

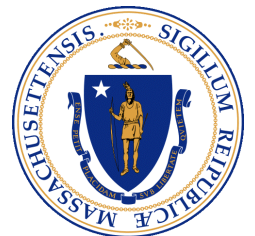
Environmental Management Commission

Executive Office of Energy and Environmental Affairs

Briefing for the National Academies of Sciences, Engineering and Medicine
September 2026



ENVIRONMENTAL MANAGEMENT COMMISSION



Environmental Management Commission

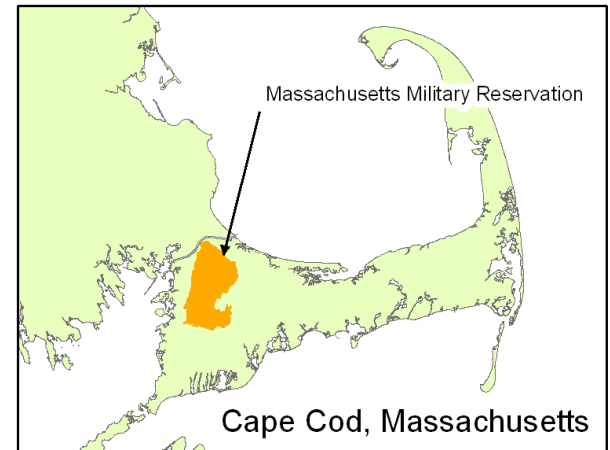
- **Environmental Management Commission**
 - Massachusetts Law, Chapter 47 of the Acts of 2002
 - Role of the Environmental Management Commission
 - Open and Public Review
- **Upper Cape Water Supply Reserve**
- **Camp Edwards Training Site**
- **Camp Edwards Small Arms Range Conceptual Site Model**
- **Range Operation and Monitoring**
- **Moving Forward**

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Massachusetts Law, Chapter 47 of the Acts of 2002

- **1986:** 58 separate projects proposed for the Massachusetts Military Reservation (MMR) Camp Edwards Training Area.
- **1994:** Number of proposed projects reduced to 6.
- **1997:** 22-member Community Working Group (CWG) created to review projects proposed at MMR.
- **1998:** The CWG adopts a Master Plan Final Report, which proposed the creation of the Upper Cape Water Supply Reserve.



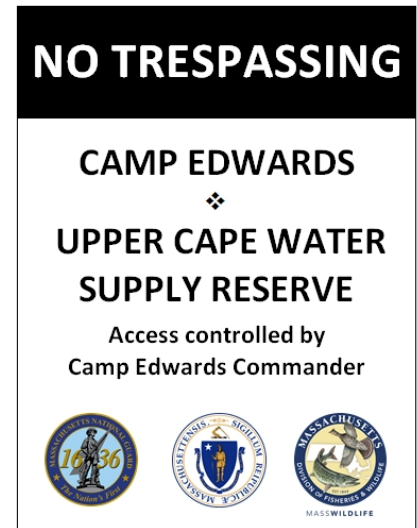
Massachusetts Law, Chapter 47 of the Acts of 2002

- **2001:** A Memorandum of Agreement between the Commonwealth of Massachusetts, the United States Army and National Guard Bureau established a long-term management structure for the northern 15,000 acres of the MMR.
- The number of projects proposed for the Camp Edwards Training Area reduced to 1.
- Draft Environmental Performance Standards (EPS) for the Upper Cape Water Supply Reserve were created by committee with the CWG, the National Guard Bureau, the Massachusetts National Guard and state environmental agencies.

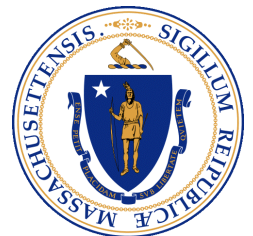


Massachusetts Law, Chapter 47 of the Acts of 2002

- **2002:** Chapter 47 of the Acts of 2002
 - Established the Upper Cape Water Supply Reserve within the northern 15,000 acres of Joint Base Cape Cod
 - Environmental Management Commission created
 - Commissioners of the Departments of Fish & Game, Conservation & Recreation, and Environmental Protection
 - Care, Custody and Control of northern 15,000 acres of Joint Base Cape Cod transferred from the Special Military Reservation Commission to Division of Fisheries and Wildlife
 - Directed the establishment of an Environmental Officer on the EMC's staff reporting to the Commission and located at Camp Edwards
 - Codified the Environmental Performance Standards



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Role of the Environmental Management Commission



- Ensure the permanent protection of the drinking water supply and wildlife habitat of the Upper Cape Water Supply Reserve
- Coordinate actions of the Commonwealth's environmental agencies in the enforcement of environmental laws and regulations at the Reserve
- Oversee compliance with and enforcement of the Environmental Performance Standards
- Facilitate an open and public review of activities within the Reserve
 - EMC Advisory Councils established by the Act and appointed by Governor
 - ❖ 15-member Community Advisory Council
 - ❖ 7 – 9 member Science Advisory Council

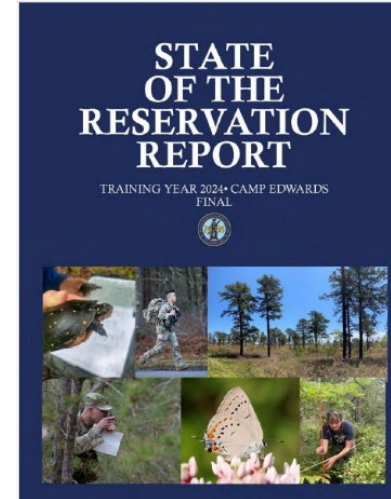
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Open and public Review

- EMC / Advisory Council public meetings and other venues to interact with the public and each other.
- Informed through various public meetings, briefings, reports, updates, and close coordination with the Mass Guard's Environmental & Readiness Center
- EMC web page: www.mass.gov/info-details/environmental-management-commission-emc
- EMC and Advisory Councils have been supportive-good problem solving / working relationship

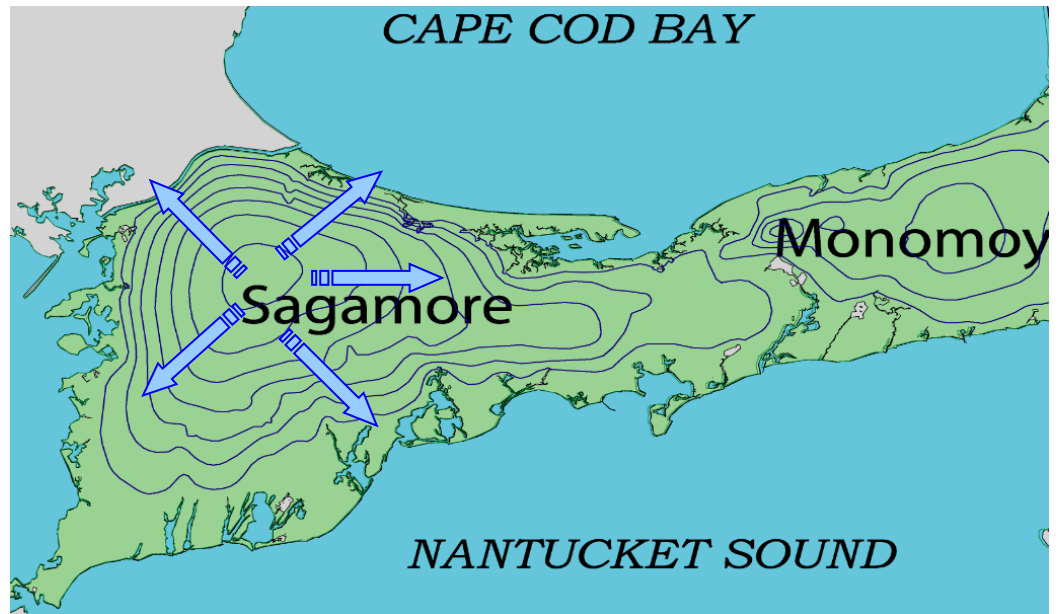
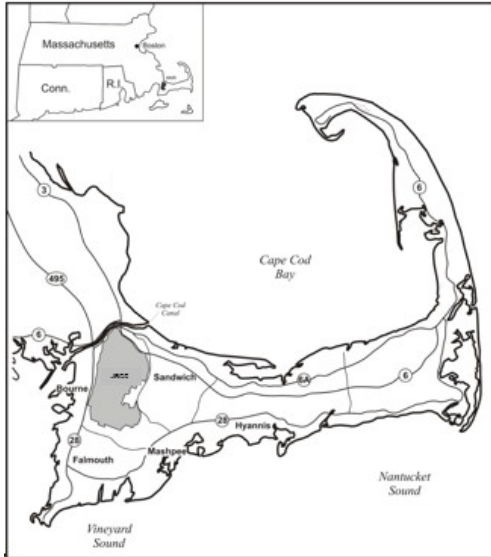
Camp Edwards State of the
Reservation Report
Training Year 2025



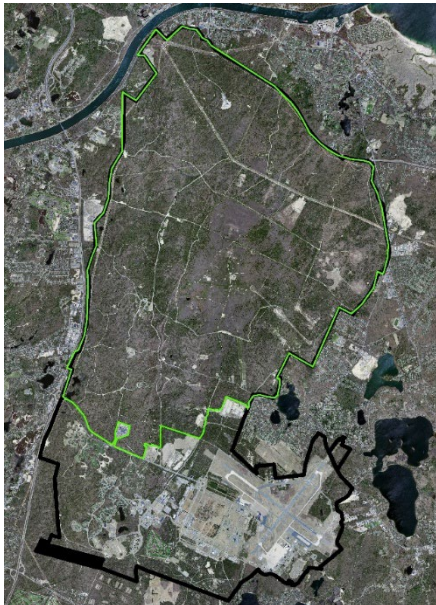
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Upper Cape Water Supply Reserve



Sagamore lens



Upper Cape
Water Supply
Reserve

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Camp Edwards Training Site

Echo Range:

38-meter Combat Pistol/Military Police Pistol
15 Firing Points, 120 Targets
Copper Jacketed Lead Ammunition

Sierra Range:

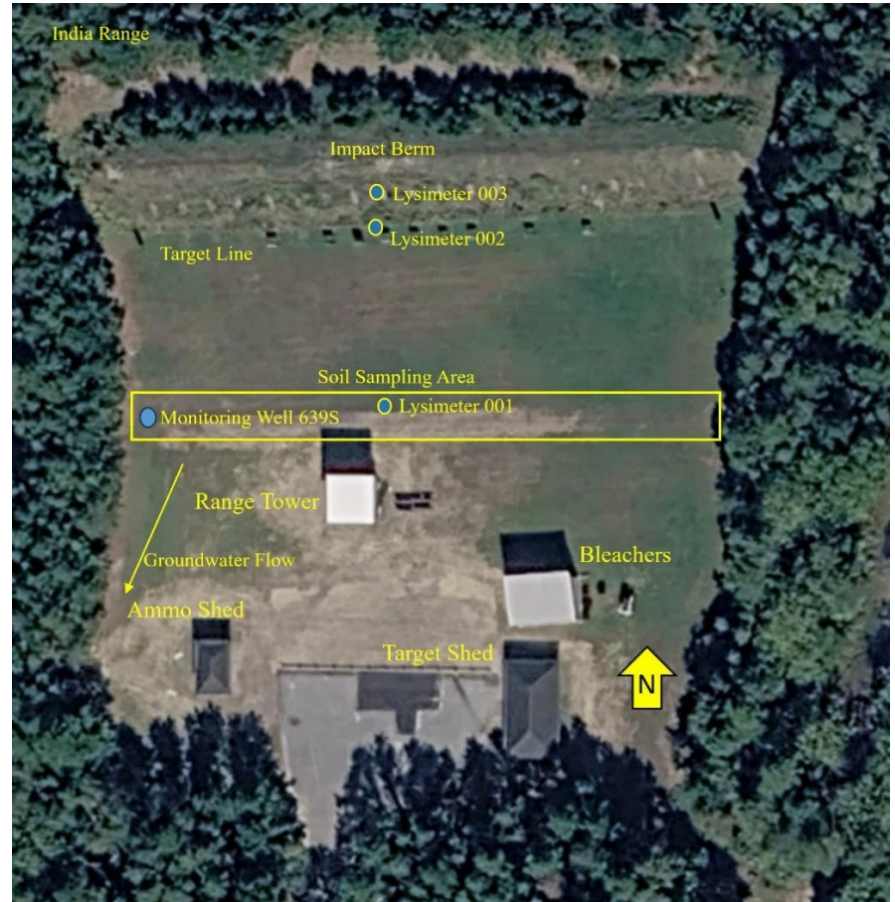
300-meter Rifle/Machine Gun
10 Firing Points, 90 Targets
Copper Enhanced Performance (EPR)/Tracer
Ammunition

India Range:

25-meter Rifle/Machine Gun/Pistol/Shotgun
20 Firing Points, 20 Targets
Copper EPR/Copper Jacketed lead/lead
Shot/Tracer Ammunition

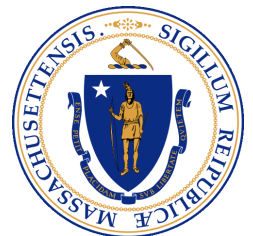
Tango Range:

25-meter Rifle/Machine Gun
32 firing points, 32 Targets
Copper EPR/Tracer Ammunition

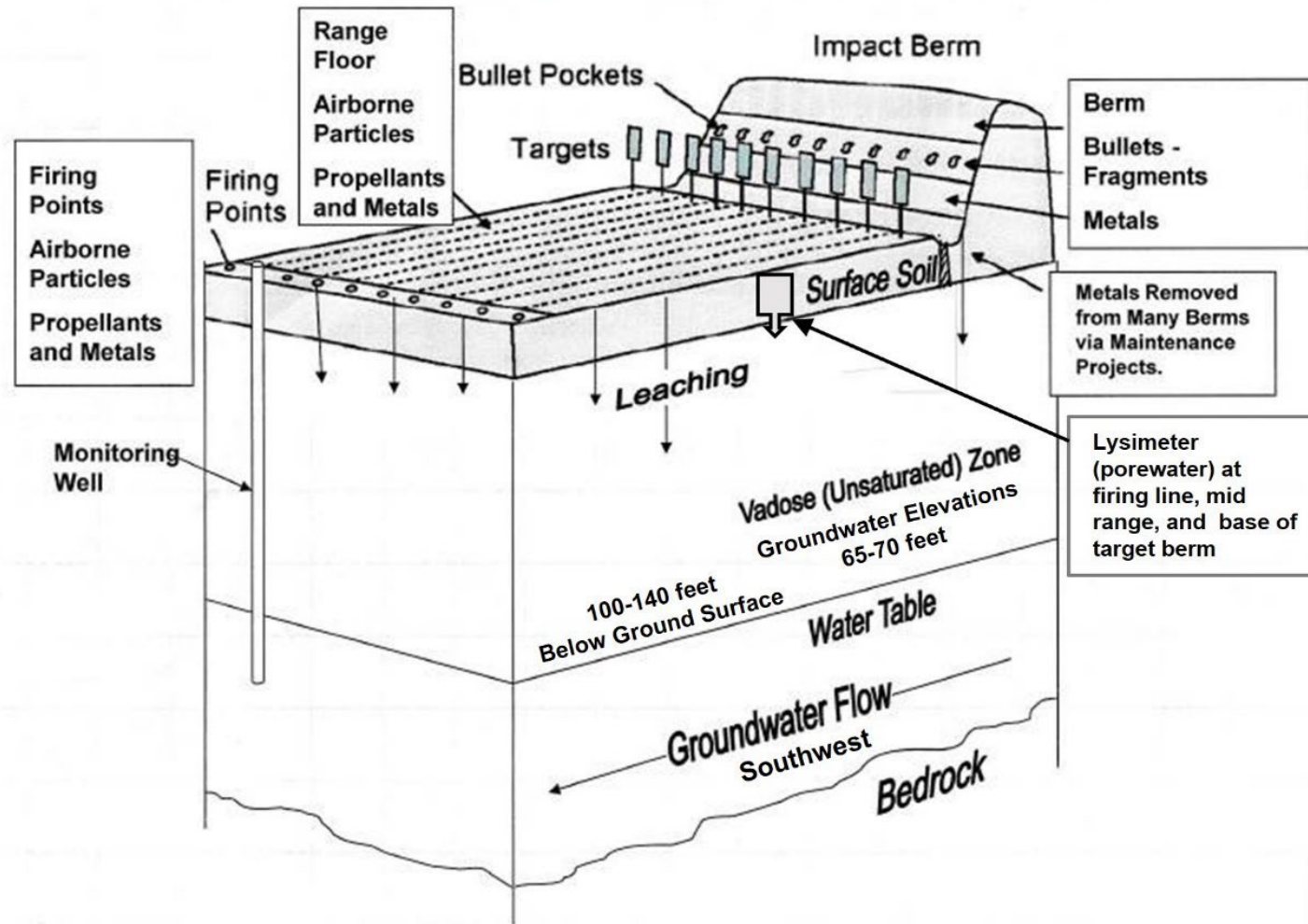


India Range

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Camp Edwards Small Arms Range Conceptual Site Model



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Camp Edwards Small Arms Range Conceptual Site Model

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JMC - MIDAS Detailed Structure For An Item

Type: M		Draw No: 13020533		Rev: F		Version: 1		Family: SAO		Reported Weight: 130.000000		Unit: GR			
Nomenclature: CTG 5.56MM BALL M855A1										Reported Calculated Weight (lbs):		0.027143 0.026631		98.11%	
NSN: 1305015964436-AB74				Status: COMPLETE											
Drawing #	Rev	Ver	P R	Std./Alt.	Nomenclature (Material)	Type	Mat.	Reported Weight	Unit	Factor	Calc. Factor	Contributed Weight (Lb)	Specification	Rev	TGCS
13020533	F	1		STD	CTG 5.56MM BALL M855A1	M		130.000000	GR	1	1				
13020534	D	1		STD	BULLET ASSY M85A1	C		62.000000	GR	1	1				
13020535	C	1		STD	JACKET	P	I			1	1				
		1		STD	BRASS	Mtl	I	18.700000	GR	1	1	0.002671	ASTM-B36	B	H220H
		1		STD	COPPER (7440-50-8) (90%)	C	I	16.830000	GR	1	1				
		1		STD	ZINC (7440-66-6) (3.9%)	C	I	1.851300	GR	1	1				
		1		STD	IRON (7439-89-6) (0.05%)	C	I	0.009350	GR	1	1				
		1		STD	LEAD (7439-92-1) (0.05%)	C	I	0.009350	GR	1	1		N/A		
		1		ALT	BRASS	Mtl	I	18.700000	GR	1	1		ASTM-B36		H210H
		1		STD	COPPER (7440-50-8) (95%)	C	I	17.765000	GR	1	1				
		1		STD	ZINC (7440-66-6) (5%)	C	I	0.935000	GR	1	1				
13020536	E	1		STD	PENETRATOR	P	I			1	1				
		1		STD	STEEL	Mtl	I	18.800000	GR	1	1	0.002686	ASTM-A29		H1005H
		1		STD	IRON (7439-89-6) (98.86%)	C	I	18.585680	GR	1	1				
		1		STD	MANGANESE (7439-96-5) (0.45%)	C	I	0.084600	GR	1	1				
		1		STD	SILICON (12597-37-4) (0.15%)	C	I	0.028200	GR	1	1		MIL-S-2308		
		1		STD	CHROMIUM (7440-47-3) (0.12%)	C	I	0.022560	GR	1	1				
		1		STD	MOLYBDENUM (7439-98-7) (0.12%)	C	I	0.022560	GR	1	1				
		1		STD	NICKEL (7440-02-0) (0.12%)	C	I	0.022560	GR	1	1				
		1		STD	CARBON (7440-44-0) (0.08%)	C	I	0.015040	GR	1	1				
		1		STD	PHOSPHORUS (7723-14-0) (0.05%)	C	I	0.009400	GR	1	1				
		1		STD	SULFUR (7704-34-9) (0.05%)	C	I	0.009400	GR	1	1				
		1		ALT	STEEL	Mtl	I	18.800000	GR	1	1		ASTM-A29		H1410H
		1		STD	IRON (7439-89-6) (97.22%)	C	I	18.277360	GR	1	1				
		1		STD	CHROMIUM (7440-47-3) (0.95%)	C	I	0.178600	GR	1	1				
		1		STD	MANGANESE (7439-96-5) (0.88%)	C	I	0.165440	GR	1	1				
		1		STD	CARBON (7440-44-0) (0.41%)	C	I	0.077080	GR	1	1				
		1		STD	SILICON (12597-37-4) (0.28%)	C	I	0.052640	GR	1	1		MIL-S-2308		
		1		STD	MOLYBDENUM (7439-98-7) (0.2%)	C	I	0.037600	GR	1	1				
		1		STD	PHOSPHORUS (7723-14-0) (0.04%)	C	I	0.007520	GR	1	1				
		1		STD	SULFUR (7704-34-9) (0.04%)	C	I	0.007520	GR	1	1				
		1		ALT	STEEL	Mtl	I	18.800000	GR	1	1		ASTM-A304		H1410H
		1		STD	IRON (7439-89-6) (97.2%)	C	I	18.273600	GR	1	1				
		1		STD	CHROMIUM (7440-47-3) (0.95%)	C	I	0.178600	GR	1	1				
		1		STD	MANGANESE (7439-96-5) (0.88%)	C	I	0.165440	GR	1	1				
		1		STD	CARBON (7440-44-0) (0.41%)	C	I	0.077080	GR	1	1				
		1		STD	SILICON (12597-37-4) (0.28%)	C	I	0.052640	GR	1	1		MIL-S-2308		
		1		STD	MOLYBDENUM (7439-98-7) (0.2%)	C	I	0.037600	GR	1	1				
		1		STD	PHOSPHORUS (7723-14-0) (0.04%)	C	I	0.007520	GR	1	1				
		1		STD	SULFUR (7704-34-9) (0.04%)	C	I	0.007520	GR	1	1				
13020546	B	1		STD	SLUG	P	I			1	1				
		1		STD	COPPER ALLOY	Mtl	I	24.300000	GR	1	1	0.003471	ASTM-B152		H101H
		1		STD	COPPER (7440-50-8) (99.99%)	C	I	24.297570	GR	1	1				
		1		STD	ANTIMONY (7440-38-0)	C	I		GR	1	1		ASTM B19	15	
		1		STD	ARSENIC (7440-38-2)	C	I		GR	1	1				
		1		STD	OXYGEN (7782-44-7)	C	I		GR	1	1				
		1		STD	SELENIUM (7782-49-2)	C	I		GR	1	1				
		1		STD	SILVER (7440-22-4)	C	I		GR	1	1				
		1		STD	TELLURIUM (13494-80-9)	C	I		GR	1	1				
		1		STD	TIN (7440-31-5)	C	I		GR	1	1				
		1		ALT	COPPER ALLOY	Mtl	I	24.300000	GR	1	1		ASTM-B152		H102H
		1		STD	COPPER (7440-50-8) (99.5%)	C	I	24.178500	GR	1	1				
		1		STD	OXYGEN (7782-44-7) (0.5%)	C	I	0.121500	GR	1	1				
13020547	B	1		ALT	BULLET ASSY M855A1	C		62.000000	GR	1	1				

- In 2010 the Army introduced the copper/steel M855A1 Enhanced Performance Round (EPR).
- In 2012 the EMC approved the EPR for use at the Camp Edwards ranges.

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Camp Edwards Small Arms Range Conceptual Site Model

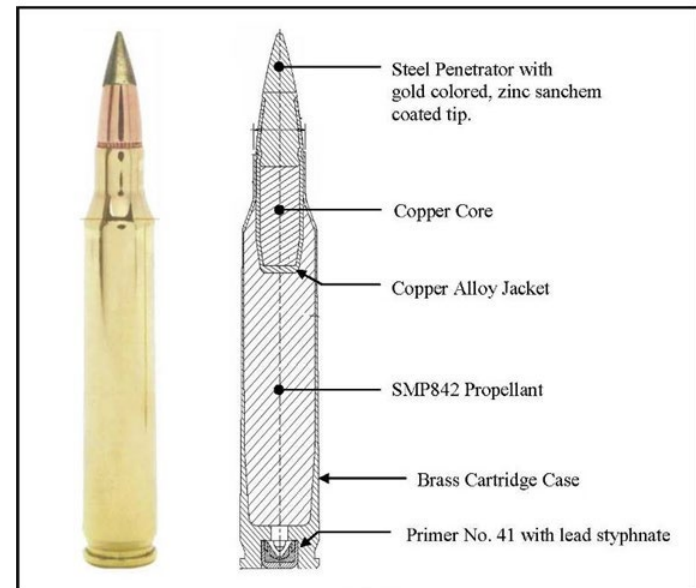
Projectile: Solid copper core, copper/zinc alloy jacket, steel penetrator

Propellant: Small arms double base propellant nitrocellulose/nitroglycerin (50-100% by weight). Flash suppressant and de-coppering additives.

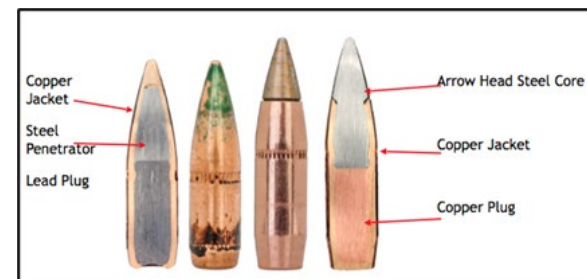
Primer: Lead styphnate and antimony (tri) sulfide.

Tracer: pyrotechnic compositions include a metal such as magnesium and an oxidizer such as strontium nitrate.

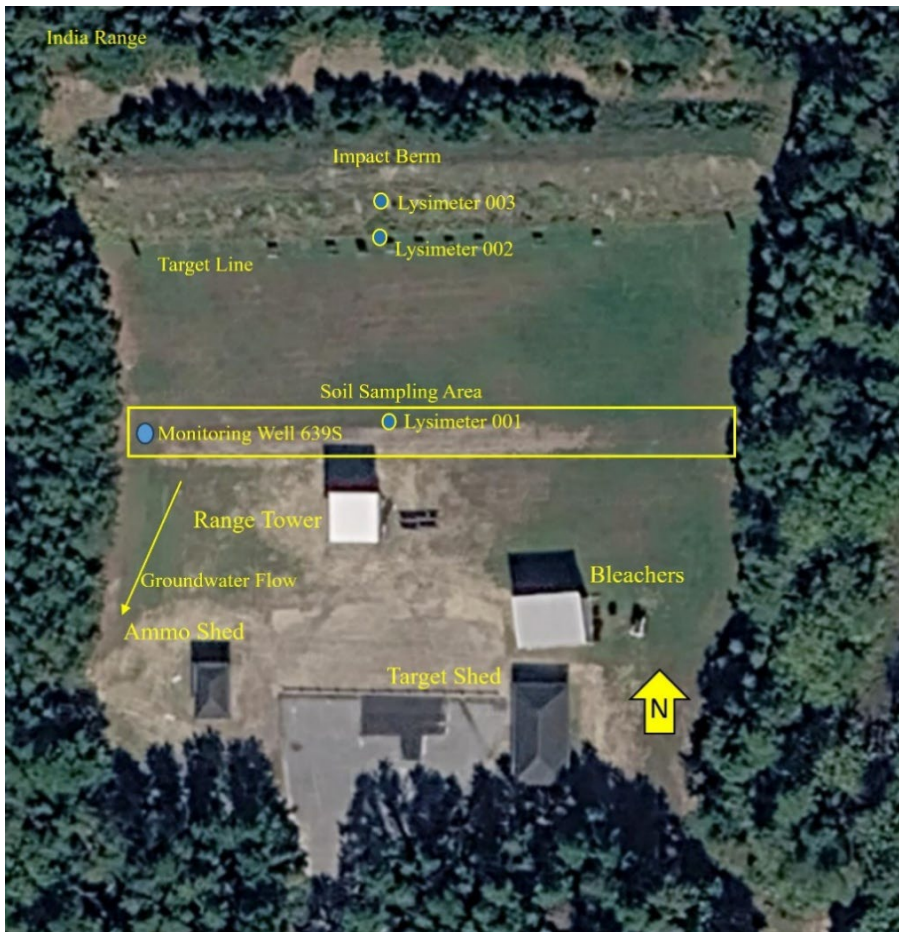
Combustion residue: carbon dioxide, water, nitrogen, antimony, aluminum oxide, barium sulphate, bismuth, carbon, potassium carbonate, lead and lead sulfide.



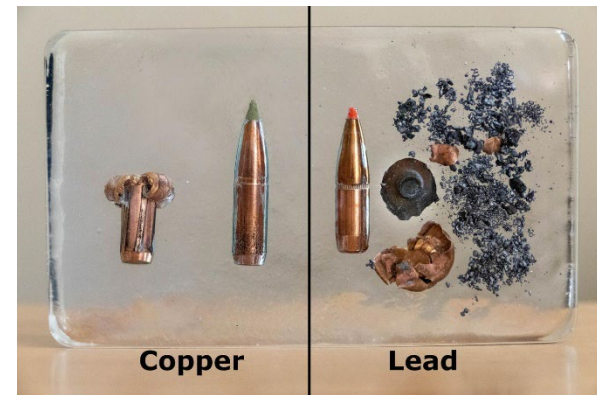
Enhanced Performance Round (M855A1)



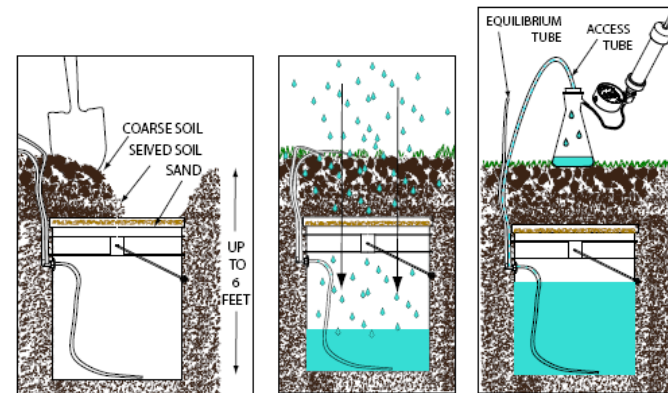
Range Operation and Monitoring



India Range



Berm impact



Lysimeter

Moving Forward

- Contaminant mass loading
 - Pollution Prevention and Best Management Practice strategies
 - Range sampling and monitoring- soil, porewater and groundwater
 - Type, frequency
- Data Gaps
 - Contaminants of Concern
 - Groundwater
 - Porewater
- Reference (action) Levels for porewater and groundwater



Moving Forward

- Operational active small arms range design
 - Modify type, locations and number of lysimeters and groundwater monitoring wells
- Range Operation, Maintenance and Monitoring
 - Monitor & manage contaminant loading
 - Review & revise media sampling
 - Review and revise Pollution Prevention strategies and Best Management Practices
- Approved Munitions List
 - Review chemical constituents in primer, powder and projectiles
- Environmental Performance Standards
 - Review EPS 19 Range Performance Standards for range requirements



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