What's On Tap

The KKW Water District Newsletter & Annual Consumer Confidence Report Vol. 14 No. 2
92 Main Street Kennebunk, ME 207-985-3385 www.kkw.org
Summer 2016

A Tale of Three Contaminants: Remove it, Reduce it and *Add it?*

Norm Labbe, Superintendent (nlabbe@kkw.org)

By now you may be aware that your Water District has officially taken a position against continuing the practice of adding fluoride to your drinking water. Our position (see sidebar) is based upon a safety, water quality and health paradigm that is common to the water utility industry in general, but is especially important to us. Being that we have taken a strong position on an issue that will likely be voted upon by you and your neighbors at this November's election, we believe it's important to explain why we oppose adding fluoride to your drinking water.

In addition to fluoride, we also want to inform you about manganese and lead, two other drinking water contaminants that are in the news and can have negative health effects. I hope that after reading these articles and seeing how we are addressing manganese and lead, you might agree with, or at least understand the reasoning behind our opposition to the continued fluoridation of your drinking water.

Manganese: Remove it

This element is currently regulated by the US Environmental Protection Agency (EPA) with a non-mandatory water quality standard referred to as a Secondary Maximum Contaminant Level, or SMCL, which was established as a guideline (from an EPA fact sheet) *"...for aesthetic considerations, such as taste, color, and odor. These contaminants are not considered to present a risk to human health at the SMCL."*

Fast forward to today: it has recently been determined that although manganese is an essential trace mineral required for the body to function, excess manganese exposure has potential negative health implications. Infants and children younger than 12 months old are potentially the most susceptible to excess manganese exposure because of their developing neurological and gastrointestinal systems. The USEPA is now considering manganese as an "emerging contaminant" that will likely be regulated as a Primary Contaminant, with an enforced Maximum Contaminant Level (MCL).

So, what does this have to do with us? One of our primary groundwater supplies had elevated manganese levels which

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Our Position on Fluoridation

Adopted 2/24/16 by the Board of Trustees

The Water District is not a proponent of continuing the practice of fluoridation of its public water supply.

Furthermore, the Board of Trustees of the District authorizes its Superintendent to voice the District's position and to support efforts to bring the topic of the District's fluoridation of its public water supply to a public vote in the November 2016 general election, in accordance with MSRA Title 22, §2654, 2655 and 2656.

Since last voted upon in 2002, the District has been fluoridating the water it serves to its customers in accordance with the will of the voting public.

Since that time, as a result of both the District's extensive experience with the handling and addition of fluoride to its water supply and from the large amount of information that has since become available about the safety and efficacy of the ingestion of fluoride, the District is of the position that there is ample justification for the public to reconsider their decision.

This is about more than the statistical reduction of cavities in the general population. It's about unintended consequences, ethics, mass medication without a sensible dosage methodology and about the safety of the District's customers and its employees.

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caused an occasional aesthetic issue for some customers. While studying the topic, we learned about the EPA's developing concerns. We have since designed and placed on-line an innovative, low cost manganese removal system for this groundwater source. For more information on this, see *Manganese Removal-Another Success Story* on Pg. 3.

Lead: Reduce it

Much has been in the news recently about this contaminant. As we reported in our prior issue of *What's on Tap,* we **DO NOT** have a lead issue. There is more information about this ongoing national issue on our website.

Unlike manganese, lead is not an essential trace mineral and is considered a Primary Contaminant by the EPA. Lead typically gets into drinking water from customer-owned plumbing and fixtures. Since well before the US EPA's Lead and Copper Rule of 1991 and the Lead Reduction Act of 2014, the District has taken several proactive steps toward minimizing the amount of lead that can possibly reach your faucets, as further detailed in *Staying Ahead of Lead*, on Pg. 7.

At this point, it's probably clear why we hold the position we do. Our mission statement (see inset) explains it well. If there is a chance of a health issue related to our water, we do our best to resolve it, in the most cost-effective manner we can find.

> **Our mission is to provide the highest quality drinking water and customer service at the most reasonable price**

Fluoride: Add it?

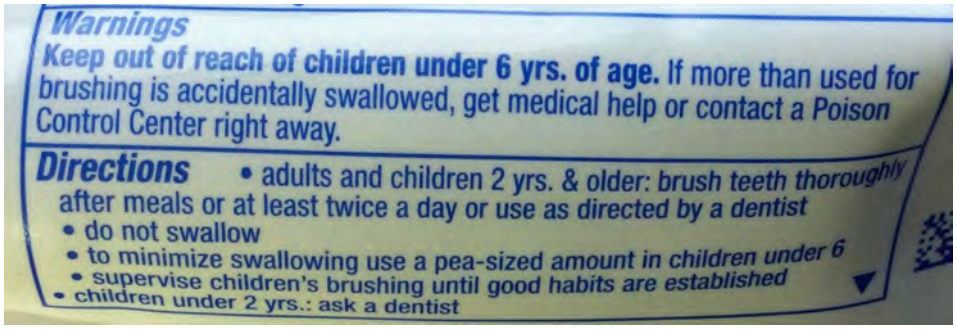
So now we are faced with issues relating to the fluoridation of your drinking water. We have been doing it for well over a decade, since the public voted for us to add fluoride in November of 2002. Although we aren't medical professionals, we try to stay abreast of current health-related news as it pertains to drinking water. Like lead, fluoride is not an essential trace mineral. What we have found, in addition to our own experience in dealing with fluoride (including employee safety issues), is that there is a mounting body of evidence linking the ingestion of fluoride to several significant health issues. The health concerns are no longer limited to dental fluorosis (which in its mild form is primarily cosmetic). It is now also being recognized as an endocrine disruptor, linked to a wide variety of health issues, which are currently being studied, discussed and debated among various groups of scientific and medical professionals. It is also now known that the general population is ingesting much more fluoride than it did some 50-plus years ago when fluoridation of drinking water was proposed as a method of reducing the incidence of dental caries. For example, there is fluoride in all of the processed beverages that utilize a utility's fluoridated water; even in beer.

What is both troubling and frustrating to us is that when a child consumes two glasses of our fluoridated water, we know that they are consuming more fluoride than if they swallowed a "pea-sized amount" of fluoridated toothpaste while brushing their teeth. If that amount of toothpaste was swallowed, they are instructed (as stated on the tube of toothpaste shown below) to immediately call the local poison control center. This bust in logic, in good conscience, runs contrary to being a licensed Water System Operator, which is defined as "An individual… assigned the responsibilities for operational activities that will directly impact the quality and/or quantity of water provided to consumers". Every time we take delivery of the 20,000 lbs. of hydrofluosilicic acid we add to your drinking water each year, we honestly believe that we are negatively impacting the quality of your drinking water. And what about our mission? Do we just look the other way?

So there you have it. At the public's request, we are adding fluoride with an acute toxicity greater than lead and only slightly less than arsenic. This runs contrary to our entire water treatment protocol, where everything else in the treatment process is done with the sole purpose and intention of improving the quality and safety of your drinking water.

Please take the time to become better informed on this important health issue. We have several sources of information on our website, representing both sides of this controversial topic. But don't only take our word for it; go ahead and do an internet search on fluoride or the fluoridation of drinking water. Check out the conclusions reached by the National Research Council's 2006 scientific review of EPA's fluoride standards (which were requested by the EPA). Check out both sides of the issue. After educating yourself, we trust that you will understand our perspective (and possibly agree with us) that we should stop adding fluoride to your drinking water.

The only way we can stop adding fluoride to your drinking water is for you and your neighbors to vote for its removal at a general election. We are supporting an ongoing petition effort to bring this to a vote in November. If you want the public to be able to reconsider fluoridation at this November's election and are a registered voter in the Towns of Kennebunk, Kennebunkport, Wells, Ogunquit, Arundel, coastal Biddeford (east of Route 9) or coastal York (Cape Neddick) north of the Cliff House, please contact us at info@kkw.org and we'll connect you with a petitioner. Thank you and good health!



Manganese Removal—Another Success Story

Bill Snyder, Plant Manager (bsnyder@kkw.org) & Rob Weymouth, Facilities Manager (rweymouth@kkw.org)

In 2007, the District began using groundwater in addition to its Branch Brook surface water supply. One of the advantages of using well water is the considerably lower chemical cost. As a result, we began relying less on Branch Brook's surface source and more on well water, especially during the high demand summer months. The well water we selected in the Merriland aquifer was of very good quality, but like most groundwater, it contained higher mineral content than that of our surface water. Some minerals can create aesthetic issues such as discoloration or staining of plumbing fixtures. For example, manganese may show up as black or grey in color.

When manganese levels are relatively low, they can generally be treated by a process called sequestration. Simply put, sequestering minerals with phosphates means tying up minerals by keeping them in solution so as not to cause discoloration. Over time, though, we found the level of manganese in the well water slowly crept upwards, where sequestration was becoming less effective. After consulting with State regulators (because any change in water treatment must be approved by them) and discovering the USEPA's growing concerns about manganese, we decided to take a more proactive approach and began looking for the most cost effective way to remove manganese.

One of our many bench test trials for optimizing the removal of manganese

Early in 2015 we successfully piloted a process of oxidizing the manganese, causing it to come out of solution, followed by filtration. It proved to be very effective, so we brought it up to full scale. Here is how the system works. A small amount of potassium permanganate and sodium hypochlorite (food grade oxidizers) are added to the Merriland River Well water, and turns the manganese into microscopic black particles. This water then passes through the two existing rapid sand filters at our Water Filtration Plant, where the manganese particles are trapped and removed. The water then goes through the existing groundwater treatment process for corrosion control (so as not to corrode customers' lead and copper plumbing), disinfection and fluoridation, before being pumped into the distribution system to our customers.

It took a real in-house team effort to perform the research, laboratory analysis, modeling trials, engineering design and field construction to achieve this new treatment process for minimal cost (all without consultants or contractors). The total cost of this treatment modification was around $110,000, which is significantly less than the estimated $1,000,000 or more for any alternative manganese removal treatment process capable of treating 1 million gallons of water per day. We recently completed the project and after some off-line testing, have the treatment chemistry dialed in. The results have been extraordinary, with manganese in the finished water averaging about 0.01 to 0.02 parts per million (ppm), which is well below the SMCL of .05 ppm.

In addition to eliminating any aesthetic issues related to manganese, our new treatment regimen has us well positioned to meet any future regulatory changes that EPA may impose. This has been a great success story for the District and one that we thought was worth sharing. As always, it's only the best for our customers, just like it says in our mission statement.

Highlights from our May 7, 2016 Open House

The air horn in the wheeler is always a treat with the kiddos

Here's Drippy with some of his fans

Could this be a future employee

The May Day parade wouldn't be the same without Cathy and the KKW Kids in the Caterpillar

2015 Drinking Water Quality Report

Where does my water come from?

In 2015, we produced a record 1,095 million gallons (MG) of water for our customers. That equates to an average of 3.0 MG produced each day from one of our five high quality supply sources:

- Branch Brook Surface Water - 677.6 MG
- Kennebunk River Wells - 369.07 MG
- Merriland River Wells - 18.95 MG
- Plant Wells - 18.18 MG
- Harrisecket Road Wells - 11.56 MG

Source Water Assessment

The sources of drinking water include rivers, lakes, ponds and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material and can pick up substances resulting from human activity. The Maine Drinking Water Program (DWP) has evaluated all public water supplies as part of the Source Water Assessment Program (SWAP). The assessments examine geology, hydrology, land uses, water testing information, and the extent of land ownership or protection by local ordinance to see how likely drinking water sources are to being contaminated by human activities in the future. Assessment results are available at public water suppliers, town offices and the DWP. For more information about the SWAP, contact the DWP at 287-2070.

Lead in Drinking Water

Elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and household plumbing. The Kennebunk, Kennebunkport and Wells Water District is responsible for providing high quality drinking water to the tap, but cannot control the variety of materials used in private plumbing systems. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (800-426-4791) or visit www.epa.gov/

HYDRATE WITH CONFIDENCE!

We are once again pleased to report that your drinking water fully complies with all Federal and State primary drinking water standards - congratulations! This drinking water quality report contains important information about your water, what it contains and the treatment process used to make it safe. Since its incorporation in 1921, the Kennebunk, Kennebunkport & Wells Water District has considered water quality and the health of our customers of prime importance. Our highly trained and State-licensed Water System Operators vigilantly treat, monitor and safeguard our water supplies to ensure that our customers are provided with safe, high quality and good tasting drinking water that still costs less than a penny per gallon, that's refreshing.

HEALTH INFORMATION

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. Contaminants that may be present in source water include:

- **Microbial contaminants,** such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- **Inorganic contaminants,** such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- **Pesticides and herbicides,** which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses.
- **Organic chemical contaminants,** including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban runoff and septic systems.
- **Radioactive contaminants,** that can be naturally-occurring or be the result of oil and gas production and mining activities.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

WATER SOURCES & PROTECTION

The District utilizes both high quality surface water and groundwater as supply sources. Surface water is obtained exclusively from Branch Brook, a largely spring-fed, naturally flowing water body that originates in Sanford and forms the town line between Kennebunk and Wells. In addition to Branch Brook, the District obtains groundwater from its four naturally developed well sites. The District also maintains mutual-aid system interconnection agreements with the Biddeford-Saco Water Company and the York Water District.

Protection of the Branch Brook watershed and well sites remains a top priority. The District continues to purchase property, seek conservation easements and work with local officials to strengthen ordinances within the watershed and wellhead protection zones as opportunities arise. If you witness illegal or suspicious activity within the Branch Brook watershed or at the well sites, please report it immediately by calling the District at 207-985-2362 or notify the local Police at 911.

WATER QUALITY VIOLATIONS

No water quality violations were issued in 2015.

WAIVER INFORMATION

In 2014, our system was granted a 'Synthetic Organics Waiver.' This is a three year exemption from the monitoring/reporting requirements for the industrial chemicals: *SEMIVOLATILE ORGANICS, TOXAPHENE/CHLORDANE/PCB, HERBICIDES* and *CARBAMATE PESTICIDES.* This waiver was granted due to the absence of these potential sources of contamination within a half mile radius of the water source.

TREATMENT PROCESS

SURFACE WATER from Branch Brook flows into our Filtration Plant where multiple processes are used to remove particles and microorganisms. The first process is COAGULATION, where chemicals (primarily food-grade alum) are added, causing particles to destabilize and attract to each other. Then FLOCCULATION occurs in mixing chambers where the small particles combine into larger particles called floc. Next, CLARIFICATION occurs in the settling basins where the heavier floc particles settle out. Chlorine dioxide is then introduced for INITIAL DISINFECTION; free chlorine is PRIMARY DISINFECTION. The FILTRATION process follows where clarified water passes through dual media filters (sand and anthracite) to remove any remaining floc particles. Finished water chemistry is then optimized for CORROSION CONTROL & SEQUESTRATION using ortho-poly phosphates, FLUORIDATION (see Note 1), and SECONDARY DISINFECTION with free chlorine prior to being pumped into our distribution system where over 212 miles of transmission and distribution system water mains and seven storage tanks distribute water to our customers.

GROUNDWATER from our four well sites (eight wells) is pumped into the distribution system after the water chemistry is optimized for CORROSION CONTROL & SEQUESTRATION with ortho-poly phosphates, FLUORIDATION, and DISINFECTION with free chlorine. Water from the Merriland River well site is also filtered to improve aesthetic quality by lowering iron and manganese levels.

2015 ANNUAL WATER QUALITY REPORT FOR PWSID# ME0090760

Contaminant	Date	Result	MCL	MCLG	Source/Comments
Microbiological					
COLIFORM (TCR)(1)	2015	**0 pos**	1 pos or 5%	0 pos	Naturally present in the environment.
Inorganics					
ARSENIC	7/9/2015	**5 ppb**	10 ppb	0 ppb	Erosion of natural deposits. Runoff from orchards, glass and electronics production wastes.
BARIUM	6/17/2015	**0.008 ppm**	2 ppm	2 ppm	Discharge of drilling wastes. Discharge from metal refineries. Erosion of natural deposits.
CADMIUM	7/9/2015	**3 ppm**	5 ppm	5 ppm	Corrosion of galvanized pipes. Erosion of natural deposits. Discharge from metal refineries, runoff from waste batteries and paints.
CHLORITE	1/4/2015	**0.32 ppm**	1 ppm	0.8 ppm	Water additive used to control microbes.
CHROMIUM	7/9/2015	**7 ppb**	100 ppb	100 ppb	Discharge from steel and pulp mills. Erosion of natural deposits.
FLUORIDE (2)	6/17/2015	**0.84 ppm**	4 ppm	4 ppm	Erosion of natural deposits. Water additive which promotes strong teeth. Discharge from fertilizer and aluminum factories.
NITRATE (4)	7/28/2015	**1.1 ppm**	10 ppm	10 ppm	Runoff from fertilizer use. Leaching from septic tanks, sewage. Erosion of natural deposits.
Radionuclides					
COMBINED RADIUM (-226 & -228)	5/4/2015	**1.1 pCi/l**	5pCi/l	0 pCi/l	Erosion of natural deposits.
COMBINED URANIUM	7/9/2015	**1.7 ppb**	30 ppb	0 ppb	Erosion of natural deposits.
RADIUM-226	11/25/2015	**0.6 pCi/l**	5 pCi/l	0 pCi/l	Erosion of natural deposits.
RADIUM-228	5/4/2015	**0.8 pCi/l**	5 pCi/l	0 pCi/l	Erosion of natural deposits.
URANIUM-238	7/30/2015	**1 ppb**	30 ppb	0 ppb	Erosion of natural deposit.
Lead/Copper					
COPPER 90TH%VALUE (3)	1/1/2015 - 6/30/2015	**0.407 ppm**	AL=1.3ppm	1.3 ppm	Corrosion of household plumbing systems.
LEAD 90TH%VALUE (3)	1/1/2015 - 6/30/2015	**11 ppb**	AL=15ppb	0 ppb	Corrosion of household plumbing systems.
Disinfectants and Disinfection By-Products					
Biddeford Pool Fire Station					
TOTAL HALOACETIC ACID (HAA5)(7)	LRAA (2015)	**25 ppb Range (0-23 ppb)**	60 ppb	0 ppb	By-product of drinking water chlorination.
TOTAL TRIHALOMETHANE (TTHM)(7)	LRAA (2015)	**32 ppb Range (7.5-33.1 ppb)**	80 ppb	0 ppb	By-product of drinking water chlorination.
Crow Hill Tank					
TOTAL HALOACETIC ACID (HAA5)(7)	LRAA (2015)	**18 ppb Range (0-42 ppb)**	60 ppb	0 ppb	By-product of drinking water chlorination.
TOTAL TRIHALOMETHANE (TTHM)(7)	LRAA (2015)	**23 ppb Range (6.9-48.4 ppb)**	80 ppb	0 ppb	By-product of drinking water chlorination.
Ogunquit Town Hall					
TOTAL HALOACETIC ACID (HAA5)(7)	LRAA (2015)	**38 ppb Range (27-52 ppb)**	60 ppb	0 ppb	By-product of drinking water chlorination.
TOTAL TRIHALOMETHANE (TTHM)(7)	LRAA (2015)	**30 ppb Range (15.7-38 ppb)**	80 ppb	0 ppb	By-product of drinking water chlorination.
Wells Library					
TOTAL HALOACETIC ACID (HAA5)(7)	LRAA (2015)	**29 ppb Range (15.3-48 ppb)**	60 ppb	0 ppb	By-product of drinking water chlorination.
TOTAL TRIHALOMETHANE (TTHM)(7)	LRAA (2015)	**19 ppb Range (10.2-40 ppb)**	80 ppb	0 ppb	By-product of drinking water chlorination.
CHLORINE RESIDUAL LEVELS	RAA (2015)	**1.28 ppm Range (0.3-2.6 ppm)**	MRDL = 4 ppm	MRDLG = 4 ppm	By-product of drinking water chlorination.
TURBIDITY LEVELS (highest recorded)	10/18/2015	**0.33 ntu (PTR)**	<0.3 ntu in 95% of samples 1.0 ntu maximum limit		Soil runoff.

Definitions:

-Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water.
-Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health.
-Running Annual Average (RAA): A 12 month rolling average of all monthly or quarterly samples for the last year at all sample locations.
-Locational Running Annual Average (LRAA): A 12 month rolling average of all monthly or quarterly samples at specific locations.
-Action level (AL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.
-Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for the control of microbial contaminants.
-Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health.
-MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
-Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Units:

ppm = parts per million or milligrams per liter (mg/L) pos = positive samples MFL = million fibers per liter
ppb = parts per billion or micrograms per liter (ug/L) pCi/l = picocuries per liter (a measure of radioactivity)

Notes:

1) Total Coliform Bacteria: Reported as the highest monthly number of positive samples for water systems that take less than 40 samples per month.
2) Fluoride: For those systems that fluoridate, fluoride levels must be maintained between 0.5 and 1.2 ppm. The optimum level is 0.7 ppm.
3) Lead/Copper: Action levels (AL) are measured at the consumer's tap. 90% of the tests must be equal to or below the action level.
4) Nitrate: Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health provider.
5) Gross Alpha: Action level over 5 pCi/L requires testing for Radium 226 and 228. Action level over 15 pCi/L requires testing for Uranium. Compliance is based on Gross Alpha results minus Uranium results = Net Gross Alpha.
6) Radon: The State of Maine adopted a Maximum Exposure Guideline (MEG) for Radon in drinking water at 4000 pCi/L, effective 1/1/2007. If Radon exceeds the MEG in water, treatment is recommended. It is also advisable to test indoor air for Radon.
7) TTHM/HAA5: Total Trihalomethanes and Haloacetic Acids are formed as a by-product of drinking water chlorination. The chemical reaction occurs when chlorine combines with naturally occurring organic matter in water. Compliance is based on running annual average.

BENEATH THE SURFACE - Brady to Gronk & the Cost of Construction

Don Gobeil, Technical Services Manager (dgobeil@kkw.org)

If I were to take the time to categorize all the *Beneath the Surface* articles I've written over the years, I bet a pattern would surface that would reveal recurring articles about the District's construction program, how we formulate our budgets, how we prioritize among the never ending number of projects that must be completed and in general how we attempt to fulfill our mission and deliver value to our customers.

Ensuring that we try to squeeze every drop of benefit from spending our customers' money is always near the top of our focus as we go about managing our buried infrastructure and assets. But there is also another element associated with the way in which our distribution system grows and expands. And it represents another aspect and responsibility of what we must manage and oversee. I'm referring to construction projects designed by, installed by and paid for by private individuals and developers. New residential subdivisions, shopping centers, industrial parks, condominium developments and single family homes are all part of the matrix of growth and expansion that we must be involved with and oversee. And in a fast paced environment like coastal York County, this can represent a sizeable additional workload for us. In the case of new subdivisions and extensions along public streets, the District assumes the ongoing responsibility to own and maintain the main after it is installed and accepted. Other projects like condominium developments and commercial or industrial projects are designed to remain privately owned and maintained. But with all projects, we require the material used and the workmanship of the installation be done in accordance to our specifications and standards. This ensures continuity in system integrity and performance regardless of whether we own and maintain the system or some private group or association does.

KKWWD's Eric Cloutier is inspecting a recent 12" water main extension on Ocean Avenue, Kennebunkport

When we work with outside engineers and developers on privately-financed projects, they generally have a good understanding of the process involved and the costs associated with completing a project successfully. They understand that expenses resulting from our oversight are a cost of doing business, and are ultimately passed along to the subsequent buyers. However, when we get an inquiry for water service from an individual building or buying a single family home beyond the end of our existing system, the process can lead in many different directions. These individual requests for water main extensions usually involve dealing with someone who has never undertaken such an endeavor, and who will likely never have to do it again if they succeed in getting a project done. It is critically important in this setting that I communicate clearly to explain the process they will encounter. This includes outlining the rules and regulations that must be adhered to, answering any and all questions that arise and generally trying to make a potentially intimidating process seem less so. Whether a project eventually materializes or not, if I can make the individual comfortable with me (and by extension the District), then I know any decision is reflective of the best information that we can provide.

With individuals, discussing a new service or main inquiry quickly brings up a standard question, *"how much will it cost"*? Whenever I attempt to provide a 'ball-park' estimate, the next question is invariably, *"why does it cost SO much"*? Sticker shock is not overstating the recurring dazed look I get from many folks when they are first presented with the harsh reality of construction costs. Consider this; new construction of a water main on a typical paved street can easily cost $150 to $300 per foot of pipe installed. If you take a yardstick and place it in the street in front of your home, it could cost $500-$1,000 to cover that distance with a buried water main. Or, the next time you see a Tom Brady to Rob Gronkowski 60 yard touchdown pass, it could cost $30,000 to $50,000 to cover that same distance with a buried water pipe. For one individual with one house needing water, this is real money indeed.

In our industry, we all acknowledge how expensive construction has become. In fact, if one were to study escalating construction costs historically over time, it would surely outpace the annual rate of inflation or the cost of living. But what are the cost drivers? And can they be managed and/or contained? There are no easy answers. Some factors that I have witnessed over time include: 1) more and more utilities vying for space in our roadways, causing congestion, conflicts and design hurdles that all translate to higher costs. 2) Cost of pipe and materials is at the mercy of global commodity prices for oil and metal, and can spike dramatically based upon world political or economic unrest. 3) Providing workers a safe work environment is now a top priority (and rightfully so), but adds expense to all projects due to incorporating best construction techniques that emphasize safety over speed in reaching daily goals. 4) Insurance regulations and requirements covering blasting work, general liability, performance guarantees, workers' compensation overhead and other required coverages all add expense to projects. 5) Increasing public expectations that construction projects incorporate an emphasis on efficient traffic and pedestrian movement at all times. And 6) Continually evolving State and Municipal permit regulations that dictate paving and restoration standards that many times are

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Staying Ahead of Lead

Bill Snyder, Plant Manager (bsnyder@kkw.org) & Norm Labbe, Superintendent (nlabbe@kkw.org)

History and Background

As previously mentioned, two years ahead of EPA's (1991) Lead and Copper Rule, the District conducted a corrosion control study, which determined the optimal water treatment regimen to minimize the corrosion of lead and copper. Since that time the District has been minimizing the corrosion of customer-owned plumbing to comply with EPA standards, as can be seen of the attached Water Quality report (and on all others, which are in prior summer issues of *What's on Tap*, available on our website). In summary, **we don't have an issue with elevated lead levels in our drinking water.**

We realize that if lead was to appear in drinking water, it would come primarily from lead pipes, lead solder joints (which is in most homes built prior to 1986) and from brass fittings (brass was at least 5% lead). Since we are involved in supplying water meters, we looked for alternatives to our use of standard brass water meters in our customers' homes. So in 2003, a full decade ahead of the January 2014 Federal ban of lead-containing brass plumbing fixtures, the District stopped buying standard brass water meters. From that time on, we have only bought what is considered by the EPA as "lead free" brass meters, (which have an average lead content of less than 0.25%).

If your water service is being used for an electrical ground, there must also be one or two grounding rods installed outside.

More recently, as a result of the unfortunate Flint, Michigan experience, it appears that the EPA will be further modifying its regulations relating to lead, including significant changes that relate to the historical use of lead service lines. Lead service lines, which were popular until the late 1930s, were very prevalent in the Midwest. Their use was somewhat less widespread in the Northeast. As an added precaution, we have already begun a comprehensive water service investigation to identify every customer's service line material, with particular emphasis on finding any remaining lead water service lines that may not have already been replaced either by the District or by the property owners.

What Can You Do As A Customer?

If your house was built prior to 1986, you may want to have an electrician assure that your electrical grounding meets current electrical codes and is not passing stray currents through your plumbing. Improper electrical grounding to your water pipes can cause electrolysis of your plumbing, forcing lead and copper into the water. If your plumbing fixtures predate the 2014 Lead Reduction Act ban on leaded brass fixtures, you may want to assure that your drinking water fixtures are indeed lead-free. There is, however, **a simple short term solution** to both of these situations. Just **run your water at the faucet for at least 30 to 60 seconds before using it for drinking or cooking.** This will help assure that you only drink the District's lead-free water prior to it being affected by your plumbing. Another, more expensive solution is to purchase an under-the-counter or faucet-mounted water filter (usually containing activated carbon) that is rated for removing metals, tastes and odors. Besides taking out lead and copper, it will also remove that chlorine odor that is ever-present in a properly operating surface water supply.

Beneath the Surface (continued from page 6)

far more extensive than what was originally disturbed. There are many other aspects of doing this type of work that have evolved over the years that contribute to the increasing 'cost of doing business'.

It cannot be argued that the way business is conducted in today's world is superior to the way things were done in the past. Incorporating ALL stakeholders and their needs is vitally important, and ultimately builds public trust and support and results in a better end product.

In closing, I'd like to get back to the inexperienced individual looking to become one of our customers. If I can succeed in maneuvering someone like that through the maze of utility regulation, explain and estimate the costs that are likely to be encountered, build trust to the point where they feel comfortable in making decisions, then I look at those opportunities as the most gratifying part of the service that I provide in my role here at the District. And if I can somehow play a part that results in reducing the cost of the project from a Brady to Gronkowski 60 yard bomb to a Brady to Edelman screen pass, then all the better as well.

DID YOU KNOW?

Since the full deployment of our Advanced Metering Infrastructure (AMI) system began in the fall, we have installed over 650 AMI meters in the Town of Kennebunk (all with in-house staff) with a 100% success rate in reporting. For now, we will continue to focus on the area that lies east of the Mousam River and north of Route 1 (Main Street and Portland Road). We will provide regular updates of our progress of this project, as well as the launching of your customer access portal, on our website at *www.kkw.org* and in upcoming newsletters.

Kennebunk, Kennebunkport and Wells Water District
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Are you ready for the long, hot summer?

Visit kkw.org for water conservation tips

Employee Spotlight

Cindy Rounds, Administrative Assistant (crounds@kkw.org)

If you've visited our business office lately, you likely noticed a new and friendly face. In June of 2015, **Aaron Lehoux** joined our front office team. His professional background in the hospitality industry lends itself well to providing the outstanding customer service that our customers have come to expect. With his knowledge and experience in information technology, Aaron has become a key member of our Technology Committee as the District enters the world of social media.

Aaron lives in Wells with his wife Danielle and their two rescue kitties, Pemi and Sandi. During his leisure time, Aaron can be found trail running crazy distances just for fun. He hopes to compete in his first 100 mile race this fall. Join us in welcoming Aaron.

Also worth mentioning.....we wouldn't have the reputation that we're so proud of if it weren't for our employees, many who have been around for a while. Achieving seniority milestones recently were Crewman **John Gove**, 30 years; Meter Reader **Charlie Brown**, 25 years; Facilities Technician **Gerry Goulden**, 25 years; and Plant Operator **Lynn Mankin**, 20 years.

By the way, nearly half of our staff has been with us for at least 20 years.

We're giving you more ways to stay informed.

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