



JOY ORGANICS

CERTIFICATE OF ANALYSIS

PRODUCT NAME: Joy Organics Dog Chews
PRODUCT STRENGTH: 2 mg / chew
FILL LOT NUMBER: 020521
DOG TREAT LOT NUMBER*: 020521
BEST BY DATE: 02/05/2023

Click on the links to view third-party reports

Physical Attributes

Test	Method	Specification	Results
Color	SOP-100	Brown	PASS
Odor	SOP-100	Beef, grains, somewhat yeasty	PASS
Appearance	SOP-100	Squat cylindrical dog treats a plastic amber container	PASS
Primary Package Eval.	SOP-132	Container clean and free of filth. Container caps tight and shrink bands intact	PASS
Secondary Package Eval.	SOP-132	Labeling Compliance Checked, Cartons sturdy and clean. Sufficient cushion material exists. Box taped and secure.	PASS

Review of Third-Party Analysis

Panel	Method	Specification	Results*	Pass/Fail
Potency - Total CBD	SOP-111	1.9-2.5 mg CBD / ea. LOQ*: 10 PPM† (0.001%)	2.2mg/chew	PASS
Potency - D9-THC	SOP-111	None Detected LOQ: 10 PPM (0.001%)	ND	PASS
Compliant Pesticide Panel	SOP-111	WIP-100008 : Product specification for Bulk Dog Treats, Oregon Action limits apply	ND	PASS
Microbial - Full Panel	SOP-111	Complies with USP 61/62	ND	PASS
CA Compliant Heavy Metal Panel	SOP-111	Arsenic (As): ≤1.5 PPM Cadmium (Cd): ≤0.5 PPM Mercury (Hg): ≤1.0 PPM Lead (Pb): ≤0.5 PPM	ND	PASS

* Level of Quantitation, † Parts Per Million

Quality Certified by:

Kei Horikawa
Kei Horikawa
Quality Control Manager

03/08/2021

Date

1BM70

CBD Dog Chew

Lot# 020521

rec'd 2/16/2021 1:23:21 PM

order 9848

total
cannabinoids

2.3mg

THC tot ND

per chew CBD tot 2.2mg

This Product Has Been
Tested and Complies
with 7USC1639o(1)Stillwater
Laboratories

Potency per	chew	MSP-7.5.1.4	LOD	LOQ	error (95%CI k=2)
total cannabinoids	2.3mg		0.02	0.06	±0.10mg
total THC†	ND		0.02	0.06	±0.06mg
total THC (THC+THCa)	ND		0.02	0.06	±0.06mg
total CBD†	2.2mg		0.02	0.06	±0.10mg
total CBD (CBD+CBDa)	2.2mg		0.02	0.06	±0.10mg
tetrahydrocannabinolic acid (THCa)	ND		0.02	0.06	±0.06mg
Δ9-tetrahydrocannabinol (Δ9 THC)	ND		0.02	0.06	±0.06mg
Δ8-tetrahydrocannabinol (Δ8 THC)	ND		0.03	0.08	±0.08mg
tetrahydrocannabivarin (THCv)	ND		0.02	0.07	±0.07mg
cannabidiolic acid (CBDa)	ND		0.02	0.05	±0.05mg
cannabidiol (CBD)	2.2mg		0.02	0.06	±0.10mg
cannabidivarin (CBDv)	0.1mg		0.02	0.06	±0.06mg
cannabigerolic acid (CBGa)	ND		0.02	0.06	±0.06mg
cannabigerol (CBG)	ND		0.01	0.04	±0.04mg
cannabinol (CBN)	ND		0.01	0.03	±0.03mg
cannabichromene (CBC)	0.1mg		0.02	0.06	±0.06mg

Terpenes

0.000

MSP-7.5.1.6

caryophyllene
humulene
terpinolene
ocimene
beta pinene
alpha pinene
limonene
myrcene
linalool

total terpenes

ND

linalool ND
β-myrcene ND
D-limonene ND
α-pinene ND
β-pinene ND
ocimene ND
terpinolene ND
α-humulene ND
β-caryophyllene ND
α-bisabolol ND
camphene ND
Δ3-carene ND
caryophyllene oxide ND
para-cymene ND
eucalyptol ND
geraniol ND
guaiol ND

Microbial	MSP-7.5.1.10	limit	LOD	LOQ	error	result
E.coli	ND	OCFU	151.8	455.4	±455.4CFU	PASS
Salmonella sp.	ND	OCFU	151.8	455.4	±455.4CFU	PASS
molds	ND	10000CFU	0.1	0.2	±0.2CFU	PASS
Ochratoxin A	ND	20 ppb	1.3	4.0	±4.0 ppb	PASS
Aflatoxin B1B2G1G2	ND	20 ppb	0.1	0.3	±0.3 ppb	PASS

Solvents	MSP-7.5.1.7	limit	LOD	LOQ	error	result
Acetone	ND	5000 ppm	0.0	0.1	±0.1 ppm	PASS
Acetonitrile	ND	410 ppm	0.0	0.1	±0.1 ppm	PASS
Benzene	ND	0 ppm	0.0	0.0	±0.0 ppm	PASS
Butane	ND	5000 ppm	0.0	0.0	±0.0 ppm	PASS
Chloroform	ND	0 ppm	0.1	0.2	±0.2 ppm	PASS
Cyclohexane	ND	0 ppm	0.0	0.1	±0.1 ppm	PASS
Ethanol	ND	10000 ppm	0.0	0.1	±0.1 ppm	PASS
Heptane	ND	5000 ppm	0.0	0.1	±0.1 ppm	PASS
Hexane	ND	290 ppm	0.0	0.1	±0.1 ppm	PASS
Isopropyl alcohol	ND	5000 ppm	0.0	0.1	±0.1 ppm	PASS
Methanol	ND	3000 ppm	0.0	0.1	±0.1 ppm	PASS
Pentane	ND	5000 ppm	0.0	0.0	±0.0 ppm	PASS
Propane	ND	5000 ppm	0.0	0.1	±0.1 ppm	PASS
Toluene	ND	890 ppm	0.0	0.1	±0.1 ppm	PASS
Xylenes	ND	2170 ppm	0.0	0.1	±0.1 ppm	PASS

Metals	MSP-7.5.1.11	limit	LOD	LOQ	error	result
Arsenic	ND	1500 ppb	94.1	282.2	±282.2 ppb	PASS
Cadmium	ND	500 ppb	52.4	157.2	±157.2 ppb	PASS
Lead	ND	500 ppb	260.2	780.5	±780.5 ppb	PASS
Mercury	ND	300 ppb	47.6	142.8	±142.8 ppb	PASS

Pesticides	MSP-7.5.1.8	limit	LOD	LOQ	error	result
Pyrethrin	ND	1.00 ppm	<0.001	0.001	±0.001 ppm	PASS
Pyridaben	ND	3.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Spinetoram	ND	3.00 ppm	<0.001	0.001	±0.001 ppm	PASS
Spinosad	ND	3.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Spiromesifen	ND	12.00 ppm	<0.001	0.001	±0.001 ppm	PASS
Spirotetramat	ND	13.00 ppm	<0.001	0.001	±0.001 ppm	PASS
Spiroxamine	ND	0.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Tebuconazole	ND	2.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Thiacloprid	ND	0.10 ppm	<0.001	0.000	±0.000 ppm	PASS
Thiamethoxam	ND	4.50 ppm	<0.001	0.000	±0.000 ppm	PASS
Trifloxystrobin	ND	30.00 ppm	<0.001	0.000	±0.000 ppm	PASS

Pesticides

MSP-7.5.1.8

limit

LOD

LOQ

error

result

Abamectin	ND	0.30 ppm	0.001	0.002	±0.002 ppm	PASS
Acephate	ND	5.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Acequinocyl	ND	4.00 ppm	0.001	0.003	±0.003 ppm	PASS
Acetamiprid	ND	5.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Aldicarb	ND	0.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Azoxystrobin	ND	40.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Bifenazate	ND	5.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Bifenthrin	ND	0.50 ppm	<0.001	0.000	±0.000 ppm	PASS
Boscalid	ND	10.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Carbaryl	ND	0.50 ppm	<0.001	0.000	±0.000 ppm	PASS
Carbofuran	ND	0.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Chlorantraniliprole	ND	40.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Chlorfenapyr	ND	0.00 ppm	<0.001	0.001	±0.001 ppm	PASS
Chlorpyrifos	ND	0.00 ppm	<0.001	0.001	±0.001 ppm	PASS
Clofentezine	ND	0.50 ppm	<0.001	0.000	±0.000 ppm	PASS
Coumaphos	ND	0.00 ppm	<0.001	0.001	±0.001 ppm	PASS
Cyfluthrin	ND	1.00 ppm	0.001	0.002	±0.002 ppm	PASS
Cypermethrin	ND	1.00 ppm	<0.001	0.001	±0.001 ppm	PASS
Daminozide	ND	0.00 ppm	<0.001	0.001	±0.001 ppm	PASS
Dichlorvos	ND	0.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Diazinon	ND	0.20 ppm	<0.001	0.000	±0.000 ppm	PASS
Dimethoate	ND	0.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Etoxazole	ND	1.50 ppm	<0.001	0.000	±0.000 ppm	PASS
Fenoxycarb	ND	0.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Fenpyroximate	ND	2.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Fipronil	ND	0.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Flonicamid	ND	2.00 ppm	0.001	0.002	±0.002 ppm	PASS
Fludioxonil	ND	30.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Hexythiazox	ND	2.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Imazalil	ND	0.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Imidacloprid	ND	3.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Malathion	ND	5.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Metaxalyl	ND	15.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Methiocarb	ND	0.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Methomyl	ND	0.10 ppm	<0.001	0.000	±0.000 ppm	PASS
Methyl parathion	ND	0.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Mevinphos	ND	0.00 ppm	<0.001	0.001	±0.001 ppm	PASS
Myclobutanil	ND	9.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Naled	ND	0.50 ppm	<0.001	0.001	±0.001 ppm	PASS
Oxamyl	ND	0.20 ppm	<0.001	0.000	±0.000 ppm	PASS
Paclobutrazol	ND	0.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Permethrin	ND	20.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Phosmet	ND	0.20 ppm	<0.001	0.000	±0.000 ppm	PASS
Piperonylbutoxide	ND	8.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Prallethrin	ND	0.40 ppm	<0.001	0.001	±0.001 ppm	PASS
Propiconazole	ND	20.00 ppm	<0.001	0.000	±0.000 ppm	PASS
Propoxur	ND	0.00 ppm	<0.001	0.000	±0.000 ppm	PASS

SECURITY FEATURE: WATERMARK MUST MATCH CERTIFICATE ID AND ISSUE DATE

Certified by:

QA Manager

ISO/IEC 17025:2017

INSTRUMENTS: Potency by HPLC (LC2030C-UV), solvents and terpenes by GCMS (QP2020/HS20), pesticides and mycotoxins by LCMSMS (LC8060), microbial by qPCR (AriaMx) and plating (Hardy Diagnostics), metals by ICPMS (ICPMS-2030)

• All testing was completed onsite at 6073 US93N, Olney MT • Potency (cannabinoid concentration) is calculated as: $[\text{cannabinoid}] = [\text{cannabinoid}]_{\text{HPLC}} \times \text{volume}_{\text{dilution}} / \text{M}_{\text{dry}}$ • Decarboxylated cannabinoid concentration is calculated $\text{XXX}_{\text{total}} = 0.877 \times \text{XXXa} + \text{XXX}$ • Standards are used to calibrate the resulting data and estimate error using a standard estimate of error method; LOD is the limit of detection (3.3s), LOQ is the limit of quantification (3xLOD), and experimental error is calculated from weighing, dilution, and interpolation error using the formula $s_e^2 = \sum (\partial f / \partial i)^2 s_i^2$ where i is the contributor to error. The 95% confidence range is calculated from: $(\text{concentration}) \pm t_{\text{CL},90} \times s_e$. Sampling error is not considered in error calculations. ND = not detected (< LOD), NT = not tested, NL = no limit, NA = not applicable. † = decarbed

Kyle Larson, MSC
Deputy Director

Jacob Harris


<https://portal.a2la.org/scopepdf/4961-01.pdf>

Stillwater Laboratories Inc.
MT License L0001, L00007
6073 US93N Suite 5, Olney MT 59927
406-881-2019

Printed 3/2/2021 11:09 AM

1BM11

Hydrobond CBD Powder

Lot#654165

rec'd 2/15/2021 3:53:43 PM

order 9837

total
cannabinoids

174.1mg

THC tot ND

per gram CBD tot 173.6mg

This Product Has Been
Tested and Complies
with 7USC1639o(1)Stillwater
Laboratories

Potency per gram MSP-7.5.1.4 LOD LOQ (95%CI k=2) error

Terpenes

MSP-7.5.1.6

total cannabinoids	174.1mg	0.80 2.40 ±3.80mg
total THC†	ND	0.80 2.40 ±2.40mg
total THC (THC+THCa)	ND	0.80 2.40 ±2.40mg
total CBD†	173.6mg	0.80 2.40 ±3.80mg
total CBD (CBD+CBDA)	173.6mg	0.80 2.40 ±3.80mg
tetrahydrocannabinolic acid (THCa)	ND	0.81 2.44 ±2.44mg
Δ9-tetrahydrocannabinol (Δ9 THC)	ND	0.76 2.29 ±2.29mg
Δ8-tetrahydrocannabinol (Δ8 THC)	ND	1.03 3.08 ±3.08mg
tetrahydrocannabivarin (THCv)	ND	0.85 2.55 ±2.55mg
cannabidiolic acid (CBDA)	ND	0.70 2.11 ±2.11mg
cannabidiol (CBD)	173.6mg	0.81 2.42 ±3.81mg
cannabidivarin (CBDv)	ND	0.80 2.41 ±2.41mg
cannabigerolic acid (CBGA)	ND	0.72 2.16 ±2.16mg
cannabigerol (CBG)	ND	0.46 1.37 ±1.37mg
cannabinol (CBN)	ND	0.44 1.32 ±1.32mg
cannabichromene (CBC)	ND	0.80 2.40 ±2.40mg

total terpenes	ND
linalool	ND
β-myrcene	ND
D-limonene	ND
α-pinene	ND
β-pinene	ND
ocimene	ND
terpinolene	ND
α-humulene	ND
β-caryophyllene	ND
α-bisabolol	ND
camphene	ND
Δ3-carene	ND
caryophyllene oxide	ND
para-cymene	ND
eucalyptol	ND
geraniol	ND
guaiol	ND

Microbial MSP-7.5.1.10 limit LOD LOQ error result

Pesticides

MSP-7.5.1.8

limit LOD LOQ error result

E.coli	ND	OCFU	151.8 455.4 ±455.4CFU	PASS
Salmonella sp.	ND	OCFU	151.8 455.4 ±455.4CFU	PASS
molds	ND	10000CFU	0.1 0.2 ±0.2CFU	PASS
Ochratoxin A	ND	20 ppb	6.0 17.9 ±17.9 ppb	PASS
Aflatoxin B1B2G1G2	ND	20 ppb	0.4 1.3 ±1.3 ppb	PASS

Abamectin	ND	0.30 ppm	0.003 0.008 ±0.008 ppm	PASS
Acephate	ND	5.00 ppm	<0.001 0.001 ±0.001 ppm	PASS
Acequinocyl	ND	4.00 ppm	0.005 0.014 ±0.014 ppm	PASS
Acetamiprid	ND	5.00 ppm	<0.001 0.000 ±0.000 ppm	PASS
Aldicarb	ND	0.00 ppm	<0.001 0.000 ±0.000 ppm	PASS
Azoxystrobin	ND	40.00 ppm	<0.001 0.000 ±0.000 ppm	PASS
Bifenazate	ND	5.00 ppm	<0.001 0.000 ±0.000 ppm	PASS
Bifenthrin	ND	0.50 ppm	<0.001 0.001 ±0.001 ppm	PASS
Boscalid	ND	10.00 ppm	0.001 0.002 ±0.002 ppm	PASS
Carbaryl	ND	0.50 ppm	<0.001 0.001 ±0.001 ppm	PASS
Carbofuran	ND	0.00 ppm	<0.001 0.000 ±0.000 ppm	PASS
Chlorantraniliprole	ND	40.00 ppm	0.001 0.002 ±0.002 ppm	PASS
Chlorfenapyr	ND	0.00 ppm	0.002 0.006 ±0.006 ppm	PASS
Chlorpyrifos	ND	0.00 ppm	0.001 0.004 ±0.004 ppm	PASS
Clofentezine	ND	0.50 ppm	<0.001 0.001 ±0.001 ppm	PASS
Coumaphos	ND	0.00 ppm	0.002 0.006 ±0.006 ppm	PASS
Cyfluthrin	ND	1.00 ppm	0.003 0.008 ±0.008 ppm	PASS
Cypermethrin	ND	1.00 ppm	0.002 0.006 ±0.006 ppm	PASS
Daminozide	ND	0.00 ppm	0.001 0.003 ±0.003 ppm	PASS
Dichlorvos	ND	0.00 ppm	0.001 0.002 ±0.002 ppm	PASS
Diazinon	ND	0.20 ppm	<0.001 0.000 ±0.000 ppm	PASS
Dimethoate	ND	0.00 ppm	<0.001 0.000 ±0.000 ppm	PASS
Etoazoxole	ND	1.50 ppm	<0.001 0.000 ±0.000 ppm	PASS
Fenoxycarb	ND	0.00 ppm	<0.001 0.000 ±0.000 ppm	PASS
Fenpyroximate	ND	2.00 ppm	<0.001 0.000 ±0.000 ppm	PASS
Flipronil	ND	0.00 ppm	<0.001 0.001 ±0.001 ppm	PASS
Flonicamid	ND	2.00 ppm	0.004 0.011 ±0.011 ppm	PASS
Fludioxonil	ND	30.00 ppm	<0.001 0.001 ±0.001 ppm	PASS
Hexythiazox	ND	2.00 ppm	<0.001 0.001 ±0.001 ppm	PASS
Imazalil	ND	0.00 ppm	<0.001 0.001 ±0.001 ppm	PASS
Imidacloprid	ND	3.00 ppm	<0.001 0.001 ±0.001 ppm	PASS
Malathion	ND	5.00 ppm	<0.001 0.001 ±0.001 ppm	PASS
Metaxalyl	ND	15.00 ppm	<0.001 0.000 ±0.000 ppm	PASS
Methiocarb	ND	0.00 ppm	<0.001 0.000 ±0.000 ppm	PASS
Methomyl	ND	0.10 ppm	<0.001 0.001 ±0.001 ppm	PASS
Methyl parathion	ND	0.00 ppm	<0.001 0.001 ±0.001 ppm	PASS
Mevinphos	ND	0.00 ppm	0.002 0.006 ±0.006 ppm	PASS
Myclobutanil	ND	9.00 ppm	<0.001 0.001 ±0.001 ppm	PASS
Naled	ND	0.50 ppm	0.002 0.006 ±0.006 ppm	PASS
Oxamyl	ND	0.20 ppm	<0.001 0.000 ±0.000 ppm	PASS
Paclobutrazol	ND	0.00 ppm	<0.001 0.000 ±0.000 ppm	PASS
Permethrin	ND	20.00 ppm	<0.001 0.001 ±0.001 ppm	PASS
Phosmet	ND	0.20 ppm	<0.001 0.000 ±0.000 ppm	PASS
Piperonylbutoxide	ND	8.00 ppm	<0.001 0.000 ±0.000 ppm	PASS
Prallethrin	ND	0.40 ppm	0.001 0.004 ±0.004 ppm	PASS
Propiconazole	ND	20.00 ppm	<0.001 0.000 ±0.000 ppm	PASS
Propoxur	ND	0.00 ppm	<0.001 0.001 ±0.001 ppm	PASS

Solvents MSP-7.5.1.7 limit LOD LOQ error result

SECURITY FEATURE: WATERMARK MUST MATCH CERTIFICATE ID AND ISSUE DATE

Acetone	ND	5000 ppm	0.0 0.1 ±0.1 ppm	PASS
Acetonitrile	ND	410 ppm	0.0 0.1 ±0.1 ppm	PASS
Benzene	ND	0 ppm	0.0 0.0 ±0.0 ppm	PASS
Butane	ND	5000 ppm	0.0 0.0 ±0.0 ppm	PASS
Chloroform	ND	0 ppm	0.1 0.2 ±0.2 ppm	PASS
Cyclohexane	ND	0 ppm	0.0 0.1 ±0.1 ppm	PASS
Ethanol	ND	10000 ppm	0.0 0.1 ±0.1 ppm	PASS
Heptane	ND	5000 ppm	0.0 0.1 ±0.1 ppm	PASS
Hexane	ND	290 ppm	0.0 0.1 ±0.1 ppm	PASS
Isopropyl alcohol	ND	5000 ppm	0.0 0.1 ±0.1 ppm	PASS
Methanol	ND	3000 ppm	0.0 0.1 ±0.1 ppm	PASS
Pentane	ND	5000 ppm	0.0 0.0 ±0.0 ppm	PASS
Propane	ND	5000 ppm	0.0 0.1 ±0.1 ppm	PASS
Toluene	ND	890 ppm	0.0 0.1 ±0.1 ppm	PASS
Xylenes	ND	2170 ppm	0.0 0.1 ±0.1 ppm	PASS

Metals MSP-7.5.1.11 limit LOD LOQ error result

Arsenic	ND	1500 ppb	118.3 354.8 ±354.8 ppb	PASS
Cadmium	ND	500 ppb	65.9 197.7 ±197.7 ppb	PASS
Lead	ND	500 ppb	327.1 981.4 ±981.4 ppb	PASS
Mercury	ND	300 ppb	59.9 179.6 ±179.6 ppb	PASS

Pesticides MSP-7.5.1.8 limit LOD LOQ error result

Pyrethrin	ND	1.00 ppm	0.001 0.003 ±0.003 ppm	PASS
Pyridaben	ND	3.00 ppm	<0.001 0.000 ±0.000 ppm	PASS
Spinetoram	ND	3.00 ppm	0.001 0.004 ±0.004 ppm	PASS
Spinosad	ND	3.00 ppm	<0.001 0.000 ±0.000 ppm	PASS
Spiromesifen	ND	12.00 ppm	0.001 0.003 ±0.003 ppm	PASS
Spirotetramat	ND	13.00 ppm	0.001 0.003 ±0.003 ppm	PASS
Spiroxamine	ND	0.00 ppm	<0.001 0.000 ±0.000 ppm	PASS
Tebuconazole	ND	2.00 ppm	<0.001 0.001 ±0.001 ppm	PASS
Thiacloprid	ND	0.10 ppm	<0.001 0.000 ±0.000 ppm	PASS
Thiamethoxam	ND	4.50 ppm	<0.001 0.000 ±0.000 ppm	PASS
Trifloxystrobin	ND	30.00 ppm	<0.001 0.000 ±0.000 ppm	PASS

Certified by:

QA Manager

ISO/IEC 17025:2017

INSTRUMENTS: Potency by HPLC (LC2030C-UV), solvents and terpenes by GCMS (QP2020/HS20), pesticides and mycotoxins by LCMSMS (LC8060), microbial by qPCR (AriaMx) and plating (Hardy Diagnostics), metals by ICPMS (ICPMS-2030)

• All testing was completed onsite at 6073 US93N, Olney MT • Potency (cannabinoid concentration) is calculated as: $[\text{cannabinoid}] = [\text{cannabinoid}]_{\text{HPLC}} \times \text{volume}_{\text{dilution}} / \text{M}_{\text{dry}}$... Decarboxyated cannabinoid concentration is calculated $\text{XXX}_{\text{total}} = 0.877 \times \text{XXXa} + \text{XXX}$... Standards are used to calibrate the resulting data and estimate error using a standard estimate of error method; LOD is the limit of detection (3.3s), LOQ is the limit of quantification (3xLOD), and experimental error is calculated from weighing, dilution, and interpolation error using the formula $s_{\text{e}}^2 = \sum (\text{d}/\text{d})^2 / s_{\text{e}}^2$ where i is the contributor to error. The 95% confidence range is calculated from: $(\text{concentration}) \pm t_{\text{CL90}} \times s_{\text{e}}$. Sampling error is not considered in error calculations. ND = not detected (< LOD), NT = not tested, NL = no limit, NA = not applicable. ‡ = decarbed

Kyle Larson, MSC
Deputy Director

Jacob Harris


<https://portal.a2la.org/scopepdf/4961-01.pdf>

Stillwater Laboratories Inc.
MT License L0001, L00007
6073 US93N Suite 5, Olney MT 59927
406-881-2019

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Chew

Certificate of Analysis



Stillwater
Laboratories

21060A

<https://portal.a2la.org/scopepdf/4961-01.pdf>

Sample Handling

test ID sample date 3/3/21 3:28 PM
order **9992** labID **1CC21** weight 138.1 g
source

Methods	method	equipment
weights	MSP-7.3.1.3	AUX120.1
potency	MSP-7.5.1.5	LC-2030
terpenes	MSP-7.5.1.7	QP2020/HS20
pesticides	MSP-7.5.1.8	LC-8060
mycotoxins	MSP-7.5.1.8	LC-8060
microbial	MSP-7.5.1.1	AriaMx/Hardy
solvents	MSP-7.5.1.6	QP2020/HS20
metals	MSP-7.5.1.11	ICPMS2030



Potency	%	estimated error	Terpenes	%	estimated error	%	estimated error	%	estimated error
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potency
not tested

terpenes
not tested / not required

Solvents	MT limit	1CC21	LOQ	Pesticides (MT)	MT limit	1CC21	LOQ	Pesticides (other)	1CC21	LOQ
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pesticides
not tested / not required

not tested /
not required

Toxic Metals	MT limit	1CC21	LOQ
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metals
not tested / not required

Microbial	MT limit	1CC21	LOQ
<i>E. coli</i>	10 CFU	0 CFU	<10 CFU/g
Salmonella sp.	10 CFU	0 CFU	<10 CFU/g
molds	10000 CFU	4 CFU	<10k CFU/g

Comments

• All testing was completed onsite at 6073 US93N, Olney MT • Potency (cannabinoid concentration) is calculated from the equation: [cannabinoid] = [cannabinoid]_{HPLC} x volume_{dilution}/m_{dry}. Terpene concentration is calculated from the equation: [terpene] = (terpene mass)_{GCMS} / m_{dry}. •• Decarboxylated cannabinoid concentration is calculated from the equation XXX_{total} = 0.877 x XXX_a + XXX ••• Standards are used to calibrate the resulting data and estimate error using a standard estimate of error method; this is combined with error from weighing and dilution using the propagation of error formula $s_y^2 = \sum (\partial f / \partial i)^2 s_i^2$ where i is the contributor to error. The 95% confidence range is calculated from the equation: (concentration) $\pm t_{CL90} \times s_y$. Sampling error is not

Certified by:

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