

**CERTIFICATE OF ANALYSIS**

**Project:** Medical Cannabis  
**Order ID:** 2019000367

**Customer ID:** 90477779  
**Customer Name:** Red Earth Cannabis

**Harvest/Extract Lot:**  
**Harvest/Extract Date:**

**Cultivar (Strain):** XXX OG  
**Sample Date:** 02/12/2019

**Lab ID:** 2019001307  
**Date Received:** 02/12/2019

**Sample Matrix:** Flower  
**Date Completed:** 02/22/2019

**Remarks:**

**Analysis Date/Time:** 02-14-2019 2002  
**Analyst:** KWF

**Method:** HPLC/UV  
**Instrument:** Agilent 1100

**Moisture Content (%):** 7.77  
**Water Activity (aw):** 0.4851 at 24.99°C

<u>Cannabinoid</u>	<u>Result (%)</u>	<u>Result (mg/g)</u>	<u>Reporting Limit (mg/g)</u>	<u>Per Unit (mg)</u>
CBD	<RL	<RL	0.050	-
CBDa	0.0483	0.483	0.050	0.480
CBDv	<RL	<RL	0.050	-
Δ9-THC	1.75	17.5	0.050	17.5
Δ8-THC	0.101	1.01	0.050	1.01
THCa	20.4	204	0.050	204
CBC	0.0286	0.286	0.050	0.290
CBG	0.0514	0.514	0.050	0.510
CBGa	0.0928	0.928	0.050	0.930
CBN	<RL	<RL	0.050	-
<b>TOTAL</b>	<b>22.5</b>	<b>225</b>		<b>225</b>



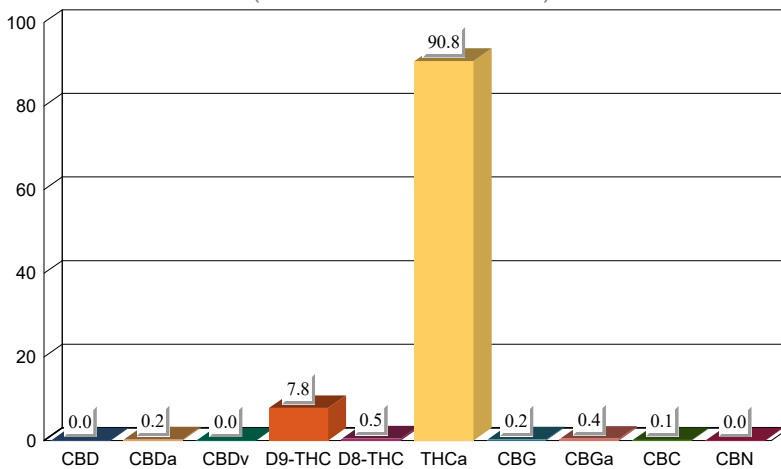
**UNIT MASS (g):** 1.00

**TOTAL THC** 19.7 197  
**TOTAL CBD** 0.0423 0.423

*Deviations from standard operating procedure:* None

**Cannabinoid Distribution**

(% of Total Cannabinoids)



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

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**TERPENOID PROFILE**

**Analysis Date/Time:** 02-20-2019 1944 **Method:** HS/GC/MS (Internal Method-002)  
**Analyst:** KWF

**Instrument:** Agilent 7890/5975

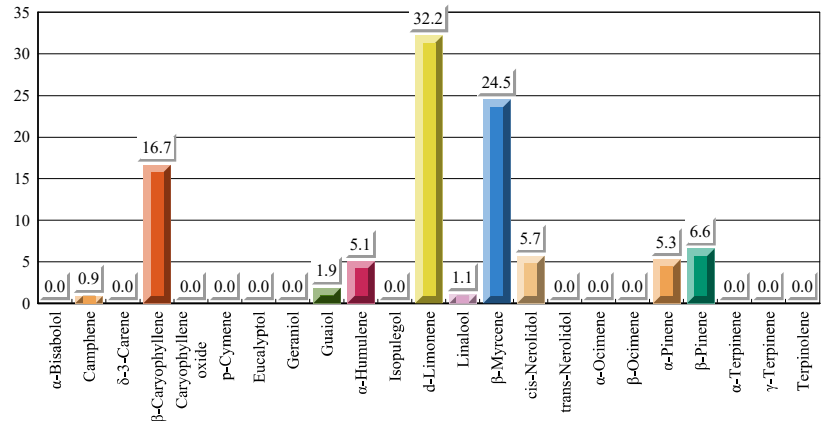
**Deviations from SOP:**  
None

<u>Terpene</u>	<u>Result</u> ( $\mu\text{g/g}$ )	<u>Result</u> (%, total terpenes)
$\alpha$ -Bisabolol	-	-
Camphene	71.1	0.915
$\delta$ -3-Carene	-	-
$\beta$ -Caryophyllene	1294	16.7
Caryophyllene oxide	-	-
p-Cymene	-	-
Eucalyptol	-	-
Geraniol	-	-
Guaiol	146	1.88
$\alpha$ -Humulene	394	5.07
Isopulegol	-	-
d-Limonene	2500	32.2
Linalool	85.6	1.10
$\beta$ -Myrcene	1903	24.5
cis-Nerolidol	445	5.73
trans-Nerolidol	-	-
$\alpha$ -Ocimene	-	-
$\beta$ -Ocimene	-	-
$\alpha$ -Pinene	412	5.31
$\beta$ -Pinene	512	6.60
$\alpha$ -Terpinene	-	-
$\gamma$ -Terpinene	-	-
Terpinolene	-	-
<b>TOTAL</b>	<b>7763</b>	<b>100</b>



**Terpenoid Distribution**

(% of Total Terpenes)



**Reporting Limit ( $\mu\text{g/g}$ )**

11

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

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**Remarks:**

**HEAVY METAL PROFILE**

**Analysis Date/Time:** 02-20-2019 1614 **Method:** ICP-OES (EPA 200.7)  
**Analyst:** KWF **Instrument:** Agilent 720-ES

**Deviations from SOP:**  
None

<u>Heavy Metal</u>	<u>Result</u> ( $\mu\text{g}/\text{kg}$ )	<u>Action Level</u> ( $\mu\text{g}/\text{kg}$ )
Arsenic (As)	-	200
Cadmium (Cd)	-	200
Lead (Pb)	-	100
Mercury (Hg)	-	500



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

**Color Key**

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

**Reporting Limit ( $\mu\text{g}/\text{kg}$ )**  
50

"-" not detected above reporting limit

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**Date Completed:** 02/22/2019

**Remarks:**

**MICROBIOLOGICAL PROFILE**

**Analysis Date/Time:** 02-22-2019 1700 **Method:** Hardy Diagnostics CompactDry  
**Analyst:** KWF **Instrument:** Plate/Incubation (35°C)

**Deviations from SOP:**  
None

<u>Bacteria/Microbe</u>	<u>Result</u> (CFU/mL)	<u>Action Level</u> (CFU/mL)
Coliforms, Total	Absent	100
Escherichia Coli (E. Coli)	Absent	1
Yeast	Absent	1000
Mold	Absent	1000
Salmonella spp.	Absent	1



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/mL)**

1

"Absent" not detected above reporting limit

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**Lab ID:** 2019001307  
**Date Received:** 02/12/2019

**Sample Matrix:** Flower  
**Date Completed:** 02/22/2019

**Remarks:**

**PESTICIDE PROFILE**

**Analysis Date/Time:** 02-21-2019 1515 **Method:** LC/MS/MS and GC/MS  
**Analyst:** KWF

**Instrument:** Waters TQD and Agilent 7890/5975

**Deviations from SOP:** None

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



**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

Pyrethrin measured as the cumulative residue of pyrethrin I, cinerin I, and jasmolin I.

<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		

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

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