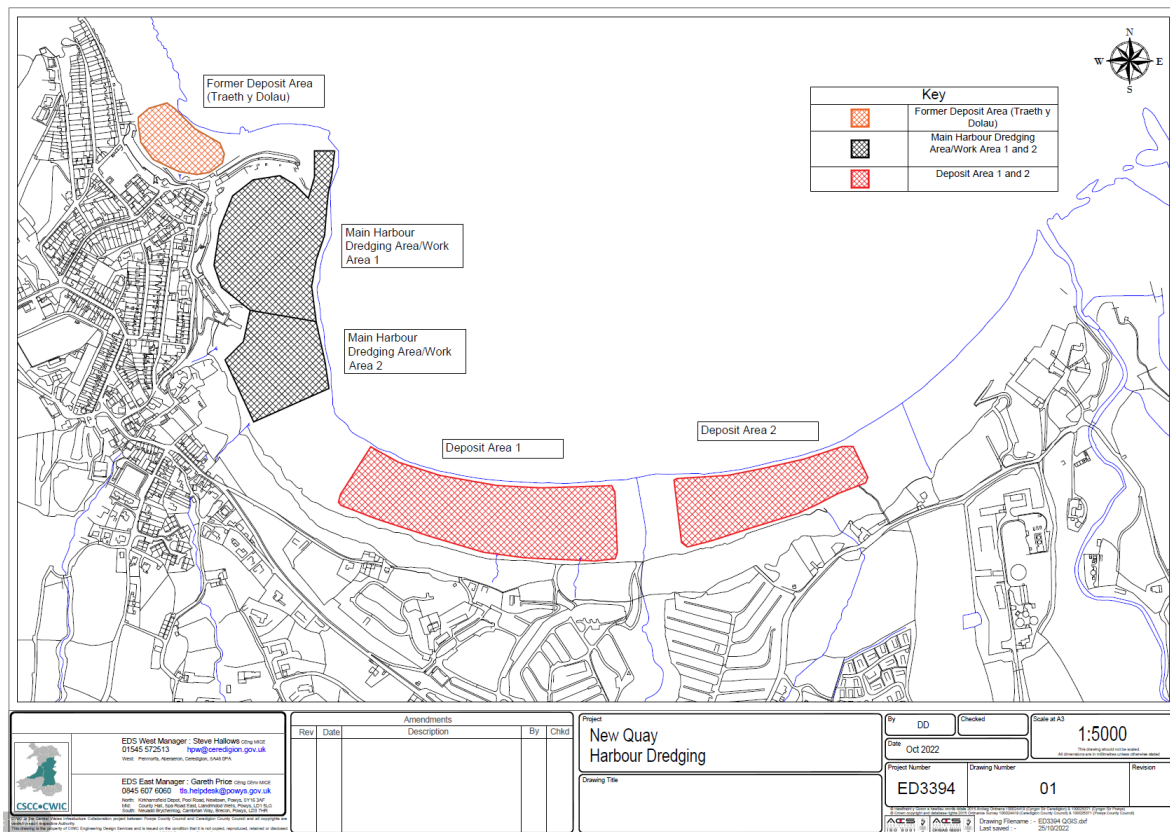




CSCC•CWIC

Engineering Design Services



ED3394 New Quay Harbour Dredging

Beach Gradient Monitoring Scheme at Cei Bach Deposit Areas

27/06/2023

Report Prepared for:-

Report Prepared For: Owen Morgan, Harbour Manager, Highways & Environmental Services, Ceredigion County Council

Report No. ED3394_BGM_1.0

Prepared By George HT Ryley, BSc, MSc

	Name	Signature	Position	Date of Issue	Version
Prepared	George HT Ryley		Highways Ecologist	27/06/2023	
Approved					

Record of Previous Issue and Amendments

Version	Revision date	Summary of Changes
1.0	27/06/2023	Original Version

Ceredigion County Council (CCC) is responsible for the maintenance of New Quay Harbour. As part of this, the harbour basin is dredged annually to maintain access for boats. The dredged material has been used previously to replenish the beach at Traeth Y Dolau, however, this is no longer possible due to overriding access issues. CCC has therefore proposed new deposit areas along neighbouring Cei Bach beach (see figure 1).

The proposed deposit areas are below Mean Highwater Springs (but above MLWS), and so on a general basis, the material is likely to be re-mobilised by the tides and dispersed northwards by the prevailing currents, which run South to North. In support of this prevailing current, the harbour authority has noted that material deposited at our former deposit area, has later re-emerged back in the Harbour, as Traeth Y Dolau is southerly to the Harbour. Storms will likely cause some variation in this general pattern, depending on storm tracks and swells, whilst it is possible that some of the material may circulate in the lower energy bay currents before being picked up by the stronger south-north general pattern.

Although these patterns are thought to occur at Cei Bach, CCC does not have quantitative data to support this or that all deposited material will be re-mobilised. In support of the marine licence application DML2301, Natural Resources Wales (NRW) have requested a Beach Gradient Monitoring Scheme in order to rule out the accretion of sediments along Cei Bach during the 5-year life of the licence, which can be used to inform any future licence renewal process.

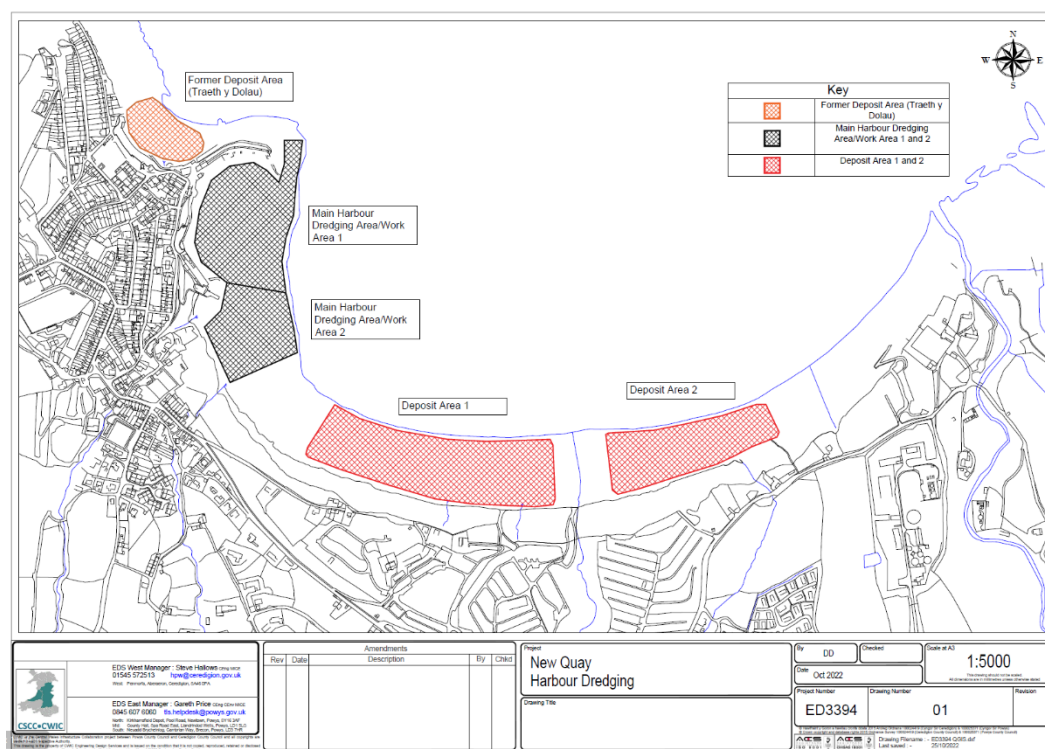


Figure 1: Plan of New Quay harbour dredging areas and proposed deposit areas along Cej Bach.

Beach Gradient Monitoring Scheme

Ceredigion County Council will directly undertake, or arrange for the undertaking by a suitably competent authority, the following:

- Two transects will be established at each disposal area, and grid-referenced for future reference.
- These transects will be equidistant from each other as well as the east and west boundaries of the disposal area.
- The starting elevation will be as far up the beach as is practically possible (which will likely be the base of the cliffs visible in figure 2).
- The transects will continue until the low water mark is reached.
- Gradient measurements will be taken within the preceeding 3 months of the next scheduled dredge (December the 01st to February the 28th) to allow the maximum time for natural forces to exert their influences on the area before new material is deposited.
- The survey will take place during a spring low tide.
- Both transects in each deposit area will be surveyed on the same day, and both deposit areas within 7 days of each other.
- This will be conducted in the 1st, 3rd, and 5th years of the DML2301 licence.



Figure 2: Views of the deposit areas and cliffs behind.