



# National Marine Pollution Contingency Plan

Republic of Namibia





## FOREWORD

It is now nearly 10 years since Namibia's 1<sup>st</sup> National Oil Spill Contingency Plan (NOSCP) was approved by Cabinet, giving effect to Namibia's obligations under the United Nations Convention on the Law of the Sea, 1982 and the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990.

The NOSCP provided for a coordinated and integrated national system for dealing with oil spills in Namibian waters and was characterised by willing and effective cooperation between Government and industry.

However, the system is no longer sufficient nor sustainable to effectively manage the fast evolving risk profile, which is driven primarily by the growth and significance of the Port of Walvis Bay as a gateway to Southern Africa.

One of the effects of our conscious national efforts in positioning Namibia as regional logistics hub is that, more than ever before, more and bigger ships are visiting our ports to carry our imports and exports as well that of neighbouring states.

In addition, Namibia is an attractive investment destination for offshore energy exploration and production, which is crucial to our energy security and socio-economic development.

Unfortunately, the above economic activities also mean that the risk of a serious marine pollution, not only from oil but also from hazardous and noxious substances (HNS), is greater than before. This threatens our marine resources and the coastline, which - in its entirety - is classified as a national park and is endowed with many biological and socio-economic resources.

Therefore, Namibia had to review its marine pollution preparedness and response system in order to make it more responsive to the prevailing risk scenarios and align it to international best practices. This included completely revising the oil-focused NOSCP and renaming it the National Marine Pollution Contingency Plan (NMPCP) which makes provision for HNS in line with the Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances, 2000.

This new National Plan espouses a sustainable funding model while recognising the need to develop and maintain a shared responsibility, and the commitment of all stakeholders in order to provide effective marine pollution prevention, preparedness and response services in Namibia, the region and internationally.

In conclusion, I urge all stakeholders involved in marine pollution management to use the renewed strategic focus provided by this new National Plan to reinforce the entire system at ship, port, local, regional and national levels.

**Right Hon. Saara Kuugongelwa-Amashila, MP.**  
**PRIME MINISTER OF THE REPUBLIC OF NAMIBIA**

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | ii   |



## POLICY STATEMENT

The Government of the Republic of Namibia (GRN) is conscious of the need to preserve and protect human health and the natural environment from the ever-present risk of oil and chemical pollutions in the Namibian marine environment.

GRN recognizes that this risk can, to a large degree, be posed by shipping and offshore oil and gas exploration operations in the coastal and offshore environments, including vessels, platforms, pipelines, ports and oil and chemical handling facilities.

GRN is mindful of the importance of precautionary measures and prevention in avoiding marine pollution in the first instance, as well as that, in the event of an oil or chemical pollution incident, prompt and effective action is essential in order to minimize the damage which may result from such an incident.

GRN recognizes that the current funding model for oil and chemical pollution management in Namibia is neither sufficient nor sustainable as it places a burden on the tax payer, who does not create the risk.

GRN emphasizes the importance of effective preparation for combating oil and chemical pollution incidents and the important role which the oil and maritime industry play in this regard.

GRN recognizes the important role played by local and international Marine Pollution Response Organizations (MPRO) in developing and maintaining an effective marine pollution preparedness and response system.

GRN is committed to ensuring that appropriate measures are taken in accordance with all relevant local legislation, standards, best industry practices and all relevant International Conventions acceded to or ratified by the Republic of Namibia.

GRN therefore:

1. Reaffirms that the responsibility for the prevention, abatement and combating of oil and chemical pollution within the Namibian waters, including the Exclusive Economic Zone (EEZ) lies with the Ministry of Works and Transport (MWT) acting in cooperation with other Government and industry institutions;
2. Mandates that this National Marine Pollution Contingency Plan (NMPCP/the National Plan) - providing for a coordinated response action in minimizing the detrimental effects of oil and chemical pollutions at sea is implemented, regularly updated and rehearsed;
3. Mandates the establishment of the National Marine Pollution Contingency Organization (MPCO) comprising of relevant structures that will function as the initiators and coordinators of marine pollution contingency planning and response for Namibia;

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | iii  |



4. Mandates that a binding cooperation agreement is concluded between Government institutions in order to ensure maximum cooperation between such institutions in furthering the objectives of the NMPCP;
5. Mandates the establishment of a sustainable funding regime for both oil and chemical pollution preparedness and response. This regime should place the burden on the potential polluter and the polluter rather than on the tax payer.
6. Mandates that entities involved in oil and gas activities, including but not limited to, oil, gas, petrochemical, storage and bunkering operations, must have the ability to manage their own Tier 1 pollutions and have arrangements in place to access Tier 2 and Tier 3 MPROs in order to mount an effective pollution response;
7. Mandates that all MPROs, marine salvage, marine waste management and marine pollution training entities be registered with MWT before providing such services in Namibia in terms of the NMPCP;
8. Encourages and supports research in marine pollution response, especially in relation to prevention, containment and mitigation methods, including mechanical and chemical means;
9. Encourages and promotes regional and international cooperation in the area of oil and chemical pollution preparedness and response.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | iv   |



## TABLE OF CONTENTS

|  |           |
|--|-----------|
| FOREWORD.....  | ii        |
| POLICY STATEMENT.....  | iii       |
| TABLE OF CONTENTS.....   | v         |
| AMENDMENTS.....  | viii      |
| ABBREVIATIONS AND ACRONYMS.....  | ix        |
| GLOSSARY OF TERMS.....   | xi        |
| <b>PART 1 – ADMINISTRATIVE ARRANGEMENTS.....</b>                       | <b>1</b>  |
| 1.1 Background.....  | 1         |
| 1.2 Purpose of the National Plan.....                                  | 1         |
| 1.3 Principles of the National Plan.....                               | 1         |
| 1.4 Scope of the National Plan.....                                    | 4         |
| 1.5 Structure of this document.....                                    | 4         |
| <b>PART 2 – NATIONAL PLAN GOVERNANCE AND MANAGEMENT.....</b>           | <b>6</b>  |
| 2.1 Legal and administrative basis for the National Plan.....          | 6         |
| 2.2 Governance.....  | 11        |
| 2.3 Management of the National Plan.....                               | 13        |
| 2.4 Roles and responsibilities.....                                    | 15        |
| 2.5 Strategic coordination of emergencies of national consequence..... | 16        |
| 2.6 International support.....   | 18        |
| <b>PART 3 – PREVENTION OF MARINE POLLUTION INCIDENTS.....</b>          | <b>19</b> |
| 3.1 Scope of prevention.....   | 19        |
| 3.2 Responsibility of the shipowner.....                               | 19        |
| 3.3 Casualty Coordinator.....  | 19        |
| 3.4 Maritime Assistance Services.....                                  | 20        |
| 3.5 Casualty Management System.....                                    | 20        |
| 3.6 Emergency towage.....  | 21        |
| 3.7 Places of refuge.....  | 21        |
| <b>PART 4 – PREPARING FOR MARINE POLLUTION INCIDENTS.....</b>          | <b>23</b> |
| 4.1 Scope of preparedness.....   | 23        |
| 4.2 Contingency planning.....  | 23        |
| 4.3 Community awareness and engagement.....                            | 23        |
| 4.4 Capability development.....  | 24        |

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | v    |



4.5 Training and development..... 27

4.6 National Plan exercises ..... 28

4.7 Research and development..... 29

**PART 5 – RESPONDING TO MARINE POLLUTION INCIDENTS..... 30**

5.1 Scope of response..... 30

5.2 Incident Management System ..... 30

5.3 Response planning..... 35

5.4 Response initiation ..... 36

5.5 Response escalation..... 40

5.6 Assessment and decision support ..... 41

5.7 Hazardous and noxious substance response ..... 41

5.8 Wildlife response ..... 43

5.9 Waste management ..... 43

5.10 Health and safety..... 44

5.11 Response termination..... 44

5.12 Post incident response analysis..... 44

**PART 6 - RECOVERING FROM MARINE POLLUTION INCIDENTS ..... 46**

6.1 Scope of recovery..... 46

6.2 Principles for recovery ..... 46

6.3 Recovery functions..... 46

6.4 Recovery arrangements and the National Plan ..... 48

6.5 Impact assessment ..... 50

6.6 Communicating with the community..... 50

**PART 7 - COST RECOVERY ..... 51**

7.1 Scope of cost recovery ..... 51

7.2 International maritime arrangements..... 52

7.3 Domestic maritime arrangements ..... 52

7.4 Offshore petroleum sector arrangements..... 53

**APPENDIX A- METEOCEAN CONDITIONS OFF NAMIBIA..... 54**

**APPENDIX C – OIL AND CHEMICAL SPILL VULNERABILITY: COASTAL RESOURCES AT RISK..... 59**

**APPENDIX D – ROLES AND RESPONSIBILITIES OF GOVERNMENT OFFICES, MINISTRIES AND AGENCIES AND OTHER INSTITUTIONS..... 60**

**APPENDIX E – SAMPLING PROCEDURES FOR OIL SPILLS..... 68**

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | vi   |



APPENDIX F – GOVERNMENT-CONTROLLED LOCALLY AVAILABLE OIL SPILL  
 REPONSES RESOURCES ..... 70

APPENDIX G– PRIVATELY -CONTROLLED LOCALLY AVAILABLE OIL SPILL  
 REPONSES RESOURCES ..... 71

APPENDIX H – OIL POLLUTION TRAJECTORY MODELLING (OPTM) REQUEST FORM 72

APPENDIX I – PUBLIC RELATIONS..... 74

APPENDIX J– SPILL RESPONSE AND CLEAN-UP STRATEGIES..... 76

APPENDIX K – MARINE POLLUTION SITUATION REPORT (SITREP) FORMAT ..... 83

APPENDIX L – VESSEL CHARTER AGREEMENT (EXAMPLE ONLY)..... 84

APPENDIX M – TRAINING AND EXERCISES..... 86

APPENDIX N - STANDARD POLLUTION OBSERVATION/DETECTION LOG..... 90

APPENDIX O –MARINE POLLUTION REPORT (POLREP) FORMAT ..... 92

APPENDIX P – USE OF CHEMICAL DISPERSANTS ..... 95

APPENDIX Q –CONTACT LIST ..... 97

APPENDIX R - INCIDENT COMMAND POST ..... 98

APPENDIX S – REFERENCES/BIBLIOGRAPHY ..... 100

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | vii  |



## AMENDMENTS

The National Plan is under continual review and will be updated as necessary. It is promulgated online for the use of all interested parties. The Internet version is the controlled document and is the latest version of this manual. The online version should therefore always be referred to as it contains the most up to date information.

Suggestions and questions regarding this National Plan should be forwarded to:

The Permanent Secretary  
Ministry of Works and Transport  
Private Bag 13341  
Ausspannplatz  
Windhoek, Namibia

Attention: Directorate of Maritime Affairs

Approved amendments will be recorded in the table below.

| No | Amendment date | Summary of amendment  | Part             | Proposed by |
|----|----------------|---|------------------|-------------|
| 1  | 31/8/2017      | Corrected typographical error in Policy Statement   | Policy Statement | MTW/DMA     |
| 2  | 31/8/2017      | Added new part on Amendments  | New              | MWT/DMA     |
| 3  | 31/8/2017      | Revised the main functions of the Management Committee to reflect the strategic role of the MC and differentiate its role from that of the Operations Team (OT)   | Part 2.2         | MWT/DMA     |
| 4  | 31/8/2017      | Deleted the suggested working groups of the OT to allow for discretion in the creation of working groups. Revised the role of the OT to include responsibilities of the Field Response Team (FRT), which is removed from the structure. Renumbered. | Part 2.2         | MWT/DMA     |
| 5  | 31/8/2017      | Deleted part 4.4.3. Removed FRT as per amendment 4 above and renumbered.  | Part 4.4         | MWT/DMA     |
| 6  | 31/8/2017      | Deleted reference to FRT. Renumbered.   | All parts        | MWT/DMA     |
|    |                |   |                  |             |
|    |                |   |                  |             |
|    |                |   |                  |             |
|    |                |   |                  |             |

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | viii |



## ABBREVIATIONS AND ACRONYMS

|                    |  |
|--------------------|--|
| Abidjan Convention | Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central Africa Region, 1981. |
| ALARP              | As Low as Reasonably Practicable   |
| BCLME              | Benguela Current Large Marine Ecosystem  |
| CC                 | Casualty Coordinator   |
| CLC                | International Convention on Civil Liability for Oil Pollution Damage (CLC), 1992.  |
| CSIR               | Council for Scientific and Industrial Research   |
| DDRM               | Directorate of Disaster Risk Management  |
| DMA                | Directorate of Maritime Affairs  |
| EEZ                | Exclusive Economic Zone  |
| EMP                | Environmental Management Plan  |
| ESC                | Ecosystem and Scientific Coordinator   |
| ESI                | Environmental Sensitivity Index  |
| ETC                | Emergency Towage Capability  |
| ETV                | Emergency Towage Vessel  |
| EWG                | Environment Working Group  |
| FAO                | Finance and Administration Officer   |
| FMPCP              | Facility Marine Pollution Contingency Plan   |
| FUND               | International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992.                          |
| FWADC              | Fixed Wing Aerial Dispersant Capability  |
| GATTS              | Government Air Transport Service   |
| GIS                | Geographic Information Systems   |
| HAZMAT             | Hazardous Materials  |
| HFO                | Heavy Fuel Oil   |
| HNS                | Hazardous and Noxious Substance  |
| IAP                | Incident Action Plan   |
| IC                 | Incident Commander   |
| ICP                | Incident Command Post  |
| ICS                | Incident Command System  |
| IMO                | International Maritime Organization  |
| IMS                | Incident Management System   |
| IMT                | Incident Management Team   |
| IOPC               | International Oil Pollution Compensation Funds   |
| IPIECA             | International Petroleum Industry Environmental Conservation Association  |
| ITOPF              | International Tanker Owners Pollution Federation   |
| LNG                | Liquefied Natural Gas  |
| LO                 | Logistics Officer  |
| LPG                | Liquefied Petroleum Gas  |
| MARPOL             | International Convention for the Prevention of Pollution from Ships  |
| MAS                | Maritime Assistance Service  |
| MC                 | Management Committee   |
| MEPC               | Marine Environment Protection Committee  |
| MET                | Ministry of Environment and Tourism  |
| MFMR               | Ministry of Fisheries and Marine Resources   |
| MHAI               | Ministry of Home Affairs and Immigration   |
| MICT               | Ministry of Information and Communications Technology  |
| MIRC               | Ministry of International Relations and Cooperation  |
| MME                | Ministry of Mines and Energy   |
| MNYSSC             | Ministry of National Youth Service, Sport and Culture  |
| MoF                | Ministry of Finance  |
| MOU                | Memorandum of Understanding  |
| MPF                | Marine Pollution Fund  |
| MPRC               | Marine Pollution Reporting Centre  |
| MPRO               | Marine Pollution Response Organization   |

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | ix   |



|                   |  |
|-------------------|--|
| MRC               | Maritime Rescue Centre   |
| MSS               | Ministry of Safety and Security  |
| MWT               | Ministry of Works and Transport  |
| NAMCOR            | National Petroleum Corporation of Namibia  |
| NAMPORT           | Namibian Ports Authority   |
| NDF               | Namibian Defence Force   |
| NEBA              | Net Environment Benefit Analysis   |
| NEBOSH            | National Examination Board in Occupational Safety and Health   |
| NIMPA             | Namibia Islands Marine Protected Area  |
| NMPCO             | National Marine Pollution Contingency Organization   |
| NMPCP             | National Marine Pollution Contingency Plan   |
| NMPRC             | National Marine Pollution Response Centre  |
| NMS               | Namibia Metrological Service   |
| NOSRA             | National Oil Spill Risk Assessment   |
| NRMC              | National Risk Management Committee   |
| OAG               | Office of the Attorney General   |
| OCOWG             | Oil and Chemicals Operations Working Group   |
| OMA               | Offices, Ministries and Agencies   |
| OO                | Operations Officer   |
| OPM               | Office of the Prime Minister   |
| OPRC              | International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990                               |
| OPRC-HNS Protocol | Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances, 2000 |
| OSC               | On-Scene Commander   |
| OSCA              | Oil Spill Control Agent  |
| OSCP              | Oil Spill Contingency Plan   |
| OSRA              | Oil Spill Response Atlas   |
| OSRL              | Oil Spill Response Limited   |
| OSRO              | Oil Spill Response Organization  |
| OT                | Operations Team  |
| P&I Club          | Protection and Indemnity Club  |
| PMPCP             | Port Marine Pollution Contingency Plan   |
| PO                | Planning Officer   |
| POLREP            | Pollution Report   |
| PRO               | Public Relations Officer   |
| RC                | Response Coordinator   |
| SADC              | Southern Africa Development Community  |
| SAMTRAC           | Safety Management Training Course  |
| SAR               | Search and Rescue  |
| SCAT              | Shoreline Cleanup and Assessment Technique   |
| SHE               | Safety Health and Environment  |
| SITREP            | Situation Report   |
| SOLAS             | Safety of Life at Sea - derived from the International Convention for the Safety of Life at Sea                      |
| SOPEP             | Shipboard Oil Pollution Emergency Plan   |
| SVOC              | Semi-Volatile Organic Compounds  |
| UNCLOS            | United Nations Convention on the Law of the Sea, 1982  |
| VHF               | Very High Frequency  |
| VOC               | Volatile Organic Compounds   |

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | x    |



## GLOSSARY OF TERMS

For clarity, and in the context of this document:

**Baseline** is the low water mark from which Namibia's maritime zones are measured.

**Bioremediation** is the process of using living organisms to break down the molecular structure of oil into less complex substances that is not hazardous or regulated. This is often undertaken using hydrocarbon-eating microbes introduced to a contaminated site in large numbers. Nutrients are often added to speed up the organisms' digestion of the oil, and reproduction.

**Bunker** means a heavy fuel oil, intermediate fuel oil, blended distillate or diesel used as a vessel's fuel.

**Catastrophic pollution** is large-scale pollution owing to unusual conditions, which is likely to have severe environmental consequences, and where the likelihood of occurrence is impossible to predict.

**Chemical dispersant** is a chemical formulation containing non-ionic surface active agents that lower the surface tension between oil and water, and enable oil film to break up more easily and disperse within the water with natural or mechanical agitation.

**Chemical terminal** means a chemical refinery and/or chemical storage/distribution facilities with access to a maritime facility, but not including the maritime facility.

**Command** means the internal direction of the members and resources of an agency in performance of the organisation's roles and tasks. Command operates vertically within an organisation.

**Community** means a group with a commonality of association and generally defined by location, shared experience or function.

**Contingency plan** means a plan of action prepared in anticipation of an incident. In this case the contingency is for a pollution incident in the marine environment. The contingency plan prepared for a site or region usually consists of guidelines and operating instructions intended to increase the efficiency and effectiveness of clean-up operations and to protect areas of biological, social and economic importance.

**Control** means the overall direction of emergency management activities during an emergency situation. Authority for control is established in legislation or administratively and carries with it responsibility for tasking organisations in accordance with the needs of the situation.

**Control Agency** means the agency or company assigned by legislation, administrative arrangements or within the relevant contingency plan, to control response activities to a maritime environmental emergency. The legislative or administrative mandate should be specified in the relevant contingency plan. The Control Agency will have responsibility for appointing the Incident Commander.

**Coordination** means the bringing together of organisations and other resources to support an emergency response.

**Division** means an organisational unit having responsibility for operations within a defined geographic area or with a functional responsibility.

**Emergency** means an event, actual or imminent, which endangers or threatens to endanger life, property or the environment, and which requires a significant and coordinated response. The term emergency and disaster are used interchangeably within the Namibian Emergency Management System.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | xi   |



**Environment** means the complex of physical, chemical and biological agents and factors which may impact on a person or a community, and may also include social, physical and built elements, which surround and interact with a community.

**Exclusive Economic Zone (EEZ)** means the sea outside the territorial sea of Namibia but within a distance of 200 nautical miles from the low water mark from which the territorial sea was measured.

**Facility marine pollution contingency plan** means a plan prepared for a land-based site or offshore installation, which specifies the measures to be taken in respect of a marine oil pollution.

**First Strike** means a prompt initial response to protect the environment that is intended to limit the effect of an incident until such time as other resources can be deployed in support. This capability may vary from location to location.

**Habitat** means the natural home or environment of an animal, plant or other organism.

**Hazardous and Noxious Substance** means any substance which, if introduced into the marine environment, is likely to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea.

**Incident** means an event, occurrence or set of circumstances that:

- has a definite spatial extent
- has a definite duration
- calls for human intervention
- has a set of concluding conditions that can be defined
- is or will be under the control of an **Incident Commander** appointed to make decisions to control and coordinate the approach, means and actions taken to resolve the incident.

**Incident Commander** means the person responsible for the control and management of the marine pollution response incident. In major incidents, the IC is responsible to the Response Coordinator (RC). In other incidents the IC is responsible to the Control Agency.

**Incident Management Team** is the group of incident management personnel comprised of the Incident Commander and personnel appointed by the Incident Commander to be responsible for the overall control of the response to an incident.

**Industry**, unless already specified or defined in a particular context, means a business or commercial group or sector, or other socially valuable activity, such as fisheries, tourism, infrastructure, transport, etc. and their representative groups.

**Internal waters of Namibia** includes port waters and any areas of the sea that are on the landward side of the baseline from which the territorial sea of Namibia is measured.

**Marine pollution** refers to any occurrence or series of events with the same origin, including fire and explosion, which results or may result in discharge, release or emission of oil or a hazardous and noxious substance, which poses or may pose a threat to the marine environment, the coastline, animals or other resource, and which requires an emergency action or immediate response.

**Maritime casualty** means a collision of vessels, stranding or other incident of navigation, or other occurrence on board a vessel or external to it resulting in material damage or imminent threat of material damage to a vessel or cargo.

**Maritime facility** means a wharf or mooring at which a vessel can be tied up during the process of loading or unloading a cargo [or passengers]. A maritime berth may be a sole user berth [such as a dedicated berth for an oil refinery] or may be a multi-user berth [such as a berth that handles general

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | xii  |



cargo, or one that handles bulk liquids such as petroleum for more than one user of the berth (sometimes known as a common-user berth)].

**National Plan** means the National Marine Pollution Contingency Plan and all policies, guidance and advisory documents produced and published in its support.

**Net environmental benefit (NEBA)** is a process of weighing the advantages and disadvantages of taking a particular course of action (such as dispersant spraying), including recognizing the likely outcomes if the course of action is not taken (the impact of doing nothing). The result will determine if there will be a net (overall) beneficial or detrimental outcome of taking the action.

**Offshore petroleum facility** means a fixed or floating offshore installation or structure engaged in gas or oil exploration, exploitation or production activities, or loading or unloading of oil and operating in accordance with the provisions of the *Petroleum (Exploration and Production) Amendment Act, 1998* or any relevant legislation.

**Oil** means hydrocarbons in any liquid form including crude oil, fuel oil, sludge, oil refuse, refined products and condensates. Also including dissolved or dispersed hydrocarbons, whether obtained from plants or animals, mineral deposits, or by synthesis.

**Oil industry** means producers, refiners and marketers of oil, and associated carriers and service contractors.

**Oil pollution** means the actual or probable release, discharge, or escape of oil into the internal waters of Namibia or Namibia marine waters.

**Oil terminal** means a petroleum refinery and/or petroleum storage/distribution facilities with access to a maritime facility, but not including the maritime facility.

**Oil terminal operator** means a company [or joint venture] that operates an oil terminal.

**On-Scene commander** means the person designated to coordinate emergency response at the scene or incident site. The On-Scene Commander exercises delegated responsibility of the IMT, communicating closely with them and co-ordinating with vessels, aircraft or other resources at the scene.

**Petroleum** includes oil and other substances extracted in the recovery of such substances, including LNG and LPG.

**Place of refuge** means a location, such as a port, anchorage, or other suitable place, where a maritime casualty can be placed in order to stabilise its condition, minimise impact on the community and environment, and reduce the hazards to navigation.

**Pollution response** means actions taken to confirm the presence of a pollution, stop its flow from the source, contain it, collect it, protect areas from damage by it, mitigate its effects on the environment, and clean up wildlife and areas contaminated by it.

**Port authority** means the Namibian Ports Authority

**Port waters** means all areas of water within the jurisdiction of the Namibian Port Authority in terms of the applicable legislation

**Region** means, depending on context, one or more of the regions of Namibia

**Responsible Agency** see **Control Agency**.

**Responsible party** means the entity that has been identified as owning or having the legal responsibility for the vessel or facility that caused the incident.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | xiii |



**Risk** is an index of values derived from assessment of possible oil pollution scenarios, where the risk equates to the probability of a particular event occurring, multiplied by a value which represents the magnitude of the impact which the event would create.

Risk = probability x consequences

**Safe haven** means a place where a vessel can safely anchor or berth to enable measures to be taken to forestall or minimize the effects of damage (eg, to minimize the leakage of oil).

**Section** means the organisational level having responsibility for the key top level functions of incident management: planning, public information, logistics and operations.

**Shipboard Oil Pollution Emergency Plan (SOPEP):** a plan required to be carried onboard certain ships by MARPOL 73/78.

**Support Agency** means an agency or company that provides essential services, personnel, material or advice in support of the Control Agency during the response to a maritime environmental emergency.

**Terminal** (see also oil terminal and chemical terminal)

**Territorial Sea** means that part of the Namibian sea waters extending out to 12 nautical mile measured from the low water mark in terms of the Territorial Sea and Exclusive Economic Zone of Namibia Act, 1990.

**Threat** means the possible impact or consequences, which a pollution of oil could create if allowed to come in contact with a biological, social or economic resource

**Tier 1 pollution** means pollutions that are operational in nature occurring at or near an operator's own facilities, as a consequence of its own activities. The individual operator is expected to respond with their own resources. All Tier 1 sites and vessels are expected to plan for and be able to provide a response to pollution incidents for which they are responsible.

**Tier 2 pollution** means pollutions that extend outside the remit of the Tier 1 response area and possibly be larger in size, where additional resources are needed from a variety of potential sources and a broader range of stakeholders may be involved in the response.

**Tier 3 pollution** means a large pollution requiring national or international assistance. MWT, as manager of the NMPCP is expected to plan for and respond to marine oil pollutions that exceed the response capability of Tier 1 and 2, or for which no responsible party can be identified.

**Unit** means a small cell of people working within one of the sections undertaking a designated set of activities.

**Vessel (and/or ship)** has several meanings within Namibian legislation and international conventions, but for the purpose of the National Plan means a vessel of any type whatsoever operating in the marine environment, and includes hydrofoil boats, air cushion vehicles, submersibles and floating craft of any type. Throughout this document the term vessel is preferred.

Ship, shipowner and shipping are used where these make sense in context or arise from an official or formal source.

**WACAF Region** means the area covering 22 West, Central and Southern African coastal and island States from Mauritania to South Africa inclusive.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | xiv  |



## PART 1 – ADMINISTRATIVE ARRANGEMENTS

### 1.1 Background

1.1.1 The 1995 hull failure incident involving the cargo vessel *Irene*, wherein 700 metric tons of Heavy Fuel Oil (HFO) were released into Namibian waters, has highlighted the need for Namibia to develop and sustain a coordinated and integrated system for preparing and responding to ship-sourced pollution incidents.

1.1.2 This National Marine Pollution Contingency Plan (NMPCP or the National Plan) sets forth and defines Namibia’s oil and hazardous and noxious substances (HNS or chemicals) pollution preparedness and response system.

1.1.3 Previously known as the National Oil Spill Contingency Plan (NOSCP), the NMPCP was 1st approved by Cabinet in 2007 and brings together the combined resources of the:

- Central Government;
- Regional and Local Authorities;
- Oil, shipping, ports, petroleum exploration and production industries; and
- Where necessary, neighbouring States.

### 1.2 Purpose of the National Plan

1.2.1 The National Plan sets out national policies, principles and arrangements for the management of maritime environmental emergencies including potential and actual oil and chemical pollutions in the marine environment. It provides for a comprehensive response to all oil and chemical pollution emergencies in the marine environment regardless of how costs might be attributed or ultimately recovered.

### 1.3 Principles of the National Plan

1.3.1 This Plan is designed to meet the following principles as described in Table 1.

*Table 1 – NMPCP principles and management context*

| Principle  |             | Management context  |                                    |                |      |
|--|-------------|---|------------------------------------|----------------|------|
| Protect the community, environment and maritime industries |             | The National Plan provides a single comprehensive and integrated response arrangement to minimise the impacts of marine pollution from vessels and oil pollutions from offshore petroleum facilities, as well as other environmental impacts arising from a maritime environmental emergency, upon the Namibian people, environment, economy and infrastructure, cultural and heritage resources. |                                    |                |      |
| Give effect to relevant international conventions          |             | The National Plan gives administrative effect to Namibia’s emergency response obligations relating to the: <ul style="list-style-type: none"> <li>• International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC);</li> </ul>  |                                    |                |      |
| Doc ID   | Revision No | Compiled by   | Approved by                        | Effective date | Page |
| NMPCP/MWT/17   | 2.1         | MWT-DMA   | Cabinet of the Republic of Namibia | April 2017     | 1    |



|  |   |
|--|---|
|  | <ul style="list-style-type: none"> <li>• Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances, 2000 (OPRC-HNS Protocol);</li> <li>• International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 (Intervention Convention); and</li> <li>• Articles 198 and 221 of the United Nations Convention on the Law of the Sea, 1982 (UNCLOS).</li> </ul>  |
| <p>Integrate with the National Emergency Management Arrangements</p> | <p>The Namibian Emergency Management Arrangements describe how Namibia addresses the risks and impacts of hazards through a collaborative approach between the national, regional, and local authorities; business and industry; and the community. The National Plan forms an essential component of this integrated approach to disaster and emergency management by detailing arrangements across governments, industry and the community for the management of the specific threats from maritime environmental emergencies.</p>  |
| <p>Provide a comprehensive management arrangement</p>                | <p>The National Plan implements a comprehensive management arrangement through five core components:</p> <ul style="list-style-type: none"> <li>• governance and policy to ensure accountability, risk assessment, engaging with stakeholders and providing clear strategic direction;</li> <li>• prevention of marine pollution through the delivery of a system for the management of maritime casualties;</li> <li>• preparedness for marine pollution incidents through a tiered approach to contingency planning, training and development of response personnel, and maintenance of response assets and services;</li> <li>• response to marine pollution incidents through the implementation of the National Plan arrangements;</li> <li>• recovery of the community and the environment from the impacts of marine pollution.</li> </ul> |
| <p>Provide a single integrated response arrangement</p>              | <p>The National Plan recognises that the management of maritime environmental emergencies is the shared responsibility of all levels of Government, industry and business, the non-Government sector and the community. The National Plan achieves this through:</p> <ul style="list-style-type: none"> <li>• all parties fostering a cooperative relationship to ensure maritime environmental emergencies are managed in the interests of the Namibian people;</li> <li>• recognising the commitment of all stakeholders to collaboration across all levels of Government, industry stakeholders and the community;</li> <li>• emphasising the development and maintenance of cooperative relationships, teamwork, consultative decision making and shared responsibilities;</li> </ul>   |

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 2    |



|  |  |
|--|--|
|  | <ul style="list-style-type: none"> <li>• all stakeholders committing to support the National Plan arrangements when an incident occurs, regardless of source or location.</li> </ul>   |
| <p>Implement a risk management approach</p>                          | <p>The National Plan recognises that the starting point for reducing the impacts of maritime environmental emergencies lies in the understanding of the specific hazards and the social, environmental, cultural and heritage, infrastructure and economic vulnerabilities presented by these events. The National Plan is underpinned by formal risk assessment at national, regional, port, maritime facility and local scale.</p>   |
| <p>Implement the potential polluter and polluter pays principles</p> | <p>The National Plan is based on the potential polluter pays principle:</p> <ul style="list-style-type: none"> <li>• preparedness is funded on the principle that the potential polluters pay, and in general, for oil and HNS risks arising: <ul style="list-style-type: none"> <li>– from shipping: a levy will be applied to commercial shipping visiting Namibian ports;</li> <li>– from the offshore petroleum industry, operators fund arrangements to meet their specific risks .</li> </ul> </li> <li>• response and recovery is funded on the basis of the polluter pays principle: <ul style="list-style-type: none"> <li>– for shipping: this is achieved through the implementation of relevant international conventions under the auspices of the International Maritime Organization (IMO).</li> <li>– for the offshore petroleum industry; this is achieved through the relevant petroleum legislation.</li> </ul> </li> </ul> |
| <p>Provide for stakeholder engagement</p>                            | <p>The National Plan recognises that a broad range of stakeholders may be affected by a maritime environmental emergency and early engagement is important for preparedness, response and recovery. As such, the National Plan is underpinned by formal stakeholder engagement through the governance arrangements, community engagement and education programmes; and a recognition that contingency planning must include arrangements for the consideration of:</p> <ul style="list-style-type: none"> <li>• the protection of habitats;</li> <li>• the protection of fauna and flora;</li> <li>• cultural and heritage issues;</li> <li>• issuing of warnings and notices; and</li> <li>• community and industry input and feedback.</li> </ul>  |

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 3    |



## 1.4 Scope of the National Plan

### Marine Pollution Incidents

1.4.1 The National Plan applies to potential and actual pollution of the sea or harm to the marine environment by oil or HNS, originating from:

- maritime casualties requiring salvage and intervention, emergency towage and requests for a place of refuge;
- oil or HNS pollution incidents from vessels;
- oil or HNS pollution incidents from oil or chemical terminals (addressed by regional, local or port plans);
- oil or HNS pollution incidents from offshore petroleum activities;
- marine pollution from unknown sources
- marine pollution from floating or sunken containers of hazardous materials
- debris originating from a maritime casualty; or
- physical damage caused by vessels.

1.4.2 The National Plan does not contain arrangements for the management of the following hazards associated with shipping and offshore petroleum facilities:

- ballast water and marine pests, or
- marine pollutants other than oil and hazardous and noxious substances.

1.4.3 The National Plan does not apply to threats to the marine environment resulting from pest species, climate change, marine debris and rubbish, or other natural or man-made occurrences. These are managed under other regimes and arrangements.

1.4.4 While the National Plan will respond to maritime environmental emergencies as outlined above, not all costs may meet the criteria for reimbursement by either insurance or through other avenues.

### Geographical Scope

1.4.5 The geographical area covered by the National Plan is the Territorial Waters including the Exclusive Economic Zone (EEZ) of Namibia, and the High Seas, where an oil or chemical pollution has the potential to impact on Namibian interests.

1.4.6 The National Plan also applies to internal waters.

## 1.5 Structure of this document

1.5.1 This document structure reflects a comprehensive approach to maritime environmental emergency management:

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 4    |



- **Part 2 – Governance and management arrangements** sets out the arrangements for the governance and strategic management of the National Plan;
- **Part 3 – Prevention of marine pollution incidents** sets out the national arrangements to prevent the release of marine pollution from a vessel through the implementation of a strategy to manage maritime casualties;
- **Part 4 – Preparing for marine pollution incidents** sets out the national arrangements that prepare National Plan stakeholders for marine pollution incidents
- **Part 5 – Responding to marine pollution incidents** sets out the national arrangements for responding to marine pollution incidents;
- **Part 6 – Recovering from marine pollution incidents** sets out the arrangements for the recovery of responding agencies, the community and environment from a marine pollution incident; and
- **Part 7 – Cost recovery** sets out the cost recovery arrangements under the National Plan.

1.5.2 Detail and support is provided by inter-institution arrangements, guidelines, and advisory documents including those referred to in the appendixes and throughout the National Plan.

### Supporting arrangements

1.5.3 The National Plan consists of a range of legal and administrative arrangements which are applied through a tiered management structure. Figure 1 depicts this structure.

1.5.4 At the highest level, international conventions and domestic legislation provide the legal context for the National Plan. This is underpinned by national policies and implemented through regional, local, and port contingency plans.

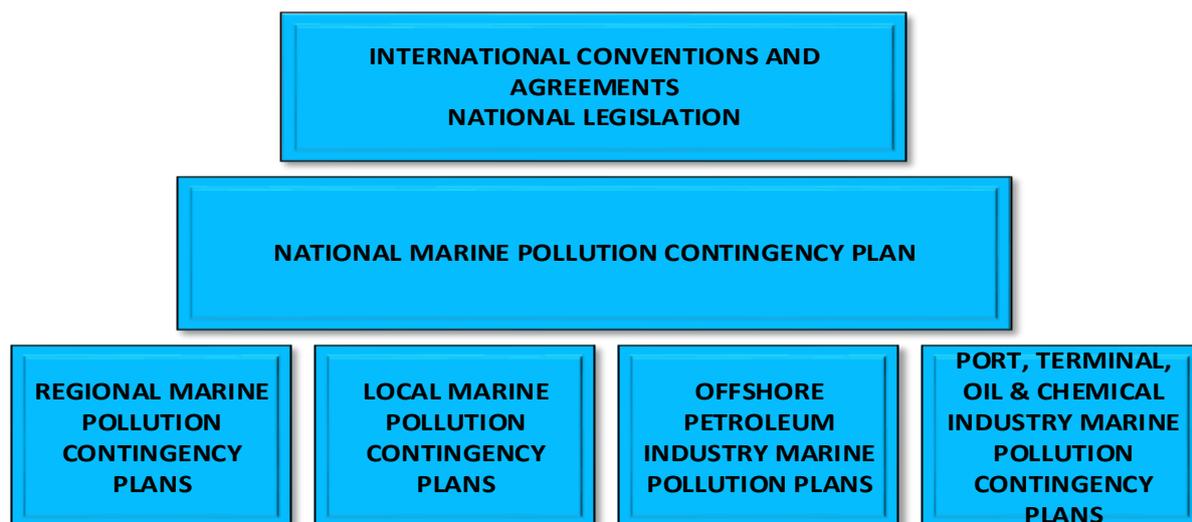


Fig 1: National Plan legal, administrative and planning framework

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 5    |



## PART 2 – NATIONAL PLAN GOVERNANCE AND MANAGEMENT

### 2.1 Legal and administrative basis for the National Plan

2.1.1 The National Plan gives effect to a number of international conventions and agreements to which Namibia is a party.

2.1.2 The National Plan utilises a range of domestic legislation that provides Government agencies with response powers and places preparedness and response obligations on various industry sectors.

2.1.3 Recovery is a responsibility variously shared across Government entities, industry and the affected communities.

#### Regional and local authorities

2.1.4 Regional and local Government authorities have responsibilities for ensuring preparation and response to maritime environmental emergencies within their jurisdictions. The following issues should be addressed:

- ensure that the jurisdiction is prepared to manage the risks associated with maritime activities;
- identify agencies or commercial operators with the responsibility to respond to maritime environmental emergencies, i.e. perform the Control Agency role;
- oversee strategic or regulatory aspects of response operations, including notification of adjoining jurisdictions;
- coordinate relevant agencies and stakeholders;
- engage the community;
- identify an authority to declare the completion of response operations;
- coordinate cost recovery on behalf of support agencies; and
- institute legal proceedings where appropriate.

#### International Conventions

2.1.5 The National Plan implements and is supported by a number of international conventions to which Namibia is a party.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 6    |



Table 2: International conventions

| International convention   | Application to the National Plan   |
|--|--|
| <p>International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990</p> <p>Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances, 2000 (OPRC-HNS Protocol)</p> | <p>Provides the basis for the National Plan by setting the context for:</p> <ul style="list-style-type: none"> <li>• developing a national system for pollution response</li> <li>• maintaining adequate capacity and resources to address oil and hazardous and noxious substances (HNS) incidents</li> <li>• facilitating international cooperation and mutual assistance in preparing for and responding to major oil and HNS incidents, and</li> <li>• notifying without delay all States (neighbouring countries) whose interests are affected or likely to be affected by an oil or HNS pollution incident.</li> </ul>     |
| <p>International Convention for the Prevention of Pollution from Ships (MARPOL)</p>  | <p>Provides ships' construction and operational requirements to prevent pollution from ships. Requires ships greater than 400 gross tonnes to have pollution emergency plans. Provides for exemptions from discharge restrictions (and prosecution) where:</p> <ul style="list-style-type: none"> <li>• a discharge is necessary to secure the safety of a ship or save a life at sea, or prevent a larger pollution; or</li> <li>• it is necessary during a pollution response to discharge oil or HNS or use dispersants to minimize the overall damage from pollution, and is approved by the relevant Government.</li> </ul> |
| <p>United Nations Convention on the Law of the Sea, 1982</p>   | <p>Article 221 provides general powers for parties to take and enforce measures beyond the territorial sea to protect their coastline or related interests from pollution or threat of pollution following a maritime casualty or acts relating to such a casualty, which may reasonably be expected to result in major harmful consequences.</p> <p>Article 198 provides that "when a State (neighbouring country) becomes aware of cases in which the marine environment is in imminent danger of being damaged ... by pollution, it shall immediately notify other States it deems likely to be affected by such damage."</p> |
| <p>International Convention Relating to Intervention on the High Sea in Cases of Oil Pollution Casualties, 1969.</p> <p>Protocol Relating to Intervention on the High Seas in Cases of Pollution by Substances Other Than Oil, 1973</p>        | <p>Provides general powers for parties to take measures on the high seas as may be necessary to prevent, mitigate or eliminate grave and imminent danger to their coastline or related interests from the threat of pollution by oil or hazardous and noxious substances following a maritime casualty or acts related to such a casualty, which may reasonably be expected to result in major harmful consequences.</p>   |



|   |   |
|---|---|
| International Convention on Civil Liability for Oil Pollution Damage, 1999  | Provides for the recovery of pollution costs and payment of compensation from owners/operators of oil tankers   |
| International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992<br><br>2003 Protocol to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992 | Provides for additional compensation where the tanker owners'/operators' liability limits are exceeded, using funds provided by the oil industry.   |
| International Convention on Civil Liability for Bunker Oil Pollution Damage, 2000   | 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 (LLMC) and its 1996 Protocol. |

Table 3: Selected national legislation relevant to the NMPCP

| Legislation  | Application to the NMPCP   |
|--|--|
| Prevention and Combating of Pollution of the Sea by Oil Act, No. 6 of 1981 as amended                                  | Provides for the prevention and combating of pollution of the sea by oil, prohibits discharge of oil, requires reporting of discharges and damage causing discharges or likelihood of discharge, determines liability in certain respects for loss or damage caused by the discharge of oil from ships, tankers or offshore installations, requires Oil Spill Contingency plans and compulsory insurance against liability for loss, damage or costs |
| Petroleum (Exploration & Production) Act, No. 2 of 1991 as amended by the Petroleum Laws Amendment Act, No. 24 of 1998 | Provides for reporting of oil pollution caused by oil exploration and production activities and places liability for pollution on entities causing such pollution. Requires exploration and product entities to prepare emergency preparedness plans   |
| Environmental Management Act, 7 of 2007  | Provides for general environmental protection and defines principles of environmental management.  |
| Marine Resources Act 27 of 2000  | Provides for the conservation of living marine resources   |
| Disaster Risk Management Act, No. 10 of 2012   | Provides, among others, for the establishment of institutions for disaster risk management in Namibia, provides for an integrated approach that focuses on preventing or reducing the risk of disasters.   |
| Water Resources Management Act, No. 11 of 2013   | Provides for the management, protection, development, use and conservation of water resources.   |



## Offshore petroleum regulation and pollution response

2.1.6 Namibia has established a regulatory regime for the offshore petroleum industry for environmental management and oil pollution response. The regime places the onus on the operator to manage marine pollution risks and requires that all petroleum activities have an Environment Management Plan (EMP), including an Oil Spill Contingency Plan (OSCP), accepted by the relevant authority before that activity is able to commence.

2.1.7 The requirements for EMPs are outlined in the Environment Management Act of 2007 while those for OSCP are set forth in the Prevention and Combating of Pollution of the Sea by Oil Act, No. 6 of 1981 as amended.

2.1.8 An EP must identify the environmental risks of a petroleum activity, including those risks associated with any emergency or pollution response, and demonstrate to the regulator that the impacts and risks from the activity have been reduced to As Low as Reasonably Practicable (ALARP), and that any residual impacts and risk is of an acceptable level.

2.1.9 There is an obligation on the offshore petroleum industry to undertake appropriate consultations in the course of managing their impacts and risks and demonstrate in the EMP that those consultations have been undertaken.

2.1.10 Under the regime, each operator has a duty to establish, maintain and implement a marine pollution response capability, which may be in partnership with other parties. This response capability must be commensurate with the risks presented by the particular activity. Where the response activities rely on, or may affect relevant stakeholders, the operator is required to demonstrate appropriate consultation and that relevant agreements are in place.

## Other international and regional agreements

2.1.11 The National Plan provides a mechanism for Namibia to enter into mutual aid arrangements with other countries that may be impacted by marine pollution emergencies, giving effect to Namibia's obligations under OPRC and the OPRC-HNS Protocol. Namibia has entered into a number of international cooperation agreements which are described below.

## Regional Oil Spill Contingency Plan for the Abidjan Convention Area

2.1.12 Namibia is a party to the Convention for the Co-operation in the Protection and Development of the Marine and Coastal environment of the West and Central Region, 1981 (Abidjan Convention).

2.1.13 The convention includes a Protocol Concerning Co-operation in Combating Pollution in Cases of Emergency in the Western and Central African Region, 1985. The protocol provides for cooperation when responding to marine pollutions.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 9    |



2.1.14 Consistent with the Abidjan Convention and Protocol, in 2011 Abidjan Convention member countries adopted the Regional Oil Spill Contingency Plan. This plan provides for cooperative regional responses to major marine pollution incidents in the region, including linkages and mechanisms for accessing regional and supra-regional assistance.

### **SADC Protocol on Transport, Communication and Metrology**

2.1.15 As a member State of the Southern Africa Development Community (SADC), Namibia is a party to the SADC Protocol on Transport, Communication and Metrology, 1996 as may be amended, which among others obliges member States to cooperate in the protection of the marine environment by inter alia “preparation and implementation of oil pollution contingency plans, including sharing of resources”.

### **Benguela Current Convention of 2013**

2.1.16 Benguela Current Convention creates the legal framework for Angola, Namibia and South Africa to promote integrated management, sustainable development and protection of the Benguela Current Large Marine Ecosystem (BCLME) using an eco-system approach to ocean governance focusing, inter-alia, on the management of shared fish stocks, environmental monitoring and early warning, biodiversity and ecosystem health, socio-economics and governance.

2.1.17 Consistent with the Benguela Current Convention, BCLME countries adopted the Regional Marine Spill Contingency Plan that provides a framework for co-operative regional responses to major marine pollutions in the Pacific Island region, including linkages and mechanisms for accessing regional and supra-regional assistance

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 10   |



## 2.2 Governance

2.2.1 The aim of National Plan governance is to ensure a coordinated, integrated and accountable system is in place to manage oil pollution emergencies. This is achieved through:

- reporting to the Namibian Government through the Minister responsible for maritime transport;
- the establishment of the National Plan Management Committee (MC) to set policy direction and oversee the implementation of the National Plan;
- stakeholder engagement, in particular with the shipping, petroleum, chemical and port industries;
- appropriate technical input to support decision making; and
- links to coordinated arrangements across Government, regional, and port authorities

2.2.2 Figure 2 depicts the National Plan governance structure.

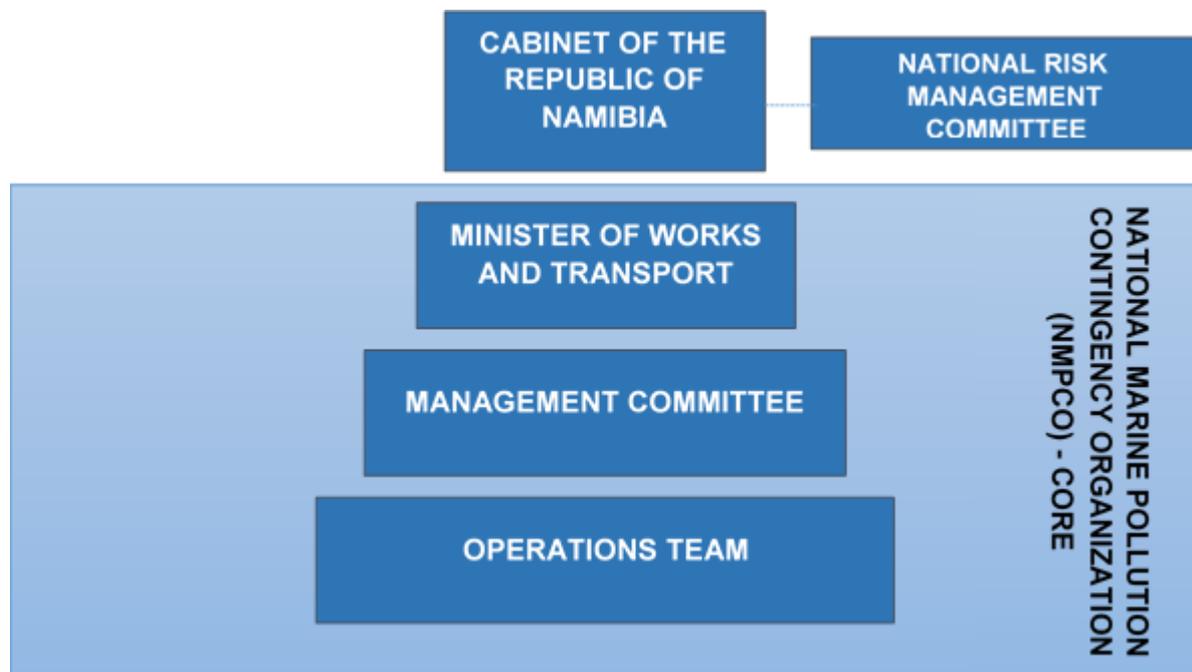


Fig 2: NMPCP Governance structure

### Minister responsible for maritime transport

2.2.3 The Minister responsible for maritime transport is responsible for protecting, through both preventive and remedial measures, the Namibian marine environment from marine pollution from shipping and other marine activities. The Ministry of Works and Transport (MWT) is therefore the Control Agency responsible for nationally significant incidents connected to the National Plan.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 11   |



## National Plan Management Committee (MC)

2.2.4 There will be established a Management Committee (MC) which will be responsible for setting the broad policy and funding directions of National Plan, overseeing the implementation of the National Plan and ensuring its effectiveness. The MC reports to the Minister responsible for maritime transport.

2.2.5 The MC will be comprised of senior Government officials and reports to the Minister responsible on the effectiveness of the National Plan. The main functions of the MC include:

- ensure that the Namibian Government is effectively prepared to respond to marine pollution incidents in terms of the National Plan;
- provide a whole of Government perspective to the implementation of the National Plan;
- provide strategic oversight and direction for the effectiveness and efficiency of the National Plan, including prevention, preparedness and response, and recovery standards;
- ensure effective integration of the National Plan into broader national emergency management arrangements;
- establish and oversee the ongoing effectiveness of the formal arrangements between key stakeholders and the Ministry of Works and Transport (MWT), as National Plan manager;
- provide advice to the Minister on the funding and other requirements of the National Plan, including contributions from the national treasury as well as industry;
- provide advice to MWT in developing and maintaining international and regional cooperative arrangements for pollution preparedness and response;
- advise the Minister on broad policy issues regarding marine pollution preparedness and response;
- handle economic and legal questions in relation to marine pollution combating operations;
- serve as the main focal point and champion of the National Plan in the respective stakeholder institutions of the National Plan;
- any other matter related to the National Plan as the Minister may confer on it from time to time.

## Operations Team (OT)

2.2.6 There will be established an Operations Team (OT) which will be responsible for supporting the MC by considering and implementing the overall operational aspects of the National Plan. The OT serves as the operational arm of the NMPCO.

2.2.7 The OT will be made up of trained and experienced oil pollution response personnel from various National Plan stakeholder agencies that is available to provide technical support and advice across all response disciplines in the event of a major pollution incident.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 12   |



2.2.8 The OT is mobilised in the first instance when a tier 3 response is initiated and initially forms the core of the Incident Management System (IMS), supplemented by responders who have received basic marine pollution response training.

2.2.9 The OT will establish teams and working groups to support its work.

2.2.10 The OT will be activated by the MC.

2.2.11 There shall be developed a Policy to serves as the basis for the management of the OT in regards to its role in the IMS.

### Regional Coordination

2.2.12 Each littoral region is, in line with its own capacity and resources, responsible for coordinating the local administration and operation of the National Plan in that region. This may be done in consultation with a regional committee and with due consideration of the relevant regional emergency management arrangements.

### National Plan Key Contacts

2.2.13 Contact details for key National Plan stakeholders are provided in Appendix Q.

## 2.3 Management of the National Plan

2.3.1 The National Plan will be managed by MWT, which represents the Namibian Government at the IMO in relation to Namibia’s obligations under the OPRC Convention and the OPRC-HNS Protocol. The main functions of MWT in this regard include:

- maintaining the National Plan
- coordinating the National Plan training program endorsed by the MC and delivery of relevant training courses;
- providing a national response equipment capability;
- managing the national emergency towage vessel and fixed-wing aerial dispersant contracts;
- approving ship, port, regional contingency plans;
- managing decision-making support systems such as National Oil Spill Risk Assessment (NOSRA), as well as the oil pollution response atlas and trajectory modelling;
- providing secretariat services for MC,OT and working groups; and
- undertaking international liaison as necessary.

### National Plan management arrangements

2.3.2 The National Plan sets out the agreed policy for the implementation of management arrangements for maritime environmental emergencies within Namibia.

The National Plan is underpinned by:

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 13   |



- **policies** – implementing documents for the strategic management of the National Plan, e.g. MC/OT terms of reference;
- **guidelines** – documents providing guidance for the application of specific response arrangements, e.g. IMO guidelines on oil pollution exercise planning; and
- **scientific, technical and operational advisories** – advisory documents on specific technical issues, e.g. ITOPF Technical Information Papers.

2.3.3 Under the National Plan governance arrangements, the MC is responsible for the review and acceptance of these documents, where appropriate.

### Monitoring and review

2.3.4 The MC is responsible to ensure that the National Plan remains current and effective. The MC may at any time decide to review the National Plan if it considers that significant change has occurred to the strategic context, including lessons learned from incidents and exercises.

2.3.5 On behalf of the MC, MWT will conduct an annual review, no later than 30 June each year for MC's consideration.

2.3.6 A National Plan Outlook Report will be prepared by MC at five-yearly intervals. Each Outlook Report should consider:

- the national risk profile;
- whether international obligations under the OPRC Convention and the OPRC-HNS Protocol are being met;
- the management effectiveness of the NMPCP.

2.3.7 The policy outcomes of the Outlook Report could include:

- renewal of current National Plan arrangements;
- minor amendments to arrangements;
- a major review of arrangements.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 14   |



## 2.4 Roles and responsibilities

### National authorities

2.4.1 Agencies that have jurisdictional or legislative responsibilities for maritime environmental emergencies are required to work closely with the Control Agency to ensure that incident response actions are adequate. Such arrangements should be clearly identified in contingency plans.

#### Control Agency

2.4.2 A Control Agency is the agency or company assigned by legislation, administrative arrangement, or within the relevant contingency plan, to control response activities to a maritime environmental emergency. Regional, port and local Authorities will ensure that there is an appointed Control Agency for the maritime hazards identified within their overall emergency management arrangements.

2.4.3 The Control Agency will have responsibility for appointing the Incident Commander (IC) to control the operational response to an incident. The functions of the Control Agency include:

- developing, maintaining and exercising contingency plans and support arrangements (e.g. response assets, contracts, etc.) for the particular maritime environmental emergency for which they are responsible;
- reporting to Government on the status of response preparedness;
- reporting to Government on the progress of response operations;
- making recommendations to Government on when the response is complete. Where recovery is not a specific responsibility of a Control Agency, early liaison with organisations responsible for recovery should be a priority.

#### Support Agency

2.4.4 Support agencies are those that provide resources (i.e. material, personnel or services) or information to the Incident Management Team (IMT) during a response. Support agencies and their responsibilities should be listed in the relevant contingency plan.

2.4.5 Roles and responsibilities of Government Offices, Ministries and Agencies (OMAs) are elaborated in Appendix D of this document.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 15   |



## 2.5 Strategic coordination of emergencies of national consequence

2.5.1 Major or catastrophic maritime environmental emergencies have the potential to significantly impact on the national interests of Namibia and may require extraordinary strategic coordination across Government and stakeholders for their effective management. Such incidents will generally be of a large scale and require the coordination of national and international level interests, and may include circumstances where:

- there is a significant threat to socio-economic and/or ecological resources;
- the incident impacts across an international boundary;
- the incident exceeds the capability of the nominated Control Agency;
- there is significant national and international media attention impacting across the interests of multiple parties.

2.5.2 The National Plan provides for the coordination of stakeholders during major incidents through the application of four core concepts:

- strategic leadership;
- coordination across Namibian OMAs and industry;
- coordination with international governments;
- processes for the orderly transfer of Control Agency responsibility.

### Strategic leadership

2.5.3 A nationally significant incident will create additional pressures on the Control Agency to manage the legitimate interests of the Government, regional, local and port authorities, and private sector stakeholders involved in the incident.

2.5.4 MWT will provide strategic leadership and coordination in support of the Control Agency. In the context of a nationally significant incident such role may include:

- assisting the Control Agency with strategic communications, including:
  - primary spokesperson for the multi-agency response
  - primary point of contact for the briefing of Government
- providing the common operating picture and situational awareness at a strategic level
- strategic coordination, including:
  - resolution of strategic multi-jurisdictional issues on behalf of the Control Agency
  - ensuring collaboration between all parties and resolving multi-jurisdictional-agency conflicts
- facilitating national and international assistance through Government emergency management arrangements.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 16   |



## International coordination

2.5.5 Namibia is party to a number of international conventions and agreements that include obligations to report, coordinate with, and provide assistance to other countries during a marine pollution incident.

2.5.6 These conventions include UNCLOS and the OPRC Convention and its HNS Protocol as detailed above in Table 2.

2.5.7 These convention and agreement obligations rest with the Namibian Government and cannot be delegated to another party. There will be developed Guidelines on the Coordination of International Incidents, which includes arrangements for:

- assessment of incidents and notification arrangements;
- engagement with the Ministry of International Relations and Cooperation and relevant diplomatic posts;
- coordination of response operations across international boundaries;
- coordination of international assistance under regional and other MOU arrangements.

## Change of Control Agency

2.5.8 There may be circumstance or factors as outlined above where there is a need to change the Control Agency responsible for managing the response.

2.5.9 The National Plan provides for the orderly escalation from local response operations to incidents requiring international assistance. For more detail see section 5.7.

2.5.10 There should be developed Guidelines on Transfer of Control Agency to a third party, where such arrangements are not already part of disaster management or regulatory arrangements and includes processes for:

- approval from the relevant authority;
- planning for the transfer of control;
- implementing a transfer arrangement.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 17   |



## 2.6 International support

### Support from other States

2.6.1 The OPRC Convention and its HNS Protocol place an obligation on parties, subject to their capabilities and availability of relevant resources, to provide technical support and equipment for the purposes of responding to an incident, when the severity of such an incident so justifies, upon the request of any party affected or likely to be affected.

2.6.2 MWT has a responsibility for making or receiving such requests in conjunction with other Government agencies with an interest or responsibility. This will generally be undertaken through diplomatic channels and in accordance with any IMO guidance on international offers of assistance and any applicable bilateral or multi-lateral agreements.

### Support from privately owned international entities

2.6.3 If additional resources are required from private entities overseas to respond to a maritime emergency in Namibia, the relevant Control Agency will arrange for assistance from the oil industry global alliance providing services through Oil Spill Response Limited (OSRL) Located in Southampton, UK.

2.6.4 MWT will, as appropriate, coordinate activation of any of these international resources on behalf of Government in the event of a maritime environmental emergency.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 18   |



## PART 3 – PREVENTION OF MARINE POLLUTION INCIDENTS

### 3.1 Scope of prevention

3.1.1 Prevention within the scope of the National Plan refers to those actions taken to prevent or minimise the release of marine pollution from a maritime casualty. The National Plan arrangements should provide for:

- clear assignment of responsibilities to the shipowner and Government ;
- an incident management system;
- national emergency towage arrangements;
- national guidance for the assessment of requests for a place of refuge.

### 3.2 Responsibility of the shipowner

3.2.1 The shipowner and shipmaster are responsible for undertaking prompt and effective action to ensure the safety of their vessel and cargo, including the engagement of commercial assets where necessary and available. These actions include:

- the engagement of emergency towage services;
- the engagement of salvage contractors;
- effective communication to Government on the actions being taken to manage the situation.

### 3.3 Casualty Coordinator

3.3.1 During an incident requiring the salvage of a vessel, consideration should be given to the appointment of a Casualty Coordinator (CC).

3.3.2 The role of the CC is to enable continuing exchange of information regarding the salvage operation between the IC, the Salvage Master and Control Agency. This will enable the Salvage Master to limit briefings to one person, whilst at the same time providing for continuity in information flow.

3.3.3 A senior MWT Officer should be available to act as the CC as required. However, if a casualty requires specialized skills MWT may appoint an experienced CC from a roster of competent persons compiled by MWT.

#### Independent Casualty Advice

3.3.4 In a major casualty the possibility may arise for the need to have access to independent salvage advice to provide advice on the salvage operation, including whether the proposed salvage operations are appropriate.

3.3.5 MWT shall therefore compile a roster of up to 5 five competent persons to, as the need arises, be appointed to serve as the CC or independent salvage advisors as the case may be.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 19   |



3.3.6 Such competent persons shall be appointed on market rates applying at the time of the appointment.

### 3.4 Maritime Assistance Services

3.4.1 Namibia is obligated under IMO Resolutions A.949(23) and A.950(23) to provide a Maritime Assistance Service (MAS) for ships that may be in need of assistance. The circumstances of a ship's operation that involve MAS are not those requiring rescue of persons and must pertain to:

- a ship involved in an incident (e.g. loss of cargo, accidental discharge over board) that does not impair its seakeeping capability but requires to be reported;
- the ship, according to its master's assessment, is in need of assistance but not in a distress situation that requires rescue of those involved; or
- the ship is found to be in a distress situation but those on board have already been rescued.

3.4.2 IMO shall be notified in accordance with IMO Resolution A.950(23) that the Namibian Maritime Rescue Centre (MRC), will be the contact point between ship masters and the Namibian Government for MAS purposes.

### 3.5 Casualty Management System

#### Principles of Maritime Casualty Response

3.5.1 The National Plan recognises that maritime casualties have specific characteristics that can affect the way the incident is managed. The Incident Management System (IMS) for maritime casualties is based on the following principles:

- operational management of a maritime casualty rests with the commercial sector, i.e. towage and salvage contractors;
- the system must be scalable and flexible to meet the demands of the incident;
- the role of Namibian governments is to oversee the actions of the shipowner/shipmaster and towage and salvage contractors;
- the need to facilitate communication amongst key stakeholders in relation to appropriate action and situational information;
- the requirement to provide for the separation of the maritime casualty and marine pollution response functions for significant incidents.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 20   |



### 3.6 Emergency towage

3.6.1 The National Plan includes national arrangements for Emergency Towing Capability (ETC) to be managed by MWT, supported by NAMPORT's arrangements to manage the risks within its area of jurisdiction and in adjacent waters.

#### National emergency towage capability

3.6.2 MWT is responsible for the delivery of a national ETC within Namibian waters.

#### Ports Towing Capability

3.6.3 NAMPORT should ensure that there are adequate emergency towage arrangements within its area jurisdiction to manage its local risks in support of the national capability.

3.6.4 This capability should be detailed within their contingency plans. This includes:

- ensuring there are no licensing, tendering or other processes that would preclude or hinder the effective use of harbour towage vessels as part of the national ETC;
- including emergency towage clauses within harbour towage contracting or licensing arrangements;
- including in port towage licensing or tendering arrangements appropriate provisions for replacement harbour towage arrangements in the event that a dedicated Emergency Towing Vessel (ETV) is required to respond to a maritime emergency.

### 3.7 Places of refuge

3.7.1 It is rarely possible to deal expeditiously and satisfactorily with a casualty in open sea conditions, and the longer a damaged ship is forced to remain at the mercy of the open sea, the higher the risk of its condition deteriorating and thereby becoming a greater pollution hazard.

3.7.2 A place of refuge will provide favourable conditions to enable a ship to stabilise its condition, protect human life, and minimise the risk of environmental degradation.

3.7.3 MWT should develop specific policies on places of refuge, and these should be followed as appropriate. MWT should also develop National Maritime Place of Refuge Risk Assessment Guidelines to provide an overall framework for the assessment and identification of place of refuge requirements.

3.7.4 Regardless of whether places of refuge are pre-designated or not, the following criteria form the basis for their selection:

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 21   |



- adequate water depth;
- good holding ground;
- shelter from the effect of prevailing wind/swell;
- relatively unobstructed approach from seaward;
- environmental classification of adjacent coastline and fisheries activity;
- access to land/air transport;
- access to loading/unloading facilities for emergency equipment.

3.7.5 The International Convention on Salvage 1989 places an obligation on Namibian response authorities to take into account the need for cooperation between various parties concerned in a salvage operation, including public authorities, when considering admittance of damaged vessels to ports.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 22   |



## PART 4 – PREPARING FOR MARINE POLLUTION INCIDENTS

### 4.1 Scope of preparedness

4.1.1 Preparedness within the scope of the National Plan refers to those activities undertaken to plan and prepare for marine pollution incidents. Key components of preparedness include:

- contingency planning;
- community awareness and engagement;
- capability development;
- training and development;
- exercises, testing and reviews;
- research and development.

### 4.2 Contingency planning

4.2.1 The National Plan arrangements are underpinned by contingency planning at the port, local, regional and national level. Contingency plans at the said levels provide a cascade of response measures with initial actions at the local level, supported and/or overseen by regional and local level resources and management, as needed.

4.2.2 Guidance on contingency planning will be provided by MWT for shipping incidents and for offshore petroleum facilities. Regional emergency management arrangements should also be able to provide guidance or templates.

### 4.3 Community awareness and engagement

4.3.1 Community engagement (including education) is a core component of the National Plan arrangements.

4.3.2 Effective engagement is essential to promoting public confidence in the National Plan at all levels. Within the context of maritime environmental emergencies, community engagement has the following objectives:

- educating and engaging with the community about the nature of the threat, the potential impacts resulting from maritime environmental emergencies and the operational constraints upon response actions;
- developing the community's understanding of the National Plan arrangements at national, regional and local levels;
- promoting the reporting of marine pollution incidents.

4.3.3 The National Plan assigns the following responsibilities in relation to engagement:

- MWT is responsible for the development of a community education strategy in relation to the national maritime arrangements;

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 23   |



- Regional, local and port authorities are responsible for the development of community education strategies in relation to their areas of jurisdiction;
- Control Agencies should ensure that contingency plans have effective arrangements for community engagement during planning, response and recovery operations, including processes for social media monitoring, briefings and warnings.

## Volunteer management

4.3.4 The National Plan recognises that, as with other types of events, during a maritime environmental emergency many people from the community may spontaneously volunteer assistance and support.

4.3.5 Offers are likely from both organised volunteer groups as well as individual members of the public.

4.3.6 The social, community engagement and resource benefits of volunteer use within the response needs to be assessed against the administration, training, welfare and safety obligations of the Control Agency.

4.3.7 Each Control Agency should consider the participation of volunteers within their jurisdiction and include relevant directions and arrangements within their contingency plans.

## 4.4 Capability development

### Operations Team (OT)

4.4.1 The Operations (OT) is comprised primarily of highly qualified, trained and experienced Government and maritime industry personnel ready and able to provide advice and support pollution response operations around the country.

4.4.2 The OT is managed in cooperation with all regional and local authorities, which nominate members to meet the needs of both incident management and operations.

### Response equipment

4.4.3 The National Plan applies a cascade response to the supply of response equipment, which is held locally, regionally and nationally.

4.4.4 Under agreed arrangements, each authority and Control Agency is responsible for ensuring that there are sufficient stocks of equipment available to them within the cooperative arrangements, to address the risks within their area of responsibility.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 24   |



## National Plan strategic equipment stockpiles

4.4.5 MWT shall maintain strategic equipment stockpiles of marine pollution response equipment around the Namibian coastline. Stocks of dispersants will be stored at these stockpiles as well as other key locations.

4.4.6 The location and composition of the MWT national stockpiles will be based on the following principles:

- the purpose of the MWT national stockpiles is to supplement the regional, local, port and industry resources;
- the establishment of an MWT national stockpile in a given location does not reduce any requirement for relevant authorities and industry to maintain their own equipment stocks;
- the location of the national stockpiles is determined through the National Oil Spill Risk Assessment (NOSRA) and logistical considerations;
- all areas identified by the NOSRA as high and very high risk will be capable of supply by road transport from a national stockpile within a maximum of 24 hours;
- each stockpile location will be able to be supplemented by road transport from a minimum of one other national stockpile within a maximum of 24 hours. MWT will maintain an accessible database of its national equipment holdings that records current location and serviceability information.

4.4.7 A list of Government controlled oil spill response resources is provided at Appendix F.

## Petroleum industry equipment stockpiles

4.4.8 The petroleum industry contributes to the National Plan via industry pooling or mutual assistance arrangements. OSRL holds stockpiles of equipment and dispersant at various locations, across the world and is able to supply equipment to any part of the world within 72 hours.

4.4.9 Small equipment holdings are held by a number of oil companies and these are generally available to oil industry members through the mutual aid arrangements.

4.4.10 A list of industry controlled oil spill response resources is provided at Appendix G.

## Ports, oil and chemical terminals

4.4.11 Operators of ports, maritime facilities, oil and chemical terminals are normally a designated Control Agency and have a responsibility for maintaining appropriate equipment stocks commensurate with the risks posed by their operations, and access to sufficient trained personnel to effectively deploy that equipment.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 25   |



4.4.12 These control agencies should at a minimum maintain stocks of equipment or cooperative arrangements for the supply of such equipment, sufficient to maintain response operations until such time as other resources can be deployed in support. This is generally referred to as the first-strike capability and will vary from location to location.

4.4.13 Each relevant authority is responsible for determining the capability required by a local Control Agency.

### Offshore petroleum activities

4.4.14 The offshore petroleum sector has a responsibility to prepare and be able to respond to marine pollutions from their activities. This requires operators to have appropriate emergency response arrangements that guarantee access to response capability commensurate with the risks from their activities.

### Fixed Wing Aerial Dispersant Capability

4.4.15 MWT will establish and manage the Fixed Wing Aerial Dispersant Capability (FWADC) on behalf of National Plan stakeholders. The FWADC will be developed in conjunction with and must be jointly funded by industry.

4.4.16 The FWADC will be activated by MWT, on the request of the relevant Incident Commander, in accordance with the relevant guidelines for the Activation of the Fixed Wing Aerial Dispersant Capability.

### Oil Spill Control Agents

4.4.17 Oil Spill Control Agents (OSCA) refer to products that are applied to floating or stranded oil to minimise their overall impact to the environment. Oil pollution dispersants, loose sorbents and surface cleaners are examples of commonly used OSCAs.

4.4.18 The National Plan's approach to the usage of oil pollution control agents involves four key elements:

- acceptance for general use within Namibian waters in accordance with the relevant policy;
- logistics through National Plan and petroleum industry stockpiles, equipment and capability to use the OSCAs in a pollution response;
- approval to use the OSCA in a specific response from the Incident Commander and any regulatory authorities. Individual contingency plans should detail the dispersant approval process; and

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 26   |



- monitoring of the pollution to determine the need to use the OSCA and of its effectiveness as part of response phase monitoring.

4.4.19 A general guide on the use of chemical dispersants is provided at Appendix P.

### Environmental, Scientific and Technical Advice

4.4.20 Contingency plans should include arrangements for environmental, scientific and technical advice within the IMT, including ensuring that both the advice and associated services are integrated across planning and response.

4.4.21 Preparedness requires the development and deployment of decision support tools (see section 5.8).

## 4.5 Training and development

4.5.1 Training and development of response personnel is a core component of the National Plan arrangements. The National Plan identifies three broad levels of training:

- **Level 1** – operator level personnel, i.e. those undertaking onsite clean-up operations. In a major incident this would also include supervisors appointed as site managers. This level of training is suitable for OT members.
- **Level 2** – middle management personnel responsible for managing the operational response, e.g. incident commanders, their deputies and environmental and scientific coordinators, and Fire Brigade (hazardous materials) specialists. This level of training is suitable for OT members.
- **Level 3** – senior Government and industry personnel responsible for high-level decision making in the management of oil or HNS pollution incidents. This level of training is suitable for MC members.
- 

### National training program

4.5.2 MWT is responsible for the delivery of preparedness and response training (all levels) for National Plan stakeholders.

4.5.3 MWT will also support the development of response personnel through the delivery of specialist workshops for key roles across the IMS structure i.e. Incident Command, Planning, Operations, Environmental and Scientific Coordination.

4.5.4 A training matrix outlining the minimum training requirement for personnel and agencies involved in oil pollution preparedness and response in Namibia is presented in Appendix M.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 27   |



## Regional, local and port authorities

4.5.5 Regional, local and port authorities are responsible for their own training, focusing on Level 1. This training may include courses on equipment operation and shoreline response, as well as the delivery of finance and administrative services. Some authorities may also require higher level training.

### Petroleum industry training

4.5.6 As part of their risk management arrangements, the petroleum industry is required to provide oil pollution response training to its personnel.

### Training providers

4.5.7 Providers of pollution preparedness and response training in terms of the National Plan must be approved by the MWT. This requirement applies to training courses as well.

## 4.6 National Plan exercises

4.6.1 Exercises form a core component of the arrangements for preparedness under the National Plan.

4.6.2 Effectively planned and conducted exercises enable agencies to evaluate contingency plans and operating procedures, develop key response personnel and reinforce the stakeholder engagement necessary to respond during incidents. Regional, local and port authorities are responsible for ensuring that there is an effective exercise programme for their area of responsibility.

4.6.3 A general guide on training and exercise is enclosed at Appendix M.

### National exercise

4.6.4 At national level, MWT shall arrange periodic exercises to ensure that reporting, alerting and communication systems function effectively and that those personnel assigned specific tasks under this plan are familiar with them.

4.6.5 The national response capability will be exercised on an annual basis, with the exercise location changing each time. The national exercises should include regional, local and port authorities and petroleum industry representation in the planning and conduct of the exercise.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 28   |



4.6.6 The national exercise will test the effectiveness and efficiency of processes related to the mobilization of equipment, personnel and materials.

#### 4.7 Research and development

4.7.1 The objective of research and development in the context of maritime environmental emergencies is to identify, analyse and apply knowledge and information to enable the continuous improvement of the national response arrangement. Research and development should be the foundation of the National Plan arrangements.

4.7.2 All National Plan stakeholders have a responsibility to identify, support and resource research and development priorities. Industry is also encouraged to actively contribute to pollution response research and development activities.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 29   |



## PART 5 – RESPONDING TO MARINE POLLUTION INCIDENTS

### 5.1 Scope of response

5.1.1 Response within the scope of the National Plan refers to the management of operations directed to coordinate and control a marine pollution incident. The aim of response operations is to minimise the impacts of marine pollution from vessels, maritime facilities and oil and chemical terminals, and offshore petroleum facilities upon the Namibian people, environment, economy and infrastructure.

5.1.2 Arrangements for response are generally detailed within regional, local, port, facility and ship contingency plans. The National Plan outlines those national arrangements that support these contingency plans.

### 5.2 Incident Management System

5.2.1 In responding to marine pollution incidents, Namibia will adopt the Incident Management System (IMS). The system is designed to be adaptable to the individual circumstances of the incident or the particular agencies involved. The IMS for pollution response is based on the five fundamental principles of:

- **flexibility** – the system can be applied across the full spectrum of incidents and agencies;
- **functional management** – the response organisation should be structured in accordance with the actual work to be performed during the incident or different phases of the incident;
- **management by objectives** – the process whereby the Incident Commander sets desired outcomes for the incident for the purpose of ensuring all responders understand the direction being taken during the response;
- **unity of command** – the response organisation should work to one set of common objectives and each individual should report to only one supervisor;
- **span of control** – refers to the number of individuals or functions that can be successfully managed by one person.

5.2.2 IMS is used in a wide range of emergency response activities to provide a standardized organizational structure that is flexible yet provides compatibility between agencies and events. Therefore, it is necessary for the Control Agency to determine how the system will be implemented within the relevant contingency plans. Control Agencies should however consider the following critical concepts when undertaking contingency planning:

- **adaptability and scalability** – the size and structure of the incident management team should reflect the complexity of the incident and change to reflect the various stages of response and recovery;

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 30   |



- **uniform terminology** – the Control Agency should consider the multi-agency aspect of significant marine pollution incidents and endeavour to maintain consistent terminology to minimise communications issues ;
- **a defined management structure** – the management structure, and respective roles and responsibilities of individuals, should be defined in a way that can be clearly communicated and applied;
- **common operating picture** – ensuring the management system can produce a shared and consistent understanding of the incident and maintain situational awareness;
- **clearly defined information flows** – clear definition of reporting relationships and information flows between individuals and sections within the response organisation.

5.2.3 IMS lists four major functions under which it is possible to group the tasks that need to be undertaken during a pollution response - Planning, Operations, Logistics, and Finance and Administration. These form the main elements of the organizational structure under IMS and are designated as sections in the structure. The sections are headed by Officers.

5.2. 4 Responsibility for carrying out the tasks is delegated to a section officer who reports to the IC forming an Incident Management Team (IMT). Units staffed by people with appropriate skills and experience to deal with particular tasks may be created within the sections.

5.2.5 The number of staff required to fill positions in the IMT structure can be varied according to the size and complexity of the incident and the number of staff available. In a major incident all positions may be filled, but in a lesser incident one person may fill a number of positions. In a very small incident, it may only be necessary to appoint an IC who will be able to carry out all management functions.

5.2.6 OMAs, regional, local and port authorities should ensure that persons with appropriate experience and skills are identified so that they can be appointed to positions on the IMS if a pollution incident occurs.

5.2.7 Figure 3 shows a typical structure<sup>1</sup> of an Incident Management System (IMS).

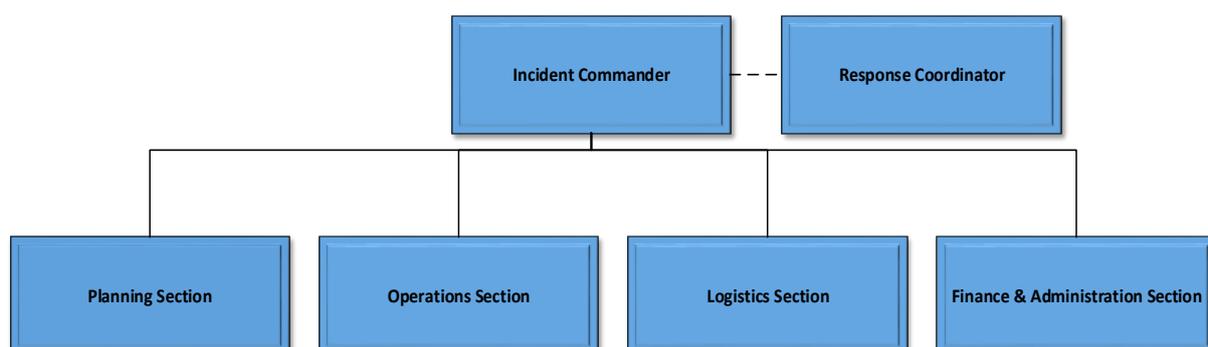


Fig 3: A Typical IMS structure

<sup>1</sup> Although the principles of IMS imply a generic organisational structure, a Control Agency will need to determine an applicable organisational structure for each incident. Therefore, a generic organisational structure has not been included.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 31   |



## Response Coordinator (RC)

5.2.8 Control Agencies should nominate a senior management level RC to take overall responsibility for everyday management of the response organisation in a major event. The RC must be capable of ministerial as well as senior Government, industry and media liaison.

## Incident Commander (IC)

5.2.9 Control Agencies or relevant OMAs should identify appropriate individuals to act as an IC. The IC is responsible for the management and coordination of response operations at the scene of a pollution incident to achieve the most cost effective and least environmentally damaging resolution to the problem.

5.2.10 During a major incident the IC is responsible to the RC for the operational aspects of the response. During minor incidents, the IC shall have overall responsibility for managing the response.

5.2.11 Control Agencies should ensure that the IC is assisted by a response team with appropriate planning, operational, technical, scientific, chemical, environmental, logistical, administrative, financial, and media liaison skills.

## Planning Officer (PO)

5.2.12 Control Agencies should identify appropriate individuals to act as the Planning Officer (PO) in accordance with relevant contingency plan requirements. The PO is responsible for the provision of information on all aspects of an incident and the development of Strategic and Incident Action Plans.

5.2.13 The PO shall ensure the distribution of all information to the IMT and to all response personnel generally.

## Operations Officer (OO)

5.2.14 Control Agencies should identify appropriate individuals to act as the Operations Officer (OO) in accordance with relevant contingency plan requirements.

5.2.15 The OO is responsible to the IC for all response operational activities. This includes ensuring that the requirements of Incident Action Plans (IAP) are passed on to operational personnel in the field, and for ensuring that the plans are implemented effectively.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 32   |



## Logistics Officer (LO)

5.2.16 Control Agencies should identify appropriate individuals to act as Logistics Officers (LO) in accordance with relevant contingency plan requirements.

5.2.17 In any response there is a vital need to ensure that response personnel are provided with adequate resources to enable an effective response to be mounted. The LO shall ensure that all resources are made available as required. This includes the procurement and provision of personnel, equipment and support services for operations in the field and for the management of resource staging areas.

## Finance and Administration Officer (FAO)

5.2.18 Control Agencies shall identify appropriate individuals to act as Finance and Administration Officers (FAO) in accordance with relevant contingency plan requirements.

5.2.19 FAO shall be responsible for all financial, legal, procurement, clerical, accounting and recording activities including the contracting of personnel, equipment and support resources.

## Environmental and Scientific Coordinator (ESC)

5.2.20 Control Agencies should pre-appoint an Environmental and Scientific Coordinator (ESC), either on a National, regional or local area basis.

5.2.21 During a pollution response the ESO will normally form part of the Planning Section. In this role the Planning Section is to provide the IC with an up-to-date and balanced assessment of the likely environmental effects of an oil pollution.

5.2.22 The Planning Section will advise on environmental priorities and preferred response options, taking into account the significance, sensitivity and possible recovery of the resources likely to be affected.

## Public Relations Officer (PRO)

5.2.23 An experienced and well-informed PRO should be appointed by the Control Agency and shall be provided for the response.

5.2.24 The PRO shall ensure adequate liaison between the IMT and the media. All queries received from the media should be directed to this person.

5.2.25 Before releasing any information, the PRO should have the approval of either the RC or IC, depending on the size of the pollution incident.

5.2.26 A general guideline on public relations is provided at Appendix I.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 33   |



## Incident classification

5.2.27 The National Plan recognises that the majority of incidents are managed locally. However, there is a need to ensure that as an incident increases in size and/or complexity, the management system can adapt to meet these additional demands.

5.2.28 Consistent with international practice, the National Plan classifies incidents so as to provide direction on the potential consequence and impact of the incident and to provide guidance for agency readiness levels, incident notifications, response actions and potential response escalation.

5.2.29 The National Plan identifies three levels of incidents as follows:

- **Tier 1** Incidents are generally able to be resolved through the application of local or initial resources only (e.g. first-strike capacity)
- **Tier 2** Incidents are more complex in size, duration, resource management and risk and may require deployment of additional resources beyond the initial response
- **Tier 3** Incidents are generally characterised by a degree of complexity that requires the Incident Commander to delegate all incident management functions to focus on strategic leadership and response coordination and may be supported by national and international resources.

5.2.30 Consistent with IMS, the National Plan employs a scalable approach to incident classification, noting that simple thresholds pose the risk of arbitrary decisions.

5.2.31 Table 5 provides a non-exhaustive list of the general characteristics of each of the three tiers. These characteristics can be used to develop criteria to be considered when evaluating the need to escalate response arrangements. These criteria should be embedded within the relevant contingency plan or adapted to the specifics of an individual incident. Not all characteristics need to apply in all cases, or to all incidents.

Table 5 – Guidance for incident classification

| Characteristic              | Tier 1   | Tier 2                                       | Tier 3   |                |      |
|-----------------------------|--|--|--|----------------|------|
| <b>Management</b>           |  |  |  |                |      |
| <b>Jurisdiction</b>         | Single   | Multiple                                     | Multiple including international                 |                |      |
| <b>Delegation</b>           | Incident Commander responsible for all functions | Some functions delegated or Sections created | All functions delegated and/or divisions created |                |      |
| <b>Number of agencies</b>   | First response agency                            | Routine Multi-agency response                | Agencies from across Government and industry     |                |      |
| <b>Incident Action Plan</b> | Simple/outline                                   | Outline                                      | Detailed   |                |      |
| <b>Resources</b>            | Resources from within one area                   | Requires inter-agency resources              | Requires national or international resources     |                |      |
| <b>Type of incident</b>     |  |  |  |                |      |
| <b>Type of response</b>     | First strike                                     | Escalated                                    | Campaign   |                |      |
| <b>Duration</b>             | Single shift                                     | Multiple shifts                              | Extended response                                |                |      |
| Doc ID                      | Revision No                                      | Compiled by                                  | Approved by                                      | Effective date | Page |
| NMPCP/MWT/17                | 2.1  | MWT-DMA                                      | Cabinet of the Republic of Namibia               | April 2017     | 34   |



| <b>Hazards</b>           | Single hazard   | Single hazard  | Multiple hazards  |
|--------------------------|---|--|---|
| <b>Resources at risk</b> |   |  |   |
| <b>Human</b>             | Potential for serious injuries                                  | Potential for loss of life   | Potential for multiple loss of life                                 |
| <b>Environment</b>       | 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 |
| <b>Wildlife</b>          | Individual fauna  | Groups of fauna or threatened fauna                                    | Large numbers of fauna  |
| <b>Economy</b>           | Business level disruption                                       | Business level disruption. Potential local and regional disruption     | Disruption to a sector. Potential national disruption               |
| <b>Social</b>            | Reduced services.   | Ongoing reduced services.  | Reduced quality of life.  |
| <b>Infrastructure</b>    | Short term failure  | Medium term failure  | Severe impairment   |
| <b>Public affairs</b>    | Local and regional media coverage                               | National media coverage  | International media coverage  |

### 5.3 Response planning

#### Strategic Plans

5.3.1 In a major incident it is important that a strategic plan is drawn up which clearly details the aims and objectives of the overall response. In some cases it may be necessary for strategic plans to be developed to cover a number of aspects of the incident.

5.3.2 Strategic plans address the broader issues of the response, not short-term operational activities.

#### Incident Action Plans (IAP)

5.3.3 Short-term operational objectives and activities are the subject of an Incident Action Plan (IAP).

5.3.4 The IAP will provide details of the operational activities and objectives to be achieved over a specified, short-term period. Initially this may be for the subsequent few hours only, but once the operation is underway it is likely to address the activities required over each of the following twenty-four hours or longer.

#### Response options for oil pollution

5.3.5 A number of options exist for the treatment of oil that has been released into the environment. All may be effective to a degree according to the conditions prevailing and the sensitivity of the environment under threat. Response options include:

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 35   |



- surveillance;
- containment and recovery;
- application of dispersants;
- in-situ burning;
- shoreline cleanup;
- bioremediation; and
- monitor and observe.

5.3.6 General guidelines for oil spill response and clean-up strategies are provided at Appendix J.

5.3.7 Response managers should be aware that at all times human life, health, and safety is paramount. The degree of risk associated with cleanup operations will depend on the:

- type of pollution;
- size of the pollution;
- location of the pollution;
- circumstances of the pollution; and
- weather conditions.

5.3.8 At all times response managers should be aware of the limitations and safe operating procedures for all equipment used throughout the phases of the cleanup operation. This should, where necessary, include a risk assessment and development of a formal site-specific management plan, including details for induction and briefing procedures.

5.3.9 Fresh crude oil and refined petroleum products are capable of giving off flammable gases. Therefore, fire and explosion remain a real danger to personnel and equipment, particularly when fresh crude oil and certain refined products are situated in confined locations.

## 5.4 Response initiation

### Measures to be employed

5.4.1 In the event of a marine pollution, especially involving oil or chemicals, the following measures should be employed according to the circumstances of the spill and conditions prevailing:

- if possible prevent, control or stop the outflow of the pollutant from the source;
- if coastal or marine resources are not threatened or likely to be threatened, monitor the movement and behaviour of the oil spill;
- if coastal and marine resources are threatened, activate response operations to protect sensitive resources;
- if possible, contain the spread of the pollutant; and
- if, due to weather and sea conditions, a response at sea is not feasible, or the protection of sensitive areas is not feasible, or these have already been affected, determine appropriate cleanup priorities and other response measures.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 36   |



5.4.2 The importance of human health and safety in any response operation cannot be overemphasized.

### Overall protection priorities

5.4.3 Protection priorities to be employed during a response to a pollution incident are, in order of descending priority:

- human health and safety;
- habitat and cultural resources;
- rare and/or endangered flora and fauna;
- commercial resources; and
- amenities.

5.4.4 However, in assessing protection priorities, it is necessary to maintain a balanced view of the potential success of particular response strategies.

### Incident Reporting and Response Activation

#### Initial Reports

5.4.5 Notification of a pollution incident will normally be made from observations by Government agencies, shipping or aircraft, by the public, or by those responsible for the incident.

5.4.6 It is important that the information received be reported without delay to enable immediate and appropriate action to be taken. The response procedures that shall be followed are summarised in Figure 4.

5.4.7 The most efficient method of ensuring that reports are dealt with promptly is by reporting through the Maritime Rescue Centre (MRC) and the port control centres which operate twenty-four (24) hours a day and are equipped with radio facilities, telephone, facsimile and email facilities. The MRC and the ports will transmit this information to the relevant Control Agency as well as MWT by way of a Pollution Report (POLREP).

5.4.8 MRC contact details are outlined in Appendix Q.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 37   |

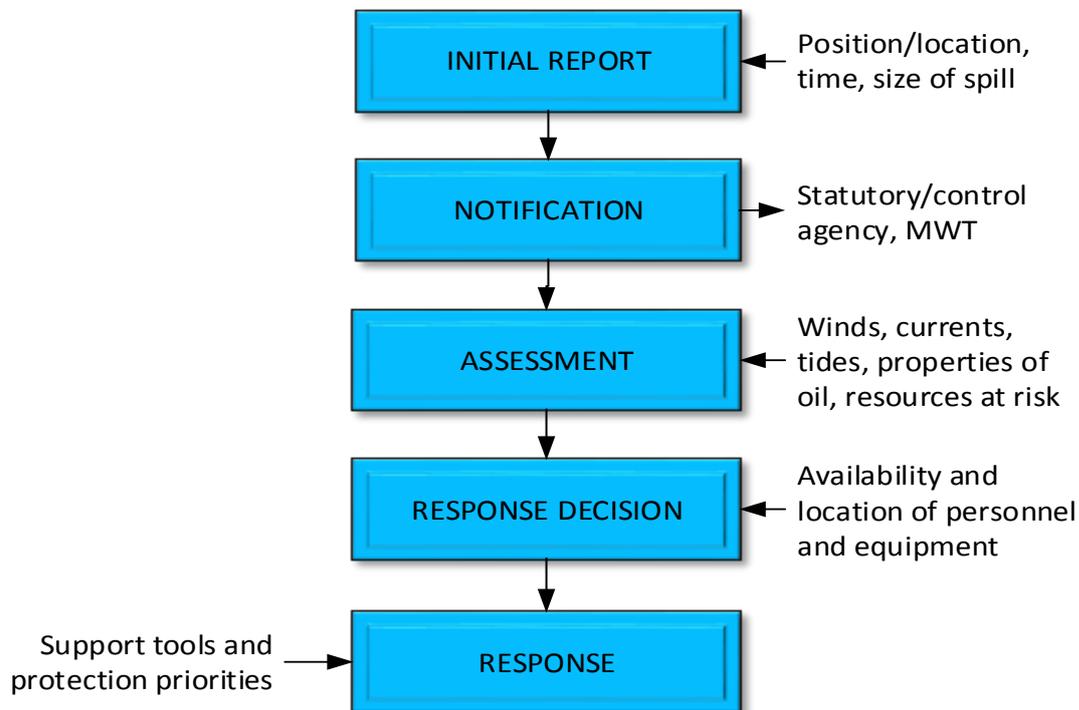


Fig 4: Typical response procedure

5.4.9 The agency receiving the report of an oil spill incident shall notify the relevant Control Agency without delay.

5.4.10 The Control Agency shall promptly assess the information contained in any report and make the necessary decisions in relation to appropriate investigations and response actions. This will include expected roles and responsibilities of the different parties.

5.4.11 Following the report of an incident the Control Agency shall issue a Pollution Report (POLREP) of which a generic form is provided in Appendix O.

### Activation

5.4.12 When a report has been received by the Control Agency, that agency should confirm the incident details. The proximity and possible subsequent movement of the marine pollution to sensitive areas will dictate the urgency of the method used to confirm the presence of the pollution.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 38   |



5.4.13 On confirmation of the presence of the pollution or where a decision has been made to implement a response action, the Control Agency should mount a response operation in accordance with the appropriate contingency plan arrangements.

5.4.14 This should be done without delay to facilitate any subsequent cost recovery actions.

### Pollution Report (POLREP)

5.4.15 After initial verbal advice has been provided to the Control Agency, the Control Agency should issue a POLREP to the MWT who would disseminate the information to relevant agencies based on the incident type and location.

### Ship Masters

5.4.16 MARPOL 73/78 and OPRC 90 Convention established the requirement for the ship's Masters to report discharges from their vessels to the nearest coastal State. Such reports shall be made in the format set forth in Marpol 73/78.

### Ship Owner

5.4.17 MARPOL 73/78 places the obligation to report any oil sightings on the ship owner if the ship has been abandoned, or if the master's report is incomplete.

### Situation Report (SITREP)

5.4.18 During a pollution incident (or potential incident), it is essential that all relevant authorities be kept advised of any significant developments.

5.4.19 The IC will be responsible for ensuring that periodic Situation Reports (SITREPs) are dispatched to those concerned in the required format. SITREPs should contain as much information as possible.

5.4.20 A suggested format, including required content, for reporting this information is outlined in Appendix K.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 39   |



Table 6: Control Agencies for oil pollution incident

| AREA - SOURCE         | OIL TERMINAL          | SOLE USER MARITIME FACILITY FOR OIL TERMINAL | MULTI-USER MARITIME FACILITY | INSIDE PORT LIMITS | EXCLUSIVE ECONOMIC ZONE |                               |
|-----------------------|-----------------------|--|------------------------------|--------------------|-------------------------|-------------------------------|
|                       |                       |  |                              |                    | SHIP SOURCE D SPILLS    | OFFSHORE PETROLEUM FACILITIES |
| First strike – Tier 1 | Oil terminal operator | Maritime Facility/terminal operator          | Maritime Facility Owner      | Port Authority     | MWT                     | Operator                      |
| Tier 2 and 3          | Port Authority        | Port Authority                               | Port Authority               |                    |                         |                               |

**Definitions – for Table 6 only**

- **First strike** means a prompt initial response to protect the environment that is intended to limit the effect of an incident until such time as other resources can be deployed in support. This capability may vary from location to location.
- **Oil terminal** means a petroleum refinery and/or petroleum storage/distribution facilities with access to a maritime facility, but not including the maritime facility.
- **Maritime facility** means a wharf or mooring at which a vessel can be tied up during the process of loading or unloading a cargo or passengers. A maritime berth may be a sole user berth such as a dedicated berth for an oil refinery or may be a multi-user berth such as a berth that handles general cargo, or one that handles bulk liquids such as petroleum for more than one user of the berth (sometimes known as a common-user berth).
- **Oil terminal operator** means a company or joint venture that operates an oil terminal.
- **Port limits/Port waters** means all areas of water within the jurisdiction of the Namibian Port Authority in terms of the applicable legislation.

**5.5 Response escalation**

5.5.1 Incidents are dynamic and may change over time and space. During an incident there may be a need to enlarge the response for a range of reasons. This is referred to as escalation and may involve increased support to a Control Agency or a change in Control Agency.

5.5.2 At all levels (oil and chemical terminals, maritime facilities, ports, regional, offshore platform, etc.), contingency plans, inter-agency and inter-jurisdictional agreements, and incident action plans should document when and how response escalation should occur.

5.5.3 The National Plan implements a scalable approach to response management. This approach provides for the orderly progression from local response operations to incidents requiring international assistance. Change of Control Agency is one form of response escalation.

5.5.4 Section 2.5 outlines the circumstances for change of Control Agency during an emergency of national consequence.

|              |             |             |                                    |                |      |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 40   |



5.5.5 There should be developed a Guideline on a Change of Control Agency to be used where change of control arrangements are not already part of existing disaster and emergency management or regulatory arrangements.

## 5.6 Assessment and decision support

### Environmental, scientific and technical advice

5.6.1 Environmental, scientific and technical advice is essential to make informed and effective decisions regarding the establishment of response objectives and the selection of the most appropriate response strategies and tactics. This advice should be incorporated at all levels of incident management and may include:

- direct advice to the Incident Commander;
- integration into the planning section to inform the development of the incident action plan; and
- support in the field to response operations.

5.6.2 MWT on behalf of the National Plan and its stakeholders should develop and maintains support tools for use in an incident. These tools, which will be made available by MWT on the request of the Control Agency include:

- **Trajectory Modelling** that identifies speed of movement, weathering and spreading characteristics of the pollutant under the influence of prevailing currents and weather conditions. The modelling capability is activated by MWT, on the direct request of the relevant Incident Commander, in accordance with applicable guidelines.
- **Geographic Information Systems (GIS)** are computer based mapping tools that identify threatened environmental and community resources, logistical information (roads, etc.) and any other information relevant to preparing and responding to marine pollution incidents. The jurisdictions are responsible for the maintenance of spatial information and manage access to their information.

5.6.3 Memoranda of understanding and contracts should be concluded with technical and scientific agencies to provide expert capability to support National Plan stakeholder needs.

## 5.7 Hazardous and noxious substance response

5.7.1 Namibia must strive to become a party to the OPRC-HNS Protocol as the risk of HNS pollution is growing. There is, therefore, a need to prepare for, and respond to, a pollution incident by HNS and the National Plan should develop capacity to respond to HNS incidents.

5.7.2 However, as a result of the broad range of properties, behaviours, potential for health effects, environmental impacts and damage to a vessel from HNS, the response to these

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 41   |



incidents requires skills, knowledge, experience and equipment, which are different to oil pollution response. It should nevertheless be noted that some oils may present and behave similarly to HNS and need to be responded to accordingly. The National Plan should develop capacity to respond to HNS incidents.

5.7.3 The National Plan arrangements for HNS response is based on cooperation with the emergency services, in particular the hazardous materials response units within fire and rescue services.

### Control Agency

5.7.4 The Control Agencies for HNS incidents are listed in Table 7.

### Levels of HNS response

5.7.5 The National Plan is based around three distinct levels of HNS Response:

- **advisory** – the focus of the advisory service is to provide an assessment of the risks to health, immediate response advice and an assessment of the need for additional assistance to a vessel’s crew. MWT will maintain arrangements with relevant hazmat agencies for the provision of hazardous materials advice on a 24/7 basis. This service will complement regional and local authority arrangements.
- **shipboard response** –the objective of a shipboard response capability is to provide rapid intervention in order to contain an incident to a vessel and prevent damage to the vessel or loss of material into the environment where possible.
- **major incident response** – in a very small number of situations, it may be beyond the capability of a shipboard response and the relevant Control Agency to contain the material to the vessel. In these situations, which may result in the loss of material into the marine environment, a full response under the National Plan will be launched similar to an oil pollution.

### Responsibilities

5.7.6 Regional, local and port authorities are responsible for establishing arrangements for HNS response within their jurisdiction. MWT is responsible for the development and maintenance of HNS response capability within the national context.

5.7.7 There should be developed Guidelines on National Hazardous and Noxious Substance Response which will detail arrangements for HNS preparedness and response.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 42   |



5.7.8 HNS preparedness and response capability should be undertaken in consultation with all relevant agencies and industry and should define relevant control agencies and address each response phase.

Table 7 – Control Agencies for HNS incidents

| Region        | Chemical terminal  | Within Port limits  | Outside port limits |
|---------------|--|---|---------------------|
| Erongo region | Chemical terminal operator or port authority                 | Port Authority assisted by local authority fire and emergency department                | MWT                 |
| /Karas region | Chemical terminal operator or port authority                 | Port Authority assisted by local authority fire and emergency department                | MWT                 |
| Kunene Region | Chemical terminal operator or port authority, as applicable. | Port Authority assisted by local authority fire and emergency department, as applicable | MWT                 |
| Hardap Region | Chemical terminal operator or port authority, as applicable. | Port Authority assisted by local authority fire and emergency department, as applicable | MWT                 |

## 5.8 Wildlife response

5.8.1 When a marine oil pollution incident occurs it is highly likely that oiling of birds, marine mammals and other wildlife will occur.

5.8.2 The impact on wildlife and biodiversity will depend upon the environmental sensitivity, the type and quantity of the pollutant, and the location of the pollution. Oiled wildlife attracts both significant community and media attention.

5.8.3 The effectiveness of a pollution response is sometimes measured on the success of its wildlife rescue and rehabilitation.

5.8.4 There should be developed National Guidelines for Oiled Wildlife Response, with the objective of providing guidance for the immediate and effective protection, rescue, cleaning and rehabilitation of birds, marine mammals, their habitat, and other wildlife resources that are harmed or potentially harmed by a marine oil pollution.

## 5.9 Waste management

5.9.1 Oil and HNS clean-up operations can generate substantial quantities of oily debris. Temporary storage, transportation and final disposal methods shall be arranged to comply with Government disposal approvals. This will usually be facilitated by the responsible regional or local authorities.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 43   |



5.9.2 Regional, local and port contingency plans should contain information on the disposal of oily waste. This should include any pre-designated arrangements for disposal sites and approved contractors.

5.9.3 Ideally disposal sites should be identified as close as practical to those areas where oil pollution could most likely occur.

5.9.4 A guideline on the management and disposal of oil pollution debris should be developed in terms of this Plan.

## 5.10 Health and safety

5.10.1 The safety of all people (responders and the community) in all activities is the highest priority. This includes training, exercising, procuring equipment or conducting an operational response activity under the National Plan.

5.10.2 In order to meet this principle, safety should be managed in accordance with a safety management system detailed within the relevant contingency plan.

5.10.3 There should be developed a National Plan Health and Safety Guidelines that will provide guidance on the implementation of a safety management system.

## 5.11 Response termination

5.11.1 The Control Agency is responsible for the decision to terminate response operations. This decision should be informed by advice from a range of stakeholders identified in relevant contingency plans, including the agency with jurisdictional authority.

5.11.2 Contingency plans should include processes for the termination of response operations.

5.11.3 There should be developed a Shoreline Clean-up Assessment and Response Termination Guideline that will provide guidance to agencies and other stakeholders when considering response termination.

## 5.12 Post incident response analysis

5.12.1 Post incident analysis, incorporating a review and reporting on the operational response to a maritime environmental emergency assists with continuous improvement of both people and organisations. Key to this is engaging and sharing within and across organisations and jurisdictions.

5.12.2 Under the National Plan, each jurisdiction is responsible for reviewing and reporting to other National Plan stakeholders on their pollution responses and exercises. In practice, post

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 44   |



incident analysis is conducted in accordance with the Guidelines for the Conduct of Post Incident Analysis, which should be developed.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 45   |



## PART 6 - RECOVERING FROM MARINE POLLUTION INCIDENTS

### 6.1 Scope of recovery

6.1.1 Recovery is part of emergency management, which includes the broader components of prevention, preparedness and response. Recovery is the coordinated process of supporting affected communities in the reconstruction of their built environment and the restoration of psychological, social, economic, built and natural environment wellbeing. Recovery activities generally commence during the response phase and often continue after response activities have concluded.

6.1.2 Recovery is characterised by a complex array of issues and involves a broad range of organisations and stakeholders. Recovery programmes and processes can have a lasting impact on the community and are often time consuming and costly in terms of financial and other resources.

6.1.3 Under the National Plan, recovery refers to three distinct processes:

- **recovery of costs** for organisations involved in response arrangements or communities that suffer loss resulting from pollution;
- **rehabilitation** of the environment;
- **return** of an affected socio-economic community to its pre-incident level of functioning.

6.1.4 In relation to recovery of costs for organisations involved in response arrangements, further information is provided in Part 7.

6.1.5 In relation to environmental rehabilitation, recovery operations should aim, as far as possible, to return the environment to its pre-incident condition or to a state that is considered to be an acceptable environmental outcome to authorities and key stakeholders.

6.1.6 The National Plan recognises the need to return an affected socio-economic community to its usual level of functioning, but acknowledges that jurisdictions already have established emergency arrangements to achieve this. These matters are addressed in more detail below.

### 6.2 Principles for recovery

6.2.1 The National Plan is underpinned by the following principles for disaster recovery outlined in table 8.

### 6.3 Recovery functions

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 46   |



6.3.1 Typically four functions need to be addressed in the context of maritime environmental emergencies – environmental, economic, social and infrastructure. The degree to which these recovery functions need to be addressed will vary from incident to incident.

6.3.2 Table 9 provides guidance on the types of activities required to address each of these recovery functions.

Table 8 – Recovery principles

| Recovery principle                      | Considerations   |
|---|--|
| Understanding the context               | <ul style="list-style-type: none"> <li>Identifying vulnerabilities (e.g. community reliant upon fishing income or tourism)</li> <li>Being culturally sensitive</li> <li>Acknowledge the capacity of the community to assist</li> <li>Being clear on community expectations</li> <li></li> </ul>                                      |
| Recognising complexity                  | <ul style="list-style-type: none"> <li>Recognising that information on impacts will change over time</li> <li>There are diverse issues which need to be addressed</li> <li>Quick action to address immediate needs may be warranted</li> <li>There may be conflicting needs and priorities amongst stakeholders</li> </ul>           |
| Using community led approaches          | <ul style="list-style-type: none"> <li>Adaptable policies and procedures to address the individual requirements of the incident</li> <li>Developing partnerships with communities should be encouraged (e.g. local environmental groups)</li> <li>Enabling the community to engage in their own recovery from an incident</li> </ul> |
| Ensuring coordination of all activities | <ul style="list-style-type: none"> <li>Based on planning and information gathering</li> <li>Clearly articulating the roles and responsibilities of stakeholders</li> <li>Being integrated into contingency planning</li> <li>Having clearly articulated goals and desired outcomes</li> </ul>  |
| Employing effective communication       | <ul style="list-style-type: none"> <li>Ensuring communication is relevant, timely and credible</li> <li>Recognising that communication with stakeholders is a two way process</li> <li>Feedback should be sought and integrated into decision making</li> <li>Ensuring information is accessible to all stakeholders</li> </ul>      |
| Acknowledging and building capacity     | <ul style="list-style-type: none"> <li>Engaging with stakeholders as part of planning</li> <li>Implementing recovery operations as soon as possible after the commencement of an incident</li> <li>Working with stakeholders to learn from incidents to increase resilience into the future</li> </ul>                               |

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 47   |



Table 9 – Recovery functions

| <b>Environmental</b>   | <b>Economic</b>  | <b>Social</b>  | <b>Infrastructure</b>  |
|--|--|--|--|
| Assessing and documenting the impact of the incident on natural resources              | Assessing and documenting the impact of the incident on natural resources              | Assessing and documenting the impact of the incident on natural resources              | Assessing and documenting the impact of the incident on natural resources              |
| Rehabilitating impacted areas where possible and measuring recovery over time          | Rehabilitating impacted areas where possible and measuring recovery over time          | Rehabilitating impacted areas where possible and measuring recovery over time          | Rehabilitating impacted areas where possible and measuring recovery over time          |
| Communicating to the public the impacts of the incident                                | Communicating to the public the impacts of the incident                                | Communicating to the public the impacts of the incident                                | Communicating to the public the impacts of the incident                                |
| Engaging with the community to assist with the assessment and rehabilitation processes | Engaging with the community to assist with the assessment and rehabilitation processes | Engaging with the community to assist with the assessment and rehabilitation processes | Engaging with the community to assist with the assessment and rehabilitation processes |

## 6.4 Recovery arrangements and the National Plan

6.4.1 In addition to the general recovery arrangements, described above, maritime environmental emergencies can encompass additional elements which should be considered when developing contingency plans and undertaking response operations.

### Engagement with the responsible party

6.4.2 The response and recovery to maritime environmental emergencies is funded on the basis of the ‘potential polluter pays’ principle (see Table 1). For recovery, this means that all stakeholders should have clear and early engagement with the responsible party or their representative (e.g. insurer).

6.4.3 The responsible party should be represented on recovery committees to enable a shared ownership of the recovery plan and its implementation.

### Recovery planning

6.4.4 Recovery should be included as part of the contingency planning process, building on emergency risk management studies and resource sensitivity assessments.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 48   |



6.4.5 Recovery plans should identify recovery management structures, actions, roles and responsibilities, and be consistent with relevant national policies and legislation as well as international guidelines and best practices.

6.4.6 Recovery plans and the results of impact assessment form the basis for detailed recovery action plans prepared following a maritime environmental emergency.

#### Recovery committee

6.4.7 When an impact assessment indicates that a formal recovery operation will be required, a Recovery Committee should be established to serve the strategic decision-making body for the recovery.

#### Recovery coordinator

6.4.8 Recovery Coordinators may be appointed for a recovery operation. Recovery Coordinators are the public face of the recovery operation, providing leadership to the Recovery Committee and coordinating the recovery effort in accordance with agreed recovery plans.

#### Transition from a response focus to a recovery focus

6.4.9 Recovery begins at impact and recovery arrangements are established in parallel with the operational response.

6.4.10 As the response activities wind down, there should be a formal transition to provide more focus on recovery and to achieve an effective hand-over between the two incident phases. A recovery action plan is developed by the Recovery Committee (where established) following a maritime environmental emergency.

6.4.11 The Incident Commander prepares a response transition report, in consultation with the Recovery Coordinator, outlining:

- the emergency action plan in place at the time of transition, emphasising actions that are incomplete;
- resources allocated to the emergency response and their exit strategies;
- an assessment of the emergency, focussing on the environment and affected community;
- an impact summary, noting specifically any areas or situations with a potential to escalate the emergency;
- a forecast of the expected recovery outcomes;
- proposals for activities to be continued in the recovery phase.

6.4.12 The transition report should reassure the community that services are still available and must be supported by a coordinated public information strategy.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 49   |



## 6.5 Impact assessment

6.5.1 An assessment of the extent of damage, impact on the community and environment and the potential need for a longer-term recovery process should take place as soon as practicable following the start of response operations.

6.5.2 The Incident Commander is responsible for initiating the recovery impact assessment, in conjunction with support agencies, local Government and statutory authorities.

6.5.3 This should consider whether recovery can be managed locally in the short-term as part of the operational response, or requires more formal recovery arrangements, including the development of a Recovery Plan.

6.5.4 The relevant contingency plan should identify the agencies responsible for the conduct of impact assessment during both the response and recovery phases of the incident.

## 6.6 Communicating with the community

6.6.1 Recovery requires a strong focus on understanding the impacts of a maritime environmental emergency on people: their communities, livelihoods and environment.

6.6.2 These include health and psychological wellbeing, and the local economy. Effective engagement with people and their community needs to be underpinned by a robust communications strategy.

6.6.3 The strategy needs to ensure that people understand what is going on and how to report and receive information. The strategy should outline actions required and the means to obtain assistance and support. Engaging the local communities and harnessing their capabilities can contribute greatly to enhancing recovery.

6.6.4 Communication strategies need to be developed in a manner that is consistent with the emergency management arrangements and accepted communications protocols in the respective affected area. Community meetings and community updates are useful tools to maintain community support for the agencies leading and responding to both the response and the recovery from a maritime environmental emergency.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 50   |



## PART 7 - COST RECOVERY

### 7.1 Scope of cost recovery

7.1.1 Funding arrangements to support the National Plan should be based on the following principles:

- Preparedness for marine pollution incidents should be funded on the basis of the principle of 'the potential polluter pays';
- Response to marine pollution incidents should be funded on the basis of the principle of 'the polluter pays'; and
- Response, and incurring costs in relation, to pollution incidents where the polluter is not identified, or costs are not recoverable, may be reimbursed through the local or international liability and compensation regime on the basis of the potential polluter pays principal.

7.1.2 For shipping, this is to be achieved through the establishment of a Maritime Pollution Fund (MPF) which will be funded through an industry levy system and through the implementation of relevant international conventions under the auspices of the IMO.

7.1.3 For the offshore petroleum industry, this is achieved through the applicable petroleum legislation and related Agreement between the operator and the relevant Ministry.

7.1.4 All agencies responding to and incurring costs in relation to pollution incidents where the polluter is not identified, or costs are not recoverable, may be able to recover their costs from the MPF, once established.

7.1.5 International arrangements provide guidance as to what are considered to be reasonable costs associated with the response to a maritime environmental emergency. Costs and expenditure for the purposes of the National Plan relate to reasonable measures taken to respond to maritime environmental emergencies such as responding to a casualty to prevent pollution, combating actual pollution by oil or chemical at sea, defending sensitive resources and/or cleaning shorelines and coastal installations.

7.1.6 In general, costs will be considered 'reasonable' if they result from actions that:

- were undertaken on the basis of a technical appraisal of the incident;
- sought to enhance the natural processes of recovery;
- were not undertaken purely for public relations reasons.

7.1.7 The Control Agency is responsible for ensuring that there are arrangements, administrative or legislative, in place to enable support agencies to be reimbursed for the costs incurred in responding to an incident.

7.1.8 These costs are met by those responsible for the pollution through various international and domestic arrangements. Generally, reimbursement is normally through international liability and compensation funds or shipowner's liability insurers known as Protection & Indemnity Clubs (P&I Clubs). Where none of the conventions or domestic statutes provides for cost recovery, legal actions may need to be pursued.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 51   |



## 7.2 International maritime arrangements

7.2.1 International arrangements exist that generally ensure that the cost of combat and clean-up of pollutions originating from oil tankers and non-tankers can be recovered. These arrangements are set out in four international conventions to which Namibia is a party:

- For oil tankers:
  - the International Convention on Civil Liability for Oil Pollution Damage 1992 (the 1992 Civil Liability Convention)
  - the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage 1992 (the 1992 Fund Convention)
- For non-tankers (i.e. all other vessels)
  - International Convention on Civil Liability for Bunker Oil Pollution Damage 2000 (the Bunkers Convention).

7.2.2 The ability to utilise cost recovery arrangements relies on the ability to identify the polluter and to prove that they have appropriate insurance cover. The only exception is where it can be demonstrated that a so-called 'mystery' pollution originated from an oil tanker. In such circumstances the Fund Convention mentioned above may meet clean-up costs and compensation.

## 7.3 Domestic maritime arrangements

7.3.1 While the international conventions mentioned above have similar applications in terms of directly incurred costs of pollution response, the conventions are, in general, far broader in their scope and application than the National Plan arrangements. Types of claims that may be accepted under the international conventions that may **not** be part of the National Plan arrangements include:

- consequential loss – loss of earnings suffered by the owners or users of property contaminated as a result of a pollution, for example the loss of income by a fisher as a result of their nets being contaminated;
- pure economic loss – loss of earnings sustained by persons whose property has not been polluted, for example a hotelier whose premises are closed due to a contaminated public beach;
- damage to property, such as repair or cleaning of boats not involved in response activity, or cost of repairing roads or jetties damaged by clean-up operations.

7.3.2 Where national, regional, local, port authorities are unable to recover costs that have been incurred in responding to pollution incidents in Namibia or may have difficulty in meeting financial commitments while waiting for reimbursements from the shipowner/P&I Club, the envisaged Maritime Pollution Fund (MPF) may reimburse the operational or response costs subject to the rules and procedures of the MPF.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 52   |



## Maritime Pollution Fund

7.3.3 In order to develop a sustainable funding regime, a Maritime Pollution Fund (MPF) should be established to meet the following objectives:

- To provide financial resources for an effective oil and HNS pollution preparedness and response system;
- To provide financial resources in response to oil and HNS pollution where the polluter cannot be identified or where the full costs are not recoverable from the polluter; and
- To provide for any other contingency arising out of an oil and HNS pollution.

7.3.4 The MPF should be established with due consideration of existing emergency or pollution funding arrangements as well as international and regional best practices.

## 7.4 Offshore petroleum sector arrangements

For offshore petroleum facility-sourced pollution incidents, petroleum operators should be required, under the relevant Petroleum legislation to maintain adequate insurance to cover the costs of responding to an incident.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 53   |



## APPENDIX A- METOCEAN CONDITIONS OFF NAMIBIA

### 1.1 General

Current and wind speed/direction are important factors that combine to influence the trajectory and fate of an oil pollution on the seas surface. High quality metocean data is therefore paramount in the accurate prediction of pollution trajectory, weathering and fate. In addition to observed data, modelled and forecast data may be used to assist with oil pollution modelling.

### 1.2 Winds

1.2.1 In South-Western Africa winds tend to be predominantly from the south and are then topographically steered along the coast. Strong southerly winds often lie near to the north of Namibia (18° S) where they are strongest during the autumn and spring (OSRL, 2012).

1.2.2 The south-easterly trade winds have a high impact on wind speeds offshore Namibia where mean wind speeds of up to 19 m/s have been recorded (OSRL, 2012).

1.2.3 Squalls are the dominant process in the wind regime in this area. These are characterized by sudden increases in wind speed which can last for several minutes. They are associated with the leading edge of multi-cell thunderstorms where accelerating rainfall forces air downwards. Thunderstorms tend to occur in this region between November to May, with increasing frequency throughout January to April occurring every 5-15 days (OSRL, 2012).

### 1.3 Waves

1.3.1 Larger swell waves with significant wave heights of around 5 m are generally from the south-west generated in the Southern Ocean. Long wave periods are the most predominant factor here with values of approximately 15 seconds, although wave periods of over 22 seconds have been recorded (OSRL, 2012).

1.3.2 Wind-sea waves tend to generate from the south and south-east. These waves are generally smaller with shorter wave periods of around 10-11 seconds (OSRL, 2012).

### 1.4 Currents

1.4.1 The most influential current passing through this location is the Benguela Current. This is the eastern boundary current of the South Atlantic subtropical gyre, and begins as a northward flow off the south-western tip of South Africa. From here it travels northwards dividing into two branches at Namibia, one continuing northwards until it joins the Angola current at around 16°S, and the other bending north-west.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 54   |

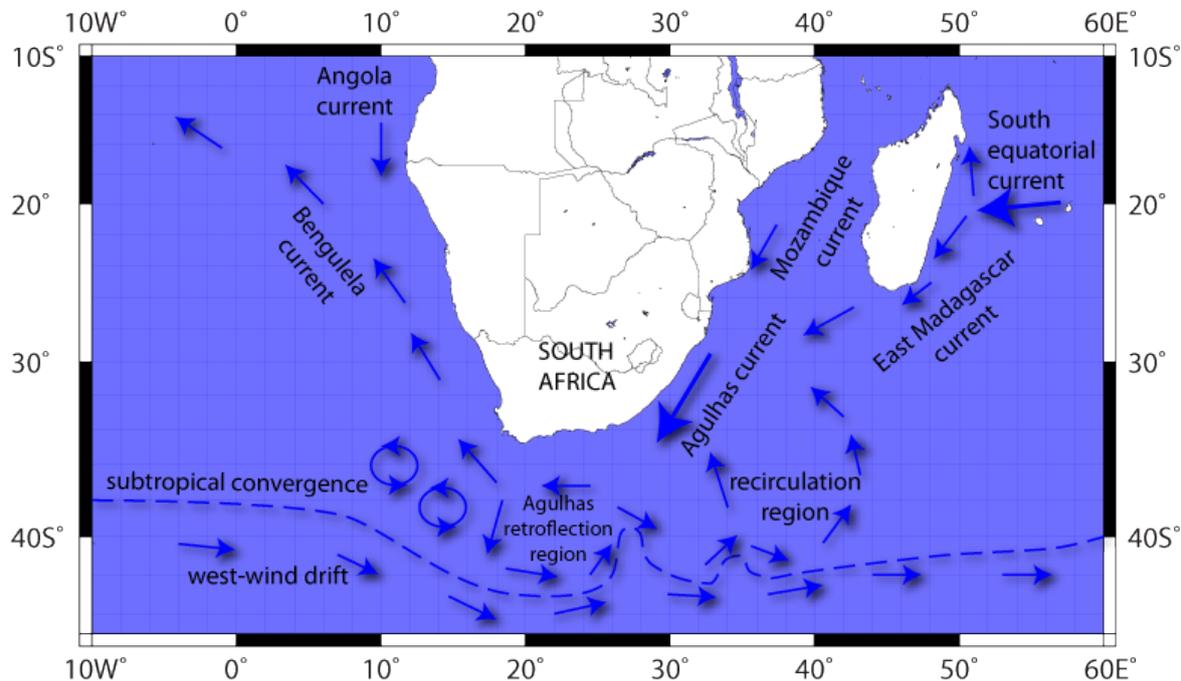


Fig 5: Surface currents off Southern Africa. Source: University of Wyoming

1.4.2 The surface currents offshore Namibia are generally northerly, influenced by the direction of the prevailing wind, with speeds of approximately 0.6 m/s (OSRL, 2012). It should be noted, however, that periodic and episodic reversals in the surface current can occur; the most pronounced and extended reversals occurring during Benguela Niños. Benguela Niños occur when warm seawater from the equator moves southwards along the south-west coast of Africa and penetrates the cold Benguela Current.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 55   |



## APPENDIX B - PROBABLE FATE OF SPILLED OIL

### 1.1 General fate and behaviour of oil on water

1.1.1 Being lighter than water, most of the oil stays on or near the surface of the water. Once released into the marine environment, several natural weathering processes set in immediately leading to changes in the physical and chemical properties of the oil.

1.1.2 In open water, physical forces (dissolution, dispersion, evaporation) are the most prominent fate processes.

1.1.3 In warmer waters surface tension spreading is considerably higher than cold water due to a lower viscosity of the oil.

1.1.4 In the intertidal areas, oil will commonly sink to the sediment, often covering wide areas depending on the weather conditions.

1.1.5 In protected areas, wave action and currents will have little physical effect on the oil.

1.1.6 In more exposed areas, the oil will spread over larger areas of the sediment bed. The mixing of the oil with sediment particles creates a situation where little further physical weathering will occur.

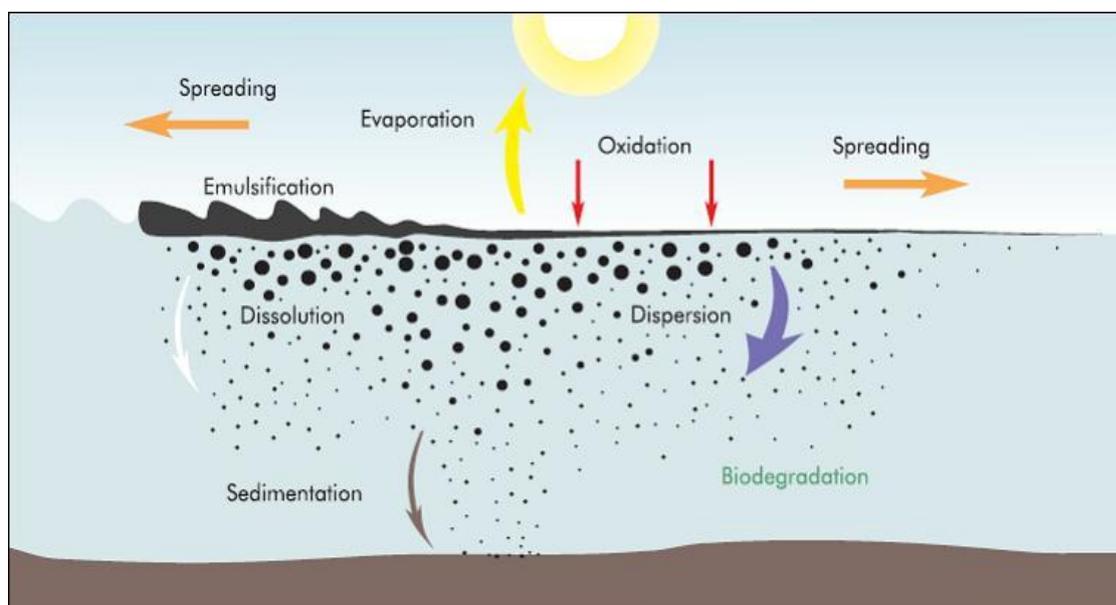


Fig 6: Weathering processes acting on polluted oil. Source: ITOPF

1.1.7 The oil will drift at 100% of the surface current and speed and direction, and 3-4% of the wind speed and direction. The result of these two components is the actual direction of drift. It is often very difficult to see the exact direction of current flow but

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 56   |



this can be remedied easily – throw oranges in the water. They drift almost exactly in the same direction that oil will.

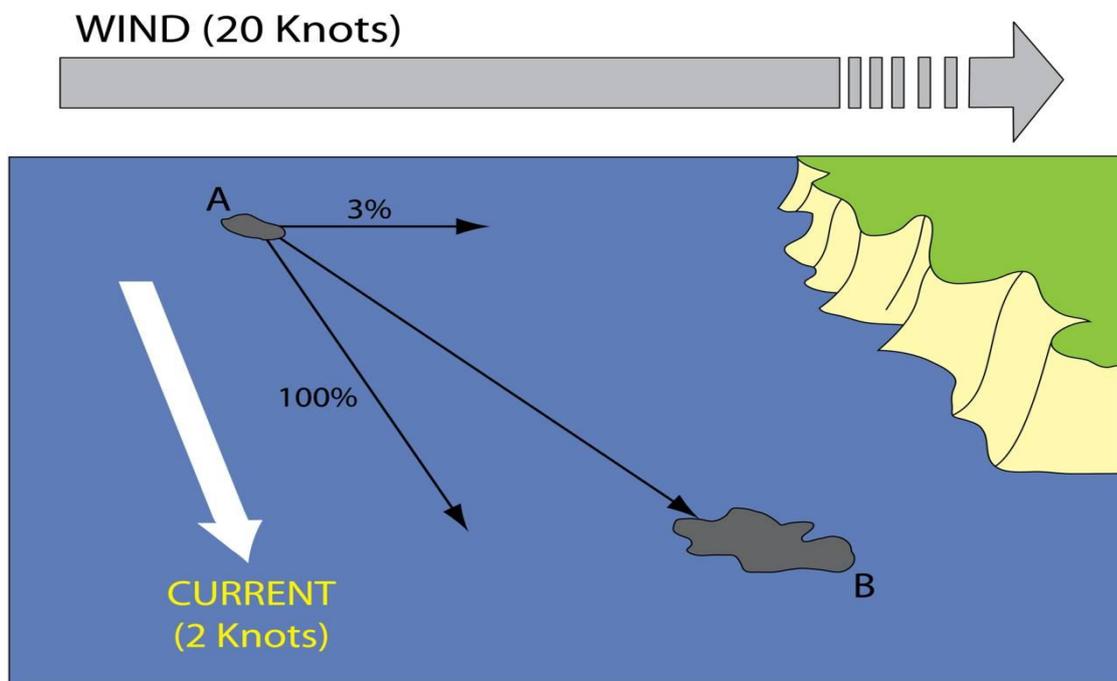


Fig 7: Direction of drift of oil on water - resultant of 100% of the current speed and 3-4% of the wind speed. Source: ITOPF

## 1.2 Drifter buoy studies

1.2.1 The average wind and current data for offshore Namibia suggest that oil released more than 40 km offshore has very little chance of drifting ashore. Drifter buoy studies carried out in 1995 by the Council for Scientific and Industrial Research (CSIR) on behalf of NAMCOR showed that oil released more than about 40 km offshore has less than a 3 % chance of being washed ashore (CSIR, 1995).

1.2.2 The chances of it washing ashore increases the closer the oil is released from shore and reaches 40% or more within 10 km of the coast; however when this happens, the oil will always wash ashore north of the point of release but under certain conditions it could come ashore several kilometres south of the point of release (CSIR, 1995).

1.2.3 As the study also showed, oil released 10 km from the shore has a 60 % chance of drifting out to sea. Some buoys released only 5 km from shore drifted in a NW direction from the start gradually moving further out to sea every day.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 57   |



1.2.4 It should be noted that the NAMCOR studies were conducted over a period of one year, which may not give a database adequate enough to illustrate all the possible scenarios that could occur on a day- by-day basis. Therefore, predictions of the likely drift direction will have to rely on the conditions prevailing at the time as is standard with any drift prediction.

### **1.3 Oil Pollution Trajectory Modelling (OPTM)**

1.3.1 During oil pollution response, periodic updates of the prevailing winds and confirmed observations of the movement of the pollution should be reported, preferably by email or facsimile, to the MRC or MWT for inclusion as necessary in the continuing OPTM predictions.

1.3.2 Additionally, MRC should obtain Meteorology forecasts for comparative purposes.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 58   |



## APPENDIX C – OIL AND CHEMICAL SPILL VULNERABILITY: COASTAL RESOURCES AT RISK

| CATEGORY                  | RESOURCE  | REGION        | CRITICAL PERIOD OF YEAR |
|---------------------------|---|---------------|-------------------------|
| Industry                  | Port of Walvis  | Erongo        | Year-round              |
|                           | Port of Luderitz  | /Karas        | Year-round              |
| Marine mammals and birds  | Cape Fria   | Kunene        | Year-round              |
|                           | Nambia Islands Marine Protected Area (NIMPA)                | Hardap-/Karas | Year-round              |
|                           | Cape Cross  | Erongo        | Year-round              |
| Sensitive habitats        | Kunene River mouth – Transfrontier Conservation Area (TFCA) | Kunene        | Year-round              |
|                           | Hoanib River mouth  | Kunene        | Year-round              |
|                           | Sandwich harbour wetland, Walvis Bay wetland - RAMSAR Sites | Erongo        | Year-round              |
|                           | Orange River mouth – RAMSAR Site                            | /Karas        | Year-round              |
| Amenities and Tourism     | Swakopmund recreational beaches                             | Erongo        | November-January        |
|                           | Hentiesbay recreational beaches                             | Erongo        | November-January        |
|                           | Orangemund recreational beaches                             | /Karas        | November-January        |
|                           | Luderitz recreational beaches                               | /Karas        | November-January        |
| Fisheries and aquaculture | NIMPA   | Hardap-/Karas | Year-round              |
|                           | Walvis Bay mariculture farms                                | Erongo        | Year-round              |
|                           | Swakopmund mariculture farms                                | Erongo        | Year-round              |
|                           | Luderitz Mariculture farms                                  | /Karas        | Year-round              |



## APPENDIX D – ROLES AND RESPONSIBILITIES OF GOVERNMENT OFFICES, MINISTRIES AND AGENCIES AND OTHER INSTITUTIONS

### 1.1 General

1.1.1 The National Plan provides a framework for the national oil and HNS preparedness and response system which operates through collaborative and coordinated mechanisms involving Government Offices, Ministries and Agencies (OMA) and industry.

1.1.2 The roles and responsibility that each stakeholder is expected to perform in order to make the system function effectively are outlined below.

### 1.2 Office of the Prime Minister (OPM)

1.2.1 OPM through the Directorate of Disaster Risk Management (DDRM) will assist in facilitating the classifying, by the National Risk Management Committee (NRMC), of certain major oil or chemical pollution incidents as national emergencies in terms of the Disaster Risk Management Act.

1.2.2 OPM will also facilitate access to national contingency and national emergency fund resources to enable oil pollution risk reduction operations, especially where the potential polluter or polluter is not identified or is unable to pay for the risk reduction operation.

1.2.3 OPM will also facilitate access to Namibian Defence Force (NDF) resources where commercial operators are unable to provide this service.

### 1.3 Ministry of Works and Transport (MWT)

1.3.1 As National Plan Manager, MWT will be expected to carry out the following functions:

- maintaining the National Plan;
- establishing and maintaining a functional National Marine Pollution Response Centre (NMPRC);
- providing on-site oil pollution operational, technical and administrative advice and assistance to control agencies;
- maintaining a list of OT members and other trained oil pollution response personnel to assist control agencies to respond to oil pollutions in the marine environment;
- maintaining a national inventory of oil pollution response equipment;
- ensuring that oil pollution combating equipment is appropriately deployed and maintained during a response;

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 60   |



- maintaining a national database of oil pollution incidents, collating data provided by other institutions;
- providing advice regarding setting of standards for equipment, training and implementation of oil pollution responses;
- providing advice and guidelines for contingency planning and audit of response plans;
- managing the development and delivery of annual and longer term equipment acquisition programs for Government-owned equipment;
- auditing and inspecting response equipment stockpiles and maintenance programs;
- coordinating the National Plan training program endorsed by the Operations Team and delivery of relevant training courses;
- reviewing and reporting to National Plan stakeholders on regional or industry pollution responses and exercises;
- managing research and development projects endorsed by the Operations Team and the dissemination of information on pollution prevention, improved pollution response and planning techniques;
- procuring and managing the oil Coastal Sensitivity Maps as well as Oil Spill Trajectory Modelling programs;
- representing the interests of National Plan stakeholders in the international fora;
- identifying oil pollution sources and insurance underwriters;
- securing polluter and/or underwriters guarantee and/or letters of undertaking;
- formulating treasury funding requests for mystery pollutions and/or incidents where there is no insurance cover;
- coordinating of all claims for reimbursement or for compensation against polluter and/or the insurance underwriters;
- approving ship, port, regional contingency plans
- managing decision-making support systems such as national oil spill risk assessment, as well as the oil pollution response atlas and trajectory modelling
- coordinating the national emergency towage and fixed-wing aerial dispersant arrangements
- providing secretariat services for MC,OT and working groups, and
- undertaking international liaison as necessary

### Department of Government Air Transport Services (GATS)

1.3.2 GATS will be required to provide fixed wing and helicopter aircrafts to:

- Conduct aerial surveillance flights to track and monitor oil slick movements;
- Carry out dispersant application;
- Where necessary, evacuate victims of pollutions to designated areas;
- Assigning representatives to the MC, OT as appropriate.

### Directorate of Civil Aviation (DCA)

1.3.3 DCA will provide expedient overflight and landing authorizations of foreign aircraft and officers that may be needed during pollution response operations.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 61   |



1.3.4 In addition DCA will oversee routine aerial surveillance through civilian aircraft reports as well as facilitating the hiring of surveillance aircraft, where necessary. DCA will, as requested, nominate and assign representatives to the OT.

### Namibia Meteorological Service (NMS)

1.3.5 NMS will, on a regular basis, provide data on the prevailing weather conditions and make predictions on weather changes during oil pollution response operations. NMS will, as requested, nominate and assign representatives to the OT.

## 1.4 Ministry of Fisheries and Marine Resources (MFMR)

1.4.1 MFMR will provide services and advice related to potential impacts of oil and chemical pollution on living marine resources. Specifically, MFMR will:

- provide the Incident Commander (IC) where appropriate;
- assess the impact of oil and chemicals on living marine resources;
- during routine operations, detect and monitor oil and chemical pollutions at sea and along the coastline;
- approve and control the use of dispersants in the marine environment in terms of the relevant policy and guidelines;
- provide aircraft for aerial surveillance and vessels for oil and chemical pollution combating;
- provide mobile resources for offshore containment and recovery;
- Assigning representatives to the MC, OT.

## 1.5 Ministry of Environment and Tourism (MET)

1.5.1 MET will provide services and advise related to the overall environmental health. Specifically, MET will:

- advise on possible effects on the health of people and ensure that appropriate remedial action is taken for the restoration and compensation of the environment;
- provide specialist advice on all issues related to areas that may be threatened by oil and chemical pollution;
- manage and coordinate shoreline clean-up operations to ensure rehabilitation of the affected areas taking into account the Net Environmental Benefit Assessment (NEBA) principle;
- coordinate and manage all pre pollution, post pollution processes in line with Shoreline Clean-up Assessment Technique(SCAT) guidelines;
- manage and coordinate activities involving the collecting, storing, transporting or disposing of oily waste material during oil pollution response in national parks and protected areas;
- manage and coordinate activities involving the protection, rescue and rehabilitation of wildlife during oil and chemical pollution clean-up;
- during routine operations, detect and monitor oil pollutions at sea and along the coastline;
- Collecting and labelling oil samples for analysis;
- Assigning representatives to the MC, OT;

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 62   |



## 1.6 Ministry of Mines and Energy (MME) and NAMCOR

1.6.1 MME and NAMCOR will be the primary liaison body with the offshore oil and gas industry. In addition, MME will:

- Ensure that offshore oil and gas operators maintain adequate insurance to cover liability and compensation claims that may result of their operations in the marine environment
- Analyse collected oil samples to determine characteristics (source, type, specific gravity, pour point, viscosity, flash point, origin of oil) of released oil or chemicals;
- Assigning representatives to the MC, OT as appropriate.

## 1.7 Namibian Defence Force (NDF)

1.7.1 NDF will provide logistical and manpower support during oil pollution response operations. In addition, NDF will:

- Transport oil pollution combating equipment, materials and personnel to and from pollution incidents, where polluters or commercial operators are unable to do so;
- Provide vessels and personnel for recovery operations at sea;
- Provide vehicles and personnel for shoreline clean-up operations;
- Render assistance to vessels in distress;
- Conduct aerial surveillance flights to track and monitor oil and chemical slick movements;
- Provide vessels and aircraft for dispersant application;
- Provide communication infrastructure;
- Provide current and tidal information;
- Provide additional security back up;
- Play the role of IC in pollution situations where necessary;
- Provide temporary accommodation and amenities such as mobile catering and ablution facilities;
- Where necessary, evacuate victims of pollutions to designated areas;
- Assigning representatives to the MC, OT as appropriate.

## 1.8 Ministry of Safety and Security (MSS)

1.8.1 MSS through the Namibian Police Force (NAMPOL) will be responsible for safety and security during pollution response operations by keeping law and order in the vicinity of the incident and protecting property. In addition, MSS will:

- Provide equipment, vehicles and personnel during pollution response activities;
- Provide communication equipment;
- Play the role of IC in pollution situations where necessary;

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 63   |



- Assigning representatives to the MC, OT, as appropriate;

## 1.9 Ministry of Home Affairs and Immigration (MHAI)

1.9.1 MHAI will facilitate the expedient issuance of visas and work permits to enable specialist personnel to enter and exit Namibia during oil pollution response operations. In addition, MHAI will assign representatives to the MC, OT as appropriate.

## 1.10 Ministry of International Relations and Cooperation (MIRC)

1.10.1 MIRC will provide liaison services with neighbouring and other States in the event of technical and logistic support services.

1.10.2 However, noting that normal diplomatic correspondence or communication may not be fast enough for communication between states in cases of threats of, actual, transboundary pollution, MWT may need to communicate directly with the relevant foreign authority in such cases. MIRC will also be required to assign a representative to the MC.

## 1.11 Ministry of Youth, National Service, Sport and Culture (MYNSSC)

1.11.1 MYNSSC will be responsible for organising and providing supervision of its own human resources and volunteers (workers of opportunity) to assist with pollution response operations including wildlife rescue and rehabilitation. In addition, MYNSSC will assign representatives to the MC, OT, as appropriate.

## 1.12 Ministry of Finance (MOF)

1.12.1 MOF will be responsible for facilitating expedient clearance (entry and exit) of imported combating equipment and materials during pollution response operations and ensure that, where applicable, customs and excise duties are waived for such equipment and materials. In addition, MOF will:

- Consider and process contingency funding requests to cover pollution response expenses in case of mystery pollutions or where the polluter has no insurance cover;
- Assist in the compilation of compensation and reimbursement claims to be lodged with polluters and/or insurance underwriters;
- Assist in negotiations and discussions of claims with polluters and/or insurance underwriters;
- Assign representatives to the MC and OT;

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 64   |



### 1.13 Ministry of Land Reform

1.13.1 MLR will be the technical custodian, in GIS and print formats, of the Coastal Sensitivity Maps for Oil and HNS Response. MLR will:

- Ensure that GIS hardware, software, and technical personnel are ready to support response activities;
- Assign representatives to the MC, OT as appropriate.

### 1.14 Ministry of Information and Communication Technology (MICT)

1.4.1 MICT will be responsible for providing communications plans for the effective use of incident communication equipment and facilities as well as provide up-to-date information about pollution situations and of the response efforts to the affected communities and the general public. To that effect, MICT will:

- Provide, install and test communications equipment;
- Set up and supervise communications centre;
- Distribute communication equipment to incident personnel;
- Communication equipment repair and maintenance;
- Work in co-operation with outside media organizations to provide accurate reporting of the incident to the outside world;
- Assign representatives to the MC, OT as appropriate.

### 1.15 Office of the Attorney General (OAG)

1.15.1 OAG will be responsible for: providing legal advisory services to the National Plan and its organs including providing legal advice on liability issues compensation claims lodged with local and international entities. In addition, OAG will:

- Institute legal proceedings against pollutants and/or their insurance underwrites as well as the IOPC funds as appropriate;
- Assign representatives to the MC, OT as appropriate.

### 1.16 Regional and local authorities

1.16.1 Regional and local authorities in each littoral region are responsible for coordinating the local administration and operation of the National Plan. This may be done in consultation with a regional or local committee and with due consideration of the relevant emergency management arrangements.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 65   |



1.16.2 According to their risk profile and capabilities, regional and local authorities will be responsible for:

- administration and operation of the National Plan, including provision of support to the MC and the OT;
- developing and implementing contingency plans for combating pollution;
- advising and supporting control agencies during response to pollution incidents;
- advising MWT in relation to training requirements on an annual basis; and
- ensuring that all oil and chemical pollution incidents and reports of oil pollution sightings whether confirmed or unconfirmed are reported to the RC.

### 1.17 Maritime Rescue Centre (MRC)

1.17.1 MRC will serve as the primary Marine Pollution Reporting Centre (MPRC).

1.17.2 MRC will provide communication facilities/equipment and manpower to enable the MRC to operate on a 24 hour/7 days a week basis. In addition, the MRC will:

- provide sufficient communication facilities to allow the rapid transfer of information to the Control Agency;
- Receive and relay without delay all reports of pollutions at sea to the NMPRC;
- Receive and relay all reports on accidents at sea or observed pollution in neighbouring countries and other countries within the WACAF Region;
- Appoint On Scene Commander (OSC) at sea;
- Carry out Oil Pollution Trajectory Modelling;
- Assign representatives to the OT as appropriate.

### 1.18 Namibian Port Authority (NAMPORT)

1.18.1 NAMPORT shall have mechanism to ensure that all its ports and facilities therein are protected from oil and chemical pollutions. All ports shall have a Port Marine Pollution Contingency Plan (PMPCP) which is coordinated with the National Plan as required by the OPRC Convention.

1.18.2 All port operators (terminals, fishing companies, oil companies etc) shall have in place Facility Marine Pollution Contingency Plans (FMPCP) which are coordinated with the respective POSCP. In addition, Namport shall:

- Serve as Control Agency within its area of jurisdiction;
- provide personnel and equipment for oil and chemical pollution response operations within its area of jurisdiction;
- provide facilities for the safe-keeping, storage and maintaining of its own as well as Government owned oil and chemical pollution combating equipment, as appropriate;
- train its personnel for possible oil pollution situations;

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 66   |



- organize regular drills and exercises to test the oil and chemical pollution preparedness and response system in the respective ports;
- provide emergency towage capability in each port in order to be able to provide assistance to vessels that may require assistance in order to reduce the risk of pollution;
- facilitate berthing for vessels involved in pollution combating;
- provide advice on the navigability of shipping lanes and channels during pollution incidents;
- provide Incident Command Post (ICP) during incidents or exercises;
- serve as the secondary RC (Port Control Walvis Bay);
- provide sufficient communication facilities to allow the rapid transfer of information to the primary RC and the MWT;
- assign representatives to the MC, OT as appropriate.

### 1.19 Industry (Ship owners/operators and the oil companies)

1.19.1 Any pollution is the responsibility of the polluter. The national response system (described by National Plan) will normally only be activated if pollution is of national or international proportions and the polluter, on its own or in conjunction with other partners under mutual assistance arrangements, cannot handle the pollution.

1.19.2 Therefore, the industry shall:

- have in place mechanisms to prevent, and respond to, pollutions including mutual assistance arrangements;
- initiate immediate response to any oil pollution within their area of responsibility;
- facilitate the provision of manpower for clean-up operations;
- mobilize industry response equipment;
- report all oil and chemical pollutions (without exception) within the marine environment to the relevant authorities;
- procure the necessary liability insurance to cover the costs of responding to oil pollutions as well as compensation, where applicable;
- assist with any other aspect of the response as requested by the Control Agency;
- assign representatives to the MC, OT as appropriate.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 67   |



## APPENDIX E – SAMPLING PROCEDURES FOR OIL SPILLS

### 1.1 General

1.1.1 Samples of oil/oily mixtures from the marine environment (water and foreshore areas) and all potential sources should be taken with the minimum of delay so that changes in the oil composition due to weathering are kept to a minimum.

1.1.2 All samples should be contained in clean glass jars (preferably sterilized glass jars if available) and information about where the samples were taken should be recorded. This information should be provided to the laboratory to assist with the analysis of the samples.

1.1.3 All samples should be kept in a cool, dark, secure location (i.e. within an insulated container, an esky or a refrigerator if available).

### 1.2 Marine environment

1.2.1 Every effort should be made to obtain representative samples of the pollutant from the water and foreshore areas or other polluted areas (including oiled wildlife).

1.2.2 A number of samples should be taken from various locations within the pollution. Note that any drains or outfalls in the area should also be sampled to be eliminated as a potential source of the pollution. Blanks or clean water samples should also be taken upstream/outside the pollution area and provided to the laboratory.

### 1.3 Ships

1.3.1 Sampling ships should only be undertaken with the assistance of an authorized officer with relevant shipping expertise. Samples from all potential ships that could have been responsible for the pollution must be obtained.

1.3.2 It is important to be able to eliminate ships as well as identifying the source of the pollution.

1.3.3 Samples should be taken from all waste oil tanks, bilge and bilge holding tanks, fuel oil tanks and the discharge from the oily water separator for comparison purposes, particularly if prosecution is envisaged. Information on how the sample was obtained should also be recorded and provided to the laboratory (e.g. from drain tap, valve, dipping into tank etc). Samples should be contained within sterilized or clean glass jars.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 68   |



## 1.4 Continuity of Samples

1.4.1 To be admissible as evidence, samples taken must be proved conclusively to be in an appropriate person's possession until delivery to the laboratory. This requires that rigid controls be instituted and maintained to establish continuity for the samples from the time of initial sampling.

## 1.5 Delivery of Samples

1.5.1 Where samples are collected for the purpose of prosecution appropriate safeguards need to be ensured during their transport.

1.5.2 Reliable transport entities should be used when transferring samples from the person responsible for its collection and/or custody to the designated analyst, incorporating rigid controls and security.

## 1.6 Analysis of Samples

1.6.1 A roster and contact details of approved competent analysis entities shall be drawn up and kept current. This process shall be coordinated by the Ministry of Mines and Energy and/or Ministry of Fisheries and Marine Resources.

## 1.7 Further Details

1.7.1 The International Maritime Organization (IMO) publication "IMO Guidelines for Sampling and Identification of Oil Spills" 1998 provides more detailed information on this subject. (All relevant structures of NMPCO have to be provided with a copy.)

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 69   |



## APPENDIX F – GOVERNMENT-CONTROLLED LOCALLY AVAILABLE OIL SPILL RESPONSES RESOURCES

| EQUIPMENT CATEGORY  | EQUIPMENT TYPE       | INSTITUTION/COMPANY |      |                        |                       |         |        |                        |
|---------------------|----------------------|---------------------|------|------------------------|-----------------------|---------|--------|------------------------|
|                     |                      | MWT                 | MFMR | Namibian Defence Force | Namibian Police Force | NAMPORT | NAMCOR | Coastal Municipalities |
| Booms               | Offshore/Ocean booms |                     |      |                        |                       |         |        |                        |
|                     | Shore sealing booms  |                     |      |                        |                       |         |        |                        |
|                     | Nearshore booms      |                     |      |                        |                       |         |        |                        |
|                     | Sorbent booms        |                     |      |                        |                       |         |        |                        |
|                     | Beach booms          |                     |      |                        |                       |         |        |                        |
|                     | Other type of booms  |                     |      |                        |                       |         |        |                        |
|                     | Towing bridles       |                     |      |                        |                       |         |        |                        |
| Boom Anchor Systems | Anchors              |                     |      |                        |                       |         |        |                        |
|                     | Anchor chains        |                     |      |                        |                       |         |        |                        |
|                     | Anchor lines         |                     |      |                        |                       |         |        |                        |
|                     | Anchor buoys         |                     |      |                        |                       |         |        |                        |
|                     |                      |                     |      |                        |                       |         |        |                        |

|              |             |             |                                    |                |      |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 70   |



## APPENDIX G– PRIVATELY -CONTROLLED LOCALLY AVAILABLE OIL SPILL REPOSSES RESOURCES

| EQUIPMENT CATEGORY  | EQUIPMENT TYPE       | INSTITUTION/COMPANY |               |                 |              |             |           |           |
|---------------------|----------------------|---------------------|---------------|-----------------|--------------|-------------|-----------|-----------|
|                     |                      | Vivo Namibia        | Engen Namibia | Chevron Namibia | PUMA Namibia | EBH Namibia | Company 6 | Company 7 |
| Booms               | Offshore/Ocean booms |                     |               |                 |              |             |           |           |
|                     | Shore sealing booms  |                     |               |                 |              |             |           |           |
|                     | Nearshore booms      |                     |               |                 |              |             |           |           |
|                     | Sorbent booms        |                     |               |                 |              |             |           |           |
|                     | Beach booms          |                     |               |                 |              |             |           |           |
|                     | Other type of booms  |                     |               |                 |              |             |           |           |
|                     | Towing bridles       |                     |               |                 |              |             |           |           |
| Boom Anchor Systems | Anchors              |                     |               |                 |              |             |           |           |
|                     | Anchor chains        |                     |               |                 |              |             |           |           |
|                     | Anchor lines         |                     |               |                 |              |             |           |           |
|                     | Anchor buoys         |                     |               |                 |              |             |           |           |

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 71   |



## APPENDIX H – OIL POLLUTION TRAJECTORY MODELLING (OPTM) REQUEST FORM

Email completed form to: [pauene@mwtc.gov.na](mailto:pauene@mwtc.gov.na) (office hours) or [wbradio@telecom.na](mailto:wbradio@telecom.na) (after hours) or Fax to: 064 208 6350 (office hours) and 064 207 497 (after hours. After sending the request call 064 208 6305. If after hours, call the Maritime Rescue Centre on 064 207575

Priority of request  Urgent  Routine  Exercise

NB: At least 5 working days must be given for OPTM run(s) requested as part of exercise or for contingency planning purpose

|  |   |  |
|--|---|--|
| Vessel /pollutions/exercise name or identifier |   |  |
| Name of requesting organization                |   | Name of Requesting person and position in response |
| Contact telephone number                       | Email address for model output (preferred method) | Fax number for receipt of model output             |

|  |   |                        |
|--|---|------------------------|
| Formats of coordinates used (select one)   | Latitude of pollution   | Longitude of pollution |
| Degrees & decimal degrees  | . °   | . °                    |
| Degrees, minutes & decimal minutes   | ° ' '   | ° ' '                  |
| Degrees, minutes & seconds   | ° ' "   | ° ' "                  |
| Spill date start (eg 23 08 2014)<br>Day                      Month                      Year | Spill start time<br>(pollution site local time, 24hour clock) |                        |

Type of oil spilt or likely to be spilt *Eg Name: Persistent oil, Type: fuel, Grade: bunker fuel*

|      |      |       |
|------|------|-------|
| Name | Type | Grade |
|------|------|-------|

Amount of oil spilt or likely to be spilt (complete one option)

*If exact pollution quantity is unknown for modeling purpose provide a maximum quantity of pollution*

Tones       Cubic meter       Litres       Barrels

Known or estimated amount of time oil was being discharged  hours   
 How long do you want the model prediction for  hours (eg.12/24/36)  
 Surface water temperature at pollution site  °C (if not available an average for this location will be used)

**Wind speed and direction at pollution location is vital to the effectiveness of the pollution simulation model**

|              |             |             |                                    |                |      |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 72   |





## APPENDIX I – PUBLIC RELATIONS

### 1.1 Introduction

1.1.1 A major maritime incident or ‘disaster’ attracts the attention of the print and electronic media. The response from reporters is likely to be immediate and, depending on the scale and nature of the incident, it may attract the attention of national and international media. The requirements of the media are immediate and sustained. The sheer numbers that arrive at the scene within a very short time exacerbate the problem of satisfying these requirements.

1.1.2 Such emergencies can place enormous demands on all those involved in the response. Media interest, particularly if it is international, can create pressure throughout a 24-hour period.

1.1.3 Recent years have seen a rapid advance in telecommunications and information technology capabilities. Television channels devoted entirely to output are with us to stay. The impact made at the scene of the disaster by those engaged in gathering material for the media can be massive and it is vital to prepare for the influx of media representatives.

1.1.4 Failure to consider the media response at an early stage may have serious implications for the management of the whole incident.

1.1.5 It is essential that the PRO and their team:

- Identifies the agencies that are responsible for handling various aspects of the situation;
- Ensures that media activity does not interfere with the operational activity of the emergency services; and
- Ensures that the media do not harass human casualties.

1.1.6 For incidents of national significance (Tier 2 or 3), the alerting procedure currently in place at MWT is as follows:

- On confirming the oil pollution incident DMA will immediately contact the Accounting Officer of MWT;
- The Accounting Officer will alert the Minister and, as appropriate, Public Relations Officer (PRO) of the Ministry;
- The PRO will then work with DMA and Combat Agency PRO in preparing and releasing news releases. This is critical in order for both the PROs of the Combat Agency and Government to be conveying a consistent message to the public.

1.1.7 Under the IMS, media management and public information will be disseminated out of the Incident Command Post (ICP). The PRO will organize media releases and conferences as necessary. For emergency situations, such as announcements on danger to the local population, necessity of evacuations etc., the PRO through relevant Statutory Agencies will

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 74   |



issue announcements on local media. All such releases should be approved by the IC, before they leave the ICP.

1.1.8 In the first few minutes, possibly within an hour, of a Tier 2 or 3 incident the briefest confirmation of the incident is needed.

1.1.9 If it is clear that the situation is a serious one and is likely to continue for some time but Combat Agency has not had sufficient time to assess the situation, any statements should be brief and factual. They should deal only within the areas of responsibility of the person making them. It is the responsibility of IC, in any incident, to agree to the release of further information. It should be his responsibility to be aware of media demands from the outset.

1.1.10 In order to minimize the risk of issuing conflicting or misleading information to the media, and bearing in mind the necessity for fast but accurate information and that press officers are likely to be co-located, all agencies should adopt the following approach:

- inform the agreed initial lead agency PRO before giving verbal statements to the media and restrict comments to matters concerning the agency that they represent;
- Before issuing news releases, to consult with the lead agency PRO. If it proves impossible to contact the lead agency in advance (for example, due to communication difficulties) inform the lead agency as soon as possible afterwards;
- contact those persons within their own organisation who the media may contact, or who may wish to make statements, and brief them on the requirement for co-ordination with the lead agency PRO;

## 1.2 Sample Initial Press Release

An oil/chemical pollution has occurred at (location) from (responsible party, if known). It was discovered at (time and date). The following areas have been affected: (fill in)

The cause of the pollution is being investigated by (fill in) and clean-up operations are underway by (fill in). The amount of product released is (amount) (or is not known, or is being calculated by the (fill in)).

Brief statement of operations is being undertaken and by whom:

The released material is/is not considered to be a health hazard. The following precautions should be taken by members of the public in the (fill in area(s)).

Further updates will be given at (time, date).

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 75   |



## APPENDIX J– SPILL RESPONSE AND CLEAN-UP STRATEGIES

This Appendix describes applicable oil pollution response strategies. Details on how to perform the operations will be made available in a reference manual or training program.

### Considerations for Developing Spill Response Strategies

|                                   |   |
|-----------------------------------|---|
| <p>Planning &amp; Logistics</p>   | <p>Response (including monitoring) as soon as practicable (4-6 hours) for Tier 1 pollutions. Response time (including monitoring) to be as soon as practicable for Tier 2 pollutions. Response time to be within 24- 48 hours for Tier 3 pollutions.</p>  |
| <p>Spills on Water (Open Sea)</p> | <p><b>Water (Open Sea)</b><br/>Options may include booming, skimming, removal, storage, dispersants and in-situ burning.</p> <p>Booms are commonly placed:</p> <ul style="list-style-type: none"> <li>- across a narrow entrance to the ocean, such as a stream/river outlet to close off that entrance so that oil can't pass through into marshland or other sensitive habitats.</li> <li>- in places where the boom can deflect oil away from sensitive locations, such as mangroves, shellfish beds, beaches used by piping plovers as nesting habitats etc..</li> <li>- around a sensitive site, to prevent oil from reaching it.</li> </ul> <p><b>Small and medium size pollutions</b><br/>It is recommended to use a skimmer(s) in conjunction with a Side Fitted Single vessel sweep (single or double sided) with the skimmer(s) placed in the apex of the sweep boom(s). "V" shaped sweeps are strongly recommended because of its excellent manoeuvrability.</p> <p><b>Large oil pollutions</b><br/>For larger oil pollutions, the Side Fitted Single Vessel "V" Sweep configuration may be combined with a large "U" configuration with an open apex. The oil - which is concentrated by the large "U" - will be guided into a narrow stripe behind the U-sweep, and may immediately be contained and recovered by the Side Fitted Single Vessel Sweep following right after the "U".</p> <p><b>Oil Recovery</b><br/>The recovery vessel's forward movement will force the floating oil - trapped inside the sweep – to concentrate at the apex of the boom formation. Allow the oil layer to build up before starting the skimmer. An oil layer of at least 2.5 to 5 cm is recommended. No type of skimmer will work efficiently in a real life situation without the presence of sufficient amounts of oil. But on the other hand the oil should continuously be pumped away as it enters the skimming zone. Otherwise it may escape under the boom. It is a question of obtaining a balance, and only the actual situation can indicate where this balance is.</p> |

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 76   |



|                                 |   |
|---------------------------------|---|
|                                 | <p>It is always better to start skimming too early than too late. In the first case, you may recover more water than necessary (dependent on type of skimmer), but in the second case you may lose the oil under the boom. If you recover too much water, it is not necessarily a big problem, as long as the type of skimmer pump used does not emulsify oil and water.</p> <p>Recovered water can easily be decanted from the storage tank, to be discharged in front of the sweep. In this way, any oil in the decanted water will be recovered again.</p> <p>Dispersant application involves the spraying of chemicals by aircraft or boat to accelerate the natural dispersion of the oil.</p> <p>Application of dispersant may be warranted based on the size of pollution. If the pollution appears as a sheen, dispersant will not be necessary. For containment, booming of sensitive coastal areas is the priority.</p>   |
| <p>Spills on water (rivers)</p> | <p>The aim is to keep the recovery equipment fixed to the river bank or structures in the river, while the water with the released oil is doing the work.</p> <p>Always try to deflect the oil to the slow side (the inner bank at a curve) of the river, if possible.</p> <p>The speed of the river current may require that the booms are positioned in a very small angle relative to the direction of the current.</p> <p>This is due to the fact that the speed of the water perpendicular to any section of boom must be less than 0.7 knots.</p> <p>The skimmer must be placed in a way which ensures the maximum flow of oil to it. In some situations it is possible to form a small circulation area close to the river bank, where the deflected and concentrated oil will rotate in a direction driven by the incoming oil, flowing along the boom. In this way the oil moves away from the critical entrainment zone at the apex, thus better avoiding loss of oil under the boom. Another very efficient way to ensure this takes place is to dig a small pond right next to the river. The river and the pond must be connected with one or two ditches. Use the boom to guide the oil into the pond. Both solutions work very well with the skimmer placed in the middle of the circulating oil.</p> <p>It may not always be possible to drive a truck all the way to the river bank, as the ground is too soft or muddy. It may be necessary to man-carry the recovery equipment to the river. So low weight is of essence here.</p> <p>Large debris must be deflected before it enters the boomed area. Rakes used from small boats will be quite useful. In some situations it is even possible to deflect large debris by means of a steel wire stretched across the river in or below the water surface, and placed in a small angle relative to the direction of the current.</p> |
| <p>Spills on the shoreline</p>  | <p>Spills on shorelines are threatening to the wild life environment and may result in the most costly recovery method.</p> <p>It should therefore be avoided by recovering as much oil as possible in the open water.</p>  |

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 77   |



|  |  |
|--|--|
|  | <p>The different shoreline types falling within the affected area should be identified and quantified and the most appropriate clean-up strategy for each considered. Factors to be taken into account include amenity value, whether beaches are easily accessible for heavy equipment and the ability of the beach to support such vehicles.</p> <p>Manual clean-up followed by natural weathering of the remaining oil is preferred for ecological reasons. Chemicals used on shoreline clean-up must be approved by the Relevant Authorities for the intended use. This approval must be obtained in writing, prior to application during an incident. Associated safety and environmental risks must be carefully evaluated and legal issues addressed, as is the case for all response options</p> <p>There are several ways of acting in the event of an oil pollution on the shoreline, but they all depend on the actual situation:</p> <p><b>Sandy Beaches</b></p> <p><b>Small to medium size pollution:</b> Use beach cleaning machines or bulldozers on the beach if it will carry the weight of such vehicles. If there is no significant surf, you can wash and push the oil back into the sea, to be recovered by a small shallow water skimmer, operating in an area surrounded by a beach boom. Dig a hole under the skimmer if the water is too shallow. Use a Fastank or a rigid open container for temporary storage.</p> <p><b>Larger pollutions/light to medium viscosity:</b> Fence in the oil by means of a shoreline boom, and operate a shallow water skimmer from the beach. If possible, try to push or wash the oil on the beach back into the water in order to let the skimmer recover it. Severe surf will make this operation difficult, if not impossible. A skimmer head or pump with a self-adjusting weir lip - mounted on a "Hiab" type hydraulic crane - a so called "Sweeper", is a very useful tool for this type of pollution response. The skimmer- or pump head can always be placed in the best recovery position, remotely controlled from the beach, a vessel, or a barge. Fast to operate and safe for personnel. Pump the oil to a land-based storage or to a sea-based facility such as a barge or a towable storage bladder (TSB).</p> <p><b>Larger pollutions/high viscosity:</b> As just above, but due to the viscosity it may be necessary to dismantle the skimmer pump from the floats and use it for transfer of the polluted oil. Sometimes the oil emulsion in the water next to the beach will be so highly viscous that a skimmer cannot sink into the oil. It will stay on top of it. Therefore a skimmer pump, mounted on a "Hiab" type hydraulic crane, is also a useful tool.</p> <p><b>Stony or Rocky Beaches</b></p> <p><b>Small to medium pollution/light to high viscosity:</b> Use absorbents for small amounts of oil and when gentle treatment is required. For larger amounts the best way to recover the oil from a rocky coast is to wash the oil back into the sea, using fire hoses or high pressure- or hot water cleaners, and let a small</p> |
|--|--|

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 78   |



|  |   |
|--|---|
|  | <p>shallow water skimmer recover it there. Work in an area fenced-in by a shoreline boom. Use a Fastank or a rigid open container for temporary storage.</p> <p>It must always be considered whether it is environmentally feasible to pressure wash a coast line. If there are important living organisms at risk, and the pollution is too big for using absorbents, a more gentle treatment with bio-degradable detergents or surface washing agents could be the option. No action at all may in some cases be the best solution.</p> <p><b>Large pollution/light to medium viscosity:</b> As above for small pollutions. However, larger skimmers and pumps can be used. Operate the skimmer from the shore, from a vessel, or from a barge, and store the oil in a land or sea-based temporary storage facility. A skimmer head or pump with a self-adjusting weir lip - mounted on a "Hiab" type hydraulic crane - a so called "Sweeper", is a very useful tool for this type of pollution response. The skimmer- or pump head can always be placed in the best recovery position, remotely controlled from the beach, a vessel, or a barge. Fast to operate and safe for personnel. Let nature finalize the cleaning process, or use a bio-degradable detergent or surface washing agent. Use absorbents whenever feasible.</p> <p><b>Large pollution/high viscosity:</b> As just above, but dismantle the skimmer pump from the floats for transfer of the oil. A skimmer can be used by means of a feeder which can force heavy oil into the transfer pump. Sometimes the oil emulsion in the water next to the beach will be so highly viscous that a skimmer cannot sink into the oil. Therefore a skimmer pump, mounted on a "Hiab" type hydraulic crane, is also a useful tool here. Let nature finalize the cleaning process, or do the final cleaning using a bio-degradable detergent or surface washing agent.</p> <p><b>Gravel Beaches Subject to Tidewater</b><br/>Gravel beaches and tidewater cause special problems for oil pollution responders. When the tide goes down, the oil sinks with the water level deep into the gravel and at every high tide the oil will be back at the surface. If you try to wash the top layer of gravel at low tide, it may appear clean until after the next high tide. Then new oil "from the deep" will cover the beach. A careful assessment of the pros &amp; cons of cleaning must be performed prior to doing anything to these beaches. Natural degradation may be the fastest and safest way for the environment.</p> |
| <p>Spills in Wetlands, Mangrove Swamps and Marshes</p> | <p>These areas are priority for protection. The main protection options are booming and mechanical recovery. If oil enters these areas the main clean-up options are:</p> <p>Natural Recovery – no action booming and skimming of oil on the water surface in creeks; pumping of bulk oil from sediment surface, depressions and channels; low pressure water flushing of free oil from sediment surface and vegetation into areas where it may be collected; and Use of absorbent materials with subsequent collection and disposal.</p> <p><b>No Action/Natural Recovery</b></p>  |

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 79   |



|  |  |
|--|--|
|  | <p>There are several circumstances under which it is appropriate to do nothing. The foremost of these situations is when clean-up would cause more harm than benefit to mangroves or other associated habitats, or when shorelines are inaccessible.</p> <p>When no clean-up is conducted, oil will slowly degrade and be removed naturally, assisted by natural and storm-generated flushing. Spills of light oils, which will naturally evaporate and break down very rapidly, do not require clean-up. Such light oils are usually gone within days. Furthermore, light fuel oils such as gasoline and jet fuels typically impart their toxic impacts immediately, and clean-up can do little to reduce the damage.</p> <p>It is important to recognize, though, that even where no clean-up is advisable, light oils can cause significant damage and contaminated mangrove habitats may require many years to recover.</p> <p>Clean-up also is not recommended for small accumulations of oil, regardless of product type. Impacts caused by light accumulations generally do not warrant the trade-offs associated with clean-up activity. Even for major pollutions, there may be cases for which it is best to take no action, depending on the nature of the oiling and the characteristics of the mangrove forest affected.</p> <p>Generally, clean-up should not be conducted in interior areas of mangrove forests because of the risk of damaging mangrove roots and seedlings, trampling oil into the sediment where it will degrade much more slowly, and spreading oil into previously unoiled areas. Exceptions may be made if access is possible from upland areas or if vegetation is sparse enough to permit access without injury to pneumatophores and prop roots. If clean-up is attempted in interior mangroves, experienced personnel must constantly oversee clean-up crews to prevent further injury. In any case, attempts should be made to control the movement and spread of any mobile oil within the mangroves to prevent contamination of adjacent areas.</p> <p>Several response techniques described below, including barriers, passive collection, and flushing can be used to help control and contain oil.</p> <p><b>Barrier Methods – Booms</b></p> <p>Several forms of barriers can deflect or contain oil, including booms, sediment berms, dams, and filter fences. Barriers can be used along mangrove shorelines and inlets to prevent oil entry. Proper strategic boom deployment in sheltered lagoon areas may be highly effective in trapping large quantities of oil and reducing oil impact to interior mangroves. To be effective, barriers must be deployed immediately after a pollution before oil moves into mangrove areas. This means that appropriate types and sufficient amounts of barrier materials must be stockpiled and available at the time of the pollution, and that strategies for boom placement and deployment have already been established and tested. Because of the soft substrate and sensitivity of prop roots and pneumatophores, barrier methods should be deployed carefully and maintained vigilantly to prevent physical damage during installation and</p> |
|--|--|

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 80   |



|  |  |
|--|--|
|  | <p>removal. Untended boom that breaks loose can become entangled in the mangrove fringe, breaking off pneumatophores, prop roots, and juvenile plants. Where barrier methods are not an option, mangrove forests will remain vulnerable to contamination. For example, booms generally cannot be deployed successfully along mangrove shorelines with strong currents or along sections of mangrove shorelines behind shallow flats. Booms are usually not effective with light oils because they can readily mix into the water column and pass under floating boom. Heavier oils are more likely to remain at the water surface and so are more easily controlled with booms, although very heavy oils can sometimes become negatively buoyant and pass under boom.</p> <p><b>Pumping/Vacuuming</b></p> <p>Vacuuming can remove pooled oil or thick oil accumulations from the sediment surface, depressions, and channels. Vacuum equipment ranges from small units to large suction devices mounted on dredges, usually used outside vegetated areas.</p> <p>Generally, vacuuming should be conducted only at the outer fringe of mangrove forests; it is most feasible and least damaging where vegetation is not very dense, enabling easy access.</p> <p>Vacuuming can be used effectively on heavier and medium oils, providing they are still reasonably fluid. Lighter, more flammable petroleum products such as jet fuel and diesel generally should not be vacuumed.</p> <p><b>Use of Sorbents</b></p> <p>Sorbent boom or other sorbent materials can be placed at the fringe of oiled mangrove forests to passively recover any mobile oil, including sheens. Sorbents are oleophilic and either absorb or adsorb oil. They can be composed of either synthetic or natural materials, and they come in a variety of forms, including sausage boom, “pompom” or snare boom, sheets, rolls, pellets, and loose particulates. Sorbents vary in their effectiveness depending upon oil type, degree of oil weathering, and sorbent absorption or adsorption capacity. Sorbent materials must be placed and removed carefully to minimize disturbance of sediments and injury to mangrove roots. Sorbent materials must be closely monitored to ensure they do not move and damage mangrove roots, and must be removed when they become saturated or are no longer needed. Sorbents have been used to wipe heavy oil coating from mangrove surfaces. Before using sorbents in this way, consideration should be given to associated physical damage. This activity is best conducted only in areas where substrate is firm enough to prevent oil mixing into it.</p> <p><b>Low-Pressure Ambient Water Flushing</b></p> <p>Low-pressure flushing with ambient seawater can wash fluid, loosely adhered oil from the sediment surface and mangrove vegetation into areas where it can be collected, as long as it can be done without resulting in significant physical disturbance of the sediment. Generally, flushing is most feasible at the outer fringe, but can sometimes be used to remove oil trapped within the mangrove forest. Flushing at water levels high enough to submerge sediments may help minimize impact to the substrate. If substrate mixing is likely or unavoidable, responders should allow the oil to weather naturally. Flushing is not effective with heavy oils, such as Bunker C, or highly weathered oils. Oil should be</p> |
|--|--|

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 81   |



|                           |   |
|---------------------------|---|
|                           | flushed only during ebbing tides to move it out where it can be collected. Flushing can be a useful technique to help control the movement and spread of mobile oil in mangrove areas to prevent contamination of adjacent areas. When flushing free-floating oil, care should be taken to minimize emulsification.   |
| VOCs and SVOCs            | Volatile Organic Compounds (VOC) and Semi-VOCs (SVOC) require specialized equipment for detection and monitoring. Every report that indicates the possibility of the presence of VOCs and SVOCs must be investigated promptly and immediate steps taken to detect and identify the offending substance and source. Isolation of the source then becomes the top priority followed immediately by addressing human concerns of both health and safety.   |
| Spill Monitoring          | Spill monitoring includes safety and occupational health conditions, existing and possible environmental threats and for river and offshore pollutions, trajectory modelling.   |
| Removal                   | Techniques for skimming and collection of oil released onto land or into water. Transfer Equipment needed to move collected liquids and solids to interim storage and disposal facilities   |
| Oil Recovery              | When large volumes of oil have been contained either through natural or mechanical containment it will be necessary to remove or recover the oil. In rivers, this will generally occur in excavated trenches, adjacent to berms or natural barriers, or back water areas. Vacuum trucks are ideal at clean-up sites accessible by road and where a large volume of oil has pooled in an area that is generally free of water. The truck must be positioned at a safe distance so that there is no possibility of fire or explosion. |
| Control Points            | Specific geographical locations, primarily on rivers, which provide for the preplanning of staging and deployment locations for oil pollution response equipment. Pre-identification required of access, work area size, boat launches, equipment storage, natural boom anchors, water depth, water speed, flow patterns and water hazards. In  |
| In-situ Burn              | As presented in Appendix 14.  |
| Post pollution activities | Personnel decontamination, equipment cleaning, pollution debris disposal, and maintenance, debriefing and review of strategies following an incident.   |

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 82   |



### APPENDIX K – MARINE POLLUTION SITUATION REPORT (SITREP) FORMAT

Incident name/  
Description

Date  Time  SITREP No

Priority  Urgent  Immediate

Final SITREP?  Yes  No Next SITREP no:.....

Description of incident and impact

Overall weather Condition

Summary of response actions to date.

Current Strategies

Summary of Resources available/ deployed

Other Information

SITREP prepared by

|       |        |       |
|-------|--------|-------|
| Name  | Agency | Role  |
| Phone | Fax    | Email |

Attachments  No of pages

|              |             |             |                                    |                |      |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 83   |



## APPENDIX L – VESSEL CHARTER AGREEMENT (EXAMPLE ONLY)

### VESSEL CHARTER AGREEMENT

IT IS MUTUALLY AGREED between the owner and the Ministry of Works and Transport (MWT) that the owner will let and MWT will take the vessel for the period of hire at the agreed rate for the purpose of combating pollution of the sea by oil within such parts of the area of operations as the Ministry of Works and Transport may direct on the following conditions namely:

- 1) Prior to the commencement of hire, the owner and the Master of the vessel shall perform and observe all laws relating to the servicing operation and certification of the vessel.
- 2) The owner will place the vessel in a seaworthy condition manned in accordance with all relevant legal requirements at the disposal of the MWT at the specified port at the commencement of hire.
- 3) The owner will pay the wages of the crew during the hiring and will bear the cost of maintenance and other expenses arising out of the hiring other than the cost of fuel which shall be borne by the MWT.
- 4) The Master will be responsible for the safe navigation of the vessel and will be the sole judge as to whether it is prudent to put to sea or remain at sea at any given time having regard to the state of the weather and the surrounding circumstances.
- 5) Subject to condition 4 the Master and crew will obey all reasonable orders of the MWT representative including orders relating to:
  - a) the carriage of persons other than the crew on board the vessel;
  - b) the fitting to the vessel of anti-pollution equipment supplied by the MWT;
  - c) the carriage, operation and use of anti-pollution equipment and materials on board the vessel; and
  - d) the voyages and tasks to be undertaken by the vessel.
- 6) Time lost through any defect in the vessel or its equipment or any unreasonable act or omission of the owner, Master or crew will be deducted from the period of hire.
- 7) The hiring may be terminated by the MWT representative, or by the owner, at any time upon either of them giving 24 hours' notice in writing to the other.
- 8) Any notice which the owner may desire to give to the MWT under this agreement may be given by the owner or Master to the MWT and any notice which the MWT may wish to give to the owner under this agreement may be given by the MWT to the owner or Master.
- 9) In the agreement the expressions set out in Column 1 of the Schedule shall have the meanings respectively set out opposite to them in Column 2 of the Schedule.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 84   |



**SCHEDULE**

COLUMN 1

COLUMN 2

Vessel:

Owner:

Master:

Specified Port :

Area of Operations: within a radius of .....nautical miles from

Commencement of Hire: ..... Am on ...../...../.....

..... PM on ...../...../.....

Period of Hire: ..... days of 24 hours

Agreed Rate: \$..... a day and for and part thereof

\$..... a day

MWT Representative: The person signing this agreement on behalf of MWT or any person nominated by him or her to be the MWT representative for the purpose of this agreement.

Done this .....day of.....20.....

.....

Owner

Ministry of Works and Transport

Witnesses

.....

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 85   |



## APPENDIX M – TRAINING AND EXERCISES

### 1.1 Introduction

1.1.1 The ultimate test of any contingency plan is measured by performance in a real emergency. It is vital therefore, that the National Plan includes an ongoing programme to test the plan through realistic exercises.

1.1.2 This exercise programme progressively prepares response teams to perform effectively in realistic representations of all the risks that the National Plan has been designed to meet. In addition, response strategies will be tested and recommendations made for modification or improvement to the National Plan.

### 1.2 Legal Basis

1.2.1 Article 6 Clause 2 (b) of the OPRC convention requires, inter alia, that “In addition, each Party, within its capabilities either individually or through bilateral or multilateral cooperation and, as appropriate, in co-operation with the oil and shipping industries, port authorities and other relevant entities, shall establish a programme of exercises for oil pollution response organizations and training of relevant personnel.”

### 1.3 Exercise Categories

1.3.1 Four exercise categories are identified which allow different aspects of the plan to be exercised separately and promote understanding of the purpose and scope of the whole plan. They are:

- notification;
- tabletop;
- equipment deployment; and
- incident management (limited and full-scale deployment)

#### Notification Exercises

1.3.2 Notification exercises test the procedures to alert and call out the response teams and are conducted through telephone and other means of communication, as stipulated in the response plan.

1.3.3 They are used to test communications systems, check availability of personnel, evaluate travel options and the speed at which travel arrangements can be made, and assess the ability to transmit information quickly and accurately.

1.3.4 This type of exercise will typically last one to two hours and may be held at any time, day or night, announced or unannounced.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 86   |



## Tabletop Exercises

1.3.5 These exercises consist of interactive discussions of a simulated scenario among members of a response team but do not involve the mobilization of personnel or equipment.

1.3.6 They focus on the roles and actions of the individuals, the interactions between the various parties and the development of information and response strategies.

1.3.7 A tabletop exercise might typically last four to eight hours and should be announced well ahead of time to ensure availability of personnel.

## Equipment Deployment Exercises

1.3.8 This involves the deployment of oil pollution response equipment at particular locations in response to an oil pollution scenario and in accordance with strategies laid down in the plan for a particular pollution scenario. They test the capability of the response teams to respond to the three levels of oil pollution incidents namely, Tier 1, Tier 2 and Tier 3 and provide experience of actual conditions and of oil pollution scenarios while enhancing individual skills and teamwork.

1.3.9 In some instances, an Equipment Deployment Exercise might be run in conjunction with a Tabletop or an Incident Management Exercise.

1.3.10 Equipment deployment exercise would typically last six to eight hours and should be repeated frequently until teams are acquainted with the equipment.

## Incident Management Exercises

1.3.11 These exercises are often more complex in that they simulate several different aspects of an oil pollution incident and involve third parties. Such an exercise may be of limited scope, for example, using own personnel to role-play the main external parties, or of full scope, when outside agencies and organizations are invited to provide personnel to play their own roles within the exercise.

1.3.12 Incident Management Exercises require significant planning in terms of availability of personnel, development of an adequate scenario and the physical arrangements for staging such events.

1.3.13 An incident management exercise often lasts one to two days and incurs a high financial cost. Appropriate budget allocations should, therefore, be included in forward planning.

## 1.4 Training

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 87   |



1.4.1 A continuous training programme must be in place to train new personnel and to maintain the skills of persons already trained and experienced in oil pollution management.

1.4.2 Since persons are continuously coming into and leaving the employ of the Government Service, this warrants that the training programme be ongoing and sustained.

1.4.3 The training matrix in the table below provides a framework to ensure that the competencies of personnel involved in Namibia's oil pollution preparedness and response system are kept current and relevant and the oil and gas companies are always present and available.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 88   |



## TRAINING MATRIX

| Personnel                      | IMO Training |             |             | Advanced Training            | Specialized Training |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                | Conferences        |                            |                   |                     |                     |                      |
|--------------------------------|--------------|-------------|-------------|------------------------------|----------------------|------------------|-------------|---------------|--------|-----|----------------------|--------|------------------|------|-----------------------------|---------------------|------------------------|----------------|--------------------|----------------------------|-------------------|---------------------|---------------------|----------------------|
|                                | IMO Level 1  | IMO Level 2 | IMO Level 3 | Advance pollution Management | CLC/FUND/OPRC/HNS    | ICS for managers | ICS general | Aerial Survey | HAZMAT | ESI | NEBOSH Environmental | SAMTRC | Waste Management | SCAT | Coastal Sensitivity Mapping | Trajectory modeling | Hydro dynamic modeling | Remote Sensing | CCS/OSRL Responder | Ecological Risk Assessment | IMO MEPC meetings | IOPC Funds meetings | Interspill (EUROPE) | Spillcon (Australia) |
| Minister/PS/ Senior Management |              |             |             |                              |                      |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                |                    |                            |                   |                     |                     |                      |
| NRMC                           |              |             |             |                              |                      |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                |                    |                            |                   |                     |                     |                      |
| NMPCP MC                       |              |             |             |                              |                      |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                |                    |                            |                   |                     |                     |                      |
| NMPCP OT                       |              |             |             |                              |                      |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                |                    |                            |                   |                     |                     |                      |
| Response Coordinator           |              |             |             |                              |                      |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                |                    |                            |                   |                     |                     |                      |
| Incident Commanders            |              |             |             |                              |                      |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                |                    |                            |                   |                     |                     |                      |
| Planning section Chiefs        |              |             |             |                              |                      |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                |                    |                            |                   |                     |                     |                      |
| Operations Section Chiefs      |              |             |             |                              |                      |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                |                    |                            |                   |                     |                     |                      |
| Logistics Section Chiefs       |              |             |             |                              |                      |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                |                    |                            |                   |                     |                     |                      |
| Finance & Admin Section Chiefs |              |             |             |                              |                      |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                |                    |                            |                   |                     |                     |                      |
| Field Response Teams           |              |             |             |                              |                      |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                |                    |                            |                   |                     |                     |                      |
| OSROs                          |              |             |             |                              |                      |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                |                    |                            |                   |                     |                     |                      |
| Trainers                       |              |             |             |                              |                      |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                |                    |                            |                   |                     |                     |                      |
| SHE Officers                   |              |             |             |                              |                      |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                |                    |                            |                   |                     |                     |                      |
| Legal Advisors                 |              |             |             |                              |                      |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                |                    |                            |                   |                     |                     |                      |
| Public Relations               |              |             |             |                              |                      |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                |                    |                            |                   |                     |                     |                      |
| Beginners                      |              |             |             |                              |                      |                  |             |               |        |     |                      |        |                  |      |                             |                     |                        |                |                    |                            |                   |                     |                     |                      |

|              |             |             |                                    |                |      |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 89   |



## APPENDIX N - STANDARD POLLUTION OBSERVATION/DETECTION LOG

NO POLLUTION DETECTED

| REPORTING AUTHORITY |              | AIRCRAFT REG   | MISSION NO     | CAPTAIN        | CO PILOT      | OPERATOR              | OBSERVER           | DAY                            | DATE                    | MONTH | YEAR                    |   |   |       |                                  |                                  |                       |
|---------------------|--------------|----------------|----------------|----------------|---------------|-----------------------|--------------------|--------------------------------|-------------------------|-------|-------------------------|---|---|-------|----------------------------------|----------------------------------|-----------------------|
| FLIGHT TYPE         |              | ROUTE/<br>AREA |                |                |               | TIME OVER THE SEA DAY |                    |                                | TIME OVER THE SEA NIGHT |       | TOTAL TIME OVER THE SEA |   |   |       |                                  |                                  |                       |
|                     |              |                |                |                |               | hrs                   | mins               | hrs                            | mins                    | hrs   | mins                    |   |   |       |                                  |                                  |                       |
| No                  | AREA<br>CODE | TIME<br>UTC    | POSTION        |                | DIMENSION     |                       | AREA<br>COVER<br>% | OIL<br>AREA<br>KM <sup>2</sup> |                         |       |                         |   |   |       | MINIMUM<br>VOLUME M <sup>3</sup> | MAXIMUM<br>VOLUME M <sup>3</sup> | COMBATIBLE?<br>YES/NO |
|                     |              |                | LAT<br>'SOUTH' | LONG<br>'EAST' | LENGT<br>H Km | WIDTH<br>Km           |                    |                                | 1                       | 2     | 3                       | 4 | 5 | Other |                                  |                                  |                       |
|                     |              |                |                |                |               |                       |                    |                                |                         |       |                         |   |   |       |                                  |                                  |                       |
|                     |              |                |                |                |               |                       |                    |                                |                         |       |                         |   |   |       |                                  |                                  |                       |
|                     |              |                |                |                |               |                       |                    |                                |                         |       |                         |   |   |       |                                  |                                  |                       |

| No | POLL<br>TYPE | DETECTION |    |    |    |    |    | PHOTO<br>Y/N | VIDEO<br>Y/N | FLIR<br>Y/N | WEATHER |       |     |     |    | REMARKS |
|----|--------------|-----------|----|----|----|----|----|--------------|--------------|-------------|---------|-------|-----|-----|----|---------|
|    |              | SLAR      | IR | UV | MS | MW | LF |              |              |             | WIND    | CLOUD | VIS | SEA | Wx |         |
|    |              |           |    |    |    |    |    |              |              | 0           |         | FT    |     |     |    |         |
|    |              |           |    |    |    |    |    |              |              | 0           |         | FT    |     |     |    |         |
|    |              |           |    |    |    |    |    |              |              | 0           |         | FT    |     |     |    |         |
|    |              |           |    |    |    |    |    |              |              | 0           |         | FT    |     |     |    |         |

| NO | REMARKS | OIL APPEARANCE TABLE |                            |  |  |
|----|---------|----------------------|----------------------------|--|--|
|    |         | NO                   | OIL APPEARANCE DESCRIPTION | MINIMUM VOLUME m <sup>3</sup> /km <sup>2</sup> | MAXIMUM VOLUME m <sup>3</sup> /km <sup>2</sup> |
|    |         | 1                    | SHEEN                      | 0.4  | 0.30   |
|    |         | 2                    | RAINBOW                    | 0.30   | 5.00   |
|    |         | 3                    | METALLIC                   | 5.00   | 50.00  |
|    |         | 4                    | DISCONTINUOUS COLUR        | 50.0   | 200  |
|    |         | 5                    | TRUE COLOR                 | 200  | >200   |

| Doc ID       | Revision No | Compiled by | Approved by                           | Effective date | Page |
|--------------|-------------|-------------|---------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of<br>Namibia | April 2017     | 90   |



## STANDARD POLLUTION OBSERVATION/DETECTION LOG COMPLETION GUIDE

|                               |  |
|-------------------------------|--|
| <b>NO POLLUTION DETECTED:</b> | Tick NO POLLUTION DECREED If no pollution is detected  |
| <b>REPORTING AUTHORITY:</b>   | National Authority responsible for pollution control   |
| <b>AIRCRAFT REG:</b>          | Aircraft registration letters/numbers  |
| <b>MISSION No.:</b>           | National Assigned Mission Number   |
| <b>FLIGHT TYPE:</b>           | National Designation for flight type   |
|                               | NAT - national   |
|                               | REG - Regional   |
|                               | EXR - Exercise   |
|                               | RIG - Oil rig patrol   |
|                               | SHIP - Shipping patrol   |
|                               | FP - Fisheries patrol  |
|                               | PC - Pollution control   |
|                               | OTH - Other  |
| <b>CAPTAIN OF AIRCRAFT:</b>   | Name of Captain  |
| <b>CO PILOT:</b>              | Name of Co-Pilot   |
| <b>OPERATOR</b>               | Name of operator   |
| <b>OBSERVER:</b>              | Name of observation  |
| <b>DAY:</b>                   | Number assigned to the Day of The Week as Follows:<br>Monday - 01<br>Tuesday - 02<br>Wednesday - 03<br>Thursday - 04<br>Friday - 05<br>Saturday – 06 |
| <b>DATE/ MONTH/YEAR:</b>      | Two number designation for each date/month/year of flight  |
| <b>ROUTE/AREA:</b>            | Flight Route Area  |
| <b>TIME OVER SEA – DAY:</b>   | Time over Sea during Daylight  |
| <b>TIME OVER SEA – NIGHT:</b> | Time over Sea at Night   |
| <b>TOTAL TIME OVER SEA:</b>   | Total time between Coasting Out and Coasting In  |
| <b>No:</b>                    | Number allocated to pollution detection  |
| <b>Area Code :</b>            | The international telephone code country (Area) in which the pollution is allocated, if outside Namibia  |
|                               | South Africa 27<br>Angola 244  |
| <b>TIME UTC:</b>              | Time of pollution detection  |

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 91   |



## APPENDIX O –MARINE POLLUTION REPORT (POLREP) FORMAT

NOTE: Incident to be reported are outlined on page 3

Send completed form to: **Directorate of Maritime Affairs**

Email: pauene@mwtc.gov.na

Fax: 064 208 6350

Date of Incident

C.C.

Time of Incident

Location name/  
Description

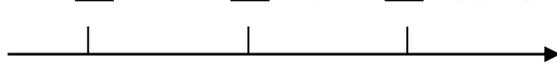
Incident coordinates

| Formats of coordinates use (select one) | Latitude of pollution | Longitude of pollution |
|---|-----------------------|------------------------|
| Degrees & decimal degrees               | . °                   | . °                    |
| Degrees, minutes & decimal minutes      | ° ' . '               | ° ' . '                |
| Degrees, minutes & seconds              | ° ' . "               | ° ' . "                |

Description of incident

### POLLUTION SOURCE

Vessel  land  other  unknown



Details

**Vessel details:** Type if known:  Tanker  Container  Bulk Cargo  Fishing  Military  
 Recreational  Other vessel type (Specify).....

|             |                      |  |
|-------------|----------------------|--|
| Vessel name | Flag state/call sign | Namibian vessel?<br><input type="checkbox"/> Yes <input type="checkbox"/> No |
|-------------|----------------------|--|

### POLLUTANT

Oil →  Bilge  Diesel oil  HFO oil  Crude Oil  Unknown

Other

|  |      |                    |
|--|------|--------------------|
| <input type="checkbox"/> Liquid chemical | Name | MARPOL Cat /UN No. |
|--|------|--------------------|

|                                  |                     |
|----------------------------------|---------------------|
| <input type="checkbox"/> Garbage | Details/description |
| <input type="checkbox"/> Package |                     |
| <input type="checkbox"/> Sewage  |                     |
| <input type="checkbox"/> Other   |                     |

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 92   |



**EXTEND OF POLLUTION**

|   |
|---|
| Size of pollution (length & width in meter) |
| Amount of pollutant if known (litres)       |

**ADDITIONAL INFORMATION**

Has the discharge stopped?       Yes       No       Unknown

Response action undertaken?       Yes       No      If yes please provide details below

Weather condition at site

|   |             |         |
|---|-------------|---------|
| <input type="checkbox"/> Photos taken →   | Details     | Held by |
| <input type="checkbox"/> Videos taken →   | Details     | Held by |
| <input type="checkbox"/> Sample taken →   | Description | Held by |
| <input type="checkbox"/> Items retrieve → | Description | Held by |

Details of Original Reporter

|      |          |       |
|------|----------|-------|
| Name | Position | Phone |
|------|----------|-------|

Control Agency

Statutory Agency

Equipment used

*NAMPORT*       *GRN/MWT*

Possible further action

*legal*       *Other*     

Details

**SENDER DETAILS**

|       |        |       |
|-------|--------|-------|
| Name  | Agency | Date  |
| Phone | Fax    | Email |

**PRIVACY STATEMENT**

MWT is collecting the information on this form to enable it to carry out its role as managing agency of the of the NMPCP.  
 MWT may give some or all of this information to other Government bodies, non-Government organizations who may have responsibilities under the the National Plan and law enforcement.

|              |             |             |                                    |                |      |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 93   |



**SUMMARY OF INCIDENTS TO BE REPORTED**

All slicks including deck washing, that can be seen trailing a vessel should be reported. The type of substance contained in the slick may not be able to be determined until further investigation has been undertaken by enforcement agencies.

| REPORTABLE   | NON-REPORTABLE  |
|--|---|
| <p><b>Oil</b></p> <ul style="list-style-type: none"> <li>• All slicks trailing from a vessel</li> <li>• All pollutions in the marine environment (notwithstanding the size or amount of oil or sheen)</li> <li>• All pollutions where NMPCP equipment is used in the response</li> </ul> <p><i>Note: If oil or sheen is visible on the surface of the water then it is an illegal discharge</i><br/> <i>MARPOL permits oily discharges at 15 parts of oil to one million parts of water (15 ppm). Oil discharged at sea cannot be visually observed until at least 50 ppm and even that may not be readily discerned depending upon the observation platform, sea state, weather conditions etc.</i></p> | <ul style="list-style-type: none"> <li>• Algal bloom</li> <li>• Hydrogen sulphide eruptions</li> <li>• Dredging foam</li> <li>• Coral spawning</li> </ul> |
| <p><b>Chemicals</b></p> <ul style="list-style-type: none"> <li>• All sightings of slicks/dicolorations trailing vessels or offshore platforms</li> <li>• All odorous discharges from vessels or offshore platforms</li> </ul>  | <ul style="list-style-type: none"> <li>• Liquid chemicals from land-based sources</li> </ul>  |
| <p><b>Harmful substances in packaged form</b></p> <ul style="list-style-type: none"> <li>• All substances associated with a vessel or offshore platform</li> </ul>   | <ul style="list-style-type: none"> <li>• Harmful substances from land-based sources</li> </ul>  |
| <p><b>Sewage</b></p> <ul style="list-style-type: none"> <li>• All slicks seen trailing from a vessel or offshore platform</li> </ul>   | <ul style="list-style-type: none"> <li>• Sewage from land-based sources</li> </ul>  |
| <p><b>Garbage</b></p> <ul style="list-style-type: none"> <li>• All sightings of garbage found that can be specifically linked to a specific vessel or offshore platform</li> <li>• Any type of garbage found that can be specifically linked to a specific vessel or offshore platform such as garbage printing showing a vessel name (e.g. Quarantine bonded plastic bags with identifier tags)</li> </ul>  | <ul style="list-style-type: none"> <li>• Garbage from land-based sources</li> </ul>   |



## APPENDIX P – USE OF CHEMICAL DISPERSANTS

### 1.1 Application of Dispersants

1.1.1 The best combination of dispersants and application method must be selected for the specific situation. On the open sea they can be applied from surface vessels and from aircraft. It is very important to use proven equipment which has been properly calibrated and to follow the instructions of the suppliers of equipment and dispersants.

1.1.2 Spraying operations should be started as soon as possible after it has been decided that dispersant use will form part of the response. Many oils will form stable water-in-oil emulsions (chocolate mousse) of which the viscosity will be higher than that of the original oil. The extent of emulsification and the stability of the emulsion will depend upon the type of oil, sea state and temperature. The viscosity also increases because of the evaporation of lower molecular weight hydrocarbons. Both processes may have taken place to a considerable extent within a couple of hours after the pollution and thus dispersant effectiveness may be reduced if application is delayed. After oil has emulsified into mousse, it is very difficult to disperse. Treatment with dispersants should, therefore, start before the mousse formation or extensive weathering has taken place.

1.1.3 Supplying an adequate quantity of dispersant to deal with a large pollution can often be a problem. Spill response managers should include in their contingency plans an inventory of suitable dispersants and should be aware of how this supply can be augmented from additional resources. In the event that the supply is inadequate, pollution response managers should prepare to use a combination of response techniques.

### 1.2 Operational Use and Application of Dispersants

1.2.1 In general, dispersants are applied either by surface vessels equipped with dispersant spray booms and support equipment (pumps, hoses, dispersant drum/tank) or by aircraft (fixed-wing or helicopter) using specially designed spray equipment and systems. In general, dispersants are only minimally effective when applied by means of fire monitors. Proper use of dispersants requires the appropriate dosage in terms of amount of chemical per unit area, such as gallons per acre, litres per hectare, etc. The dosage is extremely variable and depends on the type of dispersant, type of oil, slick thickness, temperature, viscosity, and other characteristics of the spilled oil. The actual flow rates are a function of the vessel/aircraft speed, the pump capacity, the dilution rate, and the effective swath width covered.

1.2.2 Surface Application. Most surface dispersant spray systems existing in response inventories utilize a reduction pump system that dilutes a dispersant concentrate with seawater before being sprayed on the surface through multiple-nozzle spray booms. Mounting spray booms ahead of the vessel's bow wave and wake assist in proper

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 95   |



application of the dispersant to the oil. Vessel sprays and pump system flow rates must be periodically calibrated to assure the desired dosage. Despite improvements in vessel spraying equipment, the technique will always have some limitations, due to the low treatment rates and inherent difficulties of location oil slicks from a vessel.

1.2.3 Aerial Application In contrast, aerial spraying offers the advantages of rapid response, good surveillance, high treatment rates, optimal use of dispersant and better evaluation of dispersant treatment

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 96   |



## APPENDIX Q –CONTACT LIST

| GOVERNMENT MINISTRIES, OFFICES AND AGENCIES CONTACT DETAILS |                                |                  |                 |            |         |       |
|---|--------------------------------|------------------|-----------------|------------|---------|-------|
| ORGANIZATION  | CONTACT PERSON AND DESIGNATION | PHYSICAL ADDRESS | OFFICE TEL. No. | MOBILE No. | FAX No. | EMAIL |
|   |                                |                  |                 |            |         |       |
|   |                                |                  |                 |            |         |       |
|   |                                |                  |                 |            |         |       |

| OIL AND SERVICE COMPANY CONTACT DETAILS |                                |                  |                 |            |         |       |
|---|--------------------------------|------------------|-----------------|------------|---------|-------|
| ORGANIZATION                            | CONTACT PERSON AND DESIGNATION | PHYSICAL ADDRESS | OFFICE TEL. No. | MOBILE No. | FAX No. | EMAIL |
|   |                                |                  |                 |            |         |       |
|   |                                |                  |                 |            |         |       |
|   |                                |                  |                 |            |         |       |

| REGIONAL AND INTERNATIONAL ORGANIZATIONS CONTACT DETAILS |                                |                  |                 |            |         |       |
|--|--------------------------------|------------------|-----------------|------------|---------|-------|
| ORGANIZATION   | CONTACT PERSON AND DESIGNATION | PHYSICAL ADDRESS | OFFICE TEL. No. | MOBILE No. | FAX No. | EMAIL |
|  |                                |                  |                 |            |         |       |
|  |                                |                  |                 |            |         |       |
|  |                                |                  |                 |            |         |       |

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 97   |



## APPENDIX R - INCIDENT COMMAND POST

The Incident Command Post (ICP) provides several key elements:

- A known sheltered place where supervisory personnel can meet and discuss management issues relating to the clean-up.
- Communications equipment, both internal and external, including direct links to vessels, helicopters, and vehicles.
- Storage of reference materials such as charts, computerized sensitivity maps, and pollution trajectory modelling systems.
- Possible first aid care. Dealing with the media

Types of Incident/Onsite Command Posts and their locations:

| Type of Command Post                 | Location  | Required furnishings  | Equipment to be available   |
|--------------------------------------|---|---|---|
| Existing building or operations room | MWT/DMA Walvis Bay (Primary ICP)                        | Conference Table<br>Chairs, Kitchen, White Board              | Telephones, TVs, Video links, Computers, Projectors Mobile Radios, Power Generator, Plotters, Photocopying  |
|                                      | MRSC Walvis Bay (1 <sup>st</sup> Alternate ICP)         | Conference Table<br>Chairs, Kitchen, White Board              | Telephones, TVs, Computers, Projectors Mobile Radios, Power Generator, weather stations, emergency water supply, VHF repeaters, VHF Handheld Radios, Transceiver Base Station, Desk Dispatch Radio Phone, Satellite video, Photocopying |
|                                      | Port Control Walvis Bay (2 <sup>nd</sup> Alternate ICP) | Conference Table<br>Chairs, Kitchen, White Board              | Telephones, TVs, Computers, Projectors Mobile Radios, Power Generator, weather stations, emergency water supply, VHF repeaters, VHF Handheld Radios, Transceiver Base Station, Desk Dispatch Radio Phone, Satellite video, Photocopying |
|                                      | MWT/DMA Luderitz  | Tables, chairs, sleeping facilities, white board, flip charts | Telephones, TVs, Video links, Computers, Projectors Mobile Radios, Power Generator, Plotters, Photocopying  |
|                                      | Port Control Luderitz                                   | Tables, chairs, sleeping facilities, white board, flip charts | Telephones, TVs, Computers, Projectors Mobile Radios, Power Generator, weather stations, emergency water  |

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 98   |



|  |        |  |  |
|--|--------|--|--|
|  |        |  | supply, VHF repeaters, VHF Handheld Radios, Transceiver Base Station, Desk Dispatch Radio Phone, Satellite video, Photocopying |
| On-Site Command Post   |        |  |  |
| Self-contained Mobile Facility: Buses, Vans and Trucks, Containers | Mobile | Tables, chairs, white board, flip charts | Phones, TVs, Video, Computers, Projectors, Mobile Radios, Generator, Copiers   |

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 99   |



## APPENDIX S – REFERENCES/BIBLIOGRAPHY

- AMSA (2014). National plan for maritime environmental emergencies. Retrieved from [http://www.amsa.gov.au/forms-and-publications/Publications/national\\_plan.pdf](http://www.amsa.gov.au/forms-and-publications/Publications/national_plan.pdf)
- Bonn Agreement (2001). Counter-pollution manual. Retrieved from [http://www.bonnagreement.org/site/assets/files/3946/bonn\\_agreement\\_counter\\_pollution\\_manual.pdf](http://www.bonnagreement.org/site/assets/files/3946/bonn_agreement_counter_pollution_manual.pdf).
- Bonn Agreement (2009). Aerial operations handbook. Retrieved from [http://www.bonnagreement.org/site/assets/files/1081/ba-aoh\\_revision\\_2\\_april\\_2012-1.pdf](http://www.bonnagreement.org/site/assets/files/1081/ba-aoh_revision_2_april_2012-1.pdf)
- Bonn Agreement (2011). Bonn Agreement oil appearance code photo atlas. Retrieved from [http://www.bonnagreement.org/site/assets/files/1081/photo\\_atlas\\_version\\_20112306-1.pdf](http://www.bonnagreement.org/site/assets/files/1081/photo_atlas_version_20112306-1.pdf)
- CSIR (1995). Oil pollution simulation field experiment. Vols. I-III. *Division of Earth, Marine, and Atmospheric Science and Technology, Council for Scientific and Industrial Research, Stellenbosch*. CSIR Report EMAS-C 95084(a), Vol. I (text), 128 pp.
- CSIR (1999). Integrated overview of the offshore oil and gas industry in the Benguela Current Region. *Bclme Thematic Report No 4*. Retrieved from <http://projects.inweh.unu.edu/inweh/inweh/content/789/proj%20website/Thematic%20Contingency%20Report%204.html>
- EPA (2010). Ghana's national contingency plan to combat pollution by oil and other noxious and hazardous substances. Environmental Protection Agency, Accra, Ghana: Author
- IKU (1994). Trajectories of satellite-tracked surface drifting buoys to simulate potential oil pollution drift offshore Namibia. *IKU, Sintef Group, Trondheim*, Report 22.2150.00/01/94.
- IMO (1995). Contingency planning, manual on oil pollution. International Maritime Organization, London, UK: Author
- IMO (2002). Quantified risk assessment using the IMO formal safety assessment (FSA) methodology. International Maritime Organization, London, UK: Author.
- IMO (2010). IMO manual on oil pollution risk evaluation and assessment of response preparedness. International Maritime Organization, London, UK: Author.
- IMO/IPIECA (1994). Sensitivity mapping for oil pollution response, Volume 1, IMO/IPIECA Report Series, London, UK: Author.
- IMO/IPIECA (1996). Guide to oil pollution exercise planning, Volume 2, IMO/IPIECA Report Series, London, UK: Author
- IPIECA (2000). A guide to contingency planning for oil pollutions on water, Volume 2, IPIECA Report Series, London, UK: Author
- ISO (2009). Risk management – principles and guidelines. International Standards Organization, Geneva, Switzerland: Author.

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 100  |



- ISO (2010). Risk management – risk assessment techniques. International Standards Organization, Geneva, Switzerland: Author
- ITOPF (n.d.) Disposal of oil and debris, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author
- ITOPF (n.d.) Effects of oil pollution on fisheries and aquaculture, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author
- ITOPF (n.d.). Aerial observation of marine oil pollutions, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author
- ITOPF (n.d.). Clean-up of oil from shorelines, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author
- ITOPF (n.d.). Contingency planning for marine oil pollutions, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author
- ITOPF (n.d.). Effects of oil pollution on social and economic activities, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author
- ITOPF (n.d.). Effects of oil pollution on the marine environment, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author
- ITOPF (n.d.). Effects of oil pollution on the marine environment, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author
- ITOPF (n.d.). Fate of marine oil pollutions, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author
- ITOPF (n.d.). Leadership, command and management of marine oil pollutions, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author
- ITOPF (n.d.). Preparation and submission of claims from oil pollution, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author
- ITOPF (n.d.). Recognition of oil on shorelines, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author
- ITOPF (n.d.). Response to marine chemical incidents, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author
- ITOPF (n.d.). Sampling and monitoring of marine oil pollutions, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author
- ITOPF (n.d.). Use of booms in oil pollution response, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author
- ITOPF (n.d.). Use of dispersants to treat oil pollutions, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author
- ITOPF (n.d.). Use of skimmers in oil pollution response, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 101  |



- ITOPF (n.d.). Use of sorbent materials in oil pollution response, Technical Information Paper. International Tanker Owners Pollution Federation, London, Uk: Author
- MEEA (2013). National oil pollution contingency plan of Trinidad and Tobago. Ministry of Energy and Energy Affairs, Port of Spain, Trinidad and Togabo: Author
- MWT (2005). National oil pollution contingency plan. Ministry of Works and Transport, Windhoek, Namibia: Author
- NOAA (2002). Environmental sensitivity index guidelines, *Version 3.0*. National Oceanic and Atmospheric Administration, Washington, USA: Author
- NOSDRA (2000). National oil pollution contingency plan for Nigeria. National Oil Spill Detection and Response Agency, Abuja, Nigeria: Author
- OSPAR Commission (2010). North Sea manual on maritime oil pollution offences. Retrieved from [http://www.bonnagreement.org/site/assets/files/1081/north\\_sea\\_manual\\_on\\_maritime\\_oil\\_pollution\\_offences-1.pdf](http://www.bonnagreement.org/site/assets/files/1081/north_sea_manual_on_maritime_oil_pollution_offences-1.pdf)
- OSRL (2012). Oil spill contingency plan. Enigma Oil and Gas Exploration Block 1811/5 Tapir South Offshore Namibia: Author.
- OSRL (n.d.). Field guide: Shoreline clean-up assessment technique (SCAT). Oil Spill Response, Southampton, UK: Author
- PERGSA (2003). National oil pollution contingency plan for Sudan. regional organization for the conservation of the environment of the Red Sea and Gulf of Aden, Jeddah, Kingdom of Saudi Arabia: Author.
- Robertson, T et al (2012) Namibia’s coast: Ocean riches and desert treasures. Windhoek, Namibia: Ministry of Environment and Tourism

| Doc ID       | Revision No | Compiled by | Approved by                        | Effective date | Page |
|--------------|-------------|-------------|------------------------------------|----------------|------|
| NMPCP/MWT/17 | 2.1         | MWT-DMA     | Cabinet of the Republic of Namibia | April 2017     | 102  |