



## Heavy Metals: Lead, Cadmium, Arsenic

### Overview:

The biological implications of long-term exposure and of ingesting heavy metals is well-established and ranges from acute heavy metal poisoning to long-term reproductive implications (increased risk of miscarriage and brain development abnormalities). Common heavy metal exposure typically occurs from ingesting lead and arsenic.

Hemp (Cannabis) is a natural phytoremediator, this means heavy metals (lead, arsenic, cadmium) that may be present in growing medium, soil, are accumulated into the plant tissue, remaining within the plant after harvest. While phytoremediation is a cost-effective approach to soil decontamination, the plant material must be thought of as contaminated and final use should be carefully considered.

Cannabinoid based concentrates, derived from hemp and marijuana, are typically extracted with polar solvents that also extract heavy metals. If not properly post-processed the resulting cannabinoid concentrate can contain alarming levels of heavy metals. These concentrates are then used directly in topicals, tinctures, and smokable vape cartridges.

Staggering amounts of hemp-based concentrate products have emerged without substantial and third-party certified safety testing. This lack of full disclosure and of objective, impartial self-regulation regarding consumer safety has caused a new health risk for cannabinoid consumers

### Imperial Data:

Prior to extraction, NeXtraction screens raw hemp material through a third-party, certified laboratory for cannabinoid potency and the presence of microbials, mycotoxins, heavy metals and pesticides. A result of this pre-screening, NeXtraction has demonstrated that its WET™ process is able to completely eliminate the presence of cadmium, lead and arsenic from its acidic cannabinoid concentrate.

**Testing:** Heavy metal testing was completed by a third-party, certificated, Washington State cannabis laboratory.

### Results:

	Incoming Biomass	Waste Biomass	WET™ Cannabinoid Ingredient	Washington State Legal Threshold
Arsenic	0	1.20 ug/5g	0	(WRL 10ug/5g)
Lead	2.27 ug/5g	2.70 ug/5g	0	(WRL 6 ug/5g)
Cadmium	1.03 ug/5g	1.03 ug/5g	0	(WRL 4.1 ug/5g)

Medicine Creek Analytics Certificate of Analysis

3700 Pacific HWY E, Ste 400, Fife, WA 98424  
 WA State I502 Certification 0018 | ISO 17025 91428 | Accreditation #91428



Sample **7060621**

#COC/INVOICE: 834-20

Laboratory ID	200612-013	Matrix	Kief
Licensee License	0003	Address	14797 NE 95th St, Redmond, WA, 98052
		Name	Confidence Analytics
Sampled	-	Received	Jun 12, 2020
		Reported	Jun 18, 2020
Analyses executed R3, MET			

MET - Heavy Metals Detection Analysis

Analyzed Jun 18, 2020 | Instrument ICP-MS

Analyte	LOD ug/5g	LOQ ug/5g	Result ug/5g	WRL ug/5g	Analyte	LOD ug/5g	LOQ ug/5g	Result ug/5g	WRL ug/5g
Arsenic (As)	0.02	0.06	ND	10	Cadmium (Cd)	0.01	0.04	ND	4.1
Lead (Pb)	0.01	0.02	ND	6	Mercury (Hg)	0.02	0.07	ND	2

Sample photography



NR Not Reported  
 ND Not Detected  
 <LOD Below Lod  
 NT Not Tested  
 LOD Limit of Detection  
 LOQ Limit of Quantification  
 DET Detected below quantitation limit  
 CFU/g Colony Forming Units per 1 gram  
 TNTC Too Numerous to Count  
 mg/g Milligrams per gram  
 ppm Parts per million  
 WRL Washington Regulatory Limit



Authorized Signature  
  
 Kyle Shelton  
 Thu, 18 Jun 2020 16:36:18 -0700

Medicine Creek Analytics Certificate of Analysis

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Sample **7060078**

#COC/INVOICE: 803-20

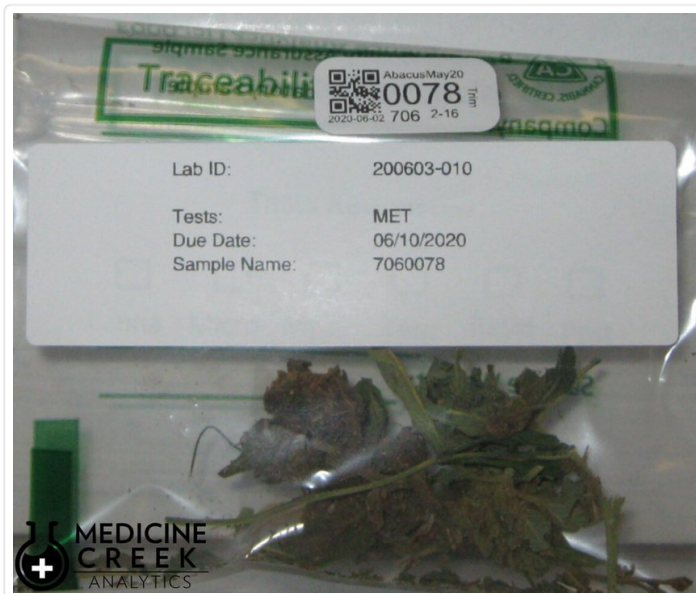
Laboratory ID <b>200603-010</b>	Matrix <b>Flower</b>	
Licensee License <b>0003</b>	Address <b>14797 NE 95th St, Redmond, WA, 98052</b>	Name <b>Confidence Analytics</b>
Sampled -	Received <b>Jun 03, 2020</b>	Reported <b>Jun 09, 2020</b>
Analyses executed <b>MET</b>		

MET - Heavy Metals Detection Analysis

Analyzed Jun 09, 2020 | Instrument ICP-MS

Analyte	LOD ug/5g	LOQ ug/5g	Result ug/5g	WRL ug/5g	Analyte	LOD ug/5g	LOQ ug/5g	Result ug/5g	WRL ug/5g
Arsenic (As)	0.02	0.06	ND	10	Cadmium (Cd)	0.01	0.04	1.03	4.1
Lead (Pb)	0.01	0.02	2.27	6	Mercury (Hg)	0.02	0.07	ND	2

Sample photography



NR Not Reported  
 ND Not Detected  
 <LOD Below Lod  
 NT Not Tested  
 LOD Limit of Detection  
 LOQ Limit of Quantification  
 DET Detected below quantitation limit  
 CFU/g Colony Forming Units per 1 gram  
 TNTC Too Numerous to Count  
 mg/g Milligrams per gram  
 ppm Parts per million  
 WRL Washington Regulatory Limit



Authorized Signature  
  
 Kyle Shelton  
 Tue, 09 Jun 2020 14:44:25 -0700

Medicine Creek Analytics Certificate of Analysis

3700 Pacific HWY E, Ste 400, Fife, WA 98424  
 WA State I502 Certification 0018 | ISO 17025 91428 | Accreditation #91428



Sample **7061080**

#COC/INVOICE: 860-20

Laboratory ID	200618-027	Matrix	Flower
Licensee License	0003	Address	14797 NE 95th St, Redmond, WA, 98052
		Name	Confidence Analytics
Sampled	-	Received	Jun 18, 2020
		Reported	Jun 25, 2020
Analyses executed	MET		

MET - Heavy Metals Detection Analysis

Analyzed Jun 25, 2020 | Instrument ICP-MS

Analyte	LOD ug/5g	LOQ ug/5g	Result ug/5g	WRL ug/5g	Analyte	LOD ug/5g	LOQ ug/5g	Result ug/5g	WRL ug/5g
Arsenic (As)	0.02	0.06	1.20	10	Cadmium (Cd)	0.01	0.04	1.03	4.1
Lead (Pb)	0.01	0.02	2.70	6	Mercury (Hg)	0.02	0.07	ND	2

Sample photography



NR Not Reported  
 ND Not Detected  
 <LOD Below Lod  
 NT Not Tested  
 LOD Limit of Detection  
 LOQ Limit of Quantification  
 DET Detected below quantitation limit  
 CFU/g Colony Forming Units per 1 gram  
 TNTC Too Numerous to Count  
 mg/g Milligrams per gram  
 ppm Parts per million  
 WRL Washington Regulatory Limit



Authorized Signature  
  
 Kyle Shelton  
 Thu, 25 Jun 2020 16:21:03 -0700