



Certificate ID: **44122**

Received: **11/27/18**

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Sustainable Aquatics

Client Sample ID: **SNCBDG26112018(2)**



110 W OLD ANDREW JOHNSON HWY

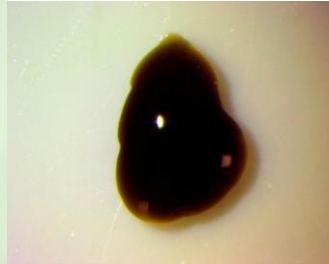
Lot Number: **7**

JEFFERSON CITY, TN 37760

Matrix: **Concentrates/Extracts - Rick Simpson Oil**

Attn: Matthew Carberry

Authorization: Rebecca Stevens, Chemist II	Signature: 	Date: 1/2/2019
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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]

Analyst: *JSG*

Test Date: 12/17/2018

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.

44122-CN

ID	Weight %	Conc.			
D9-THC	1.98 wt %	19.84 mg/g			
THCV	ND	ND			
CBD	51.94 wt %	519.45 mg/g			
CBDV	ND	ND			
CBG	0.43 wt %	4.31 mg/g			
CBC	2.03 wt %	20.34 mg/g			
CBN	0.09 wt %	0.88 mg/g			
THCA	ND	ND			
CBDA	3.05 wt %	30.47 mg/g			
CBGA	ND	ND			
Total	59.53 wt%	595.29 mg/g	0%	Cannabinoids (wt%)	51.9%
Max THC	1.98 wt%	19.84 mg/g			
Max CBD	54.62 wt%	546.17 mg/g			

Ratio of Total CBD to THC 27.5:1

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. ND = None detected above the limits of detection (LLD)

EA: Elemental Analysis [WI-10-13]

Analyst: JFD

Test Date: 12/31/2018

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.

44122-EA

Symbol	Metal	Conc. ¹	MDL	Limits ²	Status
Al	Aluminum	ND	5 ug/kg	-	
As	Arsenic	226 ug/kg	4 ug/kg	150 ug/kg	FAIL
Cd	Cadmium	2 ug/kg	1 ug/kg	150 ug/kg	PASS
Ca	Calcium	60,421 ug/kg	500 ug/kg	-	
Cr	Chromium	240 ug/kg	5 ug/kg	2500 ug/kg	PASS
Co	Cobalt	36 ug/kg	10 ug/kg	-	
Cu	Copper	2,220 ug/kg	500 ug/kg	10000 ug/kg	PASS
Fe	Iron	198,108 ug/kg	5 ug/kg	-	
Pb	Lead	20 ug/kg	2 ug/kg	500 ug/kg	PASS
Mg	Magnesium	574,797 ug/kg	500 ug/kg	-	
Mn	Manganese	9,851 ug/kg	500 ug/kg	-	
Hg	Mercury	ND	2 ug/kg	150 ug/kg	PASS
Mo	Molybdenum	ND	5000 ug/kg	1000 ug/kg	PASS
Ni	Nickel	ND	500 ug/kg	150 ug/kg	MDL>Limit
P	Phosphorus	ND	500 ug/kg	-	
K	Potassium	ND	5 ug/kg	-	
Se	Selenium	19 ug/kg	10 ug/kg	-	
Ag	Silver	ND	10 ug/kg	-	
S	Sulfur	ND	5 ug/kg	-	
Sn	Tin	ND	5000 ug/kg	-	
Zn	Zinc	5,442 ug/kg	5 ug/kg	-	

1) ND = None detected to the Method Detection Limit (MDL)

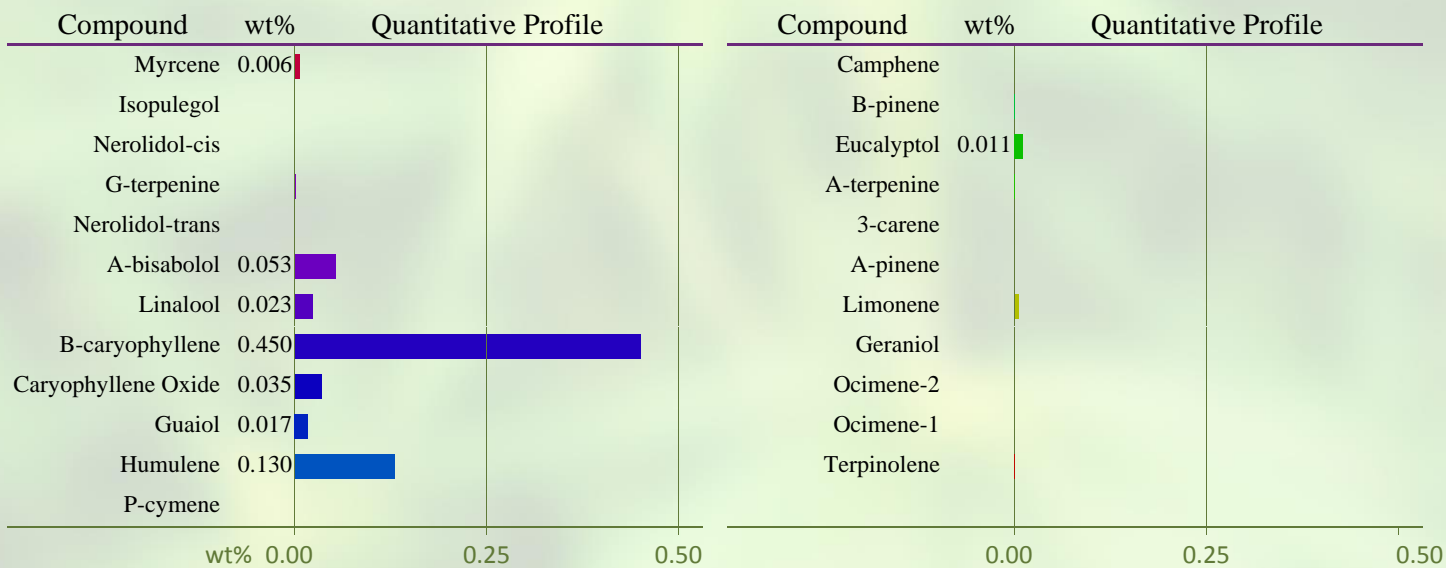
2) USP recommended maximum daily limits for inhalational drug product.

TP: Terpenes Profile [W1-10-08]

Analyst: CMA

Test Date: 12/17/2018

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.

44122-TP

Total Terpene: 0.7 wt%

* Indicates qualitative calculation based on recorded peak areas.

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.

44122-VC

Compound	CAS	Amount ¹	Limit ²	Status
1-Pentanol	71-41-0	33 ppm	5,000 ppm	PASS
Propane	74-98-6	ND	1,000 ppm	PASS
Isobutane	75-28-5	ND	1,000 ppm	PASS
Butane	106-97-8	ND	1,000 ppm	PASS
Methanol	67-56-1	165 ppm	3,000 ppm	PASS
Ethanol	64-17-5	29,898 ppm	5,000 ppm	FAIL
Acetone	67-64-1	542 ppm	1,000 ppm	PASS
Isopropanol	67-63-0	79 ppm	5,000 ppm	PASS
Acetonitrile	75-05-8	23 ppm	410 ppm	PASS
Hexane	110-54-3	ND	290 ppm	PASS
2-Butanone	78-93-3	25 ppm	N/A	-
Ethyl Acetate	141-78-6	408 ppm	5,000 ppm	PASS
Heptane	142-82-5	ND	5,000 ppm	PASS
1-Butanol	71-36-3	22 ppm	5,000 ppm	PASS

1) ND = None detected above 5 ppm.

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