

ESS PURSUIT

SULFUR MUSTARD INCIDENT



New Bedford, MA - June 2010

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E.S.S. PURSUIT
SULFUR MUSTARD INCIDENT

E.S.S. Pursuit



Type: Commercial Fishing Vessel

Typical Catch: Surf Clams/Mahogany Clams

Boat Length: 145.5 ft

Boat Gross Tons: 183.0

Boat Net Tons: 124.0

Vessel Build Year: 2002

Ship Builder: Duckworth Steel Boats

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SULFUR MUSTARD INCIDENT

E.S.S. Pursuit



- Twin dredges collect clams from ocean bottom
- Dredges dump catch on sorting “table”
- Clams travel via conveyors to on-deck cages
- Cages/catch are stored on-deck
- Cages/catch continuously sprayed with refrigerated seawater until offloaded

- 180 clam cages aboard vessel
- Each cage measures 3’ x 4’ x 5’
- Up to 3,000 lbs of clams per cage (+/- 10%)
- A typical catch could be upwards of 540,000 lbs (unprocessed weight)



An Unexpected Catch



On Sunday, June 6, 2010, the fishing vessel E.S.S. Pursuit hauled up two WW-I era military munitions while dredging for clams off Long Island.

One munition broke apart on deck, causing one crewmember to be directly exposed to Sulfur Mustard.

An Unexpected Catch



On Monday, June 7, 2010, the vessel and crew returned to port in New Bedford, MA. The catch was offloaded into a cooler at the SeaWatch International processing facility.

The exposed crewmember – now symptomatic – was transported to the local hospital. Due to the crewmember's symptoms and exposure, authorities were notified. The US Coast Guard, USEPA and the New Bedford Fire Department respond to the scene.

Sulfur Mustard

(Mustard Gas, HD, 1,5-dichloro-3-thiapentane)

- Thick liquid at ambient temperature, but becomes a solid at 58 °F
- It is heavier than water as a liquid and heavier than air as a vapor
- It is often called mustard gas, but sulfur mustard is not likely to change into a gas immediately if it is released at ordinary temperatures.
- As a pure liquid, it is colorless and odorless, but when mixed with other chemicals, it looks brown and has a garlic-like smell.

(Source: ATSDR)

Sulfur Mustard – Health Effects

- Skin*: redness and itching of the skin may occur 2 to 48 hours after exposure and change eventually to yellow blistering of the skin.
- Eyes*: irritation, pain, swelling, and tearing may occur within 3 to 12 hours of a mild to moderate exposure. A severe exposure may cause symptoms within 1 to 2 hours and may include the symptoms of a mild or moderate exposure plus light sensitivity, severe pain, or blindness (lasting up to 10 days).
- Respiratory tract*: runny nose, sneezing, hoarseness, bloody nose, sinus pain, shortness of breath, and cough within 12 to 24 hours of a mild exposure and within 2 to 4 hours of a severe exposure.
- Digestive tract*: abdominal pain, diarrhea, fever, nausea, and vomiting.

The Incident Begins



Per order of the USCG, the vessel was dispatched out of the port, and was directed to anchor just offshore of New Bedford in Buzzards Bay. The catch – assumed to be contaminated - was isolated and secured at the SeaWatch facility.

The Captain & First Mate remained aboard the vessel. The USCG Cutter “Tiger Shark” maintained a 500-foot security zone around the vessel.

Response – Day 1

An Incident Command Post was set up at the USEPA dewatering facility – located a few hundred feet north of the SeaWatch facility.

CERCLA funding was provided for the response.



The Civil Support Team arrived at the site to begin recon and screening of the vessel. Decontamination areas were set up to decon personnel.

Response – Day 1



The Command Post served as a base of operations for the incident. A nearby pier provided access for small boats, which were used to ferry equipment and personnel to the ESS Pursuit anchored offshore.

An Incident Command was established, and included the City of New Bedford, US Coast Guard, USEPA, EOD, and the CST.



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SULFUR MUSTARD INCIDENT

Response – Day 2

On Tuesday, June 8, 2010, the Massachusetts State Hazmat Team was dispatched to the Incident Command Post. The Hazmat Team performed an entry into the cooler to assess the catch. USCG & CST continued assessment of the ESS Pursuit.



MassDEP, Massachusetts Division of Marine Fisheries, and Massachusetts Department of Public Health were also on-site, providing assistance to parties involved.

A Unified Command was instituted, with USCG as Federal On-Scene Coordinator and the New Bedford Fire Department as the municipal representative/ local OSC. The State HazMat Team filled the role of State OSC.

Response – Day 3

On Wednesday, June 9, Unified Command continued with the plans for two operations at separate sites:

- Clam Removal/Disposal
- Vessel Decontamination/Clearance



Disposal Options



Disposal Options

All disposal options had potential drawbacks and issues. The major limiting factor was determining a solid analytical measure of the contamination on the clams. Without being able to conclusively prove that the catch was uncontaminated, disposal options were limited.

- Non-Hazardous disposal could not be presumed without analytical data
- International ban on disposal of chemical munitions at sea
- Sign-off required by NMFS and DMF for at-sea dumping
- HazWaste landfills require analytical data
- Waste-to-Energy facilities (like Covanta/SEMSS) require analytical data
- Public perception of burning/dumping of potentially-contaminated clams
- Regulatory Agency buy-in/sign-off crucial for permitting/waivers
- RRT-1 approval required

Clam Removal & Disposal

By Thursday, June 10, 2010, a final plan for clam disposal was agreed upon by Unified Command. The plan consisted of several operations:

- The catch would be removed from the cooler, scanned for munitions, and returned to the cooler;
 - The catch would then be unloaded from the cages and placed into lined containers which would be shipped in refrigerated trailer units to a hazardous waste incinerator
 - The empty clam cages would be decontaminated and stacked, awaiting final screening/sampling
 - The tractor trailers and cooler room would also be decontaminated (and sampled) following the removal and disposal operations
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- Clams needed to be kept near freezing during all operations (scanning, removal, and disposal). Mustard Gas will off gas at 58°F.
 - Assessment and screening of the work zones with AreaRaes and other instruments would be undertaken during all operational phases.

Clam Scanning Operation



Clam Dumping Operation



Clam Dumping Operation

As requested by Incident Command, MassDEP dispatched their Field Assessment and Support Team (FAST) to provide equipment and personnel for 24-hour assessment & monitoring during the clam dumping operation. AreaRae meters were deployed around the perimeter of SeaWatch International, and monitored for Hydrogen Sulfide and Ammonia.



Cage Decon Operation



Trailer Decon Operation



A total of 486,897 pounds of clams were taken from the site to Clean Harbors incineration facilities in El Dorado, Arkansas and Deer Park, Texas.

After the loads were processed, the trailers were brought back to Massachusetts and Rhode Island, where they were decontaminated and sampled by USEPA and State CSTs.

At this time, one remaining trailer requires decon and sampling.

Final Sampling Results

Wipe Samples/Screening confirmed that no detectable results were found for the:

- ESS Pursuit - completed 6/16/2010
- SeaWatch International cooler - 6/22/2010
- Clam cages - 6/26/2010
- Trailers (16 of 17)- as of 8/11/2010

The vessel, cooler, and cages were all released to their respective owners for re-use.

Unified Command & Involved Parties



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Shipping Out



Photos courtesy of USEPA, USCG, MassDEP, Google Images, Kennedy Cards

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