

SUMMARY OF ANALYSIS (SAMPLE ID: SA34839)

Testing Location: Arkansas 232 S. Broadview St. Greenbrier, AR 72058 License: ADH 113	Customer ID: 2161 River Valley Relief Cultivation 5601 Old Greenwood Rd Suite C Fort Smith, AR 72903 License: 00065C	Order ID: OR10381 Lot Number: M00065C13132566541 Production Run: 7028H20230227CBS-1	Sample Type: Primary Matrix: Flower Mass: 23g Date Collected: 04/03/2023 Date Received: 04/04/2023 Date Completed: 04/07/2023
Cultivar (Strain) or Sample Description: Crunch Berries			

*This page is simply a summary of the analysis performed. For analytical details, please consult the individual Certificate(s) of Analysis for each of the specific test(s) performed. All contaminant action levels are referenced from the State of Arkansas MMJ testing guidelines.

Moisture Content (%)

13.1

Water Activity (aw)

0.460 @ 24.4°C

PASS/FAIL

PASS

Moisture content/water activity action levels are referenced from the State of Arkansas MMJ testing guidelines.

Moisture content levels less than 15% are recommended but the sample does not fail. Water activity levels must be less than 0.65aw.

Cannabinoids (Top 3)	(%)	mg/g
THCA	32.6	326
CBGA	0.830	8.30
Δ9-THC	0.555	5.55
TOTAL CBD	-	-
TOTAL THC	29.1	291
TOTAL CANNABINOIDS	34.1	341

Terpenes (Top 5)	(%)	µg/g
α-Pinene	0.886	8860
β-Myrcene	0.586	5860
β-Pinene	0.380	3800
β-Caryophyllene	0.251	2510
d-Limonene	0.212	2120
TOTAL TERPENES	2.70	27000

Contaminants	PASS/FAIL
Heavy Metals:	PASS
Microbiology:	PASS
Pesticides:	PASS

Sample Picture Upon Receipt



Scan the QR code to verify results.

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REPORT OF LABORATORY ANALYSIS

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Kyle W. Felling
Kyle W. Felling, Ph.D.
Laboratory Director



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CANNABINOID (POTENCY) PROFILE (SOP: SOP-CANN-001)

Analysis Date/Time: 04/05/2023 1700
Analyst: PW

Method: HPLC/DAD
Instrument: Agilent 1100

Moisture Content (%): 13.1
Water Activity (aw): 0.46 @ 24.39°C

<u>Cannabinoid</u>	<u>Result (%)</u>	<u>Result (mg/g)</u>	<u>LOD (mg/g)</u>	<u>LOQ (mg/g)</u>	<u>Result (mg/mL)</u>	<u>Per Serving (mg)</u>	<u>Per Unit (mg)</u>
CBC	ND	ND	0.212	0.494	-	-	-
CBCA	ND	ND	0.658	1.54	-	-	-
CBD	ND	ND	1.49	3.49	-	-	-
CBDV	ND	ND	0.240	0.559	-	-	-
CBDVA	ND	ND	0.639	1.49	-	-	-
CBG	<LOQ	<LOQ	0.970	2.27	-	-	-
CBGA	0.830	8.30	0.695	1.62	-	8.30	8.30
CBL	ND	ND	1.12	2.62	-	-	-
CBN	ND	ND	0.515	1.20	-	-	-
CBNA	ND	ND	0.556	1.30	-	-	-
Δ9-THC	0.555	5.55	0.617	1.44	-	5.55	5.55
Δ8-THC	ND	ND	0.963	2.25	-	-	-
THCA	32.6	326	0.335	0.782	-	326	326
THCV	ND	ND	0.803	1.87	-	-	-
THCVA	0.128	1.28	0.256	0.597	-	1.28	1.28
TOTAL	34.1	341				341	341
TOTAL CBC	-	-				-	-
TOTAL CBD	-	-				-	-
TOTAL CBDV	-	-				-	-
TOTAL CBG	0.728	7.28				7.28	7.28
TOTAL CBN	-	-				-	-
TOTAL THC	29.1	291				291	291
TOTAL THCVA	0.111	1.11				1.11	1.11



SERVING MASS (g): 1.00
SERVINGS/UNIT: 1

"-" Not detected above LOD.

Deviations from standard operating procedure:
None

Recoveries for all analyte standards: 90-110%
Replicate Uncertainties: <5% RSD, <20% RPD
Sample/Reagent Blanks: <RL for all analytes

Values for plant matter are adjusted for moisture content.

Total CBC = (CBCA x 0.877) + CBC
Total CBD = (CBDV x 0.877) + CBD
Total CBDV = (CBDVA x 0.867) + CBDV
Total CBG = (CBGA x 0.878) + CBG
Total CBN = (CBNA x 0.876) + CBN
Total THC = (THCA x 0.877) + Δ9-THC
Total THCVA = (THCVA x 0.867) + THCVA

Percentage results are reported by mass.

mg/g results are reported as mass component per mass material.

* CBCA, CBDVA, CBL, CBNA, and THCVA are in process of being added to our accreditation scope.

Abbreviations: DAD - Diode Array Detector, HPLC - High Pressure Liquid Chromatography, RL - Reporting Limit, RPD - Relative Percent Difference, RSD - Relative Standard Deviation, DET - Detected (less than LOQ), LOD - Limit of Detection, LOQ - Limit of Quantitation, UM - Measurement Uncertainty

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TERPENOID PROFILE

Analysis Date/Time: 04/07/2023 0241
Analyst: KF

Method: GC/MS
Instrument: Agilent 7890/5975

Deviations from SOP:
None

<u>Terpene</u>	<u>Result (µg/g)</u>	<u>Result (%)</u>	
α-Bisabolol	702	0.0702	█
Camphene	132	0.0132	█
δ-3-Carene	-	-	
β-Caryophyllene	2510	0.251	█
Caryophyllene oxide	-	-	
p-Cymene	-	-	
Eucalyptol	-	-	
Geraniol	-	-	
Guaiol	-	-	
α-Humulene	1300	0.130	█
Isopulegol	-	-	
d-Limonene	2120	0.212	█
Linalool	1420	0.142	█
β-Myrcene	5860	0.586	█
cis-Nerolidol	-	-	
trans-Nerolidol	140	0.0140	█
α-Ocimene	-	-	
β-Ocimene	182	0.0182	█
α-Pinene	8860	0.886	█
β-Pinene	3800	0.380	█
α-Terpinene	-	-	
γ-Terpinene	-	-	
Terpinolene	-	-	
TOTAL	27000	2.70	



Abbreviations: GC - Gas Chromatography, MS - Mass Spectrometry, RL - Reporting Limit

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"-" Not detected above RL.

Reporting Limit (µg/g): 42.4

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PESTICIDES PROFILE (SOP: SOP-PEST-001)

Analysis Date/Time: 04/06/2023 0025
Analyst: KF

Method: LC/MS/MS
Instrument: Shimadzu LC-8050

Deviations from SOP:
None

Pesticide	Result (µg/g)	LOD (µg/g)	LOQ (µg/g)	Action Level (µg/g)	Pesticide	Result (µg/g)	LOD (µg/g)	LOQ (µg/g)	Action Level (µg/g)
Abamectin (71751-41-2)	-	0.0424	0.340	0.5	Kresoxim-methyl (143390-89-0)	-	0.0424	0.340	0.4
Acephate (30560-19-1)	-	0.0424	0.340	0.4	Malathion (121-75-5)	-	0.0424	0.340	0.2
Acetaminocyl (57960-19-7)	-	0.0424	0.340	2	Metalaxyl (57837-19-1)	-	0.0424	0.340	0.2
Acetamiprid (135410-20-7)	-	0.0424	0.340	0.2	Methiocarb (2032-65-7)	-	0.0424	0.340	0.2
Aldicarb (116-06-3)	-	0.0424	0.340	0.4	Methomyl (16752-77-5)	-	0.0424	0.340	0.4
Azoxystrobin (131860-33-8)	-	0.0424	0.340	0.2	Methyl parathion (298-0-0)	-	0.0424	0.340	0.2
Bifenazate (149877-41-8)	-	0.0424	0.340	0.2	MGK 264 (113-48-4)	-	0.0424	0.340	0.2
Bifenthrin (82657-04-3)	-	0.0424	0.340	0.2	Myclobutanil (88671-89-0)	-	0.0424	0.340	0.2
Boscalid (188425-85-6)	-	0.0424	0.340	0.4	Naled (300-76-5)	-	0.0424	0.340	0.5
Carbaryl (63-25-2)	-	0.0424	0.340	0.2	Oxamyl (23135-22-0)	-	0.0424	0.340	1
Carbofuran (1563-66-2)	-	0.0424	0.340	0.2	Pacllobutrazol (76738-62-0)	-	0.0424	0.340	0.4
Chlorantraniliprole (800008-45-7)	-	0.0424	0.340	0.2	Permethrins (52645-53-1)	-	0.0424	0.340	0.2
Chlorfenapyr (122453-73-0)	-	0.0424	0.340	1	Phosmet (732-11-6)	-	0.0424	0.340	0.2
Chlorpyrifos (2921-88-2)	-	0.0424	0.340	0.2	Piperonyl butoxide (51-03-6)	-	0.0424	0.340	2
Clofentezine (74115-24-5)	-	0.0424	0.340	0.2	Prallethrins (2331-36-9)	-	0.0424	0.340	0.2
Cyfluthrin (68359-37-5)	-	0.0424	0.340	1	Propiconazole (60207-90-1))	-	0.0424	0.340	0.4
Cypermethrin (52315-07-8)	-	0.0424	0.340	1	Propoxur (114-26-1)	-	0.0424	0.340	0.2
Daminozide (1596-84-5)	-	0.0424	0.340	1	Pyrethrins (8003-34-7)	-	0.0424	0.340	1
DDVP (62-73-7)	-	0.0424	0.340	0.1	Pyridaben (96489-71-3)	-	0.0424	0.340	0.2
Diazinon (333-41-5)	-	0.0424	0.340	0.2	Spinosad (168316-95-8)	-	0.0424	0.340	0.2
Dimethoate (60-51-5)	-	0.0424	0.340	0.2	Spiromesifen (283594-90-1)	-	0.0424	0.340	0.2
Ethoprophos (13194-48-4)	-	0.0424	0.340	0.2	Spirotetramat (203313-25-1)	-	0.0424	0.340	0.2
Etofenprox (80844-07-1)	-	0.0424	0.340	0.4	Spiroxamine (118134-30-8)	-	0.0424	0.340	0.4
Etoxazole (153233-91-1)	-	0.0424	0.340	0.2	Tebuconazole (80443-41-0)	-	0.0424	0.340	0.4
Fenoxycarb (72490-01-8)	-	0.0424	0.340	0.2	Thiacloprid (111988-49-9)	-	0.0424	0.340	0.2
(E)-Fenpyroximate (134098-61-6)	-	0.0424	0.340	0.4	Thiamethoxam (153719-23-4)	-	0.0424	0.340	0.2
Fipronil (120068-37-3)	-	0.0424	0.340	0.4	Trifloxystrobin (141517-21-7)	-	0.0424	0.340	0.2
Fonicamid (158062-67-0)	-	0.0424	0.340	1					
Fludioxinil (131341-86-1)	-	0.0424	0.340	0.4					
Hexythiazox (78587-05-0)	-	0.0424	0.340	1					
Imazalil (35554-44-0)	-	0.0424	0.340	0.2					
Imidacloprid (138261-41-3)	-	0.0424	0.340	0.4					



Color Key

RESULT < AL
RESULT > AL

"DET" detected less than LOQ
"- " not detected above LOD
Permethrins measured as the cumulative residue of the *cis*- and *trans*- permethrin isomers.
Pyrethrins measured as the cumulative residue of the pyrethrin I, cinerin I, and jasmolin I isomers.
Action levels are referenced from the State of Arkansas MMJ testing guidelines.
A value of "-" for the action level means that analyte is not currently regulated by the regulations referenced above.
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Abbreviations: LC - Liquid Chromatography, MS - Mass Spectrometry, RL - Reporting Limit, AL - Action Level, CAS - Chemical Abstract Services, LOD - Limit of Detection, LOQ - Limit of Quantification

Pesticide	Synonym(s)	Pesticide	Synonym(s)	Pesticide	Synonym(s)
Cyfluthrin	Baythroid	Myclobutanil	Sythane	Propiconazole	Tilt
DDVP	Dichlorvos	Naled	Dibrom	Propoxur	Baygon
Ethoprophos	Prophos	Phosmet	Imidan		

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HEAVY METAL PROFILE (SOP: SOP-ICP-200.7)

Analysis Date/Time: 04/05/2023 2214 (ICP/OES) **Method:** ICP/OES **Deviations from SOP:**
Analysis Date/Time: - (DMA) **Instrument:** Agilent 720-ES None
Analyst: KF

<u>Heavy Metal</u>	<u>Result</u> (µg/kg)	<u>LOD</u> (µg/kg)	<u>LOQ</u> (µg/kg)	<u>Action Level</u> (µg/kg)
Arsenic (As)	-	59.3	93.9	200
Cadmium (Cd)	-	59.3	93.9	200
Lead (Pb)	-	59.3	93.9	500
Mercury (Hg)	-	59.3	93.9	100



Abbreviations: ICP - Inductively-Coupled Plasma, OES - Optical Emission Spectroscopy,
 DMA - Direct Mercury Analyzer, RL - Reporting Limit, AL - Action Level, LOD - Limit of Detection, LOQ - Limit of Quantitation

Color Key



"DET" detected less than LOQ
 "-" not detected above LOD

Action levels for heavy metals are referenced from the State of Arkansas MMJ testing guidelines.

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MICROBIOLOGICAL PROFILE (SOP: SOP-Micro-001)

Analysis Date/Time: 20230405 **Method:** Hardy Diagnostics CompactDry **Deviations from SOP:**
Analyst: PW **Instrument:** Thermo Incubator None

Bacteria/Microbe	Result (CFU/g)	Action Level (CFU/g)
Aerobic Plate Count	NT	-
Coliforms, Total	Absent	1
Escherichia Coli (E. Coli)	Absent	100
Mold/Yeast	NT	-
Pseudomonas aeruginosa	NT	1
Salmonella spp.	NT	-
Staphylococcus aureus	NT	-



Abbreviations: EC - Escherichia Coli, CFU - Colony-Forming Unit, RL - Reporting Limit, AL - Action Level, TNTC - Too Numerous To Count, NT - Not Tested
Absent - Not Detected Above RL, Present - Detected Above RL

Color Key

RESULT < AL

RESULT > AL

Reporting Limit (CFU/g)
1

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