










*Boyle*

**Worklist: 2175**

<u>LAB CASE</u>	<u>ITEM</u>	<u>TASK ID</u>	<u>DESCRIPTION</u>	
M2017-5691	1	107128	AM 27 Blood THC Quant by LC	
M2017-5818	1	107129	AM 27 Blood THC Quant by LC	
P2017-2652	1	104717	AM 27 Blood THC Quant by LC	
P2017-2878	2	107130	AM 27 Blood THC Quant by LC	
P2018-0012	1	107131	AM 27 Blood THC Quant by LC	
P2018-0056	1	107132	AM 27 Blood THC Quant by LC	
P2018-0061	1	107133	AM 27 Blood THC Quant by LC	
P2018-0081	1	107134	AM 27 Blood THC Quant by LC	
P2018-0158	1	107135	AM 27 Blood THC Quant by LC	

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

Extraction Date: 02/07/18

Analyst: Tamara Salazar

Plate lot#: 0515037

Plate Expiration: 09/28/18

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

**Mobile phase B:** 0.1% Formic acid in Acetonitrile  
Hexane

**Blank Blood Lot:** 361331-3

**Column:** UCT Selectra DA 100 x 2.1mm 3um

**LCMS-QQQ ID:** 59740

## 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:

## 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.

Performed by Sarah Pickle.  
 Witnessed by Tamara Salazar.  
 -TS

## Post-Analytic

- 1. Create batch and process data.  
 Worklist path: *C:\MassHunter\Data\2018\THC Quant\020718 THC Quant SP TS*  
 Batch Name: *020718 TS THC Quant\_wklst 2175*
- 2. Make any necessary integration changes,  $r^2$  values  $\geq 0.98$  for each analyte.
- 3. Did all QCs pass for each analyte? Y / N Enter QCs into control charting?
- 4. Central File Packet to include: LIMS Worklist, Method Checklist, Calibration and Control Reports

COMMENTS: *Analysis was performed with Sarah Pickle acting as the primary technician. I pipetted my own case samples. I witness, reviewed, and approved of all work performed during the extraction.*

TS

Toxicology AM method 27 external prep information

Working Solution 1 ug/ml in MeOH C-THC, THC-OH, THC

Stock Solution 1mg/ml 10 ul THC, 100ug/ml 100ul THC-OH, C-THC in 9790 ul MeOH (Fisher Lot # 172516)

Prepared: 02/07/18

Expires: 02/07/19

By: TS

Drug	Lot	Expiration
C-THC	497429	N/A
THC	FE04231406	4/30/2019
THC-OH	FE01121503	1/31/2020

AM 27 control 100 ul working solution lot (WS020718) in 9900ul blood (Hemostat Lot# 361331-2)

Prepared: 02/07/18

Expires: 02/07/19

By: TS

# ISP FORENSICS - Pocatello Instrument # 59740

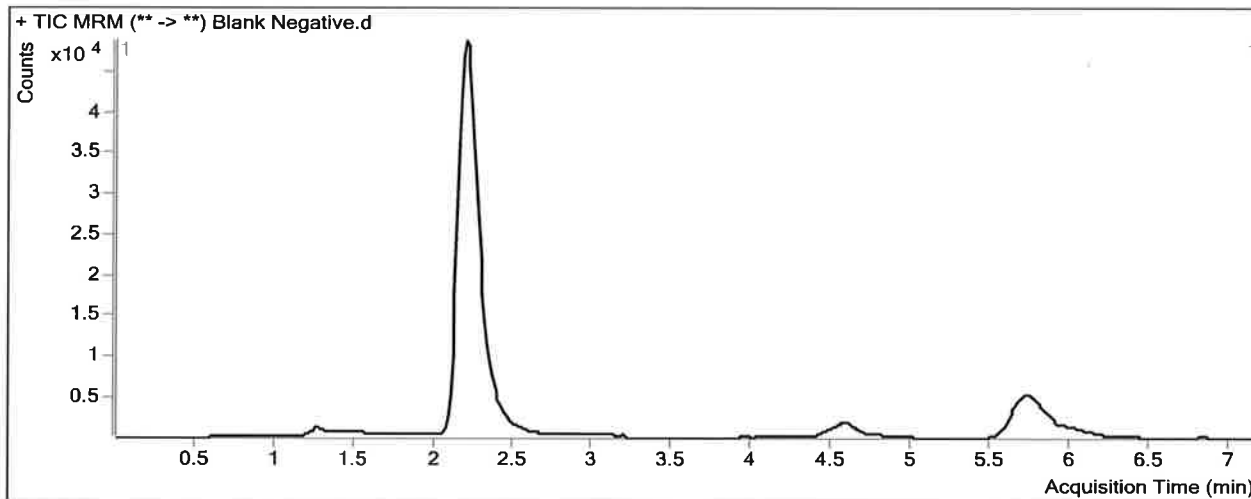
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\020718 THC Quant SP TS\QuantResults\020718 TS THC Q  
**Analysis Time** 2/8/2018 9:34 AM **Analyst Name** ISPUser  
**Report Time** 2/8/2018 9:37 AM **Reporter Name** ISPUser  
**Last Calib Update** 2/8/2018 9:34 AM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-02-07 13:49 **Data File** Blank Negative.d  
**Sample Type** Sample **Sample Name** Blank Negative  
**Dilution** 1 **Acq Method** THC Quant 051517 workingmm.m  
**Position** Vial 1 **Sample Info**  
**Inj Vol** -1 **Comment**

### Sample Chromatogram



# ISP FORENSICS - Pocatello Instrument # 59740

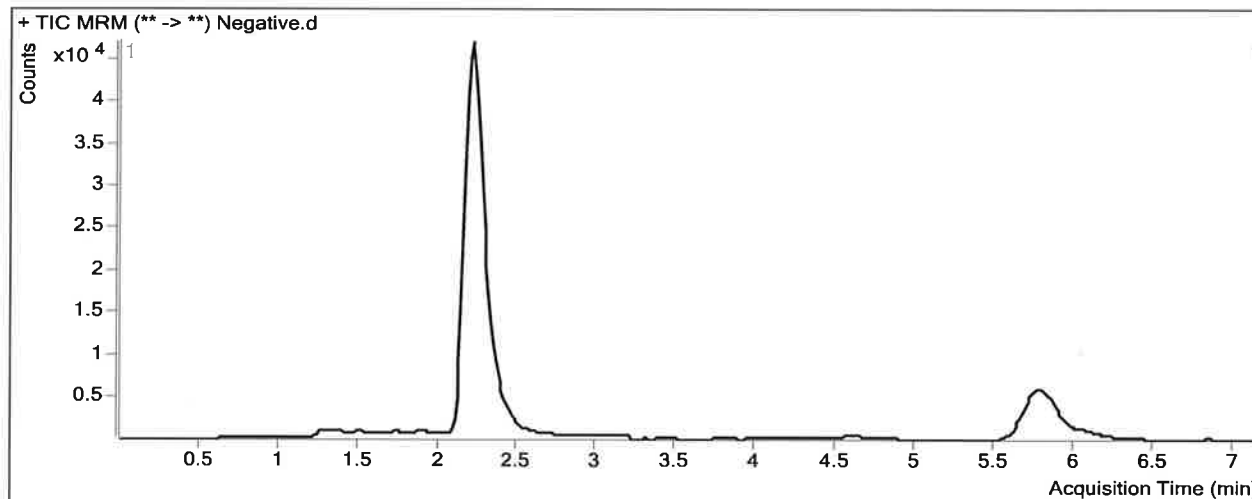
## Cannabinoids Analysis Report

<b>Batch Data Path</b>	C:\MassHunter\Data\2018\THC Quant\020718 THC Quant SP TS\QuantResults\020718 TS THC Quant_wk1st 2		
<b>Analysis Time</b>	2/8/2018 9:34 AM	<b>Analyst Name</b>	ISPUser
<b>Report Time</b>	2/8/2018 9:37 AM	<b>Reporter Name</b>	ISPUser
<b>Last Calib Update</b>	2/8/2018 9:34 AM	<b>Batch State</b>	Processed

### Analysis Info

<b>Acq Time</b>	2018-02-07 14:01	<b>Data File</b>	Negative.d
<b>Sample Type</b>	Sample	<b>Sample Name</b>	Negative
<b>Dilution</b>	1	<b>Acq Method</b>	THC Quant 051517 workingmm.m
<b>Position</b>	P1-A7	<b>Sample Info</b>	
<b>Inj Vol</b>	-1	<b>Comment</b>	Hemostat 361331-3

### Sample Chromatogram



### Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.399	2331	308551	0.0076	0.8110 <b>&lt; 3</b>
THC-COOH	THC-COOH-D9	2.299	3357	89689	0.0374	0.3319 <b>&lt; 10</b>

# ISP FORENSICS - Pocatello Instrument # 59740

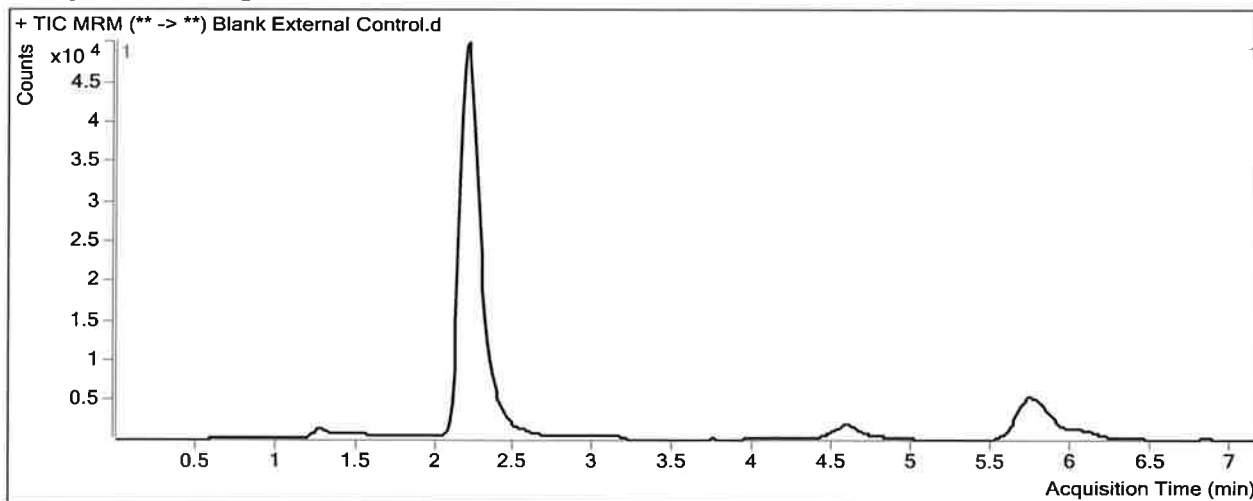
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\020718 THC Quant SP TS\QuantResults\020718 TS THC Quant\_wk1st 2  
**Analysis Time** 2/8/2018 9:34 AM **Analyst Name** ISPUser  
**Report Time** 2/8/2018 9:37 AM **Reporter Name** ISPUser  
**Last Calib Update** 2/8/2018 9:34 AM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-02-07 14:12 **Data File** Blank External Control.d  
**Sample Type** Sample **Sample Name** Blank External Control  
**Dilution** 1 **Acq Method** THC Quant 051517 workingmm.m  
**Position** Vial 1 **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	2.426	1431	335155	0.0043	0.5279 <3

# ISP FORENSICS - Pocatello Instrument # 59740

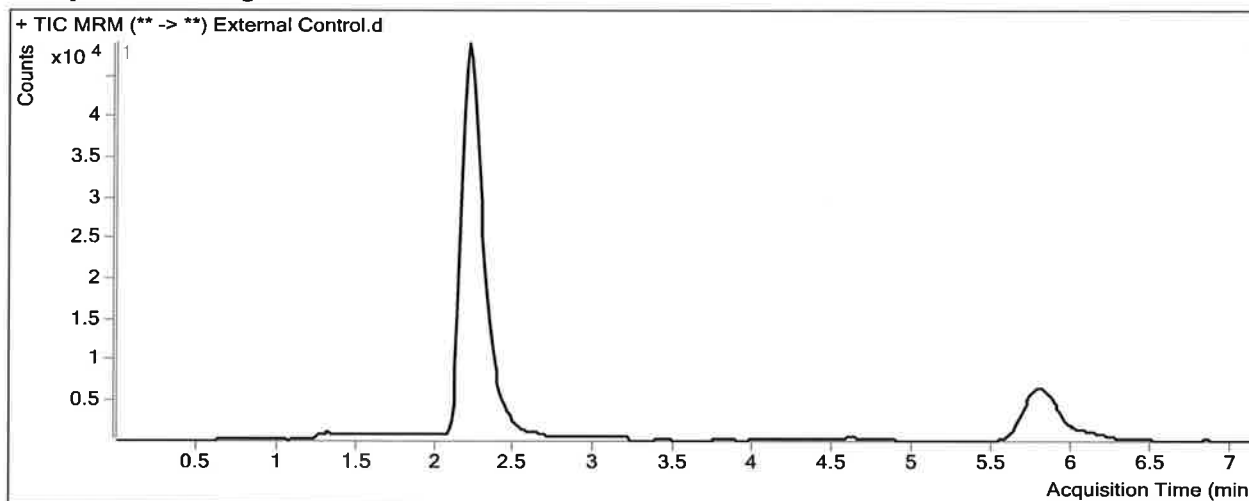
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\020718 THC Quant SP TS\QuantResults\020718 TS THC Quant\_wk1st 2  
**Analysis Time** 2/8/2018 9:34 AM **Analyst Name** ISPUser  
**Report Time** 2/8/2018 9:37 AM **Reporter Name** ISPUser  
**Last Calib Update** 2/8/2018 9:34 AM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-02-07 14:24 **Data File** External Control.d  
**Sample Type** Sample **Sample Name** External Control  
**Dilution** 1 **Acq Method** THC Quant 051517 workingmm.m  
**Position** P1-B7 **Sample Info**  
**Inj Vol** -1 **Comment** Hemostat 361331-3 + WS 020718

### Sample Chromatogram



### Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.212	26497	295357	0.0897	7.8956
THC-COOH	THC-COOH-D9	2.312	19140	86318	0.2217	8.4351
THC	THC-D3	5.812	10817	99237	0.1090	9.5178

# ISP FORENSICS - Pocatello Instrument # 59740

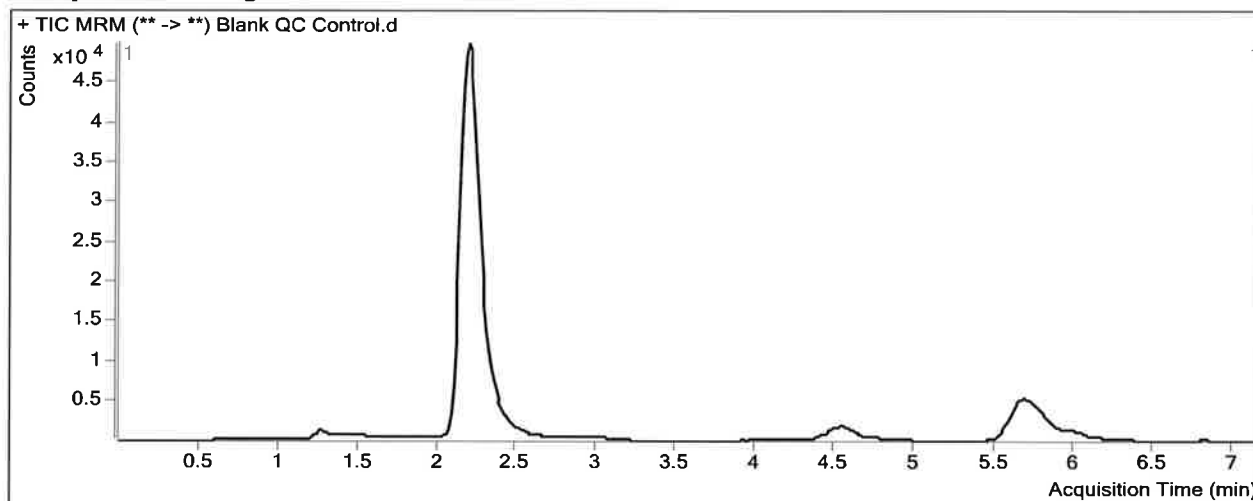
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\020718 THC Quant SP TS\QuantResults\020718 TS THC Quant\_wk1st 2  
**Analysis Time** 2/8/2018 9:34 AM **Analyst Name** ISPUser  
**Report Time** 2/8/2018 9:37 AM **Reporter Name** ISPUser  
**Last Calib Update** 2/8/2018 9:34 AM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-02-07 13:25 **Data File** Blank QC Control.d  
**Sample Type** Sample **Sample Name** Blank QC Control  
**Dilution** 1 **Acq Method** THC Quant 051517 workingmm.m  
**Position** Vial 1 **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	2.386	1431	333930	0.0043	0.5292 <3



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# ISP FORENSICS - Pocatello Instrument # 59740

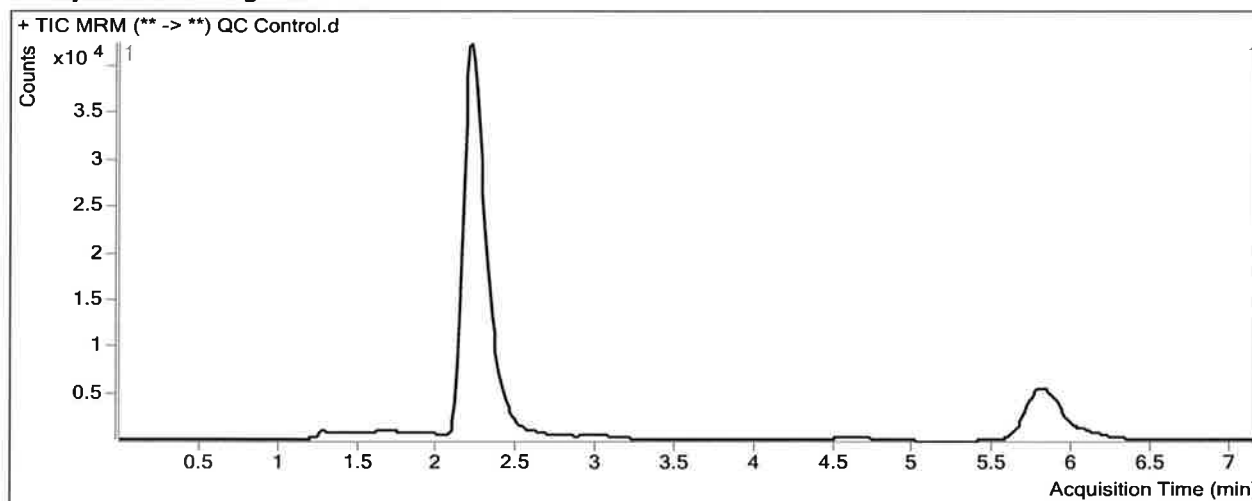
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\020718 THC Quant SP TS\QuantResults\020718 TS THC Quant\_wk1st 2  
**Analysis Time** 2/8/2018 9:34 AM **Analyst Name** ISPUser  
**Report Time** 2/8/2018 9:37 AM **Reporter Name** ISPUser  
**Last Calib Update** 2/8/2018 9:34 AM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-02-07 13:37 **Data File** QC Control.d  
**Sample Type** Sample **Sample Name** QC Control  
**Dilution** 1 **Acq Method** THC Quant 051517 workingmm.m  
**Position** P1-H6 **Sample Info**  
**Inj Vol** -1 **Comment**

### Sample Chromatogram



### Results

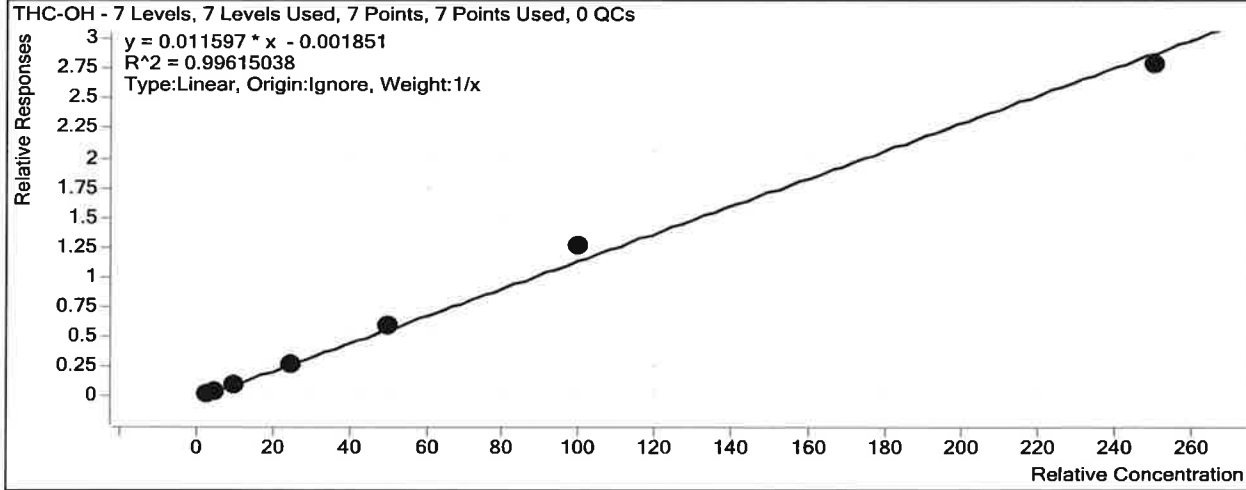
Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.225	28202	247877	0.1138	9.9704
THC-COOH	THC-COOH-D9	2.312	19281	72306	0.2667	10.4102
THC	THC-D3	5.839	9399	83556	0.1125	9.8505

# ISP Forensics Calibration Curve Report

15

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\020718 THC Quant SP TS\QuantResults\020718 TS  
THC Quant\_wk1st 2175.batch.bin  
**Last Calib Update** 2/8/2018 9:34 AM **Analyst Name** ISP TOX

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



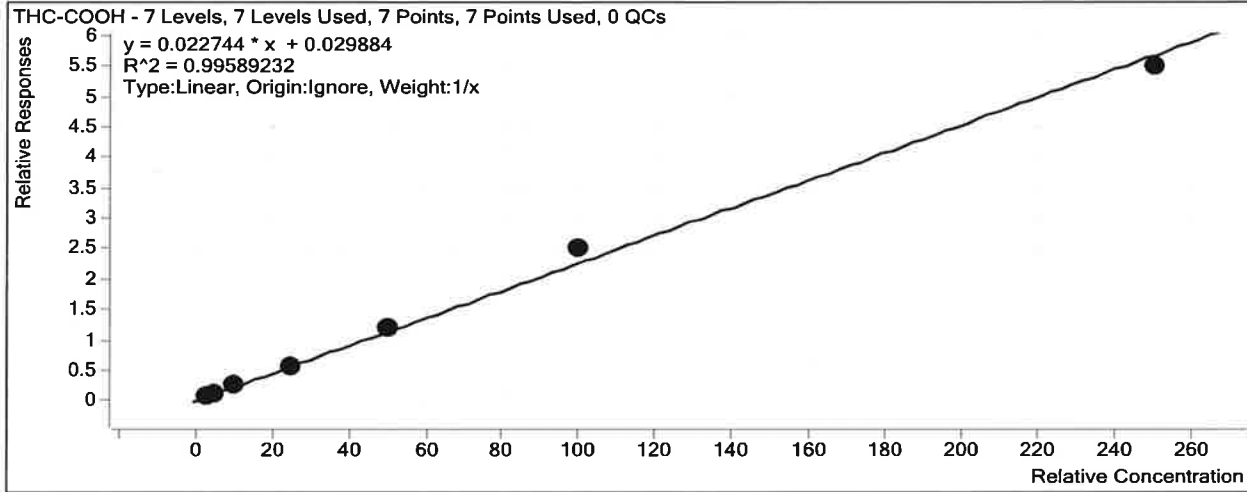
Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
Cal 1	1	<input checked="" type="checkbox"/>	3	3.2	106.9
Cal 2	2	<input checked="" type="checkbox"/>	5	4.8	95.8
Cal 3	3	<input checked="" type="checkbox"/>	10	9.1	90.8
Cal 4	4	<input checked="" type="checkbox"/>	25	24.1	96.3
Cal 5	5	<input checked="" type="checkbox"/>	50	52.5	105.1
Cal 6	6	<input checked="" type="checkbox"/>	100	109.0	109.0
Cal 7	7	<input checked="" type="checkbox"/>	250	240.4	96.1

# ISP Forensics Calibration Curve Report

15

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\020718 THC Quant SP TS\QuantResults\020718 TS  
 THC Quant\_wklst 2175.batch.bin  
**Last Calib Update** 2/8/2018 9:34 AM **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 checked="" type="checkbox"/>	3	3.1	102.5
Cal 2	2	<input checked="" type="checkbox"/>	5	4.8	95.9
Cal 3	3	<input checked="" type="checkbox"/>	10	9.9	99.1
Cal 4	4	<input checked="" type="checkbox"/>	25	23.1	92.3
Cal 5	5	<input checked="" type="checkbox"/>	50	52.3	104.5
Cal 6	6	<input checked="" type="checkbox"/>	100	109.5	109.5
Cal 7	7	<input checked="" type="checkbox"/>	250	240.3	96.1

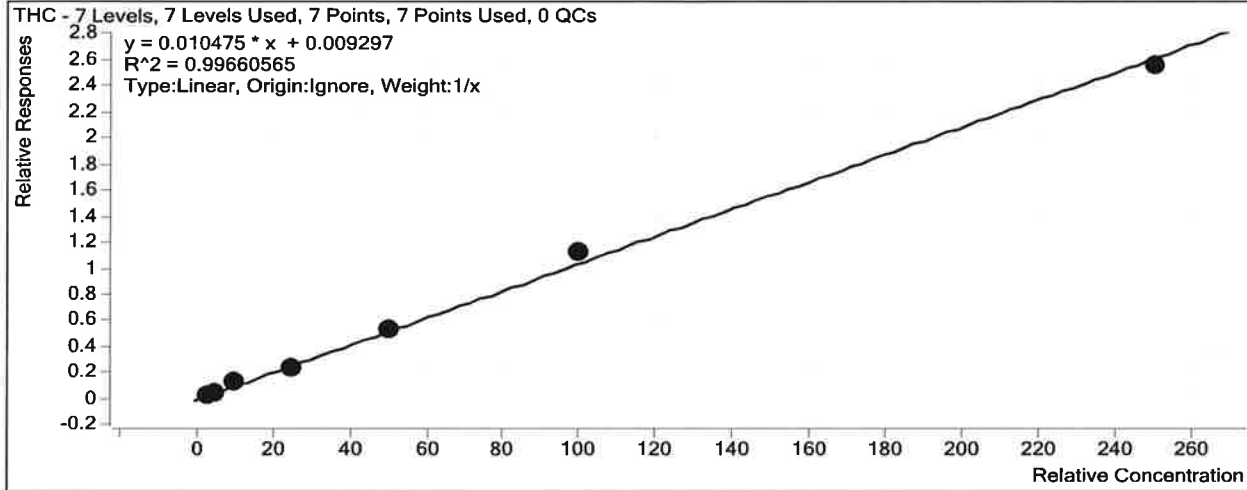
# ISP Forensics Calibration Curve Report

15

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\020718 THC Quant SP TS\QuantResults\020718 TS  
THC Quant\_wklst 2175.batch.bin

**Last Calib Update** 2/8/2018 9:34 AM      **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	95.9
Cal 2	2	<input checked="" type="checkbox"/>	5	4.6	91.6
Cal 3	3	<input checked="" type="checkbox"/>	10	11.6	115.5
Cal 4	4	<input checked="" type="checkbox"/>	25	22.6	90.4
Cal 5	5	<input checked="" type="checkbox"/>	50	51.0	102.1
Cal 6	6	<input checked="" type="checkbox"/>	100	107.4	107.4
Cal 7	7	<input checked="" type="checkbox"/>	250	243.0	97.2

# ISP FORENSICS - Pocatello Instrument # 59740

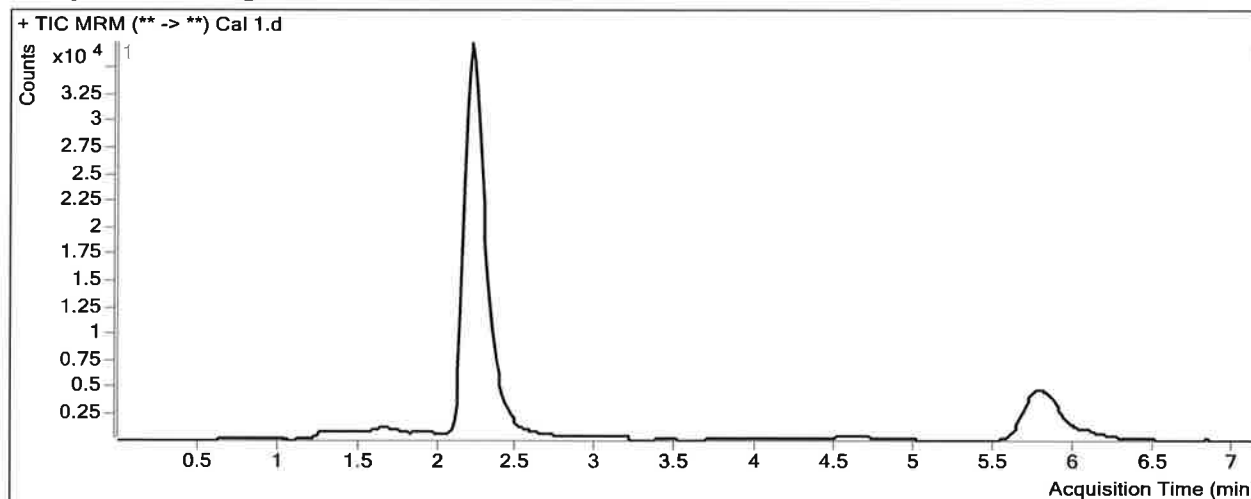
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\020718 THC Quant SP TS\QuantResults\020718 TS THC Quant\_wk1st 2  
**Analysis Time** 2/8/2018 9:34 AM **Analyst Name** ISPUser  
**Report Time** 2/8/2018 9:36 AM **Reporter Name** ISPUser  
**Last Calib Update** 2/8/2018 9:34 AM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-02-07 12:02 **Data File** Cal 1.d  
**Sample Type** Calibration **Sample Name** Cal 1  
**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	2.225	8442	238809	0.0353	3.2077
THC-COOH	THC-COOH-D9	2.312	7159	71741	0.0998	3.0738
THC	THC-D3	5.825	3253	82484	0.0394	2.8775

# ISP FORENSICS - Pocatello Instrument # 59740

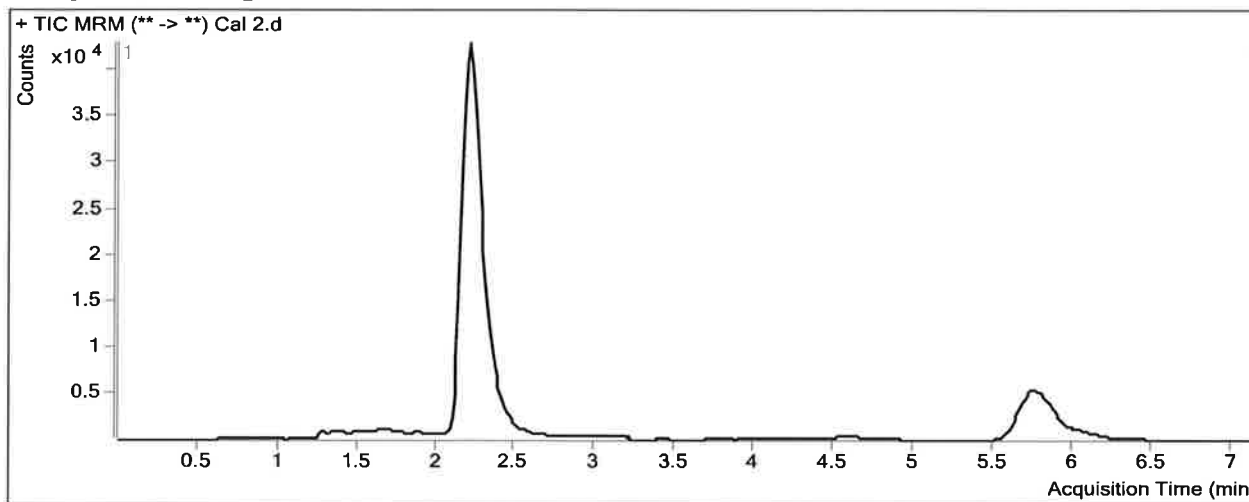
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\020718 THC Quant SP TS\QuantResults\020718 TS THC Quant\_wk1st 2  
**Analysis Time** 2/8/2018 9:34 AM **Analyst Name** ISPUser  
**Report Time** 2/8/2018 9:36 AM **Reporter Name** ISPUser  
**Last Calib Update** 2/8/2018 9:34 AM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-02-07 12:14 **Data File** Cal 2.d  
**Sample Type** Calibration **Sample Name** Cal 2  
**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	2.212	14215	264649	0.0537	4.7915
THC-COOH	THC-COOH-D9	2.312	11473	82563	0.1390	4.7960
THC	THC-D3	5.812	5079	88722	0.0573	4.5779

# ISP FORENSICS - Pocatello Instrument # 59740

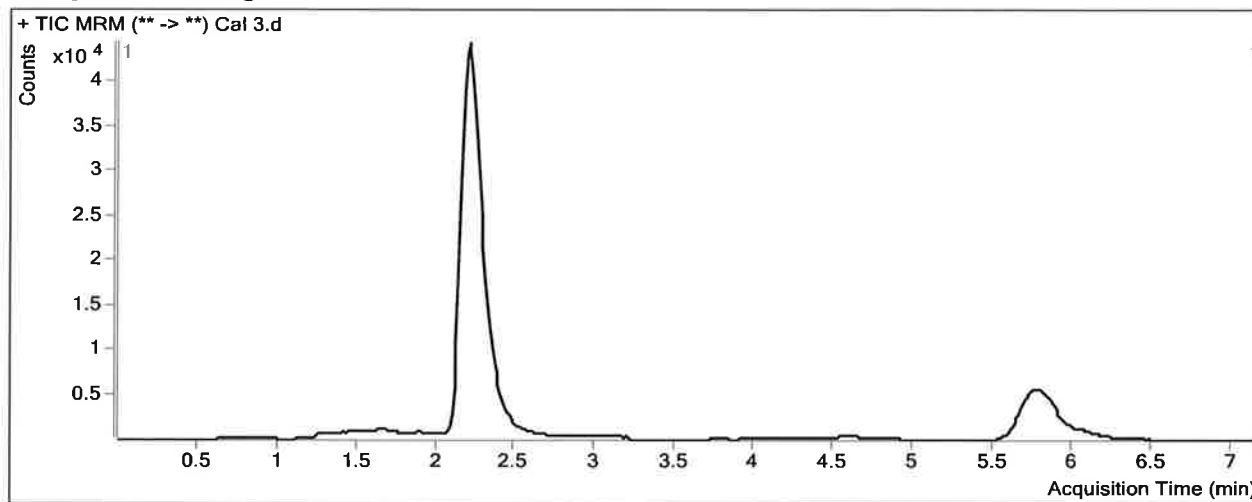
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\020718 THC Quant SP TS\QuantResults\020718 TS THC Quant\_wk1st 2  
**Analysis Time** 2/8/2018 9:34 AM **Analyst Name** ISPUser  
**Report Time** 2/8/2018 9:36 AM **Reporter Name** ISPUser  
**Last Calib Update** 2/8/2018 9:34 AM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-02-07 12:26 **Data File** Cal 3.d  
**Sample Type** Calibration **Sample Name** Cal 3  
**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	2.212	27169	262710	0.1034	9.0775
THC-COOH	THC-COOH-D9	2.299	19640	76931	0.2553	9.9105
THC	THC-D3	5.799	11291	86648	0.1303	11.5525

# ISP FORENSICS - Pocatello Instrument # 59740

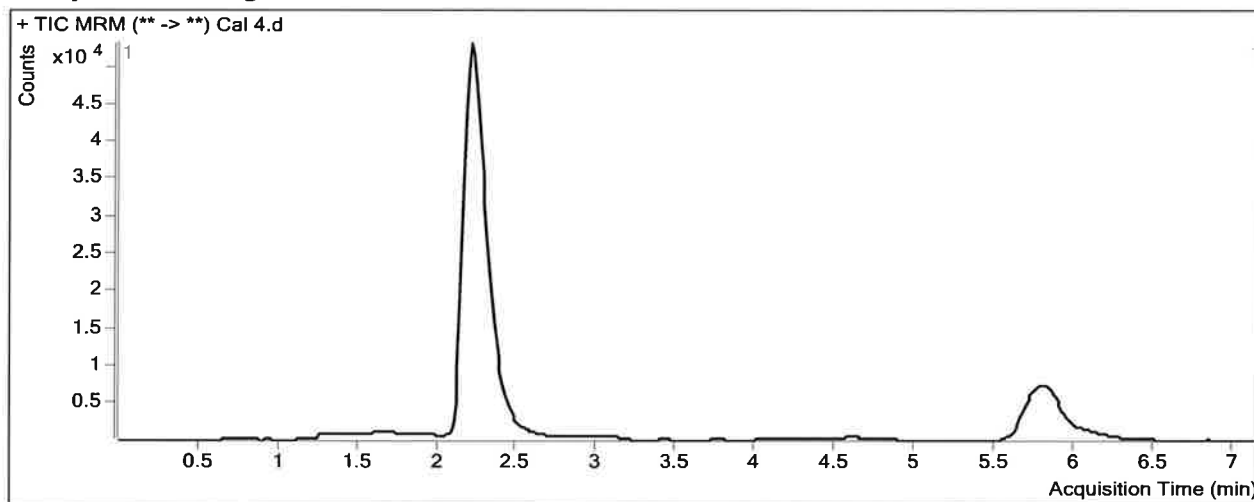
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\020718 THC Quant SP TS\QuantResults\020718 TS THC Quant\_wk1st 2  
**Analysis Time** 2/8/2018 9:34 AM **Analyst Name** ISPUser  
**Report Time** 2/8/2018 9:36 AM **Reporter Name** ISPUser  
**Last Calib Update** 2/8/2018 9:34 AM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-02-07 12:38 **Data File** Cal 4.d  
**Sample Type** Calibration **Sample Name** Cal 4  
**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	2.212	75240	271265	0.2774	24.0773
THC-COOH	THC-COOH-D9	2.312	45462	81937	0.5548	23.0810
THC	THC-D3	5.839	22771	92590	0.2459	22.5899



# ISP FORENSICS - Pocatello Instrument # 59740

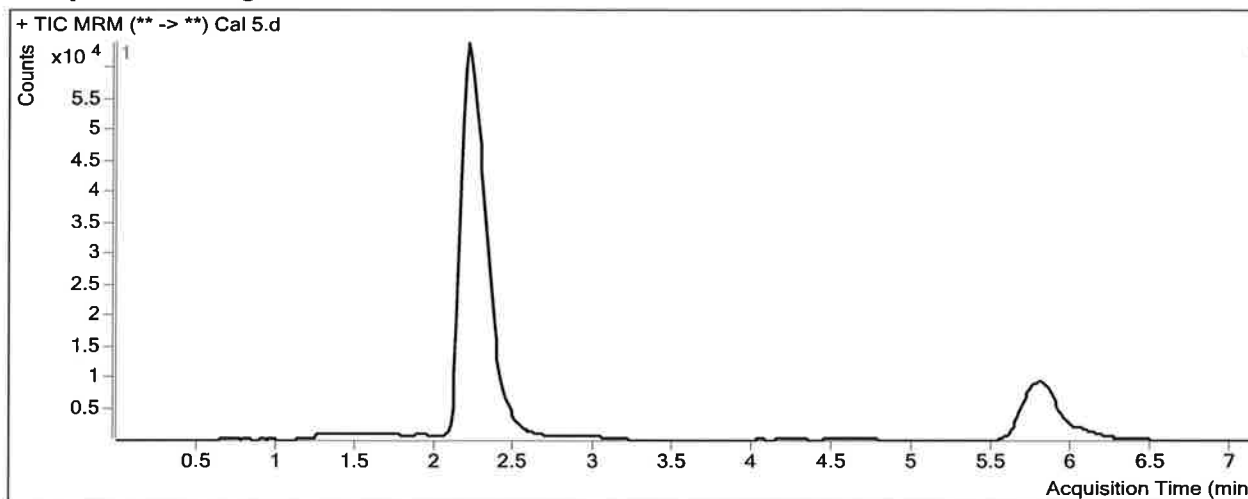
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\020718 THC Quant SP TS\QuantResults\020718 TS THC Quant\_wk1st 2  
**Analysis Time** 2/8/2018 9:34 AM **Analyst Name** ISPUser  
**Report Time** 2/8/2018 9:37 AM **Reporter Name** ISPUser  
**Last Calib Update** 2/8/2018 9:34 AM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-02-07 12:50 **Data File** Cal 5.d  
**Sample Type** Calibration **Sample Name** Cal 5  
**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	2.212	155476	255994	0.6073	52.5310
THC-COOH	THC-COOH-D9	2.312	91001	74682	1.2185	52.2609
THC	THC-D3	5.825	46197	84926	0.5440	51.0415

# ISP FORENSICS - Pocatello Instrument # 59740

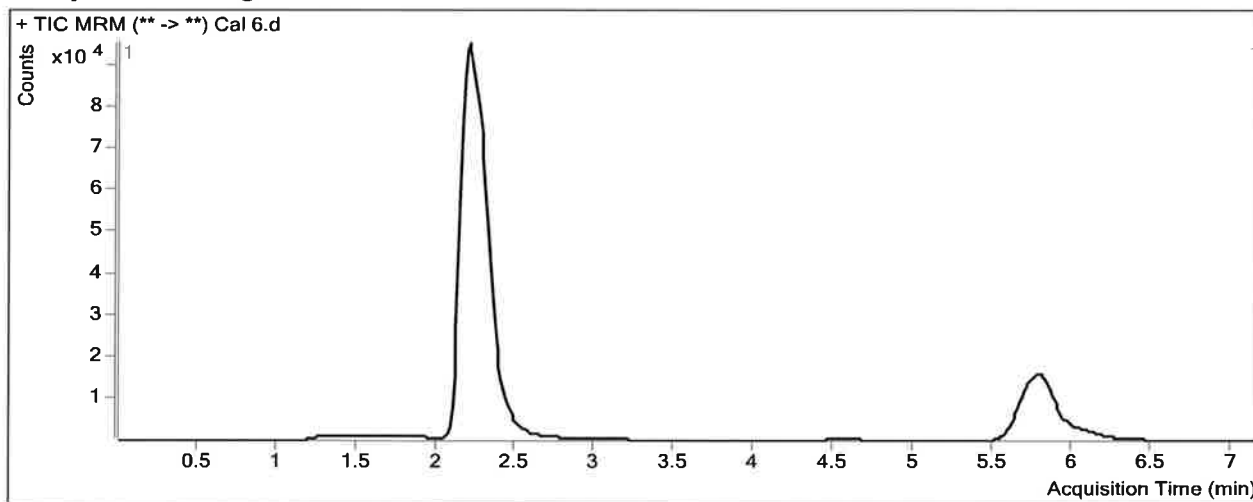
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\020718 THC Quant SP TS\QuantResults\020718 TS THC Quant\_wk1st 2  
**Analysis Time** 2/8/2018 9:34 AM **Analyst Name** ISPUser  
**Report Time** 2/8/2018 9:37 AM **Reporter Name** ISPUser  
**Last Calib Update** 2/8/2018 9:34 AM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-02-07 13:01 **Data File** Cal 6.d  
**Sample Type** Calibration **Sample Name** Cal 6  
**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	2.199	336505	266710	1.2617	108.9560
THC-COOH	THC-COOH-D9	2.299	191330	75892	2.5211	109.5305
THC	THC-D3	5.799	102200	90132	1.1339	107.3577

# ISP FORENSICS - Pocatello Instrument # 59740

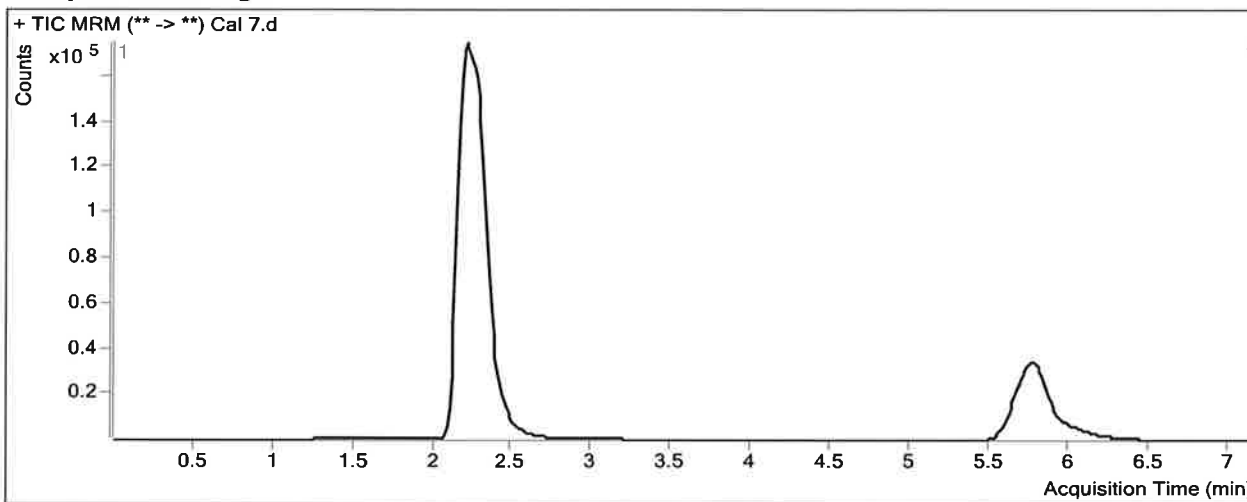
## Cannabinoids Analysis Report

**Batch Data Path** C:\MassHunter\Data\2018\THC Quant\020718 THC Quant SP TS\QuantResults\020718 TS THC Quant\_wk1st 2  
**Analysis Time** 2/8/2018 9:34 AM **Analyst Name** ISPUser  
**Report Time** 2/8/2018 9:37 AM **Reporter Name** ISPUser  
**Last Calib Update** 2/8/2018 9:34 AM **Batch State** Processed

### Analysis Info

**Acq Time** 2018-02-07 13:13 **Data File** Cal 7.d  
**Sample Type** Calibration **Sample Name** Cal 7  
**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	2.199	816311	293052	2.7855	240.3589
THC-COOH	THC-COOH-D9	2.299	448237	81551	5.4964	240.3473
THC	THC-D3	5.772	258867	101326	2.5548	243.0030