

Lighthouse Green Fuels

Development Consent Order

Preliminary Environmental Information Report

Chapter 5: Construction Programme and Management

Planning Inspectorate Reference: EN0110025

2nd December 2025

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1. Introduction

1.1 Objective

- 1.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) provides a summary of the proposed approach for the construction phase of the Proposed Development.
- 1.1.2 This includes information on the expected construction programme and timings and methods of working, where available. At this stage a detailed construction programme is not available, as this is determined by the Engineering, Procurement and Construction (EPC) contractor who has not yet been appointed. Where construction details cannot be confirmed at this stage, worst case estimates have been made based on experience gained on similar developments and professional judgment.

1.2 Construction Programme Scenarios

- 1.2.1 The most conservative construction programme is currently anticipated to be the construction of the Proposed Development in a three to four year construction phase commencing after the Development Consent Order (DCO) is granted (currently expected in 2027).
- 1.2.2 The Construction phase is therefore likely to be approximately three to four years in duration lasting from 2028 to 2031.
- 1.2.3 The key stages of the construction programme are currently expected to be:
- 2028 – Preliminary Works and site establishment/ quay construction;
 - 2029-30 – Construction of SAF production facility, Combined Heat and Power (CHP) plant and infrastructure including utilities; and
 - 2031 – Commissioning.
- 1.2.4 The sustainable aviation fuel (SAF) Plant will be located on the site of the former INEOS Nitriles plant. This site has been cleared but may contain some below ground structures and redundant services associated with its former use. The removal of those structures, clearance and any necessary remediation of site will be required before the construction of the main structures of the Proposed Development. In addition to construction of the SAF Production Facility, this PEIR assesses the environmental effects of undertaking these preliminary works required, as these also form part of the Proposed Development.
- 1.2.5 It is common for much of the groundwork, for example piling and pouring of concrete slabs, to be completed prior to the erection of any above ground

structures. The erection of civil and structural components, such as cladding and external civil works usually continue whilst mechanical erection is ongoing. However, the detailed phasing of construction is the responsibility of the appointed EPC contractor and can vary dependent on plant layout and procurement of key equipment.

- 1.2.6 To optimise the construction schedule and minimise disruption, modular construction will likely be undertaken off-site for key plant components. This will allow those modules to be delivered to the Site by ship and offloaded on the new quay within the Main Site (see below). This will reduce road-borne construction Abnormal Indivisible Loads (AILs) and heavy goods vehicle (HGV) traffic on the road network, and optimise the site construction programme duration. Areas of the Main Site as well as third-party land off the Main Site will be used for temporary construction laydown areas (see Figure 5.1).
- 1.2.7 The western portion of the Main Site is occupied by a closed former landfill site. As described in Chapter 4, it is proposed that this area will be used for construction laydown and then during operation is likely to be used for part of the SAF plant and a flare stack. Following granting of the DCO, remedial works will be undertaken prior to construction in this area. The former landfill site may be subject of geo-environmental investigations and risk assessments which will identify any necessary remedial actions and appropriate foundation solutions to allow development of this area.
- 1.2.8 A Construction Environmental Management Plan (CEMP) will be prepared prior to construction. The submission, approval and implementation of this will be secured by requirement in the DCO. An Outline (oCEMP) will be appended to the Environmental Statement (ES) which will accompany the DCO application and will set out the key measures to be employed during the main works phase to control and minimise the construction impacts on the environment.

1.3 Construction Methods

Construction Equipment

- 1.3.1 For the purposes of the PEIR and the environmental assessments that will be presented in the ES, in particular for the noise assessment presented in Chapter 9: Noise and Vibration (PEIR Volume 1), worst case estimates have been made of the types and numbers of plant and machinery likely to be used on the Proposed Development during the construction period, as well as the use of continuous flight auger (CFA) and driven piles.

Preliminary Works

- 1.3.2 Before the Applicant begins construction, the following preliminary works will be required, which have been assessed in the PEIR:
- demolition of the existing jetties in the River Tees and site clearance works;
 - removal of unsuitable and contaminated materials;
 - potential removal of some underground structures with any voids backfilled and compacted; and
 - placement of surface capping layer in selected areas.
- 1.3.3 It is anticipated that prior to preliminary works being undertaken, ground investigation works may be undertaken for both geo-environmental and geotechnical requirements.

Earthworks

- 1.3.4 Any spoil material generated during construction will be stored temporarily within the Proposed Development. Spoil which cannot be re-used, will be removed from the Proposed Development. If necessary, suitable measures will be put in place to prevent sediment being washed outside of the Site, and the stockpiles will be monitored/checked for wash away during periods of high rainfall or flooding, although the Main Site is located in an area of low flood risk (Flood Zone 1). It may be necessary to import fill materials (including soil and backfill materials) to achieve final site levels. Fill materials will be imported by ship using the new quay and also by HGV. Further details of the measures which would be implemented will be included in the oCEMP which will form part of the DCO application.
- 1.3.5 Any soils moved will be managed in accordance with the Defra Construction Code of Practice for the Sustainable Use of Soil on Development Sites (1.4.41Ref 1) to minimise impacts on soil structure and quality, and appropriate measures to minimise short-term and long-term impacts on land drainage. These measures will be included in the CEMP along with any measures for the management of contaminated soils.
- 1.3.6 Additionally, the CEMP will incorporate measures to prevent an increase in the risk of pollution during a flood event during the construction works. For example, construction materials will be stored outside of the 1 in 100-year floodplain extent and only moved to the temporary works area immediately prior to use.

Construction Laydown Areas and Welfare Facilities

- 1.3.7 Proposed construction laydown areas, including storage, site offices, welfare facilities and car parking, will be located at various places within the

Proposed Development. There will be construction laydown on currently vacant land to the north of the Main Site. Exact locations for satellite compounds are yet to be determined but may be on third-party land where utility connections are being constructed outside of the Main Site.

- 1.3.8 Clearance, levelling and ground preparation works for these laydown areas may be required to provide a suitable surface material. Where appropriate, the surface material will be permeable to allow uncontaminated rainwater to percolate to ground, with suitably bunded locations identified as storage areas for any hazardous or polluting materials or chemicals to reduce the risk of pollution.

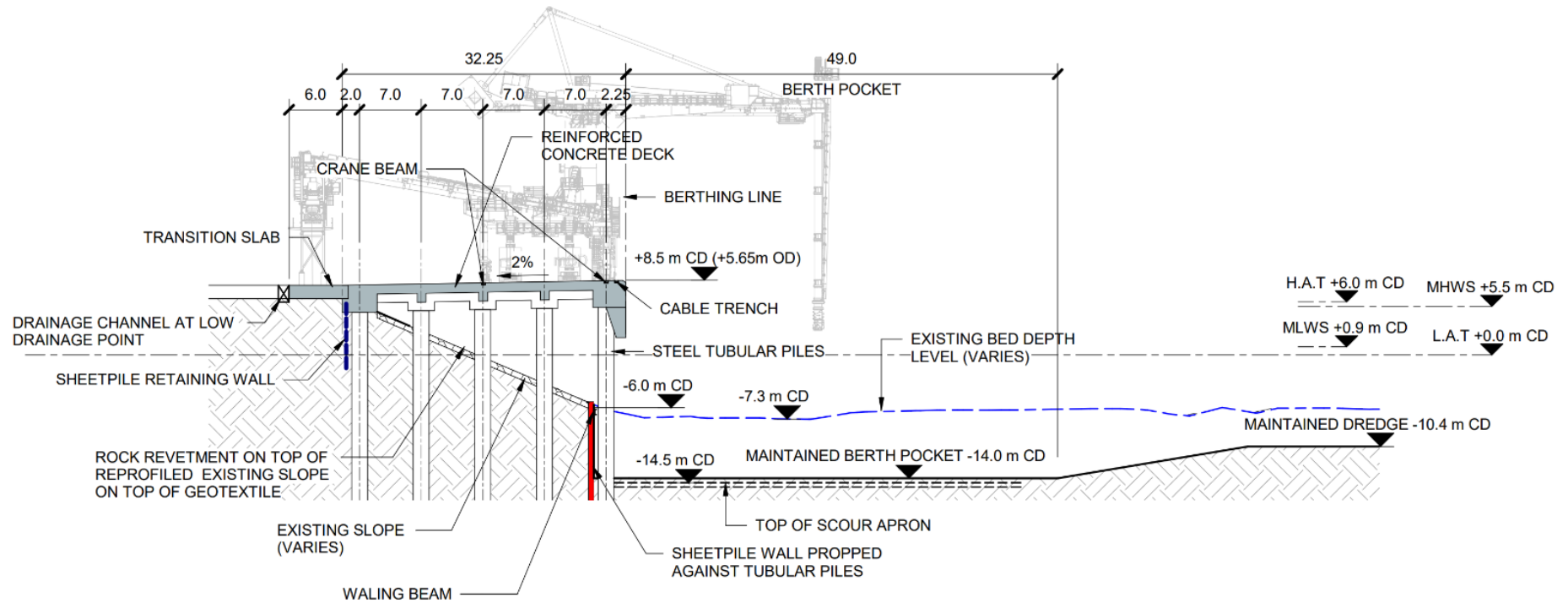
Quay Construction

- 1.3.9 To construct the quay, the existing jetties need to be demolished before construction. The quay will initially be used for the import of modular plant and materials during construction. During operations the quay will be used for import of feedstock.
- 1.3.10 There are three alternative design options for the quay:
- Open piled suspended deck quay (see Inset 1.1);
 - Combi-wall quay constructed in the river (see Inset 1.2); and
 - Quay wall set back 2-10 m landward of the crest of the existing revetment (diaphragm wall or combi-wall) (Inset 1.3).

Suspended Deck Quay

- 1.3.11 An open piled suspended deck quay would be expected to consist of the following components:
- Tubular steel piles driven into the existing embankment and riverbed to support the suspended deck. The piles would be driven into the ground likely by percussive hammers. It may be necessary to auger before piling to facilitate driving the piles to depth.
 - A reinforced concrete deck supported on the tubular steel piles. The deck would be between approximately 300m long by around 35m wide. It would support the Continuous Ship Unloaders (SCSUs) and any other quayside equipment.
 - The existing embankment slope under the concrete deck would be regraded and be protected by a rock armour revetment layer.
 - A steel pile cut-off wall would be provided at the landward side of the deck at the top of the slope. Another steel pile retaining wall would be positioned at the toe of the revetment slope. Both walls are provided to retain the fill behind them and maintain stability. These piles would also be driven by percussive hammer.

Inset 1.1 Open piled suspended deck quay (indicative)



46.25

30.0

14.0

2.25

49.0

BERTH POCKET

10.0

CRANE BEAM

RC BEAM

COMPACTED GRANULAR FILL

DRAINAGE CHANNEL

2.5%

+8.5 m CD (+5.65m OD)

CABLE TRENCH

STEEL COMBI WALL (TUBULAR STEEL & SHEETPILE)

-7.1 m CD

-6.2 m CD

EXISTING BED DEPTH LEVEL (VARIES)

MAINTAINED DREDGE -10.4 m CD

MAINTAINED BERTH POCKET -14.0 m CD

TOP OF SCOUR APRON

ANCHOR RODS

SHEETPILE ANCHOR WALL OR ANCHOR BLOCKS

REMOVE EXISTING GABION BASKETS AND PLACE GEOTEXTILE

TUBULAR STEEL PILES

EXISTING SLOPE (VARIES)

H.A.T. +6.0 m CD

MHWS +5.5 m CD

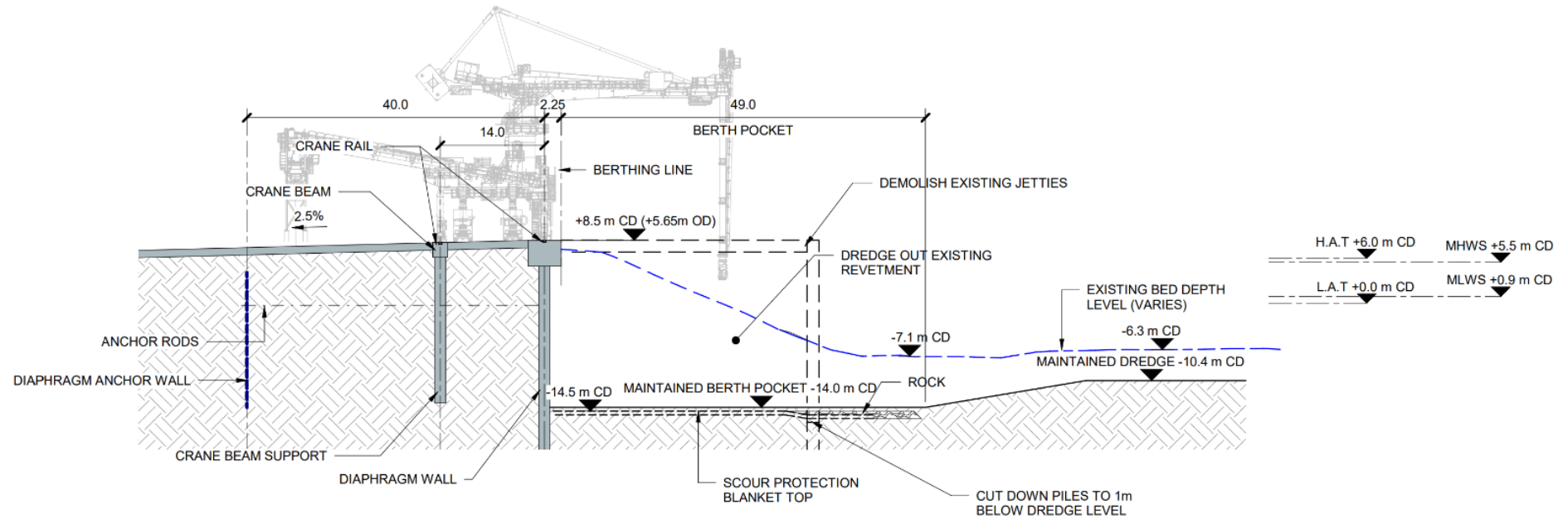
MLWS +0.9 m CD

L.A.T. +0.0 m CD

BERTHING LINE

CONCRETE OR BLOCKWORK PAVING

Inset 1.3 Setback diaphragm wall quay (indicative)



- Steel pile retaining walls would be extended laterally to both the north and south of the quay, to prevent undermining of the existing embankments. Buried steel tie bars would connect this retaining wall to a steel pile anchor wall or concrete anchor blocks.
- Quay furniture would include fenders, fender panels, bollards, ladders and navigation lights.
- Utilities behind the quay wall are expected to include drainage, potable water supply, fire mains, sewerage, electrical supplies, lighting, communication cables and possibly compressed air pipework.

Combi-wall Quay

1.3.12 A combi wall quay constructed in the river would likely consist of the following components:

- A combi wall would be approximately 300m long, likely comprising alternate steel tubular piles and sheet piles driven into the riverbed close to the toe of the existing embankment. The wall would wrap around the two ends of the quay, with each end wall being approximately 35m long. The piles would likely be driven into the ground by percussive hammers. It may be necessary to auger before piling to facilitate driving the piles to depth.
- Tie rods of steel bars would extend from the combi wall back into the Main Site Proposed Development. These would be connected to the combi wall at one end and anchors at the other end. The tie rods would be buried in the ground. The anchors could be driven steel piles or concrete anchor blocks.
- Imported clean compacted material would be used to form the ground above the existing embankment and behind the combi-wall
- A concrete capping beam will be required at the top of the combi wall. It would support the CSU front rail and quayside furniture.

Set back Quay

1.3.13 A quay wall set back up to 10m landward of the crest of the existing embankment would be expected to consist of the following components:

- A diaphragm or combi wall approximately 300m long would be excavated into the ground landward of the crest of the existing embankment. A diaphragm wall is a reinforced concrete wall placed inside an excavated trench.
- Tie rods would extend from the diaphragm wall back into the Proposed Development and connected to anchors. These would be connected to the diaphragm wall at one end and anchors at the other end. The tie rods would be buried in the ground. The anchors could be a secondary diaphragm wall, driven steel piles or concrete anchor blocks.
- Removal of the existing embankment slope in front of the diaphragm wall.

- A capping beam at the top of the diaphragm wall. It would support the CSU front rail and quayside furniture.
- Steel pile retaining walls would extend to the north and south of the quay, to prevent undermining of the existing embankments. Buried steel tie bars would connect this retaining wall to a steel pile anchor wall or concrete anchor blocks.

Jetty Demolition

- 1.3.14 Prior to constructing the quay wall, the existing Jetty No 1 and 2 and other structures along the embankment would be demolished. Piles would be extracted if required given their location and if possible, but if it is not possible to extract the piles, they would be cut down below the level where the stumps could cause a risk.
- 1.3.15 This operation is expected to rely on a combination of marine plant and landside plant. Marine plant is expected to include a spud leg barge or jack up barge with a crawler crane, supported by flat deck barges and tugs to supply equipment and remove demolished materials.
- 1.3.16 The existing gabion baskets on the face of the embankment would be removed by crane and the embankment slope regraded using land-based plant such as long-reach excavators for the upper slope and marine plant for the lower slope.
- 1.3.17 Demolished concrete would be crushed for reuse, if this is found to be practicable for concrete that is expected to contain a high chloride content. Reinforcement bars would be sent to a recycling facility. Other materials which cannot be recycled would be taken to a licensed landfill site. See Chapter 16 Materials and Waste (PEIR Volume 1).

Quay wall construction

- 1.3.18 The quay wall marine works would be mainly constructed from the river using marine plant. This is expected to be supplemented by construction plant operating from the landside at the top of the embankment.
- 1.3.19 For both the open pile suspended deck option and combi wall option, pile driving would use one or more jack up barges with a crawler crane, supported by dumb barges and tugs to supply piles and other materials. For the open pile suspended deck, piles near the top of the embankment could be driven from a crane on land.
- 1.3.20 An alternative construction methodology for the combi wall option would be to import fill material to create a construction bund in front of the existing embankment. In this case, the quay wall would be constructed using land-based piling rigs and this would avoid the need to utilise jack up barges to construct the quay wall. The fill would be imported by ship and discharged

in front of the existing embankment. When the quay wall is completed the imported material in front of the quay wall would be dredged out and used to raise ground levels on the site. Alternatively, the material would be removed by vessel for disposal at sea or a landfill site. The piles for the quay wall would be imported by ship.

- 1.3.21 For the set-back diaphragm wall construction, the wall would be excavated and backfilled using plant on land. The excavated trench would be supported by bentonite or other polymer fluid, and then the trench would be backfilled with a reinforcement cage and concrete.
- 1.3.22 For options which require a separate crane beam, the construction of the piled support and the crane beam would be a landside operation. Tie rods, where required would be placed in trenches excavated through the land.
- 1.3.23 The concrete deck for the open pile suspended deck option would be supported on a temporary deck. Precast elements would be used as much as is practical.

Use of the quay wall as a Marine Off-loading Facility (MOF) during construction

- 1.3.24 Vessels using the quay as a MOF during the construction phase are expected to include:
 - a. Vessels up to approximately 6.5m-7m draught supplying large process plant modules and AILs for construction of the SAF plant and associated facilities;
 - b. These vessels will be heavy-lift ocean going vessels such as MC Class vessel. These vessels are self-ballasting so that the AILs can be unloaded directly over the side of the vessel utilising self-propelled modular transporters (SPMTs) at the quay as a roll on/roll off (RoRo) operation;
 - c. Bulk vessels supplying up to 2 million tonnes of granular fill in order to raise ground levels across the site. As discussed under Chapter 18 Traffic and Transport, PEIR Volume 1), a proportion of this may potentially be delivered by road. The material is expected to be unloaded by a grab crane on the quay or on the vessel, or both. Alternatively, self-discharging vessels could be used; and
 - d. Barges of various sizes supplying construction materials. It is expected that these materials would be lifted off by crane as a load on/load off (LoLo) or RoRo operation. The crane could be on the quay or on the vessel, or both.

Capital Dredging

1.3.25 Capital dredging will be required to form the berthing pocket and access channel for ships using the quay during construction. This would likely comprise:

- a. A dredged pocket in front of the quay approximately 300m long and 55m wide, which would allow vessels to remain moored at the quay at all states of the tide. It would be dredged to a maintained depth of -14m relative to Chart Datum (CD) and 16.85m below Ordnance datum (OD). The capital dredging would excavate to approximately 300mm-600mm below the maintained depth level to allow for siltation. The dredged level would be lower in front of the quay in order to place a scour blanket, if this is required.
- b. An approach channel between the nearby existing turning circle in the River Tees and the dredged pocket which would be tidally restricted. It would be dredged to a maintained depth of -10.4m to -11mCD (13.25m to 13.85m below OD). Smaller vessels could navigate across this area at all states of the tide. However, larger vessels would need to wait for the appropriate tidal window.
- c. Side slopes between the dredged areas at different depths.
- d. To allow for siltation, the initial capital dredge in the approach channel would be 300 to 600mm lower than the maintained depth. For the Deemed Marine Licence application that will form part of the DCO application, there will be an additional allowance of 500mm for over dredge tolerance and a further 500mm safety margin, to ensure that the dredging remains within the licensed limit.
- e. In front of the quay wall, it may be necessary to provide underwater scour protection on the riverbed. This could comprise a concrete or asphalt mat or rock, or a combination of these. It would be necessary to temporarily dredge a trench to place the scour protection. The top of the scour protection would be placed 300 to 600mm below the maintained dredge level and the underside of the temporary trench would be approximately one metre below the top of the scour protection, approximately -15m to -16mCD (17.85 to 18.85m below OD).
- f. The dredged material would be disposed of at a licensed disposal site at sea, if this is acceptable to the licensing authorities. Otherwise, it would be disposed of at an onshore licensed landfill site. It is possible that some of the dredged material in previously undisturbed siltstone could be used as fill material to raise site levels; this would be confirmed following testing of the material quality.
- g. Periodic maintenance dredging is expected to be required to achieve the maintained depth. This could be carried out by either the Port Authority or by the Applicant.
- h. To provide unimpeded vessel manoeuvring access from the turning circle to the quay, it may be necessary to remove or relocate the existing Tees No 21 buoy.

1.3.26 In addition to the dredging for the berthing pocket, the riverbed would also

need to be dredged to a maintained depth of -7m to -8mCD (9.85m to 10.85m below OD) between the turning circle and the quay in order to facilitate vessel access to the sea during the construction phase.

- 1.3.27 It is estimated that 500,000 to 1,000,000m³ of material would be dredged at this stage, depending on which quay alignment is selected.
- 1.3.28 Alternatively, the dredging could be carried out in two stages, with initial dredging being limited to the minimum required to facilitate the construction phase delivery of materials, and then a second dredge to full depth to suit vessels using the quay during operational phase.
- 1.3.29 Dredging equipment is expected to comprise up to two backhoe dredgers each with self-propelled hopper barges and a tug. Alternatively, dredging could be carried out by a cutter suction dredger and self-propelled hopper barges or possibly a trailing suction dredger for the softer riverbed material. The choice of dredging method would be dependent on contractor equipment availability and appropriate investigation and testing of the sediment. The MMO and Natural England would be consulted on the choice of dredging method.
- 1.3.30 Dredge operations are anticipated to be continuous and operate 24 hours a day and seven days a week. Dredging could take around three months to carry out, depending on the final dredged volume, the dredging equipment selected and the ease of dredging. The dredged material would be disposed of at a licensed disposal site at sea, if this is acceptable to the Marine Management Organisation.
- 1.3.31 Measures to manage the risk of encountering Unexploded Ordnance (UXO) in the marine environment which requires removal and disposal will be set out in the Final CEMP.

Main Civil and Process Works

- 1.3.32 Construction on the Main Site will be a mix of modular and conventional construction techniques. The contractor will prepare the Main Site, followed by piling and excavation for main foundations for some of the larger modular elements of the SAF Production Facility. Other buildings and structures may be piled or have raft foundations.
- 1.3.33 Modular plant will be imported by ship and unloaded at the new quay and then moved from the quay to the construction site, potentially using Self Propelled Modular Transporters (SPMT). To allow the SPMT to access the proposed SAF Production Facility location on the Main Site, as part of the preliminary works, it will be necessary to construct a crossing of the existing Sembcorp pipeline corridor where it traverses the site if the clearance under the existing pipe bridge not be sufficient.

- 1.3.34 Following site preparation and laying off the groundwork for module installation, the EPC contractor will commence the installation of modular plant using cranes or other lifting equipment. The maximum height of cranes utilised during the construction phase is anticipated to be 155m (15m above the tallest structure). As per Civil Aviation Authority guidance, aviation lighting will be installed where necessary.
- 1.3.35 Based on the expected ground conditions it is expected that piling will be required as a foundation for the main buildings. It is likely that CFA will be used, however other techniques could include percussive and / or vibro-piles. These will be assessed in the Noise and Vibration Assessment (Chapter 9) as the worst-case. Percussive piling may be required for the quay construction works, dependent on the quay design selected.
- 1.3.36 The design and depth of piling either on land or in the marine environment will be confirmed through a Ground Investigation to be undertaken prior to finalising the construction and foundation design. A Piling Risk Assessment will be undertaken in accordance with Environment Agency guidance to consider and mitigate the risks of causing new pollutant linkages and/or worsening existing linkages with respect to risks to controlled waters during construction of the Proposed Development. This will be secured by a requirement in the draft DCO.
- 1.3.37 As set out in Chapter 9: Noise and Vibration and Chapter 12: Terrestrial Ecology (PEIR Volume 1), where possible the piling method will also be designed to reduce the risk of disturbance to birds or other noise sensitive human and ecological receptors.

1.4 Construction of Utility Connections

Natural Gas

- 1.4.1 Natural gas will be supplied to the Proposed Development by a connection to the existing Above Ground Installation (AGI) within the Main Site. It is expected that the gas connection and works on National Transmission System infrastructure will be completed by National Gas.

Construction of Water Connections

- 1.4.2 It is expected that raw water and potable water connections will be supplied using existing Northumbrian Water Ltd (NWL) infrastructure on the Main Site. For discharge of industrial wastewater, a pipeline will be constructed both above and below ground to interconnect two existing pipelines. One new section of pipeline would be installed to connect a pipeline running north from the Main Site up to the head of an existing tunnel crossing under

the Tees. There it would connect to an existing pipeline that runs through the tunnel. In South Tees this existing pipeline continues from the tunnel head house along the north bank of the Dabholm Gut. This pipeline will then be connected to NWL's Bran Sands Wastewater Treatment Works (WwTW) using a section of newly constructed pipeline.

- 1.4.3 The corridors within which the water connections could run are shown on Figure 4-1 (PEIR Volume 2).

Electrical Connection

- 1.4.4 The Applicant is seeking options for a power supply to the Proposed Development during construction. Diesel generators will be used as a backup. Further information will be provided in the ES which will accompany the DCO application.

Construction Traffic and Site Access

- 1.4.5 Construction access to the Main Site and associated utility connections in North Tees will be via the former INEOS access on Seal Sands Road which connects to the trunk road network via the A1185 and the A689/A19. It is anticipated that there will be a number of access points to the Main Site from Seal Sands Road. There will also be access from Huntsman Drive the Linkline pipeline corridor.
- 1.4.6 In South Tees, construction access for utility connections would be from Wilton International North Gate off the A1085 Steel House Gate Roundabout and then via the internal Sembcorp Road network to the Dabholm Gut, or alternatively, via the A1053, Tees Dock Road.
- 1.4.7 There will be an estimated peak of around 180 HGV one-way movements per day to the Main Site. There will be a smaller number of HGV movements per day for connections south of the Tees.
- 1.4.8 Abnormal loads may be delivered to the Main Site via the highway network. However, the primary route for AIL and module delivery will be by ship using the newly constructed quay. It is expected that up to 300 consignments in 200 deliveries will be required to facilitate the delivery of modular plant, construction aggregates and construction materials via ship over an 18-month period within the construction phase.

Construction Staff

- 1.4.9 It is estimated that there will be up to 2,000 personnel contracted to work on the Proposed Development at the peak of construction. The peak of construction activity and associated traffic is anticipated to be in 2029.

- 1.4.10 Construction staff are anticipated to travel to the Proposed Development via the existing trunk road and local networks. Where possible, the Applicant will seek to maximise sustainable transport options such as public transport, cycling, car sharing or buses from transport hubs or rail stations in accordance with policy as outlined in the Framework Construction Workers Travel Plan secured through a Requirement in the DCO.
- 1.4.11 Further detail is presented in the Construction Traffic Management Plan, and Construction Worker Travel Plan of the Transport Assessment presented within Appendix 18C and Appendix 18D in this PEIR.

Construction Working Hours

- 1.4.12 Core construction working hours will be between 07:00 and 19:00 Monday to Friday (except bank holidays), Saturday 07:00 to 16:00 and Sunday 08:00 to 17:00. However, it is likely that some construction activities may need to be undertaken outside of these core working hours. This is principally because certain construction activities cannot be stopped, such as concrete pouring, but also potentially to manage the construction programme and ensure the completion of the works in line with the agreed timescales for commissioning.
- 1.4.13 Where works within the Proposed Development are to be conducted outside the core hours, they would comply with any restrictions agreed with the local planning authority, in particular regarding control of noise and traffic. Twenty-four hours working for certain activities has therefore been assessed in Chapter 9: Noise and Vibration (PEIR Volume I) which sets out specific mitigation and control measures required to prevent disturbance from any activities outside of core working hours. Requirements in the Draft DCO will secure the working hours and the approach to exceptions to the core working hours. Any such works will be minimised and will be carefully managed to reduce effects on the local community.
- 1.4.14 Given the above, activities that could generate a noise nuisance will not be undertaken at night (i.e. between 19:00 and 07:00) unless by prior agreement with the local authority. Such activities include but are not limited to sheet piling, percussive piling, use of impact wrenches, concrete scabbling, use of reversing sirens, and concrete jack hammering. A noise monitor will be installed at the boundary of the Site, with a daytime and nighttime noise limit to be used during construction agreed with STBC.

Storage of Construction Plant and Materials

- 1.4.15 There will be granular surfaced laydown areas positioned close to access roads on the Proposed Development where any materials will be unloaded

and then transported to the area of works. It is not envisaged that these will be used for long-term storage of materials and that storage will be for six months or less. At the end of the shift, small mobile plant will be returned to a secure overnight plant storage area where drip trays will be utilised under the various types of plant, if required.

- 1.4.16 Separate laydown areas will be required for works to the north and south of the River Tees. Laydown areas and construction compounds for construction materials for the wastewater pipeline and high-pressure nitrogen connections will be required in South Tees.
- 1.4.17 Storage areas for flammable/toxic corrosive materials will be located in a separate, locked, bunded and fenced off area. Material Safety Data Sheets (MSDS) will be available for all these materials and the Control of Substances Hazardous to Health (COSHH) assessments kept within the relevant risk assessment for the task, all subject to the Applicant's approval.

Construction Utilities

- 1.4.18 It is anticipated that the use of some diesel generators will be required for construction power generation, where wired electrical supply is not practicable.
- 1.4.19 Potable water will be required during the construction phase, and this is likely to utilise the existing connection on the Main Site.
- 1.4.20 Construction surface water management methods will be included in the oCEMP.
- 1.4.21 Effluent from construction activities and foul water from welfare facilities are expected to be tankered offsite to a local treatment facility.

Lighting

- 1.4.22 Temporary generators are likely to be required during construction and mobile generators will be used along the construction corridors.
- 1.4.23 Temporary site lighting is proposed to enable safe working on the construction site in hours of darkness. Construction temporary lighting will be arranged so that glare is minimised outside the construction site. An Outline Lighting Strategy has been prepared to accompany the DCO application, and a more detailed Lighting Strategy will be prepared by the EPC contractor, to adhere to the principles set out in the Outline Lighting Strategy.
- 1.4.24 Lighting will be designed so as to minimise any potential nuisance (as far as practicable) outside of the Proposed Development in relation to views from residential receptors or light disturbance to ecological receptors.

Public Rights of Way

- 1.4.25 There is one Public Right of Way within the Site. A Public Footpath in Redcar and Cleveland (designated in sections as 102/2A/1, 102/2A/2, 116/31/3, 116/31/2 and 116/31/1) runs from the end of Tees Dock Road to the eastern end of the Dabholm Gut, adjacent to the Proposed Development.
- 1.4.26 The King Charles III England Coast Path and the Teesdale Way are not within the Proposed Development boundary. However, In North Tees the King Charles III England Coast Path runs along the eastern side of Seaton Carew Road in North Tees and is therefore adjacent to where an existing access track to be used in the Proposed Development meets Seaton Carew Road just south of Seal Sands roundabout at NGR 450668 523562. The England Coast Path along Seaton Carew Road also runs adjacent to the Proposed Development to the west of the Navigator Terminals rail terminal. In South Tees, the King Charles III Coast Path and the Teesdale Way both run close to the route of the construction access from Steel house Roundabout on the A1085.
- 1.4.27 It is not anticipated that the construction phase will require any stopping up or temporary diversions of Public Rights of Way. Crossing controls may be required where the King Charles III England Coast Path crosses the access to the track following the Sembcorp Corridor along the A178, just south of the Seal Sands roundabout. Further details on the local footpath network can be found in Chapter 3: Description of the Site and Surrounding Area, Chapter 10: Landscape & Visual (PEIR Volume 1) and Chapter 15: Socioeconomics.

Wheel Wash Facilities

- 1.4.28 In the interests of highway safety, wheel cleaning facilities will be installed on site from the start of the construction phase. All HGVs which have left the bitumen surfaced roads inside the Site will use the wheel wash as appropriate when exiting the Main Site.

Construction Materials and Waste

- 1.4.29 Likely volumes of construction materials and waste are currently being assessed and will be available for assessment in the ES.
- 1.4.30 The use of a concrete batching plant within the Proposed Development is being considered, otherwise concrete will be imported via road. The number and timing of these deliveries will be available for the ES.
- 1.4.31 Cut and fill balances are currently being developed and the need for import of soil or fill material will be identified and will be available for assessment

in the ES.

- 1.4.32 If required, the Proposed Development contains sufficient area to enable storage of construction wastes for periods during the construction phase. Any unsuitable or contaminated construction materials may be exported via HGV via the public highway network to a local waste recycling or disposal site.
- 1.4.33 Vegetation from site clearance will be collected and, if suitable, could be mulched accordingly to be reused in site enhancement and reinstatement works.
- 1.4.34 A Site Waste Management Plan will be prepared and included with the ES. This will also include the outline of a Materials Management Plan, both of which will be completed and finalised by the Principal Contractor.

Construction Environmental Management Plan and Site Waste Management Plan

- 1.4.35 The Applicant will require that the contractor produces and maintains a CEMP to control site activities to minimise any impact on the environment. This will include industry best practice measures, and specific measures set out in this PEIR. An oCEMP will accompany the DCO application.
- 1.4.36 The purpose of the CEMP is:
- to ensure nuisance levels are minimised as a result of construction;
 - to comply with regulatory requirements and environmental commitments; and
 - to ensure procedures are put into place to minimise environmental effects during construction.
- 1.4.37 In order to manage and monitor waste generated on the Proposed Development during construction, an Outline Site Waste Management Plan (oSWMP) will also be developed as part of the oCEMP, which allows for waste streams to be estimated and monitored and goals set with regards to the waste produced. The oCEMP and appended oSWMP will accompany the DCO application.
- 1.4.38 The SWMP will require that the contractor segregates principal waste streams within the Proposed Development, prior to them being taken to a waste facility for recycling or disposal. All waste removal from the Proposed Development will be undertaken by fully licensed waste carriers and taken to permitted waste facilities.

Commissioning

- 1.4.39 Commissioning of the Proposed Development will include testing of the process equipment and will take approximately nine to 12 months. A

commissioning plan will be required to be agreed with the Environment Agency under the Environmental Permit, which will specify monitoring and control procedures to be used and set out a schedule of commissioning activities.

- 1.4.40 Commissioning of pipelines will involve pressure testing using water or nitrogen. Water, following testing, will be discharged to the surface water drainage system and then the River Tees if clean and with the consent of the Environment Agency. If the water is contaminated it will be tankered off-Site for treatment. On completion of nitrogen pressure testing, nitrogen will be vented to the atmosphere.
- 1.4.41 Construction best practice measures that will be adopted during the construction phase have been taken into account in the EIA. Construction works will be undertaken in accordance with the environmental commitments identified in Chapters 8 to 21 (PEIR Volume 1) and having regard to relevant legislation.

References

- Ref 1 Defra Construction Code of Practice for the Sustainable Use of Soil on Development Sites (Defra, 2009)



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