

## Reindeer Wellhead Platform and Offshore Gas Supply Pipeline Operations and Cessation of Production Environment Plan

### Activity Overview

Santos operates the normally unmanned Reindeer Well Head Platform (WHP) and associated wells within production licence WA-41-L and the offshore section of the Devil Creek Gas Supply Pipeline (DCG Supply Pipeline) pipeline licence WA-18-PL in Commonwealth waters. These are collectively referred to as the Reindeer facilities (**Figure 1**), with hydrocarbons transported from the Reindeer field to the onshore Devil Creek Gas Plant (DCGP).

The Reindeer field is proposed to continue operations whilst there are sufficient hydrocarbons. However, the Reindeer field is approaching end of field life, at which time production will cease at the Reindeer WHP. Following cessation of production, the pipeline will be put into preservation under a revision to the existing in-force Operations Environment Plan.

This will take place ahead of a future decision on whether to proceed with decommissioning or to re-purpose the DCG Supply Pipeline for Carbon Capture and Storage (CCS) at the depleted Reindeer field. Activities planned during the operations and preservation phase are outlined on Page 2 and typically include infrequent and short duration vessel or helicopter-based inspection, monitoring, maintenance and repair (IMMR) activities.

If the CCS project proceeds, the DCG Supply Pipeline will be brought back into service to transport CO<sub>2</sub> for storage, rather than being decommissioned. Proposed activities beyond preservation are subject to separate government environmental approvals and consultation.

### 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 environment 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 authorities, persons, and organisations whose functions, interests or activities may be affected by the proposed activities (relevant persons).
- **Consultation** of relevant persons on the specific activities.

This factsheet has been issued to support preliminary consultation as part of the five-year revisions of the Operations EPs and updates to include cessation of production activities. Activity specific consultation is planned to commence on **28 June 2024**, with the consultation period closing on **29 July 2024**. More details on consultation and providing feedback can be found on the back page of this fact sheet.

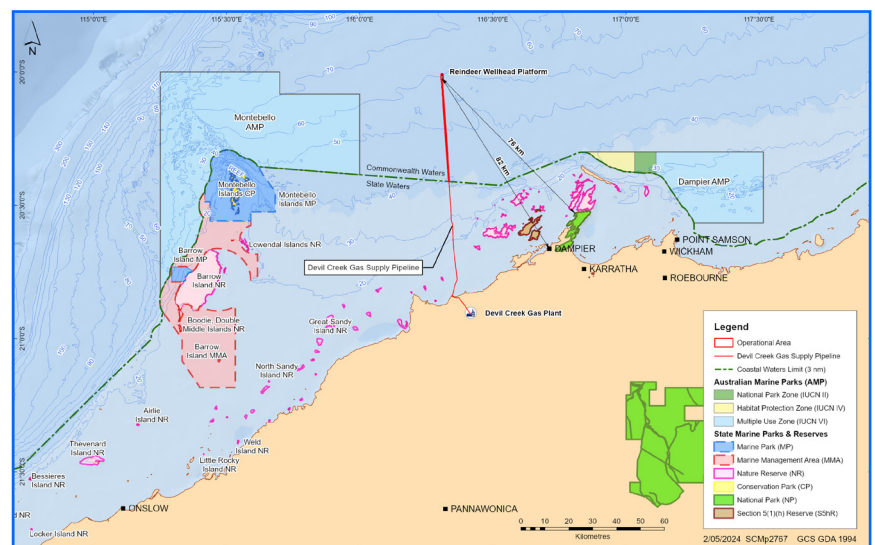


Figure 1. Reindeer facilities activity location.

## Activity Description

Activity details	
<b>Timing</b>	The Reindeer facilities are currently in the operations phase and are anticipated to enter a cessation of production (preservation phase) between 2024 and 2026 subject to matters such as field performance and economics.
<b>Duration</b>	The duration of ongoing operations and the timing cessation of production (preservation phase) will be dependent on Santos' decision-making for decommissioning or re-purposing the DCG Supply Pipeline for CCS. A 5-year EP is being sought from NOPSEMA, which will include both operations and cessation of production phases of the activity.
<b>Water depth</b>	The water depth ranges from approximately 61 m at the WHP and reduces to 38 m for the DCG Supply Pipeline at the Commonwealth / State boundary.
<b>Planned activities</b>	<p><b>Operations phase activities:</b></p> <ul style="list-style-type: none"> <li>• Production and transportation of hydrocarbons from the Reindeer field through the WHP to the DCGP.</li> <li>• Bird management activities at the WHP given the presence of birds and the need to manage the WHP for a safe work environment.</li> <li>• Suspension of operations activities (prior to cessation of production) including well intervention and/or suspension, flushing and purging of the WHP topsides, subsea equipment and the DCG Supply Pipeline and process equipment of any residual hydrocarbons.</li> <li>• IMMR activities, such as: <ul style="list-style-type: none"> <li>• WHP and pipeline plant inspection, maintenance, modification, removal, repair, and replacement</li> <li>• Marine growth/debris removal and corrosion control</li> <li>• Inline inspections of the offshore pipeline (pigging)</li> <li>• Well intervention</li> <li>• Well suspension or abandonment</li> <li>• Environmental monitoring/sampling (e.g. sediment sampling)</li> </ul> </li> <li>• Dewatering of the DCG Supply Pipeline of preservation fluid and discharging to the marine environment at the WHP.</li> </ul> <p><b>Cessation of Production (preservation phase) activities:</b></p> <ul style="list-style-type: none"> <li>• The DCG Supply Pipeline remains preserved with treated seawater or gas.</li> <li>• IMMR, including environmental monitoring/sampling (e.g. sediment and marine growth).</li> <li>• Bird management at the WHP.</li> <li>• Potential planned discharge of treated seawater at the WHP or back to DGCP to dry the pipeline and enable it to be preserved with nitrogen in the future, if required.</li> </ul>
<b>Vessels</b>	Typically, a single vessel would be used to conduct IMMR activities during the life of the EP. However, depending on the nature and location of a repair activity, additional vessels may be required.
<b>Aircraft</b>	Helicopters may be used during IMMR activities which may be undertaken during the life of the EP and to assist in emergency, as required.

<p><b>Description of the natural environment</b></p>	<ul style="list-style-type: none"> <li>• The operational area does not intercept any marine protected areas, the closest being the Murujuga National Park and the Montebello Australian Marine Park (AMP), which are located approximately 54 km and 73 km respectively from the nearest boundary of the operational area.</li> <li>• The operational area does not contain any shoreline habitat. Due to water depths, there are no primary producer habitats (including coral and seagrass) within the operational area and soft sediment is the dominant habitat.</li> <li>• The operational area includes Biologically Important Areas (BIAs) for protected marine species that include seabirds, whales, turtles and sharks.</li> <li>• No Key Ecological Features (KEF) intercept the operational area. The closest KEFs to the operational area are the Ancient Coastline at 125 m Depth Contour KEF (located approximately 45 km north from the closest edge of the operational area) and Glomar Shoals KEF (approximately 44km northeast).</li> </ul>
<p><b>Operational Area</b></p>	<p>The operational area within which the petroleum activity will take place is as per current operations and is defined as:</p> <ul style="list-style-type: none"> <li>• A 2 km x 1 km area around the WHP and Reindeer-1 well.</li> <li>• An area 250 m either side of the Commonwealth waters section of the DCG Supply Pipeline (from the WHP to the State waters boundary).</li> </ul>
<p><b>Exclusion zone</b></p>	<p>A 500m petroleum safety zone is in place around the WHP and will remain in place for the duration of this EP.</p>
<p><b>Petroleum production licences</b></p>	<p>Production licence WA-41-L Pipeline licence WA-18-PL</p>

## Activity Purpose and Approvals



**Image 1.** Typical vessel used for IMMR activities.

The in-force *Reindeer Wellhead Platform and Offshore Gas Supply Pipeline Operations Environment Plan WA-41-L and WA-18-PL* details the environmental management measures implemented by Santos for operation of the Reindeer facilities. The EP was assessed by NOPSEMA and accepted in June 2020.

Activities proposed to be managed under a revision of the EP are described in the Activity Description table in the previous section.

The preservation phase will begin when the Reindeer facility is no longer producing, and the pipeline has been flushed,

cleaned and then filled with a preservation product to preserve the pipeline ahead of a future decision on decommissioning or CCS.

Vessel-related activities will be undertaken during operations and preservation phases.

IMMR activities conducted on the WHP and the DCG Supply Pipeline will be infrequent and of a relatively short duration. Inspections will generally involve a vessel travelling along the route of the DCG Supply Pipeline using towed acoustic instruments or may involve using a Remotely Operated Vehicle (ROV) launched and recovered from the vessel. Typically, vessels

will be within the Operational Area for approximately 30 days per year depending on the IMMR requirements.

The *Offshore Petroleum and Greenhouse Gas Storage Environment Regulations 2023* (Cth) require a titleholder to have an Environment Plan accepted by NOPSEMA before any petroleum activity can commence. An accepted revision of the Operations EP must be in place to enable the cessation of production (preservation phase).

## Defining the Environment Area for Proposed Activities

Santos has undertaken an initial assessment to identify the environmental, social, economic, and cultural values and sensitivities that may be affected by impacts and risks of proposed activities.

To do this we have considered the totality of the areas 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 combined EMBA for the modelled potential worst-case hydrocarbon spill scenarios. These scenarios include a discharge of Reindeer condensate at the WHP from a loss of well integrity, a rupture of the DCG Supply Pipeline and a vessel collision releasing marine diesel oil at the sea surface. This consolidated EMBA is illustrated in **Figure 2**.

Spill EMBA's are defined by overlaying a great number (usually hundreds) of individual, computer simulated, hypothetical hydrocarbon spill events into a single map. Each simulation run starts from the same location (release point) but each run 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.

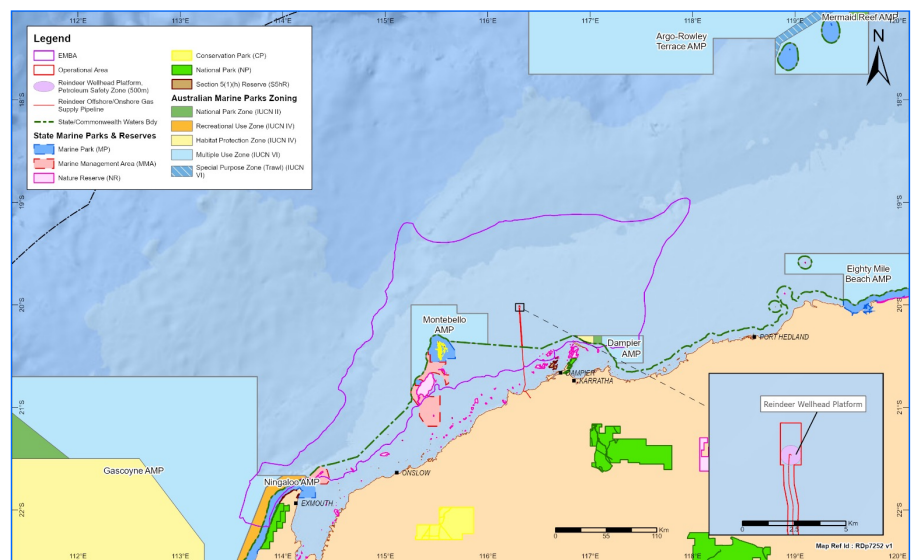
While the modelled EMBA represents the theoretical spatial extent that could be contacted by the worst-case spill event(s), an actual spill event is more accurately represented by a single simulation run, resulting in a much smaller spatial extent impacted by the spill.

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.

Please see the **NOPSEMA Spill Modelling Video** for more information on oil spill modelling and why it is required for the preparation of Environment Plans.

**Table 1.** Environment area for proposed activities

Environment Area	
<b>Operational Area</b>	<p>The operational area for the Reindeer WHP and Offshore Gas Supply Pipeline Operations EP is as per the current operational area defined as:</p> <ul style="list-style-type: none"> <li>• A 2 km x 1 km buffer around the WHP and Reindeer-1 well.</li> <li>• A 250 m buffer either side of the Commonwealth waters section of the DCG Supply Pipeline (from the WHP to the State waters limit).</li> </ul>
<b>Environment that May Be Affected (EMBA)</b>	<p>The spatial extent of activity impacts (e.g. light, noise) and risk (e.g. hydrocarbon spill).</p>



**Figure 2.** Reindeer facilities activity location and EMBA

Santos has 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
<b>Aboriginal Heritage</b>	Registered Aboriginal heritage sites protected under the: <ul style="list-style-type: none"> <li>• <i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth)</i></li> <li>• <i>Aboriginal Heritage Act 1972 (WA)</i></li> </ul>	No	Yes	<p>Barrow Island, Montebello Islands, Exmouth, Dampier Archipelago, Ningaloo Reef and the adjacent foreshores have a long history of occupancy by Indigenous communities.</p> <p>National heritage places including the Dampier Archipelago and the Ningaloo Coast Heritage Area are located 24 km and 238 km from the operational area.</p> <p>There are no registered Aboriginal Heritage sites (<i>Aboriginal Heritage Act 1972 (WA)</i>) within the operational area. However, the EMBA overlaps with 28 registered Aboriginal Heritage sites and 40 lodged Aboriginal Heritage sites.</p>
<b>Biologically Important Areas</b>	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 protected marine species that include seabirds, whales, turtles and sharks.

**Table 2. Environmental, Social, Economic and Cultural Features ... continued**

Feature	Description	Within Operational Area	Within EMBA	Public information review
<b>Cultural Heritage</b>	Registered cultural sites under the: <ul style="list-style-type: none"> <li>• <i>Underwater Cultural Heritage Act 2018</i> (Cth)</li> <li>• <i>Maritime Archaeology Act 1973</i> (WA)</li> </ul>	No	Yes	There are no known sites of shipwrecks, sunken aircraft or other types of underwater cultural heritage within the operational area. There are a total of 35 known shipwrecks located within the EMBA. The closest known historic shipwreck is the Dampier which is located approximately 16 km southwest of the operational area. Little is known about the history of this wreck.
<b>Defence</b>	Designated defence activity areas	No	Yes	The operational area does not intersect any designated defence activity areas, however the EMBA overlaps with the North-Western Exercise Area (NWXA).
<b>Energy Industry</b>	Petroleum and CCS activities	No	Yes	Several offshore petroleum projects and exploration activity is present within the region. The DCG Supply Pipeline crosses the Woodside Pluto LNG pipeline approximately 21 km south of the WHP in 50 m of water.

**Table 2. Environmental, Social, Economic and Cultural Features ... continued**

Feature	Description	Within Operational Area	Within EMBA	Public information review
<b>Fishing</b>	Commercial fishing	Yes	Yes	Several Western Australian (WA) and Commonwealth managed fisheries overlap the operational area and EMBA. No Commonwealth managed fisheries are active in the operational area. WA state managed fisheries active within the operational area include the Pilbara Trap and Fish Trawl Managed Fisheries and the Mackerel Managed Fishery.
	Indigenous, subsistence or customary fishing	No	Yes	Traditional Australian Indigenous fishing in WA waters predominately occurs within inshore tidal waters and is not expected in the operational area.
	Recreational fishing	Yes	Yes	Recreational fishing may occur within the operational area and is known to occur within the EMBA.
<b>Key Ecological Features</b>	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.	No	Yes	No KEFs intercept the operational area. The closest KEFs to the operational area are the Ancient Coastline at 125 m Depth Contour KEF (located 45 km north from the closest edge of the operational area) and Glomar Shoals KEF (44 km northeast).



Table 2. Environmental, Social, Economic and Cultural Features ... continued

Feature	Description	Within Operational Area	Within EMBA	Public information review
<b>Protected Areas (nearest Commonwealth and Territory)</b>	Australian Marine Parks	No	Yes	The operational area does not intercept any marine protected areas, the closest being the Murujuga National Park and the Montebello Australian Marine Park (AMP), which are located approximately 54 km and 73 km respectively from the nearest boundary of the operational area.
	Western Australian Marine Parks and Marine Management Areas	No	Yes	There are no Western Australian Marine Parks or Marine Management Areas located within the operational area. The Montebello/Barrow Islands Marine Conservation Reserve is located in the EMBA and is approximately 68 km from the operational area. The EMBA also overlaps the Muiron Island Marine Management Area and the Ningaloo Marine Park which are located 238 km and 258 km to the southwest of the operational area, respectively.
<b>Shipping</b>	Shipping routes	Yes	Yes	The Reindeer facilities reside between two shipping fairways, located approximately 50 km to the east and west of the boundary of the WHP.  There is a shipping fairway approximately 25 km south of the Reindeer WHP which crosses the offshore gas pipeline.  Additional shipping routes are located within the wider region and it is expected that local vessel traffic will pass through the area.

**Table 2. Environmental, Social, Economic and Cultural Features ... continued**

Feature	Description	Within Operational Area	Within EMBA	Public information review
<b>Tourism</b>	Marine and coastal tourism	No	Yes	No known tourism activities occur in the operational area. Within wider EMBA tourism/recreational activities include whale shark tours, fishing charters and whale watching tours associated with the Ningaloo Coast.
<b>Towns / Communities</b>	Dampier	No	No	Dampier is the nearest town and is approximately 81 km south-southeast of the operational area and 48 km southeast of the DCG Supply Pipeline where it crosses the WA and Commonwealth boundary.

## Activity Impacts and Risk Management

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

**Table 3. Activity Impacts and Risk Management**

Potential activity impacts	
<b>Acoustic disturbance to fauna</b>	
<p><b>Description of risks</b></p> <p>Potential impacts from noise emissions may occur from the following sources:</p> <ul style="list-style-type: none"> <li>• WHP operation (microturbine generator, pumps and hydraulics).</li> <li>• Support vessel activities (e.g., vessel engines, thrusters and other machinery).</li> <li>• IMMR activities (e.g., use of ROV, Single-Beam and Multi-Beam Echo Sounders and Side Scan Sonar, autonomous underwater vehicle (AUV), diving operations, marine growth cleaning, pigging, modification and replacement of components).</li> <li>• Helicopter activities, including the use of noise-emitting devices to deter birds).</li> <li>• Use of unmanned aerial vehicles in the operational area.</li> <li>• As a result of using a bird management system on the WHP.</li> <li>• Marine growth removal (subsea).</li> </ul>	<p><b>Compliance with the following key management measures</b></p> <ul style="list-style-type: none"> <li>• Santos' procedure for interacting with marine fauna.</li> <li>• Santos' Bird Management Plan.</li> </ul>
<b>Light emissions</b>	
<p><b>Description of risks</b></p> <p>Light emissions in the marine environment will occur as a result of:</p> <ul style="list-style-type: none"> <li>• Safety and navigational lighting on the WHP and on vessels.</li> <li>• Temporary lighting for night-time operations (e.g. maintenance on the WHP or from support vessels).</li> <li>• As a result of using a bird management system on the WHP.</li> </ul>	<p><b>Compliance with the following key management measures</b></p> <ul style="list-style-type: none"> <li>• Lighting will be used as required, for safe work conditions and to meet navigational requirements.</li> <li>• Premobilisation review and planning of lighting on vessels prior to IMMR activities commencing.</li> <li>• Santos' Bird Management Plan.</li> </ul>

**Table 3. Activity Impacts and Risk Management ... continued**

<b>Atmospheric emissions</b>	
<p><b>Description of risks</b></p> <p>Potential impacts from atmospheric emissions may occur in the operational area due to the following operations:</p> <ul style="list-style-type: none"> <li>• Combustion emissions from the use of gas and diesel powered turbines and equipment on the WHP and the use of fuel in helicopter operations and to power engines and equipment during operational and maintenance activities.</li> <li>• Emissions from the use of vessels.</li> <li>• Cold venting natural gas (methane, ethane, propane and carbon dioxide) as there is no flare present.</li> <li>• Venting of volatile organic compounds (VOCs) (primarily CH<sub>4</sub>) from drain systems on the WHP.</li> <li>• Fugitive emissions from relief valves and sumps, and also their actuation.</li> <li>• Accidental release of ozone-depleting substances in closed-system rechargeable refrigeration systems.</li> </ul>	<p><b>Compliance with the following key management measures</b></p> <ul style="list-style-type: none"> <li>• Facilities Planned Maintenance System.</li> <li>• Vessels Planned Maintenance System.</li> <li>• Fuel oil quality meets The International Convention for the Prevention of Pollution from Ships (MARPOL) requirements.</li> <li>• Ozone-depleting Substance Handling Procedures.</li> <li>• Waste incineration management.</li> <li>• International Air Pollution Prevention Certification (IAPP).</li> </ul>

**Table 3. Activity Impacts and Risk Management ... continued**

<b>Seabed and benthic habitat disturbance</b>	
<p><b>Description of risks</b></p> <p>Disturbance to the seabed and benthic habitats could potentially occur as a result of the following activities:</p> <ul style="list-style-type: none"> <li>• Vessel anchoring (non-routine).</li> <li>• Cleaning of subsea infrastructure.</li> <li>• Sedimentation as infrastructure is placed or relocated on the seabed.</li> <li>• Temporary subsea storage of equipment (e.g., ROV basket or clump weight).</li> <li>• IMMR activities (e.g., diving, AUV survey activities, ROV operations, cutting, welding, pigging, installation, replacement or modification of subsea equipment, free span rectification and stabilisation, etc.).</li> <li>• Initial placement of solid structures, deployment, retrieval or movement of equipment and ROV operations; and</li> <li>• Creation of artificial habitat because of the physical presence of infrastructure (and from currents altered by the presence of subsea infrastructure).</li> </ul>	<p><b>Compliance with the following key management measures</b></p> <ul style="list-style-type: none"> <li>• Planned subsea and offshore maintenance.</li> <li>• Dropped object prevention procedures.</li> <li>• Dropped object recovery.</li> <li>• Anchoring and equipment deployment management.</li> </ul>
<b>Physical presence and interaction with other marine users</b>	
<p><b>Description of risks</b></p> <p>Potential interactions with other marine users may occur as a result of:</p> <ul style="list-style-type: none"> <li>• Vessel operations.</li> <li>• Ongoing presence of infrastructure (WHP) and pipeline.</li> </ul>	<p><b>Compliance with the following key management measures</b></p> <ul style="list-style-type: none"> <li>• Maritime notices.</li> <li>• Santos' stakeholder consultation strategy.</li> <li>• No fishing from project vessels.</li> <li>• Existing (gazetted) WHP Petroleum Safety Zone (PSZ) established around the WHP.</li> <li>• Navigational charting of infrastructure.</li> <li>• Compliant navigation lighting and aids.</li> <li>• Seafarer certification.</li> <li>• Constant bridge watch on support vessels.</li> </ul>

**Table 3. Activity Impacts and Risk Management ... continued**

<b>Operational discharges</b>	
<p><b>Description of risks</b></p> <p>Planned discharges from the WHP and vessels to the marine environment include:</p> <ul style="list-style-type: none"> <li>• Sewage and grey water.</li> <li>• Putrescible waste.</li> <li>• Deck drainage.</li> <li>• Cooling water.</li> <li>• Desalination brine.</li> <li>• Bilge water.</li> <li>• Ballast water.</li> <li>• Treated seawater containing oxygen scavenger and biocide.</li> </ul>	<p><b>Compliance with the following key management measures</b></p> <ul style="list-style-type: none"> <li>• Waste (garbage) management plan.</li> <li>• Deck cleaning product selection procedure.</li> <li>• General chemical management procedure.</li> <li>• Chemical selection procedure.</li> <li>• Sewage treatment system.</li> <li>• Oily water treatment system.</li> <li>• Offshore platform deck drain system and bunding.</li> <li>• Pipeline flushing back to Devil Creek prior to opening of the subsea system for an IMMR activity.</li> <li>• Dispersion modelling of treated seawater discharges into the marine environment.</li> </ul>
<b>Potential activity risks</b>	
<b>Unplanned Introduction of invasive marine species (IMS)</b>	
<p><b>Description of risks</b></p> <p>Introduction of invasive marine species (IMS) may occur due to:</p> <ul style="list-style-type: none"> <li>• Biofouling on vessels and external/internal niches (such as sea chests, seawater systems).</li> <li>• Biofouling on equipment that is routinely submerged in water (such as ROVs).</li> <li>• Discharge of high-risk ballast water.</li> <li>• Cross-contamination between vessels.</li> </ul>	<p><b>Compliance with the following key management measures</b></p> <ul style="list-style-type: none"> <li>• Implementation of the management controls in the Santos Invasive Marine Species Management Plan (IMSMP).</li> <li>• Anti-foulant system.</li> <li>• Ballast water management plan.</li> </ul>

**Table 3. Activity Impacts and Risk Management ... continued**

<b>Unplanned interaction with marine fauna</b>	
<p><b>Description of risks</b></p> <p>There is the potential for vessels or equipment (e.g., ROV) involved in operational activities to interact with marine fauna, including potential strike or collision potentially resulting in severe injury or mortality. Fauna strike may also occur from helicopter or unmanned aerial vehicles collision, during take-off and landing.</p>	<p><b>Compliance with the following key management measures</b></p> <ul style="list-style-type: none"> <li>• Constant bridge watch on support vessels.</li> <li>• Procedure for interacting with marine fauna.</li> <li>• Constant bridge watch.</li> </ul>
<b>Unplanned release of solid objects</b>	
<p><b>Description of risks</b></p> <p>Solid objects, such as those listed below, can be accidentally released to the marine environment, and potentially impact on sensitive receptors:</p> <ul style="list-style-type: none"> <li>• Non-hazardous solid wastes (e.g., paper, plastics and packaging).</li> <li>• Hazardous solid wastes (e.g., batteries, fluorescent tubes, medical wastes, and aerosol cans).</li> <li>• Equipment and materials (e.g., hard hats, tools or infrastructure parts).</li> </ul>	<p><b>Compliance with the following key management measures</b></p> <ul style="list-style-type: none"> <li>• Waste (garbage) management plan.</li> <li>• Facilities Planned Maintenance System.</li> <li>• Vessels Planned Maintenance System.</li> <li>• Planned subsea and offshore maintenance.</li> <li>• Dropped Object Prevention Procedure.</li> <li>• Dropped Object Recovery.</li> </ul>

**Table 3. Activity Impacts and Risk Management ... continued**

<b>Unplanned hazardous liquid release (non-hydrocarbon)</b>	
<p><b>Description of risks</b></p> <p>Sources of risk from minor hazardous liquid releases of chemicals (including corrosion inhibitor, cleaning and cooling agents, recovered solvents, stored or spent chemicals, leftover paint materials and used greases) may occur as a result of:</p> <ul style="list-style-type: none"> <li>• Bunkering from storage tanks to bulk tanks or transferring to day tanks or due to component failure, such as flexible hoses.</li> <li>• Spills or leaking machinery accidentally discharged overboard in deck drainage water.</li> <li>• Overflow of the open and closed drainage systems.</li> <li>• Tank or pipework corrosion or rupture on the Reindeer WHP.</li> <li>• Loss of primary containment (drums, tanks, intermediate bulk containers, etc.) due to handling, storage and dropped objects (e.g., swinging load during lifting activities).</li> <li>• ROV operations.</li> </ul>	<p><b>Compliance with the following key management measures</b></p> <ul style="list-style-type: none"> <li>• Planned subsea and offshore maintenance.</li> <li>• Inspection of platform structures and hydrocarbon-containing equipment.</li> <li>• Offshore platform deck drain system and bunding.</li> <li>• Hazardous chemical management procedures.</li> <li>• General chemical management procedures.</li> <li>• Refuelling and chemical transfer procedure.</li> <li>• Spill response equipment on producing offshore platforms.</li> <li>• Vessel spill response plan (Shipboard Oil Pollution Emergency Plan / Shipboard Marine Pollution Emergency Plan)</li> <li>• Remotely operated vehicle inspection and maintenance procedures.</li> </ul>



**Table 3. Activity Impacts and Risk Management ... continued**

<b>Unplanned surface release of condensate from the wellhead platform</b>	
<p><b>Description of risks</b></p> <p>The maximum credible spill scenario as a result of a loss of well control is a release of natural gas and condensate (6.5 BSCF and 25,000 STB respectively) over a period of 11 weeks.</p>	<p><b>Compliance with the following key management measures</b></p> <ul style="list-style-type: none"> <li>• Planned subsea and offshore maintenance.</li> <li>• NOPSEMA accepted Well Operations Management Plan.</li> <li>• Well services procedures and criteria.</li> <li>• Inspection and corrosion monitoring.</li> <li>• Testing and maintenance of emergency shutdown systems and shutdown/safety valves.</li> <li>• WHP petroleum safety zone.</li> <li>• Navigational charting of infrastructure.</li> <li>• Navigation lighting and aids.</li> <li>• Dropped object prevention procedure</li> <li>• Support vessel positioning.</li> <li>• Emergency power system is provided on Reindeer WHP to secure secondary power source for safety integrity system.</li> <li>• Operational monitoring of low flow well leak.</li> <li>• In the event of a hydrocarbon spill, an activity specific Oil Pollution Emergency Plan (OPEP) will be implemented to mitigate environmental impacts. The OPEP sets out environmental protection priorities and appropriate response measures for a range of spill scenarios. The OPEP is developed in accordance with National and State marine pollution plans.</li> </ul>

**Table 3. Activity Impacts and Risk Management ... continued**

<b>Unplanned subsea release of condensate from a subsea pipeline or subsea well</b>	
<p><b>Description of risks</b></p> <p>Sources of risk from a major hydrocarbon releases may occur as a result of:</p> <ul style="list-style-type: none"> <li>• Pipeline rupture caused by an integrity or corrosion issue, dropped object or anchor drag.</li> <li>• The maximum credible spill scenario as a result of a full pipeline rupture is the release of 121.4 m<sup>3</sup> of reindeer condensate over 3.75 hours.</li> </ul>	<p><b>Compliance with the following key management measures</b></p> <ul style="list-style-type: none"> <li>• NOPSEMA accepted safety case.</li> <li>• Planned subsea and offshore maintenance.</li> <li>• Inspection and corrosion monitoring.</li> <li>• Testing and maintenance of emergency shutdown systems and shutdown/safety valves.</li> <li>• Navigational charting of infrastructure.</li> <li>• Anchoring and equipment deployment management.</li> <li>• In the event of a hydrocarbon spill, an activity specific OPEP will be implemented to mitigate environmental impacts. The OPEP sets out environmental protection priorities and appropriate response measures for a range of spill scenarios. The OPEP is developed in accordance with National and State marine pollution plans.</li> </ul>
<b>Unplanned surface release of diesel (e.g. from a vessel collision)</b>	
<p><b>Description of risks</b></p> <p>The maximum credible spill scenario as a result of a vessel collision is the release of 325 m<sup>3</sup> of marine diesel oil.</p>	<p><b>Compliance with the following key management measures</b></p> <ul style="list-style-type: none"> <li>• Seafarer certification.</li> <li>• Navigation lighting and aids.</li> <li>• Support vessel positioning.</li> <li>• Navigational charting of infrastructure.</li> <li>• WHP petroleum safety zone.</li> <li>• In the event of a hydrocarbon spill, an activity specific OPEP will be implemented to mitigate environmental impacts. The OPEP sets out environmental protection priorities and appropriate response measures for a range of spill scenarios. The OPEP is developed in accordance with National and State marine pollution plans.</li> </ul>

## Consultation

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

This feedback helps us to refine or change the management measures we are planning to address any 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 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 for us to receive first-hand feedback on commercial and recreational fishing, tourism and local community activities and interests.

## Providing feedback

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You may be considered 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, or 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 that you may be a relevant person, please contact us by **28 June 2024** to allow Santos time to initiate consultation with you, so you can tell us how you would like to be consulted throughout the consultation process or if you need additional information. The consultation period for this EP closes on **29 July 2024**.

The merits of relevant person feedback provided through the consultation process will be considered during EP development, with a summary of 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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