

Certificate ID: **76225-219** Received: **1/27/20**
 Client Sample ID: **1oz Oil - 1500mg - FS - Mint**
 Lot Number: **SHW06-04**
 Matrix: **Tincture/Infused Oil - MCT Oil**

Scan QR Code for authenticity



| | | |
|---|-----------------------------------|-------------------|
| Authorization: Jon Podgorni, Lead Research Chemist | Signature: <i>Jon Podgorni</i> | Date: 2/6/2020 |
|---|-----------------------------------|-------------------|



The data contained within this report was collected in accordance with the requirements of ISO/IEC17025:2017. I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

CN: Cannabinoid Profile & Potency [WI-10-17 & WI-10-17-01] Analyst: JFD Test Date: 1/28/2020

The client sample was analyzed for plant-based cannabinoids by Liquid Chromatography (LC). The collected data was compared to data collected for certified reference standards at known concentrations.

76225-CN

| ID | Weight % | Concentration (mg/mL) | | |
|---------|----------|-----------------------|----|-------------------------|
| D9-THC | 0.04 | 0.38 | | |
| THCV | ND | ND | | |
| CBD | 5.38 | 50.49 | | |
| CBDV | 0.01 | 0.11 | | |
| CBG | ND | ND | | |
| CBC | 0.02 | 0.23 | | |
| CBN | ND | ND | | |
| THCA | ND | ND | | |
| CBDA | ND | ND | | |
| CBGA | ND | ND | | |
| D8-THC | ND | ND | | |
| exo-THC | ND | ND | | |
| Total | 5.45 | 51.21 | 0% | Cannabinoids (wt%) 5.4% |
| Max THC | 0.04 | 0.38 | | |
| Max CBD | 5.38 | 50.49 | | |

Limit of Quantitation (LOQ) = 0.01 wt%

Max THC (and Max CBD) are calculated values for total cannabinoids after heating, assuming complete decarboxylation of the acid to the neutral form. It is calculated based on the weight loss of the acid group during decarboxylation: Max THC = (0.877 x THCA) + THC. This calculation does not include other cannabinoid isomers (eg. D8-THC and exo-THC). ND = None detected above the limits of detection (LOD), which is half of LOQ.

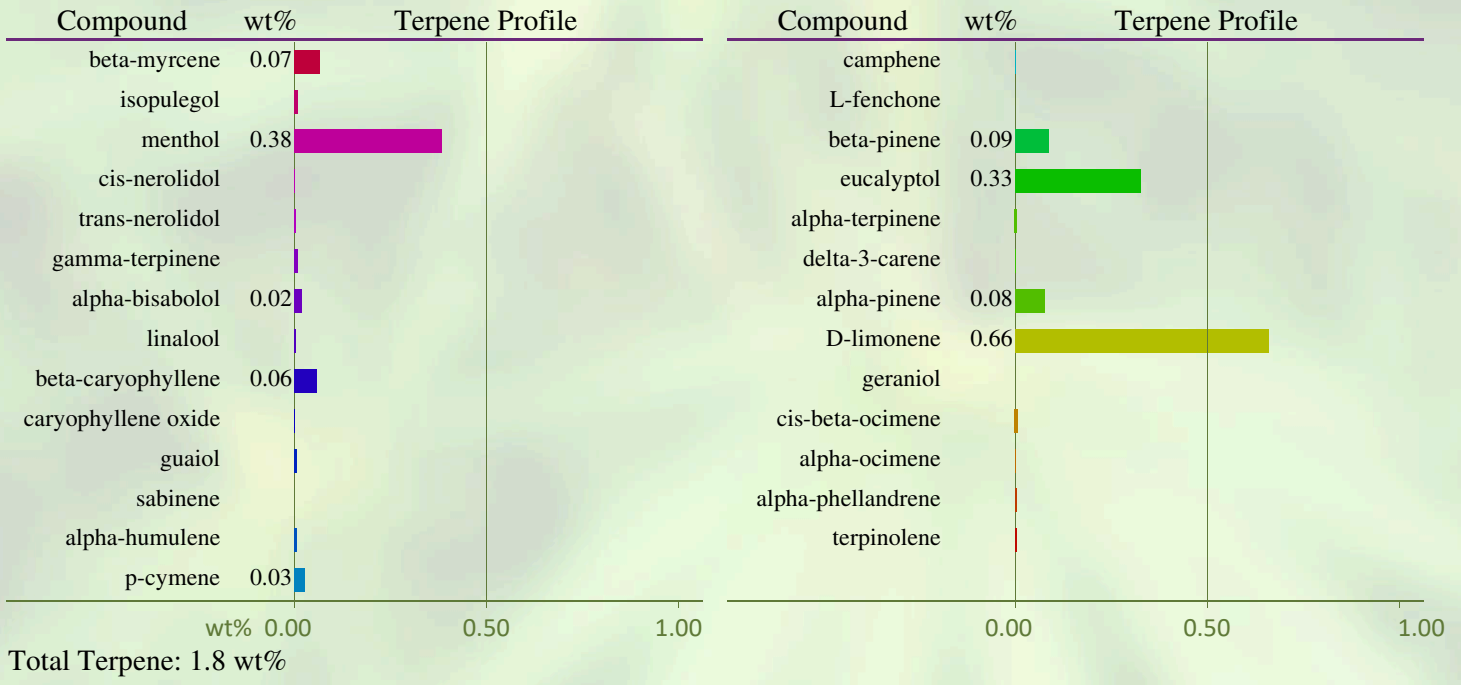
TP: Terpenes Profile [WI-10-27]

Analyst: JR

Test Date: 2/5/2020

The client sample was analyzed by Head-Space Gas Chromatography (HS-GC). The collected data was compared to data collected for certified reference standards at known concentrations. All values are semiquantitative estimates based on recorded peak areas relative to terpene calibration data.

76225-TP



VC: Analysis of Volatile Organic Compounds [WI-10-28]

Analyst: JR

Test Date: 1/27/2020

The client sample was analyzed by Head-Space Gas Chromatography (HS-GC). The collected data was compared to data collected for certified reference standards at known concentrations.

76225-VC

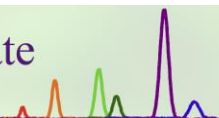
| Compound | CAS | Amount ¹ | Limit ² | RL | Status |
|--------------|----------|---------------------|--------------------|-----|--------|
| Propane | 74-98-6 | ND | 1,000 ppm | 100 | PASS |
| Isobutane | 75-28-5 | ND | 1,000 ppm | 100 | PASS |
| Butane | 106-97-8 | ND | 1,000 ppm | 100 | PASS |
| Methanol | 67-56-1 | ND | 3,000 ppm | 100 | PASS |
| Pentane | 109-66-0 | ND | 5,000 ppm | 100 | PASS |
| Ethanol | 64-17-5 | ND | 5,000 ppm | 100 | * |
| Acetone | 67-64-1 | ND | 5,000 ppm | 100 | PASS |
| Isopropanol | 67-63-0 | ND | 5,000 ppm | 100 | PASS |
| Acetonitrile | 75-05-8 | ND | 410 ppm | 100 | PASS |
| Hexane | 110-54-3 | ND | 290 ppm | 100 | PASS |
| Heptane | 142-82-5 | ND | 5,000 ppm | 100 | PASS |

1) ND = Not detected at a level greater than the Reporting Limit (RL).

2) In ppm, based on USP recommended limits for residual solvents, adopted by the Massachusetts Department of Public Health for cannabis concentrates and extracts on 3/31/16. Butane/Propane limits are based on limits established for state of Colorado.

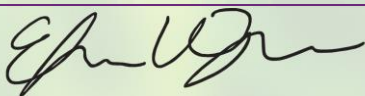
(*) For ethanol, as many formulations contain flavorings based on ethanol extracts of natural products, no status has been assigned.

END OF REPORT



Certificate ID: **54490-219** Received: **5/10/19**
 Client Sample ID: **Full Spectrum Raw Material Q2 2019**
 Lot Number: **LE190429**
 Matrix: **Concentrates/Extracts - CO2**



| | | |
|--|--|--------------------|
| Authorization: Elizabeth R. Wagoner, Lab Director | Signature:  | Date: 7/25/2019 |
|--|--|--------------------|



The data contained within this report was collected in accordance with the requirements of ISO/IEC17025:2005. I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

CN: Cannabinoid Profile & Potency [WI-10-17 & WI-10-17-01] Analyst: *LG* Test Date: *5/15/2019*

The client sample was analyzed for plant-based cannabinoids by Liquid Chromatography (LC). The collected data was compared to data collected for certified reference standards at known concentrations.

54490-CN

| ID | Weight % | Concentration | | | |
|---------|------------|---------------|----|--------------------|-------|
| D9-THC | 0.23 wt % | 2.17 mg/mL | | | |
| THCV | ND | ND | | | |
| CBD | 26.42 wt % | 245.94 mg/mL | | | |
| CBDV | 0.08 wt % | 0.74 mg/mL | | | |
| CBG | 0.01 wt % | 0.13 mg/mL | | | |
| CBC | 0.16 wt % | 1.46 mg/mL | | | |
| CBN | 0.01 wt % | 0.09 mg/mL | | | |
| THCA | ND | ND | | | |
| CBDA | 0.02 wt % | 0.18 mg/mL | | | |
| CBGA | ND | ND | | | |
| D8-THC | ND | ND | | | |
| exo-THC | ND | ND | | | |
| Total | 26.93 wt% | 250.71 mg/mL | 0% | Cannabinoids (wt%) | 26.4% |
| Max THC | 0.23 wt% | 2.17 mg/mL | | | |
| Max CBD | 26.43 wt% | 246.10 mg/mL | | | |

Max THC (and Max CBD) are calculated values for total cannabinoids after heating, assuming complete decarboxylation of the acid to the neutral form. It is calculated based on the weight loss of the acid group during decarboxylation: Max THC = (0.877 x THCA) + THC. This calculation does not include other cannabinoid isomers (eg. D8-THC and exo-THC). ND = None detected above the limits of detection (LLD)

HM: Heavy Metal Analysis [WI-10-13]

Analyst: JFD

Test Date: 5/16/2019

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

54490-HM

| Symbol | Metal | Conc. ¹ | Units | MDL | Use Limits ² | | Units | Status |
|--------|---------|--------------------|-------|-----|-------------------------|-----------|-------|--------|
| | | | | | All | Ingestion | | |
| As | Arsenic | ND | µg/kg | 4 | 200 | 1500 | µg/kg | PASS |
| Cd | Cadmium | ND | µg/kg | 1 | 200 | 500 | µg/kg | PASS |
| Hg | Mercury | ND | µg/kg | 2 | 100 | 1500 | µg/kg | PASS |
| Pb | Lead | ND | µg/kg | 2 | 500 | 1000 | µg/kg | PASS |

1) ND = None detected to Lowest Limits of Detection (LLD)

2) MA Dept. of Public Health: Protocol for MMJ and MIPS, Exhibit 4(a) for all products.

3) USP exposure limits based on daily oral dosing of 1g of concentrate for a 110 lb person.

MB1: Microbiological Contaminants [WI-10-09]

Analyst: AKR

Test Date: 5/13/2019

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

54490-MB1

| Symbol | Analysis | Results | Units | Limits* | Status |
|--------|---|---------|-------|--------------|--------|
| AC | Total Aerobic Bacterial Count | <100 | CFU/g | 10,000 CFU/g | PASS |
| CC | Total Coliform Bacterial Count | <100 | CFU/g | 100 CFU/g | PASS |
| EB | Total Bile Tolerant Gram Negative Count | <100 | CFU/g | 100 CFU/g | PASS |
| YM | Total Yeast & Mold | <100 | CFU/g | 1,000 CFU/g | PASS |

Note: All recorded Microbiological tests are within the established limits.

MB2: Pathogenic Bacterial Contaminants [WI-10-10]

Analyst: LabAdmin

Test Date: 5/14/2019

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

54490-MB2

| Test ID | Analysis | Results | Units | Limits* | Status |
|------------|----------------|----------|-------|--------------|--------|
| 54490-ECPT | E. coli (O157) | Negative | NA | Non Detected | PASS |
| 54490-SPT | Salmonella | Negative | NA | Non Detected | PASS |

Note: All recorded pathogenic bacteria tests passed.

PST: Pesticide Analysis [WI-10-11]

Analyst: RAS

Test Date: 5/18/2019

The client sample was analyzed for pesticides using Liquid Chromatography with Mass Spectrometric detection (LC/MS/MS). The method used for sample prep was based on the European method for pesticide analysis (EN 15662).

54490-PST

| Analyte | CAS | Result | Units | LLD | Limits (ppb) | Status |
|--------------------|-------------|--------|-------|-------|--------------|--------|
| Abamectin B1a | 65495-55-3 | ND | ppb | 0.20 | 300 | PASS |
| Abamectin B1b | 65195-56-4 | ND | ppb | 0.20 | 300 | PASS |
| Azoxystrobin | 131860-33-8 | ND | ppb | 0.10 | 40000 | PASS |
| Bifenazate | 149877-41-8 | ND | ppb | 0.10 | 5000 | PASS |
| Bifenthrin | 82657-04-3 | ND | ppb | 0.20 | 500 | PASS |
| Cyfluthrin | 68359-37-5 | ND | ppb | 0.50 | 1000 | PASS |
| Daminozide | 1596-84-5 | ND | ppb | 10.00 | 10 | * |
| Etoxazole | 153233-91-1 | ND | ppb | 0.10 | 1500 | PASS |
| Fenoxycarb | 72490-01-8 | ND | ppb | 0.10 | 10 | PASS |
| Imazalil | 35554-44-0 | ND | ppb | 0.10 | 10 | PASS |
| Imidacloprid | 138261-41-3 | ND | ppb | 0.10 | 3000 | PASS |
| Myclobutanil | 88671-89-0 | ND | ppb | 0.10 | 9000 | PASS |
| Paclobutrazol | 76738-62-0 | ND | ppb | 0.10 | 10 | PASS |
| Piperonyl butoxide | 51-03-6 | ND | ppb | 0.10 | 8000 | * |
| Pyrethrin | 8003-34-7 | ND | ppb | 0.1 | 1000 | PASS |
| Spinosad | 168316-95-8 | ND | ppb | 0.1 | 3000 | PASS |
| Spiromesifen | 283594-90-1 | ND | ppb | 0.10 | 12000 | PASS |
| Spirotetramat | 203313-25-1 | ND | ppb | 0.10 | 13000 | PASS |
| Trifloxystrobin | 141517-21-7 | ND | ppb | 0.10 | 30000 | PASS |

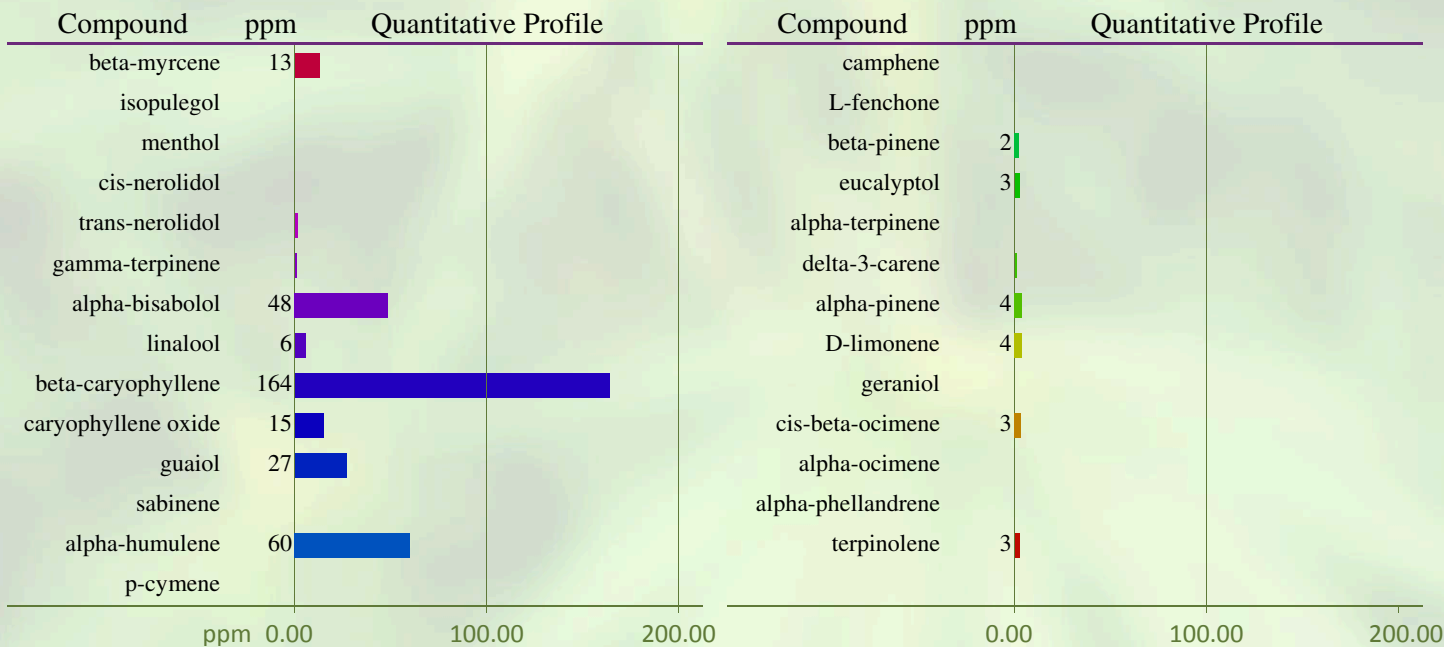
* Testing limits for ingestion established by the State of California: CCR, Title 16, Division 42, Chapter 5, Section 5313. ND indicates "none detected" above the lower limit of detection (LLD). Analytes marked with (*) indicate analytes for which no recovery was observed for a pre-spiked matrix sample.

TP: Terpenes Profile [WI-10-08]

Analyst: CMA

Test Date: 5/14/2019

The client sample was analyzed by Head-Space Gas Chromatography (HS-GC). The collected data was compared to data collected for certified reference standards at known concentrations. All values are semiquantitative estimates based on recorded peak areas relative to terpene calibration data.

54490-TP

Total Terpene: <0.1 wt%

VC: Analysis of Volatile Organic Compounds [WI-10-07]

Analyst: CMA

Test Date: 5/13/2019

The client sample was analyzed by Head-Space Gas Chromatography (HS-GC). The collected data was compared to data collected for certified reference standards at known concentrations.

54490-VC

| Compound | CAS | Amount ¹ | Limit ² | RL | Status |
|--------------|----------|---------------------|--------------------|-----|--------|
| Propane | 74-98-6 | ND | 1,000 ppm | 200 | PASS |
| Isobutane | 75-28-5 | ND | 1,000 ppm | 200 | PASS |
| Butane | 106-97-8 | ND | 1,000 ppm | 200 | PASS |
| Methanol | 67-56-1 | ND | 3,000 ppm | 200 | PASS |
| Ethanol | 64-17-5 | ND | 5,000 ppm | 200 | PASS |
| Acetone | 67-64-1 | ND | 5,000 ppm | 200 | PASS |
| Isopropanol | 67-63-0 | ND | 5,000 ppm | 200 | PASS |
| Acetonitrile | 75-05-8 | ND | 410 ppm | 200 | PASS |
| Hexane | 110-54-3 | ND | 290 ppm | 200 | PASS |
| Heptane | 142-82-5 | ND | 5,000 ppm | 200 | PASS |

1) ND = Not detected at a level greater than the Reporting Limit (RL).

2) In ppm, based on USP recommended limits for residual solvents, adopted by the Massachusetts Department of Public Health on 3/31/16. Butane/Propane limits are based on limits established for state of Colorado.

END OF REPORT