

From: Jeff Hellenbrand [<mailto:jhellenbrand@hellenbrand.com>]
Sent: Friday, August 07, 2015 2:05 PM
To: Dailey, Michael
Cc: Pat Ford
Subject: FW: Water Softeners
Importance: High

Dear Mr. Dailey,

This is an area that Hellenbrand has been closely involved with MMSD since 2010. Unfortunately, I personally cannot make that date and time as I am traveling out of town on business that week. Next week I am actually doing a presentation on this topic at the SE WI Wastewater Treatment Plant Operators meeting.

The good news is, the water softener research study that was recently completed and overseen by MMSD, clearly demonstrated that we can reduce the amount of chlorides from water softeners with high efficient systems by over 50%. This is clearly the most cost effective approach to address this. The second part of that study, water softener tune-ups, also showed a reduction in chlorides of 16%, however there clearly are not enough water softeners installed to achieve the 15% reduction in overall "mass" that MMSD needs to achieve.

The MMSD need to reduce chloride intake by 15% is very achievable. Water softening contributions are clearly front and center, however road salt is a contributor as well as other sources. The MMSD water softener research study showed we can clearly reduce the amount of chlorides we are contributing with high efficient water softeners, 4,000 grains per lb. of salt or greater by over 50%. An overall game plan to achieve the 15% reduction will require:

- Road salt which is leaching into the waste water treatment in-take piping and our aquifers needs to be addressed. We also realize we live where road salt is something we need.
- Assistance from regulators to enact some type of water softening ordinance to require an minimum efficiency standard of 4,000(?) grains per lb. of salt.

- A rebate program to incentivize end-users to upgrade older systems to new highly efficient systems.
 - Our estimate is that over 50% of the installed base are over 15-years old and many of the installed base, that are less than 15-years old are not operating at 4,000 grains per lb. of salt.
 - A rebate program that incentivizes at a higher rate for twin alternating systems verses single tank water softeners.
- Brine reclaim systems which we have been promoting for years are part of the solution for some applications.
- While there has been tremendous gains in reducing water usage with water saving showerheads and water closets, hot water recirculation lines will reduce the water that is wasted waiting for hot water for the morning shower. With an over 90% market penetration for water softeners, and the amount of showers daily, thousands and thousands of gallons of water are wasted daily waiting for hot water in many showers, which means added chlorides as well.
- An education program for builders, plumbing contractors ...etc. will be required, in addition to the general public.

The bottom line is we all need to work together on this, including:

- Water Treatment Industry
- Road Salt Group
- Water Utility
- MMSD
- All of the local government bodies from the City of Madison to the towns and villages that are a part of MMSD.
- Builders, Engineers , Architects, Plumbers ...etc.
- End-Users

If you would like, I can check to see with some other folks at Hellenbrand to see if their schedules are free or perhaps you may have another date and time that you will be meeting for us to come in. Please advise.

Sincerely,

Jeff Hellenbrand
President
Hellenbrand, Inc. / Water