

2022 NAWS China Lake North Range Public Water System Consumer Confidence Report

Water System Information

Name: China Lake Naval Air Weapons Station North Range Public Water System CA1510703

Report Date: May 25, 2023

Water Source: Groundwater from six wells

Name and General Locations: Well 15, 18, 27C, 30, 31 and 28A. Located at the southwest corner of North Range, China Lake Naval Air Weapons Station, Kern County, California

About This Report

We test the drinking water quality for many constituents as required by state and federal regulations. This report shows results of our monitoring for the period January 1 to December 31, 2022 and may include earlier monitoring data.

NAWS China Lake North Range Public Water System had no violations and no exceedance of any primary or secondary regulated water quality standards during this reporting period.

Terms Used in This Report

Term	Definition
Level 1 Assessment	A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
Level 2 Assessment	A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an <i>E. coli</i> MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of 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. MCLGs are set by the U.S. Environmental Protection Agency (U.S. EPA).
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.
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.
Primary Drinking Water Standards (PDWS)	MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.
Public Health Goal (PHG)	The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Term	Definition
Regulatory Action Level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Secondary Drinking Water Standards (SDWS)	MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.
Treatment Technique (TT)	A required process intended to reduce the level of a contaminant in drinking water.
Variances and Exemptions	Permissions from the State Water Resources Control Board (State Board) to exceed an MCL or not comply with a treatment technique under certain conditions.
ND	Not detectable at testing limit.
ppm	parts per million or milligrams per liter (mg/L)
ppb	parts per billion or micrograms per liter ($\mu\text{g/L}$)
ppt	parts per trillion or nanograms per liter (ng/L)
ppq	parts per quadrillion or picogram per liter (pg/L)
pCi/L	picocuries per liter (a measure of radiation)

Sources of Drinking Water and Contaminants that May Be Present in Source Water

Drinking water sources (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over land surface or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from animals present or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, that 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, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- Radioactive contaminants that can be naturally-occurring or be the result of oil and gas production and mining activities.

Drinking Water Source Assessment Information

- Wells 15 and Well 27C: Per the DWSAP document dated June 2003, is considered to be vulnerable to contamination from high and low density septic systems, housing, water supply wells, airport, gas stations and waste water treatment plants.
- Well 18: Per the DWSAP document dated June 2003, is considered to be vulnerable to contamination from transportation corridors

- Well 30: Per the DWSAP document dated June 2003, is considered to be vulnerable to contamination from military installations and transportation corridors.
- Well 31: Per the DWSAP document dated June 2003, is considered to be vulnerable to contamination from high density septic systems and transportation.
- Well 28A: Per the DWSAP document dated June 2003, is considered to be vulnerable to contamination from water supply wells.

Regulation of Drinking Water and Bottled Water Quality

In order to ensure tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) and the State Board prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

2022 North Range Public Water System Drinking Water Quality

Drinking Water Contaminants Detected

Presence of water contaminants does not necessarily indicate the water poses a health risk. The State Board allows us to monitor for certain contaminants less than once per year because concentrations of these contaminants do not change frequently. Some data, though representative of the water quality, are more than one year old.

Coliform Bacteria

No coliform bacteria has been detected in this Public Water System, including *E. coli*. Samples are pulled monthly from key locations throughout the Public Water System.

Lead and Copper

Twenty (20) Lead and Copper sites were sampled on 09/2020. None of these sites exceeded the Regulatory Action Level. State requires triennial sampling for all lead and copper, next sample cycle is summer 2023.

DoD/Navy - Lead in Priorities Areas Program (LIPA) focuses on Child Development Center, School Age Care, Teen Center and any youth program facilities. We sampled seven fixtures on 10/2022 and all results were below no-level exceedance results.

Sampling Results for Sodium and Hardness

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Sodium (ppm)	6/2022	52	41 - 60	None	None	Salt present in the water and is generally naturally occurring
Hardness (ppm)	6/2022	71	4.1 - 140	None	None	Sum of polyvalent cations present in the water, generally magnesium and calcium, and are usually naturally occurring

Primary Drinking Water Standards Contaminant Detection

Primary Standards are legally enforceable standards that apply to public water systems. Primary Standards protect public health by limiting levels of contaminants in drinking water. Below list contains all regulated contaminants detected in North Range Public Water System CA1510703 water. Note: all contaminants listed are below Maximum Contaminant Levels (MCL) set by State Water Resources Control Board and EPA.

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	Typical Source of Contaminant
Arsenic (mg/l - ppm)	Sampled weekly	4.5	2.9 – 6.2	10	0	Erosion from natural runoff from orchards
Nickel (ug/l - ppb)	6/2022	17	10 - 21	100	10	Erosion of natural deposits
Nitrate (mg/l -ppm)	09/22	1.15	.4 - 2.1	10	10	Runoff and leaching from fertilizer use, leaching from septic tanks and sewage, erosion of natural deposits
Flouride (mg/l -ppm)	6/2022	.64	.47– 0.90	2.0	1	Erosion of natural deposits
Radium (pCi/L)	6/2022	.31	.100 – 1.5	5	.019	Erosion of natural deposits
Selenium (ug/l - ppb)	06/2022	8.8	5 - 33	50	30	Erosion of natural deposits

Chlorine Residual (mg/l -ppm)	Sampled daily	1.16	.40 – 2.40	4.0	4.0	Drinking water disinfection added for treatment
Total Trihalomethanes TTHM (ug/l - ppb)	7/2022	12.0	3.2 – 12.0	80	N/A	By-product of drinking water disinfection
Haloacetic Acids HAA5 (ug/l - ppb)	8/2021	4.9	1 – 4.9	60	N/A	By-product of drinking water disinfectant

Lead: If present, 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 home plumbing. NAWSCL Utilities and Energy Management is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. 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 do so, you may wish to collect the flushed water and reuse it for another beneficial purpose, such as watering plants. If you are concerned about lead in your 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 or at <http://www.epa.gov/lead>.

Arsenic: While your drinking water meets federal and state arsenic standard, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic’s possible health effects against the cost of removing arsenic from drinking water. The U.S. Environmental Protection Agency continues to research health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Nitrate: Nitrate in drinking water at levels above 10 mg/L is a health risk for infants less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant’s blood to carry oxygen, resulting in serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 10 mg/L may also affect the ability of blood to carry oxygen in other individuals, such as pregnant women and those with specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider.

Secondary Drinking Water Standards Contaminant Detection

Secondary Standards are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects in drinking water. Below list contains all regulated contaminants detected in North Range Public Water System CA1510703 water. Note: all contaminants listed are below Secondary Maximum Contaminant Levels (SMCL) set by State Water Resources Control Board and EPA.

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	SMCL	PHG (MCLG)	Typical Source of Contaminant
Aluminum (ug/l - ppb)	9/2020	69	49-170	1000	600	Erosion of natural deposits
Color (units)	6/2021	1.25	0 – 7.5	15	N/A	Naturally occurring organic materials

Chloride (mg/l -ppm)	6/2022	31	11 - 67	500	N/A	Runoff/ leaching from natural deposits and seawater influence
Manganese (ug/l - ppb)	6/2021	16	19 - 25	50	N/A	Leaching from natural deposits
Specific Conductance (uS/cm)	6/2022	385	240 - 540	1600	N/A	Substances that form ions when in water and/ or seawater influence
Total Dissolved Solids (mg/l -ppm)	6/2022	238	160 - 340	1000	N/A	Runoff/ leaching from natural deposits
Turbidity (ntu)	6/2022	1.01	0.1 – 4.1	5	0.10	Soil runoff, turbidity is measure of cloudiness of water. We measure this because it is a good indicator of water quality
Sulfate (mg/l -ppm)	6/2022	52	11 - 120	500	N/A	Runoff/ leaching from natural deposits
Odor Threshold (ton)	6/2022	1	1	3	N/A	Naturally occurring organic materials

Unregulated Contaminants

We sampled for 6 PFAS compounds on 9/2016 and 18 PFAS compounds on 11/2020 from all North Range Public Water System groundwater wells.

Drinking water testing results were below the Method Reporting Limit (MRL) for all 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.

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 industrial and consumer products around the globe, including in the U.S., for decades. Due to their widespread use and environmental persistence, most people in the United States have been exposed to certain PFAS. 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, AFFF) used for fighting petroleum fires.

There is currently no federal drinking water standard for any PFAS compounds. In May 2016, the U.S. Environmental Protection Agency (EPA) established a lifetime drinking water 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. In California, there is not a PFAS drinking water regulation.

The Department of Defense (DoD) issued a policy in 2020 to monitor drinking water for PFAS at all DoD owned and operated water systems at a minimum of every three years. The DoD policy states that if water sampling results confirm that drinking water contains PFOA and PFOS at individual or combined concentrations greater than the 2016 EPA HA level of 70 ppt, water

systems would: 1) take immediate action to reduce exposure to PFOS or PFOA, to include providing alternative drinking water; and 2) undertake additional sampling to assess the level, scope, and localized source of contamination.

EPA issued interim Health Advisories for PFOS and PFOA in 2022. However, these newer levels are below quantifiable limits (i.e., below detection levels). EPA is expected to issue a proposed regulation on PFAS drinking water standards for public comment in the future. DoD looks forward to the clarity that a nationwide regulatory standard for PFOS and PFOA in drinking water will provide.

In addition, EPA issued interim Health Advisories for PFOS and PFOA in 2022. However, these newer levels are below quantifiable limits (i.e., below detection levels).

In anticipation of this EPA drinking water regulation, and to account for emerging science that shows potential health effects of PFOS and PFOA at levels lower than 70 ppt, DoD is evaluating its efforts to address PFAS in drinking water, and what actions we can take to be prepared to incorporate this standard, such as reviewing our current data and collecting additional sampling where necessary. DoD remains committed to communicating and engaging with our communities throughout this process.

Information for Violation of a MCL, MRDL, AL, TT, Systems Providing Groundwater or Monitoring and Reporting Requirement and Revised Total Coliform Rule Level 1 and Level 2 Assessment Requirements

There were no MCL, MRDL, AL, TT or Groundwater violations for this system in 2022 and no Level 1 or Level 2 Assessments required for this water system in 2022.

Additional General Information on Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. Presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline (1-800-426-4791).

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. U.S. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Contact me if you have any questions about this Consumer Confidence Report.

Michael Bizon
Water Compliance Program Manager
NAVFAC Environmental Management Division
Naval Air Weapons Station, China Lake
W-760-939-2167, C-760-282-7931
michael.e.bizon.civ@us.navy.mil