

TOTAL TRIHALOMETHANES

The regulatory Disinfectant By-Product (DBP) Rule for Stage II sampling for Total Trihalomethanes (TTHMs) requires a running average based on each sample location. In 2015, our highest locational average TTHM result was 87 ppb, which is just above the Maximum Contaminant Level (MCL) of 80 ppb. These samples were collected at an unused, outlying area of our water distribution system. The remainder of the base was unaffected. TTHMs are a widely occurring class of DBP that form during water treatment disinfection when chlorine reacts with organic material (also known as “precursors”). Factors that influence the formation of DBPs include water temperature, pH, chlorine concentration, precursor concentration, and chlorine contact time. Some individuals who drink water containing TTHMs in excess of the state MCL over many years may experience complications with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer. For more information, visit the EPA website at <http://www.epa.gov/safewater/disinfection/>.

IRON AND MANGANESE

All four of our wells exceeded the secondary MCL for manganese and two of our wells exceeded the secondary MCL for iron. These higher levels do not pose a health risk, but can impact the aesthetics of your water. At certain concentrations, iron and manganese can precipitate out and leave stains on plumbing fixtures, dishes, and on laundered clothes. We will continue to monitor the wells on a regular basis. In late 2015, VAFB switched to state purchased water which resulted in significantly lower levels of iron and manganese.

TOTAL COLIFORM BACTERIA

Coliform is a bacteria naturally present in the environment and is used as an indicator that other potentially harmful bacteria may exist. VAFB collects between 12-15 samples each month at selected sites, to include childcare facilities. All routine compliance samples were absent of coliform and met state requirements.

IMPORTANT HEALTH INFORMATION

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. US EPA/Centers for Disease Control (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).

WATER SYSTEMS IMPROVEMENTS

The drinking water system on Vandenberg was privatized on 1 June 2016 and the contract was awarded to American Water. The contractor will continue making system improvements in order to continue to deliver high quality drinking water.

CONTAMINANTS IN DRINKING WATER

The sources of drinking water (both tap water and bottled water) include 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 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 storm water 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 storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, agricultural application, and septic systems.
- Radioactive contaminants that can occur naturally or be the result from oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the US EPA and the DDW prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that 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 USEPA’s Safe Drinking Water Hotline (1-800-426-4791) or <http://water.epa.gov/infrastructure/drinkingwater/pws/index.cfm>.

ABBREVIATIONS & DEFINITIONS:

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers increased monitoring, sampling, treatment, or other requirements a water system must follow to protect public health.

Maximum Contaminant Level (MCL): The highest level of a contaminant allowed in drinking water. Primary MCLs are set as close to the PHGs/(MCLGs) as is economically and technologically feasible. Secondary MCLs are not a health concern but are set to protect the odor, taste, and appearance of drinking water.

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

Primary Drinking Water Standard: MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Public Health Goals: The level of a contaminant in the drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency (CA/EPA).

Secondary Drinking Water Standard: MCL requirements for contaminants that do not affect the health at MCLs but may affect taste, odor, or appearance of water.

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

Regulated Substances Primary									
Substance (Contaminant)	MCL	PHG (MCLG)	SWP Water (Avg)	Range	Most Recent Sample Date	SA Well Water (Avg)	Range	Most Recent Sample Date	Typical Source of Substances
			Cal. State Water Project			San Antonio Well Water (VAFB)			
Gross Alpha Particle Activity (pCi/L)	15	0	ND	ND	2015	ND	ND	2013	Erosion of natural deposits
Aluminum (ppm)	1.0	0.6	0.073	ND - 0.11	2015	ND	ND	2013	Erosion of natural deposits; residue from some surface water treatment processes
Arsenic (ppb)	10	0.004	ND	ND	2015	4	ND - 7	2013	Erosion of natural deposits; runoff from orchards; naturally occurring in groundwater
Fluoride (ppm)	2	1	ND	ND	2015	0.9	0.5-1.3	Monthly 2015	Erosion of natural deposits; water additive that promotes strong teeth
Nitrate as NO ₃ (ppm)	10	10	0.43	0.43	2015	ND	ND	2014	Runoff and leaching from fertilizer use; erosion of natural deposits
Selenium (ppb)	50	30	ND	ND	2015	6	2-11	2013	Erosion of natural deposits; runoff from livestock lots (feed additive)
* Total Trihalomethanes (TTHM) (ppb)	80	N/A	61	53-68	2015	87	25-150	Qtrly 2015	By-product of drinking water disinfection
Haloacetic Acids (HAA) (ppb)	60	N/A	12.4	8.2-18	2015	13.1	5.6-25	Qtrly 2015	By-product of drinking water disinfection
Chlorine (ppm)	4.0	N/A	2.3	1.1-3.5	2015	1.7	0.2-3.9	Weekly 2015	Drinking water disinfectant added for treatment

Lead and Copper Rule							
Substance (Contaminant)	AL	PHG	VAFB Water	Number of sites	Number of sites over AL	Sample Date	Typical Source of Substances
Lead (ppb)	15	0.2	0.0	30	0	2014	Internal corrosion of household water plumbing systems; erosion of natural deposits
Copper (ppm)	1.3	0.3	0.23	30	0	2014	

Regulated Substances Secondary MCLs									
Substance (Contaminant)	Secondary MCL	SWP Water (Avg)	Range	Most Recent Sample Date	SA Well Water (Avg)	Range	Most Recent Sample Date	Typical Source of Substances	
			CA State Water Project			San Antonio Wells water (VAFB)			
Color	15 units	ND	ND	2015	ND	ND	2013	Naturally-occurring organic materials	
*Iron (µg/L)	300	ND	ND	2015	274	130-590	2015	Leaching from natural deposits	
*Manganese (µg/L)	50	ND	ND	2015	62	51-73	2015	Leaching from natural deposits	
Odor – Threshold	3 units	ND	ND - 1	2015	1.25	1-2	2013	Naturally-occurring organic materials	
Turbidity	5 units	0.07	0.04-0.14	2015	6.5	2.8-9.4	2013	Soil runoff	
Total Dissolved Solids (mg/L)	1,000	437	349-708	2015	478	420-520	2013	Runoff/leaching from natural deposits	
Specific Conductance (µs/cm)	1,600	781	654-1160	2015	868	672-964	2013	Substances that form ions when in water	
Chloride (mg/L)	500	122	80-205	2015	99	86-110	2013	Runoff/leaching from natural deposits	
Sulfate (mg/L)	500	97	97	2015	81	65-100	2013	Runoff/leaching from natural deposits	

Non-Regulated Substances									
Substance (Contaminant)	SWP Water (Avg)	Range	Most Recent Sample Date	SA Well Water (Avg)	Range	Most Recent Sample Date	Notes		
			Cal. State Water Project			San Antonio Wells water (VAFB)			
Sodium (ppm)	62	62	2012	70	62-76	2013	Neither sodium nor hardness has an MCL but, we are presenting due to customer interest.		
Hardness, Total (ppm)	101	64-156	2012	242	213-277	2013			

* Please see coordinating substance specific paragraph on the opposite page.

<p>ACRONYMS ACU: Apparent Colorless Units CCWA: Central Coast Water Authority CFU/ml: Colony Forming Units per milliliter ND: Not detectable above testing limits NTU: Nephelometric turbidity units (a measure of turbidity/clarity)</p>	<p>pCi/L: PicoCuries per liter ppb: Parts per billion or micrograms per liter (µg/L) ppm: Parts per million or milligrams per liter (mg/L) SWP: State Water Project TON: Threshold Odor Number µmhos/cm: micromhos per centimeter</p>
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GENERAL INFORMATION

We are pleased to present our 2015 water quality report. This report is designed to inform you about the quality of drinking water we deliver to you daily. Our constant goal is to provide you with a dependable supply of drinking water. The sources of drinking water (both tap and bottled water) include 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. This requires disinfection for all water sources. The U.S. Environmental Protection Agency (U.S. EPA) and the State Water Resources Control Board, Department of Drinking Water (DDW) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. Disinfectant treatment ensures your water meets public health requirements to eliminate microbial contamination. A source assessment of the San Antonio (SA) Water Wells was completed in July 2012. The SA groundwater source has the potential to be impacted by activities relating to the military installation, other domestic water supply wells, roads/streets, surface water, and freeways/state highways. However, no substances associated with these sources have been detected in the wells. A copy of the complete assessment is available at: 30 MDOS/SGOJ, Building 13850, VAFB, CA 93437. If you would like to receive a summary of the assessment by mail, call: 30 MDOS/SGOJ at (805) 606-7811. The base drinking water working group meets on a monthly basis in building 11439.

SOURCES OF WATER

VAFB purchases water from the California State Water Project (SWP). SWP water originates in the upper Feather River in northern California and is stored in Lake Oroville and the San Luis Reservoir. The Central Branch of the Central Coast Water Authority (CCWA) delivers SWP water via pipelines to VAFB from their Polonio Pass Water Treatment Plant located approximately 125 miles northeast of the base. When additional water is needed to supplement state water or the Polonio Pass Water Plan is down for maintenance, water is obtained from groundwater wells located on VAFB in the San Antonio (SA) Groundwater Basin. Water from both sources is disinfected and fluoridated.

WATER SOURCE ASSESSMENT

In July 2012 the DDW updated Vandenberg's Source Water Assessment for the base groundwater wells. The assessment determined that there are no possible contaminating activities that have had a direct impact on Vandenberg's groundwater source. For a fuller summary of the assessment, please contact Mr. Mike Kalata, 30 CES/Water Quality at 605-0342. A copy of the complete assessment may be viewed at State Water Resources Control Board, Division of Drinking Water, District 06, 1180 Eugenia Place, Suite 200, Carpinteria, CA 93013, or you may request a summary of the assessment be sent to you by contacting Jeff Densmore, District Engineer at 805-566-1326.

WATER CONSERVATION

PROTECT OUR RESOURCE

We must all take steps to ensure we have an adequate supply of drinking water in the future. The best way to achieve this goal is by using water sparingly.

Here are some tips on how to conserve water:

- IAW Balfour Beatty Communities (BBC) policy; even numbered homes should water on Monday and Thursday and odd numbered homes should water on Tuesday and Friday. BBC recommends you water early in the day and avoid watering midday due to evaporation. Water evenly so it does not pool or run into storm drains. Only water for 10 minutes or less on each area of your lawn. **This saves up to 750-1,500 gallons per month.**
- Look for leaky faucets and plumbing joints. **This saves up to 600 gallons per month for each repaired leak.**
- Run only full loads in washing machines and dishwashers. **This saves up to 300-800 gallons per month.**
- Shorten your showers. **This saves up to 700 gallons per month.**
- Turn off the water while brushing your teeth and/or shaving. **This saves up to 10 gallons per day.**
- Visit www.epa.gov/watersense for more information.

DROUGHT INFORMATION

Due to the continuing severe drought in California, surface water sources are not as abundant as they typically are. We are currently providing water from the SWP; however, if we need to utilize our ground source, San Antonio well water, you may notice a difference in aesthetics such as appearance, taste, and/or odor. Both sources are tested and are safe to drink.

PREVENT WATER POLLUTION

VAFB is required to prevent storm water pollution. During storm events, runoff mobilizes contaminants such as oil and gasoline from parking lots, sediment and fertilizers from landscaping, and pet waste. Storm water runoff eventually makes its way into groundwater or receiving water bodies such as rivers and lakes and has the potential to contaminate water supplies. Keep storm water leaving your home or workplace clean. Prevent contamination of drinking water by following these simple guidelines:

- Use a commercial car wash.
- Keep vehicles maintained to prevent leaks.
- Clean up after your pets.
- Don't litter
- Use pesticides and fertilizers sparingly and never before anticipated rain.
- Sweep driveways and walkways rather than hosing them down.
- If you see polluted storm water runoff or materials such as motor oil discharging or being dumped into VAFB storm drains, please call the **Storm Water Hotline at 606-7541.**

You can recycle used oil and antifreeze; just take it to the Consolidated Collection Accumulation Facility at Building 3300 on New Mexico Avenue. Used kitchen grease is the only item BBC Self Help Center can accept. They are located at 603 Juniper Street.

QUESTIONS

If you have questions about your water quality, this report, please contact the appropriate department.

REPORT INFORMATION

- ❖ Asset Management Flight, Water Resources Program, Mr. Mike Kalata 605-0342

HOUSING MAINTENANCE CONCERNS

- ❖ Balfour Beatty, Facility Maintenance, 734-1488

WATER SAMPLING INFORMATION

- ❖ Bioenvironmental Engineering, TSgt Amanda Nicodemus 606-7811

HEALTH CONCERNS

- ❖ Public Health, 606-0648

WATER EMERGENCIES

- ❖ CE DCC, 606-1856 or CE Customer Service 606-0010

WATER CONSERVATION

- ❖ Utility Engineer, Mike Bird 606-2080

VANDENBERG AFB ANNUAL DRINKING WATER QUALITY REPORT 2015

ADVISORY

This report contains important information regarding your drinking water.

READING THIS REPORT

The EPA requires an Annual Drinking Water Report to present information about your drinking water, its sources, and how San Antonio well water compares to federal and California standards. To help ensure that your drinking water meets these standards, Vandenberg Air Force Base (VAFB) routinely samples and analyzes your water for over 100 different water quality parameters on a weekly, monthly, quarterly, annual, and triennial basis as required by Air Force, state, and federal procedures and/or regulations. This report will give you a representative idea of the quality of your drinking water quality, and goes into further detail about some of the constituents found in your water. The data presented this report reveals all detected substances that are regulated by the state of California.