

Operations Section Dispersants Guidance Tool

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1000 Dispersants Guidance for Operations Section

According to the NCP, for areas that are not Pre-Authorized or No-Use Zones, (as described in Section 4610), the FOSC must request approval for the use of dispersants from the RRT, in particular; there must be concurrence from the affected state and the United States Environmental Protection Agency (EPA), with consultation with the United States Department of the Interior and United States Department of Commerce.

In preparation for RRT approval, typically the UC will trigger a process to evaluate the applicability of dispersant use for the specific conditions of that incident, by setting that as an objective. During the time that the EU is following its procedures (Section 4610) for evaluating whether dispersant use is appropriate for the specific incident, the Operations Section should also be conducting its own preparations, including ordering of resources, described in further detail below.

The types of oils typically produced or transported in offshore waters in the Northwest are oils imported from Alaska such as Alaska North Slope crude oil or oil imported from foreign countries into northwest ports; oils from Canadian sources, including Alberta crude and dilbit; and a range of fuel oil types that could be spilled from a variety of marine industrial activities (e.g., fuel tanks from ships, cargoes of small tankers).

Dispersants typically work best on spilled oil with a relatively low viscosity at the time of treatment and when there is wave energy to mix the dispersant into the oil. Viscous and emulsified oil typically may not disperse as effectively as fresher oil, even with sufficient mixing. Therefore, the window of opportunity for application of dispersants is small, meaning that all preparations, authorizations, and logistics must be undertaken as expeditiously as possible while ensuring thorough adherence to all appropriate regulations and notifications.

Dispersants are typically applied using either a vessel or aircraft-mounted spraying unit. Spray systems need to be able to apply the appropriate dispersant dosage in droplets that are the appropriate size. Droplets that are too small can be subject to wind drift; those that are too large will pass right through the oil slick. Both the flow rate and the droplet size are a function of the spray bar pressure and nozzle type. Application systems should be calibrated prior to use, preferably with the specific dispersant type to be used. This determination should be made in the Operations Section during the preparation for the RRT dispersant use approval decision.

Approved dispersants are listed in the NCP Product Schedule (<https://www.epa.gov/emergency-response/alphabetical-list-ncp-product-schedule->

[products-available-use-during-oil-spill](#)) as per Subpart J of the NCP. In the Northwest, dispersant stockpiles are maintained by some of the OSROs.

As a best practice and if time allows, before dispersant applications proceed, a small test should be conducted, in which dispersants are sprayed on a portion of the slick. Once dispersant operations are underway, a monitoring/observation program should be established to monitor the safety of operations, and observations of wildlife in the area, in addition to Special Monitoring of Applied Response Technologies (SMART) protocols to monitor the effectiveness of the application

(http://response.restoration.noaa.gov/sites/default/files/SMART_protocol.pdf).

Operations will develop Daily Operational Plans using these guidelines as a minimum:

- Dispersant must only be applied by experienced spray applicators and in accordance with manufacturer instructions.
- The persons applying dispersant are responsible for the calibration and operation of the spraying system, and the safety and maintenance of the application platform.
- Droplet size is the key variable influencing dispersant effectiveness. Undersized droplets (e.g., fog or mist) will be lost through drift and evaporation. Oversized droplets will punch through the oil and be lost in the water column.
- Only undiluted concentrate dispersant is applied from aircraft. Dispersant should, where possible, be applied into the wind and parallel with the slick.
- Dispersant should be applied in a methodical and continuous manner to ensure that the entire target area is treated.
- Spraying effort should concentrate on the thickest sections, and/or the leading edges, of oil that threatens sensitive areas. Use visual observation or remote sensing to locate the thickest concentrations of oil.
- Thick portions of the slick may require several applications.
- Oil sheen should not be sprayed with dispersant.
- In general, aerial application is preferred over vessel application. The altitude of the aircraft should be as low as possible.

Dispersant applications must be monitored to confirm whether or not dispersant use is effective. The SMART protocols are the accepted protocols for monitoring dispersant applications and should be utilized. However, dispersant applications should not be delayed simply because monitoring is not in place. The policy of the RRT is that visual observation (Tier 1 of SMART) is the minimum level of monitoring during a dispersant application. Once a dispersant application operation is a potential option, the Operations

Section should immediately request deployment of the USCG Strike Team to the spill site if dispersant use is likely. The Strike Team maintains monitoring capabilities for SMART monitoring and can typically deploy a team within 2 hours of notification. The USCG FOSC will typically deploy the Strike Team.

A decision to end dispersant application due to poor effectiveness should ideally be based on SMART monitoring results. Review all aspects of the application and monitoring for possible reasons why dispersant application may be ineffective, including:

- Dispersant formulation,
- Application ratios (increase or decrease oil: dispersant ratio),
- Application methods,
- Monitoring methods,
- Interpretation of monitoring results
- Oil weathering, and
- Weather conditions.

Further details regarding how SMART field data should be interpreted and utilized to make decisions on adjustments to or termination of dispersant application can be found in the SMART Manual

(http://response.restoration.noaa.gov/sites/default/files/SMART_protocol.pdf).