

# GREATER WESTERN FLANK PHASE-3 AND LAMBERT DEEP DRILLING AND SUBSEA INSTALLATION

## CARNARVON BASIN, NORTH-WEST AUSTRALIA

Woodside is planning to undertake drilling, construction, installation, pre-commissioning and topside modification activities to support the proposed Greater Western Flank Phase-3 (GWF-3) and Lambert Deep Projects, in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

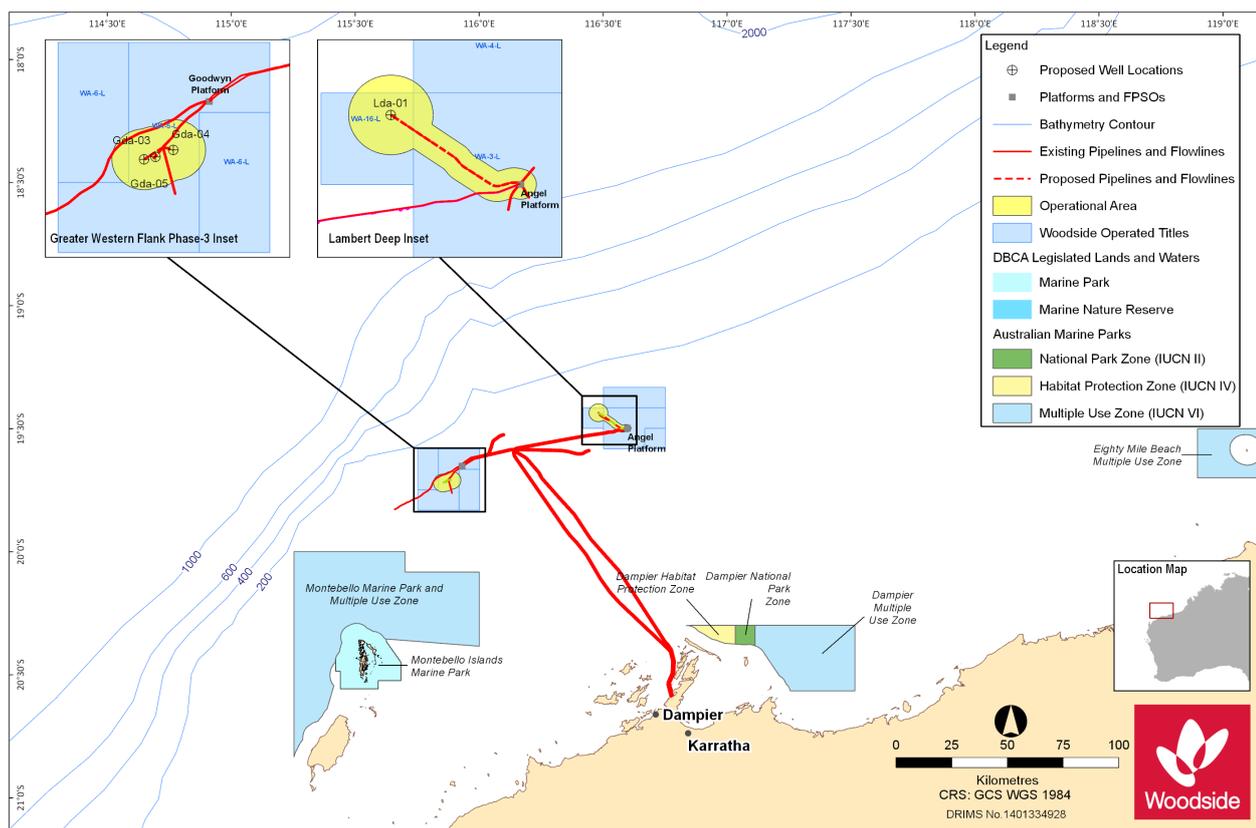
The planned activities will be undertaken in permit areas WA-5-L, WA-16-L and WA-3-L.

in Commonwealth waters and are planned to commence in Q1 2021 subject to approvals, vessel availability and weather constraints.

The Environment Plan (EP) will cover drilling and subsea installation activities for four production wells. If required, Woodside may also need to intervene, workover or re-drill the existing GWF-3 and Lambert Deep production wells in permit areas WA-5-L and WA-16-L. The Environment Plan also covers the

modifications to topside infrastructure aboard the Angel Platform in permit area WA-3-L.

The permit areas are held by Woodside (Operator) and other participants of the North West Shelf (NWS) Project: BHP Billiton Petroleum, BP Developments Australia, Chevron Australia, Japan Australia LNG (MIMI), Shell Australia, and China National Offshore Oil Corporation.



**Table 1. Activity summary**

Greater Western Flank Phase-3 and Lambert Deep Drilling and Subsea Installation	
<b>Commencement date</b>	+ Activities are to commence Q1 2021, subject to approvals, vessel availability and weather constraints
<b>Approximate duration</b>	+ 70 days per well  + 100 cumulative days to complete installation of subsea infrastructure and pre-commissioning. These activities may be performed over multiple campaigns  + Angel topside modifications estimated to be conducted over a 15-month period, commencing Q1 2021 until Q2 2022
<b>Water depth</b>	+ GWF-3: 125 m  + Lambert Deep: 80 m to 130 m
<b>Project vessels</b>	+ Semi-submersible mobile offshore drilling unit (MODU)  + Subsea installation vessel  + Light well intervention vessel  + Support vessels, including anchor handling vessels, and activity support vessels
<b>Distance to nearest port</b>	+ -126 km north-west of Dampier
<b>Distance to nearest marine park</b>	+ -31 km north-east of Montebello Marine Park - Multiple Use Zone (Cwlth)  + -68 km north-east of the Montebello Islands Marine Park (WA)

**Proposed Activity**

Woodside is proposing to develop and produce hydrocarbons from the Goodwyn GH Reservoir and Lambert Deep Field to support ongoing production from the North West Shelf Project.

The proposed activities comprise the drilling of four new production wells that will be tied-back to existing subsea infrastructure via subsea Xmas trees, flexible flowlines, production manifolds and service umbilicals. The proposed activities are planned to commence in Q1 2021, which will include the Lambert Deep well, the three GWF-3 wells and related subsea installation. Modifications to topside infrastructure aboard the Angel Platform will also occur to support the Lambert Deep Project.

Contingent intervention, workover or re-drill activities on the GWF-3 and Lambert Deep production wells may also be required. Relevant stakeholders will be advised prior to the commencement of activities if this work is required.

Drilling of the four production wells is expected to take approximately 70 days per well to complete. Installation of subsea infrastructure and pre-commissioning will commence on

completion of drilling and is expected to take approximately 100 days. Angel topside modifications are expected to be conducted over a 15-month period, commencing Q1 2021 until Q2 2022.

Activities will be 24 hours per day, seven days per week and timing and duration of these activities is subject to change due to project schedule requirements, MODU and vessel availability, weather and unforeseen circumstances.

**Project vessels**

Several vessel types will be required to complete the activities associated with the activities identified under the Petroleum Activities Program.

For the drilling component of the Petroleum Activities Program, Woodside will either use a moored MODU, or a dynamically positioned MODU. Dynamic positioning is a computer-controlled system to automatically maintain a vessel or rig’s position and heading by using its own propellers and thrusters.

Typically, two or three vessels will support drilling activities, with at least one vessel in the

vicinity to complete standby duties, if required. Supply vessels will visit the MODU at regular intervals.

A subsea installation vessel will be used for the installation of the subsea infrastructure, with support from additional dedicated vessels.

**Communications with mariners**

For safety purposes a temporary petroleum safety zone (exclusion zone) of 500 m will be in place around the MODU for the duration of activities. There will be no access to this temporary zone.

The following Operational Areas (cautionary areas that allow access to other marine users when safe to do so) will also apply to the activities:

- + Temporary Operational Areas with a 4000m radius from each well centre. The 4000 m (radius) Operational Area allows for MODU mooring operations, including the possible installation of pre-laid moorings and vessel related petroleum activities.
- + Temporary Operational Areas with a 1500m radius around the subsea installation locations allowing for movement and positioning of large vessels to undertake subsea installation, pipelay and pre-commissioning petroleum activities will take place.

Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.

**Implications for stakeholders**

Woodside will consult relevant stakeholders whose interests, functions, and activities may be affected by the proposed activities. We will also keep informed other stakeholders who have an identified interest in the planned activities.

Woodside has undertaken an assessment to identify potential risks to the marine environment and relevant stakeholders, considering timing, duration, location and potential impacts arising from the drilling, construction and installation activities.

A number of mitigation and management measures will be implemented and are summarised in Table 3. Further details will be provided in the EP.

**Table 2. Approximate locations**

Structure	Water Depth m	Latitude	Longitude	Permit Area
<b>Production wells</b>				
<b>Lambert Deep</b>				
LDA-01 production well	129	19° 26'07.220" S	116° 28'51.314" E	WA-16-L
<b>GWF-3</b>				
GDA-03 production well	125	19° 43'04.890" S	115° 51'58.911" E	WA-5-L
GDA-04 production well	125	19° 42'35.697" S	115° 53'14.475" E	WA-5-L
GDA-05 production well	125	19° 43'15.968" S	115° 51'10.743" E	WA-5-L
<b>Subsea infrastructure</b>				
LDA Manifold	129	19° 26'15.029" S	116° 29'28.721" E	WA-16-L
<b>Infrastructure</b>				
Angel Platform	80	19° 29' 55.144" S	116° 35' 53.066" E	WA-3-L

**Table 3. Summary of key risks and/or impacts and management measures**

Potential Risk and/or impact	Mitigation and/or Management Measure
<b>Planned</b>	
Chemical Use	+ Chemical use will be managed in accordance with Woodside and contractor chemical selection and approval procedures.
Interests of relevant stakeholders with respect to: + Defence activities + Petroleum activities + Commercial fishing activities + Shipping activities	+ Consultation with government departments and agencies, petroleum titleholders and commercial fishers and their representative organisations to inform decision making for the proposed activity and development of the Environment Plan.  + Advice to relevant stakeholders prior to the commencement of activities.
Marine fauna interactions	+ Measures will be taken to protect marine fauna and ecosystems from vessel activities and to prevent vessel collisions and groundings.
Marine Discharges	+ All routine marine discharges will be managed according to legislation and regulatory requirements and Woodside's Environmental Performance Standards where applicable.
Seabed Disturbance	+ Well location and site appraisal to identify and address well-specific hazards and drilling constraints.  + MODU mooring analysis, anchor deployment and suction piling, if required, in accordance with internal standards.  + No anchoring of support and installation vessels during drilling, construction and installation activities, as well as logging/ retrieval of wet-stored items.
Vessel interaction	+ Woodside will notify relevant fishery stakeholders and government maritime safety agencies of specific start and end dates, specific vessel-on-location dates and any exclusion zones prior to commencement of the activity.  + A 500 m radius petroleum safety zone will be in place around the MODU for the duration of activities.  + Commercial fishers and other marine users are permitted to use but should take care when entering the Operational Area around the MODU and subsea installation vessel. The Operational Area depending on the activity and vessel ranging from a 500 m radius for a dynamically positioned MODU or 4000 m radius for a moored MODU, and a 1500 m radius around subsea installation.
Waste generation	+ Waste generated on the vessels will be managed in accordance with legislation requirements and a Waste Management Plan.  + Waste will be managed and disposed of in a safe and environmentally responsible manner that prevents accidental loss to the environment.  + Waste transported onshore will be sent to appropriate recycling or disposal facilities by a licensed waste contractor.
<b>Unplanned</b>	
Hydrocarbon release	+ Appropriate spill response plans, equipment and materials will be in place and maintained.  + Appropriate refuelling procedures and equipment will be used to prevent spills to the marine environment.
Introduction of invasive marine species	+ All vessels will be assessed and managed as appropriate to prevent the introduction of invasive marine species.  + Compliance with Australian biosecurity requirements and guidance.

### Providing feedback

Our intent is to minimise environmental and social impacts associated with the proposed activities, and we are seeking any interest or comments you may have to inform our decision making.

An Environment Plan for the proposed activity will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth).

If you would like to comment on the proposed activities outlined in this information sheet, or would like additional information, please contact Woodside before 24 January 2020.

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*Please note that stakeholder feedback will be communicated to NOPSEMA as required under legislation. Woodside will communicate any material changes to the proposed activity to affected stakeholders as they arise.*

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