



USA Environmental, Inc.

***THE BIG BANG THEORY
and
HOW TO AVOID ONE***

**Tom Bernitt
CHMM, CSP, CQA, CMO/OE, Master EOD Technician
Quality Program Manager
USA Environmental, Inc.**

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OR

***WHAT YOU CAN'T SEE CAN STILL BITE YOU
IN THE ...***

August 20, 2013 (Reuters): A World War II American naval mine was recently found in the straits that separate the Japanese islands of Honshu and Kyushu. It was an American MK25 naval mine, one of thousands delivered by submarine and air in 1945. The problem goes back farther than World War II. Unexploded munitions from the World War I (which ended in 1918), and the American Civil War, which ended in 1865, are still showing up, and some of them are still deadly. Currently, over a thousand World War II munitions are discovered each year in Europe.





What is Unexploded Ordnance?

Military munitions (bombs and bullets, etc.) that have been fired and didn't explode.



HOW A PERFECTLY GOOD BULLET BECOMES A UXO

During military training exercises and/or war time, ordnance can be fired but does not explode as designed. Unexploded ordnance either lands on the ground or becomes buried into the ground. It is estimated that 10% of fired munitions do not function as designed (this is a safety feature for the handlers) and consequently become UXO.

Where is it?

- 1,700 Formerly Used Defense Sites (FUDS), 25 Base Realignment and Closure (BRAC) sites, and a number of active installations covering millions of acres in the U.S. (USAEC)
- And overseas...?



Unexploded Ordnance Hazards

- Explosion (Ruins your day)
- Shockwave
- Fragmentation
- Fire
- Leaching of Toxic Materials



Matrix:		SOIL							
Analysis:		Nitroaromatics and Nitroamines – EPA SW-846 Method 8330							
Analyte	CAS No.	PAL	PAL Reference	GEPA ESLs	USEPA RSLs	Project QL Goal	Laboratory-Specific Limits		
							LOQs	LODs	
								DLs	
	2691-41-				3,900				0.051
HMX	0	770	ESL-DE	770	(nc)	0.2	0.2	0.16	
RDX	121-82-4	5.5	ESL-DE	5.5	5.5 (c)	0.2	0.2	0.06	0.040
1,3,5-trinitrobenzene	99-35-4	450	ESL-DE	450	(nc)	0.2	0.2	0.06	0.040
1,3-dinitrobenzene	99-65-0	1.2	ESL-DE	1.2	6.1 (nc)	0.2	0.2	0.06	0.0378
nitrobenzene	98-95-3	6.2	ESL-DE	6.2	4.8 (c)	0.2	0.2	0.16	0.040
tetryl (2,4,6-trinitrophenyl-n-methylnitramine)	479-45-8	49	ESL-DE	49	240 (nc)	0.2	0.2	0.16	0.0651
2,4,6-trinitrotoluene (TNT)	118-96-7	7.2	ESL-DE	7.2	19 (c)	0.2	0.2	0.060	
4-amino-2,6-dinitrotoluene	19406-51-0	31	ESL-DE	31	150 (nc)	0.2	0.2	0.2	0.0627
2-amino-4,6-dinitrotoluene	35572-78-2	31	ESL-DE	31	150 (nc)	0.2	0.2	0.2	0.0634
2,4-dinitrotoluene	121-14-2	24	ESL-DE	24	1.6 (c)	0.2	0.2	0.2	0.0425
2,6-dinitrotoluene	606-20-2	12	ESL-DE	12	61 (nc)	0.2	0.2	0.16	0.050
3-nitrotoluene	88-72-2	1.9	ESL-DE	1.9	2.9 (c)	0.4	0.4	0.2	0.080
3-nitrotoluene	98-08-1	250	ESL-DE	250	6.1 (nc)	0.4	0.4	0.28	0.080
4-nitrotoluene	99-09-0	30	ESL-DE	30	30 (c)	0.4	0.4	0.28	0.080

**Not to mention:
Heavy Metals
VOCs
Perchlorates
Or (Occasionally)
Depleted Uranium**

Is It Still Dangerous?

- Even though it may look old and rusty, it still can be very dangerous.



What Can Cause Military Munitions to Function?

- Hitting it
- Dragging it
- Moving it
- Touching it
- Burning it
- Applying EMR



**EXAMPLES OF
MILITARY MUNITIONS
AND UXO**



Small Arms Ammunition



2.36 inch Rocket, G-18



Heavy frag and various fuze parts



2.36-inch Rockets without nose



Mortar 60mm illuminating



60mm Mortars



Mortar 81mm High Explosive



40mm Grenades



Projectile, 37mm



Projectile, 37mm MKI LE



Projectile, 105mm Base Ejection Smoke



2.36-inch Anti-Tank Rocket



Rifle Grenades



Practice Grenade