PART I
LEGAL AUTHORITY

See this Part in the Entire Facility Section

PART II
STANDARD CONDITIONS

See this Part in the Entire Facility Section

PART III
SPECIFIC CONDITIONS

P.III.A. GENERAL STANDARDS

P.III.A.(1) Permitted Waste Streams, Descriptions, and Codes

The Blue Grass Army Depot (BGAD) uses the Open Burning (OB) thermal treatment process to treat bulk military propellant and propellant charges (packaged propellant). BGAD uses Open Detonation/Buried Detonation (OD) to treat munitions and explosives with the potential to detonate. Except in Conditions P.III.XB.(2)(b) and (c), the use of the phrase "open detonation" or the abbreviation "OD" refers to both open detonation and buried detonation. Open detonations without soil cover (surface detonations) are not typical and shall be used only to dispose of unused donor materials that require demilitarization or to treat unexploded ordnance (UXO).

Both of the OB and OD treatment processes and the wastes treated at each are described in *Hazardous Waste Facility Permit RCRA Hazardous Waste Treatment Permit Application for Conventional Munitions by Open Burning and Open/Buried Detonation* (the permit application).

Only munitions that are members of the munitions families listed below and that are not prohibited in P.III.A.(3) shall be treated at the OB units.

Munitions Family	Example Items
Bulk Propellants	Propellants in bulk form
Propellant Charges and Increments	Packaged propellant
Propellant Munitions Components	Rocket motor propellant, cartridge actuated devices, propellant actuated devices, expelling charges
Fuzes	Fuzes (various types)

Only munitions that are members of the munitions families listed below and that are not prohibited in P.III.A.(3) shall be treated at the OD unit.

Munitions Family	Example Items
Pyrotechnics/Illumination/Tracer	Ammunition used for illumination, marking, spotting, signaling, simulating or tracing
High Explosive Components and Devices	Detonators, boosters, bursting charges not otherwise configured with an ammunition
High Explosive Cartridges	Artillery or gun ammunition with HE projectile and a propelling charge such as 90 mm, 81 mm mortar, 30 mm fuzed and unfuzed cartridges
High Explosive D	Ammunition containing Explosive D (also known as ammonium picrate or yellow D)
Bulk High Explosive	TNT, pentaerythritol tetranitrate (PETN), cyclotetramethylenetetranitramine (HMX), RDX, Comp A, Comp B, Comp C-4, plastic bonded explosives (PBXs), Black Powder
High Explosive Grenades	Hand or rifle grenades containing explosive fillers
High Explosive Depth Charges and Underwater Munitions	High explosive marine depth charges and underwater mines
High Explosive Projectiles and Warheads	Projectiles, warheads, mortars or similar devices that do not have a cartridge case, propellant, or rocket motor associated
HE Rocket Warhead	Rocket warheads and fuzes
Demolition Material	Demolition materials such as TNT, C-4, cratering charges, shaped charges, detonating cord, flexible sheet explosives, miscellaneous explosives used as donor material, plastic caps, fuzes, detonation cord
Fuzes	Fuzes (all types)
Land Mines	High explosive filled land mines including anti-tank mines

The only wastes transported to and treated at either the OB Units or OD Unit shall be those listed below. Each of these hazardous wastes shall be managed as specified within this permit.

Waste Stream	Waste Codes	Waste Description
24	D001, D003, D005, D006, D007, D008, D011, D030	X01, Open Detonation/Buried Detonation Waste Military Munitions and energetic waste
26	D003, D008, D030	X01, Open Burning Waste Military Munitions and energetic waste

The Permittee shall comply with the following conditions when accepting or treating hazardous waste from offsite sources:

- The hazardous waste shall be from another United States Department of Defense (DoD) installation source only.
- The offsite hazardous waste shall be Waste Military Munitions (WMM) with the RCRA characteristic waste codes D001, D003, D005, D006, D007, D008, D011, or D030 only.

- Prior to receipt of offsite hazardous waste from other defense installations, the Permittee shall meet the conditions of P.III.A.(4).
- WMM accepted from offsite sources shall not be treated by OB.

[40 CFR 261 as established in 401 KAR 39:060 Section 3, KRS 224.46-530]

P.III.A.(2) Hazardous Waste Treatment Units

- Each of the two **OB Units** (OB Pan 1 and OB Pan 2) is a hazardous waste miscellaneous treatment unit. Each **OB Unit** consists of a burn pan, its underlying concrete pad, the associated sediment catchment system, and the area surrounding each pad as shown by the Limits of the Open Burn Permit Area in Figure E-2b in Appendix B of this permit.
- The **OD Unit** is a hazardous waste miscellaneous treatment unit. The **OD Unit** consists of a maximum of 30 pits, the area surrounding the pits, and two erosion control barriers, as shown by the Limits of the Open Detonation Permit Area in Figure E-2a in Appendix B of this permit.

[40 CFR Part 264 Subpart X as established in 401 KAR 39:090 Section 1, 40 CFR 270.23 as established in 401 KAR 39:060 Section 5, KRS 224.46-530]

P.III.A.(3) Prohibited Wastes

The Permittee shall not treat, by either OB or OD, munitions or wastes that contain any of the items or substances listed below:

- Hazardous waste from offsite sources, except as allowed in P.III.A.(1)
- Ammunition that is 0.50 caliber or smaller
- Municipal waste
- Dunnage
- Containerized gases
- Oil
- Pesticides
- Herbicides
- Ammonium perchlorates
- Dioxins or furans
- Titanium tetrachloride
- Polychlorinated biphenyls (PCBs)
- Flechettes
- Rounds containing submunitions
- White phosphorus
- Red phosphorous
- Colored smoke
- Hexachloroethane (HC) smoke
- Napalm
- Riot control agents
- Biological agents
- Choking agents
- Nerve agents

- Blood agents
- Blister agents
- Incapacitating agents
- Chemical warfare materiel
- Components of liquid filled rounds or chemical warfare materiel
- Nuclear components or devices
- Naturally occurring radioactive materials
- Depleted uranium (DU)
- Any liquids or items containing free liquids
- Asbestos
- Munitions wastes that are a potential source of Per- and polyfluoroalkyl substances (PFAS), including Teflon, Viton, and Viton-A. This also includes both short and long chain PFAS.
- Waste Military Munitions with a different chemical composition from WMM already being treated at BGAD

[KRS 224.46-530]

P.III.A.(4) Potential New Wastes

Prior to treatment of an energetic waste or Waste Military Munition (WMM) that had not previously been treated at BGAD, the Permittee shall determine whether the waste is suitable for treatment by OB or OD. In addition, the Permittee shall review the waste's characteristics and:

- Coordinate with the BGAD Ammunition Maintenance and Demilitarization Division to determine if the energetic waste or WMM workload is acceptable in accordance with BGAD's hazardous waste permit
- Determine the appropriate EPA waste codes
- Evaluate against prohibited wastes listed in P.III.A.(3)
- Determine whether the energetic waste or WMM contains hazardous constituents that are not contained in Table F2, Groundwater Protection Standards. Permittee shall submit a modification request prior to treating the new energetic waste or WMM in the OB/OD units if the constituent is not in the table
- Evaluate the energetic waste or WMM to identify waste analysis requirements of the treatment residue, if any residue may occur
- Determine that the Net Explosive Weight (NEW) of the energetic waste or WMM does not exceed the maximum event limits (per pan or pit) for OB or OD whichever is appropriate.

Any energetic waste or WMM that do not fit the acceptable parameters of this permit shall not be treated in the OB or OD units without a permit modification.

P.III.A.(5) Permitted Container Storage Areas

There shall be no permitted container storage areas at the OB unit or OD unit. The Permittee shall comply with requirements in P.III.I. for containers at the OB and OD units.

[40 CFR 264.170 as established in 401 KAR 39:090 Section 1, KRS 224.46-530]

P.III.B. GENERAL FACILITY STANDARDS

P.III.B.(1) Identification Number

KY8-213-820-105

P.III.B.(2) Required Notices

See Entire Facility Section

P.III.B.(3) Waste Analysis

See Entire Facility Section

P.III.B.(4) Security

See Entire Facility Section

P.III.B.(5) General Inspection Requirements

See Entire Facility Section

P.III.B.(6) Personnel Training

See Entire Facility Section

P.III.B.(7) General Requirements for Ignitable, Reactive, or Incompatible Wastes

See Entire Facility Section

P.III.B.(8) Location Standards

See Entire Facility Section

P.III.B.(9) Land Disposal Restrictions (LDR)

See Entire Facility Section

P.III.B.(10) Compliance Schedule

Reports of compliance or non-compliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than fourteen days following each scheduled date, as established in the Compliance Schedule, Appendix A, and certified in accordance with 40 CFR 270.33 as established in 401 KAR 39:060, Section 5.

[40 CFR 270.33 as established in 401 KAR 39:060 Section 5]

P.III.C. PREPAREDNESS AND PREVENTION

P.III.C.(1) Design and Operation of Facility

The Permittee shall design, construct, maintain, and operate the facility in a manner to minimize the possibility of an unplanned fire, unplanned explosion, or sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

[40 CFR 264.31 as established in 401 KAR 39:090 Section 1]

P.III.C.(2) Required Equipment

The Permittee shall keep at the facility the equipment listed below. The equipment shall be maintained as specified in the Contingency Plan, Attachment G.

- An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel;
- A device, such as a telephone (immediately available at the scene of operations) or a hand-held two way radio, capable of summoning emergency assistance from BGAD security force, BGAD fire department, BGAD emergency operations center (EOC), or state/local emergency response teams;
- Portable fire extinguishers and fire control equipment, including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals.

[40 CFR 264.32 as established in 401 KAR 39:090 Section 1]

P.III.C.(3) Testing and Maintenance of Equipment

To assure proper operation of emergency equipment, the Permittee shall:

- Test all emergency equipment at the facility, including any communication, alarm, fire, spill control, and decontamination equipment
- Maintain all equipment at the facility in good working order, consistent with the inspection schedule in the Procedures to Prevent Hazards, Attachment F.

[40 CFR 264.33 as established in 401 KAR 39:090 Section 1]

P.III.C.(4) Access to Communications or Alarm Systems

If hazardous waste is present at the OB or OD site, all personnel at that site shall have immediate access, either directly or through visual or voice contact with another employee, to a telephone or a hand-held two way radio that is capable of summoning emergency assistance.

If there is ever just one employee on the premises while the facility is operating, that employee shall have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance.

[40 CFR 264.34 as established in 401 KAR 39:090 Section 1]

P.III.C.(5) Required Aisle Space **(RESERVED)**

P.III.C.(6) Arrangements with Local Authorities

See Entire Facility Section

P.III.D. CONTINGENCY PLAN AND EMERGENCY PROCEDURES

P.III.D.(1) Implementation of Plan

The Permittee shall immediately carry out the provisions of the Contingency Plan, Attachment G, and follow the emergency procedures described in 401 KAR 39:090, Section 1, and 401 KAR 39:060, Section 6(1), if there is an unplanned fire, unplanned explosion, or release of hazardous waste or constituents that could threaten human health or the environment.

[40 CFR 264.51 as established in 401 KAR 39:090 Section 1]

P.III.D.(2) Content of Plan

The Contingency Plan shall contain the following information and be kept up to date:

- Actions that facility personnel shall take in response to unplanned fires, unplanned explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility
- Arrangements agreed to by local emergency services
- All persons qualified to act as Emergency Coordinator. Where more than one person is listed, one shall be named as primary emergency coordinator and others shall be listed in the order in which they shall assume responsibility as alternates.
- A list of all emergency equipment, including the location and a physical description of each item on the list and a brief outline of its capabilities
- Evacuation plan for facility personnel that describes signals, routes, and alternate routes

[40 CFR 264.52 as established in 401 KAR 39:090 Section 1]

P.III.D.(3) Copies of Plan

A copy of the Contingency Plan, Attachment G, and all revisions to the plan shall be:

- Maintained at the OB/OD Demo Grounds Office (Building 270)
- Provided to BGAD Emergency Operations Center (EOC), all local police departments, fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services
- Provided to all outside agencies, contractors, and emergency response providers that have a Memorandum of Agreement (MOA) with BGAD to provide assistance in an emergency
- Provided to the Hazardous Waste Branch Manager

[40 CFR 264.53 as established in 401 KAR 39:090 Section 1]

P.III.D.(4) Amendment of Plan

The Contingency Plan, Attachment G, shall be reviewed, and immediately amended, if necessary, if:

- The facility permit is revised
- The plan fails in an emergency
- The facility changes (e.g., in its design, construction, operation, maintenance, or other circumstances) in a way that materially increases the potential for unplanned fires, unplanned explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency
- There is a change to the list of Emergency Coordinators
- The list of emergency equipment changes

Administrative updates and/or changes as identified above to the Contingency Plan may or may not warrant a permit modification. These shall be submitted to the Hazardous Waste Branch Manager for determination.

[40 CFR 264.54 as established in 401 KAR 39:090 Section 1]

P.III.D.(5) Emergency Coordinator

At all times, there shall be an Emergency Coordinator either at the facility or on call with the responsibility for coordinating all emergency response measures. The Emergency Coordinator shall be thoroughly familiar with all aspects of the facility's Contingency Plans, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. The Emergency Coordinator shall have the authority to commit the resources needed to carry out the Contingency Plan.

[40 CFR 264.55 as established in 401 KAR 39:090 Section 1]

P.III.D.(6) Emergency Procedures

P.III.D.(6)(a) Activate Alarms

If there is an imminent or actual emergency situation, the Emergency Coordinator shall immediately activate internal facility alarms or communication systems, where applicable, to notify all facility personnel, and notify appropriate state and local agencies as specified in the Contingency Plan.

[40 CFR 264.56 as established in 401 KAR 39:090 Section 1]

P.III.D.(6)(b) Notify Off-Post Emergency Responders

If the Emergency Coordinator and BGAD EOC determine that the facility has had a release, unplanned fire, or unplanned explosion which could threaten human health or the environment outside the facility, findings shall be reported as follows:

- Immediately notify appropriate local authorities and be available to help decide whether local

areas should be evacuated
- Notify the Madison County Emergency Operations Center and Kentucky Emergency Management (KYEM)

[401 KAR 39:060 Section 6(1), 40 CFR 264.56 as established in 401 KAR 39:090 Section 1]

P.III.D.(6)(c) Release, Fire, or Explosion

The Emergency Coordinator and the BGAD EOC shall assess possible hazards to human health or the environment that may result from a release, an unplanned fire, or an unplanned explosion. This assessment shall consider both direct and indirect effects of the release, fire, or explosion (for example: the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or firefighting chemicals used to control fire and explosions).

[40 CFR 264.56 as established in 401 KAR 39:090 Section 1]

P.III.D.(6)(d) Affected Areas

The Emergency Coordinator shall ensure that, in the affected area of the facility:
- No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed
- All emergency equipment listed in the Contingency Plan is cleaned and fit for its intended use before operations are resumed.

[40 CFR 264.56 as established in 401 KAR 39:090 Section 1]

P.III.D.(6)(e) Evaluate Release

If there is a release, an unplanned fire, or an unplanned explosion, the Emergency Coordinator shall identify the character, exact source, amount, and areal extent of any released materials. In addition, the Emergency Coordinator shall communicate the details of the emergency to the BGAD EOC.

During the emergency, the Emergency Coordinator shall take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread. These measures shall include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

[40 CFR 264.56 as established in 401 KAR 39:090 Section 1]

P.III.D.(6)(f) Secure Recovered Waste

Immediately after an emergency, the Emergency Coordinator shall provide for treating, storing, or disposing of recovered waste; contaminated soil, surface, or ground water; or other material that may result from a release, unplanned fire, or unplanned explosion at the facility.

[40 CFR 264.56 as established in 401 KAR 39:090 Section 1]

P.III.D.(6)(g) Environmental Emergency Written Report

The Permittee shall note in the Operating Record the time, date, and details of any incident that requires implementation of the Contingency Plan, Attachment G. Within fifteen days after the incident, the Permittee shall submit a written report on the incident to the Hazardous Waste Branch Manager and the Division Field Office. The report shall include:

- Name, address, and telephone number of the Permittee
- Name, address, and telephone number of the facility
- Name, address, and telephone number of persons having actual knowledge of the facts surrounding the release or threatened release
- Date, time, and type of incident (for example, fire or explosion)
- Name, quantity, and concentration of materials, pollutant, or contaminant involved
- Precise location, circumstances, and cause
- The extent of injuries, if any
- An assessment of actual or potential hazards to human health or the environment, and daily efforts taken by the Permittee to control or mitigate, including monitoring data
- Estimated quantity and disposition of recovered material that resulted from the incident.
- Changes in equipment, procedures, personnel, etc. to prevent similar incidents
- Any other pertinent or requested information

[40 CFR 264.56 as established in 401 KAR 39:090 Section 1, 401 KAR 39:060 Section 6(1), KRS 224.1-400, KRS 224.46-530]

P.III.D.(6)(h) Daily Notification During Environmental Emergencies

The Permittee shall notify the Division Field Office and Hazardous Waste Branch daily by telephone, e-mail, or fax during an environmental emergency operation. The following information, at a minimum, shall be provided:

- A summary of the previous day's operations
- A summary of planned operations for the day, including monitoring and movement/handling
- Results of any monitoring since the last daily notification
- Any other pertinent or requested information

[40 CFR 270.32 as established in 401 KAR 39:060 Section 5, KRS 224.46-530]

P.III.D.(6)(i) Memorandums of Agreement (MOA)

The Permittee shall keep current copies of all MOAs with off-post emergency responders at an on-site location. If, at any time, the Permittee enters into an agreement with an off-post emergency responder not listed in the Contingency Plan, Attachment G of the application, or chooses not to renew an agreement with an off-post emergency responder listed in the Contingency Plan, then the Permittee shall notify the Hazardous Waste Branch Manager.

[KRS 224.46-530]

P.III.E. MANIFEST SYSTEM, RECORDKEEPING, AND REPORTING

P.III.E.(1) Manifest System

See Entire Facility Section

P.III.E.(2) Manifest Discrepancies

See Entire Facility Section

P.III.E.(3) Operating Record

P.III.E.(3)(a) Operating Record for Open Burning

The Permittee shall maintain an operating record for OB that describes the hazardous waste activities. The record shall include information as it becomes available, as listed in F.III.E.(3), as well as the following information:

- The items treated in each pan during each event
- The total Net Explosive Weight (NEW) treated in each pan during each event
- A running total of NEW treated by the OB Units for that calendar year
- The times at which each event was initiated and ended
- The meteorological conditions at the time of each OB event, including the wind speed and direction.
- The date and time of any instances in which unburned propellant is retreated ("reburns")
- Records associated with any off-site shipments of hazardous wastes generated at the OB Unit, the types and locations of destination facilities, and how the wastes were managed at the destination facilities (for example: recycling, treatment, storage, or disposal)
- Records of quantities and date of each shipment of hazardous waste placed in a land disposal unit pursuant to 40 CFR 264.73 as established in 401 KAR 39:090, Section 1
- Records and results of waste analyses and waste determinations performed
- Records of all spills
- Details of all environmental releases, as defined in Condition P.III.XA.(5)
- Summary reports and details of all incidents that require implementing the Contingency Plan, Attachment G
- Records and results of all inspections

[401 KAR 39:060 Sections 3 and 6(1), 40 CFR 264.73 as established in 401 KAR 39:090 Section 1, KRS 224.46-530]

P.III.E.(3)(b) Operating Record for Open Detonation/Buried Detonation

The Permittee shall maintain an operating record for OD that describes the hazardous waste activities. The record shall include information as it becomes available, as listed in F.III.E.(3), as well as the following information:

- The items treated in each pit during each event
- The total Net Explosive Weight (NEW) treated in each pit during each event
- A running total of NEW treated by OD for that calendar year
- A notation if a detonation was a surface detonation, the location of the surface detonation, the NEW treated per detonation, and the reason a surface detonation was used
- A running total of the weight of lead and lead compounds treated by OD during that calendar year
- A running total of Delay Assembly F/155MM HERA, National Stock Number 1320-01-054-5121, units treated by OD in that calendar year
- The times at which each event was initiated and ended
- The meteorological conditions at the time of each OD event, including the wind speed and direction.
- The date and location of treatment of any munition items that failed to detonate during the initial detonation process, unexploded ordinance (UXO), or munitions that otherwise required retreatment
- Records associated with any off-site shipments of hazardous wastes generated at the OD Unit, the types and locations of destination facilities, and how the wastes were managed at the destination facilities (for example: recycling, treatment, storage, or disposal)
- Records of quantities and date of each shipment of hazardous waste placed in a land disposal unit pursuant to 40 CFR 264.73 as established in 401 KAR 39:090, Section 1
- Records and results of waste analyses and waste determinations performed
- A log showing that Observers were present during OD operations
- Records of all spills
- Details of all environmental releases, as defined in Condition P.III.XB.(5)
- Summary reports and details of all incidents that require implementing the Contingency Plan, Attachment G
- Records and results of all inspections

[401 KAR 39:060 Sections 3 and Section 6(1), 40 CFR 264.73 as established in 401 KAR 39:090 Section 1, KRS 224.46-530]

P.III.E.(4) Records

In addition to meeting the requirements of F.III.E.(4):

- The Permittee shall ensure that any facility that receives, treats, or disposes of hazardous waste generated at BGAD has the appropriate permits to treat or dispose of the waste. The Permittee shall retain documentation of treatment from the treatment or disposal facility.
- The Permittee shall retain on-site a copy of all notices, certifications, waste analysis data, and other required documentation for at least three years from the date that the waste that is the subject of such documentation was last sent to on-site or off-site treatment, storage, or disposal.

P.III.E.(5) Annual Report

See Entire Facility Section

P.III.E.(6) Unmanifested Waste Report

See Entire Facility Section

P.III.E.(7) Additional Reports

This condition is in addition to F.III.E.(7)

P.III.E.(7)(a) Immediate Notification

The Permittee shall report to the Division any non-compliance with the Permit which may endanger human health or the environment. Any information shall be provided orally within two hours from the time the Permittee becomes aware of the circumstances (Kentucky twenty-four-hour reporting number (800) 928-2380). This oral report shall include the following:

- Information concerning release of any hazardous waste or hazardous constituents that may cause an endangerment to public drinking water supplies, including both surface water and groundwater used for public drinking water supply
- Any information of a release or discharge of hazardous waste, or of an unplanned fire or unplanned explosion from the facility, that could threaten the environment or human health outside the facility

Non-compliance which requires immediate notification includes, but is not limited to:

- A determination by the Emergency Coordinator that there is an imminent or actual release, unplanned fire, or unplanned explosion which could threaten human health or the environment
- Any Environmental Release, including but not limited to, those defined by P.III.XA.(5) and P.III.XB.(5)

[40 CFR 264.73 as established in 401 KAR 39:090 Section 1, 401 KAR 39:060 Section 6(1)]

P.III.E.(7)(b) Follow-up Reporting

The Permittee shall provide the Division a written submission within seven days of the notification required by Condition P.III.E.(7)(a).

The written submission shall contain:

- A description of the non-compliance and its cause, which shall include:
  - Name, address, and telephone number of the owner or operator and the reporter
  - Name, address, and telephone number of the facility
  - Date, time, and type of incident
  - Name and quantity of material(s) involved
  - The extent of injuries, if any
  - An assessment of actual or potential hazard to the environment and human health outside the facility, where this is applicable
  - Estimated quantity and disposition of recovered material that resulted from the incident

- The period of non-compliance, including exact dates and times
- Whether the non-compliance has been corrected
- If the non-compliance has not been corrected, the anticipated time it is expected to continue
- Steps planned or taken to reduce, eliminate, and prevent reoccurrence of the non-compliance

[401 KAR 39:060 Section 6(1), KRS 224.1-400, 40 CFR 270.30 as established in 401 KAR 39:060 Section 5(7)]

P.III.F. GROUNDWATER MONITORING REQUIREMENTS

P.III.F.(1) Required Programs

Groundwater monitoring shall consist of the General Groundwater Monitoring Requirements of Permit Condition P.III.F.(2) and the Detection Monitoring Program contained in Permit Condition P.III.F.(3).

[40 CFR 264.91 as established in 401 KAR 39:090 Section 1]

P.III.F.(2) General Groundwater Monitoring Program

P.III.F.(2)(a) Well Location, Installation, and Construction

The Permittee shall install and maintain a groundwater monitoring system to comply with the requirements of 40 CFR 264 Subpart F as established in 401 KAR 39:090, Section 1, as applicable and as specified below:

- The Permittee shall maintain all groundwater monitoring wells at the facility as identified in Table F1 of this permit, at the locations specified on Figure E-2a in Appendix B of this permit.
- All groundwater monitoring wells shall be maintained in accordance with the plans and specifications presented in Part E of the OB/OD permit application and in accordance with 40 CFR 264.92 as established in 401 KAR 39:090, Section 1.
- A groundwater monitoring well shall not be removed from any monitoring program specified in this permit without a permit modification.
- If a groundwater monitoring well is damaged, the Permittee shall immediately notify the Manager in writing, to include a description of the well repair activities to be conducted. The Permittee shall not implement the well repair activities without approval from the Manager. Within 30 calendar days after the well is repaired, the Permittee shall submit a written notification to the Manager that the well repair activities were conducted in accordance with the approved procedures.
- If a groundwater monitoring well is deleted from the monitoring program(s) required by this permit, it shall be abandoned within 90 calendar days after deletion in accordance with 401 KAR 6:350, Section 11. Within 30 calendar days after the well is abandoned, the Permittee shall submit a written notification to the Manager that the well abandonment activities were conducted in accordance with the approved procedures.
- Groundwater monitoring wells MW4004C01, MW4004C02, MW4004C03, MW4004C04, MW4004C05, MW4004C06, and MW4004C10 shall define the points of compliance for the OD unit. A background monitoring point shall be established pursuant to Appendix A.

- The groundwater monitoring system shall consist of a sufficient number of wells, installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater passing the point of compliance and allow for the detection of contamination when hazardous waste or hazardous constituents have migrated from the waste management area to the upper-most aquifer.
- If any additional wells are needed, a request for a permit modification shall be submitted to the Manager. Wells shall not be installed until the permit modification is approved. The permit modification request shall specify the following:
    - The purpose for the change in the monitoring plan
    - The design, location, and depth, including screened interval
    - Well construction materials and techniques including casing depths and proposed total depth of well(s)
    - Well development method(s)
    - A schedule of implementation for construction
    - Provisions for determining the aquifer characteristics of the applicable aquifer at the location of the new well(s)

TABLE F1: MONITORING WELL DESIGNATIONS FOR THE OD UNIT

Well ID	Diameter (in)	TOC[1] (feet above MSL[2])	Total Depth (feet)	Screened Interval (feet)	Monitoring
MW4004C01	2	902.69	14.37	5.57 – 10.67	Downgradient
MW4004C02	2	905.35	13.74	4.78 – 9.86	Downgradient
MW4004C03	2	905.02	25.2	16.26 – 21.35	Downgradient
MW4004C04	2	900.14	15.95	3.00 – 13.00	Downgradient
MW4004C05	2	900.36	29.74	17.00 – 27.00	Downgradient
MW4004C06	2	900.57	17.77	5.00 – 15.20	Downgradient
MW4004C010	2	908.61	14.51	6.5 – 11.50	Downgradient
(Reserved)					Upgradient

[1] TOC is top of casing.
[2] MSL is mean sea level.

[40 CFR 264.97 as established in 401 KAR 39:090 Section 1]

P.III.F.(2)(b) General Groundwater Monitoring Requirements

- The Permittee shall determine the groundwater surface elevation from all monitoring wells listed in Table F1 of this permit each time a sampling event is conducted. The results of these determinations should be submitted in accordance with Permit Condition P.III.F.(2)(f). Elevation data should be recorded and reported as mean sea level (MSL) and referenced to an appropriate national geodetic vertical datum (NGVD) benchmark.
- The Permittee shall determine the groundwater flow rate and direction in the underlying aquifer(s) at least annually and submit the results in accordance with Permit Condition P.III.F.(2)(f).

- The Permittee shall determine background concentrations of hazardous constituents and other chemical parameters required to be monitored by this permit in accordance with Part E of the permit application and 40 CFR 264.97.

[40 CFR 264.91 as established in 401 KAR 39:090 Section 1]

P.III.F.(2)(c) Groundwater Protection Standard

- The groundwater protection standard, as required under 40 CFR 264.92 as established in 401 KAR 39:090, Section 1, is specified by Table F2 of this permit which lists the hazardous constituents and their respective concentration limits.
- The groundwater protection standard applies to all hazardous waste or hazardous constituent releases as deemed appropriate by the Division to protect human health and the environment.

TABLE F2: GROUNDWATER PROTECTION STANDARDS

Analyte	**CAS No.**	**Permit Maximum Concentration Limit (mg/L)**	**Method (SW-846)[1]**
Inorganics (metals)			
Aluminum	7429-90-5	20	6010/6020
Antimony (metallic)	7440-36-0	0.006	6010/6020
Arsenic	7440-38-2	0.01	6010/6020
Barium	7440-39-3	2.0	6010/6020
Beryllium	7440-41-7	0.004	6010/6020
Cadmium	7440-43-9	0.005	6010/6020
Chromium	7440-47-3	0.1	6010/6020
Cobalt	7440-48-4	0.006	6010/6020
Copper	7440-50-8	1.3	6010/6020
Iron	7439-89-6	14	6010/6020
Lead	7439-92-1	0.015	6010/6020
Manganese	7439-96-5	0.43	6010/6020
Mercury	7439-97-6	0.002	7470
Nickel	7440-02-0	0.1	6010/6020
Selenium	7782-49-2	0.05	6010/6020
Silver	7440-22-4	0.05	6010/6020
Thallium	7440-28-0	0.002	6010/6020

Analyte	**CAS No.**	**Permit Maximum Concentration Limit (mg/L)**	**Method (SW-846)[1]**
Tin	7440-31-5	12.0	6010/6020
Vanadium	7440-62-2	0.086	6010/6020
Zinc	7440-66-6	6	6010/6020
Explosives			
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	0.0007	8330
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	1	8330
1,3,5-Trinitrobenzene	99-35-4	0.59	8330
1,2-Dinitrobenzene	528-29-0	0.0019	8330
1,3-Dinitrobenzene	99-65-0	0.002	8330
1,4-Dinitrobenzene	100-25-4	0.002	8330
Tetryl (Trinitrophenylmethylnitramine)	479-45-8	0.039	8330
2-Amino-4,6-Dinitrotoluene	35572-78-2	0.039	8330
4-Amino-2,6-Dinitrotoluene	19406-51-0	0.039	8330
Nitrobenzene	98-95-3	0.013	8330
2,4,6-Trinitrotoluene	118-96-7	0.0098	8330
2,4-Dinitrotoluene,	121-14-2	0.00024	8330
2,6-Dinitrotoluene	606-20-2	0.000049	8330
m-Nitrotoluene, (3)	99-08-1	0.007	8330
o-Nitrotoluene, (2)	88-72-2	0.00031	8330
p-Nitrotoluene, (4)	99-99-0	0.0043	8330
Nitroglycerin	55-63-0	0.002	8330
PETN (Pentaerythritol tetranitrate)	78-11-5	19.0	8330
Semi-Volatile Organic Compounds (SVOCs)			
Dimethylaminoazobenzene	60-11-7	0.005	8270
Volatile Organic Compounds (VOCs)			
Benzene	71-43-2	0.005	8260
Trichloroethylene (trichloroethene)	79-01-6	0.005	8260
1,4-dioxane	123-91-1	0.035	8260
Other Analytes			

Analyte	**CAS No.**	**Permit Maximum Concentration Limit (mg/L)**	**Method (SW-846)[1]**
Cyanide (CN-)	57-12-5	0.2	9012
Perchlorate	14797-73-0	14.0	6850
Nitrate	14797-55-8	10	353.2
Nitrite	14797-65-0	1	353.2

[1] The latest version of the method at the time of analysis shall be used for the analysis of groundwater.

[40 CFR 264.93 as established in 401 KAR 39:090 Section 1]

P.III.F.(2)(d) Compliance Period

The compliance period shall extend throughout the active life of the hazardous waste treatment unit and the closure period (and postclosure period if applicable).

[40 CFR 264.96 as established in 401 KAR 39:090 Section 1]

P.III.F.(2)(e) 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 P.III.F.(2)(a) to provide a reliable indication of the quality of the groundwater as required under 40 CFR 264.97 as established in 401 KAR 39:090, Section 1:

- Sampling shall occur on a semi-annual basis, which shall be defined as two sampling events each year, with one sampling event in each half of every calendar year and no two events occurring within the same 4 month period
- Samples shall be taken at an interval that assures, to the greatest extent technically feasible, that independent samples are obtained, by reference to the uppermost aquifer's effective porosity, hydraulic conductivity, and hydraulic gradient, and the fate and transport characteristics of the potential contaminants
- Samples shall be collected, preserved, and shipped (when shipped off-site for analysis) in accordance with the procedures specified in Section E-1b(2) of the permit application.
- Samples shall be tracked and controlled using the chain-of-custody procedures specified in Section E-1b(2) of the permit application
- Statistical analyses used to evaluate the groundwater monitoring data shall be as described in Section E-1b(2) of the permit application and 40 CFR 264.97 as established in 401 KAR 39:090, Section 1
- All samples taken in accordance with this permit shall not be filtered prior to analysis

[40 CFR 264.97 as established in 401 KAR 39:090 Section 1]

P.III.F.(2)(f) Recordkeeping and Reporting

- The Permittee shall keep and maintain all monitoring, testing, and analytical data in accordance with Permit Condition F.III.E.
- The Permittee shall submit to the Manager a written 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 shall be integrated into all reports of analysis. The report shall be submitted within 30 days of each sampling event. Copies of this report shall be kept at the facility in accordance with Permit Condition F.III.E.

[40 CFR 264.74 as established in 401 KAR 39:090 Section 1]

P.III.F.(3) Detection Monitoring Program

The requirements of this Condition are applicable to OD unit. Except as specified otherwise in this permit, the Detection Monitoring Program shall be implemented in accordance with Part E of the permit application and 40 CFR 264 Subpart F as established in 401 KAR 39:090, Section 1.

[40 CFR 264 Subpart F as established in 401 KAR 39:090, Section 1]

P.III.F.(3)(a) Monitoring Requirements

In addition to the general groundwater monitoring requirements specified in Permit Condition P.III.F.(2)(b), the Permittee shall:

- Sample all point of compliance wells and background wells listed in Table F1 and analyze for the constituents listed in Table F2 of this permit on a semi-annual basis in accordance with Permit Condition P.III.F.(2)(e)
- Sample all background and point of compliance monitoring wells and analyze for temperature (degrees F or C), specific conductance (Mhos/cm), and pH (standard units) each time the well is sampled in accordance with Permit Condition P.III.F.(2)(e)
- Sample all designated background monitoring wells and analyze, in accordance with Permit Condition P.III.F.(2)(b), for the constituents listed in Table F2 of this permit in all monitoring events
- Begin each sampling event with the least contaminated wells (based on prior sampling) and proceed to wells of higher levels of contamination
- Compare the data from the compliance wells to the data from the background wells to determine whether there is statistically significant evidence of contamination. The comparisons shall be performed in accordance with the requirements in 40 CFR Part 264.97, EPA's "*Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance*," March 2009, or with any subsequent revisions to this document

[40 CFR 264.97 as established in 401 KAR 39:090 Section 1]

P.III.F.(3)(b) Reporting and Response Requirements

In addition to the recordkeeping and reporting requirements specified in Permit Condition P.III.F.(2)(f):

- The Permittee shall determine whether there is statistically significant evidence of contamination above background levels at each monitoring well within 45 calendar days after completion of each sampling event. The statistical evaluation of monitoring well analytical data shall be performed pursuant to Permit Condition P.III.F.(2)(e) and 401 KAR 39:090, Section 1, 40 CFR 264.97
- If the Permittee determines, pursuant to Permit Condition P.III.F.(2)(e), that there is statistically significant evidence of contamination above background levels for any chemical parameters or hazardous constituents listed in Table F2 of this permit at any monitoring well at the point of compliance, then the Permittee shall comply with 40 CFR 264.98(g) as established in 401 KAR 39:090, Section 1

[40 CFR 264.98 as established in 401 KAR 39:090 Section 1]

P.III.F.(4) Compliance Monitoring Program

If statistically significant evidence of contamination is found during the Detection Monitoring Program, in compliance with 40 CFR 264.98 as established in 401 KAR 39:090, Section 1, the Permittee shall sample all monitoring wells to determine whether constituents in the list of Appendix IX to 40 CFR 264 are present and, if so, at what concentration. For any Appendix IX compounds found, the analysis may be repeated in 1 month. If the analysis is repeated and the results of the second analysis confirm the initial results, then these constituents shall form the basis of compliance monitoring. Alternatively, the Permittee may elect to have the hazardous constituents found in the initial Appendix IX monitoring serve as the basis for compliance monitoring. Within 90 days after the discovery of statistically significant evidence of contamination, BGAD shall submit to the Manager an application for a permit modification. The permit modification application shall include the following information:

- Identification of the concentration of any Appendix IX constituent detected in the groundwater at each monitoring well at the point of compliance.
- Any proposed changes at the OD unit necessary to meet the requirements of 40 CFR 264.99 as established in 401 KAR 39:090, Section 1, including changes to:
    - The groundwater monitoring system
    - The monitoring frequency
    - Sampling and analysis procedures or methods
    - Statistical methods
- For each hazardous constituent detected at the compliance point, a proposed concentration limit under 40 CFR 264.94(a)(1) or (2), or a notice of intent to seek an alternate concentration limit under 40 CFR 264.94(b); and all of the provisions of 40 CFR 264.98(g)(5) as established in 401 KAR 39:090, Section 1.

[40 CFR 264.98 as established in 401 KAR 39:090, Section 1]

P.III.F.(5) Corrective Action Monitoring Program (RESERVED)

P.III.G. CLOSURE AND POSTCLOSURE

P.III.G.(1) Closure Performance Standards

The Permittee shall close the facility in a manner that minimizes the need for further maintenance and that controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, postclosure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere.

[40 CFR 264.111 as established in 401 KAR 39:090 Section 1]

P.III.G.(2) Update Closure Plan

- In anticipation of closure or partial closure, the Permittee shall submit an updated and site specific closure plan to the Hazardous Waste Branch Manager for each unit or units planned for upcoming closure. The Closure Plan shall include the results of an historic records review and a detailed sampling and analysis plan for all hazardous wastes and hazardous waste constituents managed in each unit proposed for closure, based upon the results of the records review.
- The Cabinet may request modifications to the plan and the Permittee shall submit the modified plan within sixty days of the Cabinet's request.

[40 CFR 264.112 as established in 401 KAR 39:090 Section 1]

P.III.G.(3) Closure Plan and Amendment

- The Permittee shall submit a written request for a permit modification to the Hazardous Waste Branch Manager to authorize a change in the Closure Plan if changes in operating plans or facility design affect the Closure Plan; there is a change in the expected year of closure; in conducting partial or final closure activities, unexpected events require a modification of the Closure Plan.
- The written request shall include a copy of the amended Closure Plan for approval by the Cabinet.
- The written request including a copy of the amended closure plan for approval, shall be submitted at least sixty days prior to the proposed change in facility design.
- If an unexpected event occurs during the partial or final closure period, the Permittee shall request a permit modification no later than thirty days after the unexpected event.
- The Cabinet may request modifications to the plan and the Permittee shall submit the modified plan within sixty days of the Cabinet's request or within thirty days if the change in facility conditions occurs during partial or final closure.

[40 CFR 264.112 as established in 401 KAR 39:090 Section 1]

P.III.G.(4) Closure Schedule and Notification

- Within ninety days after receiving the final volume of hazardous waste in a hazardous waste unit, the Permittee shall remove all hazardous wastes in that hazardous waste unit in accordance with the Closure Plan.

- All closure activities shall be completed as described in the Closure Plan; and within 180 days after receiving the final volume of waste, unless a longer period is approved by the Hazardous Waste Branch Manager.
- All equipment and the facility shall be decontaminated and washing residues removed.
- The Permittee shall notify the Division in writing at least forty-five (45) days prior to the date on which the Permittee expects to begin closure of a hazardous waste management unit or final closure of the facility.

[40 CFR 264.113 as established in 401 KAR 39:090 Section 1]

P.III.G.(5) Disposal or Decontamination of Equipment, Structures, and Soils

During the partial and final closure periods, all contaminated equipment, structures, and soils shall be properly disposed of or decontaminated.

[40 CFR 264.114 as established in 401 KAR 39:090 Section 1]

P.III.G.(6) Certification of Closure

The Permittee shall certify that the units have been closed in accordance with the specifications in the approved Closure Plan.

[40 CFR 264.115 as established in 401 KAR 39:090 Section 1]

P.III.G.(7) Survey Plat

The Permittee shall submit a survey plat no later than the submission of certification of closure of each hazardous waste disposal unit.

[40 CFR 264.116 as established in 401 KAR 39:090 Section 1]

P.III.G.(8) Postclosure Care and Use of Property

P.III.G.(8)(a) Postclosure Care Period

The Permittee shall conduct postclosure care for any hazardous waste management units which cannot achieve clean closure performance standards. Postclosure care shall be conducted for thirty years after the completion of closure, except that the thirty year postclosure care period may be shortened upon application and demonstration, approved by the Division, that the facility is secure, or may be extended if the Division finds this is necessary to protect human health and the environment.

[40 CFR 264.117 as established in 401 KAR 39:090 Section 1]

P.III.G.(8)(b) Use of Units

The Permittee shall not allow any use of the units which will disturb the integrity of the final cover, liners, any components of the containment system, or the function of the facility's monitoring systems during the postclosure care period.

[40 CFR 264.117 as established in 401 KAR 39:090 Section 1]

P.III.G.(9) Postclosure Plan

P.III.G.(9)(a) Components, Structures, and Equipment Inspections

The Permittee shall inspect the components, structures, and equipment at the site in accordance with the inspection schedule in the approved Postclosure Plan.

[40 CFR 264.117 and 40 CFR 264.118 as established in 401 KAR 39:090 Section 1]

P.III.G.(9)(b) Cover System Inspections

The Permittee shall inspect the cover system(s) for uniformity, drainage, and imperfections. Soil based covers shall be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the cover.

[40 CFR 264.117 and 40 CFR 264.118 as established in 401 KAR 39:090 Section 1]

P.III.G.(9)(c) Amendments to Postclosure Plan

The Permittee shall request a permit modification to authorize a change in the approved postclosure plan. This request shall be in accordance with applicable requirements and shall include a copy of the proposed amendments to the application for approval by the Division. The Permittee shall request a permit modification if changes in operating plans or facility design affect the postclosure plan, or other events occur during the active life of the facility that also affect the postclosure plan. The Permittee shall submit a written request for a permit modification at least sixty days prior to the proposed change in facility design or operation, or no later than sixty days after an unexpected event has occurred which has affected the postclosure plan.

[40 CFR 264.118 as established in 401 KAR 39:090 Section 1, 40 CFR 270.42 as established in 401 KAR 39:060 Section 5]

P.III.G.(9)(d) Removal Request

If the Permittee or any subsequent owner or operator of the land upon which the hazardous waste disposal unit is located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any, or contaminated soils, then the Permittee or subsequent owner or operator, as applicable, shall request a modification to the postclosure permit in accordance with applicable requirements. The Permittee or any subsequent owner or operator of the land shall demonstrate that the removal of hazardous wastes will satisfy the criteria of 40 CFR 264.119 as established in

401 KAR 39:090 Section 1.

[40 CFR 264.117 as established in 401 KAR 39:090 Section 1, 40 CFR 270.42 as established in 401 KAR 39:060 Section 5]

P.III.G.(10) Postclosure

No later than sixty days after certification of closure of each hazardous waste disposal unit, the Permittee shall submit records of the type, location, and quantity of hazardous waste disposed within each cell or disposal unit. Within sixty days of certification of closure of the first hazardous waste disposal unit and the last hazardous waste disposal unit, the Permittee shall do the following:

- Record a notation on the deed to the facility property, in accordance with 40 CFR 264.119 as established in 401 KAR 39:090, Section 1
- Submit a certification that a notation, in accordance with 40 CFR 264.119 as established in 401 KAR 39:090, Section 1, has been recorded. The certification shall be signed by the Permittee and an independent Professional Engineer (PE) who is licensed in the Commonwealth of Kentucky or who is an employee of the United States government while engaged in engineering for the government. Documentation supporting the independent licensed PE's certification shall be furnished to the Division upon request.

[40 CFR 264.119 and 40 CFR 264.120 as established in 401 KAR 39:090 Section 1, KRS 322.020, KRS 322.030]

P.III.G.(11) Certification of Completion of Postclosure Care

No later than sixty days after completion of the established postclosure care period for each hazardous waste disposal unit, the Permittee shall submit to the Manager, by registered mail, a certification that the postclosure care for the hazardous waste disposal unit was performed in accordance with the specifications in the approved Postclosure Plan. The certification shall be signed by the Permittee and an independent Professional Engineer (PE) who is licensed in the Commonwealth of Kentucky or who is an employee of the United States government while engaged in engineering for the government. Documentation supporting the independent licensed PE's certification shall be furnished to the Manager upon request until the Manager releases the Permittee from the financial assurance requirements for postclosure care.

[40 CFR 264.120 as established in 401 KAR 39:090 Section 1]

P.III.H. FINANCIAL REQUIREMENTS

Not Applicable

P.III.I. USE AND MANAGEMENT OF CONTAINERS

P.III.I.(1) Condition of Containers

If a container holding (non-munition) hazardous waste is not in good condition, including but not limited to severe rusting or apparent structural defects, or if it begins to leak, the Permittee shall transfer the hazardous waste from this container to a container that is in good condition.

[40 CFR 264.171 as established in 401 KAR 39:090 Section 1]

P.III.I.(2) Compatibility of Waste with Containers

The Permittee shall use containers made of, or lined with, materials which do not react with, and are otherwise compatible with, the hazardous waste to be stored so that the ability of the container to contain the waste is not impaired.

[40 CFR 264.172 as established 401 KAR 39:090 Section 1]

P.III.I.(3) Management of Containers

P.III.I.(3)(a) Container Management Area

Any container management area within the OB or OD sites shall be maintained and operated in accordance with 401 KAR 39:090, Section 1, and in compliance with the inspection and container management requirements described in Procedures to Prevent Hazards, Attachment F.

[40 CFR Part 264 as established in 401 KAR 39:090 Section 1]

P.III.I.(3)(b) Container Total Volume

Not Applicable

P.III.I.(3)(c) Permitted Container Storage Unit and Volume

Not Applicable

P.III.I.(3)(d) Container Waste Restriction

The Permittee shall provide secondary containment for any hazardous waste container that contains free liquids while in a less than 90 day accumulation area.

[KRS 224.46-530]

P.III.I.(3)(e) Storage of Non-Hazardous Materials

Not Applicable

P.III.I.(3)(f) Container Closed

A container holding any hazardous waste shall always be closed during storage except when it is necessary to add or remove waste.

[40 CFR 264.173 as established in 401 KAR 39:090 Section 1]

P.III.I.(3)(g) Container Handling

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

[40 CFR 264.173 as established in 401 KAR 39:090 Section 1]

P.III.I.(3)(h) Container Labeling

- Non-munition containers shall be labeled in accordance with applicable regulations.
- Hazardous waste containers shall be positioned so that labels are visible and easy to inspect.
- Before transporting or offering hazardous waste for transportation off-site, the Permittee shall label each package in accordance with the applicable Department of Transportation regulations on hazardous materials under 49 CFR part 172.

[40 CFR 262.31 as established in 401 KAR 39:080 Section 1, KRS 224.46-530]

P.III.I.(4) Container Inspections

- Permittee shall conduct weekly inspections for leaking containers and deterioration of containers caused by corrosion or other factors
- Permittee inspection procedures shall be based upon the Procedures to Prevent Hazards, Attachment F.

[40 CFR 264.174 as established in 401 KAR 39:090 Section 1]

P.III.I.(5) Containment System

Not Applicable

P.III.I.(6) Special Requirements for Ignitable or Reactive Waste

Containers holding ignitable or reactive waste shall be located at least fifteen meters from the facility's property line.

[40 CFR 264.176 as established in 401 KAR 39:090 Section 1]

P.III.I.(7) Special Requirements for Incompatible Wastes

Incompatible wastes, or incompatible wastes and materials, shall not be placed in the same container. Hazardous waste shall not be placed in an unwashed container that previously held an incompatible waste or material. A storage container holding a hazardous waste that is incompatible with any waste or materials stored nearby in other containers, shall be separated from the incompatible materials, or protected from them by means of a dike, berm, wall, or engineering controls.

[40 CFR 264.177 as established in 401 KAR 39:090 Section 1]

P.III.I.(8) Removal at Closure

At closure the Permittee shall remove all hazardous waste and hazardous waste residues from the containment management area and remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues shall be decontaminated or removed from the facility in accordance with Attachment I.

[40 CFR 264.178 as established in 401 KAR 39:090 Section 1]

P.III.J. TANK SYSTEMS (RESERVED)
P.III.K. SURFACE IMPOUNDMENTS (RESERVED)
P.III.L. WASTE PILES (RESERVED)
P.III.M. LAND TREATMENT (RESERVED)
P.III.N. LANDFILLS POST CLOSURE REQUIREMENTS (RESERVED)
P.III.O. INCINERATORS/BIF (RESERVED)
P.III.P. (RESERVED)
P.III.Q. (RESERVED)
P.III.R. (RESERVED)
P.III.S. SPECIAL PROVISIONS FOR CLEANUP (RESERVED)
P.III.T. (RESERVED)
P.III.U. (RESERVED)
P.III.V. (RESERVED)
P.III.W. DRIP PADS (RESERVED)

P.III.XA. MISCELLANEOUS UNIT: OPEN BURNING

P.III.XA.(1) General Requirements

The Permittee shall operate and maintain the OB units in a manner that ensures protection of human health and the environment, and as specified in Process Information, Attachment D, and Procedures to Prevent Hazards, Attachment F.

[40 CFR 264.601 as established in 401 KAR 39:090 Section 1]

P.III.XA.(2) Operating Requirements

P.III.XA.(2)(a) Hours of Operation

The Permittee shall conduct OB operations, including cleanup, only between one half hour after sunrise and one half hour before sunset.

[KRS 224.46-530]

P.III.XA.(2)(b) Waste Processing Limits

- The total Net Explosive Weight (NEW) treated in each pan during each event shall not exceed 2,500 lbs.
- The Permittee shall conduct no more than three OB events during each day.
- The total Net Explosive Weight treated during a calendar year by OB operations shall not exceed 2,500,000 lbs.
- The Permittee shall remove any lead foil that can be safely removed before treatment at the OB units.

[40 CFR 264.601 as established in 401 KAR 39:090 Section 1, KRS 224.46-530(1)(g)]

P.III.XA.(2)(c) Operating Conditions

- Except as otherwise specified in this permit, the Permittee shall conduct OB operations in accordance with Process Information, Attachment D, and Procedures to Prevent Hazards, Attachment F.
- Any unburned propellant shall be treated during the next event. Instances in which unburned propellant are retreated (a “reburn”) shall be noted in the operating record.
- After each event, the Permittee shall inspect the burn pan, the burn pad, and the area surrounding the burn pad for residues or other debris. Any treatment residue that is in or around a burn pan shall be removed and placed into a suitable container as soon as the pan has cooled to a safe temperature. The Permittee shall not initiate another event in a pan until the pan has been cleared of treatment residue.
- Pans shall be fully covered as soon as feasible following the last burn event of the day and shall remain completely covered when not in use.
- Any water that accumulates in pans shall be placed into DOT-approved containers. The Permittee shall make a waste determination and manage appropriately.
- Route 117 within the boundary of the OB units shall be closed during treatment operations in accordance with the application.

[40 CFR 264.601 as established in 401 KAR 39:090 Section 1, KRS 224.46-530(1)(g)]

P.III.XA.(2)(d) Meteorological Restrictions

The Permittee shall not initiate OB operations when any of the following meteorological conditions exists, or is forecasted by the National Weather Service or WebPuff to occur during the period of operations:

- Surface average wind speeds less than 3 miles per hour or greater than 20 mph (with gusts less than 30 mph)
- Winds blowing from 300 degrees clockwise to 65 degrees, where north is 360 degrees
- Electrical storms, thunderstorms, or a probability of 50 percent or greater of electrical storms or thunderstorms
- Lightning within 20 miles of BGAD
- Precipitation or a probability of precipitation of 75 percent or greater
- Visibility less than 1 mile
- Cloud cover greater than 80 percent or cloud ceiling less than 2,000 feet.

In addition, the Permittee shall comply with Department of Defense (DoD) standards for humidity restrictions.

[40 CFR 264.601 as established in 401 KAR 39:090 Section 1, KRS 224.46-530(1)(g)]

P.III.XA.(3) Inspections

The Permittee shall conduct inspections of the OB unit in accordance with Procedures to Prevent Hazards, Attachment F, except as specified below:

- After each event, the Permittee shall conduct an inspection of each unit as specified in Condition P.III.XA.(2)(c).
- After the last burn event of the day, the Permittee shall inspect the area within the Daily Inspection Limits, as shown in Figure E-2b in Appendix B of this permit, for burn residues or other debris.
- The Permittee shall inspect the area within the Limits of the Open Burn Permit Area twice each year, once in July and once in December. If treatment residues are found beyond the Limits of the Open Burn Permit Area, the occurrence shall be documented with photographs prior to removal, and reported to the Manager within 7 days.
- At least 7 days prior to conducting a semi-annual inspection, the Permittee shall notify the Division of the date on which the Permittee intends to conduct the inspection.

[40 CFR 264.602 as established in 401 KAR 39:090 Section 1]

P.III.XA.(4) Maintenance

Maintenance shall be conducted in accordance with Process Information, Attachment D, and Procedures to Prevent Hazards, Attachment F.

[40 CFR 264.601 as established in 401 KAR 39:090 Section 1]

P.III.XA.(5) Environmental Releases

- The Permittee shall operate the OB units to prevent an unpermitted environmental release of hazardous waste or hazardous waste constituents.
- An environmental release from the OB units shall include but is not limited to the following:
  - The discharge of visible emissions beyond the property line of Blue Grass Army Depot (BGAD).
  - The dispersal or discharge of debris or ash beyond the Limits of the Open Burn Permit Area as shown in Figure E-2b in Appendix B of this permit.
- The Permittee shall report an environmental release in accordance with P.III.E.(7).
- The confirmed detection of an environmental release that may threaten human health or the environment shall require activation of the Contingency Plan, Attachment G of the OB/OD Permit Application.

[401 KAR 39:090 Section 1, KRS 224.1-400(1)(b), KRS 224.1-400(4)]

P.III.XB. MISCELLANEOUS UNIT: OPEN DETONATION/BURIED DETONATION

P.III.XB.(1) General Requirements

The Permittee shall operate and maintain the OD unit in a manner that ensures protection of human health and the environment, and as specified in Process Information, Attachment D, and Procedures to Prevent Hazards, Attachment F.

[40 CFR 264.601 as established in 401 KAR 39:090 Section 1]

P.III.XB.(2) Operating Requirements

P.III.XB.(2)(a) Hours of Operation

The Permittee shall conduct OD operations, including cleanup, only between one half hour after sunrise and one half hour before sunset.

[KRS 224.46-530]

P.III.XB.(2)(b) Waste Processing Limits

- A maximum of 30 pits shall be used in OD/BD operations.
- The total Net Explosive Weight (NEW), including donor charges, that is treated in each pit during each buried detonation event shall not exceed 100 lbs.
- The Permittee shall conduct no more than three open/buried detonation events during each day.
- The total Net Explosive Weight treated during a calendar year shall not exceed 1,500,000 lbs.
- The total NEW for a surface detonation shall not exceed 20 lbs. (combined donor charge and Waste Military Munition (WMM)).
- The total weight of lead and lead compounds in the energetic compounds (excluding inert materials) treated by OD/BD shall not exceed 1,400 lbs. per calendar year.
- The number of Delay Assembly F/155MM HERA, National Stock Number 1320-01-054-5121, units treated by OD/BD annually shall not exceed 1,000.

[40 CFR 264.601 as established in 401 KAR 39:090 Section 1, KRS 224.46-530(1)(g)]

P.III.XB.(2)(c) Operating Conditions

- The Permittee shall conduct OD/BD operations in accordance with Process Information, Attachment D, and Procedures to Prevent Hazards, Attachment F, except as otherwise specified in this permit.
- All demilitarization activities for the OB/BD unit shall occur in pits, except for treatment of unexploded ordinance (UXO) that are deemed unsafe to move in accordance with Section D-8a(2)(c)(iii) in Attachment D, Process Information.
- The Permittee shall maintain at least three feet of soil between the bottom of each pit and bedrock. To maintain such a layer, the Permittee shall add soil to the OD/BD unit as needed. If a pit does not meet this requirement, the Permittee shall discontinue use of that pit until adequate soil is added.
- For detonations in which the Net Explosive Weight (NEW) in a pit exceeds 20 lbs., the Permittee shall cover the munition(s) in the pit with at least six feet of soil.
- From the time that the first detonation in an event is initiated to the time at which the plume created by the last detonation in an event is no longer visible, at least three personnel ("Observers") shall watch movement of plumes resulting from detonations. The Observers shall be positioned so that they are able to observe when a plume has crossed the BGAD fence line.
- If an Observer determines that a plume has crossed the fence line, the Observer shall immediately contact the operational Supervisor or the Supervisor's alternate. The Permittee shall immediately cease OD/BD operations until the best available meteorological data complies with the meteorological restrictions listed in P.III.XB.(2)(d).

[40 CFR 264.601 as established in 401 KAR 39:090 Section 1, KRS 224.46-530(1)(g)]

P.III.XB.(2)(d) Meteorological Restrictions

The Permittee shall not initiate OD operations when any of the following meteorological conditions exists, or is forecasted by the National Weather Service or WebPuff to occur during the period of operations:

- Surface average wind speeds less than 3 miles per hour or greater than 20 mph (with gusts less than 30 mph)
- Winds blowing from 300 degrees clockwise to 65 degrees, where north is 360 degrees
- Electrical storms, thunderstorms, or a probability of 50 percent or greater of electrical storms or thunderstorms
- Precipitation or a probability of precipitation of 75 percent or greater
- Visibility less than 5 miles
- Cloud cover greater than 80 percent or cloud ceiling less than 2,000 feet

[40 CFR 264.601 as established in 401 KAR 39:090 Section 1, KRS 224.46-530(1)(g)]

P.III.XB.(3) Inspections

The Permittee shall conduct inspections of the OD unit in accordance with Procedures to Prevent Hazards, Attachment F, except as otherwise specified below:

- At the end of each operational day, the Permittee shall inspect the area within the Daily Inspection Limit to ensure that any unexploded items, shrapnel, or other debris are discovered and removed or otherwise managed in accordance with Section D-8a(2)(c)(ii) of the Permit Application.
- The Permittee shall inspect the area within the Semi-annual Inspection Limit during the month of July to ensure that any unexploded items, shrapnel, or other debris are discovered and removed or otherwise managed in accordance with Section D-8a(2)(c)(ii) of the Permit Application.
- The Permittee shall inspect the area within the Annual Inspection Limit during the month of December to ensure that any unexploded items, shrapnel, or other debris are discovered and removed or otherwise managed in accordance with Section D-8a(2)(c)(ii) of the Permit Application. If unexploded items, shrapnel, or other debris are found beyond the Limits of the Open Detonation Permit Area, the occurrence shall be documented with photographs prior to removal, and reported to the Manager within 7 days. Upon the Division's approval of Compliance Schedule Item 8, the Permittee shall follow the provisions of the Management Plan for Materials Ejected Beyond the Open Detonation Unit Boundary.
- At least 7 days prior to conducting a semi-annual or annual inspection, the Permittee shall notify the Division of the date on which the Permittee intends to conduct the inspection.
- The Permittee shall inspect erosion control structures prior to the start of each OD operational season and after any one inch or greater rainfall event.

[40 CFR 264.602 as established in 401 KAR 39:090 Section 1]

P.III.XB.(4) Maintenance

- Maintenance shall be conducted in accordance with Process Information, Attachment D, and Procedures to Prevent Hazards, Attachment F, except as otherwise specified in this permit.
- The erosion control barriers shall be maintained as described in Process Information, Attachment D, unless they are modified as part of the Sediment Control Plan required by the Compliance Schedule, Appendix A.

[40 CFR 264.601 as established in 401 KAR 39:090 Section 1]

P.III.XB.(5) Environmental Releases

- The Permittee shall operate the OD unit to prevent an unpermitted environmental release of hazardous waste or hazardous waste constituents.
- An environmental release from the OD unit shall include but is not limited to the following:
  - The discharge of visible emissions beyond the property line of Blue Grass Army Depot (BGAD)
  - The dispersal or discharge of shrapnel, debris, or ash beyond the Limit of the Open Detonation Permit Area of the OD/BD unit as shown in Figure E-2a in Appendix B of this permit
- The Permittee shall report an environmental release in accordance with P.III.E.(7).
- The confirmed detection of an environmental release that may threaten human health or the environment shall require activation of the Contingency Plan, Attachment G.

[401 KAR 39:090 Section 1, KRS 224.1-400(1)(b), KRS 224.1-400(4)]

P.III.Y. **(RESERVED)**
P.III.Z. **(RESERVED)**

P.III.AA. AIR EMISSION STANDARDS FOR PROCESS VENTS

See Entire Facility Section

P.III.BB. AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS

See Entire Facility Section

P.III.CC. AIR EMISSION STANDARDS FOR TANKS, SURFACE IMPOUNDMENTS AND CONTAINERS

See Entire Facility Section

P.III.DD. CONTAINMENT BUILDINGS **(RESERVED)**
P.III.EE. HAZARDOUS WASTE MUNITIONS AND EXPLOSIVES STORAGE **(RESERVED)**

PART IV
CORRECTIVE ACTION FOR SWMUS AND AOCS

See Entire Facility Section

PART V
REFERENCED ATTACHMENTS

P.V.A. Attachment A, Part A (Open Burning and Open/Buried Detonation)

Part A of the Permit Application is incorporated as Attachment A of this permit.

[KRS 224.46-530]

P.V.B. Attachment B, Facility Description (Open Burning and Open/Buried Detonation)

Part B of the Permit Application, Facility Description, is incorporated as Attachment B of this permit.

[KRS 224.46-530]

P.V.C. Attachment C, Waste Analysis Plan (Open Burning and Open/Buried Detonation)

Part C of the Permit Application, Waste Analysis Plan, is incorporated as Attachment C of this permit.

[KRS 224.46-530]

P.V.D. Attachment D, Process Information (Open Burning and Open/Buried Detonation)

Part D of the Permit Application, Process Information, is incorporated as Attachment D of this permit.

[KRS 224.46-530]

P.V.E. Attachment E, Protection of Groundwater, Environmental Performance Standards, and Information Requirements for Solid Waste Management Units (Open Burning and Open/Buried Detonation)

Part E of the Permit Application, Protection of Groundwater, Environmental Performance Standards, and Information Requirements for Solid Waste Management Units, is incorporated as Attachment E of this permit.

[KRS 224.46-530]

P.V.F. Attachment F, Procedures to Prevent Hazards (Open Burning and Open/Buried Detonation)

Part F of the Permit Application, Procedure to Prevent Hazards, is incorporated as Attachment F of this permit.

[KRS 224.46-530]

P.V.G. Attachment G, Contingency Plan (Open Burning and Open/Buried Detonation)

Part G of the Permit Application, Facility Contingency Plan, is incorporated as Attachment G of this permit.

[KRS 224.46-530]

P.V.H. Attachment H, Personnel Training (Open Burning and Open/Buried Detonation)

Part H of the Permit Application, Facility Personnel Training, is incorporated as Attachment H of this permit.

[KRS 224.46-530]

P.V.I. Attachment I, Closure Plans, Post Closure Plans, and Financial Requirements (Open Burning and Open/Buried Detonation)

Part I of the Permit Application, Closure Plans, Post Closure Plans, and Financial Requirements, is incorporated as Attachment I of this permit.

[KRS 224.46-530]

P.V.J. Attachment J, Other Federal Laws (Open Burning and Open/Buried Detonation)

Part J of the Permit Application, Other Federal Laws, is incorporated as Attachment J of this permit.

[KRS 224.46-530]

P.V.K. Attachment K, Waste Minimization (Open Burning and Open/Buried Detonation)

Part K of the Permit Application, Facility Waste Minimization Program, is incorporated as Attachment K of this permit.

[KRS 224.46-530]

P.V.L. Attachment L, Signatures (Open Burning and Open/Buried Detonation)

Part L of the Permit Application, Permittee Signatures, is incorporated as Attachment L of this permit.

[KRS 224.46-530]

P.V.M. Attachment M, Air Modeling and Risk Assessment (Open Burning, Open/Buried Detonation, and Controlled Detonation Chamber)

Volume II of the Permit Application, titled *Air Modeling and Risk Assessment for the Open Burning Unit, Open Detonation/Buried Detonation Unit, and Controlled Detonation Chamber*, is incorporated as Attachment M of this permit.

[KRS 224.46-530]

PART VI
WASTE MINIMIZATION

See Entire Facility Section

Appendix A – Compliance Schedule for OB/OD Permit

1. Submit to the Division Biennial **Re-evaluations of Alternative Technologies to Open Burning and Open Detonation**.
    a. The Permittee shall submit a Report on the Re-evaluation of Alternative Technologies. The first Report shall be due on November 1, 2020. Subsequent Reports shall be due on November 1 of every second year thereafter.
    b. The Report shall include:
        i. A reevaluation of technologies that BGAD previously rejected
        ii. An evaluation of new or enhanced technologies with an emphasis on alternative technologies that are being used, are being considered, or are scheduled to be implemented at other Department of Defense demilitarization installations, with an analysis of the feasibility of either implementing the technologies at BGAD or shipping suitable munitions to other installations for demilitarization.
        iii. An evaluation of all of the recommendations in the latest National Academies of Science, Engineering, and Medicine report on Alternative Technologies
        iv. A proposed implementation schedule for selected technologies.

2. Submit to the Division a **Groundwater Monitoring Plan for the OB Unit**.
    a. The Permittee shall submit the Plan by November 1, 2019.
    b. The Plan shall include installation and periodic sampling of groundwater monitoring wells that are capable of determining whether OB activities result in significant impacts upon groundwater.
    c. The Permittee shall respond to any comments from the Division within 90 days.
    d. The Permittee shall implement the Plan no later than 180 days after the Division approves the Plan.
    e. Any required reports shall be submitted in accordance with the approved implementation schedule.

3. Submit to the Division **Revisions to the Groundwater Monitoring Plan for the OD Unit**.
    a. The Permittee shall submit the revisions by May 1, 2019.
    b. The Plan shall include the following:
        i. Installation of a background well or acceptable alternative
        ii. Proposal for a statistical method that includes use of the background data
        iii. An implementation schedule
    c. The Permittee shall respond to any comments from the Division within 90 days.
    d. The Permittee shall implement the Plan no later than 180 days after the Division approves the Plan.
    e. Any required reports shall be submitted in accordance with the implementation schedule.

4. Submit to the Division a **Sediment Control Plan for the OD Unit**.
    a. The Permittee shall submit the Plan by March 1, 2020.
    b. The Plan shall include the following details of a Sediment Control System:
        i. Run-on controls, such as berms or ditches, that are of sufficient size to prevent run-on and that are upgradient of the OD area, as shown in Figure E-2a in Appendix B of this permit,
        ii. Run-off controls, such as berms, ditches, and retention ponds, that are of sufficient size to control sediment run-off downgradient of the OD area,
        iii. A run-off collection system and a plan to conduct periodic analyses of run-off to determine whether the run-off collection system adequately prevents releases of hazardous constituents to Muddy Creek or its unnamed tributaries,
        iv. An implementation schedule.
    c. The Permittee shall respond to any comments from the Division within 90 days.

d. The Permittee shall implement the Plan no later than 180 days after the Division approves the Plan.
e. Any required reports shall be submitted in accordance with the approved implementation schedule.

5. Submit to the Division a **Soil Sampling and Analysis Plan for the OD Unit**.
   a. The Permittee shall submit the Plan by January 1, 2020.
   b. The Plan shall include sufficient sampling density to determine whether or not there are ongoing significant impacts upon soil from OD activities, including comparison to previous soil sampling events.
   c. The sampling plan shall include a determination of particle size distribution, including fractions of soil particles that have diameters of 10 micrometers (µm) (i.e. PM_{10}), 2.5 µm (i.e. $PM_{2.5}$), and 1 µm.
   d. The Permittee shall respond to any comments from the Division within 90 days.
   e. The Permittee shall implement the Plan and submit a final report no later than 270 days after the Division approves the Plan.

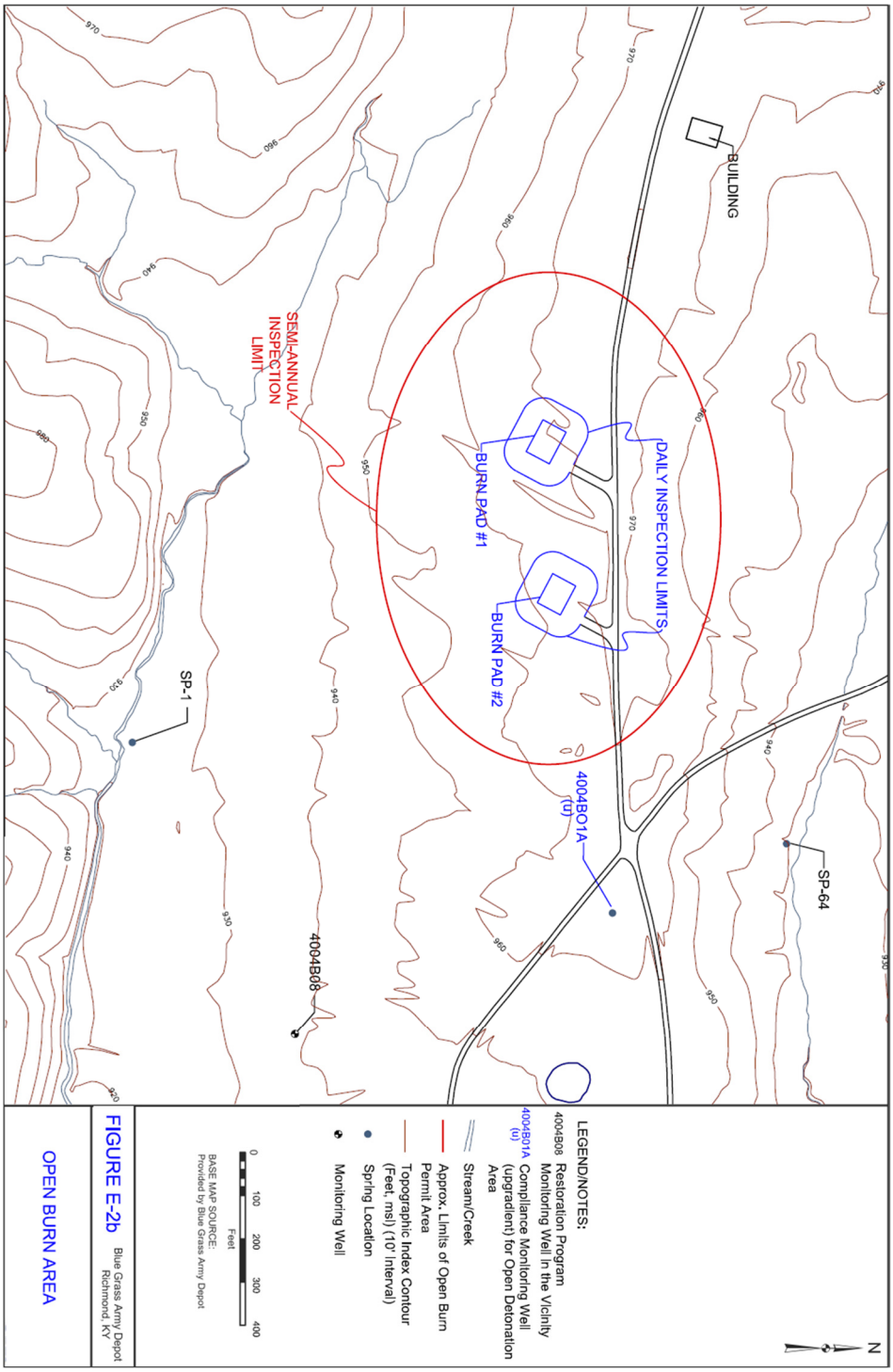
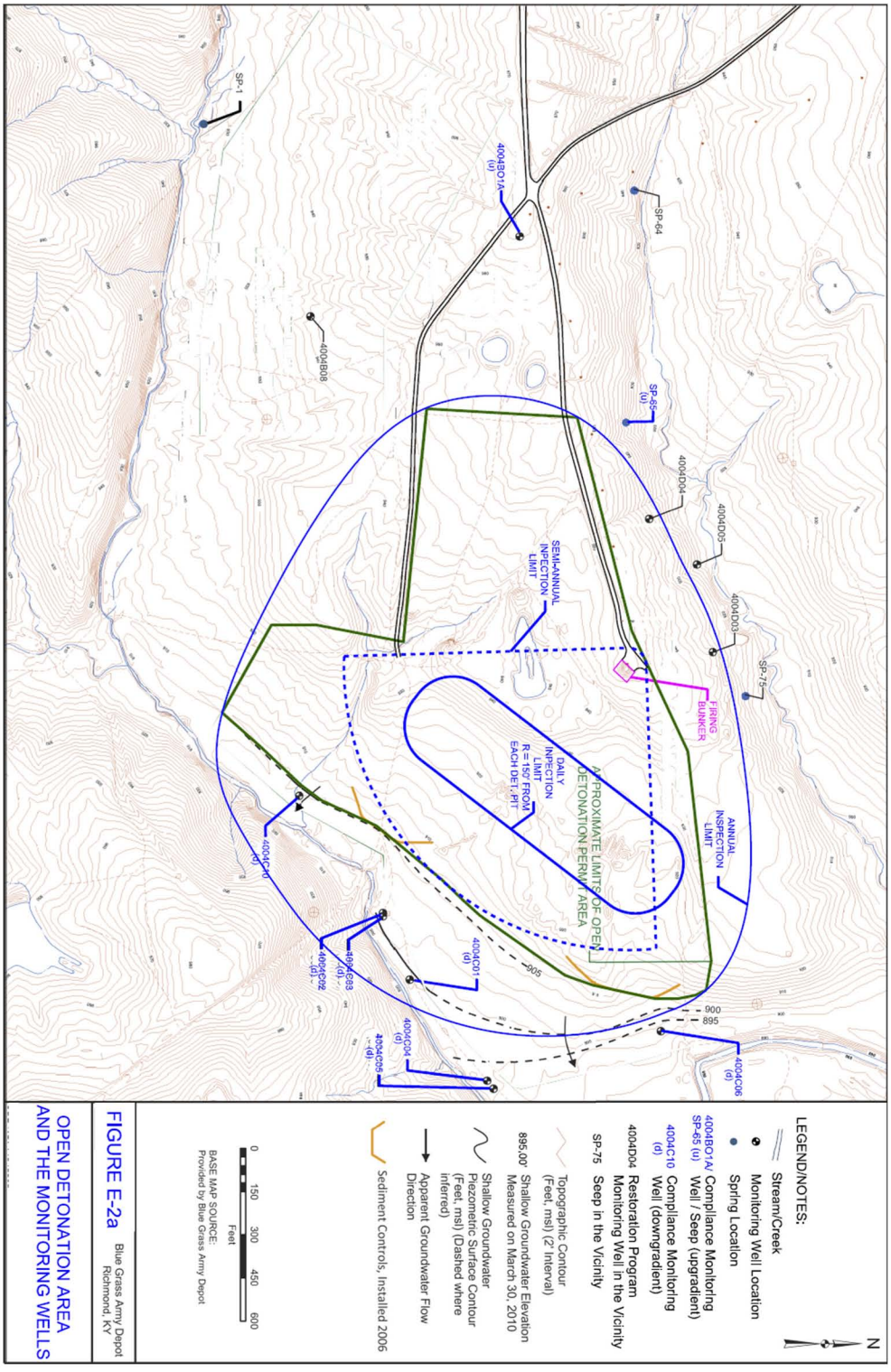
6. Submit to the Division an **Evaluation of Risk and Hazard Due to Arsenic Dispersed by Open Detonation Operations**.
   a. The Permittee shall submit the Evaluation no later than 90 days after the final report in Compliance Schedule Item 5 is submitted to the Division.
   b. The Permittee shall estimate risk and hazard posed to human receptors by air inhalation of soil-bound arsenic that is dispersed by open detonation.
   c. The Evaluation shall be based on site-specific parameters, including particle size distribution, soil-bound arsenic concentration, and exposure frequency.
   d. If the estimated risk or hazard exceeds regulatory thresholds, then the Permittee shall take interim action to modify OD operations to reduce risk to acceptable levels.

7. Submit to the Division **Documentation that Permanent Markers have been placed** to readily identify the OB and OD unit boundaries in the field.
   a. Documentation shall be submitted by July 1, 2019.

8. Submit to the Division a **Management Plan for Materials Ejected Beyond the Open Detonation Unit Boundary**.
   a. The Permittee shall submit the Plan by November 1, 2019.
   b. The Plan shall include methods for managing the following:
      i. Rounds, shrapnel, or other materials that are ejected from the OD pits and that land outside of the unit boundary as defined in Figure E-2a in Appendix B of this permit,
      ii. Any munition-related materials that are found outside of the unit boundary.
   c. The plan shall specify inspection frequency, inspection limits, and removal and notification procedures.

Appendix B – Open Burn and Open Burn Detonation Unit Boundaries

Open Burn Unit Boundaries



Open Detonation/Buried Detonation Unit Boundaries