Methods of Response – Shoreline Clean up

Shoreline Clean-up

- General Principles for clean-up
- Assessment of the problem
- Phases of the clean-up
- Clean-up techniques by shoreline type
- Points to remember

General Principles

- Consider the shoreline type
- Minimise oiled material recovery
- Labour intensive
  - Minimise use of heavy equipment
  - Maintain morale
- Act quickly
- Technical Reasonableness

Technical Reasonableness

- Cost Recovery
- Documentation on decision making
- Look for expert advice
- Unreasonable actions may not be cost recoverable

Assessment of the Problem

- Evaluation:
  - Type and amount of oil
  - Geographical extent
  - Length and nature of affected coastline
  - Source of oil – collect samples
  - Further impact

Assessment of the Problem

- Estimating oil quantity
  - Difficult task
  - Rough estimates desirable
    - Determining most appropriate response
    - Equipment requirements
    - Manpower requirements

Assessment of the Problem

- Shoreline survey - major spill
  - Overall situation assessment aerial survey
  - Detailed evaluation on foot
  - Repeat surveys for sections of different shore type and level of oil impact

Phases of the Clean-up

Stage 1 –
Removal of heavy contamination and floating oil

Stage 2 –
Removal of moderate contamination and stranded oil

Stage 3 –
Clean-up of light contamination and final polishing where necessary

Clean-up Techniques

- Dependant on:
  - Environmental Sensitivity
  - Type of oil and amount of oiling
  - Beach access
  - Substrate type
- Priorities decided after consideration of potential conflicts of interest
  - Most effective techniques may be most damaging
- Decisions on a site by site basis

Rocky Shores

Clean-up of rocky shores

- Mechanical - skimmers / vacuum
- Manual - buckets / rock wiping
- Sorbents
- High volume flushing
- High pressure washing?
- Environmental Sensitivity Issues

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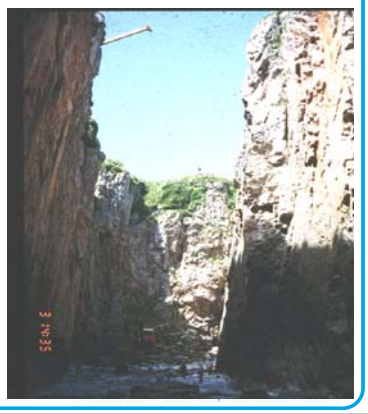
Problems of Access

Huntsmans Leap

- Recreation
- Environmental sensitivity
- Bulk oil - remobilisation
- Adjacent to bird colony
- Health and Safety



Access seaward

- Foot access only
- 2000 bags OBM
- 500m to roadway
- 80 people
- 3 hours work

Boulders and Cobble

- Stage 1- Bulk oil removal
- Poor load bearing hinders movement of vehicles and personnel
- Pumping bulk oil - mechanical/vacuum
- Health and Safety

Boulders and Cobble

- Stage 2 – Removal of stranded oil
- High pressure flushing
- Stone removal for disposal
- Push into sea for natural cleaning
- Stone washing

In-situ Stone Washing

Mechanical washing in skips

Shingle

Shingle Washing

- Suitable only for small pebble size
- Costly, must have rationale
- 1/2 hour wash cycle, 4 te loads
- Strict housekeeping required
- Strict record keeping required

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Shingle Washing

Berm Relocation

Sand

- Priorities
- Amenity
- Env Assessment
- Mechanical vs Manual

Mechanical clean-up - trenching and scraping

- Only for bulk quantities of oil
- Only on hard sand beaches
- Aim to minimise beach material pick-up
- Avoid vehicle movements in oil
- Work from clean end of beach upwards
- Work only manageable lengths of trench

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Saundersfoot beach

- 1 mile trench - inadequate resources to evacuate trenched oil

Mechanical scraping

- Steel blade
- Vertical sided trench
- Increased obm pickup?
- Sand oil mixture in trench - unpumpable?

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Ideal trench configuration

Manual Clean-up

Manual clean-up

- Can be supported by front end loader
- Into bags or drums
- Slow but precise
- Minimises sand pick-up

Minimise sand pick-up

Sand - washing

Saltmarsh and Mudflats

- Few options
- Small quantity of oil
  - leave alone?
- Bulk oil -
  - Approach from seaward?
  - Shallow draft vessels
  - Low pressure flushing
  - Vegetation cutting

Summary

- Shoreline type largely dictates technique
- Stages of clean-up
- Mechanical Vs Manual
- Sensitive shorelines are often best left alone
- Logistics / organisation
- Identify temporary storage sites

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