INFORMATION FACT SHEET

January 2019

SCARBOROUGH AND BROWSE METOCEAN SURVEYS

CARNARVON AND BROWSE BASINS NORTH-WEST AUSTRALIA

Background

Woodside is proposing to develop a regional LNG hub that would enable third-party gas resources to be transported from offshore reserves for processing through two existing onshore facilities – Pluto LNG and North West Shelf (NWS) Project's Karratha Gas Plant. Woodside's Burrup Hub vision involves the proposed development of some 20 to 25 trillion cubic feet of gross (100%) dry gas resources from Scarborough and Browse fields will supply domestic and export markets for decades to come.

Scarborough

The Scarborough field is located offshore approximately 375 km west-north-west of the Burrup Peninsula in Western Australia. Woodside plans to develop the Scarborough gas field with up to seven subsea, high-rate gas wells initially, tied back to a semi-submersible floating production unit moored in 900 m of water. Gas would be transported by an approximately 430 km pipeline to existing infrastructure on the Burrup Peninsula. Woodside's preference is to process the gas through the brownfield expansion of Pluto LNG. The proposal is subject to all necessary joint venture and regulatory approvals being obtained and all necessary commercial arrangements finalised.

Browse to North West Shelf

Woodside, as Operator for and on behalf of the Browse Joint Venture (BJV), is proposing to develop the Brecknock, Calliance and Torosa fields located approximately 425 km north of Broome in the offshore Browse Basin.

The proposed Browse to NWS is based predominantly on proven technologies including two floating production storage and offloading facilities, delivering gas through an approximately 900 km pipeline to existing NWS infrastructure.

The proposal is subject to all necessary joint venture and regulatory approvals being obtained and commercial arrangements finalised.

About the activity

A series of two specialised studies measuring current, temperature and turbidity data will be undertaken off the north-west coast of Western Australia to support the design of subsea pipelines proposed as part of the Scarborough to Pluto and Browse to NWS development.

Referred to as a metocean (meteorological and oceanographic) survey, the studies will gather data that will help influence the potential future design of the pipelines.

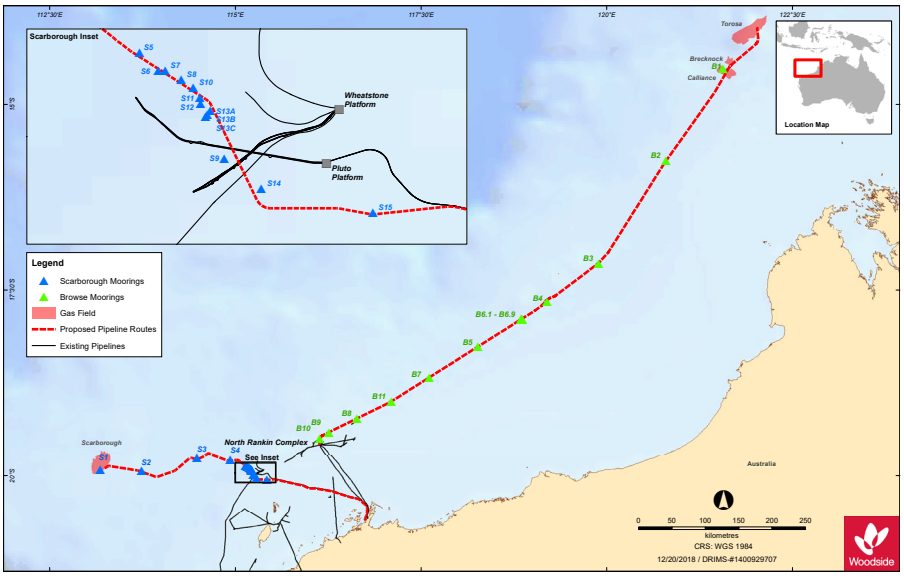

Figure 1: Mooring locations for the Scarborough to Pluto and Browse to North West Shelf Metocean Surveys.

Scarborough to Pluto

The first survey program will collect reliable current, temperature and turbidity data along the proposed pipeline route between the offshore Scarborough semi-submersible floating production unit and the Pluto LNG onshore facility.

This program will take about 12 months, involving the deployment, servicing and recovery of 17 moorings along the Scarborough to Pluto pipeline route. Operations will be conducted from the MV Warrego.

Key dates:

+ Deployment activity 1 – 12 December 2018
+ Service visit 7 – 18 May 2019
+ Recovery 1 – 12 December 2019

These dates are indicative and may change due to operational reasons, but a Notice to Mariners will be issued after deployment to advise of the final locations of the instruments.

Key information

+ Water depth is approximately 80 m to 1350 m
+ Most moorings are from the seabed to about 10 m above the seabed, while others extend substantially through the water column

Browse to North West Shelf

A second program extending along the proposed approximate 900 km pipeline route for the Browse to North West Shelf, will involve the deployment, servicing and recovery of 19 moorings. This program will be conducted over about 12 months. Operations will be conducted from the MV Warrego.

Key dates:

+ Deployment activity 3 - 10 January 2019
+ Service visit 3 – 13 June 2019
+ Recovery 3 – 13 January 2020

These dates are indicative and may change due to operational reasons. A Notice to Mariners will be issued after deployment to advise of the final locations of the instruments.

Key information

+ Water depth is approximately 140 m to 480 m
+ Mooring locations - most moorings are from the seabed to about 10 m above the seabed, while others extend substantially through the water column. (See Figure 2)

Additional activity

Other activities that will be conducted along both proposed pipeline routes include:

+ Water sampling before and after the deployment of the moorings;
+ Conductivity temperature and depth (pressure) measurements; and
+ Sediment profiling.

FIGURE 2: BROWSE AND SCARBOROUGH METOCEAN CAMPAIGNS - MOORING LOCATIONS

Scarborough Mooring Locations

ID	Latitude	Longitude	Water Depth	Height Above Seabed
S1	19° 55.441′ S	113° 10.912′ E	935 m	Through whole water column
S2	19° 56.150′ S	113° 44.080′ E	1111 m	10 m above seabed
S3	19° 45.771′ S	114° 29.017′ E	1353 m	10 m above seabed
S4	19° 46.780′ S	114° 56.044′ E	1290 m	10 m above seabed
S5	19° 51.504′ S	115° 08.210′ E	1032 m	10 m above seabed
S6	19° 52.870′ S	115° 09.589′ E	762 m	10 m above seabed
S7	19° 52.884′ S	115° 10.075′ E	575 m	10 m above seabed
S8	19° 53.490′ S	115° 11.291′ E	300 m	10 m above seabed
S9	19° 59.435′ S	115° 14.517′ E	151 m	10 m above seabed
S10	19° 54.102′ S	115° 12.202′ E	252 m	10 m above seabed
S11	19° 54.850′ S	115° 12.659′ E	229 m	10 m above seabed
S12	19° 55.353′ S	115° 12.742′ E	221 m	10 m above seabed
S13A	19° 55.867′ S	115° 13.456′ E	200 m	Through whole water column
S13B	19° 56.114′ S	115° 13.225′ E	200 m	10 m above seabed
S13C	19° 56.251′ S	115° 13.101′ E	200 m	10 m above seabed
S14	20° 01.664′ S	115° 17.256′ E	104 m	10 m above seabed
S15	20° 3.394′ S	115° 25.547′ E	76 m	10 m above seabed

Browse Mooring Locations

ID	Latitude	Longitude	Water Depth	Height Above Seabed
B1	14° 31.312′ S	121° 33.954′ E	575.0 m	Through whole water column
B2	15° 45.418′ S	120° 47.876′ E	352.0 m	10 m above seabed
B3	17° 08.444′ S	119° 53.479′ E	397.0 m	10 m above seabed
B4	17° 39.275′ S	119° 11.525′ E	331.0 m	10 m above seabed
B5	18° 16.034′ S	118° 16.065′ E	246.0 m	10 m above seabed
B6.1	17° 53.349′ S	118° 51.004′ E	271.0 m	10 m above seabed
B6.2	17° 53.615′ S	118° 51.195′ E	270.0 m	10 m above seabed
B6.3	17° 53.858′ S	118° 51.388′ E	270.0 m	Through whole water column
B6.4	17° 53.715′ S	118° 51.451′ E	270.0 m	10 m above seabed
B6.5	17° 54.295′ S	118° 51.681′ E	269.0 m	10 m above seabed
B6.6	17° 54.052′ S	118° 51.112′ E	269.0 m	10 m above seabed
B6.7	17° 54.175′ S	118° 51.222′ E	268.0 m	10 m above seabed
B6.8	17° 53.934′ S	118° 51.248′ E	269.0 m	10 m above seabed
B6.9	17° 53.736′ S	118° 51.482′ E	270.0 m	10 m above seabed
B7	18° 40.924′ S	117° 36.689′ E	268.0 m	10 m above seabed
B8	19° 13.480′ S	116° 39.904′ E	172.0 m	10 m above seabed
B9	19° 24.961′ S	116° 15.571′ E	132.0 m	10 m above seabed
B10	19° 30.032′ S	116° 08.079′ E	129.0 m	10 m above seabed
B11	19° 00.128′ S	117° 06.032′ E	273.0 m	10 m above seabed

Please note that the mooring coordinates are proposed and actual locations may vary up to 200 metres during deployment.

Note: The number of moorings for Browse indicated in this chart differ from the figure mentioned above because there are multiple moorings clustered at some sites.

Providing feedback and further information

If you would like to comment on the proposed activities outlined in this fact sheet, or would like additional information, please contact Woodside by email to feedback@woodside.com.au or toll free on 1800 442 977.

All information is current as at January 2019.

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