

Carmarthenshire County Council

Burry Port Harbour - Maintenance Dredging and Disposal of Dredged Material

Water Framework Directive Assessment Report

September 2025

Project Nr

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Burry Port Harbour - Maintenance Dredging and Disposal of Dredged Material: WFD Assessment Report

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Table of Contents

1	Introduction.....	3
1.1	Background.....	3
2	Project Definition	3
2.1	Burry Port Harbour	3
2.2	Previous Maintenance Dredging Activities.....	4
2.3	Proposed Maintenance Dredging and Deposition Activities	5
3	WFD Assessment.....	8
3.1	Introduction	8
3.2	Assessment Method.....	10
3.3	Assessment: Stage 1 - Screening	10
3.4	Assessment: Stage 2 - Scoping	11
3.5	Assessment: Stage 3 – Detailed Assessment of the Risk to Higher Sensitivity WFD Habitats	11
3.6	Assessment: Stage 3 – Detailed Assessment of Risk to WFD Protected Areas	12
3.7	Conclusions	14
4	References	16



1 Introduction

1.1 Background

- 1.1.1 Carmarthenshire County Council (CCC) are proposing to undertake maintenance dredging at Burry Port Harbour to restore the required water depths. Maintenance dredging will remove predominantly sand material from the Approach Channel and Outer Harbour using excavators and will deposit this material on the upper foreshore of the beach to the east of the harbour (known as Burry Port East Beach) using dumper / tipper trucks. These activities will be undertaken in 'dry conditions' when the tide is sufficiently low. Coastal processes - particularly wave action, on subsequent high tides - will distribute the deposited material across a larger area of the beach. By taking this approach, the sand material will be retained within the same sediment cell from where it originated, which is the generally preferred dredged material management option set out in the Welsh National Marine Plan (Welsh Government, 2019).
- 1.1.2 CCC as the statutory harbour authority (SHA) have powers conferred by the Burry Port Harbour Revision Order 2000 (hereafter referred to as 'the 2000 HRO') to undertake maintenance dredging, but need a marine licence granted by Natural Resources Wales (NRW) under the Marine & Coastal Access Act 2009 to undertake the deposit of dredged material on the adjacent beach.
- 1.1.3 Maintenance dredging of the Approach Channel and Outer Harbour and associated dredged material deposition on Burry Port East Beach will take place within the Burry Inlet Outer water body. Given the nature of the dredging and deposition activities proposed to take place within the water body, the marine licence application will be subject to an assessment of whether the proposed activities can proceed on the basis that they comply with the EU Water Framework Directive 2000/60/EC (the WFD), as transposed and retained in UK legislation by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 as amended (the WFD Regulations). Accordingly, this WFD Assessment Report has been prepared by The Bates Partnership (TBP) on behalf of CCC to present an assessment showing that, on the basis of objective information and scientific evidence, the proposed dredging and deposition activities are not likely to pose the risk of significant impacts on the water body that jeopardise compliance with the objectives of the Western Wales River Basin District - River Basin Management Plan (the '2022 Western Wales RBD RBMP') (NRW, 2022).

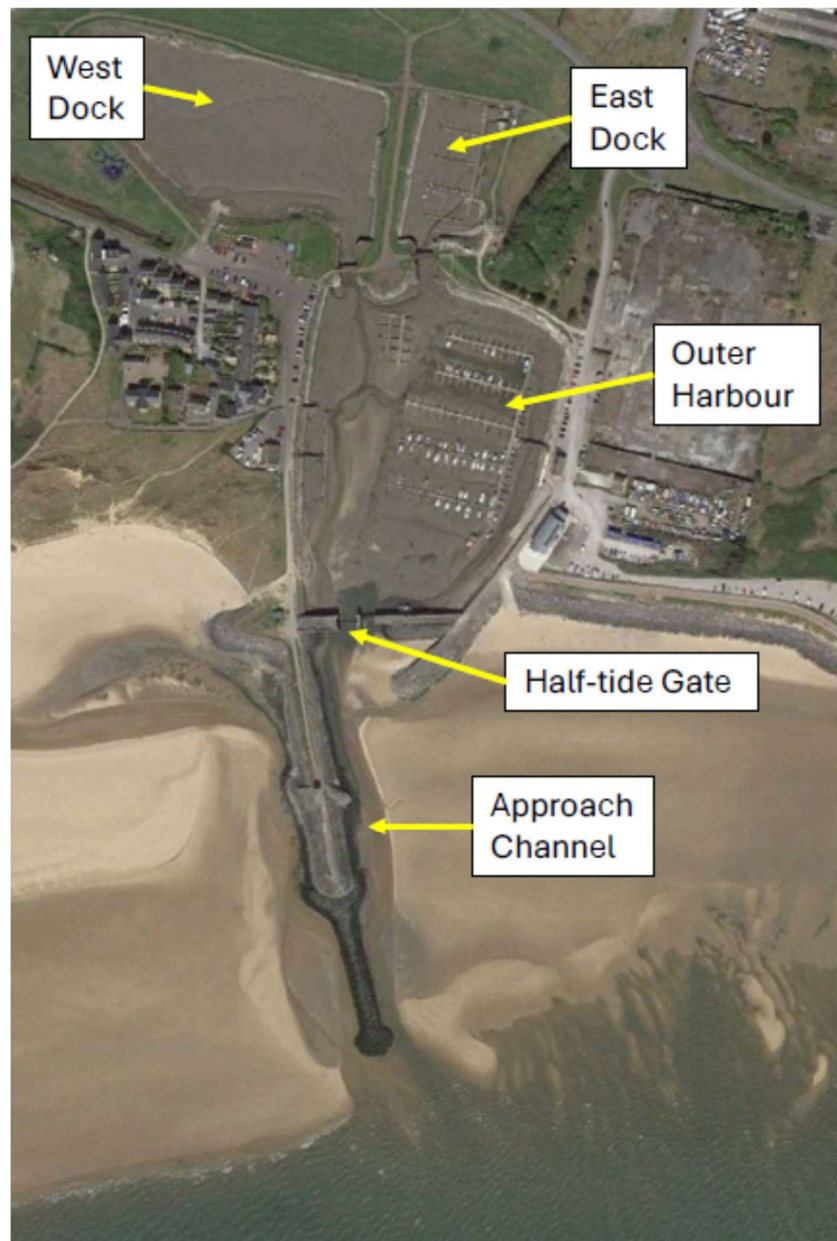
2 Project Definition

2.1 Burry Port Harbour

- 2.1.1 Burry Port Harbour is situated on the northern bank of the Burry Inlet (the River Loughor's estuary), approximately 5km west of Llanelli. It comprises an Outer Harbour and an inner West Dock and East Dock and a half-tide gate, is protected by two breakwaters, and is accessed by boats via an Approach Channel aligned parallel to the western breakwater (**Figure 1**). The half-tide gate was constructed at the entrance of the Outer Harbour in 2000 to impound water within the Outer Harbour so that boats remain afloat irrespective of tidal conditions.



Figure 1 – Layout of Burry Port Harbour



2.2 Previous Maintenance Dredging Activities

- 2.2.1 Since construction of the half-tide gate, the Approach Channel has experienced progressive infill of sand originating from the adjacent foreshore. Sand that has accumulated in the Approach Channel can overtop the sill of the half-tide gate when open and migrate into the Outer Harbour during periods of high flow and high wave activity. This sand settles out in the more benign conditions in the Outer Harbour, reduces the water depth, and causes significant access and egress problems for boat users.



- 2.2.2 The Approach Channel and Outer Harbour have been subject to a series of maintenance dredging campaigns. In 2010, the Outer Harbour was dredged using a Cutter Suction Dredger (CSD) and the dredged material was pumped and discharged onto the upper foreshore of Burry Port East Beach. Since 2012, the Outer Harbour and Approach Channel have been dredged using land-based plant (e.g., excavators), with each campaign removing approximately 20,000-25,000m³ per annum from the Approach Channel and approximately 6,000-10,000m³ per annum from the Outer Harbour.
- 2.2.3 The dredged material has been transported by pipeline or by truck and deposited onto upper foreshore area of Burry Port East Beach. Relocating the predominantly sandy material to the adjacent beach has retained the material within the same sediment cell from where it originated. This has helped to maintain the amount of natural beach material that offers protection to the historic pulverised fuel ash (PFA) deposits located along the shoreline on this part of the beach and has helped to protect the eroding shoreline behind this part of the beach.

In 2017, CCC carried out a trial using Water Injection Dredging (WID) to remove approximately 5,000m³ of silty material from the Outer Harbour to Burry Inlet on the falling tide. Relocating the predominantly silty material to the estuary has retained the material within the same sediment cell from where it originated. Since 2017, WID has been used periodically in the Outer Harbour to relocate accumulations of silty material back into Burry Inlet.

2.3 Proposed Maintenance Dredging and Deposition Activities

Dredging and Deposition Locations

- 2.3.1 Maintenance dredging will be undertaken to remove sand material that has accumulated within the Approach Channel and Outer Harbour. The dredged material will be deposited within a placement area on the upper foreshore of Burry Port East Beach, but only within the area below mean high water on spring tides (MHWS). The locations and coordinates for the Approach Channel and Outer Harbour dredging areas and the Burry Port East Beach deposit area are provided at **Appendix 1**.

Dredged Material Characteristics

- 2.3.2 In line with NRW sample plan SP2501, sediment samples were collected from nine sampling locations: three locations in dredging area of the Approach Channel, five locations in the dredging area of the Outer Harbour, and one location in the deposit area on Burry Port East Beach. Sediment samples were taken at the surface (i.e., 0m) and at 1m intervals down to the required dredge depth, which required sampling down to 3m for the dredging areas in the Approach Channel and Outer Harbour, and sampling at the surface for the deposition area on Burry Port East Beach. The sampling locations are presented at **Appendix 2**.
- 2.3.3 Particle size analysis was undertaken on the sediment samples to determine the distributions of sediment sizes and proportions of dominant sediment types (i.e., gravel, sand and silt). The particle size distributions and corresponding dominant sediment types are presented at **Appendix 3**.



- 2.3.4 Particle size analysis determined that the sediment samples are characterised by the following dominant sediment types across the dredging and deposition locations:
- Sand within the Approach Channel, southwestern part of the Outer Harbour and deposition area on Burry Port East Beach.
 - Silty sand / sandy silt material within the central part of the Outer Harbour.
 - Silt material in the northeastern part of the Outer Harbour.
- 2.3.5 Particle size analysis showed that the sand material in the dredging areas to be virtually the same as the sand material at the deposit area with all but one of the sediment samples containing more than 97.5% sand. This correlation is to be expected as the beach material is believed to be the principal source of the material that accumulates in the Approach Channel and Outer Harbour.
- 2.3.6 Chemical analyses were undertaken on the sediment samples to determine concentrations of a range of potentially contaminating substances. The concentrations for metals, organotin compounds and polyaromatic hydrocarbons (PAHs) are presented at **Appendix 4**. The concentrations of contaminants in the sediment have been compared to sediment quality criteria to indicate whether the proposed dredging and disposal activities have the potential to adversely affect the receiving environment. The principal sediment quality criteria are the 'Cefas action levels' (Cefas Action Level 1 (cAL1) and Cefas Action level 2 (cAL2)), which are used to inform marine licence applications about the suitability of sediment for disposal at sea. Generally, sediment with contaminant concentrations below cAL1 is considered suitable for disposal at sea.
- 2.3.7 Cefas action levels are partially available (cAL1 but no cAL2) for some contaminants including PAHs. Accordingly, other sediment quality criteria including the 'US effects ranges' (effects range low (ERL) and effects range median (ERM)) can be used to inform marine licence applications about the suitability of sediment for disposal at sea; albeit on an advisory basis because the other criteria have no legal or policy standing in the UK. Generally, sediment with contaminant concentrations below the ERL is considered unlikely to cause harm to marine life (Long et al., 1995; McDonald et al., 1996, Gorham-Test, 1998) and, by implication, is considered suitable for disposal at sea.
- 2.3.8 Chemical analyses determined that the sediment samples representing the dredged material in the Approach Channel and Outer Harbour and the deposition area on Burry Port East Beach are characterised by contaminants at concentrations below cAL1 and/or the ERL (**Appendix 4**).
- 2.3.9 Given the results of the particle size analysis and chemical analyses, the sediment in the Approach Channel and Outer Harbour should be suitable for deposit on Burry Port East Beach: notably, it should not change the physical and chemical characteristics of the existing beach material on Burry Port East Beach.

Dredging and Deposition Methods

- 2.3.10 The intended method for dredging the sand material will involve land-based plant including excavators supported by dumper / tipper trucks working on the beach in 'dry' conditions when the tide has receded sufficiently. The excavators will remove the sand material from the Approach Channel and Outer Harbour and place it within trucks parked immediately adjacent to the dredging activity.
- 2.3.11 The deposition method will involve land-based plant including dumper / tipper trucks working on the upper beach in 'dry' conditions when the tide has receded sufficiently. The trucks will transport the material eastwards across the beach and place it within the



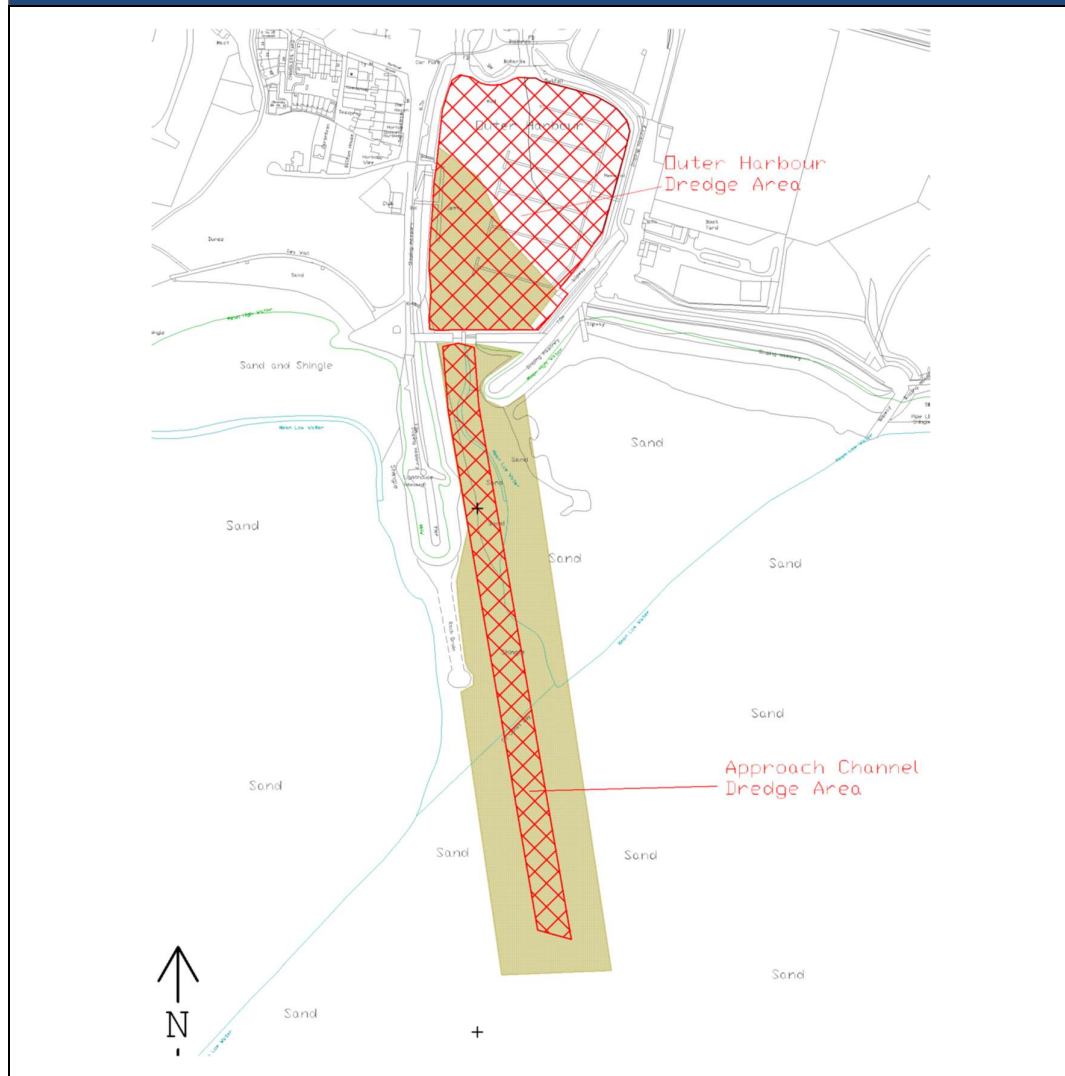
deposit area below MHWS. Following deposition, coastal processes - particularly wave action, on subsequent high tides - will distribute the deposited material across a larger area of the beach. This approach will retain the deposited dredged material within the sediment cell from where it originated.

Dredging and Deposition Programme

- 2.3.12 Maintenance dredging of the Approach Channel and/or Outer Harbour and deposition on Burry Port East Beach is proposed to take place over a series of campaigns over the next ten years. The maximum volume of sand material to be dredged and deposited within each 12-month period will be 70,000m³.
- 2.3.13 The first campaign is expected to dredge up to 70,000m³ of sand from the length of the Approach Channel and southwestern part of the Outer Harbour, as shown in **Figure 2**. Given historical maintenance dredging requirements, subsequent campaigns are expected to dredge and deposit less than 70,000m³ of sand and be focussed on the Approach Channel and southwestern part of the Outer Harbour.
- 2.3.14 For each campaign, dredging and deposition of material is expected to be undertaken for approximately 7 hours per day (3 to 3.5 hours either side of low water), 7 days per week. The dredging rate is expected to be approximately 1,500m³ per day, if using two dredge spreads (i.e., 2 excavators and 4 dumper trucks), equating to approximately 47 days (±5 days) to remove approximately 70,000m³ of sediment to restore the bed depth within the Approach Channel to -2mOD and Outer Harbour to -1.5mOD. Depending on the tidal states at the time, the dredging and deposition activity may not all be completed in one continuous period but may be split into two or more campaigns to make best use of the most suitable tides and daylight hours.



Figure 2 – Indicative Extent of Dredging Activity during the First Campaign (red hatched area)



3 WFD Assessment

3.1 Introduction

Relevant River Basin Management Plan

3.1.1 This WFD assessment considers whether the proposed dredging and deposition activities – maintenance dredging of the Approach Channel to Burry Port Harbour and dredged material deposition on Burry Port East Beach - are likely to pose the risk of significant impacts on a water body (or water bodies) that jeopardise compliance with the following objectives of the 2022 Western Wales RBD RBMP (NRW, 2022):

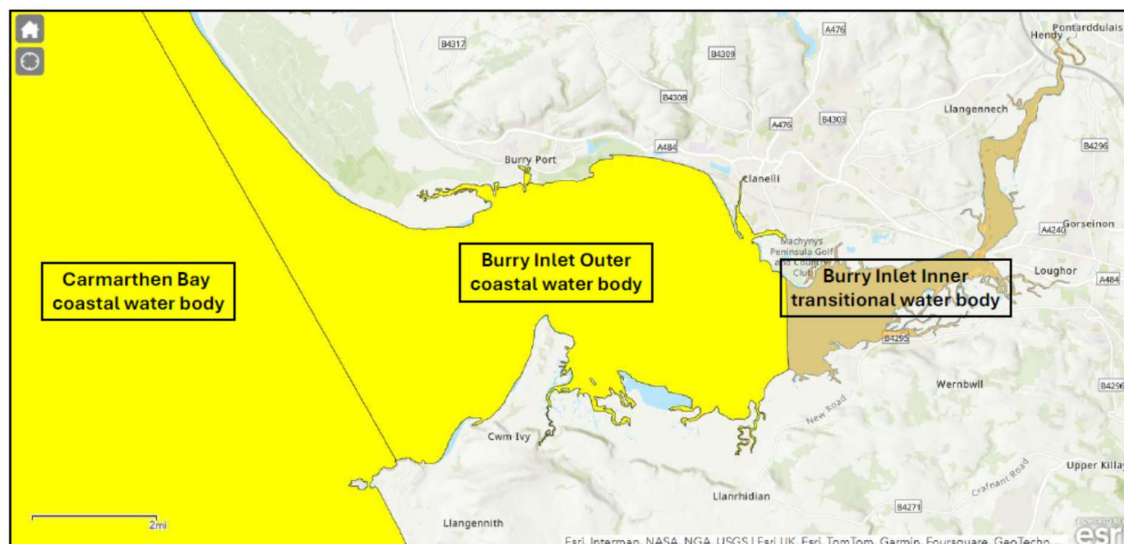
- Prevent deterioration in water body status.
- Achieve the objectives for protected areas by achieving the standards set by the relevant legislation under which protected areas are designated (e.g., the conservation objectives of European sites).

- Aim to achieve good overall status/potential for surface waters and ground waters by implementing measures to achieve good overall status where they are technically feasible and not disproportionately costly.

Relevant Water Body

- 3.1.2 The proposed dredging and deposition activities will take place within the Burry Inlet Outer coastal water body (**Figure 3**). This coastal water body connects the reach of the River Loughor's estuary within Carmarthen Bay and covers approximately 200,668,250 hectares.
- 3.1.3 The Burry Inlet Outer coastal water body is classified as natural (i.e., it is not heavily modified in terms of its hydromorphological features). The water body is currently at 'moderate' status overall based on its classifications for chemical status and ecological status. While the water body has a 'high' chemical status overall, it has a 'moderate' ecological status overall due to 'moderate' classifications for three individual ecological elements: angiosperms, phytoplankton, and winter dissolved inorganic nitrogen (DIN).
- 3.1.4 There are no hydrologically connected water bodies within five kilometres of the proposed dredging and deposition activities (**Figure 3**). The nearest hydrologically connected water bodies are the Carmarthen Bay coastal water body which is situated more than six kilometres downstream of the proposed dredging and deposition activities, and the Burry Inlet Inner transitional water body which is situated more than seven kilometres upstream of the proposed dredging and deposition activities. Connected water bodies are not considered further in this WFD assessment given the limited nature, scale and duration of the proposed dredging and deposition activities.

Figure 3 – WFD Water Bodies at and around Burry Port (source: waterwatchwales-nrw.hub.arcgis.com; accessed 26-08-2025)





3.2 Assessment Method

- 3.2.1 The assessment method used in this report is based on Complying with the WFD Regulations 2017: Guidance Note GN 078 (NRW, 2024). This document provides guidance on how to assess the WFD compliance of activities that may cause deterioration to a water body or prevent it (or protected areas) from achieving the objectives set out in the River Basin Management Plan. It sets out the following three stages for a compliance assessment:
- Stage 1: screening. This stage is undertaken to identify and exclude projects or activities that do not need further assessment.
 - Stage 2: scoping. This stage is undertaken to identify the environmental receptors that are potentially at risk from projects or activities and, therefore, need detailed assessment.
 - Stage 3: detailed assessment. This stage considers the potential impacts of projects or activities on receptors identified at the scoping stage, and identifies ways to avoid, minimise impacts or mitigate impacts. It concludes with an assessment of whether projects or activities may prevent a water body and any protected areas from achieving their objectives, or cause deterioration or jeopardise the water body status.
- 3.2.2 The assessment has been informed by the datasets available via Water Watch Wales (waterwatchwales-nrw.hub.arcgis.com) and Defra (magic.defra.gov.uk/magicmap.aspx) map applications.

3.3 Assessment: Stage 1 - Screening

- 3.3.1 The proposed activity has been screened in accordance with Complying with the WFD Regulations 2017: Screening. Guidance Note GN 078 (NRW, 2024). As identified below, the responses to all three risk screening assessment questions demonstrate that the proposed activity needs to be subject to further assessment to determine compliance with the WRD Regulations.

Q1. Is the proposal in, or could it impact on, a water body at high overall status or high status for morphology (or hydromorphology for Transitional and Coastal water bodies)?

- 3.3.2 Reference to the data presented on Water Watch Wales (waterwatchwales-nrw.hub.arcgis.com; accessed 26-08-2025) identifies that the Burry Inlet Outer coastal water body is at high status for hydromorphology. On this basis, the proposed dredging and deposition activities must be subject to a WFD assessment.

Q2. Are the proposed activities listed as low risk?

- 3.3.3 The proposed dredging and deposition activities are not listed and do not qualify as low risk activities under provisions for marine licensing (i.e., it falls outside the scope of Band 1 activities). On this basis, the proposed dredging and deposition activities must be subject to a WFD assessment.

Q3. Are there any potential in combination and/or cumulative impacts?

- 3.3.4 The proposed dredging and deposition activities have the potential for cumulative effects. On this basis, the proposed dredging and deposition activities must be subject to a WFD assessment.



3.4 Assessment: Stage 2 - Scoping

- 3.4.1 The proposed activity has been scoped in accordance with Complying with the WFD Regulations 2017: Scoping. Guidance Note GN 078 (NRW, 2024). Scoping was undertaken using the template for transitional and coastal waters and considered the following components of the proposed dredging and deposition activities individually and in-combination / cumulatively. The results of scoping are presented at **Appendix 5**.
- 3.4.2 Scoping determined that detailed assessment is required for the following risks to receptors within the Burry Inlet Outer coastal water body:
- Maintenance dredging activity, deposition activity, in-combination / cumulative activities may pose a risk to a WFD higher sensitivity habitat because the activities will be within 500m of mussel bed and/or saltmarsh habitats.
 - Maintenance dredging activity, deposition activity, in-combination / cumulative activities may pose a risk to a WFD protected area because they will take place within 2km of the Burry Inlet SPA and Ramsar site, Carmarthen Bay and Estuaries SAC, Carmarthen Bay Dunes SAC, and Bristol Channel Approaches SAC.

3.5 Assessment: Stage 3 – Detailed Assessment of the Risk to Higher Sensitivity WFD Habitats

Introduction

- 3.5.1 Scoping determined that maintenance dredging activity, deposition activity and the combination / cumulation of these activities may pose a risk to higher sensitivity WFD habitats because they will take place within 500m of mussel bed and saltmarsh habitats.

Baseline Conditions

- 3.5.2 Reference to the WFD higher sensitive habitat information presented on Defra's Magic Map Application (magic.defra.gov.uk; accessed 27-08-2025) indicates that patches of mussel bed habitat are situated at locations of hard substrate exposed on Burry port East Beach and associated with the rock armour along the harbour's breakwater and revetment for coastal erosion protection, and patches of saltmarsh habitat are situated alongside shore-parallel channels across Burry Port West Beach and Tywyn Beach (**Appendix 6**). However, this information is derived from a Phase 1 habitat survey conducted by CCW in 1996 and more recent satellite imagery indicates that the mussel bed habitat on Burry Port East Beach and the saltmarsh habitat on Burry Port West Beach and Tywyn Beach are no longer present following substantial geomorphological changes to the beaches and channels due to sand accretion.
- 3.5.3 Accordingly, for the purposes of this WFD assessment, the baseline conditions for higher sensitivity habitat are considered to comprise mussel bed habitat associated with the rock armour along the harbour's breakwater and revetment for coastal erosion protection, which are within 500m of the proposed dredging and deposition activities.

Impact Assessment

- 3.5.4 The dredging and deposition activities could pose risks to higher sensitivity WFD habitat by the following impact pathways:
- By causing sediment disturbance which, as a consequence, could impact WFD habitat by causing an increase in suspended sediment concentrations and/or sediment deposition or smothering.



- By causing changes to seabed level which, as a consequence, could impact WFD habitat by causing changes in patterns of currents and waves, sediment transport and/or seabed morphology.
- 3.5.5 These impact pathways have been considered in a coastal processes assessment for the dredging and deposition activities (TBP, 2025a). The assessment found that because dredging and deposition activities will take place in 'dry' conditions (as described in **Section 2.3**) they will have no potential to disturb and release sediment into the water column and, therefore, no potential to cause changes in suspended sediment concentrations and sediment deposition or smothering rates that are discernible over baseline conditions. Also, the assessment found that although dredging and deposition activities will have some potential to change seabed levels through the formation of 'pits' (due to dredging) and 'mounds' (due to deposition) they will not cause changes to patterns of currents and waves, sediment transport and/or seabed morphology that are discernible over baseline conditions. On this basis, the assessment concluded that the dredging and deposition activities will not cause changes to coastal processes that either directly or indirectly impact on Burry Inlet's coastal habitats and coastal ecology. that either directly or indirectly impact on the higher sensitivity WFD habitats.
- 3.5.6 Accordingly, the proposed dredging and disposal activities are not expected to pose a significant risk to the higher sensitivity WFD habitats in the Burry Inlet Outer coastal water body.

3.6 Assessment: Stage 3 – Detailed Assessment of Risk to WFD Protected Areas

Introduction

- 3.6.1 Scoping determined that maintenance dredging activity, deposition activity and the combination / cumulation of these activities may pose a risk to a WFD protected area because they will take place within 2km of the Burry Inlet SPA and Ramsar site, Carmarthen Bay and Estuaries SAC, Carmarthen Bay Dunes SAC, and Bristol Channel Approaches SAC.

Baseline Conditions

- 3.6.2 Several WFD protected areas are situated within two kilometres of the proposed dredging and deposition activities (**Table 1** and **Figures 4 and 5**).

Table 1 - WFD Protected Areas and their Qualifying Features	
Carmarthen Bay and Estuaries SAC*	Habitats: estuaries, mudflats and sandflats not covered by seawater at low tide, Atlantic saltmeadows (<i>Glauco-Puccinellietalia maritimae</i>), Salicornia and other annuals colonising mud and sand, large shallow inlets and bays, sandbanks which are slightly covered by sea water all the time Species: allis shad (<i>Alosa alosa</i>), twaite shad (<i>Alosa fallax</i>), river lamprey (<i>Lampetra fluviatilis</i>), sea lamprey (<i>Petromyzon marinus</i>), otter (<i>Lutra lutra</i>)
Burry Inlet SPA and Ramsar site*	Species: knot (<i>Calidris canutus</i>), oystercatcher (<i>Haematopus ostralegus</i>), pintail (<i>Anas acuta</i>), redshank (<i>Tringa tetanus</i>), waterbird assemblage Supporting habitats: estuaries, mudflats and sandflats not covered by seawater at low tide, Atlantic salt meadows, salicornia and other annuals colonising mud and sand
Carmarthen Bay Dunes SAC	Habitats: embryonic shifting dunes, shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes), fixed coastal dunes with herbaceous vegetation (grey dunes), dunes with <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salicion arenariae</i>), humid dune slacks Species: Narrow-mouthed whorl snail (<i>Vertigo angustior</i>), petalwort (<i>Petalophyllum ralfsii</i>), fen orchid (<i>Liparis loeselii</i>)



Burry Port Harbour - Maintenance Dredging and Disposal of Dredged Material: Habitats Regulations No Significant Effects Report

Carmarthen Bay SPA*	Species: common scoter (<i>Melanitta nigra</i>)
Bristol Channel Approaches SAC	Species: harbour porpoise (<i>Phocoena phocoena</i>)

* These protected areas form the Carmarthen Bay and Estuaries European Marine Site (EMS)

Figure 4 – WFD Protected Areas at and around Burry Port: Special Areas of Conservation (source: waterwatchwales-nrw.hub.arcgis.com; accessed 26-08-2025)

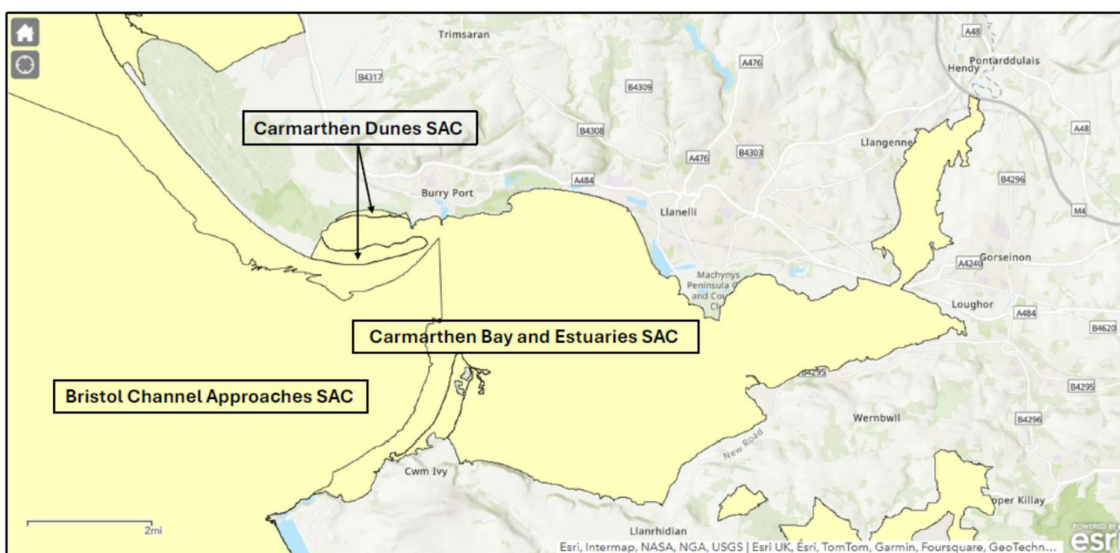
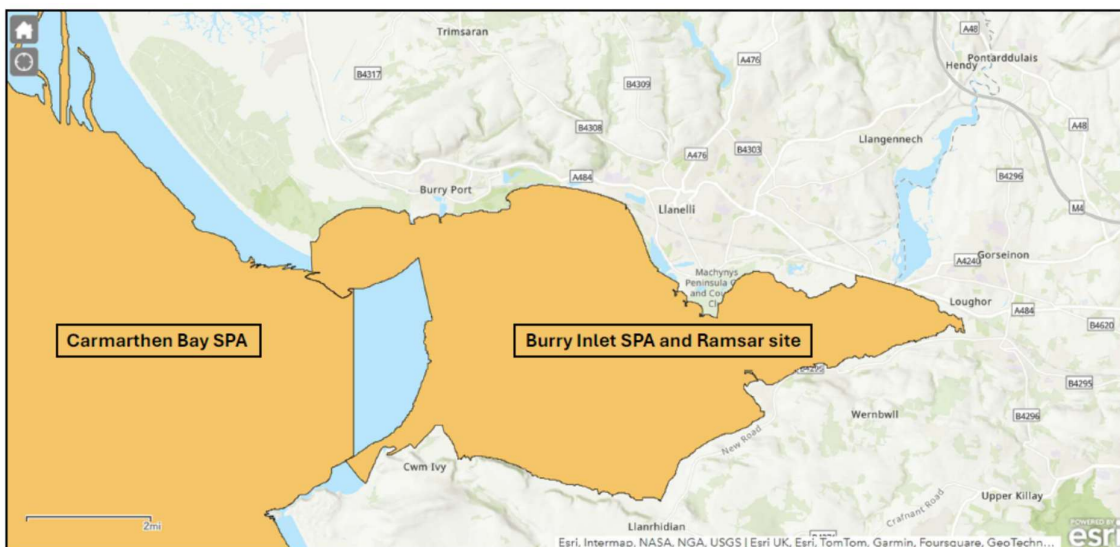


Figure 5 – WFD Protected Areas at and around Burry Port: Special Protection Areas and Ramsar Sites (source: waterwatchwales-nrw.hub.arcgis.com; accessed 26-08-2025)





Impact Assessment

- 3.6.3 The dredging and disposal activities could pose risks to WFD protected areas by the following impact pathways:
- By dredging of accreted sediment causing physical change of habitat features.
 - By dredging of accreted sediment causing chemical change of habitat features.
 - By dredging of accreted sediment causing disturbance of species features.
 - By deposition of dredged material leading to the physical change of habitat features.
 - By deposition of dredged material leading to the chemical change of habitat features.
 - By dredging of accreted sediment leading to the disturbance of species features.
- 3.6.4 These impact pathways have been considered in a Habitats Regulations Assessment (HRA) screening assessment for the dredging and deposition activities (TBP, 2025b). The screening assessment was informed by reference to information including the findings of the dredged material's physical characterisation (**Appendix 3**), the dredged material's chemical characterisation (**Appendix 4**), the findings of the coastal processes assessment (TBP, 2025a), the Regulation 33 advice for the Carmarthen Bay and Estuaries EMS (CCW, 2009), the habitat distributions included within the Fourth Article 17 UK Habitats Directive Report (JNCC, 2019), and the low water counts for Burry Inlet (Calbrade et al., 2025).
- 3.6.5 The screening assessment used a source-pathway-receptor approach to identify whether there was the potential for an effect (i.e., a potential impact pathway can be established that links a receptor (i.e., a feature of a WFD protected area) to a source of a potential impact (e.g., an impact arising from the proposed dredging and deposition activities). This approach was used to screen out the potential for impact pathways for dredging and deposition activities to affect all features of the Carmarthen Bay Dunes SAC, Carmarthen Bay SPA and Bristol Channel Approaches SAC, and some features of the Carmarthen Bay and Estuaries SAC and Burry Inlet SPA. This approach was also used to consider whether the proposed dredging and deposition activities could have a significant effect on the Carmarthen Bay and Estuaries SAC's estuaries, mudflats and sandflats and other features, and the Burry Inlet SPA's oystercatcher, redshank and waterbird assemblage features and the supporting habitats for these features (estuaries, mudflats and sandflats). The findings of the screening assessment are summarised in **Table 2**: they show that the dredging and deposition activities will not have a significant effect on the SAC and SPA's features either alone or in-combination with other plans or projects.
- 3.6.6 Accordingly, the proposed dredging and disposal activities are not expected to pose a significant risk to the WFD protected areas in the Burry Inlet Outer coastal water body.

3.7 Conclusions

- 3.7.1** This WFD assessment has been undertaken in accordance with NRW's Complying with the WFD Regulations 2017: Guidance Note GN 078 (NRW, 2024). The assessment has found that the proposed dredging and deposition activities are not expected to pose a significant risk to the environmental receptors within the Burry Inlet Outer coastal water body and, therefore, it is concluded that the proposed dredging and deposition activities will not cause or contribute to deterioration of the status of the Burry Inlet Outer coastal water body and will not jeopardise compliance WFD objectives implemented via 2022 Western Wales RBD RBMP (NRW, 2022).



Burry Port Harbour - Maintenance Dredging and Disposal of Dredged Material: Habitats Regulations No Significant Effects Report

Table 2 - Screening for Significant Effects

Source	Pathway	Receptor(s)	Summary of Screening Assessment for a Significant Effect
Maintenance dredging activity in the Approach Channel and Outer Harbour, Burry Port Harbour	Dredging (removal) of accreted sediment leading to the physical change of habitat features	SAC: mudflats and sandflats (intertidal) and estuaries SPA: mudflats and sandflats (intertidal) and estuaries (as supporting habitats)	There will be no physical change to the range and negligible degradation of the structure and function of the habitats and, therefore, there will be no significant effect on the European sites either alone or in-combination with other plans and projects.
Maintenance dredging activity in the Approach Channel and Outer Harbour, Burry Port Harbour	Dredging (removal) of accreted sediment leading to the chemical change of habitat features	SAC: mudflats and sandflats (intertidal) and estuaries SPA: mudflats and sandflats (intertidal) and estuaries (as supporting habitats)	There will be no chemical change to the water and sediment quality conditions of these habitats and, therefore, there will be no significant effect on the European sites either alone or in-combination with other plans and projects.
Maintenance dredging activity in the Approach Channel and Outer Harbour, Burry Port Harbour	Dredging (removal) of accreted sediment leading to the disturbance of species features	SAC: otter	There is a limited potential pathway for the proposed dredging activity to disturb otter and, therefore, there will be no significant effect on the European site either alone or in-combination with other plans and projects.
Maintenance dredging activity in the Approach Channel and Outer Harbour, Burry Port Harbour	Dredging (removal) of accreted sediment leading to the disturbance of species features	SPA: oystercatcher, redshank, and waterbird assemblage	There will be negligible behavioural response by the waterbird species and/or assemblage (e.g., temporary displacement) and, therefore, there will be no significant effect on the European site either alone or in-combination with other plans and projects.
Deposition activity on Burry Port East Beach	Deposit of dredged material leading to the physical change of habitat features	SAC: mudflats and sandflats (intertidal) and estuaries SPA: mudflats and sandflats (intertidal) and estuaries (as supporting habitats)	There will be no physical change to the range and negligible degradation of the structure and function of the habitats and, therefore, there will be no significant effect on the European sites either alone or in-combination with other plans and projects.
Deposition activity on Burry Port East Beach	Deposit of dredged material leading to the disturbance of species features	SAC: otter	There is a limited potential pathway for the proposed deposition activity to disturb otter and, therefore, there will be no significant effect on the European site either alone or in-combination with other plans and projects.
Deposition activity on Burry Port East Beach	Deposit of dredged material leading to the disturbance of species features	SPA: oystercatcher, redshank, and waterbird assemblage	There will be negligible behavioural response by the waterbird species and/or assemblage (e.g., temporary displacement) and, therefore, there will be no significant effect on the European site either alone or in-combination with other plans and projects.



4 References

Calbrade, N.A., Birtles, G.A., Woodward, I.D., Feather, A., Hiza, B., Caulfield, E., Balmer, D.E., Peck, K., Wotton, S.R., Shaw, J.M., and Frost, T.M. (2025). Waterbirds in the UK 2023/24: The Wetland Bird Survey and Goose & Swan Monitoring Programme. BTO/RSPB/JNCC/NatureScot. Thetford.

Countryside Council for Wales (CCW) (2009). Carmarthen Bay and Estuaries / Bae Caerfyrddin ac Aberoedd European Marine Site. Advice Provided by the Countryside Council for Wales in Fulfilment of Regulation 33 of the Conservation (Natural Habitats, &C.) Regulations 1994. February 2009.

Joint Nature Conservation Committee (JNCC) (2019). Fourth Article 17 UK Habitats Directive Report. August 2019.

Natural Resources Wales (NRW) (2024). Complying with the WFD Regulations 2017: Guidance Note GN 078. December 2024.

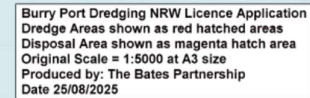
Natural Resources Wales (NRW) (2022). Western Wales River Basin District - River Basin Management Plan 2021-2027 Summary. July 2022.

The Bates Partnership (TBP) (2025a). Burry Port Harbour - Maintenance Dredging and Disposal of Dredged Material: Coastal Processes Assessment. Prepared on behalf of Carmarthenshire County Council. August 2025.

The Bates Partnership (TBP) (2025b). Burry Port Harbour - Maintenance Dredging and Disposal of Dredged Material: Coastal Processes Assessment. Prepared on behalf of Carmarthenshire County Council. August 2025.



Dredging Locations within the Approach Channel and Outer Harbour and Deposition Location on Burry Port East Beach





Burry Port Harbour - Maintenance Dredging and Disposal of Dredged Material: WFD Assessment Report

Approach Channel Dredging Area	Outer Harbour Dredging Area	Burrry Port East Beach Deposit Area
The dredging area for the Approach Channel is defined by the following OSGB coordinates (eastings and northings): • 244520.56 200157.90 • 244545.14 200153.24 • 244524.70 200134.93 • 244508.89 200120.62 • 244507.38 200114.22 • 244507.94 200108.14 • 244519.95 200095.29 • 244600.71 199641.94 • 244535.55 199629.91 • 244475.91 199949.68 • 244468.68 200011.92 • 244474.90 200027.24 • 244465.37 200052.93 • 244454.60 200110.50 • 244447.97 200158.55 • 244520.56 200157.90	The dredging area for the Outer Harbour is defined by the following OSGB coordinates (eastings and northings): • 244559.42 200167.38 • 244448.71 200167.38 • 244444.94 200234.41 • 244448.33 200300.31 • 244453.98 200354.91 • 244463.40 200401.98 • 244471.68 200428.72 • 244499.92 200427.21 • 244507.83 200413.66 • 244526.28 200415.54 • 244538.71 200423.07 • 244559.42 200423.07 • 244572.22 200412.53 • 244615.90 200398.97 • 244641.51 200380.14 • 244650.17 200365.08 • 244644.52 200334.96 • 244559.42 200167.38	The deposit area on Burry Port East Beach below mean high water on spring tides is defined by the following OSGB coordinates (eastings and northings): • 244982.42 200184.68 • 245228.38 200216.14 • 245505.80 200264.76 • 245992.00 200240.45 • 245987.71 200070.28 • 244968.12 200008.79 • 244982.42 200184.68



APPENDIX 2: SEDIMENT SAMPLING LOCATIONS (NRW SAMPLE PLAN SP2501)

Sediment Sampling Locations in the Outer Harbour (Samples A, B, C, D, E, K), Approach Channel (Samples F, G, H) and Burry Port East Beach (Sample J)





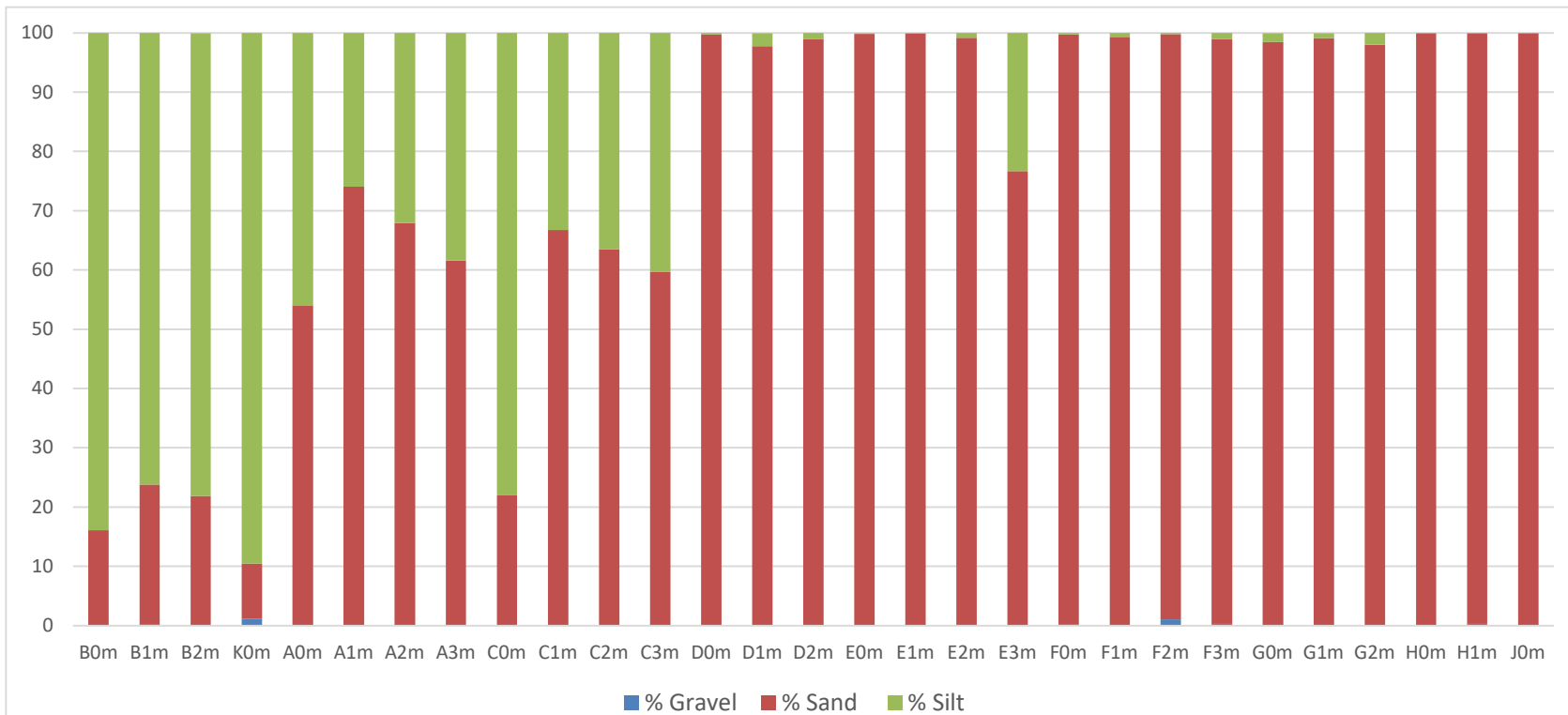
APPENDIX 3: PHYSICAL CHARACTERISATION OF DREDGED MATERIAL (NRW SAMPLE PLAN SP2501)

Sample ID	Location	Sediment Type	% Gravel (>2mm)	% Sand (0.063-2mm)	% Silt (<0.063mm)	Activity
A0m	Outer Harbour	Silty sand / sandy silt	0.05	54.02	45.93	Outside of dredging area
A1m	Outer Harbour	Silty sand / sandy silt	0.05	74.03	25.92	Outside of dredging area
A2m	Outer Harbour	Silty sand / sandy silt	0.05	67.86	32.1	Outside of dredging area
A3m	Outer Harbour	Silty sand / sandy silt	0	61.59	38.41	Outside of dredging area
B0m	Outer Harbour	Silt	0.12	15.98	83.9	Outside of dredging area
B1m	Outer Harbour	Silt	0.16	23.69	76.15	Outside of dredging area
B2m	Outer Harbour	Silt	0.09	21.77	78.13	Outside of dredging area
C0m	Outer Harbour	Silty sand / sandy silt	0.07	21.88	78.05	Outside of dredging area
C1m	Outer Harbour	Silty sand / sandy silt	0.02	66.76	33.22	Outside of dredging area
C2m	Outer Harbour	Silty sand / sandy silt	0.02	63.53	36.45	Outside of dredging area
C3m	Outer Harbour	Silty sand / sandy silt	0.05	59.65	40.3	Outside of dredging area
D0m	Outer Harbour	Sand	0.07	99.67	0.26	Dredging to -1.5m OD
D1m	Outer Harbour	Sand	0.02	97.76	2.21	Dredging to -1.5m OD
D2m	Outer Harbour	Sand	0.09	98.81	1.11	Dredging to -1.5m OD
E0m	Outer Harbour	Sand	0.04	99.8	0.15	Dredging to -1.5m OD
E1m	Outer Harbour	Sand	0.04	99.82	0.14	Dredging to -1.5m OD
E2m	Outer Harbour	Sand	0	99.19	0.81	Dredging to -1.5m OD
E3m	Outer Harbour	Sand	0	76.68	23.32	Dredging to -1.5m OD
F0m	Approach Channel	Sand	0.17	99.57	0.27	Dredging to -2.0m OD
F1m	Approach Channel	Sand	0.13	99.23	0.64	Dredging to -2.0m OD
F2m	Approach Channel	Sand	1.08	98.7	0.22	Dredging to -2.0m OD
F3m	Approach Channel	Sand	0.29	98.68	1.03	Dredging to -2.0m OD
G0m	Approach Channel	Sand	0.02	98.46	1.51	Dredging to -2.0m OD
G1m	Approach Channel	Sand	0.04	99.11	0.84	Dredging to -2.0m OD
G2m	Approach Channel	Sand	0.08	97.95	1.97	Dredging to -2.0m OD
H0m	Approach Channel	Sand	0.05	99.92	0.04	Dredging to -2.0m OD
H1m	Approach Channel	Sand	0.31	99.65	0.04	Dredging to -2.0m OD
K0m	Outer Harbour, Silt Area	Silt	1.15	9.35	89.5	Outside of dredging area
J0m	Burry Port East Beach	Sand	0.04	99.93	0.03	Deposit of dredged material



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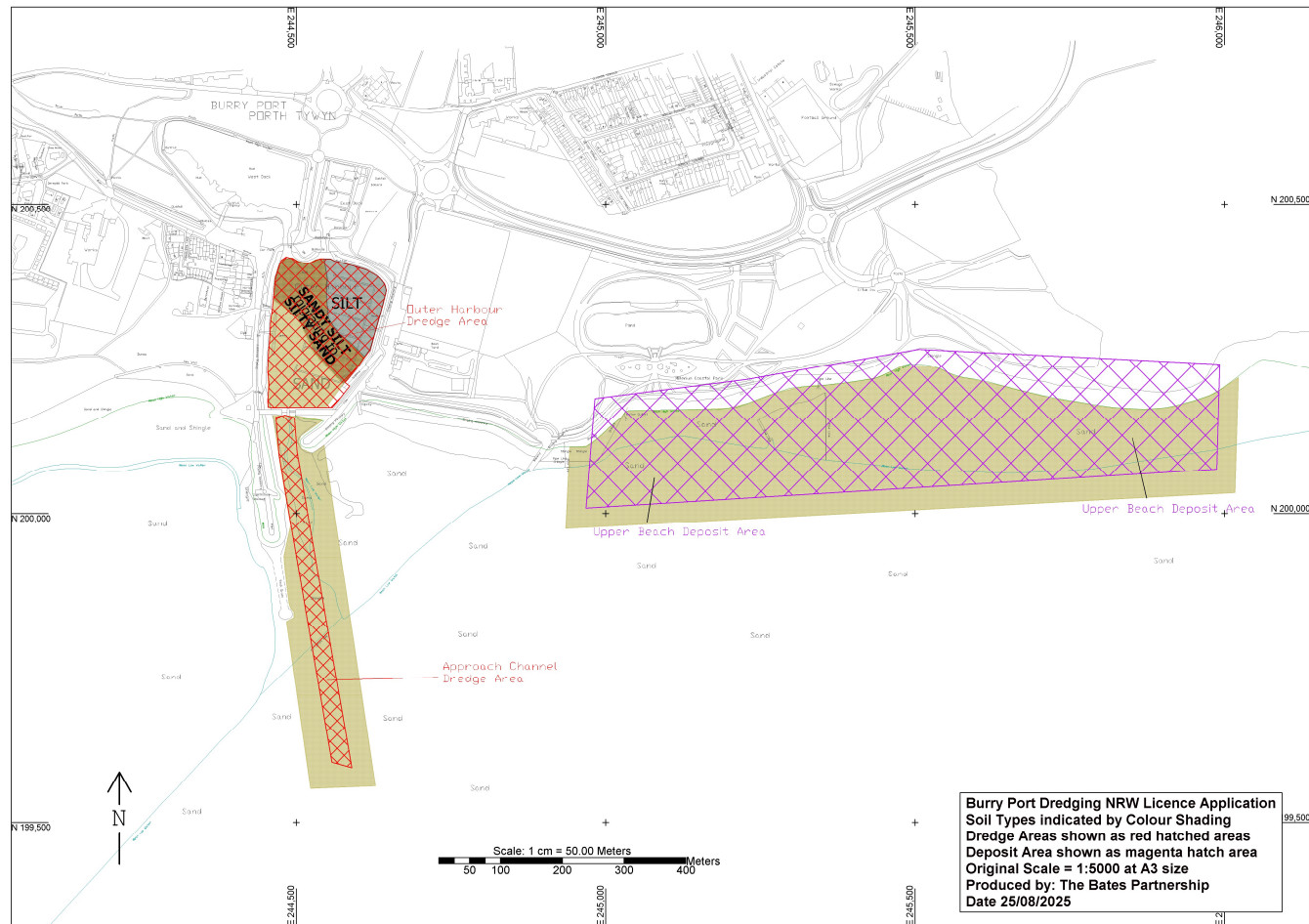
Dominant Sediment Type based on Particle Size Distributions: Silt in the Outer Harbour (Samples B, K), Silty Sand / Sandy Silt in the Outer Harbour (Samples A, C), Sand in the Outer Harbour (Samples D, E), Sand in the Approach Channel (Samples F, G, H) and Sand at Burry Port East Beach (Sample J)





Burry Port Harbour - Maintenance Dredging and Disposal of Dredged Material: WFD Assessment Report

Dominant Sediment Type based on Particle Size Distributions





APPENDIX 4: CHEMICAL CHARACTERISATION OF DREDGED MATERIAL (NRW SAMPLE PLAN SP2501)

Sediment Quality Criteria		Groups of Chemical Parameters		
		Metals	Organotins	PAHs
Cefas Action Levels	Cefas Action Level 1 (cAL1) and Cefas Action Level 2 (cAL2)	✓	✓	✓
US Effects Ranges	Effects Range Low (ERL) and Effects Range Median (ERM)	-	-	✓

Indicator	Data Comparison to Sediment Quality Criteria
	Data is either below cAL1 or below ERL
	Data is either between cAL1 and cAL2 or between ERL and ERM
	Data is either above cAL2 or above ERM
	Not applicable as there are no Cefas Action Levels or US Effects Ranges
	Not applicable as samples are outside of dredging area

Analyte Group	Analyte Abbreviations
Organotins	TBT (tributyltin), DBT (dibutyltin)
PAHs	ACENAPTH (acenaphthene), ACENAPHY (acenaphthylene), ANTHRACN (anthracene), BAA (benzo[a]anthracene), BAP (benzo[a]pyrene), BBF (benzo[b]fluoranthene), BEP (benzo[e]pyrene), BENZGHIP (benzo[ghi]perylene), BKF (benzo[k]fluoranthene), C1N (C1-naphthalenes), C1PHEN (C1-phenanthrene), C2N (C2-naphthalenes), C3N (C3-naphthalenes), CHRYSENE (chrysene), DBENZA (dibenzo[ah]anthracene), FLUORANT (fluoranthene), FLUORENE (fluorene), INDPYR (indeno[1,2,3-cd]pyrene), NAPTH (naphthalene), PERYLENE (perylene), PHENANT (phenanthrene), PYRENE (pyrene)
THC	THC (total hydrocarbons content)
LMW PAHs	ΣLMW PAHs (sum of low molecular weight PAHs comprising ACENAPTH (acenaphthene), ACENAPHY (acenaphthylene), ANTHRACN (anthracene), FLUORENE (fluorene), PHENANT (phenanthrene), NAPTH (naphthalene), C1N (C1-naphthalenes))
HMW PAHs	ΣHMW PAHs (sum of high molecular weight PAHs comprising CHRYSENE (chrysene), DBENZA (dibenzo[ah]anthracene), FLUORANT (fluoranthene), BAA (benzo[a]anthracene), BAP (benzo[a]pyrene), PYRENE (pyrene))



Burry Port Harbour - Maintenance Dredging and Disposal of Dredged Material: WFD Assessment Report

Sample ID	Metals (mg.kg ⁻¹)								Organotins (mg.kg ⁻¹)	
	Arsenic	Cadmium	Chromium	Copper	Mercury	Nickel	Lead	Zinc	DBT	TBT
A0m	7.7	0.08	10	4.1	0.03	8.9	10.1	40.4	<LOD	<LOD
A1m	7.4	0.1	10.2	5.2	0.06	9.3	11.3	45.8	<LOD	<LOD
A2m	6.9	0.08	10.5	4.5	0.04	10	10.5	55.6	<LOD	<LOD
A3m	8.2	0.11	12.2	8.1	0.07	11	15.6	56.4	<LOD	<LOD
B0m	12.1	0.25	26.6	20.4	0.1	24.3	34.2	114	<LOD	<LOD
B1m	12.1	0.25	23.4	19	0.08	19.9	30.2	102	<LOD	<LOD
B2m	13.5	0.27	27.7	22.2	0.1	22.6	36	120	<LOD	<LOD
C0m	14.5	0.28	30.2	20.8	0.11	25.2	37.7	128	<LOD	<LOD
C1m	7.5	0.12	12.8	7.2	0.04	11.7	14	74.7	<LOD	<LOD
C2m	8	0.11	11.8	7.2	0.04	10.8	13.1	52.8	<LOD	<LOD
C3m	7.4	0.1	11.8	6.8	0.02	10.4	14.4	52	<LOD	<LOD
D0m	7.5	<LOD	5.5	2.1	<LOD	6	4.7	22.3	<LOD	<LOD
D1m	7.3	0.05	6.5	2.6	<LOD	6.5	5.4	25.2	<LOD	<LOD
D2m	7.1	0.05	5.3	2.2	<LOD	5.2	5	23.6	<LOD	<LOD
E0m	7.8	<LOD	4.5	2	<LOD	5.2	4.5	20.1	<LOD	<LOD
E1m	7.8	<LOD	5	2.6	<LOD	5.4	4.7	20.7	<LOD	<LOD
E2m	7.2	<LOD	5	2.3	<LOD	5.3	4.8	21.5	<LOD	<LOD
E3m	7.8	0.09	9.1	4.1	0.02	8.4	9.9	42	<LOD	<LOD
F0m	7.5	<LOD	4.5	1.9	<LOD	5.1	4.6	20.5	<LOD	<LOD
F1m	7.7	<LOD	4.7	1.8	<LOD	5.4	4.5	21.4	<LOD	<LOD
F2m	7.1	0.05	6.5	2.4	<LOD	8.4	4.5	20	<LOD	<LOD
F3m	6.6	0.04	4.7	2.7	<LOD	5.6	4.8	26.4	<LOD	<LOD
G0m	7	0.05	5.6	2.3	<LOD	5.7	5.2	25.9	<LOD	<LOD
G1m	6.2	<LOD	5.3	1.7	<LOD	8.1	4.2	21.5	<LOD	<LOD
G2m	6.2	0.04	3.4	1.7	<LOD	4.4	4.5	20	<LOD	<LOD
H0m	7.5	0.05	5.7	2	0.01	7.7	5.1	20.1	<LOD	<LOD
H1m	6.8	0.04	5	2	<LOD	7.4	3.9	21.7	<LOD	<LOD
K0m	10.7	0.18	18.2	13.8	0.07	16.9	25.2	88.4	<LOD	<LOD
Cefas AL1	20	0.4	40	40	0.3	50	20	130	0.1	0.1
Cefas AL2	100	5	400	400	3	500	200	800	1	1



Burry Port Harbour - Maintenance Dredging and Disposal of Dredged Material: WFD Assessment Report

Sample ID	PAHs ($\mu\text{g.kg}^{-1}$)											
	ACENAPTH	ACENAPTHY	ANTHRAC	BAA	BAP	BBF	BENZGHIP	BEP	BKF	C1N	C1PHEN	C2N
A0m	4.77	4.97	9.71	42.3	49.9	55.8	41.3	43	48.7	36.2	46.2	31.3
A1m	12.7	6.91	16.5	40.8	42.9	44.9	31.4	35.4	42.1	32.6	82.2	33.9
A2m	2.71	<1	2.46	8.81	11.3	14.6	10.7	11.7	11.8	15	15.4	13.4
A3m	11.9	11	21.5	70.4	90.4	97.1	72.5	76	84.7	63.8	108	54.7
B0m	20.1	14.3	29.2	118	157	190	143	143	150	138	179	130
B1m	18	12.3	34.5	90	125	152	119	115	123	120	155	110
B2m	25.6	21.8	76.2	206	232	278	199	200	231	166	218	150
C0m	30.5	22.5	39	144	187	217	172	169	187	233	261	279
C1m	15.7	<LOD	16.7	50.7	63.7	65.1	51.8	55.7	60.3	54.3	64.9	50.9
C2m	20.2	7.57	25.1	62.2	78.5	87.5	63.8	65.1	69.8	64.9	74.7	55.2
C3m	14.9	<LOD	23.1	53.5	73.1	88.6	64.8	69.5	73.5	120	126	116
D0m	<LOD	<LOD	<LOD	2.2	2.6	3.39	2.65	1.26	3.19	1.56	<LOD	<LOD
D1m	<LOD	<LOD	<LOD	<LOD	1.49	2.17	1.84	1.66	1.58	2.46	2.97	1.67
D2m	<LOD	<LOD	<LOD	<LOD	<LOD	1.49	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
E0m	<LOD	<LOD	<LOD	1.26	1.56	1.79	1.45	1.48	2.16	2.28	2.22	1.19
E1m	<LOD	<LOD	<LOD	2	2.6	2.26	1.74	2.08	2.87	1.31	1.71	<LOD
E2m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	1.35	<LOD	1.96	1.92	1.47
E3m	3.69	4.25	8.46	21.5	30	36.4	24.3	28.1	33.8	26	58.3	25.4
F0m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	3.05	4.2
F1m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	1.99	1.21
F2m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
F3m	<LOD	<LOD	2.26	11.8	11.3	11.8	7.34	9.76	11.2	2.93	8.72	3.35
G0m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	1.41	1.69	1.29
G1m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
G2m	<LOD	<LOD	<LOD	1.34	1.26	2.2	1.57	1.59	1.82	2.28	2.78	1.7
H0m	<LOD	<LOD	<LOD	<LOD	1.44	1.76	1.46	1.59	2.29	2.01	1.39	1.47
H1m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
K0m	17.4	11.9	28.3	92.3	136	158	124	126	140	116	139	116
Cefas AL1	100	100	100	100	100	100	100	100	100	100	100	100
Cefas AL2	-	-	-	-	-	-	-	-	-	-	-	-



Burry Port Harbour - Maintenance Dredging and Disposal of Dredged Material: WFD Assessment Report

Sample ID	PAHs ($\mu\text{g}\cdot\text{kg}^{-1}$)										THC ($\mu\text{g}\cdot\text{kg}^{-1}$)
	C3N	CHRYSENE	DBENZAH	FLUORANT	FLUORENE	INDPYR	NAPTH	PERYLENE	PHENANT	PYRENE	
A0m	24.7	55.6	11.2	79.1	10.3	47.4	20.1	16.8	43.7	59.1	28.6
A1m	31.8	51.9	8.8	88.4	11.8	36.7	16.6	13.7	64.9	67.8	19.6
A2m	10.6	12.6	2.77	17.3	3.4	12.3	7.32	4.52	13.3	14.4	23.5
A3m	52.3	91.4	17.6	144	22	83.3	36.7	92.3	81	115	19.8
B0m	89.6	168	35.5	232	41.3	166	75.3	58.9	152	180	39.6
B1m	84.5	132	31.6	203	38.4	140	61.1	114	128	151	11.3
B2m	98.7	314	60	294	53.9	234	82	177	183	223	14.1
C0m	123	201	46	266	59.4	199	109	67.7	182	207	12.7
C1m	46.1	67.9	14.8	124	18.4	62.8	26.1	23.9	85.4	101	14.6
C2m	42.9	78.4	17.9	130	20.3	75.3	31.7	35.3	81.7	104	33.7
C3m	62.8	79.6	19.1	137	23.3	72.5	44.3	32.6	124	106	31
D0m	<LOD	2.37	1.81	2.24	<LOD	2.69	<LOD	<LOD	<LOD	2.39	<LOD
D1m	2.74	1.52	<LOD	2.05	<LOD	1.58	1.46	<LOD	2.18	2.02	1.26
D2m	<LOD	<LOD	<LOD	1.22	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	1.53
E0m	<LOD	1.99	<LOD	2.52	<LOD	1.34	<LOD	<LOD	2.64	2.22	3.03
E1m	1.25	2.41	<LOD	2.68	<LOD	1.73	<LOD	<LOD	<LOD	2.67	3.5
E2m	<LOD	<LOD	<LOD	1.44	<LOD	<LOD	<LOD	<LOD	1.49	1.5	1.13
E3m	22.8	42.8	5.65	83.9	9.76	26.9	13.1	13.4	89.7	59.2	19.7
F0m	3.52	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	2.04	<LOD	<LOD
F1m	1.22	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
F2m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
F3m	4.28	16.5	2.4	24.5	<LOD	7.89	1.38	3.07	5.1	17.3	2.95
G0m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	1.32	<LOD	<LOD
G1m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
G2m	1.36	1.84	<LOD	2.49	<LOD	<LOD	<LOD	<LOD	1.64	2.46	1.03
H0m	<LOD	1.91	<LOD	2.38	<LOD	<LOD	<LOD	<LOD	<LOD	2.27	<LOD
H1m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
K0m	71.5	143	28	198	33.6	130	66.4	46.2	132	154	49.4
Cefas AL1	100	100	100	100	100	100	100	100	100	100	-
Cefas AL2	-	-	-	-	-	-	-	-	-	-	-



Burry Port Harbour - Maintenance Dredging and Disposal of Dredged Material: WFD Assessment Report

Sample ID	LMW PAHs (µg.kg ⁻¹)							
	ACENAPTH	ACENAPTHY	ANTHRAC	FLUORENE	PHENANT	NAPTH	C1N	ΣLMW PAHs
A0m	4.77	4.97	9.71	10.3	43.7	20.1	36.2	129.75
A1m	12.7	6.91	16.5	11.8	64.9	16.6	32.6	162.01
A2m	2.71	<1	2.46	3.4	13.3	7.32	15	45.19
A3m	11.9	11	21.5	22	81	36.7	63.8	247.9
B0m	20.1	14.3	29.2	41.3	152	75.3	138	470.2
B1m	18	12.3	34.5	38.4	128	61.1	120	412.3
B2m	25.6	21.8	76.2	53.9	183	82	166	608.5
C0m	30.5	22.5	39	59.4	182	109	233	675.4
C1m	15.7	<LOD	16.7	18.4	85.4	26.1	54.3	217.6
C2m	20.2	7.57	25.1	20.3	81.7	31.7	64.9	251.47
C3m	14.9	<LOD	23.1	23.3	124	44.3	120	350.6
D0m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	1.56	7.56
D1m	<LOD	<LOD	<LOD	<LOD	2.18	1.46	2.46	10.1
D2m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	7
E0m	<LOD	<LOD	<LOD	<LOD	2.64	<LOD	2.28	9.92
E1m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	1.31	7.31
E2m	<LOD	<LOD	<LOD	<LOD	1.49	<LOD	1.96	8.45
E3m	3.69	4.25	8.46	9.76	89.7	13.1	26	154.96
F0m	<LOD	<LOD	<LOD	<LOD	2.04	<LOD	<LOD	8.04
F1m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	7
F2m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	7
F3m	<LOD	<LOD	2.26	<LOD	5.1	1.38	2.93	14.67
G0m	<LOD	<LOD	<LOD	<LOD	1.32	<LOD	1.41	7.73
G1m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	7
G2m	<LOD	<LOD	<LOD	<LOD	1.64	<LOD	2.28	8.92
H0m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	2.01	8.01
H1m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	7
K0m	17.4	11.9	28.3	33.6	132	66.4	116	405.6
US ERL	-	-	-	-	-	-	-	552
US ERM	-	-	-	-	-	-	-	3,160



Burry Port Harbour - Maintenance Dredging and Disposal of Dredged Material: WFD Assessment Report

Sample ID	HMW PAHs ($\mu\text{g.kg}^{-1}$)						
	CHRYSENE	DBENZAH	FLUORANT	BAA	BAP	PYRENE	Σ HMW PAHs
A0m	55.6	11.2	79.1	42.3	49.9	59.1	297.2
A1m	51.9	8.8	88.4	40.8	42.9	67.8	300.6
A2m	12.6	2.77	17.3	8.81	11.3	14.4	67.18
A3m	91.4	17.6	144	70.4	90.4	115	528.8
B0m	168	35.5	232	118	157	180	890.5
B1m	132	31.6	203	90	125	151	732.6
B2m	314	60	294	206	232	223	1329
C0m	201	46	266	144	187	207	1051
C1m	67.9	14.8	124	50.7	63.7	101	422.1
C2m	78.4	17.9	130	62.2	78.5	104	471
C3m	79.6	19.1	137	53.5	73.1	106	468.3
D0m	2.37	1.81	2.24	2.2	2.6	2.39	13.61
D1m	1.52	<LOD	2.05	<LOD	1.49	2.02	9.08
D2m	<LOD	<LOD	1.22	<LOD	<LOD	<LOD	6.22
E0m	1.99	<LOD	2.52	1.26	1.56	2.22	10.55
E1m	2.41	<LOD	2.68	2	2.6	2.67	13.36
E2m	<LOD	<LOD	1.44	<LOD	<LOD	1.5	6.94
E3m	42.8	5.65	83.9	21.5	30	59.2	243.05
F0m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	6
F1m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	6
F2m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	6
F3m	16.5	2.4	24.5	11.8	11.3	17.3	83.8
G0m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	6
G1m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	6
G2m	1.84	<LOD	2.49	1.34	1.26	2.46	10.39
H0m	1.91	<LOD	2.38	<LOD	1.44	2.27	10
H1m	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	6
K0m	143	28	198	92.3	136	154	751.3
US ERL	-	-	-	-	-	-	1,700
US ERM	-	-	-	-	-	-	9,600



APPENDIX 5: SCOPING THE WFD ASSESSMENT

Your activity	Description, notes or more information
Applicant name	Carmarthenshire County Council (CCC)
Application reference number (where applicable)	None to date
Name of activity	Maintenance dredging of Burry Port Harbour and deposition of dredged material on Burry Port East Beach
Brief description of activity	Maintenance dredging activity: maintenance dredging will be undertaken in 'dry' conditions (i.e., when the tide recedes) to remove sand that has accumulated in the Approach Channel and Outer Harbour at Burry Port Harbour using land-based plant (bulldozers, excavators, etc). Deposition activity: relocation of dredged material arising from maintenance dredging will be undertaken in 'dry' conditions to deposit sand on the upper foreshore of Burry Port East Beach using land-based plant (i.e., tipper / dumper trucks), from where the sand will be integrated back into the water body's sediment system (i.e., when the tide advances).
Location of activity (central point XY coordinates or national grid reference)	See Appendix 1 of this WFD Assessment Report.
Footprint of activity (ha)	Maintenance dredging activity: the direct footprint aligns with the dredge areas of the Approach Channel (1.7039 hectares) and Outer Harbour of Burry Port Harbour (1.2828 hectares) = 2.9867 hectares. There will be no extended indirect footprint associated with a sediment plume because dredging will be undertaken in 'dry' conditions. Deposition activity: the direct footprint aligns with the estimated deposit area below MHWS on the upper foreshore of Burry Port East Beach that is expected to result from one day's dredging on the basis that wave action on the following high tide or tides will redistribute the deposited dredged material = 0.11 hectares. There will be no extended indirect footprint associated with a sediment plume because sustainable relocation will be undertaken in 'dry' conditions. In-combination / cumulative activities: the combined footprint = 3.0967 hectares.
Timings of activity (including start and finish dates)	Maintenance dredging and deposition activities will take place simultaneously. comprise one campaign of maintenance dredging of the Approach Channel and part of the Outer Harbour and associated dredged material deposition on Burry Port East Beach. Dredging and deposition are expected to be undertaken for approximately 7 hours per day (3 to 3.5 hours either side of low water), 7 days per week. The dredging rate is expected to be approximately 1,500m³ per day, if using two dredge spreads (i.e., 2 excavators and 4 dumper trucks), equating to approximately 47 days (±5 days) to remove approximately 70,000m³ of sediment to restore the bed depth within the Approach Channel to -2mOD and Outer Harbour to -1.5mOD. Depending on the tidal states at the time, the dredging and deposition activity may not all be completed in one continuous period but may be split into two or more campaigns to make best use of the most suitable tides and daylight hours.
Extent of activity (for example size, scale frequency, expected volumes of output or discharge)	
Use or release of chemicals (state which ones)	The proposed activity does not include the use or release of chemicals.

¹ Water body information can be found in the Environment Agency's catchment data explorer and the water body summary table. Magic maps provide additional information on habitats and protected areas. Links to these information sources can be found in the WFD assessment guidance for estuarine and coastal waters.



Section 1: Hydromorphology

Consider if your activity:	Yes	No	Hydromorphology risk issue(s)
Could impact on the hydromorphology (for example morphology or tidal patterns) of a water body at high status		Impact assessment not required	Maintenance dredging activity: no, because although the water body is at high status, the sediment removed by the activity would maintain the water body's hydromorphology (i.e., the water depths for navigation) within the Approach Channel and Outer Harbour. Deposition activity: no, because although the water body is at high status, the sediment deposited by the activity would be returned to the sediment system from which it originated, thereby helping to maintain Burry Inlet's sediment budget and the water body's hydromorphology. In-combination / cumulative activities: no, for the reasons stated above.
Could significantly impact the hydromorphology of any water body		Impact assessment not required	As above.
Is in a water body that is heavily modified for the same use as your activity		Impact assessment not required	Maintenance dredging activity, deposition activity, in-combination / cumulative activities: no, because the activity(ies) does not take place in a water body that is heavily modified.

Section 2: Biology

Higher sensitivity habitats ²	Lower sensitivity habitats ³
chalk reef	cobbles, gravel and shingle
clam, cockle and oyster beds	intertidal soft sediments like sand and mud
intertidal seagrass	rocky shore
maerl	subtidal boulder fields
mussel beds, including blue and horse mussel	subtidal rocky reef
polychaete reef	subtidal soft sediments like sand and mud
saltmarsh	
subtidal kelp beds	
subtidal seagrass	

² Higher sensitivity habitats have a low resistance to, and recovery rate, from human pressures.

³ Lower sensitivity habitats have a medium to high resistance to, and recovery rate from, human pressures.



Burry Port Harbour - Maintenance Dredging and Disposal of Dredged Material: WFD Assessment Report

Consider if the footprint ⁴ of your activity is:	Yes	No	Biology habitats risk issue(s)
0.5km ² or larger		Impact assessment not required	Maintenance dredging activity, deposition activity, in-combination / cumulative activities: no, because the footprints of the activities (2.9867 hectares, 0.11 hectares, 3.0967 hectares respectively) will be less than 0.5km ² .
1% or more of the water body's area		Impact assessment not required	Maintenance dredging activity, deposition activity, in-combination / cumulative activities: no, because the footprints of the activities (2.9867 hectares, 0.11 hectares, 3.0967 hectares respectively) will be less than 1% of the water body's area (7,729.7 hectares).
Within 500m of any higher sensitivity habitat	Requires impact assessment		Maintenance dredging activity, deposition activity, in-combination / cumulative activities: yes, because the activities will be within 500m of a higher sensitivity habitat (mussel bed and/or saltmarsh).
1% or more of any lower sensitivity habitat		Impact assessment not required	Maintenance dredging activity, deposition activity, in-combination / cumulative activities: no, because the footprints of the activities (2.9867 hectares, 0.11 hectares, 3.0967 hectares respectively) will not affect 1% or more of a lower sensitivity habitat (intertidal soft sediment).

⁴ Note that a footprint may also be a temperature or sediment plume. For dredging activity, a footprint is 1.5 times the dredge area.

Consider if your activity:	Yes	No	Biology fish risk issue(s)
Is in an estuary and could affect fish in the estuary, outside the estuary but could delay or prevent fish entering it or could affect fish migrating through the estuary		Impact assessment not required	Maintenance dredging activity, deposition activity, in-combination / cumulative activities: no, because the activities will take place in 'dry' conditions such that there will be no risk pathway relating to fish migration.
Could impact on normal fish behaviour like movement, migration or spawning (for example creating a physical barrier, noise, chemical change or a change in depth or flow)		Impact assessment not required	Maintenance dredging activity, deposition activity, in-combination / cumulative activities: no, because the activities will take place in 'dry' conditions such that there will be no risk pathway relating to fish behaviour.
Could cause entrainment or impingement of fish		Impact assessment not required	Maintenance dredging activity, deposition activity, in-combination / cumulative activities: no, because the activities will take place in 'dry' conditions such that there will be no risk pathway relating to fish entrainment or impingement.



Burry Port Harbour - Maintenance Dredging and Disposal of Dredged Material: WFD Assessment Report

Section 3: Water quality

Consider if your activity:	Yes	No	Water quality risk issue(s)
Could affect water clarity, temperature, salinity, oxygen levels, nutrients or microbial patterns continuously for longer than a spring neap tidal cycle (about 14 days)		Impact assessment not required	Maintenance dredging activity, deposition activity, in-combination / cumulative activities: no, because although the activities will last for longer than a spring neap tidal cycle (about 14 days), they will take place in 'dry' conditions such that there will be no risk pathway relating to water clarity, temperature, salinity, oxygen levels, nutrients or microbial patterns.
Is in a water body with a phytoplankton status of moderate, poor or bad		Impact assessment not required	Maintenance dredging activity, deposition activity, in-combination / cumulative activities: no, because although the activities will take place in a water body which has a phytoplankton status of 'moderate', they will take place in 'dry' conditions such that there will be no risk pathway relating to phytoplankton status.
Is in a water body with a history of harmful algae		Impact assessment not required	Maintenance dredging activity, deposition activity, in-combination / cumulative activities: no, because although the activities will take place in a water body which is monitored for harmful algae, they will take place in 'dry' conditions such that there will be no risk pathway relating to harmful algae.

If your activity uses or releases chemicals (for example through sediment disturbance or building works) consider if:	Yes	No	Water quality risk issue(s)
The chemicals are on the Environmental Quality Standards Directive (EQSD) list		Impact assessment not required	Maintenance dredging activity, deposition activity, in-combination / cumulative activities: no, because the activities will not use chemicals on the (EQSD) list.
It disturbs sediment with contaminants above Cefas Action Level 1		Impact assessment not required	Maintenance dredging activity, deposition activity, in-combination / cumulative activities: no, because the activities will not disturb sediment with contaminants at concentrations above Cefas Action Level 1.

If your activity has a mixing zone (like a discharge pipeline or outfall) consider if:	Yes ⁵	No	Water quality risk issue(s)
The chemicals released are on the Environmental Quality Standards Directive (EQSD) list		Impact assessment not required	Maintenance dredging activity, deposition activity, in-combination / cumulative activities: no, because the activities will not have a mixing zone as per a permitted discharge or similar from a pipeline or outfall.

⁵ Carry out your impact assessment using the Environment Agency's surface water pollution risk assessment guidance, part of Environmental Permitting Regulations guidance.



Burry Port Harbour - Maintenance Dredging and Disposal of Dredged Material: WFD Assessment Report

Section 4: WFD protected areas

Consider if your activity is:	Yes	No	Protected areas risk issue(s)
Within 2km of any WFD protected area ⁶	Assessment required		Maintenance dredging activity, deposition activity, in-combination / cumulative activities: yes, because the activities will take place within 2km of the Burry Inlet SPA and Ramsar site, Carmarthen Bay and Estuaries SAC, Carmarthen Bay Dunes SAC, and Bristol Channel Approaches SAC. Maintenance dredging activity, deposition activity, in-combination / cumulative activities: no, because although the activities will take place within 2km of the Burry Inlet North Shellfish Water, they will take place in 'dry' conditions such that there will be no risk pathway to water quality within the shellfish water. Maintenance dredging activity, deposition activity, in-combination / cumulative activities: no, because the activities will not take place within 2km of a bathing water.

⁶ Note that a regulator can extend the 2km boundary if your activity has an especially high environmental risk.

Section 5: Invasive non-native species (INNS)

Consider if your activity could:	Yes	No	INNS risk issue(s)
Introduce or spread INNS		Impact assessment not required	Maintenance dredging activity, deposition activity, in-combination / cumulative activities: no, because the land-based plant used to dredge, transport and deposit the dredged material will only work in 'dry' conditions and, on this basis, will not have been used in or travelled through other water bodies.

Summary

Receptor	Potential risk to receptor?	Note the risk issue(s) for impact assessment
Hydromorphology	No	
Biology: habitats	Yes	Maintenance dredging activity, deposition activity, in-combination / cumulative activities may pose a risk to a WFD higher sensitivity habitat because the activities will be within 500m of mussel bed and/or saltmarsh habitats.
Biology: fish	No	
Water quality	No	
Protected areas	Yes	Maintenance dredging activity, deposition activity, in-combination / cumulative activities may pose a risk to a WFD protected area because they will take place within 2km of the Burry Inlet SPA and Ramsar site, Carmarthen Bay and Estuaries SAC, Carmarthen Bay Dunes SAC, and Bristol Channel Approaches SAC.
Invasive non-native species	No	



APPENDIX 6: SPATIAL EXTENT OF HIGHER SENSITIVITY WFD HABITATS

Spatial Extent of the Higher Sensitivity WFD Habitats at and around Burry Port (source: magic.defra.gov.uk; accessed 26-08-2025)



