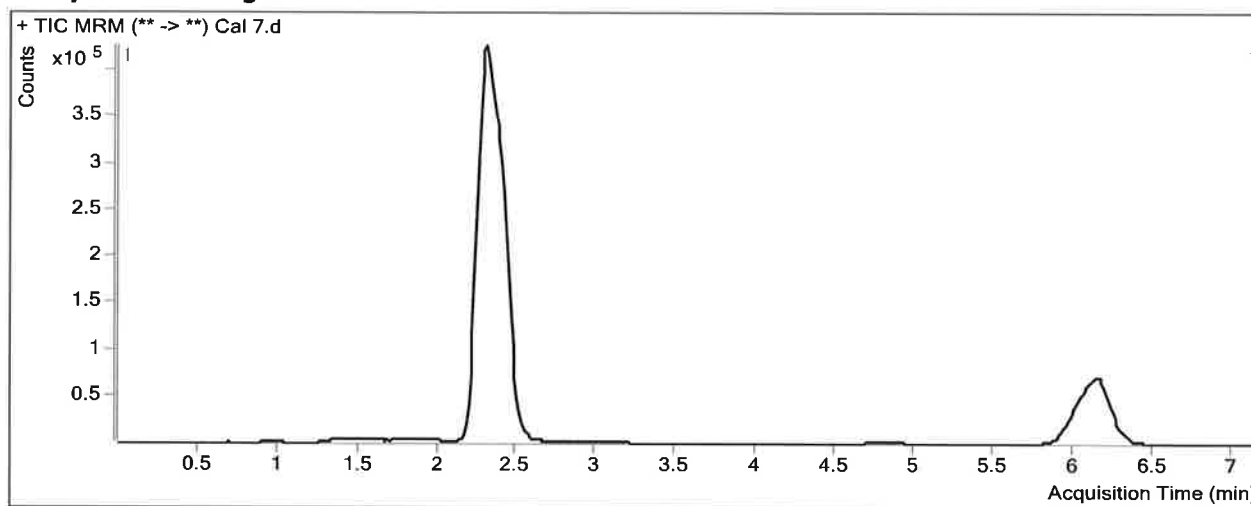
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\092618 THCQ TS\QuantResults\092618 THC Quant.batch.bin  
**Analysis Time** 9/27/2018 3:50 PM **Analyst Name** ISPUser  
**Report Time** 9/27/2018 3:51 PM **Reporter Name** ISPUser  
**Last Calib Update** 9/27/2018 3:50 PM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-09-26 19:16 **Data File** Cal 7.d  
**Sample Type** Calibration **Sample Name** Cal 7  
**Dilution** 1 **Acq Method** THC Quant 051517 workingmm.m  
**Position** P1-G7 **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	2.305	1994769	673137	2.9634	250.4675
THC-COOH	THC-COOH-D9	2.406	1110795	177945	6.2423	251.1349
THC	THC-D3	6.159	542257	185156	2.9286	248.5825