Ardersier Port
Construction Environmental Management Document (CEMD) v2.2

January 2024

CONTROL SHEET

Client:	Ardersier Port (Scotland) Ltd
Project Title:	Ardersier Port
Report Title:	Construction Environmental Management Document (CEMD) v2.2
Document number:	n/a
Project number:	679083

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Date of issue:	21/09/2018

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Amendment Record

Variation	Amended By	Reviewer	Amendments	Issue Date
2	Mike Coleman, Kathy Dale, Matt Sullivan, C Fleming	Emma Cormack	The use of a small dredger included.	13/05/2022
2.1	Emma Cormack	N/A	CEMD reviewed against current development proposals and updated	26/01/2024
			Section 3.2.3 amended to include a requirement to report to both AP and THC PA on a monthly basis during construction.	21/03/2024
2.2	Emma Cormack	N/A	Inclusion of Section 2.5.3.3 Saltmarsh Protected Area Measures.	16/07/2024
			Update to Appendix E, Construction Pollution Prevention Plan – Bullets 2, 8 & 9.	
			Update to Appendix E, Construction Pollution Prevention Plan – Lighting wording amended to “Lighting should be angled or otherwise arranged so as not to illuminate waterbodies or woodland.”	
			Insertion of Appendix L, Protocol for Dredging or Other Works Between Ardersier Port and MOD Firing Range, Fort George	
			Construction Traffic Management Plan incorporated as Appendix M and reference to the plan incorporated in Section 2.5.2.1.	

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1 OVERVIEW

1.1 Introduction

This Construction Environmental Management (CEM) Document has been produced by EnviroCentre Ltd on behalf of Ardersier Port (Scotland) Ltd (AP), to facilitate environmental management during construction activities associated with the quay wall reinstatement and capital dredging activities.

The design and construction methodology of both the capital dredge and quay wall re-instatement has been updated since the previous version (Version 1, dated 13/05/2022) of the CEMD. The main changes to the dredge is to achieve an increase in seabed depth of -12.9CD in the approach and harbour area whilst ensuring the predator free island is maintained. As a result, the design of the quay wall has been amended to ensure the structure is capable of bearing the weight from a deeper dredged channel. In addition, the quay wall construction methodology takes cognisance of the environmental sensitivity of the site and will now be constructed on land.

1.2 Legislative Requirements

AP, as the licence holders, have a duty to ensure that any construction activities do not contravene the environmental conditions of the Planning Permission, Harbour Revision Orders and Dredging and Construction Marine Licenses, which approved the development proposals. Any contractors or site personnel employed to undertake construction works on behalf of AP therefore need to understand the environmental requirements of these licenses to ensure the works remain compliant with the conditions.

A list of these licenses approving the construction and capital dredging works are:

- The Port of Ardersier Harbour Revision Order 2014;
- Marine Scotland (MS) licence 04850/14/0 – Licence for Marine Construction Works and Deposits of Substances or Objects in the Scottish Marine Area, and subsequent licenses;
- MS licence 04851/16/0 – Licence for the Act of Dredging and Sea Disposal of Dredged Spoil in the Scottish Marine Area, and subsequent licenses;
- The Highland Council Planning Permission in Principle Decision Notice (reference no: 13/01689/PIP), and subsequent permissions; and
- European Protected Species License – Dredging and Vibro-piling (EPS 06 2019/00009480).

As dictated by the *Port of Ardersier Harbour Revision Order (2014), Paragraphs 35 (1) – (9)*, a Construction Environmental Management (CEM) Document is required to be signed off by Scottish Ministers ahead of commencement of development of the Port.

1.3 Ecological Management Group

The Ecological Management Group (EMG) advises AP on delivering the implementation of mitigation measures set out in the CEM Document during the construction of the Port as required by *Port of Ardersier Harbour Revision Order (2014), Paragraphs 2 (1) – (4)*.

The EMG meets on a quarterly basis with regulatory and statutory bodies as well as other relevant organisations and individuals being invited as listed below:

- Ardersier Port Limited;

- The Highland Council (THC);
- Martine Directorate – Licensing Operations Team (MD-LOT);
- NatureScot (formally Scottish Natural Heritage (SNH));
- Scottish Environment Protection Agency (SEPA);
- The Royal Society for the Protection of Birds (RSPB);
- Whale and Dolphin Conservation (WDC);
- Ardersier and Petty Community Council (APCC); and
- The Ministry of Defence (MOD).

1.4 Construction Environmental Management Document

1.4.1 Introduction

The Construction Environmental Management (CEM) Document has been produced in accordance with The Highland Council Guidance Note on Construction Environmental Management Process for Large Scale Projects (August 2010). This Guidance Note sets out a robust Project Environmental Management Process (PEMP) for large scale projects. It describes the CEM Document as one of the key management tools for highlighting site sensitivities along with appropriate mitigation measures identified through various environmental studies as well as incorporating other requirements from consents and licences. It also provides a clear roadmap of the key roles and responsibilities of AP and the Contractor during construction works.

1.4.2 Site Specific Mitigation Plans

This CEM Document contains the following site-specific mitigation plans as stipulated within the licenses noted in Section 1.2:

- Archaeological Reporting Protocol;
- Habitat Management Plan (referred to in Appendix C as the Natural Heritage Management Scheme);
- Marine Mammal Protection Plan;
- Pollution Prevention Plan;
- Dust Management Plan;
- Noise & Vibration Plan;
- Site Waste Management Plan; and
- Sediment Transport Monitoring Plan.

Table 1.1 provides a signpost to where the above site-specific mitigation plans can be found within the CEM Document.

Table 1-1: Signpost to Locate Specific Mitigation Plans

Specified Information	**Location within CEMD**
The Port of Ardersier Harbour Revision Order 2014 - Article 36 (3)	
a) an updated schedule of mitigation	Section 4
b) processes to control and action changes from the agreed schedule of mitigation	Section 3.9
c) the following specific Construction and Environmental Management Plans: i) habitat management plan; ii) spit habitat protection and enhancement plan; iii) marine mammal protection plan;	 Appendix C Appendix C Appendix D

Specified Information	Location within CEMD
(iv) pollution prevention plan; (v) dust management plan; (vi) noise and vibration mitigation plan; (vii) site waste management plan; and (viii) sediment transport monitoring plan	Appendix E Appendix F Appendix G Appendix H Appendix I
d) details of the appointment of an appropriately qualified Environmental Clerk of Works with roles and responsibilities	Section 3.2
e) methods of monitoring, auditing, reporting and communication of environmental management on site and with the client, Scottish Ministers and other relevant parties	Section 3
f) statement of responsibility to 'stop the job or activity' if a potential breach of a mitigation measure or legislation occurs	Section 3.2.2, 3.2.4.1 and 3.2.4.2.
04851/16/0 LICENCE FOR THE ACT OF DREDGING AND SEA DISPOSAL OF DREDGED SPOIL IN THE SCOTTISH MARINE AREA - Condition 1	
a) Mitigation measures against the introduction of marine non-native species	Appendix C
b) Environmental Method Statements (EMS)	Section 2
c) Pollution prevention and management measures, including air and water pollution	Appendix E
d) A Reporting Protocol which sets out what the Licensee must do on discovering any marine archaeology	Appendix B
e) A Dredging Programme and measures for description of the proposed dredging works, the mitigation to be deployed and how this relates to the sediment transport management plan	Section 2
f) A Marine Mammal Protection Programme (MMPP) including a Vessel Management Programme (VMP) Seal Injury Avoidance Scheme (SIAS)	Appendix D
g) A Marine Mammal Observation Protocol (MMOP)	Appendix D
h) A Marine Mammal Monitoring Programme (MMMP)	Appendix D
i) A Habitat Management Plan (HMP) including a Spit Habitat Protection and Enhancement Plan	Appendix C
j) Definition of the methods to be deployed for the 'Sediment Transport Monitoring Plan'.	Appendix I
04850/14/0 LICENCE FOR MARINE CONSTRUCTION WORKS AND DEPOSITS OF SUBSTANCES OR OBJECTS IN THE SCOTTISH MARINE AREA - Condition 2	
a) Mitigation measures against the introduction of marine non-native species	Appendix C
b) Environmental Method Statements (EMS)	Section 2
c) Pollution prevention and management measures, including air and water pollution	Appendix E
d) A Reporting Protocol which sets out what the Licensee must do on discovering any marine archaeology	Appendix B
e) A Marine Mammal Protection Programme (MMPP) including a Vessel Management Programme (VMP) Seal Injury Avoidance Scheme (SIAS).	Appendix D
f) A Marine Mammal Observation Protocol (MMOP)	Appendix D
g) A Marine Mammal Monitoring Programme (MMMP)	Appendix D
h) A Habitat Management Plan (HMP) including a Spit Habitat Protection and Enhancement Plan	Appendix C
i) Definition of the methods to be deployed for the 'Sediment Transport Monitoring Plan'.	Appendix I
PLANNING PERMISSION IN PRINCIPLE Reference No:18/04552/PIP	
Condition 6	Section 4

Specified Information	Location within CEMD
• An updated Schedule of Mitigation (SM) including all mitigation proposed in support of the planning application, other relevant agreed mitigation (e.g. as required by agencies) and set out in the relevant planning conditions	
• Processes to control / action changes from the agreed Schedule of Mitigation	Section 3.9
• The following specific Construction and Environmental Management Plans: i) habitat management plan; ii) spit habitat protection and enhancement plan; iii) marine mammal protection plan; (iv) pollution prevention plan; (v) dust management plan; (vi) noise and vibration mitigation plan; (vii) site waste management plan; and (viii) sediment transport monitoring plan	 Appendix C Appendix C Appendix D Appendix E Appendix F Appendix G Appendix H Appendix I
• Details of the appointment of an appropriately qualified Environmental Clark of Works with roles and responsibilities.	Section 3.2
• Methods of monitoring, auditing, reporting and communication of environmental management on site and with the client, Planning Authority and other relevant parties.	Section 3
• Statement of responsibility to 'stop the job / activity' if in potential breach of a mitigation or legislation occurs.	Section 3.2.2, 3.2.4.1 and 3.2.4.2.

1.4.3 Schedule of Mitigation

A Schedule of Mitigation (SM) brings together all the identified mitigation measures to avoid or minimise the environmental effects of the development. It sets out in broad terms how mitigation can be appropriately managed and implemented during construction. The SM is based on general good management practises along with the measures identified through site specific environmental studies.

The measures identified in the SM are not exhaustive and appropriate mitigation shall be identified as required by the Contractor to ensure the environment is protected.

The Ardersier Port Schedule of Mitigation is provided within Section 4 of this document.

1.5 Construction Environmental Management Plans

As noted above, the CEM Document is the overarching document which highlights the arrangements for environmental management at a high level.

The information and procedures provided in this CEM Document shall be used to develop detailed Construction Environmental Management Plans (CEM Plans) for each specific construction phase. These CEM Plans shall provide focused mitigation and control measures relevant to the specific construction activity in order to ensure the environment is protected during the construction works. The CEM Plans shall incorporate, but not be limited to, the identified mitigation measures detailed within the SM. If the proposed construction works are within or have a significant likelihood of impacting on sensitive areas, the CEM Plan's shall be submitted to the relevant Regulatory Authority (i.e. THC and / or MD-LOT) for approval prior to works commencing.

The CEM Plan's are working documents which shall be regularly reviewed and updated throughout the lifetime of the individual construction project in accordance with the procedures detailed in this document and the relevant planning permissions.

2 PROJECT OVERVIEW

2.1 Site Description

Ardersier Port is located on the former McDermott Fabrication Yard, which lies some 7.5km to the west of Nairn, 18km northeast of Inverness and 3km northeast of the village of Ardersier and is centred on grid reference NH812 576.

The site is bounded by the Moray Firth to the north; extensive undeveloped sand and mudflats, known as the Carse of Delnies to the east; Case Wood to the south; and a widespread area of sand dunes and tidal mudflats to the west. To the south west of the site lies the boundary of Fort George owned by the Ministry Of Defence.

The site extends to some 307 hectares, and includes a 1,000 metre long quay which is protected by naturally occurring long sand and shingle spit, salt marsh and dunes.

The spit known as Whiteness Head shelters the main part of the port. The majority of the site was reclaimed using dredged sand that was levelled behind a steel pile retaining wall at approximately 4.5m above ordnance datum (OD).

Access to the site is gained via a dedicated 2.5 km long access road, which links to the B9092 to the south. The B9092 subsequently links with the A96, which is the main transport link between Inverness and Aberdeen.

2.2 Site History

Following reclamation, the site was developed for industrial use as the McDermott Fabrication Yard, which specialised in the fabrication and construction of off-shore platforms used in the development of the North Sea oil and gas industry. Fabrication activities ceased at the site in 2001 and the site has subsequently been remediated and cleared. At its height, the fabrication yard employed approximately 4,500 people.

Since the fabrication yard closed in 2001, there have been a number of proposals brought forward to redevelop the site. In 2014 planning permission in principle was granted to establish a port and port related services for energy related uses. At the same time, marine construction and dredging licenses and a Harbour Revision Order were also granted. The landowner at that time however went into administration in 2015.

The port and its holdings were acquired by CWC Group in July 2016 and an application to renew the 2014 planning permission and associated marine licenses were approved in 2019. The 2014 Harbour Revision Order was transferred to the then landowner in 2017.

2.3 Site Sensitivities

2.3.1 Environmental Sensitivities

The surrounding area contains several designations within a 5 km radius, as illustrated within Drawing No. 679083-GIS001, Appendix A. These include the following:

- Moray Firth Special Area of Protection (SPA). The site lies within this SPA and it extends north of the site. It is designated for Common Eider (*Somateria mollissima*), Common Goldeneye (*Bucephala clangula*), Common Scoter (*Melanitta nigra*), Great Northern Diver (*Gavia immer*) , Greater Scaup (*Aythya marila*), Long-tailed Duck (*Clangula hyemalis*), Red-breasted Merganser (*Mergus serrator*), Red-throated Diver (*Gavia stellata*), Slavonian Grebe (*Podiceps auratus*), Velvet Scoter (*Melanitta fusca*) and European Shag (*Gulosus aristotelis*).
- Inner Moray Firth Special Area of Protection (SPA). The site lies within this SPA and it extends north of the site. It is designated for Common Tern (*Sterna hirundo*), Osprey (*Pandion haliaetus*), Bar-tailed Godwit (*Limosa lapponica*), Greylag Goose (*Anser anser*), Red-breasted Merganser, Redshank (*Tringa totanus*), Greater Scaup, Eurasian Curlew (*Numenius arquata*), Goosander (*Mergus merganser*), Common Goldeneye, Teal (*Anas crecca*), Wigeon (*Anas Penelope*), and Great Cormorant (*Phalacrocorax carbo*).
- Whiteness Head Site of Special Scientific Interest (SSSI). The site encompasses this SSSI, which is designated for coastal geomorphology, coastal features (saltmarsh, sand dunes and shingle), marine features (sandflats), Bar-tailed Godwit, and Knot (*Calidris canutus*).
- Moray Firth Special Area of Conservation (SAC). This SAC bounds the site to the north and is designated for subtidal sandbanks and bottlenose dolphins.
- Dornoch Firth and Morrich More SAC. This SAC lies 24 km north of the site and is designated for many habitat and vegetation interests, however due to the easterly direction of coastal process at Ardersier, and the distance between the two sites, there is not considered to be any habitat connectivity. With regard to winter dredging, the designated feature of note is the harbour seal.
- River Moriston SAC. This SAC lies 55 km southwest of the site and is designated for Atlantic salmon and freshwater pearl mussel, however there is no habitat connectivity between this SAC and Ardersier Port for Freshwater pearl mussel.

Other aspects of the environment within the harbour with the potential to be affected by dredging operations include:

- Salmonids;
- Marine mammals;
- Otter;
- Wildfowl;
- Terns;
- Waders;
- European Shag; and
- Whooper Swan (*Cygnus cygnus*).

2.3.2 Ministry of Defence (MOD) Restrictions

The Fort George MOD facility is located to the southwest of the site. Associated with this facility is a Practice and Exercise Area (PEXA) which is a zone of danger therefore any port work is prohibited in this area without authorisation. This area in relation to the port boundary is shown in Drawing no 679083-GIS002, Appendix A.

Should a contractor identify the need to enter the MOD prohibited area, then this should be discussed with AP. AP shall then liaise directly with the MOD to obtain access consent in accordance with the agreed protocol (Refer to Appendix L). No work may occur within this area until authorisation is received.

2.4 Proposed Construction Works

2.4.1 Introduction

It is the intention of AP to improve the ports current infrastructure, so it becomes a modernised port facility equipped to support the emerging blue economy industries. Primarily this will be focused on offshore windfarms but other blue economy industries may be considered in the future once the modernised port is established.

In order to modernise the port for this purpose replacement / improvement of the existing quay, establishment of a large laydown area with associated infrastructure (i.e. security, buildings, welfare facilities etc) and capital dredging is required.

2.4.2 Quay Wall Construction

2.4.2.1 Original Design

The original proposal as authorised by the 2019 Marine Construction License was to reinstate the quay wall with sheet piles. Only vibro-piling was to be used with no impact piling. In the area of the new extension, a temporary access bund was to be placed along the quay wall to allow piles to be driven through the bund. The method of constructing the quay was to involve initial construction of bunds but it was envisaged that this would be land based.

2.4.2.2 Current Design

Since then, the quay wall has been redesigned and it is now proposed it will comprise a reinforced concrete piled diaphragm wall (d-wall) as shown in Drawing No 294067-ARUP-Z1-XX-SK-CG-000120 and 294067-ARUP-Z1-XX-DR-CG-006021, Appendix A.

The anchor and quay wall forming the d-wall would comprise of concrete panels cast in situ into existing ground with the closest point being 10 meters to the existing quay wall. Once both walls are constructed sheet piles would be installed at either end of the new reinforced concrete piled diaphragm wall to provide stability. The material in between the newly installed quay and anchor wall would then be excavated to the required depth to install the tie rods then the area would be backfilled.

Once the d-wall is constructed the sheet piles forming the old quay wall are removed through vibro-piling techniques (an example of this is shown here https://www.youtube.com/shorts/Kxx8QUIFA-Q?app=desktop;). Capital dredging works would then commence.

2.4.2.3 Environmental Constraints

The main matters when constructing the d-wall are identified as being:

- Pollution of the water environment;
- Protect the qualifying features of the designated areas; specifically bird species; and
- Airborne noise and construction dust.

The contractor shall compile a CEM Plan detailing appropriate mitigation measures to minimise the impact of the construction works on the surrounding environment. The CEM Plan is to take account of

the Schedule of Mitigation in Section 4 of this CEMD. The CEM Plan is to be submitted to the regulatory bodies for approval prior to construction works commencing.

No work within 250m of roost sites or the predator free island shall be undertaken during the winter months i.e. October to March.

The construction of the new quay wall is entirely land-based therefore there will be minimal impact on marine mammals from underwater noise. The removal of the existing old quay wall will be undertaken in accordance with the marine construction license.

2.4.3 Capital Dredging Campaign

2.4.3.1 Overview

The capital dredge campaign aims to deepen the port entrance and harbour to a sufficient depth to enable vessels to access the quay. The dredge area is shown in Drawing No 294067-ARUP-Z1-XX-SK-CG-000120, Appendix A. A large Cutter Suction Dredger (CSD) shall be used during a summer campaign to undertake the capital dredge. The dredged material is to be transported to land via a pipe and discharged to settlement lagoons before being recovered and stockpiled on site.

A dredging method statement shall be provided by the dredger contractor and submitted to MD-LOT for approval prior to dredging works commencing.

As the port is located within a dynamic marine environment it is envisaged routine maintenance dredging will be required to maintain the depths of the approach channel and harbour. An application for a routine maintenance dredging license shall therefore be submitted following completion of the capital dredge.

2.4.3.2 Dredging Depths and Quantities

The 2019 Capital Dredge License (and subsequent variations) authorises the dredging of this area to -6.5m Chart Datum (CD) producing 4,600,000 wet tonnes (wt) of sediment. Of this quantity, 400,000 wt is to be used for reinstatement to an inner section of the Whiteness Head Spit with the remaining amount to be stockpiled on site for beneficial reuse.

In October 2023 an application was submitted to the Marine Directorate Licensing Operations Team (MD-LOT) to amend the 2019 Capital Dredge License as follows:

- A temporal extension to the Marine Capital Dredge license for a period of 2 years to September 2025;
- Increase the dredge depth from the approved -6.5m CD to -12.9m CD; and
- Increase the associated dredging volume from the approved quantity to 8,600,000 wt of which 400,000 wt to be used for reinstatement to the inner section of the Whiteness Head Spit and the remaining amount of 8,200,000 wt being used for beneficial reuse.

2.4.3.3 Environmental Constraints

The main matters when dredging are identified as being:

- Pollution of the water environment; and

- Protect the qualifying features of the designated areas; specifically marine mammals and bird species.

Water Environment
Site investigation boreholes have identified that the dredge material comprises of predominantly sands (75%) and gravels (23%) with a small silt/clay content (2%). Given the nature of the material being dredged, it is considered that the majority of material will not stay in suspension for long and settle relatively quickly. The fines content will stay in suspension longer, but at 2%, is considered to be a small fraction of the material being dredged at any time. Similarly, the plume will be local in extent and short term in duration when reinstating the inner section of the Whiteness Head Spit.

There are no specific mitigation measures proposed to address the dredge plume during operations, or disposal to the inner channel due to the type of material and the short settlement durations resulting in localised, short term effects. The sediment plume associated with the dredging shall be monitored and suspended sediment samples shall be taken in accordance with the Sediment Transport Monitoring Plan (Refer to Appendix I for further details).

The dredged material will be pumped to shore into settlement lagoons where surplus seawater shall either seep back into the surrounding ground or be piped by gravity back to the shore to control sediment runoff.

Longer term management of runoff from the land-based material stockpile shall adopt a similar approach to the active deposition phase noted above, while the risk of windblown sediments being mobilised shall be mitigated against by a suppressant system to the surface of the stockpile.

Marine Mammals and Birds
All dredging activities or works within the marine environment shall be undertaken with a Marine Mammal Observer (MMO) on board the vessel or on land who shall follow the protocol provided in Appendix D of this CEMD. Further details on the responsibilities of the MMO are provided below.

In relation to birds, the ECoW shall monitor bird activity throughout the construction period. Should a roost or nest be identified then a suitable buffer zone shall be established to ensure birds are not disturbed by construction or dredging activities.

The use of the larger self-propelling dredger shall be restricted to the summer months i.e. April to September only. A minimum distance of 50m shall be maintained between the designated seal haul-out site and any dredging activities between 1 June and 31 August inclusive each year.

The AP owned smaller dredger may be used throughout the year but in the winter months i.e. October through to March it shall follow the winter dredge protocol provided in Appendix K to this CEMD.

MMO
The Marine Mammal Observer Association (MMOA) describes the role of the MMO as “to be present during offshore operations and to act immediately to protect species of concern should they enter an exclusion zone prior to and sometimes during operations. MMOs will advise personnel onboard to delay or shutdown operations until the animals are at a safe distance and also to record behaviour and sightings at other times. Monitoring and management measures may be set out by a regulatory authority or follow industry best practice. The MMO will work with the client and contractor to ensure requirements are adhered to and provide clarification advice”.

At Ardersier, the main role of the MMO is to ensure, working closely with the ECoW, that dredging and any works within the marine environment do not disturb marine mammal activity within the Moray Firth.

The MMO shall undertake visual monitoring from the highest available platform on the dredging vessel, and on land. They shall use binoculars and scan for cetacean activity.

Principally for the construction phase, should a cetacean be observed within the mitigation zone, communication between the MMO and the ECoW shall occur, and suitable mitigation measures shall be implemented to ensure safe passage through the mitigation zone for the cetaceans.

In addition to the observation tasks, the MMO shall also be responsible for the following:

- Delivery of toolbox talks for the education of all relevant site staff and dredger crew;
- Along with the ECoW, be the first call emergency contact for any environmental or ecological issues that arise during dredging or works in the marine environment;
- Organisation of all MMO programmes listed within the Marine Mammal Protection Plan (MMPP), including being active through all dredging and marine works;
- Having the authority to halt dredging or marine works when necessary; and
- Daily reporting to the ECoW using a standard form and a traffic light prioritisation system. The reports shall document the advice given, the actions taken and the ultimate outcome in relation to the planning condition, the mitigation or the legislative requirements.

2.4.4 Material Re-Use Options

The following extract from the OSPAR Guidelines for Management of Dredged Material at Sea states in relation to dredge material re-use options that:

> *7.1 Generally it is preferable to keep the sediment in the aquatic, estuarine, or marine system, however the results of the physical/chemical/biological characterisation will determine the dredged material management options. Examples of management options include beneficial use, unrestricted, open-water deposit, confined aquatic disposal or confined disposal facilities. In some cases the best option may be to leave the material in-situ.*
>
> *<u>Options for material assessed to be uncontaminated</u>*
>
> *7.2 There is a wide variety of management options for dredged material depending on the physical and chemical characteristics of the material. Generally, a characterization carried out in accordance with these Guidelines will be sufficient to determine possible management options in water and at the shoreline. Examples include:*
>
> 1. *Sustainable Deposit by retaining sediment within the natural sediment system to support sediment-based habitats, shorelines, and infrastructure.*
> 2. *Habitat Restoration and Development using direct deposit of dredged material for enhancement or restoration of natural habitat associated with wetlands, other near-shore habitats, coastal features, offshore reefs, fisheries enhancement, etc.*
> 3. *Beach Nourishment using dredged material (primarily sandy material) to restore and maintain beaches.*
> 4. *Shoreline Stabilization and Protection through the deposit of dredged material with the intent of maintaining or creating erosion protection, dike field maintenance, berm or levee construction, and erosion control.*
> 5. *Sea deposit (see Chapter 8)*
> 6. *Engineering uses (e.g. as capping material or for land reclamation).*
>
> *7.3 Additional information about beneficial uses of dredged material, including case studies, can be found at the Central European Dredging Association's (CEDA) website*

(http://www.dredging.org). PIANC (2009) provides technical information on the assessment of options for beneficial use and recommendations on how to overcome constraints based on "lessons learned" from numerous cases studies in different situations in various countries.

In accordance with the OSPAR Guidelines, AP will consult with the EMG and other relevant stakeholders to identify suitable projects located in the vicinity of the port in which the dredge arisings could be beneficially reused within the marine environment.

In addition, the Habitat Management Plan includes a Spit Habitat and Enhancement Plan which will use the data collected through the Sediment Transport Monitoring Plan to inform the options for the placement of dredge material within the Port boundary to ensure the dynamic environment is best protected using adaptive management techniques. This includes spatial and volumetric analysis of changes in the coastal environment, which along with other baseline field data allows the refinement of the port's coastal model to consider different scenarios for placement of dredged material and the potential impact on designated features within the local environment.

2.5 General Site Information

2.5.1 Hours of Working

The hours of working shall be agreed with AP and detailed within the construction project specific CEM Plan.

2.5.2 Site Security

2.5.2.1 Accessing the Port

The names of all contractors who are undertaking site works must be provided to AP prior to them attending site. On attending site all contractors must report to port management and consult the designated person in charge before undertaking works or embarking on site.

Security badges for all individuals and vehicles accessing the site must be obtained from gatehouse security and clearly displayed at all times. On leaving the port contractors must report to their site contact, sign off active permits and return any security passes to the gatehouse.

A construction traffic management plan is provided in Appendix M to ensure there is no queuing onto the B9092.

2.5.2.2 Major Construction Projects

For major construction works, a temporary construction compound shall be established within Ardersier Port with the whole of the site works area segregated from other port activities. Once established the contractor shall manage / control the area through the Construction (Design and Management Regulations 2015 (CDM Regs).

The location of the temporary construction compound, the means of segregation and access routes are to be agreed with AP and detailed within the project specific CEM Plan. Suitable signage to direct construction workers and deliveries shall be installed prior to commencement of site works.

2.5.3 General Site Housekeeping

2.5.3.1 Fire Safety

- Open fires shall be prohibited at all times.
- Specific areas within the site shall be designated as smoking areas and shall be equipped with sealed containers for smoking waste.
- All necessary measures shall be taken to minimise the risk of fire.

2.5.3.2 General Maintenance

- Waste shall be removed at frequent intervals and the site kept clean and tidy.
- Adequate toilet facilities shall be provided for all site staff.
- Food waste shall be stored in closed containers and removed frequently to avoid attracting vermin.

2.5.4 Whiteness Sands Protected Areas- Habitat Protection Measures

To protect the habitats within the Inner Moray Firth SPA and Whiteness Head SSSI from overspill from the land-based material stockpile, a 5m-wide buffer zone, clear of stored sand, is retained between the sand stockpile and the security fence to the west. This is pro-actively managed to safeguard this buffer zone.

3 APPROACH TO ENVIRONMENTAL MANAGEMENT DURING CONSTRUCTION WORKS

3.1 CEM Plan Implementation

The CEM Document shall be issued to potential contractors, ideally during the tender stage for specific major construction activities. However, it shall also be used by AP for smaller scale construction projects which may be undertaken by port staff as well as external contractors.

A CEM Plan shall then be developed by appropriate personnel taking into account the information provided within the CEM Document to ensure that construction works are undertaken in such a way as to minimise environmental impacts and ensure compliance with legislation and licenses.

As noted in Section 1.5, the CEM Plan is a live working document which shall be regularly reviewed and updated throughout the lifetime of the associated construction project.

3.2 AP and Contractor - Roles & Responsibilities

3.2.1 Philosophy

By defining responsibilities across all levels of the project management team a common goal can be sought, with individuals named to deliver all aspects of the CEM Document. Compliance with the CEM Document and supporting CEM Plans is mandatory and shall be adhered to by all personnel employed on the project to achieve a common approach to environmental control.

3.2.2 AP Client Team

During construction, AP has responsibility for delivering the commitments defined in the CEMD and project-specific CEM Plan.

AP shall act as the primary contact with all statutory bodies during construction.

AP shall regularly monitor works on-site and ensure that all conditions, committed mitigation and identified best practice are delivered in accordance with the CEM Document and project-specific CEM Plan.

AP has the authority to halt any activity where environmental commitments are not being successfully delivered, where legal requirements are being breached or where there is a significant risk to the environment.

AP shall report any environmental incidences to the consenting body within 24 hours. All instances of suspected environmental crime shall be reported immediately to the Police.

AP, as the client, shall provide the name of a key person within their organisation, who shall liaise directly with the contractor and relay relevant information to AP and the EMG (Refer to Section 1.3).

The AP key person shall be supported by AP's consultant engineer and environmental consultant who shall act as third-party reviewers for AP with other parties inputting as required. This support shall

include an Environmental Clerk of Works (ECoW) who shall audit the contractor's environmental compliance and report to the AP Client Team.

3.2.3 AP ECoW Role and Responsibilities

The Association of Environmental and Ecological Clerks of Works (AEECW) defines the Environmental Clerk of Works (ECoW) as:

> "An environmental or construction professional with direct responsibility for monitoring compliance with planning consents, environmental permits, legislation and mitigation."[1]

The ECoW shall:

- Have professional membership and thereby obliged to follow a professional code of conduct;
- Have the relevant construction and natural environment qualifications and experience;
- Be able to influence decisions on site (by educating the relevant site staff; and
- Be multi-disciplinary.

The specific responsibilities of the AP ECoW are:

- Act as direct liaison between the AP project team and the consenting bodies / regulators including attendance at the EMG meetings (Refer to Section 1.3);
- To report concurrently to the AP project team and the Planning Authority on a monthly basis during periods of construction, unless a reduced frequency is agreed in writing by the Planning Authority;
- Undertake environmental audits of the construction works to ensure the contractor is adhering to the CEM Plan and identify improvements if necessary. The audits will be undertaken on a weekly basis;
- The frequency of environmental audits shall increase during periods where construction activities are identified as having a higher environmental risk;
- The authorisation to halt works if necessary;
- Provide reports to AP on the findings of each audit using a standard form and a traffic light prioritisation system. The reports shall document the advice given, the actions taken and the ultimate outcome in relation to legislative or other requirements;
- To oversee (and act as the EMG point of contact with) the Marine Mammal Observer (MMO) in the implementation of the Marine Mammal Protection Plan (Appendix D) at all times, but specifically during dredging and working in the marine environment; and
- In the event of any environmental or ecological issues identified provide advice as required to the AP client team.

In order to comply with the legislation and to minimise the potential impacts on wintering and breeding birds, the ECoW shall also be responsible for the monitoring and review of the Habitat Management Plan, and auditing and advising on the delivery of management measures proposed therein.

These include, but are not limited to:

- Tern raft production and installation on the lagoon;
- Control or removal of the invasive, non-native New Zealand pygmy weed (*crassula helmsii*) and Japanese Rose;

[1] Burns, O and Jackson-Matthews, S. (2016). Environmental Clerks of Works: Good Practice Guidance. Version 1 Final – January 2016.

- Vegetation surveys, and the pinpointing and setting out of vegetation enhancement areas;
- Regular monitoring of the bird populations on site and within the adjacent designated land, and by agreement with the EMG, implementation of appropriate mitigation as, and if, required in order to safeguard the breeding and wintering populations, specifically those that are features of the adjacent European designated sites;
- Establishment of species-specific exclusion zones for active nests to avoid damage, and to avoid disturbance to sensitive species;
- Measures to ensure that works commence at times of year, times of day, or states of tide, which minimise any potential disturbance to breeding, roosting or foraging birds, seal haul outs, or, in association with the Marine Mammal Observer, cetacean movements within the mitigation zone;
- Access management measures on the spit (fencing, signage, etc);
- Habitat enhancement measures (new roost creation, tree planting, transplanting flora, cutting vegetation, etc).

3.2.4 The Contractor

The contractor should provide reports as required to AP Project Team confirming the status of the project, implementation of environmental requirements, environmental audits, monitoring and any environmental incidents on a regular basis to be determined between the relevant parties.

The contractor shall develop a project specific CEM Plan which, if required, shall be submitted to the Regulatory Authorities for approval prior to works commencing on site. Site works shall not commence until the CEM Plan has been approved.

The contractor shall be responsible for all site staff (at all levels) adhering to any environmental policies or sensitivities and the requirements of the approved CEM Plan. The CEM Plan should therefore include details of how the contractor intends to ensure all staff employed in the execution of the works fully understand all environmental requirements and are properly equipped to implement these requirements.

The CEM Plan should also include the details of key individuals working on site, their job roles and contact details. The communication channels that should be followed by all site staff, including who has responsibility for informing other parties on site, and how to respond in the event of an environmental incident shall also be clarified in the document.

The contractor shall manage a mitigation, commitments and conditions tracking register to demonstrate environmental compliance during the construction project. This shall form an item during regular AP Client team meetings.

3.2.4.1 Contract / Project Manager

The contractor shall identify a Contract / Project Manager within the CEM Plan who shall liaise / report directly to the AP client team. The Contract/Project Manager's specific environmental responsibilities include (but not limited to):

- Demonstrate positive environmental leadership and commitment through actively supporting the initial set-up and sustaining effective environmental management and monitoring measures;

- Ensure adequate provision of competent resources, including the appointment of a suitable person (i.e. HSEQ Manager or similar) who shall be responsible for auditing the construction works on a daily basis, to ensure the requirements of the CEM Plan are met;
- Ensure all consents and licenses are in place prior to work commencing; and
- Report any environmental incidences or crime immediately to AP within 24 hours. All instances of suspected environmental crime will be reported immediately to AP.

3.2.4.2 Site Manager / Supervisor

The Site Manager / Supervisor's specific environmental responsibilities include (but not limited to):

- Work with the HSEQ Manager (or similar) to ensure the CEM Plan is implemented and updated as necessary;
- Delivery of toolbox talks for the education of construction personnel;
- Report to the Contract / Project Manager on a weekly basis details of:
    - Any non-compliance identified on site;
    - Monitoring information relating to the significant environmental aspects on site;
    - Preventative actions reports; and
    - External environmental communications reports; and
- Inform the Contract / Project Manager of any significant deviations from the agreed methods of working or environmental incidents/crimes as soon as practicably possible.

3.2.4.3 HSEQ Manager (or Similar) Responsibilities

The specific environmental responsibilities of the HSEQ Manager (or similar) are (but not limited to):

- Oversee the implementation and organisation of the CEM Plan on a day-to-day basis;
- Ensure general environmental good practice is followed across the entire project construction site at all times, by all personnel and have the authority to halt works if necessary;
- Report any environmental non-compliances to the Site Manager / Supervisor and provide advice as required;
- Provide reports to the contractors team on the environmental status of the construction works including compliance;
- Delivery of toolbox talks, posters, information leaflets, video, digital or online applications for the education of construction personnel and;
- To liaise with the Marine Mammal Observer in the implementation of the Marine Mammal Protection Plan (Appendix D) during any construction works in the marine environment;
- Attendance of all relevant Contractor meetings;
- The contractor's emergency contact for any environmental or ecological issues that arise on the construction site; and
- Report any emergencies or suspected environmental crime immediately to the Contract / Project Manager.

3.2.4.4 All Site Personnel

All personnel working on the project are responsible for the environmental control of their own work and shall perform their duties in accordance with the requirements of the CEM Plan. No deviations are permitted without the written authority of the Contract / Project Manager.

All site personnel shall (but not limited to):

- Implement control measures described within the CEM Plan; and
- 'Stop the job / activity' if there is potential for pollution occurring and notify the Site Manager / Supervisor.

3.3 Training & Raising Awareness

All contractors and subcontractors shall be selected with due consideration of qualifications and experience.

Environmental training shall be undertaken to ensure all site personnel have the appropriate knowledge to successfully implement the Construction Method Statement (CMS), the CEM Plan and the environmental requirements of the project.

The training programme shall be developed by the contractor and form part of the construction project specific CEM Plan. As a minimum it is anticipated to include the following:

- All site personnel to attend a site induction prior to commencing work at the site. Key environmental considerations include waste management, working in or near watercourses, surface water pollution and control, ecology, dust management and noise management, emergency preparedness and responses should be included;
- Weekly sessions to cover specific relevant issues appropriate to the work being undertaken at the time;
- Any specific training requirements for key identified roles;
- Records of all training required and provided to all employees should be maintained and made available to AP for inspection;
- The use of Information posters and leaflets, video and digital or online applications should also be considered; and
- Commitment to undertake a toolbox talk in the event of an environmental incident or complaint.

3.4 Complaints & Enquiries

The formal procedure for handling project complaints/concerns shall be agreed between the Contractor and Client Team prior to works commencing. The contractor's CEM Plan shall detail the agreed procedure in the event a complaint is received.

3.5 Monitoring, Continual Improvement & Review

The Contractor shall ensure that the CEM Plan is reviewed regularly (and no less frequently than monthly) to ensure that:

- The objectives and requirements of the CEM Plan is still valid and are being met;
- Identify any negative impacts from construction activities;
- Assess the effectiveness of control measures;
- Identify if further controls/corrective action is required; and
- Forthcoming activities are reviewed and any necessary amendments to the CEM Plan are put in place before the relevant work begins.

3.6 Inspection & Audit

AP representatives shall conduct site inspections on a regular basis to confirm that processes are being carried out effectively. A written report of these inspections shall be disseminated to the relevant contractor management levels for review and action.

3.7 Non-conformance & Corrective Action

If criteria within the CEM Plan are not fulfilled and appropriate corrective action(s) is/are not taken a non-conformance may be raised by the Contractor or Client representatives. Examples of circumstances where this may arise include:

- Receipt of a complaint regarding pollution or other environmental impacts caused by the project;
- Departure from approved or agreed procedures; and
- Non-conformance identified as a consequence of any self-assessment, formal audit or other environmental survey or inspection.

The non-compliance will be notified to the Client representative as soon as practicably possible. Should it be identified that there is potential for mitigation measures or legislation to be breached the work or activity shall stop immediately. Work shall only recommence once measures are implemented to ensure the situation is remedied.

Following notification, a non-conformance/corrective action report shall be issued to the Contractor by the Client representative. It is the responsibility of the Contractor to immediately initiate corrective actions (if not already done so) and, once completed, provide details of the actions undertaken on the non-conformance/corrective action report and return it signed to the Client's representative within an agreed timeframe. If the non-conformance is considered to breach legislative requirements, the breach should be reported to the appropriate public body.

Corrective action may include changes to work instructions, alterations to the CMS, further staff training etc. Non-conformances should be reviewed by the appropriate Client representative and form part of construction meeting agendas.

3.8 Significant Incident Reporting Procedures

In the event of a potential harmful or polluting incident, spillage or discharge, the actions listed below shall be followed to notify the appropriate organisations of the occurrence:

- Should an incident occur, the Contract / Project Manager shall inform the Client representative of the occurrence of an incident at the site as soon as practicably possible following awareness of the incident;
- The Contract / Project Manager shall notify the Client representative in writing the next working day after the incident, detailing the time and nature of the incident; and
- The Contract / Project Manager shall investigate the incident and notify the Client representative of the outcome of the investigation and any mitigation measures required as soon as practicably possible. The outcome of the investigation shall be reported to the client representative within 3 days of reporting the incident.

3.9 Control of Records

Environmental records, including waste management records, shall be maintained in accordance with the respective company procedures and legal requirements. The records shall be maintained, in either hard copy or electronic format, as required by the individual procedure that the records relate to, in such a way that they are readily identifiable, retrievable and protected against damage, deterioration or loss. The individual procedure that the records relate to also specifies the retention time for the records and who has the authority to dispose of them.

3.10 Change Control Processes

Where any amendments and variations to the project-specific CEM Plan are required, either as a result of changes to construction methods, design or mitigation the method of recording the change shall be agreed between the Contractor and AP and documented in the Contractor's CEM Plan.

4 SCHEDULE OF MITIGATION

Table 4-1: Ardersier Port Schedule of Mitigation

Mitigation Ref.	Mitigation Measure	Location in CEMD	Lead
1	Prepare and maintain a Construction Environmental Management Document (CEMD), subject to approval from the appropriate Statutory Authorities.	CEMD	Ardersier Port Ltd
2	Maintain updated schedule of mitigation to include all mitigation proposed in support of the HRO, marine licenses and planning conditions.	Schedule of Mitigation (Appendix A)	Ardersier Port Ltd
3	Appoint an Environmental Clerk of Works (ECoW).	CEMD Section 3	Ardersier Port Ltd
4	Establish an Ecological Management Group (EMG) to advise and support the design and implementation of mitigation measures and to undertake ongoing monitoring of designated sites and protected species.	CEMD Section 3	Ardersier Port Ltd
5	Develop and implement a Reporting Protocol which sets out what the Licensee must do on discovering any marine archaeology. Mitigation within the Reporting Protocol includes: a) All site personnel will be briefed on the significance of archaeological finds and anomalies; b) All finds will be immediately reported to the Site Manager and ECoW; c) In the event of a find, all relevant works will halt and the ECoW process the find in accordance with The Crown Estate's *Protocol for Archaeological Discoveries: Offshore Renewables Projects*.	Archaeological Reporting Protocol (Appendix B)	Ardersier Port Ltd
6	Prepare a Habitat Management Plan	Habitat Management Plan (Appendix C)	Ardersier Port Ltd

Mitigation Ref.	Mitigation Measure	Location in CEMD	Lead
7	Implement habitat enhancement measures appropriate to the stage of the development such as: a) New buildings will be constructed on site, which provide new opportunities for nesting birds and roosting bats through the provision of bird and bat boxes; b) Spit Habitat Protection and Enhancement; c) New scrub and dry heathland planting incorporated into the proposed development; d) Tern rafts to be provided at the eastern end of the inner channel to create additional nesting opportunities for Common and Arctic Tern; e) Retain drainage ditch along the southern site boundary to allow any potential otter access; f) Removal of New Zealand pigmyweed and any other non-native species from the terrestrial lagoon; g) Avoid transgress by construction plant in the area of the spit; h) No dredging to take place during October to March to avoid the wintering bird season. If dredging is required in October this is only to occur with the approval of MD-LOT in consultation with NatureScot.	Habitat Management Plan (Appendix C)	Ardersier Port Ltd
8	Mitigation measures against the introduction of non-native species include: a) Remove any visible plant, fish, animal matter and mud from the vessel, in particular the hulls should be cleaned regularly; b) Safely dispose of any plant and animal material removed from the vessel; c) Toolbox talks will be given and posters to aid identification of non-native species will be disseminated to all members of staff involved in the project. These will aid on the management and control of marine non-native species; d) Ideally, all equipment and vessels required will be from within biogeographic regions where possible, and all have undergone the necessary inspections (and certification) prior to arriving on site; and e) Should marine non-native species be identified on site, this should be reported to the relevant authority.	Habitat Management Plan (Appendix C)	Ardersier Port Limited

Mitigation Ref.	Mitigation Measure	Location in CEMD	Lead
9	General Ecological Mitigation Measures: a) An Environmental Clerk of Works (ECoW) will be appointed to ensure delivery of the CEMD; b) Monitoring of vegetation (including lichen) and mammal activity will be undertaken during construction; c) Any changes to mitigation and habitat enhancement as a result of monitoring activity can be co-ordinated through the EMG; and d) A planting scheme and measures to enhance the general biodiversity and vegetation across the site will be developed.	Habitat Management Plan (Appendix C)	Ardersier Port Limited
10	Prepare a Marine Mammal Protection Plan (MMPP)	Marine Mammal Protection Plan (Appendix D)	Ardersier Port Ltd
11	Prepare and implement a Seal Injury Avoidance Scheme ("SIAS") Mitigation measures identified within the SIAS includes: a) Have a Marine Mammal Observer Present during all dredging and overwater piling activities to ensure that no seals enter the area during the operations, in particular during the seal breeding season (July – August); b) Employ a soft start approach to activities to allow any marine mammals present to vacate the area; and c) Develop and implement a Vessel Management Plan.	Marine Mammal Protection Plan (Appendix D)	Ardersier Port Ltd

Mitigation Ref.	Mitigation Measure	Location in CEMD	Lead
12	Prepare and implement a Noise and Vibration Plan. Mitigation measures identified within the Noise and Vibration Plan include: a) Impose appropriate conditions on the appointed contractor to minimise noise and vibration; b) Introduce measures to control noise and vibration during the construction phase; c) Use best practice to reduce emissions throughout the construction period incorporating measures to control noise and vibration; d) Utilise noise control measures such as siting of fixed plant away from noise sensitive receptors, use of properly silenced plant and use of screening and enclosures where appropriate; e) Select inherently quiet plant; f) Site fixed plant away from noise sensitive receptors; g) Use silenced plant, screening and enclosures where appropriate around any noisy fixed plant; h) Adhere to relevant British Standards including, but not limited to, British Standard BS 5228; i) Develop a Construction Traffic Management Plan. Measures relating to on-site vehicle movements could include: i. Only vehicles conforming to relevant national or international standards, directives and recommendations on noise and vibration emissions will be used; ii. Personnel will be instructed on best practice measures to reduce noise and vibration as part of their induction including training as required prior to specific work activities; iii. When transporter engines are not required to be running, engines should be turned off; and iv. Where possible, vehicles should be fitted with broadband reversing alarms rather than tonal types.	Noise & Vibration Mitigation Plan (Appendix G)	Contractor
~~13~~	No dredging operations using the larger self-propelled CSD shall take place during the November to March period.	CEMD Section 2.4.3.3	Ardersier Port Ltd
14	Pollution Prevent Plan mitigation measures include: a) CEMPs will consider all possible pollution pathways and be in accordance with relevant SEPA PPG and GPP; b) Regulate use of fires and lights within the harbour and within any vessel within the harbour; and c) Routinely inspect access road to ensure that there are no signs of erosion.	Pollution Prevention Plan (Appendix E)	Contractor

Mitigation Ref.	Mitigation Measure	Location in CEMD	Lead
15	Dust Management: a) Visually monitor dust generation from work areas to ensure that excessive dust is not being produced; b) Maintain all trafficable areas and vehicle manoeuvring areas in or on the premises, in a condition that will minimise the generation, or emission from the premises, of wind blown or traffic generated dust; c) If excessive fugitive dust observed, investigate source and implement/increase suppression measures; and d) Restrict traffic to defined roads and implement a speed limit.	Dust Management Plan (Appendix F)	Contractor
16	Waste management: a) The Contractor will adopt an integrated approach to waste management and minimisation by applying the waste hierarchy; b) A list of clearly defined waste responsibilities will be prepared and implemented; c) Present glass, metal, plastic, paper and card (including cardboard) for separate collection; d) Take steps to maintain the quality of dry recyclables presented for separate collection; e) Take care of the waste to prevent escape; f) Ensure waste is transferred to someone who is authorised to receive it, for example, a registered waste carrier or waste manager with the relevant authorisation; g) Complete a waste transfer note for any transfer of waste, including a full description of the waste, and retain a copy of this note for two years; h) Describe the waste accurately and provide information for the safe handling, transport, treatment, recovery or disposal by subsequent holders; i) Take reasonable measures to ensure that the waste does not cause pollution or harm to human health; j) All movements of special waste must be accompanied by a Special Waste Consignment Note (SWCN). Copies of SCCN must be retained for three years; and k) Monthly waste reports must be provided to Ardersier Port Limited.	Site Waste Management Plan (Appendix H)	Contractor
17	Construction Traffic Management Plan	(part Appendix G)	Contractor

Mitigation Ref.	Mitigation Measure	Location in CEMD	Lead
18	Formation of the Storage Area Bunds A Permanent bund will be constructed to provide screening of the nearest known coastal roost site prior to any dredging commencing. Once the permanent bund has been created, the temporary bund will be constructed around the remaining coastal perimeter of the storage area. For more details please refer to drawing as indicated.	Habitat Management Plan (Appendix C) Drawing 670191-018)	Contractor

APPENDICES

A DRAWINGS

B ARCHAEOLOGICAL REPORTING PROTOCOL

Underwater archaeology is not considered to be a major concern, however the following shall be adopted to ensure that during dredging any unexpected archaeological discoveries are reported and investigated. This approach follows guidance detailed within The Crown Estate's Protocol for Archaeological Discoveries (PAD) published by Wessex Archaeology[2].

PADs are systems of monitoring for unexpected or incidental finds relating to the historic environment. PADs are intended to apply to development, construction and installation activities where an archaeologist is not present on site and therefore not immediately available, i.e. in those instances where a traditional archaeological scheme of works is not in place (such as a watching brief, evaluation, etc.). PADs address both archaeological 'finds' and 'anomalies'. Finds are defined as an object or site with archaeological potential or significance, where as an anomaly is a signature that could be visual or digital (e.g. geophysical) that indicates a possible find or site which will require further investigation.

Consistent with the Crown Estate's guidance, the following shall be implemented:

a) All site personnel shall be briefed on the significance of archaeological finds and anomalies;
b) All finds shall be immediately reported to the Site Manager and ECoW; and
c) In the event of a find, all works shall be halt and the ECoW shall process the find in accordance with The Crown Estate's guidance and supporting materials[3].

[2] The Crown Estate (2014). *Protocol for Archaeological Discoveries: Offshore Renewables Projects.* Published by Wessex Archaeology, Salisbury, on behalf of The Crown Estate.

[3] http://www.wessexarch.co.uk/projects/marine/tcerenewables/protocol-awareness-programme

C HABITAT MANAGEMENT PLAN

D MARINE MAMMAL PROTECTION PLAN

E CONSTRUCTION POLLUTION PREVENTION PLAN

ARDERSIER PORT CONSTRUCTION POLLUTION PREVENTION PLAN

(Version 2, Dated 22/05/2024)

A CEM Plan shall be produced prior to specific elements of work commencing and, if required, shall be submitted to the relevant regulatory authority (i.e. THC and/or MD-LOT) prior to works starting on site. These will relate to particular individual specific site/aspects of the work and shall apply the principles of the agreed mitigation to show how the mitigation is implemented effectively down to the specific site/aspect level. The CEM Plans shall consider all possible pathways for pollution, and be in accordance with relevant SEPA guidance including:

- Guidance for Pollution Prevention (GPP) 1: Understanding your environmental responsibilities - good environmental practices;
- GPP 5: Works and maintenance in or near water;
- GPP 6: Working on construction and demolition sites; and
- GPP 21: Pollution incident response planning.

Roles and responsibilities for pollution prevention are outlined within Section 3 of the CEMD.

Oil and Chemical Storage, Use and Disposal

Storage, use and disposal of any chemicals including fuels shall be compliant with:

- GPP 2: Above ground oil storage tanks;
- GPP 6: Working on construction and demolition sites; and
- GPP 8: Safe storage and disposal of used oils.

This should include, at a minimum:

- Bunds shall provide storage of at least 110% of a tank's maximum capacity;
- Risk of damage to the secondary containment system of tanks by impact or collision will be minimised. Where possible, tanks should not be sited where there are frequent vehicle or plant movements unrelated to the use of the tank. Buffer zones should be set up around fixed tanks to allow close approach only by vehicles or plant needing access to them. Where other preventative measures may not be effective, fixed barriers should be installed to protect tanks;
- All fuel and chemicals will be stored on impermeable surfacing at least 10m from the nearest watercourse, ditch or drainage channel;
- All fuel and chemicals will be stored in suitable containers that are in good condition and clearly labelled;
- Appropriate temporary storage for any oils and chemicals used outside of permanent storage. Chemicals should always be placed back into permanent storage after use and at the end of each day. Never leave oil/ fuel containers in unsecured or high-risk locations;
- Fuelling trigger must be locked shut when not in use and the sight gauge should have an automatic cut-off valve. The fuelling trigger, hose and sight gauge should be within the bund. Refuelling must only take place at least 10m from any surface water;
- Any chemicals entering the site will be accompanied by the relevant COSHH data sheets. A copy of these sheets will be filed by the Site Manager and kept at hand. Handling and storage measures will be incorporated into the CEMP as required. The relevant COSHH data sheets will be relayed to the work force who may be required to handle or deal with any such chemicals or equipment;
- Appropriate emergency spill kits will be located at key work areas and should be carried in the cabs of a proportion of site vehicles, including supervisor vehicles;
- Regular inspection and maintenance of plant, vehicles, equipment containing fuels or oils, tanks and bunds will be undertaken. Any leaks identified must be stopped, contained and repaired;
- Whenever possible, fuelling and maintenance of vehicles and machinery, and cleaning of tools, will be carried out in a designated area(s);

- Mobile fuel bowsers will be filled on a designated impermeable and bunded area and the pump or valve of the bowser must have a lock and be locked shut when not in use; and
- If refuelling or dispensing must be done away from a designated area, it will be completed over a drip tray, absorbent plant nappy or plant mat, or other secondary containment solution; and
- If oil soaks into the ground, a professional company should remove the soil soaked in oil. Store any materials that are soaked in oil in sealed containers for correct and legal disposal.

Compounds and Hardstanding Areas
Drainage from compounds and hardstanding areas will be designed to prevent pollution through use of appropriate local scale Sustainable Drainage Systems (SuDS) such as those detailed in the CIRIA SuDS Manual.

Sewage
Welfare facilities will include a flushing toilet which will be connected to a closed tank. This will be routinely serviced to remove sewage off site by a suitably licensed contractor.

Air
Dust will be managed in accordance with the Dust Management Plan (CEMD Appendix F).

To reduce emissions, the movement of all vehicles around the site will be kept to a minimum with all vehicles and plant switched off when not in use.

No fires will be permitted on site.

Noise
Airborne noise and vibration will be managed in accordance with the Noise & Vibration Plan (CEMD Appendix G).

Underwater noise will be managed in accordance with the Marine Mammal Protection Plan (CEMD Appendix D).

Lighting
Lighting should be angled or otherwise arranged so as not to illuminate waterbodies or woodland.

Lighting used will be the minimum amount required for safety and switched off when not required.

Emergency Response
A site-specific Emergency Response Plan will be implemented as detailed within Appendix J of the CEMD.

F CONSTRUCTION DUST MANAGEMENT PLAN

Introduction

The aims of the Dust Management Plan (DMP) is to ensure that dust and exhaust emissions of plant and equipment are controlled to an acceptable level. This DMP provides a strategy for dust control, and how measures are implemented and monitored.

Mitigation

Dust shall be considered within the detailed, activity-specific CEM Plans. Mitigation measures may include:

- Visually monitor dust generation from work areas to ensure that excessive dust is not being produced;
- Maintain all trafficable areas and vehicle manoeuvring areas in or on the premises, in a condition that will minimise the generation, or emission from the premises, of wind blown or traffic generated dust;
- Provision of dust suppression measures;
- If excessive fugitive dust is observed:
    - investigate source;
    - implement suppression measures if not present;
    - implement further suppression measures;
- Restrict traffic to defined roads and implement a speed limit.

G CONSTRUCTION NOISE & VIBRATION MANAGEMENT PLAN

Introduction
The Noise & Vibration Plan details the approach to be adopted to manage and monitor noise and vibration on site. Information is provided on the assessments undertaken within the Environmental Statement[4], the control measures to be employed to minimise potential impacts and the reporting procedures to be adopted.

Noise emissions from the site shall at all times be managed in such a manner as to ensure that noise from such operations, when assessed in accordance with current policy and guidance notes where applicable, shall not be determined as indicating that complaints or disturbance are likely to occur.

The scope of this Noise and Vibration Plan is limited to dredging and quay wall construction activities.

The proposed hours of operation are as follows:

- Capital dredging work – continuous 24/7 for dredge period of approximately eight weeks; and
- Quay wall – mainly daylight hours.

Airborne Noise and Groundborne Vibration
An assessment of potential noise and vibration impacts during construction activities is detailed within Chapter 9 of the Port of Ardersier Proposed Offshore Renewables Manufacturing and Port Facility Environmental Statement (ES) (2013). The approach to the assessment of construction activities was based on the following:

- Identification of noise sensitive receptors within the vicinity of the Site and assess its level of sensitivity;
- Establishment of prevailing baseline noise conditions at selected noise sensitive receptors;
- Noise and vibration assessment of predicted noise levels during construction operations associated with the development;
- Determination of design aims for plant and services to be located on, or within, the proposed new buildings at the site;
- Development of preliminary mitigation proposals, where appropriate; and
- Assessment of the significance of any residual effects.

The Environmental Statement predicted negligible effects for construction noise and vibration however recommended a CEMP, as per standard practice, and provided mitigation measures to control noise and vibration on site.

Mitigation
Mitigation measures to control airborne noise and groundborne vibration include:
- Selecting inherently quiet plant;
- Siting of fixed plant away from noise sensitive receptors;
- Use of properly silenced plant and use of screening and enclosures where appropriate. Using, where necessary and practicable, enclosures and screens around any noisy fixed plant;
- Adhering to relevant British Standards including, but not limited to, British Standard BS 5228;

[4] Port of Ardersier Limited (2013). Proposed Offshore Renewables Manufacturing and Port Facility. Environmental Statement Volume 2: Environmental Statement.

- Mitigation for building services and fixed plant includes procurement of ‘quiet’ non-tonal plant, locate plant and air vents away from nose sensitive receptors, acoustic enclosures, in-duct attenuators, acoustic louvers etc.;
- Development and implementation of a Construction Traffic Management Plan to minimise the potential impacts from construction traffic, including:
    - Provision to ensure unloading is carried out on-site rather than on the adjacent roads;
    - Routing of construction vehicles via designated routes, which would be agreed with The Highland Council and other relevant authorities; and
    - Phasing of materials deliveries which would be controlled on a 'just-in-time' basis, wherever possible, minimising travel time and traffic congestion around the site.
- Measures relating to on-site vehicle movements could include:
    - Only vehicles conforming to relevant national or international standards, directives and recommendations on noise and vibration emissions will be used;
    - Site hoarding and screens will provide acoustic screening where necessary where vehicle movements are in close proximity to NSRs;
    - Personnel will be instructed on BPM to reduce noise and vibration as part of their induction including training as required prior to specific work activities;
    - When transporter engines are not required to be running, i.e. other than unloading, engines should be turned off so they do not contribute unnecessarily to the prevailing noise climate; and
    - Where possible, vehicles should be fitted with broadband reversing alarms rather than tonal types.

Monitoring
The requirement for airborne noise monitoring shall be determined within the detailed CEMPs.

Complaints
Ardersier Port Limited shall investigate any noise complaints promptly. If the complaint is considered to be associated with site activities, remedial action shall be undertaken immediately to reduce source of noise and vibration.

If a second complaint is received relating to the same issue, then a series of environmental monitoring shall be undertaken by a competent person in accordance with current policy and guidance notes where applicable at the location of the complaint.

Following monitoring, the CEMP shall be reviewed and remedial measures undertaken as soon as practical.

Any incidents of noise and vibration problems or complaints should be recorded in the site diary.

H SITE WASTE MANAGEMENT PLAN

This Site Waste Management Plan (SWMP) outlines the requirements and guidance necessary for effective waste management. Activity-specific waste will be managed in accordance with this SWMP and captured with specific CEMPs.

The scope of this SWMP is limited to activities associated with dredging and quay wall reinstatement.

Approach to Waste Management
Waste is defined in Article 3 (1) of the Waste Framework Directive (2008/98/EC) and means…. ” any substance or object which the holder discards or intends or is required to discard”. Further guidance can be found within *Is it waste? Understanding the definition of waste guidance note* (SEPA, 2006).

The project will adhere to the principles of sustainable waste management – where waste generation is avoided, and waste is viewed and used as a resource. This resource-centred approach is summarised in the 5 step waste hierarchy illustrated within Figure H.1. The waste hierarchy ranks waste management options according to the best environmental outcome taking into consideration the lifecycle of the material from-cradle-to-grave. In its simplest form, the waste hierarchy gives top priority to preventing waste. Further guidance on applying the waste hierarchy can be found within Guidance on Applying the Waste Hierarchy (Scottish Government, 2013).

The Contractor will adopt an integrated approach to waste management and minimisation by implementing the waste hierarchy.

Duty of Care
Section 34 of the Environmental Protection Act 1990 (as amended) (applicable to Scotland, England and Wales) places a legal duty of care on all those who produce, keep or manage controlled waste, including waste carrier and brokers. The act introduces a system of monitoring, control and recording of the management of waste enroute and at its destination. This duty has no limit and extends until the waste has either been finally disposed of or fully recovered.

To comply with the Duty of Care, the following shall be undertaken:

- Apply the waste hierarchy to the management of waste and promote ‘high quality’ recycling.
- Present glass, metal, plastic, paper and card (including cardboard) for separate collection.
- Take steps to maintain the quality of dry recyclables presented for separate collection.
- Take care of the waste to prevent escape.
- Ensure waste is transferred to someone who is authorised to receive it, for example, a registered waste carrier or waste manager with the relevant authorisation.
- Complete a waste transfer note for any transfer of waste, including a full description of the waste, and retain a copy of this note for two years.
- Describe the waste accurately and provide information for the safe handling, transport, treatment, recovery or disposal by subsequent holders.
- Take reasonable measures to ensure that the waste does not cause pollution or harm to human health.

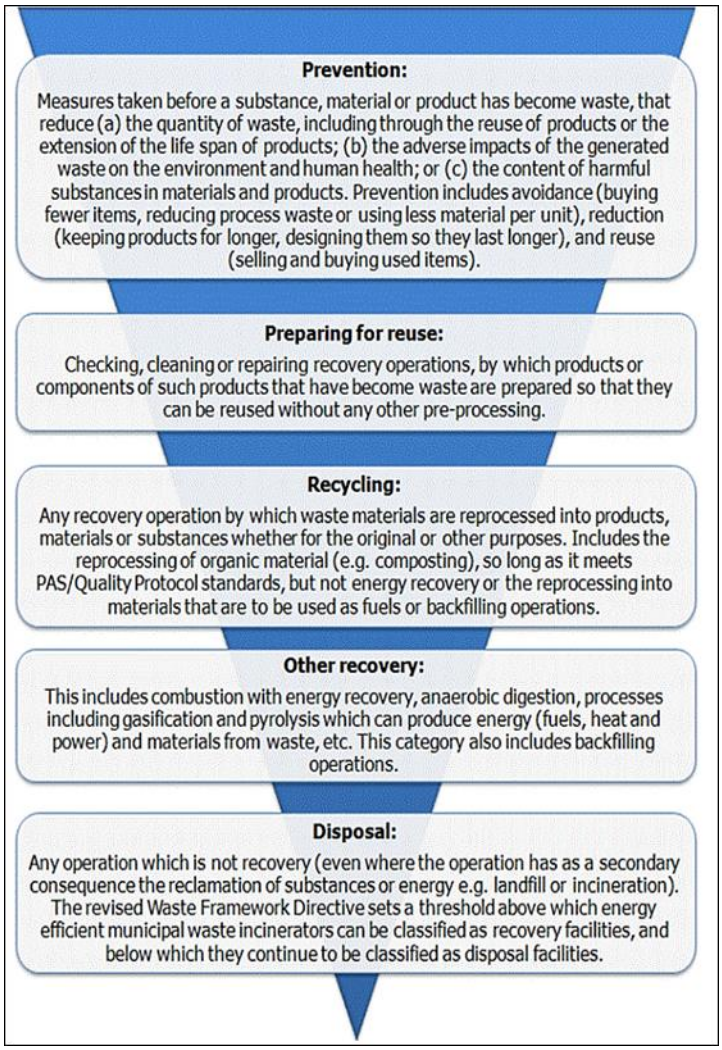

Figure H-4.1: Waste Hierarchy

Waste Transfer

Waste shall only be transferred to licensed waste disposal contractors.

A Waste Transfer Note (WTN) must be completed and signed by both the person handing over the waste and the person receiving it. The WTN must contain enough information about the waste for it to be handled safely and either recovered or disposed of legally. The WTN must include:

- a description of the waste;
- any processes the waste has been through;
- how the waste is contained or packaged;
- the quantity of the waste;
- the place, date and time of transfer;
- the name and address of both parties;
- details of the permit, licence or exemption of the person receiving the waste;
- the appropriate European Waste Catalogue (EWC) code (SEPA: Consolidated version of the EWC); and
- the Standard Industry Code (SIC) of the business (Companies House: Guide to SIC 2007).

Copies of all WTNs must be kept for at least two years.

All movements of special waste must be accompanied by a Special Waste Consignment Note (SWCN). Copies of SWCN must be retained for three years.

Responsibilities
In order to achieve success in waste minimisation and management practices during construction, a list of clearly defined responsibilities will be prepared and implemented. Common responsibilities may include, but is not limited to:

- Management of service provider contracts;
- Compilation of monthly waste data for regulator/corporate reporting;
- Training;
- Completion of waste transfer notes;
- Waste segregation;
- Waste packaging and labelling;
- Record keeping; and
- Auditing and performance review.

Waste Performance Monitoring and Reporting
Monthly waste reports must be provided to AP.

I SEDIMENT TRANSPORT MONITORING PLAN

J EMERGENCY RESPONSE PLAN

A site-specific Emergency Response Plan shall be developed by the contractor and shall detail the response to any environmental incidents on site. Emergency response to environmental incidents shall be included in all CEM Plans.

The Emergency Response Plan shall, as a minimum, include:

- A Site Plan showing:
  - layout and access details;
  - schematic representation of the site drainage arrangements;
  - layout/location of any buildings including temp facilities;
  - access routes and meeting points for emergency services;
  - areas used to store raw materials, products and wastes;
  - bunded areas, with details of products stored and estimated retention capacity;
  - location of hydrants, 'fireboxes' and pollution prevention equipment and materials;
  - any watercourse, spring, borehole or well located within or near the site;
  - areas of porous or unmade ground; and
  - site drainage – foul, surface and trade effluent drainage systems.
- A risk screening assessment;
- A site chemical, product and waste inventory with location and quantities;
- An inventory of on site equipment and materials to deal with pollution incidents;
- Details of the Emergency Response team with clearly defined roles and responsibilities (See further details below);
- An out of hours standby system should be identified and detailed in the Emergency Response plan;
- Procedure for responding to pollution incidents;
- Details of how waste associated with any incidents shall be managed; and
- Procedure for reporting incidents.

Emergency Response Team
The contractor shall include provision for an emergency response team to be available during works. The Emergency Response team shall consist of an appropriate number of members plus appropriate equipment to deal with all incidents identified in the Emergency Response Plan. The team shall be on standby during working hours and be capable of attending an incident within 60 minutes of receiving notice.

Emergency Response Training
Relevant site personnel shall be trained in the use of pollution control equipment.

K WINTER DREDGE PROTOCOL

L PROTOCOL FOR NOTIFYING WORKS IN THE AREA OF THE MOD FIRING RANGES, FORT GEORGE

Background
Ardersier Port is situated as a neighbouring property to the MOD Firing Range at Fort George.

Port dredging operations are confined to the area of the access channel and these have no effect on the firing range.

There may also be occasions in which Ardersier Port employees / representatives may require access to Whiteness Sands to perform certain works i.e. sediment transport monitoring etc.

This protocol is intended to allow works to be carried out safely.

Proposed Protocol Arrangements

- Ardersier Port will notify MOD Fort George Range Control of any planned works on Whiteness Sands. This would be at an early stage and would identify the general timescale of these works and activities.
- Agreement on dates for which access is possible will be sought.
- Confirmation will be given in writing to Range Control of the finalised dates and activities prior to commencement.

M CONSTRUCTION TRAFFIC MANAGEMENT PLAN