NIUE

SPILL

CONTINGENCY PLAN

(Add Niue Seal)

Draft for Circulation and Comment

Copy No: XXX

This plan has been developed to reflect the essential steps to initiate, conduct and terminate an emergency spill response in the Niue

The Plan provides a concise and easy to follow guide to the management of spill response and associated linkages to supporting documentation.

This plan consists of two main parts,

Part A: The core plan text designed to provide key supporting information to assist with spill response operations and planning.

Part B: Appendixes & Annexes which contain Operational information for Oil Spill Planning, Preparedness & Response.

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	Bulk Fuel Corporation		
	Police Department		
	Fisheries Division		
	Public Works Department		

PLAN AMENDMENT CERTIFICATION

Proposals for amendment or additions to the text of this plan should be forward to:

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Amendment		Section	Page	Entered	Date	Signature
No	Date					

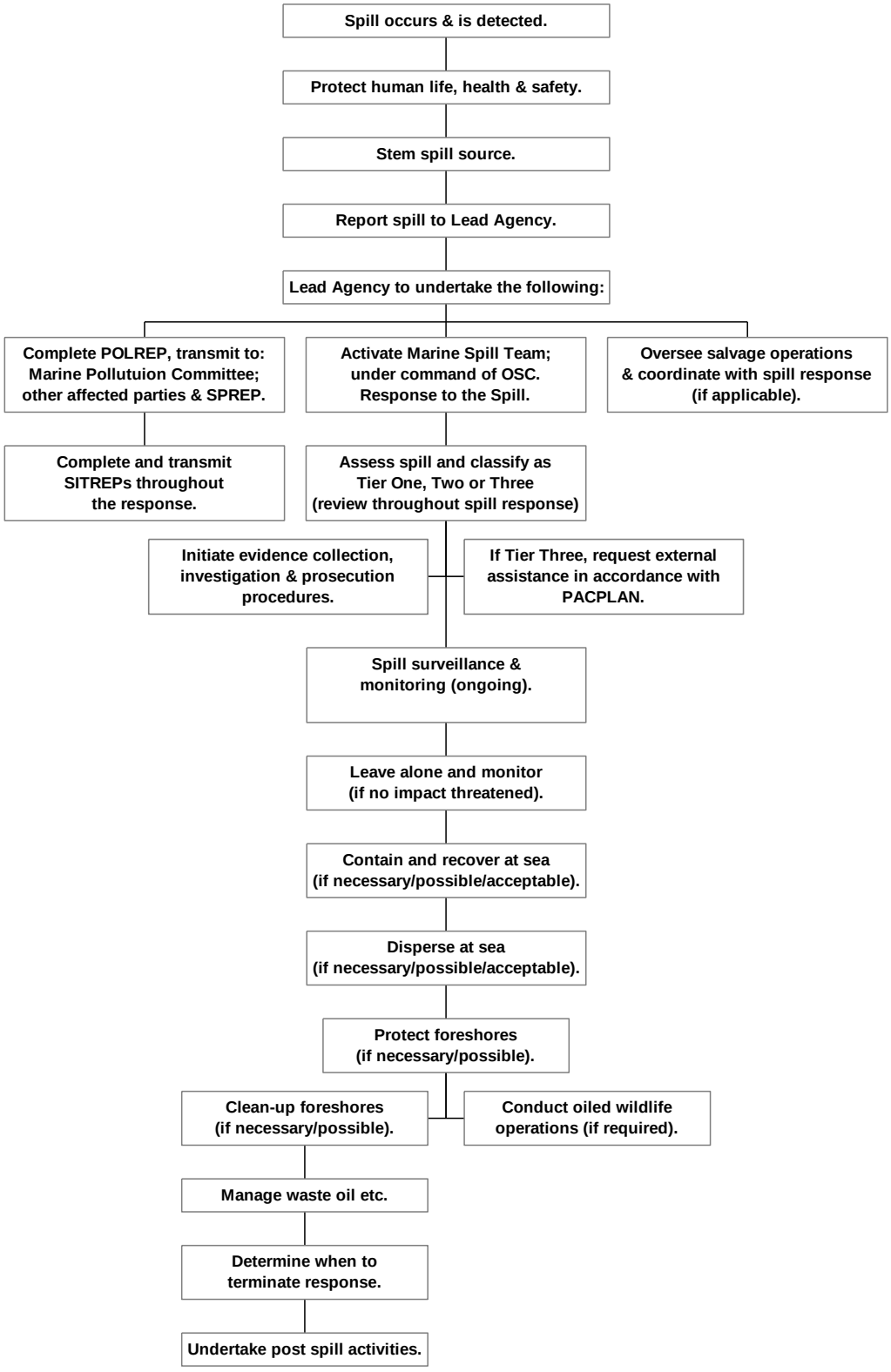
EMERGENCY CONTACTS

24 Hours/7 days Number – 999

Organisation/ Department	Phone	Fax/Mobile
Bulk Fuel Corporation	4326	4362
Police Department		
Fisheries Division		
Public Works Department		
Bulk Fuel Corporation		
SPREP – Marine Pollution Adviser	(685) 21929	(685) 20231

SPILL RESPONSE – ACTION CHECKLIST

24 – Hour Contact for Pollution Incident Reports - 999



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1. INTRODUCTION

1.1 Background

The Government of Niue has developed this Spill Contingency Plan as part of its commitment to protecting its valuable coastal and marine resources from the threat of pollution from spill incidents.

The Plan has been developed to reflect the essential steps necessary to initiate, conduct and terminate an emergency spill response on, or into Niue waters. The Plan extends to also address spill response to spill incidents on land.

While Niue is not a party to both the *Protocol Concerning Cooperation in Combating Pollution Emergencies in the South Pacific Region (SPREP Pollution Protocol)* of the *Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (SPREP Convention)* and the *International Convention on Oil Pollution Response, Preparedness and Cooperation 1990 (OPRC 90)* the Plan meets the objectives of these conventions and will facilitate the meeting of obligations should it become a party.

In the event of a pollution incident in Niue all government departments and agencies and other relevant parties, which operate within Niue, are required to follow the procedures laid down in this Plan.

1.2 Aim & Objectives

The Aims of Niue Spill Contingency Plan is:

- To plan and provide for an appropriate response capability to prevent and minimize damage to the environment and resources as a result of pollution incidents.

The Objectives of the Plan are:

- Provide the basis of planning for pollution emergencies.
- To provide the organizational structure and procedures for the coordinated, timely and effective response to spills of oil and other noxious and hazardous substances.
- To provide systems for the detection and reporting of spills within the area covered by the plan, including communications networks.
- To outline the counter-measures available to restrict the spread of a spill and minimize the environmental, economic and social impacts of a spill.
- To facilitate the implementation of the Noumea Revised Pollution Protocols and OPRC 90 in Niue.
- To complement the Pacific Islands Regional Marine Spill Contingency Plan (PACPLAN).

1.3 Technical Scope & Tier One, Two and Three Spills

This Plan covers the response to spills into the environment of all forms of pollutants, including oil, chemicals and other hazardous materials. However, it retains a primary focus on oil spills, as oil is the main pollutant likely to be spilled in Niue waters.

The Plan covers spills into the environment from all sources, including both shipping and shore-based facilities. While the primary focus is marine spills the plan also covers terrestrial spills.

For the purposes of this Plan, spills are classified as Tier One, Two and Three spills. Classification is dependant upon the amount of pollutant spilt, or likely to be spilt, the resources required to respond to the spill.

Tier One

- Small spills that are within the response capability and resources of an individual port or oil terminal within Niue. These spills would normally have low potential for environmental or economic harm and are usually covered by oil terminal or port specific response arrangements.
- As a guide spills of this nature are in the range of less than 10,000litres

Tier Two

- Medium spills that are within the capability and resources of Niue and that occur within Niue waters. These spills would have a moderate potential for environmental and/or economic harm and are **c**overed by this Plan.
- As a guide spills of this nature are in the range of 10,000-100,000litres

Tier Three

- Major spills that are of a magnitude and/or severity that is beyond the response capability and resources of Niue, and/or

- That impacts or threatens to impact within the jurisdiction of both Niue and neighbouring country (ies) and,

- The spill has the potential to cause extensive local or regional environmental damage and loss of resources.

- As a guide spills of this nature are in the range of greater than 100,000litres

Tier Three spills are covered by this Plan and also require activation of PACPLAN - the Pacific Islands Regional Marine Spill Contingency Plan or other international mutual assistance agreements.

Set quantities and sizes of spills have intentionally not been used in the definition of Tiers. This is because in some instances a relatively small spills of oils and hazardous chemicals may fit the Tier Two or even Tier Three category, depending on the response capabilities and resources available, the prevailing conditions at the time of the spill and the types of environments impacted or threatened.

Allocation of any one spill to a particular Tier can only be done at the time of the spill, according to an assessment by the Lead Agency.

Because in reality spills do not fall into convenient categories, the boundaries between Tiers will inevitably be blurred. The Lead Agency must therefore be prepared to involve the next highest Tier from the earliest moments, as it is easier to stand down an alerted system than to escalate a response by calling up unprepared reserves.

1.4 Integration with Other Contingency Plans

This Contingency Plan is a sub-plan of the Niue National Disaster Management Plan as well as international support plans like PACPLAN. The plan will provide a framework within which local oil industry, site and port contingency plans will be implemented.

1.5 Geographical Scope

The geographical scope of NATPLAN, referred to hereafter as the NATPLAN Area, is the land area, all of the coastlines and all marine waters below highest astronomical tide within the 200 nautical mile limit of Niue.

(Refer to Appendix 1: The NATPLAN Area for Niue)

1.6 Underlying Principles, Protection Priorities & Environmental Sensitivities

The main four underlying principles of an environmental pollution emergency plan are:

Mitigation:	regulatory and physical measures to prevent incidents or mitigate the effects of the pollutant.
Preparedness:	arrangements to mobilise and deploy all necessary resources and services.
Response:	actions taken during and immediately after a pollution emergency to minimise effects.
Recovery:	arrangements to restore the affected environment to normal.

In the event of a spill requiring a response to be mounted under this Plan, the following order of protection priorities should be adhered to:

- Human life, health and safety.
- Protection of ecological habitat.
- Rare and endangered species.
- Cultural resources.
- Commercial resources.
- Non-commercial property and amenity.

In the event of a marine spill requiring a response to be mounted under NATPLAN, the following protection priorities should be adhered to (in order of priority accepted internationally):

* *Human life, health and safety.*
* *Biological habitat.*
* *Rare and endangered species.*

* *Cultural resources.*

* *Commercial resources.*

* *Non-commercial property and amenity.*

Within these protection priorities, various marine and coastal environments and resources have different environmental sensitivities, requiring further prioritisation of spill response efforts.

Tropical coastal foreshores can be classified into a number of broad scaling of sensitivity to oil pollution as follows.

1	*Exposed rocky headlands and platforms with high wave energy*	*Wave swept, most oil removed by natural processes within days according to wave energy.*
2	*Exposed sand beaches*	*Oil may sink and/or buried according to sand sub Strata. Generally oil will be removed naturally within weeks. Can be removed by mechanical means.*
3	*Exposed tidal flats and gravel beaches*	*Oil may penetrate and be buried. Depending on energy conditions. Oil may persist for sometime.*
4	*Sheltered rock coasts and high amenity Areas*	*If not protected oil may persist for sometime. Amenity areas most likely to cause public and tourist operator concern.*
5	*Sheltered tidal flats, mangroves and Biologically sensitive areas*	*Most productive of coastal environments. Oil may persist for many years. Difficult to clean, protection of these environments should receive first priority.*

The clean up options used must be tailored to suit the needs and sensitivities of the foreshore contaminated. Response authorities must ensure that expert environmental opinion is sought on the correct methods to use in the different coastal environments to ensure further damage is not done to sensitive ecosystems.

Further information on the advantages and disadvantages of various cleanup and response options is contained in Section 5. Response Actions and Operations.

These cleanup options can be summarised as follows.

Clean up Response

Rocky Foreshore:
If clean up action is required, the use of low pressure sea water to disperse the oil back into the water should be considered where booms deployed in the near shore can concentrate the oil for recovery. Dispersant may be used by should only be used in the absence of significant biological activity. Physical cleaning techniques are also widely used.

Sandy Beaches:
Preferred method is physical removal and disposal of oiled material.

Marshlands and Mud Flats.
Expert opinion should be sought in these situations. Water flushing techniques can be used but sometimes no clean up action may be preferable. These environments are very sensitive to physical damage from the impacts of responders disturbing the roots systems of marsh plants and mangroves and trampling oil into the soft sediments.

1.7 Risk Assessment

International data suggests that 80% of marine oil spills occur within port or harbour areas. These spills are usually small in nature resulting from normal operations such as loading/unloading and bunkering of fuels.

Harbour Facilities

The port of Alofi is an open roadstead, shipping anchoring offshore and landing cargo into lighters that are then towed to the concrete wharf to discharge via a mobile KATO crane of ten tonnes SWL.

Approximately fifteen container vessel calls are made per annum; currently bulk fuel is transported in tank containers on board these vessels.

Niue Petroleum Product Handling

The Niue Bulk Fuel Depot situated in Alofi, the capital of Niue was severely damaged during Cyclone Heta and was closed down. Bulk fuel is currently supplied in 24,000litre tanker containers in a temporary yard in Aliluki. An average of 10 tanker containers are brought in per month. A new bulk fuel depot is under construction at Amanau – currently this will be limited to a storage area for tanker containers.

Aviation product (Jet A1) is transferred to the Hanan International Airport installation some 3 kilometres away by demountable lorry truck. The airport installation, which is also owned and operated by Niue Government, has 2 × 55,000 litre horizontal tanks. The depot has a bunded area of 13m × 13m × 75m, therefore the volume of each tank is less than the bund capacity.

A 3" above ground pipeline runs some 93 metres from the depot the airport tarmac and a Fixed Refuelling Unit is mounted for refuelling.

Marine Traffic As A Source Of Pollution

The harbour at Alofi is small and is restricted to use by fishing vessels only. All of the vessels regularly calling at Niue anchor in the roadstead and transfer cargo ashore via barges to the wharf. The risk of pollution incidents therefore is limited to the possibility of grounding at the anchorage.

Most cargo vessels are regular callers, are familiar with the anchorage, and do not work cargo at night. Other vessels stand well off and present minimal risk.

Some passing traffic is sighted from time to time possibly en route New Zealand to Tahiti. Niue does not have any off-lying reefs or atolls and because of the steep nature of the island, presents a good radar target. Passing vessels therefore keep well clear and are not considered to present a significant risk.

Should any oil be spilt in quantity and be blown ashore on the east side of the island, it would be rapidly dispersed by the prevailing south easterlies against the steep and exposed rocky headlands. It is doubtful that the effects of pollution would be long term unless oil was entrapped in some of the caves and chasms. This is considered unlikely.

Oil impacting the west coast however would expect to have more effect upon the population as it could penetrate the caverns and, dependant upon subsequent weather conditions, persist for a while. This in fortunately an unlikely scenario as all oil handled is light product and would be subject to fairly rapid evaporation. Should an escape of a persistent grade of bunker fuel occur from a grounding, this might have more adverse effect. Again this is an unlikely scenario as winds are generally offshore and none of the known traders to the island carry persistent fuels.

1.8 Types of Petroleum Products and Chemicals in Niue

The following petroleum products are stored and transported in Niue:

- Diesel
- Gasoline
- Kerosene/Jet A1
- Lubricating Oils

There is no bulk transportation or storage of chemicals in Niue.
(Can add some data on the quantities of petroleum importation)

Litres	*Year*	*Lubricating Oils*	*Aviation kerosene*	*Diesel*	*Gasoline*	*Total*
	1999					
	2000					
	2001					
	2002					
	2003					
	2004					
	2005					
	2006					

2. ROLES & RESPONSIBILITIES

The proclamation of an Emergency is the prerogative of the Minister responsible for the Disaster Council of Niue. In cases of immediate necessity, such as a major mass casualty or accident, a declaration may be made by the Senior Officer of the Police Force present, acting in accordance with the provision of Section 4 of the Public Emergency Act, and the Disaster Plan activated to the extent necessary by the nature of the emergency. In this event, the Cabinet is to be informed as soon as practicable.

2.1 Disaster Council of Niue

The Disaster Council of Niue is constituted by the Premier as the national disaster management and coordination organisation to further disaster prevention; to plan, organise and carry out preparations for emergencies; to conduct relief rehabilitation and reconstruction in so far as these functions are not undertaken by other Ministries or Department by virtue of any existing Acts of Declaration of the Government.

The Disaster Council consists of:

- Secretary to Government (Chairman),
- Chief of Police,
- Director of Health,
- Director of Works
- Director of Telecommunications,
- Financial Secretary,
- Government Solicitor
- And any other person co-opted by the Council.

The role of the council and its members are to (with relation to the NATPLAN):

- Develop, implement and maintain the NATPLAN.
- Review the NATPLAN every 2years.
- Convene a meeting of the committee at least 4times a year.
- Oversee the response to marine spills and monitor performance and effectiveness.
- Review local/facility contingency plans for consistency with National arrangements
- Oversee national marine spill response training and exercises. Hold a Tier II annually and a Tier III every 2years.
- Make available those facilities or resources, that may be useful in a response situation, consistent with the agencies authority and capability.
- Provide advice to government on general marine pollution issues and contribute to development of policy, legislation and other initiatives relating to the prevention and response to marine pollution
- Acquire funds to assist in the administration of the NATPLAN, purchase equipment and provide quick response in the case of an oil spill.
- Promote public awareness of, and appropriate community participation in marine pollution prevention, preparedness and response.

A Task Force Committee (TFC) is established as an interim and operational working group to oversee the operation of the NATPLAN. The TFC which comprises of PWD, Bulk Fuel Corporation, Ports & Harbour, NDMO and Environment shall be responsible for operational functions of the NATPLAN. The secretariat of the TFC shall rotate amongst its members for a term of 2years. The Bulk Fuel Corporation will be first secretariat recognizing the important role that the oil companies play in an oil spill response activity. This will coincide with the NATPLAN revision and a TIER II exercise every 2years. The TFC shall appoint the next secretariat at the end of the 2year term.

2.2 Responsible Authority

The Police Department is the Responsible Authority for all spills on land, the coastal and marine environments within Niue waters.

The Responsible Authority has legal or statutory responsibility for administering and enforcing the regulatory requirements in the event of spills.

2.3 Lead Agency.

The Police Department is the Lead Agency for all spills on land and within Niue waters.

The Lead Agency has operational responsibility for the co-ordination of the response to spills. The Lead Agency designates the Incident Commander (IC). The Incident Commander is the Chief of Police. The alternate IC is the Disaster Co-ordination Office (who???).

2.4 Other Government Agencies

Regardless of which agency bears lead responsibility all other government agencies shall support the Responsible Authority and Lead Agency in accordance with the organizational structure outlined in section 4 below.

2.5 Responsible Party (Polluter)

The party responsible for causing the spill has the following responsibilities:

- Reporting the spill immediately to the Responsible Authority.
- Taking immediate action to control or stem the source of the spill.
- Taking immediate action to contain the spill and prevent it from spreading.
- Taking immediate action to clean up the spill.
- Co-operating fully with the Lead Agency in the response to the spill under the direction of the Incident Commander (IC).
- Any legal obligations and responsibilities not covered above as required by relevant legislation, including those relating to meeting the costs of the spill response and clean up and mitigation of any environmental and economic damage.

2.6 Oil Industry

All oil companies operating in Niue, in this case just one Bulk Fuel Corporation have the following roles and responsibilities under NATPLAN:

- *Giving highest priority to preventing spills from potential tankers, pipelines, terminals, depots and other facilities owned and/or operated by them.*
- *Immediately reporting all marine spills from their facilities to the Responsible Authority or Lead Agency.*
- *Developing and maintaining local marine spill contingency plans for all facilities that they own, manage and/or operate as well as ensuring that these plans are compatible and integrated with NATPLAN.*
- *Establishing and maintaining stockpiles of marine spill response equipment for all facilities that own, manage and/or operate, with the types and amounts of equipment being appropriate to the level of risk at each facility.*
- *Ensuring that personnel are appropriately trained in marine spill prevention and response.*

- *In the event of a spill from its facilities, the roles and responsibilities outlined in section 2.5 above.*

- *Actively participating in the TFC and in planning, exercises and training activities.*

2.7 Role of P&I Clubs

In the case of marine spill, approximately 90% of the world's shipping fleet is entered with a Protection and Indemnity insurer, called a P&I Club. The risks covered by the P&I Clubs include;

- Liability arising from the carriage of cargo
- Pollution liability
- Liability for loss of life and injury to crew members, passengers and others such stevedores on a ship
- Damage to fixed and floating objects and to other property
- Wreck removal
- And other such parts of the liability for collision damage as is not covered under a vessel's hull policy.

When an incident occurs a P&I Club usually appoints a correspondent to assist the P&I Club in relation to claims that arise where the correspondent operates.

The role of the correspondent in marine pollution incidents involving vessels includes but not limited to;

- Notifying the P&I Club of incidents that occur in his area of responsibility
- To attend an incident scene if appropriate
- To appoint surveyors/experts to attend at the scene of a maritime casualty
- To liase with governments, maritime authorities at the scene of a maritime casualty
- To monitor salvage operations, pollution containment/removal at the scene of the casualty
- To assist in posting security for claims and,
- To assist in carrying out investigations on cause of loss of vessel/cargo

The IC should ensure that the P&I Club and/or P&I Correspondent are fully informed of the activities being undertaken during the incident response and that they have access to running records of costs of the incident. The correspondent would also be working closely with the Salvors and ships master and will be a valuable conduit for information flow.

3. POLLUTION REPORTS & COMMUNICATIONS

3.1 Surveillance & Spill Detection

All oil and chemical spills should be reported to the Responsible Authority and recorded systematically. Vessel incidents such as groundings, collisions, fires, explosions or other accidents or incidents should also be reported as these can often lead to the release of cargoes or vessel fuels and oils.

Under the *International Convention for the Prevention of Pollution from Ships (MARPOL* 73/78) there is an obligation on the master of a vessel to report any marine pollution incidents without delay, and to the fullest extent possible, to the coastal State in order to facilitate necessary counter-pollution actions. Mandatory reporting requirements for incidents involving harmful substances are contained in article 8 and Protocol 1 to MARPOL 73/78.

All personnel in industry, government agencies, members of the general public, as well as crews of civil and military aircraft, should be required to, and be able to, report a spill to the Responsible Authority or Lead Agency 24 hours a day.

3.2 Initial Pollution Reports (POLREPS)

Recognizing the importance of rapid dissemination of information in the event of a spill, any person observing a spill including any ship's master or crew, aircraft crew, oil company employee, port personnel should immediately report the spill to the Responsible Authority.

It is essential that a 24-hour hotline number be established and maintained to provide a focal point to government, industry and the general public.

24-Hour Emergency Hotline for Niue

999

The Lead Agency should assess the implications of the situation and make a decision on whether any response is likely to be required. The Lead Agency must also consider whether other parties need to be made aware of a potential pollution situation if operational personnel need to be placed on standby.

The Lead Agency should immediately complete a POLREP, using the standard format contained in Appendix One, and urgently transmit this to all members of the Council, the National Government, any other affected parties and to SPREP via facsimile (see 3.6 below).

3.3 Situation Reports (SITREPS)

In order to provide periodic updates on pollution incidents, the Lead Agency should complete SITREPs, using the standard format contained in Appendix Two. These SITREPs should be frequently compiled from field information and transmitted to all members of the Council, any other affected/interested parties and to SPREP via facsimile, at regular intervals throughout the spill.

3.4 Post-Incident Reports (POSTREPS)

After a pollution incident, the Lead Agency should prepare a brief report including:

- Assessment of the response operation, including reference to equipment used, its effectiveness, additional equipment, and training needs.
- Documentation of clean-up costs.
- Assessment of environmental and economic damage.
- Details of problems encountered.
- Recommendations regarding amendment or revision of the State Plan.

When the Lead Agency has compiled this report, the Incident Commander and other personnel should meet with the Council to review their collective experiences and compile an overall Post-incident Report (POSTREP), including if necessary, any recommendations for amending or revising the Plan.

3.5 Media and Public Reporting

When an incident occurs it is imperative to give the public prompt, accurate information on the nature of the incident and actions underway to mitigate the damage. Media and community relations personnel should ensure that all appropriate public and private interests be kept informed and their concerns are considered throughout a response. The Media Office is responsible for all media issues.(Refer to Appendix 9 for Media Plan)

3.6 Pacific Islands Regional Marine Spill Reporting Center (PACREP)

In the case of marine spills, SPREP has established and maintains the Pacific Islands Regional Marine Spill Reporting Center (PACREP), at its office in Apia, Samoa.

PACREP is simply the SPREP fax number (685) 20231, which provides the focal point for receiving and relaying information concerning any marine pollution incident in the region. PACREP is a facility where:

- POLREPS of all marine spills in the region should be sent to by the Lead Agency where the spill occurs.

- The progress of a spill can be monitored, through the receipt of SITREPs from the Lead Agency where the spill occurs.

POLREPS received by SPREP through PACREP are entered into a database and Geographic Information System, to provide a long-term picture of trends in marine spills throughout the region.

This will assist updating of risk assessments and targeting of prevention, education, surveillance and enforcement efforts, and provides a performance indicator for spill prevention efforts and state of the environment reporting. SPREP is responsible for reporting annual spill statistics from PACREP to interested parties.

It should be noted that PACREP is NOT an emergency response facility, and is only functional during normal business hours. Its main purpose is for the collection, analysis and dissemination of spill data. All spills within Niue must be reported to the Responsible Authority.

4. INCIDENT COMMAND & CONTROL

4.1 Elements of Effective Control of Spill Response

Establishing effective control and initiating a spill response requires a number of actions, these include:

- Appointment of an Incident Commander,
- Mobilizing the Spill Response Team,
- Establishing a suitable incident control centre,
- Establishment of effective communications,
- Effective collation, transfer, display and storage of information,
- Effective management of public and community relations (media and consultative processes).

4.2 Incident Command Structure

Response operations cannot be effectively carried out unless there is a clear organizational structure to command and control the response and trained individuals to carry out the response plans.

The overall structure of incident command and control system is depicted in Figure Five. In the event of a spill on land or within Niue waters, a Spill Response Team based on this structure should be immediately established by the designated Lead Agency. The number and nature of the individual sections and units should be flexible and tailored to suit the size and nature of the spill. Several functions may be combined for small spills.

The IC directs response efforts and co-ordinates all efforts at the scene and is the primary decision-making authority in relation to spill response activities. This is achieved through the Incident Control System especially modified to support oil spill response called the Oil Spill Response Incident Command Structure (OSRICS). While originally designed to apply to oil spills it is equally applicable to all types of spills and is used in this Plan in that context.

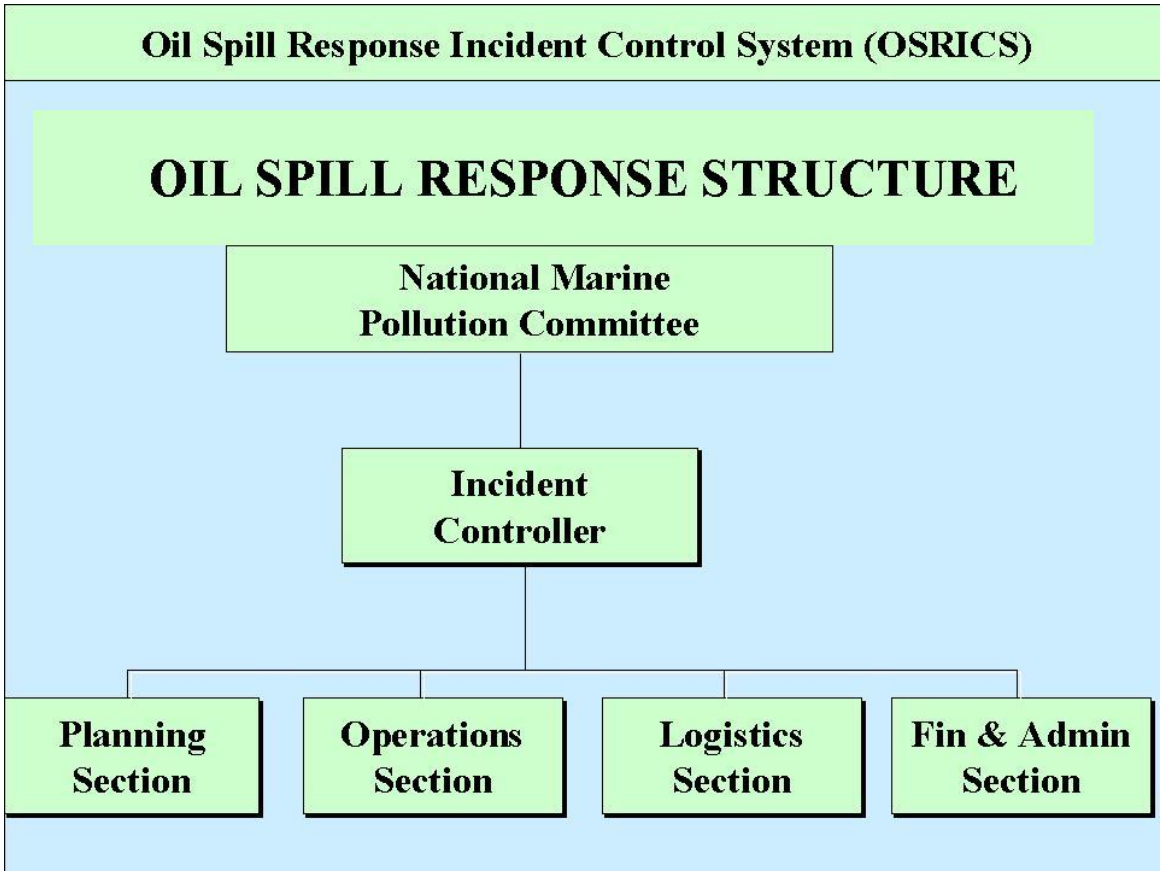
4.2.1 Incident Commander

Incident Commander (IC): The Chief of Police is designated as the IC for all spills on land and within Niue waters. The ??? (rep from Disaster Coordination Office) is the alternate IC.

In the event of a spill, the IC will assume operational responsibility for commanding the response to the spill and will control and direct the use of all resources. The state government invests the IC with the authority necessary to command all state assets and resources as deemed necessary to deal with the incident.

In carrying out his/her role, the IC shall be supported by an incident response team comprising the personnel and organizational structure outlined in Figure Five.

Figure 5: Oil Spill Response Incident Control System



The responsibilities of the various roles within the Spill Response Team can be summarized as follows:

- **Planning Section** - responsible for the provision of scientific and environmental information, the maintenance of incident information services, and the development of the Incident Action Plan. The PWD are responsible for Planning.

- **Operations Section** - responsible for undertaking all response operations in the field. The PWD is responsible for operations.

- **Logistics Section** - responsible for the provision of resources to sustain the response. The PWD is responsible for logistics.

- **Finance & Administration Section** - responsible for maintaining financial and administrative records of the response activities. The PWD is responsible for Finance and Administration.

5. RESPONSE ACTIONS & OPERATIONS

The ecological impact of a oil, fuel, chemical or hazardous substance spill can be minimized by good management and planning as well as the response actions put into effect by the Responsible Authority and Lead Agency. Such actions will largely depend on several factors;

- The type of oil, fuel or chemical(s) involved;
- The size of the spill;
- The location of the spill;
- Prevailing weather and where applicable sea conditions at the spill site;
- The environmental sensitivity of the impacted sites.

In commanding the response to the spill, the IC should ensure that defensive actions should begin as soon as possible to prevent, minimize or mitigate the threat to the environment or public health from the pollution.

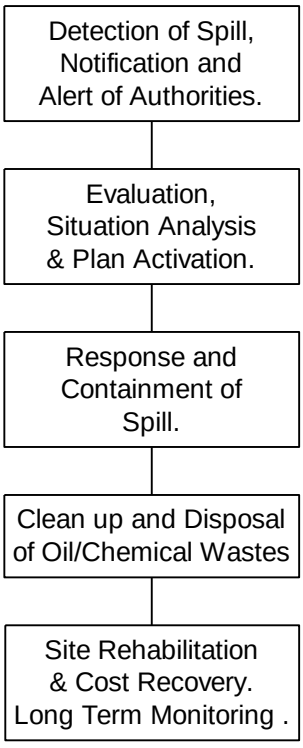
To ensure that these actions are taken, the IC should delegate relevant tasks to the Spill Response Team. To assist in this process a Spill Response Action Checklist at the front of the Plan summarizes this sequence.

Depending on the nature of the spill, some of the actions listed below may not be applicable or may be carried out in parallel rather than in sequence, as determined by the IC.

5.1 Phases of a Response

There are five main phases to the overall process of responding to oil or hazardous chemical spills which can be summarized as follows in figure 7;

Figure 7. Five Phases - Response to Marine Spills.



5.2 Secure Human Life, Health and Safety

The highest priority when a spill has occurred is to take action to ensure that there is no threat to human life, health and safety. This protection of public health and safety as well response personnel should take precedence over all other actions to minimise environmental damage.

Every oil, fuel or chemical spill incident has its own unique dangers to which response personnel may be exposed. The protection of the public and response personnel should always be of prime importance in the decision making. In marine spill response situations, equipment or personnel should not be deployed:

- *if the identity of the fuel oil or chemical(s) spilled and hazards are unknown;*
- *if weather or sea conditions pose an undue risk to personnel safety;*
- *if there is a threat of fire or explosion;*
- *if required personnel protective equipment is not available.*

Operations should be suspended or terminated if an unsafe condition arises during a response operation.

Major vessel incidents such as fires, explosions, groundings etc can result in the need for the search and rescue of mariners. First priority should always be to the health and safety of personnel.

5.3 Stabilising Spill Source & Intervention at Sea

The second priority action is to attempt to stop the flow of oil (or other pollutant in the case of spills other than oil), in order to minimise the potential size, extent and severity of the spill.

All efforts must be focused on saving a vessel so that the problem is not compounded. Stabilising the situation includes securing the source of the spill and/or removing the remaining oil from the vessel, tank or pipeline to prevent additional pollutant entering the sea.

With accession to the United Nations Convention on the Law of the Sea (UNCLOS), Niue's jurisdiction extends to the Exclusive Economic Zone and the Territorial Sea extends to 12 miles from the coastline. This permits Niue to intervene on the high seas against the wishes of the ship and cargo interests. This is only to the extent necessary to prevent, mitigate or eliminate grave and imminent danger to the coastline or related interests from pollution or threat of pollution of the sea, following a maritime casualty, which may be reasonably expected to result in major harmful consequences.

The measures taken must be proportionate to the damage, whether actual or threatened, and must not go beyond what is reasonably necessary to achieve the ends of protection and must cease when those ends have been achieved.

Such measures may include:

- *move the ship or part of the ship to another place;*
- *remove cargo from the ship;*
- *salvage the ship, part of the ship or any of the ships cargo;*
- *sink or destroy the ship or any part of the ship;*
- *sink, destroy or discharge into the sea any of the ship's cargo, or*
- *take over control of the ship or any part of the ship.*

5.4 Salvage of Casualty

In the event of an incident involving a damaged or disabled ship, it is paramount that the salvage industry be involved in the response as soon as possible. Salvage activities may need to be arranged for taking the vessel in tow, refloating a grounded vessel, or reducing or stopping a discharge of pollutant to minimise environmental damage resulting from the casualty. It is essential that these operations are undertaken as soon as possible

In accordance with Niue legislation, the ??? has responsibility for safety issues relating to vessels on coastal or foreign voyages and will be responsible for ship operational matters. These functions include alerting and liaising with salvors, taking measures to minimise pollution release or outflow and other salvage activity.

A salvor will normally be appointed by the vessel's owner or master by signing a Lloyds Open Form Agreement. However, in cases where this does not occur, the Vanuatu Maritime Authority may use its powers under the International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Damage 1969, to either direct the Master/Owner to engage a Salvor or alternatively contract a salvor to undertake necessary work, with costs recoverable from the owner.

5.5 Spill Assessment & Reporting

Once attempts have been made to stem the flow of oil (or other pollutant), the nature, size, extent, severity and likely movement of the spill should be assessed, and a POLREP completed and transmitted urgently to all members of the TFC, other affected/interested parties and SPREP.

The IC is responsible for the assessment of the spill to attempt to classify it as Tier One, Two or Three (refer section 1.3), and determine whether or not external assistance is required though activating PACPLAN (refer section 6 below). The assessment of Tier levels may change over time and should be periodically reviewed during the spill.

5.6 Spill Surveillance and Forecasting

It is vital that the likely movement of the spill is assessed, in order to identify possible impact areas and determine the most operate response options. There are three main ways a spill trajectory can be determined:

- *direct observation (surveillance),*
- *manual calculation using currents & winds,*
- *and computer modelling.*

Visual observation of any spill is essential and the IC, through his support personnel, should arrange for charter, military or commercial aircraft to assess and monitor the movement of the spill.

Include contact details:

Airports, Airlines, Fisheries Surveillance, Meteorology Department, New Zealand: NZ Maritime

Meteorological and hydrographic data should be obtained by the IC, through his support personnel, and analysed to obtain predictions of expected spill movement. Local knowledge from people such as fishermen and mariners should be used as a valuable source of expertise on likely spill movement.

It is essential that the results of such observations and predictions are transmitted to other parties likely to be affected by the spill (e.g. neighboring islands).

In some areas, sophisticated spill trajectory prediction systems may be available, such as computer models. Information on the availability of such systems for various areas can be requested through SPREP.

5.7 Response Option Assessment Criteria

Alternative control and protection options shall be assessed to determine whether they can adequately protect human health and the environment in both the short term and long term from the unacceptable risks posed by the oil or hazardous substance spill.

When assessing the appropriate response options the criteria the Planning Unit and IC should use are:

- *overall protection of human health and the environment,*
- *short and long term effectiveness on reducing flow, mobility or toxicity of pollutant,*
- *implementability of option and availability of equipment and materials,*
- *government/community acceptance of option,*
- *and relative cost compared to other options.*

It is the responsibility of the Planning Section to develop a Response Action Plan (RAP) which must include;

- *Clear environmental objectives for the plan (eg protection / clean-up)*
- *A strategy for the response and necessary action to be undertaken by the Operations Section*
- *Clear time-lines for actions to phases of the plan and,*
- *Concise statements of responsibilities for the set actions/tasks.*

5.8 Leave Alone and Monitor

Should surveillance and forecasting indicate that the spill is unlikely to impact on coastlines and is likely to remain in open water, then the best option maybe to leave the spill alone, allowing natural physical and biological degradation to occur at sea.

The response to marine spills under NATPLAN should always seek to complement and make use of ***natural forces*** *to the fullest extent possible.*

However, it is vital that the movement of the spill is closely monitored, through continuing surveillance and forecasting. The next stage of response operations should be activated if even the slightest possibility of coastal impact arises.

5.9 Containment & Recovery at Sea

Should surveillance and forecasting indicate that the spill may impact on coastlines, the possibility of containing and recovering the oil at sea to prevent such impact should be pursued.

The ability to conduct effective containment and recovery operations at sea will be limited by the nature of the spill, available equipment, physical conditions and logistical considerations. In many instances, especially in open water, containment and recovery at sea may not be possible.

General pieces of mechanical containment and recovery equipment are available from the three oil companies and companies listed in Appendix 4.

Shoreline containment and response operations may be complicated by rough terrain, porous ground, accessibility and the nature of the shoreline habitat. Once oil has landed on the shore, one more of the following techniques may be used:

- *rope mop skimmer;*
- *direct suction (where equipment is available);*
- *manual removal;*
- *mechanical removal using heavy earthmoving equipment;*
- *sorbent;*
- *sorbent booms.*

5.9.1 River Mouths

In tidal areas should where possible be boomed to prevent oil entering the river system provided that:

- *river flow rates are less than 1.2 m/sec;*
- *accessible sites are available;*
- *storage facilities exist or can be constructed;*
- *collection can be achieved using diversion booms and retrieval systems (skimmer, suction devices or sorbent) or using sorbent booms.*

DO NOT

- *apply dispersant;*
- *attempt to collect or control in fast flowing streams.*

5.9.2 Coastal Swamps (mangroves)

- *oil should be prevented from entering coastal swamps by using dispersant on marine spills well off-shore;*
- *booms should be deployed so as to restrict flow of oil into the mangrove area;*
- *oiled swamps should not be cleaned unless:*
  - *access is readily available;*
  - *mangroves do not have aerial roots*
  - *(pneumatmophores).*

DO NOT

- *use dispersant on or near mangroves;*
- *manually clean up mangrove areas.*

5.9.3 Offshore

An oil spill offshore will either be from a source that has been exhausted or be a continuing event. The first priority, if the oil spill has no obvious source, will be to assess the amount of weathering that has been taken place, and, if the oil is persistent and is far enough offshore, whether spraying with dispersant will be effective. If dispersant is to be effective, it must be used as soon as possible before weathering and spreading of the oil makes dispersant application less effective.

If the oil spill is continuing (i.e. a grounded vessel with ruptured fuelled tanks) the first priority would be to isolate or halt the flow of the oil and to contain the escaped oil in a boom to limit spreading,

unless such action would create a fire or health hazard. Choosing the appropriate containment method would depend upon prevailing weather and sea condition and the characteristics of the oil and the slick. To avoid a fire or health hazard, oil may be allowed to drift away from the source before it is contained.

5.10 Use of Oil Spill Dispersants

In the event that containment and recovery is not possible, or is only partially effective, another possible option to prevent or minimise the spill from impacting on the coast is to disperse it at sea, using chemical dispersants. Dispersants can be applied to the spill from vessels or aircraft.

The techniques and equipment available for the application of dispersants in Niue waters will be used in accordance with SPREP Environmental Guidelines as further mentioned below. Also refer to appendix 7.

As with containment and recovery at sea, the effective use of dispersants will be limited by the nature of the spill (including the type of oil and its dispersability), the availability of dispersant stocks and application equipment, physical conditions and logistical considerations. In many instances, effective dispersal of oil at sea may not be possible.

In addition, the inappropriate use of dispersants can cause worse environmental impacts than undispersed oil. Dispersants are pollutants themselves, and their use can temporarily increase the toxicity of the oil, by increasing its surface area to volume ratio and thereby increasing the release of the toxic components of the oil into the marine environment. If used in very shallow water and on shorelines, they can cause the oil to penetrate into sediments, creating potential long-term pollution problems.

The use of dispersants should therefore only occur under strict supervision by competent environmental and scientific authorities and in accordance the SPREP Environmental Guidelines On the Use of Oil Spill Dispersants.
If dispersants are used in accordance with the SPREP Guidelines, they represent a very useful oil spill response tool and it is advised that the nominated environmental unit of the response team be involved in the planning and use of dispersants.

To ensure only approved dispersants are used in Niue waters the TFC shall maintain a schedule of dispersants and other response chemicals that may be authorised for use on oil spills at sea or on shorelines.

5.11 Foreshore Protection

In most circumstances, despite best efforts to contain and recover and/or disperse a spill at sea, a weather-driven spill is highly likely to impact on coastal environments and resources.

Efforts will therefore have to be made to protect foreshores. Options include the use of oil spill booms to physically prevent oil from impacting on the foreshore, or to direct it to preferred collection points (such as a sandy beach), where it can be recovered.

The ability to conduct effective foreshore protection operations will be limited by the nature of the spill, available equipment and personnel, physical conditions and logistical considerations. In virtually every situation, it will only be possible to protect a relatively small area of foreshore. It is therefore absolutely necessary to clearly establish protection priorities, in accordance with the relative environmental sensitivities and resource values of the threatened coastal environments and resources. The designation of environmental sensitivity ratings is shown in maps of Figure Three.

5.12 Foreshore Clean-up

In the likely event that a spill does impact on coastal resources and environments, it may be necessary to conduct foreshore clean-up operations. However, before proceeding with clean-up, the option of leaving the oil (or other pollutant) alone and allowing natural physical and biological degradation to occur, should be considered However, this option is only likely to be acceptable in very remote, unpopulated areas or with high-energy wave environments.

Where oil does come ashore, the extent of clean-up of oiled coastal areas is to be carefully planned with the view of minimising further environmental damage which may result from the clean-up operation.

Sometimes, oil on shorelines may best be left to weather and degrade naturally. This is particularly true where oil impacts a sensitive area such as mangroves, salt marshes or mud flats. In these areas the clean-up operations can result in more environmental damage than the oil itself due to physical disturbance and substrate erosion.

The selection of shoreline clean-up techniques depends on many different factors, which include:

- *type of substrate;*
- *amount of oil on the shoreline;*
- *depth of oil in the sediments;*
- *type of oil (tar balls, pooled oil, etc);*
- *presence of wildlife;*
- *prevailing oceanographic and meteorological conditions;*
- *environmental or culturally significant sites;*
- *access and trafficability for equipment.*

Shoreline clean-up methods may consist of one or more of the following methods, depending on the extent of oiling and the shoreline environment:

- *removal of floating or pooled oil;*
- *removal of oiled material and vegetation;*
- *use of sorbent materials;*
- *low pressure flushing;*
- *mechanical collection and removal of oiled material;*
- *manual collection and removal of oiled material;*
- *use of Bioremediation agents; and*
- *dispersant application.*

An important consideration during foreshore clean-up is to ensure that clean-up operations do not cause greater environmental damage than the spill itself (for example heavy machinery damaging sand-dunes, etc). Also that wastes collected are kept to a minimum to avoid costly waste disposal and loss of foreshore materials and biota.

Equipment such as the following can be used on foreshore cleanup operations if available.

- *Rope mops*
- *Sorbents materials and booms*
- *Skimmers*
- *Direct suction equipment (vacuum trucks)*
- *Water flushing equipment*
- *Other mechanical equipment etc.*

5.12.1. River Mouths

In tidal areas should where possible be boomed to prevent oil entering the river system provided that:

- *river flow rates are less than 1.2 m/sec;*
- *accessible sites are available;*
- *oil storage facilities exist or can be constructed;*
- *collection can be achieved using diversion booms and retrieval systems (skimmer, suction devices or sorbent) or using sorbent booms*
- *it can be done safely.*

DO NOT

- *apply dispersant without seeking expert environmental advice;*
- *attempt to collect or control in fast flowing streams where booms maybe destroyed or personnel put at risk.*

5.12.2 Coastal Swamps and Mangroves

Coastal swamps and mangroves are very fragile and important ecosystems and a high level of protection should be placed on these coastal environments.

- *oil should be prevented from entering coastal swamps by using dispersant on marine spills well off-shore;*
- *booms should be deployed so as to restrict flow of oil into the mangrove area;*
- *oiled swamps should not be cleaned unless:*
  - *access is readily available and sediment is firm;*
  - *the mangroves do not have aerial roots (pneumatmophores)*
- *seek expert environmental advice before using dispersant on or near mangroves;*
- *Manually clean up mangrove areas must be strictly supervised.*

5.13 Bioremediation

Bioremediation is the artificial enhancement of hydrocarbon degrading organisms designed to consume and break down oil. By accelerating the natural biological processes of biodegradation, bioremediation aims to increase the rate of degradation, by either stimulating micro-organisms existing naturally in the area, or by seeding more micro-organisms. However, the immediate environment is quickly depleted of available nutrients, especially nitrogen, which is necessary to support this increased population. Thus, most uses of bioremediation will require the application of fertiliser to the affected area. In some cases it may be beneficial to start fertiliser application before an area is affected.

Whilst bioremediation has not been a primary response strategy to an oil spill historically, it is now receiving renewed attention and can be used successfully to assist an area to recover oil foreshores from the effects of an oil spill.

Bioremediation of oil spills can incorporate three general techniques to artificially enhance the biological degradation of oil:

- *addition of nutrients to the environment (fertilisation);*
- *culture and inoculation of in-situ or exotic organisms;*
- *culture and inoculation of genetically enhanced organisms.*

The most effective bioremediation strategies for oiled foreshores have utilised the fertilisation technique.

5.14 In-situ Burning

Burning of the spilt oil or fuels at sea has the potential of removing large quantities of spilt oil or fuels but has not been used extensively in oil spill response in the region

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The application of in-situ burning could prevent oil coming ashore into populated areas or preventing oil contamination of environmentally sensitive habitats and wildlife. The technique offers the advantage of a quick removal process minimising shoreline contamination and reducing the quantity of oily waste products requiring treatment or disposal, as well as removing the oil before it spreads or moves to other areas under the action of wind and currents.

The disadvantages of in-situ burning are the inefficient combustion of the oil resulting in a visible black smoke plume. It has been perceived that atmospheric fallout of combustion by-products, soot, combustion gases and volatilised hydrocarbons could pose a health risk down wind. Recent research has shown that these emissions and their toxicity were lower than expected. Residues after in-situ combustion tests varied between 1-10% of the original oil.

The combustion behaviour of the oil spilled must be known prior to this option being considered for use. The field monitoring or plume dispersion modelling of the combustion cloud and fumes is a high priority in the decision to use this option. Great caution must be exercised with the in-situ burning of petrol spills as this must be carried out well away from population centres and can emit large quantities of radiant heat and fumes in the vicinity of the burn.

For in-situ combustion to be sustained the heat generated by the burning of the oil must overcome the cooling effect of the sea. Thin slicks do not burn and a minimum thickness of oil is required for combustion. For in-situ combustion to work, the oil must have sufficient volatility and light oils must have 2-3 mm thickness and for heavy oils 8-10 mm thickness. Because oil spreads rapidly, especially low viscosity oils, the use of containment systems such as fire resistant booms, are sometimes required to maintain this minimum thickness. These booms are very expensive and not readily available within Pacific region or even Australia and often require full replacement after one use.

In-situ burning of oil spills in open waters is receiving greater attention by response agencies world-wide as it offers a very viable and cheap option to stop oil spreading, especially in remote areas where the lack of equipment or weather conditions limits conventional open water containment and clean-up.

5.15 Oiled Wildlife Operations

It is highly likely that wildlife will become contaminated in the event of a spill, including sea birds and shorebirds, marine reptiles (e.g. nesting turtles) and marine mammals.

A national strategy and plan including procedures for the rescue and rehabilitation of oiled wildlife will be developed by the Environment Unit in close collaboration with the Fisheries Department and the Maritime Authority. Until such time as this occurs the interim procedures are given below.

5.15.1 Interim Procedures

Immediately contact the Environment Unit and Fisheries Department if wildlife is oiled, or at risk of being oiled by a spill.

- *Consult with the Environment Unit and Fisheries Department and other advisory groups such as the Working Group on Scientific studies established under the National Biodiversity Strategy Action Plan on the effects of spilled oil on threatened or contaminated biota in Niue , and how to best handle the problem.*
- *Advise the IC of the wild life response priorities.*
- *Coordinate their activities within the allocated priorities set by the IC.*
- *Attempt to prevent further wildlife becoming oiled*
- *Recover oiled wildlife and decide how best it will be handled (humane destruction or rehabilitation).*
- *Humanely destroy and dispose of wildlife unsuitable for rehabilitation.*
- *Arrange appropriate rehabilitation and subsequent release into a safe environment.*
- *Advise the IC of any issues that may affect the health and safety of volunteers or other personnel in the clean up of the affected wildlife.*

Any costs associated with this work will be recovered from the polluter. The IC will ensure that funds are recovered from the polluter.

5.16 Oily Waste Management

5.16.1 Waste Disposal

An often-difficult problem created by oiled foreshore clean up is the generation of quantities of recovered oil and oily waste, which needs to be treated, recycled and/or disposed. The problems of oily waste management are exasperated on small islands such as those of the region, due to severe limits on management options.

The Lead Agency in close collaboration with the Municipalities and all other local provincial authorities shall identify suitable temporary and/or permanent sites for the receipt and disposal of oiled debris. All necessary approval for the disposal of oiled debris shall be obtained, where possible, prior to the event, in accordance with local legislation and by-laws.

The need for temporary storage sites should be determined when the site of the spill is known but should be located no more than 50 km from the spill site. Temporary storage sites should only be used when permanent sites are unavailable, or are too far from the site of the spill to be practicable.

Temporary oily waste storage sites must be selected taking into account;

- *Accessibility of the storage site (good road access)*
- *Distance from where oily wastes is collected*
- *Oil type*
- *Relatively impervious ground (e.g. clay)*
- *Composition of contamination e.g. vegetation, sand, sorbents*
- *Volume of oil/contaminants*
- *Potential for groundwater pollution (low water table)*
- *Potential for flooding from tidal movement*
- *Compatibility with on-site and adjacent land use*
- *Proximity to environmentally sensitive areas*
- *Wildlife access to site e.g. birds.*
- *ability to monitor ground and surface water for contamination*

Impervious tanks or containers should be used for the pumpable wastes while open pits should be used for unpumpable wastes. Open pit areas should be saturated with water prior to being sealed (e.g. with plastic or compacted clay). This is to prevent leaking oil penetrating into the ground. To prevent damage to the seal the area should be underlaid with fine sand and covered with a protective layer of wet sand and or soil.

Pits should not exceed 2 meters in depth, should have rainfall diversion trenches around the edges, and should never be filled to capacity because of the risk of overflow in times of heavy rain. A drainpipe and valve at the bottom of the pit to allow rain and seawater to be drained from beneath floating oils should be included.

Due considerations should be made to keep the different types of waste oils in separate pits.

5.16.2 Waste Transportation

Preferred routes to disposal areas, which minimise the risk of spreading oil contamination, minimise traffic disruptions, or interference with response activities, should be identified by the local authorities and the local Police.

The location and availability of suitable transport vehicles should be determined and drivers briefed of their responsibilities.

It will be necessary to develop an MOU for Port Alofi Municipality in regards to Oily Waste Management Arrangements. This Oily Waste Management Arrangements will be added as a detailed annex if possible.

5.17 Chemical Spills/HAZMAT Response

As outlined under section 1.3, NATPLAN is designed to cover the response to spills into the marine environment of all types of pollutants, including oil, chemicals and hazardous materials (HAZMAT).

*However, technical details within NATPLAN relate primarily to marine **oil** spills. This reflects the fact that oil is the main pollutant likely to be spilled in the region, and the fact that the discipline of oil spill response is far more developed and advanced than that of chemical spill/HAZMAT response.*

In the event of a chemical/HAZMAT spill within the NATPLAN Area, the general procedures and arrangements of NATPLAN should be followed.

External assistance may be requested from Australia under the Memorandum of Understanding between the two countries as per OPRC 90 or via SPREP under PACPLAN.

6. EXTERNAL ASSISTANCE

Arrangements for external assistance to spills are currently limited to marine spills.

Should the Lead Agency assess a spill to be a Tier Three spill (refer sections 1.3 and 5.3), it should activate a Request for Assistance through SPREP, in accordance with the procedures laid down in PACPLAN - the Pacific Islands Regional Marine Spill Contingency Plan.

The Niue National Government SPREP and PACPOL Focal Point hold controlled Copies of PACPLAN.

When requesting assistance, as much information as possible about the nature of the spill should be provided and the request should be as specific as possible about the type of assistance required.

6.1 Pacific Islands Regional Marine Spill Contingency Plan (PACPLAN)

The Pacific Islands Regional Marine Spill Contingency Plan (PACPLAN) now endorsed by countries sets up a framework for the activation of a regional response to large marine spills that are beyond the response capability of one country or that have the potential to impact on more than one country. It allocates responsibilities in the event of marine spill incidents for the Secretariat, Pacific island members, non-island members and industry. It also provides a mechanism to address the responsibilities of countries to the SPREP Convention of 1986.

At Noumea, New Caledonia on 25 November 1986, the members of SPREP adopted the *Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (the SPREP Convention)*, with associated Protocols. The Convention includes a *Protocol Concerning Co-operation in Combating Pollution Emergencies in the South Pacific Region (SPREP Pollution Protocol)*. This protocol has been amended to two new protocols, the 'Protocol on Oil Pollution Preparedness, Response & Corporation for the Pacific Region' and the 'Protocol on Hazardous and Noxious Substances Preparedness, Response & Corporation for the Pacific Region' The Protocols provides a formal framework for co-operation between Pacific Island Countries and Territories when responding to marine spills.

The SPREP New Protocols requires Parties to:

- Take initial action at the state and national levels to respond to pollution incidents.
- Co-operate with other Parties in the response to pollution incidents.
- Establish and maintain, within their respective capabilities, the means of preventing and responding to pollution incidents, including;
    - Enacting relevant legislation.
    - Developing and maintaining contingency plans.
    - Designating a Responsible Authority.
- Exchange information with each other and report all pollution incidents to relevant authorities and other parties likely to be affected.
- Provide assistance, within their capabilities, to other Parties who request such assistance.
- Facilitate the movement of personnel and materials needed for the response to a pollution incident into, out-of and through its territory.

- Develop and maintain, where appropriate sub-regional and bilateral arrangements for preventing and responding to pollution incidents.

PACPLAN now provides the framework for co-operative regional responses to major marine spills in the Pacific Islands region, including broad aims and objectives, underlying spill response philosophies and priorities, roles and responsibilities of relevant organizations, regional and international linkages and mechanisms for accessing regional and international assistance. Below are the primary and secondary responder responsibilities under PACPLAN. The Primary responder responsible for Niue is New Zealand.

Primary and Secondary Sources of Assistance - Divisions of Responsibility

Assistance Provider	Primary source of assistance for:	Secondary source of assistance for:
Australia	Nauru, PNG, Solomon Islands, Tuvalu, Vanuatu, Kiribati	FSM, Fiji, Guam, New Caledonia, Northern Mariana, Palau, Tonga
France	French Polynesia, New Caledonia, Wallis & Futuna	Cook Islands, Marshall Islands, Niue, Vanuatu
New Zealand	Cook Islands, Fiji, Niue, Tokelau, Tonga	American Samoa, Nauru, PNG, Samoa, Solomon Islands, Wallis & Futuna
USA	American Samoa, FSM, Guam, Marshall Islands, Northern Mariana, Palau Samoa	French Polynesia, Kiribati, Tokelau, Tuvalu

7. RESPONSE TERMINATION & POST-SPILL ACTIVITIES

7.1 Response Termination

In any marine spill response operation, a point is reached where the cost and effort involved in continuing clean-up operations outweigh the benefits to be gained. The IC, in consultation with his/her support personnel under the Marine Spill Response Team and the members of the TFC, should determine the point when further effort and expenditure become unreasonable and can no longer be supported on grounds of environmental effectiveness and cost.

The advice of the nominated scientific/environmental expertise, including any provided through external assistance, will be of paramount importance in determining when the environmental effectiveness of continued spill clean-up efforts do not justify continued expenditure.

7.2 Equipment Cleaning/Restoration and Return

Oiled equipment should be cleaned as soon as possible after use. Cleaning should be carried out in a controlled situation where run-off can be contained without causing further pollution of the environment.

Equipment cleaning methods include:

- *High pressure hosing.*
- *Steam cleaning (do not use on booms made of PVC, or plasticity of the boom will be lost).*
- *Apply dispersants and brush (especially heavily oiled booms).*
- *Flushing pumps that have been used to apply dispersants with fresh-water, immediately after use.*

All oil collected from cleaning operations must be disposed of in accordance with the oily waste management procedures outlined in NATPLAN.

Once cleaning is completed, all equipment that has been provided through external assistance should be inspected and checked-off, and arrangements made in consultation with the assistance provider for returning/replacing the equipment.

7.3 Response Evaluation & Debriefing

As soon as possible after termination of clean-up, a full de-brief session should be held. The aim of the debrief session is not to assess the performance of individuals, but to evaluate the response and to translate any lessons learned into improvements to the NATPLAN, so as to improve the effectiveness of any future spill responses.

It is preferred a concise report of lessons learnt and any operational deficiencies be compiled for submission to the TFC for action.

7.4 Damage Assessment & Monitoring

Following a marine spill it is necessary to conduct post-spill damage assessment and monitoring activities, in order to scientifically and quantitatively assess:

- *Ecological damage.*
- *Impacts on commercial resources and activities such as fisheries, aquaculture and tourism.*

It will also provide a baseline against which to measure recovery from the spill.

The information gathered will assist with:

- *Determination of compensation claims.*
- *Better understanding of the effects of spills and the ability of the environment to recover from such effects.*
- *Better understanding of the effects and effectiveness of the various clean-up techniques used.*
- *Identification of any necessary ongoing restoration and rehabilitation requirements for damaged environments and resources.*

Responsibility for initiating and coordinating post-spill damage assessment and monitoring should generally rest with the Environment Unit, which provides the Environmental Scientific Coordinator (ESC) on the spill response team. The following general principles should apply to post-spill damage assessment and monitoring.

- *The Environment Unit, should organise joint government/industry monitoring teams, to undertake coordinated, integrated studies. This will avoid duplication of effort and the possibility of conflicting results that may be used for compensation claims.*
- *Assessment and monitoring should aim to be as quantitative as possible, and the basis of any qualitative assessments stated.*
- *Monitoring must be designed so as to be statistically valid and rigorous, with the levels of confidence clearly stated.*
- *Data collection should commence as soon as possible after the spill.*
- *The use of sound pre-spill baseline data is essential to the success of post-spill damage assessment and monitoring. The Environment Unit should rapidly identify all such data, including that held by government environment and fisheries agencies, universities and research institutions.*
- *The monitoring design should include the identification and monitoring of control sites.*
- *The monitoring design should include areas impacted by the spill, areas disturbed by clean-up activities and areas used for the storage of oily waste.*
- *All organisations involved in post-spill damage assessment and monitoring should keep detailed records of all costs and expenses associated with these activities.*
- *The results obtained should be published in the scientific literature, to assist the development of the spill response discipline in general.*

7.5 Environmental Restoration & Rehabilitation

Following a spill, it may be necessary to undertake activities to restore and rehabilitate damaged ecosystems and resources, for example replanting mangroves killed by a spill, rehabilitating beaches damaged by clean-up activities or transplanting coral to a high-use tourist area impacted by a spill.

Responsibility for Post-spill restoration & rehabilitation should generally rest with the Environment Unit, which provides the ESC on the spill response team. The following general principles should apply to post-spill restoration & rehabilitation.

- *Areas requiring restoration and rehabilitation should be identified during post spill damage assessment (refer section 7.4).*

- *In determining the best options for the restoration and rehabilitation, techniques that seek to complement and make use of **natural forces** to the fullest extent possible should be selected, including the option of allowing natural recovery without active intervention.*

- *The effects and effectiveness of restoration and rehabilitation efforts should be assessed through rigorous monitoring, as part of post-spill damage assessment and monitoring activities (refer section 7.4).*

- *All organisations involved in restoration and rehabilitation should keep detailed records of all costs and expenses associated with these activities.*

- *The results obtained should be published in the scientific literature, to assist the development of the spill response discipline in general.*

8. COST RECOVERY & REIMBURSEMENT

Pollution response is to be undertaken according to the "Polluter Pays Principle." It is the responsibility of the Responsible Authority to as far as practicable ensure that the costs of the spill response and any monitoring and remediation activities are borne directly or recovered from the polluter.

To assist in the recovery of costs, detailed records of action taken and equipment and other resources used to respond to the incident, including detailed and complete records of all costs incurred must be kept by all parties. These records can be utilized both to support cost recovery, claims for compensation and for subsequent analysis of actions taken during the pollution incident, in order to upgrade the Plan.

The IC through the Spill Response team shall ensure the necessary collection and safeguarding of oil and environmental samples, information, accounts, receipts and reports for the recovery of costs through the spillers' insurer.

For marine spills it is the responsibility of the Responsible Authority to initiate cost recovery actions direct with the polluter's representative, e.g. P&I Club correspondent. If required to negotiate or to take legal action to achieve full settlement of amounts incurred in the response. In most cases the identity of the spiller is known and a representative of the P&I Club or Fund will be aware of the Authorities intervention.

The reimbursement of the costs of a marine spill response should be attempted from the polluter, under existing legal regimes (such as relevant state/national legislation, the Civil *Liability Convention1992 and the Fund Convention 1992*, if applicable).

9. EQUIPMENT

The state equipment inventory is a joint government/industry arrangement, with both parties contributing and having access to the equipment. In general, the oil industry, ports and power stations provides the equipment necessary to respond to Tier One spills from its facilities, and government provides the balance of the stockpile necessary to bring the capability up to Tier Two level.

A list of equipment available in Niue, storage locations and contact details is outlined in Appendix 4.

Additional equipment may be available through external assistance (refer section 6).

10. TRAINING & EXERCISES

Training of key personnel is an essential component of contingency planning and preparedness. All personnel involved in spill response should have as a minimum health and safety training. Ideally they should have sufficient training to fully understand their responsibilities during a spill response, be capable of operating all equipment and performing all duties allocated to them in a safe, timely, efficient and environmentally safe manner.

Drills will be conducted at sea or on-site using the resources that would be used in an actual spill. Hands-on experience with clean up equipment and techniques will be used where practical.

Types of exercises to be considered include:

- Deployment of selected equipment (as in a training exercises);
- Call-out of personnel who would be involved or contacted during a spill event (including other government department officers, port and harbour personnel, oil industry company personnel, etc.); and
- Full scale exercises.

A state spill response exercise/drill should be held at least on an annual basis. Such exercises should be joint government/oil industry activities and seek to further develop government/industry integration. Responsibility for organizing these on-island exercises rests with the Council. SPREP can provide technical advice and assistance in the development, conduct and monitoring of these exercises.

11. APPLICABLE LEGISLATION, ENFORCEMENT & PROSECUTION

The Marine Pollution Act 1974 (NZ) as at 17 October 1974 is Niue law. The Oil in Navigable Waters Act 1965 (NZ) was made Niue law by the Niue (New Zealand) Laws Regulations 1972. The Marine Pollution Act 1974 (NZ) repealed the Oil in Navigable Waters Act 1965 (NZ) and thereby became Niue law by substitution by virtue of section 676 of the Niue Act 1966.

In the event of a spill, the Responsible Authority and other government departments, will arrange for the collection of all necessary evidence, including sampling and analysis of the pollutant and its suspected source, photographs, records of interview and inspection of records, vessels, equipment and other facilities; to assist the effective prosecution of any offence that may have been committed.

Appendix Five contains Investigation and Sampling Guidelines

12. APPROVAL, CONTROL & REVISION OF THE PLAN

12.1 Approval of the Plan

The Plan will be approved pursuant to (Insert appropriate legal ref) ??

12.2 Control of the Plan

The Plan will be a controlled document under the direction of the Lead Agency. Full contact details for all holders of controlled copies of the Plan are maintained on a register at the office of the Lead Agency, in order to facilitate revisions and updating.

12.3 Revision of the Plan

Any member of the Council may submit proposed revisions to the Plan. Any proposed revision of PART A of the Plan shall be considered and requires approval by the Disaster Council of Niue.

Technical information contained in informational annexes & appendixes PART B, such as contact details and equipment inventory, will be revised and updated regularly, and new informational appendices added as required, by the Lead Agency, without the need for agreement by the Council. Such revisions and updates will be circulated by the Lead Agency to all registered holders of controlled copies of the plan.

The accuracy of technical information contained in informational annexes, which relates to individual Council members, is the responsibility of each Council member. Council members and other parties to the plan should report to the Lead Agency, any changes in circumstances, including levels of risk of spills, capability to manage spills, internal administrative arrangements and contact details, that may require revision and updating of the plan. The Lead Agency will then be responsible for circulating such updates to all registered holders of controlled copies of the plan.