OIL SPILL EMERGENCY RESPONSE -
MONITORING THE USE OF DISPERSANTS

Measuring Oil Discharge Volume and Flow Rate

About

Dispersants are chemical agents used to break up oil into smaller droplets throughout the water column. Dispersants are applied to surface oil floating on water, or below the surface closer to an uncontrolled release of crude oil from a well blowout source. This series of fact sheets details monitoring requirements and how to apply the collected data to inform the use of dispersants under **Subpart J of the National Contingency Plan (NCP)**.

Description of the Requirement

Surface dispersant applications:
The responsible party must document the best estimate of the oil discharge volume or flow rate, including a description of the method used, associated uncertainties, and materials. This best estimate needs to be periodically re-evaluated as conditions dictate. Refer to the regulatory requirement in the Code of Federal Regulations (CFR): **40 CFR 300.913(a)(2)**.

Subsurface dispersant applications:
The responsible party must document the best estimate of the discharge flow rate of associated volatile petroleum hydrocarbons including a description of the method used, associated uncertainties, and materials. This best estimate needs to be periodically re-evaluated as conditions dictate.
Refer to the regulatory requirement: **40 CFR 300.913(a)(5)**.

Oil Discharge Volume and Flow Rate

Oil discharge volume and flow rate are measures of the daily amounts of oil flowing into the body of water and contributing to the spill.

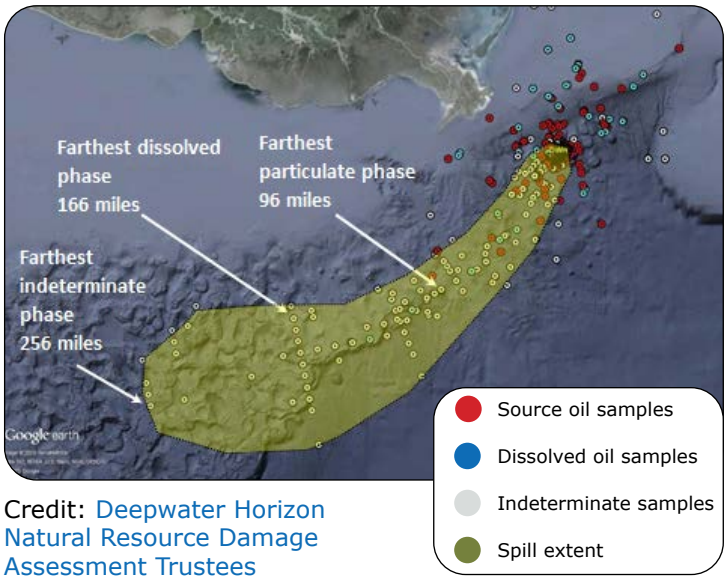
Measuring Oil Discharge Volume and Flow Rate

- Oil discharge volume is commonly measured in barrels, while flow rate is measured in barrels per day.
- Surface oil discharges are generally more easily measured than subsurface discharges.
- Subsurface oil flow rate estimates are derived from a combination of oil reservoir data, models, and field observations (e.g., underwater video, acoustic observations) (Figures 1 and 2). Models may use parameters from the oil reservoir, the oil well itself, or observations from the ocean's surface to derive flow estimates.

Using Oil Discharge Volume and Flow Rate Data

- Oil discharge measurements help characterize the potential spatial distribution and extent of the oil spill (Figure 1).
- These data, in conjunction with the product manufacturer's recommendations for dispersant-to-oil ratio, help inform the On-Scene Coordinator when determining an appropriate dispersant use rate and evaluating the amount of dispersant used for the incident.

Figure 1: Example of extent of an oil spill plume based on discharge data from the various sampling locations.



Credit: Deepwater Horizon Natural Resource Damage Assessment Trustees

Decision Points for Responders

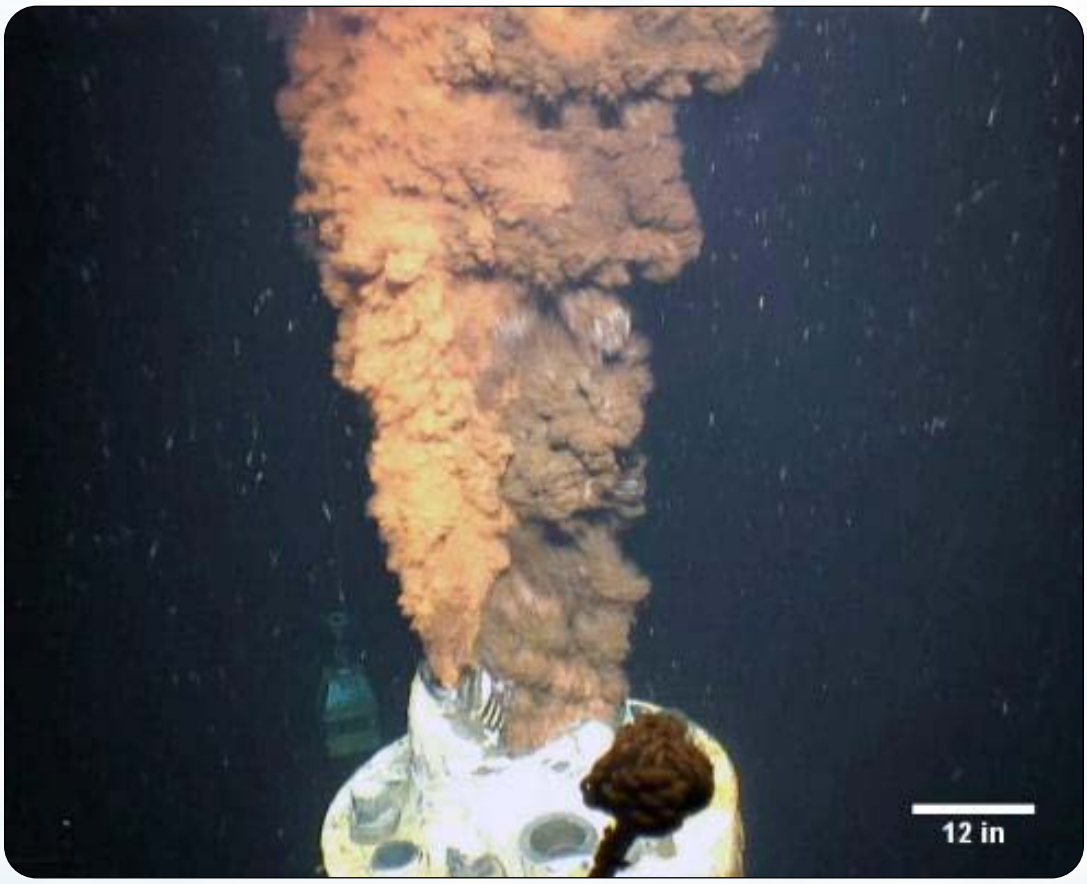
The On-Scene Coordinator should consider all available data and information relevant to the response and consult with subject matter experts. When changes in discharge volume or flow rates occur, the On-Scene Coordinator should consider whether there is a need to modify dispersant use, including adjustments to the dispersant application rate.

Additional Resources

NCP Product Schedule Technical Notebook

This compilation of product bulletins summarizes data requirements and test results for dispersant products listed on EPA's NCP Product Schedule. It includes information on dispersant product application methods, toxicity and effectiveness, and physical properties.

Figure 2: Discharge observation of a subsurface oil spill.



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