



From Ypres to Damascus: The Quest to Abolish Chemical Weapons

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World War I





Ypres, Belgium, April/May 1915

- 90,000 killed, 1 million injured by chemical weapons in WWI
- 190,000 tons of chemical agents produced by Germany, France, Britain, and US
- April 22, 1915 – 5,700 canisters of chlorine used by Germany





1925 Geneva Protocol

- For the Prohibition of Use of Asphyxiating, Poisonous, or Other Gases, and Bacteriological Methods of Warfare
- Banned use of chemical and biological weapons, but not RDT&E
- US President Roosevelt (1943) – “use of such [gas] weapons has been outlawed by the general opinion of civilized mankind.”



Chemical Weapons Threats

- Iran-Iraq War 1980s
- Iraq attack in Halabja 1988
- 1991 Gulf War
- 1995 Tokyo attack by Aum Shinrikyo
- Ongoing terrorist threats to obtain WMD
- Syria 2012-2013



AP / Peter Dejong



Chemical Weapons Convention

- Over 12 years in negotiations
- Opened for signature in 1993
- Entered into force in 1997
- US and Russia both ratified in 1997
- 190 States Parties today
- 6 countries still outside of CWC
- 8 countries declared CW stockpiles



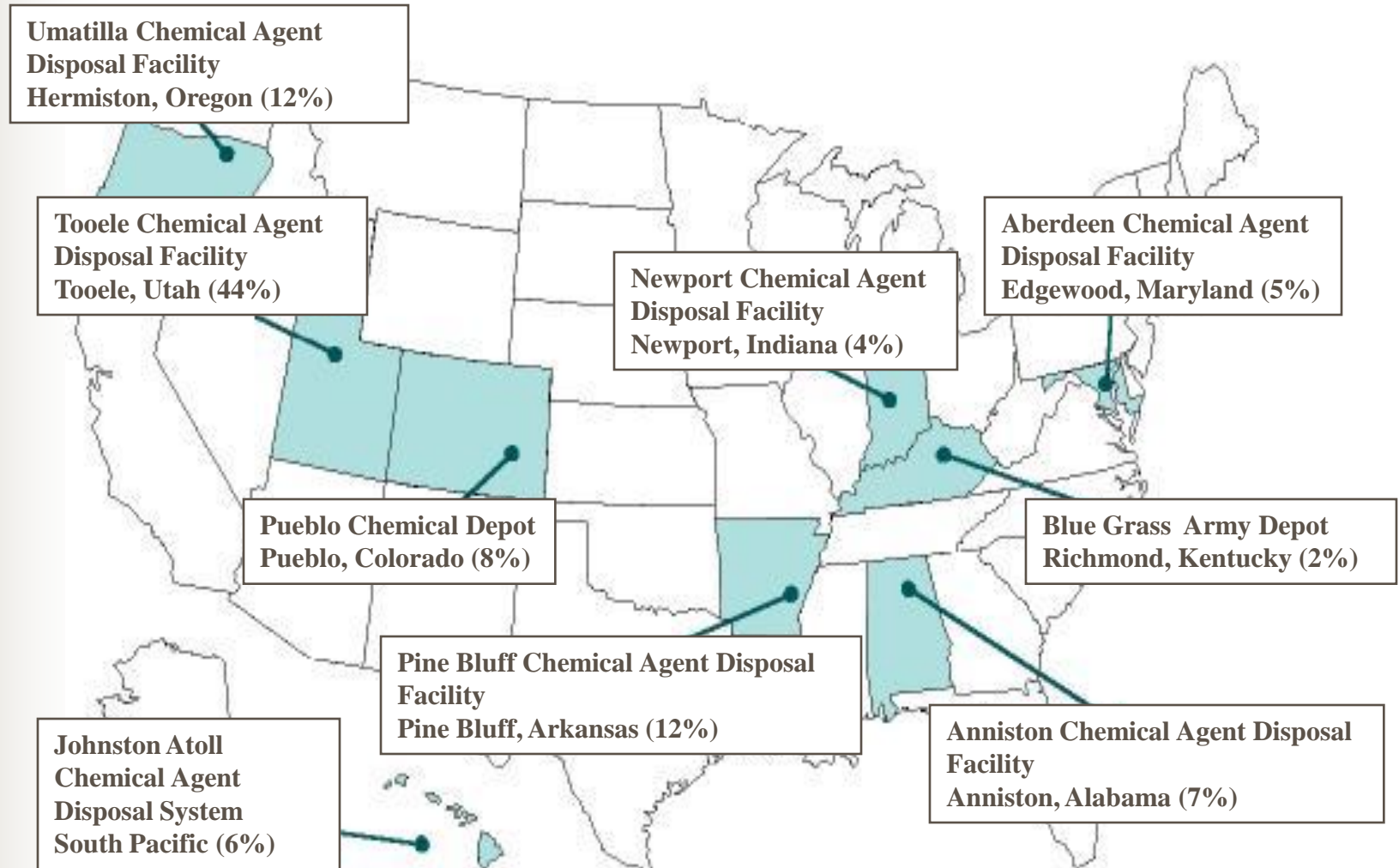
8 Declared CW Stockpiles

■ Russia	40,000 metric tons
■ USA	28,600 metric tons
■ India	1,000+ metric tons (est)
■ South Korea	1,000+ metric tons (est)
■ Libya	26+ metric tons
■ Albania	16 metric tons
■ Iraq	na
■ Syria	1,300+ metric tons (est)
■ TOTAL	72,500 +/- metric tons



Declared U.S. CW Stockpile: 31,495 US tons

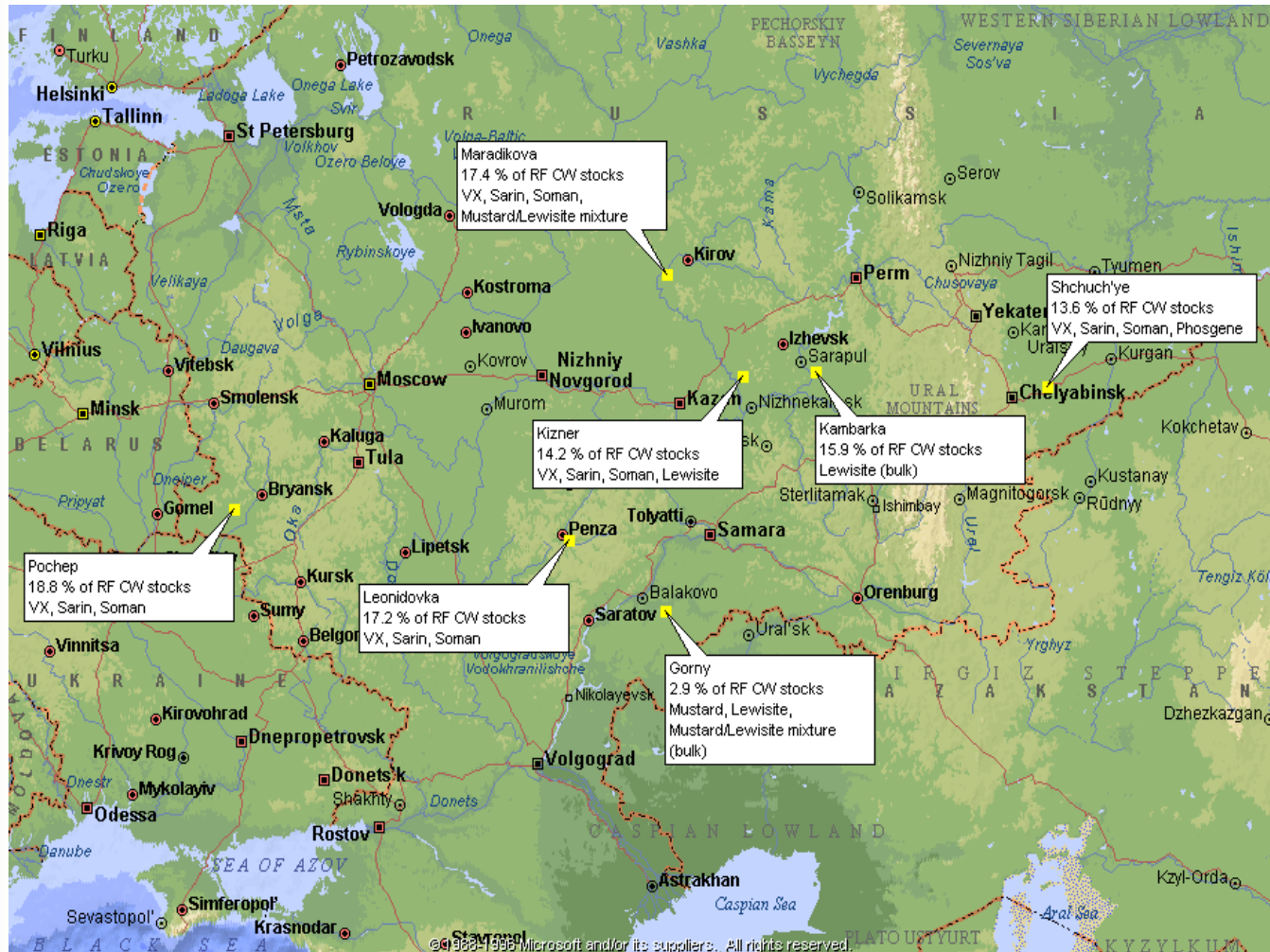
(9 stockpile sites in 8 states and Johnston Atoll)





Declared R.F. CW Stockpile: 40,000 MTs

(7 stockpiles in 5 Oblasts and the Udmurt Republic)



Shchuch'ye Stockpile



Shchuch'ye Chemical Weapons



CW Destruction in US

- 1990 – present
- 25,650 MT destroyed (90%)
- 7 stockpiles closed
- \$30 billion+ spent to date
- 9-10 more years to go
- 2 facilities under construction



CW Destruction in Russia

- 2002 – present
- 30,400 MT destroyed (76%)
- 2 stockpiles neutralized
- \$8+ billion spent to date
- 3-6+ years to go





Other CWD Progress

- **Albania** – 16 MT destroyed (100%) 2007
- **South Korea** – 1,000+ MT destroyed (100%) 2008
- **India** – 1,000+ MT destroyed (100%) 2009
- **Libya** – 26 +/- MT destroyed (100%) (excl. Sched. 2)
- **Iraq** – Declared 2009
- **Syria** – Declared 2013



Syrian Chemical Weapons

- 1,335 MTs declared of precursor chemicals
- 23 MTs of mustard agent
- 50% removed to date from Syria
- Remainder removed in April?
- Complete destruction in 2014





CW Destruction Process

- 560 MTs hydrolyzed on MV Cape Ray
- 154 MTs burned in UK
- 122 MTs treated in Syria
- 500 MTs treated in US & Finland
- 6,000 MTs toxic effluent treated in US, Finland, & Germany





Challenge #1 – Cost Escalation

- US cost first estimated at \$2B
- Now approaching \$40B
- RF cost first estimated at \$3-4B
- Now estimated at \$10B+
- Not including non-stockpile & sea-dumped





Challenge #2 – Technology Choice

- High temperature incineration or low temperature neutralization
- Management of effluent toxic wastes
- Impacts on public health & environment





Challenge #3 – Emergency Preparedness

- Most communities feel ill-prepared
- Gas masks, plastic & duct tape distributed for “shelter in place”
- Early warning radios and sirens lacking
- Transportation for evacuation



Challenge #4 – Community Investment and Involvement



Shchuch'ye, Kurgan Oblast



Challenge #5 – Transparency





Crete Demonstrations, 2014





Green Cross Outreach Office

- Proactive outreach to local & regional constituencies
- Timely response to all inquiries
- Facilitation of stakeholder involvement
- Empowerment of local communities



Community Outreach





Conclusions

- Chemical agents are no longer viable military weapons, and have become “taboo,” morally reprehensible, and a dangerous burden.
- All possessor states must complete safe elimination of CW stockpiles in the near term – Russia, US, Iraq, and Syria.
- All non-member states must join the CWC – Angola, Egypt, Israel, Myanmar, North Korea, and South Sudan.



Conclusions (2)

- Protection of the environment, public health, and worker safety in weapons demilitarization processes is an absolute necessity, trumping deadlines and budget limits.
- Transparency, stakeholder involvement, public dialogue, and consensus-building are essential to program success.
- Abolition of a whole class of weapons of mass destruction is an historic achievement.



Congratulations OPCW!





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