



PERSONNEL AND
READINESS

OFFICE OF THE UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

MAY - 3 2018

The Honorable Rodney P. Frelinghuysen
Chairman
Committee on Appropriations
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

The enclosed report is in response to House Report 114-577, page 278, which accompanies H.R. 5293, the Department of Defense (DoD) Appropriations Bill, 2017. The House Report requests the Assistant Secretary of Defense for Health Affairs conduct a study and provide a report to determine if the Department's current policies and procedures for monitoring drinking water are sufficient, with recommendations for improving the quality of water testing.

The extensive and detailed DoD policies and procedures for monitoring drinking water quality are sufficient to assure quality drinking water at military bases worldwide, and to address future contaminants of concern. The type and periodicity of drinking water sampling and testing conducted on military bases meet all compliance requirements designed to assure high quality drinking water. As such, the DoD does not have any recommendations at this time for improving the quality of drinking water testing.

A similar letter is being sent to the other congressional defense committees. Thank you for your interest in the health and well-being of our Service members and their families.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Barna".

Stephanie Barna
Performing the Duties of the Under Secretary of
Defense for Personnel and Readiness

Enclosure:
As stated

cc:
The Honorable Nita M. Lowey
Ranking Member



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MAY - 3 2018

The Honorable Richard Shelby
Chairman
Committee on Appropriations
United States Senate
Washington, DC 20510

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Stephanie Barna
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Defense for Personnel and Readiness

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cc:
The Honorable Patrick J. Leahy
Vice Chairman



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MAY - 3 2018

The Honorable William M. "Mac" Thornberry
Chairman
Committee on Armed Services
U.S. House of Representatives
Washington, DC 20515

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Stephanie Barna
Performing the Duties of the Under Secretary of
Defense for Personnel and Readiness

Enclosure:
As stated

cc:
The Honorable Adam Smith
Ranking Member



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OFFICE OF THE UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
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MAY - 3 2018

The Honorable John McCain
Chairman
Committee on Armed Services
United States Senate
Washington, DC 20510

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Stephanie Barna
Performing the Duties of the Under Secretary of
Defense for Personnel and Readiness

Enclosure:
As stated

cc:
The Honorable Jack Reed
Ranking Member

Department of Defense

Water Safety on Military Bases



May 2018

Office of the Assistant Secretary of Defense for Health Affairs

The estimated cost of this report or study for the Department of Defense is approximately \$19,000 in Fiscal Years 2017 - 2018. This includes \$5,080 in expenses and \$13,500 in DoD labor.

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I. Congressional Reporting Request

This report is in response to House Report 114–577, page 278, accompanying H.R. 5293, the Department of Defense (DoD) Appropriations Bill, 2017, that requests the Assistant Secretary of Defense for Health Affairs to submit to the congressional defense committees a report on the sufficiency of current DoD policies and procedures for monitoring drinking water quality and any recommendations for improving the quality of water testing. Also in response to House Report 114–577, the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics submitted a December 2017 report, “DoD Drinking Water Compliance Program for Fiscal Year (FY) 2016,” to the congressional defense committees that describes the current water quality status of military bases worldwide and outlines the procedures in place to provide safe drinking water if the current water supply is deemed unhealthy.

II. DoD Drinking Water Monitoring Policy and Procedures

For this report, the term “DoD” pertains to Departmental-level policy and procedures. “DoD Components” for this report refers to the Army, Navy, Marine Corps, Air Force, and Defense Logistics Agency.

The DoD and DoD Component policies direct DoD Public Water Systems (PWS) to comply with Federal and state drinking water standards and monitoring requirements, in accordance with the Safe Drinking Water Act (SDWA) (Public Law 93-523) and published National Primary Drinking Water Regulations (NPDWRs) (40 CFR 141) and NPDWRs Implementation (40 CFR 142). NPDWRs set mandatory water quality standards for drinking water contaminants, called “maximum contaminant levels” (MCLs). An MCL is the maximum allowable amount of a contaminant in drinking water which is delivered to the consumer. MCLs are established to protect the public against consumption of drinking water contaminants that present a risk to human health. A PWS defined under SDWA regulations is a drinking water system that provides water for human consumption to at least 15 service connections or an average of 25 persons daily at least 60 days out of the year.

The overarching Department of Defense Directive (DoDD) 4715.1E, “Environment, Safety, and Occupational Health (ESOH),” states that it is DoD policy to:

- Protect the public from risk of death, injury, illness or property damage because of DoD activities.
- Protect DoD personnel from accidental death, injury, or occupational illness.
- Ensure DoD and non-DoD installation tenants comply with all applicable laws and DoD policies relating to ESOH requirements.
- Ensure all DoD organizations plan, program, and budget to manage the ESOH risks that their activities generate.
- Use ESOH management systems in mission planning and execution across all military operations and activities.

For U.S. installations, the DoD SDWA compliance policy is published in Department of Defense Instruction (DoDI) 4715.06, “Environmental Compliance in the United States.” This policy also requires DoD Components to measure SDWA compliance using prescribed metrics.

For overseas installations, DoD SDWA compliance policy is issued in DoDI 4715.05, “Environmental Compliance at Installations Outside the United States.” More specific compliance policy for overseas installations is published in DoD 4715.05-G, “Overseas Environmental Baseline Guidance Document (OEBGD).” The OEBGD is the base document that applies the U.S. standards, including the SDWA, to overseas installations. The final governing standards (FGS) reconcile the requirements of applicable international agreements and host nation environmental standards with the OEBGD. The FGS will reflect the more protective requirement, normally, unless a specific international agreement with the host nation mandates a different standard applicable to installations.

Under these three policy issuances, the DoD is to achieve, maintain, and monitor compliance with applicable environmental requirements, to include the SDWA and its drinking water quality standards and monitoring requirements worldwide. DoD Component SDWA compliance status is briefed annually to the Assistant Secretary of Defense for Energy, Installations, and Environment (ASD(EI&E)).

The DoD Components have published implementation policies and procedures to ensure compliance with DoD policy and SDWA requirements, including water quality monitoring (see table below) and detailed and numerous supporting issuances. The overarching DoD Component policies and procedures include:

- Air Force Instruction (AFI) 48-144, “Drinking Water Surveillance Program;”
- Army Regulation (AR) 200-1, “Environmental Protection and Enhancement,” (Chapter 4-2);
- Marine Corps Order (MCO) 5090.2A, “Environmental Compliance and Protection Manual”(Chapter 16); and
- Office of the Chief of Naval Operations Manual (OPNAV M-5090.1), “Environmental Readiness Program Manual,” includes a chapter providing policy on compliance with the SDWA by Navy shore facilities in the U.S. (Chapter 21) and a chapter for compliance overseas (Chapter 34).

In the absence of regulatory requirements, the DoD and its Components take methodical risk-based approaches to address emerging, military-unique, and other unregulated contaminants. DoD policy for emerging contaminants is published in DoDI 4715.18, “Emerging Contaminants (ECs).” It is DoD policy that chemicals and materials that meet the definition of an EC shall be identified as early as possible, whether they are in use or planned to be used by the DoD. The policy requires that risks to people, the environment, and DoD missions, programs, and resources shall be assessed and appropriate actions shall be taken to reduce risks related to EC development, use, or release. In accordance with DoDI 4715.18, DoD shall work cooperatively and collaboratively with appropriate representatives from regulatory agencies, industry, and academia on EC issues and initiatives.

In addition, DoDI 6055.20, “Assessment of Significant Long-Term Health Risks from Past Environmental Exposures on Military Installations,” was published in 2017. This issuance establishes DoD policy, responsibilities and procedures for assessing significant long-term health risks to military personnel and civilian individuals resulting from environmental exposures, including drinking water, while living or working on military installations.

The DoD conducts additional monitoring through compliance with the SDWA Unregulated Contaminant Monitoring Rule (UCMR). Under the UCMR, PWS serving more than 10,000 people are required to monitor the current UCMR list of unregulated contaminants every five years. The United States Environmental Protection Agency (EPA) randomly selects 800 smaller systems to also monitor the same list of unregulated contaminants. During UCMR 3, conducted during 2013-2015, 21 contaminants were targeted for assessment monitoring with an additional 12 contaminants that were screened. The current iteration of the SDWA UCMR is UCMR 4, under which monitoring will occur from 2018–2020 for 10 specific cyanotoxins and 20 additional contaminants, including 3 groups of haloacetic acids. Seventy-seven DoD community water systems required sampling under UCMR 3, and a similar amount will likely be required to sample under UCMR 4.

III. Oversight of the Implementation of DoD Drinking Water Policy & Procedure

The ASD(EI&E) provides guidance, oversight, and program review of the DoD Components’ environmental compliance programs, which includes drinking water. The DoD Components are required to plan, program, and budget to achieve and maintain compliance with environmental regulations and requirements both in the United States and overseas.

The ASD(EI&E) establishes performance metrics to provide oversight and monitoring of various environmental programs. For over 20 years, the DoD Components have consistently collected metrics data and reported annually to the office of the ASD(EI&E). For compliance with the SDWA, the performance metric is the percentage of the DoD population served by DoD PWS that meet established health-based drinking water standards. DoD applies this metric to DoD drinking water systems worldwide.

DoDI 4715.15, “Environmental Quality Systems,” establishes DoD policies and assigns roles and responsibilities for the incorporation of environmental quality systems into DoD activities and programs involving the collection, management, and use of environmental data. This provides quality assurance for meeting sampling and testing data requirements in the DoD.

DoDI 4715.17, “Environmental Management Systems,” publishes policies and establishes roles and responsibilities for the DoD Components to integrate environmental management systems into missions and activities to minimize risks to the environment and human health. Drinking water quality and water supply are environmental aspects taken into account when DoD facilities determine their impacts on the environment and are evaluated for compliance with applicable law and policy.

IV. DoD Component Drinking Water Quality Monitoring & Testing

The DoD Components publish their own policies and implementing procedures to regularly monitor compliance with the federal, state, and overseas drinking water standards and requirements. This includes sampling, testing, and reporting drinking water quality to the appropriate officials. If there is non-compliance with a drinking water requirement, the DoD will take the necessary actions to resolve the non-compliance quickly and bring the PWS back into compliance to avoid any health risks. This may include consumer notifications, retesting, investigating the cause of source of contamination, flushing out sections of the distribution system, making repairs on equipment, improving treatment, and/or providing an alternative drinking water supply.

DoD Component public health laboratories use EPA standard methods and receive rigorous accreditation, certification of methods, and performance testing through independent accreditation agencies to assure the quality and reliability of drinking water quality analyses. When non-DoD laboratories are used for water quality sample analyses they are contractually obligated to be independently accredited and certified in their use of applicable EPA standard methods. DoDI 4715.15 also authorizes the DoD Environmental Laboratory Accreditation Program (ELAP) for sampling and testing in our environmental restoration program. ELAP is a unified DoD quality assurance program that uses accrediting bodies to evaluate commercial laboratories for compliance with DoD and international standards for sampling and testing, which can provide some application to drinking water sampling and testing. DoD Manual 4715.25 provides implementation guidance and procedures for ELAP.

EPA has delegated primary enforcement responsibility for compliance with federal and local drinking water regulations to the states and territories, except for Wyoming and District of Columbia. States have the responsibility to establish a principal laboratory certified by the EPA and a program to certify laboratories that will analyze water samples required by the regulations. Drinking water laboratories in DoD or contracted by DoD are required by Service policies and instructions to use EPA standard methods and work with states for appropriate accreditations, certification of methods, and performance testing through independent accreditation agencies to assure the quality and reliability of compliance-driven water quality analyses. For non-compliance driven water quality monitoring and testing, the DoD Military Departments' public health laboratories use EPA Standard Methods, work with the EPA to develop alternative approved methods, use industry-wide best practice analytical methods, or develop methods in-house for military unique analyses.

The DoD Components regularly collect information to include the population served by the PWS, health-based violation(s), the duration and actions taken for the violation, and the population associated with the violation. Under the SDWA, health-based violations fall into three categories: 1) exceedances of the MCLs which specify the highest allowable contaminant concentrations in drinking water; 2) exceedances of the maximum residual disinfectant levels, which specify the highest concentrations of disinfectants allowed in drinking water; and 3) treatment technique requirements, which specify certain processes intended to reduce the level of

a contaminant. Under DoD's metric, if a DoD PWS is out of compliance for a short duration, such as a day, the installation is considered out of compliance for the entire year.

V. Performance

The DoD had 102 PWS (produced and/or purchased water) in the U.S. and U.S. Territories with violations of one or more health-based standards sometime during Fiscal Years (FYs) 2013-2016 timeframe. The DoD Components and installations had action plans for each PWS with a violation to prevent potential health impacts and tracked progress on programmed infrastructure upgrades that spanned over (FYs). Most of the violations were attributed to the total coliform rule and the various disinfection and disinfection byproduct rules.

Sixty-four PWS had violations of the total coliform rule during this period. DoD Component and installation actions were appropriate to quickly resolve violations. Compliance was achieved with repeat sampling or after flushing the pipes and repeating the sampling. Public notifications were provided to impacted populations with guidance if they had any concerns. Each installation with a PWS history of periodic non-compliance has implemented a flushing program and is upgrading their distribution system.

Twenty-eight PWS had violations with the various disinfection and disinfection byproducts rules (e.g., total trihalomethanes and five regulated haloacetic acids). These contaminants formed when the naturally-occurring organic materials in raw water react with the chlorine added as disinfectant. The DoD Components and installations involved had action plans to resolve the issues with their own water treatment plants or with their supplier while they modified or upgraded their water treatment process. Public notifications were provided as part of the consumer confidence reports to the population serviced by each PWS.

VI. Conclusion

DoD policies and procedures for monitoring drinking water quality are sufficient to assure quality drinking water at military bases and to address future contaminants of concern.

The DoD Components are providing high quality, safe, drinking water to the population served by each PWS. As violations of health-based standards occur, they are addressed quickly, corrective actions are taken, and the required public notifications provided to the populations served and to the State or Territory that has primacy from the EPA.

The type and periodicity of drinking water sampling and testing on DoD installations meets all compliance requirements designed to assure quality drinking water. As such, the DoD does not have any recommendations for improving the quality of drinking water testing.

Table: Departmental Policies and Procedures

DoDD 4715.1E	Environment, Safety, and Occupational Health (ESOH)
DoDI 4715.05	Environmental Compliance at Installations Outside the United States
DoD 4715.05-G	Overseas Environmental Baseline Guidance Document
DoDI 4715.06	Environmental Compliance in the United States
DoDI 4715.15	Environmental Quality Systems
DoDI 4715.17	Environmental Management Systems
DoDI 4715.18	Emerging Contaminants (ECs)
DoDI 6055.20	Assessment of Significant Long-Term Health Risks from Past Environmental Exposures on Military Installations
AFI 48-144	Drinking Water Surveillance Program – Provides guidance for managing and implementation of the Air Force drinking water surveillance program.
AFI 32-7047	Environmental Compliance Release and Inspection Reporting – Provides requirements to report, track, and resolve non-compliance with environmental laws, regulations and standards.
AFI 32-1067	Water and Fuel Systems – Provides guidance for managing and implementation of the Air Force drinking water surveillance program.
CNO ODW	Drinking Water Laboratory Policy for U.S. Navy Installations Overseas (April 2015)

BUMEDINST 6240.10B	Water Quality Standards – Provides an update to policy, provides guidance, and assigns roles and responsibilities for medical personnel in the Department of the Navy Drinking Water Program.
OPNAV 5090.1D	Environmental Readiness Program – Provides requirements, delineates responsibilities, and issues implementation policy guidance for the management of the environmental, natural, and cultural resources for all Navy ships and shore activities.
MCO 5090.2A	Environmental Compliance and Protection Manual – Sets forth Marine Corps policies and responsibilities for compliance with environmental statutes and regulations, as well as the management of Marine Corps environmental programs.
NAVMED P- 5010-5	Water Supply Ashore – Provides general public health and preventive medicine guidance for Department of the Navy personnel concerned with the medical surveillance of PWS at shore facilities.
TB MED 576	OEH Sanitary Control and Surveillance of Water Supplies at Fixed Installations – Provides public health and preventive medicine information and guidance to Department of the Army civilian and military personnel concerned with the production and surveillance of potable waters at fixed installations.
USAPHC TG 179	Complying with the Safe Drinking Water Act – Provides guidance on meeting the requirements pursuant to the SDWA with amendments. Compliance with the SDWA ensures United States (U.S.) Army water systems are minimizing drinking water health risks and providing water that is protective of consumer health.
AR 420-1	Facilities Engineering, Army Facilities Management – Addresses the management of Army facilities. Specifically, it describes the management of public works activities, housing, and other facilities operations and management, military construction program development and execution, master planning, utilities services and energy management, and fire and emergency services. Also, it identifies and synthesizes other regulations that provide detailed facilities management policy.
AR 200-1	Environmental Quality, Environmental Protection and Enhancement) – Covers environmental protection and enhancement and provides the framework for the Army Environmental Management System.

Acronyms, Terms, and References

Acronym	Term
AFI	Air Force Instruction
AR	Army Regulation
ASD(EI&E)	Assistant Secretary of Defense for Energy, Installations, and Environment
BUMEDINST	Bureau of Medicine and Surgery Instruction
CFR	Code of Federal Regulations
CNO ODW	Chief of Naval Operations Overseas Drinking Water Program
DoD	Department of Defense
DoDD	Department of Defense Directive
DoDI	Department of Defense Instruction
EC	Emerging Contaminants
ELAP	Environmental Laboratory Accreditation Program
EPA	United States Environmental Protection Agency
ESOH	Environment, Safety, and Occupational Health
FGS	Final Governing Standards
FY	Fiscal Year
MCL	Maximum Contaminant Level
MCO	Marine Corps Order
NAVMED	Navy Medicine
NPDWRs	National Primary Drinking Water Regulations
OEBGD	Overseas Environmental Baseline Guidance Document
OPNAV	Office of the Chief of Naval Operations
PWS	Public Water System
SDWA	Safe Drinking Water Act
TB MED	Technical Bulletin (Medical)
UCMR	Unregulated Contaminant Monitoring Rule
USAPHC TG	U.S. Army Public Health Center Technical Guide