



DEPARTMENT OF THE ARMY  
US ARMY PUBLIC HEALTH CENTER  
BUILDING 5158  
8252 BLACKHAWK ROAD  
ABERDEEN PROVING GROUND MARYLAND 21010-5403

Field Water Branch

December 21, 2018

Mr. Zachary Rice  
President  
Carbon Block Technology, Inc.  
7251 Cathedral Rock Drive  
Las Vegas, Nevada 89128

Dear Mr. Rice:

The U.S. Army Public Health Center (APHC) is designated as the Government Review Agency (GRA) for NSF International Protocol P248 *Military Operations Microbiological Water Purifiers* (2012, Protocol P248). As such, my staff reviewed the results of testing for the Carbon Block Technology, Inc. (CB Tech) WaterBox®, reported by IEH-BioVir Laboratories in "NSF Protocol P248 Purifier Specific Test Plan CB TECH Water Box®", dated 17 November 2017.

Seldon Technologies, Inc. developed the WaterBox, which was previously evaluated twice to the requirements of Protocol P248 (enclosure). CB Tech purchased Seldon Technologies in 2015 and began manufacturing a very similar version of the WaterBox but using their own proprietary carbon block filter. Due to changes to the system, the APHC required a retest to evaluate compliance with Protocol P248. Based on the technologies used in the WaterBox, it was agreed that testing would be reduced in the number of sample points and limited to bacteria and virus reduction only, using previous data for compliance with *Cryptosporidium parvum* reduction requirements.

The results from testing, summarized in the Table, demonstrated that the CB Tech WaterBox was capable of reducing waterborne microbial pathogens in accordance with the requirements of Protocol P248. Three systems were operated four hours per day at the manufacturer-set maximum flowrate of 0.5 gallons per minute. To maintain adequate flowrate and pressure, Test Units A and B required four prefilter replacements and Test Unit C required two prefilter replacements. No primary filters were replaced. Total volume produced per test unit during the 12 day test (10 days flowing and 2 days stagnation) was about 3,000 liters (L) [800 gallons (gal)].

Use of trademarked names does not imply endorsement by the U.S. Army but is intended only to assist in identification of a specific product.

Table. CB Tech WaterBox Average Log<sub>10</sub> Reduction of Waterborne Pathogens.

Pathogen	Required Log <sub>10</sub> Reduction	Average Log <sub>10</sub> Reduction	Range Log <sub>10</sub> Reduction
<i>Escherichia coli</i>	6	>7.94	>7.77 to >8.08
MS2 Coliphage	4	>4.56	>4.39 to >4.86
fr Coliphage	4	>5.02	>4.89 to >5.15
<i>Cryptosporidium parvum</i> <sup>+</sup>	3	>4.29	4.11 to >4.58

<sup>+</sup> based on 2015 testing

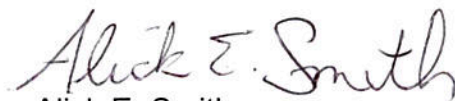
The APHC reviewed all materials that contact water and identified no health risks from chemical leaching. A Toxicity Clearance was granted in December 2018.

**This letter serves as congratulations and notification that the CB Tech WaterBox is GRA-compliant for microbial pathogen reduction [*Escherichia coli*, MS2, fr, and *Cryptosporidium parvum* (tested as 3.0µm microspheres)] and material safety in accordance with the requirements of NSF Protocol P248 Appendix B. This letter does not grant NSF International Protocol P248 certification or permission to use the NSF Mark.**

Please note that changes made to the device materials or treatment process must be submitted to the GRA for review and approval prior to being considered included under this Letter of Compliance.

Please direct questions to the APHC Field Water Branch at 410-436-3919 or [usarmy.apg.medcom-aphc.mbx.dehe-water-supply@mail.mil](mailto:usarmy.apg.medcom-aphc.mbx.dehe-water-supply@mail.mil).

Sincerely,



Alick E. Smith  
Lieutenant Colonel, U.S. Army  
Director, Environmental Health Sciences  
and Engineering

Enclosure



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
US ARMY INSTITUTE OF PUBLIC HEALTH  
5158 BLACKHAWK ROAD  
ABERDEEN PROVING GROUND MARYLAND 21010-5403

May 7, 2015

Mr. Shawn Montgomery  
Seldon Technologies, Inc.  
31 Depot Avenue  
Windsor, VT 05089

Dear Mr. Montgomery:

The Army Institute of Public Health (AIPH) is designated as the Government Review Agency (GRA) for NSF International Protocol P248 *Military Operations Microbiological Water Purifiers* (February 2012). As such, my staff reviewed the results of testing for the Seldon WaterBox™ MIL 300, reported by NSF International in "Results: NSF P248, Appendix B," dated 27 March 2015.

This GRA Letter of Compliance (LOC) replaces and supersedes your previous compliance LOC dated 19 February 2013. This retest was conducted to evaluate the performance of modified nanomesh material.

The NSF report included results from two testing events conducted April 2014 (J-00138156) and December 2014 (J-00162324). Test water during the April 2014 event was out of Protocol specification for total organic carbon (TOC). Seldon Technologies, Inc. raised concern that the TOC led to the failure of the units to adequately reduce viruses in the challenge water. With approval from the USAPHC, NSF International performed a retest in December 2014 challenging the units with viruses only.

The combined results of the testing, summarized in the Table, demonstrated that the Seldon WaterBox™ MIL 300 was capable of reducing waterborne microbial pathogens in accordance with the requirements of NSF Protocol P248 (February 2012) for the protocol-defined capacity.

Table. Seldon WaterBox™ MIL 300 Ave Log<sub>10</sub> Reduction of Waterborne Pathogens.

Pathogen	Required Log <sub>10</sub> Reduction	Average Log <sub>10</sub> Reduction	Range Log <sub>10</sub> Reduction
<i>Raoultella terrigena</i>	6	>7.94	7.65 to >8.04
MS2	4	>5.49	4.86 to >5.68
fr	4	>5.47	4.28 to >6.01
<i>Cryptosporidium parvum</i>	3	>4.29	4.11 to >4.58


The test units were operated for 4 hours per day for a period of 10 days at flowrates ranging from of 0.2 to 0.6 gallons per minute. The design flowrate is 0.5 gallons per minute. In addition to the microbial reduction performance summarized above, the test units consistently reduced turbidity to below 1 nephelometric turbidity unit.

This letter serves as congratulations and notification that the Seldon WaterBox™ MIL 300 is GRA-compliant for microbial pathogen reduction (*Raoultella terrigena*, MS2, fr, and *Cryptosporidium parvum*) and material safety to NSF Protocol P248 Appendix B (February 2012). This letter does not grant NSF International Protocol P248 certification or permission to use the NSF Mark.

Please submit changes made to the device materials or treatment process to the GRA for review and prior approval to be included under this LOC.

Please direct questions to the AIPH Drinking Water and Sanitation Program, at (410) 436-3919, or by email at [usarmy.apg.medcom-phc.mbx.dehe-water-supply@mail.mil](mailto:usarmy.apg.medcom-phc.mbx.dehe-water-supply@mail.mil).

Sincerely,

  
FOR  
Gayle E. McCowin  
Lieutenant Colonel, U.S. Army  
Portfolio Director, Environmental Health  
Engineering

cc:  
NSF International



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
US ARMY INSTITUTE OF PUBLIC HEALTH  
5158 BLACKHAWK ROAD  
ABERDEEN PROVING GROUND MARYLAND 21010-5403

February 19, 2013

Drinking Water and Sanitation Program

Roger Miller  
Seldon Technologies, Inc.  
31 Depot Avenue  
Windsor, VT 05089

Dear Mr. Miller:

The Army Institute of Public Health (AIPH) is designated as the Government Review Agency (GRA) for NSF International Protocol P248 *Emergency Military Operations Microbiological Water Purifiers* (February 2012). As such, my staff reviewed the report titled "P248, Appendix B - Complete," dated 4 December 2012.

The results from testing, summarized in the Table, demonstrated that the WaterBox™ MIL 300 was capable of reducing waterborne microbial pathogens in accordance with the requirements of NSF Protocol P248 (February 2012) for the protocol-defined capacity; 4 hours per day for a period not less than 10 days. Additionally, the AIPH Toxicology Program reviewed the WaterBox™ MIL 300 construction materials and found no health concerns.

Table. Seldon WaterBox™ MIL 300 Ave Log<sub>10</sub> Reduction of Waterborne Pathogens.

Pathogen	Required Log <sub>10</sub> Reduction	Average Log <sub>10</sub> Reduction	Range Log <sub>10</sub> Reduction
<i>Raoultella terrigena</i>	6	>8.15	7.11 to >8.29
MS2	4	>5.77	>5.65 to >5.96
fr	4	>5.10	>4.92 to >5.52
<i>Cryptosporidium parvum</i>	3	>3.93	3.06 to >4.14

**This letter serves as congratulations and notification that the Seldon WaterBox™ MIL 300 is GRA-compliant for microbial pathogen reduction (*Raoultella terrigena*, MS2, fr, and *Cryptosporidium parvum*) and material safety to NSF Protocol P248 Appendix B (February 2012). This letter does not grant NSF International Protocol P248 certification or permission to use the NSF Mark.**

Please note that changes made to the device materials or treatment process must be submitted to the GRA for review and approval prior to being considered included under this Letter of Compliance.

Please direct questions to the AIPH Drinking Water and Sanitation Program, at (410) 436-3919, or by email at [water.supply@amedd.army.mil](mailto:water.supply@amedd.army.mil).

Sincerely,



William J. Bettin, P.E.  
Lieutenant Colonel, U.S. Army  
Portfolio Director, Environmental Health  
Engineering