

SUMMARY OF ANALYSIS (SAMPLE ID: SA25432)

Testing Location: OKC 3680 E. I-240 Service Rd. Oklahoma City, OK 73135 License: LAAA-4Y4X-Z72Z	Customer ID: 1648 Red Dirt Sungrown P.O. Box 1399 Guthrie, OK 73044 License: GAAA-41RN-M7KD	Order ID: OR7942 Lot Number: PE040702 Batch Number: Not Entered	Sample Type: Primary Matrix: Flower Mass: 5g Date Collected: 04/09/2020 Date Received: 04/09/2020
Cultivar (Strain) or Sample Description: Pineapple Express			Date Completed: 04/13/2020

*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.

*For Oklahoma, with the new OMMA rules to be effective April 1, 2020, limits on moisture are proposed at 15% and water activity at 0.65aw.

Moisture Content (%) 11.6	PASS/FAIL PASS	Water Activity (aw) 0.42 @ 22.2°C	PASS/FAIL PASS
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Cannabinoids (Top 3)	(%)	mg/g
THCa	18.6	186
CBGa	0.525	5
Δ9-THC	0.365	4
TOTAL CBD	0.0418	0.418
TOTAL THC	16.6	166
TOTAL CANNABINOIDS	19.8	198

Terpenes (Top 5)	(%)	µg/g
α-Pinene	0.235	2348
β-Myrcene	0.165	1650
β-Caryophyllene	0.150	1504
β-Pinene	0.110	1098
α-Humulene	0.102	1019
TOTAL TERPENES	0.882	8821

Contaminants	PASS/FAIL
Heavy Metals:	PASS
Microbiology:	PASS
Mycotoxins:	PASS
Pesticides:	PASS
Visual Inspection:	PASS



Scan the QR code to verify results.

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Kyle W. Felling, Ph.D.
Laboratory Director



CERTIFICATE OF ANALYSIS (SAMPLE ID: SA25432)

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Cultivar (Strain) or Sample Description: Pineapple Express **Date Completed:** 04/13/2020

CANNABINOID (POTENCY) PROFILE

Analysis Date/Time: 04/09/2020 1206 **Method:** HPLC/DAD **Moisture Content (%):** 11.6
Analyst: WW **Instrument:** Agilent 1100 **Water Activity (aw):** 0.4152 @ 22.2Â°C

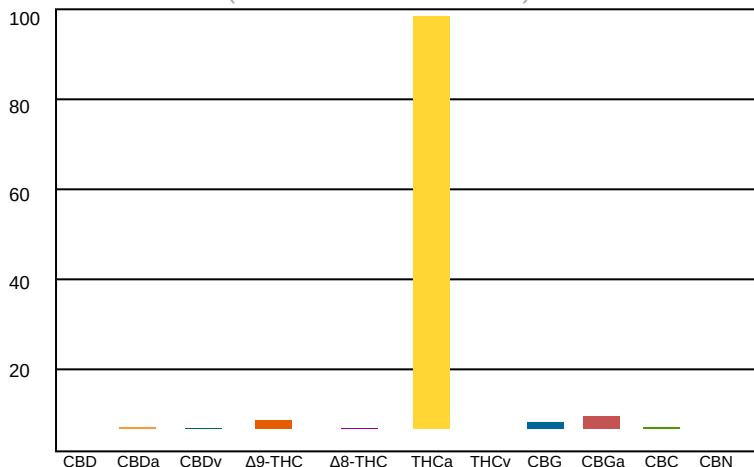
Cannabinoid	Result (%)	Result (mg/g)	Reporting Limit (mg/g)	Result (mg/mL)	Per Unit (mg)
CBD	-	-	0.0511	-	-
CBDa	0.0477	0.477	0.0511	-	0.477
CBDv	0.0146	0.146	0.0511	-	0.146
Δ9-THC	0.365	3.65	0.0511	-	4
Δ8-THC	0.014	0.14	0.0511	-	0.14
THCa	18.6	186	0.0511	-	186
THCv	-	-	0.0511	-	-
CBC	0.0421	0.421	0.0511	-	0.421
CBG	0.243	2.43	0.0511	-	2
CBGa	0.525	5.25	0.0511	-	5
CBN	-	-	0.0511	-	-
TOTAL	19.8	198			198
TOTAL THC	16.6	166			166
TOTAL CBD	0.0418	0.418			0.418



UNIT MASS (g): 1

"-" Not detected above RL.

Cannabinoid Distribution (% of Total Cannabinoids)



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 THC = (THCa x 0.877) + Δ9-THC
 Total CBD = (CBDa x 0.877) + CBD

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

Abbreviations: UV - Ultraviolet, HPLC - High Pressure Liquid Chromatography, RL - Reporting Limit, RPD - Relative Percent Difference, RSD - Relative Standard Deviation

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Cultivar (Strain) or Sample Description: Pineapple Express			Date Completed: 04/13/2020

TERPENOID PROFILE

Analysis Date/Time: 04/09/2020 1206 **Method:** HS/GC/FID (Internal Method-002) **Deviations from SOP:**
Analyst: DJ **Instrument:** Agilent 6890 None

<u>Terpene</u>	<u>Result (µg/g)</u>	<u>Result (%)</u>	
α-Bisabolol	-	-	
Camphene	83	0.00826	
δ-3-Carene	-	-	
β-Caryophyllene	1504	0.15	■
Caryophyllene oxide	-	-	
p-Cymene	-	-	
Eucalyptol	-	-	
Geraniol	-	-	
Guaiol	-	-	
α-Humulene	1019	0.102	■
Isopulegol	-	-	
d-Limonene	730	0.073	■
Linalool	-	-	
β-Myrcene	1650	0.165	■
cis-Nerolidol	-	-	
trans-Nerolidol	-	-	
α-Ocimene	-	-	
β-Ocimene	48	0.00482	
α-Pinene	2348	0.235	■
β-Pinene	1098	0.11	■
α-Terpinene	-	-	
γ-Terpinene	-	-	
Terpinolene	341	0.0341	
TOTAL	8821	0.882	



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

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"-" Not detected above RL.

Reporting Limit (µg/g): 2.04

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Cultivar (Strain) or Sample Description: Pineapple Express **Date Completed:** 04/13/2020

PESTICIDES PROFILE

Analysis Date/Time: 04/09/2020 1206
Analyst: DJ

Method: LC/MS/MS
Instrument: Waters Acquity/TQD

Deviations from SOP:
None

<u>Pesticide</u>	<u>Result (µg/g)</u>	<u>Action Level (µg/g)</u>
Abamectin (71751-41-2)	-	0.5
Azoxystrobin (131860-33-8)	-	0.5
Bifenazate* (149877-41-8)	-	0.5
Etoazazole (153233-91-1)	-	0.5
Imazalil (35554-44-0)	-	0.5
Imidacloprid (138261-41-3)	-	0.5
Malathion (121-75-5)	-	0.5
Myclobutanil (88671-89-0)	-	0.5
Permethrins* (52645-53-1)	-	0.5
Spinosad A (168316-95-8)	-	0.5
Spinosad D (168316-95-8)	-	0.5
Spiromesifen (283594-90-1)	-	0.5
Spirotetramat (203313-25-1)	-	0.5
Tebuconazole (80443-41-0)	-	0.5

Color Key

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

Reporting Limit (µg/g)
1/2 of AL

"-" not detected above reporting limit

"*" analyzed by GC/MS (all others analyzed by LC/MS/MS)

Permethrins measured as the cumulative residue of the *cis*- and *trans*-permethrin isomers.



Abbreviations: LC - Liquid Chromatography, GC - Gas Chromatography, MS - Mass Spectrometry, RL - Reporting Limit, AL - Action Level, CAS - Chemical Abstract Services

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

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MYCOTOXIN PROFILE

Analysis Date/Time: 04/09/2020 1206
Analyst: DJ

Method: LC/MS/MS
Instrument: Waters Acquity/TQD

Deviations from SOP:
None

<u>Mycotoxin</u>	<u>Result (µg/kg)</u>	<u>Action Level (µg/kg)</u>
Aflatoxin B1	-	20
Aflatoxin B2	-	20
Aflatoxin G1	-	20
Aflatoxin G2	-	20
Ochratoxin A	-	20



Abbreviations: EC - Escherichia Coli, CFU - Colony-Forming Unit, RL - Reporting Limit, AL - Action Level

Color Key

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

Reporting Limit (CFU/g)
1

"-" not detected above reporting limit

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HEAVY METAL PROFILE

Analysis Date/Time: 04/09/2020 1206
Analyst: CC

Method: ICP/MS
Instrument: PerkinElmer Elan 9000

Deviations from SOP:
None

<u>Heavy Metal</u>	<u>Result (µg/kg)</u>	<u>Action Level (µg/kg)</u>
Arsenic (As)	-	400
Cadmium (Cd)	-	440
Lead (Pb)	-	1000
Mercury (Hg)	-	200



Abbreviations: ICP - Inductively-Coupled Plasma, OES - Optical Emission Spectroscopy, MS - Mass Spectroscopy, RL - Reporting Limit, AL - Action Level

Color Key

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

Reporting Limit (µg/kg)
50

"-" not detected above reporting limit

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MICROBIOLOGICAL PROFILE

Analysis Date/Time: 04/09/2020 1206 **Method:** Hardy Diagnostics CompactDry **Deviations from SOP:**
Analyst: KB **Instrument:** Thermo Incubator None

<u>Bacteria/Microbe</u>	<u>Result (CFU/g)</u>	<u>Action Level (CFU/g)</u>
Aerobic Plate Count, Total	Absent	-
Escherichia Coli (E. Coli)	Absent	1
Mold	Absent	10000
Yeast	Absent	10000
Salmonella spp.	Absent	1



Abbreviations: EC - Escherichia Coli, CFU - Colony-Forming Unit, RL - Reporting Limit, AL - Action Level, NT - Not Tested

Color Key

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

Reporting Limit (CFU/g)
1

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