

CERTIFICATE OF ANALYSIS

PRODUCT NAME: PRODUCT STRENGTH: LOT NUMBER: **BEST BY DATE: HEMP EXTRACT LOT NUMBER:**

CBD Tincture - Lemon

450 mg 20LL007K11 07/15/2021 110419

Physical Attributes

Test	Method	Specification	Results
Color	SOP-100	Golden to Amber	PASS
Odor	SOP-100	Characteristic - coconut and hemp, lemon	PASS
Appearance	SOP-100	Golden to Amber oil in brown glass bottle with dropper	PASS
Primary Package Eval.	SOP-132	Container clean and free of filth. Container caps tight and shrink bands intact	PASS
Secondary Package Eval.	SOP-132	Labeling Compliance Checked, Cartons sturdy and clean. Sufficient cushion material exists. Box taped and secure.	PASS

Review of Third-Party Analysis

Panel	Method	Specification	Results	Pass/Fail
Potency - Total CBD	SOP-111	427.5-562.2 mg CBD LOQ*: 10 PPM† (0.001%)	<u>477.2</u>	PASS
Potency - D9-THC	SOP-111	None Detected LOQ: 10 PPM (0.001%)	ND	PASS
FL Compliant Pesticide Panel	SOP-111	Florida State Hemp Program Rule 5B-57.014: Action Limits for Pesticides	<u>ND</u>	PASS
Microbial - Stec E.Coli	SOP-111	Complies with USP 61/62	Below LOD	PASS
Microbial - Salmonella	SOP-111	Complies with USP 61/62	Below LOD	PASS
Microbial - Aspergillus	SOP-111	Complies with USP 61/62	Below LOD	PASS
CA Compliant Heavy Metal Panel	SOP-111	Arsenic (As): ≤1.5 PPM Cadmium (Cd): ≤0.5 PPM Mercury (Hg): ≤1.0 PPM Lead (Pb): ≤0.5 PPM	Below LOQ	PASS

* Level of Quantitation, † Parts Per Million

Quality Certified by:

Darcie Moran

02/12/2020

Darcie Moran Manager of Quality Assurance

Date



Order #: 48116 Order Name: 450.Lemon.007-rush Batch#: 20LL007K11 Received: 02/04/2020 Completed: 02/07/2020

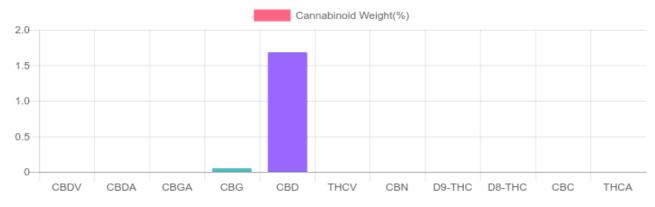


Cannabinoids Test

SHIMADZU INTEGRATED UPLC-PDA

GSL SOP 400	PREPARED: 02/	04/2020 15:53:44	UPLOADED: 02	2/05/2020 15:19:28
Cannabinoids	LOQ	weight(%)	mg/g	mg/bottle
D9-THC	10 PPM	N/D	N/D	N/D
THCA	10 PPM	N/D	N/D	N/D
CBD	10 PPM	1.683%	16.832	477.2
CBDA	20 PPM	N/D	N/D	N/D
CBDV	20 PPM	N/D	N/D	N/D
CBC	10 PPM	N/D	N/D	N/D
CBN	10 PPM	N/D	N/D	N/D
CBG	10 PPM	0.050%	0.501	14.2
CBGA	20 PPM	N/D	N/D	N/D
D8-THC	10 PPM	N/D	N/D	N/D
THCV	10 PPM	N/D	N/D	N/D
TOTAL D9-THC		N/D	N/D	N/D
TOTAL CBD*		1.683%	16.832	477.2
TOTAL CANNABINOIDS		1.733%	17.333	491.4

1 bottle = 30 ml per bottle x density (0.945) x Cannabinoid concentration



Reporting Limit 10 ppm *Total CBD = CBD + CBDA x 0.877

N/D - Not Detected, B/LOQ - Below Limit of Quantification

Dr. Andrew Hall, Ph.D., Chief Scientific Officer

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Ben Witten, MS, MT., Lab Director

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Sample





Order #: 48116 Order Name: 450.Lemon.007-rush Batch#: 20LL007K11 Received: 02/04/2020 Completed: 02/07/2020



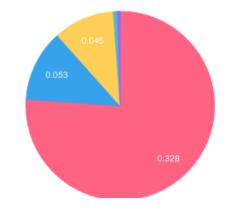
TERPENES: TOTAL (0.431%)

Headspace GCMS - Shimadzu GCMS QP2020 with HS20

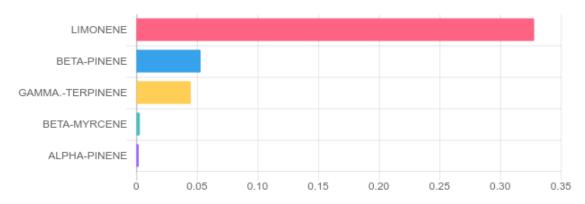
Terpene	Results (%)	LOQ (%) LOD (%)
ALPHA-PINENE	B/LOQ	0.0067% 0.0063%
BETA-MYRCENE	B/LOQ	0.0067% 0.0063%
BETA-PINENE	0.053%	0.0067% 0.0063%
GAMMATERPINENE	0.045%	0.0067% 0.0016%
LIMONENE	0.328%	0.0067% 0.0063%

GSL SOP 404 Prepared: 02/04/2020 16:58:08 Uploaded: 02/05/2020 08:34:47

Terpenes Breakdown



Top Terpenes Results:



Tested for but not present:

Dr. Andrew Hall, Ph.D., Chief Scientific Officer

CAMPHENE, 3-CARENE, ALPHA-TERPINENE, TRANS-BETA-OCIMENE, P-CYMENE, CIS-BETA-OCIMENE, EUCALYPTOL, TERPINOLENE, LINALOOL, ISOPULEGOL, GERANIOL, CARYOPHYLLENE, HUMULENE, CIS-NEROLIDOL, TRANS-NEROLIDOL, GUAIOL, CARYOPHYLLENE OXIDE, ALPHA-BISABOLOL

Ben Witten, MS, MT., Lab Director

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Order #: 48116 Order Name: 450.Lemon.007-rush Batch#: 20LL007K11 Received: 02/04/2020 Completed: 02/07/2020

PREPARED: 02/04/2020 16:53:59



PESTICIDE ANALYSIS:

GSL SOP 401

GCMS-MS - Shimadzu GCMS-TQ8040

Pesticide	Action Level (ppm)	Results (ppm)	LOQ (ppm)	LOD (ppm)
CAPTAN	0.700	N/D	0.003	0.001
CHLORDANE	0.100	N/D	0.003	0.001
CHLORFENAPYR	0.100	N/D	0.003	0.001
COUMAPHOS	0.100	N/D	0.003	0.001
CYFLUTHRIN	2.000	N/D	0.003	0.001

Action Level Results LOQ LOD Pesticide (ppm) (ppm) (ppm) (ppm) CYPERMETHRIN 1.000 N/D 0.003 0.001 FIPRONIL 0.100 N/D 0.003 0.001 FLUDIOXONIL 0.100 N/D 0.003 0.001 PARATHION-METHYL 0.100 N/D 0.003 0.001 PENTACHLORONITROBENZENE N/D 0.001 0.100 0.003

UPLOADED: 02/05/2020 15:31:03

LCMS-MS - Shimadzu LCMS-8060

Pesticide	Action Level (ppm)	Results (ppm)	LOQ (ppm)	LOD (ppm)
ABAMECTIN B1A	0.100	N/D	0.005	0.001
ACEPHATE	0.100	N/D	0.001	0.001
ACEQUINOCYL	0.100	N/D	0.001	0.001
ACETAMIPRID	0.100	N/D	0.005	0.001
ALDICARB	0.100	N/D	0.005	0.001
AZOXYSTROBIN	0.100	N/D	0.001	0.001
BIFENAZATE	0.100	N/D	0.005	0.001
BIFENTHRIN	3.000	N/D	0.005	0.001
BOSCALID	0.100	N/D	0.005	0.001
CARBARYL	0.500	N/D	0.003	0.001
CARBOFURAN	0.100	N/D	0.001	0.001
CHLORANTRANILIPROLE	10.000	N/D	0.005	0.005
CHLORPYRIFOS	0.100	N/D	0.001	0.001
CLOFENTEZINE	0.100	N/D	0.001	0.001
DAMINOZIDE	0.100	N/D	0.005	0.001
DIAZANON	0.100	N/D	0.001	0.001
DICHLORVOS	0.100	N/D	0.005	0.001
DIMETHOATE	0.100	N/D	0.001	0.001
DIMETHOMORPH	2.000	N/D	0.005	0.001
ETHOPROPHOS	0.100	N/D	0.001	0.001
ETOFENPROX	0.100	N/D	0.001	0.001
ETOXAZOLE	0.100	N/D	0.010	0.005
FENHEXAMID	0.100	N/D	0.005	0.001
FENOXYCARB	0.100	N/D	0.005	0.001
FENPYROXIMATE	0.100	N/D	0.001	0.001
FLONICAMID	0.100	N/D	0.025	0.010
HEXYTHIAZOX	0.100	N/D	0.005	0.001
IMAZALIL	0.100	N/D	0.005	0.001

Pesticide	Action Level (ppm)	Results (ppm)	LOQ (ppm)	LOD (ppm)
IMIDACLOPRID	5.000	N/D	0.005	0.001
KRESOXIM-METHYL	0.100	N/D	0.010	0.005
MALATHION	0.500	N/D	0.005	0.001
METALAXYL	2.000	N/D	0.001	0.001
METHIOCARB	0.100	N/D	0.005	0.001
METHOMYL	1.000	N/D	0.001	0.001
MEVINPHOS	0.100	N/D	0.001	0.001
MYCLOBUTANIL	0.100	N/D	0.005	0.001
NALED	0.100	N/D	0.005	0.001
OXAMYL	0.500	N/D	0.001	0.001
PACLOBUTRAZOL	0.100	N/D	0.005	0.001
PERMETHRINS	0.500	N/D	0.005	0.001
PHOSMET	0.100	N/D	0.005	0.001
PIPERONYL	3.000	N/D	0.001	0.001
BUTOXIDE	3.000	N/D	0.001	0.001
PRALLETHRIN	0.100	N/D	0.005	0.005
PROPICONAZOLE	0.100	N/D	0.010	0.005
PROPOXUR	0.100	N/D	0.001	0.001
PYRETHRINS (PYRETHRIN I)	0.500	N/D	0.005	0.005
PYRIDABEN	0.100	N/D	0.005	0.001
SPINETORAM	0.100	N/D	0.001	0.001
SPINOSAD	0.100	N/D	0.001	0.001
SPIROMESIFEN	0.100	N/D	0.005	0.001
SPIROTETRAMAT	0.100	N/D	0.001	0.001
SPIROXAMINE	0.100	N/D	0.001	0.001
TEBUCONAZOLE	0.100	N/D	0.005	0.001
THIACLOPRID	0.100	N/D	0.001	0.001
THIAMETHOXAM	5.000	N/D	0.001	0.001
TRIFLOXYSTROBIN	0.100	N/D	0.001	0.001

N/D = Not Detected, A/LOQ = Above LOQ Level, B/LOQ = Below LOQ Level, B/LOD = Below LOD Level

Dr. Andrew Hall, Ph.D., Chief Scientific Officer

Ben Witten, MS, MT., Lab Director

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Order #: 48116 Order Name: 450.Lemon.007-rush Batch#: 20LL007K11 Received: 02/04/2020 Completed: 02/07/2020



RESIDUAL SOLVENTS:

Headspace GCMS - Shimadzu GCMS QP2020 with HS20

GSL SOP 405 Prepared: 02/04/2020 16:58:20 Uploaded: 02/05/2020 07:41:28

Residual Solvent	Action Level (ppm)	Results (ppm)	LOQ (ppm)	LOD (ppm)
ACETONE	5,000	N/D	140	20
ACETONITRILE	410	N/D	25	1
BENZENE	1	N/D	1	0.5
UTANE	5,000	N/D	50	10
HLOROFORM	1	N/D	1	0.5
ICHLOROETHANE	1	N/D	1	0.5
DICHLOROMETHANE	1	N/D	1	0.5
THANOL	5,000	N/D	140	20
THYL ACETATE	5,000	N/D	140	20
THYL ETHER	5,000	N/D	140	20
SOPROPYL ALCOHOL	5,000	N/D	140	20
IETHANOL	3,000	N/D	100	20
I-HEPTANE	5,000	N/D	140	20
I-HEXANE	290	N/D	18	10
ENTANE	5,000	N/D	140	20
ROPANE	5,000	N/D	20	1
OLUENE	890	N/D	53	1
RICHLOROETHENE	1	N/D	0	0
YLENES	2,170	N/D	130	20

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Order #: 48116 Order Name: 450.Lemon.007-rush Batch#: 20LL007K11 Received: 02/04/2020 Completed: 02/07/2020



Microbial Analysis:

Microbial Analysis GSL SOP 406

Uploaded: 02/07/2020 09:35:47

PCR - Agilent AriaMX Test	Test Method Used	Device Used	LOD	Allowable Criteria	Actual Result	Pass/Fail
STEC E.COLI*	USP 61/62†	ARIAMX PCR	2 COPIES OF DNA	PRESENCE / ABSENT	BELOW LOD	PASS
SALMONELLA*	USP 61/62†	ARIAMX PCR	5 COPIES OF DNA	PRESENCE / ABSENT	BELOW LOD	PASS
ASPERGILLUS	USP 61/62†	ARIAMX PCR	ASP_LOD***	PRESENCE / ABSENT	BELOW LOD	PASS
YEAST AND MOLD	USP 61/62†	ARIAMX PCR	363.05518 CFU/G**	1,000	BELOW THRESHOLD	PASS
TOTAL AEROBIC BACTERIA	USP 61/62†	ARIAMX PCR	0.25316 CFU/G**	10,000	BELOW THRESHOLD	PASS
COLIFORM	USP 61/62†	ARIAMX PCR	3.41539 CFU/G**	100	BELOW THRESHOLD	PASS
ENTEROBACTERIACEAE	USP 61/62†	ARIAMX PCR	0.32951 CFU/G**	100	BELOW THRESHOLD	PASS

† USP 61 (enumeration of bacteria TAC, TYM, and ENT/Coliform), USP 62 (identifying specific species E.coli Aspergillus etc) * STEC and Salmonella run as Multiplex

** CFU/g Calculation based on Select Category Type Gummy MIP/Extract Flower matrix

**** Flavus = 2 Copies of DNA / Fumigatis = 2 Copies of DNA Niger = 20 Copies of DNA / Terrus = 10 copies of DNA



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Order #: 48116 Order Name: 450.Lemon.007-rush Batch#: 20LL007K11 Received: 02/04/2020 Completed: 02/07/2020



Mycotoxin Analysis:

LC-MS - Shimadzu LCMS-8060 GSL SOP 401

Uploaded: 02/05/2020 15:31:03

Analyte	Action Lvl (ppb)	Results (ppb)
AFLATOXIN B1	20	N/D
AFLATOXIN B2	20	N/D
AFLATOXIN G1	20	N/D
AFLATOXIN G2	20	N/D
OCHRATOXIN A	20	N/D

Heavy Metals Analysis:

ICP-MS - Shimadzu ICPMS-2030 GSL SOP 403

Uploaded: 02/05/2020 18:15:35

Metal	Action Level (ppb)	Result (ppb)
ARSENIC (AS)	200	B/LOQ
CADMIUM (CD)	200	B/LOQ
MERCURY (HG)	100	B/LOQ
LEAD (PB)	500	B/LOQ

Lower Limit of Quantitation (LOQ) is 75 ppb

LOQ is 4ppb, LOD is 1ppb

Water Activity:

HD-3A Water Activity Meter - GSL SOP 407

Uploaded: 02/04/2020 17:01:14

Water 0.51

Filth and Foreign Materials Analysis:

Microscope - Amscope Simul-Focal Trinocular Stereo Zoom Microscope - GSL SOP 409

Uploaded: 02/04/2020 17:07:19

Pass: No Foreign Materials Detected

Dr. Andrew Hall, Ph.D., Chief Scientific Officer

Ben Witten, MS, MT., Lab Director

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Order #: 40909 Order Name: BSO2.110419 Batch#: BSO2.110419 Received: 11/06/2019 Completed: 11/08/2019

Cannabinoids Test

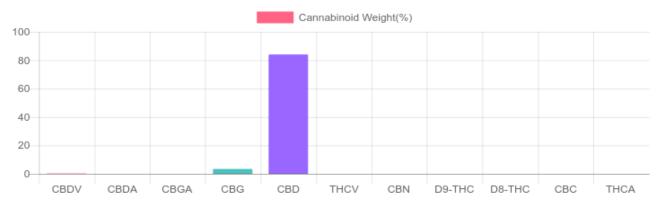


Sample





SHIMADZU INTEGRATED GSL SOP 400	UPLC-PDA PREPARED: 11/06/2019 16:53:01	UPLOADE	D: 11/07/2019 07:53:11
Cannabinoids	LOQ	weight(%)	mg/g
D9-THC	10 PPM	N/D	N/D
THCA	10 PPM	N/D	N/D
CBD	10 PPM	83.965%	839.655
CBDA	20 PPM	N/D	N/D
CBDV	20 PPM	0.231%	2.305
CBC	10 PPM	N/D	N/D
CBN	10 PPM	N/D	N/D
CBG	10 PPM	3.410%	34.096
CBGA	20 PPM	N/D	N/D
D8-THC	10 PPM	N/D	N/D
THCV	10 PPM	N/D	N/D
TOTAL D9-THC		N/D	N/D
TOTAL CBD*		83.965%	839.655
TOTAL CANNABINOIDS		87.606%	876.056



Reporting Limit 10 ppm *Total CBD = CBD + CBDA x 0.877

N/D - Not Detected, B/LOQ - Below Limit of Quantification



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Order #: 40909 Order Name: BSO2.110419 Batch#: BSO2.110419 Received: 11/06/2019 Completed: 11/08/2019



LOQ

(ppm)

0.005

0.005

0.010

0.005

0.001

0.005

0.001

0.001

0.005

0.005

0.001

0.005

0.005

0.005

0.001

0.005

0.010

0.001

0.005

0.005

0.001

0.001

0.005

0.001

0.001

0.005

0.001

0.001

0.001

LOD

(ppm)

0.001

0.001

0.005

0.001

0.001

0.001

0.001

0.001

0.001

0.001

0.001

0.001

0.001

0.001

0.001

0.005

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0.001

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0.001

0.001

0.001

PESTICIDE ANALYSIS:

GSL SOP 401

PREPARED: 11/06/2019 11:40:45

UPLOADED: 11/07/2019 08:58:24

Results

(ppm)

N/D

0.010

N/D

N/D

N/D

Action Level

(ppm)

0.100

5.000

0.100

0.500

2.000

0.100

1.000

0.100

0.100

0.100

0.500

0.100

0.500

0.100

3.000

0.100

0.100

0.100

0.500

0.100

0.100

0.100

0.100

0.100

0.100

0.100

0.100

5.000

0.100

TRIFLOXYSTROBIN

LCMS-MS - Shimadzu LCMS-8060

Pesticide	Action Level (ppm)	Results (ppm)	LOQ (ppm)	LOD (ppm)	Pesticide	1
ABAMECTIN B1A	0.100	N/D	0.005	0.001	IMAZALIL	
ACEPHATE	0.100	N/D	0.001	0.001	IMIDACLOPRID	
ACEQUINOCYL	0.100	N/D	0.001	0.001	KRESOXIM-METHYL	
ACETAMIPRID	0.100	N/D	0.005	0.001	MALATHION	
ALDICARB	0.100	N/D	0.005	0.001	METALAXYL	
AZOXYSTROBIN	0.100	N/D	0.001	0.001	METHIOCARB	
BIFENAZATE	0.100	N/D	0.005	0.001	METHOMYL	
BIFENTHRIN	3.000	N/D	0.005	0.001	MEVINPHOS	
BOSCALID	0.100	N/D	0.005	0.001	MYCLOBUTANIL	
CARBARYL	0.500	N/D	0.003	0.001	NALED	
CARBOFURAN	0.100	N/D	0.001	0.001	OXAMYL	
CHLORANTRANILIPROLE	10.000	N/D	0.005	0.005	PACLOBUTRAZOL	
CHLORPYRIFOS	0.100	N/D	0.001	0.001	PERMETHRINS	
CLOFENTEZINE	0.100	N/D	0.001	0.001	PHOSMET	
DAMINOZIDE	0.100	N/D	0.005	0.001	PIPERONYL	
DIAZANON	0.100	N/D	0.001	0.001	BUTOXIDE	
DICHLORVOS	0.100	N/D	0.005	0.001	PRALLETHRIN	
DIMETHOATE	0.100	N/D	0.001	0.001	PROPICONAZOLE	
DIMETHOMORPH	2.000	N/D	0.005	0.001	PROPOXUR	
ETHOPROPHOS	0.100	N/D	0.001	0.001	PYRETHRINS	
ETOFENPROX	0.100	N/D	0.001	0.001	(PYRETHRIN I)	
ETOXAZOLE	0.100	N/D	0.010	0.005	PYRIDABEN	
FENHEXAMID	0.100	N/D	0.005	0.001	SPINETORAM	
FENOXYCARB	0.100	N/D	0.005	0.001	SPINOSAD	
FENPYROXIMATE	0.100	N/D	0.001	0.001	SPIROMESIFEN	
FIPRONIL	0.100	N/D	0.003	0.001	SPIROTETRAMAT	
FLONICAMID	0.100	N/D	0.025	0.010	SPIROXAMINE	
FLUDIOXONIL	0.100	N/D	0.003	0.001	TEBUCONAZOLE	
HEXYTHIAZOX	0.100	N/D	0.005	0.001	THIACLOPRID	
					THIAMETHOXAM	

N/D = Not Detected, A/LOQ = Above LOQ Level, B/LOQ = Below LOQ Level, B/LOD = Below LOD Level



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Order #: 40909 Order Name: BSO2.110419 Batch#: BSO2.110419 Received: 11/06/2019 Completed: 11/08/2019



RESIDUAL SOLVENTS:

Headspace GCMS - Shimadzu GCMS QP2020 with HS20

GSL SOP 405 Prepared: 11/06/2019 15:09:21 Uploaded: 11/08/2019 07:09:26

Residual Solvent	Action Level (ppm)	Results (ppm)	LOQ (ppm)	LOD (ppm)
ACETONE	5,000	N/D	140	20
ACETONITRILE	410	N/D	25	1
BENZENE	1	N/D	1	0.5
BUTANE	5,000	N/D	50	10
CHLOROFORM	1	N/D	1	0.5
DICHLOROETHANE	1	N/D	1	0.5
DICHLOROMETHANE	1	N/D	1	0.5
ETHANOL	5,000	N/D	140	20
ETHYL ACETATE	5,000	N/D	140	20
THYL ETHER	5,000	N/D	140	20
SOPROPYL ALCOHOL	5,000	N/D	140	20
IETHANOL	3,000	N/D	100	20
I-HEPTANE	5,000	N/D	140	20
I-HEXANE	290	N/D	18	10
PENTANE	5,000	N/D	140	20
PROPANE	5,000	N/D	20	1
OLUENE	890	N/D	53	1
RICHLOROETHENE	1	N/D	0	0
YLENES	2,170	N/D	130	20



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Order #: 40909 Order Name: BSO2.110419 Batch#: BSO2.110419 Received: 11/06/2019 Completed: 11/08/2019



Heavy Metals Analysis:

ICP-MS - Shimadzu ICPMS-2030 GSL SOP 403

Uploaded: 11/07/2019 08:25:31

Metal	Action Level (ppb)	Result (ppb)
ARSENIC (AS)	200	B/LOQ
CADMIUM (CD)	200	B/LOQ
MERCURY (HG)	100	B/LOQ
LEAD (PB)	500	B/LOQ

Lower Limit of Quantitation (LOQ) is 75 ppb



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