



## The management of waste in marine spills

Beachmaster training



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## Waste contingency planning

National Contingency Plan for Marine Pollution from Shipping and Offshore Installations (NCP)

- Shoreline Response Centre
  - Technical Team
    - Waste Management Sub Group - chaired by local authority representative

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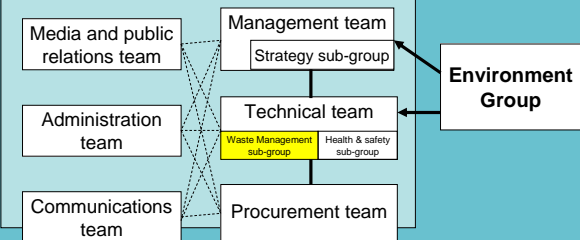
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### Shoreline Response Centre



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### Waste Management Sub Group

Manage and direct waste disposal issues in consultation with the regulator:

- Develop waste disposal strategy
- Advise on waste minimisation and segregation
- Prepare a plan for temporary storage of waste
- Provide advice on the location and format of temporary stores and treatment areas
- Provide advice on final disposal options
- Ensure waste regulations are followed:
  - Registered carriers
  - Hazardous Waste Regs.

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### Waste disposal strategy

Mission Statement:

- Facilitate the recovery and removal of pollutant (e.g. bulk oil)
- Facilitate the recovery and removal of contaminated material
- Have regard for the principles of sustainable waste management.

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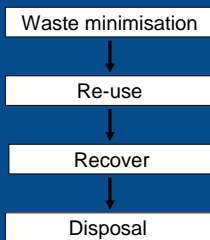
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### Sustainable waste management




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### Waste minimisation

- Ensure that the clean up generates as little waste as possible.
- Essential to avoid the mixing clean material with waste or contaminated material.




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### Re-use

- Make best use of the waste that is produced e.g. as a fuel, or a raw material such as road construction.
- Very important to segregate types of waste.




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### Recover and treat

- Treatment may result in oil recovery for recycling, with the return of clean material back to the environment.
- Other treatment options include e.g. washing, thermal remediation, in-situ biological treatment, mobile plant, oil/water separation.




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### Disposal

- Least favoured option.
- Disposal usually means to landfill (those able to accept Hazardous Waste).
- If waste goes to landfill it will have to be pre-treated.
- Very expensive.




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### Types of waste arising from oil spills

- Recovered crude oil (not heavily contaminated)
- Water in oil emulsion (chocolate mousse) – treated with dispersant
- Thick weathered oil – lumps
- Semi-solid bunker oil
- Oil and sand mixtures
- Dry waste e.g. clean up materials, pads
- Oil shingle and seaweed
- Oily Beach Material (OBM) – covers a wide range of materials from PPE, dead wildlife, oily litter and other debris cleared from the beach.

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### Options for storage, treatment or disposal

- Temporary storage (short term) - washing, thermal remediation, stabilisation and then recover or reuse.
- Direct to refinery/incinerator - mainly for oily liquids only.
- Direct to landfill or land farm
- Temporary storage (long term) - prior to landfill or land farm after some form of pre-treatment.
- Very few waste facilities available in the UK for the disposal of oily waste materials!

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### Oil refineries

- Can accept oil/water and oil/sand
- Sludge treatment
- Storage lagoons
- Effluent treatment plants




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### Oily water storage – Transfer stations

- Waste oil and water storage
- Tanker fleet
- Waste oil barge




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### Transfer stations

- Oily waste/water storage tanks
- Skip storage - bulking up of wastes
- Drums, IBC's storage vehicles – parked overnight




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### Waste contractors - road tankers



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### Landfill

- No longer able to send oily waste for co-disposal at landfills under the Landfill Directive.
- Hazardous landfill sites only.



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### Landfill Directive restrictions

- Oily waste is likely to be hazardous waste.
- Some hazardous waste may not be landfilled.
- Others can only be landfilled if:
  - it has first been treated
  - it complies with chemical quality standards
  - it is not mixed with non-hazardous waste.
- As an indirect effect – we have few hazardous waste landfill sites in the UK.
- Sites are likely to be far from the spill site.

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### Treatment of oily waste for landfill

- It must be a physical/thermal/chemical or biological process which includes sorting.
- It must change the characteristics of the waste.
- It must do so in order to:
  - reduce its quantity, or
  - reduce its hazardous nature, or
  - facilitate its handling, or
  - enhance its recovery.
- Pre-treatment is required prior to all landfill disposal.

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### MSC Napoli 2007

- Fifty eight containers
- 60 tonnes of steel scrap
- 169 tonnes of other waste




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### Role of the Beachmaster

- To follow the waste hierarchy (reduce, re-use, recover, disposal).
- To ensure wastes are segregated by type to ensure most efficient management of the waste.
- To ensure the paperwork is correct.
- To prevent where possible secondary pollution.
- Keep dirty PPE separate to contaminated sand, aggregates and bulked oils.

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### Beachmaster (continued..)

- Keep a log of waste created - type, how much and when (required as part of the audit paper trail for claiming back costs).
- Ensure that a transfer note and or a consignment note is produced for waste taken directly to disposal - listing the waste, quantities and where it is to be taken.
- Ensure the people taking the waste direct to disposal are authorised - Registered waste carrier.

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### Beachmaster (continued...)

- Ensure waste is stored so not to cause secondary pollution.
- Use bunded and lined storage areas.
- Set up clean zones and dirty zones to contain segregated types of oily wastes.

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### Waste permitting

- Sites for the keeping and treatment of waste require an Environmental Permit.
- A permit may not be required in an emergency under statutory defences.
- If we decide that this statutory defence no longer serves the public interest, deposits must be either permitted, registered exempt, removed or mitigated as appropriate – within a specified timescale.
- Location and specification of temporary sites should be agreed with us and be identified in LA's emergency plans.

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### Waste permitting




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### Hazardous Waste Regs

- All movements of hazardous waste require the use of consignment notes, unless between clean-up areas or between temporary sites.
- Consignment notes may not be required in an emergency.
- EA will require the maintenance of records so that movements of all wastes from clean up sites can be audited.
- When EA has determined that this statutory defence no longer serves the public interest, compliance with the Hazardous Waste Regs will be required.

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### Registration of Waste Carriers

- All waste carriers must be registered - online or by phone.

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### Case Study: Erika - Bay of Biscay, Brittany

- 11<sup>th</sup> December 1999
- Severe storms
- Broke in two and sank
- All crew rescued
- 20,000 tonnes Heavy Fuel Oil spilled
- Beached on Christmas day – Over 400kms affected.




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### Case Study: Erika - Bay of Biscay, Brittany

- Total Fina (cargo owner) – No liability but volunteered to deal with oily waste clear up.
- Large volumes of waste generated quickly.
- Up to 27 cms thick on some beaches.
- Shoreline clean up – volunteers, councils plus military.
- 4000+ people involved at peak.

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### Erika - Issues

- 1 tonne spilled created 10 tonne of waste.
- Waste segregated on beach then taken to temporary stores and mixed up!
- Inadequate advanced planning by French Government.
- Failed to segregate different waste types.
- Total Fina left to sort out the problems.

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### Erika - Issues

- Waste categorisation – took 6 months to categorise mixed up waste.
- Contractor appointed after long tender process.
- More than 4 years after incident occurred – waste continued going for treatment disposal.
- Over 260,000 tonnes of waste created.
- Insistence for all traces to be removed.
- Ignored advice, such as surf washing on beaches.
- Erosion issues if materials (sand cobbles etc) not put back.

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### Erika - Issues

- Incineration only option
- Typical incinerator (UK) 60 tonne/week
  - Therefore it will take 83 years to dispose of Erika oily waste!
- Estimated cost (contractor) - £30 million.

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### Lessons learnt



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### Summary

- The first priority is often to get the waste off the beach but in most cases its unlikely that there will be sufficient waste management facilities to cope.
- The waste must therefore be taken to the clean up areas to allow time to identify disposal or recovery routes.

**Temporary storage of segregated waste is the key**

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### Conclusion

- Facilitate clean up on beaches
- Promote sustainable waste management
- Limit waste going to landfill
- Retain regulatory control
- Development and test contingency plans
- Hold emergency exercises
- Liaise with response centre counterparts.



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