



Certificate ID: **50414-86**

Received: **3/11/19**

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NSA Holdings, LLC.

Client Sample ID: **LE_190143_030519**



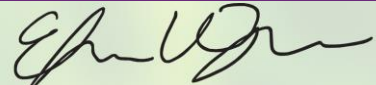
359 Indian Creek Dr.

Lot Number: **LE190143**

Levittown, PA 19057

Matrix: **Tincture - MCT Oil**

Attn:

Authorization: Elizabeth R. Wagoner, Lab Director	Signature: 	Date: 6/5/2019
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The data contained within this report was collected in accordance with the requirements of ISO/IEC17025:2005. I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

CN: Cannabinoid Profile & Potency [WI-10-17 & WI-10-17-01]

Analyst: **LG**

Test Date: **3/22/2019**

The client sample was analyzed for plant-based cannabinoids by Liquid Chromatography (LC). The collected data was compared to data collected for certified reference standards at known concentrations.

50414-CN

ID	Weight %	Concentration		
D9-THC	0.17 wt %	1.62 mg/mL		
THCV	ND	ND		
CBD	25.83 wt %	246.15 mg/mL		
CBDV	0.11 wt %	1.04 mg/mL		
CBG	0.04 wt %	0.40 mg/mL		
CBC	0.14 wt %	1.34 mg/mL		
CBN	0.02 wt %	0.17 mg/mL		
THCA	ND	ND		
CBDA	0.02 wt %	0.18 mg/mL		
CBGA	ND	ND		
D8-THC	ND	ND		
exo-THC	ND	ND		
Total	26.33 wt%	250.90 mg/mL	0%	Cannabinoids (wt%) 25.8%
Max THC	0.17 wt%	1.62 mg/mL		
Max CBD	25.85 wt%	246.31 mg/mL		

Max THC (and Max CBD) are calculated values for total cannabinoids after heating, assuming complete decarboxylation of the acid to the neutral form. It is calculated based on the weight loss of the acid group during decarboxylation: Max THC = (0.877 x THCA) + THC. This calculation does not include other cannabinoid isomers (eg. D8-THC and exo-THC). ND = None detected above the limits of detection (LLD)

HM: Heavy Metal Analysis [WI-10-13]

Analyst: JFD

Test Date: 3/19/2019

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

50414-HM

Symbol	Metal	Conc. ¹	Units	MDL	Use Limits ²		Units	Status
					All	Ingestion		
As	Arsenic	ND	µg/kg	4	200	1500	µg/kg	PASS
Cd	Cadmium	ND	µg/kg	1	200	500	µg/kg	PASS
Hg	Mercury	ND	µg/kg	2	100	1500	µg/kg	PASS
Pb	Lead	ND	µg/kg	2	500	1000	µg/kg	PASS

1) ND = None detected to Lowest Limits of Detection (LLD)

2) MA Dept. of Public Health: Protocol for MMJ and MIPS, Exhibit 4(a) for all products.

3)USP exposure limits based on daily oral dosing of 1g of concentrate for a 110 lb person.

MB1: Microbiological Contaminants [WI-10-09]

Analyst: MM

Test Date: 3/11/2019

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

50414-MB1

Symbol	Analysis	Results	Units	Limits*	Status
AC	Total Aerobic Bacterial Count	<100	CFU/g	100,000 CFU/g	PASS
CC	Total Coliform Bacterial Count	<100	CFU/g	1,000 CFU/g	PASS
EB	Total Bile Tolerant Gram Negative Count	<100	CFU/g	1,000 CFU/g	PASS
YM	Total Yeast & Mold	<100	CFU/g	10,000 CFU/g	PASS

Note: All recorded Microbiological tests are within the established limits.

VC: Analysis of Volatile Organic Compounds [WI-10-07]

Analyst: CMA

Test Date: 3/14/2019

The client sample was analyzed by Head-Space Gas Chromatography (HS-GC). The collected data was compared to data collected for certified reference standards at known concentrations.

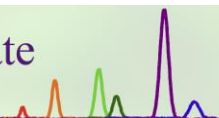
50414-VC

Compound	CAS	Amount ¹	Limit ²	RL	Status
Propane	74-98-6	ND	1,000 ppm	2	PASS
Isobutane	75-28-5	ND	1,000 ppm	2	PASS
Butane	106-97-8	ND	1,000 ppm	2	PASS
Methanol	67-56-1	ND	3,000 ppm	20	PASS
Ethanol	64-17-5	ND	5,000 ppm	20	PASS
Acetone	67-64-1	102 ppm	5,000 ppm	20	PASS
Isopropanol	67-63-0	ND	5,000 ppm	20	PASS
Acetonitrile	75-05-8	ND	410 ppm	20	PASS
Hexane	110-54-3	ND	290 ppm	20	PASS
Heptane	142-82-5	ND	5,000 ppm	20	PASS

1) ND = Not detected at a level greater than the Reporting Limit (RL).

2) In ppm, based on USP recommended limits for residual solvents, adopted by the Massachusetts Department of Public Health on 3/31/16. Butane/Propane limits are based on limits established for state of Colorado.

END OF REPORT



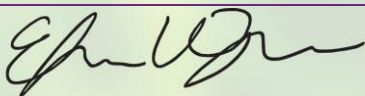
Certificate ID: **56017-86**
 Client Sample ID: **LE_190143_030519**
 Lot Number: **LE190143**
 Matrix: **Tincture - MCT Oil**

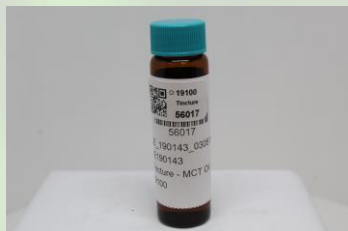
Received: **5/30/19**

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NSA Holdings, LLC.
359 Indian Creek Dr.
Levittown, PA 19057
 Attn:

Authorization: Elizabeth R. Wagoner, Lab Director	Signature: 	Date: 6/5/2019
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EA: Elemental Analysis [WI-10-13]

Analyst: *JFD*

Test Date: 6/3/2019

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

56017-EA

Symbol	Metal	Conc. ¹	MDL	Limits ²	Status
Al	Aluminum	177 ug/kg	5 ug/kg	-	
As	Arsenic	ND	4 ug/kg	150 ug/kg	PASS
Cd	Cadmium	ND	1 ug/kg	2500 ug/kg	PASS
Ca	Calcium	ND	500 ug/kg	-	
Cr	Chromium	ND	5 ug/kg	-	
Co	Cobalt	ND	10 ug/kg	-	
Cu	Copper	ND	500 ug/kg	100000 ug/kg	PASS
Fe	Iron	ND	5 ug/kg	-	
Pb	Lead	ND	2 ug/kg	500 ug/kg	PASS
Mg	Magnesium	526 ug/kg	500 ug/kg	-	
Mn	Manganese	ND	500 ug/kg	-	
Hg	Mercury	ND	2 ug/kg	1500 ug/kg	PASS
Mo	Molybdenum	ND	50 ug/kg	10000 ug/kg	PASS
Ni	Nickel	ND	50 ug/kg	50000 ug/kg	PASS
P	Phosphorus	1,309 ug/kg	500 ug/kg	-	
K	Potassium	4,353 ug/kg	5 ug/kg	-	
Se	Selenium	ND	10 ug/kg	-	
Ag	Silver	ND	10 ug/kg	-	
S	Sulfur	946 ug/kg	5 ug/kg	-	
Sn	Tin	ND	5000 ug/kg	-	
Zn	Zinc	ND	5 ug/kg	-	

1) ND = None detected to the Method Detection Limit (MDL)
 2) USP recommended maximum daily limits for oral drug product.

MB2: Pathogenic Bacterial Contaminants [WI-10-10]*Analyst: LabAdmin**Test Date: 5/31/2019*

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

56017-MB2

Test ID	Analysis	Results	Units	Limits*	Status
56017-ECPT	E. coli (O157)	Negative	NA	Non Detected	PASS
56017-SPT	Salmonella	Negative	NA	Non Detected	PASS

Note: All recorded pathogenic bacteria tests passed.

MY: Mycotoxin Testing [WI-10-05]*Analyst: CJB**Test Date: 5/31/2019*

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

56017-MY

Test ID	Date	Results	MDL	Limits	Status*
Total Aflatoxin	5/31/2019	< MDL	2 ppb	< 20 ppb	PASS
Total Ochratoxin	5/31/2019	< MDL	3 ppb	< 20 ppb	PASS

END OF REPORT



NSA Holdings, LLC
359 Indian Creek Dr.
Levittown, PA 19057

Report Number: P190922
Report Date: June 07, 2019
Client Project ID:

Client Sample ID: 2144
PAL Sample ID: P190922-01

Sample Date: 05/29/2019
Received Date: 05/30/2019
Extraction Date: 06/03/2019

Certificate of Analysis

Analysis Date	Analyte	Amount Detected	LOQ (mg/kg)	Notes	Analysis Date	Analyte	Amount Detected	LOQ (mg/kg)	Notes
JASBC 69(3):121-126, 2011 (GC-MS/MS)									
06/04/2019	a-BHC	ND	0.20		06/04/2019	Aldrin	ND	0.20	
06/04/2019	b-BHC	ND	0.20		06/04/2019	Benfluralin	ND	0.20	
06/04/2019	Bolstar	ND	0.20		06/04/2019	Bromopropylate	ND	0.20	
06/04/2019	Captan	ND	4.0		06/04/2019	Chlordane	ND	0.20	
06/04/2019	Chlorfenapyr	ND	0.20		06/04/2019	Chloroneb	ND	0.20	
06/04/2019	Chlorothalonil	ND	0.20		06/04/2019	Chlorpropham	ND	0.20	
06/04/2019	Chlorpyrifos	ND	0.20		06/04/2019	Chlorpyrifos-methyl	ND	0.20	
06/04/2019	cis-Nonachlor	ND	0.20		06/04/2019	Cyfluthrin	ND	1.0	
06/04/2019	Cypermethrin	ND	1.0		06/04/2019	Dacthal	ND	0.20	
06/04/2019	d-BHC	ND	0.20		06/04/2019	Deltamethrin	ND	1.0	
06/04/2019	Diazinon	ND	0.20		06/04/2019	Dichlobenil	ND	0.20	
06/04/2019	Dichlorofenthion	ND	0.20		06/04/2019	Dichlorvos	ND	0.20	
06/04/2019	Diclofop-methyl	ND	0.20		06/04/2019	Dicloran	ND	1.0	
06/04/2019	Dicofol	ND	0.20		06/04/2019	Diphenamid	ND	0.20	
06/04/2019	Dithiopyr	ND	0.20		06/04/2019	Esfenvalerate	ND	0.20	
06/04/2019	Ethalfuralin	ND	0.20		06/04/2019	Ethofumesate	ND	0.20	
06/04/2019	Ethoprophos	ND	0.20		06/04/2019	Ethoxyquin	ND	0.20	
06/04/2019	Etoxazole	ND	0.20		06/04/2019	Etridiazole	ND	0.20	
06/04/2019	Fenarimol	ND	0.20		06/04/2019	Fenvalerate	ND	0.20	
06/04/2019	Fipronil	ND	0.20		06/04/2019	Fludioxonil	ND	0.20	
06/04/2019	Flutolanil	ND	0.20		06/04/2019	g-BHC	ND	0.20	
06/04/2019	Heptachlor	ND	0.20		06/04/2019	Heptachlor epoxide	ND	0.20	
06/04/2019	Hexachlorobenzene	ND	0.20		06/04/2019	Kresoxim-methyl	ND	0.20	
06/04/2019	lambda-Cyhalothrin	ND	0.40		06/04/2019	Malathion	ND	0.20	
06/04/2019	Mefenoxam	ND	0.20		06/04/2019	Metolachlor	ND	0.20	
06/04/2019	MGK-264	ND	0.20		06/04/2019	Myclobutanil	ND	0.20	
06/04/2019	o-Phenylphenol	ND	0.40		06/04/2019	Oxadiazon	ND	0.20	
06/04/2019	Oxyfluorfen	ND	0.40		06/04/2019	p,p'-DDD	ND	0.20	
06/04/2019	p,p'-DDE	ND	0.20		06/04/2019	p,p'-DDT	ND	0.20	
06/04/2019	Pacllobutrazol	ND	0.20		06/04/2019	Parathion-methyl	ND	0.20	
06/04/2019	Pendimethalin	ND	0.20		06/04/2019	Pentachlorophenyl methyl sulfide	ND	0.20	
06/04/2019	Permethrin	ND	0.40		06/04/2019	Pirimicarb	ND	0.20	
06/04/2019	Procymidone	ND	0.20		06/04/2019	Prodiamine	ND	0.40	
06/04/2019	Pronamide	ND	0.20		06/04/2019	Pyriproxyfen	ND	0.20	
06/04/2019	Quinoxifen	ND	0.20		06/04/2019	Spirodiclofen	ND	0.20	
06/04/2019	Tetraconazole	ND	0.20		06/04/2019	trans-Nonachlor	ND	0.20	



NSA Holdings, LLC
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Levittown, PA 19057

Report Number: P190922
Report Date: June 07, 2019
Client Project ID:

Client Sample ID: 2144
PAL Sample ID: P190922-01

Sample Date: 05/29/2019
Received Date: 05/30/2019
Extraction Date: 06/03/2019

Certificate of Analysis
(Continued)

Analysis Date	Analyte	Amount Detected	LOQ (mg/kg)	Notes	Analysis Date	Analyte	Amount Detected	LOQ (mg/kg)	Notes
JASBC 69(3):121-126, 2011 (GC-MS/MS) (Continued)									
06/04/2019	Trifluralin	ND	0.20						
JASBC 69(3):121-126, 2011 (LC-MS/MS)									
06/04/2019	3-Hydroxycarbofuran	ND	0.20		06/04/2019	Acephate	ND	0.80	
06/04/2019	Acequinocyl-Hydroxy	ND	1.0		06/04/2019	Acetamiprid	ND	0.20	
06/06/2019	Aldicarb	ND	0.20		06/04/2019	Aldicarb Sulfone	ND	0.20	
06/04/2019	Aldicarb Sulfoxide	ND	0.20		06/04/2019	Ametoctradin	ND	0.20	
06/04/2019	Atrazine	ND	0.20		06/04/2019	Azinphos-methyl	ND	0.40	
06/04/2019	Azoxystrobin	ND	0.20		06/04/2019	Bendiocarb	ND	0.20	
06/04/2019	Bensulide	ND	0.20		06/04/2019	Bifenazate	ND	0.20	
06/05/2019	Bifenthrin	ND	0.20		06/04/2019	Boscalid	ND	0.20	
06/04/2019	Bromacil	ND	0.20		06/04/2019	Carbaryl	ND	0.20	
06/04/2019	Carbendazim	ND	0.20		06/04/2019	Carbofuran	ND	0.20	
06/04/2019	Carfentrazone-ethyl	ND	0.20		06/04/2019	Chlorantraniliprole	ND	0.20	
06/04/2019	Clethodim	ND	0.40		06/04/2019	Clofentezine	ND	0.20	
06/04/2019	Clothianidin	ND	0.20		06/04/2019	Cyanazine	ND	0.20	
06/04/2019	Cyantraniliprole	ND	0.20		06/04/2019	Cyazofamid	ND	0.20	
06/06/2019	Cycloate	ND	0.40		06/05/2019	Cyflufenamid	ND	0.20	
06/05/2019	Cyflumetofen	ND	0.20		06/05/2019	Cymoxanil	ND	0.20	
06/05/2019	Daminozide	ND	1.0		06/04/2019	DCPMU	ND	0.20	
06/04/2019	Diazoxon	ND	0.20		06/04/2019	Diflubenzuron	ND	0.20	
06/04/2019	Dimethoate	ND	0.20		06/04/2019	Dimethomorph	ND	0.20	
06/04/2019	Dinotefuran	ND	0.20		06/04/2019	Disulfoton sulfone	ND	0.20	
06/04/2019	Diuron	ND	0.20		06/04/2019	d-Phenothrin	ND	0.50	
06/04/2019	Etofenprox	ND	0.20		06/04/2019	Famphur	ND	0.20	
06/04/2019	Fenamidone	ND	0.20		06/04/2019	Fenamiphos sulfone	ND	0.20	
06/04/2019	Fenamiphos sulfoxide	ND	0.20		06/04/2019	Fenazaquin	ND	0.20	
06/04/2019	Fenbuconazole	ND	0.20		06/04/2019	Fenoxycarb	ND	0.20	
06/04/2019	Fenpropathrin	ND	0.20		06/04/2019	Fenpyroximate	ND	0.20	
06/04/2019	Flonicamid	ND	1.0		06/04/2019	Fluometuron	ND	0.20	
06/04/2019	Fluopicolide	ND	0.20		06/04/2019	Fluopyram	ND	0.20	
06/04/2019	Fluoxastrobin	ND	0.20		06/04/2019	Flupyradifurone	ND	0.20	
06/04/2019	Fluridone	ND	0.20		06/04/2019	Flutriafol	ND	0.20	
06/04/2019	Fluvalinate	ND	0.20		06/04/2019	Fluxapyroxad	ND	0.20	
06/04/2019	Formetanate HCl	ND	0.20		06/04/2019	Hexazinone	ND	0.20	
06/04/2019	Hexythiazox	ND	0.20		06/04/2019	Imazalil	ND	0.20	
06/04/2019	Imidacloprid	ND	0.20		06/04/2019	Indaziflam	ND	0.20	



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NSA Holdings, LLC
359 Indian Creek Dr.
Levittown, PA 19057

Report Number: P190922
Report Date: June 07, 2019
Client Project ID:

Client Sample ID: 2144
PAL Sample ID: P190922-01

Sample Date: 05/29/2019
Received Date: 05/30/2019
Extraction Date: 06/03/2019

Certificate of Analysis
(Continued)

Table with 10 columns: Analysis Date, Analyte, Amount Detected, LOQ (mg/kg), Notes, Analysis Date, Analyte, Amount Detected, LOQ (mg/kg), Notes. Contains two columns of data for JASBC 69(3):121-126, 2011 (LC-MS/MS) (Continued).

Handwritten signature of Rick Jordan



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Levittown, PA 19057

Report Number: P190922
Report Date: June 07, 2019
Client Project ID:

Client Sample ID: 2144
PAL Sample ID: P190922-01

Sample Date: 05/29/2019
Received Date: 05/30/2019
Extraction Date: 06/03/2019

Notes and Definitions

<u>Notes</u>	<u>Definition</u>
LOQ	Limit of Quantitation
ND	Not Detected
*	Not included under current scope of accreditation

The results contained in this report relate only to the items tested.
 The results reflect the condition of the samples as received by PAL.
 Samples will be stored for a minimum of 60 days after the final report is issued, as described in our Quality Manual.
 Reports should not be reproduced, except in full, without written approval from PAL.
 PAL is accredited to ISO/IEC 17025:2017 Standard, by PJLA, Accreditation #64422, Testing.

Rick Jordan, Laboratory Manager