

Revisions to Standards for the Open Burning/Open Detonation of Waste Explosives



INFORMATIONAL PRESENTATION FOR ENVIRONMENTAL & COMMUNITY STAKEHOLDER GROUP

MARCH 10, 2022, 2:00 – 4:00 PM (EST)

Welcome & Introductions

- Facilitator – Karen Swetland-Johnson
- Members of EPA's Office of Resource Conservation and Recovery
- Attendees for this meeting include environmental and community members

Please...

- Keep yourself muted throughout the meeting.
- Use the “Raise Hand” button if you would like to speak during the designated stakeholder input portion.
- Put questions and comments in the **Q&A** box and we will strive to address them in a timely manner at the stakeholder input portion of the agenda.
- Note that proposed agenda times are approximate.
- Note that we are recording the EPA presentation portion of presentation only; we will not be recording the stakeholder input portion.

Additional Notes

- EPA will be developing a meeting summary for this meeting, which we expect to include in the docket for the proposed rule.
- You may also provide written feedback by emailing RCRAPost@epa.gov. EPA may include written feedback in the docket for the proposed rule.
- In addition, you will have an opportunity to provide comment on the proposed rule during the public comment period for the rulemaking.
- EPA is also conducting stakeholder engagement with others, including EPA Regions, states, territories, tribes, environmental/community groups, and regulated entities, both federal and private.

This is not a Federal Advisory Committee Act Meeting

- This is not a FACA meeting; therefore, we must ensure that we operate within certain parameters.
- FACA generally applies to groups that EPA establishes or utilizes in the interest of obtaining **group advice** and **recommendations** for the Agency. EPA takes its FACA responsibilities seriously and follows FACA requirements for obtaining collective advice from groups it establishes or utilizes.
- At the same time, it is appropriate for EPA to get input from outside individuals and entities using other mechanisms that are not subject to FACA. One such mechanism is arranging a meeting to obtain individual advice rather than group or collective advice.

Meeting Objective

For stakeholder participants to share their individual perspectives with EPA regarding how to amend the RCRA regulations pertaining to the open burning and open detonation (OB/OD) of hazardous waste explosives, prior to EPA drafting rule language. EPA intends to use input from this meeting in developing a proposed rulemaking to revise applicable regulatory standards.

Specifically, EPA would like feedback on the list of questions provided with the invitation. If time permits, EPA would also be open to hearing about other related topics stakeholders may wish to present to EPA for consideration in the rulemaking.

Agenda

- **EPA PRESENTATION** (10 minutes)
- **ALL STAKEHOLDER INPUT** (90-100 minutes)
 - Topic #1: Alternative Treatment Technologies
 - Topic #2: Scope of Applicability
 - Topic #3: Timing for Rule Compliance
 - Topic #4: Technical Standards for OB/OD units
 - Other Stakeholder Issues of Interest (time permitting)
- **NEXT STEPS AND CLOSING REMARKS** (5 minutes)

EPA Presentation



Overview

- Background:
 - OB/OD
 - Alternative Treatment Technologies
- Proposed Rule Approach
 - Overview
 - Considerations
- Proposed Rule Schedule

Background: OB/OD

Open burning

- “means the combustion of any material without the following characteristics: (1) Control of combustion air to maintain adequate temperature for efficient combustion, (2) Containment of the combustion-reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion, and (3) Control of emission of the gaseous combustion products.” 40 CFR 260.10

Detonation

- “explosion in which chemical transformation passes through the material faster than the speed of sound (0.33 kilometers/second at sea level).” 40 CFR 265.382

OB/OD is a treatment method for hazardous waste explosives, mostly from military munitions. There are 67 facilities with OB/OD units. More than 50% of facilities are operated by the US Department of Defense, with NASA, Department of Energy, with privately owned facilities making up the remainder.



Open Burning at Clean Harbors Colfax
Source: Louisiana Department of Environmental Quality



Open Detonation at Anderson AFB, Guam
Source: Department of Defense

OB/OD Current Regulations

- In 1980, EPA banned open burning of hazardous waste because of the potential hazards to human health and the environment; however, there is one exception – EPA allowed the open burning/open detonation (OB/OD) of waste explosives.
- At the time, there were no safe alternatives to OB/OD treatment of hazardous waste explosives.
- Thus, the current regulations at 40 CFR 265.382 state: “Open burning of hazardous **waste is prohibited except for the open burning and detonation of waste explosives.** Waste explosives include waste that has the potential to detonate and bulk military propellants which cannot safely be disposed of through other modes of treatment” [emphasis added].

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.”

These include:

- Military ammunition
- Explosives
- Rocket propellants (e.g., RDX, HMX, IMX, TNT, perchlorates)
- Fireworks
- Flares
- Auto airbags

Waste explosives, in addition to their reactive nature, when open burned or open detonated, have the potential to release to the environment heavy metals, perchlorate, particulate matter, per- and polyfluoroalkyl substances (PFAS), dioxins/furans, and other hazardous contaminants.

Background: Alternative Treatment Technology Development

Since 1980, many technology alternatives have been developed to treat waste explosives in lieu of OB/OD.

Two reports were published in 2019 which described these technologies.

- *Alternatives for the Demilitarization of Conventional Munitions*, National Academies of Sciences, Engineering, and Medicine (NASEM), 2019.¹
 - “There are no significant technical, safety, or regulatory barriers to the full-scale deployment of alternative technologies for the demilitarization of the vast majority of the conventional waste munitions, bulk energetics, and associated wastes.”
- *Alternative Treatment Technologies to Open Burning and Open Detonation of Energetic Hazardous Wastes*, EPA-ORCR, 2019.²
 - "There is a wide range of available alternative treatment technologies that can be, and have been used successfully, in place of OB/OD."

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Alternatives for the Demilitarization of Conventional Munitions (2019)

DETAILS

132 pages | 8.5 x 11 | PAPERBACK



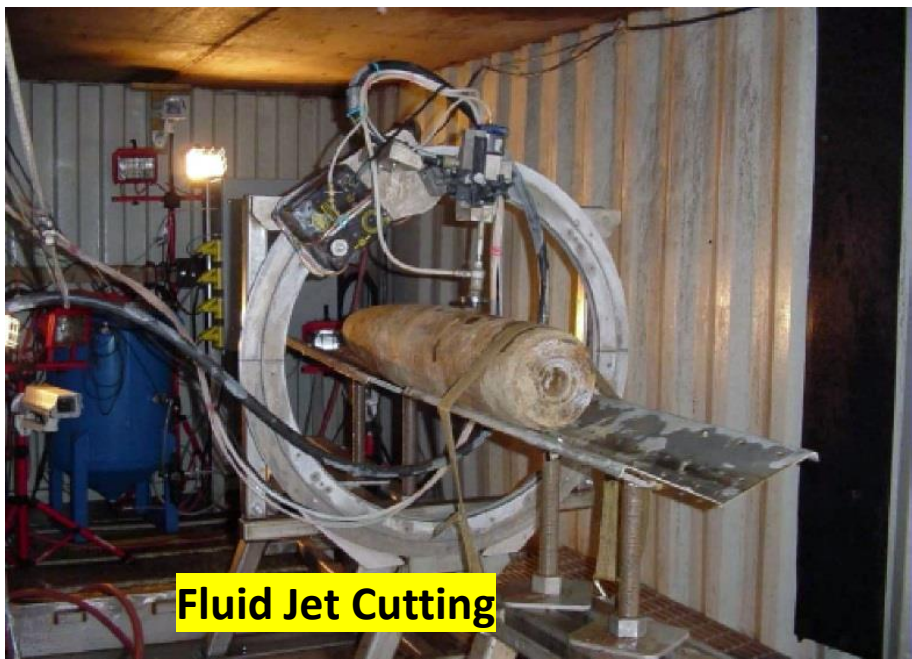
Alternative Treatment Technologies to Open Burning and Open Detonation of Energetic Hazardous Wastes

Final Report

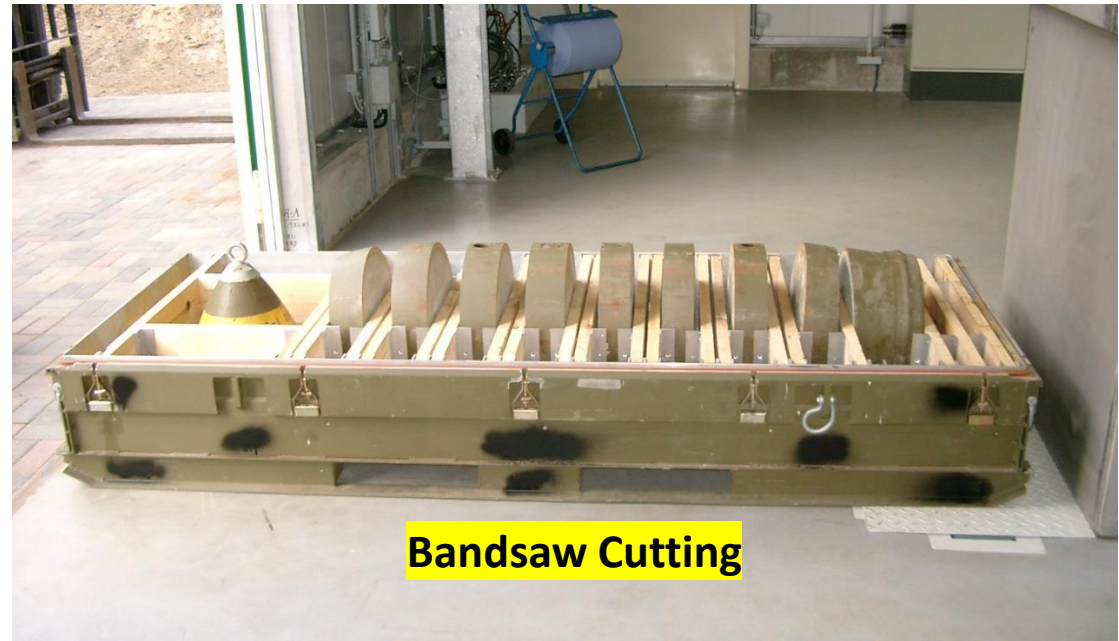


¹<https://www.nap.edu/catalog/25140/alternatives-for-the-demilitarization-of-conventional-munitions>

²https://www.epa.gov/sites/production/files/2019-12/documents/final_obod_alttechreport_for_publication_dec2019_508_v2.pdf



Fluid Jet Cutting



Bandsaw Cutting



Autoclave Meltout



Dry Ice Blasting



Controlled Detonation Chamber



Static Detonation Chamber



**Contained
Burn Furnace**



Detonation Chamber



Supercritical Water Oxidation



Decineration Rotary Furnace

Proposed Rule Approach: Overview

Because viable, safe alternative technologies are available, EPA is revising its regulations to account for this information.

EPA is considering revisions to explicitly require owners and operators of OB/OD facilities to conduct an evaluation of available alternative treatment technologies and to require implementation of identified viable alternatives in lieu of OB/OD.

Given that rulemakings take several years to develop and finalize, EPA Headquarters plans to encourage evaluation and use of alternatives through formal communication with our state and Regional regulatory partners this spring.

Forthcoming EPA Communication on OB/OD (Spring 2022)

- Formal communication to EPA Regions and states may include:
 - How the prohibition on OB/OD applies to permitted OB/OD units.
 - Who is responsible for demonstrating eligibility for the exception to the prohibition.
 - How permitting authorities can require alternative technology evaluations and use of alternative technologies that are identified.
 - How to facilitate transition from OB/OD to identified alternative technologies.
 - Recognition that OB/OD, while the least preferred technology, will still be needed to treat some waste explosives which do not yet have a safe mode of treatment.
 - Considerations for OB/OD permitting, where still needed.
- **Your feedback today will be considered in development of this memo, as applicable.**

Proposed Rule Approach: Considerations

- Alternative technologies – what should EPA consider when developing an explicit requirement to conduct evaluations of alternative technologies?
- Scope of applicability – should the rule address all OB/OD operations?
- Timing for Rule Compliance – when should the new/revised requirements go into effect?
- New Technical Standards for OB/OD Units – what regulatory standards would help to further minimize impacts to human health and the environment?

Proposed Rule Schedule



EPA plans to publish the proposed rule in the Federal Register in late 2022 or early 2023 and accept public comments for 60 days.

All written comments must be received **within** the public comment period. A final rule typically follows 12-18 months later.

Questions for Stakeholder Input



**Open Detonation Showing Uncontrolled
Emissions and Kickout**

Alternative Treatment Technologies

EPA is considering adding an explicit regulatory requirement to evaluate available alternative treatment technologies and subsequently implement identified alternatives. Potential supporting requirements would be, for example:

- a) A detailed waste characterization/analysis for each waste stream (i.e., not simply categories of wastes) currently being treated by OB/OD.
- b) Inclusion of criteria that provide the basis for a comparative analysis of available technologies.
- c) A mechanism to verify the adequacy and results of an alternative technology evaluation that is performed by the owner/operator. For example, third party certification of the results.

Alternative Treatment Technologies

- What considerations should EPA take into account for adding an explicit regulatory requirement?
- What other standards should apply/be included in an alternative treatment technology evaluation?
- What ideas do you have to improve EPA's preliminary thinking or to address potential issues?

Scope of Applicability

What should the rule include/exclude? Specifically, should the rule

- a) Include all treatment, storage, and disposal facilities (TSDFs) that conduct OB/OD;
- b) Include all TSDFs plus OB/OD conducted in response to emergencies, conducted pursuant to RCRA cleanup, closure, corrective action, and CERCLA cleanups; or
- c) Same as b) except do not include certain time-critical emergencies in the rule (and provide clarifications related to emergency exemption provision in 264.1(g) and 270.1(c)(3) and emergency permit provisions in 270.61).

Scope of Applicability

- What pros and cons do you see with these scope options?
- What ideas do you have to improve EPA's preliminary thinking or to address potential issues?

Timing for Rule Compliance

When should the new/revised requirements go into effect?

- a) Should EPA require or recommend prioritization of facilities with higher potential for risk to human health and the environment?
- b) Should EPA connect the timing for facilities to conduct evaluations to the rule effective date or permit actions? For example,
 - (i) Should an OB/OD facility be required to conduct an evaluation of available alternatives 90 days after rule effective date, and reevaluate at least every 5 years; or
 - (ii) Should an OB/OD facility be required to conduct an evaluation when there is a permit action (e.g., renewal, new unit, modification), but within 2 years after rule effective date, and for interim status units, 90 days after rule effective date, and reevaluate at least every 5 years?
- c) How should EPA approach the timing for implementation of identified alternatives? Specifically, should EPA
 - (iii) Allow flexibility, but require schedule of milestones with deadline for submission of schedule; or
 - (iv) Not allow flexibility and require a schedule of milestones with deadline for submission and deadline for implementation?

Timing for Rule Compliance

- What pros and cons do you see for these options?
- Do you have ideas to improve these options, add new ones, or address potential issues?

Technical Standards for OB/OD

In recognition of a continued need for some OB/OD capacity, EPA would like to establish technical standards for OB/OD units. What technical standards do you think should be included in the rule? Examples can include:

- Specify closure requirements and closure plan contents
- Detailed waste characterization and analysis requirements
- Requirements to specify maximum allowable wind direction/speed and other meteorological conditions during OB/OD
- Requirements to notify community before OB events and smoke advisories
- Restrictions on frequency and/or duration of burns
- Restrictions on quantities of waste explosives allowed
- Prohibiting treatment of specific wastes such as depleted uranium, PFAS-containing waste, insensitive munitions
- Require use of platforms, liners, pans, or trench cover
- Require run-on and run-off controls to prevent contaminant migration
- Specify frequency of monitoring soil and groundwater
- Others (see meeting materials)

Technical Standards for OB/OD

- What do you consider as the most important standards needed for design, maintenance, operation, and closure of OB/OD units that could be established now to help ensure national consistency in permitting and further reduce impacts to the environment?

Other Stakeholder Issues of Interest

- Is there anything else you'd like to share with EPA?

Next Steps and Closing Remarks



Open Detonation Showing Uncontrolled Emissions and Kickout

Next Steps

- You may provide written feedback after this meeting by emailing RCRAPost@epa.gov. EPA may place this feedback in the docket for the proposed rule.
- EPA will use oral and written feedback to inform how to propose revisions to the RCRA standards with respect to OB/OD.
- EPA intends to issue its policy communication to EPA Regions and states later this spring.
- EPA intends to publish its proposed rule in late 2022/early 2023. You may then provide feedback on the proposed rule during the public comment period.

Closing

Thank you! We appreciate your interest in this topic and for providing feedback to inform EPA's future policies.