

Kentucky Department for Environmental Protection (KDEP), Division of Waste Management

Response to Comments on the Draft Open Burning / Open Detonation (OB/OD) Permit,

Blue Grass Army Depot

November 13, 2018

KDEP received comments from four sources:

1. Dr. Tom Reed, Concerned Citizen, written and oral comments
2. Craig Williams, Kentucky Environmental Foundation / Cease Fire Campaign
3. Laura Olah, Cease Fire Campaign
4. Blue Grass Army Depot

Comment items are numbered; KDEP's responses are in italics. Some comments have been summarized or grouped for clarity and to reduce repetition.

Comments From Dr. Tom Reed:

1. Dr. Reed expressed a concern about the instrumentation and systems that we have to detect harmful substances. He stated that right now, what we know about cancer and all kinds of human illness, we just realized that in recent years, for example if we look at particularly the number of chemicals that we find in our bodies now. Some of the Studies were done that said...to anybody today there are chemicals in our bodies that simply were not in the bodies of our grandparents. We have been experiencing such a tremendous boon in our scientific production that our understanding and methodology for detecting this in order to prevent it before the disease is hit and the deaths hit is my concern.

BGAD is monitoring the groundwater and soils around the OD unit. This permit requires BGAD to install groundwater monitoring around the OB unit. Emitted pollutants should appear in these sample analyses. BGAD has also produced a Human Health Risk Assessment (HHRA) and Air dispersion modeling. Any harmful substances that exceed accepted levels in the samples, or exceedances in the modeling are dealt with through permitting conditions (as are lead and chromium). The chemistries of the items demilitarized at BGAD's OB/OD units are documented and understood. Many items are forbidden to be treated at these units. Furthermore, local meteorological conditions are monitored at the time of the detonations and burns. Spotters are located around the boundary of the Demo Grounds (OB/OD unit) to stop activities if a plume should begin to migrate beyond the border of the Depot. KDEP believes this is sufficiently protective of human health and the environment.

2. Somehow, the Richmond Register failed to get the meeting posted on their community calendar the previous week. Partially due to this lack of notice, I believe that community involvement and input has been severely limited. I think the August 8th meeting should be a first, not final, public hearing.

The Public Meeting and Public Hearing were advertised in the Lexington Herald-Leader, the Richmond Register, and the Berea Citizen. Public Service Announcements were distributed for broadcast on both WCYO-FM and WVLK-FM. The Division of Waste Management maintains an email list and a mailing list of citizens who are concerned with issues related to the Blue Grass Army Depot and have signed up. Emails and letters were sent to persons on the lists. These

letters included a public notice of the public meeting and the public hearing and a fact sheet. This exceeded the regulatory requirement for advertising the Public Hearing.

3. Due to the time limits and inadequate notice, no one, including myself, thought to ask specifically about pretests or to solicit and hear opinions of independent experts. Since community safety is at risk and adequate information is essential, I strongly suggest that any pretest evidence be made easily available, and that residents and experts be given time to learn the facts.

The notices for this draft permit exceeded the regulatory requirements for advertising the proposed action. This operation has occurred almost continuously since 1944, so this is not a new activity. In addition, two citizens groups have submitted comprehensive comments and objections to the proposed OB/OD permit. KDEP acknowledges that there are continuing studies regarding OB/OD operations and alternative technologies; however the permit has requirements that require periodic reevaluation of alternative technologies, so new information can be incorporated into the permit at that time.

4. The meetings of years ago were well attended, including one on EKU's campus that was packed. During those previous hearings, I heard that all of Kentucky's state and federal representatives opposed the old plan of burning. After adequate consideration, it was set aside and a new, safer method was later approved.

The above referenced meeting appears to be concerning the Chemical Demilitarization project at the Blue Grass Chemical Agent-Disposal Pilot Plant (BGCAPP). The "old plan of burning" was probably incineration. That project is totally unrelated to OB/OD. In fact, chemical agents are expressly forbidden to be treated by OB/OD (Condition P.III.A.3).

5. These basic processes of democratic governance are necessary in order for any citizen to make adequately informed and morally responsible judgments. My concern stems primarily from extensive knowledge of our government's past flaws and missteps. Substantial data show that—by our own and international standards—our government's record is, at best, questionable. Unfortunately, in the use, storage, transportation, and destruction of nuclear, biological, and chemical weapons, substantial risks have been ignored or minimized.

Noted. The permit prohibits the treatment of all nuclear, biological, or chemical weapons at the OB/OD site (Condition P.III.A.3).

6. During one meeting years ago, a highly knowledgeable opponent of open burn cited data on specific toxic elements that would be released into the air and wind. At the meeting, I expressed similar concerns about whether released substances could be contained within the local boundaries that were established. This concern reflects documented failures of proper caution by our government.

KDEP is unaware of the referenced public meeting about open burning at BGAD. Perhaps the referenced meeting was about the early Army plans to incinerate chemical munitions. Again, this is unrelated to the OB/OD permit for the destruction of conventional munitions at the OB/OD sites.

Every effort is being made to ensure that the plume does not leave depot property until it has adequately dispersed. The permit requires spotters (P.III.XB.(2)(c)) and prohibits OB/OD when the wind is blowing in a southerly direction (P.III.XB.(2)(d) and P.III.XA.(2)(d)).

7. In particular, see the illustrated map of the United States in Gallagher (1993, American Ground Zero, p. ix) showing vast areas of our county that were affected by fallout from nuclear testing during the Cold War. Facts about this fallout risk were kept secret for decades. More recently, there is evidence of the EPA's initial statements that denied risks from toxic fallout from the 11 September 2001 attack on New York. Later reports showed considerable harm to health and loss of life that probably could have been reduced, if valid information and protective equipment had been provided. I encourage everyone to read Moreno's (2001) book *Undue Risk* that grew out of his work as a medical officer in the Pentagon. He documented repeated risks in the U.S. associated with radiological, chemical, and biological weapons. This work is relevant, since it is generally accepted that the best predictor of an organization's or government's behavior is the pattern of its past practices, not its political promises or claims.

Noted. No nuclear, chemical, or biological weapons can be treated at OB/OD (Condition P.III.A.3).

8. I ask that all relevant data be studied, serious efforts at risk assessment be undertaken, and alternate methods of disposal explored, before this process begins. Clearly, the stakes are extremely high: The key issue is not simply about environmental protection, but also the human right to live a normal life that is not in the constant shadow of unexamined risks.

The Human Health Risk Assessment and Air Dispersion Modeling performed by BGAD has been approved after extensive review and discussion with KDEP. Further, there is a provision in the permit compliance schedule (item #1 in Appendix A) that requires BGAD to re-evaluate alternative technologies for OB/OD every two years.

Comments From Kentucky Environmental Foundation (KEF):

1. KEF recognizes that BGAD cannot unilaterally abandon its OB/OD practice without authority provided via AMC/JMC as they are the command authority under which BGAD operates. However, KEF requests its concerns associated with the OB/OD process via these and *Cease Fire's* comments will be communicated up the chain-of-command to AMC/JMC. KEF also recognizes that alternatives to OB/OD exist and are being used throughout the world and at certain U.S. bases and urges BGAD and KDEP to advocate strongly for their incorporation at the BGAD.

These comments and responses are part of the administrative record, and are provided to BGAD for their awareness. The Application has a section on Alternative Technologies. A number of technologies are examined and ruled out. Most alternate technologies are designed for a specific munition or family of munitions. BGAD has shown that no current technologies are as safe and have sufficient throughput to entirely replace OB/OD at this time. Please note that this permit (item #1 in Appendix A) requires BGAD to re-evaluate alternate technologies every two

years. The permit also requires the Army to evaluate the soon-to-be released (in 2019) study by the National Academies of Science on alternative technologies.

2. KEF also recognizes the benefits associated with KDEP moving forward via a hazardous waste permit when previously the OB/OD operations went on for decades under an interim permit. The permit under consideration will provide KDEP with increased oversight and enforcement capabilities and require stricter operating parameters to be complied with by BGAD. However, for reasons cited in the comments provided by *Cease Fire*, along with those to follow below, KEF objects to the practice of OB/OD at the Blue Grass Army Depot based on public health and ecological impacts associated with this practice.

Comment noted.

3. Included in P.III.A.(1) are the following heavy metals which cannot be destroyed via high temperature or deflagration: D004 Arsenic - D005 Barium - D006 Cadmium - D007 Chromium - D008 Lead - D009 Mercury D010 Selenium - D011 Silver. All these elements can be routinely released into the atmosphere via OB/OD depending on the concentrations of each within a given waste stream. Since there is no air monitoring associated with the OB/OD activities other than visual sighting of a plume, the release of these materials, accumulating within and outside the Depot boundary present unknown but possibly significant risk to the Depot workers as well as the public.

BGAD has conducted a Human Health Risk Assessment (HHRA) and Air Dispersion Modeling. Groundwater sampling, soil sampling, meteorological restrictions, munitions restrictions, and the modeling are the best tools available at this time.

Permit Changed: Arsenic and Selenium have been removed from the permitted waste streams in Section P.III.A.(1).

4. Section P.III.C.(1) addresses “unplanned” releases “which could threaten human health or the environment.” Throughout Section P.III.C there exists no method to determine concentrations of hazardous waste that could result in such threats beyond extrapolation based on waste constituents (which can vary at the manufacturing level from lot to lot), and, “the discharge of visible emissions” as described in Section P.III.XA.(5). In addition, Section P.III.(6)(e) the Emergency Coordinator is tasked with identifying “the character...amount...and areal extent of any released material” Again, this requirement refers only to unplanned event. It is impossible for the Emergency Coordinator (or anyone else) to identify any of the identified constituents associated with an unplanned event. Worse yet, no data is collected during routine practices that can certify compliance with any emissions standards.

The permit requires BGAD to conduct periodic groundwater sampling. BGAD must also keep an operating record (Section P.III.E.(3)), that is subject to periodic inspection by KDEP personnel. As noted above, groundwater sampling, soil sampling, meteorological restrictions, munitions restrictions, and the modeling are the best tools that are available at this time.

5. Alternative disposal technologies exist for the OB/OD materials identified in the DRAFT. Examples include:

- Explosive Detonation Technology

- Super Critical Water Oxidation
- Solvated Electron Technology
- *Gas Phase Chemical Reduction*
- Chemical Treatment
- ArcTech
- Molten Salt Process
- Others presented to the NAS Committee on Alternative Disposal Methods for Conventional Weapons.

Alternative technologies were evaluated in the permit application. In addition, Item #1 in Appendix A to the permit requires a biennial review of alternative technologies, to include “an evaluation of all of the recommendations in the latest National Academies of Science, Engineering, and Medicine report on Alternative Technologies.”

6. To emphasize the fundamental shortcoming of the OB/OD practice, which results in the conclusion that any permit issued by KDEP can claim to be protective of the public health and the environment, falls short of that objective as there is no air monitoring taking place with this OB/OD practice. Without tools to accurately identify and measure the quantity of pollutants entering the atmosphere, the position that, even under the enhanced restrictions and oversight provided in the DRAFT, it is speculative at best that the OB/OD practice is indeed protective.

The permit-required soil sampling (Appendix A, Compliance Schedule Item #5), water sampling (Condition P.III.F), meteorological restrictions (Conditions P.III.XA.(2)(d) and P.III.XB.(2)(d)), prohibited munition chemistries (Condition P.III.A.(3)), and modeling (Air Dispersion and Human Health Risk Assessment) are the best tools available at this time.

7. Therefore, based on these comments and those included by reference submitted by *Cease Fire*, KEF opposes the ongoing practice of OB/OD at the Blue Grass Army Depot and urges KDEP to work with the Depot, AMC, JMC, EPA and others to deploy safer, more protective methods of disposal for conventional munitions and associated materials.

Comment noted. Permit compliance schedule item #1 in Appendix A to the permit requires a biennial review of alternative technologies, to include “an evaluation of all of the recommendations in the latest National Academies of Science, Engineering, and Medicine report on Alternative Technologies.”

Comments From Cease Fire Campaign

1. By this letter, the Cease Fire Campaign objects to the continued open air burning and detonation of hazardous and mixed wastes at Blue Grass Army Depot based on the availability of safer advanced alternatives, the excessive risk to human health and the environment, a noncompliance with federal and state law requiring the implementation of available safer advanced treatment methods.

Only military munitions that are not on the prohibited list (Condition P.III.A.3) can be treated at the OB/OD sites at BGAD. Alternative technologies are required to be evaluated by Appendix A, Compliance Schedule #1.

2. By definition, open burning and detonation result in the uncontrolled release of toxic pollutants to the environment. These toxic emissions endanger public health by contaminating air, groundwater and soils near these operations. Onsite men and women are often the most exposed to these toxic pollutants, along with nearby communities. Across the country, hundreds of communities and thousands of military personnel have felt the adverse effects of these toxic pollutants.

The public does not have access to the OB/OD grounds. The only people exposed to the immediate area are BGAD employees and regulators. Please note that during OB/OD operations, there is an exclusion zone where entry is barred around the OB/OD range, even for non-essential BGAD employees.

3. According to the provided documents, open burning at the Blue Grass Army Depot will result in the uncontrolled release of persistent toxic pollutants such as perchlorate to the surrounding environment. As the State is aware, perchlorate is highly soluble in water, and relatively stable and mobile in surface and subsurface aqueous systems. As a result, perchlorate plumes in groundwater can be extensive (ITRC, 2005). For example, the perchlorate plume at a former safety flare manufacturing site (the Olin Flare Facility) in Morgan Hill, California, extends 10 miles (Cal/EPA, 2016). Moreover, perchlorate released directly to the atmosphere is expected to readily settle through wet or dry deposition (ATSDR, 2008).

Ammonium perchlorate is a major component of composite rocket motors, and is probably responsible for the noted plumes. Condition P.III.A.(3) prohibits the treatment, by either OB or OD, of munitions or wastes that contain ammonium perchlorates. The only perchlorate involved at BGAD is very small amounts of potassium perchlorate in the igniters and fuses of a few munitions. In addition, perchlorates have been, and will continue to be monitored at the OB/OD sites (Condition P.III.F.(2)(c), Table F2).

4. Like perchlorate, lead emissions pose a serious health risk particularly to children. Recent research has shown that lead is toxic in children at extremely low levels (10-15 µg/dl). The routes of entry of lead into the body are ingestion (eating paint chips or soil) or inhalation of lead dust (LDEQ, 2003). Even at lower levels of exposure, lead is now known to produce a spectrum of injury across multiple body systems. In particular lead can affect children's brain development resulting in reduced intelligence quotient, behavioral changes such as reduced attention span and increased antisocial behavior, and reduced educational attainment. Lead exposure also causes anemia, hypertension, renal impairment, immunotoxicity and toxicity to the reproductive organs. The neurological and behavioral effects of lead are believed to be irreversible. In fact, there is no known safe blood lead concentration. (WHO, 2018).

KDEP agrees that lead is a concern at the OB/OD sites. Lead and lead compounds occur in both explosives and propellants and cannot be completely eliminated from OB and OD. This has been a major focus of the review process for the permit. The permit limits the amount of lead that is processed at both the OB and the OD sites (see Condition P.III.E.(3)(b)). Lead is monitored in the groundwater and soils around these sites. The HHRA and Air Dispersion Modeling have both indicated that with the proposed restrictions, the lead levels should be kept below unacceptable levels.

5. In the past 25 years, alternatives to the incineration of hazardous waste have emerged due to the work of communities, EPA, and the Department of Defense (DOD). These technologies are being used by the DOD to destroy energetics and chemical warfare agents and could be readily applied to conventional munitions and other types of hazardous waste.

The Application has a section on Alternative Technologies. A number of technologies are examined and ruled out. Most alternate technologies are designed for a specific munition or family of munitions. The application shows that there are no current technologies that are as safe and have sufficient throughput to replace OB/OD at this time.

This permit requires BGAD to re-evaluate alternate technologies every two years. Permit compliance schedule item #1 in Appendix A to the permit requires a biennial review of alternative technologies, to include "an evaluation of all of the recommendations in the latest National Academies of Science, Engineering, and Medicine report on Alternative Technologies."

6. Examples of these technologies include Gas Phase Chemical Reduction which uses hydrogen and heat to break down toxic chemicals into their basic components. Because hydrogen is used for the reduction reaction and no oxygen is present, no harmful chlorinated byproducts can be formed. This technology was used to destroy PCBs and obsolete pesticides in Australia. It was specifically developed for the Assembled Chemicals Weapons Destruction program.

This technology is not currently available at BGAD. This permit requires a biennial review of alternative technologies, as required by compliance schedule item #1 in Appendix A to the permit.

7. Supercritical Water Oxidation uses the unique forces of supercritical fluids to breakdown the chemical bonds which form munitions, propellants, and energetics. Supercritical Water Oxidation uses super pressurized, heated water to tear apart the chemical bonds in toxic organic compounds, breaking them down into basic components such as water, carbon dioxide, and nitrogen gas. The lower temperature (compared to combustion) and the high pressure of the water keep harmful byproducts from being formed.

BGAD is familiar with SCWO technology and has a unit under construction at this time, as part of the chemical demilitarization project at BGCAPP. This technology is not currently available for OB/OD.

8. There are several types of detonation chambers that can be used to safely destroy waste munitions. These detonation chambers are much safer than open burning or incineration because they hold and test the gases to ensure all the toxic components have been destroyed before releasing them. One kind of detonation chamber, the DAVINCH chamber, detonates explosives in a vacuum. Without the presence of oxygen, harmful products of incomplete combustion cannot be formed. Moreover, over the past 15 years the Department of Defense Explosives Safety Board has certified a number of technologies as safe for the destruction of hazardous wastes which are explosive. Those technologies are now in use by the Department of Defense and the private sector for the destruction of explosive hazardous waste. Not only do safer advanced technologies exist, their implementation is required by federal law. The operating language on open burning/open detonation of hazardous wastes which are waste explosives

is contained in Title 40, Section 266.382. "Open burning of hazardous waste is prohibited except for the open burning and detonation of waste explosives. Waste explosives include waste which has the potential to detonate and bulk military propellants which cannot safely be disposed of through other modes of treatment." In fact, the State of Kentucky has a similar mandate. Restrictions pertaining to open burning (401 KAR 63:005) allow for disposal of dangerous materials only if "no safe alternative is available". Therefore, we urge you to immediately end the indefensible practice of continued open air burning of hazardous waste in Kentucky in favor of safer non-thermal alternatives.

BGAD has a Controlled Destruction Chamber that is currently undergoing permit review. This chamber is appropriate for a few types of munitions, and the Army has plans to use it for those munitions, specifically uncontaminated rocket motors during the Chemical Demilitarization project.

Alternative Technologies, including those currently being implemented at other facilities, will be evaluated every two years for use at BGAD as required by compliance schedule item #1 in Appendix A of the permit.

9. The provided lists of known and potential munitions constituents and formulas by percentage are incomplete and should be amended. The applicant provides only generalized tables providing an abbreviated list of examples of "typical" or "common" munitions making it impossible to predict the full potential risks to human health and the environment.

The Blue Grass Army Depot has made available to KDEP detailed information about the chemistries of the munitions. That information has been used by KDEP to write the draft permit and check the air dispersion modeling and risk assessment.

10. Prohibited Wastes (Page D-2, C-12 and others). The list of prohibited wastes for treatment by OB/OD should include: (1) asbestos and (2) munitions wastes that are a potential source of PFAS (Per- and polyfluoroalkyl substances) emissions such as those containing fluoropolymers. For example, the draft permit lists Viton™ (page C-12) and Teflon™ (page C-15) which both contain PFAS. Moreover, there is no discussion or characterization of the thermal decomposition products of wastes containing PFAS and their corresponding fate and transport. The amount of PFAS may be significant. For example, LX-04 explosive contains 85% HMX and 15% Viton™. For these reasons, baseline and ongoing analysis should include comprehensive environmental testing (soils, groundwater, surface water, sediments, fish, etc.) for PFAS, many of which are persistent bioaccumulative toxins that are highly mobile in the environment.

Permit Changed: Asbestos and PFAS have been added to the prohibited items list (Condition P.III.A.(3)) in response to the comment. The list now prohibits:

- *Asbestos*
- *Munitions wastes that are a potential source of Per- and polyfluoroalkyl substances (PFAS), including Teflon, Viton, and Viton-A. This includes both short and long chain PFAS.*

11. Groundwater Analytes. Groundwater should be monitored for all six (6) isomers of DNT. In Wisconsin, the Groundwater Enforcement Standard for the summed total concentration of all six isomers of DNT is 0.05 µg/l. The significance of this approach (i.e. addressing DNT as a mixture) quickly became evident when a DNT groundwater contaminant plume emanating from a former Deterrent Burning Grounds at Badger Army Ammunition Plant was found to contain elevated levels of the four lesser DNT isomers in the absence of 2,4- and 2,6-DNT. As groundwater monitoring for chlorinated solvents TCE is recommended, 1,4-Dioxane should also be included in baseline and ongoing monitoring protocols.

P.III.F.(2)(c) (Groundwater Protection Standard) already includes TCE in Table F2.

Permit Changed: 1,4-dioxane (Method 8260) has been added to Table F2 in Section P.III.F.(2)(c) in response to the comment.

Kentucky has no equivalent standard regarding total dinitrotoluene (DNT). Kentucky follows the USEPA Regional Screening Level table per KRS 224.1-530. The USEPA Regional Screening Level Table includes standards for 2,4-DNT and 2,6-DNT but no other isomers.

It appears, after inspecting recent Badger Army Ammunition Plant groundwater data, that the likelihood of detecting 2,3-, 2,5-, 3,4-, and 3,5 isomers of DNT in the absence of 2,4- and 2,6- DNT is low. Using the Propellant Burning Grounds monitoring well group as a more realistic comparison to the Blue Grass Army Depot OB/OD area, there were 17 wells with detectable concentrations of DNT in them inclusive of the years 2016 and 2018 for a total of 31 independent samples. Of those 31 samples, only four of them had no detectable concentrations of 2,4- or 2,6-DNT in them.

12. Thresholds for Prohibited Wastes. The permit should establish thresholds for the amount of prohibited wastes that may be treated per annum on an “emergency” basis. Unfortunately, “emergency” OB/OD activities at some facilities have become routine in nature, resulting in significant unauthorized releases to the environment. A measurable threshold is recommended to discourage potential abuse of this privilege and minimize potential exposures and risks to workers, soldiers and the environment.

This permit does not address emergency OB/OD events. Those will be addressed on a case-by-case basis.

13. Waste minimization. The proposed number of OB/OD events per day, number of burn pans, etc. have not been shown to be necessary or even realistic given the required pre- and post-activities. Without further justification, these numbers can and should be significantly reduced.

The most restrictive limits placed on BGAD are the annual limits. This gives BGAD the flexibility to manage the munitions destruction at an acceptable throughput. The annual limits are acceptable amounts as determined by the risk assessment and air dispersion models.

14. Available but not operational alternatives (Page K-1 and others). Army states: “Although no longer operational, BGAD’s explosives washout facility is one example of the application of R3 principals to

reduce both the volume and toxicity of hazardous waste associated with the conventional munitions demilitarization operation. When operating, the washout facility was used to remove energetic materials from metal munitions casings. Millions of pounds of metal was recovered and recycled from the effort.” Revitalization of the washout facility, enclosed blast chamber and other waste reduction facilities and activities that are present on-site and/or are otherwise available to the Department of Defense should be prioritized and deployed.

The TNT washout facility at BGAD has been permanently taken out of service.

15. The selected OD site is problematic (Figure E2-A, Open Detonation Area). According to the provided map, surface water borders almost all sides of the OD area, making surface water runoff a likely route for contaminant transport and shallow groundwater moves from the OD area in multiple directions presumably discharging to adjacent surface water. This is of great concern given the existing and predicted release of highly mobile contaminants such as perchlorate. It also suggests that active remediation of groundwater will be difficult, if not impossible, as part of site closure.

This site has been used since the 1940’s. It is probably not prudent to require BGAD to construct (and potentially contaminate) a second site. In addition to current controls, the permit has a requirement for BGAD to submit a comprehensive sediment control plan to control runoff (compliance schedule item #4 in Appendix A of the permit).

16. The proclivity of perchlorate salts to be soluble in water makes it very mobile in the subsurface and can form extensive plumes in groundwater. For example, there is a perchlorate plume from an Olin plant in California that is more than 10 miles long. Such direct and indirect discharges via deposition of particulates, surface water run-off and via groundwater may be expected to constitute a discharge of pollutants to surface waters pursuant to the Clean Water Act.

Ammonium perchlorate is a major component of composite rocket motors, and is probably responsible for the noted plumes. Condition P.III.A.(3) prohibits the treatment, by either OB or OD, of munitions or wastes that contain ammonium perchlorates. The only perchlorate involved at BGAD is very small amounts of potassium perchlorate in the igniters and fuses of a few munitions. In addition, perchlorates have been, and will continue to be monitored at the OB/OD sites.

17. “Non-RCRA” Activities. The permit should specify that “non-RCRA” activities at the OB/OD areas shall comply with permit conditions such as hours of operation, prohibited wastes, proximity to surface water, site inspections, etc. that are intended to protect the health of workers and soldiers and mitigate environmental impacts. The draft permit on page D-3 describes these “non-RCRA” activities as including training of personnel in the conduct of OB and OD/BD demilitarization techniques and procedures, emergency responses, and the conduct of Research, Development, Test and Evaluation activities. These constitute many of the same activities as OB/OD and therefore pose the same risks to human health and the environment.

KDEP’s hazardous waste program does not regulate “non-RCRA” activities. The permit does require items related to regulatory requirements, such as emergency preparedness, documentation of training, daily inspections, and other recordkeeping.

18. OB/OD of Non-Explosive Wastes. Certain items listed as “Demolition Material” in the draft permit do not appear to meet the definition of “waste explosives” having the potential to detonate (40 CFR 265.382) and therefore may NOT be treated by OB/OD. The category of Demolition Material is described as including “miscellaneous standard and non-standard items used as donor material” which effectively allows the facility to burn just about anything that is flammable. This and the corresponding category should be deleted altogether.

Permit Changed: The words “standard and non-standard items” have been removed from the OD Munitions Family table Example Items column, and replaced by the word “explosives” (Condition P.III.A.(1)).

19. Dunnage and Fuel. Smoke is made up of a complex mixture of gases and fine, microscopic particles produced when wood and other organic matter burn. The biggest health threat from wood smoke comes from fine particles (particulate matter). They are small enough to enter the lungs where they can cause bronchitis, pneumonia, asthma, or other serious respiratory diseases. Fine particles can also aggravate chronic heart and lung diseases, and are linked to premature deaths in people with these chronic conditions. In addition to fine particles, open burning of both wood and diesel fuel may also be expected to release dioxins. If the Army is introducing dunnage (such as wood or demolition materials) and fuels to facilitate OB/OD of waste munitions, the permit must place a clear threshold on the both the amount and type of dunnage and fuel that may be added. For example, added dunnage and fuels must be both clean and free of lead, asbestos, PCBs, dried-applied paint, wood-preservatives, and all prohibited OB/OD wastes and constituents.

The permit does not allow fuels (liquids and oils) to be treated or utilized at the OB/OD sites (Permit Condition P.III.A.(3)).

Permit Changed: “Dunnage” has been added to the list of Prohibited Wastes (Condition P.III.A.(3)).

20. A permit condition should be added that NO amount (zero) of liquids or semi-liquids, including fuels, solvents, oils, lubricants, grease, etc. shall be allowed to come into direct or indirect contact with soils.

Permit Condition P.III.A.(3) prohibits “oil”, “any liquids or items containing free liquids”, and “municipal waste”.

Comments From Blue Grass Army Depot:

1. Request to remove the permit conditions pertaining to the wind vane and anemometer readings requirement occurring in pages 11, 12, 28, and 31 of the permit, as follows:

- P.III.E(3)(a), 5th bullet
- P.III.E(3)(b), 5th bullet
- P.III.XA(2)(c), 2nd bullet
- P.III.XB(2)(c), 2nd bullet

BGAD had numerous discussions on this subject with KDEP. We had provided comments expressing our concerns due to the unreliability of this data on 26-Apr-2018. Subsequently, the issue was discussed at the meeting on 30-May-2018. We also noted at the meeting that a "reality check" is underway

comparing the data from this meteorological station against other certified government source that we use (WebPuff). We collected real time data in the month of May 2018. The differences are quite substantial. Then, around the last week of June, we exchanged conversations on the results of this reality check study and came to the conclusion to remove this requirement from the permit. We had also discussed at the meeting to re-visit the need for maintaining local certified meteorological station as a long-term compliance item, perhaps after the BGCAPP mission.

KDEP concurs. The demo grounds meteorological station requirement has been removed from the permit.

Permit Changed: References to the Demo Grounds meteorological station have been removed from Conditions P.III.E(3)(a), 5th bullet; P.III.E(3)(b), 8th bullet; P.III.XA(2)(c), 2nd bullet; and P.III.XB(2)(c), 2nd bullet.