

# CERTIFICATE OF ANALYSIS



**JuniperAnalytics**  
INTEGRITY AND ACCURACY IN EVERY STEP

Juniper Analytics, LLC  
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541.382.3796  
ORELAP: 4101 / OLCC: 010-10035537931

Client Name: GVB Biopharma  
Contact Info: Josh  
Sample Type: Extract  
External Batch ID: 177  
Harvest/Prod. Date: 2/10/2020  
Sample ID: CRD  
METRC ID: Industrial Hemp  
Juniper Batch #: 20JA0389.02\_A-B Composite  
Intake Date: 2/21/2020

Batch sampled per  
OAR 333-064-0100



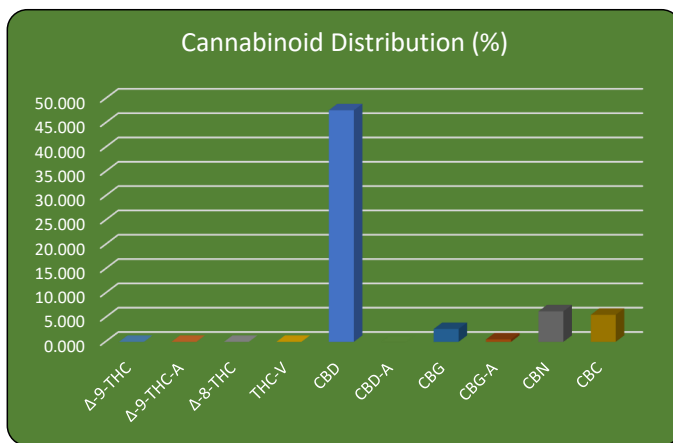
## Potency Analysis (Oregon Compliance Standard OAR 333-007-0430)

ANALYSIS DATE: 2/21/2020

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	47.621	476.21	1.00
CBD-A	<LOQ	<LOQ	1.00
CBG	2.640	26.40	1.00
CBG-A	0.509	5.09	1.00
CBN	6.273	62.73	1.00
CBC	5.557	55.57	1.00



TOTAL THC/CBD	Weight (%)	Conc (mg/g)	RPD
% THC Total =	<LOQ	<LOQ	N/A
%THC <sub>Total</sub> = (THC-A * 0.877) + Δ9THC			
% CBD Total =	47.621	476.21	N/A
%CBD <sub>Total</sub> = (CBD-A * 0.877) + CBD			

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

ANALYSIS DATE: 2/24/2020

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)
<b>Pentanes;</b>	<LOQ	5000 / 500
-n-pentane	<LOQ	**
-iso-pentane	<LOQ	**
-neo-pentane	<LOQ	**
<b>Butanes;</b>	<LOQ	5000 / 500
-n-butane	<LOQ	**
-iso-butane	<LOQ	**
<b>Hexanes;</b>	<LOQ	290 / 50
-n-hexane	<LOQ	**
-2-methylpentane	<LOQ	**
-3-methylpentane	<LOQ	**
-2,2-dimethylbutane	<LOQ	**
-2,3-dimethylbutane	<LOQ	**
<b>Xylenes;</b>	<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

*[Signature]*

Report Date: 2/25/2020

QA Review



Juniper Batch #: 20JA0389.02\_A-B Composite  
 Intake Date: 2/21/2020

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

ANALYSIS DATE: 2/24/2020			Instrument: LC/MS/MS		Method: AOAC 2007.1 <sup>modified</sup>	
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	Paclotrazol	<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	
Fenpyroximate	<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				
<b>Pesticide Screen</b>	<b>PASS</b>					

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
<i>Escherichia coli (E. coli)</i>	Not tested	Not tested	N/A

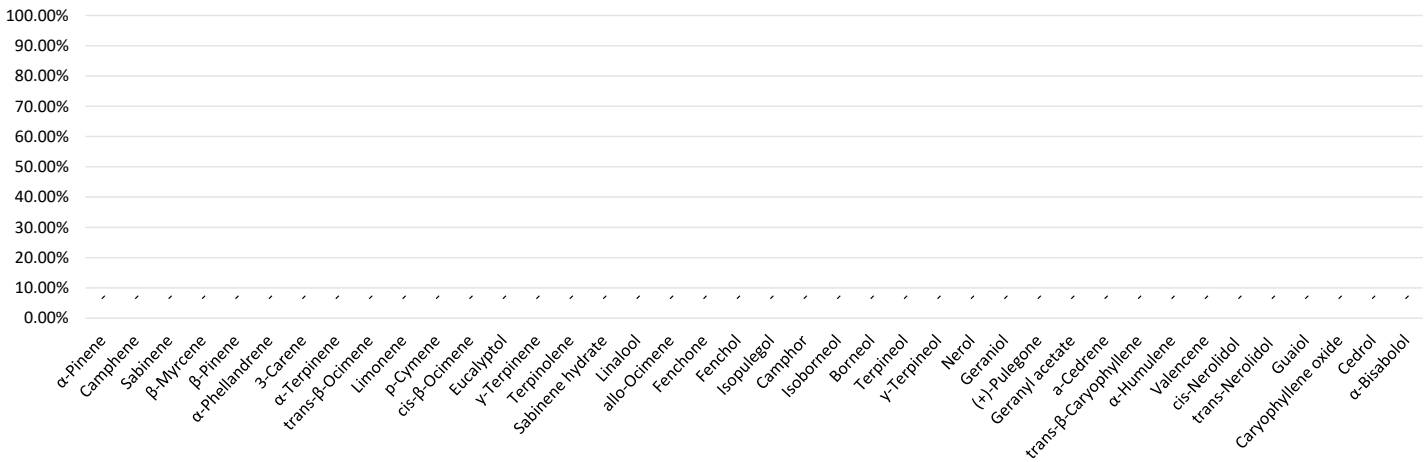


Juniper Batch #:	20JA0389.02_A-B Composite
Intake Date:	2/21/2020

### 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-2020-02-21-01

Pesticides PE-2020-02-21-01

Residual Solvents RS-2020-02-21-01

### Disclaimer

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