



STRAIGHT HEMP

CERTIFICATE OF ANALYSIS

PRODUCT: Full Spectrum Hemp Oil
BATCH/LOT: A0058
INGREDIENTS: Full Spectrum Hemp Extract, Organic Hemp Seed Oil
ADDITIVES: none
EXCIPIENTS: none

PRODUCTION DATE: 2/26/2020
EXPIRATION DATE: 02/2022

TEST	METHOD	SPECIFICATION	RESULTS
Strength & Composition			
Identity	Organoleptic	Conforming	PASS
Identity	UPLC/UV	Chemical Fingerprint	PASS
Total Cannabidiol (CBD) ⁱ	UPLC/UV	35.0 – 43.0 mg/g	39.2 mg/g ⁱⁱ
Total Tetrahydrocannabinol (THC) ⁱⁱⁱ	UPLC/UV	NMT 0.30%	0.11%
Terpene assay ^{iv}	HS-GC/MS	n/e	2,080 ppm
Microbiological ^v			
Total Plate Count	USP 42	NMT 1,000 cfu/ml	PASS
Total Yeast & Mold	USP 42	NMT 100 cfu/ml	PASS
<i>E. coli</i>	USP 42	Absent	PASS
<i>Salmonella</i>	USP 42	Absent	PASS
<i>Staph. aureus</i>	USP 42	Absent	PASS
<i>Pseudo. aeruginosa</i>	USP 42	Absent	PASS
Heavy Metals ^{vi}			
Arsenic (As)	ICP/MS	NMT 2 ppm	PASS
Cadmium (Cd)	ICP/MS	NMT 2 ppm	PASS
Lead (Pb)	ICP/MS	NMT 2 ppm	PASS
Mercury (Hg)	ICP/MS	NMT 1 ppm	PASS
Residual Solvents			
Multi-residue panel	GC-HS-MSD	Below MRL ^{vii}	PASS
Pesticides			
Multi-residue panel	UPLC-MS/MS	Below MRL	PASS

David Cole
Director of Quality

3/23/20

Date

ⁱ Total CBD = CBD + (0.877*CBDA) to account for loss of acid group during decarboxylation

ⁱⁱ Corresponds to **36.5mg/ml**

ⁱⁱⁱ Total THC = THC + (0.877*THCa) to account for loss of acid group during decarboxylation

^{iv} Sum of terpene assay (n=22)

^v Microbiological limits based on USP, WHO, and/or NSF/ANSI.

^{vi} Limits for As and Pb set below CA Prop 65 *no significant risk level*; Cd and Hg set below USP permitted daily exposure for 110lb body weight

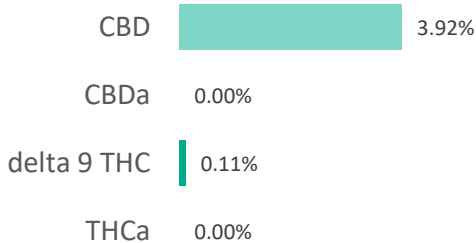
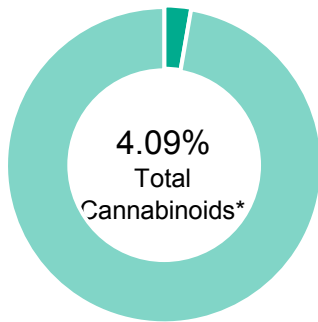
^{vii} 11 solvent panel: Propane, Butane, Pentane, Ethanol, Acetone, Isopropyl Alcohol, Hexane, Benzene, Heptanes, Toluene, Xylenes

NMT = Not More Than

MRL = Method Reporting Limit

FSO FULL SPECTRUM HEMP OIL

Batch ID:	A0058	Test ID:	8343778.0056
Reported:	6-Mar-2020	Method:	TM14
Type:	Concentrate		
Test:	Potency		


CANNABINOID PROFILE


Compound	LOQ (%)	Result (%)	Result (mg/g)
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.03	ND	ND
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.01	0.11	1.1
Cannabidiolic acid (CBDA)	0.00	ND	ND
Cannabidiol (CBD)	0.00	3.92	39.2
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.02	ND	ND
Cannabinolic Acid (CBNA)	0.04	ND	ND
Cannabinol (CBN)	0.02	ND	ND
Cannabigerolic acid (CBGA)	0.02	ND	ND
Cannabigerol (CBG)	0.01	ND	ND
Tetrahydrocannabivarinic Acid (THCVA)	0.02	ND	ND
Tetrahydrocannabivarin (THCV)	0.01	ND	ND
Cannabidivarinic Acid (CBDVA)	0.00	ND	ND
Cannabidivarin (CBDV)	0.00	0.01	0.1
Cannabichromenic Acid (CBCA)	0.02	ND	ND
Cannabichromene (CBC)	0.03	0.05	0.5
Total Cannabinoids		4.09	40.90
Total Potential THC**		0.11	1.10
Total Potential CBD**		3.92	39.20

% = % (w/w) = Percent (Weight of Analyte / Weight of Product)
 * Total Cannabinoids result reflects the absolute sum of all cannabinoids detected.
 ** Total Potential THC/CBD is calculated using the following formulas to take into account the loss of a carboxyl group during decarboxylation step.
 Total THC = THC + (THCa *(0.877)) and Total CBD = CBD + (CBDa *(0.877))
 ND = None Detected (Defined by Dynamic Range of the method)

NOTES:
N/A

FINAL APPROVAL


 Michelle Gagnon
 6-Mar-2020
 4:14 PM


 Greg Zimpfer
 6-Mar-2020
 5:34 PM

PREPARED BY / DATE

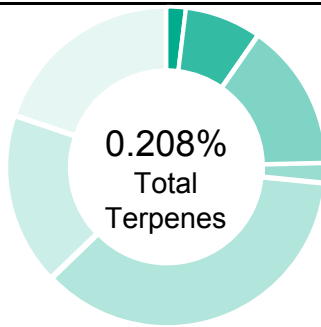
APPROVED BY / DATE

Testing results are based solely upon the sample submitted to Botanacor Laboratories, LLC, in the condition it was received. Botanacor Laboratories, LLC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices using validated methods. Data was generated using an unbroken chain of comparison to NIST traceable Reference Standards and Certified Reference Materials. This report may not be reproduced, except in full, without the written approval of Botanacor Laboratories, LLC. ISO/IEC 17025:2005 Accredited A2LA Certificate Number 4329.02

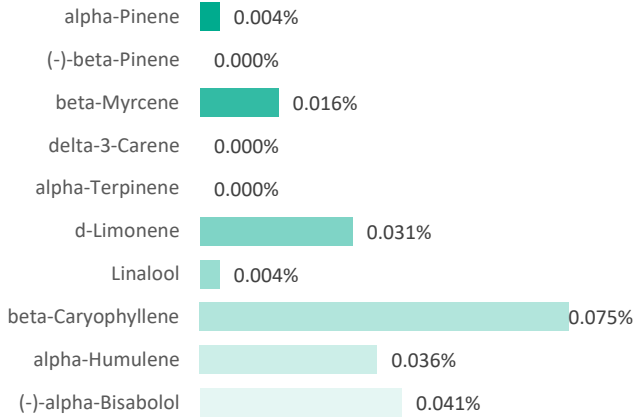


FSO FULL SPECTRUM HEMP OIL



Batch ID:	A0058	Test ID:	3439344.0016
Reported:	10-Mar-2020	Method:	TM10
Type:	Concentrate		
Test:	Terpenes		

TERPENE PROFILE


Compound	%(w/w)	mg/g
(-)-alpha-Bisabolol	0.041	0.41
Camphene	N/A	N/A
delta-3-Carene	0.000	0
beta-Caryophyllene	0.075	0.75
(-)-Caryophyllene Oxide	0.000	0
p-Cymene	0.000	0
Eucalyptol	0.001	0.01
Geraniol	0.000	0
alpha-Humulene	0.036	0.36
(-)-Isopulegol	0.000	0
d-Limonene	0.031	0.31
Linalool	0.004	0.04
beta-Myrcene	0.016	0.16
cis-Nerolidol	0.000	0
trans-Nerolidol	0.000	0
Ocimene	0.000	0
beta-Ocimene	0.000	0
alpha-Pinene	0.004	0.04
(-)-beta-Pinene	0.000	0
alpha-Terpinene	0.000	0
gamma-Terpinene	0.000	0
Terpinolene	0.000	0
	0.208%	2.08

PREDOMINANT TERPENES

 NOTES:
 0

FINAL APPROVAL

	Michelle Gagnon 10-Mar-2020 3:30 PM		Greg Zimpfer 10-Mar-2020 4:34 PM
---	---	---	--

PREPARED BY / DATE

APPROVED BY / DATE

Testing results are based solely upon the sample submitted to Botanacor Laboratories, LLC. Botanacor Laboratories, LLC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices using validated methods. Data was generated using an unbroken chain of comparison to NIST traceable Reference Standards and Certified Reference Materials. This report may not be reproduced, except in full, without the written approval of Botanacor Laboratories, LLC. ISO/IEC 17025:2005 Accredited A2LA Certificate Number 4329.02



Certificate #4329.02


FSO FULL SPECTRUM HEMP OIL

Batch ID:	A0058	Test ID:	T000064880
Reported:	17-Mar-2020	Method:	Arsenic = Arsenic EPA 6020A (mod), Cadmium = Cadmium EPA 6020A (mod), Lead = Lead EPA 6020A (mod), Mercury = Mercury EPA 6020A (mod)
Type:	Other		
Test:	Metals		


HEAVY METALS

Compound	Reporting Limit (ppm)	Result (ppm)
Arsenic	0.05	<0.05
Cadmium	0.05	<0.05
Lead	0.05	<0.05
Mercury	0.05	<0.05

FINAL APPROVAL

 Sam Smith
17-Mar-2020
1:51 PM

PREPARED BY / DATE

 Greg Zimpfer
17-Mar-2020
2:36 PM

APPROVED BY / DATE

Testing results are based solely upon the sample submitted to Botanacor Laboratories, LLC, in the condition it was received. Botanacor Laboratories, LLC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices using validated methods. Data was generated using an unbroken chain of comparison to NIST traceable Reference Standards and Certified Reference Materials. This report may not be reproduced, except in full, without the written approval of Botanacor Laboratories, LLC.

FSO FULL SPECTRUM HEMP OIL

Batch ID:	A0058	Test ID:	T000064877
Reported:	9-Mar-2020	Method:	TM04
Type:	Concentrate		
Test:	Residual Solvents		

RESIDUAL SOLVENTS


Solvent	Dynamic Range (ppm)	Result (ppm)
Propane	87 - 1742	*ND
Butanes (Isobutane, n-Butane)	171 - 3410	*ND
Methanol	62 - 1244	*ND
Pentane	94 - 1873	*ND
Ethanol	96 - 1926	*ND
Acetone	101 - 2024	*ND
Isopropyl Alcohol	111 - 2217	*ND
Hexane	6 - 123	*ND
Ethyl Acetate	103 - 2053	*ND
Benzene	0.2 - 4.1	*ND
Heptanes	98 - 1955	*ND
Toluene	19 - 371	*ND
Xylenes (m,p,o-Xylenes)	141 - 2829	*ND

* ND = None Detected (Defined by Dynamic Range of the method)

NOTES:
N/A**FINAL APPROVAL**

Ryan Weems
9-Mar-2020
6:48 PM

PREPARED BY / DATE



Greg Zimpfer
9-Mar-2020
6:57 PM

APPROVED BY / DATE

Testing results are based solely upon the sample submitted to Botanacor Laboratories, LLC, in the condition it was received. Botanacor Laboratories, LLC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices using validated methods. Data was generated using an unbroken chain of comparison to NIST traceable Reference Standards and Certified Reference Materials. This report may not be reproduced, except in full, without the written approval of Botanacor Laboratories, LLC. ISO/IEC 17025:2005 Accredited A2LA Certificate Number 4329.02



Certificate #4329.02



Certificate of Analysis

Straight Hemp
5135 W. 58th Ave, Ste 5
Arvada, CO 80002
Phone: 970-214-7814

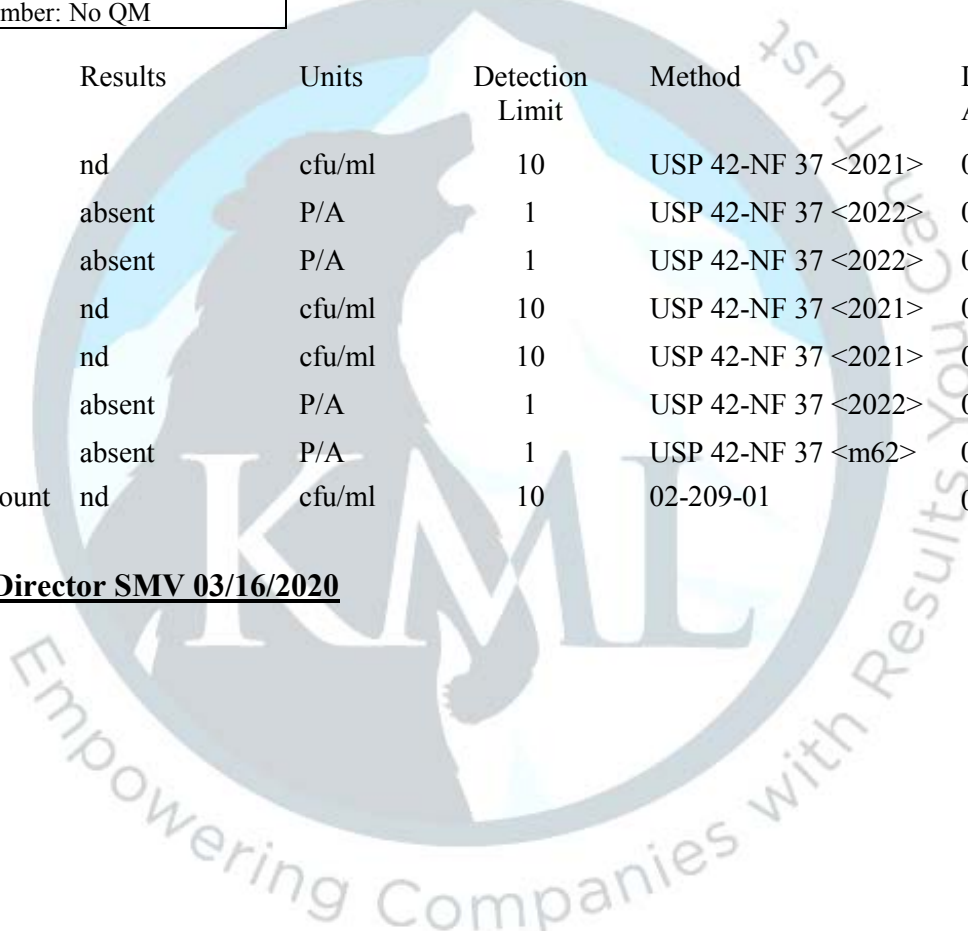
Invoice Number: 20.0301
PO Number:
Received Date: 03/09/2020
Number of Samples: 01
Project Name: Routine Testing

Microbiology Report:

Lab #: 20-1979	Sample Lot: A0058	Sample Date: 03/03/2020
Sample Name:	Additional ID: FSO-Full Spectrum Hemp Oil	Plated Date: 03/09/2020
Qualifying Material Number: No QM		

Test Performed	Results	Units	Detection Limit	Method	Date Analyzed
Aerobic Plate Count	nd	cfu/ml	10	USP 42-NF 37 <2021>	03/12/2020
<i>E. coli</i>	absent	P/A	1	USP 42-NF 37 <2022>	03/12/2020
<i>Staph aureus</i>	absent	P/A	1	USP 42-NF 37 <2022>	03/12/2020
Yeast	nd	cfu/ml	10	USP 42-NF 37 <2021>	03/14/2020
Mold	nd	cfu/ml	10	USP 42-NF 37 <2021>	03/14/2020
Salmonella	absent	P/A	1	USP 42-NF 37 <2022>	03/13/2020
<i>Pseudo. aeruginosa</i>	absent	P/A	1	USP 42-NF 37 <m62>	03/12/2020
Enterobacteriaceae Count	nd	cfu/ml	10	02-209-01	03/10/2020

Approved By: QA Director SMV 03/16/2020



Confidential

Page 1 of 2

This Certificate/Report shall not be reproduced, except in full, without the prior written consent of KML Laboratories, Inc.

This report may include work not covered by KML's current ISO accreditation as indicated by ‡.

Note: On this date, this material met the specifications designated above, and is **not known if statistically representative of the lot evaluated on a routine basis**. This information is not intended to relieve the purchaser from its responsibility to determine the suitability of this material for purchaser's purposes, to comply with all laws and regulations regarding the safe use of this material. [nd = none detected above the listed detection limit](#)





Certificate of Analysis

Straight Hemp
 5135 W. 58th Ave, Ste 5
 Arvada, CO 80002
 Phone: 970-214-7814

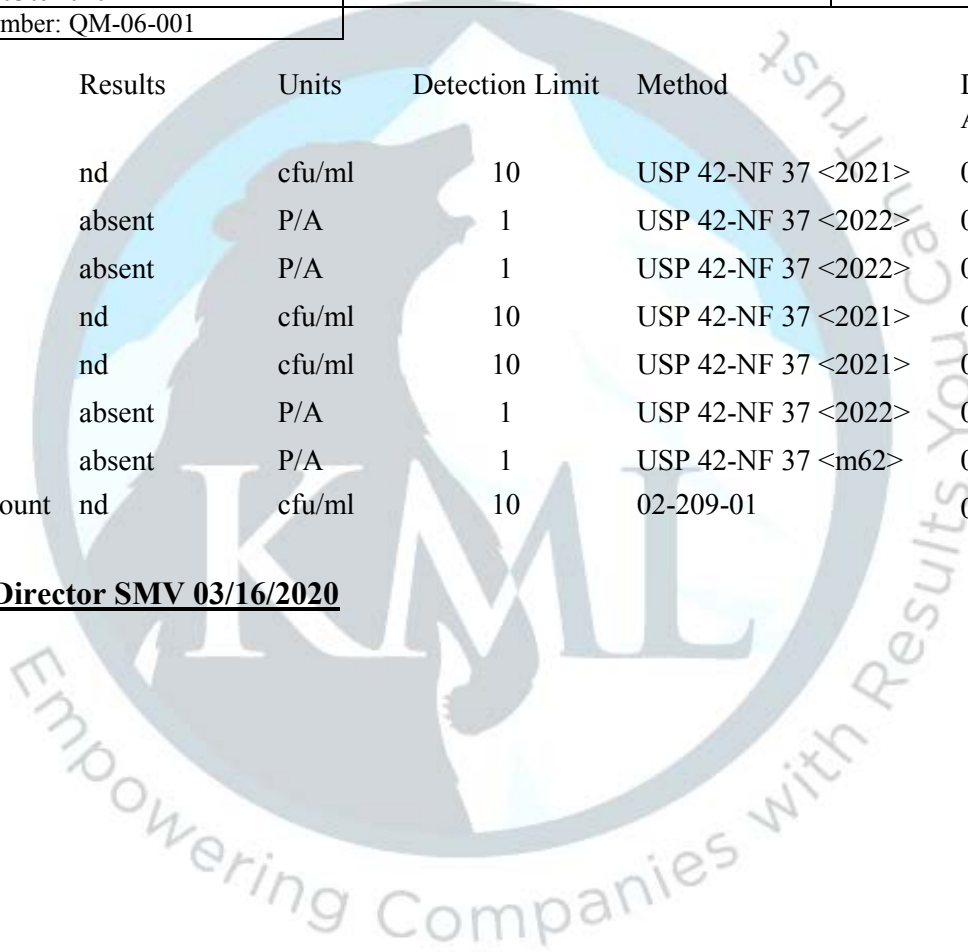
Invoice Number: 20.0301
 PO Number:
 Received Date: 03/09/2020
 Number of Samples: 01
 Project Name: Routine Testing

Microbiology Report:

Lab #: Control 03092020	Additional ID: Negative Control Purposes	Plated Date: 03/09/2020
Sample Name: Control 03092020		
Qualifying Material Number: QM-06-001		

Test Performed	Results	Units	Detection Limit	Method	Date Analyzed
Aerobic Plate Count	nd	cfu/ml	10	USP 42-NF 37 <2021>	03/12/2020
<i>E. coli</i>	absent	P/A	1	USP 42-NF 37 <2022>	03/12/2020
<i>Staph aureus</i>	absent	P/A	1	USP 42-NF 37 <2022>	03/12/2020
Yeast	nd	cfu/ml	10	USP 42-NF 37 <2021>	03/14/2020
Mold	nd	cfu/ml	10	USP 42-NF 37 <2021>	03/14/2020
Salmonella	absent	P/A	1	USP 42-NF 37 <2022>	03/13/2020
<i>Pseudo. aeruginosa</i>	absent	P/A	1	USP 42-NF 37 <m62>	03/12/2020
Enterobacteriaceae Count	nd	cfu/ml	10	02-209-01	03/10/2020

Approved By: QA Director SMV 03/16/2020



Confidential

Page 2 of 2

This Certificate/Report shall not be reproduced, except in full, without the prior written consent of KML Laboratories, Inc.

This report may include work not covered by KML's current ISO accreditation as indicated by ‡.

Note: On this date, this material met the specifications designated above, and is **not known if statistically representative of the lot evaluated on a routine basis**. This information is not intended to relieve the purchaser from its responsibility to determine the suitability of this material for purchaser's purposes, to comply with all laws and regulations regarding the safe use of this material. [nd = none detected above the listed detection limit](#)

