California Environmental Protection Agency
Department of Toxic Substances Control

HAZARDOUS WASTE FACILITY PERMIT

Facility Name: Sierra Army Depot

Facility EPA ID Number: CA5210020843

Owner Name: U. S. Department of the Army

Operator Name: Sierra Army Depot

Pursuant to Section 25200 of the California Health and Safety Code, this Resource Conservation and Recovery Act (RCRA)-equivalent Hazardous Waste Facility Permit is hereby issued to: U.S. Department of the Army, Sierra Army Depot. The issuance of this Permit is subject to the conditions set forth in Attachment A and the Part "B" Applications (Storage/OB/OD Operation Plan, dated November 1997 and Incinerator Operation Plan, dated April 1, 1998). The Attachment A consists of 40 pages and Appendix A.

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James M. Pappas, P.E.
Chief, Land Disposal Branch
Hazardous Waste Management Program
Department of Toxic Substances Control

Date:

DEPARTMENT OF THE ARMY/SIERRA ARMY DEPOT
SIOSI-PWV, HERLONG, CALIFORNIA, 96113-5171
HAZARDOUS WASTE FACILITY PERMIT
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HAZARDOUS WASTE FACILITY PERMIT

SIERRA ARMY DEPOT
SIOSI-PWV
HERLONG, CALIFORNIA 96113-5171
EPA ID NO. CA5210020843

PART I. DEFINITIONS

All terms used in this Permit shall have the same meaning as the terms in the California Health and Safety Code, Division 20, Chapter 6.5 and Title 22, California Code of Regulations, Division 4.5, unless expressly provided otherwise by this Permit.

1. **"Permittee"** as used herein means the Owner and Operator.

2. Unless explicitly stated otherwise, all references to items in this Permit shall refer only to items occurring within the same part.

3. **"DTSC"** as used herein means the Department of Toxic Substances Control.

4. **"HSC"** as used in this Permit means the Health and Safety Code.

5. **"Cal. Code of Regs."** as used in this Permit means the California Code of Regulations.

6. **"Munitions/Explosives"** as used herein, shall be limited to items as defined in Title 40, Code of Federal Regulations, Section 260.10, *Military munitions*. In addition, the source of the munitions/explosives shall also include both military and non-military use.

PART II. DESCRIPTION OF THE FACILITY AND OWNERSHIP

1. OWNER

The Facility owner is the United States Department of the Army, hereafter "Owner".

2. OPERATOR

The Facility operator is Sierra Army Depot (SIAD), hereafter "Operator".

3. LOCATION

The SIAD facility, hereinafter referred to as the "Facility", or as "SIAD", is located adjacent to the town of Herlong (approx. population 800) in the Honey Lake Valley of Lassen County in northeastern California. SIAD is situated at the base of the foothills on the eastern side of the Sierra Nevada Mountains, approximately 55 miles northwest of Reno, Nevada and 45 miles southeast of Susanville, California as depicted in Figure 1.

4. GENERAL DESCRIPTION

The present mission of the SIAD is to receive, store, inspect, classify, issue, maintain, and demilitarize ammunition, propellant, explosives, and war reserves from both onsite and off-site military and off-site non-military sources. SIAD also provides storage and maintenance of operational project stocks; such as the Inland Petroleum Distribution System, the Water Support System, and Force Provider. SIAD also handles, stores and demilitarizes general supply items and personal property.

SIAD covers 96,430 acres divided into three areas: the Main Depot, the Upper Burning and Demolition Area, and Honey Lake. Amedee Army Airfield, located in the Main Depot area, is a 7,168-foot runway which allows movement of materials by all aircraft. No hazardous waste is transported by aircraft.

The types of activities related to hazardous waste munitions/explosives that occur at SIAD include:

1) Receipt of hazardous waste munitions/explosives by rail or truck from off-site generators.

2) Reclassification of product munition/explosives as hazardous waste munitions/explosives upon inspection or while in storage.

3) Generation of hazardous waste munitions/explosives from disassembly of product munitions/explosives.

4) Storage of hazardous waste munitions/explosives.

5) Treatment of hazardous waste munitions/explosives by disassembly and/or thermal treatment by either open burning, open detonation, or incineration.

The Permittee also generates non-munition/explosive hazardous wastes from activities to support their mission and to maintain operational project stocks, such as equipment, vehicle and building maintenance. These non-munition/explosive hazardous wastes and the containerized ash residues, which is generated from thermal treatment of onsite hazardous waste munitions/explosives, are handled under generator requirements, stored less than 90 days at the Container Storage Facility (Building 380), and shipped off site for treatment and/or disposal.

5. FACILITY SIZE AND TYPE FOR FEE SERVICES

Pursuant to HSC 25205.19, the Facility's type for purposes of the annual facility fee, as defined by HSC 25205.1, shall be: **Large Treatment Facility**.

PART III. GENERAL CONDITIONS

1. PERMIT APPLICATION DOCUMENTS

The following documents are hereby made a part of this Permit by reference:
The Part "A" Application, signed by Permittee on November 12, 1997.
The Part "B" Application - Storage/OB/OD (Storage/OB/OD Operation Plan), Volumes 1 to 2, November 1997. Approved on March 3, 1998.
The Part "B" Application- Incinerator (Incinerator Operation Plan), Volumes 1 to 4, April 1,1998. Approved on April 20, 1999.
Operations Manual for Emissions/Risk/Hazard Database (Database Operations Manual), November 1998. Approved on **(pending)**
Health Risk Assessment (HRA) for Military Munitions Treatment Facilities, Volumes 1 to 3, September 12, 1996. Approved on October 26, 1996.
Ecological Risk Assessment (ERA), April 30, 1996. Approved on April 14, 1998.
Final Environmental Impact Report (EIR) (**pending**). Certified on **(pending public comment)**

2. EFFECT OF PERMIT

A. The Permittee shall comply with the provisions of the California Health and Safety Code, and Division 4.5 of Title 22, California Code of Regulations (Title 22, Cal. Code of Regs.). The issuance of this Permit by DTSC does not release the Permittee from any liability or duty imposed by federal or state statutes or regulations or local ordinances, except the obligation to obtain this Permit. The Permittee shall obtain the permits required by other governmental agencies, including but not limited to, the applicable land use planning, zoning, hazardous waste, air quality, water quality, and solid waste management laws for the construction and/or operation of the Facility.

B. The Permittee is permitted to treat and store hazardous wastes in accordance with the conditions of this Permit. Any treatment or storage of hazardous wastes not specifically authorized in this Permit is strictly prohibited.

C. Compliance with the terms of this Permit does not constitute a defense to any action brought under any other law governing protection of public health or the environment, including, but not limited to, one brought for any imminent and substantial endangerment to human health or the environment.

D. DTSC's issuance of this Permit does not prevent DTSC from adopting or amending regulations that impose additional or more stringent requirements than those in existence at the time this Permit is issued and does not prevent the enforcement of these requirements against the Permittee.

E. Failure to comply with any term or condition set forth in the Permit in the time or manner specified herein will subject the Permittee to possible enforcement action including but not limited to penalties pursuant to HSC Section 25187.

F. In addition, failure to submit any information required in connection with the Permit, or falsification and/or misrepresentation of any submitted information, is grounds for termination of this Permit, pursuant to Title 22, Cal. Code of Regs., Section 66270.43.

G. In case of conflicts between the Incinerator Operation Plan and/or the Storage/OB/OD Operation Plan and the Permit, the Permit conditions take precedence.

H. This Permit includes and incorporates by reference any conditions of waste discharge requirements issued by the State Water Resources Control Board or any of the California Regional Water Quality Control Boards and any conditions imposed pursuant to Section 13227 of the Water Code.

3. TERM OF PERMIT

This Permit shall have a term of ten years from the effective date of the Permit, subject to a five-year review by DTSC. At the end of the first five years, DTSC will review the permitted operations and determine whether the Permit shall be continued, modified, or revoked.

4. COMPLIANCE WITH CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

An Environmental Impact Report has been prepared in the accordance with the requirements of Public Resources Code, Section 21000 et seq. and the CEQA Guidelines, Section 15000 et seq. of Title 14, California Code of Regulations.

5. ENVIRONMENTAL MONITORING

Permittee shall establish and implement an environmental program in accordance with the requirements of Title 22, Cal. Code of Regs., Section 66264.700 for activities as permitted. Such environmental monitoring program shall be implemented annually, unless approved by DTSC, and shall include, but not be limited to:

A. Surface soil sampling and analysis for chemicals of concern, as determined by DTSC, within the Open Burn and Open Detonation Units and any additional impacted area outside of the Units.

The program will monitor and track treatment residue levels to ensure there is no significant impact to animal and plant resources.

B. An evaluation work plan for impacts to groundwater from the Open Burn and Open Detonation Units.

The plan shall determine the potential for leachability of treatment residues, capture zones analysis of existing local monitoring wells, and appropriateness of monitoring of groundwater, if applicable. The work plan shall be submitted within six months of the effective date of the Permit. The plan shall be implemented as outlined in Part V.13 of the Permit.

C. Surface stream sampling and analysis for emissions generated from the Open Burn and Open Detonation Units.

The program will monitor and track levels from chemicals of concern, as determined by DTSC, to ensure there is no significant impact to surface and groundwater quality, animal, and plant resources.

D. Ambient air sampling and analysis for emissions from the Open Burn and Open Detonation Units.

The program shall be implemented as follows.

(1). No later than nine months from the effective date of this Permit, the Permittee shall submit a work plan describing its monitoring and response program in accordance with the requirements of Title 22, Cal. Code of Regs., Section 66264.701 and shall be implemented as defined in Part V.13 of the Permit.

(2). The ambient air detection monitoring program shall be consistent with the "Health Risk Assessment for Military Munitions Treatment Facilities", September 12, 1996, and the Ecological Risk Assessment, April 30, 1996.

E. Stack emission monitoring from the Deactivation Furnace.

6. WASTE MINIMIZATION CERTIFICATION

Pursuant to HSC, Section 25202.9, the Permittee shall certify annually, by March 1, for the previous year ending December 31, that:

A. The Facility has a program in place to reduce the volume and toxicity of all hazardous wastes identified in Section C of the Storage/OB/OD Operation Plan,

which are generated by the Facility operations to the degree, determined by the Permittee, to be economically practicable.

B. The method of treatment is the only practicable method or combination of methods currently available to the Facility which minimizes the present and future threat to human health and the environment. This evaluation shall be made by developing a list of viable alternatives according to: technical feasibility, economic feasibility, impact to employee health and safety implications, and whether it will reduce releases and discharges. Alternatives which are not viable shall be identified with the rationale for the rejection.

C. The Facility has a program in place to investigate other available technologies than open burning and open detonation of hazardous waste munitions/explosives in order to reduce the volume and toxicity of released treatment residues. This shall include, but not be limited to, a literature search of EPA publications, published literature, California Air Resource Board, manufacturers and suppliers, consultants, trade associations, Department of Defense research programs, and similar facilities.

The Permittee shall make this certification, in accordance with Title 22, Cal. Code of Regs., Section 66270.11. The Permittee shall submit the certification to James M. Pappas, P.E., Chief, Land Disposal Branch, Hazardous Waste Management Program, Department of Toxic Substances Control, along with two copies of the alternatives evaluation and shall record and maintain such documents in the Facility's Operating Record.

7. WASTE MINIMIZATION CONDITIONS

The Permittee shall comply with the Hazardous Waste Source Reduction and Management Review Act (SB 14) requirements that are specified in the HSC, Sections 25244.19, 25244.20, and 25244.21, and any subsequent applicable statutes or regulations promulgated thereunder. This would include submittal of SB 14 documents to DTSC upon request.

DTSC may require the Permittee to submit a more detailed status report explaining any deviation from, or changes to, the approved waste minimization plan.

PART IV. PERMITTED UNITS AND ACTIVITY

This Permit authorizes operation only of the following facility units and activities listed below. The Permittee shall not treat, store or otherwise manage hazardous waste munitions/explosives in any unit other than those specified in this Part III. Any modification to a designated unit or activity authorized by this Permit requires the written approval of DTSC in accordance with the permit modification procedures set forth in Title 22, Cal. Code of Regs., Division 4.5.

1. CONTAINER STORAGE

The Magazine Area Staging Area is defined as a unit for the handling and temporary storage of hazardous waste munitions/explosives. There are five units at SIAD that are permitted to store onsite and off-site generated hazardous waste munitions/explosives and one unit that is permitted to store ash generated from thermal treatment of off-site hazardous waste munitions/explosives. Hazardous waste munitions/explosives are stored in: Building 640 Igloos; Magazine Area Igloos; Magazine Area "Y" Sites; J, K, and N Area Open Sites; and, Magazine Area Standards. Off-site hazardous waste ash is stored in Ash Storage Igloos.

A. UNIT NAME:

Magazine Area Staging Area

LOCATION:

The Magazine Area Staging Area covers approximately 9,360 acres, located in the center of the SIAD facility. The Unit is enclosed by a chain link fence. The Universal Transverse Mercator (UTM) coordinates of the Unit are: NW corner (743679,4457725); NE corner (747997,4457878); SW corner (743970, 4448338); and SE corner (748243, 4450343)

ACTIVITY TYPE:

Handling of product and hazardous waste munitions/explosives from both military and non-military sources.

ACTIVITY DESCRIPTION:

Handling and transferring of munitions/explosives between truck/rail and storage units at SIAD. Munitions/explosives designated as hazardous waste and as product may be handled within the unit.

PHYSICAL DESCRIPTION:

The Magazine Area Staging Area is all land located within the fenced Magazine Area. The Magazine Area also contains the Magazine Area Igloos; Magazine Area "Y" Sites; J, K, and N Area Open Sites; and Magazine Area Standards.

MAXIMUM CAPACITY:

No maximum capacity is required.

WASTE TYPE:

All hazardous waste munitions/explosives which are handled shall exhibit the characteristic of reactivity (EPA Hazardous Waste Number D003). The energetic (propellants, explosives, and pyrotechnics) constituents have the properties as defined in Title 22, Cal. Code of Regs., Section 66261.23(a)(6) or (8).

RCRA HAZARDOUS WASTE CODES:

D001, D003 through D011, D030, D032, D036, K044, K045

CALIFORNIA HAZARDOUS WASTE CODES:

181, 352 with STLC/TTLC for antimony, arsenic, barium, beryllium, cadmium, chromium (III), chromium (VI), copper, lead, manganese, mercury, nickel, selenium, zinc, organic lead.

B. UNIT NAME:

Building 640 Igloos

LOCATION:

Building 640 Igloos are located west of the main Magazine Area. The Unit, which includes the igloos, is within a separate fenced area, outside of the main Magazine Area (Storage/OB/OD Operation Plan, Figure B-7). The fenced area is 580 feet by 800 feet. The UTM coordinates of the Unit are (742058, 4453685), (742152, 4453690), (742152, 4453595), (742063, 4453598).

ACTIVITY TYPE:

Storage of product and hazardous waste munitions/explosives from both military and nonmilitary sources.

ACTIVITY DESCRIPTION:

Building 640 Igloos are a part of the disassembly and renovation area for munitions/explosives at SIAD. Munitions/explosives designated as hazardous waste and as product may be stored within the unit (Igloos 635, 636, 637, and 638). Hazardous waste munitions/explosives generated from the disassembly and renovation activity may also be stored within the unit.

PHYSICAL DESCRIPTION:

Igloos 635, 636, 637, and 638 are four earth-covered product and hazardous waste munitions/explosives storage magazines located in Area B-640. The igloos are constructed of concrete and steel with interior dimensions of 11 feet wide by 23 feet long. The front head walls and the back walls of the igloos are constructed of concrete, and the remaining walls are steel arch. The floor is made of concrete. The igloos are constructed to be waterproof. No utilities are required for storage.

MAXIMUM CAPACITY:

5,000 pounds Net Explosive Weight each igloo

WASTE TYPE:

All stored hazardous waste munitions/explosives exhibit the characteristic of reactivity (EPA Hazardous Waste Number D003). The energetic (propellants, explosives, and pyrotechnics) constituents have the properties as defined in Title 22, Cal. Code of Regs., Section 66261.23(a)(6) or (8).

RCRA HAZARDOUS WASTE CODES:

D001, D003 through D011, D030, D032, D036, K044, K045

CALIFORNIA HAZARDOUS WASTE CODES:

181, 352 with STLC/TTLC for antimony, arsenic, barium, beryllium, cadmium, chromium (III), chromium (VI), copper, lead, manganese, mercury, nickel, selenium, zinc, organic lead.

C. UNIT NAME:

Magazine Area Igloos

LOCATION:

The Magazine Area Igloos are located within the Magazine Area and are located among the Magazine Area "Y" sites. The igloos are distinguished by areas or blocks. The Unit is defined by the Magazine Area and includes the igloos. The Unit is within a separate fenced area (Storage/OB/OD Operation Plan, Figure B-10). The UTM coordinates of the Unit are: NW corner (743679,4457725); NE corner (747997,4457878); SW corner (743970, 4448338); and SE corner (748243, 4450343). Any two igloos, which are adjacent to a "Y" site, must be 400 feet apart (from the center line of each igloo) from each other.

ACTIVITY TYPE:

Storage of product and hazardous waste munitions/explosives from both military and non-military sources.

ACTIVITY DESCRIPTION:

The Magazine Area igloos are the major general buildings for munitions/explosives storage at SIAD. Munitions/explosives designated as hazardous waste and as product may be stored within the unit.

PHYSICAL DESCRIPTION:

Munitions/explosives are stored in 799 earth-covered igloos arranged in nine blocks (A, B, C, D, E, F, G, H, and J). The igloos are constructed of concrete and steel and are 26', 6" wide by either 40', 60', or 80' long (refer to Storage/OB/OD Operation Plan, Section D-1a for specific lengths). The front head walls and the back walls of the igloos are 10 inches thick, and the remaining walls are 1-foot, 4 inches thick at the bottom, tapering to 6 in. thick at the top. The floor is made of concrete and sloped to divert condensate from within the igloo to the drainage channels located along the side walls. The channels are sloped to the front of the igloo and discharge outside. The igloos are constructed to be waterproof. No utilities are required for storage.

MAXIMUM CAPACITY:

500,000 pounds Net Explosive Weight each igloo.

WASTE TYPE:

All stored hazardous waste munitions/explosives exhibit the characteristic of reactivity (EPA

Hazardous Waste Number D003). The energetic (propellants, explosives, and pyrotechnics) constituents have properties as defined in Title 22, Cal. Code of Regs., Section 66261.23(a)(6) or (8).

RCRA HAZARDOUS WASTE CODES:

D001, D003 through D011, D030, D032, D036, K044, K045

CALIFORNIA HAZARDOUS WASTE CODES:

181, 352 with STLC/TTLC for antimony, arsenic, barium, beryllium, cadmium, chromium (III), chromium (VI), copper, lead, manganese, mercury, nickel, selenium, zinc, organic lead.

D. UNIT NAME:

Magazine Area "Y" sites

LOCATION:

"Y" sites are located within the Magazine Area and are located among the Magazine Area Igloos. The Unit is defined by the Magazine Area and includes the "Y" sites. The Unit is within a separate fenced area (Storage/OB/OD Operation Plan, Figure B-10). The UTM coordinates of the Unit are: NW corner (743679,4457725); NE corner (747997,4457878); SW corner (743970, 4448338); and SE corner (748243, 4450343). Any two igloos, which are adjacent to a "Y" site, must be 400 feet apart (from the center line of each igloo) from each other.

ACTIVITY TYPE:

Storage of product and hazardous waste munitions/explosives from military and nonmilitary sources.

ACTIVITY DESCRIPTION:

The Magazine Area "Y" sites are the major open outdoor sites for munitions/explosives storage at SIAD. Munitions/explosives are stored in 664 outdoor areas with earthen barriers on three sides, between the igloos located in the Magazine Area. No utilities are required.

PHYSICAL DESCRIPTION:

There are 664 munitions/explosives outdoor storage areas called "Y" sites. "Y" sites are either 30 feet by 60 feet or 45 feet by 100 feet. Materials of construction and flooring are native soils. "Y" sites have drainage ditches that drain to outside the storage area.

MAXIMUM CAPACITY:

70,000 pounds Net Explosive Weight each "Y" site.

WASTE TYPE:

DOT Class 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6 explosives are stored in "Y" sites. All stored hazardous waste munitions/explosives exhibit the characteristic of reactivity (EPA Hazardous Waste Number D003). The energetic (propellants, explosives, and pyrotechnics) constituents have the properties as defined in Title 22, Cal. Code of Regs., Section 66261.23(a)(6) or (8).

RCRA HAZARDOUS WASTE CODES:

D001, D003 through D011, D030, D032, D036

CALIFORNIA HAZARDOUS WASTE CODES:

181, 352 with STLC/TTLC for antimony, arsenic, barium, beryllium, cadmium, chromium (III), chromium (VI), copper, lead, manganese, mercury, nickel, selenium, zinc, organic lead.

UNIT SPECIFIC SPECIAL CONDITIONS:

Hazardous waste munitions/explosives stored in a "Y" site shall be at least two feet from the base of the barrier and one foot below the top of the barrier.

E. UNIT NAME:

J, K, and N Area Open sites

LOCATION:

The Unit is defined by the Magazine Area and includes the Open sites. The Unit is within a separate fenced area (Storage/OB/OD Operation Plan, Figure B-10). The UTM coordinates of the Unit are: NW corner (743679,4457725); NE corner (747997,4457878); SW corner (743970, 4448338); and SE corner (748243, 4450343).

ACTIVITY TYPE:

Storage of product and hazardous waste munitions/explosives from military and nonmilitary sources.

ACTIVITY DESCRIPTION:

Munitions/explosives are stored in three open outdoor areas. Hazardous waste munitions/explosives shall be stored within an area crowned to promote the runoff of precipitation. No utilities are required.

PHYSICAL DESCRIPTION:

There are three munitions/explosives outdoor storage areas identified as J sites, K sites, and N sites. Each area has multiple storage locations: 7 J sites, 12 K sites, and 13 N sites. Each site is either 30 feet by 60 feet or 45 feet by 100 feet. These sites are crowned slightly to promote the run off of precipitation. Materials of construction and flooring are native soils, except K-7 and N-1 are concrete. J, K, and N sites have drainage ditches and drain to outside the storage area. The only major structural difference from "Y" sites is the absence of earthen barriers.

MAXIMUM CAPACITY:

500,000 pounds Net Explosive Weight each storage site within a J, K, or N site.

WASTE TYPE:

DOT Class 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6 explosives are stored in J, K, and N sites. All stored hazardous waste munitions/explosives exhibit the characteristic of reactivity (EPA Hazardous Waste Number D003). The energetic (propellants, explosives, and pyrotechnics) constituents have the properties as defined in Title 22, Cal. Code of Regs., Section 66261.23(a)(6) or (8).

RCRA HAZARDOUS WASTE CODES:

D001, D003 through D011, D030, D032, D036

CALIFORNIA HAZARDOUS WASTE CODES:

181, 352 with STLC/TTLC for antimony, arsenic, barium, beryllium, cadmium, chromium (III), chromium (VI), copper, lead, manganese, mercury, nickel, selenium, zinc, organic lead.

F. UNIT NAME:

Magazine Area Standards

LOCATION:

The Unit, which includes the Standards, is located on the west side of the fenced Magazine Area, near Blocks A and C (Storage/OB/OD Operation Plan, Figure B-10). The fenced area is feet by feet. The UTM coordinates of the Unit are: NW corner (743679,4457725); NE corner (747997,4457878); SW corner (743970, 4448338); and SE corner (748243, 4450343).

ACTIVITY TYPE:

Storage of product and hazardous waste munitions/explosives from military and non-military sources.

ACTIVITY DESCRIPTION:

Magazine area standards are used primarily for storage of small arms munition. DOT Class 1.2, 1.3, 1.4, 1.5, and 1.6 (not Class 1.1) explosives are stored in the standards. Munitions/explosives designated as hazardous waste and as product may be stored within the unit.

PHYSICAL DESCRIPTION:

There are 12 Standards in the Magazine area, spaced at least 300 feet apart. They are above ground, steel framed buildings with hollow tile walls, concrete floors, and concrete foundation walls. Each standard is 51 feet 7 inches by 218 feet 8 inches.

MAXIMUM CAPACITY:

500,000 pounds Net Explosive Weight each Magazine Standard.

WASTE TYPE:

All stored hazardous waste munitions/explosives exhibit the characteristic of reactivity (EPA Hazardous Waste Number D003). The energetic (propellants, explosives, and pyrotechnics) constituents have the properties as defined in Title 22, Cal. Code of Regs., Section 66261.23(a)(6) or (8).

RCRA HAZARDOUS WASTE CODES:

D001, D003 through D011, D030, D032, D036

CALIFORNIA HAZARDOUS WASTE CODES:

181, 352 with STLC/TTLC for antimony, arsenic, barium, beryllium, cadmium, chromium (III),

chromium (VI), copper, lead, manganese, mercury, nickel, selenium, zinc, organic lead.

G. UNIT NAME:

Ash Storage Igloos

LOCATION:

The Unit, which includes the Ash Storage Igloos, is located at F Block within the fenced Magazine Area. The ten igloos are designated as F0101 to F1010 (Storage/OB/OD Operation Plan, Figure B-10). The corners (UTM coordinates) of the Unit are (745202,4455251), (746699,4455279), (746708,4453949), (745216,4453926).

ACTIVITY TYPE:

Storage of ash in containers from the thermal treatment of off-site hazardous waste munitions/explosives.

ACTIVITY DESCRIPTION:

The Ash Storage Igloos are a part of the Magazine Area igloos, which are the major general buildings for munitions/explosives storage at SIAD. Munitions/explosives designated as hazardous waste and as product may be stored within the unit. All hazardous waste and product munitions/explosives shall be segregated from ash storage.

PHYSICAL DESCRIPTION:

Ash is stored in 10 earth-covered igloos arranged in F Block. Ash is stored in steel, open head, 55 gallon drums. Containers will be single stacked. The igloos are constructed of concrete and steel and are 26', 6" wide by 80' long. The front head walls and the back walls of the igloos are 10 inches thick, and the remaining walls are 1-foot, 4 inches thick at the bottom, tapering to 6 in. thick at the top. The floor is made of concrete and sloped to divert condensate from within the igloo to the drainage channels located along the side walls. The channels are sloped to the front of the igloo and discharge outside. The igloos are constructed to be waterproof. No utilities are required for storage.

MAXIMUM CAPACITY:

180 containers of ash per each igloo.

WASTE TYPE:

Ash shall not exhibit the characteristic of reactivity (EPA Hazardous Waste Number D003). Hazardous waste ash containers shall not contain free liquids.

RCRA HAZARDOUS WASTE CODES:

D004 through D011, D030, D032, D036

CALIFORNIA HAZARDOUS WASTE CODES:

181, 352 with STLC/TTLC for antimony, arsenic, barium, beryllium, cadmium, chromium (III), chromium (VI), copper, lead, manganese, mercury, nickel, selenium, zinc, organic lead.

2. INCINERATOR

UNIT NAME:

Deactivation Furnace-Army Ammunition Peculiar Equipment -1236 M1 (Incinerator)

LOCATION:

The incinerator is located at 40°10'04" (40-9-9717)north latitude, 120°07'02" (120-7-.0566)west longitude.

ACTIVITY TYPE:

Incineration

ACTIVITY DESCRIPTION:

The incinerator is used for thermal treatment of onsite and off-site generated hazardous and non-hazardous waste residual raw explosives, munitions, and explosive loaded components. This includes small caliber ammunition items containing propellants and explosives, disassembled munition components such as fuzes, and detonators.

Hazardous waste munitions/explosives are fed to the incinerator by a conveyor belt. The conveyor drops the waste into the kiln feed chute. The furnace, which ignites the waste, is a rotary kiln (with no refractory) that is heated by an auxiliary propane pilot light and diesel fuel burners. Combustion gases generated by the ignition are drawn out by an exhaust fan to an afterburner where the trace organics are burned. The gases, cooled by two separate coolers, are then sent to a cyclone to remove large particles from the gas stream. The gases are finally sent to a baghouse (fabric filters) to remove smaller particles, and then sent through the exhaust stack. Non-combustible material (ash, shell casings, bullets) which remained after combustion are removed from the back end of the kiln for metal recovery and disposal.

PHYSICAL DESCRIPTION:

The incinerator consists of five major components: a rotary kiln, a feed system, an air pollution control system, a metallic residue collection system, and equipment control panels.
The air pollution control system consists of the following units: an after burner; high temperature and low temperature gas coolers; a centrifugal dust collector (cyclone) that achieves removal of large particulate matter; a baghouse for final particulate cleansing; a draft fan to remove the exhaust gases; and a 29.5 foot high exhaust stack.

MAXIMUM CAPACITY:

882 lbs/hr. and shall not exceed established risk thresholds. See Permit- Part V- SPECIAL CONDITIONS for risk thresholds.

WASTE TYPE:

The incinerator treats both onsite and off-site military and non-military generated hazardous and non-hazardous waste munitions/explosives.

A complete list of chemical constituents that may be treated by incineration is located in Appendix 3-2 of the Database Operations Manual.

RCRA HAZARDOUS WASTE CODES:

D001, D003, D005, D007, D008, D030, and D036

CALIFORNIA HAZARDOUS WASTE CODES:

181, 352 with STLC/TTLC for antimony, barium, beryllium, chromium (III), chromium (VI), copper, lead, manganese, nickel, zinc, organic lead.

3. OPEN BURN/OPEN DETONATION

A. UNIT NAME:

Open Burn Unit

LOCATION:

The Open Burn (OB) Unit is located, along with the Open Detonation (OD) Unit at the OB/OD complex (Figure 2). The OB/OD complex is located within an area of 8.4 square miles or approximately 5,300 acre, separate from the main base's north boundary. The OB Unit is positioned near the southern boundary of the OB/OD complex and covers approximately 18 acres. The OB Unit is located in Section 16, T28N, R17E; latitude of the OB is 40º16'35" North, and the longitude is 120º04'03" West. The corners (UTM coordinates) of the Unit are (74861.52, 4462137.24), (749149.92, 4462137.24), (749149.92, 442695.02), and (748616.52, 4462695.02).

ACTIVITY TYPE:

Thermal treatment by open burning.

ACTIVITY DESCRIPTION:

Open burning operations are conducted in elevated pans. Propellant shall be loaded to a depth no greater than the depth of the pan and shall not exceed 1,000 pounds of propellant per pan. Propellant is ignited in each pan with a timed fuze in a sequential manner. The burn for each pan typically does not exceed two minutes.

PHYSICAL DESCRIPTION:

The OB Unit has a maximum of 30 burn stations, each consisting of 5 burn pans together. The pans are elevated 6 to 8 inches above the ground by I-beams. The I-beams are spaced 4 feet apart. The maximum dimensions for a pan are 8 feet 4 inches wide, 16 feet long, and 15 inches deep. The pans are constructed with a minimum thickness of 1/4-inch carbon steel.

MAXIMUM CAPACITY:

The event maximum is:
1000 lbs Net Explosive Weight (NEW)/pan for safety protection,
1100 lbs. gross weight/pan, and an event and daily limit is
150,000 lbs NEW/Unit, 165,000 lbs gross weight/Unit,
and not to exceed established risk thresholds. See Permit- Part V- SPECIAL CONDITIONS for risk thresholds.

WASTE TYPE:

All onsite and off-site, military and non-military, generated hazardous waste

munitions/explosives exhibit the characteristic of reactivity (EPA Hazardous Waste Number D003). The energetic (propellants, explosives, and pyrotechnics) constituents have the properties as defined in Title 22, Cal. Code of Regs., Section 66261.23(a)(6) or (8). The hazardous waste munitions/explosives containers shall not contain free liquids.

A complete list of chemical constituents that may be treated by OB is located in Appendix 3-2 of the Database Operations Manual.

RCRA HAZARDOUS WASTE CODES:

D001, D003 through D011, D030, D032, D036, K044.

CALIFORNIA HAZARDOUS WASTE CODES:

181, 352 with STLC/TTLC for antimony, arsenic, barium, beryllium, cadmium, chromium (III), chromium (VI), copper, lead, manganese, mercury, nickel, selenium, zinc, organic lead.

UNIT SPECIFIC SPECIAL CONDITIONS:

Metal covers shall be placed over the pans within 24 hours after use to prevent dispersal of ash. Ash shall be placed in containers and managed pursuant to onsite and off-site hazardous waste requirements.

B. UNIT NAME:

Open Detonation Unit

LOCATION:

The Open Detonation (OD) Unit is located, along with the Open Burn (OB) Unit, at the OB/OD complex (Figure 2). The OB/OD complex is located within an area of 8.4 square miles or approximately 5,300 acre, separate from the main base's north boundary. The OD unit is located north of the center of the OB/OD complex and covers approximately 35 acres. The UTM coordinates for the boundary of the Unit are (N4018.7320,W12004.9950), (N4018.3825,W12003.3662), (N4017.7141,W12003.3708), (N4017.7967,W12005.0650).

ACTIVITY TYPE:

Thermal treatment by open detonation and open burning.

ACTIVITY DESCRIPTION:

The hazardous waste munitions/explosives to be detonated are placed on the ground in a detonation pit. Explosive charges are then set to initiate an "inward" reaction to minimize the ejection of metal fragments out of the pit. After each OD event, the pits and the immediate area surrounding the pits are inspected for unexploded ordnance (UXO). A record of any location outside of the OD Unit where a UXO is treated in place is kept. Metallic shrapnel is collected and shipped for recycling after being certified as explosive free.

The OD pits are also used to treat rocket motors by OB. One to fourteen pits may be used. The rocket motor is placed in a detonation pit using material handling equipment (rough terrain forklift, rough terrain lift, crane, etc.). All thermal treatment of rocket motors takes place in the detonation pit. After each rocket motor thermal treatment event, non-hazardous wastes, such as the motor casing and metal residue are collected and placed into roll-off boxes. The ground surface is inspected after each OD or rocket motor OB by ammunition personnel. Ash is managed pursuant to hazardous waste requirements.

PHYSICAL DESCRIPTION:

The 14 OD pits are located at the base of the Amedee Mountains. The OD pits are constructed into the moderately sloping hillside, forming side and back walls. No liners or structures are used in the pits. The pits are rectangular and sloped towards the back wall of the pit. The pits are no larger than 113 feet wide and 258 feet long. The back wall is no higher than 38 feet.

MAXIMUM CAPACITY:

The daily maximum is:

Open Detonation
10,000 lbs Net Explosive Weight (NEW)/pit for safety protection, 40,000 lbs. gross weight/pit and 140,000 lbs. NEW/Unit, 560,000 lbs. gross weight/Unit for each event with up to two events per day,
and
Open Burn of rocket motors
160,000 lbs Net Explosive Weight (NEW)/pit for safety protection, 240,000 lbs. gross weight/pit and 160,000 lbs. NEW/Unit, 240,000 lbs gross weight/Unit;
and
shall not exceed established risk and hazard thresholds. See Permit- Part V- SPECIAL CONDITIONS for risk thresholds.

WASTE TYPE:

All military and non-military, onsite and off-site hazardous waste munitions/explosives shall exhibit the characteristic of reactivity (EPA Hazardous Waste Number D003). The energetic (propellants, explosives, and pyrotechnics) constituents shall have the properties as defined in Title 22, Cal. Code of Regs., Section 66261.23(a)(6) or (8).

A complete list of chemical constituents that may be treated by OD is located in Appendix 3-2 of the Database Operations Manual. A complete list of chemical constituents that may be treated by OB of rocket motors is also located in Appendix 3-2 of the Database Operations Manual.

RCRA HAZARDOUS WASTE CODES:

D001, D003 through D011, D030, D032, D036, K044.

CALIFORNIA HAZARDOUS WASTE CODES:

181, 352 with STLC/TTLC for antimony, arsenic, barium, beryllium, cadmium, chromium (III), chromium (VI), copper, lead, manganese, mercury, nickel, selenium, zinc, organic lead.

PART V. SPECIAL CONDITIONS

1. WASTE CHARACTERIZATION

Permittee shall include the analysis for asbestos by method specified in Title 22, Cal. Code of Regs., Chapter 11, Appendix III, Table 4 in the procedures identified in the Storage/OB/OD Operation Plan, Section C-26(3) for the Open Burn ash residues generated from the treatment of rocket motors.

2. CONTAINER STORAGE

A. In lieu of the Storage/OB/OD Operation Plan section F-3b, Permittee shall maintain aisle space for storage of hazardous waste munitions/explosives to meet the requirements specified in Title 22, Cal. Code of Regs., or other applicable DTSC regulation, whichever governs the specific subject matter.

B. In lieu of the Storage/OB/OD Operation Plan section F-2a(1), Permittee shall conduct inspections in accordance with applicable requirements in Title 22, Cal. Code of Regs., Chapter 14, or other applicable DTSC regulation, whichever governs the specific subject matter.

C. All hazardous waste munitions/explosives which have been accepted by the Facility shall be entered and tracked as identified in the Storage/OB/OD Operation Plan, section B-5d within 24 hours of receipt or by the end of the next working day. Documentation shall specify the quantity, type, and exact location of hazardous waste munitions/explosives.

D. Containers of hazardous waste munitions/explosives received from off-site nonmilitary facilities shall be manifested and managed in accordance with Title 22, Cal. Code of Regs., Chapter 14, Article 5.

E. Hazardous waste munitions/explosives shall be stored no longer than five years.

3. INCINERATOR

A. INCINERATOR PERFORMANCE STANDARDS

The Permittee shall maintain the incineration system, so that the system will meet the following performance standards in accordance with Title 22, Cal. Code of Regs., Section 66264.343:

(1). Each waste feed shall meet a destruction and removal efficiency (DRE) of 99.99 percent for each principal organic hazardous constituent (POHC). The POHCs for this Permit are: nitroglycerin, 2,4 dinitrotoluene, and diphenylamine.

(2). Hydrogen chloride (HCl) stack emissions shall not exceed the larger of either 4.0 pounds per hour or 1 percent of the HCl in the stack gas prior to entering any pollution control equipment.

(3). Particulate matter stack emissions shall not exceed 180 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foo t(dscm)) when corrected to 7 percent oxygen on a dry basis.

(4). Metals fed to the incinerator shall not exceed the following rates. No other toxic metals defined under Title 22, Cal. Code of Regs., Section 66261.24 shall be fed to the incinerator.

	Maximum feed rate, lb/hr	Metal Removal Efficiency,%
barium	less than or equal to 46.18	99.72
chromium (total)	less than or equal to 0.25	97.95
lead	less than or equal to 882.34	99.87
antimony	less than or equal to 11.20	99.80
arsenic	0	0
beryllium	less than or equal to 0.25	99.96
cadmium	0	99.98
copper	less than or equal to 0.001	90
manganese	less than or equal to 0.0005	80
mercury	0	0
nickel	less than or equal to 0.0005	80
selenium	0	80
silver	0	80.00
thallium	0	80.00
vanadium	0	90

(5). Metal emissions during the trial burn shall not exceed the following, as determined by the approved Health Risk Assessment dated September 12, 1996, and approved on October 28, 1996. No other toxic metals defined under Title 22, Cal. Code of Regs., Section 66261.24 are allowed to be treated.

	Maximum stack emissions, lb/hr
barium	less than or equal to 0.0266
chromium (total)	less than or equal to 0.00515
lead	less than or equal to 0.0671
antimony	less than or equal to 0.0223

arsenic	0
beryllium	less than or equal to 0.0001
cadmium	0
copper	less than or equal to 0.0001
manganese	less than or equal to 0.0001
mercury	0
nickel	less than or equal to 0.0001
selenium	0
silver	0
thallium	0
vanadium	0

(6). Organic emissions during the trial burn shall not exceed the following rates, as determined by the Health Risk Assessment dated September 12, 1996, and approved on October 28, 1996.

	maximum allowable stack emissions, lb/hr
1,3,5 trichloroethane	5.20 E-6
benzene	2.24 E-3
bis(2-ethylhexyl)phthalate	8.00 E-5
butyl benzyl phthalate	6.40 E-5
carbon tetrachloride	1.40 E-5
chlorobenzene	2.08 E-5
chloroform	6.40 E-5
methylene chloride	3.80 E-5
naphthalene	7.60 E-4
phenol	1.08 E-3
pyrene	3.36 E-5
tetrachloroethylene	5.20 E-6
toluene	2.76 E-5
trichloroethylene	9.20 E-5
2,4,6 trinitrotoluene	4.00 E-2
2,4 dinitrotoluene	1.94 E-3
2,6 dinitrotoluene	4.00 E-2
dibutyl phthalate	2.40 E-3
diethyl phthalate	4.00 E-2
diphenylamine	2.86 E-4

	maximum allowable stack emissions, lb/hr
nitrocellulose	2.20 E-2
nitroglycerin	4.25 E-3
PETN	1.30 E-3
RDX	2.89 E-2
Tetryl	2.39 E-2

(7). Carbon monoxide shall not exceed 100 parts per million, hourly rolling average, at any given time (by volume, dry basis, corrected to 7 percent O_2).

(8). Dioxins/Furans during the trial burn shall not exceed 0.1 ng/dscm International Toxic Equivalent (I-TEQ), as determined by US EPA Method 0023A.

B. INCINERATOR OPERATING REQUIREMENTS

The Permittee shall not operate the incinerator until procedures and a schedule for calibration of temperature and pressure sensing devices have been approved by DTSC.

(1). The Permittee shall monitor and record on a continuous basis: combustion temperature, waste feed rate, indicator of combustion gas velocity, and stack carbon monoxide concentration.

(2). The combustion zone temperature of the kiln (measured by the kiln outlet temperature) shall be maintained at or below 1449° F while hazardous waste is being incinerated. The combustion zone temperature of the afterburner (measured by the afterburner outlet temperature) shall be maintained at or above 1449° F.

(3). Stack gas velocity will be an indicator of combustion gas velocity, and shall be maintained at or below 50 ft/sec as measured by the pitot tube located inside the stack. The pitot tube shall be calibrated in accordance with 40 CFR, Part 60, Appendix A, Reference Method 2. Calibration shall be conducted every six months. DTSC shall be notified if results are greater than or less than $\pm$ 5% of the standard.

(4). During start-up and shut down of the incinerator, hazardous waste shall not be introduced into the incinerator until the incinerator is operating within the conditions specified in this Permit.

(5). The draft pressure at the kiln feed end shall be maintained below negative (-) 0.15 inches water, in order to control fugitive emissions from the combustion zone.

(6). The low temperature gas cooler (LTHE) outlet temperature shall not exceed 276 degrees F.

(7). The baghouse pressure drop shall not be less than 3.0 inches of water column (gauge pressure). After new bags have been installed, the baghouse pressure drop shall not be less than or equal to 0.5 inches of water column (gauge pressure) for a period not to exceed 80 hours of operation of hazardous waste feed. Pre-coat material, "Neutralite" or

equivalent, shall be used to pre-coat new bags prior to the introduction of hazardous waste feed to the incinerator. Bag cleaning (reverse-air pulsating and/or shaking) shall be terminated at 3.0 inches of water (gauge pressure), with the pressure drop not to fall below 2.0 inches of water column.

(8) The maximum allowable baghouse pressure drop is 6.0 inches of water column (gauge pressure). Waste feed will be cut off if the baghouse pressure drop exceeds 6.0 inches of water column (gauge pressure).

(9). WASTE FEED LIMITATIONS:

a. The maximum ash feed rate for any given item with established feed rates shall be no greater than 52.9 lb/hr.

b. The maximum chlorine feed rate for any given item with established feed rates shall be no greater than 4.0 lb/hr.

c. The maximum net explosive weight (NEW) feed rate for any given item with established feed rates shall be no greater than 182 lb/hr.

d. The Permittee may not burn energetic (NEW) compounds with a heat of combustion lower than nitroglycerin (or ranked higher on the heat of combustion index, US EPA Incineration Guidance Volume I), and with a thermal stability higher than diphenylamine (see U.S. EPA Incineration Guidance Volume II).

e. The Permittee may only incinerate the hazardous wastes listed on Page C-47 of the Incinerator Operation Plan.

f. The Permittee may only incinerate a maximum waste feed of 882 lb/hr.

g. The physical state of the hazardous waste shall be solid or bulk powder.

C. METEOROLOGICAL CONDITIONS

(1). The incinerator meteorological stations must be operated, maintained, and calibrated according to the November 1995, Meteorological Monitoring Plan and the Environmental Protection Agency, 1987, Onsite Meteorological Program Guidance for Regulatory Modeling Applications, EPA-450/4-87-013 (Revised February 1993), U.S. Environmental Protection Agency, Triangle Research Park, N.C.

(2). The following meteorological conditions records must be maintained as part of the treatment event record identified in the Database Operation

Manual. All meteorological data must be kept for the duration of the Permit. The following information must be noted.

a. Wind speed

b. Wind direction

c. Temperature

D. THERMAL TREATMENT RESIDUALS

In lieu of the Incinerator Operation Plan section D-5c(2)(g), treatment residue from the incineration of off-site hazardous waste munitions/explosives, as specified in Title 22, Cal. Code of Regs., Section 66262.34(e), may not be stored under the "satellite" accumulation rules.

4. OPEN BURN/OPEN DETONATION

A. METEOROLOGICAL CONDITIONS

(1). No open detonations may be performed during the following conditions:

a. During electrical storms.

b. When the wind speed is either: (a) less than 3 miles per hour (mph), (b) more than 30 mph, or (c) with gust more than 35 mph.

c. When visibility is less than one mile.

d. Before 8:00 A.M. or ½ hour after sunrise, whichever occurs later and no later than 6:00 P.M. or ½ hour before sunset, whichever occurs first.

(2). The OB/OD meteorological stations must be operated, maintained, and calibrated according to the November 1995, Meteorological Monitoring Plan and the Environmental Protection Agency, 1987, Onsite Meteorological Program Guidance for Regulatory Modeling Applications, EPA-450/4-87-013 (Revised February 1993), U.S. Environmental Protection Agency, Triangle Research Park, N.C.

(3). The following meteorological conditions records must be maintained as part of the treatment event record identified in the Database Operation Manual. All meteorological data must be kept for the duration of the Permit. The following information must be noted.

a. Wind speed

b. Wind direction

c. Temperature

B. THERMAL TREATMENT RESIDUALS

(1). Treatment residues in soil from the open burning and open detonation of hazardous waste munitions/explosives shall not exhibit a hazardous waste characteristic as defined by Chapter 11 of Division 4.5 of Title 22, Cal. Code of Regs. Soil within the OB/OD complex shall be sampled on a periodic basis to determine if it exhibits a hazardous waste characteristic. Permittee shall submit a work plan within 30 days from the effective date of the Permit, which shall address the requirements and procedures for managing of any hazardous waste identified from characterization samples.

(2). In addition to inspections identified in the Storage/OB/OD Operation Plan section F-2b(7)(a), Permittee shall annually inspect for unexploded ordnance, damaged or deteriorated munitions/explosives, and munition fragments within the OB/OD complex identified in Figure 2. A Global Positioning System unit is used to determine the location. This information is kept in the operating record.

(3). In lieu of the Storage/OB/OD Operation Plan section C-1g(3)(d), treatment residue from the open burning and open detonation of off-site hazardous waste munitions/explosives, as specified in Title 22, Cal. Code of Regs., Section 66262.34(e), may not be stored under the "satellite" accumulation rules.

5. CLOSURE

In lieu of the Storage/OB/OD Operation Plan, Section I, prior to time of closure, Permittee shall submit to DTSC, a revised closure plan that meets the requirements of DTSC at time of closure.

6. RISK & HAZARD TRACKING REQUIREMENTS

A. Permittee shall maintain, in the Operating Record, a quarterly report that identifies that all Permit conditions identified in the Permit have been met.

B. WASTE CHARACTERIZATION

(1). All energetic and non-energetic materials and hazardous waste munitions/explosives thermally treated by Permittee must be characterized and reported on the Form 1, Waste Characterization Form from the Database Operation Manual, using the MIDAS database or other

Department of Defense (DOD) reference sources to determine the type and amount of each chemical treated by OB/OD or incineration. This shall include any chemical identified in the Environmental Impact Report requiring mitigation through risk and hazard tracking or environmental monitoring. If the information is not available, constituents must be estimated on a percent by weight basis and tracked accordingly.

(2). The gross weight of the item must include all energetic and non-energetic constituents.

(3). Only chemicals of concern, as identified in Appendix 2-7 & 2-8 of the September 12, 1996 Health Risk Assessment, may be treated by OB/OD and incinerator unless the conditions under V.6.B.4 of the Permit are met.

(4). For any additional chemical(s) of concern, Permittee must submit a Class 1* permit modification for DTSC's written approval, under Title 22, Cal. Code of Regs., Section 66270.42(a) and adhere to the following protocol. Any newly identified chemical or new chemical treated by Permittee must be added to the Database Operation Manual, pursuant to the most recent Cal/EPA, DTSC Preliminary Endangerment Assessment Guidance Manual. The criteria for identifying a chemical of concern include:

a. All new or known additional chemicals which have cancer potency factors (slope factors,(Sfs)) or chronic reference doses (RfDs) pursuant to applicable California laws and regulations.

b. All new or known additional chemicals with Sfs or chronic RfDs used to develop environmental criteria pursuant to applicable California laws and regulations.

c. All new or known additional chemicals on the USEPA's Integrated Risk Information System (IRIS).

d. All new or known additional chemical from the most current edition of U.S. EPA's Health Effects Assessment Summary Tables (HEAST) or U.S. EPA designated equivalent.

(5) Prior to treatment of all new or known additional chemicals which are not listed in the above Section V.6.B.4 a. through d., Permittee must contact DTSC.

(6). Permittee must submit a report biennially, for review and approval by DTSC, in writing and on diskette, in a format to be determined by DTSC, a listing of all chemicals identified in Appendix 3.2 of the Database Operation Manual and any new chemicals which have not been previously listed or known to be treated by Permittee. At a minimum the summary report must include the following information:

a. Highlight chemicals which have been added as a new chemical constituent.

b. A notation must be made to indicate if the chemical was added to the risk and hazard tracking system or dropped due to a lack of toxicity data, and the date of the permit modification associated with that addition or deletion.

c. The Permittee shall review all chemicals listed in Appendix 6-4 of the 1996 HRA, for modifications or changes to previous toxicity data, and chemicals added to the toxicity database by the procedure in V.6.B. of the Permit. All changes shall include the source of data.

d. Once a new or previously known chemical is identified, Permittee shall update the risk and hazard tracking system within 30 days of DTSC approval of the changes.

C. CARCINOGENIC RISK & NONCARCINOGENIC HUMAN HEALTH HAZARD MANAGEMENT REQUIREMENTS

The OB, OD, and incinerator units may not operate if the cumulative annual carcinogenic risk and chronic hazard and/or daily acute hazard from all units exceed the following.

(1). Carcinogenic risk may not exceed 1.0×10^{-5} (ten in a million) as calculated for the Reasonably Exposed Individual and calculated according to the September 12, 1996 HRA methodology or as directed by DTSC.

(2). Noncarcinogenic chronic hazards may not exceed a hazard index of 1.0 as calculated according to the September 12, 1996, Health Risk Assessment or as directed by DTSC.

(3). Noncarcinogenic acute hazards may not exceed a hazard index of 1.0 for any 24 hour period and will be calculated according to the September 12, 1996, HRA or as directed by DTSC. Acute hazards will be calculated at the maximum impact point for the closest potential receptor.

7. MITIGATION ACTIVITIES REQUIRED UNDER CEQA

The Permittee shall implement the following mitigation measures that are addressed in the Environmental Impact Report (EIR):

A. Human Health The Permittee shall implement Permit condition V.6.C. to reduce emissions to levels which will not result in significant impacts on human health. The Permittee shall limit long-term cumulative risks to below 1×10^{-5}, and both long-term and short-term hazard indices to less than 1.0. The Permittee shall prepare and maintain daily operation records showing the composition of the wastes treated, treatment emissions, daily hazard indices, and rolling 365-day long-term hazard indices. In order to prevent exceedence of limits, the Permittee shall notify DTSC within 24 hours when long term risk or reaches 0.9×10^{-5} or noncarcinogenic long-term hazard indices reach 0.90. Permittee shall cease operation if daily noncarcinogenic short-term hazard index exceeds 1.0 until approval is received from DTSC to continue operation.

B. Plant Resources The Permittee shall implement a soil monitoring program, as defined in Ecological Monitoring Program (Appendix A), to ensure there is not a significant impact to plant resources from a buildup of residues from the OB/OD/Incinerator. The Permittee shall submit and implement a plan as scheduled under Permit condition V.9. Permittee shall compare annual buildup of hazardous constituent concentrations over benchmark toxicity values listed in ERA Table 2-2 or to any changes to benchmark toxicity values recalculated from background soil sampling. Increases to soil contaminant concentrations shall require implementation of Phase 2 of the Ecological Monitoring Program. This measure is designed to prevent exceedence of benchmark toxicity values for plants.

C. Animal Resources The Permittee shall implement a soil monitoring program, as defined in Appendix A, to ensure there is not a significant impact to animal resources from a buildup of residues from the OB/OD/Incinerator. The Permittee shall submit and implement a plan as scheduled under Permit conditions V.9. Permittee shall utilize information in ERA Tables 5-6 and 6-9 to calculate any increases to Hazard Indices from annual buildup in hazardous constituent concentrations. Significant impacts to plant tissue determined from Phase 2 of the Ecological Monitoring Program shall require implementation of Phase 3 of the Ecological Monitoring Program. This measure is designed to prevent exceedence of threshold hazard indices for animals.

D. Aquatic Resources- Pyramid Lake The Permittee shall calculate annual emissions of aluminum and copper from OB/OD treatment and report to DTSC the estimated ambient air deposition on Pyramid Lake. This measure is to prevent exceedence of benchmark toxicity in Pyramid Lake, as defined in the EIR, Table 5-1.

E. Aquatic Resources- Ephemeral Streams The Permittee shall implement surface stream monitoring program in order to verify that surface water quality criteria are not impacted. Permittee shall submit and implement a plan as scheduled under Permit condition V.9.

F. Groundwater Resources The Permittee shall prepare, submit, and implement a groundwater evaluation plan to determine if subsurface groundwater could be impacted. Permittee shall submit and implement a plan as scheduled under Permit

condition V.9.

G. Ambient Air Quality The Permittee shall limit the one hour maximum quantity of sulfur treated by open burning to no more than 44.5 pounds in order to not exceed the California 1-hour standard for sulfur dioxide. The Permittee shall not conduct open burn treatment of rocket motors which contain aluminum when wind speeds are more than 18 miles per hour. This condition is to prevent exceedence of state and federal particulate (PM_{10}) Ambient Air Quality Standards.

8. COMPLIANCE SCHEDULE

The Permittee shall comply with the following:

Tasks		**Due Date**
1.	Submit a Work Plan for management of soil contaminated from thermal treatment residues.	30 days from effective date of Permit
2.	Submit an Ecological Monitoring Plan, consistent with Appendix A	6 months from effective date of Permit
3.	Submit a Groundwater Evaluation Work Plan	6 months from effective date of Permit
4.	Conduct calibration of incinerator pitot tubes	Every 6 months from effective date of Permit
5.	Submit Surface Soil Monitoring Work Plan consistent with Appendix A	9 months from effective date of Permit
6.	Conduct annual soil sampling in accordance with an approved Surface Soil Monitoring Plan	Within 365 days after approval by DTSC of Surface Soil Monitoring Plan, and annually thereafter.
7.	Submit a Surface Water Monitoring Plan	9 months from effective date of Permit
8.	Conduct surface water sampling in accordance with an approved Surface Water Monitoring Plan.	As directed in DTSC approval of Surface Water Monitoring Plan
9.	Submit Ambient Air Detection Monitoring Plan for emissions from OB/OD units.	9 months from effective date of Permit

10.	Conduct air sampling in accordance with an Ambient Air Detection Monitoring Plan	Within 365 days after approval by DTSC of Ambient Air Detection Monitoring Plan, and annually thereafter.
11.	Conduct a visual inspection of the OB/OD complex ground surface for unexploded ordnance	Every year from effective date of Permit
12.	Submit Annual Meteorological Report with calibration records for Incinerator and OB/OD Stations	Every year from effective date of Permit
13.	Submit a certification for the evaluation of alternative treatment technologies	March 1 after the proceeding year
14.	Submit Biennial Report on Risk and Hazard Tracking	Every two years from effective date of Permit
15.	Submit findings from surveillance of all potential off-site impact locations for new receptors	Every two years from effective date of Permit
Tasks		**Due Date**
16.	Submit a trial burn plan for the Incinerator	5 years from effective date of Permit
17.	Conduct a trial burn for the Incinerator	6 years from effective date of Permit

PART VI. CORRECTIVE ACTION

The Permittee is required to conduct corrective action at the Facility pursuant to HSC section 25200.10. Except as otherwise provided in this Permit, corrective action shall be carried out under the Sierra Army Depot Federal Facility Site Remediation Agreement (FFSRA), entered into among the United States Department of the Army, DTSC, and the California Regional Water Quality Control Board and dated May 30, 1991. Section 16 of the FFSRA provides that the parties to the FFSRA intend to integrate the Permittee's CERCLA response obligations and RCRA corrective action obligations which relate to the releases of hazardous substances, hazardous wastes, pollutants, or contaminants. However, DTSC reserves the right to require the Permittee to comply with additional corrective action requirements, should the remedial action implemented under the FFSRA be deemed insufficient or inadequate for the protection of public health or the environment.

With regard to any releases of hazardous waste or constituents into the environment at or from the OB/OD complex, the Permittee shall conduct corrective action pursuant to the Corrective Action Consent Agreement, Docket No. __, entered into between DTSC and the Permittee, dated ____.