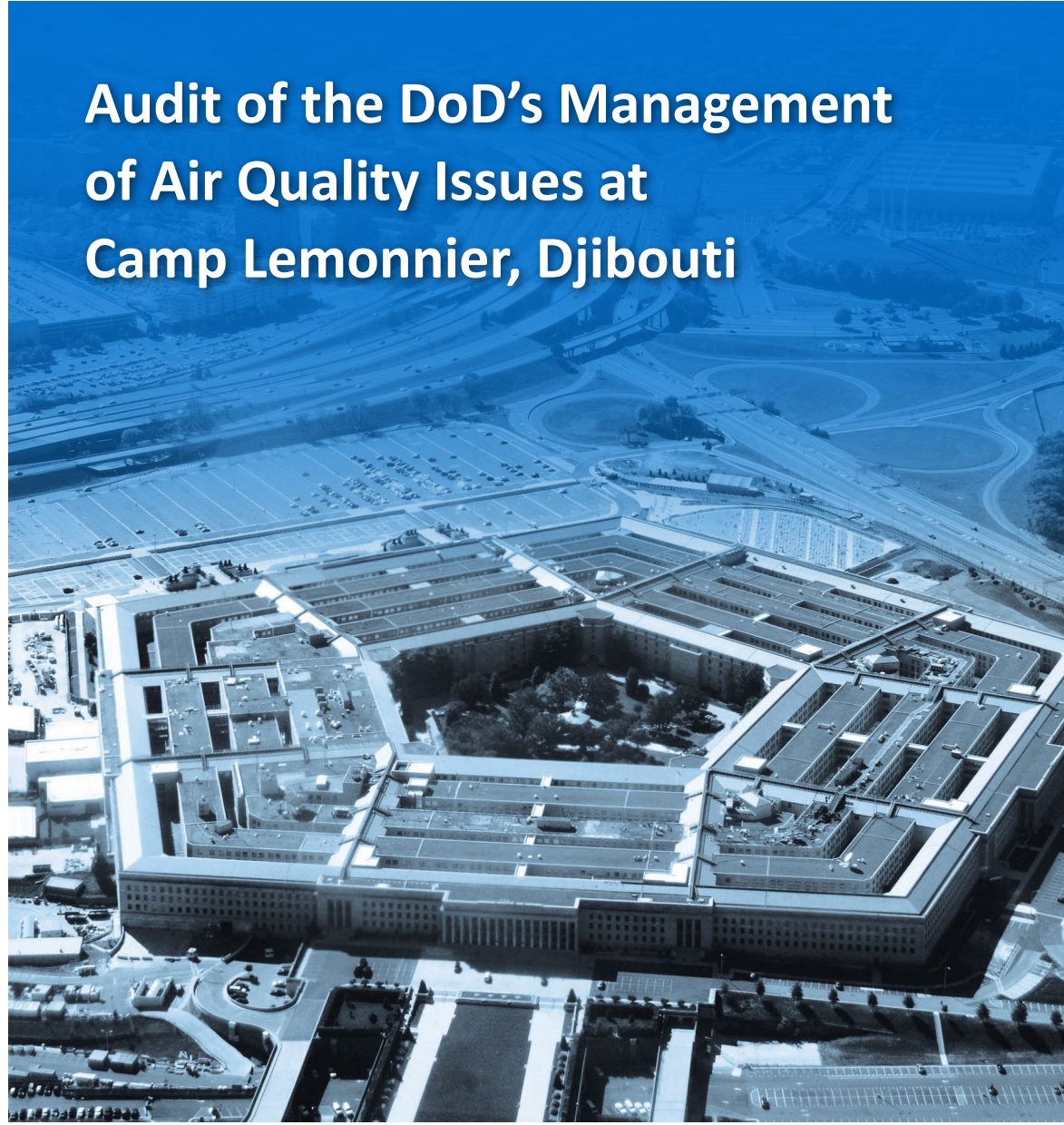




INSPECTOR GENERAL

U.S. Department of Defense

NOVEMBER 20, 2024



Audit of the DoD's Management of Air Quality Issues at Camp Lemonnier, Djibouti

INDEPENDENCE ★ INTEGRITY ★ EXCELLENCE ★ TRANSPARENCY





Results in Brief

Audit of the DoD's Management of Air Quality Issues at Camp Lemonnier, Djibouti

November 20, 2024

Objective

The objective of this audit was to determine whether the Navy effectively developed a plan to mitigate air quality issues on Camp Lemonnier, Djibouti (CLDJ).

Background

CLDJ serves as the DoD's only enduring installation on the African continent. According to widely circulated information from public sources, including the World Health Organization and the United Nations Environment Programme, the air quality in Djibouti is poor because of factors such as open burning of trash by the local population and emissions from factories and vehicles. Since 2002, the DoD has identified air quality issues that degrade the air quality on CLDJ—for example, smoke plumes from burning garbage and emissions from U.S. military operations.

For CLDJ, U.S. Naval Forces Africa (NAVAF) is required by DoD policy to establish, maintain, and fund an occupational and environmental health (OEH) program that includes OEH risk assessment, risk mitigation, evaluation of mitigation effectiveness, and risk communication. NAVAF risk assessment responsibility includes requesting completion of and funding for Occupational and Environmental Health Site Assessments (OEHSAs). The U.S. Africa Command (USAFRICOM) Surgeon is required to annually determine to either request completion of a new Periodic Occupational and Environmental Monitoring Summary (POEMS) to update the current

Background (cont'd)

POEMS with new OEH assessment information or to recertify the current POEMS without new OEH assessment information.

Finding

U.S. Navy Officials did not develop a plan to mitigate poor air quality at CLDJ. Specifically, NAVAF officials did not create an OEH risk management plan for CLDJ.

This occurred because NAVAF officials were unclear whether OEH risk management requirements for completing OEHSAs and POEMSs in DoD Instruction 6055.05, "Occupational and Environmental Health," and Defense Health Agency Procedural Instruction 6490.03, "Deployment Health Procedures," applied to CLDJ due to its status as an enduring installation supported by deployed personnel. In addition, NAVAF and USAFRICOM officials did not identify or address air quality risks because:

- NAVAF officials did not request Navy and Marine Corps Force Health Protection Command officials to complete OEHSAs since 2018; and
- USAFRICOM officials did not perform an annual determination regarding the need to update or recertify POEMSs, and they did not ensure that the 2019 POEMS completed for CLDJ referenced all available CLDJ OEH information.

As a result of NAVAF officials not developing a plan for CLDJ, USAFRICOM does not know if CLDJ air quality has worsened over the past 6 years or the current health impact to CLDJ personnel from routine exposure to environmental hazards. Without knowing the air quality hazards, there is increased risk that U.S. military and civilian personnel deployed to CLDJ could be exposed to harmful airborne toxins, which could develop into serious medical conditions. Additionally, this increases the risk that toxic exposures are not properly captured in the permanent health records of U.S. military personnel deployed to CLDJ, which is essential for diagnostic and treatment purposes.



Results in Brief

Audit of the DoD's Management of Air Quality Issues at Camp Lemonnier, Djibouti

Recommendations

We made a total of six recommendations to the NAVAf Commander, USAFRICOM Command Surgeon, and CLDJ Commanding Officer to address the Navy's need for a plan and associated actions to mitigate the effects of poor air quality at CLDJ, including a recommendation that NAVAf complete a comprehensive air quality assessment that provides adequate information to fully characterize the air quality pollution sources and related health risks for CLDJ.

Management Comments, Actions, and Our Response

The NAVAf Executive Director, responding for the NAVAf Commander, agreed with three and partially agreed with one of the four recommendations. Therefore, the three recommendations are considered resolved; but will remain open until we verify that management has implemented the corrective actions to fully address each recommendation. The remaining recommendation is unresolved. We request that the NAVAf Commander reconsider their position and provide comments, within 30 days, on the unresolved recommendation that addresses whether NAVAf will complete a comprehensive air quality assessment.

The USAFRICOM Command Surgeon, responding for the USAFRICOM Commander, stated that they would update

the USAFRICOM Campaign Plan and require the preparer or signer of POEMS ensure all relevant air quality studies are included in the document. Therefore, the recommendation is resolved but will remain open until we receive documentation that USAFRICOM made the planned updates to the USAFRICOM Campaign Plan.

During the audit, the CLDJ Commander took immediate action by updating their Joint Reception, Staging, Onward Movement, and Integration briefing to include information on Djibouti's poor air quality and the health risks of short- and long-term exposure. Therefore, the related recommendation is closed.

Please see the Recommendations Table on the next page for the status of recommendations.

Recommendations Table

Management	Recommendations Unresolved	Recommendations Resolved	Recommendations Closed
U.S. Naval Forces Africa Commander	1.b	1.a, 1.c, 1.d	None
U.S. Africa Command Commander	None	2	None
Camp Lemonnier, Djibouti Commanding Officer	None	None	3

Please provide Management Comments by December 20, 2024.

Note: The following categories are used to describe agency management’s comments to individual recommendations.

- **Unresolved** – Management has not agreed to implement the recommendation or has not proposed actions that will address the recommendation.
- **Resolved** – Management agreed to implement the recommendation or has proposed actions that will address the underlying finding that generated the recommendation.
- **Closed** – The DoD OIG verified that the agreed upon corrective actions were implemented.





OFFICE OF INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
4800 MARK CENTER DRIVE
ALEXANDRIA, VIRGINIA 22350-1500

November 20, 2024

MEMORANDUM FOR COMMANDER, U.S. AFRICA COMMAND
AUDITOR GENERAL, DEPARTMENT OF THE NAVY

SUBJECT: Audit of the DoD's Management of Air Quality Issues at Camp Lemonnier, Djibouti
(Report No. DODIG-2025-041)

This final report provides the results of the DoD Office of Inspector General's audit. We previously provided copies of the draft report and requested written comments on the recommendations. We considered management's comments on the draft report when preparing the final report. These comments are included in the report.

Of the six recommendations, this report contains one recommendation to the U.S. Naval Forces Africa, Commander that is considered unresolved because the comments from the U.S. Naval Forces Africa, Executive Director, responding for the U.S. Naval Forces Africa, Commander, did not fully address the recommendation. The unresolved recommendation will remain open until management has agreed to take actions that we determine to be sufficient to meet the intent of the recommendation and management officials submit adequate documentation showing that all agreed-upon actions are completed.

Of the remaining five recommendations, one recommendation to the Camp Lemonnier, Djibouti Commanding Officer is closed and four recommendations to the U.S. Naval Forces Africa and U.S. Africa Command, Commanders remain open. We will close these resolved recommendations when each command provides us documentation showing that all agreed-upon actions to implement the four recommendations are completed.

DoD Instruction 7650.03 requires that recommendations be resolved promptly. For unresolved recommendations, please provide us within 30 days your response concerning specific actions in process or alternative corrective actions proposed on the recommendations. Send your response to either audrgo@dodig.mil if unclassified or rfunet@dodig.smil.mil if classified SECRET. For the resolved recommendations, please provide us documentation showing you have completed the agreed-upon actions. Please send your documentation for the resolved recommendations as a PDF to followup@dodig.mil.

We appreciate the cooperation and assistance received during this audit. If you have any questions, please contact me at [REDACTED].

FOR THE INSPECTOR GENERAL:

A handwritten signature in black ink, reading "Richard B. Vasquez".

Richard B. Vasquez
Assistant Inspector General for Audit
Readiness and Global Operations

Contents

Introduction

Objective.....	1
Background.....	1

Finding. Navy Officials Did Not Develop a Plan to Mitigate Poor Air Quality on CLDJ.....8

NAVAF Officials Did Not Develop a Plan to Identify and Address Poor Air Quality Risks.....	9
NAVAF Officials Were Unclear Whether OEH Risk Management Requirements Applied to CLDJ.....	9
NAVAF and USAFRICOM Officials Did Not Direct Completion of Air Quality Assessments on CLDJ for over 5 Years or Perform an Annual Determination on the Need for POEMSs.....	10
The NAVAf and CLDJ Commanders Needed to Develop Initiatives to Lessen the Effects of Known Air Quality Risks on Personnel.....	14
CLDJ Deployers Are at Risk for Airborne Pollutant Exposure.....	18
Recommendations, Management Comments, and Our Response.....	18

Appendixes

Appendix A. Scope and Methodology.....	23
Internal Control Assessment and Compliance.....	25
Use of Computer-Processed Data.....	25
Use of Technical Assistance.....	25
Prior Coverage.....	26
Appendix B. 30-Day Air Quality Compilation Data for Djibouti.....	27
Appendix C. USFK Air Quality Index Guide to Outdoor Activities.....	29

Management Comments

NAVAF.....	31
USAFRICOM.....	33

Acronyms and Abbreviations.....34

Introduction

Objective

The objective of this audit was to determine whether the Navy effectively developed a plan to mitigate air quality issues on Camp Lemonnier, Djibouti (CLDJ). We conducted this audit in response to a DoD Hotline complaint that alleged CLDJ command staff ignored ongoing, hazardous air quality conditions at CLDJ. See Appendix A for the scope and methodology related to the audit.

Background

U.S. Africa Command

U.S. Africa Command (USAFRICOM) is the geographic combatant command with responsibility for all DoD operations and exercises taking place on the African continent, except for operations and exercises in Egypt.

Camp Lemonnier, Djibouti, Africa

CLDJ is in Djibouti, Africa, where it serves as the DoD's only enduring installation on the African continent.¹ CLDJ is located within the capital of Djibouti, Djibouti City. The U.S. military acquired CLDJ in 2002 and has continuously expanded the camp to accommodate increased troop strength and operations. Most notably, in January 2007, the U.S. and Djiboutian governments announced that they signed a lease agreement to expand CLDJ from 88 acres to nearly 500 acres. Since occupying CLDJ, the DoD has built more than 20 facilities, including a chapel, a galley, two recreation centers, a water production and distribution center, and a wastewater treatment plant. CLDJ supports U.S. personnel on temporary deployment orders, allied military and civilian personnel, and DoD contractors—a total of approximately 4,000 individuals.

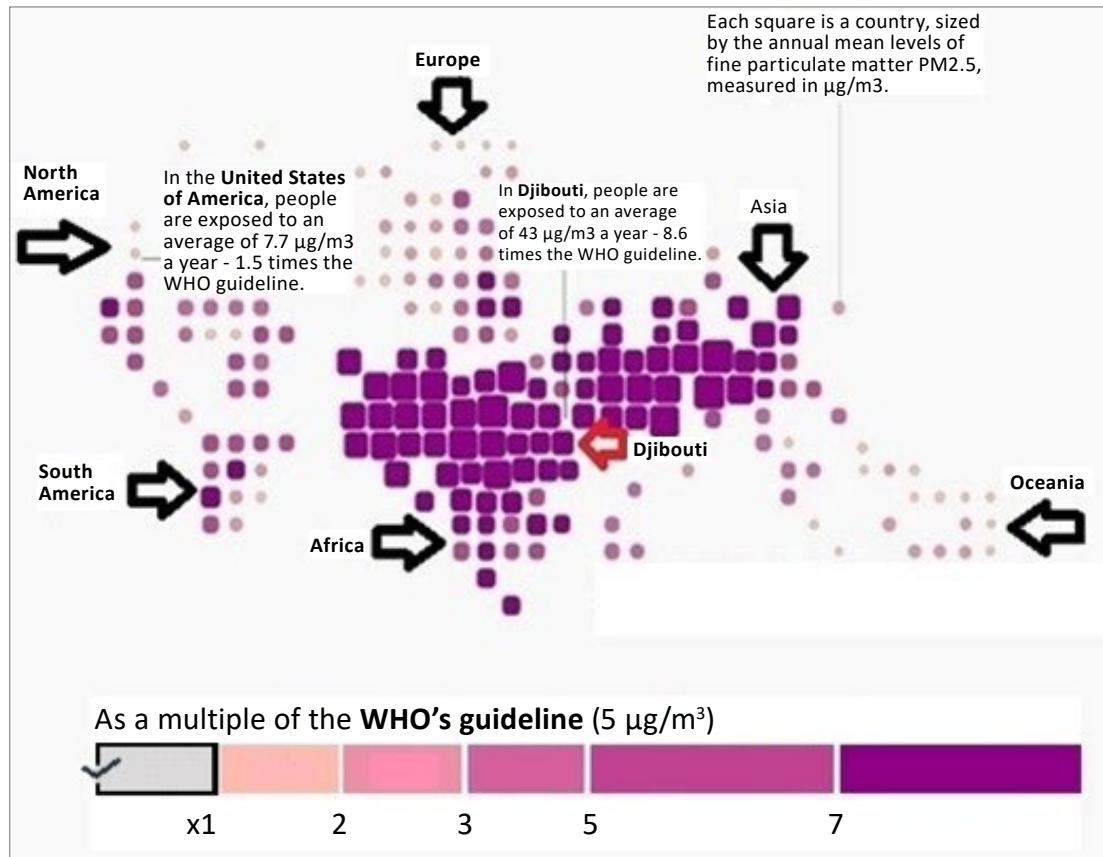
Known Air Quality Issues Affecting CLDJ

According to widely circulated information from public sources, including the World Health Organization (WHO) and the United Nations Environment Programme (UNEP), the air quality in Djibouti is poor because of factors such as open burning of trash by the local population and emissions from factories and vehicles. According to UNEP, as of 2019, Djibouti had an exposure rate of 43 microns per cubic meter ($\mu\text{g}/\text{m}^3$) of fine particle pollution, which is 8.6 times higher than the

¹ An enduring location is an installation where the DoD operates from, and the United States expects to have a security interest and presence for the foreseeable future.

WHO's annual mean air quality guideline of $5 \mu\text{g}/\text{m}^3$.² Figure 1 shows countries around the world, with each country assigned a square that varies in size according to the amount of fine particle pollution in its air.

Figure 1. Diagram of Fine Particle Pollution in Djibouti Compared to Other Countries



Source: The UNEP.

Since 2002, the DoD has identified air quality issues that degrade the air quality on CLDJ—for example, smoke plumes from burning garbage at the nearby La Douda Dump and emissions from U.S. military operations. According to the 2016 CLDJ Periodic Occupational and Environmental Monitoring Summary (POEMS), on-site preventive medical officials considered smoke and odors associated with the La Douda Dump as the principal health concern on CLDJ.³ The La Douda Dump was the primary refuse disposal site for Djibouti City and surrounding areas, and it served as the disposal site for offal, animal waste products from slaughterhouses.

² A micron is a metric unit of measurement for which 1 micron is equivalent to 0.001 millimeter. An average human hair has a diameter of 100 microns.

³ POEMSs are the documents for summarizing occupational and environmental health surveillance information for deployment sites where service members may be exposed to environmental stressors.

The La Doua Dump was a 247-acre site situated approximately 1.2 miles southeast of CLDJ. According to the 2019 CLDJ POEMS, the smoke from this open burning regularly impacted CLDJ and concentrated in the CLDJ housing area. An August 2016 update from the CLDJ Commander confirmed that burning at the dump continued. The Government of Djibouti closed the La Doua Dump in 2019 after working with U.S. Embassy personnel to identify an alternate waste disposal location approximately 6 miles south of CLDJ. However, CLDJ officials stated that despite its closure, open burning at La Doua Dump continued due to scavenging activity by the local population and spontaneous combustion of remaining trash. Figure 2 is an image from the 2011 CLDJ Office of the Staff Judge Advocate presentation that shows open burning of trash at the La Doua Dump in 2011, with the smoke traveling in the direction of CLDJ.



DoD Policies Addressing Environmental Health Activities

The DoD has issued several instructions to expand risk management procedures to anticipate, recognize, evaluate, and control health issues associated with occupational and environmental exposures to chemical, physical, and biological hazards.

DoD Instruction 6055.05

DoD Instruction (DoDI) 6055.05, “Occupational and Environmental Health,” establishes policies, procedures, and responsibilities for DoD Components and combatant commands regarding occupational and environmental health (OEH) risk management procedures for military operations and deployments.⁴

DoDI 6055.05 requires the heads of DoD Components to establish, maintain, and fund OEH programs at enduring and semi-permanent base camps. The DoD Component head is also required to implement OEH risk management procedures by identifying environmental hazards and assessing their risk. In addition, DoD Component heads are to develop a plan to monitor, mitigate risk, and communicate information about OEH hazards to installation commanders, health care providers, and military personnel, as well as use OEH risk management results to inform future OEH risk management procedures.

Furthermore, DoDI 6055.05 states that DoD Component heads must ensure that adequate OEH information is collected to allow for proper OEH risk assessment. To meet this goal, DoDI 6490.03, “Deployment Health,” requires each Service to develop a series of POEMSs for deployed locations.⁵ A POEMS summarizes available OEH information, such as results of OEH testing and sampling, during a particular time frame—often spanning several years. The POEMS describes the source of exposure at a location, such as airborne pollutants, water pollutants, infectious disease, noise, heat, or cold; assesses whether the level of exposure to these sources at each location is acceptable; and provides an assessment of the significance of any known or potential acute (short-term) and post-deployment (long-term) health risks to the population deployed to the location.

DoD Instruction and Defense Health Agency Procedural Instruction 6490.03

Defense Health Agency (DHA) Procedural Instruction (PI) 6490.03, “Deployment Health Procedures,” implements the requirements of DoDI 6490.03.⁶ DHA PI 6490.03 assigns the DoD Components the responsibility for implementing OEH risk management steps and requires the combatant commands to ensure that risk management activities are conducted effectively at enduring locations within their area of responsibility (AOR). DoDI and DHA PI 6490.03 together require that, based on the Occupational and Environmental Health Site Assessment (OEHSAs) or preliminary hazard assessment and determination of potential exposure risks, the Combatant Commander is to determine which locations in their AOR require a

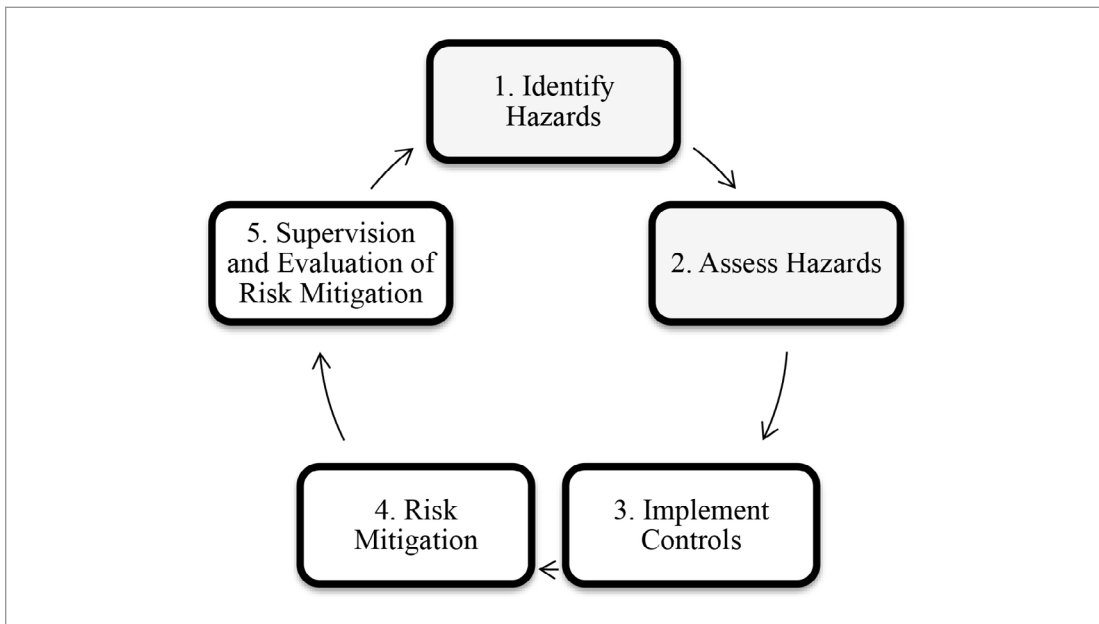
⁴ DoDI 6055.05, “Occupational and Environmental Health,” November 11, 2008 (Incorporating Change 2, August 31, 2018).

⁵ DoDI 6490.03, “Deployment Health,” June 19, 2019.

⁶ DHA PI 6490.03, “Deployment Health Procedures,” December 17, 2019.

POEMS; review the POEMS annually; and either update the POEMS with new OEH assessment information or certify the POEMS as current. Figure 3 depicts the OEH risk management process required by DHA PI 6490.03.

Figure 3. OEH Risk Management Process



Source: DHA PI 6490.03.

DHA PI 6490.03 identifies the OEHSAs as a key element of the OEH risk assessment process that supports risk management decisions concerning OEH threats. OEHSAs document environmental conditions; identify potential OEH threats; guide OEH data collection activities and further risk assessments; and summarize needed short-term risk mitigation actions. DHA PI 6490.03 requires OEHSAs to be updated annually with new OEH surveillance information at deployed locations.

Environmental Risk Assessment and Mitigation Roles and Responsibilities

Multiple organizations are responsible for OEH risk identification, risk assessment, risk mitigation, evaluation of mitigation effectiveness, and risk communication for CLDJ.

U.S. Africa Command

USAFRICOM is responsible for OEH risk management in operational planning and execution to ensure force health protection during deployed activities in its AOR, including CLDJ. USAFRICOM delegates functions of OEH risk management to its components, including the USAFRICOM Command Surgeon and U.S. Naval Forces Africa (NAVAF).

U.S. Africa Command Surgeon

The USAFRICOM Commander delegated to the USAFRICOM Command Surgeon the responsibility to determine whether a new POEMS is needed for CLDJ each year. In making this determination, the USAFRICOM Command Surgeon should consider whether there were any significant changes in health risks. When the USAFRICOM Command Surgeon decides a new POEMS is required for CLDJ, they request through the Joint Staff that the Navy and Marine Corps Force Health Protection Command (NMCFHPC) complete the POEMS. When the USAFRICOM Command Surgeon decides that a new POEMS is not needed for CLDJ, they are required to certify the most recent POEMS as current.

U.S. Naval Forces Africa

NAVAF is the forward-deployed naval component of USAFRICOM. Because the USAFRICOM Commander delegated CLDJ Base Operations Support to NAVAf, NAVAf is responsible for developing an OEH risk management plan that includes risk assessment, risk mitigation, evaluation of mitigation effectiveness, and risk communication for CLDJ. As part of this responsibility, NAVAf provides funding for environmental quality assessments, including OEHSAs, and requests that the NMCFHPC execute these assessments at locations within the USAFRICOM AOR. According to DoDI 6055.05, DoD Components, such as the Navy, are required to communicate OEH assessment results to each location's Commanding Officer, and the Commanding Officer is responsible for communicating the results to their subordinate staff and deployed Service members at the location.

Navy Region Europe, Africa, Central

Navy Region Europe, Africa, Central, as a subordinate command of the Commander, Navy Installations Command, provides infrastructure, security, occupational safety and health, and quality of life services for CLDJ. Navy Region Europe, Africa, Central operates CLDJ with direction from NAVAf. The Navy Region Europe, Africa, Central Commander appoints and supervises the CLDJ Commander.

The CLDJ Commander is responsible for operating CLDJ on behalf of Navy Region Europe, Africa, Central. Such operational responsibilities include executing Navy Region Europe, Africa, Central's provision of occupational safety, health, and quality of life on CLDJ, including communicating health risks (such as poor air quality) to installation personnel. The CLDJ Occupational Health Division is responsible for supporting the health and safety of personnel working on CLDJ.

The Navy and Marine Corps Force Health Protection Command

The NMCFHPC serves as the center for public health services within the Navy and is responsible for conducting all environmental health assessments, such as OEHSAs, and writing POEMSs for CLDJ when requested. Additionally, when requested, NMCFHPC officials conduct comprehensive air quality assessments on overseas locations that are modeled after guidelines from the U.S. Environmental Protection Agency (EPA). Such assessments, conducted over the course of 1 year are designed to determine where environmental risks are coming from and apportion the risks to the various sources in the area in order for NMCFHPC to be able to determine and recommend what, if any, risk mitigations can be implemented to reduce the risks. NMCFHPC officials also direct the operations of the Navy's Forward-Deployed Preventive Medicine Units (FDPMU), which can be deployed to overseas locations to perform OEH assessments.

Finding

Navy Officials Did Not Develop a Plan to Mitigate Poor Air Quality on CLDJ

NAVAF officials did not develop a plan to identify air quality issues and address the risks associated with poor air quality, as required by DoDI 6055.05 and DHA PI 6490.03. Specifically, NAVAF officials responsible for OEH did not create an OEH risk management plan for CLDJ. Such a plan should have included identifying environmental issues impacting CLDJ; assessing, monitoring, and mitigating identified risks; and communicating information about identified risks to installation commanders, health care providers, and military personnel.

NAVAF officials stated that they did not develop a plan to identify and address air quality risks because they were unclear whether the OEH risk management requirements of DoDI 6055.05 and DHA PI 6490.03 applied to CLDJ due to CLDJ's status as an enduring installation supported by deployed, rather than permanent, personnel.

In addition, NAVAF and USAFRICOM officials did not identify or address air quality risks because:

- NAVAF officials did not request NMCFHPC officials to complete air quality assessments, such as OEHSAs or an EPA-style assessment recommended by the NMCFHPC, on CLDJ since 2018; and
- USAFRICOM officials did not perform an annual determination regarding the need to update or recertify POEMSs, and they did not ensure that the POEMS completed in 2019 referenced all available CLDJ OEH information.

Furthermore, despite not having information on specific risks that an implemented plan could have revealed, the NAVAF and CLDJ Commanders could have developed initiatives to lessen the effects of publicly known air quality risks on installation personnel. Specifically, the:

- CLDJ Commander could have communicated to incoming CLDJ personnel about the potential health impacts from exposure to known poor air quality; and
- NAVAF and CLDJ Commanders could have identified actions within their control to lessen the impact of poor air quality, such as notifying installation personnel of suggested adjustments to the daily timing and pace of outdoor operations, especially non-mission essential activities.

As a result of NAVAf officials not developing a plan for CLDJ, USAFRICOM does not know if the air quality has worsened over the past 6 years or the current health impact to CLDJ personnel from routine exposure to environmental hazards. Without knowing the air quality hazards, there is increased risk that U.S. military and civilian personnel deployed to CLDJ could be exposed to harmful airborne toxins, which could develop into serious medical conditions. Additionally, this increases the risk that toxic exposures are not properly captured in the permanent health records of U.S. military personnel deployed to CLDJ, which is essential for diagnostic and treatment purposes.

NAVAf Officials Did Not Develop a Plan to Identify and Address Poor Air Quality Risks

NAVAf officials did not develop a plan to identify and address the risks associated with poor air quality, as required by DoDI 6055.05 and DHA PI 6490.03. Specifically, NAVAf officials responsible for OEH did not create an OEH risk management plan for CLDJ. Such a plan should have included:

- identifying environmental risks impacting CLDJ;
- assessing, monitoring, and mitigating identified risks; and
- communicating information about identified risks to installation commanders, health care providers, and military personnel.

NAVAf officials did not identify their plans for execution of assessment, monitoring, or communication of air quality risks on CLDJ in a developed OEH risk management plan. NAVAf officials stated that, although they did not create an OEH risk management plan, they recommended mitigation strategies for CLDJ air quality risks in the OEHSAs they previously completed for CLDJ. However, we reviewed the three CLDJ OEHSAs completed from 2012 through 2018 and determined that Navy officials recommended only one mitigation strategy in two of the three CLDJ OEHSAs, which was to close the La Douda Dump. Additionally, NAVAf's recommendation to close the La Douda Dump was based on anecdotal information about the dump's effects on CLDJ personnel, rather than evidence based on quantitative data from air quality assessments and monitoring that a developed and executed plan could have provided.

NAVAf Officials Were Unclear Whether OEH Risk Management Requirements Applied to CLDJ

NAVAf officials stated that they did not develop a plan to identify and address air quality risks because they were unclear whether the OEH risk management requirements of DoDI 6055.05 and DHA PI 6490.03 applied to CLDJ due to CLDJ's status as an enduring installation supported by deployed, rather than

permanent, personnel. NAVAF officials stated that several internal discussions occurred regarding which OEH requirements applied to CLDJ, but NAVAF officials were unable to agree about whether one or both of the Instructions were applicable. Therefore, NAVAF officials did not take any action to address either set of requirements. DHA PI 6490.03 clearly indicates that for enduring locations that host personnel who deploy for more than 30 days, such as CLDJ, the combatant command component of the military service that is responsible for the location's Base Operations Support is required to implement both the OEH risk management process in DoDI 6055.05 and the OEH risk assessment procedures in DHA PI 6490.03.⁷ Because NAVAF is responsible for CLDJ's Base Operations Support, we asked personnel from the Office of the Under Secretary of Defense for Personnel and Readiness; Office of the Under Secretary of Defense Acquisition and Sustainment; and DHA if NAVAF is required to implement both the OEH risk management process in DoDI 6055.05 and the OEH risk assessment procedures in DHA PI 6490.03 on CLDJ. All three offices confirmed that NAVAF is required to implement the processes and procedures within DoDI 6055.05 and DHA PI 6490.03 for enduring installations supported by deployed personnel.

Therefore, to ensure that NAVAF officials fully understand and implement all OEH requirements applicable to CLDJ, the NAVAF Commander should develop standard operating procedures that detail their staff's roles and responsibilities in executing both the OEH risk management process in DoDI 6055.05 and the OEH risk assessment procedures in DHA PI 6490.03.

NAVAF and USAFRICOM Officials Did Not Direct Completion of Air Quality Assessments on CLDJ for over 5 Years or Perform an Annual Determination on the Need for POEMSs

In addition to being uncertain about the requirements as described previously in this report, NAVAF and USAFRICOM officials did not identify or address air quality risks because:

- NAVAF officials did not request NMCFHPC officials to complete air quality assessments, such as OEHSAs or an EPA-style assessment recommended by the NMCFHPC, on CLDJ since 2018; and
- USAFRICOM officials did not perform an annual determination regarding the need to update or recertify POEMSs for CLDJ, and they did not ensure that the POEMS completed for CLDJ in 2019 referenced all available OEH information.

⁷ DHA PI 6490.03 states that commanders must implement its OEH risk management procedures at all deployment locations where personnel deploy longer than 30 days.

NAVAF Officials Did Not Request the Completion of Air Quality Assessments on CLDJ Since 2018

Despite the requirement in DHA PI 6490.03 that OEHSAs be updated annually with new OEH surveillance information at deployed locations, NAVAf officials did not request NMCFHPC officials to complete air quality assessments, such as OEHSAs, on CLDJ since 2018. For the 2018 OEHSA, the NMCFHPC conducted two on-site air quality assessments from December 3 through December 15, 2018. However, the results of these air quality assessments were omitted from the final OEHSA because the data analysis for the assessments was not complete at the time of the 2018 OEHSA's publication. On July 1, 2024, a NAVAf official confirmed that no further air quality assessments were conducted to measure air quality on CLDJ since the conclusion of on-site work for the 2018 OEHSA.

Furthermore, of the three OEHSAs published for CLDJ since January 1, 2012, only an OEHSA in 2012 included any air quality assessments. Moreover, 7 (70 percent) of the 10 air quality assessments performed on CLDJ between January 1, 2012, and December 15, 2018, stated that CLDJ needed additional air quality testing to adequately characterize the air pollution risks. NMCFHPC officials recommended and the CLDJ Commander made requests in 2011, 2016, and 2023 to obtain additional air quality testing through an EPA-style air quality assessment. NMCFHPC officials stated that the EPA-style assessment would allow for the identification and assessment of specific air pollution exposure sources and pathways, including how such sources differ according to time of day, weather, and season. According to a draft budget document prepared by Navy officials in March 2023, the EPA-style assessment would involve funding the travel and salary of five officials for 18 months—12 months of air quality sample collection, plus 6 months of pre- and post-quality assurance sampling, setup, and takedown—to run a network of six Monitoring Ambient Air Stations, along with funding for lab analysis of samples taken, with an estimated cost of \$18 million in 2023.

Figure 4 is an example of a Monitoring Ambient Air Station that would be used on CLDJ for the EPA-style assessment.



However, NAVAf officials did not budget for an EPA-style air quality assessment, which NMCFHPC officials recommended in 2011 and 2016, and when the CLDJ Commander requested an EPA-style air quality assessments in January 2023, NAVAf officials only partially addressed the request. In response to the January 2023 request from the CLDJ Commander for an EPA-style assessment, NAVAf officials developed and submitted a funding request in January 2024 to permanently station a FDPMU on CLDJ. NAVAf officials stated that their request for the FDPMU was approved as of September 2024 pending formal Secretary of Defense tasking. Although the FDPMU can create OEHSAs, an NMCFHPC official stated that the general OEHSA framework used by all of the DoD component preventive medicine teams (to include the framework used by the FDPMU) does not follow the EPA-style framework for air quality assessments and does not apportion risk related to various pollution sources (for example, on and off-base) to ultimately understand how each pollution source contributes to the risk. As such, only an EPA-style or comparable comprehensive assessment could provide sufficient information to fully characterize the air quality pollution and related health risks for CLDJ deployers and then determine the effectiveness of various risk management options for mitigation.

The indecision from NAVAFA officials, over which set of DoD Instructions applied to CLDJ, led to a lack of any completed air quality assessments for over 5 years and a lack of adequate air quality testing to characterize the risks of air pollution, which made it impossible to identify, quantify, or assess specific environmental hazards for CLDJ across time, preventing NAVAFA officials from developing effective OEH monitoring plans and mitigation strategies for assessed risks and communicating this information to the CLDJ Commander. Therefore, the NAVAFA Commander should complete a comprehensive air quality assessment such as an EPA-style or a comparable air quality assessment that provides adequate information to fully characterize the air quality pollution sources and related health risks for CLDJ deployers and use the results of the comprehensive assessment to develop a DoDI 6055.05 and DHA PI 6490.03 compliant OEH risk management plan for CLDJ.

USAFRICOM Did Not Perform an Annual Determination for Completion or Recertification of POEMSs for CLDJ

USAFRICOM officials did not perform an annual determination regarding the need to update or recertify POEMSs as accurate for CLDJ. Specifically, since 2012, USAFRICOM officials requested that the NMCFHPC complete only two POEMSs for CLDJ, with the most recent POEMS completed in 2019. DoDI 6490.03 requires the responsible combatant command to annually update or recertify POEMSs. To comply with DoDI 6490.03, the USAFRICOM Campaign Plan tasked the USAFRICOM Command Surgeon with the responsibility to decide whether a new POEMS needs to be completed, and request that the NMCFHPC complete the POEMS for CLDJ, or certify the most recent POEMS as current each year that a new POEMS is not requested or prepared for CLDJ. When asked, USAFRICOM Command Surgeon officials stated that they had no record of recertifying a POEMS for CLDJ and confirmed that the 2019 POEMS was the last POEMS completed for CLDJ.

Additionally, the 2019 CLDJ POEMS did not reference all available OEH information for CLDJ completed during the time period covered by the summary. Specifically, the 2019 CLDJ POEMS, which covered October 2002 through July 2019, did not include the 2017 or 2018 CLDJ OEHSAs. Therefore, the POEMS was incomplete and did not provide a full reference for all OEH information available for CLDJ. While Navy officials did include reference to all air quality sampling assessments conducted during the OEHSAs in the 2019 POEMS, the references to the OEHSAs would have allowed users of the POEMS to examine the OEHSAs for further information on detailed results of those air quality assessments. Therefore, to ensure that USAFRICOM Command Surgeon officials fully understand and execute their responsibility for the completion and accuracy of the POEMS, the USAFRICOM Commander should develop and implement a standard operating procedure that details the USAFRICOM Command Surgeon and their staff's

roles and responsibilities to execute the DoDI 6490.03 required annual review and certification of the POEMS for CLDJ. The standard operating procedure should include the process by which the USAFRICOM Command Surgeon and their staff review the POEMS for accuracy and inclusion of all relevant environmental assessments.

The NAVAf and CLDJ Commanders Needed to Develop Initiatives to Lessen the Effects of Known Air Quality Risks on Personnel

Despite not having information on specific risks that an implemented plan could have revealed, the NAVAf and CLDJ Commanders could have developed initiatives to lessen the effects of poor air quality based on publicly known air quality risks. Specifically, the:

- CLDJ Commander could have communicated to incoming CLDJ personnel about the potential health impacts from exposure to known poor air quality; and
- NAVAf and CLDJ Commanders could have identified actions within their control to lessen the impact of poor air quality, such as notifying installation personnel of suggested adjustments to the daily timing and pace of outdoor operations, especially non-mission essential activities.

The CLDJ Commander Did Not Communicate Risks and Potential Health Impacts from Exposure to Known Poor Air Quality

Despite the publicly available information about the air quality conditions in Djibouti and known short-term effects of poor air quality on human health, the CLDJ Commander did not communicate any information to CLDJ personnel about these conditions or the potential health impacts from exposure to poor air quality. DoDI 6055.05 requires installation commanders to effectively communicate information to personnel about OEH risks, including for air quality, by providing clear and concise information about the nature of the risks, potential consequences, and recommended mitigation measures. Although the CLDJ Commander did not have specific information about the exact air quality hazards impacting CLDJ, they could have communicated that the air quality in Djibouti is generally poor and, as a result, could create health issues. According to the weather website IQAir, the EPA air quality index (AQI) in Djibouti is frequently over 50, putting those who

live there at risk from moderate air pollution.⁸ To demonstrate the availability of information about poor air quality in Djibouti, we compiled the AQI, particulate matter concentrations, and recommended mitigations from the IQAir website for Djibouti City twice daily for 30 consecutive days, from June 21 through July 20, 2024.⁹ This compilation shows that over the 30-day period, the air quality in Djibouti City was consistently above levels the EPA deemed safe for everyone with average readings of 79.47 and 87.27 over the course of 1 day, and the particulate matter concentration in Djibouti City was consistently multiple times above the level that the WHO identifies as safe for human health. Table 1 summarizes the 30 days of publicly available air quality information we collected; compares the 30-day average particulate matter concentration to the WHO Global Air Quality Guidelines; and identifies recommended mitigations based on the average exposure.

Table 1. Average Air Quality Index and Particulate Matter Readings from June 21 Through July 20, 2024, for Djibouti City, Djibouti

Average of 30 Day Air Quality Index Readings	Average of 30 Day Particulate Matter Readings ¹	Average of 30 Day Particulate Matter Concentration Above WHO Global Air Quality Guidelines ¹	Common Health Recommendations ³
Daily Reading 1 ² :			
79.47	23.47	4.69	Reduce outdoor exercise, wear a mask outdoors, close windows, run an air purifier
Daily Reading 2 ² :			
87.27	27.15	5.43	Reduce outdoor exercise, wear a mask outdoors, close windows, run an air purifier

¹ PM2.5 concentration, measured in µg/m³.

² We compiled Daily Reading 1 between the hours of 0300 and 0535 and Daily Reading 2 between the hours of 0600 and 2100.

³ According to the U.S. Centers for Disease Control and Prevention, the ten classes of respirator masks that an individual can use to filter particulate matter include N95, N99, N100, R95, R99, R100, P95, P99, P100, and HE respirator masks.

Source: The DoD OIG and the WHO Global Air Quality Guidelines.

⁸ The AQI is a rating system that shows the severity of pollution in the air on a scale from 0 to 500. The rating is created by measuring five major pollutants: particulate matter, ground-level ozone, carbon monoxide, nitrogen dioxide and sulfur dioxide. An AQI under 50 is considered good air quality, meaning that it is safe for everyone to spend time outdoors without posing a risk to their health. As the AQI number increases, so does the risk to health.

See Appendix B for the full 30 days of information we collected from the publicly accessible weather website, IQAir, located at <https://www.iqair.com/us/djibouti>.

⁹ We compiled two sets of AQI readings, particulate matter concentrations, and recommended mitigations for each day in the 30 day period —one set between the hours of 0300 and 0535 and a second set between the hours of 0600 and 2100.

The CLDJ Commander demonstrated awareness of the poor air quality in Djibouti when they sent a January 2023 memorandum to Navy Region Europe, Africa, Central that requested funding for an EPA-style air quality assessment and discussed, as well as described, the widely known issue of Djibouti's poor air quality. Specifically, the memorandum stated that air quality had been the source of congressional, U.S. Embassy, CLDJ, and Combined Joint Task Force-Horn of Africa concerns since the Navy first occupied CLDJ. The memorandum also stated that the CLDJ Commander received multiple anecdotal complaints about the air quality on CLDJ and that deployed personnel expressed concerns about short- and long-term health risks from poor air quality on CLDJ.

According to the Senior Medical Officer of CLDJ's Expeditionary Medical Facility, personnel arriving to CLDJ receive a medical briefing during the Joint Reception, Staging, Onward Movement, and Integration (JRSOI) process. The Senior Medical Officer stated that as part of this briefing, deployed personnel are informed about the air quality in Djibouti and are also told that by virtue of their deploying to CLDJ, they can sign up for the Department of Veterans Affairs Airborne Hazards and Open Burn Pit Registry. However, upon review of the JRSOI brief, we determined that CLDJ OEH personnel did not include information about Djibouti's poor air quality and the related medical risks and, therefore, neither the CLDJ Commander nor their OEH staff communicated any information to CLDJ personnel about poor air quality or the potential health impacts from exposure to poor air quality, as required by DoDI 6055.05. Therefore, the CLDJ Commander should require their OEH staff to update the JRSOI brief to include formal notification about the known poor air quality of Djibouti and any potential health risks to CLDJ personnel from short- and long-term exposure.

The NAVAF and CLDJ Commanders Did Not Identify Actions to Lessen the Impact of Poor Air Quality on Deployers

Despite the well-known issue of poor air quality in Djibouti, the NAVAF and CLDJ Commanders did not identify actions within their control to lessen the impact of poor air quality on deployed personnel. Several national and DoD organizations have developed best practices and activities that can be undertaken to mitigate general air quality risks, even in the absence of a formal OEH risk management plan. For example, the American Lung Association suggests reducing time spent outdoors to under 30 minutes, reducing the intensity of outdoor activities, and wearing N95 or KN95 masks on days when the AQI is high. According to the EPA, the chances of being affected by unhealthy levels of air pollution increase the longer a person is active outdoors and the more strenuous their activity.

Additionally, United States Forces Korea (USFK) Instruction 4200.03, “Air Quality,” serves as a U.S. military example of what the NAVAFA and CLDJ Commanders could have done using knowledge of the generally poor air quality in CLDJ’s operating environment.¹⁰ The Instruction states that USFK commanders, administrators, and leaders will monitor the AQI for locations where their forces are deployed and employ risk management principles to mitigate the dangers to their personnel caused by poor air quality levels. For non-mission-critical activities, the Instruction requires USFK Commands and personnel to follow recommendations to modify activities based on the USFK Air Quality Index Guide to Outdoor Activities. For example, according to the USFK Air Quality Index Guide to Outdoor Activities, when the AQI is 0–50, deployed personnel can safely perform activities outside. When the AQI is 51–100, deployed personnel who are sensitive should consider reducing prolonged or heavy exertion, and they should also watch for symptoms, such as coughing or shortness of breath. See Appendix C for the USFK Air Quality Index Guide to Outdoor Activities. As demonstrated in Table 1 and Appendix B, there is enough publicly available information about Djibouti’s air quality and short-term mitigation practices that the NAVAFA Commander could have developed similar guidance for CLDJ.

While the CLDJ Commander does not have operational control over the commands and forces occupying CLDJ, it is still within the CLDJ Commander’s authority to provide OEH recommendations to all installation personnel regardless of operational control. Mitigation options, such as providing notice of the daily AQI and associated recommendations, including reducing outdoor activity or wearing a mask for a defined demographic, are within the CLDJ Commander’s control to lessen the impact of poor air quality on installation personnel. Operational commanders occupying CLDJ could use such notifications to make decisions. Therefore, the NAVAFA Commander, in coordination with the CLDJ Commander, should use available information about Djibouti’s poor air quality and associated mitigation recommendations to develop interim standard operating procedures to provide mitigation activities and flexibility for operations on CLDJ until the NAVAFA Commander can implement a comprehensive OEH risk management plan.

¹⁰ United States Forces Korea Instruction 4200.03, “Air Quality,” February 3, 2023.

CLDJ Deployers Are at Risk for Airborne Pollutant Exposure

As a result of NAVAf officials not developing a plan for CLDJ, USAFRICOM does not know if the air quality has worsened over the past 6 years or the health impact to CLDJ personnel from routine exposure to environmental hazards. For example, USAFRICOM does not know the impact on CLDJ's air quality from events occurring near CLDJ since December 2018, including the closure of the La Douba Dump; changes to emissions from Djibouti City and the Djibouti-Ambouli International Airport; and construction on a major People's Republic of China military base in Djibouti City. As documented in Report No. DODIG-2024-107, "Management Advisory: Non-DoD Solid Waste Burning At or Near DoD-Occupied Sites," OEH assessments are vital to capturing U.S. Service member exposure to harmful OEH conditions.¹¹ NAVAf's inaction over the last 6 years increases the risk that such exposures are not being captured in the permanent health record of U.S. Service members, which is essential for diagnostic and treatment purposes.

Without knowing the air quality hazards, there is increased risk that U.S. military and civilian personnel deployed to CLDJ are being exposed to harmful airborne toxins, which could develop into serious medical conditions. Adverse health outcomes for personnel who deploy to CLDJ could decrease their future readiness to deploy and cause the DoD to incur costs for veteran care that could be avoided with proper notification and mitigation procedures.

Recommendations, Management Comments, and Our Response

Recommendation 1

We recommend that the U.S. Naval Forces Africa Commander:

- a. Develop standard operating procedures that detail their staff's roles and responsibilities in executing the occupational and environmental health risk management process in DoD Instruction 6055.05 and the occupational and environmental health risk assessment procedures in Defense Health Agency Procedural Instruction 6490.03.**

U.S. Naval Forces Africa Comments

The NAVAf Executive Director, responding for the NAVAf Commander, agreed with the recommendation, stating that NAVAf would work with USAFRICOM to deconflict the requirements in DoDI 6055.05 and DHA PI 6490.03. The Executive

¹¹ Report No. DODIG-2024-107, "Management Advisory: Non-DoD Solid Waste Burning At or Near DoD-Occupied Sites," July 11, 2024.

Director also stated that NAVAF would develop standard operating procedures detailing the roles and responsibilities for executing OEH risk management requirements by September 30, 2025.

Our Response

Comments from the Executive Director addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close this recommendation once we receive NAVAF's standard operating procedures that detail their staff's roles and responsibilities in executing the OEH risk management process.

- b. Complete a comprehensive air quality assessment, such as an U.S. Environmental Protection Agency-style or comparable air quality assessment, that provides adequate information to fully characterize the air quality pollution sources and related health risks for Camp Lemonnier, Djibouti deployers.**

U.S. Naval Forces Africa Comments

The NAVAF Executive Director, responding for the NAVAF Commander, partially agreed with the recommendation. The Executive Director stated that NAVAF will conduct air quality sampling assessments in accordance with the standards found in DHA PI 6490.03, DoDI 6055.05, and Navy Tactical Reference Publication 4-02.9M, rather than EPA standards.¹² The Executive Director also stated that a preventive medicine unit deployed to CLDJ to conduct air sampling in August and September 2024. The Executive Director further stated that the air sampling results will be codified in a report and a sampling and analysis plan will be generated from the results for ongoing OEH assessment. In addition, the Executive Director further stated that the results of the August and September 2024 preventive medicine unit sampling including any subsequent reports will be entered into the Defense Occupational Environmental Health Readiness System by March 1, 2025.¹³

Our Response

Comments from the Executive Director did not address the specifics of the recommendation; therefore, the recommendation is unresolved. As explained in this report, only a comprehensive air quality assessment, such as the

¹² Navy Tactical Reference Publication 4-02.9M, "Occupational and Environmental Health Site Surveillance at Deployment Locations," January 2023.

¹³ The Defense Occupational Environmental Health Readiness System is a DHA system for entering, assessing, managing, and reporting occupational and environmental exposures. The Defense Occupational Environmental Health Readiness System is used for both garrison and deployed operations, is mandated by various DoD policies and public laws, and is the system of record for the DoD individual longitudinal exposure record.

NMCFHPC-proposed EPA-style assessment, would provide sufficient information to fully characterize the air quality and related health risks for CLDJ deployers and inform the effectiveness of various risk management options for mitigation. The Executive Director's proposed 1 or 2 months of air quality sampling results will not provide NAVAF with a data set comparable to that of a comprehensive assessment such as an EPA-style assessment, which includes 12 months of air quality sample collection. A comprehensive assessment, comparable to an EPA-style air quality assessment, would allow officials to apportion risk related to various pollution sources (for example, on and off-base); determine how pollution sources vary according to time of day, weather, and season; and ultimately provide information on how each pollution source contributes to the overall air quality risk. Therefore, we request that within 30 days of the final report, the NAVAF Commander reconsider their position and provide comments to the final report that address whether NAVAF will complete a comprehensive air quality assessment, such as an EPA-style assessment or other comparable assessment, that would identify, quantify, and assess specific environmental hazards for CLDJ across time to fully characterize the air quality, pollution sources, and related health risks for CLDJ deployers.

- c. **Use the results of the comprehensive assessment to develop a DoD Instruction 6055.05 and Defense Health Agency Procedural Instruction 6490.03 compliant occupational and environmental health risk management plan for Camp Lemonnier, Djibouti.**

U.S. Naval Forces Africa Comments

The NAVAF Executive Director, responding for the NAVAF Commander, agreed with the recommendation. The Executive Director stated that NAVAF would develop an OEH risk management plan by July 1, 2025.

Our Response

Comments from the Executive Director addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close the recommendation in tandem with resolution of Recommendation 1.b and when we receive the CLDJ OEH risk management plan to verify the plan fully satisfies all the OEH risk management requirements of DoDI 6055.05 and DHA PI 6490.03.

- d. **Develop interim standard operating procedures in coordination with the Camp Lemonnier, Djibouti Commander, using available information about Djibouti's poor air quality and associated recommendations, to provide mitigation activities and flexibility for operations on Camp Lemonnier, Djibouti, until U.S. Naval Forces Africa officials can implement a comprehensive occupational and environmental health risk management plan.**

U.S. Naval Forces Africa Comments

The NAVAf Executive Director, responding for the NAVAf Commander, agreed with the recommendation. The Executive Director stated that NAVAf would develop interim standard operating procedures by January 1, 2025.

Our Response

Comments from the Executive Director addressed the specifics of the recommendation; therefore, the recommendation is considered resolved but will remain open. We will close this recommendation once we receive the interim standard operating procedures and verify that the procedures provide air quality-related mitigation activities and flexibility for operations on CLDJ that consider available information on Djibouti's poor air quality, and that the CLDJ Commander has agreed to implement the procedures.

Recommendation 2

We recommend that the USAFRICOM Commander develop standard operating procedures that detail the USAFRICOM Command Surgeon and their staff's roles and responsibilities to execute the DoD Instruction 6490.03-required annual review and certification of the Periodic Occupational and Environmental Monitoring Summary for Camp Lemonnier, Djibouti. The standard operating procedures should include the process by which the USAFRICOM Command Surgeon and their staff review the Periodic Occupational and Environmental Monitoring Summary for accuracy and inclusion of all relevant environmental assessments.

U.S. Africa Command Comments

The USAFRICOM Command Surgeon, responding for the USAFRICOM Commander, agreed with the recommendation, stating that they will update Annex Q of the USAFRICOM Campaign Order to include POEMS development and review requirement timelines that conform to DoDI 6490.03. Additionally, the Command Surgeon stated that the update to Annex Q will include a requirement that the preparer or signer of each POEMS searches for, reviews, and ensures that all relevant OEH studies covering the time period of the POEMS are included in the POEMS analysis and text.

Our Response

Comments from the Command Surgeon addressed the specifics of the recommendation; therefore, the recommendation is resolved but will remain open. We will close this recommendation once we receive a copy of Annex Q of the USAFRICOM Campaign Order that contains the POEMS review requirement and the development and review requirement timelines for POEMSs that conform

to DoDI 6490.03 and verify that USAFRICOM fully included the process by which the Command Surgeon and their staff should review the POEMSs for accuracy and inclusion of all relevant environmental assessments.

Recommendation 3

We recommend that the Camp Lemonnier, Djibouti Commander require their Occupational and Environment Health staff to update the Joint Reception, Staging, Onward Movement, and Integration brief to include formal notification of the known poor air quality of Djibouti and any known health risks to CLDJ personnel from short- and long-term exposure.

Management Action Taken During the Audit

During the audit, we briefed the CLDJ Commander on the lack of information about the known poor air quality of Djibouti and exposure risks in their JRSOI briefing. The CLDJ Commander took immediate action by tasking their staff to update the JRSOI briefing to include information on Djibouti's poor air quality and risks of short- and long-term exposure, including the symptoms, for deployers' awareness. In January 2024, CLDJ staff provided the updated JRSOI brief that contained information about poor air quality on CLDJ and related risks to deployer health. Therefore, this recommendation is closed.

Appendix A

Scope and Methodology

We conducted this performance audit from September 2023 through September 2024 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

We reviewed the following DoD, DHA, USAFRICOM, and Navy criteria to determine whether the Navy effectively developed strategies to mitigate the effects of poor air quality at CLDJ.

- DoDI 3000.12, “Management of U.S. Global Defense Posture,” May 6, 2016, (Incorporating Change 1, May 8, 2017)
- DoDI 4715.19, “Use of Open-Air Burn Pits in Contingency Operations,” November 13, 2018
- DoDI 4715.22, “Environmental Management Policy for Contingency Locations,” February 18, 2016 (Incorporating Change 2, August 31, 2018)
- DoDI 6055.05, “Occupational and Environmental Health,” November 11, 2008 (Incorporating Change 2, August 31, 2018)
- DoDI 6490.03, “Deployment Health,” June 19, 2019
- DoDM 4715.05, Volume 2, “Overseas Environmental Baseline Guidance Document: Air and Toxics,” June 29, 2020
- DHA PI 6490.03, “Deployment Health Procedures,” December 17, 2019
- USAFRICOM Campaign Plan, August 1, 2022
- Office of the Chief of Naval Operations Manual-5100.23, “Navy Safety and Occupational Health Manual,” September 20, 2023
- Office of the Chief of Naval Operations Manual-5090.1, “Environmental Readiness Program Manual,” June 25, 2021
- Navy Tactical Reference Publication 4-02.9M, “Occupational and Environmental Health Site Surveillance at Deployment Locations,” January 2023

We interviewed personnel and reviewed documents sent from the following organizations to understand the roles and responsibilities of each organization for OEH activities on CLDJ, as well as reviewed air quality risk assessment and mitigation activities carried out on CLDJ from January 2012 through June 2024.

- USAFRICOM Headquarters; Stuttgart, Germany
- USAFRICOM Surgeon's Office; Stuttgart, Germany
- NAVAF; Naples, Italy
- Navy Region Europe, Africa, Central; Naples, Italy
- Navy and Marine Corps Force Health Protection Command; Portsmouth, Virginia
- Naval Facilities Engineering Systems Command Atlantic; Norfolk, Virginia
- Naval Facilities Engineering Systems Command Europe, Africa, Central; Naples, Italy

Additionally, we consulted with the Office of the Under Secretary of Defense for Acquisition and Sustainment; the Office of the Under Secretary of Defense for Energy, Installations, and Environment; and DHA regarding the interpretation of roles and responsibilities for OEH risk management on CLDJ, in accordance with DoDI 6055.05, DoDI 6490.03, and DHA PI 6490.03.

We conducted a site visit to CLDJ in November 2023 to physically observe air quality conditions, occupational health measures, preventive medicine procedures, and to conduct interviews of CLDJ personnel. During our site visit, we met with officials from the CLDJ Command Staff, CLDJ Public Works Division, CLDJ Occupational and Environmental Health Department, and the CLDJ Expeditionary Medical Facility to obtain information concerning CLDJ officials' activities for air quality risk identification, assessment, mitigation, and communication. We also met with Combined Joint Task Force-Horn of Africa officials to determine their role in CLDJ air quality risk management. We visited the La Douda and Chabelley Dumps to conduct physical observations of the two sites, including taking photographs and filming open burning taking place at the Chabelley Dump.

To determine the extent to which the Navy had conducted air quality assessments on CLDJ as part of an OEH risk management process, we requested and reviewed all air quality assessments and OEHSAs performed on CLDJ since January 1, 2012. We compiled information from each assessment and OEHSA on air pollutants analyzed; the method of analysis; and the number and location of sampling events, results, and conclusions. From this information, we analyzed the methods and results of each air quality assessment and OEHSA, and the length of time between publication

of these documents, to determine to what extent the air quality assessments could constitute inputs for an effective OEH risk management plan. We also requested all POEMSs completed for CLDJ since January 1, 2012, and analyzed the POEMSs to determine the extent to which they included air quality assessment results in their findings, conclusions, and recommendations.

To document publicly known air quality risks impacting CLDJ and Djibouti, we examined public source information from IQAir (a real-time air quality information platform) and UNEP.

Internal Control Assessment and Compliance

We assessed internal controls and compliance with laws and regulations necessary to satisfy the audit objective. In particular, we assessed the following internal controls.

- **Risk assessment (identify, analyze, and respond to risk).** We evaluated whether Navy officials conducted risk assessments of air quality on CLDJ in accordance with DoD and Navy guidance. We also evaluated whether Navy officials created a risk management strategy for OEH on CLDJ in accordance with DoD guidance that included plans to identify, assess, and communicate air quality risks; create mitigation strategies for identified pollutants; and incorporate the results of such activities into future OEH risk management planning.
- **Information and communication (communicate internally).** We evaluated whether Navy officials communicated information on air quality risks to deployed personnel on CLDJ.

However, because our review was limited to these internal control components and underlying principles, it may not have disclosed all internal control deficiencies that may have existed at the time of this audit.

Use of Computer-Processed Data

We did not use computer-processed data to perform this audit.

Use of Technical Assistance

We enlisted assistance from an engineer from within the DoD OIG. The engineer was responsible for documenting and interpreting air quality assessments and advising us on their physical observations of waste dumps and air quality identification, assessment, mitigation, and communication procedures during the site visit to CLDJ. The engineer also assisted us with our interpretation of technical OEH terminology and DoD OEH policies and procedures.

Prior Coverage

The DoD OIG issued one report related to the process for reporting non-DoD solid waste burning at or near DoD-occupied locations. Unrestricted DoD OIG reports can be accessed at <http://www.dodig.mil/reports.html/>.

DoD OIG

Report No. DODIG-2024-107, “Management Advisory: Non-DoD Solid Waste Burning At or Near DoD-Occupied Sites,” July 11, 2024

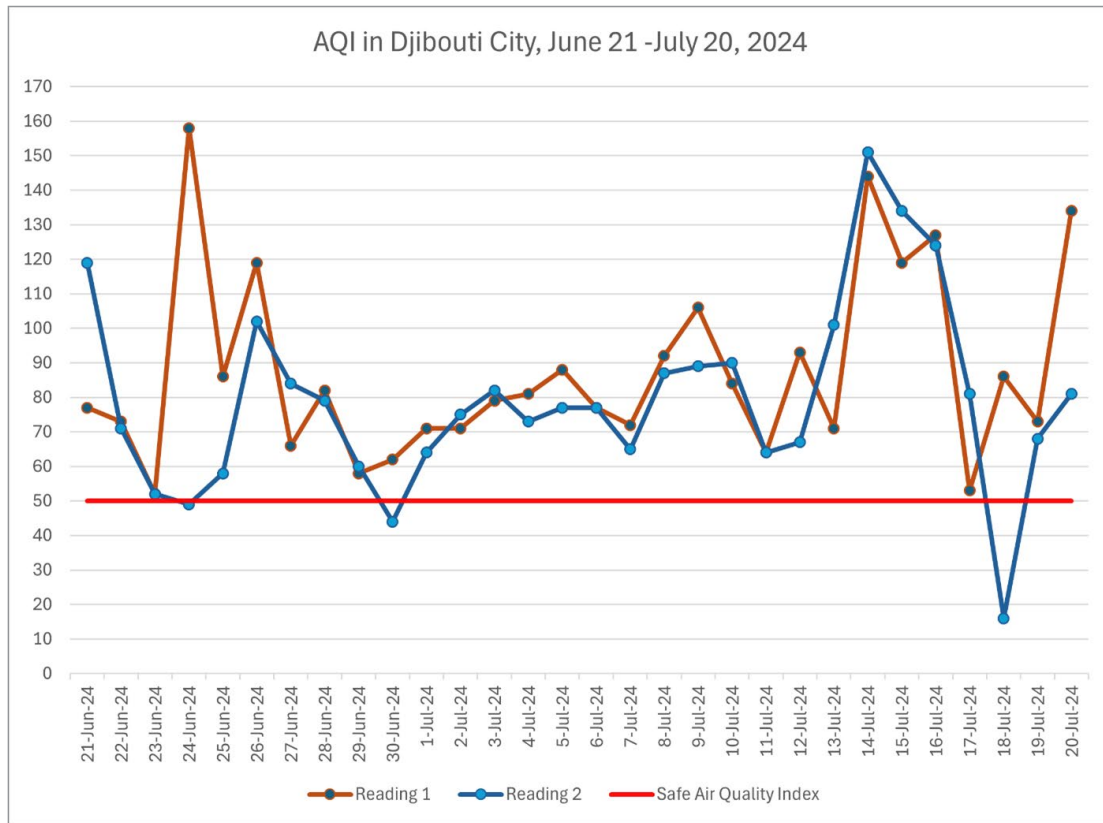
This report discussed concerns over the insufficient process for identifying and reporting non-DoD solid waste burning at or near DoD-occupied sites. Specifically, DoD officials did not develop policy requiring operational commanders to identify and report non-DoD-controlled burn pits disposing of non-DoD-generated waste to the Combatant Command and Joint Chiefs of Staff J-4 Logistics Directorate. DoD policy only requires the identification and reporting of burn pits that are burning solid waste generated by the DoD. The omission of a reporting requirement for non-DoD solid waste burning creates the potential for U.S. Service members’ exposure to burn pit toxins not being captured in their health records.

Appendix B

30-Day Air Quality Compilation Data for Djibouti

Figure 5 displays the AQI readings we compiled from the IQAir website for Djibouti City twice a day for 30 consecutive days, from June 21 through July 20, 2024, with a constant AQI of 50 for comparison. An AQI under 50 is considered good air quality, meaning that it is safe for everyone to spend time outdoors without posing a risk to their health. As the AQI number increases, so does the risk to health. We compiled Daily Reading 1 between the hours of 0300 and 0535 and Daily Reading 2 between the hours of 0600 and 2100 for each day in the 30-day period.

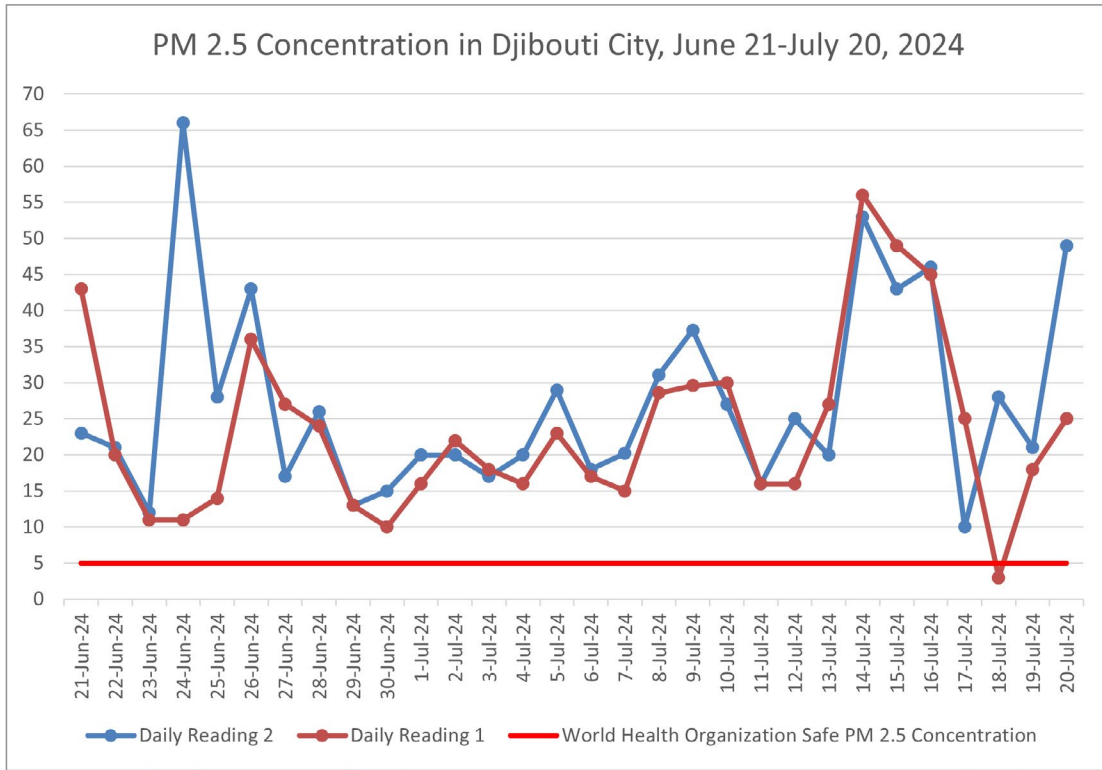
Figure 5. Publicly Available AQI Readings for Djibouti City from June 21 Through July 20, 2024



Source: The DoD OIG.

Figure 6 displays the particulate matter concentrations compared to the maximum level the WHO identifies as safe for human health that we compiled from the IQAir website for Djibouti City twice a day for 30 consecutive days, from June 21 through July 20, 2024.

Figure 6. Daily Particulate Matter 2.5 Readings Compared to WHO Guidelines from June 21 Through July 20, 2024



Source: The DoD OIG.

Appendix C

USFK Air Quality Index Guide to Outdoor Activities

According to USFK Instruction 4200.03, “Air Quality,” USFK Service Component Commanders are to monitor AQI conditions and forecasts daily, or more frequently as needed, in order to follow the guidance of USFK Air Quality Index Guide to Outdoor Activities and to implement modified activities for their personnel and family members of personnel. Such modified activities include having personnel work indoors instead of outdoors, changes to activity intensity or work-rest cycles, or the use of N95 masks. The USFK Service Component Commanders are to ensure commanders and leaders at all levels implement these measures as needed, and installations commanders are to communicate mitigation measures to their communities. Figure 7 displays the AQI chart that USFK Service Component Commanders are to follow, which includes recommended mitigation strategies for each AQI level and specific populations of personnel and family members of personnel.

Figure 7. USFK Air Quality Index Guide to Outdoor Activities

Korea CAI	US EPA AQI	Recommended Behavioral Guidelines and Activity Modifications					
		General Public and Military Non-Mission Critical Activities	Sensitive Groups***	Schools, Child Development Centers, and Child and Youth Services			
				Recess and Other Outdoor Activities (typically <30 minutes)	Physical Education (P.E) Class (typically <1 hour)	Athletic Practice and Training (typically <4 hours)	Scheduled Athletic Event (typically <4 hours)
Good (0-50)	Good (0-50)	No limitations to outdoor activities. It's a great day to be active outside!					
Moderate (51-100)	Moderate (51-100)	No limitations	Unusually Sensitive Individuals: Consider reducing prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath.	No limitations	Monitor sensitive individuals and limit their vigorous activities.	Monitor sensitive individuals and limit their vigorous activities.	Monitor sensitive individuals and limit their vigorous activities.
Unhealthy (101-250)	Unhealthy for Sensitive Groups (101-150)	No limitations	Reduce prolonged or heavy exertion. Take more breaks and reduce intensity of activities. Watch for symptoms such as coughing, chest pain, or difficulty breathing. Follow individual treatment care plan.	It's OK to be active outside for short periods. Watch for symptoms such as coughing, chest pain, or difficulty breathing. Monitor students with chronic medical conditions and follow treatment care plans.	It's OK to be active outside for short periods. Watch for symptoms such as coughing, chest pain, or difficulty breathing. Monitor students with chronic medical conditions and follow treatment care plans.	Take more breaks and reduce intensity of activities. Watch for symptoms such as coughing, chest pain, or difficulty breathing. Monitor individuals with chronic medical conditions and follow treatment care plans.	Increase rest periods and substitutions for all participants to lower breathing rates. Watch for symptoms such as coughing, chest pain, or difficulty breathing. Monitor individuals with chronic medical conditions & follow treatment care plans.
	Unhealthy (151-200)	Reduce prolonged or heavy exertion. Take more breaks and reduce intensity of outdoor activities.	Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling.	Keep all students indoors.	Conduct P.E indoors in an environment with good air quality.	Conduct practice and training indoors in an environment with good air quality.	Consider rescheduling event. If outdoor event is held, have emergency medical support immediately available. Increase rest periods and substitutions for all participants to lower breathing rates. Monitor individuals with chronic medical conditions and follow treatment care plans.
	Very Unhealthy (201-300)	Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling.	Avoid all physical activity outdoors. Move activities indoors or reschedule.	Keep all students indoors.	Conduct P.E indoors in an environment with good air quality.	Conduct practice and training indoors in an environment with good air quality.	Reschedule event.
Very Unhealthy (251-500)	Hazardous (301-500)	Avoid all physical activity outdoors. Move activities indoors or reschedule.	Avoid all physical activity outdoors.	Keep all students indoors.	Conduct P.E indoors in an environment with good air quality.	Conduct practice and training indoors in an environment with good air quality.	Reschedule event.

***Sensitive Groups include people with heart or lung disease, older adults (who may have undiagnosed heart or lung disease), and children.

LEGEND

CAI Comprehensive Air Quality Index

Source: USFKI 4200.03, "Air Quality," February 3, 2023.

Management Comments

NAVAF

**DOD IG DRAFT REPORT DATED SEPTEMBER 19, 2024
D2024-D000RJ-0155.000**

**"AUDIT OF THE DOD'S MANAGEMENT OF AIR QUALITY ISSUES
AT CAMP LEMONNIER, DJIBOUTI"**

U.S. NAVAL FORCES AFRICA RESPONSE TO THE DOD IG RECOMMENDATIONS

RECOMMENDATION 1.a: Develop standard operating procedures that detail their staff's roles and responsibilities in executing the occupational and environmental health risk management process in DoD Instruction 6055.05 and the occupational and environmental health risk assessment procedures in Defense Health Agency Procedural Instruction 6490.03.

NAVAF RESPONSE: U.S. Naval Forces Africa (NAVAF) concurs and will work with U.S. Africa Command (AFRICOM) to deconflict the requirements in DoD Instruction 6055.05 and Defense Health Agency Procedural Instruction 6490.03. NAVAF will develop standard operating procedures detailing the roles and responsibilities for executing requirements by 30 September 2025.

RECOMMENDATION 1.b: Complete a comprehensive air quality assessment such as an U.S. Environmental Protection Agency-style or comparable air quality assessment that provides adequate information to fully characterize the air quality pollution sources and related health risks for Camp Lemonnier, Djibouti deployers.

NAVAF RESPONSE: NAVAF concurs with the recommendation to conduct air sampling, with the caveat the assessments will be conducted in accordance with Defense Health Agency Procedural Instruction 6490.03, DoD Instruction 6055.05, and NTRP 4-02.9M, and not the Environmental Protection Agency. A preventive medicine unit was tasked to deploy to Camp Lemonnier, Djibouti (CLD) to conduct air sampling in August/September 2024. The results will be codified in a report, and a sampling and analysis plan will be generated for ongoing assessment. Sampling results and subsequent reports will be entered into the system of record, Defense Occupational and Environmental Health Readiness System (DOEHRs). DOEHRs provides a comprehensive, personnel exposure data repository for service members and a concise summary of individual exposures for DOD and VA health care providers and claims adjudicator. The results of the September 2024 sampling will be entered in DOEHRs by 1 March 2025.

RECOMMENDATION 1.c: Use the results of the comprehensive assessment to develop a DoD Instruction 6055.05 and Defense Health Agency Procedural Instruction 6490.03 compliant occupational and environmental health risk management plan for Camp Lemonnier, Djibouti.

NAVAF RESPONSE: NAVAF concurs with this recommendation. An occupational and environmental health risk management plan will be developed by 1 July 2025.

RECOMMENDATION 1.d: Develop interim standard operating procedures in coordination with the Camp Lemonnier, Djibouti Commander, using available information about Djibouti's poor air quality and associated recommendations, to provide mitigation activities and flexibility for operations on Camp Lemonnier, Djibouti, until U.S. Naval Forces Africa officials can implement a comprehensive occupational and environmental health risk management plan.

NAVAF (cont'd)

NAVAF RESPONSE: NAVAF concurs and will develop interim standard operating procedures by 1 January 2025.

BEYLER.JULIE Digitally signed by
T.MARIE [redacted] BEYLER.JULIET.MARIE.
[redacted] [redacted]

USAFRICOM



Unclassified

HEADQUARTERS
UNITED STATES AFRICA COMMAND
 OFFICE OF THE COMMAND SURGEON
 UNIT 29951
 APO AE 09751-9951

15 Oct 2024

MEMORANDUM FOR DEPARTMENT OF DEFENSE OFFICE OF THE INSPECTOR
 GENERAL

SUBJECT: (U) Concurrence with Recommendation #2 for Project No. D2023-D000RJ-0155.000 Audit of the DoD's Management of Air Quality Issues at Camp Lemonnier, Djibouti

1. (U) AFRICOM provides concurrence with comment for Project No. D2023-D000RJ-0155.000 Audit of the DoD's Management of Air Quality Issues at Camp Lemonnier, Djibouti Recommendation #2.
2. (U) Recommendation #2: We recommend that the USAFRICOM Commander develop standard operating procedures that detail the USAFRICOM Command Surgeon and their staff's roles and responsibilities to execute the DoD Instruction 6490.03-required annual review and certification of the Periodic Occupational and Environmental Health Summary (POEMS) for Camp Lemonnier, Djibouti. The standard operating procedures should include the process by which the USAFRICOM Command Surgeon and their staff should review the Periodic Occupational and Environmental Health Summary for accuracy and inclusion of all relevant environmental assessments.
 - a. (U) The current Annex Q of the AFRICOM Campaign Order outlines POEMS being the responsibility of the USAFRICOM Surgeon's office and states POEMS will be "created and validated/updated for every major deployment site as soon as sufficient data is available, but no later than one year after a given site is established." To address Recommendation #2, the Annex Q will be updated with the POEMS development and review requirement timelines according to DoDI 6490.03 and include the requirement that the preparer/signer of each POEMS searches for, reviews, and ensures that all relevant OEH studies covering the time period of the POEMS are included in the POEMS analysis and text.
 - b. (U) Upon implementation of the corrections, we will submit a request for closure.
3. (U) The point of contact for this memorandum is [REDACTED], who can be reached at [REDACTED] or by electronic mail at [REDACTED].

COHEN.MICHAEL [REDACTED]
 .IRA [REDACTED]
 MICHAEL I COHEN, D.O.
 COL, MC
 AFRICOM Command Surgeon

Unclassified

Acronyms and Abbreviations

AOR	Area of Responsibility
AQI	Air Quality Index
CLDJ	Camp Lemonnier, Djibouti
DHA	Defense Health Agency
EPA	U.S. Environmental Protection Agency
FDPMU	Forward-Deployed Preventive Medicine Unit
JRSOI	Joint Reception, Staging, Onward Movement, and Integration
NAVAF	U.S. Naval Forces Africa
NMCFHPC	Navy and Marine Corps Force Health Protection Command
OEH	Occupational and Environmental Health
OEHSA	Occupational and Environmental Health Site Assessment
PI	Procedural Instruction
POEMS	Periodic Occupational and Environmental Monitoring Summary
UNEP	United Nations Environment Programme
USAFRICOM	U.S. Africa Command
USFK	U.S. Forces Korea
WHO	World Health Organization

Whistleblower Protection

U.S. DEPARTMENT OF DEFENSE

Whistleblower Protection safeguards DoD employees against retaliation for protected disclosures that expose possible fraud, waste, and abuse in Government programs. For more information, please visit the Whistleblower webpage at www.dodig.mil/Components/Administrative-Investigations/Whistleblower-Reprisal-Investigations/Whistleblower-Reprisal/ or contact the Whistleblower Protection Coordinator at Whistleblowerprotectioncoordinator@dodig.mil

For more information about DoD OIG reports or activities, please contact us:

Congressional Liaison

703.604.8324

Media Contact

public.affairs@dodig.mil; 703.604.8324



www.twitter.com/DoD_IG

LinkedIn

www.linkedin.com/company/dod-inspector-general/

DoD Hotline

www.dodig.mil/hotline





DEPARTMENT OF DEFENSE | OFFICE OF INSPECTOR GENERAL

4800 Mark Center Drive
Alexandria, Virginia 22350-1500
www.dodig.mil
DoD Hotline 1.800.424.9098

