



Hemp Industry Interlaboratory Program

Summary Report #4-Winter 2023

[Introduction to the Hemp Program](#)

[Key for Web Summary Report](#)

Analysis Analysis Name

Hemp: Cannabinoids

9601	Δ 9-Tetrahydrocannabinol (THC)
9602	Δ 9-Tetrahydrocannabinolic Acid (THCA)
9603	Cannabidiol (CBD)
9604	Cannabidiolic Acid (CBDA)
9605	Total Δ 9-Tetrahydrocannabinol (THC)
9606	Total Cannabidiol (CBD)
9607	Cannabichromene (CBC)
9612	Cannabichromenic (CBCA)

Hemp: Heavy Metals

9631	Arsenic (As)
9632	Cadmium (Cd)
9633	Lead (Pb)
9634	Mercury (Hg)

Hemp: Terpenes

9661	Myrcene or β -Myrcene
9662	Limonene
9663	α -Pinene
9664	Humulene
9665	β -Caryophyllene
9666	Caryophyllene Oxide
9667	α -Bisabolol
9669	β -Pinene

Hemp: Moisture Content

9691	Moisture Content
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About the Hemp Interlaboratory Program

This interlaboratory testing program is administered and operated by Collaborative Testing Services, Inc. (CTS). The purpose of the program was to evaluate laboratory performance and assess the performance of the industry. Participants can expect to receive results that are clear, concise, and easy to understand and act upon. This program allows laboratories to compare periodically the level and uniformity of their testing with that of other laboratories in the Hemp industry.

A two-sample set of ground hemp plant material of differing THC concentration were provided to the participants. Sample materials used in this program adhere to the legal requirement of having THC concentration of 0.3% or below. In each report, there is a summary of the statistics for the analysis and a graphical representation of the data for each test. Also shown are notes concerning specific laboratory results, as well as significant findings related to other testing variation. Please refer to the section *Key for Web Summary Report* for an explanation of terms and guidelines to interpreting the results.

About CTS

Founded in 1971, Collaborative Testing Services, Inc. (CTS) is a privately - owned company that specializes in interlaboratory tests for a variety of industries including ALP, rubber, plastics, fasteners and metals, containerboard, paper, hemp, wine, and color, as well as proficiency tests for forensic laboratories. All of the tests are designed to assist organizations in achieving and maintaining quality assurance objectives. Labs from the U.S., as well as more than 100 countries, currently participate in the CTS programs.

For further information concerning this report contact:

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Key for Web Summary Report (Page 1 of 2)

WebCode	Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Hemp Web Summary Report published on the CTS web site. The WebCode for each analysis can be found in the Performance Analysis Report mailed to each participant.
Lab Mean	The average of the test results obtained by the participant.
Grand Mean	The average of the LAB MEANS for all included participants. Laboratories flagged with an X or an M (see DATA FLAG column) are excluded from the GRAND MEAN.
Difference from Grand Mean	The difference of the LAB MEAN from the GRAND MEAN.
Between-Lab Standard Deviation	An indication of the precision of measurement between the laboratories. The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).
Comparative Performance Value	An indication of how well a laboratory's results agree with the other participants. The CPV is a ratio indicating the number of standard deviations from the GRAND MEAN. The closer a laboratory's COMPARATIVE PERFORMANCE VALUE is to zero, the more consistent its results are with the other participants' data (and vice versa). The critical value for each CPV will vary depending on the number of labs participating in a test.
Data Flag	DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following chart for an explanation of each symbol:

<u>DATA FLAG</u>	<u>STATISTICALLY INCLUDED/EXCLUDED</u>	<u>ACTION REQUIRED</u>
*	INCLUDED	CAUTION - Review testing procedure and monitor future results. Results fall outside 95% ellipse but within a 99% ellipse that is calculated but not drawn.
X	EXCLUDED	STOP - Immediate review of data and/or testing procedure is required. Results fall outside the 99% ellipse. See specific notes following each table for more information on why the data is excluded.
M	EXCLUDED	PROCEED - Lab was unable to report data for one sample. Or lab was unable to report numeric data for both samples.

Graph - For each laboratory, the LAB MEAN for the first sample (x-axis) is plotted against the LAB MEAN for the second sample (y-axis) with each point representing a laboratory. The horizontal and vertical cross-hairs are the GRAND MEANS for each sample. When 20 or more laboratories are in the statistics, an ellipse is also drawn so that 95% of the time a randomly selected laboratory will be included inside the ellipse. Plotted data flags are explained above.

Common Problems Highlighted in Footnotes

1. **Extreme data** - The laboratory's results for one or both samples are so inconsistent with those of the other participants that the lab mean(s) fall outside the plot. The participant is advised to immediately review his data and/or testing procedure.
2. **Systematic bias** - The laboratory's results are either consistently high or low for both samples when compared to the other participants (the plotted point falls near the top or bottom of the ellipse). This indicates that the participant is performing the test with a constant bias. Causes of systematic errors include improper calibration, the particular make/model of equipment or a modification to the testing procedure.
3. **Inconsistency in testing between samples/sample sets** - The laboratory's results indicate that there are differences in the way the two samples tested (the plotted point falls to the side of the ellipse). This type of error may be attributed to the analyst deviating from the procedure when testing one of the samples or a material interaction occurrence with the instrument or room conditions. The inconsistency is reflected in the CPVs for the two samples, such as a +1.5 CPV for sample A and a -2.2 CPV for sample B. CTS also will specify if the laboratory's data for one sample are high/low compared to the other participants. If this inconsistency is slight, the lab's plotted point will be an * that falls on the edge of the ellipse.
4. **Inconsistency in testing within a sample** - The laboratory's within-lab standard deviation for a specified sample is high when compared to the other participants, often causing the lab's plotted point to fall outside of the ellipse.

Labs flagged with an * are not typically included in the footnotes of a data table. These labs may locate their position in the control ellipse and use the definitions above to help identify the type of testing error. An * should serve as a caution flag, a "yellow light", to a lab. If this error is repeated in future rounds, a lab may need to stop and review its testing procedures. The initial data flag is not cause for alarm. Interlaboratory tests conducted at regular intervals permit a lab to recognize trends in testing.



CTS Hemp Industry Interlaboratory Testing Program

**Report #4
Winter 2023**

Analysis 9601

Δ9-Tetrahydrocannabinol (THC)

Percent (%)

WebCode	Data Flag	Sample CB07			Sample CB08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		0.1427	-0.0328	-0.75	0.0810	-0.0056	-0.40
4DTPQY		0.2350	0.0595	1.36	0.0950	0.0084	0.60
6E4QCX		Numeric data not provided, see Reporting Limit section			Numeric data not provided, see Reporting Limit section		
JMQPLH		0.1427	-0.0328	-0.75	0.0696	-0.0169	-1.21
L3T7KF		0.1817	0.0062	0.14	0.1007	0.0141	1.01

		Summary Statistics	
Grand Means	0.1755 Percent (%)	0.0866	Percent (%)
Std Dev Btwn Labs	0.0437 Percent (%)	0.0140	Percent (%)
Statistics based on 4 of 4 reporting participants			

Hemp tested: CB07: The Grand

CB08: Glacier

Reporting Limit

No labs reported data indicating the Detection or Quantification limit

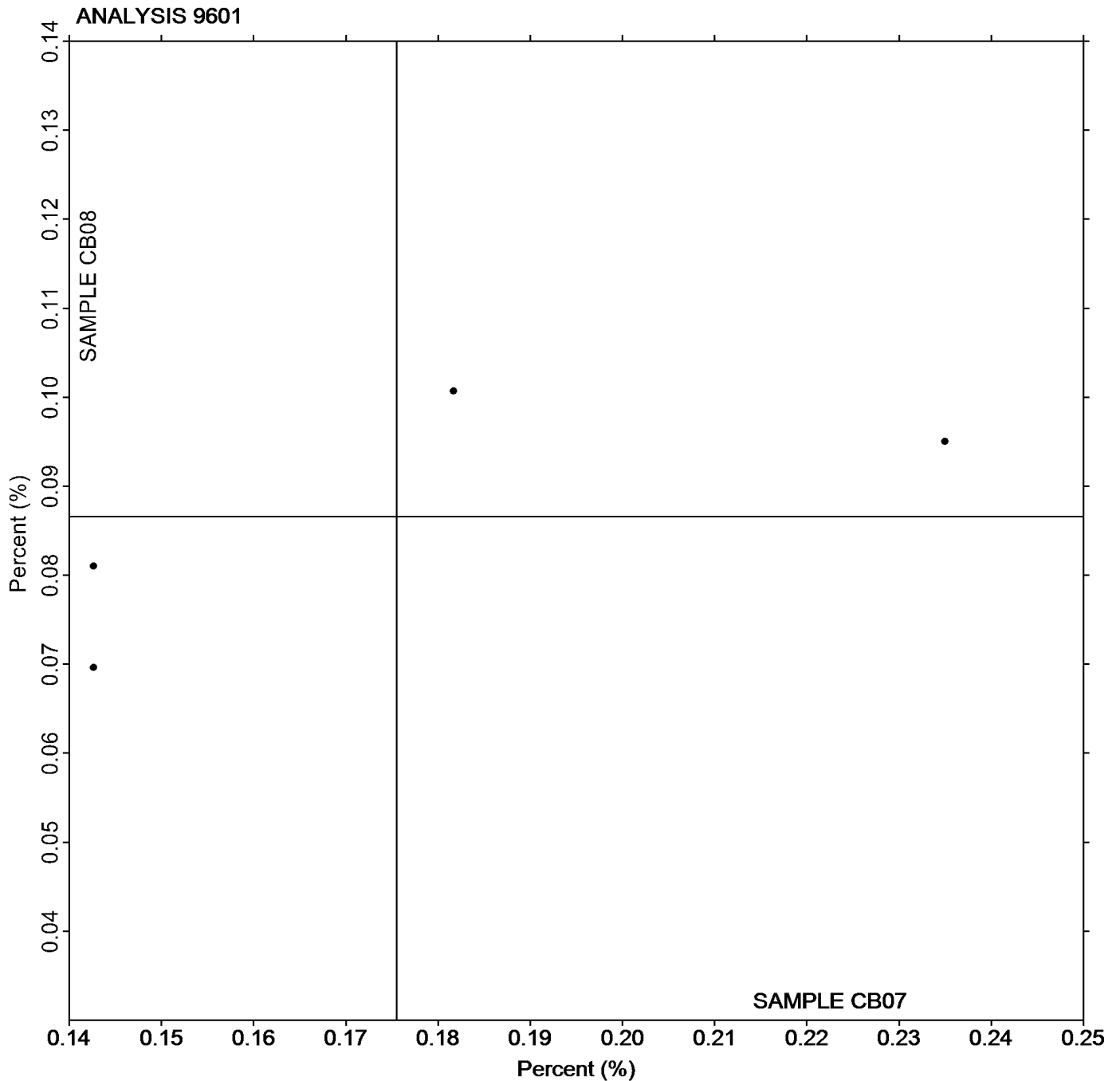


Analysis 9601

Δ 9-Tetrahydrocannabinol (THC)

Percent (%)

Grand Mean Sample CB07: 0.18 Percent (%) Grand Mean Sample CB08: 0.09 Percent (%)



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



CTS Hemp Industry Interlaboratory Testing Program

Report #4
Winter 2023

Analysis 9602

Δ9-Tetrahydrocannabinolic Acid (THCA)

Percent (%)

WebCode	Data Flag	Sample CB07			Sample CB08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		0.2927			0.0651		
6E4QCX	M	0.2267			Numeric data not provided, see Reporting Limit section		
JMQPLH	M	0.3247			Numeric data not provided, see Reporting Limit section		
L3T7KF		0.3520			0.0820		

Reporting Limit

No labs reported data indicating the Detection or Quantification limit

Please note: Statistical Analysis has not been provided due to the low population of participants reporting numeric data.

Comments on Assigned Data Flags for Test #9602

6E4QCX (M) - Participant did not submit data for sample CB08.

JMQPLH (M) - Participant did not submit data for sample CB08.



No graph is available due to the low population of participants reporting numeric data.



CTS Hemp Industry Interlaboratory Testing Program
Analysis 9603
Cannabidiol (CBD)
mg/g

Report #4
Winter 2023

WebCode	Data Flag	Sample CB07			Sample CB08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		20.43	-2.23	-0.63	3.447	-0.620	-0.61
6E4QCX		20.23	-2.43	-0.68	5.067	1.000	0.99
JMQPLH		22.17	-0.50	-0.14	2.973	-1.093	-1.08
L3T7KF		27.84	5.17	1.45	4.780	0.713	0.70

		Summary Statistics	
Grand Means	22.67 mg/g	4.067 mg/g	
Std Dev Btwn Labs	3.55 mg/g	1.015 mg/g	
Statistics based on 4 of 4 reporting participants			

Hemp tested: CB07: The Grand

CB08: Glacier

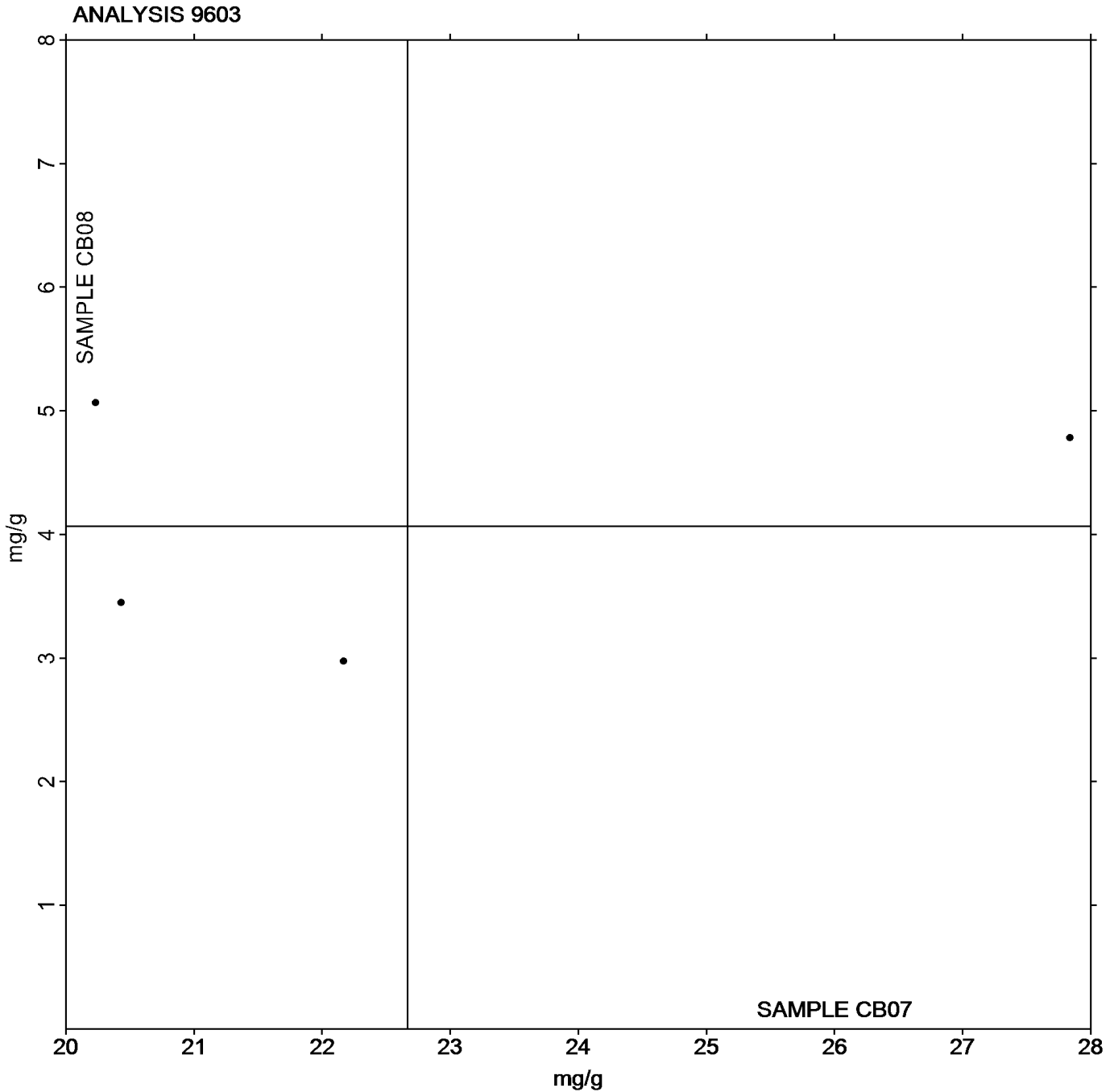
Reporting Limit

No labs reported data indicating the Detection or Quantification limit



Analysis 9603
Cannabidiol (CBD)
mg/g

Grand Mean Sample CB07: 22.67 mg/g Grand Mean Sample CB08: 4.07 mg/g



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



CTS Hemp Industry Interlaboratory Testing Program

Report #4
Winter 2023

Analysis 9604

Cannabidiolic Acid (CBDA)

mg/g

WebCode	Data Flag	Sample CB07			Sample CB08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		88.9	-13.3	-1.08	6.173	0.708	0.37
6E4QCX		100.6	-1.7	-0.13	3.167	-2.298	-1.20
JMQPLH		100.8	-1.5	-0.12	4.857	-0.608	-0.32
L3T7KF		118.7	16.5	1.34	7.663	2.198	1.15

Grand Means		Summary Statistics	
	102.3 mg/g		5.465 mg/g
Std Dev Btwn Labs			1.914 mg/g
	12.3 mg/g		
Statistics based on 4 of 4 reporting participants			

Hemp tested: CB07: The Grand

CB08: Glacier

Reporting Limit

No labs reported data indicating the Detection or Quantification limit



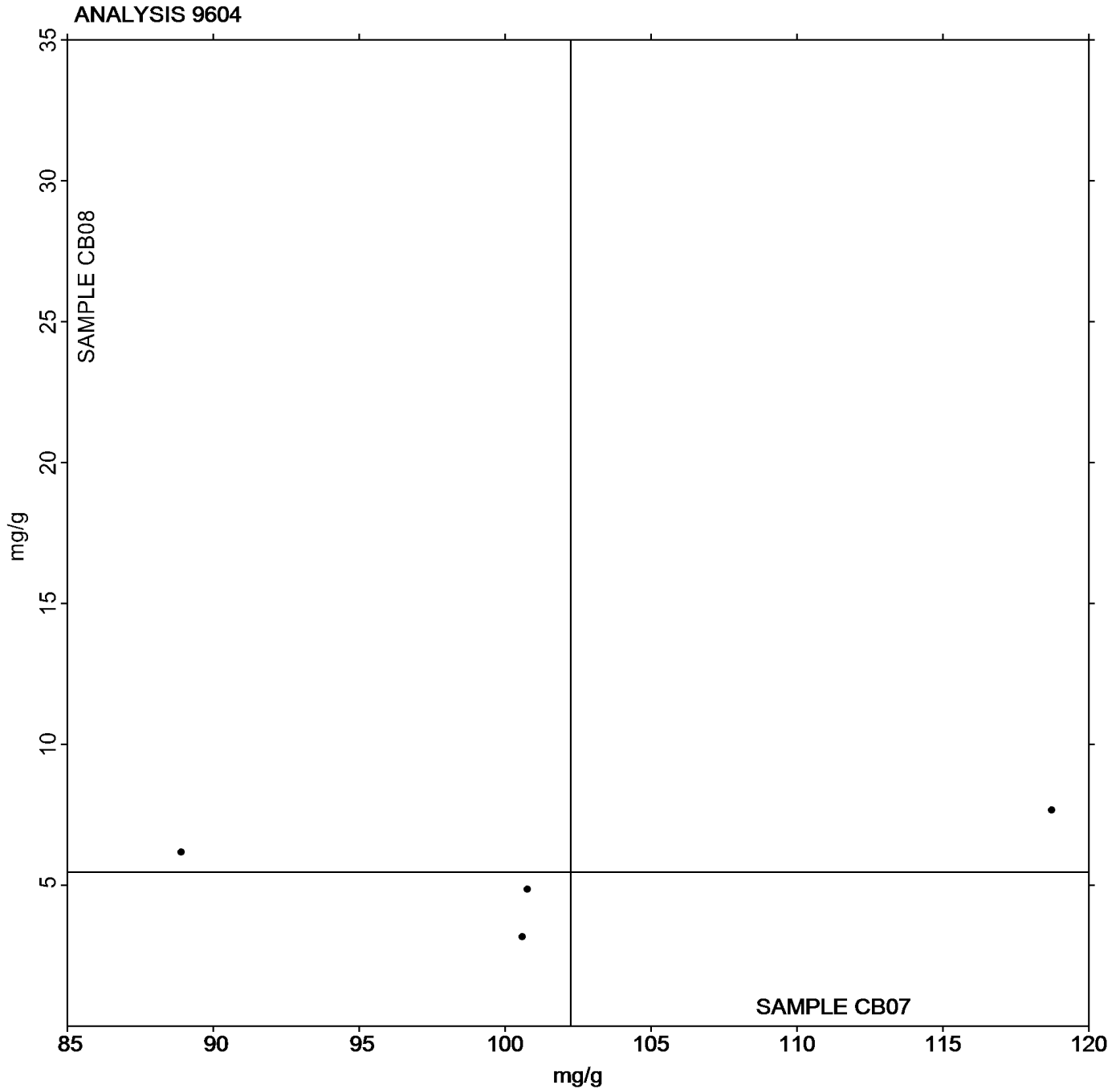
Analysis 9604

Cannabidiolic Acid (CBDA)

mg/g

Grand Mean Sample CB07: 102.25 mg/g

Grand Mean Sample CB08: 5.47 mg/g



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



Analysis 9605

**Total Δ9-Tetrahydrocannabinol (THC)
Percent (%)**

Total THC values were within acceptable levels on two certificates of analysis reviewed by CTS for the materials distributed in this cycle.

WebCode	Data Flag	Sample CB07			Sample CB08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
6E4QCX	M	0.2000	-0.2872	-5.27	Numeric data not provided, see Reporting Limit section		
JMQPLH		0.4273	-0.0598	-1.10	0.1350	-0.0182	-0.71
L3T7KF		0.5340	0.0468	0.86	0.1827	0.0295	1.14
PPCKPC		0.5001	0.0130	0.24	0.1419	-0.0113	-0.44

Summary Statistics			
Grand Means	0.4872	Percent (%)	0.1532 Percent (%)
Std Dev Btwn Labs	0.0545	Percent (%)	0.0258 Percent (%)
Statistics based on 3 of 4 reporting participants			

Hemp tested: CB07: The Grand

CB08: Glacier

Reporting Limit

No labs reported data indicating the Detection or Quantification limit

Comments on Assigned Data Flags for Test #9605

6E4QCX (M) - Participant did not submit data for sample CB08.

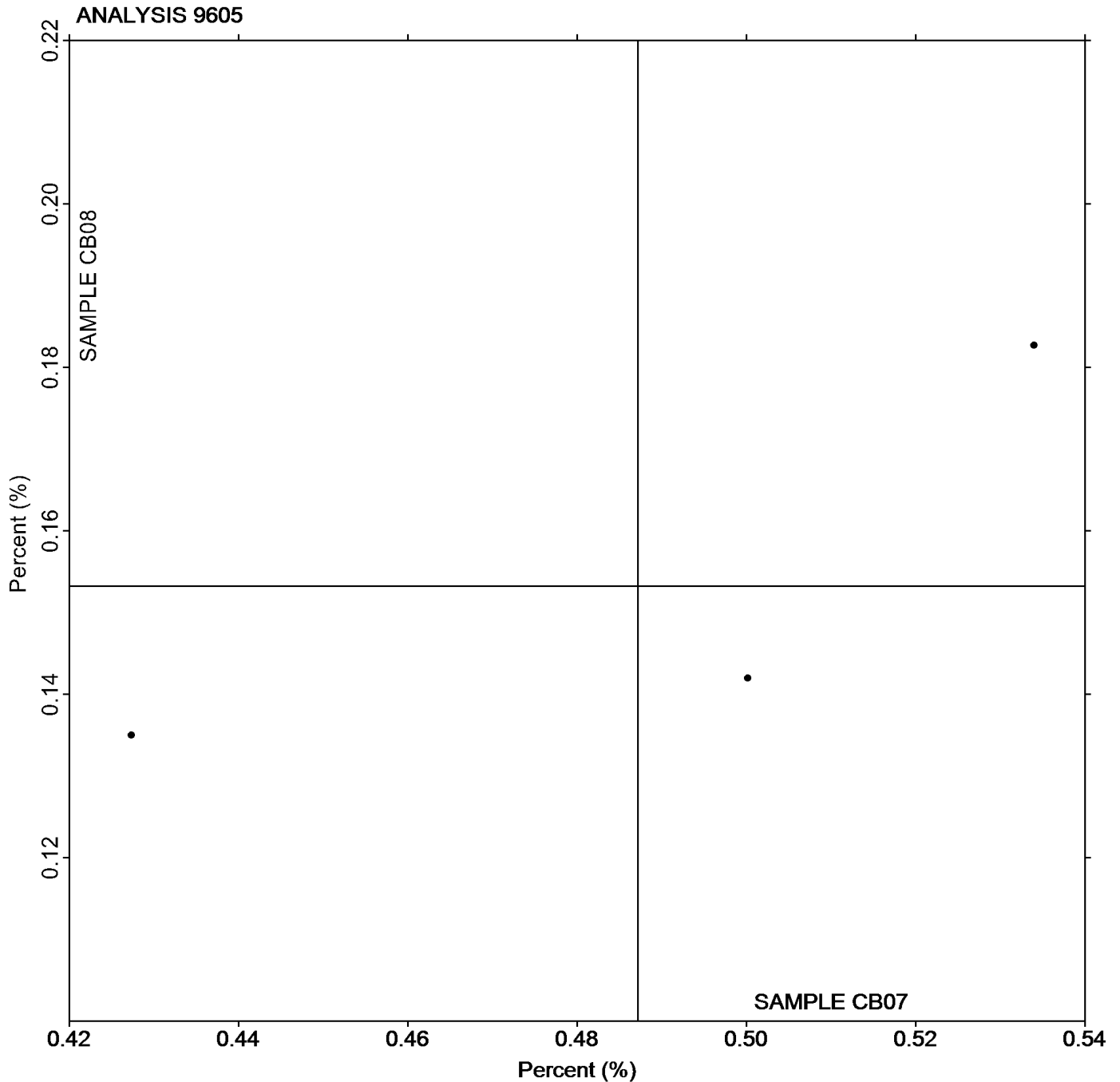


Analysis 9605

Total $\Delta 9$ -Tetrahydrocannabinol (THC)
Percent (%)

Total THC values were within acceptable levels on two certificates of analysis reviewed by CTS for the materials distributed in this cycle.

Grand Mean Sample CB07: 0.49 Percent (%) Grand Mean Sample CB08: 0.15 Percent (%)



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



CTS Hemp Industry Interlaboratory Testing Program

Report #4
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Analysis 9606

Total Cannabidiol (CBD)

mg/g

WebCode	Data Flag	Sample CB07			Sample CB08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
6E4QCX		108.4	-13.5	-0.63	7.867	-1.314	-0.46
JMQPLH		110.7	-11.2	-0.52	7.230	-1.951	-0.69
L3T7KF		146.6	24.7	1.15	12.447	3.266	1.15

Grand Means		Summary Statistics	
	121.9 mg/g		9.181 mg/g
Std Dev Btwn Labs			2.846 mg/g
	21.4 mg/g		
Statistics based on 3 of 3 reporting participants			

Hemp tested: CB07: The Grand

CB08: Glacier

Reporting Limit

No labs reported data indicating the Detection or Quantification limit



CTS Hemp Industry Interlaboratory Testing Program

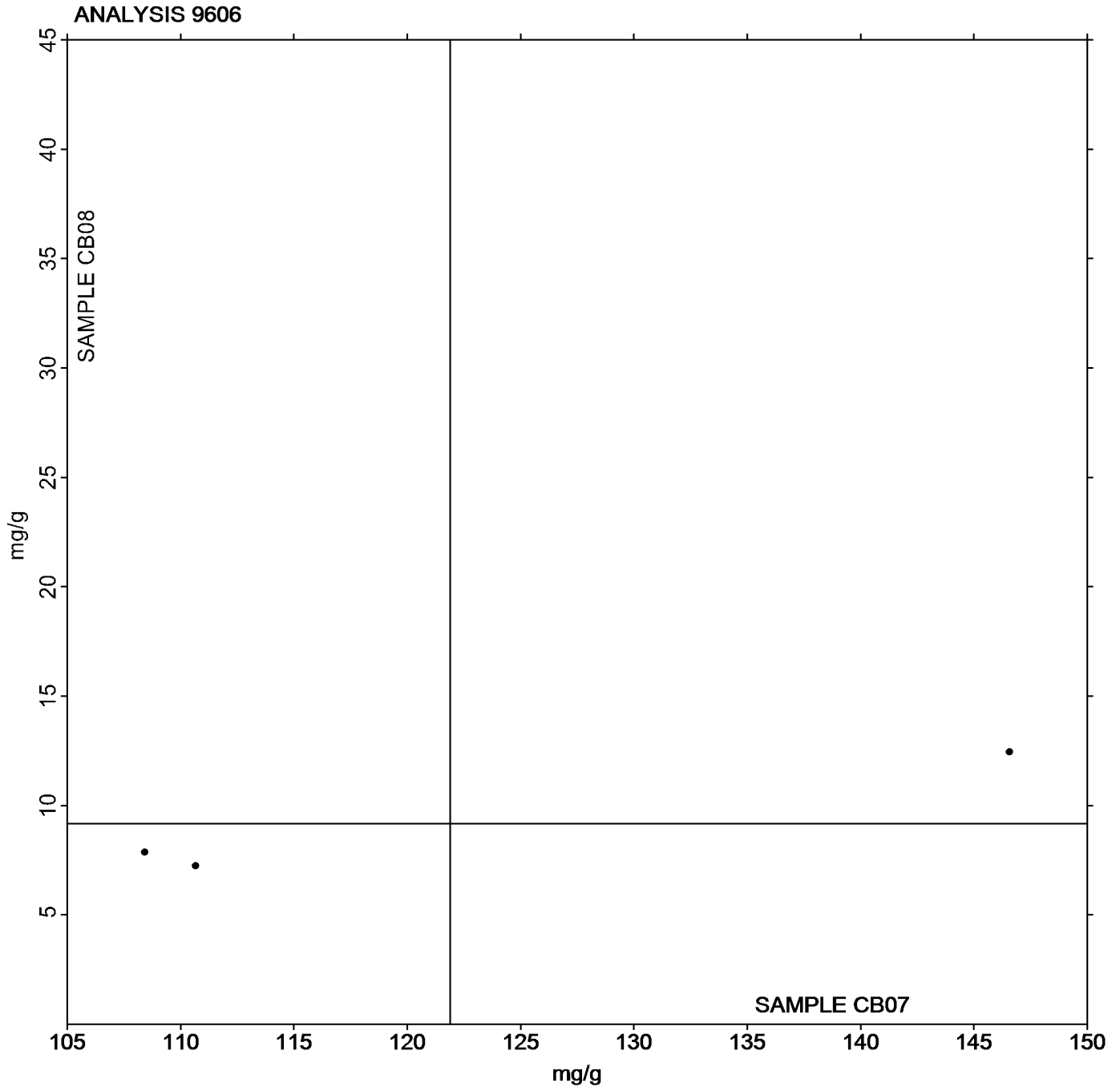
**Report #4
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Analysis 9606

Total Cannabidiol (CBD)

mg/g

Grand Mean Sample CB07: 121.89 mg/g Grand Mean Sample CB08: 9.18 mg/g



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



CTS Hemp Industry Interlaboratory Testing Program
Analysis 9607
Cannabichromene (CBC)
Percent (%)

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WebCode	Data Flag	Sample CB07			Sample CB08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		0.1110	-0.0116	-0.90	0.1610	-0.0238	-0.51
JMQPLH		0.1203	-0.0022	-0.17	0.1547	-0.0301	-0.64
L3T7KF		0.1363	0.0138	1.08	0.2387	0.0539	1.15

Grand Means		Summary Statistics	
0.1226	Percent (%)	0.1848	Percent (%)
Stnd Dev Btwn Labs			
0.0128	Percent (%)	0.0468	Percent (%)
Statistics based on 3 of 3 reporting participants			

Hemp tested: CB07: The Grand

CB08: Glacier

Reporting Limit

No labs reported data indicating the Detection or Quantification limit



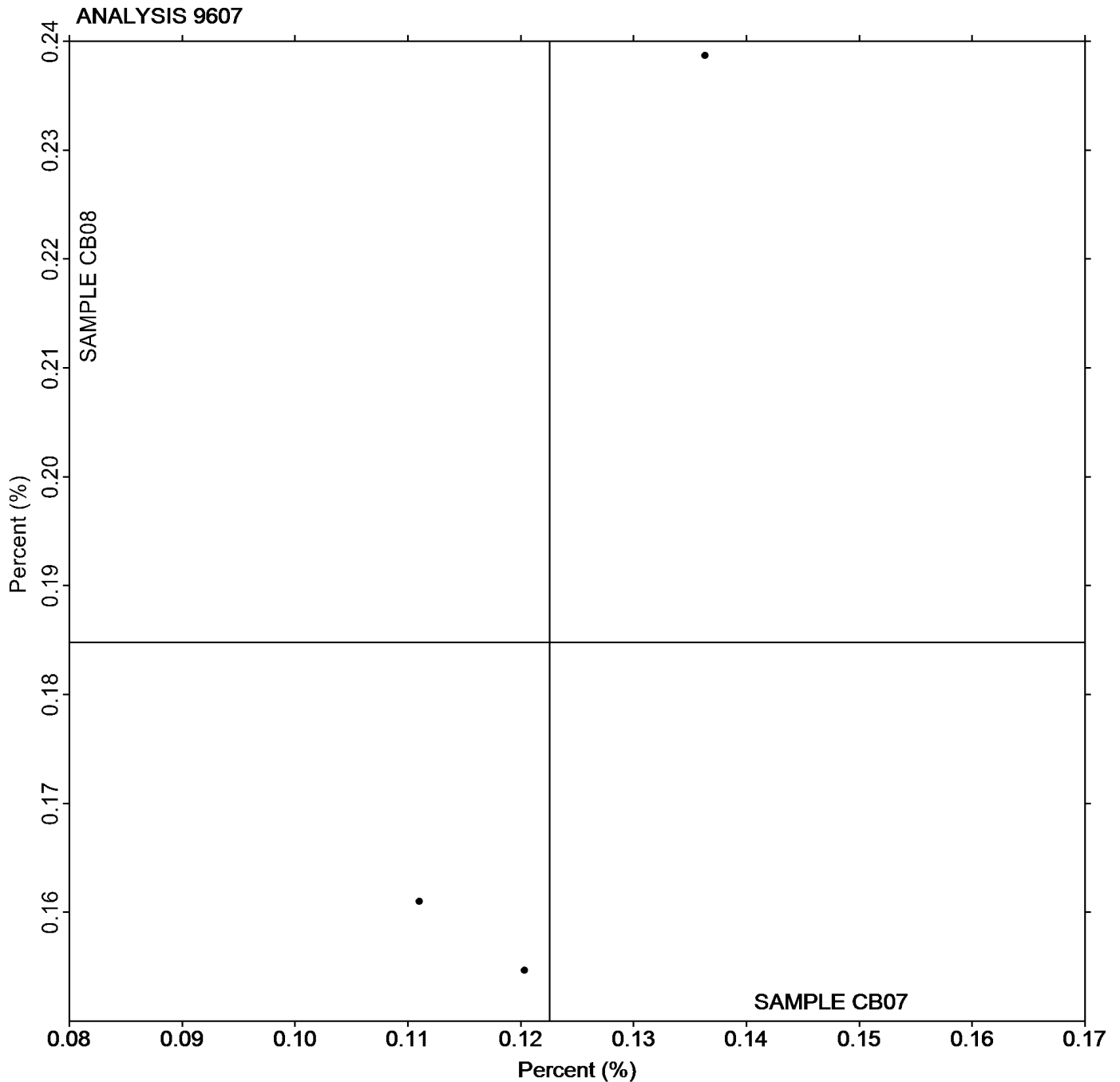
Analysis 9607

Cannabichromene (CBC)

Percent (%)

Grand Mean Sample CB07: 0.12 Percent (%)

Grand Mean Sample CB08: 0.18 Percent (%)



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



CTS Hemp Industry Interlaboratory Testing Program

Report #4
Winter 2023

Analysis 9612

Cannabichromenic (CBCA)

Percent (%)

WebCode	Data Flag	Sample CB07			Sample CB08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		0.3993			0.2653		

Reporting Limit

No labs reported data indicating the Detection or Quantification limit

Please note: Statistical Analysis has not been provided due to the low population of participants reporting numeric data.



No graph is available due to the low population of participants reporting numeric data.



CTS Hemp Industry Interlaboratory Testing Program

Report #4
Winter 2023

Analysis 9631

Arsenic (As)

ug/g

WebCode	Data Flag	Sample HM07			Sample HM08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		0.0668	-0.0127	-0.26	0.0661	-0.0200	-0.31
JMQPLH		0.1330	0.0535	1.10	0.1590	0.0729	1.12
L3T7KF		0.0386	-0.0409	-0.84	0.0331	-0.0530	-0.81

Grand Means		Summary Statistics	
	0.0795 ug/g		0.0861 ug/g
Std Dev Btwn Labs			0.0653 ug/g
	0.0484 ug/g		
Statistics based on 3 of 3 reporting participants			

Hemp tested: HM07: The Grand

HM08: Glacier

Reporting Limit

L3T7KF N/A

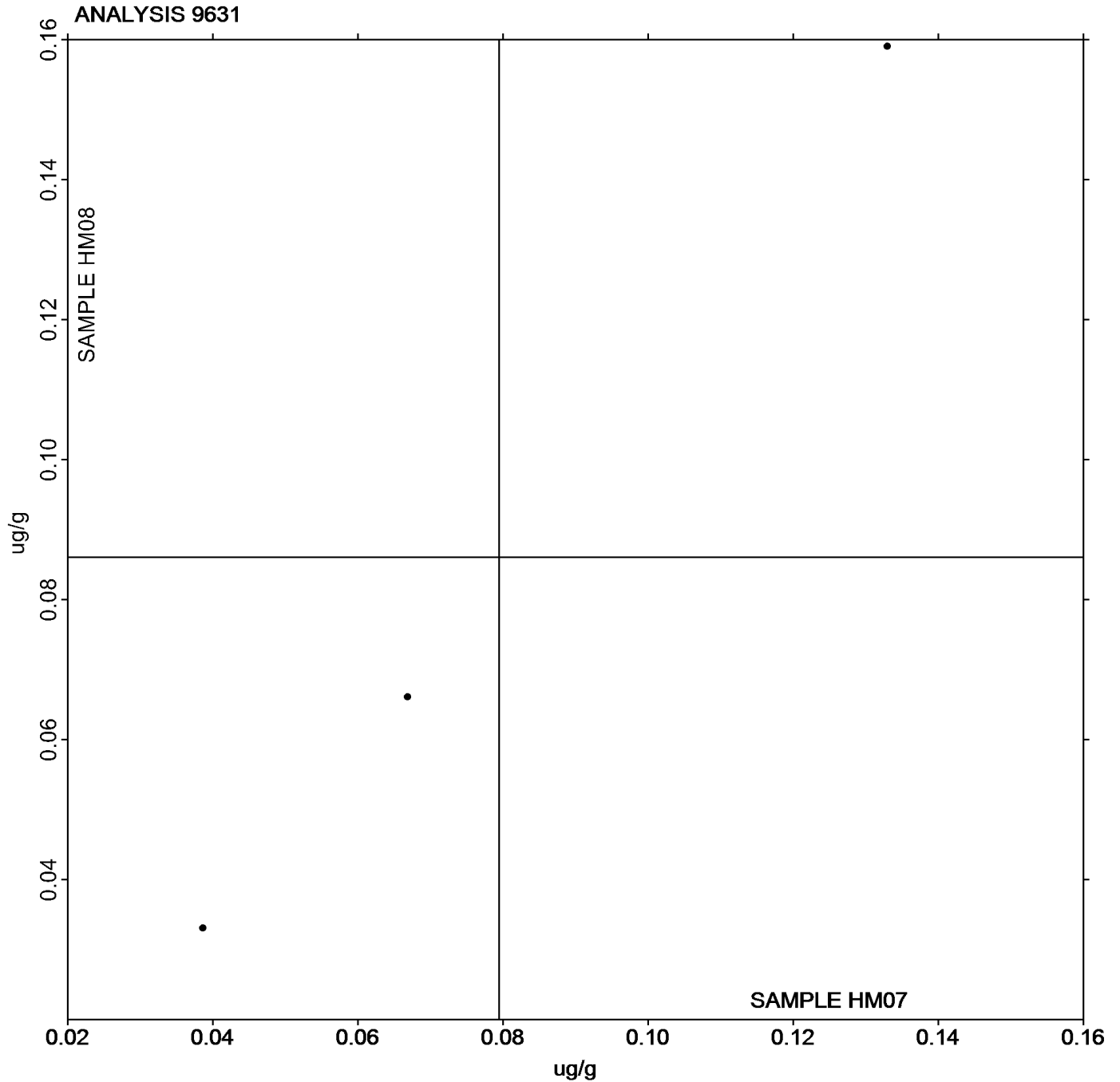


Analysis 9631

Arsenic (As)

ug/g

Grand Mean Sample HM07: 0.08 ug/g Grand Mean Sample HM08: 0.09 ug/g



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



CTS Hemp Industry Interlaboratory Testing Program
Analysis 9632
Cadmium (Cd)
ug/g

Report #4
Winter 2023

WebCode	Data Flag	Sample HM07			Sample HM08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		0.1046	0.0012	0.05	0.0324	-0.0016	-0.14
JMQPLH		0.1277	0.0243	0.98	0.0456	0.0117	1.06
L3T7KF		0.0779	-0.0255	-1.02	0.0239	-0.0101	-0.92

Grand Means		Summary Statistics	
	0.1034 ug/g		0.0340 ug/g
Std Dev Btwn Labs			0.0109 ug/g
	0.0249 ug/g		
Statistics based on 3 of 3 reporting participants			

Hemp tested: HM07: The Grand

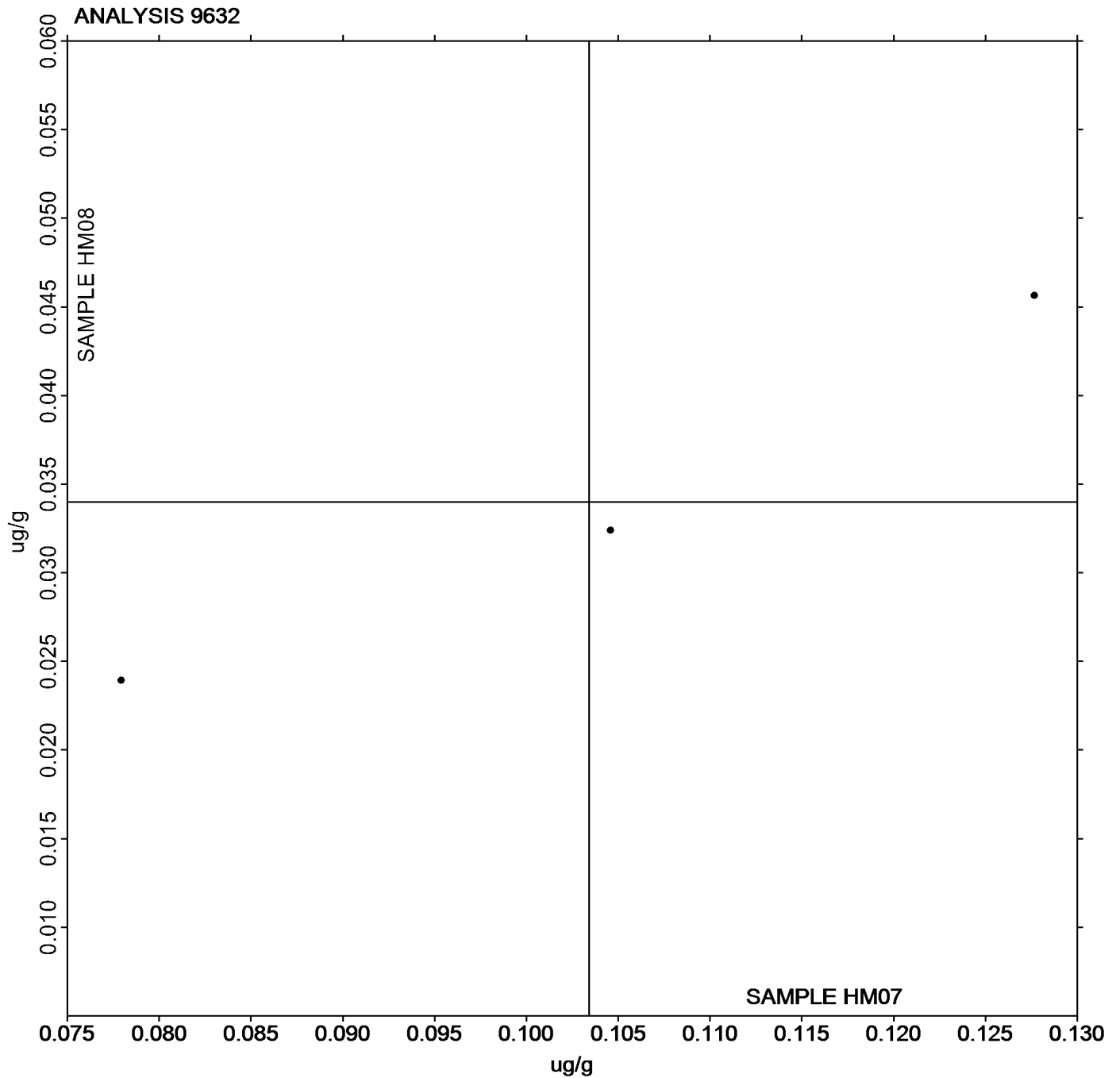
HM08: Glacier

Reporting Limit

L3T7KF N/A



Grand Mean Sample HM07: 0.10 ug/g Grand Mean Sample HM08: 0.03 ug/g



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



CTS Hemp Industry Interlaboratory Testing Program

Report #4
Winter 2023

Analysis 9633

Lead (Pb)

ug/g

WebCode	Data Flag	Sample HM07			Sample HM08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		0.2037	0.0405	0.95	0.2007	0.0234	0.50
JMQPLH		0.1670	0.0038	0.09	0.2073	0.0301	0.65
L3T7KF		0.1189	-0.0443	-1.04	0.1237	-0.0535	-1.15

Grand Means		Summary Statistics	
	0.1632 ug/g		0.1772 ug/g
Std Dev Btwn Labs			0.0465 ug/g
	0.0425 ug/g		
Statistics based on 3 of 3 reporting participants			

Hemp tested: HM07: The Grand

HM08: Glacier

Reporting Limit

L3T7KF N/A



CTS Hemp Industry Interlaboratory Testing Program

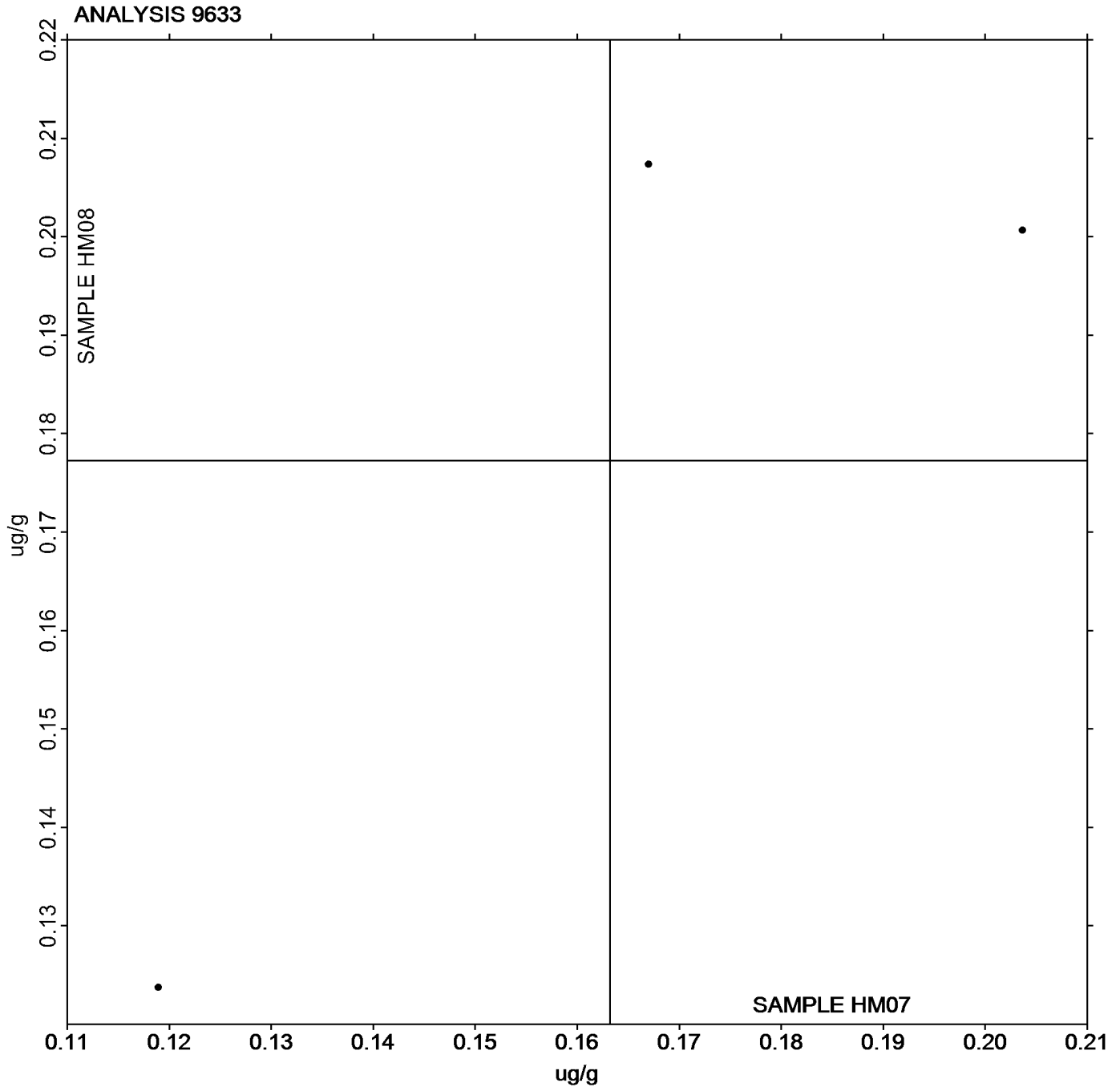
**Report #4
Winter 2023**

Analysis 9633

Lead (Pb)

ug/g

Grand Mean Sample HM07: 0.16 ug/g Grand Mean Sample HM08: 0.18 ug/g



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



CTS Hemp Industry Interlaboratory Testing Program
Analysis 9634
Mercury (Hg)
ug/g

Report #4
Winter 2023

WebCode	Data Flag	Sample HM07			Sample HM08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		0.0091	0.0038	0.82	0.0111	0.0053	0.98
JMQPLH		0.0001	-0.0052	-1.12	0.0001	-0.0056	-1.02
L3T7KF		0.0067	0.0014	0.30	0.0060	0.0002	0.04

Grand Means		Summary Statistics	
	0.0053 ug/g		0.0057 ug/g
Std Dev Btwn Labs			0.0055 ug/g
	0.0047 ug/g		
Statistics based on 3 of 3 reporting participants			

Hemp tested: HM07: The Grand

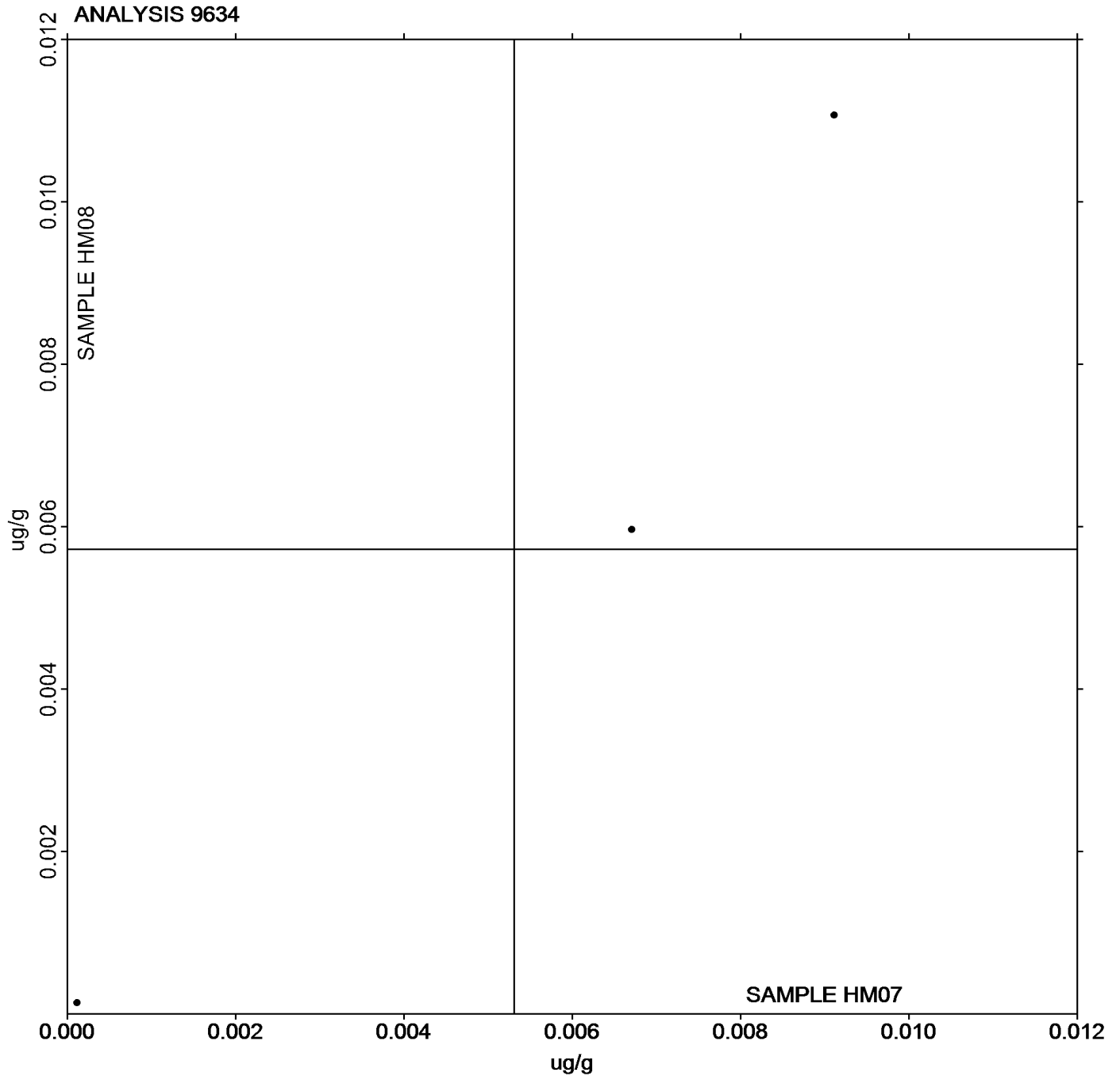
HM08: Glacier

Reporting Limit

L3T7KF N/A



Grand Mean Sample HM07: 0.01 ug/g Grand Mean Sample HM08: 0.01 ug/g



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



CTS Hemp Industry Interlaboratory Testing Program

Report #4
Winter 2023

Analysis 9661

Myrcene or β -Myrcene

mg/g

WebCode	Data Flag	Sample TP07			Sample TP08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		1.7000			0.1167		
JMQPLH		1.5433			0.2737		
L3T7KF	M	1.3127			Numeric data not provided, see Reporting Limit section		

Reporting Limit

No labs reported data indicating the Detection or Quantification limit

Please note: Statistical Analysis has not been provided due to the low population of participants reporting numeric data.

Comments on Assigned Data Flags for Test #9661

L3T7KF (M) - Participant did not submit data for sample TP08.



No graph is available due to the low population of participants reporting numeric data.



CTS Hemp Industry Interlaboratory Testing Program

Report #4
Winter 2023

Analysis 9662

Limonene

mg/g

WebCode	Data Flag	Sample TP07			Sample TP08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		0.3067			0.0733		
JMQPLH		0.3577			0.1350		
L3T7KF		Numeric data not provided, see Reporting Limit section			Numeric data not provided, see Reporting Limit section		

Reporting Limit

No labs reported data indicating the Detection or Quantification limit

Please note: Statistical Analysis has not been provided due to the low population of participants reporting numeric data.



No graph is available due to the low population of participants reporting numeric data.



CTS Hemp Industry Interlaboratory Testing Program

Report #4
Winter 2023

Analysis 9663

α -Pinene mg/g

WebCode	Data Flag	Sample TP07			Sample TP08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		0.5067			0.0773		
JMQPLH		0.5633			0.1240		
L3T7KF	M	0.7417			Numeric data not provided, see Reporting Limit section		

Reporting Limit

No labs reported data indicating the Detection or Quantification limit

Please note: Statistical Analysis has not been provided due to the low population of participants reporting numeric data.

Comments on Assigned Data Flags for Test #9663

L3T7KF (M) - Participant did not submit data for sample TP08.



No graph is available due to the low population of participants reporting numeric data.



CTS Hemp Industry Interlaboratory Testing Program

Report #4
Winter 2023

Analysis 9664

Humulene mg/g

WebCode	Data Flag	Sample TP07			Sample TP08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		0.6633			0.2600		
JMQPLH		0.7790			0.5013		
L3T7KF	M	0.7033			Numeric data not provided, see Reporting Limit section		

Reporting Limit

No labs reported data indicating the Detection or Quantification limit

Please note: Statistical Analysis has not been provided due to the low population of participants reporting numeric data.

Comments on Assigned Data Flags for Test #9664

L3T7KF (M) - Participant did not submit data for sample TP08.



No graph is available due to the low population of participants reporting numeric data.



CTS Hemp Industry Interlaboratory Testing Program

Report #4
Winter 2023

Analysis 9665 β-Caryophyllene mg/g

WebCode	Data Flag	Sample TP07			Sample TP08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		1.933	-0.198	-1.15	0.903	-0.215	-1.04
JMQPLH		2.230	0.099	0.58	1.317	0.198	0.96
L3T7KF		2.231	0.099	0.58	1.135	0.017	0.08

Grand Means		Summary Statistics	
	2.131 mg/g		1.118 mg/g
Stnd Dev Btwn Labs			0.207 mg/g
	0.171 mg/g		
Statistics based on 3 of 3 reporting participants			

Hemp tested: TP07: The Grand

TP08: Glacier

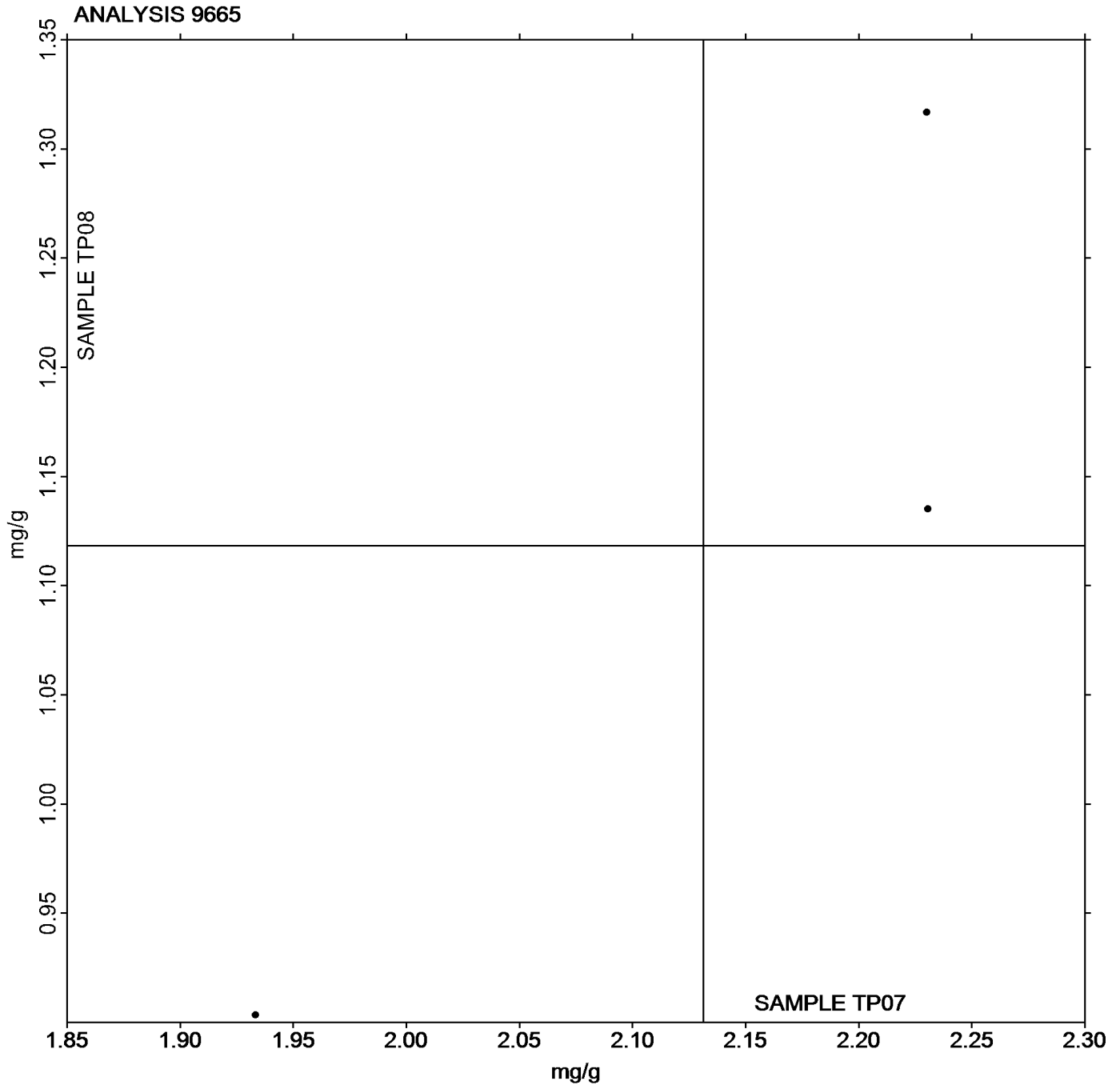
Reporting Limit

No labs reported data indicating the Detection or Quantification limit



Analysis 9665
 β -Caryophyllene
mg/g

Grand Mean Sample TP07: 2.13 mg/g Grand Mean Sample TP08: 1.12 mg/g



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



CTS Hemp Industry Interlaboratory Testing Program

Report #4
Winter 2023

Analysis 9666 Caryophyllene Oxide mg/g

WebCode	Data Flag	Sample TP07			Sample TP08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		0.5300			0.2233		
JMQPLH	M	0.5830			Numeric data not provided, see Reporting Limit section		
L3T7KF		Numeric data not provided, see Reporting Limit section			Numeric data not provided, see Reporting Limit section		

Reporting Limit

No labs reported data indicating the Detection or Quantification limit

Please note: Statistical Analysis has not been provided due to the low population of participants reporting numeric data.

Comments on Assigned Data Flags for Test #9666

JMQPLH (M) - Participant did not submit data for sample TP08.



No graph is available due to the low population of participants reporting numeric data.



CTS Hemp Industry Interlaboratory Testing Program
Analysis 9667
α-Bisabolol
mg/g

Report #4
Winter 2023

WebCode	Data Flag	Sample TP07			Sample TP08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		1.1333			0.6133		
JMQPLH		1.3267			0.9820		
L3T7KF	M	1.0643			Numeric data not provided, see Reporting Limit section		

Reporting Limit

No labs reported data indicating the Detection or Quantification limit

Please note: Statistical Analysis has not been provided due to the low population of participants reporting numeric data.

Comments on Assigned Data Flags for Test #9667

L3T7KF (M) - Participant did not submit data for sample TP08.



No graph is available due to the low population of participants reporting numeric data.



Analysis 9669

β -Pinene
mg/g

WebCode	Data Flag	Sample TP07			Sample TP08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ	M	190.0000			Numeric data not provided, see Reporting Limit section		
JMQPLH	M	215.0000			Numeric data not provided, see Reporting Limit section		

Reporting Limit

No labs reported data indicating the Detection or Quantification limit

Please note: Statistical Analysis has not been provided due to the low population of participants reporting numeric data.

Comments on Assigned Data Flags for Test #9669

2WVPPZ (M) - Participant did not submit data for sample TP08.

JMQPLH (M) - Participant did not submit data for sample TP08.



No graph is available due to the low population of participants reporting numeric data.



CTS Hemp Industry Interlaboratory Testing Program
Analysis 9691
Moisture Content
Percent (%)

Report #4
Winter 2023

WebCode	Data Flag	Sample MC07			Sample MC08		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2WVPPZ		12.600	5.260	1.09	10.933	4.511	1.11
JMQPLH		3.167	-4.173	-0.87	3.100	-3.322	-0.82
L3T7KF		6.253	-1.087	-0.23	5.233	-1.189	-0.29

Grand Means		Summary Statistics	
	7.340 Percent (%)		6.422 Percent (%)
Std Dev Btwn Labs			
	4.810 Percent (%)		4.050 Percent (%)
Statistics based on 3 of 3 reporting participants			

Hemp tested: MC07: The Grand

MC08: Glacier

Reporting Limit

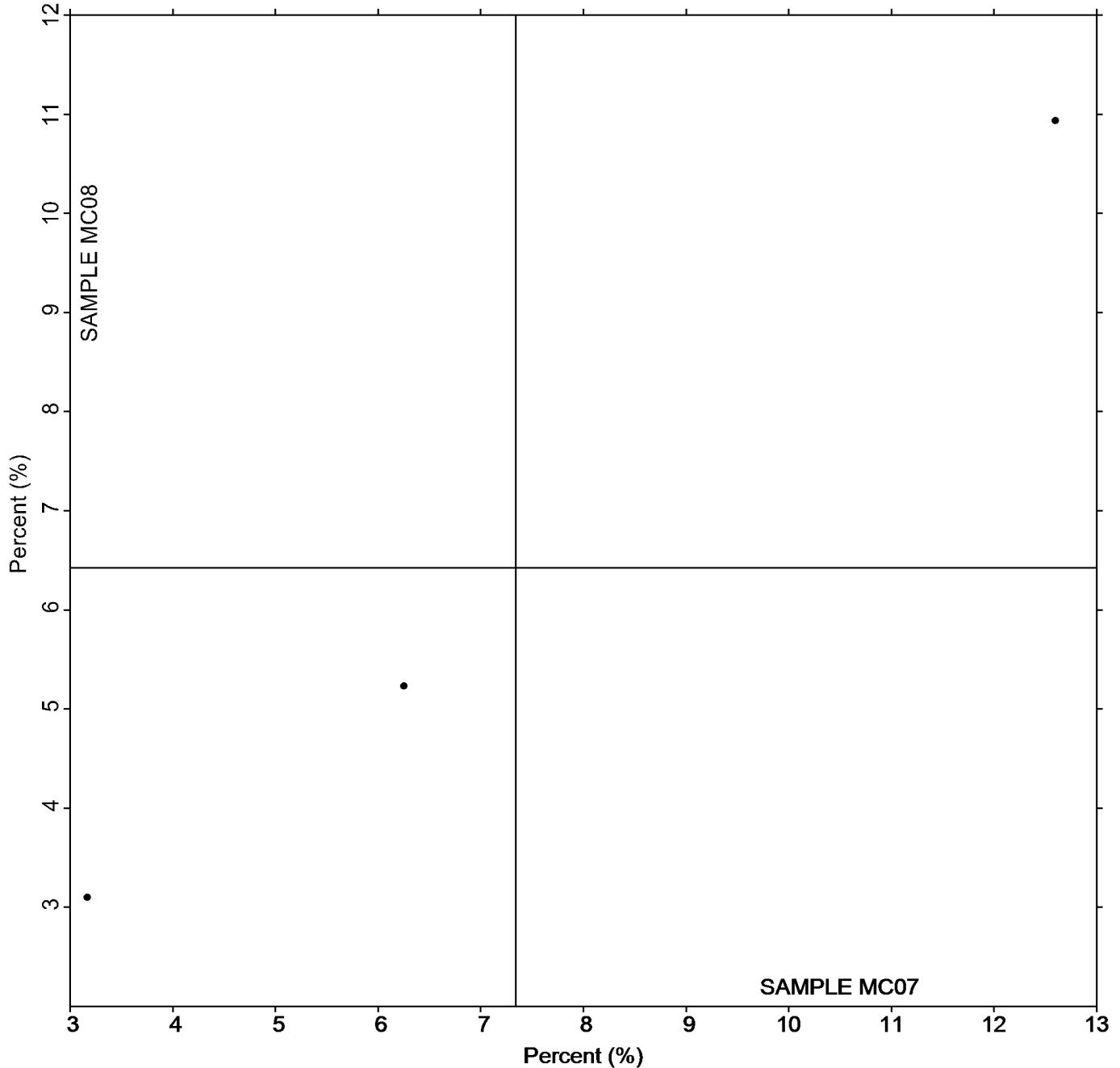
No labs reported data indicating the Detection or Quantification limit



Analysis 9691
Moisture Content
Percent (%)

Grand Mean Sample MC07: 7.34 Percent (%) Grand Mean Sample MC08: 6.42 Percent (%)

ANALYSIS 9691



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

-End of Report-