

Keraudren Extension Phase 3 3D Marine Seismic Survey (MSS) Environment Plan

Activity overview

Santos is seeking to acquire subsurface data via a 3D Marine Seismic Survey (MSS) in Commonwealth waters in the Bedout Basin.

The proposed Operational Area (OA) is located approximately 130 km northeast of Port Hedland and 64 km north of Cartamina Point on the Western Australian (WA) coastline at the closest point.

This proposed seismic survey is located adjacent to the Keraudren Extension 3D MSS completed by Santos in 2021 and 2022 respectively and will be undertaken in petroleum titles WA-438-P, WA-64-L, WA-435-P, WA-436-P, WA-437-P and surrounding waters.

Santos is undertaking this activity because results from previous exploration drilling and seismic acquisition undertaken in the area have highlighted potential for further oil and gas resources.

Consultation and feedback

All petroleum activities in Commonwealth waters must have an Environment Plan (EP) accepted by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) before any activities can take place.

Under Commonwealth Environmental Regulations, Santos is required to consult with relevant persons about proposed activities when preparing an EP. A relevant person includes authorities, persons or organisations whose functions, interests or activities may be affected by the proposed activity.

Santos meets this requirement by undertaking consultation in two phases:

- **Preliminary consultation** to understand values and sensitivities and confirm consultation expectations of relevant persons.
- **Consultation** with relevant persons on specific activities.

Activity specific consultation is planned to commence on **8 April 2024**, with the consultation period closing on **8 May 2024**. More details on consultation and providing feedback can be found on the back page of this fact sheet.

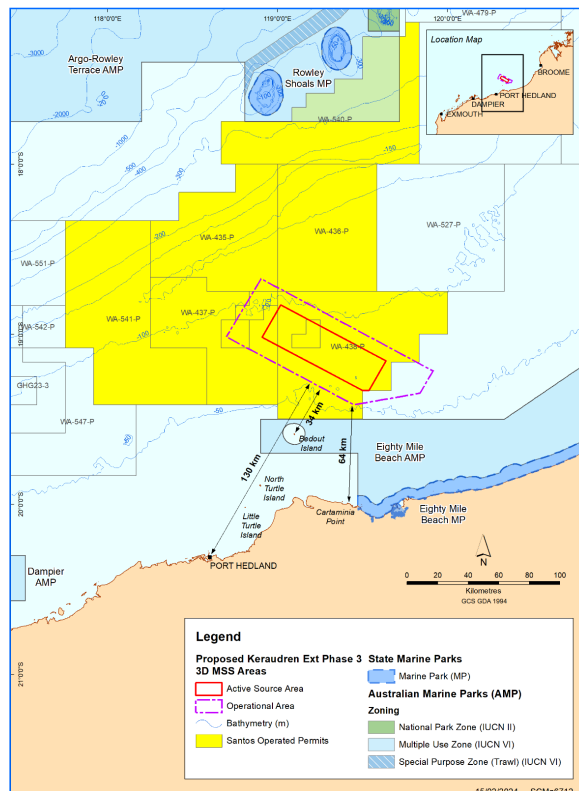


Figure 1. Keraudren (K3) 3D MSS activity location.

Activity description

Activity details		
Timing	A single survey will be undertaken in either 2026, 2027 or 2028. Activity timing will be between 1 February and 30 June.	
Duration	The proposed survey duration is 40 days (including contingency).	
Water depth	Operational area 33-138 m.	Active source area 33-100m.
Vessels	Seismic survey vessel and up to two dedicated support vessels. Vessel details are unknown at this time.	
Aircraft	Helicopters may be used for crew changes, critical equipment supply, and emergency response uses.	
Volume of seismic source	Max. 3,500 cubic inches (in ³).	
Operating pressure	2,000 pounds per square inch (psi).	
Description of the natural environment	The Operational Area is predominately characterised by a relatively flat and largely featureless seabed, predominantly sand with a proportion of silt and clay which gradually slopes from south to north. No high conservation significant ecological values, habitats, communities of species have been identified and the habitats and communities within the Operational Area are very well represented in the local area and region.	
Exclusion zone	3 nm (5.6 km) exclusion (safety) zone around the seismic vessel and trailing streamers.	
Petroleum exploration permits	WA-438-P, WA-64-L, WA-435-P, WA-436-P and WA-437-P.	
Activity coordinates		
Operational Area	Latitude	Longitude
	19° 00' 54.699" S	118° 41' 54.401" E
	18° 40' 22.954" S	118° 54' 10.086" E
	19° 12' 57.212" S	119° 54' 51.410" E
	19° 20' 48.243" S	119° 50' 13.533" E
	19° 24' 52.891" S	119° 26' 53.029" E
Active source area	Latitude	Longitude
	18° 49' 37.740" S	119° 01' 7.575" E
	19° 9' 24.248" S	119° 38' 17.629" E
	19° 19' 53.326" S	119° 32' 16.141" E
	19° 19' 53.328" S	119° 30' 00.618" E
	19° 01' 00.930" S	118° 54' 32.254" E

About marine seismic surveys

The process of collecting seismic data is known as ‘acquisition’. A marine seismic survey takes place along a series of pre-defined acquisition lines (normally several hundred metres apart) within an overall acquisition area.

Marine seismic surveys are carried out by specialised vessels that tow an array of acoustic sources (airguns) and receivers (hydrophones) across a defined acquisition area.

Airguns work by rapidly releasing compressed air to form a bubble, which creates a pulse of sound. This sound energy is directed at the seafloor. The sound waves reflected by the rock layers beneath the seafloor are recorded by hydrophone receivers, which are towed behind the vessel on a series of cables known as ‘streamers’ (see **Figure 2**).

More information about marine seismic surveys can be found [here](#).

Source: NOPSEMA

Proposed activity overview

The Keraudren Extension 3D MSS is planned to occur within a defined ‘Active Source Area’ (ASA) of approximately 1,789 km² in size. The seismic source will only be discharged within the ASA.

Further allowance for vessel manoeuvring provides for a total ‘Operational Area’ (OA) of 4,878 km² in size.

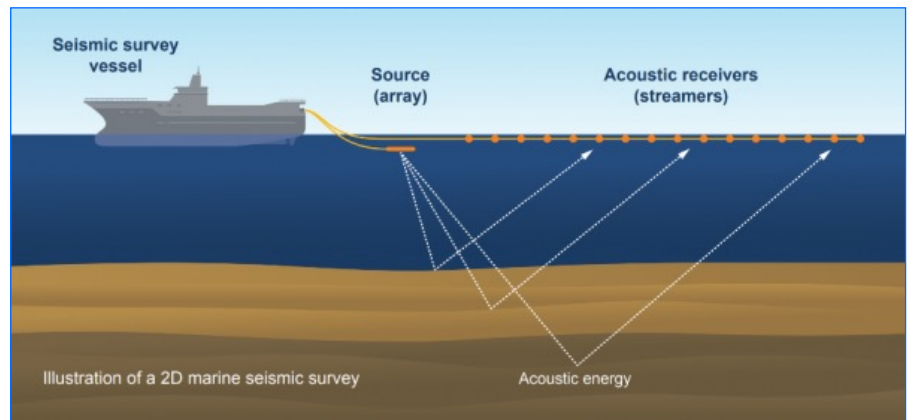


Figure 2. Illustration of a marine seismic survey (Source: NOPSEMA).

Seismic acquisition will be via methods and procedures consistent with other seismic surveys conducted in Australian waters. The survey vessel will travel along a series of pre-determined lines towing a seismic source and a series of cables (known as streamers or acoustic receivers) which contain microphones (known as hydrophones).

As the survey vessel travels along the lines, sound waves will be emitted from the seismic source and directed down through the water and into the geology below the seabed. The sound that reflects back is measured by the hydrophones and is later processed to provide information about the structure and composition of geological formations below the seabed.

The seismic source used during the survey will have a total volume less than 3,500 cubic inches (in³) and be towed approximately 5-10 m below sea surface. The streamers will be approximately 9 km long, towed approximately 15-25 m below the ocean surface and always greater than 10 m above the seabed.

While undertaking the survey, the vessel will traverse predetermined sail lines separated by approximately 450-600 m. Sail lines over the ASA will be orientated NW-SE.

The vessel will travel back and forth along the sail lines in a ‘race-track’ pattern, whereby the vessel turns at the end of each sail line and returns in the opposite direction along a different sail line. This pattern is repeated until acquisition is complete.

The survey vessel will tow the seismic source at a speed of approximately 4.5 knots with the seismic source emitting a pulse of sound approximately every 12.5 m. A support vessel will be on standby to direct any shipping traffic away from the survey vessel and towed streamers.

Defining the environment area for proposed activities

Santos has undertaken an assessment to define the environmental, social, economic and cultural aspects that may be affected by proposed activities.

To do this we have considered the totality of the area where activity impacts and risks may occur.

These areas are summarised in **Table 1**. The widest extent of these areas is called the Environment that May Be Affected (EMBA), which for this activity is the outer boundary

of worst-case marine diesel spill resulting from a vessel collision (see **Figure 3**).

EMBA's are defined by overlaying hundreds of individual, computer simulated, hypothetical spill events into a single map. Each simulation starts from the same location (release point), but each will be subject to a different set of wind and weather conditions derived from historical data. The use of advanced and sophisticated models enables us to present all the areas that could be affected.

While the EMBA represents the largest possible spatial extent that could be contacted by the worst-case spill events modelled, an actual spill event is more accurately represented by a single simulation run, resulting in a smaller spatial extent. Often one or more simulation runs are selected to be representative of the 'worst-case' based on the nature and scale of the Activity and the local environment.

However, both the EMBA (based on numerous possible spill simulations) and the single representative worst-case spill are used for the environmental risk assessment and spill preparedness and response planning.

Please see the [NOPSEMA Spill Modelling Video](#) for more information on spill modelling and why it is required for the preparation of Environment Plans.

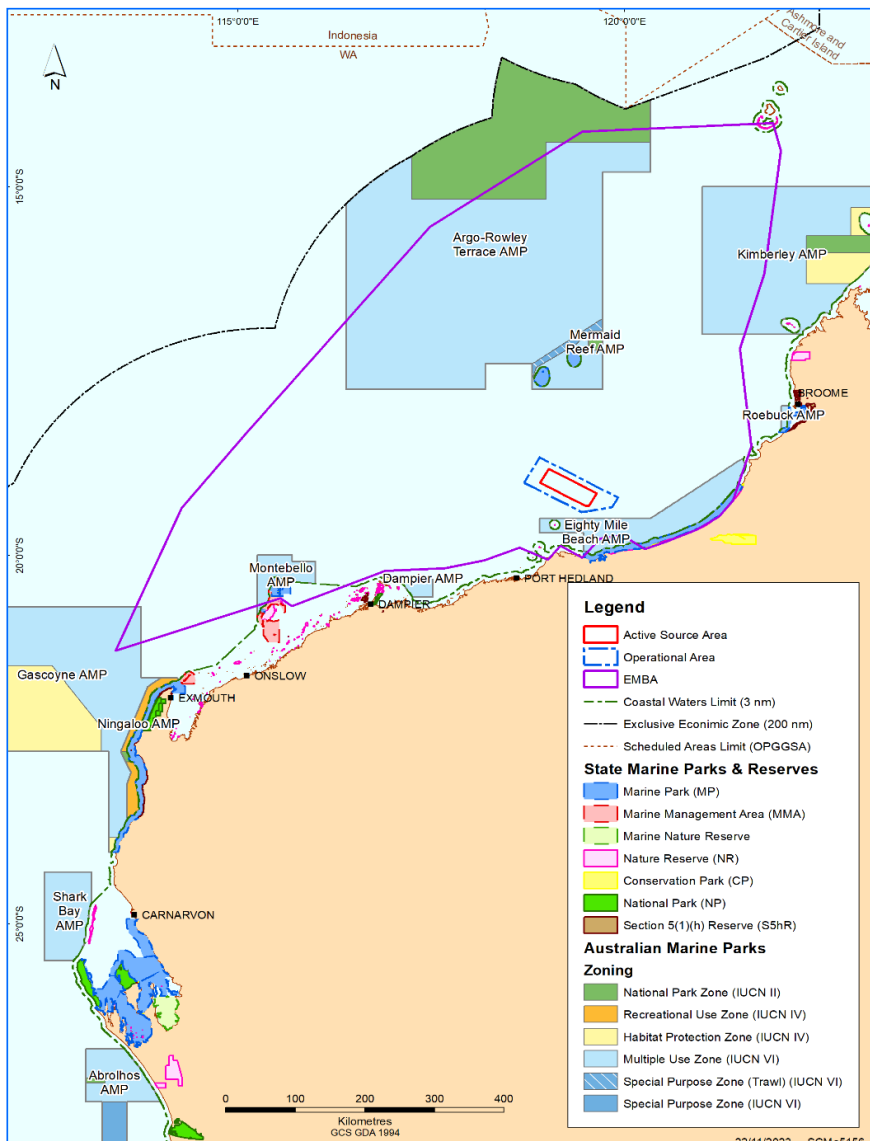


Table 1. Environment area for proposed activities

Operational Area
The area in which the seismic vessel will operate, accounting for line turns with streamers deployed.
Active source area
The area in which the seismic vessel will operate to acquire the seismic data and achieve the geophysical objectives of the survey.
Environment that May Be Affected (EMBA)
The spatial extent of activity impacts (e.g. vessel presence, light, noise) and risks (e.g., hydrocarbon spill).

Figure 3 Keraudren 3D MSS activity location & EMBA.

Santos have undertaken a review of publicly available information to identify environmental, social, economic and cultural features and/or values that may be affected by activity impacts and risks. The outcomes of this review are summarised in **Table 2**.

Table 2. Environmental, social, economic and cultural features

Feature	Description	Within Operational Area	Within EMBA	Public information review
Aboriginal heritage	Registered Aboriginal heritage sites protected under the: <ul style="list-style-type: none"> • <i>Aboriginal Torres Strait Islander Heritage Protection Act 1984 (Cth)</i> • <i>Native Title Act 1993 (Cth)</i>. • <i>Aboriginal Heritage Act 1972 (WA)</i>. 	No	Yes	<p>The representative interests of the Kimberley Land Council Yamatji Marlpa Aboriginal Corporation overlap the EMBA.</p> <p>The EMBA contains three sites listed in the WA Aboriginal Cultural Heritage Register.</p> <p>The EMBA overlaps two Native Title determinations for Ngarla and Ngarla #2 (Determination Area A) and Nyangumarta People (Part A) and seven registered Indigenous Land Use Agreements.</p> <p>The EMBA is adjacent to four Indigenous Protected Areas managed under the National Reserve System.</p>
Biologically important areas	Biologically important areas (BIAs) are spatially defined areas where aggregations of individuals of a species are known to display biologically important behaviour such as breeding, foraging, resting or migration.	Yes	Yes	The Operational Area includes BIAs for the lesser frigatebird, brown booby, whale shark and humpback whale.
Cultural heritage	Registered cultural sites under the: <ul style="list-style-type: none"> • <i>Underwater Cultural Heritage Act 2018</i>. 	No	Yes	There are no historic shipwrecks or sunken aircraft (older than 75 years) located within the OA. There are however 21 historic shipwrecks located in the EMBA, the closest being the Edith (1907), 60 km south-west of the OA.

Table 2. Environmental, social, economic and cultural features ... continued

Feature	Description	Within Operational Area	Within EMBA	Public information review
Defence	Designated defence activity areas.	No	Yes	Defence activities may take place within the EMBA, which contains both practice and training areas to the south-west of the activity area.
Fishing	Commercial fishing.	Yes	Yes	A number of Commonwealth, State and Territory fisheries overlap the EMBA, some of which are active in the Operational Area.
	Indigenous, subsistence or customary fishing.	No	Yes	Traditional Australian Indigenous fishing activities are generally concentrated within 3 nm of the Northern Territory / Western Australian coastline.
	Recreational fishing.	Yes	Yes	Fishing charter vessels may transit through the Operational Area and EMBA, but fishing activities are considered unlikely in the Operational Area due to the remoteness of the activity location.
Key ecological features	Key ecological features (KEFs) are elements of the Commonwealth marine environment that are considered to be of regional importance for either a region's biodiversity or its ecosystem function and integrity.	Yes	Yes	The Operational Area overlaps one KEF for the Ancient coastline at 125 m contour. KEFs are present in the EMBA.

Table 2. Environmental, social, economic and cultural features ... continued

Feature	Description	Within Operational Area	Within EMBA	Public information review
Oil and gas operations	Petroleum operations.	No	Yes	The area of the North West Shelf (NWS) is a major oil and gas hub in Australia, with several companies operating on the NWS. The Activity occurs in a particularly isolated area of the NWS with respect to the main oil and gas operational and exploratory fields. There are currently no existing facilities in the Operational Area. The nearest operating facility is located approximately 250 km from the Operational Area. Exploration activity, such as seismic surveys and exploration drilling, could occur within and surrounding the Operational Area over the life of this EP.
Protected areas (nearest Commonwealth and Territory)	Australian Marine Park.	No	Yes	There are no Australian Marine Parks overlapping the Operational Area. The EMBA overlaps the following marine parks: Eighty Mile Beach AMP, Argo-Rowley Terrace AMP, Mermaid Reef AMP, Kimberley AMP, Gascoyne AMP and Montebello AMP.
	Western Australia State Marine Parks.	No	Yes	There are three WA Marine Parks that overlap the EMBA, the Rowley Shoals Marine Park, Montebello Islands Marine Park and Eighty Mile Beach Marine Park.
Shipping	Shipping routes.	Yes	Yes	The Operational Area overlaps one designated shipping fairway servicing Port Hedland. Estimated use of the fairway is expected to be 1 to 3 vessels per day.
Telecommunications	Subsea telecommunications cables.	No	Yes	The North West Cable System which connects offshore oil and gas facilities in the Browse, Bonaparte and Carnarvon Basins to onshore locations, is located 12 km from the Operational Area.

Table 2. Environmental, social, economic and cultural features ... continued

Feature	Description	Within Operational Area	Within EMBA	Public information review
Tourism	Marine and coastal tourism.	No	Yes	Santos was advised during consultation for the previous Keraudren 3D MSS that there is no offshore tourism industry that operates from Port Hedland. A low level of recreational diving may occur in the waters surrounding Bedout Island.
Towns/communities	Port Hedland.	No	No	130 km south-west of the Operational Area.
	Cartamina Point.	No	No	64 km south of the Operational Area.

Activity impacts and risk management

We have summarised in **Table 3** the potential environmental impacts and risks and associated management measures for the proposed activity. These aspects will be risk-assessed with the Environment Plan on a case-by-case basis.

Table 3. Activity impacts and risk management

Potential impacts – planned activities	
Interaction with other marine users	
<p>Description of potential impacts</p> <p>The presence of vessels in the OA could potentially inhibit or be an inconvenience to marine user groups such as commercial shipping and commercial fishing.</p>	<p>Compliance with the following key management measures</p> <ul style="list-style-type: none"> • Navigation equipment and procedures are used throughout the survey. • Vessels fitted with automatic identification system (AIS) systems and radars (virtual or installed) to mark the location of streamer tail buoys. • Exclusion (safety) zone established to reduce potential for collision or interference with other marine user activities. • Maritime Notices - Notices to Mariners (NTM) and AUSCOAST warnings distributed. • Stakeholder consultation so that other marine users, such as commercial fishers, are aware of upcoming seismic survey operations so they can plan their business accordingly. • Concurrent operations planning with relevant commercial fishers established where required. • Commercial fishery claims - Should commercial fishers be displaced from their normal fishing areas because of the physical presence of the seismic vessel or fishers incur damage to fishing equipment by the seismic vessel then an assessment of loss would be undertaken. Further detail can be found in the Commercial fishery specific fact sheet. • Support vessel is present and operational during the Activity to reduce potential for collision or interference with other marine users. • Santos' decision making and communications protocol will be implemented in the event that the seismic vessel and towed equipment are required to leave the Operational Area during the survey.

Table 3. Activity impacts and risk management ... continued

Noise emissions	
<p>Description of potential impacts</p> <p>Potential impacts from noise emissions may occur in the operational area from the following sources:</p> <ul style="list-style-type: none"> • Seismic source array comprising series of airgun discharges. • Vessel operations (e.g. vessel engines, thrusters, propeller cavitation and operation of machinery and equipment). • Helicopter activities relating to crew change requirements. 	<p>Compliance with the following key management measures</p> <ul style="list-style-type: none"> • Implementation of EPBC Policy Statement 2.1 (Part A) to cetaceans, marine turtles and whale sharks which includes: <ul style="list-style-type: none"> • Pre start-up visual observation. • Soft start procedures. • Start-up delay procedure. • Stop work procedure. • Night-time and low visibility procedures. • <i>Environment Protection Biodiversity and Conservation Regulations 2000 (EPBC Regulations) Part 8</i> for interacting with cetaceans. • Implementation of control measures consistent with EPBC Policy Statement 2.1 Part B: Use of 2 MFOs (MMOs) on board the seismic survey vessel. • Implementation of EPBC Policy Statement 2.1 (partial part B.6 – adaptive management): Adaptive management for humpback whales: During acquisition, if there are three or more humpback whale induced shutdowns / low power downs within a 24-hour period, seismic operations will not be undertaken over the following night-time or period of low visibility. Seismic acquisition will only commence during daylight hours. Night-time operations will only resume when there have been no further sightings of humpback whales in the shutdown / low power zones in the previous daylight period. • Seismic source validation - If the seismic source selected for the Activity is different to those modelled in the EP then additional source modelling will be undertaken to confirm whether the sound levels are consistent with levels assessed as acceptable under this EP.

Table 3. Activity impacts and risk management ... continued

	<ul style="list-style-type: none"> Commercial fishery claims - Should commercial fishers be displaced from their normal fishing areas because of the physical presence of the seismic vessel or fishers incur damage to fishing equipment by the seismic vessel then an assessment of loss would be undertaken. Further detail can be found in the Commercial fishery specific fact sheet. Adopt UK Diving Medical Advisory Committee Guidance Note DMAC 12 (DMAC 2019).
<p>Cumulative and additive noise impacts</p>	
<p>Description of potential impacts</p> <p>Potential impacts from successive seismic surveys can be classified as the following:</p> <ul style="list-style-type: none"> Cumulative impacts - Considered when the spatial footprint of impacts from previous seismic surveys (or other significant underwater sound producing activities) have occurred over the same area of activity. Additive impacts - Result from other concurrent seismic surveys (or other significant underwater sound producing activities), where the effects may or may not overlap spatially, but when taken together have an additive or incremental effect on the same receptors. 	<p>Compliance with the following key management measures</p> <ul style="list-style-type: none"> Seismic source separation distance during concurrent surveys: minimum 40 km separation distance while operating. Engage with proponents identified as having potential concurrent seismic activities prior to commencing the survey and develop a concurrent operations plan for any concurrent surveys identified within 40 km of the Active Source Area. Management of concurrent seismic surveys within Pilbara commercial fisheries.
<p>Light emissions</p>	
<p>Description of potential impacts</p> <p>Potential impacts from light emissions may occur in the operational area from the following sources:</p> <ul style="list-style-type: none"> Vessel operations (e.g. external navigation and safe operations lighting). Vessel-based spot lighting (e.g. streamer deployment and retrieval procedures). 	<p>Compliance with the following key management measures</p> <ul style="list-style-type: none"> Lighting will be used as required for safe work conditions and navigational purposes.

Table 3. Activity impacts and risk management ... continued

Planned operational discharges	
<p>Description of potential impacts</p> <p>Planned discharges from the vessel in the operational area may include:</p> <ul style="list-style-type: none"> • Sewage/greywater. • Food waste. • Brine. • Cooling water. • Deck drainage. • Oily water. 	<p>Compliance with the following key management measures</p> <ul style="list-style-type: none"> • Waste management onboard the vessels will be undertaken in accordance with the relevant International Convention for the Prevention of Pollution from Ships (MARPOL) requirements. • Sewage treatment and Oily water treatment systems in use during the Activity. • Waste (garbage), general chemical, hazardous chemical and deck cleaning product selection procedures in use during the Activity. • Clean up of oil/lubricant spills to deck in accordance with vessel Shipboard Oil Pollution Emergency Plan (SOPEP).
Atmospheric emissions	
<p>Description of potential impacts</p> <p>Potential impacts from atmospheric emissions may occur in the operational area from the following sources:</p> <ul style="list-style-type: none"> • Vessel operations (e.g. vessel & aircraft engines, generators, mobile and fixed plant and equipment). • Vessel waste incinerator. • Vessel ozone-depleting substances (ODS) used in closed-system rechargeable refrigeration systems. 	<p>Compliance with the following key management measures</p> <ul style="list-style-type: none"> • MARPOL compliant fuel oil (MDO/MGO) will be used during the Activity. • Waste incineration managed in accordance with MARPOL and Marine Orders as appropriate. • All vessel engines to be maintained in accordance with manufacturers specifications. • Vessel holds appropriate air pollution prevention certification. • Ozone-depleting substance handling procedures in use during the Activity.

Table 3. Activity impacts and risk management ... continued

Potential risks - unplanned activities	
Marine Diesel Oil (MDO) release from vessel collision (surface)	
<p>Description of potential risks</p> <p>Potential release of MDO may occur in the operational area from the following sources:</p> <ul style="list-style-type: none"> • Vessel collision and fuel tank rupture. 	<p>Compliance with the following key management measures</p> <ul style="list-style-type: none"> • Use of navigation equipment and procedures during the Activity. • Vessels fitted with Automatic Identification Systems (AIS) systems and radars (virtual or installed) to mark the location of streamer tail buoys. • MARPOL compliant fuel oil (MDO/MGO) will be used during the Activity. • Exclusion (safety) zone established to reduce potential for collision or interference with other marine user activities. • Notice to Mariners (NTM) and AUSCOAST warnings. • Support vessel is present and operational during the Activity to reduce potential for collision or interference with other marine users. • Restrictions on how small volumes of unused Intermediate Fuel Oil (IFO) and Heavy Fuel Oil (HFO) must be stored on a vessel, including restricting volumes and limiting storage to tanks that do not have direct exposure to the marine environment. If IFO or HFO is proposed to be on board then this will be risk assessed. For the vessel to store IFO or HFO then the risk assessment must conclude that the high cost of removing and disposing of the IFO or HFO onshore is grossly disproportionate to the low risk of a vessel collision and rupture of an in-board fuel tank containing small volumes of the fuel. • Implementation of Vessel spill response plans (shipboard oil pollution emergency plan (SOPEP)/ shipboard marine pollution emergency plan (SMPEP) available for use during the Activity. • Implementation of Oil Pollution Emergency Plan (OPEP) available for use during the Activity. • Maximum volume of fuel stored in a single tank of vessels used for the Activity will not exceed 1,065 m³.

Table 3. Activity impacts and risk management ... continued

Minor hydrocarbon release	
<p>Description of potential risks</p> <p>Sources of risk from an accidental minor release of hydrocarbons may occur as a result of:</p> <ul style="list-style-type: none"> • Vessel refuelling (e.g. fuel hose breaks, coupling failure, tank overfilling). • Vessel equipment and machinery failure (e.g. tank pipework failure or rupture, hydraulic hose failure, inadequate bunding and/or storage, insufficient fastening or inadequate handling, vessel thruster/propeller stern tube seal leak and/or mechanical damage). 	<p>Compliance with the following key management measures</p> <ul style="list-style-type: none"> • MARPOL compliant fuel oil (MDO/MGO) will be used during the Activity. • Deck drainage control measures (such as scupper plugs) in areas where chemicals and hydrocarbons are stored and frequently handled. • Bulk refuelling transfer procedures used during the Activity. • Implementation of Vessel spill response plans (shipboard oil pollution emergency plan (SOPEP)/ shipboard marine pollution emergency plan (SMPEP) available for use during the Activity. • Implementation of Oil Pollution Emergency Plan (OPEP) available for use during the Activity. • Undertake bunkering / bunkering drill prior to the Activity.
Spill response operations	
<p>Description of potential risks</p> <p>In the event of a hydrocarbon spill, response strategies will be implemented where possible to reduce environmental impacts to ALARP but may include:</p> <ul style="list-style-type: none"> • Light, noise and atmospheric emissions. • Operational discharges and waste. • Physical presence and disturbance. • Disruption to other users of marine and coastal areas and townships. • Shoreline clean-up operations. • Oiled wildlife response operations. 	<p>Compliance with the following key management measures</p> <ul style="list-style-type: none"> • Competent Incident Management Team (IMT) and Oil Spill Responder personnel available for use during the Activity. • Use of competent vessel crew/ personnel during the Activity. • Spill response activities selected on the basis of a Net Environmental Benefit Analysis (NEBA). • Vessels and aircraft used in oil spill response compliant with Santos' Protected Marine Fauna Interaction and Sighting Procedure (EA-91-11-00003). • Vessels and aircraft compliant with Santos' Protected Marine Fauna Interaction and Sighting Procedure (EA-91-11-00003). • Aquatic Biosecurity Solution vessel check tool applied to all spill response vessels on basis of the outcome of a NEBA. • Use of shallow draft vessels for shoreline and nearshore operations. • Oil Spill Response Team (OSRT) Team Leader assesses and selects vehicle appropriate to shoreline conditions.

Table 3. Activity impacts and risk management ... continued

	<ul style="list-style-type: none"> • Conduct shoreline/nearshore habitat/bathymetry assessment prior to nearshore operations. • Establish demarcation zones for vehicle and personnel movement considering sensitive vegetation, bird nesting and roosting areas and turtle nesting habitat. • Operational restriction of vehicle and personnel movement to limit erosion and compaction. • Prioritise use of existing roads and tracks. • Soil profile assessment prior to earthworks. • Use of Heritage Advisor if spill response activities overlap with potential areas of cultural significance. • Pre-cleaning and inspection of equipment (quarantine). • Adhere to WA Oiled Wildlife Response Plan (WAOWRP) and Pilbara Regional Oiled Wildlife Response Plan (PROWRP). • Use existing moorings or anchor locations where possible or available. • Boom will be monitored and maintained to ensure trapped fauna are released as early as possible.
<p>Unplanned hazardous and non-hazardous discharges - liquid</p>	
<p>Description of potential risks</p> <p>Sources of risk from an accidental release of hazardous and non-hazardous (non-hydrocarbon) liquids may occur as a result of:</p> <ul style="list-style-type: none"> • Vessel equipment and machinery failure (e.g. tank pipework failure or rupture, hydraulic hose failure, inadequate bunding and/or storage, insufficient fastening or inadequate handling, vessel thruster/propeller stern tube seal leak and/or mechanical damage). 	<p>Compliance with the following key management measures</p> <ul style="list-style-type: none"> • Equipment maintenance in accordance with Planned Maintenance Schedule. • Dangerous goods managed in accordance with International Maritime Dangerous Goods Code (IMDG Code). • Vessel spill response plans (shipboard oil pollution emergency plan (SOPEP)/ shipboard marine pollution emergency plan (SMPEP) available for use during the Activity. • Oily water treatment system implemented as per MARPOL requirements as appropriate for vessel class.

Table 3. Activity impacts and risk management ... continued

Unplanned hazardous and non-hazardous discharges – solid	
<p>Description of potential risks</p> <p>Sources of risk from an accidental release of hazardous and non-hazardous (non-hydrocarbon) solids may occur as a result of:</p> <ul style="list-style-type: none"> • Overfull/uncovered bins on deck. • Incorrectly disposed items. • Spills during transfers of waste. • Loss of vessel and survey equipment (e.g. streamers, fenders). • Supply transfer from support vessel to survey vessel. <p>Solid objects, such as those below, can be accidentally released to the marine environment, and potentially impact sensitive receptors:</p> <ul style="list-style-type: none"> • Non-hazardous solid wastes, such as paper, plastics and packaging. • Hazardous solid wastes, such as batteries, fluorescent tubes, medical wastes, and aerosol cans. 	<p>Compliance with the following key management measures</p> <ul style="list-style-type: none"> • Equipment maintenance in accordance with Planned Maintenance Schedule. • Streamers are fitted with streamer recovery devices (SRD). • Streamer deployment / retrieval procedure followed during Activity. • Streamers have locating devices fitted. • Streamer tow depth managed during acquisition.
Marine fauna collisions	
<p>Description of potential risks</p> <p>Marine fauna interactions may occur as a result of:</p> <ul style="list-style-type: none"> • Vessel collision. • Equipment collision (e.g. streamers, seismic source). 	<p>Compliance with the following key management measures</p> <ul style="list-style-type: none"> • Use of a ‘turtle friendly’ tail buoy. • Marine fauna observations undertaken to minimise the disturbance to fauna caused by the Activity. • EPBC Regulations (Part 8) for interacting with cetaceans. • Implementation of control measures consistent with EPBC Policy Statement 2.1 Part B: • Use of 2 MFOs (MMOs) on board the seismic survey vessel. • Streamer deployment / retrieval procedure. • Constant bridge watch.

Table 3. Activity impacts and risk management ... continued

Introduction of Invasive Marine Species (IMS)	
<p>Description of potential risks</p> <p>Introduction of invasive marine species (IMS) may occur due to:</p> <ul style="list-style-type: none"> • Biofouling on vessels and marine equipment (e.g. streamers, ballast water exchange). • External / internal niches (e.g. sea chests, seawater systems). 	<p>Compliance with the following key management measures</p> <ul style="list-style-type: none"> • Aquatic Biosecurity Solution vessel check tool (applied to vessels) and immersible equipment cleaned. Exception: If concurrent surveys are conducted within the same Bioregion, then immersible equipment does not need to be cleaned when moving from one survey area to another.

Consultation

Consultation provides Santos with an opportunity to receive feedback from authorities, persons and organisations whose functions, interests or activities may be affected by the proposed activities.

This feedback helps us to refine or change the management measures we are planning to address potential activity impacts and risks. Santos' objective for proposed activities is to reduce environmental impacts and risks to a level that is As Low As Reasonably Practicable (ALARP) and acceptable over the life of the activity.

Consultation also helps us to identify values and sensitivities where information is not publicly available, such as spiritual and cultural connection to land and sea country, as well as first-hand feedback on commercial and recreational fishing, tourism and local community activities and interests.

Providing feedback

You might be a relevant person if, for example, you have spiritual or cultural connections to land and sea country in accordance with Indigenous tradition that might be affected by our activity, if you otherwise carry out recreational or commercial fishing, tourism or other activities that might be affected by our proposed activity, or if you are part of a local community that might be affected by our proposed activity.

If you consider you may be a relevant person, please contact us by **8 April 2024** to allow Santos time to initiate consultation with you, so you can tell us how you would like to be consulted throughout this process or if you need additional information.

The merits of relevant person feedback provided through the consultation process will be considered during EP development, with responses summarised and included in the EP submitted to NOPSEMA for assessment. Please let us know if you would like your personal/organisational details or any part of your feedback to remain private and we will ensure this remains confidential to NOPSEMA.

More information about how community members can participate in environmental approvals for activities proposed in Commonwealth waters has been published in a [brochure](#) by NOPSEMA.

Contact

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