



HOUSEHOLD

Date:

Subject: Problem Water: PFOS and PFOA Reduction

File #: HH-1611

SUBJECT: PERFLUOROCTANE SULFONATE (PFOS) & PERFLUOROCTANOIC ACID (PFOA) TALKING POINTS

Culligan has received numerous inquiries regarding treatment methods of PFOA & PFOS reduction. There has also been several dealerships engaged in the reduction of PFOA & PFOS. Below are talking points on what is PFOA & PFOS, health concerns, contaminant level and treat methods. Additional information on PFOA & PFOS can be found at US EPA website...below is the link:

<https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos>

What is PFOS & PFOA?

Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) are chemicals that were used in the production of carpets, clothing, fabrics for furniture, paper packaging for food and other materials (e.g., cookware) that are resistant to water, grease or stains. They are also used for firefighting at airfields and in a number of industrial processes.

Such contamination is typically localized and associated with a specific facility, for example, an industrial facility where these chemicals were produced or used to manufacture other products or an airfield at which they were used for firefighting.

What are Potential Health Effects?

Studies indicate that exposure to PFOA and PFOS over certain levels may result in adverse health effects, including developmental effects to fetuses during pregnancy or to breastfed infants (e.g., low birth weight, accelerated puberty, skeletal variations), cancer (e.g., testicular, kidney), liver effects (e.g., tissue damage), immune effects (e.g., antibody production and immunity), thyroid effects and other effects (e.g., cholesterol changes).

What is the US EPA Contaminant Level?

- EPA develops **Health Advisories** to provide information on contaminants that can cause human health effects and are known or anticipated to occur in drinking water.
- EPA's **Health Advisories** are non-enforceable and non-regulatory and provide technical information to state agencies and other public health officials on health effects, analytical methodologies, and treatment technologies associated with drinking water contamination.
- EPA established the **Health Advisory** levels at **70 parts per trillion**.
- Public water systems are required to notify consumers if water is contaminated. Consumers can also contact their local water supplier and ask for information on PFOA & PFOS in their drinking water and request a copy of the Consumer Confidence Report.

CONFIDENTIAL: For use only in connection with the Culligan System. May not be reproduced without permission.

All marks herein are trademarks of Culligan International Company.

©2013 Culligan International Company



HOUSEHOLD

Date:

Subject: Problem Water: PFOS and PFOA Reduction

File #: HH-1611

Potential PFOS & PFOA Contamination Locations

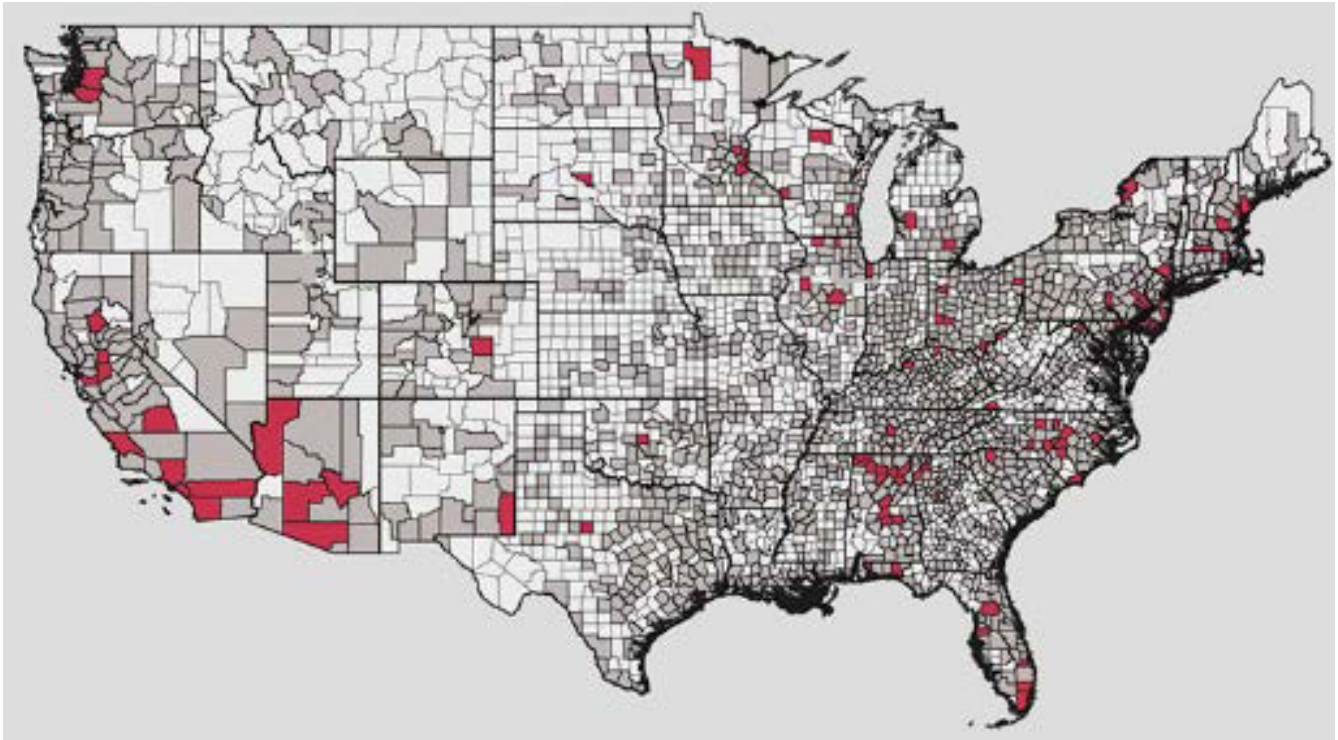
Below is a map referencing potential locations where PFOS & PFOA have been detected. The map can be located at the following link:

<http://www.ewg.org/interactive-maps/>

Gray – Not Detected

Red – Detected

White – Not Tested



CONFIDENTIAL: For use only in connection with the Culligan System. May not be reproduced without permission.

All marks herein are trademarks of Culligan International Company.

©2013 Culligan International Company

Treatment Methods

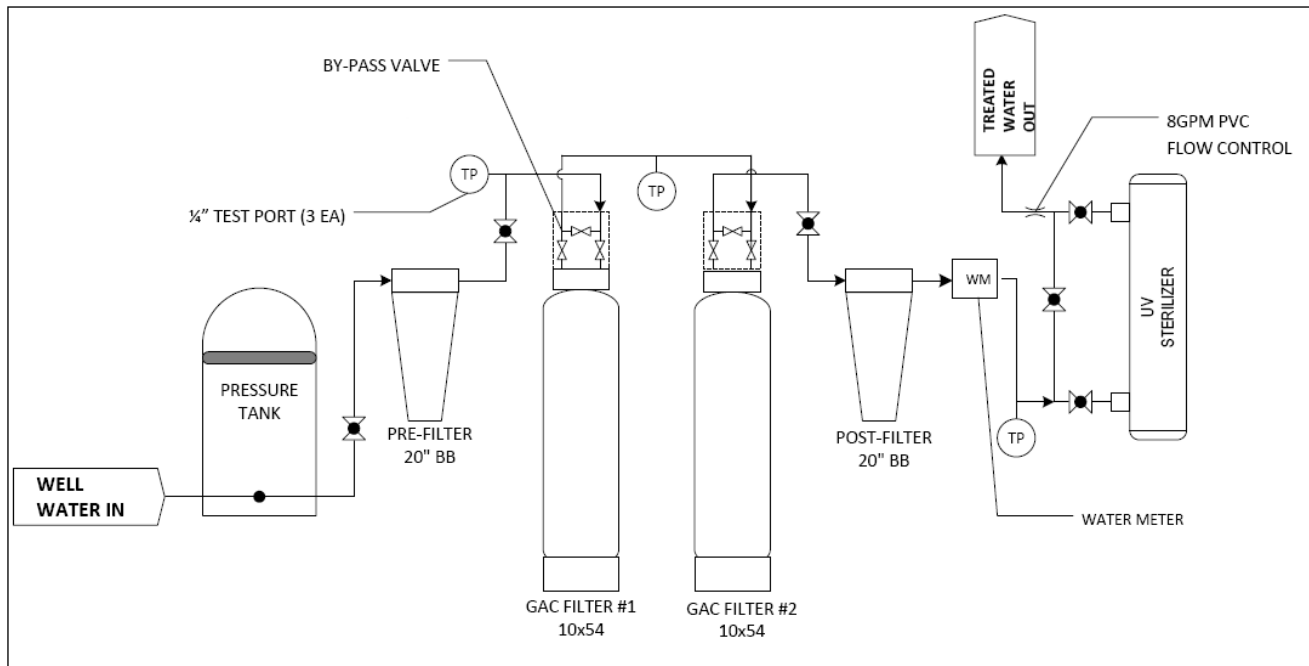
- **Point of Use...Reverse Osmosis**

The Aqua-Clear w/ Total Defense Cartridge. The Minnesota Department of Health (MDH) retained the services of Water Science & Marketing, LLC, (WSM) and the Water Quality Association (WQA) in testing POU devices in laboratory and in field applications. The Aqua-Clear w/ Total Defense Cartridge was found to reduce Perfluorochemicals (PFC's) in water at levels typically found in drinking water. See below WQA and Minnesota Department of Health links:

- https://www.wqa.org/find-products/ctl/detail/mid/1054/cid/culligan_internation/sid/26/keyword/culligan
- <http://www.health.state.mn.us/divs/eh/wells/waterquality/poudevicefinalsummary.pdf>

- **Point of Entry – Carbon Filtration**

Below is an approved system that has been installed in several states...over 300+ POE systems have been installed for PFOS & PFOA reduction. The below system is designed for a 8 gpm flow...PE carbon filters installed in series with a minimum EBCT of 4 minutes is mandatory.



Date:

Subject: Problem Water: PFOS and PFOA Reduction

File #: HH-1611

Below is a picture of a typical installation courtesy of Everett Windover...



CONFIDENTIAL: For use only in connection with the Culligan System. May not be reproduced without permission.

All marks herein are trademarks of Culligan International Company.

©2013 Culligan International Company