

STATE OF COLORADO

John W. Hickenlooper, Governor
Larry Wolk, MD, MSPH
Executive Director and Chief Medical Officer

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-2000
Located in Glendale, Colorado
www.colorado.gov/cdphe



Colorado Department
of Public Health
and Environment

June 6, 2014

Peter Brown
Operations Manager
The Strainrite Companies
65 First Flight Dr.
Auburn, Maine 04210

Subject: Acceptance of the Strainrite Two Stage Bag Filter Process utilizing models HPM99-CC-2-SR Prefilter and HPM99-CCX-2-SR final filter as an Alternative Filtration Technology to meet the *Colorado Primary Drinking Water Regulations* requirements for *Giardia lamblia* and *Cryptosporidium* Removal

Dear Mr. Brown,

The Colorado Department of Public Health and Environment's (CDPHE) Water Quality Control Division ("the Department") has received and reviewed the information for the Strainrite Two Stage Bag Filter Process utilizing models HPM99-CC-2-SR Prefilter and HPM99-CCX-2-SR final filter in accordance with Section 11.8(2)(b)(ii) and 11.10(5)(j) of the *Colorado Primary Drinking Water Regulations* (Regulation 11), 5 CCR 1002-11. The Strainrite Two Stage Bag Filter Process utilizing models HPM99-CC-2-SR Prefilter and HPM99-CCX-2-SR final filter meets or exceeds the requirements of the *State of Colorado Design Criteria for Potable Water Systems* (DCPWS) Sections 1.11, 4.3.9 and the requirements of Regulation 11. The technology is therefore conditionally accepted for use as an Alternative Filtration Technology and granted the removal credit in Table 4.2, Section 4.3.9.2 of the DCPWS. The bag filters and filter housings are subject to the conditions outlined in Table 1 of this document and Section 4.3.9 of the DCPWS.

This acceptance supersedes all the previous acceptance letters of the HPM99-CC-2-SR and the HPM99-CCX-2-SR and associated vessels.

This acceptance addresses the following items:

- Strainrite Two Stage Bag Filter (HPM99-CC-2-SR prefilter and HPM99-CCX-2-SR final filter) with the AQ2-2B vessels and the AQ2-2B compression device.

This acceptance applies only to the Strainrite Two Stage Bag Filter (HPM99-CC-2-SR prefilter and HPM99-CCX-2-SR final filter) and does not constitute construction approval for installation at any public water system. Each individual submittal to the Department must demonstrate conformance with Section 4.3.9 of the DCPWS for each installation of the filters and housings. **Review and approval for the design of any public water system proposing to use this technology will be handled on a case-by-case basis by the Department as required by Section 11.4 of Regulation 11.**

As part of this review, the Department has evaluated the following documents:

- California Department of Health Services (CDHS) June 9, 2005 Conditional Acceptance of Aqua-Rite Potable Water Filtration Systems as an alternative filtration technology.
- Bio Vir Laboratories March 23-25, 2005 Particle Reduction Study.
- Correspondence between Strainrite and CDHS indicating that the HPM99-CC-35-2-SR used in the performance study will be marketed as the HPM99-CCX-2-SR final filter.
- Underwriters Laboratories ANSI-NSF standard 61 certification for the Strainrite Two Stage Bag Filter (HPM99-CC-2-SR prefilter and HPM99-CCX-2-SR final filter)

Any addenda that will modify the module must be submitted to the Department for review and acceptance prior to use in Colorado by a regulated public water system. This requirement includes any changes made to the filter materials of construction and associated interfaces with process piping. The Department will review any additional third party verification reports and issue a revised acceptance letter if appropriate.

Table 1. Strainrite HPM99-CC-2-SR prefilter and HPM99-CCX-2-SR final filter Technical Specifications and Conditions of Acceptance:

Technical Specifications	
Filter Model	Strainrite Two Stage Bag Filter HPM99-CC-2-SR prefilter and HPM99-CCX-2-SR final filter
Maximum Flow Rate	20 gallons per minute
Maximum Differential Pressure for Cartridge Change out	25 pounds per square inch differential (psid) across each filter
Turbidity Performance Standards	< 1 NTU 95% of the time - Never to exceed 5 NTU
Vessels	
Models	Strainrite AQ2-2B Vessel with AQC-1 compression device.
Vessel Design	
Materials	304 Stainless Steel
Pressure Requirements	Rated for 150 pounds per square inch (PSI).
Additional Operations and Maintenance Criteria	
<ol style="list-style-type: none"> 1. Each public water system must keep a record daily routine pressure differential readings and filter change outs. The document must be available for review by the Department upon request. 2. An Operations and Maintenance (O&M) Manual must be provided for all installations including a protocol for filter change out to ensure sanitary conditions and good filter installation practice. 3. Spare Parts: One (1) space Cover-o-Ring Seal for the AQ2-2 must be kept onsite. 	

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Please direct any further correspondence regarding this acceptance to:

Tyson Ingels, P.E.
Colorado Department of Public Health and Environment
Water Quality Control Division
4300 Cherry Creek Drive South
Denver, CO 80246

If you have any questions or comments, please call Tyson Ingels at 303-692-3002.

Sincerely,

Tyson Ingels, P.E.
Lead Drinking Water Engineer
Engineering Section
Water Quality Control Division
Colorado Department of Public Health and Environment

cc: Dennis W. Smith, ProWest Filtration, Inc.