

**SUMMARY OF ANALYSIS (SAMPLE ID: SA34504)**

<b>Testing Location:</b>	<b>Customer ID:</b> 2161	<b>Order ID:</b> OR10319	<b>Sample Type:</b> Primary
Arkansas	River Valley Relief Cultivation	<b>Lot Number:</b>	<b>Matrix:</b> Flower
232 S. Broadview St.	5601 Old Greenwood Rd Suite C	M00065C13133989154	<b>Mass:</b> 23g
Greenbrier, AR 72058	Fort Smith, AR 72903	<b>Production Run:</b>	<b>Date Collected:</b> 02/20/2023
License: ADH 113	License: 00065C	1022H20221228BBF1	<b>Date Received:</b> 02/21/2023
<b>Cultivar (Strain) or Sample Description:</b> Ben's Buffalo			<b>Date Completed:</b> 02/27/2023

\*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 (%)**

12.4

**Water Activity (aw)**

0.502 @ 24.2°C

**PASS/FAIL**

**PASS**

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

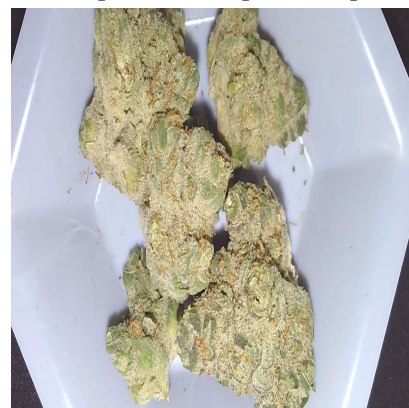
Moisture content levels less than 15% are recommended but the sample does not fail. Water activity levels must be less than 0.65aw.

<b>Cannabinoids (Top 3)</b>	<b>(%)</b>	<b>mg/g</b>
THCA	12.5	125
Δ9-THC	0.903	9.03
CBGA	0.728	7.28
TOTAL CBD	-	-
TOTAL THC	11.9	119
TOTAL CANNABINOIDS	14.5	145

<b>Terpenes (Top 5)</b>	<b>(%)</b>	<b>µg/g</b>
Caryophyllene oxide	1.57	15700
Terpinolene	0.163	1630
β-Caryophyllene	0.111	1110
Linalool	0.0827	827
β-Myrcene	0.0826	826
TOTAL TERPENES	2.35	23500

<b>Contaminants</b>	<b>PASS/FAIL</b>
Heavy Metals:	<b>PASS</b>
Microbiology:	<b>PASS</b>
Pesticides:	<b>PASS</b>

**Sample Picture Upon Receipt**



Scan the QR code to verify results.

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



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License: ADH 113	License: 00065C	1022H20221228BBF1	<b>Date Received:</b> 02/21/2023
<b>Cultivar (Strain) or Sample Description:</b> Ben's Buffalo			<b>Date Completed:</b> 02/27/2023

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

**Analysis Date/Time:** 2/21/2023 1827

**Analyst:** PW

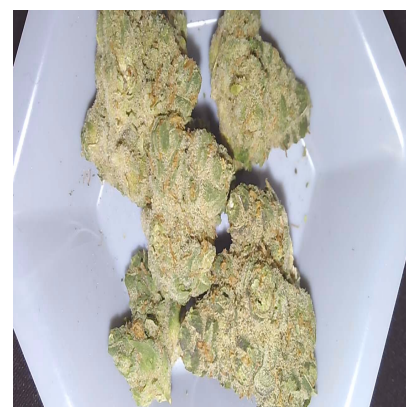
**Method:** HPLC/DAD

**Instrument:** Agilent 1100

**Moisture Content (%):** 12.4

**Water Activity (aw):** 0.502 @ 24.2°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	0.220	0.513	-	-	-
CBCA	ND	ND	0.683	1.59	-	-	-
CBD	ND	ND	1.55	3.62	-	-	-
CBDV	ND	ND	0.571	1.33	-	-	-
CBDVA	ND	ND	0.249	0.580	-	-	-
CBDVA	ND	ND	0.663	1.55	-	-	-
CBG	ND	ND	1.01	2.35	-	-	-
CBGA	0.728	7.28	0.721	1.68	-	7.28	7.28
CBL	ND	ND	1.16	2.72	-	-	-
CBN	ND	ND	0.534	1.25	-	-	-
CBNA	ND	ND	0.577	1.34	-	-	-
Δ9-THC	0.903	9.03	0.640	1.49	-	9.03	9.03
Δ8-THC	ND	ND	0.999	2.33	-	-	-
THCA	12.5	125	0.347	0.812	-	125	125
THCV	ND	ND	0.833	1.94	-	-	-
THCVA	0.352	3.52	0.266	0.619	-	3.52	3.52
<b>TOTAL</b>	<b>14.5</b>	<b>145</b>			-	<b>145</b>	<b>145</b>
<b>TOTAL CBC</b>	-	-			-	-	-
<b>TOTAL CBD</b>	-	-			-	-	-
<b>TOTAL CBDV</b>	-	-			-	-	-
<b>TOTAL CBG</b>	0.639	6.39			-	6.39	6.39
<b>TOTAL CBN</b>	-	-			-	-	-
<b>TOTAL THC</b>	11.9	119			-	119	119
<b>TOTAL THCVA</b>	0.305	3.05			-	3.05	3.05



**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:** 02/23/2023 2305

**Method:** GC/MS

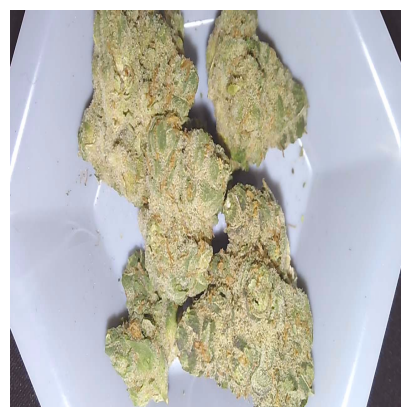
**Deviations from SOP:**

**Analyst:** KF

**Instrument:** Agilent 7890/5975

None

<b>Terpene</b>	<b>Result (µg/g)</b>	<b>Result (%)</b>	
α-Bisabolol	545	0.0545	
Camphene	-	-	
δ-3-Carene	-	-	
β-Caryophyllene	1110	0.111	
Caryophyllene oxide	15700	1.57	
p-Cymene	-	-	
Eucalyptol	-	-	
Geraniol	-	-	
Guaiol	-	-	
α-Humulene	399	0.0399	
Isopulegol	-	-	
d-Limonene	729	0.0729	
Linalool	827	0.0827	
β-Myrcene	826	0.0826	
cis-Nerolidol	-	-	
trans-Nerolidol	172	0.0172	
α-Ocimene	-	-	
β-Ocimene	539	0.0539	
α-Pinene	399	0.0399	
β-Pinene	606	0.0606	
α-Terpinene	-	-	
γ-Terpinene	-	-	
Terpinolene	1630	0.163	
<b>TOTAL</b>	<b>23500</b>	<b>2.35</b>	



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

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"-" Not detected above RL.

**Reporting Limit (µg/g): 44.2**

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**PESTICIDES PROFILE (SOP: SOP-PEST-001)**

**Analysis Date/Time:** 02/23/2023 2126

**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)	-	0.0442	0.354	0.5	Kresoxim-methyl (143390-89-0)	-	0.0442	0.354	0.4
Acephate (30560-19-1)	-	0.0442	0.354	0.4	Malathion (121-75-5)	-	0.0442	0.354	0.2
Acetaminophen (57960-19-7)	-	0.0442	0.354	2	Metalaxyl (57837-19-1)	-	0.0442	0.354	0.2
Acetamiprid (135410-20-7)	-	0.0442	0.354	0.2	Methiocarb (2032-65-7)	-	0.0442	0.354	0.2
Aldicarb (116-06-3)	-	0.0442	0.354	0.4	Methomyl (16752-77-5)	-	0.0442	0.354	0.4
Azoxystrobin (131860-33-8)	-	0.0442	0.354	0.2	Methyl parathion (298-0-0)	-	0.0442	0.354	0.2
Bifenazate (149877-41-8)	-	0.0442	0.354	0.2	MGK 264 (113-48-4)	-	0.0442	0.354	0.2
Bifenthrin (82657-04-3)	-	0.0442	0.354	0.2	Myclobutanil (88671-89-0)	-	0.0442	0.354	0.2
Boscalid (188425-85-6)	-	0.0442	0.354	0.4	Naled (300-76-5)	-	0.0442	0.354	0.5
Carbaryl (63-25-2)	-	0.0442	0.354	0.2	Oxamyl (23135-22-0)	-	0.0442	0.354	1
Carbofuran (1563-66-2)	-	0.0442	0.354	0.2	Paclobutrazol (76738-62-0)	-	0.0442	0.354	0.4
Chlorantraniliprole (800008-45-7)	-	0.0442	0.354	0.2	Permethrins (52645-53-1)	-	0.0442	0.354	0.2
Chlorfenapyr (122453-73-0)	-	0.0442	0.354	1	Phosmet (732-11-6)	-	0.0442	0.354	0.2
Chlorpyrifos (2921-88-2)	-	0.0442	0.354	0.2	Piperonyl butoxide (51-03-6)	-	0.0442	0.354	2
Clofentezine (74115-24-5)	-	0.0442	0.354	0.2	Prallethrin (2331-36-9)	-	0.0442	0.354	0.2
Cyfluthrin (68359-37-5)	-	0.0442	0.354	1	Propiconazole (60207-90-1)	-	0.0442	0.354	0.4
Cypermethrin (52315-07-8)	-	0.0442	0.354	1	Propoxur (114-26-1)	-	0.0442	0.354	0.2
Daminozide (1596-84-5)	-	0.0442	0.354	1	Pyrethrins (8003-34-7)	-	0.0442	0.354	1
DDVP (62-73-7)	-	0.0442	0.354	0.1	Pyridaben (96489-71-3)	-	0.0442	0.354	0.2
Diazinon (333-41-5)	-	0.0442	0.354	0.2	Spinosad (168316-95-8)	-	0.0442	0.354	0.2
Dimethoate (60-51-5)	-	0.0442	0.354	0.2	Spiromesifen (283594-90-1)	-	0.0442	0.354	0.2
Ethoprophos (13194-48-4)	-	0.0442	0.354	0.2	Spirotetramat (203313-25-1)	-	0.0442	0.354	0.2
Etofenprox (80844-07-1)	-	0.0442	0.354	0.4	Spiroxamine (118134-30-8)	-	0.0442	0.354	0.4
Etoazoxole (153233-91-1)	-	0.0442	0.354	0.2	Tebuconazole (80443-41-0)	-	0.0442	0.354	0.4
Fenoxycarb (72490-01-8)	-	0.0442	0.354	0.2	Thiacloprid (111988-49-9)	-	0.0442	0.354	0.2
(E)-Fenpyroximate (134098-61-6)	-	0.0442	0.354	0.4	Thiamethoxam (153719-23-4)	-	0.0442	0.354	0.2
Fipronil (120068-37-3)	-	0.0442	0.354	0.4	Trifloxystrobin (141517-21-7)	-	0.0442	0.354	0.2
Flonicamid (158062-67-0)	-	0.0442	0.354	1					
Fludioxinil (131341-86-1)	-	0.0442	0.354	0.4					
Hexythiazox (78587-05-0)	-	0.0442	0.354	1					
Imazalil (35554-44-0)	-	0.0442	0.354	0.2					
Imidacloprid (138261-41-3)	-	0.0442	0.354	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-200.7)**

<b>Analysis Date/Time:</b> 2/26/2023 1011 (ICP/OES)	<b>Method:</b> ICP/OES	<b>Deviations from SOP:</b>
<b>Analysis Date/Time:</b> - (DMA)	<b>Instrument:</b> Agilent 720-ES	None
<b>Analyst:</b> 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)	-	56.6	89.6	200
Cadmium (Cd)	-	56.6	89.6	200
Lead (Pb)	-	56.6	89.6	500
Mercury (Hg)	-	56.6	89.6	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**

<b>RESULT &lt; AL</b>
<b>RESULT &gt; AL</b>

"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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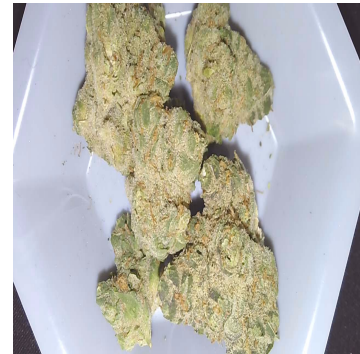
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**MICROBIOLOGICAL PROFILE (SOP: SOP-Micro-001)**

<b>Analysis Date/Time:</b> 20230222 1148	<b>Method:</b> Hardy Diagnostics CompactDry	<b>Deviations from SOP:</b>
<b>Analyst:</b> PW	<b>Instrument:</b> Thermo Incubator	None

<b>Bacteria/Microbe</b>	<b>Result (CFU/g)</b>	<b>Action Level (CFU/g)</b>
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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