Choosing the right strategy

Factors to consider

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SINTEF Conference. Spill response for the future.

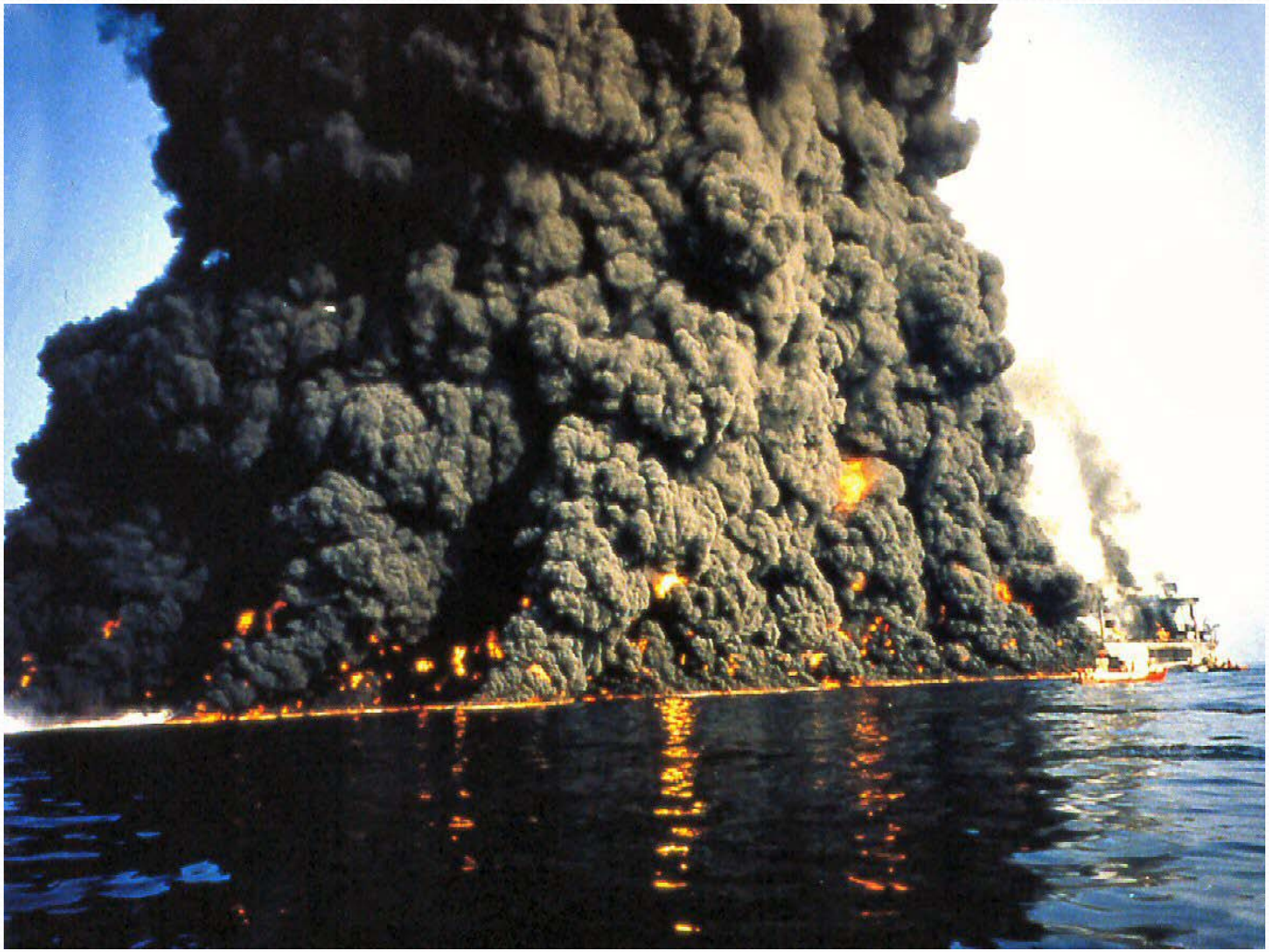
Outline

- Quick review of strategies
- When to and when not to use them
- Common aspects of response
- Technical decision factors
- Other decision factors
- Making a decision

Strategies available

- Leave alone
- Natural dispersion
- Chemical dispersion (surface)
- Mechanical containment (and recovery)
- In-situ burning
- Coastal protection
- Shoreline clean up
- Biological remediation

Leave alone ?



Leave alone ?

Leave alone ?

Leave alone ?

Leave alone ?

Leave alone

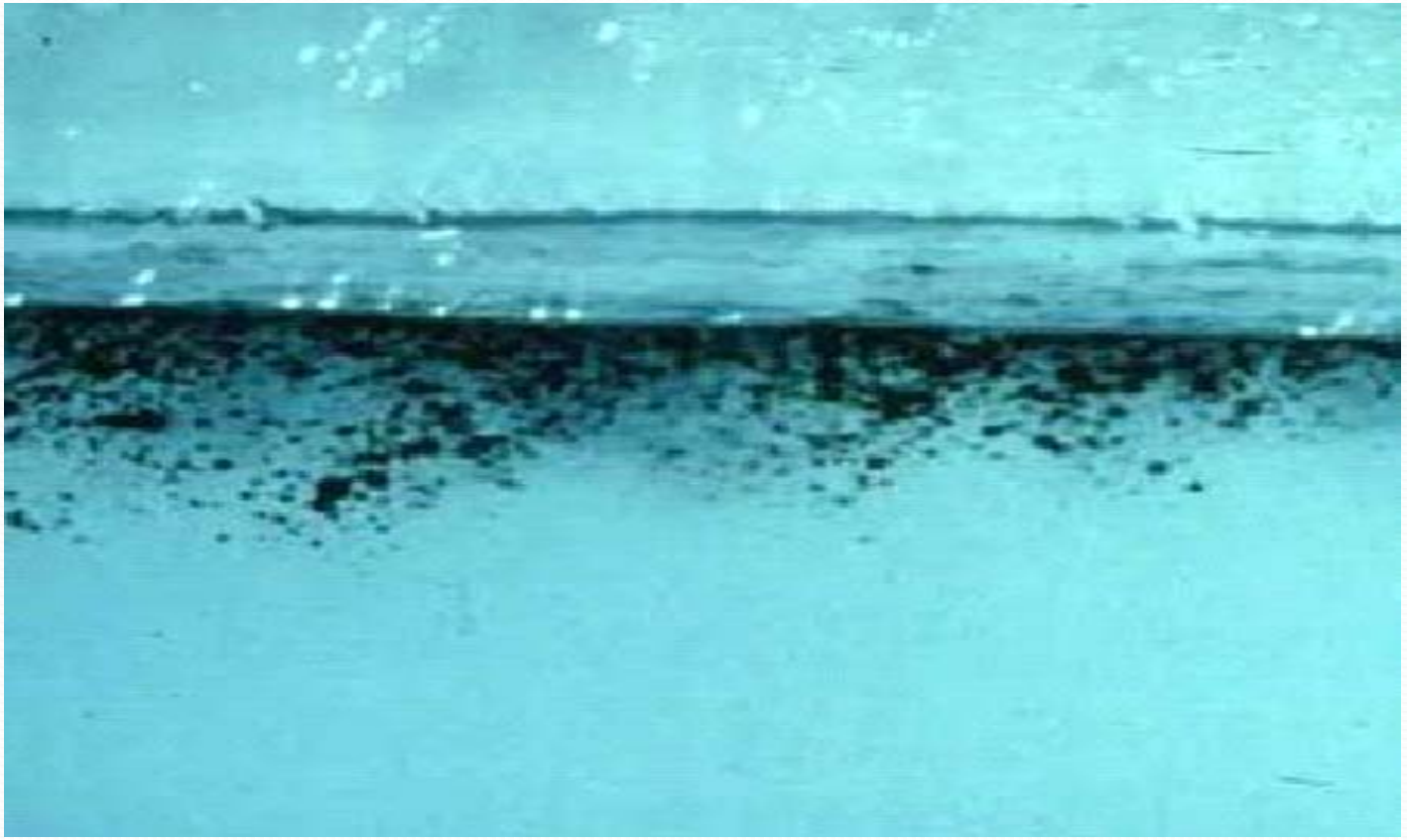
Yes

- When unsafe
- When nature will do a better job than you
- When more damage will be done by clean up activity
- When regulators have all agreed.

No

- When there is an environmental benefit to performing a clean up
- When you have other pressures driving you to perform a clean up

Natural dispersion



Natural dispersion

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Natural dispersion

Yes

- Oil light
- Long way from environmental sensitivities
- Behaviour of oil known to disperse
- When you can monitor from the air and verify dispersion
- When you have no choice e.g. safety considerations

No

- Oil heavy , not amenable
- Resources at risk nearby

Chemical dispersion

Chemical dispersion

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Chemical dispersion

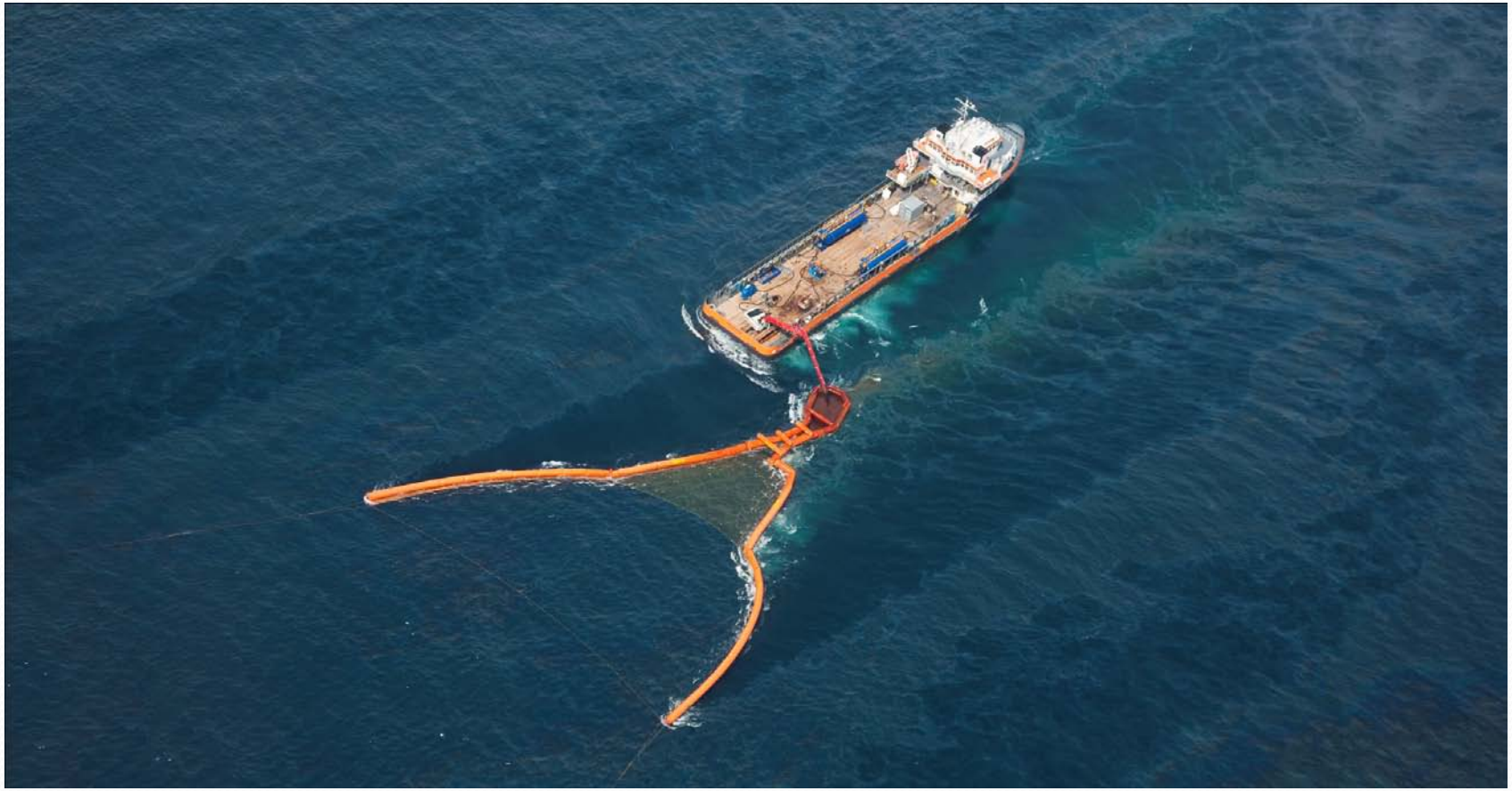
Yes

- Oil known to be amenable to dispersant.
- When weather is agreeable
- Within limits of agreements to spray
- When products are licensed
- When it is in the plan.
- When it can be applied quickly on to fresh oil
- When it may result in a safer workplace

No

- In areas sensitive to dispersed oil
- On very heavy oil
- On weathered oil
- When regulations do not permit it use
- If poor weather

Offshore mechanical containment and recovery



Offshore mechanical containment and recovery

Offshore mechanical containment and recovery

Offshore mechanical containment and recovery

Yes

- Weather conditions good
- You have the equipment and competent personnel
- You have access to vessels of opportunity
- The oil is not spread out too much so you can contain it
- You can get close to source
- You have a means to collect the oil and store it without a blockage in the logistics chain

No

- Poor weather
- Too far offshore for sensible logistics
- Safety considerations

In-situ burning

In-situ burning

Yes

- You have the equipment and expertise
- When skimming and recovery of the oil is not easily possible
- You have the logistics
- You have permission, its in the plan.
- You have good weather
- You are not easily scared.

No

- Poor weather
- Unsafe
- Not in plan
- Not agreed with regulators
- When there are other more environmentally friendly options

Coastal protection

Coastal protection

Coastal protection

Yes

- When you have been able to identify the sensitive areas
- When you have agreement on the priorities
- When you have the resources and expertise to perform correct protection measures

No

- When you apply the wrong techniques and its a waste of time

Shoreline clean up

Shoreline clean up

Shoreline clean up ?

Shoreline clean up

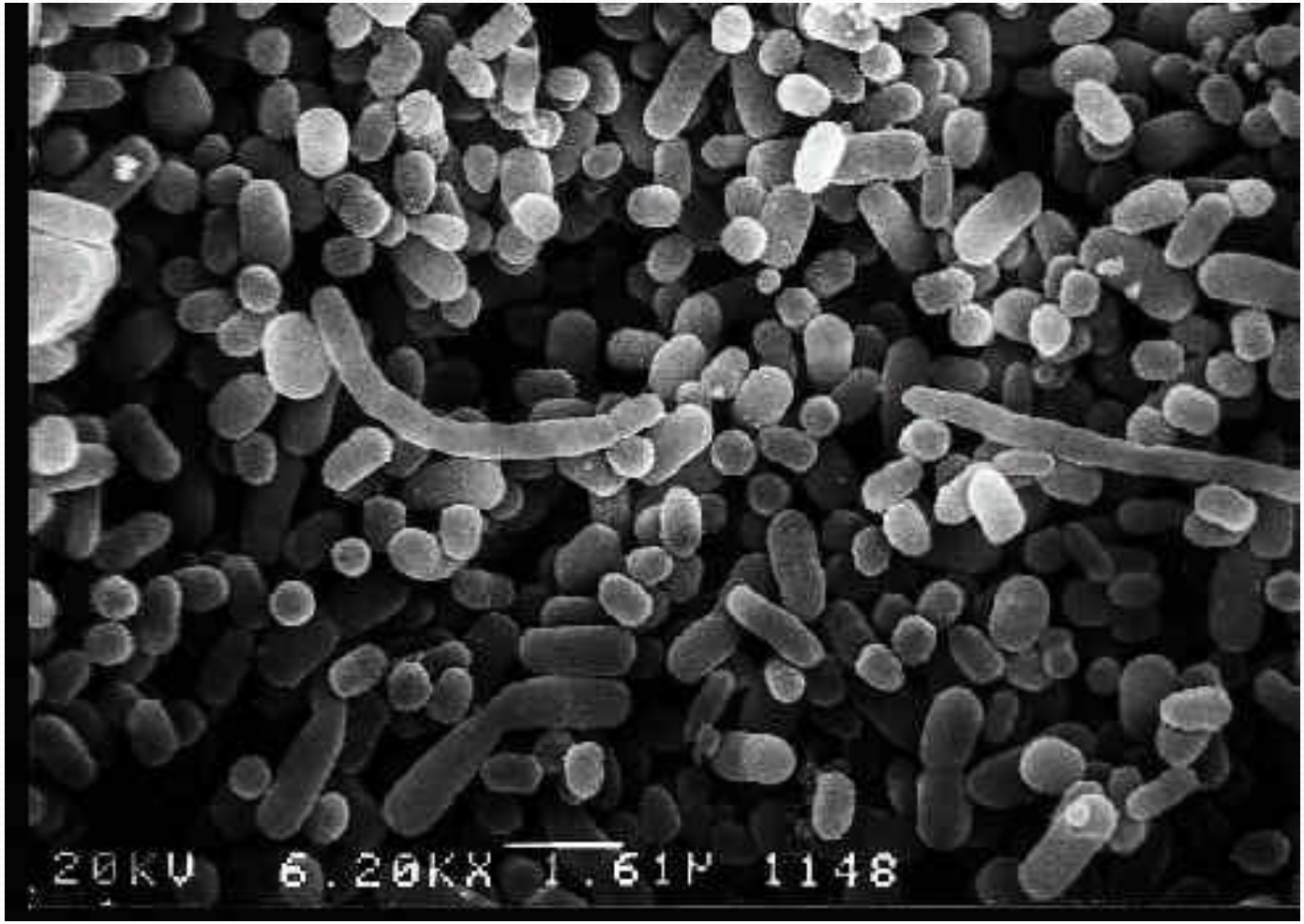
Yes

- When you can manage a large scale operation safely and efficiently
- When you have a well practised management system
- When you can store waste material safely

No

- When its clean ! What is clean ?
- Environmental disturbance
- When unsafe e.g. weather, type of shoreline

Biological remediation



Biological remediation

Yes

- When you have time for the treatments to work before more oiling or damage
- When you are sure its going to work
- When you have an agreed protocol on sampling and analysis

No

- When you need to clean up a lot of oil in a short time

Common aspects

- Command, control, organisation, systems.
- Air Surveillance
- Shoreline surveillance: SCAT
- Data management. COP. Information.
- Logistics
- Waste management
- Sampling and analysis
- External communications
- Claims

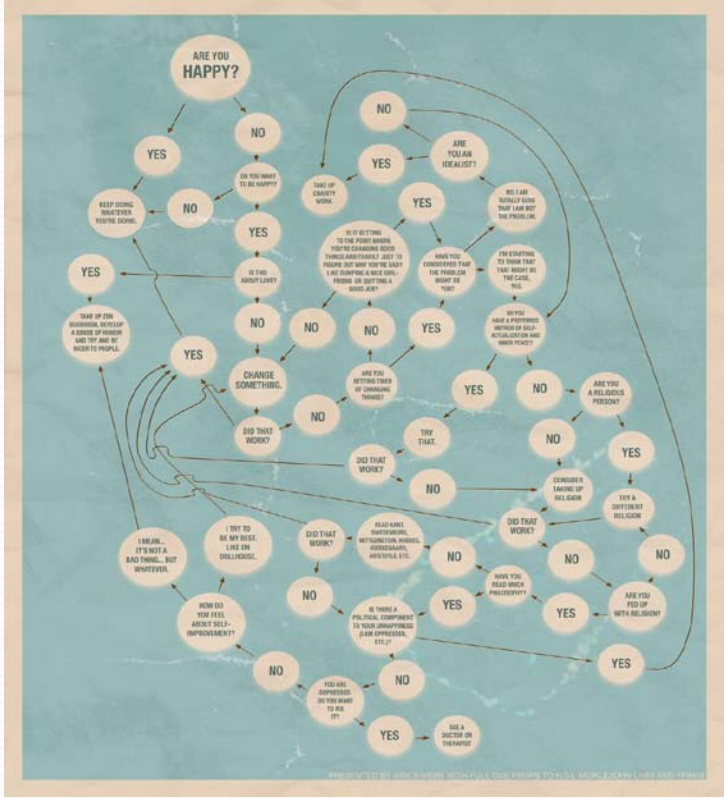
Arguments in selection of strategy

Technical selection summary

- Net Environmental Benefit
- Compliance with regulations
- Logistics
- Safety of workforce
- Competence of workforce
- Weather conditions

How do you choose ?

- Pre-Planning
- Management process
  - Strategic goals of the response
  - Modelling output
  - Situation verification / status /sampling and analysis. Data Management.
  - Expert review
  - Decision aids
  - Leadership Intervention
  - Managing diverse interests egg Search and Rescue, containment capping, salvage, affected parties, clean up companies. (UK SOSREP example)
- Costs



If only it was that simple…….

External Factors

- Stakeholder acceptability of response
- Public acceptability of response / perception
- Regulators acceptability of response
- Political bodies acceptability of response
- Decrees from political leaders
- Insurers position
- What are the media saying
- What does it say on Face Book
- Point scoring / Agendas
- NGO positions

Reputation Factors

- How much value do you put on your reputation ?
- When was your last mistake ?
- Do you need to continue with a licence to operate / drill ?
- What is the geographical location ?
- What are the expectations from you ? Big Oil, Shipping company, Terminal / Port operator.
- How will the costs be managed ? What can you realistically offer.
- Do you want to be in charge.
- Are the media nice ?

Technical or political selection

Quiz Answer A,B,C or D

A. 100 % technical decision ?
B. 50 /50 ?
C. 10% technical 90% political ?
D. It depends.

What does that say about the direction of research ?

Conclusions

- Many factors contribute to the selection of response strategies
- Technical, political or reputational drivers and arguments all contribute to a greater or lesser extent
- Future response must recognise all factors.

- Thank you