Anniston Army Depot
Anniston, Alabama
EPA I.D. Number ALD AL3 210 020 027

FACT SHEET

A draft modification to the Alabama Hazardous Wastes Management and Minimization Act (AHWMMA) permit has been prepared for the Anniston Army Depot (ANAD) facility. This hazardous waste facility is located in Anniston, Alabama. This fact sheet has been prepared to briefly advise the public of the principal permitting, legal and policy issues of the draft permit.

I. PERMIT PROCESS

The purpose of the permitting process is to allow the State and the public to evaluate ANAD's ability to comply with the hazardous waste management requirements of the AHWMMA, as amended. ANAD must comply with hazardous waste management conditions set forth in the permit during the effective period of the permit, which is ten (10) years from the last permit renewal (September 21, 2021).

II. PROCEDURES FOR REACHING A FINAL DECISION

ADEM Admin. Code r. 335-14-8-.08(6)(b)1. requires that the public be given a 45-day comment period for each draft permit. The comment period will begin on May 28, 2025, which is the date of publication of the public notice in major local newspaper(s) of general circulation and will end on July 14, 2025. The public notice will also be broadcast over local radio station(s).

Any person interested in commenting on the application or draft permit must do so within the 45-day comment period discussed above.

All persons wishing to comment on any of the draft permit modification conditions or the permit modification application should submit their comments in writing to the Alabama Department of Environmental Management, Permits and Services Division, 1400 Coliseum Blvd. (zip 36110-2059), P.O. Box 301463 (zip 36130-1463) Montgomery, Alabama, ATTENTION: Mr. Russell A. Kelly.

ADEM will consider all written comments received during the comment period while making a permit decision for this facility. When the Department makes its final permit decision, notice will be given to the applicant and each person who has submitted written comments or requested notice of the final permit decision.

III. FACILITY DESCRIPTION

ANAD is the designated Center of Industrial and Technical Excellence for combat vehicles (tracked and wheeled), towed and self-propelled artillery, assault bridging systems, individual and crew served small caliber weapons, locomotives, rail equipment, and non-tactical generators. Major components of each vehicle are also overhauled and returned to stock. Additionally, worldwide distribution of stocks and the maintenance, storage, and demilitarization of conventional ammunition and missiles are significant parts of ANAD’s overall mission and capabilities. Key tenant organizations on ANAD include Defense Distribution Anniston Alabama (DDAA), Defense Logistics Agency Disposition Services, Assembled Chemical Weapons Alternatives Anniston Field Office (AFO) Static Detonation Chamber (SDC) Facility, Anniston Munitions Center (ANMC), and the Center of Military History Clearing House.

As a result of its U.S. Department of Defense (DoD) mission, ANAD generates a variety of hazardous industrial and process waste streams such as waste solvents, laboratory wastes, off-specification hazardous materials, filter media, and sludge from the industrial waste treatment plant (hereinafter referred to as industrial wastes). The ANAD waste streams additionally include conventional munitions deemed a hazardous waste per the Military Munitions Rule (MMR) (hereinafter, referred to as waste military munitions [WMM]) and secondary wastes related to thermal treatment/disposal of these WMM at the open burn (OB), open detonation (OD), Rocket Motor Fire Units (RMF) stands, SDC, Thermal Treatment Closed Disposal Process (TTCDP)
or Energetic Treatment Unit (ETU) units.

Additional provisions have been included in the permit as a result of the changes made to AHWMMA to incorporate the requirements of the 1984 Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA). These requirements are included in accordance with ADEM Admin. Code r. 335-14-5-.06(12), which addresses corrective action for solid waste management units (SWMUs). This rule requires a RCRA Facility Assessment (RFA) of all SWMUs to be conducted at the facility. The RFA for ANAD has been completed and SWMUs have been identified. All SWMUs are recommended for further sampling and corrective action, if necessary.

IV. SUMMARY OF PROPOSED MODIFICATIONS

ANAD's proposed permit modification is to incorporate closure procedures for the SDC facility. The SDC processed non-chemical agent contaminated munition components from the Pueblo Chemical Agent-destruction Pilot Plant (PCAPP) in Pueblo, CO, and the Blue Grass Chemical Agent-destruction Pilot Plant (BGCAPP) in Richmond, KY. Upon completion of operations, and because there are no further mission requirements, the Anniston SDC will be closed and demolished in accordance with the proposed closure plan.

V. CHANGES TO THE EXISTING PERMIT

The specific changes to the permit are explained below.

Section/Appendix	**Reason**
Cover Page	Updated to include the current modification and request dates.
Introduction Pages ii-iv	Updated pages to include the current modification date and number. Added the modification submittal dates.

VI. TECHNICAL CONTACT

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Facilities Engineering Section
Governmental Hazardous Waste Branch, Land Division
Alabama Department of Environmental Management
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P.O. Box 301463 (zip 36130-1463)
Montgomery, Alabama
(334) 274-4236

Alabama Department of Environmental Management

HAZARDOUS WASTE FACILITY PERMIT

PERMITTEE: United States Department of the Army, Anniston Army Depot
United States Department of the Army, Anniston Munitions Center
United States Department of the Army, Anniston Field Office
Washington Demilitarization Company, LLC

ADDRESS: Anniston, Calhoun County

EPA ID/PERMIT NUMBER: AL3 210 020 027

UNITS PERMITTED:
3 ANMC Conventional Waste Munitions Storage Igloos (I-103, F-704A, F-405)
3 ANAD Industrial Waste Storage Buildings (BLDG 466, BLDG 512, BLDG 527)
1 Roll-off Storage Building
1 Open Burning Unit
1 Open Detonation Unit
1 Static Detonation Chamber (SDC)
3 SDC Service Magazines
34 SDC Conventional Waste Munitions Storage Igloos
1 Thermal Treatment Closed Disposal Process (TTCDP)
1 Energetic Treatment Unit (Flash Furnace)
3 Rocket Motor Fire Units

ISSUANCE DATE:
September 21, 2021
May 8, 2024 **Modification 1, Minor**
July XX, 2025 **Modification 2, Major**

EXPIRATION DATE: **September 20, 2031**

*This Permit is issued pursuant with the **Code of Alabama 1975**, §§ 22-30-1-**et. seq.**, as amended, and regulations adopted thereunder and the Hazardous Wastes Management and Minimization Act and in accordance with the plans and specifications and applications filed with the Department subject to the conditions appended hereto, all of which are considered a part of this Permit. This Permit shall be subject to all applicable laws of the State of Alabama, rules and regulations and orders of the Department of Environmental Management and shall be effective from the date of issuance.*

_____
Alabama Department of Environmental Management

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
HAZARDOUS WASTE STORAGE AND TREATMENT PERMIT

Permittee: United States Department of the Army, Anniston Army Depot
United States Department of the Army, Anniston Munitions Center
United States Department of the Army, Anniston Field Office
Washington Demilitarization Company LLC
7 Frankford Avenue
Anniston, Alabama 36201-4199

Permit Number: AL3 210 020 027
Identification Number: AL3 210 020 027

Permit Modification: 2

Pursuant to the Hazardous Wastes Management and Minimization Act, Code of Ala. 1975, Section 22-30-1, et. seq., as amended, and attendant regulations promulgated thereunder by the Alabama Department of Environmental Management (ADEM or the Department), a permit is issued to the United States Department of the Army, Anniston Army Depot (Facility Owner, Facility Co-Permittee, Facility Operator); the United States Department of the Army, Anniston Munitions Center (Facility Co-Permittee, Facility Co-Operator (ANMC operations)); the United States Department of the Army, Anniston Field Office (AFO) (Facility Co-Permittee, Facility Co-Operator (Static Detonation Chamber (SDC) Site); and Washington Demilitarization Company LLC (Facility Co-Permittee, Facility Co-Operator (SDC site)) to operate a hazardous waste storage and treatment facility located in Calhoun County, Alabama, West of the city of Anniston, latitude 33° 39' 00" and longitude 85° 58' 22".

For purpose of clarification, the designations Facility Owner, Facility Co-Permittee, Facility Operator, and Facility Co-Operator hereinafter shall be referred to as Owner, Permittee, and Operator respectively. The use of referring to Co-Permittee as Permittee and Co-Operator as Operator shall not change legal obligations and/or responsibilities.

To ensure the proper execution of this Permit, the Permittee agrees to the following division of operation responsibility:

- The U.S. Department of the Army, Anniston Army Depot (ANAD), as Facility Owner, a Permittee and Operator, acknowledges its responsibility for hazardous waste management activities at the ANAD Facility. These responsibilities include funding, policy, capital expenditures, design, programmatic and scheduling decisions, general oversight of contractor activities, interim or corrective actions, and closure or post-closure activities.
- The U.S. Department of the Army, Anniston Munitions Center (ANMC), as Permittee and Operator, acknowledges its responsibility for hazardous waste management activities under the control of ANMC as a tenant property to ANAD. These responsibilities include funding, policy, capital expenditures, design, programmatic and scheduling decisions, general oversight of contractor activities, interim or corrective actions and closure or post-closure activities. The areas under ANMC control include the energetic treatment of waste munitions by open burning utilizing pans or rocket motor fire stands, open detonation, thermal treatment including grenade closed disposal process and flashing of energetic residue. ANMC also controls the storage of waste within permitted igloos for these operations.
- The U.S. Department of the Army, Anniston Field Office (AFO) as a Permittee and Operator, acknowledges its responsibility for hazardous waste management activities at the SDC Site, including responsibility for funding, policy, capital expenditures, design, programmatic and

scheduling decisions, general oversight of contractor activities, interim or corrective actions, and closure or post-closure activities.

- Washington Demilitarization Company LLC as a Permittee and Operator, acknowledges its responsibility for hazardous waste management activities at the SDC Site for day to day management within its direct management control and authority (including waste analysis, handling and monitoring, record keeping and related hazardous waste activities) as governed by law and the decisions and direction of the Army. The areas under control include the Building 695 Complex and the SDC used for the treatment of energetic waste munitions and the associated storage of waste within permitted service magazines and storage igloos for these operations.

The Permittee must comply with all terms and conditions of this Permit, which consists of the conditions set forth herein (including those in any attachments), and the regulations applicable to the Permittee's facility contained in Chapters 335-14-1, 335-14-2, 335-14-5, 335-14-7, 335-14-8, and 335-14-9 of the ADEM Administrative Code of Regulations (hereinafter referred to as the "ADEM Admin. Code Rule"). Applicable regulations are those which are in effect on the date of issuance of this Permit.

This permit is based on the assumption that the information submitted in the permit application attached to the Permittee's letter dated May 11, 2017, as modified by subsequent amendments dated October 15, 2018, March 19, 2024, March 21, 2024, January 27, 2025, and May 12, 2025 (hereby incorporated by reference and hereafter referred to as the Application) is accurate and that the facility will be constructed and operated as specified in the Application. Any inaccuracies found in this information could lead to the termination or modification of this permit in accordance with ADEM Admin. Code Rules 335-14-8-.04(2), 335-14-8-.04(3), and 335-14-8-.04(4) and could lead to potential enforcement action. The Permittee must inform ADEM of any deviation from or changes in the information provided in the Application that would affect the Permittee's ability to comply with the applicable regulations or permit conditions.

This Permit is effective as of September 21, 2021, as amended May 8, 2024 and July XX, 2025, and shall remain in effect until September 20, 2031 unless revoked and reissued, or terminated under ADEM Admin. Code Rules 335-14-8-.04(2) and 335-14-8-.04(4) or continued in accordance with ADEM Admin. Code Rule 335-14-8-.05(2).

Alabama Department of Environmental Management

Date Signed

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DOCUMENTS INCORPORATED BY REFERENCE:

1. Part A and B Permit Application submitted on May 11, 2017, as modified by subsequent amendments dated October 15, 2018 , March 19, 2024, March 21, 2024, January 27, 2025, and May 12, 2025
2. ANCDF SDC Emissions Test Plan (October 14, 2009, revised on February 18, 2010, August 12, 2010, November 2, 2010, and May 9, 2011)
3. Final SDC Emissions Test Report for Conditions 1, 2 and 3 (May 9, 2011)
4. Final SDC Emissions Test Report for Condition 4a (August 19, 2011)
5. Final SDC Emissions Test Report for Condition 4b (October 31, 2011)
6. Risk Assessment for SDC Condition 4b (February 12, 2012)
7. SDC 5-year Emissions Test Plan, Revision 0 (September 15, 2015)
8. SDC Emissions Test Plan (Conditions 1 and 2) (April 14, 2016, revised August 10, 2016)
9. Final SDC Condition 2 Emissions Test Report (June 26, 2017)
10. SDC CEMS Certification Plan (most recent version)
11. Air Modeling and Risk Assessment in Support of the Renewal Part B Application October 25, 2017, revised August 2018)
12. Interim Record of Decision for Southeast Industrial Area Operable Unit 1 (September 2004)
13. Final Record of Decision (ROD) for Ammunition Storage Area (July 2006)
14. Final Record of Decision (ROD) for Southeast Industrial Area Soil Operable Unit 2 (July 2008)
15. Final Interim Record of Decision Amendment for Southeast Industrial Area OU-1 (October 2014)
16. Final Southeast Industrial Area Remedial Design and Remedial Action Work Plan (September 2005)
17. Final Ammunitions Storage Area Remedial Design and Remedial Action Work Plan (September 2005)
18. Final Remedial Action Work Plan for Interim Remedial Action, Comprehensive Groundwater Operable Unit -1 (August 8, 2018)
19. Final Southeast Industrial Area Remedial Action Post-Construction Report and Operation and Maintenance Plan (September 2008)
20. Land Use Control Implementation Plan (LUCIP) (September 2017)
21. Remedial Design Work Plan for the Interim Remedial Action of Operable Unit 1 (May 2019)

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IV J B FACILITY DESCRIPTION

This section provides a general description of the Static Detonation Chamber (SDC) at the Building 695 Complex on the Anniston Army Depot (ANAD) in Anniston, Alabama.

Permitting of the SDC was originally pursued to support the destruction of waste military munitions (WMM) containing mustard agent. Munitions originally processed at the SDC included over-packed munitions, reject munitions, munitions with limited safety features, and munitions for demonstration testing such as emissions testing or feasibility assessments. Since mustard munitions also involve conventional explosives, the SDC application includes language to support permitting the SDC to destroy conventional munitions deemed appropriate or needed while this unit is being operated.

Mustard munitions processing at the SDC was completed on September 18, 2011. The Anniston Chemical Agent Disposal Facility (ANCDF) completed chemical agent decontamination of all SDC equipment and structures in accordance with (IAW) the ANCDF RCRA Closure Plan. The SDC Decontamination Report was submitted on April 5, 2012, and the SDC unit and facilities are now classified as chemical agent free under the ANCDF clean closure standards defined in the closure plan. Approval of the closure report was received on July 22, 2013.

The SDC is an explosive detonation chamber designed to dispose of WMM. The SDC unit located at the ANAD may be used to process munitions that are not defined as chemical munitions or contaminated with chemical agent from both inside and outside of the State of Alabama. Recovered WMM received from areas inside the State of Alabama may also be processed. The SDC may also treat conventional munitions components from chemical weapons, which have been verified agent free and received from outside the State of Alabama.

WMM may include items containing fill material such as white phosphorus, smoke rounds, tear gas, riot control agents, tracers, illumination and incendiary munitions, liquid-filled conventional munitions, liquid contaminated explosive components, etc., and related items. Related items may include shipping and storage containers, packing materials, and personal protective equipment (PPE). These items will be characterized prior to treatment in the same manner as WMM. The feed limitations demonstrated during emissions testing to the unit (e.g., chlorine, metals, sulfur, etc.) will be adhered to at all times and the completion of reaction of the previously fed items will be ensured by monitoring of system response to verify that feed durations are controlled IAW procedural and permit requirements.

IAW the Alabama Department of Environmental Management (ADEM) Administrative Code r. 335-14-8-.02(5)(b)1, Section IV J B-1 provides the general description of the SDC and an overview of the treatment operations proposed for WMM currently stored at ANAD or recovered from areas within the State of Alabama.

Section IV J B-2 provides and discusses the ANAD and SDC topographic map required by ADEM Admin. Code r. 335-14-8-.02(5)(b)19 and other facility related information.

Section IV J B-3 addresses the location information requirements of ADEM Admin. Code r. 335-14-8-.02(5) (b)11.

Section IV J B-4 describes the ANAD and SDC traffic patterns as required by ADEM Admin. Code r. 335-14-8-.02(5)(b)10.

IV J B-1 General Description

ADEM Admin. Code r. 335-14-8-.02(5)(a) and 335-14-8-.02(5)(b)1

The SDC is located within the Ammunition Limited Area (ALA) on the west side of G block within ANAD. The description of ANAD is located in Section II B of the ANAD RCRA Permit Application. The SDC is designed for destruction or treatment of WMM and components which are either explosively or non-explosively configured. The SDC does not require the use of explosive counter charges to destroy munitions. Over-packed munitions can be processed without being removed from the over-pack container. This reduces the risk of accidental explosions and unexpected environmental release. The system is very flexible, and is able to destroy many types and sizes of munitions. It can also decontaminate equipment, scrap or soil.

A detailed description of the SDC is contained in Section IV J D.

IV J B-1a Overview of the SDC Operations

WMM, including recovered items, will be brought to the SDC by truck or appropriate transportation vehicle and may be stored in the three permitted service magazines, 34 permitted storage igloos, or delivered directly to the loading area for the SDC. WMM will be transported in appropriate packaging to ensure the safety of the workers and environment.

Once processing is to begin, the WMM will be brought to the facility by forklift or appropriate transportation vehicle and placed in the loading area. In the loading area the munitions are placed in ammunition trays and loaded onto the feed conveyor. A lifting assist device may be used for this operation. Once the munitions have been placed on the feed conveyer, no further handling is required. The munitions are fed to the SDC automatically under remote control and observation. The munitions heat up and any explosive present deflagrates or detonates and is destroyed. The ambient heat of the SDC chamber alone is adequate to open the munition case and destroy any fill materials, such as riot control agents or tear gas without the presence of explosives. No counter charges, detonators, or munitions handling is needed. All gases from the treatment of WMM are treated in the pollution control system under automatic control. No one is required to be present within the sprung structure during these operations.

The unit is able to treat any type of WMM provided permitted limits are not exceeded and dimensional limitations are adhered to for each feed event. Generally, changes in munition feeds do not require modification of the system. The system can handle mixed feeds. If a munition contains fill materials such as smokes, illumination mixtures, white phosphorous, or a fuze, these are destroyed at the same time that the explosive is destroyed, without the need for donor charges, and with an absolute minimum of munitions handling.

IV J B-1b Hazardous Wastes Managed / Generated at the SDC

The SDC receives munitions for treatment (see Figure IV J-1 for the general facility layout)[1]. Munitions may be stored in one of three service magazines, 34 permitted storage igloos, or delivered directly to loading area of the SDC prior to being processed. The wastes managed or generated at the SDC include:

- WMM,
- Recovered WMM from within the State of Alabama,
- Energetic contaminated material,
- Scrap metals from munitions after treatment process,
- Miscellaneous liquid wastes,
- Brines and Off-Gas Treatment (OGT) System fluids,
- Solids generated during the treatment process, and
- Miscellaneous solid waste / dunnage.

Detailed descriptions of the materials to be processed and wastes generated are provided in Section IV J C-1.

The three service magazines and 34 igloos for storage of WMM are located within the ALA and constructed IAW Department of Defense Explosives Safety Board (DDESB) standards. This satisfies ADEM Admin. Code r. 335-14, the Military Munitions Rule (MMR), requirements for WMM storage.

IV J B-1c Hazardous Waste Management Unit to be Permitted

The hazardous waste management unit addressed in this section of the permit application is considered a Miscellaneous Unit (40 Code of Federal Regulations (CFR) 264 Subpart X). Wastes generated during SDC operations are accumulated in containers. The containers will not remain in the sprung structure longer than 90 days. This permit application does not seek permitting of the SDC, as less than (<) 90-day storage areas are exempt from permitting requirements [40 CFR 262.34(a)]. However, the service magazines and storage igloos used for waste storage are permitted IAW the MMR.

A detailed description of operations to be conducted at the SDC is provided in Section IV J D-1.

IV J B-2 Topographic Map

ADEM Admin. Code r. 335-14-8-.02(5)(b)1

IV J B-2a General Requirements

IAW the requirements of ADEM Admin. Code r. 335-14-8-.02(5)(b)19, a topographic map and other maps are used to detail the location of the SDC and the surrounding area. The

[1] All figures are located at the end of this section.

information includes the following: contour maps, the location of surface waters, a wind rose, surrounding land use, and facility area designations.

The topographic map (Figure IV J-1)[2] depicts a distance of approximately (~) 1,000 feet around the SDC. The map's scale is 1 inch equals 240 feet. Topographic contours are displayed at 2-foot intervals. There are no legal boundaries shown on the topographic map for the SDC because it is totally self-contained within the ANAD. Legal boundaries for the ANAD are shown in Figure IV J-1. The service magazines (Buildings 712, 713 and 714) near the SDC are shown on Figure IV J-5.

Additional Drawings (Figures IV J-2, IV J-3, and IV J-4), each with a scale of 1 inch equals 30 feet, show contours, locations of catch basins, manholes, storm sewers, sanitary sewers, drain lines, culverts, fences, guard rails, gas lines, fire water lines, hydrants, power poles, access roads, and road surfaces in relation to the SDC. The SDC will be the only Solid Waste Management Unit within the boundary of Building 695 Complex.

A wind rose for ANAD is included as Figure IV K B-8. The wind rose for ANAD shows the average wind speed and direction for 4 years (January 2009 to December 2013). Average total wind speed measured at the Anniston Airport is 3.58 knots.

Normal precipitation in Anniston, Alabama, is 53 inches per year, of which nearly all occurs as rain. Highest rainfalls are in March, averaging 6.34 inches. Lowest rainfalls are in October, averaging 2.74 inches.

For the twelve-month period ending June 30, 1999, 55 inches of precipitation were recorded at ANAD. The highest rainfall (9.4 inches) was recorded in June. The lowest rainfall (1.1 inches) was recorded in September of that period.

The Building 695 Complex is not located in the 100-year floodplain. See Section II, Figure II-B4 for a depiction of the 100-year floodplain..

There are no surface waters within 1,000 feet of SDC.
The Building 695 Complex does not have any process sewage systems. Sanitary sewage is piped to the existing sewage treatment plant located in the southeast portion of the ANAD.

There are no injection wells on the ANAD, or within 1,000 feet of Building 695 Complex. There are groundwater monitoring wells located at several locations within the ANAD around closed disposal sites, and withdrawal wells at three groundwater treatment facilities. None of the monitoring or withdrawal wells are located in the vicinity of Building 695 Complex.

Storm drainage from upslope areas is diverted around Building 695 Complex by the use of berms, swales, and ditches, thereby preventing any run-on. Storm drainage from the roof and paved areas is directed to catch basins and storm sewers and discharged north of the building using a combination of swales, ditches, and culverts. The runoff is directed to existing offsite drainage courses. Runoff at ANAD is controlled by three prominent

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[2] All drawings are located at the end of this section.

drainage divides that divert surface water into drainage basins occupied by Choccolocco Creek to the east and south, Cane Creek to the north, and Blue Eye Creek to the west.

The small community of Bynum is located on the ANAD's southern boundary. The remaining three boundaries are adjacent to sparsely populated areas. The northern boundary is Pelham Range, a wooded operational and training area that is licensed to the Alabama National Guard. Lightly populated rural lands border the eastern and western boundaries.

IV J B-3 Location Information

ADEM Admin. Code r. 335-14-8-.02(5)(b)11

IV J B-3a Floodplain Standard

ADEM Admin. Code r. 335-14-5-.02(9)(b), and 335-14-8-.02(5)(b)11(iii)

ANAD is located in Calhoun County in northeastern Alabama within the valley and ridge province of the Appalachian Highlands. The ANAD occupies 15,246 acres of land. None of the land within 1,000 feet of Building 695 Complex is in the 100-year floodplain.

IV J B-4 Traffic Information

ADEM Admin. Code r. 335-14-8-.02(5)(b)10

The transport of WMM is described in Section IV B-5 of this permit Application.

The locations of the roads connecting Building 695 Complex to the ANAD ALA are shown in Figure IV J-1. All main access routes to Building 695 Complex are paved, all-weather roads meeting Department of the Army (DA) road design standards. Construction of ANAD roads meet the technical requirements contained in Army Technical Manuals (TM) 5-822-2 and TM 5-822-5. The roads have 10-foot wide lanes with a minimum cross-slope of 2 percent and 6-foot wide gravel shoulders with a minimum cross-slope of 6 percent (all roads in the ALA do not have a 6-foot shoulder).

IV J B-4a Description of Existing Roads

The largest portion of the ANAD is used for munitions storage and, therefore, has only minimal traffic. The ANAD road system consists of 113 miles of paved roads and 104 miles of unpaved roads with most of the unpaved roads located in the Ammunition Restricted Area and Munition Demolition Area. The unpaved roads range from 16 to 22 feet wide and the paved roads are generally 22 feet wide, although some are as wide as 24 feet.

IV J B-4b External Access

The major highways serving the ANAD are I-20 and U.S. 78, running east and west, and U.S. 431, running north and south. The main access to the ANAD is from Alabama State Highway 202 by way of a 24-foot wide concrete road with 10-foot shoulders through the Main Gate. This road is used by most employees and by commercial trucks. Commercial trucks may also access through Gate 5A via the Morrisville Road on the north side of the ALA. Eastbound employees exit through the Eulaton Gate. All other gates are normally

closed to traffic. The movement of hazardous waste leaving ANAD is typically through the Main Gate or Gate 5A.

Approximately 4,200 vehicles enter and leave the ANAD each day. In addition, approximately 6,500 truck shipments are processed at the ANAD each year. Essentially, all civilian and truck traffic occurs on weekdays.

IV J B-4c Traffic Control

Traffic on the ANAD is controlled by several means:

- All major road intersections have traffic control lights, check gates, or stop signs.
- All secondary road intersections have stop signs or yield signs.
- Speed limits are well posted.

Civilian federal employee guard forces regularly patrol all traffic ways and enforce traffic regulations.

IV J C WASTE CHARACTERISTICS

The chemical and physical characteristics of the wastes that are managed at the SDC are discussed in this section. Section IV J C-1 describes the chemical and physical properties of the wastes to be processed in the SDC. Section IV J C-2 presents the Waste Analysis Plan (WAP) that details the methodologies for sampling, testing, and evaluating all wastes generated from the treatment process to ensure that sufficient information is available for their proper characterization and safe management. This information is also used to ensure that all wastes are treated IAW best-demonstrated available technology (BDAT) to maintain compliance with the land disposal restrictions (LDR). Section IV J C-3 addresses waste analysis requirements pertaining to LDR.

IV J C-1 Chemical and Physical Analysis

ADEM Admin. Code r. 335-14-5-.02(4), and 335-14-8-.02(5)(b)2

The SDC will be used to thermally treat WMM or waste material contaminated with energetics. Other wastes that may be generated and treated include PPE, dunnage, rags, towels, mops, and sampling equipment.

Table IV J-1[3] and IV J-4 identify each known and potential hazardous waste managed or generated at the SDC along with the appropriate analysis method for determining RCRA hazardous waste designation, EPA waste codes, RCRA regulatory citation for the relevant definition or criteria for designating the waste as hazardous, and specific data or rationale relating the waste to the respective criterion or definition. Specific physical and chemical information on the wastes managed or generated at the SDC are provided in Section IV J C-1a.

Illumination, smoke, phosphorous items, other such items, and other WMM, to include recovered WMM, are also available for destruction within the SDC. Detailed information for each of these types of items not addressed in Section IV C, as applicable, will be assessed per feed event to ensure compliance with limitations demonstrated as a result of the emissions tests conducted at the SDC. WMM may be properly categorized using the Munitions Items Disposition Action System (MIDAS), Material Assessment Review Board (MARB), or other appropriate source of data for the munition type. These systems identify the constituents contained within WMM found in the demilitarization stockpile, including recovered WMM, and allow for accurate characterization for control of feed parameters for the operation of the SDC. For items not listed in Sections IV J C or IV C, concurrence for processing will be received from both ADEM Air and Land divisions prior to processing within the SDC.

[3] Reference Table IV J-4 for more details.

IV J C-1a Volume and Composition of Waste in Miscellaneous Treatment Units

ADEM Admin. Code r. 335-14-5-.24(2), and 335-14-8-.02(14)

The volume of WMM treated at the SDC fluctuates based on the disposal needs of the Department of Defense (DoD). The SDC system is designed to accept a maximum gross weight of up to 330.7 pounds (lb) per feed event including the feed tray. The explosive capacity for the SDC is up to:

- 6.7 lb of mass detonating explosive material (TNT equivalent, Net Explosive Weight [NEW]), or
- 23.0 lb of non-mass detonating explosive material per feed cycle.

For the purposes of destruction in the SDC most Class 1.1 materials that are not confined and Class 1.2 and 1.3 materials confined or unconfined are considered non-mass detonating as they typically deflagrate in the SDC. Exceptions are the primary Class 1.1 explosives, which normally mass detonate whether confined or not. The NEW of a munition represents the combined explosive weight of all energetics contained in a munition item or items. Section IV C of the ANAD RCRA Permit Application includes detailed information about WMM and any associated breakdown products.

IV J C-1a(1) Fill Materials

The munitions treated in the SDC operations may contain fill materials, such as riot control agents, tear gas, smokes, illumination mixtures, phosphorous mixtures, etc. The Army recognizes the toxic nature of these fill materials and the need to implement strict and conservative management practices to facilitate effective processing at minimal risk to human health and the environment. Therefore, the Army is minimizing the handling of these wastes by limiting handling to designated locations and by employing, where possible, automated handling and conveyance systems. Section IV C of the ANAD RCRA Permit Application includes detailed information about the fill materials and any associated breakdown products.

IV J C-1a(2) Explosives and Propellants

The explosives, propellants, and related compounds are not tested prior to or during processing. These materials were manufactured and loaded IAW strict government specifications and standards; therefore, sufficient information is available on their composition. Data available from manufacture and quality control for these materials have been used with engineering knowledge to characterize and to develop and assess effective treatment processes. Detailed information concerning explosives and propellants can be found in Section IV C of the ANAD RCRA Permit Application. Examples of the various explosives and propellants that are contained in the WMM demilitarized at the SDC are identified in Table IV J-4 or are identified in Section IV C of the ANAD RCRA Permit Application. For items not listed in Section IV C, detailed product composition will be reviewed prior to treatment within the SDC to ensure compliance with established limitations.

IV J C-1a(3) Wastes Contaminated with Energetic Material

Demilitarization of WMM is typically performed using mechanical equipment which may come in contact with energetic components of the WMM. This process can leave a portion of the energetic material affixed to the equipment which in turn requires cleaning to ensure that subsequent operations are conducted safely. Cleaning of the equipment or tools used to demilitarize WMM therefore will generate items such as PPE, rags, mops, etc. that will potentially be contaminated with energetic material. The SDC is capable of processing these items, under approved feed limitations based on characterization of the material, to ensure that the energetic material is destroyed prior to release of the resultant ash or process waste for disposal.

IV J C-1b Containerized Waste

The storage of WMM is addressed as container storage with regards to the hazardous waste regulations [ADEM Admin. Code r. 14-5-.09 and 14-8-.02(6)]. Refer to Section II of the ANAD RCRA Permit Application for further detail on container storage of hazardous waste.

Waste material collected post-treatment at the SDC is containerized and removed from the units, managed, and disposed. These materials include, but are not limited to, scrap metal, dust material from the buffer tank, cyclone, and dust collection system, spent bag house material, salts from water recycle system, and filter units from the exhaust filter. Waste material may be temporarily stored at an appropriate hazardous waste storage location at ANAD prior to disposal offsite or treatment onsite.

Sections IV J C-1b(1) through IV J C-1b(5) discuss the major waste streams to be containerized.

IV J C-1b(1) Treated Scrap Material from the SDC

Waste resulting from emptying the SDC consists mainly of scrap metal from munitions processing and over-packs which have been treated. Treated materials that are discharged from the SDC may be fed back into the system for reprocessing if necessary. Inorganic waste material may remain as a dust from treatment of feed trays, munition boxes (if fed with the munitions), or waste contaminated with energetics. This waste can be characterized as scrap after cooling to room temperature. The scrap is a mix of the above fractions. The content of the fractions may differ depending on the type of material initially fed to the SDC.

Excess scrap material is collected, visually inspected, certified as "free of explosive hazard", and sent to the DRMO onsite for further management and recycling or disposed of IAW applicable regulations.

IV J C-1c Waste in Tanks

There is no waste stored in tanks at the SDC; therefore the requirements for this section are not applicable.

IV J C-1d Waste in Piles

ADEM Admin. Code r. 14-5-.12(c)1

The SDC will not have waste piles; therefore the requirements for this section are not applicable.

IV J C-1e Landfilled Wastes

ADEM Admin. Code r. 14-8-.14

The SDC will not have landfilled wastes; therefore the requirements for this section are not applicable.

IV J C-1f Waste Used in Performance Tests

ADEM Admin. Code r. 14-8-.06(2)(b)2.(i)

Various physical and chemical properties of fill materials, explosives and propellants are summarized in Section IV C. Information on each of the materials used in performance tests may be found in the respective SDC Emissions Test Report.

The SDC conducted emissions testing for conventional WMM (Condition 1) from December 3 to 7, 2010, surrogates and metal oxides (Condition 2) from February 1 to 4, 2011, and (Condition 3) from February 8 to 9, 2011, mustard at a reduced feed rate (Condition 4a) from July 5 to 8, 2011, and mustard-filled munitions (Condition 4b) from August 9 to 13, 2011. A confirmatory emissions test was conducted using conventional WMM and surrogates on February 25 to 27, 2014. The most recent emissions test was conducted March 22 to March 25, 2017. This most recent emissions test was a comprehensive emissions test to verify performance results demonstrated in 2011.

IV J C-1g Miscellaneous Components

Please refer to Section IV C for miscellaneous components.

IV J C-1h Hazardous Waste Treatment

The SDC may also process hazardous waste in the form of recovered WMM or other items associated with the management of recovered WMM and components that may be classified as hazardous waste. Waste to be treated in the SDC:

WASTE INPUT

1. WMM, including liquid filled, and/or recovered items
2. Explosives and Propellants
3. Fuzes and Bursters
4. Miscellaneous solid and liquid waste, including waste material contaminated with energetics

TREATMENT RESIDUE

1. Scrap metal

2. Ash
3. OGT System Solids (spent carbon, high-efficiency particulate air (HEPA) filters, and pre-filters) and liquids

Any items classified as hazardous waste should arrive under manifest at the ANAD or SDC. If manifests accompany items to be processed, appropriate records to include final copies of the manifest will be returned to the necessary agencies upon receipt and completion of the treatment process.

Hazardous wastes to be processed in the SDC will be characterized using available government sources of information such as the MARB, MIDAS, or other source of information relative to the items being processed. These actions will be completed to ensure that the feed control for any items processed is allowed under the approved feed rates for the SDC. Characterization of waste material contaminated with energetics will be based on generator knowledge of the energetics to which the item was exposed.

IV J C-1i Waste to be Land Treated

ADEM Admin. Code r. 14-5-.13(3)(a) and 14-5.13(3)(c)1.(i)

The SDC has no land treatment units; therefore, the requirements of this section are not applicable.

IV J C-1j Wastes in Miscellaneous Treatment Units

ADEM Admin. Code r. 14-5-.24(2) and 14-8-.02(14)

The SDC is a miscellaneous treatment unit used for processing WMM. Military munitions are defined in ADEM Admin. Code r. 335-14-1-.02. These munitions require disposal because the ANAD has determined that they cannot otherwise be reused or recycled. These military munitions become WMM when removed from the various storage igloos at ANAD and offered for disposal at the SDC.

Section IV C of the ANAD RCRA Permit Application contains detailed information about WMM and any associated breakdown products.

IV J C-2 Waste Analysis Plan (WAP)

ADEM Admin. Code r. 335-14-5-.02(4)(b) and (c), 335-14-5-.02(8), 335-14-8-.02(5)(b)3, and 335-14-9-.01(7)

The following sections address the various components of the SDC-specific WAP. These components include: analytical parameters and the rationale for their selection, test methods, sampling methods, frequency of analyses, additional requirements for wastes generated offsite, and additional requirements for ignitable, reactive, or incompatible wastes. In effect, the WAP delineates the waste parameters that are determined prior to treatment of waste during SDC operations. Waste streams from the operation of the SDC include, but are not limited to, scrap metal, ash, dust material from the buffer tank, cyclone, and dust collection system, spent bag house material, salts from water recycle system, filter units from the exhaust filters, OGT brines, and sludges. Other miscellaneous wastes that

may be generated include PPE, dunnage, rags, towels, mops, cardboard dunnage, banding / box hardware, and sampling equipment.

The Army is using production knowledge, quality assurance and analytical data, and engineering judgment to characterize wastes processed in the SDC. The Army is both the WMM manufacturer and SDC owner. The SDC was engineered to achieve the treatment requirements for WMM treatment and is operated with attention directed to minimizing the risk associated with all WMM activities conducted at the SDC.

IV J C-2a Parameters and Rationale

ADEM Admin. Code r. 14-5-.02(4)(b)1

The analytical parameters and rationale for their selection are described by waste category in the paragraphs below and have been divided into three groups – solids, liquids, and sludges. This information is summarized in Table IV J-1[4].

IV J C-2a(1) Solids

IV J C-2a(1)(a) Ash from Treated Scrap Material from the SDC

This waste stream consists of ash from metal munitions and miscellaneous parts that have been thermally treated in the SDC. A grab sample will be collected from the residue of waste streams processed for the purposes of characterization and profile development. During clean out activities, a composite sample will be collected from the total amount of residue generated and characterized unless a profile exists for the wastes that had been processed prior to cleanout. The residues will be analyzed for Toxicity Characteristic Leaching Procedure (TCLP) organics and metals. The disposal requirements will be based on the analysis results.

IV J C-2a(1)(b) Dust Material from the Buffer Tank, Cyclone, and Dust Collection System

Dust material is generated during regular operation of the SDC and during maintenance activities associated with the buffer tank, cyclone, and dust collection equipment. A grab sample will be collected from the residue of each waste stream processed for the purposes of characterization and profile development. During clean out activities, a composite sample will be collected from the total amount of residue generated and characterized unless a profile exists for the wastes that had been processed prior to cleanout. The residues will be analyzed for TCLP organics and metals. The disposal requirements will be based on the analysis results.

IV J C-2a(1)(c) Spent Solids from the Bag House Filter

The bag house is utilized for particulate and semi-volatile metal collection. A grab sample will be collected from the spent solids for the purposes of characterization and profile development. During clean out activities, a composite sample will be collected from the

[4] All tables are located at the end of this section.

total amount of residue generated and characterized unless a profile exists for the wastes that had been processed prior to clean out. The residues will be analyzed for TCLP organics and metals. The disposal requirements will be based on the analysis results.

IV J C-2a(1)(d) Salts from Water Recycle System

This waste stream comes from the water recycling operation (acid and neutral scrubbers) and consists of residual salts with collected dust particles. A grab sample will be collected from the residual salts for the purposes of characterization and profile development. During clean out activities, a composite sample will be collected from the total amount of residue generated and characterized unless a profile exists for the wastes that had been processed prior to clean out. The residues will be analyzed for TCLP organics and metals. The disposal requirements will be based on the analysis results.

IV J C-2a(1)(e) Exhaust Filter Units

This waste is comprised of prefilters, HEPA filters, and carbon filters from the exhaust filter system. The filter system is designed as a backup for the OGT System. Due to the efficiency of the particulate removal devices upstream of this filter unit, it is not expected that this system will ever be exposed to pollutants that will require filter replacement. In the event the filters are replaced, spent filt ers will be properly stored in containers and analyzed for TCLP organics and metals. The disposal requirements will be based on the analysis results.

IV J C-2a(1)(f) Explosives and Propellants

The explosives, propellants, and related compounds are not tested prior to or during processing. These materials were manufactured according to strict government specifications and standards; therefore, sufficient information is available on their composition. Data available from the manufacturer and quality control for these materials have been used with engineering knowledge for proper characterization and to develop and assess effective treatment processes. Detailed information concerning explosives and propellants can be found in Section IV of the ANAD RCRA Permit Application.

IV J C-2a(1)(g) Miscellaneous Solid Waste

Miscellaneous solid waste includes, but is not limited to, valves, pumps, gearboxes, conveyors, belts, piping, hoses, flanges, thermocouples, pH probes, nuts, bolts, gaskets, and other waste removed from the SDC equipment or generated during operation of the SDC. Miscellaneous solid waste will be characterized by generator knowledge and/or analysis. Analysis may be limited to a particular hazardous waste code or series of codes, such as TCLP metals, or it may be extensive as necessary to adequately characterize and profile the waste. The disposal requirements will be based on the analysis results.

IV J C-2a(1)(h) Refractory Material

Refractory material from the thermal oxidizer exit duct may be periodically removed and replaced. A batch consists of all the refractory material removed during one periodic change out. Each batch of discarded refractory material will be analyzed for TCLP metals. Table IV J-1 details the analyses that may be needed for sufficient characterization and the associated disposal requirements. The disposal requirements are based on the analysis

results.

IV J C-2a(2) Liquids

IV J C-2a(2)(a) OGT System Brines

OGT System brines are generated from the treatment of munitions in the SDC. A composite sample will be analyzed for TCLP organics and metals and pH to properly characterize the brine. The disposal requirements will be based on the analysis results.

IV J C-2a(2)(b) Miscellaneous Liquid Waste

Miscellaneous liquid waste such as, but not limited to, clean up fluids, reserve flush tank solution, hydraulic fluid, and lubricating oil will be generated periodically during operations at the SDC. This waste stream is typically characterized by generator knowledge. Miscellaneous liquid waste that is not characterized by generator knowledge will be analyzed for TCLP organics and metals and pH for proper characterization with the exception of the process fluids from the reserve flush tank. The disposal requirements will be based on the analysis results.

IV J C-2a(3) Brine Sludges

Brine sludge generated from the operation of the OGT System will be tested for TCLP organics and metals and pH for proper characterization. The disposal requirements will be based on the analysis results.

IV J C-2b Test Methods

ADEM Admin. Code r. 335-14-5-.02(4)(b)2

Process knowledge during waste treatment will be incorporated to obtain the necessary chemical and physical information to properly treat reactive hazardous wastes at the SDC. The methods used to test the parameters for WMM treated and treatment residues are described in Table IV J-2 of the ANAD RCRA Permit Application.

IV J C-2c Sampling Methods

ADEM Admin. Code r. 335-14-5-.02(4)(b)3 and 335-14-2, Appendix I

Sampling, when required, will be performed IAW Tables IV J-1 and IV J-2.

IV J C-2d Frequency of Analysis

ADEM Admin. Code r. 335-14-5-.02(4)(b)4

Frequency of analysis will be performed IAW Tables IV J-1 and IV J-2.

IV J C-2e Additional Requirements for Wastes Generated Offsite

ADEM Admin. Code r. 335-14-5-.02(4)(a),(b) and (c), 335-14-5-.02(5), and 335-14-5-.05(4)(a) and (b)

Only WMM that are permitted for treatment at the SDC will be accepted from off-site DoD facilities. WMM shipments to ANAD are coordinated well in advance with Anniston Munitions Center (ANMC) Ammunition Maintenance Division (AMD). WMM shipments to ANAD are characterized by the generating activity and accompanied by an EPA shipping manifest or appropriate DoD shipping controls as defined by the MMR. The generating activity will provide all necessary information, including National Stock Number (NSN) and DoD Identification Code. No unknown wastes or unidentified wastes will be accepted.

IV J C-2f Additional Requirements for Ignitable, Reactive, or Incompatible Wastes

ADEM Admin. Code r. 335-14-5-.02(4)(b)6 and 335-14-5-.02(8)

The majority of hazardous wastes treated at the SDC are reactive (D003). Some of the wastes may be ignitable (D001) as well. These characteristics are the primary RCRA characteristics of concern. Therefore, the waste characterization procedures were developed considering the reactivity, ignitability, and potential incompatibilities of munitions/explosives. There are no additional waste characterization requirements to be addressed.

IV J C-3 Waste Analysis Requirements Pertaining to Land Disposal Restrictions (LDR)

ADEM Admin. Code r. 335-14-9, 335-14-8-.02(5)(b)3, 335-14-5-.02(4)(a)1, and 335-14-5-.02(4)(b)6

The Hazardous and Solid Waste Amendments of RCRA prohibit land disposal of certain types of wastes and establish concentration limits and treatment standards for certain restricted wastes before land disposal. Information provided in this section describes the identification, characterization, documentation, and certification of wastes that are subject to LDR.

The SDC treats reactive hazardous wastes onsite to remove the reactivity characteristic. The WAP (Section IV J C-2) is designed to provide all information required to comply with the LDR in the event that tests of the SDC treatment residues show the residues are hazardous based on TCLP testing results.

Treatment residue from the SDC unit will be analyzed to determine whether it is a hazardous waste due to exceeding a toxicity characteristic constituent limit. These analyses are also used to determine whether federal LDR treatment standards are met. Treatment residue is analyzed by TCLP to determine whether the treatment standard for toxicity characteristic metals and organic waste are exceeded. Additional analyses of the residues for reactivity are not required because all reactive material is destroyed in the treatment process.

If the treatment residue does not meet the LDR treatment standards for toxicity characteristic metals or organics, with each shipment of waste, ANAD will notify, in writing, the facility receiving the waste of the appropriate treatment standards.

IV J C-3a Waste Characterization

ADEM Admin. Code r. 335-14-9-.01(7)

Wastes to be managed during SDC operation are characterized as described in Sections IV J C-1 and IV JC-2. The information provided by this characterization allows for determinations of LDR applicability and compliance with LDR treatment standards, concentration limits, or notification and certification requirements for LDR constituents and underlying LDR constituents. Specific analysis required to determine whether the waste is an LDR restricted waste and whether the waste is being managed properly under the land disposal requirements of ADEM Admin. Code r. 335-14-9 are discussed in this section.

The following paragraphs describe the analysis requirements pertaining to LDR regulations for each waste stream.

IV J C-3a(1) Treatment Residues and Other Miscellaneous Wastes Generated

Treatment residue from the SDC is limited to waste such as ash and metal fragments. These materials are generated as dry solids, with the exception of OGT System fluids (brine), and containerized properly for temporary storage. Other miscellaneous waste may be characterized based on generator knowledge and/or analysis. Disposal of these items will be based on analysis results or IAW applicable regulation.

IV J C-3a(2) Explosives and Propellants

The explosives and other energetic components of the munitions, as described in Section IV J C-1, are characterized as reactive wastes (D003).

In addition to the reactivity characteristic (D003), wastes treated at the SDC may also be classified as hazardous due to the hazardous characteristics of ignitability (D001), corrosivity (D002), and/or toxicity codes based on munition type.

Other waste codes associated with WMM or components of WMM have been included in Section I Part A of the ANAD RCRA Permit Application. Section IV C of this application includes detailed information about WMM and any associated breakdown products.

For the reactive waste code D003, the applicable treatment standard is deactivation and requires meeting the concentration limits in ADEM Admin. Code r. 335-14-9 for underlying hazardous constituents. Disposal of these items will be based on analysis results or IAW applicable regulation.

IV J C-3b Notification and Certification Requirements

ADEM Admin. Code r. 335-14-9-.01(7)

The SDC may be a generator of wastes subject to LDR. ANAD will comply with all generator notification requirements applicable to SDC operations including a notification IAW ADEM Admin. Code r. 335-14-9-.01(7). All supporting data and waste analysis data will be retained for a period of at least 3 years. Copies of all notices, certifications, demonstrations, and other documentation produced to support the determination for restricted waste treated, stored, or disposed of at an approved hazardous waste Treatment Storage and Disposal Facility (TSDF) will also be retained.

IV J C-3c Requirements Pertaining to the Storage of Restricted Wastes

ADEM Admin. Code r. 335-14-9-.05

The SDC does not store restricted waste.

IV J C-3d Exemptions, Extensions, and Variances to Land Disposal Restrictions

ADEM Admin. Code r. 335-14-9-.01(5) and (6), and 335-14-9-.04(5)

The applicant is not seeking any case-by-case extensions, or petitions to allow land disposal of a prohibited waste, or variances from treatment standards.

IV J C-4 Waste Transportation and Offsite Treatment, Storage, and Disposal

ADEM Admin. Code R.-14-3

All waste disposed offsite will be transported offsite and disposed IAW applicable regulations. Information concerning transportation procedures for hazardous waste can be found in Section II B-5.

IV J D MISCELLANEOUS UNITS

ADEM Admin Code r. 335-14-5-.24(1) to (4) and 335-14-8-.02(14)

Section IV J D, addresses the treatment of WMM inside the SDC at ANAD. This section describes the SDC treatment processes. The SDC does not fit the definition for other types of treatment units and is therefore categorized as a miscellaneous treatment unit under RCRA.

IV J D-1 Description of Miscellaneous Unit

ADEM Admin. Code r. 335-14-8-.02(14)(a)1 and 335-14-8-.02(14)(a)2

The SDC unit is designed to destroy WMM which are either explosively or non-explosively configured. The SDC does not require the use of explosive donor or counter charges to destroy munitions. The unit is able to handle various types of munitions. Generally, changes in munition feeds do not require reconfiguration of the system, and the system can handle mixed feeds. Munitions that have been over-packed can be processed without being removed from the over-pack container. If a munition contains smoke, illumination mixtures, white phosphorus, or a fuze, these are destroyed at the same time that the explosive is destroyed. The unit is designed and built in such a way as to eliminate worker or public exposure to explosive or environmental hazards at any time during operations, and to produce products that are environmentally acceptable. The system is designed with interlocks and redundant systems where required, for safety and to prevent release of untreated products.

A description for the SDC, including service magazines and storage igloos, is presented in Section IV J D-1b. Photographs of the SDC Unit are presented as Figures IV J-7 through IV J-12 at the end of this Section.

IV J D-1a Physical Characteristics

ADEM Admin. Code r. 335-14-8-.02(14)(a)1

This section describes the physical characteristics of the SDC. The layout of the SDC is shown in Figure IV J-6[1]. The conceptual design of the SDC is discussed below.

The SDC and service magazines are located on the west side of G block and just north of the Demolition Pit road and next to Building 695. The storage igloos are located in G block. For safety, buildings not associated with SDC operations are at least 1,250 feet from the SDC. The SDC is also 1,200 feet from the nearest storage igloo in G block. Access roadways are provided for trucks, buses, forklifts, and service vehicles. Access roads are provided to G block on the east and to the emergency egress road on the west. Refer to Section IV J B for a detailed description of the location of the SDC.

[1] All figures are located at the end of this section.

The SDC unit is contained in a sprung structure, which is an engineered stress membrane structure. The sprung structure is constructed of extruded aluminum arches, connected to an all-weather outer membrane which will cover the loading area, SDC equipment, and OGT equipment. Neither the sprung structure nor its ventilation system are required for treatment of WMM.

The SDC System is designed and built as a mobile system, able to be transported over road, rail or by sea using containers which are configured as standard ISO specification containers. Each container is equipped with a frame, and with dimensions and lifting points per ISO standards and contains parts of the SDC System preconfigured and installed, ready to place and bolt together with a minimum of connections. The unit remains installed within the containers for use. Installation of the system occurs at the point of use. The various containers are received at the location and placed in the proper location using a crane. Once in place the containers are bolted together into a rigid structure using rigid connectors, and then the inter-container process piping and electrical connections are made. All electrical connections are brought to one junction box per container to facilitate connections and plug in connectors are used to the extent possible. Process piping interconnectors are flange type prefabricated junctions, and piping meant to contain potentially hazardous materials are double wall construction. Where required, expansion joints are provided in the process piping to accommodate temperature swings. The process for erection is as follows:

a) Containers are unloaded and placed according to the erection plan;
b) Side walls are removed for easy access where not necessary;
c) Necessary stairs and platforms are connected;
d) Process connections are made between the containers;
e) Power and bus cables are connected;
f) Cameras and PA speakers external to the containers are mounted;
g) Sprung structure is erected, filters connected, external cameras mounted;
h) Consumables are connected with flexible double wall hose to the process containers;
i) Electrical and process checks are performed according to a defined check list; and
j) Leakage test is done for the whole system before start up.

An exhaust filtration unit, though not required for WMM operations, may be connected to the sprung structure to provide negative pressure within the structure with respect to the outside. The minimum footprint for sprung structure is 70 x 100 feet. The footprint may be adjusted for ancillary equipment outside of the sprung structure (e.g., generators, carbon filtration units, airlocks, control room, waste water treatment, etc.).

The SDC System is contained within a series of containers which are trucked to the site and placed using a crane. After placement, the sprung structure was erected around the system which acts as a tertiary containment (primary containment is afforded by the system itself, and secondary containment is afforded by the ISO containers). For processing mustard

munitions the tertiary containment is kept under negative pressure by a series of activated carbon/HEPA filters attached to ID fans. Blast protection panels are incorporated into the sea containers as necessary. The SDC loading container, detonation chamber container and scrap bin container are located in three sea containers which are stacked one on top of the other for operations. The OGT System is housed in another three containers with additional containers for the loading and scrap handling operations, and two electrical switchgear utility containers.

IV J D-1a(1) Munitions Limitations

In addition, all types of explosive containing material can be processed in the system as long as the following boundary conditions per feed cycle are not exceeded:

- Chlorine < 11.1 lb,
- Sulfur < 6.3 lb,
- Mass Detonating Explosives < 6.7 lb (TNT equivalent),
- Non-Mass Detonating Explosives < 23.0 lb (TNT equivalent),
- No shape charges unless shape charge function is defeated prior to feeding, and
- Overall weight < 330.7 lb (including feed tray).

All feed events (e.g., miscellaneous solid waste, dunnage, process fluids) will be bound by the feed rates contained in the RCRA Permit.

IV J D-1a(2) Description of the Service Magazines and Storage Igloos

Each service magazine is an earthen covered steel reinforced concrete structure and located within Building 695 Complex. The structure is 29 feet deep and 17 feet high and ~ 170 feet wide and is divided into three sections (712, 713 and 714).

The storage igloos are also steel reinforced concrete structures that vary in size and dimension. Each of the igloos are sized and rated by DDESB to store significantly more explosive material than the service magazines and will serve as the primary storage for munitions per the MMR and WMM prior to being offered to the SDC for treatment. The igloos are also being permitted to allow for storage of hazardous waste material contaminated with energetics that is delivered for treatment at the SDC from DoD facilities and for storage of recovered WMM that have been declared as hazardous waste. The SDC-dedicated service magazines are designated as 712, 713, and 714. The SDC-dedicated storage igloos which may be used for storage are as follows:

G-102	G-202A	G-308A	G-505A	G-603A
G-102A	G-203A	G-404A	G-506A	G-604
G-103	G-206A	G-405A	G-507A	G-604A
G-104	G-208A	G-408A	G-508A	G-605
G-105	G-209A	G-502A	G-602	G-605A
G-108A	G-306A	G-503A	G-602A	G-606
G-200A	G-307A	G-504A	G-603	

IV J D-1a(3) Fire Protection

The Fire Protection System is an automatic sprinkler system that complies with the requirements as stated in United Fire Code 3-600-01 (6-10.5), Table 4-1 for Ordinary Hazard Group 2.

IV J D-1a(4) Utility System

A 1,500 kilovolt-amperes, pad-mounted transformer is used to supply electrical power to the SDC. Natural gas is used to heat the thermal oxidizer. Water is received from ANAD via pipeline and distributed to points of consumption throughout SDC. The system also supplies water to the required process systems.

IV J D-1b Process Descriptions

ADEM Admin. Code r. 335-14-8-.02(14)(a)2

The loading area is where munitions are placed in ammunition trays and loaded onto the loading conveyor. The loading conveyor is designed to accept multiple trays prior to any conveyor transfer. After the loading conveyor is loaded, it moves one tray at a time to the lift. The lift then transfers the tray to the level of the first loading chamber (LC1). From the lift, the item is then transferred to the apron of LC1. All trays must be configured to pass through the 18.1 inches in diameter opening of the SDC.

At this point the loading system pauses until the Control Room (CON) Operator (CRO) initiates staging of a tray into LC1. All movements from the loading conveyors to LC1 are automatic. However, the CRO has full control of all movements and can abort or reverse the movements as required. The loading conveyors and lift are also equipped with guides, interlocks, and sensors that prevent misalignment of trays or other problems and will halt movements automatically if problems arise.

Staging of a tray consists of deflating a pneumatic seal in the gate leading to LC1 and then raising the gate. An electrically operated ram, equipped with sensors to detect misfeeds and other problems, pushes the tray into the LC1 and then retracts. The gate is lowered and pneumatic seal inflated forming a gas-tight boundary. Staging of a tray into LC1 can occur while the previous tray is being processed in the DC.

When conditions are verified acceptable for initiating feed to the DC, the CRO initiates the loading sequence for staging the next tray into the second loading chamber (LC2). The actions of transferring a tray to the DC are automatic but are monitored in the CON and can be manually interrupted. The seals on both sides of the gate leading to LC2 are deflated and the gate is raised. The hydraulically operated ram pushes the tray into a cradle located in LC2 and then retracts. The gate leading to LC2 is lowered and the seals on both sides of the gate are inflated. This gate is rated to withstand blast pressures of the DC.

If needed, LC1 may then be filled with flush tank solution to ensure that no air which may contain contamination remains. Air displaced by this operation is fed to the DC for treatment. Flush tank solution may either be fed into the DC for treatment or recycled back to the reserve flush tank for re-use.

The cradle and fragment valve within LC2 move as one unit but are located perpendicular to each other. With the cradle in position to receive a tray, the fragment valve is located over the opening to the DC. When a tray is placed in the cradle, hydraulic pressure is released off the fragment valve and the cradle/fragment valve assembly rotates 90 degrees (°) and dumps the tray into the DC. The cradle/fragment valve assembly is then rotated back into position. A hydraulic piston exerts pressure on the fragment valve to hold it in place during detonation/deflagration in the DC.

Upon entering the DC, the munitions are heated resulting in a detonation and/or deflagration. The increase of pressure within the munition casing caused by the ambient heat of the DC alone is adequate to open the munition case and destroy fill material without the presence of explosives.

Detonations within the SDC occur inside a detonation chamber (DC). The DC consists of an upper portion (UDC) which is fixed to the loading system and a lower portion (LDC) which can separate from the UDC. During detonation, the UDC and LDC portions of the DC are sealed by means of a locking ring, rope gasket, and six seals (three on the top side of the locking ring, sealing to the UDC, and three underneath the locking ring, sealing the LDC). The seals may consist of rubber gaskets, rope gaskets, pneumatic seals, or other similar seal/gasket.

To empty the DC, the locking ring is partially twisted to free the LDC. The LDC can then be lowered and tilted to empty the scrap. Following scrap removal, the LDC is returned to the upright position and raised. The locking ring is twisted in the opposite direction to lock the UDC and LDC together.

The LDC contains electric heaters to maintain the DC at high temperatures. Both the UDC and LDC are constructed of heat resistant steel which can withstand the mechanical stress loads caused by detonation pressures at high temperatures. Inside the LDC, a fragment shield acts as a sacrificial plate to absorb impacts from fragmentation.

The OGT System consist of a buffer tank which absorbs pressure perturbations caused by blast waves within the DC, followed by an orifice or control valve which also helps to equalize the flow going to downstream components of the system. Following the orifice or control valve, the gas is heated to a minimum of 1,741 degrees Fahrenheit (°F) for at least 2 seconds.

Off-gases from the detonation and/or deflagration are further treated in the OGT System which is comprised of a thermal oxidizer, spray dryer, bag house filter, quench venturi, acid scrubber, and neutral scrubber. Off-gases received from the thermal oxidizer are cooled by a spray dryer followed by a baghouse to remove salts and particulates. The remaining contaminants are removed by the acid and neutralization scrubbers. The last step is a multistage exhaust filtration system, which acts as a safeguard to the OGT System prior to releasing the off gas to the environment.

IV J D-1b(1) Transportation of Material for Treatment

Transportation details for WMM to be treated at the SDC are discussed in Section IV B-5 and IV D-1k(3).

IV J D-1b(2) Equipment Descriptions

A detailed description specific equipment and systems included in the SDC is discussed in the following sections.

Conveyor System

The conveyor system is electrically powered and consists of a series of conveyors which transport the trays to the lift, a lift which elevates the trays up to LC1, and an electrical pusher which propels the trays into LC1.

Gate 1

Gate 1 is a hydraulically operated sliding gate located at the inlet to LC1. Gate 1 is sealed gastight with a pneumatic seal. An electric pusher propels the package into LC1.

Loading Chamber 1 (LC1)

LC1 is a staging location prior to LC2. If required, LC1 may be filled with a water-based flush tank solution after any loading sequence in order to evacuate gases for further treatment.

Gate 2

Gate 2 is a hydraulically operated sliding gate located at the inlet to LC2 from LC1. Gate 2 is sealed gastight with four pneumatic seals which are designed to withstand design blast pressures within the DC.

Loading Chamber 2 (LC2) and Cradle

LC2 has a built-in hydraulically powered cradle and fragment valve which move as a single unit.

With the cradle in position to receive a tray, the fragment valve is located over the opening to the DC. When a tray is placed in the cradle, hydraulic pressure is released off the fragment valve and the cradle/fragment valve assembly rotates 90° and dumps the tray into the DC. The cradle/fragment valve assembly is then rotated back into position. A hydraulic piston exerts pressure on the fragment valve to hold it in place during detonation/deflagration in the DC.

Upper Detonation Chamber (UDC)

The UDC is mounted to the outlet flange of LC2. Connections for incoming process air, outlet exhaust gases, temperature sensors, and pressure gauges are placed on the UDC.

Lower Detonation Chamber (LDC)

The LDC has an inner fragment shield and outer chamber. Electrical resistance heating elements are located on the LDC.

Elevating and Turning System
When emptying the LDC, it is first lowered by the hydraulically powered mechanical lifting jacks. The rotation of the LDC is made by a hydraulic motor, connected to the LDC by a gearbox and roller chain.

Locking and Sealing System
The UDC and LDC are locked to each other with a locking ring during destruction. The locking ring is maneuvered by two hydraulic cylinders. For the emptying procedure the locking ring is turned to the open position and the LDC is lowered and tilted. The connection between UDC and LDC is sealed during destruction.

Hydraulic Power Unit
The hydraulic power unit provides power to operate the lifting jacks, tilting motor, Gates 1 and 2, locking ring, and pushers. It also has a built in backup pump which is driven by the uninterrupted power supply of the SDC.

Scrap Chute and Scrap Conveyor
When removal of scrap material is required, the LDC is lowered and rotated so the scrap material can be transferred to the scrap conveyor via the scrap chute.

Scrap Conveyor System
Scrap Conveyors 201, 202, and 203 are vibration conveyors which use gravity to transfer material. The scrap conveyors are separated by gates and can be operated independently of each other. Dust is removed and collected in a drum between scrap conveyers 202 and 203 when the scrap passes over a wire mesh. Scrap Conveyor 203 allows visual inspections of WMM after treatment.

Detonation Chamber Air Heater
Air heaters are used to raise the temperature of the process air which is used to aid the destruction process.

Reserve Flush Tank
The reserve tank contains the water-based solution which may be used to Flush Loading Chamber 1 as needed after any loading sequence. Process air provides the needed pressure to drive the solution into loading chamber 1. When necessary, the solution can be emptied from Chamber 1 into the SDC for destruction. Otherwise it will be led back into the reserve flush tank.

Buffer Tank
The buffer tank is designed to smooth gas pressure and volume surges from the DC that occur when a munition detonates or deflagrates. By smoothing surges to downstream equipment, the equipment is better able to operate near optimum design flow rates which allows for a more consistent removal of contaminants. The buffer tank is comprised of a cone-bottom cylindrical tank made of stainless steel. The inlet and outlet of the tank is configured in such a way that the tank also acts as a cyclone, allowing the removal of large particles of ash and small metal fragments from detonations. These materials are collected in the bottom of the conical tank section. The bottom of the buffer tank has two slide valves

that operate pneumatically. These valves periodically open and solids are collected in a drum for disposal. The entire tank and associated piping are maintained at a predetermined temperature using electric heaters and insulation.

Orifice Plate and Control Valve

An orifice plate or control valve also helps to smooth the flow of gases presented to downstream equipment. The orifice plate is comprised of a sharp edged orifice located in a stainless steel metal plate which is in turn sandwiched between two pipe flanges. The control valve may be operated automatically to bypass the orifice. These components are replaceable if needed, and are also maintained at temperature using electric heaters and insulation. Alternatively, if processing temperatures become elevated the duct between the DC and the THO is equipped with a cooling system that is capable of lowering exhaust gas piping temperatures if needed.

Process Ventilation Cyclone, Filter, and Fan

The fan drives the process ventilation for the SDC. The cyclone and filter remove dust from the process ventilation. The dust is transferred to the air mainly from the scrap emptying sequence and the scrap conveyor system.

Thermal Oxidizer

The off gases resulting from the detonation/deflagration process in the DC are transferred to a thermal oxidizer. The thermal oxidizer is designed to accept all gases resulting from one feed cycle to the DC. The thermal oxidizer (and OGT System) is oversized for this peak flow and able to accommodate twice the flow that is anticipated.

The thermal oxidizer uses natural gas as a fuel to enable the development of the high temperatures required. The thermal oxidizer design is based on a retention time of a minimum of 2 seconds at greater than 1,741°F for the peak load expected from the upstream SDC. An additional flow of combustion air is automatically added to ensure an oxygen rich environment. The gases to be treated are fed tangentially via a ring system to ensure proper treatment of the contaminated gases.

Spray Dryer

The off gas from the thermal oxidizer is quickly cooled to ~ 350°F in the spray dryer by the injection of spent scrubber liquid into the gas stream. Evaporation of the spent scrubber liquid generates dry salts and particulates. The dry salts and particulates are automatically removed from the bottom of the spray dryer and collected in a container using a screw feeder and slide gate valve for disposal.

Bag House Filter

The bag house is comprised of a filter system which uses bags layered with sodium bicarbonate, or similar, as the absorbent to remove dust and heavy metals from the off gas. The ratio of the absorbent may be adjusted to fit the application. The absorbent is fed from a hopper by a pneumatic feed system to the outside of the bags providing a fresh surface to the incoming gases. Periodically when the pressure drop across the filter exceeds a predetermined set point, the bags are cleaned using a pulse jet and the spent solids are collected in a drum for disposal using a screw feeder and slide gate valve.

Quench Venturi

The quench venturi cools the off gas from ~ 350 to 170°F by injecting solution water from the acid scrubber. Any remaining solution water is cooled and recycled to the acid scrubber sump.

Acid Scrubber

The acid scrubber cools the off gas from ~ 170 to 150°F. The acid scrubber is designed where the scrubber liquid flows counter current to the gas flow. Dust is removed by washing out solid particles in the washing tower. Acid gases, volatile and semi-volatile heavy metals will also be removed from the off gas by dissolving in the scrubber liquid making it acidic.

The conductivity of the scrubber liquid is also monitored. Raising of conductivity is an indication of increasing dissolved salt content in the scrubber liquid. To counter act this, fresh water is added. Excess scrubber liquid is then transferred to the bleed water tank for mixing and pH correction.

Scrubber liquid is pumped from the bottom of the scrubber column to the top and distributed inside the column by a distribution pan. The off gas enters the column from a position located just above the column sump and streams from the bottom to top of the column. In order to ensure adequate mixing and contact between the liquid and gas, the column is filled with a column packing material. As a safeguard, the temperature of the off gas inlet is monitored. In case of a high temperature off gas, due to a spray dryer malfunction, an emergency water injection is used.

Neutral Scrubber

The neutral scrubber removes any residual contaminants that passed through the spray dryer and acid scrubber. The neutral scrubber has the same dimensions and is built using the same construction principles as the acid scrubber. The neutral scrubber operates with a parallel current gas liquid flow. To obtain a good material exchange between the gas and the liquid, the column is filled with a column packing material.

The scrubber liquid is monitored by a pH controller. Sodium hydroxide is used to maintain the proper neutral pH. The amount of scrubber liquid in the neutral scrubber is controlled by a level transmitter in the sump of the scrubber column.

To obtain a constant quality in the scrubber, spent scrubber liquid is periodically removed based on level and conductivity and sent to the spray dryer where it acts as a cooling agent. Scrubber liquid is refreshed by the addition of caustic solution as needed.

Induced Draft (ID) Fans

The two ID fans are located between the neutral scrubber and inlet to the safeguard filter. Should an ID fan fail, the other will automatically assume the load. The ID fans ensure that the pressure of the off gas in the thermal oxidizer is maintained below atmospheric pressure. The pressure is controlled by pressure transmitters. The speed of the ID fans is adjustable by a frequency controller. The ID fans work continuously during the operations.

Safeguard Filter
The safeguard filter system is an exhaust filtration unit. The exhaust filtration unit is designed as a series of filters built IAW the requirements by the U.S. Army's Chemical Demilitarization program. The function of the filter units is described below:

- Prefilter: Removes particulates remaining in the gas stream that may cause blinding or clogging of the downstream HEPA filter;
- HEPA Filter: Removes particulates down to 0.3 microns;
- Charcoal: Removes contaminants such as volatile and semi-volatile heavy metals;
- Charcoal: Serves as a backup for the first charcoal filter described above;
- HEPA Filter: Ensures that there are no emissions of potentially contaminated particulates released to the atmosphere.

The filter housings are made of stainless steel and equipped with differential pressure monitors on all filters to ensure adequate flow and to evaluate when a filter needs to be replaced. The safeguard filter system includes an ID fan to maintain negative pressure within system to protect against leakage.

Stack
The stack for discharge of cleaned gases meets the requirements of the American Conference of Governmental Industrial Hygienist (ACGIH) Industrial Ventilation Manual.

IV J D-1b(3) Monitoring

Continuous Emissions Monitoring Systems (CEMS) monitor the off gas for carbon monoxide and oxygen. The CEMS are located after the safeguard filter unit in the Monitoring House. CEMS monitoring is conducted IAW the SDC CEMS Certification Plan.

IV J D-1c Miscellaneous Unit Wastes

ADEM Admin. Code r. 335-14-5-.24(2)(a)1, 335-14-5-.24(2)(b)1, and 335-14-5-.24(2)(c)1

The characteristics of the components of the WMM are described in Section IV C of this permit application. The wastes generated from the SDC are described in Section IV J C.

IV J D-1d Applicable Performance Standard

The applicable performance standards considered to be appropriate for the SDC are the miscellaneous unit standards under ADEM Admin. Code r. 335-14-5-.24. The SDC has demonstrated a destruction and removal efficiency of 99.9999 percent (%) for mustard agent.

IV J D-1e Provisions to Prevent Releases of Hazardous Waste or Hazardous Waste Constituents into the Groundwater or Subsurface Environment, or into Surface Water, or Wetlands or on the Soil Surface

ADEM Admin. Code r. 335-14-5-.24(2)(b) and (c) and 335-14-8-.02(14)(b) and (c)

To prevent releases into the groundwater or subsurface environment, surface water, wetlands, or on the soil surface, a containment system will be provided that conforms with the requirements of ADEM Admin. Code r. 335-14-5-.09(6)(b). Refer to the ANAD RCRA Permit Application for information regarding to the hydrologic conditions and precipitation information at ANAD. The following sections describe the containment system at the SDC.

IV J D-1e(1) Basic Design Parameters, Dimensions, and Materials of Construction of the Containment System

ADEM Admin. Code r. 335-14-5-.09(6)(b)(1) and 335-14-8-.02(6)(a)(1)

The treatment process is performed inside the sprung structure. For the processing of munitions, the SDC design incorporates triple redundant containment with the primary containment consisting of the SDC itself, a secondary containment consisting of the ISO containers which house components of the SDC and OGT System, and a tertiary containment which consists of a bermed concrete floor in the sprung structure.

IV J D-1e(2) Containment System Drainage

ADEM Admin. Code r. 335-14-5-.09(6)(b)(2) and 335-14-8-.02(6)(a)(1)

The floor of the structure is concrete and includes containment (diked / bermed areas) where liquids may be present in the treatment process. Where containment is required, the floor is coated with an appropriate sealant to ensure any liquids released to the secondary containment are captured. The floors within the diked / bermed areas are sloped to allow for collection of liquids.

IV J D-1e(3) Containment Capacity

ADEM Admin. Code r. 335-14-5-.09(6)(b)(3) and 335-14-8-.02(6)(a)(3)

Containment capacity is sized to capture the entire liquid contents of the OGT System with an estimated total volume of 700 gallons.

IV J D-1e(4) Control of Run-On

ADEM Admin. Code r. 335-14-5-.09(6)(b)(4) and 335-14-8-.02(6)(a)(4)

The SDC is constructed ~ 850 feet above sea level and the area surrounding this facility is adequately sloped. The sprung structure has a sloped roof that facilitates rainwater drainage away from the building. The facility is located in an area that is not known to be

flooded and not in a 100-year floodplain. The storm drainage is designed for a 10-year storm capacity.

IV J D-1e(5) Removal of Liquids from Containment System

ADEM Admin. Code r. 335-14-5-.09(6)(b)(5) and 335-14-8-.02(6)(a)(5)

All spills and leaks are reported IAW the ANAD's Integrated Contingency Plan (ICP).

IV J D-1f Provisions to Prevent Release into the Air

ADEM Admin. Code r. 335-14-5-.24(2)(c) and 335-14-8-.02(14)(b) and (c)

During normal operations, emissions are below the limitations imposed on the facility. The OGT System serves to minimize emissions. In the event of equipment upsets, the system is designed to allow for restricting emissions while necessary corrective actions are performed.

Though not required for non-agent operations, the sprung structure is also equipped with a Carbon Filtration Unit (IONEX 16000) capable of maintaining negative air pressure within the structure.

IV J D-1f(1) Process Vents

ADEM Admin. Code r. 335-14-5-.27

The SDC has no process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air-or-stream-stripping operations that manage hazardous wastes. Therefore, ADEM Admin. Code r. 335-14-5-.27 is not applicable.

IV J D-1f(2) Equipment Leaks

ADEM Admin. Code r. 335-14-5-.28

The SDC has no pumps, compressors, pressure relief devices, sampling connecting systems, open-ended valves or lines, valves in gas/vapor or light liquid service, or pumps, valves, flanges, and other connectors in heavy liquid service associated with processing of the munitions. Therefore, ADEM Admin. Code r. 335-14-5-.28 is not applicable.

IV J D-1f(3) Tanks, Surface Impoundments, and Containers

ADEM Admin. Code r. 335-14-5-.29

The average volatile concentration of wastes generated is < 100 parts per million by weight (ppmw). Therefore, analysis of the volatile organic concentration, IAW the analytical methods specified in ADEM Admin. Code r. 335-14-6, is not required.

The standards, which may be appropriate to the processing of munitions, are the container standards specified in ADEM Admin. Code r. 335-14-5. The standards apply to containers having design capacities greater than (>) 0.1 cubic meters (m^3) (~ 26 gallons). The maximum quantity of fill material in any WMM to be processed at the SDC contains < 0.1 m^3 (the

system is not capable of accepting WWM larger than that size). Therefore, the munitions qualify for exemption from the container standards. Wastes contained in drums are managed IAW the < 90-day generator requirements at the SDC, including compliance with ADEM Admin. Code r. 335-14-6 air emission standards for containers.

IV J D-1f(4) Design Parameters of Closed Vent System - Heating, Ventilation, and Air Conditioning System

No volatile organic compounds are carried within valved or piped systems for the SDC; therefore, a closed vent system is not required.

IV J D-1f(5) Air Quality

According to the ADEM, the air quality in the Anniston area meets the National Ambient Air Quality Standards (NAAQS) set to protect public health and welfare [Environmental Impact Statement (EIS) 1991]. Dugger Mountain Wilderness Area, 30 miles northeast of the ANAD location, is classified as a Prevention of Significant Deterioration (PSD) Class I area, where additional degradation of local air quality is severely restricted. This is the closest PSD Class I area to the SDC. (EIS 1991).

No significant emissions are expected from treatment operations. ANAD is 30 miles away from the Dugger Mountain Wilderness PSD Class I area and since there are no emissions expected from SDC, there is no likelihood of the treatment operation impacting this PSD Class I area.

Emissions in the southeast industrial area of ANAD from natural gas-fired boilers (one 61.5 million British thermal units (BTU), two 21 million BTU each, two 9 million BTU each, two 12.52 million BTU each and two 90 million BTU each) are of sufficient magnitude to designate the ANAD as a major stationary source of air emissions.

IV J D-1f(6) Operation of Closed Vent System

No volatile organic compounds are carried within valved or piped systems for the SDC; therefore, a closed vent system is not required.

IV J D-1g Monitoring, Analysis, Inspection, Response, Reporting, and Corrective Action

ADEM Admin. Code r. 335-14-5-.24 and 335-14-8-.02(14)(a)2

The SDC facility is available to process recovered rounds from within the State of Alabama. Should the need arise to monitor a chemical fill round, the Permittee must await concurrence from the Department prior to receipt of the munition to ensure that any additional requirements which the Department may require have been incorporated. The Department may respond with additional conditions that may be applicable for the receipt, storage, and processing of recovered items to include additional monitoring requirements.

IV J D-1g(1) Monitoring Equipment

The SDC will be equipped with CEMS which monitor the off gas for carbon monoxide and oxygen.

IV J D-1g(2) Location of Monitoring Devices

The CEMS for the SDC are located after the safeguard filter system.

IV J D-1g(3) Operation of Monitoring Devices

The CEMS will remain in operation IAW regulatory requirements during hazardous waste processing within the SDC.

IV J D-1g(4) Quality Assurance/Quality Control (QA/QC) Requirements

If a suspect munition is found, the SDC Plant Manager determines the course of action. It is up to his/her discretion to request an evaluation of the round(s) in question.

IV J D-1g(5) Response Procedures

In the event of an emergency, all personnel will follow the SDC Contingency Procedures and ANAD ICP. The attachments for treatment operations at the SDC have been incorporated into the ANAD ICP.

IV J D-1g(6) Inspection and Preventive Maintenance

Refer to Table IV J-3 for inspection and preventive maintenance procedures for the monitoring equipment.

IV J D-2 Container Design

Hazardous wastes that are stored in containers at the SDC, including the service magazines and storage igloos, include WMM offered for disposal and secondary waste. Hazardous waste will be managed IAW Section IV J C of the ANAD RCRA Permit Application.

WMM and secondary waste may be stored in the SDC-dedicated service magazines or storage igloos. Secondary waste will be stored in appropriate containers and labeled accordingly. WMM may not be containerized or labeled.

IV J D-3 Service Magazine and Storage Igloo Description

The magazine is an earthen covered steel reinforced concrete structure that is 29 feet (length), 17 feet (height), and ~ 170 feet (width) separated into three sections. This structure was constructed IAW DDESB standards and satisfies the MMR requirements. The SDC-dedicated service magazines will be maintained IAW DDESB requirements.

The storage igloos are also steel reinforced concrete structures that vary in size and dimension. Each of the igloos are sized and rated by DDESB to store significantly more explosive material than the service magazines and serve as the primary storage for WMM prior to being offered for treatment. The igloos are primarily used for storage of hazardous waste material contaminated with energetics and WMM delivered for treatment at the SDC.

IV J E GROUNDWATER MONITORING

ADEM Admin. Code r. 335-14-8-.02(5)(c), 5, 6, 7, and 8

The groundwater monitoring requirements of ADEM Admin. Code r. 335-14-5-.06 apply to surface impoundments, waste piles, land treatment units, and landfills. None of these types of hazardous waste management units are present at the SDC; therefore, groundwater monitoring is not required.

IV J F SECURITY

ADEM Admin Code r. 335-14-5-.02(5) and 335-14-8-.02(5)(b)4

This section contains information concerning procedures to prevent hazards IAW ADEM Admin. Code r. 335-14-5-.02(5). These regulations require a description of the security procedures and equipment, inspection schedules, justification for a waiver of preparedness and prevention requirements, spill prevention containment and countermeasures plan, and prevention of accidental ignition or reaction of ignitable, reactive, or incompatible wastes.

IV J F-1 Security Procedures and Equipment

ADEM Admin. Code r. 335-14-5-.02(5) and 335-14-8-.02(5)(b)4

Security is addressed in Section II F-1a. The SDC is located within the ALA of ANAD. Access to this area requires passage through an additional fence/gate system.

IV J F-1a Twenty-Four Hour Surveillance System

ADEM Admin. Code r. 335-14-5-.02(5)(b)1

Surveillance systems are addressed in Section II F-1a.

IV J F-1b Barrier and Means to Control Entry

ADEM Admin. Code r. 335-14-5-.02(5)(b)2

IV J F-1b(1) Barrier

ADEM Admin. Code r. 335-14-5-.02(5)(b)2(i)

The SDC area is surrounded by two 7-foot high chain-link security fences. These fences are separated by 30 feet. Each fence is topped with three strands of barbed wire. The perimeter is completely lighted. No space in the fence is greater than 4 inches wide. The bottom of the fence is blocked by cement curbing.

IV J F-1b(2) Means to Control Entry

ADEM Admin. Code r. 335-14-5-.02(5)(b)2(ii)

Entrance to ANAD is through one of two gates, all of which are attended 24 hours per day by armed guards. Entrance to the SDC area is through the ALA, which is accessible through controlled points of entry within the ANAD. All personnel are required to wear identification badges when reporting for work and while on the premises. Visitors are not permitted on the facility premises without first registering and receiving the proper badge, which must be displayed at all times.

Visitors to the SDC are always accompanied during their visit and are subject to security checks.

IV J F-1b(3) Warning Signs

ADEM Admin. Code r. 335-14-5-.02(5)(c)

Signs warning that the area is restricted and dangerous, and that unauthorized entry is illegal, are posted along the perimeter fence surrounding ANAD at numerous locations and near all access gates. These signs are ~ 18 x 24 inches and are easily visible at a distance of 25 feet. Large signs describing the "Conditions of Entry" are posted at each gate. These signs are ~ 4 x 6 feet in size, and warn of the possible consequences of unauthorized entry.

IV J F-1c Waiver

ADEM Admin. Code r. 335-14-5-.02(5)(a)

A waiver is not being sought; therefore, this section is not applicable.

IV J F-1d Injury to Intruder and Violation Caused By Intruder

ADEM Admin. Code r. 335-14-5-.02(5) a 1 and 2

Sections IV J F-1 and IV J F-1a identify procedures that will be taken to prevent the unknowing entry and minimize the possibility for unauthorized entry of persons or livestock onto the active portion of the facility.

IV J F-2 Inspection Schedule

ADEM Admin. Code r. 335-14-5-.02(6), 335-14-5-.24(3), and 335-14-8-.02(5)(b)5

IV J F-2a General Inspection Requirements

ADEM Admin. Code r. 335-14-5-.02(6)(a) and (b), 335-14-5-.03(4), and 335-14-8-.02(5)(b)5

The SDC area is inspected according to a prescribed inspection schedule designed to detect equipment deterioration and prevent possible equipment malfunctions that can potentially cause a release of hazardous wastes to the environment or pose a threat to human health. The inspection schedule document and inspection records will be located at the SDC. The inspection program will include inspections of the equipment, including frequency, such as those listed in Table IV J-3[5]. Inspection requirements will not be performed while the SDC is not in operation. This does not apply to any wastes that are in storage. Inspection of waste storage areas will be conducted at all times IAW regulatory requirements when waste is present.

Once the SDC system begins closure or decommissioning, inspections for this system and associated components will cease as the system will no longer be intended for use in processing or handing of hazardous wastes.

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[5] All tables are located at the end of this section.

IV J F-2a(1) Types of Problems

ADEM Admin. Code r. 335-14-5-.02(6)(b)3

The types of problems looked for during inspections are identified in Table IV J-3.

IV J F-2a(2) Frequency of Inspection

ADEM Admin. Code r. 335-14-5-.02(6)(b)4 and 335-14-5-.15(8)(c)

The frequency of inspection, as listed in Table IV J-3, is based on the rate of possible deterioration of equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or operator error goes undetected between inspections. The inspections are performed often enough to allow identification of problems in time to correct them before they harm human health or the environment.

Where appropriate, inspection frequencies have been developed from operational knowledge. Manufacturer recommendations, Army SOPs, Occupational Safety and Health Administration (OSHA) regulations, and specified regulated unit requirements are also adhered to.

IV J F-2b Specific Process Inspection Requirements

ADEM Admin. Code r. 335-14-5-.02(6)(b)4 and 335-14-8-.02(5)(b)5

IV J F-2b(1) Miscellaneous Unit Inspection

ADEM Admin. Code r. 335-14-5-.24(3) and 335-14-8-.02(5)(b)5

The inspection records will be kept at the SDC for a minimum of 3 years.

Inspections of operating and structural equipment, security devices, safety and emergency equipment, loading/unloading areas, monitoring equipment, secondary containment systems and the HVAC system at the facility are included in Table IV J-3.

IV J F-2b(2) Inspection for Process Vents

ADEM Admin. Code r. 335-14-5-.27

The requirements of this section are not applicable because SDC does not operate any distillation/fractionation, thin-film evaporation, or solvent extraction units, nor does it conduct air-or-steam-stripping operations.

IV J F-2b(3) Inspection Procedures for Equipment Leaks

ADEM Admin. Code r. 335-14-5-.28

Inspections of operating equipment at the SDC are included in Table IV J-3.

IV J F-2b(4) Inspection for Air Emission Standards for Tanks, Surface Impoundments, and Containers

ADEM Admin. Code r. 335-14-5-.29

As described in Section IV J D-1, the munitions are exempt from the requirements of ADEM Admin. Code r. 335-14-5-.29. Inspections of the HVAC system and monitoring devices are conducted as specified in Table IV J-3.

IV J F-2c Remedial Action

ADEM Admin. Code r. 335-14-5-.02(6)(c)

When inspections reveal that non-emergency maintenance is needed, the maintenance will be completed as soon as possible to preclude further damage and reduce the need for emergency repairs. If a hazard is imminent or has already occurred during the course of an inspection or any time between inspections, remedial action will be taken. Remedial actions and required notifications for emergencies associated with the SDC area are detailed in the ANAD ICP.

If during routine inspection a drum is noted that has deteriorated or is beginning to leak (rusted, severely dented, lid fitting improperly, etc.), the drum will be transferred to a new container or over-packed in place. Any spilled material will be cleaned up immediately.

IV J F-2d Inspection Records

ADEM Admin. Code r. 335-14-5-.05(4)(b)5

Inspection records that are used at the Building 695 Complex identify the name of inspector, observations made, date, and nature of repairs or remedial action taken. Inspection records will be on file at the SDC for a minimum of three years.

IV J F-3 Documentation of Preparedness and Prevention Requirements

ADEM Admin. Code r. 335-14-8-.02(5)(b)6

The Army is not requesting any waivers for the preparedness and prevention requirements of AAC 335-14-5-.03(3) and 335-14-5-.03(6).

IV J F-3a Equipment Requirements

ADEM Admin. Code r. 335-14-5-.03(3)

The following paragraphs describe the internal and external communication system, emergency equipment, and water for fire control that is available at SDC.

IV J F-3a(1) Internal Communications

ADEM Admin. Code r. 335-14-5-.03(3)(a)

Telephones and public address loudspeakers are available at SDC in case of emergencies. The telephone system is available for internal as well as external communications.

IV J F-3a(2) External Communications

ADEM Admin. Code r. 335-14-5-.03(3)(b)

The telephone system at the SDC is available for external communication with the ANAD and surrounding areas.

IV J F-3a(3) Emergency Equipment

ADEM Admin. Code r. 335-14-5-.03(3)(c)

Internal /external communications and emergency equipment are included in the ANAD ICP. Safety equipment necessary for first responder activities as listed in the SDC Contingency Procedures are included in the weekly inspection logs for the applicable areas (see Table IV J-3).

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

ADEM Admin. Code r. 335-14-5-.03(3)(d)

Sufficient water exists for fire control as part of the water distribution system.

IV J F-3b Aisle Space Requirements

ADEM Admin. Code r. 335-14-5-.03(6)

The SDC service magazines are permitted storage units under the MMR to store munitions and are also permitted to store hazardous waste generated onsite. Storage of WMM and recovered WMM in the SDC service magazines is IAW DDESB standards. Sufficient aisle space (minimum 24 inches) is maintained in the service magazines for any generated hazardous waste to allow unobstructed movement of personnel, fire protection equipment, and spill control or decontamination equipment.

Storage of WMM and recovered WMM in the SDC-dedicated storage igloos is IAW DDESB standards. Like the service magazines, sufficient aisle space (24 inches) will be maintained for hazardous waste generated onsite to allow unobstructed movement of personnel, fire protection equipment, and spill control or decontamination equipment.

IV J F-4 Preventive Procedures, Structures, and Equipment

ADEM Admin. Code r. 335-14-8-.02(5)(b)8

IV J F-4a Unloading Operations

ADEM Admin. Code r. 335-14-8-.02(5)(b)8(i)

The three categories of wastes managed at the SDC include: (1) WMM to include recovered items, (2) explosives and propellants, including waste material contaminated with energetics and (3) treatment residues, ash, cleaning solutions, ventilation filters. (See Sections IV J C-1 and IV J C-2 for more detail.)

Unloading operations for hazardous WMM are described in Section IV F-4a of the ANAD RCRA Permit Application.

Treatment residues, ash, and other treated solid dunnage will be discharged directly to collection containers. Containers will be properly classified, labeled, and placed into storage awaiting off-site treatment and disposal. Ventilation filters will be removed by personnel in appropriate PPE and placed in appropriate containers. Ventilation filters will be disposed of IAW Table IV J-5.

Cleaning solutions generated during cleanup activities will be collected in appropriate containers stored in the proper location prior to disposal.

Spills that occur during loading or unloading operations are unlikely; however, in the event of an accident, they are immediately cleaned up. Standard industrial absorbents, absorbent booms, pads, sand and dirt are used for clean-up of spilled materials. Spill residues are placed in containers, properly classified, labeled, and placed into storage awaiting off-site treatment and disposal.

IV J F-4b Runoff

ADEM Admin. Code r. 335-14-8-.02(5)(b)8(ii)

Runoff from hazardous waste handling areas is prevented by the SDC design features. Waste handling takes place in an enclosed structure. Since the waste propellants and explosives are effectively destroyed during SDC operations and remaining residue is collected from the treatment, the process itself eliminates the potential for run-off.

IV J F-4c Water Supplies

ADEM Admin. Code r. 335-14-8-.02(5)(b)8(iii)

The processing of all hazardous waste at the SDC takes place in an enclosed structure with a concrete base that will prevent the downward percolation of liquids. The SDC is not in a flood-plain. Any spills of hazardous materials are cleaned up IAW site procedures and, if necessary, the ANAD Integrated Contingency Plan. Therefore, prevention of contamination to water supplies is achieved.

IV J F-4d Equipment and Power Failure

ADEM Admin. Code r. 335-14-8-.02(5)(b)8(iv)

In the event of an electrical failure, an automatic transfer switch will start a diesel generator and will automatically transfer the essential load to the generator. The generator connected load will consist of the exhaust filter unit for the SDC to maintain pressure, cameras and electronics, and interior and exterior lighting.

IV J F-4e Personal Protection Equipment

ADEM Admin. Code r. 335-14-8-.02(5)(b)8(v)

Levels of PPE for workers will vary throughout the installation and are based upon the specific task to be performed. A job safety hazard analysis will be generated for hazardous tasks at the installation. These identify work practices, protective clothing, and procedures necessary to protect the worker from potential hazards.

IV J F-5 Prevention of Ignition or Reaction of Ignitable, Reactive, or Incompatible Wastes

ADEM Admin. Code r. 335-14-8-.02(5)(b)9

IV J F-5a Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste

ADEM Admin. Code r. 335-14-5-.02(8)(a),(b),(c), and 335-14-8-.02(5)(b)9

No ignitable or reactive waste will stored at the SDC. These wastes are moved to the facility at the time of treatment. No matches, lighters, or other flame-producing instruments are allowed in the possession of personnel at the SDC. WMM are, therefore, adequately protected from ignition. The SDC will be equipped with a sprinkler system designed to meet the special needs of individual areas.

IV J F-5b General Precautions for Handling Ignitable or Reactive Waste and Mixing of Incompatible Waste

ADEM Admin. Code r. 335-14-5-.02(8)(b),(c), and 335-14-8-.02(5)(b)9

General precautions for the SDC include:

- SDC operations will be under the direct supervision of an experienced and trained supervisor charged with responsibility for all activities within the area. During the supervisor's absence, a competent qualified person is designated to be in charge. This competent person is also charged with sole custody of ignition devices.
- The number of personnel involved in SDC operations will be kept to a minimum to limit exposure of personnel for a minimum time to a minimum amount of hazardous material consistent with safe and efficient operations.

- Anyone entering the SDC while operations are ongoing will report to the Control Room.

IV J F-5c Management of Ignitable or Reactive Wastes in Miscellaneous Units

ADEM Admin. Code r. 335-14-5-.24

Management of reactive wastes is addressed in Sections IV F-5a, b, and c of the ANAD RCRA Permit Application.

IV J F-5d Management of Incompatible Waste in Containers

ADEM Admin. Code r. 335-14-5-.09(8)(a),(b) & (c) and 335-14-8-.02(6)(d)

Any incompatible wastes that may be generated will not be placed in the same container. All waste will be placed into new and/or cleaned containers for storage and off-site transportation/disposal or for disposal at a TSDF.

IV J G CONTINGENCY PLAN

ADEM Admin. Code r. 335-14-5-.03(8), 335-14-5-.04(1) through 335-14-5-.04(7), and 335-148-.02(5)(b)7

Contingency requirements for ANAD, including the Building 695 Complex, are found in the ANAD ICP.

IV J H PERSONNEL TRAINING

ADEM Admin. Code r. 335-14-5-.02(7) and 335-14-8-.02(5)(b)12

The training program for the SDC provides personnel, depending on job descriptions, with the necessary knowledge and skills to perform hazardous waste duties safely, efficiently, and in an environmentally sound manner. The purpose of this training program is to prepare SDC personnel for treatment operations, with emphasis on reducing potential risks that may threaten human health or the environment. This is accomplished by ensuring that the SDC personnel handling hazardous waste can properly perform their assigned duties and responsibilities. In addition to providing training in the mechanics of the job functions, this training program provides SDC personnel with a thorough understanding of the treatment operations, including the safety and emergency response operations. Refresher training will be conducted, as necessary, to update workers on new methods or equipment.

This training program meets the requirements in ADEM Admin. Code r. 335-14-5-.02(7) and 335-14-8-.02(5)(b)12 by:

- Providing specific training for various hazardous waste management positions;
- Ensuring that all personnel involved in ammunition operations and planning complete the training program prior to being assigned duties involving ammunitions or explosives;
- Providing training that ensures SDC personnel are able to respond effectively to emergencies;
- Ensuring that the training program is directed by qualified persons trained in hazardous waste management practices;
- Maintaining required documentation at the Building 695 Complex; and
- Maintaining training records on current SDC personnel for at least 3 years from the date last worked.

IV J H-1 Outline of Training Program

The SDC Training Program has been designed to ensure that personnel will be able to perform their specific job assignments. The training program consists of both onsite training and additional courses that apply to specific job functions.

Section IV J H-1a provides the job titles and descriptions for the SDC personnel involved in hazardous waste operations. Section IV J H-1b describes the training content, frequency, and techniques. Section IV J H-1c describes the responsibilities of the appropriate supervisor, who coordinates training of the SDC personnel. Section IV J H-1d describes the relevance of the training to the job positions, and Section IV J H-1e describes training for emergency response.

IV J H-1a Job Titles and Duties

ADEM Admin. Code r. 335-14-5-.02(7)(d)1 and 2

Complete job descriptions, including title, office, person reporting to, duties, and minimum qualifications/training for each position related to hazardous waste management shall be maintained at the SDC and/or ANAD Directorate of Risk Management. Job titles and duties will be consistent with the current duties and responsibilities for safely treating explosive components from WMM IAW applicable OSHA, RCRA, and military requirements.

In general, all personnel working at the SDC will be required to:

- Demonstrate the ability to understand and apply both oral and written instructions at a level appropriate to the assigned job;
- Possess the aptitude and attitude necessary to ensure compliance with environmental, safety and job requirements; and
- Be physically capable of doing the work.

IV J H-1b Training Content, Frequency, and Techniques

ADEM Admin. Code r. 335-14-5-.02(7)(a)3, 335-14-5-.02(7)(c) and 335-14-5-.02(7)(d)3

The training program provides both initial and continuing training of supervisors, operators, and personnel involved in the waste management unit operations. The principal objectives of the training program are to train personnel to safely operate, maintain, and monitor the SDC operation. The training program includes job orientation, safety procedures, and basic work principles.

At a minimum, SDC personnel involved in hazardous waste management operations have or will have received training in the following areas, as determined by the position and additional duties to which they are assigned:

- Hazard Communications (HAZCOM),
- Hazardous Waste Operations and Emergency Response (HAZWOPER)/ 24-hour Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER),
- RCRA Compliance,
- Explosive Safety, and
- Material Handling Equipment Operator Certification.

SDC personnel are qualified to meet the minimum requirements outlined in 29 CFR 1910.120 covering HAZWOPER training for operations conducted under RCRA. Qualification records for the SDC personnel are maintained by the SDC Training Coordinator. This minimum training includes:

- Initial 24 hour HAZWOPER training, consisting of classroom and hands-on experience, in the use of PPE, implementation of the emergency response plan, safe operating practices, identification of potential hazards or hazardous situations, etc., IAW OSHA standards and
- 8 hours of annual refresher training.

IAW with U.S. Army Materiel Command (AMC)-Regulation 350-4, any new personnel involved with the handling of WMM, as required for the download and reconfiguration, are required to meet certain training requirements prior to their being assigned duties associated with the SDC operation. All personnel must successfully complete the following training as determined by their assigned position and additional duties:

- Characteristics and Hazards of Explosives
- Explosives Safety
- Industrial Safety
- Protective Clothing and Equipment
- Standing Operating Procedures
- Material Handling Equipment
- Specialized Training (Acquaint the employee with conditions, procedures, and regulations as they apply to the specific job and local environment.)
- Examination and Critique

This information may be included as a component of the HAZWOPER training. Additional course work may be required based on actual duties as determined by the Training Coordinator.

Personnel operating or maintaining monitoring equipment, such as CEMS, are required to complete the same training as required by ANAD.

IV J H-1c Training Supervisor (SDC Training Coordinator)

ADEM Admin. Code r. 335-14-5-.02(7)(a)2

The SDC Training Coordinator is responsible for the training of the SDC personnel. The responsibilities of the Training Coordinator are to:

- Coordinate training of the SDC personnel in the proper operation of the facility IAW Federal, State, Army, and installation regulations;
- Coordinate continuing training, as necessary, to inform personnel of new procedures, provide refresher training, and provide training for new personnel;
- Ensure that training records are maintained IAW 40 CFR 264.16(d) and (e); and
- Ensure that SDC personnel are trained in hazardous waste management and contingency plan implementation, including emergency procedures, and ensure that personnel receive training appropriate to their positions.

IV J H-1d Relevance of Training to Job Position

ADEM Admin. Code r. 335-14-5-.02(7)(a)2

The SDC personnel receive training relevant to the duties and responsibilities entailed by their positions.

IV J H-1e Training for Emergency Response

ADEM Admin. Code r. 14-5-.02(7)(a)3

Emergency response training is designed and structured to ensure that all SDC personnel are trained to respond properly to emergency situations, as outlined in the ANAD ICP, and to maintain compliance, during emergencies, with applicable permit requirements and environmental regulations.

This training addresses non-routine situations that could lead to emergencies involving hazardous wastes, if proper responses are not implemented, such as:

- Procedures for using, inspecting, repairing, and replacing the SDC emergency and monitoring equipment;
- Communication and alarm systems;
- Implementation of the contingency plan and appropriate emergency notifications,
- Shutdown of operations and evacuation, and
- Response to fires, explosions, or other releases;

Additional topics covered during emergency response training include:

- Chemical characteristics of the wastes personnel will be assigned to manage, that is, reactivity and toxicity characteristics;
- Knowledge of what to do in the event of a spill or leak, and
- Types of protective equipment, which may include gloves, hard hat, eye protection, and splash resistant clothing;

Introductory training and annual review sessions will be completed by these personnel.

IV J H-2 Implementation of Training Program

ADEM Admin. Code r. 335-14-5-.02(7)(b), 335-14-5-.02(7)(d)4, and 335-14-5-.02(7)(e)

All personnel are trained prior to beginning work at the SDC. All of the SDC personnel are required to complete the training program specific to his/her job assignment and will not work unsupervised until training has been successfully completed.

Training records for the SDC personnel are maintained electronically, onsite, and will include, at a minimum:

- Job title for each position related to hazardous waste management operation and activities, and the name of each employee filling the position;

- Job description specifying duties for each position, minimum qualifications required to fill the position, and required training for the position;
- Description of the type and amount of introductory and continuing training that will be given to each employee;
- Date each employee started working at the SDC; and
- Course enrollment, attendance, and successful completion information.

All training records and documentation on current SDC personnel will be kept until closure of the facility. Training records on former SDC personnel will be kept for at least 3 years from the date last worked.

IV J I CLOSURE PLAN, POST-CLOSURE PLAN, AND FINANCIAL ASSURANCES

ADEM Admin. Code r. 335-14-5-.07(1) through 335-14-5-.07(11), 335-14-5-.08(1) through 335-14-5-.08(12), 335-14-5-.09(9), 335-14-5-.10(8), and 335-14-8-.02(5)(b)13 through 335-14-8-.02(5)(b)18

ANCDF performed decontamination of this facility at completion of the operational phase for chemical agent (mustard) operations. With the completion of chemical agent operations and based on the decontamination and monitoring records provided in the SDC Decontamination Report, the SDC unit, facilities, and service magazines are now classified as chemical agent free.

After decontamination, ANCDF provided ADEM with professional engineering (PE) certification and notification of completion of the decontamination of the SDC. The SDC Agent Decontamination Report was submitted in April of 2012 and approved by the ADEM on July 22, 2013.

This closure plan has been developed IAW ADEM Admin. Code r. 335-14-5-.07(3) and specifies performance standards and procedures for the closure of the SDC. The closure performance standards of ADEM Admin. Code r. 335-14-5-.07(2) are designed to minimize the need for further maintenance by removing all hazardous waste and hazardous waste constituents from the SDC. The closure plan is also designed to provide closure in a manner that will control, minimize, or eliminate, to the extent necessary to protect human health and the environment, the post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to surface water, groundwater, or the atmosphere. A separate closure plan addressing polychlorinated biphenyls associated with shipping and firing tubes was requested by EPA to address closure requirements associated with TSCA. This TSCA closure plan will be provided under a separate submittal to EPA, as well as, provided to ADEM for informational purposes.

The SDC will be taken to clean closure levels prior to final closure of the facility. A statistical sampling program, such as Visual Sampling Program (VSP) or an equivalent, will be used to determine the number of samples and sample locations for areas where sampling has been determined to be necessary. Wipe samples of equipment (if remaining in-place) and surface areas will be collected, analyzed, and compared to RCRA TCLP levels. All equipment that is demolished will be disposed in accordance with the WAP. A data package containing supporting documentation will be submitted prior to closure of the affected areas. Areas to be sampled represent areas where waste has been stored or was present.

Soil sampling will be conducted as described later in this section.

Characterization for pollutants of concern, such as select metals, chlorine, and sulfur, will be in accordance with the WAP and disposal will be governed by the same or other applicable regulations.

Post-closure care (Sections IV I-2) of SDC facility is not anticipated since all hazardous waste and hazardous waste constituents will be removed or decontaminated to clean closure criteria during closure operations.

Since the SDC facility is a federal installation, the financial requirements of 40 CFR 264, Subpart H, do not apply to this Resource Conservation and Recovery Act (RCRA) permit application (Sections IV I-5 through IV I-9).

IV J I-1 Closure Plan

ADEM Admin. Code r. 335-14-5-.07(3) and 335-14-8-.02(5)(b)13

During activities in the SDC facility, storage igloos, or the service magazines, any identified hazardous waste spill were remediated and containerized immediately. Records of all spills and cleanup activities were recorded in an operating record. If an igloo was not used to store waste or WMM, closure will be limited to making an administrative (record keeping) activity report.

Upon completion of operations, all hazardous waste and hazardous waste residues that were in secondary containment will be removed. Equipment and structures will be decontaminated, if necessary, using an appropriate decontamination and water washing in accordance with the treatment technology requirements specified in 40 CFR 268.45.

IV J I-1a Closure Performance Standards

ADEM Admin. Code r. 335-14-5-.07(2)

This closure plan specifies performance standards and describes procedures for the closure of the SDC. This closure plan is designed to provide for closure in a manner that will minimize the need for further maintenance and control, minimize, or eliminate, to the extent necessary to protect human health and the environment, the post-closure escape of hazardous waste, hazardous waste decomposition products to surface water, groundwater, or the atmosphere.

Final closure will accomplish the goals of the closure performance standards, noted above by: (1) processing the entire inventory of WMM at or before the commencement of closure activities, and (2) removing and/or decontaminating all equipment, bases, structures, soils, or other materials containing or contaminated with hazardous waste or hazardous constituents associated with the hazardous waste management units. Decontamination of certain early opportunity items when no longer expected to be needed may precede commencement of closure of all systems or areas. Post-closure maintenance or monitoring is not anticipated since no hazardous wastes or hazardous constituents are expected to remain above clean closure target levels following final closure.

After final closure, certification, and acceptance of closure by the ADEM has been completed, the area will no longer be classified as a hazardous waste management unit. After approval of clean closure is received, the status of the SDC will remain as a SWMU but will be reclassified from an operating unit to a unit that is RCRA clean closed.

IV J I-1b Partial Closure and Final Closure Activities

ADEM Admin. Code r. 335-14-5-.07(3)(b)

Closure activities are expected to begin in 2025, with final closure completed, demolition and removal, in approximately 9 months. Final closure of the SDC facility, igloos, and magazines will be accomplished through a series of partial closures (i.e., unit-by-unit closure operations). Closure of the SDC facility will be conducted as expeditiously as possible following completion of the demilitarization operations.

Aspects of SDC closure are briefly summarized in Table IV J-1 with detailed discussions of closure procedures included in Section IV J I-1e.

IV J I-1b(1) Certification of Closure

ADEM Admin. Code r. 335-14-5-.07(7)

Within 60 days of completion of the final SDC closure procedures, a certification, signed by the responsible parties and a qualified PE, will be submitted documenting that the HWMUs have been closed in accordance with this closure plan and all applicable regulations. Since the SDC will not have any regulated disposal units, only certification of final closure of the SDC facility and SDC-dedicated igloos/magazines will be submitted.

A closure data package and certification by a PE will be submitted for SDC Sprung Structure. Individual closure packages for the SDC-dedicated igloos and magazines will be submitted separately as they will not be part of the SDC Sprung Structure package.

The SDC facility will be dismantled and taken to below grade, meaning the removal of pad concrete (pillars may remain.) Multiple buildings, facilities and support systems currently located at SDC complex will remain for use by ANAD. Buildings such as warehouse areas, office buildings, etc., will not be subject to closure requirements. For the regulated buildings that are to remain, SDC complex will need release from permit control at the completion of closure activities as applicable to support future use by the ANAD.

IV J I-1c Maximum Waste Inventory

ADEM Admin. Code r. 335-14-5-.07(3)(b)3

The maximum amount of hazardous waste stored on-site during the operational life of the SDC was 530 tons. The onsite inventory of munitions will be continuously processed, however, and will be eliminated prior to final implementation of SDC closure activities. Wastes on hand at the SDC at the start of closure may include containerized rinseate solution and storage of containerized waste. A small inventory of containerized hazardous wastes may be maintained in Building 695.

IV J I-1d Schedule for Closure

ADEM Admin. Code r. 335-14-5-.07(3)(b)2 and 6

No specific date has been scheduled for implementation of closure for the SDC. ADEM will be notified in writing at least 45 days prior to the date that any final closure operations are

scheduled to begin. Final closure will occur when all operations are complete and final certification is received and approved by ADEM. All hazardous waste including any spill cleanup material and decontamination residues will be removed from the facility within the 90-day time limit.

IV J I-1d(1) Time Allowed for Closure

ADEM Admin. Code r. 335-14-5-.07(4)(a) and (b)

An initial closure milestone schedule will be submitted prior to the commencement of HWMU closure activities. Status updates and revisions to the schedule will be provided to the Department. The overall closure of the SDC will be accomplished through a series of HWMU closures (i.e., partial closures) until all HWMUs have been closed. Each partial closure activity will be completed within 180 days of initiating each unit closure. It is anticipated that final closure of the entire SDC complex will take approximately 9 months from the date that processing of munitions is complete. Individual HWMU closures may occur concurrently with other unit closure activities (e.g., SDC-dedicated igloos and magazines).

IV J I-1d(1)(a) Extensions for Closure Time

ADEM Admin. Code r. 335-14-5-.07(4)(a) and (b)

Closure of the SDC complex will be accomplished through a series of closures of individual HWMUs. It is not expected that any HWMU closure will exceed the 180 days allowed for each unit when partial closures are conducted.

Overall certification that the SDC complex has been properly closed and will not present any future threats to human health or the environment is the primary goal. SDC will submit a closure schedule prior to completion of the munition processing activities. This schedule will dictate when closure activities will commence and also include projected durations for each activity.

All hazardous waste will be removed from each regulated unit prior to submittal of final closure packages. Should the need arise to store hazardous waste onsite, waste will be stored in an area that has not undergone closure or a temporary less than 90 day storage area will be established to manage the wastes.

IV J I-1e Environmental Protection

Closure of the SDC will be performed in a manner that controls, minimizes, or eliminates, to the extent necessary to protect human health and the environment, escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere. In all instances of closure, all necessary steps will be taken to prevent threats to human health or the environment from unclosed but not operating waste management unit(s), including compliance with all applicable permit conditions pertaining to the unit(s). The permittee will comply with all applicable laws and regulations to ensure protection for human health and the environment.

IV J I-1f Closure Procedures

ADEM Admin. Code r. 335-14-5-.07(3), 335-14-5-.07(5), and 335-14-8-.02(5)(b)13

This section is organized in a manner that describes the general activities associated with closure of the SDC complex, as well as SDC-dedicated RCRA permitted unit (igloos and magazines) closure activities. The following sections are included:

- Inventory Removal, Disposal, or Decontamination of Equipment
  - SDC Sprung Structure Decontamination Procedures and Techniques
  - Facility Soils Investigation at Closure
  - Disposal or Decontamination of Equipment, and Structures
  - Disposal of Contaminated Soils
- Closure of Permitted Storage Area

IV J I-1f(1)(a) Inventory Removal, Disposal, or Decontamination of Equipment

ADEM Admin. Code r. 335-14-5-.07(5)

Prior to closure, the inventory of munitions in the SDC-dedicated igloos and magazines will be processed through the SDC. Prior to the completion of closure operations, all hazardous waste residues originating from munition processing will be removed from SDC facility in accordance with Section IV C-2, Waste Analysis Plan (WAP).

The closure of the HWMUs and known contaminated areas, if any, of the SDC will be completed according to the procedures discussed in this section. During closure operations, residues such as rinseate solutions and other residues (i.e., secondary waste streams) will be generated. Wastes and residues, in accordance with the WAP, may be shipped offsite in accordance with all generator and LDR standards.

IV J I-1f(1)(b) General Decontamination Procedure and Techniques

Gross decontamination of the SDC will proceed after all demilitarization activities have been completed and all munitions have been destroyed. Decontamination of certain early opportunity items which are no longer expected to be used may precede commencement of closure of the SDC system. Gross decontamination includes removal of all solid residues and/or meeting "RCRA empty" criteria for liquids. Any solid residue or liquid collected from closure cleaning activities will be disposed of in accordance with the WAP. Based on ANAD reuse plans, the Sprung Structure and all equipment contained therein will be disposed in accordance with applicable regulations or recycled via a smelter. The concrete pad supporting the Sprung Structure will remain. A total of eight random concrete chip samples will be collected, analyzed for TCLP metals and compared to clean closure criteria.

During closure activities, a qualified PE will review records maintained at the SDC as necessary to prepare data packages for unit closures.

Any area at the SDC in which hazardous wastes have been accidentally released will be sampled during closure activities. Sampling of these areas will not be conducted unless

there is documented evidence that an accidental release of hazardous waste has occurred. Sample results will be compared to the clean closure target levels.

Soil samples will be collected from underneath the concrete pad supporting the Sprung Structure. These samples will be analyzed for priority pollutant metals only (total metal analysis). If the concentration of the analyzed hazardous constituents in the soil is within the established clean closure target level concentration plus two standard deviations, then the clean closure criteria for the constituent has been achieved. If soil removal is necessary, excavation will be conducted until soil clean closure target level is achieved. All residue generated will be characterized in accordance with the WAP.

The qualified PE will review documentation of the SDC soils investigation, which will be included in the final SDC closure certification. Documentation of the soils investigation and all records of soil/pavement removal will be maintained in the engineer's logs.

IV J I-lf(1)(c) Disposal or Decontamination of Equipment and Structures

During closure of the SDC, wastes will be generated from closure activities. At or before final closure, all applicable explosive hazardous wastes are to be thermally treated onsite by processing through the SDC and disposed accordingly. Certain hazardous wastes generated during closure that will not be treated onsite, will be containerized and shipped offsite to an approved hazardous waste treatment, storage, or disposal facility in accordance with the WAP.

Based on ANAD reuse plans, the Sprung Structure and all equipment contained therein will be disposed in accordance with applicable regulations or recycled via a smelter.

It is not anticipated that soil removal will be necessary during closure because any incidents involving hazardous waste during the operational life will be addressed under the ANAD Contingency Plan.

IV J I-lf(1)(d) Disposal of Contaminated Soils

ANCDF submitted a Background Soils Investigation (BSI, January 2001) at the time the ANCDF was clean closed. The information that was submitted with the clean closure of ANCDF will serve as the comparative information for all soil samples collected at the time of closure of the SDC.

Clean closure standards for soils will be limited to soils beneath the Sprung structure. Three (3) soil samples will be collected from potential high-risk spill areas of the Sprung structure as depicted in Figure IV J-13. Subsurface soils are typically collected from a depth of greater than 6 inches but less than 5 feet below grade. Because there have been no known releases to the environment, the soil will only be analyzed for metals (i.e., no organic analysis). The results of this soil sampling effort will be compared to the BSI results and statistically represent that there has been no increased contamination from the operation of the SDC. If the concentration of the analyzed hazardous constituents in the soils is within the established target level concentration as relative to the BSI results plus two standard deviations, then the target criteria for the constituent has been achieved. If the soil results

are greater than the BSI results, the contaminated soils will be removed to clean closure standards in accordance with the WAP.

IV J I-1f(2) Closure of Permitted Storage Areas
ADEM Admin. Code r. 335-14-5-.09(9)

Closure of the SDC-dedicated igloos and magazines will be considered complete upon verification of clean closure sampling and certification of a closure data package by the qualified PE. Based on the results of the ANAD/ANCA Chemical Munition Storage Igloo Closure Report (submitted to ADEM January 2013), the igloos and magazines designated for SDC WMM and secondary waste storage met the criteria for clean closure. During the storage of WMM and secondary waste to support SDC operations, there has been no history of igloo or magazine surface contamination due to direct exposure or spillage of hazardous constituents. Because there has been no surface contamination of the igloos and magazines to hazardous constituents, no sampling will be required to demonstrate clean closure criteria. All igloos and magazines used to store WMM and secondary waste to support SDC operations will be swept to remove dust and debris from foot/forklift traffic and mopped with water to transferring service back to ANAD.

Initial surface decontamination and verification following final munitions campaign will be based on the munitions processed during SDC operations. Necessary interior surfaces will be decontaminated with cleaning solutions, if required to achieve RCRA empty for the equipment prior to recycling or disposal. The interior of select OGT equipment will be triple rinsed and emptied. The collected rinseate will be disposed of in accordance with the WAP. No acutely hazardous waste was processed in the SDC System after completion of closure for chemical warfare agent. Accordingly no triple rinsing will be required.

If clean closure sampling is required, it will be conducted to confirm the effectiveness of the decontamination methods. Sampling methods will be in accordance with procedures established in SW-846 and applicable ASTM Methods.

IV J I-2 POST-CLOSURE PLAN

ADEM Admin. Code r. 335-14-5-.07(9), 335-14-8-.02(5)(b)13, and 335-14-5-.24(4)

Since the SDC is not a disposal site, and any residual hazardous contamination will be removed prior to closure, a post-closure plan is not required.

IV J I-3 Certification of Closure

ADEM Admin. Code r. 335-14-5-.07(6)

Within 60 days of completion of final closure procedures, a certification will be signed by a PE and then submitted by the Permittee, stating that the SDC has been closed IAW the closure plan and all applicable regulations. Since there are no regulated disposal units, only certification of final closure of the facility will be submitted. In the event that clean closure cannot be achieved, a post-closure care permit application will be submitted to ADEM.

IV J I-4 Closure Cost Estimate

ADEM Admin. Code r. 335-14-5-.08(3) and 335-14-8-.02(5)(b)15

The Permittee will submit a closure cost estimate to the ANAD DRK for inclusion with the ANAD's closure estimate. The closure cost estimate will be prepared IAW ADEM Admin. Code r. 335-14-8-.02(5)(b)(15). The Permittee will adjust the closure cost estimate annually for inflation. ANAD DRK will submit the closure cost estimate to ADEM no later than June 1st of each calendar year.

IV J I-5 Financial Assurance Mechanism for Closure

ADEM Admin. Code r. 335-14-5-.08(4), 335-14-8-.02(5)(b)15, and 335-14-5-.08(12)

No financial assurance mechanism for the closure of storage areas is required. AAC 335-14-5-.08(1) exempts States and Federal government from the financial requirements of AAC 335-14-5.

IV J I-6 Post-Closure Estimate

ADEM Admin. Code r. 335-14-5-.08(5) and 335-14-8-.02(5)(b)16

No post-closure plan is required; therefore, no post-closure estimate is required.

IV J I-7 Financial Assurance Mechanism for Post-Closure Care

ADEM Admin. Code r. 335-14-5-.08(6), 335-14-8-.02(5)(b)16, and 335-14-5-.08(12)

No post-closure plan is required; therefore, no financial assurance mechanism for post-closure care is required.

IV J I-8 Liability Requirements

ADEM Admin. Code r. 335-14-8-.02(5)(b)17 and 335-14-5-.08(8)(a) and (b)

The Federal government owns the SDC; therefore, pursuant to ADEM Admin. Code r. 14-5-.08(1)(d), it is exempt from the liability insurance requirements.

IV J I-9 State Financial Mechanism

ADEM Admin. Code r. 335-14-8-.02(5)(b)18

Proof of coverage by a state financial mechanism is not required for the SDC because no financial assurance mechanism for the closure of the facility is required. ADEM Admin. Code r. 335-14-5-.08(1)(d) exempts states and the Federal government from the financial requirements of ADEM Admin. Code r. 335-14-5.

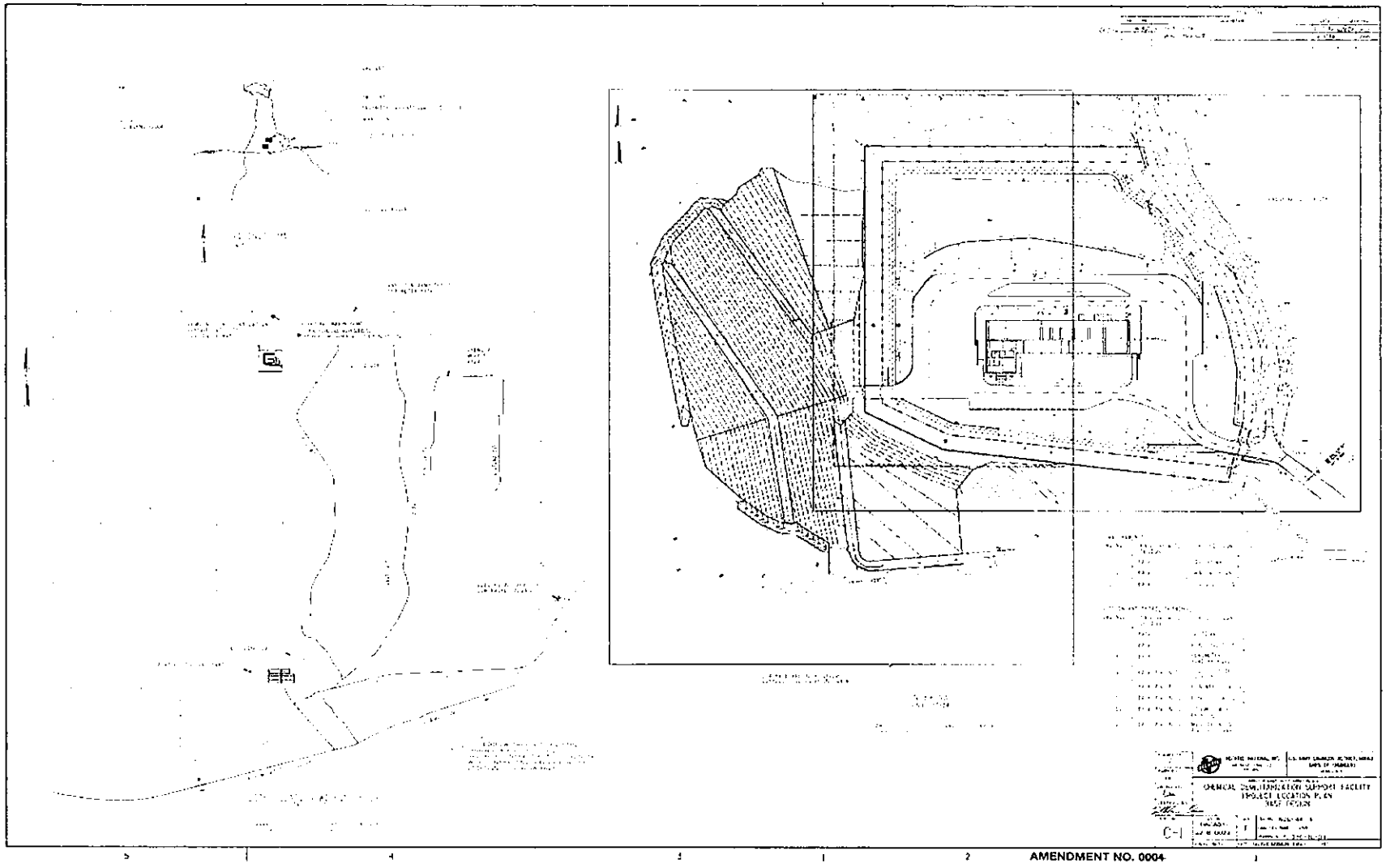

Figure IV J- 1

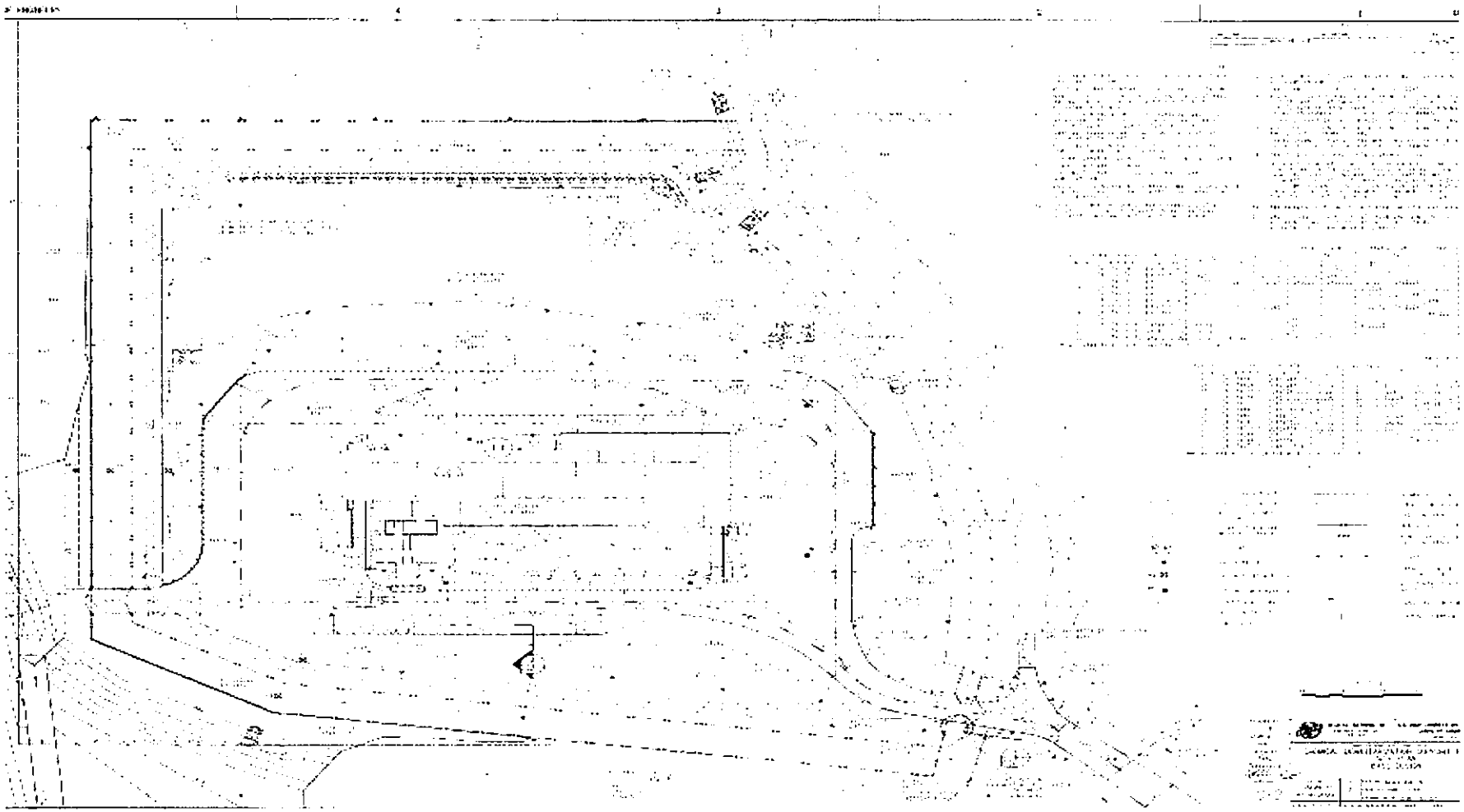

Figure IV J- 2

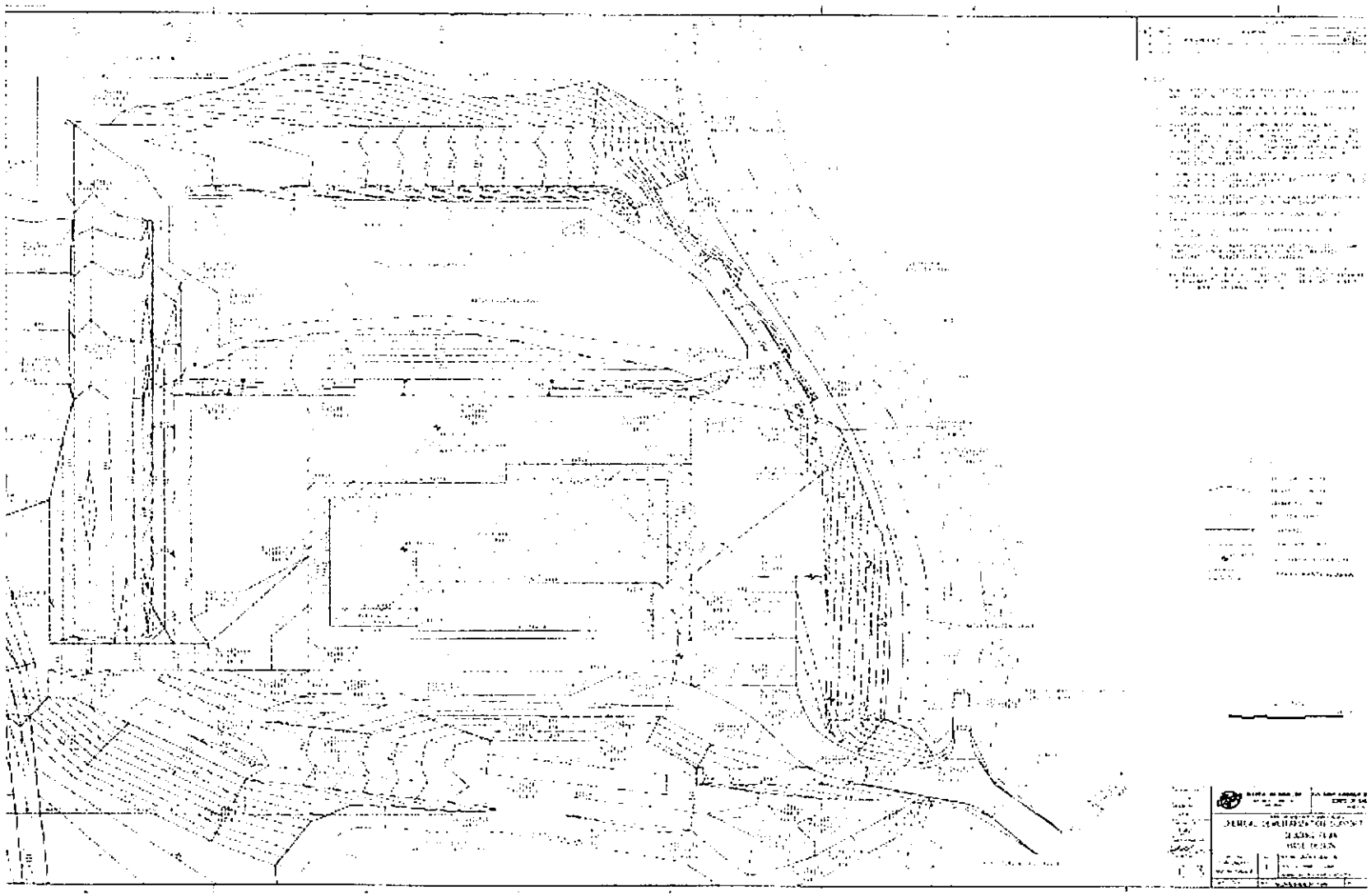

Figure IV J- 3

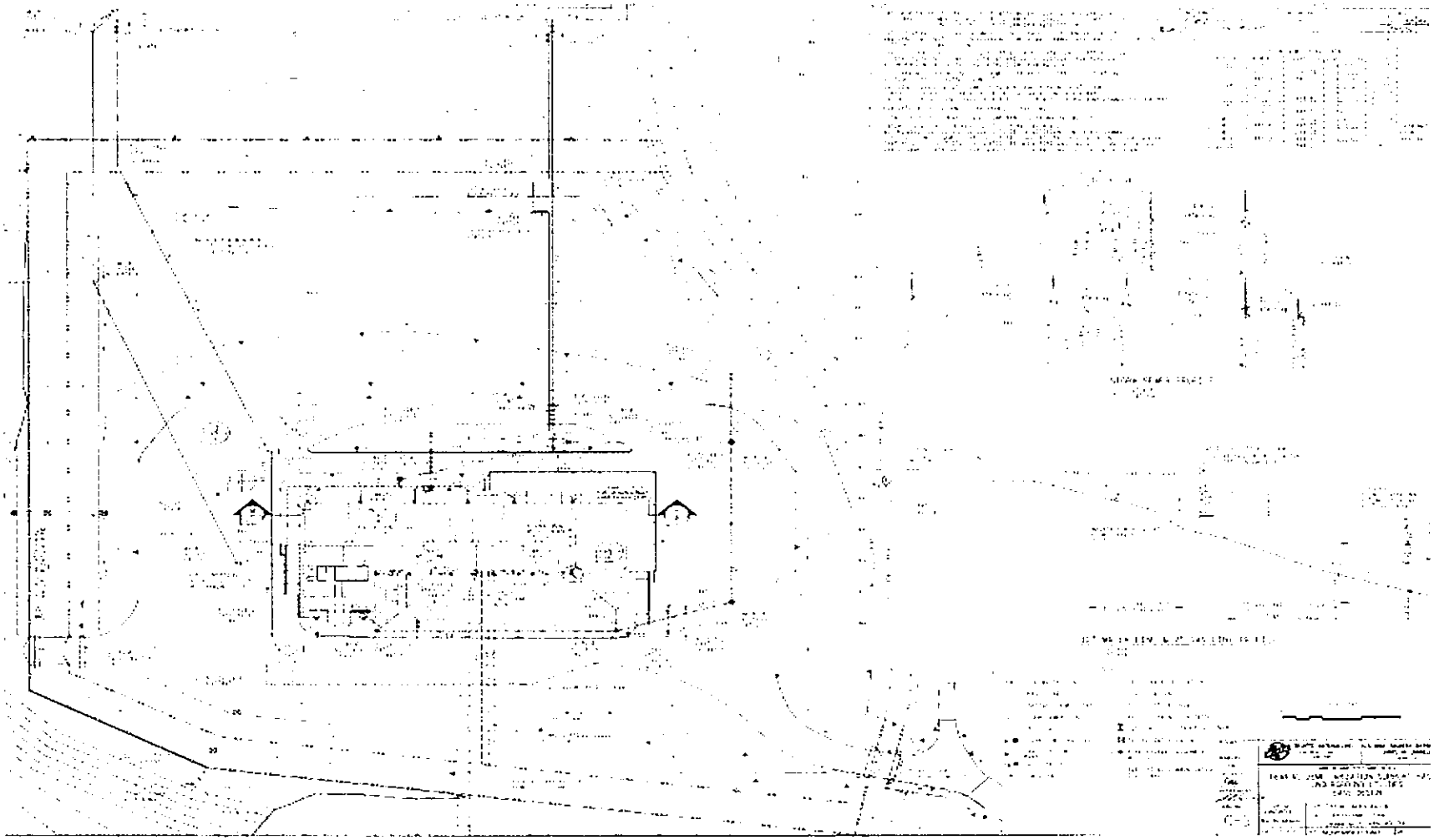

Figure IV J- 4

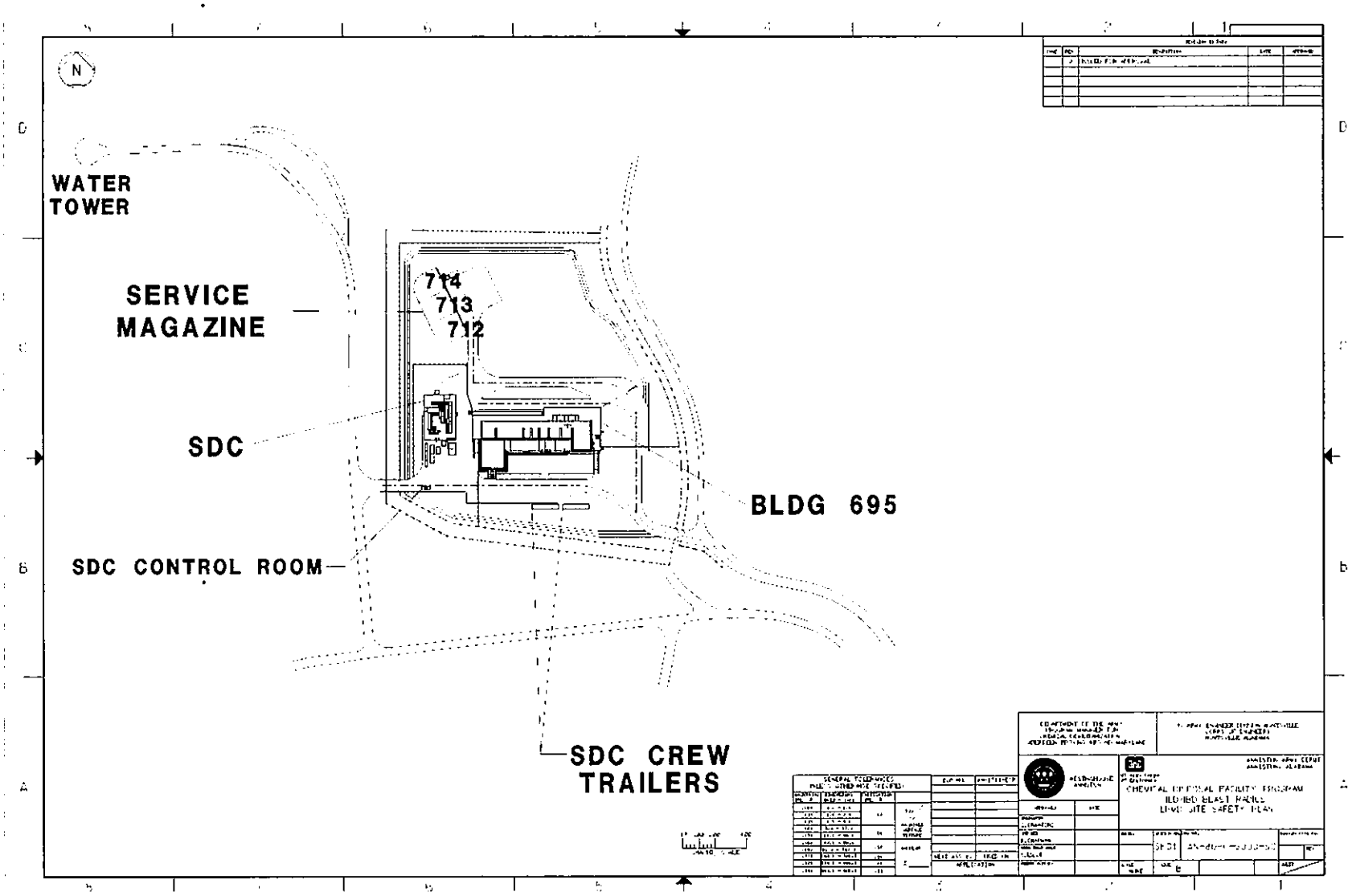
N
WATER TOWER
SERVICE MAGAZINE
714
713
712
SDC
BLDG 695
SDC CONTROL ROOM
SDC CREW TRAILERS

Figure IV J- 5

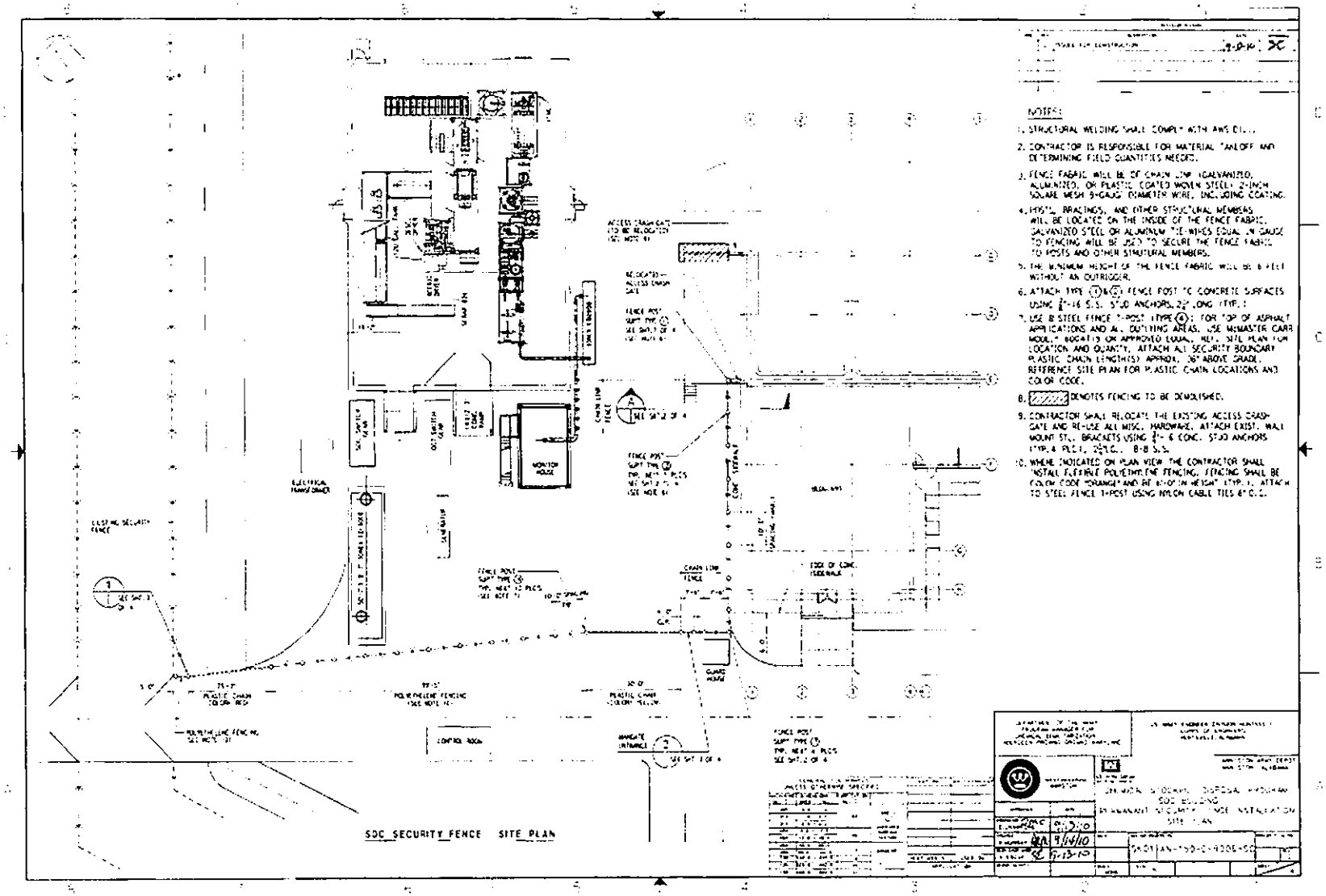
SDC SECURITY FENCE SITE PLAN
NOTES:
1. STRUCTURAL WELDING SHALL COMPLY WITH AWS D1...
2. CONTRACTOR IS RESPONSIBLE FOR MATERIAL TAKEOFF AND DETERMINING FIELD QUANTITIES NEEDED.
3. FENCE FABRIC WILL BE OF CHAIN LINK (GALVANIZED, ALUMINIZED, OR PLASTIC COATED WOVEN STEEL) 2-INCH SQUARE MESH 9-GAUGE DIAMETER WIRE, INCLUDING COATING.
4. POSTS, BRACINGS, AND OTHER STRUCTURAL MEMBERS WILL BE LOCATED ON THE INSIDE OF THE FENCE FABRIC. GALVANIZED STEEL OR ALUMINUM TIE-WIRES EQUAL IN GAUGE TO FENCING WILL BE USED TO SECURE THE FENCE FABRIC TO POSTS AND OTHER STRUCTURAL MEMBERS.
5. THE MINIMUM HEIGHT OF THE FENCE FABRIC WILL BE 8 FEET WITHOUT AN OUTRIGGER.
6. ATTACH TYPE (1)&(2) FENCE POST TO CONCRETE SURFACES USING 3/8"-16 S.S. STUD ANCHORS, 2 1/2" LONG (TYP.).
7. USE 8 STEEL FENCE T-POST (TYPE (4)) FOR TOP OF ASPHALT APPLICATIONS AND ALL OUTLYING AREAS. USE McMASTER CARR MODEL # 8004T13 OR APPROVED EQUAL. REF. SITE PLAN FOR LOCATION AND QUANTITY. ATTACH ALL SECURITY BOUNDARY PLASTIC CHAIN LENGTH(S) APPROX. 36" ABOVE GRADE. REFERENCE SITE PLAN FOR PLASTIC CHAIN LOCATIONS AND COLOR CODE.
8. DENOTES FENCING TO BE DEMOLISHED.
9. CONTRACTOR SHALL RELOCATE THE EXISTING ACCESS CRASH GATE AND RE-USE ALL MISC. HARDWARE. ATTACH EXIST. WALL MOUNT ST.L. BRACKETS USING 3/8"-16 CONC. STUD ANCHORS (TYP.4 PLCS.), 2 1/2"LG., B-B S.S.
10. WHERE INDICATED ON PLAN VIEW THE CONTRACTOR SHALL INSTALL FLEXIBLE POLYETHYLENE FENCING. FENCING SHALL BE COLOR CODE "ORANGE" AND BE 6'-0" IN HEIGHT (TYP.). ATTACH TO STEEL FENCE T-POST USING NYLON CABLE TIES 6" O.C.
ACCESS CRASH GATE (TO BE RELOCATED) SEE NOTE 9
RELOCATED ACCESS CRASH GATE
FENCE POST SEE NOTE 6
CHAIN LINK FENCE
MONITOR HOUSE
GUARD HOUSE
EXISTING SECURITY FENCE
ELECTRICAL TRANSFORMER
75'-0" PLASTIC CHAIN COLOR: RED
POLYETHYLENE FENCING SEE NOTE 10
PLASTIC CHAIN COLOR: YELLOW
CONTROL BOOTH
MAGNATE ENTRANCE
EDGE OF CONC. SIDEWALK
10'-0" SWING GATE
5'-0"
6'-0"

Figure IV J- 6

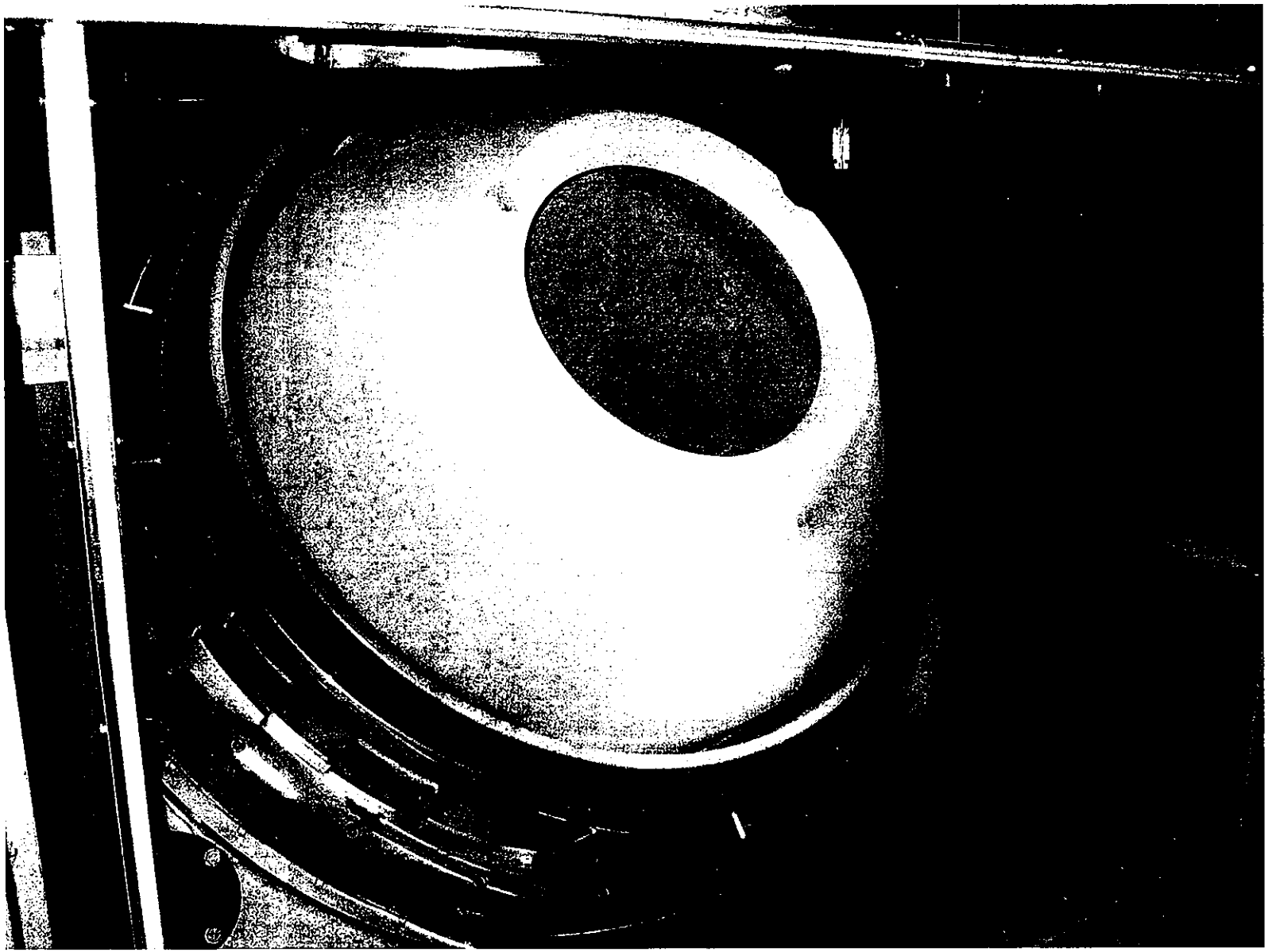

Figure IV J-7 SDC Detonation Chamber

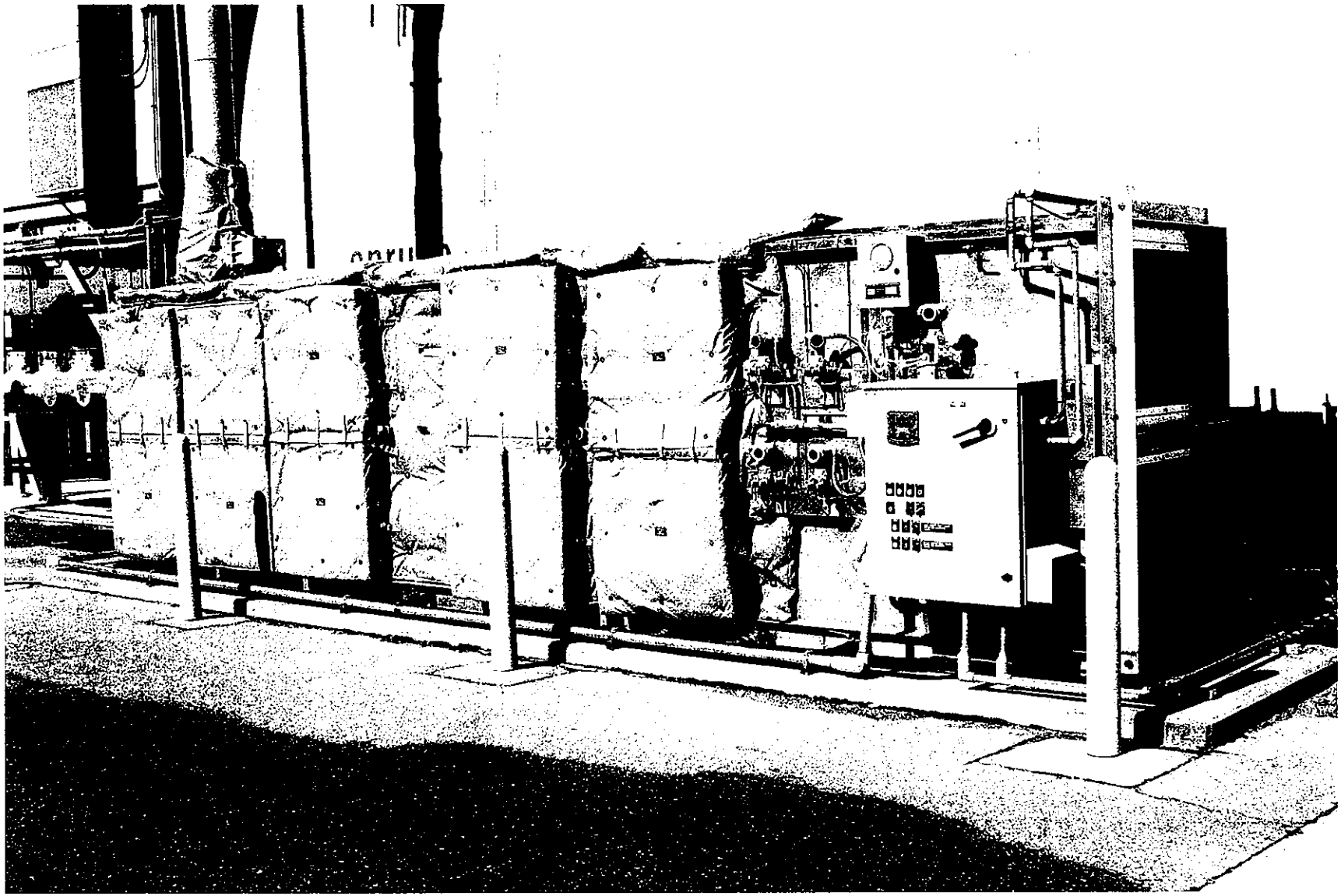

Figure IV J-8 SDC Off-Gas Filter

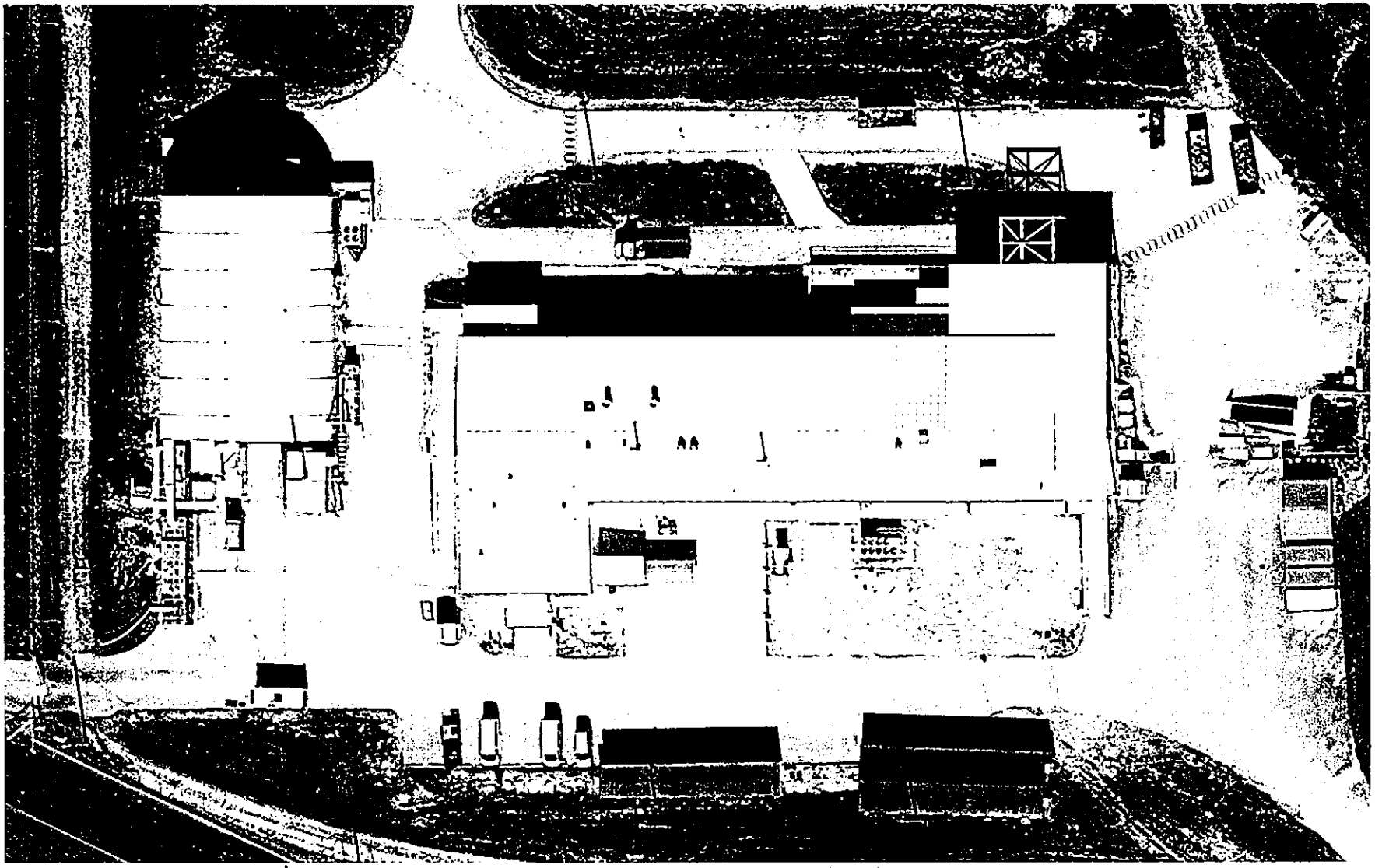

Figure IV J-9 SDC Overhead View

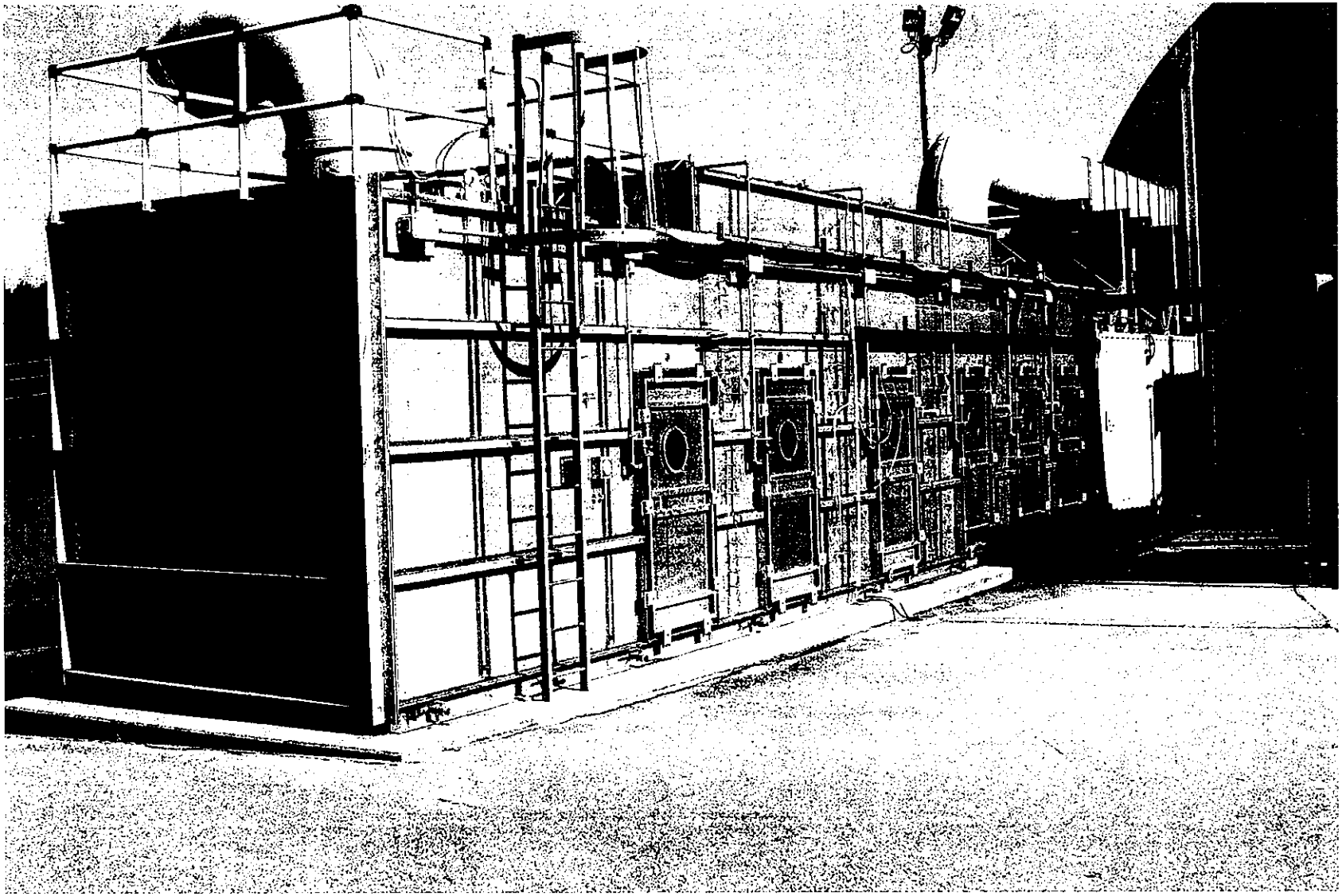

Figure IV J-10 SDC Process Ventilation Filter

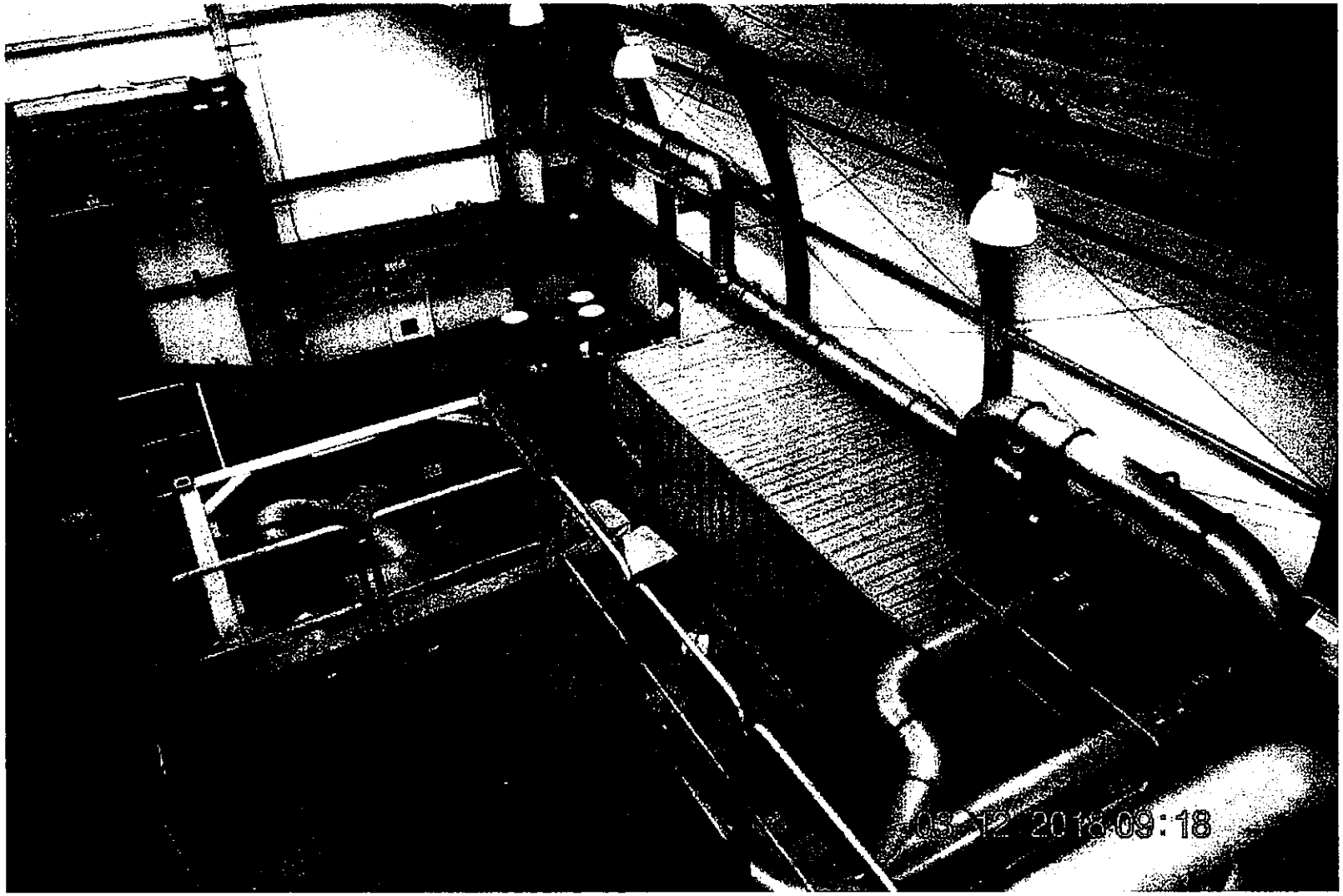

Figure IV J-11 SDC Scrap Handling

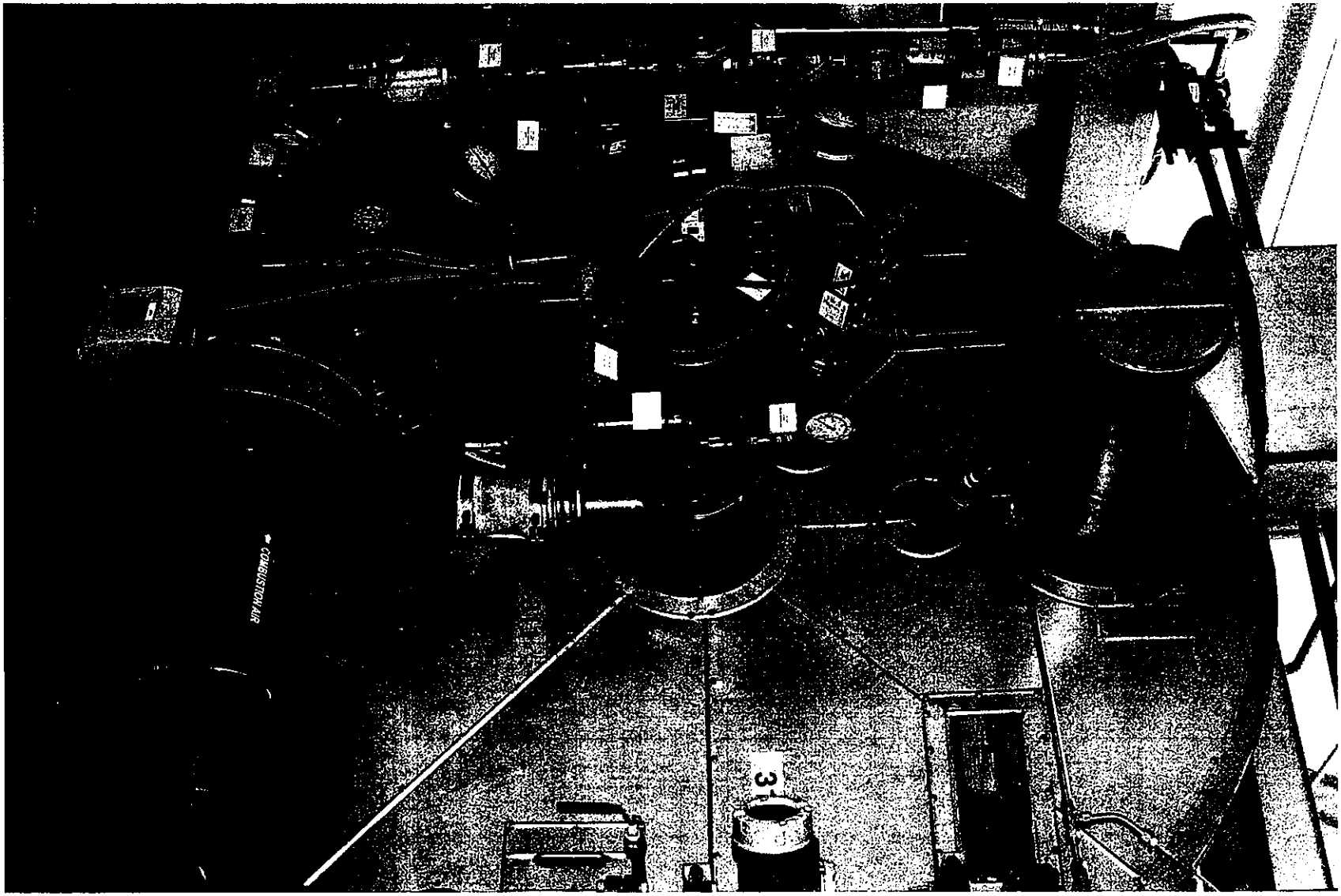

Figure IV J-12 SDC Thermal Oxidizer

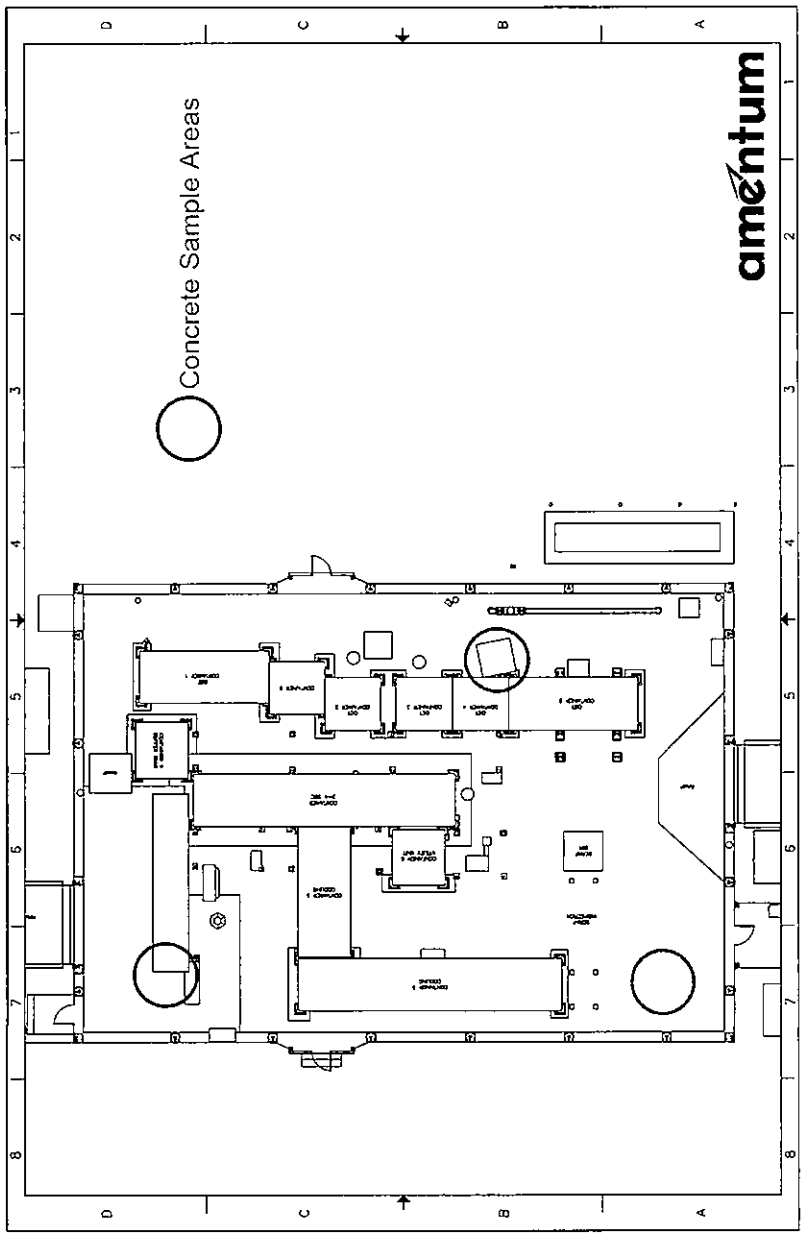

Figure IV J-13 SDC Concrete and Soil Sampling Areas

1

2

Table IV J- 1 : Parameters and Rationale

WAP Section Number	Waste Stream	Parameters for Analysis	Determination Methods	Frequency of Analysis/ Characterization(1)	Sampling Method(2)	Disposal Limits	Disposal Requirements
IV J C-2a(1)(a)	Scrap Metal	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
IV J C-2a(1)(a)	Ash from Treated Scrap Metal from the SDC	TCLP Organics and Metals	See Table IV J-2	Annually or as necessary to characterize for disposal	Grab or Composite sample	IAW applicable ADEM or EPA regulations	Disposal requirements based on analytical results
IV J C-2a(1)(b)	Dust Material from the Buffer Tank, Cyclone and Dust Collection System	TCLP Organics and Metals	See Table IV J-2	Annually or as necessary to characterize for disposal	Grab or Composite sample	IAW applicable ADEM or EPA regulations	Disposal requirements based on analytical results
IV J C-2a(1)(c)	Spent Solids from the Bag House Filter	TCLP Organics and Metals	See Table IV J-2	Annually or as necessary to characterize for disposal	Grab or Composite sample	IAW applicable ADEM or EPA regulations	Disposal requirements based on analytical results
IV J C-2a(1)(d)	Salts from Water Recycle System	TCLP Organics and Metals	See Table IV J-2	Annually or as necessary to characterize for disposal	Grab or Composite sample	IAW applicable ADEM or EPA regulations	Disposal requirements based on analytical results
IV J C-2a(1)(e)	Filter Units from the Exhaust Filter[1]	TCLP Organics and Metals	See Table IV J-2	In the event of filter replacement	Representative sample	IAW applicable ADEM or EPA regulations	Disposal requirements based on analytical results
IV J C-2a(1)(f)	Explosives and Propellants	See Section IV C	Generator knowledge/ Manufacturer's specifications	Not Applicable	Not Applicable	IAW Section IV C of ANAD RCRA Application	Treatment in SDC
IV J C-2a(1)(g)	Miscellaneous Solid Waste	Total Organics and Metals TCLP Organics and Metals	See Table IV J-2	As necessary to characterize for disposal	Grab or Composite sample	IAW applicable ADEM or EPA regulations	Disposal requirements based on analytical results

WAP Section Number	Waste Stream	Parameters for Analysis	Determination Methods	Frequency of Analysis/ Characterization[1]	Sampling Method[2]	Disposal Limits	Disposal Requirements
		Ignitability					
		Reactivity	Generator knowledge		Not Applicable		
IV J C-2a(1)(h)	Refractory Material	TCLP Metals	See Table IV J-2	Each Batch	Composite Sample	IAW applicable ADEM or EPA regulations	Disposal offsite
IV J C-2a(2)(a)	OGT System Brines	TCLP Organics and Metals	See Table IV J-2	Annually or as necessary to characterize for disposal	Composite Sample	IAW applicable ADEM or EPA regulations	Disposal requirements based on analytical results
		pH					
IV J C-2a(2)(b)	Miscellaneous Liquid Waste	TCLP Organics and Metals	See Table IV J-2	As necessary to characterize for disposal	Grab or Composite Sample	IAW applicable ADEM or EPA regulations	Disposal requirements based on analytical results
		pH					
IV J C-2a(3)(a)	Brine Sludge	TCLP Organics and Metals	See Table IV J-2	As necessary to characterize for disposal	Grab or Composite Sample	IAW applicable ADEM or EPA regulations	Disposal requirements based on analytical results
		pH					

Footnotes:
(1) Similar waste streams may be profiled for disposal IAW this table for continued disposal.
(2) Sample containers and preservation techniques, if any, will be IAW individual method of analysis (see Section IV C).

Table IV J- 2: Test Methods

Parameter	Test Method	Reference[1]
TCLP Metals, Organics	Acid extraction of non-liquids Liquids--no extraction necessary	SW-846 Method 1311
Antimony	Inductively-coupled plasma atomic emissions spectrometry or atomic absorption	SW-846 Method 6010B/7062 or E200.7
Arsenic	Inductively-coupled plasma atomic emissions spectrometry or atomic absorption—gaseous hydride	SW-846 Method 6010B/7061 or EPA 206.3
Selenium	Inductively-coupled plasma atomic emissions spectrometry or atomic absorption—gaseous hydride	SW-846 Method 6010B/7741 or EPA 270.3
Mercury	Automated cold vapor technique	SW-846 Method 7470A/7471
Barium	Inductively-coupled plasma atomic emissions spectrometry or atomic absorption—direct aspiration	SW-846 Method 6010B/7000 or EPA 208.1
Beryllium	Inductively-coupled plasma atomic emissions spectrometry or atomic absorption	SW-846 Method 6010B/7000 or E200.7
Cadmium	Inductively-coupled plasma atomic emissions spectrometry or atomic absorption—direct aspiration	SW-846 Method 6010B/7000 or EPA 213.1
Chromium	Inductively-coupled plasma atomic emissions spectrometry or atomic absorption—direct aspiration	SW-846 Method 6010B/7000 or EPA 218.1
Nickel	Inductively-coupled plasma atomic emissions spectrometry or atomic absorption	SW-846 Method 6010B/7000 or E200.7
Silver	Inductively-coupled plasma atomic emissions spectrometry or atomic absorption—direct aspiration	SW-846 Method 6010B/7000 or EPA 272.1
Thallium	Inductively-coupled plasma atomic emissions spectrometry or atomic absorption	SW-846 Method 6010B/7000 or E200.7
Vanadium	Inductively-coupled plasma atomic emissions spectrometry or atomic absorption	SW-846 Method 6010B/7000 or E200.7
Zinc	Inductively-coupled plasma atomic emissions spectrometry or atomic absorption	SW-846 Method 6010B/7000 or E200.7
Lead	Inductively-coupled plasma atomic emissions spectrometry or atomic absorption—direct aspiration	SW-846 Method 6010B/7000 or EPA 239.1
Total Metals	Inductively-coupled plasma atomic emissions spectrometry (except mercury) and manual/automated cold vapor technique (mercury)	SW-846 Method 6010B/7471
Total Organics	Gas Chromatograph/Mass Spectrometry	SW-846 Method 8260B/ 8270C/8081/8082
pH	Soil and Waste pH	SW-846 Method 9040B/9045 or EPA 150.1
	Paper	SW-846 Method 9041A
Ignitability	Pensky-Martens closed cup method for determining ignitability; Ignitability of solids	SW-846 Method 1010A/1030

Footnote:
(1) The most current approved analytical method will be used.

Table IV J- 3 : Inspection Schedule		
Item	**Frequency[1]**	**Types of Problems**
General Area	W	Inspect the floor for areas that indicate excessive wear or deterioration of protective coating (where applicable).
General Area	M	Exits are clearly identified and marked.
General Area	D	Examine floor for apparent drips, spills, or leaks.
SDC EQUIPMENT		
Elevator	W	Observe equipment in operation to determine any loss of performance. Inspect lift area for apparent leaks from equipment.
Pushers	W	Observe equipment in operation to determine any loss of performance. Inspect area for apparent leaks from equipment.
Hatches	W	Observe equipment in operation to determine any loss of performance. Inspect area for apparent leaks from equipment.
Loading Chambers	W	Observe equipment in operation to determine any loss of performance. Inspect area for apparent leaks from equipment.
Tilting Unit	W	Observe equipment in operation to determine any loss of performance. Inspect area for apparent leaks from equipment.
Upper DC	W	Observe equipment in operation to determine any loss of performance. Inspect area for apparent leaks from equipment.
Lower DC	W	Observe equipment in operation to determine any loss of performance. Inspect area for apparent leaks from equipment.
Elevating System	W	Observe equipment in operation to determine any loss of performance. Inspect area for apparent leaks from equipment.
Turning System	W	Observe equipment in operation to determine any loss of performance. Inspect area for apparent leaks from equipment.
Locking Ring	W	Observe equipment in operation to determine any loss of performance. Inspect area for apparent leaks from equipment.
Conveyors	W	Observe equipment in operation to determine any loss of performance. Inspect areas for apparent drips, spills, or leaks.

Table IV J- 3 : Inspection Schedule		
Item	**Frequency[1]**	**Types of Problems**
FPI Mechanisms	W	Test control circuits and document waste-feed cutoff.
Detonation Chamber	A	Bring detonation chamber to ambient temperature and perform a detailed inspection/maintenance operation.
POLLUTION CONTROL EQUIPMENT		
Stack Monitors	D	Check Calibration.
ID Fans	D	Visually inspect for loss of lubrication, check for excessive vibration, and loss of performance by use of operator console data for operating parameters.
Quench Unit	M	Visually inspect shell for corrosion.
Scrubbers	M	Visually inspect shell for corrosion.
Spray Dryer	M	Visually inspect shell for corrosion.
Bag House	W	Visually inspect for evidence of corrosion, malfunctions, leaks, or excessive wear.
Cyclone	W	Visually inspect for evidence of corrosion, malfunctions, leaks, or excessive wear.
Exhaust Filter	W	Visually inspect for evidence of corrosion, malfunctions, leaks, or excessive wear.
SCRAP HANDLING SYSTEM		
Scrap Funnel	W	Observe equipment in operation to determine any loss of performance. Inspect areas for apparent drips, spills, or leaks.
Scrap Box	W	Observe equipment in operation to determine any loss of performance. Inspect areas for apparent drips, spills, or leaks.
Scrap Conveyors	W	Observe equipment in operation to determine any loss of performance. Inspect areas for apparent drips, spills, or leaks.
Ash Collection and Containers	D	Visually inspect for spills and level of waste in containers.
FIRE PROTECTION SYSTEM		
Extinguishers (Manual)	M	Check for condition and gauge pressure. Check expiration dates.
Sprinkler System	A	Inspect IAW Fire Codes and Regulations.

Table IV J- 3 : Inspection Schedule		
Item	**Frequency[1]**	**Types of Problems**
	Q	Using test valve, assure that the system functions and a signal is received by ANAD Fire Department.
UNINTERRUPTIBLE POWER SUPPLY		
Input Voltage, L-L and L-N	M	Check meter for proper voltage.
Input Amps	M	Check meter for proper current.
Input Hertz	M	Check meter for proper frequency.
Output VAC, L-L and L-N	M	Check meter for proper voltage.
Output Hertz	M	Check meter for proper frequency.
Output Amps	M	Check meter for proper current.
Battery VDC	M	Check meter for proper voltage.
EMERGENCY GENERATOR		
Engine / Generator	S	Visually inspect for loose drive belts, oil leaks, coolant leaks, lube oil level, mechanical integrity, crankcase containment and air motors; observe operation and inspect for loss of performance.
FIRST RESPONDER EMERGENCY EQUIPMENT		
Spill Control Material	W	Visually verify that safety equipment necessary for first responder activities is available and/or operational. These activities may be included on inspection logs for the applicable area(s).
Fire Extinguishers		
Eyewash Stations (Portable)		
Safety Shower		
PERMITTED STORAGE AREAS		
Service Magazines	A	Inspect for proper storage of materials, good housekeeping, and condition of magazine doors, vents and maintenance of fire breaks.
	S	Visual inspect the condition of Lightning Protection System.
	B	Check components of the Lightning Protection System for electrical continuity.
	W	Visually inspect for proper storage of materials, proper labeling, and aisle space. If present, visually inspect secondary containment for leaks and deterioration caused by corrosion or other factors.

Table IV J- 3 : Inspection Schedule		
Item	**Frequency[1]**	**Types of Problems**
Storage Igloos	W	Visually inspect for proper storage of materials, proper labeling and aisle space. If present, visually inspect secondary containment for leaks and deterioration caused by corrosion or other factors.
	Q	Inspect WMM and Recovered WMM in storage IAW DDESB storage controls.
	A	Conduct inventory of WMM and recovered WMM in storage IAW DDESB and MMR requirements.

Footnotes:

(1) Inspection requirements will not be performed while the SDC is not in operation.
(2) Frequency definitions are as follows:
- D - daily (once every calendar day)
- W - weekly (once every calendar week)
- M - monthly (once every calendar month)
- S - semiannually (once every six (6) calendar months)
- A - annually (once every twelve (12) calendar months)
- Q - quarterly (once every three (3) calendar months)
- B - biennially (once every two (2) years)

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Table IV J- 4: RCRA HAZARDOUS WASTE DESIGNATION AND RATIONALE [1][2]

Waste Material	RCRA Hazardous Waste Designation (Number)	RCRA Hazardous Waste Definition Regulatory Citation	Basis for Designation
Fill Material			Hazardous wastes to be processed in the SDC will be characterized using available Government sources of information such as the MARB, MIDAS, or other sources of information relative to the items being processed.
Explosives			
Composition B and Tetrytol	Reactive (D003)	ADEM Admin. Code r.-14-2-.03(4)(a)8	Contains Class A explosives, tetryl, and TNT IAW 49 CFR 173.53.
Tetryl	Reactive (D003)	ADEM Admin. Code r.-14-2-.03(4)(a)8	Is a Class A explosive IAW 49 CFR 173.53.
Fuzes (M8, M557, and M51A5, M603, M508, M57)	Reactive (D003)	ADEM Admin. Code r.-14-2-.03(4)(a)8	Contains a Class A explosive, tetryl, IAW 49 CFR 173.53.
Bursters (M5, M6, M14, M40A1, M71, M83 and M22 Booster)	Reactive (D003)	ADEM Admin. Code r.-14-2-.03(4)(a)8	Contains Class A explosives, tetryl and TNT, IAW 49 CFR 173.53.
Activator (M1)	Reactive (D003)	ADEM Admin. Code r.-14-2-.03(4)(a)8	Contains Class A explosives, igniter mix, lead azide and tetryl, IAW 49 CFR 173.53.
Propellants			
M28, M6, and M67	Reactive (D003)	ADEM Admin. Code r.-14-2-.03(4)(a)8	Contains a Class A explosive, nitrocellulose, IAW 49 CFR Subpart C.
M6 and M67	Reactive (D003) TC organic (D030)	ADEM Admin. Code r.-14-2-.03(4)(a)8 ADEM Admin. Code r.-14-2-.03, Table 1	Contains a Class A explosive, 2,4-dinitrotoluene, IAW 49FR Subpart C.

Other Miscellaneous Wastes			
OGT HEPA filters and prefilters (from ventilation system)	Potentially Reactive (D003) Toxicity characteristic metals (D004 through D011)(If found to be present)	ADEM Admin. Code r.-14-2-.03(4)(a)4 ADEM Admin. Code r.-14-2-.03, Table 1	These filters may be contaminated with heavy metals and / or organics. The waste is not expected to be toxicity characteristic. Sampling and analysis will be used to identify other contaminants that may be subject to RCRA regulations.

Note:

(a) Memorandum from Matthew A. Straus, Acting Chief, Waste Identification Branch, U.S. Environmental Protection Agency (EPA), to Jon P. Yeagley, Chief, State Programs Section, U.S. EPA; June 4, 1984.

Footnotes:

(1) Explosives, propellants, and fuzes may contain the following:

D004	arsenic
D005	barium
D006	cadmium
D007	chromium
D008	lead
D009	mercury
D010	selenium
D011	silver

(2) The explosives and propellants listed are examples of the items that may be processed at the SDC. A more extensive list is contained in Section IV C of the ANAD RCRA Application. All energetic material processed at the SDC will be IAW approved feed rates and limitations contained in the RCRA Permit.

Table IV J- 5: RATIONALE FOR SELECTION OF ANALYSIS TO PERFORM ON WASTE MATERIALS

Waste	Analysis	Rationale
Explosives in Munitions	None	Sampling and analysis is not conducted because the explosives were manufactured and loaded to government standards and sufficient information is available for proper characterization. These wastes are managed as RCRA hazardous wastes.
Propellants	None	Sampling and analysis is not conducted because the propellants were manufactured and loaded to government standards and sufficient information is available for proper characterization. These wastes are managed as RCRA hazardous wastes.
Energetic Contaminated Waste	None	Generator knowledge as described in Section IV J C-1 above will be applied for the energetic contaminated waste.
Other Miscellaneous Wastes (OGT HEPA Filter and Prefilters)	TC Organics and Metals	Spent filters may be generated occasionally at the SDC but are not stored, treated, or disposed of at this location. The filters will be disposed of as ordinary solid waste if no heavy metal or organics exposure has occurred with respect to the filters as is demonstrated by applicable analysis.