SAPIA capability review close out report

SAPIA
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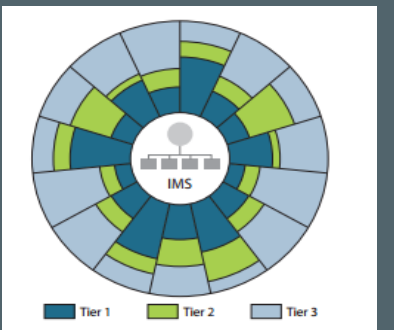

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1. Introduction

The South African Petroleum Industry Association (SAPIA) requested Oil Spill Response Limited (OSRL) to provide a comprehensive audit of South Africa's current national oil spill preparedness levels through the delivery of an oil spill capability review.

The capability review was designed to assess South Africa's current national oil spill preparedness levels and discern whether is meets the needs of the current operations, legislation and oil spill risks. This included assessing industry and government oil spill response equipment, competence and capability to respond to a Tier 2 oil spill incident with the potential of escalation to a Tier 3 incident.

As part of this review, the following companies were assessed at the following sites in late July/early August 2019, and the gaps identified in this review represent the situation observed at the time of visit:

1. Saldanha Transnet Port Authority (TNPA), Oil Pollution Control of South Africa (OPCSA) and Astron Energy.
2. Cape Town – TNPA.
3. Cape Town Joint Bunkering Services.
4. Mossel Bay – TNPA (supporting SPM/CBM facilities), Petro SA, Shell.
5. Port Elizabeth – TNPA, Shell (Dom Pedro).
6. Port of Ngqura (Coega)
7. East London – TNPA, Engen, Buffalo City Municipality.
8. Durban – TNPA, SAPREF, Island View (i.e. Cutler Complex), Blendcor, JBS Facility (total 1 facility).
9. Richards Bay Bunkering Services.

National resources in the following locations were also reviewed:

1. Department of Environment, Fisheries and Forestry (DEFF) pollution control vessels and oil spill response equipment stockpile in Paarden Eiland, Cape Town.
2. Navy oil spill warehouse at Simons Town near Cape Town.
3. SAMSA emergency towing and salvage vessel (contract held by AMSOL). Neither SAMSA nor AMSOL hold oil spill cleanup equipment.
4. Oil Pollution Control South Africa warehouse, Saldanha.
5. Private tier 1 service providers – some of these providers have numerous warehouses across the country which could be used to supplement equipment already in the base closest to the spill site.
6. Wildlife response providers -SANCCOB and uShaka.

2. South African oil spill risks

As part of the SAPIA oil spill capability review project, risk assessments were produced identifying potential oil spill risks for the South African coastline, ports and harbours for each operator and for risks identified nationally.

The greatest oil pollution risks identified in South Africa that have the potential to cause significant impact are:

- vessels offloading crude oils at the offshore Durban SBM;
- bunkering tanker;
- transiting vessels along the coastline having a collision/ grounding incident and a loss from the storage tanks
- tanker place of refuge for damaged tanker, with loss of oil from storage tanks.

The various downstream oil spill scenarios and range of risks identified in the review are show in Figure 1.

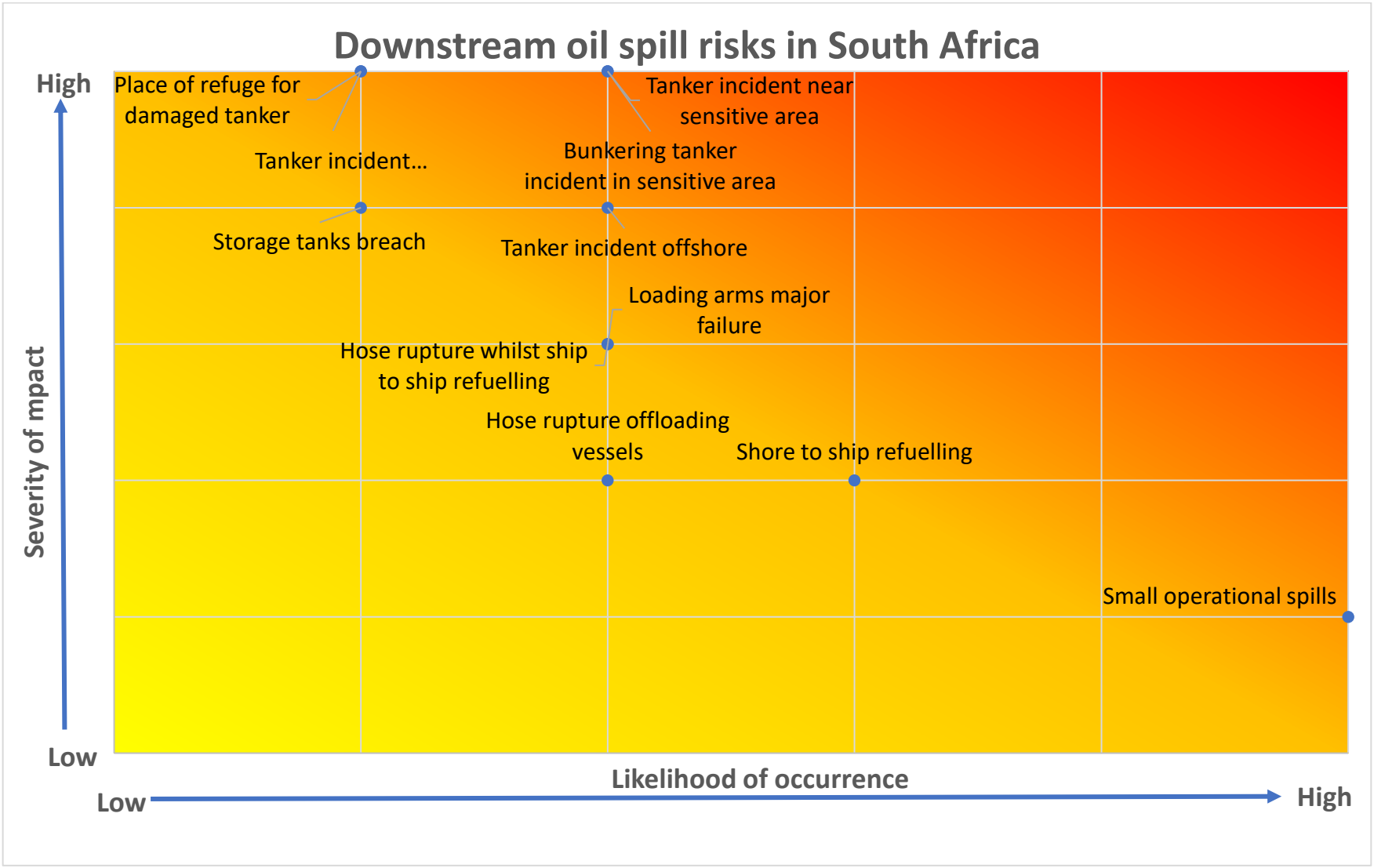

Figure 1 Chart showing range of oil spill risks in South Africa

3. Current level of preparedness

3.1. Tiered Preparedness

The Tiered Preparedness and Response (TPR) principle was used in this gap analysis to categorize and structure levels of oil spill response capability to allow for response escalation. The definitions used are consistent with the IPIECA/IOGP tiered preparedness and response good practice guide[1].

Tier 1 Resources	• Resources necessary to handle a local spill and/or provide an initial response.
Tier 2 Resources	• National or regional resources necessary to supplement a Tier 1 response.
Tier 3 Resources	• Global resources necessary for spills that require a substantial additional response due to incident scale, complexity and/or impact potential.

Due to the nature of this definition whereby all on-site resources have been classified as Tier 1, note that Tier 1 resources are not necessarily under the direct control of the oil industry operators. This review focused on Tier 1 and 2 gaps rather than Tier 3.

Tiered resources differ between downstream industry operators and the shipping industry. For the downstream industry, Tier 1 resources are those within the operator's facility or available from a contracted service provider.

For shipping related spills, a greater reliance would be made on Tier 2 resources (unless the spill is related to a South African operator who would support with Tier 1 resources) as ships would only hold resources to deal with very minor scale spills.

The capability reviews for each operator have:

- created and used planning scenarios to indicate the level of oil spill risk that could arise from each operators/joint venture operations in South Africa;
- assessed oil spill response resources available in each of the 8 main Ports around South Africa where each operator is based;
- assessed compliance of current oil spill activities to South African oil spill guidance and typical good industry practice; and
- assessed completeness and currency of existing emergency response documents to suit the current operations.

3.2. Main gaps identified

Based on the capability review of all the SAPIA members Tier 1 capability and Tier 2 national capability a series of gaps were identified. Figure 2 summaries the gaps identified for each of the segments of the TPR wheel and the following sections summarise the main areas where gaps were identified.

[1] IPIECA/IOGP Tiered preparedness and response: Good practice guidelines for using the tiered preparedness and response framework revision 2016

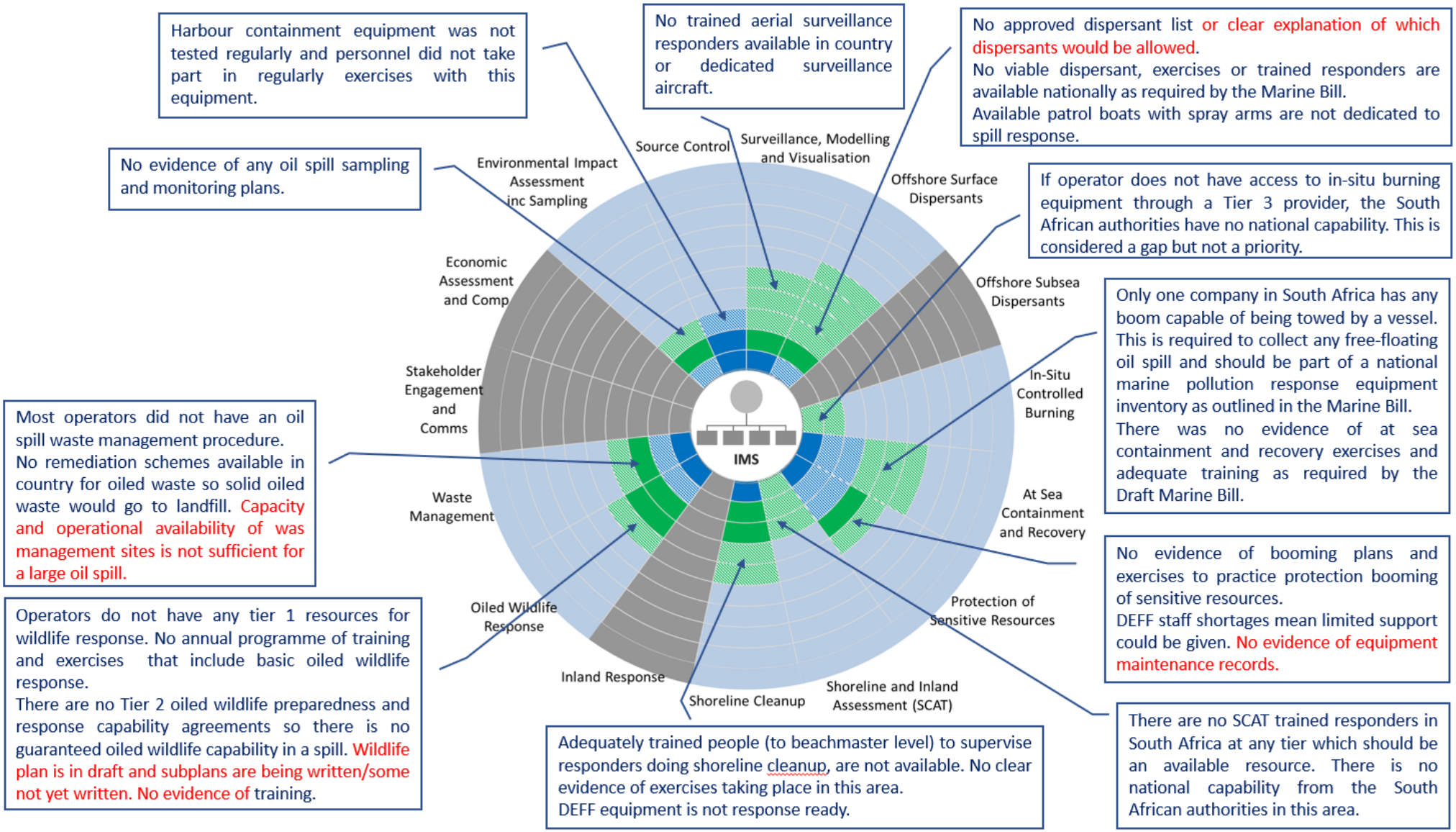

Figure 2 Current tiered preparedness and response status of South Africa and areas lacking preparedness

3.2.1 Safety

- Gas monitors were not seen in any response equipment stockpile. Facilities/tankers will have fixed gas monitors but oil spill responders may have to work outside their range. Gas monitors were available for operator staff but not for TNPA. Gas monitors were in central oil spill responder contractor bases but were not seen in forward bases.
- Standard operating procedures / work instructions reduce risk of accidents: TNPA and DEFF had equipment with no visible written procedures on operating equipment.
- Equipment decay (equipment items seized/perished) was seen where equipment had not been used/maintained regularly. DEFF and some TNPA stockpiles included hydraulic hoses that had exceeded test dates and showed signs of decay. This can cause hose failure which is dangerous to equipment operators/nearby personnel.

3.2.2 Legislation / agreements / approvals

- The draft dispersant policy is broadly in line with industry good practice. The 3 nm restriction for use is tighter than other countries and puts Durban SBM in a 'no dispersant' area yet the oil spill modelling shows the potential for a large incident at the SBM which could result in extensive shoreline oiling. The draft policy states dispersant can be used outside specified limits if preapproval for dispersant use has been incorporated into the relevant contingency plan but operators were unclear about the process.
- There is no published list of approved dispersants or clear explanation of which dispersants would be allowed. For an operator to arrange a stockpile then they need to know which dispersant type is approved for use.
- There is no clear dispersant approval process. NEBA is required but there is no sample form and it is not clear if the operator or DEFF will conduct the NEBA. The draft policy says pre-approval is limited to Tier 1 spills, but dispersible spills are likely to be large. The policy says approval is granted if dispersant is incorporated into the OSCP, but it is unclear if that means the dispersant was approved/which dispersants were approved.
- It is unclear who would do the offshore response (containment and recovery and/or dispersant) of oil spilt from a ship offshore. P&I clubs will cover the costs of the vessel and clean up. SAMSA will lead on incident management. AMSOL has the contract for salvage vessels but do not hold oil spill clean-up equipment. There is no trained workforce who would do the offshore clean-up so it is unclear who would do this aspect of the response.
- Outer harbor jurisdiction is not clear. Two regional TNPA's saw their area of responsibility to be the outer port area. All other TNPA areas saw their area of responsibility for a spill to be the inner port area only up to a harbor breakwater. SAMSA saw their own responsibility as outside of port limits. Who would respond to the outer port areas?

3.2.3 Response capability

- The hands-on responders in a large shipping spill are not defined. DEFF have responsibility for combating pollution of the sea and shoreline by oil. Very limited personnel restricts DEFFs ability to lead a large scale response. SAMSA would manage a large at-sea response, but they have no resources to actually clean up oil pollution.
- Pollution control vessels also have fisheries control responsibilities and do not have equipment on board (besides dispersant spray arms). Are personnel trained in spill response?
- There is no at sea containment and recovery capability. DEFF equipment stockpile is tailored towards shoreline/nearshore response, not at sea. The only equipment available for collection / recovery of free floating mobile oil was seen in Saldanha and is not a national on call resource. Containment and recovery with a towed boom is not suitable in rough conditions but would be suitable in calmer waters/calmer conditions.
- Oiled wildlife response is not guaranteed to operators. Wildlife response organisations exist in South Africa, but they are not on call and will always have to balance limited competing resources. Wildlife plan is in draft and subplans are being written but not yet complete/some are not yet written. Operators of port facilities or oil facilities do not have training or exercises in marine pollution control and clean-up including basic oiled wildlife response, for relevant staff from their organisations.

- There are no dispersant stocks or trained dispersant responders available in country.
- There are no trained aerial surveillance observers in country (agency or operator). There are no dedicated surveillance resources in country.
- Equipment maintenance below standard. DEFF equipment needs cleaning and maintenance before it is response ready. All equipment should be started, checked and perishables (rubber seals, etc.) replaced as appropriate. The DEFF equipment warehouse was in the process of being changed. Current storage does not allow for easy access to the equipment. Ancillary equipment (e.g. hoses / air blowers) should be stored so they are easily accessible with the main equipment.
- Whilst there was evidence of Incident Management System (IMS) training at higher levels of oil spill response management, there was incomplete IMS training of operator level oil spill responders.
- No trained SCAT responders in any of the operator or agency teams.
- Tug captains are restricted to operate within port limits or sheltered port limits only. This could limit the number of vessels available for spill response outside of the port limits.
- In general, Oil Spill Contingency Plans lacked detailed risk scenarios and the response techniques planned to mitigate the impact from them.

3.2.4 Training and exercises

- Responder level of competency varied across the organisations. Tier 1 providers had varying levels of spill response knowledge. One example was the overuse of sorbents which are not suitable for on water spills (collect oil using skimmer instead).
- In some ports, whilst we were told that oil spill exercises had taken place, equipment had not been used in a long time or had never been commissioned. Only one oil spill exercise report / exercise lessons learnt was seen during the visit provided by an oil industry operator.

4. Solutions to close the gaps

Industry good practice guidelines for using the tiered preparedness and response framework established three-tiered structure aim is to ensure suitable response resources are in the right place at the right time.

The capability needs to:

- be commensurate with South Africa's assessed risk;
- encourage cooperation, mutual assistance and integration of shared resources;
- be fully scalable via a mechanism of escalation through the tiers;
- be tested, maintained and verified as part of a defined preparedness framework and;
- employ the most appropriate response options reflecting a net environmental benefit analysis (NEBA).

As part of this capability review, recommendations have been made for how to address the gaps identified. We have outlined in the following sections the areas that need to be enhanced to increase the overall oil spill response capability in South Africa.

Figure 3 shows the areas where equipment is recommended (some ports already have resources available that can be re-tasked) to be located across South Africa based on the oil spill risks identified.

4.1.1 Surveillance

- Use helicopter resources already available (TNPA in Durban and Richards Bay and, if appropriate, industry operators in Durban and Mossel Bay). If the helicopter would not be released outside local areas, arrange call off contracts with private helicopter operators (available in Cape Town, Durban, East London) for areas that do not have a helicopter for surveillance use. Each region should know where it would get aerial surveillance from. Test the mobilisation of DEFF UAVs to an area outside Cape Town in an exercise. Ensure that any documentation required for flight mobilisation including logistical requirements, any required dangerous goods notes, etc are in place.
- Train staff in oil spill surveillance (better to have separate surveillance responders rather than pilots). TNPA and/or SAMSA staff are best placed.
- No need to have oil spill modelling capability in-country but need to know who to go to in a large spill. Test the process and information required in an exercise.

4.1.2 Shoreline/nearshore containment and recovery

- Arrange adequate storage, operating procedures and maintenance schedule for DEFF equipment.
- Ensure TNPA and Navy equipment is commissioned, maintained and stored adequately. Replace perished equipment and make sure any equipment awaiting decommissioning is clearly marked so it cannot be confused with 'in-use' equipment.
- Ensure booms are being used with skimmers to recover free floating oil – not with sorbents. Test in exercises (boom, skimmer, temporary storage should be set up).

4.1.3 Offshore containment and recovery

- OPCSA (SFF) Saldanha have offshore boom and are experienced in towing it. This should be arranged into an on-call agreement for local oil spills.
- Arrange capability for offshore containment and recovery for key port areas; Cape Town, Port Elizabeth or Coega (to cover Algoa Bay), Durban. This is most useful in sheltered bays.
- Arrange containment and recovery system onboard the DEFF pollution control vessel the Sarah Baartman which is best suited to hold and deploy this equipment from. Pollution control vessels to be used for towing in support of a containment and recovery response around the South African coast. Crews need to be trained in deployment and experienced in towing.

4.1.4 Dispersant

- Make wording clearer in the policy for how to establish if a dispersant is approved for use i.e. listed on 2 of 3 country approved lists, make reference to the websites these up-to-date lists can be sourced from and test in exercises.
- If an operator should be conducting the NEBA as part of an application to spray dispersant then provide a NEBA assessment form in the draft dispersant guidance. Continue to test approval process with different parties during oil spill exercises.
- Operations with a known higher risk of shoreline oiling of should have pre-approval for dispersant use under given conditions and suitable oil types. We understand that since the time of the visit this has been granted in some cases.
- Arrange an in-country capability; small dispersant stock, to be supplemented by international stocks in a large spill. Selected ports to have dispersant stocks (approx. 20 m^3) stored on the quayside ready to be loaded onto vessels when required (suggested Cape Town, Port Elizabeth or Coega (to cover Algoa Bay), Durban).
- Test pollution control / fisheries vessel spray arms and replace dispersant within tanks if spray arms are serviceable.
- DEFF pollution control vessels to hold dispersant stocks (~4 m^3 each) and use spray arms.
- Train crews in safe application of dispersant and how to evaluate if it is working.

4.1.5 Wildlife

- Train relevant staff from their organisations in basic oiled wildlife response.
- Arrange Tier 1 and Tier 2 oiled wildlife preparedness and response capability through oiled wildlife preparedness and response retainer agreements with OWR organisations.
- Finalise national wildlife plan and subplans with more detail on how oiled wildlife would be managed in a response.

4.1.6 Shoreline Cleanup Assessment Technique

- Train responders to be able to do the initial surveys (eg Sanparks staff) which would take place either before oil impacts the shore or once the first oil has stranded.

Figure 3 Locations suggested to hold/use existing oil spill response resources across South Africa based on National risk.