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REPORT

Northern Gateway Container Terminal

Archaeological Written Scheme of Investigation

Client: PD Teesport

Reference: IEMPB3751R001D01
Revision: 02/Final
Date: 19 November 2015

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Document title:	Northern Gateway Container Terminal
Document short title:	Northern Gateway WSI
Reference:	IEMPB3751R001D01
Revision:	02/Final
Date:	19 November 2015
Project name:	Northern Gateway Container Terminal
Project number:	PB3751
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Classification
Open

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Executive Summary

PD Teesport is proposing to construct a deep sea container terminal known as the Northern Gateway Container Terminal. Royal HaskoningDHV (Royal Haskoning) prepared an Environmental Statement in 2006 in support of the scheme, and planning permission was received in February 2008 and a Harbour Revision Order was granted.

A desk based assessment for the project was undertaken by AOC Archaeology in 2005. This demonstrated that there were no extant cultural heritage assets within the area proposed for development and that impacts to unknown buried archaeology would be unlikely due to the location of the development upon an area of land reclaimed in the 20th century. The only extant buildings are all of 20th century industrial origin and due to the industrial nature of the site, and the wider area, there would be no impact on settings or the historic character of the site from the development.

The assessment by AOC did identify that the channel dredging, deep water berth and construction of the quay wall may impact archaeological deposits, if present, comprising peat and alluvial deposits associated with the prehistoric environment. As such, a programme of archaeological coring was recommended to assess whether any buried archaeological deposits were present. These aspects of the development were also considered to potentially have an impact on the remains of wrecks or other archaeological material associated with the former maritime use of the River Tees that may be present. The potential for impact, however, was considered low due to the levels of historic dredging that has taken place within the exiting approach channel.

This desk based study has been revisited in light of the recent assessment undertaken for the York Potash Harbour Facilities, located immediately adjacent to the north of the site of the proposed Northern Gateway Container Terminal development. The assessment revealed no further evidence for impacts to cultural heritage sites, and a settings assessment undertaken by Cotswold Archaeology supported the conclusion that, due to the existing industrial nature of the area, there would be no impact to the setting of designated heritage assets within the wider area.

A programme of ground investigation for the York Potash project included vibrocores and boreholes. A broad sedimentary sequence was identified with a sediment unit of peat and estuarine alluvium identified in the boreholes. However, due to the infrequent and slight nature of the peat deposit within this unit (Unit 2) no further work was recommended. This was agreed in consultation at the time with English Heritage (North-East Region) during December 2014.

This current document comprises a summary of the above assessments and a Written Scheme of Investigation for archaeological works to prevent impacts to cultural heritage assets within the footprint of the Northern Gateway Container Terminal.

The scheme of investigations addresses:

- Geoarchaeological assessment in the event that further ground investigation is carried out for the development;
- Archaeological Interpretations of marine geophysical data that may be acquired for the development;
- Ground truthing and possible associated works in the event that significant cultural heritage assets are revealed; and
- A finds reporting protocol to address discoveries encountered during the course of construction.

1 Project Background

PD Teesport is proposing to construct a deep sea container terminal on the site of the existing Teesport Container Terminal 1, the redundant former Shell jetty and the Riverside Ro-Ro No. 3 at Teesport. Capital dredging of the approach channel will be undertaken to provide the required access to the proposed terminal for container vessels. The proposed development is known as the Northern Gateway Container Terminal (NGCT).

Royal HaskoningDHV (RHDHV) has been contracted by PD Teesport to compile an archaeological Written Scheme of Investigation (WSI) setting out the archaeological requirements for NGCT, and to undertake consultation with the Local Planning Authority (LPA) in order to agree the content of the WSI.

An Environmental Statement (ES) was submitted for the proposed scheme by Royal Haskoning (now RHDHV) in 2006. Planning permission and a Harbour Revision Order were granted in 2008. Due to the national economic downturn, the development was subsequently postponed. PD Teesport are now looking to address certain planning conditions in advance of works commencing.

Archaeology and the historic environment were addressed by planning condition 14, set out below:

- Pre-development - written scheme of archaeological investigation to be approved by LPA. Reason: To enable the identification and recording of archaeological and palaeoecological remains.

This document constitutes the draft WSI as required by planning condition 14.

In accordance with Section 106 of the Town and Country Planning Act 1990 (as amended) specific mitigation works with regard to Marine Archaeology included the requirement for a sampling strategy to be submitted to Redcar and Cleveland Borough Council before the commencement of development. This requirement is included in the scheme of investigations presented below (see **Section 6.2**).

A Marine Licence will be required for works below high water (MHWS). This WSI addresses archaeological works within the marine environment and will be updated subsequent to the granting of the Marine Licence, as necessary.

2 Location

A plan showing the location of the proposed development within the Tees Estuary is shown in **Figure 1** (Drawing 9T3867/PLN/1000).

The site of the proposed development is located within the Teesport Estate. The river frontage within the existing Teesport Estate comprises approximately 2000m of quay with seven general cargo berths, three tidal Ro-Ro ramps and two container terminals.

Details of the boundaries of capital dredging for the approach channel and the locations of the disposal areas will be set out in a subsequent iteration of this WSI that will be produced and updated with respect to the required Marine Licence for the NCGT project.

3 Overview of Development

3.1 Construction Phase

The main features of the construction phase are summarised as follows:

- Capital dredging within the existing dredged approach channel to deepen the channel by 0.4m from 14.1m below CD to 14.5m below CD, with deepening from 10.4m below CD to 14.5m below CD for the final (approximately) 1km of the approach to the proposed terminal;
- Realignment of the existing approach channel in the vicinity of the proposed terminal and deepening of the two existing turning circles (Tees Dock turning circle and Seaton Channel turning circle) in the Tees Estuary;
- Construction of a 1000m quay face with a proposed quay deck level of 9.0m above CD (+6.15m OD). It is proposed that the terminal construction would be undertaken in two phases (700m followed by 300m);
- Pumping suitable dredged material ashore for use in the reclamation works and for locally raising land levels within the proposed terminal area;
- Disposal of the balance of the capital dredged material at existing offshore disposal grounds in Tees Bay;
- Relocation of the existing Riverside Ro-Ro facility to accommodate the new container terminal;
- Capital dredging of deep water berthing areas alongside the proposed quay face (dredged to 16m below CD);
- Paving the terminal area (approximately 55ha);
- Provision of an area outside of the terminal fence for emergency parking of heavy goods vehicles (HGVs) (approximately 6ha);
- Construction of a new intermodal rail terminal;
- Installation of cargo handling equipment;
- Modifications to the existing roads within the Teesport Estate to provide vehicular access to the new terminal;
- Entrance and exiting gateways to the terminal;
- Buildings and workshops within the proposed terminal area; and,
- Installation of a surface water drainage system, a pumped foul drainage system, a power supply system (including floodlighting) and installation of a water supply system (including firefighting supply).

With respect to the disposal of dredged material, it is proposed to dispose of the majority of the dredged material offshore (i.e. the balance of material remaining following the reclamation work).

3.2 Operation Phase

The total container throughput of the terminal will be approximately 1.5 million TEU per annum. The terminal will operate 365 days per year, 24 hours per day.

At present, maintenance dredging of the navigation channel and various berthing areas is required throughout the lower Tees Estuary. As a result of the proposed development, it is not expected that the existing maintenance dredging strategy will need significant adjustment. It is proposed that maintenance dredgings will be disposed of at the existing disposal sites in Tees Bay, as currently occurs.

4 Existing Environment

4.1 Desk Based Assessment

The existing environment and impact assessment of the archaeology and cultural heritage resource for the ES was based on an archaeological desk-based assessment (DBA) undertaken by AOC Archaeology Group (AOC, 2005).

The following sources of data were consulted to ascertain the existing baseline environment:

- Museum of Hartlepool, Museum Service (Clarence Road, Hartlepool): For old Ordnance Survey maps (1st & 2nd Edition, small- and large-scale) and pre-Ordnance Survey historical maps;
- Sites and Monuments Records (curated by Tees Archaeology, Hartlepool): For data pertaining to archaeological sites, Listed Buildings and Scheduled Ancient Monuments and World Heritage Sites within the study area;
- Teesside Archives (Middlesbrough): For tithe and enclosure maps pertaining to the proposed development area;
- National Monuments Record (Swindon): For vertical aerial photographs; and
- A site walkover.

The DBA demonstrated that there are no cultural heritage sites within the proposed development area (**Figures 2** and **3**). Details of heritage assets within a 1km buffer (study area) of the site are included in **Appendix I**, as listed in the AOC report.

The DBA report concluded that there would be no impact to buried archaeology from onshore aspects of the development (i.e. the ground breaking works associated with the container terminal, intermodal rail terminal, road modification and offices and workshops). These works will all be located within an area of made ground and land reclaimed in the 20th century and, as such, it is unlikely that they will disturb any previously unknown archaeology. Consequently, no mitigation was deemed to be required in these areas.

The proposed development area does contain the remains of a number of 20th century structures, including industrial remains relating to its use as a docking terminal, some of which were still in use. However, the site visit undertaken by AOC in support of the DBA confirmed that these structures are modern and unremarkable and relate solely to the later 20th century port operations. As such, AOC concluded that Historic Building Recording would not be required prior to demolition.

The construction of the deep water berth and quay wall and capital dredging, however, were considered likely to impact potential archaeology that may be present. The berth and quay wall could disturb peat and alluvial deposits that may be present and that may preserve evidence of the early use of the Tees.

Cartographic evidence reviewed by AOC showed that the area of the site once formed part of the intertidal zone of the River Tees. Similarly, the proposed dredging works will in part impact upon previously undisturbed buried sediments within the Tees Channel, which have the potential to preserve important information relating to early use of the channel, as well as sea level change and the palaeoenvironment. As such, a programme of archaeological coring was recommended to assess whether buried archaeological deposits are present.

The documented losses of several ships in the River Tees also indicate the potential for remains associated with former maritime use to be present. These documented losses are discussed in more details below (**Section 4.2**). The potential impact to maritime remains, however, was considered to be low given that capital dredging will primarily take place within an existing dredged channel.

With regard to potential effects on the setting of cultural heritage assets, AOC concluded that, as there are no designated buildings and monuments within 2km of the site, and as the nearest listed buildings are in Redcar, shielded from the site by mature trees, industrial factories and topography, impacts to setting are unlikely to occur.

4.2 Additional Assessment (York Potash Harbour Facilities)

In 2015 York Potash Limited (YPL) submitted an ES in support of their application for a Development Consent Order (DCO) to develop a harbour facility on Teesside for the export of polyhalite bulk fertilizer (RHDHV, 2015).

The site of the York Potash Harbour Facilities is located immediately adjacent to the north of the NGCT site (**Figure 4**). A 1km study area established for the purposes of the assessment of archaeology and heritage for the York Potash project overlaps the site and study area for the NGCT. Consequently, aspects of the assessment undertaken for the YPL project can also inform current understanding of impact to archaeology and heritage for NGCT.

Data from the Redcar and Cleveland HER acquired for the YPL project include new records of cultural heritage sites in addition to the DBA produced by AOC archaeology in 2005. Three of these are located within the NGCT site and study area. However, these do not relate to extant sites, and comprise of:

- **Site No. 60**

Name: Beacon
HER UID: 6054
Location (BNG): 454650 523910
Description: O.S. 1895. 6" Yorkshire Sheet VI N.E. & 25" Yorkshire Sheet VI.8. 2nd Edition show a River Tees navigation light. Not shown on modern mapping.

- **Site No. 61**

Name: Beacon
HER UID: 6055
Location (BNG): 454680 523910
Description: O.S. 1895. 6" Yorkshire Sheet VI N.E. & 25" Yorkshire Sheet VI.8. 2nd Edition show a River Tees navigation light. Not shown on modern mapping.

- **Site No. 62**

Name: Eighth Buoy Scarp Beacon
HER UID: 6056
Location (BNG): 454840 524350

Description: O.S. 1895. 6" Yorkshire Sheet VI N.E. & 25" Yorkshire Sheet VI.4. 2nd Edition show a River Tees navigation light. Not shown on modern mapping.

Data from the National Record of the Historic Environment (NRHE) acquired for the YPL project did not demonstrate the presence of further monuments within the NGCT site, with the exception of providing further details on the documented losses of vessels in the vicinity of the development.

Maritime records from the NRHE comprised 20 vessels documented as lost within the Tees Estuary. Nineteen of these are grouped by the NRHE at a 'Named Location' adjacent to the NGCT site within the River Tees. Nine of the vessels were lost following collision, nine foundered or were stranded and one was lost after striking a mine during WWI. The date of loss of the nineteen vessels ranges from 1751 to 1921 with a general distribution as follows:

- 1750-1799: 2 records;
- 1800-1849: 4 records;
- 1850-1899: 9 records; and
- 1900-1949: 4 records.

The remaining record is that of the 'wherry' *Heckler* (NRHE 908826/HER 3119), a type of boat traditionally used for carrying cargo or passengers within rivers or canals, that sank in River Tees in the fairway in the vicinity of Teesport in 1960. The current location of the wreck is unknown although the documented location of loss lies adjacent to the Bran Sands lagoon, within the River Tees.

It should be noted that a 'Named Location' is an arbitrary point on the seabed at which the NRHE groups reported losses and the points do not, except by chance, correspond to actual remains on the seabed. Nonetheless, the number of vessels located at this Named Location is a useful indicator of the high potential for the presence of previous unidentified wreck remains within the River Tees. The use of the Estuary as a historic shipping, transport and trade route, and also as a port from at least the medieval period onwards, points to the potential for greater numbers of vessels to have been lost within the Tees, but perhaps not officially reported, and for which surviving wreck material may potentially be present.

4.3 Geoarchaeological Assessment

A *Geoarchaeological Stage 1 Vibrocore and Borehole Assessment* was conducted in October and November 2014 for the YPL project by Cotswold Archaeology (2014a). A programme of marine vibrocoring was undertaken and the vibrocore logs were analysed along with boreholes from the edge of the Tees Estuary. The locations of these boreholes are listed below (**Table 1**) and shown on **Figure 5**.

Table 1: Locations of Vibrocores and Boreholes Acquired for the York Potash Harbour Facilities Assessment (Cotswold Archaeology 2014a)

Vibrocore/Borehole ID	Easting	Northing
VC01A	454598	524826
VC02A	454737	525000
VC03A	454862	524849
VC04	454832	524969
VC05A	454814	525102

Vibrocore/Borehole ID	Easting	Northing
VC06	454814	525237
VC07	454826	525327
VC08A	454829	525427
BHP2	454964	524966
BHP3	454964	525106
BH4PA	454961	525193
BHP5B	454958	525260
BHP6	454946	525358

The logs revealed five broad sedimentary units. These are summarised in **Table 2**.

Table 2: Summary of Sedimentary Units Identified in Vibrocores and Boreholes for the York Potash Harbour Facilities Assessment (Cotswold Archaeology 2014a)

Sedimentary Unit	Description	Interpretation	General Depth
Unit 5	Silty, sandy gravel with cobbles and inclusions of slag, concrete and brick	Made ground (20th century)	Up to 9.3m thick
Unit 4	Gravelly sandy Clay	Estuarine alluvium/ polluted fluvial sediments	Generally 1 to 2m thick in vibrocores and 0.5m thick in boreholes
Unit 3	Gravelly Sand and slightly silty and clayey Sand	Marine sediments/ Estuarine alluvium	Up to 12m thick in boreholes, basal unit in vibrocores
Unit 2	Sandy/ silty/ gravelly Clay	Estuarine alluvium and peats (possible mid-Holocene sediments)	From 16.7m, generally c. 2m in extent
Unit 1	Extremely weak Mudstone	Weathered Bedrock	Generally present from c. 20m

Only Unit 2 was assessed as having the potential to contain *in situ* prehistoric archaeological material associated with mid-Holocene (broadly covering the late Mesolithic to early Iron Age) seasonal use of the estuary / marshland. Coal was recorded within Unit 2 within borehole BHP3, between 16.7 and 18.2m. In addition, pseudo-fibrous peat lenses/ pockets and fragments of wood and organic material within a clay context were recorded within borehole BHP6, between 20.8 and 21.8m. The development of peat within a clay context indicates temporary marshland/ terrestrial conditions within the estuarine environment.

None of the vibrocores reached a depth to which Unit 2 was encountered and no retained borehole samples included material from Unit 2 that would be suitable for further analysis. Due to the infrequent and slight nature of the peat deposit within Unit 2 (within BHP6 only), Cotswold Archaeology concluded that it would not be guaranteed that further borehole survey would encounter these deposits again and no further work was recommended. This was agreed in consultation with English Heritage (North-East Region) during December 2014 (RHDHV, 2014).

4.4 Settings Assessment

A settings assessment was carried out by Cotswold Archaeology (2014) in relation to a proposed overhead conveyor system, linking to the proposed Harbour Facilities, for the YPL project.

The assessment identified an extensive modern industrial landscape, along the southern bank of the Tees Estuary, comprising:

- Large funnels, vent shafts and stacks associated with the coal, gas and biomass powered generators of the wider Wilton Works Complex;
- Flare stacks, which are regularly set aflame in order to burn off waste emissions;
- Concentrations of large industrial buildings forming the various works' principle units, processing plants and storage facilities;
- Large warehouses and container units;
- Dumps of coal and other combustible fuels; existing material conveyor systems;
- Pipework clusters and grids; pipelines, pylons and power cables;
- Tanks, ponds and cisterns; roads; small areas of waste ground;
- Dumps of industrial waste materials; and
- Emissions (smoke, steam and other gases) produced by the various facilities, which are manifest as coalescing plumes of white, grey and black vapour.

In addition to visual considerations, noise, smell and heat also contribute to the experience of the landscape.

The settings assessment concluded that the addition of the overhead conveyor system (another modern engineering feature) to this landscape would be in keeping with the intensive modern industrial nature of the area and that there would be no change to character of the landscape. Consequently there would be no material change to the setting of heritage assets in the wider area, including:

- Kirkleatham Conservation Area and all of the Listed Buildings within it (including the Grade I Listed Church of St. Cuthbert, the Grade I Listed Sir William Turner's Hospital and Grade II* Listed Old Hall Museum);
- Foxrush Farm and other associated Grade II Listed Buildings;
- Westfield House, Grade II Listed Building;
- Marsh Farmhouse and other associated Grade II Listed Buildings;
- Yearby Conservation Area and other Grade II Listed Buildings within and within proximity to it;
- Manor Farm and other associated Grade II Listed Buildings; and
- Coatham Conservation Area and Listed Buildings within and proximate to it.

As the NCGT development is located in the same industrial complex, and as structures are expected to be of lower height in comparison to the proposed maximum height for the YPL overhead conveyor system, it is similarly concluded that there will be no impact to the setting of these heritage assets from the NCGT development.

5 Impact Assessment and Mitigation Summary

With consideration of the DBA carried out by AOC in 2005, and additional work carried out for the YPL project, potential impacts to the historic environment with respect to the NGCT are summarised as follows.

There are no extant cultural heritage assets within the area of the NGCT development. Therefore, there will be no impact and no mitigation is required.

With regard to the modern industrial structures, the AOC (2005) site visit demonstrated that the structures are modern and unremarkable and relate solely to the later 20th century port operations. Consequently, no mitigation is recommended prior to demolition.

Similarly, there will be no impact to buried archaeology from onshore aspects of the development (i.e. the ground breaking works associated with the container terminal, intermodal rail terminal, road modification and offices and workshops). These works are located within an area of made ground and land reclaimed in the 20th century and, as such, it is very unlikely that they will disturb any previously unknown archaeology. Consequently, no mitigation is recommended.

The construction of the deep water berth and quay wall and capital dredging may impact as yet undiscovered archaeology surviving within the footprint. Potential archaeological remains may comprise wrecks or crashed aircraft and other evidence relating to the former maritime use of the River Tees. There is also the possibility of encountering palaeogeographic features and deposits relating to prehistoric activity and the palaeoenvironment.

Maritime, aviation and prehistoric finds encountered during the course of works, other than those discovered through specific archaeological investigation, will be reported through the finds reporting protocol (see **Appendix II**). In addition, if further ground investigations or geophysical surveys are carried out in advance of capital dredging within the approach channel or the deep water berth area, or in advance of the construction of the quay wall, then archaeological objectives will be included as part of the survey methodology (See **Sections 6.2** and **6.3** respectively).

If significant archaeological remains are identified through geoarchaeological assessment of ground investigation data, or archaeological interpretation of the marine geophysical survey data, then ground truthing to establish the nature and extent of these remains may be required. Ground truthing may take place via diver or Remotely Operated Vehicle (ROV) survey. It may also be possible to combine archaeological objectives within any such survey undertaken for the purposes of identification of Unexploded Ordnance (UXO).

If diver or ROV survey is required, and the presence of significant archaeological remains is confirmed, then further works may be necessary to record archaeological material prior to removal (i.e. preservation by record) or to establish Archaeological Exclusion Zones (AEZs) to ensure preservation *in situ* and to prevent damage or destruction to significant archaeological remains during construction and operational works.

Due to the existing industrial character of the area, there will be no impact to the setting or historic character of the area or to heritage assets in the wider vicinity, as a result of the development, and as such no mitigation is recommended.

The draft outline methodology for proposed mitigation is included as a Scheme of Investigation below.

6 Scheme of Investigation

6.1 Roles, Responsibilities and Communications

RHDHV has been contracted by PD Teesport to produce this WSI and to undertake consultation to agree the WSI with the Local Planning Authority (LPA). RHDHV are responsible for:

- Compiling, reviewing and updating this WSI following consultation with PD Teesport, the LPA and the archaeological curators;
- Advising PD Teesport on their current responsibilities regarding the implementation of the WSI;
- Advising PD Teesport on the necessary interaction with the LPA and archaeological curators and other third parties for the purposes of agreeing this WSI; and
- To consult with the LPA to agree this WSI.

The archaeological curators (LPA) responsible for heritage matters onshore are Redcar and Cleveland Borough Council.

The archaeological curators responsible for heritage matters offshore are Historic England.

PD Teesport will retain the services of a suitably qualified and experienced archaeological contractor (the Retained Archaeologist) to ensure the effective implementation of this WSI. The specific individual nominated by the developer will act as a point of contact with the archaeological curators throughout the currency of the WSI and the work carried out under its terms.

The responsibilities of the Retained Archaeologist will include:

- Advising PD Teesport on their responsibilities regarding the ongoing implementation of the WSI and finds reporting protocol;
- Advising PD Teesport on further necessary interaction with the archaeological curators and other third parties;
- Preparing detailed method statements for all archaeological activities (if required);
- Procuring, monitoring the work of, and liaising with specialist archaeological sub-contractors (if required);
- Monitoring the preparation and submission of archaeological reports, as appropriate, and making them available to the archaeological curators for review and approval; and
- Advising PD Teesport on any final requirements and arrangements for further analysis, archive deposition, publication and popular dissemination.

All contractors engaged in the construction of the project will need to:

- Familiarise themselves with the requirements of the WSI and make the contents available and accessible to their staff;
- Adhere to legal obligations in respect of 'wreck' and 'treasure' under the Merchant Shipping Act 1995 and the Treasure Act 1996 respectively;
- Assist and afford access to archaeologists employed by PD Teesport;
- Inform the Retained Archaeologist of any environmental constraint or matter relating to health, safety and welfare of which they are aware, that is relevant to the archaeologists' activities; and

- Implement and strictly adhere to the finds reporting protocol.

It is not the responsibility of the Retained Archaeologist to implement the requirements of this WSI but rather to advise PD Teesport on their overall responsibility for the implementation of this WSI and the finds reporting protocol.

6.2 Geoarchaeological Assessment

The ES for NGCT recommended that a programme of archaeological coring be conducted in order to further assess whether the potential for any buried prehistoric deposits exists, and to help substantiate the presence or absence of any such deposits.

A vibrocore and borehole survey undertaken for the YPL project revealed a single unit (Unit 2: Estuarine Alluvium and Peats) of archaeological potential. However, due to the infrequent and slight nature of the peat deposit within the unit no further work was recommended at that stage. This was agreed in consultation with English Heritage at the time (December 2014). It was recommended, however, that, suitable samples should be taken if future works are found to impact upon any peat deposits.

In accordance with the recommendation by AOC, and with consideration of the results of the geoarchaeological assessment undertaken for the YPL project, if any further ground investigations are undertaken in advance of construction and dredging for NGCT, all collected cores and samples will be subject to geoarchaeological assessment.

If further ground investigations are required, PD Teesport and/or their appointed representative will procure a suitably qualified and experience geoarchaeological contractor to undertake the work, as advised by the Retained Archaeologist and agreed in further consultation with the archaeological curators.

The principal objective of any geoarchaeological assessment would be to determine whether any significant archaeological, palaeoenvironmental or geoarchaeological remains are present within the footprint of the approach channel, deep water berths and area of the quay wall.

If required, geoarchaeological assessment would take place via a staged approach:

- **Stage 1:** Integration of archaeological objectives into any planned borehole/vibrocore surveys:
  - PD Teesport and the geotechnical contractor would take into account the advice of the Retained Archaeologist and geoarchaeological sub-contractor in planning ground investigation surveys;
  - Advice would be provided on the suitability of the planned survey methodology and equipment for archaeological purposes;
  - Consideration would be given to the archaeological potential of areas in planning the location of the boreholes/vibrocores;
  - Consideration would be given to requirements for onsite subsampling, recording and logging of cores, including provision for a geoarchaeological watching brief during the acquisition of cores and subsamples if required; and
  - The planned survey would be designed to allow for non-archaeological objectives and archaeological objectives to be combined within one survey, if it is not possible to take one core that covers both, two cores may be necessary at each location.
- **Stage 2:** Initial assessment of borehole/vibrocore logs:
  - PD Teesport would ensure that the core logs are available to the geoarchaeological contractor;

- The geoarchaeological contractor would review the core logs to provide an overview of the sedimentary sequence within the area of study and identify the archaeological potential of identified sediment units; and
- On the basis of the review the geoarchaeological contractor would identify the requirements for Stages 3 to 5, to be presented in a report and agreed with the archaeological curators and PD Teesport.

- **Stage 3:** Geoarchaeological assessment of cores:
  - If sedimentary units with archaeological potential are identified during Stage 2 then PD Teesport would ensure that undisturbed cores and associated samples are available to the geoarchaeological contractor for further assessment;
  - The geoarchaeological contractor would undertake archaeological recording and subsampling in accordance with, and allowing for, the objectives of the geotechnical contractor, as agreed in Stage 1). One undisturbed half of each core containing archaeological deposits would be required for geoarchaeological recording;
  - Each selected core sample would be cleaned and recorded, noting sediment colour, type and inclusions;
  - Sub-samples would be collected for palaeoenvironment analysis, if required;
  - On the basis of the review the geoarchaeological contractor would identify the requirements for Stages 4 and 5, to be presented in a report and agreed with the archaeological curators and PD Teesport.
- **Stage 4:** Palaeoenvironmental analysis and dating:
  - As appropriate, palaeoenvironmental assessment for some or all of the following indicators of past environments would be carried out by the geoarchaeological contractor:
    - Plant macro-fossils;
    - Pollen;
    - Diatoms;
    - Ostracods;
    - Foraminifera;
    - Insects and molluscs; and
    - Charcoal.
  - Assessment may also include some scientific dating of samples;
  - The results of palaeoenvironmental analysis would be presented in a report and would inform the requirements for stage 5 and any recommendations for further work.
- **Stage 5:** Production of a geoarchaeological deposit model and recommendations for further mitigation, if required:
  - The results from stages 1 to 4 would be collated in a database and used to generate a deposit model of the buried deposits and landscape features present within the area of study;
  - The deposit model will also include relevant results from other surveys including:
    - Geoarchaeological assessment of vibrocores/boreholes by Cotswold Archaeology for the YPL project; and
    - The results of any seismic (sub-bottom) survey undertaken for the purposes of NGCT.

- A geoarchaeological assessment report would be produced to collate the results for stages 1 to 5 and to outline any recommendations for further work.

If ground investigations are carried out for NGCT, and geoarchaeological assessment is required, a detailed methodology would be set out in a Method Statement to be agreed with the archaeological curators and PD Teesport, as advised by the Retained Archaeologist, prior to the commencement of works. The methodology for geoarchaeological assessment would be carried out in accordance with best practice as set out in available industry standards and guidance, including:

- English Heritage, forthcoming, The Historic Environment in Ports and Harbours in England: Practical Approaches for the Assessment and Management of Marine Archaeology During Port and Harbour Development, English Heritage (EH 6801);
- English Heritage, 2011, Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (second edition, English Heritage (51644));
- Gribble, J. and Leather, S. for EMU Ltd., 2011, Offshore Geotechnical Investigations and Historic Environment Analysis: Guidance for the Renewable Energy Sector. Commissioned by COWRIE Ltd (project reference GEOARCH-09); and
- English Heritage, 2007, Geoarchaeology: Using earth sciences to understand the archaeological record, English Heritage (50848).

The Method Statement would include detailed requirements for reporting and archiving associated with this package of archaeological works. Reports will be made available to the archaeological curators for review and comment prior to final issue.

6.3 Marine Geophysical Survey Assessment

The DBA by AOC (2005) concluded that the potential impact to maritime remains was considered to be low given that capital dredging will primarily take place within an existing dredged channel.

In order to confirm this, any marine geophysical survey data acquired prior to the commencement of construction, specific to the NGCT scheme, will be subject to archaeological interpretation by a suitably qualified and experienced archaeological contractor.

The principal objective of any geophysical assessment would be to determine whether any significant archaeological and palaeogeographical features are present within the footprint of the approach channel, deep water berths and the area of the quay wall.

It is envisaged that geophysical survey may be required for NGCT in order to inform the dredging methodology for the channel and deep water berths and the construction methodology for the quay wall. Geophysical survey may also be required to inform the risk from Unexploded Ordnance (UXO) that may be present within the footprint of proposed dredging activity.

If marine geophysical survey is required then archaeological objectives will be incorporated within the methodology for planned surveys, as advised by the Retained Archaeologist and in agreement with the archaeological curators and PD Teesport.

Potential surveys and their relevance to the assessment of archaeology and paleogeography include:

- Sidescan sonar:

- Applies to the identification of wrecks and crashed aircraft that may be present on the surface of the seabed, including materials and debris fields associated with these sites.
- High resolution sidescan sonar data suitable for archaeological interpretation is usually acquired through a combination of high frequency and short range (e.g. 500 kHz at a range of 50m or 75).
- Coverage of 200% is ideal for archaeological interpretations (100% overlap of swaths of sonar data) with a minimum of 100% coverage.

- Multibeam bathymetry:
  - Can assist in the identification of wrecks and crashed aircraft that may be present on the surface of the seabed, although the technique is less effective than sidescan sonar in detecting smaller sites with little vertical expression.
  - Higher resolution data is obtained through a shorter distance between the multibeam echo sounder and the seabed.
- Magnetometry:
  - Used to detect ferrous material lying on, or buried within, the seabed.
  - Unlike sidescan and multibeam, magnetometers can detect buried material and can identify a wreck as either wooden or metal hulled, for example.
- Sub-bottom profilers:
  - Seismic surveys are used to profile the sub-seabed geology.
  - Used in combination with ground investigation surveys (cores) to facilitate the identification of sub-surface palaeogeographic features, such as palaeochannels, associated with prehistoric submerged landscapes.
  - Choice of line spacing determines the level of the detail recorded, the smaller the line spacing the greater the detail recorded.
  - Seismic data may also detect the presence of buried wrecks if the system passes directly over the site.

Marine geophysical data acquired by a geophysical contractor will be provided in raw format to the appointed archaeological contractor, together with vessel track plots and details of the survey (i.e. equipment used, weather conditions etc.). The data would then be processed using specialist software by the archaeological contractor according to different settings that allow for the appropriate enhancement of the geophysical data for archaeological interpretation. Individual anomalies are assessed, grouped and characterised according to their archaeological potential. The assessment would also be integrated with pre-existing records of wrecks and obstructions from the area of study and any other relevant information that helps facilitate the archaeological identification and interpretation of identified anomalies in the data (e.g. secondary sources or the results of similar surveys or archaeological studies in the area of the River Tees).

The results would be presented in a report that will include any recommendations for further work, such as ground truthing using divers or ROV survey, to be agreed by the archaeological curators and PD Teesport.

If geophysical surveys are carried out for NGCT, and archaeological assessment is required, a detailed methodology would be set out in a Method Statement and would be agreed with the archaeological curators and PD Teesport, as advised by the Retained Archaeologist, prior to the commencement of works. The methodology for assessment would be carried out in accordance with best practice as set out in available industry standards and guidance, including:

- English Heritage, forthcoming, The Historic Environment in Ports and Harbours in England: Practical Approaches for the Assessment and Management of Marine Archaeology During Port and Harbour Development, English Heritage (EH NHPP project ref: 6801);
- Plets R., Dix J. and Bates R. (2013) Marine Geophysics Data Acquisition, Processing and Interpretation, Guidance Notes, published by English Heritage (product code:51811); and
- Chartered Institute of Archaeologists (CIfA), 2014a, Standard and Guidance for archaeological geophysical survey.

The Method Statement would include detailed requirements for reporting and archiving associated with this package of archaeological works.

6.4 Diver/ROV Survey and Associated Works

If remains of archaeological potential are identified during the review of marine geophysical data then ground truthing using divers or ROV survey may be required to clarify the nature and extent of the remains prior to the commencement of works.

If diver/ROV survey is planned in relation to the identification and clearance of UXO within the prosed footprint then archaeological objectives may be incorporated within the proposed UXO works. If no UXO related ground truthing is required then PD Teesport and/or their appointed representative would, as required, procure a suitably qualified and experience diving or ROV contractor to undertake the work, as advised by the Retained Archaeologist.

If the presence of significant archaeological remains was confirmed then measures for recording significant archaeological remains may be required prior to removal (preservation by record) or for their preservation *in situ* (through AEZs). This would be discussed and agreed with the archaeological curators and PD Teesport prior to dredging and construction works commencing.

The requirement and objectives for any diver or ROV survey would need to be informed by the results of the marine geophysical survey assessment with an agreed methodology detailed in a survey specific Method Statement to be agreed through further consultation with the archaeological curators and PD Teesport.

6.5 Finds Reporting Protocol

Any archaeological discoveries that come to light during the course of the NGCT dredging and construction phases ,other than those discovered through specific archaeological investigation, will be addressed by the implementation of an archaeological reporting protocol.

The main objective is to reduce any adverse effects on heritage by enabling people working on the NGCT project to report archaeological discoveries in a manner that is conducive to their everyday work and that allows for efficient reporting so that archaeological advice can be provided in a timely manner.

Expected archaeological works would comprise:

- Toolbox talks to ensure understanding of and adherence to the reporting protocol by NGCT staff and contractors; and
- Operation of the protocol throughout the construction phase.

Specific objectives are to:

- Ensure all staff and contractors are fully aware of the mechanisms for reporting discoveries through the protocol and are provided with advice on identifying finds, 'first-aid for finds' and initial recording;
- Ensure that all discoveries are addressed in an efficient and proportionate manner to prevent adverse effects from further impacts associated with the proposed scheme; and
- Ensure that details of the discovery are forwarded to Historic England, the appropriate Local Government Archaeology Officer(s), the Receiver of Wreck, if required, and other stakeholders, as relevant.

The proposed archaeological reporting protocol for NGCT is included as **Appendix II**. The proposed protocol is set out in accordance with the methodology adopted for the Marine Aggregates Industry (MAI) and set out in the British Marine Aggregate Producers Association (BMAPA) and English Heritage Protocol for reporting finds of archaeological interest (Wessex Archaeology, 2005).

The proposed protocol will be agreed in advance of works with the archaeological curators and PD Teesport.

Responsibility for the implementation of the Protocol rests with PD Teesport.

The services of an appropriately qualified contractor will be secured by PD Teesport and/or their appointed representative to operate the protocol during the pre-construction and construction phases of the project. The contractor will carry out toolbox talks for PD Teesport staff and contractors in advance of work commencing on site. The number and frequency of these talks will be agreed by PD Teesport with the archaeological curator prior to works commencing.

Reporting on individual discoveries will occur in accordance with the terms of the protocol and will comprise:

- A summary data sheet report outlining the circumstances of the discovery, an interpretation of the find and actions taken to address the discovery; and
- A MIDAS compliant heritage report for submission to national and local authority heritage data archives.

MIDAS is the UK Historic Environment Data Standard for recording cultural heritage information established by The Forum on Information Standards in Heritage (FISH) (2012). The data standard suggests the minimum level of information needed for recording heritage assets and covers the procedures involved in understanding, protecting and managing these assets. It also provides guidelines on how to support effective sharing of knowledge, data retrieval and long-term preservation of data.

Throughout the pre-construction and construction phases, PD Teesport will submit notification of the date from which the protocol is active with monthly reports if finds are made and an annual report to summarise the implementation of the protocol to the curators (Historic England and Redcar and Cleveland Borough Council) so that the effectiveness of the protocol can be monitored.

Following the completion of the proposed scheme a final report will be produced summarising the results of the protocol. Even if no discoveries are reported a "nil discovery" report will be issued to demonstrate adherence to the protocol throughout the pre-construction and constructions phases of NGCT.

6.6 Reporting and Archive

As outline above, stand-alone reporting will be produced for each stage of fieldwork. Each report would include a clear statement of the archaeological value (importance) of the results, and their significance in the context of relevant research agendas, as appropriate.

Archaeological reports will be prepared in accordance with the guidance given in the relevant CIfA and English Heritage guidance documents. Reports will typically include:

- A non-technical summary;
- The aims and methods of the work;
- The results of the work including finds and environmental remains;
- A statement of the potential of the results;
- Proposals for further analysis and publication; and
- Illustrations and appendices to support the report.

A digital version of the reports once fully reviewed and approved by PD Teesport and the LPA and/or Historic England, will be placed with OASIS (Online Access to the Index of Archaeological Investigations) at - www.oasis.ac.uk. This will be arranged for by the Retained Archaeologist. The project records will include technical details for each technique used in the project. Subject to any contractual requirements on confidentiality, copies of the OASIS record would be integrated into the relevant local and national records and published through the Archaeology Data Service – ArchSearch catalogue. This will include an uploaded .pdf version of each fieldwork report (a paper copy will also be included with the archive).

Final reports will also be submitted to the Redcar and Cleveland HER for inclusion in their database of archaeological events.

On completion of the project and if merited by the significance of the findings, articles would be published in a range of journals and publications, again suitable to the significance of the findings, and in accordance with recommendations made in the post-excavation assessment, analysis and reporting. All publication matters will be discussed and agreed in advance with PD Teesport and the archaeological curators.

The project archive will consist of all written, drawn, photographic and digital records and artefacts/ecofacts related to and generated by the NGCT archaeological works. The archive will be prepared for long-term storage in accordance with Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation (Brown, 2007) and Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives (CIfA, 2014b).

Detailed provisions for reporting and archiving will be set out in the Method Statements for each package of archaeological works (geoarchaeological assessment, marine geophysical survey, diver/ROV survey and associated works), if required.

6.7 Resources and Timetabling

The timetable for construction works is not yet finalised and, once known, the details of the timetabling for proposed works will be set out in the Method Statement for each package of works. Due to the phased construction of the NGCT, the overall timetable for works is expected to take a number of years to complete.

The geoarchaeological assessment, marine geophysical survey, diver/ROV survey and associated works, if required, will be undertaken by appropriately qualified and experienced archaeological contractors. The archaeological contractors will provide staff CVs of the Project Manager, Project Officer and any proposed specialists. Such staff will be able to demonstrate an appropriate level of experience and expertise and should preferably, where appropriate, be Members of the CIfA.

All equipment and tools (including computer hardware and software) required by the archaeological contractors are to be supplied by the archaeological contractors.

The archaeological contractor(s) must give immediate warning should any agreed programme date not be achievable, due to for example unforeseen access issues, and early warning must be given on any costing and/or budget concerns.

6.8 Confidentiality and Copyright

Although certain information regarding the development is in the public domain, the construction works, including archaeological works, may attract interest.

In the event of any enquiries by the public, the archaeological contractor(s) will refer all enquiries to the Principal Contractor, PD Teesport and/or their representatives without making any unauthorised statements or comments.

The archaeological contractor(s) will not disseminate information or images associated with the project for publicity or information purposes, without the permission of PD Teesport and/or their representatives.

The archaeological contractor(s) shall assign copyright in all reports and documentation/images produced as part of this project to PD Teesport. The contractor shall retain the right to be identified as the author/originator of the material.

The archaeological contractor(s) may apply in writing to use/disseminate any of the project archive or documentation (including images), and any such permission will not be unreasonably withheld.

Following submission of the final approved reports to Redcar and Cleveland HER, the information within them will be publicly accessible under the Freedom of Information Act (2000) and the Environmental Information Regulations (2004).

6.9 Health and Safety

The archaeological contractor(s) will adhere to risk assessments and any project specific health and safety plan prepared by or for PD Teesport and the Principal Contractor.

The archaeological contractor(s) will provide details of their public and professional indemnity insurance and all other insurances required by law.

The archaeological contractor(s) will have their own Health and Safety policies compiled using national guidelines, which conform to all relevant Health and Safety legislation. A copy of the sub-contractor's Health and Safety policy will be submitted to PD Teesport and/or their representatives prior to works commencing.

If it is necessary to visit site, as a minimum the following PPE will be worn at all times:

- High visibility vest / jacket;
- Approved work wear (e.g.: overalls/trousers/long-sleeved tops/no shorts).
- Hard hat; and
- Safety boots with reinforced toes and mid-sole, with ankle support.

Where appropriate and necessary, additional PPE including safety glasses and gloves will be utilised.

In undertaking all work the contractors, archaeologists and other staff (as applicable) are to abide by all statutory provisions and by-laws relating to the work in question, especially the Health and Safety at Work Act 1974.

No lone working will be permitted at any time.

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Appendix I

Cultural Heritage Sites within the 1km site buffer identified by AOC (2005)

Site No. 1
Name: Bran Sands QL/QF Site
Type of remains: Bombing Decoy Site
Grid reference: NZ 5590 2360
SMR ID no: 4365
Description: Former WWII bombing decoy QL/QF site. QF component was a fire based decoy. Fires were lit to represent sites already under attack thus diverting the enemy fire away from the real target. QL site was designed to replicate furnace glow and railway marshalling yards of the Cleveland Ironworks. The first reference to Bran sands QL site is 2nd October 1942, to QF it is 1st May 1943. The last reference to both sites is 1st May 1943 (Dobson 1996). The site is now built over.

Site No. 2
Name: Eston Grange (Grangetown)
Type of remains: Railway Station
Grid reference: NZ 5490 2180
SMR ID no: 4360
Description: Station at Grangetown formerly known as Eston Grange opened November 1885, replacing Eston Junction Station (SMR 4358) to the West. The name change to Grangetown occurred in 1902, bringing it in line with the community which it served (Crow 2000) A well-built ashlar subway is the only survival of the station (RCHME 1993).

Site No. 3
Name: South Bank
Type of remains: Railway Station
Grid reference: NZ 5266 2112
SMR ID no: 4359
Description: A station was opened at South Bank in 1882, on the site which it occupied for the next 102 years. Today's station is approximately 750 yards east of the former site. Not to be confused with SMR 4358 (Site 4). The Station is now disused and is superseded by the modern South Bank (Crow 2000).

Site No. 4
Name: Eston Junction
Type of remains: Railway Station
Grid reference: NZ 5386 2137
SMR ID no: 4358
Description: Former station at Eston Junction. The station was sited on the Middlesbrough - Redcar railway at the junction with the Eston railway between South Bank and Grangetown. The station was built in 1850 at the time of the construction of the Eston Branch. The Station was substantial. One of three to have the name of Eston Station. The station was renamed South Bank in December 1877, but for only five years.

Site No. 5
Name: Warrenby
Type of remains: Spear

Grid reference: NZ 5650 2450
SMR ID no: 239
Description: Early Medieval iron spearhead with leaf shaped blade and closed socket. Length 36cm and blade width 3.1cm. Socket and blade have been made separately with a hammered joint. The tip of the spear is missing from a recent break. There are the remains of the shaft in the socket. The spear was found at a slag tip in the 1930s on the site of an old blast furnace by Mr G E Dickinson of Redcar.

Site No. 6
Name: West Coatham Marsh
Type of remains: Saltmound, Medieval
Grid reference: NZ 5681 2358
SMR ID no: 3750
Description: Sub triangular salt mound marked on O.S 1st edition Map. Not now extant.

Site No. 7
Name: West Coatham Marsh
Type of remains: Saltmound, Medieval
Grid reference: NZ 5736 2380
SMR ID no: 3751
Description: Large ovate salt mound marked on 1st edition O.S. Map Not now extant.

Site No. 8
Name: West Coatham Marsh
Type of remains: Saltmound, Medieval
Grid reference: NZ 5736 2380
SMR ID no: 3752
Description: Large ovate salt mound marked on 1st edition O.S with a trig point on the summit. Not now extant.

Site No. 9
Name: West Coatham Marsh
Type of remains: Saltmound, Medieval
Grid reference: NZ 5714 2400
SMR ID no: 3753
Description: Marked on 1st edition O.S. Map Not now extant.

Site No. 10
Name: West Coatham Marsh
Type of remains: Saltmound, Medieval
Grid reference: NZ 5714 2400
SMR ID no: 3754
Description: Ovate salt Mound marked on 1st edition O.S. Map Not now extant.

Site No. 11
Name: West Coatham Marsh
Type of remains: Saltmound, Medieval
Grid reference: NZ 5748 2382
SMR ID no: 3755
Description: Ovate salt Mound marked on 1st edition O.S. Map. Not now extant.

Site No. 12
Name: West Coatham Marsh
Type of remains: Saltmound, Medieval
Grid reference: NZ 5744 2391
SMR ID no: 3756
Description: Ovate salt Mound marked on 1st edition O.S. Map Not now extant.

Site No. 13
Name: West Coatham Marsh
Type of remains: Saltmound, Medieval
Grid reference: NZ 5760 2412
SMR ID no: 3758
Description: Ovate salt Mound marked on 1st edition O.S. Map Not now extant.

Site No. 14
Name: West Coatham Marsh
Type of remains: Saltmound, Medieval
Grid reference: NZ 5763 2406
SMR ID no: 3757
Description: Salt mound marked on 1st Edition O.S. two sub-circular mounds with a bridging causeway. Not now extant

Site No. 15
Name: West Coatham Marsh
Type of remains: Saltmound, Medieval
Grid reference: NZ 5739 2418
SMR ID no: 3759
Description: Small sub-circular saltmound marked on 1st edition O.S. Map Not now extant.

Site No. 16
Name: West Coatham Marsh
Type of remains: Saltmound, Medieval
Grid reference: NZ 5670 2340
SMR ID no: 3749
Description: Ovate salt Mound marked on 1st edition O.S. Map Not now extant.

Site No. 17
Name: Grangetown
Type of remains: Signal Box 20th century
Grid reference: NZ 5524 2211
SMR ID no: 4782
Description: Signal box dating to 1954. This box operated a panel frame dating to 1984. The box is still in use and stands on the side line NE of Grangetown Station.

Site No. 18
Name: River Tees
Type of remains: Pottery
Grid reference: NZ 5338 2291
SMR ID no: 651

Description: Found in Tees by Mr Watkinson whilst Dredging. Stone ware flagon. Cracked. There is a hole in the side where it was hit by the bucket of the dredger.

Site No. 19
Name: Coatham Sands Pillbox
Type of remains: Pillbox
Grid reference: NZ 5660 2605
SMR ID no: 1828
Description: Rectangular pillbox with extension at either end. Land use is sand and dump for British Steel waste. In excellent condition in 1997.

Site No. 20
Name: Coatham Sands Pillbox
Type of remains: Pillbox
Grid reference: NZ 5660 2619
SMR ID no: 1829
Description: 3m square Pillbox of brick and concrete in a poor state of repair, bricks inside the pillbox are marked 'Carlton' 'LBC' 'Calder' and others are unmarked. Large entry port on W side appears to be modern addition. Land use is sand dunes and dump for British steel waste.

Site No. 21
Name: River Tees
Type of remains: Stone axe
Grid reference: NZ 5437 2618
NMR ID no: 27759
Description: A Neolithic stone axe head was found in 1892. It was dredged from the River Tees about a mile from its mouth. It was given to the Dorman Memorial Museum Middlesbrough.

Site No. 22
Name: Redcar
Type of remains: Moated sites
Grid reference: NZ 575 243
NMR ID no: 27784
Description: Two possible moated sites. Now destroyed. Earthworks of uncertain type and period.

Site No. 23
Name: River Tees Port sanitary Authority Floating Hospital
Type of remains: Hospital, ship
Grid reference: NZ 536 233
NMR ID no: 1075645
SMR ID no: 2812
Description: Built in 1885 to designs by Head Wrightson and comprised a floating platform on pontoon supporting two wards and an administration block. During World War I the Royal Navy took the hospital over for accommodation. It was sold in 1917.

Appendix II

Northern Gateway Container Terminal Draft Finds Reporting Protocol

Approach

The approach taken in implementing the archaeological reporting protocol for NGCT will follow that set out in the Marine Aggregates Industry (MAI) Protocol for reporting finds of archaeological interest (Wessex Archaeology, 2005).

The MAI Protocol has been operating since 2005 and has proved efficient and successful in addressing discoveries of archaeological interest from dredging within MAI licence areas. Between 2005 and 2014, 330 separate reports have been filed addressing over 1000 finds. The MAI protocol for marine dredging reflects discoveries under similar conditions to the capital dredging for NGCT and the methodology is thus considered applicable to the current scheme.

The approach for NGCT will mirror that of the MAI Protocol comprising the following structure:

- Awareness training provided to staff and contractors in advance of works commencing;
- Discoveries can be made on the seabed, on board a vessel or ashore;
- NGCT staff to provide first aid to finds and record basic details of any discovery;
- Discoveries are reported to the archaeological contractor who will provide initial advice and seek further specialist advice, as necessary;
- Measures to address the discovery are established by the archaeological contractor, in consultation with PD Teesport and the curator, as necessary;
- Measures are implemented by NGCT staff; and
- A summary report is provided to stakeholders by the archaeological contractor and a MIDAS compliant report is forwarded to national and local authority heritage data archives.

Relevant information can also be drawn from The Crown Estate Protocol for Archaeological Discoveries: Offshore Renewables Projects (Wessex Archaeology 2014).

Types of Discovery

Discoveries may comprise finds, seabed obstructions or seabed anomalies.

Finds are categorised as:

- Wreck: all artefacts that have originated from a vessel in accordance with the legal definition of ‘wreck’ in the Merchant Shipping Act (1995) and which must be reported to the Receiver of Wreck;
- Non-wreck: cultural artefacts that are present within terrestrial contexts and/or on the seabed as a result of having been lost on land, either at times of lowered sea-level or eroded from the shore, for example; and
- Treasure: artefacts above low water that are not ‘wreck’ and that are considered ‘treasure’ under the Treasure Act 1996 must be reported to the relevant Coroner’s Office, the North and East Yorkshire Finds Liaison Officer (who is the designated treasure co-ordinator for Redcar and Cleveland), PD Teesport and the archaeological curators.

If discoveries comprise unexploded ordnance (UXO) then the measures put in place by PD Teesport will take precedence. Historic ordnance, however, may still be of archaeological interest and can still be reported under the Protocol once the UXO policy has been fully followed and satisfied.

An obstruction, or 'site', on the seabed may comprise previously undiscovered wrecks or fragments of wrecks, including aircraft, former port and harbour structures or the remains of other structures or installations.

An anomaly is a visual or digital signature that indicates the presence of a possible find or site that may be identified through geophysical or ROV survey, for example.

Circumstances of Discovery

This Protocol will address finds of archaeological interest made on the seabed, on board vessels, in the inter-tidal zone or on land. With regard to the proposed NGCT scheme, discoveries may occur during the following activities:

- Capital dredging within the existing dredged approach channel; to deepen the channel by 0.4m from 14.1m below CD to 14.5m below CD, with deepening from 10.4m below CD to 14.5m below CD for the final (approximately) 1km of the approach to the proposed terminal;
- Realignment of the existing approach channel in the vicinity of the proposed terminal and deepening of the two existing turning circles (Tees Dock turning circle and Seaton Channel turning circle) in the Tees Estuary;
- Construction of a 1000m quay face with a proposed quay deck level of 9.0m above CD (+6.15m OD). It is proposed that the terminal construction would be undertaken in two phases (700m followed by 300m);
- Pumping suitable dredged material ashore for use in the reclamation works and for locally raising land levels within the proposed terminal area; and
- Capital dredging of deep water berthing areas alongside the proposed quay face (dredged to 16m below CD).

Scenarios that may result in discoveries of archaeological interest include, but are not limited to:

- Capital dredging:
  - Obstructions encountered by the draghead or dredge bucket on the seafloor; and
  - Archaeological material observed within dredged material or trapped in the dredge gear.
- Ground Interventions:
  - Obstructions encountered on the seafloor during piling for the quay face, for example.
- Use of dredged material:
  - Finds encountered during deposition of reclamation material and that may be visible on a new ground surface, for example.
- Survey:
  - Previously unidentified anomalies or obstructions seen in any geophysical or diver survey data; and
  - Obstructions encountered during borehole or vibrocore surveys.

Roles and Responsibilities

PD Teesport

PD Teesport will retain ultimate responsibility for the implementation of the Protocol. Specific responsibilities will include:

- Securing the services of an archaeological contractor to facilitate the implementation of the protocol;
- Assigning staff to the key roles of Nominated Contact and Site Champions and ensuring their awareness of their responsibilities under the Protocol;
- Ensuring the availability of NGCT staff and contractors for tool box talks; and
- Providing annual reports to the curator to demonstrate adherence to the Protocol.

Archaeological Contractor

An archaeological contractor will be secured and contracted by PD Teesport to facilitate the implementation of the protocol.

The archaeological contractor will be responsible for:

- Arranging tool box talks with relevant staff and contractors to ensure awareness of the Protocol and to provide guidance on the types of discoveries that may be encountered;
- Providing initial advice to NGCT staff in the event of a discovery;
- Undertaking an assessment of archaeological potential;
- Seeking specialist advice to inform the interpretation of discoveries, where necessary;
- Consulting with stakeholders (e.g. the archaeological curators) to agree proportionate measures to address discoveries;
- Producing summary reports and MIDAS compliant reports to disseminate data to stakeholders;
- Ensuring that the Receiver of Wreck is informed in the event of discoveries of wreck material; and
- Production of the final report.

Nominated Contact

A member of staff from PD Teesport will be nominated to act as the single point of contact for all communications regarding archaeology.

The Nominated Contact will be responsible for:

- Co-ordinating reports of discoveries from site champions and ensuring that appropriate ‘first aid for finds’ is carried out and that initial data is recorded;
- Reporting discoveries to the archaeological contractor and to the Receiver of Wreck, if required;
- Communicating appropriate measures to site staff as advised by the archaeological contractor; and
- Ensuring that measures are implemented, as appropriate.

Site Champion

The Nominated Contact will identify a Site Champion, or Champions, as appropriate, to act as a point of contact for staff on site.

The Site Champion will be responsible for:

- Implementing a Temporary Exclusion Zone (TEZ) where the location of a discovery is known;
- Ensuring observation and strict adherence of the TEZ by all staff and contractors;
- Compiling Preliminary Record Sheets for discoveries; and
- Reporting discoveries to the Nominated Contact.

All Staff and Contractors

On making a discovery all NGCT staff and contractors have a responsibility under the terms of the Protocol to:

- Safeguard finds:
  - Handle with care;
  - Leave marine growth, rust, sediment or concretion intact; and
  - Undertake appropriate first aid measures, such as immersing waterlogged finds in seawater in a clean, covered container.
- Undertake initial recording:
  - Record the positon of the discovery;
  - Photograph finds in the condition in which they were recovered; and
  - Label finds with a unique ID number as advised by the archaeological contractor.
- Report the discovery to the Site Champion.

All staff and contractors also have a responsibility to observe mitigation measures agreed by PD Teesport with the curator such as the implementation of a TEZ at the location of a discovery.

Reporting Discoveries

Staff or contractors making a discovery will report the find, obstruction or anomaly to the Site Champion.

If the discovery comprises an obstruction or anomaly on the seabed, and the position is known, then intrusive works (dredging or piling) will need to cease in the vicinity of this position and the position of the obstruction or anomaly will be recorded. Works will not recommence in this vicinity of this position until archaeological advice has been obtained. The Site Champion will implement a TEZ and ensure observation by staff and contractors.

If the discovery comprises archaeological material, the position of the discovery will be recorded. This will be the position of the find itself, if known, or the position of the dredger at the time of the discovery. The find will be photographed in its discovery condition, including an appropriate scale in the photograph. If photographs are not possible then a drawing or other record may be used as an alternative.

Measures will be taken by staff to safeguard the find including first aid conservation:

- Marine growth, rust, sediment or concretion should be left intact;
- Waterlogged finds should be immersed in seawater in a suitable clean and covered container; and
- Dry finds should be placed in a suitable container and stored in a cool, dry, dark place.

The Site Champion will ensure that safeguarding has taken place and will compile a Preliminary Record and pass this, along with any photographs, drawings or other records, to the Nominated Contact.

On receiving the report of a discovery the Nominated Contact will confirm the details of the Preliminary Report with the Site Champion and inform the archaeological contractor as soon as possible. The Nominated Contact will ensure that all PD Teesport and all construction teams that may be required to work in the area are aware of the discovery.

If the find is, or appears to be 'wreck', the Nominated Contact will, as soon as possible, notify the Receiver of Wreck in accordance with the Merchant Shipping Act (1995).

The archaeological contractor will advise the Nominated Contact of any further actions that may be required, such as:

- Advice on first aid conservation or other actions to be taken in respect of a find;
- Advice on the identification of finds and proposals to further evaluate discoveries; and
- Advice to prevent further impacts, such as the implementation of TEZ.

The archaeological contractor will undertake an assessment of the archaeological potential of discoveries and will liaise with the curator, PD Teesport and other stakeholders as relevant, to agree measures to address the discovery, if required. The archaeological contractor will advise PD Teesport on any additional work required to stabilise, conserve or record recovered finds.

Following identification, evaluation and the agreement of measures to address the discovery, if required, the archaeological contractor will compile a summary report for the discovery for distribution to stakeholders, as well as a MIDAS compliant report to submit details of the discovery to national and local authority heritage data archives.

Timing

Action will be taken immediately following a discovery so that the precise position of a discovery can be calculated and recorded (from the vessel track for example) and to minimise disruption to NGCT works.

Measures to safeguard finds, including the application of first aid conservation, will be implemented as soon as possible following discovery, in accordance with both health and safety and practical requirements.

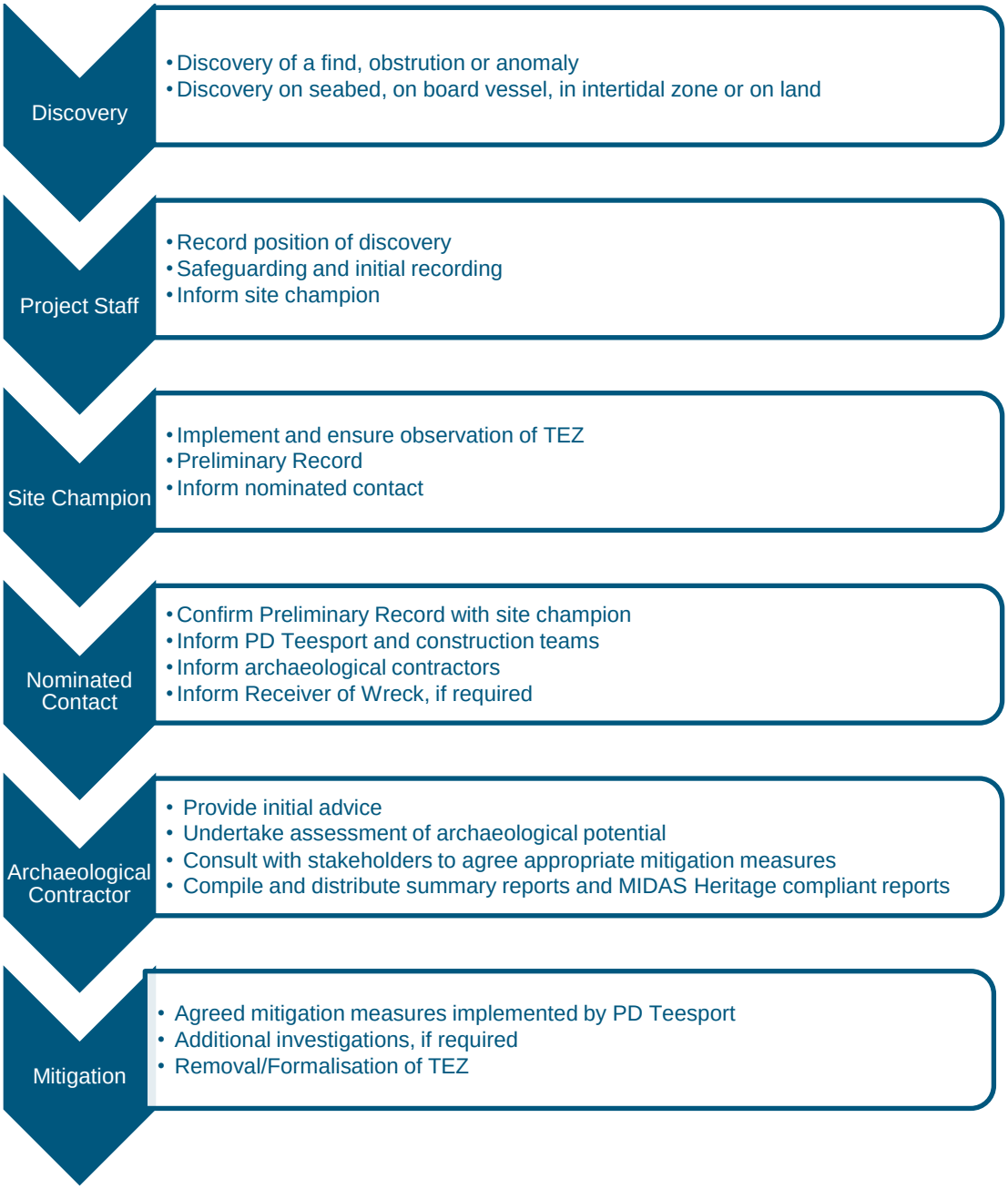
The initial record, including photographs, will be compiled and forwarded by the Site Champion to the Nominated Contact on the same working day that the discovery is made.

On receiving the report the Nominated Contact will report the discovery to the archaeological contractor within two working days.

An initial response will be provided by the archaeological contractor to the Nominated Contact within two working days of receiving the initial report.

A timetable for implementing measures to address the discovery will be agreed following the initial response, as appropriate to the archaeological interest of the discovery.

Diagram 1: Reporting Protocol Flow Chart



Temporary Exclusion Zones (TEZs)

A TEZ will be implemented by the Nominated Contact if the position of an obstruction, anomaly or find is known with reasonable certainty.

A TEZ precludes all activities from taking place in the vicinity of the obstructions, anomaly or find until further archaeological advice has been obtained.

In the event that, following further investigation, it can be reasonably concluded that there is no important wreck or other feature present within the TEZ then it will be revoked.

The TEZ may be formalised as an Archaeological Exclusion Zone (AEZ) if:

- an important wreck or other site or feature is confirmed to be present on the seabed; or
- If PD Teesport does not wish to undertake additional investigation to confirm the nature of the discovery.

The removal or formalisation of a TEZ will occur only following consultation and in agreement with the archaeological curator(s).

Additional investigation may include:

- high resolution geophysical survey;
- diver survey; or
- ROV survey.

Where additional investigations are carried out they will be undertaken in accordance with specifications to be agreed by PD Teesport with the archaeological curator(s), as advised by the archaeological contractor. A report detailing the results of any investigation will be submitted to the curator(s) in order to inform discussions concerning the removal or formalisation of a TEZ.

If archaeological remains are confirmed and it is not possible to implement a formal AEZ then, subject to agreement with the archaeological curator(s), PD Teesport may implement alternative forms of mitigation such as a programme of recording and/or recovery; these measures will be detailed in a method statement and agreed with the archaeological curator(s), as necessary.

All investigative works will be set out in a detailed method statement that will be submitted to the archaeological curator(s) for approval in advance of works commencing.

Northern Gateway Container Terminal Discoveries Preliminary Record Form	
Finder Details	
Vessel/Team/Contractor Name:	
Work Package:	
Date:	Time of compiling information:
Name of compiler (Site Champion):	
Name of finder (if different to above):	
Discovery Details	
Time at which discovery encountered:	
Original position of discovery on seabed/inter-tidal/on land (if known):	
• Latitude:	
• Longitude:	
• Datum (if different from WGS84):	
Position of vessel:	
• Latitude:	
• Longitude:	
• Datum (if different from WGS84):	
Notes on accuracy of position:	
Description of the find/obstruction/anomaly:	
Size/extent:	

Details of finds recovered:
Details of photographs, drawings or other records:
Details of treatment given to find(s):
Any other notes:
Date and time at which Nominated Contact informed:
Signed: Date: