SECTION 3
SHIPBOARD SPILL MITIGATION PROCEDURES

The vessel master is responsible for safe operation and activities of his or her vessel or crew. When faced with a spill, he or she will initiate several actions simultaneously:

- Control the source of the spill
- Containment
- Clean-up

The Master must ensure the safety of his or her crew and passengers. He or she will remain in charge unless relieved by the Qualified Individual or other official acting under the authority of the Qualified Individual. The Master should follow the general instructions in addition to the specific instructions in the sections that follow.

- Direct the crew to take the necessary actions to protect life and property and to control the source of the discharge.
- If oil entered the water, or has the potential of entering the water, deploy available boom.
- **Make the proper notifications.**

Emergency Towing
During emergency situations, the vessel master, qualified individual, or incident management ream (Forefront Emergency Management, L.P.) will make the proper arrangements to contact an outside contractor for the towing of the vessel. The contractor will be responsible for the rigging and the operation of any emergency towing equipment.

Location, Crew Responsibilities & Procedures for Use of Oil Discharge Mitigation Equipment
Absorbent pads are stored on the barge's towing vessel. This equipment should be deployed if there is substantial threat of a discharge or as directed by the Qualified Individual.

Crew Responsibilities for Record Keeping and Sampling
The crew is responsible for the summary of events once the initial action is secure. All other record keeping functions will be performed by the Qualified Individual and the Incident Management Team (Forefront Emergency Management, L.P.)

Crew Responsibilities to Initiate a Response and Supervise Shore-based Response Activities
The crew's responsibility in this area shall end at the notification of the Qualified Individual.

SECTION 3
SHIPBOARD SPILL MITIGATION PROCEDURES (CONTINUED)

Topics to provide master with guidance when conducting mitigation activities:

- Assessment and monitoring requirements. Reference the Safety Data Sheet (SDS) in the vessel binder and/or the SDS binder located within the vessel wheelhouse for routinely carried cargo.
- Personnel protection issues (protective equipment and threats to health and safety). Reference the Safety Data Sheet (SDS) in the vessel binder and/or the SDS binder located within the vessel wheelhouse for routinely carried cargo.
- Physical properties of the substance (e.g. solubility, density, water reactivity, solidification, and compatibility). Reference the Safety Data Sheet (SDS) in the vessel binder and/or the SDS binder located within the vessel wheelhouse for routinely carried cargo.
- Containment and other response techniques (e.g. dispersing, absorbing, etc.). Reference the Safety Data Sheet (SDS) in the vessel binder and/or the SDS binder located within the vessel wheelhouse for routinely carried cargo.
- Isolation procedures. Reference the Safety Data Sheet (SDS) in the vessel binder and/or the SDS binder located within the vessel wheelhouse for routinely carried cargo.
- Decontamination of personnel. Reference the Safety Data Sheet (SDS) in the vessel binder and/or the SDS binder located within the vessel wheelhouse for routinely carried cargo.
- Disposal of removed oil and clean-up materials. Reference the Safety Data Sheet (SDS) in the vessel binder and/or the SDS binder located within the vessel wheelhouse for routinely carried cargo.

In accordance with 33 CFR 155.4035(a), a copy of the Chem Carriers, L.L.C. shipboard spill mitigation procedures has been provided to the contracted Salvage and Marine Firefighting provider, T&T Salvage, LLC.

INCIDENT	VESSEL EMERGENCY ACTION	CREW MEMBER (RANK ONLY) RESPONSIBLE
OPERATIONAL SPILLS (spilled oil; contained on deck)	1. Secure the source. 2. Contain the spill on deck, to ensure it does not go overboard. 3. Clean-up oil using absorbent material. 4. Place contaminated absorbent material in pollution bags and place in DOT drums. 5. Dispose of DOT drums in accordance with local, state and federal guidelines.	Engineer Engineer Deck Hands Deck Hands Deck Hands
PIPE LEAKAGE	1. Secure the source 2. Contain the spill on deck, to ensure it does not go overboard. 3. Clean-up oil using absorbent material. 4. Place contaminated absorbent material in pollution bags and place in DOT drums. 5. Dispose of DOT drums in accordance with local, state and federal guidelines. (Reference SDS in electronic log within wheelhouse for routinely carried cargo, or SDS attached to the DOI for NLS carried as cargo for procedures relating to NLS discharge response)	Engineer Engineer Deck Hands Deck Hands Deck Hands
TANK OVERFLOW	1. Secure the transfer. 2. Close valves leading into affected tank(s). 3. Contain oil using available materials on deck. 4. Deploy boom around vessel, if necessary. 5. Make proper notifications. 6. Transfer excess oil to empty tank(s) or back ashore if possible via vessel and/or shore base transfer pumps. (Reference SDS in electronic log within wheelhouse for routinely carried cargo, or SDS attached to the DOI for NLS carried as cargo for procedures relating to NLS discharge response)	Engineer Engineer Engineer Deck Hands Master Engineer
UNKNOWN SUSPECTED HULL LEAKAGE/FRACTURE	1. Ensure the safety of the crew. 2. Commence notification procedures. 3. If suspected hull leakage or fracture occurs during a transfer, secure transfer and close valves. 4. If underway, navigate to shallow water out of navigable waterway. 5. Access damage to vessel and sound fuel tanks for fuel level and water. 6. Before an internal transfer and/or transfer ashore to reduce the head pressure, the captain must get approval from the Chem Carriers, L.L.C. engineering staff or class society to ensure that undue hull stress and/or the vessels stability is not compromised. (Reference SDS in electronic log within wheelhouse for routinely carried cargo, or SDS attached to the DOI for NLS carried as cargo for procedures relating to NLS discharge response)	Master Master Engineer Master Master Engineer
IDENTIFIED TANK / HULL LEAKAGE AND/OR FRACTURE	1. Ensure the safety of the crew. 2. Commence notification procedures. 3. If suspected hull leakage or fracture occurs during a transfer, secure transfer and close valves. 4. If underway, navigate to shallow water out of navigable waterway. 5. Access damage to vessel and sound fuel tanks for fuel level and water. 6. Before an internal transfer and/or transfer ashore to reduce the head pressure, the captain must get approval from the Chem Carriers, L.L.C. engineering staff or class society to ensure that undue hull stress and/or the vessels stability is not compromised. (Reference SDS in electronic log within wheelhouse for routinely carried cargo, or SDS attached to the DOI for NLS carried as cargo for procedures relating to NLS discharge response)	Master Master Engineer Master Master Engineer

SPILLS RESULTING FROM CASUALTIES	
FIRE/EXPLOSION	**Small Fire** 1. Sound the emergency alarm. 2. Ensure the safety of the crew. 3. Determine if a safe condition exists to control the fire with on board firefighting equipment. 4. If a safe condition exists, attempt to control with on board fire fighting equipment. (Reference SDS in electronic log within wheelhouse for routinely carried cargo, or SDS attached to the DOI for NLS carried as cargo for procedures relating to NLS discharge response) **Large Fire** 1. Sound the emergency alarm. 2. Ensure the safety of crew. 3. Call for help. 4. Determine if a safe condition exists to control the fire with on board firefighting equipment. 5. If a safe condition exists, attempt to control with on board fire fighting equipment. 6. If a spill has occurred, take action to control the spill. (**DO NOT RISK INJURIES TO CREW TO CONTAIN A SPILL.)** 7. Await shore base assistance. 8. Abandon vessel if necessary. (Reference SDS in electronic log within wheelhouse for routinely carried cargo, or SDS attached to the DOI for NLS carried as cargo for procedures relating to NLS discharge response)
COLLISION (with a fixed or moving object)	1. Sound the emergency alarm. 2. Take action to saves lives aboard your vessel, as well as others involved. The possibility of fire exists. The other vessel(s) contents may cause a greater risk than your own. Ensure your vessel is still seaworthy. 3. Call for help. 4. Assess damage to vessel. Abandon ship if necessary. 5. If a spill is readily apparent, commence notification procedures. (Reference SDS in electronic log within wheelhouse for routinely carried cargo, or SDS attached to the DOI for NLS carried as cargo for procedures relating to NLS discharge response)
HULL FAILURE	1. Sound the emergency alarm. 2. If hull failure occurs during a transfer, secure transfer and close valves. 3. If underway, navigate to shallow water/ out of navigable waterway. 4. Commence notification procedures. (Reference SDS in electronic log within wheelhouse for routinely carried cargo, or SDS attached to the DOI for NLS carried as cargo for procedures relating to NLS discharge response)
EXCESSIVE LIST	1. Sound the emergency alarm. 2. Ensure the safety of the crew. 3. Secure operations. 4. Asses for damage. 5. Commence notification procedures (Reference SDS in electronic log within wheelhouse for routinely carried cargo, or SDS attached to the DOI for NLS carried as cargo for procedures relating to NLS discharge response)
GROUNDING	1. Sound the emergency alarm. 2. Ensure the safety of the crew 3. Ascertain the condition of the vessel. 4. Check voids for water or product. 5. Assess the likelihood of damage to the vessel with all available information including, but not limited to how hard the vessel grounded, topography of the bottom, the likelihood of the vessel being hung on an obstruction. 6. Check the tides/river situation (is the tide ebb or flood) and other factors bearing on whether to attempt to refloat the vessel. 7. If satisfied that the vessel may safely be refloated, an attempt may be made working in conjunction w/ federal and state agency representatives. (Reference SDS in electronic log within wheelhouse for routinely carried cargo, or SDS attached to the DOI for NLS carried as cargo for procedures relating to NLS discharge response)

SPILLS RESULTING FROM CASUALTIES (CONTINUED)	
CONTAINMENT SYSTEM FAILURE	1. Sound the emergency alarm, if situation warrants 2. Determine the extent of the failure and decide what control measures can be taken. 3. Request assistance as deemed necessary. If necessary, transfer product(s) to empty tanks. 4. Assess the possibility of pollution from oil/fuel leakage. If there is a spill of oil or fuel, inform appropriate parties in accordance with Section III of this plan. (Reference SDS in electronic log within wheelhouse for routinely carried cargo, or SDS attached to the DOI for NLS carried as cargo for procedures relating to NLS discharge response)
SUBMERGED/ FOUNDERED	1. Sound the emergency alarm. 2. Muster crew to safe location and assess casualties. 3. Determine extent of damage and decide what damage control measures can be taken. 4. Request assistance as deemed necessary. 5. Assess the possibility of pollution from oil or fuel leakage. 6. Evacuate if necessary. (Reference SDS in electronic log within wheelhouse for routinely carried cargo, or SDS attached to the DOI for NLS carried as cargo for procedures relating to NLS discharge response)
WRECKED/ STRANDED	1. Sound emergency alarm. 2. Muster crew to safe location and assess casualties. 3. Determine extent of damage and decide what damage control measures can be taken. 4. Request assistance as deemed necessary. 5. Assess the possibility of pollution from oil or fuel leakage. 6. If there is spill, inform appropriate parties in accordance with Section III of this plan. (Reference SDS in electronic log within wheelhouse for routinely carried cargo, or SDS attached to the DOI for NLS carried as cargo for procedures relating to NLS discharge response)
HAZARDOUS VAPOR RELEASE	1. Sound the emergency alarm. 2. Activate gas sensors. 3. Establish source, cause, and nature of gas present. 4. Shut-down all hot machinery in area. 5. Close all ventilating systems, air intakes, doors, and hatches. 6. Muster crew to a safe point, upwind of release. 7. Alert standby vessel and helicopter services, if evacuation becomes necessary. 8. Instruct crew to don emergency escape breathing devices (EBDs). 9. Evacuate if necessary. (Reference SDS in electronic log within wheelhouse for routinely carried cargo, or SDS attached to the DOI for NLS carried as cargo for procedures relating to NLS discharge response)
LOSS OF POWER, STEERING, ESSENTIAL CONTROLS AND NAVIGATIONAL AIDS	1. Switch to standby or backup units, or sources of power or control to restore the vessel's ability to navigate safely. 2. Reduce speed or alter course to move the vessel out of danger. 3. Anchor the vessel. 4. Display appropriate lights or day shapes to warn other craft that that the vessel is anchored or not under command. 5. Sound appropriate warning signals. 6. Take action to effect repairs to the disabled equipment.
DANGEROUS REACTIONS OF CARGO	1. Sound emergency alarm and direct crewmembers to their assigned stations, as posted on the vessel's Station Bill. Crew to suit up in safety clothing. 2. Inform terminal/port authority personnel about the dangerous reactions. 3. Shutdown all non-essential air intakes. 4. If possible, shut down all non-essential sources of ignition of vapors, such as engines, non-essential generators, etc. 5. Secure all doors and windows into accommodation and engine spaces to prevent the ingestion of flammable vapors and hazardous vapors into these spaces. 6. The crew will muster and Master is to evaluate the SDS carried onboard pertaining to the reacting NLS chemical for proper measures to be conducted. (Reference Emergency Station Bill for Responsibilities Duties.)

SPILLS RESULTING FROM CASUALTIES (CONTINUED)	
DANGEROUS RELEASE OF CARGO	1. Sound emergency alarm and direct crewmembers to their assigned stations, as posted on the vessel's Station Bill. Crew to suit up in safety clothing. 2. Inform terminal/port authority personnel about the dangerous release. 3. Shutdown all non-essential air intakes. 4. If possible, shut down all non-essential sources of ignition of vapors, such as engines, non-essential generators, etc. 5. Secure all doors and windows into accommodation and engine spaces to prevent the ingestion of flammable vapors and hazardous vapors into these spaces. 6. The crew will muster and Master is to evaluate the SDS carried onboard pertaining to the released NLS chemical for proper measures to be conducted. (Reference Emergency Station Bill for Responsibilities Duties.)
LOSS OF TANK ENVIRONMENTAL CONTROL	1. Sound emergency alarm and direct crewmembers to their assigned stations, as posted on the vessel's Station Bill. Crew to suit up in safety clothing. 2. Inform terminal/port authority personnel about the dangerous reactions. 3. Shutdown all non-essential air intakes. 4. If possible, shut down all non-essential sources of ignition of vapors, such as engines, non-essential generators, etc. 5. Secure all doors and windows into accommodation and engine spaces to prevent the ingestion of flammable vapors and hazardous vapors into these spaces. 6. The Master is to evaluate the SDS carried onboard pertaining to the reacting NLS chemical for proper measures to be conducted. 7. Set a hazardous zone radius of 10 meters around the vent, where no one can smoke or impose an ignition of some sort for flammability reasons if the chemical is flammable and where no one can come into physical contact with vapors 8. The chemical should be transferred into a slack or empty tank if possible until the vessel reaches port where the vent can be addressed.
CARGO CONTAMINATION YIELDING A HAZARDOUS CONDITION	1. Sound emergency alarm and direct crewmembers to their assigned stations, as posted on the vessel's Station Bill. Crew to suit up in safety clothing. 2. Shutdown all non-essential air intakes. 3. If possible, shut down all non-essential sources of ignition of vapors, such as engines, non-essential generators, etc. 4. Secure all doors and windows into accommodation and engine spaces to prevent the ingestion of flammable vapors and hazardous vapors into these spaces. 5. The Master is to evaluate the SDS carried onboard pertaining to the reacting NLS chemical for proper measures to be conducted to either neutralize or keep the chemical contained until a port is reached.
TRANSFER SYSTEM LEAK	1. Immediately shutdown the operation and if deemed safe to do so, make sure that: 2. All pumps are shut down 3. All flanges are secure 4. No valves are leaking 5. The transfer hoses are not leaking or busted 6. There is no rupture to the pipelines 7. Notify the Qualified Individual or his alternate for instructions (Reference SDS in electronic log within wheelhouse for routinely carried cargo, or SDS attached to the DOI for NLS carried as cargo for procedures relating to NLS discharge response)
EQUIPMENT FAILURE	1. Anchor and secure vessel, if possible; radio distress message if anchoring is not possible 2. Notify the Qualified Individual or his alternate for instructions (Reference SDS in electronic log within wheelhouse for routinely carried cargo, or SDS attached to the DOI for NLS carried as cargo for procedures relating to NLS discharge response)

SECTION 3
ADDITIONAL PROCEDURES

A. In the event of an incident, actions will be taken to:

1. Ensure the safety of the personnel and the barge.
2. Assess damage to the barge.
3. Ensure the above as outlined in the procedures give in the section

B. Damage stability and longitudinal strength assessments:

1. The information in the incident report will be used to initially provide information in order to determine proper procedures for assessing the stability of the vessel.
2. The experience of the barge's crew and master will be relied upon in order to make these assessments since there are too many variables to make a procedure viable.
3. If the barge is certified to carry NLS, considerations as to the compatibility of all substances involved such as cargoes, bunkers, tanks, coatings, piping, etc., must be considered before such an operation is undertaken. SDS should be referred to for solubility, density, water reactivity, solidification and compatibility for each chemical carried on board. See Section 5 for Assessment Contact Information.

C. Lightening, Barge-to-Ship Transfers:

1. When first picking up a barge to use for lightering from a fleet, from another boat or from a shipyard or dock, attend to the items on the Chem Carriers, L.L.C. Vessel Inspection, barge section;
2. Check the condition and inspection date of the cargo hoses to be used for the transfer. Cargo hoses provided by the ship must pass visual inspection and the Person-In-Charge of the transfer on the ship must show proof of the annual testing of the hoses;
3. Ensure that a minimum of four fender tires or large rope bumpers are in place on the barge;
4. Ensure that a minimum of four mooring lines of at least 120 feet are onboard. Obtain additional line if strong currents, tides, or seas are anticipated;
5. Ensure that pollution control material and equipment is onboard the barge;
6. Ensure that a minimum of two portable radios are onboard
7. Report deficiencies to the wheelhouse person on watch before proceeding with the barge.
8. Before going alongside the ship to transfer, follow these precautions:
   a) Ensure the lightering site is in an area approved by the Coast Guard and local port authorities;
   b) Ensure that the lightering site does not imperil or impede safe navigation;
   c) Ensure that a standby boat will be on the scene during all lightering operations;
   d) Ensure that a "Letter of Alternative Compliance" has been received from the Captain of the Port and is onboard for a multi-barge transfer; and,
   e) If these conditions cannot be met, or if you are at all uncertain, do not proceed with the transfer. Contact the Chem Carriers, L.L.C dispatcher.
9. For ship lightering operations, the following specific procedures apply:
   a) Test start the barge pump engine before going alongside a ship;
   b) Spot the barge alongside the ship to allow for a proper hookup to the ship's manifold; and,
   c) Rig the mooring lines to allow for a minimal amount of surge and/or current drag.
   d) If fenders are not available onboard, obtain contractor fenders (aircraft tires) and place at strategic locations along the barge to provide proper cushioning between the barge and the lightering vessel. (i.e. 1 aft, 1 forward, 1 in vicinity of the hose connection and elsewhere as required.

SECTION 3
ADDITIONAL PROCEDURES

D. Lightening, Barge-to-Ship Transfers (Continued):

10. Ship boarding procedures
    a) Board via the dock gangway when available;
    b) Use the ship's gangway, Jacob's ladder, or pilot's ladder;
    c) Ensure that the access provided by the ship is fastened to the ship and is tended when is use; and
    d) A safe access must be provided by the ship. If access is judged to be unsafe, do not use it. Report the condition to the pilot on watch.
11. Standby-boat operating procedures
    a) Position the boat in a location where flammable/toxic vapor will not be drawn into the boat;
    b) The pilot on watch must maintain a radio watch to advise traffic in the area of the lightering operating in progress; and,
    c) The pilot on watch during cargo transfer must use a walkie-talkie on the barge when assisting the tankerman in the startup and finishing of the cargo transfer.
12. Oil transfer procedures for loading or discharging
    a) Conduct a pre-transfer conference discussion with the Person-In-Charge on the ship. This conference must include the following:
        i. The role of the Chem Carriers, L.L.C lightering supervisor as the safety coordinator and transfer expediter between the ship's personnel and the barge tankerman;
        ii. Ensure that each person involved in the transfer clearly understand the lightering procedures;
        iii. Establish the cargo transfer sequence;
        iv. Establish the transfer flow rate;
        v. Establish the pump pressure; and,
        vi. Establish the cargo gauging procedures.
    b) Set up communication procedures to use during the transfer. Discuss with the Person-In-Charge of the transfer on the ship the following:
        i. Controlling the starting, rate of flow, and stopping of the transfer on the ship on the barge.
        ii. Emergency shutdown procedures.
    c) Establish voice communication between the ship's Person-In-Charge and the Chem Carriers, L.L.C lightering supervisor.
    d) The lightering representative should station himself at the cargo manifold on the ship during the start-up and completion of the lightering. Make sure there is a bolt in every hole.
    e) The Chem Carriers, L.L.C lightering representative and the tankerman in charge of the barge shall communicate by way of portable radio.
    f) Discuss the change of watch procedure onboard the ship and the barge.
    g) Go over the Declaration of Inspection (DOI) with the ship's Person-In-Charge.
    h) This ship's Person-In-Charge, the barge tankerman in charge, the pilot in charge, and the Chem Carriers, L.L.C lightering representative must all agree on the DOI.
    i) Any time there is a problem due to lack of understanding between the Person-In-Charge caused by a language barrier, do not proceed with the transfer. Report to the pilot on watch. He will contact the Chem Carriers, L.L.C dispatcher, who will contact the ship's agent for clarification.
    j) Ensure the safety of the third party personnel.