

Control Laboratories

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Account No:
 XXXX
 Batch:
 MMM YY X
 CODE:
 BioChar IBI

Contact Name
 Company
 Address
 City, ST ZIP

Date Received: MM/DD/YY
 Sample ID: Client Sample ID
 Lab ID. Number: Work Order #

International BioChar Initiative (IBI) Laboratory Tests for Certification Program

	Dry Basis Unless Stated:	Range	Units	Method
Moisture (time of analysis)	58.0		% wet wt.	ASTM D1762-84 (105c)
Bulk Density	17.1		lb/cu ft	
Organic Carbon	59.8		% of total dry mass	Dry Combust-ASTM D 4373
Hydrogen/Carbon (H:C)	0.36	0.7 Max	Molar Ratio	H dry combustion/C(above)
Total Ash	29.6		% of total dry mass	ASTM D-1762-84
Total Nitrogen	0.57		% of total dry mass	Dry Combustion
pH value	7.61		units	TMECC (2001) 4.11, 1:20 dilution
Electrical Conductivity (EC20 w/w)	0.102		dS/m	TMECC (2001) 4.10, 1:20 dilution
Liming (neut. Value as-CaCO3)	11.1		%CaCO3	AOAC 955.01
Carbonates (as-CaCO3)	5.2		%CaCO3	ASTM D 4373
Butane Act.	2.4		g/100g dry	ASTM D 5742-95
Surface Area Correlation	209		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)	1.5	13 to 100	0.36	J	< 0.5mm	36.6 percent	F	
Cadmium (Cd)	0.99	1.4 to 39	0.14	J	0.5-1mm	14.8 percent	F	
Chromium (Cr)	13.2	93 to 1200	0.36	J	1-2mm	19.5 percent	F	
Cobalt (Co)	5.7	34 to 100	0.36	J	2-4mm	18.4 percent	F	
Copper (Cu)	37.3	143 to 6000	0.36	J	4-8mm	8.3 percent	F	
Lead (Pb)	15.6	121 to 300	0.14	J	8-16mm	2.3 percent	F	
Molybdenum (Mo)	0.70	5 to 75	0.36	J	16-25mm	0.0 percent	F	
Mercury (Hg)	ND	1 to 17	0.001	EPA 7471	25-50mm	0.0 percent	F	
Nickel (Ni)	10.2	47 to 420	0.36	J	>50mm	0.0 percent	F	
Selenium (Se)	ND	2 to 200	0.71	J	Basic Soil Enhancement Properties			
Zinc (Zn)	194	416 to 7400	0.71	J	Total (Ca)	27164 mg/kg	E	
Boron (B)	24.5	Declaration	3.6	TMECC	Total (Mg)	4372 mg/kg	E	
Chlorine (Cl)	820	Declaration	20.0	TMECC	Total (K)	7236 mg/kg	E	
Sodium (Na)	399	Declaration	357	E	Total (P)	1899 mg/kg	E	
Iron (Fe)	10164	Declaration	17.9	E	Ammonia (NH4-N)	39.3 mg/kg	A	
Manganese (Mn)	1161	Declaration	0.36	J	Nitrate (NO3-N)	10.5 mg/kg	A	
					Organic (Org-N)	5677 mg/kg	Calc.	
					Volatile Matter	18.7 percent dw	D	

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

Method A Rayment & Higginson
 D ASTM D1762-84
 E EPA3050B/EPA 6010
 F ASTM D 2862 Granular

G Butane Activity Surface Area Correlation Based on McLaughlin, Shields, Jagiello, & Thiele's 2012 paper: Analytical Options for Biochar Adsorption and Surface Area
 J EPA3050B/EPA 6020

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