



# Offshore Petroleum Industry – COVID-19 - Oil Spill Response and Source Control - Mitigations Workshops

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### Disclaimer

The information contained in this publication is based on a fictitious scenario. The scenario, process and outcomes are not intended to satisfy the testing arrangements required under the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.



## Background

The Australian oil and gas industry is responding to the personnel and operational challenges posed by the COVID-19 pandemic to ensure vital energy supplies are maintained. The COVID-19 pandemic has been managed by the Australian Federal and State/Territory governments, and at the time of preparation of this report, lifting of some restrictions had commenced in some States/Territories. Prevention of further COVID-19 outbreaks/clusters is of the highest priority for all Australians.

As such, the upstream petroleum industry, via APPEA Oil Spill Preparedness and Response Working Group (OSPRWG), and the Drilling Industry Safety Committee (DISC) source control working group (WG) have conducted two separate workshops, to evaluate the COVID-19 risks and potential mitigation and control measures available, to minimise the risk of COVID-19 outbreaks as a result of spill response/source control activities.

In addition to the above-mentioned Oil Spill Response and Source Control COVID-19 Mitigation Workshops, the APPEA OSPRWG and DISC Source Control WG have conducted a separate COVID-19 Oil Spill Response and Source Control Service Provider Capability Validation Activity. This activity evaluates service provider organisation capability (personnel, equipment, assets, mobilisation capabilities etc) and their agreement to work under the National Plan endorsed Novel Coronavirus (COVID-19) Disease Management Guideline for Oil Spill Response Personnel (the Disease Management Guideline). The outcomes from that activity are provided in the APPEA/DISC COVID-19 Oil Spill Response and Source Control Service Provider Capability Validation Activity Report.

## Workshop Scenario

'A major oil spill arising from a petroleum activity in Australian Commonwealth waters will never be acceptable, but in the rare event of a spill occurring, consequences can be reduced through a well-planned and coordinated response. Practising and regularly testing individual response arrangements is fundamental to ensuring effective oil spill response capability, and helps to identify areas for improvement'.<sup>1</sup>

Workshop (fictitious) scenario - A well blow-out of heavy crude in the Exmouth basin, offshore of the Ningaloo Reef coastline was selected.

This scenario was selected as a worst-case scenario, due to the following considerations:

- Heavy crude – most challenging oil type from spill response perspective
- Close to highly sensitivity coastal marine environment
- Logistically challenging location.
- Western Australian (WA) Government have tightest border control arrangements within Australia.

Whilst the selected scenario is for WA, the threat to personnel and associated mitigations are broadly applicable/transferable to any other State/Territory cross-border scenario.

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<sup>1</sup> <https://www.nopsema.gov.au/environmental-management/environment-resources/effective-testing-of-oil-spill-response-arrangements/>



## Workshop Process

The workshop process is described, as follows:

- Define response strategy requirements
- Define existing WA capability
- Identify potential gaps in WA capability, needing to be filled by interstate/international capability
- Define COVID-19 risk to WA community, presented by the mobilisation and execution of the interstate/international capability
- Identify the range of mitigation options available (mitigations which are in addition to the Disease Management Guideline).
- Evaluate likely success of the additional mitigation option in protecting WA community from COVID-19 risk. Success was ranked as follows:
  - Mitigation option likely to achieve full isolation from WA community
  - Mitigation option likely to significantly reduce risk of COVID-19 exposure to WA community, however full isolation not always achieved
  - Mitigation option unlikely or will not result in a significantly reduced risk of COVID-19 exposure to WA community.
- Evaluate any limitations of the mitigation option on response mobilisation timeframe or execution capability and the resulting environmental outcome of that limitation.
- Identify any additional actions which could assist in identifying additional mitigation options.
- Define the preferred mitigation option(s), which would be recommended by the upstream petroleum industry, to both manage the COVID-19 risks to personnel, whilst facilitating an effective response.

## Workshop Outcomes Summary

Full workshop spreadsheets are provided in the sections below. Key points from the workshops are as follows:

- 13 oil spill response activities and 6 source control activities were assessed.
- As displayed in Table 1, three spill response and two source control activities (if implemented) would likely result in a request to Australian Border Force (ABF) to expedite permission for personnel entry into Australia. Where appropriate mitigation measures have been identified (to ABF satisfaction), an additional request may be made for exemption from 14-day isolation periods. Details of preferred mitigation measures are in the workshop spreadsheets.
- The highest priority for international mobilisations would be aerial dispersant, capping stack and debris clearance personnel.
- As displayed in Table 2, eight spill response activities (if implemented) would potentially result in a request to State/Territory border control agencies to expedite permission for personnel entry across Australian internal borders. Where appropriate mitigation measures have been identified (to the relevant border control agency satisfaction), an additional request may be made for exemption from 14-day isolation periods.



- The highest priority for interstate mobilisation would be aerial surveillance, aerial dispersant, and operational monitoring (fluorometer equipment/personnel). SCAT/shoreline clean-up, protect & deflect and oiled wildlife cleaning/rehabilitation would also be priorities, if significant populations of protected species/habitat were at risk.

Mitigation measures identified during the workshop which are in addition to the Disease Management Guideline are as follows:

- All response strategies - where possible, utilise communication technologies such as live-feed video streaming, teleconferences etc to eliminate the need to mobilise response expertise from interstate/international. If 14-day isolation requirements are mandated by border control agencies, utilise these technologies whilst international/interstate personnel are in isolation, prior to their mobilisation to site.
- Aviation general - physical cockpit/cabin isolation barriers in place for all aerial surveillance/air attack activities.
- Aviation general - when operating in remote locations, where possible, select airports/airbases which are not associated with remote communities, to ensure full isolation of response teams from remote communities.
- Aerial dispersant - where possible, maximise the use of the Aerotech First Response air-tractor aircraft instead of international air tankers
- Aerial dispersant - for international aerial dispersant airtankers, provide self-contained accommodation and transport arrangements near/at the airfield, to ensure full international air crew isolation from local community.
- Vessel activities - where possible (dependent on vessel size/type), limit/eliminate physical interaction between marine crew and response personnel, via separate accommodation decks, messing times, and use of communication technologies for planning meetings onboard.
- Source control activities - where possible, mobilise international response expert personnel onboard vessels from port of departure, to eliminate requirement for isolation periods on arrival in Australian waters (will require international government cooperation).
- Shoreline response including SCAT, clean-up, oiled wildlife and protect and deflect activities - where possible, designate shoreline segments, and associated FOB, transport and accommodation into 'local' vs 'interstate' response teams.
- Waste transfer - Design waste transfer handover in the 'warm zone' and avoid interstate/international personnel in the 'warm zone' during waste collection, to eliminate interaction between local waste transport personnel and any interstate/international response personnel.

**Table 1: Potential International Mobilisation Requirement**

| <b>Response activity</b>                     | <b>International mobilisation likelihood</b> | <b>Approx. # personnel</b> | <b>Environmental consequence of delay in mobilisation</b>  |
|--|--|----------------------------|--|
| Aerial dispersant air tanker pilots/crews    | High   | 3-6                        | High – due to significant surface oil not treated with dispersant, potentially arriving on shorelines.                       |
| Oiled wildlife – cleaning and rehabilitation | Moderate                                     | 2-10                       | Moderate – due to reduced efficiency in set-up and activation of significant oiled wildlife cleaning/rehabilitation facility |
| Controlled in-situ burning                   | Low  | 2-4                        | Low – due to slight reduction in oil burned on surface at sea  |
| Capping stack                                | High   | 3-8                        | High – due to significant delay to achieving well kill.  |
| Debris clearance                             | Low  | 3-5                        | High – due to significant delay to achieving well kill.  |

**Table 2: Potential Interstate Mobilisation Requirements**

| <b>Response activity</b>                     | <b>Interstate mobilisation likelihood</b> | <b>Approx. # personnel</b> | <b>Environmental consequence of delay in mobilisation</b>   |
|--|---|----------------------------|---|
| Aerial surveillance                          | Low                                       | 3-5                        | High – due to reduction in surveillance data for IMT response planning purposes   |
| Aerial dispersant                            | High                                      | 5-20                       | High – due to significant surface oil not treated with dispersant, potentially arriving on shorelines.  |
| Offshore vessel dispersant                   | Low                                       | 5-10                       | Low – due to minor increase in surface oil not treated with dispersant, potentially arriving on shorelines.   |
| Offshore contain and recover                 | Moderate                                  | 5-10                       | Low – due to minor increase in surface oil not recovered, potentially arriving on shorelines.   |
| SCAT / shoreline clean-up                    | Moderate                                  | 50-100                     | Moderate – due to increased time to clean-up shorelines. High – if shoreline supports EPBC protected species.   |
| Protect & deflect of sensitive areas         | Low                                       | 10-20                      | High – due to estuaries habitats often supporting protected species, under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> . |
| Oiled wildlife – cleaning and rehabilitation | Moderate                                  | 30-50                      | Moderate – due to reduced efficiency in set-up and activation of significant oiled wildlife cleaning/rehabilitation facility                          |
| Operational monitoring                       | Low                                       | 2-5                        | High – due to inability to continue critical response activities such as subsea or aerial dispersant application.                                     |



## Next Steps

- The Australian maritime Safety Authority (AMSA) to consider the inclusion of the above-mentioned additional mitigation measures in the Disease Management Guideline.
- A list of the types of spill response & source control personnel & equipment that may be required to be mobilised from interstate and/or overseas will be presented to the National Disaster Preparedness Sub-Group. The list of service provider organisations will be provided, based on the APPEA/DISC COVID-19 Oil Spill Response and Source Control Service Provider Capability Validation Activity Report. This data is then available to be shared with Australian Border Force, Department of Home Affairs, and relevant State/Territory spill response hazard management agencies and border control agencies, to assist in facilitating a timely and safe cross-border mobilisation of spill response/source control personnel and equipment, should it be required.

## COVID-19 Mitigations Workshop – Spill Response

Date & Time – 29 April 2020. 0900 – 1200.

### Participants

- NOPSEMA – Spill Risk Team – [REDACTED]
- AMOSC – [REDACTED]
- WA Department of Transport – Marine Safety Division – [REDACTED]
- Esso – [REDACTED]
- Woodside – [REDACTED]
- Jadestone – [REDACTED]
- Santos – [REDACTED]
- Vermillion – [REDACTED]
- BHP – [REDACTED]
- Conoco – [REDACTED]
- Shell – [REDACTED]
- Chevron – [REDACTED]
- INPEX – [REDACTED]

### Workshop assumptions

- Local (within State) capability will always be mobilised first, and capability maximised through use of additional labour hire/on-the-job training as far as practicable, prior to mobilising interstate/international capability.
- All controls from the Disease Management Guideline are implemented, including any interstate/international arrivals subject to COVID-19 testing (swab etc) at routine intervals and mandatory use of the Australian Govt COVIDSafe App (new control for Disease Management Guideline).

| Response Strategy   | Response requirement  | Existing WA capability   | Interstate capability requirement  | International capability requirement | COVID risk to WA community   | Mitigation options (in addition to Disease Mgt Guideline)   | Success of mitigation strategy in protecting WA community.   | Limitations of mitigation strategy on response mobilisation and execution, and environmental consequence of the limitation.  | Preferred mitigation options   |
|---------------------|---|--|--|--------------------------------------|--|---|--|--|--|
| Aerial surveillance | 3 x fixed wing aircraft, each with pilot and a trained aerial observer. | Sufficient local aircraft and pilots available in WA.<br><br>Aerial observers:<br><br>AMOSC core-group = 54 trained aerial observers.<br><br>WA Industry trained aerial observers include; Chevron (21), Woodside (4), Santos (7)<br><br>WA DFES aerial observers available, but not spill response trained. | Highly unlikely to be required for WA, however under certain circumstances, interstate aerial observer personnel could be needed to support local teams. | Not required.                        | Interstate aerial observers presents COVID risk to pilot, and community at accommodation/airports<br><br>Even for personnel within WA, there is an Increased risk of COVID spread at airports attached too, or serviced by locals from Kimberley Aboriginal communities such as Lombardina, Kalumburu etc. | 1. <b>Seek exemption from border control agencies for 14-day isolations.</b> Implement Disease Mgt Guideline controls. Aviation company existing cockpit/cabin isolation barriers and processes should significantly reduce risks to WA pilots.<br><br>2. Mobilise interstate aerial observers and isolate for 14 days, prior to conducting aerial observation activities.<br><br>3. When in the Kimberley, where possible, select airports (such as Truscott, Troughton etc) which are not part of, or serviced by, remote Aboriginal communities. | 1. Isolation from WA community/marine crew not fully achieved.<br><br>2. Achieves 14-day isolation requirement.<br><br>3. Eliminates risk of COVID-19 introduction into remote Aboriginal communities. | 1. No impact on mobilisation/execution.<br><br>2. Delays mobilisation of a critical response activity by 14 days, potentially resulting in significant additional impacts, due to lack of surveillance data for IMT response planning.<br><br>3. No impact on mobilisation. Limited impact on flight range capability. | Highly unlikely to require interstate aerial observer personnel. However, if required, Disease Management Guideline protocols plus aviation standard cockpit/cabin isolation protocols should provide sufficient risk management for WA pilots.<br><br>Preferred mitigation options 1 & 3. |
| Oil spill modelling | Remote data access for spill modelling team.                            | WA based spill modelling contractor RPS, broadly utilised (NatPlan,  | Highly unlikely to be required.  | Not required                         | N/A  | No COVID mitigation options required for the following reasons.<br><br>RPS have teams of modelling personnel located in WA, QLD, USA  | N/A  | N/A  | Maintain current arrangements with RPS.  |

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|-------------------|---|---|--|---|---|---|--|--|---|
|                   |   | AMOSC most of industry).  |  |   |   | and UK, all able to run modelling programs from laptops whilst at home in isolation. The modelling software is backed up on 4 separate IT servers and in the cloud., significantly reducing any risk associated with reliance on one contractor.<br><br>GHD and OSRL can also provide additional spill modelling services, if required.   |  |  |   |
| Aerial dispersant | Assume 6 x air tractors from Australia and C130 and/or Boeing air-tanker from international location. | 1 x air-tractor wheels up in 4 hours. Additional air tractors from within WA possible | Additional air tractors in 4-hours wheels up, plus additional air tractors as needed from interstate.<br><br>Additional air attack supervisors, ground crews and aircraft engineers also potentially required. | For Level 3 event, likely additional C130 and Boeing air tankers, and associated pilots and support crews may be required.<br><br>(Note – Woodside exercise with OSRL on 28-April verified international mobilisation | Interstate/international pilots/crews presenting COVID risk to WA community, through interaction at airfields and onshore accommodation | 1. <b>Seek exemption from border control agencies for 14-day isolations</b> , provided interstate/international air and ground crews utilise their own fleet of cars/busses hotel rooms and food provided. No face to face interaction with WA community at accommodation, FOB, airports etc.<br><br>2. Aerotech First Response contract provides for up to 30 air tractors. Aerotech First Response have | 1. <b>Full isolation from WA community achieved.</b><br><br>2. <b>Avoiding mobilisation of air-tankers eliminates requirement for international mobilisations.</b> | 1. <b>No impact to timeframe for mobilisation of capability.</b><br><br>2. <b>Mobilisation timeframe of a fleet of 15+ air-tractors likely increased, compared to mobilisation of international air tankers from Singapore.</b><br><br>3. <b>14 day in-country isolation period for international air tanker crews will result in 14-day delay in activation</b> | Highly likely to require interstate aircraft, and possibly international airtankers, for a significant crude oil spill event.<br><br>If required, Option 1 should successfully manage COVID risks to WA community.<br><br>Options 2 also available if desired, to reduce reliance on international air tankers. |

| Response Strategy          | Response requirement                                      | Existing WA capability  | Interstate capability requirement  | International capability requirement | COVID risk to WA community   | Mitigation options (in addition to Disease Mgt Guideline)   | Success of mitigation strategy in protecting WA community.  | Limitations of mitigation strategy on response mobilisation and execution, and environmental consequence of the limitation.  | Preferred mitigation options  |
|----------------------------|---|---|--|--------------------------------------|--|---|---|--|---|
|                            |   |   |  | achievable within 37 hours).         |  | <p>confirmed ~15 air tractors could treat a 7000m3 crude spill and this capability could be mobilised and sustained for a long duration activity.</p> <p>3. Early mobilisation of international air-tanker crews, to achieve 14-day isolation within Australia, prior to commencing operations at Australian airfields.</p>   | <p>3. Achieves 14-day isolation requirements within Australia.</p>                                      | <p>of this capability, with potential for significant increase in oil on shoreline.</p>  |   |
| Offshore Vessel Dispersant | 4 x offshore support vessels conducting vessel dispersant | Likely that sufficient support vessels, trained personnel and equipment are already available within WA. (Woodside exercise 28 April – validated significant WA vessel capability). | Highly unlikely to require additional support vessels, AMOSC core-group dispersant spray trained personnel or equipment from interstate. | Not required.                        | Interstate personnel onboard WA based vessels – exposure of WA vessel crews/personnel to interstate response personnel | <p>1. Sail full East-coast crew/equipment on interstate vessel to WA waters</p> <p>2. <b>Seek exemption from border control agencies for 14-day isolations.</b> Fly interstate marine crew (from same fleet) &amp; AMOSC core-group/deck crew to WA. Board and operate from WA located vessel (all WA personnel already removed).</p> <p>3. <b>Seek exemption from border control</b></p> | <p>1. Full isolation from WA community achieved</p> <p>2. Full isolation from WA community achieved</p> | <p>1. Delay in mobilisation by approx. 7 days (assuming 2400nm, Geelong to Exmouth, 14 knots transit speed). Outcome is potential for some additional oil on a shoreline.</p> <p>2. No impact on mobilisation timeframe. Dependent on willingness of vessel contractor to mobilise</p> | <p>Highly unlikely to require interstate vessel dispersant support. However, if required, Disease Management Guideline protocols should provide sufficient risk management for WA marine crews.</p> <p>Preferred mitigation options 2 and/or 3.</p> |

| Response Strategy             | Response requirement   | Existing WA capability  | Interstate capability requirement  | International capability requirement | COVID risk to WA community   | Mitigation options (in addition to Disease Mgt Guideline)  | Success of mitigation strategy in protecting WA community.                                       | Limitations of mitigation strategy on response mobilisation and execution, and environmental consequence of the limitation.   | Preferred mitigation options  |
|-------------------------------|--|---|--|--------------------------------------|--|--|--|---|---|
|                               |  | Equipment drawn from AMOSC/NatPlan stockpiles throughout WA.  |  |                                      |  | <b>agencies for 14-day isolations.</b> Fly interstate AMOSC Coregroup crew to WA. Mobilise WA based vessel with WA marine crew. Isolate marine crew from AMOSC Core-Group deck crew. Separate accommodation deck levels and messing times etc where possible.  | 3. Isolation from WA community/marine crew not fully achieved.                                   | interstate crew onto WA vessel.<br><br>3. No impact on mobilisation timeframe.  |   |
| Offshore contain and recovery | 6 x C&R advanced booming strike-teams (4 vessels per strike team = total 24 vessels) | Likely that sufficient support vessels, trained personnel and equipment are already available within WA. (Woodside exercise 28 April – validated significant WA vessel capability).<br><br>Equipment drawn from AMOSC/NatPlan stockpiles throughout WA. | Potential additional support vessels, AMOSC core-group contain & recovery trained personnel and equipment may be required from interstate. | Not required.                        | Interstate personnel onboard WA based vessels – exposure of WA vessel crews/personnel to interstate response personnel | 1. Sail full East-coast crew/equipment on interstate vessel to WA waters<br><br>2. <b>Seek exemption from border control agencies for 14-day isolations.</b> Fly interstate marine crew (from same fleet) & AMOSC core-group/ deck crew to WA. Board and operate from WA located vessel (all WA personnel already removed).<br><br>3. <b>Seek exemption from border control agencies for 14-day isolations.</b> Fly interstate AMOSC Coregroup crew to WA. Mobilise WA based vessel with WA marine | 1. Full isolation from WA community achieved<br><br>2. Full isolation from WA community achieved | 1. Delay in mobilisation by approx. 7 days (assuming 2400nm, Geelong to Exmouth, 14 knots transit speed). Outcome is potential for some additional oil on a shoreline.<br><br>2. No impact on mobilisation timeframe. Dependent on willingness of vessel contractor to mobilise interstate crew onto WA vessel. | Unlikely to require interstate contain and recovery vessel support. However, if required, Disease Management Guideline protocols should provide sufficient risk management for WA marine crews.<br><br>Preferred mitigation options 2 and/or 3. |

| Response Strategy           | Response requirement  | Existing WA capability  | Interstate capability requirement  | International capability requirement | COVID risk to WA community  | Mitigation options (in addition to Disease Mgt Guideline)   | Success of mitigation strategy in protecting WA community.  | Limitations of mitigation strategy on response mobilisation and execution, and environmental consequence of the limitation.  | Preferred mitigation options  |
|-----------------------------|---|---|--|--------------------------------------|---|---|---|--|---|
|                             |   |   |  |                                      |   | crew. Isolate marine crew from AMOSC Core-Group deck crew through separate accommodation deck levels and messing times etc where possible.  | 3. Full isolation from WA community/marine crew not fully achieved.   | 3. No impact on mobilisation timeframe.  |   |
| SCAT and Shoreline Clean-Up | <p>SCAT: 5 teams of 4 persons. (2x SCAT specialists, 1 x OWR and 1 x local govt ranger type role).</p> <p>Shoreline Clean-up: 5 x 50-person shoreline clean-up teams.</p> <p>Each team allocated 1 sector within the Exmouth Division</p> | <p>SCAT WA DoT provide 3 teams, Industry provide 2 teams.</p> <p>Shoreline Clean-Up Personnel: First Swing; 50-80 trained WA DoT + Industry personnel. Second Swing; 50-80 trained (WA DoT + Industry), plus ~200 labour hire on-the-job trained) person.</p> <p>Equipment:</p> | Potential that additional strike teams from interstate required to support WA, either initially, or for second swing – likely only required if significant sensitivity may be impacted (E.g. turtle nesting season). | Not required.                        | Interstate clean-up crews presenting COVID risk to WA community, through interaction at FOB, shoreline clean-up locations and accommodation | <p>1. <b>Seek exemption from border control agencies for 14-day isolations.</b> Design process where shoreline clean-up segments, FOB, Accommodation and transport are effectively a 'quarantine segments' for interstate teams.</p> <p>2. Mobilise interstate teams but conduct 14-day isolation in WA prior to activating capability.</p> | <p>1. Full isolation from WA community achieved</p> <p>2. Achieves 14-day isolation requirements within WA.</p> | <p>1. Mobilisation timeframe and capability not impacted.</p> <p>2. Mobilisation timeframe of interstate support delayed by 14 days, potentially resulting in longer duration clean-up of shorelines. Significant risk if the shorelines at risk support EPBC listed species critical activities such as nesting/breeding.</p> | <p>Highly unlikely to require interstate shoreline clean-up support. However, if required, Option 1 should successfully manage COVID risks to WA community.</p> <p>Preferred mitigation option 1.</p> |

| Response Strategy                                 | Response requirement              | Existing WA capability  | Interstate capability requirement   | International capability requirement | COVID risk to WA community  | Mitigation options (in addition to Disease Mgt Guideline)   | Success of mitigation strategy in protecting WA community.   | Limitations of mitigation strategy on response mobilisation and execution, and environmental consequence of the limitation.   | Preferred mitigation options   |
|---|-----------------------------------|---|---|--------------------------------------|---|---|--|---|--|
|   |                                   | WA DoT – 3 x shoreline kits.<br><br>Industry – up to 5 shoreline kits.  |   |                                      |   |   |  |   |  |
| Protect and Deflect/Sensitive Receptor Protection | 5 x 10 person teams and equipment | WA DoT – 3 x inshore booming kits and teams available.<br><br>Industry - 2 x 10 industry person teams and equipment located in WA<br><br>Additional equipment mobilised from AMOSC/NatPlan stockpiles as needed for additional sensitive receptors. | Unlikely required, however there is potential that additional strike teams from interstate required to support WA.<br><br>(Note - Victorian situation different, significant number of sensitive resources needing protection, within priority mobilisation timeframes – may need additional WA resources to assist). | Not required.                        | Interstate protection crews presenting COVID risk to WA community, through interaction at FOB, sensitive receptor locations and accommodation | <ol style="list-style-type: none"> <li><b>Seek exemption from border control agencies for 14-day isolations.</b> Design process where shoreline clean-up segments, FOB, accommodation and transport are effectively a 'quarantine segments for interstate teams.</li> <li>Mobilise interstate teams but conduct 14-day isolation in WA prior to activating capability.</li> </ol> | <ol style="list-style-type: none"> <li>Full isolation from WA community achieved</li> <li>Achieves 14-day isolation requirements within Australia/WA.</li> </ol> | <ol style="list-style-type: none"> <li>Mobilisation timeframe and capability not impacted.</li> <li>Mobilisation timeframe of interstate support delayed by 14 days, potentially resulting in long-term damage to sensitive wetlands, likely supporting EPBC listed species.</li> </ol> | <p>Highly unlikely to require interstate protect and deflect personnel/support.</p> <p>However, if required, Option 1 should successfully manage COVID risks to WA community. Preferred mitigation option 1.</p> |

| Response Strategy                            | Response requirement   | Existing WA capability   | Interstate capability requirement  | International capability requirement  | COVID risk to WA community   | Mitigation options (in addition to Disease Mgt Guideline)  | Success of mitigation strategy in protecting WA community.   | Limitations of mitigation strategy on response mobilisation and execution, and environmental consequence of the limitation.   | Preferred mitigation options  |
|--|--|--|--|---|--|--|--|---|---|
| Oiled Wildlife – collection teams            | <p>OWR collection team ~4 people per team.</p> <p>2 teams per shoreline clean-up sector. Total 40 OWR trained personnel.</p>                   | <p>Initial 40 OWR trained personnel and equipment available in WA.</p> <p>Assume 50% AMOSCOWRT &amp; 50% DBCA (noting fire season reduces DBCA capability).</p> <p>Some labour hire/on the job training support can be achieved rapidly.</p> | <p>Unlikely to be required, however potential that additional OWR teams from interstate may be needed to support local response, especially if DBCA response capability has been reduced due to other factors.</p> | <p>Not required.</p>  | <p>Interstate/international OWR personnel presenting COVID risk to WA community, through interaction at FOB, shoreline locations, tertiary wildlife rehabilitation centres and accommodation</p>     | <p>1. <b>Seek exemption from border control agencies for 14-day isolations.</b> Design process where shoreline clean-up segments, FOB, Accommodation and transport are effectively a 'quarantine segments for interstate teams.</p> <p>2. Mobilise interstate teams but conduct 14-day isolation in WA prior to activating capability.</p> | <p>1. <b>Full isolation from WA community achieved</b></p> <p>2. <b>Achieves 14-day isolation requirements within Australia/WA.</b></p>          | <p>1. <b>Mobilisation timeframe and capability not impacted.</b></p> <p>2. <b>Mobilisation timeframe of interstate support delayed by 14 days. Depending on species at risk, could result in additional mortality of individuals or local populations of an EPBC listed species.</b></p>                    | <p>Highly unlikely to require interstate oiled wildlife collection team support. However, if required, Option 1 should successfully manage COVID risks to WA community.</p> <p>Preferred mitigation option 1.</p>               |
| Oiled Wildlife – cleaning and rehabilitation | <p>Single rehabilitation centre, with 2 (up to 3) OWR Containers.</p> <p>20 OWR team, plus local trades persons for infrastructure set-up.</p> | <p>3 x OWR container located in WA (Industry, DoT &amp; AMSA)</p> <p>WA OWR personnel (industry, DBCA, Vets etc) likely available in WA already.</p> <p>Local trades and additional</p>  | <p>Potential that additional OWR teams from interstate may be needed to support local response, especially if DBCA response capability has been reduced due to other factors, or</p>                               | <p>Potential that additional international OWR support required (E.g. Dwyertech &amp; Massey University from NZ.)</p> | <p>Interstate/international OWR personnel presenting COVID risk to WA community, through interaction at FOB &amp; secondary/tertiary wildlife cleaning/rehabilitation centres and accommodation.</p> | <p>1. Utilise communication technology (live stream video chats etc) with interstate/international specialists to eliminate need for mobilisation.</p> <p>2. Mobilise interstate/international teams but conduct 14-day isolation in WA prior to activating capability.</p>  | <p>1. <b>Eliminates interstate/international mobilisations.</b></p> <p>2. <b>Achieves 14-day isolation requirements within Australia/WA.</b></p> | <p>1. <b>May be successful, but potential to result in reduction in OWR rehabilitation capability/efficiency due to lack of expertise on site, for very large scale OWR event.</b></p> <p>2. <b>Mobilisation timeframe of interstate/international support delayed by 14 days, resulting in reduced</b></p> | <p>Possible requirement for interstate/international oiled wildlife rehabilitation team support.</p> <p>Preferred mitigation options worth considering are a combination of 1, 2 and 4, depending on the specific scenario.</p> |

| Response Strategy  | Response requirement  | Existing WA capability  | Interstate capability requirement   | International capability requirement  | COVID risk to WA community  | Mitigation options (in addition to Disease Mgt Guideline)   | Success of mitigation strategy in protecting WA community.  | Limitations of mitigation strategy on response mobilisation and execution, and environmental consequence of the limitation.  | Preferred mitigation options  |
|--|---|---|---|---|---|---|---|--|---|
|  |   | labour hire available in WA.  | significant contact at a sensitive location during peak wildlife nesting/ breeding season.                                  |   |   | <p>3. <b>Seek exemption from border control agencies for 14-day isolations.</b> Design process where OWR cleaning &amp; rehab centres, accommodation etc. are isolated for the interstate/international crews from the WA teams. (Note – would be challenging to achieve.)</p> <p>4. <b>Seek exemption from border control agencies for 14-day isolations.</b> Manage OWR rehabilitation facility as per normal practice, with the Disease Management Guideline as the only available controls.</p> | <p>3. Unlikely to successfully result in full isolation of WA OWR personnel from interstate/international teams.</p> <p>4. Unlikely to successfully result in full isolation of WA OWR personnel from interstate/international teams.</p> | <p>OWR rehabilitation capability.</p> <p>3. Attempting to manage multiple quarantine areas within OWR rehab facilities likely to result in inefficiencies, overall reduced capability.</p> <p>4. Would meet expected level of performance for mobilisation and response execution.</p> |   |
| Remote area response (combined SCAT, shoreline clean-up and wildlife response) | Accommodation support vessel, marine crew, plus SCAT, shoreline clean-up and OWR teams, all located on single | WA DoT would be 'Control Agency' for WA remote shoreline response.<br><br>With combined WA DoT plus CoreGroup teams, entire | Unlikely, but possible some interstate response personnel may be required.<br><br>Highly unlikely, however interstate light | Highly unlikely to be required, however light utility helicopter from NZ/PNG may be required. | Interstate AMOSC core group response personnel, and light utility helicopter crew presenting COVID risk to WA community, through interaction at FOB & onboard accommodation support vessel. | 1. <b>Seek exemption from border control agencies for 14-day isolations.</b> Fly interstate AMOSC Coregroup crew to WA. Mobilise WA based vessel with WA marine crew. Isolate marine crew and WA response crew from interstate AMOSC Core-Group deck crew. Separate   | 1. Isolation from WA community/marine crew and response personnel not fully achieved.   | 1. No impact on mobilisation timeframe.  | Unlikely to require interstate remote area response support.<br><br>Remote area response typically expected to take a minimum of 1 week to plan, perhaps longer. Remote are response also significantly dependent on weather and other factors affecting site |

| Response Strategy          | Response requirement  | Existing WA capability  | Interstate capability requirement   | International capability requirement  | COVID risk to WA community   | Mitigation options (in addition to Disease Mgt Guideline)  | Success of mitigation strategy in protecting WA community.  | Limitations of mitigation strategy on response mobilisation and execution, and environmental consequence of the limitation.  | Preferred mitigation options   |
|----------------------------|---|---|-------------------------------------|---|--|--|---|--|--|
|                            | <p>Accommodation support vessel.</p> <p>Light utility helicopter possibly required from day 7 onwards (pending poor weather limiting vessel landings on shoreline).</p> <p>Selected personnel preferably multi-skilled, to reduce team numbers.</p> | <p>SCAT, shoreline clean-up and WA wildlife response personnel likely available within WA.</p> <p>Sufficient support vessels available in WA.</p> <p>Some light utility helicopter capability now more available due to COVID reductions in their other activities.</p> | utility helicopter may be required. |   | <p>Risk of response crew transmitting COVID to remote island communities, e.g. Tiwi islands, remote Kimberley aboriginal communities etc. Victorian coastline communities also damaged by recent fires may also have reduced capacity to assist. Therefore, remote response teams must consider full self-sufficiency and isolation, even within their own State, where appropriate.</p> | <p>accommodation deck levels and messing times etc where possible.</p> <p>2. Fly interstate AMOSC Coregroup crew to WA and conduct 14 days isolation prior to mobilisation.</p> <p>3. Mobilise an interstate vessel and response team to a remote island/remote shoreline (i.e. a specific quarantine segment).</p> <p>4. <u>Seek border control approval for light utility helicopter pilots to conduct 14 days isolation at port-of-origin</u>, prior to mobilisation to WA.</p> | <p>2. Full 14-day isolation requirement achieved.</p> <p>3. Full isolation from local community achieved.</p> <p>4. Full 14-day isolation for interstate/international operational pilots achieved.</p> | <p>2. Planning/preparations typically ~7 days for a remote response mobilisation, 14-day isolation of certain team members would therefore only result in a delay of 7 additional days compared to typical remote response mobilisation timeframe.</p> <p>3. Delay of 7 days for full mobilisation of interstate remote response team (assuming 2400nm Geelong to Exmouth, 14 knots transit speed)</p> <p>4. Delay of 7 days for light utility helicopter mobilisation/activation within WA.</p> | <p>access. As such, a combination of 1, 2, 3 or 4 may be appropriate, depending on the scenario, sensitivities at risk, and weather forecast, site access etc.</p> |
| Controlled in-situ burning | Fire retardant booms, experienced personnel and support vessels   | Support vessels located in WA   | Nil                                 | Fire retardant booms and experienced burning personnel required from overseas | International personnel presenting COVID risk to WA community, through interaction at FOB & onboard support vessel.  | <p>1. 14-day isolation of controlled burning international personnel upon arrival in Australia.</p> <p>2. <u>Seek exemption from border control agencies for 14-day isolations.</u> Fly international controlled</p>   | <p>1. Full 14-day isolation requirement achieved.</p> <p>2. Isolation from WA community/marine crew not fully achieved.</p>   | <p>1. 14-day delay to start-up of controlled burning operations, resulting in some additional oil potentially reaching a shoreline.</p> <p>2. No delay to start-up of controlled burning operations.</p>   | <p>Unlikely to require international controlled burning support, except for a Level 3 crude oil well</p> <p>Preferred mitigation option 1 and/or 3.</p>            |

| Response Strategy                     | Response requirement   | Existing WA capability   | Interstate capability requirement                                 | International capability requirement                  | COVID risk to WA community   | Mitigation options (in addition to Disease Mgt Guideline)   | Success of mitigation strategy in protecting WA community.     | Limitations of mitigation strategy on response mobilisation and execution, and environmental consequence of the limitation.   | Preferred mitigation options  |
|---------------------------------------|--|--|---|---|--|---|--|---|---|
|                                       |  |  |   | (E.g. MSRC, OSRL).                                    |  | burning crew to WA. Mobilise WA based vessel with WA marine crew. Isolate marine crew and international response specialists via separate accommodation deck levels and messing times etc where possible.<br><br>3. Utilise controlled burn personnel expertise remotely, via real-time satellite links and other communication technology. | 3. Full isolation from WA community achieved.                  | 3. No delay to mobilisation/start-up of controlled burn operations, reasonable chance of successful execution. However potential for reduced burning efficiency or some start-up issues, due to lack of direct, on-site expertise, resulting in some additional oil potentially reaching a shoreline. |   |
| Waste management                      | Transport (trucks etc) and oily waste disposal sites                         | Capability available within WA                                   | Not required.   | Not required.   | Interstate shoreline clean-up crews presenting COVID risk to WA community, through interaction with drivers at waste transfer locations        | 1. Design waste transfer handover in the 'warm zone' and avoid interstate/international personnel in the 'warm zone' during waste collection, to eliminate interaction between local waste transport personnel and any interstate/international response personnel.   | 1. Full isolation from WA community achieved.                  | 1. No impact to timeframe for mobilisation/execution of capability.   | Preferred mitigation option 1.  |
| Operational and Scientific Monitoring | Small teams of scientists' onboard vessels/aircraft to support long duration | Significant small/medium size vessel capability available in WA. | Potential that some interstate scientific personnel and equipment | Highly unlikely, however some international expertise | Interstate/international scientific personnel presenting COVID risk to WA community, through interaction with marine crews and aircraft pilots | 1. <u>Seek exemption from border control agencies for 14-day isolations.</u> Fly interstate scientists to WA. Mobilise WA based vessel with WA marine crew. Isolate marine  | 1. Isolation from WA community/marine crew not fully achieved. | 1. No increase in mobilisation timeframe/execution of capability  | Certain response activities are dependent on successful operational monitoring. E.g. large-scale dispersant |

| Response Strategy | Response requirement                                 | Existing WA capability                           | Interstate capability requirement   | International capability requirement | COVID risk to WA community                   | Mitigation options (in addition to Disease Mgt Guideline)  | Success of mitigation strategy in protecting WA community.   | Limitations of mitigation strategy on response mobilisation and execution, and environmental consequence of the limitation.   | Preferred mitigation options   |
|-------------------|--|--|---|--------------------------------------|--|--|--|---|--|
|                   | environmental studies, during and after spill event. | Large scientific capability available within WA. | may be required.<br><br>E.g. Operators of specialist fluorometry equipment needed for long-duration dispersant application. | may be required.                     | etc and at land-based FOB and accommodation. | <p>crew and interstate scientists via separate accommodation deck levels and messing times etc where possible.</p> <p>2. Utilise interstate/international expert scientists remotely, via real-time satellite links and other communication technology, to oversee field activities.</p> <p>3. Proactively mobilise specialist personnel ASAP (e.g. fluorometry &amp; other specialist equipment operators) to undertake 14-day isolation in WA.</p> | <p>2. Full isolation from WA community achieved.</p> <p>3. Full 14-day isolation requirement achieved.</p> | <p>2. No delay to OSMP activation. However potential for reduced rigour of data, or equipment malfunction/drop-out due to lack of on-site expertise.</p> <p>3. Specialist scopes such as fluorometry may be delayed, resulting in delay to approval/ongoing permission to conduct large scale dispersant operations, or delay to achieving pre-impact data from sensitive environments.</p> | <p>operations dependent on fluorometry. Pre-impact baseline survey data is critical to evaluating impacts of the spill and post spill litigation etc. Therefore, Option 1 is preferred for critical scopes.</p> <p>Where on-site expertise is not as critical, Option 2 preferred.</p> |

## COVID-19 Mitigations Workshop – Source Control

Date and Time – 04 May 2020. 14:00 – 16:00

### Participants

- NOPSEMA - [REDACTED]
- AMOSC - [REDACTED]
- INPEX - [REDACTED]
- Woodside - [REDACTED]
- Shell - [REDACTED]
- Exxon - [REDACTED]
- Chevron - [REDACTED]
- Santos - [REDACTED]

### Workshop assumption

- All controls from the Disease Management Guideline are implemented, including any interstate/international arrivals subject to COVID-19 testing (swab etc) at routine intervals and mandatory use of the Australian Govt COVIDSafe App (new control for Disease Management Guideline).
- Utilise charter flights for any SMEs flying into Australia.

| Response Strategy | Response requirement  | Existing WA capability   | Interstate capability requirement | International capability requirement  | COVID risk to WA community   | Mitigation options (in addition to Disease Mgt Guideline)  | Success of mitigation strategy in protecting WA community. | Limitations of mitigation strategy on response mobilisation and execution, and environmental consequence of the limitation.  | Preferred mitigation options |
|-------------------|---|--|-----------------------------------|---|--|--|--|--|------------------------------|
| Site Survey       | Support vessel with ROV and other survey (e.g. site scanning/mapping) equipment | Support vessels with work class ROVs, and site survey/scanning/mapping equipment readily available as part of the SFRT in WA.<br><br>Site survey equipment operator personnel available in WA. | Nil                               | Wildwell/OSRL other source control experts <i>may</i> mobilise onto support vessel to observe site. | International source control personnel presenting COVID risk to WA community, through interaction at ports, and onboard vessels. | Site survey review by source control experts (Wildwell etc) conducted remotely – live ROV data feeds, recorded footage/data.<br><br>Internet & IT support available in WA to ensure live data streaming.<br><br>Subject Matter Experts (SMEs) for survey data analysis / interpretation available within Australia – | 1. Full isolation from WA community achieved.              | 1. Minimal reduction in ability of Wildwell/other source control experts to review/input into response planning, given technology can be used to review/live stream ROV feeds. | Option 1 preferred.          |

| Response Strategy           | Response requirement   | Existing WA capability   | Interstate capability requirement   | International capability requirement  | COVID risk to WA community  | Mitigation options (in addition to Disease Mgt Guideline)   | Success of mitigation strategy in protecting WA community.   | Limitations of mitigation strategy on response mobilisation and execution, and environmental consequence of the limitation.   | Preferred mitigation options   |
|-----------------------------|--|--|---|---|---|---|--|---|--|
|                             |  |  |   |   |   | all work can be done remotely.  |  |   |  |
| BOP intervention            | Support vessel with work-class ROV (additional work-class capability compared to Site Survey ROVs) and stabs<br><br>MODU and subsea engineering experts  | Support vessels with work class ROVs located in WA.<br><br>MODU and subsea engineering experts available in WA.  | Nil   | Wildwell / OSRL / drilling contractors (subsea BOP SMEs) / other source control experts typically would mobilise onto support vessel to directly oversee BOP intervention activities. | International source control personnel presenting COVID risk to WA community, through interaction at ports, and onboard vessels.  | BOP intervention review by source control experts (Wildwell and Drilling/subsea engineering experts etc) conducted remotely – live ROV data feeds, recorded footage/data.<br><br>Internet & IT support available in WA to ensure live data streaming. | 1. Full isolation from WA community achieved.  | 1. Minimal reduction in ability of Wildwell/other source control experts to review/input into response planning, given technology can be used to review/live stream ROV feeds.  | Option 1 preferred.  |
| Subsea Dispersant Injection | Support vessel with work-class ROV<br><br>Dispersant stockpile and injection wands/rings<br><br>Wellsite specific down-line / transfer system (e.g. coiled tubing) for dispersant (vessel to subsea) | Support vessels with work class ROVs located in WA.<br><br>500 m <sup>3</sup> Slick-gone N/S dispersant stockpile and dispersant wands/rings in WA (Fremantle).<br><br>SFRT tooling package located locally (Perth).<br><br>ROV contractor (i.e. Oceaneering) has WA based operations personnel to deploy SFRT tooling.<br><br>Downlines between vessels and wands need to be provided by operator, may be in WA, but coil-tubing not in WA. | Additional dispersant stockpiles.<br><br>If required by water depth, possible senior coiled tubing personnel if not WA based (for subsea transfer).<br>Require 2-4 PAX (supervisor level) at ~ Day 7. | Additional dispersant stockpiles.   | Nil? (I.e. expertise, vessels and equipment to start SSDI all located in WA.<br><br>Interstate/international dispersant stockpiles can be mobilised with no risk to WA personnel.<br><br>If required by water depth, Interstate personnel presenting COVID risk to WA community, through interaction at ports, and onboard vessels. | 1. Pre-mobilise coil-tubing experts from interstate, quarantine in WA prior to boarding vessel.<br><br>2. Seek border control exemption for coil tubing operators from interstate, mobilise and segregate as far as practicable onboard vessel.       | 1. Full 14-day isolation from WA community achieved.<br><br>2. Isolation from WA community/marine crew not fully achieved. | 1. SSDI delayed by up to 7 days, due to quarantine period, resulting in 7 days oil not dispersed, potentially arriving on shoreline.<br><br>2. SSDI application able to commence within normal planned timeframe (first 7 – 10 days). | Highly unlikely to require interstate coil tubing expert personnel except in specific deep-water scenarios. However, if required, Option 2 should successfully manage COVID risks to WA community whilst achieving best environmental outcome.<br>Preferred mitigation option 2. |

| Response Strategy | Response requirement  | Existing WA capability  | Interstate capability requirement | International capability requirement  | COVID risk to WA community   | Mitigation options (in addition to Disease Mgt Guideline)  | Success of mitigation strategy in protecting WA community.  | Limitations of mitigation strategy on response mobilisation and execution, and environmental consequence of the limitation.   | Preferred mitigation options   |
|-------------------|---|---|-----------------------------------|---|--|--|---|---|--|
| Debris Clearance  | Support vessel with work-class ROV and suitable crane capability<br><br>SFRT debris clearance tooling | AMOSC SFRT located in WA.<br><br>ROV contractor (i.e. Oceaneering) has WA based operations personnel to deploy SFRT tooling.<br><br>Light construction support vessels located in WA. | Nil                               | Possible larger shears (and personnel to oversee operations) required from overseas. SME's required for operation of this tooling. PAX of ~4 required around 7-14 days.<br><br>Possible larger / higher capability vessel required to be mobilised from international port.<br><br>Wildwell / other source control experts typically would mobilise onto support vessel to directly oversee debris clearance activities?? | International source control personnel presenting COVID risk to WA community, through interaction at ports, and onboard vessels. | 1. Debris clearance activities review by source control experts (Wildwell etc) conducted remotely – live ROV data feeds etc.<br><br>2. Mobilise vessel, equipment and SME personnel on vessel from overseas, sail directly to site, no interaction with Australian crews (requires international Govt approvals for all SMEs to board vessel at port of departure).<br><br>3. Fly SME's directly from overseas into Australia to meet vessel (require Aust. Gov approval). PAX of ~4 required around 7-14 days.<br><br>4. <b>2. Seek border control exemption</b> for debris clearance SMEs from overseas to mobilise directly onto vessel in Australia, and segregate as far as practicable onboard vessel. | 1. Full isolation from WA community achieved.<br><br>2. Full isolation from WA community achieved.<br><br>3. Full isolation from WA community achieved.<br><br>4. Isolation from WA community/marine crew not fully achieved. | 1. Minimal reduction in ability of Wildwell/other source control experts to review/input into response planning, given technology can be used to review/live stream ROV feeds.<br><br>2. No delay to operations, however is pending International government approvals to have all SMEs board vessel at port of departure.<br><br>3. SMEs for overseas SFRT equipment – ~7 days delay in operating of heavy-duty cutting equipment offshore, resulting in additional 7 days delay to accessing well-head for capping stack access.<br><br>4. No delay to debris clearance activity. | Highly unlikely to require international debris clearance personnel, given SFRT equipment and personnel located in WA. However, in specific scenarios, if required, Option 1 and/or 2 preferred. Option 4 if Option 1 or 2 not available, should also successfully manage COVID risks to WA community whilst achieving best environmental outcome. |
| Capping Stack     | Capping stack and HLV. Possible offset stack equipment.   | Nil   | Nil                               | Capping stack, crew and HLV required to be mobilised from overseas.   | International HLV crew and capping stack personnel presenting COVID risk to WA   | 1. Option to (depending on provider) have capping stack ready and mobilised directly to site from  | 1. Full isolation of WA community achieved.   | 1. Capping stack installation achieved  | Option 1 is preferred however, is subject to contractual arrangements and  |

| Response Strategy | Response requirement              | Existing WA capability | Interstate capability requirement | International capability requirement   | COVID risk to WA community                                    | Mitigation options (in addition to Disease Mgt Guideline)  | Success of mitigation strategy in protecting WA community.  | Limitations of mitigation strategy on response mobilisation and execution, and environmental consequence of the limitation.  | Preferred mitigation options   |
|-------------------|-----------------------------------|------------------------|-----------------------------------|--|---|--|---|--|--|
|                   | Specialist capping crew/personnel |                        |                                   | If assembly of capping stack components required in Australia, 4-8 PAX (capping stack international SMEs) required day 3-4 (to meet arrival of equipment in Australia for assembly). | community, through interaction at ports, and onboard vessels. | <p>international port (conventional method), avoiding any interaction with WA community. (requires international Govt approvals for all SMEs to board vessel at port of departure).</p> <p>Alternative to mobilise capping stack in components to Australia for assembly within Australia.</p> <p>2. Capping stack SME's 14-day isolation period (in country of origin if possible, or on arrival in WA) prior to stack-up &amp; test of cap in Australian Port (whilst capping stack in transit), and prior to boarding HLV.</p> <p>Capping stack export from Singapore / foreign port by local crew. Assembly SMEs can be mobilised directly to Australia.</p> <p>3. <b>Seek border control exemption</b> for capping stack SMEs from overseas to mobilise directly into Australia, and segregate as far as practicable from Port workforce during stack-up and testing, and vessel workforce during installation. Practice social</p> | <p>2. Full isolation of WA community achieved.</p> <p>3. Isolation from WA community/port workforce/marine crew not fully achieved.</p> | <p>within expected timeframe.</p> <p>2 Assuming 3-4 days for capping stack to arrive in Australia. Therefore, delays to installation of capping stack, by approx 10 days, due to isolation periods. Resulting in approx. 10 days of additional oil entering marine environment.</p> <p>3. Capping stack installation achieved within expected timeframe.</p> | <p>international Govt. approval for all SMEs to board vessel at port of departure.</p> <p>If Option 1 is not achievable, Option 3 is preferred, to minimise COVID risks whilst reducing environmental impacts.</p> |

| Response Strategy | Response requirement   | Existing WA capability  | Interstate capability requirement                                  | International capability requirement  | COVID risk to WA community   | Mitigation options (in addition to Disease Mgt Guideline)  | Success of mitigation strategy in protecting WA community.   | Limitations of mitigation strategy on response mobilisation and execution, and environmental consequence of the limitation. | Preferred mitigation options |
|-------------------|--|---|--|---|--|--|--|---|------------------------------|
|                   |  |   |  |   |  | distancing and other controls as per Disease Management Guideline.   |  |   |                              |
| Relief well       | Relief rig, crew, well-kill specialist personnel and support vessels | Vessels and rigs likely available in WA. Relief well rig monitoring underway, as well as APPEA relief well rig MOU. | Possible requirement for interstate workforce for relief well rig. | SMEs (~10 to 20) for relief well planning and execution (e.g. ranging tools etc) will be required, however not needed within 14 days. | Interstate/international rig/well-kill specialist personnel presenting COVID risk to WA community, through interaction onboard rig and in transit. | Interstate/international crews should be able to complete 14-day isolations in Australia, prior to being required on rig. Therefore, not on critical path. | 1. Isolation protocols already in place for interstate workforces and well kill specialist personnel not on critical path. Therefore, risk to WA community can be managed. | 1. First weeks typically spent planning, no impact to standard relief well timings.   | Option 1 preferred.          |