

# THE YORK POTASH HARBOUR FACILITIES ORDER 201X

## Outline Construction Environment Management Plan



Regulation Number 5(2)(q)

Document 6.10A

Royal HaskoningDHV

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**YORKPOTASH**  
A Sirius Minerals Project







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HaskoningDHV**  
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# **York Potash Harbour Facilities Order 201X - Outline Construction Environmental Management Plan**

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## 1 INTRODUCTION

### 1.1 Purpose of this Document

- 1.1.1 The Harbour facilities Construction Environmental Management Plan (CEMP) defines the management framework for the environmental requirements, commitments and performance targets associated with the planning and implementation of the construction activities associated with the Harbour facilities element of the wider York Potash Project (YPP).
- 1.1.2 The Harbour facilities CEMP will form part of the overall Project Execution Plan and activities identified herein are anticipated to be integrated with other management processes, including the Outline CEMP submitted in support of separate planning applications for the other YPP elements. Both CEMP documents cover those matters within the responsibility of York Potash Ltd (YPL) and the contractors engaged on the construction of the YPP. This document describes the checking, monitoring and auditing process that is to be implemented to ensure construction works are undertaken in accordance with the requirements established in the Environmental Statements (ESs) produced, together with measures to ensure that appropriate corrective actions or mitigation measures are taken to protect the environment.
- 1.1.3 The purpose of this document is, therefore, to facilitate the management and reduction of environmental risk, specifically the potential adverse impacts on sensitive environmental receptors. The Harbour facilities CEMP is informed by the results of environmental surveys that have been undertaken by or on behalf of YPL and includes details of the timing of works, measures to prevent disturbance, pollution or impact on habitats, and details of mitigation measures.
- 1.1.4 This version of the Harbour facilities CEMP outlines the approaches and measures to be taken at a level of resolution commensurate with the detail contained within the DCO application submitted under the Planning Act 2008 (as amended). The CEMP will be reviewed and updated as required, in relation to the discharge of future consent requirements and in consultation with appointed contractors prior to commencement and during the project related construction activities.
- 1.1.5 Overall accountability for environmental compliance will remain with YPL, however it is anticipated that the responsibility for undertaking the construction activities in line with the requirements of the Harbour facilities CEMP, including the management processes, mitigation measures, potential consent requirements, additional permit or consent conditions and best practice standards will be agreed contractually within the tender and work specifications for each of the construction contractors.

### 1.2 Structure of the Document

- 1.2.1 **Sections 1 to 2** of this document introduce and describe the proposed Harbour facilities scheme, and summarise the details of the proposals and relevant environmental aspects.
- 1.2.2 **Sections 3 to 5** establish the environmental management framework for managing the environmental risks associated with the construction of the Harbour facilities scheme in accordance with current environmental legislation. It defines the proposed roles and responsibilities of the

construction team with respect to environmental management and outlines proposed measures to reduce any adverse impacts from construction on the surrounding environment.

- 1.2.3 **Section 6** records the potential environmental impacts arising from undertaking the construction activities of the Harbour facilities and those mitigation measures which have been recommended to reduce the likelihood and/or significance of identified negative impacts. These are presented in a framework structured by environmental topic / theme to align with the Harbour facilities Environmental Statement (ES).
- 1.2.4 **Section 7** defines the auditing and monitoring procedures of the Harbour facilities CEMP required to demonstrate the performance of the project against the statutory requirements and agreed environmental standards.

## 2 PROJECT DESCRIPTION

### 2.1 Project Overview

2.1.1 YPL intends to develop a new Mine, south of Whitby in North Yorkshire (NGR NZ894 051), to extract polyhalite. An ES has been submitted on behalf of YPL and accompanies two planning applications for the winning, working, transfer and processing of polyhalite. An additional ES relating solely to the Harbour facilities has also been submitted to PINS under the Planning Act 2008 (as amended). These applications taken together represent the '**York Potash Project (YPP)**'.

2.1.2 The YPP comprises four main distinct elements:

1. The winning (the process of gaining the material) and working (the process of extracting the mineral) of polyhalite (the Mine).
2. A Mineral Transport System (MTS) for the removal and transfer of the resource.
3. A Materials Handling Facility (MHF) for processing the polyhalite into a granulated product.
4. Harbour facilities to export the polyhalite.

### 2.2 Harbour facilities

2.2.1 The proposed Harbour facilities comprises the following elements:

- a conveyor system between the port terminal (quay) and the MHF at Wilton ;
- product storage facilities (surge bins) adjacent to a quay and ship loaders on the quay;
- a port terminal on the southern bank of the Tees estuary; and,
- capital dredging (i.e. deepening beyond the current maintained depth) of a section of the approach channel and to create a berth pocket to allow the maximum design vessels proposed access to the port terminal.

2.2.2 A full description of the proposed Harbour facilities is considered in Section 3 of the Environmental Statement (ES).



### 3 ROLES AND RESPONSIBILITIES

#### 3.1 Introduction

3.1.1 The lines of responsibility for environmental management during the construction phases are currently in development and will be formalised in future iterations of this Harbour facilities CEMP. However the following roles are anticipated in the Harbour facilities CEMP management structure.

#### 3.2 Roles

##### *YPL Project Director*

3.2.1 The Project Directors from YPL, and the owners' representative (Project Management Consultant (PMC)), support the effective management of environmental issues for the construction of YPP. As Directors they support the CEMP approach and will receive regular reports on environmental matters associated to it as a part of established management processes.

##### *Contractors Project Manager*

3.2.2 Similar to the Project Directors, the Contractors Project Manager will be obliged to support and implement the CEMP approach and will receive and generate regular reports on environmental matters associated with, as a part of, established management processes.

3.2.3 This role has responsibility for the delivery of the project in terms of environmental objectives during the construction period. This will include ensuring the dissemination of environmental information (including waste reduction and waste management procedures, and water sustainability matters) to all relevant personnel on site and the application of environmental requirements during the construction process. The Heads of Construction Operations will ensure that appropriate resources are available, and any necessary environmental controls or mitigation measures are implemented, including those identified through environmental audits of the site work. As such they are in a position to direct and control construction activities on site.

##### *PMC Environmental Manager*

3.2.4 The PMC Environmental Manager has responsibility for managing the environmental obligations of YPL within the agreed environmental constraints and in conjunction with all other environmental management duties associated with the YPL project. The PMC Environmental Manager is supported by the PMC Environment Team and responsible for monitoring the performance of the project against the statutory requirements and agreed environmental standards. They will use advice from environmental consultants as required.

3.2.5 Duties of the PMC Environmental Manager include:

- Acting on behalf of YPL as the owners' representative for the construction of the YPP.
- Review of the Harbour facilities CEMP (and updates of it) and procedures.
- Identification of areas for environmental improvement.
- Ensuring the environmental competence of all Contractors working on the project.
- Review and revision of construction method statements and task sheets (and any updates thereof) for environmental aspects of the work.

- Feedback to the Contractors on environmental impacts and risks prior to the commencement of any part of the works.
- Monitoring construction activities to ensure the identified control measures are effective and in compliance with the Harbour facilities CEMP and environmental permits, licences and consents.
- Acting as the main point of contact with other (including external) parties for environmental matters.
- Undertake quarterly environmental audits of the work and reported to the YPL Area Project Manager and YPL Environmental Manager.

### ***Contractors Environmental Manager***

- 3.2.6 The Contractors Environmental Manager will have responsibility for environmental aspects of the work undertaken by that Contractor for the specific YPP construction scope. He will ensure compliance with environmental aspects of the construction works through his Environmental Team Leaders together with the necessary monitoring and will report to the Contractors Project Manager.
- 3.2.7 Contractors Environmental Team Leaders will contribute to regular updates of their contract specific CEMP as well as to the preparation of method statements and task sheets and risk assessments; they shall review all such documentation before submission to the PMC Environmental Manager. The Environmental Team Leaders will consider how approaches for different aspects of the works can contribute to environmental improvement in performance and present these forward to the PMC for consideration. They will ensure implementation and monitoring of (the control of) nuisance matters such as noise, dust, light, and conduct on site that may have environmental implications. They will also ensure the PMC Environmental Manager is fully informed on all environmental matters as construction works proceed and be available for construction site audits with the PMC Environmental Manager or by their advisors as required.

### ***Contractors Site Environmental Co-ordinators***

- 3.2.8 A number of Site Environmental Co-ordinators will be identified by the contractors for overseeing different construction activities on the ground. The Environmental Team Leaders will have provided them a specific induction for the role prior to commencement of work and will be available for advice and guidance to them on an on-going basis. Construction activities are likely to run in parallel and hence this approach ensures coverage of all aspects of the works and a point of accountability for environmental matters on a continuous basis.
- 3.2.9 Site Environmental Co-ordinators will ensure all environmental aspects such as waste, pollution, environmental disturbance (including noise, dust, light etc.), protected species etc. are addressed to agreed conditions (from permits licences or consents), methods, and standards, including undertaking ad-hoc inspection and house-keeping of the working areas. They will provide regular reporting to the Environmental Team Leaders and be a conduit for dissemination of issues and lessons learnt across the site (through provision of toolbox talks). They will also attend site environmental audits with the PMC Environmental Project Manager or their advisors within the area they have responsibility for as required.

### ***Sub-Contractor Environmental Representative***

- 3.2.10 Each Sub-Contractor, appointed by the main contractor, will be required to appoint an Environmental Representative who will be responsible for:
- Ensuring that environmental considerations are included and/or applied with regards to risk assessments, method statements, task sheets and work instructions including delivery of toolbox talks to their staff.
  - Carrying-out environmental inspections and house-keeping of (their part of) the site.
  - Carrying out any corrective actions identified through audit, inspection, or as directed by the Main Contractor or PMC.
  - Implementation and monitoring of waste minimisation, segregation and safe disposal measures.
  - Implementation and monitoring of nuisance matters such as noise, dust, light, and conduct on site that may have environmental implications.
- 3.2.11 These Sub-contractor Environmental Representatives will meet with Environmental Team Leaders to ensure clarity on environmental issues for the activities they are involved in. All subcontractors will need to demonstrate ability to comply with any environmental constraints or requirements as part of the procurement process.

### ***Site staff***

- 3.2.12 The approach to the environmental management structure aims to ensure that the appropriate environmental performance is delivered by all staff working on site whether from the main contractor or their sub-contractors. Ultimately site staff can both be responsible for environmental impacts but also for resolving any incidents quickly and in the correct manner. All staff working on site will be inducted and a part of the induction delivered by Contractors must include the environmental sensitivities and requirements of the project. All staff will, thus, receive an overview of environmental issues and then be provided more detailed guidance from Site Environmental Co-ordinators for specific activities. All Site Staff will be empowered to act to prevent any unnecessary impact to the natural environment.

## **3.3 Responsibilities**

- 3.3.1 The environmental responsibilities within the tender and work specifications for each of the anticipated construction work packages will be appended to this CEMP as they become available.

## 4 ENVIRONMENTAL ACTION PLAN

### 4.1 Environmental Risk Assessments

4.1.1 An Environmental Action Plan (EAP) is required to identify and coordinate activities that are required to complete the construction process in an environmentally acceptable way. The EAP identifies reference documentation and the approvals required to complete activities in a satisfactory manner. The EAP is broken down by operations and types of receptors. This activity shall be developed by the Contractors to apply to particular work they undertake and consider the risk and methods involved.

4.1.2 The Contractor will ensure all activities undertaken on site will be subject to an environmental risk assessment. The risk assessment shall:

- identify significant environmental impacts that can be anticipated;
- assess the risks from these impacts;
- identify control measures to mitigate risk; and,
- report any unacceptable residual risk such that changes can be implemented to reduce the risk to an acceptable level.

4.1.3 The findings of each risk assessment, and in particular the necessary controls to reduce risk, will be recorded in Method Statements, Task Sheets and explained to site operatives prior to the commencement of the relevant activities through the use of tool-box talks.

### 4.2 Method Statements, Task Sheets, and Tool-box Talks

4.2.1 Method Statements, Task Sheets and Tool-box Talks will cover matters of Health and Safety, engineering design, effective working and environmental issues; in short, one integrated document will be produced rather than the environmental aspects being separated unnecessarily. In this way environmental issues form an integral part of working practices rather than seen as a separate or add-on item.

4.2.2 All Methods Statements, Task Sheets and Tool-box Talks will be prepared as documents and shall be kept under review and revised, updated, or re-written as a result of lessons learnt, changes in legislative requirements, incidents and/or as part of the continuous improvement of construction environmental management on-site.

### 4.3 Method Statements

4.3.1 Method Statements will be produced by the Contractor(s) in advance of commencing any construction activity to take account of the environmental risks (as identified in the risk assessment), provide awareness of those risks to those overseeing and managing a part of the construction, and identify how the method should be executed to ensure that appropriate environmental control measures are applied in the construction process. Method Statements should cover (as a minimum) the relevant environmental matters identified within Environmental Risk Assessments introduced in **Section 4.1** and the relevant mitigation measures identified in **Section 6 of this CEMP**. Those working on an activity must be fully briefed prior to the commencement of that activity; the briefing of a Method Statement should be recorded on a signed and dated register by all staff working on that matter.

4.3.2 Method statements shall be reviewed by the PMC Environmental Manager (or their assistants / advisors) and agreed by YPL in advance of works with relevant regulators (such as Natural England, the Environment Agency or the MMO) where appropriate or a conditional requirement. Method statements must include at least the following information:

- Location of activity and access arrangements.
- Work to be undertaken and methods of construction.
- Plant and materials to be used.
- Supervision requirements.
- Health considerations.
- Safety considerations.
- Environmental considerations.
- Details of any permit or consent requirements.
- Identify significant environmental impacts that can be anticipated and how they are to be controlled.

#### **4.4 Task Sheets**

4.4.1 Task Sheets shall record particular tasks that might be undertaken and repeated on more than one activity on site; for example the de-coupling or replacement of hydraulic hoses might be a task which applies to many of the pieces of machinery working on different construction activities but the environmental risks and mitigation measures will be largely the same. Task Sheets support the Method Statement for the particular construction activity and should be passed to individuals who are to undertake the particular task (they can also identify useful general matters to promote under Tool-box Talks); the provision of a Task Sheet to an individual should be recorded as a signed and dated register.

#### **4.5 Tool-box Talks**

4.5.1 Tool-box Talks aim to communicate information to the Site Staff and serve to educate, prompt and remind staff of certain environmental responsibilities. A Tool-box talk might cover a particular permit, licence or consent, an issue such as water pollution, or protocols such as for archaeological finds; it can also provide feedback on issues of concern that are raised by Staff or general information of interest to the Site Staff. A particular Talk may be repeated after some period of time as a reminder or prompted by an incident arising on site. This is an important tool in communicating information to site staff and it is anticipated that each work team will receive at least one environmental Tool-box Talk per fortnight throughout the construction period.

#### **4.6 Emergency Preparedness and Response**

4.6.1 Planning for responding to incidents and emergencies is an important part of project environmental management. Emergency preparedness and response and contingency plans should take account of the location of the local drainage system (and watercourses); requirement to engage emergency services, location and contents of spill kits, notification process and emergency contacts list in the event of an incident (including external parties such as the Environment Agency and Emergency Services), etc.

4.6.2 Project Emergency Preparedness and Response Procedures will be developed and completed, and included in the site induction and allocated persons should be appropriately trained. The

procedures should be drilled on a periodic basis to ensure that it is still effective and personnel know how to respond.

## **5 CONTROL OF CONSTRUCTION PROCESS**

### **5.1 Environmental Awareness and Competence**

- 5.1.1 To control the environmental risks, a number of management measures are required during the construction phases of YPP. These controls shall be managed and exerted by the PMC Environmental Manager and fully supported throughout the Contractors management chain on Site.
- 5.1.2 Site Environmental Standards (SES) to be applied by the Contractor shall be agreed with the PMC Environmental Manager and approved by the YPL Environmental Manager. SES will detail the measures that should be achieved for the general day to day operations and cover the majority of construction activities. This will consider matters such as the storage of materials, management of waste, water pollution, noise and vibration, dust, and their control measures.
- 5.1.3 The raising of environmental awareness amongst those working on Site is a crucial element in the implementation of the CEMP. As a consequence all staff (including any staff brought in during the project) will require a pre-start (i.e. prior to commencing work on Site) induction which will include details of the environmental aspects of the project. Managers and supervisors will ensure that all personnel engaged in activities are competent to carry out their duties or, where necessary, provided suitable training.
- 5.1.4 Specific induction should be given to Contractors Site Environmental Coordinators by one of the Contractors Environmental Team Leaders to ensure they have broad appreciation of environmental matters. This training will include (as minimum) presentation on the context of the Harbour facilities adjacent to designated sites for nature conservation, protected and invasive species, and an overview of legal requirements (including matters such as nesting birds), an overview of environmental permits, licences and consents and the implications of non-compliance or loss of those that apply to the works.
- 5.1.5 Regular meetings of the Contractors Environmental Team Leaders will ensure that forthcoming issues are identified, site environmental performance monitored and good practice disseminated as well as communicated formally to the PMC Environmental Manager as a report. Updates to the CEMP shall also be made at these points in time and sent to the YPL Environmental Manager for approval.
- 5.1.6 A copy of the CEMP will be provided to each Site Environmental Coordinator and the content explained. The Environmental Team Leaders will provide updates of relevant methods of working, schedules and permits, consents and licences as they arise and develop and disseminate Tool-box Talks. The specific inductions will also apply to any replacement or additional staff in these roles as they are required on the works.

### **5.2 PMC supervision of Construction Activities**

- 5.2.1 All construction and installation activities, including those carried out by subcontractors, will be supervised by the Contractors Project Manager with the support of the Environmental Team Leaders to ensure that requirements identified in risk assessments and method statements are properly implemented. The frequency of this supervision will be dependent upon the competency displayed by the workforce and the level of risk to the environment of particular activities.

5.2.2 The environmental management identified within this CEMP will be subject to inspections by the PMC Environmental Manager and/or one of the Contractors Environmental Team Leaders on a regular basis. These inspections will seek to confirm that:

- construction works are progressing in accordance with the agreed method statements and Task Sheets;
- agreed controls, protection and mitigation measures (including those in the CEMP) are in place prior to or during the implementation of construction activities; and,
- construction works have been completed in accordance with commitments made during the statutory process as set out within permits, licences and consents.

5.2.3 The Site Environmental Team Leaders will carry out regular inspections of their construction areas, to verify that the required methods and mitigation measures are being implemented effectively.

### **5.3 Construction inspection of environmental impacts**

5.3.1 Inspections of construction and storage areas will be undertaken by Site Staff, to verify that good housekeeping is being implemented effectively. These inspections will utilise Site Environmental Standards (as the minimum standards that should be achieved), with necessary actions being recorded and forwarded to the relevant Heads of Operations and Site Environmental Team leaders. Subsequent inspections by the Contractor would commence with a review of all outstanding necessary actions to verify that they have been completed and record that to be the case. Such inspections will be both programmed and at ad hoc timings.

5.3.2 Head of Operations will periodically satisfy themselves that the reports and actions presented to them are indeed implemented on the ground. The Heads of Operations will carry out an assessment of the project's environmental performance based upon reports and from their own (direct) site inspections and those of the Environmental Team Leaders. This will be carried out on a monthly basis. An assessment of the performance over the month will be made and quantified, where possible. A monthly report detailing inspections completed, audits undertaken and a register of incidents will be provided to the Employers Representative and the PMC Environmental Manager.

### **5.4 Communication and coordination**

#### ***Internal Communication***

5.4.1 Environmental issues will be discussed at regular Project Environmental Reviews, attended by the PMC Environmental Manager, Environmental Team Leaders and other relevant environmental representatives. When necessary this may include representatives from statutory bodies to address matters of concern to them or for them to provide information of changes to legislative requirements or its interpretation.

5.4.2 The Project Environmental Review will:

- Consider the past period performance.
- Review audits and available data from inspections.
- Provide an overview of any environmental monitoring results.
- Plan actions required to mitigate issues that have arisen and/or forthcoming risks.



- Provide a mechanism to disseminate best practice across the site.

#### ***External Communication***

- 5.4.3 Although relatively remote from high density residential areas, keeping neighbours informed of the works is paramount to avoiding any complaints and maintaining a good working relationship. As such the main contractor will establish a residents and landowner liaison protocol and provide a resource to monitor communications.
- 5.4.4 Where a complaint is received, it shall be immediately logged and all relevant details obtained. All complaints will be closed out within an appropriate time frame in order to satisfy the complainant.
- 5.4.5 A display board should be erected outside the site keeping local residents and stakeholders informed of works and schedule. As a minimum the board shall identify key personnel, contact addresses and telephone numbers, as well as show work progression.

## 6 ENVIRONMENTAL MITIGATION MEASURES

- 6.1.1 The mitigation measures presented in **Table 6-1** have been developed from the mitigation proposals described in the Harbour facilities ES.

## 7 AUDIT AND MONITORING OF ENVIRONMENTAL PERFORMANCE

- 7.1.1 An important part of this process will involve the audit and monitoring of environmental performance on site by the PMC Environmental Manager and inspection by the Environmental Team Leaders and Site Environmental Coordinators. Through the identification of issues that arise, and their cause, modifications to existing processes and procedures can be made. Furthermore, guidance, information, or enforcement can be distributed across the site (through the structure for environmental management) and improvement achieved in an efficient and effective manner.
- 7.1.2 Improvements made during the construction phase will be recorded in reports to the PMC from the Contractor(s) and include where sustainable construction has been implemented or developed as the work proceeds. Information from records of water, fuel and power consumption that are to be maintained by the Contractor will provide metrics to measure some aspects of performance such as waste minimisation, recycling, and reuse of materials. Such matters will be reviewed regularly between the PMC Environmental Manager and the Environmental Team Leaders to both identify and implement continuous improvement measures.

**Table 6-1 Summary of mitigation measures for Harbour facilities**

Environmental Statement: Proposed mitigation or best practice measures	
<b>Section 6 – Hydrology, hydrogeology and land quality</b>	
1	<p>All construction phase activities would be carried out in accordance with the following:</p> <ul style="list-style-type: none"> <li>• Best practice guidance including the Environment Agency’s Pollution Prevention Guidance (PPG) notes and guidance from the Construction Industry Research and Information Association (CIRIA).</li> <li>• Adherence to Construction Design and Management (CDM) Regulations 2007 where applicable.</li> <li>• Adherence to the Harbour facilities CEMP and an Incident / Emergency Response Plan.</li> <li>• All works to be carried out by appropriately trained personnel.</li> </ul> <p>Appropriate PPE and working practices to be adopted by construction workers, including subcontractors, and health and safety measures would be undertaken to mitigate any short term risk during construction.</p>
2	The potential for cross contamination as a result of soil movements would be mitigated following the principles of the CL:AIRE Code of Practice incorporating the development of a materials management plan.
3	Implementation of an asbestos management strategy.
4	Contractors would ensure that sound environmental practices are adopted. Health and safety precautions should be adopted to protect workers from potential contaminants, including the use of PPE.
5	Care would be taken to prevent run-off of waters that may contain suspended solids or fuels.
6	Monitoring (in line with the scope of monitoring defined in the aftercare and closure report for Bran Sands landfill) would take place during the construction phase, potentially with modifications in terms of sampling frequency for some parameters and additional monitoring locations.
7	Best practice construction techniques and due diligence would be executed throughout construction to minimise the risk of pollution incidents.

Environmental Statement: Proposed mitigation or best practice measures	
<b>Section 7 – Marine sediment and water quality</b>	
8	The site compounds would be underlain by crushed rock / stone and rain water would percolate into the ground.
9	Appropriate preventative and control measures would be adopted, such as the placement of drip trays under all parked vehicles and bunded areas to store the substances as well as ensuring that a spill kit is kept on site. PD Teesport is also a spill responder for the Tees estuary and, as such, there are plans in place to ensure spillages or leakages can be rapidly and effectively managed.
10	Best practice techniques and due diligence would be executed throughout all construction activities. All working practises would adhere to the Environment Agency's Pollution Prevention Advice and Guideline (PPG) 5: Works and maintenance in or near water (Environment Agency, 2007) and all vessels would adhere to the requirements of the MARPOL Convention Regulations.
11	A spill kit (including booms) would be kept on site at all times during operation and any major spills or leakages will be reported to the Environment Agency and Harbour Master.
<b>Section 8 - Marine ecology</b>	
12	A minimum of eight hours continuous break in every 24 hour period would be implemented where no impact piling is carried out.
<b>Section 9 - Marine and coastal ornithology</b>	
13	<p>As mitigation for the potential impact of construction phase noise disturbance, it is proposed that temporary noise attenuation barriers would be positioned:</p> <ul style="list-style-type: none"> <li>• along the embankment between Bran Sands lagoon and the proposed construction works for the port terminal; and</li> <li>• on either side of the route of the overland conveyor should it be constructed in the southern corridor (i.e. between the lagoon and Dabholm Gut and the construction works for the conveyor); or,</li> <li>• between Bran Sands lagoon and the construction works for the conveyor should the conveyor be constructed in the northern corridor.</li> </ul> <p>The use of noise reduction curtain over the hammer piling rig during percussive operations would be investigated; this can provide a minimum of 10dB attenuation.</p>

Environmental Statement: Proposed mitigation or best practice measures	
14	As mitigation for potential visual disturbance to waterbirds, it is proposed that temporary visual barriers are positioned in the same locations as identified under item 13 for the noise attenuation barriers (it should be noted that the barriers positioned for mitigation of potential noise disturbance as described in item 13 will also serve as a visual screen; the same locations are appropriate as mitigation for both noise and visual disturbance).
15	<p>As part of the construction phase lighting design, the strategies set out below would be adopted to ensure the effects of construction phase lighting on the surrounding environment is minimised as far as possible and minimises the lighting effect on Bran Sands lagoon and Dabholm Gut:</p> <ul style="list-style-type: none"> <li>• Artificial lighting during the construction phase would only be used during the hours of darkness, during low levels of natural light or during specific construction methods or tasks.</li> <li>• Lighting would be directed to focus inwards to the site wherever possible to reduce external glare.</li> <li>• The luminaires to be mounted on lighting columns would comprise of a flat glass construction, appropriate to the nature and location of the installation. The aiming angle of the peak intensity of the luminaire would be limited to maintain the light output from the luminaire within five degrees from the downward vertical. This would control the lighting of the area and minimise any potential glare, sky glow and obtrusive lighting to the surrounding areas. The luminaires to be mounted on the lighting columns would incorporate the appropriate photometry reflectors to control the distribution of light from the luminaires and maintain the illumination within the construction development areas, boundary or task area. The proposed horizontal lighting illuminance levels (minimum and average levels) would comply with the lighting standard and guidance documents relevant to the method and construction work being undertaken.</li> <li>• During low levels of activity, public holidays or lulls in construction, the contractors would be required to maintain only appropriate minimum levels of illumination around the proposed development.</li> <li>• HGVs and other site traffic during the construction phase, during the hours of darkness, would be subject to a travel plan strategy that limits traffic and, therefore, vehicle lighting during hours of darkness.</li> </ul> <p>Contractors would be required to monitor the lighting levels and spillage, and records of lighting levels would be retained on site. Where lighting levels are found to be inadequate or excessive, mitigation strategies to remedy the effects would be implemented, such as re-directing luminaires</p>
<b>Section 10 – Terrestrial ecology</b>	
16	Construction lighting would be located away from the bridges which provide foraging habitat and occasional daytime roosting sites to avoid disturbance to potential bat roosts. Lighting requirements would be designed in accordance with guidance from the Bat Conservation Trust.

<b>Environmental Statement: Proposed mitigation or best practice measures</b>	
17	A Precautionary Method of Working document would be prepared by an ecologist to cover the site works associated with the scheme to minimise the risk of harm to reptiles. Habitat manipulation would be undertaken which would comprise vegetation cutting and the removal of debris which could provide shelter. Clearance of potential reptile refuges and vegetation cutting would be undertaken outside of reptile hibernation season. All advance habitat manipulation would be supervised by an ecologist.
18	Any trenches and excavations would be closed overnight and escape routes provided should an animal become trapped.
<b>Section 11 – Fisheries and fishing activity</b>	
19	The mitigation measures relevant to Section 7 are also of relevance to this section.
20	No piling would be undertaken for three hours following low water between 1 March and 30 November. During May, no piling would take place. A minimum of eight hours continuous break in every 24 hour period would be implemented where no impact piling is carried out.
<b>Section 13 – Air quality</b>	
21	Mitigation measures relating to communications include the following: <ul style="list-style-type: none"> <li>• Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.</li> <li>• Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.</li> <li>• Display the head or regional office contact information</li> </ul>
22	Mitigation measures relating to dust management include the following: <ul style="list-style-type: none"> <li>• Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority.</li> <li>• Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.</li> <li>• Make the complaints log available to the local authority when asked.</li> <li>• Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.</li> </ul>

<b>Environmental Statement: Proposed mitigation or best practice measures</b>	
	<ul style="list-style-type: none"> <li>• Liaise with other high risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.</li> <li>• Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to note any dust deposition, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of site boundary, with cleaning to be provided if necessary.</li> <li>• Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.</li> <li>• Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is practicable.</li> <li>• Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.</li> <li>• Consider enclosure of site or specific operations where there is a high potential for dust production and the site is active for an extensive period.</li> <li>• Take measures to control site runoff of water or mud.</li> <li>• Keep site fencing, barriers and scaffolding clean using wet methods.</li> <li>• Remove materials that have a potential to produce dust from site as soon as possible.</li> <li>• Cover, seed or fence stockpiles to prevent wind whipping.</li> <li>• Ensure all vehicles switch off engines when stationary - no idling vehicles.</li> <li>• Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.</li> <li>• Impose and signpost a maximum-speed-limit of 15 mph on surfaced, and 10 mph on unsurfaced, haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate)</li> <li>• Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.</li> <li>• Implement a Travel Plan that supports and encourages sustainable travel for contractor operatives and staff (public transport, cycling, walking, and car-sharing).</li> <li>• Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.</li> <li>• Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.</li> <li>• Use enclosed chutes and conveyors and covered skips.</li> <li>• Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.</li> <li>• Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.</li> </ul>

Environmental Statement: Proposed mitigation or best practice measures	
	<ul style="list-style-type: none"> <li>Bonfires and burning of waste materials should not be permitted.</li> </ul>
23	<p>Mitigation measures specific to demolition include the following:</p> <ul style="list-style-type: none"> <li>Ensure effective water suppression is used during demolition operations.</li> <li>Avoid explosive blasting, using appropriate manual or mechanical alternatives where possible.</li> <li>Bag and remove any biological debris or damp down such material before demolition.</li> </ul>
24	<p>Mitigation measures specific to earthworks include the following:</p> <ul style="list-style-type: none"> <li>Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.</li> <li>Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.</li> <li>Only remove the cover in small areas during work and not all at once.</li> </ul>
25	<p>Mitigation measures specific to construction include the following:</p> <ul style="list-style-type: none"> <li>Ensure sand and other aggregates are stored in surge bins, bunded areas or in a controlled and well-managed manner.</li> <li>Avoid scabbling (roughening of concrete surfaces) if possible.</li> <li>Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in surge bins with suitable emission control systems to prevent escape of material and overfilling during delivery.</li> <li>For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust release.</li> </ul>
26	<p>Mitigation measures specific to trackout include the following:</p> <ul style="list-style-type: none"> <li>Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.</li> <li>Avoid dry sweeping of large areas.</li> <li>Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.</li> <li>Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.</li> <li>Record all inspections of haul routes and any subsequent action in a site log book.</li> <li>Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.</li> <li>Install a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).</li> </ul>



Environmental Statement: Proposed mitigation or best practice measures	
	<ul style="list-style-type: none"> <li>• Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.</li> <li>• Locate site access gates at least 10m from receptors where possible.</li> </ul>
27	<p>Mitigation measures specific to Non Road Mobile Machinery (NRMM) include the following:</p> <ul style="list-style-type: none"> <li>• Non Road Mobile Machinery (NRMM) and plant would be well maintained. If any emissions of dark smoke occur then the relevant machinery should stop immediately and any problem should be rectified. In addition, the following controls should apply to NRMM: <ul style="list-style-type: none"> <li>○ All NRMM should use fuel equivalent to ultralow sulphur diesel (fuel meeting the specification within EN590:2004).</li> <li>○ All NRMM should comply with either the current or previous EU Directive Staged Emission Standards (97/68/EC, 2002/88/EC, 2004/26/EC). As new emission standards are introduced the acceptable standards should be updated to the previous and most current standard.</li> <li>○ All NRMM should be fitted with Diesel Particulate Filters (DPF) conforming to defined and demonstrated filtration efficiency (load/duty cycle permitting).</li> <li>○ The ongoing conformity of plant retrofitted with DPF, to a defined performance standard, should be ensured through a programme of onsite checks.</li> <li>○ Implementation of energy conservation measures, including instructions to throttle down or switch off idle construction equipment; switch off the engines of trucks while they are waiting to access the site and while they are being loaded or unloaded, ensure equipment is properly maintained to ensure efficient energy consumption.</li> </ul> </li> </ul>
<b>Section 14 – Noise and vibration</b>	
28	<p>The results of the noise calculations indicate that the majority of activities associated with the Port and Conveyor construction are predicted to be no more than the daytime noise threshold level at any of the surrounding residential and ecological receptors and therefore satisfy the design guidance provided in BS 5228-1 and the PPG for the NPPF.</p> <p>Good construction noise management includes measures such as:</p> <ul style="list-style-type: none"> <li>• Informing local residents about the construction works, including the timing and duration of any particularly noisy elements, and providing a contact telephone number to them;</li> <li>• Avoiding operating particularly noisy equipment at the beginning and end of the day;</li> <li>• Keeping potentially noisy deliveries, such as skips and concrete, to the middle or less sensitive times of the day where possible;</li> <li>• Locating noisy static plant, such as diesel generators, away from residential properties;</li> <li>• Appropriate use of site hoardings and barriers around site compounds;</li> <li>• Appropriate use of barriers around static construction equipment, i.e. generators, auger piling rigs etc.;</li> <li>• Consideration into the use of noise reduction skirts over the hammer piling rig during percussive operations;</li> </ul>

Environmental Statement: Proposed mitigation or best practice measures	
	<ul style="list-style-type: none"> <li>• Using the most modern equipment available and ensuring equipment is properly maintained; and</li> <li>• Where possible, using silencers/mufflers on equipment.</li> </ul> <p><i>Training</i></p> <p>The site induction programme and site rules would include good working practice instructions for site staff, managers, visitors and contractors to help minimise noise whilst working on the site.</p> <ul style="list-style-type: none"> <li>• Good working practice guidelines/instructions would include, but not be limited to, the following points:</li> <li>• avoid un-necessary revving of engines;</li> <li>• plant used intermittently should be shut-down between operational periods;</li> <li>• avoid reversing wherever possible;</li> <li>• drive carefully and within the site speed limit at all times;</li> <li>• report any defective equipment/plant as soon as possible so that corrective maintenance can be undertaken; and,</li> <li>• handle material in a manner that minimises noise.</li> </ul> <p><i>Maintenance</i></p> <p>Maintenance of plant would be carried out routinely and in accordance with the manufacturers' guidance. A regular inspection of all plant and equipment would be undertaken as a minimum to ensure that:</p> <ul style="list-style-type: none"> <li>• all plant is in a good state of repair and fully functional;</li> <li>• any plant found to be requiring interim maintenance has been identified and taken out of use;</li> <li>• acoustic enclosures fitted to plant are in a good state of repair;</li> <li>• doors and covers remain closed during operation; and,</li> <li>• any repairs are being undertaken by a fully qualified maintenance engineer.</li> </ul> <p><i>Non-compliance with noise limits / receipt of complaint</i></p> <p>If the predicted noise levels are exceeded as a result of construction works or a complaint is received from a local resident, an investigation would be instigated by the Site Manager within an agreed time period to identify the cause of the non-compliance/complaint.</p> <p>Such an investigation may involve the identification and cessation of the activity or activities considered to be the cause of the non-compliance/complaint (where operationally safe to do so) and/or the investigation of mitigation measures to reduce the noise emission levels from the activity or activities, for example the replacement of noisy plant with quieter alternatives and/or the use of temporary screens.</p> <p>Any deviation from agreed working practices would be identified immediately and conformance to the working practice reinstated. A further noise</p>

Environmental Statement: Proposed mitigation or best practice measures	
	<p>survey would be undertaken as soon as possible following the implementation of mitigation to re-assess the noise levels against the guideline noise levels.</p> <p>A complaints response system would be maintained for the site enabling any complaints regarding noise to be reported and appropriate action taken.</p> <p><i>Communication</i></p> <p>Contact information should be displayed at the site entrance in order that complaints can be registered. A 24 hour emergency contact number would be set up and distributed accordingly to ensure enquiries can be registered at all times.</p>
29	<p>Best management practice for vibration should be implemented to minimise vibration impacts, including:</p> <ul style="list-style-type: none"> <li>• choosing alternative, lower impact equipment or methods where possible;</li> <li>• scheduling the use of vibration-causing equipment at the least sensitive time of day;</li> <li>• routing, operating or locating high vibration sources as far away from sensitive areas as possible;</li> <li>• sequencing operations so that vibration-causing activities do not occur simultaneously;</li> <li>• isolating the equipment causing vibration on resilient mounts; and,</li> <li>• keeping equipment well maintained.</li> </ul>
<b>Section 18 – Infrastructure</b>	
30	<p>The installation of the conveyor would involve progression of bored concrete piles rather than impact piling along both conveyor route options. Existing buried assets would be exposed by hand in the areas where piling activities are in close proximity to them, prior to any piling commencing.</p>
31	<p>Works would start with ground penetrating surveys to determine the exact location of underground pipes and then controlled excavations with hand digging where required.</p>
32	<p>Subject to detailed geotechnical information and assessment, a strategy of soil stiffening above the Breagh Onshore Gas Pipeline could be implemented prior to dredging works being undertaken. One method which could be adopted to stiffen the material above the pipeline is jet grouting, where a high pressure cementitious grout is injected, which forms a matrix of cement grout with the surrounding material, resulting in a column of stiffened material. A series of grouted columns could be installed in a grid, resulting in a modified stiffness over an extended area.</p>

<b>Environmental Statement: Proposed mitigation or best practice measures</b>	
33	The mitigation measures relevant to Section 7 are also of relevance to this section to prevent impacts to water abstractions.
<b>Section 21 – Recreation and access</b>	
34	Temporary night time closures of the sections of Teesdale Way National Trail and the combined footpath and traffic free cycle route within the proposed scheme footprint would be implemented (only where the route of the proposed conveyor intercepts these recreational assets), during the relevant period of the construction phase.
35	To reduce disturbance impacts, members of the public should be informed well in advance of the proposed works regarding the works to be undertaken and informed of diversion routes for footpaths. Recreational users should also be provided with information regarding the extent of the works, proposed working hours and a timetable of works. A contact name, address and telephone number should be provided to recreational users in case of complaint or problem.
36	Public information signs would be utilised along the route of the walks to raise awareness of the temporary closure and diversions. Signs would be used to clearly identify the route of the diversion.
37	Best practice measures identified within Section 13 and 14 are also of relevance to prevent noise and air quality disturbance to recreational users.
<b>Appendix 4.3 - Water Framework Directive</b>	
38	Ensure that the working methodology adheres to Environment Agency's Pollution Prevention Guidance Notes (including PPG01, PPG05, PPG08 and PPG21) and construction industry good practice guidance recommended in CIRIA (2001).
39	The wheels of all vehicles should be washed before leaving site. It is assumed that the wheels of all vehicles delivering materials to site will be washed on departure from their point of origin.
40	Concrete and cement mixing and washing areas should be situated at least 10m away from the nearest watercourse. These should incorporate settlement and recirculation systems to allow water to be re-used. All washing out of equipment should be undertaken in a contained area, and all water should be collected for off-site disposal.

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41	All fuels, oils, lubricants and other chemicals should be stored in an impermeable bund with at least 110% of the stored capacity. Spill kits should be available at all times, and damaged containers should be removed from site. All re-fuelling should take place in a dedicated impermeable area, using a bunded bowser. Biodegradable oils should be used where possible.



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