



STRAIGHT HEMP

CERTIFICATE OF ANALYSIS

PRODUCT: Full Spectrum Hemp Oil
BATCH/LOT: A0055
PRODUCTION DATE: 10/7/2019
BEST BY/EXP DATE: 10/2021

INGREDIENTS: Full Spectrum Hemp Extract, Organic Hemp Seed Oil
ADDITIVES: none
EXCIPIENTS: none

TEST	METHOD	SPECIFICATION	RESULTS
Strength & Composition			
Identity	Organoleptic	Conforming	PASS
Identity	UPLC/UV	Chemical Fingerprint	PASS
Total Cannabidiol (CBD) ⁱ	UPLC/UV	3.5 – 4.5%	3.67%
Total Tetrahydrocannabinol (THC) ⁱⁱ	UPLC/UV	NMT 0.3%	0.25%
Terpene assay ⁱⁱⁱ	HS-GC/MS	n/e	2,790 ppm
Microbiological^{iv}			
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^v			
Arsenic (As)	ICP/MS	NMT 5 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
Pesticides			
Multi-residue panel	UPLC-MS/MS	Below MRL ^{vi}	PASS


David Cole
Director of Quality

10/31/19
Date

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

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

ⁱⁱⁱ Sum of terpene assay (n=22)

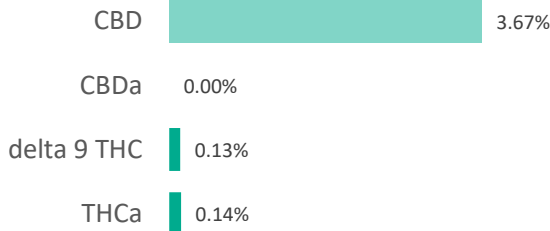
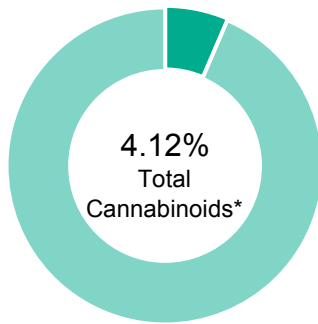
^{iv} Microbiological limits based on USP, WHO, and/or NSF/ANSI.

^v 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

^{vi} MRL = Method Reporting Limit

FSO 15ml

Batch ID:	A0055	Test ID:	3616361.0055
Reported:	22-Oct-2019	Method:	TM14
Type:	Concentrate		
Test:	Potency		

CANNABINOID PROFILE


Compound	LOQ (%)	Result (%)	Result (mg/g)
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.08	0.14	1.4
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.04	0.13	1.3
Cannabidiolic acid (CBDA)	0.08	0.00	0.0
Cannabidiol (CBD)	0.04	3.67	36.7
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.04	0.00	0.0
Cannabinolic Acid (CBNA)	0.11	0.00	0.0
Cannabinol (CBN)	0.05	0.00	0.0
Cannabigerolic acid (CBGA)	0.07	0.00	0.0
Cannabigerol (CBG)	0.04	0.07	0.7
Tetrahydrocannabivarinic Acid (THCVA)	0.07	0.00	0.0
Tetrahydrocannabivarin (THCV)	0.04	0.04	0.4
Cannabidivarinic Acid (CBDVA)	0.07	0.00	0.0
Cannabidivarin (CBDV)	0.04	0.07	0.7
Cannabichromenic Acid (CBCA)	0.06	0.00	0.0
Cannabichromene (CBC)	0.07	0.00	0.0
Total Cannabinoids		4.12	41.20
Total Potential THC**		0.25	2.53
Total Potential CBD**		3.67	36.70


NOTES:

N/A

% = % (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.

$$\text{Total THC} = \text{THC} + (\text{THCa} * (0.877)) \text{ and Total CBD} = \text{CBD} + (\text{CBDa} * (0.877))$$
FINAL APPROVAL


Tyler Wiese
22-Oct-2019
6:48 PM

PREPARED BY / DATE



David Green
22-Oct-2019
7:36 PM

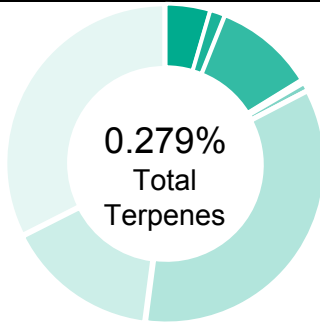
APPROVED BY / DATE

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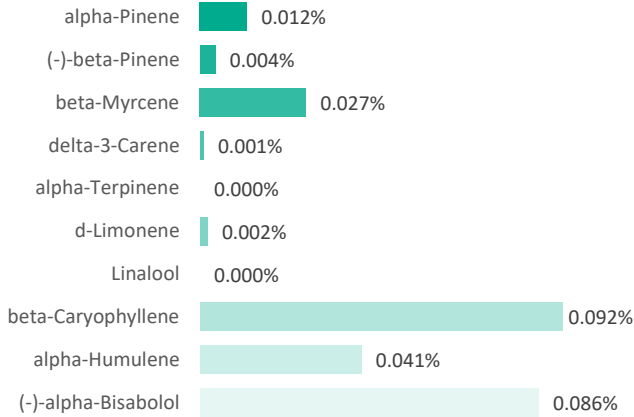


FSO 15ml

Batch ID:	A0055	Test ID:	4905195.0038
Reported:	22-Oct-2019	Method:	TM10
Type:	Concentrate		
Test:	Terpenes		

TERPENE PROFILE


Compound	%(w/w)	mg/g
(-)-alpha-Bisabolol	0.086	0.86
Camphene	0.000	0
delta-3-Carene	0.001	0.01
beta-Caryophyllene	0.092	0.92
(-)-Caryophyllene Oxide	0.000	0
p-Cymene	0.000	0
Eucalyptol	0.000	0
Geraniol	0.000	0
alpha-Humulene	0.041	0.41
(-)-Isopulegol	0.000	0
d-Limonene	0.002	0.02
Linalool	0.000	0
beta-Myrcene	0.027	0.27
cis-Nerolidol	0.000	0
trans-Nerolidol	0.000	0
Ocimene	0.000	0
beta-Ocimene	0.007	0.07
alpha-Pinene	0.012	0.12
(-)-beta-Pinene	0.004	0.04
alpha-Terpinene	0.000	0
gamma-Terpinene	0.000	0
Terpinolene	0.007	0.07
	0.279%	2.79

PREDOMINANT TERPENES

 NOTES:
 0

FINAL APPROVAL

 Greg Zimpfer 22-Oct-2019 11:09 AM	 David Green 22-Oct-2019 1:04 PM
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PREPARED BY / DATE

APPROVED BY / DATE

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FSO 15ml

Batch ID:	A0055	Test ID:	T000023147
Reported:	28-Oct-2019	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

Greg Zimpfer
28-Oct-2019
2:52 PM

PREPARED BY / DATE



David Green
28-Oct-2019
2:59 PM

APPROVED BY / DATE

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FSO 15ml


Batch ID:	A0055	Test ID:	5814726.0062
Reported:	21-Oct-2019	Method:	TM17
Type:	Concentrate		
Test:	Pesticides		

PESTICIDE RESIDUE

Compound	Dynamic Range (ppb)	Result (ppb)	Compound	Dynamic Range (ppb)	Result (ppb)
Acephate	47 - 2189	ND*	Malathion	47 - 2189	ND*
Acetamiprid	47 - 2189	ND*	Metalaxyl	284 - 2189	ND*
Avermectin	284 - 2189	ND*	Methiocarb	47 - 2189	ND*
Azoxystrobin	47 - 2189	ND*	Methomyl	47 - 2189	ND*
Bifenazate	47 - 2189	ND*	MGK 264 1	47 - 2189	ND*
Boscalid	284 - 2189	ND*	MGK 264 2	284 - 2189	ND*
Carbaryl	47 - 2189	ND*	Myclobutanil	284 - 2189	ND*
Carbofuran	47 - 2189	ND*	Naled	284 - 2189	ND*
Chlorantraniliprole	47 - 2189	ND*	Oxamyl	47 - 2189	ND*
Chlorpyrifos	284 - 2189	ND*	Paclobutrazol	47 - 2189	ND*
Clofentezine	47 - 2189	ND*	Permethrin	284 - 2189	ND*
Diazinon	47 - 2189	ND*	Phosmet	47 - 2189	ND*
Dichlorvos	284 - 2189	ND*	Prophos	284 - 2189	ND*
Dimethoate	47 - 2189	ND*	Propoxur	284 - 2189	ND*
E-Fenpyroximate	284 - 2189	ND*	Pyridaben	284 - 2189	ND*
Etofenprox	284 - 2189	ND*	Spinosad A	47 - 2189	ND*
Etoxazole	284 - 2189	ND*	Spinosad D	284 - 2189	ND*
Fenoxycarb	47 - 2189	ND*	Spiromesifen	47 - 2189	ND*
Fipronil	284 - 2189	ND*	Spirotetramat	284 - 2189	ND*
Flonicamid	47 - 2189	ND*	Spiroxamine 1	47 - 2189	ND*
Fludioxonil	284 - 2189	ND*	Spiroxamine 2	47 - 2189	ND*
Hexythiazox	284 - 2189	ND*	Tebuconazole	47 - 2189	ND*
Imazalil	284 - 2189	ND*	Thiacloprid	47 - 2189	ND*
Imidacloprid	47 - 2189	ND*	Thiamethoxam	47 - 2189	ND*
Kresoxim-methyl	47 - 2189	ND*	Trifloxystrobin	284 - 2189	ND*

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

N/A

FINAL APPROVAL

 Chris Jungling
 21-Oct-2019
 12:44 PM
 PREPARED BY / DATE


 David Green
 21-Oct-2019
 1:42 PM
 APPROVED BY / DATE

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Certificate of Analysis

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

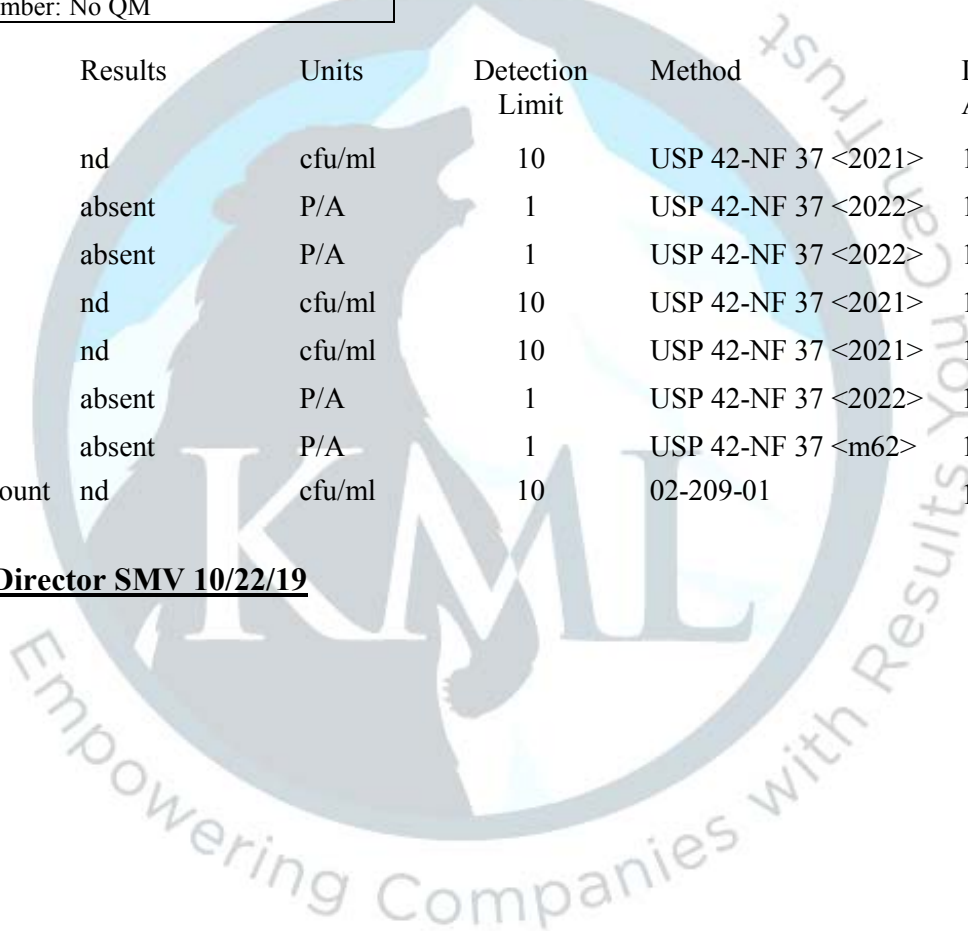
Invoice Number: 19.1659
 PO Number:
 Received Date: 10/17/2019
 Number of Samples: 01
 Project Name: Routine Testing

Microbiology Report:

Lab #: 19-10495	Sample Lot: A0055	Sample Date: 10/11/2019
Sample Name: FSO	Additional ID:	Plated Date: 10/17/19
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>	10/20/19
<i>E. coli</i>	absent	P/A	1	USP 42-NF 37 <2022>	10/20/19
<i>Staph aureus</i>	absent	P/A	1	USP 42-NF 37 <2022>	10/20/19
Yeast	nd	cfu/ml	10	USP 42-NF 37 <2021>	10/22/19
Mold	nd	cfu/ml	10	USP 42-NF 37 <2021>	10/22/19
Salmonella	absent	P/A	1	USP 42-NF 37 <2022>	10/21/19
<i>Pseudo. aeruginosa</i>	absent	P/A	1	USP 42-NF 37 <m62>	10/20/19
Enterobacteriaceae Count	nd	cfu/ml	10	02-209-01	10/18/19

Approved By: QA Director SMV 10/22/19



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Certificate of Analysis

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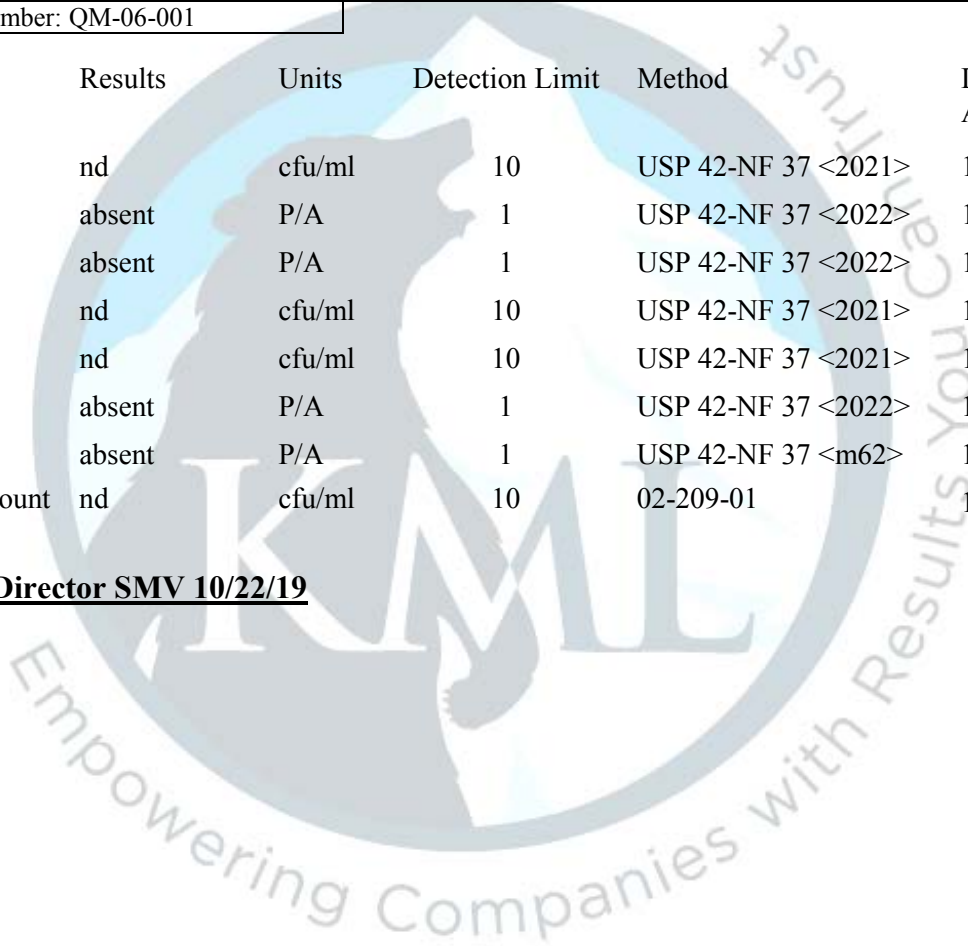
Invoice Number: 19.1659
 PO Number:
 Received Date: 10/17/2019
 Number of Samples: 01
 Project Name: Routine Testing

Microbiology Report:

Lab #: Control 10172019	Additional ID: Negative Control Purposes	Plated Date: 10/17/19
Sample Name: Control 10172019		
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>	10/20/19
<i>E. coli</i>	absent	P/A	1	USP 42-NF 37 <2022>	10/20/19
<i>Staph aureus</i>	absent	P/A	1	USP 42-NF 37 <2022>	10/20/19
Yeast	nd	cfu/ml	10	USP 42-NF 37 <2021>	10/22/19
Mold	nd	cfu/ml	10	USP 42-NF 37 <2021>	10/22/19
Salmonella	absent	P/A	1	USP 42-NF 37 <2022>	10/21/19
<i>Pseudo. aeruginosa</i>	absent	P/A	1	USP 42-NF 37 <m62>	10/20/19
Enterobacteriaceae Count	nd	cfu/ml	10	02-209-01	10/18/19

Approved By: QA Director SMV 10/22/19



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