ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

NOTICE OF PROPOSED RENEWAL OF THE HAZARDOUS WASTE FACILITY PERMIT UNDER THE ALABAMA HAZARDOUS WASTES MANAGEMENT AND MINIMIZATION ACT (AHWMMA) AND REQUEST FOR COMMENTS

PUBLIC NOTICE – 421

CALHOUN COUNTY

Anniston Army Depot of Anniston, Alabama submitted to ADEM an application for renewal of its Hazardous Waste Facility permit for the 3 ANMC Conventional Waste Munitions Storage Igloos, 3 ANAD Industrial Waste Storage Buildings ,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), and 3 Rocket Motor Fire Units which are used to manage hazardous waste at its facility (**EPA I.D. Number AL3 210 020 027** located at 7 Frankford Avenue, Anniston, Alabama 36201. The Department has determined the facility's renewal application to be complete and has prepared a draft permit in accordance with State regulations.

Anniston Army Depot operates a facility that treats and stores hazardous waste. 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)) are the operators of the hazardous waste storage and treatment facility. The proposed permit renewal incorporates updates to the previous permit to reflect changes made to Part I thought IX of the AHWMMA permit. In addition, the proposed permit renewal includes provisions that require any other solid waste management units and areas of concern at the facility to be addressed.

Copies of the fact sheet, permit renewal application and draft AHWMMA permit are available for public inspection electronically via **http://adem.alabama.gov/newsEvents/publicNotices.cnt** and at the following location Monday – Friday (except legal holidays) during the hours of 8:00 a.m. to 5:00 p.m. A nominal fee for copying and/or mailing may be charged. Arrangements for copying should be made in advance.

Russell A. Kelly, Chief
Permits and Services Division
Alabama Department of Environmental Management
1400 Coliseum Blvd., Montgomery, Alabama 36110-2400
[Mailing address: P.O. Box 301463; Zip 36130-1463]
(334) 271-7714

Persons wishing to comment may do so, in writing, to the Department's named contact above within 45 days following the publication date of this notice. In order to affect final decisions, comments must offer technically substantial information that is applicable to the proposed permit.

A written request for a public hearing may also be filed within that 45-day period and must state the nature of the issues proposed to be raised in the hearing. The Director shall hold a public hearing upon receipt of a significant number of technical requests.

After consideration of all written comments, review of any public hearing record, and consideration of the requirements of the AHWMMA, the Federal Resource, Conservation and Recovery Act (RCRA) and applicable regulations, the Department will make a final determination. The Department will develop a response to comments, which will become part of the public record and will be available to persons upon request. Notice will be sent to any person requesting notice of the final action.

The Department maintains a list of interested individuals who are mailed legal notices regarding proposed permits. If you wish to receive such notices, contact the Permits & Services Division via telephone (334-271-7714), e-mail (permitsmail@adem.alabama.gov), or postal service (P.O. Box 301463, Montgomery, AL 36130-1463).

This notice is hereby given this **2nd day of July, 2021** by authorization of the Alabama Department of Environmental Management.

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Lance R. LeFleur
Director

Nondiscrimination Statement: The Department does not discriminate on the basis of race, color, national origin, sex, religion, age or disability in the administration of its programs.

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

FACT SHEET

A draft renewal of 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 date.

II. PROCEDURES FOR REACHING A FINAL DECISION

The Alabama Department of Environmental Management (ADEM or Department) is proposing to issue ANAD a permit for hazardous waste storage and treatment, for solid waste management unit and areas of concern investigations, and for corrective action requirements, including 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 (OB) Unit, 1 Open Detonation (OD) 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 (ETU)(Flash Furnace), and 3 Rocket Motor Fire (RMF) Units.

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 July 2 2021, which is the date of publication of the public notice in major local newspaper(s) of general circulation, and will end on August 16, 2021. 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 permit conditions or the permit 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 the Depot'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 OB, OD, RMF stands, SDC, TTCDP or ETU treatment 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 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. TECHNICAL CONTACT

Renee Carter
Facilities Engineering Section
Governmental Hazardous Waste Branch, Land Division
Alabama Department of Environmental Management
1400 Coliseum Blvd (zip 36110-2059)
P.O. Box 301463 (zip 36130-1463)
Montgomery, Alabama
(334) 274-4236

ADEM
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: **August XX, 2021**

EXPIRATION DATE: **August XX, 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.*

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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

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. ADMC 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 (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 August XX, 2021 and shall remain in effect until August XX, 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
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)

PART I

STANDARD FACILITY CONDITIONS

I.A. EFFECT OF PERMIT

1. At the Anniston Field Office (AFO) – Static Detonation Chamber (SDC) Facility, the Permittee is allowed to store and treat hazardous waste in accordance with (IAW) the conditions of this Permit and IAW ADEM Admin. Code Rule 335-14. The Permittee is allowed to store hazardous waste in containers, and treat hazardous waste in miscellaneous treatment units. The SDC facility is also allowed to accumulate hazardous waste onsite for less than 90 calendar days pursuant to ADEM Admin. Code Rule 335-14-3-.03(5). The SDC site may be used to process conventional munitions obtained from either inside or outside the State of Alabama that are not defined as chemical munitions and are chemical agent free. This may include conventional munitions components from chemical munitions which have been verified chemical agent free and received from outside the State of Alabama. Only those recovered waste military munitions (WMM) recovered and received from locations within the State of Alabama may be processed at the SDC. The Department must be notified prior to receipt of any recovered munitions.

2. Within the Anniston Army Depot (ANAD), the Permittee is allowed to thermally treat conventional waste military munitions (WMM) hazardous waste by the energetic treatment unit (ETU), open burning (OB), open detonation (OD), rocket motor firing (RMF), and the thermal treatment closed disposal process (TTCDP), IAW ADEM Admin. Code Rule 335-14-5-.24 in the designated ETU, OB, OD, RMF, and TTCDP units. Any treatment, storage, or disposal (TSD) of hazardous waste not authorized in this Permit is prohibited. Within the ANAD, the Permittee is allowed to store industrially derived hazardous waste, non-regulated waste (solid and universal waste, used oil, etc.), and conventional WMM IAW the conditions of this Permit and IAW ADEM Admin. Code Rule 335 Division 14. The Permittee is allowed to receive shipment from off-site sources of waste conventional munitions for the purpose of reuse, recycle, recovery, or for disposal. Receipt of any other hazardous waste from off-site sources is not allowed.

3. Issuance of this Permit does not authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations. Compliance with the terms of this Permit does not constitute a defense to any action brought under the AHWMMA, or any other law governing protection of public health or the environment, for any imminent and substantial endangerment to human health, welfare, or the environment. (ADEM Admin. Code Rule 335-14-8-.01(4)).

I.B. SEVERABILITY

The provisions of this Permit are severable and if any provision of this Permit, or the application of any provision of this Permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby. Invalidation of any State or Federal statutory or regulatory provision which forms the basis for any condition of this Permit does not affect the validity of any other State or federal statutory or regulatory basis for said condition.

I.C. DUTIES AND RESPONSIBILITIES

1. Duty to Comply

The Permittee must comply with all conditions of this Permit except to the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of the AHWMMA, and is grounds for enforcement action, permit termination, revocation and re-issuance, modification, or denial of a permit renewal application.

2. Duty to Reapply

a. Operating Units

If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must apply for and obtain a new permit. The application for a new permit must be submitted at least 180 calendar days before the expiration of this permit, as required by ADEM Admin. Code Rule 335-14-8-.03(1)(b)2.

b. SWMU Corrective Action Requirements

The Permittee must submit an application for a new permit for both post-closure and Solid Waste Management Unit (SWMU) corrective measures at least 180 calendar days before the expiration of this permit. The Permittee must reapply in order to fulfill the 30-year post-closure care period required by ADEM Admin. Code Rule 335-14-5-.07(8)(a)1. The Department may shorten or extend the post-closure care period applicable to the hazardous waste facility in accordance with ADEM Admin. Code Rules 335-14-5-.07(8)(a)2. and 335-14-8-.03(1)(b).

3. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit (ADEM Admin. Code Rule 335-14-8-.03(1)(c)).

4. Duty to Mitigate

In the event of noncompliance with the permit, the Permittee shall take all reasonable steps to minimize releases to the environment resulting from the noncompliance, and shall carry out such measures as are reasonable, to prevent significant adverse impacts on human health or the environment (ADEM Admin. Code Rule 335-14-8-.03(1)(d)).

5. Proper Operation and Maintenance

The Permittee shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance project plans (QAPP) to include following SOPs. Adherence to any SOP employed by the Permittee does not necessarily constitute regulatory compliance. This provision requires the operation of back-up or auxiliary equipment or similar systems only when necessary to achieve compliance with the conditions of this Permit (ADEM Admin. Code Rule 335-14-8-.03(1)(e)).

6. Permit Actions

This Permit may be modified, revoked and reissued, or terminated for cause as specified in ADEM Admin. Code Rule 335-14-8-.04 (2) through (4). The filing of a request for a permit modification, revocation and reissuance, or termination or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition (ADEM Admin. Code Rule 335-14-8-.03(1)(f)).

7. Property Rights

Issuance of this permit does not convey any property rights of any sort, nor any exclusive privilege.

8. Duty to Provide Information

The Permittee shall furnish to the Department, within a reasonable time, any relevant information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittee shall also furnish to the Department upon request, copies of records required to be kept by this Permit (ADEM Admin. Code Rule 335-14-8-.03(1)(h)).

9. Inspection and Entry

Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow duly designated officers and the employees of the Department or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

a. Enter at reasonable times the Permittee's premises where a regulated facility or activity is located or conducted; or where records must be kept under the conditions of this Permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;

c. Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the AHWMMA, any substances or parameters at any location. The Permittee shall have the opportunity to split samples during sampling.

10. Monitoring and Records

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The methods used to obtain representative samples of the waste to be analyzed must be the appropriate method from ADEM Admin. Code Rule 335-14-2 Appendix I, or the methods specified in the Waste Analysis Plan (WAP) [see Sections II C-2(permitted storage), IV C-2 (OB, OD, and RMF), IV J C-2(SDC), IV K C-2(TTCDP), and IV L C-2(ETU) of the permit application]. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical

Methods (SW-846, latest edition), Methods for Chemical Analysis of Water and Wastes (EPA-600/4-79-020), the methods specified in sections II C-2, IV C-2, IV J C-2, IV K C-2 and IV L C-2 of the permit application or an alternative method approved by ADEM Admin. Code Rule 335-14-8-.03(1)(j)1.

b. The Permittee shall maintain, at the facility, records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentations, the certification required by ADEM Admin. Code Rule 335-14-5-.05(4)(b)9, records of all data used to prepare documents required by this permit, and records of all data used to complete the application for this permit for a period of at least three (3) years from the date of the certification, application, sample, measurement, report or record, or until corrective action is completed, whichever date is later. This period may be extended by the Department at any time and is automatically extended during the course of any unresolved enforcement action regarding this facility. [ADEM Admin Code Rule 335-14-5-.05(5)(b)) and 335-14-8-.03(1)(j)2.]

c. The Permittee shall maintain, at the facility, records of all groundwater monitoring wells, piezometers, and associated groundwater surface elevations throughout the term of this permit. These records shall include the surveyed location, surveyed elevation, surveyed elevation reference point, total depth, screened interval, construction details, well log, and all other pertinent information for each well and piezometer.

d. Records of monitoring information shall include:

   i. The date(s), exact place, and time of sampling or measurements;

   ii. The names of individual(s) who performed the sampling for measurements;

   iii. The date(s) analyses were performed;

   iv. The names of individual(s) who performed the analyses;

   v. The analytical techniques or methods used; and

   vi. The results of such analyses.

e. The following documents and information shall be maintained throughout the term of this permit at the Facility:

   i. Complete copy of this permit and the permit application.

   ii. Operating record as required by ADEM Admin. Code Rule 335-14-5-.05(4) and this permit.

   iii. Copies of all plans, reports, inspection schedules, inspection logs as required by ADEM Admin. Code Rule 335-14-5 and this permit.

11. Signatory Requirements

All applications, reports or information required by this permit and submitted to the Department shall be signed and certified in accordance with ADEM Admin. Code Rules 335-14-8-.02(2) and 335-14-8-.03(1)(k).

12. Reporting Requirements

a. Planned Changes

The Permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility and any solid waste management units identified under Part VI of this permit.

b. Anticipated Noncompliance

The Permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

c. Transfer of Permit

This Permit may be transferred to a new owner or operator only if it is modified or revoked and reissued pursuant to ADEM Admin. Code Rules 335-14-8-.04(1) and 335-14-8-.03(a)1.(vii). Before transferring ownership or operation of the facility during the term of this permit, the Permittee shall notify the new owner or operator, in writing, of the requirements of ADEM Admin. Code Rules 335-14-5 and 335-14-8 and this permit.

d. Monitoring Reports

Monitoring results shall be reported at the intervals specified elsewhere in this permit.

e. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted to the Department no later than 14 calendar days following each schedule date.

f. Twenty-Four Hour Reporting

i. The Permittee shall report to the Department any noncompliance with this permit that may endanger human health or the environment. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the circumstances. This report shall include, but is not limited to, the following:

(I) Information concerning the release of any hazardous waste which may endanger public drinking water supplies; and,

(II) Information concerning the release or discharge of any hazardous waste, or hazardous waste constituents, or of a fire or explosion at the facility, which could threaten the environment or human health outside the facility.

ii. The description of the occurrence and its cause shall include:

(I) Name, address, and telephone number of the owner or operator;

(II) Name, address, telephone number, and EPA Identification Number of the facility;

(III) Date, time, and type of incident;

(IV) Name and quantity of material(s) involved;

(V) The extent of injuries, if any;

(VI) An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and,

(VII) Estimated quantity and disposition of recovered material that resulted from the accident.

iii. A written submission shall also be provided within 5 calendar days of the time that the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the periods of noncompliance (including exact dates and times); whether the noncompliance has been corrected, and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

g. Other Noncompliance

The Permittee shall report to the Department all instances of noncompliance not otherwise required by Permit Conditions I.C.12.d., I.C.12.e., or I.C.12.f. at the time any other reports required by this permit are submitted. The reports shall contain the information required by Permit Condition I.C.12.f.

h. Other Information

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information. In addition, upon request, the Permittee shall furnish to the Department any information related to compliance with this permit.

13. Obligation for Corrective Action

Owners or operators of hazardous waste management units must have permits during the active life (including the closure and post-closure period) of the unit, and for any period necessary to comply with the SWMU corrective action requirements (Part VI) of this permit. Therefore, the Permittee must reapply in accordance with Condition I.C.2 of this permit unit this obligation is fulfilled.

14. Certification of Construction

The Permittee may not commence treatment, storage or disposal of hazardous waste or contaminated media in any new unit or modified portion of the facility until the Permittee has submitted to the Department, by certified mail or hand-delivery, a letter (together with the certification by the Construction Quality Assurance (CQA) officer required by ADEM Admin. Code Rule 335-14-5-.02(10)(d) and any other certifications required by this permit or ADEM Admin. Code Rule 335-14) signed by the Permittee and a registered Professional Engineer (State of Alabama) stating that the facility has been constructed or modified in compliance with this permit where appropriate; and

a. The Department has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the permit; or

b. The Department has either waived the inspection or has not notified the Permittee, within 15 calendar days of the notification from the Permittee, of its intent to inspect. [ADEM Admin. Code Rule 335-14-8-.03(1)(l)2.]

15. The Permittee shall assure that all measures necessary to maintain and/or achieve compliance with all applicable requirements of ADEM Admin. Code Rules 335-14 are taken during the active life of the facility, post-closure care period, corrective action period, and throughout the term of this permit.

16. In the event that circumstances beyond the Permittee's control arise to prevent achievement of any deadline set forth by this permit, the Permittee may immediately, upon the occurrence thereof, request an extension by sending a written request to the Department explaining the need for the extension. The Department may, after consideration of the circumstances, grant the extension. Requests for extensions may require a permit modification pursuant to ADEM Admin. Code Rule 335-14-8-.04(2) or (3).

I.D. CONFIDENTIAL INFORMATION

The Permittee may claim confidential any information required to be submitted by this permit if the information is protected under the Code of Alabama 1975, §22-30-18, as amended. The term "trade secret" as used in §22-30-18 is defined in the Code of Alabama 1975, §22-30-2(12).

I.E. DEFINITIONS

For the purpose of this Permit, terms used herein shall have the same meaning as those in ADEM Admin. Code Rules 335-14-1, 335-14-2, 335-14-5, and 335-14-8, unless this Permit specifically provides otherwise; where terms are not otherwise defined, the meaning associated with such terms shall be as defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

"Alternative Concentration Limit" (ACL), for the purposes of this permit, refers to a groundwater concentration limit which is established pursuant to ADEM Admin. Code Rule 335-14-5-.06(5)(b).

"Area of concern" (AOC) for purposes of this permit includes any area having a probable release of a hazardous waste or hazardous constituent which is not from a solid waste management unit and is determined by the Department to pose a current or potential threat to human health or the environment. Such areas of concern may require investigations and remedial action as required under Section 3005(c)(3) of the Resource Conservation and Recovery Act and ADEM Admin. Code Rule 335-14-8-.03(3) (b)2. in order to ensure adequate protection of human health and the environment.

"Chemical agent" for purposes of this permit, includes, but is not limited to, the nerve agents VX or GB (Sarin) and the blister agent mustard (HD, HN, HT, or Lewisite, dependent upon the mixture).

"Chemical agent free" for the purposes of this permit refers to the condition of a material that, after being analyzed for chemical agents to which the material was exposed, is determined to

have chemical agent concentrations less than (<) 1 Short-Term Limit (STL) for non-porous waste or < 1 Waste Control Level (WCL) for porous wastes.

"Chemical munitions" for the purposes of this permit refers to military munitions containing chemical agent.

"Contamination" for purposes of this permit refers to the presence of any hazardous constituent in a concentration which exceeds the naturally occurring concentration of that constituent in the immediate vicinity of the facility (in areas not affected by the facility).

"Conventional munitions" for the purposes of this permit means military munitions and munition products and components produced for or used by the military for national defense and security, as defined by ADEM Admin. Code Rule 335-14-1-.02 as "military munitions", and are not chemical munitions.

"Corrective action" for purposes of this permit is the sum of all corrective measures necessary to protect human health and the environment for all releases of hazardous constituents from any SWMU at the facility, regardless of the time at which waste was placed in the unit, as required by ADEM Admin. Code Rule 335-14-5-.06(11) and/or 335-14-5-.06(12). Corrective measures may address releases to air, soils, surface water, or groundwater.

"Corrective Action Management Unit" (CAMU) for purposes of this permit, includes any area within a facility that is designated by the Department under ADEM Admin. Code Rule 335-14-5-.19 for the purpose of implementing corrective action requirements under ADEM Admin. Code Rule 335-14-5-.06(12), §22-30-19 et seq., Code of Alabama 1975, and/or RCRA section 3008(h). A CAMU shall only be used for the management of remediation waste pursuant to implementing such corrective action requirements at the facility.

"Corrective measures" for purposes of this permit, include all individual measures taken and/or necessary to remedy releases and to protect human health and the environment for all releases of hazardous waste or hazardous constituents from any SWMU at the facility, regardless of the time at which waste was placed in the unit, as required under ADEM Admin. Code Rule 335-14-5-.06(12). Corrective measures may address releases to air, soils, surface water, or groundwater. The sum of all individual corrective measures is known as corrective action.

"DDESB" means the Department of Defense Explosive Safety Board.

"Decontamination" means the application of a solution to any waste, equipment or facilities for the purposes of reducing contamination.

"Emissions test period" shall refer to the period of time required to complete an emissions test, from the first run until the final run of the emissions test, as described in the emissions test plan.

"Extent of contamination" for the purposes of this permit is defined as the horizontal and vertical area in which the concentrations of hazardous constituents in the environmental media being investigated are above detection limits or background concentrations indicative of the region, whichever is appropriate as determined by the Department.

"Fill material" for the purposes of this Permit may be a liquid or solid material such as colored smokes, white phosphorous, red phosphorous, hexachloroethane, riot control agents, etc. that does not meet the definition of a chemical munition.

"Government furnished equipment" (GFE) is hazardous waste management unit (HWMU) equipment that shall be delivered to the site as a pre-fabricated assembly.

"Hazardous constituents" for purposes of this Permit are those substances listed in ADEM Admin. Code Rule 335-14-2- Appendix VIII and/or ADEM Admin. Code Rule 335-14-5- Appendix IX and include hazardous constituents released from solid waste, hazardous waste, and hazardous waste constituents that are reaction by-products.

"Hourly rolling average" (ROHA) is the arithmetic mean of the 60 most recent 1-minute averages recorded.

"In process" refers to any waste, primary or secondary, which has been loaded into the Static Detonation Chamber and has been configured with the intent of processing through the SDC system.

"Interim measures" for purposes of this permit are actions necessary to minimize or prevent the further migration of contaminants and limit actual or potential human and environmental exposure to contaminants while long term corrective action remedies are evaluated and, if necessary, implemented.

"Land Disposal" for purposes of this permit and ADEM Admin. Code Rule 335-14-9 means placement in or on the land and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, underground mine or cave, or concrete vault or bunker intended for disposal purposes.

"Landfill" for the purposes of this permit includes any disposal facility or part of a facility where hazardous waste is placed in or on the land and which is not a pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, a cave, or a corrective action management unit.

"Land Use Controls", for the purposes of this permit, is as defined by ADEM Admin. Code Rule 335-15-1-.02.

A "maximum concentration limit" (MCL), for the purposes of this permit, refers to a groundwater concentration limit in Table 1 of ADEM Admin. Code Rule 335-14-5-.06(5), or which is listed in ADEM Admin. Code Rule 335-7-2 (Primary Drinking Water Standard) or ADEM Admin. Code Rule 335-7-3 (Secondary Drinking Water Standards) or analogous Federal safe drinking water regulations (40 CFR 141). In cases where a constituent is listed in multiple sources (ADEM Admin. Code Rule 335-14 and/or ADEM Admin. Code Rule 335-7, and /or 40 CFR 141), the most stringent standard shall apply.

"Method detection limit" (MDL), for the purposes of this permit, means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

"Mixed waste", for the purposes of this permit, means a solid waste that is a mixture of hazardous waste (as defined in ADEM Admin. Code Rule 335-14-2-.01(3)) and radioactive waste (as defined in 10 CFR 61.2). The radioactive component of mixed waste is subject to regulation by the Atomic Energy Act (AEA)/Nuclear Regulatory Commission (NRC). The non-radioactive chemically hazardous component of mixed waste is subject to regulation by the AHWMMA and ADEM Admin. Code Rule 335-14.

"Miscellaneous unit", for the purposes of this permit, means a hazardous waste management unit where hazardous waste is treated, stored, or disposed of and that is not a container, tank, surface impoundment, pile, land treatment unit, landfill, incinerator, boiler, industrial furnace, underground injection well with appropriate technical standards under 40 CFR Part 146,

containment building, corrective action management unit, unit eligible for a research, development and demonstration permit under 335-14-8-.06(4); or staging pile.

"Munitions Debris" for purposes of this permit means remnants of munitions (*e.g.*, fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal.

"Net Explosive Weight (NEW)", for the purposes of this permit, represents the combined explosives weight of all energetics contained in a munition item

"Non-regulated waste", for the purposes of this permit, means waste that is not otherwise regulated as RCRA listed and/or characteristic hazardous waste. In this case, non-regulated includes, but it not limited to, solid and universal waste, used oil, PCB, etc. Universal waste and used oil are subject to ADEM Admin. Code Rule 335-14-11, Standards for Universal Waste Management and ADEM Admin. Code Rule 335-14-17, Standards for the Management of Used Oil, respectively.

"Normal operating period" for a unit for the purposes of this permit shall begin when all requirements provided in Part IV for that unit have been met by the Permittee and approved by the Department, the emissions test results and the health risk assessment have been evaluated and approved by the Department, and the applicable numerical values in the conditions and tables of Part IV have been established. The normal operating period lasts until the unit re-enters a pre-emissions test, emissions test, or post-emissions test period or until the unit treats the last batch of waste prior to beginning closure operations.

"Notice of Environmental Use Restriction (NEUR)" for the purpose of this permit as defined in ADEM Admin. Code Rule 335-5-1-.02(3) is a notice required in lieu of an environmental covenant for properties or sites owned by the federal government where a response action does not return contaminated property to unrestricted use. An environmental covenant shall be filed at such time as the property is transferred to a non-federal owner.

Open burning" (OB), for the purposes of this permit, means the combustion of any material without the control of combustion air to maintain adequate temperature for efficient combustion, containment of the combustion-reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion, and control of emission of the gaseous combustion products.

"Open detonation" (OD), for the purposes of this permit, means the explosion in which chemical transformation passes through the material faster than the speed of sound (0.33 kilometers/second at sea level) and which produces the uncontrolled emission of the gaseous detonation products.

"Operating day" for the purposes of this permit, means any day on which hazardous waste is treated, stored, or disposed of in a unit. For example, each day that a hazardous waste storage unit contains hazardous waste is an operating day; as is each day that a disposal unit contains or receives hazardous waste, or each day that hazardous waste is treated in a treatment unit.

"Operational range" for the purpose of this permit, as defined in Section 1019(e) of the United States Code means a range that is under the jurisdiction, custody, or control of the Secretary of a military department and (a) that is used for range activities, or (b) although not currently being used for range activities, that is still considered by the Secretary to be a range and has not been put to a new use that is incompatible with range activities.

"Post-emissions test period" shall refer to the period of time extending from the completion of the final run of an emissions test as described in the emissions test plan for that unit until all requirements provided in Part IV for that unit have been met by the Permittee and approved by

the Department, the emissions test results and health risk assessment have been evaluated and approved by the Department, and the applicable numerical values in the conditions and tables of Part IV have been established.

"Practical quantitation limits" (PQL), for the purposes of this permit, are the lowest concentrations of analytes in groundwater that can be reliably determined within specified limits of precision and accuracy by a given method under routine laboratory operating conditions, as listed in ADEM Admin. Code Rule 335-14-5-Appendix IX.

"Recovered Waste Military Munitions" refers to military munitions recovered from sites such as Formerly Used Defense Sites (FUDS), CERCLA/MMRP remediation sites, burial pits, range clearing operations, etc. and may include items such as explosives, propellant, chemical agent, chemical munitions, or fill material as defined above.

"Release" for purposes of this permit includes any spilling, leaking, pouring, emitting, emptying, discharging, injecting, escaping, leaching, pumping, or disposing into the environment of any hazardous waste or hazardous constituent.

"Remediation waste" for the purposes of this permit includes all SWMUs and all media (including groundwater, surface water, soils, and sediments) and debris, which contain listed hazardous wastes or which themselves exhibit a hazardous waste characteristic, that are managed

for the purpose of implementing corrective action requirements under ADEM Admin. Code Rule 335-14-5-.06(12) and RCRA Section 3008(h). For a given facility, remediation wastes may originate only from within the facility boundary, but may include waste managed in implementing RCRA sections 3004(v) or 3008(h) for releases beyond the facility boundary.

"Shakedown period" shall refer to the period of time required to determine operational readiness extending from systemization until the beginning of the emissions test period.

"Short Term Exposure Limit (STEL)" is the maximum exposure concentration of a chemical substance not to be exceeded in a 15-minute period. Exposure to the STEL concentration shall not occur more than four (4) times per day and at least 60 minutes should elapse between successive exposures, with the exception for VX, which shall not occur more than once per day.

"Short Term Level (STL) refers to the standard for agent vapor monitoring of non-porous materials defined as 0.0001 milligrams per cubic meter (mg/m^3) for GB, 0.00001 mg/m^3 for VX, and 0.003 mg/m^3 for HD/HT. The STL is used in locations that require monitoring for an environmental release, engineering controls (i.e. filters), process upset conditions or vapor decontamination classification (headspace monitoring). The STL is the STEL equivalent which is adjusted from a 15-minute period to an ACAMS cycle time period.

"Solid waste", for the purposes of the permit, means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded materials, including solid, liquid, semisolid, or contained gaseous materials resulting from industrial, commercial, mining, and agricultural operations, and from community activities. It does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

"Solid waste management unit" (SWMU) for the purposes of this Permit includes any unit which has been used for the treatment, storage or disposal of solid waste at any time, irrespective of whether the unit is or ever was intended for the management of solid waste. RCRA regulated

HWMUs are also solid waste management units. SWMUs include areas that have been contaminated by routine and systematic releases of hazardous waste or hazardous constituents, excluding one-time accidental spills that are immediately remediated and cannot be linked to solid waste management activities (e.g., product or process spills).

"Standard operating procedure" (SOP) is a written description of the procedures by which a process, machine, etc. shall be operated. An SOP may be written by the manufacturer and/or the Permittee. Adherence to any SOP employed by the Permittee does not necessarily constitute regulatory compliance.

"Storm event", for the purposes of this permit, is defined as a 1-year, 24-hour storm event or rainfall that measures 1 inch or greater in 1 hour or less. Rainfall measurements may be taken at the site, or the closest official weather monitoring station may be used.

"Temporary Unit" (TU), for the purposes of this permit, includes any temporary tanks and/or container storage areas used solely for treatment or storage of hazardous remediation wastes during specific remediation activities. Designated by the Department, such units must conform to specific standards and may only be in operation for a period of time as specified in this permit.

"Toxic containing material" for the purposes of this permit refers to fill material in a conventional military munition that may include compounds such as FS Smoke (a mixture of sulfur trioxide and chlorosulfonic acid), CNB (a mixture of chloroacetophenone, carbon tetrachloride and benzene), FM (titanium tetrachloride), WP (white phosphorous), etc. or toxic materials such as arsenic, barium, cadmium, lead, etc. that are not considered chemical agents.

"Thermal treatment", for the purposes of this permit, includes open burning and open detonation of hazardous energetics and energetic contaminated waste.

"Unit" for the purposes of this permit includes any contiguous discernable area used for the management of hazardous waste (or non-hazardous waste in the case of a SWMU) and may include, but is not limited to, any landfill, surface impoundment, waste pile, land treatment unit, incinerator, injection well, tank, container storage area, septic tank, drain field, wastewater treatment unit, elementary neutralization unit, transfer station, miscellaneous treatment unit, or recycling unit.

"Waste Control Limit (WCL)" is a control standard for monitoring porous waste material, such as concrete, and is represented by 20 nanograms per gram (ng/g) or parts per billion (ppb) for GB and VX, and 200 ng/g (ppb) for HD/HT. Energetic materials such as explosives, bursters, fuzes, etc. are not considered porous material.

I.F. EXPIRATION AND CONTINUATION OF PERMIT

This permit and all conditions herein will remain in effect beyond this permit's expiration date if the Permittee has submitted a new application as required by Permit Condition I.C.2. and, through no fault of the Permittee, the Department has not issued a new permit (ADEM Admin. Code Rule 335-14-8-.05(1) and 335-14-8-.05(2)).

I.G. WASTE MINIMIZATION

1. Certification Requirements

   Pursuant to ADEM Admin. Code Rule 335-14-5-.05(4)(b)9, the Permittee must certify, no less often than annually, that:

a. The Permittee has a program in place to reduce the volume and toxicity of hazardous waste to the degree determined by the Permittee to be economically practicable; and,

b. The proposed method of treatment, storage, or disposal is the most practicable method available to the Permittee and that it minimizes the present and future threat to human health and the environment.

2. Recording Requirements

a. The Permittee shall maintain copies of this certification in the facility operating record as required by ADEM Admin. Code Rules 335-14-5-.05(4)(b)9.

b. The Waste Minimization Program required under I.G.1. should at a minimum address the following topics:

i. Identity of each hazardous waste stream and the source of generation.

ii. Types and amount of hazardous waste that is generated at the facility.

iii. Present and proposed method of treatment, storage, or disposal that is available to the Permittee.

iv. Description of techniques implemented in the past for hazardous waste reduction and their effectiveness.

v. An evaluation of technically and economically feasible hazardous waste reduction techniques.

vi. A program and schedule for implementing the selected hazardous waste reduction technique.

3. Solid Waste Minimization Objectives

If Condition I.G. of this permit is applicable, the Waste Minimization program required under Condition I.G. above should address the objectives listed in Appendix A of this permit.

I.H. COST ESTIMATES

1. The Permittee shall maintain detailed written cost estimates, in current dollars, at the location specified in Permit Condition I.C.10.e. and on file with ADEM in accordance with ADEM Admin. Code Rules 335-14-5-.08(3), (5), and (10).

2. All cost estimates must be updated annually as required by ADEM Admin. Code Rules 335-14-5-.08(3)(b), 335-14-5-.08(5)(b), and 335-14-5-.08(10)(b).

3. The cost estimate shall be maintained and submitted in the form designated by the Department.

4. The Permittee must update the cost estimate no later than 30 calendar days after the Department has approved a modification to the Closure Plan, Post-Closure Plan, or Corrective Action Plan, or any other plan required or referenced by this permit, if the change in the plan results in an increase in the amount of the cost estimate.

I.I. FINANCIAL ASSURANCE (RESERVED)

I.J. PERMIT MODIFICATIONS

The Permittee shall request a permit modification whenever changes in operating plans or facility design affect any plan (e.g. closure, groundwater monitoring, post-closure, or corrective actions) required or referenced by this permit. The Permittee must submit a written request for a permit modification pursuant to the requirements of ADEM Admin. Code Rule 335-14-8-.04(2) at least 60 calendar days prior to the proposed change in facility design or operation.

I.K. REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE DEPARTMENT

All reports, notifications, or other submissions that are required by this permit should be sent via certified mail or delivered as described below:

1. Two (2) hard copies and one (1) electronic copy in a standard text-searchable format (e.g., portable document format) acceptable to the Department shall be provided to the Chief of the Land Division using the following mailing address:

   Chief, Land Division
   Alabama Department of Environmental Management
   PO Box 301463 (Zip 36130-1463)
   1400 Coliseum Boulevard (Zip 36110-2059)
   Montgomery, Alabama

2. Upon request by the Department, the Permittee shall also provide 1 hard copy and/or 1 electronic copy to the Director of the Land, Chemical, and Redevelopment Division using the following mailing address:

   Director, Land, Chemical and Redevelopment Division
   USEPA, Region 4
   Atlanta Federal Center
   61 Forsyth Street SW
   Atlanta, GA 30303-3104

PART II

GENERAL FACILITY CONDITIONS

II.A. DESIGN AND OPERATION OF FACILITY

1. The Permittee shall design, construct, maintain, and operate the permitted sites at the ANAD/AFO facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, groundwater, or surface water which could threaten human health or the environment.

2. The Permittee shall construct all Hazardous Waste Management Units (HWMUs) IAW the approved designs and specifications that are included in the Application for new units, except for minor changes deemed necessary by the Permittee to facilitate proper construction of the HWMUs. Minor deviations from the approved designs or specifications necessary to accommodate proper construction shall be noted on the as-built drawings and the rationale for those deviations shall be provided in written narrative form to the Department. After completion of construction of each HWMU, the Permittee shall submit final as-built drawings and the narrative report to the Department as part of the construction certification documentation specified in Condition I.C.14.

3. The Permittee shall ensure that all waste shipped from the facility for offsite treatment has been appropriately characterized in accordance with Sections II C and III K C of the permit application. Decontamination of items identified for offsite shipment is allowed.

II.B. RECEIPT OF OFF-SITE WASTE

1. The Permittee is not authorized and therefore, shall not receive hazardous chemical agent and /or chemical agent munitions waste from outside the State of Alabama at the AFO SDC site.

2. The Permittee may receive hazardous waste conventional munitions or conventional munition components from chemical munitions which have been verified agent free from off-site Department of Defense facilities at the ANAD site (from both within and outside the State of Alabama) for the purpose of reuse, recycle operations, and/or treatment and disposal.

3. Recovered waste military munitions (WMM), which were both recovered and received from locations within the State of Alabama and have been declared as hazardous waste, may also be received.

4. Hazardous industrial wastes (i.e. waste solvents, waste paint, waste sludges, waste blast media, waste filter media, etc) shall not be received from off-site industrial processes.

II.C. GENERAL WASTE ANALYSIS

1. The Permittee shall comply with all requirements set forth under ADEM Admin. Code Rule 335-14-5-.02(4) and shall follow the procedures in the WAP described in section II C-2 of the permit application.

2. The Permittee shall utilize the methods specified in section II C-2 of the permit application for the analysis of any of any wastes listed in the Table II C-1 of the permit application. Modification of the WAP shall require a modification of this permit pursuant to ADEM Admin. Code Rule 335-14-8-.04(2).

3. The Permittee shall subject samples from incoming waste shipments to the fingerprint parameters identified in Table II C-4 of the permit application.

4. The Permittee shall classify waste as non-conforming when the receiving analysis does not match the information contained in the accompanying manifest, profile, and/or equivalent information described in Section II.C of the permit application

5. Before storing, treating, or disposing of a hazardous waste stream, the Permittee shall obtain a detailed chemical and physical analysis of a representative sample of the waste, as described in Section II.C of the permit application.

II.D. SECURITY

1. The Permittee shall comply with the security provisions set forth under ADEM Admin. Code Rule 335-14-5-.02(5) and as described in Section II F-1 of the permit application.

2. In order to comply with ADEM Admin. Code Rule 335-14-5-.02(5), the hazardous waste storage areas and all miscellaneous treatment units of the facility shall remain fenced with at least a six-foot high chain link fence. The fence shall be kept in good repair. All entrances to the permitted hazardous waste management areas shall be closed and locked when security and/or operations personnel are not present. The map depicting the location of fencing and gates for the entire ANAD facility is located in Figures II B-2 and II B-4 of the permit application.

3. The Permittee shall maintain signs along the perimeter fence of the permitted hazardous waste management areas and all miscellaneous treatment units. The signs shall read "Danger – Unauthorized Personnel Keep Out". At least one sign must be legible from a distance of at least 25 feet from any approach to each area (ADEM Admin. Code Rule 335-14-5-.02(5)(c)).

II.E. GENERAL INSPECTION REQUIREMENTS

1. The Permittee shall comply with all requirements under ADEM Admin. Code Rule 335-14-5-.02(6), and 335-14-5-.09(5).

2. The Permittee shall follow the inspection procedures and schedules, as described in section II F-2 and III K F of the permit application.

3. The Permittee shall remedy any deterioration or malfunction (of equipment or structure(s)) discovered during any inspection as required by ADEM Admin. Code Rule 335-14-5-.02(6)(c).

4. Records of inspections shall be maintained at the facility as required by ADEM Admin. Code Rule 335-14-5-.02(6)(d).

II.F. PERSONNEL TRAINING

The Permittee shall conduct personnel training as required by ADEM Admin. Code Rule 335-14-5-.02(7). This training program shall follow the procedures and outline described in Section II H and Section IV H of the permit application. The Permittee shall maintain training documents and records at the facility as required by ADEM Admin. Code Rule 335-14-5-.02(7)(d) and (e).

II.G. GENERAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE

1. The Permittee shall comply with all requirements for ignitable, reactive, or incompatible wastes set forth under ADEM Admin. Code Rule 335-14-5-.02(8).

2. "No Smoking" signs must be conspicuously placed wherever there is a potential hazard from ignitable waste.

II.H. LOCATION STANDARDS AND UNIT MAINTENANCE

1. The Permittee shall comply with all locations standards set forth under ADEM Admin. Code Rule 335-14-5-.02(9).

2. If changes are made to the design or operation of a hazardous waste management or treatment unit, these changes must receive approval by the Department before they are implemented, and may require permit modification pursuant to ADEM Admin. Code Rule 335-14-8-.04(2).

II.I. PREPAREDNESS AND PREVENTION

1. Required Equipment

   The Permittee shall comply with ADEM Admin. Code Rule 335-14-5-.03(3) and, at a minimum, shall equip the facility with the equipment set forth in the ANAD Integrated Contingency Plan (ICP). The ICP is incorporated by reference into this Permit and Sections II D, IV D, IV J D, IV K D, and IV L D of the permit application.

2. Testing and Maintenance of Equipment

   The Permittee shall test and maintain the equipment specified in the ANAD ICP, as necessary to assure its proper operation in time of emergency as required by ADEM Admin. Code Rule 335-14-5-.03(4).

3. Access to Communication or Alarm System

   The Permittee shall maintain access to the communications or alarm system as required by ADEM Admin. Code Rule 335-14-5-.03(5).

4. The Permittee shall maintain arrangements with state and local authorities as required by ADEM Admin. Code Rule 335-14-5-.03(8). The Permittee shall develop and maintain a Preparedness and Prevention Plan providing information on the type, approximate quantities and locations of hazardous wastes within the

facility. The Plan shall be provided to state and local authorities in both written paper format and in appropriate electronic format that is most useful to emergency responders. Updated copies of the Plan shall be provided to reflect significant changes in operations (*e.g.*, significant changes in waste streams and/or volumes, facility design changes, etc.). A copy of the Plan and documentation that the Plan has been submitted to all local police departments, fire departments, hospitals and local emergency response teams that may be called upon to provide emergency services, shall be submitted to the Department within 45 calendar days from the effective date of this permit. If state or local officials refuse to enter into preparedness and prevention arrangements with the Permittee, the Permittee must document this refusal in the operating record.

5. Required Aisle Space

The Permittee shall maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency (ADEM Admin. Code Rule 335-14-5-.03(6)).

II.J. CONTINGENCY PLAN

1. Implementation of Plan

The Permittee shall immediately carry out the provisions of the Core Plan (Section 2) of the ANAD ICP, and follow the emergency procedures as required by ADEM Admin. Code Rule 335-14-5-.04(2) whenever there is a fire, explosion, or release of hazardous waste or hazardous constituents which threatens or could threaten human health or the environment.

2. Copies of Plan

A copy of the ANAD ICP and all current revisions to the plan must be maintained at the facility and submitted to all local police departments, fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services, as described in the ANAD ICP and as required by ADEM Admin. Code Rule 335-14-5-.04(4).

3. Amendments to Plan

The Permittee shall review and immediately amend, if necessary, the ANAD ICP, as required by ADEM Admin. Code Rule 335-14-5-.04(5).

4. Emergency Coordination

The Permittee shall comply with the requirements of ADEM Admin. Code Rule 335-14-5-.04(6) concerning the emergency coordinator(s) as specified in Table B-1 of the ANAD ICP.

II.K. RECORDKEEPING AND REPORTING

In addition to the recordkeeping and reporting requirements specified elsewhere in this Permit, the Permittee shall comply with the following:

1. Operating Record

   The Permittee shall maintain a written operating record at the facility, IAW with ADEM Admin. Code Rule 335-14-5-.05(4).

2. Availability, Retention, and Disposition of Records

   The Permittee shall comply with the availability, retention, and disposition of records at the facility in accordance with ADEM Admin. Code Rule 335-14-5-.05(5).

3. Biennial Report

   The Permittee shall comply with the biennial report requirements of ADEM Admin. Code Rule 335-14-5-.05(6).

II.L. CLOSURE

1. Performance Standard

   The Permittee shall close the permitted hazardous waste management areas, as required by ADEM Admin. Code Rules 335-14-5-.07(2), 335-14-5-.09(9), 335-14-5-.10(8), and in accordance with the Closure Plan, Sections II I and Section IV I of the permit application.

2. Amendment to Closure Plan

   The Permittee shall amend the Closure Plan as required by ADEM Admin. Code Rule 335-14-5-.07(3)(c).

3. Notification of Closure

   As required by ADEM Admin. Code Rule 335-14-5-.07(3)(d), the Permittee shall notify the Department at least 60 calendar days prior to the date closure activities are initiated at either unit.

4. Time Allowed for Closure

   The Permittee shall comply with the requirements of ADEM Admin. Code Rule 335-14-5-.07(4). After receiving or treating the final volume of hazardous waste, the Permittee shall complete closure activities in accordance with the schedule specified in the Closure Plan, Section II I and Section IV I of the permit application.

5. Disposal or Decontamination of Equipment

   The Permittee shall decontamination or dispose of all facility equipment as required by ADEM Admin. Code Rules 335-14-5-.07(5), 335-14-5-.09(9), 335-14-5-.10(8), 335-14-5-.11(9), and 335-14-5-.12(9) and as specified in the Closure Plan, Section II I and Section IV I of the permit application.

6. Certification of Closure

The Permittee shall certify that each individual unit has been closed in accordance with the specification presented in the Closure Plan, Section II I and Section IV I of the permit application, and as required by ADEM Admin. Code Rule 335-14-5-.07(6). The Permittee shall maintain copies of this closure certification in the facility operating record as required by ADEM Admin. Code Rule 335-14-5-.05(4).

II.M. POST-CLOSURE

If at closure not all waste and contaminated structures and soils at a unit can be removed or decontaminated, the Permittee shall close the unit as a landfill and perform post-closure care as specified in ADEM Admin. Code Rules 335-14-5-.09(9)(b) and 335-14-5-.14(11).

1. Post-Closure Care Period

The Permittee shall begin post-closure care at all units, where closure by removal is not achieved, after completion of unit closure and shall continue for the duration of the post-closure period. The post-closure care shall continue for a period of 30 years after the closure of each hazardous waste management unit, unless shortened or extended pursuant to ADEM Admin. Code Rule 335-14-5-.07(8). Each post-closure care period is initiated upon certification by a registered Professional Engineer (State of Alabama) and upon acceptance by the Department pursuant to ADEM Admin. Code Rule 335-14-5-.07(6), that closure has been completed and waste has been left in place. The post-closure care period shall automatically extend through the end of the compliance period specified in Condition VII.B.4 of this permit.

2. Post-Closure Security

The Permittee shall maintain security at the facility during post-closure care period in accordance with the post-closure plan included in the permit application.

3. Amendment to Post-Closure Plan

The Permittee shall amend the Post-Closure Plan in accordance with ADEM Admin. Code Rule 335-14-5-.07(9), whenever necessary.

4. The Permittee shall maintain continuous compliance with the following:

   a. Post closure care of property. (ADEM Admin. Code Rule 335-14-5-.07(8))

   b. Notice to local land authority and notice on deed to property. (ADEM Admin. Code Rule 335-14-5-.07(10))

II.N. LAND DISPOSAL RESTRICTIONS

1. General Restrictions

ADEM Admin. Code Rule 335-14-9 identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances in which an otherwise prohibited waste may continue to be placed on or in a land treatment, storage or disposal unit. The Permittee shall maintain compliance with the requirements of ADEM Admin. Code Rule 335-14-9. Where the Permittee has applied for an extension, waiver, or variance under ADEM Admin. Code Rule 335-14-9 the Permittee shall comply with all restrictions on land disposal under this Part once the effective date for the waste has been reached pending final approval of such a land disposal permit application.

2. Land Disposal Prohibitions and Treatment Standards

a. A restricted waste identified in ADEM Admin. Code Rule 335-14-9-.03 may not be placed in a land disposal unit without further treatment unless the requirements of ADEM Admin. Code Rules 335-14-9-.03 and/or .04 are met.

b. The storage of hazardous wastes restricted from land disposal under ADEM Admin. Code Rule 335-14-9 is prohibited unless the requirements of ADEM Admin. Code Rule 335-14-9-.05 are met.

II.O. ORGANIC AIR EMISSION REQUIREMENTS

1. General Introduction

a. Process Vents and Equipment

Phase I Organic Air Emission Standards consist of ADEM Admin. Code Rule 335-14-5-.27 and 335-14-5.28 for hazardous waste treatment, storage and disposal (TSD) facilities. ADEM Admin. Code Rule 335-14-5-.27 contains emission standards for process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, and air or steam stripping operations that process hazardous waste with an annual average total organic concentration of at least 10 parts per million by weight (ppmw). ADEM Admin. Code Rule 335-14-5-.28 contains emission standards that address leaks from specific equipment (i.e., pumps, valves, compressors, etc.) containing or contacting hazardous waste with a total organic concentration of at least ten-percent by weight.

b. Tanks, Containers, Surface Impoundments and Miscellaneous Units

Phase II Organic Air Emission Standards consist of ADEM Admin. Code Rule 335-14-5-.29 for hazardous waste TSD facilities, including certain hazardous waste generator standards for accumulating waste on-site in RCRA permit-exempt (90-day) tanks and containers. In general, under these standards air emission controls must be used for tanks, surface impoundments, containers, and miscellaneous units which contact hazardous waste containing an average organic concentration greater

than 500 ppm by weight (ppmw) at the point of origination determined by the procedure outlined in ADEM Admin. Code Rule 335-14-5-.29(4), except as specifically exempted under ADEM Admin. Code Rule 335-14-5-.29(1) and (3).

2. Notification of New Units

a. Prior to constructing any equipment subject to the requirements of ADEM Admin. Code Rule 335-14-5-.27, or installing any additional equipment subject to the requirements of ADEM Admin. Code Rule 335-14-5-.28, or prior to modifying the current process such that existing equipment previously not subject to the requirement of ADEM Admin. Code Rule 335-14-5-.28 the Permittee shall supply the specific Part B information required pursuant to ADEM Admin. Code Rule 335-14-8-.02(15) and 335-14-8-.02(16) as applicable, and shall obtain a permit modification in accordance with the requirements of ADEM Admin. Code Rule 335-14-8-.04(3) and Condition I.J of this permit.

b. Tanks, Containers, Surface Impoundments, Miscellaneous Units

Prior to installing any tank, container, surface impoundment or miscellaneous unit subject to ADEM Admin. Code Rule 335-14-5-.29, or modifying an existing process waste handling or tank or container such that the unit(s) will become subject to ADEM Admin. Code Rule 335-14-5-.29, the Permittee shall obtain a permit modification IAW ADEM Admin. Code Rule 335-14-8-.04(3), and provide specific Part B application information required IAW ADEM Admin. Code Rules 335-14-8-.02(5) thru (8) and 335-14-8-.02(18), as applicable with the modification request.

II.P. MANIFEST SYSTEM

The Permittee shall comply with the requirements of ADEM Admin. Code Rules 335-14-5-.05(2), 335-14-5-.05(3), and 335-14-5-.05(7).

II.Q CONSTRUCTION COMPLIANCE SCHEDULE FOR PROPOSED UNITS

All proposed units, whether simultaneously constructed or not, are subject to the following conditions:

1. Actual, physical onsite construction of all proposed units must be initiated within two (2) years of the date of the issuance of this permit;

2. Detailed construction drawings of all proposed units must be submitted for the Department's review at least 60 calendar days before the initiation of construction;

3. The Permittee must meet all "Certification of Construction" requirements of Permit Condition I.C.14.;

4. The Permittee must meet all cost estimate requirements of Permit Conditions I.H.

PART III

MANAGEMENT IN CONTAINERS

III.A. PERMITTED OPERATIONS

The Permittee may store hazardous waste in the storage buildings/igloos described in Table III.1 and Table III.2 of this permit, subject to the terms of this permit. Operation of any other storage area not listed in Table III.1 and Table III.2 of this permit, operation of any process in a unit or area other than that for storage, or exceedance of any capacity listed therein, for the, storage, or disposal of hazardous waste is prohibited.

III.B. WASTE IDENTIFICATION

1. In the Hazardous Waste Storage Buildings listed in Table III.1, the Permittee may store, in containers at the facility, the Industrial/Process hazardous wastes listed in Part A or Table II C-1 of Part B of the facility permit application, subject to the terms of this permit. Storage of any waste not listed in Part A or Table II C-1 of Part B of the facility permit application is prohibited.

2. In the Conventional WMM Igloos listed in Table III.2, the Permittee may store, in containers at the facility, the hazardous waste conventional military munitions listed in Table II C-1 of the facility Part B permit application, subject to the terms of this permit. Conventional WMM hazardous waste may consist of conventional munitions related waste (secondary waste) and/or conventional waste munitions. Storage of any conventional munitions waste not listed in Part A or Table II C-1 of Part B of the facility permit application is prohibited.

3. The maximum total storage capacity of the industrial hazardous waste storage buildings (Buildings 466, 512, and 527) is 182,543 gallons. The maximum storage capacity for the Roll-off Box Storage Building is 132 cubic yards (4 roll-off boxes). Individual building storage limits for industrial hazardous waste are specified in Table III.1. The total maximum storage for 37 igloos and 3 service magazines is 2,266,858 gallons. Individual igloo maximum storage limits for conventional waste munitions are specified in Table III.2. For containers, these maximum storage capacities are based on the capacity of the containers stored therein; for munitions, these maximum storage capacities are based on the volume occupied by the munitions as they are packaged for storage.

III.C STORAGE IN CONTAINERS

1. The Permittee shall maintain and operate the container storage buildings, igloos, and service magazines in accordance with the procedures specified in Section II B and Section IV J of the permit application.
2. The container and munitions storage capacities are distributed through the storage buildings and igloos as shown in Table III.I and Table III.2 of this permit, and as

described in Section II B and Section IV J of the permit application. The maximum quantity of hazardous and non-hazardous waste stored in each storage building, igloo, and service magazine shall not exceed the capacities listed in Table III.1 and Table III.2 of this permit.

3. The maximum combined quantity of hazardous and non-hazardous waste stored in a given area shall not exceed ten times the capacity of the containment system for that area. Individual containers shall not be stored in a given area with a volume that exceeds the capacity of the containment system for that area.

4. The sampling and staging of drums shall not exceed 72 hours. All containers that are to be fingerprinted or are awaiting analysis shall be segregated from other containers in the container storage area. Each container shall be marked with the date of receipt.

5. In addition to the other requirements of Part III of this permit, the Permittee shall comply with all of the requirements for military munitions in accordance with ADEM Admin. Code r. 335-14-7-.13.

III.D. TREATMENT IN CONTAINERS (RESERVED)

III.E. CONDITION OF CONTAINERS

If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, upon discovery the Permittee shall immediately transfer the hazardous waste from such container to a container that is in good condition or otherwise manage the waste in compliance with the conditions of this permit, as required in ADEM Admin. Code r. 335-14-5-.09(2).

III.F. COMPATIBILITY OF WASTE WITH CONTAINERS

The Permittee shall assure that the ability of the container to contain the waste is not impaired, as required by ADEM Admin. Code r. 335-14-5-.09(3).

III.G. MANAGEMENT OF CONTAINERS

1. The Permittee shall manage containers as required by ADEM Admin. Code r. 335-14-5-.09(4) and Section II B, and Section IV J of the permit application.

2. A container holding hazardous waste must always be closed during storage, except when it is necessary to add, remove, sample, or inspect the waste.

3. A container holding hazardous waste must not be opened, handled, or stored in a manner that may rupture the container or cause it to leak.

4. Adequate aisle space will be maintained at all times, as shown in Section II B-3 and Section IV J F-3 of the permit application and as necessary to provide adequate access for emergency equipment and inspection.

5. Containers having a capacity greater than or equal to 30 gallons shall not be stacked over two containers high at any time.

III.H. CONTAINMENT

1. The Permittee shall maintain the containment systems for those hazardous waste storage areas listed in Table III.1 and Table III.2 in accordance with the requirements of ADEM Admin. Code r. 335-14-5-.09(6)(b) and as specified in Section II B and Section IV J of the permit application.

2. The Permittee shall maintain an impervious coating that is free of cracks, gaps, or other deterioration on all containment system surfaces which may be exposed to hazardous wastes or hazardous constituents (or releases of hazardous wastes or hazardous constituents).

3. The Permittee shall provide secondary containment in the storage igloos listed in Table III.2 for any container containing free liquids. The secondary containment must meet the requirements of ADEM Admin. Code r. 335-14-5-.09(6)(b). Drip pans or container overpacks are two of the methodologies that meet the secondary containment regulatory requirement.

III.I. INSPECTIONS

1. The Permittee shall conduct weekly inspections of the storage buildings in Table III.1, as required by Section II F-2b and Table II F-1 in the facility permit application, to detect leaking containers or containment systems and to ensure stacking is no more than two containers high as specified in Permit Condition III.G.5 and as required by ADEM Admin. Code r. 335-14-5-.09(5). The Permittee shall note the number and capacity of hazardous waste containers present.

2. The Permittee shall conduct inspections of igloos and service magazines weekly, quarterly, semi-annually, annually, or biennially, as required in Section II F-2b and Section IV J F-2 according to the inspection frequencies listed in Table II F-1 and Table IV J-3 of the permit application.

III.J. SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTES

1. The Permittee shall not locate containers holding ignitable or reactive waste within 15 meters (50 feet) of the facility's property line as required by ADEM Admin. Code r. 335-14-5-.09 (7).

2. The Permittee shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste and follow the procedures specified in Section II F-5 of the permit application and as required by ADEM Admin. Code r. 335-14-5-.02(8).

III.K. SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTE

The Permittee shall separate containers of incompatible wastes as specified in Section II.F-5 and Section IV J F-5 of the facility permit application.

1. Incompatible wastes, or incompatible wastes and materials, must not be placed in the same container unless the Permittee is in compliance with ADEM Admin. Code r. 335-14-5-.02(8)(b).

2. The Permittee shall not place hazardous waste in an unwashed container that previously held an incompatible waste or material.

3. The Permittee must document compliance with Conditions III.K.1 and III.K.2 of this permit as required by ADEM Admin. Code r. 335-14-5-.05(4) and place this documentation in the operating record.

4. The Permittee shall separate containers of incompatible wastes as required by ADEM Admin. Code r. 335-14-5-.09(8)(c).

III.L. CLOSURE

1. Following the receipt of the final volume of hazardous wastes, the Permittee shall close the container storage areas, igloos and storage magazines in accordance with the requirements of the Closure Plans, Section II I and Section IV J I of the permit application and of ADEM Admin Code r. 335-14-5-.07(2) and 335-14-5-.09(9).

2. If at closure not all waste and contaminated structures and soils at a unit can be removed or decontaminated, the Permittee shall close the container storage or treatment unit as a landfill and perform post-closure care as specified in ADEM Admin. Code r. 335-14-5-.09(9)(b) and 335-14-5-.14(11).

TABLE III.1: INDUSTRIAL/PROCESS HAZARDOUS WASTE STORAGE BUILDINGS*

Part I – Standard Facility Conditions	*Part I – Standard Facility Conditions*	**Maximum Volume****
466–A Side	100’ x 50’	27,720 gallons
466–B Side	100’ x 60’	69,300 gallons
512	40’ x 60’	25,440 gallons
527	50’ x 80’	60,083 gallons
Roll-off Box Storage Building	36’ x 60’	4 roll-off boxes; 132 cubic yards

Note: (*) Non-regulated waste includes solid and universal waste, used oil, etc.
(**) Max. Volume includes all waste stored (regulated and non-regulated)

TABLE III.2: CONVENTIONAL WASTE MUNITIONS/CONVENTIONAL WASTE MUNITIONS COMPONENTS STORAGE IGLOOS

Igloo	Storage Dimensions	Max. Volume (gallons)**
I-103	23'6" x 80'	60,083
F-704A	23'6" x 80'	60,083
F-405	23'6" x 80'	60,083
G-102	23'6" x 60'	45,945
G-102A	23'6" x 80'	60,083
G-103	23'6" x 60'	45,945
G-104	23'6" x 60'	45,945
G-105	23'6" x 60'	45,945
G-108A	23'6" x 80'	60,083
G-200A	23'6" x 80'	60,083
G-202A	23'6" x 80'	60,083
G-203A	23'6" x 80'	60,083
G-206A	23'6" x 80'	60,083
G-208A	23'6" x 80'	60,083
G-209A	23'6" x 80'	60,083
G-306A	23'6" x 80'	60,083
G-307A	23'6" x 80'	60,083
G-308A	23'6" x 80'	60,083
G-404A	23'6" x 80'	60,083
G-405A	23'6" x 80'	60,083
G-408A	23'6" x 80'	60,083
G-502A	23'6" x 80'	60,083
G-503A	23'6" x 80'	60,083
G-504A	23'6" x 80'	60,083
G-505A	23'6" x 80'	60,083
G-506A	23'6" x 80'	60,083
G-507A	23'6" x 80'	60,083
G-508A	23'6" x 80'	60,083
G-602	23'6" x 60'	45,945
G-602A	23'6" x 80'	60,083
G-603	23'6" x 60'	45,945
G-603A	23'6" x 80'	60,083
G-604	23'6" x 60'	45,945
G-604A	23'6" x 80'	60,083

TABLE III.2: CONVENTIONAL WASTE MUNITIONS/CONVENTIONAL WASTE MUNITIONS COMPONENTS STORAGE IGLOOS (CONT.)

Igloo	Storage Dimensions	Max. Volume (gallons)**
G-605	23'6" x 80'	60,083
G-605A	23'6" x 80'	60,083
G-606	23'6" x 60'	45,945
Service Magazine 712	29' x 57'	52,297
Service Magazine 713	29' x 57'	52,297
Service Magazine 714	29' x 57'	52,297

Note: (**) Max. Volume includes all waste stored (regulated and non-regulated)

PART IV

MISCELLANEOUS TREATMENT UNITS (SUBPART X)

IV.A. MISCELLANEOUS TREATMENT UNIT REQUIREMENTS

1. This Part allows the thermal treatment of conventional WMM, disassembled explosive components removed from both conventional WMM and chemical munitions that have been verified chemical agent free, including hazardous energetic and energetic-contaminated wastes, recovered WMM from inside the State of Alabama (which may include recovered liquid filled munitions), and non-energetic contaminated wastes within permitted miscellaneous treatment units. Additionally, the units may be used to treat by-products from non-permitted activities such as test programs, Resource, Recovery, and/or Recycle (R3) Program, surveillance, emergency response operations including components listed in Permit Condition IV.C.5 as described in the Section IV of the facility permit application. The thermal treatment units described in this part are regulated under ADEM Admin. Code r. 335-14-5-.24. The following units are permitted for thermal treatment of wastes:

    a. Open Burning (OB) Unit #1 – SWMU 16

    b. Open Detonation (OD) Unit – SWMU 17

    c. Static Detonation Chamber (SDC) – SWMU 70

    d. Thermal Treatment Closed Disposal Process (TTCDP) – SWMU 74

    e. Energetic Treatment Unit (ETU) – SWMU 75

    f. Rocket Motor Fire (RMF) Stands – SWMU 92

2. All thermal treatment operations shall be accomplished by trained explosives personnel IAW Department of Defense (DoD) Standard Operating Procedures (SOPs), Sections IV H (OBOD, RMF), IV J H (SDC), IV K H (TTCDP), and IV L H (ETU) of the facility permit application, and the conditions of this permit.

3. The Permittee shall maintain an operating record describing the thermal treatment activities. The record shall include the following information:

    a. Description and quantity [number and Net Explosive Weight (NEW)] of each hazardous waste munition, initiator, and donor received and treated in each tray fed into the SDC unit, each pan of the OB unit, each detonation pit for the OD unit, each unit for the TTCDP, each basket, strongbox or tray for the ETU, and each stand for the RMF. For processing operations in the SDC that are consistent (same type and number of munitions per event) within a processing day, one record is acceptable provided it captures the initial evaluation and time of each subsequent tray,

b. The annual running total of the NEW of all energetics treated at the thermal treatment units,

c. Date of thermal treatment,

d. Copies of all documents showing the disposition of residues transported from the thermal treatment units,

e. Current copies of all SOPs used at the thermal treatment units,

f. Meteorological conditions during each treatment (OB, OD, or RMF) as listed in Permit Condition IV.D,

g. All information to characterize waste including information to support Permit Condition IV.B,

h. Copies of all inspection records for each unit,

i. Copies of all employee training records IAW Sections IV H, IV J H, IV K H, and IV L H of the facility permit application,

j. All groundwater monitoring reports required by Permit Condition IVI.B.6.

k. For SDC and TTCDP unit operations, the date and time of all Feed Prohibitive Interlock (FPI) malfunctions including the cause, corrective action, and corrective measures taken to prevent recurrence of the incident.

l. For SDC and TTCDP unit operations, all monitoring equipment data and inspection records of monitoring equipment compiled under the conditions of this permit, and

m. For the ETU, the Data Record printout showing the temperature history for each feed event from the data logging device must be maintained in the operating record. This record must include the necessary information to describe items treated in the ETU [i.e. scrap metal weight, scrap metal type (origin)], the date and the time of each feed event.

IV.B. DESCRIPTION OF THERMAL TREATMENT UNITS

1. Open Burning (OB) and Rocket Motor Fire (RMF) Stands:

a. The OB unit, including the RMF stands, occupies approximately 17 acres in the northwestern corner of the Ammunition Storage Area (ASA) [also referred to as the Ammunition Limited Area (ALA)]. Treatment by OB may be conducted in ten burn pans and three vertical Static Fire Stands within the designated open burn unit encompassing an area of soil approximately 400 x 800 feet. All burn pans and lids shall be constructed, as shown in Figure IV B-3 and Figure IV B-3a of the facility permit application. The general arrangement of the OB and RMF units within the facility boundary is located in Figure IV B-1 of the facility permit application. The general arrangement of the OB pans and RMF stands

within the OB unit is shown in Figure IV B-7 of the permit application. A photograph of one of the burn pans is located in Figure IV B-12 of the facility permit application. Design drawings for the RMF stands are located in Figures IV B-4a, IV B-4b, and IV B-4c of the permit application.

b. The OB unit is dedicated to the thermal destruction of Hazard Class 1 explosives including propellants, WMM, obsolete rocket motors (including but not limited to Honest John, Little John and Nike Hercules motors with double based propellants) and explosive-contaminated wastes. The OB unit may be used to treat wastes that are generated on-site by the facility or off-site by other DoD installations.

c. Open burning shall not be conducted in the OB pans and the RMF stands at the same time.

2. Open Detonation (OD):

a. The OD unit occupies approximately 51 acres in the northwestern corner of the ASA. Treatment by OD may be conducted within an approximate 900 x 300 foot area designated for digging of pits that are used for detonation stations. No more than 8 detonation pits shall be used during any detonation series. Detonation stations may be ignited electrically or non-electrically. Both above ground and buried detonations (BD) are allowed. The general arrangement of the OD unit within the facility boundary is located in Figure IV B-1 of the facility permit application. Photographs of the detonation pit are located in Figure IV B-5 and IV B-6 of the facility permit application. A sediment retention basin for the control of run-off from the OD operations is located within the western OD unit boundary. Sediment removed from the basin may be reused within the OD unit boundary.

b. The OD unit is dedicated to the detonation of Hazard Class 1 explosives including WMM and explosive-contaminated wastes. The OD unit may be used to treat wastes that are generated on-site by the facility or off-site by other DoD installations.

3. Static Detonation Chamber (SDC)

a. The SDC is located on the west side of G block near Building 695 in the ALA of ANAD. The footprint for the structure is approximately 70 x 100 feet. Treatment by SDC shall be conducted by loading ammunition trays that are conveyed into the SDC unit. No more than one feed tray may be loaded into the SDC per feed event. The general arrangement of the SDC facility is shown in Figures IV J-5 and IV J-6 of the facility permit application. Photographs of the SDC units are located in Figures IV J-7 through IV J-12 of the facility permit application.

b. The SDC may be used to process WMM obtained from either inside or outside the State of Alabama that are not defined as chemical munitions and are determined to be chemical agent free. Recovered WMM which are both recovered and received from locations within the State of Alabama may also be processed. The SDC may treat conventional munitions components from

chemical munitions that have been verified chemical agent free and received from outside the State of Alabama. The SDC unit may treat conventional WMM which are either explosively or non-explosively configured as well as secondary waste generated by the SDC operations. The explosive capacity of the SDC unit shall not exceed 6.7 pounds (lbs) of mass detonating explosive material or 23.0 lbs of non-mass detonating explosive material per feed event. If mass detonating and non-mass detonating explosives are both contained in any single feed event to the SDC, then the entire feed for that event shall be considered mass detonating. The SDC unit may be used to treat wastes, including waste contaminated with energetics, that are generated on-site by the facility or off-site by other DoD installations.

4. Thermal Treatment Closed Disposal Process (TTCDP)

   a. The TTCDP is located in the ALA at Building 670 within the Multi-Launch Rocket System (MLRS) Recycling Facility. The TTCDP interfaces with the Warhead Disassembly and Grenade Removal System, which are used for MLRS demilitarization. An overview of the TTCDP within and adjacent to Building 670 is provided in Figure IV K D-1 of the facility permit application.

   b. The TTCDP consists of three operations for the purpose of thermally treating M77 grenade submunitions from the MLRS recycling operation. These processes include a Grenade Treatment Unit (GTU) which uses a thermal conveyor system to treat fuze-less grenade bodies and copper cones, a Munitions Destruction System (MDS) which thermally treats fuze assemblies within a small detonation chamber and an Off-gas Treatment (OGT) system with HEPA filtration. A detailed description of these systems can be found in Section IV K D of the facility permit application and TTCDP photographs are located in Figures IV K D-5 through IV K D-9 of the facility permit application.

   c. The TTCDP may process WMM grenade submunitions including fuze-less grenades, fuze assemblies/remnants, and copper cones from the demilitarization of the MLRS. Energetically contaminated materials, which are derived from the demilitarization processes of cone and fuse removal and the cleaning of process equipment, may also be treated at the TTCDP. The TTCDP may treat MLRS submunitions that are obtained from offsite DoD facilities. No recovered munitions or chemical munitions/ chemical munitions components may be treated at the TTCDP.

5. Energetic Treatment Unit (ETU)

   a. The ETU is located within the ALA in a cleared area near Building 300 west of Elwood Avenue. F block storage igloos are to the north and E block storage igloos are to the south of the ETU. Figure IV L B-3 of the facility permit application shows the location of the ETU within the ALA.

   b. The ETU, also referred to as a flash furnace, is manufactured by El Dorado Engineering (EDE). Engineering drawings of the ETU are located in Appendix A of Section IV L of the facility permit application. The ETU uses propane burners to heat munitions-related scrap metal and metal fragments to temperatures above the flashpoint of potential residual energetic material.

Flashing of these materials is necessary for the purpose of documenting this material as safe prior to release outside of DoD control.

c. The ETU is limited to processing munitions-related scrap metal that has undergone previous physical, chemical or thermal separations or treatment to remove the bulk of energetics, has undergone initial visual inspection by qualified personnel, and is not known to contain sufficient quantities of energetic material, which could result in a detonation or explosion within the ETU.

IV.C. PERMITTED AND PROHIBITED WASTE IDENTIFICATION

1. The majority of WMM treated by OB, OD, RMF, SDC, and TTCDP at ANAD require disposal because munitions have exceeded the shelf life and the Designated Disposition Authority (DDA) has determined that they cannot be reused or recycled. For OB, OD, and SDC operations, military munitions become hazardous waste when they are removed from the munitions storage igloos/service magazines IAW the Military Munitions Rule (ADEM Admin. Code r. 335-14-7-.13). For TTCDP operations, the M77 grenade submunitions from the MLRS become hazardous waste once they enter the MDS/GTU processing room within Building 670.

2. WMM treated at the OB, OD, and RMF units may exhibit the ignitability (D001) and reactivity (D003) hazardous waste characteristics as defined in ADEM Admin. Code r. 335-14-2-.03(4) and include small arms ammunition (hazard class 1.4). In addition, the OB, and RMF WMM may also exhibit the eleven toxicity characteristics of D004, D005, D006, D007, D008, D009, D010, D011, D030, D032, or D039 and the U-listed waste code, U098. The munitions related scrap metal treated in the ETU exhibits the same characteristic and toxicity waste codes as the OB and OD units. WMM treated at the SDC may exhibit D001, (D002) corrosivity, or the D003 hazardous waste characteristics. In addition, the SDC waste feed may also exhibit the toxicity characteristics of D004, D005, D006, D007, D008, D009, D011, D030, D032, D033, D034, D035 D036, D037, D038, D039, D040, D041, D042, and D043, and may contain P-listed or U-listed wastes; P016, P017, P022, P028, P030, P033, P036, P063, P095, and U125. WMM treated at the TTCDP may exhibit the D003 as well as the D008 characteristics. All waste codes are listed in the current Part A or Table II.C-1 of Part B of the facility permit application.

3. The wastes treated at the ETU, OB, OD, and RMF units shall not contain pesticides, herbicides, dioxins, or polychlorinated biphenyls (PCBs). Conventional waste types and waste characteristics are detailed in Section IV C of the facility permit application. All WMM must be identified using the procedures in Section IV C of the facility permit application. Only the Munitions Items Disposition Action System (MIDAS) classifications listed in Table IVC-9 of the facility permit application may be treated by ANAD at the OB and OD units.

4. Thermal treatment of hazardous waste by means other than as specifically authorized by this permit is prohibited. Conventional WMM exhibiting waste codes described in Permit Condition IV.C.2 may be treated at the ETU, OB, OD, RMF, SDC and TTCDP. Recovered WMM, components of recovered liquid filled munitions, and recovered liquid fill-contaminated explosive components may be treated in the SDC, but are prohibited to be processed at the ETU, OB, OD, RMF and TTCDP units.

5. Items containing depleted uranium, either loaded or expended, are prohibited at all locations. Treatment of loaded munitions or components containing colored smokes, white phosphorous, red phosphorous, hexachloroethane, or riot control agents may also be treated during normal operations at the SDC or during an emergency operation as determined by facility Quality Assurance Surveillance, Ammunition Specialists (QASAS) IAW Section IV D-3f(1) of the facility permit application.

6. The donor charge and placement geometry for OB and OD/BD thermal treatment operations shall be optimized to minimize the generation of unburned and un-detonated waste and residue. All re-burns and re-detonations shall be recorded in the operating record.

7. Conventional components of chemical munitions may be processed in the SDC as long as they have been verified "chemical agent free".

8. The SDC facility may receive recovered liquid-filled munitions, components of recovered liquid filled munitions, and recovered liquid-fill contaminated explosive components that have been recovered from off-site locations within the boundary of the State of Alabama only. Receipt of recovered items from outside the State of Alabama is prohibited.

9. The facility shall notify the Department prior to receipt of any recovered munitions and/or components described in Permit Condition IV.C.8.

10. For each event requiring the processing of potential chemical agent contaminated recovered munition(s)/component(s), a plan, which describes the process for chemical agent monitoring IAW the AFO SDC "Guidance for Developing a Recovered Munition Monitoring Plan", must be submitted within 45 days prior to the receipt of the munition(s)/component(s). The facility must obtain Department approval of the plan before processing any recovered chemical munitions. At a minimum, the plan must include the following:

    i. Identification of required monitoring equipment, such as Automatic Continuous Air Monitoring Systems (ACAMS), Depot Area Monitoring System (DAAMS), MiniCAMS, Draeger tubes, etc.

    ii. Locations of monitoring equipment required.

    iii. Analytical/monitoring methods which will be utilized.

    iv. Responsible agencies and/or on-site personnel who will set up and conduct monitoring.

    v. Prior concurrence from the Department shall be obtained if deviation from the approved monitoring plan is necessary.

11. Upon completion of each monitoring event required by Permit Condition IV.C.10 above, the facility shall submit a report to the Department within 30 days. This report shall describe the results of the monitoring and processing of the chemical agent contaminated waste munition(s) including any deviations from the original monitoring plan.

12. Treatment of WMM end items (i.e., intact unused/unexpended munitions items with known energetic fillers) are prohibited to be processed in the ETU. The ETU is limited to processing munitions-related scrap metal described in Section IV.B.5.c of this permit.

IV.D. THERMAL TREATMENT OPERATIONS

1. Open Burning (OB)/Rocket Motor Fire (RMF) Stands

a. Meteorological Restrictions

The listed meteorological restrictions are applicable to OB treatment operations. Treatment is allowed subject to the requirements of this permit under the following weather conditions:

i. Less than (<) a 50 percent (%) chance of precipitation (including thunderstorms or electrical storms),

ii. Average wind speed between 3 and 20 miles per hour,

iii. Cloud cover < 80 % and ceilings greater than (>) 2,000 feet, and

iv. Wind direction that will not carry emissions over any publicly accessible area within one mile of the unit boundary.

b. Other Restrictions

i. OB operations are limited to the hours between 8:00am and 4:00pm Monday through Saturday, and

ii. OB may be conducted in each pan no more than once per day.

c. Treatment Quantities and Daily Maximum Limits

The following quantity of material may be treated at the OB unit, expressed as NEW. NEW represents the combined explosives weight of all energetics contained in a munitions item and initiators. Explosive limits have been established for the OB unit and these limits shall not be exceeded at any time. The volume of WMM treated at the OB unit varies based on the disposal and demilitarization needs of DoD. The operating limits are as follows:

i. Open Burning (OB) Pans: Shall not exceed 2,000 pounds (lbs) NEW per pan or a maximum daily total limit of 20,000 lbs NEW for 10 open burn pans. Only one burn per pan is allowed in an operating day. Treatment of WMM on the ground is prohibited. Burn pan lids shall remain in place at all times when the pans are not in use.

ii. Rocket Motor Fire (RMF) vertical stands: Shall not exceed a total daily maximum of 10,000 lbs NEW for the three stands collectively. Each

stand is limited to a maximum of 5000 lbs NEW per stand at any time. Up to three rocket motors may be secured and ignited consecutively.

d. Residue Control

The OB operation of WMM results in the generation of treatment residues in the forms of residue and scrap metal. The OB residue is a fine powdery or feathery material resembling ash. These residues shall be handled in the following manner:

i. Ash Residue

At the completion of each burn, the Permittee will allow a 1-hour cooling period and then verify via visual inspection that all of the reactive material has been properly treated. Within 24-hours following the treatment event and verification that all explosives have been treated, or in as timely a manner as is possible to prevent harm to human health and the environment, the ash residue shall be removed from the pan and placed into DOT-approved containers. The containers shall be properly labeled with the appropriate hazardous waste designation including the applicable RCRA waste codes and the date(s). All containers must be managed IAW the conditions set forth in Part III and all appropriate state and Federal regulations governing hazardous waste accumulation, storage, and disposal. Filled containers may be removed to a permitted hazardous waste storage area (Building 466, 512 or 527) before disposal. Accumulation of up to 55 gallons of waste residue is allowed at the OB area IAW ADEM Admin. Code r. 335-14-3-.03(5)(c). All waste in containers shall be characterized IAW Section IV C-2 (Waste Analysis Plan) of the facility permit application. Wind dispersal of ash shall be controlled by limiting burns IAW Permit Condition IV.D.1.a. When ash is present following the cooling period and prior to removal, lids are to be placed on the burn pans in order to prevent precipitation from accumulating in the burn pans.

ii. Scrap Metal from OB

At the completion of each burn, the Permittee will allow a 1-hour cooling period. Metal fragments shall be visually inspected, certified, and verified as free of explosives on an ANMC Form 55-6 (or equivalent document). The scrap metal shall be collected, loaded into containers, and transported to the Permittee's Defense Reutilization Marketing Office (DRMO) or suitable scrap vendor for recycling or disposal. The ANMC Form 55-6 (or equivalent document) shall be retained by the ANMC as the document of record.

2. Open Detonation (OD) / Buried Detonation (BD)

a. Meteorological Restrictions

The listed meteorological restrictions are applicable to OD treatment operations. Treatment is allowed subject to the requirements of this permit under the following weather conditions:

i. Less than (<) a 50 % chance of precipitation (including thunderstorms or electrical storms),

ii. Average wind speed between 3 and 20 miles per hour,

iii. Cloud cover < 80 % and ceilings > 2,000 feet,

iv. Wind direction which will not carry emissions over any publicly accessible area within one mile of the unit boundary, and

v. When any of the above weather conditions have changed after a detonation has been set, wired and buried and it is determined that under such conditions it would be unsafe to leave the explosives in place without detonating.

b. Other Restrictions

i. OD are limited to the hours between 8:00am and 4:00pm Monday through Saturday, and

ii. OD is limited to no more than 16 detonations per day.

c. Treatment Quantities and Daily Maximum Limits

The following quantity of material may be treated at the OD unit, expressed as NEW. NEW represents the combined explosives weight of all energetics contained in a munitions item and donor material. Explosive limits have been established for the OD unit and these limits shall not be exceeded at any time. The volume of WMM treated at the OD unit varies based on the disposal and demilitarization needs of DoD. The operating limits are as follows:

i. Open (above ground) Detonation (OD): Shall not exceed 15 lbs NEW per detonation and a maximum daily limit of 240 lbs NEW for the eight detonation stations. No more than two detonations may be conducted per station per operating day.

ii. Buried Detonation (BD): Shall not exceed 1,000 lbs NEW per detonation station and a maximum daily limit of 16,000 lbs NEW for the eight detonation stations. No more than 16 detonations may be conducted per operating day, which is twice daily per station. BD shall not occur at depths below 14 feet or above 1 foot below ground surface.

d. Residue Control

i. The OD operation may generate unexploded ordnance (UXO), munitions components containing energetic material, and metal fragments ejected from the OD area. Residue must be managed IAW the procedures in

Section IV F-6 of the facility permit application. The OD Unit has been defined by three areas – the Active Area, the Validation Area, and the Assessment Area. Figure IV F-5 of the facility permit application shows the individual areas and the GPS coordinates of the boundaries associated with each area.

a). Active Area of the OD Unit

1). At the completion of each detonation series, the Permittee will visually inspect the Active Area of the OD Unit for the presence of UXO. Any UXO or munitions containing unreacted material shall be retreated with the next available detonation.

2). At the completion of each operating day, the Permittee shall visually inspect the Active Area of the OD Unit for the presence of metal fragments that are (1) observable on the soil and (2) measure 4 inches or greater in any dimension. Any metal fragments meeting the above criteria shall be collected and removed. Any fragment found shall be visually inspected to verify that the energetic component of the waste munitions has been successfully treated. Any UXO or munitions components containing unreacted material shall be retreated with the next available detonation. Metal fragments will be certified as explosive-free and removed as scrap metal.

b). Validation Area

At least monthly (during months which have at least one operating day), the Permittee shall visually inspect the Validation Area of the OD Unit for the presence of UXO, munitions components containing unreacted material and metal fragments that are (1) observable on the soil and (2) measure 4 inches or greater in any dimension. Any metal fragments meeting the above criteria shall be collected and removed. The location of any UXO or munitions components containing UXO or munitions components containing unreacted material will be identified on a site map which will be maintained in the Pit Office and will be retreated with the next available detonation. Metal will be certified as explosive-free and removed as scrap metal.

c). Assessment Area

1). In the event that UXO or munitions components containing unreacted material are found during inspection of the Validation Area, the corresponding quadrant of the Assessment Area will also be inspected. The location of any UXO or munitions components

containing unreacted material will be identified on the site map maintained at the Pit Office and retreated with the next available detonation. The presence of UXO or munitions components containing unreacted material within the Assessment Area will result in re-evaluation of the shot configuration and re-evaluation of the site map boundaries.

2). The Department must be notified within 24 hours of the discovery of UXO within the Assessment Area. The permittee shall submit a written report within 15 days showing the results of the boundary re- evaluation. If the evaluation indicates that currently permitted boundaries are ineffective in keeping all UXO or munitions components containing unreacted material within the permitted boundaries, then a permit modification to justify re-evaluation of permitted boundaries shall be submitted IAW Permit Condition I.J.

ii. Sediment from Retention Basins

Any run-off sediment collected and removed from the retention basin may be reused within the OD unit boundary. However, any sediment applied onto the soil surface outside the OD unit boundary shall constitute land disposal and, as such, must comply with all applicable Land Disposal Restriction (LDR) treatment standards under ADEM Admin. Code r. 335-14-9. Any sediment disposed of off-site must be properly characterized and disposed of IAW the ANAD Waste Analysis Plan.

3. Static Detonation Chamber (SDC)

a. Meteorological Restrictions

There are no meteorological restrictions for the SDC, as it is an enclosed system.

b. Hours of Operation

The SDC has no restriction on the hours of operation.

c. Treatment Quantities and Maximum Limits

The following quantity of material may be treated at the SDC unit, expressed as NEW. NEW represents the combined explosives weight of all energetics contained in a munitions item. Explosive limits have been established for the SDC unit and these limits shall not be exceeded at any time. The volume of conventional WMM treated at the SDC unit may vary based on the disposal and demilitarization needs of DoD but shall not exceed the limits below. Conventional WMM listed in Section IV C. of the facility permit application (including small arms, projectiles, mines, rockets, grenades, pyrotechnics, and explosives contaminated material, toxic containing materials, fuzes, detonators,

etc.), secondary waste generated by the SDC, waste contaminated with energetics received from off-site DoD facilities, and recovered WMM from within the State of Alabama may be processed in the SDC provided the following boundary conditions are not exceeded. An event shall be defined as processing of one tray within the SDC.

i. No shape charges unless shape charge is disengaged or altered prior to feeding in order to prevent equipment damage,

ii. Overall weight < 330.7 lbs/event (including feed tray),

iii. Chlorine < 11.1 lbs/event,

iv. Sulfur < 6.3 lbs/event,

v. Non-Mass Detonating Explosives < 23.0 lbs NEW/event, and

vi. Mass Detonating Explosives < 6.7 lbs NEW/event. If mass detonating and non-mass detonating explosives are both contained in any single feed event to the SDC, then the entire feed for that event shall be considered mass detonating.

d. Maintenance

i. All RCRA and Maximum Achievable Control Technology (MACT) required process monitors shall be equipped with alarms operated to warn of deviation from the limits specified in Table IV-1 of this permit

ii. Modifications to the design plans, specifications, and operating conditions in the facility permit application for the SDC shall be allowed only IAW Permit Condition II.A.2.

iii. Prior to treating hazardous waste in the SDC unit, the Permittee shall install and test all process monitoring and control instrumentation specified in Table IV-1 of this permit according to manufacturer specifications and the SDC Continuous Emissions Monitoring System (CEMS) Certification Plan.

iv. The Permittee shall not process hazardous waste in the SDC until such time that the Permittee has demonstrated compliance with the certification of construction or modification requirements, as specified in Permit Condition I.C.14.

v. The Permittee shall maintain the SDC during systemization, emissions testing, post emissions testing, and normal operating periods such that when operated IAW the operating requirements specified in this Permit, it shall meet the applicable performance standards specified in the Emissions Test Plan and Permit Condition IV.D.3.h.

vi. The Off-Gas Treatment (OGT) system and Carbon Filtration System shall be maintained and operated so as to minimize the emissions of air

contaminants. This equipment shall be properly operated and maintained IAW Section IV J of the facility permit application. Carbon filter disposal shall be managed IAW Section IV J C-2a and Table IV J-5 of the facility permit application.

vii. The Carbon Filtration System shall be monitored IAW the SDC CEMS Certification Plan and this permit.

a) The OGT Safeguard Filtration unit must be operational at all times during processing.

b) The first bank of the OGT Safeguard Filtration unit shall contain Sulfur Impregnated Carbon (SIC) as demonstrated during emissions testing for mercury removal.

e. Emissions Test Plan and Data Submittal

An emissions test is required by RCRA regulations whenever the waste feed stream is altered. Prior to processing any new waste types, an emission test plan and emissions test data report will be prepared and submitted IAW the following:

i. The Permittee shall operate and monitor the SDC unit during the short-term periods (systemization, emissions testing, and post emissions testing) as specified in the approved emissions test plan.

ii. The emissions test plan shall be submitted by the Permittee as a request for major permit modification(s) at least 180 calendar days prior to the proposed start date of the systemization period for each test. All applicable public comment periods and notifications as required by ADEM Admin. Code r. 335-14-8-.04(2) shall be followed.

iii. The emissions test plan shall define operating conditions and waste feed rates that shall be used to determine SDC performance IAW ADEM Admin. Code r. 335-14-8-.06(2)(b).

iv. The Permittee shall not start a systemization period in the SDC unit until the Department has approved the emissions test plan for the SDC unit.

v. The Permittee shall submit a summary of all data collected during the emissions test to the Department upon completion of each test period. The Permittee shall submit to the Department an emissions test report within 90 calendar days of completion of each test. All submissions shall be certified IAW ADEM Admin. Code r. 335-14-8-.02(2).

vi. If the preliminary calculations show that one or more of the performance standards listed in this permit for the SDC were not met during the emissions test, the Permittee shall immediately stop waste feed to the SDC system. The Department shall be verbally notified within 24 hours of this discovery. If necessary, a revised post-emissions test feed rate may be submitted to the Department for approval.

f. Systemization

i. The systemization period for the SDC shall be conducted IAW the approved emissions test plans provided.

ii. The systemization period for the SDC shall begin with the introduction of conventional munitions into the SDC unit and shall end with the start of the emissions test.

iii. Each systemization period shall not exceed 720 operating hours. The Permittee may petition the Department for one extension of any systemization period for up to 720 additional operational hours IAW ADEM Admin. Code r. 335-14-8-.06(2)(a).

g. Reporting

During the systemization, emissions test, post-emissions test, and normal operating periods, the Permittee shall submit a report of all quarterly CEMS Calibration Error and annual CEMS Performance Specification Tests conducted IAW ADEM Admin. Code r. 335-3-11-.06 [56] within 60 calendar days of the date of the end of the calendar quarter in which the tests are conducted.

h. Performance Standards

The following performance standards must be satisfied prior to initiating feed into the detonation chamber:

i. During the systemization, emissions test, post-emissions test, and normal operating periods, the Permittee shall control emissions of products of incomplete combustion (PICs) from the stack such that the carbon monoxide (CO) level in the stack, corrected to 7% oxygen (O_2) IAW the formula given below, shall not exceed 100 parts per million (ppm), dry volume, instantaneous.

$$CO_c = CO_m \times (21 - 7)/(21 - O_m)$$

Where: Co_c = corrected CO ppm

Co_m = measured CO ppm

O_m = measured % O_2

ii. During the systemization, emissions test, post-emissions test, and normal operating periods, the particulate matter (PM) emissions from the common stack, corrected to 7% O_2 IAW the formula given below (ADEM Admin. Code r. 335-14-5-.15(4)(c)), shall not exceed 0.013 grains per dry standard cubic foot (grains/dscf).

$$P_c = P_m \times 14/(21 - Y)$$

Where: P_c = corrected concentration of PM

P_m = measured concentration of PM

Y = measured O_2 concentration in the stack gas

iii. During the systemization and emissions test periods, emissions limits must be established for the following parameters in grams per second (g/s);

a) Hydrogen chloride (HCl) emissions

b) Metal emission rates for antimony, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, phosphorous, selenium, silver, thallium, tin, vanadium, and zinc

c) Volatile, semivolatile, and total organic compound emissions

d) Dioxin/furan emissions, and

e) Energetic emissions.

iv. During normal operations, the established emissions limits shall be met by limiting the overall feed rate into the SDC. The Permittee shall submit a request to modify this permit to include numerically specified data for the above parameters not later than 90 days following the emissions test.

i. Limitations on Waste Feed

i. During the systemization, emissions test, post-emissions test, and normal operating periods, the Permittee shall treat only the hazardous wastes that meet the requirements listed in Permit Condition IV.D.3.c and in compliance with the operating requirements specified in Permit Condition IV.D.3.h.

ii. After successful completion of the emissions test, the Permittee shall be authorized to commence hazardous waste feed to the SDC at rates up to 50 % of the maximum feed rates for all hazardous waste processing.

iii. After successful completion of the emissions test, the Permittee shall be authorized to commence hazardous waste feed to the SDC at rates up to 75% of the maximum feed rates upon submittal and Departmental approval of a report in a format specified by the Department showing compliance with the performance standards in Permit Condition IV.D.3.h.

iv. After successful completion of the emissions test, the Permittee shall be authorized to commence hazardous waste feed to the SDC at rates up to 100% of the maximum feed rates demonstrated during the previous emissions test for the SDC upon submittal and Departmental approval of the following:

a) A complete emissions test report,

b) A submittal proposing operating conditions for post-emissions test and normal operating periods; and

c) An updated Risk Assessment Addendum (RAA) and/or a final Human Health Risk Assessment (HHRA) Report.

v. Reserve flush tank solution meeting the requirements in Permit Condition IV.D.3 may be fed to the SDC during the systemization, emissions test, post-emissions test, and normal operating periods.

vi. During the systemization, emissions test, post-emissions test, and normal operating periods, the Permittee shall verify that the waste feed is within the physical and chemical composition limits specified in this Permit. The munitions treated in the SDC may contain fill materials, such as riot control agents, tear gas, smokes, illumination mixtures, phosphorous mixtures, etc. Fill material and metal feed rates will be based upon the results of emissions testing. Feed rates for sulfur, chlorine and energetics (NEW) will be established by using munitions specific data available from MIDAS, the Material Assessment Review Board (MARB) or other appropriate source of data for the munition type. Feed determinations must be made for each feed event to the SDC. One determination is sufficient for identical feed trays.

vii. During the systemization and emissions testing periods conducted on various dates from December 2010 through August 2011, the SDC was limited to on-site conventional munitions from the ANAD storage igloos which were required to conduct performance and emissions testing. This included up to 68 pyrotechnic rounds and demonstrated feed up to 24 60mm rounds per hour. No off-site munitions were processed during these initial systemizations and testing periods.

viii. During systemization, emissions test, post-emissions test and normal operating periods, the feed rates of metals to the SDC shall not exceed the limits in Table IV-2.

j. Operating Conditions

i. During the systemization, emissions test, post-emissions test and normal operating periods, the Permittee shall operate the SDC in order to maintain the system and process parameters listed in Table IV-1.

ii. During the systemization, emissions test, post-emissions test and normal operating periods, the Permittee shall operate the FPI System to automatically prohibit waste feed to the SDC when the monitored operating conditions deviate from the setpoints specified in Table IV-1.

iii. After approval of the emissions test report, the Permittee shall operate the SDC IAW the feed limitations specified in this Section.

k. Monitoring Requirements

i. During the systemization, emissions test, post-emissions test, and normal operating periods, the Permittee shall maintain, calibrate, and operate process monitoring, control, and recording equipment, as specified in Table IV-1 while treating hazardous waste.

ii. During the systemization, emissions test, post-emissions test, and normal operating periods, the Permittee shall not treat any hazardous waste in the SDC at any time if any of the monitoring instruments listed in Table IV-1, fail to operate properly.

l. Feed Prohibitive Interlock (FPI) Requirements

iii. During the systemization, emissions test, post-emissions test, and normal operating periods, the Permittee shall operate the FPI System, specified in Table IV-1, to automatically prohibit hazardous waste feed to the SDC when the monitored operating conditions deviate from the setpoints specified in Table IV-1. The destruction sequence may not resume until the parameter(s) which cause the interlock is/are restored to permit limits and all other parameters are within permit limits.In the event of a malfunction of the FPI systems listed in Table IV-1 during the systemization, emissions test, post-emissions test, and normal operating periods, the Permittee shall immediately, manually, cut-off and/or lock-out the waste feed. The Permittee shall not restart waste feed until the problem causing the malfunction has been identified and corrected. Waste feed may not restart until the parameter(s) which caused the feed prohibitive condition is/are restored to permit limits and all other parameters are within permit limits.

m. Permitted Waste Storage Areas for the SDC

i. The Permittee shall operate the SDC-dedicated service magazines and storage igloos as specified in Sections IV J D-1a(2) of the facility permit application.

ii. The Permittee shall not store more energetic material in either the permitted storage igloos or service magazines than is allowed by Department of Defense Explosive Safety Board (DDESB) specifications.

iii. Any container of secondary waste containing free liquids shall be provided with a secondary containment device when stored in the service magazines or storage igloos. The Permittee shall inspect weekly any secondary containment in use to ensure that it is free of accumulated liquids.

iv. The Permittee shall inspect the service magazines and the storage igloos weekly when they are being used to store hazardous waste to detect leaks and deterioration caused by corrosion or other factors IAW the Inspection Schedule (Section IV J F-2 of the facility permit application). All inspection data shall be recorded and the records shall be placed in the operating record IAW Permit Condition II.I.

4. Thermal Treatment Closed Disposal Process (TTCDP)

a. Meteorological Restrictions

There are no meteorological restrictions for the TTCDP, as it is an enclosed system.

b. Hours of Operation

The TTCDP has no restriction on the hours of operation.

c. Treatment Quantities and Maximum Limits

The following quantity of material may be treated at the TTCDP, expressed as NEW. NEW represents the combined explosives weight of all energetics contained in the M77 grenade submunitions and their components (i.e. fuze-less grenades, fuze assemblies/remnants, and copper cones).

i. The overall feedrate to the TTCDP shall not exceed 192 lbs NEW per hour, which is equivalent to 2,880 M77 grenades per hour x 0.0665 lb NEW per grenade. Grenades include fuze-less grenades bodies, copper cones, fuze assemblies and sheared remnants.

ii. Non-Mass Detonating Explosives shall not be treated in the unit, and

iii. Mass Detonating Explosives shall be less than 192 lbs NEW/hr.

d. Maintenance

i. All RCRA required process instrumentation shall be equipped with visual indicators or audible alarms to warn of deviation from the limits specified in Table IV-3.

ii. Modifications to the design plans, specifications, and operating conditions in the facility permit application for the TTCDP shall be allowed only IAW Permit Condition II.A.2.

iii. Prior to treating hazardous waste in the TTCDP units, the Permittee shall install and test all process control instrumentation specified in Table IV-3 according to manufacturer specifications.

iv. The Permittee shall not process hazardous waste in the TTCDP until such time that the Permittee has demonstrated compliance with the certification of construction or modification requirements, as specified in Permit Condition I.E.14.

v. The OGT and associated filters shall be maintained and operated so as to minimize the emissions of air contaminants. This equipment shall be properly operated and maintained IAW Section IV.K of the facility permit application. Filter disposal shall be managed IAW Section IV K C-2a and Table IV K C-5 of the facility permit application. Filters shall be changed out IAW the inspection schedule located in Table IV K F-1 of the facility permit application.

e. Limitations on Waste Feed

i. The Permittee shall treat only the hazardous wastes that meet the requirements listed in Permit Condition IV.D.4.c.

ii. The Permittee shall verify that the waste feed is within the physical and chemical composition limits specified in Section IV K of the facility permit application and this permit. The waste treated in the TTCDP are limited to the MLRS M77 submunitions fuze-less grenades, fuze assemblies including sheared remnants, and copper cones.

iii. Any other wastes not listed in Permit Condition IV.D.4.e.ii above are prohibited from treatment in the TTCDP.

iv. The use of explosive donor or counter charges shall not be used in the TTCDP.

v. All safety doors must be closed while the TTCDP equipment is in operation.

vi. There shall be no more than 30 reject grenades at any one time in the reject box within the grenade reject station during operation of the GTU.

vii. The feed rates of metals to the TTCDP shall not exceed the calculated limits in Table IV-4.

f. Operating Conditions

i. The Permittee shall operate the TTCDP in order to maintain the FPI System and process instrumentation listed in Table IV-3.

ii. The Permittee shall operate the FPI System to automatically prohibit waste feed to the GTU and MDS units when the monitored operating conditions deviate from the setpoints specified in Table IV-3.

g. Monitoring Requirements

i. The Permittee shall maintain, calibrate, and operate process monitoring, control, and recording equipment, as specified in Table IV-3 while treating hazardous waste in the TTCDP.

ii. The Permittee shall not treat any hazardous waste in the TTCDP at any time if any of the monitoring instruments listed in Table IV-3 fail to operate properly.

h. Feed Prohibitive Interlock (FPI) Requirements

i. The Permittee shall operate the systems, specified in Table IV-3, to automatically prohibit hazardous waste feed to the TTCDP when the monitored operating conditions deviate from the setpoints specified in Table IV-3. The destruction sequence may not resume until the parameter(s) which cause the interlock is/are restored to permit limits and all other parameters are within permit limits.

iii. In the event of a malfunction of the FPI System listed in Table IV-3 the Permittee shall immediately, manually, cut-off and/or lock-out the waste feed. The Permittee shall not restart waste feed until the problem causing the malfunction has been identified and corrected. Waste feed may not restart until the parameter(s) which caused the feed prohibitive condition is/are restored to permit limits and all other parameters are within permit limits.

5. Energetic Treatment Unit

a. Meteorological Restrictions

There are no meteorological restrictions for the ETU, except that operations are suspended in the event of a thunderstorm or electrical storm.

b. Hours of Operation

ETU operations are limited to the hours between 8:00am and 4:00pm Monday through Saturday

c. Treatment Quantities and Daily Maximum Limits

The following quantity of material may be treated at the ETU unit, expressed as NEW. NEW represents the combined explosives weight of all energetics contained in munitions related scrap metal. Explosive limits have been established for the ETU and these limits shall not be exceeded at any time. The operating limits are as follows:

i. Energetic Treatment Unit (ETU): Shall not exceed 5 pounds (lbs) NEW per load (tray, basket or strongbox). The ETU is limited to 12 loads per day with a maximum of 60 lbs NEW per day.

d. Operating Conditions

i. The ETU shall be operated in accordance with the procedures outlined in ANAD SOP Number AN-0000-K-027. Control limits shall be maintained and burners shut down as indicated in Appendix A of this SOP.

ii. For each feed event to the ETU, the internal temperature must be recorded and maintained at 1000°F. Process retention time for explosives (including HMX, TNT only, tritonal, cyclotol, and propellants) shall be set at 30 minutes per load and for range scrap metal shall be set at 45 minutes per load. Temperature and retention times shall be maintained as part of the operating record for the ETU as required by Permit Condition IV.A.3.m.

IV.E. INSPECTION

The Permittee is required to conduct routine inspections at the OB, OD, SDC, and TTCDP units. During such inspections, the Permittee will check for malfunction and/or deterioration, operator error, and evidence of discharge, that may cause or lead to the release of hazardous constituents or that may have caused or lead to a potential threat to human health or the environment. These inspections shall be conducted at frequencies specified in Tables IV F-1, IV J-3, IV K F-1, and IV L F-1 of the facility permit application.

1. Any equipment or structure deterioration or malfunction identified in the inspection must be promptly remedied to ensure that operations remain in compliance with permit conditions and do not cause environmental or human health hazards. If a hazard is determined to be imminent, or has already occurred, remedial action must be taken immediately. No further ETU, OB, OD, RMF, SDC, or TTCDP operation is allowed to commence if the deterioration or malfunction has the potential to cause an imminent hazard to human health or the environment. The Department shall be notified within 24 hours of the determination of an imminent hazard IAW the reporting requirements of Permit Conditions I.17 and I.18.

2. OB, OD, and RMF inspections shall be performed IAW Section IV.F-2 of the facility permit application. OB, OD, and RMF inspections shall be documented IAW Figure IV.F-1 (inspection log sheet) of the facility permit application.

3. SDC inspections shall be performed IAW Section IV J F of the facility permit application and IAW the SDC inspection log sheets. Inspections of SDC-dedicated igloos and service magazines will be conducted when used for hazardous waste storage.

4. TTCDP inspections shall be performed IAW Section IV K F and Table IV K F-2 (TTCDP inspection log) of the facility permit application.

5. ETU inspections shall be performed IAW Section IV L F and Table IV L F-1 (ETU inspection schedule) of the facility permit application.

IV.F. GROUNDWATER MONITORING PROGRAM

A groundwater monitoring program shall be established for the OB and OD units IAW the requirements in Part VII.

IV.G. AIR MONITORING

The Permittee shall operate the thermal treatment units to protect human health of on-site workers and off-site receptors and to minimize significant effects to the ecosystem surrounding the treatment areas. The Permittee shall adhere to the following conditions to minimize risk of cancer and non-cancer effects due to exposure to thermal treatment air emissions:

1. The Permittee shall conduct a HHRA and Ecological Risk Assessment (ERA) based upon operational limits of the thermal treatment units in Permit Condition IV.C.

2. A cumulative assessment of cancer risk to off-site receptors posed by ANAD's ETU, OB, OD, RMF, SDC, and TTCDP units must be evaluated to determine cancer risk. Results of the cumulative evaluation must indicate that the summation of the risk estimates is below the cancer risk factor of 1×10^{-5}.

3. The maximum NEW, including donors and initiators, to be treated shall not exceed the values in Permit Condition IV.D.

4. Any changes in operational limits of the thermal treatment units shall require submission of a revised risk assessment to the Department under permit modification pursuant to Permit Condition I.J.

5. The Permittee shall perform sampling and analysis of the waste and exhaust emissions at the SDC to verify that the operating requirements established in the permit achieve the performance standards delineated in this Permit. Initial testing must be done within 6 months after startup of the SDC. Subsequent tests shall be conducted no later than 61 months after the previous test. The Department must be notified in writing at least one year prior to the scheduled date of the test.

6. During the systemization, emissions test, and post-emissions test periods for the SDC, the Permittee shall calibrate the O_2 and CO CEMS specified in this Permit IAW the Performance Specifications for CEMS referenced by ADEM Admin. Code r. 335-3-11-.06[56].

7. Either a new risk assessment and air modeling evaluation or a complete emissions test protocol and test plan, depending upon the munitions chosen for future processing, must be completed and submitted to the Department and approval obtained prior to treating any WMM in the TTCDP other than the M77 grenade submunitions from the MLRS recycling operation.

IV.H. CLOSURE AND POST-CLOSURE PLAN

The Permittee shall close the ETU, OB, OD, RMF, SDC, and TTCDP units IAW ADEM Admin. Code R. 335-14-5-.07 and Sections IV I, IV J I, VI K I, and IV L I of the facility permit application. If clean closure according to ADEM Admin. Code R. 335-14-5-.07(2) cannot be

obtained, then the Permittee shall submit a post-closure plan as part of a permit modification IAW Permit Condition I.J.

1. Closure Procedures

   a. All untreated reactive hazardous wastes, contaminated ash residue, UXO, contaminated concrete pads, and contaminated soils shall be removed from the OB and OD units as described in Section IV.G of the facility permit application and disposed IAW all State and Federal regulations governing hazardous waste handling and disposal. Sediments within the OD retention basin shall be sampled, removed, and managed IAW Permit Condition IV.D.2.d.ii.

   b. All burn pans and lids shall be decontaminated or disposed as required by ADEM Admin. Code r. 335-14-5-.07(5) and as described in Section IV.G of the facility permit application. Decontaminated burn pans and lids may be removed from the OB unit and disposed as scrap metal or may be put to other use at ANAD. All SDC, TTCDP, and ETU equipment shall be decontaminated or disposed of as required by ADEM Admin. Code r. 335-14-5-.07(5) and as described in Sections IV J I, IV K I, and IV L I of the facility permit application.

   c. Concrete pads shall be decontaminated and/or cleaned to remove untreated waste and/or ashes as required by ADEM Admin. Code r. 335-14-5-.07 and as described in Section IV.I of the facility permit application. The supports and pads may be left in place if decontaminated to acceptable criteria approved by the Department or disposed of as a non-hazardous waste. If concrete cannot be cleaned and properly decontaminated, it shall be disposed of IAW Permit Condition IV.H.1.a.

   d. All soil in the OB and OD unit areas shall be sampled for contamination IAW the ADEM approved closure plan required by Permit Condition IV.H. If removal or remediation of all contaminated soil cannot be attained during approved closure activities, the OB and OD units shall be closed IAW ADEM Admin. Code r. 335-14-5-.07 and an approved post-closure plan

   e. If the ETU, OB, OD, SDC, and TTCDP units cannot be clean-closed and certified for unrestricted use pursuant to the Uniform Environmental Covenant Act (UECA)[ADEM Admin. Code r. 335-5], then a Land Use Control Plan must be developed and submitted in the post-closure plan.

2. Groundwater

   a. Groundwater underlying the OB and OD units is required to be monitored throughout the operating life of the OB and OD units IAW Permit Conditions X.A through X.E and Section IV I of the facility permit application. If at the time of closure the current and historical groundwater monitoring results indicate no evidence of contamination from the OB and OD units, then the groundwater will be considered un-impacted by OB and OD operations. If groundwater contamination is present from OB and OD operations, then the Permittee must address continued groundwater monitoring and corrective action in the post-closure plan.

Table IV-1: FPI Conditions for the SDC [(1)]

Item No.	Instrument Tag Number	Process Data Description	Range	Parameter
SDC-FPI-01	PI 12007	Detonation Chamber Static Pressure Indication	MAX	18.32 psi
SDC-FPI-02	TI 12021	Detonation Chamber Temperature Indication	MIN	1,000ºF
SDC-FPI-03	TIC 310 AVG	Thermal Oxidizer Temperature	MIN	1,741º F
SDC-FPI-04	PIC 310 AVG	Thermal Oxidizer Pressure	MAX	- 0.01 psi
SDC-FPI-05	TIC 320 AVG	Spray Dryer Temperature	MAX	400º F
SDC-FPI-06	PDS 33001	Bag-house Differential Pressure	MAX	0.18 psi
SDC-FPI-07	FIA 34204	Acid Scrubber Process Flow	MIN	3.2 cfm
SDC-FPI-08	FIS 34203	Quench Tower Flow	MIN	2.4 cfm
SDC-FPI-09	TIS 34003, 34004	Quench Tower Temperature	MAX	170º F
SDC-FPI-10	TIA 37002	Neutral Scrubber Discharge Temperature	MAX	200º F
SDC-FPI-11	AIT-900	CO Concentration	MAX	100 ppm, dry basis @7% O_2 (instantaneous)
SDC-FPI-12	QICA 36008	Neutral Scrubber pH	MIN	7.0 pH

Footnote:

1. Operational parameter(s) interlock will prohibit the transfer from loading chamber 1 into chamber 2 until all conditions are met or are within range.

Table IV-1: FPI Conditions for the SDC [(1)] (continued)

Abbreviations:

% .....percent	@ ..... at
°F.....degrees Fahrenheit	CO ..... carbon monoxide
FPI.....feed prohibitive interlock	cfm ..... cubic feet per minute
MAX .....maximum	MIN ..... minimum
O_2 .....oxygen	ppm..... parts per million
psi.....pounds per square inch	
SDC.....Static Detonation Chamber	

Table IV-2: Metal Feed Rates for Munitions and WMM Feed Events for the SDC (1)

Metal	Total Feed Rate (lbs/hr)	Metal	Total Feed Rate (lbs/hr)
Antimony	1.12E00	Manganese	3.06E00
Arsenic	6.7E-01	Mercury	3.7E-02
Barium	2.24E+01	Nickel	2.2E-01
Beryllium	5.3E-03	Phosphorus	3.28E+01
Boron	6.8E+01	Selenium	1.4E-02
Cadmium	1.8E-02	Silver	2.6E-02
Chromium	6.43E00	Thallium	3.0E-03
Cobalt	7.8E-02	Tin	4.6E-01
Copper	8.8E-01	Vanadium	1.0E-02
Lead	5.42E+01	Zinc	1.23E+01

Footnotes:

1. These rates were demonstrated during Condition 2 emissions testing on March 23-26, 2017.

Table IV-3: FPI Conditions for the TTCDP [(1)]

Grenade Treatment Unit (GTU)[(2)]				
Item No.	**Instrument Tag Number**	**Process Data Description**	**Range**	**Parameter**
TTCDP-FPI-01	TBD	Munitions Feed Rate[(3)]	MAX	2,880 Grenades/hr
TTCDP-FPI-02	TBD	All Electric Coils (igniters)	N/A	Operational
TTCDP-FPI-03	TBD	OGT Fan Motor On	N/A	On
Munitions Destruction System (MDS)[(4)]				
Item No.	**Instrument Tag Number**	**Process Data Description**	**Range**	**Parameter**
TTCDP-FPI-04	TBD	Munitions Feed Rate[(5)]	MAX	2,880 Fuzes/hr
TTCDP-FPI-05	TBD	Detonation Chamber Temperature	MIN	662ºF
TTCDP-FPI-06	TBD	Detonation Chamber Temperature	MAX	1112ºF
TTCDP-FPI-07	TBD	Discharge Flap	N/A	Closed/locked
TTCDP-FPI-08	TBD	Differential Pressure Across Fan Inlet and Outlet	MAX	17.0 inwc
TTCDP-FPI-09	TBD	Pre-Filter Differential	MIN	0.1 inwc
TTCDP-FPI-10	TBD	Pre-Filter Differential	MAX	6.0 inwc
TTCDP-FPI-11	TBD	HEPA Filter Differential	MIN	0.1 inwc
TTCDP-FPI-12	TBD	HEPA Filter Differential	MAX	12.0 inwc
TTCDP-FPI-13	TBD	Air Filter Inlet Temperature	MAX	350ºF

Table IV-3: FPI Conditions for the TTCDP [(1)] (Continued)

Footnotes:

1. The operational parameter(s) interlock will prohibit the transfer of grenades into the TTCDP until all parameters are met for the units listed (GTU, MDS, and OGT). If any set point is triggered, the feed will stop and the OGT will continue to operate. Any already ignited grenades and fuzes in the MDS and on the GTU conveyor may continue to be processed.

2. The GTU is a thermal treatment conveyor system which is used for treating grenade bodies.

3. The grenades to the GTU will be counted and will determine the overall feed rate. Approximately 99% of the NEW feed rate to the TTCDP system is comprised of fuze-less grenade bodies which will be processed in the GTU.

4. The MDS is a 0.2 Dynasafe Detonation Chamber which is used for processing fuze assemblies.

5. The fuze assemblies fed to the MDS will not be counted separately from the grenades; however, when fuze assemblies are present in the feed, there is a 1 to 1 ratio of grenades to fuzes. Therefore, the fuze count will equal the grenade count. If the GTU feed stops when the maximum feed rate is achieved, then the feed to the MDS will automatically stop. Fuze assemblies comprise about 1% of the overall NEW feed rate and will be processed in the MDS.

Abbreviations:

°F	degrees Fahrenheit	inwc	inches water column
GTU	Grenade Treatment Unit	MAX	maximum
MDS	Munitions Destruction System	MIN	minimum
TBD	to be determine	TTCDP	Thermal Treatment Closed Disposal Process

Table IV-4: Metal Feed Rates for the ANMC TTCDP [1]

Metal	Total Feed Rate (lbs/hr)
Antimony	5.14E-03
Barium	1.01E-02
Lead	2.60E-01

Footnote:

1. Metal feed rates were calculated using the metal composition of the M77 grenades located in the Munitions Items Disposition Action System (MIDAS) and assuming a maximum feed rate of 2,880 grenades per hour.

Part V

SWMUs AND AOCs ON OPERATIONAL RANGES

(Reserved)

There are currently no SWMUs/AOCs identified at this time that are located on operational ranges.

PART VI

SOLID WASTE MANAGEMENT UNIT (SWMU) AND AREA OF CONCERN (AOC) IDENTIFICATION AND EVALUATION

VI.A. APPLICABILITY

The Conditions of this Part apply to the solid waste management units (SWMUs) and/or areas of concern (AOCs) listed in Part VI.A.1 through VI.A.8 below. SWMUs were identified either by the RCRA Facility Assessment (RFA) dated September 21, 2018, the CERCLA process in coordination with the Army and EPA under the conditions of the 1990 Federal Facility Agreement (FFA), or by subsequent reporting and investigations. All SWMU's/AOC's that have been, or are being addressed pursuant to the FFA are notated in the respective tables of this Part. All actions taken on such SWMU's/AOC's pursuant to the FFA that achieve, or have already achieved, concurrence by the Department (as a party to the FFA) will be deemed to also have satisfied the respective permit requirement. Furthermore, regarding those SWMUs/AOCs being addressed pursuant to the FFA, which are also required to be addressed pursuant to this permit, ANAD must follow the approved schedules agreed upon by the parties of the FFA. Failure to address SWMUs/AOCs in accordance with the timelines and procedures set forth in the approved CERCLA documents will result in addressing the respective SWMUs/AOCs in accordance with the timelines and procedures outlined in this permit. Approved CERCLA decision documents have been incorporated into this permit by reference and are listed below the Table of Contents of this permit. The CERCLA coordination process also applies to Parts VII and VIII of this permit.

1. The SWMUs and AOCs identified in Table VI.1 of this Permit.

2. The SWMUs and AOCs identified in Table VI.2 of this Permit, which require investigation and/or remediation;

3. The SWMUs and AOCs identified in Table VI.3 of this Permit, which require no further investigation under this permit at this time;

4. The SWMUs and AOCs identified in Table VI.4 of this Permit, which are miscellaneous treatment units and storage units regulated by Parts I-IV and VII-IX of this permit.;

5. The SWMUs and AOCs identified in Table VI.5 of this Permit, which require interim measures and/or source removal;

6. The SWMUs and AOCs identified in Table VI.6 of this Permit, which require corrective measures implementation;

7. Any additional SWMUs or AOCs discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means identified by section VI. B of this permit, and

8. Contamination beyond the facility boundary, if applicable. The Permittee shall implement corrective actions beyond the facility boundary where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of the Department that, despite the Permittee's best efforts, as determined by the Department, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where offsite access is denied. On-site measures to address such releases will be determined on a case-by-case basis.

VI.B. NOTIFICATION AND ASSESSMENT REQUIREMENTS FOR NEWLY IDENTIFIED SWMUS AND AOCS

1. The Permittee shall notify the Department in writing, within fifteen (15) calendar days of discovery, of any suspected new AOC as discovered under Permit Condition VI.A.7. The notification shall include, at a minimum, the location of the AOC and all available information pertaining to the nature of the release (e.g., media affected, hazardous constituents released, magnitude of release, etc.). If the Department determines that further investigation of an AOC is required, the permit shall be modified in accordance with ADEM Admin. Code r. 335-14-8-.04(2).

2. The Permittee shall notify the Department in writing, within fifteen (15) calendar days of discovery, of any additional SWMU as discovered under Permit Condition VI.A.7.

3. The Permittee shall prepare and submit to the Department, within ninety (90) calendar days of notification, a SWMU Assessment Report (SAR) for each SWMU identified under Permit Condition VI.B.2. At a minimum, the SAR shall provide the following information:

   a. Location of unit(s) on a topographic map of appropriate scale such as required under ADEM Admin. Code r. 335-14-8-.02(5)(b)19.

   b. Designation of type and function of unit(s).

   c. General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings).

   d. Dates that the unit(s) was operated.

   e. Specification of all wastes that have been managed at/in the unit(s) to the extent available. Include any available data on hazardous constituents in the wastes.

   f. All available information pertaining to any release of hazardous waste or hazardous constituents from such unit(s) (to include groundwater data, soil analyses, air, and/or surface water data).

4. Based on the results of the SAR, the Department shall determine the need for further investigations at the SWMUs covered in the SAR. If the Department determines that such investigations are needed, the Permittee shall initiate an investigation as outlined in Permit Condition VI.D.1. immediately upon receiving notification of the Department's determination.

VI.C. NOTIFICATION REQUIREMENTS FOR NEWLY DISCOVERED RELEASES AT PREVIOUSLY IDENTIFIED SWMUS OR AOCS

1. The Permittee shall notify the Department in writing of any newly discovered release(s) of hazardous waste or hazardous constituents discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, within 15 calendar days of discovery. Such newly discovered releases may be from SWMUs or AOCs identified in Permit Condition VI.A.3 or SWMU or AOCs identified in Permit Condition VI.A.7 for which further investigation was not required.

2. If the Department determines that further investigation of the SWMUs or AOCs is needed, the Permittee shall initiate an investigation as outlined in Permit Condition VI.D immediately upon receiving notification of the Department's determination.

VI.D. RCRA FACILITY INVESTIGATION (RFI)

1. The Permittee must perform a RFI for any SWMU or AOC identified by the Department in Permit Conditions VI.A.2., VI.B.4., or VI.C.2.

2. The RFI must completely identify the concentration of hazardous constituents released from each SWMU and AOC and fully delineate the area where such hazardous constituents have come to be located.

3. The RFI must fully characterize the nature and extent of contamination released from each SWMU or AOC under investigation.

4. The RFI must be performed in a manner consistent with the most recent edition of the Alabama Environmental Investigation and Remediation Guidance.

5. Except as provided by Permit Condition VI.D.6, the RFI must be completed within 180 calendar days from the effective date of this permit, or for SWMUs or AOCs identified pursuant to Permit Conditions VI.B. and VI.C., within 180 calendar days from the receipt of notification from the Department that an RFI is required. If, prior to the effective date of this permit, the Department has approved a work plan that includes a schedule for completing the RFI, the RFI shall be completed in accordance with the approved schedule

6. RFI Schedule of Compliance

a. For RFIs expected to require greater than 180 calendar days to complete, the Permittee may submit a schedule of compliance subject to Department approval and/or modification.

b. Submittal of a RFI Schedule of Compliance does not delay or otherwise postpone the Permittee's obligation to initiate the RFI.

c. The Schedule of Compliance must include:

i. A detailed narrative discussion, which explains why the RFI cannot be completed within 180 days; and,

ii. A detailed and chronological listing of milestones with estimated durations that provides sufficient information to track the progress of the investigation.

d. The RFI Schedule of Compliance shall be reviewed by the Department in accordance with Permit Condition VI.G.

e. The Permittee shall complete the RFI in accordance with the approved RFI Schedule of Compliance.

7. RFI Progress Reports

a. For an RFI being conducted in accordance with the approved RFI Schedule of Compliance, the Permittee must submit progress reports on a monthly basis.

b. The RFI Progress Reports must include:

i. A description of the portion RFI activities completed during the reporting period;

ii. Summaries of any problems or potential problems encountered during the reporting period;

iii. Actions taken to rectify problems;

iv. Changes in relevant personnel;

v. Projected work for the next reporting period;

vii. Any proposed revisions to the RFI Schedule of Compliance. Modifications of the RFI Schedule of Compliance are subject to approval by the Department; and,

vii. A summary of any data collected during the reporting period, including:

A. The location of each sampling point identified on a site map;

B. The concentration of each hazardous constituent detected at each sampling point; and,

C. Submittal of RFI Progress Reports, work plans, or other documents during the RFI does not alter the approved RFI Schedule of Compliance.

8. RFI Reports

a. The Permittee shall prepare and submit to the Department an RFI Report within 60 calendar days from the completion of investigation activities in accordance with the approved RFI Schedule of Compliance, if applicable.

b. The RFI Report must provide a detailed description of all required elements of the investigation as described in the most recent edition of the Alabama Environmental Investigation and Remediation Guidance.

c. The RFI Report shall be reviewed by the Department in accordance with Permit VI.G.

VI.E. SELECTION OF CORRECTIVE MEASURES AND PERMIT MODIFICATION

1. The Permittee shall develop and submit to the Department a Corrective Measures Implementation (CMI) Plan for any areas of the Permittee's site where hazardous constituents have come to be located at concentrations exceeding those appropriate for the protection of human health and the environment. The CMI Plan must include all applicable elements of the proposed remedy pursuant to the most recent edition of the Alabama Environmental Investigation and Remediation Guidance.

2. The CMI Plan shall be submitted to the Department within 120 calendar days following the Permittee's submittal of the RFI Report indicating that hazardous constituents have come to be located at any area of the Permittee's facility, or beyond the facility, at concentrations exceeding those appropriate for the protection of human health and the environment, or within 120 calendar days following notification from the Department that a CMI Plan is required, whichever occurs earlier.

3. The CMI Plan shall be submitted along with a request for permit modification pursuant to ADEM Admin. Code r. 335-14-8-.04(2), and shall include any applicable fees pursuant to ADEM Admin. Code r. 335-1-6. This modification will serve to incorporate the proposed final remedy, including all procedures necessary to implement and monitor the remedy, into this permit.

4. The CMI Plan shall be submitted for the SWMUs and AOCs listed in Table VI.6 within 120 days from permit issuance.

VI.F. INTERIM MEASURES (IM)

1. IM Work Plan(s)

   a. Upon notification by the Department, the Permittee shall prepare and submit an Interim Measures (IM) Work Plan for any SWMU or AOC that the Department determines is necessary. IM are necessary in order to minimize or prevent further migration of contaminants and limit human and environmental exposure to contaminants while long-term corrective action remedies are evaluated and, if necessary, implemented. The IM Work Plan shall be submitted within thirty (30) calendar days of such notification and shall include the elements listed in VI.F.1.b. Such IM may be conducted concurrently with investigations required under the terms of this Permit. The Permittee may initiate IM by submitting an IM Work Plan for approval and reporting in accordance with the requirements under Permit Condition VI.F.

   b. The IM Work Plan shall ensure that the IM are designed to mitigate any current or potential threat(s) to human health or the environment and are consistent with and integrated into any long-term solution at the facility. The IM Work Plan shall include: the IM objectives, procedures for implementation (including any designs, plans, or specifications), and schedules for implementation.

   c. The IM Work Plan must be approved by the Department, in writing, prior to implementation. The Department shall specify the start date of the IM Work Plan schedule in the letter approving the IM Work Plan.

   d. The IM Report shall be reviewed by the Department in accordance with Permit Condition VI.G.

   e. The Permittee shall submit IM Work Plans for the SWMUs and AOCs listed in Table VI.5 of this permit to the Department for review and approval. The IM Work Plans shall be submitted within 180 days from the effective date of this permit.

2. IM Implementation

   a. The Permittee shall implement the IM in accordance with the approved IM Work Plan.

   b. The Permittee shall give notice to the Department as soon as possible of any planned changes, reductions or additions to the IM Work Plan.

   c. Final approval of corrective action required under ADEM Admin. Code r. 335-14-5-.06(12), which is achieved through IM, shall be in accordance with ADEM Admin. Code r. 335-14-8-.04(2) and Permit Condition VI.E.

3. IM Reports

a. If the time required for completion of IM is greater than one year, the Permittee shall provide the Department with progress reports at intervals specified in the approved work plan. The Progress Reports shall, at a minimum, contain the following information:

i. A description of the portion of the IM completed;

ii. Summaries of any deviations from the IM Work Plan during the reporting period;

iii. Summaries of any problems or potential problems encountered during the reporting period; and

iv. Projected work for the next reporting period.

v. Copies of laboratory/monitoring data.

b. The Permittee shall prepare and submit to the IM Report to the Department within ninety (90) calendar days of completion of IM conducted under Permit Condition VI.F. The IM Report shall, at a minimum contain the following information:

i. A description of IM implemented;

ii. Summaries of results;

iii. Summaries of all problems encountered;

iv. Summaries of accomplishments and/or effectiveness of IM; and,

v. Copies of all relevant laboratory/monitoring data, *etc*. in accordance with Permit Condition I.E.11.

VI.G. SUBMITTALS

1. All work plans, reports, schedules, and other documents ("submittals") required by this permit shall be subject to approval by the Department to assure that such submittals and schedules are consistent with the requirements of this Permit and with applicable regulations and guidance. The Permittee shall revise all submittals and schedules as directed by the Department.

2. The Department will review all submittals in accordance with the conditions of this permit. The Department will notify the Permittee in writing of any submittal that is disapproved, and the basis therefore. If the Department disapproves a submittal, the Department shall: (1) notify the Permittee in writing of the submittal's deficiencies and specify a due date for submission of a revised submittal, (2) revise the submittal and notify the Permittee of the revisions, or (3) conditionally approve the submittal and notify the Permittee of the conditions. Permit Condition VI.H. shall apply only to submittals that have been disapproved and revised by the Department, or that have been disapproved by the Department,

then revised and resubmitted by the Permittee, and again disapproved by the Department.

3. All submittals shall be submitted within the time frame specified by the Department and in accordance with the approved schedule of compliance. Extensions of the due date for submittals may be granted by the Department based on the Permittee's demonstration that sufficient justification for the extension exists.

4. All submittals required by this permit shall be signed and certified in accordance with ADEM Admin. Code r. 335-14-8-.02(2).

5. Two (2) copies of all submittals shall be provided by the Permittee to the Department in accordance with Permit Condition I.H.

VI.H. DISPUTE RESOLUTION

Notwithstanding any other provision in this permit, in the event the Permittee disagrees, in whole or in part, with the Department's revision of a submittal or disapproval of any revised submittal required by the permit, the following may, at the Permittee's discretion apply:

1. In the event that the Permittee chooses to invoke the provisions of this section, the Permittee shall notify the Department in writing within thirty (30) calendar days of receipt of the Department's revision of a submittal or disapproval of a revised submittal. Such notice shall set forth:

   a. The specific matters in dispute;

   b. The position the Permittee asserts should be adopted as consistent with the requirements of the permit;

   c. The basis for the Permittee's position; and,

   d. Any matters considered necessary for the Department's determination.

2. The Department and the Permittee shall have an additional thirty (30) calendar days from Department's receipt of the notification provided for in Condition VI.H.1. of this Permit to meet or confer to resolve any disagreement.

3. In the event agreement is reached, the Permittee shall submit the revised submittal and implement the same IAW and within the time frame specified in such agreement.

4. If agreement is not reached within the 30-day period, the Department shall notify the Permittee in writing of its decision concerning the dispute, and the Permittee shall comply with the terms and conditions of the Department's decision in the dispute. For the purposes of this provision in this permit, the responsibility for making this decision shall not be delegated below the Land Division Chief.

5. With the exception of those conditions under dispute, the Permittee shall proceed to take any action required by those portions of the submission and of the permit that the Department determines are not affected by the dispute.

TABLE VI.1 MASTER LIST OF KNOWN SWMUS/AOCS AT THE ANNISTON ARMY DEPOT

The following Solid Waste Management Unit(s) (SWMU) and/or Area(s) of Concern (AOC) numbers and descriptions correspond with those noted in the RCRA Facility Assessment (RFA) Report dated September 21, 2018. Where discrepancies exist, the permit shall take precedence.

SWMU/AOC Number	SWMU/AOC Name	SWMU/AOC Location
SWMU 1*	Chemical Sludge Waste Pits	Southeast Industrial Area (SIA)
SWMU 2*	Sanitary Landfill	Southeast Industrial Area (SIA)
SWMU 3*	Old Industrial Wastewater Treatment Plant	Southeast Industrial Area (SIA)
SWMU 4*	New Industrial Wastewater Treatment Plant	Southeast Industrial Area (SIA)
SWMU 5*	Sink Hole Disposal Area	Ammunition Storage Area (ASA)
SWMU 6*	Valve Disposal Pit	Southeast Industrial Area (SIA)
SWMU 7*	Chemical Waste Burial Pit	Southeast Industrial Area (SIA)
SWMU 8*	Acid Disposal Pit	Ammunition Storage Area (ASA)
SWMU 9*	Calcium Hypochlorite Burial Pit	Southeast Industrial Area (SIA)
SWMU 10*	TNT Washout Facility	Ammunition Storage Area (ASA)
SWMU 11*	Sedimentation Leaching Bed TNT Washout Facility	Ammunition Storage Area (ASA)
SWMU 12*	Facility 414 (Old Lagoon)	Southeast Industrial Area (SIA)
SWMU 13*	SIA Acid Chemical Waste Pit	Southeast Industrial Area (SIA)
SWMU 14*	Laundry Waste Leaching Facility	Ammunition Storage Area (ASA)
SWMU 15*	Propellant Disposal Facility	Ammunition Storage Area (ASA)
SWMU 16*	Burning Ground #1	Ammunition Storage Area (ASA)
SWMU 17*	Demolition Pit	Ammunition Storage Area (ASA)
SWMU 18*	WIA Old Sewage Treatment Plant	Western Industrial Area (WIA)
SWMU 19*	SIA Old Sewage Treatment Plant and Drying Beds	Southeast Industrial Area (SIA)
SWMU 20*	New Sewage Treatment Plant	Southeast Industrial Area (SIA)
SWMU 21*	Abrasive Dust Landfill	Southeast Industrial Area (SIA)
SWMU 22*	A-Block Lagoon	Southeast Industrial Area (SIA)
SWMU 23*	Asbestos Waste Disposal Trench	Southeast Industrial Area (SIA)
SWMU 24*	Old Sanitary Landfill	Southeast Industrial Area (SIA)
SWMU 25*	Building 130 Sump	Southeast Industrial Area (SIA)
SWMU 26*	North TNT Burial Pit	Ammunition Storage Area (ASA)
SWMU 27*	South TNT Burial Pit	Ammunition Storage Area (ASA)
SWMU 28*	Waste Wood Landfill	Southeast Industrial Area (SIA)
SWMU 29*	Old Lumber Disposal Yard	Southeast Industrial Area (SIA)
SWMU 30*	Northeast Lagoon Area	Southeast Industrial Area (SIA)
SWMU 31*	Building 114 Metal Plating Shop	Southeast Industrial Area (SIA)

SWMU/AOC Number	SWMU/AOC Name	SWMU/AOC Location
SWMU 32*	Hazardous Waste Storage Building 512	Bill Nichols Industrial Complex
SWMU 33*	Hazardous Waste/Roll-off Box Storage Building 466	Bill Nichols Industrial Complex
SWMU 34*	Chemical Storage Igloos (Total of 155)	Ammunition Storage Area (ASA)
SWMU 35*	Deactivation Furnace/Popping Furnace	Ammunition Storage Area (ASA)
SMWU 36*	Drill and Transfer System Site (Toxic Demilitarization Site)	Ammunition Storage Area (ASA)
SWMU 37*	Vehicle Wash Rack (Building 45)	Western Industrial Area (WIA)
SWMU 38*	Air Emission Baghouses (Buildings 5, 31, 74A, 103113, 114, 117, 127, 129, 130, 133, 145, 147, 186, 409, 413, 431, 432, 433, 474, 475, 652, CD-020)	Southeast Industrial Area (SIA)
SWMU 39*	Dynamometer Wastewater Treatment System	Southeast Industrial Area (SIA)
SWMU 40*	Oil-Water Separator Building 501 and 501 UST Site	Southeast Industrial Area (SIA)
SWMU 41*	Steam Cleaning Buildings (Buildings 128A, 129, 130, 409, 414, 421, 475 and 503)	Southeast Industrial Area (SIA)
SWMU 42*	Paint Booths (Buildings 8, 31, 58, 74A, 105, 113, 117, 128A, 129, 130, 143B, 167, 409, 433, 474, 475, 499, 501, 652 and 680)	Southeast Industrial Area (SIA)
SWMU 43*	Cyanide Pretreatment System Building 506	Southeast Industrial Area (SIA)
SWMU 44**	Dry Creek	Southeast Industrial Area (SIA)
SWMU 45	Building 410 former UST	Southeast Industrial Area (SIA)
SWMU 46**	Building 6 former UST	Western Industrial Area (WIA)
SWMU 47	Building 385 former UST	Ammunition Storage Area (ASA)
SWMU 48	Hazardous Waste Storage Building (Building 527)	Bill Nichols Industrial Complex
SWMU 49	Conventional Waste Munitions/Components Storage Igloos (F-405, F-704A, I-103, 34 G-Block Igloos for SDC Storage)	Ammunition Storage Area (ASA)
SWMU 50	Brine Evaporation System	Former ANCDF
SWMU 51	Container Handling Building	Former ANCDF
SWMU 52	Brine Surge Tank System	Former ANCDF
SWMU 53	Toxic Maintenance Area	Former ANCDF

SWMU/AOC Number	SWMU/AOC Name	SWMU/AOC Location
SWMU 54	Upper Munitions Corridor	Former ANCDF
SWMU 55	Buffer Storage Area	Former ANCDF
SWMU 56	Liquid Incinerator	Former ANCDF
SWMU 57	Deactivation Furnace System	Former ANCDF
SWMU 58	Brine Drum Dryers	Former ANCDF
SWMU 59	Agent Collection Tank System	Former ANCDF
SWMU 60	Waste Transfer Facility	Former ANCDF
SWMU 61	Lower Munitions Corridor	Former ANCDF
SWMU 62	Spent Decontamination Holding Tank System	Former ANCDF
SWMU 63	Metal Parts Furnace	Former ANCDF
SWMU 64	HDC Bin Lay Down Area – Container Handling Building	Former ANCDF
SWMU 65	Burning Ground #2	Ammunition Storage Area (ASA)
SWMU 66	Less than 90 Day Storage Areas (SWMU 1, SWMU 4, Buildings 114, 129, 130, 133, 145, 147, 162, 431/432, 433, 466, 474, 475, 512, 520, and 652, CD-020, MILVANs 3-9, and Storage Magazines 385 and 386)	Southeast Industrial Area (SIA) and Ammunition Storage Area (ASA)
SWMU 67	Building 129 Test Range for M16	Western Industrial Area (WIA)
SWMU 68	Building 129 Test Range for Handguns	Western Industrial Area (WIA)
SWMU 69	Abandoned Phenol Basin at Industrial Wastewater Treatment Plant	Southeast Industrial Area (SIA)
SWMU 70	Static Detonation Chamber	Ammunition Storage Area (ASA)
SWMU 71	Western Area – Clean Fill Site	Western Industrial Area (WIA)
SWMU 72	Building 409	Southeast Industrial Area (SIA)
SWMU 73	SDC Service Magazines (712, 713, and 714)	Ammunition Storage Area (ASA)
SWMU 74	Thermal Treatment Closed Disposal Process (TTCDP)	Ammunition Storage Area (ASA)
SWMU 75	Energetic Treatment Unit	Ammunition Storage Area (ASA)
SWMU 76	Building 114: CC-ANAD-10	Southeast Industrial Area (SIA)
SWMU 77	Building 117: CC-ANAD-11	Southeast Industrial Area (SIA)
SWMU 78	Building 136: CC-ANAD-12	Southeast Industrial Area (SIA)
SWMU 79	Building 524: CC-ANAD-13	Southeast Industrial Area (SIA)
SWMU 80	Building 634: CC-ANAD-14	Southeast Industrial Area (SIA)
SWMU 81**	Baseball Field	Main Gate Area
SWMU 82	Building 128 Manhole ST-3A	Southeast Industrial Area (SIA)
SWMU 83	Building 133	Southeast Industrial Area (SIA)
SWMU 84	Building 414 Lift Station	Southeast Industrial Area (SIA)
SWMU 85	Building 432 Spinner Hanger	Southeast Industrial Area (SIA)

SWMU/AOC Number	SWMU/AOC Name	SWMU/AOC Location
SWMU 86	Lance Missile Spill Site	Ammunition Storage Area (ASA)
SWMU 87***	Former Open Detonation Buffer Area	Ammunition Storage Area (ASA)
SWMU 88	Building 31 Test Fire Tunnels 1-3	Southeast Industrial Area (SIA)
SWMU 89	Building 186 Pistol Range	Cantonment Area
SWMU 90	Linear Projectile Mortar Disassembly	Ammunition Storage Area (ASA)
SWMU 91	Lift Station GW-12 at Building 114	Southeast Industrial Area (SIA)
SWMU 92	Rocket Motor Fire Stands	Ammunition Storage Area (ASA)
AOC A**	Western Industrial Area	Western Industrial Area (WIA)
AOC B	Underground Storage Tanks in Chemical Limited Area	Chemical Limited Area (CLA)
AOC C	Tank 77 Release	Southeast Industrial Area (SIA)
AOC D***	Recoilless Rifle Range	Northeast Corner of Depot
AOC E***	Pistol Range	Cantonment Area
AOC F***	Former Burning Ground Buffer Area	Ammunition Storage Area (ASA)
AOC G	Small Arms (Competition Pistol) Range	Northwestern Corner of Depot
AOC H	Tank Howitzer Range	Ammunition Storage Area (ASA)
AOC I	Pyrotechnics Range	Northwestern Corner of Depot
AOC J	Defense National Stockpiles	Ammunition Limited Area (ALA)
AOC K	Underground Pipe Release at Building 504	Southeast Industrial Area (SIA)

*SWMUs 1 – 43 are listed in Appendix 2 of the 1991 Federal Facilities Agreement and are being addressed pursuant to the FFA. The SIA SWMUs are listed on the USEPA National Priorities List (NPL) collectively as the Southeast Industrial Area. Since the signing of the FFA SWMUs 16, 17, 32, 33, and 34 have been identified as RCRA TSD units subject to the requirements of Parts I-IV and VII-IX of this permit.

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** Some SWMUs have been included as part of the FFA since its signing in 1990. SWMU 44 was approved for FFA inclusion in the OU-1 Phase I Remedial Investigation Report (Jacobs, 1994). SWMU 46 was approved for FFA inclusion in the OU-5 Remedial Investigation (AECOM, 2019). SWMU 81 was approved for FFA inclusion in the Preliminary Assessment Report for the Ball Field Construction and Demolition Debris Site (URS, 2008). AOC A was approved for FFA inclusion in the OU-5 Site Investigation (J.J. Sosa, 2004).

***SWMU 87, AOC D, AOC E and AOC F are classified as Munitions Response Sites and are being addressed under the Military Munitions Response Program (MMRP) pursuant to the FFA.

TABLE VI.2 LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUs) AND AREAS OF CONCERN (AOCs) REQUIRING A RCRA FACILITY INVESTIGATION (RFI)

Solid Waste Management Unit (SWMU) and/or Area of Concern (AOC) numbers and descriptions correspond with those noted in the RCRA Facility Assessment (RFA) Report dated September 21, 2018. Where discrepancies exist, the permit shall take precedence.

SWMU/AOC Number *	SWMU/AOC Name	Unit Comment	Potentially Affected Media
SWMU 15	Propellant Disposal Facility	Requires site investigation to determine extent of NDMA contamination	Groundwater, Soil
SWMU 37	Vehicle Wash Rack (Building 45)	Remedial investigation (RI) pending within the Western Industrial Area (WIA)	Groundwater, Soil
SWMU 46	Building 6 Former UST	Remedial investigation (RI) pending within the Western Industrial Area (WIA)	Groundwater, Soil
SWMU 72	Building 409	RFI required for confirmatory sampling and/or remediation of possible contamination.	Groundwater, Soil
SWMU 76	Building 114: CC-ANAD-10	2018 RFA recommendation – proceed with completion of RFI	Groundwater, Soil
SWMU 77	Building 117: CC-ANAD-11	2018 RFA recommendation – proceed with completion of RFI	Groundwater, Soil
SWMU 78	Building 136: CC-ANAD-12	2018 RFA recommendation – proceed with completion of RFI	Groundwater, Soil
SWMU 79	Building 524: CC-ANAD-13	2018 RFA recommendation – proceed with completion of RFI	Groundwater, Soil
SWMU 80	Building 634: CC-ANAD-14	2018 RFA recommendation – proceed with completion of RFI	Groundwater, Soil
SWMU 82	Building 128 Manhole ST-3A	2018 RFA recommendation – proceed with completion of RFI	Groundwater, Soil
SWMU 83	Building 133	2018 RFA recommendation – proceed with completion of RFI	Groundwater, Soil
SWMU 84	Building 414 Lift Station	2018 RFA recommendation – proceed with completion of RFI	Groundwater, Soil
SWMU 87	Former Open Detonation Buffer Area	MMRP RI/FS	Groundwater, Soil
SWMU 91	Lift Station GW-12 at Building 114	RFI required for confirmatory sampling and/or remediation of possible contamination.	Groundwater, Soil
AOC A	Western Industrial Area	Remedial investigation (RI) pending	Groundwater, Soil
AOC D	Recoilless Rifle Range	MMRP RI/FS	Groundwater, Soil
AOC E	Pistol Range	MMRP RI/FS	Groundwater, Soil
AOC F	Burning Ground Buffer Zone	MMRP RI/FS	Groundwater, Soil

SWMU/AOC Number *	SWMU/AOC Name	Unit Comment	Potentially Affected Media
AOC J	Defense National Stockpiles	Phase I and II RFI completed. Conducting phase III.	Soil

*Note: See footnotes for Table VI.1 for those SWMUs that are being addressed pursuant to the FFA and MMRP.

TABLE VI.3 LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUs) AND AREAS OF CONCERN (AOCs) REQUIRING NO FURTHER ACTION (NFA) AT THIS TIME

Solid Waste Management Unit (SWMU) and/or Area of Concern (AOC) numbers and descriptions correspond with those noted in the RCRA Facility Assessment (RFA) Report dated September 21, 2018. Where discrepancies exist, the permit shall take precedence.

SWMU/AOC Number*	SWMU/AOC Name	Unit Comment	Potentially Affected Media
SWMU 2	Sanitary Landfill	Solid Waste Landfill Closure, 1994. ADEM approved May 5, 1995.	
SWMU 6	Valve Disposal Pit	SIA – Phase II RI, May 1998	
SWMU 14	Laundry Waste Leaching Facility	ASA – OU-3 Final ROD, July 2006	
SWMU 18	WIA Old Sewage Treatment Plant	ASA – OU-3 Final ROD, July 2006	
SWMU 26	North TNT Burial Pit	ASA – OU-3 Final ROD, July 2006	
SWMU 34	Chemical Storage Igloos (Total of 155)	Former ANCDF – Clean Closure Certification September 30, 2014	
SMWU 36	Drill and Transfer System Site (Toxic Demilitarization Site)	ASA – Site Expansion Report, 1994	
SWMU 38	Air Emission Baghouses (Buildings 5, 31, 74A, 103, 113, 114, 117, 127, 129, 130, 133, 145, 147, 186, 409, 413, 431, 432, 433, 474, 475, 652, CD-020)	SIA – OU-2 Final ROD, July 2008; SIA – Phase II RI, May 1998	
SWMU 39	Dynamometer Wastewater Treatment System	SIA – Phase I RI ,1995	
SWMU 40*	Oil-Water Separator Building 501 and 501 UST Site	SIA – OU-2 Final ROD, July 2008; SIA – Phase II RI, May 1998	
SWMU 42*	Paint Booths (Buildings 8, 31, 58, 74A, 105, 113, 117, 128A, 129, 130, 143B, 167, 409, 433, 474, 475, 499, 501, 652 and 680)	SIA – OU-2 Final ROD, July 2008; SIA – Phase II RI, May 1998	
SWMU 43*	Cyanide Pretreatment System Building 506	SIA – OU-2 Final ROD, July 2008; SIA – Phase II RI, May 1998	
SWMU 44	Dry Creek	SIA – OU-1 Comprehensive Groundwater RI – Phase III, January 2008	
SWMU 45	Building 410 former UST	SIA - GW Code R335-6-15.26-.29/2005 ARBCA Evaluation	

SWMU/AOC Number*	SWMU/AOC Name	Unit Comment	Potentially Affected Media
SWMU 47	Building 385 former UST	Approved UST Removal March 28, 1996	
SWMU 50	Brine Evaporation System	Former ANCDF- Clean Closure Certification September 30, 2014	
SWMU 51	Container Handling Building	Former ANCDF- Clean Closure Certification September 30, 2014	
SWMU 52	Brine Surge Tank System	Former ANCDF- Clean Closure Certification September 30, 2014	
SWMU 53	Toxic Maintenance Area	Former ANCDF- Clean Closure Certification September 30, 2014	
SWMU 54	Upper Munitions Corridor	Former ANCDF- Clean Closure Certification September 30, 2014	
SWMU 55	Buffer Storage Area	Former ANCDF- Clean Closure Certification September 30, 2014	
SWMU 56	Liquid Incinerator	Former ANCDF- Clean Closure Certification September 30, 2014	
SWMU 57	Deactivation Furnace System	Former ANCDF- Clean Closure Certification September 30, 2014	
SWMU 58	Brine Drum Dryers	Former ANCDF- Clean Closure Certification September 30, 2014	
SWMU 59	Agent Collection Tank System	Former ANCDF- Clean Closure Certification September 30, 2014	
SWMU 60	Waste Transfer Facility	Former ANCDF- Clean Closure Certification September 30, 2014	
SWMU 61	Lower Munitions Corridor	Former ANCDF- Clean Closure Certification September 30, 2014	
SWMU 62	Spent Decontamination Holding Tank System	Former ANCDF- Clean Closure Certification September 30, 2014	
SWMU 63	Metal Parts Furnace	Former ANCDF- Clean Closure Certification September 30, 2014	
SWMU 64	HDC Bin Lay Down Area – Container Handling Building	Former ANCDF- Clean Closure Certification September 30, 2014	
SWMU 66	Less than 90 Day Storage Areas (SWMU 1, SWMU 4, Buildings 114, 129, 130, 133, 145, 147, 162, 431/432, 433, 466, 474, 475, 512, 520, and 652, CD-020, MILVANs 3-9, and Storage Magazines 385 and 386)	RCRA Regulated Units – Satellite Accumulation	
SWMU 67	Building 129 Test Range for M16	RCRA Regulated Units – Satellite Accumulation	
SWMU 68	Building 129 Test Range for Handguns	RCRA Regulated Units – Satellite Accumulation	

SWMU/AOC Number*	SWMU/AOC Name	Unit Comment	Potentially Affected Media
SWMU 69	Abandoned Phenol Basin at Industrial Wastewater Treatment Plant	Approved NFA on October 21, 2009 following completion of RFI	
SWMU 81*	Baseball Field	Draft Final Preliminary Assessment on the Ball Field, August 2008	
SWMU 86	Lance Missile Spill Site	Preliminary Assessment, June 2008	
SWMU 88	Building 31 Test Fire Tunnels 1-3	2018 RFA recommendation – No Further Action	
SWMU 89	Building 186 Pistol Range	2018 RFA recommendation – No Further Action	
SWMU 90	Linear Projectile Mortar Disassembly	LPMD Closure Report, October 2011, Approved July 2013	
AOC B	Underground Storage Tanks in Chemical Limited Area	Approved NFA on October 21, 2009 following completion of RFI	
AOC C	Tank 77 Release	GW Sampling 2004-2005. Re-mediation complete, 5/2006.	
AOC G	Small Arms (Competition Pistol) Range	2018 RFA recommendation – No Further Action	
AOC H	Tank Howitzer Range	2018 RFA recommendation – No Further Action	
AOC I	Pyrotechnics Range	2018 RFA recommendation – No Further Action	

*Note: See footnotes for Table VI.1 for those SWMUs that are being addressed pursuant to the FFA and MMRP.

TABLE VI.4 LIST OF TREATMENT OR STORAGE SOLID WASTE MANAGEMENT UNITS (SWMUs) REGULATED BY PARTS I – IV AND VII OF THIS PERMIT

Solid Waste Management Unit (SWMU) and/or Area of Concern (AOC) numbers and descriptions correspond with those noted in the RCRA Facility Assessment (RFA) Report dated September 21, 2018. Where discrepancies exist, the permit shall take precedence.

SWMU/AOC Number	SWMU/AOC Name	Unit Comment	Potentially Affected Media
SWMU 16	Burning Ground #1	RCRA-permitted Unit	Air, Groundwater, Soil
SWMU 17	Demolition Pit	RCRA-permitted Unit	Air, Groundwater, Soil
SWMU 32	Hazardous Waste Storage Building 512	RCRA-permitted Unit	Soil
SWMU 33	Hazardous Waste/Roll-off Box Storage Building 466	RCRA-permitted Unit	Soil
SWMU 48	Hazardous Waste Storage Building (Building 527)	RCRA-permitted Unit	Soil
SWMU 49	Conventional Waste Munitions/Components Storage Igloos (F-405, F-704A, I-103, 34 G-Block Igloos for SDC Storage listed in Table III.2 of this permit)	RCRA-permitted Unit	Soil
SWMU 65	Burning Ground #2	Currently conducting RCRA closure according to closure plan.	Soil
SWMU 70	Static Detonation Chamber	RCRA-permitted Unit	Air, Groundwater, Soil
SWMU 73	SDC Service Magazines (712, 713, and 714)	Ammunition Storage Area (ASA)	Soil
SWMU 74	Thermal Treatment Closed Disposal Process (TTCDP)	Ammunition Limited Area (ALA)	Air, Groundwater, Soil
SWMU 75	Energetic Treatment Unit (ETU	RCRA-permitted Unit	Air, Groundwater, Soil
SWMU 92	Rocket Motor Fire Stands	RCRA-permitted Unit	Air, Groundwater, Soil

TABLE VI.5 LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUs) AND AREAS OF CONCERN (AOCs) REQUIRING INTERIM MEASURES (IM) AND/OR SOURCE REMOVAL/REDUCTION

There are currently no SWMUs/AOCs identified at this time that require IM and or source removal/reduction.

(RESERVED)

TABLE VI.6 LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUS) AND AREAS OF CONCERN (AOCS) REQUIRING A CORRECTIVE MEASURES IMPLEMENTATION (CMI) PLAN

Solid Waste Management Unit (SWMU) and/or Area of Concern (AOC) numbers and descriptions correspond with those noted in the RCRA Facility Assessment (RFA) Report dated September 21, 2018. Where discrepancies exist, the permit shall take precedence.

SWMU/AOC Number	SWMU/AOC Name	Unit Comment
AOC K	Underground Pipe Release at Building 504	Tank removed and closed. CMIP in progress.
SWMU 71	Western Area – Clean Fill Site	CMIP required for contamination.
SWMU 85	Building 432 Spinner Hanger	CMIP required for contamination.

PART VII

GROUNDWATER MONITORING AND CORRECTIVE ACTION

V.IA. REQUIRED PROGRAM(S)

1. Groundwater monitoring shall consist of the General Groundwater Monitoring Program of Permit Condition VII.B., the Detection Monitoring Program contained in Permit Condition VII.C., the Compliance Monitoring Program contained in Permit Condition VII.D., and the Corrective Action Monitoring Program contained in Permit Condition VII.E.

2. The Permittee shall commence groundwater monitoring as required by this permit no later than 120 calendar days after the effective date of this permit.

VII.B. GENERAL GROUNDWATER MONITORING PROGRAM

1. Well Location, Installation and Construction

   The Permittee shall install and/or maintain a groundwater monitoring system to comply with the requirements of ADEM Admin. Code r. 335-14-5-.06(8), 335-14-5-.06(9), 335-14-5-.06(10), and 335-14-5-.06(11) as applicable and as specified below:

   a. The Permittee shall maintain all groundwater monitoring wells at the facility as identified in Table VII.1. of this permit, at the locations specified on Figures IV E-9 and IV E-10 of the permit application, Figure 1.1 of the Remedial Pre-Design Report Addendum for Interim Remedial Action of the Comprehensive Groundwater Operable Unit (dated September 2017), and Figure 3-1 of the CMI Plan and Site Summary Report for Building 504 (dated April 2018), and any other groundwater monitoring wells specified by Permit Conditions VII.B.1.d.

      i. All groundwater monitoring wells shall be maintained IAW the plans and specifications presented in Section IV.E of the permit application or the specific CMI Plan and IAW ADEM Admin. Code r. 335-14-5-.06.

      ii. A groundwater monitoring well shall not be removed from any monitoring program specified in this permit without an approved permit modification pursuant to Permit Condition I.J.

      iii. If a groundwater monitoring well is damaged, the Permittee shall immediately notify the Department in writing, which includes a description of the well repair activities to be conducted. The well repair procedures must be approved by the Department prior to implementation. Within 30 calendar days after the well is repaired, the Permittee shall submit a written notification to the Department that the well repair activities were conducted IAW the approved procedures.

iv. If a groundwater monitoring well is deleted from the monitoring program(s) required by this permit IAW Permit Conditions VII.B.1.a.ii. and I.J., it shall be abandoned within 90 calendar days after deletion using procedures to be approved by the Department. Within 30 calendar days after the well is abandoned, the Permittee shall submit a written notification to the Department that the well abandonment activities were conducted IAW the approved procedures.

b. Groundwater monitoring wells 05CW16-2, 05CW16-3, and 05CW16-4 shall define the point of compliance (POC)for the OB unit. Groundwater monitoring wells 05CW17-1, 05CW17-2, and 91B19 shall define the POC for the OD unit. Groundwater monitoring wells MW8-21 and MW 8-27 shall define the POC for Building 504 UST site. Monitoring wells 06-S05-U01, 97-S05-U01, 98-S05-B02, 98-S05-B03, and W2-17 shall define the POC for ASA SWMU 5. Groundwater monitoring wells 06-S11-U01, 06-S11-U02, , 98-S11-B01, MW-1-97, MW-2-97, and MW-3-97 shall define the POC for ASA SWMUs 10 and 11. Groundwater monitoring wells 06-S27-U01, 91B22, 91B23, and 97-S27-U01 shall define the POC for ASA SWMU 27. Groundwater wells 91B24, 97-S35-U02, 97-S35-U03, and 98-S35-B01 shall define the POC for ASA SWMU 35. Groundwater monitoring wells 98-SB01, 98-S08-B02, and 98-S08-B03 shall define the POC for the ASA SWMU 8. The Cooper Well and Coldwater Spring shall define the POC for the SIA.

c. The Permittee shall maintain groundwater monitoring well wells 05CW16-1 and 91B18 as the background monitoring well(s) for Open Burning (OB) and Open Detonation (OD), respectively. The Permittee shall maintain groundwater monitoring well 03-CGW-B01S as background monitoring for the SIA.

d. The Permittee shall install and maintain additional groundwater monitoring wells as necessary to assess changes in the rate and extent of any plume of contamination or as otherwise deemed necessary to maintain compliance with ADEM Admin. Code r. 335-14-5-.06(6), 335-14-5-.06(8), 335-14-5-.06(9), 335-14-5-.06(10), and 335-14-5-.06(11), as applicable. A plan in the form of a permit modification request specifying the design, location and installation of any additional monitoring wells should be submitted to the Department at least 90 calendar days prior to installation which, at a minimum, shall include:

i. Well construction techniques including casing depths and proposed total depth of well(s);

ii. Well development method(s);

iii. A complete description of well construction materials;

iv. A schedule of implementation for construction; and,

v. Provisions for determining the lithologic characteristics, hydraulic conductivity, grain size distribution, and porosity for the applicable aquifer unit(s) at the location of the new well(s).

2. General Groundwater Monitoring Requirements

a. The Permittee shall determine the groundwater surface elevation from all monitoring wells listed in Table VII.1. of this permit at least annually and each time a sampling event is conducted. The results of these determinations should be submitted IAW Permit Condition VII.B.6. Elevation data should be recorded and reported as mean sea level (MSL) and referenced to an appropriate national geodetic vertical datum (NGVD) benchmark.

b. The Permittee shall determine the groundwater flow rate and direction in the underlying aquifer(s) at least annually and submit the results IAW Permit Condition VII.B.6.

c. The Permittee shall determine background concentrations of hazardous constituents and other chemical parameters required to be monitored by this permit IAW Section IV.E of the permit application and ADEM Admin. Code r. 335-14-5-.06(8)(g).

3. Groundwater Protection Standard

a. The groundwater protection standard, as required under ADEM Admin. Code r. 335-14-5-.06(3), shall consist of Table VII.3. of this permit which lists the hazardous constituents and their respective concentration limits.

b. The groundwater protection standard applies to all hazardous waste or hazardous constituent releases as deemed appropriate by the Department to protect human health and the environment.

4. Compliance Period

a. The compliance period, during which the groundwater protection standard specified in Permit Condition VII.B.3. applies, shall begin at the time of the first sampling event of the compliance monitoring program (Permit Condition VII.D.), or the corrective action monitoring program (Permit Condition VII.E.), whichever is earlier.

b. The compliance period shall continue (after beginning pursuant to Permit Condition VII.B.4.a.) until the groundwater protection standard as defined by Permit Condition VII.B.3.a. has not been exceeded for a period of three consecutive years.

c. If the Permittee is engaged in a corrective action program pursuant to Permit Condition VII.E., then the compliance period shall continue as required by ADEM Admin. Code r. 335-14-5-.06(7)(c) until the groundwater protection standard has not been exceeded for a period of three consecutive years after corrective action has been terminated and this permit has been modified, IAW Permit Condition I.J., to implement a compliance monitoring program pursuant to Permit Condition VII.D. or a detection monitoring program pursuant to Permit Condition VII.C., as required by ADEM Admin. Code r. 335-14-5-.06(11)(f).

5. Sampling and Analysis Procedures

The Permittee shall use the following techniques and procedures when obtaining and analyzing samples from the groundwater monitoring wells described in Permit Condition VII.B.1. to provide a reliable indication of the quality of the groundwater as required under ADEM Admin. Code r. 335-14-5-.06(8)(d), (e), and (g):

a. Samples shall be collected, preserved, and shipped (when shipped off-site for analysis) IAW the procedures specified in Section IV E of the permit application.

b. Samples shall be analyzed according to the procedures specified in Section IV E of the permit application, the most recent edition of SW-846 or other appropriate methods approved by the Department. Analytical method detection limits shall be less than or equal to the concentration limits specified in Table VII.3, unless otherwise approved in writing by the Department.

c. Samples shall be tracked and controlled using the chain-of-custody procedures specified in Section IV E of the permit application.

d. Statistical analyses used to evaluate the groundwater monitoring data shall be as described in Section IV E of the permit application and ADEM Admin. Code r. 335-14-5-.06(8)(h).

e. No samples taken IAW this permit shall be filtered prior to analysis.

6. Recordkeeping and Reporting

a. The Permittee shall keep and maintain all monitoring, testing, and analytical data obtained IAW Permit Conditions VII.B., VII.C., VII.D., and VII.E. as required by Permit Condition I.C.10.

b. The Permittee shall submit to the Department a report to include all analytical sampling data, established background values, statistical evaluations, groundwater elevations, associated potentiometric maps, and the annual groundwater flow rate and direction determinations. The analytical method and the method detection limit (MDL) for each constituent must be integrated into all reports of analysis. The report shall be submitted within 90 calendar days after the first sampling event and on an annual basis thereafter. Copies of this report shall be kept at the facility IAW Permit Conditions I.C.10.c and I.C.10.e.

c. The Permittee shall submit progress reports to the Department describing implementation of groundwater monitoring and/or corrective action activities at the site as required by Part VII of this permit on a quarterly basis. The first progress report shall be submitted to the Department within 90 calendar days after the effective date of this permit. The progress reports shall continue until such time as the required monitoring and/or corrective action systems and activities required by this permit are fully constructed and operational. In the event that additional monitoring and/or corrective action requirements are imposed through a permit modification, IAW Permit Condition I.J., the quarterly reporting requirement shall resume, commencing upon the effective date of the permit modification and continuing until the required monitoring and/or corrective action systems and activities are again fully constructed and operational.

VIIC. DETECTION MONITORING PROGRAM

The requirements of this Condition are applicable to the OB and OD units. Except as specified otherwise in this permit, the Detection Monitoring Program shall be implemented IAW Section IV E of the permit application and ADEM Admin. Code r. 335-14-5-.06(9).

1. Monitoring Requirements

   In addition to the general groundwater monitoring requirements specified in Permit Condition VII.B.2., the Permittee shall:

   a. Sample all point of compliance wells and background wells for the OB and OD units and analyze for the constituents listed in Table VII.2. of this permit, on a semi-annual basis IAW Permit Condition VII.B.5.

   b. Sample all background and point of compliance monitoring wells for the OB and OD units and analyze for temperature (degrees F or C), specific conductance (Mhos/cm), and pH (standard units) each time the well is sampled IAW Permit Condition VII.B.5. The data obtained should be submitted as raw data in the reports required by Permit Condition VII.B.6.

   c. Sample all designated background monitoring wells for the OB and OD units and analyze, IAW Permit Condition VII.B.5., for the constituents listed in Table VII.2. of this permit in all monitoring events.

2. Reporting and Response Requirements

   In addition to the recordkeeping and reporting requirements specified in Permit Condition VII.B.6:

   a. The Permittee shall determine whether there is statistically significant evidence of contamination above background levels at each monitoring well within 45 calendar days of completing each sampling event. The statistical evaluation of monitoring well analytical data shall be performed pursuant to Permit Condition VII.B.5. and ADEM Admin. Code r. 335-14-5-.06(9)(f).

   b. If the Permittee determines, pursuant to Permit Condition VII.C.2.a., that there is statistically significant evidence of contamination above background levels for any chemical parameters or hazardous constituents listed in Table VII.2. of this permit at any monitoring well at the point of compliance, he or she must comply with ADEM Admin. Code r. 335-14-5-.06(10)(g).

VIID. COMPLIANCE MONITORING PROGRAM (RESERVED)

VIIE. CORRECTIVE ACTION MONITORING PROGRAM

The requirements of this Condition are applicable to SIA Groundwater Source Area SWMUs, the ASA SWMUs, and AOC K (Building 504 UST site). Except as specified otherwise in this permit, the Corrective Action Monitoring Program shall be implemented IAW approved CMI Plans (or equivalent documents) listed in Table VIII.1 of this permit and ADEM Admin. Code r. 335-14-5-.06(11). The monitoring protocol for SIA and ASA wells shall follow the

recommendations of the most recently approved annual Monitored Natural Attenuation Report for the respective operable units (i.e. monitoring for year 13 shall follow the recommendations listed in the report for year 12).

1. Monitoring Systems

In addition to the point of compliance and background well monitoring systems identified in Permit Conditions VII.B.1.b. and VII.B.1.c., the Permittee shall:

a. Maintain groundwater monitoring wells 00-X03-B06D, 00-X03-B06S, 00-X04-B09D, and 00-X04-B09S as boundary wells for the ASA as specified in Table VII.1. of this permit and as shown on Figure 2-2 of the Final Ammunition Storage Area Remedial Design and Remedial Action Work Plan, dated July 2006, and Figures 4-2 through 4-7 of the Work Plan Addendum to ASA Long-Term Groundwater Monitoring Plan, dated April 2012.

b. Maintain groundwater monitoring wells MW-5, MW-8, 00-GOU-B02, and 02-CGW-BO5-4 as boundary wells for the SIA as specified in Table VII.1 of this permit and as shown on Figure 1.1 of the Remedial Pre-Design Report Addendum for Interim Remedial Action of the Comprehensive Groundwater Operable Unit, dated September 2017.

c. Maintain groundwater monitoring wells MW 8-2, MW 8-4, MW 8-5, MW 8-6, MW 8-8, MW 8-10, MW 8-11, MW 8-13, MW 8-14, MW8-15, MW 8-17, MW 8-29, MW 8-35, MW 8-36, MW 8-37, and MW 8-38 as effectiveness wells for Building 504 as specified in Table VII.1. of this permit and as shown on Figure 3-1 of the CMIP and Site Summary Report for Building 504, dated January 2016.

d. Maintain groundwater monitoring wells 91B11, 97-S10-U01, 97-S10-U02, 06-S11-U03, 06-S11-U04, 91B12, 98-S11-B02, MW-4-97, MW-5-97, WAAD-13 as effectiveness wells for the ASA downgradient as specified in Table VII.1 of this permit and as shown on Figure 2-2 of the Final Ammunition Storage Area Remedial Design and Remedial Action Work Plan, dated July 2006 and Figures 4-2 through 4-7 of the Work Plan Addendum to ASA Long-Term Groundwater Monitoring Plan, dated April 2012.

e. Maintain groundwater monitoring wells SWMU12-01, 00-GOU-B05, 88EWLF-1, 15PDLB-01, 15PDLB-02, 01-CGW-U11, 15PDNB-01, 15PDNB-02, 82B09, 95-GOU-U06, OO-GOU-B03, MW-410-13, 81B27, 83B19, 88EWNE-5, 95-SO1-UO1, 81B04, 15PDTB-01, and 15PDBT-02 as effectiveness wells for the SIA as specified in Table VII.1 of this permit and as shown on Figure 1.1 of the Remedial Pre-Design Report Addendum for Interim Remedial Action of the Comprehensive Groundwater Operable Unit, dated September 2017.

f. **RESERVED for future recovery wells.**

g. Maintain groundwater monitoring wells MW 8-21 and MW 8-27 as point of compliance wells for Building 504 UST site as specified in Table VII.1 of this permit and as shown on Figure 3-1 of the CMI Plan and Site Summary Report for Building 504, dated January 2016.

h. Maintain groundwater monitoring wells 06-S05-U01, 97-S05-U01, 98-S05-B02, 98-S05-B03, and W2-17 as the points of compliance for ASA SWMU 5 as specified in Table VII.1 of this permit and as shown on Figure 2-2 of the Final Ammunition Storage Area Remedial Design and Remedial Action Work Plan, dated July 2006 and Figures 4-2 through 4-7 of the Work Plan Addendum to ASA Long-Term Groundwater Monitoring Plan, dated April 2012.

i. Maintain groundwater monitoring wells 98-S0B1, 98-S08-B02, and 98-S08-B03 as the point of compliance wells for the ASA SWMU 8 as specified in Table VII.1 of this permit and as shown on Figure 2-2 of the Final Ammunition Storage Area Remedial Design and Remedial Action Work Plan, dated July 2006 and Figure 4-3 of the Work Plan Addendum to ASA Long-Term Groundwater Monitoring Plan, dated April 2012.

j. Maintain groundwater monitoring wells 06-S11-U01, 06-S11-U02, 98-S11-B01, MW-1-97, MW-2-97, and MW-3-97 as the point of compliance for ASA SWMUs 10 and11 as specified in Table VII.1 of this permit and as shown on Figure 2-2 of the Final Ammunition Storage Area Remedial Design and Remedial Action Work Plan, dated July 2006 and Figure 4-4 of the Work Plan Addendum to ASA Long-Term Groundwater Monitoring Plan, dated April 2012.

k. Maintain groundwater monitoring wells 06-S27-U01, 91B22, 91B23, and 97-S27-U01 as the point of compliance wells for ASA SWMU 27 as specified in Table VII.1. of this permit and as shown on Figure 2-2 of the Final Ammunition Storage Area Remedial Design and Remedial Action Work Plan, dated July 2006 Figure 4-5 of the Work Plan Addendum to ASA Long-Term Groundwater Monitoring Plan, dated April 2012.

l. Maintain groundwater wells 91B24, 97-S35-U02, 97-S35-U03, and 98-S35-B01 as the point of compliance wells for ASA SWMU 35 as specified in Table VII.1 of this permit and as shown on Figure 2-2 of the Final Ammunition Storage Area Remedial Design and Remedial Action Work Plan, dated July 2006 and Figure 4-6 of the Work Plan Addendum to ASA Long-Term Groundwater Monitoring Plan, dated April 2012.

m. Maintain groundwater monitoring well “Cooper Well” and monitor “Coldwater Spring” as the points of compliance for the SIA as specified in Table VII.1 of this permit and as shown on Figure 1.1 of the Remedial Pre-Design Report Addendum for Interim Remedial Action of the Comprehensive Groundwater Operable Unit, dated September 2017.

2. Corrective Action Program

a. The Permittee shall conduct a Corrective Action Program, as described in the approved CMI Plans listed in Table VIII.1, to remove or treat in place all hazardous constituents that exceed their respective groundwater protection standards as described in Table VII.3. of this permit at the point of compliance, between the point of compliance and the down-gradient facility property boundary, and beyond the facility boundary IAW ADEM Admin. Code r. 335-14-5-.06(11)(e)2.

b. Pursuant to ADEM Admin. Code r. 335-14-5-.06(11)(c) and 335-14-5-.06(11)(e)3., the Permittee shall continue to implement the corrective action program as described in the approved CMI Plans listed in Table VIII.1 within 120 calendar days after the effective date of this permit. Corrective action equivalent programs under the CERCLA process must continue the current monitoring program frequencies agreed upon by the Army, EPA and ADEM (i.e. groundwater monitoring, LUC inspections, etc).

c. The Permittee shall handle/treat groundwater IAW the approved CMI Plans and with the applicable requirements of this permit.

3. Monitoring Requirements

In addition to the general groundwater monitoring requirements specified in Permit Condition VII.B.2., the Permittee shall:

a. Sample all background, point of compliance and effectiveness monitoring wells shown in Table VII.1. of this permit and analyze for the constituents listed in Table VII.2 of this permit on a semi-annual basis for SIA and Building 504 wells and annually for ASA wells beginning within 120 calendar days of the effective date of this permit and continuing through the end of the compliance period.

b. Sample all background, point of compliance, effectiveness, and boundary monitoring wells shown in Table VII.1. of this permit and analyze for temperature (degrees F or C), specific conductance (Mhos/cm), and pH (standard units) each time the well is sampled. The data obtained should be submitted as raw data in the reports required by Permit Condition VII.B.6. Additionally, all ASA wells shown in Table VII.1 must be sampled and analyzed for the Monitored Natural Attenuation (MNA) parameters listed in Table VII.4.

c. When evaluating the monitoring results to determine the effectiveness of the corrective measures, IAW Permit Condition VII.E.4., the Permittee shall:

i. Determine if the corrective action system effectively addresses the entire plume of contamination;

ii. Determine if the concentration of the hazardous constituents are decreasing (pH increasing or decreasing toward neutrality, as applicable) in the effectiveness wells specified in Permit Condition VII.A.1.;

iii. Determine if hazardous waste or hazardous constituents are being released into the environment; and,

iv. Determine if hazardous constituents have been detected in the boundary wells specified in Permit Condition VII.A.1.

4. Reporting and Response Requirements

In addition to the recordkeeping and reporting requirements specified in Permit Condition VII.B.6.:

a. The Permittee shall report the effectiveness of the corrective action program annually, as required under ADEM Admin. Code r. 335-14-5-.06(11)(g). These reports shall be submitted to the Department within 60 calendar days of each annual anniversary of this permit after corrective action is initiated and continue until corrective action is completed. The Permittee must provide data from groundwater monitoring along with an analysis of that data and any conclusions regarding the effectiveness of the program IAW Permit Condition VII.E.3.d. If the analysis of the data warrants any change to the corrective action program, the Permittee must include these revisions in the annual report which will be followed up within 90 calendar days with an application for permit modification IAW Permit Condition I.J.

b. If corrective action is terminated under Permit Condition VII.B.4.c., the Permittee must sample all background, point of compliance, effectiveness and boundary sampling locations for the compounds listed in ADEM Admin. Code r. 335-14-5-Appendix IX. Based upon the sampling results, the Permittee may petition the Department, IAW Permit Condition I.J, for a permit modification to implement either a detection monitoring program or a compliance monitoring program.

TABLE VII.1

MONITORING WELL DESIGNATIONS

WELL NUMBER	WELL TYPE[1]	WELL LATITUDE	WELL LONGITUDE	UNIT(S) MONITORED	WELL DEPTH (ft. btoc)	GROUND ELEVATION (ft. MSL)	TOP-OF-CASING ELEVATION (ft. MSL)	SCREENED INTERVAL (ft. bgs)	MONITORED ZONE[2]
05CW16-1	BKG	33° 39’ 56.17”N	85° 59’ 48.42”W	OB	22.9	711.07	713.75	10.0-20.0	Residuum
05CW16-2	POC	33° 40’ 05.96”N	85° 59’ 56.04”W	OB	17.7	685.82	688.09	5.0-15.0	Residuum
05CW16-3	POC	33° 40’ 03.60”N	85° 59’ 55.21”W	OB	18.0	690.22	693.36	4.5-14.5	Residuum
05CW16-4	POC	33° 40’ 04.41”N	85° 59’ 52.34”W	OB	22.0	693.55	695.81	9.5-19.5	Residuum
05CW17-1	POC	33° 40’ 57.77”N	85° 59’ 58.67”W	OD	22.0	612.79	616.04	1.0-20.0	Residuum
05CW17-2	POC	33° 40’ 55.22”N	85° 59’ 53.68”W	OD	18.0	621.80	623.91	5.0-15.0	Residuum
91B18	BKG	33° 40’ 47.77”N	85° 59’ 30.44”W	OD	17.5	650.39	651.89	5.0-15.0	Residuum
91B19	POC	33° 40’ 56.73”N	85° 59’ 52.34”W	OD	22.0	620.98	621.57	10.0-20.0	Residuum
MW 8-2	EFF	33° 38’ 09.60”N	85° 55’ 39.74”W	Building 504	21.8	622.20	622.01	6-21.5	Residuum
MW 8-4	EFF	33° 38’ 09.54”N	85° 55’ 40.57”W	Building 504	21.0	623.30	623.03	5.9-20.9	Residuum
MW 8-5	EFF	33° 38’ 09.49”N	85° 55’ 41.32”W	Building 504	16.0	623.10	622.96	6-15.8	Residuum
MW 8-6	EFF	33° 38’ 09.49”N	85° 55’ 40.94”W	Building 504	17.0	623.80	623.62	6.9-16.5	Residuum
MW 8-8	EFF	33° 38’ 09.63”N	85° 55’ 39.34”W	Building 504	15.7	622.20	622.03	5.9-15.7	Residuum
MW 8-10	EFF	33° 38’ 08.93”N	85° 55’ 40.39”W	Building 504	15.3	622.20	622.04	5.5-15.3	Residuum
MW 8-11	EFF	33° 38’ 09.63”N	85° 55’ 39.79”W	Building 504	75.5	622.20	621.92	70-75.4	Bedrock
MW 8-13	EFF	33° 38’ 09.92”N	85° 55’ 39.54”W	Building 504	19.6	621.80	621.61	9.8-19.6	Residuum
MW 8-14	EFF	33° 38’ 09.70”N	85° 55’ 39.15”W	Building 504	16.8	622.50	622.18	6.8-16.6	Residuum
MW 8-15	EFF	33° 38’ 09.47”N	85° 55’ 38.96”W	Building 504	20.0	622.60	622.28	10.2-20	Residuum
MW 8-17	EFF	33° 38’ 08.99”N	85° 55’ 37.43”W	Building 504	17.0	621.80	621.54	7.2-17	Residuum
MW 8-21	POC	33° 38' 07.57"N	85° 55' 37.04"W	Building 504	21.5	NA	622.76	11-21.5	Residuum
MW 8-27	POC	33° 38' 07.25"N	85° 55' 40.47"W	Building 504	23.0	NA	622.68	13-23	Residuum

WELL NUMBER	WELL TYPE[1]	WELL LATITUDE	WELL LONGITUDE	UNIT(S) MONITORED	WELL DEPTH (ft. btoc)	GROUND ELEVATION (ft. MSL)	TOP-OF-CASING ELEVATION (ft. MSL)	SCREENED INTERVAL (ft. bgs)	MONITORED ZONE[2]
MW 8-29	EFF	33° 38' 08.99"N	85° 55' 38.90"W	Building 504	23.0	623.13	622.78	8-23	Residuum
MW 8-35	EFF	33° 38' 09.72"N	85° 55' 40.90"W	Building 504	22.5	624.68	623.68	7.5-22.5	Residuum
MW 8-36	EFF	33° 38' 10.03"N	85° 55' 40.94"W	Building 504	21.0	624.85	623.85	6-21	Residuum
MW 8-37	EFF	33° 38' 10.26"N	85° 55' 41.16"W	Building 504	19.0	623.99	622.99	4-19	Residuum
MW 8-38	EFF	33° 38' 10.83"N	85° 55' 40.50"W	Building 504	17.0	623.21	622.21	7-17	Residuum
06-S05-U01	POC	33° 39' 21.29"N	85° 56' 05.70"W	ASA SWMU 5	109.5	745.85	748.05	101.8-111.8	Bedrock
97-S05-U01	POC	33° 39' 21.64"N	85° 56' 03.77"W	ASA SWMU 5	48.8	739.35	741.30	35-45	Residuum
98-S05-B02	POC	33° 39' 23.74"N	85° 56' 01.86"W	ASA SWMU 5	103.3	736.27	738.67	91.5-101.2	Bedrock
98-S05-B03	POC	33° 39' 21.23"N	85° 56' 01.79"W	ASA SWMU 5	109.2	733.22	735.52	105-106.8	Bedrock
W2-17	POC	33° 39' 22.10"N	85° 56' 00.42"W	ASA SWMU 5	39.3	730.02	731.20	28-38	Residuum
98-S08-B01	POC	33° 40' 20.02"N	85° 56' 53.04"W	ASA SWMU 8	86.1	720.92	723.18	74-84	Bedrock
98-S08-B02	POC	33° 40' 19.21"N	85° 56' 51.16"W	ASA SWMU 8	104.6	708.57	710.98	88.8-98.8	Bedrock
98-S08-B03	POC	33° 40' 18.49"N	85° 56' 52.27"W	ASA SWMU 8	84.8	716.13	718.53	72.3-82.3	Interface
91B11	EFF	33° 39' 32.88"	85° 58' 50.97"	ASA SWMU-10	38.0	NA	793.92	28-38	Residuum
97-S10-U01	EFF	33°39'31.47"N	85°58'49.74"W	ASA SWMU-10	17.0	NA	791.82	6.4-16.4	Residuum
97-S10-U02	EFF	33°39'32.88"N	85°58'49.55"W	ASA SWMU-10	85.0	NA	790.54	73.9-83.9	Bedrock
06-S11-U01	POC	33° 39' 34.30"N	85° 58' 43.24"W	ASA SWMU 11	98.9	784.39	786.69	86.5-96.5	Interface
06-S11-U02	POC	33° 39' 38.03"N	85° 58' 41.75"W	ASA SWMU 11	114.0	NA	782.11	101.5-111.5	Bedrock
06-S11-U03	EFF	33°39'31.84"N	85°58'44.70"W	ASA SWMU 11	120.0	NA	792.77	108.72-118.72	Bedrock
06-S11-U04	EFF	33° 39' 28.28"N	85° 58' 45.10"W	ASA SWMU 11	75.6	NA	794.09	65.23-75.23	Bedrock
91B12	EFF	33°39'31.11"N	85°58'48.60"W	ASA SWMU 11	52.3	NA	792.51	42-52	Residuum
98-S11-B01	POC	33° 39' 32.72"N	85° 58' 45.87"W	ASA SWMU 11	55.1	786.69	788.53	42.3-52.3	Bedrock
98-S11-B02	EFF	33° 39' 32.99"N	85° 58' 44.01"W	ASA SWMU 11	125.2	787.93	790.35	112.3-122.3	Bedrock

WELL NUMBER	WELL TYPE[1]	WELL LATITUDE	WELL LONGITUDE	UNIT(S) MONITORED	WELL DEPTH (ft. btoc)	GROUND ELEVATION (ft. MSL)	TOP-OF-CASING ELEVATION (ft. MSL)	SCREENED INTERVAL (ft. bgs)	MONITORED ZONE[2]
MW-1-97	POC	33° 39' 29.12"N	85° 58' 48.82"W	ASA SWMU 11	34.3	790.44	793.00	10.6-30.6	Residuum
MW-2-97	POC	33° 39' 27.83"N	85° 58' 47.67"W	ASA SWMU 11	18.8	777.46	780.00	6.5-16.5	Residuum
MW-3-97	POC	33° 39' 29.12"N	85° 58' 47.05"W	ASA SWMU 11	13.0	776.09	779.00	5-10	Residuum
MW-4-97	EFF	33° 39' 31.02"N	85° 58' 46.74"W	ASA SWMU 11	18.8	779.49	782.20	5-15	Residuum
MW-5-97	EFF	33° 39' 32.31"N	85° 58' 46.88"W	ASA SWMU 11	13.8	779.34	782.00	6-11	Residuum
WAAD-13	EFF	33° 39' 32.49"N	85° 58' 48.46"W	ASA SWMU 11	31.4	790.28	792.23	20-30	Residuum
06-S27-U01	POC	33° 41' 00.51"N	85° 57' 57.56"W	ASA SWMU 27	24.3	702.9	705.1	11.6-21.6	Residuum
91B22	POC	33° 40' 59.09"N	85° 57' 53.20"W	ASA SWMU 27	27.4	701.60	703.60	15-25	Residuum
91B23	POC	33° 40' 58.40"N	85° 57' 52.24"W	ASA SWMU 27	42.6	704.81	707.06	30-40	Residuum
97-S27-U01	POC	33° 40' 58.37"N	85° 57' 53.25"W	ASA SWMU 27	52.4	702.48	704.75	40-50	Interface
91B24	POC	33° 40' 22.96"N	85° 59' 24.23"W	ASA SWMU 35	46.4	694.98	696.18	34-44	Residuum
97-S35-U02	POC	33° 40' 21.41"N	85° 59' 22.69"W	ASA SWMU 35	57.0	693.43	695.62	44-54	Residuum
97-S35-U03	POC	33° 40' 24.73"N	85° 59' 21.77"W	ASA SWMU 35	46.8	696.57	698.80	34-44	Residuum
98-S35-B01	POC	33° 40' 23.05"N	85° 59' 21.32"W	ASA SWMU 35	43.8	697.46	699.89	32-42	Bedrock
00-X03-B06D	BDY	33° 37' 22.17"N	85° 57' 40.53"W	ASA Downgradient	221.5	625.70	626.95	208.7-218.7	Unweathered Bedrock
00-X03-B06S	BDY	33° 37' 22.17"N	85° 57' 40.53"W	ASA Downgradient	136.5	625.72	626.95	123.7-133.7	Unweathered Bedrock
00-X04-B09D	BDY	33° 37' 11.05"N	85° 59' 25.84"W	ASA Downgradient	295.2	619.13	621.15	283-293	Unweathered Bedrock
00-X04-B09S	BDY	33° 37' 11.05"N	85° 59' 25.84"W	ASA Downgradient	111.4	619.09	621.15	89-109	Unweathered Bedrock
03-CGW-B01S	BKG	33° 39' 26.29"N	85° 55' 18.56"W	SIA Upgradient Sentinel Well	262.5	676.13	678.53	250-260	Unweathered Bedrock
SWMU12-01	EFF	33° 37' 46.12"N	85° 55' 52.68"W	SIA Landfill Area	32.7	NA	630.64	75 (estimated total depth)	Residuum
00-GOU-B05	EFF	33° 37' 46.82"N	85° 55' 43.38"W	SIA Landfill Area	191.0	619.50	621.40	175-185	Unweathered Bedrock
88EWLF-1	EFF	33° 37' 46.73"N	85° 55' 52.77"W	SIA Landfill Area	62.4	NA	628.91	51.8-61.8	Weathered Bedrock
15PDLB-01	EFF	NA	NA	SIA Landfill Area	64.0	NA	632.47	51.3-61.3	Weathered Bedrock

WELL NUMBER	WELL TYPE[1]	WELL LATITUDE	WELL LONGITUDE	UNIT(S) MONITORED	WELL DEPTH (ft. btoc)	GROUND ELEVATION (ft. MSL)	TOP-OF-CASING ELEVATION (ft. MSL)	SCREENED INTERVAL (ft. bgs)	MONITORED ZONE[2]
15PDLB-02	EFF	NA	NA	SIA Landfill Area	63.0	NA	631.10	50.6-60.6	Weathered Bedrock
01-CGW-U11	EFF	33° 38' 26.89"N	85° 55' 02.28"W	SIA Northeast Area	39.0	NA	629.91	28.4-38.4	Residuum
15PDNB-01	EFF	NA	NA	SIA Northeast Area	64.4	NA	631.99	51.6-61.6	Weathered Bedrock
15PDNB-02	EFF	NA	NA	SIA Northeast Area	63.6	NA	635.90	51-61	Weathered Bedrock
82B09	EFF	33° 38' 24.46"N	85° 55' 16.11"W	SIA Industrial Area	28.1	NA	624.07	12-27	Residuum
95-GOU-U06	EFF	33° 38' 10.04"N	85° 55' 22.76"W	SIA Industrial Area	24.5	NA	619.51	12.1-21.6	Residuum
00-GOU-B03	EFF	33° 38' 02.02"N	85° 55' 18.66"W	SIA Industrial Area	114.0	NA	622.69	95-105	Unweathered Bedrock
MW-410-13	EFF	33° 38' 21.17"N	85° 55' 10.42"W	SIA Industrial Area	116.0	620.30	619.84	105-115	Unweathered Bedrock
81B27	EFF	33° 37' 51.50"N	85° 55' 29.43"W	SIA Industrial Area	85.9	618.10	622.20	83-93	Weathered Bedrock
83B19	EFF	33° 38' 24.46"N	85° 55' 16.11"W	SIA Industrial Area	29.9	NA	621.94	16.7-27	Weathered Bedrock
88EWNE-5	EFF	33° 38' 20.20"N	85° 55' 10.84"W	SIA Northeast Area	37.0	NA	619.80	27-37	Weathered Bedrock
95-SO1-U01	EFF	33° 38' 28.35"N	85° 55' 45.27"W	SIA Trench Area	67.0	622.10	686.78	55-65	Residuum
81B04	EFF	33° 38' 28.66"N	85° 55' 44.02"W	SIA Trench Area	105.0	NA	690.21	100.2-105	Unweathered Bedrock
15PDTB-01	EFF	NA	NA	SIA Trench Area	103.8	NA	688.71	91.9-101.1	Weathered Bedrock
15PDBT-02	EFF	NA	NA	SIA Trench Area	79.7	NA	689.86	68.1-78.1	Weathered Bedrock
MW-5	BDY	33° 37' 33.50"N	85° 55' 25.36"W	SIA Offsite Sentinel Well	76.4	NA	655.47	56.7-76.4	Weathered Bedrock
MW-8	BDY	33° 37' 22.79"N	85° 55' 54.48"W	SIA Downgradient Sentinel Well	70.8	609.50	614.54	50-70	Weathered Bedrock
00-GOU-B02	BDY	33° 37' 57.23"N	85° 55' 17.93"W	SIA Downgradient Sentinel Well	119.1	639.60	642.05	106-116	Unweathered Bedrock
COOPER WELL	POC	33° 37' 34.94"N	85° 55' 33.02"W	SIA Downgradient Sentinel Well	86.2	622.60	623.42	Open, total depth = 86	Bedrock
02-CGW-B05-4	BDY	33° 37' 23.61"N	85° 55' 54.94"W	SIA Downgradient Sentinel Well	390.4	NA	609.82	380-390	Unweathered Bedrock
Coldwater Spring	POC	33° 36' 12.85"N	85° 55' 31.96"W	Offsite Drinking Water Source	NA	595.00	NA	NA	Spring

Footnotes:

[1] Well Type:
POC - Point of Compliance Wells

EFF - Effectiveness Monitoring Wells
BDY - Boundary Monitoring Wells
BKG - Background Wells
UPG - Upgradient Well

[2] Monitored Zone:
Residuum – Unconsolidated saturated zone overlying bedrock
Weathered Bedrock – Lithified zone exhibiting dissolution and erosional features underlying the residuum
Unweathered Bedrock – Deeper lithified zone of consolidated rock underlying weathered bedrock
Interface – Well screened across the residuum and bedrock
FLUTe – Flexible Liner Underground Technologies, multi-screened well in a single borehole
NA – Not applicable

TABLE VII.2

GROUNDWATER QUALITY MONITORING CONSTITUENTS

UNIT[1]	HAZARDOUS CONSTITUENT
OB and OD	Energetics[2]
	TAL Metals[3]
	SVOCs[4]
	Perchlorate
	VOCs[5]
ASA Boundary Wells	Arsenic
	Chromium, total
	Chromium (VI)
	Lead
	Manganese
	Thallium
	Vanadium
	Bis(2-ethylhexyl)phthalate (BEHP)
	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)
	Trinitrotoluene (TNT)
	2,4-Dinitrotoluene (DNT)
	2,6- Dinitrotoluene (DNT)
	2-Amino-4,6-dinitrotoluene (DNT)
	4-Amino-2,6-dinitrotoluene (DNT)
SWMU 5	Lead
	Manganese
	BEHP
SWMU 8	Manganese
	BEHP
SWMU 10/11	Arsenic
	Chromium, total
	Chromium (VI)
	Lead
	Manganese
	Vanadium
	Bis(2-ethylhexyl)phthalate (BEHP)
	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)
	Trinitrotoluene (TNT)
	2,4-Dinitrotoluene (DNT)
	2,6- Dinitrotoluene (DNT)
	2-Amino-4,6-dinitrotoluene (DNT)
	4-Amino-2,6-dinitrotoluene (DNT)
SWMU 27	Lead

UNIT[1]	HAZARDOUS CONSTITUENT
SWMU 35	Arsenic
	Chromium, total
	Chromium (VI)
	Manganese
	Thallium
	Vanadium
SIA	Methylene Chloride
	Tetrachloroethene
	Trichloroethene
	cis-1,2-Dichloroethene
	Bis(2-ethylhexyl)phthalate (BEHP)
	Arsenic
	Chromium
	Lead
	Manganese
Building 504	Benzene
	Toluene
	Ethylbenzene
	p,m-Xylene
	o-Xylene
	methyl-tertiary-butyl-ether (MTBE)
	Anthracene
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(g,h,i)perylene
	Benzo(k)fluoranthene
	Benzo(k)fluoranthene
	Fluoranthene
	Fluorene
	Naphthalene
	Phenanthrene
	Pyrene Building 504

Footnotes:

[1] Identifies the unit(s) at which the given constituent must be monitored.

[2] Energetics shall include RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine), HMX (Octahydro-,3,5,7- tetranito-1,3,5,7-tetrazocine), 1,3,5-Trinitrobenzene, 1,2-Dinitrobenzene, 1,3-Dinitrobenzene, 1,4-Dinitrobenzene, Methyl-2,4,6-trinitrophenylnitramine (Tetryl), 2-Amino-4,6-dinitrotoluene, 4-Amino-2,6-dinitrotoluene, Nitrobenzene, 2,4,6-Trinitrotoluene. 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, 2-Nitrotoluene, 3-Nitrotoluene, 4-Nitrotoluene, Nitroglycerin

[3] TAL Metals shall include Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Mercury, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc

[4] SVOCs shall include 1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4,5-Trichlorophenol, 2,4,6-Trichlorophenol, 2,4-Dimethylphenol, 2,4-Dichlorophenol, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, 2-Chloronaphthalene, 2-Chlorophenol, 2-Methyl-4,6-dinitrophenol (4,6-Dinitro-o-cresol), 2-Methylnaphthalene, 2-Methylphenol (o-Cresol), 2-Nitroaniline, 3,3'-Dichlorobenzidine, 3-Methylphenol (m-Cresol), 4-Methylphenol (p-Cresol), 3-Nitroaniline, 4-Chloro-3-methylphenol, 4-Chloroaniline, 4-Nitroaniline, 4-Nitrophenol, Acenaphthene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Benzoic acid, Benzyl alcohol, Bis(2-chloroethoxy)methane, Bis(2-chloroethyl)ether, Bis(2-chloroisopropyl)ether, Bis(2-ethylhexyl)phthalate (BEHP), Butyl benzyl phthalate, Chrysene, Dibenzo(a,h)anthracene, Dibenzofuran, Diethyl phthalate, Dimethyl phthalate, Di-n-butyl phthalate, Di-n-octyl phthalate, Fluoranthene, Fluorene, Hexachlorobenzene, Hexachlorobutadiene, Hexachlorocyclopentadiene, Hexachloroethane, Indeno(1,2,3-cd)pyrene, Isophorone, Nitrobenzene, N-Nitrosodimethylamine, n-Nitroso-di-n-propylamine, N-Nitrosodiphenylamine/Diphenylamine, Pentachlorophenol, Phenanthrene, Phenol, Pyrene

[5] VOCs shall include Acetone, Benzene, Bromobenzene, Bromodichloromethane, Bromoform, Bromomethane, 2-Butanone (Methyl Ethyl Ketone), sec-Butylbenzene, tert-Butylbenzene, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, 2-Chlorotoluene, 4-Chlorotoluene, Dibromochloromethane, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane (EDB), 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Dichlorodifluoromethane, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethylene, 1,2-Dichloropropane, 1,3-Dichloropropane, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Ethylbenzene, Hexachlorobutadiene, Isopropylbenzene, Methylene chloride (Dichloromethane), 4-Methyl-2-pentanone (Methyl Isobutyl Ketone), Naphthalene, Styrene, 1,1,1,2-Tetrachloroethane, 1,1,2,2-Tetrachloroethane, Tetrachloroethene, Toluene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, Trichloroethene, Trichlorofluoromethane, 1,2,3-Trichloropropane, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Vinyl chloride, Total Xylenes

TABLE VII.3

GROUNDWATER PROTECTION STANDARD

UNIT[1]	HAZARDOUS CONSTITUENT	CONCENTRATION LIMIT (mg/L)
OB and OD	Energetics[2]	EPA RSLs[6]
	TAL Metals[3]	EPA RSLs/MCLs[7]
	SVOCs[4]	EPA RSLs[6]
	Perchlorate	EPA RSLs[6]
	VOCs[5]	EPA RSLs[6]
ASA Boundary[9]Wells	Arsenic	0.01
	Chromium, total	0.1
	Chromium (VI)	NE[9]
	Lead	0.015
	Manganese	0.05
	Thallium	0.002
	Vanadium	0.011
	Bis(2-ethylhexyl)phthalate (BEHP)	0.006
	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.0008
	Trinitrotoluene (TNT)	0.0008
	2,4-Dinitrotoluene (DNT)	NE[8]
	2,6- Dinitrotoluene (DNT)	NE[8]
	2-Amino-4,6-dinitrotoluene (DNT)	NE[8]
	4-Amino-2,6-dinitrotoluene (DNT)	NE[8]
SWMU 5[9]	Lead	0.015
	Manganese	0.05
	Bis(2-ethylhexyl)phthalate (BEHP)	0.006
SWMU 8	Manganese	0.05
	Bis(2-ethylhexyl)phthalate (BEHP)	0.006
SWMU 10/11[9]	Arsenic	0.01
	Chromium, total	0.1
	Chromium (VI)	NE[9]
	Lead	0.015
	Manganese	0.05
	Bis(2-ethylhexyl)phthalate (BEHP)	0.006
	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.0008
	Trinitrotoluene (TNT)	0.0008
	2,4-Dinitrotoluene (DNT)	NE[8]
	2,6- Dinitrotoluene (DNT)	NE[8]
	2-Amino-4,6-dinitrotoluene (DNT)	NE[8]
	4-Amino-2,6-dinitrotoluene (DNT)	NE[8]
SWMU 27[9]	Lead	0.015

UNIT[1]	HAZARDOUS CONSTITUENT	CONCENTRATION LIMIT (mg/L)
SWMU 35[9]	Arsenic	0.01
	Chromium, total	0.1
	Chromium (VI)	0.0035
	Lead	0.015
	Manganese	0.05
	Thallium	0.002
	Vanadium	0.011
Building 504	Benzene	MCL
	Toluene	MCL
	Ethylbenzene	MCL
	p,m-Xylene	MCL
	o-Xylene	EPA RSLs[6]
	Methyl tertiary-Butyl Ether (MTBE)	EPA RSLs[6]
	Poly Aromatic Hydrocarbons (PAHs):	
	~Anthracene	EPA RSLs[6]
	~Benzo(a)anthracene	EPA RSLs[6]
	~Benzo(a)pyrene	EPA RSLs[6]
	~Benzo(b)fluoranthene	EPA RSLs[6]
	~Benzo(g,h,i)perylene	EPA RSLs[6]
	~Benzo(k)fluoranthene	EPA RSLs[6]
	~Benzo(k)fluoranthene	EPA RSLs[6]
	~Fluoranthene	EPA RSLs[6]
	~Fluorene	EPA RSLs[6]
	~Naphthalene	EPA RSLs[6]
	~Phenanthrene	EPA RSLs[6]
	~Pyrene	EPA RSLs[6]
SIA	Methylene Chloride	NPDWS MCL[10]
	Tetrachloroethene	NPDWS MCL[10]
	Trichloroethene	NPDWS MCL[10]
	cis-1,2-Dichloroethene	NPDWS MCL[10]
	Bis(2-ethylhexyl)phthalate (BEHP)	NPDWS MCL[10]
	Arsenic	NPDWS MCL[10]
	Chromium	NPDWS MCL[10]
	Lead	NPDWS MCL[10]
	Manganese	NSDWR SMCL[10]

Footnotes:

[1] Identifies the unit(s) at which the given constituent must be monitored.

[2] Refer to Footnote 2 of Table VII.2

[3] Refer to Footnote 3 of Table VII.2

[4] Refer to Footnote 4 of Table VII.2

[5] Refer to Footnote 5 of Table VII.2

[6] EPA RSLs are the values listed for Tap Water in the most recent US EPA Regional Screening Level (RSL) Table, using a Hazard Quotient (HQ) of 0.1.

[7] The MCL found on the most recent US EPA Regional Screening Level (RSL) Table is used as the concentration limit where available for metals. All others metals shall reference the values listed for Tap Water in the most recent US EPA RSL table, using a Hazard Quotient (HQ) of 0.1.

[8] Although screening levels were not initially established for these constituents as part of the final ROD, the US EPA Regional Screening Level (RSL) Table, using a Hazard Quotient (HQ) of 0.1, shall be the standard for evaluating hexavalent chromium and dinitrotoluene compounds.

[9] The standards listed in this table for the Ammunition Storage Area (ASA) operable unit including Boundary wells, SWMUs 5, 8, 10, 11, 27, and 35, are those approved in Final Work Plan Addendum to the ASA Long-Term Groundwater Monitoring Plan dated May 2013 (Tables 5-6 and 5-7).

[10] The cleanup goals established for the SIA were approved in the Interim Record of Decision Amendment for the Southeast Industrial Area (Operable Unit 1). The National Primary and Secondary Drinking Water Regulations (NPDWRs and NSDWRs) were utilized to establish these goals. Listed here are the Maximum Contaminant Levels (MCLs) from the NPDWRs and the Secondary Maximum Contaminant Levels (SMCLs) from the NSDWRs

Table VII.4

Monitored Natural Attenuation (MNA) Parameters for the ASA

UNIT[1]	Parameter[1]	Unit of Measure
All ASA Monitoring Wells (SWMUs 5, 8, 10, 11, 27, 35 and downgradient boundary wells)	Conductivity[2]	Mhos/cm
	Dissolved Oxygen (DO)[2]	Milligrams/liter (mg/L)
	Oxidation-reduction potential (ORP)[2]	Millivolts (mV)
	pH[2]	Standard Units (S.U.)
	Temperature[2]	Degrees (°F or °C)
	Turbidity	Nephelometric Turbidity Units (NTU)
SWMUs 10/11	Calcium	mg/L or µg/L
	Chloride	mg/L or µg/L
	Iron, total	mg/L or µg/L
	Iron (II)	mg/L or µg/L
	Magnesium	mg/L or µg/L
	Methane	mg/L or µg/L
	Nitrate + Nitrite	mg/L or µg/L
	Total Organic Carbon (TOC)	mg/L or µg/L

Notes:

[1] In accordance with the RA Work Plan for OU-3 (EMR, 2014), the Final ANAD OU-3 Groundwater Monitoring Work Plan Addendum for Year 10 (EMR, 2015), and with the agreement of the ANAD Tier I Partnering Team members, the MNA field parameters have been revised from the original ASA RA/RD Work Plan of 2005.

[2] Field parameters required.

PART VIII

CORRECTIVE MEASURES IMPLEMENTATION

VIII.A. APPLICABILITY

The Conditions of this Part apply to SWMUs and/or AOCs identified in Table VIII.1. These SWMUs have reached the final remedy phase and the remedial design has been approved by the Department and implemented by the Army. The final remedies detailed in the Remedial Design/Remedial Action (RD/RA) Work Plans and/or Land Use Control Remedial Design (LUC RD) Work Plans have been incorporated into this Part of the permit. See permit condition VI.A for additional applicability for the CERCLA process.

VIII.B. GENERAL CONDITIONS

1. The Permittee is required to perform corrective measures for the SWMUs and AOCs identified in Condition VIII.A. The approved remedy for these defined units, waterway areas, or land parcels, includes any and all actions set forth in this permit and in the approved Interim Measures Plans, Corrective Measures Implementation (CMI) Plans, Remedial Design and Remedial Action (RD/RA) Work Plans, and Land Use Control Remedial Design (LUC RD) Work Plans approved by the Department, as noted in Table VIII.1.

2. Remedial Cleanup Levels

   Upon approval of the CMI Plan (or comparable document listed in Table VIII.1), the cleanup level(s) for the areas specific to the CMI Plan will be deemed to be a condition of this permit.

3. Groundwater Monitoring and Remediation

   Where required pursuant to Permit Conditions VIII.B.1. and VII.C., the Permittee shall comply with the general groundwater monitoring requirements of Part VII of this permit.

4. Land Use Controls

   Where required pursuant to Conditions VIII.B.1. and VIII.C. of this permit, the Permittee shall establish appropriate land use controls to achieve protection of human health and the environment. The Permittee shall comply with Conditions VIII.B.5. and VIII.B.6. of this permit when implementing corrective measures requiring land use controls. In the event an off-site property owner will not allow an environmental covenant to be imposed, the Permittee shall notify the Department within 14 calendar days of receipt of such written notification of the refusal by the off-site property owner. If the off-site property owner does not provide a written refusal of the request to

allow an environmental covenant to be imposed, the Permittee shall notify the Department within 14 days of delivery of the request to the off-site property owner. In such cases, the Department may allow the Permittee to propose an alternate area-specific land use control IAW ADEM Admin. Code Rule 335-5-1-.02(i) subject to the Department's review and approval.

5. Survey Plat

For corrective measures where residual concentrations of contaminants will remain in-place at levels greater than those appropriate for unrestricted land use, or for corrective measures that rely on land use controls, the Permittee must:

a. No later than the submission of the certification of closure of each hazardous waste disposal unit, the Permittee shall submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Department, a survey plat indicating the location and dimensions of the SWMUs, AOCs, and capped or partially remediated areas with respect to permanently surveyed benchmarks, the locations of sampling points, and the concentrations of hazardous constituents detected. This plat must be prepared and certified by a professional land surveyor registered in the State of Alabama. The plat must be filed with the local zoning authority or the authority with jurisdiction over local land use and must contain a note, prominently displayed, which states the Permittee's obligation to limit the property to the specified restricted uses.

b. Maintain the survey plat as described in Condition VIII.B.5.a of this permit and in the CMI Report, until the Permittee has demonstrated, to the satisfaction of the Department that the levels of hazardous constituents in all contaminated media are within limits appropriate for unrestricted land uses.

6. Environmental Covenant

No later than the submission of the survey plat required in Permit Condition VIII.B.5., the Permittee must:

a. Record in the Calhoun County probate judge's office an environmental covenant in accordance with ADEM Admin. Code R. 335-5 [or Notice of Environmental Use Restriction (NEUR) pursuant to ADEM Admin. Code R. 335-5-1-.02(3)] that will in perpetuity notify any potential purchaser of the property that:

i. The land is contaminated with hazardous constituents in concentrations that exceed unrestricted use standards;

ii. The use of the property is restricted by this permit for certain residential, municipal, or industrial purposes and may lead to an increased risk of exposure to hazardous constituents depending upon the activities initiated at the site. Such activities may yield an increased level of human health risk to the owner;

iii. The potential purchaser or entity that desires to work in the contaminated area should notify the Permittee before mobilizing to the area covered by the land use control.

b. Submit to the Department a certification, signed by the Permittee in accordance with Permit Condition I.C.11. that the environmental covenant (or NEUR pursuant to ADEM Admin. Code R. 335-5-1-.02(3)) specified in this part has been performed. This certification must include a copy of the covenant (or NEUR pursuant to ADEM Admin. Code R. 335-5-1-.02(3)) and of the document in which the notation has been placed.

c. Maintain the environmental covenant (or NEUR pursuant to ADEM Admin. Code R. 335-5-1-.02(3)) described in Permit Condition VIII.B.6. until the Permittee has demonstrated, to the satisfaction of the Department, that the levels of hazardous constituents in all contaminated media are within limits appropriate for unrestricted land uses.

7. Security

Security measures, where required by Conditions VIII.B.1. and VIII.C. of this permit, will be conducted in accordance with ADEM Admin. Code R. 335-14-5-.02(5) and as prescribed in the approved CMI Plan.

8. Inspection

Where corrective measures addressed in Permit Condition VIII.B.1. include provisions to cap in place or partially remediate properties or land areas, whether owned or not owned by the Permittee, the Permittee shall specify inspection protocols on a scheduled basis to ensure continued integrity of the remedy and to ensure that land use remains appropriately restricted per the environmental covenant (or NEUR pursuant to ADEM Admin. Code R. 335-5-1-.02(3)) established pursuant to Permit Condition VIII.B.6. Inspection provisions shall be as prescribed in the approved CMI Plan.

VIII.C. AREA SPECIFIC CONDITIONS

The Permittee shall implement the actions and conditions as described in the referenced CMI Plans identified in Table VIII.1 and this Permit; the current area specific conditions are as follows:

1. The following area specific conditions apply collectively to including SWMUs 1, 5, 7, 8, 9, 10, 11, 12, 13, 19, 20, 21, 22, 23, 24, 27, 28, 29, 30, and 35 within the ASA and SIA.

   a. No access or use of groundwater shall be allowed at the site.

   b. Public access shall be restricted. The Permittee shall patrol the existing chain-link fence bordering the entire installation as a security measure to prevent unauthorized entry into the area. Entrance into the facility shall be authorized only with a badge or pass.

   c. The Permittee shall install, inspect, and maintain land use control (LUC) visible warning signs prohibiting unauthorized excavation and entry. The Permittee shall install, inspect, and maintain the signs along the boundary of each SWMU, leveled and positioned facing outward from the SWMU boundary, legible from a distance of 25 feet. The Permittee shall place the signs at entry locations and SWMU boundaries spaced approximately every 200 feet at locations to be seen from any approach. The Permittee shall space signs closer together at smaller SWMUs, targeting locations that are visible near roads or access points.

   d. The Permittee shall monitor the sites for land use restriction violations and promptly report any LUC restriction violations to the facility Installation Restoration Program (IRP) manager and/or the appropriate Permittee organizations. The Permittee shall take action to restore the integrity of the LUC and prevent future violations.

   e. The Permittee shall conduct an annual inspection to ensure the effectiveness of LUC mechanisms and to identify LUC restriction violations. The Permittee shall prepare an annual inspection report and submit the report to ADEM. The Permittee shall use the inspection checklist located in Appendix E of the Permittee's Remedial Design Work Plan for Land Use Controls (Appendix A of the RA/RD WP) to support this annual review.

   f. The Permittee shall provide a LUC training course for designated supervisors in all directorates, tenants, contractors, all personnel associated with the Permittee's environmental,

security, safety, and public works organizations, and for new employees during new employee orientation. The LUC training course shall provide an overview of the Permittee's land use restrictions and procedures for preventing and reporting land use restriction violations. The Permittee shall maintain a list of personnel who have received training and the date of completion of training.

g. The Permittee shall review the placement of new facilities and equipment on the installation to ensure that construction projects will not violate the Permittee's land use restrictions.

h. The Permittee shall record and annually update all LUCs on its Geographical Information System (GIS).

i. The Permittee shall maintain the LUCs until concentrations of contaminants of concern are at levels to allow unrestricted use/unrestricted exposure (UU/UE) and a permit modification, in accordance with Permit Condition I.K.3., to remove the LUCs is submitted to the Department for review and approval.

j. The Permittee shall restrict the land use to industrial land use only; residential, commercial, and agricultural land uses shall not be permitted.

k. Well installation, except for monitoring or investigation wells, shall be prohibited. All proposed well installations shall be approved by ADEM.

2. SWMU 1 – Landfill Z-1 (Chemical Waste Pits) (SIA):

a. No excavation greater than 8 feet shall be conducted without the approval of the facility IRP manager.

b. Any excavated soils shall not be transported outside the SWMU boundary without the approval of the facility IRP manager.

3. SWMU 5 – Sink Hole Disposal Area (ASA):

a. No excavation greater than 14 feet deep shall be conducted without the approval of the facility IRP manager.

b. The Permittee shall conduct monitored natural attenuation (MNA) in accordance with the Final Ammunition Storage Area Remedial Design and Remedial Action Work Plan (ASA RD/RA WP) (June 21, 2006) for the constituents listed in Table VII.3 of this permit and in accordance with Part VII of this permit.

c. The Permittee shall conduct groundwater monitoring in accordance with Part VII of this permit.

4. SWMU 7 – Chemical Waste Burial Pit (SIA):

a. The Permittee shall conduct barrier inspections on a quarterly basis.

b. The Permittee shall check drainage structures and cover integrity after severe storms.

c. The Permittee shall document inspection and maintenance activities on a Maintenance/Inspection Checklist and an Action Item Log (Tables 1 and 2, respectively, of Appendix F of the Final Southeast Industrial Area Remedial Action Post-construction Report and Operation and Maintenance Plan, Anniston Army Depot, September 2008). The Permittee shall ensure that barrier inspection and maintenance activity documentation is readily accessible for review at all times. The Permittee shall include barrier inspection and maintenance activity information in the annual LUC inspection report submitted to ADEM.

d. The Permittee shall examine the gravel barrier to determine if settlement, erosion, or other disturbances affecting either the quality or line and grade of the final cover have occurred. If settlement, erosion, or other disturbances are observed, the Permittee shall perform repairs in a timely manner (i.e., not to exceed 30 days) by adding geotextile fabric and/or gravel, or by re-grading, as appropriate.

e. The Permittee shall record observations documenting the presence or absence of standing water on the areas protected by gravel barriers on the Maintenance/Inspection Checklist.

f. The Permittee shall inspect the site for signs of erosion. If erosion or other disturbance has occurred to an extent that is determined to be potentially detrimental to barrier effectiveness, the Permittee shall repair the barrier by adding geotextile fabric and/or gravel, or by re-grading, as appropriate.

g. The Permittee shall inspect drainage structures to verify that these structures are intact and undisturbed and that swales are clear to permit unimpaired movement of surface runoff. Typical maintenance may involve silt removal and removal of obstructions found in swales. If berms are damaged or incapable of retaining internal drainage, the Permittee shall make repairs as necessary to restore proper operation.

h. The Permittee shall exercise extreme care when operating vehicles or moving equipment on the gravel barriers to ensure that the integrity of the barrier is not compromised; the Permittee shall minimize vehicle speed and avoid sharp turns when driving over the barriers.

i. No excavation greater than 8 feet shall be conducted without the approval of the facility IRP manager.

j. Any excavated soils shall not be transported outside the SWMU boundary without the approval of the facility IRP manager.

k. No disturbance of the cap shall occur without the approval of the facility IRP manager. Upon approval, no disturbance of the cap shall occur without the use of proper protective equipment.

5. SWMU 8 – Acid Disposal Pit (ASA):

a. At SWMU 8, no excavation greater than 35 feet deep shall be conducted without the approval of the facility IRP manager.

b. The Permittee shall conduct monitored natural attenuation (MNA) in accordance with the Final Ammunition Storage Area Remedial Design and Remedial Action Work Plan (ASA RD/RA WP) (June 21, 2006) for the constituents listed in Table VII. 3 of this permit and in accordance with Part VII of this permit.

c. The Permittee shall conduct groundwater monitoring in accordance with Part VII of this permit.

6. SWMU 9 – Calcium Hypochlorite Burial Pit (SIA)

a. The Permittee shall conduct barrier inspections on a quarterly basis.

b. The Permittee shall check drainage structures and cover integrity after severe storms.

c. The Permittee shall document inspection and maintenance activities on a Maintenance/Inspection Checklist and an Action Item Log (Tables 1 and 2, respectively, of Appendix F of the Final Southeast Industrial Area Remedial Action Post-construction Report and Operation and Maintenance Plan, Anniston Army Depot, September 2008). The Permittee shall ensure that barrier inspection and maintenance activity documentation is readily accessible for review at all times. The Permittee shall include barrier inspection and maintenance

activity information in the annual LUC inspection report submitted to ADEM.

d. The Permittee shall examine the gravel barrier to determine if settlement, erosion, or other disturbances affecting either the quality or line and grade of the final cover have occurred. If settlement, erosion, or other disturbances are observed, the Permittee shall perform repairs in a timely manner (i.e., not to exceed 30 days) by adding geotextile fabric and/or gravel, or by re-grading, as appropriate.

e. The Permittee shall record observations documenting the presence or absence of standing water on the areas protected by gravel barriers on the Maintenance/Inspection Checklist.

f. The Permittee shall inspect the site for signs of erosion. If erosion or other disturbance has occurred to an extent that is determined to be potentially detrimental to barrier effectiveness, the Permittee shall repair the barrier by adding geotextile fabric and/or gravel, or by re-grading, as appropriate.

g. The Permittee shall inspect drainage structures to verify that these structures are intact and undisturbed and that swales are clear to permit unimpaired movement of surface runoff. Typical maintenance may involve silt removal and removal of obstructions found in swales. If berms are damaged or incapable of retaining internal drainage, the Permittee shall make repairs as necessary to restore proper operation.

h. The Permittee shall exercise extreme care when operating vehicles or moving equipment on the gravel barriers to ensure that the integrity of the barrier is not compromised; the Permittee shall minimize vehicle speed and avoid sharp turns when driving over the barriers.

i. No excavation greater than 8 feet shall be conducted without the approval of the facility IRP manager.

j. Any excavated soils shall not be transported outside the SWMU boundary without the approval of the facility IRP manager.

k. No disturbance of the cap shall occur without the approval of the facility IRP manager. Upon approval, no disturbance of the cap shall occur without the use of proper protective equipment.

7. SWMU 10 – TNT Washout Facility (ASA):

a. No excavation greater than 5 feet deep shall be conducted without the approval of the facility IRP manager.

b. The Permittee shall conduct monitored natural attenuation (MNA) in accordance with the Final Ammunition Storage Area Remedial Design and Remedial Action Work Plan (ASA RD/RA WP) (June 21, 2006) for the constituents listed in Table VII.3 of this permit and in accordance with Part VII of this permit.

c. The Permittee shall conduct groundwater monitoring in accordance with Part VII of this permit.

8. SWMU 11 (Sediment Leaching Bed – TNT Washout Facility (ASA):

a. No excavation greater than 5 feet deep shall be conducted without the approval of the facility IRP manager.

b. The Permittee shall conduct monitored natural attenuation (MNA) in accordance with the Final Ammunition Storage Area Remedial Design and Remedial Action Work Plan (ASA RD/RA WP) (June 21, 2006) for the constituents listed in Table VII.3 of this permit and in accordance with Part VII of this permit.

c. The Permittee shall conduct groundwater monitoring in accordance with Part VII of this permit.

9. SWMU 12- Facility 414 (Old Lagoon) (SIA):

a. The Permittee shall document inspection and maintenance activities on a Maintenance/Inspection Checklist and an Action Item Log (Tables 1 and 2, respectively, of Appendix F of the Final Southeast Industrial Area Remedial Action Post-construction Report and Operation and Maintenance Plan, Anniston Army Depot, September 2008). The Permittee shall ensure that barrier inspection and maintenance activity documentation is readily accessible for review at all times. The Permittee shall include barrier inspection and maintenance activity information in the annual LUC inspection report submitted to ADEM.

b. The Permittee shall examine the gravel barrier to determine if settlement, erosion, or other disturbances affecting either the quality or line and grade of the final cover have occurred. If settlement, erosion, or other disturbances are observed, the Permittee shall perform repairs in a timely manner (i.e., not to exceed 30 days) by adding geotextile fabric and/or gravel, or by re-grading, as appropriate.

c. The Permittee shall record observations documenting the presence or absence of standing water on the areas protected by gravel barriers on the Maintenance/Inspection Checklist.

d. The Permittee shall inspect the site for signs of erosion. If erosion or other disturbance has occurred to an extent that is determined to be potentially detrimental to barrier effectiveness, the Permittee shall repair the barrier by adding geotextile fabric and/or gravel, or by re-grading, as appropriate.

e. The Permittee shall inspect drainage structures to verify that these structures are intact and undisturbed and that swales are clear to permit unimpaired movement of surface runoff. Typical maintenance may involve silt removal and removal of obstructions found in swales. If berms are damaged or incapable of retaining internal drainage, the Permittee shall make repairs as necessary to restore proper operation.

f. The Permittee shall exercise extreme care when operating vehicles or moving equipment on the gravel barriers to ensure that the integrity of the barrier is not compromised; the Permittee shall minimize vehicle speed and avoid sharp turns when driving over the barriers.

g. No excavation greater than 8 feet shall be conducted without the approval of the facility IRP manager.

h. Any excavated soils shall not be transported outside the SWMU boundary without the approval of the facility IRP manager.

i. No disturbance of the cap shall occur without the approval of the facility IRP manager. Upon approval, no disturbance of the cap shall occur without the use of proper protective equipment.

10. SWMU 13 – SIA Acid Chemical Waste Pit (SIA):

a. The Permittee shall conduct barrier inspections on a quarterly basis.

b. The Permittee shall check drainage structures and cover integrity after severe storms.

c. The Permittee shall document inspection and maintenance activities on a Maintenance/Inspection Checklist and an Action Item Log (Tables 1 and 2, respectively, of Appendix F of the Final Southeast Industrial Area Remedial Action Post-construction Report and Operation and Maintenance Plan, Anniston Army Depot, September 2008). The Permittee shall

ensure that barrier inspection and maintenance activity documentation is readily accessible for review at all times. The Permittee shall include barrier inspection and maintenance activity information in the annual LUC inspection report submitted to ADEM.

d. The Permittee shall examine the gravel barrier to determine if settlement, erosion, or other disturbances affecting either the quality or line and grade of the final cover have occurred. If settlement, erosion, or other disturbances are observed, the Permittee shall perform repairs in a timely manner (i.e., not to exceed 30 days) by adding geotextile fabric and/or gravel, or by re-grading, as appropriate.

e. The Permittee shall record observations documenting the presence or absence of standing water on the areas protected by gravel barriers on the Maintenance/Inspection Checklist.

f. The Permittee shall inspect the site for signs of erosion. If erosion or other disturbance has occurred to an extent that is determined to be potentially detrimental to barrier effectiveness, the Permittee shall repair the barrier by adding geotextile fabric and/or gravel, or by re-grading, as appropriate.

g. The Permittee shall inspect drainage structures to verify that these structures are intact and undisturbed and that swales are clear to permit unimpaired movement of surface runoff. Typical maintenance may involve silt removal and removal of obstructions found in swales. If berms are damaged or incapable of retaining internal drainage, the Permittee shall make repairs as necessary to restore proper operation.

h. The Permittee shall exercise extreme care when operating vehicles or moving equipment on the gravel barriers to ensure that the integrity of the barrier is not compromised; the Permittee shall minimize vehicle speed and avoid sharp turns when driving over the barriers.

i. No excavation greater than 8 feet shall be conducted without the approval of the facility IRP manager.

j. Any excavated soils shall not be transported outside the SWMU boundary without the approval of the facility IRP manager.

k. No disturbance of the cap shall occur without the approval of the facility IRP manager. Upon approval, no disturbance of the cap shall occur without the use of proper protective equipment.

11. SWMU 19 – SIA Old Sewage Treatment Plant and Drying Beds:

a. No excavation greater than 8 feet shall be conducted without the approval of the facility IRP manager.

b. Any excavated soils shall not be transported outside the SWMU boundary without the approval of the facility IRP manager.

12. SWMU 20 – New Sewage Treatment Plant (SIA):

a. No excavation greater than 8 feet shall be conducted without the approval of the facility IRP manager.

b. Any excavated soils shall not be transported outside the SWMU boundary without the approval of the facility IRP manager.

13. SWMU 21 – Abrasive Dust Landfill (SIA):

a. No excavation greater than 8 feet shall be conducted without the approval of the facility IRP manager.

b. Any excavated soils shall not be transported outside the SWMU boundary without the approval of the facility IRP manager.

14. SWMU 22 – A-Block Lagoon (SIA):

a. No excavation greater than 8 feet shall be conducted without the approval of the facility IRP manager.

b. Any excavated soils shall not be transported outside the SWMU boundary without the approval of the facility IRP manager.

c. No disturbance of the cap shall occur without the approval of the facility IRP manager. Upon approval, no disturbance of the cap shall occur without the use of proper protective equipment.

15. SWMU 23 – Asbestos Waste Disposal Trench (SIA):

a. No excavation greater than 8 feet shall be conducted without the approval of the facility IRP manager.

b. Any excavated soils shall not be transported outside the SWMU boundary without the approval of the facility IRP manager.

16. SWMU 24 – Old Sanitary Landfill (SIA):

a. No excavation greater than 8 feet shall be conducted without the approval of the facility IRP manager.

b. Any excavated soils shall not be transported outside the SWMU boundary without the approval of the facility IRP manager.

17. SWMU 27 – South TNT Burial Pit (SIA):

a. No Excavation greater than 1 foot shall be conducted without the approval of the facility IRP manager.

b. The Permittee shall conduct monitored natural attenuation (MNA) in accordance with the Final Ammunition Storage Area Remedial Design and Remedial Action Work Plan (ASA RD/RA WP) (June 21, 2006) for the constituents listed in Table VII.3 of this permit and in accordance with Part VII of this permit.

c. The Permittee shall conduct groundwater monitoring in accordance with Part VII of this permit.

18. SWMU 28: - Waste Wood Landfill (SIA)

a. No excavation greater than 8 feet shall be conducted without the approval of the facility IRP manager.

b. Any excavated soils shall not be transported outside the SWMU boundary without the approval of the facility IRP manager.

c. The Permittee shall surround the SWMU 28 site with a fence that is sufficient to prevent unauthorized entry into the SWMU.

19. SWMU 29 – Old Lumber Disposal Yard (SIA):

a. The Permittee shall conduct barrier inspections on a quarterly basis.

b. The Permittee shall check drainage structures and cover integrity after severe storms.

c. The Permittee shall document inspection and maintenance activities on a Maintenance/Inspection Checklist and an Action Item Log (Tables 1 and 2, respectively, of Appendix F of the Final Southeast Industrial Area Remedial Action Post-Construction Report and Operation and Maintenance Plan, Anniston Army Depot, September 2008). The Permittee shall ensure that barrier inspection and maintenance activity documentation is readily accessible for review at all times. The

Permittee shall include barrier inspection and maintenance activity information in the annual LUC inspection report submitted to ADEM.

d. The Permittee shall examine the gravel barrier to determine if settlement, erosion, or other disturbances affecting either the quality or line and grade of the final cover have occurred. If settlement, erosion, or other disturbances are observed, the Permittee shall perform repairs in a timely manner (i.e., not to exceed 30 days) by adding geotextile fabric and/or gravel, or by re-grading, as appropriate.

e. The Permittee shall record observations documenting the presence or absence of standing water on the areas protected by gravel barriers on the Maintenance/Inspection Checklist.

f. The Permittee shall inspect the site for signs of erosion. If erosion or other disturbance has occurred to an extent that is determined to be potentially detrimental to barrier effectiveness, the Permittee shall repair the barrier by adding geotextile fabric and/or gravel, or by re-grading, as appropriate.

g. The Permittee shall inspect drainage structures to verify that these structures are intact and undisturbed and that swales are clear to permit unimpaired movement of surface runoff. Typical maintenance may involve silt removal and removal of obstructions found in swales. If berms are damaged or incapable of retaining internal drainage, the Permittee shall make repairs as necessary to restore proper operation.

h. The Permittee shall exercise extreme care when operating vehicles or moving equipment on the gravel barriers to ensure that the integrity of the barrier is not compromised; the Permittee shall minimize vehicle speed and avoid sharp turns when driving over the barriers.

i. No excavation greater than 8 feet shall be conducted without the approval of the facility IRP manager.

j. Any excavated soils shall not be transported outside the SWMU boundary without the approval of the facility IRP manager.

k. No disturbance of the cap shall occur without the approval of the facility IRP manager. Upon approval, no disturbance of the cap shall occur without the use of proper protective equipment.

20. SWMU 30 – Northeast Lagoon Area (SIA):

a. The Permittee shall conduct barrier inspections on a quarterly basis.

b. The Permittee shall check drainage structures and cover integrity after severe storms.

c. The Permittee shall document inspection and maintenance activities on a Maintenance/Inspection Checklist and an Action Item Log (Tables 1 and 2, respectively, of Appendix F of the Final Southeast Industrial Area Remedial Action Post-Construction Report and Operation and Maintenance Plan, Anniston Army Depot, September 2008). The Permittee shall ensure that barrier inspection and maintenance activity documentation is readily accessible for review at all times. The Permittee shall include barrier inspection and maintenance activity information in the annual LUC inspection report submitted to ADEM.

d. The Permittee shall examine the gravel barrier to determine if settlement, erosion, or other disturbances affecting either the quality or line and grade of the final cover have occurred. If settlement, erosion, or other disturbances are observed, the Permittee shall perform repairs in a timely manner (i.e., not to exceed 30 days) by adding geotextile fabric and/or gravel, or by re-grading, as appropriate.

e. The Permittee shall record observations documenting the presence or absence of standing water on the areas protected by gravel barriers on the Maintenance/Inspection Checklist.

f. The Permittee shall inspect the site for signs of erosion. If erosion or other disturbance has occurred to an extent that is determined to be potentially detrimental to barrier effectiveness, the Permittee shall repair the barrier by adding geotextile fabric and/or gravel, or by re-grading, as appropriate.

g. The Permittee shall inspect drainage structures to verify that these structures are intact and undisturbed and that swales are clear to permit unimpaired movement of surface runoff. Typical maintenance may involve silt removal and removal of obstructions found in swales. If berms are damaged or incapable of retaining internal drainage, the Permittee shall make repairs as necessary to restore proper operation.

h. The Permittee shall exercise extreme care when operating vehicles or moving equipment on the gravel barriers to ensure that the integrity of the barrier is not compromised; the Permittee shall minimize vehicle speed and avoid sharp turns when driving over the barriers.

i. No excavation greater than 8 feet shall be conducted without the approval of the facility IRP manager.

j. Any excavated soils shall not be transported outside the SWMU boundary without the approval of the facility IRP manager.

k. No disturbance of the cap shall occur without the approval of the facility IRP manager. Upon approval, no disturbance of the cap shall occur without the use of proper protective equipment.

21. SWMU 35 – Deactivation Furnace/Popping Furnace (ASA):

a. The Permittee shall conduct barrier inspections on a quarterly basis.

b. The Permittee shall check drainage structures and cover integrity after severe storms.

c. The Permittee shall document inspection and maintenance activities on a Maintenance/Inspection Checklist and an Action Item Log (Tables 1 and 2, respectively, of Appendix F of the Final Southeast Industrial Area Remedial Action Post-construction Report and Operation and Maintenance Plan, Anniston Army Depot, September 2008). The Permittee shall ensure that barrier inspection and maintenance activity documentation is readily accessible for review at all times. The Permittee shall include barrier inspection and maintenance activity information in the annual LUC inspection report submitted to ADEM.

d. The Permittee shall examine the gravel barrier to determine if settlement, erosion, or other disturbances affecting either the quality or line and grade of the final cover have occurred. If settlement, erosion, or other disturbances are observed, the Permittee shall perform repairs in a timely manner (i.e., not to exceed 30 days) by adding geotextile fabric and/or gravel, or by re-grading, as appropriate.

e. The Permittee shall record observations documenting the presence or absence of standing water on the areas protected by gravel barriers on the Maintenance/Inspection Checklist.

f. The Permittee shall inspect the site for signs of erosion. If erosion or other disturbance has occurred to an extent that is determined to be potentially detrimental to barrier effectiveness, the Permittee shall repair the barrier by adding geotextile fabric and/or gravel, or by re-grading, as appropriate.

g. The Permittee shall inspect drainage structures to verify that these structures are intact and undisturbed and that swales are clear to permit unimpaired movement of surface runoff. Typical maintenance may involve silt removal and removal of obstructions found in swales. If berms are damaged or incapable of retaining internal drainage, the Permittee shall make repairs as necessary to restore proper operation.

h. The Permittee shall exercise extreme care when operating vehicles or moving equipment on the gravel barriers to ensure that the integrity of the barrier is not compromised; the Permittee shall minimize vehicle speed and avoid sharp turns when driving over the barriers.

i. No excavation greater than 8 feet shall be conducted without the approval of the facility IRP manager.

j. The Permittee shall conduct monitored natural attenuation (MNA) in accordance with the Final Ammunition Storage Area Remedial Design and Remedial Action Work Plan (ASA RD/RA WP) (June 21, 2006) for the constituents listed in Table VII.3 of this permit and in accordance with Part VII of this permit.

k. The Permittee shall conduct groundwater monitoring in accordance with Part VII of this permit.

22. SIA Groundwater Source Areas

The Permittee shall install and implement the remedies for the SIA Groundwater as specified in the Remedial Design Report for the Interim Remedial Action of Operable Unit 1, dated February, 2018, and the Remedial Action Work Plan for Interim Remedial Action for Operable Unit 1, dated August 8, 2018. Figure 1-1 of the Remedial Action Work Plan shows the four designated source areas:

a. Industrial Area – includes SWMUs 3, 4, 25, 31, and 41. Selected groundwater remedies for the industrial area include:

   i. Point of use treatment (POUT) at Coldwater Spring
   ii. Enhanced groundwater interceptor system (eGWIS) consisting of a pump and treat system for the entire SIA with extraction wells placed in the source zones and a centralized treatment facility to treat the extracted water.
   iii. Long term monitoring (LTM)
   iv. Land use control implementation

b. Landfill Area – includes SWMUs 9, 12, 13, 19, 20, 22, and 24. Selected groundwater remedies for the industrial area include:

i. Point of use treatment (POUT) at Coldwater Spring by air strippers.
ii. Aggressive bioremediation for partial source mass removal by introduction of carbon substrate into an injection well network.
iii. Enhanced groundwater interceptor system (eGWIS) consisting of a pump and treat system for the entire SIA with extraction wells placed in the source zones and a centralized treatment facility to treat the extracted water.
iv. Long term monitoring (LTM)
v. Land use control (LUC) implementation

c. Northeast Area – includes SWMUs 7, 28, 29, and 30. Selected groundwater remedies for the northeast area include:

i. Point of use treatment (POUT) at Coldwater Spring by air strippers.
ii. Aggressive bioremediation for partial source mass removal by introduction of carbon substrate into an injection well network.
iii. Enhanced groundwater interceptor system (eGWIS) consisting of a pump and treat system for the entire SIA with extraction wells placed in the source zones and a centralized treatment facility to treat the extracted water.
iv. Long term monitoring (LTM)
v. Land use control (LUC) implementation

d. SIA Trench Area – includes SWMUs 1, 2, 21, and 23. Selected groundwater remedies for the trench area include:

i. Point of use treatment (POUT) at Coldwater Spring by air strippers.
ii. Aggressive bioremediation for partial source mass removal by introduction of carbon substrate into an injection well network.
iii. Enhanced groundwater interceptor system (eGWIS) consisting of a pump and treat system for the entire SIA with extraction wells placed in the source zones and a centralized treatment facility to treat the extracted water.
iv. Long term monitoring (LTM)
v. Land use control (LUC) implementation

VIII.D. CORRECTIVE MEASURES IMPLEMENTATION (CMI) REPORTS

1. CMI Progress Reports

If the time required to complete implementation of a specific set of corrective measures, as described in the Department-approved CMI Plan, is greater than 180 calendar days, the Permittee shall provide ADEM with progress reports according to the approved schedule in the CMI Plan. If no schedule has been approved as part of the associated plan, progress reports shall be submitted at least quarterly. The progress reports shall, at a minimum, contain the following information:

a. A description of the portion of CMI completed;

b. Summaries of and deviations from the approved CMI Plan during the reporting period;

c. Summaries of current and potential problems, including recommended solutions and alternatives as well as corrective actions undertaken;

d. Any monitoring data (soil, air, dust, water) collected for any reason during the construction period for the purposes of monitoring potential for human and ecological exposure; and,

e. Projected work for the next period and impacts to the approved schedule.

2. Final CMI Reports

Upon completion of construction of corrective measures systems, implementation of land use controls, interim removal actions, or other short-term activities required by this permit and/or the approved CMI Plan, the Permittee shall submit to the Department a Final CMI Report containing, at a minimum, the following:

a. A description of activities completed;

b. For cap and cover remedies, as-built construction drawings presenting the final in-place three-dimensional location of contaminated material. A plan view of the remediated areas shall be presented in addition to a cross section of the in-place capped areas;

c. Hazardous waste manifests indicating the handling of any excavated material that has been shipped off-site to a Department-approved, certified landfill;

d. For remedies involving land use controls, a copy of the survey plat and environmental covenant (or NEUR pursuant to ADEM Admin. Code R. 335-5-1-.02(3) required by Condition VIII.B. of this permit;

e. Monitoring data (soil, air, dust, water) collected for any reason during the construction period for the purposes of monitoring potential for human and ecological exposure; and

f. Certification, prepared in accordance with ADEM Admin. Code Rule 335-14-8-02 (2)(d) by the Permittee and a professional engineer registered in the State of Alabama, that the corrective measures implementation phase (*i.e.,* construction) required by this permit is complete and that the approved system and/or facilities are ready for operation in accordance with the intended design (*i.e.,* CMI Plan).

3. Corrective Measures (CM) Effectiveness Reports

a. For corrective measures that have been fully implemented and where the corrective measures system must operate for a period of time to achieve cleanup goals or levels, the Permittee shall submit an overall CM Effectiveness Report (addressing all Corrective Measures systems at the facility which are subject to this permit condition) annually, unless otherwise approved by the Department, beginning 180 calendar days following the Department's approval of the Final CMI Report for the initial Corrective Measures system subject to this permit condition. The overall CM Effectiveness Report shall include, at a minimum, the following information for each SWMU and/or AOC included in the report:

i. A detailed narrative presenting an evaluation of the effectiveness of the selected remedy;

ii. Summaries of compliance with and progress toward achieving cleanup goals;

iii. Any significant revisions, adjustments, or proposed modifications to the selected remedy;

iv. Tabulated environmental sampling and monitoring data including, but not limited to, groundwater quality, elevation data, and a graphical representation of all constituents detected during each sampling event from recovery wells, monitoring wells, drinking water wells, and other locations;

v. Chain of custody, field reports, and laboratory data sheets to include the date of collection, the date the sample was extracted, and the date of sample analysis for samples collected during the reporting period;

vi. Any monitoring data (soil, air, dust, water) collected for any reason during the post-construction period for

the purposes of monitoring potential for human and ecological exposure;

vii. Isoconcentration maps depicting the distribution of parameters for each sampling event;

viii. Time versus concentration plots for each monitoring parameter for each recovery well and a representative number of effectiveness wells;

ix. Tabulated volumetric data on groundwater pumped and pumping rates (monthly and cumulative) for each recovery well;

x. Records of any groundwater recovery system operation time, including shutdown periods, not including any minor (less than 24 hours) shutdowns for repairs, maintenance, etc.;

xi. Potentiometric surface maps;

xii. Description of land use during the reporting period at the designated area requiring corrective measures; and,

xiii. Findings of the Permittee's investigation into the continued effectiveness of land use controls per Condition VIII.B.

b. If, at any time, the Permittee determines that any remedy selection specified in Condition VIII.B or VIII.C. of this permit no longer satisfies the applicable requirements of ADEM Admin. Code R. 335-14-5-.06(12) or this permit for releases of hazardous waste or hazardous constituents originating from SWMUs or AOCs, the Permittee must, within 90 calendar days, submit an application for a permit modification, pursuant to Permit Condition I.K., to make any appropriate changes to the CMI Plan.

c. The application for changes in the CMI Plan, including changes in inspection and monitoring provisions of the CMI Plan, shall be submitted as an application for a permit modification pursuant to the requirements of ADEM Admin. Code R. 335-14-8-.04.

4. Final Report of Corrective Measures

Within 90 calendar days following attainment of cleanup levels or goals as outlined in this Permit and the approved CMI Plan(s), the Permittee shall submit to the Department a Final Report of Corrective Measures (FRCM). The FRCM shall contain a certification by the

Permittee and an independent professional engineer registered in the State of Alabama that all remedial measures required by this permit and the approved CMI Plan has been completed. The FRCM shall outline any procedures and schedules for dismantling of corrective measures systems, groundwater monitoring or recovery systems, removal of land use controls, and any other remedial systems or controls required by this permit or the approved CMI Plan.

TABLE VIII.1 LIST OF SWMUs REQUIRING CORRECTIVE MEASURES IMPLEMENTATION

The following Solid Waste Management Unit(s) (SWMUs) and/or Area(s) of Concern (AOCs) numbers and descriptions correspond with those noted in the RCRA Facility Assessment (RFA) Report dated September 21, 2018. Where discrepancies exist, the permit will take precedence.

Applicable SWMU/AOC*	CMI/RD/RA WP/LUC RD	Approval Date	Unit Comments
SIA SWMUs 1, 7, 9, 12, 13, 19, 20, 21, 22, 23, 24, 28, 29, and 30	Final Southeast Industrial Area Remedial Design and Remedial Action Work Plan, Anniston Army Depot, dated September 2005 Final Southeast Industrial Area Remedial Action Post-Construction Report and Operation and Maintenance Plan, dated September 2008 Land Use Control Implementation Plan (LUCIP), dated September 2017	06/21/2006 12/01/2009	The 2006 approved remedy addresses SIA soils only. Groundwater is addressed under the approved OU-1 Interim Record of Decision Amendment dated July 16, 2015.
ASA SWMUs 5, 8, 10, 11, 27, and 35	Final Ammunition Storage Area Remedial Design and Remedial Action Work Plan, Anniston Army Depot, dated September 2005 Work Plan Addendum to ASA Long-Term Groundwater Monitoring Plan, dated April 2012	06/21/2006 05/2/2012	Remedy addresses all media (groundwater and soils)
SIA Groundwater Source Areas (Industrial Area, Landfill Area, Northeast Area, and Trench Area)	Remedial Design Work Plan for the Interim Remedial Action of Operable Unit 1, dated May 2019	04/27/2018	Remedy addresses SIA Groundwater

*Note: See footnote below Table VI.1 for reference to SWMUs addressed pursuant to the FFA. The SIA groundwater source areas are also being addressed pursuant to the FFA. Source areas contain the SWMUs listed in Permit Condition VIII.C.22.

PART IX

POST-CLOSURE CARE

IX.A. POST-CLOSURE CARE PERIOD

The post-closure care period shall extend for a period of thirty (30) years after the effective date of this permit, unless shortened or extended pursuant to ADEM Admin. Code r. 335-14-5-.07(8). The post-closure care period shall automatically extend through the end of the compliance period specified in Part VII of this permit.

IX.B. POST-CLOSURE PROCEDURES AND USE OF PROPERTY

1. Post-Closure Activities

   The Permittee shall conduct post-closure long term monitoring, as required in the Ammunition Storage Area Long Term Groundwater Monitoring Plan (SAIC, 2007), The Remedial Actions – Operations Work Plan For OU-3 (EMR, 2014) and the Final ANAD OU-3 Groundwater Monitoring Work Plan Addendum for Year 12 (EMR, July2018) and as required by ADEM Admin. Code r. 335-14-5-.07 and 335-14-5-.14(11)(d), for each hazardous waste management unit listed in Table IX.1. Post-closure care shall commence upon the effective date of this permit, and shall continue throughout the post-closure care period.

2. Security

   The Permittee shall comply with the security provisions of ADEM Admin. Code r. 335-14-5-.02(5)(b) and (c) and as described in Permit Conditions II.D.

3. Disturbance of Closed Unit(s)

   The Permittee shall not allow the disturbance of the integrity of the final cover, liners, any components of the containment system, or the function of the facility's monitoring systems during the post-closure care period for any unit identified in Condition IX.A.

4. The Permittee shall:

   a. Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of ADEM Admin. Code r. 335-14-5-.06 and Part VII of this permit;

IX.C. INSPECTIONS

1. The Permittee shall inspect the closed hazardous waste management unit listed in Table IX.1 at least annually in accordance with the Inspection Checklist, Appendix E, of the Final Ammunition Storage Area Remedial Design and Remedial Action Work Plan and as required under ADEM Admin. Code r. 335-14-5-.07 and 335-14-5-.14. The inspections shall specifically include evaluation of the following items:

a. Integrity of the final cover (erosion, ponding, subsidence, cracking, water elevation, etc.);

b. Growth and stabilization of vegetation;

c. Groundwater monitoring wells; and

d. Security fencing and LUC signs.

TABLE IX.1

POST-CLOSURE CARE UNITS

UNIT NAME	UNIT DESCRIPTION	CLOSED-IN-PLACE CAPACITY (ESTIMATED QUANTITY)	DESCRIPTION OF UNIT[2]	LOCATION OF UNIT[2]
SWMU 35[1]	Deactivation Furnace	Groundwater[3]	Section VI, page VI-10	Section VI, ALA Map

[1] This unit was addressed under the same remedy as SWMUs 5,8,10,11 and 27 as part of the Final Ammunition Storage Area Remedial Design and Remedial Action Work Plan for soils and groundwater.

[2] Location in permit application containing description (text) or location (figure) of unit.

[3] Long-term groundwater monitoring for SWMU 35 is included in the Monitored Natural Attenuation (MNA) monitoring program for the ASA. No further action is recommended for soils at SWMU 35.