

Open Burning/Open Detonation

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Agenda

- Background on OB/OD
- EPA Actions
 - OB/OD Policy Memo
 - Proposed Rulemaking
- Implementation

Background: EPA Regulations

- In 1980, EPA prohibited open burning, including open detonation, of hazardous waste.
- However, an exception was allowed for OB/OD of waste explosives “which cannot safely be disposed of through other modes of treatment” (40 CFR 265.382).
- Explosives include military munitions, explosives, gun and rocket propellants (e.g., RDX, HMX, IMX, TNT, and perchlorate), fireworks, and flares that are discarded.

Background: EPA Regulations

- ▶ In 1987, EPA finalized permitting standards for miscellaneous units (40 CFR part 264 subpart X).
- ▶ Under Subpart X, units must be designed and operated in manner that will ensure protection of human health and the environment (40 CFR 264.601).
- ▶ In the preamble to the 1987 rule, EPA listed OB/OD of waste explosives “as defined in § 265.382” as example units covered under Subpart X.

Background:

Universe of OB/OD

- There have been 225 OB/OD facilities that have operated since 1980.
- Currently, 66 of those facilities are operating.
- Two thirds are no longer operating and are in various stages of closure or closed.
- Likely all states/territories are impacted, if, in addition to permitted facilities, include OB/OD used to treat confiscated fireworks, flares, and explosives during emergencies.

Owner	Operating	%Total
DoD Total	37	56%
Army	19	
Navy/ Marines/ joint base	10	
Air Force	8	
NASA	1	1.5%
DOE	4	6%
Private	23	35%
Local Gov	1	1.5%
Universe Total	66	100%

Background:

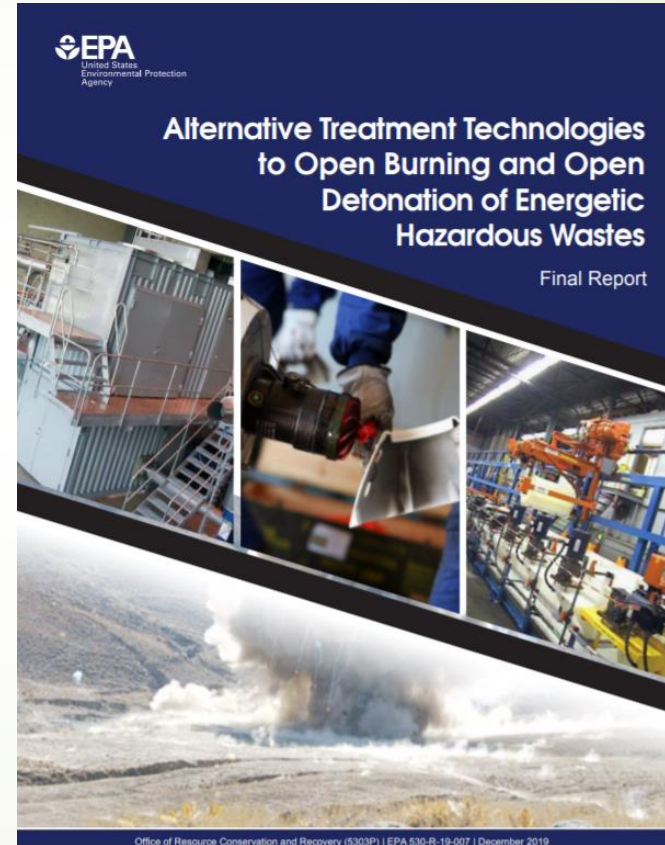
Concerns with OB/OD

- OB/OD lacks controls needed for complete combustion and for control of emissions.
- Potential to release heavy metals, perchlorate, particulates, PFAS, dioxins/furans, explosive compounds, and other toxic contaminants.
- Communities are concerned with contamination of air, soils, surface water, sediments, and groundwater through release, deposition and kickout.



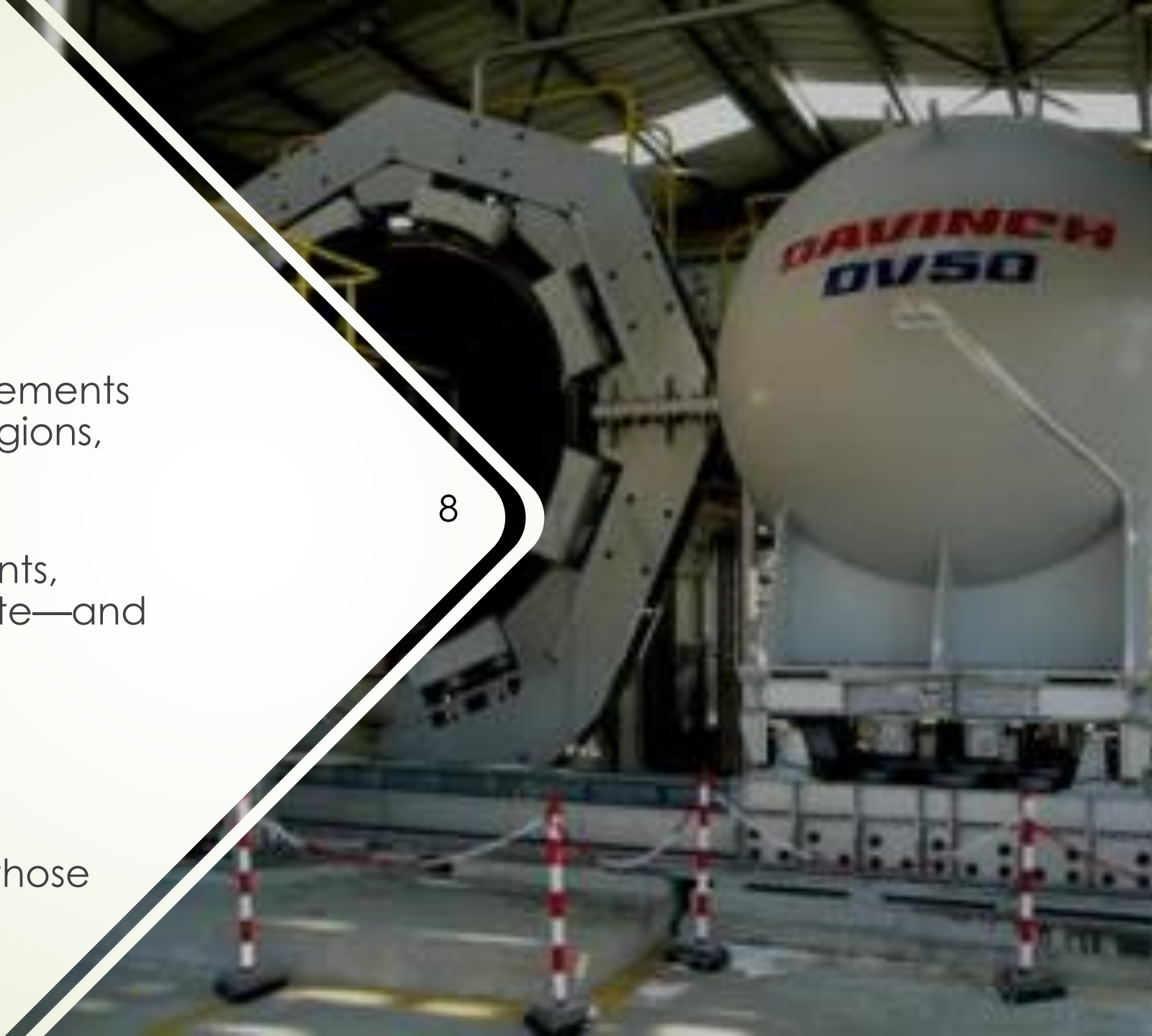
Background: Alt Tech Reports

- In 2019, the EPA and the National Academies of Sciences, Engineering, and Medicine (NASEM) published separate reports describing many alternative technologies now available to treat explosive waste.
- In response, EPA has taken two actions: issued a policy memo and initiated rulemaking.



Action: OB/OD Policy Memo (Issued June 2022)

- Purpose of the [memo](#) is to communicate existing requirements and provide guidance to Regions, states, and territories.
- Under the existing requirements, OB/OD facilities **must** evaluate—and re-evaluate—whether safe alternative technologies are available.
- Where safe alternatives are available, facilities **must** use those alternatives in lieu of OB/OD.



Action: OB/OD Policy Memo

- ▶ EPA acknowledges that OB/OD will still be needed to treat waste explosives that do not yet have other safe modes of treatment.
- ▶ Where OB/OD is needed, EPA provided guidance regarding permit conditions to reduce impacts to human health and the environment.
- ▶ EPA acknowledges that implementation may be complex; EPA encourages communication among EPA, states, territories, tribes, local communities, and facility owners with respect to site-specific permitting decisions.

Action: OB/OD Policy Memo

- ▶ Where OB/OD is being considered/determined to be needed, recommended permit conditions “should” address:
 - Accurate waste characterization, including explosive reactivity tests where needed
 - Methods of Evaluating Explosive Reactivity of Explosive-Contaminated Solid Waste Substances, Bajpayee and Mainiero, US Bur of Mines, 1988; other tests: DOT, ATF, DOD, IME.
 - Waste reduction/diversion
 - Location: floodplains; property boundary
 - Operating hours; limits on net explosive weight (NEW)
 - Weather conditions
 - Noise/vibration
 - Environmental media monitoring
 - Run-on/run-off controls; residuals management

Action: Proposed Rulemaking (Expected 2023)

- Key feedback points heard from early engagement with stakeholders:
 - Regulators: generally, very supportive; concerned with implementation challenges
 - Environmental/Community Groups: ban OB/OD across the board
 - Regulated Entities: safety is paramount; funding questions; preserve ability to use OB/OD
- Current Status: **Developing proposed rule.**



Action: Proposed Rulemaking

- ▶ Under consideration:
 - Scope of applicability
 - Timing of required alt tech evaluation and for implementation of identified technologies
 - Minimum technical standards for OB/OD
 - Mobile treatment units

Implementation

- ▶ How to incorporate the policy memo for permit renewals – alt tech evaluation and alt tech implementation
 - Communicate early in permit application process that alt tech evaluation is required and what factors will be considered (can't "risk it away")
 - Require periodic alt tech evaluations in permit to keep pace with new technologies
 - Permit mod for alt tech implementation
 - Use enforceable milestones; require detailed timeline for implementation

- ▶ How to address evaluations that are insufficient, and timing for submission of evaluations.
 - Evaluate alternatives per waste stream
 - More than one alternative may be needed; alternatives can be implemented on different timelines
 - Offsite transport can be an alternative
 - Seek out good examples of alt tech evaluations



Implementation

RCRA OB/OD Closure Studies:

► Nine case studies:

- Seneca, NY (Army)
- Umatilla, OR (Army)
- Ft. Wingate, NM (Army)
- Ft. Belvoir, VA (Army)
- Kirtland AFB, NM (AF)
- Holloman AFB, NM (AF)
- White Sands, NM (NASA)
- Los Alamos, NM (DOE)
- Aerojet/Rocketdyne, VA (Pvt)

► Status of closures

► Documenting:

- Extent of contamination
 - Issues: other sources; legacy wastes
- Site assessment procedures
- Cleanup procedures
- Success in achieving clean closure
- Costs

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