



DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
WASHINGTON, D.C. 20380-0001

MCO 6280.8
LFL-dt
23 Jul 1987

MARINE CORPS ORDER 6280.8

From: Commandant of the Marine Corps
To: Distribution List

Subj: Hazardous Waste Minimization

Ref: (a) MCO P11000.8B

Encl: (1) Hazardous Waste Minimization Techniques

Report Required: Hazardous Waste Report (Report Symbol
MC-6280-02), par. 4c(4)

1. Purpose. To identify the background and concepts for the minimization of hazardous waste (HW) generation through various methods and techniques.

2. Background

a. The Marine Corps hazardous waste minimization (HAZMIN) policy is to minimize the volume and toxicity of the HW it generates in a practical and economical manner. HAZMIN consists of two parts:

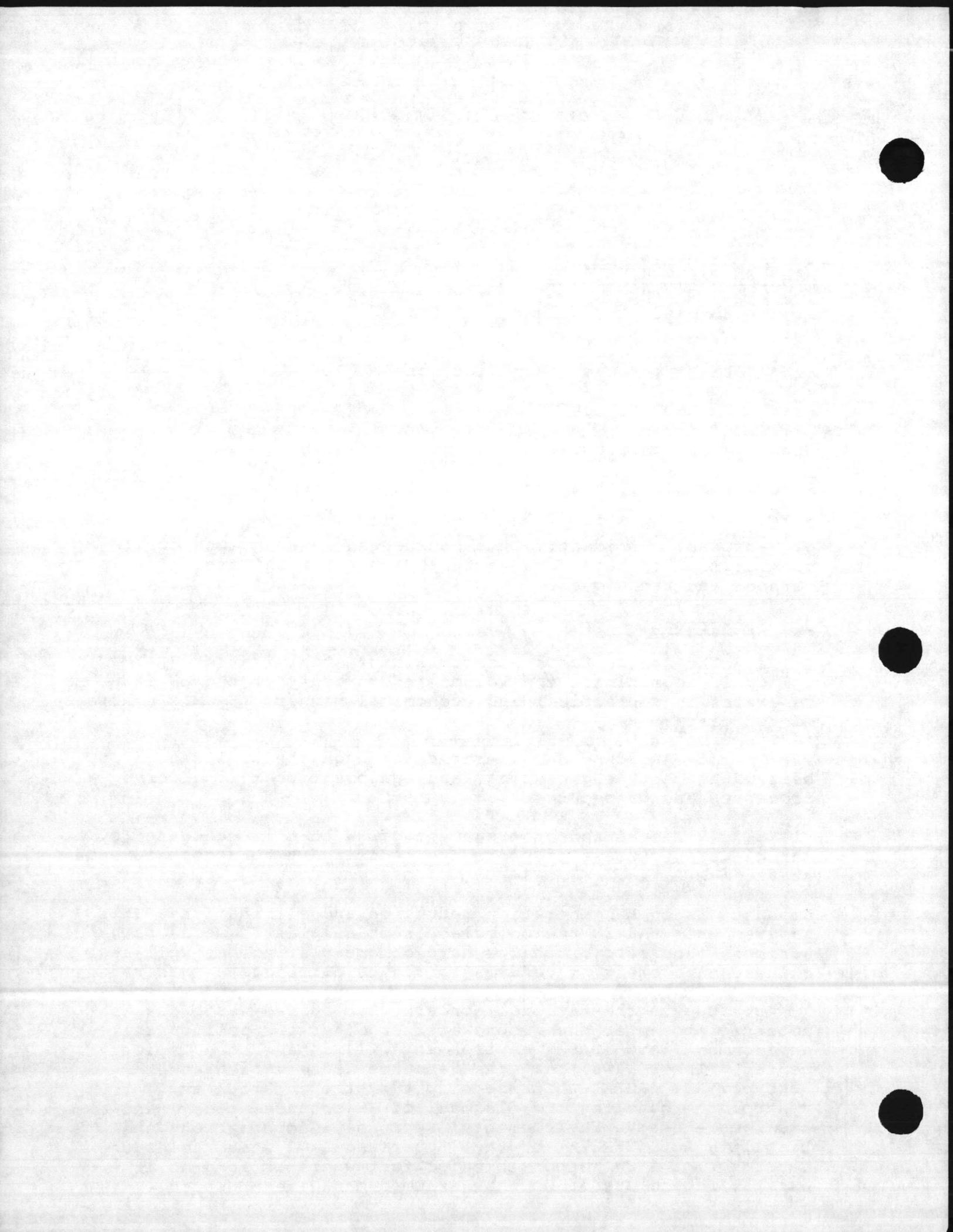
(1) Avoiding HW generation through the application of best management, engineering, and equipment to Marine Corps processes and procedures.

(2) Reuse and/or treatment of HW that is generated by a Marine Corps process or procedure reducing it to a nonhazardous state.

Emphasis is on HW generation reduction and elimination. This program uses HAZMIN technologies, such as plastic media paint stripping and zero discharge hard chrome plating, as well as changed management procedures to reduce/eliminate HW generation.

b. Due to the national concern that buried waste has the potential to enter the groundwater or otherwise pollute the environment, two strict environmental laws have been implemented. These laws are: the Resource Conservation and Recovery Act (RCRA) which sets up a system to track and control the handling and disposal of HW produced today; and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or the "Superfund Law" which holds the generator of a HW responsible for that waste as long as it exists, regardless of who has assumed management custody.

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If the Marine Corps generates a HW today, and it causes an environmental or health problem at anytime in the future, the Marine Corps is legally responsible for that problem and appropriate corrective action despite "proper" disposal in accordance with all requirements. In summary, this responsibility cannot be delegated to another party.

c. The RCRA recognizes the long-term problems of HW landfills. A 20-year guaranteed landfill "liner" is obviously of little comfort if a HW does not degrade with time; in fact, no one can really "guarantee" a HW landfill. Consequently, the RCRA prohibits placement of bulk or noncontainerized liquid HW in any landfill. The Office of the Secretary of Defense, noting the long-term liabilities of HW, and solvents in particular, has banned the disposal of waste solvents by landfill (whether through contract or otherwise) and required solvent users to start recycling nearly all solvents by October 1986.

d. The RCRA also requires every generator of HW to: (1) certify on the HW manifest which accompanies all HW that the generator has a program to minimize the amount and toxicity of wastes generated to the degree the generator determines to be economically practicable, and that the generator's proposed treatment, storage, or disposal method minimizes the present and future threat to human health and the environment, and; (2) include in the biennial report to the Environmental Protection Agency (EPA) Regional Administrator (40 CFR 262.41), the activity's efforts to reduce the waste volumes and toxicity, as well as describe the changes already accomplished. Also, any installation that holds a RCRA permit to operate a HW treatment, storage, or disposal facility must make similar certifications at least annually per 40 CFR 264.73. This certification is maintained at the facility as part of the operating record until closure of the facility.

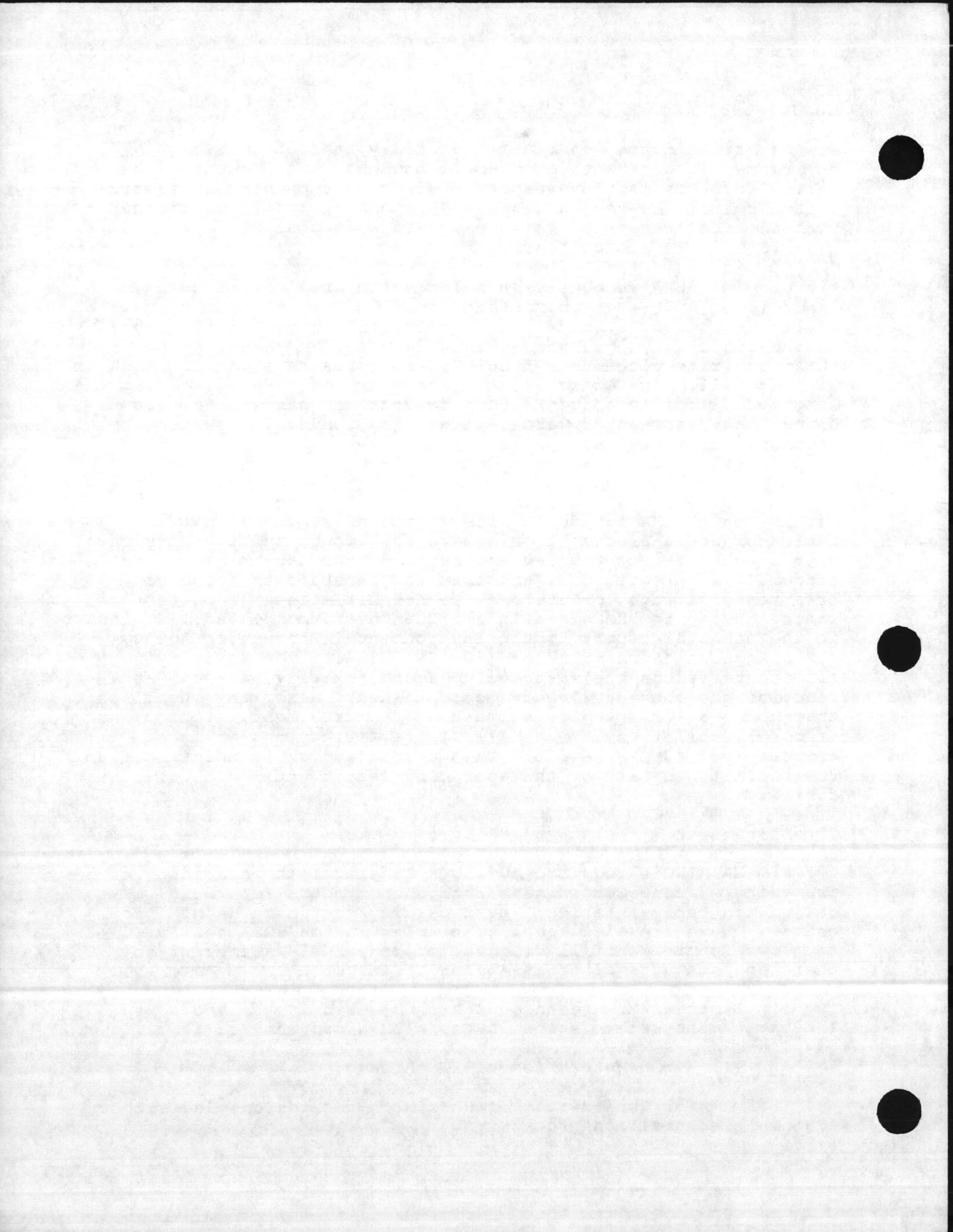
3. Discussion

a. HAZMIN is required by law. As stated in paragraph 2d, preceding, Marine Corps installation commanders (or their designated representatives) must certify they have HAZMIN programs. There are also legal timetables in the RCRA that will shutdown future landfill disposal of many HWs, whether or not there are adequate alternate means of disposal.

b. Basic HAZMIN techniques are outlined in the enclosure. The three consecutive steps in the HAZMIN program are as follows:

(1) Avoid generation of HW through:

(a) Considering of HAZMIN in the weapons and support equipment acquisition process.



(b) Tighting control of hazardous materials at Marine Corps installations.

(c) "Delisting" of specific Marine Corps wastes from generic HW streams listed by regulatory agencies.

(d) Substituting of a material in a process so that HW generation is reduced or eliminated.

(e) Changing the process to reduce or eliminate HW generation.

(f) Extending of shelf-life and other factors which cause hazardous materials to become excess and enter the Defense Logistics Agency (DLA) reuse, transfer, donation, and sale screening process.

(2) Recycle the HW by:

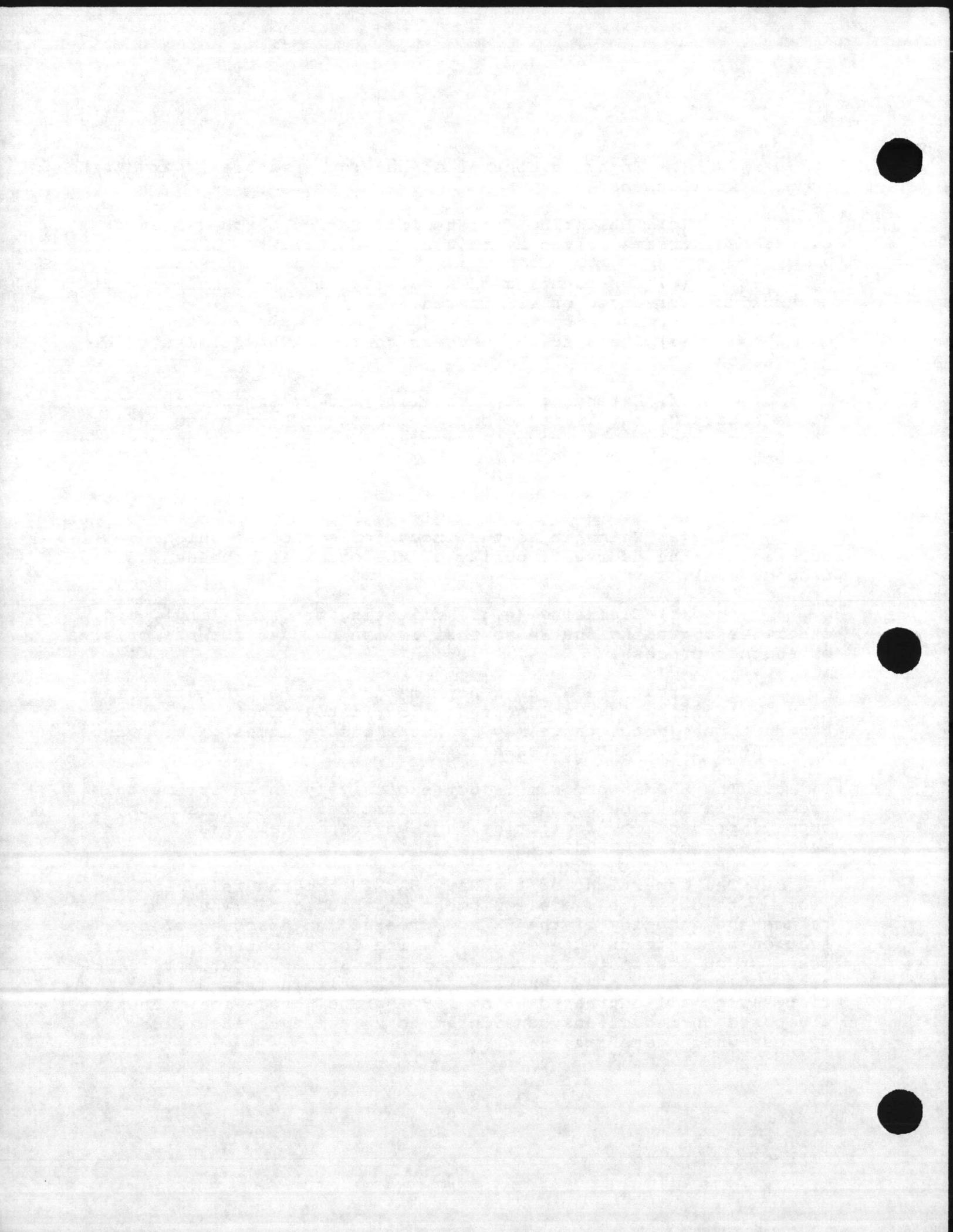
(a) Using it as the input for a process which does not require the degree of purity of the original process (called cascade use).

(b) Cleansing (e.g., filtering or distilling), or otherwise upgrading the HW so that it can be used for the original or another process.

(3) Treat the HW to a nonhazardous state by neutralization, solidification, volume reduction, detoxification, or thermal destruction. (Note, there may be hazardous residues; i.e., waste, from these treatment processes.)

c. The HAZMIN program is not exclusively an environmental program; it must be a cooperative effort between acquisition, supply, production, facilities, and environmental personnel at every level of command.

d. The Department of the Navy HAZMIN program is a 5-year program to put into place equipment and procedures which will reduce the quantity of the HW now treated and disposed of off-station by contract (DLA or Navy/Marine Corps contract), or disposed of on the installation. The goals are a 50 percent reduction (by weight) in HW generated and the elimination of the disposal of all untreated HW by 1992 Marine Corps-wide. These are based on reductions considered to be achievable in each process which generates HW.



e. The HAZMIN program will be financed through several mechanisms:

(1) Local resources will be used to implement management and operational changes to effect HW generation reduction to the maximum extent practical.

(2) Limited Headquarters Marine Corps Environmental Management (P1 and R2) Operations and Maintenance Marine Corps funds are available to support HAZMIN studies and required construction (chapter 4 of the reference applies).

(3) Additional funding through the Defense Environmental Restoration Account (DERA) will periodically be available to supplement activity projects requiring procurement and installation of HW reduction equipment. These funds must be considered supplemental, and internal Marine Corps resources must be used to the maximum extent possible.

4. Action

a. The Commandant of the Marine Corps (CMC) (LF) will:

(1) Oversee implementation of a hazardous material control program at each activity.

(2) Plan, program, and budget, through normal channels, funds (beyond those made available from the DERA) for projects necessary to achieve HAZMIN goals for field activities.

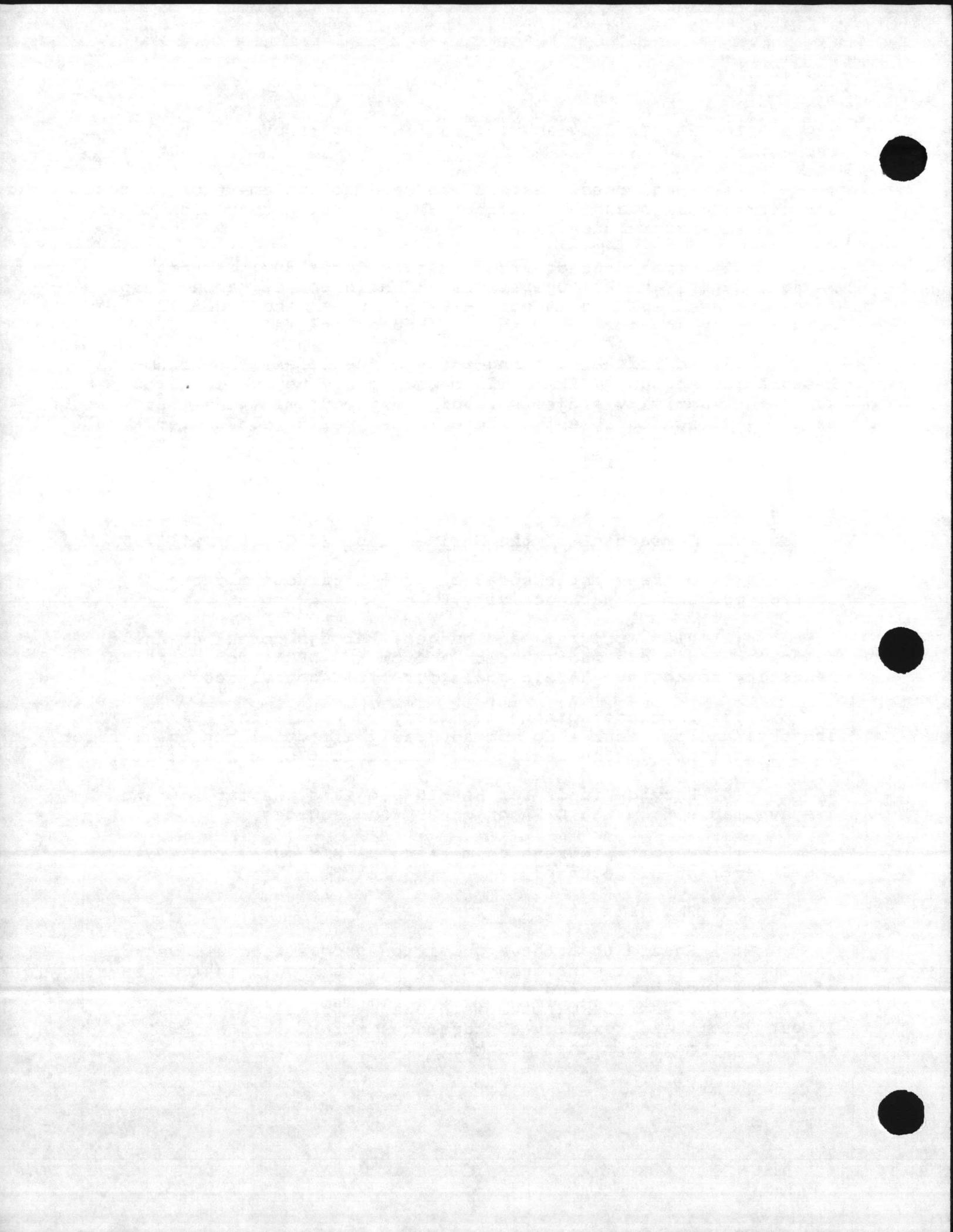
(3) Initiate actions necessary to assure that HAZMIN projects and procedures do not adversely affect either the mission of the activity or the quality of the product of the activity.

(4) Provide funds for HAZMIN projects insofar as funds are available from the DERA or other fund sources.

(5) Report progress on meeting HAZMIN goals to SECNAV and Department of Defense.

b. The CMC (LM) will:

(1) Ensure that the acquisition process for all weapons and support systems considers HAZMIN. This should include review of maintenance cycles and materials recommended by vendors, to ensure they prescribe minimum maintenance frequency and use the lowest volume and toxicity of hazardous materials which will effectively maintain the equipment.



(2) Ensure to the maximum extent practicable, consumable hazardous materials which have shelf-life considerations accurately define maximum shelf-life and are procured only in quantities sufficient to meet mission requirements.

c. Commanding generals/commanding officers of Marine Corps activities shall:

(1) Develop and implement programs using the steps described in paragraph 3b, preceding, to meet HAZMIN goals.

(2) Identify and program HAZMIN projects per the procedures in chapter 4 of the reference.

(3) Certify to the Defense Reutilization and Marketing Office and on HW manifests that HAZMIN programs are implemented. This Order provides the basis for such certification.

(4) Include a description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated and actual reductions achieved in the Biennial Report to the Regional Administrator of EPA. This report is due no later than 1 March of each even numbered year. Instructions and Form EPA 8700-13 (Hazardous Waste Report) are available from the cognizant EPA Regional Administrator or the EPA Forms and Publications Distribution Center, 26 West Saint Clair, Cincinnati, OH 45268. Copies of this report shall be provided to the CMC (LFL), the cognizant Naval Facility Engineering Command, Engineering Field Division, and the Naval Energy and Environmental Support Activity, Port Hueneme, CA 93043. Report Control Symbol MC-6280-02 is assigned to this report.

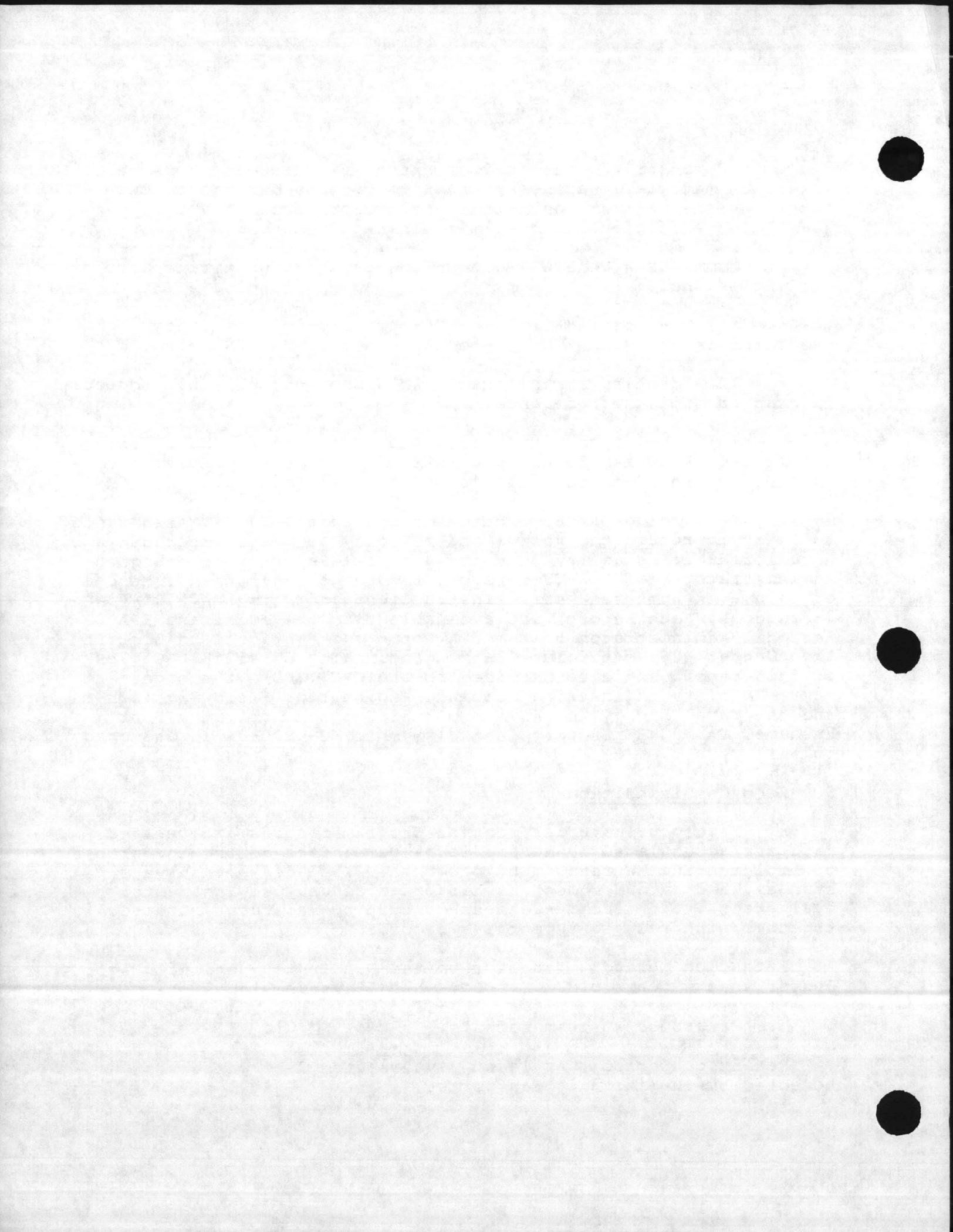
5. Records Disposition

a. Hazardous material control program records and related data are accumulated by Marine Corps commanders during the process of implementing HW management programs. Included are surveys, studies, and data documenting histories of unusual incidents, evaluations, and recommendations concerning hazardous conditions, together with related supportive records.

Retention period: Transfer to the Washington National Records Center when 5 years old. Destroy when 75 years old.

b. Hazardous waste manifests.

Retention period: At least 3 years from date waste was accepted by the initial transporter.



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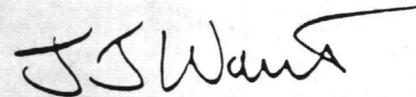
c. Biennial Report and Exception Reports.

Retention period: At least 3 years from due date of report unless unresolved enforcement actions regarding the regulated activity exist, in which case reports may not be destroyed until actions are resolved.

d. Records of test results, waste analyses, or other determinations.

Retention period: At least 3 years from date waste was sent to on-site or off-site treatment, storage, or disposal.

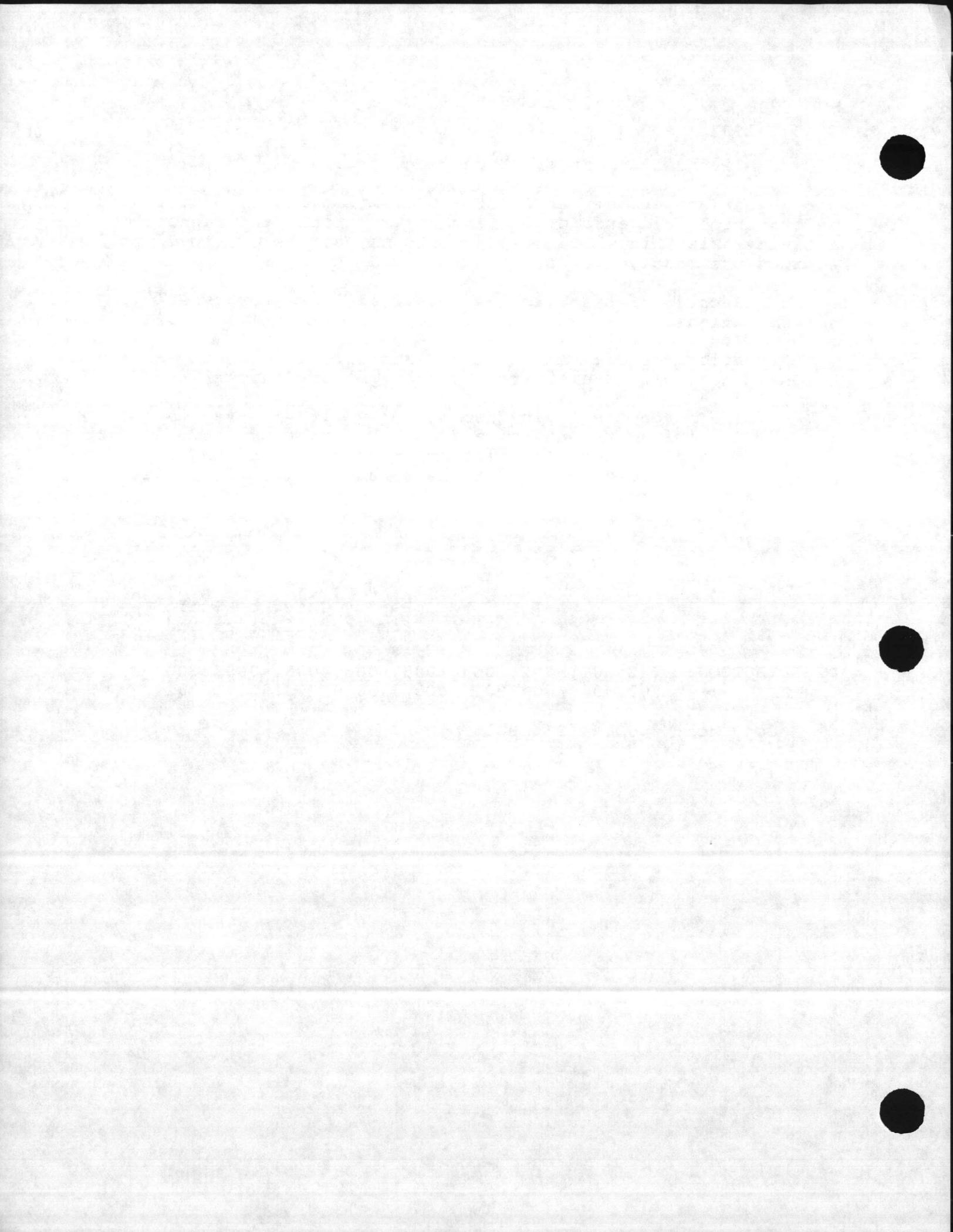
NOTE: Though these timeframes comply with the regulatory minimum retention periods, the long term environmental and personal liabilities associated with HW management dictate retention of these records longer if space permits.



J. J. WENT
Deputy Chief of Staff
for Installations and Logistics

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HAZARDOUS WASTE MINIMIZATION TECHNIQUES

<u>Industrial Operation or Process</u>	<u>Hazardous Waste Generated</u>	<u>Hazardous Waste Reduction Techniques</u>
Metal working/ heat treating	coolants; quenching oils; salt baths	filtration, centri- fuge for reuse; fuel supplements; neutral- ization
Painting	thinners; heavy metals; polyurethanes	process change: airless sprays, powders, water base primers; recycle; segregation; incineration; replace water curtain with dry filters in spray booth
Transport vehicle maintenance	oils; lubricants; coolants; petroleum; alcohols	fuel supplements; waste segregation; recycle
Cleaning, degreasing	solvents; detergents; ketones; freon	fuel supplements; recovery; substitution
Electrical/electronic maintenance	heavy metals; Poly- chlorinated biphenyls; solvents; freon	material control; substitution; incineration
Stripping	solvents; caustics	process change: dry media blasting; laser stripping; water jet
Metal plating/ finishing	acids; bases; metal rinses	process change: zero discharge hard chrome plating; industrial waste treatment: neutralization, ion exchange, electrolytic pre- cipitation; non- cyanide baths



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<u>Industrial Operation or Process</u>	<u>Hazardous Waste Generated</u>	<u>Hazardous Waste Reduction Techniques</u>
Battery shop operations	acids; bases, cyanides	neutralization; industrial waste treatment; domestic waste treatment (with dilution)
Laboratory operations	spent/used/expired chemicals; silver (photography)	material control; recovery; industrial or domestic waste treatment
Test and evaluation	contaminated soils; calibration fluids	test/burning pad; recovery/reuse; static testing
Propellant, explosive manufacture	pink, red acid wastes	industrial waste treatment
Industrial waste treatment	sludges; spent carbon; ion exchangers; filters	dewatering; delist- ing; regeneration; incineration
Fuel storage	tank bottoms; contam- inated or excess POL	biological treat- ment; fuel suppl- ment; reblend; recycle
Munitions demil	OB/OD residues; contaminated soil	burning pads; con- tainment facilities; delisting; down- grade; reuse; incineration

ENCLOSURE (1)

