



# CERTIFICATE OF ANALYSIS

STATUS: **RELEASED** REVISION: 00

DATE: 01/31/2021

Analysis ID No. 210120  
 TDA License No. 2020002  
 ISO/IEC No. 1055838  
 Customer No. 20210058  
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CUSTOMER INFORMATION	SAMPLE INFORMATION
<b>Company Name:</b> Duck Creek Apothecary	<b>Submitted Sample Name:</b> Granny's Tonic Nano CBDa,CBG,CBD Tincture,1500 mg/30mL
<b>Address:</b> 902 N. Hwy 137; Lamesa, Texas 79331 USA	<b>Submitted Sample Lot:</b> Batch 100
<b>Phone Number:</b> 806-759-3061	<b>Submitted Sample Description:</b> Oil in 30 mL, Glass, Retail, Amber Bottle w/ Dropper Cap
<b>Contact Name / Email:</b> Al Crisp / lonestarginner@gmail.com	<b>Submitted Sample Product Type / Matrix:</b> CBD / Oil

TOTAL THC ASSAY					
Analysis	Test Method	LOQ	Specifications	Test Results	Pass / Fail
Δ9-THC	UHPLC-DAD	0.002 w/w%	w/w%: NMT 0.300 mg/g: NMT 3.0 (Δ9-THC States Only)	0.004 w/w% 0.038 mg/g	PASS
THCa	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	< LOQ	Results Reported
Total THC	UHPLC-DAD	0.002 w/w%	w/w%: NMT 0.300 mg/g: NMT 3.0	0.004 w/w% 0.038 mg/g	PASS
Measurement Uncertainty (MU) = 0.02% at 0.3% THC					

LABEL CLAIM					
Analysis	Test Method	LOQ	Specifications	Test Results	Pass / Fail
CBD, CBDa, CBG	UHPLC-DAD	0.002 w/w%	mg/g: Report Only mg/mL: Report Only* mg/Unit: 1,350 – 1,650 mg/Unit	45.187 mg/g 42.521 mg/mL 1,275.63 mg/Unit	Results Reported
CBD, CBDa, CBG	UHPLC-DAD	0.002 w/w%	% Label Claim: 90.0 to 110.0% Target: 100%	85.0%	Results Reported
Unit Mass: 30 mL (*Density = 0.941 g/mL)					

CANNABINOIDS ASSAY					
Analysis	Test Method	LOQ	Specifications	Test Results	Pass / Fail
CBD	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	4.464 w/w% 44.637 mg/g	Results Reported
CBDa	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	0.039 w/w% 0.395 mg/g	Results Reported
Δ9-THC	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	0.004 w/w% 0.038 mg/g	Results Reported
THCa	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	< LOQ	Results Reported
CBG	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	0.015 w/w% 0.155 mg/g	Results Reported
CBGa	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	< LOQ	Results Reported
CBN	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	0.013 w/w% 0.131 mg/g	Results Reported
CBNa	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	< LOQ	Results Reported

Santé Laboratories, LLC - 8201 East Riverside Drive, STE 650, Austin, Texas 78744 USA  
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CANNABINOIDS ASSAY					
Analysis	Test Method	LOQ	Specifications	Test Results	Pass / Fail
CBC	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	0.004 w/w% 0.042 mg/g	Results Reported
CBCa	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	< LOQ	Results Reported
CBL	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	< LOQ	Results Reported
CBDV	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	0.022 w/w% 0.218 mg/g	Results Reported
CBDVa	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	< LOQ	Results Reported
THCV	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	< LOQ	Results Reported
THCVa	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	< LOQ	Results Reported
Total CBD	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	4.498 w/w% 44.984 mg/g	Results Reported
Total Cannabinoids	UHPLC-DAD	0.002 w/w%	w/w%: Report Only mg/g: Report Only	4.562 w/w% 45.616 mg/g	Results Reported

RESIDUAL SOLVENTS ASSAY					
Analysis	Test Method	LOQ	Specifications	Test Results	Pass / Fail
1,1-Dichloroethene	USP <467> by GC-MS	0.4 ppm	NMT 8 ppm	< LOQ	PASS
1,1,1-Trichloroethane	USP <467> by GC-MS	75 ppm	NMT 1,500 ppm	< LOQ	PASS
1,2-Dichloroethane	USP <467> by GC-MS	0.25 ppm	NMT 5 ppm	< LOQ	PASS
Benzene	USP <467> by GC-MS	0.1 ppm	NMT 2 ppm	< LOQ	PASS
Carbon tetrachloride	USP <467> by GC-MS	0.2 ppm	NMT 4 ppm	< LOQ	PASS
1,2-dichloroethene (E,Z)	USP <467> by GC-MS	93.5 ppm	NMT 1870 ppm	< LOQ	PASS
1,2-Dimethoxyethane	USP <467> by GC-MS	5 ppm	NMT 100 ppm	< LOQ	PASS
1,2,3,4-tetrahydronaphthalene	USP <467> by GC-MS	5 ppm	NMT 100 ppm	< LOQ	PASS
1,4-Dioxane	USP <467> by GC-MS	19 ppm	NMT 380 ppm	< LOQ	PASS
2-Hexanone	USP <467> by GC-MS	2.5 ppm	NMT 50 ppm	< LOQ	PASS
4-methyl-2-pentanone	USP <467> by GC-MS	225 ppm	NMT 4,500 ppm	< LOQ	PASS
Acetonitrile	USP <467> by GC-MS	20.5 ppm	NMT 410 ppm	< LOQ	PASS
Chlorobenzene	USP <467> by GC-MS	18 ppm	NMT 360 ppm	< LOQ	PASS
Chloroform	USP <467> by GC-MS	3 ppm	NMT 60 ppm	< LOQ	PASS
Cumene	USP <467> by GC-MS	3.5 ppm	NMT 70 ppm	< LOQ	PASS

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Cyclohexane	USP <467> by GC-MS	194 ppm	NMT 3,880 ppm	< LOQ	PASS
Dichloromethane	USP <467> by GC-MS	30 ppm	NMT 600 ppm	< LOQ	PASS
Ethylbenzene	USP <467> by GC-MS	108.5 ppm	NMT 2,170 ppm	< LOQ	PASS
Hexane, n-	USP <467> by GC-MS	14.5 ppm	NMT 290 ppm	< LOQ	PASS
Methanol	USP <467> by GC-MS	150 ppm	NMT 3,000 ppm	< LOQ	PASS
Methylcyclohexane	USP <467> by GC-MS	59 ppm	NMT 1,180 ppm	< LOQ	PASS
Nitromethane	USP <467> by GC-MS	2.5 ppm	NMT 50 ppm	< LOQ	PASS
Pyridine	USP <467> by GC-MS	10 ppm	NMT 200 ppm	< LOQ	PASS
Sulfolane	USP <467> by GC-MS	8 ppm	NMT 160 ppm	< LOQ	PASS
Tetrahydrofuran	USP <467> by GC-MS	36 ppm	NMT 720 ppm	< LOQ	PASS
Toluene	USP <467> by GC-MS	44.5 ppm	NMT 890 ppm	< LOQ	PASS
Trichloroethene	USP <467> by GC-MS	4 ppm	NMT 80 ppm	< LOQ	PASS
Xylene, m-	USP <467> by GC-MS	108.5 ppm	NMT 2,170 ppm	< LOQ	PASS
Xylene, o-	USP <467> by GC-MS	108.5 ppm	NMT 2,170 ppm	< LOQ	PASS
Xylene, p-	USP <467> by GC-MS	108.5 ppm	NMT 2,170 ppm	< LOQ	PASS
1-Butanol	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
1-Pentanol	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
1-Propanol	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
2-Butanol	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
2-Butanone	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
2-methyl-1-propanol	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
2-Propanol	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
3-methyl-1-butanol	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Acetone	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Anisole	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Butyl acetate	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Ethanol	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS

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Ethyl acetate	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Ethyl ether	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Ethyl formate	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Heptane, n-	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Isobutyl acetate	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Isopropyl acetate	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Methyl acetate	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
N,N-Dimethylsulfoxide	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Pentane, n-	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Propyl acetate	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
t-Butyl Methyl Ether	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Triethylamine	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Butane, iso-	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Butane, n-	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Propane	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
1,1-Dichloroethene	USP <467> by GC-MS	0.4 ppm	NMT 8 ppm	< LOQ	PASS
1,1,1-Trichloroethane	USP <467> by GC-MS	75 ppm	NMT 1,500 ppm	< LOQ	PASS

## PESTICIDES ASSAY

Analysis	Test Method	LOQ	Specifications	Test Results	Pass / Fail
Acetamiprid	LC-MS/MS & GC-MS/MS	0.050 ppm	NMT 0.200 ppm	< LOQ	PASS
Aldicarb	LC-MS/MS & GC-MS/MS	0.050 ppm	NMT 0.400 ppm	< LOQ	PASS
Azoxystrobin	LC-MS/MS & GC-MS/MS	0.010 ppm	NMT 0.200 ppm	< LOQ	PASS
Bifenazate	LC-MS/MS & GC-MS/MS	0.005 ppm	NMT 0.200 ppm	< LOQ	PASS
Boscalid	LC-MS/MS & GC-MS/MS	0.050 ppm	NMT 0.200 ppm	< LOQ	PASS
Carbaryl (Sevin)	LC-MS/MS & GC-MS/MS	0.100 ppm	NMT 0.500 ppm	< LOQ	PASS
Carbofuran	LC-MS/MS & GC-MS/MS	0.050 ppm	NMT 0.200 ppm	< LOQ	PASS
Chlorantraniliprole	LC-MS/MS & GC-MS/MS	0.100 ppm	NMT 0.200 ppm	< LOQ	PASS

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PESTICIDES ASSAY					
Analysis	Test Method	LOQ	Specifications	Test Results	Pass / Fail
Chlorpyrifos	LC-MS/MS & GC-MS/MS	0.050 ppm	NMT 0.600 ppm	< LOQ	PASS
Cypermethrin	LC-MS/MS & GC-MS/MS	0.025 ppm	NMT 18.0 ppm	< LOQ	PASS
Diazinon	LC-MS/MS & GC-MS/MS	0.050 ppm	NMT 2.600 ppm	< LOQ	PASS
Dichlorvos	LC-MS/MS & GC-MS/MS	0.050 ppm	NMT 0.100 ppm	< LOQ	PASS
Ethoprophos (Prophos)	LC-MS/MS & GC-MS/MS	0.050 ppm	NMT 0.400 ppm	< LOQ	PASS
Etofenprox	LC-MS/MS & GC-MS/MS	0.050 ppm	NMT 0.400 ppm	< LOQ	PASS
Fipronil	LC-MS/MS & GC-MS/MS	0.050 ppm	NMT 1.000 ppm	< LOQ	PASS
Flonicamid	LC-MS/MS & GC-MS/MS	0.050 ppm	NMT 1.000 ppm	< LOQ	PASS
Imidacloprid	LC-MS/MS & GC-MS/MS	0.005 ppm	NMT 0.400 ppm	< LOQ	PASS
Metalaxyl	LC-MS/MS & GC-MS/MS	0.100 ppm	NMT 0.200 ppm	< LOQ	PASS
Methiocarb	LC-MS/MS & GC-MS/MS	0.050 ppm	NMT 0.400 ppm	< LOQ	PASS
Methomyl	LC-MS/MS & GC-MS/MS	0.200 ppm	NMT 0.400 ppm	< LOQ	PASS
Methyl parathion	LC-MS/MS & GC-MS/MS	0.050 ppm	NMT 8.500 ppm	< LOQ	PASS
Myclobutanil	LC-MS/MS & GC-MS/MS	0.005 ppm	NMT 0.300 ppm	< LOQ	PASS
Oxamyl	LC-MS/MS & GC-MS/MS	0.250 ppm	NMT 1.000 ppm	< LOQ	PASS
Permethrin (mix of isomers)	LC-MS/MS & GC-MS/MS	0.020 ppm	NMT 1.100 ppm	< LOQ	PASS
Pyridaben	LC-MS/MS & GC-MS/MS	0.050 ppm	NMT 0.200 ppm	< LOQ	PASS
Spiroxamine	LC-MS/MS & GC-MS/MS	0.050 ppm	NMT 2.000 ppm	< LOQ	PASS
Tebuconazole	LC-MS/MS & GC-MS/MS	0.005 ppm	NMT 0.400 ppm	< LOQ	PASS
Thiacloprid	LC-MS/MS & GC-MS/MS	0.050 ppm	NMT 0.200 ppm	< LOQ	PASS
Thiamethoxam	LC-MS/MS & GC-MS/MS	0.025 ppm	NMT 0.200 ppm	< LOQ	PASS



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MYCOTOXINS ASSAY					
Analysis	Test Method	LOQ	Specifications	Test Results	Pass / Fail
Total Aflatoxins	LC-MS/MS	5 ppb	NMT 20 ppb (20 mcg/mL)	< LOQ	PASS
Aflatoxin B1	LC-MS/MS	5 ppb	Report Only	< LOQ	Results Reported
Aflatoxin B2	LC-MS/MS	5 ppb	Report Only	< LOQ	Results Reported
Aflatoxin G1	LC-MS/MS	5 ppb	Report Only	< LOQ	Results Reported
Aflatoxin G2	LC-MS/MS	5 ppb	Report Only	< LOQ	Results Reported
Ochratoxin A	LC-MS/MS	5 ppb	NMT 20 ppb (20 mcg/mL)	< LOQ	PASS

HEAVY METALS ASSAY					
Analysis	Test Method	LOQ	Specifications	Test Results	Pass / Fail
Lead	USP <232> <233> by ICP-MS	10 ppb	NMT 1,000 ppb	< LOQ	PASS
Mercury	USP <232> <233> by ICP-MS	5 ppb	NMT 500 ppb	< LOQ	PASS
Arsenic	USP <232> <233> by ICP-MS	10 ppb	NMT 1,500 ppb	< LOQ	PASS
Cadmium	USP <232> <233> by ICP-MS	10 ppb	NMT 300 ppb	< LOQ	PASS

MICROBIOLOGICAL ASSAY					
Analysis	Test Method	LOQ	Specifications	Test Results	Pass / Fail
Total Aerobic Plate Count (TAPC)	Isolation Agar	10 CFU/gm	NMT 1,000 CFU/gm	< LOQ	PASS
Total Yeast & Mold (TYM)	Isolation Agar	10 CFU/gm	NMT 100 CFU/gm	< LOQ	PASS
Escherichia coli (E. coli)	Isolation Agar	1 CFU/gm	Absent	Absent	PASS
Campylobacter	Isolation Agar	1 CFU/gm	Absent	Absent	PASS
Listeria Monocytogenes	Isolation Agar	1 CFU/gm	Absent	Absent	PASS
Salmonella	Isolation Agar	1 CFU/gm	Absent	Absent	PASS
Shiga-Toxin E.coli (STEC)	Isolation Agar	1 CFU/gm	Absent	Absent	PASS
Staphylococcus aureus	Isolation Agar	1 CFU/gm	Absent	Absent	PASS
Yersinia	Isolation Agar	1 CFU/gm	Absent	Absent	PASS

TESTING FACILITY INFORMATION	SAMPLE INFORMATION
<b>Santé Laboratories</b> 8201 East Riverside Drive, STE 650 Austin, Texas 78744 USA	<b>Santé Sample ID:</b> 210120 <b>Receipt Date:</b> 01/20/2021 / 2:00 PM CST / S. ORTEGA <b>Receipt Condition:</b> Good <b>Analysis Start Date:</b> 01/20/2021



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## ADDITIONAL REPORT NOTES

The reported results presented in this document is only applicable to samples submitted to Santé Laboratories for testing and may not represent the entire lot and/or batch produced by the manufacturer. \*Density = 0.941 g/mL and a fill volume of 30 mL. Specifications for microbiology, pesticides, solvents, and heavy metals according to limits defined by Texas DSHS for Consumable Hemp. ©2020 Santé Laboratories, LLC – All Rights Reserved


## VERSION HISTORY

Version	Effective Date	Summary of Changes
00	01/31/2021	Initial Release

## PRODUCT SAMPLE / IMAGE



## REVIEWED AND APPROVED BY

DocuSigned by:  Brian Sloat 1DA7685D65C740B...	1/31/2021 Date	DD-MM-YY
<b>Brian Sloat, Ph.D.</b> Chief Scientific Officer / Quality Manager Santé Laboratories		