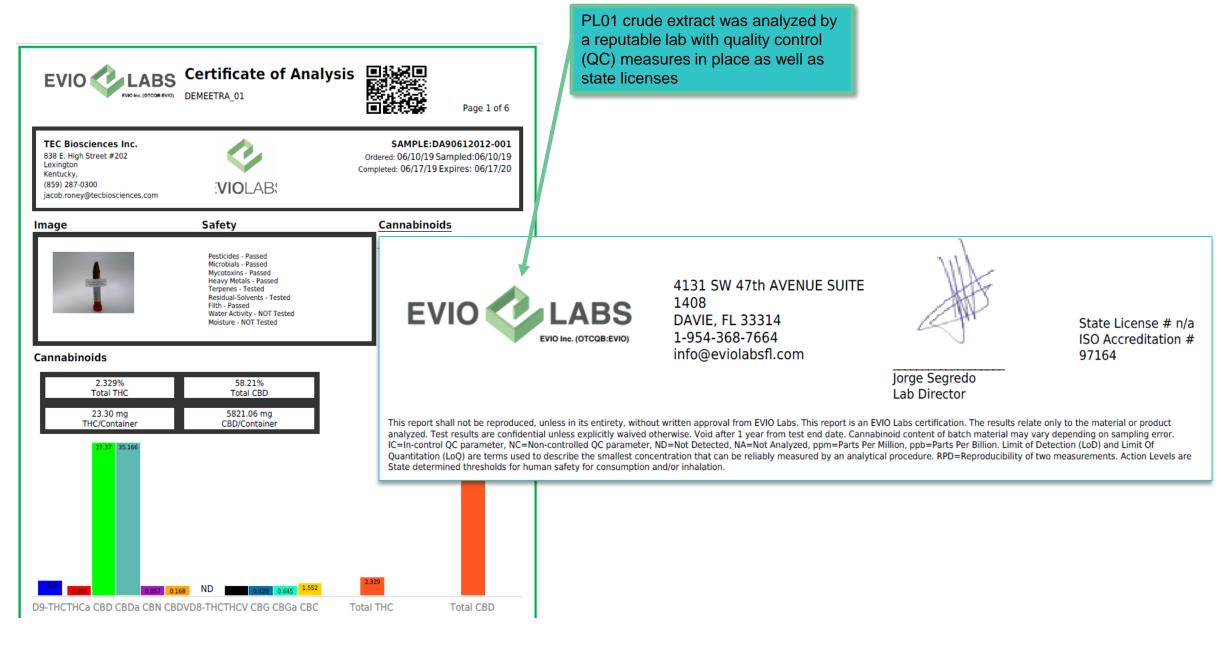


# PL01 Summary of the Certificate of Analysis (CoA) for both the Crude and Diluted hemp oils



- Following processing of hemp a concentrated oil is produced, the "Crude Extract"
- The Crude Extract is diluted with MCT (coconut oil) in order to produce an extract that is 50 mg/mL dropper CBD or 58 mg/mL dropper full-spectrum hemp extract including all cannabinoids and terpenes as the product, the "Diluted Extract"
- A review of the Crude Extract is useful to discover and acknowledge the trace cannabinoids, terpenes and their potential benefits
- The Diluted Extract is the product that we sell
- Data on any other chemicals and components is disclosed and discussed
- The unadulterated CoA's themselves are also attached following the summary

## **Crude Extract – Reputable lab analysis**



Pure Lyfe, LLC Lexington KY 40505 purelyfeinc.com

## Crude Extract – cannabinoid make-up & potential full-spectrum effect snapshot

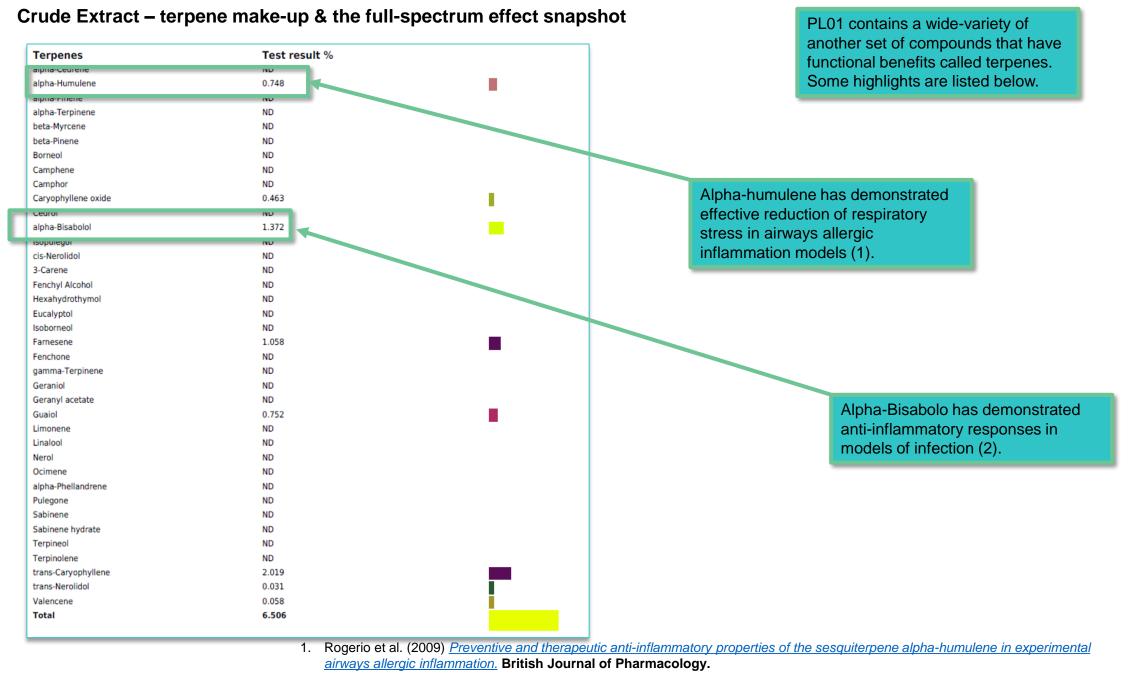


PL01 was tested for pesticides and other toxins. No chemicals or toxins were identified as expected with a USDA organic hemp product.

Cannabinoids levels were determined. Notably the extract has a wide variety of cannabinoids dominated by CBD. CBDa is generally converted to CBD by heat in the formulation process. The THC levels in the Crude Extract are too concentrated and must be diluted for the product to be sold.

CBD is well established to combat stress. However, CBC has been compared favorably to anti-inflammatory drugs such as NSAIDs (1) going as far back as the 1980s. CBG has also demonstrated positive effects on models of inflammatory bowel disease (2). The potential effect of these cannabinoids along with the terpenes on the next page would be missed in pure CBD products.

- 1. Wirth et al. (1980) Anti-inflammatory Properties Of Cannabichromene. Life Sciences.
- 2. Borrelli et al (2013) <u>Beneficial effect of the non-psychotropic plant cannabinoid cannabigerol on experimental</u> inflammatory bowel disease. **Biochemical Pharmacology.**



2. Cavalcante et al. (2019) <u>Effect of (-)-α-Bisabolol on the Inflammatory Response in Systemic Infection Experimental Model in C57BL/6</u> *Mice.* **Inflammation**.

## **Crude Extract – solvents & pathogen testing**

Residual solvent	Action Level(ppm)	Pass/Fail	Results(ppm)
1,2-Dichloroethane	2	Pass	ND
1,2-Dichloroethene	8	Pass	ND
1,4-Dioxane		Pass	ND
2-Butanol		Pass	ND
2-Ethoxyethanol		Pass	ND
2-Propanol	500	Pass	ND
Acetone	750	Pass	170.222
Acetonitrile	60	Pass	ND
Benzene	1	Pass	ND
Butanes (iso-butane)	2000	Pass	ND
Butanes (n-butane)		Pass	ND
Chloroform	2	Pass	ND
Cyclohexane		Pass	ND
Ethanol	5000	Fail	8255.175
Dichloromethane		Dacc	ND
Ethyl acetate	400	Pass	ND
Ethyl ether	500	Pass	ND
Ethylene Oxide	5	Pass	ND
Ethylbenzene		Pass	ND
Heptane	500	Pass	ND

PL01 was processed with the solvent ethanol.

At the Crude Extract level ethanol levels are above the action level of 5000 parts per million (ppm) however, as we will see in the Diluted Extract that ethanol is diluted well below the action limit at 11 ppm.

Mycotoxin Analysis-Analysis Method (SOP.1.30.065, SOP.1.4	40.065	Analytical Batch:DA003963	
Analyte	Results	Action Level	
aflatoxin_g2	ND	0.020	
aflatoxin_g1	ND	0.020	
aflatoxin_b2	ND	0.020	
aflatoxin_b1	ND	0.020	
ochratoxin_a	ND	0.020	
Aflatoxins B1, B2, G1, G2, and Ochratoxins A testing using LC-MS. (Method: SOP.T.3 Using LCMS. LOQ 1.0 ppb). Total Aflatoxins (Aflotoxin B1, B2, G1, G2) must be <20			
Micro Analysis-Analysis method :SOP.T.40.043		Analytical Batch: DA003976	

Reagent LOT/ID Dilution **Pathogens** Results aspergillus\_terreus\_1j2 not present in 1 gram. aspergillus\_niger not present in 1 gram. aspergillus\_fumigatus not present in 1 gram aspergillus\_flavus not present in 1 gram. salmonella specific gene not present in 1 gram. escherichia coli shigella spp not present in 1 gram.

Microbiological testing for Fungal and Bacterial Identification via Polymerase Chain Reaction (PCR) method consisting of sample DNA amplified via tandem Polymerase Chain Reaction (PCR) as a crude lysate which avoids purification. (Method SOP.T.4.0.043) If a pathogenic Escherichia Coli, Salmonella, Aspergillus fumigatus, Aspergillus flavus, Aspergillus for a sample, the sample fails the microbiological-impurity testing.

Fungal and bacterial pathogens were not identified.

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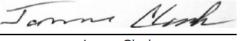
Consumables id

## Diluted Extract - Reputable lab analysis & and cannabinoid content

PL01 diluted extract was analyzed by a reputable lab with quality control (QC) measures in place as well as state licenses



12620 N. Cave Creek Road Suite 1A Phoenix, AZ 85022 (602) 466-9730 http://www.deltaverdelab.com

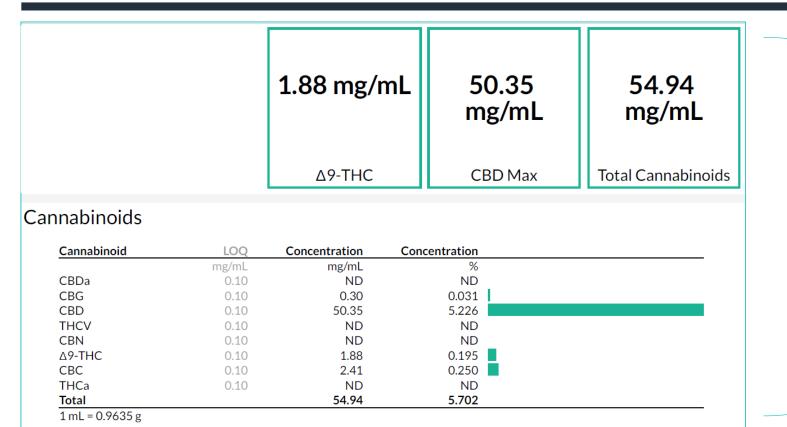


James Clark **Laboratory Director** 

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This product has been tested by Delta Verde Laboratory using validated testing methodologies. Values reported relate only to the product tested. Delta Verde Laboratory makes no claims as to the efficacy, safety or other risks associated with any detected or non-detected levels of any compounds reported herein. This Certificate shall not be reproduced except in full, without the written approval of Delta Verde Laboratory.



Cannabinoids in the Diluted Extract Product are listed. PL01 products are 50 mg/mL dropper CBD, roughly 55 mg/mL dropper total cannabinoids and 58 mg/mL dropper total hemp including the terpenes.

## **Diluted Extract – microbial and chemical analysis**

Analyte	Units	Status
	CFU/g	
Aerobic Bacteria	NR	NT
Coliforms	ND	Tested
E. Coli	ND	Tested
Enterobacteriaceae	NR	NT
Salmonella	NR	NT
Yeast & Mold	ND	Tested

No microbials were identified but Pure Lyfe also runs the product through a pharmaceutical grade filter for final sterilization prior to bottling.

No pesticides, solvents or heavy metals were detected above the action level. The ethanol was diluted way down to 11 PPM.

Analyte	LOQ	Mass	Status
	PPM	PPM	
Abamectin	0.003	ND	Tested
Acequinocyl	1.000	ND	Tested
Bifenazate	0.750	ND	Tested
Dimethomorph	3.000	ND	Tested
Etoxazole	0.350	ND	Tested
Fenhexamid	1.500	ND	Tested
Flonicamid	0.350	ND	Tested
Imidacloprid	0.003	ND	Tested
Myclobutanil	0.450	ND	Tested
Paclobutrazol	0.010	ND	Tested
Piperonyl Butoxide	0.100	ND	Tested
Pyrethrins	0.050	1.790	Tested
Spinetoram	0.085	ND	Tested
Spinosad	0.085	ND	Tested
Spirotetramat	0.050	ND	Tested
Thiamethoxam	0.001	ND	Tested
Trifloxystrobin	0.550	ND	Tested

Analyte	LOQ	Mass	Status
	PPM	PPM	
Propane	1	ND	Tested
Isobutane	1	ND	Tested
n-Butane	1	ND	Tested
Methanol	1	ND	Tested
Ethanol	1	11	Tested
Acetone	1	33	Tested
Isopropanol	1	<loq< td=""><td>Tested</td></loq<>	Tested
n-Hexane	1	2	Tested
Heptane	1	ND	Tested
Ethyl Acetate	1	ND	Tested
,			

Analyte	LOQ	Mass
	PPM	PPM
Arsenic	0.01	ND
Cadmium	0.01	ND
Lead	0.01	ND
Mercury	0.01	ND

Pure Lyfe, LLC Lexington KY 40505 purelyfeinc.com





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#### **TEC Biosciences Inc.**

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#### SAMPLE:DA90612012-001

Ordered: 06/10/19 Sampled: 06/10/19 Completed: 06/17/19 Expires: 06/17/20

#### **Image**

### Safety

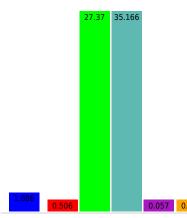
Pesticides - Passed Microbials - Passed Mycotoxins - Passed Heavy Metals - Passed Terpenes - Tested Residual-Solvents - Tested Filth - Passed Water Activity - NOT Tested Moisture - NOT Tested

#### **Cannabinoids**

2.329%	58.21%
Total THC	Total CBD
23.30 mg	5821.06 mg
THC/Container	CBD/Container

#### Cannabinoids

Analyte	Weight(%)	mg/g
D9-THC	1.886	18.86
THCa	0.506	5.06
CBD	27.37	273.7
CBDa	35.166	351.66
CBN	0.057	0.57
CBDV	0.168	1.68
D8-THC	ND	ND
THCV	0.088	0.88
CBG	0.428	4.28
CBGa	0.645	6.45
CBC	1.552	15.52
Total THC	2.329	23.29
Total CBD	58.21	582.1



ND 0.428 0.645 1.552 0.057 0.168

Total CBD

D9-THCTHCa CBD CBDa CBN CBDVD8-THCTHCV CBG CBGa CBC

Total THC

58.21



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#### SAMPLE:DA90612012-001

Ordered: 06/10/19 Sampled: 06/10/19 Completed: 06/17/19 Expires: 06/17/20

Terpenes	Test result %	
alpha-Cedrene	ND	
alpha-Humulene	0.748	
alpha-Pinene	ND	
alpha-Terpinene	ND	
beta-Myrcene	ND	
beta-Pinene	ND	
Borneol	ND	
Camphene	ND	
Camphor	ND	
Caryophyllene oxide	0.463	
Cedrol	ND	
alpha-Bisabolol	1.372	
Isopulegol	ND	<del></del>
cis-Nerolidol	ND	
3-Carene	ND	
Fenchyl Alcohol	ND	
Hexahydrothymol	ND	
Eucalyptol	ND	
Isoborneol	ND	
Farnesene	1.058	
Fenchone	ND	<del>-</del>
gamma-Terpinene	ND	
Geraniol	ND	
Geranyl acetate	ND	
Guaiol	0.752	
Limonene	ND	_
Linalool	ND	
Nerol	ND	
Ocimene	ND	
alpha-Phellandrene	ND	
Pulegone	ND	
Sabinene	ND	
Sabinene hydrate	ND	
Terpineol	ND	
Terpinolene	ND	
trans-Caryophyllene	2.019	
trans-Nerolidol	0.031	<del>-</del>
Valencene	0.058	Ī
Total	6.506	
		1
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## SAMPLE:DA90612012-001

Ordered: 06/10/19 Sampled: 06/10/19 Completed: 06/17/19 Expires: 06/17/20

Pesticides	LOQ	<b>Action Level</b>	Result	Pesticides	LOQ	Action	Result
Dimethoate	0.010	0.05	ND		_	Level	
Abamectin B1a	0.020	0.1	ND	Cypermethrin	0.020	0.5	ND
Acephate	0.010	0.1	ND	Daminozide	0.020	0.5	ND
Dimethomorph	0.005	0.05	ND	Metalaxyl	0.010	0.05	ND
Ethoprophos	0.010	0.05	ND	Dichloryos	0.050	0.1	ND
Acequinocyl	.05	0.1	ND	Methiocarb	0.010	0.05	ND
Acetamiprid	0.010	0.05	ND	Methomyl	0.010	0.1	ND
Etofenprox	0.010	0.05	ND	Diazanon	0.010	0.05	ND
Aldicarb	0.020	0.05	ND	Mevinphos	0.010	0.05	ND
Etoxazole	0.010	0.05	ND	Myclobutanil	0.010	0.1	ND
Azoxystrobin	0.010	0.05	ND	Naled	0.010	0.25	ND
Fenhexamid	.010	0.1	ND	Oxamyl	0.010	0.25	ND
Bifenazate	0.010	0.01	ND	Paclobutrazol	0.010	0.05	ND
Fenoxycarb	0.010	0.05	ND	Permethrins	0.050	0.1	ND
Fenpyroximate	0.010	0.5	ND	Phosmet	0.010	0.1	ND
Bifenthrin	0.010	0.1	ND	Piperonyl butoxide	0.010	3.0	ND
Carbaryl	0.010		ND	Prallethrin	0.050	0.1	ND
Fipronil	0.020	0.05	ND	Propiconazole	0.010	0.1	ND
Flonicamid	0.010	0.4	ND	Propoxur	0.010	0.1	ND
Carbofuran	0.010		ND	Pyrethrins (Pyrethrin I)	0.010	0.5	ND
Chlorantraniliprole	0.010		ND	Pyridaben	0.010	0.2	ND
Fludioxonil	0.010	0.1	ND	Spinosad (Spinosyn A)	0.010	0.1	ND
Hexythiazox	0.010	0.25	ND	Spinosad (Spinosyn D)	0.010	0.1	ND
Chlorfenapyr	.010	0.05	ND	Spiromesifen	0.010	0.1	ND
Imazalil	0.010	0.05	ND	Spirotetramat	0.020	0.1	ND
Chlorpyrifos	0.010	0.1	ND	Spiroxamine	0.010	0.05	ND
Imidacloprid	0.010	0.1	ND	Tebuconazole	0.010	0.05	ND
Clofentezine	0.010	0.2	ND	Thiacloprid	0.010	0.05	ND
Kresoxim-methyl	0.010	0.1	ND	Thiamethoxam	0.010	0.05	ND
Coumaphos	0.005	0.05	ND	Trifloxystrobin	0.010	0.1	ND
Malathion	0.010	0.05	ND	. ,		•	



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#### SAMPLE:DA90612012-001

Ordered: 06/10/19 Sampled: 06/10/19 Completed: 06/17/19 Expires: 06/17/20

Residual solvent	Action Level(ppm)	Pass/Fail	Results(ppm)
1,2-Dichloroethane	2	Pass	ND
1,2-Dichloroethene	8	Pass	ND
1,4-Dioxane		Pass	ND
2-Butanol		Pass	ND
2-Ethoxyethanol		Pass	ND
2-Propanol	500	Pass	ND
Acetone	750	Pass	170.222
Acetonitrile	60	Pass	ND
Benzene	1	Pass	ND
Butanes (iso-butane)	2000	Pass	ND
Butanes (n-butane)		Pass	ND
Chloroform	2	Pass	ND
Cyclohexane		Pass	ND
Ethanol	5000	Fail	8255.175
Dichloromethane		Pass	ND
Ethyl acetate	400	Pass	ND
Ethyl ether	500	Pass	ND
Ethylene Oxide	5	Pass	ND
Ethylbenzene		Pass	ND
Heptane	500	Pass	ND
Hexanes (2,2-dimethylbutane)	60	Pass	ND
Hexanes (2,3-dimethylbutane)	60	Pass	ND
Hexanes (2-methylpentane)	60	Pass	ND
Hexanes (3-methylpentane)	60	Pass	ND
Isopropyl acetate		Pass	ND
Methalene Chloride	125	Pass	ND
Methanol	250	Pass	ND
n-Hexane		Pass	ND
Pentanes (iso-pentane)		Pass	ND
Pentanes (n-pentane)	750	Pass	ND
Pentanes (neo-pentane)		Pass	ND
Propane	100	Pass	ND
Tetrahydrofuran		Pass	ND
Toluene	150	Pass	ND
Total Xylenes	150	Pass	ND
Trichloroethylene	25	Pass	ND



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#### SAMPLE:DA90612012-001

Ordered: 06/10/19 Sampled: 06/10/19 Completed: 06/17/19 Expires: 06/17/20

#### Cannabinoid Profile Test Result-Analysis Method :SOP.T.40.020, SOP.T.30.050 Analytical Batch:DA003982

Reagent LOT ID Dilution Consumables Id 061319.R12 180711 061119.R04 SFN-BX-1025 061119.R03 849C4-849AK 840C6-840H

Full spectrum cannabinoid analysis utilizing High Performance Liquid Chromatography with UV detection (HPLC-UV). (Method: SOP.T.30.050 for sample prep and Shimadzu High Sensitivity Method SOP.T.40.020 for analysis. LOQ for all cannabinoids is 1 mg/L).

#### Filth and foreign Materials-Analysis Method: SOP.T.40.013

This includes but is not limited to hair, insects, feces, packaging contaminants, and manufacturing waste and by-products. An SH-2B/T Stereo Microscope is use for inspection.

Mycotoxin Analysis-Analysis Method :SC	Analytical Batch:DA0039	
Analyte	Results	Action Level
aflatoxin_g2	ND	0.020
aflatoxin_g1	ND	0.020
aflatoxin_b2	ND	0.020
aflatoxin_b1	ND	0.020
ochratoxin_a	ND	0.020

Aflatoxins B1, B2, G1, G2, and Ochratoxins A testing using LC-MS. (Method: SOP.T.30.065 for Sample Preparation and SOP.T40.065 Procedure for Mycotoxins Quantification Using LCMS. LOQ 1.0 ppb). Total Aflatoxins (Aflotoxin B1, B2, G1, G2) must be <20µg/Kg. Ochratoxins must be <20µg/Kg.

#### Micro Analysis-Analysis method: SOP.T.40.043

#### Reagent LOT/ID Dilution Results **Pathogens** aspergillus terreus 1j2 not present in 1 gram. aspergillus\_niger not present in 1 gram. aspergillus fumigatus not present in 1 gram. aspergillus\_flavus not present in 1 gram. salmonella\_specific\_gene not present in 1 gram. escherichia\_coli\_shigella\_spp not present in 1 gram.

Microbiological testing for Fungal and Bacterial Identification via Polymerase Chain Reaction (PCR) method consisting of sample DNA amplified via tandem Polymerase Chain Reaction (PCR) as a crude lysate which avoids purification. (Method SOP.T.40.043) If a pathogenic Escherichia Coli, Salmonella, Aspergillus fumigatus, Aspergillus flavus, Aspergillus niger, or Aspergillus terreus is detected in 1g of a sample, the sample fails the microbiological-impurity testing.



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Analytical Batch: DA003976

Consumables id

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Analytical Batch: DA003962

Analytical Batch: DA003960

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#### SAMPLE:DA90612012-001

Ordered: 06/10/19 Sampled: 06/10/19 Completed: 06/17/19 Expires: 06/17/20

Pesticide Analysis-Analysis Method:SOP.T.30.065, SOP.T.40.065

Reagent LOT/ID

Dilution

Consumables ID

180711 280653964

061319.R13

Pesticide screen is performed using LC-MS which can screen down to below single digit ppb concentrations for regulated Pesticides. Currently we analyze for 57 Pesticides. (Method: SOP.T.30.065 Sample Preparation for Pesticides Analysis via LCMSMS and SOP.T.40.065 Procedure for Pesticide Quantification Using LCMS).

Heavy Metals Analysis-Analysis-Method:SOP.T.40.050, SOP.T.30.052

50

Dilution Consumables ID

061219.R06 061219.R17

Reagent LOT/ID

061119 R07

040219.21

060519.R25

061219.R05

061119.R08

030119.06

060319.01

Heavy Metals screening is performed using ICP-MS (Inductively Coupled Plasma - Mass Spectrometer) which can screen down to below single digit ppb concentrations for regulated heavy metals using Method SOP.T.30.052 Sample Preparation for Heavy Metals Analysis via ICP-MS and SOP.T.40.050 Heavy Metals Analysis via ICP-MS.

Metal Result **Action-Level** ND arsenic 0.2 cadmium ND 0.2 lead ND 0.5 mercury ND 0.1

#### Abbreviation:ppm=Parts Per Million Residual SolventsAnalysis Method:SOP.T.40.032

#### Analytical Batch : DA003896

Analytical Batch : DA003971

Residual solvents screening is performed using GC-MS which can detect below single digit ppm concentrations. Currently we analyze for 34 Residual solvents. (Method: SOP.T.30.042 Residual Solvents Analysis via GC-MS).

#### Terpenes screening-Analysis-Method:SOP.T.40.090

Terpenoid profile screening is performed using GC-MS with Liquid Injection (Gas Chromatography - Mass Spectrometer) which can screen 38 terpenes using Method SOP.T.40.091 Terpenoid Analysis Via GC-MS/MS



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