

## Marine Notice No. 3 of 2009

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### Policy on the use of oil spill dispersants in South African waters

TO ALL PRINCIPAL OFFICERS, MASTERS, SHIPOWNERS, SHIP OPERATORS, SHIP AGENTS, HARBOUR MASTERS AND DEA & T

*Marine Notice No. 14 of 1997 is cancelled*

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#### *Summary*

Government Notice No. R. 662 (Government Gazette No. 17973) of 9 May 1997 amended the regulations made under the Prevention and Combating of Pollution of the Sea by Oil Act, 1981 (Act No. 6 of 1981), by the addition of a new Chapter VII [Oil Dispersants]. The new Chapter gives effect to the Department of Environmental Affairs and Tourism's Policy on the use of oil spill dispersants in South African waters, the text of which is reproduced for general information in the annex to this Marine Notice.

## 1 INTRODUCTION

Oil spills may have adverse effects on various marine and coastal resources, both natural and socio-economic. The objective of counter-measures is to minimise such effects.

Oil spill dispersants have frequently been used during response operations. Their use, however, is controversial, as it has both advantages and disadvantages. Disadvantages include the fact that application of dispersants result in increased concentrations of oil in the water column, and that oil dispersant mixtures are generally more toxic than the oil itself. Moreover, dispersants are only effective on certain types of oil and even then, only within a limited time span after the spill. It is very important, therefore, that their use is properly controlled. The dispersants should only be used when physical containment and removal are not possible, and their use should be beneficial to the net environment.

The objective of the guidelines below is to set out the criteria necessary for making rational decisions on the use/non-use of dispersants. It should be pointed out, however, that in general, the decision to use dispersants should only be taken by the governmental authority responsible for the co-ordination of oil spill response, i.e. the Department of Environmental Affairs and Tourism (DEA & T). Refer to Marine Notice No. 16 of 2007 for a list of DEA & T Pollution Officers to be contacted in this regard.

## 2 CONDITIONS FOR USE

- (i) Oil spill dispersants should only be used when it has been decided by the authorities concerned (the DEA & T On Scene Director - in consultation with the scientific advisors - during a spill incident) that such use will minimise the overall environmental impact.
- (ii) Only oil spill dispersants bearing the SABS mark of approval and which have passed the SFR1 approved toxicity/efficiency tests may be used. The specifications for the SABS mark

are contained in SABS 1234-1978 (Amendment No. 1: 3 November, 1982). It does not include dispersants and detergents approved by SABS for purposes other than oil spill dispersion. Details of the SFRI tests and a list of dispersants, which have passed the test can be obtained from the Pollution Officer.

- (iii) All use of dispersants should be documented (see Appendix), so that relevant information can be used to improve predictions of effectiveness in field situations.

### 3 RESTRICTIONS ON USE

In general terms, dispersants should only be used in waters more than 5 nautical miles offshore, and/or with a depth of more than 30 metres. Use within these limits must be approved by a Pollution Officer of DEA & T, except in circumstances of extreme emergency where dispersant use is specifically recommended (see Section 4), or where approval for dispersant use has been incorporated into the relevant contingency plan. The Pollution Officer must then be informed of such use without delay.

In situations where the use of dispersants is being considered, the following restrictions also apply:

- A Dispersants should only be utilised in circumstances where they are likely to prove effective.

- (i) Type and state of the oil: Dispersants should not be used on:

- slicks > 0,5 cm in thickness;
    - slicks that appear as sheen or colour bands;
    - diesel or light fuel oil;
    - heavy fuel oil;
    - viscous, weathered or emulsified oil;
    - oils with pour points at or above ambient temperature;
    - small offshore spills.

Dispersants are most effective on fresh crude oils, but it is good practise to test the effectiveness of the dispersant on the particular oil in the laboratory before application at sea, where this is practical. Should the tests prove favourable, dispersants should still only be used when all other requirements are met.

- (ii) Weather conditions: Dispersants require a certain amount of mixing energy to be effective, and are therefore not effective in flat calm conditions, unless energy is supplied during application. On the other hand, in turbulent sea conditions the oil will be dispersed naturally. For these purposes, turbulent conditions are considered to be sea states 4, or Beaufort No.s 4-5. In winds greater than Beaufort No. 5, dispersant application will be impossible.

- (iii) Time limitations: Immediately oil has spilled it begins to change as a result of processes such as evaporation, dissolution, biodegradation, photochemical breakdown, etc. As stated above, dispersants are not effective on weathered oil. They should, therefore, only be used if they can be applied preferably within 12 hours or at a maximum of 24 hours after the oil's release. These time limitations may be modified either way should careful monitoring of the operation indicate so. Ideally, oil should be sprayed as near to the source as is possible.

- (iv) Application: There are a number of methods for the application of dispersants. Dispersants should not be used unless suitable equipment is available to apply it at the rate recommended by the manufacturers. Generally, the volume of dispersant used should never exceed 20 - 30% of the volume of oil treated.

B Dispersants should only be utilised where their use will result in a net environmental benefit. They **should not** be used in the following situations:

- (i) in areas of low water volume and a limited rate of exchange, e.g. bays, estuaries etc.;
- (ii) near shellfish resources;
- (iii) in fresh water;
- (iv) on established fish breeding grounds and in migratory areas;
- (v) in the vicinity of industrial water intakes;
- (vi) in areas far offshore where there is little likelihood of the oil coming ashore;
- (vii) on the shoreline.

#### **4 USE IN EMERGENCIES**

At the present time, dispersant use is recommended for use on fresh crude oil when:

- (i) the slick is approaching islands/rocks supporting large seabird colonies, especially if these colonies include rare or endangered species.
  - (ii) the slick, although just beyond the 5 nautical mile offshore limit, is moving rapidly onshore (winds or currents onshore) into:
    - (a) an area with ecologically sensitive coastal features, e.g. estuaries or bays which would not be possible to close artificially (e.g. Langebaan).
    - (b) an area with important socio-economic features that could not be protected from impact, e.g. heavily utilised bathing beaches at the height of the holiday season.
- As stipulated above, the DEA & T Pollution Officers must be informed of any such use of dispersants as soon as possible and by the quickest means available (preferably telephonically).

#### **5 DECISION MAKING**

As mentioned above, the decision to use/not use dispersants involves weighing up the advantages and disadvantages. This can be facilitated using the decision tree shown in Figure 1.

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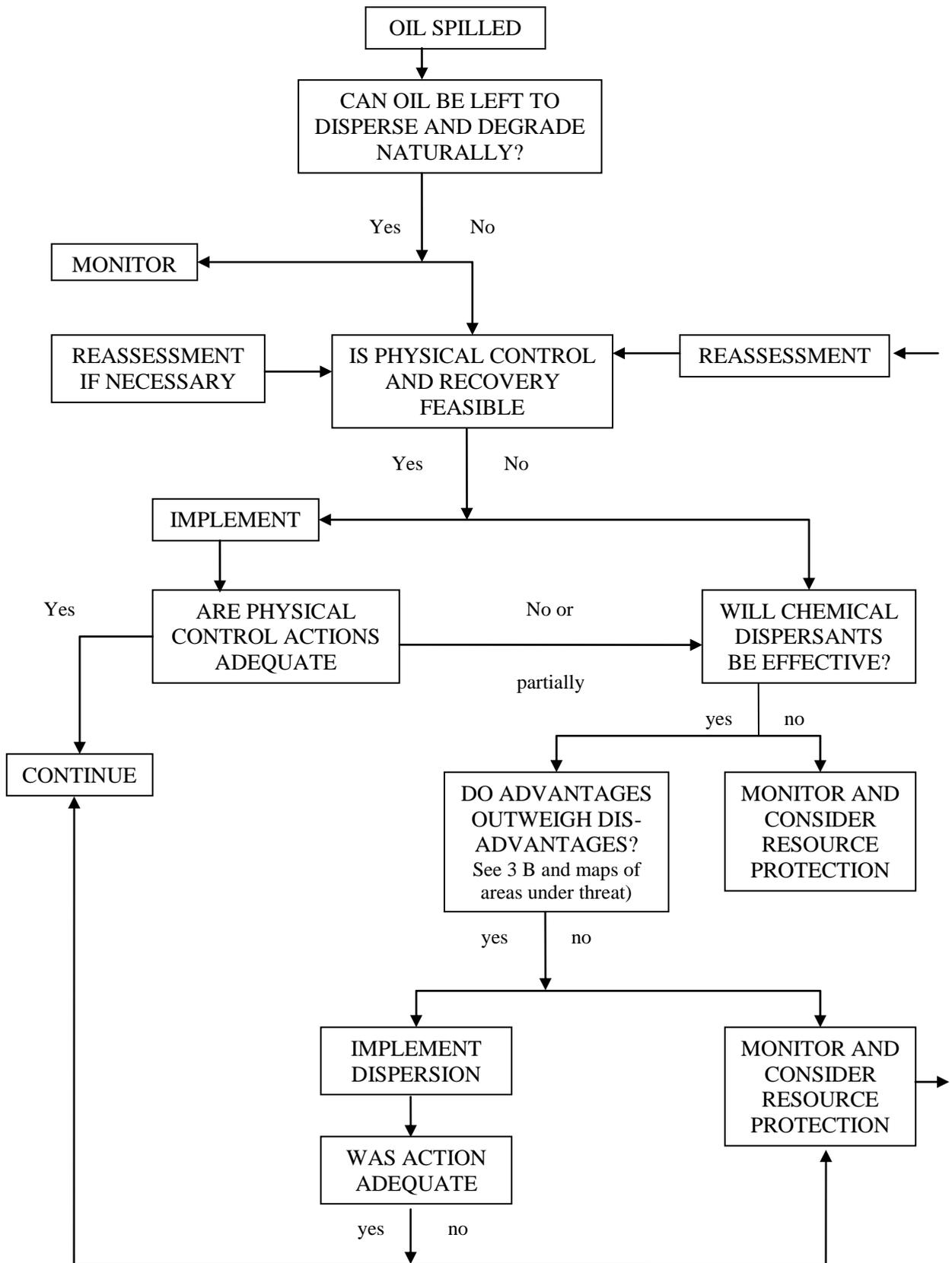


Figure 1. DISPERSANT USE DECISION TREE

## APPENDIX

### SAMPLE FORM FOR REPORT ON THE USE OF DISPERSANTS

- (a) Details of the spill
- Location
  - Data and time of the spill
  - Source and type of oil
  - Estimated amount, slick area, and thickness
  - Appearance of the oil
- (b) Environmental conditions
- Air and water temperature
  - Wind, waves, currents
  - Water depth
  - Shoreline under threat
- (c) Dispersant applications
- § Rationale
  - § Type of dispersant
  - § Amount used
  - § Application and mixing methods
  - § Application rate
  - § Date and time commenced and ceased
  - § Amount of oil treated
- (d) Observations
- Visual, photographic, remote sensing, sampling
  - Estimated amount of oil left on water surface
  - Rate of dispersed oil
  - Effects on birds, fish etc.
  - Persistence of effects
- (e) Were other countermeasures used?  
Were they successful?

Reports should be sent to:

The Deputy Director: Marine and Coastal Pollution Management  
Department of Environmental Affairs and Tourism  
Private Bag X2  
ROGGE BAY  
8012 CAPE TOWN

Contact Details:

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**APPROVED OIL SPILL DISPERSANTS (PASSED SABS AND SFRI TEST)**

Chernserve OSE 750  
Chernserve OSE 760  
Chernserve OSE 770  
Shell 208184  
Shell 209184  
Shell 109185  
Shell 10185  
Shell 11 185  
Shell VDC plus  
INIPOL IP 80  
INIPOL IP 90  
Oil Technics SC-500  
Slickgone LT2  
Chernrite OSD  
Drew Arneroid Marine OSDILT  
Planisol NT4  
Veclean 1 :20  
Veclean 1 :40  
HSC 8 630  
Marinekleen 2  
ASC 7