

# Camp Lemonnier Djibouti City, Djibouti Drinking Water 2013 Consumer Confidence Report

OUR MISSION IS TO PROVIDE SAFE DRINKING WATER

Ce rapport contient des informations importantes sur votre eau potable. Traduisez-le ou parlez en avec quequ'un qui le comprend bien.

Warbixintan waxay wadataa macluumaad muhiim ah ee la xiriira biyaha aad cabtid. Cid ha kuu tarjunto ama la hadl cid fahmaysa.

IS OUR WATER SAFE TO DRINK?

**Yes**, the drinking water supplied to Camp Lemonnier consumers is safe to drink. We are proud to support the Navy's commitment to provide safe and reliable drinking water. This annual Consumer Confidence Report (CCR) includes general and mandatory information to educate everyone about Camp's water source, treatment process, standard requirements, and other relevant details to help assure you that our water is safe to drink.

## Annual Declaration of Potability

Camp Lemonnier drinking water is declared POTABLE. This declaration is based on the bacteriological sampling conducted by the Expeditionary Medical Facility for calendar year 2013 and Public Works Department, Environmental Division, water analysis.

Preventive Medicine/Environmental Health Officer  
Expeditionary Medical Facility  
Camp Lemonnier, Djibouti City, Djibouti

## WHAT ARE OUR DRINKING WATER REQUIREMENTS?

It's important to know that, wherever we are in the world, all water we drink (including bottled) may reasonably be expected to contain at least trace amounts of contaminants. This CCR discusses CLDJ's water source, its treatment, and why it is safe to drink.

Department of Defense potable water systems must comply with the applicable requirements of the Overseas Environmental Baseline Guidance Document (OEBGD), CNIC Instruction 5090.1 and 5090.3, and COMNAVREGEUR Instruction 11330.1. The drinking water distributed to our Camp consumers is in full compliance with OEBGD criteria and standards, which are developed after a comprehensive review and comparison with the

U.S. Environmental Protection Agency's (EPA) Safe Drinking Water Act. The OEBGD regulates the amount of certain contaminants in water provided by our system; these amounts are referred to as Maximum Contaminant Levels (MCLs).

Drinking water is monitored frequently for various parameters and compared to the MCLs considered safe for human consumption to ensure consumer health and safety. Regular sampling and analysis is conducted by an independent third-party laboratory to verify the water quality. Results from the 2013 sampling show that all levels are well below the OEBGD MCLs. Constituents evaluated include (details are provided on page 11 of this CCR):

- Bacteriological contamination
- Inorganic and organic compounds
- Pesticides and PCB's
- Disinfection byproducts

## WHAT IS THE SOURCE OF OUR WATER?

Camp Lemonnier is located on the western coast of the Gulf of Aden on a tectonic plate boundary between the Arabian and African Plates so subsurface geology is complex. The Camp sits atop three geological layers: sediment and clay, pyroclastic, and fractured basalt. Our drinking water aquifer is impacted by sea and volcanic activity.

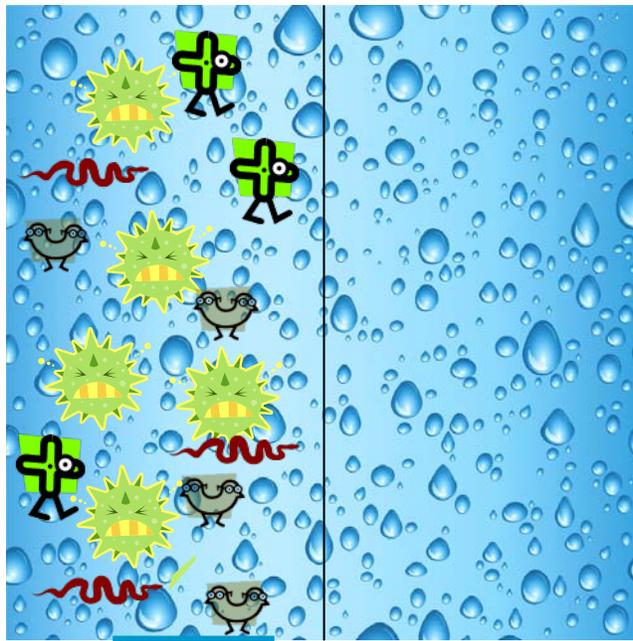
An aquifer is formed when water travels through the pore space in rocks like sandstone, limestone, and gravel. Fractured volcanic rock like basalt makes good aquifers because water can move

quickly through the porous spaces. As the water passes through the rocks, it dissolves substances that may be harmful to humans and therefore requires treatment and processing to remove these contaminants.

## HOW IS OUR DRINKING WATER TREATED?

The treatment process at CLDJ consists of several different technologies each with a specific job to do: filtration, ultraviolet (UV) disinfection, reverse osmosis (RO) and chemical disinfection. The treatment plant, which is called a reverse osmosis water purification unit (ROWPU) consists of eight multimedia filters, eight granular activated carbon filters, eight cartridge filters and four parallel RO treatment trains.

Each treatment train is identical and is designed to produce 100,000 gallons of drinking water per day or a total of 400,000 gallons of drinking water in one day. Water from three groundwater wells is processed through the granular multimedia pressure filters to remove large particulate matter. From there it passes through the granular activated carbon (GAC) adsorption pressure filters to remove dissolved contaminants as well as the cartridge pressure filters to remove small particles. The filtered water then passes through a UV light disinfection unit to kill any microbes that might have passed through the multiple filtration steps before entering the RO unit.



In the reverse osmosis treatment units, pressure is continuously applied to push the water molecules across the membrane from an area of lower concentration (less water molecules, more contaminants) to higher concentration (more water molecules, less contaminants). The RO skid removes unwanted salts, microorganisms, and other contaminants. After the RO treatment, the drinking water is disinfected with calcium hypochlorite in order to maintain a chlorine residual in the distribution system.

Hard water contains dissolved minerals including calcium and magnesium. Because our treatment process eliminates a considerable amount of these minerals during processing, our water is considered soft water. The minerals in water provide its

characteristic taste. Soap lathers less in hard water. The characteristics of soft water, for example, a “flat” taste and lots of lather during washing are not associated with poor quality water; just very pure water.

For the majority of 2013, the Camp purchased bottled water from suppliers in Djibouti and the United Arab Emirates. This water was stored in ice chests located throughout Camp. However, ice contract expired on August 31, 2013 and bottled water was no longer provided. Prior to the contract expiring, multiple drinking water fountains and seven chilled water filling stations were operational and provided chilled water to Camp personal at various locations across the base.

## WHAT CONTAMINANTS MAY BE FOUND IN DRINKING WATER?

The presence of contaminants does not necessarily indicate that the water poses a health risk. To ensure that water is safe to drink, it is adequately treated to remove harmful chemicals, heavy metals and pathogens. When present at or above acceptance levels, these contaminants may be harmful to human beings. Additionally, drinking water may contain certain additives and essential minerals, which when added during treatment, provide taste, growth and development of the human body.

Typical contaminants may include:

**Microbial contaminants**, including viruses and bacteria; possible sources are wildlife, sewage treatment plants, septic system and livestock.

**Inorganic contaminants**, from many sources: discharge from petroleum refineries, fire retardants, ceramics, electronics, solder, discharge of drilling wastes, discharge from metal refineries, and erosion of natural deposits; infiltration through soil, sediment and rock that form the Earth's crust; water traveling over the Earth's surface dissolves salts and minerals; and contamination from improperly built wells from other aquifers.

**Pesticides and herbicides**, which can be carried in rainwater runoff from farm fields, suburban lawns, or roadside embankments into the nearest creeks and streams. Occasionally, they are even intentionally sprayed into waterways as part of pest control efforts. Also entering the environment are herbicides, insecticides, fungicides, rodenticides, and algicides.

**Organic, chemical contaminants** include synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can come from gas stations, urban storm water run-off and septic systems.

**Radioactive contaminants**, which are certain radionuclide (ex: Barium and Strontium) that occur naturally and form part of the Earth's crust. Other radionuclide may be present as contaminants, due to their use as tracers in the oil fields.

## SOME PEOPLE MUST USE SPECIAL PRECAUTIONS

Some people are more sensitive to contaminants in drinking water than the general population. Immuno-compromised persons, such as those undergoing chemotherapy, those who have undergone organ transplants, those with HIV/AIDS or other immune system disorders, some elderly, and infants, can be particularly at risk of infections. These people should always seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and microbial contaminants are available from the EPA safe drinking water hotline: 800-426-4791 or <http://www.epa.gov/safewater>.

## ADDITIONAL INFORMATION ON 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. Camp's Public Works Department (PWD) 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 thirty seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, please contact the Installation Environmental Programs Director at 824-5523. Information on lead in drinking

water and the steps you can take to minimize exposure is available from the EPA Safe Drinking Water website, <http://www.epa.gov/safewater/lead>.

## SUMMARY

In order to ensure that tap water is safe to drink, the OEBGD prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during 2013. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. 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. The following table provides definitions of commonly used terms to quantify water quality.

<b>Tem</b>	<b>Definition</b>
MCLG	Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is known or expected risk to health, MCLGs allow for a margin of safety.
MCL	Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCL are set as close to the MCLGs as feasible using the best available treatment technology.
TT	Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	Action Level: The concentration of a contaminant which, if exceeded, triggers treatment of other requirements which a water system must follow.
Variances and exemptions	Permission granted by regulatory authority not to meet an MCL or a treatment technique under certain conditions.
MRGLG	Maximum residual disinfection 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.
MRDL	Maximum residual disinfectant level. 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.
MNR	Monitored Not Regulated
MPL	State Assigned Maximum Permissible Level

### Important Drinking Water Definitions

Contaminant	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
Nitrate [measured as nitrogen] (ppm)	10	10	0.76	N/D	.76	2013	No	Storm water runoff
Boron (ppm)	N/A	N/A	0.33	0.26	0.33	2013	No	Erosion of soil originating from marine sediments and arid regions
Calcium (ppm)	N/A	N/A	1.20	0.50	1.20	2013	No	Erosion of soil including fossil material; leaching
Potassium (ppm)	N/A	N/A	0.55	N/D	0.55	2013	No	Erosion of natural deposits; leaching
Silica (ppm)	N/A	N/A	0.09	N/D	0.09	2013	No	Erosion of natural deposits; leaching

**Note:** No other Inorganic Compounds, Organic Compounds, Pesticides, PCBs, Total Trihalomethanes and Radionuclide, Lead, Copper and Total Coliforms were detected.

\* indicates a National Secondary Drinking Water Guideline Standard

N/D = Not Detected, i.e. below Practical Quantitation Limit (PQL) of the Test Method.

ppm = parts per million, milligrams per liter (mg/L)

N/A = not applicable

### Water Quality Data Table

## POINTS OF CONTACT

For any questions regarding this report or drinking water at Camp Lemonnier, please contact any of the Installation Water Quality Board (IWQB) members below:

Public Works Officer  
Camp Lemonnier  
Phone DSN 311-824-4064

Force Health Protection Officer  
Camp Lemonnier EMF  
Phone DSN 311-824-4910

Installation Environmental Programs Director  
Camp Lemonnier  
Phone DSN 311-824-5523; 253 77 759 465

## DID YOU KNOW?

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference – try one today and soon it will become second nature:

- 💧 Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath. *Combat showers really do work!*
- 💧 Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- 💧 Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month. *Camp has installed these showerheads in our abulation units.*
- 💧 Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month. *Camp uses high efficiency washers – remember to watch the amount of soap you add because a little goes a long way!*
- 💧 Water plants only when necessary. *Camp uses reuse water!*
- 💧 Fix leaky toilets and faucets. Fixing or replacing toilets with a more efficient model can save up to 1,000 gallons a month. Faucet washers are inexpensive and take only a few minutes to replace. *While on Camp, call 824-COLD to report leaks!*

## HOW CAN YOU HELP?

Protection of drinking water is everyone's responsibility. You can help protect our drinking water source in several ways:

- Spills of antifreeze, gasoline, motor oil and other petroleum products are the greatest risk to our drinking water supply. Please use drip pans and secondary containers! Call 1-911 or 77-359-056 to report spills.
- Recycle your batteries, aerosol cans, and printer toner in the marked bins around Camp.
- Dispose of chemicals properly – call 824-4941 for help with disposal of hazardous chemicals.
- Return vehicles to TMP for maintenance and stop leaks before they happen.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use EPA's Adopt Your Watershed to locate groups in your community, or visit the Watershed Information Network's How to Start a Watershed Team.
- Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.
- Teach your kids about water conservation to ensure the future generation uses water wisely. Make it a family effort to reduce next month's water bill!

And when you return home:

- Eliminate excess use of lawn and garden fertilizers and pesticides – they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.