

Black Berkey Microcystin LR Toxin and Microcystis Algae Lab Results

Test Start Date: 1 Aug 2018

Test End Date: 20 Aug 2018

Analysis: *Microcystin LR Toxin Filtration*

Test Water: General Test Water

Efficacy Test Point: Initial Filtration Efficacy

Test Point Conclusion: Pass

Testing Parameters	
Flow Rate	31.3 mL/min
Temperature	23.2C
pH Level	7.1
NTU	0.4
TOC	0.1ppm
Influent Conc	4.2E+01ppb (ng/mL)
TDS	183 ppm
Hardness	121.4 ppm

Test Notes: Microcystin toxin was not detected in units' effluent (Qualifier: U).

Client ID 1: Black Berkey Purification Element A

Client ID 2: Black Berkey Purification Element B

Pressure(psi)	Gravity
Eff Conc 1	<1.5E-01 ppb (ng/mL)
% Reduct 1	>99.7
Log10 Reduct 1	>2.5

Pressure(psi)	Gravity
Eff Conc 2	<1.5E-01 ppb (ng/mL)
% Reduct 2	>99.7
Log10 Reduct 2	>2.5

Analysis: *Microcystis Algae Filtration Efficacy*

Test Water: General Test Water

Test Point: Initial Filtration Efficacy

Test Point Conclusion: Pass

Testing Parameters	
Flow Rate	31.3 mL/min
Temperature	23.2C
pH Level	7.1
NTU	0.4
TOC	0.1ppm
Influent Conc	1.10E+06 cells/mL
TDS	183 ppm
Hardness	121.4 ppm

Test Notes: None to report.

Client ID 1: Black Berkey Purification Element A

Client ID 2: Black Berkey Purification Element B

Pressure(psi)	Gravity
Eff Conc 1	<1.0E+00 cells/mL
% Reduct 1	>99.9999
Log10 Reduct 1	>6.0

Pressure(psi)	Gravity
Eff Conc 2	<3.5E+02 cells/mL
% Reduct 2	>99.97
Log10 Reduct 2	>3.5

Testing performed by an independent EPA certified laboratory and does not have any affiliation with New Millennium Concepts Ltd.

Study was conducted as per laboratory's accredited ISO17025:2005 methodology: turbidity was analyzed as per SM213B, pH as per SM4500HB, TOC as per SM5310C, Alkalinity as per SM2320B (if needed), TDS as per Sm2540, chlorine as per SM4500-Cl G, & hardness as per SM2340C. Analysis was conducted using calibrated and/or validated instruments to traceable standards (NIST). All QC was within method acceptance limit.

Quality assurance controls were performed as outlined in the method as per Good Laboratory Practices. Analyses were performed in accordance with laboratory practices and procedures set-forth by ISO 17205:2005 and NELAP/TNI accreditation standards unless otherwise noted.

The methods of analysis used in the study are EPA approved methods for drinking water for which BCS Laboratory is currently certified and has the capabilities to perform the test.

DATA QUALIFIER CODES	
SYMBOL	MEANING
D	Measurement was made in the field.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J1	The sample matrix interfered with the ability to make any accurate determination.
J2	No Quality Control criteria exists for the component.
^	Analysis conducted outside the Laboratory's scope of accreditation.
L	Off scale high. Actual value is known to be greater than value given.
O	Sampled, but analysis not performed.
Q	Sample held beyond the accepted holding time.
U	Indicates that the compound wa analyzed for but not detected. The reported value is the method detection limit.
V	Analyte was detected in both sample and associated method blank. Data may not be accurate.
Y	The laboratory analysis was from an improperly preserved sample. Data may not be accurate.
Z	Too many colonies present (TNTC); the numeric value given represents the upper end of the value that can be determined based on volume.
?	Data are rejected and should not be used. QC data did not meet acceptance criteria.
**	Analysis of analyte submitted to an accredited sub-contract laboratory.
!	Data deviate from historically established concentration range.
#	BCS Lab specific qualifier. See laboratory analysis notes.

Revised: 2 Jul 2019