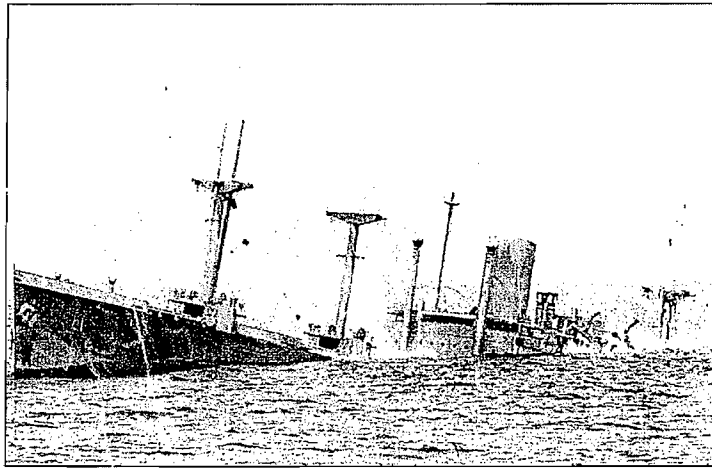




U.S. Army Research, Development and Engineering Command

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

Compiled by the
Historical Research and Response Team



Historical Database No. 26

This information is cleared for public release.

Historical Research and Response Team
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U.S. Army Research, Development and Engineering Command
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I. ATLANTIC OCEAN

1. WWI Lewisite Disposal

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.

2. WWII Canal Zone Mustard Bomb Disposal

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.

3. WWII Mustard Disposal

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.

4. WWII Chemical Disposal

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

5. WWII Area Number 1 Chemical Disposal

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.

6. WWII North Sea Chemical Disposal

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.

7. 1946 Gulf of Mexico Mustard Disposal

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*.

8. 1946 Gulf of Mexico Mustard Bomb Disposal

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.

9. 1946 Site Baker Mustard Projectile Disposal

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*.

10. 1946 Gulf of Mexico Phosgene Disposal

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

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

11. 1946 Skagerrak Chemical Disposal

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.

12. 1946 Skagerrak Chemical Disposal

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.

13. 1946 Skagerrak Chemical Disposal

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.

14. 1946 Gulf of Mexico Mustard Bomb Disposal

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.

15. 1946 Skagerrak Chemical Disposal

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.

16. 1946 Site Baker Chemical Disposal

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.

17. 1946 Skagerrak Chemical Disposal

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.

18. 1947 Skagerrak Chemical Disposal

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.

19. 1947 Skagerrak Chemical Disposal

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.

20. 1947 Skagerrak Chemical Disposal

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.

21. 1947 Skagerrak Chemical Disposal

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.

22. 1948 North Sea Chemical Disposal

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.

23. 1948 North Sea Chemical Disposal

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.

24. 1948 Florida Lewisite Disposal

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.

25. 1954 Gulf of Mexico Chemical Disposal

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*.

26. 1955 Gulf of Mexico Chemical Disposal

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

27. 1957 Lewisite Disposal

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.

28. 1958 Chemical Disposal

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.

29. 1958 Decontaminant Disposal

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

30. 1960 Chemical Disposal

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.

31. 1962 Chemical Disposal

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.

32. 1964 Chemical Disposal

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.

33. 1967 Operation CHASE 8 Disposal

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.

34. 1968 Operation CHASE 11 Disposal

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.

35. 1968 Operation CHASE 12 Disposal

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.

36. 1970 Operation CHASE 10 Disposal

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

1. WWII Canal Zone Mustard Shell Disposal

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.

2. WWII Manila Bay Mustard Bomb Disposal

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.

3. WWII Mariveles Bay Chemical Disposal

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.

4. WWII Mustard Bomb Disposal

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

5. WWII Hawaii Disposal

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.

6. WWII Hawaii Mustard Bomb Disposal

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.

7. WWII New Caledonia Chemical Disposal

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.

8. WWII Cape Moreton Chemical Disposal

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.

9. WWII Hawaii Chemical Disposal

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.

10. WWII Philippines Mustard Bomb Disposal

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

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

11. WWII Japan Chemical Disposal

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.

12. WWII Australia Chemical Disposal

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).

13. 1946 Japan Chemical Disposal

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.

14. 1946 Japan Chemical Disposal

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.

15. 1946 Chlorine Disposal

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.

16. 1946 Chlorine Disposal

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.

17. 1946 Chemical Disposal

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

COMMENT: Material was captured Japanese chemical agents.

18. 1947 Aleutian Islands Chemical Disposal

DATE: 30 Jun-15 Jul 47
LOCATION: Pacific Ocean, 12 miles off Chicagof 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.

19. 1958 Chemical Disposal

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.

20. 1958 Chemical Disposal

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

1. Bari Harbor Mustard Bomb Accident

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.

2. WWII Ischia Chemical Disposal

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.

3. WWII Mustard Bomb Disposal

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

4. WWII Manfredonia Bay Mustard Bomb Accident

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.

5. WWII Naples Chemical Disposal

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

6. 1946 Ischia Chemical Disposal

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.

7. 1946 St. Raphael Chemical Disposal

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

1. WWII Pakistan Mustard Disposal

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

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

2. WWII Bay of Bengal Mustard Disposal

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.

3. WWII Bay of Bengal Mustard Disposal

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.

4. WWII Bay of Bengal Mustard Disposal

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.

5. WWII Bay of Bengal Mustard Disposal

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

6. WWII Bay of Bengal Mustard Disposal

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

7. WWII Bay of Bengal Chemical Disposal

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

8. WWII Bay of Bengal Chemical Disposal

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

1. WWII Mississippi River Mustard Bomb Disposal

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.

2. WWII Mississippi River Chemical Disposal

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

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