

Aquaculture Licenses Appeals Board (ALAB)

Site Reference: T05/591A

ALAB Reference: AP45/2018

Report with respect to Navigation near Bank Harbour, Bantry Bay, Co. Cork.

by

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Acknowledgement.

I wish to thank the British Hydrographic Office for granting permission to reproduce British Admiralty (BA) Chart: 1840 Bantry Bay Black Ball Head to Shot Head. The chart extracts cannot be used for navigation.

1.0 Introduction

This section includes the instructions to the technical advisor and an overview of the report contents.

1.1 Remit.

It is proposed that a seaweed cultivation site will be located off Bank Harbour, Bantry Bay. An appeal against the decision to grant permission for the installation has been lodged.

This report was requested by the Aquaculture Licenses Appeals Board (ALAB) with respect to appeal by an interested party who claims that navigation in relation to the existing Roancarrig site is adversely affected.

The appellant states that the proposed site completely obstructs an essential navigational route and access west of and around the existing site of Roancarrig (T05/444D). It has been stated that access will be reduced to a narrow shallow channel where navigational 'pinch points' are regarded as too narrow and shallow to enable safe passage, especially at night and in inclement weather.

This report is a summary of the relevant investigations in relation to the above statements.

1.2 Aims and Objectives.

The aim of this report is to investigate if navigation is compromised on the approaches to Bank Harbour and around the nearest existing site if the proposed seaweed cultivation site is installed.

The objective of the Report is to;

- Analyse ship operations with respect to navigation, caused by the location of the proposed site which will be adjacent to the existing site of Roancarrig.

1.3 Scope.

This report is concerned with the specific appeal with respect to safe navigation only. The remit does not include recommendations to the placing of aids to navigation. The report is not concerned with any factors in relation to marine biology, ecology or related aquaculture operations.

1.4 Report Layout.

The following sections include the methods used to obtain the information required including the site visit and navigation techniques used (2.0). Section 3.0 presents the

analysis of the observations and justifications for the report’s decisions and the conclusions and recommendations are given in section 4.0.

2.0 Methodology.

This section describes the methods used for analysis.

2.1. Site Visit

I visited Bank Harbour and the appropriate pier on 27 May 2019. The weather conditions were good, visibility good, wind north-westerly beaufort force 5/6. The approach road is very narrow and transport parking in or near the area is limited. Measurements of the pier and approximate distances in the harbour were obtained. Photographs were taken on the harbour aspects and a vessel approach and berthing were witnessed.

2.2. Documentation and Charts.

The relevant appeal documents were read, and the proposed plans were analysed. British Admiralty (BA) chart 1840 was consulted for hydrographic data including depths, locations of dangers and the relative location of the shore. The proposed installation was overlaid on chart BA1840 by converting eastings and northings into latitude and longitude. Latitude and Longitude positioning using the chart is less accurate than a surveyor’s plan using easting and northings. However, it is believed that the accuracy of the conversion is sufficient for the purposes of this exercise. The site co-ordinates are as follows:

Easting and Northing	Latitude and Longitude
076050, 046450	51 degs. 39 mins. 27 secs. N 009 degs. 47 mins. 31 secs. W
076800, 046450	51 degs. 39 mins. 27 secs. N 009 degs. 46 mins. 52 secs. W
076800, 046200	51 degs. 39 mins. 19 secs. N 009 degs. 46 mins. 52 secs.
076050, 046200	51 degs. 39 mins. 19 secs. N 009 degs. 47 mins. 31 secs. W

The courses for approach and departure to and from Bank harbour were drawn on the chart and limits were also indicated. From those course lines, distances to the nearest dangers were measured.

The proposed channel to be placed in the middle of the installation was overlaid on the site approximately. This is for illustration purposes only and is not in exact proportion to the dimensions of the site.

The nearest existing site (T5/591A) was drawn on Admiralty chart BA 1840 and distances/clearances were obtained between the closest points on each site.

2.3 Tidal Heights.

Tidal factors do not influence the navigation of vessels in terms of undeck clearance in this case. The seabed rises from over 10 metres (m) to drying heights within short distances. A drying height is a rock that is visible over the surface of the water when the tide falls to Chart Datum (CD) which is usually referenced to Lowest Astronomical tide (LAT). Such rocks are significant dangers to navigation at all times and are to be avoided.

2.4 Vessel Types.

The types of vessels using the harbour were identified to be smaller fishing, workboat and leisure vessels of shallow drafts. Vessels that used the existing site varied from small work boats under 8.0 metres (m) to larger working vessels of about 60.4 m length, 11 m beam and 4.45 m draft.

3.0 Analysis.

This section includes the analysis of the investigation.

3.1. Background.

Bantry Bay is located in the South-west coast of Ireland. It is entered between Black Ball Head and Sheep's Head. It extends about 20 nautical miles to Bantry Harbour including Whiddy Island where a tanker terminal is located. Both tankers and cruise ships visit Bantry regularly. There is only a weak tidal stream in the Bay although it is more significant at the entrances to Bantry Harbour and Castletownbere harbour. During strong winds, local wind drift currents are formed. The north coast of the Bay is mountainous in character. The mountainous nature of the north shore facilitates heavy squalls with strong north-west winds. Several aquaculture facilities including cages are located throughout the Bay.

3.2 Bank Harbour Entrance.

The entrance (from the sea) to the harbour is approximately 30m. This is a narrow entrance and would normally be approached only by day in good visibility. Navigation in darkness would be difficult due to the lack of navigational lights and buoyage. A number of buoys probably indicating pots are placed inside the harbour.

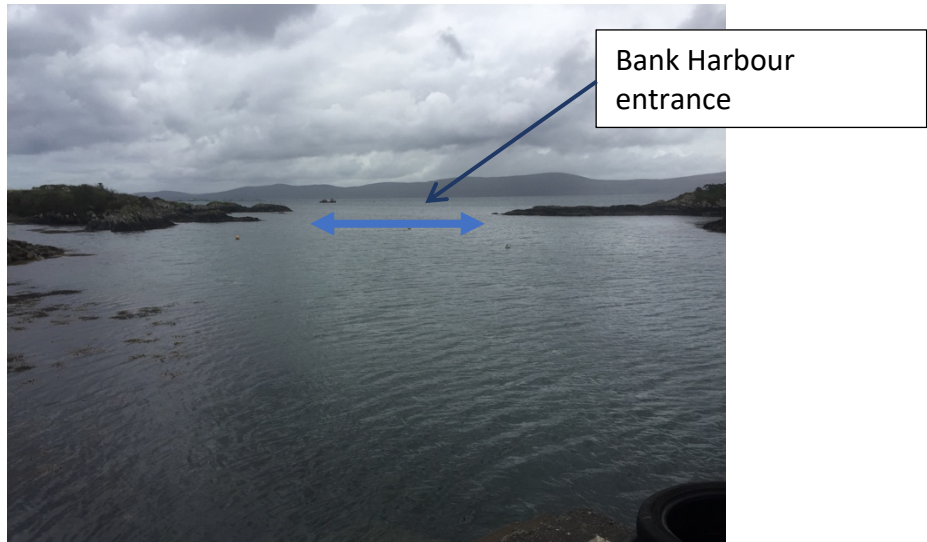


Figure 3.2.1: Harbour entrance.

The site has been drawn by converting the eastings and northings stated in the application and converted into latitude and longitude as described in the methodology.

Figure 3.2.2 below shows the proposed new site with a navigation channel to allow access to and from Bank Harbour.

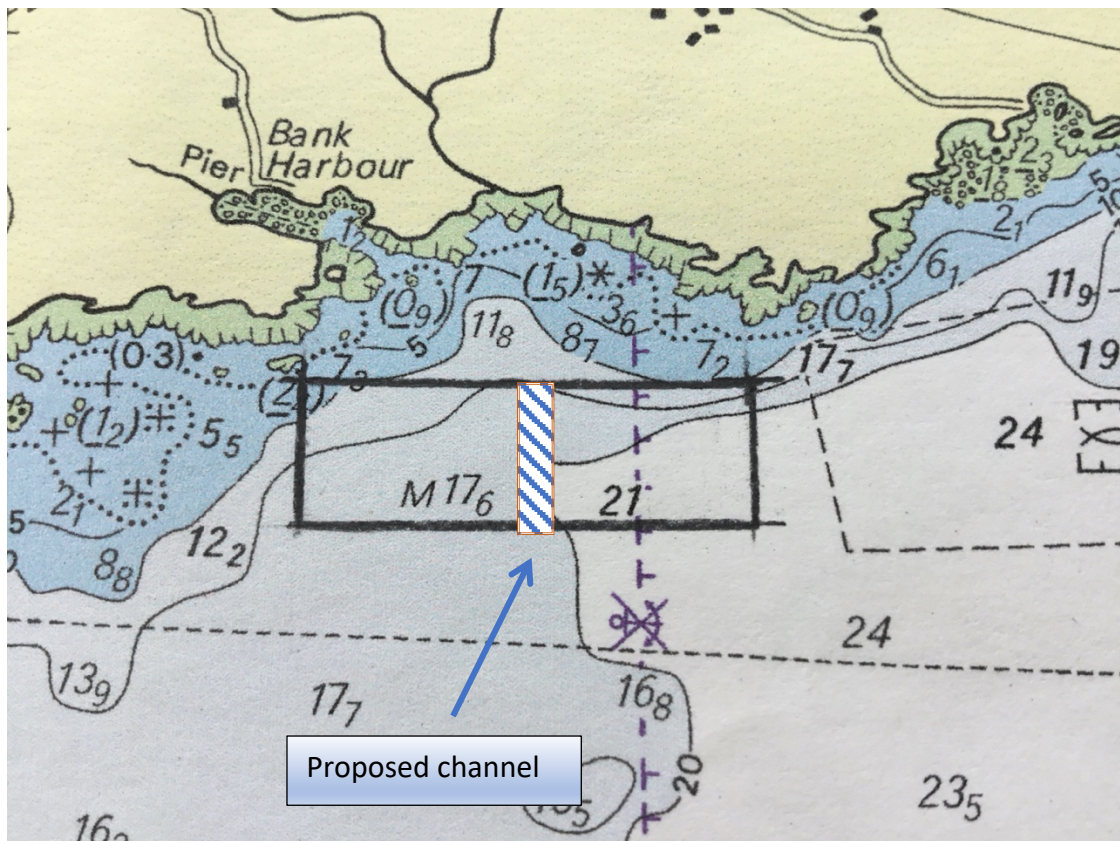


Figure 3.2.2: Proposed channel in the site.

4.0 Navigation in the approaches from the West and around Site T5/444D (Roancarraig).

The following chart extract gives an overview of the area and the Roancarraig site, labelled T5/591A. The site limits are illustrated rather than the actual space taken by the farm and proposed far.

Approaches from the East would be via the East Entrance or in good weather north of Roancarrigbeg. Approaches from the West would pass north of Bere Island and south of the mainland. The orange lines on the chart show possible courses when approaching both sites. There is adequate sea-room in normal weather conditions and sufficient depth of water to allow for safe navigation to and from the sites. More detail will be shown in Figure 4.1

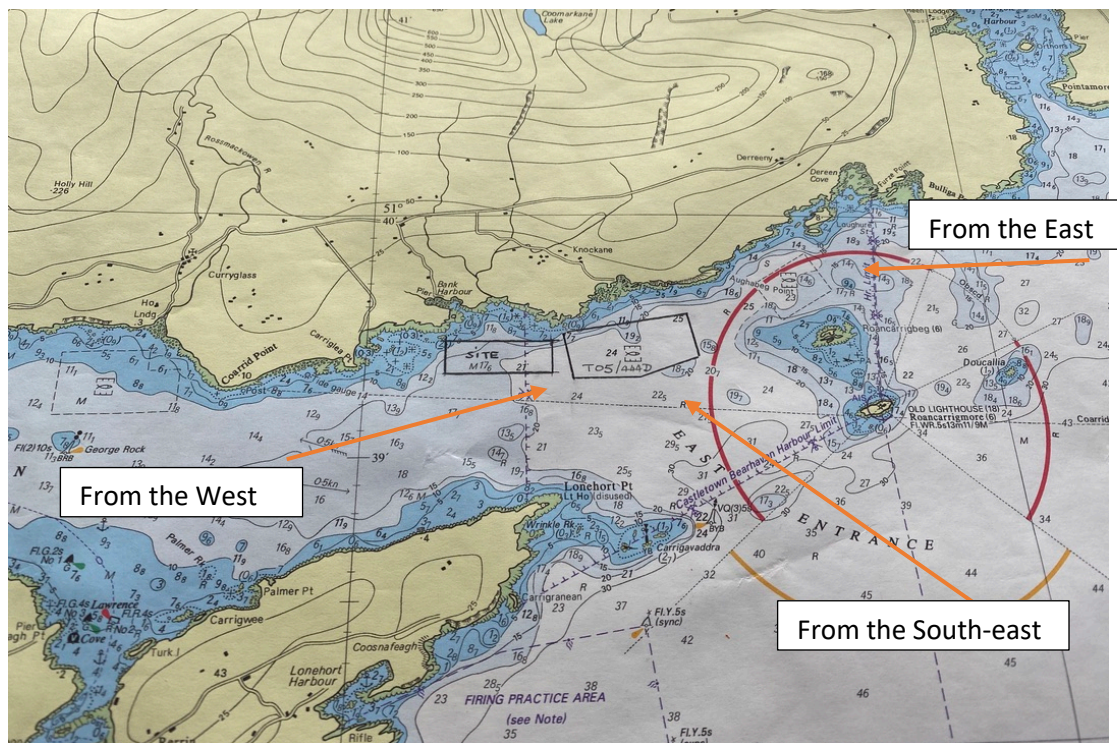
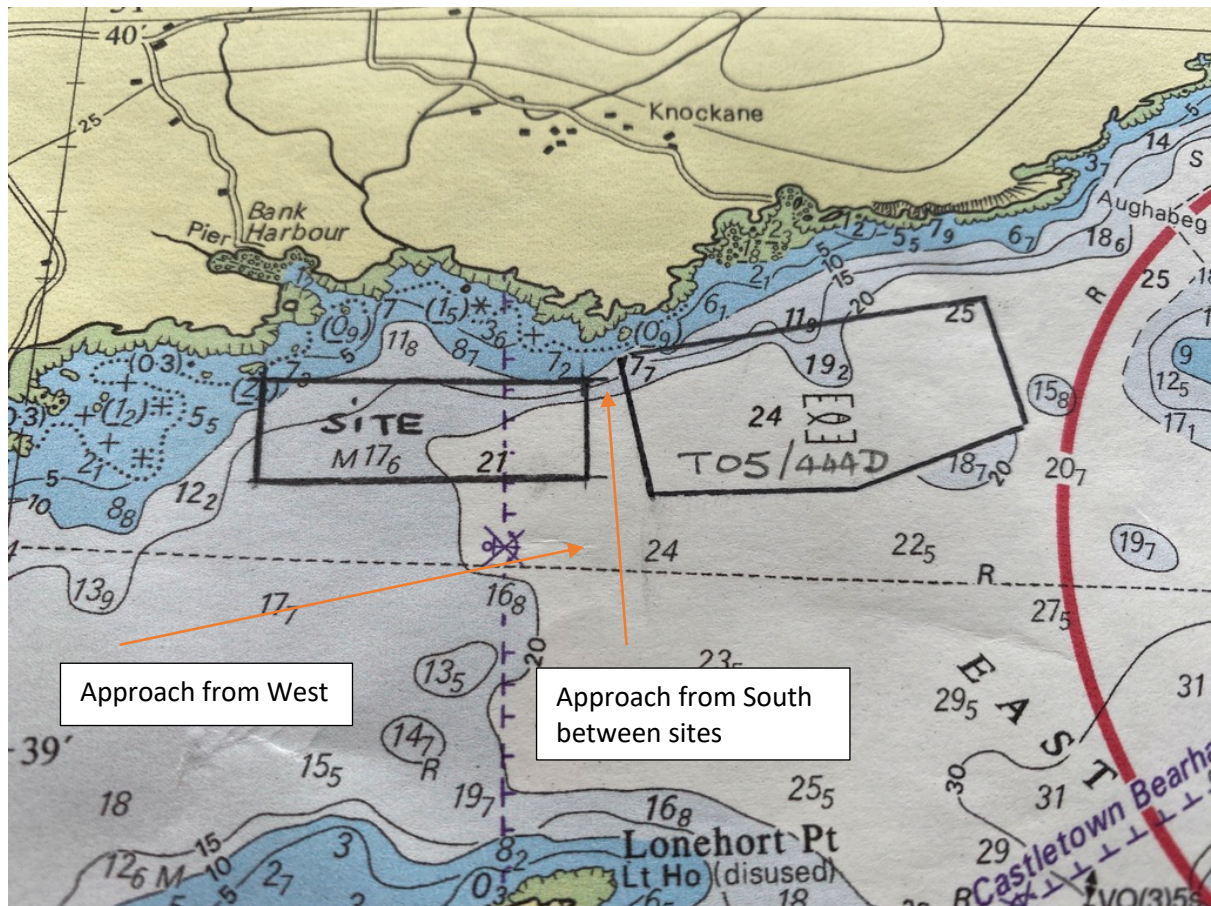


Figure 4.1: Overview of the proposed site and the Roancarraig site and approaches.

Figure 4.2 below gives a more detailed view of the area including both sites with hydrographic details including depths and dangers. Approach courses to and from the sites are indicated.



4.2 Approaches to both sites.

The approach from the West would be in depths of water of 16m to 17m of water at Chart Datum (Lowest Astronomical Tide) and well clear of any hazards.

The approach from the South would be in depths of water of 24m (Chart Datum) and free of dangers.

The distance between the South-east corner of the proposed site and the South-west corner of the Roancarraig site is about 150m.

The distance between the North-east corner of the proposed site and the North-west corner of the Roancarraig site is about 100m.

All of these distances are well in excess of the largest stated boat-length (60.4m) and beam (11m). Such vessels will be able to manoeuvre safely in terms of navigation when operating near the sites. The measured distances are well in excess of the entrance to Bank Harbour and Castletownbere Harbour. A comparison may be made with the main channel in the Port of Cork. That channel is 160m wide and accommodates large tankers of over 170m in length and 25m beam. Therefore, vessels of 60m in length and 11m beam will be able to manoeuvre in distances of 150m between hazards.

Figure 4.3 below illustrates the 'pinch points' and approximate distances between each point.

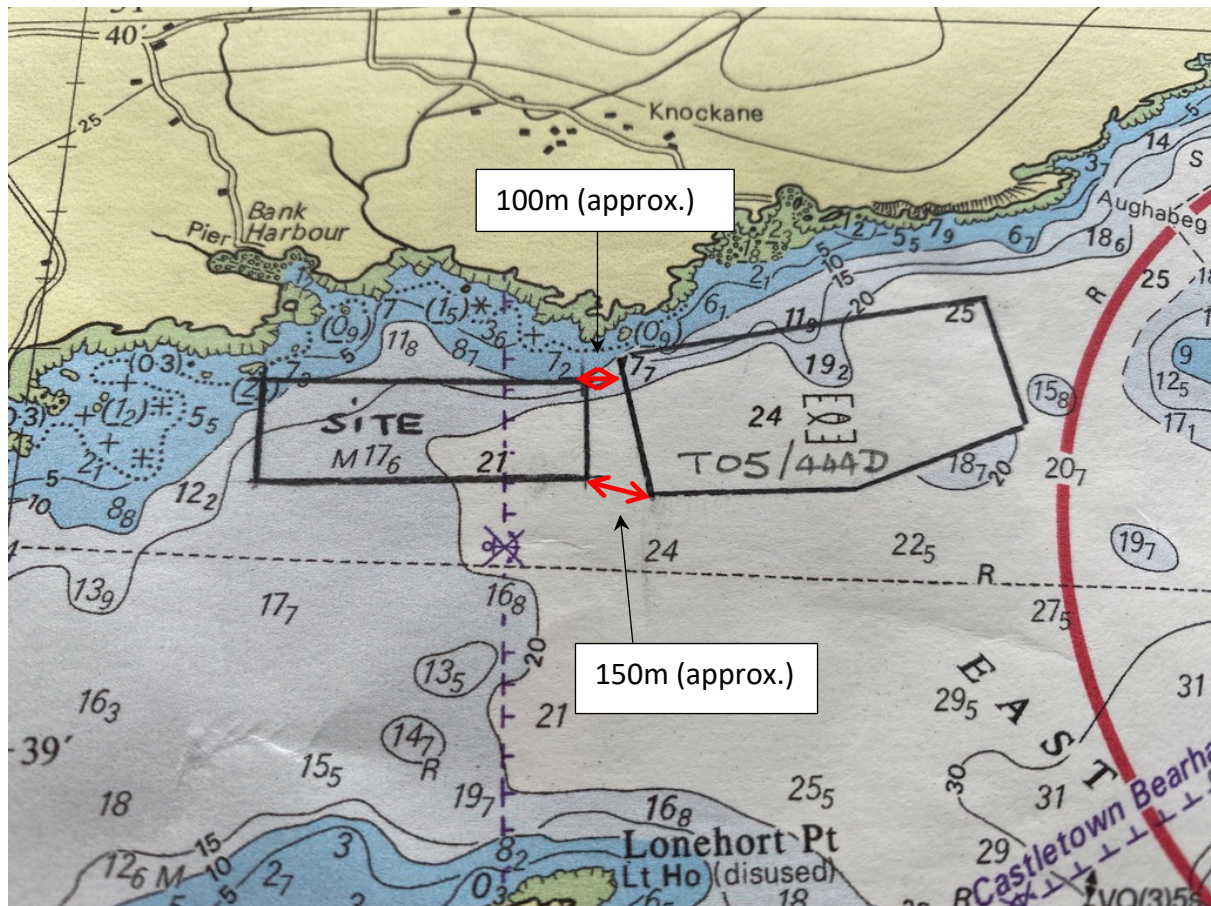


Figure 4.2: Approximate distances between 'pinch points'.

The above figure shows that the initial approach has a distance of approximately 150m between the southerly points and that the northerly points have a distance of approximately 100m between them.

5.0 Conclusions.

This report has considered the implications for navigation in and near the Roanarraig Site if a proposed seaweed cultivation site is located as per the co-ordinates stated.

As a result of visiting Bank Harbour and examining the appropriate plans and charts, it is my opinion that;

- Navigation from the West and South and in or around the Roanarraig site (T05/444D) can be conducted in sufficient depths of water and clear of hazards.
- With reference to the term 'inclement weather', conditions of Beaufort 6 whereby a small craft warning is issued by Met Eireann may be considered 'inclement'. A vessel of 60m length, could navigate in or near the Roanarraig site, adjacent to the proposed site in these conditions subject to their Safety Management System (SMS).
- For comparison purposes, and in line with best practice, the main channel in the Port of Cork is 160 m wide and allows for the navigation of large tankers of 25m beam and length of 175 m. Such vessels are more than twice the beam of vessels that currently work at Roanarraig.
- For further comparison purposes, and in line with best practice, the main channel in the Port of Cork is 160m wide and allows for the navigation of medium size coastal vessels of 90m in length and 12m beam without the requirement for tugs.
- The location of the proposed site does not significantly affect navigation in or around the Roanarraig site.
- However, to ensure a large margin of safety, a recommended safe distance between the Roanarraig site and the proposed site should be not less than two vessel lengths, i.e. 120m.