RRT 3

December 2024

SECTOR VIRGINIA
INCIDENT MANAGEMENT DIVISION

AGENDA

- Case Study: M/V DALI Hazardous Materials Salvage Plan
- Closing / Q&A

Case Study:

M/V DALI

HAZARDOUS MATERIALS SALVAGE PLAN AND OVERVIEW

After initial response in Baltimore, DALI was towed to Norfolk to complete salvage operations on June 24th, 2024

1717 Turning Basin Dr. Suite 430
Houston, TX 77029

Subj: **CAPTAIN OF THE PORT ORDER, 24-023 (Rev. 1), M/V DALI, IMO# 9697428**

Dear Captain:

On June 24, 2024, you were issued an order to submit to this office an updated transit plan and intended mooring arrangements prior to movement within the Sector Virginia Captain of the Port (COTP) Zone.

I am in receipt of your updated transit plan and mooring arrangement to Norfolk International Terminal Pier 3. Therefore, as Captain of the Port (COTP), under authority of the Ports and Waterways Safety Act [Title 46, United States Code (U.S.C), Section 70001] and Title 33, Code of Federal Regulations (CFR), Part 160.111(c), I hereby direct the following while transiting to through the Sector Virginia regulated navigation area (RNA), as defined by Title 33, Code of Federal Regulation (CFR), 165.501 (a)(2):

1. Proceed under tug assist in accordance with your updated transit plan from Virginia International Gateway to Norfolk International Terminal Pier 3. Your vessel must be assisted by at least 3 tugs with the minimum of 50 ton bollard pull each.

2. The prevailing weather conditions during the transit shall not exceed significant wave heights of 1.5 meters (4.9 feet), sustained wind shall be 20 knots or less, and visibility must be 1.0 nautical mile or greater.

3. Prior to any further movement from Norfolk International Terminal Pier 3, you shall submit to this office a written surveyor's report from a classification society surveyor authorized to represent your vessel's flag state, which details the seaworthiness of your vessel.

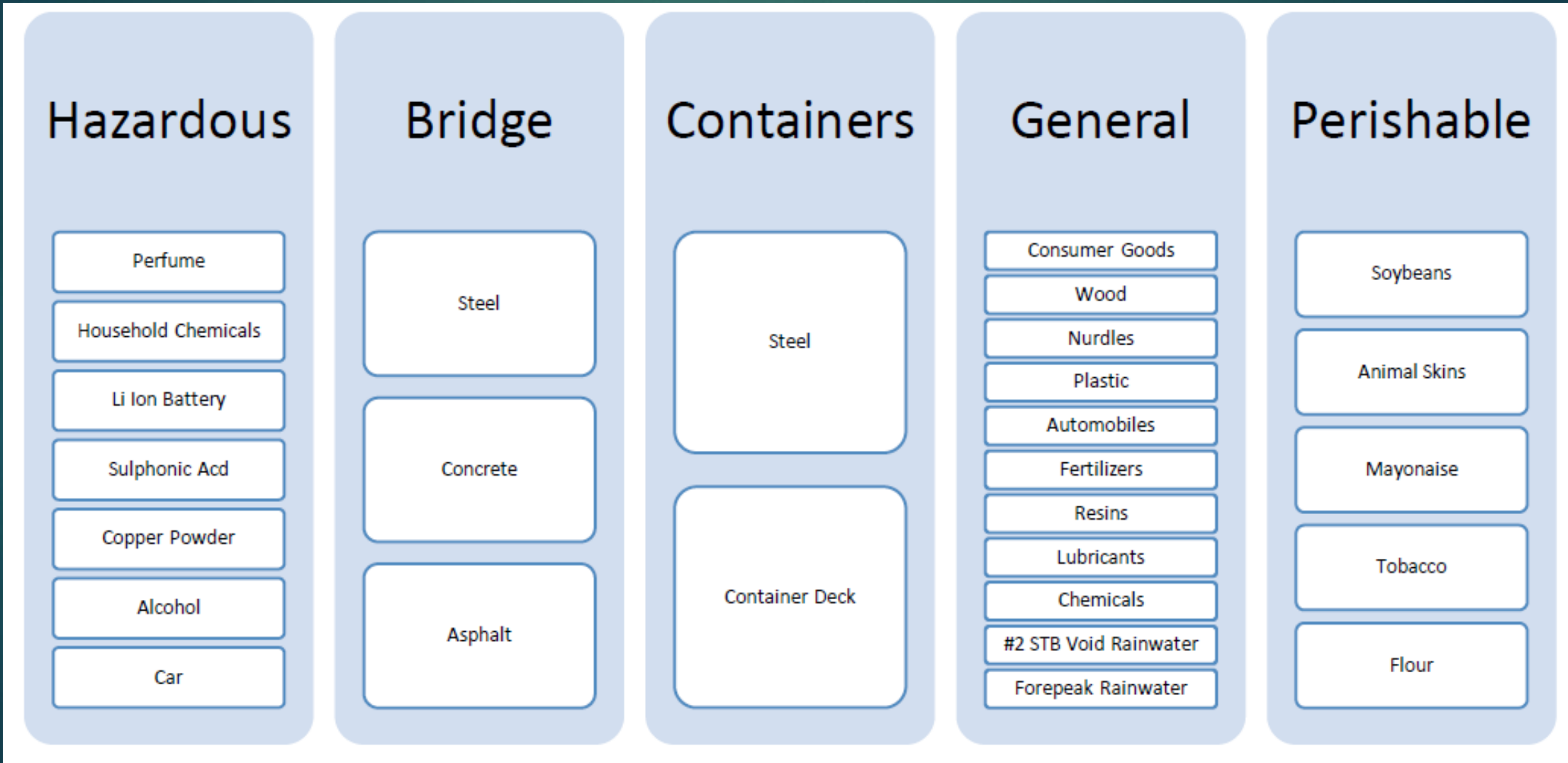
4. While moored at Norfolk International Terminal Pier 3, movement and removal of hazardous materials from your vessel shall be in accordance with and communicated to Sector Virginia through an approved salvage plan.

5. Submit a heavy weather plan for review by Sector Virginia COTP no later than 14 days from receipt of this order.

6. Continue to execute M/V DALI Non-Tank Vessel Response Plan, as appropriate, in accordance with Title 33 CFR, Part 155. Provide the COTP with a waste mitigation plan for all pier side salvage operations, taking account all applicable laws, prior to starting

Order of Operations

5 Waste Streams



Perfumes

Total collected for disposal: 12 roll-off bins with various boxes, 6 drums

Chemical Disinfectants, Cleaners, and Fungicides

- Various Cleaners
- Stainless Steel / Furniture Polishes

- BARDAC 205-M (Fungicide)

Flammable. Harmful in contact with skin and if swallowed. Causes burns, very toxic to aquatic organisms (per SDS).

Due to container damage, access to approximately (20) 55-gallon drums of BARDAC 205-M was not possible without cutting the container in place.

Once gaining access, the hazmat crews pumped the contents of the drums into tote tanks for removal.

Totals: Bardac 205 count: (2) 275 gal. totes, 4 overpacks with 55-gallon drums, 2 supersacks of debris with bardac 205 on it.

WESTON 705T

Base component of adhesives

Solidified waste had to be shoveled into supersacks

Contaminated water pumped into totes

Not classed as HAZMAT, but crews experienced skin and respiratory tract irritation.

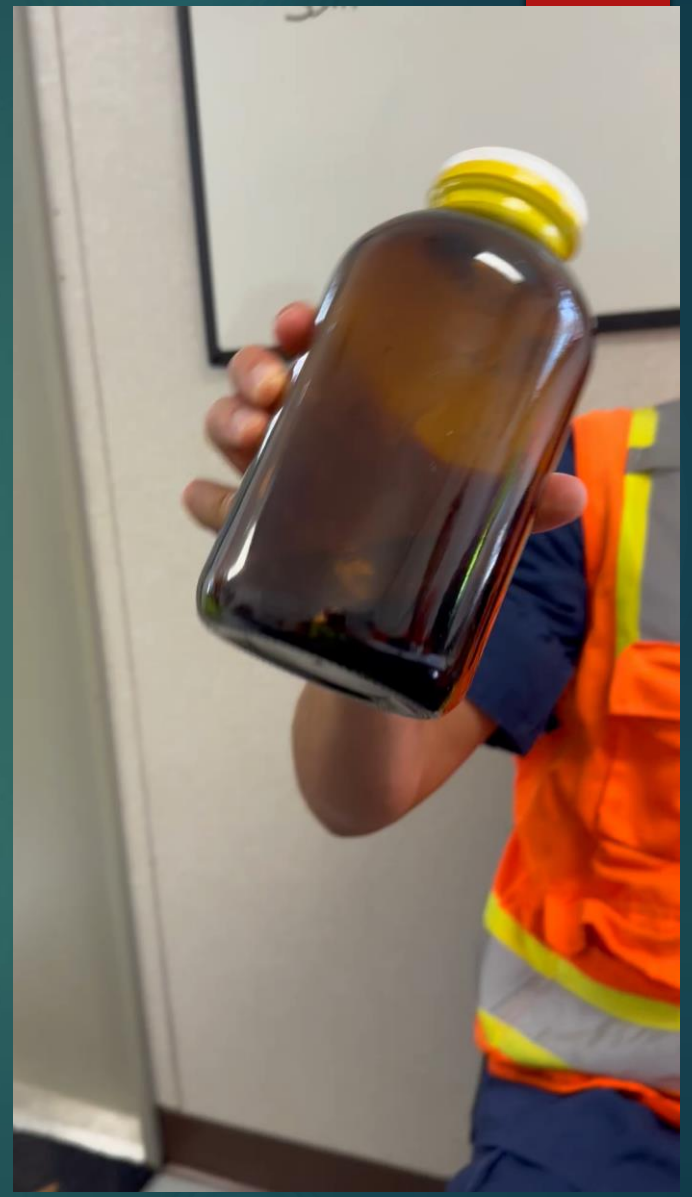
#1 Cargo Hold Sludge

Generated by hazardous chemicals that were released during the incident along with rainwater that accumulated in the cargo hold over time. Know contents of the sludge include:

- Decomposing Soybeans
- Hydro sulfonic Acid
- Rainwater
- An unknown quantity of pesticides

The Sludge

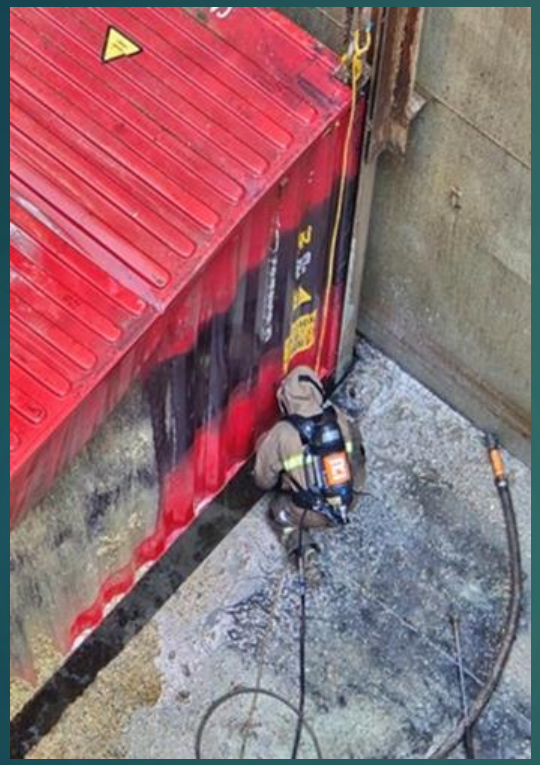
- Field testing revealed that the sludge is heavier than water and sinks readily.
- It will also emulsify upon agitation. Lab samples do not ignite when exposed to flame



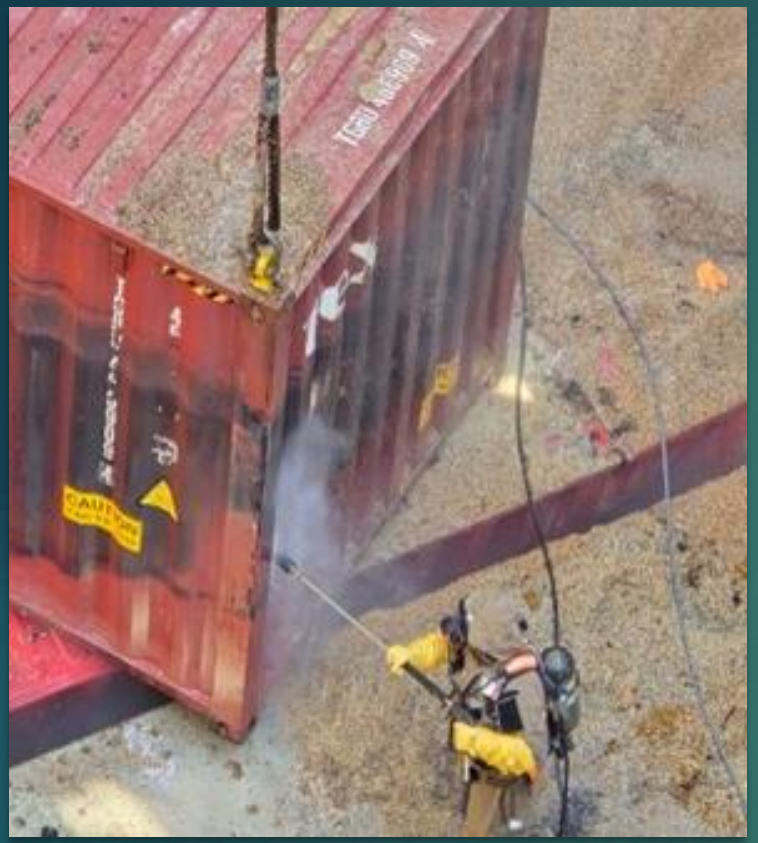
Once debris was cleared from the top, Liquid sludge was revealed underneath piles of soybeans

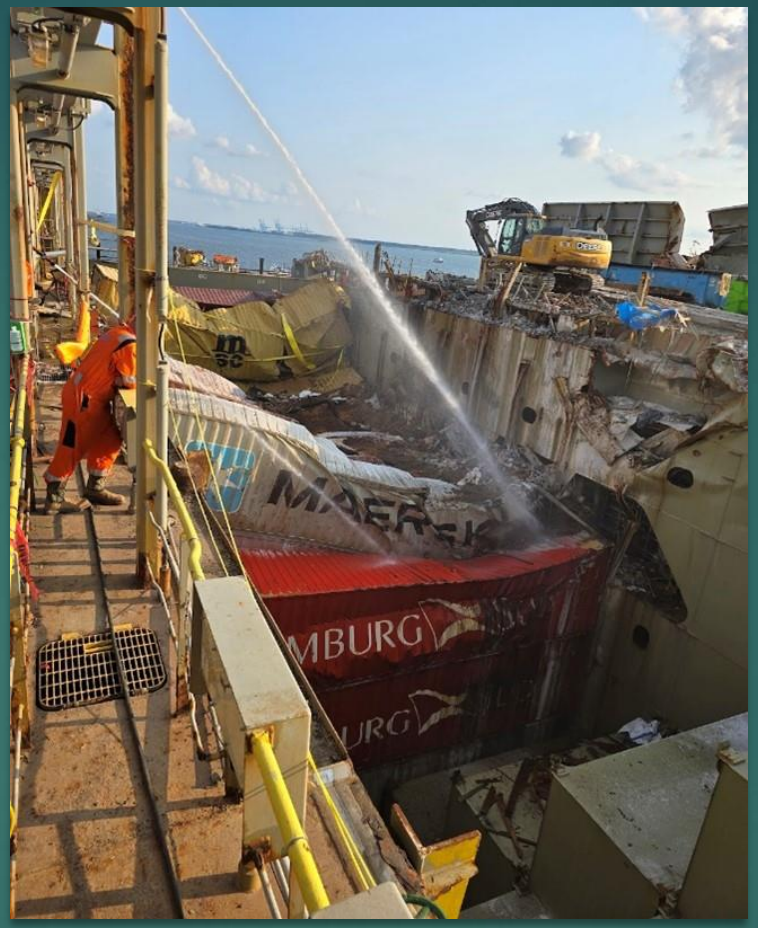
Several containers were completely submerged

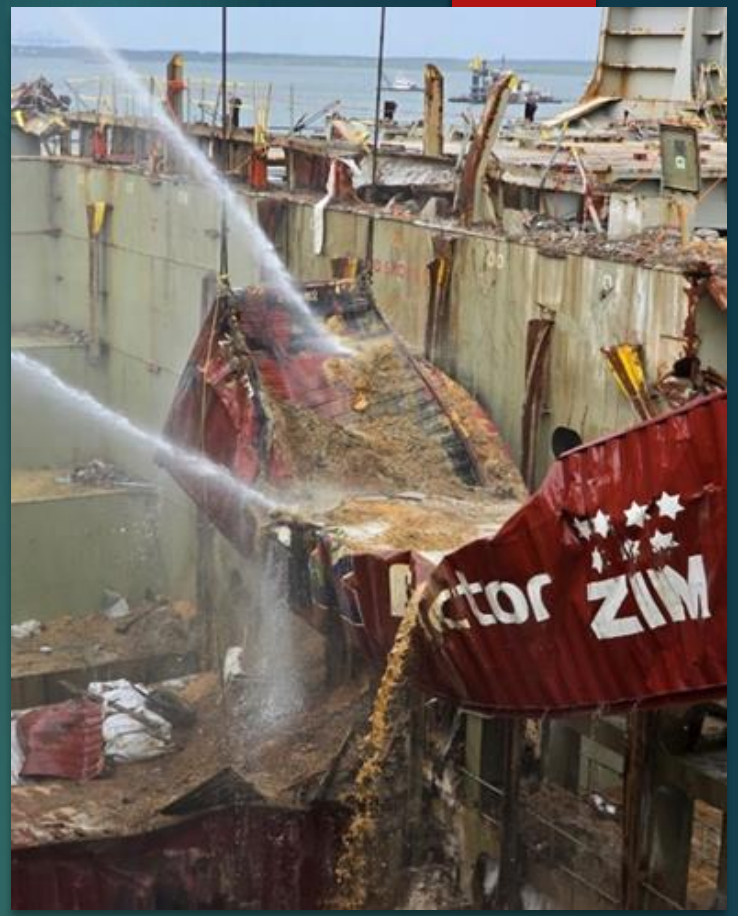
Drilling & Draining Submerged Containers



Level B responders deconned containers in place before being offloaded







Decontamination, added volume

Hazardous Liquids Transfer Plan

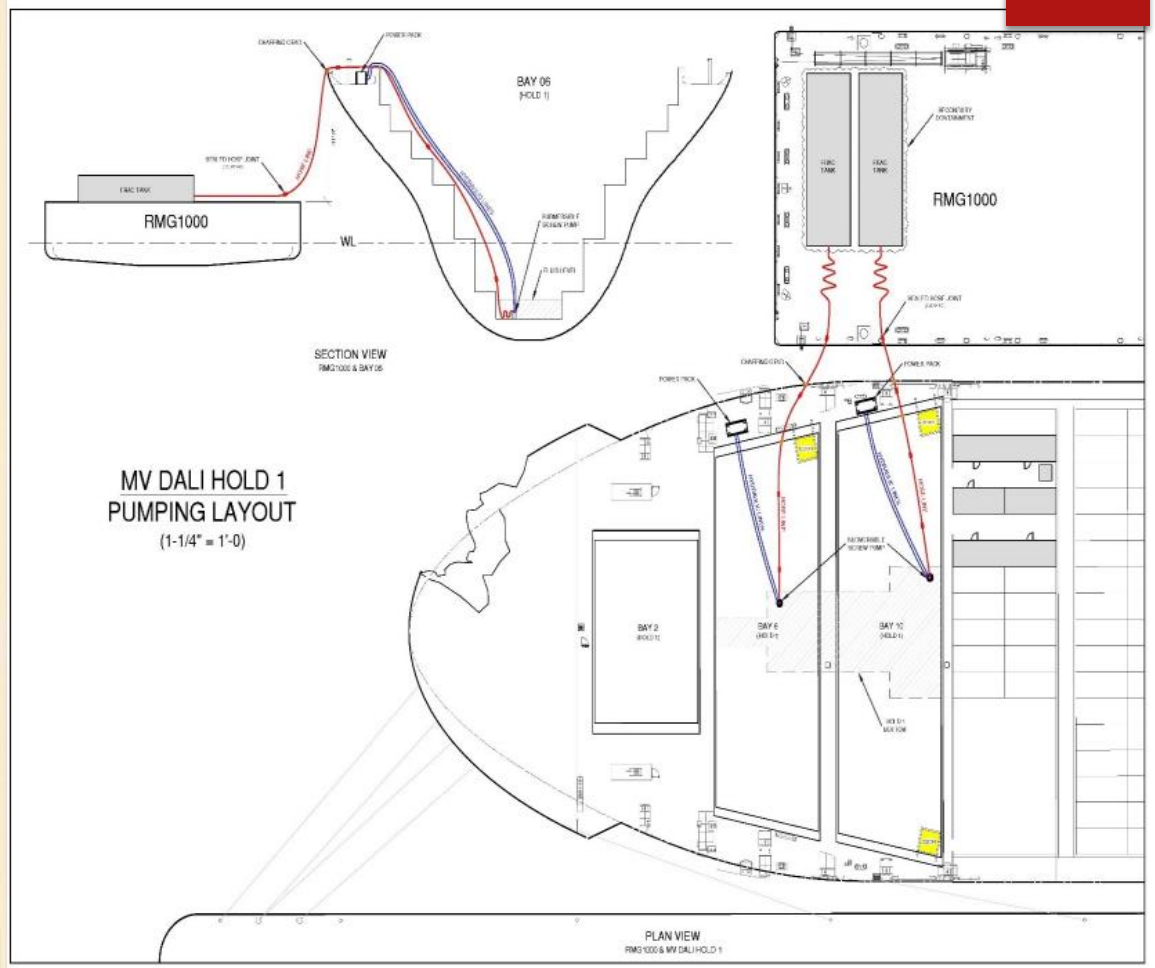
Reslove LLC. Salvage company submitted 88-page plan submitted for review

Estimated 90K gallons of product remain in bottom of hold (growing)

Frac tanks on barge used with a total tank capacity 21k gallons; or 17K at 80%

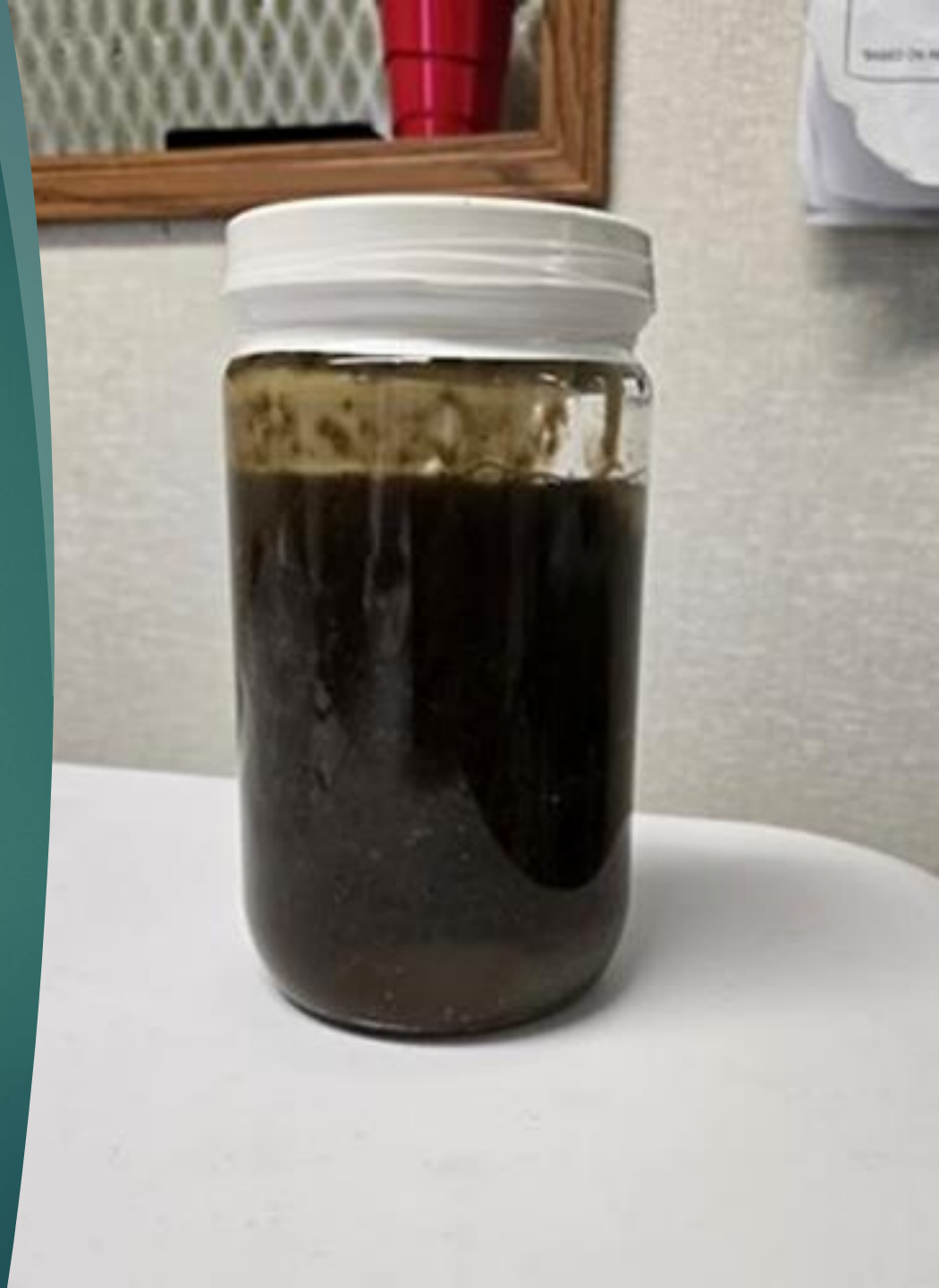
Plan mimicked regulations for over-the-water mobile facility transfer operations (hoses, small discharge containment)


RAIN FOR RENT
800-742-7246
259045


RMG1000
WL
BAY 05
(HOLD 1)
SECTION VIEW
RMG1000 & BAY 05
RMG1000
MV DALI HOLD 1
PUMPING LAYOUT
(1-1/4" = 1'-0)
BAY 2
PLAN VIEW
RMG1000 & MV DALI HOLD 1

Identified Challenges

- Since product sinks in water, boom not effective
- 50’ hose lengths left possibility of connection points mid-air
- Product not tested for sorbent pad clean up



Challenge Mitigation Techniques

- 100’ hose length purchased- 6-inch, bolted flange
- Operate at 150 psi vice 200 MAWP
- 12’ corrugated pipe purchased to act as secondary hose containment
- Sorbent material tests conducted on sludge
- (20) 50-lb bags of saw dust ordered for on-deck spills

Sorbent Material Test

Key Transfer Procedures

- 6 person transfer team
- VHF Comms
- Emergency Shutdown
- Declaration of Inspection

Dedicated Marine Chemist Performing Air Sampling

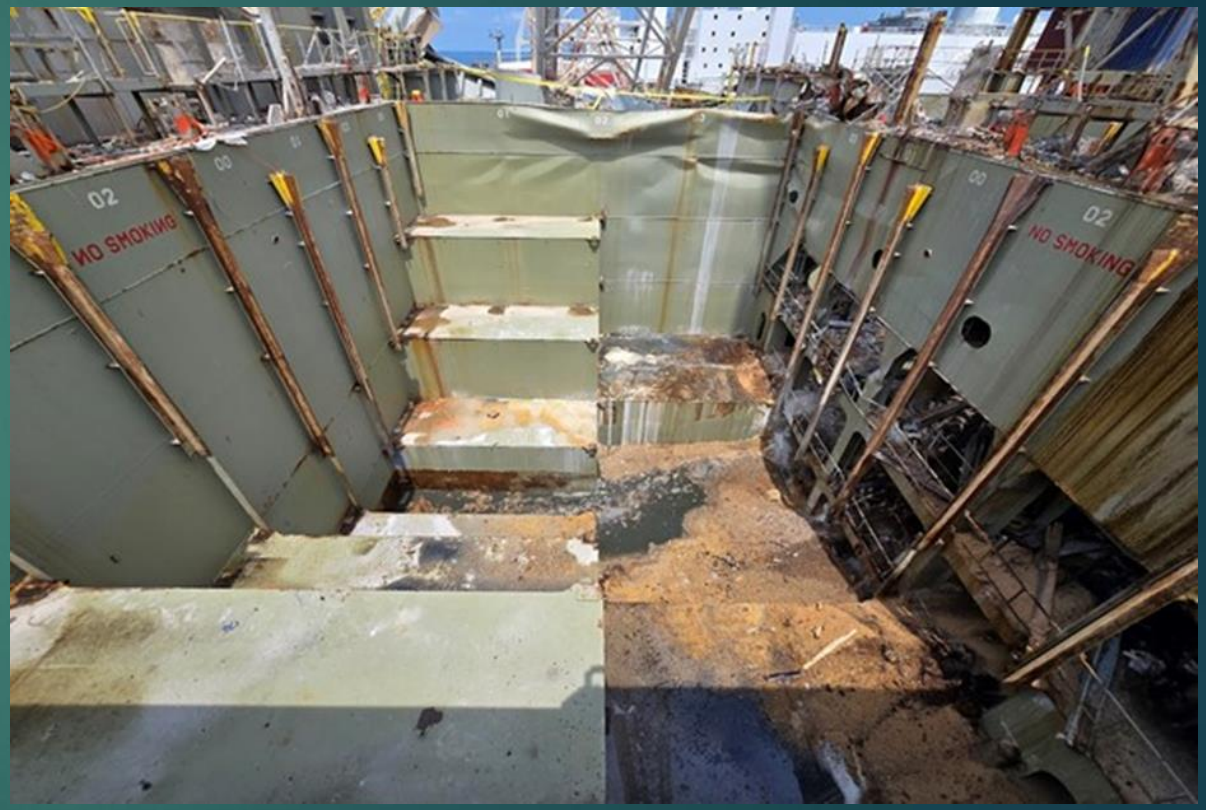
Daily Air Monitoring Locations

Station Name	Location	Analytes	Equipment	Notes
1	Center Mid	VOCs, O2, LEL, H2S, CO	Area Rea (unit # 295003200)	Some monitoring points are slated to change monitoring of H2S to monitoring NH3
2	Office (Bay 14)	VOCs, O2, LEL, H2S, CO	Area Rea (Unit # 295002580)	Some monitoring points are slated to change monitoring of H2S to monitoring NH3
3	Center Forward	VOCs, O2, LEL, H2S, CO	Area Rea (Unit #295002980)	Some monitoring points are slated to change monitoring of H2S to monitoring NH3
4	Starboard Center	VOCs, O2, LEL, H2S, CO	Area Rea (Unit # W01B00001313)	Some monitoring points are slated to change monitoring of H2S to monitoring NH3
5	Port side Center	VOCs, O2, LEL, H2S, CO	Area Rea (Unit # W01B00001314)	Some monitoring points are slated to change monitoring of H2S to monitoring NH3
6	1000 Barge scrap area	VOCs, O2, LEL, H2S, CO	Area Rea (Unit # 295835472)	Some monitoring points are slated to change monitoring of H2S to monitoring NH3
7	1000 Barge break area	VOCs, O2, LEL, H2S, CO	Area Rea (Unit # 292900051)	Some monitoring points are slated to change monitoring of H2S to monitoring NH3
8	Key side forward	VOCs, O2, LEL, H2S, CO	Area Rea (Unit # 295835470)	Some monitoring points are slated to change monitoring of H2S to monitoring NH3
9	Key side office	VOCs, O2, LEL, H2S, CO	Area Rea (Unit # 295835448)	Some monitoring points are slated to change monitoring of H2S to monitoring NH3

Mitigation tools

- All appropriate PPE
- Short term exposure
- Air monitoring 24/7
- Risk management and re-evaluation
- Multiple agencies involved, USCG, DEQ, VDEM, etc.
- Off-load safeguards

Working Towards the Bottom



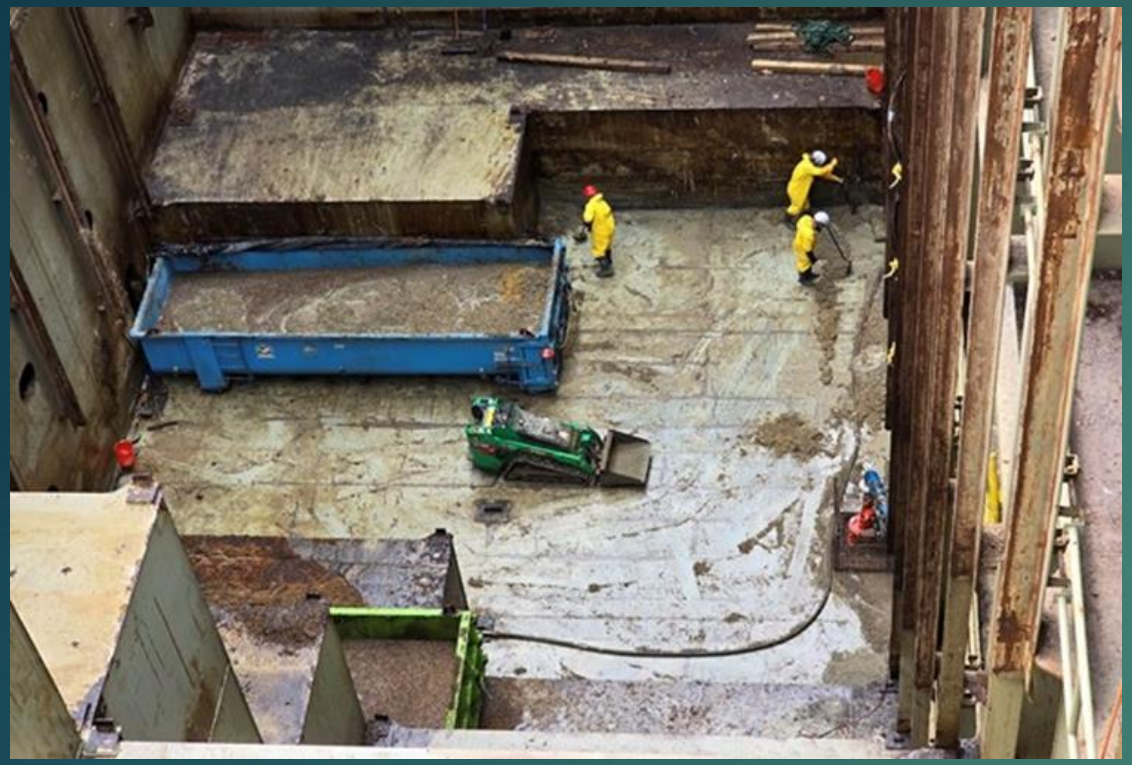
Pumping Operations Begin

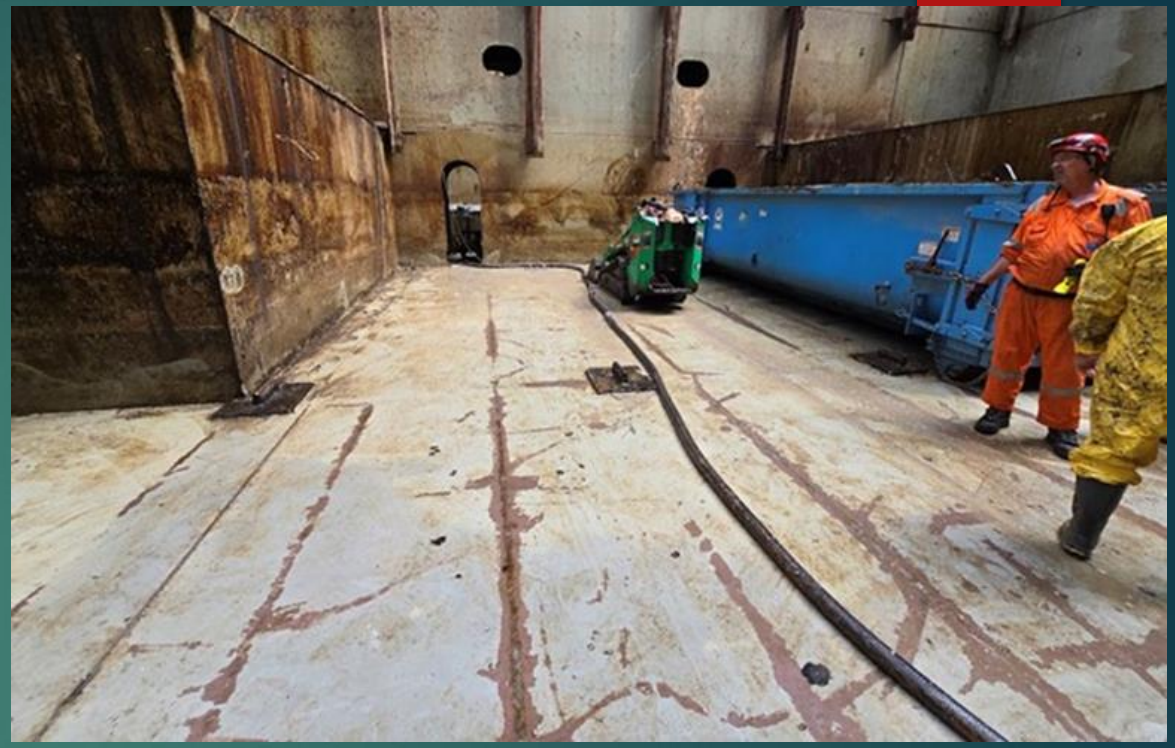
- Vessel ballast utilized to tilt bow 2 meters higher than the stern

Transfer Hose to Barge


USCG
U.S. COAST GUARD
DEQ

Underdeck Passageway at Tier 04 Level (second from bottom). Shoveling sludge/soybean mixture to bottom of cargo hold and towards pump. Level B primarily for high H2S readings.





02SEP24: Hold 01 was tested by the Marine Chemist and observed by WOB, Resolve Salvage Master, and the Chief Mate. It was determined that the hold is safe and clean.

Sludge Departure

- Frac tanks Preparing For Departure To Seaward Marine to be offloaded
- 6 Frac tanks of sludge totaling ~117,000 gallons

The Second Transfer

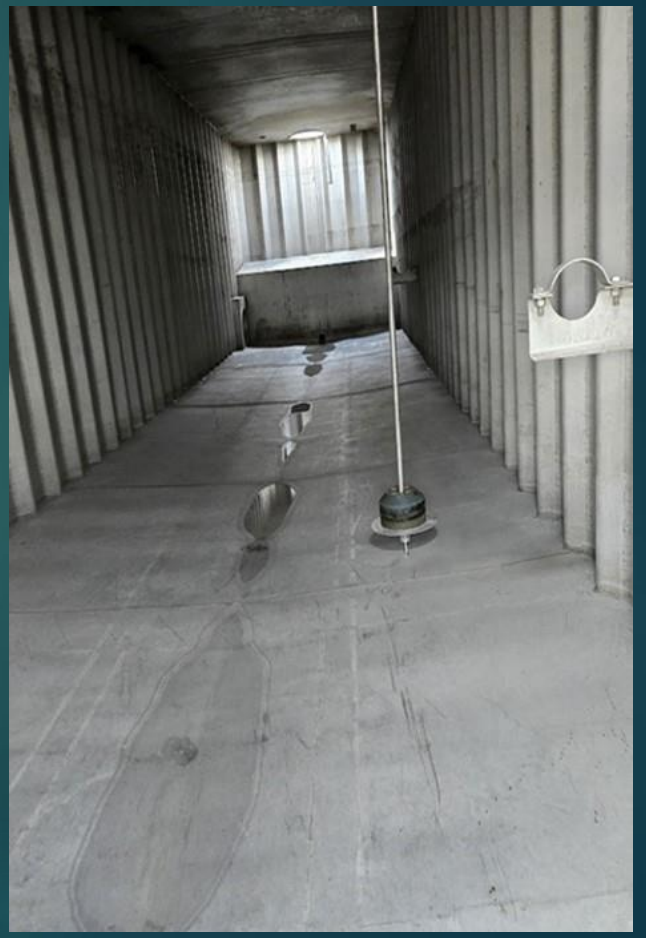
- Once at Seaward Marine, Frac tanks were pumped via Vac Truck and transported to disposal
- TSD Facility: Clearfield MMG

The Final Step in Sludge

Confined Space Entry
To Decon Frac Tanks

Level B

Decon and Demob



Last Thoughts?

Thank You

LT Mike Long

24/7 PR Duty Phone Number: (757) 274-5046

24/7 FOSC-R Duty Phone Number: (757) 993-0764