



## Use of Dispersants

The Montara Wellhead Platform had an uncontrolled release of oil on 21 August 2009. As part of the response dispersants were used to treat surface oil released from the platform.

### Dispersants and their role in oil spill response

The dispersion of oil into the water column is a natural process that occurs following the release of oil into the marine environment. Under wave action the surface slick breaks down into small droplets, some of which become suspended in the water column.

Dispersants are chemical products that are applied onto spilled oil for the purpose of transferring the oil from the water surface into the upper water column. Dispersants enhance the natural dispersion process and cause the formation of smaller droplets which are less likely to resurface.

When effectively applied, dispersants reduce the impact to marine organisms and habitats at risk from surface oiling (e.g. birdlife, cetaceans, coastal habitats). It has also been noted that numerous animal species can detect hydrocarbons (as well as components in the dispersant) at concentrations far below those that will cause acute harm. The absence of observed effects on mobile species such as fish after spills is thought to be due to them detecting and moving away from the dispersed oil.

Within Australia dispersants are only applied where it is considered there will be a consequent net environmental benefit, i.e. the potential environmental harm is greater if the oil remains on the water surface.

### The decision to use dispersants

The decision to apply dispersants in response to the uncontrolled release from the Montara Wellhead Platform was taken only after careful consideration of a number of issues relevant to the overall response strategy:

- Oil spill modelling predicted that significant quantities of oil could move from the spill site, an area of lesser environmental biodiversity, to impact the marine reserves covering Ashmore and Cartier Reefs;
- The environmental sensitivity of the region and the high priority areas of Ashmore and Cartier Reefs. An environmental assessment also identified large numbers of birds foraging throughout the region;
- The remoteness of the location which precluded immediate vessel based containment and recovery operations;
- An assessment that concluded that removal of oil from the water surface through the use of dispersants would prevent significant impacts on the marine reserves; and
- The approved contingency plan for the Montara oil field which identified dispersants as an appropriate response option.

### Montara Fact Sheets

- 1 Australia's Offshore Petroleum Industry
- 2 Australia's Offshore Petroleum Regulatory Framework
- 3 Incident and Response
- 4 Environmental Response
- 5 **Use of Dispersants**
- 6 Map: Montara Wellhead Platform
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### Dispersant applied

A total of approximately 184,000 litres of dispersant was used during response operations. The location, duration and volume of dispersant applied in the field was recorded daily. In total, seven different types of dispersant were used. Data on the amount of dispersant used and the location can be found at [www.amsa.gov.au/montara](http://www.amsa.gov.au/montara).

### Location of dispersant operations

Dispersant operations commenced on 23 August 2009 and were terminated on 22 October 2009, with actual dispersant spraying being undertaken (from fixed wing aircraft and/or surface vessels) on 46 days during this period. Dispersant operations were conducted in a very limited area, primarily within an approximate 30 kilometre radius of the Montara Wellhead Platform. This was due in part to the fact that dispersant needs to be applied before the oil weathers and this weathering process is relatively rapid for this oil type due to the high temperatures in the Timor Sea.

All dispersant operations were conducted well within the Australian Exclusive Economic Zone (EEZ). The nearest dispersant operation to Indonesian waters was approximately 50 nautical miles to the south of the EEZ boundary – some 124 nautical miles from the Indonesia coastline.

### Toxicity of dispersants

All of the dispersants applied during the Montara Wellhead Platform response had passed toxicity testing required by the Australian Maritime Safety Authority (AMSA). Under the testing regime the dispersants are tested against two tropical and two temperate species. Dispersants must be of “low toxicity” to pass the toxicity test.

All Australian dispersants are significantly less toxic than the oil to which they are applied. The toxicity effects of dispersants in comparison to oil are further reduced when it is considered that ideally dispersants are applied at a dispersant/oil ratio of 1:20. The acute toxicity resulting from dispersed oil derives from the soluble fractions of the oil and not the dispersant.

The testing regime is continually reviewed to ensure best practice is maintained. Types and quantities of dispersants used during the Montara response can be found at [www.amsa.gov.au/montara](http://www.amsa.gov.au/montara).

### Monitoring of dispersed oil

AMSA monitored the presence and distribution of dispersed oil during dispersant operations. Monitoring detected hydrocarbons below dispersed oil slicks of less than five parts per million and at depths of up to 20 metres (although these were low concentrations of less than one part per million).

Data from this monitoring is available in the report *Operational Monitoring Study O2 – Monitoring of Oil Character, Fate and Effects, Report 03: Dispersant Treated Oil Distribution*. This report can be viewed at [http://www.amsa.gov.au/Marine\\_Environment\\_Protection/National\\_plan/Reports-Fact\\_Sheets-Brochures/](http://www.amsa.gov.au/Marine_Environment_Protection/National_plan/Reports-Fact_Sheets-Brochures/).

In addition to this monitoring undertaken during the response, computer-based modelling of the dispersant plume was undertaken as part of the longer term monitoring programme. This report will be published by the Department of Sustainability, Environment, Water, Population and Communities.



## Summary

Results from field monitoring undertaken during and after the response and post response computer modelling indicate a low level exposure of dispersed oil, for short periods of time over a limited area.

The isolation of the application area together with the trajectory modelling indicate that chemically dispersed oil would be diluted below detectable limits well before reaching inshore waters and reefs. No evidence has been found of any dispersant damage to Australian shorelines. Nevertheless, longer term scientific monitoring of the area is underway and all findings will be published.

For more information please contact the Australian Maritime Safety Authority on 1300 624 633.