

CERTIFICATE OF ANALYSIS



Juniper Analytics, LLC
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 541.382.3796
 ORELAP: 4101-001 / OLCC: 10035537931

Client Name: ECS Brands Ltd.
 Contact Info: Arthur Jaffee
 Sample Type: Concentrate
 External Batch ID: 8018
 Harvest/Prod. Date: 1/4/2019
 Sample ID: CBD Isolate
 METRC ID: Hemp
 Juniper Batch #: 19JA0054.01_A-B Composite
 Intake Date: 1/8/2019

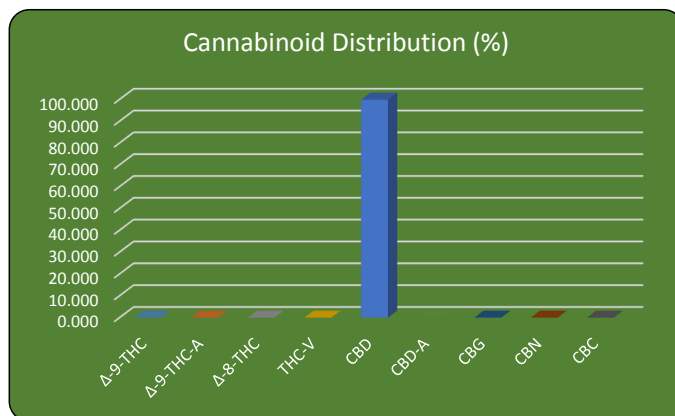


Potency Analysis (Oregon Compliance Standard OAR 333-007-0430)

ANALYSIS DATE: 1/9/2019

Instrument: HPLC/DAD
 Method: JA-Potency-Proprietary

Compound	Weight (%)	Concentration (mg/g)	LOQ (mg/g)
Δ-9-THC	<LOQ	<LOQ	1.00
Δ-9-THC-A	<LOQ	<LOQ	1.00
Δ-8-THC	<LOQ	<LOQ	1.00
THC-V	<LOQ	<LOQ	1.00
CBD	99.861	998.61	1.00
CBD-A	<LOQ	<LOQ	1.00
CBG	<LOQ	<LOQ	1.00
CBN	<LOQ	<LOQ	1.00
CBC	<LOQ	<LOQ	1.00



TOTAL THC/CBD	Weight (%)	Conc (mg/g)	RPD
% THC Total =	<LOQ	<LOQ	N/A
%THC _{Total} = (THC-A * 0.877) + Δ9THC			
% CBD Total =	99.861	998.61	
%CBD _{Total} = (CBD-A * 0.877) + CBD			

Residual Solvent Analysis (Oregon Compliance Standard OAR 333-007-0410)

ANALYSIS DATE: 1/9/2019

Instrument: GC/MS Method: USP 467 - Modified

Solvent	Result (ppm)	Action Level / LOQ (ppm)
1,4-Dioxane	<LOQ	380 / 100
2-Butanol	<LOQ	5000 / 500
2-Ethoxyethanol	<LOQ	160 / 100
2-Propanol (IPA)	<LOQ	5000 / 500
Acetone	<LOQ	5000 / 500
Acetonitrile	<LOQ	410 / 100
Benzene	<LOQ	2 / 1
Cumene	<LOQ	70 / 50
Cyclohexane	<LOQ	3880 / 500
Dichloromethane	<LOQ	600 / 100
Ethyl acetate	<LOQ	5000 / 500
Ethyl ether	<LOQ	5000 / 500
Ethylene glycol	<LOQ	620 / 300
Ethylene oxide	<LOQ	50 / 10
Heptane	<LOQ	5000 / 500
Isopropyl acetate	<LOQ	5000 / 500
Methanol	<LOQ	3000 / 500
Propane	<LOQ	5000 / 500
Tetrahydrofuran	<LOQ	720 / 100
Toluene	<LOQ	890 / 100

Solvent	Result (ppm)	Action Level / LOQ (ppm)
Pentanes;	<LOQ	5000 / 500
-n-pentane	<LOQ	**
-iso-pentane	<LOQ	**
-neo-pentane	<LOQ	**
Butanes;	<LOQ	5000 / 500
-n-butane	<LOQ	**
-iso-butane	<LOQ	**
Hexanes;	<LOQ	290 / 50
-n-hexane	<LOQ	**
-2-methylpentane	<LOQ	**
-3-methylpentane	<LOQ	**
-2,2-dimethylbutane	<LOQ	**
-2,3-dimethylbutane	<LOQ	**
Xylenes;	<LOQ	2170 / 300
-1,2-dimethylbenzene	<LOQ	**
-1,3-dimethylbenzene	<LOQ	**
-1,4-dimethylbenzene	<LOQ	**
-Ethyl benzene	<LOQ	**

**RPD calculated for combined results

Residual Solvents **PASS**

Tentatively Identified Compounds: None Detected

<LOQ - Less than the Limit of Quantification

***Largest hit reported to appropriate governing body; RPD only calculated on samples where the average result is above 50% of the action level.

Approval

Report Date: 1/10/2019

QA Review



Juniper Batch #: 19JA0054.01_A-B Composite
 Intake Date: 1/8/2019

Pesticide Analysis (Oregon Compliance Standard OAR 333-008-1190)

ANALYSIS DATE: 1/9/2019			Instrument: LC/MS/MS			Method: AOAC 2007.1 ^{-modified}		
Pesticide	Result (ppm)	Action Level / LOQ (ppm)	Pesticide	Result (ppm)	Action Level / LOQ (ppm)			
Abamectin	<LOQ	0.5 / 0.25	Imazalil	<LOQ	0.2 / 0.10			
Acephate	<LOQ	0.4 / 0.20	Imidacloprid	<LOQ	0.4 / 0.20			
Acequinocyl	<LOQ	2.0 / 1.00	Kresoxim-methyl	<LOQ	0.4 / 0.20			
Acetamiprid	<LOQ	0.2 / 0.10	Malathion	<LOQ	0.2 / 0.10			
Aldicarb	<LOQ	0.4 / 0.20	Metalaxyl	<LOQ	0.2 / 0.10			
Azoxystrobin	<LOQ	0.2 / 0.10	Methiocarb	<LOQ	0.2 / 0.10			
Bifenazate	<LOQ	0.2 / 0.10	Methomyl	<LOQ	0.4 / 0.20			
Bifenthrin	<LOQ	0.2 / 0.10	Methyl Parathion	<LOQ	0.2 / 0.10			
Boscalid	<LOQ	0.4 / 0.20	MGK-264	<LOQ	0.2 / 0.10			
Carbaryl	<LOQ	0.2 / 0.10	Myclobutanil	<LOQ	0.2 / 0.10			
Carbofuran	<LOQ	0.2 / 0.10	Naled	<LOQ	0.5 / 0.25			
Chlorantraniliprole	<LOQ	0.2 / 0.10	Oxamyl	<LOQ	1.0 / 0.50			
Chlorfenapyr	<LOQ	1.0 / 0.50	Paclbutrazol	<LOQ	0.4 / 0.20			
Chlorpyrifos	<LOQ	0.2 / 0.10	Permethrins	<LOQ	0.2 / 0.10			
Clofentezine	<LOQ	0.2 / 0.10	Phosmet	<LOQ	0.2 / 0.10			
Cyfluthrin	<LOQ	1.0 / 0.50	Piperonyl butoxide	<LOQ	2.0 / 1.00			
Cypermethrin	<LOQ	1.0 / 0.50	Prallethrin	<LOQ	0.2 / 0.10			
Daminozide	<LOQ	1.0 / 0.50	Propiconazole	<LOQ	0.4 / 0.20			
DDVP (Dichlorvos)	<LOQ	1.0 / 0.50	Propoxur	<LOQ	0.2 / 0.10			
Diazinon	<LOQ	0.2 / 0.10	Pyrethrins	<LOQ	1.0 / 0.50			
Dimethoate	<LOQ	0.2 / 0.10	Pyridaben	<LOQ	0.2 / 0.10			
Ethoprophos	<LOQ	0.2 / 0.10	Spinosad	<LOQ	0.2 / 0.10			
Etofenprox	<LOQ	0.4 / 0.20	Spiromesifen	<LOQ	0.2 / 0.10			
Etoxazole	<LOQ	0.2 / 0.10	Spirotetramat	<LOQ	0.2 / 0.10			
Fenoxycarb	<LOQ	0.2 / 0.10	Spiroxamine	<LOQ	0.4 / 0.20			
Fenproximate	<LOQ	0.4 / 0.20	Tebuconazole	<LOQ	0.4 / 0.20			
Fipronil	<LOQ	0.4 / 0.20	Thiacloprid	<LOQ	0.2 / 0.10			
Flonicamid	<LOQ	1.0 / 0.50	Thiamethoxam	<LOQ	0.2 / 0.10			
Fludioxonil	<LOQ	0.4 / 0.20	Trifloxystrobin	<LOQ	0.2 / 0.10			
Hexythiazox	<LOQ	1.0 / 0.50						
Pesticide Screen	PASS							

LOQ= Limit of Quantification

Microbiological Contaminants (Oregon Compliance Standard OAR 333-007-0390)

ANALYSIS DATE: Not Tested			
Microbiological screening	Colony count	CFU/g	Results:
Total coliforms	Not tested	Not tested	N/A
Escherichia coli (E. coli)	Not tested	Not tested	N/A

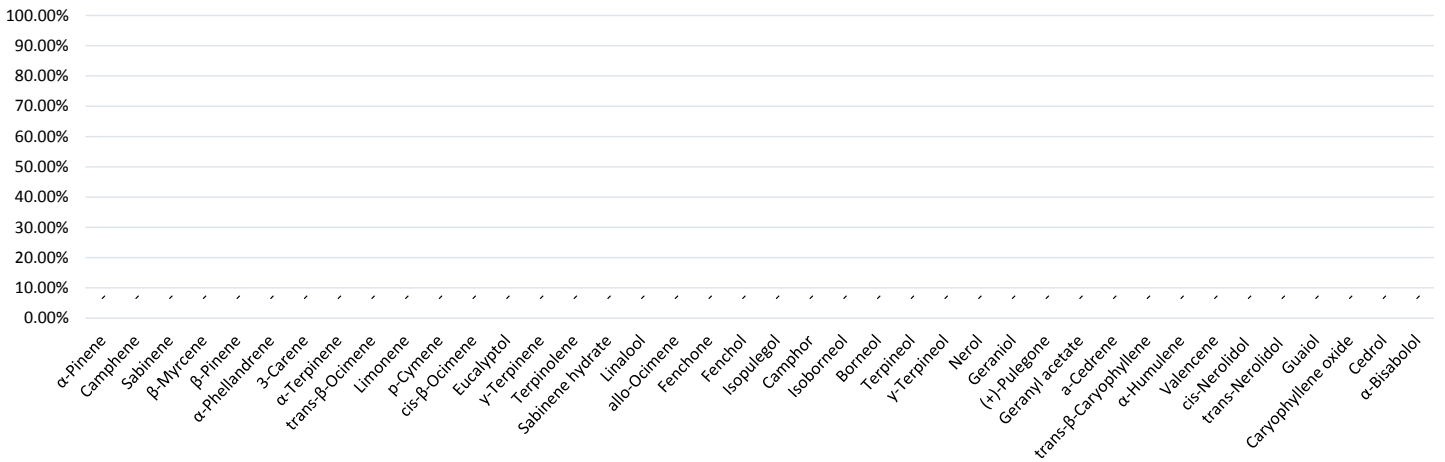


Juniper Batch #:	19JA0054.01_A-B Composite
Intake Date:	1/8/2019

Terpene Profile

ANALYSIS DATE: Not Tested			Instrument: GC/MS		Method: JA-Terpene-Proprietary	
Compound	µg/g	%	Compound	µg/g	%	
α-Pinene			Isopulegol			
Camphene			Camphor			
Sabinene			Isoborneol			
β-Myrcene			Borneol			
β-Pinene			Terpineol			
α-Phellandrene			γ-Terpineol			
3-Carene			Nerol			
α-Terpinene			Geraniol			
trans-β-Ocimene			(+)-Pulegone			
Limonene			Geranyl acetate			
p-Cymene			α-Cedrene			
cis-β-Ocimene			trans-β-Caryophyllene			
Eucalyptol			α-Humulene			
γ-Terpinene			Valencene			
Terpinolene			cis-Nerolidol			
Sabinene hydrate			trans-Nerolidol			
Linalool			Guaiol			
allo-Ocimene			Caryophyllene oxide			
Fenchone			Cedrol			
Fenchol			α-Bisabolol			
			TOTAL			

Terpene Profile*



* Profile expressed as a percent of total terpenes

Batch QC WorkGroup ID:
 Potency PO-2019-01-08-01
 Pesticides PE-2019-01-08-01
 Residual Solvents RS-2019-01-08-01

Disclaimer

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