This report is a requirement of the Safe Drinking Water Act. It provides our customers a summary of the tests performed on your drinking water in 2016 so you can assess for yourself how clean your water is.

So often, the difference between a poor outcome and a good one has to do with being proactive in a situation rather than reactive. For instance, it makes sense to leave the house ten minutes early on an icy winter morning, rather than driving too fast for the conditions and ending up in a ditch. It’s not just subscribing to “a stitch in time” philosophy, it’s also using a thread that is less likely to fray.

The City’s Legacies and Strategic Commitments (Legacies), adopted by the City Council in 2009, are a great example of proactivity. The Legacies emphasize clean safe drinking water, a healthy environment, vibrant economy, equity and other important goals. At its core, the Legacies are a framework to ensure positive community outcomes are a guiding focus of our work.

The Department of Public Works is proactive in many areas, some of which are highlighted here. As one example: for the past 25 years the Dept. of Public Works has been replacing customer water connections that may contain lead – long before the problems with these pipes made national headlines. Fortunately in our region, lead was not commonly used in water lines. Since 1990, crews have found less than 2% of customer connections that were galvanized or contained lead and these were promptly replaced.

Public Works has been proactive in finding a cost effective solution for needed upgrades at the 50-year old Water Treatment Plant while also improving treated water quality. The result is a dissolved air floatation (DAF) process that will be online in 2018. As part of our proactive approach - with Lake Whatcom water quality a City Legacy - we continue our work with our partners to understand and protect this valuable community resource.

We look forward to furthering the City’s goals for a socially, economically and environmentally healthy community. The full list of the City’s Legacies and Strategic Commitments can be found here: www.cob.org/Documents/council/legacies-commitments.pdf

Why Add Pretreatment?

At the water treatment plant, coagulating agents are added to the water right before it flows through filter beds of anthracite coal and sand. While this method of filtration has served the City well for almost 50 years, more efficient treatment processes are now available that will improve our ability to provide high quality drinking water. The addition of the Dissolved Air Floatation system (DAF) - starting in 2018 - will decrease the organic matter in the water before this water flows through the existing filter beds. Less organic matter in the water means a decrease in the amount of chemicals we need to add to the water during treatment - and that, in turn, will deliver a more consistent and efficient means of treating water for now and into the future.

WATER METERING PROJECT WRAPS UP

After five years, with 15,000 water meters installed, the City is wrapping up this state-mandated project in great fashion. The project is on-time and on-budget, thanks to the cooperation of water customers and the efficiency of our skilled and professional Public Works water crews. We take pride in all the work we do to provide you with safe, reliable drinking water and appreciate your help in making this project a success. Water meters help to meet the water use efficiency goals of a reliable long-term water supply, good stewardship of water resources, and efficient operation and management of water systems.
DISSOLVED AIR FLOATATION

The City of Bellingham Water Filtration Plant will soon include a new dissolved air floatation (DAF) pretreatment step! Here’s how it happened:

2009
Treatment plant filters are not able to keep up with water needs of customers. Initiate the City’s first-ever mandatory water restrictions.

2010
Water experts assess options to solve water production issues, including:
- **Pretreatment**: Remove solids from water before filtration step
- **Add Filters**: Add to the existing 6 filters at treatment plant
- **New Intake**: Extend or relocate pipeline that brings water from lake
- **Modify Intake**: Improve existing intake pipe to allow water to be drawn from different depths of lake

2011-2012
Review options and select the best one. Tour other plants using pretreatment and perform on-site pilot testing of selected pretreatment alternative - DAF.

2013-2014
- **Project Design and Preparation**
- **Condition Assessment**: Inspect existing system
- **Hydraulic Analysis**: Ensure proper flows and future expansion potential
- **Site and Construction Impacts**: Habitat impacts, Critical Area assessment and geologic analysis
- **DAF Siting**: Select proper site to minimize impact and maximize performance
- **Plans Development**: Develop and review plans for new DAF facility
- **Construction**: Develop construction plan that will not limit ability to continue to produce water

2015
DAF project out to bid

2016
DAF project construction begins

2018
DAF project completion - even higher quality water!

TESTING THE WATERS

Since 1970, there have been major reductions in lead levels in air, tap water, food, gas, toys, paint and soil in the U.S., resulting in much lower blood lead levels in children. However, there really is no safe blood lead level.

Drinking water accounts for about 15% of a person’s total lead exposure - fortunately water is a source that can be controlled. Lead can enter drinking water when a home’s water pipes that contain lead corrode. Lead-containing pipes are mainly found in the Midwest and Northeast, not locally. Even so, to ensure safe drinking water, the City buffers water to reduce corrosion of pipes, as this has been shown to be a successful lead-reduction strategy. Brass faucet fixtures with lead solder can also contribute lead into water, so always let the cold water run for a bit prior to using it for cooking or drinking. You might also consider replacing your faucet with newer lead-free model.

The City meets all federal and state standards for drinking water quality, but when it comes to drinking water we do much more than meet minimum requirements. We have expanded testing beyond our customers’ taps to also test for lead in all City public facilities. It is another way to ensure residents receive safe, pure water.

2 For more information about water quality contact Lab Supervisor Peg Wendling at (360) 778-7872
The City of Bellingham Water Filtration Plant will soon include a new dissolved air floatation (DAF) pretreatment step!

For more information about water quality contact Lab Supervisor Peg Wendling at (360) 778-7872.

2016 Level Detected

<table>
<thead>
<tr>
<th>Detected Substances</th>
<th>2016 Level Detected</th>
<th>EPA Maximum Contaminant Level (MCL) or Action Level (AL)</th>
<th>In Compliance?</th>
</tr>
</thead>
<tbody>
<tr>
<td>THM:</td>
<td>Average (all sites): 36.1 ppb</td>
<td>MCL must be:</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>Maximum single site average: 46.7 ppb</td>
<td>THM: Below 80 ppb and</td>
<td></td>
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<tr>
<td></td>
<td>Range: 13.4 to 53.2 ppb</td>
<td>HAA: Below 60 ppb</td>
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</tr>
<tr>
<td>HAA:</td>
<td>Average (all sites): 18.0 ppb</td>
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<td></td>
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<tr>
<td></td>
<td>Maximum single site average: 19.6 ppb</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Range: 12.8 to 27.2 ppb</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Free Chlorine Residual: Chlorine levels are monitored continuously at the water treatment plant and daily at representative points throughout the water distribution system.

Of the 1,104 free available chlorine samples collected in the distribution system along with water purity samples in 2016, the average free chlorine was 0.46 ppm. The range was <0.01 to 0.91 ppm.

There is a requirement for a measurable chlorine residual at 95% of all routine monitoring sites each month.

The allowable highest 90th percentile values are:
- Lead AL: 15 ppb
- Copper AL: 1300 ppb

In

Total and Fecal Coliform Bacteria: The City samples a minimum of 90 sites in the water distribution system each month for indicator bacteria to ensure the water maintains its purity from the treatment plant to our customers.

Of the 1,104 samples collected for total and fecal coliform in 2016, none tested positive for total coliform bacteria. No sample was positive for fecal coliform bacteria in 2016.

Allowable highest percentage of total coliform-positive samples per month is 5%. The presence of any fecal coliform in drinking water for two consecutive samples would require public notification within 24 hours.

Turbidity: Turbidity measures the clarity of the water. The City monitors turbidity continuously at the beginning, middle and end of the treatment process. Turbidity reported for compliance is in the fully treated drinking water in the combined effluent.

Bellingham’s single highest turbidity level for 2016 was 0.09 nephelometric turbidity units (NTU). Bellingham met the 0.3 NTU requirement in 2016 100% of the time.

Compliance means filtered water turbidity is less than or equal to 0.3 NTU in at least 95% of the measurements made each month & never exceeding a turbidity of 1.0 NTU.

Definitions

**Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants (e.g., chlorine, chloramines, chlorine dioxide).

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Bellingham’s source water is Lake Whatcom on the eastern edge of town. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. 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 occur naturally or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, and farming.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater 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 stormwater runoff, and septic systems.
- **Radioactive contaminants**, which can be naturally occurring or the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the Department of Health and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and the Washington State Department of Agriculture regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Elevated levels of lead in drinking water can cause serious health problems, especially for pregnant women and young children. In Bellingham, fortunately, lead is not found in the treated water, but lead in drinking water can come from pipes and faucets in our customers’ homes. The City of Bellingham is responsible for providing high quality drinking water, but cannot control the variety of materials used in customers’ plumbing. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for at least 30 seconds before using the water for drinking or cooking. You can capture this water to use on plants. If you are concerned about lead in your water, you may opt to have your water analyzed by a local laboratory. To learn more about lead in water, go to: http://water.epa.gov/drink/info/lead.