

UNIT LEADERS' HANDBOOK

FOR

ENVIRONMENTAL STEWARDSHIP



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GOAL OF THE ARMY
ENVIRONMENTAL PROGRAM

Plan Initiate, and Carry Out
All Actions and Programs to Avoid or Minimize
Adverse Environmental Impacts Without Impairing the Army's Mission.

Change 1

Headquarters
Department of the Army
Washington, DC, 3 October 1995

Unit Leaders' Handbook for Environmental Stewardship

1. Change TC 5-400, 29 September 1994, as follows:

Remove Old Pages

5-1 through 5-4

References-1

References-2

Insert New Pages

5-1 through 5-4

References-1

References-2

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DENNIS J. REIMER
General, United States Army
Chief of Staff

Official:


JOEL B. HUDSON

*Acting Administrative Assistant to the
Secretary of the Army*

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**UNIT LEADERS' HANDBOOK
FOR
ENVIRONMENTAL STEWARDSHIP**

Table of Contents

	Page
PREFACE	v
INTRODUCTION	vi
CHAPTER 1 ARMY ENVIRONMENTAL STRATEGY	
1-1. Background	1-1
1-2. Army Environmental Ethic	1-3
1-3. Strategy	1-3
1-4. Environmental Model	1-4
1-5. Goals and Policies	1-6
CHAPTER 2 ENVIRONMENTAL LAWS AND THE UNIT	
2-1. Sources of Environmental Laws and Regulations	2-1
2-2. Key Environmental Laws and Regulations	2-2
2-3. Environmental Penalties	2-8
CHAPTER 3 DUTIES AND RESPONSIBILITIES	
3-1. Soldiers	3-1
3-2. Unit Noncommissioned Officers	3-2
3-3. Unit Officers	3-3
3-4. Unit Commanders	3-4

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CHAPTER 4 UNIT-LEVEL ENVIRONMENTAL PROGRAMS

4-1. Unit-Level Programs4-1
4-2. Training Requirements 4-10
4-3. Sources of Environmental Training 4-11
4-4. Program Assessment 4-12

CHAPTER 5 RISK MANAGEMENT DURING UNIT TRAINING AND MILITARY OPERATIONS

5-1. Risk Management5-1
5-2. Actions Before Training 5-2
5-3. Actions During Training 5-6
5-4. Actions After Training 5-9
5-5. Environmental Risk-Assessment Matrices 5-9
5-6. Practical Application of Environmental Risk-Assessment Matrices 5-11
5-7. Risk Reduction 5-16

CHAPTER 6 INSTALLATION SUPPORT

6-1. Installation Organizations6-1
6-2. Environmental Quality-Control Committee (EQCC) 6-5
6-3. Points of Contact 6-5

APPENDIX A ENVIRONMENTAL LAWS AND REGULATIONS

A-1. AR200-1 A-1
A-2. AR200-2 A-1
A-3. AR 420-40A-2
A-4. AR 420-47A-2
A-5. AR 420-74A-2
A-6. AR 420-76A-2
A-7. Archeological Resources Preservation Act (ARPA) A-2
A-8. Asbestos Hazard Emergency Response Act A-2
A-9. Clean Air ActA-3
A-10. Clean Water ActA-3
A-n. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)A-4

APPENDIX F ENVIRONMENTAL RISK-ASSESSMENT MATRICES

F-1. Air Pollution Probability of Occurrence F-2
F-2. Archeological and Historic Sites Probability
of Occurrence F-4
F-3. Hazardous Materials and Hazardous Waste Probability
of Occurrence F-5
F-4. Noise Pollution Probability of Occurrence F-7
F-5. Threatened and Endangered Species Probability of
Occurrence F-8
F-6. Water Pollution Probability of Occurrence. F-9
F-7. Wetland Protection Probability of Occurrence F-11

APPENDIX G ENVIRONMENTAL INFORMATION
HOTLINES

GLOSSARY Glossary-1
REFERENCES References-1
INDEX Index-1

PREFACE

Leaders have the inherent personal and professional responsibility to know, understand, and support the Army's environmental program. This training circular is intended to be a ready reference and general source of guidance for leaders involved with making decisions that affect the environment. It is intended to help unit leaders prevent environmental damage. Additionally, it is applicable to staff officers who will likely find themselves confronted with environmental issues.

Intended as a "primer" on the environment this circular provides leaders with information on how to effectively integrate the Army's environmental program at the unit level. The information provided offers a level of detail needed for basic knowledge of key environmental issues. This basic knowledge will better enable unit leaders to work with their chain of command and installation environmental personnel in developing and maintaining the most effective environmental program possible, without sacrificing mission readiness.

**"It is not what we have that will
make us a great nation; it is the
way we use it."**

-- President Theodore Roosevelt



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Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

INTRODUCTION

For more than 200 years, the Army has been a vital force in US society, promoting national stability and defense while developing skills and techniques to enhance future operational effectiveness.

The Army is integral to the fabric of American society. The Army shares with all Americans their values of democracy, equal opportunity, and wise use of natural resources. The American people expect the Army to responsibly manage the resources entrusted to it.

The world environment has changed and priorities for tomorrow are different. The senior leadership of this country, as well as state and local authorities, has set in motion new laws governing the environment which affect the way the Army trains. These laws notwithstanding, all Americans have a legal and moral responsibility to protect the environment and to become good stewards.

ARMY ENVIRONMENTAL VISION STATEMENT

The Army will be a national leader in environmental and natural resource stewardship for present and future generations as an integral part of our mission.

The Army's environmental vision statement communicates its commitment to the environment. The vision defines the leadership role of the Army in environmental management. The vision is intended to inspire, direct, and empower soldiers at all levels to participate in managing change to ensure the future success of the Army and nation.

The main values and themes for a vision of the future are leadership, environmental stewardship, and protection of the environment as an integral part of the overall Army mission.

Leaders are responsible for both enforcing the laws and regulations and for instilling a sense of environmental awareness and responsibility in their soldiers.

CHAPTER 1

ARMY ENVIRONMENTAL STRATEGY

	Page
Background	1-1
Army Environmental Ethic	1-3
Strategy	1-3
Environmental Model	1-4
Goals and Policies	1-6

While senior leaders determine the direction and goals of training, it is the officers and noncommissioned officers (NCOs) at the brigade, battalion, company, and platoon levels who ensure that every training activity is well planned and rigorously executed.

All leaders are expected to serve as the Army's basic environmental stewards. They have a professional and personal responsibility to understand and support the Army's environmental program. This chapter provides these leaders with background information, key definitions, and a review of the Army's environmental model. This information will enable leaders to complete an assigned mission and conserve the fighting strength, while protecting the environment and conserving our natural resources.

Among the many challenges we in the United States Army face today, none is more crucial than the balancing of realistic training, dwindling resources and the preservation of our vital natural resources. We must remain trained and ready; we must protect the environment today and in the future. Just as we preserve and defend the freedom of this great country of ours, so must we also protect its finite and precious resources.

General Gordon Sullivan, Army Chief of Staff

1-1. Background. For years, the Department of Defense (DOD) and private industry believed that nature would take care of itself. This belief and the preparation for two world wars, numerous armed conflicts, and the growing threat of communism required the testing, development, and production of hazardous substances. This has resulted in an increased risk to the environment and human health. The magnitude of this problem is

large. To date, DOD has identified over 20,000 suspected toxic sites that require cleanup.

There has also been an assumption that natural resources were free and that it did not matter how military operations and facilities affected the environment. The Army now realizes that water pollution, air pollution, training-area abuses, and mismanagement of hazardous wastes at Army installations represent very real costs. These costs can include fees paid to state regulatory agencies, work hours used to clean up spills of hazardous substances, lost training areas, delays in projects, and negative impacts on training readiness. Pollution-prevention techniques often cost less than the costs of cleanup and adverse public opinion.

The intensive and continuous use of Army training areas has resulted in environmental damage in many locations. This damage includes-

- The loss of historical sites, vegetation, water resources, and wildlife.
- Diminished quality of available realistic training areas.
- Diminished operational security.
- Ineffective tactical operations.
- The creation of safety hazards to personnel and equipment.
- An increase in training, maintenance costs, and litigation.

For the Army to carry out its mission, leaders must decrease environmental damage and repair past harmful environmental impacts. The management of environmental resources is an important component to Army operations. Management will affect safety, military tactics, installation and unit budget, down time during field exercises, and local community and host-nation relations.

Environmental Ethic
We will take care of the environment
because it is the right thing to do.

1-2. Army Environmental Ethic. This ethic is the operating principle and value governing individual soldiers, units, and the Army. In relation to the environment, it means caring for the environment. By considering the effects of training, operations, and logistic activities on the environment and by managing hazardous material and hazardous waste properly, the possibility of causing damage to our environment can be reduced. Doing what is environmentally right helps to ensure that space will be available to conduct realistic training.

Stewardship is a key element of the Army environmental ethic. The Army is charged with protecting and defending the nation and its people, which includes safeguarding the environment. The Army has been entrusted with more than 12 million acres of federal land. This landmass (almost 19,000 square miles) is equivalent to almost half of the Commonwealth of Virginia. With this vast acreage, comes the responsibility of stewardship. The American people expect the Army to use and manage these resources wisely.

Environmental stewardship must be integrated into everything that units and soldiers do to-

- Enhance combat readiness.
- Ensure mission completion.
- Conserve the fighting strength.
- Protect the environment.
- Reduce the Army's and nation's current and future cost for environmental restoration.

Just as good training is key to winning wars on the battlefield, proper awareness and training play a critical role in ensuring the Army achieves its environmental stewardship vision.

1-3. Strategy. The Army's environmental strategy takes its direction from a vision and consists of goals, policies, and an implementation plan. Through the framework set out in this strategy, the Army strives to achieve

environmentally sustainable operations, improve national security, and enhance the quality of life. This entails four simultaneous efforts:

- Give immediate priority to sustained compliance with all environmental laws and regulations.
- Continue to restore previously contaminated sites as quickly as funds permit.
- Focus efforts on pollution prevention to reduce or eliminate pollution at the source.
- Conserve and preserve natural and cultural resources so they will be available for present and future generations.

1-4. Environmental Model. Figure 1-1 shows the Army’s environmental strategy model. This strategy is founded on the bedrock of shared national values, which tie the Army to the nation and give it stability. The key building blocks — people, resources, communication and management and organization — provide the foundation for all Army activities, to include environmental stewardship. These building blocks support the Army’s tradition of leadership. Strong commitment to each part of the foundation is critical to ensure a solid base for environmental initiatives and for long-term success. Army leadership, coupled with the building blocks, provides a

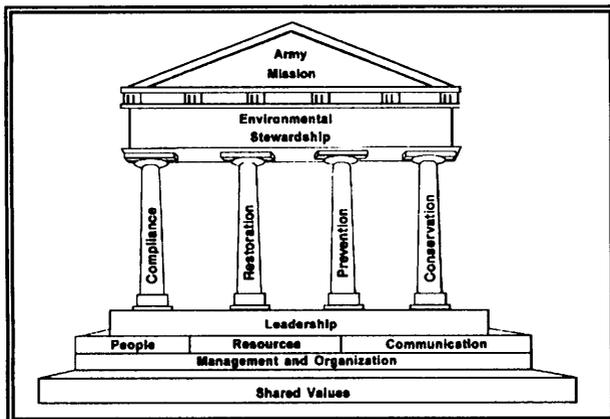
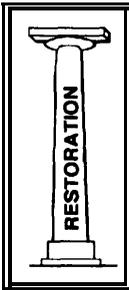
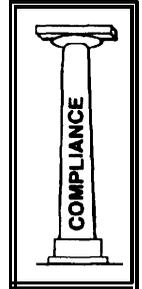


Figure 1-1. Army's environmental strategy model

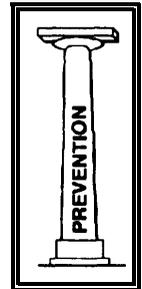
sound footing for the pillars of compliance, restoration, prevention, and conservation. These four pillars symbolize the Army's environmental program. Maximum support for the Army mission is realized when all four pillars are strong and well balanced.

a. *Compliance Pillar.* This pillar addresses all activities to ensure that current operations conducted on Army installations meet federal, state, local, and host-nation environmental requirements and Army regulations. The Army will sustain compliance at all sites in the US and abroad. It must also establish good relationships with communities and regulators.



b. *Restoration Pillar.* The restoration pillar includes all activities necessary to clean up contaminated sites at Army installations. The Army works closely with the other federal agencies, states and local governments, and host nations to define cleanup requirements and schedule for remediation activities.

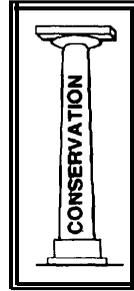
c. *Prevention Pillar.* This pillar focuses on eliminating pollution at the source; this includes reducing or eliminating hazardous-materials use and hazardous-waste generation. All phases of the material-management life cycle from cradle to grave are included. Prevention is generally achieved in a hierarchical process, starting with source reduction. The amount of waste generated is reduced by changing process inputs, seeking environmentally acceptable or less toxic material, or increasing efficiency by reusing materials and by-products and treating residuals before discharge.



Proactive prevention requires instilling an environmental ethic that changes behavior across the Army and helps to avoid future compliance and restoration problems.

d. *Conservation Pillar.* The conservation pillar includes two different types of resource management—conservation and preservation. Conservation focuses on responsibly using Army land to ensure long-term

natural-resource productivity so the Army can achieve its mission. Preservation which focuses on resource protection is essential for ensuring the future of valuable national resources. The Army exercises numerous preservation techniques and programs. These programs are exercised in concert with the US Soil Conservation Service, US Forest Service, US Fish and Wildlife Service, and other federal and state agencies. They are devoted to land use, conservation and maintenance of training areas, natural resources, and historic and cultural sites.



1-5. Goals and Policies. The Army adopted environmental quality goals to protect the environment and conserve our natural-resource heritage. These goals are to-

- Demonstrate leadership in environmental protection and improvement.
- Ensure that consideration of the environment is an integral part of Army decision making.
- Minimize adverse environmental and health impacts while maximizing readiness and strategic preparedness.
- Initiate aggressive action to comply with all applicable federal, state, regional, local and host-nation environmental laws.
- Support Army programs for recycling and reuse of materials to conserve natural resources, prevent pollution, and minimize the generation of wastes.

To be a leader in environmental stewardship requires environmental awareness and Commitment throughout the Army. All personnel, from incoming ranks to senior leaders must be sensitive to and responsible for the environment.

Achievement of environmental goals is an integral part of the Army mission. To this end, the Army has established the policies listed below:

- The environmental effects of any proposed action must be considered during the earliest stages and throughout the planning process.

- Programs and actions must be planned, initiated, and carried out so as to prevent, minimize, or mitigate degradation of the environment or endangerment of human health.
- Activities must be monitored to ensure they comply with federal, state, regional, local and host-nation environmental quality requirements.
- Weapon systems and energy resources must be procured and used so as to minimize pollution and waste generation. Wastes generated must be minimized, reprocessed, or reclaimed for other productive uses.
- Personnel must be encouraged to foster an appreciation of the Army's support of the environmental protection effort, and an understanding of the urgent need to protect and enhance the natural environment and conserve natural resources.
- Commanders at all levels must cooperate in community environmental action programs and must comply with the requirements of the Emergency Planning and Community Right-to-Know Act (EPCRA), as best they can.
- Historic and archeological sites, structures, and districts under Army jurisdiction that meet the criteria of the National Register of Historic Places must be managed in a spirit of stewardship for the inspiration and benefit of present and future generations.
- On lands under Army jurisdiction, an integrated, multi-use, natural-resource and land-management program must be conducted that promotes the conservation of natural and cultural resources.

Good leaders do not waste valuable and limited resources, and they do not permit their soldiers to do so.

CHAPTER 2

ENVIRONMENTAL LAWS AND THE UNIT

	Page
Sources of Environmental Laws and Regulations	2-1
Key Environmental Laws and Regulations	2-2
Environmental Penalties	2-8

Environmental issues are a major concern of the Army, and with emerging new laws and regulations, they will continue to have a growing impact on Army operations. Violations of federal, state, or local environmental laws can result in both civil and criminal penalties. Unit leaders must understand the laws and know what actions to take. They must also ensure that unit personnel are properly trained and that all requirements are complied with.

2-1. Sources of Environmental Laws and Regulations. Federal, state, local, and host-nation governments have established laws and regulations to protect human health and the natural and cultural resources from environmental degradation. Heightened environmental awareness by the public and the federal government has led agencies to develop policies to support regulatory compliance and stewardship.

Full compliance with applicable environmental laws and regulations is a necessary cost of doing business. To that end, the Army is committed to setting the standard for the DOD and other federal agencies as the leader in compliance with environmental laws, prevention of environmental damage, and the protection and stewardship of natural resources. In doing so, the Army is making a concerted effort to integrate environmental considerations into all Army activities.

The four primary sources of environmental law that influence Army actions are federal, state, local, and host nation. The Army will comply with these laws and regulations as they pertain to individual localities and installations.

a. *Federal Laws.* These laws provide states and federal agencies with a legal framework within which to operate. These include acts and executive orders. For example, the Federal Facilities Compliance Act

(FFCA) allows regulatory agencies to impose civil fines on other federal agencies, like the DA, for violations of the Resource Conservation and Recovery Act (RCRA). Paragraph 2-2 provides an overview of key federal environmental laws and regulations applicable to unit-level operations,

b. *State Law*. Each state has its own regulatory organization charged with developing and implementing environmental regulations. Many of the state regulations parallel federal environmental regulations and are often more stringent.

c. *Local Law*. Local laws and ordinances address the concerns of the local communities. Generally, they will be based on federal and state laws. However, each municipality or community may place more stringent restrictions on certain activities (noise restrictions during certain hours of the day).

d. *Host-Nation (HN) Law/Final Governing Standards (FGS)*. The Army is committed to pursuing an active role in addressing environmental quality issues in our relations with neighboring communities and assuring that consideration of the environment is an integral part of all decisions. Installations and units outside the continental United States (OCONUS) that are not subject to federal environmental regulations decreed by Environmental Protection Agency (EPA) will, in areas where a HN has minimal or no environmental laws and regulations, comply with Army Regulations (AR) 200-1 and 200-2. In countries where there are HN laws, the FGS will be used according to the executive agent of that country.

Given the state and local differences of environmental laws, soldiers need to understand that what is environmentally permissible on one installation may not be permissible on another. For example, some installations in the 48 contiguous states allow soldiers to dig “cat hole” latrines, but those in Alaska do not. Therefore, check with the appropriate installation personnel on state and local laws as they apply to your location.

2-2. Key Environmental Laws and Regulations. At most locations, installation environmental support personnel are available to help unit leaders understand the various laws and regulations. These support personnel include the chain of command and key installation personnel (Directorate of Public Works (DPW)/environmental officer, Staff Judge Advocate (SJA) attorneys, range officers, and so forth). Installation support

personnel are addressed in more detail in Chapter 6. Consult with the installation agencies on specific requirements.

Major laws and regulations that apply to unit leaders are described below. Appendix A provides supplementary information on these and other laws and regulations.

a. *National Environmental Policy Act (NEPA)*. NEPA directs the Army's stated environmental goals and policy. It requires federal officials to analyze potential environmental impacts of proposed actions and alternatives before making decisions. The law applies to all Army leaders and their activities. Its purpose is to encourage harmony with our physical environment, promote efforts that prevent or eliminate environmental degradation, and improve our understanding of relations between ecological systems and important natural resources. Figure 2-1 lists some NEPA requirements.

Unit leaders must—

- **Identify areas of environmental concerns.**
- **Identify mission-related environmental risks.**
- **Identify potential effects of environmental factors on missions and operations.**
- **Discuss environmental risks in training meetings and briefings.**
- **Identify alternative training scenarios and techniques.**
- **Consult installation environmental office personnel regarding requirements for NEPA documentation.**

Figure 2-1. NEPA requirements

b. *Resource Conservation and Recovery Act (RCRA)*. RCRA sets the nation's framework for managing hazardous wastes. Its regulations establish the standards for identifying, classifying, transporting, storing, treating, and disposing of hazardous wastes. RCRA also requires that those involved in managing hazardous wastes be properly trained. Figure 2-2 (page 2-4) lists RCRA requirements.

Nonhazardous Solid Waste
<p>Unit leaders must—</p> <ul style="list-style-type: none"> • Support the installation recycling program (ensure soldiers know why it exists). • Remove expended brass, communications wire, concertina, and trip wires immediately after a training exercise (recycle as appropriate). • Conduct police calls to collect and dispose of solid waste (trash). • Dispose of kitchen waste only as authorized; prohibit garbage burning/burying.
Hazardous Waste and Materials
<p>Unit leaders must—</p> <ul style="list-style-type: none"> • Ensure that the unit standing operating procedures (SOP) covers hazardous waste (HW) and hazardous material (HM), including spill contingencies. • Collect and turn in HW/HM according to local and installation procedures, both in garrison and in the field. • Properly clean up, report, and document any hazardous spills. • Transport HW according to local and installation procedures. • Report the location of any unexploded ordnance. • Conduct maintenance or use HM only after being trained. • Ensure that the unit environmental compliance officer/NCO is properly trained and that training is documented. • Maintain a current HM inventory and material safety data sheets (MSDS) for every HM in the unit. Provide a copy of the HM inventory to the fire department.

Figure 2-2. RCRA requirements

c. *Clean Water Act (CWA)*. CWA affects surface, groundwater, and stormwater protection, wetlands and coastal waters protection, and erosion control. CWA seeks to restore and maintain the chemical, physical, and biological integrity of the nation’s navigable waterways. It also establishes requirements for reporting oil and hazardous substances spills into waterways. Figure 2-3 lists CWA protection requirements.

Surface and Groundwater Protection

Unit leaders must—

- Know the locations of surface waters and groundwaters.
- Plan and conduct training, operations, and logistics activities to avoid surface-water and groundwater areas.
- Cross streams and ditches only at designated vehicle crossings.
- Ensure that soldiers use designated vehicle wash areas and do not perform maintenance or refuel vehicles or equipment where a spill can easily contaminate surface water or groundwater.
- Ensure that released or spilled vehicle fluids do not contaminate surface water and groundwater. Take immediate corrective action should oil or hazardous substance spills occur.
- Report all spill/releases as stated in the Installation Spill Contingency Plan.
- Use proper preventive medicine and sanitation procedures to prevent surface-water and groundwater contamination.
- Dispose of liquid waste from kitchens, showers, and bath properly.
- Avoid entering terrain drainage areas with vehicles unless the area is dry and the ground will support such activities.
- Ensure that soldiers do not pour chemicals into sinks or storm drains.

Wetlands and Coastal Water Areas Protection

Unit leaders must—

- Request a map of designated wetlands and coastal water areas from environmental office or range control.
- Ensure that soldiers are aware of wetland and coastal water areas and restrictions in each area.
- Plan and conduct training, operations, and logistics activities without contaminating or causing unnecessary damage to wetlands or coastal water areas.
- Ensure that soldiers use designated vehicle wash areas and do not perform maintenance or refuel vehicles or equipment in wetlands or coastal water areas.
- Cross streams and ditches at designated vehicle crossings.
- Ensure that permits are obtained before any operations resulting in dredging or filling of wetlands.

Figure 2-3. CWA protection

Erosion Control
Unit leaders must—
<ul style="list-style-type: none">• Verify range restrictions with range control.• Brief soldiers on environmental and safety considerations before field training.• Plan missions to reduce possibility of erosion. Do not use live vegetation in heavily used training areas. Do not drive or park vehicles close to trees. Do not cut trees without permission from range control and the installation forester.• Avoid compacting soil so water can no longer percolate through it.• Avoid tactical maneuvers in erosion susceptible areas and refill fighting positions.• Reduce maneuvers during periods of high rainfalls and saturated soil conditions.• Make maximum use of existing roads and trails.

Figure 2-3. CWA protection (continued)

d. *Clean Air Act (CAA)*. CAA requires preventing, controlling, and reducing air pollution from various sources (maintenance, logistics, and training). Vehicles, other than combat and heavy engineering equipment, require emission inspections in some areas of the country. Significant controls are also required on air toxins and ozone-depleting compounds, such as chlorofluorocarbons (CFCs). Figure 2-4 lists clean-air considerations.

Clean-Air Considerations
Unit leaders must—
<ul style="list-style-type: none">• Advise the chain of command about air-pollution sources.• Identify and correct sources of air pollution (dust control in training areas, excessive exhaust emissions from poorly maintained vehicles, and so forth).• Use riot control and smoke agents in approved training areas.

Figure 2-4. Clean-air considerations

e. *National Historic Preservation Act (NHPA)*. The purpose of NHPA is to help safeguard against the loss of irreplaceable historic, archeological, and cultural properties, especially on federal lands. Many Army facilities are located on historic and archeological sites, to include prehistoric settlements and 19th century cantonments. These places must be preserved. Figure 2-5 lists NHPA requirements.

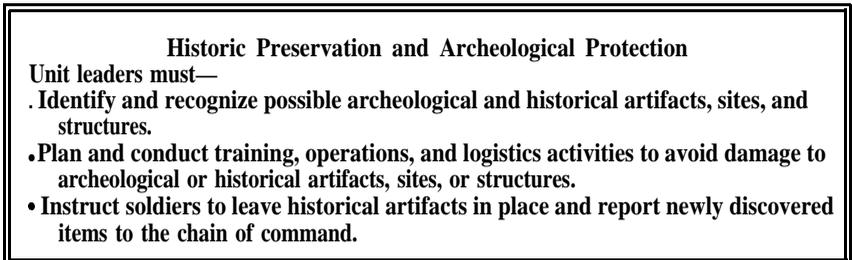


Figure 2-5. NHPA requirements

f. *Endangered Species Act (ESA)*. ESA prohibits actions that harm listed threatened or endangered species or their critical habitats. Figure 2-6 lists ES A requirements.

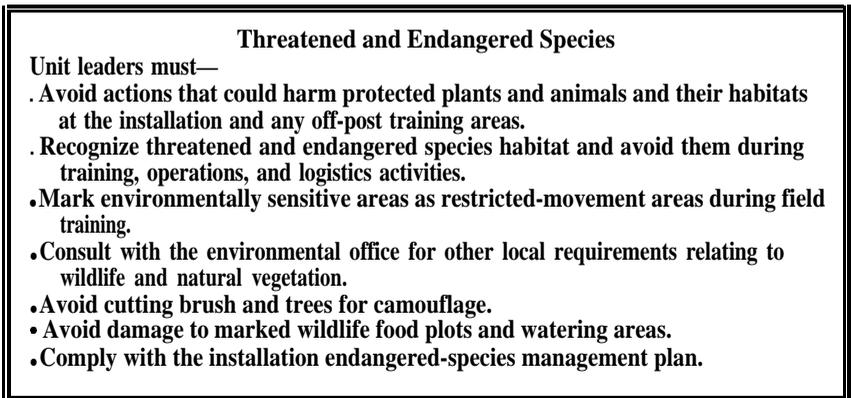


Figure 2-6. ESA requirements

g. *Noise Control Act*. This act enables EPA to establish noise standards. It regulates noise emissions from commercial products such as transportation and construction equipment. This act exempts weapons or equipment that are designated for combat



use. However, the Army's environmental noise-abatement program tries to achieve regulatory compliance in a manner consistent with mission accomplishment. Figure 2-7 lists noise-control requirements.

Noise Emissions	
Unit leaders must—	
• Comply with local and installation noise restrictions.	
• Maintain equipment to perform to maintenance specifications.	
• Check with range control to confirm installation compatible use zone (ICUZ) program requirements.	

Figure 2-7. Noise-control requirements

2-3. Environmental Penalties. Under the FFCA, the federal and state environmental regulatory agencies can impose civil fines on federal agencies, including the Army, for RCRA violations. For the Army, penalties can be fines, damage awards, and intervention from the EPA and other federal, state, and regional agencies. An additional consequence is an increase in monitoring by these agencies.



Unit leaders and their subordinates are required to comply with all federal, state, and local laws designed to protect the environment. Violators can be held personally liable for cleanup costs and civil or criminal penalties. Violators include the actual person who causes contamination and the commanders, supervisors, and leaders who allowed the contamination to occur and did not take immediate action to prevent or correct the occurrence. The penalty can be up to \$50,000 for each day of violation and/or up to two years in jail.

CHAPTER 3
DUTIES AND RESPONSIBILITIES

	Page
Soldiers	3-1
Unit Noncommissioned Officers	3-2
Unit Officers	3-3
Unit Commanders	3-4

Army operations can damage the environment. Unit leaders must consider the environmental impact of their unit's actions and plan to eliminate or minimize negative effects.

Soldiers and leaders must understand their specific duties and responsibilities concerning protection of the environment and comply with environmental laws and regulations. Soldiers are required to do what is right when specific guidance is lacking. Leaders must be competent and confident in the area of environmental stewardship. Not all leaders are environmental experts; however, they should be aware and responsive in those areas required to execute their duties.

3-1. Soldiers. Soldiers have the inherent professional and personal responsibility to understand and support the Army's environmental program. They should—

- a. Comply with installation environmental policies, unit SOPs, ARs, and environmental laws and regulations.
- b. Prevent environmental damage and pollution by applying environmental awareness to daily activities while making sound decisions that will not harm the environment.
- c. Advise the chain of command on techniques to ensure compliance with environmental regulatory requirements.
- d. Identify the environmental risks associated with individual and team tasks.

e. Support the Army's recycling program. Effective recycling programs at Army installations can produce sizeable annual savings or income. For example, Fort Benning, Georgia, received more than \$1.2 million in fiscal year (FY) 91. After deducting operating costs, the remaining funds can be used for environmental, safety, and morale-support projects.

f. Report HM and waste spills immediately.

g. Make sound environmental decisions in the absence of a supervisor or proper guidance by reviewing the following:

- Training.
- Guidance from the chain of command.
- Concept of right and wrong.



3-2. Unit Noncommissioned Officers.

The role of the NCO in environmental stewardship centers on building an environmental ethic in their soldiers. This means training and counseling soldiers on environmental stewardship, leading by example, and enforcing compliance with laws and regulations. NCOs should—

a. Apply environmental awareness to daily activities while making sound decisions that will not harm or minimize harm to the environment.

b. Communicate the Army's environmental ethic to soldiers while training them to be good environmental stewards.

c. Develop and sustain a positive and proactive commitment to environmental protection.

d. Identify the environmental risk associated with tasks.

e. Plan and conduct environmentally sustainable actions and training.

f. Protect the environment during training and other activities.

- g. Analyze the influence of environmental factors on mission accomplishment.
- h. Integrate environmental considerations into unit activities.
- i. Train peers and subordinates to identify the environmental effects of plans, actions, and missions.
- j. Counsel soldiers on the importance of protecting the environment and the possible consequences of not complying with environmental laws and regulations.
- k. Ensure that soldiers are familiar with the unit SOPS and supervise their compliance with laws and regulations.
- l. Incorporate environmental considerations in after-action reviews (AARs).
- m. Support the Army's recycling program
- n. Report HM and waste spills immediately.

3-3. Unit Officers. The role of officers in environmental stewardship centers on building an environmental ethic in their soldiers. Officers train and counsel their subordinate leaders on stewardship, lead by example, and enforce compliance with laws and regulations. They should—

- a. Apply environmental awareness to daily activities while making sound decisions that will not harm or minimize damage to the environment.
- b. Communicate the Army's environmental ethic to subordinates while training them to be good environmental stewards.
- c. Develop and sustain a positive and proactive commitment to environmental protection in subordinate leaders.
- d. Analyze the influence of environmental factors on mission accomplishment.
- e. Integrate environmental considerations into unit activities, to include identifying the environmental risks associated with unit tasks.

- f. Plan and conduct environmentally sustainable action and training.
- g. Protect the environment during all activities.
- h. Counsel subordinate leaders on the need to protect the environment and possible consequences of violating laws and regulations.
- i. Incorporate environmental considerations during AARs.
- j. Support the Army's recycling program.
- k. Report HM and waste spills.
- l. Ensure that subordinate leaders are familiar with the unit SOP and supervise their compliance with laws and regulations.

3-4. Unit Commanders. The commander's role in environmental stewardship centers on building an environmental ethic in their soldiers. The commander, who sets the tone regarding environmental compliance, is ultimately responsible for compliance with all applicable environmental laws and regulations in the unit. Commanders train their subordinate leaders on stewardship, counsel them on doing what is right, lead by example, and enforce compliance with laws and regulations. Commanders should—



- a. Apply environmental awareness to daily activities while making sound decisions that will not harm the environment and potential for training realism degradation.
- b. Be knowledgeable about the NEPA, HM and HW, hazardous communications (HAZCOM) efforts, and spill contingencies.
- c. Develop and sustain a positive and proactive commitment to environmental protection in subordinates. To do this, commanders should—
 - Communicate the environmental ethic to officers and NCOs while training them to be good environmental stewards.

- Counsel officers and NCOs on the importance of protecting the environment and the possible consequences of violating laws and regulations.
- Supervise officer and NCO compliance with environmental laws and regulations, to include complying with regulatory reporting requirements (hazardous substance spills).

d. Ensure that environmental concerns are addressed throughout the training cycle (evaluation, assessment, planning, execution, and after action). To do this, commanders should—

- Identify and assess the environmental consequences of proposed programs and activities. Use the “before,” “during,” and “after” checklists and risk-assessment matrices in Chapter 5.
- Plan and conduct training that complies with environmental laws and regulations, to include designating environmentally restricted areas as “off-limits” areas during training exercises.
- Discuss environmental considerations during briefings, meetings, and AARs.

e. Establish and sustain unit environmental awareness training.

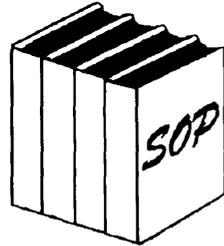
f. Appoint an environmental compliance officer and a HW coordinator (the same person can serve in both positions). These appointments are made to ensure that environmental compliance occurs at the unit level. Appointed personnel—

- Should receive formal training.
- Should act as an advisor on environmental regulatory compliance during training, operations, and logistics functions.
- Will be the commander’s eyes and ears for environmental matters, as the safety officer/NCO is for safety matters.
- Should function as the liaison between the unit and higher headquarters who are responsible for managing the environmental compliance programs and who can provide

information on training requirements and certifications that unit personnel need.

- Inspect HM and HW accumulation sites.
- Ensure that soldiers handling HM and HW are properly trained.

g. Ensure the unit's SOP covers environmental considerations, conservation, natural resources, and spill procedures. Appendix B contains a sample of the HM/HW portion of an SOP.



h. Support the Army's pollution prevention/recycling program.

i. Report HM and waste spills immediately.

j. Conduct environmental self-assessment (see Appendix C) or internal environmental compliance assessments.

k. Meet with key installation environmental points of contact (POC). See Chapter 6.

CHAPTER 4

UNIT-LEVEL ENVIRONMENTAL PROGRAMS

	Page
Unit-Level Programs	4-1
Training Requirements	4-10
Sources of Environmental Training	4-11
Program Assessment	4-12

Unit leaders set the tone for environmental compliance within their units. They bring focus, direction, and commitment to environmental protection. Their role requires them to demonstrate commitment, organize for success, train their units, resource the effort, and build the unit's environmental ethic. The success of the unit-level environmental program depends on receiving adequate guidance and support from the chain of command and installation environmental office, increasing communication at all levels, and establishing an effective management structure and committed leadership. Environmental awareness needs to be made a part of command policy and guidance and enhanced through the chain of command.

Leadership direction and support are needed to implement improvements in all facets of Army activities and operations to achieve environmental stewardship. Army leaders will ensure their effective implementation. To that end, unit leaders must ensure that their unit has active and strong environmental programs in place or supports the installation's environmental program. Typical programs that the unit leader needs to ensure are in place or supported are addressed in this chapter.

4-1. Unit-Level Programs. To set up an effective unit environmental program, the unit leader needs to-

- Begin with the basics — ensure all unit personnel have had environmental awareness training. The environmental training sources addressed later in this chapter provide information/POCs available for increasing environmental awareness.
- Designate an environmental compliance officer/HW coordinator who is properly trained and qualified This individual will interface

with appropriate environmental personnel and ensure that the unit is in compliance with environmental laws and regulations.

- Meet with key battalion operations and training officer (US Army) (S3), and supply officer (US Army) (S4), and installation personnel who deal with environmental issues. Find out what their requirements may be concerning environmental training and qualifications of unit personnel, Environmental Compliance Assessment System (ECAS) inspections that may affect the unit, and common environmental problem areas and how to avoid them.
- Ensure the unit has a well-written SOP that addresses environment issues and procedures that apply to the unit (coordinate environmental requirements with appropriate installation/chain of command personnel).

The following are environmental programs that the unit should have established (in house) or support (installation):

- HM management.
- HW management.
- HAZCOM.
- Pollution prevention and hazardous waste minimization (HAZMIN).
- Recycling program.
- Spill prevention/response plan.

a. *Hazardous Materials*. The Army's objective is to minimize health hazards and environmental damage caused by the use and misuse of HM. A hazardous material is one which, because of its quantity, concentration physical, chemical, or infectious characteristics, may—

- Cause, or significantly contribute to, an increase in mortality or an increase in serious, irreversible, or incapacitating reversible illness.
- Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

If your unit deals with HM, you should—

- Ensure the best management practices for all HM.
- Comply with all applicable regulations.
- Not stockpile HM; order and use only what is required.
- Use nonhazardous substitutes to the maximum extent practicable.
- Conserve resources through recovery, recycling, and reuse.
- Establish procedures to identify and correct management deficiencies.
- Establish a training program and ensure that required personnel are properly trained.
- Ensure that adequate spill-prevention and -control equipment are on hand.
- Coordinate training requirements with the chain of command and the installation environmental office/safety officer.
- Comply with the chain of command and installation HM requirements.
- Ensure compliance with special disposal/turn in of batteries.
- Establish HM spill procedures.
- Establish HM fire/explosion procedures.
- Establish emergency first-aid procedures.
- Ensure that adequate protective equipment is available.

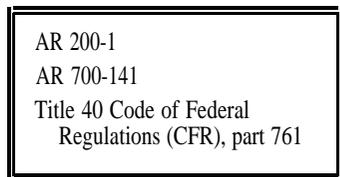


Figure 4-1 lists applicable HM references.

Figure 4-1. HM references

b. *Hazardous Waste*. The presence of HW may be a cause of concern among installation personnel or nearby residential populations. Yet, hazardous substances are an unavoidable fact of Army activities and ultimately result in some waste generation. The proper handling and disposal of these wastes will minimize dangers and ensure the safety of people and the environment. If your unit deals with HW, you should—

- Establish a HW management program to comply with HW regulations.
- Ensure that HW is properly identified. The correct danger and warning signs must be present on stored waste, and the containers that hold HW must be properly labeled.
- Ensure that wastes do not accumulate beyond allowable quantity and time limits.
- Maintain proper HW records, and report periodically, as required by EPA.
- Employ waste-minimization techniques (see paragraph 4.1.d, page 4-7).
- Ensure compliance with on-post HW transportation requirements. Contact installation Defense Reutilization and Marketing Office (DRMO) or Directorate of Logistics (DOL) for details.
- Ensure compliance with off-post HW transportation requirements. Public road use increases transportation requirements. Contact installation DOL/facilities management officer (FMO) for movement approval.
- Ensure that drivers transporting HW are qualified. Transporters of HM must be trained according to DOT HM 181 and 126F, by law.
- Establish a HW training program, and ensure the proper training of personnel occurs. Most installations conduct *HW train-the-trainer* programs.
- Maintain liaison with key chain of command and installation personnel.

- Appoint an environmental compliance officer for your unit.
- Ensure that the unit environmental compliance officer has sufficient support to carry out his/her duties.
- Ensure that unit personnel use their personal protective equipment (PPE) when handling HW.
- Ensure that adequate spill prevention and control equipment are on hand.
- Establish HW fire/ explosion procedures.
- Establish HW spill/leak procedures.
- Establish emergency first-aid procedures.
- Ensure that unauthorized storage or disposal of HW does not occur. HW must be stored only in authorized containers and disposed of as directed by environmental office/DRMO.

AR 200-1
AR 420-47
RCRA
Title 29 CFR, part 1910
Title 40 CFR, part 259
Title 40 CFR, parts 260 through 281
Title 40 CFR, parts 300 through 302
Title 40 CFR, part 761
Title 49 CFR, parts 106 through 178
Technical Manual (TM) 38-410

Figure 4-2 lists applicable HW references.

Figure 4-2. H W references

c. Hazardous Communications.

An effective HAZCOM program will assist leaders in determining what hazardous chemicals are present in their units, how to protect their soldiers from hazards those chemicals present, and how to properly store and use those chemicals. The installation safety officer is the POC for most HAZCOM matters (MSDS program and HAZCOM training program).

In support of HAZCOM, unit leaders should—

- Ensure that their subordinates receive adequate training on HM to which they are exposed to in the workspace (Occupational Safety and Health Act (OSHA) requirement).

On/ 13 April 1994, 1SG Smith became the First Sergeant of Company C, 3/151st Infantry, Fort Yukon. One of his first actions was to conduct a walk through the unit area with the platoon sergeants. While in the 2nd platoon's area, the 1SG found a locked room, which the platoon sergeant unlocked. Inside was a collection of cnas, bottles, and other containers filled with various soivents and cleaning products. The 1SG told the platoon sergeant to clean up the room. The platoon sergeant passed on the order to the squad leader responsible for the room. The squad leader and his squad quickly removed the room's contents, placing the various containers in the dumpster behind the dining facility. Shortly thereafter, mess personnel placed lunch meal waste into the same dumpster. Almost immediately, the dumpster began to burn and ;et off large amounts of strange looking smoke. The Fort Yukon Fire Department was called. Upon arrivai, the fire chief noticed the smoke's strange color and odor, and determined that it was a chemical fire. Subsequent inquiry determined that the unit's personnei needed training on identifying, storing, and disposing of hazardous material and hazardous waste. The unit's leaders learned that precise Orders needed to be given and that those receiving them should seek clarification for unclear matters.

Would this Incident have happened in the first place had this unit had effective unit-level environmental programs?

- Maintain an up-to-date list of all HM/HW known to be present in their area.
- Ensure that containers of hazardous substances are labeled,~ tagged, or otherwise marked to identify the material and warn soldiers of hazards.
- Maintain a MSDS for every HM in their unit (see Appendix D).
- Ensure that soldiers are trained to recognize, understand, and use MSDS and labels for the HM they use.
- Ensure that soldiers use proper procedures when working with hazardous substances.

AR 40-5
 AR 385-10
 AR 700-141
 Title 29 CFR, part 1910

Figure 4-3 lists applicable HAZCOM references.

Figure 4-3. HAZCOM references

d. *Pollution Prevention and Hazardous-Waste Minimization.* This program compliments the HM/HW/ HAZCOM program. HAZMIN means reducing the amount and toxicity of the HW generated or produced. Pollution prevention means reducing the amount of material whether it is hazardous or not; for example, recycling/reusing to reduce the amount of trash that goes into landfills.

Unit leaders should ensure that their units conduct inventory control. A unit should not stockpile HM. If a HM has an expired shelf life, it can cost much more to dispose of the item than it did to obtain it. The HM will have to be handled as a HW.

Product substitution is an easy way to reduce HW generation. Unit personnel should review the HM inventory in their areas and check if there are substitutes available that are nonhazardous or less hazardous. Examples would be solvent usage or replacing the sand used in sandblasting operations with plastic beads, which last longer and can be recycled.

A process change can reduce the amount of HW generated. Using a vapor degreaser could be replaced by using a soap-and-hot-water parts cleaner. Changing processes in painting operations can reduce overspray and pollution. However, the water still needs to be treated as HW, since paint particles can become waste material.

Figure 4-4 lists applicable pollution prevention and HAZMIN references.

AR 200-1 EPA/625/7-88/003 Executive Order 12856 Title III, Clean Air Act Amendments of 1990 (PL101 - 549) Title 40 CFR, part 262.41 United States Army Environmental Hygiene Agency (USAEHA), Trainer's Guide (TG) No. 178 Environmental Product Guide
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Figure 4-4. Pollution-prevention and HAZMIN references

e. *Recycling Program.* The Army is promoting increased use of product separation, substituting materials and changing procedures to avoid the use of hazardous substances (source reduction), and recycling to reduce the volume of solid waste. Most installations have a recycling program. To support that program, personnel should—

- Ensure that all recyclable materials are being recycled. Recyclable materials include computer printouts, corrugated cardboard, computer punch cards, newspaper, high-grade white paper, aluminum cans, plastics, oil, solvents, glass, steel, and brass. Check with the installation environmental office to verify the material being recycled for your location.
 - Ensure that recycling material source is separated. Contaminated material must be removed from recyclable.

AR 200-1 Executive Order 12873

Figure 4-5 lists applicable recycling references.

Figure 4-5. Recycling references

f. *Spill Prevention and Response Plan.* It is Army policy and the Clean Water Act requirement to prevent spills of oil and hazardous substances and to provide prompt response to contain and clean up spills. The discharge of oil or hazardous substance from installations, vehicles, aircraft, and watercraft into the environment without a discharge permit is prohibited. Exceptions will be made in cases of extreme emergency where the discharge is—

- Considered essential to protect human life.
- Authorized by a discharge permit or installation on-scene coordinator (IOSC) during a spill-incident response.

Every reasonable precaution should be taken to prevent spills of oil and hazardous substances. The unit leader should—

- Ensure that facilities are provided to store, handle, or use oils and hazardous substances and proper safety and security measures are implemented.
- Appoint a spill coordinator and members of the unit spill response team. This designation should be in writing.
- Maintain an up-to-date spill-response plan. This is an installation requirement.

- Conduct periodic spill-response drills.
- Ensure that sufficient equipment and supplies (absorbent materials) for spill responses are on hand and pre-positioned in the unit.
- Locate all drains, drainage ditches, streams, ponds, and so forth in the area, and plan how you will prevent a spill from reaching them,
- Coordinate with the installation safety office, preventive medicine office, and environmental office to determine the proper PPE and to know when to attempt to cleanup a spill and when to leave the area and contact the installation spill response team for cleanup. This will be determined by the installation environmental office and/or spill-response team.
- Maintain a copy of the Installation Spill Contingency Plan (ISCP). Some of the information you will need is contained in this plan. This is available from the environmental office.
- Maintain a current list of names and phone numbers of those who may need to be contacted—fire department, safety office, provost marshal, preventive medicine, environmental office, and so forth.
- Maintain an up-to-date inventory of all HM/HW; provide a copy to the post fire department so they can use in case of a chemical fire.
- Ensure that pollutants are not discharged into storm or washrack drains or poured on the ground.
- Ensure that small spills are properly attended to, cleaned up, and collected. Contaminated soil needs to be properly disposed of. Contact the installation environmental office for additional information
- Strictly control the discharge of ballast water from watercraft.
- Ensure that treatment of waste oil will comply with all applicable federal, state, and local requirements.

- Ensure that wastes produced during the cleaning of fuel storage tanks and combustion-engine components are collected and treated to required levels before discharge.
- Monitor wastewater discharges containing oil or hazardous substances to comply with permit limits.
- Ensure that oil, fuel, or other hazardous pollutant spills are reported to the environmental office and higher headquarters. The battalion S4 and the post environmental office can provide information on reportable spill quantities.
- Establish HM/HW fire/explosion procedures.
- Establish emergency first-aid procedures.

<p>General: AR 200-1</p> <p>Oil: Title 40 CFR, part 110</p> <p>Hazardous substances: Title 40 CFR, part 302</p> <p>Extremely hazardous substances: Title 40 CFR, part 355</p>

Figure 4-6 lists applicable spill-prevention references.

Figure 4-6. Spill-prevention references

4-2. Training Requirements. Training is the key to accomplishing the mission. All military personnel should have environmental awareness training because it leads to safer performance and establishes an environmental ethic among soldiers. Training should occur as early as possible in their careers and should be reinforced as they progress professionally.

In addition to general environmental awareness training, specialized training is required based on certain duties and responsibilities. Some of this specialized environmental training and much of the awareness training can be addressed most appropriately through integrated instruction or supplemental material as part of the ongoing unit training programs for technical skills and leadership duties.

4-3. Sources of Environmental Training.

a. *Service Schools.* Service schools will provide environmental awareness training for soldiers as they attend professional development courses. The training will provide general knowledge of the impact on their decisions/actions, human health issues, environment, and the integration of environmental ethic. Environmental awareness training will be taught at all levels from initial entry training to the graduates of the pre-command course. The US Army Engineer Center is the proponent for this training.

b. *Army Correspondence Course Program (ACCP).* The ACCP provides the student with a variety of environmental lessons they can select from. A sampling of subjects includes environmental protection, defense hazardous materials and waste handling, hazardous materials handling, hazardous materials - a citizen orientation Students in this program satisfy their own particular training needs. To enroll, individuals must follow the procedures for enrollment in DA Pamphlet 351-20.

c. *Unit.* The Engineer school is the proponent for the unit training program for each company-size unit. This training program assists commanders to better prepare their unit personnel to face environmental issues and eliminate environmental constraints that affect their mission. This training program stresses the before, during, and after operations checks commanders can use to help them prepare their unit for a field training exercise. Unit commanders are responsible for the training of their soldiers. Commanders at all levels of command should develop their own training program to ensure that personnel are fully aware of their responsibility as stewards of the environment.

d. *Installation.* Many installations (including OCONUS) currently provide a training program for required specific training (unit environmental compliance officers and spill coordinators). In the future, expect to see a training package to familiarize soldiers and their families on environmental issues when assigned to a new duty station.

e. *Other Training.* To support the needs of commanders at all command levels, other environmental training is currently available. Contact each training proponent for a listing of courses and training programs.

TYPE OF TRAINING

PROPONENT

Soldier Training
Unit Level

United States Army Engineer Center and
Fort Leonard Wood
ATTN: ATSE-T-TLL
Fort Leonard Wood, MO 65473
TEL: 3 14/563-4122

Managerial
(including HW)

Department of the Army
US Army Logistics Management College
ATTN: ATSZ-ATR
Fort Lee, VA 23801-6040
TEL: 804/765-41 73/4803

Scientific/
Technical

United States Army Engineer Division
ATTN: CEHND-TD-ET
Huntsville, AL 35807-4301
TEL: 205/722-5816

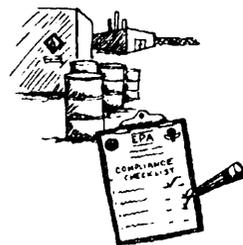
Hands-On
Occupational

United States Army Field Artillery Center
(and Fort Sill
ATTN: ATZR-BT
Center for Environmental Initiatives and
Hands-On Training (CEIHOT)
Fort Sill, OK 73503-5100
TEL: 405/351-21 11

4-4. Program Assessment. Environmental compliance status can be determined through a formal inspection by a regulatory agency. It can also be determined through self inspections using ECAS checklists as a guide. Non-Army regulatory agencies have the legal right and responsibility to inspect units and individual facilities and actions to ensure compliance. Often the first indication that federal, state, or other inspectors are on post is when they drop into the installation environmental coordinator's office, or the provost marshal's office, asking for directions to a specific site on the installation.

Once a year, EPA inspectors conduct spot inspections of installations, often without notice. Local and state inspectors also conduct frequent inspections. Regulatory inspections often concentrate on a particular area, such as HW management. Inspection frequency guidelines have been established under the EPA Federal Facility Compliance Strategy. For

example, inspections for HW facilities under the RCRA generally occur annually. Inspections in other programs may occur at different frequencies. Installations and units with specific major problems can expect more frequent follow-up inspections.



The Army established the ECAS as a means of achieving and monitoring compliance with applicable federal, state, regional, and local environmental laws and regulations. In addition, the Army uses compliance assessment as a vehicle for attaining Army environmental program goals and improving program visibility. If your unit deals with HW and HM, you are required to conduct internal inspections. HW coordinators for larger units can request a copy of the ECAS protocol to assist in developing inspections and recordkeeping plans. However, the installation HW management plan should normally contain information sufficient to develop an inspection plan for HW generation points and accumulation sites at the unit level. Contact your environmental office for an ECAS protocol if you want to conduct an internal/self-compliance assessment.

OCONUS commanders determine the scope for ECAS within their commands. They often implement procedures to ensure compliance with applicable host nation, Status of Forces Agreement (SOFA), and FGS requirements, as well as the requirements of AR 200-1 and AR 200-2.

Battalion S3 and S4 personnel can help in ensuring compliance. Appendix C has a generic aid that can be used to assess unit environmental compliance status. The battalion staff or installation environmental office may have similar aids specific to a unit or location. Key installation and personnel for compliance assistance are discussed in Chapter 6.

Chapter 5

Risk Management During Unit Training and Military Operations

	Page
Risk Management	5-1
Actions Before Training	5-2
Actions During Training	5-6
Actions After Training	5-9
Environmental Risk-Assessment Matrices	5-9
Practical Application of Environmental Risk-Assessment Matrices	5-11
Risk Reduction	5-16

The purpose of this chapter is to help leaders assess and reduce environmental damages while optimizing battle focused training and task performance to ensure mission completion. Although all damages cannot be eliminated, unit leaders must identify actions that may negatively impact the environment and take appropriate steps to reduce any damage.

5-1. Risk Management. Leaders must identify the environmental risks and eliminate or reduce these risks whenever possible by modifying task conditions. They must also ensure that all soldiers understand their responsibilities and perform all tasks to standards.

Environmental issues that have a positive impact on Army installations include-

- A viable program for protecting the environment and its resources.
- Wildlife habitat, forest, and land-use management.
- The preservation of prime and unique agricultural lands.
- Recycling programs.
- The conservation of threatened and endangered species.

Environmental issues that may have a negative impact include-

- Noise pollution (artillery firing and helicopters).
- Air pollution (vehicle exhaust, hydrocarbon vapor emissions from paint shops and degreasing operations, open-air fires, and dust from tracked-vehicle movement).
- Water pollution (oil and hazardous-material spills, runoff from construction activities, and habitat modification or destruction).
- Soil erosion (tracked-vehicle movement and construction) and land-use effects (habitat modification or destruction, damage to forest vegetation and archeological sites, contamination by toxic substances).

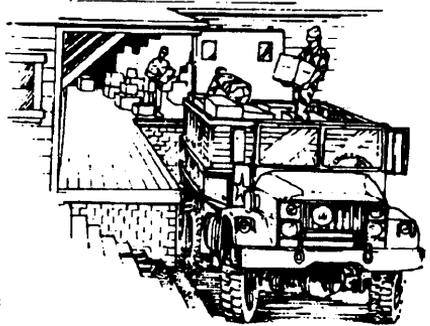
First-line leaders are expected to make decisions concerning environmental protection every day, often under adverse or unexpected conditions. Since failure to make intelligent decisions in a timely manner can result in serious damage to the environment, they must have a method of assessing and reducing the risks involved. Leaders using the before, during, and after checklists and the environmental risk-assessment process defined in this chapter can determine the environmental considerations that will affect the operations. The identified environmental considerations should be part of the training-management cycle, as defined in FM 25-101, in preparing long-, short-, and near-term plans and just before conducting training (environmental briefings to soldiers).

5-2. Actions Before Training. Preexecution checks are the informal planning and coordination conducted before training execution. They are developed to prepare soldiers, trainers, and resources systematically so that training execution starts properly. These check are developed, and the responsibility for their execution is fixed, during the short-range planning phase. They become increasingly detailed during the near-term phase. Preexecution checks provide the attention to detail needed to use resources efficiently and minimize environmental damage. The before checklist provided in this chapter is a start point and should be modified to be unit specific.

While preparing for training, leaders should review typical problems that apply to the training they are about to conduct, which they may obtain from a review of lessons learned and after-action reports (AARs) from

previous operations. In this way, leaders can avoid making similar mistakes. Range control, safety office, environmental office, and the chain of command can help provide this information. In addition, leaders should review higher headquarters SOPs and directives (operational plans and letters of instruction),

Training preparation should include a review of the unit's SOP concerning environmental protection such as spill-response. Units must have the necessary tools and supplies on hand for the training exercise; the personnel designated for the spill-response team must be aware of their assignments and be properly trained. Unit commanders must ensure that their personnel are aware of procedures for requesting additional spill assistance and of the correct reporting procedures, when required.



Leaders can use the following checklist in their before-training planning and activities. This checklist is not all inclusive and should be supplemented to fit your unique unit and mission requirements.

Checklist of Actions Before Training

General

- Are environmental considerations part of training conditions and standards?
- Are leaders including the 'environmental considerations,' in the long-, short-, and near-term planning?
- Are forecasted weather considerations included in planned training?
- Are alternative missions planned?

Checklist of Actions Before Training (continued)

Area of Operation

- Has range clearance been obtained?
- Have special land-use permits been obtained?
- Are areas of environmental concern verified during site reconnaissance?
- Are leaders reviewing previous environmental issues and problems that are applicable to the operations/training about to be conducted to identify lessons learned and plan preventive measures?

Personnel Preparation

- Do soldiers understand their responsibilities in reducing generation of HW and minimizing damage to the environment?
- Have all soldiers been briefed on range restrictions, endangered species, the appropriate use of vegetation for camouflage, archeological sites, and other sensitive environmental resources?
- Are identified environmental risks discussed in unit training meetings?
- Are transporters of HM trained according to DOT HM 181 and 126F?

Operations Preparation

- Has an environmental risk-assessment been performed?
- Are rehearsals conducted to ensure that all safety and environmental considerations are satisfied?
- Has the unit's SOP been reviewed for procedures concerning environmental protection?
- When the unit transports hazardous materials (explosives, and petroleum, oil, and lubricants (POL)), are the materials checked to ensure that they are properly labeled and that a MSDS is present for each substance?
- Are provisions made for handling medical wastes (if applicable)?
- Are provisions made for handling human and solid wastes?
- Are needed tools, equipment, and materials available to respond to environmental emergencies?
- Are personnel designated for the spill-response team(s) properly trained and aware of their assignment?
- Are team members aware of the procedure for requesting additional spill assistance if required?
- Has all training received by the spill-response team(s) been documented and placed on file in the unit?

Checklist of Actions Before Training (continued)**Chain of Command**

- Have the battalion commander and the S3 been briefed on the training plan?

Unit Specific Items

-
-
-
-
-
-
-



5-3. Actions During Training. During training operations, leaders must check to ensure that environmental restrictions and preventive measures are being observed. Specifically, they can minimize environmental damage by employing the listed techniques during training. This checklist should be supplemented to fit the unique unit and mission requirements and should be reviewed and understood before the actual execution of the planned activities. Leaders should consider what must be done to accomplish planned activities and organize and allocate sufficient resources to each element (training objectives, environment, safety, time, and so forth).

Checklist of Actions During Training

General

- Are all unit personnel knowledgeable of “off-limits” areas?
- Do you have approval for fighting positions, tank ditches, and so forth?
- Are range conditions and restrictions known?
- Is downtime used for conducting hip-pocket training on environmental concerns?
- Are leaders monitoring high-risk operations and activities?

Noise Reduction

- Are leaders explaining about and marking hazardous-noise areas?
- Are units avoiding unnecessary noise by not revving engines?
- Are units complying with community/installation noise-abatement hours?
- Are vehicles avoiding unnecessary noise by obeying speed limits?

Minimizing Vehicle-Movement Damage

- Are soldiers driving vehicles on secondary roads and bypasses whenever possible to minimize on-road damage?
- Are soldiers moving vehicles into bivouac or assembly areas in columns?
- Are soldiers designated to remove mud and debris immediately from roadways?
- When soldiers drive off road, do they stay on marked trails and routes, thus minimizing cross-country movement?
- Do soldiers drive carefully in wooded areas to avoid vehicle damage to vegetation?
- Do soldiers cross streams and ditches only at approved crossings?

Checklist of Actions During Training (continued)

Wetlands (marshes, swamps, bogs)

- Is a special permit obtained (if required) to train in the wetland areas?
- Are sensitive and “off-limits” areas designated and well marked?
- If possible, is the use of vehicles and other destructive activities avoided?
- Are soldiers using designated bridges and crossing sites, when driving?
- Are units avoiding discharging wastewater into wetlands or waterways?
- Are units prohibiting refueling or field-maintenance operations near or in wetlands or surface waters?
- Are units avoiding filling any wetland areas?

Threatened/Endangered Species and Other Protected

Wildlife/Vegetation/Habitat

- Are soldiers exercising due care in not disturbing/destroying threatened/endangered species, habitats, and sensitive areas?
- Are sensitive areas marked off?

Cultural Resources

- Are units avoiding digging in or near these sites or structures?
- Are soldiers instructed to not modify or destroy these sites in any way?
- Do soldiers understand that the destruction or defacing of archeological sites is a violation of the law?
- Are soldiers instructed to report immediately the discovery of any artifacts and wait for clearance to resume training?

Camouflage

- Are units exercising care that ground cover is not stripped bare of vegetation?
- Are units using camouflage nets, whenever possible, instead of live vegetation?
- Are soldiers briefed concerning the local camouflage policy?

Waste Disposal

- Is each unit policing its training area?
- Are units establishing designated collection points for proper trash disposal?
- Are field-kitchen wastes being disposed only as authorized?

Checklist of Actions During Training (continued)

Waste Disposal (continued)

- Are medical and human wastes being disposed in an approved manner?
- Are units following local policies and procedures (outlined in Field Manual (FM) 21-1 O) when disposing of liquid waste from kitchens, showers, and baths?

Hazardous Material and Waste Handling

- Are units complying with the installation environmental management office (EMO) procedures for the turn in and disposal of hazardous waste?
- Are units obtaining approval before using a riot-control chemical agent (CS) and smoke?
- Are unexploded munitions being properly marked and reported?
- Are units minimizing the use of hazardous chemicals?
- Are units placing hazardous waste and POL waste products in separate containers?
- Are units delivering hazardous waste and POL waste products to a designated waste-collection point?
- Are units ensuring that POL and vehicle maintenance waste products are not dumped into sewers, ditches, or streams?
- Are spill teams designated and trained?
- Are needed spill-response equipment and material available?
- Are spill teams responding immediately to reported spill locations?
- Are spill teams trained on fire/explosion procedures?
- Are spill teams trained in emergency first aid?
- Are spills reported as required by local regulations and unit SOP?

Refueling and Maintenance

- Are vehicles refueling only at designated sites?
- Are soldiers protecting ground surfaces, using POL drip pans?
- Are units ensuring that POL-absorbing compounds are present during refueling operations?
- Are units avoiding the performance of field services and maintenance activities near wetlands, streams, or other bodies of water?

5-4. Actions After Training. As with other training objectives, performance in the environmental area should be included in the AAR process. A discussion of actions that were environmentally correct and incorrect will provide the basis on which to instill a sense of environmental stewardship in unit personnel. This has proven to be effective in helping soldiers learn and develop from each other. Ensure that all the environmental considerations listed in the training evaluation plan are covered in the review.

Checklist of Actions After Training

- Are units avoiding washing vehicles in natural bodies of water and using only designated vehicle wash facilities and equipment?
- Are fighting positions, gun emplacements, and other holes being properly refilled?
- Are communications and barrier wires being collected?
- Are all wastes (litter, ammo brass, and so forth) being properly policed and removed?
- Are unexploded munitions being properly marked and reported?
- Are hazardous spills being reported and cleaned up?
- Are leaders inspecting the range and training areas before obtaining range control clearance?
- During assessment of soldiers' proficiency, has it been noted how well they understand and followed environmental requirements?
- Are environmental concerns addressed in the unit's evaluation report and included in AARs?

5-5. Environmental Risk-Assessment Matrices. The environmental risk-assessment matrices can be used to identify planned activities that may needlessly damage the environment, make adjustments to the planned actions, and minimize adverse effects on the environment without impairing the Army's mission. Unit leaders should assess all training for inherent environmental risks or hazards as an integral part of training meetings and training briefs. To be effective, leaders must employ those controls that have the greatest payoff in risk reduction. A written environmental risk assessment should be completed before conducting training, operations, or logistics activities, which could adversely affect the environment.

An environmental risk assessment allows commanders and leaders to address the environmental considerations using the following steps:

- Step 1. Identify the hazards to the environment during mission analysis. Environmental hazards are conditions that have the potential of polluting the air, soil, water and/or degrading natural/cultural resources.
- Step 2. Assess probability of environmental damage/violations using environmental risk-assessment matrices.
- Step 3. Make decisions and develop measures to reduce high risks.
- Step 4. Brief chain of command (to include the installation environmental office, if applicable) and appropriate decision maker on proposed plans and residual risk.
- Step 5. Implement environmental measures by integrating them into plans, orders, SOPS, training performance standards, and rehearsals.
- Step 6. Supervise and enforce environmental standards. Train to the standard.

The environmental risk-assessment matrix (Table 5-1) provides an approach to assess the relative risk of generic unit-level activities on specific environmental areas. Each environmental risk-assessment matrix has three main areas.

a. *Environmental Area.*

- Air pollution.
- Archeological and historic sites.
- Hazardous materials and hazardous waste.
- Noise pollution.
- Threatened and endangered species.
- Water pollution.

- Wetland protection.

b. *Unit Operations (Company-Level Activities).*

- Movement of heavy vehicles and systems.
- Movement of personnel and light vehicles/systems.
- Assembly-area activities.
- Field maintenance of equipment.
- Garrison maintenance of equipment.

c. *Risk Impact Value (Numeric Value).* The value represents an estimate of the conditions under which the unit will operate and is an indicator of the severity of environmental degradation. Table 5-1 uses a scale of 0 to 5, with 5 representing the greatest risk value.

Table 5-1. Environmental risk-assessment matrix

Environmental Area						Rating
Unit Operations	Risk Impact					
Movement of heavy vehicles and systems	5	4	3	2	1	0
Movement of personnel and light vehicles/systems	5	4	3	2	1	0
Assembly-area activities	5	4	3	2	1	0
Field maintenance of equipment	5	4	3	2	1	0
Garrison maintenance of equipment	5	4	3	2	1	0

5-6. Practical Application of Environmental Risk-Assessment Matrices.

The following scenario provides a practical application of the seven environmental area matrices:

The 2/151st Infantry (Mech) will conduct a unit-level field training exercise (FTX) in Anatumak Training Area of Fort Yukon, which is many miles from any civilian areas. The area has hills, wetlands, several winding streams, and one large river. The wetlands are identified and marked. Command and control are adequate. The FTX will involve normal operations (12-16 hours a day), with no night or limited visibility operations. The forecasted weather will not adversely affect operations. The soldiers are somewhat familiar with terrain, which contains some identified and marked-off archeological sites. The training area contains the habitats for two endangered species, which are marked off and posted. In addition, the soldiers will be briefed on the endangered species. Although only minor maintenance will be done in the training area, adequate spill cleanup materials are available, if needed. However, the experience of the battalion's soldiers in responding to hazardous material or waste spills is untested. The soldiers' tactical and environmental proficiency is low.

Based on the scenario, the unit commander and other unit leaders perform the following steps for assessing environmental impacts on planned activities.

a. *Step 1.* Identify the hazards to the environment during mission analysis. Unit leaders must identify the following possible hazards: degradation of wetlands, polluting streams, disturbing endangered species habitat and archeological sites/or structures, creating oil spills, and improperly handling HW and HM.

b. *Step 2.* Assess probability of environmental damage/violations using environmental risk-assessment matrices. Using the above example, leaders assess their planned activities on water pollution, one of the seven environmental areas. The planners first consider the risk impact value (see contributing factors for water pollution in Appendix F) on each of the possible types of unit operations. The numeric value does not have to include all contributing factors; it is a subjective, overall risk-impact value representing the worst-case situation. The following shows how planners assigned a rating to the water-pollution factor:

(1) Since the units will be moving into and through an area that has numerous water sources with heavy vehicles, planners realize there is a real chance of spills that would affect surface waters. They assign a risk impact of 5 for the movement of heavy vehicles and systems.

(2) Once units are in an assigned training area, they conduct dismounted operations. The planners assign a risk impact of 2 for the movement of personnel and light vehicles/systems.

(3) Planners consider the risk impact to be 3 for assembly area activities because of the chance of a substantial spill during that phase.

(4) Field maintenance of equipment is assigned a 2 because of planned minor maintenance and availability of adequate cleanup material.

(5) Garrison maintenance of equipment is assigned a 0; it does not apply for this planned exercise (see Table 5-2).

Table 5-2. Water pollution example

Environmental Area	Water Pollution						Rating 12
Unit Operations	Risk Impact						
Movement of heavy vehicles and systems	⑤	4	3	2	1	0	
Movement of personnel and light vehicles/systems	5	4	3	②	1	0	
Assembly-area activities	5	4	③	2	1	0	
Field maintenance of equipment	5	4	3	②	1	0	
Garrison maintenance of equipment	5	4	3	2	1	①	

The environmental risk assessment is repeated for each of the other applicable environmental matrices. For illustrative purposes, assume the following matrices values (ratings): air pollution, 4; archeological sites, 7; hazardous materials and waste, 6; noise pollution, 2; threatened and endangered species, 2; water pollution, 12; and wetland protection, 10. These values are transcribed to the format in Table 5-3 (page 5-14).

Overall, risks fall into 1 of 4 categories: low risk (0-58), medium risk (59- 117), high risk (118- 149), or extremely high risk (150- 175) (see Table 5-4, page 5-15). These ranges are based on using all seven environmental matrices (air pollution, archeological sites, hazardous materials and waste, noise pollution, threatened and endangered species, water pollution, and wetland protection).

Table 5-3. Overall environmental risk-assessment format

Environmental Area	Unit Operations					Risk rating
	Movement of heavy vehicles and systems	Movement of personnel and light vehicles/systems	Assembly area activities	Field maintenance of equipment	Garrison maintenance of equipment	
Air pollution	2	1	0	1	0	4
Archeological and historical sites	3	3	0	1	0	7
Hazardous material and hazardous waste	2	1	1	2	0	6
Noise pollution	1	0	1	0	0	2
Threatened and endangered species	1	1	0	0	0	2
Water pollution	5	2	3	2	0	12
Wetland protection	5	2	1	2	0	10
Overall rating	19	10	6	8	0	43

Table 5-4. Risk categories

Category	Range	Environmental Damage	Decision Maker
Low	0-58	Little or none	Appropriate level
Medium	59-117	Minor	Appropriate level
High	118-149	Significant	Installation/Divisional
Extremely high	150-175	Severe	MACOM

c. *Step 3.* Make decisions and develop measures to reduce high risks. The overall environmental risk-assessment rating for our example is 43, a low-risk classification, as shown in Table 5-4. However, using this format helps to identify quickly individual high-risk items by environmental area and by type of operation. In our example, movement of heavy vehicles and systems and water pollution and wetland protection are high-risk areas. Thus, the unit commander and subordinate leaders need to consider possible, practical, and effective measures to reduce those individual high-risk areas. The unit leaders could perform the following to reduce risk impact:

- Restrict high-risk land areas, if practical, from vehicular operations.
- Sensitize personnel on performing maintenance near water sources (include environmental considerations in training evaluation plan).
- Use drip pans during all maintenance tasks.
- Be prepared to correctly respond to spills (qualified personnel and correct equipment on hand).
- Have highly qualified leaders supervise high-risk tasks/operations.

Modifications to the task standards for each of the seven environmental matrices should be considered, which will reduce the risk of environmental damage and enhance the probability of successful mission accomplishment.

d. *Step 4.* Brief chain of command and installation environmental office, if applicable, on proposed plans and pertinent high-risk environmental matrices.

e. *Step 5.* Implement environmental measures by integrating them into plans, orders, SOPS, training performance standards, and rehearsals, as applicable.

f. *Step 6.* Supervise and enforce environmental standards. Train to the standards.

The overall environmental risk-assessment form, risk-assessment matrices for the seven environmental areas, and a generic environmental risk-assessment matrix are in Appendix F.

5-7. Risk Reduction. Risk-reduction processes include identifying and assessing hazards, making risk decisions, implementing controls, and supervising controls. Using the *before*, *during*, and *after* training checklists and environmental risk-assessment matrices provides a means for identifying key factors affecting the environment and planned operations. With proper planning, leaders can quantify risks, detect risks before damage or losses occur, reduce risk of injury or death, reduce property damage, ensure compliance with regulatory requirements, and accomplish realistic training. Appendix E contains an environmental risk-reduction listing.

Risk reduction has direct implications on safety and health issues, compliance with mandatory environment laws and regulations, and leadership responsibilities. While the Army has done much within its resources regarding environmental issues/problems, more needs to be done. Attitudes must change because noncompliance will hamper the Army's ability to equip, train, and otherwise maintain preparedness for military missions.

CHAPTER 6

INSTALLATION SUPPORT

	Page
Installation Organizations	6-1
Environmental Quality-Control Committee	6-5
Points of Contact	6-5

The primary sources available to assist a unit with environmental problems and issues are the chain of command and specialists (EMO) at the installation. Environmental directives are communicated through the chain of command. The installation's staff that has environmental responsibilities is addressed in this chapter. By understanding organizational relationships, unit leaders can better work as a team and operate more efficiently and effectively.

6-1. Installation Organizations. The Army's environmental program specifies the offices available to assist commanders and their chain of command in solving environmental problems and making soldiers aware of environmental requirements. A basic review of key installation POCs will help in determining who can provide assistance. Figure 6-1, page 6-2, shows a typical installation staff/offices that have environmental responsibilities. Due to various factors (mission, magnitude of installation environmental problems, manning, not all installations are organized as depicted.



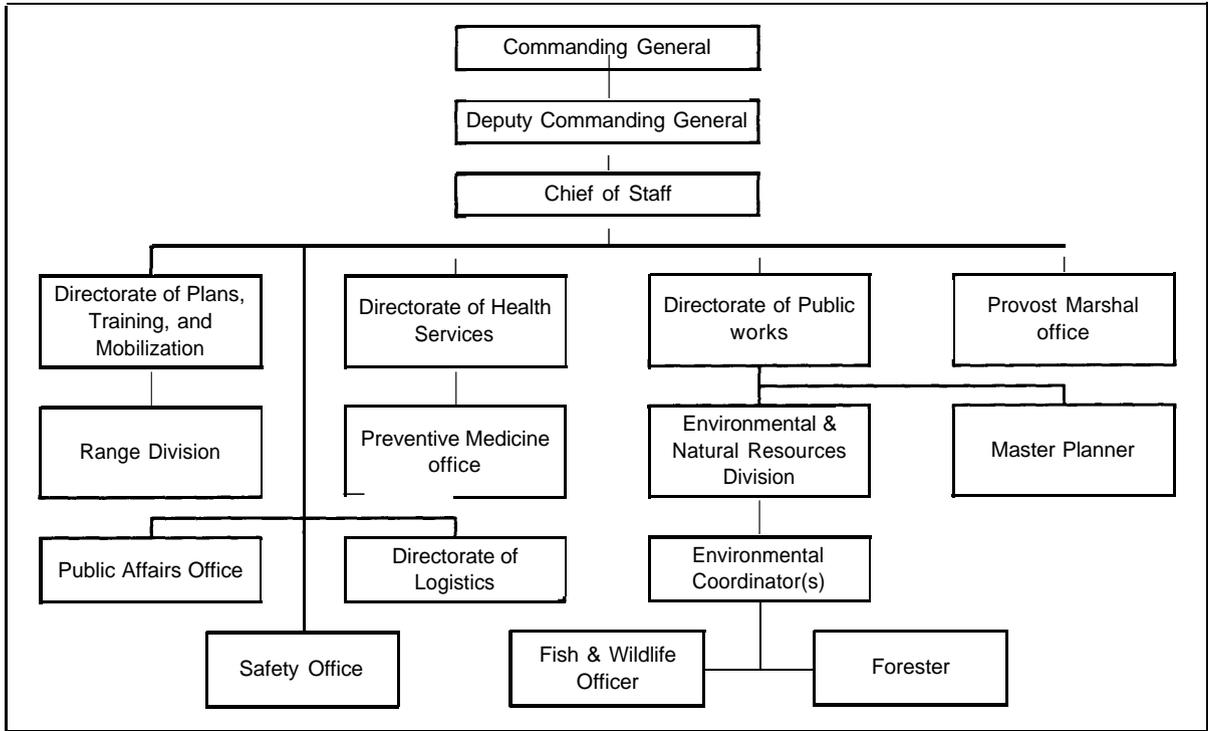


Figure 6-1. Typical installation staff (dealing in environmental matters)

a. *Directorate of Public Works.* The DPW is often the organization that manages the environmental program at the installation level. It prepares and provides input into the annual work plan and budgetary documents. In addition, the DPW provides notices of violations from regulatory agencies to the major Army command (MACOM) to which the installation reports.

(1) Environmental and Natural Resources Division (ENRD). This division/office is sometimes separate but is more often a subordinate division of the DPW. It advises commanders and staff personnel on environmental protection, compliance, and regulations. Its activities require it to coordinate with federal, state, and local regulatory agencies on issues that impact the installation environmental management programs. The environmental offices, headed by environmental coordinator(s), are located within this division.

- Installation Environmental Coordinator (EC). The EC monitors activities to ensure they remain in compliance with environmental laws and regulations. The EC works in the ENRD or the DPW. The EC develops management plans for environmental control aspects of many facilities and operations, recommends appropriate training (including unit HW coordinator), and provides in-house guidance to operators. The coordinator may or may not have technical and support staff, depending on the size of the installation and the magnitude of its environmental problems.
- Forester and Fish and Wildlife Officer. These offices/officers are normally assigned to the environmental office. The installation forester is responsible for the forestry program at the installation. Most of an installation's forests are normally in training areas; therefore, any training activities that affect the forestry program and regulations are of concern to this office. The fish and wildlife officer is responsible for the fish and wildlife management programs on an installation.

(2) Master Planner. The installation master planner is responsible for planning facilities for the installation according to missions, force strictures, and technological advancements for the next 20 years. The master planner maintains maps, records, and reports for this planning process. He has current information on the installation's training areas and on plans for their future development.

b. *Directorate of Plans, Training, and Mobilization (DPTM)*. The DPTM is the installation's operations and training office. It coordinates all training activities, including budgeting, development and maintenance of training areas, and mission priorities.

The range officer is the chief of the range division and has overall responsibility for developing and managing the installation's training ranges. The range control officer is in charge of range operations, to include maintaining and enforcing range regulations, coordinating and scheduling daily range operations, and providing range data to using units. The range manager is responsible for range maintenance and construction.

c. *Directorate of Logistics*. DOL is responsible for compliance and quality assurance. The DOL is also responsible for—

- Control of the used-solvent elimination (USE) program.
- POL management (new and used materials).
- HM tracking (to include MSDS).
- Environmental control and oversight of maintenance, transportation, and ammunition storage activities.

d. *Defense Reutilization and Marketing Office*. The DRMO program is established by DOD directive. Typically, DRMOs are located at all MACOMs as a tenant activity (not depicted in Figure 6-1). They work closely with the installation's DOL and environmental office to store, sell, or dispose of excess real property (to include HW). DRMO, if present at your installation, is usually the designated storage facility for all HW generated at the installation. Whether or not a DRMO is located at your installation, you must first coordinate your disposal requirements with your environmental office.

e. *Safety Office*. This office provides support for managing HM, to include worker protection guidance and inspection assistance.

f. *Public Affairs Officer (PAO)*. The PAO is the official spokesperson for the installation and manages public involvement activities and responses (particularly in public controversy situations) in close coordination with other key installation members.

g. *Directorate of Health Services/Preventive Medicine Office*. This office provides required respiratory and protective support and conducts and maintains baseline medical surveys.

h. *Provost Marshal Office (PMO)*. The PMO personnel are responsible for evacuating and securing designated hazardous sites. They are often involved in cases where hazardous spills pose imminent health and safety problems.

i. *Fire Department*. This department provides fire-fighting support to the installation, conducts and maintains safety surveys, and performs other environmentally-related tasks.

6-2. Environmental Quality-Control Committee (EQCC). Each installation except satellite installations will have an EQCC as directed in AR 200-1. In overseas areas, the EQCC may be organized at the military community level, including major and satellite installations and tenant activities. The EQCC advises the installation commander concerning environmental issues and assists in formulating installation environmental policy. It consists of the installation commander, who chairs the committee; the DPW, who acts as the executive secretary and representatives of each directorate and staff section. Tenant units are encouraged to have representatives attend the EQCC meetings.



6-3. Points of Contact. The key to a successful unit environmental program is to ask questions and know where to go for help. The following data is provided for your information. A directory of key environmental topics and corresponding POCs is at Table 6-1, page 6-6. A POC telephone directory is at Table 6-2 page 6-7. Environmental information hotlines are in Appendix G.

Table 6-1. Environmental points of contact

Topic	Point of Contact
Air pollution	Environmental and natural resources division (ENRD)
Audits/ECAS	ENRD
Archeological and historic sites	ENRD, range control (DPTM)
Clean/safe water	ENRD
Environmental training	Battalion S3, ENRD
HAZCOM training	Battalion S 3, safety office, fire department
Hazardous materials	Battalion S4, DOL, safety office, fire department
Hazardous waste	Battalion S4, ENRD, DRMO
Laws and regulations	Battalion adjutant (US Army) (S1) and S3, ENRD, legal office
Noise pollution	ENRD, range control (DPTM)
Range clearances/restrictions	Range control (DPTM)
Recycling program	Battalion S4, ENRD
Standing operating procedures	Battalion S3 and S4, ENRD
Spill reporting/planning	Battalion S3 and S4, ENRD
Threatened/endangered species	ENRD
Water pollution	ENRD, battalion S3 and S4
Wetland protection	ENRD, range control
Wildlife management	ENRD, range control

Table 6-2. POC telephone directory

Battallon Commander _____ Phone _____
Battallon S1 _____ Phone _____
Battailon S3 _____ Phone _____
Battalion S4: _____ Phone: _____
Fire Department _____ Phone: _____
Installation Environmental Coordinator: _____ Phone: _____
Legal Advisor: _____ Phone: _____
Provost Marshal: _____ Phone: _____
Preventive Medicine: _____ Phone: _____
Public Affairs: _____ Phone: _____
Range Control: _____ Phone: _____
Safety Office: _____ Phone: _____
Spill Notification: _____ Phone: _____

APPENDIX A

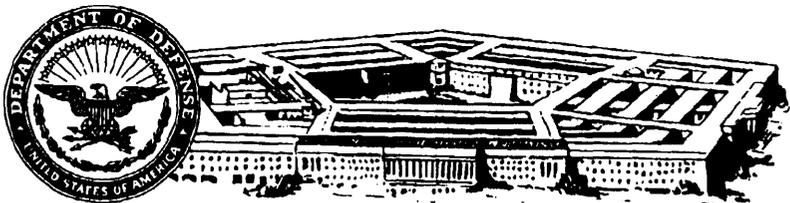
ENVIRONMENTAL LAWS AND REGULATIONS

All leaders must have a working knowledge of environmental issues and requirements to protect themselves, their soldiers, and the Army from regulatory problems and financial liability. Ignorance of the laws and regulations is no excuse.

The following laws and regulations are provided for your review and information. This list is not all-inclusive, but it is representative of environmental laws and regulations most applicable to unit leaders. For further information about these and other laws, consult with the installation SJA or environmental office.

A-1. AR 200-1. This regulation explains the Army's environmental program, defines program objectives and policies, assigns responsibilities for managing the program and prescribes procedures to protect and preserve the environment.

A-2. AR 200-2. This regulation sets forth policy, responsibilities, and procedures for integrating environmental considerations into Army planning and decision making according to the NEPA. Besides being a legal requirement, NEPA and AR 200-2 procedures give units a mechanism for considering compliance requirements of other laws, pollution prevention and conservation opportunities, and restoration follow-up in normal unit planning. AR 200-2 also describes how to tell if an action can be categorically excluded from NEPA documentation requirements, or whether it needs a public environmental assessment (EA) or an Environmental Impact Statement (EIS) before the action can begin.



A-3. AR 420-40. This regulation prescribes Army policy for cultural resource management and guidance for the treatment of historic properties, including any significant prehistoric or historic district, site, building, structure, or object on Army-controlled property in compliance with the National Historic Preservation Act. It also defines the Army's requirement for the development of a Cultural Resources Management Plan (CRMP). The CRMP details installation procedures for integrating cultural resource management responsibilities with mission requirements.

A-4. AR 420-47. This regulation provided the Army's original responsibilities, regulatory requirements, and procedures for the proper management of solid waste and HW. Most of these program requirements have been amended and incorporated into the current AR 200-1. The solid-waste management policy and responsibilities that still apply address solid-waste collection procedures and operation of solid-waste disposal facilities located on installations.

A-5. AR 420-74. This regulation provides current Army policies, responsibilities, procedures, and standards for the conservation, management, maintenance, and restoration of natural resources under Army control. This includes the Army policy and guidance on endangered species. The Army's goal is to ensure that its actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species.

A-6. AR 420-76. This regulation provides policies, standards, and procedures for pest-control activities on Army installations. It requires that each installation's DPW prepare and annually update a pest-management plan (PMP). The PMP lists all program objectives in priority according to the potential or actual impact on health, morale, structures, or property.

A-7. Archeological Resources Preservation Act (ARPA). The ARPA of 1979 stipulates that anyone investigating archeological sites on federal lands must have a permit or be subject to civil or criminal penalties.

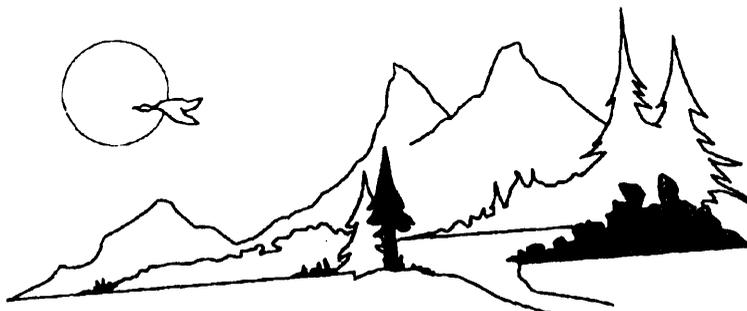
A-8. Asbestos Hazard Emergency Response Act. This act requires the EPA to set standards for school inspections, asbestos evaluation, remedial-action methods, and training certification and insurance for removal firms. Schools on military installations must comply with this act.

A-9. Clean Air Act. The CAA, passed in 1970 and amended in 1977 and 1990, requires the prevention, control, and abatement of air pollution from stationary sources (power plants) and mobile sources (cars). Directly resulting from the CAA were the national ambient air-quality standards (NAAQS), which are designed to protect the public's health and welfare as well as the environment as a whole. There are currently NAAQS for six criteria pollutants: sulfur dioxide, particulate matter, carbon monoxide, ozone, nitrogen dioxide, and lead. Asbestos removal and disposal are also regulated under the CAA, and recent amendments require major controls on air toxins and ozone depleting compounds, such as CFC.

The Army's air-pollution abatement program is designed to control the emissions of pollutants into the air, protect human health, and meet applicable federal, state, and local regulations. It includes activities to-

- Participate in the air-pollution regulatory development process while maintaining programs to train air-emissions management personnel.
- Conduct motor-vehicle inspection and maintenance to ensure regulatory compliance.
- Identify, monitor, and maintain an up-to-date inventory of emission sources and obtain permits and provide reports for emission sources.
- Notify the appropriate MACOM immediately whenever a notice of violation (NOV) is received.

A-10. Clean Water Act. The CWA was passed in 1972 and amended in 1977. This act seeks to restore and maintain the chemical, physical, and biological integrity of the nation's navigable waterways. The CWA regulates both domestic and industrial wastewater by requiring National Pollutant Discharge Elimination System (NPDES) permits for discharging from point sources (industrial and sewage treatment plants). The CWA also establishes requirements for reporting oil and hazardous substances spilled into waterways. Sewage sludge management and storm-water discharges are also addressed by CWA regulations. Proper unit HM/HW management and pollution-prevention activities are particularly important in installation storm-water compliance.



A-11. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The CERCLA commonly known as the *Super-fund*, was passed in 1980. The applicability of CERCLA to unit leaders is that this act established the liability of the individual responsible for release of hazardous substances into the environment. If a unit leader ordered his subordinate to bury some half-filled paint cans, the leader can be charged and convicted of a CERCLA violation. The Superfund Amendments and Reauthorization Act (SARA) amended the CERCLA in 1986. Together, these laws established the nation's "superfund" program to clean up HW sites. They also spawned extensive new regulations concerning releases of hazardous substances into the environment. The corresponding DOD program is the Installation Restoration Program (IRP), which was established in 1975. The IRP helps identify, investigate, and clean up contamination on DOD property.

A-12. Emergency Planning and Community Right-to-Know Act. The EPCRA of 1986, known as SARA Title III, provides a mechanism for informing potentially affected populations of the types and general bulk quantities of HMs in living areas and workplaces.

The EPCRA establishes four criterion for local governments and facilities operating, handling, or managing HMs. Local governments have to prepare for emergency releases of hazardous substances by appointing a local emergency planning committee (LEPC). Facilities with HM operations must prepare and submit an inventory to the LEPC, immediately notify the LEPC when any release of hazardous substances occurs in quantities greater than established levels, and prepare an annual report of HMs released, through both accidental and normal operations.

The EPCRA applies to government agencies, per Executive Order 12856 (see A-19, page A-6). Complying with the EPCRA means that in-house tracking systems must account for all quantities and types of

chemicals on an installation. Installations must tell state and local authorities when a spill of listed chemicals occurs above reportable quantity levels.

A-13. Endangered Species Act. This act was passed in 1973 to protect threatened or endangered plants or animals (to include fish, insects, and invertebrates). All federal agencies must ensure that their actions do not jeopardize any threatened or endangered species or critical habitats. Agencies are authorized to use their resources to further the spirit of the act by carrying out programs, such as the introduction or reintroduction of listed species. The Secretary of the Interior must publish lists of endangered and threatened species in the federal register. Species that are listed cannot be destroyed, captured, traded, sold, and bought.

A-14. Executive Order 11989. This order, dated 24 May 1977, addresses the use of off-road vehicles on public (Army) lands. It directs installation commanders to safeguard soil, vegetation, wildlife, wildlife habitat, and cultural or historic resources from damage by off-road (military) vehicles.

A-15. Executive Order 11990. Passed in 1977, this order addresses the protection of wetlands from destruction or modifications as a result of direct/indirect construction in those areas.

A-16. Executive Order 12088. This order was signed on 13 October 1978, and is the critical link between federal environmental regulations and federal facilities. It mandates that all federal facilities control and monitor environmental pollution in compliance with federal environmental regulations. It also established the A-106 reporting process (the Army refers to this as the 1383 report). In November 1988, the EPA issued the *Federal Facilities Compliance Strategy*, also known as the EPA Yellow Book, which established a comprehensive and proactive approach by which federal facilities may comply with federal regulations.

A-17. Executive Order 12114. Dated 4 January 1979, this order addresses the environmental effects of major federal actions abroad. This order establishes internal procedures for federal agencies to consider the significant effects of their actions on the environment outside the United States. The Department of State coordinates all interaction between federal agencies and foreign governments. The objective of this program is to provide information to decision makers, increase awareness and interest in environmental concerns, and encourage environmental cooperation with foreign nations.

A-18. Executive Order 12580. Signed on 23 January 1987, this order amended Executive Order 12088. Executive Order 12580 addresses the delegation of duties and powers assigned to the President in the CERCLA, as amended by the SARA. It requires the National Contingency Plan (NCP) to provide for national and regional response teams composed of representatives from various federal agencies to plan and coordinate preparedness and response actions. The response teams may include representatives from state and local governments.

A-19. Executive Order 12856. Dated 3 August 1993, this order challenges the federal government to publicly lead by example through applying source reduction in the management of its facilities and in its acquisition practices. It commits federal agencies to publicly report toxic wastes and emissions and to reduce toxic releases at least 50 percent by 1999. By preventing pollution, the federal government not only protects the environment it saves the taxpayers money by reducing waste-management costs and long-term liability for expensive cleanup.

A-20. Executive Order 12873. Dated 20 October 1993, this order details federal agencies to incorporate waste prevention and recycling in their daily operations and implement cost-effective procurement preference programs for recycled and environmentally preferable products and services.

A-21. Federal Facilities Compliance Act. The FFCA, originally passed in 1993, determines how environmental laws affect military installations. It allows regulatory agencies to impose civil fines and administrative action on other federal agencies (including the Army) for solid- and hazardous- waste violations. The FFCA—

- Represents a growing consensus that federal facilities should comply with environmental laws the same way as civilian agencies.
- Establishes states' authority to impose fines.
- Waives sovereign immunity for the RCRA and subjects Army installations to fines and penalties of up to \$25,000 for each violation.
- Changes the cost of noncompliance without changing the rules of compliance.

A-22. Federal Insecticide, Fungicide, and Rodenticide Act. The FIFRA of 1972 establishes requirements for licensing and registration procedures for pesticide products. It also requires proper management, use, storage, and disposal of pesticides. For *restricted-use* pesticides, pesticide applicators must be certified or under the direct, on-site supervision of a certified applicator. Integrated pest management (IPM) is the Army's comprehensive approach to the prevention, elimination, and control of pests. The IPM concept involves recognizing and accepting the fact that pest problems can be addressed in various ways and only the "best approach" is one that involves looking at all the options.

A-23. Freedom of Information Act (FOIA). Although not an environmental law, the FOIA is a vital piece of legislation. It requires each federal agency to promulgate requirements and procedures to enable the public to request information from that agency. Each agency is required to publish its requirements and a description of its procedures in the federal register.

A-24. Historic and Archeological Data Preservation Act. This act of 1974 states that funds may be used to recover significant historic or archeological data when they are threatened by a federal construction project or federally licensed project.

A-25. Lead Contamination Control Act. This act of 1988 requires states to develop lead-monitoring programs for school, day care, hospital, and housing drinking- water systems.

A-26. Marine Mammal Protection Act (MMPA). The MMPA of 1972 provides protection for certain marine mammals. It prohibits the taking of these animals except as authorized under the MMPA or by permit. As defined by the MMPA, marine mammals include whales, dolphins (porpoises), sea otters, polar bears, and any mammal morphologically adapted to the marine environment.

A-27. National Environmental Policy Act. NEPA of 1969 affects virtually every proposed action on an installation or training area. It requires the Army and other federal agencies to consider the environmental effects of proposed actions in their planning and decision making. Particular attention must be given to actions that may present a danger to the health, safety, or welfare of soldiers, their dependents, or civilians or may cause irreparable harm to animal or plant life.

A-28. National Historic Preservation Act. The NHPA of 1966 seeks to help safeguard against the loss of irreplaceable historic properties, especially those on federal lands. Many Army installations contain a wealth of historic and cultural resources. Archeological and historic properties listed in the National Register of Historic Places must be preserved and safeguarded. Corresponding Army policy and guidance in AR 420-40 requires the development of a historic preservation plan to comply with legal requirements.



A-29. Native American Grave Protection and Repatriation Act. This act of 1990 requires consultation with the appropriate native American tribes before excavating or removing native American human remains and associated objects from federal lands. This act also requires federal agencies to inventory all native American human remains and burial objects under their control and to repatriate those remains and objects to the appropriate native American tribes. Unit personnel must be informed that discovery of native American remains/artifacts requires protection and must be immediately reported to their chain of command.

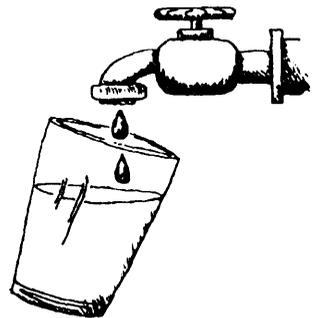
A-30. Noise Control Act. This act of 1972 establishes a national policy to promote an environment free from noise that jeopardizes the public's health and welfare. This act also regulates noise emissions from commercial products, such as transportation and construction equipment. For the military, the act exempts regulation of noise emitted from weapons or equipment that is designated for combat use. However, the goal of the Army's environmental noise-abatement program is to achieve compliance with applicable noise regulations in a manner consistent with mission accomplishment.

A-31. Occupational Safety and Health Act. OSHA is not considered to be an environmental law because it deals primarily with safety issues in the workplace. However, the same chemicals that are regulated in the workplace are usually being regulated under environmental regulations if they become air or water discharges, spills, or HW. As implemented in the Army, the OSHA Hazard Communication Program has many features that can simplify compliance with environmental rules.

A-32. Quiet Communities Act. This act amended the Noise Control Act to allow local communities to develop ordinances to control unnecessarily loud noises. To minimize contention between installations and surrounding communities, the DOD established a program, referred to as the ICUZ program. The ICUZ's objectives are to assess the environmental impact of the noise produced by proposed actions and both on-post and off-post noise sources; comply with federal regulations; ensure the installation's mission is compatible with local land use; minimize environmental noise impacts through engineering, operational controls, siting, and architecture; and protect the health and welfare of all individuals adjacent to Army installations.

A-33. Resource Conservation and Recovery Act. The RCRA establishes the nation's framework for managing HW. Originally passed in 1976, the first implementing regulations were promulgated in 1980. These original regulations established standards for identifying, classifying, and storing HW. The RCRA was reauthorized in 1984, with major additional requirements, including requirements for underground storage tanks. All states require RCRA operating permits for HW treatment, storage, and disposal facilities (TSDF); the permit is issued by either US EPA or the state, whichever has primacy. RCRA regulations require those involved in managing hazardous substances to be properly trained, and the training to be properly documented.

A-34. Safe Drinking Water Act. The SDWA was enacted in 1974 and amended in 1986. It requires the EPA to set primary drinking-water regulations in terms of maximum contaminant levels (MCL) for any pollutants that may have adverse effects on human health. Managers of water supply facilities are required to regularly analyze treated water to ensure MCL standards are met. If water quality is below standards, customers must be notified. The Army's



program objectives are to conserve water resources by implementing conservation plans and to provide drinking water that meets regulatory standards.

A-35. Sikes Act. This act, as amended, requires each military department to ensure that services are provided for proper fish and wildlife management and that priority is given to work with federal and state agencies having responsibility for conservation or management of fish and wildlife. It further requires that installation fish and wildlife management be carried out according to a cooperative plan mutually agreed on by the installation commander, the regional office of the US Fish and Wildlife Service (USFWS), and the state agency designated by the host state.

A-36. Toxic Substances Control Act (TSCA). The TSCA of 1976 seeks to preclude unreasonable risks to human health and the environment by requiring testing and necessary use restrictions on certain chemical substances. It established requirements for regulating CFC's, polychlorinated biphenyls (PCB), asbestos, and other toxins. The TSCA requires the testing of chemical substances entering the environment and regulating releases, when necessary. It bans the manufacture of PCBs in this country and closely regulates the use, storage, and disposal of PCBs.

APPENDIX B**SAMPLE HAZARDOUS MATERIALS AND WASTE
MANAGEMENT APPENDIX TO UNIT MAINTENANCE SOP**

This SOP is provided as an example only. Since each installation will have different local and state requirements, this SOP should not be used as is.

1. **REFERENCES.** (Includes references to AR 200-1, AR 420-47, TM 38-250, and federal and state regulations).
2. **PURPOSE.** Establish procedures for the storage and disposal of HM and HW.
3. **RESPONSIBILITIES.**
 - a. Commander.
 - (1) Sets unit HM and HW management policy.
 - (2) Ensures that personnel comply with the provisions of referenced regulations and public law.
 - (3) Ensures that the HM/HW coordinator and senior personnel have received the proper training and in turn, train all HM and HW handlers.
 - (4) Ensures that all personnel who are exposed to HM in the course of their work are made aware of the hazards to which they are exposed and the precautions required to protect themselves in the work environment.
 - b. Maintenance Officer.
 - (1) Acts as the HM/HW spill coordinator.
 - (2) Ensures the accountability of all HM and HW.
 - (3) Ensures that HM and HW are stored and disposed of properly.

(4) Ensures that HM and HW spills are immediately contained, reported to the fire department and installation environmental office.

(5) Reports nonfunctional/inoperative treatment/collection facilities (oil/grease interceptors, floor drains, catch basins, waste tanks) to EMO through the unit environmental compliance officer.

c. Motor Sergeant.

(1) Establishes and maintains a HW accumulation (HW less than 55 gallons) area with proper separation of incompatible products.

(2) Inspects HW accumulation areas weekly and documents results.

(3) Ensures that leaking containers are overpacked and/or the uncontaminated contents recontainerized.

(4) Ensures that only waste oil is placed in the waste-oil tank or drums.

(5) Ensures that the waste-oil tank or drums are pumped out when full or 90 days after previous pumping, whichever occurs first.

(6) Ensures that the washrack oil/water separator is kept clean and serviceable.

(7) Maintains an inventory log of all waste products being stored, to include exact locations of each container.

(8) Labels all hazardous-waste containers properly as they are put in service and ensures turn-in and delivery to the DRMO or contractor pickup within 90 days of accumulation start date (coordinates with the EMO).

d. Unit Supply Sergeant.

(1) Initiates and processes turn-in documents (TIDs) for turn in of HM and HW.

(2) Maintains a suspense file and validates receipt copies of TIDs for all scrap, HM, and HW shipped to the DRMO.

e. Prescribed Load List (PLL) Clerk. Requisitions mercury and lithium batteries with recoverability code “A” only when a like item and quantity have been turned in.

f. Nuclear, Biological, and Chemical (NBC) NCO.

(1) Inspects all possible decontaminant solution 2 (DS2) and super tropical bleach (STB) accumulation sites (conexes, wall lockers, POL accumulation area, and so forth) to ensure these products have been properly turned over to DOL/supply for consolidated storage.

(2) Does the following in the event the unit is temporarily in possession of decontamination agents DS2 or STB:

(a) Ensures that DS2 and STB are stored in separate locations.

(b) Inspects containers monthly for leakage and records results. Arranges for leakers to be overpacked and turned into the DRMO.

g. Individual Mechanics.

(1) Place hazardous wastes in properly designated containers.

(2) Never place HW in a dumpster; this is illegal disposal.

(3) Promptly report leakers/spills to the motor sergeant and/or maintenance officer; report spills directly to the fire department and installation environmental office, if necessary, to ensure prompt response.

(4) Wear proper protective clothing when handling HM or HW.

(5) Keep HM and HW accumulation containers closed except to add or remove product.

4. GENERAL. (Includes a short summary of reasons for HM and HW requirements; safety precautions and equipment; and hazards of POL products, batteries, paint products, and decontamination agents.)

5. PROCEDURES FOR ACCUMULATION SITE.

a. Place all above-ground accumulation of HW on a nonpermeable bermed hard stand; label and locate it 50 feet or more from any building.

Used greases, oil filters, solvents, brake fluids, and anti-freeze are examples of substances that you should store in separate containers. Keep the containers (drums, cans, or tanks) closed except when depositing waste. This is to safeguard against spills and prevent water from entering the containers. If 2%- or ½-inch threaded caps on 55-gallon drums are missing, get a replacement from the troop support office.

b. Leave the following headspace to prevent overflow due to expansion

55 gallon drum	—	3 to 4 inches
5 gallon cans	—	1.5 to 2 inches
1 gallon cans	—	1 inch

c. Dispose of used oil in an appropriate above-ground container marked WASTE OIL and located _____ Use a 55-gallon drum (National Stock Number (NSN) 8110-00-823-8121).

(1) Label the waste-oil storage tank(s) WASTE-OIL ONLY. Make sure that personnel are trained to place only waste oil in the tanks. (Due to past practices of disposing of all hazardous liquids plus rags and other debris into the waste-oil tanks, oil recyclers do not want our waste oil; therefore, we must now pay a very high price for its disposal.)

(2) Most waste-oil tanks are pumped on a regular schedule. If a tank fills up before the scheduled pick up date or the tank is not on the schedule, notify Chief DRMO, extension. Coordinate these activities with the installation environmental office.

d. If HM or HW is spilled, use vermiculite (NSN 7930-00-269- 1272) to soak up the puddles and Safestep (NSN 7930-01-145-5797) or sawdust (NSN 7930-00-633-9849) to cleanup hard stands. Place all the contaminated soil and absorbent material in removable head drum(s) (NSNs 8110-00-082-2626 or 81 10-00-292-8121) and turn in to the DRMO.

e. Store decontamination agents DS2 and STB at the installation supply division (ISD) consolidated accumulation site.

f. Overpack chemical products and POL in leaking, corroded, or otherwise deteriorating containers in Department of Transportation (DOT) approved drums and dispose of them as HW through the DRMO. For

assistance in determining the appropriate overpack containers, contact the environmental office.

(1) To be accepted for turn-in, the waste material must be in a safe, nonleaking, durable container. Most leakers can be overpacked in steel removable head drums, which are available through the supply system. Leaking containers of liquids must be packed in absorbent material (NSN 7930-00-269- 1272), which is available at the self-service supply center. A leaking 55-gallon drum may be overpacked in an 85-gallon drum. The absorbent material must be capable of soaking up all the liquid contents of the drum; therefore, there must be 6 inches of absorbent on the bottom and top of the interior container, with at least 2 inches around the sides (adjust for different size drums and overpack). Leaking containers of nonliquid hazardous waste may not need to be packed with absorbent material. Check with the environmental office or the DRMO. Many liquids, such as battery acid, cannot be packed in steel containers; call the environmental office or the DRMO when in doubt.

(2) If drums are not available for overpacking an emergency spill, contact the environmental office for a loaner. A replacement drum must be requisitioned and provided to the environmental office. Removable head 55-gallon drums (NSN 8110-00-082-2626) are also stocked by installation supply. Get them by walking a requisition through your support office to the ISD. Used drums are available at the DRMO.

(3) Request assistance from the environmental office on compatibility of waste, packing, and labeling of containers.

g. Inspect HW weekly. Results of the inspection will be documented on a log and made accessible to state and federal inspectors. Inspection logs should contain the following information: description of waste, location, quantity, date accumulation started, end of 90-day period, date removed to the DRMO or by contractor, remarks (condition of storage area and containers), inspector's printed name, signature, and date of inspection. This action should be coordinated with the installation environmental office.

6. DISPOSAL OF EMPTY CONTAINERS AND HAZARDOUS ITEMS. (Includes information on turn-in of mufflers and exhaust pipes, brake shoes and clutch plates, fuel tanks, aerosol cans, PCB capacitors and transformers, hydraulic rams and gas cylinders, shock absorbers, oil saturated wood and pallets, paint and paint containers, solvents and thinners,

oils and greases, antifreeze, oily rags, sweeping compound, oil and fuel filters, washracks soil/sand residue, and products with expiration dates.)

7. PROCEDURES FOR TURN-IN OF HM OR HW. (Includes information on filling out and processing the turn-in document.)

8. TRANSPORT OF HM AND HW. (Coordinate with DOL/FMO for approval.)

9. POINTS OF CONTACT FOR ASSISTANCE. (Listed by office, name, telephone number, and building.)

APPENDICES (not provided).

- Packaging materials authorized, by type of container, Department of Transportation (DOT) specification, capacity, and NSN.
- Instructions for preparing turn-in document, with filled out example.
- Example HW label, where available (self-service supply center or troop support office and installation environmental office).
- Labels and placards guide, including publications supply system standard form (SF) numbers, and installation stock numbers for use at the self service supply center. For example: “To maintain a subdued visibility while in the field, turn over the placards and paint them forest green on the back side with the title stenciled in flat black.”
- Emergency procedures for HM/HW spills.

APPENDIX C**UNIT ENVIRONMENTAL. SELF-ASSESSMENT**

This appendix provides a generic questionnaire for environmental self-assessment and a basis from which to initially assess a unit's environmental compliance. This form should be supplemented locally using state and local environmental regulations that are applicable to your installation. This form, with local supplements, is intended to serve as the primary tool in conducting unit environmental assessment. The form is divided into eight assessment areas (management, waste-oil storage, HM/HW, solid-waste management, spill prevention, recycle program, washracks, and land management). Items answered "no" require corrective action.

I. Management

1. _____ Is an environmental-compliance officer or hazardous-waste coordinator appointed, in writing?
2. _____ Is an environmental-compliance officer or hazardous-waste coordinator properly trained within 30 days of assigned duty?
3. _____ Does the environmental-compliance officer or hazardous waste-coordinator maintain a file of applicable references, appointment orders, and inspection records for the last 24 months?
4. _____ Is an environmental awareness training program available for unit personnel?
5. _____ Are most unit personnel trained in environmental awareness?
6. _____ Does the unit SOP cover unit spill prevention and response?
7. _____ Does the unit SOP cover HAZCOM program?
8. _____ Does the unit have a pollution prevention/HAZMIN program?
9. _____ Does the unit have/support a recycling program?
10. _____ Is good housekeeping evident in POL, HM, and HW storage areas?

11. _____ Does the unit implement safety to minimize performing detailed maintenance in the field?

II. Waste-Oil Storage

1. _____ Are there adequate dikes or catchments around POL storage facilities?
2. _____ Are waste oil or other possible pollutants always stored in authorized containers?
3. _____ Are waste-oil tanks pumped out when full?

III. Hazardous Material/Hazardous Wastes

1. _____ Is only the amount of HM needed on hand (no stockpiling of HM)?
2. _____ Is the unit HM/HW inventory (quantity and location) up to date?
3. _____ Is HW collected and stored in authorized containers?
4. _____ Is HM/HW disposed of according to directives?
5. _____ Are containers labeled according to directives?
6. _____ Are containers in good condition and closed when not used?
7. _____ Are there accumulation start dates on each HW container?
8. _____ Are waste-oil accumulation tanks used for collecting HW and other pollutants (antifreeze, GAA, oil, and so forth)?
9. _____ Are danger and warning signs conspicuously placed?
10. _____ Is spill-prevention and -control equipment adequate?
11. _____ Are personnel trained in the proper handling, collection, storage, or transportation of HM/HW?

-
12. _____ Are used POL cans and drums being disposed of properly?
 13. _____ Asbestos containing parts (brake shoes, clutch plates, and equipment insulation) being removed, collected and disposed of properly?
 14. _____ Are tires and batteries properly turned in for recycling?

IV. Solid Waste Management

1. _____ Are procedures to reduce production of waste enforced?
2. _____ Are product separation and recycling efforts in effect?
3. _____ Are source reduction practices enforced?
4. _____ Is the unit requisitioning only supplies needed (not stockpiling excessive materials)?
5. _____ Are personnel ensuring that water, soap, kitchen grease, or garbage is never discharged into the street, storm drainage system, or groundwater source while washing garbage cans and field kitchen equipment?

V. Spill Prevention

1. _____ Are oil, fuel, or other hazardous pollutant spills (over 5 gallons in volume or 100 square feet in area) reported properly? (A written report is required for oil, fuel, or other hazardous spill over 5 gallons in volume or 100 square feet in area.)
2. _____ Are creek/drainage channels free of pollution?
3. _____ Are personnel ensuring that pollutants are never discharged into storm or washrack drains or poured on the ground or along fence lines? (Common pollutants are oil, solvent, soap, diesel, gasoline, battery acid, chemicals, waste antifreeze, paint, and grease.)
4. _____ Are small oil spills cleaned in a timely manner?

5. _____ Are drip pans used under vehicles/equipment and POL product barrels, where spills are likely to occur?
6. _____ Is contaminated soil properly disposed of (soil is taken to TSD or designated authorized disposal area)?

VI. Recycle Program

1. _____ Are all materials (solvents, antifreeze, used oil) being recycled according to directives?
2. _____ Is the unit delivering material to the installation recycling center?
3. _____ Are recyclable materials sources separated?
4. _____ Is contaminated material separated from recyclable?
5. _____ Is the unit recycling the following materials?
 - ___ a. Computer printouts
 - ___ b. Computer punch cards
 - ___ c. High-grade white paper
 - ___ d. Corrugated cardboard
 - ___ e. Newspaper
 - ___ f. Aluminum cans
 - ___ g. Steel cans
 - ___ h. Glass
6. _____ Are dumpsters free of recyclable items?
7. _____ Are used cleaning solvents being recycled/collected properly?

VII. Washracks

1. _____ Are vehicles or equipment washed only in authorized washrack?
2. _____ Is steam-cleaning equipment used only in authorized washrack?
3. _____ Are washracks and vicinity around them free of contaminated soil, sand, or silt?

4. _____ Are signs that indicate whether solvents or soap may be used present?
5. _____ Are metal gratings or baffles present and in good condition at washrack oil interceptor, catch basins, or floor drains?
6. _____ Is washrack area free of oil and/or fuel spills?
7. _____ Are treatment devices (oil and grease interceptors, catch basins, collection ponds, drains, tanks, and so forth) properly maintained and serviced.
8. _____ Is washrack area free of oil rags and trash?
9. _____ Are faucets and/or backflow preventors in good operating condition?
10. _____ Are only authorized soap, solvent, or chemicals used with steam-cleaning equipment?
11. _____ Is oil/water separator in good working condition?
12. _____ Is vehicle/equipment/aircraft waste-water discharge tied into treatment system?

VIII. Land Management

1. _____ Are vehicles parked or driven only in authorized areas?
2. _____ Are surface areas and curbs free of vehicular damage?
3. _____ Is the area free of litter?
4. _____ Is gravel used only in authorized areas and in an authorized manner?
5. _____ Are archeological or historical sites safeguarded?
6. _____ Are live or dead trees or limbs felled, removed, or used only with appropriate approval (range control/forester)?

7. ____ Are personnel ensuring that garbage, refuse, and rubbish are never burned or buried on the range area? (The generating unit is to deliver all solid waste items to the sanitary landfill for disposal or to other approved sites.)
8. ____ Are storm-water ditches in vicinity of motor pools free of POL or other HM/HW?
9. ____ Are detention ponds, waste-and-sump collection points, and vehicle-inspection points functional and being serviced properly?
10. ____ Are paint spray and battery and radiation repair operations being operated properly and coordinated with the EMO, safety, and preventive medicine officers?
11. ____ Are collection points established with proper containers and servicing for all maintenance-generated wastes?
12. ____ Does the unit observe fording sites and fording operational procedures?
13. ____ Does the unit dig fighting positions?
14. ____ Does the unit cover all of the fighting positions after an exercise?
15. ____ Does the unit have designated refueling points (garrison and field)?
16. ____ Do refueling operations SOPS address practices to minimize spills?
17. ____ Is there material on hand to clean up a spill (spill kits)?
18. ____ Do fuel handlers know how to report a spill?
19. ____ Do units maintain and use the tanks' turning pads?
20. ____ Does the unit properly conduct smoke operations according to appropriate Army and installation regulations?

APPENDIX D

MATERIAL SAFETY DATA SHEET

Hazardous communication starts with the chemical manufacturer. They are required to evaluate their chemicals for possible physical and health hazards. This information is entered on the MSDS.

The MSDS gives details on chemical and physical dangers, safety procedures, and emergency response techniques. Everything that is known about the chemical is listed on this form. Your supervisors must have one of these forms for every chemical in your work area. The MSDS can tell you a great deal about the materials in your area and the hazards associated with them.

Chemical Hazards	
Health Hazards ⇒ Illness, acute or chronic ⇒ Injury	Physical Hazards ⇒ Explosion and/or fire ⇒ Violent chemical reactions ⇒ Other hazardous situations

With this information you can—

- Better protect soldiers.
- Store materials safely.
- Respond to spills and emergencies quickly and correctly.

When a material is issued, ask the supply personnel to provide you with an MSDS. A sample MSDS is shown in Figures D-1 and D-2 (pages D-2 and D-3). If one is unavailable, contact the installation safety office for assistance. There are various versions of the MSDS form. However, each version contains the same basic information. Each version must be approved by the Department of Labor.

MATERIAL SAFETY DATA SHEET			
(Approved by U.S. Department of Labor "Essentially Similar to Form OSHA-20")			
SECTION 1		NAME & PRODUCT	
Chemical Name: Acrylonitrile			Catalog Number: AX0350
Trade Name & Synonyms: Vinyl Cyanide	CAS #107-13-1	Chemical Family: Nitrile	
Formula: CH ₂ :CHCN	Formula Weight: 53.07		
SECTION 2		PHYSICAL DATA	
Boiling Point, 760mm Hg (°C)	77.3°	Specific Gravity (H ₂ O = 1)	0.806
Melting Point (°C)	-83.5°	Solubility in H ₂ O, % by wt. at 20°C	7.35%
Vapor Pressure at 20°C	83 mm Hg	Appearance and Odor Clear yellow liquid	
Vapor Density (air = 1)	1.83	pungent odor	
Percent Volatiles by Volume	100%	Evaporation Rate (Butyl Acetate = 1)	4.5
SECTION 3		FIRE AND EXPLOSION HAZARD DATA	
Flash Point (test method) 30°F(TCC)	Flammable Limits	Liq 3%	Uel 17%
Extinguishers: Meth. CO ₂ , alcohol foam, dry chemical. (Water may be ineffective.)			
Special Hazards and Precautions: Wear self-contained breathing apparatus and protective clothing			
Unusual Fire and Explosion Hazards		Violent polymerization may occur in presence of concentrated alkali. Thermal decomposition produces highly toxic fumes.	
SECTION 4		REACTIVITY DATA	
Stable XX	Conditions to Avoid		
Unstable	Polymerizes in the absence of oxygen or exposure to light.		
Materials to Avoid			
<input type="checkbox"/> Water <input checked="" type="checkbox"/> Strong Acids <input type="checkbox"/> Bases <input type="checkbox"/> Corrosives <input type="checkbox"/> Oxides <input checked="" type="checkbox"/> Other (specify) Alkali, Br, NH ₃ Cu and copper alloys, amines			
Hazardous Decomposition Products HCN, NO ₂ , COx			
SECTION 5		SPILL OR LEAK PROCEDURES AND DISPOSAL	
Steps to be Taken in Case Material is Released or Spilled		Collect on vermiculite or absorbent	
Waste Disposal Method To be performed in compliance with all current local, state, and federal regulations.			
We believe the data contained herein is factual; however, it is offered solely for your consideration, investigation, and verification. Do not take as a warranty.			

Figure D-1. Sample MSDS form

SECTION 6	HEALTH HAZARD DATA
Threshold Limit Value 2 ppm (skin)	TXDS: inh-hmn TC _{Lo} : 16ppm/20M orl-rat LD ₅₀ : 82mg/kg
Effects of Overexposure May be fatal if inhaled, swallowed or absorbed through the skin. Inhalation causes tearing, headache, sneezing, nausea, weakness, dizziness, unconsciousness and possible death. Contact causes irritation of skin, eyes, and mucous membranes.	
First Aid Procedures Get immediate medical assistance for all cases of overexposure. Skin: Wash with soap/water. Eyes: Flush thoroughly with water for at least 15 minutes. Inhalation: Remove to fresh air/ give artificial respiration if necessary, when breathing restored, administer amyl nitrite by inhalation for 3 minutes. Ingestion: Get medical attention at once; if conscious, induce vomiting.	
SECTION 7	SPECIAL PROTECTION INFORMATION
Ventilation, Respiratory Protection, Protective Clothing, Eye Protection Provide general and exhaust ventilation. Protect eyes and skin with safety goggles and gloves. Air supplied respirator should be worn if vapor concentration is above 2 ppm.	
SECTION 8	SPECIAL HANDLING AND STORING PRECAUTIONS
Keep container closed in storage. Store in a cool, well-ventilated area away from alkaline or oxidizing materials. Do not store uninhibited material. Do not breathe vapor. Do not get in eyes, on skin, or on clothing. DOT Hazard Class - Flammable Liquid	
SECTION 9	HAZARDOUS INGREDIENTS
N/A	(refer to Section 3 through 8)
SECTION 10	OTHER INFORMATION
Tests on laboratory animals indicate material may be carcinogenic and cause mutagenic and adverse reproductive effects.	
AUTHORIZED SIGNATURE _____	DATE ISSUED: _____ DATE ISSUED: _____
<small>DA118f 3/83</small>	

Figure D-2. Sample MSDS form (continued)

The MSDS provides you and your soldiers important information about the chemical substance, its hazards, and the procedures to follow to avoid injury and illness. Ensure that soldiers read and understand the MSDS before they start a job. The MSDS contains the following general sections:

- **Hazardous Ingredients/Identity Information (Name and Product).** Lists the substance's hazardous components, chemical identification, and common names. Worker exposure limits to the chemical are included.
- **Physical/Chemical Characteristics.** These include boiling point, vapor pressure, vapor density, specific gravity, melting point, evaporation rate, water volubility, and appearance and odor under normal conditions.
- **Fire/Explosion Hazard Data.** Lists ways to handle hazards such as free-fighting equipment and procedures.
- **Reactivity Data.** States whether the substance is stable and which substance and situation to avoid so it will not react.
- **Spill or Leak Procedures and Disposal.** Addresses what to do if the substance spills or leaks, how to dispose of the substance, and what equipment and procedures are needed for cleaning up spills and leaks.
- **Health Hazards Data.** States how chemicals could enter the body, such as inkling, penetrating the skin, and swallowing. Discusses the possible hazards that could come from exposure, and lists chemicals that maybe carcinogens.
- **Special Protection Information.** Lists ways to reduce harmful exposure as well as special work or hygiene practices that should be followed.
- **Special Handling and Storing Precautions.**
- **Hazardous Ingredients.**
- **Other Information.**

APPENDIX E**UNIT LEADERS METT-T
ENVIRONMENTAL RISK-REDUCTION MEASURES**

During training activities, the consideration of environment using the METT-T process can identify, and decrease environmental damage/liabilities and enhance mission accomplishment. Consider the following:

Mission

- ▶ Anticipate or assess environmental risk during planning.
- ▶ Analyze effects of environmental risks on mission operations.
- ▶ Simplify scheme of maneuver.
- ▶ Issue complete and concise orders.
- ▶ Ensure key leaders track the exercise and render timely reports.
- ▶ Identify alternative training scenarios or techniques.
- ▶ Use large-scale battalion- or brigade-sector sketches for detail.
- ▶ Send key leaders on objective reconnaissance.
- ▶ Set the environmental standard within the unit, and ensure soldiers are aware of and comply with that standard.
- ▶ Keep the chain of command informed of environmental problems and concerns.
- ▶ Take immediate and effective action in response to hazardous spills or other emergencies.

Enemy (Opposing Forces (OPFOR))

- ▶ Ensure the OPFOR commander understands environmental problems and concerns.
- ▶ Know enemy characteristics and equipment.
- ▶ Identify environmental impacts of decisions.

Terrain and Weather

- ▶ Ensure high-risk areas (surface waters, archeological sites, and endangered species) are identified/marked.
- ▶ Navigate accurately know your location.
- ▶ Ensure that unit boundaries are identifiable.
- ▶ Ensure that there are redundant navigation aids or checks.
- ▶ Know weather effects (dry/windy or wet/soggy conditions), and limit/alter operations accordingly.

Troops and Equipment

- Ensure that soldiers are briefed on environmental concerns/standards.
- › Demand situational awareness — units, enemy, hazards, and environment.
- Anticipate where maneuver density will be highest.
- Use validated SOPS to simplify operations.
- › Insist on accurate and timely spot reports.
- Recognize soldier stress.
- › Rehearse, always.

Time

- ▶ Maximize planning time.
- ▶ Prioritize tasks, rehearsals, and reconnaissance.
- ▶ Adjust pace and tempo.

APPENDIX F**ENVIRONMENTAL RISK-ASSESSMENT MATRICES**

One cannot identify environmental risks without first determining what the hazards are. The best tool unit leaders can use in identifying hazards is the environmental risk assessment. Assessing risks in any operation can be as small an issue as simply asking, “How can the environment (air, land, and water) be damaged, and what can I do about it?” Asking that one question, getting an answer, and applying the environmental risk-assessment principles of task analysis and hazard control may prevent needless damage to the environment.

The environmental risk-assessment forms on pages F-13 and F-14 (methodology explained in Chapter 5) can be used by unit leaders to identify hazards and threats and place them in perspective to the mission or task at hand. These forms can be modified to more accurately reflect your mission, environmental conditions, and local requirements.

F-1. Air Pollution Probability of Occurrence.

Value	Contributing Factors
5	<p>“ Current or forecasted weather conditions will contribute to range fires (dry and windy conditions).</p> <ul style="list-style-type: none"> • Operating area is susceptible to range fires. • Vehicles and equipment are not reliable or well maintained • Soldiers are not environmentally conscientious. • Soldiers are not proficient/experienced. • Command and control or supervision is marginal. • Sustained high-tempo operations are planned. • Extensive use of explosives is planned.
4	<p>“ Operating area is susceptible to range fires.</p> <ul style="list-style-type: none"> • Current or forecasted weather conditions could contribute to range fires. • Soldiers are not environmentally conscientious. • Some high-tempo operations are planned. • Some use of explosives is planned.
3	<ul style="list-style-type: none"> • Weather is favorable to training; winds and range conditions are within safe operating limits. • Operating area is safe from range fires. • Soldiers are briefed on hazards of range fires and fire restrictions. • Command and control or supervision is adequate.
2	<p>“ Operating area is safe from range fires.</p> <ul style="list-style-type: none"> • Standby fire-fighting equipment is available. • Soldiers are environmentally conscientious. • Soldiers are briefed on hazards of range fire and fire restrictions. • Command and control or supervision is good.

Value	Contributing Factors (continued)
1	<p>“ Operating areas are not susceptible to range fires.</p> <ul style="list-style-type: none">• Fires are limited, controlled, and allowed only in authorized areas (powder burn areas and incinerators).• Use and training with CS (riot-control chemical agent) and smoke are strictly controlled.• Vehicles and equipment are well maintained and in good operating order.• Soldiers are environmentally conscientious.• Soldiers are thoroughly familiar with range fire restrictions.• Coremand and control or supervision is excellent.
0	<p>* No risk/not applicable.</p>

F-2. Archeological and Historic Sites Probability of Occurrence.

Value	Contributing Factors
5	<ul style="list-style-type: none"> • Low-visibility, night, or sustained high-tempo operations are planned. • Terrain has many archeological or historic sites. • Sites are neither identified nor marked off as restricted areas. • Command and control or supervision is marginal • Soldiers are not familiar with the terrain.
4	<ul style="list-style-type: none"> • Terrain has some archeological or historic sites. • Archeological and historic sites are marked off. • Low-visibility or night operations are planned. • Command and control or supervision is adequate. • Soldiers are not familiar with the terrain.
3	<ul style="list-style-type: none"> • Archeological and historic sites are marked off. • Soldiers have been briefed on sites in operating area. • No low-visibility or night operations are planned. • Command and control or supervision is adequate.
2	<ul style="list-style-type: none"> • Archeological and historic sites are identified and marked off. • No low-visibility or night operations are planned. • Command and control or supervision is good. • Soldiers are familiar with the terrain.
1	<ul style="list-style-type: none"> • Archeological and historic sites are identified and marked off. • Soldiers avoid sites during training operations, and logistics activities. • Soldiers are proactive in recognizing safeguarding, and reporting signs or evidence of possible archeological artifacts or sites. • Command and control or supervision is effective. • Soldiers are thoroughly familiar with the terrain. • Current or forecasted weather conditions are not an adverse factor.
0	<ul style="list-style-type: none"> • No risk/not applicable.

F-3. Hazardous Materials and Hazardous Waste Probability of Occurrence

Value	Contributing Factors
5	<ul style="list-style-type: none"> • Low-visibility, night, or sustained high-tempo operations are planned. • Operations are planned close to surface water sources. • Current or forecasted weather conditions are harsh. • Soldiers' experience with responding to HM or HW spills is limited or untested • Command and control or supervision is marginal. • Soldiers generally consider environmental matters a nuisance.
4	<ul style="list-style-type: none"> • Some high-tempo operations are planned. • Operations close to water sources are planned. • Current or forecasted weather conditions are marginal. • Some individuals are HM/HW qualified.
3	<ul style="list-style-type: none"> • Soldiers are environmentally conscientious but not trained. • Key HM/HW personnel are available during operations and maintenance activities. • Adequate spill cleanup materials are available. • Command and control or supervision is adequate. • Current or forecasted weather conditions are not a factor. • Operations tempo is normal.
2	<ul style="list-style-type: none"> • Normal operations are planned (soldiers have adequate rest). • Key HM/HW individuals will oversee high-risk HM/HW operations and maintenance activities. • Soldiers are environmentally sensitive and HM/HW trained. • Current or forecasted weather conditions are not a factor. • Command and control or supervision is excellent.

Value

Contributing Factors (continued)

- 1 * Soldiers dealing with HM/HW are well trained and experienced.
 - Spill-response team is well trained and has successfully conducted a HW/HM spill drill within preceding six months.
 - Unit HM/HW SOP is current (has accurate HM/HW inventory and location of HM/HW identified), and fire department is provided with this inventory and the location.
 - Command and control or supervision is excellent.
 - HM/HW is transported according to local/installation procedures.
 - Tempo of operations, training, and maintenance is normal.
 - Soldiers support the recycling program.
 - Work areas are well maintained, and unit maintains good housekeeping practices.

- 0 * No risk/not applicable.

F-4. Noise Pollution Probability of Occurrence

Value	Contributing Factors
5	<ul style="list-style-type: none"> • Sustained high-tempo operations are planned, with much noise-generating equipment and activities (artillery, tracked vehicles, marksmanship). • Activities are located close to civilian populace. • Command and control or supervision is marginal. • Soldiers' proficiency is marginal. • Soldiers are not environmentally conscientious. • Extensive night maneuvers planned
4	<ul style="list-style-type: none"> • High-tempo operations are planned with some noise-generating activities. • A large number of engine starts and runups are required • Command and control or supervision is adequate. • Activities are located near civilian populace. • Soldiers are not environmentally conscientious. • Limited night maneuvers planned.
3	<ul style="list-style-type: none"> • Level of noise-generating equipment is normal. • Civilian populace will be nominally affected. • Command and control or supervision is adequate. • Night maneuvers may be conducted.
2	<ul style="list-style-type: none"> • Nominal noise levels are generated. • Command and control or supervision is good. • Soldiers are environmentally conscientious. • Night maneuvers not likely.
1	<ul style="list-style-type: none"> • Soldiers are aware of and comply with noise-restriction hours. • Minimum operations, training, or maintenance activities are planned. • Command and control or supervision is highly effectively. • Activities are located away from civilian populace. • No night maneuvers planned.
0	<ul style="list-style-type: none"> • No risk/not applicable.

F-5. Threatened and Endangered Species Probability of Occurrence.

Value	Contributing Factors
5	<ul style="list-style-type: none">• Threatened and endangered species habitats are not identified.• Threatened and endangered species habitats are not marked off as a restricted area.• Command and control or supervision is marginal.• Low-visibility or night operations are planned.• Sustained high-tempo operations are planned.• Soldiers are not familiar with the terrain.
4	<ul style="list-style-type: none">• Threatened and endangered species habitats are marked off.• Low-visibility or night operations are planned.• Command and control or supervision is adequate.• Soldiers are not familiar with the terrain.
3	<ul style="list-style-type: none">• Threatened and endangered species habitats are marked off.• Soldiers are briefed on threatened and endangered species.• Low-visibility or night operations are not planned.• Command and control or supervision is adequate.
2	<ul style="list-style-type: none">• Threatened and endangered species habitats are identified.• Threatened and endangered species habitats are marked off.• Low-visibility or night operations are not planned.• Command and control or supervision is good.• Soldiers are familiar with the terrain.
1	<ul style="list-style-type: none">• Threatened and endangered species habitats are identified.• Soldiers know and recognize threatened and endangered species.• Threatened and endangered species habitats are marked off as restricted/"off -limits" areas.• Soldiers avoid threatened and endangered species habitats during training, operations, and logistics activities.• Command and control or supervision is effective.• Soldiers are thoroughly familiar with the terrain.
0	<ul style="list-style-type: none">• No risk/not applicable.

F-6. Water Pollution Probability of Occurrence,

Value	Contributing Factors
5	<ul style="list-style-type: none">• Current or forecasted weather conditions will cause much terrain damage.• Spills most likely will affect surface waters (wetlands, groundwater, streams, ditches, sewers, or drains).• Night or low-visibility operations are planned• Soldiers' environmental proficiency is low.• Command and control or supervision is marginal.• Sustained high-tempo operations (36 hours plus) are planned.• Spill response is marginal or untested.• Spill-response material is not available.
4	<ul style="list-style-type: none">• Current or forecasted weather conditions will cause some terrain damage.• Spill on the ground is 25' gallons and will not affect surface waters, wetlands, groundwater, streams, ditches, sewers, or drains.• High-tempo operations (up to 36 hours) are planned.• Soldiers' proficiency is somewhat low.• Command and control or supervision is marginal.
3	<ul style="list-style-type: none">• Spill on the ground is less than 25 gallons, with no possibility of contaminating any water source.• Normal operations (12- 16 hours a day) are planned.• Soldiers are environmentally sensitive.• Command and control or supervision is adequate.• Weather will not adversely affect operations.
2	<ul style="list-style-type: none">• Ground spill is minor (less than one gallon), with no possibility of contaminating any water source.• Normal operations (12- 16 hours a day) are planned.• Soldiers are environmentally sensitive.• Command and control or supervision is good.• Soldiers are trained in spill-response duties.• Spill-control material is readily available.

value

Contributing Factors (continued)

- 1 “ No potential for spill.
- Soldiers’ proficiency is high.
 - Soldiers are very environmentally sensitivity.
 - Command and control or supervision is high/tested.
 - Soldiers maintain good housekeeping practices.
 - Equipment is well maintained
 - Collection of maintenance wastes are managed properly.
- 0 •No risk/not applicable.

F-7. Wetland Protection Probability of Occurrence.

Value	Contributing Factors
5	<ul style="list-style-type: none">“ Sustained high-tempo operations are planned.• Command and control or supervision is marginal.• Current or forecasted weather conditions will adversely affect operations.• Wetland boundaries are not marked or understood by soldiers.• Soldiers are not environmentally conscientious.• Soldiers’ proficiency is marginal.• Equipment is unreliable or untested.• Field service/maintenance may have to be done near wetlands.• Spill response is marginal or untested.• Spill-response material is not available.
4	<ul style="list-style-type: none">’ Wetland boundaries are marked.• Low-visibility or night operations are planned.• Command and control or supervision is adequate.• Soldiers are not familiar with the terrain.• Soldiers are not environmentally conscientious.• Field service/maintenance may have to be done near wetlands.
3	<ul style="list-style-type: none">“ Wetland area is well defined and marked.• Soldiers have been briefed on susceptibility of wetlands to damage by operations, training, and logistic activities.• No low-visibility or night operations are planned.• Command and control or supervision is adequate.
2	<ul style="list-style-type: none">“ Wetland area and boundaries are well defined.• Soldiers are environmentally conscientious.• No low visibility or night operations are planned.• Command and control or supervision is good.• Soldiers are familiar with the terrain.

Value

Contributing Factors (continued)

- 1 “ Maintenance is conducted in approved areas.
- Wetland areas and boundaries are identified.
 - No refueling will be conducted in wetland areas.
 - Streams/ditches will be crossed at designated vehicle crossings.
 - Coremand and control or supervision is excellent.
 - Soldiers are environmentally conscientious.
 - Soldiers are familiar with terrain.
 - Applicable permits for activities impacting wetlands have been obtained.
 - Collection of maintenance wastes are managed properly.
- 0 • No risk/not applicable.

Environmental Risk-Assessment Worksheet

Environmental Area	Rating					
Unit Operations	Risk Impact					
Movement of heavy vehicles and systems	5	4	3	2	1	0
Movement of personnel and light vehicles/systems	5	4	3	2	1	0
Assembly-area activities	5	4	3	2	1	0
Field maintenance of equipment	5	4	3	2	1	0
Garrison maintenance of equipment	5	4	3	2	1	0

Environmental Area	Unit Operations						Risk rating
	Movement of heavy vehicles and systems	Movement of personnel and light vehicles/systems	Assembly-area activities	Field maintenance of equipment	Garrison maintenance of equipment		
Air pollution							
Archeological and historical sites							
Hazardous material and hazardous waste							
Noise pollution							
Threatened and endangered species							
Water pollution							
Wetland protection							
Overall rating							

F-9. Overall Environmental Risk-Assessment Form

APPENDIX G

ENVIRONMENTAL INFORMATION HOTLINES

Environmental hotline numbers provided for your information.

Army Environmental Information Response Line

Operated by USAEC. Provides information and assistance on Army environmental issues.

CONUS	1-800-872-3845
OCONUS	1-410-671-1699
DSN	584-1699

Environmental Training Support Center (Corps of Engineers (COE) - Huntsville Division)	1-205-722-5838
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A central referral point for the Army for environmental training support information.

Soldier Training	1-314-563-4122
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Provides information on environmental training furnished to all service schools and units by USAES.

Additional hotline numbers.

GLOSSARY

1SG first sergeant

2nd second

AAR after action review; after action report

ACCP Army Correspondence Course Program

AL Alabama

AR Army regulation

ARPA Archeological Resources Preservation Act

asbestos A group of natural minerals that tend to separate into strong, heat-resistant fibers. It is a suspected carcinogen

ATTN attention

CAA Clean Air Act

carcinogen A substance known to cause or help the growth of cancerous cells.

CEQ council on environmental quality

CERCLA Comprehensive Environmental Response, Compensation and Liability Act regulates clean up of hazardous waste sites. Also known as “Superfund”

CFC chlorofluorocarbons; a family of fully halogenated hydrocarbons containing fluorine and chlorine. These substances are environmentally harmful because they deplete the earth’s stratospheric ozone layer.

CFR code of federal regulations

characteristics of hazardous waste A method of identifying which substances are HW by their physical/chemical properties. EPA has define four characteristics that can be determined by tests:

1. Ignitability: the ability to catch fire.
2. Corrosivity: the ability to corrode other materials.
3. Reactivity: the ability to enter into a violent chemical reaction, which may involve explosions or fumes.
4. Toxicity: the ability to release certain toxic constituents when leached with mild acid.

chemical A substance that is produced by or used in a chemical process

civil action A law suit filed in court against a person who has either failed to comply with statutory or regulatory requirements or an administrative order or has contributed to a release of hazardous wastes or constituents. These are four types of civil actions: compliance, corrective, monitoring and analysis, and imminent hazard.

Commander's Guide to Environmental Management This reference provides commanders with basic information concerning their responsibilities in management the Army's environmental program at installation or activity level. It is intended as a primer on the environmental program. The guide is currently published by USAEC; it will be converted to an official Army publication

conexes container express

CONUS continental United States; from an environmental standpoint, CONUS refers to any land over which the EPA has jurisdiction. Included are Alasks, Hawaii, Puerto Rico, Guam and the Virgin Islands.

criminal action A prosecutorial action taken by the United States Government or a state towards any person(s) who has knowingly and willfully not complied with the law. Such an action can result in the imposition of frees or imprisonment.

CRMP Cultural Resources Management Plan

CS riot-control chemical agent

CWA Clean Water Act

DA Department of the Army

DD Department of Defense

discharge Includes, but is not limited to, the accidental or intentional spilling, leaking, pumping, emitting, emptying, or dumping of a substance into or on any land or water.

disposal The discharge, deposit, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water.

DOD Department of Defense

DOL Directorate of Logistics

DOT Department of Transportation

DPTM Directorate of Plans, Training, and Mobilization

DPW Directorate of Public Works

DRMO Defense Reutilization and Marketing Office

DS2 decontaminant solution 2; incompatible with most metals, DS2 is procured exclusively by DOD to decontaminate machinery after a chemical-weapons attack DS2 is not authorized for training due to the hazards it presents to humans who are exposed to it. It can cause severe burns, stricture of the esophagus, and damage to the central nervous system, liver, and reproductive system.

EA environmental assessment; a study to determine if significant environmental impacts are expected from a proposed action, required by NEPA.

EC environmental coordinator

ECAS Environmental Compliance Assessment System; this system involves the use of the Environmental Compliance Assessment. Also, referred to as an environmental audit or environmental program review; it involves an examination of an installation's environmental program

to identify possible compliance deficiencies. It also includes designing corrective-action plans and implementing fixes for identified deficiencies.

ecology The science concerned with the relationship between organisms and their environment and the interrelationships and interdependence of these organisms; that is, the study of living things in relation to the environment and to each other.

EMO environmental management office

endangered species Those species, designated by the Secretary of the Interior, that are in danger of extinction throughout all or a significant portion of their range.

EIS environmental impact statement; a document prepared by EPA or under EPA guidance that identifies and analyzes in detail the environmental impacts of a proposed action.

ENRD environmental and natural resources division

environmental audit A compliance review of facility operations, practices, and records to assess and verify compliance with federal, state, and local environmental laws and regulations.

environmental noise The outdoor noise environment consisting of all noise (including ambient noise) from all sources that extend beyond, but do not include, the workplace.

environmental pollution The condition resulting from the presence of chemical, mineral, radioactive, or biological substances that alter the natural environment or that adversely affect human health or the quality of life, biosystems, the environment, structures and equipment, recreational opportunities, aesthetics, or natural beauty.

environmental stewardship The care and management of another's property. Army objective is to plan, initiate, and carry out its actions and programs in a manner that minimizes adverse effects on the environment without impairing the mission.

EPA Environmental Protection Agency; established in 1970, the EPA is charged with protecting and enhancing the environment today and for future generations to the fullest extent possible.

EPCRA Emergency Planning and Community Right-to-Know Act

EQCC Environmental Quality Control Committee

ESA Endangered Species Act

FFCA Federal Facilities Compliance Act

FGS final governing standards

FIFRA Federal Insecticide, Fungicide, and Rodenticide Act

FM field manual

FMO facilities management officer

FOIA Freedom of Information Act

FTX field training exercise

FY fiscal year

groundwater A body of water, generally within the boundaries of a watershed, that exists in the internal passageways of porous geological formations (aquifers) and which flows in response to gravitational forces. Nearly half of the US population uses groundwater as its primary water source.

hazard A condition that can be expected to cause damages including injury or death to exposed individuals.

hazardous substance Under CERCLA, any element, compound, mixture, solution, or substance which, when released into the environment may present substantial danger to public health/welfare or the environment. The definition is broader than the definition of hazardous waste under RCRA.

HAZCOM hazardous communication, the responsibility of leaders and supervisors concerning possible hazards in the workplace and notification of hazards and necessary precautions to their soldiers.

HAZMIN hazardous-waste minimization

health hazards Those that can cause injury or illness when a person is exposed to hazardous chemicals by breathing, swallowing, skin contact, or eye contact.

HM hazardous material; any material, including waste, that may pose an unreasonable risk to health, safety, property, or the environment, when they exist in specific quantities and forms. Chemicals that have been determined by the Secretary of Transportation to present risks to safety, health, and property during transportation.

HN host nation; a nation which receives the forces and/or supplies of Allied nations and/or North Atlantic Treaty Organization (NATO) organizations to be located on, or to operate in or to transit through its territory.

HQ headquarters

HW hazardous waste; waste which, if improperly managed, can create a risk to the safety or health of people or to the environment. EPA considers hazardous waste a subset of both solid waste and hazardous materials. Technically, those wastes that are regulated under RCRA 40 CFR, part 261 either because they are "listed or because they are ignitable, corrosive, reactive, or toxic.

ICUZ installation compatibility use zone; a land use planning procedure employed to control environmental noise.

ID identification

IOSC installation on-scene coordinator

IPM integrated pest management, the management of actual and potential pest problems using a combination of available preventive and corrective control measures. The biological effectiveness, environmental acceptability, and cost effectiveness of the measures

must be considered before such measures can be approved for use on Army-controlled property.

IRP installation restoration program, the military's program to address environmental contamination at its facilities. An installation response team are those collective persons designated to act in an emergency to perform functions directed by the installation on-scene coordinator.

IRT installation response team

ISCP Installation Spill Contingency Plan; document detailing resources and procedures for cleanup of oil and hazardous-substances spills.

ISD installation supply division

landfill An in-ground disposal site for wastes that were designed to reduce air pollution and unsightly trash that resulted from open dumping and burning. Older landfills leak contaminants into the soil and groundwater, although many new ones are built with elaborate leak-prevention systems.

LEPC local emergency planning committee

MACOM major Army command

MCL maximum contaminant level

mech mechanized

METT-T mission, enemy, terrain, troops, and time available

MMPA Marine Mammal Protection Act

MO Missouri

monitoring The assessment of emissions and ambient air quality conditions. Monitoring techniques used are emission estimates, visible emission readings, diffusion or dispersion estimates, and sampling or measurement with analytical instruments.

MSDS material safety data sheet

NAAQS national ambient air quality standards

NBC nuclear, biological, and chemical

NCO noncommissioned officer

NCP National Contingency Plan

NEPA National Environmental Policy Act

NHPA National Historic Preservation Act

NOV notice of violation; formal written document provided to an installation by a regulatory agency as a result of environmental noncompliance.

NPDES National Pollutant Discharge Elimination System

NSN national stock number

OCONUS outside the continental United States

OK Oklahoma

OPFOR opposing forces

OSHA Occupational Safety and Health Act

PAO public affairs office(r)

PCB polychlorinated biphenyls; a family of chemicals that are probable carcinogens, once widely used in electrical insulation. Banned in the US in 1979, PCB contamination has occurred on US bases where abandoned electrical transformers have leaked into the environment

physical hazards Those that can cause explosions, fires, violent chemical reactions, or other hazardous situations.

PLL prescribed load list

PMO provost marshal office

PMP Pest Management Plan

POC point of contact

POL petroleum, oils, and lubricants

PPE personal protective equipment

primacy A legal situation which allows the states to have environmental and worker protection standards more stringent than the federal standards.

RCRA Resource Conservation and Recovery Act

reclamation Regeneration of a material, or processing a material to recover a usable product. Examples include the recovery of lead from spent batteries or the regeneration of spent solvents.

recovered materials Waste materials and by-products that have been recovered or diverted from solid waste, but such term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

recyclability The ability of a product or material to be recovered from, or otherwise diverted from, the solid waste stream for the purpose of recycling.

recycling The process by which recovered materials are transformed into new or usable products.

risk The probability of exposure, coupled with the severity of the consequences. Risk is often used in a more general way than danger, in that risk is used to describe potential financial loss or property damage in addition to environmental damage or personal injury.

S1 Adjutant (US Army)

S3 Operations and Training Officer (US Army)

S4 Supply Officer (US Army)

SARA Superfund Amendments and Reauthorization Act

SDWA Safe Drinking Water Act

SF standard form

SJA staff judge advocate

SOFA Status of Forces Agreement; an agreement on the stationing of forces to which the US is a party, such as a multilateral or bilateral stationing or base rights agreement, or an arrangement or understanding concluded thereunder.

solvents Volatile organic compounds (trichloroethylene and so forth) used as powerful cleaners, degreasers, and paint strippers. Solvents were widely used in the military's industrial production and maintenance operations and routinely dumped untreated into the ground.

SOP standing operating procedure

source reduction The DOD has set the goal of reducing hazardous waste generation at its sources. This reduction is to be achieved through product substitution, recycling, and inventory control, and by developing new industrial processes that use less hazardous materials, such as bead-blasting rather than solvents to remove paint.

sovereign immunity A legal situation where the sovereign (for example, federal government) cannot be held legally liable for what it does or does not do.

spill A generic term that encompasses the accidental and the deliberate but unpermitted discharge or release of a pollutant.

Superfund See CERCLA.

surface water Water contained in rivers, streams, and so forth.

STB super tropical bleach

TC training circular

TEL telephone

TG trainer's guide

threatened species Those species that are likely to become endangered within the foreseeable future throughout all or a significant portion of their range.

TID turn-in document

TM technical manual

toxic Capable of producing injury, illness, or damage to humans, domestic livestock, wildlife, or other organisms through ingestion, inhalation or absorption through any body surface.

TRADOC United States Army Training and Doctrine Command

TSCA Toxic Substances Control Act

TSDF treatment, storage, disposal facility

US United States

USAEHA United States Army Environmental Hygiene Agency

USAEC United States Army Environmental Center; provides oversight, coordination, and execution support for Army environmental programs and projects, and technical and related support. Formerly the US Army Toxic and Hazardous Materials Agency (USATHAMA).

USAES United States Army Engineer School

USE used-solvent elimination program

USEPA United States Environmental Protection Agency

USFWS United States Fish and Wildlife Service

VA Virginia

wetlands Generally includes marshes, swaps, bogs, and similar areas. Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for saturated soil conditions.

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INDEX

- after-action reports/review (AAR), 3-3, 5-2, 5-9
- air pollution, 2-6, 5-2, 5-10, A-3
- Army Environmental Ethic, 1-2, 3-2 through 3-4
- Asbestos Hazard Emergency Response Act, A-2

- chlorofluorocarbons (CFCs), 2-6, A-3, A- 10
- Clean Air Act (CAA), 2-6, A-3
- Clean Water Act (CWA), 2-4, A-3
- compliance
 - pillar, 1-5
 - requirements, 2-1
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), A-4
- conservation
 - pillar, 1-6
 - Resource Conservation and Recovery Act, A-9
- Cultural Resources Management Plan (CRMP), A-2

- defense reutilization and marketing office (DRMO), 6-4
- directorate of logistics (DOL), 4-4, 6-4
- directorate of plans, training, and mobilization (DPTM), 6-4
- directorate of public works (DPW)
 - description, 6-3
 - pest management, A-7

- Emergency Planning and Community Right-to-Know Act (EPCRA), 1-7, A-4
- endangered species, 2-7, 5-7, 5-10
- Endangered Species Act (ESA), 2-7, A-5
- environmental
 - assessment, 4-12
 - background, 1-1
 - compliance officer 3-5
 - coordinator (EC), 6-3
 - damage, 1-2
 - ethic. See Army Environmental Ethic
 - goals (Army), 1-6
 - hotlines, G-1
 - inspections, 4-12, 4-13

environmental (continued)

- laws, 2-1 through 2-2, A-2
- leaders, 1-1, 3-1
- model, 1-4
- penalties, 2-8
- point of contacts, 6-1, 6-6
- policies, 1-6
- self-assessment, C-1
- stewardship, 1-3, 3-1 through 3-4
- strategy, 1-3, 1-4
- unit program, 4-1

Environmental Compliance Assessment System (ECAS), 4-2, 4-12, 4-13

environmental and natural resources division, 6-3

Environmental Protection Agency (EPA), 2-2, 2-8, 4-4, 4-13

Environmental Quality Control Committee (EQCC), 6-5

EPA Federal Facilities Compliance Strategy, 4-12

erosion, 5-2

erosion control, 2-4, 2-6

Executive Order

11989, A-5

11990, A-5

12088, A-5

12114, A-6

12580, A-6

12856, 4-7, A-6

12873, 4-8, A-6

Facilities Management Officer (FMO), 4-4

Federal Facilities Compliance Act (FFCA), 2-2, A-6

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), A-7

Final Governing Standards (FGS), 2-2

fire department, 6-5

fish and wildlife management, A-10

fish and wildlife officer, 6-3

federal register, A-5

forester, 6-3

Freedom of Information Act (FOIA), A-7

hazardous communications (HAZCOM), 4-5, D-1

hazardous material

checklist, 5-8

unit program, 4-1 through 4-4

hazardous waste
 checklist, 5-8
 coordinator, 3-5
 regulations, 4-5
 unit program, 4-4 through 4-5
hazardous-waste minimization (HAZMIN), 4-7
Historic and Archeological Data Preservation Act, A-7
hotlines, G-1
host-nation laws, 2-2

installations, 2-2, 4-11, 6-1
Installation Compatible Use Zone (ICUZ) Program, A-9
Installation Restoration Program (IRP), A-4
Installation Spill Contingency Plan (ISCP), 4-9
installation spill response team, 4-9
integrated pest management (IPM), A-7

laws
 federal, 2-1, 2-2, 2-8, A-2
 local, 2-2
 state, 2-2
Lead Contamination Control Act, A-7
local emergency planning committee (LEPC), A-4

Marine Mammal Protection Act (MMPA), A-7
master planner, 6-3
material safety data sheet (MSDS), 4-5, 4-6, 5-3, D-1
maximum contaminant levels (MCL), A-9
METT-T process, 5-2, E-1

National Ambient Air Quality Standards (NAAQS), A-3
National Contingency Plan (NCP), A-6
National Environmental Policy Act (NEPA)
 description, A-7
 regulations (AR 200-2), A-1
 requirements, 2-3
National Historic Preservation Act (NHPA), 2-7, A-8
National Pollutant Discharge Elimination System (NPDES), A-3
Native American Grave Protection and Repatriation Act, A-8
natural resources regulations (AR 420-74), A-2
noise
 Noise Control Act, 2-8, A-8

noise (continued)

 Quiet Communities Act, A-9

 reduction, 5-6

nonhazardous waste, 2-4

Occupational Safety and Health Act (OSHA), A-9

OCONUS

 compliance, 4-13

 host-nation law, 2-2

OSHA Hazard Communication Program, A-9

penalties, 2-8

personal protective equipment (PPE), 4-5, 4-9

pest management

 integrated pest management (IPM), A-7

 plan (PMP), A-2

 regulations (AR 420-76), A-2

point of contact (POC), 6-1, 6-5

pollution prevention, 4-2, 4-7

polychlorinated biphenyls (PCBs), A-10

prevention pillar, 1-5

preventive medicine office, 6-5

provost marshal office (PMO), 6-5

public affairs office (PAO), 6-4

range control officer, 6-4

range manager, 6-4

range officer, 6-4

recycling, 4-2, 4-7

regulations (Army)

 200-1, A-1

 200-2, A-1

 420-40, A-2

 420-47, A-2

 420-74, A-2

 420-76, A-2

reports

 1383, A-5

 A-106, A-5

Resource Conservation and Recovery Act (RCRA), 2-3, 2-8, A-9

responsibilities

 commanders, 3-4

leaders, 1-1, 2-1, 4-1, 5-1
noncommissioned officers, 3-2
officers, 3-3
soldiers, 3-1
restoration pillar, 1-5
risk
 assessment, 5-9, 5-10
 -assessment form, overall, F-14
 -assessment matrices, 5-9 through 5-15
 -assessment worksheet, F-13
 contributing factors, F-2 through F-12
 management, 5-1
 reduction, 5-16, E-1, E-2

SI, 6-6
S3, 4-2, 6-6
S4, 4-2, 6-6
Safe Drinking Water Act (SDWA), A-9
safety office, 6-4
SARA Title III (EPCRA), A-4
Sikes Act, A-10
solid- waste management
 nonhazardous, 2-4
source reduction, 1-5
spill. See, installation spill contingency plan (ISCP)
 coordinator, 4-8
 planning, 4-8
 prevention, 4-8
 response plan, 4-8
standing operating procedures (SOP), 3-6, 4-2, 5-3, B-1
Staff Judge Advocate (SJA), 2-3
Status of Forces Agreement (SOFA), 4-13
strategy, 1-3
stewardship, 1-3, 3-1 through 3-4
Superfund. See, CERCLA
Superfund Amendments and Reauthorization Act (SARA), A-4

threatened species, 2-7, A-5
Toxic Substances Control Act (TSCA), A-10
training
 areas, 1-2
 requirements, 4-10

training (continued)

responsibilities, 1-1

sources

Army Correspondence Course Program, 4-11

installation 4-11

service schools, 4-11

unit, 4-11

types

hands-on, 4-12

managerial, 4-12

scientific/technical, 4-12

soldier training, 4-12

unit environmental compliance officer, 4-5

US Fish and Wildlife Service (USFWS), 1-6, A-10

US Forest Service, 1-6

US Soil Conservation Service, 1-6

water

pollution, 5-2

wetlands, 2-5, A-5

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By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:


MILTON H. HAMILTON

Administrative Assistant to the
Secretary of the Army

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