



Oil Spill Dispersants

One tool used occasionally in oil spill response as a secondary and alternative method is the category of chemical dispersants. Under strict approvals and a narrow set of conditions, dispersants can be sprayed aerially onto oil spilled in Alaskan marine waters. Chemical dispersants break a slick into smaller droplets, promoting mixture of oil into the water column, and accelerating dilution and degradation.

Federal and state approval for dispersant application in Alaska is considered only when an effective conventional response is not feasible or not totally adequate in containing or controlling the spill. Even then, approval is given only when the impact of dispersants or dispersed oil is judged to be less harmful than that of non-dispersed oil.

The primary oil spill response method in Alaska and the United States is mechanical containment and recovery, which involves the use of containment booms, skimmers and other related equipment. The many hindrances to spill recovery, however, place a real advantage to having many “tools in the toolbox” – historically, no more than 10 percent of the oil has been recovered from large marine spills. Current mechanical technology is not effective in waves greater than about 6 feet, winds greater than 20 knots, or currents greater than 1.0 knot. Colder air and water temperatures, and emulsification of the oil also limit recovery.

Conditions of use

- Dispersants are best used to protect shoreline: when the damage to the shore and nearby marine life would be worse than “dissolving” the oil into the off-shore water.
- They’re best used on the leading edge of slicks that may get out of control and head ashore.
- Their use is avoided in near-shore areas especially near sensitive habitats.
- Dispersants must be applied soon after the oil is spilled and before the oil weathers or slicks are broken up. This means usually within a matter of several days.
- Conditions are best when the water is deep and when there is “mixing” action from waves, wind or currents. There must also be the right quantity of dispersants on hand to provide the proper oil-to-dispersant ratio, and they can be applied in the right place.
- Dispersants are used primarily on crude oil, but have been used on bunker oils too.



Dispersant application equipment is tested during a drill in Prince William Sound.

How they work

Dispersants help prevent formation of water-oil emulsions, or “mousse,” and they speed up biological breakdown of oil by natural marine organisms. They also reduce the adhesion of oil to sediments and other organisms in the water.

Rules for use

State law requires all companies which handle and ship large amounts of oil to write an oil spill prevention and contingency plan. In order for dispersants to be considered an option in spill response, those companies must make many preparations through their contingency plan, including the following:

- 1) mechanisms to assess environmental consequences and provide continuous monitoring of its environmental effects;
- 2) an inventory of equipment and supplies, including their type and toxicity;
- 3) identification of all permits, approvals, or authorizations and the timeline for obtaining them; and,
- 4) a plan for protecting environmentally sensitive areas, areas of public concern, and the public from any adverse effects of dispersant use.

Approvals required

Under federal regulations, the National Contingency Plan (NCP) lists the government agencies needed to authorize the use of dispersants:

- The Federal On-Scene Coordinator, represented by the U.S. Coast Guard,
- with the concurrence of the U.S. Environmental Protection Agency (EPA) representative to the Regional Response Team (RRT)
- with the concurrence of the RRT representatives from the Alaska Department of Environmental Conservation,

- AND in consultation with the Department of Commerce and Department of Interior natural resource trustees, when practicable.

In order to expedite the approval process for oil dispersants, the Alaska Regional Response Team has developed guidelines. The guidelines can be found in the Alaska Federal/State Preparedness Plan for Response to Oil and Hazardous Substance Discharge/Release or "Unified Plan".

Spill Prevention and Response Division

Alaska Department of Environmental Conservation

555 Cordova Street

Anchorage, AK 95501

Report all oil spills

State law requires all oil and hazardous substance releases to be reported to the Department of Environmental Conservation. For federal reporting requirements see NRC website at www.nrc.uscg.mil

Where to Report a Spill

During normal business hours call or fax a completed [spill report form](#) to the nearest DEC Area Response Team Office. Outside normal business hours, call: 1-800-478-9300



Area	Phone	FAX
Central (Anchorage)	269-3063	269-7648
Northern (Fairbanks)	451-2121	451-2362
Southeast (Juneau)	465-5340	465-2237