

THE YORK POTASH PROJECT HARBOUR FACILITIES

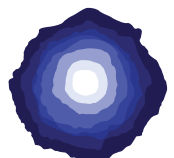
Summary of
Proposals Document

September 2014

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Doc No: 7.2



YORKPOTASH
A Sirius Minerals Project



A GUIDE TO THIS DOCUMENT

THIS DOCUMENT IS A GUIDE TO THE PROPOSED HARBOUR FACILITIES IN TEESSIDE WHICH WOULD SERVE THE YORK POTASH PROJECT.

IT IS AN IMPORTANT PART OF THE CONSULTATION AND WE ENCOURAGE YOU TO READ IT AND OTHER TECHNICAL INFORMATION THAT IS AVAILABLE AND PROVIDE US WITH YOUR COMMENTS.

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THE HARBOUR FACILITIES CONSULTATION

BACKGROUND

The proposed harbour facilities at Teesside are an integral part of the York Potash Project.

The harbour development is classified as a Nationally Significant Infrastructure Project (NSIP). This requires a Development Consent Order (DCO) from the Secretary of State for Transport before it can be developed. As part of the application for a DCO York Potash has to consult with a wide range of stakeholders, including local residents, to ensure they are given the opportunity to find out more, comment on and influence the proposals where appropriate.

WHAT WE ARE CONSULTING ON?

York Potash Ltd is asking for views on the proposed harbour facilities and associated infrastructure; its construction and the ongoing operation of the facilities and their overall impact.

Your views on any element of the proposals are encouraged at this stage and could help to shape further development of the harbour facilities going forward.

TELL US WHAT YOU THINK

The consultation includes both public events and more technical information available for people to view. The public exhibition schedule is detailed below. A range of draft technical reports is available at public locations and on the Company website www.yorkpotash.co.uk.

HAVE YOUR SAY NOW

York Potash is proposing a one-stage consultation process for the harbour facilities so it's important to have your say now.

PUBLIC EXHIBITION SCHEDULE

DATE/TIME	VENUE
Wed 17 Sept 2014 10am–5pm	Dormanstown Westfield Farm Community Centre, The Green, Redcar, Dormanstown TS10 5NA
Thurs 18 Sept 2014 12–6.30pm	Redcar Tuned In, Majuba Road, Redcar TS10 5BJ
Fri 26 Sept 2014 10am–5pm	Redcar Tuned In, Majuba Road, Redcar TS10 5BJ
Sat 27 Sept 2014 10am–2pm	Dormanstown Westfield Farm Community Centre, The Green, Redcar, Dormanstown TS10 5NA



YOUR VIEWS COUNT
PLEASE TAKE TIME TO COMPLETE THE
FEEDBACK FORM ON OUR WEBSITE
[WWW.YORKPOTASH.CO.UK/
CONSULTATION](http://WWW.YORKPOTASH.CO.UK/CONSULTATION)

OVERVIEW OF THE WIDER YORK POTASH PROPOSALS

THE YORK POTASH PROJECT AIMS TO BUILD THE FIRST POTASH MINE IN THE UK FOR OVER 40 YEARS – AN OPPORTUNITY FOR NORTH YORKSHIRE AND TEESIDE THAT HAS LOCAL, NATIONAL AND GLOBAL SIGNIFICANCE.

The state-of-the-art mine would be the first in the world focused on the extraction of polyhalite. The Project would boost the local, regional and UK national economies.

It has the potential to create thousands of jobs, benefit local businesses, help improve skills in the region and contribute to people's prosperity for generations to come.

There are four main elements to the York Potash Project as outlined in the concept drawing and the brief description on this page.

MINE SITE

This would be situated approximately three miles south of Whitby and include two mine shafts from which the polyhalite would be extracted.

MINERAL TRANSPORT SYSTEM (MTS)

The MTS would transport the mined polyhalite from the mine site on an underground conveyor belt system in a tunnel to the materials handling facility at Wilton, Teesside.

MATERIALS HANDLING FACILITY (MHF)

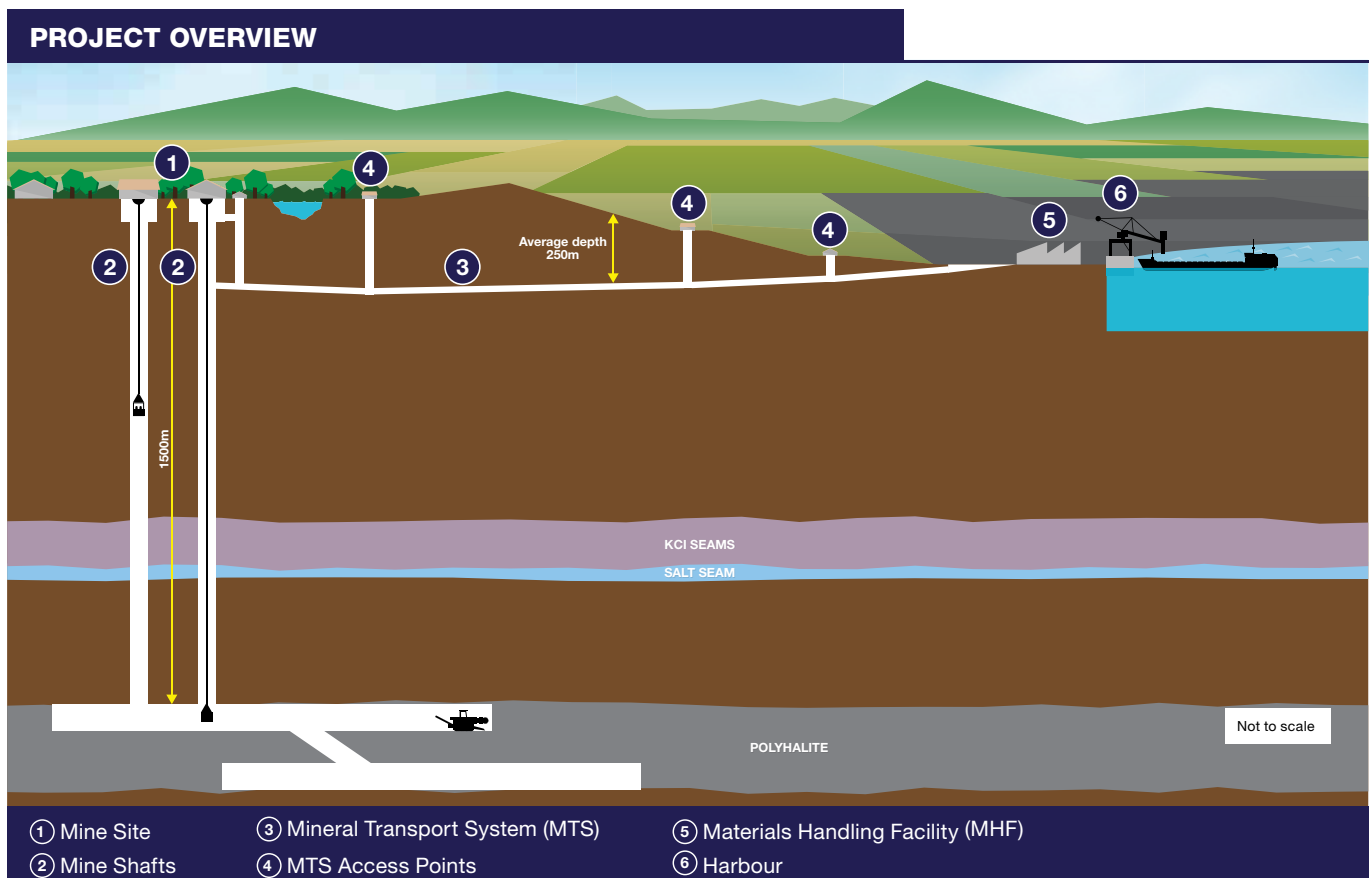
This would consist of the plant and equipment necessary to granulate the polyhalite and create the final product.

HARBOUR FACILITIES

This incorporates the conveyor system used to take the granulated polyhalite from the MHF, and the quayside infrastructure needed to enable the polyhalite to be exported by ship.

APPROVALS REQUIRED FOR THE YORK POTASH PROJECT

York Potash Ltd will be submitting two separate planning applications for the mine and MTS and for the MHF at the end of September 2014. As previously stated, the harbour facilities will require a Development Consent Order (DCO). This document focuses on the harbour facilities and has been written to support the consultation for the DCO application.



POLYHALITE – FERTILIZER OF THE FUTURE

THE YORK POTASH PROJECT FOCUSES ON MINING THE LARGEST AND HIGHEST GRADE RESOURCE OF POLYHALITE FOUND ANYWHERE IN THE WORLD.

WHAT IS POLYHALITE?

Polyhalite is a type of potash, an essential ingredient in plant fertilizer. It contains a unique combination of four of the six essential nutrients plants need – potassium, magnesium, sulphur and calcium. It can be used directly on crops or combined with the other nutrients – nitrogen and phosphorus – to create other commonly used NPK fertilizer products.



Polyhalite core

Polyhalite has a low carbon footprint, no measurable effects on soil pH and is essentially chloride free. Its high total nutrient content delivers excellent nutrient availability and polyhalite has been certified for use in organic farming.

WHY IS IT NEEDED?

As the world population grows, demand for food increases. New wealthy economies are emerging and within them a growing middle-class which demands more protein rich and higher quality diets. Sustaining greater efficiency from grain production and arable land requires farmers and food producers to use balanced fertilization to increase yields.

The situation has become even more challenging as there is increasingly less farm land available to grow the required crops, necessary for both food supply and to support biofuel technology.

Potash, and polyhalite in particular, can play a major role in more efficient and productive agricultural techniques.

GLOBAL MARKET

Since it began marketing polyhalite, York Potash has already signed major sales agreements with leading commercial organisations in North America, Central America and China and has commitments from many other regions including Europe, Africa, the Americas and Asia.

The proposed harbour facilities at Teesside would allow the Company to be able to export polyhalite around the world, generating up to £1.2 billion in export revenue annually at full production. This would reduce the UK's balance of trade deficit by 4%.

POLYHALITE

MACRO-NUTRIENT COMPOSITION ⁽¹⁾

19 K	POTASSIUM (14% K ₂ O)	16 S	SULPHUR (19% S)
12 Mg	MAGNESIUM (6% MgO)	20 Ca	CALCIUM (17% CaO)
7 N	NITROGEN	15 P	PHOSPHORUS

SUITABLE FOR ORGANIC USE
WITH NO CHEMICAL
PROCESSING REQUIRED



Poly4 is the trademark name for polyhalite products from the York Potash Project.

Notes: (1) Based on 90% polyhalite grade. Polyhalite contains four of the six essential macro-nutrients highlighted in green.

THE HARBOUR FACILITIES

THE HARBOUR FACILITIES WOULD BE LOCATED AT BRAN SANDS, WITH A CONVEYOR CONNECTION TO THE WILTON ESTATE.

The Tees Estuary is a well-established deep water port, which is ideally suited to providing shipping access to customers around the world. The proposed harbour facilities would enable York Potash to export the product to satisfy the global demand for high quality polyhalite, and as a result deliver significant regional and national economic benefits.

- Quay structure – providing docking for up to two ships and space for ship loading equipment.
- Associated infrastructure – including access and car parking, office space, a workshop and smaller ancillary buildings for plant and equipment.
- Dredging – allowing sufficient berth depth for the proposed ships.

OVERVIEW

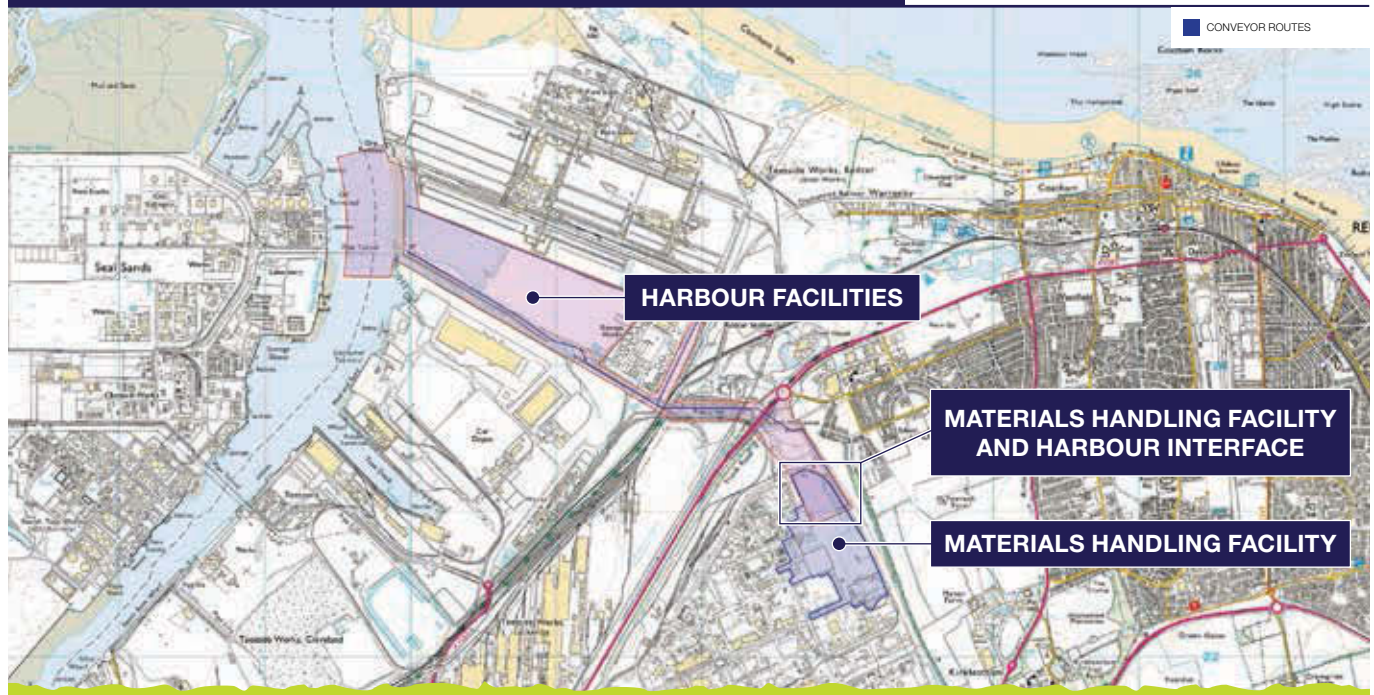
In summary, the proposed harbour facilities development would comprise of the following main elements:

- A conveyor system – linking the materials handling facility to the quay.
- Product storage facility – two surge bins, stationed at the quay, to provide product storage.

Implementation and operation of the harbour facilities would be undertaken in two phases. Phase 1 would be the immediate operation of the facility with a throughput of 6.5 million tonnes per annum (mtpa) of polyhalite, utilising one new wharf and temporary usage of an existing quay at the site. Phase 2 would enable the facility to increase its operational capacity to 13mtpa through the addition of a second wharf.

OPERATIONS AT TEESSIDE

The materials handling facility would be located close to the proposed harbour facilities development which can be seen on the map (below).



CONVEYOR OVERVIEW

POLYHALITE WOULD ARRIVE AT THE HARBOUR FACILITY FROM THE MATERIALS HANDLING FACILITY (MHF) ALONG A CONVEYOR SYSTEM.

ROUTE FROM MATERIALS HANDLING FACILITY

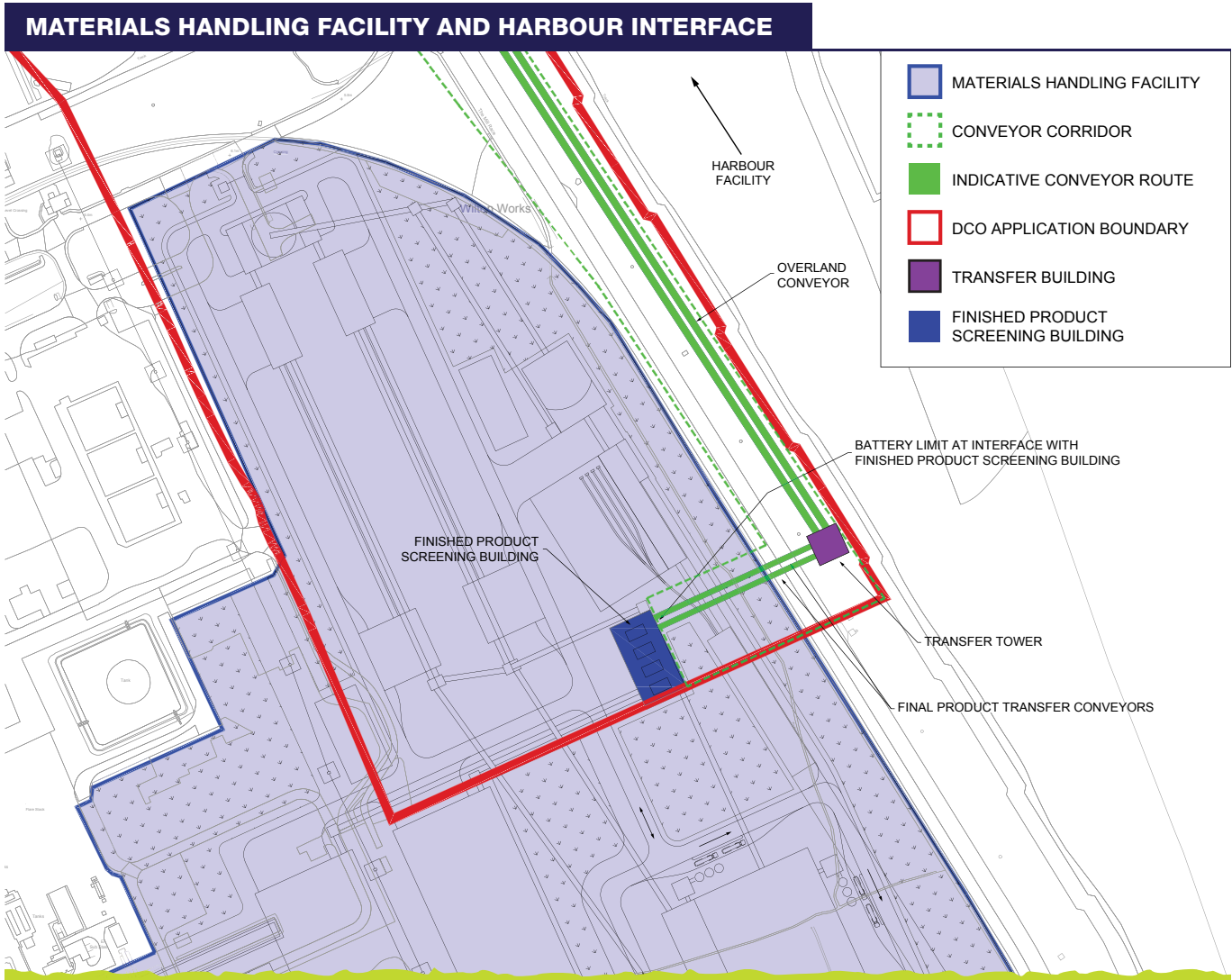
The final design and detailed route are currently being refined. However, decisions on the overall concept and main alignment have been made and are described in the following pages.

At the finished product screening building (see plan below), the granulated polyhalite would be inspected for a final time and then transferred to the quay on a conveyor system.

The conveyor comprises two parallel belts that would run along elevated conveyor bridges. The bridges would be enclosed until crossing the A1085 after which they would run largely on open trestles. Conveyor covers would be fitted to prevent dust escaping and to protect the product from rain.

The conveyor bridges would pass between the MHF and the quay at an elevated height passing over all existing infrastructure, with the exception of National Grid Power Lines, which would be underpassed.

At various stages, in order to facilitate a change in direction, the conveyor bridges pass through transfer towers. At transfer towers the polyhalite would be transferred from one conveyor to another within an enclosed high level structure.



CONVEYOR ROUTE DORMANSTOWN VIEW

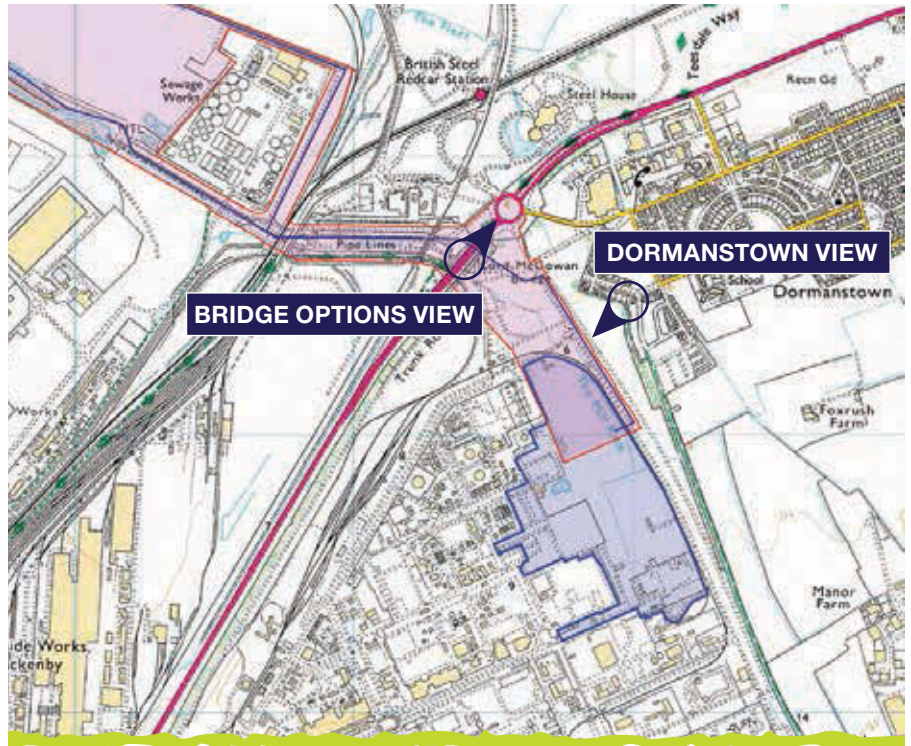
ABOUT THE ROUTE

The route of the proposed conveyor has been designed to minimise the need for significant changes in direction. This is because the types of conveyors selected only operate in straight lines.

Once the polyhalite has been transferred from the MHF it will be transported in an enclosed section of conveyor bridge, at an initial height of approximately 10m, and run along the boundary of the MHF site in a broadly straight route passing to the west of Dormanstown.

The conveyor system would be contained within an enclosed conveyor bridge, and include measures to minimise any noise impacts where necessary.

The conveyor would have a galvanised metal finish and rise gradually to a suitable height for crossing the A1085 and other road and rail crossings.



VIEW FROM DORMANSTOWN

CONVEYOR IMAGE

The artist's impression (right) shows an indicative image of the conveyor bridge at the eastern edge of the MHF and Wilton Estate. The photo used in the artist's impression is taken from Dormanstown, looking south-west, and the location is shown on the map above



CONVEYOR ROUTE BRIDGE DESIGN OPTIONS

The conveyor from the MHF to the Bran Sands harbour would start at a transfer tower located on the east side of Boundary Road East. The conveyor would run along the eastern edge of the MHF and would rise gradually and curve to the west to a height suitable for crossing over the A1085 and the hot metal rail bridge. In this section the conveyor would be fully enclosed in a conveyor bridge to contain noise and would be supported at regular intervals by steel trestles.

After the hot metal rail bridge, the conveyor would descend gradually to cross safely over Network Rail and under the National Grid power lines. It would continue all the way to the harbour where it would discharge to a surge bin.

The conveyor would be in a fully enclosed structure between the MHF transfer tower and the hot metal rail bridge. After the hot metal rail bridge the conveyor would run on a gantry supported by steel trestles except where it runs over roads where it would be fully enclosed. Where the conveyor is on an open gantry, it would have covers to protect the product from rain and prevent dust generation.

The Preliminary Environmental Report for the harbour facilities and the Project Description state that the maximum height of the conveyor would be 25m as a worst case scenario.

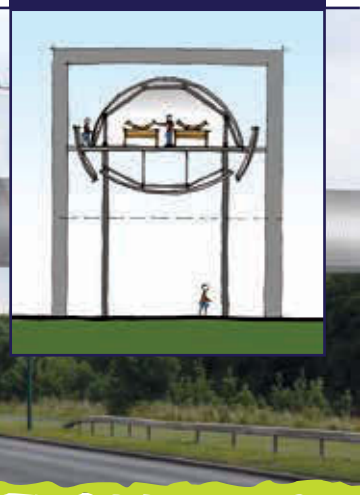
There would be two conveyors, one for each phase, and where possible they would be on the same supports and within the same enclosure.

The conveyor route needs to pass over the A1085, the main road into Redcar. The Company's architects have designed two options to create an attractive crossing structure. The artist's impressions of these are shown below.

BRIDGE OPTION 1 – SIMPLE



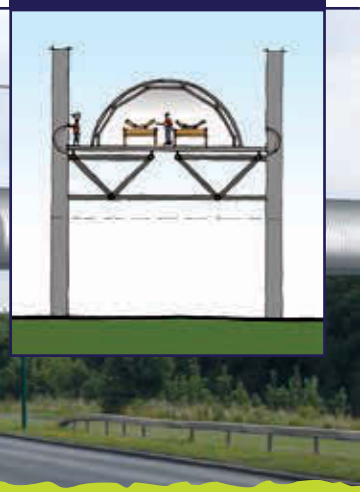
CROSS SECTION



BRIDGE OPTION 2 – TRUSS



CROSS SECTION



CONVEYOR ROUTE OPTIONS

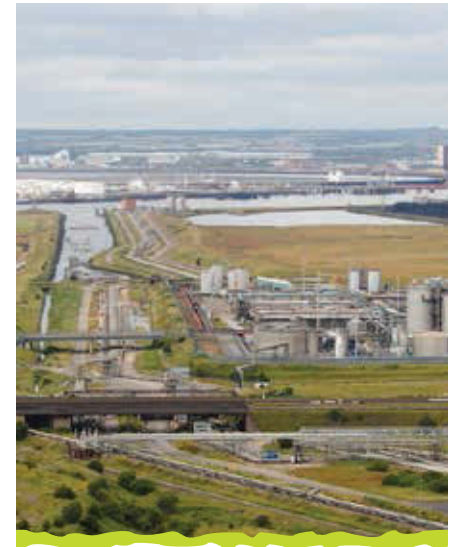
After passing over the railway, the conveyor would enter the Bran Sands site and could take one of two routes – either along the northern or the southern boundary of the site. Either route may require a transfer tower (at a maximum height of 25 metres) after crossing the railway and would then travel to the quayside.

The southern route would travel in a north-westerly direction towards a transfer tower or a surge bin at the southern end of the quayside. The surge bin or transfer tower at this location would be a maximum height of 35 metres.

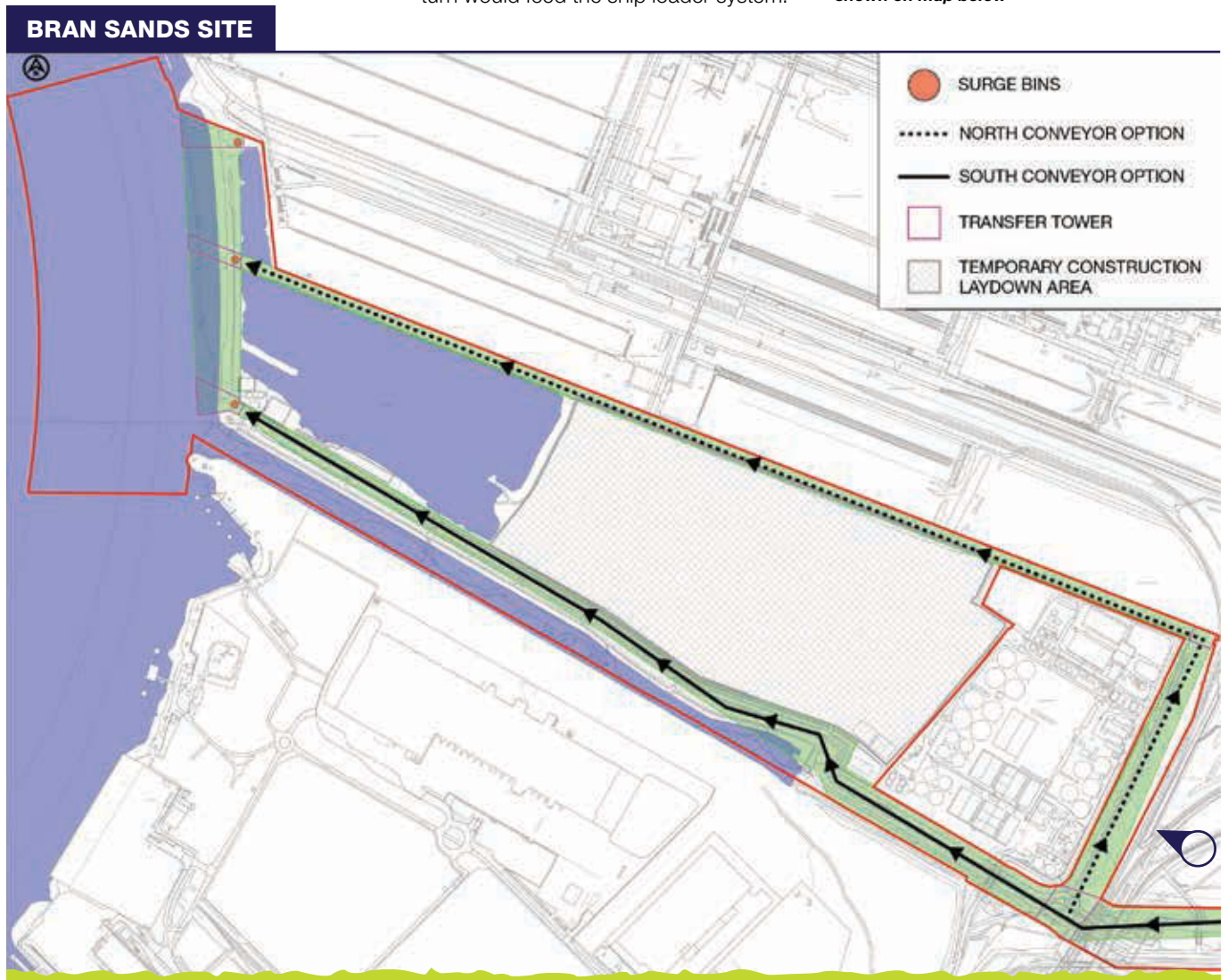
The northern route would depart from the transfer tower in a northerly direction to another transfer tower north-east of the Northumbria Water (NWL) sewage treatment works. From here, the conveyor would continue westward to a surge bin or transfer tower at either the centre of the port terminal or at the northern end.

The conveyor crossing over the Bran Sands lagoon ‘finger’ would require two supporting foundations within the lagoon. Otherwise, works carried out which could affect the lagoon would be kept to a minimum.

The transfer towers or surge bins would feed into a conveyor system which in turn would feed the ship loader system.



Aerial image taken from approximate location shown on map below



BUILDINGS AND STRUCTURES

BUILDINGS

Existing structures and buildings on the site would be kept except where there is a direct conflict with proposed works.

During the construction period, an area of approximately 200 metres x 150 metres would be required for the contractor's compound, associated storage and car parking for 70 spaces. This would be located to the south-east of the lagoon and would be cleared and restored once construction of the harbour facilities is complete.

When the harbour facilities are operational several permanent buildings would be required including an office, workshop, storage, and various smaller ancillary buildings housing plant and machinery.

NWL TEMPORARY JETTY

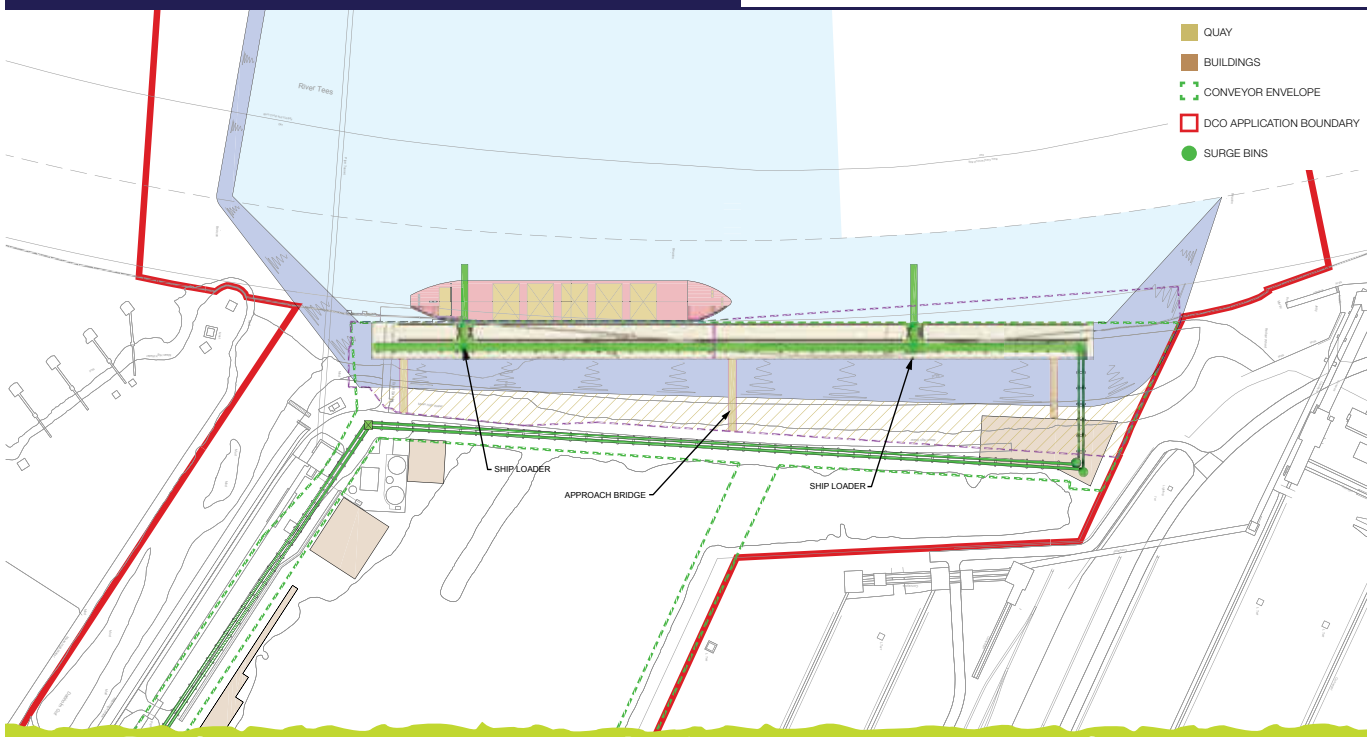
Northumbria Water (NWL) previously operated a sludge jetty located to the north of the Dabholm Gut, which is no longer operational. In the first two years of operation this may be used on a temporary basis, with new equipment installed to allow for smaller boats to moor and the polyhalite transferred to the ships by a temporary ship loader or truck.

This option could either be pursued through a standard planning application to Redcar & Cleveland Borough Council and/or included in the DCO process.



View of current frontage where proposed quay will be constructed

OPEN QUAY OPTION AND BUILDING STRUCTURES



THE QUAY STRUCTURE

The proposed quay would consist of a wharf of a minimum of 540 metres in length and up to a maximum of 85 metres in width. This would allow for the docking of two ships at one time, as well as space for the ship loaders that would be used to transfer the polyhalite.

The quay deck level will be approximately 2m above the highest water level (8.45 metres 'Above Chart Datum'). The design has accounted for anticipated sea level rises.

Two possible options for the construction of the quay are under consideration – an open quay structure or a closed quay – as outlined in this section.

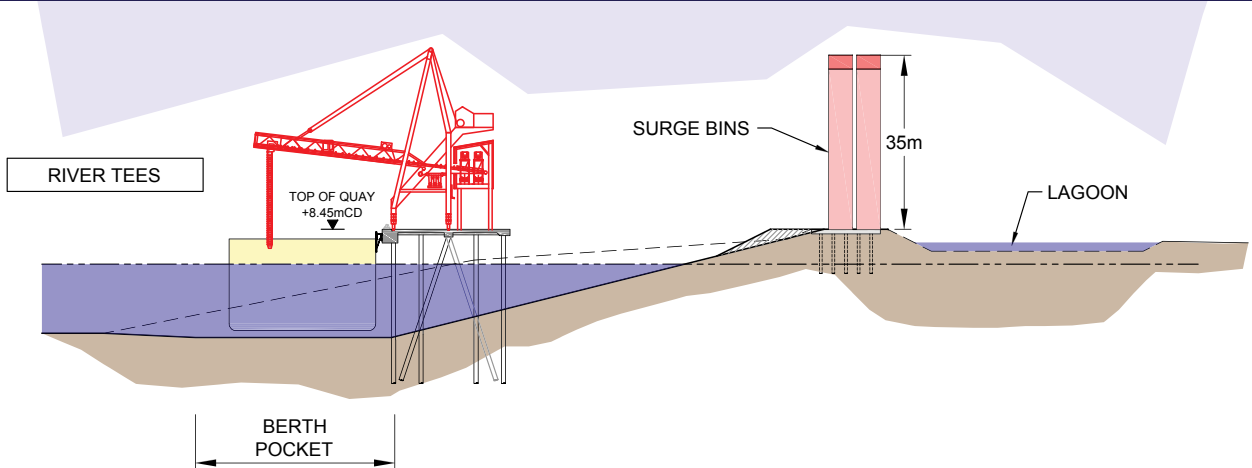
OPEN QUAY STRUCTURE:

This involves an open quay structure, whereby the quay platform would be a suspended structure located approximately 60m from the existing river bank. The platform could be accessed via one of three approach bridges. The effect being that the Tees would have free and open flow between the quay platform and the bank and would have the least impact on the flow of the river. This option would require an increased level of dredging in order to clear adequate space for the open quay structure.

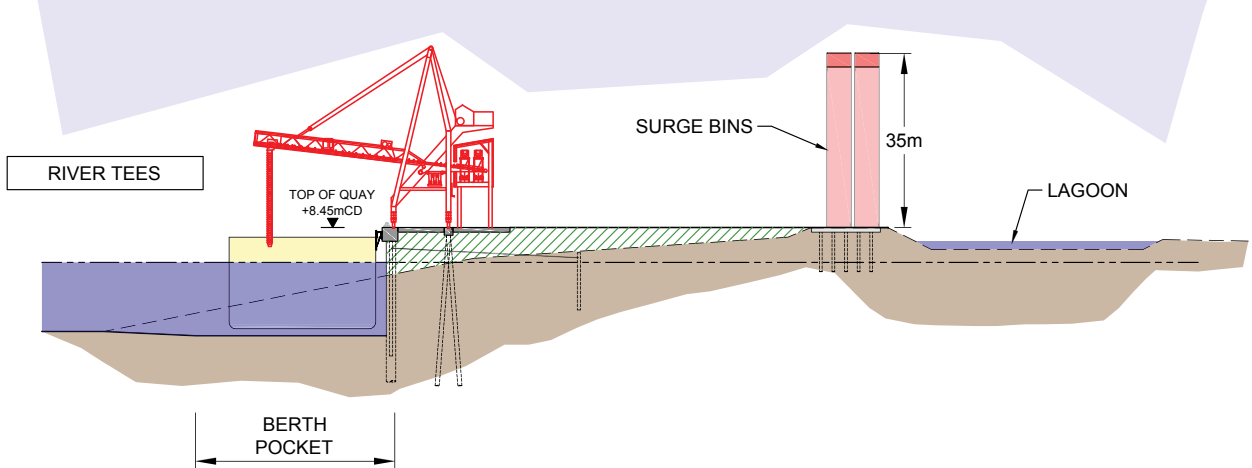
CLOSED QUAY STRUCTURE:

In a closed quay structure the space between the bank and the proposed location of the quay platform would be back filled. The quay platform would therefore be accessible via engineered hard standing. This proposal would result in less dredging of the Tees Estuary and add increased stability to the shoreline through the construction of a new, reinforced, riverbank.

OPEN QUAY STRUCTURE



CLOSED QUAY STRUCTURE



CONSTRUCTION AND DREDGING

CONSTRUCTION

Subject to all necessary consents, works to construct the proposed harbour facilities would commence in January 2017 with completion of Phase 1 expected in July 2018. Phase 2 would be completed, with the harbour running at full capacity, by 2024.

Construction and operation vehicle access to the harbour facilities would be via the A1085 trunk road. With the exception of internal road access, no new road infrastructure is proposed. There is also potential for some construction materials to be brought to the site on barges using the River Tees via an existing jetty.

DREDGING

To accommodate the quay and the boats it would be necessary to dredge an area of the estuary to provide berth pockets for mooring and an adequate entry channel. Dredging involves the removal of a layer of the river bed in order to create the necessary depth. As it stands the estuary is not deep enough to accommodate the proposed ships required and therefore this is a necessary element of the construction.

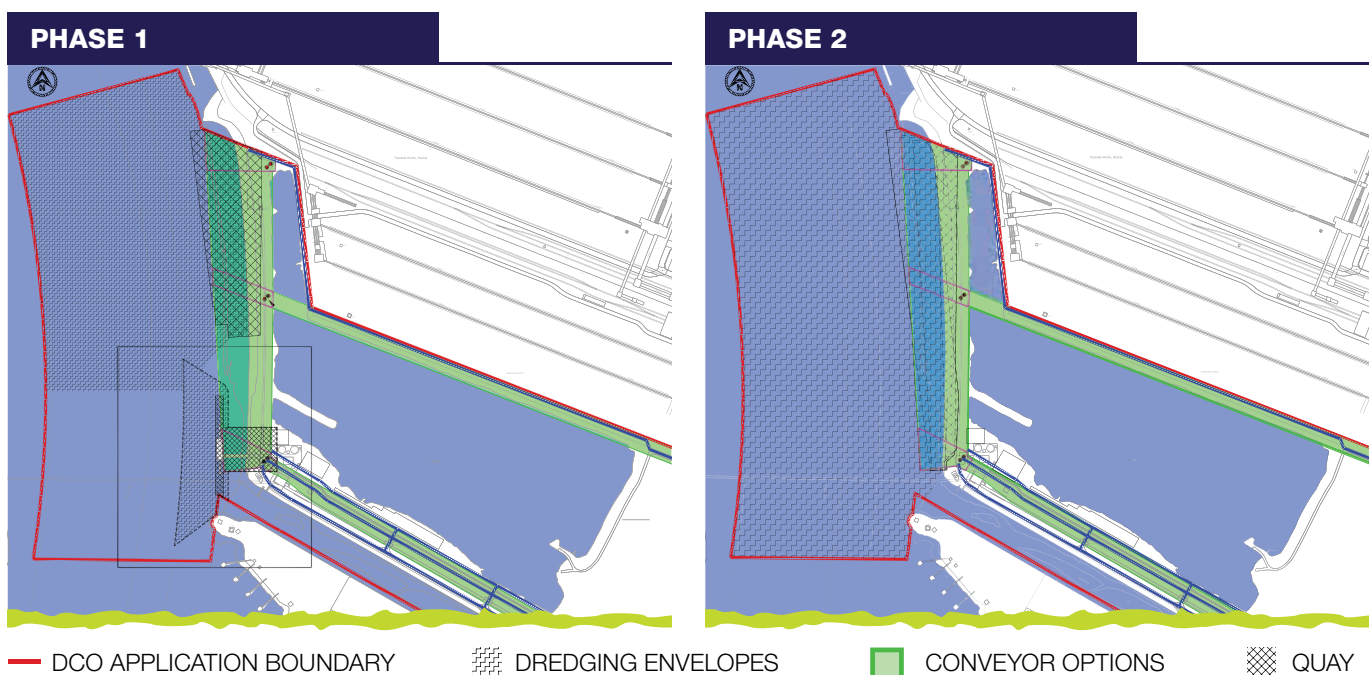
The material that is displaced in the dredging process would be removed from the area rather than moved to another part of the estuary, this process is known as capital dredging.

The necessary dredging would include the approach channel, allowing ships to enter the quay area safely. The dredging in this location would be to a depth that

matches that of the remainder of the approach channel between the mouth of the estuary and the proposed quay location (14.1m below chart datum (bCD) (currently the approach channel is 10.4m bCD). At the docking area, along the mooring locations, berth pockets would be created at an additional depth (16m bCD).

Dredging of the approach channel would take place in Phase 1 and Phase 2 as necessary. As described previously, the open quay structure (option 1) would require further dredging than the closed quay structure (option 2).

Most dredging would be carried out as part of the construction process, however some would be required as part of routine maintenance to prevent the build-up of river sediment in the quay berth.



ENVIRONMENTAL IMPACTS AND MITIGATION

The development is of a scale that gives rise to a requirement to undertake a formal Environmental Impact Assessment (EIA) and this is being prepared by an experienced team at one of the UK's leading environmental consultancies.

The EIA looks in detail at the potential impacts of the Project on the environment, both during construction and once the harbour is operational, and also identifies any measures that may be needed to minimise these effects.

A Construction Environmental Management Plan would be developed to ensure that all environmental impacts are managed effectively. As part of the EIA, an in-depth assessment has been undertaken into a wide range of environmental topics in consultation with key stakeholders and consultees. A summary of the key topics that are being investigated is provided below:-

1. Ecological issues – both in terms of the marine and coastal areas as well as areas on land
2. Water issues – including water quality and hydrology, coastal protection and flooding
3. Visual impacts – focusing on the effects from those who live, work and travel through the area
4. Transportation – relating to lorry and car movements on land and also navigational issues within the Tees
5. Air quality and noise & vibration – particularly focusing on the construction period including piling into the riverbed
6. Heritage and archaeology
7. Socio-economics and any effects on the use of the area for recreation or leisure purposes

As part of this consultation process, a Preliminary Environmental Report has been prepared which provides information identified to date in relation to the current conditions of the site and the possible effects of the harbour facilities development.

An Environmental Statement, reporting on the findings from the EIA, will be submitted with the DCO application to assist those responsible for making a decision on the development to understand the extent of any environmental effects and the strategy which York Potash is proposing to put in place to address these.

MORE INFORMATION

A copy of details of the proposals, preliminary environmental information, plans, maps and other draft documents showing the nature and location of the proposed development, may be inspected free of charge at the following locations and during the hours set out below.

VENUE	OPENING TIMES		
Redcar & Cleveland Borough Council offices Kirkleatham Street, Redcar, TS10 1RT	Mon–Fri 9am–5pm		
York Potash Ltd 7–10 Manor Court, Manor Garth, Scarborough, YO11 3TU	Mon– Fri 9am–5pm		
Redcar Library Kirkleatham Street, Redcar, Cleveland TS10 1RT	Mon–Wed, Fri 9am–6pm	Thurs 9am–5pm	Sat 9.30am–12.30pm
Tuned In Majuba Road, Redcar, TS10 5BJ	Mon–Fri 8.30am–8pm	Sat 8.30am–6pm	Sun 8.30am–4pm

The documents relating to the proposed application will be on display at the above locations from 11 September 2014 to 16 October 2014. Further details in relation to the Project and these documents can be found on the York Potash website www.yorkpotash.co.uk.

CONSULTATION PROCESS AND DOCUMENTATION

FORMAL CONSULTATION

Information on the formal consultation with people living in the vicinity of the proposed harbour facilities is set out in a Statement of Community Consultation (SOCC) which is available to download from the Project website www.yorkpotash.co.uk/consultation.

Formal consultation will also take place with prescribed consultees pursuant to s.42 of the Act.

COMPULSORY PURCHASE ORDER

It is currently anticipated that it may be necessary to utilise land that is in third party ownership or affected by third party rights. All parcels of land and rights affected are identified in the Book of Reference and on the Land Plans.

FURTHER INFORMATION

Publicly available documents, listed in the table (right), can all be downloaded from the Company website. If you would like any further information about the proposals, please do not hesitate to contact us.

For more information on where hard copies of these documents are publicly available, please see page 14.

PUBLICLY AVAILABLE CONSULTATION DOCUMENTS

Application Forms	
Plans/Drawings/Sections	<ul style="list-style-type: none"> • Land Plans • Works Plans • Access and Rights of Way Plan
Other plans necessary to describe proposed development	<ul style="list-style-type: none"> • Location Plan • Layout Plans (Temporary) • Layout Plans (Phase 1) • Layout Plans (Phase 2) • Interface with MHF • MHF Layout Plan • Flowchart • Conveyor Information
Draft Development Order and Associated Plans	<ul style="list-style-type: none"> • Draft Proposed Order • Explanatory Memorandum
Compulsory Acquisition Information	<ul style="list-style-type: none"> • Statement of Reasons • Book of Reference
Other Documents	<ul style="list-style-type: none"> • Preliminary Environmental Report • Summary of Proposals Document • Project Description



PROJECT TIMELINE

SEPTEMBER 2014

Planning application submitted for the mine and MTS
Planning application submitted for the MHF



DECEMBER 2014

DCO application submitted for the harbour facilities



Q1 2015

Proposed mine construction starts



JANUARY 2017

Proposed harbour construction starts



2018

Target date for first production



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