

Appendix Q: Sea Disposal of Military Munitions

Section 314 of the Fiscal Year (FY) 2007 National Defense Authorization Act (NDAA), requested the Secretary of Defense conduct a review of archival information in an attempt to verify the types, quantities, and locations of chemical warfare material (CWM) and conventional munitions disposed of by the Department of Defense (DoD) in waters of the United States, and report the results of that review annually in the Defense Environmental Programs Annual Report to Congress. This report represents an update to previous reports documenting DoD's past sea disposal activities.

History

Sea disposal of excess, obsolete, unserviceable, and captured enemy munitions was an internationally accepted practice throughout the 1970s, until prohibited by Congress with the Marine Protection, Research, and Sanctuaries Act of 1972. Although these munitions may have been fuzed, they would not have experienced the firing sequence required to arm them. Prior to the 1970s, destruction alternatives were generally limited to burning, burial on-land, or disposal at sea.

The U.S. Armed Forces established specific procedures for munitions disposal beginning in 1917. These procedures, which defined depths and locations of disposal sites, became more stringent over time in an effort to reduce the possibility of recovery and accidental contact by the public. In 1944, the War Department required that CWM be disposed in water at least 300 feet deep and 10 miles from shore and established specific criteria for conventional munitions disposal. By December 1945, the Department increased the disposal depth requirement to 6,000 feet for CWM and 3,000 feet for explosives and ammunition. The Department also required disposal locations to be published in a notice to mariners and on nautical charts.

Archival Research

To date, DoD has reviewed archival records on CWM, chemical agents, and conventional munitions disposed of by DoD Components in the waters of the United States between 1919 and 1970. DoD will convey the results of this research to the U.S. Coast Guard, the National Oceanic and Atmospheric Administration, and other federal agencies, to ensure that sea disposal sites are accurately depicted on nautical charts. Further, DoD will use this more precise information on the possible locations of sea disposals to conduct research to determine if sea disposed munitions pose a risk to the public and marine environments, as required by Section 314.

Research Results

In general, DoD disposed of approximately 30,000 tons of CWM in deep waters off the coast of the United States in the Atlantic and Pacific Oceans, and the Gulf of Mexico between 1919 and 1970. DoD has nearly completed research on sea disposal of CWM and is currently identifying sites in U.S. coastal waters where the Armed Forces disposed of conventional military munitions.

Figure Q-1 provides a summary of the net chemical agent weight (NCAW) of CWM according to the chemical agent and water body where disposal took place. NCAW totals were determined using assumptions regarding the container sizes and densities of the disposed materials.

Figures Q-2 through Q-4 display the locations of each disposal site in U.S. coastal waters for chemical and conventional munitions.

Figures Q-5 through Q-36 provide chemical and conventional munitions information for each disposal site. For CWM disposal sites, these figures include the distance from shore, the depth, type of chemical agent, the type of munition or container, the quantity that was disposed, and the NCAW. For conventional military munitions, these figures include the distance from shore, the depth, the type of munition or container; the fill type (e.g., explosive, smoke), and the quantity. Also reported are disposals that involved empty munition bodies (e.g., bombs, projectiles) and other DoD materials of interest (e.g., low-level radioactive material, drums of chemicals, contaminated soil) that were co-disposed.

DoD's ongoing research efforts continue to make significant progress toward developing a comprehensive list of all sites. Calculations and totals have been rounded and may not match exactly.

Figure Q-1 Summary of Sea Disposal of Military Munitions—Chemical

Chemical Agent	Atlantic Coast (tons)	Caribbean Coast (tons)	Pacific Coast (tons)	Gulf Coast (tons)	Alaska Coast (tons)	Hawaii Coast (tons)	Total NCAW (tons)
Lewisite	8,286		1,344		843	181	10,654
Mustard	5,179	<1	9,040	8	55	2,184	16,466
Sarin	239						239
VX	124						124
Arsenic Trichloride	505						505
Arsenic	16						16
Phosgene	37			1			38
Cyanogen Chloride	1	7				204	212
Cyanide	8					2	10
Tabun	6	15					21
Sulfur Monochloride	16						16
Unknown Agent	1,182			184			1,366
Total	15,599	22	10,384	193	898	2,571	29,667

Figure Q-2 Approximate Locations of Munitions Disposals in U.S. Northeast

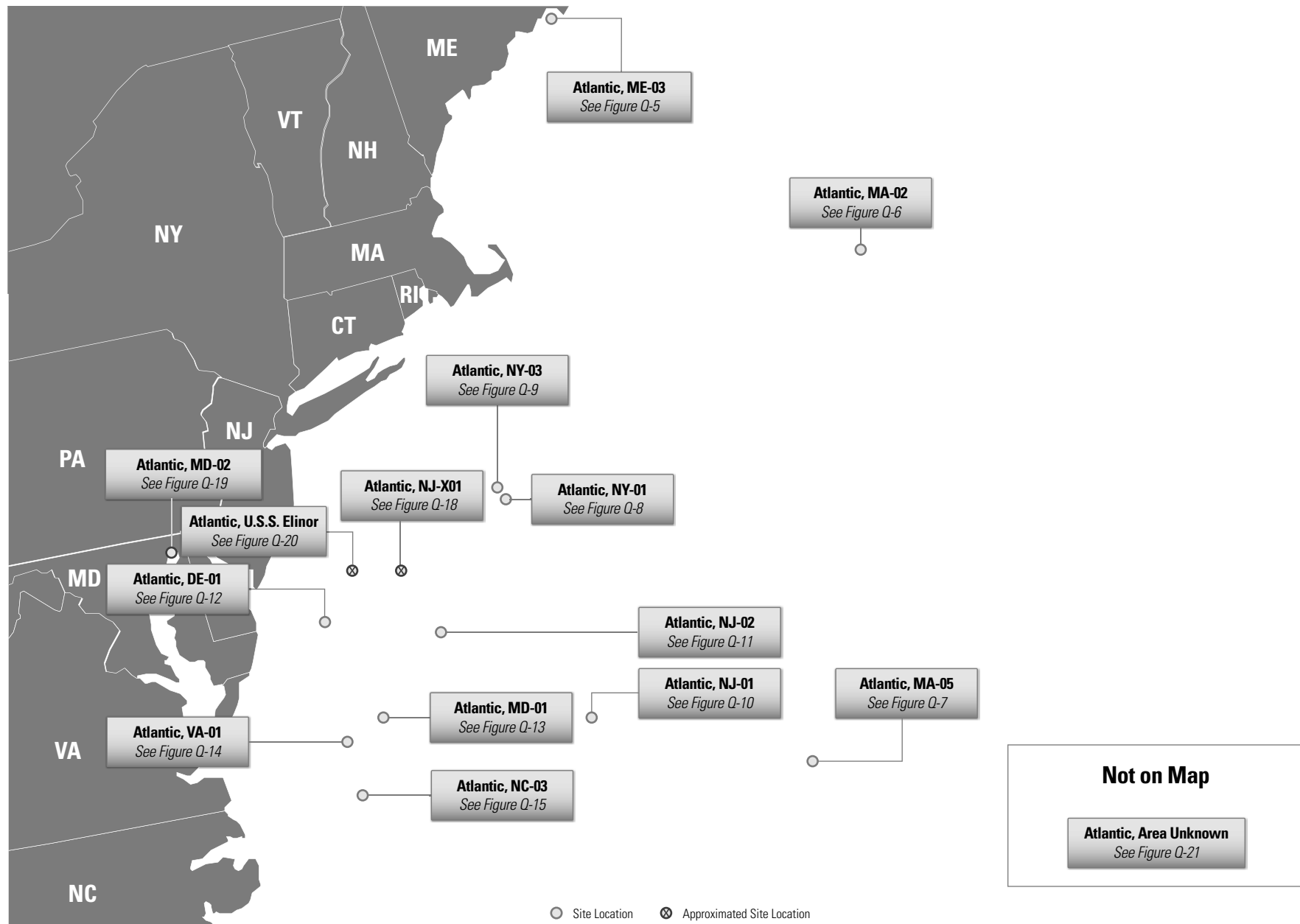


Figure Q-3 Approximate Locations of Munitions Disposals in U.S. Southeast

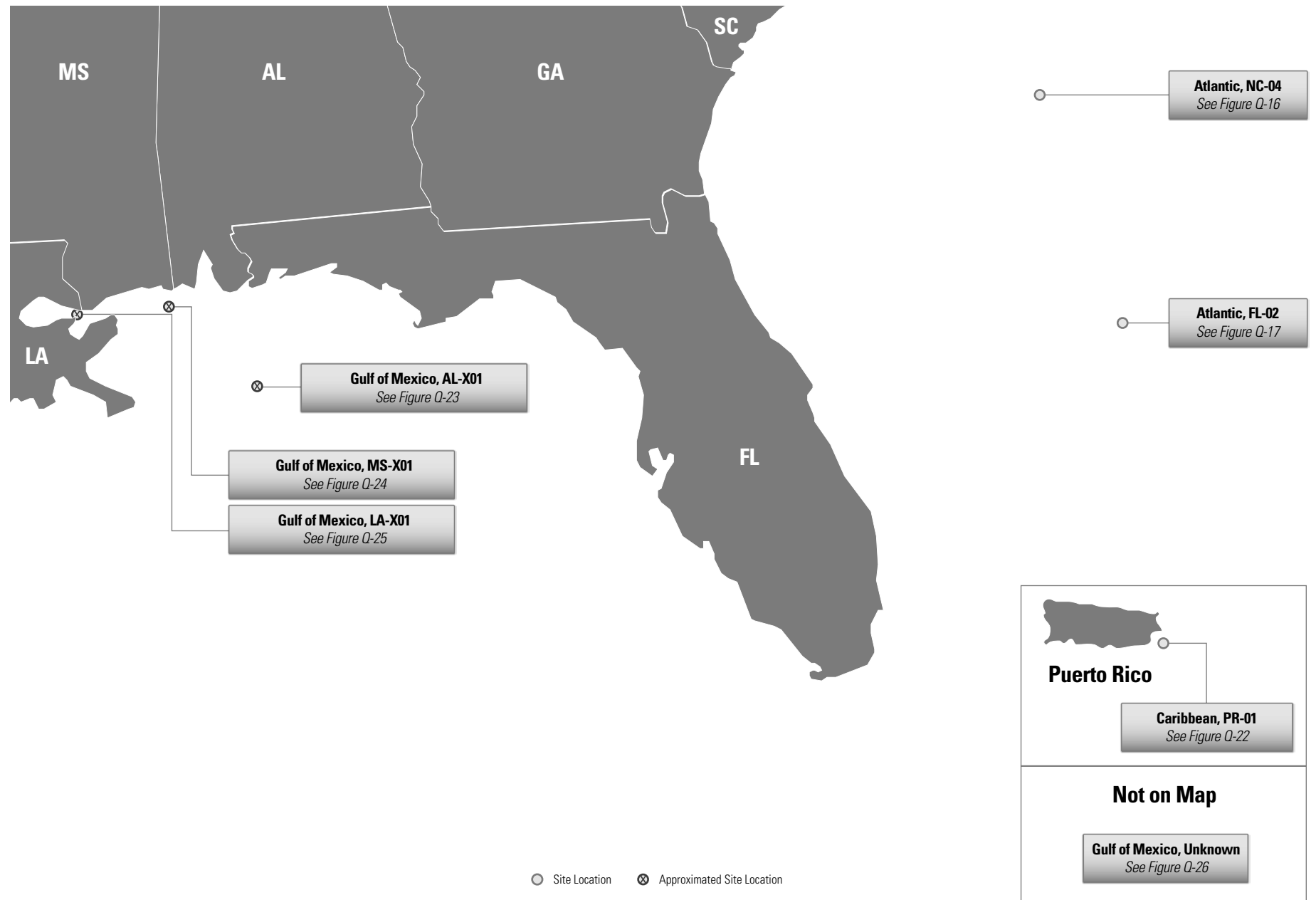


Figure Q-4 Approximate Locations of Munitions Disposals in U.S. West

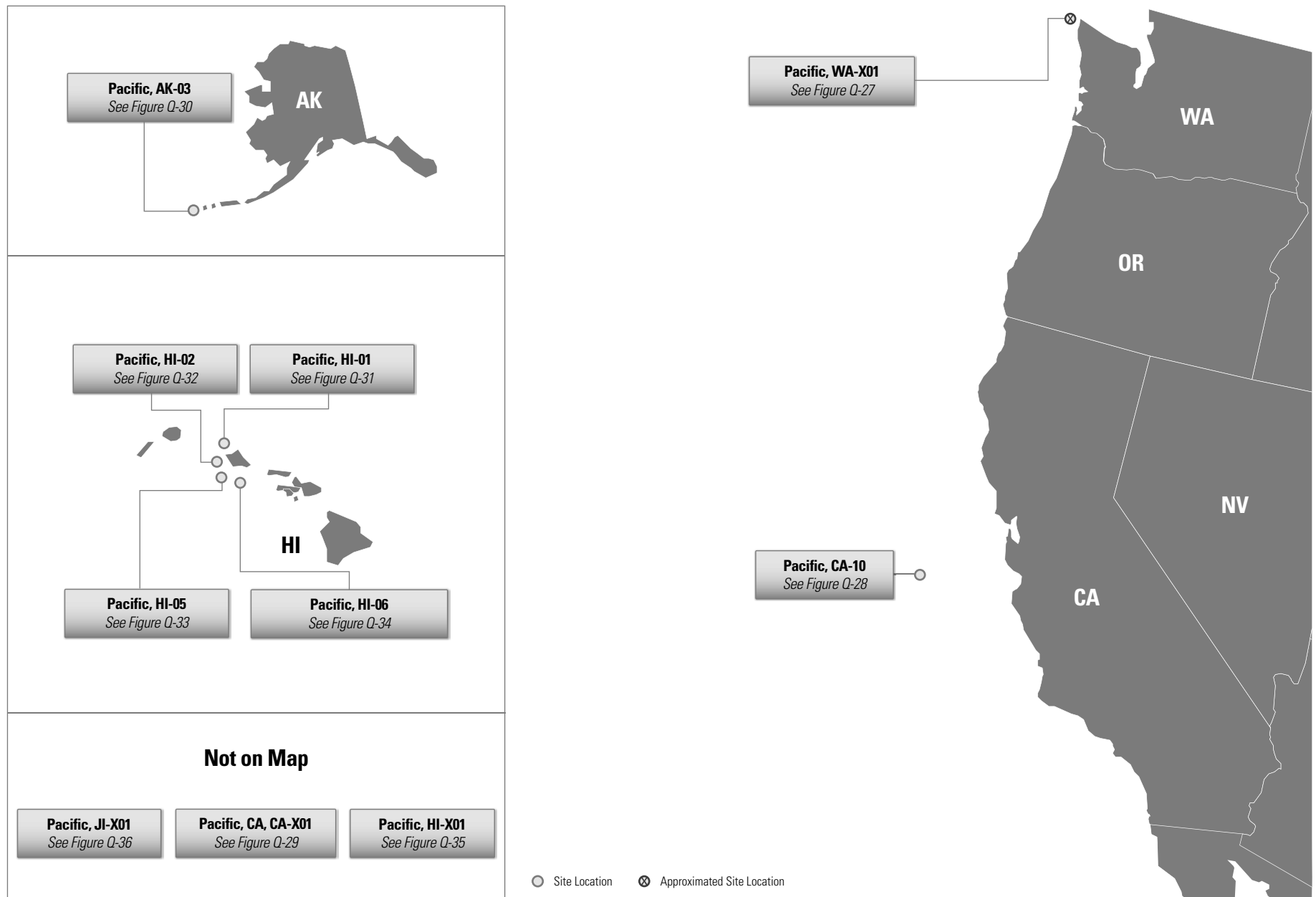


Figure Q-5 U.S. Waters—Atlantic, ME-03 (Penobscot Bay) Detail of CWC Schedule Disposals and Other Materials Disposed

Distance (miles): 1

Depth (feet): Greater than 100

CWC Schedule Disposals

Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Mustard	55 Gallon Drum	Each	4	555	1
Mustard Total					1

Figure Q-6 U.S. Waters—Atlantic, Area MA-02 Detail of Other Materials Disposed*

Distance (miles): 200

Depth (feet): Greater than 1,500

Other Materials Disposed

Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Smoke (FM)	Drum	N/A	N/A	N/A	N/A

*This site lies outside of the U.S. Exclusive Economic Zone and is included for informational purposes only.

Figure Q-7 U.S. Waters—Atlantic, MA-05 Detail of Other Materials Disposed*

Distance (miles): Greater than 200

Depth (feet): Unknown

Other Materials Disposed

Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Conventional Munitions	Unknown	N/A	Unknown	N/A	N/A

*This site lies outside of the U.S. Exclusive Economic Zone and is included for informational purposes only.

Figure Q-8 U.S. Waters—Atlantic, NY-01 (Area A) Detail of CWC Schedule Disposals and Other Materials Disposed

Distance (miles): 125

Depth (feet): Greater than 1,500

CWC Schedule Disposals						
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)	
Mustard	Ton Container	Each	4,577	1,800	4,119	
Mustard Total					4,119	
Sarin (GB)	M55 Rockets in Concrete Vaults	Each	29,280	11	157	
Sarin (GB)	Ton Container	Each	19	1,600	15	
Sarin Total					172	
VX	M55 Rockets in Concrete Vaults	Each	21,900	10	110	
VX	Ton Container	Each	19	1,430	14	
VX Total					124	
Arsenic	50 and 30 Gallon Drum or Canister	Each	60	543	16	
Arsenic Total					16	
Cyanide	50 and 30 Gallon Drum or Canister	Each	60	176	5	
Cyanide Total					5	
Unknown Agent	Ton Container	Each	28	1,900	27	
Unknown Agent Total					27	
Other Materials Disposed						
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)	
Methyl Bromide	Cylinder	Each	4	N/A	N/A	
Explosives	Unknown	Tons	2,444	N/A	N/A	
Water	Ton Container	Each	3,500	N/A	N/A	

Figure Q-9 U.S. Waters—Atlantic, NY-03 Detail of Other Materials Disposed

Distance (miles): Greater than 100

Depth (feet): Greater than 1,500

Other Materials Disposed						
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)	
Explosives	Unknown	N/A	Unknown	N/A	N/A	

Figure Q-10 U.S. Waters—Atlantic, NJ-01 (Unnamed 2) Detail of CWC Schedule Disposals***Distance (miles):** 275**Depth (feet):** Greater than 1,500

CWC Schedule Disposals					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Lewisite	Ton Container	Each	48	1,900	46
Lewisite Total					46

*This site lies outside of the U.S. Exclusive Economic Zone and is included for informational purposes only.

Figure Q-11 U.S. Waters—Atlantic, NJ-02 (Unnamed 1) Detail of CWC Schedule Disposals and Other Materials Disposed**Distance (miles):** 150**Depth (feet):** Greater than 1,500

CWC Schedule Disposals					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Lewisite	Ton Container	Each	2	1,900	2
Lewisite	150 lb Cylinder	Each	1	75	<1
Lewisite Total					2
Mustard	Ton Container	Each	74	1,800	67
Mustard	75 mm Projectile	Each	1,700	1.4	1
Mustard Total					68
Cyanogen Chloride (CK)	M78 500 lb Bomb	Each	10	176	1
Cyanogen Chloride Total					1

Other Materials Disposed					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Radiological Waste	55 Gallon Drum	Each	800	N/A	N/A
Radiological Waste	Unknown	N/A	N/A	N/A	N/A
Riot Control (CNB)	Ton Container	Each	456	N/A	N/A
Smoke (FS)	Smoke Mixture	N/A	N/A	N/A	N/A

Figure Q-12 U.S. Waters—Atlantic, DE-01 Detail of Other Materials Disposed**Distance (miles):** 50**Depth (feet):** Greater than 100

Other Materials Disposed					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Smoke	Smoke Pot	N/A	N/A	N/A	N/A

Figure Q-13 U.S. Waters—Atlantic, MD-01 (Area 1) Detail of CWC Schedule Disposals and Other Materials Disposed

Distance (miles): 120

Depth (feet): Greater than 1,500

CWC Schedule Disposals

Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Lewisite	Ton Container	Each	1	1,900	1
Lewisite Total					1
Mustard	155 mm Projectile	Each	341	12	2
Mustard	105 mm Projectile	Each	378	3.2	1
Mustard	4.2 inch Mortar Shell	Each	56,144	6.5	182
Mustard Total					185
Arsenic Trichloride	55 Gallon Drum	Each	1,154	875	505
Arsenic Trichloride Total					505
Cyanide	55 Gallon Drum	Each	20	283	3
Cyanide Total					3

Other Materials Disposed

Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Low-Level Radiological Waste	Unknown	Pounds	421,757	N/A	N/A
White Phosphorus (WP)	M74 500 lb Cluster Bomb	Each	278	N/A	N/A
WP	M74 110 lb Cluster Bomb	Each	646	N/A	N/A
WP	57 mm Cartridge	Each	2,376	N/A	N/A
WP	Igniter	Each	2,876	N/A	N/A
Adamsite (DM)	Smoke candle	Tons	375	N/A	N/A
Smoke	M1 155 mm Smoke Canister	Each	252	N/A	N/A
Smoke	M2 155 mm Smoke Canister	Each	84	N/A	N/A
Smoke	M3 155 mm Smoke Canister	Each	156	N/A	N/A
Smoke	M4 155 mm Smoke Canister	Each	52	N/A	N/A
Smoke (HC)	105 mm Smoke Canister	Each	55,201	N/A	N/A
Smoke	76 mm Smoke Canister	Each	84	N/A	N/A
Smoke	76 mm Smoke Canister (Unfixed)	Each	22,110	N/A	N/A
Smoke	60 mm Smoke Canister (Unfixed)	Each	378	N/A	N/A
Smoke	M84 Smoke Shell (Unfixed)	Each	96	N/A	N/A
Smoke (HC)	2.36 inch T27E1 Rocket Head	Each	1,273	N/A	N/A
Smoke (HC)	T6 Rifle Grenade Head	Each	155	N/A	N/A
Incendiary	2.36 inch T31 Rocket Head	Each	8	N/A	N/A

Figure Q-14 U.S. Waters—Atlantic, VA-01 (Unnamed 3) Detail of CWC Schedule Disposals**Distance (miles):** 100**Depth (feet):** Greater than 1,500

CWC Schedule Disposals					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Mustard	4.2 inch Mortar Shell	Each	19,728	6.5	64
Mustard Total					64

Figure Q-15 U.S. Waters—Atlantic, NC-03 (Area Baker) Detail of CWC Schedule Disposals**Distance (miles):** 100**Depth (feet):** Greater than 1,500

CWC Schedule Disposals					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Mustard	4.2 inch Mortar Shell	Each	12,160	6.5	40
Mustard Total					40

Figure Q-16 U.S. Waters—Atlantic, NC-04 (Area B-1) Detail of CWC Schedule Disposals and Other Materials Disposed**Distance (miles):** Greater than 250**Depth (feet):** Greater than 1,500

CWC Schedule Disposals					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Lewisite	Bomb, unspecified	Tons	462	1,100	254
Lewisite	M70 115 lb Bomb	Tons	2,854	1,100	1,570
Lewisite	M70 115 lb Bomb	Each	928	83	38
Lewisite	Ton Container	Cars	6	20,000	60
Lewisite Total					1,922
Mustard	155 mm Projectile	Each	968	12	6
Mustard	105 mm Projectile	Each	1,048	3.2	2
Mustard	75 mm Projectile	Each	86	1.4	<1
Mustard Total					8

Other Materials Disposed

Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
High Explosive (HE)	1,000 kg Bomb	Each	25	N/A	N/A
HE	1,000 lb Bomb	Each	7	N/A	N/A
HE	500 kg Bomb	Each	18	N/A	N/A
HE	250 kg Cluster Bomb	Each	24	N/A	N/A
HE	100 kg Bomb	Each	6	N/A	N/A
HE	100 lb Bomb	Each	1	N/A	N/A
HE	81 mm Detonator	Each	176	N/A	N/A
HE	81 mm Fuze	Each	176	N/A	N/A
WP	81 mm Projectile	Each	176	N/A	N/A

Figure Q-17 U.S. Waters—Atlantic, FL-02 (Unnamed 4) Detail of CWC Schedule Disposals and Other Materials Disposed*

Distance (miles): Greater than 250

Depth (feet): Greater than 1,500

CWC Schedule Disposals

Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Lewisite	Container	Ton Container	3,659	1,900	3,476
Lewisite Total					3,476
Mustard	75 mm and 155 mm Projectiles	Cars	62	20,000	620
Mustard Total					620
Sarin (GB)	M121 155 mm Projectile	Each	3	6	<1
Sarin (GB)	M55 Rocket	Each	12,508	11	67
Sarin Total					67
VX	M23 Land Mine	Each	1	11	<1
VX Total					<1

Other Materials Disposed

Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Incendiary	M14 500 lb Cluster Bomb	Each	60	N/A	N/A
Unknown	Experimental Munitions	N/A	N/A	N/A	N/A

*This site lies outside of the U.S. Exclusive Economic Zone and is included for informational purposes only.

Figure Q-18 U.S. Waters—Atlantic, NJ-X01 (New Jersey) Detail of CWC Schedule Disposals**Distance (miles):** 60**Depth (feet):** Greater than 100

CWC Schedule Disposals					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Mustard	M47A1 100 lb Bomb	Each	3	75	<1
Mustard Total					<1

Figure Q-19 U.S. Waters—Atlantic, MD-02 (Bush River) Detail of Other Materials Disposed**Distance (miles):** less than 1**Depth (feet):** Unknown

Other Materials Disposed					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Empty	25 lb Drop Bomb (Contained WP)	Each	102	N/A	N/A
Empty	25 lb Drop Bomb (Contained CN in CCL4)	Each	88	N/A	N/A

Figure Q-20 U.S. Waters—Atlantic, U.S.S. Elinor Detail of CWC Schedule Disposals**Distance (miles):** Greater than 45**Depth (feet):** Greater than 100

CWC Schedule Disposals					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Unknown Agent	Miscellaneous	Tons	2,460	400	492
Unknown Agent Total					492

Figure Q-21 U.S. Waters—Atlantic, Area Unknown Detail of CWC Schedule Disposals and Other Materials Disposed**Distance (miles):** Unknown**Depth (feet):** Unknown

CWC Schedule Disposals					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Lewisite	55 Gallon Drum	Each	364	780	142
Lewisite	M70 115 lb Bomb	Each	30,432	83	1,263
Lewisite	Ton Container	Each	1,509	1,900	1,434
Lewisite Total					2,839

Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Mustard	1,000 lb Bomb	Each	6	420	1
Mustard	500 lb Bomb	Each	16	220	2
Mustard	M47 100 lb Bomb	Each	57	75	2
Mustard	German 1,000 lb Bomb	Each	25	420	5
Mustard	German 500 lb Bomb	Each	24	220	3
Mustard	Bomb, Unspecified	Each	107	75	4
Mustard	M60 105 mm Projectile	Each	8	3.2	<1
Mustard	Unspecified Munitions	N/A	N/A	N/A	N/A
Mustard (HN)	Ton Container	Each	63	1,800	57
Mustard Total					74
Phosgene	1,000 lb Bomb	Each	6	417	1
Phosgene	500 lb Bomb	Each	15	205	2
Phosgene	Bomb, Unspecified	Each	55	205	6
Phosgene	M78 500 lb Bomb	Each	25	205	3
Phosgene	M79 1,000 lb Bomb	Each	25	417	5
Phosgene	Cylinder	Tons	20	2,000	20
Phosgene Total					37
Sulfur Monochloride	Drum	Each	45	704	16
Sulfur Monochloride Total					16
Tabun (GA)	1,000 lb Bomb	Each	6	420	1
Tabun (GA)	German 1,000 lb Bomb	Each	24	420	5
Tabun Total					6
Unknown Agent	100 lb Bomb	N/A	N/A	N/A	N/A
Unknown Agent	105 mm Projectile	N/A	N/A	N/A	N/A
Unknown Agent	Chemical Weapons/Agent	N/A	N/A	N/A	N/A
Unknown Agent	Stokes and Livens Ammunition	Tons	2,650	500	663
Unknown Agent Total					663
Other Materials Disposed					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Explosives	Non-Toxic Gas and Smoke-Filled Shells, Bursters, Fuzes, Charges, etc.	Tons	450	N/A	N/A
Stannic Chloride (KJ)	Hand Grenade	N/A	N/A	N/A	N/A

Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Decontaminating Agent, Non-Corrosive	Unknown	Pounds	70,180	N/A	N/A
Water	Ton Container	Container	2	N/A	N/A
CAIS	Set, Gas Identification	Each	200	N/A	N/A
Riot Control (CN)	Capsule	Each	7,875	N/A	N/A
Riot Control (CN)	M7HA Hand Grenade	Each	65	N/A	N/A
Riot Control (CN)	M6HA CN-DM Hand Grenade	Each	230	N/A	N/A

Figure Q-22 U.S. Waters—Caribbean, PR-01 (Puerto Rico, Vieques) Detail of CWC Schedule Disposals and Other Materials Disposed*

Distance (miles): 10

Depth (feet): Greater than 1,500

CWC Schedule Disposals

Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Mustard	4.2 inch Mortar Shell	Each	68	6.5	<1
Mustard Total					<1
Cyanogen Chloride (CK)	ANM79 1,000 lb Bomb	Each	8	351	1
Cyanogen Chloride (CK)	M70 115 lb Bomb	Each	124	52	3
Cyanogen Chloride (CK)	M78 500 lb Bomb	Each	29	176	3
Cyanogen Chloride Total					7
Tabun (GA)	4.2 inch Mortar Shell	Each	1,842	4	4
Tabun (GA)	German 250 kg Bomb	Each	110	206	11
Tabun Total					15

Other Materials Disposed

Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Smoke (FS)	4.2 inch Mortar Shell	Each	6	N/A	N/A
Empty	4.2 inch Mortar Shell	Each	467	N/A	N/A
Empty	M47A2 100 lb Bomb	Each	50	N/A	N/A
Empty	M70 115 lb Bomb	Each	238	N/A	N/A
Empty	T3 126 lb Bomb	Each	40	N/A	N/A
Empty	500 lb Chemical Drum	Each	12	N/A	N/A

*This site is included for informational purposes only.

Figure Q-23 U.S. Waters—Gulf of Mexico, AL-X01 (Mobile) Detail of CWC Schedule Disposals

Distance (miles): 50

Depth (feet): Greater than 1,500

CWC Schedule Disposals					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Mustard	German 1,000 kg Bomb	Each	30	420	6
Mustard	German 500 kg Bomb	Each	3	220	<1
Mustard Total					7

Figure Q-24 U.S. Waters—Gulf of Mexico, MS-X01 (Horn Island) Detail of Other Materials Disposed

Distance (miles): Unknown

Depth (feet): 50

Other Materials Disposed					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Empty	500 kg Bomb Debris	Each	5	N/A	N/A

Figure Q-25 U.S. Waters—Gulf of Mexico, LA-X01 (Braithwaite) Detail of CWC Schedule Disposals

Distance (miles): Less than 1

Depth (feet): 50

CWC Schedule Disposals					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Mustard	100 lb Bomb	Each	20	75	1
Mustard Total					1
Unknown Agent	Bomb	Each	2	N/A	N/A
Unknown Agent					N/A

Figure Q-26 U.S. Waters—Gulf of Mexico, Unknown Detail of CWC Schedule Disposals and Other Materials Disposed

Distance (miles): Unknown

Depth (feet): Unknown

CWC Schedule Disposals					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Mustard	T3 126 lb Bomb	Each	2	60	<1
Mustard	M47A2 100 lb Bomb	Each	1	75	<1
Mustard Total					<1
Phosgene (CG)	250 kg Bomb	Each	2	240	<1
Phosgene (CG)	500 kg Bomb	Each	1	475	<1
Phosgene (CG)	M78 500 lb Bomb	Each	1	205	<1
Phosgene (CG)	M79 1,000 lb Bomb	Each	1	417	<1
Phosgene Total					1
Unknown Agent	Munitions	Short tons	922	400	184
Unknown Agent Total					184
Other Materials Disposed					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Riot Control (CNS)	4.2 inch Mortar Shell	Barge	1	N/A	N/A

Figure Q-27 U.S. Waters—Pacific, WA-X01 (Puget Sound) Detail of CWC Schedule Disposals

Distance (miles): 10

Depth (feet): 300

CWC Schedule Disposals					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Riot Control (CN)	Grenade, Rifle, CN, M1	Each	428	N/A	N/A

Figure Q-28 U.S. Waters—Pacific, CA-10 (West Coast) Detail of CWC Schedule Disposals and Other Materials Disposed

Distance (miles): 120

Depth (feet): Greater than 1,500

CWC Schedule Disposals						
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)	
Lewisite	Ton Container	Each	1,415	1,900	1,344	
Lewisite Total					1,344	
Mustard	M70 115 lb Bomb	Each	301,000	60	9,030	
Mustard	M47 100 lb Bomb	Each	6	75	<1	
Mustard (HN)	Ton Container	Each	11	1,800	10	
Mustard Total					9,040	
Other Materials Disposed						
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)	
Other	55 Gallon Drum	Each	4	N/A	N/A	
Other	Contaminated Soil with Fragments	N/A	N/A	N/A	N/A	

Figure Q-29 U.S. Waters—Pacific, CA-X01 (Unknown) Detail of CWC Schedule Disposals

Distance (miles): Unknown

Depth (feet): Unknown

CWC Schedule Disposals						
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)	
Smoke (HC)	4 inch 50 MK 15-1 Projectile	Each	71	N/A	N/A	
CAIS	Set, Gas Identification Instructional (Navy) HN, M1	Each	5	N/A	N/A	

Figure Q-30 U.S. Waters—Pacific, AK-03 (Attu Island, Chicago Harbor) Detail of CWC Schedule Disposals

Distance (miles): 10

Depth (feet): Greater than 1,500

CWC Schedule Disposals						
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)	
Lewisite	Ton Container	Each	887	1,900	843	
Lewisite Total					843	
Mustard	Ton Container	Each	61	1,800	55	
Mustard Total					55	

Figure Q-31 U.S. Waters—Pacific, HI-01 (Oahu Area 1) Detail of CWC Schedule Disposals**Distance (miles):** 10**Depth (feet):** Greater than 1,500

CWC Schedule Disposals						
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)	
Lewisite	Ton Container	Each	190	1,900	181	
Lewisite Total					181	
Mustard	M70 115 lb Bomb	Each	14,956	60	449	
Mustard	M110 155 mm Projectile	Each	1,949	12	11	
Mustard	MK2 155 mm Projectile	Each	1,747	11	10	
Mustard	MK2A1 155 mm Projectile	Each	595	11	3	
Mustard	M60 105 mm Projectile	Each	10,773	3.2	17	
Mustard	M64 75 mm Projectile	Each	2,390	1	1	
Mustard	4.2 inch Mortar Shell	Each	30,917	6.5	100	
Mustard	Ton Container	Each	1,038	1,800	934	
Mustard Total					1,525	
Cyanogen Chloride (CK)	M79 1,000 lb Bomb	Each	1,100	351	193	
Cyanogen Chloride (CK)	M78 500 lb Bomb	Each	125	176	11	
Cyanogen Chloride Total					204	
Cyanide (AC)	M79 1,000 lb Bomb	Each	20	200	2	
Cyanide Total					2	

Figure Q-32 U.S. Waters—Pacific, HI-02 (Oahu Area 2) Detail of CWC Schedule Disposals**Distance (miles):** 10**Depth (feet):** Greater than 1,500

CWC Schedule Disposals						
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)	
Mustard	M104 155 mm Projectile	Each	868	12	5	
Mustard	M60 105 mm Projectile	Each	14,119	3.2	22	
Mustard	MK2 75mm Shell	Each	1,213	1.4	1	
Mustard	M64 75mm Projectile	Each	2,151	1	1	
Mustard Total					29	

Figure Q-33 U.S. Waters—Pacific, HI-05 Unnamed Detail of CWC Schedule Disposals

Distance (miles): Greater than 5

Depth (feet): Greater than 500

CWC Schedule Disposals						
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)	
Mustard	M47A2 100 lb Bomb	Each	16,000	75	598	
Mustard	Stokes Mortar	Each	12	7.5	<1	
Mustard Total					598	

Figure Q-34 U.S. Waters—Pacific, HI-06 (Oahu, Ordnance Reef) Detail of Other Materials Disposed

Distance (miles): 1

Depth (feet): 25

Other Materials Disposed						
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)	
Small Arms Ammunition	.50 Caliber Cartridge	Each	200	N/A	N/A	
HE	20 mm Cartridge	Each	1040	N/A	N/A	
HE	25 mm Cartridge	Each	250	N/A	N/A	
HE	90 mm Mortar	Each	1	N/A	N/A	
HE	105 mm Projectile	Each	152	N/A	N/A	
HE	155 mm Projectile	Each	75	N/A	N/A	
HE	3 to 6 inch Naval Gun Ammunition	Each	77	N/A	N/A	
HE	5 to 8 inch Naval Gun Ammunition	Each	142	N/A	N/A	
HE	Ammunition, Various Sizes	Each	108	N/A	N/A	
HE	100 lb Fragmentation Bomb	Each	1	N/A	N/A	
HE	Bottom Mine	Each	1	N/A	N/A	
HE	Depth Charge	Each	1	N/A	N/A	
Unknown	Ammunition Box	Each	29	N/A	N/A	

Figure Q-35 U.S. Waters—Pacific, HI-X01 (Oahu Unknown) Detail of CWC Schedule Disposals and Other Materials Disposed**Distance (miles):** Unknown**Depth (feet):** Unknown

CWC Schedule Disposals					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Mustard	Mk42 100 lb Bomb	Each	6	41	<1
Mustard	M47A2 100 lb Bomb	Each	36	75	1
Mustard	MK2 155 mm Projectile	Each	302	11.4	2
Mustard	MK2 75 mm Projectile	Each	25,849	1.4	18
Mustard	105 mm Projectile	Each	7,011	3.2	11
Mustard Total					32
Other Materials Disposed					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Incendiary	Bomb, Unspecified	N/A	N/A	N/A	N/A
Riot Control (CN)	MK V Grenade	Each	119	N/A	N/A
Riot Control (NC)	MK2 75 mm Projectile	Each	45	N/A	N/A
Smoke	MK2 Smoke Float	Each	1	N/A	N/A
Smoke	MK3 and Mods Smoke Float	Each	41	N/A	N/A
Smoke	MK3 Smoke Pot	Each	11	N/A	N/A
Smoke (FM)	MK2 155 mm Projectile	Each	35	N/A	N/A
Smoke (FM)	MK2 75 mm Projectile	Each	96	N/A	N/A
Smoke (FS)	4.5 inch MK7 Rocket Body	Each	12	N/A	N/A
Smoke (HC)	M1 Smoke Pot	Each	46	N/A	N/A
WP	75 mm Projectile	Lot	1	N/A	N/A

Figure Q-36 U.S. Waters—Pacific, JI-X01 (Johnston Atoll) Detail of Other Materials Disposed**Distance (miles):** Greater than 5**Depth (feet):** Unknown

Other Materials Disposed					
Item or Fill	Munition or Container Type	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Empty	Debris from Decontaminated M55 Rocket	Each	19	N/A	N/A