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UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

IN REPLY REFER TO
6240
NREAD
10 Sep 1984

From: Commanding General

Subj: HAZARDOUS WASTE ANALYSIS

Ref: (a) BO 6240.5

Encl: (1) Hazardous Waste Analysis Plan

1. The enclosure provides information concerning hazardous waste disposal and is provided to assist hazardous material disposal coordinators to carry out responsibilities assigned by the reference. Point of contact in this matter is Mr. Danny Sharpe, Natural Resources and Environmental Affairs Division, telephone 5003/2083.

J. I. WOOTEN
By direction

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HAZARDOUS WASTE ANALYSIS PLAN

for

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

MARINE CORPS AIR STATION (HELICOPTER), NEW RIVER, JACKSONVILLE, N. C.

NAVAL HOSPITAL, CAMP LEJEUNE, NORTH CAROLINA

NAVAL DENTAL CLINIC, CAMP LEJEUNE, NORTH CAROLINA

DEFENSE PROPERTY DISPOSAL OFFICE (DPDO), CAMP LEJEUNE, NORTH CAROLINA

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Pursuant to

Requirements of North Carolina Division of Health Services regulations implementing the Resource Conservation and Recovery Act

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Revised June 1983

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ENCLOSURE (11)

HAZARDOUS WASTE ANALYSIS PLAN

This plan describes the procedures for sampling and for chemical and physical analysis of hazardous materials and hazardous waste stored at the Camp Lejeune complex awaiting transportation to an appropriate disposal site, generally a commercial facility. Table I lists the wastes at the Camp Lejeune complex and their hazards. In most cases, the identity of the waste will be known in sufficient detail to preclude costly analytical services. Generating organization certification may be used in lieu of such analysis when feasible, provided Preservation, Packaging and Packing is provided adequate information to certify shipment on public highway and officer with responsibility for disposal has sufficient information to properly store and dispose of the item(s) in accordance with Base Order 6240.5. The waste analysis must provide information required to implement the procedures developed to properly store and transport hazardous materials and hazardous waste. This plan provides the following: sampling methods; parameters selected; test methods; and frequency of sampling.

In cases where the identity of the waste cannot be adequately determined by generating unit, sampling and analysis will be done. The Hazardous Material Disposal Coordinator for generating organization will contact the Supervisory Chemist, Soil, Water and Environmental Branch, Natural Resources and Environmental Affairs Division, Assistant Chief of Staff, Facilities, to arrange for this sampling. The Base Maintenance Division has established a Standing Job Order Number to be used to pay for the costs incurred in sampling and analysis for hazardous waste.

The Water Quality Control Laboratory personnel will conduct the sampling, under the direction of the Supervisory Chemist. The methods and equipment will vary with the form and consistency of the waste to be sampled. Table 2 lists the possible sample types and the references for the sample methods to be used. At the time of the sampling, the Laboratory will affix a sample number to the waste container which will correspond to the sample sent for analysis. The officer having physical custody of the sampled item(s) will ensure that the item(s) are not tampered with. Whenever possible, sampling will be delayed until the items are transported to the Base long-term hazardous waste storage facility. The Laboratory analysis reports will be provided to the Hazardous Material Disposal Coordinator via the Director, Natural Resources and Environmental Affairs Division. Analysis will be by qualified Commercial Laboratory. Quality control will be ensured by Supervisory Chemist.

Unless specifically requested by DPDO or other authorized official, only the minimum level of analysis, as required to ensure compliance with RCRA storage and DOT regulations, will be run. Chart I shows how the determination for parameters is made. Table 3 lists the parameters for the known wastes at the Camp Lejeune complex. If the National Stock Number (NSN) is known, the Base has access to the Hazardous Material Information System (HMIS) which provides chemical

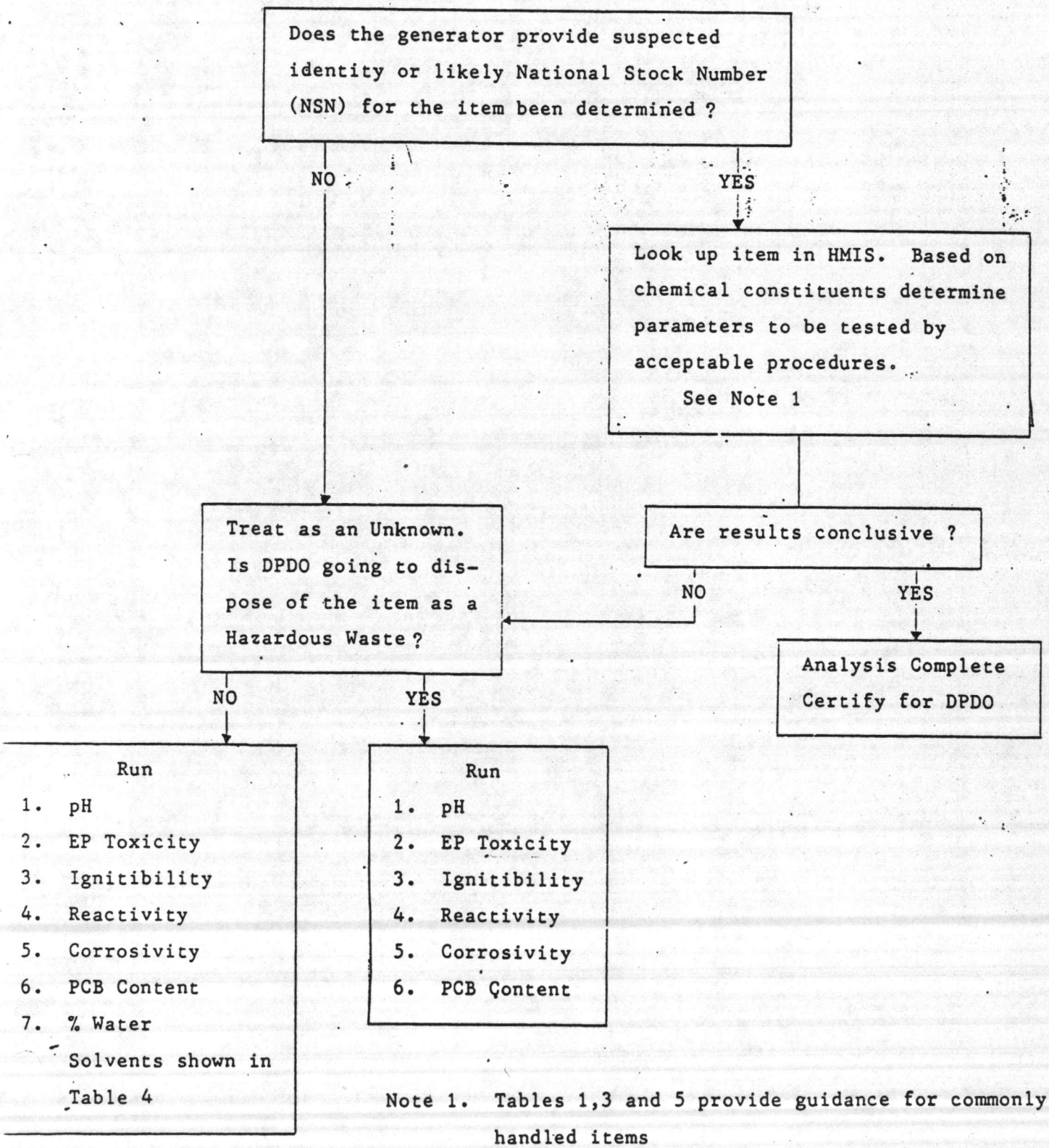
constituent information which can assist in selecting the appropriate parameter. Table 4 lists the organic solvents known to be aboard Camp Lejeune.

Procurement contracts for laboratory analysis will specify that all these samples sent for analysis for the compliance with federal regulations and therefore only "certified" laboratories and procedures approved by regulatory agencies are acceptable. Table 5 lists parameters and test methods.

The wastes generated aboard the Camp Lejeune complex are generated in batches, as waste containers fill up. Therefore, sampling will be done, as needed, on each batch, as it is awaiting final disposition.

CHART 1

DETERMINATION OF PARAMETERS



Note 1. Tables 1,3 and 5 provide guidance for commonly handled items

TABLE I

WASTES, ASSOCIATED HAZARDS, AND BASIS FOR HAZARD DESIGNATION:

EPA HAZARD WASTE NO.	TYPES OF CHEMICALS	HAZARD(S)	BASIS FOR HAZARD DESIGNATION
D001	Mineral Spirits and Stoddard Solvents (See Note 1)	Ignitable Toxic	Flash point of pure mineral spirits is 100°F.
	Lacquer Paint	Ignitable	Paint is flammable, some have flash points below 140°F.
D002	DS-2, Decontaminating Agent	Corrosive Toxic	Diethylenetriamine, a major constituent (70%) of DS-2, is toxic and corrosive.
	Used Electrolyte	Corrosive Toxic	pH of several types of electrolyte are above 12.5 or below 2.
D003	Super Tropical Bleach (STB)	Reactive Oxidizer	Contains Calcium Hypochlorite and can release toxic gases if mixed with water or other chemicals.
	Lithium Batteries	Reactive	Components generate toxic gases, vapors or fumes when mixed with water or exposed to certain pH conditions.
D007	Paint Strippers (used)	Toxic	Contains chromium contamination not properly classifiable as F009.
D009	Mercury from Meter Maintenance	Toxic	Contains metallic mercury which is in used condition not properly classifiable as U151.
D011	Photographic Chemical Wastes	Toxic	Contains Silver
F001	Spent solvents used for degreasing	Toxic	Contains one of the following: tetrachloroethylene; trichloroethylene, methylene chloride, 1,1,1-Trichloroethane or chloronated fluorocarbons (Freon)

EPA Hazard Waste No.	Types of Chemicals Generated	Hazard(s)	Basis for Hazard Designation
F002	Spent solvents and paint thinners	Toxic	Same as F001
F003	Spent non-halogenated Solvents	Ignitable	Contains Acetone or Xylene
F005	Spent non-halogenated Solvents	Ignitable Toxic	Contains Toluene, Methyl Ethyl Ketone
U002	Acetone (unused)	Ignitable	EPA listed waste
U061	DDT (unused)	Toxic	EPA listed waste
U076	1,1 Dichloroethane (unused)	Toxic	EPA listed waste
U080	Dichloromethane (unused) (Methylene Chloride)	Toxic	EPA listed waste
U122	Formaldehyde (unused)	Toxic	EPA listed waste
U129	Lindane (unused)	Toxic	EPA listed waste
U142	Kepone (unused)		EPA listed waste
U151	Mercury (unused)	Toxic	EPA listed waste
U159	Methyl Ethyl Ketone (unused)	Toxic Ignitable	EPA listed waste
U188 Changed per forecon with Jimmy Carter ON 1 June 1984.	Phenols (unused)	Toxic	EPA listed waste
U210	Tetrachloroethene (Tetrachloroethylene) (Unused)	Toxic	EPA listed waste
U220	Toluene (unused)	Toxic	EPA listed waste
U226	1,1,1-Trichloroethane (unused)	Toxic	EPA listed waste
U228	Trichloroethene (unused) (Trichloroethylene)	Toxic	EPA listed waste
U239	Xylene (unused)	Toxic	EPA listed waste

NOTE:

1. If a particular Stoddard Solvent is found to contain Methylene Chloride, then it will be manifested and handled as F001 or F002 as appropriate.

TABLE 2

SAMPLING METHODS

TYPE OF WASTE	GUIDE REFERENCE
1. Extremely viscous liquid	ASTM Standard D140-70
2. Crushed or powdered material	ASTM Standard D346-75
3. Soil or rock-like material	ASTM Standard D420-69
4. Soil-like material	ASTM Standard D1452-65
5. Fly Ash-like material	ASTM Standard D2234-76
6. Containerized liquid waste	"COLIWASA" described in "Test Methods for Evaluation of Solid Waste, Physical/Chemical Methods," EPA or Samplers & Sampling Procedures for Hazardous Waste Streams, EPA
7. Liquid waste in pits, ponds, lagoons and similar reservoirs	"Pond Sampler" described in "Test Methods for Evaluation of Solid Waste, Physical/Chemical Methods."

TABLE 3

PARAMETERS AND RATIONALE FOR THEIR SELECTION

HAZARDOUS WASTE	PARAMETER	RATIONALE
Mineral spirits and Stoddard Solvents	Flash point Methylene Chloride	This waste is ignitable. Knowledge of flash point helps to ensure safe handling. Some contain Methylene Chloride.
Lacquer Paints	Flash point (See Note #1)	These wastes are ignitable. Knowledge of flash point helps to ensure safe handling. See Note #1.
DS-2 Decontaminating Agent	Diethylenetriamine	The waste's major constituent is Diethylenetriamine.
Used Electrolyte	pH	Waste may have a pH above 12.5 or below 2.
STB (Super Tropical Bleach)	Chlorine	The waste's major constituent is Chlorinated Lime with 28% available Chlorine.
Lithium Batteries	Visible inspection	The batteries are determined on physical appearance and labeling.
Paint Strippers	Chromium, flash point	The waste's major contaminate is Chromium. Knowledge of flash point helps to ensure safe handling.
Mercury from meter maintenance	Mercury	The waste is Mercury.
Photographic Chemical Wastes	Silver	The waste's major contaminant is Silver.
Spent solvents used for degreasing or spent solvents	Tetrachloroethylene Trichloroethylene Methylene Chloride 1,1,1-Trichloroethane Chlorinated Fluorocarbons (Freon)	One of these is the major constituent of the waste.

TABLE 3 (continued)

HAZARDOUS WASTE	PARAMETER	RATIONALE
Spent Non-halogenated Solvents	Acetone Xylene Toluene Methyl, Ethyl Ketone	Waste's major constituent is one of the listed parameters.
Acetone (unused)	Acetone	It is unused so there is no reason to believe this waste will contain any other toxic constituents.
DDT (unused)	DDT	"
1,1-Dichloroethane unused)	1,1-Dichloroethane	"
Dichloromethane Methylene Chloride) unused)	Methylene Chloride	"
Formaldehyde (unused)	Formaldehyde	"
Lindane (unused)	Lindane	"
Kepone (unused)	Kepone	"
Mercury (unused)	Mercury	"
Methyl Ethyl Ketone unused)	Methyl Ethyl Ketone	"
Phenols (unused)	Total Phenol	"
Tetrachloroethylene unused)	Tetrachloroethylene	"
Toluene (unused)	Toluene	"
1,1,1-Trichloroethane unused)	1,1,1-Trichloroethane	"
Trichloroethylene unused)	Trichloroethylene	"
Xylene unused)	Xylene	"

Note 1: There are hundreds of different lacquer paints in the Federal Supply System with no particular hazardous constituent common to all. Therefore, if the unit cannot provide the specific federal stock number of the paint, it will be treated as an unknown. If the federal stock number is known, then possible hazardous constituents should be listed on the Hazardous Material Information System (HMIS) Microfiche and/or computer printouts. This list of hazardous constituents in the HMIS will be utilized to determine appropriate parameter(s) to be tested.

TABLE 4

Regulated chemicals and solvents likely to be found in oily-type wastes generated aboard Camp Lejeune:

Methylene Chloride

Xylene

Tetrachloroethylene (Tetrachloroethene)

Trichloroethylene (Trichloroethene)

1,1,1-Trichloroethane

Acetone

Toluene

Methyl Ethyl Ketone

Total Phenols

1,1-Dichloroethane

TABLE 5

PARAMETERS AND TEST METHODS

PARAMETER	TEST METHODS	REFERENCE
Flash Point	RCRA Method 261.21	Note 1
Methylene Chloride	RCRA Method 8.01 GC/ECD	Note 1
Xylene	RCRA Method 8.02 GC/FID	Note 1
Diethylenetriamine	GC/FID	ASTM Standards
pH	Electrometric	Note 1
Chlorine, Total	Bomb Calorimeter	ASTM Standards
Tetrachloroethylene	RCRA Method 8.01 GC/ECD	Note 1
Trichloroethylene	RCRA Method 8.01 GC/ECD	Note 1
1,1,1-Trichloroethane	RCRA Method 8.01 GC/ECD	Note 1
Acetone	RCRA Method 8.08 GC/FID	Note 1
Toluene	RCRA Method 8.02 GC/FID	Note 1
Methyl Ethyl Ketone	RCRA vethod 8.02 GC/FID	Note 1
[illegible]	RCRA vethod 8.08 GC/ECD	Note 1
FORMALDEHYDE	RCRA Method 8.02 GC/FIC	Note 1
HEPTACHLOR	RCRA Method 8.08 GC/ECD	Note 1
METHOXYCHLOR	RCRA Method 8.08 GC/ECD	Note 1
Total Phenols	RCRA Method 8.04 GC/FID	Note 1
[illegible]	RCRA Method 8.08 GC/ECD	Note 1

TABLE 5 (cont'd)

PARAMETER	TEST METHODS	REFERENCE
1,1-Dichloroethane	RCRA Method 8.01 GC/ECD	Note 1
% Water	Karl Fischer Moisture	ASTM Standards
Corrosivity	RCRA Method 261.22	Note 1
Reactivity	RCRA Method 261.23	Note 1
EP Toxicity	RCRA Method 261.24	Note 1
Chromium	Atomic Absorption	Note 2
Lead	Atomic Absorption	Note 2
Mercury	Atomic Absorption	Note 2
Silver	Atomic Absorption	Note 2

Note 1: This reference is Test Methods for Evaluating Solids Waste. Physical/Chemical Methods U.S. EPA SW-846 1980.

Note 2: This reference is Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79/020, March 1979