PILBARA PORTS AUTHORITY

Port of Ashburton

Marine Pollution Contingency Plan

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DOCUMENT AMENDMENT TABLE

Version	Amendment	Made by	Date
5	Revision to accommodate port infrastructure and formatting.	Harbour Master & Deputy Harbour Master	June 2016
6	Document revised for the ongoing transition of the port to an operational phase.	Harbour Master & Marine Operations Coordinator	February 2018
7	Revised and Restructured	Harbour Master & Deputy Harbour Master	November 2019

FOREWORD

Pilbara Ports Authority is committed to the management of the environment and environmental resources in and around the Port of Ashburton. Marine pollution incidents present a risk to the marine environment, the economy of the Pilbara Region, Western Australia and Australia and can adversely affect social amenity.

The Marine Pollution Contingency Plan has been developed to manage the impact of a marine pollution emergency by providing a response framework, a first strike plan based on the risk of a marine pollution incident, an alert and activation procedure and integration with the state and national plans.

Pilbara Ports Authority – Port of Ashburton will implement this plan in the event of a marine pollution incident, to minimise the impact of the marine pollution incident on the environment and economy.

To ensure the effectiveness of the plan, Pilbara Ports Authority will ensure that necessary training and exercises are undertaken so that staff and stakeholders, such as commercial operators, port users, other state and federal government agencies and community groups are familiar with and able to successfully implement this plan.

The plan will be reviewed and tested at regular intervals to ensure that it meets the functional requirements of oil spill management at the Port of Ashburton and is in line with industry best practice.

Captain John Finch
General Manager Operations
Pilbara Ports Authority

1. INTRODUCTION

1.1 Aim and Objectives

This plan aims to:

- Enable Pilbara Ports Authority, Port of Ashburton (PPA-PoA) to protect, or where this is not practicable, minimise the impact on the marine environment from any marine pollution incident within the port and its associated waters, through the facilitation of a rapid, effective and appropriate incident response;
- To provide an effective system for reporting, assessing and responding to an oil pollution incident or a potential incident;
- To ensure the organisation of resources of all agencies involved in the incident response are in a high state of preparedness;
- To enlist the co-operation and support of all relevant agencies within the region;
- To protect the corporate, economic and environmental interests of PPA and stakeholders;
- To ensure a seamless integration between PPA–PoA, Western Australia (WA) and national response efforts; and
- To ensure that PPA responds according to the priorities and procedures outlined within this document.

1.2 Scope of the Plan

The Port of Ashburton Marine Pollution Contingency Plan (PoA MPCP) is a source of information for those individuals and agencies that are responsible for developing and managing oil spill response capabilities within the Port of Ashburton port limits, outside the footprint of Chevron's Wheatstone operations. This plan is to be used in conjunction with the State Hazard Plan - Maritime Environmental Emergencies (MEE) and the National Plan, to combat pollution of the sea by oil and other noxious and hazardous substances.

The operating environment in the Port of Ashburton will continue to evolve over the coming years and this plan will be routinely updated to ensure alignment with the risk profile.

The PoA MPCP applies to the spillage of oil or hazardous and noxious substances within the Port of Ashburton port limits, as outlined in figure 1.

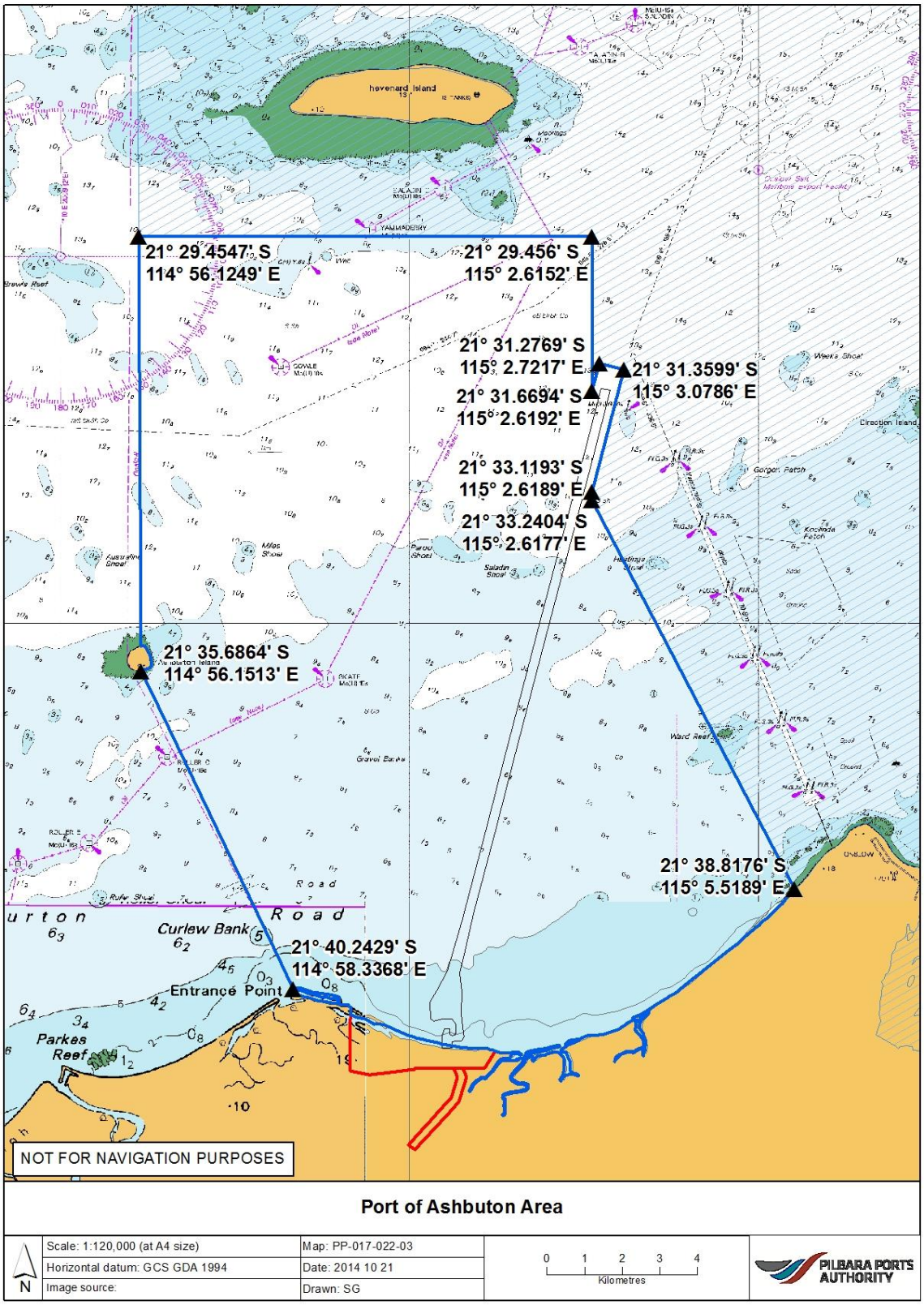


Figure 1 Port of Ashburton Port Limits

1.3 Acronyms

ACRONYM	DEFINITION
AIIMS	Australasian Inter-services Incident Management System
AMSA	Australian Maritime Safety Authority
ATSB	Australian Transport Safety Bureau
AUS	Australia
Avgas	Aviation Gasoline
CCU	Casualty Coordination Unit
CEO	Chief Executive Officer
COPEP	Chevron Oil Pollution Emergency Plan
CST	Centistokes
DBCA	Department of Biodiversity, Conservation and Attractions
DFES	Department of Fire and Emergency Services
EPCB	Environment Protection and Biodiversity Conservation Act 1999
ERC	Emergency Response Checklist
FLIR	Forward Looking Infra-Red
FSRP	First Strike Response Plan
G10	Automotive Diesel Fuel
GMMS	General Manager Marine Safety
HFO	Heavy Fuel Oil
HMA	Hazard Management Agency
IC	Incident Controller
IFO	Intermediate Fuel Oil
IMT	Incident Management Team
IPIECA	International Petroleum Industry Environmental Conservation Association
ITOPF	International Tankers Owners Pollution Federation Limited
JHA	Job Hazard Analysis
MARPOL	International Convention for Prevention of Pollution from Ships
MEE	Marine Environmental Emergencies (MEE)
MEER	Marine Environmental Emergency Response
MGO	Marine Grade Oil

ACRONYM	DEFINITION
MOP	Marine Oil Pollution
MPCP	Marine Pollution Contingency Plan
MTE	Marine Transport Emergencies
NATO F76	Naval Distillate
NEBA	Net Environmental Benefit Analysis
NRT	National Response Team
OPEP	Oil Pollution Emergency Plan
OPRC	International convention on Oil Pollution Preparedness, Response and Co-operation 1990
OSCA	Oil Spill Control Agent
OSRA	Oil Spill Response Atlas
OSTM	Oil Spill Trajectory Modelling
OWR	Oiled Wild Life Response
OWRP	Oiled Wild Life Response Plan
P&I	Protection and Indemnity
PoA MPCP	Port of Ashburton Marine Pollution Contingency Plan
POLREP	Pollution Report
POWBONS	Western Australian Pollution of Waters by Oil and Noxious Substances Act 1987
PPA	Pilbara Ports Authority
PPA - PoA	Pilbara Ports Authority Port of Ashburton
RCC	Rescue Coordination Centre
SDS	Safety Data Sheet
SITREP	Situation Report
SLAR	Side Looking Aerial RADAR
SMEEC	State Maritime Environment Emergency Coordinator
SMS	Safety Management System
SRT	State Response Team
SWI	Standard Work Instruction
ULP	Unleaded Petroleum
VTS	Vessel Traffic Service
VTSC	Vessel Traffic Service Centre

ACRONYM	DEFINITION
VTSO	Vessel traffic Services Officer
WA	Western Australia
WA DOT	Western Australian Department of Transport
WA DOT IIT	WA Department of Transport Incident Investigation Team

1.4 Legislation

This plan meets PPA Port of Ashburton's international, national and state obligation under the following conventions, acts, regulations and integrates with the following plans.

Table 1.1

CONVENTIONS, ACTS AND PLANS	
Convention	Requirements
1990 International Convention on Oil Pollution Preparedness, Response and Cooperation (the OPRC Convention)	Provision for contingency plans for ships, offshore platforms, coastal terminals and ports, and for the development of national response plans.
The United Nations Convention on Law of the Sea (UNCLOS)	Establishes rules for the use of the oceans and their resources. Confers rights on the coastal states.
1973/78 International Convention on the Prevention of Pollution from Ships (MARPOL)	Established to prevent pollution of the marine environment from ships for operational and accidental causes.
1969 International Convention Relating to the Intervention on the High Seas in Cases of Oil Pollution Casualties (INTERVENTION)	Affirms the rights of coastal states to take such measures as may be necessary to prevent, mitigate or eliminate danger to its coastline or related interests following a marine casualty.
1989 International Convention on Salvage (SALVAGE)	International frame work for salvage. Expanded on the no cure no pay principle to provide enhanced salvage award for preventing or minimising damage to the environments.
International Convention on Civil Liability for Oil Pollution Damage (CLC)	Relates to ships carrying oil as cargo. Ensures that adequate compensation is available for persons who suffer from oil pollution and places the liability on the owner of the ship.
International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (FUND)	Establishes an international fund, subscribed to by the cargo interests, which would provide for the dual purposes of:

CONVENTIONS, ACTS AND PLANS	
	Relieving the shipowner of the additional financial burden imposed on them by the CLC; and Provide compensation to the extent that the protection afforded by CLC is inadequate.
International Convention on Civil Liability for Bunker Oil Pollution Damage 2001	Provides for the recovery of pollution costs and payment of compensation from owners/operators of all vessels using oil as bunker fuel and references the liability arrangements in the Convention on Limitation of Liability for Maritime Claims, 1976 and the 1996 Protocol.
Acts	
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act 1999) as amended	Provides for protection of the environment and biodiversity in accordance with international conventions of which Australia is a signatory.
Protection of the Sea (Prevention of Pollution by Ships) Act, 1983 as amended and Marine Orders Parts 91 and 93	Implements the International Convention for Prevention of Pollution from Ships (MARPOL). S11A requires vessels to have a Shipboard Oil Pollution Emergency Plan (SOPEP). Prohibits the discharge of oil or oily mixtures within coastal waters and sets penalties. Requires the reporting of all oil pollution incidents S11 [1] and sets penalties for failure to comply. A number of Marine Orders issued and administered by Australian Maritime Safety Authority (AMSA) under this Act.
Protection of the Sea (Civil Liability for Bunker Oil Pollution Damage) Act 2008	Enacts the BUNKER convention into national law.
Protection of the Sea (Civil Liability) Act 1981	Enacts CLC into national law.
Protection of the Sea (Oil Pollution Compensation Fund) Act 1993	Enacts the FUND convention into national law.
Protection of the Sea (Powers of Invention) Act 1981	Enacts the INTERVENTION convention into national law. Details the power of intervention within the Exclusive Economic Zone (EEZ), territorial sea and internal waters.
The Western Australian Pollution of Waters by Oil and Noxious Substances Act 1987 (POWBONS) as amended.	The WA Act implementing MARPOL for state waters. Port Authorities are considered “Appropriate Authorities” under POWBONS and have a Statutory Authority responsibility to respond to spills of oil and noxious substances within port waters.

CONVENTIONS, ACTS AND PLANS	
Port Authorities Act 1999 as amended	The Port Authorities Act 1999 (WA) details the functions, the areas that they are to control and manage, the way in which they are to operate and related matters.
Plans	
National Plan for Marine Pollution Emergencies	National arrangement for Marine Pollution Emergencies. Maritime Emergency Response Commander (MERCOM) and the powers of intervention. Combat Agency Arrangements.
Conventions, acts and plans	
State Hazard Plan Marine Environmental Emergencies (MEE)	This document contains information relating to the arrangements for managing marine oil pollution and marine transport emergencies. It must be read in conjunction with the state emergency management plan, which contains the generic emergency management.
Western Australia (WA) Oil Spill Contingency Plan	Outlines the procedures and arrangement for responding to and recovering from marine oil pollution emergencies in state waters.
WA Oiled Wildlife Response Plan (OWRP)	Provides guidance to oiled wildlife response agencies to the approach to an oiled wildlife marine pollution response.
Pilbara Region OWRP	Provides operational guidance to respond to any injured or oiled wildlife resulting from a marine based spill from any source in the Pilbara region.

1.5 Jurisdictional Authority and Control Agencies

STATE HAZARD PLAN Marine Environmental Emergencies (MEE) contains information relating to the arrangements for managing marine oil pollution and marine transport emergencies. It must be read in conjunction with the state emergency management plan, which contains the generic emergency management, this document also outlines the Jurisdictional Authority and Control Agencies for MOP emergencies and outlines their respective responsibilities for Prevention, Preparation, Response and Recovery (PPRR).

Table 1.2 prescribes the responsibilities for response to MOP emergencies.

Table 1.2: WA Maritime Environmental Emergency Response Arrangements

LOCATION	INCIDENT	HAZARD MANAGEMENT AGENCY / JURISDICTIONAL AUTHORITY	CONTROLLING AGENCY	
			LEVEL 1	LEVEL 2/3
Australian Government Waters	Marine Transport Emergency	AMSA	AMSA	AMSA
	Offshore Petroleum Activity Marine Oil Pollution	NOPSEMA	Petroleum Titleholder	Petroleum Titleholder
	Vessel Marine Oil Pollution	AMSA	AMSA	AMSA
WA State Waters	Marine Transport Emergency	Marine Safety General Manager, DoT	DoT	DoT
	Offshore Petroleum Activity Marine Oil Pollution	Marine Safety General Manager, DoT	Petroleum Titleholder	DoT
	Vessel Marine Oil Pollution	Marine Safety General Manager, DoT	DoT	DoT
Port Authority Waters	Marine Transport Emergency	Marine Safety General Manager, DoT	PA[2]	PA/DOT[3]
	Offshore Petroleum Activity Marine Oil Pollution	Marine Safety General Manager, DoT	Petroleum Titleholder	DOT
	Vessel Marine Oil Pollution	Marine Safety General Manager, DoT	PA[2]	PA/DOT[3]
Shipping and Pilotage Port (SPA) Waters	Marine Transport Emergency	Marine Safety General Manager, DoT	DoT[2]	DoT
	Offshore Petroleum Activity Marine Oil Pollution	Marine Safety General Manager, DoT	Petroleum Titleholder	DoT
	Vessel Marine Oil Pollution	Marine Safety General Manager, DoT	DoT	DoT

Notes:

The Controlling Agency remains true to the incident initial location. If a Maritime Environmental Emergency crosses over defined waters boundaries, the Controlling Agency will remain with the original nominated agency or organisation unless otherwise appointed through agreement between the HMA / Jurisdictional Authority of both waters.

AMSA may request that DoT manage an incident in Australian Government waters.

DMIRS is the Regulatory Agency for Offshore Petroleum Activities in State waters and have the responsibility to approve OSCPs and to administer their relevant legislation. DoT remains the HMA for spills sourced from Offshore Petroleum Activities in State waters.

(1) In the event of a Level 2/3 incident resulting from an Offshore Petroleum activity in Australian Government waters that impacts State waters, the role of Controlling Agency will be performed by DoT for response activities in State waters. Petroleum Titleholders are to ensure they are compliant with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009, Reg 14 (8AA), (a), (b), (c) (d).

(2) DoT and PA may assign, through IMPs/OSCPs/OPEPs, emergency response functions to a Port Operator or Port Facility Operator for spills originating from their activities, however the role of Controlling Agency will remain with the nominated agency or organisation as above.

(3) In the event of a Level 2/3 incident in PA waters, the role of Controlling Agency may fall with the PA or DoT and will be determined by the HMA in consultation with the PA. The Controlling Agency will be the agency deemed most capable of performing the role of Controlling Agency.

The controlling agency has responsibility to control response activities to an actual or impending Maritime Environmental Emergency.

The State Maritime Environmental Emergency Coordinator (SMEEC) is to confirm in writing the Control Agency during a MOP emergency during a maritime Environmental Emergency.

In any MOP emergency, if a Control Agency be deemed by the SMEEC being incapable of providing an adequate response, the Jurisdictional Authority may opt to assume the role of Control Agency.

1.6 Western Australian Hazard Management Arrangements

The *Western Australian Hazard Management Act 2005* as amended specifies the Hazard Management Agencies (HMA) for Western Australia. The General Manager Marine Safety (WA DoT) is the designated HMA for marine pollution emergencies. WA DoT is the 'Jurisdictional Agency' for marine environmental emergencies within West Australian State Waters. PPA - PoA is the Control Agency for Level 1 marine oil pollution emergencies within Ashburton Port Limits. For Level 2/3 incidents the SMEEC will determine which the most appropriate controlling agency is.

For all hazardous and noxious substance incidents, the Department of Fire and Emergency Services (DFES) is the HMA.

1.7 Integration with PPA Plans, Manuals and Procedures

The MPCP integrates with and is supported by:

- The Pilbara Ports Authority Business Continuity Manual
- The Pilbara Ports Authority Crisis Management Plan
- The Pilbara Ports Authority Incident Management Plan
- The Pilbara Ports Authority Emergency Management Procedures – Operational.

2. RISK ASSESSMENT

DET Norske Veritas produced a report for AMSA on marine oil pollution risks for the Australian coast. In this report, the Pilbara coast line rated a very high risk for a marine pollution incident. This includes the Port of Ashburton.

The following types of incidents have been identified as the main causes of marine pollution emergencies within the port:

- Collision between vessels
- Allision with a navigation aid or wharf
- Vessel grounding
- Illegal discharge from a vessel or ashore
- Incident during bunkering or cargo transfer operations.

The risk of a marine pollution incident is increased by:

- Seaworthiness of vessels
- Negligence and/ or competence of the owner/operator, master or crew
- Age of the fleet
- Size/type of vessel
- Stowage and control of cargoes
- Type/amount of chemical(s) and oil carried
- Proximity of navigation hazards
- Traffic density
- Environmental factors including tidal flow and weather etc.

The main types of fuels used / imported / exported within the Port of Ashburton and adjacent waters are posed by:

- Heavy Fuel Oil (HFO)
- Intermediate Fuel Oils (IFO)
- Marine Grade Oil (MGO)
- NATO F76
- Automotive Diesel Fuel (G10)
- Unleaded Petroleum (ULP)
- Hydraulic Oils
- Condensate.

HFO and IFO are present in significant quantities as bunker fuel on ships calling at Ashburton. MGO and NATO F76 are also used as bunker fuel within the Port. Noxious chemicals are not currently handled in bulk at Ashburton.

In 2018 Pilbara Ports Authority engaged Response Resource Management to conduct an oil spill risk assessment and make recommendations with respect to PPA's response capability under State Hazard Plan Marine Environmental Emergencies.

This oil spill risk assessment identifies the likely causes of oil spills, the associated risks and their significance. It also provides PoA with a basis for the identification of appropriate management strategies to reduce the unique environmental impacts which could be expected within the Port Limits.

The risk assessment also considered the logistical difficulties in responding to an oil spill incident in the remote, North-West Pilbara Region and the need to be self-reliant for the first few days of a marine incident. The remoteness of the Port will impact on the region's ability to provide logistical support and the additional personnel and equipment required to respond to an oil spill.

It was assessed that PoA has a risk of one oil spill every 3 years. However, the spills which could be expected to occur at 3-year intervals would be minor. Level 1 incidents would occur inside the Materials Offloading Facility (MOF) and cause negligible environmental damage. The most likely type of oil to be spilled is diesel and at volumes of less than 100 litres.

Additionally, PoA has a risk of one heavy fuel oil (HFO) spill occurring once in approximately 45 years, which would be a Level 2 or greater and could cause significant environmental damage.

Based on international statistics, the most probable marine incidents which could result in an oil spill in the port are listed below in order of their likelihood:

- Discharge from diesel bunkering within the MOF
- Accidental or deliberate discharge from a vessel inside the MOF
- Grounding while transiting the main channel
- Grounding on the shoals between the anchorage and the channel
- Allision/Collision while berthing at WMT - probably in the swing basin
- Allision of a vessel transiting through PoA with a ship at anchor
- Grounding while entering or departing the MOF.

Additionally, an incident in the Port of Onslow could impact operations at the PoA, as it shares a common boundary with the PoA.

2.1 Predictions of Oil Trajectory

Offshore incidents occurring in the outer channel or near the anchorage would see oil travel East/West with the tidal currents for an approximate maximum distance of 9 nautical miles either side of the incident site and on the first tidal cycle post incident. It could be expected that oil would migrate outside of Port Limits in the first 6-hour tidal cycle and would return with the change of tide.

The prevailing North Westly winds would drive oil towards the eastern shoreline of the port at approximately 0.5 of a knot. It is probable that oil from an offshore spill would impact the shoreline to the east of the port and oil would most likely enter Four Mile and Hooley Creeks.

It is expected that oil would take approximately 24 hours to reach the shoreline from a spill at the anchorage or seaward end of the main channel.

Oil could also rapidly travel beyond the Port Limits or migrate along the shoreline under the influence of tidal currents.

It is less likely, but possible, for oil to strand on the western beaches and enter entrance point creek.

The less prevalent offshore wind which occurs mostly in the mornings may hold oil offshore and increase the time before shoreline impacts and would have an influence of less than 0.3 of a knot on the oil trajectory.

Inspection of the port and surrounds showed obvious signs of the collection of leaf litter and seed pods fetched-up in the creeks and sheltered shorelines. This is a good indicator of locations where oil may also fetch-up. While the open sandy beaches were clear at the time of inspection, oil is most likely to impact the sandy open beaches first before migrating into the estuaries.

Ashburton Island is at risk of being oiled by an offshore incident but is unlikely to be oiled from an incident occurring closer to the WMT or MOF.

2.2 Zones of Potential Impacts (ZPI).

Areas within the Port Limits were segmented in accordance with their various environmental character. Eight ZPI's were then identified:

- Manmade structures, wharves and rock walls associated with the WMT and MOF
- Seagrass beds and subsea habitat
- Sandy beaches east of the port facilities
- Sandy beaches west of the port facilities
- Hooley Creek mangrove and salt marsh/wetland habitat
- Four Mile Creek mangrove and salt marsh/wetland habitat
- Entrance Creek mangrove and salt marsh/wetland habitat
- Ashburton Island bird nesting area and shoreline.

Where it was considered that multiple segments could potentially be affected, the most vulnerable segment was used as the standard for risk.

3. MOP EMERGENCY RESPONSE STRUCTURE

3.1 Incident Controller

The Incident Controller (IC) for all marine pollution incidents is the Harbour Master or delegate.

3.2 Incident Control System

PPA Port of Ashburton has adopted the Australasian Inter Service Incident Management System (AIIMS) for incident management as per PPA Port of Ashburton Incident Management Plan. AIIMS has been adopted to ensure interoperability with all response agencies and to provide a known structure that can be adapted to suit the response requirements.

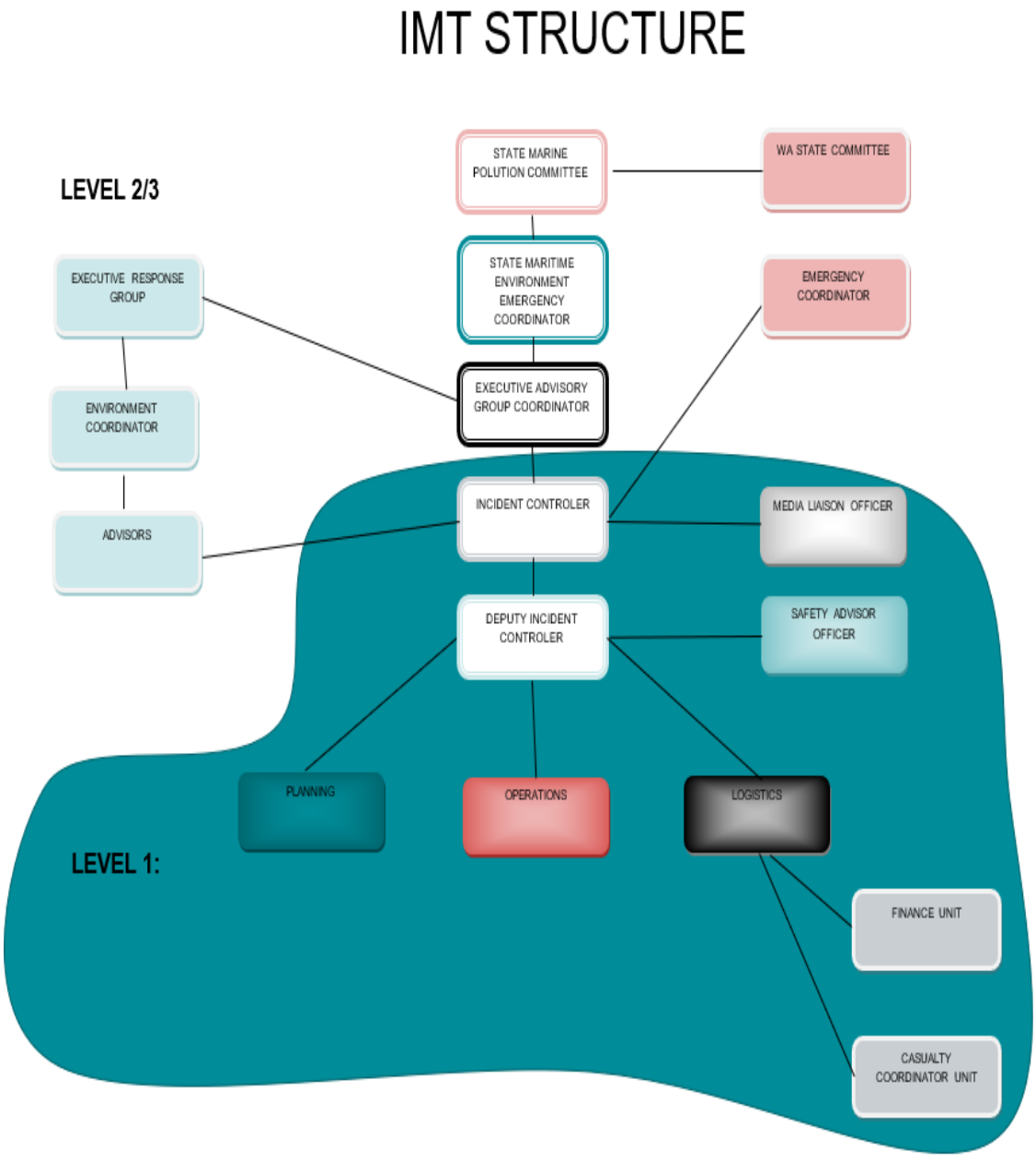
The IC will assess the required response effort and adjust the size and scale of the response to meet the specific incident requirements. That is, the IC will determine the number of responders required and the functional areas that are established to form the Incident Management Team (IMT).

3.3 Incident Level Classifications

As per the National Plan the following incident classifications are used:

- **Level 1** – are generally able to be resolved through the application of local or initial resources only.
- **Level 2** - are more complex in size, duration, resource management and risk and may require deployment of jurisdiction resources beyond the initial response
- **Level 3** – are generally characterised by a degree of complexity that requires the Incident Controller to delegate all incident management functions to focus on strategic leadership and response coordination and may be supported by national and international resources

IMT Structure for Level 1 **Figure 2.1**



Media and public relations will be coordinated by the PPA communications team in conjunction with DOT. The communications team is contactable by;

Mobile: 0447 072 294 Email: media@pilbaraports.com

Incident Management Team Structure for a Major Response Figure 2.2

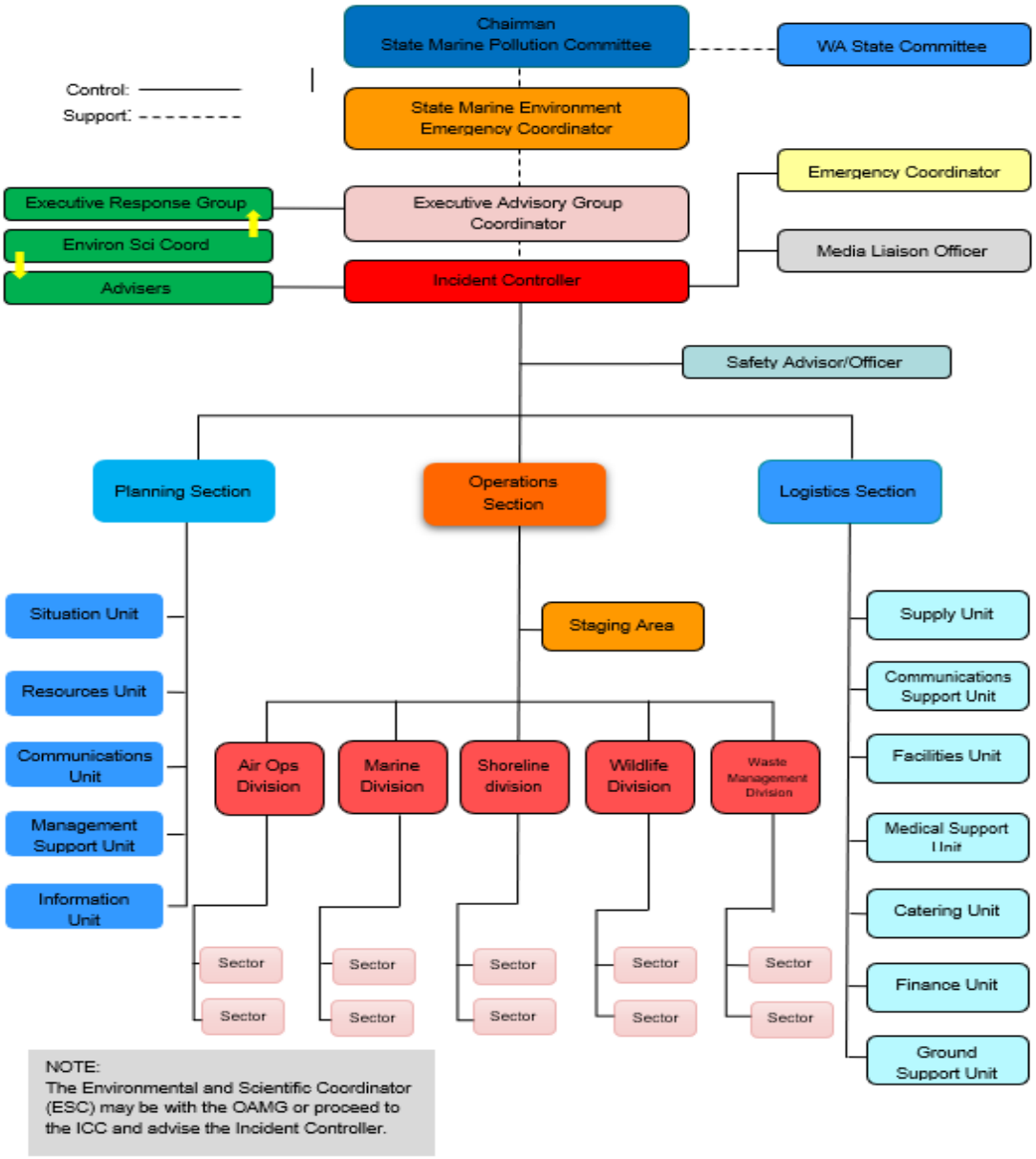


Table 2.1

FUNCTION		ROLE
Incident Controller (1)	Incident Controller (1)	The overall planning and control of the spill response.
	Media Liaison (1)	Manages media relations. Prepares press statements, organises press briefings and supports the Incident Controller in dealing with media.
	Incident Safety	For larger responses an Incident Safety Officer (ISO) may be appointed to oversee sites safety management.
Planning (1)	The coordination. Monitoring and review of Incident Action Plans. Planning personnel will collate the information and consolidate the policies, objectives, strategies and tactics developed by the Incident Controller/IMT. Specific functions include:	
	Situation	The collection, processing and organisation of information. E.g. oil spill trajectory modelling, weather, sea-state.
	Resources	Tracking of the deployment of resources.
	Environment	Responsible for the collection and collation of environment data/ advice, e.g. obtaining environmental data from OSRA, MEER and local sources.
	Consultation	Consultation with the non-indigenous community and commercial operations.
Operations (1)	Directs all “field” operations in the response, which may include:	
	Marine	Coordination and direction of all activities undertaken by waterborne craft and equipment.
	Aviation	Coordination and direction of all activities undertaken utilising aircraft, e.g. aerial dispersant spraying, aerial surveillance and transport.
	Shoreline	Planning and coordination of shoreline assessment and clean-up activities.
	Wildlife	Implementation of the WA Oiled Wildlife Plan, i.e. the collection, treatment and rehabilitation of oiled wildlife. Responsibility of DBCA
	Occupational Health and Safety	Development and implementation of the Occupational Health & Safety Sub-Plan.
	Waste Management	Coordination of the containment, storage, transport and disposal of recovered oil and oily waste. Instruction in on-site handling, storage and/or separation and treatment.
Logistics (1)	Responsible for ensuring that the IMT is provided with adequate resources to enable an effective response. Specific functions include:	

FUNCTION		ROLE
	Procurement	Acquisition of personnel and equipment.
	Services	Acquisition of services and facilities.
	Transport	Provision of aviation, land and sea transport services.
	Communications	Preparation of Communications Sub-Plan and for ensuring the provision of communications services and support.
	Medical	Provision of medical services where needed.
Finance and Administration (1)	Responsible for the provision of administrative services to the IC, Sections and Units of the IMT, and for the management of financial (costs) information. Functions include:	
	Administration	Administrative services to operate telephones, facsimiles, computers, radios (if qualified) and messenger services.
	Finance	Accounting and contracting services.
	Records	Collation and filing of records and forms including, time sheets, equipment usage records and personnel records.
	ICC Management	Ensures effective operation of the ICC, including management of information transfer within the ICC, (Status Boards, faxes/ messages delivery/despatch), administering the meeting schedule, ICC security etc.

(1) Denotes a designated Pilbara Ports Authority Level 1 IMT Role

3.4 The State Maritime Environmental Emergency Coordinator (SMEEC)

The DOT General Manager Marine Safety (GMMS) is the SMEEC as per the STATE HAZARD PLAN Marine Environmental Emergencies (MEE). For level 1 incidents the interaction between the SMEEC and the IC will be limited. Updates will be passed via Pollution Report (POLREP) or Situation Report (SITREP).

For level 2 and level 3 incidents the SMEEC will formally appoint the IC and provide a written statement of intent. The statement of intent generally follows the order of response priorities outlined below with a focus on the safety of life and minimizing the impact.

For level 2 and level 3 incidents the SMEEC will provide DOT with a liaison officer in the IMT. This will generally be a member of the MEER, who will be rapidly mobilised to site.

3.5 Inter-agency and External Liaison

Where the IMT is liaising with another agency such as DFES, consideration must be given to include a representative of that agency to in the IMT as a liaison and advisor. This will facilitate better communication and will allow for a fuller assessment of the response requirements and ensure a more coordinated and efficient response.

A representative of the vessels Protection and Indemnity Club (P&I Club) should be present within the IMT as an advisor to ensure that there is open communication and involvement for the P&I Club.

4. REPORTING AND DETERMINING THE SCALE OF RESPONSE

4.1 Initiating the response

Reporting and response activation consists of four Procedures:

- Reporting of the incident (Figure 3.1)
- Assessment of the situation and determination of the appropriate level of response (Table 3.1)
- Establishment of an Incident Control Centre (Annex 2, Procedure A)
- Activation of the Incident Management team (Annex 2, Procedure B)

4.2 Reporting Procedures

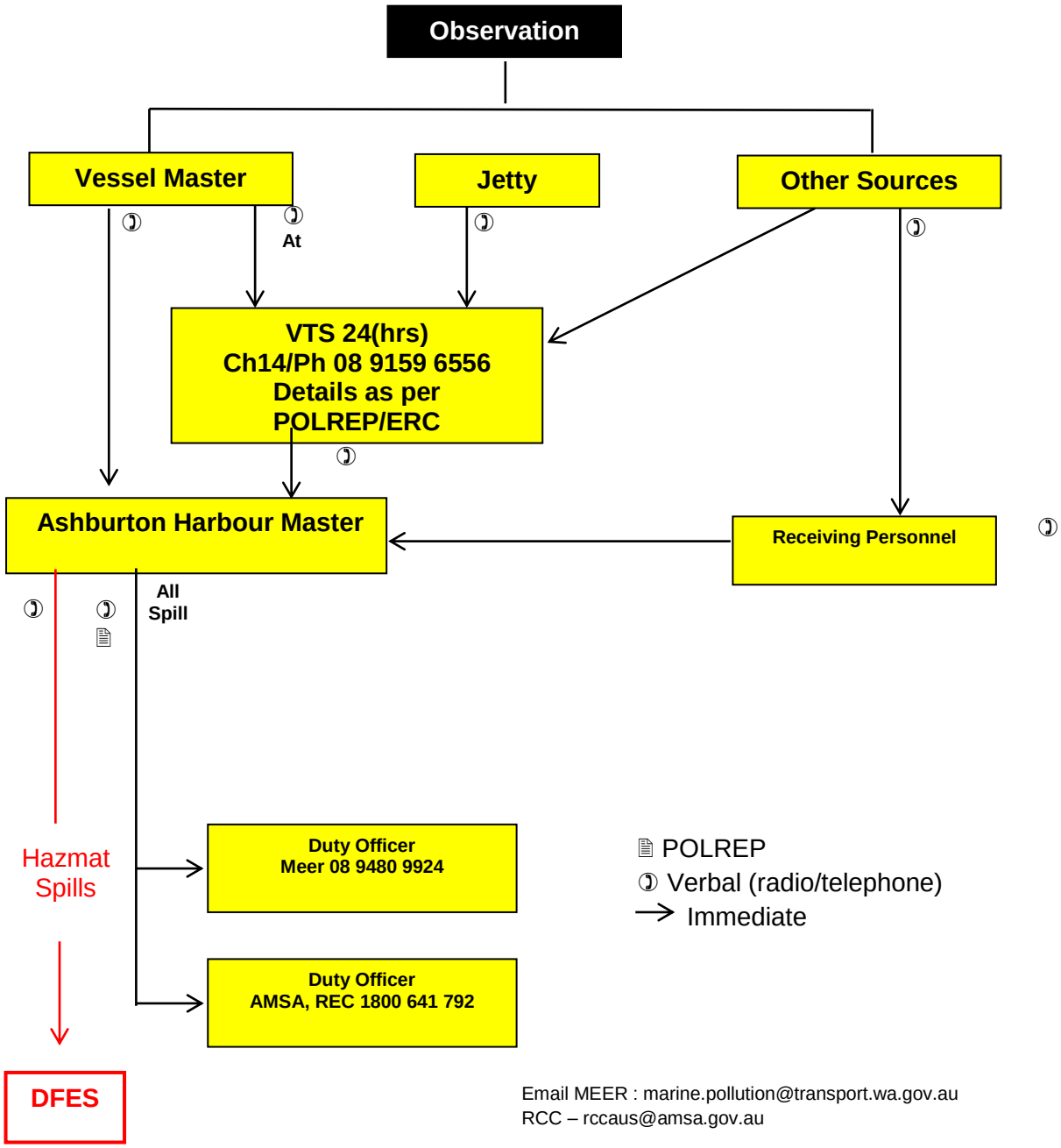
- Reporting Procedures are summarized in Figure 3.1

4.3 Receiving External Reports

Reports of oil spills or sightings of oil on the sea may come from a variety of source. Personnel receiving an external report of a spill must:

- Obtain as many details of the incident as possible. Use VTS-ERC or a POLREP (Form 249 in Appendix B) as a guide.
- Immediately pass the report details to the Harbour Master.

Reporting Sequence **Figure 3.1**



4.4 Scale of the Response

Based on the initial report and subsequent confirmation the IC shall determine the required response. This determination is to include the level of the response and an initial assessment of the requirement for state or national assistance.

Where state or national assistance is required the IC is to contact the duty officer at MEER on the number above and request state and/or national assistance as appropriate. The request is to be backed up with an email when convenient.

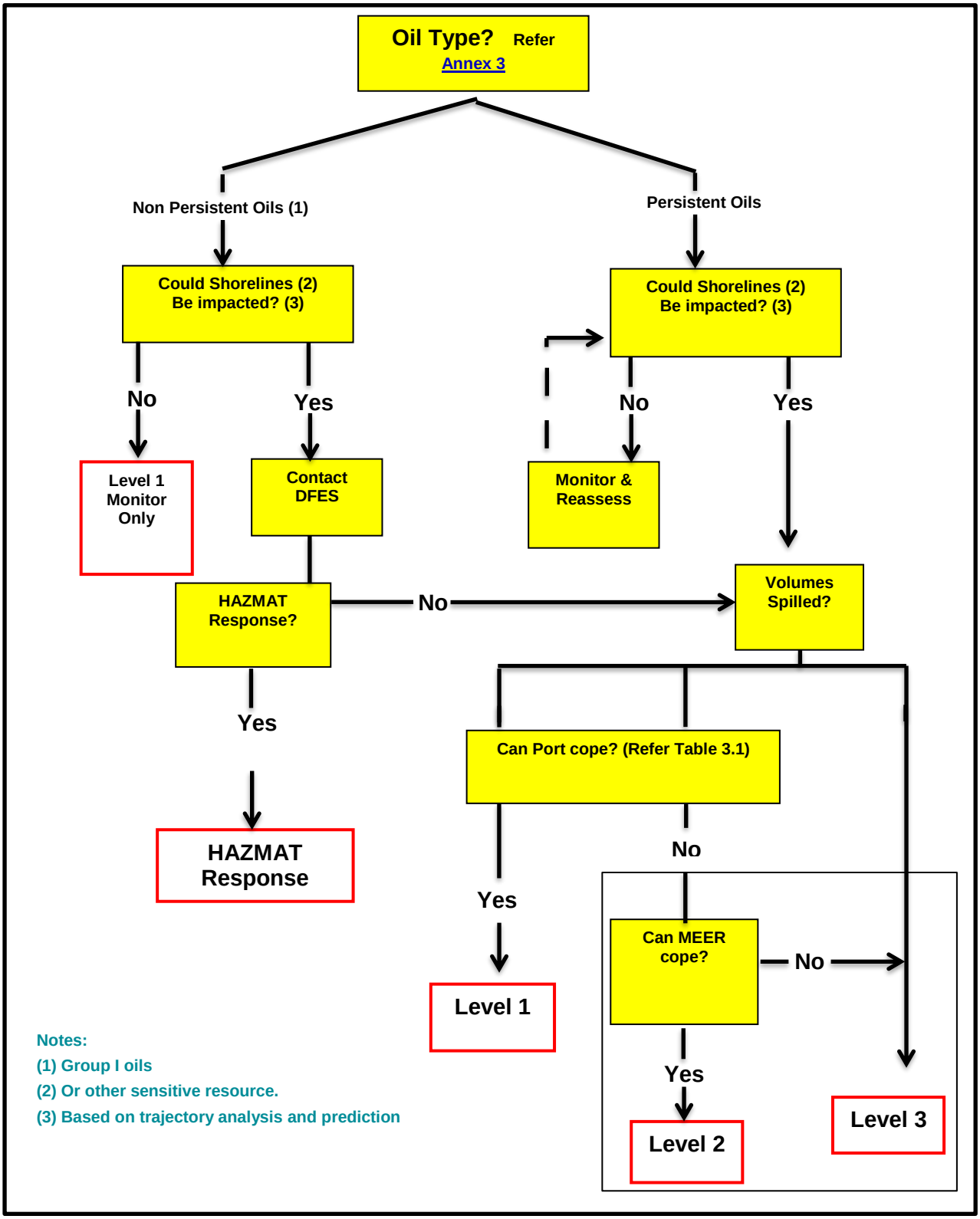
State and national assistance can be requested at any point in the response. There will be a lag between the request and arrival of resources on site. Assistance is to be sought early from the state or national response team to minimise the impact of mobilising resources.

To assist in determining the level of MOP emergency the below Table provides a non-exhaustive list of the general characteristics of each of the three levels. These characteristics can be used to develop criteria for consideration when evaluating the need to escalate response arrangements.

Emergency Classification and Activation Triggers **Table 3.1**

CHARACTERISTIC	LEVEL 1	LEVEL 2	LEVEL 3
MANAGEMENT			
Jurisdiction	Single jurisdiction	Multiple jurisdictions	Multiple jurisdictions
Delegation	Incident Controller responsible for all functions	Some functions delegated or divisions created	All functions delegated and/or divisions created
Number of agencies	First-response agency	Routine multi-agency response	Agencies from across government and industry
Incident Action Plan	Simple/Outline	Outline	Detailed
Resources	Resourced from within one area	Requires intra-state resources	Requires national or international resources
TYPE OF EMERGENCY			
Type of response	First-strike	Escalated	Campaign
Duration	Single shift	Multiple shifts Days to weeks	Extended response Weeks to months
Hazards	Single hazard	Single hazard	Multiple hazards
RESOURCES AT RISK			
Human	Potential for serious injuries	Potential for loss of life	Potential for multiple loss of life
Environment	Isolated impacts or with natural recovery expected within weeks	Significant impacts and recovery may take months. Remediation required	Significant area and recovery may take months. Remediation required
Wildlife	Individual fauna	Groups of fauna or threatened fauna	Large numbers of fauna
Economy	Business level disruption	Business failure	Disruption to a sector
Social	Reduced services	Ongoing reduced services	Reduced quality of life
Infrastructure	Short term failure	Medium term failure	Severe impairment
Public Affairs	Local and regional media coverage	National media coverage	International media coverage

Guideline for Determining the Level of Response **Figure 3.2**



5. ESTABLISHING CONTROL

5.1 Role of Incident Controller

Once appointed by the Control Agency, the IC has the responsibility for the overall management and control of the MOP emergency and the tasking of Support Agencies as required. The responsibilities of the IC include but are not limited to:

- Take charge and exercise leadership, including the establishment of a management structure
- Set objectives for the response to the incident, considering the safety of communities as a priority
- Develop and approve plans and strategies (IAP) to control the incident
- Implement the IAP and monitor its progress
- Provide information and warnings to communities and other relevant groups so informed decisions can be made
- Establish effective liaison and cooperation with all relevant agencies, affected communities and others external to the IMT
- Obtain and maintain human and physical resources required for the resolution of the incident
- Apply a risk management approach, and establish systems and procedures for the safety and welfare of all persons working at the incident
- Ensure relief and recovery considerations are addressed, and that services are provided to the persons and communities impacted by the incident
- Ensure collaboration between response and recovery agencies.

5.2 Incident Management Team

The IC will initiate the establishment of the IMT structure commensurate to the MOP emergency level requirements. The IC must ensure personnel fulfilling IMT roles have completed relevant training and accept the responsibility of the nominated role. **Refer Annex 2 Procedure B.**

5.3 Incident Control Centre (ICC)

The designated ICC for Port Ashburton is the Training and Incident Management room which is equipped with a remote VTS work station.

Functional area folders are in the store room in the TIMS building. The folders contain the relevant forms, plans and associated items to assist in the management of the functional areas. **Refer Annex 2 Procedure A.**

The following table outlines the functional areas breakout rooms:

Table 4.1

ICC LOCATIONS		
Functional Area	Breakout Room	ALTERNATE LOCATION
Planning	Training and Incident Management room	Dampier Board Room
Operations	Training and Incident Management room	HM Office
Finance	Training and Incident Management room	Finance Office area
Logistics	Training and Incident Management room	Dampier Board Room
Media	CEO's Office (Perth, Dampier, Port Hedland)	
FOB	PPA Operations Building - Ashburton	PPA Meeting building - Ashburton

5.4 Field Teams

For teams deploying into the field, a dedicated team leader will be appointed. This will be a member of the Oil Spill Incident Response Team (OSIRT) who has been assessed as competent. The team leader will provide direction and leadership to field teams and communicate back to the sector or functional area. The size of the team will be based on the team leader's span of control. These teams will be supported from a Forward Operating Base (FOB) located in the Ashburton Operations building.

5.5 Planning Process

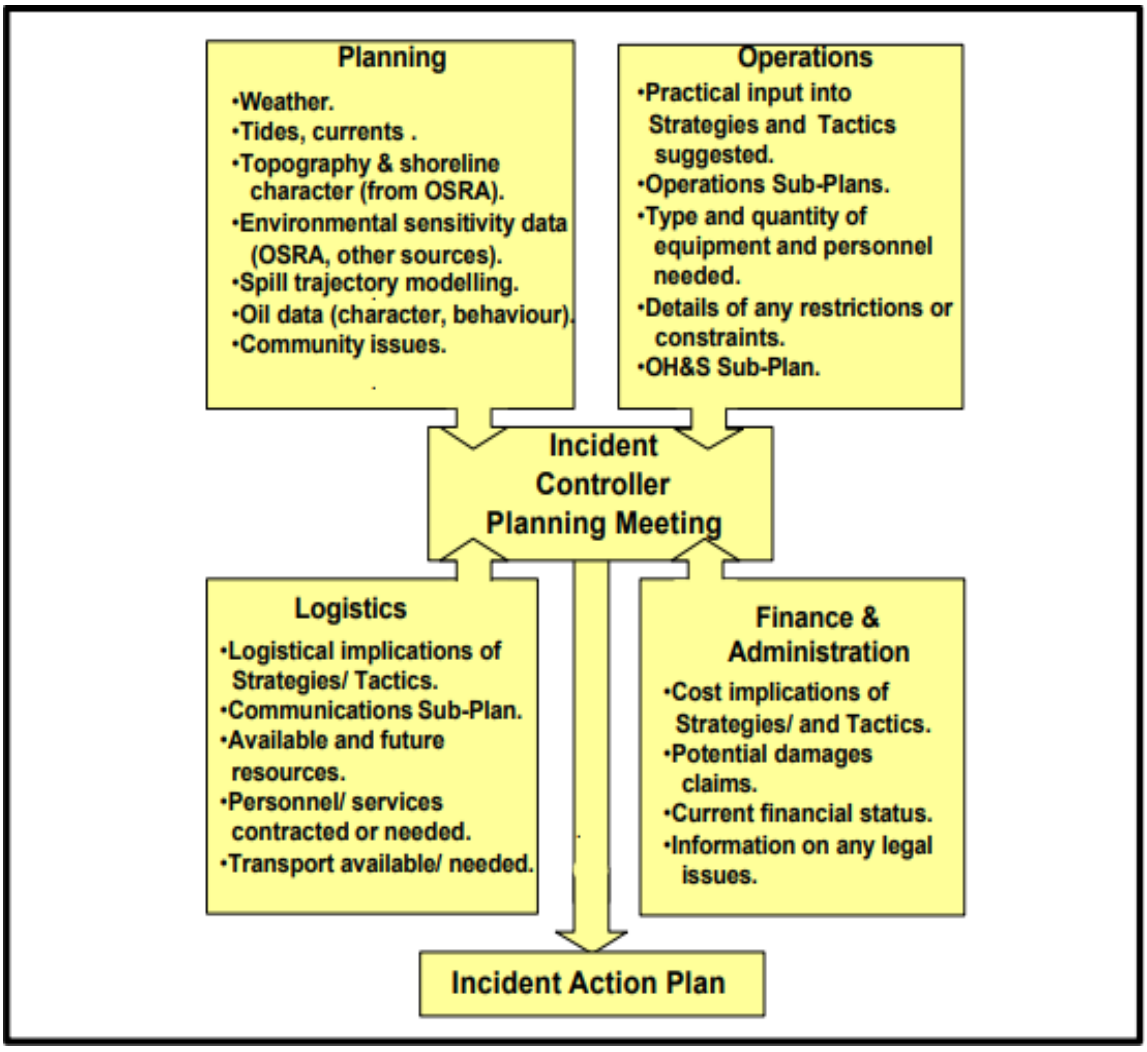
Planning of the response is the responsibility of the IC but involves all key IMT personnel and advisers.

Information Inputs to the Planning Process

The key to effective planning is the acquisition and the application of information.

Figure 4.1 illustrates the information inputs of the key IMT members into the planning process and demonstrates the need to involve all key IMT members in the process.

Inputs to the Planning Process **Figure 4.1**



5.5.1 The Incident Planning Cycle

The planning process is ongoing and involves a number of procedures:

- Initial Planning (Briefing) Meeting
- Development of the Incident Action Plan
- Execution of the Plan
- Feedback to Planning Section (collection and analysis of information)
- Ongoing Planning Meetings (to revise/update the Incident Action Plan).

5.5.2 Briefing

Planning Meetings are to be preceded by a briefing, during which the IC, or other person(s) detail:

- Current situation
- Spill location and size
- Combat and Support Agencies
- Response Tier and resources mobilised
- Current shorelines and resources impacted
- Predicted situation
- Trajectory
- Resources at risk/ potential effects.

5.5.3 Other Actions

Following each Planning Meeting a designated IMT member will:

- Prepare a Resource Requisition Form (A267244)

5.6 Records Management and Administrational Control

Maintaining records of all activities and decisions of a MOP emergency is a requirement of any level emergency. Records include any documentation created or received as part of a MOP emergency that could be used to recreate, prove or support a response related activity or decision. Records may be required for post spill activities including Cost Recovery and Investigation processes and therefore the management of record keeping and controlling the administrational requirements will need to be established immediately by the IMT. The Management Support Unit within Planning provides administrational support and will implement an approved records management process for the MOP emergency

All personnel are responsible for maintaining personal logs of any actions they undertake and decisions they make during a MOP emergency unless otherwise advised by the IMT. Refer form 220

6. RESPONSE

6.1 Incident Action Plan

The incident action plan (IAP) documents the MOP emergency response Objectives, prioritized operational Strategies and the corresponding response tasks. The Planning unit is responsible for producing the Incident Action Plan in consultation with the Operations and Logistics unit. The completed IAP will require approval from the Incident Controller prior to becoming operational. Initial Response / First Strike Response plans and Standard Operating Procedures or Work Orders can be used in support of an initial IAP to allow immediate response operations to be undertaken. The creation of such plans is to be undertaken using risk assessment techniques and subjected to a Net Environmental Benefit Analysis (NEBA).

6.1.1 Planning considerations

When formulating the IAP, the Planning unit will also need to consider additional aspects of response planning that may be undertaken concurrently to the response operations.

6.1.2 Net Environmental Benefit Analysis (NEBA)

The overriding principle for marine pollution response is that the response efforts will have a net environmental benefit. That is the efforts to recover the oil will have less environmental impact that allowing the oil to weather naturally in the environment.

A NEBA is a detailed assessment of the net environmental benefit of response options. The NEBA is a valuable planning tool which allows the response options to be carefully assessed and the best option selected. A NEBA is required when seeking approval for the use of Oil Spill Control Agent (OSCA).

PPA-Port of Ashburton uses the DOT NEBA Template which is available from the link:

https://www.transport.wa.gov.au/mediaFiles/marine/MAC_F_PLAN_NetEnvironmentalBenifitAnalysis.pdf

The template outlines the required steps and guides the planning section through the process of conducting the NEBA.

When assessing the resources at the risk the following resources areas and sub sets must be considered:

- Water Surface
- Seabird feeding areas
- Waterbird feeding areas
- Marine mammals
- Aquaculture
- Social amenity
- Tourism
- Economic such as the shipping channel or inner harbour
- Shoreline Resources
- Mangrove habitats
- Intertidal mud or sand flats
- Beach type
- Rocks or rocky shorelines
- Bird feeding, roosting or nesting areas
- Heritage sites
- Social amenity

- Tourism
- Water Column
- Fish spawning areas
- Marine mammals
- Seabird feeding areas
- Benthic systems
- Commercial and recreational fishing
- Commercial water intake.

6.2 Surveillance and Monitoring

6.2.1 Initial Assessment

The initial reporting of the incident will be based on limited and in some cases un-collaborated information. Information must be verified to allow a proper assessment of the size and scale of the incident.

6.2.2 Situational Awareness

The IC and IMT needs to quickly gain situational awareness to determine:

- The scale of the incident
- The risk to environmental sensitivities
- The potential for a shoreline impact
- The need for resources.

This can be gained quickly by vessel or aerial observation. Once situational awareness is initially gained it needs to be maintained through regular vessel and / or aerial observations.

Visual observation will be extremely limited at night except possibly within close proximity of the wharves, or the use of Forward Looking Infra-Red (FLIR) camera on fresh oil.

6.2.3 Aerial Observation

Aerial observation is a powerful tool in oil spill response. Aerial observation allows for the situation to be quickly and relatively accurately assessed. It also allows for confirmation of trajectory modelling and continued assessment of the effectiveness of response efforts.

For initial assessments a photo or sketch of the extent of the oil will be acceptable from the pilot. But for a more detailed analysis a trained aerial observer is required and must be put in the helicopter as soon as practicable.

For larger spills, the systematic use of aerial observation will be key to the success of the response. A program with regular over flight and observation is to be scheduled as follows:

- An early morning flight to gain situational awareness from the night before and confirm trajectory modelling.
- An afternoon flight to update the IMT prior to afternoon briefs
- Flights as required to maintain situational awareness, such as for change of weather conditions or early on for large amounts of mobile oil.

For very large spills with large amounts of mobile oil the use of fixed wing aircraft is be considered. Due to the proximity of the Onslow airport to the likely impacted areas within the Port of Ashburton, rotary wing aircraft will be highly effective for aerial observation. For very large spills with large amounts of mobile oil the use of fixed wing aircraft is be considered. The use of AMSA search and rescue assets can be requested through WA DOT. The IC must contact MEER with such requests. These assets will take time to be mobilized to site

When making the assessment of oil in the water guidance shall be taken from the Bonn Agreement Oil Appearance Code Atlas:

http://www.bonnagreement.org/site/assets/files/1081/photo_atlas_version_20112306-1.pdf

All Aerial observation shall be reported on the DOT aerial observation form:

http://www.transport.wa.gov.au/mediaFiles/marine/MAC_F_OA01_Aerial_Observation.pdf

6.2.4 Vessel Observation

Vessel observation can assist with developing or maintaining situational awareness. However, vessels are more limited in their ability to visually observe the oil due to the height of eye of the observer and the lower relative speed.

6.2.5 Oil Spill Response Atlas (OSRA)

Once the first strike response plan actions have been completed, situational awareness has been gained and the trajectory of the oil has been predicted, an assessment of the resources at risk needs to be made. The OSRA contains information on:

- Shoreline character (i.e. sandy beach, rocky cliff etc.)
- Bathymetry (5m, 10m, 20m, 30m)
- Topography
- Biological resources
- Socio-economic resources
- Infrastructure
- Access (and suitability for heavy equipment)

- Stockpiled resources
- Tide and current information
- Access to research data that contains information on the efficacy of dispersants.

AMSA manages a computer-based Oil Spill Response Atlas (OSRA) which TRANSPORT updates and maintains for Western Australia.

The OSRA contains data that identifies the sensitive and valuable marine resources and other data that will assist in:

- The deployment of resources for combating spill
- Assessing the suitability of response strategies
- Determining response protection priorities
- Calculating sensitivities of areas being considered as 'Places of Refuge'
- Predicting the effort required for shoreline and wildlife response.

The PPA Environment Manager and Transport OSRC can access and distribute this material.

6.3 Trajectory Modelling

Spill trajectories can be determined by:

- Direct observations (Surveillance)
- Manual calculation based on a vector diagram
- Computer modelling – OSTM Oil Spill Trajectory Modelling.

Where trajectory modelling is produced it is to be verified by aerial observation to confirm validity. The modelling is based on assumptions and models which try to reflect real world conditions. Small errors in the modelling can produce results that vary significantly from observations.

6.3.1 Spill trajectory Modelling

Computer based oil spill trajectory modelling (OSTM) is available through the AMSA and can be provided by them on request. The planning team will need to complete an AMSA Form 95 National Plan Spill Trajectory Model Request.

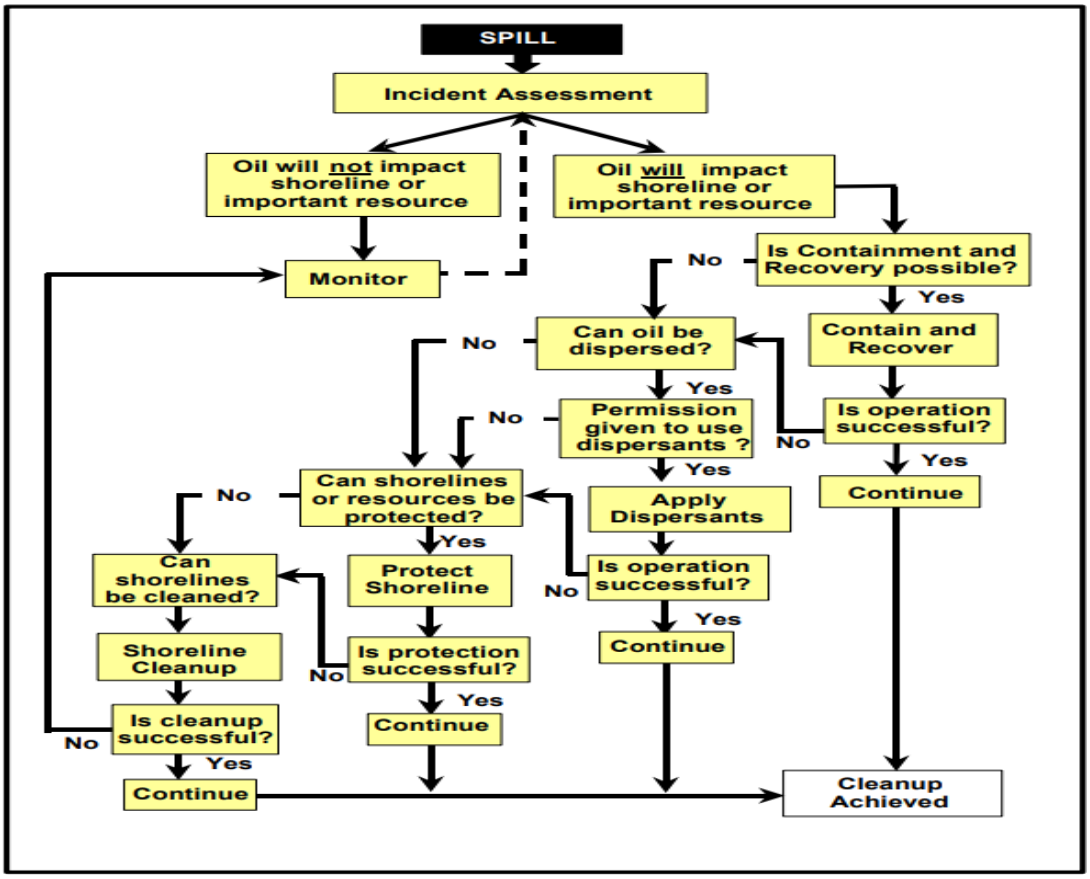
The AMSA Form 95 is available on the AMSA website through the request proforma in the below link;

https://www.amsa.gov.au/forms/national-plan-spill-trajectory-modelling-request

6.4 Response Strategies

The decision to use a particular response strategy is to be based on a NEBA, effectiveness of techniques and combined with feasibility of logistics and resourcing.

Generic Guideline for determining Response Strategies **Figure 5.1**



** Use of Dispersant must be in line with the consent frame work as established and can be accessed from the following link

https://www.transport.wa.gov.au/mediaFiles/marine/MAC_P_DispersantUseConsentFramework.pdf

6.5 Response Methods

6.5.1 Physical Break-Up of the Oil Using Surface Craft

It may be possible to mechanically accelerate natural breakdown of the oil slick using vessels towing breaker boards through the oil. The operation of vessels in areas of possible fire hazard needs to be considered with this option.

6.5.2 Bioremediation

Bioremediation is the acceleration of hydrocarbon degradation of stranded or recovered oil/oily waste through the application of nutrients and/or bacteria. Although the technique has been applied for some years to industrial waste sites, it has been used in oil spills only experimentally, mainly on oiled shorelines and recovered oily waste. Little conclusive or detailed information is available on its effectiveness in tropical areas.

Inappropriate bioremediation techniques may lead to adverse environmental effects, e.g. contamination of ground water resources. Bioremediation options and procedures are to be discussed with and approved by the ESC. Any bioremediation activities will require appropriate environmental approvals and appropriately defined supervision and monitoring techniques.

6.6 Recovery Options

6.6.1 Natural Recovery

Natural recovery involves allowing the oil to degrade naturally over time. This is the preferred option where the oil does not pose a risk to sensitive natural or socioeconomic resources or where the net environmental impact of removing the oil is greater than allowing the oil to degrade naturally.

Are areas where natural recovery could be considered, include rock walls, harbour infrastructure and rocky coastlines. However, natural recovery is not a viable option for the mangrove areas.

Trajectory modelling combined with aerial observation will be required to ensure that the oil is tracking away from environmentally sensitive areas and the slick is weathering as predicted.

During monitoring, the response team are to be prepared to move into a more active response in case the situation changes, and oil threatens to impact coastal resources of a sensitive nature.

6.6.2 Floating oil recovery

In a level 1 oil spill, the recovery of oil from water can be achieved with the aid of DESMI Terminator skimmer and the current buster booms available in the stock pile of Chevron's oil spill equipment.

In a Level Two or Three events Pilbara Ports Authority has three sweep systems available from the National Plans Stocks:

- Ro-Boom, which can be configured in a "U" or "J" Sweep in conjunction with the GT185 skimmer;
- NOFI "V" Sweep Systems in conjunction with the GT185 skimmer; and

- MARCO Oil Recovery Vessel with booms connected for a “V” Sweep system.

All of these systems require some form of floating oil storage and transfer pump.

6.7 Protection and Deflection,

Protection involves the physical barricading of an area of high sensitivity through the deployment of booms.

For this technique to be successful the oil slick is to be located in an area of relatively quiet and still water as this method is dependent on a number of factors such as:

- Swell
- Wind
- Current.

Deflection involves the physical deflection of migrating oil from an area of high sensitivity to a sacrificial area of lower sensitivity through the deployment of booms.

Careful monitoring and tending of booms are required as booms are susceptible to a number of failures including:

- Entrainment – where oil breaks away from the bottom of the boom due to wave and current turbulence
- Drainage – where oil captured in the boom escapes under the boom due to the presence of too much oil
- Splash over – where captured oil in the boom passes over the boom due to swell and chop
- Submergence – where the boom is pulled below the water surface because the towing speed is to high
- Planning failure – where the boom is forced parallel to the water surface as in blown over due to high winds.

6.7.1 Protecting the Wetlands

In line with the IMO OPRC environmental protection priorities PoA would need to develop strategies which give a reasonable opportunity to prevent impacts from the most damaging potential spill. The most sensitive environmental “Zones of Potential Impact” are the wetlands, saltmarsh and mangrove forests on the coastline.

The seagrass beds are recognized as sensitive, however oil is likely to drift over the beds and strand on the shoreline. Similarly, any coral reef within

the Port Limits is submerged and is not likely to be impacted (one reason dispersant application is not recommended).

The most achievable and most reliable strategy to protect the wetland is to deflect incoming oil to a collection point within the estuary system where there is easy access for deployment and oil recovery. The deployment and oil collection site should be as close as possible to the entrance to reduce oil impact further upstream but located sufficiently inside the estuary to provide sheltered waters for the containment and recovery systems.

Deployment of booms across creeks at an angle into the current to create collection and recovery points is the most effective operation. This will require off road vehicles to transport the equipment along the beach tracks to the deployment sites.

6.7.2 Containing Oil at the Source

The best way to prevent environmental impact to surrounding sensitivities is to contain oil as close to the source as possible and prevent further escape of oil. This can be achieved by booming off a holed vessel, however oil escaping from a condensate ship is highly volatile and not safe to approach. Fuel oil escaping from a ship may be safety concerns need to be taken into consideration when approaching a leaking vessel.

The better way to contain oil close to the source, particularly in the MOF, would be to have a prepositioned containment system which can be rapidly deployed across the entrance to the MOF and keep oil from escaping out, and impacting more sensitive environments.

As a secondary containment for ships outside the MOF, a boom could be deployed around or alongside the vessel to prevent further loss of oil. This can be secured with ropes or purpose-built ships side magnets with ASTM boom end connectors.

6.7.3 Monitor and Evaluate

Although there is no physical control or recovery of oil, monitor and evaluate provides operational support and identifies the oil trajectory and potential impact locations. Monitor and evaluate is vital to spill response operations. If the spill is small and there is a high likelihood of natural degradation before impact to sensitive environments, this may be the only required response operation.

6.8 Oiled Shorelines

To ensure the best outcome in the event of a shoreline impact it is vital that a beach pre-assessment and pre-clean is undertaken to minimise the amount of waste collected.

Shoreline response involves a number of different components including:

- Shoreline protection (deployment of boom or barriers to capture or deflect oil)
- Shoreline cleaning and remediation.

Shoreline protection involves the deployment of booms or erecting of barriers to protect sensitivities. Shoreline cleaning and remediation involves the manual or mechanical cleaning, washing methods or shoreline cleaners. Shoreline clean-up is resource intense and requires careful planning and execution.

The use of heavy machinery to clean shorelines is not recommended. Heavy machinery removes more sand than manual cleaning and can push oil into the substrate of the beach which will result in remobilisation of oil for an extended period.

6.8.1 Shoreline Response Strategies

A number of shoreline response strategies are available. However, all shorelines must be assessed in order to determine whether methods are suitable. This will depend on a number of factors including:

- Rate and likelihood of natural cleaning
- Access for personnel and machinery
- Nature and distribution of the oil
- Shoreline character
- Availability of personnel and machinery
- Safety issues
- Environmental sensitivity to both oil and clean-up methods
- Cultural and Heritage Considerations. All sites are protected from impacts under the *Aboriginal Heritage Act 1972* and the DIA must be contacted where there is risk of an oil spill stranding.

6.8.2 Cleaning of Oiled Foreshores

Differing foreshores support a range of activities. When oiled they require distinctly separate clean-up methods. Any manpower made cleaning activity is to be limited to support, and if possible, augment natural cleaning through prevailing weather and environmental activity in the area.

Where oil has been deposited on sandy beaches and cleaning is required, supervision is necessary to ensure that only oiled sand is removed; waste minimisation is essential in oil spill clearance operations to ensure the least impact on the environment and to minimise clean-up costs. Coarse sand beaches may absorb oil into sediments, while on hard packed fine sand beaches oil will generally deposit itself on the surface with minimal or no penetration. The IC is to make an assessment of the load bearing capacity of the beach before allowing vehicle access.

Removal of oiled material can be achieved by careful use of mechanical earthmoving equipment supported by teams of personnel equipped with shovels and rakes. The polluted material must be taken to the closest disposal sites as soon as possible. Heavy duty plastic bags may be used for temporary storage for a limited time only (e.g. three weeks). If left for too long, oil will ultimately degrade the polythene material and re-deposit the contents to the beach surface. Care must be taken to ensure earth moving equipment does not force oil into the substrate.

On beaches having relatively low wave energy, hoses and pumps to provide low-pressure saltwater flushing is a useful technique. The oil being flushed into booms deployed a metre or so offshore from the low water level and removed using suitable skimmers.

Cleaned beaches are to be subsequently monitored to ensure that oil does not re-appear after being buried with successive tidal action or changes in beach structure.

6.9 Response Strategies

The below table shows each of the IMO/OPRC recognized oil spill response strategies, their purpose and likelihood of success within the PoA.

RESPONSE STRATEGY	ACHIEVABLE/ PERMISSIBLE	LIKELIHOOD OF SUCCESS IF DEPLOYED CORRECTLY	SENSITIVITIES PROTECTED	RECOMMENDED FOR POA
Monitor and evaluate (Only)	Achievable and permissible	High	Nil, will provide situational awareness of potential impacts	Highly recommended to assess the potential impact sites and direct deployment operations
Dispersant Application	Achievable (Only on condensate), but not permissible	25% to 50% only on condensate and only offshore (Not near the WMT which	Wetlands and mangroves however may have adverse effects on	No, the potential adverse effects would most likely outweigh the benefits. It is unlikely permission

RESPONSE STRATEGY	ACHIEVABLE/ PERMISSIBLE	LIKELIHOOD OF SUCCESS IF DEPLOYED CORRECTLY	SENSITIVITIES PROTECTED	RECOMMENDED FOR POA
		is the most likely sources of condensate)	shorelines, seagrass and reef.	would be granted by DoT.
Containment and recovery at sea	Achievable and Permissible	Very low, less than 5% recovery rates even if perfect conditions	nil, sensitivities would still be impacted by the remaining 95% of oil.	Not recommended so that the limited numbers of available personal and resources can be directed to strategies with a much higher likelihood of success
Protection and deflection near shore	Permissible and very achievable	Highly likelihood of success if deployed appropriately	Wetlands, Mangroves, saltmarsh, some shorelines	Highly recommended
Containment at the incident location	Permissible and achievable	High likelihood of success if deployed if prepositioned for timely deployment	All ZPI's outside the MOF	Highly recommended
In-situ Burning	Not Permissible	Regardless of any potential success rate, the risk to people and assets far exceeds any benefits	All ZPI's	Not recommended at all
Shoreline Clean-up	Permissible and achievable	Very High likelihood of success in assessable areas	Sandy shorelines, turtle nesting areas and Ashburton Island	Highly Recommended where access permits

6.10 Oiled Wildlife Response

Oiled Wildlife Response (OWR) under the SHP MEE is the responsibility of the WA Department of Biodiversity, Conservation and Attractions (DBCA). Copies of the OWRP's are available in the Planning and Operations folders and at the links below.

The WA OWR Plan is available at:

http://www.dpaw.wa.gov.au/images/documents/conservation-management/marine/wildlife/West_Australian_Oiled_Wildlife_Response_Plan_V1.1.pdf

The Pilbara Region OWR Plan is available at:

https://www.dpaw.wa.gov.au/images/documents/conservation-management/marine/wildlife/PROWRP_20141103.pdf

6.11 Waste Management

Marine pollution incidents generate large volumes of waste. Oil in the water increases its volume by between 3 and 5 times. Oil stranding ashore can increase in volume by between 10 and 50 times depending on the type of shoreline and the presence of debris.

The key principle for waste management is waste minimisation. In the event that a shoreline will be impacted the following must occur:

- Shoreline pre-assessment
- Shoreline pre-clean.

This will reduce the amount of waste, facilitate planning for shoreline clean-up and assist with cost recovery.

6.11.1 Onsite Temporary Storage

Marine response units will require assistance in the establishment of storage facilities on jetties or other locations.

Shoreline Units will require assistance in the establishment of temporary waste storage areas behind beaches being cleaned.

6.11.2 Temporary Storage Site

Temporary waste handling bases should be established. The treatment and disposal of waste material must be managed if it is to not inhibit clean-up activities or pose any threat to the environment. To undertake the task of managing waste the IC may appoint a Waste Management Coordinator (WMC) to develop a local Waste Management Sub-Plan and to direct the Waste Management Unit. This section will usually be co-ordinated by a local DWER officer.

6.12 Ongoing Response

Where the size and complexity of the incident requires a response effort with duration greater than a week, careful consideration to fatigue management and business continuity will be required. Once the initial first strike has been conducted, careful considerations of the use and allocation of personnel is to be made. Where the response will continue for more than a week, the IMT can be divided into 2. With the first IMT group working for 5 to 7 days before handing over to the second group. Any work routine shall comply with PPA Fitness for Duty Policy – Fatigue Management Policy.

In order for PPA to maintain control of the response effort and to ensure that PPA's corporate objectives and business continuity is maintained a PPA staff member is to be used for the role of IC and each functional head. The use of Port Hedland and Dampier based PPA staff can be considered to augment the Port of Ashburton capability.

For an ongoing response State Response Team (SRT) and National Response Team (NRT) resources should be mobilised. The SRT and NRT can provide both field team leaders and IMT resources.

For prolonged responses the appointment of a Deputy IC can be considered, the Deputy IC will be able to assist the IC by ensuring the smooth and efficient running of the IMT and ensuring all time-based outcomes are achieved whilst the IC coordinates external engagement.

7. ACTIVATION AND DEPLOYMENT OF RESOURCES

The IC must mobilise sufficient equipment and personnel resources to manage the incident response.

- All labour mobilised needs to be carefully tracked
- Each person participating in the response needs to register using a Labour Registration Form (235) and be provided with an induction outlining
- Administrative requirement
- PPA Safety and Incident reporting requirements
- Outline of the response
- PPA point of contact
- Accommodation and meal arrangements.

The Executive Advisory Group (EAG), through the EAG Co-Ordinator (Co-ordinator, OSRC), will assist in the initial location and mobilisation of resources including the State Response Team (SRT).

The Australian Maritime Safety Authority, Environment Protection Response (AMSA, EPR) can also assist in the provision of National Plan equipment and National Response Team (NRT) personnel and can be co-ordinated through the EAG Co-Ordinator.

7.1 Safety and Hazard Management

The protection of people from harm is the highest response priority. All response activities must be undertaken safely, in compliance with PPA standard operating procedures, and with consideration for the risks outlined below.

All personnel must comply with:

- PPA Occupational Safety and Health Policy
- PPA Fitness for Duty – Drug and Alcohol Policy
- PPA Fitness for Duty Policy – Fatigue Management Policy
- PPA Hazard Management Procedure
- PPA PPE Procedure
- PPA Incident Management Policy.

Oil Spill response actions have inherent risks/ hazards associated with them due to the toxicity and nature of the oil, the use of machinery, the weather, and presence of wildlife. The PPA Hazard Management Procedure requires that the hazards associated with each task are identified and documented, and that controls are implemented to reduce the risk to as low as reasonably practicable. PPA has developed a number of Standard Work Instructions (SWI) for deployment of response equipment, and activities:

Each team member is required to review the relevant SWI. They must also complete an individual Take 5 risk assessment to record any hazards and controls not reflected in the SWI. For any task where an SWI has not been developed, a Job Hazard Analysis (JHA) is to be completed by the team. Where the circumstances change during the response, a new Take 5 shall be conducted, and the JHA shall be reviewed in accordance with the Hazard Management Procedure. During any marine pollution response all PPE controls stated in the risk assessment shall be worn by response personnel.

Crude oil and petroleum products are complex chemical mixtures, containing aromatic hydrocarbon solvents (such as benzene) and or hydrogen sulphide. Careful analysis of the oil shall be undertaken to determine the risk to responders, with consideration for how responders may become exposed to hazardous products, such as through:

- Effects of vapours
- Inhalation
- Skin Contact and ingestion.

Additional risks may exist in the following circumstances:

- During the initial weathering stages, when oil can be particularly toxic as the light ends evaporate
- Under wharves and jetties, where the atmosphere may allow toxic gasses to build up or oxygen to be displaced.

Other risks specific to each product are outlined in the relevant Safety Data Sheet (SDS). In the event the SDS are not readily available from the vessel, a generic SDS for bunker oil can be quickly accessed via the PPA ChemAlert system at; chemalert

Please refer to the SDS to establish appropriate controls.

OSCA, degreasers, and detergents used to clean equipment present different hazards. Refer to the relevant SDS for appropriate handling precautions.

7.1.1 Other hazards typically associated with oil spill response include:

- Toxicity of the oil or OSCA
- Uneven or slippery surfaces (potential for slips and falls)
- Wildlife and plant life (potential for physical injury, inappropriate handling causing harm)
- Machinery and equipment (potential for vehicle collisions, burns, crush injuries, being struck by mobile equipment)
- Working over or near water (potential for drowning)
- Hazardous substances (potential for ingestion or dermal reaction)
- Heavy, awkward or slippery equipment (potential for manual handling injuries)
- Extreme weather conditions inherent in the Pilbara Region (potential for hypothermia, heat exhaustion, heat stroke or sun burn).

Personnel are to be mindful that gloves and other PPE become extremely slippery when oiled, increasing the time required completing simple tasks. Shade is to be erected close to the work site, and water made available for all responders.

In case of emergency, personnel shall need to contact the VTS on 08 9159 6573 or VHF 14, in accordance with the PPA Port of Ashburton Emergency Response Procedures.

All hazards and other incidents including injuries, property damage, and near misses must be reported to the relevant team leader immediately and addressed in accordance with the PPA Incident Management Procedure.

7.2 Mobilisation of Additional Resources

The activation of additional resources is through the Jurisdictional Authority with initial requests to be made via the MEER Duty Officer through the 24-hour reporting number (08) 9480 9924. The MEER Duty Officer will respond to all resource requests as per the DoT Mobilisation of Oil Pollution Response Personnel and DoT MOP Equipment Mobilisation procedures available to MEER via the DoT Intranet.

8. RESPONSE TERMINATION

8.1 Responsibility for Terminating the Response

As the response progresses a determination on the end point will be required as per below:

Level 1 – IC in consultation with advisory group

Level 2 and 3 – As determined by the SMEEC

For guidance refer AMSA foreshore assessment:
https://www.amsa.gov.au/sites/default/files/2015-11-mp-gui025-response-assessment-cleaning-foreshores_0.pdf

8.2 Investigation and Reporting

An investigation into the incident may be conducted by the Australian Transport Safety Bureau (ATSB), AMSA or the WA Department of Transport (DOT) Marine Safety Investigation Unit (MSIU). These organisations will perform the role of the investigation function. The IMT is to provide support and assistance as required.

8.3 Cost Recovery

Response and recovery for MOP emergency is funded on the basis of the polluter pays. For shipping, this is achieved through the implementation of relevant international conventions under the auspices of the International Maritime Organisation (IMO). For the offshore petroleum industry, this is achieved through the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* for Australian Government and the *Petroleum (Submerged Lands) Act 1982* for State.

The Controlling Agency is responsible for initiating and preparing claims for cost recovery in line with the polluter pays principles outlined in the National Plan, AMSA guidance on cost recovery and relevant legislation.

All records of costs must be collated for submission to the relevant Insurer.

All costs incurred in returning equipment to the owner, cleaning and servicing must be included in the overall schedule of costs submitted for reimbursement by the polluter.

8.3.1 Mobilising Personnel

For a large scale, ongoing response of all labour that has been mobilised needs to be carefully tracked. It is important to note that PPA have limited staff resident in Onslow therefore all responders will require to mobilise to site from other PPA sites. Each person participating in the response needs to register using a Labour Registration Form (WM01) and be provided with an induction outlining:

- Administrative requirement
- PPA Safety and Incident reporting requirements
- Outline of the response
- PPA point of contact
- Accommodation and meal arrangements.

9. EQUIPMENT AND CAPABILITY MAINTENANCE

PPA has a strong commitment to maintaining a high level of marine pollution response preparedness. In order to ensure that PPA meets its obligations, PPA has a multi-facet-ted approach to preparedness and response arrangements that includes:

- Planning
- Equipment
- Training
- Exercises
- Continuous review and improvement.

ANNEX 1: OIL SPILL RESPONSE EQUIPMENT

EQUIPMENT	TOTAL
GP boom 500	600m
Anchor/tow bridles	8
Anchor kits	25
Large (25kg) stingray anchor kit	2
Tandem axle galvanised off road flatbed road trailer with boom box/cage	1
Portable 10,000L Fastanks	2
Foilex mini weir skimmer	1
PD75 spate pump pull start	2
Vehicles	
Tractor (4x4) with fork lift attachment and Hydraulic PTO	1
Tracked bobcat (high flow hydraulic pump to run skimmer) fork lift attachment	1

EQUIPMENT	TOTAL
Deployment Ancillaries	
Tide slide w floating ASTM boom connector for MOF sheet pile wall	1
HDPE fairlead for boom deployment off the wharf	1
Shipside magnetic boom connectors	2
Vessels x 2	
Tuff Tender outboard motor small (4/5m) shallow draft work boat 15hp	1
10m landing craft style vessel	1

ANNEX 2: ESTABLISHING ICC AND IMT

PROCEDURE PPA - A		ESTABLISHING THE PORT OF ASHBURTON INCIDENT CONTROL CENTRE (ICC)		A
Task	Action		Location	Status
1.0	Obtain and/or assign ICC equipment.			
1.1	Communications.			
	a	Telephone Lines		
	b	Fax lines (at least 2)		
	c	Radio frequency (as required).		
1.2	Information Display.			
	a	Set of laminated Status Boards.		
	b	Set of forms (minimum of 5 sets.)		
	c	Regional Maps;		
		i	Nautical charts.	
		ii	Topographic maps (2 sets of 1:50,000).	
	d	Clear plastic sheets, to cover maps (4m x 1m).		
	e	Overhead projector (in nominated briefing room)		
	f	Whiteboards (1 or 2)		
1.3	Stationary.			
	a	Whiteboard markers (5-10 mixed colours).		
	b	Ballpoint pens (10 black, 10 red).		
	c	Pencils (20 each of HB, B, 2B).		
	d	Rulers (5 x 30cm and 2 x 100cm).		

PROCEDURE PPA - A		ESTABLISHING THE PORT OF ASHBURTON INCIDENT CONTROL CENTRE (ICC)		A
	e	Adhesive tape (5 rolls).		
	f	Paper clips.		
	g	Staplers (5) and staples.		
	h	Manila folders (20).		
	i	A4 white paper (2 packs)		
	j	A4 Plastic transparent sleeves (1 box, 20/25)		
	k	Bulldog clips (25 mixed sizes).		
	l	A4 spring clip folders/binders (10).		
	m	Transparency sheets (20.)		
1.4	Computers (see Communications line 8 also).			
	a	Nominates 2 computers for admin work, if required.		
	b	Printers (at least 2).		
1.5	Administration / Document Storage.			
	a	Photocopier.		
	b	Document (“in” and “out”) trays (6 – 8).		
	c	Hanging file trays and file folders.		
1.6	Copy(s) of the PPA OSCP and Appendices			
1.7	Tables and chairs.			
2.0	ICC Set up			
2.1	Order and obtain any items needed (lines 1.1-1.5)			
2.2	Clean white-boards.			
2.3	Check connections of telephones, faxes.			
2.4	Place OSCPs on the table for references.			
2.5	Advise switchboard to direct incoming calls to the ICC.			
2.6	Display appropriate Maps, Status Boards, Charts (Cover with plastic if not laminated)			

END OF PROCEDURE A

PROCEDURE PPA - B		PLANNING MEETINGS SCHEDULE & PREPARATION OF THE INCIDENT ACTION PLAN				B
Phase / Task		Action			Responsibility	Check
Meeting	1	Briefing on situation.				
		a	Current situation.			
			i	Spill location		
			ii	Spill size		
			iii	Control / Combat Agencies.		
			iv	Response Tier / resources mobilised.		
		b	Predicted situation:			
			i	Trajectory.		
			ii	Resources at risk / potential effects.		
	2	State Aim (or Policy) of Response.				
	3	Develop and rank response objectives, based on protection priorities.				
	4	Develop Strategies for each Objectives.				
	5	Develop Tactics for each Strategy.				
	6	Identify and obtain any permits required for strategies (e.g. dispersant use).				
	7	Document Aim, Objectives and Strategies i.e. prepare Draft Incident Action Plan.				
	8	Prepare/Review Sub-Plans:				
		a	Communications Sub-Plan.			
		b	OH&S Sub-Plan.			
		c	Wildlife Sub-Plan.			
		d	Media Sub-Plan.			
	9	Determine need for and location of, Advanced Operations Centres or Staging Areas.				
	10	Document Incident Action Plan (IAP)				
	11	Prepare revised lists of resource Needs.				
	12	Approve IAP				

ANNEX 3: CLASSIFICATION OF OILS

Oils are generally classified by the American Petroleum Institute gravity scale in to groups. The Oil Groups and Properties Table outline the grouping of oils based on specific gravity. Oils within each group will generally have similar viscosity, spreading rates and pour points. Oils within each group will have a similar fate in the marine environment. The Table below outlines the general fate of the oil in the marine environment.

OIL GROUPS AND PROPERTIES					
Group	Specific Gravity	API Gravity	Viscosity (cSt at 15°C)	% Boiling < 200°C	% Boiling > 370°C
I	< 0.8	>45	0.5 – 2/0	50 - 100	0
II	0.8 – 0.85	35 – 45	4 – solid	10 – 48	0 – 40
III	0.85 – 0.95	17.5 – 35	8 – solid	14 – 34	28 – 60
IV	0.95 – 1.0	< 17.5	1500 - solid	3 - 34	33 - 92

FATE OF OILS IN THE MARINE ENVIRONMENT				
Weathering Process	Group I	Group II	Group III	Group IV
Spreading	Rapid	Rapid	Rapid	None
Evaporation	High	Moderate	Moderate	None
Emulsification	Little or no tendency	Low to Moderate	Moderate to High	High
Physical dispersion	Rapid	Moderate to Rapid	Moderate to Slow	Slow
Dissolution	Little	Low	Little	Little or none
Photo – oxidation	Not significant	Not significant	Not significant	Not significant
Sedimentation	Very low probability	Very low probability	Low Probability	Low probability unless in contact with sediment

More information on the properties and weathering of oil can be found in the ITOPF Technical Information Paper 2 Fate of Marine Oil Spills and The Global Oil and Gas Industry Association for Environmental and Social Issues (IPIECA) Finding 19 Guidelines on Oil Characterisation to Inform Spill Response Decisions.

Diesel (MGO, NATO F76 or G10)

Diesel is a refined product, light petroleum distillate which is a Group II oil with a relatively low specific gravity and low pour point (-17 to -30°C). Diesel is a light persistent oil which will weather and evaporate rapidly. However, when present in large quantities, diesel will present a significant risk to the marine environment.

Diesel, once in the water will spread rapidly with potentially small quantities covering large areas. In summer conditions the oil will evaporate rapidly and with wave action and mixing the slick will rapidly weather and dissipate. In summer conditions, potentially up to 80% of the volume will be lost through evaporation in the first hour.

In winter conditions, diesel will be more persistent. The oil will rapidly spread but will not lose as much volume through evaporation. Wave action and mixing will still allow for weathering and dissipation of the oil. Diesel will not emulsify in climatic conditions experienced in Ashburton.

Intermediate Fuel Oil and Heavy Fuel Oils

IFO and HFO are residual refined product with a higher specific density and high viscosity. IFO and HFO are of variable composition with a high specific gravity. IFO 180 is a Group III oil and IFO 360 is a Group IV oil. Both are highly persistent.

Once in the water IFO and HFO will emulsify with a water content of up to 80 percent. The light ends or volatile aromatic components will evaporate leaving heavier residuals. This means the specific gravity will increase with time. IFO and HFO will not readily spread and can be expected to fragment and form patches. IFO and HFO will show little tendency to disperse or dissolve.

As IFO emulsifies it will be less reactive to Oil Spill Control Agents (OSCA). HFO's viscosity is too high to be treatable with OSCA.

Light Petroleum Products (ULP, Jet A1 or Avgas)

Other light petroleum products such as ULP and Avgas are extremely volatile. These oils will spread rapidly with high physical dispersions and evaporation. These products will weather rapidly and dissipate unless present in large volumes. Careful assessment of the safety aspects is required when responding to these light petroleum products as they are potentially highly flammable and potentially very toxic.

Condensate

Natural-gas condensate is a low-density mixture of hydrocarbon liquids that are present as gaseous components in the raw natural gas produced from many natural gas fields.

Some gas species within the raw natural gas will condense to a liquid state if the temperature is reduced to below the hydrocarbon dew point temperature at a set pressure.

There are many condensate sources worldwide and each has its own unique gas condensate composition. However, in general, gas condensate has a specific gravity ranging from 0.5 to 0.8, and is composed of hydrocarbons such as propane, butane, pentane, hexane, etc. Natural gas compounds with more carbon atoms (e.g. pentane, or blends of butane, pentane and other hydrocarbons with additional carbon atoms) exist as liquids at ambient temperatures. Additionally, condensate may contain additional impurities such as: Hydrogen Sulphide, Cyclohexane, Naphthenes, Aromatics (benzene, toluene, xylenes, and ethylbenzene)

A leak or rupture of a pipeline line may result in the release of substantial quantities of gas and condensate. Stemming the leak in the line may take some time.

Although condensate is highly toxic to marine life, the major risk is **fire or explosion**.

All precautions against potential ignition must be taken.

All non-essential personnel are to be cleared from the area.

A **3 nautical** mile exclusion zone is to be established for vessels

A **no-fly zone** established for aircraft.

The IC is to consider declaring a **Level 3 event**.

Oil spill booms should not be used to contain the spill, the most effective option is to allow the product to spread rapidly. This will assist with evaporation, natural dispersion and dissolution.

The ambient temperatures and prevailing winds in the Pilbara will assist with rapid spreading rates and volume loss of condensate see the Tables at the end of this document evaporation; approximately 70% of the volume will evaporate within less than an hour.

Spills of other substances

If the substance spilled is not known, or the spill involves both oil and another chemical, the IC must ensure that the HAZMAT HMA (Fire and Emergency Services Authority - FESA) is notified.

. DFES will be a Combat Agency for the HAZMAT component of the emergency. *Refer section 4.1.2 of State Hazard Plan [HAZMAT]*

https://semc.wa.gov.au/emergency-management/plans/state-hazard-plans/Documents/StateHazardPlanHAZMAT.pdf

ANNEX 4: PILBARA PORTS AUTHORITY TRAINING

PPA has a strong commitment to maintaining a high level of response preparedness. In order to ensure that PPA meets its obligations for preparedness and marine pollution emergency response PPA-PoA has a multi-facetted approach to preparedness that encompasses:

- Planning
- Equipment
- Training
- Annual exercise
- Continuous improvement.

In order to meet PPA-PoA preparedness, the Executive has approved the following training for Port of Ashburton based staff;

Senior Operations Managers

- AIIMS Level 2
- Media training
- Designated Incident Controllers
- AMSA National Plan Incident Control Course
- Media training.

Designated Functional Heads

- National Plan training for nominated functional area
- National Plan IMT Course
- IMT Staff either
- AMSA National Plan IMT
- Level 1 Incident Management Course.

OSIRT

- Attend OSIRT training 4 times a year
- DOT Oiled Shoreline Course
- DOT Basic Operators Course
- All Staff
- Oil Spill familiarisation training
- OSIRT Training on an opportunity basis
- Operations Staff
- National Plan Online Introduction to Marine Pollution.

10. PROCESS OWNER

The Harbour Master is responsible for this External Document.

Date approved:	28/11/2019	Review date:	29/11/2020
Version:	7	Approved by:	General Manager Operations

APPENDEX A – PORT OF ASHBURTON FIRST STRIKE PLAN

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APPENDEX B – FORMS AND CHECKLIST

These Checklists are available from Objective: FA17234

	INDEX	
NUMBER	CHECKLIST	DATE
212	INCIDENT ACTION PLAN PPA	
213	AERIAL OBSERVATION REPORT PPA	
214	RESPONDER CONTACT LIST PPA	
215	ENVIRONMENTAL SITREP PPA	
216	EQUIPMENT PERSONNEL DEPLOYMENT /SITREP	
217	EQUIPMENT TRACKING LOG PPA	
218	GENERAL WORK ORDER FORM PPA	
219	IMT - KEY ROLE ALLOCATION AND CONTACTS	
220	PERSONAL LOG OR SECTION UNIT LOG PPA	
221	PERSONNEL ASSIGNMENT FORM PPA	
222	PERSONNEL REQUISITION - ALLOCATION PPA	
223	PERSONNEL REQUISITION - ALLOCATION PPA	
224	RESPONDER TIME SHEET CURRENT PPA	
225	IMT RESPOSNSE PERONNEL PPA	
226	SHORELINE OILING ASSESSMENT FORM PPA	
227	SHORELINE STATUS TRACKING FORM PPA	
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231	MEDICAL RESOURCES PPA	
232	OPERATIONS AIR OPS DIVISIONS ASSIGNMENT	
233	OPERATIONS MARINE DIVISIONS ASSSGNMENT	
234	RADIO COMMUNICATIONS ALLOCATION	
235	LABOUR REGISTRATION FORM PPA	
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