



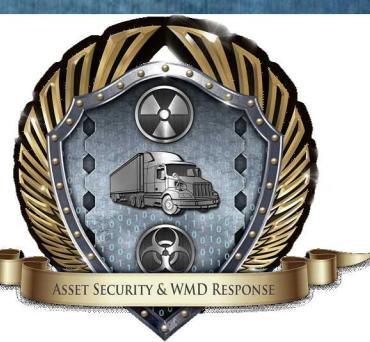
6649 Demilitarization Overview

Megan Tribble and Jerry Stofleth



Chemical Weapons Convention

- Entered into force April 1997
- 193 state parties, 8 chemical weapons possessor states
- Agreed to “never under any circumstances...
 - Develop, produce, otherwise acquire, stockpile or retain chemical weapons
 - Use chemical weapons”
- Original US destruction deadline of April 2012, now intending 2023



Chemical Weapons Convention (CWC)

Country	Entry into CWC	Declared stockpile of Schedule 1 (tonnes)	% OPCW-verified destroyed (date of full destruction)
Albania	29 April 1997	17	100% (July 2007)
South Korea	29 April 1997	3,000–3,500	100% (July 2008)
India	29 April 1997	1,044	100% (March 2009)
Libya	5 February 2004	25	100% (January 2014)
Syria	14 October 2013	1,040	100% (August 2014)
Russia	5 December 1997	40,000	100% (September 2017)
United States	29 April 1997	33,600	92.2% (as of May 2019)
Iraq	12 February 2009	remnant munitions	100% (March 2018)



Burial/dump sites

- Ground burial and ocean dumping *were* approved methods of CW disposal
- Buried/dumped munitions are not declared per CWC until they are recovered
- Many burial sites—some known, largely undocumented





Recovered munitions

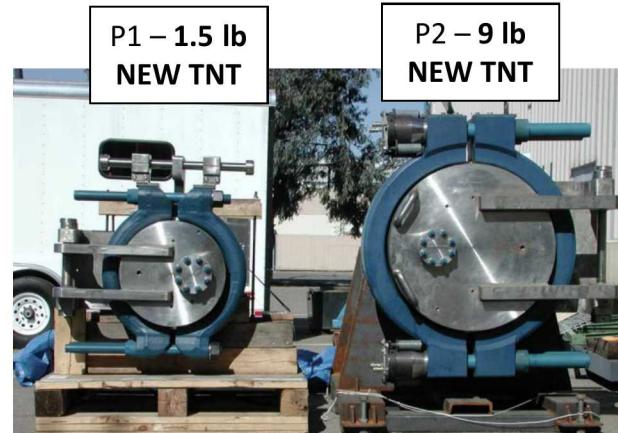
Explosive Destruction System team mission: **recovered** munitions





Explosive Destruction System (EDS)

- Transportable
- Uses explosive shaped charges to access agent and destroy burster
- Contains all blast, fragments, and gases
- Chemically treats the munitions' fill
- Confirms destruction by sampling
- Repackages the waste into containers
- 15 nerve agents/ arsenicals
- 15+ munition sizes/types
- **28 tons**



[EDS on YouTube](#)



P1



P2



Transportable Detonation Chamber (TDC)

- Detonation chamber built by Donovan – rated to **32 lb NEW TNT**
- Purchased by CH2MHill
 - Designed pollution abatement system
- Deployed in Belgium, Australia, Hawaii
- Always underperformed
- RCMD bought the system and rights
 - Want the combined conventional/chemical capability
 - Want higher throughput than EDS
- RCMD asked us to improve it, but it has not performed well in testing
- **88 tons**

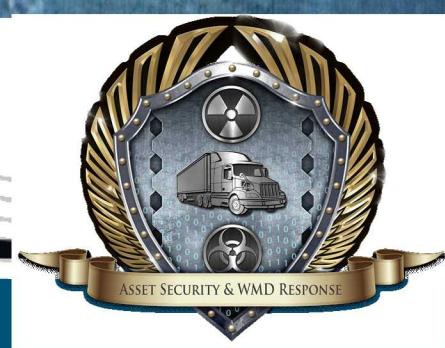




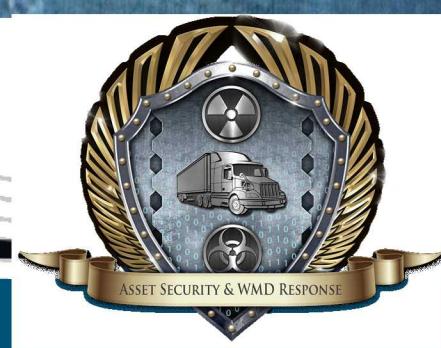
Dynesafe MMD2

- Rated to **19.5 lb NEW TNT**
- Designed for repetitive detonation of 3X munition bodies to remove energetic hazard
- Intended as a replacement for the TDC blast chamber
- Double-walled, gap filled with fluid
- Double-doored
- **48 tons**





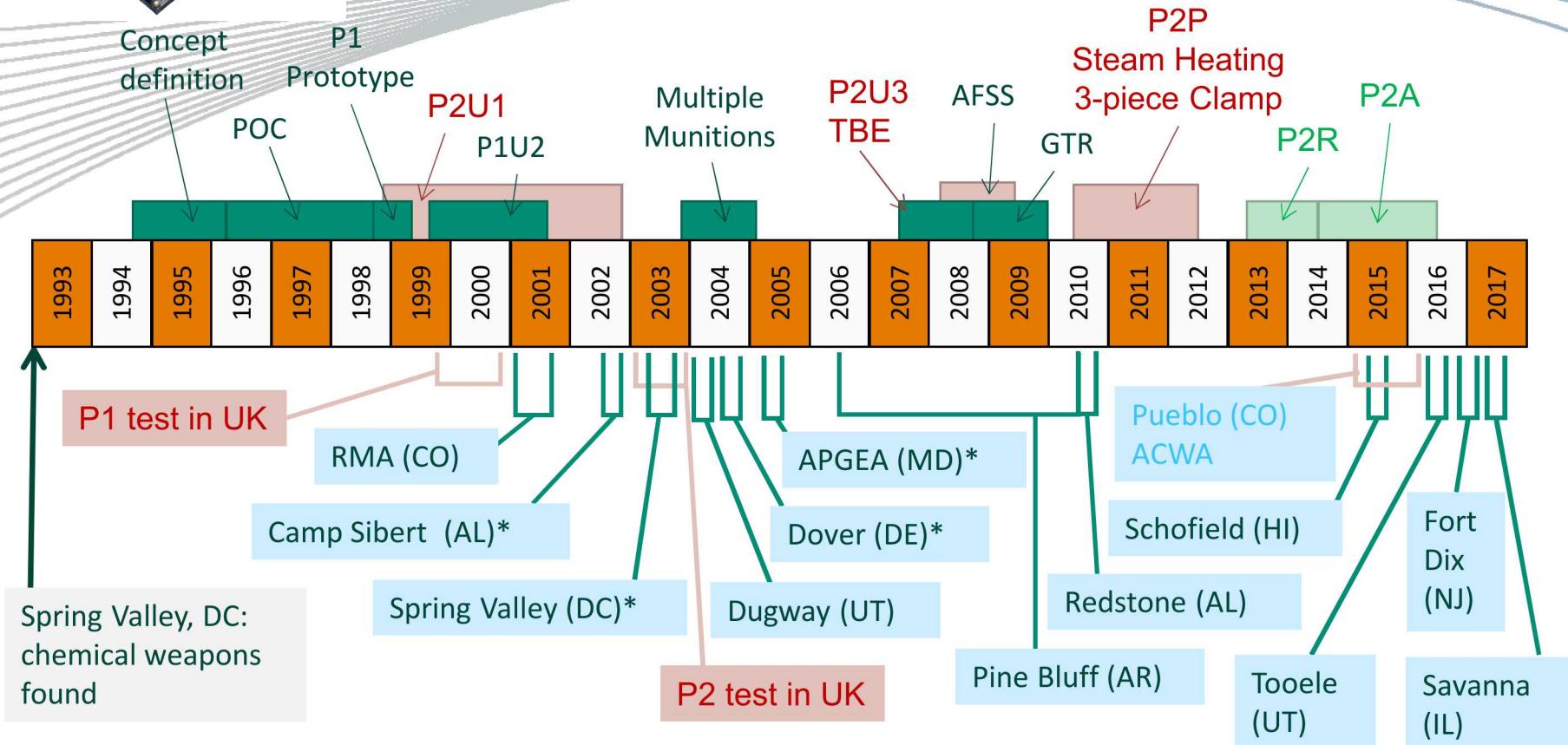
Questions?



Back-up slides

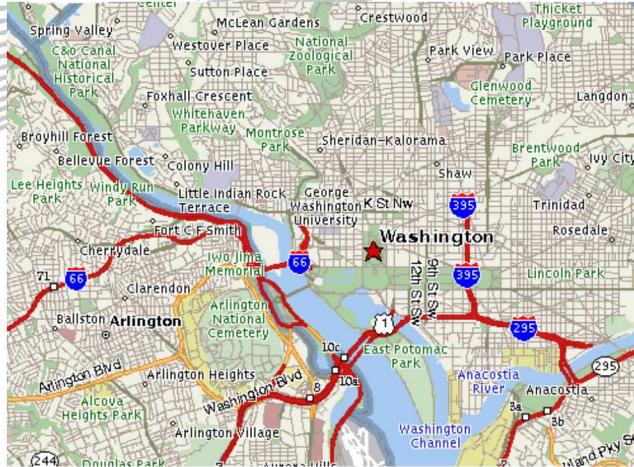


History of EDS



* Subsequent operations not shown

Origin of EDS - Spring Valley, DC



EDS platforms through the years



Phase 1, Unit 1



Phase 1, Unit 2,3



Phase 2



Phase 2 Prototype



Phase 2 Retrofit



Phase 2 ACWA



EDS Deployments

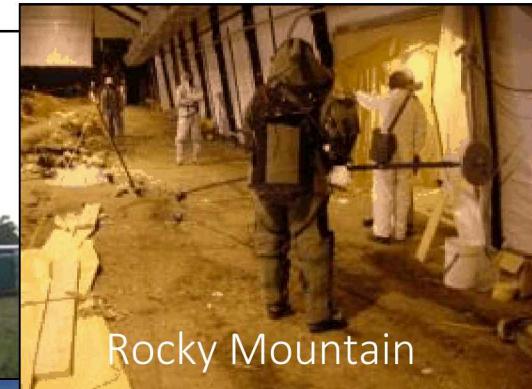


Porton Down, UK
Rocky Mountain Arsenal, CO
Aberdeen Proving Grounds, MD
Camp Siebert, AL
Spring Valley, Washington, DC
Dugway Proving Ground, UT
Dover Air Force Base, DE
Pine Bluff Arsenal, AR
Redstone Arsenal, AL
Schofield Barracks, HI

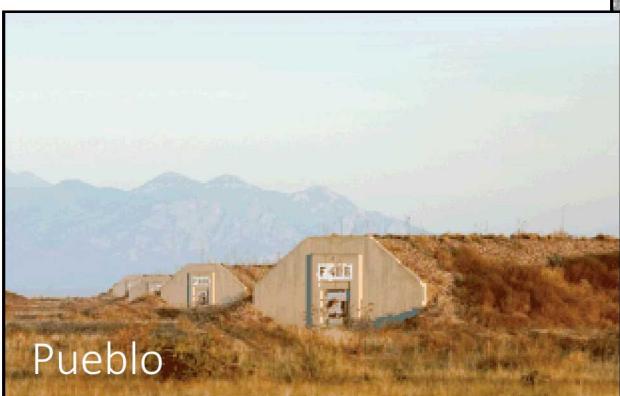
Pueblo Chemical Depot, CO
Tooele Army Depot South, UT
Joint Base McGuire-Dix-Lakehurst, NJ
Savanna Army Depot, IL



Camp Siebert



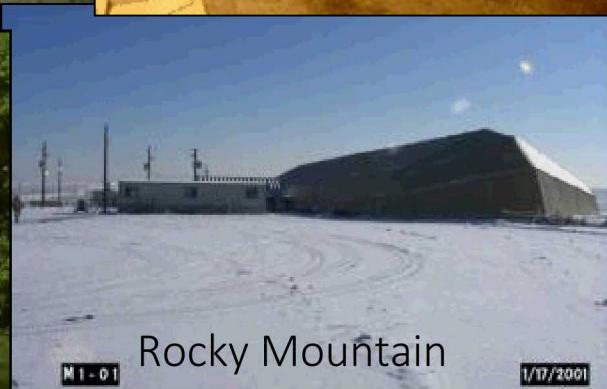
Rocky Mountain



Pueblo



Spring Valley



Rocky Mountain

1/17/2001