



August 2, 2012

BRANDENBURG PLUMBING AND HEATING  
RYAN BRANDENBURG  
2270 N 14TH AVE  
WAUSAU WI 54401

Re: Description: WATER TREATMENT DEVICE - SITE SPECIFIC/COMMERCIAL  
Manufacturer: BRANDENBURG PLUMBING AND HEATING  
Product Name: ITC BUILDING - PRAIRIE WOODS AND STREAMS  
Model Number(s): CARBONAIR PC-5 FIXED BED GAC ADSORPTION UNITS  
(2)/TETRACHLOROETHENE (PCE)  
(Trans. I.D. No. 2105865)  
Product File No: 20120283

The specifications and/or plans for this plumbing product have been reviewed and determined to be in compliance with chapters SPS 382 through 384, Wisconsin Administrative Code, and Chapters 145 and 160, Wisconsin Statutes. The Department hereby issues an approval based on the Wisconsin Statutes and the Wisconsin Administrative Code. This approval is valid until the end of August 2, 2014. This approval is contingent upon compliance with the following stipulation(s):

- No bypass piping shall be installed serving the PC-5 adsorption units. However, we will accept a locking bypass as an equivalent alternative.
- Flow restrictors shall be installed to preclude service flow rates that exceed the design maximum flow rate of 49 gpm.
- Sample taps must be installed before tank 1, between tanks 1 and 2 and after tank 2. A totalizing water meter shall be installed prior to tank 1.
- These GAC filters shall not be backwashed. If particulate loading is an onsite concern, then tank 1 shall be preceded with an acceptable mechanical (i.e. particulate) filter.
- The GAC filter tanks shall be installed in series.
- All interior water distribution piping shall convey treated water to all distal outlets. Any untreated exterior wall hydrants that receive untreated water shall use at least one of the following:
  1. Signage indicating the water is unsafe for human consumption;
  2. the hydrant outlet shall be capped and soldered;
  3. the hydrant shall have a removable handle; or
  4. the hydrant shall be keyed.
- The tetrachloroethene (PCE) simple average of all samples collected since 9/2/2009 (12) is 3.42 µg/l. The maximum contaminant level for PCE is 5.0 µg/l.

This system is sized based on a PCE concentration of 10.0 µg/l; or 2.9 times the average influent concentration, at a flow rate of 49 gpm. The system provides an empty bed contact time (EBCT) of 11.1 minutes, and a hydraulic loading rate of 5.1 gpm/ft<sup>2</sup>.

The estimated capacity of the entire system is 197,568,000 gals. However, only 50% of that total estimated capacity, 98,784,000, shall be effectively used. The intent of this is to provide a 100% safety factor.

- This product has undergone sufficient testing to document the product's ability to reduce only those contaminants and/or substances as specified in this approval letter when the product is installed and maintained in strict accordance with the manufacturer's published instructions.
- Where the Department of Natural Resources (DNR) has jurisdiction, a written approval may be required prior to installation of this product in a water supply system to reduce the concentration of a contaminant that exceeds the primary drinking water standards contained in ch. NR 809, Wis. Admin. Code, the enforcement standards contained in ch. NR 140, Wis. Admin. Code, or for a water supply system that is subject to a written advisory opinion by the DNR. For more information contact the DNR Section of Private Water Systems, P.O. Box 7921, Madison, WI 53707, telephone (608) 267-9787.
- If this approved device is modified or additional assertions of function or performance are made, then this approval shall be considered null and void, unless the change is submitted to the department for review and the approval is reaffirmed.
- The finished installation must undergo a final inspection prior to the treated water being used for consumptive purposes. The Plumbing Consultant having jurisdiction in this area is Tom Braun. Mr. Braun can be reached via the following:

Phone: 715-340-5387

E-mail: [Thomas.braun@wi.gov](mailto:Thomas.braun@wi.gov)

If the treated water is used for consumptive purposes prior to passing the final inspection, then this approval may be rendered null and void and the device ordered removed. The Plumbing Consultant shall provide a written indication of the results of the final inspection to the system owner. When the final inspection has been passed, the Plumbing Consultant will notify the Wisconsin Department of Natural Resources (WDNR) Field Staff having authority over the well. The WDNR will then monitor the quality of the treated water to its satisfaction. Monitoring advice, which the WDNR is free to accept or reject, is provided elsewhere in this letter. The WDNR Field Staff having authority over this well is Dave Carriveau. Mr. Carriveau can be contacted via the following:

Phone: 715-365-8925

E-mail: [David.carriveau@wisconsin.gov](mailto:David.carriveau@wisconsin.gov)

- The suggested monitoring interval for this installation is quarterly. As a minimum, the following tests should be performed:

1. tetrachloroethene (PCE)

Influent and effluent samples should be collected in pairs, with the influent samples being collected at the sample tap just prior to tank 1 and the effluent samples being taken at the sample tap between tank 1 and tank 2. If PCE is detected at the sample tap between tank 1 and tank 2, the an additional sample should collected promptly from the sample tap just after tank 2 and tank 1 should be rebedded as soon as possible. If, by chance, PCE is detected after tank 2, then both tanks must be rebedded; however, this is highly unlikely to occur. A totalizing water meter installed on the water distribution pipe adjacent to tank 1 would be very helpful in tracking treated water volume and characterizing the rebed interval.

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Based on testing data submitted to and reviewed by the department, this approval recognizes that this plumbing product will reduce the concentration of contaminants as specified on pages 1 through 3 of this letter.

This device was tested under controlled laboratory, or field, conditions. The actual performance of this device for a specific end use installation will vary from the tested conditions based on local factors such as water pressure, water temperature and water chemistry.

The department is in no way endorsing this product or any advertising, and is not responsible for any situation which may result from its use.

Sincerely,

Glen W. Schlueter  
Engineering Consultant  
Safety and Buildings Division  
Department of Safety and Professional Services  
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GWS:gws