



DEPARTMENT OF THE NAVY
BUREAU OF MEDICINE AND SURGERY
7700 ARLINGTON BOULEVARD
FALLS CHURCH, VA 22042

IN REPLY REFER TO
BUMEDINST 6240.10B
BUMED-M3
5 Dec 2014

BUMED INSTRUCTION 6240.10B

From: Chief, Bureau of Medicine and Surgery

Subj: WATER QUALITY STANDARDS

- Ref:
- (a) NAVMED P-5010-6
 - (b) NAVMED P-5010-5
 - (c) OPNAVINST M-5090.1
 - (d) MCO P5090.2A
 - (e) 42 U.S.C. §300f-300j
 - (f) 40 CFR §141-144 and 146
 - (g) 40 CFR §141.201-141.211
 - (h) DoD Issuance 4715.05 of 1 November 2013
 - (i) CNICINST 5090.1
 - (j) CNICINST 5090.2
 - (k) CNICINST 5090.3
 - (l) 40 CFR §141.61-66
 - (m) TB MED 577/NAVMED P-5010-10/AFMAN 48-138_IP
 - (n) AR 40-657/NAVSUPINST 4355.4H/ MCO P10110.31H
 - (o) National Automatic Merchandising Association Standard for the Sanitary Design and Construction of Food and Beverage Vending Machines
 - (p) Environmental Protection Agency Revised Public Notification Handbook, EPA 816-R-09-013 of Apr 10
 - (q) U.S. Environmental Protection Agency PNWriter
 - (r) National Sanitation Foundation/American National Standards Institute Standard 60: Drinking Water Treatment Chemicals-Health Effects
 - (s) National Sanitation Foundation/American National Standards Institute Standard 61: Drinking Water System Components-Health Effects

- Encl:
- (1) Preventive Medicine Authority Overseas Drinking Water Systems Training Requirements
 - (2) Definitions
 - (3) Acronyms

1. Purpose. To update policy, provide guidance, and assign roles and responsibilities for medical personnel in the Department of the Navy (DON) Drinking Water Program. This instruction is a complete revision and must be read in its entirety.

2. Cancellation. BUMEDINST 6240.10A.

3. Scope. This instruction applies to all DON medical personnel.

4. Responsibilities

a. Chief, Bureau of Medicine and Surgery (BUMED) shall:

(1) Formulate and disseminate Navy Medicine policy and guidance related to drinking water quality.

(2) Appoint a BUMED representative to the DON's Water Quality Oversight Council executive body to serve as public health advisor and consultant.

b. Commander, Navy Medical Education and Training Command shall develop a formal training course for environmental health officer (EHO) and preventive medicine authority in collaboration with Navy and Marine Corps Public Health Center (NMCPHC) subject matter experts (SMEs) which addresses medical roles and responsibilities for providing drinking water quality public health advice and consultation.

c. Commanding Officer, NMCPHC shall:

(1) Provide SMEs, to include public health advice and consultation for water quality concerns, formal public health risk assessments, and risk communication support to shore, afloat, and field commands as requested or required.

(2) Appoint a SME to serve as the NMCPHC representative to the DON's Water Quality Oversight Council staff body.

(3) Maintain and update references (a) and (b) as required.

(4) Provide training via available resources as needed.

d. Commander, Navy Medicine Regions shall:

(1) Execute requirements as set forth in this instruction.

(2) Appoint, in writing, preventive medicine representatives (i.e., Environmental Health Officer, Preventive Medicine Officer or Preventive Medicine Technician) to serve as the preventive medicine authority on the applicable Regional Water Quality Board in their area of responsibility.

(3) Ensure designated preventive medicine authority appointed to Regional Water Quality Board complete minimum online drinking water training identified in enclosure (1).

(4) Audit/conduct assessment of medical treatment facilities (MTFs) tri-annually for compliance with this instruction and other drinking water responsibilities.

e. Commanding Officers, MTFs shall:

(1) Execute requirements as set forth in this instruction.

(2) Appoint, in writing, a preventive medicine representative (i.e., EHO, Preventive Medicine Officer or Preventive Medicine Technician) to serve as the preventive medicine authority on the applicable Installation Water Quality Board.

(3) Ensure designated preventive medicine authority appointed to the Installation Water Quality Board complete minimum online drinking water training identified in enclosure (1).

f. Preventive Medicine Authority shall:

(1) Provide public health advice and consultation to the installation commanding officer and public works on health aspects of drinking water quality as set forth in references (b) through (d).

(2) Develop and maintain a written public health drinking water surveillance plan as set forth in reference (b). Appendix A of reference (b) provides detailed guidance and a template that shall be used in establishing a local medical surveillance program.

(3) Advise the installation via the Installation Water Quality Board and Regional Water Quality Board on health aspects of a public notice and assist with risk communication as needed.

(4) Advise installation commanding officers when water consumption may present health risks, to include recommending alternate water sources for human ingestion when indicated. Consult NMCPHC for assistance to include advice on when to request a formal public health risk assessment. All consumer consumptive uses, drinking, cooking, food preparation, oral hygiene, dishwashing, bathing, showering, and hand washing, as well as all exposure pathways: ingestion, dermal contact, or inhalation will be considered.

5. Definitions. Terms used in this instruction are defined in enclosure (2).

6. Acronyms. Acronyms used in this instruction are defined in enclosure (3).

7. Regulations and Policy. It is DON's policy that all Navy and Marine Corps public water systems be operated and maintained to comply with Federal and State laws and regulations as well as Department of Defense (DoD) and DON policy. References (e) and (f) establish drinking water laws and regulations for the United States (U.S.) and its Territories. Drinking water compliance monitoring requirements ashore are established by references (c), (d), (f), and (g). Per reference (c), the Commander, Navy Installation Command (CNIC) is the executive agent for drinking water quality matters for all Navy Shore facilities and installations worldwide, and as such, serves as the single point of contact for water systems that provide drinking water to

installation personnel. Per references (c) and (d), installations are required to execute a compliance monitoring program using certified laboratories. Laboratory accreditation and methodology certification shall be in compliance per reference (c). Only water quality data from accredited laboratories using certified methodologies outlined in reference (c) shall be used by the medical authority when rendering an opinion regarding a drinking water supply's fitness for human consumption.

8. Water Quality Standards

a. Ashore (Stateside): Reference (f), executed per references (c) and (d), establishes drinking water quality standards for DON public water systems in the U.S. and its Territories.

b. Ashore (Overseas): Per authority in references (c) and (d), the respective Host Nation final governing standards set forth water quality standards. Where final governing standards have not been issued, the Overseas Environmental Baseline Guidance Document (OEBGD) applies per reference (h). References (i) through (k) provide additional water quality standard policy for Navy overseas installations that fall under the primary enforcement authority of CNIC and are part of the Navy Overseas Drinking Water program. Reference (j) is available at: <http://www.med.navy.mil/sites/nmcphc/Documents/program-and-policy-support/Signed-CNICINST-5090-2.pdf>. Reference (k) is available at: http://www.med.navy.mil/sites/nmcphc/Documents/program-and-policy-support/CNICINST_5090_3_Navy_Overseas_Drinking_Water_Program_Ashore.pdf.

c. Afloat: Per authority in reference (c) this instruction adopts reference (l) as the water quality standards for U.S. Navy vessels. Reference (l) standards should be used as performance standards for vessel design and during certification of the ship's drinking water system (both for new construction and during major repair and/or overhaul) to establish baseline water quality data. More extensive water testing such as required by reference (l) may be required during investigations and/or when water quality concerns exist afloat. However, during vessel operations, routine and periodic compliance monitoring are not required. Reference (a) provides specific guidance for medical surveillance of the ship's water system, including the requirement for periodic halogen and coliform bacteria testing by the ship's medical department. Vessels needing a technical assist visit for drinking water quality health concerns should contact the cognizant preventive medicine authority or a Navy Environmental and Preventive Medicine Unit.

d. Field: Reference (m) provides general instructions and detailed technical guidance and recommendations for the sanitary control and public health surveillance of land-based field water supplies. It establishes Military field water standards that are applicable to drinking water, including short and long term Tri-Service field water quality standards.

e. Other water source requirements (i.e., bottled water, bulk water, vending machines). DoD bottled water source approval is set forth in reference (n) which provides a worldwide directory listing of approved bottled water manufacturers. Reference (o) provides standards governing the sanitary design and construction of food and beverage vending machines and related dispensing equipment and incorporates the requirements of the Food and Drug Administration model food code is available at: <http://www.fda.gov/Food/GuidanceRegulation/RetailFoodProtection/FoodCode/ucm374275.htm>. Reference (o) is available at: <http://www.vending.org/vending/certified-companies>.

9. Public Notification

a. Per references (c) and (k), installation commanding officers of overseas installations are responsible for determining when drinking water systems are fit for human consumption. When a water quality standard is not met, the installation commanding officer is responsible to advise all consumers via public notification alerts in consultation with the Installation Water Quality Board.

b. Upon discovering an exceedance of primary drinking water, maximum containment levels (MCLs), or of a drinking water issue that has the potential to threaten public health, the Installation Water Quality Board must convene to determine the proper response to the exceedance, to include public notification per references (g) and (k). The Installation Water Quality Board shall notify the installation commanding officer immediately and the Regional Water Quality Board immediately thereafter. References (p) and (q) provide technical guidance for preparing public notifications, including the mandatory health effects language. Reference (p) is available at: http://www.epa.gov/safewater/publicnotification/pdfs/guide_publicnotification_pnhandbook.pdf. Reference (q) is available at: <http://water.epa.gov/lawsregs/rulesregs/sdwa/publicnotification/compliancehelp.cfm>.

c. Per reference (c), BUMED is required to provide public health advice and consultation in the preparation of draft public notifications prepared by public works. Accordingly, the installation preventive medicine authority will provide such assistance for overseas drinking water systems.

10. Public Health Risk Assessment

a. A public health risk assessment is a scientifically defensible process conducted by a multidisciplinary team of SMEs at NMCPHC. It uses a weight of evidence approach and typically includes hazard identification and characterization, toxicity assessment, exposure assessment and risk characterization.

b. For U.S. Navy overseas drinking water systems, determination of fit for human consumption for an installation must include consultation with the preventive medicine authority.

When this consultation requires conduct of a public health risk assessment, the preventive medicine authority must consult with the NMCPHC and copy the regional preventive medicine authority prior to advising the Installation Water Quality Board. Examples of situations where the preventive medicine authority would consult with NMCPHC include, but are not limited to, contamination of the overseas drinking water systems by unregulated substances (i.e., no MCL established) or where the installation commanding officer has determined the drinking water is not fit for human consumption and requests an evaluation for other consumptive uses (i.e., cooking, food preparation, oral hygiene, dishwashing, bathing, showering, and hand washing).

c. As is the practice for water systems in the U.S., public health risk assessment should be infrequent and are interim assessments not intended to delay or defer maintenance or repair to overseas drinking water systems for purposes of compliance with applicable regulations and delivering water that is fit for human consumption.

d. Public health risk assessment does not include every instance of an installation public notice of drinking water violations (i.e., MCLs treatment techniques, monitoring and testing, etc.) issued by the installation commanding officer. Follow public notification procedures per references (g) and (k).

e. The public health risk assessment will be based on submission of valid installation compliance monitoring and other data (i.e., certified laboratory results), as specified by NMCPHC, and include the installation's plan of action to address the violation.

11. Public Health Effects from Water Treatment Processes

a. Drinking water treatment chemical health effects: Reference (r) establishes minimum public health standards for drinking water treatment chemicals that are directly added to water and are intended to be present in the finished (tap) water. This public health standard also contains health effects requirements for other chemicals that are directly added to water but are not intended to be present in the finished (tap) water. Reference (r) is available at: http://nsf.org/newsroom_pdf/NSF_60-13_-_watermarked.pdf.

b. Drinking water system components-health effects: Reference (s) establishes minimum public health standard requirements for the chemical contaminants and impurities that are indirectly imparted to drinking water from products, components, and materials used in drinking water systems. Reference (s) is available at: http://nsf.org/newsroom_pdf/NSF_61-13_-_watermarked.pdf.

12. Review Responsibility. BUMED Clinical Operations (BUMED-M3B2) is responsible for reviewing this instruction as required.

BUMEDINST 6240.10B
5 Dec 2014

13. Records. Records created as a result of this instruction, regardless of media and format, shall be managed per SECNAV M-5210.1 of January 2012.



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Distribution is electronic only via the Navy Medicine Web site at:
<http://www.med.navy.mil/directives/Pages/default.aspx>

PREVENTIVE MEDICINE AUTHORITY OVERSEAS DRINKING WATER SYSTEMS
TRAINING REQUIREMENTS

The preventive medicine authority provides public health advice and consultation for drinking water quality. Generally, the preventive medicine authority will be the senior environmental health officer or preventive medicine technician.

For overseas installations, the preventive medicine authority shall be designated in writing by the Navy Medicine Region or MTF commanding officer/officer in charge as applicable to represent Navy Medicine.*

Prior to assignment to an Installation Water Quality Board, Regional Water Quality Board or Water Quality Oversight Council, the appointed preventive medicine authority shall complete the minimum online training courses detailed below which may be found on the U.S. Environmental Protection Agency (EPA), Drinking Water Academy Web site.

EPA Drinking Water Academy Catalog of Trainings Web site http://water.epa.gov/learn/training/dwatraining/training.cfm	
Safe Drinking Water Act 101	Training documentation shall be maintained by the preventive medicine authority in the written Public Health Drinking Water Surveillance Plan.
Introduction to the Public Water Supervision Program	
From Risk to Rule : How EPA Develops Drinking Water Regulations	
Risk Communication under the Safe Drinking Water Act	
Consumer Confidence Report	
Sanitary Survey Training, Learner's Guide	
Regulating Microbial Contaminants	

*A sample appointment letter is available under the "Sample Formats" tab on the Navy Medicine Web site at: <http://www.med.navy.mil/directives/Pages/SampleFormats.aspx>.

Future training courses will be added as addendums to this instruction.

DEFINITIONS

1. Acute Health Effect. An immediate (i.e., within hours or days) adverse health effect that may result from exposure to certain drinking water contaminants (i.e., pathogens).
2. Certified Laboratory. As required by reference (c), an environmental laboratory providing analysis for drinking water quality compliance to the Navy must possess any required State or Host Nation certification and must have an established and documented quality system that conforms to International Organization for Standardization /International Electrotechnical Commission 17025:2005, as implemented by the latest version of the DoD Quality Systems Manual for Environmental Laboratories (DTC ADA 396793) available at: <http://www.denix.osd.mil/edqw/upload/QSM-Version-5-0-FINAL.pdf>.
3. Final Governing Standards. Country-specific substantive provisions, typically technical limitations on effluent, discharges, etc., or specific management practices with which DoD command must comply. Final governing standards are developed using the OEBGD unless the OEBGD is inconsistent with applicable Host Nation environmental standards or standards under applicable international agreements and these other applicable standards provide more protection to human health and the environment. In the case of inconsistency, the more protective standard is normally used to establish the final governing standards unless a specific international agreement with the Host Nation establishes a different standard applicable to U.S. installations and commands.
4. Fit For Human Consumption. Water that is safe enough to be consumed by humans or used with low risk of immediate or long term harm.
5. Installation Water Quality Board. Representative bodies for overseas Navy installations chaired by the installation commander. Membership includes at least one representative from public works, engineering, public affairs, medical, and housing and others as requested by the installation commanding officer. Develops strategy and oversees processes to ensure compliance with rules and regulations as set forth for water systems at the bases for which they have oversight. Monitors all drinking water systems and communicates all drinking water issues with their cognizant Regional Water Quality Board.
6. Overseas Environmental Baseline Guidance Document. A set of objective criteria and management practices the DoD develops per reference (h), to protect human health and the environment, per Executive Order 12088 available at: <http://www.archives.gov/federal-register/codification/executive-order/12088.html>
7. Public Health Surveillance of Drinking Water Quality. The ongoing, systematic collection, analysis, and interpretation of water quality data performed to protect public health. Medical surveillance of drinking water is complimentary to the water quality compliance function of public works or water supplier. It does not remove or replace the responsibility of public works

or water supplier to ensure that a water supply meets compliance monitoring requirements to confirm water quality standards are maintained. It includes an installation written drinking water surveillance plan per the guidance found in Appendix A of reference (b).

8. Public Notification. A required advisory for a public water system to be distributed to affected consumers when the water system has violated a MCL or other regulations. The notice advises consumers what precautions, if any, that should be taken to protect their health. Mandatory health effects language per reference (g), shall be included in a public notification.

9. Preventive Medicine Authority. The senior EHO or preventive medicine technician assigned to the medical facility. They sit on the Installation and Regional water quality boards that provide public health advice and consultation for drinking water quality.

10. Regional Water Quality Board. Representative bodies for Commander, Navy Region Europe, Africa, Southwest Asia; and Commander, Navy Region Japan, Commander, Navy Region Far East, Commander, Navy Region Korea, and Singapore chaired by the regional commander. Membership includes at least one representative from public works, engineering, public affairs, medical, housing and others as requested by the regional commander. Develops strategy and oversees processes to ensure compliance with rules and regulations as set forth for water systems on Navy bases in their respective region. Must coordinate and seek input and approval from the Water Quality Oversight Council for all risk-based decisions concerning the overseas drinking water program.

11. Water Quality Oversight Council. Representative body chaired by CNIC N4 consisting of members from CNIC Headquarters (HQ), Naval Facilities Engineering Command HQ, BUMED, and NMCPHC. It establishes and enforces drinking water policy and provides drinking water program oversight and management for drinking water systems at overseas Navy bases.

ACRONYMS

BUMED	Bureau of Medicine and Surgery
CNIC	Commander, Navy Installations Command
DoD	Department of Defense
DON	Department of the Navy
EPA	Environmental Protection Agency
HQ	Headquarters
MCL	Maximum Contaminant Level
MTF	Medical Treatment Facility
NMCPHC	Navy and Marine Corps Public Health Center
OEBGD	Overseas Environmental Baseline Guidance Document
SME	Subject Matter Expert