

**SUMMARY OF ANALYSIS (SAMPLE ID: SA34602)**

<b>Testing Location:</b> Arkansas 232 S. Broadview St. Greenbrier, AR 72058 License: ADH 113	<b>Customer ID:</b> 2161 River Valley Relief Cultivation 5601 Old Greenwood Rd Suite C Fort Smith, AR 72903 License: 00065C	<b>Order ID:</b> OR10335 <b>Lot Number:</b> M00065C13132619885 <b>Production Run:</b> 3024H20230113GP2-1	<b>Sample Type:</b> Primary <b>Matrix:</b> Flower <b>Mass:</b> 23g <b>Date Collected:</b> 03/06/2023 <b>Date Received:</b> 03/07/2023 <b>Date Completed:</b> 03/12/2023
<b>Cultivar (Strain) or Sample Description:</b> Grape Pie #2			

\*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 (%)**

13.0

**Water Activity (aw)**

0.507 @ 24.5°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	26.9	269
CBGA	0.950	9.50
Δ9-THC	0.243	2.43
TOTAL CBD	-	-
TOTAL THC	23.8	238
TOTAL CANNABINOIDS	28.5	285

<b>Terpenes (Top 5)</b>	<b>(%)</b>	<b>µg/g</b>
α-Bisabolol	1.78	17800
Caryophyllene oxide	0.729	7290
d-Limonene	0.492	4920
α-Pinene	0.168	1680
β-Pinene	0.141	1410
TOTAL TERPENES	3.83	38300

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

**Analysis Date/Time:** 3/8/2023 1518      **Method:** HPLC/DAD      **Moisture Content (%):** 13  
**Analyst:** PW      **Instrument:** Agilent 1100      **Water Activity (aw):** 0.507 @ 24.53°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	0.225	0.525	-	-	-
CBCA	0.198	1.98	0.699	1.63	-	1.98	1.98
CBD	ND	ND	1.59	3.71	-	-	-
CBDV	ND	ND	0.255	0.595	-	-	-
CBDVA	ND	ND	0.680	1.59	-	-	-
CBG	<LOQ	<LOQ	1.03	2.41	-	-	-
CBGA	0.950	9.50	0.739	1.72	-	9.50	9.50
CBL	ND	ND	1.19	2.78	-	-	-
CBN	ND	ND	0.547	1.28	-	-	-
CBNA	ND	ND	0.591	1.38	-	-	-
Δ9-THC	0.243	2.43	0.656	1.53	-	2.43	2.43
Δ8-THC	ND	ND	1.02	2.39	-	-	-
THCA	26.9	269	0.356	0.832	-	269	269
THCV	ND	ND	0.853	1.99	-	-	-
THCVA	0.211	2.11	0.273	0.634	-	2.11	2.11
<b>TOTAL</b>	<b>28.5</b>	<b>285</b>			<b>-</b>	<b>285</b>	<b>285</b>
<b>TOTAL CBC</b>	<b>0.174</b>	<b>1.74</b>			<b>-</b>	<b>1.74</b>	<b>1.74</b>
<b>TOTAL CBD</b>	<b>-</b>	<b>-</b>			<b>-</b>	<b>-</b>	<b>-</b>
<b>TOTAL CBDV</b>	<b>-</b>	<b>-</b>			<b>-</b>	<b>-</b>	<b>-</b>
<b>TOTAL CBG</b>	<b>0.834</b>	<b>8.34</b>			<b>-</b>	<b>8.34</b>	<b>8.34</b>
<b>TOTAL CBN</b>	<b>-</b>	<b>-</b>			<b>-</b>	<b>-</b>	<b>-</b>
<b>TOTAL THC</b>	<b>23.8</b>	<b>238</b>			<b>-</b>	<b>238</b>	<b>238</b>
<b>TOTAL THCV</b>	<b>0.183</b>	<b>1.83</b>			<b>-</b>	<b>1.83</b>	<b>1.83</b>



**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 THCV = (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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<b>Cultivar (Strain) or Sample Description:</b> Grape Pie #2			<b>Date Completed:</b> 03/12/2023

**TERPENOID PROFILE**

**Analysis Date/Time:** 03/08/2023 2205  
**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	17800	1.78	
Camphene	344	0.0344	
δ-3-Carene	-	-	
β-Caryophyllene	1150	0.115	
Caryophyllene oxide	7290	0.729	
p-Cymene	-	-	
Eucalyptol	-	-	
Geraniol	-	-	
Guaiol	607	0.0607	
α-Humulene	700	0.0700	
Isopulegol	-	-	
d-Limonene	4920	0.492	
Linalool	665	0.0665	
β-Myrcene	480	0.0480	
cis-Nerolidol	-	-	
trans-Nerolidol	193	0.0193	
α-Ocimene	-	-	
β-Ocimene	797	0.0797	
α-Pinene	1680	0.168	
β-Pinene	1410	0.141	
α-Terpinene	-	-	
γ-Terpinene	-	-	
Terpinolene	309	0.0309	
<b>TOTAL</b>	<b>38300</b>	<b>3.83</b>	



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

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"-" Not detected above RL.

**Reporting Limit (µg/g): 45.2**

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

**Analysis Date/Time:** 03/08/2023 2023  
**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)	-	0.0452	0.362	0.5	Kresoxim-methyl (143390-89-0)	-	0.0452	0.362	0.4
Acephate (30560-19-1)	-	0.0452	0.362	0.4	Malathion (121-75-5)	-	0.0452	0.362	0.2
Acetaminocyl (57960-19-7)	-	0.0452	0.362	2	Metalaxyl (57837-19-1)	-	0.0452	0.362	0.2
Acetamiprid (135410-20-7)	-	0.0452	0.362	0.2	Methiocarb (2032-65-7)	-	0.0452	0.362	0.2
Aldicarb (116-06-3)	-	0.0452	0.362	0.4	Methomyl (16752-77-5)	-	0.0452	0.362	0.4
Azoxystrobin (131860-33-8)	-	0.0452	0.362	0.2	Methyl parathion (298-0-0)	-	0.0452	0.362	0.2
Bifenazate (149877-41-8)	-	0.0452	0.362	0.2	MGK 264 (113-48-4)	-	0.0452	0.362	0.2
Bifenthrin (82657-04-3)	-	0.0452	0.362	0.2	Myclobutanil (88671-89-0)	-	0.0452	0.362	0.2
Boscalid (188425-85-6)	-	0.0452	0.362	0.4	Naled (300-76-5)	-	0.0452	0.362	0.5
Carbaryl (63-25-2)	-	0.0452	0.362	0.2	Oxamyl (23135-22-0)	-	0.0452	0.362	1
Carbofuran (1563-66-2)	-	0.0452	0.362	0.2	Pacllobutrazol (76738-62-0)	-	0.0452	0.362	0.4
Chlorantraniliprole (800008-45-7)	-	0.0452	0.362	0.2	Permethrins (52645-53-1)	-	0.0452	0.362	0.2
Chlorfenapyr (122453-73-0)	-	0.0452	0.362	1	Phosmet (732-11-6)	-	0.0452	0.362	0.2
Chlorpyrifos (2921-88-2)	-	0.0452	0.362	0.2	Piperonyl butoxide (51-03-6)	-	0.0452	0.362	2
Clofentezine (74115-24-5)	-	0.0452	0.362	0.2	Prallethrins (2331-36-9)	-	0.0452	0.362	0.2
Cyfluthrin (68359-37-5)	-	0.0452	0.362	1	Propiconazole (60207-90-1))	-	0.0452	0.362	0.4
Cypermethrin (52315-07-8)	-	0.0452	0.362	1	Propoxur (114-26-1)	-	0.0452	0.362	0.2
Daminozide (1596-84-5)	-	0.0452	0.362	1	Pyrethrins (8003-34-7)	-	0.0452	0.362	1
DDVP (62-73-7)	-	0.0452	0.362	0.1	Pyridaben (96489-71-3)	-	0.0452	0.362	0.2
Diazinon (333-41-5)	-	0.0452	0.362	0.2	Spinosad (168316-95-8)	-	0.0452	0.362	0.2
Dimethoate (60-51-5)	-	0.0452	0.362	0.2	Spiromesifen (283594-90-1)	-	0.0452	0.362	0.2
Ethoprophos (13194-48-4)	-	0.0452	0.362	0.2	Spirotetramat (203313-25-1)	-	0.0452	0.362	0.2
Etofenprox (80844-07-1)	-	0.0452	0.362	0.4	Spiroxamine (118134-30-8)	-	0.0452	0.362	0.4
Etoxazole (153233-91-1)	-	0.0452	0.362	0.2	Tebuconazole (80443-41-0)	-	0.0452	0.362	0.4
Fenoxycarb (72490-01-8)	-	0.0452	0.362	0.2	Thiacloprid (111988-49-9)	-	0.0452	0.362	0.2
(E)-Fenpyroximate (134098-61-6)	-	0.0452	0.362	0.4	Thiamethoxam (153719-23-4)	-	0.0452	0.362	0.2
Fipronil (120068-37-3)	-	0.0452	0.362	0.4	Trifloxystrobin (141517-21-7)	-	0.0452	0.362	0.2
Fonicamid (158062-67-0)	-	0.0452	0.362	1					
Fludioxinil (131341-86-1)	-	0.0452	0.362	0.4					
Hexythiazox (78587-05-0)	-	0.0452	0.362	1					
Imazalil (35554-44-0)	-	0.0452	0.362	0.2					
Imidacloprid (138261-41-3)	-	0.0452	0.362	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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*Kyle W. Felling*  
Kyle W. Felling, Ph.D.  
Laboratory Director



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<b>Cultivar (Strain) or Sample Description:</b> Grape Pie #2			<b>Date Completed:</b> 03/12/2023

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

<b>Analysis Date/Time:</b> 3/10/2023 0828 (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 (µg/kg)</u>	<u>LOD (µg/kg)</u>	<u>LOQ (µg/kg)</u>	<u>Action Level (µg/kg)</u>
Arsenic (As)	-	59.4	94.0	200
Cadmium (Cd)	-	59.4	94.0	200
Lead (Pb)	-	59.4	94.0	500
Mercury (Hg)	-	59.4	94.0	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:** 20230309 113      **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	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

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