

# Aberdeen Harbour Expansion Project

Updated marine licence  
application: Dredging &  
Disposal

May 2016

**Aberdeen Harbour Expansion Project**  
**Updated Marine Licence application: Dredging and Disposal May 2016**  
**Document and drawing register**

**Document register**

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**Drawing register**

Drawing reference	Description
01. Location plan Q2582	Location of existing Aberdeen Harbour and proposed harbour expansion
02. Areas to be dredged 121106-1300	Areas to be dredged and dredge depths
03. Areas of rock dredging 121106-1014	Areas of rock to be dredged
04. Offshore disposal site 121106-1010	Location plan and bathymetric survey of licensed offshore disposal site
05. AHB jurisdiction 2015001-504	Extent of statutory harbour authority jurisdiction (Aberdeen Harbour Board)

**Aberdeen Harbour Expansion Project**  
**Marine Licence application for Dredging & Disposal**  
**Rationale for updating the application**

On 4 November 2015, Aberdeen Harbour Board (AHB) submitted a marine licence application to Marine Scotland for Dredging & Disposal for the Aberdeen Harbour Expansion Project (AHEP).

Since the original application was submitted, two additional sediment sampling surveys have been carried out to provide further information on the sediment quality within the area to be dredged for the AHEP. The volume of material to be dredged has also been refined following additional site investigation carried out in December 2015 and further calculations undertaken by the three contractors tendering for the project. AHB has, therefore, withdrawn the original marine licence application and submitted an updated application to account for these changes. The changes are described in further detail below.

- Increase in volume to be dredged

The original application form for Dredging & Disposal states that the total volume of material to be dredged is 2,300,000 m<sup>3</sup>, of which 109,000 m<sup>3</sup> is rock. Additional site investigation carried out in December 2015 and further calculations undertaken by the three contractors tendering for the project has been used to refine these volumes, and the total volume of material to be dredged has increased to 2,850,000 m<sup>3</sup>, of which 250,000 m<sup>3</sup> is estimated to be rock. The exact volumes will be dependent on the appointed contractor's methodology. As stated in the Environmental Statement (ES), all rock will be used within the harbour works and will not be disposed offshore.

As detailed in Section 3 of the Additional Environmental Information Report submitted with the updated application, the conclusions in the ES relating to the effects of disposal and plume dispersion (i.e. those elements that would be affected by the increase in volume) remain valid.

- New sediment survey data

Two sediment sampling surveys have been carried out since the ES was produced to provide further information on the sediment quality within the area to be dredged. The results and interpretation of the surveys are presented in Section 2 of the Additional Environmental Information Report submitted with this updated application.

- Updated coordinates

In the southern section of Nigg Bay, the coordinates given in the original application followed the line of the area that will be dredged to 9.0 m below Chart Datum, whereas they should have followed the mean high water mark to encompass the slope that is required to create a stable dredge profile. Figure 3.1 in Chapter 3 of the ES shows the marine licence boundary correctly following the mean high water mark at this location.

- All other elements of the application remain unchanged.

AHB has produced an 'Additional Environmental Information Report' which assesses the effects of the changes listed above. This report forms part of the updated application.

This updated application for Dredging & Disposal is subject to a 28-day consultation in accordance with Part 4 of the Marine (Scotland) Act 2010, which commenced on 7 May 2016. This consultation is in conjunction with the 42-day public consultation for the overall project under The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended), which commenced on 22 April 2016.

## **Marine Licence Application for Dredging and Sea Disposal**

Version 1.0

### **Marine (Scotland) Act 2010**

## Acronyms

Please note the following acronyms referred to in this application form:

<b>BPEO</b>	Best Practicable Environmental Option
<b>MHWS</b>	Mean High Water Springs
<b>MMO</b>	Marine Mammal Observer
<b>MPA</b>	Marine Protected Area
<b>MS-LOT</b>	Marine Scotland – Licensing Operations Team
<b>PAM</b>	Passive Acoustic Monitoring
<b>SAC</b>	Special Area of Conservation
<b>SNH</b>	Scottish Natural Heritage
<b>SPA</b>	Special Protection Area
<b>SSSI</b>	Site of Special Scientific Interest
<b>WGS84</b>	World Geodetic System 1984

## Explanatory Notes

The following numbered paragraphs correspond to the questions on the application form and are intended to assist in completing the form. These explanatory notes are specific to this application and so you are advised to read these in conjunction with the Marine Scotland Guidance for Marine Licence Applicants document.

### **1. Applicant Details**

The person making the application who will be named as the licensee.

### **2. Dredging Contractor Details**

The person whose activities produce the substance(s) or object(s) to be dredged and/or intended for sea disposal (e.g the dredging contractor).

### **3. Agent Details**

Any person acting under contract (or other agreement) on behalf of any party listed as the applicant and having responsibility for the control, management or physical deposit or removal of any substance(s) or object(s).

### **4. Payment**

Indicate payment method. Cheques must be made payable to: The Scottish Government.

**Marine licence applications will not be accepted unless accompanied by a cheque for the correct application fee, or if an invoice is requested, until that invoice is settled. Target timelines for determining applications do not begin until the application fee is paid.**

### **5. Application Type**

Indicate if the application is for a new dredging site or a site that has previously been dredged. Provide the existing or previous consent/licence number, expiry date and quantity (in wet tonnes) dredged under the consent/licence up to a stated date if applicable.

### **6. Dredging and Sea Disposal Details**

- (a) Give a brief description of the dredging and sea disposal operation.
- (b) Provide the proposed start date of the project. The start date will not be backdated, since to commence a project for which a licence has not been obtained will constitute an offence, which may result in appropriate legal action. A licence is normally valid for the duration of the project but not exceeding 3 years. If a project will not be completed before a marine licence lapses, it will be necessary for licence holders to re-apply for a further licence to continue any ongoing work at least 14 weeks prior to the expiry date of the licence. **Target duration for determination of a marine licence application is 14 weeks.**
- (c) Provide the proposed completion date of the project.

- (d) Describe the location of the proposed works. Include a list of the latitude and longitude co-ordinates (WGS84) of the boundary points for each dredge site area. WGS84 is the World Geodetic System 1984 and the reference co-ordinate system used for marine licence applications. Co-ordinates taken from GPS equipment should be set to WGS84. Coordinates taken from recent admiralty charts will be on a WGS84 compatible datum. Ordnance survey maps do not use WGS84.

**Example:** For positions read from charts the format should be as in the example: 55°55.555'N 002°22.222'W (WGS84). The decimal point specifies that decimals of minutes are used and the datum is stated explicitly. If seconds are used then the format should be as in the example: 55°55'44"N 2°22'11"W (WGS84).

**It is important that the correct positions, in the correct format, are included with this application, as any errors will result in the application being refused or delayed.**

To supplement your application, please provide a suitably scaled extract of an Ordnance Survey Map (1:2,500 scale but not more than 1:10,000) or Admiralty Chart which must be marked to indicate:

- the full extent of the works in relation to the surrounding area;
- latitude and longitude co-ordinates defining the location of the works;
- the level of MHWS;
- any adjacent SAC, SPA, SSSI, MPA, Ramsar or similar conservation area boundary.

Drawings and plans will be consulted upon. If they are subject to copyright, **it is the responsibility of the applicant to obtain necessary approvals to reproduce the documents and to submit suitably annotated copies with the application.**

- (e) Provide details of the proposed disposal site for the dredged substance(s) or object(s) and, if necessary, any alternative disposal site(s) considered. In determining whether to grant a marine licence, MS-LOT will take into account any site nominated by the applicant. However, should this site be unsuitable, the nearest suitable disposal site for the dredged substance(s) or object(s) will be identified. Should you wish to establish a new site, please provide details in a covering letter with your application and MS-LOT will contact you to discuss your proposal before your application is determined. The cost of any site investigations to identify any new disposal site will normally be the responsibility of the applicant.
- (f) Indicate if any part of the works (dredging or sea disposal site) are located within the jurisdiction of a statutory harbour authority and provide details of the statutory harbour authority where relevant.
- (g) Provide a full method statement. The method statement must include details such as the rate of dredging, timing of the operation and order of the areas to be dredged.
- (h) Provide assessment of the potential impacts the works may have, including interference with other uses of the sea. Please include details of areas of concern e.g designated conservation areas, such as a SAC, SPA, SSSI, MPA or Ramsar site and shellfish harvesting areas. Further guidance on designated conservation areas can be obtained from SNH at this website: <http://gateway.snh.gov.uk/sitelink/index.jsp> and guidance on shellfish harvesting areas can be obtained from <http://www.foodstandards.gov.scot/> with regards to the Shellfish Waters Directive (2006/113/EC) which has parameters set to protect the water quality in which edible shellfish are grown.

Applicants should also be aware of the need to pay due regard to coastal and marine archaeological matters and attention is drawn to Historic Scotland's Operational Policy Paper HP6, "Conserving the Underwater Heritage".

Any application for beach replenishment works must be cross checked as to whether the proposed site is a designated bathing water site. If so, all physical works should ideally be done outwith the Bathing Water Season (1<sup>st</sup> June to 15<sup>th</sup> September). Further guidance on the Bathing Waters Directive (2006/7/EC) can be obtained from <http://apps.sepa.org.uk/bathingwaters/>.

Where there are potential impacts from the works, please provide details of proposed mitigation, such as use of MMOs or PAM, in response to potential impacts.

## 7. Details of Substance(s) or Object(s) to be Dredged

Information is required for each dredge site area listed in section 6 (d). please provide the following information:

**Name of Dredge Area:** For example Approach Channel or West of South Quay.

**Type (Maintenance or Capital):** **Maintenance dredge** applies to an area that has been dredged more than once and either annually or on a regular basis and was last dredged with the past 7 years; and a **Capital dredge** applies where an area/depth is being dredged either for the first time, or which has not been dredged within the past 7 years.

For capital dredging operations, a pre-dredge survey and sediment chemical analysis report will be required by MS-LOT prior to the issue of a sea disposal licence. Please contact MS-LOT for details in relation to specific projects. For maintenance dredging operations sites that have not been chemically analysed for more than 3 years, pre-dredge chemical analysis will be required to be undertaken. In addition to those samples analysed by the applicant, sediment sub-sample(s) must be submitted to MS-LOT as check monitoring may be required.

**Estimated Specific Gravity:** Indicate the specific gravity of the substance(s) or object(s) to be dredged from each dredge area.

**Depth:** Indicate the maximum depth (in metres) below the current seabed level, to which it is expected dredging is to be carried out, for each dredge area.

**Quantity to be Dredged per Year (wet tonnes):** Indicate the quantity of substance(s) or object(s) to be dredged (per year) from each dredge area. The quantity must be provided in wet tonnes.

## 8. Physical Composition

Indicate the approximate proportions as a percentage for each size range against each of the dredge site areas listed in section 6 (d) which are expected to be removed.

## 9. Details of Substance(s) or Object(s) Quality

Please indicate whether the substance(s) or object(s) from any of the areas to be dredged have been chemically analysed within the past 3 years. If yes, please provide details (locations, dates, results) on a separate sheet. If no, please provide justification. For capital projects, you are required to have representative sediment samples analysed at a laboratory of choice (see MS-LOT Pre-dredge Sampling Guidance document at <http://www.gov.scot/Topics/marine/Licensing/marine/Applications/predredge> for analytical requirements. This is liable to extend the time required to consider your application as **marine licence applications will not be determined without provision of this chemistry data.**

As part of the application determination process, you are required to carry out an assessment of the chemical and physical characteristics of the substance(s) or object(s) to be deposited at sea and potential effects upon the marine environment. It is your responsibility to show that the substance(s) or object(s) are suitable to be considered for sea disposal. This assessment should form part of your BPEO.

Under section 27(2) of the Marine (Scotland) Act 2010, the licensing authority has an obligation to consider the availability of practical alternatives when considering applications involving disposal of substance(s) or object(s) at sea. All applications for sea disposal must be supported by a detailed assessment of the alternative options - BPEO assessment. This must include a statement setting out the reasons why deposit of the substance(s) or object(s) at sea is the preferred option and applications will not be considered unless they are accompanied by such an assessment. All options in the BPEO must be explored fully (as per the guidance documents) otherwise your form and BPEO are liable to be returned to you, thereby delaying processing of the application.

As part of the licence conditions, you are likely to be required to take representative samples of the dredged substance(s) or object(s) during the dredging/sea disposal operations for analysis by MS-LOT. In such cases, samples must be taken at specified locations and depths and placed in containers which will be provided. The

samples must then be returned to MS-LOT at the Marine Laboratory Aberdeen. This process enables MS-LOT to fulfil its obligations under international conventions.

## **10. Details of Vessel(s) Undertaking Dredging and Sea Disposal**

Provide the vessel name, vessel type (e.g cutter-suction) and name and address of all vessel operators to be used for dredging and sea disposal operations. If vessel details are not available at the time of application, please indicate this on the form as these details will be required prior to licence issue.

## **11. Noise Monitoring**

Under the Marine Strategy Regulations (2010), there is now a requirement to monitor loud, low to mid frequency (10Hz to 10kHz) impulsive noise. Activities where this type of noise is produced include seismic airguns, other geophysical surveys (<10kHz), pile driving, explosives and certain acoustic deterrent devices. Where noisy activity is being undertaken, you must complete an initial registration form for the noise registry which allows you to provide details on the proposed work. Completion of a 'close-out' form, which allows licensees to provide details of the actual dates and locations where the activities occurred, is also required within 12 weeks of the completion of the 'noisy' activity or, in the case of prolonged activities such as piling for harbour construction or wind farms, at quarterly intervals or after each phase of foundation installation.

These forms can be downloaded from:

<http://www.scotland.gov.uk/Topics/marine/science/MSInteractive/Themes/noise-reduction>

**Marine licence applications will not be accepted until this form has been completed and submitted.**

## **12. Statutory Consenting Powers**

Please describe in the answer to this question what (if any) statutory responsibilities you (or your client) have to consent any aspect of the project.

## **13. Scotland's National Marine Plan**

Scotland's National Marine Plan has been prepared in accordance with the EU Directive 2014/89/EU, which came into force in July 2014. The Directive introduces a framework for maritime spatial planning and aims to promote the sustainable development of marine areas and the sustainable use of marine resources. It also sets out a number of minimum requirements all of which have been addressed in this plan. In doing so, and in accordance with article 5(3) of the Directive, Marine Scotland have considered a wide range of sectoral uses and activities and have determined how these different objectives are reflected and weighted in the marine plan. Land-sea interactions have also been taken into account as part of the marine planning process. Any applicant for a marine licence should consider their proposals with reference to Scotland's National Marine Plan. A copy of Scotland's National Marine Plan can be found at: <http://www.gov.scot/Publications/2015/03/6517/0>

Indicate whether you have considered the project with reference to Scotland's National Marine Plan and provide details of considerations made including reference to the policies that have been considered. If you have not considered the project with reference to Scotland's National Marine Plan please provide an explanation.

## **14. Consultation**

Provide details of all bodies consulted and give details of any consents issued including date of issue.

## **15. Associated Works**

Indicate whether the application is associated with any other marine projects (e.g. land reclamation, or marine/harbour construction works etc). If this is the case, provide reference/licence number for the related marine projects.



# Marine Licence Application for Dredging and Sea Disposal

Version 1.0

## Marine (Scotland) Act 2010

It is the responsibility of the applicant to obtain any other consents or authorisations that may be required.

Under Section 54 of the Marine (Scotland) Act 2010, all information contained within and provided in support of this application will be placed on a Public Register. There are no national security grounds for application information not going on the Register under the 2010 Act.

### Public Register

Do you consider that any of the information contained within or provided in support of this application should not be disclosed:

- (a) for reasons of national security; YES  NO
- (b) for reasons of confidentiality of commercial or industrial information where such confidentiality is provided by law to protect a legitimate commercial interest? YES  NO

If **YES**, to either (a) or (b), please provide full justification as to why all or part of the information you have provided should be withheld.

## WARNING

It is an offence under the Act under which this application is made to fail to disclose information or to provide false or misleading information.


Target duration for determination is 14 weeks. Please note that missing or erroneous information in your application and complications resulting from consultation may result in the application being refused or delayed.

Marine licence applications will not be accepted unless accompanied by a cheque for the correct application fee, or if an invoice is requested, until that invoice is settled. Target timelines for determining applications do not begin until the application fee is paid.

### Declaration

I declare to the best of my knowledge and belief that the information given in this form and related papers is true.

Signature



Date

Name in BLOCK LETTERS

### Application Check List

Please check that you provide all relevant information in support of your application, including but not limited to the following:

- Completed and signed application form
- Maps/Charts
- Co-ordinates of the boundary points of the area of harbour jurisdiction (if you are a statutory harbour authority)
- Method Statement
- BPEO Assessment
- Analytical chemistry data (for capital projects)
- Transportation plan (dredger route to and from disposal site – if required)
- Additional information e.g. photographs, consultation correspondence
- Noise Registry – Initial Registration Form (if applicable)
- Payment (if paying by cheque)

**1. Applicant Details**

Title:    Initials:    Surname:

Trading Title (if appropriate):

Address:

Name of contact (if different):

Telephone No. (inc. dialing code):

Email:

Statutory Harbour Authority?                  YES  NO

If **YES**, please provide a list of the latitude and longitude co-ordinates (WGS84) of the boundary points of the area of harbour jurisdiction using Appendix 01 Additional Co-ordinates form if necessary.

**2. Dredging Contractor Details (if any)**

Title:    Initials:    Surname:

If the Dredging Contractor is the Applicant shown in section 1 please tick the box                 

Trading Title (if appropriate):

Address:

Name of contact (if different):

Telephone No. (inc. dialing code):

Email:

**3. Agent Details (if any)**

Title:    Initials:    Surname:

Trading Title (if appropriate):

Address:

Name of contact (if different):

Telephone No. (inc. dialing code):

Email:

**4. Payment**

Enclosed Cheque

Invoice

Contact and address to send invoice to:

Applicant

Agent

Other

If **OTHER**, please provide contact details:

Title:

Initials:

Surname:

Address:

Email:



**5. Application Type**

Is this application for a new dredging site or a site that has previously been dredged:

New Site  Previously Dredged Site

If an **PREVIOUSLY DREDGED SITE**, please provide the following:

Consent/Licence Number	Expiry Date	Quantity (wet tonnes) dredged under consent/licence as at (date)

**6. Dredging and Sea Disposal Details**

(a) Brief description of the dredging and sea disposal operation:

(b) Proposed start date (**Target duration for determination of a marine licence application is 14 weeks**):

(c) Proposed completion date:

(d) Location of Dredging:

Latitude and Longitude co-ordinates (WGS84) defining the extent of all dredge areas (continue on Appendix 01 Additional Co-ordinates form if necessary):

**Dredge Area A**

Latitude								Longitude							
		°		.			' N			°		.			' W
		°		.			' N			°		.			' W
		°		.			' N			°		.			' W
		°		.			' N			°		.			' W
		°		.			' N			°		.			' W
		°		.			' N			°		.			' W

*[then follows mean high water back to the first coordinate point]*

**Dredge Area B**

Latitude								Longitude								
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W

**Dredge Area C**

Latitude								Longitude								
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W

**Dredge Area D**

Latitude								Longitude								
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W

**Dredge Area E**

Latitude								Longitude								
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W

(e) Name of Disposal Site and Oslo Code:

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Latitude and Longitude co-ordinates (WGS84) defining the extent of disposal site (continue on Appendix 01 Additional Co-ordinates form if necessary):

Latitude								Longitude								
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W
		°			.		' N				°			.		' W

(f) Is any part of the works (dredging or sea disposal site) located within the jurisdiction of a statutory harbour authority?

YES  NO

If **YES**, please specify statutory harbour authority:

(g) Method statement including rate of dredging, timing of the operation and order of the areas to be dredged (continue on separate sheet if necessary):

(h) Potential impacts the works may have (including details of areas of concern e.g. designated conservation and shellfish harvesting areas) and proposed mitigation in response to potential impacts (continue on separate sheet if necessary):

**7. Details of Substance(s) or Object(s) to be Dredged** (Please provide details for each of the Dredge Areas listed in Section 5 (d) above. Continue on a separate sheet if necessary):

Dredge Area	Name of Dredge Area	Type (Maintenance or Capital)	Harbour bed, Seabed or Estuary bed?	Estimated Specific Gravity	Depth (metres)	Quantity to be Dredged per Year (wet tonnes)
A						
B						
C						
D						
E						

8. **Physical Composition of Substance(s) or Object(s) to be Dredged** (Please provide the approximate proportions as a percentage for each size range against each of the dredge site areas listed in Section 6 (d) above. Continue on a separate sheet if necessary):

<b>Dredge Area</b>	<b>Clay and Silt</b> ( $< 0.063$ mm)	<b>Sand</b> ( $0.063 \leq \text{Sand} < 2.0$ mm)	<b>Pebbles, Cobbles &amp; Boulders</b> ( $\leq 2.0$ mm)
<b>A</b>			
<b>B</b>			
<b>C</b>			
<b>D</b>			
<b>E</b>			

9. **Details of Substance(s) or Object(s) Quality**

Have the dredged substance(s) or object(s) been chemically analysed in the last 3 years?

YES  NO

10. **Details of Vessel(s) Undertaking Dredging and Sea Disposal** (please note that a marine licence cannot be issued until the vessel details have been confirmed. Continue on a separate sheet if necessary):

<b>Vessel Name</b>	<b>Type of Vessel</b>	<b>Name and Address of Operator</b>



**11. Noise Monitoring**

Will loud, low to mid frequency (10Hz to 10kHz) impulsive noise be produced by the project? YES  NO

If **YES**, which please indicate the noise generating activities and sound frequencies:

Noise Generating Activity	Sound Frequency (Hertz)
Use of Explosives	
Other (please describe below):	

If you have ticked **YES**, please complete the Noise Registry – Initial Registration form located at: <http://www.scotland.gov.uk/Topics/marine/science/MSInteractive/Themes/noise-reduction>

**A marine licence application will not be accepted until this form has been completed and submitted.**

**12. Statutory Consenting Powers**

Do you, or (if appropriate) your client, have statutory powers to consent any aspect of this project?

**13. Scotland’s National Marine Plan**

Have you considered the application with reference to Scotland’s National Marine Plan? YES  NO

If **YES**, provide details of considerations made including reference to the policies that have been considered:

If **NO**, please provide an explanation of why you haven’t considered the National Marine Plan?

**14. Consultation**

List all bodies you have consulted and provide copies of correspondence:

**15. Associated Works**

Provide details of other related marine projects, including reference/licence numbers (if applicable):

## **Aberdeen Harbour Expansion Project**

### **Marine Licence Application for Dredging and Disposal**

#### **Continuation Sheet: Question 6.g. Dredging Method Statement**

It is anticipated that up to 250,000 m<sup>3</sup> of the material to be dredged is rock, located in the areas shown on drawing '03. *Areas of rock dredging 121106-1014*' submitted with this application. All rock will be used within the harbour works and will not be disposed offshore.

#### Trailer Suction Hopper Dredger (TSHD)

Where possible, unconsolidated material will be removed using a TSHD. This type of dredger has a suction pipe with a draghead at the end of the pipe which is suspended off the vessel, with the pipe and draghead trailing along the seabed. A pump is used to draw the seabed material up the suction pipe where material is discharged into the hopper.

Dredged material removed will be disposed of through the bottom opening of the hopper at the licenced offshore disposal site CR110 (shown on drawing '04. *Offshore disposal site 121106-1010*' submitted with this application) or reused within the harbour works.

#### Backhoe Dredger

A backhoe dredger will be used to remove the more consolidated material. This is typically a stationary dredger which has a hydraulic excavator with a digging bucket at the end and is positioned on top of a turntable attached to one end of the pontoon. The pontoon uses spud legs to keep it stable and stay in position. Once the bucket has been lowered and has dug up/removed material, the bucket is lifted, then swung over to and placed in a barge which is located alongside the pontoon. As this is a stationary dredger, the dredging area will be the limit of reach of the bucket. Once this limit is reached the pontoon will be repositioned.

The material removed will be disposed of through the bottom opening of the barge (into which the dredged material is placed) at the licenced offshore disposal site CR110 (shown on drawing '04. *Offshore disposal site 121106-1010*' submitted with this application) or reused within the harbour works.

#### **Drilling and Blasting**

The rock to be dredged will require pre-dredge treatment through drilling and blasting methods in order for the material to be removed. Some drilling and blasting will be undertaken from land. Marine drilling is likely to take place from a barge or jack-up.

Drilling will be undertaken in preparation of blasting works. Drilling will continue until the pre-selected number of holes have been completed.

Drilling and blasting activities could be undertaken at any point during the dredging programme. Blasting operations will only be undertaken during daylight hours, except in the case of an emergency where it may be necessary to detonate a charge for safety reasons.

Further information is available in ES Chapter 3: Description of the Development.

A detailed dredging method statement will be produced once a contractor has been appointed.