

7. ACTION PLAN AND PROCEDURES

This chapter lists the specific environmental protection activities and procedures required to avoid or minimise impacts on the environment from the proposed exploration programme.

The specific environmental protection activities and procedures are addressed under each of the project life cycle phases listed below:

7.1	PLANNING PHASE	7.1.1. Preparation of subsidiary plans
		7.1.2. Stakeholder consultation and notification
		7.1.3. Permits / Exemptions
		7.1.4. Financial Provision
7.2	ESTABLISHMENT PHASE	7.2.1. Compliance with the EMPr Addendum
		7.2.2. Environmental Awareness Training
		7.2.3. Notifying other users of the sea
		7.2.4. Appoint an independent observer or MMO and PAM operator
7.3	OPERATIONAL PHASE	7.3.1. Adherence to the EMPr and Environmental Awareness
		7.3.2. Prevention of emergencies
		7.3.3. Communication with other users of the sea and resource managers
		7.3.4. Dealing with emergencies including major oil spills
		7.3.5. Pollution control and waste management
		7.3.6. Equipment loss
		7.3.7. Oil bunkering / refuelling at sea
		7.3.8. Acoustic Emissions
7.4	DECOMMISSIONING AND CLOSURE PHASE	7.4.1. Survey vessel to leave area
		7.4.2. Inform key stakeholders of survey completion
		7.4.3. Final waste disposal
		7.4.4. Compiling survey / sampling "close out" report

7.1 PLANNING PHASE						
PROJECT PHASE AND ACTIVITIES:	ENVIRONMENTAL OBJECTIVES:	AUDITABLE MANAGEMENT ACTIONS TO BE TAKEN TO MEET THE EMP REPORT OBJECTIVES (SEISMIC SURVEYS):	✓	RESPONSIBILITY:	TIMING:	REQUIREMENT FOR "CLOSE-OUT" REPORT:
7.1.1 PREPARATION OF SUBSIDIARY PLANS	<i>Preparation for any emergency that could result in an environmental impact</i>	<p>Ensure the following plans are prepared and in place:</p> <ul style="list-style-type: none"> • Shipboard Oil Pollution Emergency Plan (SOPEP) as required by MARPOL; • Emergency Response Plan (including MEDIVAC plan); • South African Search and Rescue (SASAR) Manual; • Waste Management Plan (see contents in Section 7.3.5); and • Incident Management and Reporting. 		TEPSA	Prior to commencement of operations	Confirm compliance and justify any omissions
7.1.2 STAKEHOLDER CONSULTATION AND NOTIFICATION	<i>PASA and DEA notification</i>	<p>Compile the specific details of the operation into an Environmental Notification for submission to the Petroleum Agency of South Africa (PASA). The environmental notification may include, depending on the activity, the following:</p> <ul style="list-style-type: none"> • Sampling target areas/survey lines; • Number of samples; • Sampling / survey timing and duration; • Contractor details; • Vessel specification (including relevant certificates and insurance); and • Details of the Marine Mammal Observer (MMO) and Passive Acoustic Monitoring Operator (PAM), where applicable. 		TEPSA	30 days prior to commencement of operations or as required by PASA	Confirm that notification was sent to PASA
	<i>Stakeholder notification</i>	<ul style="list-style-type: none"> • Notify relevant government departments and other key stakeholders of the operation (including navigational co-ordinates, timing and duration of proposed activities) and the likely implications thereof (specifically the 500 m exclusion zone and the movement of any support vessels). Stakeholders include: <ul style="list-style-type: none"> > Fishing industry / associations: <ul style="list-style-type: none"> - South African Tuna Association - South African Tuna Long-line Association; - Fresh Tuna Exporters Association; - South African Deep-sea Trawling Industry Association; - South African Hake Long-Line Association; - South African Midwater Trawling Association; - South Coast Rock Lobster Association; - South African Commercial Linefish Association; and - South African Squid Management Industrial Association > South African Maritime Safety Authority (SAMSA), > South African Navy (SAN) Hydrographic office; 		TEPSA	30 days prior to commencement of operations	Provide copies of all correspondence

7.1 PLANNING PHASE						
PROJECT PHASE AND ACTIVITIES:	ENVIRONMENTAL OBJECTIVES:	AUDITABLE MANAGEMENT ACTIONS TO BE TAKEN TO MEET THE EMP REPORT OBJECTIVES (SEISMIC SURVEYS):	✓	RESPONSIBILITY:	TIMING:	REQUIREMENT FOR "CLOSE-OUT" REPORT:
		<ul style="list-style-type: none"> > Department of Agriculture, Forestry and Fisheries (DAFF), including the fisheries research managers, Deon Durholtz (DeonD@daff.gov.za) and Janet Coetzee (JanetC@nda.agric.za); > Port Captains; and > Adjacent prospecting / exploration right holders. • Any dispute arising with adjacent prospecting / exploration right holders should be referred to the Department of Mineral Resources or PASA for resolution. 				
7.1.3 PERMITS / EXEMPTIONS	<i>Compliance with legislative requirements</i>	<p>If necessary, apply to DEA for an exemption to approach to or remain within 300 m of whales (see note below). The request for an exemption must be submitted to DEA (Xola Mfeke; email: xmfeke@environment.gov.za).</p> <p><u>Note:</u> In terms of the Marine Living Resources Act, 1998 (No. 18 of 1998):</p> <ul style="list-style-type: none"> • No person may approach within 300 m of a whale by vessel, aircraft or other means without a permit; • A vessel approached by a whale is required to distance itself at 300 m from the whale, unless in possession of a permit; • A vessel may not proceed directly through a school of dolphins or porpoises; and • No person shall attempt to feed, harass, disturb or kill great white sharks, dolphins, seals or turtles. 		TEPSA	Prior to commencement of operations	Provide copy of permit / exemption
7.1.4 FINANCIAL PROVISION	<i>Compliance with legislative requirements</i>	Verify that financial provision is in place to execute the requirements of the EMPr Addendum.		TEPSA	Prior to commencement of operations	Confirm that financial provision for EMPr Addendum has been put in place

7.2 ESTABLISHMENT PHASE						
PROJECT PHASE AND ACTIVITIES:	ENVIRONMENTAL OBJECTIVES:	AUDITABLE MANAGEMENT ACTIONS TO BE TAKEN TO MEET THE EMP REPORT OBJECTIVES (SEISMIC SURVEYS):	✓	RESPONSIBILITY:	TIMING:	REQUIREMENT FOR "CLOSE-OUT" REPORT:
7.2.1 COMPLIANCE WITH EMPR ADDENDUM	<i>Operator and contractor to commit to adherence to EMPr Addendum</i>	<ul style="list-style-type: none"> Verify that a copy of the approved EMPr Addendum is supplied to all Contractors and is on board the survey and sampling vessels during the operation. Operator to commit organisation and Contractor to meet the requirements of the EMPr. Verify correct equipment and personnel are available to meet the requirements of the EMPr Addendum. 		TEPSA	Prior to commencement of operation	Ensure that a copy of the EMPr Addendum report is provided to any contractors and that an acknowledgment of receipt form is signed by the Contractor
7.2.2 ENVIRONMENTAL AWARENESS TRAINING	<i>Ensure personnel are appropriately trained</i>	<ul style="list-style-type: none"> Undertake Environmental Awareness Training to ensure the vessel's personnel are appropriately informed of the purpose and requirements of the EMPr. Verify that responsibilities are allocated to personnel. 		TEPSA and contractors (where applicable)	Prior to commencement of operation	Copy of attendance register and training records
7.2.3 NOTIFYING OTHER USERS OF THE SEA	<i>Ensure that other users are aware of the survey and sampling activities</i>	<ul style="list-style-type: none"> TEPSA must request, in writing, the SAN Hydrographic Office to release Radio Navigation Warnings and Notices to Mariners throughout the survey and sampling programme. The Notice to Mariners should give notice of (1) operation co-ordinates, (2) 500 m safety zone around the operating vessel, (3) the timing of the operation, and (4) day-to-day location of the operating vessel. 		TEPSA	7 days prior to start	Confirm that request was sent to the SAN Hydrographic office
7.2.4 APPOINT AN INDEPENDENT MMO AND PAM OPERATOR	<i>Ensure impacts associated with the construction phase are kept to a minimum</i>	<ul style="list-style-type: none"> Appoint an independent MMO. For the months of June and November appoint a PAM operator. 		TEPSA	Prior to commencement of operations	
7.3 OPERATIONAL PHASE						
PROJECT PHASE AND ACTIVITIES:	ENVIRONMENTAL OBJECTIVES:	AUDITABLE MANAGEMENT ACTIONS TO BE TAKEN TO MEET THE ENVIRONMENTAL MANAGEMENT PROGRAMME OBJECTIVES:	✓	RESPONSIBILITY:	TIMING:	REQUIREMENT FOR "CLOSE-OUT" REPORT:
7.3.1 ADHERENCE TO THE EMPR ADDENDUM AND ENVIRONMENTAL AWARENESS	<i>Operate in an environmentally responsible manner</i>	<ul style="list-style-type: none"> Comply fully with the EMPr Addendum (compliance would mean that all activities were undertaken successfully and details recorded and included in the "close-out" report). Undertake appropriate monitoring (as per specific topics) and track performance against objectives and targets. Document all activities and results for internal and external auditing. Subscribe to the principles of an internationally acceptable 		TEPSA	Throughout programme	Provide copies of records

		Environmental Management System on board the vessels. This includes environmental awareness training, waste management and environmental monitoring, record keeping and continuous improvement.				
7.3.2 PREVENTION OF EMERGENCIES	<i>Minimise the chance of emergency and subsequent damage to the environment occurring</i>	<ul style="list-style-type: none"> Prevent collisions by ensuring that vessels display correct signals by day and lights by night (including twilight). Maintain 500 m safety zone around vessels through Notices to Mariners and Navigation Warnings. Ensure all hazardous materials are correctly labelled, stored, packed and sealed with proper markings for shipping. Establish lines of communication with the following agencies: SAMSA, SAN Hydrographic Office, DEA (Directorate of Marine Pollution) and PASA. 	TEPSA	Throughout operation		
7.3.3 CONTINUE TO COMMUNICATE WITH OTHER USERS OF THE SEA AND RESOURCE MANAGERS	<i>Promote co-operation and successful multiple use of the sea, including promotion of safe navigation</i>	<ul style="list-style-type: none"> Through normal communication channels, Radio Navigation Warnings and Notices to Mariners, keep relevant government departments and other key stakeholders (see Section 7.1.2) updated on the exploration programme. Co-operate with other legitimate users of the sea to minimise disruption to other marine activities. 	TEPSA	During operations as required	Provide copies of written notices and list of those to whom it was sent	
7.3.4 DEALING WITH EMERGENCIES INCLUDING MAJOR OIL SPILLS (owing to collision, vessel break-up, refuelling etc.)	<i>Minimise damage to the environment by implementing response procedures efficiently</i>	<ul style="list-style-type: none"> Adhere to obligations regarding other vessels in distress. Notify SAMSA about wrecked vessels (safety and pollution) and the Department of Finance (salvage, customs, royalties). Provide location details to SAN Hydrographer. In the event of an oil spill immediately implement emergency plans (see Section 7.1.1). In the case of an oil spill to sea with serious potential consequences to marine and human life notify (a) the Principal Officer of the nearest SAMSA office, (b) the DEA's Chief Directorate of Marine & Coastal Pollution Management in Cape Town, and (c) PASA. Information that should be supplied when reporting a spill includes: <ul style="list-style-type: none"> > Name and contact details of person reporting the incident; > The type and circumstances of incident, ship type, port of registry, nearest agent representing the ships company; > Date and time of spill; > Location (co-ordinates), source and cause of pollution; > Type and estimated quantity of oil spilled and the potential and probability of further pollution; > Weather and sea conditions; > Action taken or intended to respond to the incident; and 	TEPSA	In event of spill	Record of all spills (Spill Record Book), including spill reports; emergency exercise reports; audit reports. Incident log	

		<ul style="list-style-type: none"> > Support vessels must have the necessary spill response capability to deal with accidental spills in a safe, rapid, effective and efficient manner. • Where diesel, which evaporates relatively quickly, has been spilled, the water should be agitated or mixed using a propeller boat/dinghy to aid dispersal and evaporation. • Dispersants should not be used without authorisation of DEA. Dispersants should not be used: <ul style="list-style-type: none"> > On diesel or light fuel oil. > On heavy fuel oil. > On slicks > 0.5 cm thick. > On any oil spills within 5 nautical miles off-shore or in depths less than 30 metres. > In areas far offshore where there is little likelihood of oil reaching the shore. • Dispersants are most effective: <ul style="list-style-type: none"> > On fresh crude oils; under turbulent sea conditions (as effective use of dispersants requires mixing). > When applied within 12 hours or at a maximum of 24 hours. • The volume of dispersant application should not exceed 20-30% of the oil volume. 			
7.3.5 POLLUTION CONTROL AND WASTE MANAGEMENT of products disposed of: into the air (exhausts, cfcs and incinerators), to sea (sewage, food, oils), to land (used oils etc, metals, plastics, glass, etc.)	<i>Minimise pollution, and maximise recycling by implementing and maintain pollution control and waste management procedures at all times</i>	<ul style="list-style-type: none"> • Implement a Waste Management Plan (see Section 7.1.1). The plan must comply with legal requirements (including MARPOL) for waste management and pollution control (for air and water quality levels at sea) and ensure "good housekeeping" and monitoring practices: <ul style="list-style-type: none"> > General waste: <ul style="list-style-type: none"> - Initiate a waste minimisation system. - No disposal overboard. - Ensure on-board solid waste storage is secure. - Transport ashore for disposal. - Retain waste receipts. > Galley (food) waste: <ul style="list-style-type: none"> - No disposal within 3 nm of the coast. - Disposal between 3 nm and 12 nm needs to be comminuted to particle sizes smaller than 25 mm. - Disposal beyond 12 nm requires no treatment. - Minimise the discharge of waste material should obvious attraction of fauna be observed. > Deck drainage: <ul style="list-style-type: none"> - Deck drainage should be routed to a separate drainage 	TEPSA	Throughout operations	Provide summary of waste record book / schedule and receipts Report occurrence of minor oil spills and destination of wastes

		<p>system (oily water catchment system).</p> <ul style="list-style-type: none"> - Ensure all process areas are banded to ensure drainage water flows into the closed drainage system. - Use drip trays to collect run-off from equipment that is not contained within a banded area and route contents to the closed drainage system. - Ensure that weather decks are kept free of spillage. - Mop up any spills immediately with biodegradable low toxicity detergents. - Low-toxicity biodegradable detergents should be used in cleaning of all deck spillage. - Ensure compliance with MARPOL standards (15 ppm). <p>> Machinery space drainage: Vessels must comply with international agreed standards regulated under MARPOL. All machinery space drainage would pass through an oil/water filter to reduce the oil in water concentration to less than 15 ppm.</p> <p>> Sewage:</p> <ul style="list-style-type: none"> - Use approved treatment plants to the MARPOL standards. - No disposal within 4 nm of the coast. - Disposal between 4 nm and 12 nm needs to be comminuted and disinfected prior to disposal into the sea. - Disposal beyond 12 nm requires no treatment. <p>> Medical waste: Seal in aseptic containers for appropriate disposal onshore.</p> <p>> Metal: Send to shore for recycling or disposal.</p> <p>> Other waste: Send remaining waste to a licensed waste site. Ensure waste disposal is carried out in accordance with appropriate laws and ordinances.</p> <p>> Waste oil: Return used oil to a port with a registered facility for processing or disposal.</p> <p>> Wastewater: Comply with MARPOL.</p> <p>> Minor oil spill: Use oil absorbent.</p> <p>> Emissions to the atmosphere:</p> <ul style="list-style-type: none"> - Properly tune and maintain all engines, motors, generators and all auxiliary power to contain the minimum of soot and unburned diesel. - Implement leak detection and repair programmes for valves, flanges, fittings, seals, etc. <p>> Other hazardous waste:</p>				
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7.3.6 EQUIPMENT LOSS	<i>Minimise hazards left on the seabed or floating in the water column, and inform relevant parties</i>	<ul style="list-style-type: none"> • Keep a record of lost equipment and all items lost overboard and not recovered. • When any items that constitute a seafloor or navigational hazard are lost on the seabed, or in the sea, complete a standard form / record sheet, which records the date and cause of loss, details of equipment type, etc. • Pass information to PASA and SAMSA. Notify SAN Hydrographer, relevant fishing associations. Request SAN Hydrographer to send out Notice to Mariners with this information. 	TEPSA	Throughout operation	Provide a list of lost equipment and a copy of record sheet	
7.3.7 OIL BUNKERING / REFUELLING AT SEA	<i>Minimise disturbance / damage to marine life.</i>	<ul style="list-style-type: none"> • No discharge of any oil whatsoever is permitted within 50 nm of the coast • Transfer of oil at sea is not permitted within the economic zone (i.e. 200 miles from the coast) without the permission of the Minister. • Submit an application in terms of Regulation 14 to the Principal Officer at the port nearest to where the transfer is to take place. • Inform SAMSA of location, supplier and timing, 5 days prior to refuelling at sea. 	Vessel Captain	As required, 5 days prior to refuelling	Confirm that a notice was sent to SAMSA	
7.3.8 ACOUSTIC EMISSIONS	<i>Reduce disturbance of marine fauna</i>	<ul style="list-style-type: none"> • Surveying must only commence once it has been confirmed for a 15-minute period (visually during the day) that there is no large cetacean activity within 500 m of the vessel; • Terminate the survey if cetaceans show obvious negative behavioural changes within 500 m of the survey vessel or equipment. The survey should be terminated until such time it is confirmed that cetaceans have moved to a point that is more than 500 m from the source or despite continuous observation, 15 minutes has elapsed since the last sighting of the cetaceans within 500 m of the source. • The MMO should conduct visual scans for the presence of cetaceans around the survey vessel prior to the initiation of any acoustic impulses. The duties of the MMO would be to: <ul style="list-style-type: none"> > Monitor the survey pre-watch period to confirm that there is no large cetacean activity within 500 m of the vessel for a 15-minute period; 				

		<ul style="list-style-type: none"> > Record sound levels, pre-watch sightings and “soft-start” procedures (if required); > Observe and record responses of marine fauna to the multi-beam bathymetry survey. Data captured should include species identification, position (latitude/longitude), distance from the vessel, swimming speed and direction (if applicable) and any obvious changes in behaviour (e.g. startle responses or changes in surfacing/diving frequencies, breathing patterns) as a result of the survey activities; and > Request the temporary termination of survey, as appropriate. A log of all termination decisions must be kept for inclusion in both daily and “close-out” reports. • If the source level is greater than 210 dB re 1 μPa at 1 m the following is recommended: <ul style="list-style-type: none"> > Where equipment allows, a “soft-start” procedure shall be implemented for a period of 20 minutes. This requires that the sound source be ramped from low to full power rather than initiated at full power, thus allowing a flight response by marine fauna to outside the zone of injury or avoidance. Where this is not possible, the equipment should be turned on and off over a 20 minute period to act as a warning signal and allow cetaceans to move away from the sound source; > “Soft-starts” should, as far as possible, be planned to commence within daylight hours; > “Soft-start” procedures must only commence once it has been confirmed by the MMO (visually during the day) that there is no large cetacean activity within 500 m of the vessel for a 15-minute period. However, if after a period of 15 minutes small cetaceans (particularly dolphins) are still within 500 m of the vessel, the normal “soft-start” procedure should be allowed to commence; and > “Soft-start” procedures must also be implemented after breaks in surveying (for whatever reason) of longer than 20 minutes. Breaks of shorter than 20 minutes should be followed by a “soft-start” of similar duration. • For the months of June and November (period of Southern Right Whale migration to and from the South Coast) ensure that Passive Acoustic Monitoring (PAM) is incorporated into any survey programme. 				
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7.4 DECOMMISSIONING AND CLOSURE PHASE						
PROJECT PHASE AND ACTIVITIES:	ENVIRONMENTAL OBJECTIVES:	AUDITABLE MANAGEMENT ACTIONS TO BE TAKEN TO MEET THE ENVIRONMENTAL MANAGEMENT PROGRAMME OBJECTIVES:	✓	RESPONSIBILITY:	TIMING:	REQUIREMENT FOR "CLOSE-OUT" REPORT:
7.4.1 SURVEY VESSEL TO LEAVE AREA	<i>Leave survey area as it was prior to survey</i>	<ul style="list-style-type: none"> Ensure that all deployed equipment is retrieved. 		TEPSA	On completion of survey	
7.4.2 INFORM RELEVANT PARTIES OF SURVEY COMPLETION	<i>Ensure that relevant parties are aware that the survey and sampling campaign is complete</i>	<ul style="list-style-type: none"> Inform all key stakeholders (refer to Section 7.1.2) that the survey and sampling has been completed and the vessels are off location. 		TEPSA	Within two weeks after completion of survey	Copies of notification documentation required.
7.4.3 FINAL WASTE DISPOSAL	<i>Minimise pollution and ensure correct disposal of waste</i>	<ul style="list-style-type: none"> Dispose all waste retained onboard at a licensed waste site using a licensed waste disposal contractor. 		TEPSA	When vessel is in port	Receipt required from contractor
7.4.4 COMPILE SURVEY / SAMPLING "CLOSE-OUT" REPORT	<i>Ensure corrective action and compliance and contribute towards improvement of EMPr Addendum implementation</i>	<ul style="list-style-type: none"> Compile a survey / sampling "close-out" report at the end of the exploration activity. "Close-out" report must be based on requirements of the monitoring and Performance Assessment. Provide information / records as indicated in the "close-out" report column of the EMP within 90 days of the seismic survey. Provide a copy of the report to PASA. 		TEPSA	Within 90 days of completion of the survey / sampling	