1/23/2019

Worklist: 2894

LAB_CASE	ITEM	TASK_ID	DESCRIPTION
M2018-6160	1	137771	AM 27 Blood THC Quant by LC-QQQ
M2018-6183	1	137772	AM 27 Blood THC Quant by LC-QQQ
M2018-6185	1	137773	AM 27 Blood THC Quant by LC-QQQ
M2018-6364	3	137774	AM 27 Blood THC Quant by LC-QQQ
P2018-3591	1	137775	AM 27 Blood THC Quant by LC-QQQ
P2018-3604	2	137776	AM 27 Blood THC Quant by LC-QQQ
P2018-3653	1	137777	AM 27 Blood THC Quant by LC-QQQ
P2018-3655	1	137778	AM 27 Blood THC Quant by LC-QQQ
P2019-0052	1	137779	AM 27 Blood THC Quant by LC-QQQ
P2019-0053	1	137780	AM 27 Blood THC Quant by LC-QQQ
P2019-0099	1	137781	AM 27 Blood THC Quant by LC-QQQ
P2019-0103	1	137782	AM 27 Blood THC Quant by LC-QQQ

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

Extraction Date: 1/18/19 Analyst: Sarah Pickle
Plate lot#: 0539904 Plate Expiration: 09/10/19

Mobile phase A: 0.1% Formic Acid in LCMS Water **Mobile phase B:** 0.1% Formic acid in Acetonitrile
MTBE LCMS Methanol Hexane
Blank Blood Lot: 445283-1 **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: 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: 011819 THCQ SP Batch Name: THCQ
☒ 2. Make any necessary integration changes, Curve weighting of Linear 1/x with r^2 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: *Curve range limited: Carboxy-THC 10-100*

Idaho State Police Forensic Services

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

Methanol External Control Solution (Lot: WS102418)

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

Component	*Source*	*Source Lot Number*	*Expiration Date*
Methanol (LCMS)	Fisher	177145	
THC	Cerilliant	FE04231406	04/30/2019
C-THC	Cayman	0497429	02/08/2019
THC-OH	Cerilliant	FE01121503	01/31/2020
Prepared:	10/24/18		
Prepared By:	Tamara Salazar		
Expires:	02/08/19		

Blood External Control Solution (Lot: 102418)

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

Component	*Source*	*Source Lot Number*
Negative Blood	Lampire	18G207D7
Methanol External Control Solution		WS102418
Prepared:	10/24/18	
Prepared by:	Sarah Pickle	
Expires:	02/08/19	

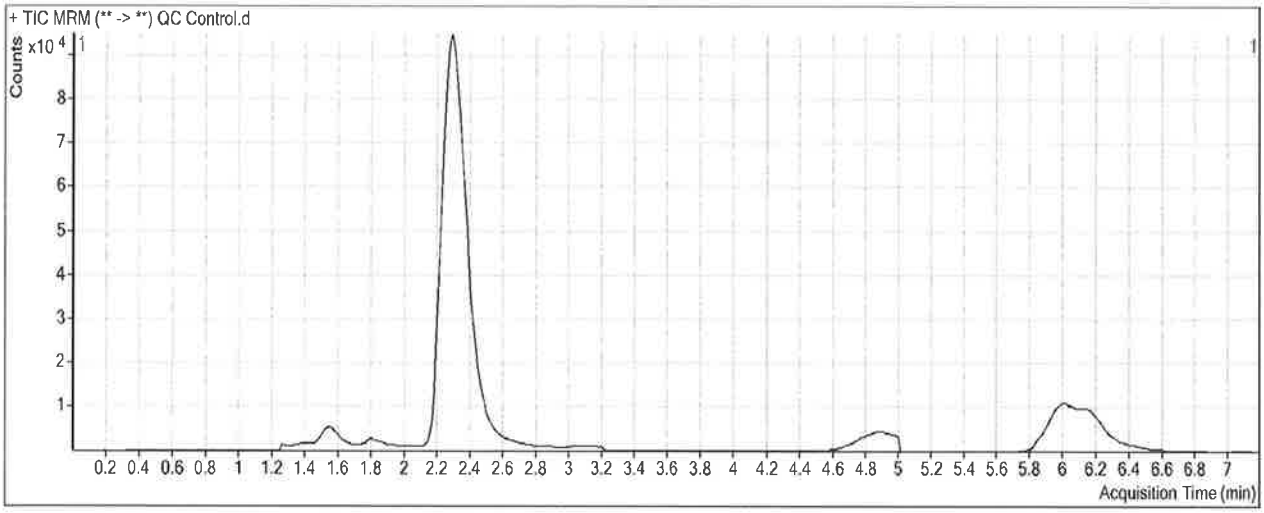
ISP FORENSICS - Pocatello Instrument # 59740
Cannabinoids Analysis Report

Batch Data Path	C:\MassHunter\Data\2019\AM 27\011819 THCQ SP\QuantResults\THCQ.batch.bin		
Analysis Time	1/22/2019 2:48 PM	**Analyst Name**	datastor
Report Time	1/23/2019 12:50 PM	**Reporter Name**	datastor
Last Calib Update	1/22/2019 2:48 PM	**Batch State**	Processed

Analysis Info

Acq Time	2019-01-18 13:54	**Data File**	QC Control.d
Sample Type	Sample	**Sample Name**	QC Control
Dilution	1	**Acq Method**	THC Quant 051517 workingmm.m
Position	P1-A12	**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	37689	691059	0.0545	5.3871
THC-COOH	THC-COOH-D9	2.392	50113	216002	0.2320	10.6402
THC	THC-D3	6.132	9629	231939	0.0415	4.9027

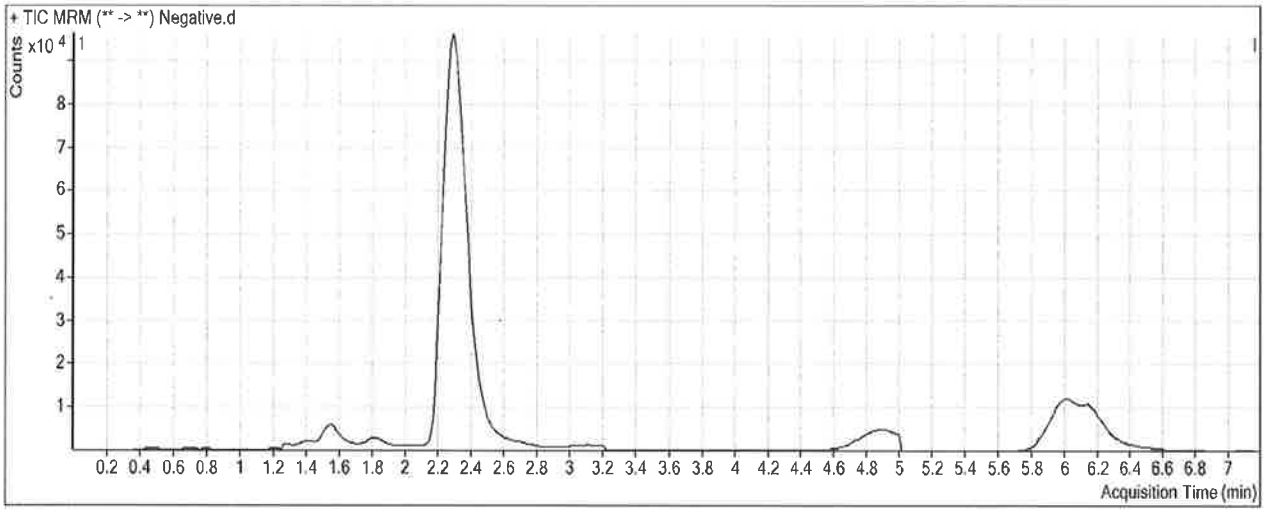
ISP FORENSICS - Pocatello Instrument # 59740
Cannabinoids Analysis Report

Batch Data Path	C:\MassHunter\Data\2019\AM 27\011819 THCQ SP\QuantResults\THCQ.batch.bin		
Analysis Time	1/22/2019 2:48 PM	**Analyst Name**	datastor
Report Time	1/23/2019 12:51 PM	**Reporter Name**	datastor
Last Calib Update	1/22/2019 2:48 PM	**Batch State**	Processed

Analysis Info

Acq Time	2019-01-18 14:18	**Data File**	Negative.d
Sample Type	Sample	**Sample Name**	Negative
Dilution	1	**Acq Method**	THC Quant 051517 workingmm.m
Position	P1-H11	**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	2.245	9012	231621	0.0389	0.4952

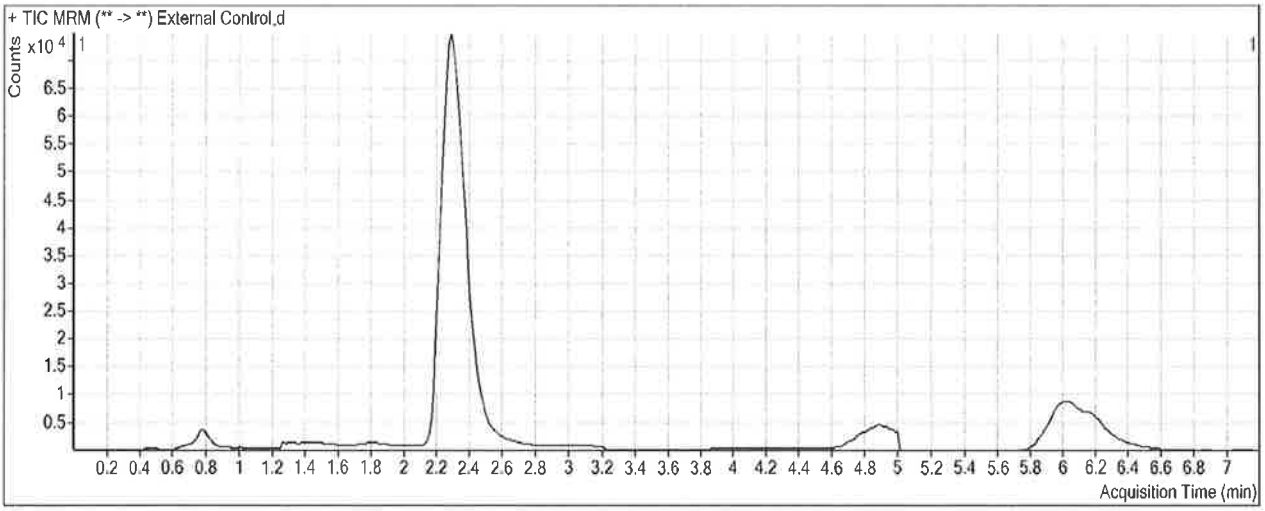
ISP FORENSICS - Pocatello Instrument # 59740
Cannabinoids Analysis Report

Batch Data Path	C:\MassHunter\Data\2019\AM 27\011819 THCQ SP\QuantResults\THCQ.batch.bin		
Analysis Time	1/22/2019 2:48 PM	**Analyst Name**	datastor
Report Time	1/23/2019 12:51 PM	**Reporter Name**	datastor
Last Calib Update	1/22/2019 2:48 PM	**Batch State**	Processed

Analysis Info

Acq Time	2019-01-18 14:42	**Data File**	External Control.d
Sample Type	Sample	**Sample Name**	External Control
Dilution	1	**Acq Method**	THC Quant 051517 workingmm.m
Position	P1-G11	**Sample Info**	
Inj Vol	-1	**Comment**	Lampire 18G207D7 + WS 102418

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.279	49797	512282	0.0972	9.0645
THC-COOH	THC-COOH-D9	2.392	31703	177744	0.1784	7.8221
THC	THC-D3	6.146	13743	180866	0.0760	8.8591

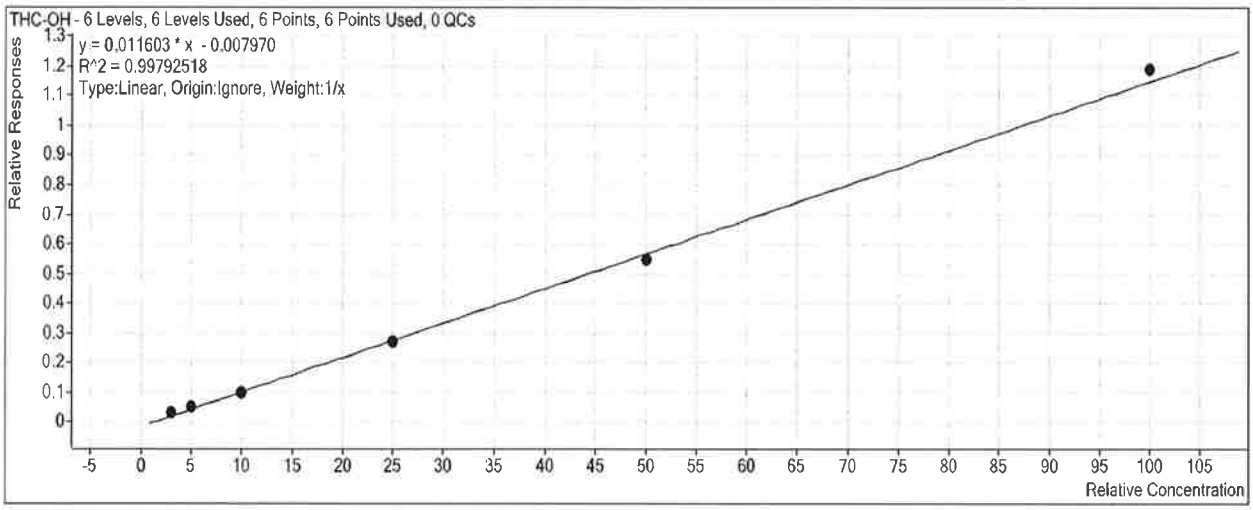
ISP Forensics
Calibration Curve Report

Batch Data Path C:\MassHunter\Data\2019\AM 27\011819 THCQ SP\QuantResults\THCQ.batch.bin

Last Calib Update 1/22/2019 2:48 PM **Analyst Name** ISP TOX

Target Compound *THC-OH*

Internal Standard *THC-OH-D3*



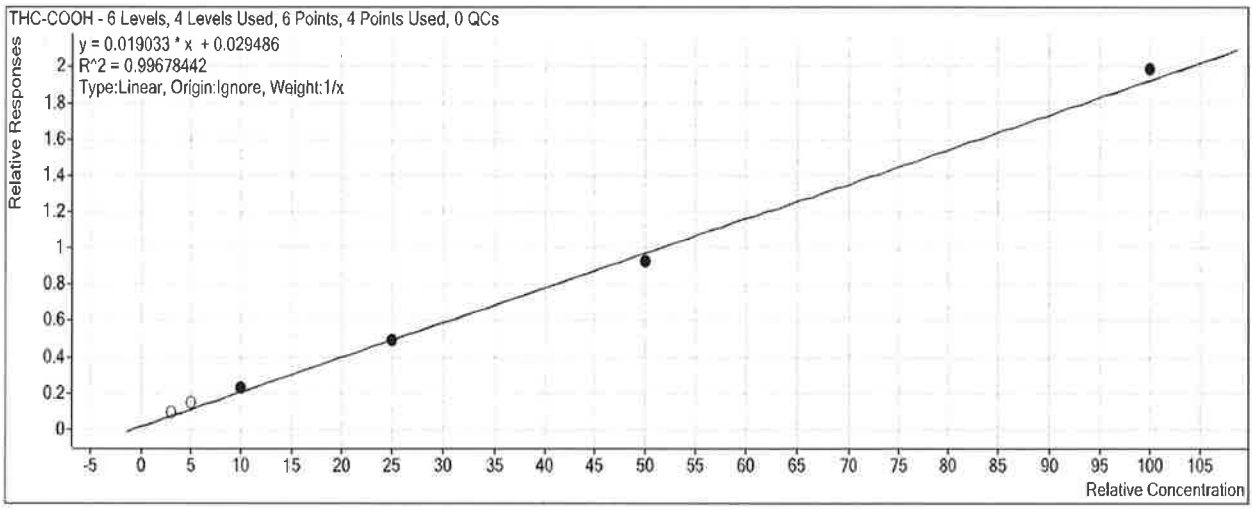
Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
Cal 1-3ng	1	☑	3	3.3	109.4
Cal 2-5ng	2	☑	5	5.1	101.5
Cal 3-10ng	3	☑	10	9.4	93.6
Cal 4-25ng	4	☑	25	24.1	96.4
Cal 5-50ng	5	☑	50	47.9	95.8
Cal 6-100ng	6	☑	100	103.3	103.3

ISP Forensics
Calibration Curve Report

Batch Data Path C:\MassHunter\Data\2019\AM 27\011819 THCQ SP\QuantResults\THCQ.batch.bin

Last Calib Update 1/22/2019 2:48 PM **Analyst Name** ISP TOX

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



Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
Cal 1-3ng	1	☐	3	3.4	112.0
Cal 2-5ng	2	☐	5	6.5	130.4
Cal 3-10ng	3	☑	10	10.5	105.4
Cal 4-25ng	4	☑	25	24.3	97.2
Cal 5-50ng	5	☑	50	47.2	94.4
Cal 6-100ng	6	☑	100	103.0	103.0

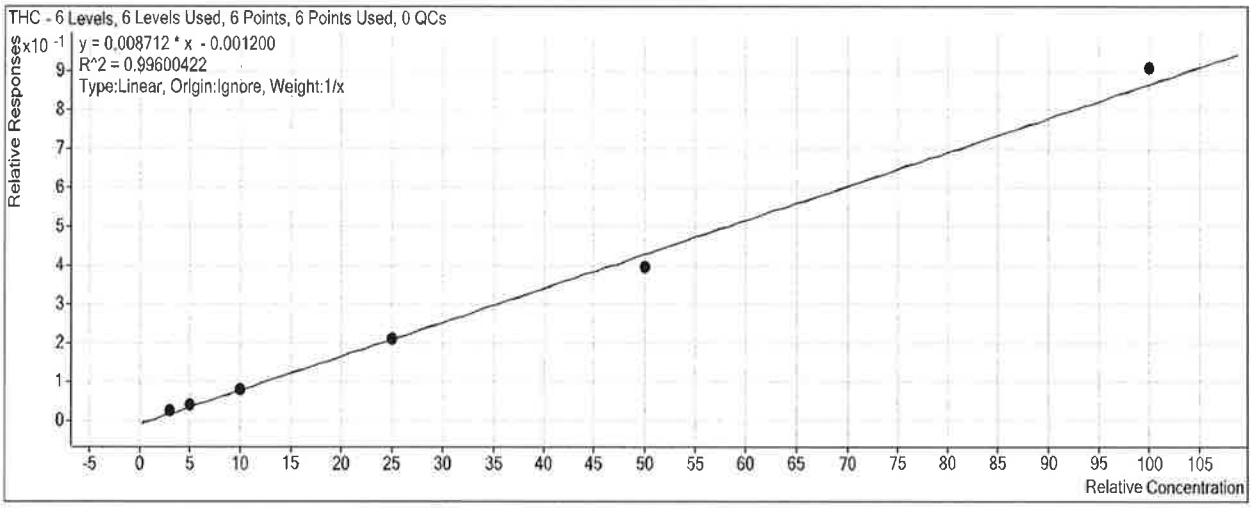
ISP Forensics
Calibration Curve Report

Batch Data Path C:\MassHunter\Data\2019\AM 27\011819 THCQ SP\QuantResults\THCQ.batch.bin

Last Calib Update 1/22/2019 2:48 PM **Analyst Name** ISP TOX

Target Compound *THC*

Internal Standard *THC-D3*



Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
Cal 1-3ng	1	☑	3	3.2	106.8
Cal 2-5ng	2	☑	5	5.0	100.6
Cal 3-10ng	3	☑	10	9.8	97.7
Cal 4-25ng	4	☑	25	24.7	98.7
Cal 5-50ng	5	☑	50	45.8	91.7
Cal 6-100ng	6	☑	100	104.5	104.5

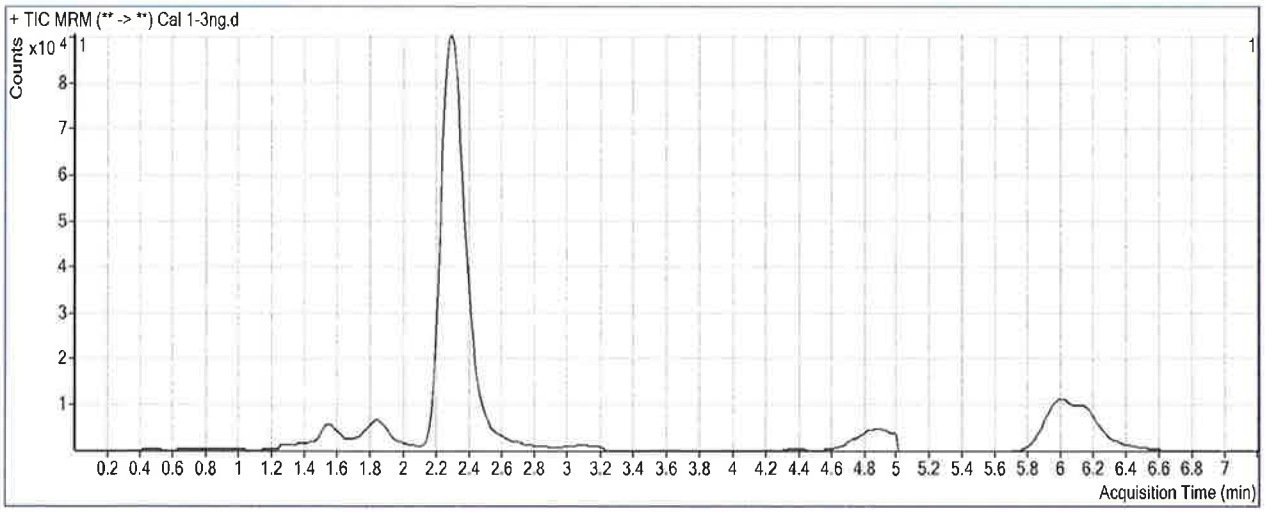
ISP FORENSICS - Pocatello Instrument # 59740
Cannabinoids Analysis Report

Batch Data Path	C:\MassHunter\Data\2019\AM 27\011819 THCQ SP\QuantResults\THCQ.batch.bin		
Analysis Time	1/22/2019 2:48 PM	**Analyst Name**	datastor
Report Time	1/23/2019 12:50 PM	**Reporter Name**	datastor
Last Calib Update	1/22/2019 2:48 PM	**Batch State**	Processed

Analysis Info

Acq Time	2019-01-18 12:31	**Data File**	Cal 1-3ng.d
Sample Type	Calibration	**Sample Name**	Cal 1-3ng
Dilution	1	**Acq Method**	THC Quant 051517 workingmm.m
Position	P1-G12	**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	20526	681881	0.0301	3.2812
THC-COOH	THC-COOH-D9	2.379	19867	212580	0.0935	3.3611
THC	THC-D3	6.159	6194	231741	0.0267	3.2054

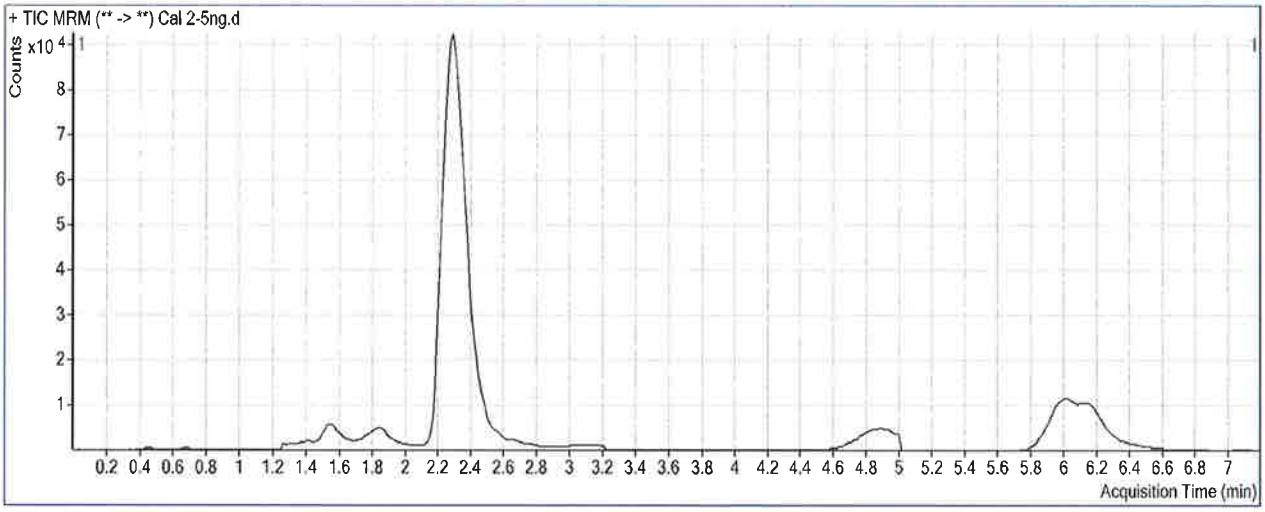
ISP FORENSICS - Pocatello Instrument # 59740
Cannabinoids Analysis Report

Batch Data Path	C:\MassHunter\Data\2019\AM 27\011819 THCQ SP\QuantResults\THCQ.batch.bin		
Analysis Time	1/22/2019 2:48 PM	**Analyst Name**	datastor
Report Time	1/23/2019 12:50 PM	**Reporter Name**	datastor
Last Calib Update	1/22/2019 2:48 PM	**Batch State**	Processed

Analysis Info

Acq Time	2019-01-18 12:43	**Data File**	Cal 2-5ng.d
Sample Type	Calibration	**Sample Name**	Cal 2-5ng
Dilution	1	**Acq Method**	THC Quant 051517 workingmm.m
Position	P1-F12	**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	34243	672678	0.0509	5.0741
THC-COOH	THC-COOH-D9	2.392	31770	206901	0.1536	6.5185
THC	THC-D3	6.146	9937	233244	0.0426	5.0277

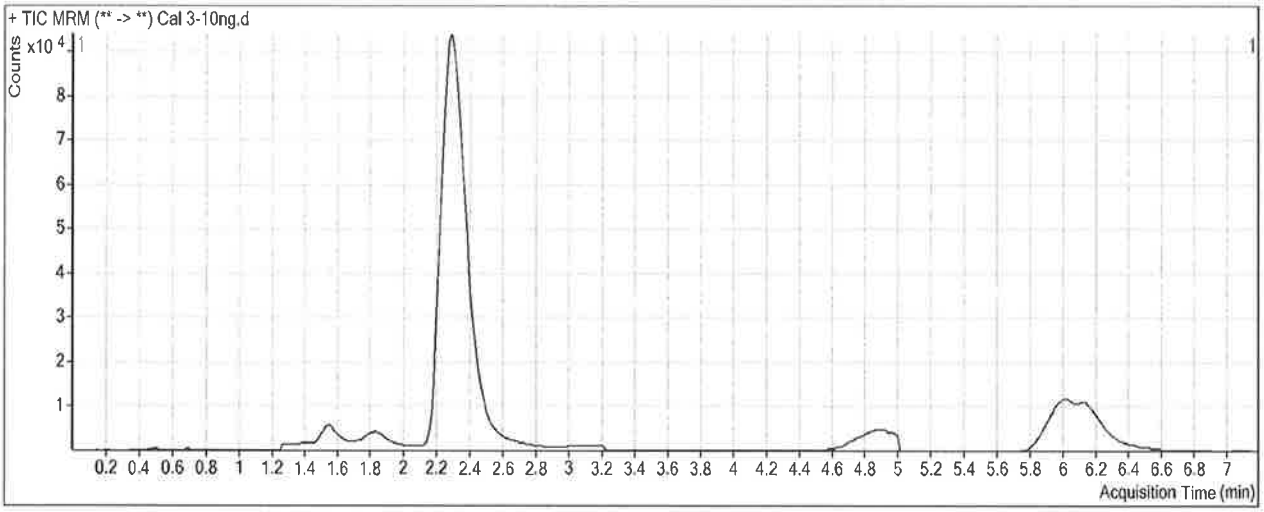
ISP FORENSICS - Pocatello Instrument # 59740
Cannabinoids Analysis Report

Batch Data Path	C:\MassHunter\Data\2019\AM 27\011819 THCQ SP\QuantResults\THCQ.batch.bin		
Analysis Time	1/22/2019 2:48 PM	**Analyst Name**	datastor
Report Time	1/23/2019 12:50 PM	**Reporter Name**	datastor
Last Calib Update	1/22/2019 2:48 PM	**Batch State**	Processed

Analysis Info

Acq Time	2019-01-18 12:55	**Data File**	Cal 3-10ng.d
Sample Type	Calibration	**Sample Name**	Cal 3-10ng
Dilution	1	**Acq Method**	THC Quant 051517 workingmm.m
Position	P1-E12	**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	66438	659919	0.1007	9.3636
THC-COOH	THC-COOH-D9	2.392	46943	203958	0.2302	10.5436
THC	THC-D3	6.119	19384	230928	0.0839	9.7723

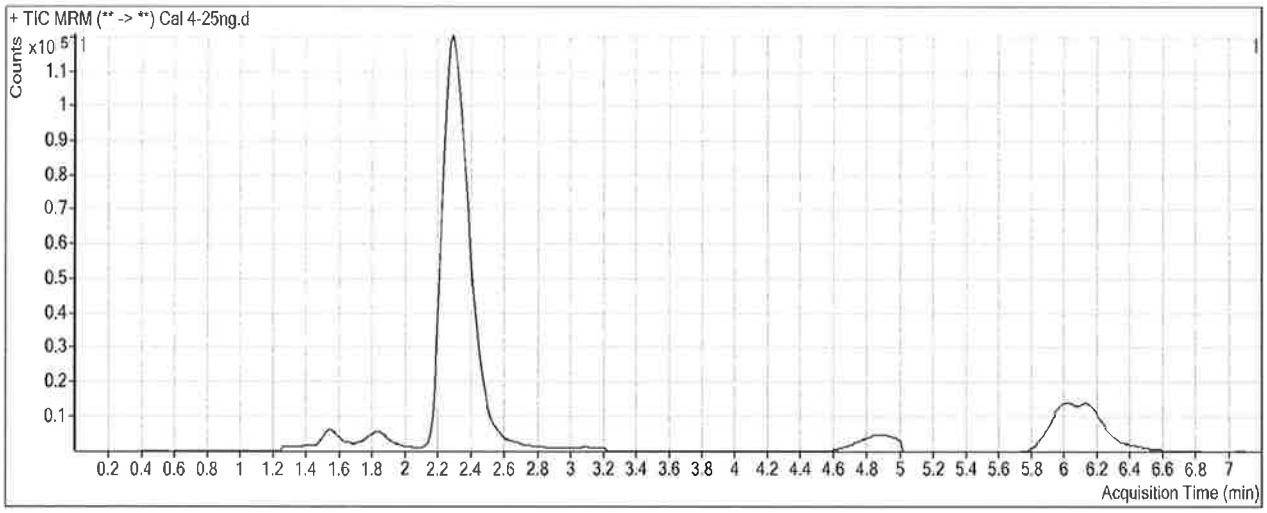
ISP FORENSICS - Pocatello Instrument # 59740
Cannabinoids Analysis Report

Batch Data Path	C:\MassHunter\Data\2019\AM 27\011819 THCQ SP\QuantResults\THCQ.batch.bin		
Analysis Time	1/22/2019 2:48 PM	**Analyst Name**	datastor
Report Time	1/23/2019 12:50 PM	**Reporter Name**	datastor
Last Calib Update	1/22/2019 2:48 PM	**Batch State**	Processed

Analysis Info

Acq Time	2019-01-18 13:07	**Data File**	Cal 4-25ng.d
Sample Type	Calibration	**Sample Name**	Cal 4-25ng
Dilution	1	**Acq Method**	THC Quant 051517 workingmm.m
Position	P1-D12	**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	200770	738742	0.2718	24.1094
THC-COOH	THC-COOH-D9	2.392	111777	227169	0.4920	24.3028
THC	THC-D3	6.132	51577	241221	0.2138	24.6796

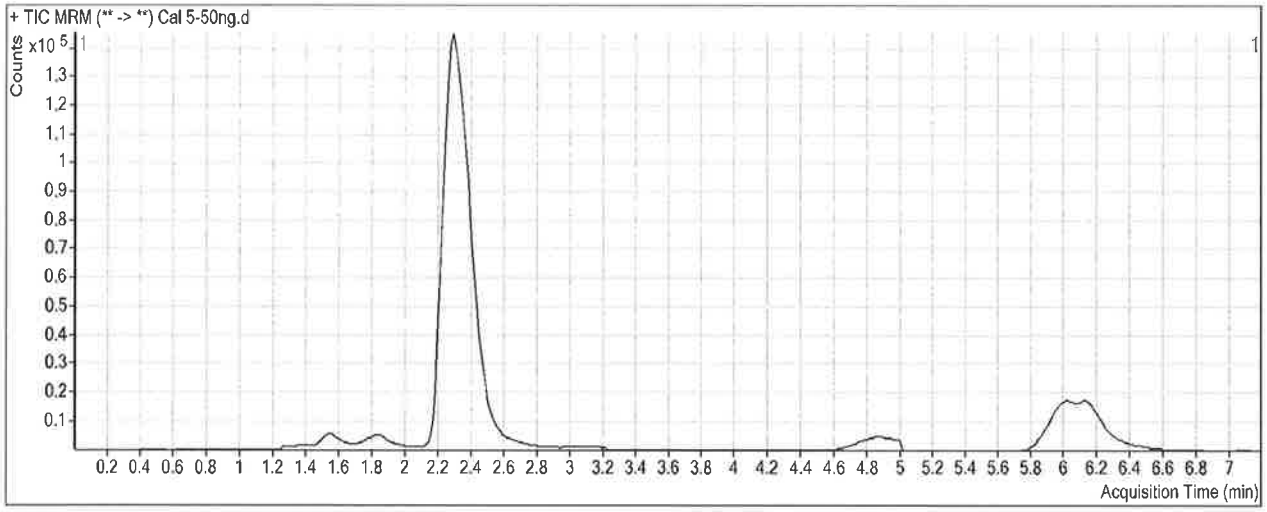
ISP FORENSICS - Pocatello Instrument # 59740
Cannabinoids Analysis Report

Batch Data Path	C:\MassHunter\Data\2019\AM 27\011819 THCQ SP\QuantResults\THCQ.batch.bin		
Analysis Time	1/22/2019 2:48 PM	**Analyst Name**	datastor
Report Time	1/23/2019 12:50 PM	**Reporter Name**	datastor
Last Calib Update	1/22/2019 2:48 PM	**Batch State**	Processed

Analysis Info

Acq Time	2019-01-18 13:19	**Data File**	Cal 5-50ng.d
Sample Type	Calibration	**Sample Name**	Cal 5-50ng
Dilution	1	**Acq Method**	THC Quant 051517 workingmm.m
Position	P1-C12	**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	391600	714828	0.5478	47.9005
THC-COOH	THC-COOH-D9	2.392	205215	221178	0.9278	47.1991
THC	THC-D3	6.132	100636	252723	0.3982	45.8437

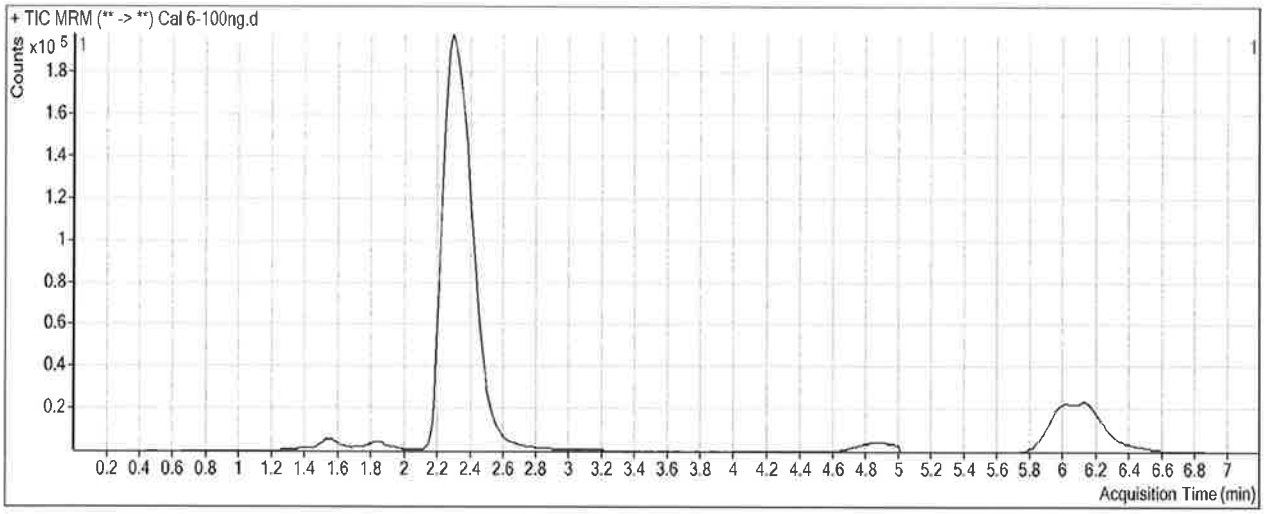
ISP FORENSICS - Pocatello Instrument # 59740
Cannabinoids Analysis Report

Batch Data Path	C:\MassHunter\Data\2019\AM 27\011819 THCQ SP\QuantResults\THCQ.batch.bin		
Analysis Time	1/22/2019 2:48 PM	**Analyst Name**	datastor
Report Time	1/23/2019 12:50 PM	**Reporter Name**	datastor
Last Calib Update	1/22/2019 2:48 PM	**Batch State**	Processed

Analysis Info

Acq Time	2019-01-18 13:31	**Data File**	Cal 6-100ng.d
Sample Type	Calibration	**Sample Name**	Cal 6-100ng
Dilution	1	**Acq Method**	THC Quant 051517 workingmm.m
Position	P1-B12	**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	825276	693337	1.1903	103.2713
THC-COOH	THC-COOH-D9	2.392	409138	205698	1.9890	102.9545
THC	THC-D3	6.132	204360	224822	0.9090	104.4714