2022
Annual Consumer Confidence Report on the Quality of
Naval Base Kitsap Bangor Drinking Water

This is an annual report on the quality of water delivered by the drinking water system at Naval Base Kitsap Bangor. Presented in this report is information on the source of our water, its constituents, and the health risks associated with any contaminants. Please read on for a full explanation of the quality of our water.

Our water is safe to drink.

Source of our Water

The Naval Base Kitsap Bangor water system provides drinking water to over 15,000 people, drawing water from the Sea Level Aquifer through four groundwater source wells S01, S02, S04 & S09 located on base. The depths of the wells range from 300 to 500 feet below the ground surface. Groundwater wells are safeguarded through wellhead protection efforts. All water facilities are monitored and patrolled. Access to the water system within the Naval Base Kitsap Bangor boundaries is secured and limited to water supply activities. Additionally, unlike surface water sources, our aquifer is not exposed to air and is not subject to direct pollution and contamination. The aquifer is recharged by rainfall that falls on the Kitsap Peninsula and slowly percolates through the ground.

The water system is operated and maintained by experienced personnel licensed by the state of Washington. Treatment of the installation water currently consists of:

- Chlorination for disinfection to control microbes that could be present in the water
- Addition of orthophosphate to reduce corrosion of lead and copper in plumbing

Information from Environmental Protection Agency (EPA)

The sources of drinking water include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land and through the ground, it dissolves naturally occurring minerals, and in some cases, radioactive material. It can also pick up substances resulting from the presence of animals or from human activity. These substances are referred to as contaminants by the EPA.

Contaminants that may be present in source water include:

a. Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;
b. Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;
c. Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;
d. 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;
e. Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

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

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 EPA's Safe Drinking Water Hotline at 800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 from their health care providers about drinking water. EPA/Center for Disease Control and Prevention (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 (1-800-426-4791).

Secondary Drinking Water Contaminants

The EPA has established National Secondary Drinking Water Regulations that set water quality standards for 15 contaminants, including Manganese. They are established primarily as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor, however, EPA does not enforce these "secondary maximum contaminant levels" (SMCLs). These contaminants are only considered to have potential health implications at very high concentrations. If SMCLs are exceeded, Naval Base Kitsap consults with the Washington State Department of Health (WDOH) to determine if any actions are required.

Manganese is a common element found in the earth. Water percolating through soil can dissolve minerals containing manganese and hold them in solution, carrying them into our wells. In 2015, 2019 & 2021, water source samples exceeded the SMCL for manganese. The WDOH was notified, and we took and analyzed samples inform the distribution system; all sample results were less than the SMCL. The WDOH prescribed no further action.

Household Cross Connection Protection

A cross connection happens when your drinking water plumbing is connected or in contact with a non-drinking water system such as a lawn sprayer, soap dispenser, sprinkler system, swimming pool, irrigation system, or water heating and cooling system. When water flows back from the non-drinking water system into your drinking water plumbing system, your drinking water becomes contaminated. Signs of contamination include discolored water and unusual smells. See attached pamphlet titled *Help Protect Your Drinking Water from Contamination* for more information on how to protect your drinking water from cross connections.

Additional Information for Lead

In Washington State, lead in drinking water comes primarily from materials and components used in household plumbing. The more time water sits in pipes, the more dissolved metals, such as lead, it may contain. Elevated levels of lead can cause serious health problems, especially in pregnant women and young children.

To help reduce potential exposure to lead: for any drinking water tap that has not been used for 6 hours or more, flush water through the tap for thirty seconds to two minutes, or until the water is noticeably colder, before using for drinking or cooking. You can use the initial flushed water for watering plants, washing dishes, or general cleaning. Only use water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels of lead. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water is available from EPA's Safe Drinking Water Hotline at 1-800-426-4791 or online at http://www.epa.gov/safewater/lead.

Compliance (Action Level) for lead and copper samples is based on a 90th percentile. This means that the concentration of lead and copper must be less than or equal to the action level in at least 90% of the samples collected. In other words, to be compliance with EPA regulations, nine out of every 10 locations sampled must be at or below the Action Level.

Water Quality Summary

Per applicable federal and state regulations, we regularly test your drinking water both at the water sources and within the water distribution system. The water system operators use only EPA approved laboratory methods to analyze your drinking water. The licensed water system operators draw samples from the sources and designated sample sites in the distribution system. The samples are then transported to an accredited laboratory where a full spectrum of water quality analyses are performed for the following listed parameters.

Sampling Parameter
Coliform Monitoring [1]
Lead and copper
Asbestos
Total Trihalomethane (TTHM)
Halo-Acetic Acids (HAA5)
Volatile Organic (VOC)
Complete Inorganics (IOC)[2]
Herbicides
Pesticides
Gross Alpha – energy from naturally occurring radionuclides
Radium 228
Residual Chlorine

1 Parameters in this group include total coliform.

2 Parameters in this group include a wide range of metals, nitrate, and asbestos.

Detected Contaminants

In order to ensure that tap water is safe to drink, EPA and WDOH prescribe regulations that limit the amount of contaminants in water provided by public water systems. The tables below list each water source and distribution system, with all of the detected drinking water contaminants.

Although we tested for many more contaminants than are shown here, only those substances listed below were found to be present in your water were recorded here. All sources of drinking water contain some naturally occurring contaminants. At low levels in our drinking water, these substances are generally not harmful. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the 2022 calendar year. The EPA/WDOH may only require us to monitor for certain contaminants less frequently than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of the data, though representative, may be more than one year old. In this table, there may be terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions at the end of the tables.

Monitoring for Water Source S01							
Contaminants	Water Source	MCLG	MCL	Your Water	Sample Date	Violation	Typical Sources
Nitrate (ppm)	S01	10	10	ND	2022	No	Runoff from fertilizer; leaching from septic tank sewage; erosion of natural deposits.
Gross Alpha activity (pCi/L)	S01	0	15	1.8	2014	No	Erosion of natural deposits
Radium-228 (pCi/L)	S01	0	5	0.4	2014	No	Erosion of natural deposits
Sodium (ppm)	S01	20[1]	None[1]	6.84	2021	No	Erosion of natural deposits

Lead (ppb)	S01	0	15	ND	2021	No	Erosion of natural deposits

[1] Although no MCL is established for sodium, the EPA has established a recommended level of 20 ppm as a level of concern for those consumers who may be restricted for daily sodium intake in their diets.

Monitoring for Water Source S02							
Contaminants	Water Source	MCLG	MCL	Your Water	Sample Date	Violation	Typical Sources
Nitrate (ppm)	S02	10	10	ND	2022	No	Runoff from fertilizer use; leaching from septic tank sewage; erosion of natural deposits.
Gross Alpha activity (pCi/L)	S02	0	15	1.3	2014	No	Erosion of natural deposits
Radium-228 (pCi/L)	S02	0	5	0.2	2014	No	Erosion of natural deposits
Sodium (ppm)	S02	20[1]	None[1]	7.1	2022	No	Erosion of natural deposits
Lead (ppb)	S02	0	15	ND	2022	No	Erosion of natural deposits

[1] Although no MCL is established for sodium, the EPA has established a recommended level of 20 ppm as a level of concern for those consumers who may be restricted for daily sodium intake in their diets.

Monitoring for Water Source S04							
Contaminants	Water Source	MCLG	MCL	Your Water	Sample Date	Violation	Typical Sources
Nitrate (ppm)	S04	10	10	ND	2022	No	Runoff from fertilizer use; leaching from septic tank sewage; erosion of natural deposits.
Gross Alpha activity (pCi/L)	S04	0	15	0.5	2017	No	Erosion of natural deposits
Radium-228 (pCi/L)	S04	0	5	0.2	2017	No	Erosion of natural deposits
Sodium (ppm)	S04	20[1]	None[1]	7.19	2021	No	Erosion of natural deposits
Lead (ppb)	S04	0	15	ND	2021	No	Erosion of natural deposits

[1] Although no MCL is established for sodium, the EPA has established a recommended level of 20 ppm as a level of concern for those consumers that may be restricted for daily sodium intake in their diets.

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Monitoring for Water Source S09							
Contaminants	Water Source	MCLG	MCL	Your Water	Sample Date	Violation	Typical Sources
Nitrate (ppm)	S09	10	10	ND	2022	No	Runoff from fertilizer use; leaching from septic tank sewage; erosion of natural deposits.
Gross Alpha activity (pCi/L)	S09	0	15	0.2	2016	No	Erosion of natural deposits
Radium-228 (pCi/L)	S09	0	5	0.6	2014	No	Erosion of natural deposits
Sodium (ppm)	S04	20[1]	None[1]	7.5	2021	No	Erosion of natural deposits
Lead (ppb)	S04	0	15	ND	2021	No	Erosion of natural deposits

Distribution System Monitoring								
Contaminants	MCLG	MCL	Your Water	Range		Sample Date	Violation	Typical Sources
				Low	High			
Volatile Organic Contaminants								
Haloacetic Acids (HAA) (ppb)	N/A	60	2.3[1]	0	4.0	2022	No	By-product of drinking water disinfection
Total Trihalomethane (TTHM) (ppb)	N/A	80	10.1[1]	0.5	15.0	2022	No	By-product of drinking water disinfection
Asbestos								
Asbestos (Million Fibers/L)[2]	0	7	<0.12	<0.12	<0.12	2019	No	Corrosion of plumbing systems

[1] Denotes the highest Locational Running Annual Average (LRAA) for the 2022 calendar year.
[2] Fibers longer 10 µm

Distribution System Monitoring							
Contaminants	MCLG	AL	Your Water (90^{th} %)	Sample Date	# of Samples Exceeding AL	Violation	Typical Sources
Inorganic Contaminants							
Lead (ppb)	0	15	1[1]	2021	0	No	Corrosion of household plumbing systems; erosion of natural deposits.
Copper (ppm)	0	1.3	0.09[1]	2021	0	No	Corrosion of household plumbing systems; erosion of natural deposits.

[1] This is the 90th% value from the most recent testing, which is below the AL showing our system complies with the Lead & Copper Rule.

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Secondary Drinking Water Contaminants Monitoring for Water Source S01							
Contaminants	Source	MCLG	SMCL	Your Water	Sample Date	Exceedance	Typical Sources
Manganese (ppb)	S01	50	50	0.03	2021	No	Erosion of natural deposits
Iron (ppb)	S01	300	300	ND	2021	No	Erosion of natural deposits
Chloride (ppm)	S01	250	250	ND	2021	No	Erosion of natural deposits
Zinc (ppm)	S01	5	5	ND	2021	No	Erosion of natural deposits
Conductivity (µS/cm)	S01	700	700	152	2021	No	Erosion of natural deposits

Secondary Drinking Water Contaminants Monitoring for Water Source S02							
Contaminants	Water Source	MCLG	SMCL	Your Water	Sample Date	Exceedance	Typical Sources
Manganese (ppb)	S02	50	50	10	2022	No	Erosion of natural deposits
Iron (ppb)	S01	300	300	ND	2022	No	Erosion of natural deposits
Chloride (ppm)	S02	250	250	3.19	2022	No	Erosion of natural deposits
Zinc (ppm)	S01	5	5	ND	2022	No	Erosion of natural deposits
Conductivity (µS/cm)	S02	700	700	156	2022	No	Erosion of natural deposits

Secondary Drinking Water Contaminants Monitoring for Water Source S04							
Contaminants	Water Source	MCLG	SMCL	Your Water	Sample Date	Exceedance	Typical Sources
Manganese (ppb)	S04	50	50	70	2021	Yes[1]	Erosion of natural deposits
Iron (ppb)	S04	300	300	180	2021	No	Erosion of natural deposits
Chloride (ppm)	S04	250	250	ND	2021	No	Erosion of natural deposits
Zinc (ppm)	S01	5	5	ND	2021	No	Erosion of natural deposits
Conductivity (µS/cm)	S04	700	700	165	2021	No	Erosion of natural deposits

[1] This is an exceedance of the SMCL, which means the limits are set primarily to protect the aesthetic qualities of drinking water and are not federally enforced. The WA Department of Health (WDOH) was informed of this exceedance. Per WDOH instruction, samples within the distribution system were taken that all showed concentrations below the SMCL. No further actions were recommended by the WDOH. Manganese is a common element. Water percolating through soil can dissolve minerals containing manganese and hold them in solution, carrying them into our wells.

Secondary Drinking Water Contaminants Monitoring for Water Source S09							
Contaminants	Water Source	MCLG	SMCL	Your Water	Sample Date	Exceedance	Typical Sources
Manganese (ppb)	S09	50	50	63	2021	Yes[1]	Erosion of natural deposits
Iron (ppb)	S04	300	300	ND	2021	No	Erosion of natural deposits
Chloride (ppm)	S04	250	250	ND	2021	No	Erosion of natural deposits
Zinc (ppm)	S01	5	5	ND	2021	No	Erosion of natural deposits
Conductivity (µS/cm)	S04	700	700	172	2021	No	Erosion of natural deposits

[1] This is an exceedance of the SMCL, which means the limits are set primarily to protect the aesthetic qualities of drinking water and are not federally enforced. The WA Department of Health (WDOH) was informed. Per WDOH instruction, samples within the distribution system were taken which all showed concentrations below the SMCL. No further actions were recommended by the WDOH. Manganese is a common element. Water percolating through soil can dissolve minerals containing manganese and hold them in solution, carrying them into our wells.

Definitions and Abbreviations

AL (Action Level) – The concentration of a contaminant, which, if exceeded, triggers treatment techniques or other requirements, which must be followed.

Level Detected – Laboratory analytical result for a contaminant; this value is evaluated against an MCL or AL to determine compliance.

LRAA (Locational Running Annual Average) – The average of analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

MCL (Maximum Contaminant Level) – The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible based on the best available treatment technology. Under the Safe Drinking Water Act, the EPA establishes these MCLs for compliance purposes.

MCLG (Maximum Contaminant Level Goal) – In drinking water, the level of a contaminant below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

SMCL (Secondary Maximum Contaminant Level) – These standards are developed primarily to protect the aesthetic qualities of drinking water but are not federally enforced. Exceeding an SMCL requires notification to the WA Department of Health.

N/A – Not Applicable

ND – Not Detected. The compound was not detected above the Lab's Method Detection Limit

ppb – 1 part per billion (equivalent to one penny in $10,000,000).

ppm – 1 part per million (equivalent to one penny in $10,000).

pCi/L – Picocuries per liter. A measurement of radioactivity in water.

µS/cm – micro-Siemens per centimeter. A standard measurement of conductivity in water.

Range – Represents the lowest and highest analytical results of a reported contaminant.

Public Involvement

Further drinking water system information may be obtained by contacting the Naval Base Kitsap Public Affairs Office, at 360-627-4031.

PFAS Information

What are per- and polyfluoroalkyl substances and where do they come from?
Per- and polyfluoroalkyl substances (PFAS) are a group of thousands of man-made chemicals. PFAS have been used in a variety of industries and consumer products around the globe, including in the United States, since the 1940s. PFAS have been used to make coatings and products that are used as oil and water repellents for carpets, clothing, paper packaging for food, and cookware. They are also contained in some foams (aqueous film-forming foam or AFFF) used for fighting petroleum fires at airfields and in industrial fire suppression processes because they rapidly extinguish fires, saving lives and protecting property. PFAS chemicals are persistent in the environment and some are persistent in the human body – meaning they do not break down and they can accumulate over time.

Is there a regulation for PFAS in drinking water?
There is currently no established federal water quality regulation for any PFAS compounds. In May 2016, the EPA established a health advisory (HA) level at 70 parts per trillion (ppt) for individual or combined concentrations of perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). Both chemicals are types of PFAS.

Out of an abundance of caution for your safety, the Department of Defense's (DoD) PFAS testing and response actions go beyond EPA Safe Drinking Water Act requirements. In 2020 the DoD promulgated a policy requiring the Services to monitor drinking water for PFAS at least every three years at all service-owned and service-operated water systems.

The EPA's health advisory states that if water sampling results confirm that drinking water contains PFOA and PFOS at individual or combined concentrations greater than 70 parts per trillion, water systems should quickly undertake additional sampling to assess the level, scope, and localized source of contamination to inform next steps.

Has Naval Base Kitsap Bangor tested its water for PFAS?
Yes. In November 2020, samples were collected from Buildings 7009 and 7051.
We are pleased to report that drinking water testing results were below the Method Reporting Limit for all 18 PFAS compounds covered by the sampling method, including PFOA and PFOS. This means that PFAS were not detected in your water system. In accordance with DoD policy, the water system will be resampled every three years for your continued protection.

Common Household Hazards

Chemical Spray Applicators

The chemicals used on your lawn and garden can be toxic or fatal if ingested. These chemicals include pesticides, herbicides, and fertilizers. Even strong cleaning chemicals sprayed on cars, house siding, etc., may cause health problems if ingested.

Submerged Hoses

Water held in pools, ponds or other vats open to the air and exposed to humans or animals may contain microbiological contaminants. Hoses submerged in buckets or containers can act as a conduit for contaminants under backflow conditions.

Underground Lawn Irrigation Systems

Underground irrigation systems often have puddles of standing water around the ground-level sprinkler heads. The sprinkler heads **are not** designed to be drip-tight under backflow conditions. The puddles of water may contain microbiological contaminants, such as excrement from animals or chemical residue from fertilizer and herbicides sprayed on the lawn.

For further information contact your local water purveyor or the PNWS/AWWA Cross-Connection Control Committee through the PNWS office at (877) 767-2992 or on the web at www.pnws-awwa.org

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Help protect your
Drinking Water
from
Contamination

Household Hazards

American Water Works Association
Pacific Northwest Section

How Contamination Occurs

Water normally flows in one direction, from the public water system through the customer's cold or hot water plumbing to a sink tap or other plumbing fixture. The plumbing fixture is the end of the potable water system and the start of the waste disposal system.

Under certain conditions water can flow in the reverse direction. This is known as ***backflow***. Backflow occurs when a backsiphonage or backpressure condition is created in a water line.

Backsiphonage may occur due to a loss of pressure in the water distribution system during a high withdrawal of water for fire protection, a water main or plumbing system break, or a shutdown of a water main or plumbing system for repair. A reduction of pressure below atmospheric pressure creates a vacuum in the piping. If a hose bib was open and the hose was submerged in a wading pool during these conditions, the non-potable water in the pool would be siphoned into the house's plumbing and back into the public water system.

Backpressure may be created when a source of pressure, such as a pump, creates a pressure greater than that supplied from the distribution system. If a pump supplied from a non-potable source, such as a landscape pond, was accidentally connected to the plumbing system, the non-potable water could be pumped into the potable water supply.

How to Prevent Contamination of Your Drinking Water

Protect your drinking water by taking the following precautions:

Don't:

- Submerge hoses in buckets, pools, tubs, sinks, ponds, etc.
- Use spray attachments without a backflow prevention device.
- Connect waste pipes from water softeners or other treatment systems to the sewer, submerged drain pipe, etc.
- Use a hose to unplug blocked toilets, sewers, etc.

Do:

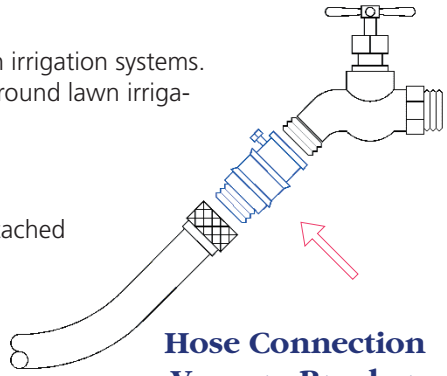
- ✔ Keep the ends of hoses clear of all possible contaminants.
- ✔ If not already equipped with an integral (built-in) vacuum breaker, buy and install hose bib type vacuum breakers on all threaded faucets around your home. These devices are inexpensive and are available at hardware stores and home improvement centers.
- ✔ Install an approved backflow prevention assembly on all underground lawn irrigation systems. Remember, a plumbing permit is required for the connection of an underground lawn irrigation system to your plumbing system.

Hose Connection Vacuum Breaker

Hose connection vacuum breakers are specifically made for portable hoses attached to threaded faucets. Their purpose is to prevent the flow of contaminated water back into the drinking water. These devices screw directly to the faucet outlet. They can be used on a wide variety of installations, such as service sinks, hose faucets near a wading pool, laundry tub faucets, etc.

Some units are designed for manual draining for freezing conditions. Some are furnished with breakaway set screws as a tamper proof feature.

These device are not intended for operation under continuous pressure.



Hose Connection Vacuum Breaker

Protection of the Water Purveyor's Distribution System

In general, the installation of plumbing in compliance with the plumbing code will provide adequate protection for your plumbing system from contamination.

However, the water purveyor may require (as a condition of service) the installation of a backflow prevention assembly on the water service to provide additional protection for the public water system. A backflow prevention assembly will normally be required where a single-family residence has special plumbing that increases the hazard above the normal level found in residential homes, or where a hazard survey cannot be completed.

To help determine if a backflow prevention assembly is required, the water purveyor may send residential customers a Cross Connection Control Survey Questionnaire. The water purveyor will evaluate the returned questionnaires to assess the risk of contamination to the public water system. Based on the results of the evaluation, the installation of backflow prevention assemblies may be required on services to some customers.