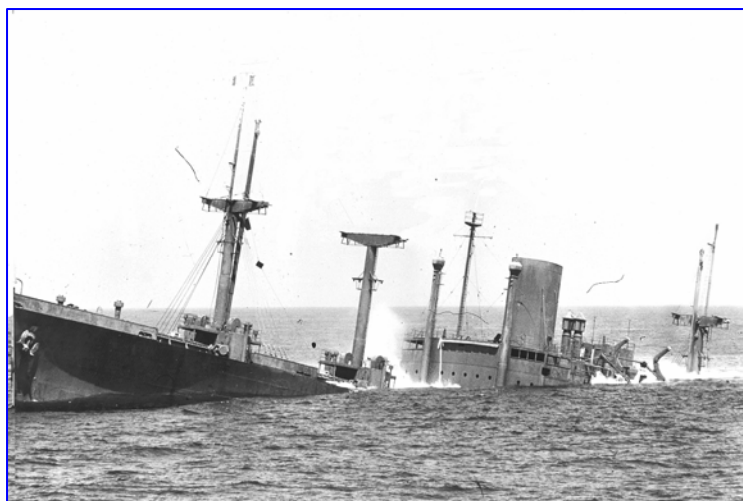




## U.S. Army Research, Development and Engineering Command

# OFF-SHORE DISPOSAL OF CHEMICAL AGENTS AND WEAPONS CONDUCTED BY THE UNITED STATES

Compiled by the  
Historical Research and Response Team



**This information is cleared for public release.**

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Corporate Information Office  
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## I. ATLANTIC OCEAN

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### 1. WWI Lewisite Disposal

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**DATE:** 1918  
**LOCATION:** Atlantic Ocean  
**MATERIAL:** lewisite

**COMMENT:** The earliest recorded incident of off-shore disposal of chemical munitions and/or bulk chemical agent into the sea occurred at the end of World War I when the U.S. disposed of lewisite into the Atlantic Ocean somewhere between England and the United States.

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### 2. WWII Canal Zone Mustard Bomb Disposal

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**DATE:** February 1940-September 1941  
**LOCATION:** France Field, Canal Zone  
**MATERIAL:** 5 30-pound mustard bombs

**COMMENT:** Material was loose dumped in three separate disposal operations.

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### 3. WWII Mustard Disposal

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**DATE:** World War II  
**LOCATION:** Atlantic Ocean, off Charleston, South Carolina  
**MATERIAL:** 105mm mustard projectiles  
M70 115-pound mustard bombs

**COMMENT:** This disposal operation was probably loose dumping of leaking munitions.

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### 4. WWII Chemical Disposal

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**DATE:** World War II  
**LOCATION:** Atlantic Ocean, off Nansemond, Norfolk, Virginia  
**MATERIAL:** Unknown

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### 5. WWII Area Number 1 Chemical Disposal

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**DATE:** 14 Sep-21 Dec 45  
**LOCATION:** Atlantic Ocean, (Disposal Area Number 1)  
**MATERIAL:** 1,154 55-gallon drums of arsenic trichloride  
375 tons of diphenylaminechloroarsine (adamsite) smoke candles  
75,852 4.2-inch distilled mustard shells  
924 M74 10-pound white phosphorus cluster bombs  
approximately 56,000 smoke canisters  
approximately 23,000 smoke projectiles

**COMMENT:** Items were loaded at Edgewood Arsenal, MD and sea disposed during seven trips. Material from the first load was transferred from a barge to the Coast Guard Cutter Gentian and was loose dumped from the cutter. The following six trips were made by a Navy landing ship medium (LSM) and the material was disposed from the LSM.

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## 6. WWII North Sea Chemical Disposal

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**DATE:** December 1945  
**LOCATION:** Skagerrak area of North Sea  
**MATERIAL:** 11,000 tons of nerve agent sarin (GB)  
4,000 tons of mustard agent  
35,000 tons of chloroacetophenone and diphenylamine-chloroarsine (adamsite)  
66,000 tons of mustard agent and phosgene

**COMMENT:** This material was captured German chemical agents.

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## 7. 1946 Gulf of Mexico Mustard Disposal

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**DATE:** 7 Mar 46  
**LOCATION:** Gulf of Mexico  
**MATERIAL:** unspecified mustard projectiles

**COMMENT:** The material came from the New Orleans Port of Entry. Disposal was accomplished from the *U.S.S. Akutan*.

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## 8. 1946 Gulf of Mexico Mustard Bomb Disposal

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**DATE:** 10 Mar 46  
**LOCATION:** Gulf of Mexico  
**MATERIAL:** 2 mustard bombs

**COMMENT:** At the New Orleans Port of Entry, two mustard bombs, discovered leaking upon arrival from Edgewood Arsenal, Maryland, were placed on a barge and disposed at sea.

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## 9. 1946 Site Baker Mustard Projectile Disposal

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**DATE:** 21-25 Mar 46  
**LOCATION:** Atlantic Ocean, Site "Baker" off Charleston, South Carolina.  
**MATERIAL:** 4 carloads of mustard projectiles

**COMMENT:** Items came from the Naval Mine Depot, Yorktown, Virginia. The material was loose dumped from the *S.S. Diamond Head*.

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## 10. 1946 Gulf of Mexico Phosgene Disposal

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**DATE:** May 1946  
**LOCATION:** Gulf of Mexico  
**MATERIAL:** 3 phosgene bombs

**COMMENT:** German bombs were probably disposed from the *S.S. Park Benjamin*.

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## 11. 1946 Skagerrak Chemical Disposal

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**DATE:** 1 Jul 46  
**LOCATION:** North Sea, Skagerrak  
**MATERIAL:** 1,349 long tons of captured German chemical weapons/agent

**COMMENT:** Sunk in hulk *Sperrbrecher* as Davy Jones Locker 1. Depth of water 650 meters.

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**12. 1946 Skagerrak Chemical Disposal**

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**DATE:** 1 Jul 46  
**LOCATION:** North Sea, Skagerrak  
**MATERIAL:** 1,526 long tons of captured German chemical weapons/agent

**COMMENT:** Sunk in hulk *T65* as Davy Jones Locker 2. Depth of water 650 meters.

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**13. 1946 Skagerrak Chemical Disposal**

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**DATE:** 2 Jul 46  
**LOCATION:** North Sea, Skagerrak  
**MATERIAL:** 671 long tons of captured German chemical weapons/agent

**COMMENT:** Sunk in hulk *UJ305* as Davy Jones Locker 3. Depth of water 650 meters.

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**14. 1946 Gulf of Mexico Mustard Bomb Disposal**

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**DATE:** 13 Jul 46  
**LOCATION:** Gulf of Mexico  
**MATERIAL:** 30 500 kg mustard bombs  
3 250 kg mustard bombs

**COMMENT:** During unloading of *S.S. Francis Lee* at Theodore Naval Magazine near Mobile, Alabama, several German bombs were set aside on a barge for disposal. They were disposed in 200-600 feet of water 20 miles off the coast. One bomb was later recovered after it floated ashore.

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**15. 1946 Skagerrak Chemical Disposal**

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**DATE:** 14 Jul 46  
**LOCATION:** North Sea, Skagerrak  
**MATERIAL:** 2,765 long tons of captured German chemical weapons/agent

**COMMENT:** Sunk in hulk *Alco Banner* as Davy Jones Locker 4. Depth of water 650 meters.

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**16. 1946 Site Baker Chemical Disposal**

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**DATE:** 1 Aug-17 Oct 46  
**LOCATION:** Atlantic Ocean, Disposal Site "Baker"  
**MATERIAL:** lewisite, mustard, and phosgene bombs  
German mustard and tabun bombs  
mustard one-ton containers  
mustard projectiles

**COMMENT:** This disposal was a disposal of stocks returning from or captured in Europe. A total of 23 barges departed from Charleston, South Carolina.

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**17. 1946 Skagerrak Chemical Disposal**

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**DATE:** 30 Aug 46  
**LOCATION:** North Sea, Skagerrak  
**MATERIAL:** 3,653 long tons of captured German chemical weapons/agent

**COMMENT:** Sunk in hulk *James Otis* as Davy Jones Locker 5. Depth of water 650 meters.

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**18. 1947 Skagerrak Chemical Disposal**

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**DATE:** 6 Jun 47  
**LOCATION:** North Sea, Skagerrak  
**MATERIAL:** 4,000 long tons of captured German chemical weapons/agent

**COMMENT:** Sunk in hulk *James Sewell* as Davy Jones Locker 6. Depth of water 725 meters.

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**19. 1947 Skagerrak Chemical Disposal**

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**DATE:** 20 Jun 47  
**LOCATION:** North Sea, Skagerrak  
**MATERIAL:** 3,000 long tons of captured German chemical weapons/agent

**COMMENT:** Sunk in hulk *James Harrod* as Davy Jones Locker 7. Depth of water 665 meters.

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**20. 1947 Skagerrak Chemical Disposal**

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**DATE:** 30 Jun 47  
**LOCATION:** North Sea, Skagerrak  
**MATERIAL:** 1,000 long tons of captured German chemical weapons/agent

**COMMENT:** Sunk in hulk *George Hawley* as Davy Jones Locker 8. Depth of water 685 meters.

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**21. 1947 Skagerrak Chemical Disposal**

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**DATE:** 18 Jul 47  
**LOCATION:** North Sea, Skagerrak  
**MATERIAL:** 6,000 long tons of captured German chemical weapons/agent

**COMMENT:** Sunk in hulk *Nesbit* as Davy Jones Locker 9. Depth of water 580 meters.

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**22. 1948 North Sea Chemical Disposal**

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**DATE:** 24 Jul 48  
**LOCATION:** Atlantic Ocean off Scotland and Norway  
**MATERIAL:** 2,000 long tons of captured German chemical weapons/agent

**COMMENT:** Sunk in hulk *Philip Heiniken* as Davy Jones Locker 10. Depth of water 1,035 meters.

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**23. 1948 North Sea Chemical Disposal**

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**DATE:** 24 Aug 48  
**LOCATION:** Atlantic Ocean off Scotland and Norway  
**MATERIAL:** 2,500 long tons of captured German chemical weapons/agent

**COMMENT:** Sunk in hulk *Marey* as Davy Jones Locker 11. Depth of water 1,180 meters.

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#### 24. 1948 Florida Lewisite Disposal

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**DATE:** 15-20 Dec 48  
**LOCATION:** Atlantic Ocean, 300 miles off Florida  
**MATERIAL:** 3,711 containers of lewisite  
60 M14 (?) bulk lewisite

**COMMENT:** This material came from Gulf Chemical Warfare Depot via Charleston, South Carolina, and was sunk in the merchant hulk *S.S. Joshua Alexander*. Code name for the program was Operation Geranium.

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#### 25. 1954 Gulf of Mexico Chemical Disposal

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**DATE:** 20 Feb 54  
**LOCATION:** Gulf of Mexico  
**MATERIAL:** one barge of riot control agent (CNS) projectiles

**COMMENT:** Items left Theodore Naval Magazine near Mobile, Alabama and were loose dumped from *LST 694*.

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#### 26. 1955 Gulf of Mexico Chemical Disposal

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**DATE:** January-February 1955  
**LOCATION:** Gulf of Mexico  
**MATERIAL:** 1 or 2 barges of unspecified toxic munitions

**COMMENT:** Items left Theodore Naval Magazine near Mobile, Alabama

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#### 27. 1957 Lewisite Disposal

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**DATE:** 13-14 Nov 57  
**LOCATION:** Atlantic Ocean  
**MATERIAL:** 48 one-ton containers of lewisite

**COMMENT:** Containers were loose dumped in 12,600 feet of water from *U.S.S. Calhoun County*. The material was originally from Edgewood Arsenal, Maryland, and was loaded at Colts Neck Naval Pier, Earle, New Jersey.

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#### 28. 1958 Chemical Disposal

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**DATE:** 20-27 Mar 58  
**LOCATION:** Atlantic Ocean off South Carolina  
**MATERIAL:** 1,507 one-ton containers of lewisite  
63 one-ton containers of nitrogen mustard

**COMMENT:** Containers were loose dumped from barges. The material was originally from Pine Bluff Arsenal, Arkansas, and was loaded at SunnyPoint, North Carolina.

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#### 29. 1958 Decontaminant Disposal

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**DATE:** June 1958  
**LOCATION:** Atlantic Ocean off coast of North Carolina  
**MATERIAL:** 70,180 pounds of DANC decontaminant

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**30. 1960 Chemical Disposal**

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**DATE:** 14-15 Jun 60  
**LOCATION:** Atlantic Ocean  
**MATERIAL:** 2 one-ton containers of lewisite  
1 lewisite cylinder  
radiological waste

**COMMENT:** The material came from Edgewood Arsenal, Maryland. A total of 320 tons of material was loose dumped from a single barge.

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**31. 1962 Chemical Disposal**

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**DATE:** 18 Jun 62  
**LOCATION:** Atlantic Ocean  
**MATERIAL:** 378 105mm mustard projectiles  
341 155mm mustard projectiles  
1 one-ton container of lewisite  
20 drums of cyanide  
421,757 pounds of radiological waste  
5,252 white phosphorous munitions

**COMMENT:** The material was loaded at Edgewood Arsenal, Maryland and loose dumped from a single barge.

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**32. 1964 Chemical Disposal**

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**DATE:** 6-7 Aug 64  
**LOCATION:** Atlantic Ocean near 1960 & 1962 sites  
**MATERIAL:** 456 one-ton containers of riot control agent (CNB)  
1,700 75mm mustard projectiles  
74 one-ton containers of mustard agent  
10 M78 500-pound cyanogen chloride bombs  
800 55-gallon drums of radiological waste

**COMMENT:** The material was loaded at Edgewood Arsenal, Maryland, and loose dumped from a single barge.

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**33. 1967 Operation CHASE 8 Disposal**

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**DATE:** 15 Jun 67  
**LOCATION:** Atlantic Ocean  
**MATERIAL:** 4,577 one-ton containers of mustard agent  
7,380 M55 sarin (GB) rockets in concrete vaults

**COMMENT:** The material was loaded at Colts Neck Naval Pier, Earle, New Jersey. It was sunk in the hulk *S.S. Corporal Eric G. Gibson* in 7,200 feet of water. The wreck site was sampled in 1969. In 1972, the wreck was located, photographed, and sampled with no contamination detected.



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### 34. 1968 Operation CHASE 11 Disposal

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**DATE:** 19 Jun 68  
**LOCATION:** Atlantic Ocean  
**MATERIAL:** 38 one-ton containers of sarin (GB) and VX nerve agent  
1,460 vaults holding M55 sarin (GB) and VX rockets  
120 drums of canisters of arsenic and cyanide

**COMMENT:** Material was loaded at Colts Neck Naval Pier, Earle, New Jersey. It was sunk in the hulk *S.S. Mormactern* in 6,390 feet of water. The wreck site was sampled 1969 and again located, photographed and sampled in 1972. No agent was detected.

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### 35. 1968 Operation CHASE 12 Disposal

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**DATE:** 7 Aug 68  
**LOCATION:** Atlantic Ocean  
**MATERIAL:** 3,500 one-ton containers contaminated with mustard agent and filled with water  
conventional explosives

**COMMENT:** The material was loaded at Colts Neck Naval Pier, Earle, New Jersey. It was sunk in the hulk *S.S. Richardson* in 7,800 feet of water. The wreck detonated during the descent to the bottom. The site was sampled in 1969 and 1972, but debris from the wreck could not be positively identified. No contamination was found. The one-ton containers were minimally contaminated with mustard agent as many stood open at Edgewood Arsenal for over one year prior to disposal.

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### 36. 1970 Operation CHASE 10 Disposal

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**DATE:** 18 Aug 70  
**LOCATION:** Atlantic Ocean, 250 miles east of Cape Kennedy, Florida  
**MATERIAL:** 12,508 M55 sarin (GB) rockets in vaults  
3 155mm sarin (GB) projectiles  
1 M23 VX land mine

**COMMENT:** The material was loaded at Sunny Point, North Carolina. It was sunk in the hulk *S.S. LeBaron Russell Briggs* in 16,440 feet of water. The wreck was located, photographed and sampled in 1971, 1972, 1973, 1974 and 1975. No contamination was detected. This was the last ocean disposal of chemical weapons.

## II. PACIFIC OCEAN

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### 1. WWII Canal Zone Mustard Shell Disposal

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**DATE:** February 1940-January 1942  
**LOCATION:** Quarry Heights, Canal Zone  
**MATERIAL:** 6 4.2-inch mustard shells

**COMMENT:** Material was found to be leaking and was loose dumped.

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## 2. WWII Manila Bay Mustard Bomb Disposal

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**DATE:** December 1941  
**LOCATION:** Manila Bay, Philippines  
**MATERIAL:** M47-series 100-pound mustard bombs

**COMMENT:** An undisclosed number of M47-series 100-pound mustard bombs stored at Fort William McKinley, Rizal, Philippine Islands, were disposed of by the Ordnance Department by dumping them overboard in Manila Bay from the *U.S.S. Tilly* shortly before Christmas 1941. The exact location of this disposal operation is not known.

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## 3. WWII Mariveles Bay Chemical Disposal

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**DATE:** 1942  
**LOCATION:** Mariveles Bay, Philippines  
**MATERIAL:** 1000 pounds of white phosphorus livens shells  
4.2-inch mortar shells  
6 one-ton containers of chlorine

**COMMENT:** Material was loose dumped.

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## 4. WWII Mustard Bomb Disposal

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**DATE:** August 1944  
**LOCATION:** Pacific Ocean  
**MATERIAL:** 36 M47A2 100-pound mustard bombs  
approximately 15,000 unspecified bombs

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## 5. WWII Hawaii Disposal

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**DATE:** 1944  
**LOCATION:** Pacific Ocean, off Pearl Harbor, Oahu, Hawaii  
**MATERIAL:** 4,220 tons of unspecified toxics hydrogen cyanide

**COMMENT:** Material was probably loose dumped. Probably the source of a 1976 accidental recovery of liquid filled 4-inch Stokes Mortar rounds which injured crewman aboard a hydraulic dredge.

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## 6. WWII Hawaii Mustard Bomb Disposal

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**DATE:** 1944  
**LOCATION:** about five miles off of Oahu  
**MATERIAL:** approximately 16,000 M47A2 100-pound mustard bombs

**COMMENT:** These bombs were stored in the Upper Kipapa and Ala Moana areas prior to disposal.

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## 7. WWII New Caledonia Chemical Disposal

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**DATE:** September 1945  
**LOCATION:** Pacific Ocean, possibly near Noumea, New Caledonia  
**MATERIAL:** 4,243 tons of toxic artillery ammunition

**COMMENT:** The *Louis A. Sengteller*, holding a load of toxic ammunition from Guadalcanal, sea disposed the items somewhere near Noumea, New Caledonia after receiving orders to do so.

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### 8. WWII Cape Moreton Chemical Disposal

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**DATE:** 2 Oct-20 Dec 45  
**LOCATION:** Pacific Ocean, 25 miles from Cape Moreton, Australia  
**MATERIAL:** 876 one-ton containers of mustard agent or 8,000 tons of mustard agent  
93 one-ton containers of lewisite or 8,000 tons of lewisite  
314 55-gallon drums of CNS (tear gas)  
432 55-gallon drums of CNB (tear gas)  
3,500 or 8,000 tons of 75mm, 105mm, and 155mm toxic projectiles  
8,000 tons of diphenylaminechloroarsine (adamsite) smoke candles

**COMMENT:** The items came from Darra Ammunition Depot, Brisbane, Australia. On 19 Jan 70, a one-ton container of mustard agent was recovered by a fishing trawler in 69 fathoms of water near this area. Later in the 1970's, a ton container washed ashore in this area. The Australian Government has indicated that the area is a hazard to mariners.

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### 9. WWII Hawaii Chemical Disposal

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**DATE:** 17 Oct-2 Nov 45  
**LOCATION:** Pacific Ocean, off Hawaii  
**MATERIAL:** 20 (7 tons) M79 1000-pound hydrogen cyanide bombs  
1,100 (461 tons) M79 1000-pound cyanogen chloride bombs  
125 (28 tons) M78 500-pound cyanogen chloride bombs  
14,956 (800 tons) M70 114-pound mustard bombs  
30,917 (510 tons) 4.2-inch mortar mustard shells  
1,038 (1,817 tons) one-ton containers of mustard agent  
190 (399 tons) one-ton containers of lewisite

**COMMENT:** The material was loaded at Waianae, Hawaii, to avoid moving the munitions through densely populated areas. The exact location of the sea disposal is unknown.

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### 10. WWII Philippines Mustard Bomb Disposal

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**DATE:** October 1945  
**LOCATION:** near Asuncion, Philippines  
**MATERIAL:** unknown quantity of leaking mustard bombs

**COMMENT:** Material was loose dumped from the *Robert Lesley*.

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### 11. WWII Japan Chemical Disposal

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**DATE:** November 1945  
**LOCATION:** Pacific Ocean, off Japanese Coast  
**MATERIAL:** 3,200 metric tons of unspecified chemical agent

**COMMENT:** This material was probably captured Japanese chemical agents.

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### 12. WWII Australia Chemical Disposal

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**DATE:** 1945  
**LOCATION:** Pacific Ocean, off Australia  
**MATERIAL:** 6,396 tons of projectiles  
1,600 tons of small arms ammunition (non-toxic)

**COMMENT:** This disposal may be the same as the Cape Moreton Disposal (No. 8).

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### 13. 1946 Japan Chemical Disposal

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**DATE:** 1946  
**LOCATION:** Pacific Ocean  
**MATERIAL:** 14,485 Type 94 floating smoke candles  
3,364 Type 94 large smoke candles  
113 tons thiodiglycol (containers)  
60 metric tons hexachloroethane  
other non-chemical material

**COMMENT:** All items were Japanese chemical warfare material removed from Okuno Shima by the U.S. 58th Chemical Service Company and sea disposed at an unknown location.

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### 14. 1946 Japan Chemical Disposal

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**DATE:** 1946  
**LOCATION:** Pacific Ocean  
**MATERIAL:** 8,339 T-99 large vomiting gas candles  
1,670 T-93 medium vomiting gas candles  
29,953 Y-98 small vomiting gas candles  
45,814 T-100 vomiting gas candles (self-propelling)  
17,460 T-100 medium vomiting gas candles  
7,210 T-100 large vomiting gas candles  
6,735 T-94 large smoke candles  
35,949 T-94 floating smoke candles  
207,210 T-94 small smoke candles  
245,220 T-94 substitute smoke candles  
9,156 T-94 signal smoke candles  
11,020 T-97 smoke candles  
542,389 T-99 smoke candles  
191,906 cans of imitation mustard agent

**COMMENT:** All items were Japanese chemical warfare material removed from Tadanoumi by the U.S. 58th Chemical Service Company and prepared for sea disposal at an unknown location. The 58th Company, however, was relieved from duty on 30 Jan 46 and documentation on the actual sea disposal has not been located.

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### 15. 1946 Chlorine Disposal

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**DATE:** 6 Mar 46  
**LOCATION:** Pacific Ocean, off Japan  
**MATERIAL:** 1 150-pound chlorine cylinder

**COMMENT:** After leaving Mukilteo Ammunition Pier, Washington, while enroute to Yokohama, Japan, on board the S.S., *Eugene Skinner*, a chlorine cylinder was found to be leaking. After unsuccessful efforts to plug the leak it was thrown over board.

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### 16. 1946 Chlorine Disposal

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**DATE:** 8 Apr 46  
**LOCATION:** Pacific Ocean, off Japan  
**MATERIAL:** 1 one-ton chlorine container

**COMMENT:** After leaving Mukilteo Ammunition Pier, Washington, enroute to Yokohama, Japan, on board the *S.S. Cape Friendship* a ton container of chlorine began to leak through a faulty plug. After unsuccessful efforts to plug the leak, the ton container was thrown overboard.

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### 17. 1946 Chemical Disposal

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**DATE:** 8 May-30 Nov 46  
**LOCATION:** Pacific Ocean  
**MATERIAL:** Japanese mustard and lewisite agents

**COMMENT:** Material was captured Japanese chemical agents.

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### 18. 1947 Aleutian Islands Chemical Disposal

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**DATE:** 30 Jun-15 Jul 47  
**LOCATION:** Pacific Ocean, 12 miles off Chicago Harbor, Attu, Aleutian Islands  
**MATERIAL:** 61 containers of mustard agent  
887 containers bulk lewisite

**COMMENT:** Shipment originated at Attu and Adak, Alaska. The Technical Escort Unit conducted the dumping.

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### 19. 1958 Chemical Disposal

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**DATE:** 19 Apr 58  
**LOCATION:** Pacific Ocean, 117 miles West of San Francisco  
**MATERIAL:** 301,000 M70 115-pound mustard bombs  
1,479 one-ton containers of lewisite

**COMMENT:** Material sunk in the hulk *S.S. William Ralston* in 13,542 feet of water. Material was originally from Navajo and Tooele Army Depots and was loaded at the Naval Weapons Station, Concord, California.

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### 20. 1958 Chemical Disposal

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**DATE:** 25 May 58  
**LOCATION:** Pacific Ocean, 117 miles West of San Francisco  
**MATERIAL:** 6 M47 100-pound mustard bombs  
335 one-ton containers of lewisite  
11 one-ton containers of nitrogen mustard  
2 mustard projectiles

**COMMENT:** Material was loose dumped from barge towed by tug *Sea Lion*. The material was originally from Tooele Army Depot and was loaded at the Naval Weapons Station, Concord, California.

### III. MEDITERRANEAN SEA

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#### 1. Bari Harbor Mustard Bomb Accident

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**DATE:** 2 Dec 43  
**LOCATION:** Bari Harbor, Italy  
**MATERIAL:** 2,000 M47A1 100-pound mustard bombs

**COMMENT:** Although not a sea disposal, on 2 Dec 43 the *S.S. John Harvey*, loaded with 2,000 M47A1 mustard bombs, was destroyed during a German air raid at Bari Harbor, Italy. The only members of the crew who were aware of the chemical munitions were killed in the raid. The destruction of the ship resulted in mustard agent contaminating the oily water in the harbor and inflicting 617 casualties. The harbor clean-up took three weeks and lots of lime as a decontaminant once the causative agent was determined.

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#### 2. WWII Ischia Chemical Disposal

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**DATE:** 21 Oct-5 Nov 45 and 1-15 Dec 45  
**LOCATION:** Mediterranean Sea off Italy, near island of Ischia (near Naples)  
**MATERIAL:** phosgene bombs  
cyanogen chloride bombs  
hydrogen cyanide bombs

**COMMENT:** The material was loaded at Italian ports under U.S. Army control. The quantity of each item is unknown.

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#### 3. WWII Mustard Bomb Disposal

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**DATE:** After World War II (?)  
**LOCATION:** Mediterranean Sea  
**MATERIAL:** M47 100-pound mustard bombs

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#### 4. WWII Manfredonia Bay Mustard Bomb Accident

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**DATE:** December 1945/January 1946  
**LOCATION:** Manfredonia Bay area  
**MATERIAL:** 100-pound M47-series mustard bombs

**COMMENT:** Unknown number of 100-pound mustard bombs were transported from La Serpe to Manfredonia. During unloading operations, one barge either sank or listed enough that a portion of the bombs fell into the water. A number of the bombs were recovered 2-3 weeks later and sea dumped 54 miles away at an unknown location. Later, bombs were discovered floating nearby and in the harbor, some from the harbor and some from the sea disposal. Additional bombs were thought to have settled into the harbor mud.

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#### 5. WWII Naples Chemical Disposal

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**DATE:** unknown  
**LOCATION:** sea disposal from Naples area  
**MATERIAL:** 13,000 mustard 4.2-inch mortar shells and mustard artillery shells  
438 55-gallon drums of mustard agent

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#### 6. 1946 Ischia Chemical Disposal

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**DATE:** 1-23 Apr 46  
**LOCATION:** Mediterranean Sea off Italy near island of Ischia (near Naples)  
**MATERIAL:** unspecified quantity of mustard and lewisite bombs

**COMMENT:** The material came from Auera, Italy.

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#### 7. 1946 St. Raphael Chemical Disposal

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**DATE:** July-October 1946  
**LOCATION:** Mediterranean Sea off St. Raphael, France  
**MATERIAL:** 1,700 lewisite bombs  
1,700 mustard bombs

**COMMENT:** The material came from France.

### IV. INDIAN OCEAN

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#### 1. WWII Pakistan Mustard Disposal

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**DATE:** 1943  
**LOCATION:** offshore from Karachi, Pakistan  
**MATERIAL:** unknown quantity of mustard bombs

**COMMENT:** Material was loose dumped in 250 feet of water.

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#### 2. WWII Bay of Bengal Mustard Disposal

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**DATE:** 10 May 45  
**LOCATION:** Bay of Bengal  
**MATERIAL:** 33-gallon (British Imperial) drums of mustard agent  
M47A2 100-pound mustard bombs

**COMMENT:** The *U.S.S. George B. Porter* sea disposed a portion of 16,000 mustard bombs formerly stored at Ondal Advance Chemical Park. The ships instructions were to sea dispose the items in at least 5,000 feet of water and 60 miles from the nearest land. This particular load was sea disposed in 1,200 fathoms.

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#### 3. WWII Bay of Bengal Mustard Disposal

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**DATE:** 11 May 45  
**LOCATION:** Bay of Bengal  
**MATERIAL:** 33-gallon (British Imperial) drums of mustard agent  
M47A2 100-pound mustard bombs

**COMMENT:** The *U.S.S. George B. Porter* sea disposed a portion of 16,000 mustard bombs formerly stored at Ondal Advance Chemical Park. The ships instructions were to sea dispose the items in at least 5,000 feet of water and 60 miles from the nearest land. This particular load was sea disposed in 1,300 fathoms.

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#### 4. WWII Bay of Bengal Mustard Disposal

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**DATE:** 12 May 45  
**LOCATION:** Bay of Bengal  
**MATERIAL:** 33-gallon (British Imperial) drums of mustard agent  
M47A2 100-pound mustard bombs

**COMMENT:** The *U.S.S. O.B. Martin* sea disposed a portion of 16,000 mustard bombs formerly stored at Ondal Advance Chemical Park. The ships instructions were to sea dispose the items in at least 5,000 feet of water and 60 miles from the nearest land. This particular load was sea disposed in 1,150 fathoms.

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#### 5. WWII Bay of Bengal Mustard Disposal

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**DATE:** May 1945  
**LOCATION:** Bay of Bengal  
**MATERIAL:** 572 55-gallon drums of mustard agent  
4,693 M47 100-pound mustard bombs

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#### 6. WWII Bay of Bengal Mustard Disposal

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**DATE:** May 1945  
**LOCATION:** Bay of Bengal  
**MATERIAL:** 608 55-gallon drums of mustard agent  
4,500 M47 100-pound mustard bombs

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#### 7. WWII Bay of Bengal Chemical Disposal

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**DATE:** May 1945  
**LOCATION:** Bay of Bengal  
**MATERIAL:** 37,957 M70 115-pound mustard bombs  
1,496 M78 500-pound phosgene bombs  
8,742 M79 1000-pound phosgene bombs  
2,512 M79 1000-pound cyanogen chloride bombs

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#### 8. WWII Bay of Bengal Chemical Disposal

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**DATE:** November 1945  
**LOCATION:** Bay of Bengal  
**MATERIAL:** 2,672 M70 115-pound mustard bombs  
910 M78 500-pound phosgene bombs  
2,672 one-ton containers of mustard agent  
883 one-ton containers of lewisite

## V. U.S. RIVERS AND LAKES

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#### 1. WWII Mississippi River Mustard Bomb Disposal

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**DATE:** probably 1944  
**LOCATION:** Mississippi River  
**MATERIAL:** loose disposal of more than 20 leaking M70 115-pound mustard bombs

**COMMENT:** Material was from New Orleans Port of Entry.



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## 2. WWII Mississippi River Chemical Disposal

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**DATE:** 1945  
**LOCATION:** 3-4 miles below Braithwaite, Louisiana  
**MATERIAL:** 2 unspecified bombs

**COMMENT:** The bombs accidentally sank in quicksand in the ship canal.