

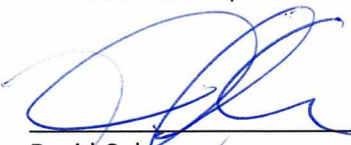
# STRAIGHT HEMP

## CERTIFICATE OF ANALYSIS

PRODUCT: Full Spectrum Hemp Oil  
BATCH/LOT: A0060  
INGREDIENTS: Full Spectrum Hemp Extract, Organic Hemp Seed Oil  
ADDITIVES: none  
EXCIPIENTS: none

PRODUCTION DATE: 3/31/2020  
EXPIRATION DATE: 03/2022

TEST	METHOD	SPECIFICATION	RESULTS
<b>Strength &amp; Composition</b>			
Identity	Organoleptic	Conforming	PASS
Identity	UPLC/UV	Chemical Fingerprint	PASS
Total Cannabidiol (CBD) <sup>i</sup>	UPLC/UV	35.0 – 43.0 mg/g	36.8 mg/g <sup>ii</sup>
Total Tetrahydrocannabinol (THC) <sup>iii</sup>	UPLC/UV	NMT 0.30%	0.22%
Terpene assay <sup>iv</sup>	HS-GC/MS	n/e	2,090 ppm
<b>Microbiological<sup>v</sup></b>			
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
<b>Heavy Metals<sup>vi</sup></b>			
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
<b>Residual Solvents</b>			
Multi-residue panel	GC-HS-MSD	Below MRL <sup>vii</sup>	PASS
<b>Pesticides</b>			
Multi-residue panel	UPLC-MS/MS	Below MRL	PASS

  
David Cole  
Director of Quality

4/17/20  
Date

<sup>i</sup> Total CBD = CBD + (0.877\*CBDA) to account for loss of acid group during decarboxylation

<sup>ii</sup> Corresponds to **34.2mg/ml**

<sup>iii</sup> Total THC = THC + (0.877\*THCa) to account for loss of acid group during decarboxylation

<sup>iv</sup> Sum of terpene assay (n=22)

<sup>v</sup> Microbiological limits based on USP, WHO, and/or NSF/ANSI.

<sup>vi</sup> 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

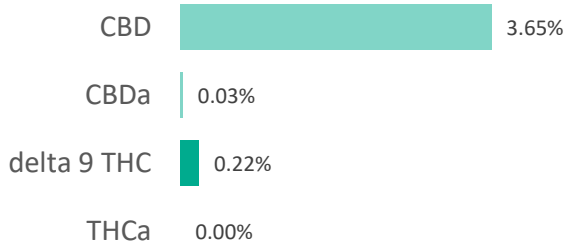
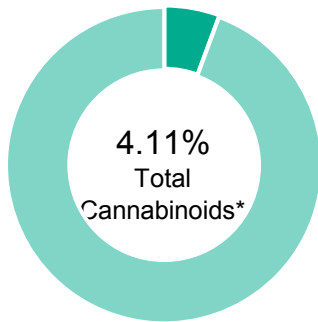
<sup>vii</sup> 11 solvent panel: Propane, Butane, Pentane, Ethanol, Acetone, Isopropyl Alcohol, Hexane, Benzene, Heptanes, Toluene, Xylenes

NMT = Not More Than

MRL = Method Reporting Limit

**FSO - Full Spectrum Hemp Oil**

<b>Batch ID:</b>	A0060	<b>Test ID:</b>	6536253.0024
<b>Reported:</b>	3-Apr-2020	<b>Method:</b>	TM14
<b>Type:</b>	Concentrate		
<b>Test:</b>	Potency		


**CANNABINOID PROFILE**


Compound	LOQ (%)	Result (%)	Result (mg/g)
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.03	ND	ND
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.02	0.22	2.2
Cannabidiolic acid (CBDA)	0.02	0.03	0.3
Cannabidiol (CBD)	0.01	3.65	36.5
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)	0.03	ND	ND
Cannabigerol (CBG)	0.02	0.03	0.3
Tetrahydrocannabivarinic Acid (THCVA)	0.03	ND	ND
Tetrahydrocannabivarin (THCV)	0.01	ND	ND
Cannabidivarinic Acid (CBDVA)	0.02	ND	ND
Cannabidivarin (CBDV)	0.01	0.06	0.6
Cannabichromenic Acid (CBCA)	0.02	ND	ND
Cannabichromene (CBC)	0.03	0.12	1.2
<b>Total Cannabinoids</b>		<b>4.11</b>	<b>41.10</b>
<b>Total Potential THC**</b>		<b>0.22</b>	<b>2.20</b>
<b>Total Potential CBD**</b>		<b>3.68</b>	<b>36.76</b>

% = % (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**

  
 Ryan Weems  
 3-Apr-2020  
 3:10 PM

  
 David Green  
 3-Apr-2020  
 3:35 PM

PREPARED BY / DATE

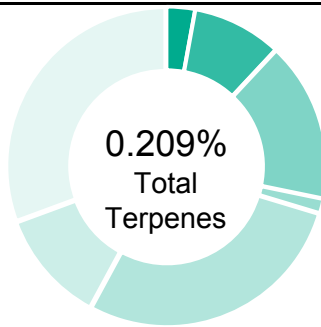
APPROVED BY / DATE

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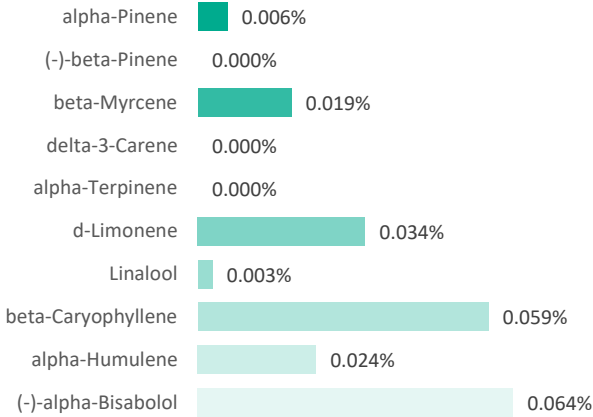


**FSO - Full Spectrum Hemp Oil**


<b>Batch ID:</b>	A0060	<b>Test ID:</b>	2640089.008
<b>Reported:</b>	2-Apr-2020	<b>Method:</b>	TM10
<b>Type:</b>	Concentrate		
<b>Test:</b>	Terpenes		

**TERPENE PROFILE**


Compound	%(w/w)	mg/g
(-)-alpha-Bisabolol	0.064	0.64
Camphene	N/A	N/A
delta-3-Carene	0.000	0
beta-Caryophyllene	0.059	0.59
(-)-Caryophyllene Oxide	0.000	0
p-Cymene	0.000	0
Eucalyptol	0.000	0
Geraniol	0.000	0
alpha-Humulene	0.024	0.24
(-)-Isopulegol	0.000	0
d-Limonene	0.034	0.34
Linalool	0.003	0.03
beta-Myrcene	0.019	0.19
cis-Nerolidol	0.000	0
trans-Nerolidol	0.000	0
Ocimene	0.000	0
beta-Ocimene	0.000	0
alpha-Pinene	0.006	0.06
(-)-beta-Pinene	0.000	0
alpha-Terpinene	0.000	0
gamma-Terpinene	0.000	0
Terpinolene	0.000	0
	<b>0.209%</b>	<b>2.09</b>

**PREDOMINANT TERPENES**

 NOTES:  
 0

**FINAL APPROVAL**

 Daniel Weidensaul 2-Apr-2020 7:05 PM	 Greg Zimpfer 2-Apr-2020 7:10 PM
--	--

PREPARED BY / DATE

APPROVED BY / DATE

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Certificate #4329.02

## FSO - Full Spectrum Hemp Oil


<b>Batch ID:</b>	A0060	<b>Test ID:</b>	T000070015
<b>Reported:</b>	3-Apr-2020	<b>Method:</b>	TM19
<b>Type:</b>	Other		
<b>Test:</b>	Metals		

## HEAVY METALS

Analyte	Dynmic Range (ppm)	Result (ppm)
Arsenic	0.081 - 8.14	ND
Cadmium	0.079 - 7.91	ND
Mercury	0.140 - 13.90	ND
Lead	0.218 - 21.70	ND


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

## FINAL APPROVAL



Chris Jungling  
3-Apr-2020  
9:09 AM

PREPARED BY / DATE



Greg Zimpfer  
3-Apr-2020  
10:12 AM

APPROVED BY / DATE

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**FSO - Full Spectrum Hemp Oil**

<b>Batch ID:</b>	A0060	<b>Test ID:</b>	T000070012
<b>Reported:</b>	6-Apr-2020	<b>Method:</b>	TM04
<b>Type:</b>	Concentrate		
<b>Test:</b>	Residual Solvents		

**RESIDUAL SOLVENTS**


Solvent	Dynamic Range (ppm)	Result (ppm)
Propane	92 - 1847	*ND
Butanes (Isobutane, n-Butane)	176 - 3527	*ND
Methanol	61 - 1228	*ND
Pentane	95 - 1894	*ND
Ethanol	93 - 1866	*ND
Acetone	100 - 1993	*ND
Isopropyl Alcohol	103 - 2064	*ND
Hexane	6 - 123	*ND
Ethyl Acetate	101 - 2021	*ND
Benzene	0.2 - 4	*ND
Heptanes	97 - 1938	*ND
Toluene	18 - 362	*ND
Xylenes (m,p,o-Xylenes)	130 - 2609	*ND

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

NOTES:  
N/A

**FINAL APPROVAL**

  
 Ryan Weems  
 6-Apr-2020  
 2:42 PM  
 PREPARED BY / DATE

  
 Greg Zimpfer  
 6-Apr-2020  
 4:46 PM  
 APPROVED BY / DATE

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Certificate #4329.02

**FSO - Full Spectrum Hemp Oil**

<b>Batch ID:</b>	A0060	<b>Test ID:</b>	4614057.009
<b>Reported:</b>	7-Apr-2020	<b>Method:</b>	TM17
<b>Type:</b>	Concentrate		
<b>Test:</b>	Pesticides		


**PESTICIDE RESIDUE**


Compound	Dynamic Range (ppb)	Result (ppb)	Compound	Dynamic Range (ppb)	Result (ppb)
Acephate	51 - 2375	ND*	Malathion	308 - 2375	ND*
Acetamiprid	51 - 2375	ND*	Metalaxyl	51 - 2375	ND*
Abamectin	>308	ND*	Methiocarb	51 - 2375	ND*
Azoxystrobin	51 - 2375	ND*	Methomyl	51 - 2375	ND*
Bifenazate	51 - 2375	ND*	MGK 264 1	308 - 2375	ND*
Boscalid	51 - 2375	ND*	MGK 264 2	308 - 2375	ND*
Carbaryl	51 - 2375	ND*	Myclobutanil	51 - 2375	ND*
Carbofuran	51 - 2375	ND*	Naled	51 - 2375	ND*
Chlorantraniliprole	51 - 2375	ND*	Oxamyl	51 - 2375	ND*
Chlorpyrifos	51 - 2375	ND*	Paclobutrazol	51 - 2375	ND*
Clofentezine	308 - 2375	ND*	Permethrin	308 - 2375	ND*
Diazinon	308 - 2375	ND*	Phosmet	51 - 2375	ND*
Dichlorvos	>308	ND*	Prophos	308 - 2375	ND*
Dimethoate	51 - 2375	ND*	Propoxur	51 - 2375	ND*
E-Fenproximate	51 - 2375	ND*	Pyridaben	51 - 2375	ND*
Etofenprox	51 - 2375	ND*	Spinosad A	51 - 2375	ND*
Etoxazole	308 - 2375	ND*	Spinosad D	308 - 2375	ND*
Fenoxycarb	>51	ND*	Spiromesifen	>308	ND*
Fipronil	51 - 2375	ND*	Spirotetramat	>308	ND*
Flonicamid	51 - 2375	ND*	Spiroxamine 1	51 - 2375	ND*
Fludioxonil	>308	ND*	Spiroxamine 2	51 - 2375	ND*
Hexythiazox	51 - 2375	ND*	Tebuconazole	308 - 2375	ND*
Imazalil	308 - 2375	ND*	Thiacloprid	51 - 2375	ND*
Imidacloprid	51 - 2375	ND*	Thiamethoxam	51 - 2375	ND*
Kresoxim-methyl	51 - 2375	ND*	Trifloxystrobin	51 - 2375	ND*

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

N/A

**FINAL APPROVAL**

  
 Tyler Wiese  
 7-Apr-2020  
 3:00 PM  
 PREPARED BY / DATE

  
 Greg Zimpfer  
 7-Apr-2020  
 7:53 PM  
 APPROVED BY / DATE

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## Certificate of Analysis

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

Invoice Number: 20.0447  
PO Number:  
Received Date: 04/03/2020  
Number of Samples: 01  
Project Name: Routine Testing

### Microbiology Report:

Lab #: 20-2922	Sample Lot: A0060	Sample Date: 03/31/2020
Sample Name: FSO-Full Spectrum Hemp Oil	Additional ID:	Plated Date: 04/03/2020
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>	04/06/2020
<i>E. coli</i>	absent	P/A	1	USP 42-NF 37 <2022>	04/06/2020
<i>Staph aureus</i>	absent	P/A	1	USP 42-NF 37 <2022>	04/06/2020
Yeast	nd	cfu/ml	10	USP 42-NF 37 <2021>	04/08/2020
Mold	nd	cfu/ml	10	USP 42-NF 37 <2021>	04/08/2020
Salmonella	absent	P/A	1	USP 42-NF 37 <2022>	04/07/2020
<i>Pseudo. aeruginosa</i> *	absent	P/A	1	USP 42-NF 37 <m62>	04/06/2020
Enterobacteriaceae Count	nd	cfu/ml	10	02-209-01	04/04/2020

\*This report was revised to include *Pseudo. aeruginosa* which had been inadvertently left off of the original report. This revised report replaces the report issued prior 04/08/20.

**Approved By: QA Director SMV 04/17/2020**

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## Certificate of Analysis

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

Invoice Number: 20.0447  
 PO Number:  
 Received Date: 04/03/2020  
 Number of Samples: 01  
 Project Name: Routine Testing

### Microbiology Report:

Lab #: Control 04032020	Additional ID: Negative Control Purposes	Plated Date: 04/03/2020
Sample Name: Control 04032020		
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>	04/06/2020
<i>E. coli</i>	absent	P/A	1	USP 42-NF 37 <2022>	04/06/2020
<i>Staph aureus</i>	absent	P/A	1	USP 42-NF 37 <2022>	04/06/2020
Yeast	nd	cfu/ml	10	USP 42-NF 37 <2021>	04/08/2020
Mold	nd	cfu/ml	10	USP 42-NF 37 <2021>	04/08/2020
Salmonella	absent	P/A	1	USP 42-NF 37 <2022>	04/07/2020
<i>Pseudo. aeruginosa</i> *	absent	P/A	1	USP 42-NF 37 <m62>	04/06/2020
Enterobacteriaceae Count	nd	cfu/ml	10	02-209-01	04/04/2020

\*This report was revised to include *Pseudo. aeruginosa* which had been inadvertently left off of the original report. This revised report replaces the report issued prior 04/08/20.

**Approved By: QA Director SMV 04/17/2020**

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