



Waste Management Requirements In Military Operations



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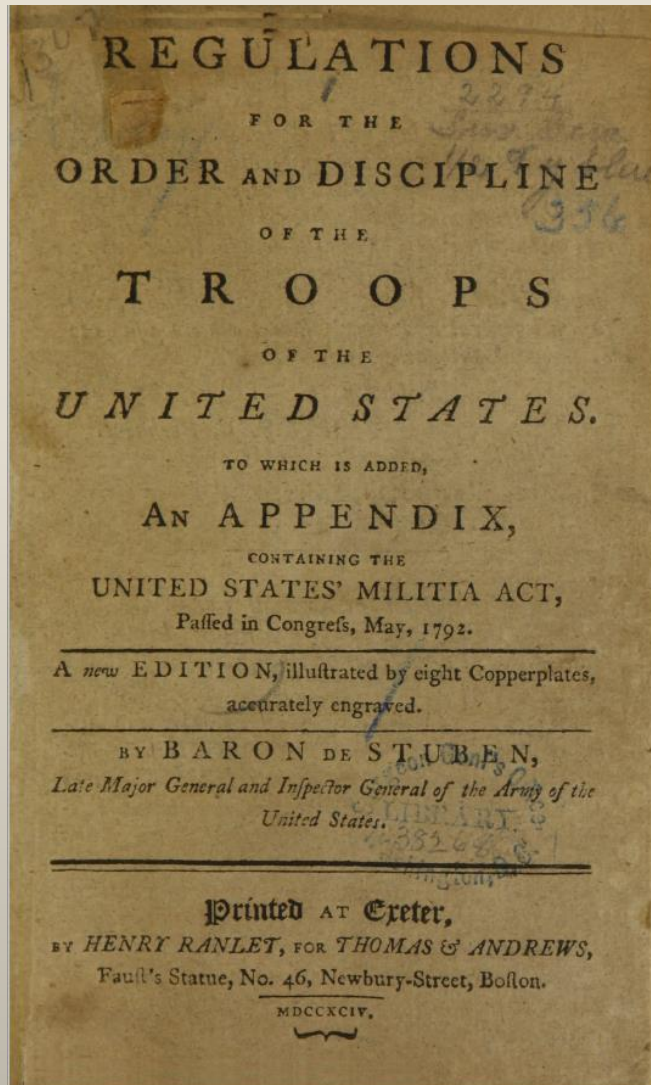


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The Quartermaster must be answerable that the parade and environs of the encampment of a regiment are kept clean; that the sinks (i.e. latrines) are filled up, and new ones dug every four days, and oftener in warm weather; and if any horse or other animal dies near the regiment, he must cause it to be carried at least half a mile from camp and buried.

The place where the cattle are killed must be at least fifty paces in the rear of the wagons; and the entrails and other filth immediately buried; for which the commissaries are to be answerable.

The quartermaster general must take care that all dead animals, and every other nuisance in the environs of the camp, be removed.



The quarter-master must be answerable that the parade and environs of the encampment of a regiment are kept clean; that the sinks are filled up, and new ones dug every four days, and oftener in warm weather; and if any horse or other animal dies near the regiment, he must cause it to be carried at least half a mile from camp and buried.

The place where the cattle are killed must be at least fifty paces in the rear of the waggons; and the entrails and other filth immediately buried; for which the commissaries are to be answerable.

The quarter-master general must take care that all dead animals, and every other nuisance in the environs of the camp, be removed.



Requirements and Resources



CONUS Installation
U.S. and State Laws
DoDI 4715.06
Command Environmental Policy

Resources
DPW Environmental Staff
Army Environmental Center
DCS G-9
AR 200-1, OPNAV M-5090.1

OCONUS Enduring Location
Final Governing Standards
Host Nation Law
DoDI 4715.05
OEBGD (DoDM 4715.05 V1-V5)
COCOM Policy
NATO STANAGS



Resources
COCOM Environmental Staff (J4)
Lead Environmental Component
DCS G-9
AR 200-1, OPNAV M-5090.1

OCONUS Contingency
DoDI 4715.19, 4715.22
CLES (Forthcoming)
Final Governing Standards / SOFA
Host Nation Law
COCOM Policy
NATO STANAGS
OPORD/OPLAN

Resources
COCOM Environmental Staff (J4)
Lead Environmental Component
USAES DEI
ATP 3-34.5, TM 3-34.56,
OPNAV M-5090.1,
AF HandBook 10-222





Broad Policy Goals

- **Protect human health & mission effectiveness**
- **Minimize adverse environmental & cultural impact**
- **Implement reasonable pollution prevention and sustainable practices**
- **Avoid using locations with pre-existing environmental degradation**
- **Comply with applicable US and international law, and binding international agreements**

From DODI 4715.22 Env Mgt Policy for Contingency Locations





Joint Operation Plan, Annex L, is reserved for environmental considerations

Annex L - Environmental Considerations Checklist

- **Participating nations**
- **Legal requirements**
- **Water – potable, other**
- **Wastewater**
- **Hazardous materials**
- **Hazardous waste**
- **Solid waste**
- **Petroleum/lubricants**
- **Noise**
- **Air Quality**
- **Cultural, historic, & religious factors**
- **Threatened/endangered wildlife**
- **Natural resources**
- **PCBs, asbestos, lead paint**
- **Spill prevention/spill response**
- **Human health & safety (also addressed in Annex Q)**
- **Socio-Economic impacts**
- **Camp closure/site cleanup**



Environmental File

- **Important Documentation/Record Keeping**
 - **Integrated Waste Management Plan**
 - **Environmental Baseline Survey (EBS), DD Form 2993, 2994**
 - **Environmental Condition Report (ECR), electronic message, subject to COCOM guidance**
 - **Significant change in conditions, spill, discovery of previously unknown hazard**
 - **Environmental Site Closure Survey (ESCS), DD Form 2995**

Going In
During
Leaving

Classification:

ENVIRONMENTAL BASELINE SURVEY (EBS) CHECKLIST	
For use of this form, see ATP 3-34.5/MCRP 4-11B; the proponent agency is TRADOC.	
<p>Note: Do not leave any blanks empty. If they do not apply to the current site, enter not applicable (NA) or nothing significant to report (NSTR) to show the section has been investigated. The section numbers in the checklist correspond to the section numbers in the report format. <i>*Items that are completed in the Environmental Baseline Study Report. These items are shown in the EBS Checklist to ensure that item numbers are matched between the checklist and the report.</i></p>	
<input type="button" value="Continue"/> Click this button to add a continuation page if more space is needed for any item.	
1. ADMINISTRATIVE DATA	
a. LOCATION NAME	<i>(Official name and legal address of the location being assessed. Name of country, city, township, or area of operation for the site location.)</i>
b. LOCATION ALIASES	<i>(Other names the base is currently or was previously known as.)</i>
c. START DATE AND TIME	d. END DATE
e. ORGANIZATION CONDUCTING SURVEY	<i>(Name of the unit or activity conducting the assessment.)</i>
f. SURVEYOR'S NAME, RANK, GRADE, AND TITLE	
g. SURVEYOR'S TELEPHONE	
h. SURVEYOR'S E-MAIL	
I. GEOGRAPHIC LOCATION	
<p>Note: If this information is classified, enter it in Section 14 of this checklist. The 8-digit military grid coordinates are mandatory for the site using the center of the camp for reference. Coordinates may also be taken from the outside corners of the site to provide site boundaries. A global positioning system may be used in addition to the grid coordinates. The 8-digit military grid coordinates will always include the 3-character zone designator and the 2-character grid square</p>	

Classification:

ENVIRONMENTAL SITE CLOSURE SURVEY	
For use of this form, see ATP 3-34.5/MCRP 4-11B; the proponent agency is TRADOC.	
SURVEY TYPE DEFINITIONS	
Initial Survey (I)	Any survey conducted by the closing base camp or unit's environmental officer and/or the theater support group or major subordinate command environmental staff to determine actions needed for transfer or closures. This survey needs to be completed sufficiently in advance of transfer or closure to allow the identified environmental follow-up items to be completed prior to the actual closure or transfer of the base.
Preliminary Survey (P)	A survey conducted by the theater support group or major subordinate command environmental staff to identify all environmental closure actions that must be completed prior to the base camp or unit being granted final clearance. A preliminary survey is normally scheduled 30 days prior to site closure or transfer.
Final Survey (F)	Final clearance survey conducted by theater support group or major subordinate command environmental staff as part of the overall site clearance process.
REFERENCES	
FM 21-10, <i>Field Hygiene and Sanitation</i> . Environmental Final Governing Standards (as applicable). Applicable negotiated standards with transfer entity or receiving host nation.	Overseas Environmental Baseline Guidance Document. Annex L: Environmental to the governing operation plan (as applicable).
DISPOSITION	
<i>(Fill in the number of years and the number of days in the spaces provided.)</i>	
Completed surveys will be maintained at the theater support group or major subordinate command environmental staff for _____ years. Copies will be forwarded to the theater command environmental section no later than _____ days after site transfer or closure.	
1. SITE INFORMATION	
<input type="button" value="Continue"/> Click this button to add a continuation page if more space is needed for any item.	
a. SITE NAME AND DESIGNATION	
b. SITE LOCATION	<i>(Full military grid reference system or latitude and longitude coordinates of site outline or boundary. Not the center of mass.)</i>
c. SITE USE	
d. PREVIOUS UNITS ASSIGNED TO THE BASE	



IWMP Concept Plan

	PH I	PH II	PH III	PH IV
BULK SOLID WASTE				
RECYCLABLE SOLID WASTE				
HAZWASTE / MEDWASTE				
POTABLE WATER				
BLACK WATER				
GREY WATER				
FUEL POINT				



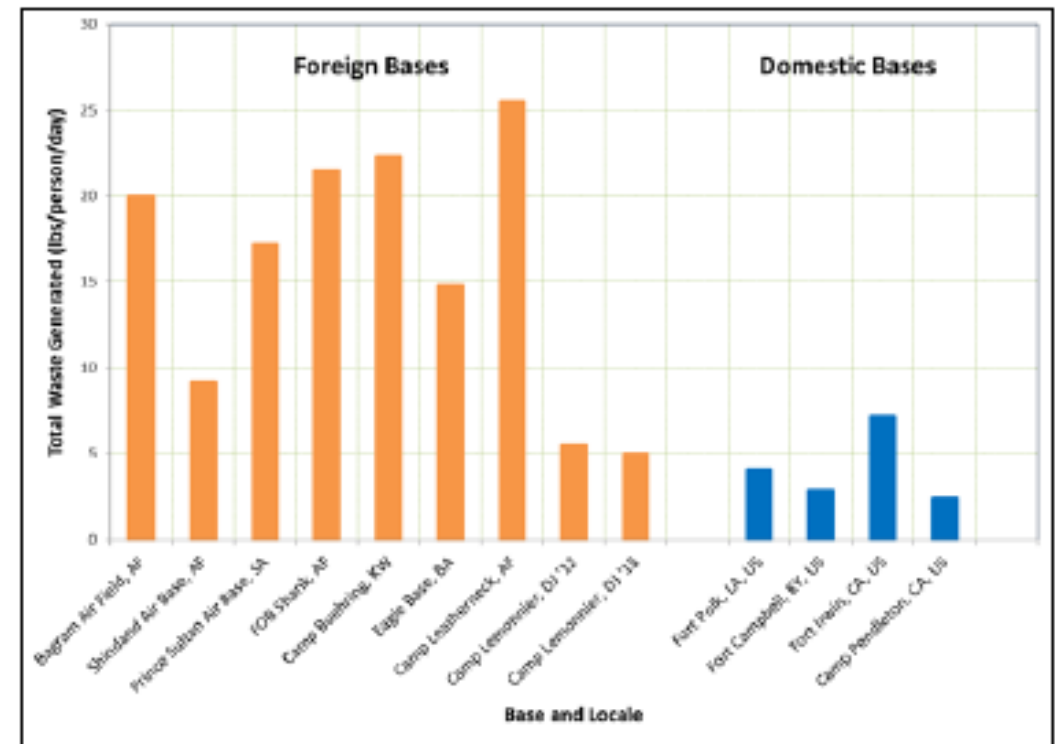
Time Phasing

- **Phase I**
 - Immediate needs
 - Initial forces will need to deal with the situation 'as is' until security and support is available
- **Phase II**
 - Basic Sustainment
 - Everything takes time – an operating location will ramp up in services and population
- **Phase III**
 - Expanded or enhanced service
 - During steady state operations, waste management should get to a sustainment level
- **Phase IV**
 - Preparation for transfer or closure
 - Waste management areas require time to close properly, personnel performing the closure will still generate some waste



Solid Waste

- Everyone generates trash - Minimize the potential harm and cost
- Plan in detail, make the best decisions possible with the best information available.
- Predict short and long-term hazards (risks) and implement actions to mitigate the effects
- Leverage available resources
- Develop feasible, suitable, and sustainable options
- Average observed waste generation of 13.5 lb/person/d (Army Research Lab, 2016)



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Fig. 14 Total waste generated (lb/person/day) vs. base location (domestic vs. foreign)

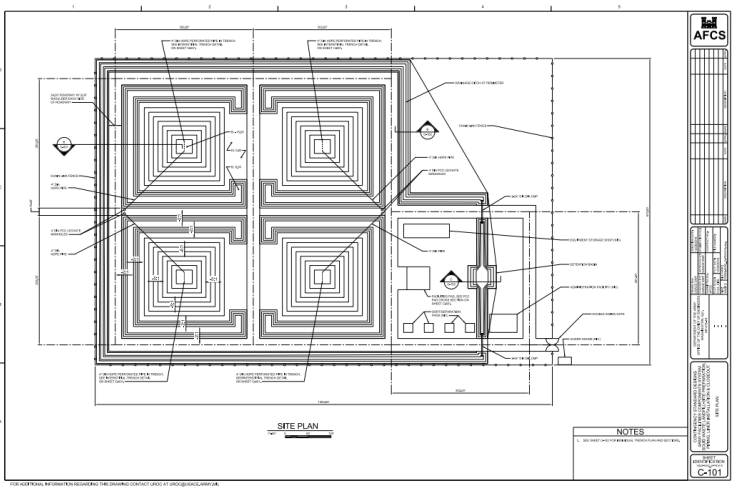


Solid Waste End State

- Fully integrated waste management plan
- Waste segregation, minimization, and reuse practices are well established



Two 64-ton Solid Waste Incinerators
Typical burn temperature 1500-1800° F



JCMS Component DW2000
Sanitary Landfill



Air Curtain Burners



Expeditionary Solid Waste Disposal System



The Hard Parts

“Everything is very simple in war, but the simplest thing is difficult. These difficulties accumulate and produce a friction which no man can imagine exactly who has not seen war.” – Karl von Clausewitz, Prussian Military Theorist

Logistical

Space is limited –
going and
returning

Technical

Operations and
Maintenance must
be accessible

Behavioral

Proper
segregation and
management of
waste is always
hard



Burn Pit Operations

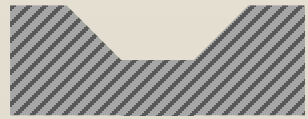
- **The use of open burn pits has been restricted by policy**
- **Open burning will only get harder, not easier, going forward**





Open-Air Burn Pits

Definition



**“excavation or surface feature”...
“outside the United States”**

“used to dispose of solid waste by burning”

“pits lack any stack or air pollution controls”

Excluding



“sites where *individuals* are burning solid wastes generated by *non-DoD sources* (i.e., domestic household and/or yard waste burned by local population, for example burn barrels.)”



DoD Policy

DoD prohibits open-air burning of all waste generated by U.S. forces, whether burning is performed by U.S. forces, allied forces, multinational partners, or contractors

- unless -

The CCDR determines that no other disposal method is feasible, with an exemption requested in writing

- and -

The SECDEF grants the exemption for no more than 180 days, after which it must be renewed

- and -

The location commander manages the burn site to minimize risks to the health and safety of U.S. personnel IAW DODI 4715.19 and USD(A&S) guidance



Policy and Guidance Documents

- **DoDI 4715.05, *Environmental Compliance at Installations Outside the United States*, 31 Aug 2018 (OEBGD)**
- **DoDM 4715.05, *Overseas Environmental Baseline Guidance Document (OEBGD)*, June 2020 – 5 volumes (Conservation, Air, Water, HM, Waste)**
- **DoDI 4715.08, *Remediation of Environmental Contamination Outside the United States***
- **DoDI 4715.19, Use of Open-Air Burn Pits in Contingency Operations – **Additional guidance published pending update****
- **DoDI 4715.22, Environmental Management Policy for Contingency Locations**
- **DoDM 4715.22, Contingency Location Environmental Standards (forthcoming)**
- **Joint Publication 4-04, Contingency Basing**
- **Combatant Command Regulations (CCR) 200-2, Contingency Environmental Guidance**
- **NATO Allied Joint Environmental Protection Publications**
 - STANAG = Standardization Agreement - Doctrine (participating nations agree to standards)
 - AJEPP = Allied Joint Environmental Protection Publication Standard (the details/specifics)
- **Annex L of ATP 3-34.5 and FM 6-0**