



Frequently Asked Questions: Camp Lejeune Historic Drinking Water

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Chemicals and Exposure

1. Is the water at Camp Lejeune currently safe to drink?

The drinking water at Camp Lejeune meets all government drinking water standards and is tested more often than required. For Camp Lejeune's annual water quality reports, please see: <http://www.lejeune.usmc.mil/emd/reports/annualreports.htm>.

2. What chemicals were previously detected in the drinking water system?

The chemicals detected in the drinking water were a class of chemicals known as "volatile organic compounds". These chemicals were commonly used as solvents for cleaning machinery and weapons, for dry cleaning, and some are found in fuels. These chemicals include:

- Trichloroethylene (TCE), primarily used as a metal cleaner (i.e., for cleaning weapons, engine parts, and machinery);
- Tetrachloroethylene (also known as PCE, perc, or perchloroethylene), primarily used in dry cleaning;
- Benzene and toluene, chemicals found in gasoline and other fuels;
- Vinyl chloride, 1,2-dichloroethylene, and 1,1-dichloroethylene, breakdown products of TCE and PCE; and
- Methylene chloride, a chemical solvent used in laboratories and in removing paint.

3. Who may have been exposed?

Current Agency for Toxic Substances and Disease Registry (ATSDR) estimates indicate that anyone at Camp Lejeune prior to 1987 may have been exposed. The Tarawa Terrace and Hadnot Point water systems were affected by chemical contaminants; however, the levels varied. The water system serving Holcomb Boulevard was potentially affected at times because it sometimes received water from Hadnot Point during dry spring and summer months.

4. What amounts of the chemicals were in the drinking water?

We can't be certain. The lack of historic data creates uncertainties with accurately estimating levels of the chemicals in the water that occurred decades ago. A public health agency, the Agency for Toxic Substances and Disease Registry (ATSDR), has completed a water modeling study to estimate the level of chemicals in drinking water at the Tarawa Terrace area. The ATSDR is currently developing similar estimates for the Hadnot Point/Holcomb Boulevard area. Detailed information may be found in tables published in reports by the ATSDR and the National Academy of Sciences/National Research Council (NAS/NRC).*

* For more technical details, see the ATSDR's website at <http://www.atsdr.cdc.gov/sites/lejeune> and Contaminated Water Supplies at Camp Lejeune (NAS/NRC, 2009) at http://www.nap.edu/openbook.php?record_id=12618&page=R1.

Health and Medical

5. Could my health condition be related to the chemicals in the drinking water?

At this time, we do not know if past exposure to these chemicals in Camp Lejeune's drinking water caused adverse health effects in individuals. We are supporting the Agency for Toxic Substances and Disease Registry (ATSDR) with their scientific studies attempting to determine if exposures to drinking water at Camp Lejeune may have caused adverse health effects. According to the ATSDR,

"Exposure to the drinking water contaminants trichloroethylene (TCE)*, perchloroethylene (PCE), vinyl chloride, benzene, and other volatile organic compounds found at Camp Lejeune have been linked with some types of cancer, birth defects,

and other health problems. Still, even if you were exposed, ATSDR cannot confirm that these health problems are a result of that exposure”

(http://www.atsdr.cdc.gov/sites/lejeune/faq_general.html).

The amount of harm the chemicals may cause is related to several factors:

- When a person is exposed (e.g., as an adult, during pregnancy, as a child);
- How much a person is exposed to (e.g., the amount of chemicals in the water and how much you drank or used);
- How long a person is exposed; • How a person is exposed (e.g., breathing, drinking); and
- What a person’s personal traits and habits are.

* The United States Environmental Protection Agency published a Final Health Assessment for TCE on September 28, 2011 at

<http://yosemite.epa.gov/opa/admpress.nsf/1e5ab1124055f3b28525781f0042ed40/b8d0e4d8489ad991852579190058d6c3!OpenDocument> and <http://www.epa.gov/IRIS/subst/0199.htm>. Drafts of the assessment were released in 2001, 2002, and 2009.

6. What should I do about any medical condition I may have or that I suspect I may have?

We encourage you to contact your family physician regarding any concerns you may have about your health or your family’s health. Also, please sign up on our notification database to receive updated information at <http://www.marines.mil/clwater>.

7. Where can I file a claim with the government for an illness that I believe is potentially related to the past drinking water at Camp Lejeune?

Former Service Members: Claims by former service members may be filed with the Department of Veterans Affairs (VA). For more information, please see: <http://www.vba.va.gov/bln/21/compensation/index.htm> or call 1-800-827-1000.

Civilian Employees: Claims by civilian employees may be filed with the Department of Labor’s (DoL) Office of Workers Compensation Program. For more information, please see: <http://www.dol.gov/compliance/topics/benefits-comp-fed.htm> or call 1-866-487-2365.

Family Members and Other Persons’ Claims: Claims for personal injury or wrongful death may be filed through a process established by the United States Congress under the Federal Tort Claims Act. The claims packet from the Department of the Navy can be accessed at: <http://www.jag.navy.mil/organization/documents/CampLejeuneClaimsPacket.pdf> or call 202-685-4600.

History of Discovery

8. When and how were the chemicals in drinking water discovered and addressed? Were there drinking water regulations for these chemicals at the time?

In the early 1980s, Camp Lejeune began to test drinking water for trihalomethanes (THMs) because of new regulations that had been announced by the United States Environmental Protection Agency (EPA) for those chemicals. THMs are chemicals that are created when water is treated with chlorine. While these initial tests for THMs were being conducted, other chemicals, unidentified at the time, were sometimes interfering with the results. Through special testing of the drinking water system in 1982, the chemicals causing the interference with THM testing were identified as TCE and PCE. The test results varied between drinking water samples collected at different times. Base officials were unable to immediately identify the source of the chemicals. Beginning in 1984, as part of the environmental cleanup program, some drinking water wells were tested near potential former disposal sites. Benzene, a volatile organic compound, was found in one of the wells serving the Hadnot Point water system. When Base officials were notified of the result, the well was taken out of service on the same day it was found to be affected, and a more comprehensive well testing effort began. When this testing identified volatile organic compounds in specific drinking water wells, those affected wells were removed from service. A total of ten drinking water wells were removed from service in 1984/1985 based on the presence of these chemicals. The sources were later found to be on-Base sources such as leaking storage tanks and industrial activities, and one off-Base source, a dry cleaner that affected specific drinking water wells. The normal rotation of the wells and geological factors likely caused the variation of chemical levels in the drinking water. Detailed information may be found in tables published in reports by the ATSDR and the NAS/NRC.* There were no drinking water regulations established for these chemicals at the time, which further complicated the Base’s efforts. Federal regulations for TCE, benzene, and vinyl chloride were published in the Federal Register in 1987 and standards became effective and enforceable in 1989; Federal regulations for PCE were published in the Federal Register in 1991 and standards became effective and enforceable in 1992.

* For more technical details, see the ATSDR’s website at <http://www.atsdr.cdc.gov/sites/lejeune> and Contaminated Water Supplies at Camp Lejeune (NAS/NRC, 2009) at http://www.nap.edu/openbook.php?record_id=12618&page=R1 .

9. How did the chemicals get into the drinking water?

These chemicals got into the drinking water through wells that pumped groundwater into the drinking water systems for Camp Lejeune. The water from some of the wells was affected by past on-Base industrial and disposal activities and leaking storage tanks, as well as disposal practices of an off-Base dry cleaner. Standard practices in the United States for industrial activities, waste management, and disposal were much different in the past than they are today. In the early 1980s, standards and regulations were put in-place for the treatment and disposal of solvents and other chemicals. Camp Lejeune drinking water currently meets all government drinking water standards and testing is performed more often than is required.

Notification and Outreach

10. When did the Marine Corps notify people about the drinking water problem?

Our outreach efforts began in 1984 following the discovery of chemicals in the drinking water wells. The Base newspaper ran an article in December 1984. In May 1985, the Marine Corps held a press event which resulted in multiple articles in local newspapers. In 2000-2001 and again in 2011, we helped recruit participants for health studies being conducted by the ATSDR through an extensive notification effort through the media and military messages.

Today, we continue to engage in community outreach and world-wide notification activities through press releases, public notices in newspapers and magazines, website announcements, and direct mailings. We have established a drinking water notification database that provides notifications and updated information to registrants. You may register at <http://www.marines.mil/clwater>. To see how many people have registered in your area, click on the "Registration Summary" tab.

Independent Reviews

11. Have any independent organizations/agencies reviewed Marine Corps actions to ensure compliance with past regulations?

Three independent organizations/agencies have formally reviewed our actions:

- The Fact Finding Panel chartered by the Commandant of the Marine Corps(https://clnr.hqi.usmc.mil/clwater/Site/Events/events_summary.html) conclusions included: ?Camp Lejeune drinking water was consistent with industry standards that existed at the time.
?No evidence of an attempt to cover up information.
?Various factors contributed to the Marine Corps decision making at the time including a focus on compliance with, and training to meet existing regulatory standards; resource constraints; inconsistent test results; and inadequate communication among Navy and Marine Corps staff and officials, and with the residents.
- The EPA Criminal Investigation Division/Department of Justice (DoJ) (Congressional hearing transcripts, Exhibit 14: http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_house_hearings&docid=f:37793.pdf) findings included: ?There were no violations of the Safe Drinking Water Act (SDWA) and no "instances when data or records [were] intentionally withheld or false data was provided."
?The Commandant's Fact Finding Panel report was accurate and "consistent with the findings of the DoJ's expert witness hired to participate in interviews and to review the Administrative Record and other documents."
- The Government Accountability Office (<http://www.gao.gov/new.items/d07276.pdf>) reviewed the history of the issue and had no conclusions or recommendations for the Department of Defense.

Role of Other Agencies

12. What is the role of the Agency for Toxic Substances and Disease Registry (ATSDR) regarding the Camp Lejeune historic drinking water issue?

The ATSDR is a Federal public health agency of the United States Department of Health and Human Services. They have been charged by Congress to assess health hazards at environmental cleanup sites such as Camp Lejeune. The ATSDR is currently conducting studies to attempt to determine if exposure to chemicals at Camp Lejeune may have caused adverse health effects. We support the ATSDR by providing data, information, and funding. For more information about the ATSDR, please visit <http://www.atsdr.cdc.gov> or call 1-800-232-4636.

13. What is the Agency for Toxic Substances and Disease Registry (ATSDR) studying at Camp Lejeune?

The ATSDR has been conducting studies at Camp Lejeune since 1991. They are currently evaluating whether there is a relationship between past exposure to chemicals in drinking water and potential adverse health outcomes at Camp Lejeune through three ongoing studies: a childhood cancer and birth defects study; a mortality study; and a health survey. In addition, they are conducting water modeling to try to estimate past exposure to the chemicals in the drinking water. Additional information about these research initiatives can be found at <http://www.atsdr.cdc.gov/sites/lejeune>.

14. When can I expect to have answers from the scientific studies related to past water contamination at Camp Lejeune?

The ATSDR estimates their studies will be completed as follows:

- Childhood cancers and birth defects study – 2013
- Mortality study – 2013
- Health survey – 2014

Additional information about these studies can be found at <http://www.atsdr.cdc.gov/sites/lejeune>.

15. What is the role of the National Academy of Sciences (NAS)/National Research Council (NRC) regarding the Camp Lejeune historic drinking water issue?

The NRC is part of the NAS, a private, nonprofit institution that provides independent science, technology, and health policy advice. The NRC committees consist of the world's top scientists, engineers, and other professionals who volunteer their time without compensation. Under the direction of Congress, the NAS/NRC convened a committee in 2007 to evaluate the evidence on whether adverse health outcomes are associated with past contamination of the water supply at Camp Lejeune. The scope of the review had three elements:

- 1.To review the scientific evidence about the kinds of adverse health effects that could occur after exposure to TCE, PCE, and other contaminants.
- 2.To evaluate studies that were performed or that are underway on former residents of the Base and to consider how useful it will be to conduct additional studies.
- 3.To identify scientific considerations that could help the Navy set priorities on future activities.

The NAS/NRC determined that The available scientific information does not provide a sufficient basis for determining whether the population at Camp Lejeune has, in fact, suffered adverse health effects as a result of exposure to contaminants in the water supplies."

To view their report published in 2009, please see: http://www.nap.edu/openbook.php?record_id=12618&page=R1.

16. What is the role of the Department of Veterans Affairs (VA)?

The primary mission of the VA is to provide certain benefits for our Nation's Veterans. The VA provides medical benefits for veterans in the VA health care system. They provide disability compensation for injuries or diseases as well as a full range of preventive outpatient and inpatient services within the VA health care system. The VA has an established process for reviewing claims for benefits on a case-by-case basis. The process for reviewing Camp Lejeune claims is the same as for other claims. For information about VA benefits, please see: <http://www.va.gov> or call 1-800-827-1000.

For more information from the VA regarding health benefits under the "Honoring America's Veterans and Caring for Camp Lejeune Families Act of 2012" please visit: <http://www.publichealth.va.gov/exposures/camp-lejeune/> or call 1-877-222-8387.

17. What is the role of the Department of Labor (DoL)?

The primary mission of the DoL is to foster, promote, and develop the welfare of the wage earners, job seekers, and retirees of the United States; improve working conditions; advance opportunities for profitable employment; and assure work-related benefits and rights. The DoL also administers the worker's compensation program for Federal employees who have been injured as a result of their job. For more information about the worker's compensation program for Federal employees, please see: <http://www.dol.gov/owcp/dfec/index.htm> or call 1-866-487-2365.



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