

International Biochar Initiative

IBI Biochar Certification Program

Awards this certificate to

Bioforcetech
South San Francisco, USA
for
OurCarbon®

as having met all the program requirements, according to the *IBI Biochar Standards*.

Status of this IBI certification may be verified at <http://www.biochar-international.org/certification>

Certificate No: 2022103
Issue Date: 15th July 2022
Renewal Date: 14th July 2023



NAME Dr F David Wayne
TITLE Board Member
International Biochar Initiative



The *International Biochar Initiative* grants the biochar manufacturer named on this certificate non-exclusive, non-transferable, non-licensable rights to display the *IBI Certified™ biochar seal* in conjunction with the sale or marketing of their *IBI Certified™ biochar* and to use the *IBI Certified Biochar Seal* in promotional, advertising and informational material describing their *IBI Certified Biochar*.



Notice of Approval for *IBI Biochar Certification*

15th July 2022

Bioforcetech
Attn Elizabeth Bridges
938 Linden Avenue
South San Francisco
California 94080
USA

Dear Elizabeth,

The International Biochar Initiative has reviewed your application for certification of **OurCarbon®** (Product Registration Number 2022103) within the *IBI Biochar Certification Program*. Congratulations, your application has been approved, and your biochar qualifies as IBI certified.

These documents are being sent separately: your official *Certificate of Use* indicating your product has met *IBI Biochar Certification Program* requirements. This certificate grants you non-exclusive, non-transferable, non-licensable rights to display the *IBI Certified™ biochar seal* in conjunction with the sale or marketing of your IBI certified biochar and to use the *IBI Certified™ biochar seal* in promotional, advertising and informational material describing the IBI certified biochar. Please remember that if you are mixing your biochar with another product, IBI has only certified the biochar component of your product. The *IBI Biochar Certification Program* does not certify any other product, including a product mixed with biochar, nor does it certify biochar systems, processes, technologies, or equipment related to the production of biochar, whether proprietary or otherwise. These restrictions apply for the duration of your certificate.

The period of coverage for this certificate is one (1) year and will expire on **14th July 2023**. You may begin to use *IBI Certified™ biochar seal* on the certified product and product materials immediately. If you wish to use the *IBI Certified™ biochar seal* beyond this date, you will need to have your IBI biochar certification renewed. We recommend that you start the IBI biochar certification renewal process 60 days prior to the expiration of your current certificate, to ensure continuity of use of the seal. Also note that if your biochar undergoes a “material change” in feedstock or production processes during the period of coverage, you must have your biochar re-tested and re-certified. Please review Section 5.4 and Appendix 6 of the *IBI Biochar Standards* Version 2.1 for information on determining material changes in biochar.

Your acceptance of this certification constitutes your agreement to abide by the terms and conditions listed in the *IBI Certified Biochar Seal: Guidelines and Usage Requirements* as well as in the *IBI Biochar Certification Program Manual*. Violation of any of the terms will result in immediate revocation of your certificate.

Thank you for your commitment to biochar. We look forward to maintaining a lasting relationship with you and your company. If you have any questions regarding your certification or any aspect of the program, please contact us at certification@biochar-international.org.

Sincerely,

A handwritten signature in black ink, appearing to read "D Wayne", with a long horizontal stroke extending to the right.

David Wayne

Dr F David Wayne
For Board of Directors
International Biochar Initiative

International Biochar Initiative (IBI)

c/o 4159 East Lake Road, Canandaigua, New York NY 14424

www.biochar-international.org

Control Laboratories

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 www.biocharlab.com
 Tel: 831 724-5422
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Account No:
 11360
 Batch:
 MAY 22 A
 CODE:
 BioChar IBI

Elizabeth Bridges
 Bioforcetech Corporation (South San Francisco)
 938 Linden Avenue
 South San Francisco, CA 94080

Date Received: 4/26/2022
 Sample ID: Sample
 Lab ID. Number: 2040598-01

International BioChar Initiative (IBI) Laboratory Tests for Certification Program

	Dry Basis Unless Stated:	Range	Units	Method
Moisture (time of analysis)		0.5	% wet wt.	ASTM D1762-84 (105c)
Bulk Density		59.7	lb/cu ft	
Organic Carbon		32.5	% of total dry mass	Dry Combust-ASTM D 4373
Hydrogen/Carbon (H:C)		0.57 0.7 Max	Molar Ratio	H dry combustion/C(above)
Oxygen/Carbon (O:C)		0.04	Molar Ratio	O(calc)/C(above)
Total Ash		60.4	% of total dry mass	ASTM D-1762-84
Total Nitrogen		3.59	% of total dry mass	Dry Combustion
pH value		11.32	units	4.11USCC:dil. Rajkovich
Electrical Conductivity (EC20 w/w)		0.730	dS/m	4.10USCC:dil. Rajkovich
Liming (neut. Value as-CaCO3)		9.5	%CaCO3	AOAC 955.01
Carbonates (as-CaCO3)		1.6	%CaCO3	ASTM D 4373
Butane Act.		0.8	g/100g dry	ASTM D 5742-95
Surface Area Correlation		158	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)	7.5	13 to 100	0.25	J	< 0.5mm	46.2	percent	F
Cadmium (Cd)	12.8	1.4 to 39	0.10	J	0.5-1mm	22.8	percent	F
Chromium (Cr)	139	93 to 1200	0.25	J	1-2mm	24.5	percent	F
Cobalt (Co)	14.0	34 to 100	0.25	J	2-4mm	6.5	percent	F
Copper (Cu)	973	143 to 6000	0.25	J	4-8mm	0.0	percent	F
Lead (Pb)	100	121 to 300	0.10	J	8-16mm	0.0	percent	F
Molybdenum (Mo)	61.9	5 to 75	0.25	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)	124	47 to 420	0.25	J	>50mm	0.0	percent	F
Selenium (Se)	17.6	2 to 200	0.51	J	Basic Soil Enhancement Properties			
Zinc (Zn)	4747	416 to 7400	0.51	J	Total (K)	7874	mg/kg	E
Boron (B)	88.0	Declaration	2.5	TMECC	Total (P)	119554	mg/kg	E
Chlorine (Cl)	1426	Declaration	20.0	TMECC	Ammonia (NH4-N)	3.8	mg/kg	A
Sodium (Na)	7627	Declaration	254	E	Nitrate (NO3-N)	1.3	mg/kg	A
Iron (Fe)	160118	Declaration	12.7	E	Organic (Org-N)	35881	mg/kg	Calc.
Manganese (Mn)	1654	Declaration	0.25	J	Volatile Matter	17.6	percent dw	D

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

Method A Rayment & Higginson	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	& Thiele's 2012 paper: Analytical Options for Biochar Adsorption and Surface Area
E EPA3050B/EPA 6010	J EPA3050B/EPA 6020
F ASTM D 2862 Granular	

Analyst: Nik Zumberge

