

7. Port navigation and movement restrictions

7.1 Under keel clearance (UKC)

The depth alongside at datum

Berth	Design depth	UKC requirements
Abbot Point 1	19.0m	10% of deepest draft
Abbot Point 2	19.5m	10% of deepest draft
Approach depth	17.2m	Static UKC:6% of deepest draft + 1.00 metre
Departure Channel	17.2m	Dynamic Under-Keel Clearance System (DUKC) <i>If DUKC unavailable refer section 7.3</i>

Refer Notices to Mariners for current depths.

The required Static UKC must be maintained for a minimum of 1.5 hours from commencement of the movement.

7.2 Dynamic Under keel clearance (UKC) - Departure

All ships with departure draft greater than 15.0 metres departing Abbot Point Terminal will use the Dynamic Under keel Clearance (DUKC) System

DUKC uses ship modelling and real time tidal information to scientifically calculate the under-keel clearance (UKC) of a ship in real time as it transits a channel. For each section of the transit, each UKC is individually determined based on the forecast environmental conditions, channel configuration, vessel dimensions, load state and speed.

DUKC uses the same ship modelling and real time tidal information to determine the tidal window for departing vessels or maximum departure draft a vessel may safely navigate from the berth on a particular tide.

DUKC® methodology removes the requirement for UKC allowances to be unnecessarily conservative in favourable conditions. Extreme conditions are accounted for as required, with UKC allowances increased accordingly to provide additional safety.

The DUKC® programme is used to determine the tidal window for vessels to depart or to determine the maximum draft that a vessel may sail at for a particular tide.

The ships data is input into the system as soon as it is received. The system then calculates the tidal windows and maximum departure drafts for each tidal cycle. DUKC continuously updates the tidal window predictions. This enables the terminal to plan the load out.

3 to 12 hours prior to completion and sailing (no later than 3 hours prior to sailing) the ship provides its final updated calculations which is input into the system to predict the final sailing tidal window.

Procedure

1. Agents for Abbot Point vessels must notify the Master to complete the DUKC® – ABBOT POINT – SHIP DEPARTURE CONDITION

2. The **completed DUKC form** must be emailed to VTSTownsville (vtstowns ville@msg.qld.gov.au) with cc to Abbot Point Terminal) **no later than 96 hours prior to a vessel's scheduled berthing or as soon as the ship responds to the Terminal's loading instructions/specification.**

Important Note: *If the completed form is not received when the terminal loading instructions/specifications is returned to the terminal and VTS – Terminal will **not** program the Vessel's berthing.*

Important Note: *Completed form not received – vessel will be rescheduled.*

3. VTS will input the information into DUKC system and the status will remain planned
4. **Three (3) hours prior to the vessel planned departure - Master to email the completed DUKC form updated with the vessel's departure information to VTS.** *The updated DUKC® Data Request forms can be sent 3 to 6 hours prior to departure, but the 3-hour mark is the minimum before departure that this should be received.*

Important Note: *Completed form not received – VTS will direct Abbot Point terminal to cease loading till the vessel has submitted the updated form.*

5. On receipt of the updated form VTS will update the information into DUKC system and amend status to status to “Approved”.

7.3 Dynamic Under keel clearance (DUKC) - Unavailable

Once the data is input into DUKC system, the program automatically recalculates the tidal windows at regular intervals. If an outage occurs

- Within 3 hours of departure – Vessel may depart in accordance with the calculated draft and tidal windows obtained by the final 3hour update
- Within 12 hours – Vessel may depart in accordance with the calculated draft and tidal windows immediately before the outage.
- Beyond 12 hours – Static rule – Notify RHM and cease loading at static draft await restoration of DUKC or sail on static. Consider stability implications; check with OMC regarding restoration of DUKC

RHM – will consider the last calculated DUKC for this movement, implications on vessels stability, consider the reason for the outage, consult with OMC regarding restoration of the system to decide a safe and appropriate action

Static Rule

Under Keel Clearance (UKC) 6% of deepest draft + 1.00 metre

Maximum transit draft = (departure channel depth* + tide – 1.00) divided by 1.06

* Departure channel depth is the depth declared by notice to mariners.

7.4 Approaches to pilot boarding ground (AUS 255)

The port of Abbot Point is situated in Abbot Bay and may be approached from either the NE or NNW direct from the Inner Route of the Great Barrier Reef.

From the NE – the front lead is situated on Abbot Point and the rear lead on Bald Hill, the leading lights in line bearing 225°.

From the NNW – the front lead is situated towards the shore end of the jetty 315 metres in front of the rear lead on Abbot Point, the leading lights in line bearing 163·6°.

7.5 Departure readiness – Vessels using DUKC

All ships must be ready for departure, accommodation ladder lifted and crew on stations a minimum 15 minutes prior to close of tidal window. It is critical the vessel departs (last line is released) prior to the window closing. Failure to comply may result in the vessel not departing and staying alongside for the next tidal window.

Note: Vessel's Masters and Terminal operators need to recognise the risk of the vessel being neaped and remaining alongside for a prolonged period till a suitable tidal window is available.

7.6 Departure from Abbot Point

All ships departing the Abbot Point terminal berth 1 and berth 2, port of Abbot Point must proceed to a pilot disembarking place in position latitude 19° 48.500' S, longitude 148° 06.900' E, where the pilot will disembark.

All ships are further directed to proceed in an Easterly direction to position Latitude 19° 48.500' S, Longitude 148°15.000' E in the 2way route; and

- then in a Northerly direction, around the Abbot Point anchorages to join the 2way route if proceeding North; or
- continue along the 2way route if proceeding South.

Refer: s16.3 – map S3t-27

7.7 Dangers off Abbot Point

Clark Shoal extends for approximately three miles in a NW direction from Abbot Point. Clark Shoal is marked by an east cardinal beacon in approximate position 19° 51·20'S, 148° 03·82'E. The beacon is fitted with the appropriate top mark and exhibits Q (3) 10 s.

7.8 Berthing requirements

- Pilot and terminal operator will liaise on conditions (that is weather, tide) and other factors of safety prior to berthing.
- Ships will generally berth starboard side to or as determined by the Regional Harbour Master (Townsville) and/or pilot.
- During periods of unsuitable wind and sea conditions, further restrictions may be imposed in the interests of safety.
- Two tugs are generally used for berthing (refer section 4.5)
- Ship should ensure that engines are ready and fully operational, that mooring ropes with heaving lines are ready for use, and anchors are cleared and ready.
- Cranes and derricks are to be stowed and lashed so as to provide clear vision forward of the bridge wings and wheelhouse.
- Gangways are not to be broken out until the ship is safely moored alongside.

- Discharge outlets in the vicinity of tug lashing points are not to be used unless absolutely essential to berthing operations.

7.8.1 Position at berth

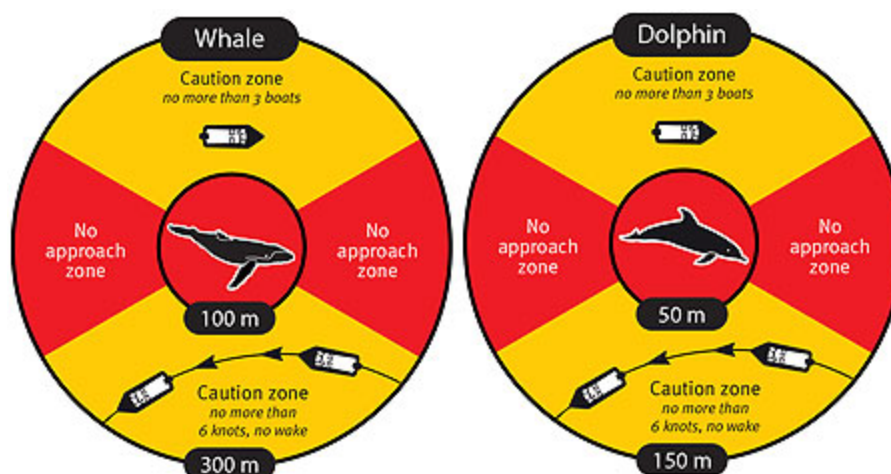
- Ship position at the berth should enable loading of all hatches of the ship (unless agreed otherwise by the terminal operator and Regional Harbour Master (Townsville)).
- Ship position at the berth should limit overhang past outermost fenders in contact with the ship to less than 25% of the ship's LOA.
- Ship position at the berth must achieve acceptable angular contact with fender frames, particularly those in contact with the flare of the ship's stern and bow.
- Ship's crew must not allow mooring lines to slacken (due to tidal range and loading rate, moorings can become slack allowing the ship to shift out of position).

7.9 Advisory Note – Interaction with Marine Mammals

The presence of whales or marine mammals indicates that our ports are seen as environmentally attractive places.

The safety of life and the security of the environment from ship-based incidents is paramount.

All vessel masters are required to fully comply with relevant marine mammal legislation, such as the provisions of the [Nature Conservation \(Wildlife Management\) Regulation 2006](#) part 5A which prescribes minimum approach distances and maximum speeds within proximity to whales as illustrated in the diagram below.



When whales or marine mammals are reported in the vicinity of port areas and a risk to marine mammals is perceived, then every possible endeavour will be undertaken to manage shipping movements around the marine mammals to keep them safe, provided the safety of life, the ship and other environmental protection objectives are not threatened. Such action may include not commencing transits until the mammals are deemed clear.

In situations where a vessel is underway and restricted in its ability to manoeuvre or constrained to a channel and marine mammals are reported in the vicinity of the transit and a risk to marine mammals is perceived, the master must take all reasonable action necessary to keep them safe, without endangering the vessel, crew and the environment.

Such action may include the reduction of speed to the minimum safe speed to safely navigate the channels.

Masters are required to report collisions with marine mammals to VTS and Department of Environment and Science **1300 130 372**

[Marine wildlife strandings | Environment, land and water | Queensland Government](#)
(www.qld.gov.au)