

2015

# WATER QUALITY

**TACOMA WATER**  
TACOMA PUBLIC UTILITIES

THE TEAM AT TACOMA WATER IS COMMITTED TO SUPPLYING YOU AND YOUR FAMILY SAFE, RELIABLE DRINKING WATER. WE TAKE GREAT PRIDE IN THAT MISSION.

This year, in an effort to find and remove any pieces of old lead pipe in our system, we found high levels of lead in the pipes outside four homes. In response, we did extensive testing both inside and outside an additional dozen homes to determine the source of the lead and what we could do to eliminate it. While we were able to conclusively show your water is safe, we learned a great deal.

We expected that the short pieces of lead pipe—called goosenecks—were the source, and we found that the homes with lead goosenecks had the highest lead results. More surprising, though, was that when the valve at the meter was opened and the plumbing was disrupted, lead particulates from the valve were released into the water, regardless of whether there was a lead gooseneck.

We confirmed that flushing the water after opening and closing the valve clears the high levels of lead. We have long had a practice of flushing

service lines after we work on either them or the meter, but we will also now be sure to flush after turning water off and on. We also want to remind you about the importance of flushing your pipes if you turn your water service off and on.

It's still important that Tacoma Water remove the remaining lead goosenecks from its system, and we'll do that as expediently and efficiently as possible. We anticipate it will take about five years to replace all of them. In order to assure you of the high quality of your water, we are offering water sample kits to test for lead. Initially the 1,200 homes and businesses with a possible lead gooseneck will have the opportunity to request a kit. The kits will be available to all Tacoma Water customers this fall.

The extensive water sample results clearly show that the utility's corrosion control efforts are working. Corrosion control, which ensures

that Tacoma's water does not degrade the piping material it flows through, is essential to protect the quality of the water we deliver to you.

### Exceeding Regulations

In all areas of testing, Tacoma Water meets the standards set by federal regulation. Rules require that we test our water supply for more than 80 regulated contaminants and more than 50 unregulated chemicals, even if they do not exist in our water. We also take weekly samples from our water system to check for bacteria, and we test for chlorine and other parameters continuously. Washington State Department of Health (DOH) rules require us to take 150 bacteria samples per month; however, we routinely take more than 200.

DOH inspects our operations and facilities regularly and suggests ways to improve. Reliable operation and treatment are always their most critical concern. Our water must meet or exceed the highest standard, or we will not send it to you.



I hope you find this report interesting and learn a bit more about your water source. Every day, our team does its very best to ensure your water is clean and you can count on reliable service.

Sincerely,

**Linda McCrea**

*Tacoma Water Superintendent*

## CORROSION CONTROL: THE MOST EFFECTIVE LEAD PREVENTION



WATER UTILITY WORKERS TAMAR JACKSON AND KIMBERLY EDWARDS REMOVE A LEAD GOOSENECK AND REPLACE A CUSTOMER'S SERVICE.

Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in service lines and household plumbing. Those materials include lead-based solder used to join copper pipe, brass and chrome-plated brass faucets, and in some cases, pipes made of lead that connect your house to the water meter. Homes built before 1986 are more likely to have lead pipes, fixtures and solder. However, new homes are also at risk: Up until 2014, even legally "lead-free" plumbing could contain up to 8% lead.

The most effective way to keep lead out of the water is by preventing that corrosion in the first place. In the water industry, that practice is called "corrosion control."

Tacoma Water has been using corrosion control on its Green River water supply—the utility's primary water source—since 1997. The water from the Green River is treated with caustic soda (sodium hydroxide) to raise the pH, which is a measure of acidity. Raising the pH of the water makes it less corrosive on plumbing and reduces the amount of lead that can dissolve into the drinking water.

Tacoma Water also has groundwater wells that supplement the river supply when it's limited or demand is high, making those wells a critical resource. In late 2013, Tacoma Water started running two new corrosion control treatment facilities that treat a majority of those groundwater wells. Both caustic soda and aeration are used to raise the pH of most of Tacoma Water's groundwater wells.

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## Impact of corrosion control

The federal Lead and Copper Rule, developed by the Environmental Protection Agency in 1991, prescribes the sampling methodology for testing water for lead. The federally acceptable limit of lead in drinking water is 15 parts per billion in no more than 10% of collected samples. Since Tacoma Water started using corrosion control treatment at the Green River in 1997, the utility has completed 14 rounds of testing lead samples from homes of customers. In each round, the 90th percentile results have been below that 15 parts per billion, as required.

Water providers are required to initially conduct those tests every year, and then every three years once a positive performance has been established.

In the back of this report, you'll see that Tacoma Water has met the federal regulation for 2015 with its tests conducted in 2013. In line with the requirement, we will test again this summer. (The testing we conducted this spring, in which we found high levels of lead outside four homes, was beyond what's required by the EPA.)

Tacoma Water continues to evaluate and monitor corrosion control treatment to ensure that it's optimized to reduce the risk of lead exposure to people. Although all of the utility's primary sources of water now have corrosion control treatment, there are some infrequently used backup groundwater sources that do not yet have the treatment. Those sources are used very little and often not run for several years at a time, but the 2015 drought highlighted the value of those backup sources. Tacoma Water is working to ensure that all sources of water for the system, even those not typically needed, have optimal corrosion control treatment.

- Tacoma Water has used corrosion control to protect water for almost 20 years.
- Corrosion control treatment helps build a protective layer inside pipes.
- Drinking water also contains dissolved minerals that, over time, form a mineral scale or coating on the inside of pipes and fixtures.
- Once this coating forms, there is a protective barrier between any metal in the plumbing and the water.

## HOW WE USE CORROSION CONTROL AT THESE FACILITIES

### Green River

Since 1997, the water from the Green River has been treated with caustic soda (sodium hydroxide) to raise the pH, which is a measure of acidity.

### Hood Street Reservoir

In 2014, new chemical systems were used to add fluoride and sodium hydroxide to the groundwater supply. Those changes provide uniform fluoride levels for healthier teeth and reduce water acidity to prevent household plumbing corrosion.

### South Tacoma Pump Station

An aeration system within an existing basin was installed in 2013. Air blown into the basin raises the pH of the groundwater supply, further protecting your plumbing from corrosion.

### Stripping Towers

Air stripping towers have been in operation at one of Tacoma Water's important groundwater wells since 1983. The towers raise the pH of the water, making the water less corrosive on plumbing materials, and also remove any chemical contamination that may exist.



Left to right: GARY FOX, CHRIS McMEEN, SCOTT HALLENBERG, KIM DeFOLO AND CRAIG DOWNS, REPRESENTING A LARGE TEAM OF PEOPLE WORKING TO ENSURE SAFE WATER

# REPORTING CHEMICALS IN YOUR WATER

# 2015 WATER TESTING TACOMA WATER

For all Tacoma Water customers:

The water quality table shown here shows substances we identified at the water source, treatment plant and distribution system during our most recent sampling. The table does not include the other 63 volatile organic chemicals and 75 synthetic organic chemicals we tested for—including many industrial chemicals, herbicides and pesticides—but did not find.

For more information, contact us at (253) 502-8215 or [waterquality@cityoftacoma.org](mailto:waterquality@cityoftacoma.org).

## DEFINITIONS

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

**(MCLG) Maximum Contaminant Level Goal:** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

**ppm** – one part per million.

**ppb** – one part per billion.

**NTU** – Nephelometric Turbidity Unit is a standard to measure water clarity.

**AL** – Action Level is the concentration which, if exceeded, triggers treatment or other requirements which a water system must follow. Action Levels are reported at the 90th percentile for homes at greatest risk.

**MRL** – Minimum Reporting Level, also known as Method Reporting Limit: The smallest amount of a substance that can be reliably measured and reported in a sample.

**ND** – Not Detected, result was below the laboratory minimum detection level.

**TT** – Treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

**(MFL) Million Fibers per Liter:** Samples with values higher than (7) MFL are above the EPA MCL and must be reported to the appropriate state agency for assessment of vulnerability.

**Trigger Level:** Department of Health drinking water response level. Systems with compounds detected at concentrations in excess of this level are required to take additional samples.

**(MRDL) Maximum Residual Disinfectant Level:** Highest level of a disinfectant allowed in drinking water.

**(MRDLG) Maximum Residual Disinfectant Level Goal:** 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.

**NA** – Not applicable (Or not analyzed).

**NR** – Not Regulated (Not currently subject to EPA drinking water regulations).

**CFU/ml** – colony-forming units per milliliter.

**pCi/L** – picocuries per liter (measure of radioactivity).

Constituent	Highest Level Allowed (MCL)	Highest Level Detected	Ideal Goals (MCLG)	Range of Level Detected or # exceed AL	Regulation Met?	Potential Sources of Contaminant
<b>REGULATED AT THE GROUNDWATER SOURCES</b>						
Arsenic	10 ppb	6 ppb	0	0 - 6 ppb	Yes	Natural erosion
Barium	2 ppm	0.044 ppm	2 ppm	0 - 0.044 ppm	Yes	Natural erosion
Chromium	100 ppb	2 ppb	100 ppb	0 - 2 ppb	Yes	Natural erosion
Nickel	100 ppb	3 ppb	100 ppb	0 - 3 ppb	Yes	Natural erosion
Nitrate	10 ppm	4.2 ppm	10 ppm	0 - 4.2 ppm	Yes	Agricultural uses, septic
Trichloroethylene	5 ppb	0.99 ppb	0	0 - 0.99 ppb	Yes	Industrial contamination
<b>UNREGULATED AT THE GROUNDWATER SOURCES</b>						
Chloroform	<i>not regulated</i>	0.76 ppb	<i>not regulated</i>	0 - 0.76 ppb Average 0.22 ppb	<i>not regulated</i>	Industrial contamination
<b>EPA UNREGULATED CONTAMINANT MONITORING (UCMR3)</b>						
Chlorate	<i>not regulated (MRL = 20 ppb)</i>	220 ppb	<i>not applicable</i>	0 - 220 ppb	NA	Agricultural uses, disinfection byproduct
Chromium (total)	100 ppb <i>(MRL = 0.2 ppb)</i>	0.38 ppb	100 ppb	0 - 0.38 ppb	NA	Natural erosion
Hexavalent Chromium (Cr-6)	<i>not regulated (MRL = 0.03 ppb)</i>	0.31 ppb	<i>not applicable</i>	0.31 ppb	NA	Natural erosion
Strontium	<i>not regulated (MRL = 0.3 ppb)</i>	120 ppb	<i>not applicable</i>	0 - 120 ppb	NA	Natural erosion
Vanadium	<i>not regulated (MRL = 0.2 ppb)</i>	3.5	<i>not applicable</i>	0 - 3.5 ppb	NA	Natural erosion
<b>REGULATED AT THE TREATMENT PLANT</b>						
Fluoride	4 ppm	1.44 ppm	4 ppm	0.00 - 1.44 ppm	Yes	Treatment additive
Turbidity	5 NTU	3.43 NTU	<i>not applicable</i>	0.03 - 3.43 NTU	Yes	Soil erosion
<b>REGULATED IN THE DISTRIBUTION SYSTEM</b>						
Disinfection byproducts	Highest running annual average allowed	Our running annual average	MCLG	Range of level Detected	Regulation Met?	Potential sources of contaminant
Total Trihalomethane	80 ppb average	12.5 ppb average	<i>not applicable</i>	0 - 24 ppb	Yes	Disinfection interaction
Haloacetic Acid	60 ppb average	8.3 ppb average	<i>not applicable</i>	0 - 16 ppb	Yes	Disinfection interaction
Bromate	10 ppb	0	0	0	Yes	Disinfection interaction
Chlorine Residual	4 ppm	NA	4 (MRDLG)	0.13 - 1.62 ppm	Yes	Treatment additive
<b>REGULATED AT THE CONSUMERS' TAP</b>						
Lead & Copper: sampled in 2013; required once every 3 years	90% of taps sampled must be below action level	90% of taps sampled were at or below this level	MCLG	# of sites above the AL	Regulation Met?	Potential sources of contaminant
Lead	15 ppb AL	10 ppb	0	3 of 50 sites	Yes	Household plumbing
Copper	1.3 ppm AL	0.223 ppm	1.3 ppm	zero of 50 sites	Yes	Household plumbing
Total Coliform	<5% positive	0.000 %	0	zero of 2202 sites	Yes	Sampling technique

**For Tacoma Water customers who live in N.E. Tacoma:**

Tacoma Water bought water from the Lakehaven Utility District for several weeks in 2015, so we are providing their information as well.

LAKEHAVEN UTILITY DISTRICT

EPA REGULATED PRIMARY INORGANIC ANALYTES AT THE SOURCE

Regulated Substance	MCL	MCLG	Range of Level Detected	Highest Detection	Year Tested	Major Sources	Violation
Arsenic	10 ppb	0 ppb	ND – 5.4 ppb	5.4 ppb	2015	Natural Erosion	No
Beryllium	0.004 ppm	0.004 ppm	ND – 0.0014 ppm	0.0014 ppm	2014	Discharge from electrical & aerospace industries	No
Cadmium	0.1 ppm	0.005 ppm	ND – 0.0014 ppm	0.0014 ppm	2014	Corrosion of galvanized pipes and/or natural erosion	No
Fluoride	4.0 ppm	4.0 ppm	ND – 0.3 ppm	0.3 ppm	2014	Natural Erosion — Treatment Additive	No
Nitrate	10 ppm	10 ppm	ND – 3.1 ppm	3.1 ppm	2015	Runoff From Fertilizer Use, Septic Systems	No
Selenium	0.05 ppm	0.05 ppm	ND – 0.0023 ppm	0.0023 ppm	2014	Natural Erosion	No
Radium 228	5 pCi/L	0 pCi/L	ND – 1.4 pCi/L	ND – 1.4 pCi/L	2015	Decay of Natural Deposits	No

OTHER STATE REGULATED INORGANIC CONTAMINANTS AT THE SOURCE

Regulated Substance	MCL	MCLG	Range of Level Detected	Highest Detection	Year Tested	Major Sources	Violation
Turbidity	5.0 NTU	NA	NA	NA	NA	Natural Erosion	No
Nickel	100 ppb	100 ppb	ND	ND	2014	Natural Erosion	No

EPA REGULATED IN LAKEHAVEN'S DISTRIBUTION SYSTEM

Regulated Substance	Highest running annual average allowed	MCLG	Range of Level Detected	Running annual average	Year Tested	Major Sources in Drinking Water	Violation
Haloacetic Acid	60 ppb	NA	ND – 31 ppb	10.1 ppb	2015	Disinfection interaction	No
Total Trihalomethane	80 ppb	NA	2.0 – 42 ppb	15.7 ppb	2015	Disinfection interaction	No

EPA UNREGULATED CONTAMINANT MONITORING IN LAKEHAVEN'S DISTRIBUTION SYSTEM (UCMR3)

Regulated Substance	MRL	MCLG	Range of Level Detected	Highest Detection	Year Tested	Major Sources in Drinking Water	Violation
Chlorate	20 ppb	NR	ND – 120 ppb	120 ppb	2014	Pesticides, disinfection byproduct	NR
Chromium	0.2 ppb	NR	ND – 0.32 ppb	0.32 ppb	2014	Naturally occurring earth metal & in paints and metal coatings	NR
Hexavalent Chromium (Cr-6)	0.03 ppb	NR	ND – 0.32 ppb	0.32 ppb	2014	Naturally occurring earth metal & in paints and metal coatings	NR
Molybdenum	1.0 ppb	NR	ND – 1.4 ppb	1.4 ppb	2014	Naturally occurring earth metal & in grains, vegetables and metal finishing	NR
Strontium	0.3 ppb	NR	0.56 – 140 ppb	140 ppb	2014	Naturally occurring earth metal & in phosphate fertilizers	NR
Vanadium	0.2 ppb	NR	0.2 – 47 ppb	47 ppb	2014	Naturally occurring earth metal & in fossil fuel deposits	NR

STATE REGULATED AT THE CONSUMERS TAP (FROM DISTRIBUTION SYSTEM/TARGETED HIGH RISK RESIDENTIAL UNITS)

Regulated Substance	MCL	MCLG	Range of Level Detected	Highest Detection	Year Tested	Major Sources	Violation
Lead	15 ppb (AL)	0.0 ppb	ND – 2 sites above AL	10 ppb (90th percentile)	2013	Household Plumbing	No
Copper	1.3 ppm (AL)	1.3 ppm	ND – All sites below AL	0.33 ppm (90th percentile)	2013	Household Plumbing	No

OTHER MICROBIOLOGICAL & DISINFECTION STANDARDS IN LAKEHAVEN'S DISTRIBUTION SYSTEM

Regulated Substance	MCL	MCLG	Range of Level Detected	Highest Detection	Year Tested	Major Sources	Violation
Heterotrophic Plate Count (HPC Bacteria)	NR	NR	ND – 4 sites above 50 CFU/ml	(ND – 4 sites above 50 CFU/ml) 2015 average = 1 CFU/ml	2015	Range of bacteria naturally present in the environment	NR
Total Coliform Bacteria	>5% Monthly Samples are Positive	0	80%	1 of 124 samples	2015	Bacteria naturally present throughout the environment	No
Free Chlorine Residual	4.0 ppm	>0.2 ppm	0.2 – 1.7 ppm	1.7 ppm (Average = 0.79 ppm)	2015	Treatment to control bacteria	No

FINDING SUBSTANCES IN YOUR WATER

Tap water and bottled water sources include rivers, lakes, streams, reservoirs, springs and wells. As water travels over or through the ground, it dissolves naturally occurring minerals and can pick up other substances resulting from the presence of animals or human activity. Those substances may include inorganic material such as salts and metals, synthetic and volatile organic material from industrial processes, storm water runoff and septic systems, and pesticides and herbicides from agriculture and residential uses. To ensure your drinking water is safe, the EPA and/or the Washington State Board of Health prescribe regulations that limit the amount of certain contaminants in public water systems.

**ORGANISMS**

Cryptosporidium (KRIP-toe-spo-RID-ee-um)

Cryptosporidium is another microscopic organism commonly found in open surface water sources. Swallowing cryptosporidium can cause diarrhea, fever and other stomach and abdominal symptoms. We tested the Green River for cryptosporidium on a monthly basis from 2001 – 2012. Samples were collected and analyzed using the best available method approved by the EPA. We did detect cryptosporidium in the untreated Green River three times during this 12-year period. We have had no reported instances of cryptosporidium-related health problems in our service area. We resumed monitoring for cryptosporidium in April of 2015 and have had zero detections.

Giardia (GEE-are-DEE-uh)

Giardia lamblia is a microscopic organism commonly found in open-surface waters such as rivers, lakes and streams. Like other water systems that use open surface water sources, federal and state regulations require us to treat Green River water for Giardia. We kill Giardia effectively with disinfecting chemicals like chlorine and ozone.

**GASES**

Radon

Radon is a naturally occurring radioactive gas. Breathing radon can cause lung cancer in humans. Ninety-eight percent of detected radon comes from indoor air generally released from soil beneath homes. Radon can release from tap water, but in much smaller quantities – only about 1% of radon exposure comes from drinking water.

We test for radon in our groundwater sources. Federal guidelines require drinking water to contain no more than 4,000 picocuries per liter (a picocurie is a measure of radiation). We took 111 samples and tested them between 1992 and 2015. Findings show an average of 291 picocuries per liter. Our largest single test shows 530 picocuries per liter.

**MINERALS**

Lead & Copper

Studies cited by the EPA show swallowing lead or copper can cause health problems, especially in pregnant women and young children. Lead and copper found in drinking water usually come from home plumbing. Some homes have higher levels than other homes. Water with a low pH can cause copper to dissolve directly from pipes into water and lead to dissolve from solder used to join copper pipes. Lead-based solder was banned in 1986, but small amounts of lead can still be found in many brass-plumbing fixtures and can slowly dissolve into water after standing in pipes for a long time.

Federal and state drinking water rules establish “action levels” allowable for lead and copper in water samples collected from homes. At least 90% of samples may have no more than 0.015 milligrams of lead in one liter of water and no more than 1.3 milligrams of copper per liter. Once every three years, we sample at least 50 homes for lead and copper. The most recent sampling was completed in 2013. Results show our system met action levels for both lead and copper, however, we found a few homes with elevated levels of lead. Though we meet regulatory requirements, we will continue to monitor and adjust pH levels to reduce corrosion in pipes. We will sample again for lead and copper in 2016.

Pregnant women and young children can be more vulnerable to lead in drinking water than the general population. If you have concerns about lead levels in the water at your home, have your water tested. Running water between 30 seconds and two minutes after it sits stagnant in the pipe for a few hours can help clean the tap and reduce the amount of lead and or copper in your water.

A change in the temperature of water will also tell you when fresh water arrives.

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 at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

Sand & Silt

Because we take our water from the Green River, which was an unfiltered water source, pipeline shutdowns and fire flows from hydrants can stir up sand and silt that sits in the bottom of water mains throughout the water supply system. Even though this water is treated, turbid events like these can cause water to appear visually unpleasant, but it remains safe.

Unregulated Contaminant Monitoring Rule 3 (UCMR3)

UCMR3 sampling is conducted for unregulated contaminants for which the EPA has not established drinking water standards. This sampling assists the EPA in determining the occurrence of certain compounds/substances and if regulation is warranted. Tacoma Water conducted Assessment Monitoring (List 1) and Screening Survey (list 2) sampling. Detections are summarized in the water quality table. Please note that while we did detect some contaminants in our source water the levels detected were below that known or believed to be a health concern. For additional information on the UCMR3 please visit the EPA UCMR3 website at <http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3> or contact the EPA's Safe Drinking Water Hotline at 800-426-4791 or contact Tacoma Water at (253) 502-8215.

TREATING YOUR WATER

In addition to filtering the water, in 2015 we treated the Green River supply with chlorine, fluoride, caustic soda and ozone.

Treating water with chemical disinfectants, chlorine and ozone is important to protecting your health when water is drawn from a surface supply like the Green River. Placing disinfecting chemicals in water kills germs and microorganisms, making it safe to drink.

**FLUORIDE**

Tacoma voters approved fluoride treatment in 1988 and 1989 because of the dental health benefits it provides. The Tacoma City Council then enacted an ordinance directing fluoridation of the water supply. We currently fluoridate at a level of 0.7 ppm.

**CAUSTIC SODA**

We treat our Green River water supply with caustic soda to raise the pH (a measurement of acidity) of the water, to make it less corrosive on plumbing and reduce the amount of lead and copper that can dissolve into drinking water.

**OZONE**

We treat the Green River water supply with ozone. Algae and other organic material in the river can create objectionable taste and odor in drinking water. Ozone effectively destroys objectionable taste and odors that can occur in the water and provides disinfection benefits to help ensure water remains safe to drink.

Ozone gas is generated when pure oxygen gas is exposed to electricity in an ozone generator. After ozone gas is created, it is combined with water and injected into pipeline reactors at the Green River Headworks. Ozone only lasts for a few minutes in the water, and is not present in the water supply when it leaves the treatment site.

**CHLORINE**

Chlorine is our primary disinfection treatment. While it does an excellent job of killing the microorganisms that may be harmful to you, chlorine also reacts with natural organic material commonly found in surface water sources like lakes, rivers and streams. This reaction forms compounds called “disinfection byproducts.” We must meet drinking water standards for two groups of disinfection byproduct compounds. Byproduct levels found in water depend primarily on:

- The amount of natural organic material in the water
- The amount of chlorine used to treat the water
- The amount of time it takes water to reach the customer

Byproduct levels vary throughout the year. Byproducts often increase during the warmest months when the water supply has its highest levels of natural organic material and chemical reactions happen faster. We work to minimize byproduct levels and have adjusted portions of our system operations. We have placed new covered storage tanks at McMillin Reservoir, replacing the last of our open reservoirs. This will improve water quality and help reduce disinfection byproducts. Filtration will remove a percentage of the natural organic material, further reducing byproducts.

**For Tacoma Water customers who live south of the Puyallup River Bridge:**

Tacoma Water bought a small amount of water from the City of Orting in 2015, so we are providing their information as well.

CITY OF ORTING

RADIOACTIVE CONTAMINANTS		SYNTHETIC ORGANIC CHEMICALS (SOC'S)		VOLATILE ORGANIC CHEMICALS (VOC'S)		
None Detected (11/6/15)		None Detected (9/18/15)		None Detected (6/8/15)		
Contaminant	Violation Yes / No	Level Detected	Unit Measure	MCL/g	MCL	Likely Source of Contamination
<b>INORGANIC CONTAMINANTS</b>						
Arsenic 6/18/2015	No	6	PPB Range <0.001-6	0	10	Erosion of natural deposits: runoff from orchards, runoff from glass and electronics production waste.
Asbestos 11/5/2009	No	0	MFL	7	7	Decay of asbestos cement water mains, erosion of natural deposits.
Copper 30 Sample Sites 9/21/2015	No	90th Percentile (0.44)	PPM	1.3	AL = 1.3	Corrosion of household plumbing systems, erosion of natural deposits, leachate from wood preservatives.
Lead 30 Sample Sites 9/21/2015	No	90th Percentile (3)	PPb	0	AL = 15	Corrosion of household plumbing systems, erosion of natural deposits.
Nitrate 8/26/2015	No	1.2	PPM Range <0.2-1.2	10	10	Runoff from fertilizer use, leaching from septic tanks, sew-age, erosion of natural deposits .
<b>DISINFECTION BY-PRODUCTS</b>						
TTHM Total Trihalomethanes 9/21/2015 (TT)	No	0.5	PPB Range 0.5-1.0	0	80	By-Product of drinking water chlorination
Haloacetic Acids (HAA5) 4/17/2015 (TT)	No	0	PPB Range 0-0	0	60	By-Product of drinking water chlorination Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer
Chlorine Residual (PPM) 1/1/2015 thru 12/17/2015 (TT)	No	0.5	PPM Range 0.4-0.6	4 MRDLG	4.0 MRDL	Measure of disinfectant added to water

- Unless otherwise noted, the data presented in the table is from testing completed between November 5, 2009 and Dec. 31, 2015. The state requires monitoring for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.
- Lead & Copper — One residential sample site out of thirty samples taken exceeded the action level for lead.
- Copper samples — 30 samples taken and all sample results were below the action level.
- Total Trihalomethanes, Haloacetic Acids and Chlorine Residual are within the DOH required limits as per the range in parentheses above.
- Monitoring Waivers — The Washington State Department of Health (DOH) has reduced the monitoring requirements for Synthetic Organic Chemicals (SOC'S) for all City of Orting water sources because the sources are not at risk of contamination. The last sample collected for these contaminants were reported on July 9, 2012, and was found to meet all applicable EPA and DOH standards. SOC and VOC samples were taken for Well #4 in 2015 because Well #4 was recently added to the system and needed testing. All of the test results were non-detect meeting DOH standards.

**A MESSAGE FROM THE ENVIRONMENTAL PROTECTION AGENCY**

Your drinking water currently meets the EPA's revised drinking water standard for arsenic. However, it does contain low levels of naturally occurring arsenic not associated with known sources of industrial contamination. There is a small chance that some people who drink water containing low levels of arsenic for many years could develop circulatory disease, cancer or other health problems. Most types of cancer and circulatory diseases are due to factors other than exposure to arsenic. EPA's standard balances the current understanding of arsenic's health effects against the costs of removing arsenic from drinking water.

**KEEPING YOU HEALTHY**

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. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline, (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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. Environmental Protection Agency/Centers for Disease Control 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).

**DELIVERING YOUR WATER**

Most of your water comes from the Green River in south King County. The Green River Watershed is a 231-square-mile forested area that serves as a collection point for melting snow and seasonal rainfall in an uninhabited area of the Cascade Mountains between Chinook and Snoqualmie passes. Tacoma Water owns land along the river, which is about 11% of the watershed.

Through agreements with other landowners, we limit watershed access and carefully control activities, such as recreation, road maintenance and logging.

We also own and operate seven wells on the North Fork of the Green River and take water from them during periods when Green River water is turbid.

We supplement the Green River supply with groundwater from more than 20 additional wells to meet peak summer demands. Most are in Tacoma city limits.

**WATER SMART**

Water conservation makes it possible to use existing supplies more efficiently and provides opportunities to develop our regional water supply and fish enhancement programs. This helps ensure enough water remains available regionally to meet your needs and the needs of our community as well as those of fish, animals and the environment.

The Washington State Department of Health requires municipal water suppliers to establish a water conservation goal and report on its progress annually. Tacoma Water's conservation goal is to reduce the amount of water each person uses by 8.4% between Jan. 1, 2011, and Jan. 1, 2018. With the focus on "smart use" of water, we know that working together we can achieve and are making progress toward that goal.

Please see [TacomaWater.com/smart](http://TacomaWater.com/smart) to learn ways you can be "water smart."



## TACOMA PUBLIC UTILITY BOARD

The Tacoma Public Utility Board is the governing and policy-making body for Tacoma Water. To become involved in water quality decisions, you may participate in public meetings, held on the second and fourth Wednesdays of each month at 6:30 p.m. in the Tacoma Public Utilities Auditorium, 3628 S. 35th St. in Tacoma.

## YOUR WATER QUALITY REPORT

This report contains information about your drinking water.

Congress and the EPA require us to inform you annually about your drinking water and its impacts. Although most content in this report is required, we are pleased to share additional helpful information about your water and the work we do to get it to you.

We produced and mailed this report for about 42 cents per customer.

## CONTACT INFORMATION

**Water Quality**  
(253) 502-8207  
waterquality@  
cityoftacoma.org

**Conservation**  
(253) 502-8723  
conservation@  
cityoftacoma.org

**Cross Connection Control/  
Backflow Prevention**  
(253) 502-8207  
backflow@  
cityoftacoma.org

**Rates**  
(253) 502-8913

**National Radon Hotline**  
(800) 55-RADON  
(800) 557-2366

**Washington State  
Department of Health**  
doh.wa.gov/ehp/dw

**U.S. Environmental  
Protection Agency  
Safe Drinking Water  
Hotline**  
(800) 426-4791  
epa.gov/safewater

*The hotline and EPA website offer information about drinking water contaminants and their potential health effects as well as guidelines from the U.S. Centers for Disease Control about appropriate ways to reduce the risk of infection by cryptosporidium and other microbial contaminants. Both sources also offer information about lead in drinking water, testing methods and steps you can take to minimize exposure.*

TACOMAWATER.COM

**TACOMA WATER**  
TACOMA PUBLIC UTILITIES

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