

From: AQUATHIN TECH SUPPORT [mailto:TECHSUPPORT@AQUATHIN.COM]

Sent: Thursday, May 08, 2014 1:57 PM

Subject: FORUM Q & A: UPDATE #4 STUDIES -- MAJOR STUDY SUGGESTS EFFICIENTLY RUN SOFTENERS DO NOT HURT SEPTIC TANK PERFORMANCE

Importance: High

Dear Aquathin Dealer OnLine;

Water Softener Motivation

The following recent article confirms "water softeners, when operated efficiently, do not harm septic systems..." . Your Aquathin Soft & Clean Series are **WQA GOLD SEAL EFFICIENCY RATED**. That is a HUGE bullet in your presentation bandoleer!!! BECAUSE NOT ALL WATER SOFTENERS ARE EQUAL !!!

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Alfred J. Lipshultz
President & CEO

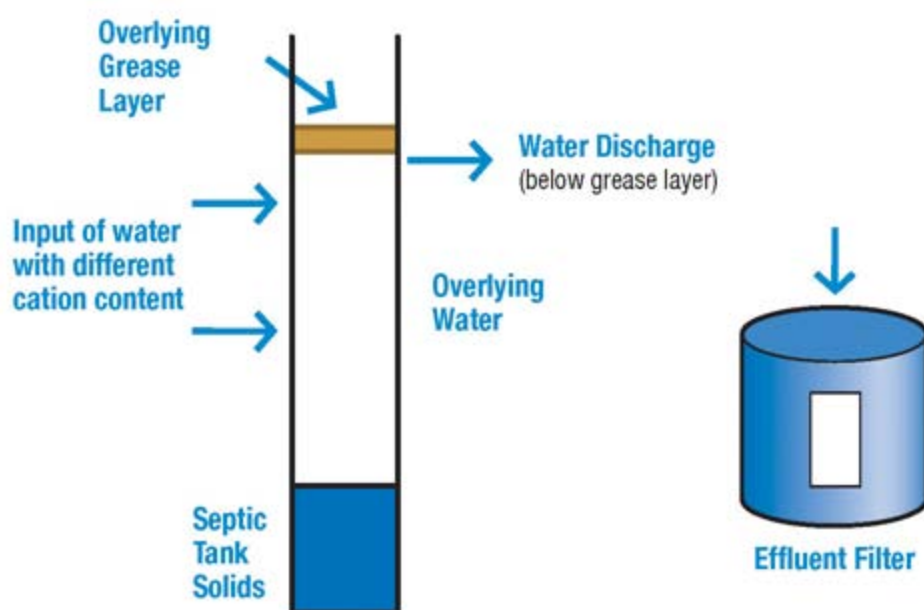
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Do Water Softeners and Septic Systems Mesh?

An 18-month research project has found that water softeners, when operated efficiently, do not harm septic systems or affect their ability to

properly treat wastewater. The question has been raised for decades despite other studies that have had the same result.

"If a water softener is set at an efficient salt setting, the impact on septic systems is very limited if any at all," says Pauli Undesser, director of regulatory and technical affairs for the Water Quality Association and foundation coordinator for the Water Quality Research Foundation, which funded the study. It was conducted by John Novak, Ph.D., P.E., through the Virginia Polytechnic Institute and State University with a steering committee consisting of the Water Quality Association, NOWRA, and NSF International, a global standards-setting organization. According to the study's executive summary, water softeners operating at or above about 3,000 grains per pound of salt efficiency can actually improve septic tank performance. Those operating at or below about 1,000 grains per pound may have a negative effect. Those cases, Undesser says, are limited and can be addressed by adjusting water softeners to use less salt or replacing them with better technology.



There are signs an onsite professional can be aware of that indicate a sodium/calcium imbalance from a water softener may be causing problems. "If the separation isn't happening — the sludge settling out and the FOG coming to the top — it could be an indication," Undesser says. The so-called "milkshake effect" can also be caused by other issues. "They can look at having the settings adjusted to make it more efficient."

The results of the study did come out as expected. "We hear a lot of talk about water softeners always being a problem, and that's not the case," she adds. "It's really a dialogue we'd like to have between the two industries to make sure consumers are doing a better job of keeping their softeners at efficient levels, and how the onsite industry can work with water treatment professionals to make sure consumers are doing the right thing for the health of the septic

system.”

Conducted from May 2011 to the summer of 2012, part of the research was done in the lab with real septic waste to allow for many more samples and comparisons in a short amount of time.

“Novak also did real-world testing at a retirement home that was divided so he could look at three different septic systems from one facility,” Undesser says. “He looked at different levels of salt and regenerant going into each of those to come up with the final conclusions.”

Perhaps the results from this research aren’t groundbreaking, but the new study continues the ongoing discussion among industry experts on the effects of water softeners and regeneration water on onsite systems.

Four years ago, [pumpers and onsite professionals responded to a COLE Publishing forum](#) survey from NAWT Secretary Tom Ferrero, asking about conditions they saw in septic tanks and absorption areas that they attributed to water softeners. The attribution was based on the problem going away once the water softener was disconnected from the onsite system.

The survey was prompted by a workshop that included members of the Water Quality Association, Water Environment Research Foundation and the U.S. EPA that were tasked with determining whether further research was necessary to understand the effect softened water and regenerated water from water softeners may have on onsite systems. NAWT was asked to provide the pumpers’ perspective, so Ferrero wanted to find out what that was from our readers.

The 30 responses received fell into five categories, listed in order of frequency:

1. Hydraulic overloading from the backwash cycle or water softener leaking. Most leaks average 200 gpd, but we once clocked one at 700 gpd, and we couldn’t notice or hear it.
2. Disruption of settling in the septic tank. The argument is that salt water is denser than water, allowing more solids to prematurely clog the effluent filter and float out of the tank. However, a presentation on “Monovalent & Divalent Cations and Their Effect on Settling” by John T. Novak, Ph.D., P.E., Virginia Tech, explained the relationship that sodium, calcium and chloride ions have on settling. The sodium ion has a single or monovalent charge and the calcium ion has a double or divalent charge. When the ratio of monovalent charges to divalent charges is imbalanced, it effects settling. Novak conducted his research at wastewater treatment plants, but the basics are identical.
3. Chemical and biological upsets such as no scum layer or a scum layer that looks like and has the consistency of milkshakes with no stratification in the septic tank. Scientists in the group confirmed that salts can emulsify grease, keeping it suspended in the tank and, therefore, able to reach the drainfield in the effluent.
4. Structural deterioration of distribution boxes and concrete baffles. Presentations revealed that sodium could increase the production of sulfides and hydrogen sulfide, which reacts with oxygen to form sulphuric acid. It is sulphuric acid that erodes the concrete in the upper reaches of the tanks and d-boxes.
5. Clogging of the soils or peat and sand filters, which is logical if more grease and solids are

leaving the tank.

Bottom line? Scientific explanations corroborated anecdotal evidence pumpers and onsite professionals saw in septic tanks and absorption areas that they attributed to water softeners. The new study is being prepared for publication. Undesser adds that WQA would like to hear from onsite professionals who may have personal experience that doesn't match up with the study results. "If there are issues they are seeing, we'd like to hear more about it. If they feel the research isn't adequately showing reality, we'd like to know that."

From: AQUATHIN TECH SUPPORT [<mailto:TECHSUPPORT@AQUATHIN.COM>]

Sent: Wednesday, April 03, 2013 4:23 PM

To: Info@Aquathin.Com (info@aquathin.com)

Subject: FORUM Q & A: UPDATE #3 STUDIES -- MAJOR STUDY SUGGESTS EFFICIENTLY RUN SOFTENERS DO NOT HURT SEPTIC TANK PERFORMANCE

Importance: High

Dear Aquathin Dealer OnLine;

I respectfully urge you to meet with your Teams to review [and Reprint, Duplicate, Laminate, Disseminate for your Customers] the article below concerning firm data that water softeners do not harm septic tanks...in addition to the earlier Forum Q&A Update that softened water results in detergent and energy reduction, and prolonged appliance life and efficiencies <http://www.aquathin.com/pdf/Conditioned%20Water%20Does%20Make%20A%20Difference.pdf> and attachment.

Major study suggests efficiently run softeners do not hurt septic tank performance

Independent testing concludes that systems can work well together

INDIANAPOLIS, April 2, 2013 /PRNewswire/ -- Water softeners set with appropriate salt efficiency do not harm septic systems and may actually help them, according to a new study released today at WQA Aquatech USA.

The Water Quality Research Foundation commissioned Virginia Polytechnic Institute and State University to conduct independent and scientific testing on the issue in 2012. The result is an official report, "Changes in Septic Tank Effluent Due to Water Softener Use." Nearly \$100,000 was invested for this 18-month study, which included many site visits and the work of numerous trained experts from WQA, NOWRA, regulators and NSF International. According to the authors of the study: "The data indicate that the use of efficiently operated water softeners improves septic tank performance, while the use of very inefficient home softeners may have a negative effect on solids discharge to the drain field and the level of impact will depend on the level of hardness in the water, whether the regeneration waste is discharged to the septic tank, and the amount of excess sodium present in regeneration wastes."

Softeners are often the enabling technology that keeps the rest of our houses running effectively by preventing damaging scale build up, said Dave Haataja , executive director of WQA. In areas with especially hard water, softeners are a necessity for anyone who doesn't want to constantly buy new appliances and replace pipes and fixtures. Comprehensive independent studies have also shown many other practical advantages: Saving energy and money, reducing the use of harmful detergents, and keeping our landfills a little less full.

To obtain the most accurate results possible, two different approaches were taken by those conducting the research. One study in a controlled laboratory setting examined a range of softener/septic reactions. Then to look at real-world conditions in everyday circumstances, case studies were conducted in the field. The authors also looked at previous studies and tests.

WQA and NOWRA have collaborated to update the "Guidance for the Use of Water Softening and Onsite Wastewater Treatment Equipment" to include recommendations for use of water softeners with higher salt efficiencies, which this study indicates will minimize potential impacts on septic tank performance.

The Water Quality Association, a non-profit organization that seeks to uphold high standards in the water treatment industry, has committed to education programs to help disseminate sound practices for those with softeners and septic. The association provides information through its professional training and certification programs and other venues.

The Water Quality Research Foundation (WQRF), formerly The Water Quality Research Council (WQRC), was formed in 1949 to serve as a universally recognized, independent research organization. WQRF has invested hundreds of thousands of dollars to commission credible third-party testing to offer hard data to consumers, those in the industry and policymakers.

For more information, contact Dave Loveday at dloveday@wqa.org or 630 505 0160 (office) or 630 947 5955 (cell).

SOURCE Water Quality Association

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From: AQUATHIN TECH SUPPORT [<mailto:TECHSUPPORT@AQUATHIN.COM>]

Sent: Friday, March 04, 2011 2:50 PM

To: Info@Aquathin.Com (info@aquathin.com)

Subject: FORUM Q & A: UPDATE #2 STUDIES -- WASHING WITH SOFTENED WATER CAN "SIGNIFICANTLY" CUT DETERGENT & ENERGY CONSUMPTIONS

Importance: High

Dear Aquathin Dealer OnLine;

I respectfully urge you to meet with your Teams to review [and Reprint, Duplicate, Laminate, Disseminate for your Customers] the article below concerning firm data for detergent and energy reductions as a result of softened water ...IN ADDITION to the already data information you have for prolonged appliance life and efficiencies [see attached...gottaluv this pic] !!!



Studies: Washing with softened water can significantly cut detergent use, energy consumption

3/2/2011 11:19:06 AM

LISLE, ILL. — Two new independent studies released yesterday indicate that consumers can cut back dish and laundry detergent use by 50 percent or more and lower washing machine temperatures from hot to cold just by using softened water, according to a [press release](#).

The detergent savings studies, conducted by the independent testing firm Scientific Services S/D of New York and funded by the Water Quality Research Foundation (WQRF), reveal that softened water might not only save consumers money but could also be environmentally friendly.

According to the studies, washing machine detergent use can be reduced by 50 percent and energy saved by washing in 60 F cold water instead of 100 F hot water, achieving the same or better stain removal and whiter clothes compared to results in hard water.

And in dishwashers, residents living in areas with very hard water can cut detergent use by more than 50 percent after softening and get the same results.

"The benefits of softened water in people's daily lives are significant," said Peter Censky, executive director of the [Water Quality Association](#). "These studies show how consumers can save money and energy by softening their water."

To read the entire article, [click here](#)...AND FOR DETAILED INFO, CLICK wqa.org/detergent/SWB_Studies.pdf

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