

Document Title: NONTANK VESSEL RESPONSE PLAN	Issue: 09/13/2007
Document Section: 4 - SHORE-BASED RESPONSE ACTIVITIES	Rev: 4
	Page: 34

ADVANTAGES/DISADVANTAGES OF DIFFERENT CLEANUP STRATEGIES

MECHANICAL CONTAINMENT – RECOVERY:

Basic Strategy:

Corral as much of the oil as possible and remove it from the water surface where it floats.

Procedure Employed:

OSRO(s) deploy floating booms to contain or fence off the oil slick. The oil is then collected with skimmers that remove oil and water from the surface and separate the oil from the water or vacuum hoses that suck up oil from the surface. In many cases the collected oil/water mixture is transferred to specialized storage tanks that further separate the oil from the water. In some cases cleanup crews use absorbents to collect residual oil from the surface.

Spill Application:

Spills in calm water, near sensitive areas.

Advantages:

- * It causes least environmental impact.
- * It prevents oil from ingesting oil.
- * It prevents the oil from reaching the shoreline.

Disadvantages:

- * Booms must be deployed quickly to contain the oil slick before it spreads. Booms do not do well in rough water.
- * It requires large numbers of personnel and equipment that may be difficult to get to a spill site quickly.
- * Recovery rate of oil under the best circumstances rarely exceeds 15%.

DISPERSANT APPLICATION:

Basic Strategy:

Dispersants are chemical detergents that break the oil into tiny droplets that spread through the water column. This technique dilutes the oil to minimize the toxicity to marine mammals and birds. The smaller droplets are also more easily biodegraded by naturally-occurring micro-organisms. The use of dispersants accelerates the process of physical and chemical breakdown that would occur during natural weathering.

Procedures Employed:

Dispersants can be sprayed from aircraft or vessels.

Spill Applications:

Spill in turbulent water, way from sensitive habitats.

Document Title: NONTANK VESSEL RESPONSE PLAN	Issue: 09/13/2007
Document Section: 4 - SHORE-BASED RESPONSE ACTIVITIES	Rev: 4
	Page: 35

Advantages:

- * It works well in rough waters.
- * It can be employed effectively on large spills that are beyond the capability of containment and recovery methods.
- * It makes the oil less sticky, keeping it off rocks, boats, and equipment.

Disadvantages:

- * It must be applied within the first 24 hours to be effective.
- * Some Dispersants need wave action and therefore, may have limited usefulness in calm waters.
- * Since the spraying of dispersants require prior approval from governmental authorities, the time limit for the technique to be effective may expire and therefore, most dispersants would not prove effective past 24 hours.

IN-SITU BURNING:

Basic Strategy:

Concentrate oil and ignite to burn as much as possible.

Procedures Employed:

The oil is concentrated and corralled through the use of booms and ignited by flares, bombs, rockets, or lasers deployed from a helicopter. The fire burns until the fuel runs out or until conditions favorable to combustion change.

Spill Applications:

Spills on ice, or on calm, open water, away from populated areas.

Advantages:

- * It is extremely effective, usually burning off 80-98% of the oil from the surface of the water.
- * It prevents oil from reaching the shoreline.
- * It prevents oil from mixing into water column, keeping it away from marine life.
- * It works well in calm water.

Disadvantages:

- * It causes air pollution and thus is not a good technique to employ around populated areas.
- * To conduct this technique safely and effectively, specialized trained workers are required.
- * It must be initiated before the oil is broken by wind, waves, or currents.
- * Because of possible environmental impacts, and safety concerns, governmental authorities often must approve the use of this technique before it can be deployed.
- * It may be difficult to sustain a burn in very rough or cold water.
- * It may leave tarry residue that will wash up on the shoreline or sink to the bottom.
- * The smoke and residues may damage nearby ships, waterfront structures, and shoreline environments.

Document Title: NONTANK VESSEL RESPONSE PLAN	Issue: 09/13/2007
Document Section: 4 - SHORE-BASED RESPONSE ACTIVITIES	Rev: 4
	Page: 36

NATURAL CLEANUP:

Basic Strategy:

Allowing oil break down naturally.

Procedures Employed:

If nothing is done, oil will weather naturally by breaking down chemically or physically with turbulent wave action and effects of sunlight. Within 24 hours the most toxic portions of the oil will evaporate, posing less of a threat to wild life. Eventually the oil will break up into smaller droplets that are more easily biograded by naturally occurring microorganisms.

Spill Applications:

Spills on open water, away from shorelines; spills on shorelines exposed to significant wave action.

Disadvantages:

- * It can allow oil to reach areas that may experience serious environmental impacts.
- * It is often difficult to predict how weather, currents, wave action, and sunlight will act on the spilled oil.

CLEANUP ON SHORE:

Where containment and cleanup from the water could not protect the shore from impact, cleanup of shorelines and wetlands should be divided into several categories to facilitate cleanup. Each type would have agreed-upon cleaning techniques in consultation with the appropriate natural resource trustees.

Resources needed for shoreline cleanup would include large numbers of OSHA trained manual laborers for the labor-intensive cleanup.

Heavy equipment, vacuum trucks, mechanized shore cleaning gear and vast supplies of sorbents would be needed. On certain shorelines, trenching, burning or artificial barriers could be used to reduce the effects of standing oil. As a precaution, heavily oiled areas would be boomed off during shore cleaning to prevent a recurrent oil slick on the following high tides. Thousands of feet of boom would be needed for these simultaneous shoreline cleaning operations. Staging of the equipment from water may be needed to protect sensitive wetlands.

Transportation of needed resources to remote locations may require off-road vehicles along with other transports, such as small passenger vessels to ferry manpower, air lifts, and deck cargo barges.

Accommodations and meeting facilities for the large number of personnel involved with all aspects of spill response would need to be provided due to the remoteness of the sites. Contracted motor homes and tenting hotel barges would be needed to house the personnel.

Surveys of cleaned areas would be conducted by the USCG incident commander, land managers, and state representatives to determine if cleanup personnel can move on to other areas. The advice of biologists and natural resource specialists would be requested via NOAA.

EXPERIENCE HAS SHOWN THE SHORELINE CLEANUP OPERATIONS OFTEN CAUSE MORE ENVIRONMENTAL DAMAGE THAN IF OIL WERE LEFT ALONE.

Summary of company's incident command center resources needed at or near vicinity:

- * 2 Nos trailer offices for 12 persons, equipped with telecommunication systems, VHF's, fax machines, copiers and other office supplies.
- * 2 mobile vans with telecommunications for alternate Q.I.'s, government officials, OSRO groups, salvage groups, for use as sub-command centers.
- * Communication resources needed:
 - * 10 telephone lines (PRIMARY)
 - * 3 VHF marine radios (SECONDARY)
 - * 10 hand held all channel radios with recharge capability
 - * 6 fax machines
 - * 10 cellular phones