2019 Annual Water Quality Report

Vandenberg Air Force Base
PWS ID: CA4210700

This report contains important information about your drinking water. If you do not understand it, please have someone explain or translate it for you.

Este informe contiene información muy importante sobre su agua potable. Si no lo comprende, favor acudir a alguien que se lo pueda traducir o explicar.

Continuing Our Commitment

A Message From Military Services Group President Mark K McDonough

American Water's Military Services Group owns and operates water and wastewater utilities under the Utilities Privatization program and proudly provides water and wastewater services to military communities around the country, including yours. Our Company's Vision – "We Keep Life Flowing" drives everything we do for you, our customers. To reinforce our vision and maintain your trust, it's important that we share with you information about our commitment to providing high-quality water service.

I am pleased to provide you with the 2019 Annual Water Quality Report with detailed information about the source and quality of your drinking water. We have prepared this report using the data from water quality testing conducted for your local water system from January through December 2019. You'll find that we supply water that meets or surpasses all federal and state water quality regulations.

With equal importance, we place a strong focus on acting as stewards of our environment. In all of the communities we serve, we work closely with the local directorates of public works, civil engineering squadrons, local environmental departments and state regulatory agencies to protect environmental quality, educate customers on how to use water wisely, and ensure the high quality of your drinking water every day.

At American Water, our values – safety, trust, environmental leadership, teamwork, and high performance – mean more than simply making water available "on-demand". It means every employee working to deliver a key resource for public health, fire protection, the economy and the overall quality of life we enjoy – We Keep Life Flowing. For more information or for additional copies of this report, visit us online at www.amwater.com.

Sincerely,

Mark K McDonough

President – American Water's Military Services Group

Special Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC (Centers for Disease Control and Prevention) 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) or by calling our Customer Service Center at (800) 685-8660.

Water Information Sources

The Military Services Group of American Water provides water and wastewater contract services to military installations across the country as part of the federal government's Utility Privatization Program. It operates and maintains the water and/or wastewater assets at Fort A.P. Hill, VA., Fort Sill, OK., Fort Leavenworth, KS., Scott Air Force Base, Ill., Fort Rucker, AL., Fort Meade, MD., Fort Belvoir, VA., Fort Hood, TX, Fort Polk, LA., Picatinny Arsenal, NJ., Hill Air Force Base, UT and Vandenberg Air Force Base, CA., Wright-Patterson Air Force Base, OH and Fort Leonard Wood, MO.

American Water Military Services Group (AW-MSG) provides water services to approximately 15,000 customers at Vandenberg Air Force Base, California. With a history dating back to 1886, American Water is the largest and most geographically diverse U.S. publicly traded water and wastewater utility company. The company employs more than 6,800 dedicated professionals who provide regulated and market-based drinking water, wastewater and other related services to 15 million people in 46 states. American Water provides safe, clean, affordable and reliable water services to our customers to make sure we keep their lives flowing. For more information, visit amwater.com and follow American Water on Twitter, Facebook and LinkedIn.

The web sites of US EPA Office of Water, the Centers for Disease Control and Prevention, and California State Water Resource Control Board provide a substantial amount of information on many issues relating to water resources, water conservation and public health.

You may visit these sites as well as American Water's website at the following addresses:

Centers for Disease Control and Prevention
www.cdc.gov

California State Water Resource Control Board

http://www.waterboards.ca.gov/drinking_water/programs/index.shtml

United States Environmental Protection Agency
www.epa.gov/safewater

American Water
www.amwater.com

American Water Works Association
www.awwa.org

Safe Drinking Water Hotline: 1 (800) 426-4791

What is a Water Quality Report?

To comply with the State Water Resource Control Board and Environmental Protection Agency (EPA) regulations, American Water issues a report annually describing the quality of your drinking water. The purpose of this report is to provide you an overview of last year's (2019) drinking water quality. It includes details about where your water comes from and what it contains. We hope the report will raise your understanding of drinking water issues and awareness of the need to protect your drinking water sources. For more information, please contact the Chief Water Operator at 805-734-0043.

How is Your Water Treated?

Current treatment processes include flash mixing, coagulation, flocculation, and sedimentation followed by filtration and disinfection. Fluoridation is provided from the treatment plant for reduction of dental cavities. Throughout the process-dedicated plant, operations and water quality staff continuously monitor and control these plant processes to assure you, our customer superior water quality.

Share This Report

Landlords, businesses, schools, hospitals and other groups are encouraged to share this important information with water users at their location who are not billed customers of Vandenberg Air Force Base American Water and therefore do not receive this report directly.

Source Water Assessment Completed

A Source Water Assessment Program (SWAP) is a result of the 1996 amendments to the Federal Safe Drinking Water Act (SDWA). Those amendments require all states to establish a program to assess the vulnerability of public water systems to potential contamination. The State Resource Control Board completed the Source Water Assessment of the Base groundwater wells in 2012. The assessment determined that there are no possible contaminating activities that have a direct impact on Vandenberg's ground water source.

Water Conservation Tips

Conservation measures you can use inside your home include:

- Fix leaking faucets, pipes, toilets, etc.
- Replace old fixtures; install water-saving devices in faucets, toilets and appliances.
- Wash only full loads of laundry.
- Do not use the toilet for trash disposal.
- Take shorter showers.
- Do not let the water run while shaving or brushing teeth.
- Soak dishes before washing.
- Run the dishwasher only when full.

You can conserve outdoors as well:

- Water the lawn and garden in the early morning or evening.
- Use mulch around plants and shrubs.
- Repair leaks in faucets and hoses.
- Use water-saving nozzles.
- Use water from a bucket to wash your car and save the hose for rinsing.

Where Does My Water Come From?

The Vandenberg Air Force Base water system is investor owned and serves the residents, employees, and visitors of the VAFB. American Water operates groundwater sources, potable water reservoirs, and potable water booster stations to provide potable water to about 14,971 people via 1,161 service connections. It is classified as a community water system and has operated under the authority of permit number CA4210700, issued by DDW in 2008 and most recently amended in 2016. The most recent Sanitary Survey of VAFB's water system was conducted during June of 2019.

American Water utilizes active groundwater wells constructed in unconsolidated deposits. Drinking water source assessments were completed for American Water's wells in 2001 and updated in 2012.

VAFB purchases treated surface water from Central Coast Water Authority (CCWA). CCWA obtains water from the State Water Project via the Coastal Branch of the California Aqueduct. The water is disinfected with the use of chloramines by CCWA and has a combined chlorine residual when it enters AW's Main Reservoir Water Treatment Plant. Water from the State Water Project is treated at the Polonio Pass Water Treatment Plant. The treatment plant utilizes conventional filtration, which includes the use of coagulation, flocculation, sedimentation, filtration, and disinfection. The plant is permitted by DDW to meet the requirements of the Surface Water Treatment Rule. CCWA also serves water to 23 other public water systems throughout Santa Barbara and San Luis Obispo Counties.

How much sodium is in your water?

The sodium level for VAFB from the San Antonio Well Field averages from 67-82 mg/L. Water from the CCWA comes into our water treatment plant at 58 mg/L.

What is the pH (acidity) range of your water?

Water in the distribution system averages about 8.3. A pH of 7.0 is considered neutral, neither acidic nor basic.

Is there fluoride in your water?

VAFB treated water supply Fluoride level is 0.60 - 0.90 mg/L

State TCR and Federal RTCR:

This Consumer Confidence Report (CCR) reflects changes in drinking water regulatory requirements during 2016. All water systems are required to comply with the state Total Coliform Rule (TCR). Effective April 1, 2016, all water systems are also required to comply with the federal Revised Total Coliform Rule (RTCR). The new federal rule maintains the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of microbials (i.e., total coliform and E. coli bacteria). The U.S. EPA anticipates greater public health protection as the new rule requires water systems that are vulnerable to microbial contamination to identify and fix problems. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment to determine if any sanitary defects exist. If found, these must be corrected by the water system. In 2019, there were no total coliform or E. coli positive samples detected.

Cryptosporidium

Cryptosporidium is a single cell microbial organism found in surface water throughout the US. During its life cycle, it matures into resistant cells called oocysts that can be shed in feces. The disease caused by *Cryptosporidium* is called Cryptosporidiosis and is caused by infection with oocysts. People can be exposed to oocysts from other people, animals, water, swimming pools, fresh food, soils, and any surface that has not been sanitized after exposure to feces. Symptoms range from a mild to incapacitating diarrhea, cramps, loss of appetite, weight loss, nausea, and low-grade fever.

Although *Cryptosporidium* can be removed through commonly used filtration methods, US EPA issued a new rule in January 2006 that requires systems with higher *Cryptosporidium* levels in their source water to provide additional treatment. The EPA created this rule (Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) to provide for increased protection against microbial pathogens, such as *Cryptosporidium*, in public water systems that use surface water sources.

Substances Expected to be in Drinking Water

To ensure that tap water is of high quality, U.S. Environmental Protection Agency prescribes regulations limiting the amount of certain substances in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

VAFB (AWE-MSG) advanced water treatment processes are designed to reduce any such substances to levels well below any health concern. The source of drinking water (both tap water and bottled water) includes rivers, lakes, streams, ponds, reservoirs, springs, and wells. 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, or wildlife.

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also, come from gas stations, urban storm water runoff, and septic systems.

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at 1 (800) 426-4791

Information about Lead

Is there lead in my water?

Although we regularly test lead levels in your drinking water, it is possible that lead and/or copper levels at your home are higher because of materials used in your plumbing. If present, elevated levels of lead can cause serious 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. American Water 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 and copper exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. You can also use cold water for cooking, drinking, or making baby formula; use low lead containing faucets; and when replacing or working on pipes, use lead-free solder. Vandenberg AFB American Water remains in full compliance with all of the requirements dealing with lead in drinking water. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from

the National Lead Information Center (800-LEAD-FYI) or the EPA Safe Drinking Water Hotline at 1-800-426-4791 or at http://www.epa.gov/safewater/lead.

How to Read the Data Tables

American Water Operations and Maintenance-Military Service Group (AW-MSG) conducts extensive monitoring to ensure that your water meets all water quality standards. The results of our monitoring are reported in the following tables. While most monitoring was conducted in 2019, certain substances are required to be monitored less than once per year and represent the most current results available. For help with interpreting this table, see the "Table Definitions" section.

Starting with a **Substance**, read across. **Year Sampled** is usually in 2018 or year prior. **MCL** shows the highest level of substance (contaminant) allowed. **MCLG** is the goal level for that substance (this may be lower than what is allowed). **Average Amount Detected** represents the measured amount (less is better). **Range** tells the highest and lowest amounts measured. A **Yes** under **Compliance Achieved** means the amount of the substance met government requirements. **Typical Source** tells where the substance usually originates.

Unregulated substances are measured, but maximum contaminant levels have not been established by the government.

Special Monitoring:

Vandenberg Air Force Base tested for several different compounds over the year at the point of entry, and the maximum distant distribution site.

Table Definitions and Abbreviations

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

BPQL (Below Practical Quantitative Limit): Below the minimum concentration of a substance can be measured and reported with 99 percent confidence that the true value is greater than zero.

LRAA: Locational Running Annual Average reported under Disinfection By Products; Trihalomethanes and Haloacetic Acids.

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 using the best available treatment 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. MCLGs allow for a margin of safety.

MRDL (Maximum Residual Disinfectant Level): The highest level of disinfectant routinely allowed in drinking water. Addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of 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 contamination.

mrem/year: Millirems per year (a measure of radiation absorbed by the body)

NA: Not applicable.

ND: Not detected.

NTU - Nephelometric Turbidity Units: Measurement of the clarity, or turbidity, of water.

pCi/L (picocuries per liter): Measurement of the natural rate of disintegration of radioactive contaminants in water (also beta particles).

pH: A measurement of acidity, 7.0 being neutral.

ppm (parts per million): One part substance per million parts water, or milligrams per liter.

ppb (parts per billion): One part substance per billion parts water, or micrograms per liter.

ppt (parts per trillion): One part substance per trillion parts water, or nanograms per liter.

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.

Water Quality Statement

Vandenberg Air Force Base (VAFB) purchases all of its drinking water from the Central Coast Water Authority (CCWA) in Buellton CA. American Water owns and operates the water distribution system on VAFB. American Water is required to sample for many different contaminants in your drinking water annually. The tables below only contain sample results for contaminants that were detected in your drinking water. Some contaminants are required to be sampled for less than annually and in these cases, the most recent sample results are provided below and the year they were collected.

REGULATED CONTAMINANTS FROM CCWA (PURCHASED WATER)

Substance (units)	Year Sampled	MCL	MCLG	Polonio Pass Water Treatment Plant			Typical Source
				Average Amount Detected	Range	Compliance Achieved	
CLARITY							
Combined Filter Effluent Turbidity (NTU)	2019	TT=<1 NTU every 4 hours		Range	0 - 0.13	Yes	Soil runoff
		TT=95% of samples <0.3NTU		%	100%		
INORGANIC CONTAMINANTS							
Aluminum mg/L)	2019	1	0.6	0.05	ND - 0.095	Yes	Erosion of natural deposits; residual from some surface water treatment processes
RADIONUCLIDES							
Gross Alpha Particle (pCi/L)	2019	15	0	ND	ND	Yes	Erosion of natural deposits

Substance (units)	Year Sampled	MCL	MCLG	Polonio Pass Water Treatment Plant			Typical Source
				Average Amount Detected	Range	Compliance Achieved	
DISTRIBUTION TESTING							
Total Chlorine Residual (ppm)	2019	4.0	4.0	2.47	0.33 - 3.5	Yes	Measurement of the disinfectant used in the production of drinking water
Total Coliform Bacteria	2019	5% of monthly samples	0	0.0%	0.0 - 0.0	Yes	Naturally present in the environment
Total Trihalomethanes (ppb)	2019	80	NA	45 47.8 (Highest LRAA)	24 - 75	Yes	By-product of drinking water production
Haloacetic Acids (ppb)	2019	60	NA	15 15.5 (Highest LRAA)	7.4 - 25	Yes	By-product of drinking water production

Substance (units)	Year Sampled	MCL	MCLG	Polonio Pass Water Treatment Plant			Typical Source
				Average Amount Detected	Range	Compliance Achieved	
Secondary Standards (Aesthetic Standards)							
Chloride (ppm)	2019	500	NA	59	13 - 146	Yes	Run off/leaching from natural deposits; seawater influence
Color	2019	15	NA	ND	ND	Yes	Naturally occurring organic material
Corrosivity	2019	Non-corrosive	NA	12	12	Yes	Balance of hydrogen, carbon,& oxygen in water, affected by temperature& other factors
Odor Threshold (TON)	2019	3	NA	ND	ND	Yes	Naturally occurring organic materials
Manganese, Total (ug/L)	2019	50	NA	ND	ND	Yes	
Specific Conductance (uS/cm)	2019	1600	NA	403	138 - 762	Yes	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2019	500	NA	46	46	Yes	Run off/ leaching from natural deposits
Total Dissolved Solids (TDS)	2019	1000	NA	260	260	Yes	Run off/ leaching from natural deposits
Turbidity (NTU)	2019	5	NA	0.05	ND - 0.12	Yes	Soil Runoff

Turbidity (NTU) is a measure of cloudiness of the water and it a good indicator of the effectiveness of CCWA's filtration system. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the

presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

Substance (units)	Year Sampled	MCL	MCLG	Polonio Pass Water Treatment Plant			Typical Source
				Average Amount Detected	Range	Compliance Achieved	
Additional Parameters (Unregulated)							
Alkalinity (Total) as CaCO3 equivlents (ppm)	2019	NA	NA	56	30 - 80	Yes	Run off/ leaching from natural deposits; sea water influence
Calcium (ppm)	2019	NA	NA	19	19	Yes	Run off/ leaching from natural deposits; sea water influence
Chromium, Hexavalent (ppb)	2018	NA	0.02	0.058	0.058	Yes	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits
Geosmin ng/L	2019	NA	NA	2.8	ND - 6	Yes	
Hardness (Total) as CaCO3 (ppm)	2019	NA	NA	82	26 - 144	Yes	Leaching from natural deposits
Heterotrophic Plate Count CFU/mL	2019	TT	NA	0	0 - 2	Yes	Naturally present in the environment
Magnesium (ppm)	2019	NA	NA	12	12	Yes	Run off/ leaching from natural deposits; sea water influence
2-Methylisoborneol ng/L	2019	NA	NA	0.2	ND-1	Yes	
pH	2019	NA	NA	8.4	7.7 – 8.7	Yes	Run off/ leaching from natural deposits; sea water influence
Potassium (ppm)	2019	NA	NA	3.1	3.1	Yes	Run off/ leaching from natural deposits; sea water influence
Sodium (ppm)	2019	NA	NA	58	58	Yes	Run off/ leaching from natural deposits; sea water influence
Total Organic Carbon – TOC (removal ratio)	2019	TT	NA	1.9	1.5 - 3	Yes	Various natural and man made sources

REGULATED CONTAMINANTS FROM THE VANDENBERG AFB DISTRIBUTION SYSTEM (AMERICAN WATER OPERATIONS AND MAINTENANCE, LLC.)

Substance (units)	Year Sampled	MCL	MCLG	Average Amount Detected	Range	Compliance Achieved	Typical Source
DISINFECTANT AND DISINFECTION BY-PRODUCTS (AMERICAN WATER)							
Chloramines (ppm)	2019	4	4	1.84	1.42-2.20	Yes	Disinfectant water additive used to control microbes

MICROBIOLOGICAL CONTAMINANTS (AMERICAN WATER)

Substance (units)	Year Sampled	MCL	MCLG	Tested Positive	Compliance Achieved	Typical Source
Coliform, Total (TCR)	2019	No more than 1 positive monthly sample.	0	0	Yes	Naturally present in the environment

DISTRIBUTION TESTING (AMERICAN WATER) - *In 2017, 35 Homes participated in Lead & Copper Testing (conducted every 3 years). In 2018, four schools requested Lead testing. Lead and Copper sampling will be conducted in the summer of 2020.*

Substance (units)	Year Sampled	AL	MCLG	90th Percentile	Sites Above AL	Compliance Achieved	Typical Source
Lead (ppb)	2017	15	0	ND	0	Yes	Corrosion of household plumbing; Erosion of natural deposits
Copper (ppm)	2017	1.3	0	0.055	0	Yes	Corrosion of household plumbing; Erosion of natural deposits.

DISTRIBUTION TESTING (AMERICAN WATER)

Substance (units)	Year Sampled	MCL	MCLG	Average Amount Detected	Range	Compliance Achieved	Typical Source
THMs (ppb)	2019	80	NA	39.82 41.9 (Highest LRAA)	21.3-66.0	Yes	By-product of drinking water disinfection
HAA5 (ppb)	2019	60	NA	17.82 19.1 (Highest LRAA)	9.3-37.7	Yes	By-product of drinking water disinfection