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[www.gov.uk/mca](http://www.gov.uk/mca)  
20 February 2024

Your ref: EN010109

Dear Mr Wheadon

## **Planning Act 2008 and The Infrastructure Planning (Examination Procedure) Rules 2010**

### **Application by Equinor New Energy Limited (“the Applicant”) for an Order granting Development Consent for the proposed Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects (“Sheringham and Dudgeon Extension Projects”)**

#### **Comments on the information provided in response to the Secretary of State’s request of 22 November 2023.**

Thank you for your letter dated 23 January 2024 requesting comments on the information provided in response to the Secretary of State’s request of 22 November 2023, as part of its assessment of the proposed Sheringham and Dudgeon offshore windfarm extension projects.

Representatives from the MCA’s UK Technical Service Navigation Branch have reviewed the letter from Burges Salmon LLP to the Secretary of State dated 1 December 2023 regarding the proposed ‘no obstacle area’ and controlling depths used for passage planning. Within this letter, the applicant identified what they believe is a “fundamental error of fact” in relation to the MCA’s identification of controlling depths in the navigable area adjacent to the proposed Sheringham Shoal and Dudgeon windfarm extensions. The applicant has requested that the recommendations issued by the MCA should be ignored due to this perceived fundamental error. The following text provides clarity on the MCA interpretation and the importance of understanding the implications of basing a judgement on an acceptance of a 10m controlling depth.

#### **What is a Controlling Depth?**

The definition of controlling depth can be found in the UKHO publication ‘The Mariners Handbook’ which can be assumed as the definitive definition for the purpose of navigation within the UK EEZ.

*“Controlling Depth – The least depth within the limits of a channel: it restricts the safe use of the channel to draughts of less than that depth.”*

It should be noted that within the definition there is no reference made to limitations on where this term can be used. The applicant suggests that a controlling depth is only used within port limits. This is incorrect and given the name of the area is ‘Outer Dowsing Channel’ the terminology of ‘controlling depth’ is applicable in this scenario.

## Outer Dowsing Channel Overview

When determining the controlling depth of the area adjacent to the proposed Sheringham and Dudgeon extension projects we should look at both the vicinity of the area west of the Waveney gas field as well as the whole navigable channel from the North Outer Dowsing north cardinal buoy to the Dudgeon west cardinal buoy (Figure 1). It should be noted that whilst considering this buoy-to-buoy line as the eastern boundary of the Outer Dowsing Channel, the proposed northern site of the Dudgeon extension (DEP-North) encroaches into the Outer Dowsing Channel.

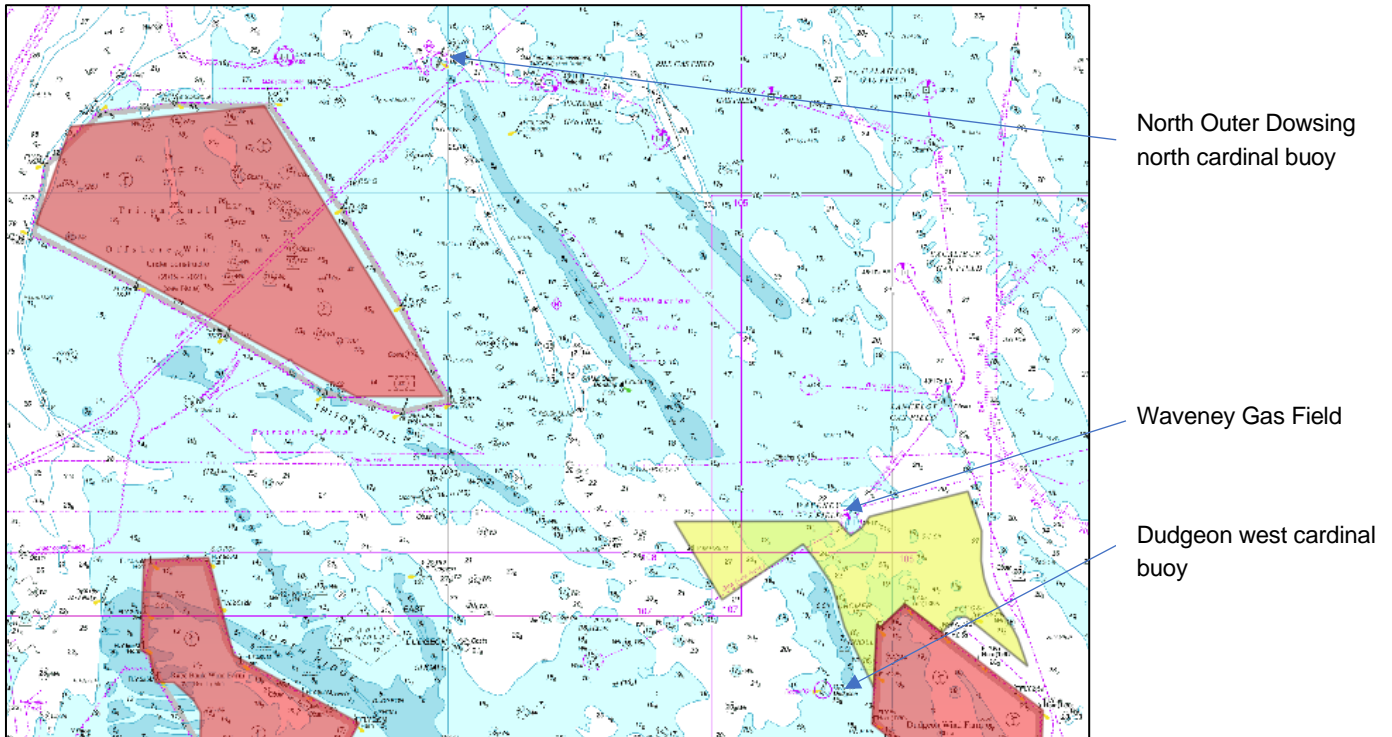


Figure 1 - Outer Dowsing Channel

Looking at the wider picture that incorporates the Outer Dowsing Channel and utilising the terminology above, to consider the controlling depth (least depth) of the areas west of the 15m contour as 10m (we identify it as 10.1m in Figure 2) uses a very narrow interpretation of the definition, rather than the principle of the depth limiting the vessels that can transit the channel.

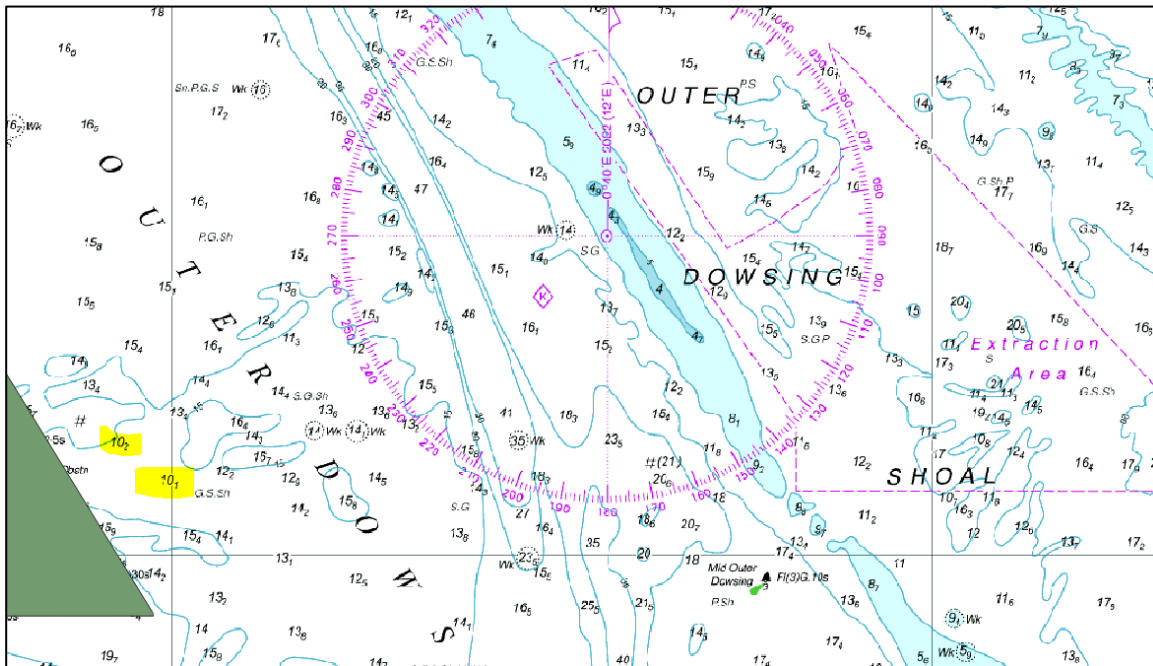


Figure 2 - Outer Dowsing Controlling Depth

The identification of these depths does match the applicant’s understanding of the controlling depths within this area in that they are the shallowest depths in the channel. The applicant’s interpretation is only half of the picture and does not equate to a “critical error of fact” as implied by the applicant but rather a lack of appreciation on the controlling depth at the western extremity of the proposed DEP-North, based on the known draughts of all vessels transiting the area.

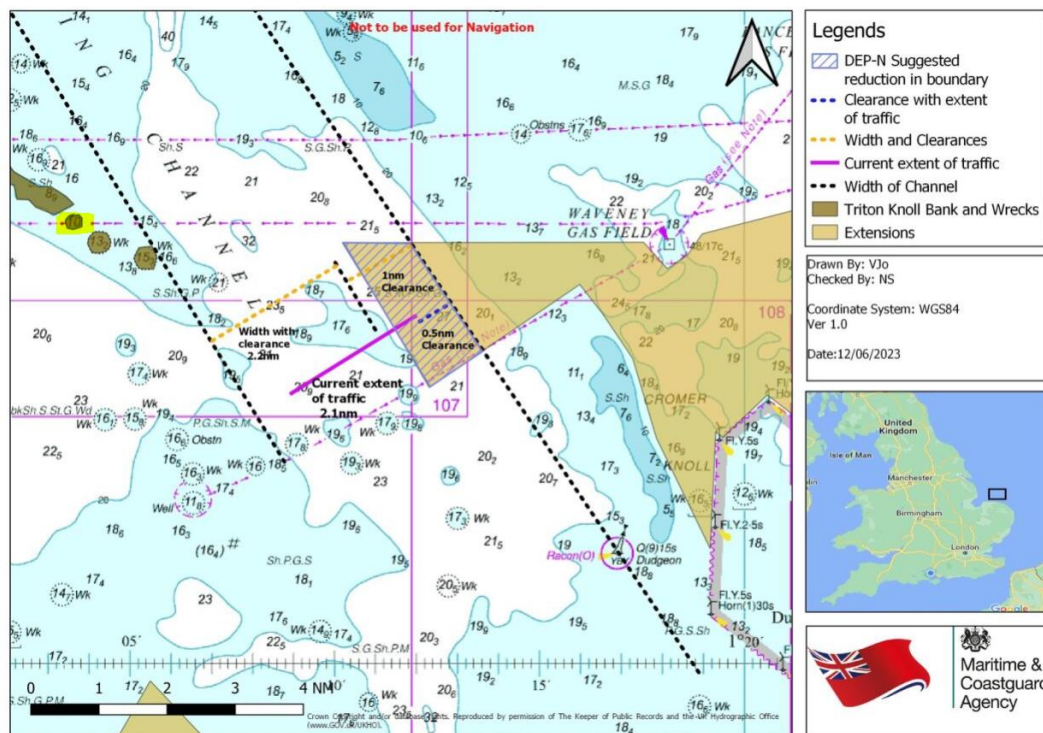


Figure 3 - Deadline 5 MCA Submission

The 10.1m least depth identified above, along with the 10m controlling depth identified by the applicant directly west of the proposed western extremity of DEP-North (highlighted in Figure 3) is only acceptable from a navigation safety viewpoint if the maximum draught of vessels transiting this area is less than 10m, or 8m if considering dynamic draught and under keel clearance (UKC).

## Vessel Draughts and Movements

Prior to clarifying the rationale for identifying 15.3m as the controlling depth it is important to understand the actual limiting depth for the expected vessel movements within the area.

When determining if a controlling depth is acceptable, the Mariner will determine the actual draught, referred to as Dynamic Draught. The Dynamic Draught considers the dynamic movement of the vessel, squat, and an additional under keel clearance (UKC) safety factor. This additional safety factor is not uniform and will vary between operators and can range from a defined amount (e.g. 1m) or a percentage of the dynamic draught. MGN654 identifies the safety factor as 30% of the dynamic draught when assessing for subsea renewable energy assets, although from audit experience it is assumed that vessel operators when utilising a percentage figure within their Safety Management System (SMS) are more likely to use figures between 10%-20% of the dynamic draught for pilotage/port approach. Areas such as the Outer Dowsing Channel have far lower certainty of hydrographic data and are more mobile seabeds, accounting for the 30% figure used in MGN654.

At Deadline 6 the Applicant provided a bar chart in their REP6-024 document to show the breakdown of vessel draughts using the Outer Dowsing Channel which identified the mean draught as 6.1m. The chart shows that during the 12-month period in 2019, up to 45% of the vessels had a draught of 6-8m and 8% of the vessels had a draught of 8-10m. It also shows there were occasions when vessels with a draught greater than 10m were present, although the exact frequency is unclear. The MCA must consider the impacts to navigation in a worst-case scenario i.e. the largest vessels at all states of tide, weather, and sea state conditions, thus using the mean of 6.1m is inappropriate as it would disregard vessels with a larger draught. When passage planning, a vessel's Master and officers must consider the dynamic draught which will include squat allowances, roll/heel allowance, and allowance for zone of confidence of the charted depths. These will be added to the draught of the vessel, the lowest expected height of tide will be subtracted, and a safety allowance is added to calculate dynamic draught of a vessel.

Using an example of a 183m tanker with 30000GT at 13Kts speed, the 45% of the vessels with a draught of up to 8m would have a dynamic draught of up to 10.2m:

Dynamic draught = draught + squat + charting accuracy (Catzoc) allowance + safety allowance – Height of tide  
= 8m + 1.2m + 0.6m + 0.5m – 0.1m (LAT)  
= 10.2m

The 8% of vessels with a draught of up to 10m would have a dynamic draught (using the same vessel example) of up to 12.5m:

Dynamic draught = draught + squat + charting accuracy (Catzoc) allowance + safety allowance – Height of tide  
= 10m + 1.5m + 0.6m + 0.5m – 0.1m (LAT)  
= 12.5m

With the above dynamic draughts determined, we can then add a safety margin based on assumed medians of vessel operator procedures and add an additional 15% (a conservative value), therefore identify our controlling depth. With a 15% safety margin we can therefore assume 11.73m and 14.38m respectively as the required depths for vessels with a static draught of 6-10m which potentially represents 53% of the total traffic navigating within the vicinity of the proposed windfarm extensions. These vessels would have an unacceptably high likelihood of running aground in 10m water depth.

With the above calculations in mind, we can now assess the actual known routes of vessels transiting the area by utilising the AIS data provided by the applicant. Precise routing information from vessels and operators is not available and the applicant provided data that includes vessels of a shallower draught



than 8m which creates excessive line population when reviewing routes. It is clear to see however, that most vessels maintain the 15m contour as the basis for their passage (Figure 4 and 5) and therefore it can be determined that navigators are maintaining routes and utilising waypoints based on this depth analysis in line with their minimum UKC requirements and an agreed cross track corridor.

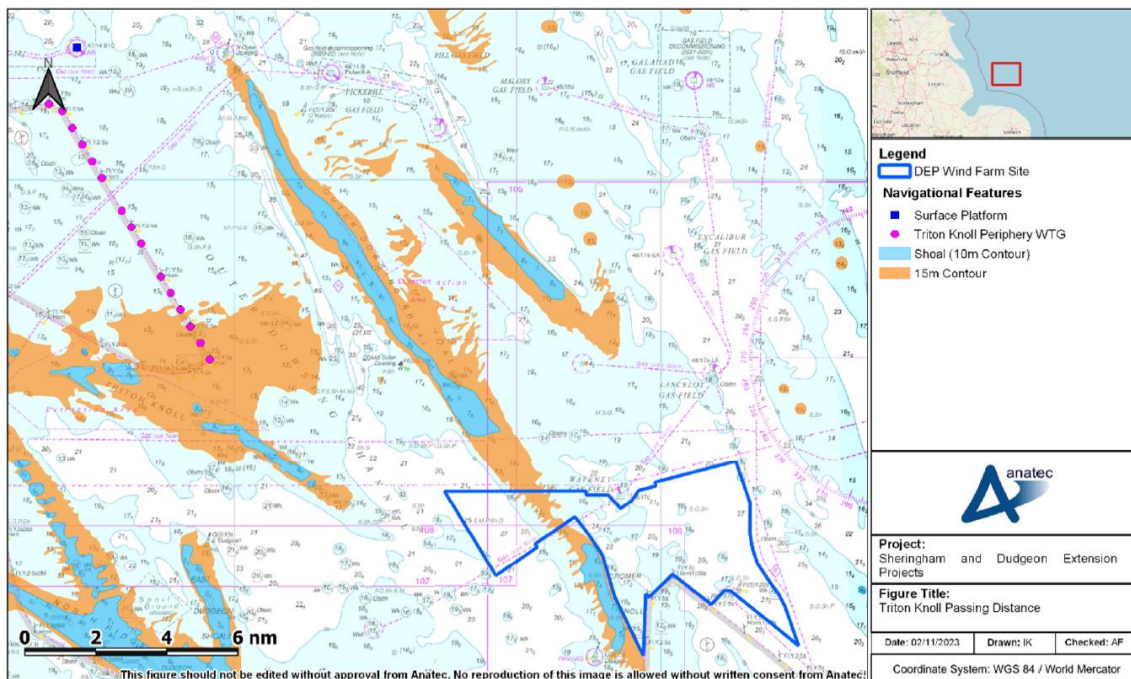


Figure 4 - 10m and 15m Contours

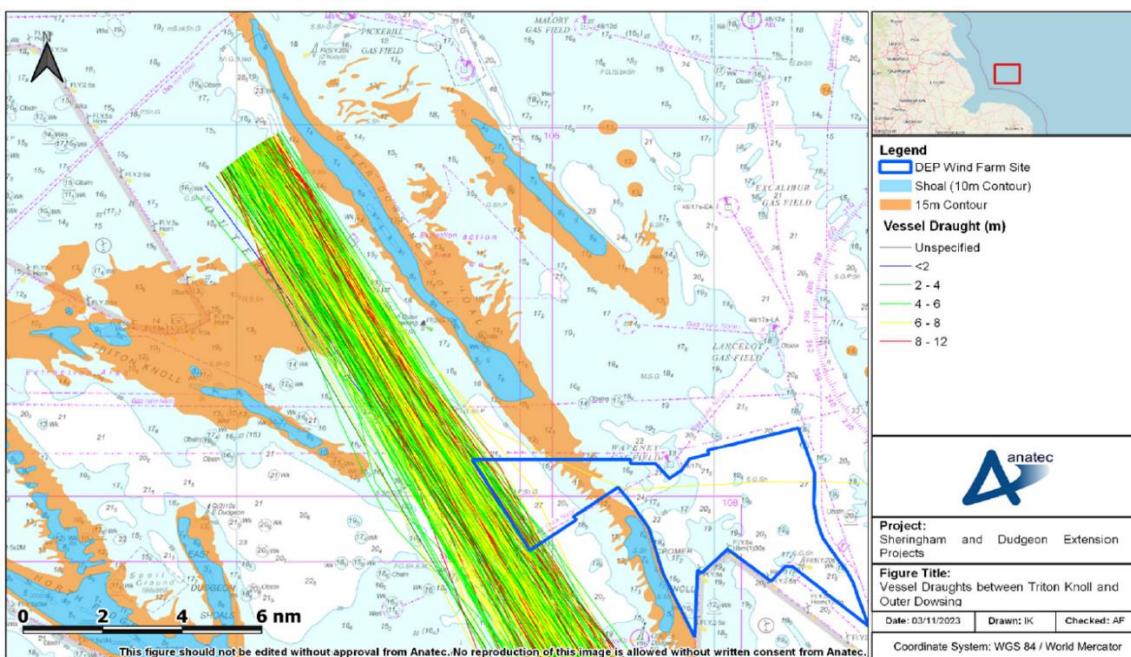


Figure 5 - 28 Days of Vessel Tracks Colour Coded

We can see that utilising a control depth of 10m or 10.1m for the entire area from the North Outer Dowsing north cardinal buoy to the Dudgeon west cardinal buoy is inappropriate and does not relate to real life vessel transits. We can see in Figure 6 that an assumed channel edge leading from the 15.3m wreck (identified within the black square) to the 15m contour on the western side of the Mid Outer Dowsing starboard hand lateral mark is the natural route assessed by vessel navigators and utilised accordingly. It can be seen that the deeper draught vessels (red lines in Figure 5) maintain greater clearance using the centre of the channel in keeping with our channel width.

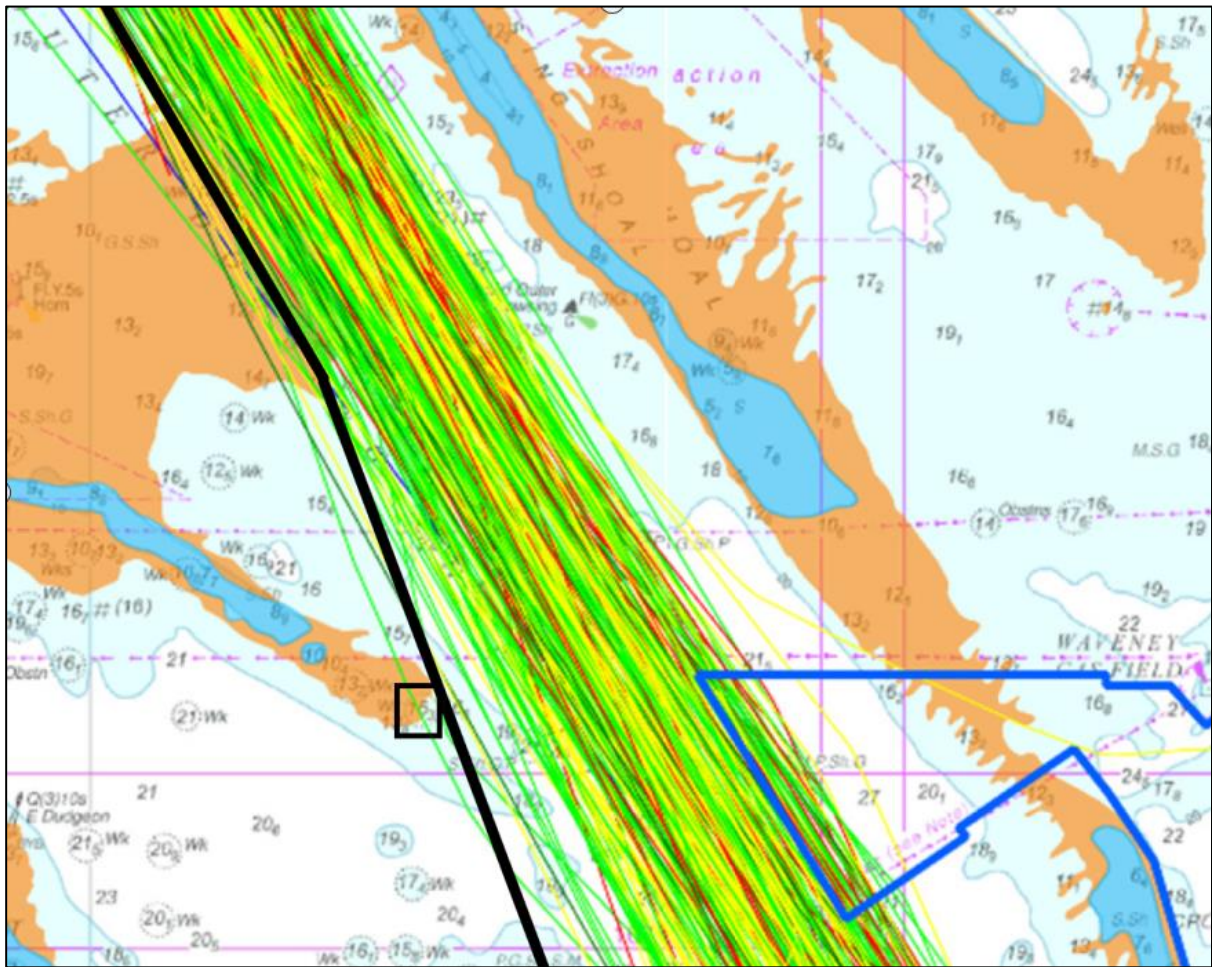


Figure 6 - 15.3m controlling depth and natural channel edge

The controlling depth therefore can be determined as 15.3m at area adjacent to the most westerly point of the proposed DEP-North site.

### Controlling Depth – 10m v 15.3m

On review of the available information provided by the applicant, the controlling depth they use within the limits of the Outer Dowsing Channel is 10m, on the assumption the channel is taken from the navigational marks on the east to the extremities of the Triton Knoll windfarm (Figure 4). This is using a very narrow and specific interpretation of the definition as stated within the Mariner's Handbook rather than the wider principle as applied in vessel navigation decision making and is based on an assessment where the traffic data is not considered. It is clear from Figure 6 that vessels transiting the area do not use 10m as the controlling depth but are maintaining the 15m contour and therefore at the critical juncture west of DEP-North, the 15.3m wreck is the natural controlling depth.

The AIS data provided by the applicant (Figure 6) indicates that most vessels maintain a distance of approximately 0.8nm from the Mid Outer Dowsing lateral buoy and Dudgeon west cardinal buoy as well as a similar distance to the 15.3m wreck and shallow patch to the west. The applicant has assessed post installation routing within their NRA and has stated that it is not expected that the proposed DEP-North site will affect vessel routing, therefore potentially acknowledging that mariners will continue to utilise the 15.3m wreck and 15m contour as the controlling depth. What is not assessed or acknowledged fully within this section of the NRA is the potential increased collision risk caused by the reduction of sea room if transiting vessels do not reassess routes and waypoints to base their controlling depth on 10m, which has been used as the basis for the applicant's ALARP assessment. On analysis of the current traffic movements, traffic routes, and utilising the applicant's NRA in relation to post installation expectations, it is



the opinion of the MCA that there is a potential for increased collision risk due to the reduction of available sea room which we believe has not been adequately assessed within the NRA and no clear mitigation identified. Given the likely squeeze of traffic when safe passing distances are applied, MCA's assessment was that vessels will be constricted into a route 1.3NM wide which, given the high collision risk already present in the area, we believe to be insufficient. The narrowing of the channel will increase the frequency of encountering head on situations and merging traffic and will limit mariners' options for taking early and substantial avoiding action if a collision scenario is identified. This in turn increases the risks of collision with the turbines and grounding on nearby shallow banks.

Therefore, the appropriate mitigation as per our Deadline 7 and 8 submissions on 6 July 2023 and 17 July 2023 respectively, is either a reduction in the Red Line Boundary to a line joining the Mid Outer Dowsing lateral buoy and Dudgeon west cardinal buoy, or a commitment to not construct any structures in the hatched area in Figure 7 which would provide a 3.2NM width of sea room measured from the 15.3m wreck and the buoy-to-buoy line. In this regard, and in reference to the applicant's assertion that our position is contrary to Trinity House's position, it is noted that Trinity House confirmed at Deadline 5 that they "would defer to the MCA, as the primary navigational safety body, when defining shipping routes/lanes and assessing the appropriate widths of corridors as per MGN654".

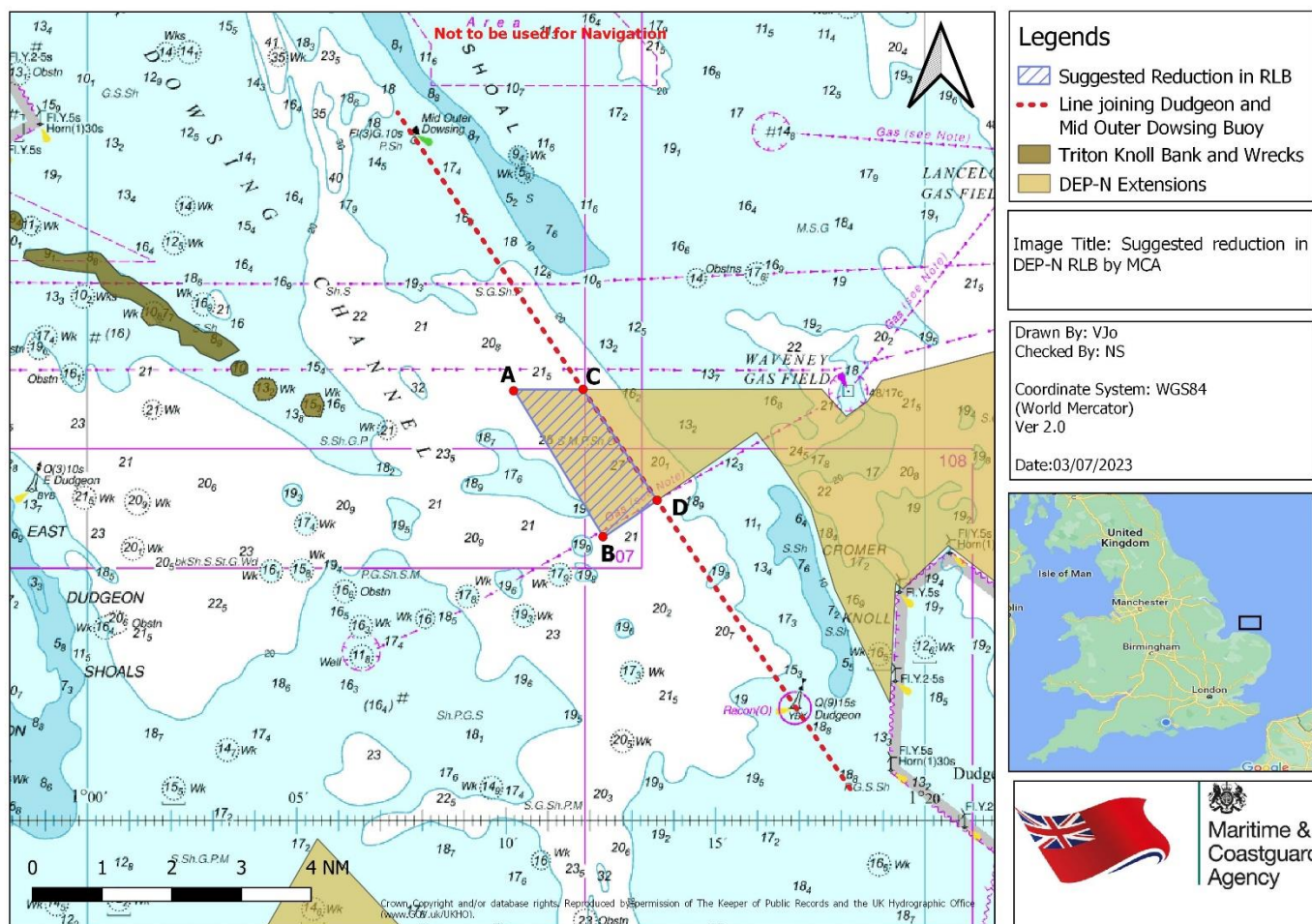


Figure 7 Recommended reduction in RLB or 'structures exclusion area'

### Equinor Meeting Request

I can confirm that our Chief Executive and Assistant Director UK Technical Services Navigation met with representatives from Equinor on 7 February 2024 to discuss their letter dated 17 July 2023. MCA maintains that the delay in raising our objection is a result of the applicant delaying the completion of their

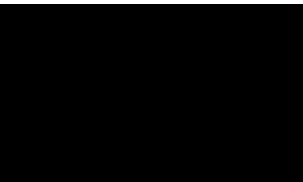
traffic data survey and stakeholder consultation until after the Section 42 Preliminary Environmental Information Report stage. The applicant argued during examination that the 12 months of Automatic Identification System (AIS) data they had obtained at the PEIR stage was superior to the requirement, however this did not meet MCA guidance in MGN654 where traffic survey requirements are provided. At the PEIR stage the applicant had not completed the second 14-day traffic survey nor held a Hazard Identification workshop with navigation stakeholders. MGN654 Paragraph 4.6 states:

- a. *An up to date, traffic survey of the proposed development area concerned should be undertaken within 12 months prior to submission of the EIA Report. This should include all the vessel and craft types found in the area and total at least 28 days duration but also take account of seasonal variations and peak times in traffic patterns and fishing operations. AIS data alone will not constitute an appropriate traffic survey; radar, manual observations, other data sources (e.g. for fishing and recreation) and stakeholder consultation will ensure those vessels that are not required to carry and operate AIS are included, and it provides an appropriate representation of the base line marine traffic.*

A meeting took place between the applicant and the MCA on the 15 June 2020, and the minutes of this meeting show the applicant's intent at that time was to collect the data as required by the MCA guidance above, with the first survey as early as July or August 2020. I can confirm no other agreement was entered into by the MCA for traffic data requirements at the PIER stage, and we would be happy to forward the minutes of the meeting if it would be useful.

I hope the above provides additional clarity on our position on the proposed 'no obstacle area' and the controlling depth used by the mariner whilst passage planning and navigating the area. MCA remains committed to continuing our statutory responsibilities to ensure that safety of navigation is preserved, and our Search and Rescue (SAR) capability is maintained whilst progress is made towards government targets for offshore renewable energy. Our concerns remain that the reduction in navigable sea room has not been appropriately represented for assessing the increased vessel collision, allision and grounding risk west of the DEP-North boundary.

Yours sincerely,



Nick Salter  
Offshore Renewables Lead  
UK Technical Services Navigation