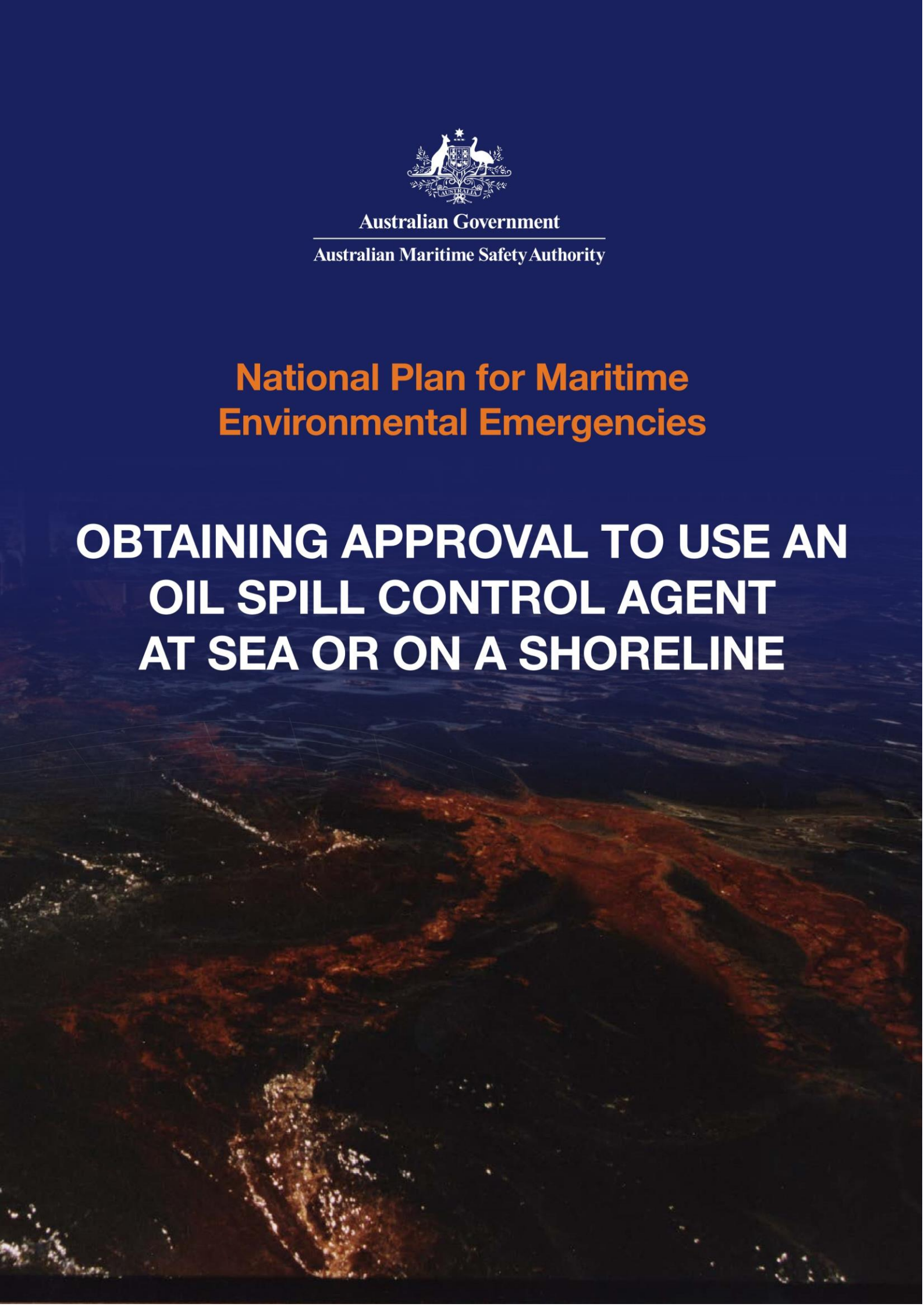
Australian Government

Australian Maritime Safety Authority

National Plan for Maritime Environmental Emergencies

OBTAINING APPROVAL TO USE AN OIL SPILL CONTROL AGENT AT SEA OR ON A SHORELINE



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Purpose

This Guideline sets out a best practice process for recommending and obtaining approval (normally from an Incident Controller) to use an oil spill control agent (OSCA) during a response. It assists in answering the questions:

- **Need** – Is an OSCA required? Will it assist? Is there a benefit?
- **Information** – What information is required for approval?
- **Engagement** – Who else needs to be involved in any discussion and/or recommendation?
- **Consent** – Who else might need to approve or consent to the use? Are other consents or approvals required from other local authorities or regulators?
- **Recording** – How should the decision-making process be recorded?

It is intended to support rapid, well-informed, and well-documented decision-making.

Regulatory approval and incident controller agreement

Oil spill control agents are chemical formulations (such as dispersants, surface cleaners, bioremediation agents and loose sorbents) used during a spill response to improve clean-up results. As they are released into the environment, their use will need approval by the spill response Incident Controller and may need approval from any other relevant State/NT or Commonwealth regulator with responsibility for water quality, environmental protection or chemical use, within the area where the OSCA is to be used (at sea, in estuaries or on coastal land).

Under the *National Plan for Maritime Environmental Emergencies*, only those OSCAs listed on the OSCA Register are able to be used in a National Plan response. To gain Register listing, OSCAs must successfully pass tests on efficacy, ecotoxicology and biodegradation. The specific requirements for each OSCA are outlined in the National Plan Policy on the Register of Oil Spill Control Agents for maritime response use. This can be found on the AMSA National Plan website*.

> **Note**: Use of OSCAs in fully freshwater systems is not dealt with in this Guideline.

The objectives of using an OSCA are to improve the spill response and to benefit the effected environment. In making a recommendation to use an OSCA, the decision-making authority (at least the Incident Controller) must be provided with evidence showing that good processes have been followed.

Documentary evidence should show that:

- The OSCA is expected to be effective.
- Alternative cleaning options have been considered.
- The expected effects of the oil on the environment have been assessed (no action) and compared with the expected effects of the OSCA use to create an OCSA/oil mixture. This is known as Net Environmental Benefit Analysis (NEBA) or Spill Impact Mitigation Assessment (SIMA).
- Any known or expected health and safety issues for the public, operators or responders have been identified and addressed.

Evidence may come from the results of monitoring, testing, experience or expert advice. It is important that the reasons and evidence are well documented and that these are regularly re-assessed and further documented, throughout the response.

Attached to this Guideline is a template for an assessment form that can be used to document the request and approval process *Request for Approval to Use Oil Spill Control Agents in a Spill Response*. It follows the logical assessment processes below, using the decision-points in the assessment as a map, and has space to record the consultation, the analysis, the evidence, the advice, and finally, the recommendation and approval.

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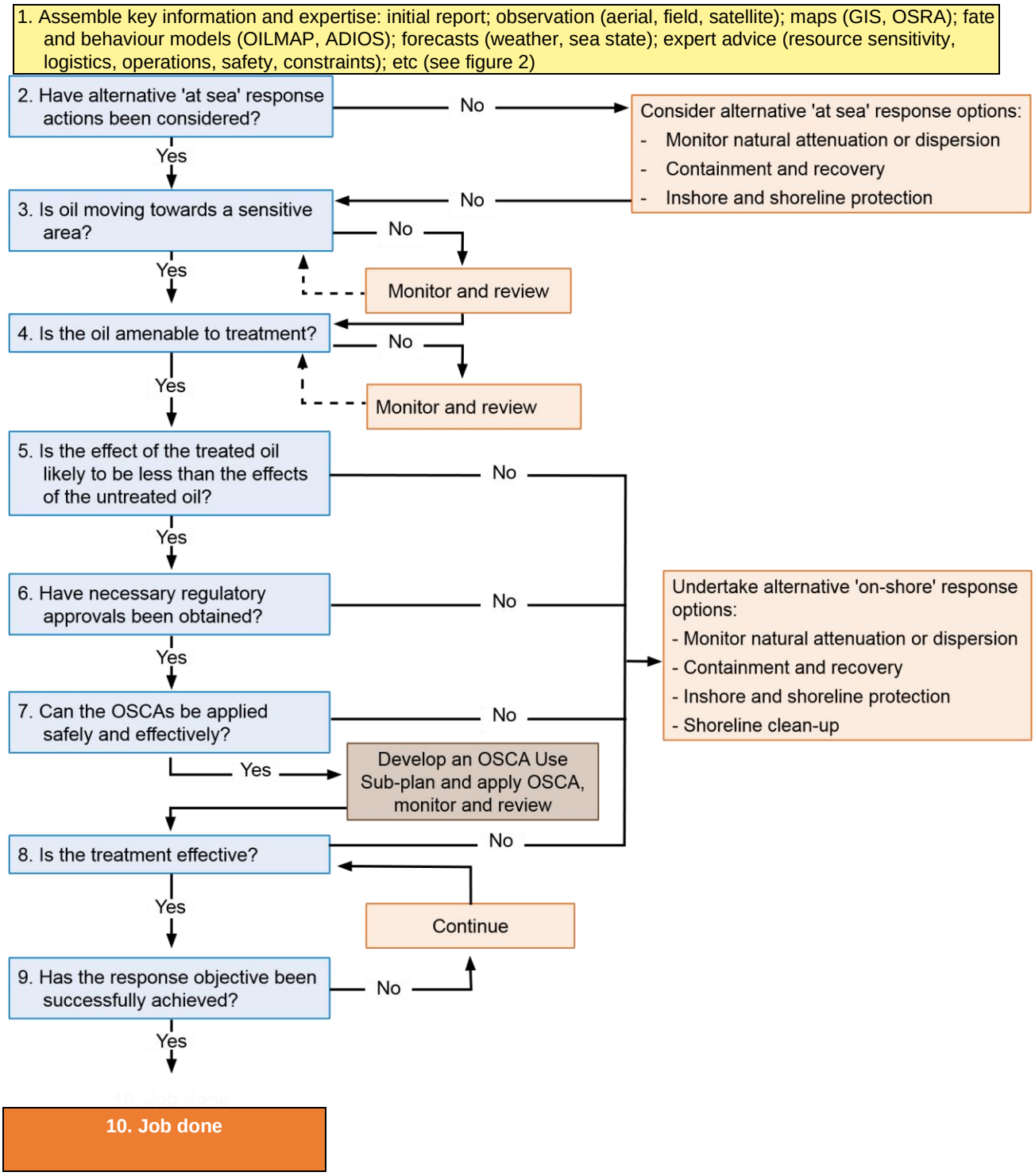
*https://www.amsa.gov.au/marine-environment/national-plan-maritime-environmental-emergencies

Approval to use oil spill control agents at sea

Figure 1 shows the sequence of considerations and decision-points (expressed as questions and assessments) required to assess whether an OSCA should be used in the marine environment. Figure 3 shows the same process for OSCA use on a shoreline.

Guidance on getting the answers for each decision-point are provided below. The assessment form template to request approval to use an oil spill control agent in a spill response is attached (this form can be downloaded from https://www.amsa.gov.au/forms/application-new-listing-oil-spill-control-agent).

Figure 1. Guideline for determining whether to apply for approval to use oil spill control agents to oil at sea



At sea OSCA use assessment

1. Have you obtained and assembled your key information?

In many cases, assessing the potential to use an OSCA at sea, especially a dispersant, will proceed in advance or in parallel with gathering the intelligence and information for robust situational awareness and a common operating picture. Much of this should already available through the initial report, oil spill contingency plan (OSCP), its baseline information, and the response decision support tools.

Gather as much of this information before starting the assessment with the consultative group. Some information may take time to obtain, such as field observations or modelling results, or expert opinion, so allow for this in the process. When discussing options, considering benefits and constraints, and making a recommendation, it is important to be able to refer to this information and assess its rigor, robustness and uncertainty. Time spent preparing for any debate will likely save time in the assessment and recommendation process.

2. Have alternative at sea response actions been considered?

In general, the applicability and suitability of the full range of marine oil spill response strategies will have been considered during the preparation of any OSCP produced for the area or activity. The OSCP will identify the response methods and the conditions under which they can be used. Where an OSCP does not exist, general approaches to oil spill response should be considered and documented, as needed.

During the spill response, these options should be reassessed in light of ambient conditions and the nature of the incident. This is the role of the Incident Controller (IC) in consultation with other Incident Management Team (IMT) officers.

The assessment form template provides guidance on what other alternative response strategies and methods are feasible. However, the final decision on a particular operational approach always resides with the IC in consultation with the IMT officers.

3. Is the oil heading towards a sensitive area?

Three key pieces of information are required to make this assessment:

- The oil **character and behaviour**, particularly its volatility, specific gravity (density) and persistence.
- The oil spill slick **trajectory**, considering its predicted direction and speed of movement, and the rate of spread.
- The **environmental character** of the zone of potential impact of the oil, considering the resources, species, habitats, value, and likely effects of contact with the oil.

Oil character and behaviour

Some oils weather rapidly and may be mostly removed from the sea surface by a mix of evaporating, dispersing naturally, dissolving into the water, or spreading very thin and diluting across a very large sea surface area, or by the slick physically breaking up into very small patches due to ambient conditions. Some oils may emulsify and become thick, sticky and sluggish, due to components that promote this. Some or all of this will likely occur before an impact on a sensitive resource can happen, and will affect the nature and extent of the effects.

Where the type of oil is known, decision support tools such as NOAA's ADIOS and the National Plan Spill Trajectory Modelling capability can provide a good indication of oil weathering and change over time and space. Modelling can also predict how persistence will affect any resources in the trajectory and the location, time and type of impact. However, it is also worth checking the oil's analytical data if it is available. Seek expert advise on the implications of the oil's chemistry and physics, in the conditions you are facing.

In particular:

- **Specific gravity** – this is an indicator of the density of the oil relative to water and can provide an indication of the oil's tendency to evaporate (i.e. its volatility). Light oils will generally lose much of their volume due to evaporation. As an oil loses volume due to evaporation, it becomes denser (heavier) and thicker, so other weathering actions tend to reduce. It can also start to sink, if it becomes too dense.

- **Wax content** – waxes tend to be persistent chemicals and will reduce the evaporation losses of an oil.
- **Pour point** – this is the 'melting point' of the oil relative to the water temperature. Some oils (particularly high wax oils) may have a relatively high pour point. Below this temperature they will be solid or highly viscous. If the ambient temperature is close to the oil's pour point then it will weather more slowly.
- **Asphaltene content** – high asphaltene oils tend to emulsify. This causes them to persist for longer at sea, to become stickier and to increase the total volume of the slick.

It is important that predicted oil behaviour is verified through aerial surveillance, monitoring and field observation throughout the response.

Oil spill trajectory

Computer-based spill trajectory models (OILMAP) can provide quite accurate results, and these can be delivered within two hours from a full request (under National Plan arrangements). In the interim, expert manual calculations may be used, with caution. The following information should be obtained:

- **Direction and speed** of slick movement over a minimum of 48 hours and up to 96 hours (recognising that predictions becomes less certain over longer durations).
- **Slick extent** (spread, thickness and volume). Determining the area covered by oil, and its character can assist with estimating slick volume. This is critical is estimating the likely effectiveness of all response options, including containment and recovery operations, and OSCA (dispersant) application rates and volumes. Note, slick extent and volume are extremely difficult to estimate manually – they require expert assessment. Guidance on this is available in the AMSA publication *Identification of Oil on Water*.
- **Resources at risk** – these are the places and resources that are likely to be impacted, because the oil slick passes through them or because they are hit and the oil becomes stranded or stuck there. Impacts are as variable as the resources, depending on many factors. These also require expert assessment, but a general overview is provided at Attachment 1.
- **Time to impact** – estimates the time available to plan and implement a particular response action. It may be a significant consideration in deciding on the use of dispersants due to weathering and logistics constraints.

Note: This also requires expert advice from the IMT Operations Section, as all response options take time to plan, prepare for and implement, and so implementing one option may preclude the use of others.

Environmental resources at risk

If a shoreline impact is likely the relevant information should be consulted, including an Oil Spill Response Atlas or GIS, if available. This will assist in identifying the resources likely to be affected. Some map systems do not identify the sensitivity of marine shoreline resources, but Attachment 1 provides examples of sensitive resources and areas.

If dispersant use is being assessed, the environmental resources within both the spray zone and the sub-surface plume zone also need to be identified and assessed. This is a crucial comparison for the net environmental benefit assessment, and is often overlooked.

Wherever possible, expert opinion or evidence should also be sought.

4. Is the oil treatable?

This will depend on a number of factors including:

- Oil character (initial; as weathered now; as will be weathered when dispersant application starts; and as weathered too much for continued application – thresholds for decreasing dispersant effectiveness).
- Dispersant (or other OSCA) type.
- Method of application.
- Sea state (provides mixing energy).

Preliminary assessment

If the oil has not been tested for chemical dispersibility the guidelines in Table 1 can be used as a preliminary assessment of whether an oil is likely to be amenable to treatment. There is less information regarding the amenability of various oils to treatments with other OSCAs. Refer to the OSCA Register listing, as effectiveness reports should be available.

Table 1. Indications for effective dispersant use

Parameter	**Oil is generally dispersible[1] if:**			
Oil character[2]	Density	The specific gravity: is less than 0.95 (i.e. >17 API)		
	Pour point	Is > 5oC below ambient sea surface temperature (non-waxy oil)		
		Is below ambient sea surface temperature (waxy oil)[3]		
	Viscosity[4] at ambient temperature	very unlikely	>10,000 cSt	under most conditions
		uncertain	5,000 - 10,000 cSt	good conditions
		possible	2,000 – 5,000 cSt	good conditions
		likely	<2,000 cSt	most conditions
Slick character	Oil thickness[5]	Estimations of these will give the total volume of the slick and allow calculations to be made about dispersant to oil ratios (DoR) for aircraft spray dose rates (see Table 3)		
	Percentage cover[6]			
Ambient conditions	Sea state	Generally work best at wind speeds between 5 -15m/s (18-54km/ hr or 10-30knots). Above this wave action over-washes the slick and removes the dispersant, below this mixing energy is reduced (but vessels can provide this).		
	Wind			
	Temperature	Limiting only in that it alters oil viscosity		
	Salinity	Most dispersants are formulated to work best between 30ppt to 40ppt (seawater = 35ppt)		
	Sediment load in water	This can affect the effectiveness of dispersant, due to both chemical interactions between the oil and the clay/sediment particles, and their tendency to increase oil density and so sink.		

[1]For dispersant OSCAs only - other OSCAs will be added over time as information becomes available.

[2]This relates to the oil on the sea not fresh oil.

[3]Waxy oils tend to change viscosity rapidly when approaching the pour point.

[4]Viscosity of the oil will vary over time due to weathering (evaporation and emulsification) and also due to temperature.

[5]This can be estimated by aerial surveillance or by computer modelling. The latter will give an average thickness and will not make allowance for percent coverage.

[6]The percentage of the area of water surface to be treated which is covered by oil.

Field testing of dispersant effectiveness

It is often logistically difficult or unnecessary to try to determine the exact nature of the oil spilled, or its weathering path, or its amenability to dispersant. Previously the National Plan recommended its NAT-DET test protocol, which involved collecting a sample of the oil and trialling it against a range of dispersants.

With more recent advances in understanding dispersant efficiency, modelling and the ability to apply dispersants and monitor their effectiveness, it is best to undertake monitoring and assessment of the first and subsequent field applications.

Dispersant trial runs

In the absence of better data, it may be necessary to do a test run of the dispersant or OSCA on the slick and observe/measure its effectiveness. For dispersants, this may be necessary for every run of the aircraft, or for every new operational period (day), simply to assess the continuing effectiveness, as oil weathers over time. Weathering can occur quickly and thresholds for effectiveness can appear very quickly as they are based on combinations of factors, including the oil character and the ambient conditions.

5. Is the effect of treated oil likely to be less than the effect of untreated oil?

This is the key consideration in deciding upon the use of OSCAs and requires a *Net Environmental Benefit Assessment* (NEBA) or more recently referred to as a *Spill Impact Mitigation Assessment* (SIMA).

This can be a complex process requiring considerable information input. However, decisions regarding the use of dispersant (or other rapid-deployment OSCAs) are normally made quickly and so a rapid and robust assessment is necessary. The complexity of the required NEBA will depend initially on the sensitivity of the receiving environment, the volume of the water body, the volume and character of the oil present, the expected volume of dispersant (or other OSCA) likely to be used, and the fate of the treated oil/OSCA mix. For dispersant, it will be the expected dilution and distribution of treated oil. For other OSCAs used at sea (such as loose sorbents), it may relate to the ability of the response operations to recover the oil/OSCA mix.

It is important to note that a robust and justifiable assessment and recommendation will always be difficult when time and information are limited. So, recognise that uncertainty will occur, and be prepared to complete the process as best you can. That said, make clear and concise information gaps, any uncertainty and all assumptions, so that the current decisionmaker (and any later reviewer) can follow the logic.

Figure 2 shows a typical assessment Decision Tree for undertaking a rapid NEBA.

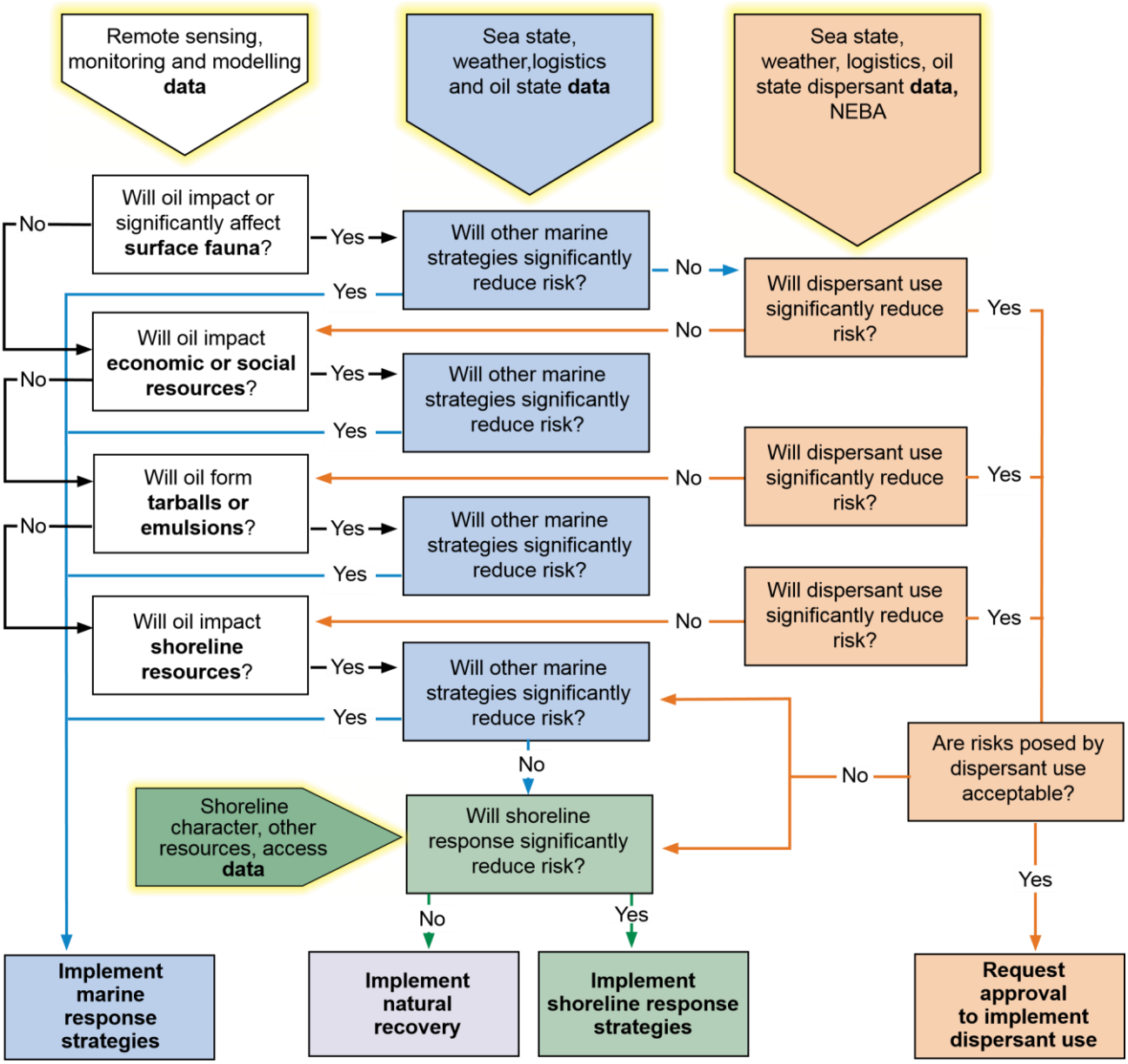
6. Have necessary regulatory approvals been obtained?

Identify approval agencies and other agencies that must be consulted before dispersants (or other OSCAs) are used. Normally, these will be known in advance and listed in the relevant contingency plan. The most important agency is the regulator, if one exists. Other agencies with resource management or protection functions may not have a regulatory role, but their agreement is highly desirable. Ensure as many as possible have been consulted and their responses recorded.

> **Note**: The first time you need to seek their agreement should not be the first time you consult with them on an issue as potentially contentious as dispersant application. Prepare the ground with information about response activities, dispersant use, the benefits and issues, so they are able to provide a timely and informed response. Seek expert support to do this, if need be.

*https://www.amsa.gov.au/marine-environment/national-plan-maritime-environmental-emergencies

Figure 2. Guideline for determining the likely Net Environmental Benefit of using oil spill control agents on oil at sea, and in particular, dispersant use



7. Can OSCAs be applied safely and effectively?

This assessment will generally be undertaken by the Operations Unit of the IMT with input from the Health and Safety Coordinator (if appointed). Guidelines for dispersant application are provided in Table 2 with more information available through the dispersant and OSCA webpages of the National Plan website*.

Human exposure to dispersant chemicals should not normally occur. Dispersants are stored and delivered to their application vehicles (aircraft, helicopters, vessels, etc.) completely enclosed in storage tanks (1000 litre IBCs, normally). The liquid is then pumped into the enclosed tanks of the delivery aircraft or helicopter, or the IBCs are transferred to the vessel. Spraying only occurs where the oil is and should be completed in a way whereby no public, operators or response personnel are exposed to the dispersant, as it is sprayed directly on to the slick. All response personnel use personal protective equipment (PPE) when dealing with the hazardous properties of the oil.

Table 2. Safety constraints for dispersant application

Method	Conditions for the Safe and Effective Application of Dispersants	
Aerial Application (Fixed Wing)	Wind	Less than or equal to 25 knots
	Visibility	Greater than 5.5 km (3 nautical miles)
	Ceiling	>300m
	Proximity to coast	Should avoid drift of dispersant spray on shore
		Should not be further than the aircraft is safely able to operate
	Other	Daylight only
Aerial Application (Helibucket)	Wind	Less than or equal to 25 knots
	Visibility	Greater than 5.5 km (3 nautical miles)
	Ceiling	Consult with aircraft operator and air attack supervisor
	Proximity to coast	Should avoid drift of dispersant spray on shore
		Should not be further than the aircraft is safely able to operate
	Other	Daylight only
Vessel Application	Sea State	18- 54km/hr or 10-30knots and respective sea state/wave height
	Other	Suitable PPE must be available for responders (refer to the product Safety Data Sheet)

Note: For extended responses or those being undertaken under difficult conditions it may be advisable to develop an Activity Safety Plan or include safety provisions within an OSCA Sub-Plan (see below).

Table 3. Guideline for determining the dispersant dose rate on different types of slick

Slick application	Oil volume litres/km^2	Oil volume litres/ha*	Dispersant to Oil Ratio (DOR) to give aerial dose rate of dispersant in litre/ha						
			1:10	1:15	1:20	1:30	1:50	1:75	1:100
Silver sheen (<0.5u)	40-300	0.4-3	N/A as slick oil volume too small to be concerned with						
Rainbow sheen (<5u)	300-5000	3-50							
Metallic (<50u)	5000-50,000	50-500	N/A - only as overspray at edges of thicker oil						
Discontinuous true oil colour (<200u)	50,000-200,000	500-5000	>120<	>90<	>60<	>45<	>30<	>20<	>15<
Continuous true oil colour (>200u)	>200,000	>2000	200+	150+	100+	80+	50+	40+	30+

Notes: >90< is mid-range starting delivery value for this slick type

150+ is the starting delivery value for this slick type

Needs two aircraft runs - beyond one aircraft delivery rate

May need two aircraft runs depending on aircraft type

Can be completed by one aircraft - within dial-up dose rate

Can be ignored as too little oil for effective dispersant use

Note: These calculations are applicable only to the smaller single-engine agricultural aircraft available under the National Plan Fixed Wing Aerial Dispersant Contract.

*https://www.amsa.gov.au/marine-environment/national-plan-maritime-environmental-emergencies

Development of an OSCA Sub-Plan

This Sub-Plan should set out the procedures for applying dispersants and/or other OSCAs and should include any health and safety requirements (including personal protective equipment) for dealing with both the oil and the OSCA, and procedures. This Sub-Plan should reflect the scale of the application, the sensitivity of the receiving environment and resources, and any hazards and risks posed by the OSCA. It should be as simple as possible. The Sub-Plan should include:

- **Objective** – this describes the purpose of the actions and the end point at which the application of the OSCA is assessed to be successful. This should involve specifying criteria and thresholds in advance (i.e. oil present but no longer dispersible; oil character, until only silver sheen visible; etc.)
- **Management responsibility** – this is the nominated officer in charge of the application operation.

  Note: With most OSCA application activities, this will be the person responsible for the activity of the application vessels (aircraft or vessel), as these are the key logistical platforms. There may also be an overall dispersant or OSCA Team Leader.

- **Information requirements**
  - weather forecasts
  - sea state/shoreline character
  - prediction and modelling outputs – oil type, character, extent and volume – effectiveness monitoring.
- **Operations**
  - contractors and support required
  - application methods
  - dispersant OSCA type and/or volume required
  - constraints (timing of delivery, hours of operation, no-go areas, depth restrictions, shoreline access etc.) – safety (handling, storage and PPE needs).
- **Logistics**
  - vessel or air base of operations or shoreline forward operating base
  - safety (aerial observation and maritime intervention) – monitoring of total volumes used use (for resupply).
- **Record keeping**
  - location
  - delivery means
  - dispersant/OSCA used
  - volumes used
  - date/time delivered
  - effectiveness results
  - consultation, recommendations and decisions.

8. Is treatment effective?

The use of OSCAs must be monitored to ensure that the application is, and remains, effective. Oil will weather and conditions will change and so this reassessment is ongoing. Previously this was done by aerial observation, and more recently with fluorometer sensors.

CSIRO now have an in-water, real-time dispersant monitoring capability (known as the ‘OilFish’). This can be towed by a small vessel and is able to accurately determine whether dispersion is effective and likely to remain so. This capability is available for National Plan operations through AMSA and the CSIRO Response Team.

9. Has the operational objective been successfully achieved, or is the action no longer being effective?

This is an operational decision based on monitoring of the oil slick and OSCA application. It should be set with criteria and thresholds, so that operators are able to see and/or measure a change in a parameter that tells them the operation is successful, or is no longer being effective.

10. Job done

The response functions may be completed, but there will also be documentation to complete. Both response phase monitoring (of the response effectiveness) and recovery phase monitoring (of the effects and impacts) may also continuing, and should be recognised and supported, as needed.

Shoreline OSCA use assessment

OSCAs that may be used on shorelines are chemicals specifically tested and accepted for this, and are primarily bioremediation agents, washing agents and loose sorbents. The last of these are generally recovered and so there may be no runoff with this method. Bioremediation agents are longer-term treatments, often applied after all other response treatments and actions are complete as a polishing action to remove final traces of hydrocarbons.

Figure 3 outlines the sequence of considerations and assessments required for assessing the use of OSCAs on shoreline. This process is essentially the same as that for marine application but the information that is needed for each decision or assessment is different. Each step is discussed below.

1. Have you obtained and assembled your key information?

Unlike the process for dispersants (or other offshore OSCAs), the process of assessing the potential to use an OSCA on a shoreline will likely proceed in a less urgent way, in parallel to a shoreline clean-up assessment (SCAT). One of the key processes within SCAT is the assessment of likely effective clean-up processes and techniques, including any OSCA use.

The group assessing the shoreline OSCA use is most likely to be the same group undertaking the SCAT. When discussing options, considering benefits and constraints, and making a recommendation, it is important to be able to refer to the SCAT information, the OSCA information and its effects on associated sensitive resources, such as wildlife or near-shore and intertidal marine life, and be able to assess its rigor, robustness and uncertainty. Again, the time spent preparing for the inevitable debate on both OSCA use, its impacts and its effectiveness will likely save time, in the long run.

2. Have alternative on-shore response actions been considered?

Generally, OSCAs are considered for use onshore only if:

- There is a need to remove oil more rapidly than can be achieved with alternative methods. This could be due to:
  - human hazard and safety concerns
  - potential for ongoing exposure of wildlife (e.g. seal haul-out areas, bird nesting)
  - the need to cause minimum noise of other human effects (e.g. nesting birds)
- Alternative methods are not practicable or feasible, (e.g. lack of access coupled or a very large impact area)
- Other methods are potentially damaging (e.g. most methods in wetlands, marshes etc).

Please refer to the in the CSIRO Oil Spill Monitoring Handbook which looks at the assessment and response methodologies for various shoreline response options.

3. Is oil likely to be persistent?

Oil may persist on shorelines if:

- It has penetrated into sediment or crevices (or buried) where washing energy of tides and waves is low.

- It is sticky (and washing energy from waves is low). This may occur if oil weathers to tarry or asphalt residues.
- The shoreline is sheltered and very low energy.

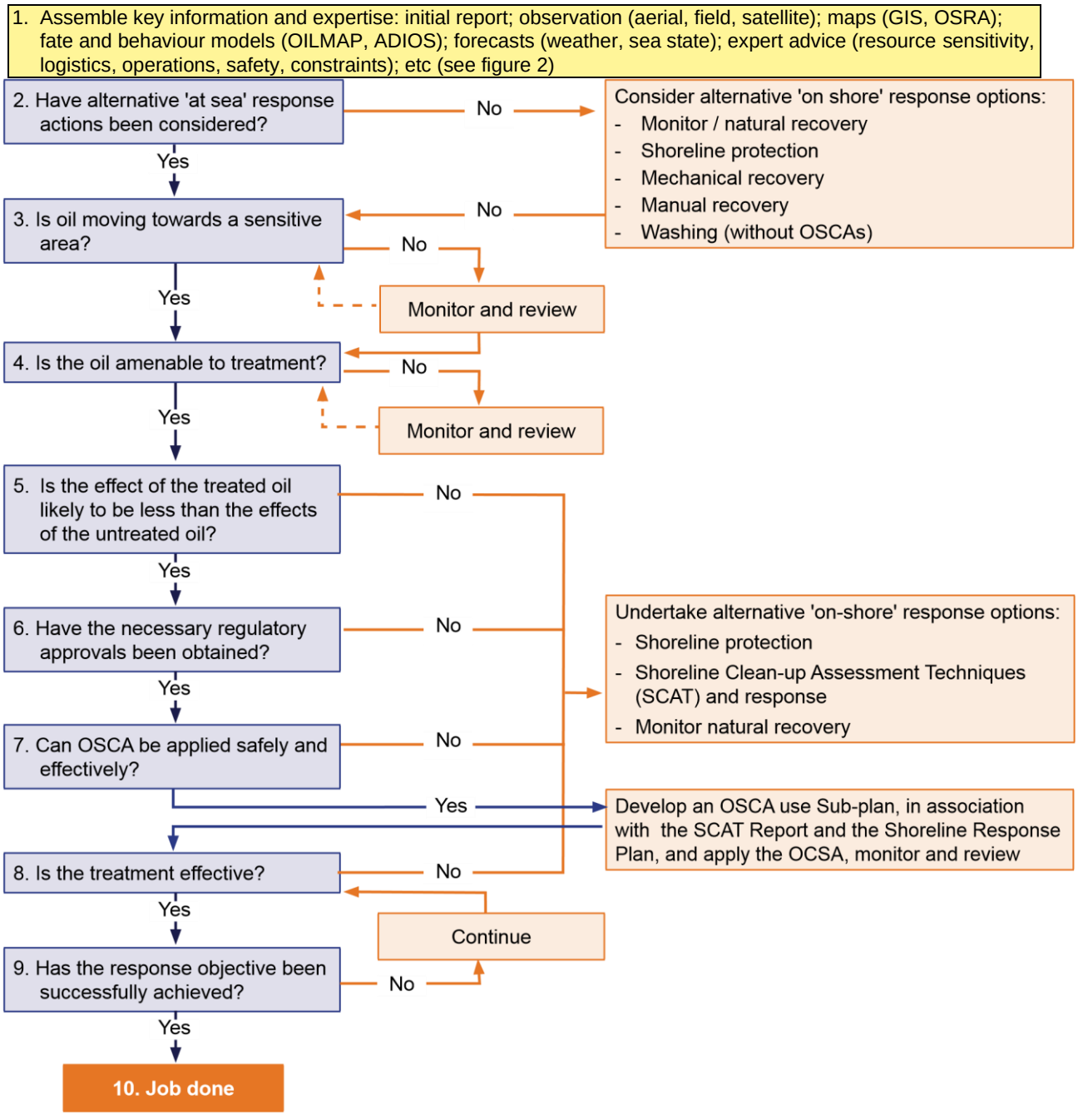
4. Is the oil treatable?

This will depend on a number of factors including:

- Oil character (initial and at the current stage of weathering)
- Nature of the substrate oiled and the depth of any penetration of oil in sediments
- OSCA type and method of application. For washing agents this will include the pressure of washing and temperature of OSCA and water applied
- Wave energy (if artificial washing is not applied after OSCA application).

Generally, oils are not formally tested for stickiness, as this is not normally a property of concern to the producer or buyer, and so it may be necessary to undertake a test application of cleaning agents in order to determine the best method of application and overall effectiveness.

Figure 3. Guideline for determining whether to apply for approval to use oil spill control agents on shorelines



5. Is the effect of the treated oil likely to be less than the effect of untreated oil?

This requires a Net Environmental Benefit Assessment (NEBA). The undertaking of a NEBA for shoreline response is considerably more complex than that for at sea response. This is because:

- There are more response options, and a number of these options can be damaging to shorelines and shoreline ecology.
- The potential for damage may be highly dependent on levels of responder competency and supervision, and on other variables, such as the type of equipment deployed, water or washing pressure, the nature and chemistry of the OSCA applied, etc.
- Sensitivity (or resilience) of the shoreline character to oil and clean-up activities.

Furthermore, OSCAs are often used onshore in association with other cleaning methods rather than as a substitute treatment. The advantage that OSCAs often bring is of a more rapid and thorough cleaning. The NEBA assessment therefore may need to compare a higher short-term level of harm with the potential for a more speedy recovery, i.e. reduced longer term harm, with a lower level of cleaning from less intervention, and a longer or delayed recovery.

6. Have the necessary regulatory approvals been obtained?

Identify approval agencies and other agencies that must be consulted before OSCAs are used. Normally, these will be known in advance and listed in the relevant contingency plan. The most important agency is the regulator, if one exists. Other agencies with resource management or protection functions may not have a regulatory role, but their agreement is highly desirable. Ensure as many as possible have been consulted and their responses recorded.

> **Note**: the first time you need to seek their agreement should not be the first time you consult with them on an issue as potentially contentious as chemically enhanced cleaning. Prepare the ground with information about response activities, OSCA use, the benefits and issues, so they are able to provide a timely and informed response. Seek expert support to do this, if need be.

7. Can the OSCA be applied safely and effectively?

The safety of both the public and OSR operators must be considered. This assessment will generally be undertaken by the Occupational Health and Safety Coordinator of the Incident management Team (IMT).

Responder safety can be addressed through the provision of suitable PPE (as indicated in the product MSDS) and training of operators and other response personnel.

For public safety, the short term and longer term exposure must be considered. Exclusion of the public during and immediately after OSCA application should be mandatory.

Longer term exclusion must be based on an assessment of likely persistence of the OSCA and associated oil, potential effects on humans and fauna and possibly on ongoing monitoring of the area until the treated area is declared clean.

A suitable OSCA Sub-Plan should be developed (see page 9). This Sub-Plan will almost certainly be integrated with the Shoreline Clean-up Assessment Techniques (SCAT) report and process, as shorelines are often very visible and contentious locations within the response. Specific National Plan guidance on the *Response, Assessment and Termination of Cleaning for Oil Contaminated Foreshores* is available on the National Plan website*, with a *Foreshore Response Plan* format that could include OSCA use or be adapted to sites further from the coastline.

*https://www.amsa.gov.au/marine-environment/national-plan-maritime-environmental-emergencies

8. Is treatment effective?

The use of OSCAs must be monitored to ensure that the application is, and remains, effective. As oil and weather conditions change this reassessment is on-going. The *National Plan Guidelines on Foreshore Response Plan* and the *Foreshore Inspection and Sign-off Report(s)* will be of assistance.

9. Have the operational objectives been successfully achieved?

The end point should be documented in the OSCA Sub-Plan.

10. Job done

The response functions may be completed, but there will also be documentation to complete. Both response phase monitoring (of the response effectiveness) and recovery phase monitoring (of the effects and impacts) may also be continuing, and should be recognised and supported, as needed.

ATTACHMENT 1 Potentially Sensitive Resources

Resource	Considerations
Birds	Highly sensitive and vulnerable
	May congregate (seasonally) in large numbers for feeding, roosting, nesting
	Can be attracted to oil sheen (oil can mimic baitfish oil sheen)
	Difficult to clean (low survival rates)
Mangroves and coastal swamps	Low wave energy so oil may persist
	Ecological character (community type, species, biodiversity)
	Difficult to clean without causing additional damage
	Social and economic sensitivity to oil impact and cleaning
Other shorelines	Wave energy may offer other response options
	Social and economic sensitivity to oil impact and cleaning
	Possibility of clean-up – access, substrate type (rock or sediment)
	Effects of clean-up
	Potential persistence of oil on (or in) sediments
Reefs, shoals and other shallow water communities (corals, seagrasses, sponges etc.)	Character (community type, species, biodiversity)
	Depth (intertidal forms are particularly vulnerable and sensitive)
	Sea states (vertical mixing of the oil)
	Oil character (stickiness)
Fish breeding sites and aggregations	Seasonal occurrence
	Sensitive to dispersed oil also. Consider the depth of occurrence.
Seals and Sea Lions (Pinnipeds)	Difficult to treat when oiled
	Congregate in large numbers seasonally at locations
	Breeding, roosting/haul-out areas are of high sensitivity

Whales and Dolphins (Cetaceans)	Growing evidence that resident animals can be affected by oil or dispersed oil
	Breeding or nursing areas must be considered sensitive
	Presence of calves must be treated as sensitive

Form

Request for approval for the use of oil spill control agents in a spill response

REQUEST FOR APPROVAL TO USE OIL SPILL CONTROL AGENTS IN A SPILL RESPONSE

Incident name

Spill location

Part A - Request from:

Name

Agency/position (usual)

IMT position

ICC location

Contact details

Tel:	Mob:
Email:	

Request Details

Date of request

Time of request (24 hr)

Safety assessment completed ☐ yes ☐ no

OSCA type

Product name(s)

Receiving environment: ☐ At sea ▶ Likely minimum depth of receiving water body ____ m

☐ Shore line ▶ Character

☐ Other (specify)

Proposed application method(s): ☐ Fixed wing ▶ Is FWAD mobilisation requested? ☐ yes ☐ no

☐ Vessel ▶ Method(s)

☐ Helicopter (spray bucket)

☐ Other (specify)

Proposed location of application: Lat: Lon:

Extent ha/km

Authorised by

Name:	Position:
Signature:	Date:

Comments / additional requests

Part B - Assessment details:

Decision Point 1: Is key information available?

(a) Initial report

- ☐ Initial report

(b) Oil character

- ☐ ADIOS model
- ☐ Spill volume/extent

(c) Oil behaviour/fate

- ☐ Trajectory model (OILMAP)
- ☐ Manual movement prediction

(d) Location

- ☐ Relevant marine chart(s) at appropriate scale
- ☐ Aerial/satellite photographs
- ☐ Google Earth (or equivalent)

(e) Resources at risk

- ☐ GIS
- ☐ Maps
- ☐ Oil Spill Resources Atlas
- ☐ Oil Spill Contingency Plan
- ☐ Responsible agencies/key contacts
- ☐ Oiling assessment

(f) OSCA

- ☐ Product details
- ☐ OSCA Register documentation (effectiveness, toxicity, degradation)
- ☐ SDS - safety information, PPE required/available

(g) Logistics

- ☐ Volumes required/available
- ☐ Delivery logistics
- ☐ Application logistics

(h) Alternative response options

- ☐ Expert advice

(i) NEBA

- ☐ Response NEBA or template

(j) Regulatory approvals other than I.C.

- ☐ Agencies with approval requirement - should be in OSCP
- ☐ Agencies with strong interest
- ☐ Key contacts
- ☐ Forms/templates

(k) OSCA sub-plan

- ☐ Template available
- ☐ SDS (see (f) above)
- ☐ Safety assessment

Decision Point 2: Have alternative response strategies been considered?

(a) Containment / recovery at sea

Oil unable to be contained and/or recovered at sea due to:

- ☐ Size and/or extent and/or volume of oil
- ☐ Trajectory/speed towards, or proximity to, sensitive resources and/or constrained location
- ☐ ESC consulted
- ☐ Unsafe / ineffective to attempt due to ambient or forecast conditions
- ☐ Forecast obtained

☐ Other:

Comments

(b) Shoreline or sensitive resource protection

Impact area unable to be adequately protected due to:

- ☐ Area, length, location too large/difficult for available protection strategies and resources
- ☐ Trajectory/speed towards impact area prevents interception
- ☐ Unsafe/ineffective to attempt due to local, ambient or forecast conditions
- ☐ Forecast obtained

☐ Other:

Comments

(c) Shoreline response/clean-up without OSCA use

Impact area unable to be cleaned adequately using non-OSCA response strategies, due to:

- ☐ Response resources inadequate due to impact size, extent, access, logistics, etc
- ☐ Safety or hazards preventing response
- ☐ Presence of wildlife or other sensitive resources
- ☐ Other:

Comments

(d) Natural attenuation - monitor progress

Oil poses risk of detrimental impact or effect, due to:

- ☐ Location and movement
- ☐ Trajectory model (OILMAP)
- ☐ Character/persistence
- ☐ ADIOS
- ☐ Other:

Comments

Decision Point 3: Is oil heading towards a sensitive resource?

(a) Has a trajectory analysis been undertaken?

☐ yes ☐ no

Manual calculation? ☐ yes ☐ no

OILMAP? ☐ yes ☐ no

Attach printed outputs

(b) Is impact on sensitive resource anticipated?

☐ yes ☐ no

Resource:

Location:

Extent of oiling (est.):

(c) Has a time of impact been estimated?

☐ yes ☐ no

If yes, estimated time:

Assessment/comments

Decision Point 4: Is the oil amenable to treatment?

(a) Has oil data been obtained? ☐ yes ☐ no

ADIOS? ☐ yes ☐ no

Comments or attach oil data

(b) Has a field assessment / test been undertaken?

☐ yes ☐ no

Results

(c) Assessment: is oil currently likely to be amenable?

☐ yes ☐ no

Comments

Decision Point 5: Is the effect of the treated oil less than the untreated oil?

(a) Has NEBA assessment been undertaken?

☐ yes ☐ no

Findings (attach NEBA)

(b) Have relevant experts been consulted?

☐ yes ☐ no

If yes, who? (list)

(c) Have resources likely to be impacted by treated oil been identified?

☐ yes ☐ no

How will risks be managed?

Decision Point 6: Regulatory approvals

Have necessary regulatory approvals been obtained?

☐ yes ☐ no

Are other approvals required?

☐ yes ☐ no

If yes, specify

Type	Agency	Obtained
		☐ yes ☐ no
		☐ yes ☐ no
		☐ yes ☐ no
		☐ yes ☐ no
		☐ yes ☐ no

Decision Point 7: Can OSCAs be applied safely and effectively?

(a) Has OSCA Sub-Plan been prepared?

☐ yes ☐ no

If yes, attach

(b) Have SDS been obtained assessed and distributed?

☐ yes ☐ no

Comment

(c) Is all PPE and equipment held or able to be obtained?

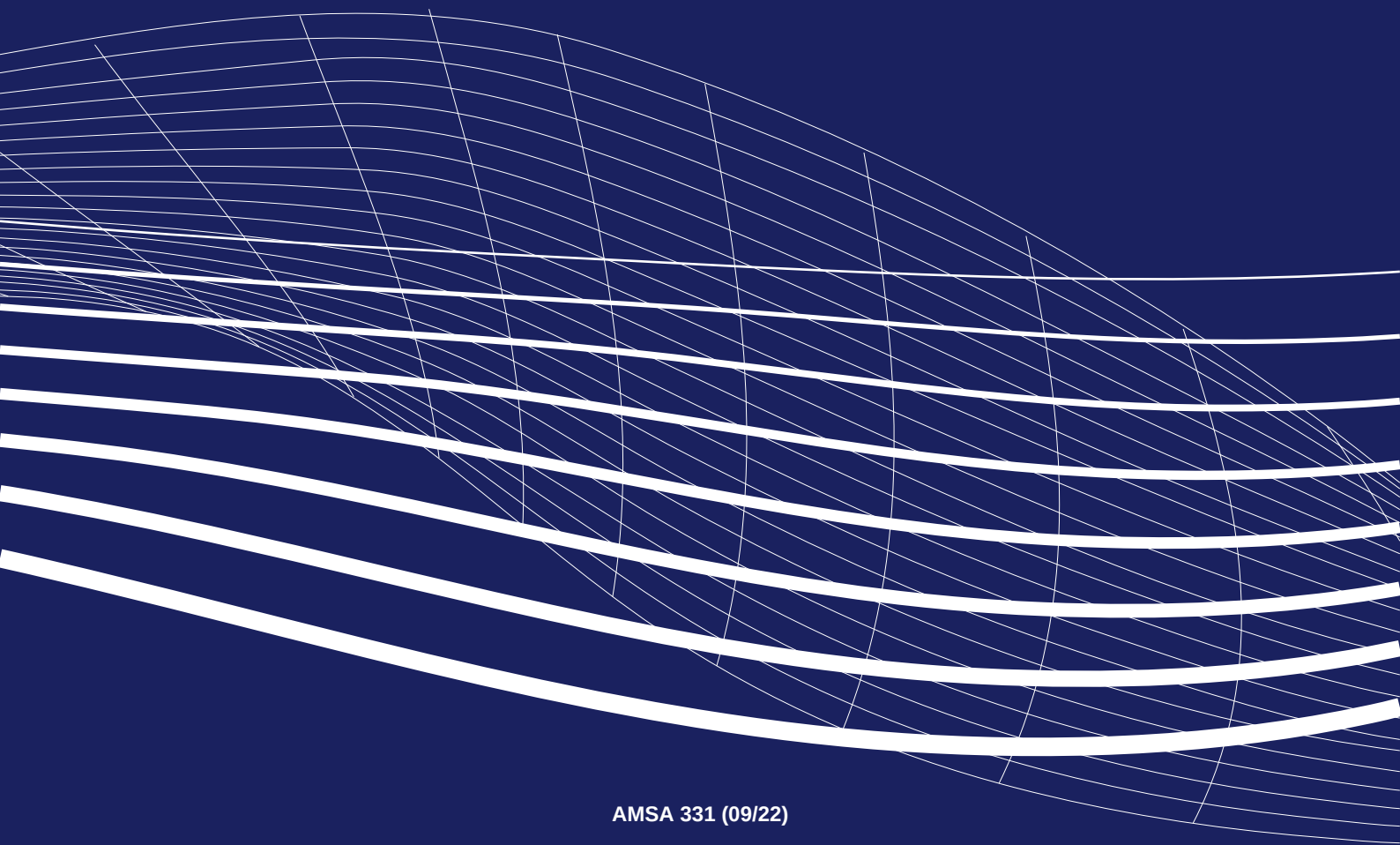
☐ yes ☐ no

If yes, list

Note: Statutory approval agencies must be advised of outcomes of:

Decision Point 8 (Has treatment been effective) and **Decision Point 9 (Have operational objectives been successfully achieved?)**

Other comments



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