

Control Laboratories

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Account No:
 9624
 Batch:
 FEB 2017 C
 CODE:
 BioChar IBI

Date Received: 2/14/2017
 Sample ID: Sample 1
 Lab ID. Number: 7020309-01

International BioChar Initiative (IBI) Laboratory Tests for Certification Program

	Dry Basis Unless Stated: Range	Units	Method
Moisture (time of analysis)	27.6	% wet wt.	ASTM D1762-84 (105c)
Bulk Density	4.9	lb/cu ft	
Organic Carbon	83.6	% of total dry mass	Dry Combust-ASTM D 4373
Hydrogen/Carbon (H:C)	0.25 0.7 Max	Molar Ratio	H dry combustion/C(above)
Total Ash	8.7	% of total dry mass	ASTM D-1762-84
Total Nitrogen	0.94	% of total dry mass	Dry Combustion
pH value	10.50	units	4.11USCC:dil. Rajkovich
Electrical Conductivity (EC20 w/w)	1.212	dS/m	4.10USCC:dil. Rajkovich
Liming (neut. Value as-CaCO3)	11.1	%CaCO3	AOAC 955.01
Carbonates (as-CaCO3)	5.1	%CaCO3	ASTM D 4373
Butane Act.	10.2	g/100g dry	ASTM D 5742-95
Surface Area Correlation	456	m2/g dry	G

All units mg/kg dry unless stated:		Range of		Reporting		Particle Size Distribution		
	Results	Max. Levels	Limit (ppm)	Method		Results	Units	Method
Arsenic (As)	17.3	13 to 100	0.82	J	< 0.5mm	1.4 percent	F	
Cadmium (Cd)	ND	1.4 to 39	0.33	J	0.5-1mm	3.2 percent	F	
Chromium (Cr)	11.1	93 to 1200	0.82	J	1-2mm	49.8 percent	F	
Cobalt (Co)	1.6	34 to 100	0.82	J	2-4mm	43.9 percent	F	
Copper (Cu)	57.1	143 to 6000	0.82	J	4-8mm	1.8 percent	F	
Lead (Pb)	5.2	121 to 300	0.33	J	8-16mm	0.0 percent	F	
Molybdenum (Mo)	ND	5 to 75	0.82	J	16-25mm	0.0 percent	F	
Mercury (Hg)	ND	1 to 17	0.002	EPA 7471	25-50mm	0.0 percent	F	
Nickel (Ni)	4.2	47 to 420	0.82	J	>50mm	0.0 percent	F	
Selenium (Se)	ND	2 to 200	1.63	J	Basic Soil Enhancement Properties			
Zinc (Zn)	113	416 to 7400	1.63	J	Total (K)	5723 mg/kg	E	
Boron (B)	163	Declaration	8.16	TMECC	Total (P)	725 mg/kg	E	
Chlorine (Cl)	358	Declaration	20.0	TMECC	Ammonia (NH4-N)	8.4 mg/kg	A	
Sodium (Na)	3268	Declaration	815.7	E	Nitrate (NO3-N)	1.7 mg/kg	A	
Iron (Fe)	1948	Declaration	40.8	E	Organic (Org-N)	9413 mg/kg	Calc.	
Manganese (Mn)	454	Declaration	0.82	J	Volatile Matter	25.3 percent dw	D	

* "ND" stands for "not detected" which means the result is below the reporting limit.

Method A Rayment & Higginson	E EPA3050B/EPA 6010	J EPA3050B/EPA 6020
B Enders & Lehmann	F ASTM D 2862 Granular	
C Wang after Rajan	G Butane Activity Surface Area Correlation Based on McLaughlin, Shields, Jagiello, & Thiele's 2012 paper: Analytical Options for Biochar Adsorption and Surface Area	
D ASTM D1762-84		

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