

SUMMARY OF ANALYSIS (SAMPLE ID: SA36474)

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: OR10717 Lot Number: M00065C13132504126 Production Run: 4046H20231012CBS-1	Sample Type: Primary Matrix: Flower Mass: 23g Date Collected: 11/20/2023 Date Received: 11/21/2023 Date Completed: 11/23/2023
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 (%)

12.9

Water Activity (aw)

0.535 @ 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	32.7	327
Δ9-THC	0.706	7.06
CBGA	0.499	4.99
TOTAL CBD	-	-
TOTAL THC	29.4	294
TOTAL CANNABINOIDS	34.2	342

Terpenes (Top 5)	(%)	µg/g
α-Pinene	0.762	7620
β-Pinene	0.443	4430
β-Myrcene	0.366	3660
β-Caryophyllene	0.231	2310
d-Limonene	0.227	2270
TOTAL TERPENES	2.27	22700

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



CERTIFICATE OF ANALYSIS (SAMPLE ID: SA36474)

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

Analysis Date/Time: 11/21/2023 1353 **Method:** HPLC/DAD **Moisture Content (%):** 12.9
Analyst: PW **Instrument:** Agilent 1100 **Water Activity (aw):** 0.535 @ 24.4°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	0.0420	0.0981	-	-	-
CBCA	ND	ND	0.131	0.305	-	-	-
CBD	ND	ND	0.297	0.692	-	-	-
CBDV	ND	ND	0.109	0.255	-	-	-
CBDVA	ND	ND	0.0476	0.111	-	-	-
CBG	0.0924	0.924	0.127	0.296	-	-	-
CBGA	0.499	4.99	0.193	0.450	-	0.805	0.805
CBL	ND	ND	0.273	0.322	-	4.34	4.34
CBN	ND	ND	0.222	0.519	-	-	-
CBNA	ND	ND	0.102	0.239	-	-	-
Δ9-THC	ND	ND	0.110	0.257	-	-	-
Δ8-THC	0.706	7.06	0.122	0.285	-	6.15	6.15
THCA	ND	ND	0.191	0.446	-	-	-
THCV	32.7	327	0.0664	0.155	-	285	285
THCVA	ND	ND	0.159	0.371	-	-	-
THCVA	0.172	1.72	0.0509	0.118	-	1.50	1.50
TOTAL	34.2	342				298	298
TOTAL CBC	-	-				-	-
TOTAL CBD	-	-				-	-
TOTAL CBDV	-	-				-	-
TOTAL CBG	0.530	5.30				4.62	4.62
TOTAL CBN	-	-				-	-
TOTAL THC	29.4	294				256	256
TOTAL THC V	0.149	1.49				1.30	1.30



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 0.867) + 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 THC V = (THCVA x 0.867) + THC V

Percentage results are reported by mass.

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

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: 11/21/2023 1935
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	277	0.0277	
Camphene	184	0.0184	
δ-3-Carene	ND	-	
β-Caryophyllene	2310	0.231	■
Caryophyllene oxide	ND	-	
p-Cymene	ND	-	
Eucalyptol	ND	-	
Geraniol	ND	-	
Guaiol	ND	-	
α-Humulene	922	0.0922	■
Isopulegol	ND	-	
d-Limonene	2270	0.227	■
Linalool	799	0.0799	■
β-Myrcene	3660	0.366	■
cis-Nerolidol	ND	-	
trans-Nerolidol	ND	-	
α-Ocimene	ND	-	
β-Ocimene	277	0.0277	
α-Pinene	7620	0.762	■
β-Pinene	4430	0.443	■
α-Terpinene	ND	-	
γ-Terpinene	ND	-	
Terpinolene	ND	-	
TOTAL	22700	2.27	



Abbreviations: GC - Gas Chromatography, MS - Mass Spectrometry, RL - Reporting Limit
Abbreviations: ND - Not Detected, LOD - Limit of Detection, LOQ - Limit of Quantitation

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Reporting Limit (µg/g): 76.8

"-" Not detected above LOD.

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Laboratory Director

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PESTICIDES PROFILE (SOP: SOP-PEST-001)

Analysis Date/Time: 11/21/2023 1554
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)	-	0.0460	0.368	0.5	Kresoxim-methyl (143390-89-0)	-	0.0460	0.368	0.4
Acephate (30560-19-1)	-	0.0460	0.368	0.4	Malathion (121-75-5)	-	0.0460	0.368	0.2
Acetaminocyl (57960-19-7)	-	0.0460	0.368	2	Metalaxyl (57837-19-1)	-	0.0460	0.368	0.2
Acetamiprid (135410-20-7)	-	0.0460	0.368	0.2	Methiocarb (2032-65-7)	-	0.0460	0.368	0.2
Aldicarb (116-06-3)	-	0.0460	0.368	0.4	Methomyl (16752-77-5)	-	0.0460	0.368	0.4
Azoxystrobin (131860-33-8)	-	0.0460	0.368	0.2	Methyl parathion (298-0-0)	-	0.0460	0.368	0.2
Bifenazate (149877-41-8)	-	0.0460	0.368	0.2	MGK 264 (113-48-4)	-	0.0460	0.368	0.2
Bifenthrin (82657-04-3)	-	0.0460	0.368	0.2	Myclobutanil (88671-89-0)	-	0.0460	0.368	0.2
Boscalid (188425-85-6)	-	0.0460	0.368	0.4	Naled (300-76-5)	-	0.0460	0.368	0.5
Carbaryl (63-25-2)	-	0.0460	0.368	0.2	Oxamyl (23135-22-0)	-	0.0460	0.368	1
Carbofuran (1563-66-2)	-	0.0460	0.368	0.2	Paclotrazol (76738-62-0)	-	0.0460	0.368	0.4
Chlorantraniliprole (800008-45-7)	-	0.0460	0.368	0.2	Permethrins (52645-53-1)	-	0.0460	0.368	0.2
Chlorfenapyr (122453-73-0)	-	0.0460	0.368	1	Phosmet (732-11-6)	-	0.0460	0.368	0.2
Chlorpyrifos (2921-88-2)	-	0.0460	0.368	0.2	Piperonyl butoxide (51-03-6)	-	0.0460	0.368	2
Clofentezine (74115-24-5)	-	0.0460	0.368	0.2	Prallethrins (2331-36-9)	-	0.0460	0.368	0.2
Cyfluthrin (68359-37-5)	-	0.0460	0.368	1	Propiconazole (60207-90-1))	-	0.0460	0.368	0.4
Cypermethrin (52315-07-8)	-	0.0460	0.368	1	Propoxur (114-26-1)	-	0.0460	0.368	0.2
Daminozide (1596-84-5)	-	0.0460	0.368	1	Pyrethrins (8003-34-7)	-	0.0460	0.368	1
DDVP (62-73-7)	-	0.0460	0.368	0.1	Pyridaben (96489-71-3)	-	0.0460	0.368	0.2
Diazinon (333-41-5)	-	0.0460	0.368	0.2	Spinosad (168316-95-8)	-	0.0460	0.368	0.2
Dimethoate (60-51-5)	-	0.0460	0.368	0.2	Spiromesifen (283594-90-1)	-	0.0460	0.368	0.2
Ethoprophos (13194-48-4)	-	0.0460	0.368	0.2	Spirotetramat (203313-25-1)	-	0.0460	0.368	0.2
Etofenprox (80844-07-1)	-	0.0460	0.368	0.4	Spiroxamine (118134-30-8)	-	0.0460	0.368	0.4
Etoxazole (153233-91-1)	-	0.0460	0.368	0.2	Tebuconazole (80443-41-0)	-	0.0460	0.368	0.4
Fenoxycarb (72490-01-8)	-	0.0460	0.368	0.2	Thiacloprid (111988-49-9)	-	0.0460	0.368	0.2
(E)-Fenpyroximate (134098-61-6)	-	0.0460	0.368	0.4	Thiamethoxam (153719-23-4)	-	0.0460	0.368	0.2
Fipronil (120068-37-3)	-	0.0460	0.368	0.4	Trifloxystrobin (141517-21-7)	-	0.0460	0.368	0.2
Fonicamid (158062-67-0)	-	0.0460	0.368	1					
Fludioxinil (131341-86-1)	-	0.0460	0.368	0.4					
Hexythiazox (78587-05-0)	-	0.0460	0.368	1					
Imazalil (35554-44-0)	-	0.0460	0.368	0.2					
Imidacloprid (138261-41-3)	-	0.0460	0.368	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	Systhane	Propiconazole	Tilt
DDVP	Dichlorvos	Naled	Dibrom	Propoxur	Baygon
Ethoprophos	Prophos	Phosmet	Imidan		

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HEAVY METAL PROFILE (SOP: SOP-ICP-200.6)

Analysis Date/Time: 11/21/2023 1734 (ICP/OES)	Method: ICP/MS	Deviations from SOP:
Analysis Date/Time: - (DMA)	Instrument: Agilent 7500ce	None
Analyst: KF		

<u>Heavy Metal</u>	<u>Result (µg/kg)</u>	<u>LOD (µg/kg)</u>	<u>LOQ (µg/kg)</u>	<u>Action Level (µg/kg)</u>
Arsenic (As)	-	58.4	92.4	200
Cadmium (Cd)	-	58.4	92.4	200
Lead (Pb)	-	58.4	92.4	500
Mercury (Hg)	-	58.4	92.4	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

RESULT < AL
RESULT > AL

"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: 11/22/2023 1034 **Method:** Hardy Diagnostics CompactDry **Deviations from SOP:**
Analyst: PW **Instrument:** Thermo Incubator None

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