88-5

RCRA PART B PERMIT APPLICATION

FOR

OPEN BURNING/OPEN DETONATION

AT

FORT WINGATE DEPOT ACTIVITY
GALLUP, NEW MEXICO

PREPARED FOR
U.S. ARMY CORPS OF ENGINEERS
HUNTSVILLE, ALABAMA

PREPARED BY:

ENGINEERING, DESIGN AND GEOSCIENCES GROUP, INC
NASHVILLE, TENNESSEE

IN COOPERATION WITH
ENVIROMENTAL AND SAFETY DESIGNS, INC.
MEMPHIS, TENNESSEE

NOVEMBER, 1988

88-3

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NOVEMBER, 1988

DEPARTMENT OF THE ARMY
TOOELE ARMY DEPOT
TOOELE, UTAH 84074

REPLY TO
ATTENTION OF:

Jan 25

Facilities Engineering Division

State of New Mexico
Environmental Improvement Division
Ground Water & Hazardous Waste Bureau
ATTN: Mr. Boyd Hamilton
P.O. Box 968
Santa Fe, New Mexico 97501

Dear Mr. Hamilton:

Enclosed is a revised copy of the Fort Wingate Part A Application. This will bring the Part A Application up to date with all operations at Fort Wingate.

The items changed in this revision and an explanation as to why these items were changed are as follows:

- The deactivation furnace has been taken off the revised Part A. The original deactivation furnace was modified to operate as a "pilot plant" for conversion of white phosphorus to phosphoric acid. A new retort was included in the modification and the acid that was produced was sold. Before modification of the furnace as a phosphoric acid conversion unit, the unit was not used for over 10 years. There are no future plans to use the facility as a deactivation furnace, therefore, it is eliminated from the Part A.

- The hazardous waste storage facility has also been taken off the revised Part A. The deactivation furnace was the only facility (if it had operated) that would have generated a hazardous waste. Now that the facility will not be used in the future there is no need for the hazardous waste storage facility. Also, there has never been any hazardous waste stored in this facility. The facility, therefore, has been deleted from the revised Part A.

If you have any further questions, contact Mr. Larry Fisher, Environmental Coordinator, Tooele Army Depot, (801) 833-2334.

Sincerely,

Nelson A. Miller Jr.
Maj, OD
Commanding

Enclosure

Copies Furnished:

Huntsville Corps of Engineers, ATTN: Jerry Chandler, w/encl
U.S. Army Depot System Command, ATTN: AMSDS-RM-EF, w/encl
Tooele Army Depot, ATTN: SDSTE-ASF-E, w/encl
Fortworth District Corps of Engineers, ATTN: SWFED-FG, w/encl

FORM 3 RCRA

EPA

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

F N M 6 2 1 3 8 2 0 9 7 4

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APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facility or revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's EPA I.D. Number in Item I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

☐ 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

FOR EXISTING FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

YR.	MO.	DAY
4 1	0 2	2 5

☐ 2. NEW FACILITY *(Complete item below.)*

FOR NEW FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR IS EXPECTED TO BEGIN

YR.	MO.	DAY

B. REVISED APPLICATION *(place an "X" below and complete Item I above)*

☒ 1. FACILITY HAS INTERIM STATUS

☐ 2. FACILITY HAS A RCRA PERMIT

III. PROCESSES – CODES AND DESIGN CAPACITIES

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process *(including its design capacity)* in the space provided on the form *(Item III-C)*.

B. PROCESS DESIGN CAPACITY – For each code entered in column A enter the capacity of the process.

1. AMOUNT – Enter the amount.
2. UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D79	GALLONS OR LITERS
LANDFILL	D80	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D81	ACRES OR HECTARES
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)*	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G
LITERS	L
CUBIC YARDS	Y
CUBIC METERS	C
GALLONS PER DAY	U
LITERS PER DAY	V
TONS PER HOUR	D
METRIC TONS PER HOUR	W
GALLONS PER HOUR	E
LITERS PER HOUR	H
ACRE-FEET	A
HECTARE-METER	F
ACRES	B
HECTARES	Q

EXAMPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

DUP T/A C 1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S02	600	G	
X-2	T03	20	E	
1	T04	65,000	J	
2	T04	10,000	J	
3				
4				
5				
6				
7				
8				
9				
10				

CONTINUE ON REVI

SPACE FOR ADDITIONAL PROCESS CODES OR INCLUDE DESIGN CAPACITY. | R DESCRIBING OTHER PROCESSES (code "T04 | FOR EACH PROCESS ENTERED HERE

1. All types of conventional ammunition are destroyed at the detonation area. There are eight (8) detonation pits. Detonations are limited to 5000 lbs of explosive aboveground and 10,000 lbs buried under 10 feet of earth.

2. Bulk explosives, explosive, filled munitions, and explosive-contaminated materials are burned within 5 burning pads at the burning area. Burning is restricted to 10,000 lbs of material.

IV. DESCRIPTION OF HAZARDOUS WASTES

A. EPA HAZARDOUS WASTE NUMBER — Enter the four-digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four-digit number(s) from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. ESTIMATED ANNUAL QUANTITY — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:
   For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.
   For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.
   Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER — Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV *(shown in line numbers X-1, X-2, X-3, and X-4 below)* — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2				included with above

EPA I.D. NUMBER (enter from page 1)

W	N	M	6	2	1	3	8	2	0	9	7	4		1
1	2	3										12	13	14

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W	DUP		2	DUP
1	2	13	14	15

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (If a code is not entered in D(1))
1	D003	2,000	T	T04	Open Burning and Detonation
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

CONTINUE ON REVERSE

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

E. USE THIS SPACE TO LIST ADDITIONAL P... CESS CODES FROM ITEM D(1) ON PAGE

EPA I.D. NO. (enter from page 1)

													TIA	C
1	N	M	6	2	1	3	8	2	0	9	7	4		6

V. FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility *(see instructions for more detail).*

VI. PHOTOGRAPHS

All existing facilities must include photographs *(aerial or ground–level)* that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas *(see instructions for more detail).*

VII. FACILITY GEOGRAPHIC LOCATION

LATITUDE (degrees, minutes, & seconds)			LONGITUDE (degrees, minutes, & seconds)		
35	27	03.0	108	34	03.0

VIII. FACILITY OWNER

☒ A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER	2. PHONE NO. (area code & no.)
E	

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE
F	G		

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED
NELSON A. MILLER JR Maj, OD Commanding		11 Jan 85

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED
NELSON A. MILLER JR Maj, OD Commanding		11 Jan 85

DEPARTMENT OF THE ARMY
TOOELE ARMY DEPOT
TOOELE, UTAH 84074-5000

November 3, 1988

REPLY TO
ATTENTION OF

Environmental Office

USEPA, Region VI
1445 Ross Avenue
Dallas, Texas 75202-2733

You will find enclosed the RCRA Part B permit application for the Open Burn/Open Detonation facility at Fort Wingate Depot Activity, This application was written pursuant to the Federal Subpart X (Miscellaneous Units) Regulations published December 10, 1987.

Should you have any questions regarding the contents of this application, please contact Adrian Bond, Fort Wingate Depot Activity, at (505)488-5301, or David Woodworth, Environmental Engineer, Tooele Army Depot, (801) 833-3504.

Sincerely,

Richard J. Maksimowski
COL, OD
Commanding

Enclosure

Copy Furnished: State of New Mexico Environmental Improvement Division

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ACRONYMS

AAP	Army Ammunition Plant
ACGIH	American Conference of Governmental Industrial Hygienists
AD	Army Depot
ADNL	A-weighted DNL (day night level)
AEC	Atomic Energy Commission
ADA	Army Depot Activity
Ag	Silver
AMC	US Army Material Command
AMCCOM	US Army Armament, Munitions and Chemical Command
AMMCON	US Army Armament, Munitions, and Chemical Command
AR	Army Regulation
ARDC	US Army Armament Research and Development Center
As	Arsenic
Ba	Barium
BACT	Best Available Control Technology
CAA	Clean Air Act
Cd	Cadmium
CDNL	C-weighted DNL (day night level)
CE	Corps of Engineers
CFR	Code of Federal Regulations
Cr	Chromium
CWP	Contaminated Waste Processor
DA	Depot Activity
dBA	A-weighted Decibel
dBC	C-weighted Decibel
dBP	Peak Decibel
DESCOM	US Army Depot Systems Command
DNL	Day Night Level
DNT	Dinitrotoluene
DOD	Department of Defense
DOT	Department of Transportation
EO	Executive Order
EP	Extraction Procedure
EPA	US Environmental Protection Agency
EWI	Explosive Waste Incinerator
g	Grain
GC/MS	Gas Chromatography/Mass Spectrophotometry
Hg	Mercury

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HMX	1,3,5,7-tetranitro-1,3,5,7-tetraazacyclooctane
HPCL	High Pressure Liquid Chromatography
HUD	US Department of Housing and Urban Development
IARC	International Agency for Research on Cancer
IAW	In Accordance With
ICUZ	Installation Compatible Use Zone
ID	Identification
Inc	Incorporated
LC50	Concentration of a contaminant which is lethal to 50 percent of the population
mg/L	Milligrams per Liter; Parts per Billion
ml	Milliliters
mm	Millimeters
MSL	Mean Sea Level
N	Nitrogen
NASA	National Aeronautics and Space Administration
NC	Nitrocellulose
ND	Not Detected
NESHAP	National Emissions Standards for Hazardous Air Pollutant
NG	Nitroglycerin
NIPDWR	National Interim Primary Drinking Water Regulations
NOAA	National Oceanic and Atmospheric Administration
NOD	Notice of Deficiency
NO_2	Nitrite
NO_3	Nitrate
OB	Open Burning
OD	Open Detonation
OSHA	Occupational Safety and Health Administration
Pb	Lead
PCB	Polychlorinated Biphenyl
PEP	Pyrotechnics, Explosives, and Propellants
PL	Public Law
ppm	Parts per million
QA	Quality assurance
QC	Quality control
RCRA	Resource Conservation and Recovery Act
RDX	1,3,5-nitro-1,3,5-triazacyclohexane
RTP	Research Triangle Park
SDPDA	Special Defense Property Disposal Account
Se	Selenium
SJP	Special job procedures
SOP	Standing Operating Procedure
SPCCP	Spill Prevention Control and Countermeasure Plan
TCE	Trichloroethylene
TECOM	US Army Test and Evaluation Command
TEP	Toxic Extraction Procedure
TKN	Total Kjeldahl nitrogen

TLV	Threshold Limit Value
TNT	Trinitrotoluene
TSD	Treatment/storage/disposal
TTCL	Total Threshold Concentration Limit
ug/L	Microgram per liter
USAMBRDL	US Army Medical Bioengineering Research and Development Laboratory
USAEHA	US Army Environmental Hygiene Agency
USATHAMA	US Army Toxic and Hazardous Materials Agency
USC	United States Code
UXO	Unexploded ordnance

GLOSSARY OF TERMS

AMMUNITION	a contrivance charged with explosives, propellants, pyrotechnics, and/or initiating compositions which is used for military purposes
ANNULUS	area between the outside of the well casing and walls of the soil boring
AQUIFER	any water-bearing (saturated) geologic stratum capable of yielding water to a well
BACKGROUND WELL	a monitoring well so located as to yield groundwater samples which represent native water quality rather than any leachate emanating from the facility under surveillance
CARCINOGENIC	capable of causing cancer
COMPOSITE	a propellant consisting of two or more PROPELLANT energetic constituents
DECIBEL	a unit of air overpressure commonly used to measure air blast
DEMILITARIZATION	the rendering of propellants, explosives, pyrotechnics, ammunition, and other ordnance items harmless and ineffective for military use
DETONATION	a chemical reaction within a substance in which the transformation proceeds through the material faster than the speed of sound and produces a shock wave which is originally of supersonic velocity.
DISPOSAL	the discharge, deposit, injection, dumping, spilling, leaking or placing of any solid waste or hazardous waste into or on any land or water so that such solid or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.
DOUBLE BASE PROPELLANT	a propellant composition whose principal explosive ingredients are nitroglycerin and nitrocellulose

DOWNGRADIENT WELL	a monitoring well so located as to yield groundwater samples which can reasonably be expected to characterize any contamination leaching from the facility under surveillance
ENERGETIC MATERIAL(S)	any chemical compound(s) or mixture(s) of substances which, when initiated, result in the rapid evolution of energy. Such materials include propellants, explosives, pyrotechnics, and some of their ingredients, precursors, and by-products
EP TOXICITY	a characteristic of a waste that is capable of causing death or severe temporary or permanent damage of an organism by the concentration of a contaminant (listed in Table I of 40 CFR 261.24) from the extract of a sample waste
EPHEMERAL	channelized runoff which occurs only in
DEFLAGRATION	a rapid chemical reaction in which the output of heat is sufficient to enable the reaction to proceed and be accelerated without input of heat from another source. Deflagration is a surface phenomenon, with reaction products flowing away from unreacted material at subsonic velocity. The effect of a true deflagration under confinement is an explosion. Confinement of deflagration may cause transition to detonation.
EXPLOSION	a chemical reaction of any chemical compound or mechanical mixture which, when initiated, undergoes very rapid combustion or decomposition releasing large volumes of highly heated gases which exert pressures on the surrounding medium. Depending on the rate of energy release, an explosion can be categorized either as a deflagration or a detonation
EXPLOSIVE	any chemical compound, mixture, or device which, when subjected to suitable initiating impulses or agents such as flame, spark, heat, impact, or friction (whether applied mechanically or electrically), will undergo chemical and physical transformations at speeds varying from extremely rapid to virtually instantaneous resulting in sudden and rapid development of very high pressure in the surrounding medium. The term applies to materials that either detonate or deflagrate

EPHEMERAL DRAINAGE	channelized runoff which occurs only in response to rainfall events
EXCESS EVAPORATION	the difference between mean annual lake evaporation and mean annual precipitation; applicable only where evaporation exceeds precipitation
EP TOXICITY	an extraction test to evaluate the leachability of eight different metals from a hazardous waste. These metals are arsenic (As), barium (Ba), cadmium (Cd), chromium(Cr), lead (Pb), mercury (Hg), silver (Ag), and selenium (Se). Synonymous with TEP.
FACILITY	All contiguous land and structures, other appurtenances, and improvements on the land used for treating, storing, or disposing of hazardous waste. For permitting purposes, a facility may consist of an entire installation or any part or combination of parts of that installation where treatment, storage, or disposal operations are located (see OB grounds, OB area, and OD area)
GRAIN	a unit of weight measurement where 7,000 grains are equivalent to one 16-ounce pound (0.45 kilograms).
GROUNDWATER	water below the surface in a zone of saturation
HIGH EXPLOSIVE	an explosive in which the transformation from its original composition and form, once initiates, proceeds with virtually instantaneous and continuous speed throughout the total mass, accompanied by the rapid evolution of heat and a large volume of gas, causing very high pressure and a widespread shattering effect
INITIATION	the act of causing an explosive material to detonate or deflagrate
LAKE EVAPORATION	a measure of free-water evaporation and a good index to potential evapotranspiration
LEACHATE	water which freely drains through a waste treatment or disposal site and through the unsaturated soil horizons, picking up dissolved contamination as it percolates downward towards the water table

MAGAZINE	any building, structure, or container, other than a building used in the manufacture of energetic materials, which has been approved for the storage of these materials
MUTAGENIC	capable of causing mutation
OB AREA	that area or portion of the facility where open burning operations are conducted. Synonymous with OB grounds
OB GROUNDS	Synonymous with OB area
OB UNIT	a continuous area of land containing one or more OB/OD sites or subunits
OD AREA	that area or portion of the facility where open detonation operations are conducted
OPEN BURNING	the burning of materials in the open air, either on the ground surface or in a containment device, without significant control of the combustion and in such a manner that the products of combustion are emitted directly into the ambient air without passing through a device intended to control gaseous or particulate emissions
ORDNANCE	military material such as combat weapons of all kinds, including ammunition and equipment required for their use
OXIDIZER	a substance, such as nitrate, that readily yields oxygen or other oxidizing substances to stimulate the combustion of organic matter or other fuel
PROPELLANT	a high energy material that normally functions by deflagration and is used for propulsion purposes. Specifically, it is an explosive charge for propelling a bullet, shell, or the like; also a fuel, either solid or liquid, for propelling a rocket or missile
PYROTECHNIC	any combustible or explosive compositions or manufactured articles designed and prepared for the purpose of producing audible or visible (smoke or light) effects.
PERMEABILITY	capacity of a soil or geologic stratum to transmit water

REACTIVITY	a characteristic of solid waste whereby the waste is: (1) capable of detonation or explosion if subjected to a strong initiating source or if heated under confinement (2) readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure
REWORK	work performed on ammunition, missiles, rockets, or other ordnance, to restore these items to a completely serviceable condition; it usually involves the replacement of unserviceable or outmoded parts.
SHELF LIFE	the length of time of storage during which an energetic material retains adequate performance characteristics
SHOCK WAVE	a transient pressure pulse that propagates at supersonic velocity
SINGLE-BASE PROPELLANT	a propellant composition whose principal explosive ingredient is nitrocellulose
STANDARD	a document which prescribes operator OPERATING instructions in a definite course of action PROCEDURES for processing a work unit. An SOP includes (SOP) specifications, safety instructions, and performance standards (i.e., environmental and engineering)
SUBSONIC	less than the speed of sound
SUPERSONIC	greater that the speed of sound
TETRYL	2,4,6-trinitrophenyl-methylnitramine
TILL	unsorted, nonstratified sediment generally of low permeability, carried and deposited by a glacier trinitrotoluene
TRANSPIRATION	the process whereby plants absorb soil moisture and lose excess moisture from their leaves to the atmosphere
TREATMENT	any method, technique, or process design to change the chemical, physical, or biological character or composition of any hazardous waste

	so as to recover energy or material resource from the waste, or to render energy or material resource from the waste, or to render such waste nonhazardous, or less hazardous, or safer to transport
UNIT	specific TSD facility
WASTE MUNITIONS	consists of waste ordnance and waste PEP
WASTE PEP	consists of propellants, explosives, or pyrotechnics (PEP) and other such energetic or hazardous materials which do not or cannot be refined to meet the required military specifications. Such wastes consist of off-specification and scrap materials which are generated from primary production, loading, rework,demilitarization, and resource recovery operations
WATER TABLE	the upper surface of a zone of saturation; the focus of points in subsurface water at which the pressure is equal to atmospheric pressure

SECTION A

PART A APPLICATION

SECTION A

PART A APPLICATION

A-1 RCRA PERMIT APPLICATION [40 CFR 270.13]

Fort Wingate Army Depot Activity (FWDA), Gallop, New Mexico is seeking a Hazardous Waste Treatment Permit for an open burning/open detonation (OB/OD) facility comprised of four detonation pits and two burning pans. Currently FWDA has authorization under interim status for thermal treatment by open burning/open detonation (T04) of waste explosives and explosive-contaminated wastes.

T04 - thermal treatment by open burning/open detonation. This unit is still in operation and will continue to operate under interim status.

Heavy metals may be present in ash depending on PEP treated and will be reported after each ash analysis is complete.

A-2 PART A APPLICATION CHANGES

Form 3

1. The Commanding Officer at FWDA is currently Maj. Nelson Miller. The Commanding Officer active when the original Part A application was submitted was Maj. Gerry Tetreault.

(fill—in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-R0175

EPA — U.S. ENVIRONMENTAL PROTECTION AGENCY
GENERAL INFORMATION
Consolidated Permits Program
(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER: F N M 6 2 1 3 8 2 0 9 7 4

GENERAL

PLEASE PLACE LABEL IN THIS SPACE

- II. EPA I.D. NUMBER
- III. FACILITY NAME
- IV. FACILITY MAILING ADDRESS
- V. FACILITY LOCATION

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill—in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill—in area(s) below. If the label is complete and correct, you need not complete items I, III, V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold—faced terms.

SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X	
B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)		X	
D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X	X	
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile, of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	
J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP: Fort Wingate Depot Activity

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title)	B. PHONE (area code & no.)
2 Bond Adrian Chief Support Div	505 488 5411

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX		
3 Fort Wingate		
B. CITY OR TOWN	**C. STATE**	**D. ZIP CODE**
4 Gallup	NM	87301

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER			
5 I-40			
B. COUNTY NAME			
cKinley			
C. CITY OR TOWN	**D. STATE**	**E. ZIP CODE**	**F. COUNTY CODE (if known)**
6 Gallup	NM	87301	

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

	A. FIRST	B. SECOND
(specify)	9111 National Security	
C. THIRD		D. FOURTH
(specify)		

VIII. OPERATOR INFORMATION

A. NAME: US Government

B. Is the name listed in Item VIII-A also the owner? [X] YES [ ] NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.) F = FEDERAL, M = PUBLIC (other than federal or state), S = STATE, O = OTHER (specify), P = PRIVATE: F

D. PHONE (area code & no.): A 505 488 541

E. STREET OR P.O. BOX: Fort Wingate

F. CITY OR TOWN: Gallup

G. STATE: NM

H. ZIP CODE: 87301

IX. INDIAN LAND

Is the facility located on Indian lands? [ ] YES [X] NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)	B. UIC (Underground Injection of Fluids)	C. RCRA (Hazardous Wastes)	D. PSD (Air Emissions from Proposed Sources)	E. OTHER (specify)
9 N	9 U		EID 059	(specify) Open Burning Permit

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

Dispose of waste munitions by open burning with containment or open detonation

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
CHARD J. MAKSIMOWSKI COL, OD Commanding	Richard J. Maksimowski	3/10/88

COMMENTS FOR OFFICIAL USE ONLY

...in areas are spaced for elite type, i.e., 12 characters/inch)

Form Approved OMB No. 158-S80004

ORM 3 CRA

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER

F	N	M	6	2	1	3	8	2	0	9	7	4

OR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

FIRST OR REVISED APPLICATION

...e an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facility o...vised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility ...PA I.D. Number in Item I above.

FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

☐ 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

FOR EXISTING FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

YR.	MO.	DAY
4 1	0 2	2 5

☐ 2. NEW FACILITY *(Complete item below.)*

FOR NEW FACILITI... PROVIDE THE DAT... (yr., mo., & day) OPE... TION BEGAN OR IS EXPECTED TO BEG...

YR.	MO.	DAY

REVISED APPLICATION *(place an "X" below and complete Item I above)*

☒ 1. FACILITY HAS INTERIM STATUS

☐ 2. FACILITY HAS A RCRA PERMIT

PROCESSES – CODES AND DESIGN CAPACITIES

PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided fo... entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, the... describe the process *(including its design capacity)* in the space provided on the form *(Item III-C)*.

PROCESS DESIGN CAPACITY – For each code entered in column A enter the capacity of the process.

1. AMOUNT – Enter the amount.
2. UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
...NTAINER (barrel, drum, etc.)	S01	GALLONS OR LITERS
...NK	S02	GALLONS OR LITERS
...STE PILE	S03	CUBIC YARDS OR CUBIC METERS
...FACE IMPOUNDMENT	S04	GALLONS OR LITERS
...:		
...TION WELL	D79	GALLONS OR LITERS
...NDFILL	D80	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
...ND APPLICATION	D81	ACRES OR HECTARES
...EAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
...RFACE IMPOUNDMENT	D83	GALLONS OR LITERS

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)*	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE
...ALLONS	G
...ITERS	L
...UBIC YARDS	Y
...BIC METERS	C
...LLONS PER DAY	U
LITERS PER DAY	V
TONS PER HOUR	D
METRIC TONS PER HOUR	W
GALLONS PER HOUR	E
LITERS PER HOUR	H
ACRE-FEET	A
HECTARE-METER	F
ACRES	B
HECTARES	G

...MPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and th... her can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

DUP

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S 0 2	600	G		5				
X-2	T 0 3	20	E		6				
	0 4	See Section III.C			7				
					8				
					9				
					10				

PROCESSES (continued)

SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

1) All types of conventional ammunition are destroyed at the detonation area. There are four detonation pits. Detonations are limited to 5,000 lbs. of explosive aboveground and 10,000 lbs buried under 10 feet of earth.

2) Bulk explosives, explosive-filled munitions, and explosive-contaminated materials are burned within 2 burning pans at the burning area. Burning is restricted to 10,000 lbs. of material.

Due to the nature and variety of explosive items disposed of at this facility, it is impractical to convert these weights to gallons/or liters.

DESCRIPTION OF HAZARDOUS WASTES

EPA HAZARDOUS WASTE NUMBER — Enter the four-digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If y handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four-digit number(s) from 40 CFR, Subpart C that describes the character ics and/or the toxic contaminants of those hazardous wastes.

ESTIMATED ANNUAL QUANTITY — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annu basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handle which possess that characteristic or contaminant.

UNIT OF MEASURE — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropria codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking int account the appropriate density or specific gravity of the waste.

PROCESSES

1. **PROCESS CODES:**
   For listed hazardous wastes: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item I to indicate how the waste will be stored, treated, and/or disposed of at the facility.
   For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process code contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possa that characteristic or toxic contaminant.
   Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in th extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. **PROCESS DESCRIPTION:** If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER — Hazardous wastes that can be described b more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annua quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line ente "included with above" and make no other entries on that line.
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV *(shown in line numbers X-1, X-2, X-3, and X-4 below)* — A facility will treat and dispose of an estimated 900 pound of year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two waste is corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimate pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (If a code is not entered in D(1))
X-1	0 5 4	900	P	T 0 3 D 8 0	
X-2	0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2				included with above

Continued from page 2.

NOTE: *Photocopy this page before completing if you have more than 26 wastes to list.*

Form Approved OMB No. 158-S80004

EPA I.D. NUMBER *(enter from page 1)*: W N M 6 2 1 3 8 2 0 9 7 4 — T/A C: 1

FOR OFFICIAL USE ONLY: W DUP — T/A C: 2 DUP

DESCRIPTION OF HAZARDOUS WASTES *(continued)*

LINE NO.	A. EPA HAZARD. WASTE NO. *(enter code)*	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE *(enter code)*	D. PROCESSES: 1. PROCESS CODES *(enter)*	D. PROCESSES: 2. PROCESS DESCRIPTION *(if a code is not entered in D(1))*
1	D 0 0 3	2,000	T	T 0 4	Open Burning & Detonation
2	D 0 0 8	included in Line 1		T 0 4	
3	D 0 0 9	" " " "		T 0 4	
4	D 0 0 1	" " " "		T 0 4	
5	D 0 0 5	" " " "		T 0 4	
6					
7					
8					
9					
10					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
25					
26					

. DESCRIPTION OF HAZARDOUS WASTES *(continued)*

USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.

EPA I.D. NO. *(enter from page 1)*														
N	M	6	2	1	3	8	2	0	9	7	4			6

FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility *(see instructions for more detail)*.

PHOTOGRAPHS

existing facilities must include photographs *(aerial or ground-level)* that clearly delineate all existing structures, existing storage, eatment and disposal areas; and sites of future storage, treatment or disposal areas *(see instructions for more detail)*.

CILITY GEOGRAPHIC LOCATION

LATITUDE *(degrees, minutes, & seconds)*						LONGITUDE *(degrees, minutes, & seconds)*					
3	5	2	7	0	3	0	1	0	8	3	4	0	3	0

. FACILITY OWNER

A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER	2. PHONE NO. *(area code & no*)

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE
	C G		

. OWNER CERTIFICATION

certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached uments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the nitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, cluding the possibility of fine and imprisonment.

A. NAME *(print or type)*	B. SIGNATURE	C. DATE SIGNED
RICHARD J. MAKSIMOWSKI COL, OD Commanding	Richard J. Maksimowski	31 NOV 88

OPERATOR CERTIFICATION

y under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached nts, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the d information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, uding the possibility of fine and imprisonment.

A. NAME *(print or type)*	B. SIGNATURE	C. DATE SIGNED
RICHARD J. MAKSIMOWSKI COL, OD Commanding	Richard J. Maksimowski	31 NOV 88

Form Approved OMB No. 158-S80004

7. FACILITY DRAWING (see page 4)

See Figure B-2

SECTION B

FACILITY DESCRIPTION

SECTION B

FACILITY DESCRIPTION

The information in this section is submitted in accordance with the requirements of 40 CFR 270.14(b). This description is intended to acquaint the permit application reviewer with an overview of the facility. Specific information required by 40 CFR 270.14(b)(10), (11), and (19) is also included in this Section.

B-1 GENERAL DESCRIPTION [40 CFR 270.14(b) (1)]

The Fort Wingate Army Depot Activity (FWDA) is located in northwestern New Mexico. The installation is 32 miles east of the Arizona border and 10 miles east of Gallup, New Mexico. The state and vicinity maps are located in Figures B-1 and B-1(a). respectively to provide ample location information. The installation is under the command of the Tooele Army Depot located near Salt Lake City, Utah. FWDA encompasses 22,120 acres with facilities to operate a reserve storage activity providing for the care, preservation, and minor maintenance of assigned commodities, mostly ammunition. The depot also ships, receives, and prevents the deterioration of these commodities. The mission includes the disassembly and demilitarization of outdated and unservicable ammunition. Ammunition maintenance facilities exist for the clipping, linking, and repacking of small arms ammunition. Ammunition surveillance personnel reclaim, renovate, preserve, and package other ammunition materials. The mailing address for FWDA is: Commander, Fort Wingate Depot Activity, Gallup, New Mexico 87301.

The history of FWDA dates as far back as 1862 when the first site of Fort Wingate was at San Raphael. The permanent installation was established at Bear Springs in 1870 and was designated Fort Wingate Military Reservation. From 1868 until 1911 the installation was occupied by the cavalry who controlled Indian, Mexican, and U.S. relations. The fort was abandoned in 1911 and was ceded to the U.S. Government in 1912. It was reactivated in 1914 as an internment area for Mexican Civil War refugees. Fort Wingate took on its current name as an ordnance depot in 1916 when it began storing highly explosive materials. At this time it was redesignated as Fort Wingate Ordnance Depot, and it became a closed reservation. The mission status changed from inactive to active in 1928 with repacking and shipping of explosives. The installation was redesignated Wingate Depot Ordnance in 1942 and began storing and shipping explosives other than TNT. In 1960, it became Fort Wingate Ordnance Depot and was placed under the U.S. Army Supply and Maintenance Command, who relinquished its control of the Depot to the U.S. Army Material Command in 1966.

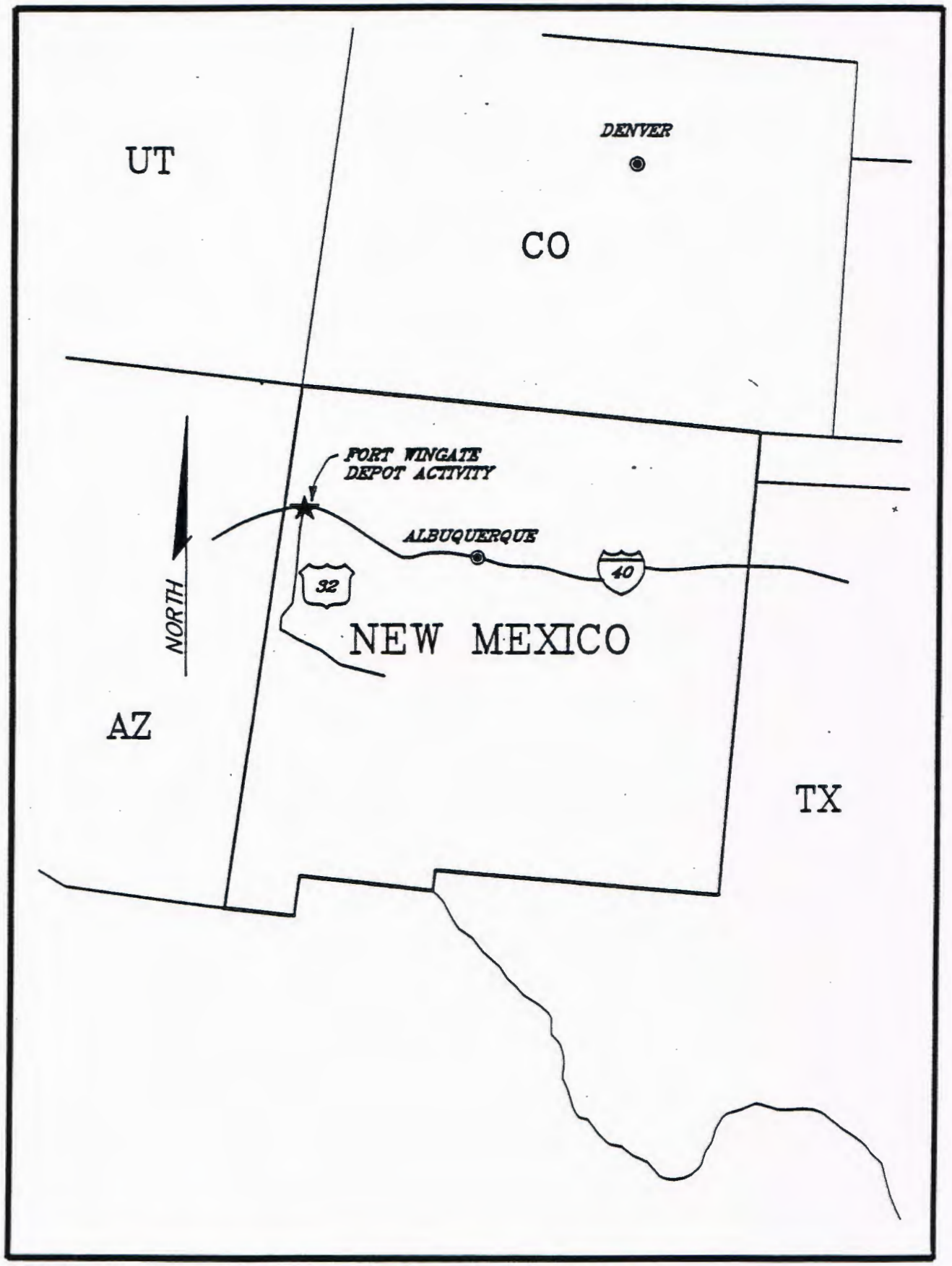
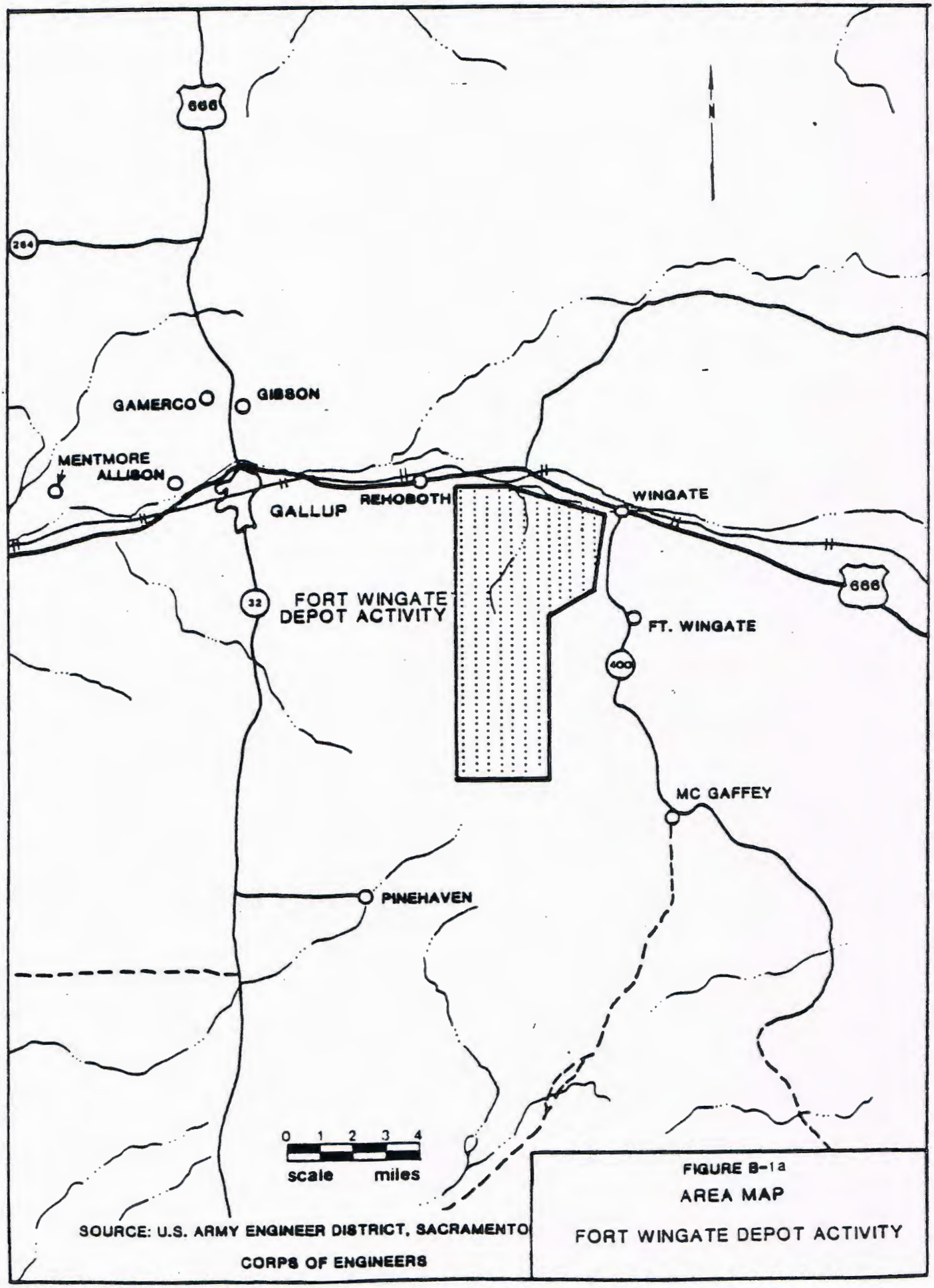


FIGURE B–1. FORT WINGATE DEPOT ACTIVITY. VINICITY/STATE MAP



SOURCE: U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS

FIGURE B-1a
AREA MAP
FORT WINGATE DEPOT ACTIVITY

Pueblo Army Depot took command of Fort Wingate in 1971 when it was placed on reserve status and was redesignated as Fort Wingate Depot Activity. The current status of command under Tooele Army Depot began in 1975 and has remained unchanged since that time. Tenant activities include an Occupational Health Clinic, a U.S. Army Communications Command, the National Guard, the Bureau of Indian Affairs, and the Department of Agriculture. The missions of FWDA are expected to remain the same.

B-2 TOPOGRAPHIC MAPS [40 CFR 270.14 (b)(19)]

A topographic map for the OB/OD area is provided in Figure B-3. Topography for the OB/OD area is shown by 25-foot contour intervals at a scale of 1 inch equals 200 feet.

River and stream flows are generally intermittent. The South Fork Puerco River is the predominant stream and Lake McFerren is the only year-round reservoir within the reservation boundary. Surface drainage is northward to an arroyo that remains dry most of the year.

B-2(a) Land Use

The Fort Wingate Depot is located in southwestern McKinley County approximately 10 miles east of downtown Gallup. The northern portion of the Depot is located in the Rio Puerco Valley and has flat to rolling terrain. As the Depot extends southward, the terrain rises into mountain foothills in the mid-portion and rugged mountain terrain in the southern portion. In addition, the Hogback Mountains run generally north/south along the Depot's western boundary. The lands surrounding the Depot are primarily under the control of the federal government.

The lands to the east of the Depot consist of Navajo Reservation lands (adjacent to the northern portions of the Depot) and the Cibola National Forest (adjacent to the southern portion). Fort Wingate is located immediately east of the Depot. This community, which was originally the headquarters area for the fort, presently houses two Indian schools.

The area south of the Depot is included in Cibola National Forest. This area is rugged mountainous terrain and is undeveloped.

The area west of the Depot consists of rugged mountainous terrain along the southern portion, which transitions to the Rio Puerco Valley to the north. This land is primarily under Bureau of Land Management, Navajo Trust Land (U.S. government), Indian Allotment, and Navajo Tribe (fee lands) control. This area is

primarily undeveloped and constrained by mountainous terrain (Hogback Mountains) with the exception of the northern area. The Sundance Subdivision, which consists of scattered homes on Indian lands, and the Sundance coal mine are located in this area. Further west along the Rio Puerco Valley floor and sideslopes are located the Rehoboth Mission and City of Gallop.

The area north of the Depot consists of Indian lands and Red Rock State Park. The community of Church Rock is located immediately north of the Depot and to the west is located the Zuni Railroad Siding Area (Navajo Industrial Park) and El Paso fractionating plant and housing area. Interstate 40/U.S. 666, which links the Depot to the City of Gallop, forms the northern boundary of the Depot. The Sante Fe Railroad also runs along this corridor.

B-2(b) Hazardous Waste Management Facility Boundary

The location of the Open Burning/Open Detonation facility is shown on Figure B-3. The regulations for OB/OD facilities which are operating under interim status, 40 CFR 265.382, require a safety margin of 1,730 feet from the property of others for facilities which detonate between 1,001 to 10,000 pounds of waste explosives. In that context, the facility boundary will be that area which encompasses 1,730 feet of the unit. This area is illustrated in Figure B-2 and B-3.

B-2(c) Wind Rose

A wind rose for the installation is shown in Appendix E-1. Winds are generally westerly with an annual average speed of 9.6 miles per hour. Spring is the windy season with winds averaging 12 miles per hour. Winds of 24 miles per hour or more occur about 5 percent of the time.

B-2(d) Access Control

Primary motor vehicle entry into FWDA is through the main gate on Navajo Boulevard. Navajo Boulevard intersects Interstate Highway 40 and U.S. Highway 666 approximately 2000 feet from the gate guardhouse. The administration area at FWDA is located in the controlled area just past the main entrance gate. Traffic in this area consists primarily of civilian employees traveling to and from work, approximately 100 vehicles per day. An average of 10 semi-trailer trucks use Navajo Boulevard daily on their way to the magazine area. Another guarded gate on Navajo Boulevard controls entry to the magazine area (limited access area).

The limited access area gate is manned during working hours and locked otherwise. Just past this gate, Navajo Boulevard fans out into various arterial roads. No unauthorized civilian traffic is

allowed in the limited access area. Motor vehicle traffic within this area is light. The OB/OD area is located within the limited access area. This area is also locked at all times unless there is detonation or burning activities in progress. Demil Road accesses the OB/OD area and is composed of compacted native soil with a width of approximately 15 feet. It should be noted that demil activities will only proceed when weather conditions are favorable and road conditions are good. Outside the OB/OD area the roads are composed of 2 to 4 inches of asphaltic concrete overlying 8 inches of compacted base material and 6 inches of compacted subgrade to a width of 22 feet. To avoid bearing capacity problems, roads are designed for loads of 20,000 pounds on single axles and 34,000 pounds on tandem axles. In addition, loads along this route will be limited to a gross weight of 40 tons which is the posted weight limit of Bridge No. 427.

B-2(e) Injection and Withdrawal Wells

There are no injection wells located at Fort Wingate Army Depot Activity. However, there is an artesian well located in Bldg. 61 in the administration area. It is the only withdrawal well on the Depot and is located next to the fire station (Bldg. 34). The withdrawal well is located approximately 30,000 feet from the OB/OD facility and is therefore not included on the topographic map, Figure B-2.

B-2(f) Buildings; Treatment, Storage, and Disposal Areas; Other Structures

Figure B-2 is a map identifying the OB/OD facility and distances are marked on the map identifying proximity to the nearest structures. The only structure within 1000 feet of the facility is the observation bunker provided for safe inspection of the operations being performed.

B-2(g) Recreational Areas

There are no recreational areas within 1,000 feet of the OB/OD area.

B-2(h) Runoff Control System

The OB/OD facility has two functions: (1) to open detonate waste explosives on the ground without containment and (2) to open burn waste explosives in a containment device. Due to the extreme explosive nature of the open detonation process, there are no runoff control devices, in the form of containment in place. It has been determined that containment devices would be destroyed in the explosion and may result in personal injury. However, contaminated runoff is controlled during open burning exercises by conducting the open burn in a containment device. Further

detail regarding the containment device will be provided in Section D. This device shall be designed of materials sufficient to withstand intense temperatures and to contain any initiating liquids, such as diesel fuel or kerosene, and serve to contain contaminated ash residues. A removable top is utilized to ensure that any ash residue remaining in the tray will not be washed out during inclement weather. This top is not used when the burning operations are being performed.

B-2(i) Access and Internal Roads

Figure B-2 identifies the internal roads located in the OB/OD facility.

B-2(j) Storm, Sanitary, and Process Sewers

There are no storm or process sewers in the vicinity of the OB/OD facility.

B-2(k) Loading and Unloading Areas

Waste explosives awaiting destruction shall be stored at not less than intraline distance, based on the largest quantity involved, from explosives being destroyed. The material shall be protected against accidental ignition or explosion from fragments, grass fires or detonating impulse originating in material being destroyed. Explosives-loaded ammunition, packaged ammunition or bulk explosive shall not be handled roughly, thrown about, tumbled, dropped, or walked over other explosives or ammunition. Large ammunition items packaged in DOT approved containers designed to permit dragging, rolling or towing, may be so moved when necessary during handling. Forklift trucks will not be used for handling ammunition items when fused unless the item is packed in an approved manner for safe shipment, complying with AMCCOM and DOT regulations.

B-2(l) Fire Control Facilities

Fire protection for the City of Gallop and a large part of McKinley County is provided by the City of Gallop. Presently the city employs 45 full-time fire protection personnel and 13 volunteers. Equipment available at the city station includes: four 1,000-gallon-per-minute pumpers, four 750-gallon tankers, and an air crash unit. The Zuni Pueblo Indians maintain a volunteer fire department, as does the town of Thoreau (FWDA Environmental Assessment, December 1982).

The FWDA also has its own fire department located on the depot. The fire station is located in building 34 adjacent to the artesian well used for water withdrawal. It is a 4,003 sq. ft.

building and is a permanent structure. The FWDA fire fighting personnel consist of a Fire Chief, Supervisory Fire Fighter(Structural), and several Fire Fighters (Structural). During any detonation or burning activity, the fire fighting team is on stand-by to extinguish any brush or grass fires. The FWDA Fire Chief and Assistant Fire Chief currently are: *

Mr. Reyes Romero	Shift Supervisor
Fire Chief	Assistant Fire Chief
Phone: Ext. 333/238	Phone: Ext. 333/238
Home: 863-3642	

* See Installation Spill Contingency Plan in Appendix G-2.

B-2(m) Surface Waters

There are two artificial lakes and one pond located within the confines of FWDA. Lake McFerren is two acres in size and located near the southern boundary of the installation. Lake Knudson is a shallow lake 20 acres in size located on the northern portion of the installation. A small pond used for stock watering is located on Eastern Patrol Road. Surface water exists in the FWDA as a result of two major mechanisms: (1) spring discharge, and (2) impoundment of surface runoff from rainfall and snowmelt.

B-2(n) Flood Control/Drainage Barriers

There are no flood control or drainage barriers associated with the OB/OD facility.

B-3 LOCATION INFORMATION [40 CFR 270.14 (b)(11)]

B-3(a) Seismic Standard

FWDA is not located in an area included in 40 CFR 264 Appendix VI; therefore, the seismic standard does not apply.

B-3(b) Floodplain Standard

The Floodplain Map shown in Figure B-2 shows that the open burning and open detonation area is not in the 100-year floodplain. Inspection of topography in this area also reveals that flooding of the area is highly improbable.

B-4 TRAFFIC INFORMATION [40 CFR 270.14(b)(10)]

B-4(a) Traffic Patterns and Volumes

Access to the Depot from I-40 and U.S. 666 is provided by the main gate located in the north central portion of the Depot. the main gate is manned by the Depot security police and access is limited to authorized personnel. Just inside the gate a patrol road provides access to the railroad classification yard and western portion of the Depot. A parking area is located along the main access road between the guard house and the main administration building. From the administration area a comprehensive system of roads provides access to and within the major activity areas of the Depot. There are approximately 150 miles of paved roads and approximately 69 miles are gravel or dirt surfaced.

There are two gates which allow access to the Depot. These include the main entrance gate and a gate located in the southeastern portion of the Depot. The southeastern gate provides access to the Lake McFerren recreational area from N.M. 400. This gate is normally locked and has limited use.

All Depot-bound traffic (employee, visitor, and truck) enters via the main gate. Depot hours run from 7:00 a.m. to 3:30 p.m. Inbound and outbound traffic peaks in the half-hour periods before and after duty hours. Truck traffic is generally distributed throughout the day. Because of the low number of personnel employed at the Depot, no significant traffic problems are created by commuter traffic either on or off the Depot. An approximate 100 vehicles per day enter the Depot. The majority of these are confined to the administration and workshop areas. The traffic in the limited access area is light and consists mainly of security patrols and transport trucks.

B-4(b) Traffic Control

Navajo Boulevard is the primary street on the Depot. The speed limit is 35 miles per hour and is strictly enforced. Traffic stop signs provide for control of traffic. The low level of traffic on the Depot does not warrant installation of any traffic signals.

B-4(c) Load-Bearing Capacity

All main roads are capable of bearing loads up to 20,000 pounds on single axles and 34,000 pounds on tandem axles. In addition, loads will be limited to a gross weight of 40 tons which is the posted weight limit of Bridge No. 427.

All main roads are 22-feet wide and are composed of 2 to 4 inches of asphaltic concrete overlying 8 inches of compacted base material and 6 inches of compacted subgrade. Other secondary roads are 18 feet wide and are composed of low bituminous material. The volume of material to be delivered to the OB/OD facility at one time is 10,000 pounds due to restriction of material to be burned at one time.

SECTION C

WASTE CHARACTERISTICS

SECTION C

WASTE CHARACTERISTICS

The chemical and physical characteristics of waste thermally treated at the OB/OD facility is described in this section along with a waste analysis plan for sampling, testing, and evaluating the waste to ensure that sufficient information is available for its safe handling. The information submitted has been developed in accordance with the requirements of 40 CFR 270.14(b)(2) and 264.13(a).

C-1 CHEMICAL AND PHYSICAL ANALYSIS [40 CFR 270.14(b)(2) and 264.13(a)]

C-1(a) Containerized Waste [40 CFR 270.15(b)(1)]

Ash generated from the open burning operations at FWDA are containerized and sent to Toole Army Depot for analysis upon generation.

C-1(b) Waste in tanks [40 CFR 264.191]

There are no wastes in tanks associated with the FWDA OB/OD facility.

C-1(c) Waste in Piles [40 CFR 264.250]

There are no wastes in piles associated with the FWDA OB/OD facility.

C-1(d) Landfilled Wastes [40 CFR 264.314]

There are no landfills associated with the FWDA OB/OD facility. Any generated ash will be analysed to determine ultimate disposal i.e., disposition it to a solid waste land fill if it is rendered non-hazardous or to a properly permitted TSD facilty if it remains reactive and/or EP Toxic for barium, cadmium, lead, and/or mercury.

C-1(e) Wastes Incinerated and Wastes Used in Performance Tests [40 CFR 270.62(b)(2)(i)]

There are no waste incinerators or wastes used in performance tests associated with the FWDA OB/OD facility.

Table C-1

SPECIFICATION REFERENCES FOR PROPELLANTS

Title	Number
Propellant Artillery	MIL-P-270A
Propellant Charge Assy for Rocket, Practice, 35MM Subcaliber, M73	MIL-P-50981S(1)
Propellant Charge Assy Rocket, HE, 66MM, M72A1, w/coupler	MIL-P-60009A
Propellant Charge Nuclear Component	MIL-P-48194
Propellant Charge, Nuclear Component, Tng	MIL-P-50838
Propellant Charge, Rocket, M180	MIL-P-50202A(4)
Propellant CTBN 23-17	MIL-P-85364
Propellant Double Base Sheet, XM36	MIL-P-48357A(1)
Propellant Feed System, Rocket Propulsion, General Specification For	MIL-P-27409(1)
Propellant for Small Arms Ammunition	MIL-P-3984G(3)
Propellant for 20MM Aircraft Gun Mark 12	MIL-P-18942A(3) NOTICE (1)
Propellant for 20MM Ammunition	MIL-P-81994
Propellant Grain M753 for 8" Projectile	MIL-P-63159
Propellant Grain, Cylindrical, for Rocket Motors	MIL-P-18906(1)
Propellant Grain, Mk 43, Mod 1	MIL-P-18811A(2)
Propellant Grain, M28	MIL-P-60071A(1)
Propellant Grain Igniter	MIL-P-82691
Propellant M1 for Use in Charge, Propelling, XM164	MIL-P-43848
Propellant M1 Type II (Master Lot) for Use in Charge XM72	MIL-P-14768(1)
Propellant M1 for Use in charge, Propelling, M4A2	MIL-P-60397B
Propellant M1 for Use in Charge, Propelling, 155MM, M3A1 for 155MM Howitzer Cannon	MIL-P-60416A(1)
Propellant M1 for Use in 90MM Cartridges	MIL-P-48759
Propellant M10 for Use in Cartridges, for 57MM Rifle, M18 and M18A1	MIL-P-48051A
Propellant M10 for 81MM Mortar Propelling Charges	MIL-P-48130A(1)
Propellant M14 for Use in Cartridge 105MM TP-T M490E1	MIL-P-63517
Propellant M26 (T28) for Use in Increment XM90E1 for 81MM Mortar	MIL-P-46993
Propellant M26 for Use in Cartridge, Anti-personnel XM581 for 106MM Rifle M40A1	MIL-P-60375
Propellant M26A1 for Use in Charge Propelling M189	MIL-P-50472A

Table C-1
(continued)

SPECIFICATION REFERENCES FOR PROPELLANTS

Title	Number
Propellant M30 for Use in Cartridge 105MM, APFSDS-T M833	MIL-P-63515A
Propellant M30 for Use in Cartridge 105MM APFSDS-T, M735, M735A1 and XM774	MIL-P-63105B(1)
Propellant M30 for Use in Cartridge 105MM HEAT-T-MP M456A1E2 and TP-T, M490	MIL-P-46458F
Propellant M30A1 for Use in 155MM Propelling Charges	MIL-P-48349
Propellant M30 for Use in Cartridge, 105MM, APDS-T, M728	MIL-P-48266A
Propellant M30 for Use in Cartridge, 105MM, TPDS-T, M724A1	MIL-P-48154B
Propellant M30 for Use in cartridge, 90MM, Antipersonnel, XM580 for Guns M36 and M41	MIL-P-60382(1)
Propellant M30 for Use in 105MM Cartridge HEAT-T, M622	MIL-P-63301
Propellant M30 for Use in Cartridges, TP-T M353A1 and AP-T M318A1E1 and 90MM Guns	MIL-P-46999B
Propellant M30 Type 1 for Use in Charge, XM72, Zone III	MIL-P-14769
Propellant M30 for Use in Cartridge, HEAT-T M431 for 90MM Guns	MIL-P-46600C
Propellant, M30A1 (M30E1) for Use in Charge, Propelling, 105MM, XM176, for Cartridge, HE, XM548 for Howitzers M101, M102 and M108	MIL-P-60422(1)
Propellant, M30A1 for Use in Charge Propelling, M203	MIL-P-48367(B)
Propellant M30A1 for Use in Charge, Propelling XM201E2	MIL-P-48366(1)
Propellant M30A1 for Use in Charge, Propelling, XM203 for 155MM Projectile, Rocket-assisted, M549	MIL-P-48257
Propellant M30A1 for Use in Charge, Propelling XM201E1 for 155MM Projectile, Rocket Assisted M549	MIL-P-48256
Propellant M30A2 for Use in Charge Propelling, M188 and M188E1 for 8 Inch Projectiles	MIL-P-48181C

Table C-1
(continued)

SPECIFICATION REFERENCES FOR PROPELLANTS

Title	Number
Propellant M30E1 for Use in Propelling Charge M85 and XM121 for 105MM Howitzer	MIL-P-46651B(1)
Propellant M31E1 for Use in Charge Propellant M188E2 for 8 Inch Projectiles	MIL-P-63341A
Propellant M5 for Use in Charge, Propelling, XM178 for 90MM Recoilless Rifle	MIL-P-60358(1)
Propellant M6 for Use in Cartridge, 105MM HEP-T, M327	MIL-P-48058
Propellant M6 for Use in Cartridge, 105MM APERS-T M494	MIL-P-48231
Propellant M6 for Use in Cartridge, 76MM, HEAT-T, M496	MIL-P-46484A
Propellant M6 for Use in Cartridge, 90MM, APERS, XM580E1 for Guns M36 and M41	MIL-P-60417
Propellant M6 for Use in Cartridge, 90MM, Canister, M377	MIL-P-60465
Propellant M6 for Use in Cartridge, 90MM, TP-T, M353	MIL-P-60359
Propellant M6 for Use in Charge, Propelling, M119, 155MM	MIL-P-14940B(1)
Propellant M6 for Use in Charge Propelling 175MM, M199 and M86A2B1	MIL-P-46230C
Propellant M6 for Use in Charge Propelling 155MM, M119A2	MIL-P-63404
Propellant, M6 for Use in Charge, Propelling, (Green Bag) 175MM, XM124	MIL-P-60384(2)
Propellant M9 for Use in Charge, Propelling, M36A2	MIL-P-48127
Propellant M9 for Use in Increments M90 and M90A1 for 81MM Mortar	MIL-P-60029B(1)
Propellant M9, Flake (For Use in Ignition Cartridges)	MIL-P-60398A(1)
Propellant M9, Flake (For Use in 40MM Cartridges)	MIL-P-50206(2)
Propellant Powder (For Use in Base Grain OGK)	MIL-P-604638B
Propellant Pressurizing Agent, Helium	MIL-P-27407A
Propellant Pressurizing Agent, Nitrogen	MIL-P-27401C
Propellant, Ammonia	MIL-P-27406

Table C-1
(continued)

SPECIFICATION REFERENCES FOR PROPELLANTS

Title	Number
Propellant, Ball Powder for Cartridge, 105MM, HE, XM710	MIL-P-63084
Propellant, Booster, Grain-Ignition (For Torpedo Mk 46 Mod 0)	MIL-P-81095
Propellant, Cannon, Naco	MIL-P-19264A NOTICE 1
Propellant, Chlorine Pentafluoride	MIL-P-27413
Propellant, Chlorine Trifluoride	MIL-P-81399A
Propellant, Double Base Sheet M36	MIL-P-48357A
Propellant Double Base Sheet N5	MIL-P-17689
Propellant, Composite ADC-109	MIL-P-83405
Propellant, Double Base, Type N-2 (JPN)	MIL-P-18617
Propellant, Ethylene Oxide (Asg)	MIL-P-8845A
Propellant Fluoride	MIL-P-27405(2)
Propellant, Foam (For Torpedo Mk 46 Mod 0)	MIL-P-81069(1)
Propellant, Furfuryl Alcohol	MIL-P-45702B
Propellant, Grain, Inhibited	MIL-P-60852A
Propellant, High Density Synthetic Hydrocarbon Type, Grade JP-9 & JP-10	MIL-P-87107B(1)
Propellant Hydrazine	MIL-P-26536C(2)
Propellant, Hydrazine - UNS-DIMETHYLHYDRAZINE (50 Percent N2H4 - 50 Percent Udmh)	MIL-P-27402B
Propellant, Hydrogen	MIL-P-27201B
Propellant, Hydrogen Peroxide	MIL-P-16005E
Propellant, H8	MIL-P-23929A
Propellant, Kerosene	MIL-P-25576C(2)
Propellant Igniter X-62	MIL-P-85489
Propellant, M1 for Use in Charge Propelling for 75MM How M1A1 & M3	MIL-P-46990
Propellant, Mixed Amine Fuel, MAF-1	MIL-P-23741A(1)
Propellant, Mixed Amine Fuel, MAF-3	MIL-P-23686A(1)
Propellant, Mixed Oxides of Nitrogen	MIL-P-27408A
Propellant, Monomethylhydrazine	MIL-P-27404B
Propellant, M1 for Use in Charge Propelling M2 (White Bag) for 8 Inch Howitzer)	MIL-P-46699B
Propellant, M1 for Use in Charge, Propelling, M67 for 105MM Howitzer	MIL-P-60318B
Propellant, M1 for Use in 105MM Cartridges	MIL-P-46252C
Propellant, M1, for Use in Charge Propelling M1 (Green Bag for 8 Inch Howitzer)	MIL-P-46698

Table C-1
(continued)

SPECIFICATION REFERENCES FOR PROPELLANTS

Title	Number
Propellant, M1 for Use in Charge, Propelling, 155MM, M3	MIL-P-46913
Propellant, M10 (For Use in Special Applications)	MIL-P-48099A
Propellant M10 for 60MM Mortar M204 Propelling Charge	MIL-P-63194A
Propellant, M15 and M17	MIL-P-668A
Propellant, M17, for Use in Cartridge, 76MM, AP-T, M33, and 76MM TP-T, M340A1	MIL-P-46522(1)
Propellant, M2 and M5	MIL-P-323A
Propellant, M2 for M5 Subsystem Ammunition	MIL-P-60989A(1)
Propellant, M2 for Use in 165MM Cartridges	MIL-P-60045A
Propellant, M2, for Cartridge, 37MM, TP, M63 Mod 1	MIL-P-46663
Propellant, M26 (T28) for Use in Cartridges M344 and M346, in 105MM Rifles	MIL-P-46235A
Propellant, M26A1, for Use in Charge Propelling XM189 and XM190	MIL-P-50472(A)
Propellant, M30 (T36), for Use in Cartridge, 105MM HEAT-T, M456A1 and TP-T M490	MIL-P-46458F(1)
Propellant, M30 for Use in Cartridge 105MM APFSDS-T, M735	MIL-P-63105B(1)
Propellant, M30 for Use in Cartridge, 105MM, APDS-T, M392A2	MIL-P-46489C(1)
Propellant, M30 for Use in Cartridges 76MM, AP-T, M339 and TP-T, M340A1	MIL-P-60389A
Propellant M30A1 for Use in Charge, Proof, 155MM PXR-6255	MIL-P-48372
Propellant M30A1 for Use in Charge, Proof, 155MM PXR-6297	MIL-P-63387
Propellant, M31 (T34), for Use in Charge Propelling, M45 For Projectiles M365 and M367, for 120MM Gun, M58	MIL-P-46683A(1)
Propellant, M5 (For Use in Special Applications)	MIL-P-48089(1)
Propellant, M5 for Use in Cartridge, 90MM, HEAT, M371 and M371E1	MIL-P-46426A

Table C-1
(continued)

SPECIFICATION REFERENCES FOR PROPELLANTS

Title	Number
Propellant, M6 for Use in Cartridge, Canister, 76MM M363	MIL-P-60098
Propellant, M7	MIL-P-14737(2)
Propellant, M9 (For Use in Base Charge Assemblies)	MIL-P-60363A
Propellant, M9 (For Use in M19A2 Signal)	MIL-P-60354(1)
Propellant, M9, for Use in Increment, M185 for 81MM Mortar	MIL-P-50418
Propellant, M9 for Use in Increment, M5 for 81MM Mortar	MIL-P-50425
Propellant, M9 for Use with Charge, Propelling M36A1 for 4.2 Inch Mortar	MIL-P-60019A(3)
Propellant, M9 for Use in Cartridge, Ignition XM702E1	MIL-P-63195(1)
Propellant, Nitric Acid	MIL-P-7245F(2)
Propellant, Nitrogen Tetroxide	MIL-P-26539C(2)
Propellant, Oxygen	MIL-P-25508E(3)
Propellant, Pressurizing Agent, Argon	MIL-P-27415
Propellant, Pyrocellulose	MIL-P-231A(2)
Propellant, Rocket Motor, Rocket, High Explosive, 345MM XM130	MIL-P-53028
Propellant, T36E1, for Use in Charge, Propelling, 155MM, XM119 (Supercharge)	MIL-STD-2100
Propellant Solid for Cannon Requirements and Packing	MIL-STD-652D NOTICE 2 NOTICE 4
Propellant, Soluentless Type 37 for Projectile 155MM, HE, Rocket Assisted, M459 & M549A1	MIL-P-63201
Propellant, Solid, Gas Generator	MIL-P-47144
Propellant, Solid, Sampling, Examination and Testing	MIL-STD-286B NOTICE 4
Propellant, Spheroidal Ball Powder	MIL-P-48335
Propellant, T2	MIL-P-45460A
Propellant, T36E1, for Use in Charge, Propelling, 155MM, XM119 (Supercharge)	MIL-P-60033B

Table C-1
(continued)

SPECIFICATION REFERENCES FOR PROPELLANTS

Title	Number
Propellant, T36E1, for Use in Charge, Propelling, 155MM, M51	MIL-P-46902
Propellant, T36E1 for Use in Charge, Propelling, 155MM, XM115 (White Bag)	MIL-P-46953(2)
Propellant, U.S. Navy Guns, Ballistic Appendix	MIL-P-22314(3)
Propellant, Uns-dimenthylhydrazine - Jet Fuel	MIL-P-26694B(2)
Propellant, Uns-demethylhydrazine	MIL-P-25604D(1)
Propellant, M6 for Use In Charges, Propelling, 175MM M199 and M86A2B1	MIL-P-46230C

NOTE: THESE SPECIFICATIONS WERE OBTAINED FROM THE DEPARTMENT OF DEFENSE INDEX OF SPECIFICATIONS AND STANDARDS (DODISS) CURRENT AS OF THE DATE OF HANDOUT PUBLICATION. THE DODISS SHOULD BE CONSULTED WHEN COMPLETE, UP TO DATE INFORMATION IS DESIRED.

C-2 WASTE ANALYSIS PLAN [40 CFR 264.13(b)(c)]

As previously stated in Section C-1, all wastes treated in this manner are assumed to be hazardous prior to OB/OD. A detailed waste analysis plan is not necessary to ensure successful treatment through OB/OD, as the constituents of the PEP waste, as well as its ballistic properties are well known prior to treatment. Chemical and physical data on military PEPs for the hazardous wastes which are subjected to OB/OD are on file at this facility. Table C-3 contains a list of explosive hazardous wastes and their corresponding EPA hazardous waste codes. In addition, Tables C-4 and C-5 represent the chemical composition of materials that may be thermally treated through open burning and open detoantion, respectively. The chemical and physical prperties of these wastes are listed in Table C-6, and additional data on the chemical and physical properties of these items is presented in Appendix I. Specific information on PEP items historically thermally treated at FWDA is provided in Appendix II.

The purpose of the following waste analysis plan, therefore, is to gather information that will aid FWDA in:

* Characterizing the residue remaining after OB/OD;
* Subsequent handling, storage, and disposal of this residue.

C-2(a) Parameters and Rationale [40 CFR 264.13(b)(1)]

The waste ash/residue resulting from the open burning of waste munitions shall be tested for the characteristics of reactivity and EP toxicity. The reactivity tests (Gap Test and Deflagration, Detonation, and Transition Test) shall be used to determine if the ash/residue meets the criteria of a characteristic hazardous waste as specified per 40 CFR 261.23. Upon rendering the material non-reactive, the EP toxicity test will be conducted. The rationale behind this analytical sequence is to minimize the potential for laboratory hazards associated with testing an explosive sample. If positive results are obtained from the reactivity tests, the ash/residue will be submitted for additional thermal treatment. After confirming that the ash/residue is not reactive, it shall be tested for EP Toxicity. The appropriate test methods for EP Toxicity and the Bureau of Mines Gap and Detonation, Deflagration and Transition

Table C-2

PROPELLANT COMPOSITIONS

The information contained in this chart is an approximation only. Specific information regarding percentages and tolerances of components should be obtained from appropriate specifications and standards. (See Appendix)

In addition, these sources may provide information about perforation and web thickness applicable to a particular weapon or round of ammunition.

Numbers within the chart are percentages by weight.

Component/Propellant Model Designation	M1	M2	M5	M6	M7	M8	M9	M10	M12	M13	M14	M15	M17
Nitrocellulose	85.0	77.45	81.95	87.0	54.6	52.15	57.75	98.00	97.70	57.30	90.00	20.0	22.0
Nitroglycerin		19.50	15.00		35.5	43.00	40.00			40.00		19.0	21.5
Nitroguanidine												54.7	54.7
Dinitrotoluene	10.0			10.0					Coating		8.00		
Dibutylphthalate	5.0			3.0							2.00		
Diethylphthalate						3.00							
Diphenylamine	1.0*			1.0				1.0	0.80	0.20	1.00*		
Ethyl Centralite		0.60	0.60		0.9	0.60	0.75			1.00		6.0	1.5
Barium Nitrate		1.40	1.40										
Potassium Nitrate					7.8								
Lead Carbonate	1.0**												

*Added basis **When specified, added basis

Table C-2
(continued)

PROPELLANT COMPOSITIONS

Component/Propellant Model Designation	M1	M2	M5	M6	M7	M8	M9	M10	M12	M13	M14	M15	M17
Potassium Sulfate	1.0**			1.0*				1.0	0.75	1.50			
Tin									0.75				
Carbon black					1.2					0.05*			
Graphite		0.30	0.30					Glaze 0.1					Glaze 0.1
Cryolite												0.3	0.3

*Added basis **When specified, added basis.

Table C-2
(continued)

PROPELLANT COMPOSITIONS

Component/Propellant Model Designation	M26 —	M26 E1	M30 —	M30 A1	M31 —	T2 —	M18 —	IMR —	M30 A2	M31 A1
Nitrocellulose	67.25	68.70	28.00	28.00	20.00	57.50	80.00	100.00	27.00	20.00
Nitroglycerine	25.00	25.00	22.50	22.50	19.00	30.00	10.00		22.50	19.00
Nitroguanidine			47.70	47.00	54.70				46.25	54.00
Dinitrotoluene						4.50		9.00		4.5
Ethyl Centralite	6.00	6.00	1.50	1.50		8.00			1.5	
Barium Nitrate	0.75									
Potassium Nitrate	0.70								2.75	
Carbon Black						0.02*				
Graphite	0.30	0.30	Glaze 0.10							
Cryolite			0.30		0.30					
Lead Stearate						0.50				
2-Dinitrodiphenyldiamine					1.50					
Potassium Sulfate				1.00		1.50		*1.00		1.5
Diphenylamine							1.00	.70		1.00

*Added basis

Table C-3

EXPLOSIVE WASTES AND ID NUMBERS

PROPELLANTS

Name	Chemical Formula	Hazardous Waste ID Number
Nitrocellulose	$C_{12}H_{16}(ONO_2)_4O_6$	D003
Nitroglycerin	$C_3H_5N_3O_9$	D003
Nitroguanidine	$CH_4N_4O_2$	D003

These three primary constituents can be used singularly or in various combinations along with metals, metallic salts, and organic polymer binders.

PRIMARY EXPLOSIVES

Name	Chemical Formula	Hazardous Waste ID Number
Lead azide	N_6Pb (71% Pb)	D003, D008
Mercury Fulminate	$C_2HgN_2O_2$ (7.05% Hg)	P065, D003, D009
Diazodinitrophenol (DDNP)	$C_6H_2N_4O_5$	D003
Lead styphnate	$C_6HN_3O_8Pb$ (44.2% Pb)	D003, D008
Tetracene	$C_{18}H_{12}$	D003
Potassium Dinitrobenzo-furoxane (KDNBF)	$C_6H_2N_4O_6K$	D003
Lead Mononitroresor-cinate (LMNR)	$C_6H_3NO_2Pb$ (57.5% Pb)	D003, D008

Primary Compositions - mixtures of primary explosives, fuels, oxidizers and binders.

Table C-3
(continued)

EXPLOSIVE WASTES AND ID NUMBERS

Name	Chemical Formula	Hazardous Waste ID Number
Fuels - Lead thiocyanate	$Pb(SCN)_2$ (64% Pb)	D008
Antimony sulfide	S_5Sb_2	D003
Calcium silicide	$CaSi_2$	D003, D001
Oxidizers - Potassium chlorate	$C10_3K$	D003
Ammonium Perchlorate	NH_4CIO_4	D003
Barium Nitrate	N_2O_6Ba	D003, D005

Table C-3
(continued)

BOOSTER AND SECONDARY EXPLOSIVES (HIGH EXPLOSIVES)

Aliphatic Nitrate Esters

Name	Chemical Formula	Hazardous Waste ID Number
1,2,4-Butanetriol Trinitrate (BTN)	$C_4H_7N_3O_9$	D003
Diethyleneglycol Dinitrate (DEGN)	$C_4H_8N_2O_7$	D003
Nitroglycerine (NG)	$C_3H_5N_3O_9$	D003
Nitrostarch (NS)	$C_6H_{10}O_5NO_2$	D003
Pentaerythyritol Tetranitrate (PETN)	$C_5H_8N_4O_{12}$	D003
Triethylene Glycoldinitrate (TEGN)	$C_6H_{12}O_4N_2O_4$	D003
1,1,1-Trimethylolethane Trinitrate (TMETN)	$C_5H_9O_9N_3$	D003
Nitrocellulose (NC)	$C_{12}H_{16}(ONO_2)_4O_6$	D003

Table C-3
(continued)

BOOSTER AND SECONDARY EXPLOSIVES (HIGH EXPLOSIVES)

Nitramines

Name	Chemical Formula	Hazardous Waste ID Number
Cyclotetra-methylene - tetranitramine (HMX)	$C_4H_8N_8O_2$	D003
Cyclotrime-thylene - trinitramine (RDX)	$C_3H_6N_6O_6$	D003
Ethylenediamine Dinitrate (EDDN Haleite)	$C_2H_6N_4O_4$	D003
Nitroguanidine (NQ)	$CH_4N_4O_2$	D003
2,4,6-Trinitro-phenyl-methyl-nitramine (Tetryl)	$C_7H_5N_5O_8$	D003

Table C-4

WASTES TREATED IN OB AREA

Propellant Type	Chemical Make Up	
1. M1 Propellant	Nitrocellulose	86%
	Dinitrotoluene	10%
	Dibutylphtalate	5%
	Diphenylamine	17%
2. M2 Propellant	Nitrocellulose	77.45%
	Nitroglycerin	19.50 %
	Ethyl Centralite	.60%
	Barium Nitrate	1.40%
	Potassium Nitrate	.75%
	Graphite	.30%
3. M5 Propellant	Nitrocellulose	81.95%
	Nitroglycerin	15.00 %
	Ethyl Centralite	.60%
	Barium Nitrate	1.40%
	Potassium Nitrate	.75%
	Graphite	.30%
4. M6 Propellant	Nitrocellulose	87.0 %
	Dinitroluene	10.0 %
	Dibutylphthalate	3.00%
	Diphenylamine	1.00%
5. M10 Propellant	Nitrocellulose	98.00%
	Dinitrotoluene	1.00%
	Potassium Sulfate	1.00%
	Graphite	.10%
6. M12 Propellant	Nitrocellulose	97.70%
	Diphenylamine	.80%
	Potassium Sulfate	.75%
	Tin	.75%
7. M15 Propellant	Nitrocellulose	20.00%
	Nitroglycerin	19.00%
	Nitroguanidine	54.70%
	Ethyl Centralite	6.00%
	Cryolite	.30%
8. M17 Propellant	Nitrocellulose	22.00%
	Nitroglycerin	21.50%
	Nitroguanidine	54.70%
	Barium Nitrate	.10%
	Cryolite	.30%

Table 4
(continued)

WASTES TREATED IN OB AREA

Propellant Type	Chemical Make Up	
9. T23 Propellant	Nitrocellulose	67.25%
	Nitroglycerin	.25%
	Ethyl Centralite	6.00%
	Barium Nitrate	.75%
	Potassium Nitrate	.70%
	Graphite	.30%
10. M8 propellant	Nitrocellulose	52.15%
	Nitroglycerin	43.00%
	Diethylphthalate	3.00%
	Ethyl Centralite	.60%
	Cryolite	.30%
	Potassium Nitrate	1.25%
11. M9 Propellant	Nitrocellulose	57.75%
	Nitroglycerin	43.00%
	Diethylphthalate	3.00%
	Ethyl Centralite	.60%
	Cryolite	.30%
	Potassium Nitrate	1.25%
12. M7 Propellant	Nitrocellulose	54.60%
	Nitroglycerin	35.50%
	Ethyl Centralite	.90%
	Potassium Perchlorate	.30%
	Carbon Black	1.2 %
13. M13 Propellant	Nitrocellulose	57.30%
	Nitroglycerin	40.00%
	Diphenylamine	.20%
	Ethyl Centralite	1.00%
	Potassium Sulfatee	1.50%
	Carbon Black	.05%
14. M16 Propellant	Nitrocellulose	55.50%
	Nitroglycerin	27.50%
	Dinitroltoluene	10.50%
	Ethyl Centralite	4.00%
	Potassium Sulfate	1.50%
	Carbon Black	.50%
	Lead Stearate	.505

Table C-4
(continued)

WASTES TREATED IN OB AREA

Propellant Type	Chemical Make Up	
15. T2 Propellant	Nitrocellulose	57.50%
	Nitroglycerin	30.00%
	Dinitrotoluene	2.50%
	Ethyl Centralite	8.00%
	Lead Stearate	.50%
16. T8 Propellant	Nitrocellulose	58.00%
	Nitroglycerin	22.50%
	Dinitrotoluene	2.50%
	Ethyl Centralite	8.00%
	Lead Stearate	.50%
	Triacetin	8.50%
17. Black Powder	Potassium Nitrate	74.00%
	Charcoal	15.60%
	Sulfur	10.40%

Table C-5

WASTES TREATED IN OD AREA

Propellant Type	Chemical Make Up	
1. Black Powder	Potassium Nitrate	74.0 %
	Charcoal	15.6 %
	Sulfur	10.4 %
2. TNT	Trinitratoluene	
3. Composition B	60/40 Cyclotol	
	RDX	60%
	TNT	39%
	WAX	17%
4. Petn	Pentaerythrite Tetra-nitrate	
	Chemical Formula	
	Carbon	19.0 %
	Hydrogen	2.5 %
	Nitrogen	17.7 %
	Oxygen	60.8 %
5. Photoflash	Laminac	96.8 %
	Lupersol, DDM	3.0 %
	Iron Oxide	.2 %
6. Composition C4	RDX	91.0 %
	Polysobulylene	2.1 %
	Motor Oil	1.6 %
	Di-(2-Elhylhexyl) Sebacate	5.3 %
7. RDX	(Cyclonite) (Cyclotrimethylete-Trinitramine	
	Chemical Formula	
	Carbon	16.3 %
	Hydrogen	2.7 %
	Nitrogen	37.8 %
	Oxygen	43.2 %

Table C-5
(continued)

WASTES TREATED IN OD AREA

Propellant Type	Chemical Make up
8. Tetryl	Trinitro-Phenylmethyl Nitramine
	Chemical Formula
	Carbon 29.3 %
	Hydrogen 1.7 %
	Nitrogen 24.4 %
	Oxygen 44.6 %
9. TPA Incendiary	Triethylaluminum
10. HMX	(Homecyclonite) (Cycloteramamethylene Tetranitramine)
	Chemical Formula
	Carbon 16.2 %
	Hydrogen 2.7 %
	Nitrogen 37.9 %
	Oxygen 43.2 %
11. Lead Azide	Chemical Formula
	Nitrogen 28.8 %
	Lead 71.2 %
12. Lead Styphnate	Chemical Formula
	Carbon 15.4 %
	Hydrogen .65%
	Nitrogen 9.0 %
	Oxygen 30.8 %
	Lead 44.2 %
13. Amatol	Ammonium Nitrate TNT
14. Ammonium Nitrate	Chemical Formula
	Nitrogen 35%
	Hydrogen 5%
	Oxygen 60%

Table C-5
(continued)

WASTES TREATED IN OD AREA

Propellant Type	Chemical Make up	
15. Composition A3	RDX	91%
	WAX	9%
16. Explosive A4	RDX	97%
	WAX	3%
17. Explosive D	Ammonium Picrate	
	Chemical Formula	
	Carbon	29.3 %
	Hydrogen	2.4 %
	Nitrogen	22.7 %
	Oxygen	45.6 %
18. Haleite	(EDNA) Ethylene - Dinitramine)	
	Chemical Formula	
	Carbon	16.0 %
	Hydrogen	4.0 %
	Nitrogen	37.3 %
	Oxygen	42.75%
19. HBX-1.3 & 6	RDX	39.6 %
	TNT	37.8 %
	Aluminum	17.1 %
	Densitizer Comp D2)	5.0 %
	CACL	.5 %
20. Octol	HMX	75 %
	TNT	25 %
21. PBX	RDX Polystyrene Dioclylphtha-late	

Table C-5
(continued)

WASTES TREATED IN OD AREA

Propellant Type	Chemical Make up	
22. Pentolite 50/50	PETN	50 %
	TNT	50 %
23. Pentolite 10/90	PETN	10 %
	TNT	90 %
24. Picratol	Explosive D	52 %
	TNT	48 %
25. Tetrytol	Tetryl	
	TNT	
26. Torpex	RDX	42 %
	TNT	40 %
	Aluminum	18 %
27. Tritonal	Aluminum	
	TNT	
28. Nitroglycerin	Chemical Formula	
	Carbon	15.9 %
	Hydrogen	2.2 %
	Nitrogen	18.5 %
	Oxygen	63.4 %
29. Nitroguanidine (Picrate)	Picrate	
	Chemical Formula	
	Carbon	11.5 %
	Hydrogen	3.9 %
	Nitrogen	53.8 %
	Oxygen	30.8 %

Table C-5
(continued)

WASTES TREATED IN OD AREA

Propellant Type	Chemical Make up	
30. Military Dynamite-Medium Velocity	RDX	75 %
	TNT	15 %
	Starch	5 %
	SAE No. 10 Oil	4 %
	Polysobutylene	1 %
31. Military/Dynamite-Low Velocity	RDX/DYE	17.5 %
	TNT	67.8 %
	Tripentaery- Thritol 8.6 %	
	Binder**	4.1 %
	Cellulose Acetate	2.0 %

* The dye is 96% pure 1 - Methylamino - Anthraquinone (1-MA) used in the amount of .5% of the RDX mixture.

** The binder is vistac No. 1 consisting of polybutene and Diotyseabacate.

Table C-6

THERMOCHEMICAL CHARACTERISTICS OF EXPLOSIVES

Material	Heat of combustion, calories per gram at constant pressure	Heat of formation, kilogram calories per mole	Products of explosion: Heat, calories per gram (H_2O) gas	Products of explosion: Gas, milliliters per gram
Primary explosives				
Lead azide	--	--112 to --126.3	367	308
Mercury fulminate	938	--221 to -- 22[6]	427	315
Diazodinitrophenol	--	956	820	
Lead styphnate	1,251	92.3	460	440
Tetracene	--	270	658	1,190
Aliphatic nitrate esters				
BTN	2,167	368	1,458	--
DEGN	2,792	--99.4	1,161	--
Nitrocellulose				
Pyroxlyn (12% N)	--	--216	1,020	--
Guncotton (13.35% N)	2,313	--200	1,020	883.2
High nitrogen (14.14% N)	--	--191	1,810	--
Nitroglycerin	1,603	--90.8	1,486	715

Table C-6
(continued)

THERMOCHEMICAL CHARACTERISTICS OF EXPLOSIVES

Material	Heat of combustion, calories per gram at constant pressure	Heat of formation, kilogram calories per mole	Products of explosion: Heat, calories per gram (H_2O) gas	Products of explosion: Gas, milliliters per gram
PETN	1,957	--128.7	1,510	790
TEGN	3,428	--603.7	750	--
TMETN	2,642	--422	--	--
Nitramines				
HMX	2,231 to 2,253	11.3 to 17.93	1,480	--
RDX	2,259 to 2,284	14.71	1,480	908
EDDN	2,013	156.1	128 to 159	--
Haleite	2,477	20.11	1,276	908
Nitroguanidine	2,021	20.29	880	1,077
Tetryl	2,914	4.67 to 7.6	1,450	760
Nitroaromatics				
Ammonium pictrate	2,745	95.82	800	--
DATB	--	-97.1 to --119	910	--

Table C-6
(continued)

THERMOCHEMICAL CHARACTERISTICS OF EXPLOSIVES

Material	Heat of combustion, calories per gram at constant pressure	Heat of formation, kilogram calories per mole	Products of explosion: Heat, calories per gram (H_2O) gas	Products of explosion: Gas, milliliters per gram
HNAB	--	--58 to 67.9	1,420	--
HNS	3,451	--13.9 to 1.87	1,360	--
TATB	2,850	--33.46 to --36.85	1,018	--
TNT	3,563 to 3,598	--10 to -- 19.99	1,290	730
Ammonium nitrate	--	88.6	381	980

Tests are included in Table C-7. These tests will used to confirm that the thermal treatment has been successful in rendering the explosive waste materials non-hazardous. The waste analysis plan flow scheme is shown in Figure C-1.

C-2(b) Test Methods [40 CFR 264.13(b)(2)]

The test procedures described in the previous section are listed in Table C-7, along with method numbers and volume requirements. All methods referenced are from Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd edition, USEPA, 1986 unless otherwise specified. The laboratory performing these analyses is to operate in accordance with a QA/QC plan that is equivalent to the one detained in Chapter 1 of SW-846. Appendix IV shows test methods for testing samples.

C-2(c) Sampling Methods [40 CFR 264.13(b)(3)]

As discussed before, there is sufficient documentation on waste ordnances such that sampling and analysis of these items is not warranted. However, the residual ash must be sampled to verify that it has been rendered non-hazardous and, therefore, does not exhibit those specific characteristics of a hazardous waste as specified per 40 CFR 261.23 and 261.24.

The residual ash will be sampled to ensure that the treatment has been successful in rendering the waste to a non-hazardous condition. Any generated ash/residue will be removed from the burning tray after sufficient time has elapsed to ensure that there is no evidence of heat emminating from the tray. The ash will be placed in a labeled DOT 17H 55-gallon drum with a bolted, ring-secured lid. Upon generating a 55-gallon drum of ash/residue, the drum will be sampled for reactivity and EP Toxicity according to the standard methods prescribed in Table C-7. Sampling will be accomplished through the use of a Thief Sampler. The operations procedures for this device are discussed in Table C-8. This sampling device will provide a representative sample of the ash/residue. The drum will be sampled three times in order to obtain one composite sample. All appropriate protective clothing will be worn when sampling as well as appropriate decontamination procedures for the Thief Sampler. Appropriate chain of custody forms will be used by the person obtaining the sample and, the form will be completed before the sample is transported to the laboratory.

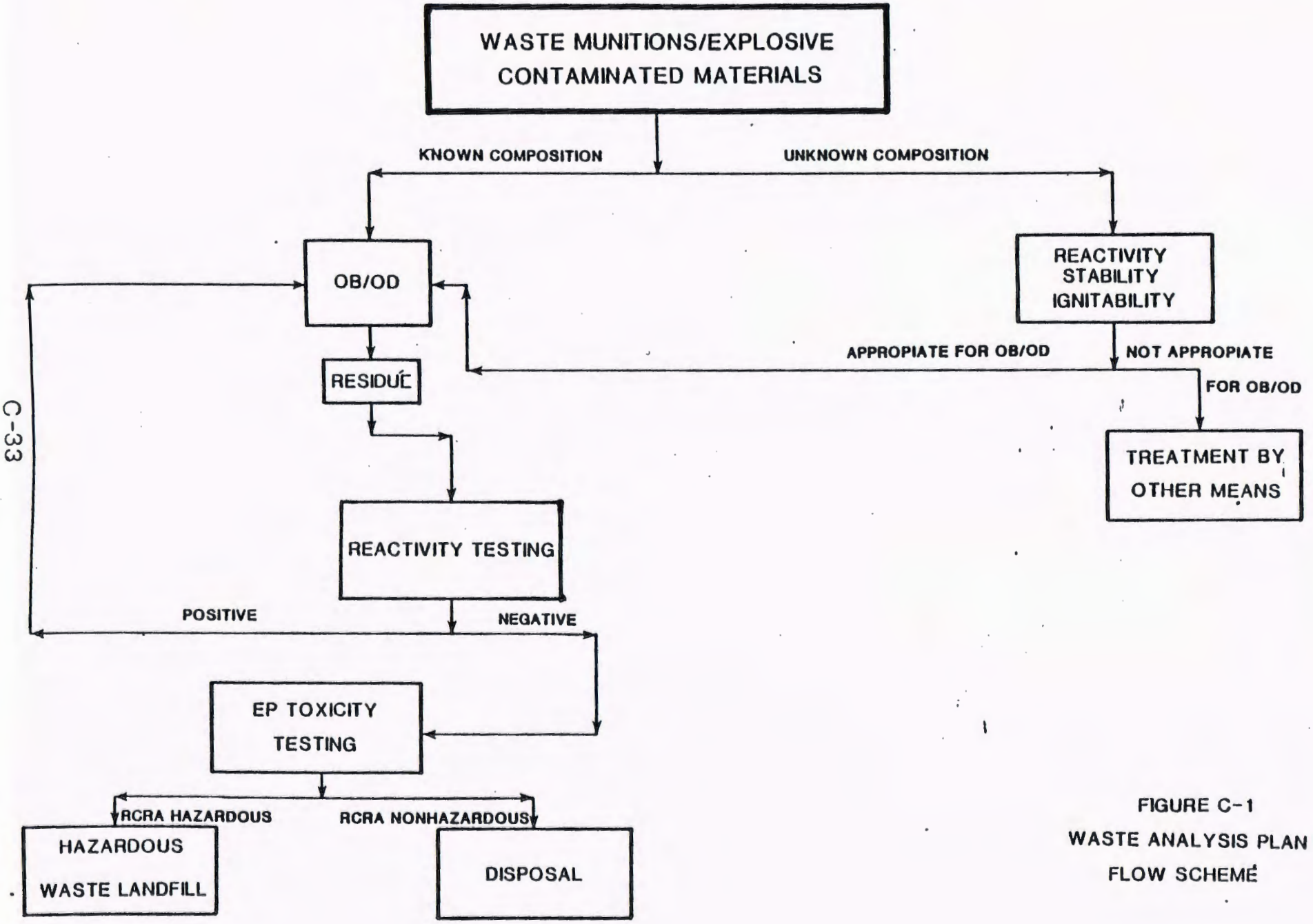


FIGURE C-1
WASTE ANALYSIS PLAN
FLOW SCHEME

C-1(f) Wastes to be Land Treated [40 CFR 270.20(b)(4), 264.271(a)(1) and (2)]

There are no wastes to be land treated associated with the FWDA OB/OD facility.

C-1(g) Wastes Treated at Miscellaneous Units [40 CFR 270.23 and 264.601]

The existing OB/OD facility consists of unit(s) used to thermally treat various propellants, explosives, pyrotechnics(PEP) and related items, in order to render them demilitarized. Prior to treatment, historical data, specifications, and ordnance publications are used to obtain information regarding the nature of the waste to be burned/detonated. All containers of explosives are identified with appropriate identification numbers. Table C-1 presents a list of military propellants and there corresponding identification number. After the type of ordnance has been identified, Table C-2 is used to determine the chemical composition for any given propellant. Although these tables only present information regarding propellant, similar tables are used on a routine basis to classify and identify ordnances of all types which have been designated for treatment at the OB/OD facility. This data will generally be sufficient to determine the suitability of the waste material for OB/OD. Other wastes that are open detonated are inert parts which contains no hazardous air pollutants under NESHAPs, hazardous constituents, or characteristic or listed hazardous wastes.

The categories of wastes to be treated at these facilities will consist primarily of military energetic materials that have exceeded their shelf life and off-specification versions of these same materials. The off-specification items generally are composed of the same raw materials as the usable items but do not meet performance specifications. If this is the case, the same conclusions can be drawn regarding the appropriate treatment based on published data. If there is a difference in the composition of off-specification materials that may render them unacceptable for OB/OD purposes, the generator must provide thisinformation. This information is then reviewed and if there is a question as to the suitability of a particular waste for

OB/OD, other data is gathered to resolve the issue. A small test burn of this material, if possible, may provide adequate information on the applicability of OB/OD for this waste. A test burn may also be appropriate to determine acceptability of OB/OD on materials for which little or no historical data exists. It would not be feasible in the aforementioned cases to do a complete chemical analysis of the material in question because of its presumed hazardous nature.

Information to ensure safe handling of materials to be thermally treated is available in historical data and ordnance publications. In the case of materials that have no such information, it will be necessary to perform chemical and physical analysis to determine its reactivity, stability, and ignitability characteristics as applicable. These guidelines are provided in the waste analysis plan contained in this permit application. No waste materials for treatment are stored at the OB/OD site. They are transported to the site directly from the production plant or from approved storage locations.

Full hazard characteristic analyses will not be performed prior to OB/OD to avoid dangers associated with excessive handling of such materials and to eliminate costly and potentially dangerous time delays. The waste is visually inspected prior to treatment to ensure that only appropriate wastes are subjected to thermal treatment. Seneca Army Depot requests that the detailed waste compositions submitted here be substituted for actual waste analyses.

After treatment, the immediate area surrounding the units is inspected and unburned/unexploded PEP materials are collected and held until the next scheduled burn/detonation. This procedure ensures that any waste treatment residues are collected for analysis and disposal will not be of an explosive nature. Scrap metal fragments are collected and disposed of in accordance with applicable environmental regulations.

The primary hazardous characteristic of the waste residue after thermal treatment will originate from heavy metals and possibly traces of the PEP material. All of the waste residues from burning and cleaning of the burn pans are containerized and handled as hazardous waste. They are stored onsite, sampled and analyzed in accordance with the hazardous waste analysis plan contained in this document and in accordance with 40 CFR 264. Wastes that are verified as being hazardous are then disposed of in a permitted hazardous waste disposal facility.

Table C-2

PROPELLANT COMPOSITIONS

The information contained in this chart is an approximation only. Specific information regarding percentages and tolerances of components should be obtained from appropriate specifications and standards. (See Appendix)

In addition, these sources may provide information about perforation and web thickness applicable to a particular weapon or round of ammunition.

Numbers within the chart are percentages by weight.

Component/Propellant Model Designation	M1	M2	M5	M6	M7	M8	M9	M10	M12	M13	M14	M15	M17
Nitrocellulose	85.0	77.45	81.95	87.0	54.6	52.15	57.75	98.00	97.70	57.30	90.00	20.0	22.0
Nitroglycerin		19.50	15.00		35.5	43.00	40.00			40.00		19.0	21.5
Nitroguanidine												54.7	54.7
Dinitrotoluene	10.0			10.0					Coating		8.00		
Dibutylphthalate	5.0			3.0							2.00		
Diethylphthalate						3.00							
Diphenylamine	1.0*			1.0				1.0	0.80	0.20	1.00*		
Ethyl Centralite		0.60	0.60		0.9	0.60	0.75			1.00		6.0	1.5
Barium Nitrate		1.40	1.40										
Potassium Nitrate					7.8								
Lead Carbonate	1.0**												

*Added basis **When specified, added basis

Table C-2
(continued)

PROPELLANT COMPOSITIONS

Component/Propellant Model Designation	M1	M2	M5	M6	M7	M8	M9	M10	M12	M13	M14	M15	M17
Potassium Sulfate	1.0**			1.0*				1.0	0.75	1.50			
Tin									0.75				
Carbon black					1.2					0.05*			
Graphite		0.30	0.30					Glaze 0.1					Glaze 0.1
Cryolite												0.3	0.3

*Added basis **When specified, added basis.

Table C-2
(continued)

PROPELLANT COMPOSITIONS

Component/Propellant Model Designation	M26 —	M26 E1	M30 —	M30 A1	M31 —	T2 —	M18 —	IMR —	M30 A2	M31 A1
Nitrocellulose	67.25	68.70	28.00	28.00	20.00	57.50	80.00	100.00	27.00	20.00
Nitroglycerine	25.00	25.00	22.50	22.50	19.00	30.00	10.00		22.50	19.00
Nitroguanidine			47.70	47.00	54.70				46.25	54.00
Dinitrotoluene						4.50		9.00		4.5
Ethyl Centralite	6.00	6.00	1.50	1.50		8.00			1.5	
Barium Nitrate	0.75									
Potassium Nitrate	0.70								2.75	
Carbon Black						0.02*				
Graphite	0.30	0.30	Glaze 0.10							
Cryolite			0.30		0.30					
Lead Stearate						0.50				
2-Dinitrodiphenyldiamine					1.50					
Potassium Sulfate				1.00		1.50		*1.00		1.5
Diphenylamine							1.00	.70	1.00	

*Added basis

TABLE C-8

PROCEDURES OF SAMPLING RESIDUAL ASH GENERATED FROM OPEN BURNING OPERATIONS

1. Choose the stainless steel or brass Sampling Thief for the sampling of residual ash.
2. Make sure that the sampler is clean.
3. Check to make sure that the sampler is functioning properly and that the inner tube can rotate freely to open and close the sampler.
4. Wear appropriate protective clothing and observe required sampling precautions.
5. Ensure that the Thief Sampler is in the closed position before any sampling is performed.
6. Slowly lower the Sampling Thief into the barrel of waste ash until it reaches the bottom of the barrel.
7. Slowly rotate the top of the handle in a clock-wise fashion to open the Thief Sampler. This will allow the residual material to enter the Thief Sampler.
8. Close the Thief Sampler by rotating the top of the handle in a counter clock-wise fashion to secure the sample.
9. Slowly retrieve the Thief Sampler from the barrel with one hand while wiping the sampler with a disposable cloth or rag with the other hand.
10. Carefully discharge all of the sample into a suitable sample container by slowly opening the sampler. This is done by again rotating the upper handle in a clock-wise fashion.
11. Cap the sample container; attach label and seal; record in the field log book; and complete the sample analysis request sheet.
12. Disassemble the sampler, if appropriate, and decontaminate with an appropriate cleaning solution, or store the contaminated parts in a plastic storage tube for subsequent cleaning. Store used rags in a plastic bag for subsequent disposal.

C-2(d) Frequency of Analysis [40 CFR 264.13(b)(4)]

In most cases, the burning of propellants, black powder, etc., generates very little ash/residue. However, any detectable ash will be collected and sampled upon generating a 55-gallon drum or at least annually. In addition, sampling will be performed when the types of munitions normally treated changes significantly from past operations.

C-2(e) Additional Requirements for Waste Generated Off-Site [40 CFR 264.13]

This section is not applicable since the facility has no plans to accept wates generated off-site. However, in the event that off-site generated PEP waste must be treated at this facilty, information necessary to comply with the requirements of this section will be submitted.

C-2(f) Additional Requirements for Ignitable, Reactive, or Incompatible Wastes [40 CFR 264.13(b)(6), 264.17]

SOPs have been developed which address the operational characteristics employed during the handling and treatment of reactive hazardous waste. These SOPs will be ammended to address the proper handling, accumulation, and ultimate disposal of the ash/residue. The current SOPs for FWDA are attached as Appendix V.

SECTION D

PROCESS INFORMATION

SECTION D

PROCESS INFORMATION

The information provided in this Section is submitted in accordance with the regulatory requirements of 40 CFR 270.23. Additional regulatory requirements addressed in this Section include those specified per 40 CFR 264.601, 602, and 603.

D-1 OPEN BURNING/OPEN DETONATION FACILITY [40 CFR 270.23]

D-1(a). Description of Facility [40 CFR 270.23(a)]

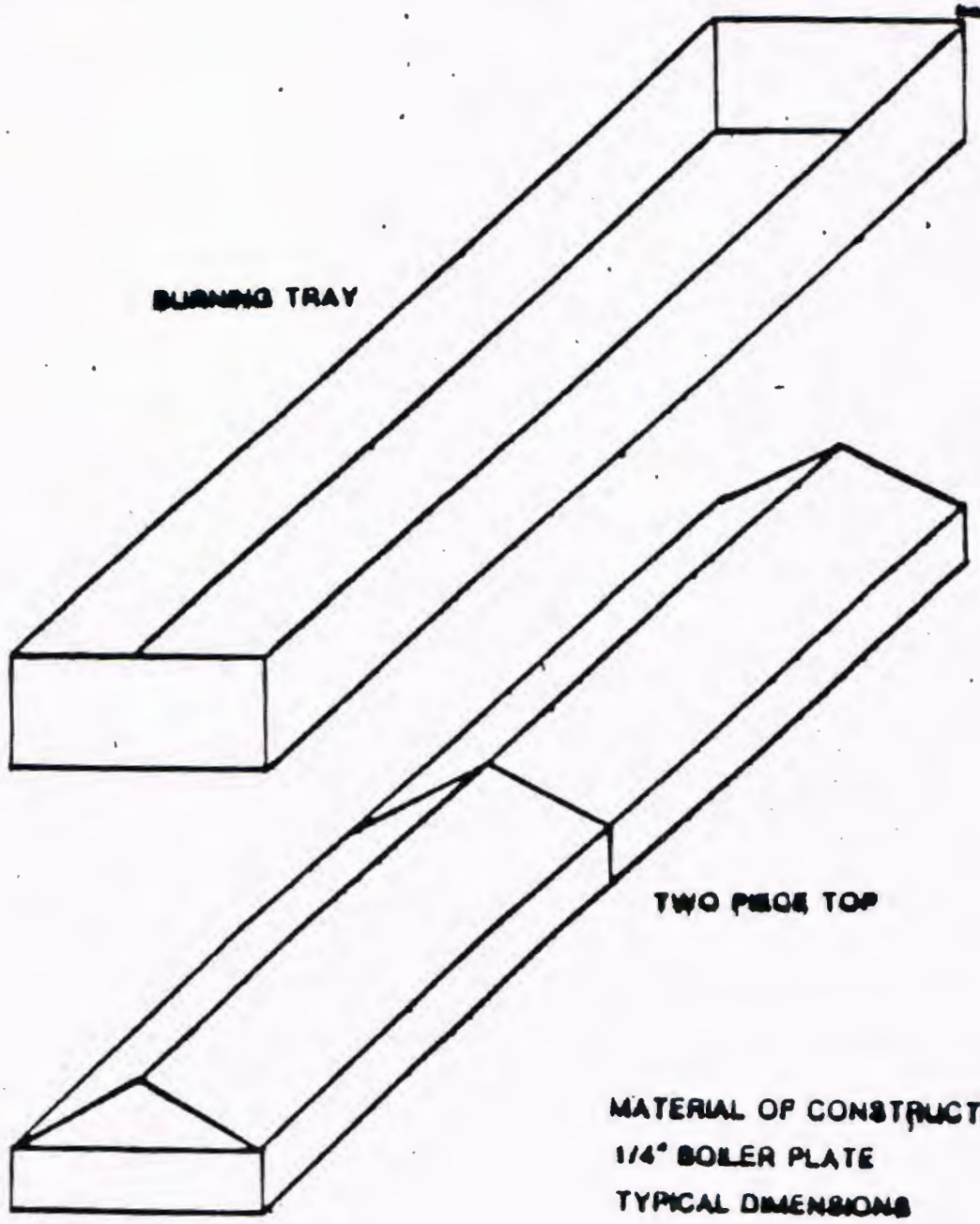
Open burning and open detonation operations are conducted at two separate locations at the OB/OD facility. Operational characteristics include open detonation of high explosives on the ground and open burning of waste propellants and pyrotechnics in a burning tray. The specific location for each of these operations is identified on the facility topographic map. These facilities are limited in operation by the following PEP weight limits: 10,000 pounds for both open burning and open detonation.

A burning tray will be used for open burning to provide containment of hazardous waste explosives and the resultant ash to prevent contamination of the soils, ground water and surface waters. It will be approximately 4 ft. x 16 ft. x 2 ft. (Figure D-1). It is constructed of one quarter inch boiler plate to contain any ash that may be generated and any initiating fluids that may be required. The burning tray is equipped with a removable cover which is used to keep precipitation out. The burning tray will be kept covered at all times except during operations.

D-2 OPERATIONAL CHARACTERISTICS [40 CFR 270.23(a)(2)]

D-2(a) Open Burning of PEPs

Explosives from screw top munitions, pyrotechnics, and initiators will be burned in a burning tray. This device will be elevated from the ground for easy inspection. Waste materials have already been disassembled from the cartridge prior to transportation to the demolition range and are then placed in the burning tray according to Standing Operating Procedures (SOP's). These procedures are located in Appendix V. After the munitions for disposal have been properly placed in the burning tray, the non-electric ignition train will be secured in place. Then the safety fuse for igniting the ignition train will be attached. Upon completing the preparation of the ignition system, the



MATERIAL OF CONSTRUCTION
1/4" BOILER PLATE
TYPICAL DIMENSIONS
2' x 4' x 16'

FIGURE D-1

OPEN BURNING TRAY FOR
WASTE EXPLOSIVES

safety fuse will be ignited and all personnel will retire from the burning area as follows: 1) Vehicle with driver and motor running will be used to evacuate personnel not involved with observation of the operation, and 2) personnel involved with observation will retire on foot at a normal walking pace to the observation shelter.

D-2(b) Open Detonation of High Explosives

The Standing Operating Procedures for demilitarization of munitions by open detonation are located in Appendix V. Material to be destroyed is carefully placed in the hole according to the SOPs. Demolition material which is used to destroy the ammunition or components is transferred from storage to the demolition range. The time blasting fuse is then prepared and the non-electric blasting caps are connected. The fuse igniter is then attached and the charge is initiated. When these procedures are completed according to the Standing Operating Procedures, all personnel will exit the area as follows: 1) A vehicle with driver and motor running will evacuate all non-observing personnel to the entrance of the OB/OD area and will remain there until further notification, and 2) observation personnel will retire to the observation shelter at a normal walking pace to await detonation.

D-3 MONITORING, ANALYSIS, INSPECTION, RESPONSE, REPORTING, AND CORRECTIVE ACTION [40 CFR 264.602]

D-3(a) General Inspection Requirements [40 CFR 264.15]

The operator of the OB/OD facility shall comply with the general inspection requirements of 40 CFR 264.15 as follows:

1. Inspect the facility for malfunctions or operator errors which may lead to the release of hazardous constituents to the environment or threaten human health.

2. Develop and follow a written inspection schedule.

3. Keep the inspection schedule at the facility.

4. Identify, on the inspection schedule, the types of problems to be looked for during routine inspections.

5. Identify the frequency of inspection as related to the safe operation of the OB/OD facility.

6. Remedy any deterioration or malfunction of equipment which may arise through routine operations at the OB/OD facility.

7. Record inspections in an inspection log and maintain

records of the inspections for at least 3 years.

A copy of the inspection form is provided in Figure D-2. The specific parameters regarding how the requirements of 40 CFR 264.15 will be met shall be addressed in Section F.

D-3(b) Testing and Maintenance of Equipment [40 CFR 264.33]

The operator of the OB/OD facility shall comply with the requirements of 40 CFR 264.33 by ensuring that all communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, are tested and maintained as necessary to ensure its proper operation in time of emergency. Detailed information regarding these parameters shall be addressed in Section F.

D-3(c) Biennial Report [40 CFR 264.75]

The operator of the OB/OD facility shall prepare and submit a single copy of a biennial report to the Regional Administrator by March 1 of each even numbered year. The biennial report must be submitted on EPA Form 8700-13B. The report must cover facility activities during the previous calendar year and must include all pertinent information of 40 CFR 264.75. In the case of the OB/OD facility, the biennial report will be submitted for the entire Army Depot and operations of the OB/OD facility shall be included in that report.

D-3(d) Unmanifested Waste Report [40 CFR 264.76]

At this time the OB/OD facility at FWDA does not receive shipment of explosive materials for thermal treatment. However, in the future, if unmanifested waste shipments are received, FWDA shall comply with the preparation and filing of such reports as specified per 40 CFR 264.76.

D-3(e) Additional Reports [40 CFR 264.77]

In addition to submitting the biennial reports and unmanifested waste reports described in the previous sections, the operator of the OB/OD facility (FWDA) shall report to the Regional Administrator:

1. Releases, fires, and explosions specified in 264.56(j);
2. Facility closures specified in 264.115; and
3. As otherwise required by Subparts F and K-N.

b. Upon arriving at a burning or demolition ground, trucks may distribute explosive containers or explosive items to be destroyed at sites where destruction is to take place. As soon as all items have been removed, trucks shall be withdrawn from the burning or demolition area to a safe location until destruction is complete. Containers of explosives shall not be opened until the truck has been withdrawn.

c. Containers of explosives or ammunition items to be destroyed at the destruction site shall be spotted and opened at least 10 feet from each other and from explosive material previously laid for destruction to prevent rapid transmission of fire in the event of premature ignition.

d. Empty containers shall be closed and moved a sufficient distance away to prevent charring or damage during burning of the explosives. Empty containers may be picked up by truck on the return trip after delivery of the next quantity to be destroyed.

e. When materials being processed at destruction sites are to be handled by gasoline or diesel powered forklift trucks, the requirements of para 24-2cof AMC-R 385-100 will be observed. All such material handled will be properly packaged and must not be contaminated with explosives.

13. Materials for Detonating Ammunition

After the munitions for destruction have been properly placed in the detonation pits the destruction will begin by non-electric initiators as follows:

a. Munitions that have been placed in the detonation pit for destruction will have a non-electric initiating charge placed in the pit also. This will be buried under ten feet of earth provided the operation involves a detonation of 5,000 pounds or more.
b. The initiating charge will be primed with detonating cord of sufficient length to reach up through the covering to a point where the blasting cap may be connected above ground level.
c. The non-electric blasting caps will be connected to the waste munitions via detonating cord.
d. The fuse igniter will then be attached and the charge initiated once all personnel have been properly evacuated.

14. Detonation of Ammunition

a. Ammunition of explosives to be destroyed by detonation should be detonated in a pit not less than four feet deep and covered with not less than two feet of earth. The

components should be placed in intimate contact on top of the item to be detonated and held in place by earth packed over the demolition blocks. Where space permits, and the demolition area is remotely located from inhabited buildings, boundaries, work areas, and storage areas, detonation of shells and explosives may be accomplished without the aid of a pit. In either event, however, the total quantity to be destroyed at one time, dependent on local conditions, should be established by trial methods to assure that adjacent and nearby structures and personnel are safe from the blast effect or missiles resulting from the explosion. This procedure should be used for the destruction of fragmentation grenades, HE projectiles, mines, photo flash munitions, mortar shells, bombs, and HE rockets heads which have been separated from motors. Rocket motors containing solid propellants should not be destroyed by detonation.

b. After each detonation, a search shall be made of the surrounding area for unexploded material and items. Items or material such as lumps of explosives or unfused ammunition may be picked up and prepared for the next detonation. Fused ammunition or items which may have internally damaged components should be detonated in place unless the item can be safely handled by using mechanical retrievers providing protection to personnel.

c. In case of misfires, personnel shall not return to the point of detonation for at least 30 minutes after which not more than two qualified personnel shall be permitted to examine the misfire.

15. Operation of Motor Vehicles

a. During loading and unloading of munitions, the brakes must be set. In addition, when on a grade at least one wheel must be chocked.

b. Trucks containing ammunition or explosives should not be refueled within magazines or explosives areas of AMC installations, including refueling from mobile units. A central station located outside the restricted area should be used.

c. No person shall be allowed to ride in or on the truck body or van of a motor vehicle transporting ammunition or explosives except in cases involving limited quantities of small arms ammunition with nonexplosive bullets. In the latter case, the small arms ammunition must be in closed containers which are properly secured in the truck body and seats shall be provided for personnel, restricted in number to the minimum required.

e. No explosives shall be loaded or unloaded from motor vehicles while their motors are running. Motors may be kept running when required to provide power to vehicle accessories such as mechanical handling equipment used in the loading and unloading of the vehicle, provided:

1. The accessory is an integral part of the vehicle.

2. The exhaust gases from the motor are emitted at least six feet from the point at which the loading operations are conducted and are directed away from this point.

3. The exhaust pipe is equipped with a spark arrestor.

16. Inspection of Vehicles

a. All vehicles used to transport ammunition and/or explosives will be inspected monthly by D/QA using DD Form 626.

b. Government owned motor vehicles used for transportation of hazardous materials shall be inspected at frequent intervals by a competent person to see that mechanical conditions and safety devices are in good working order and that oil and motor pans under engines are clean. Daily inspection shall be made by operators to determine that:

1. Fire extinguishers are serviceable.

2. Electric wiring is in good condition and properly attached.

3. Fuel tank and piping are secure and not leaking.

4. Brakes, steering, and other equipment are in good condition.

5. The exhaust system is not exposed to accumulation of grease, oil, gasoline, or other fuels, and has ample clearance from fuel lines and other combustible materials.

17. Government motor vehicles involved only in on post shipments shall be equipped, as a minimum, with one Class 10-BC rated portable fire extinguisher mounted outside the cab on the driver's side of the vehicle.

D-6(c) SOPs For Open Burning Operations

This section provides only a summary of the servicing of the destruction site, the general burning requirements, and the open burning of out-loaded HE projectiles. Other general safety precautions for the handling of pyrotechnics and propellants are the same as those for handling explosives described in the previous section, D-6(b). Appendix V includes the SOPs for open burning operations.

1. Servicing of Destruction Site

a. Trucks transporting explosive material to burning grounds shall meet the requirements of Chap 22, AMC-R 385-100. No more than two people shall ride in the cab.

b. Upon arriving at a burning or demolition ground, trucks may distribute explosives containers or explosive items to be destroyed (treated) at sites where destruction is to take place. As soon as all items have been removed, trucks shall be withdrawn from the burning or demolition area to a safe location until destruction is completed. Containers of explosives shall not be opened until the truck has been withdrawn.

c. Containers of explosives or ammunition items to be destroyed at the destruction site shall be spotted and opened at least 10 feet fro each other and from explosives material previously laid for destruction to prevent rapid transmission of fire in event of premature ignition.

d. Empty containers shall be closed and moved a sufficient distance away to prevent charring or damage during burning of the explosives. Empty containers may be picked up by truck on the return trip after delivery of the next quantity to be destroyed.

e. When materials being processed at destruction sites are to be handled by gasoline or diesel powered forklift truck, the requirements of para 24-2c of AMC-R 385-100 will be observed. All such material handled will be properly packaged and must not be contaminated with explosives.

2. General Burning Requirements

a. Except in specific cases, such as Explosive D loaded projectiles, ammunition and explosives shall not be burned in containers.

b. Bulk initiating explosives and others used predominantly in detonator and photo-flash compositions shall be destroyed by detonation except that small quantities (not exceeding 28 grams) may be decomposed chemically.

c. Loose explosives, other than initiating explosives, may be burned in beds not more than three inches deep. Wet explosives may require a thick bed of readily combustible material such as excelsior underneath and beyond to assure that all the explosives will be consumed once the materials are ignited. From the end of the layer of explosives the combustible material should be

extended in a train to serve as the ignition point. If an ignition train of combustible material leading to the explosives is used, it must be arranged so that both it and the explosives burn into the wind. The combustible train of explosive, if ignited directly, must be ignited by a safety fuze of a length which will permit personnel to withdraw safely to the protective shelter. In some cases, it may be necessary to tie two or more squibs together to assure ignition of the combustible train. When a misfire occurs, personnel shall not return to the point of initiation for at least 30 minutes. Not more than two qualified persons shall be permitted to examine the misfire.

1. Loose, dry explosive may be burned without being placed on combustible material if burning will be complete and the burning does not become unduly contaminated. The ground must be decontaminated as frequently as is necessary for the safety of personnel and operations.

2. Wet explosives shall not be burned without first preparing a bed of nonexplosive combustible material upon which the explosives are placed to assure complete burning. It is necessary to burn RDX wet to prevent detonation.

3. Dry grass, leaves, and other extraneous combustible material in amounts sufficient to spread fire shall be removed within a radius of 200 feet from the point of destruction.

3. Burning Out-Loaded HE Projectiles

a. TNT, Explosive D, Composition B, pentolite, and other explosives filler in open projectiles may be burned out when destruction by detonation or washing out and burning the explosive filler separately is impracticable.

b. Projectiles to be burned out should be placed on their sides and arranged in groups of not more than six projectiles, with all open ends facing in one direction. Open ends of projectiles should not be pointed into the wind.

c. Combustible material such as excelsior or scrap lumber should be used to ignite the explosive filler. Oil-soaked waste may also be used; however, it shall not be placed in the interior of the fuze activities. Use of oil or wood treated pentachlorophenol (PCP) is prohibited, unless specifically authorized by Commander, AMC, ATTN: AMCSF.

SECTION E

ENVIRONMENTAL PERFORMANCE STANDARDS

SECTION E

ENVIRONMENTAL PERFORMANCE STANDARDS

This section contains the information required for an initial assessment study as required by 40 CFR 264.601. This section has been developed and supported by existing documentation conducted by the United States Army Environmental Hygiene Agency (AEHA) to conclude that a detailed assessment will not be required. In addition, this section supports the contention by the U.S. Corps of Engineers that a detection monitoring program will not be required for this facility. A flow chart containing a ground water environmental performance standards evaluation process is located in Figure E-1.

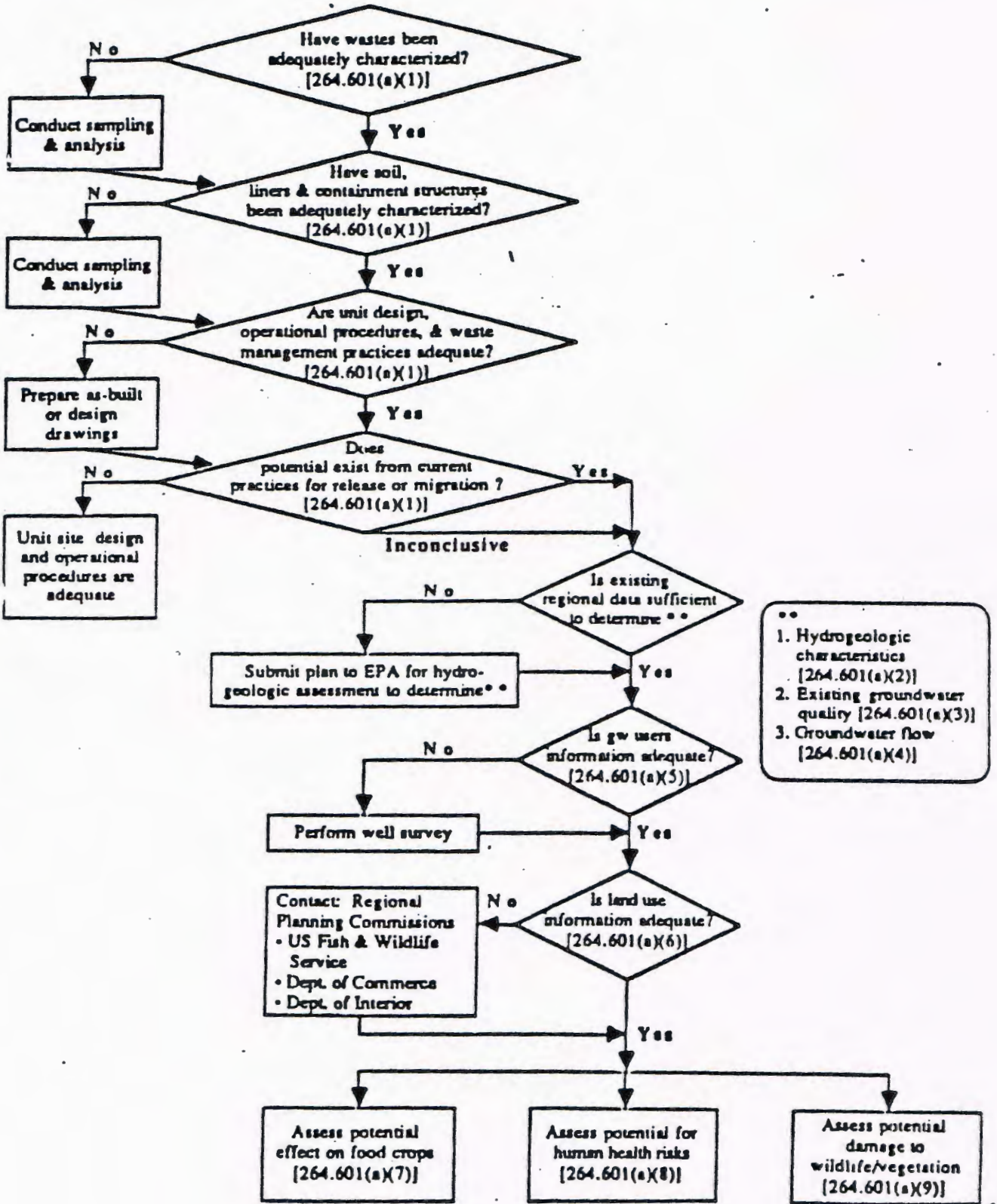
E-1 ENVIRONMENTAL SETTING [40 CFR 264.601]

E-1(a) Geology [40 CFR 264.601]

The Fort Wingate Depot is situated in the Puerco River Valley in the foothills of the Zuni Mountains. FWDA is bounded on the west by a ridge of steeply dipping sedimentary rock called the Hogback. The southern boundary is formed by the Zuni Mountains. North of the installation lie the massive Wingate Cliffs. Rocks of the Permian, Triassic , Jurassic, Cretaceous, and Quarternary periods are all present in the area.

San Andres limestone and Glorieta sandstone, both of Permian age, are exposed in the Zuni Mountains in the southeastern portion of the installation. These formations dip steeply to the west and to the north under the thick sequence of younger sedimentary rocks in the vicinity of the installation. At one point in the geologic past, these younger sedimentary rocks were forced upward by the Zuni Uplift. Tremendous tensional stresses were placed on the area currently occupied by FWDA. The rocks were fractured and later removed by erosion, leaving the present-day basin. The numerous ridges and hills that remain in the basin are portions of the Chinle Formation that have resisted erosion.

Groundwater Environmental Performance Standards Evaluation Process



2.459ab

E-1(b) Topography [40 CFR 264.601(b)(3) & (c)(4)]

Figure B-2 shows the relief in the vicinity of the open burning open detonation facility. Three distinct topographic zones occur on and in the immediate vicinity of the Depot:

(1) steep to abrupt slopes in the mountains which dominate the southern portions of the installation;
(2) moderate slopes in the foothills which lie between the mountains and the valley; and
(3) gentle to undulating slopes in the valley area on the northern portions of the installation.

Elevations average 7,650 feet in the southern portion of the Depot and 6,800 feet in the northern portion.

E-1(c) Soils [40 CFR 264.601(b)(8)]

Soils in the FWDA area are representative of those found in both cool plateau and cool to cold mountain regions. Generally the area north of the Depot, where climatic conditions are dry and arid, contains undeveloped soils overlying erosional surfaces. The area to the south, where conditions range from semi-arid to cool, contains well developed soils of the hills and mountains. All soils are relatively shallow, and bedrock is either at or near the surface over some 25% of the area.

The principal agricultural value of the soils is as rangeland, although those lying at the higher elevations of the mountains can support timber. Topsoil is generally of low fertility, contains stones and rock fragments, and is highly erodible. Root growth is limited by shallow-lying bedrock and soils in low-lying areas or within flood plains are somewhat saline.

E-1(d) Surface Water [40 CFR 264.601(a)(4) & (b)(5)]

Ground water is present in many rock units underlying the installation. Examination of these rocks and records of wells in the area indicate that the only formations at the Depot capable of yielding more than a few gallons per minute to a well are the San Andres Limestone and Glorieta Sandstone at Permian age, and alluvium of Quarternary age. Water-bearing formations of the Jurassic and Cretaceous ages capable of yielding 100 or more gallons per minute are present within four to six miles of the Depot.

The San Andres-Glorieta formation, which constitutes the primary ground water source for FWDA, crops out near the southern boundary of the Depot. The winter snow pack probably furnishes much of the recharge water to the aquifer. As the snow pack

gradually melts the water released from it does not run off rapidly as does rainfall, and generally has an opportunity to infiltrate.

The San Andres-Glorieta aquifer is composed of San Andres Limestone and Glorieta Sandstone. These two separate geological formations function together as one unit hydrologically. In general water from this aquifer is of good quality, but it is often high in iron, sulfates, and total dissolved solids.

According to records from the U.S. Weather Bureau, slightly more than three inches of water is received annually in the area in the form of snow. If it assumed that one inch of precipitation per year infiltrates the ground water body at FWDA, about 2,300 acre feet per year is obtained for annual recharge. Ground water is in a northwesterly direction. Ground water flows from the Zuni foothills on the southern portion of the installation toward the Puerco River.

The Fort Wingate Depot obtains its water supply from a deep well tapping the San Andres-Glorieta aquifer. The well is located in the administration area is 1,300 feet deep. Currently the well flows freely at 12 gallons per minute and can be pumped at 165 gallons per minute. This well is located approximately 5.7 miles from the OB/OD area.

Treated water is used for human consumption and the heating plant boilers. The consumption of treated water is approximately 8,000 gallons per day. Consumption of untreated water which is used for fire protection and irrigation is approximately 23,000 gallons per day. Combined water requirements average 31,000 gallons per day. The well can be pumped at 165 gallon per minute. Assuming the well can be pumped 16 hours per day a yield of 158,000 gallons per day can be obtained. Following pumping, the well returns to free flow of 12 gallons per minute after 10 minutes. Free flow would account for an additional 5,760 gallons per day assuming eight hours of free flow. Thus, a total daily yield of 163,760 gallons may be obtained. This figure is 5.28 times the current daily consumption levels.

E-1(e) Surface Water [40 CFR 264.601(b)(3) & (c)(4)]

Lake Knudson, a shallow lake that is approximately 20 acres in size, is located near the administration area is approximately 5.2 miles from the OB/OD area. Lake McFerren is two acres in size and located approximately 3.4 miles from the facility. A small stock watering pond exists on Eastern Patrol Road and is approximately 3.1 miles from the OB/OD unit.

Lake McFerren is located in-between a campground and a picnic site. It is located in the Ponderosa pine forest toward the south end of the depot and near the east boundary. The uses of

this body of water primarily are recreation. The lake is stocked with rainbow trout and channel catfish for fishing. Lake Knudson is also used for fishing and is also stocked with rainbow trout and channel catfish. The small pond previously mentioned is, as stated, used for stock watering.

The quality of surface waters on the installation appears to be generally good. Surface water samples were obtained from several locations including Lake Knudson in 1981. The analytical results do not indicate any significant contamination.

E-1(f) Meteorology [40 CFR 264.601(b)(4) & (c)(4)]

1. Precipitation

Summer precipitation is generally from intense localized (three-mile-diameter) convectional thunderstorms. These storms are caused by warm moist tropical air moving up from the tropical Atlantic (Gulf of Mexico) air mass and passing over strongly heated and mountainous terrain which causes it to rise rapidly, cool, and condense. During late summer, surges of moisture, thought to originate as the fringes of Mexican west coast hurricanes, push up from the Gulf of California and form another source of precipitation. May through October accounts for 60% of the area's precipitation.

Winter precipitation is associated with winds from the west that bring polar Pacific moisture from Washington, Oregon, and sometimes as for south as central California. These storms are infrequent but cover a larger area and are more gentle. Winter precipitation is much more variable from year to year than summer precipitation.

In nearby Arizona yearly precipitation increases approximately five inches per 1,000 feet of increased elevation on mountainous gradients. A 29-year average shows the yearly precipitation to be 9.66 inches. The average humidity is 20%. Figure E- is a evaporation map

2. Temperatures

The skies are clear or only partly cloudy 70% of the time resulting in approximately 3,100 hours of sunshine annually. A 34-year average of mean maximum temperature is 64° F. and the mean minimum is 36° F. The recorded high temperature is 100° F. and the low is -35° F. On the average, the last day of temperatures lower than 32° F is May 11 and the first killing frost is October 9, giving an average of 151 frost-free days. The average diurnal temperature change is more than 30° F.

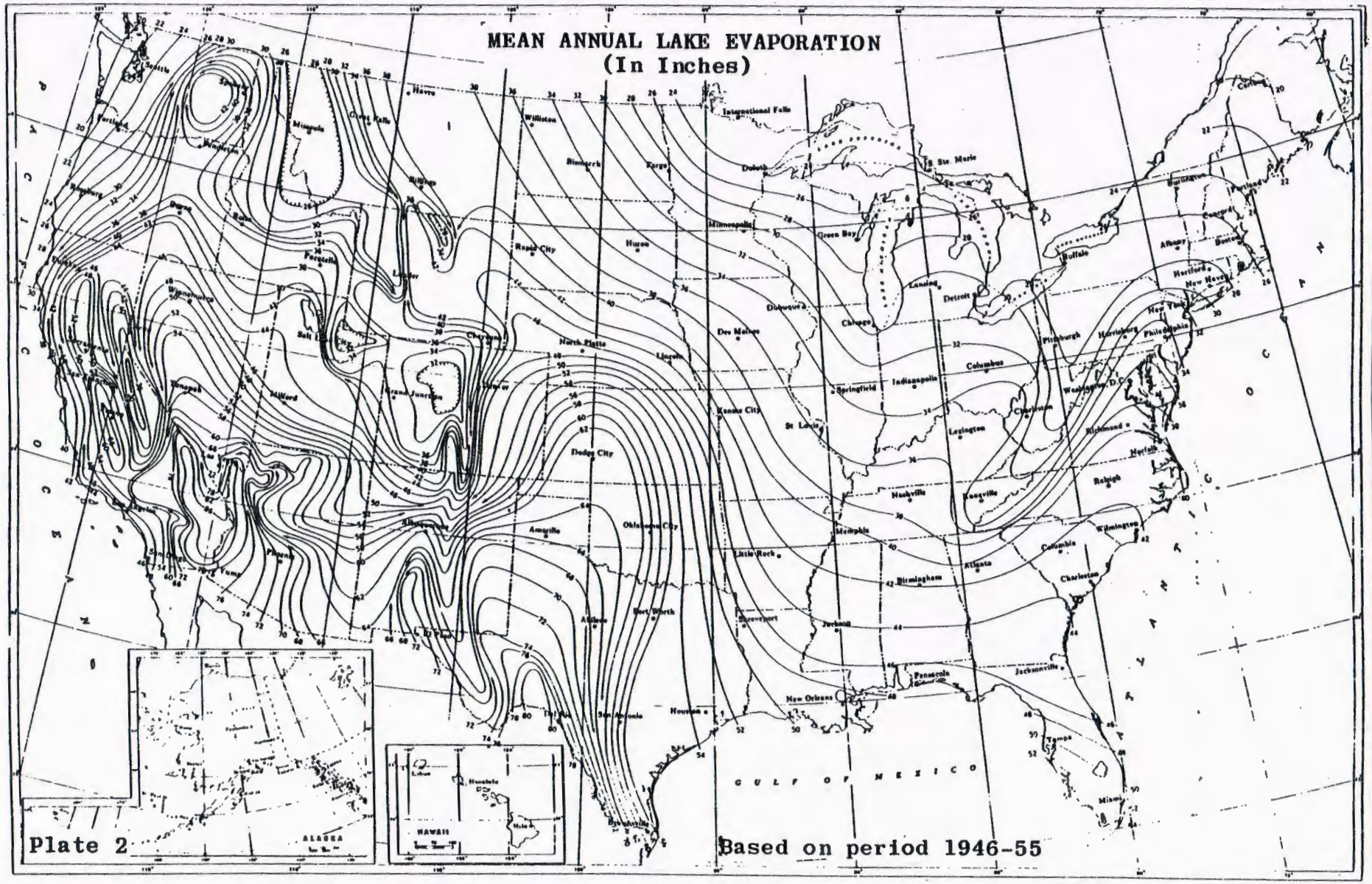

MEAN ANNUAL LAKE EVAPORATION
(In Inches)
Plate 2
Based on period 1946-55
GULF OF MEXICO
ALASKA
HAWAII

FIGURE E-2

3. Winds

Winds are generally westerly with an annual speed of 9.6 miles per hour at Zuni. Spring is the windy season with winds averaging 12 miles per hour. However, winds of 24 miles per hour or more occur about 5% of the time. A wind rose obtained from Black Rock Airport, Zuni NM. is located in Appendix VIII.

E-1(g) Land Use [40 CFR 264.601(a)(6) & (b)(9)]

Table E-1 lists the major land use areas of the Depot and the approximate acreage devoted to each. The following discussion briefly outlines the activities taking place within each of these land use areas.

The woodland area is located in the northern portion of the Depot. This area is a non-use area and consists of forested plateau and mountainous terrain.

A recreation area is located in the southeastern portion of the Depot. This area is surrounded by the woodland area and contains Lake McFerren. Picnic facilities are available.

The protection areas are buffer zones that surround the magazine or igloo storage areas. These areas are non-use areas which serve as wildlife habitat. The western, eastern, and southern boundaries of the Depot are provided with these buffer zones.

The magazine area is the dominant use area of the Depot and comprises most of its central portion. This area is composed of igloos that provide for safe storage of munitions. It is served by a comprehensive system of roads and railroads that allow both truck and rail access.

The workshop area is located in the north central portion of the Depot. Ammunition maintenance and demilitarization operations take place here.

The administration area is located between the workshop area and the northern boundary of the Depot. This area contains the Depot administration buildings, housing, sewage disposal facility, maintenance shops, dispensary, service facilities, warehouses, railroad classification yard, and recreational facilities.

The demolition and burning area is located between the magazine and woodland areas in the west central portion of the Depot. Munitions slated for disposal are burned and exploded in this area.

Newman, Jay R SWF

From: P2 Mailer [applmgr@cpc35.usace.army.mil]
Sent: Tuesday, June 29, 2004 1:46 PM
To: Newman, Jay R
Subject: Project "115221" status changed to "LCM Complete"

Oracle Workflow Notification (FYI)
From:

PLEASE DO NOT REPLY TO THIS EMAIL. THIS NOTIFICATION DOES NOT REQUIRE A RESPONSE.

For project "115221", the status changed to LCM Complete by PATRICIA S MONSCHKE.

Please complete the WBS and activity structure, project schedule, resource assignments, and budget in P3e.

Project Number:	115221
Project Name:	VEN Shaw AFB Test 39SU299
Project Description:	Shaw AFB Archaeological Testing of Site 39SU299
Project Status:	LCM Complete
Project Owning Organization:	M2K1310-CULTURAL RESOURCES SECTION
Project Type:	ENVIRONMENTAL
Project WI Code:	J461HC

Project Classifications

Category	Class Code	Description
Funds Type	Military	Military Funds
Primary Congressional District	SC05	South Carolina District 5
Area of Responsibility	K6	Savannah District
ARLOC	45803	Shaw Air Force Base
EPS:	M2 - EN	Fort Worth District - Environmental
EPA Region Code	04	Region 4: AL, FL, GA, KY, MS, TN, NC, SC, ZD
DOD Primary Program Type	Air Force	Air Force
DOD Secondary Program Type	VENN	Conservation
NPL Status	Not Listed	Not Listed

Pillar	Conservation	Conservation Pillar
Lead Assignment	2	TP - Third Party
Regulatory Driver	NHPA	National Historic Preservation Act & Cultural Resources
Sub Pillar	VNN-CRM	Conservation-Cultural Resources Management

Project Key Members

Role	Employee
Project Manager	NEWMAN, JAY R
PM Proxy	PAXTON, JOSEPH E
PM Proxy	ELLEFSON, JEFF
PMP Approver	ELLEFSON, JEFF
CEFMS Alternate Responsible Employee	SLUTZ, PATRICIA A
CEFMS Alternate Responsible Employee	SANDERS, RHONDA R
CEFMS Alternate Responsible Employee	MILLER, SANDURA S
CEFMS Alternate Responsible Employee	MONSCHKE, PATRICIA S

Project Customers

Name	Relationship	
Shaw AFB	INSTALLATION	100%

Workflow Initiated by: PATRICIA S MONSCHKE (M2PMMPSS) Workflow Started on: 29-JUN-04

Table E-1

LAND USE AREAS AT FWDA

	Acres
Administration area	733.38
Workshop area	672.00
Magazine area	7,351.77
Demolition and burning area	1,128.11
Woodland area	5,803.00
Recreational area	257.63
Protection area	21,637.42

E-2 WASTE CHARACTERISTICS [40 CFR 264.601(a)(1), (b)(1), & (c)(1)]

Hazardous waste is present at the facility only during those intermittent times of treatment. The maximum volume at any such time is estimated to be 10,000 pounds. A Hazardous Waste Management Special Study was performed at FWDA in September of 1981 and the results of this study indicated that the soil and residue samples from the OD area are not hazardous by characteristic of EP toxicity for heavy metals content. This study is provided in Appendix VI.

E-3 MONITORING (CHARACTERIZATION DATA) [40 CFR 264.601(a)(3), (b)(8), & (c)(5)]

Decisions regarding the need for environmental monitoring are based on the decision chart given in Figure E-1.

E-3(a) Soils [40 CFR 264.601(b)(8)]

It is considered impractical and unnecessary to monitor soil at open detonation units for the following reasons: OD operations are usually conducted over a relatively large area, and the intent of OD is treatment of the explosive waste materials. It is recognized that some residues will remain; however, the residues will be dispersed by the force of detonation. As a result it is difficult to locate potential "hot spots" and to evaluate their degree of hazard. Also, because contamination sources are small and because management of residues must be employed, very little or no contamination should migrate to the ground water. In summary, there is no discernible source of contamination within an OD unit.

Open burning operations that are performed where proper operational procedures of burning in pans are followed, are posing no potential threat to the soil surface. The residue of ash that is generated during operations are collected at the

end of each burn and containerized to prevent the migration of possible hazardous constituents to the environment.

E-2(b) Ground Water [40 CFR 264.601(a)(3), 270.14, 270.18, 264.90, 264.97, 264.93, 264.99, 264.94, 264.100]

It is considered impractical and unnecessary to monitor ground water at open detonation units for the following reasons: OD operations are usually conducted over a relatively large area, and the intent of OD is treatment of the explosive waste materials. It is recognized that some residues will remain; however, the residues will be dispersed by the force of detonation. As a result it is difficult to locate potential "hot spots" and to evaluate their degree of hazard. Also, because contamination sources are small and because management of residues must be employed, very little or no contamination should migrate to the ground water. In addition, due to the nature of the operation, monitoring wells cannot be located in close proximity to the unit. Therefore, because monitoring wells would be located relatively far away from many small and isolated potential contamination sources, their ability to detect any contaminant migration would be very limited if at all possible In summary, there is no discernible source of contamination within an OD unit.

Units, where OB of wastes not containing free liquids is performed, which are located where the estimated excess evaporation is greater than or equal to 2 feet per year (based on lake evaporation minus precipitation) have a low potential of contaminating the ground water. This is due to there being no driving force to leach potential contaminants (from solid residues) to the water table. This does not apply when wastes containing free liquids are treated because a contaminated liquid which is released to the soil may migrate to the water table due to its own driving force of liquid.

Units where OB of wastes not containing free liquids is performed within a containment device also have low potential for contaminating the environment provided the containment device is positioned off the ground surface so that visual inspections of the pan can be performed to detect cracks or holes in the device.

E-3(c) Surface Water [40 CFR 264.601(b)(8)]

There are no surface waters in close proximity to the OB/OD facility at FWDA.

E-4(D) Air [40 CFR 264.601(c)(5)]

An air quality assessment has been provided in Appendix VIII.

E-4 PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT [40 CFR 264.601(a)(7), (8) & (9); (b)(10) & (11); (c)(6) & (7)]

E-4(a) Human Exposure and Health Risks [40 CFR 264.601(a)(8), (b)(10) & (c)(6)]

Because the hazardous waste is a containerized solid, there is little potential for high contact at toxic levels. Further, the personal protective equipment worn by those handling the material protects those people from direct contact. Since the primary hazard of the material is explosion, the safety program is directly concerned with this "hazardous property".

E-4(b) Environmental Exposure [40 CFR 264.601 (a)(7) & (9), (b)(11), & (c)(7)]

The low volatility along with the fact that the material is in solid form minimizes the potential to migrate to the surrounding environment.

SECTION F

PREPAREDNESS AND PREVENTION PLANS

SECTION F

PREPAREDNESS AND PREVENTION PLANS

This section discusses the procedures, equipment, and structures maintained by Fort Wingate Army Depot Activity to prevent hazardous situations related to the demilitarization of ammunition.

F-1 SECURITY [40 CFR 270.14(b)(4)]

F-1(a) Security Procedures and Equipment

Fort Wingate Depot Activity is a closed post with primary entry through a guarded gate on Navajo Boulevard. The guardhouse at the main gate is occupied by two armed guards 24 hours a day, 7 days a week. All vehicles must stop at the entrance gate. Employees have to show identification cards while visitors have to sign in and obtain visitor passes. The administration buildings are located in the controlled area past the main entrance gate. FWDA is enclosed with a five foot chain link fence with two strands of barbed wire in top for a total height of six feet. At frequent intervals, signs are posted along the fence that read "U.S. Government Property - Keep Out". Patrols within the controlled area of FWDA are conducted every two hours.

The next level of security at FWDA is the limited access area. Primary entry into this area is through a guarded gate on Navajo Boulevard located approximately 2800 feet from the main entry gate. This gate is manned during working hours and locked otherwise. All visitors entering the limited access area are escorted by FWDA personnel. The limited access area within FWDA is also enclosed by a five foot chain link fence with two strands of barbed wire on top. This area is patrolled by armed guards on an hourly basis. Signs are located on the fence at the entrance gate to the limited access area that read "Restricted Area - Warning". These signs are bilingual to ensure that all persons coming in contact with the warning sign can interpret the meaning. The identification badges that are normally worn on the lapel are exchanged at the limited access area gatehouse for badges that are easily identifiable in that they are red in color. When personnel exit the area the regular identification badges are returned to them.

Inside the limited access area there is still another level of security. The area reserved for open burning and open detonation of waste explosives has a six foot man-proof fence as described previously that surrounds the area. The access gate to this area is locked at all times. Warning signs, previously described, are

located along the fence to provide bilingual warning to any unauthorized person(s).

Procedures provided for the security on munitions within AMC are as prescribed by DOD 5100.76M, Chapter 12 of DOD 5160.65M, and AR 190-11. There are no separate security procedures and/or requirements relative to the handling of items identified for demilitarization. All items designated as sensitive and assigned a risk category retain that status until such time as demilitarization or other recertification criteria has been in fact accomplished. Demilitarization assets will be stored IAW security risks categories as required by DOD 5100.76-M. They will be stored in warehouses, magazines, and igloos which have special door locks as required by AR 190-11. The keys will be centrally controlled and will be issued on a signature basis to authorized persons.

F-1(b) Waiver

FWDA does not request a waiver of the security requirements stated in 40 CFR 264.14(a)(1) and (2) regarding injury to intruder and violation by intruder.

F-2 INSPECTION SCHEDULE [40 CFR 270.14(b)(5)]

F-2(a) General Inspection Requirements

MSC (environmental offices) shall inspect demilitarization facilities for environmental compliance at least once every 2 years. Installation environmental coordinators shall inspect demilitarization/disposal facilities not less than once a quarter to ensure compliance with applicable permits, environmental regulations, and SOP's. All inspections will be followed by a written report to the installation commander identifying deficiencies and corrective action. Copies of inspection reports will be provided by MSC environmental offices and to HQ ANC, ATTN: ANCEN-A, 5001 Eisenhower Avenue, Alexandria, VA 22333-0001.

Demilitarization facility operators will develop and follow a written inspection schedule IAW 40 CFR 264.15 and 265.15. They must comply with specific inspection requirements for specific demilitarization/disposal facilities as stipulated in 40 CFR 264 and 265; e.g., 40 CFR 264.347 and 265.347 re: incinerators. The inspection schedule for the facility and equipment/supplies is shown in Table F-1.

A written policy will be developed at each installation conducting demilitarization/disposal operations which will table

INSPECTION LOG

HAZARDOUS MATERIAL HAZARDOUS WASTE

AREA/BLDG OPEN BURNING/DETONATION

CHECK LIST (DAILY)	SAT	UNSAT	PROBLEMS FOUND	CORRECTIVE ACTION TAKEN
FACILITY (DAILY IF OPERATING)				
TEMPERATURE INVERSIONS				
WIND DIRECTIONS				
CLEAN AIR INDEX				
WARNING DEVICES				
PHONE/EMERGENCY EQUIP.				
GROUND CONDITIONS				
EQUIPMENT & SUPPLIES (WEEKLY IF OPERATING				
FIRST AID EQUIPMENT (COMPLETE)				
ROAD BLOCKS/BARRICADES				
WARNING SIGNS				
FIRE FIGHTING EQUIPMENT				
SAFETY HATS				
EAR PLUGS				
LEATHER GLOVES				
NON SPARKING SHOES				
FLAME PROOF COVERALLS				
ALL TOOLS NON-SPARKING				
WATER AVAILABLE				

FIGURE F-1

CHART.ENVIR.SEC

NOTE - IN THE EVENT THAT THEIR IS NO HAZARDOUS WASTE ACTIVITY, INSPECTIONS WILL NOT BE PERFORMED UNTILL ACTUAL WORK IS PERFORMED

DATE _____ SIGNATURE OF INSPECTOR _____

establish the responsible individual(s) and office(s) (by name and location) for the maintenance and storage of required operating records (manifests, waste analysis, training files, inspection reports). A copy of this policy shall be filed in the environmental coordinator's office. Recordkeeping tasks must be delineated in the demilitarization SOP's.

F-2(b) Container Inspection Requirements

The inspection requirements for the hazardous waste containers is located in the Part B permit application for the Hazardous Waste Storage Facility.

F-2(c) OB/OD Inspection Requirements

The OB/OD facility has only one structure to be inspected. The protection shelter which is used to observe the OB/OD operation is inspected for proper operation of communication devices, e.g. telephone and two-way radio, and the proper operation of the periscope used to view the operation through a small window on the shelter. The first aid equipment required to be on location is inspected for completeness. All special clothing such as, safety hats, ear plugs, leather gloves, non sparking shoes, and flame proof coveralls, will be inspected to ensure proper condition.

In addition, emergency equipment shall be inspected. Fire fighting personnel will be on standby at a safe distance from the operation in the event of grass or brush fires and their equipment is inspected, at a minimum, prior to each OB/OD operation. Fire fighting personnel will be responsible for inspecting their equipment for proper working order.

F-2(c)(1) Open Burning Inspections

The containment device used for conducting open burning operations shall be inspected for signs of significant deterioration which may allow initiating fluids or ash to leak onto the ground. The inspector shall inspect all welds to ensure that they are intact and ensure that there are no unexploded materials remaining in the device from the previous burn.

F-2(c)(2) Open Detonation Inspections

The grounds of the OB/OD facility shall be inspected prior to and after each detonation operation. The inspector shall look for

unexploded ordnances or large items of debris, such as metal casings, and dispose of them before any destruction operations are undertaken.

F-3 WAIVER OF PREPAREDNESS AND PREVENTION REQUIREMENTS [40 CFR 270.14(b)(6)]

FWDA does not request a waiver of the preparedness and prevention requirements of 40 CFR, Subpart C. Documentation of compliance with these requirements is contained below and in Section D and Section G.

F-3(a) Equipment Requirements

F-3(a)(1) Internal Communication

Internal Communication at the OB/OD facility shall be by two way radio. During disposal and destruction operations, the number of people in the area exposed to the hazard must be kept to a minimum. Warning signs or roadblocks shall be posted to restrict the area and to ensure proper segregation of activities. The number of personnel engaged in the disposal and destruction operations shall be no fewer than two and operations shall be arranged to that not all of the personnel are exposed to an incident so that notification of emergency response personnel can be accomplished in the event of injury.

F-3(a)(2) External Communication

The protection/observation shelter located at the OB/OD facility has a telephone to be used for communication with areas on-base and to off-base services if needed. Just prior to detonation, contact with the Attendant at the entrance gate to the OB/OD area will be accomplished by radio to assure that all personnel who have entered the area are accounted for and allow no one to enter until further word from the supervisor.

F-3(a)(3) Emergency Equipment

The Fire Department will be on standby at the entrance to the OB/OD area in the event that there are grass or brush fires that are initiated by the operation. The Fire Department will not approach the demolition area until the Supervisor of the OB/OD operation gives approval. The equipment utilized by the Fire Department consists of: (1) four - 1,000 gpm pumpers, (2) four - 750 gal tankers. A nurse will also be on location to provide any medical attention that personnel might need.

F-3(a)(4) Water for Fire Control

Water for controlling brush or grass fires at the OB/OD facility is stored in tanker trucks described above. The OB/OD facility is not provided with any permanent water source such as fire hydrants, etc.

F-3(b) Aisle Space Requirements

The OB/OD facility does not store containers of waste and therefore, the aisle space requirement does not apply directly. This facility is designed to allow ample room for vehicles to enter and leave and, in the event of an emergency, response personnel will have ample room to maneuver.

F-4 PREVENTIVE PROCEDURES, EQUIPMENT, AND STRUCTURES

The information provided in this section is submitted in accordance with the regulatory requirements of 40 CFR 270.14(b)8.

F-4(a) Loading/Unloading Operations

Specific requirements for the loading and unloading of waste PEPs are described in the SOP's. Although the most up to date SOP's are on file at Fort Wingate, those pertaining to the loading and unloading of waste PEP's are provided in this section as follows:

1. Appropriate fire symbols and chemical hazard symbols shall be displayed in such a manner as to be easily visible from all roads of approach to the munitions storage bunkers and the OB/OD facility.

2. All loading and unloading areas shall be maintained in a neat and safe condition.

3. All tools required for such operations shall be in good condition and shall be non-sparking when appropriate.

4. Each MHE/vehicle operator will have in his possession a valid operators permit for the particular piece of equipment to be operated.

5. Explosives-loaded munition, packaged ammunition or bulk explosives shall not be handled roughly, thrown about, tumbled, dropped, or walked over other explosives or ammunition. Large

ammunition items, packaged in DOT approved containers designed to permit dragging, rolling, or towing may be so moved when necessary during handling for storage and transportation.

6. Leather gloves and steel toed shoes shall be worn by all personnel involved in the loading and unloading of waste PEP's

7. Explosive materials shall be unloaded by hand or forklift as appropriate. Personnel operating the forklifts shall be fully trained in the handling of explosive materials and posses a valid forklift operator's license.

8. Trucks transporting explosive materials to burning grounds shall meet the requirements of Chap22, AMCO-R 385-100. No more than two people shall ride in the cab.

9. Upon arriving at a burning or demolition ground, trucks may distribute explosive items to be treated at sites where treatment is to take place. As soon as all items have been removed, trucks shall be withdrawn from the burning or demolition area to a safe location until treatment is concluded.

10. When materials being processed at the OB/OD facility are to be handled by gasoline or diesel powered forklift trucks, the requirements of para 24-2c of AMC-R 385-100 will be observed. All such material handled will be properly packaged and must not be contaminated with explosives.

11. During the loading or unloading of motor vehicles, the brake must be set. In addition, when on a grade, one wheel must be chocked.

12. When a motor vehicle approaches within 25 feet of the doors of a structure through which a shipment is to be moved, the doors must be kept closed until the motor has been shut off unless the exhaust system is equipped with a spark arresting device.

13. No explosives shall be loaded into or unloaded from motor vehicles while their motors are running. Motors may be kept running when required to provide power to vehicle accessories such as mechanical handling equipment used in the loading and unloading of the vehicles, provide:

1. The accessory is an integral part of the vehicle.

2. The exhaust gases from the motor are emitted at least six feet from the point at which the loading operations are conducted and are directed away from this point.

3. The exhaust pipe is equipped with a spark arrestor.

4. Materials being loaded or unloaded which may involve flammable vapors are enclosed in tightly fitting containers.

14. Trucks with end-operating platforms or pedals shall be equipped with platform guards of heavy channel iron and heavy steel plate or materials of equal strength. The guards should be at least 18 inches high on the sides and should extend a sufficient distance beyond the platform or pedal to protect the operator. Overhead guards are requried for forklift trucks of all types.

15. Transportation and/or moving fuzed ammunition, including bombs directly or indirectly on the forks of the lift trucks without skids or pallets is prohibited unless such containers are so designed to be safely carried in this manner. Loaded unfuzed bombs may be carried directly on the forks of the lift trucks.

16. Loads on tines of forklifts must not extend more than one-third of the height of the top tier of containers above the load back rest. When handling two low profile unitized loads together, because of low overhead clearance in the storage magazine, the package guard must extend to at least one third the height of the top of the load.

F-4(b) Run-on/Runoff Control Structures

Open burning operations are conducted in a burning pan which acts to contain initiating fluids and residual ash. In addition, open burning operations are not conducted under adverse weather conditions and the burning pans are kept covered when not in use. These operational procedures prevent precipitation run-on and also prevent contaminated runoff of leachate from migrating to the soil and/or ground water.

Due to the inherent nature of treatment, open detonation operations are conducted on the ground without any form of engineered control devices which will prohibit run-on or contaminated runoff. The logistics behind this operational parameter is that such devices would be destroyed under normal treatment operations and that extruded fragments would create a safety hazard to personnel.

F-4(c) Water Supplies

A recent study conducted by the United States Army Environmental Hygiene Agency (USAEHA, 38-26-0868-88) at the Seneca Army Depot

concluded that ground water in the vicinity of that demolition range showed no significant contamination. In addition, USAEHA has taken the stand that when open burning operations are conducted in a containment device, ground water contamination is negligible. USAEHA has also postulated that the open detonation of waste explosives does not pose a significant threat to the environment, including water supplies.

F-4(d) Equipment Failure/Power Outages

There are no electrical power sources at the demolition range. Therefore if there were a power outage at the Base, treatment operations would not be hindered. Equipment failures shall be reported immediately as specified in the SOP's. Faulty equipment shall be repaired or replaced as appropriate.

F-4(e) Prevention of Undue Exposure

The handling of waste explosives shall be conducted in a manner that minimizes contact with the waste. All handling operations and requirements for protective clothing shall be in accordance with SOP's. At a minimum, protective clothing shall include but not limited to the following: fire retardant overalls, safety shoes, and gloves.

F-4(f) Minimum Protective Distance to the Facility

The minimum protective distance to the OB/OD facility is determined by the following table which is located in 40 CFR 265.382:

TABLE F-2

Pounds of waste explosive or propellants	Minimum distance from open burning or detonation to the property of others
0 to 100	204 meters (670 feet)
101 to 1,000	380 meters (1,250 feet)
1,001 to 10,000	530 meters (1,730 feet)
10,001 to 30,000	690 meters (2,260 feet)

At FWDA the maximum amount of material detonated at a time is 10,000 pounds. Therefore the minimum protective distance is 1,730 feet from the OB/OD facility.

F-5 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, AND INCOMPATIBLE WASTES [40 CFR 270.14(b)(9)]

F-5(a) Management of Ignitable and Reactive Wastes

All hazardous materials handled at the demolition range shall be assumed to be reactive due to their inherent physical characteristics. As such, personnel must take appropriate measure to prevent reactions which:

(1) Generate extreme heat or pressure, fire or explosions, or violent reactions;

(2) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;

(3) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosion;

(4) Damage the structural integrity of the device or facility;

(5) Through other like means threaten human health or the environment.

The means to accomplish the aforementioned criteria are provided through the establishment of safety guidelines implemented through the SOP's. The safety guidelines include, but are not limited to the following:

(1) No smoking signs shall be posted at the demolition range;

(2) Ignition sources shall be prohibited at the demolition site;

(3) Spark producing equipment and tools shall be prohibited from use near explosive materials unless specifically authorized;

(4) Incompatible materials shall not be treated or stored in the same location;

(5) Supervisors shall perform inspections of hand tools and mechanical devices to ensure that they have not become unsafe for use as designated either to the item or to the operator;

(6) Motor vehicles used to transport waste explosives, ammunition, or other material to the destruction site shall meet the requirements of AMC-R-385-100, Chapter 22;

(7) Thermal treatment operations shall not be conducted during electrical storms.

F-5(c) Management of Ignitable or Reactive Wastes in Containers

The OB/OD facility at Fort Wingate is greater than 50 feet from the facility's property line,as can be established from the site map.

F-5(d) Managemnt of Incompatible Wastes in Containers

Incompatible wastes are not treated at the OB/OD facility. In addition, containers of explosive material are destroyed after use and will not be used to contain other waste PEP's.

SECTION G

CONTINGENCY PLAN

SECTION G

CONTINGENCY PLAN

CONTINGENCY PLAN FOR HAZARDOUS WASTE EMERGENCIES

This Section of the Hazardous Waste Permit Application includes the Hazardous Waste Contingency Plan for Fort Wingate Army Activity (FWDA), as required by 40 CFR 270.14(b)(7) and Subpart D of 40 CFR 264. The Contingency Plan is written as an independent document and included here in its entirety. Because it is an independent document, the Contingency Plan may be reproduced with attachments and distributed separately as necessary.

G-1 INTRODUCTION AND GENERAL INFORMATION

G-1(a) Introduction

This Contingency Plan presents procedures and equipment maintained by Fort Wingate Army Depot Activity (FWDA) to respond to hazardous situations related to the generation, accumulation, and treatment of hazardous waste.

Responses to emergencies involving hazardous wastes will be supervised by an Emergency Coordinator. The Emergency Coordinator will have the ultimate authority and responsibility for the following:

1. Determining if the emergency involves a spill of a reportable quantity of material (per 40 CFR 117)

2. Assessing the immediate threat to the environment or human health beyond the boundaries of the base.

3. Determining when to initiate notification procedures to other agencies.

4. Ensuring that proper cleanup equipment and procedures are available.

5. Providing assistance, personnel, and equipment to work centers for spill response.

Departments responsible for emergency response are identified in this plan. Specific methods of response to spills, fires, and flood emergencies involving hazardous waste are given. Emergency and protective equipment is also described.

G-1(b) General Information

The Fort Wingate Army Depot Activity (FWDA) is located in northwestern New Mexico. The installation is 32 miles east of the Arizona border and 10 miles east of Gallop, New Mexico. A vicinity map shown in Figure G-1 depicts FWDA with respect to the nearby cities and communities of Gallop, Rehoboth, Wingate, and Ft. Wingate, New Mexico.

FWDA encompasses 22,120 acres with facilities to operate a reserve storage activity providing for the care, preservation, and minor maintenance of assigned commodities, mostly ammunition. The depot also ships, receives, and prevents the deterioration of these commodities. The mission includes the disassembly and demilitarization of outdated and unservicable ammunition.

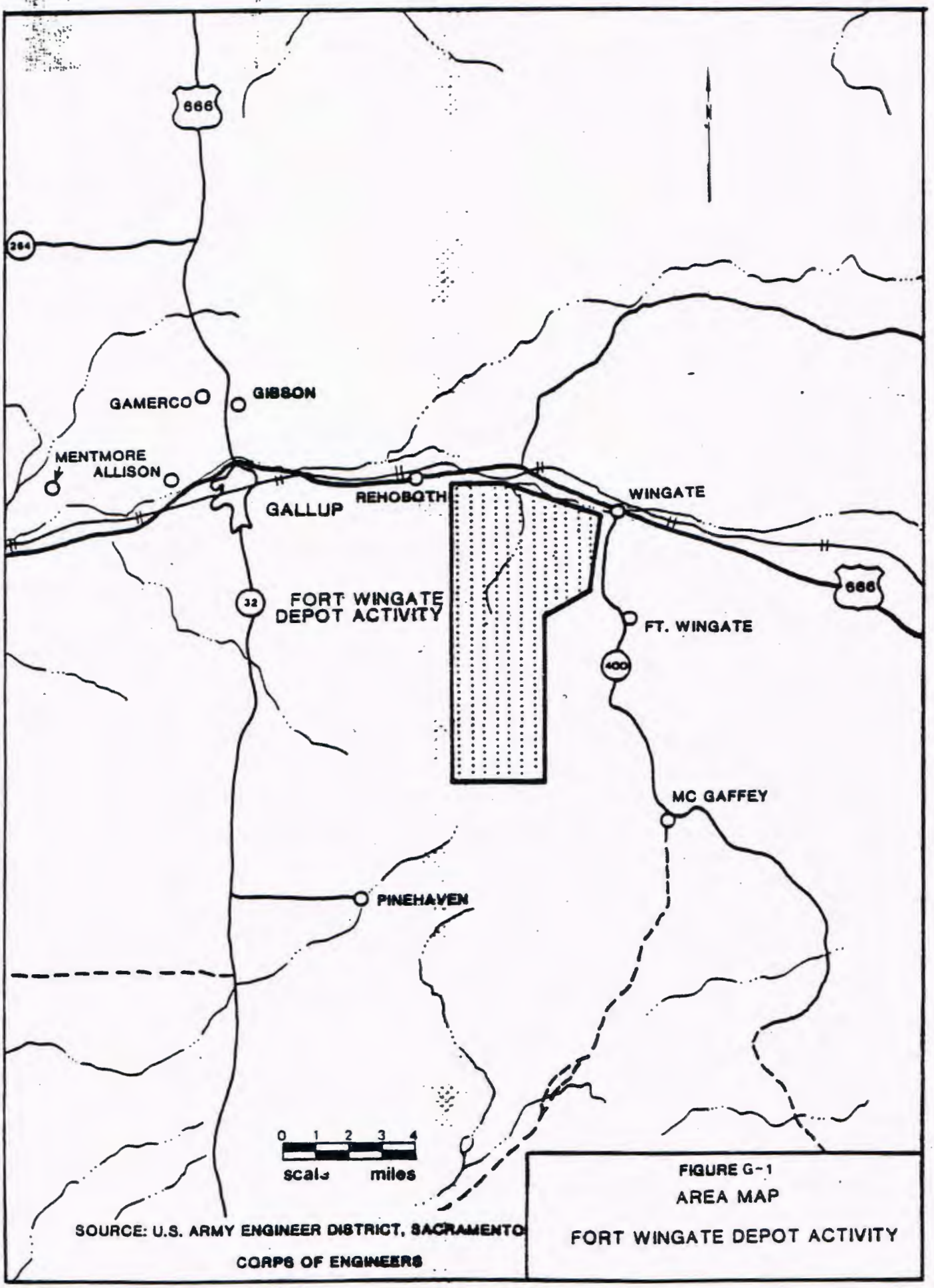
G-2 EMERGENCY COORDINATORS

In an emergency, contact the Installation On-Scene Coordinator (IOSC) listed below (primary first, then alternate). The listed individuals have the authority to commit the necessary resources of the Base and have been trained in emergency response. Their authority to commit the resources of the Base is delegated from the Public Works Officer.

Primary IOSC	Alternate IOSC
Mr. Adrian Bond	Mr. Russel Gleadle
Chief, Support Division	Chief, Services Branch
Phone: Ext. 330/230*	Phone: Ext. 334*
Home: 783-2641	Home: 863-9922

*Extension numbers are extensions of (505) 488-5411.

Other emergency organizations and telephone numbers are listed in Table G-1. The person who will call these numbers during normal working hours is the Environmental Coordinator, Adrain Bond, at (505) 488-5411 and during off duty hours the on-duty supervisor will become the Alternate IOSC until either of the two men above



SOURCE: U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS

FIGURE G-1
AREA MAP
FORT WINGATE DEPOT ACTIVITY

TABLE G-1

EMERGENCY ORGANIZATIONS AND PHONE NUMBERS

EMERGENCY	ORGANIZATION	TELEPHONE
Fire/Explosion	Base Fire Department	Ext. 333/238
	Cibola National Forest	287-8833
	Gallop Fire Department	
Injury/Chemical Spill	Base Clinic	Ext. 333/238
	EPA Region VI	
	Equipment Operations and Maintenance	Ext. 347
	National Response Cntr.	(800) 424-8802
Natural Disaster	Base Security	Ext. 312/212
	Civil Defense	

arrives on the scene to take over. The FWDA Fire Chief and Assistant Fire Chief currently are:

Mr. Reyes Romero	Shift Supervisor
Fire Chief	Assistant Fire Chief
Phone: Ext. 333/238	Phone: Ext. 333/238
Home: 863-3642	

G-3 IMPLEMENTATION CRITERIA

The Contingency Plan must be implemented under the following circumstances:

1. Fire/Explosion
   a. Fire causes release of toxic fumes;
   b. Fire spreads beyond area of ignition;
   c. Fire threatens off-site areas;
   d. Fire fighting agents result in contaminated runoff; or
   e. Imminent threat of explosion.

2. Spills/Leaks
   a. Fire hazard exists due to spilled material;
   b. Toxic fume hazard exists;
   c. Groundwater may be threatened;
   d. Spill threatens off-site property ; or
   e. Spill threatens navigable water.

G-4 EMERGENCY RESPONSE PROCEDURES

G-4(a) Notification

In the event of an emergency situation which meets the implementation criteria., the Emergency Coordinator must be notified by the discoverer. The Emergency Coordinator will make the federal, state, local, and Army-required official notifications, if necessary, after assessing the situation. If the Emergency Coordinator determines that the facility has had a release, fire or explosion which could threaten human health or the environment outside the facility he must report his findings as follows:

(a) If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and

(b) He must immediately notify the National Response Center at their 24- hour toll free number (800/424-8802) This report must include:

Name and telephone number of reporter;
Name and address of facility;
Time and type of incident;
Name and quantity of materials involved, to the extent known;
The extent of injuries, if any; and
The possible hazards to human health, or the environment outside the facility.

The Emergency Coordinator will also notify Base Security, Fire Department, and the Hospital if their assistance is needed.

G-4(b) Identifying Type of Waste

The Emergency Coordinator will determine the types of wastes involved or threatened in the emergency, the exact source, amount and areal extent of released materials by reviewing the operating records for the Open Burning/Open Detonation facility or by observation if the area can be approached safely. A copy of this form is shown as Figure G-2. The hazardous wastes that are generated at FWDA are listed in Table G-2.

G-4(c) Hazard Assessment

The Emergency Coordinator will assess possible hazards, both direct and indirect, to human health or environment. This assessment will consider:

* The waste(s) involved (explosive, free liquids)
* Quantity (NCP Reportable Quantity, Multiple Containers)
* Proximity to surface stream (distance to standing water)
* Local surface drainage patterns (slope, ditches)
* Potential for Explosion
* Probability for spreading (pavement, soil, slope)

Specific considerations will be given to the need for evacuation and notification of authorities.

G-4(d) Control Procedures

Potential emergency incidents may be classified as either a fire/explosion or a spill. Specific guidance relating to these incidents is provided in the following paragraphs.

OPERATING RECORD

OPEN BURNING & OPEN DETONATION

E.P.A. NUMBER D003

HANDLING CODE T18(OPEN BURNING OPEN DETONATION)

DATE	STARTING TIME	DESCRIPTION & QUANTITY (COMMON NAME & PHYSICAL FORM)	METHOD OF DISPOSAL (BURNED OR SHOT)	* PROCESS THAT PRODUCED THE WASTE	WEIGHT	PIT NO.	PERSON PLACE	

* PROCESSES PRODUCING WASTE

1 EXCESS, OBSOLETE AMMUNITION

2 SHIPPING HANDLING MATERIALS, CONTAMINATED

3 OTHER (EXPLAIN)

FIGURE G-2

TABLE G-2

HAZARDOUS WASTES GENERATED AT FWDA

WASTE	WASTE NUMBER	BASIS FOR HAZARD
Waste munitions and Munition components	D003/D005/D008	Contains Class A or B explosives, and lead or barium
Explosive-contaminated solvents and rags	D003/F003/F005 D005/D008	Contains acetone, alcohol, toluene, and may contain residual explosives, barium, or lead
Explosive-contaminated rinse water containing lead or barium	D003/D005/D008	Contains residual explosives
Ash from open burning ground	D003/D008/D005	Ash results from the treatment of reactive hazardous wastes

Fire/Explosion

The Fire Department and the Emergency Coordinator must be notified in the event of any fire. Notification should be by two-way radio or the telephone located in the protection shelter at the OB/OD facility. In the event of a fire within any magazine or adjacent loading/unloading area, all personnel in the magazine area will evacuate the area and await further instruction from the Emergency Coordinator. Fire fighting and control will be conducted by the Fire Department. Fire control will be limited to extinguishing fires outside the explosion danger zone surrounding the burning magazine. That distance is at least as great as the distance between adjacent magazines. The area will be reentered only after the Fire Chief and the Emergency Coordinator agree that the emergency is over and have given an "all-clear" signal.

Fires involving hazardous wastes in vehicular transport within FWDA may require evacuation. The evacuation will be determined by the Fire Chief, depending on:

* the amount and type of waste involved (explosives)
* the proximity to occupied buildings

The evacuation may be as far as one-half mile. Should the Fire Chief deem it appropriate to fight a fire involving hazardous wastes, the runoff from the incident will be contained by earthen dikes constructed within the surface drainage a safe distance downgradient. The captured runoff will be promptly pumped into a tank truck and transported to an industrial wastewater ("pink water") treatment facility for treatment.

A sample of the runoff will be analyzed; if the concentration of RDX or TNT is less than 340 ppb or 490 ppb, respectively (ten times ambient water quality limits established by AMCCOM), the soil under the temporary impoundment will be considered uncontaminated.

If the runoff concentrations exceed those limits, three random samples of soil, taken 6-inches deep within the impoundment area will be collected, composited, and the composite sample analyzed for RDX and TNT. If the extract concentration of either RDX or TNT exceed the 340 ppb or 490 ppb, respectively, the soil will be considered contaminated and the area extending 5 feet beyond the perimeter of the temporary impoundment will be excavated, containerized and stored in a hazardous waste magazine for subsequent disposal off-site.

Following the excavation, a confirmation sample, comprised of three six-inch deep random soil samples will be analyzed for RDX and TNT. If that sample is contaminated, an additional 6-inch soil layer will be excavated. The excavation and sampling will continue until uncontaminated soil is reached; followed by regarding the excavation to reestablish the natural drainage pattern.

Spills

The most probable emergency involving spills of hazardous wastes are:

1. Spills as a result of a vehicular accident during movement of waste; or

2. Spills caused by accidents during unloading operations at the OB/OD facility.

In the event of a spill the Emergency Coordinator will make an immediate assessment of the degree of hazard posed by the spill. Based on this assessment, the Emergency Coordinator will initiate one or more of the following actions:

1. Request trained personnel to handle the spill under his supervision.

2. Moisten explosive/explosives-contaminated material (moist wastes pose little explosion hazard).

3. Direct the Fire Department to mobilize and stand by at the site of the spill for fire protection.

Once the Emergency Coordinator determines that it is safe for clean-up operations to begin, employees will be directed to bring emergency equipment (shovels and brooms) and containers to the spill location. These personnel, instructed in safety procedures and use of emergency equipment, will remove and containerize all spilled material. Although no migration of contaminated liquids is expected from a spill of the hazardous wastes, one inch of soil will be excavated with the spilled material to ensure the removal of all spilled material.

After the immediate emergency, the Emergency Coordinator will ensure that all equipment is cleaned, decontaminated, and restored for immediate use.

An Installation Spill Contingency Plan (ISCP) was prepared in May 1988 for FWDA and is included in this Plan as Appendix X.

G-4(e) Prevention of Recurrance or Spread of Fires, Explosions, or Releases

To avoid the spread of fires and explosions the magazines are spaced at a nonpropagating distance. In addition the magazines are designed to vent the blast through the front and top and placed so that the front of one magazine faces the back of another. The Emergency Coordinator may order the temporary removal of containers of waste from the storage building after an emergency and until the building is safe and no recurrence can be expected.

The spread of released material will be prevented by the immediate removal of any spilled material and contaminated soil. The spent carbon is the only waste which may contain free liquids and that amount is insignificant, therefore no migration of contaminated liquids can be expected.

G-4(f) Storage and Treatment of Released Material

The Emergency Coordinator will order all spilled material, clean-up debris, and contaminated soil to be containerized and stored for later disposal. Recovered carbon, ash and contaminated soil will be containerized in 55-gallon drums, labelled properly and stored in the HW storage magazine for subsequent shipment off-site for disposal. Recovered explosive will be containerized in fiber drums and burned at the open burning ground. Munition components will be containerized in wooden crates, metal cans or cardboard boxes and detonated at the open detonation area. the equipment used to containerize the spilled material is discussed in Section 5.0 of the Plan.

G-4(g) Incompatible Wastes

There are no incompatible wastes stored at FWDA.

G-4(h) Post-Emergency Equipment Maintenance

After an emergency event, all emergency equipment will be flushed with water so that it is fit for use or it will be replaced. Resulting wastewaters will be collected and taken to a industrial wastewater treatment system. Before operations are resumed, an inspection of all safety equipment will be conducted. The Regional Administrator and State of New Mexico DHE will be notified that post-emergency equipment maintenance has been performed and operations will be resumed.

G-5 EMERGENCY AND PERSONAL PROTECTIVE EQUIPMENT

The Maintenance Department is responsible for fork-lifts, ramps, trucks, and earth-moving equipment which might be used in an emergency. The Fire Department maintains its equipment at the Fire Station. FWDA wastes do not pose special hazards other than reactivity. A list of emergency and personal protective equipment is located in Table G-3.

G-6 COORDINATION AGREEMENTS

FWDA has signed a reciprocal agreement with the City of Gallop Fire Department. A copy of the agreement can be found in Appendix IX.

A memorandum of understanding between FWDA and the Public Health Service - Gallop Indian Medical Center has been entered into, a copy of which can be found on Appendix IX.

G-7 EVACUATION PLAN

The Emergency Coordinator and the Fire Chief are responsible for determining whether evacuations are necessary in the event of an emergency. If an evacuation is necessary, the signal will be transmitted via two-way radio. To ensure that all personnel have evacuated the area, security personnel will assist by searching the area. The evacuation route from the OB/OD area is shown on Figure G-3.

G-8 REQUIRED REPORTS

In addition to the verbal notifications to be initiated by the Emergency Coordinator, written follow-up reports will be prepared. All emergencies which require implementation of the Contingency Plan will be reported in writing within 15 days to the Administrator, Environmental Protection Agency, and the State of New Mexico DHE. The report will detail name of the facility, date, time, and type of accident, type and quantity of material involved, extent of injuries, an assessment of the impact on human health and the environment, and the quantity and disposition of material released.

The time, date and details of any incident that requires implementation of the Contingency Plan will also be noted in the operating record.

TABLE G-3

EMERGENCY AND PERSONAL PROTECTIVE EQUIPMENT

EMERGENCY EQUIPMENT	LOCATION	QUANTITY
Dump Truck	Building 5	2
Loader Front End	Building 5	2
Bulldozer	Building 9	1
Pumper Truck (1,000 gpm)	Building 34	4
Tanker Truck (750 gal cap.)	Building 34	4

Personal Protective Equipment

Safety Goggles/Face Shields

Leather or Leather Palmed Gloves

Coveralls, Flame Resistant

Safety Shoes

Hard Hats

After an emergency, the Emergency Coordinator will review the Contingency Plan for effectiveness and make changes as are appropriate. The plan will also be reviewed when Emergency Coordinators, emergency equipment, or the Hazardous Waste Management Plan are altered.

SECTION H

PERSONNEL TRAINING

TRAINING PROGRAM [§270.14(b)(12), 264.16]

H.1 Outline of the Training Program [§264.16(a)(1)]

Presented below is a general outline of the training plan which is described in greater detail in the following sections.

The purpose of the FWDA hazardous waste training program is to train the personnel who are responsible for conducting the hazardous waste management program. All personnel directly involved in the hazardous waste program will receive training. The level and extent of training will be tailored to each individual's job duties and level of responsibility. Personnel will receive both introductory and continuing training through classroom instructions and on-the-job training.

This personnel training program is specifically designed to ensure that all Open Burning/Open Detonation (OB/OD) operations are conducted in a safe and environmentally sound manner. The training program teaches personnel to follow the Standard Operating Procedures (SOPs), regulations, and other requirements which ensure that operations are conducted in compliance with environmental regulations. In particular, the OB/OD SOPs, AMC Regulation 755-8 (Appendix H.1), and the AMC Policy on Environmental Compliance for OB/OD Operations (Appendix H.2) have been written to ensure compliance with RCRA.

This personnel training plan is designed to address four functional groups, each of which has different responsibilities for the OB/OD operations at Fort Wingate Army Depot Activity (FWDA). The first, the Demilitarization Section, 259th Ordenance Detachment (EOD), is responsible for the conduct of the OB/OD operations. The second, the Environmental Compliance Management Section, is responsible for writing environmental policies for FWDA, conducting environmental inspections of RCRA Treatment, Storage, and Disposal (TSD) units, and ensuring that all operations are in compliance with RCRA and other environmental regulatory programs. The third functional group consists of the individual in charge of all environmental compliance programs at FWDA, the Environmental Coordinator. The fourth functional group is the Emergency Response Section. This Division is responsible for responding to all hazardous materials related emergencies including emergencies at the OB/OD grounds.

The personnel training program consists of four types of training required for the groups which have OB/OD related responsibilities. These include: training in basic OB/OD operations, hazardous waste management, emergency response procedures for fires and explosions, and advanced hazardous waste management for Environmental Coordinators. The program is designed so that the training required of each job position is appropriate for the individual's various responsibilities and ensures that the individual filling each position is adequately trained to carry out his or her responsibilities.

The purpose of the FWDA hazardous waste training program is to train the personnel who are responsible for conducting the hazardous waste

management program. All personnel directly involved in the hazardous waste program will receive training. The level and extent of training will be tailored to each individual's job duties and level responsibility. Personnel will receive both introductory and continuing training through classroom instruction and on-the-job training.

Figure H.1 presents a matrix illustrating the general training topics required of each functional group with OB/OD responsibilities. The training program consists of both on-the-job and classroom training. Each position has introductory training requirements (to be completed within an individual's first six months of employment) and continuing annual training requirements. No individuals are allowed to work unsupervised until they have completed their introductory training requirements.

H.1.1 Job Title/Job Description [§264.16(d)(1)-(2)]

Figure H.2 presents an organizational chart for FWDA which illustrates the chain of command and functional groups which have OB/OD related responsibilities. The positions within each functional group discussed in the previous section and the general OB/OD responsibilities associated with each position are shown below.

Job Position	Responsibilities
Demilitarization Section (functional group)	
o Demilitarization Section Director	o Sets policies in demilitarization procedures, staffing, training
o Demilitarization Group Leader	o Directs OB/OD operations, determines initiating charge amounts for OD
o Demilitarization Group Member	o Conducts OB/OD operations; sets charges, controls burn pans, polices area
o Demilitarization Equipment Operator	o Operates heavy equipment and conducts OB/OD operations
Environmental Coordinator (functional group)	
o Environmental Coordinator	o Sets policies on procedures for ensuring

	environmental compliance
o Environmental Scientist/Engineer	o Conducts environmental sampling, designs environmental compliance activities, assists in response to environmental problems
o Environmental Inspector	o Conducts inspections to ensure compliance with RCRA, other environmental programs, and army policies and regulations

Emergency Response Section (functional group)

o Emergency Coordinator	o Determines need for and directs Contingency Plan implementation
o Fire Chief	o Directs emergency response operations, coordinates with other organizations on response, determines appropriate response
o Fire Protection Section Staff	o Conducts emergency response operations

Complete job descriptions for these positions are included in Appendix H.3.

H.1.2 Training Content, Frequency, and Techniques [§264.16(b)-(d)]

Training for all personnel having OB/OD related responsibilities consists of on-the-job training, which is conducted by the individual's immediate supervisor, and classroom training which is described below. Individuals are required to complete the introductory on-the-job and classroom training within their first six months. No individual is allowed to work unsupervised until he or she has completed the classroom training and until the individual's supervisor has determined that he or she has completed the on-the-job training required for the position.

Figure H-1

General Training Topics Required for Functional Groups Having OB/OD-Related Responsiblilities

	Hazardous Waste Management	OB/OD Training	Emergency Response Training	Environmental Coordinator Training
Demilitarization Section	○	○	○*	
Environmental Compliance Management Section	○			
Emergency Response Section			○	
Environmental Coordinator	○	○*		○

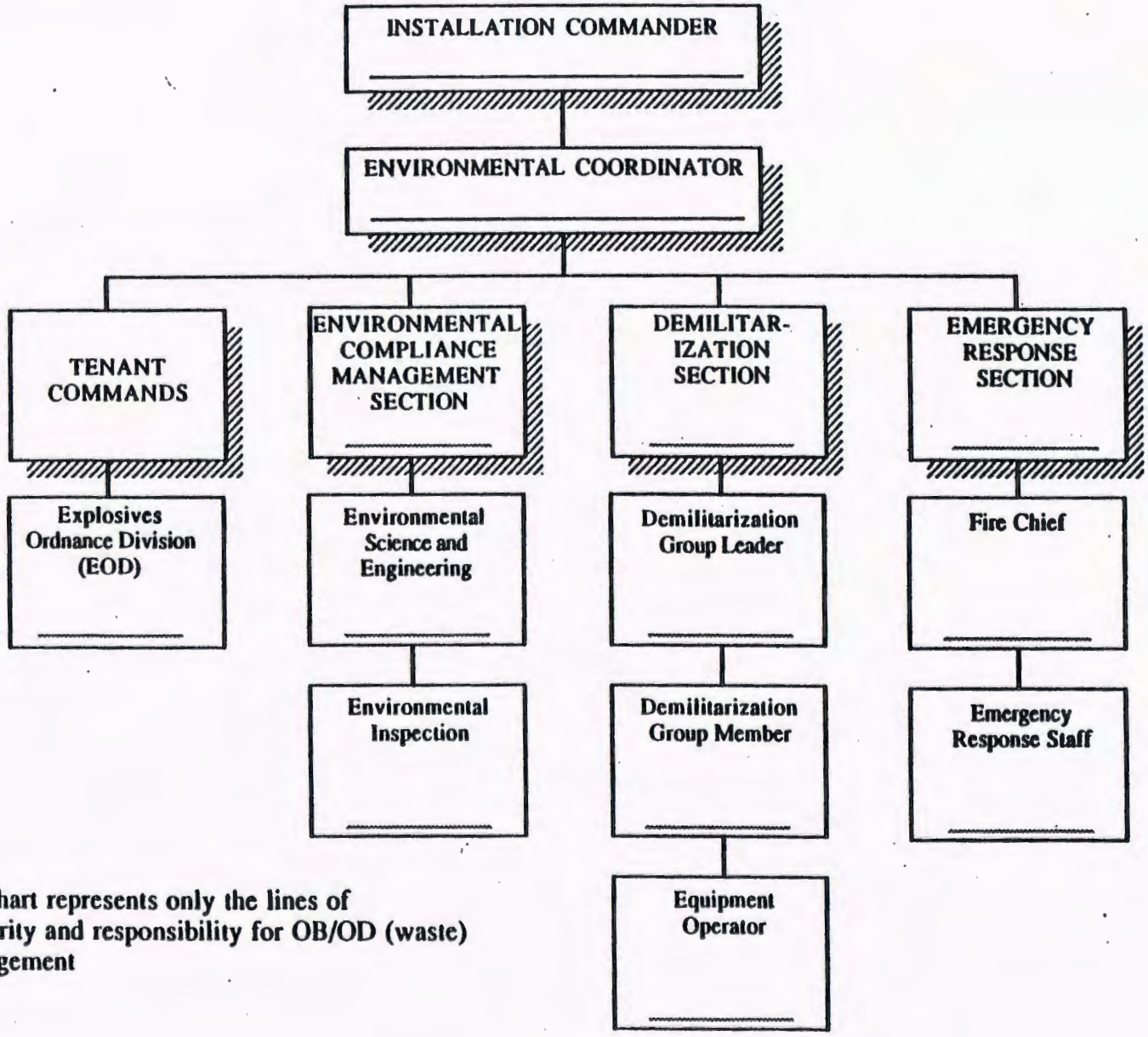
KEY:

○ Training topic required

* Familiarization (OB/OD) or General Training (Emergency Response) rather than in-depth training

Figure H-2

Command OB/OD Management*



* This chart represents only the lines of authority and responsibility for OB/OD (waste) management

Figure H.3 presents the classroom training required for each position. Equivalent courses may be substituted if available. The specific courses included in these training requirements fulfill the general training topic requirements illustrated in Figure H-1. Appendix H-4 includes course descriptions and course materials that describe in detail the topics and content covered in each course. The basic hazardous waste management training requirements may also be met by attendance of the FWDA introductory hazardous waste management on-site training course. An outline for this course is included in Appendix H-4.

The Environmental Coordinator will attend, at a minimum, the Environmental Coordinators Course (taught at the U.S. Army Logistics Management Center, Fort Lee, Virginia), the SOP Preparation Course, and the Demilitarization Familiarization Course (taught at the U.S. Army Defense Ammunition Center and School, Savanna Army Depot Activity, Savanna, Illinois) within six months of his or her appointment as Environmental Coordinator.

Continuing training for each functional group consists of an annual update/refresher for the hazardous waste training course (for all positions required to take the initial course), an annual update of demilitarization training for the Demilitarization Section, and annual emergency response updates for the Emergency Response Section.

On-site continuing training in basic hazardous waste management will consist of a review of the introductory training program, as outlined in Appendix H-4, followed by discussions and reviews on current hazardous wastes being handled by FWDA, current treatment, storage, operating conditions, and procedures relating to these wastes, existing and potential problem areas in these operations, and any emergency situations. All current hazardous waste types handled by the installation will be identified with respect to waste characteristics, volume, source, and location. Current or potential problems in treatment, storage, operating conditions, and handling procedures will be identified, with special emphasis placed on employee participation in identifying problem areas and seeking effective solutions.

H.1.3 Training Director [§264.16(a)(2)]

Each functional group at FWDA has a training director for the group since each group is under separate command. The training director for the Demilitarization Section is the Director of the Ammunition Directorate. The training director for the Emergency Response Section is the Fire Chief. The Environmental Coordinator is the training director for the Environmental Management Section. Individuals named as training directors for each section are highly qualified to design and implement the personnel training programs for their section, due to their knowledge in all aspects of the activities and responsibilities of their Sections. In addition, the Director of the Ammunition Directorate and the Fire Chief consult with the Environmental Coordinator when designing and updating the training program. The Environmental Coordinator must

approve all elements of the program used to fulfill the requirements for environmental and hazardous waste management training.

Attachment H.5 includes copies of the training directors' qualifications. The qualifications demonstrate that the directors are trained in the area of hazardous waste management and in OB/OD operations appropriate for their section's duties.

H.1.4 Relevance of Training to Job Position [§264.16(d)]

The figures presented previously in this section demonstrate that the training program has been designed to tailor course requirements to the subject areas and levels of detail appropriate for each position within the organization. Figure H.1 shows how subject areas were assigned to functional groups. Section H.1.1 outlines the general responsibilities within a functional group. With this information, a determination was made regarding the level of detail in each subject area that is required knowledge for each position. The decisions as to which courses are most relevant for each position are presented in the Training Course Matrix, Figure H.3.

H.1.5 Emergency Response Training [§264.16(a)(3)]

The Emergency Response Section is the organization responsible for planning, organizing, and implementing all emergency response activities at FWDA. As illustrated in Figure H.3, the Emergency Response Section is highly trained in responding to emergencies of the type likely to occur in the OB/OD areas. Appendix H.4, which includes course descriptions of the required training for emergency response, demonstrates that these individuals are fully trained in all aspects of emergency response necessary for OB/OD operations.

In addition, the Demilitarization Section is also trained in basic OB/OD emergency response as shown in Figure H.3. The responsibilities of the Demilitarization Section include immediate notification of the Emergency Response Section regarding any emergency at the OB/OD areas, including any fires or explosions.

Training in emergency response procedures will also be covered in the FWDA introductory training session received by all hazardous waste management personnel, then will be reviewed and updated annually in continuing training sessions.

H.2 IMPLEMENTATION OF THE TRAINING PROGRAM [§264.16(b)]

Records documenting that each individual has completed required training are maintained by each division's training director and included in the personnel training program. Individual training records are kept as partof an individual's employment history. The Environmental Management Division also keeps records of the attendees of required hazardous waste management courses as illustrated in Figure H.3. Training records are maintained using training forms. An example of the forms are included as Appendix H.6. Training records are maintained for three years after an individual leaves FWDA or until closure of TSD operations.

Classroom Training Requirements

Functional Group and Job Position	Classroom Training (Described Below)			
	OB/OD Training	Basic Hazardous Waste Management	Emergency Response (Fires, Explosions)	Advanced Hazardous Waste Management
Demilitarization Section				
Section Director	●	▬	✖	
Demilitarization Group Leader	●	▬	✖	
Demilitarization Group Staff	●	▬	✖	
Equipment Operator	●	▬	✖	
Environmental Coordinator				
Environmental Coordinator	▲			✚
Environmental Compliance Management Section				
Environmental Scientist/Engineer		▬		
Environmental Inspector	▲	▬		
Emergency Response Section				
Emergency Coordinator		▬	▮	
Fire Chief		▬	▮	
Emergency Response Staff		▬	▮	

● Advanced OB/OD Training

▲ Basic OB/OD Familiarization

▬ Basic HW Management Training

✖ Basic Emergency Response Training

▮ Advanced Emergency Response Training

✚ Advanced HW Management Training

NOTE: Key to specific courses represented by each symbol is shown on following page

Key to Course Listings for Training Course Matrix

OB/OD Training ●

Demilitarization Operations

1. Explosive Ordnance Disposal Training Program,
   US Army Ordnance Missile and Munitions Center and School, Redstone Arsenal, Alabama OR
2. Ammunition Specialist Training Program,
   US Army Defense Ammunition Center and School, Savanna, Illinois

OB/OD Training ▲

1. Demilitarization Familiarization Course, USA DACS, Savanna Army Depot Activity, Savanna, Illinois

Basic Hazardous Waste Management ▬

1. Defense Hazardous Materials Handling Course, ALMC, Fort Lee, Virginia
   OR
2. Environmental Requirements
   US Army Defense Ammunition Center and School, Savanna Army Depot Activity, Savanna, Illinois

Emergency Response [In-Depth] ▮

EPA, Edison, New Jersey

1. Hazardous Materials Incident Response Operations
2. Hazardous Materials Response Training

Safety System, St. Augustine, Florida

3. Hazardous Materials Tactical Considerations
4. Hazardous Materials Leaks, Spills, and Fire Control School

Key to Course Listings for Training Course Matrix

Emergency Response [Not In-Depth] ✖
National Fire Protection Academy, Emmitsburg, Maryland
1. Hazardous Materials Tactical Considerations
2. Fire Prevention Specialist, I
3. Chemistry of Hazardous Materials
4. Hazardous Materials Incident Analysis

Advanced Hazardous Waste Management for OB/OD Operations ✚
1. Environmental Coordinators Course
   Army Logistics Management Center, Fort Lee, Virginia
2. SOP Preparation Course
   Army Logistics Management Center, Fort Lee, Virginia

SECTION I

CLOSURE PLAN, POST-CLOSURE PLAN, AND FINANCIAL AGREEMENTS

SECTION I

CLOSURE, POST CLOSURE, FINANCIAL REQUIREMENTS

I-1 CLOSURE PLAN [40 CFR 270.14 (b)(13)]

I-1(a) Closure Performance Standard [40 CFR 264.111]

Upon facility closure, all contaminated ash residue or contaminated soils will be removed from the OB/OD units. There will be no need for further maintenance of these units, other than re-contouring their surface and covering them with native soil and vegetation to prevent erosion.

The criteria and standards provided in Table I-1 will be used as a basis for demonstrating that containment concentrations remaining in the soil do not exceed Agency-recommended limits or factors, and for responding to releases of hazardous waste or hazardous constituents from the OB/OD units following closure.

I-1(b) Description of How Each Unit Will Be Closed [40 CFR 264.112 (b)(1)]

This closure plan applies to the open burning/open detonation (OB/OD) unit located at FWDA.

The open burning units will also be sampled during closure to determine whether the ash residue or surrounding soil contain hazardous waste, or hazardous constituents equalling or exceeding the concentrations in Table I-1. If these standards or criteria are not met, then the open burning unit will be closed by removing any contaminated ash residue or contaminated soil and treating the material on-site or disposing of the materials at a permitted hazardous waste management facility. Any equipment and structures associated with open burning will be decontaminated on-site and disposed of as described in Section I-1(e).

I-1(c) Description of Maximum Extent of Operation Left Unclosed During Active Life of Facility [40 CFR 264.112(b)(2)]

The OB/OD unit described in this permit application is expected to remain in service during the active life of the facility.

SECTION K

CERTIFICATION

SECTION K
CERTIFICATION
[40 CFR 270.11]

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

RICHARD J. MAKSIMOWSKI
COL, OD
Commanding Officer

Operator

Date: 3/10/88

Name

RICHARD J. MAKSIMOWSKI
COL, OD
Commanding Officer

Owner

Date: 3/10/88

Name

and furnish other guidance and assistance to the Department of Defense in observance of the Endangered Species Act of 1973, and other Federal wildlife laws.

J-4 FISH AND WILDLIFE COORDINATION ACT

A copy of the Cooperative Plan Agreement for Conservation and Development of Fish and Wildlife resources is attached as Appendix XIII. This agreement provides for the release and care of certain exotic game animals by the State of New Mexico and is in agreement with the Fish and Wildlife Coordination Act.