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Beatrice Offshore Wind Farm Marine Archaeological Written Scheme of Investigation & Protocol for Archaeological Discoveries

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List of Abbreviations and Definitions

Term	Description
AEZ	Archaeological Exclusion Zone.
Application	The Application letters and Environmental Statement submitted to the Scottish Ministers by BOWL on 23 April 2012 and Supplementary Environmental Information Statement submitted to the Scottish Ministers by BOWL on 29 May 2013.
Archaeological Consultant	Specialist archaeologists responsible for advising on all archaeological matters relating to the Project that might impact on archaeological and cultural heritage resources.
Asset	Archaeological or cultural heritage remains on the seabed.
BOWL	Beatrice Offshore Windfarm Limited (Company Number SC350248) and having its registered office at Inveralmond House, 200 Dunkeld Road, Perth, PH1 3AQ.
BOWL CLT	BOWL Consents and Licencing Team
Client Representative	<p>A representative appointed by BOWL to represent BOWL and act as a first point of contact for Project staff, including all contractors. Will ensure compliance with the terms and conditions of this WSI and PAD so that archaeological and cultural heritage resources are protected.</p> <p>In this document, the term 'Site Champion' used in the Offshore Renewables Protocol for Archaeological Discoveries (ORPAD), The Crown Estate, 2014, will be replaced with the term 'Client Representative'.</p>
Commencement of the OfTW	The date on which the first vessel arrives on the Site to begin carrying on the Licensable Marine Activity in connection with the construction of the OfTW, as described in Part 2 of the OfTW Marine Licence.
Commencement of the Wind Farm	The date on which Construction commenced on the site of the Wind Farm in accordance with the S.36 Consent.
Consent Conditions	The terms that are imposed on BOWL under the S.36 Consent or OfTW Marine Licence that must be fulfilled throughout the period that they are valid.
Construction	As defined at section 64(1) of the Electricity Act 1989, read

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Term	Description
	with section 104 of the Energy Act 2004.
Contractor	Any company working on the Project other than BOWL.
Dead wreck	A recorded wreck that surveys undertaken for the ES and SEIS have failed to identify.
Development	The Wind Farm and the OfTW.
ECow	Environmental Clerk of Works.
EIA	Environmental Impact Assessment.
ES	Environmental Statement, submitted to the Scottish Ministers by the Company on 23 April 2012 as part of the Application as defined above.
Finds	All forms of artefact that can be found on the seabed.
HES	Historic Environment Scotland, the statutory body for archaeology and heritage within Scotland including marine archaeology from the mean high water mark to 200 nautical miles (nm) offshore. They are advisors to Marine Scotland Licensing and Operations Team (MS-LOT) on behalf of Scottish Ministers.
Implementation Service	A team of archaeologists at Wessex Archaeology that research and report Protocol discoveries on behalf of The Crown Estate
Licencing Authority	The Scottish Ministers.
Licensee	Beatrice Offshore Windfarm Limited, a company registered in Scotland having its registered number as SC350248.
Marine Coordinator	Responsible for the management and surveillance of people, vessels and offshore structures to ensure the safe preparation and execution of offshore activities, in order to minimise the probability of an incident, and to provide effective response if an incident does occur.
MCC	Marine Coordination Centre
Marine Licences	The written consents granted by the Scottish Ministers under Section 20(1) of the Marine (Scotland) Act 2010, which were issued on 2 September 2014. and revised by the issue of

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Term	Description
	licences on 27 April 2016 (Reference: 04461/16/0 and 04462/16/0 respectively)
MARP	Marine Archaeology Reporting Protocol. The MARP is equivalent to the Protocol for Archaeological Discoveries (PAD).
MS-LOT	Marine Scotland Licensing Operations Team.
OfTW	Offshore Transmission Works. The OfTW includes the transmission cable required to connect the Wind Farm to the OnTW. This covers the Offshore Transformer Modules (OTMs) and the cable route from the OTMs to the Mean High Water Springs (MHWS) at the landfall west of Portgordon on the Moray coast.
OfTW corridor	The area within which the OfTW cable is to be located as presented in the ES and SEIS.
OTM	Offshore Transformer Module means an alternating current (AC) offshore substation platform (OSP) which is a standalone modular unit that utilises the same substructure and foundation design as a wind turbine generator.
ORPAD	Offshore Renewables Protocol for Archaeological Discoveries (ORPAD) was developed for The Crown Estate by Wessex Archaeology, and has been in effect since 2010. The Protocol was revised and reissued in 2014. The ORPAD sets out best practice in the reporting of finds of archaeological interest during the Project. This PAD is based on the ORPAD
PAD	A Protocol for Archaeological Discoveries (equivalent to a MARP), which sets out the procedures that must be followed in the event of archaeological discoveries either on the seabed or on the deck of working vessels and identifies the personnel with responsibility for ensuring that the PAD is implemented.
Preliminary Record	The record of unexpected archaeological discoveries on the seabed, intertidal zone or on the deck of a works vessel.
Project	The construction, operation, maintenance and monitoring of the Development.
Receiver of Wreck	A centralised function, dealing with all reports of wrecks from

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Term	Description
	around the UK including Northern Ireland. It is based within the Maritime and Coastguard Agency headquarters in Southampton, with assistance from Coastguard personnel around the coast.
Relevant Authority	MS-LOT on behalf of Scottish Ministers and Historic Environment Scotland.
ROV	Remotely-operated vehicle.
S.36 Consent	The written Consent granted by the Scottish Ministers under Section 36 of the Electricity Act 1989, on 19 March 2014.
SEIS	Supplementary Environmental Information Statement, submitted to the Scottish Ministers by the Company on 29 May 2013 as part of the Application as defined above.
Site	The area outlined in red in Figure 1 attached to the S.36 Consent at Annex 1, and in black in the Marine Licence in Part 4.
Target	An anomaly on the seabed identified in the geophysical survey data that may be an archaeological feature.
UKHO	United Kingdom Hydrographic Office.
UTM	Universal Transverse Mercator, a grid-based method of mapping locations on the surface of the Earth.
UXO	Unexploded Ordnance
WGS	World Geodetic System, a mapping reference for the Earth for use in navigation.
Wind Farm	The Beatrice Offshore Wind Farm in the outer Moray Firth as assessed in the ES including wind turbines, their foundations and inter-array cabling.
Works	The “Beatrice Offshore Windfarm Ltd. Offshore Transmission Works” (the OfTW), as described in the Marine Licence.
Wreck	Materials that come to be on the seabed as a direct result of once being aboard or part of a vessel or aircraft.
WSI	Written Scheme of Investigation, which establishes the

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Term	Description
	mitigation procedures that must be followed in order to avoid damage to cultural heritage assets and targets of archaeological potential for the entire scope of the Project. The WSI sets out the respective responsibilities of BOWL, the Contractor, and the Archaeological Consultant prior to and during installation, and creates formal lines of communication between the parties and relevant stakeholders.

1 Introduction

The Beatrice Offshore Wind Farm (the Wind Farm) received consent under Section 36 of the Electricity Act 1989 from the Scottish Ministers on 19th March 2014 (the S.36 Consent) and was granted two Marine Licences from the Scottish Ministers, one for the Wind Farm and one for the Offshore Transmission Works (OfTW) respectively, on 2nd September 2014 (the Marine Licences) and revised by the issue of licences on 27 April 2016 (Reference: 04461/16/0 and 04462/16/0 respectively).

For the purposes of this document, the Wind Farm and OfTW will be known as the Development. The construction, operation, maintenance and monitoring of the Development will be known as the Project.

This Marine Archaeological Written Scheme of Investigation (WSI) and Protocol for Archaeological Discovery (PAD) is prepared to enable the Conditions of the S.36 Consent and the relevant Marine Licence conditions (the Consent Conditions) to be discharged.

The report contains the following sections:

- Scope of the Marine Archaeological WSI and PAD;
- WSI; and,
- PAD.

Table 1.1 sets out the consent conditions which this Archaeology WSI and PAD provides the information required to discharge.

Table 1.1: Consent Conditions

Consent Document	Condition Reference	Condition Text	Reference to relevant Section of this WSI and PAD
Section 36	Condition 37	<p>The Company must, no later than 6 months prior to the Commencement of the [Wind Farm], submit a Reporting Protocol which sets out what the Company must do on discovering any marine archaeology during the construction, operation, maintenance and monitoring of the [Wind Farm], in writing, to the Scottish Ministers for their written approval.</p> <p>Such approval may be given only following consultation by the Scottish Ministers with any such advisors as may be required at the discretion of the Scottish Ministers.</p> <p>The Reporting Protocol must be implemented in full, at all times, by the Company.</p> <p>Reason: To ensure any discovery of archaeological interest is properly and correctly reported.</p>	<p>This WSI and PAD</p> <p>To be undertaken by the Scottish Ministers. Section 3</p>
OfTW Marine Licence	3.2.2.16	<p>Marine Archaeology Reporting Protocol (MARP)</p> <p>The Licensee must, no later than 6 months prior to the Commencement of the [OfTW], submit a MARP which sets out what the Licensee must do on discovering any marine archaeology during the construction, operation, maintenance and monitoring of the [OfTW], in writing, to the Licensing Authority for their written approval.</p> <p>Such approval may be given only following consultation by the Licensing Authority with any such advisors as may be required at the discretion of the Licensing Authority.</p>	<p>This WSI and PAD</p> <p>To be undertaken by the Scottish Ministers.</p>

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Consent Document	Condition Reference	Condition Text	Reference to relevant Section of this WSI and PAD
		The MARP must be implemented in full, at all times, by the Licensee.	Section 3

2 BOWL Commitments

In addition to the conditions in Table 1.1, Condition 8 of the S.36 Consent states “*The [Wind farm] must be constructed and operated in accordance with the terms of the Application and related documents, including the accompanying ES [Environmental Statement], the Supplementary Environmental Information Statement (“SEIS”) and Annex 1 of this letter, except in so far as amended by the terms of this section 36 consent.*”

The ES and SEIS set out a number of commitments in relation to various aspects of the Development (design, monitoring, mitigation etc). The effects of the Development on the cultural heritage and archaeological resource were assessed in the ES and SEIS on the basis that these commitments would be implemented. The commitments were made to ensure that the Development followed good practice in relation to its interaction with archaeology. **Appendix A** provides an overview of the commitments made in the ES relevant to this WSI and PAD. It also highlights where the commitments are addressed in this WSI and PAD.

3 Scope of the Marine Archaeological Written Scheme of Investigation and Protocol for Archaeological Discoveries

This Archaeological WSI and PAD has been prepared based on COWRIE & Wessex Archaeology (2007), The Crown Estate (2014) and The Crown Estate & Wessex Archaeology (2010) guidelines for:

- Desk-based assessments;
- Geotechnical surveys;
- Geophysical surveys; and,
- Historic environment and setting appraisals.

This WSI establishes the mitigation procedures that must be followed in order to seek to avoid damage to cultural heritage assets and targets of archaeological potential for the scope of the Project. These assets and targets were identified during the Environmental Impact Assessment (EIA) for the Development.

This PAD is based on the Offshore Renewables Protocol for Archaeological Discoveries (ORPAD) which was developed for The Crown Estate by Wessex Archaeology, and has been in effect since 2010. The Protocol was revised and reissued in 2014 (The Crown Estate, 2014). This PAD sets out the protocols and procedures that must be followed in the event of any unexpected archaeological discoveries whilst undertaking work related to the Project.

The main objectives of this Archaeological WSI and PAD, following the Model Clauses for Archaeological Written Schemes of Investigation (The Crown Estate & Wessex Archaeology 2014), are to:

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- Set out the respective responsibilities of BOWL, their Contractors, the ECoW, the **Client Representative** and the Archaeological Consultant prior to and during the Project, and formal lines of communication between these parties and Marine Scotland Licensing and Operation Team (MS-LOT) and Historic Environment Scotland (HES);
- Establish mitigation procedures to seek to avoid damage to cultural heritage assets and targets of archaeological potential;
- Propose measures for mitigating effects upon archaeological material that may be encountered during the Project;
- Ensure that, in the event that unexpected archaeological discoveries are made, archaeological advice is sought and the discovery is subject to archaeological input, review, recording and sampling; and
- Establish the reporting, publication, conservation and archiving requirements for the archaeological works undertaken during the course of the Project.

The primary mitigation strategy for the protection of archaeological and cultural heritage assets and targets in situ is through avoidance, by implementing site-specific Archaeological Exclusion Zones (AEZs).

BOWL is responsible for the implementation of its obligations under this Archaeological WSI and PAD as well as contractually obliging other parties to implement theirs.

4 Archaeological Written Scheme of Investigation

4.1 Introduction

This WSI sets out the procedures that will be followed in order to protect cultural heritage assets and targets throughout the duration of the Project. Assessments of geotechnical data (Headland Archaeology, 2011a and 2011b), desk-based assessments (Headland Archaeology, 2011c and 2011d) and geophysical survey assessments (Headland Archaeology, 2011e and 2011f) have been undertaken for the Wind Farm (WF) and OfTW in order to identify potential cultural heritage assets and targets that may be affected by the Project and to establish their current condition.

This work provided information upon which to base the assessment of the archaeological potential as outlined in the Archaeology and Cultural Heritage chapters in the ES and SEIS. These assessments have been used to identify and delineate the assets and targets and the appropriate buffer zones around these assets and targets forming the Archaeological Exclusion Zones (AEZs).

39 assets and targets within the Development were originally assigned AEZs. In June 2015 BOWL appointed APEM Ltd./ MSDS Marine to undertake a ground truthing survey of 13 of the AEZs which could possibly impact on the proposed design of the Development. The ground-truthing survey was undertaken using a remotely-operated vehicle (ROV). APEM/ MSDS produced an archaeological ground truthing report which recommended that the 13 AEZs be removed (Ref.: LF000005-REP-575). Headland Archaeology reviewed this report and confirmed that all 13 AEZs should have their AEZ designations removed in their report Beatrice Offshore Windfarm Review of Archaeological Exclusion Zones (Ref.: LF000005-REP-666). Subsequently Historic Environment Scotland (HES) and MS-LOT confirmed their agreement with the removal of the 13 AEZs on 04 November 2015 (via letter ref: LF000005-

LET-292) and 14 January 2016 (via email ref: LF000005-EMA-242) respectively.

In December 2016 Unexploded Ordnance (UXO) clearance works were undertaken in the wind farm area using ROVs to inspect potential UXO targets. During these works a probable cast iron cannon was discovered and, under the terms of the PAD, was reported to HES on 13 January 2017 (via report ref.: LF000005-REP-1563).

Subsequently HES recommended that the cannon be left in situ, and an exclusion zone of 50 m be implemented (via email ref. LF000005-EMA-389).

The twenty seven AEZs, which remain the scope of this WSI, are listed in **Appendix B**.

Due regard has been given to the remaining twenty seven AEZs in the design of the Wind Farm and OfTW, and they will be respected by BOWL and BOWL's contractors during construction and operation of the Project unless otherwise agreed with HES and Marine Scotland.

4.2 Consultation

The Archaeological WSI and PAD was formally accepted by MS-LOT on 22 May 2015, and section 36 condition 37 and Marine Licence (OfTW) condition 3.2.2.16 discharged. Further consultation has taken place with MS-LOT and HES as follows:

- Discussion of the results of the ground truthing survey and the Headland Archaeology review of same. In agreement with MS-LOT and HES this WSI and PAD has been updated to remove 13 AEZs from the list of AEZs reported in the Environmental Statement.
- Reporting of the probable cast iron cannon discovered during the UXO clearance works in December 2016. In agreement with MS-LOT and HES this WSI and PAD has been updated to implement a 50 m AEZ for the probable cast iron cannon.

4.3 Proposed Development

The works encompassed by the Archaeological WSI include the construction of the Wind Farm of 84 wind turbine generators (WTGs) and associated infrastructure including inter-array cabling to the connection point on the two Offshore Transformer Modules (OTMs). The associated export cable corridor will cover a distance of approximately 60 km before making landfall near Portgordon.

Elements of the Project have the potential to affect archaeological and cultural heritage assets and targets.

4.4 Known Archaeological and Cultural Heritage Assets and Targets

Archaeological and cultural heritage assets and targets described hereafter are separated into either the Wind Farm or the OfTW. Cultural heritage assets and targets are further divided into their respective Inner and Outer Study Areas (ISA and OSAs). An overview of the Development area can be seen in Figure 1, in **Appendix F**.

For the Wind Farm site, which includes the OTMs, the ISA is comprised of the proposed Site, while the OSA is comprised of a 1 km buffer zone beyond the proposed Site.

For the OfTW export cable corridor, the ISA is comprised of the OfTW corridor, while the OSA comprises a 1 km buffer zone beyond the OfTW corridor.

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4.4.1 Wind Farm and OTM Study Areas

The following archaeological and cultural heritage assets and targets within the ISA of the Wind Farm and OTMs, as shown in Figure 2 of **Appendix F**, were identified from the marine geophysical survey assessment (Headland Archaeology, 2011e):

- Nine targets (HA2, HA22, HA41, HA53, HA111, HA130, HA137, HA139 & HA140) were identified. These targets displayed features that could be interpreted to be of archaeological significance. They were therefore considered to be of medium potential for this assessment; two of these targets (HA22 and HA111) were subsequently investigated further using a ROV and were found to be of no archaeological interest (Ref: LF00005-REP-666).
- In December 2016 a probable cast iron cannon was identified. This cannon, CA1, was considered to be of medium archaeological potential.
- There are no designated archaeological or cultural heritage assets or targets within the ISA.

The following cultural heritage assets and targets within the OSA of the Wind Farm, as shown in Figure 2 of **Appendix F**, were identified during the marine geophysical survey assessment (Headland Archaeology, 2011e):

- One wreck (HA1) of high potential was identified which is charted by the United Kingdom Hydrographic Office (UKHO) (Headland Archaeology, 2011c);
- Three targets (HA122, HA136 & HA138) of medium archaeological potential were identified from the marine geophysical survey assessment (Headland Archaeology, 2011e), one of which (HA136) was investigated using a ROV and found to be geological in nature (Ref: LF00005-REP-666);
- There are no designated archaeological or cultural heritage assets or targets within the OSA.

4.4.2 Offshore Transmission Works Study Areas

Archaeological and cultural heritage assets and targets for the OfTW ISA and OSA are shown in Figures 3 to 5 in **Appendix F**. The following cultural heritage assets and targets within the ISA of the OfTW were identified during the marine geophysical survey assessment (Headland Archaeology, 2011f):

- Fourteen targets (HA17, HA20, HA28, HA33, HA63, HA87, HA90, HA102, HA126, HA127, HA133, HA135, HA154, & HA156) of medium archaeological potential were identified from the marine geophysical survey assessment (Headland Archaeology, 2011f). Ten of these targets (HA17, HA20, HA28, HA33, HA63, HA87, HA126, HA127, HA135 & HA156) were investigated using a ROV and were found to be of no archaeological interest (Ref: LF00005-REP-666);
- There are no designated archaeological or cultural heritage assets or targets within the ISA.

The following cultural heritage assets and targets within the OSA of the OfTW, were identified within the OSA during the marine geophysical survey assessment (Headland Archaeology, 2011e):

- One target (HA68) of high potential was identified from the marine geophysical survey assessment (Headland Archaeology, 2011f);

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- Four targets (HA52, HA61, HA121, HA143) of medium potential were identified from the marine geophysical survey (Headland Archaeology, 2011f).
- Eight wrecks (HA1001 - HA1008) from UKHO records were reported in the desk based assessment (Headland Archaeology, 2011d), and confirmed during the geophysical survey:
 - a. Five wrecks (HA1001, HA1003, HA1005, HA1006, HA1008) are 'live' and therefore high potential;
 - b. Three wrecks (HA1002, HA1004, HA1007) are 'dead':
 - i. Two (HA 1002, HA1004) are of medium potential;
 - ii. One (HA1007) is considered to be of low potential, having not been detected in the survey and having coordinates which are known to be unreliable.
- There are no designated archaeological or cultural heritage assets or targets within the OSA.

4.5 Archaeological Exclusion Zones (AEZs)

AEZs will be the principal means used to preserve in situ any sites or deposits of potential or known archaeological interest. In all cases, known and potential cultural heritage assets and targets will be avoided. AEZs were originally established based on the results of the completed archaeological assessments (Headland Archaeology, 2011a to 2011f). Further investigation of thirteen targets originally ascribed AEZs, using a ROV, demonstrated that these targets had little or no archaeological potential and therefore did not warrant protection, so in consultation with HES and MS-LOT these AEZs have been removed. An additional AEZ was established following the UXO clearance works on site in December 2016. All AEZs have been established in consultation with HES. These AEZs will be in place for the entire duration of the Project, unless otherwise altered or removed (see sections 5.8.7 and 5.8.8).

The locations and extents of all AEZs are outlined in **Appendix B** and have been conveyed to BOWL's key Contractors, the **Client Representative** and the ECoW through this report to ensure all Project staff respect their boundaries. The importance of respecting the AEZs will be emphasised at toolbox talks for each phase of the Project by the Archaeological Consultant in collaboration with the ECoW.

In the event of an infringement of construction activities upon an AEZ, the procedure set out in **Appendix C** will be followed.

4.5.1 Location and extent of AEZs

AEZs are required for all known sites of high, medium and uncertain potential where the location of the archaeological asset or target is known, or where the asset or target has at one time been identified by geophysical/diver/ROV survey. AEZs are asset or target specific depending on the extent of the site or wreckage, and are based on their archaeological potential. Sites of a high potential have been assigned 100 m AEZs and sites of medium potential have been assigned 50 m AEZs.

AEZs comprise a circular zone centred on a point on each site. The radius of the zone will vary according to the archaeological potential of each site (see sections 4.5.2 and 4.5.3). Based on the assessments undertaken as part of the ES and SEIS, thirty-nine assets and

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targets were originally assigned AEZs (around assets and targets set out in Section 4.4). Further investigations using a ROV resulted in the removal of thirteen of these AEZs, see Section 4.5. Following the UXO clearance works in December 2016 an additional AEZ was established in agreement with HES. Twenty-seven AEZs remain and will be respected throughout the duration of the Project unless otherwise agreed with HES and MS-LOT.

The gazetteer of the 27 AEZs surrounding cultural heritage assets and targets can be found in **Appendix B**.

4.5.2 50 m AEZs

Twenty archaeological assets and targets have been ascribed AEZs of 50 m as they have been assessed to be of medium potential.

- Seventeen are geophysical:
 - Seven (HA2, HA41, HA53, HA130, HA137, HA139 & HA140) are located within the ISA of the Wind Farm;
 - Two (HA122 & HA138) are located within the OSA of the Wind Farm;
 - Eight (HA52, HA61, HA90, HA102, HA121, HA133, HA143 & HA154) are located within the ISA of the OfTW;
- Two (HA1002 & HA1004) are 'dead' wrecks charted by the UKHO. All are located within the OSA of the OfTW.
- One is a probable cannon discovered during the site UXO clearance works located within the ISA of the Wind Farm.

4.5.3 100 m AEZs

Seven archaeological assets and targets have been ascribed AEZs of a 100 m as they have been assessed to be of high potential.

- Six are wrecks charted by the UKHO:
 - One (HA1) is located within the OSA of the Wind Farm;
 - Five (HA1001, HA1003, HA1005, HA1006, & HA1008) are located within the OSA of the OfTW;
- One is a geophysical anomaly:
 - Target (HA68) is considered of high potential. It is located within the OSA of the OfTW.

4.5.4 Monitoring of AEZs

The effectiveness of the AEZs will be periodically monitored by the Archaeological Consultant with support from the **Client Representative** and the ECoW to ensure their efficacy. If deemed necessary, these may be monitored by periodic consultations between works crews and the Archaeological Consultant when construction is being planned in particular areas considered to be of medium or high archaeological potential.

No activities associated with the Project will be undertaken within an AEZ. If it becomes apparent that activities have taken place within any AEZ, the party responsible will obtain advice from the Archaeological Consultant in accordance with their obligations with respect

to AEZs and the detail of this WSI as relevant to any identified AEZs, see Protocol for Infringement of Archaeological Exclusion Zone flow chart in **Appendix C**.

If deemed necessary by it, the Archaeological Consultant will periodically visit the construction teams when construction activities are being planned in particular areas considered to be of medium or high archaeological potential.

BOWL will issue regular compliance reports during the construction of the Development, which will include a section on archaeology with specific emphasis on AEZs and any archaeological discoveries made during operations associated with the Project. The reports will also include any recommendations regarding amendment of the extent, removal and/or creation of new AEZs, and whether there are still archaeological grounds for maintaining each AEZ. These decisions must be made by the Archaeological Consultant representing BOWL in consultation with MS-LOT and HES.

4.6 Reporting and Deliverables

On completion of the different stages of the Project, if deemed necessary by the Archaeological Consultant and BOWL, a report may be compiled on the effectiveness of the AEZs, any alterations to them (as described in section 5.8.8), and the results of monitoring. This will be determined in consultation with MS-LOT and HES.

5 Protocol for Archaeological Discoveries

5.1 Scope

This PAD sets out best practice in the reporting of finds of archaeological interest during the Project and is based on the ORPAD. The principles that are set out here are intended to address mitigation measures for any archaeological and cultural heritage assets and targets that have not been identified to date.

This PAD applies to development, construction and installation activities, where an archaeologist is not present on site.

5.2 Types of Find

Finds are considered here to mean all forms of artefact that can be found on the seabed. To be an artefact, the item must have been made, modified, used or transported by people; i.e. their presence on the seabed is 'artificial' or 'cultural' rather than 'natural'.

For legal purposes, finds from the seabed fall into three categories. Wreck has a specific legal definition broadly encompassing materials that come to be on the seabed as a direct result of once being aboard or part of a vessel or aircraft. Statutory law relating to wreck is set out principally in the Merchant Shipping Act 1995, applicable to territorial waters out to twelve nautical miles. The common law relating to wreck is to be found in legal cases.

Material can also be covered under the Protection of Military Remains Act 1986. This Act, administered by the Ministry of Defence, refers to ships that have been specifically designated, but all aircraft that crashed while in military service are automatically protected.

The third category of finds are referred to as 'non-wreck'. 'Non-wreck' includes things such as prehistoric flint artefacts that were lost on land that has since been inundated by rising sea level, or artefacts that have been eroded from sites on the shore. The law applicable to 'non-wreck' is largely common law, to be found in legal cases.

5.3 Potentially Significant Materials

It is possible that during construction a range of archaeological and palaeo-environmental materials may be recovered:

- Palaeo-environmental materials: includes waterlogged organics from deposits of peat and large wooden timbers from the remains of trees from submerged forests. The importance of such deposits and materials for palaeo-environmental study is well recognised (English Heritage 2002, 2007);
- Seabed Prehistory materials: including lithic artefacts (e.g. flint tools). This is particularly pertinent in light of recent work undertaken on submerged landscapes like the prehistoric site of Doggerland (Gaffney et al 2009).
- Shipwreck material: from the wooden boats of the Neolithic to the steel and iron vessels of the modern period, including material associated with ships, such as pottery fragments, cargo, animal remains, and so forth;
- Aircraft material: from the early 20th century to the modern period, including aluminium and other material; and,
- Human bone: in the event of discovery of any human remains (articulated or disarticulated, cremated or unburnt), a Ministry of Justice Licence will be obtained by the Archaeological Consultant prior to any further disturbance (including where remains are to be left *in situ*). Should human remains require removal, all excavation and post-excavation will be in accordance with the Archaeological Consultant's protocols and undertaken in-line with current guidance documents (e.g. McKinley 2013) and the standards set out in ClfA Technical Paper 13 *Excavation and post-excavation treatment of cremated and inhumed remains*. Appropriate specialist guidance will be undertaken if required. The final deposition of human remains subsequent to the appropriate level of osteological analysis and other specialist sampling/examinations will follow the requirements set out in the Ministry of Justice Licence.

5.4 Circumstances of Discovery

This PAD addresses finds of archaeological or cultural heritage interest made in the following circumstances:

- Discoveries on the seabed during seabed inspections, seabed clearance or scheme installation: for example, an anomaly (such as possible wreck or a cultural heritage feature identified during any stage of the Project) has been encountered on the seabed. A find of archaeological interest is recovered to the deck of a works vessel: for example wreck or objects recovered to the deck caught in equipment such as grapnels, anchors, or ploughs.

5.5 Roles and Responsibilities

A flow chart detailing the roles and responsibilities within the PAD process is presented in **Appendix E**.

Client Representative

For the Project, BOWL will identify a **Client Representative** to act as a first point of contact for Project staff, including all contractors. Included in their responsibilities will be to liaise with

Beatrice Marine Archaeological WSI and PAD

the ECoW in respect of the implementation of the PAD during the course of the Project. The **Client Representative** will be issued with the preliminary record sheets and the flow chart (see **Appendices D & E: Preliminary Record sheets and flow chart**), setting out the actions to be taken when they are told about a discovery either on the seabed or on the deck of the vessel.

Ecological Clerk of Works (ECoW)

The ECoW is the representative from BOWL who will be responsible for liaison with the Archaeological Consultant and the **Client Representative**. The ECoW will be familiar with the requirements set out in the Archaeological WSI and PAD.

Archaeological Consultant

The Archaeological Consultant will be the initial point of contact for the ECoW. They shall:

- Brief the **Client Representative** on the nature of archaeological finds and features and appropriate measures for interim conservation and safe storage;
- Advise on the identification of finds and features of interest and, if possible, the character of their seabed locations;
- Advise on material conservation of any recovered finds;
- Agree appropriate actions to be taken; and,
- Where appropriate, pass on all details and records associated with any discoveries to MS-LOT and HES.

Relevant Authorities

MS-LOT, acting on behalf of Scottish Ministers, is responsible for discharging BOWL consent conditions.

HES is the statutory body for archaeology and cultural heritage within Scotland including marine archaeology in waters adjacent to the Scottish coast up to the mean high water mark and out to 200 nautical miles.

In the event that the Archaeological Consultant and BOWL consider it necessary, HES and MS-LOT will be informed of any archaeological or cultural heritage finds, and will as soon as reasonably practicable:

- Liaise with other relevant archaeological authorities;
- Advise on proposals to further evaluate any finds; and,
- Advise on proposals to mitigate the effects of work activities upon any finds, if required.

5.6 Lines of Communication

Contractors will report any discoveries to BOWL's **Client Representative**. The **Client Representative** informs the ECoW and the Marine Coordination Centre (MCC). The ECoW has a wide ranging role across the Project in relation to the implementation of mitigation and monitoring compliance with the consent. In the event of an archaeological discovery, the ECoW will liaise with the Archaeological Consultant and BOWL CLT to provide them with the details of the reported discovery. The Archaeological Consultant will assess the nature of the appropriate action to be taken, and whether to contact HES and MS-LOT.

The Archaeological Consultant will also brief BOWL, BOWL's key Contractors, the **Client Representative** and the ECoW on the types of archaeological finds and features that may be encountered during the course of the Project, including the possible importance of such finds. Key staff will be briefed on the operation of the PAD prior to the commencement of work on each phase of the Project, and at regular intervals during each phase if required.

5.7 Discoveries on the seabed and on the deck of a works vessel

The following presents the actions to be taken in the event of an archaeological discovery during the course of the Project. The preliminary record sheets and flow chart illustrating the actions to be followed are presented in **Appendices D & E**: Preliminary Record sheets and flow chart. The PAD is designed so that an archaeologist does not need to be present during all works. The PAD sets out appropriate actions to be taken if an unexpected archaeological discovery is made, see the PAD flow chart (**Appendix E**).

5.7.1 Preliminary Actions by BOWL or its Contractors

If an archaeological object is discovered on the deck of a vessel or retrieved from equipment, or an anomaly or structure has been encountered on the seabed, the Contractor shall inform the **Client Representative**. The **Client Representative** will examine any archaeological material and will arrange for sub-sea gear to be examined to see if any archaeological material is recovered with it, as soon as practicable after it has been discovered.

5.7.2 Initial Actions by the **Client Representative**

In the event of archaeological material being encountered, the Contractor will temporarily cease potentially damaging activities in the vicinity, if it is safe to do so. Where it is possible to identify the position from which the find originated, the **Client Representative** will implement a Temporary Exclusion Zone (TEZ) within which construction activities must temporarily cease until the advice of the Archaeological Consultant has been obtained.

The **Client Representative** will record the occurrence as soon as possible in the site records together with the time and exact vessel position. Where possible, the report entry should include a close approximation of the original position of the anomaly on the seabed. The Contractor, will ensure that the area shall be marked on navigational software, site drawings and survey charts/software. The **Client Representative** will notify the Marine Coordination Centre (MCC) who will mark the TEZ on navigational software and inform other vessels/teams in the area where the discovery has been made. The **Client Representative** will also be responsible for compiling a Preliminary Record of the occurrence both for discoveries on the seabed and on the deck of the vessel.

The **Client Representative** will inform the ECoW of the occurrence as soon as possible and pass on all available information, including a copy of the Preliminary Record and copies of any photographs, drawings or other relevant records made. If any finds have been recovered, the **Client Representative** shall arrange for them to be immersed in seawater in a suitable clean container, which should be covered. Any rust, concretion or marine growth should not be removed. Furthermore, the Client Representative will make any finds available to the Implementation Service as necessary.

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5.7.3 Initial Actions by the ECoW and **Client Representative**

Once informed of a find by the **Client Representative**, the ECoW will confirm with the **Client Representative** that all the details set out in the Preliminary Record are comprehensive and correct.

The **ECoW** should be contacted as follows:

Naomi Campbell, Foreshore Consultants Limited
Email: naomi.campbell@sse.com
Mob.: 07979704635 / 07515271272

5.7.4 Contacting the Archaeological Consultant and the Implementation Service

The ECoW will notify BOWL CLT and the Archaeological Consultant, if required, and will pass all available information to them, including a copy of the Preliminary Record and copies of other relevant records. The ECoW will approach the Archaeological Consultant who will offer advice on the nature of any discoveries and ensure appropriate action is taken. The Archaeological Consultant will respond to all e-mails within 48 hours, or as soon as reasonably practicable. The Archaeological Consultant will notify the Implementation Service and forward all available information including a copy of the Preliminary Record and any photographs, drawings or other records. The Implementation Service will advise the Archaeological Consultant if further actions are required.

The Archaeological Consultant will ensure that any find is appropriately assessed and documented and if deemed necessary reported to the Relevant Authority.

The Archaeological Consultant should be contacted as follows:

Andrew Bicket, Wessex Archaeology (Scotland)
Email: a.bicket@wessexarch.co.uk
Mob: 07872 418863
Tel: 0131 239 7050

5.7.5 Contacting the Relevant Authority

In the event that the Archaeological Consultant and BOWL consider it necessary, HES and MS-LOT will be informed by the Archaeological Consultant for further advice. All available information relating to the circumstances of the occurrence, including a copy of the Preliminary Record and copies of any photographs, drawings or other records that have been made will be passed on to HES and MS-LOT.

HES and MS-LOT should be contacted as follows:

Philip Robertson	Jessica Drew
Historic Environment Scotland	Marine Scotland Licensing Operations Team
Longmore House	375 Victoria Road
Salisbury Place	Aberdeen
Edinburgh	AB11 9DB
EN9 1SH	Tel: +44 (0)1224 295683
Tel: 0131 668 8843	

5.7.6 Advising other teams/vessels working on the site

Where relevant, the Marine Coordinator shall inform other vessels working in the area from which a find is thought to have been recovered. Such other vessels shall be advised by the

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ECoW to keep a particular watch for anomalies and finds.

5.7.7 Establishing new AEZs

If new finds of archaeological importance come to light during the course of the Project they may be subject to the implementation by BOWL of a new AEZ based on their archaeological potential. This decision will be taken by BOWL and the Archaeological Consultant in consultation with MS-LOT and HES for any marine construction activities within the Wind Farm and OfTW area.

5.7.8 Altering AEZs

If archaeological material is discovered during the course of the Project, then AEZs may be altered (enlarged, reduced, moved or removed) as a result. These discoveries might include material recovered during the course of construction works on the Project. Any alteration will be defined by BOWL and the Archaeological Consultant in consultation with MS-LOT and HES and will be communicated via the ECoW or Client Representative to key Contractors and staff working on the Project.

Should an encroachment of an AEZ be unavoidable then further archaeological investigation will be undertaken in consultation with the Archaeological Consultant in order to enable micro-siting within the AEZ to avoid any cultural heritage assets and targets.

5.8 Finds recovered within the UK twelve nautical mile limit

Any recovered finds will be made available for inspection by the Archaeological Consultant, MS-LOT and HES, coordinated by the **Client Representative**. Once the find has been reported through the PAD, if deemed to be wreck, the Archaeological Consultant will report the find to the Receiver of Wreck in accordance with Section 236(1) of the Merchant Shipping Act 1995, on behalf of BOWL. This is a legal requirement.

The Archaeological Consultant will forward the necessary paperwork to the ECoW for signature, and the ECoW will return the signed form to the Receiver of Wreck.

The Receiver of Wreck can be contacted as follows:

Receiver of Wreck

Bay 1/05

Spring Place

105 Commercial Road

SOUTHAMPTON

SO15 1EG

Telephone: 023 8032 9474

Fax: 023 8032 9477

5.9 Reporting and Archiving

Reporting activities will include the results of archaeological assessment of serendipitous discoveries during the Project, and the effectiveness and/or implementation of new AEZs. A PAD finds report will be produced for each discovery of archaeological interest. If a final archaeological report is deemed necessary by BOWL after appropriate consultation it will

Beatrice Marine Archaeological WSI and PAD

address the following themes: maritime sites and finds; and palaeo-environmental and submerged prehistoric archaeology.

Archaeological reports produced as a result of the implementation of the PAD will be sent for review to MS-LOT and HES prior to finalisation.

BOWL will be responsible for ensuring that copies of any archaeological assessment are issued to HES.

The final report will be delivered to MS-LOT and HES for consultation in a timely manner upon completion of the works.

Any samples, finds or objects of cultural heritage interest that may be recovered during the works will be handled and stored in the appropriate manner under the guidance of the Archaeological Consultant, curators and staff from the receiving institution. All subsequent decisions regarding the handling, transport and storage of retained finds will be agreed with the relevant authority and the relevant staff from the allocated receiving institution.

Depending on outcomes, each element of work may give rise to one or more reports, the provision of which will be the responsibility of BOWL through their appointed Archaeological Consultant.

5.10 Health and Safety

Health and Safety considerations are of paramount importance. Safe working practices will override archaeological considerations at all times.

The Archaeological Consultant will supply trained, competent and suitably qualified staff to perform tasks on site, if required.

All work will be carried out in accordance with the Health and Safety at Work Act 1974 and the Management of Health and Safety Regulations 1999, and all other applicable Health and Safety legislation, regulations and codes of practice applicable at the time.

A copy of the Archaeological Consultant's Health and Safety Policy and a Risk Assessment will be supplied to BOWL prior to the commencement of any fieldwork. The Risk Assessment will be read, understood and signed by all staff going to the Site before fieldwork commences.

The Archaeological Consultant will comply with the Personal Protective Equipment (PPE) requirements if working on Site and any other specific additional requirements of BOWL and/or their Contractors.

The Archaeological Consultant will comply with the Beatrice Offshore Wind Farm SHE Procedure, LF000005-PIC-016.

6 References

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The Crown Estate, 2014. Protocol for Archaeological Discoveries: Offshore Renewables Projects. Published by Wessex Archaeology, Salisbury, on behalf of The Crown Estate.

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Appendix A: ES and SEIS Commitments

Document	Chapter No.	Chapter	Ref (page, para)	Details of Commitment	Reference to Section in WSI/PAD
ES	15	Wind Farm Marine Archaeology and Cultural Heritage	74 p. 21	Should it not be possible to avoid sites of cultural heritage interest, a full programme of archaeological investigation which may include diver survey or Remote Operated Vehicle (ROV) investigation will be undertaken to identify the nature and extent of these sites. Subject to these investigations an appropriate mitigation strategy will be agreed upon with Historic Environment Scotland.	Section 4 and 5
	26	OFTW Marine Archaeology and Cultural Heritage	59 P. 14		
ES	15	Wind Farm Marine Archaeology and Cultural Heritage	75 p. 21	Where cultural heritage assets and targets may potentially be subject to secondary physical effects during construction and operation, temporary exclusion zones will be implemented to prevent these resulting from invasive activities, such as cable installation, anchoring or installation of jack-up vessels. Exclusion zones of 100 m will be established around sites identified as being of high sensitivity in this assessment, while an exclusion zone of a minimum 50 m will be established around those of medium sensitivity.	Section 4.5
	26	OFTW Marine Archaeology and Cultural Heritage	61 p. 14		
ES	26	OFTW Marine Archaeology and Cultural Heritage	60 p. 14	All sites of cultural heritage interest will be avoided where possible with the implementation of temporary exclusion zones and the micro-siting and re-routing of the OFTW cable. In addition, data gathered as part of pre and post-installation geophysical and geotechnical survey should be made available for archaeological assessment.	Section 4.5
ES	26	OFTW Marine Archaeology and Cultural Heritage	61 p. 14	In the event that dynamic positioning systems are used for operational vessels, the implementation of temporary exclusion zones may be deemed unnecessary and appropriate alternative archaeological mitigation agreed with Historic Environment Scotland.	DP vessels will follow the same protocols as all vessels, as set out in Section 5.8.2.
ES	15	Wind Farm Marine Archaeology and Cultural Heritage	77 p. 22	In order to mitigate the risk of damage to any previously unrecorded archaeological remains, an archaeological Protocol for Archaeological	Section 5

Beatrice Marine Archaeological WSI and PAD

Document	Chapter No.	Chapter	Ref (page, para)	Details of Commitment	Reference to Section in WSI/PAD
	26	OfTW Marine Archaeology and Cultural Heritage	62 p.14	Discoveries (PAD) will be prepared for the approval of Historic Environment Scotland and Moray Council Archaeologist to mitigate direct or secondary effects in the event of any unexpected discoveries of archaeological remains during installation.	
ES	26	OfTW Marine Archaeology and Cultural Heritage	64 p.14	A WSI (Written Scheme of Investigation) will be implemented	Section 4

Appendix B: Locations and extents of Archaeological Exclusion Zones surrounding cultural heritage assets and targets

HA No.	Name/Type	SeaZone ID/ UKHO ID	NMRS ID	Status	Position WGS 84 UTM 30N	Location	Study Area	Extent of AEZ
HA2	Sonar Target				503988.1 6452797.9	WF	ISA	50 m
HA41	Sonar Target				509895.6 6461456.1	WF	ISA	50 m
HA53	Sonar Target				510640 6462129.2	WF	ISA	50 m
HA130	Sonar Target				509703.2 6462000.9	WF	ISA	50 m
HA137	Sonar Target				504159.15 6456488.94	WF	ISA	50 m
HA139	Sonar Target				507805.04 6463086.4	WF	ISA	50 m
HA140	Sonar Target				508585.71 6464099.88	WF	ISA	50 m
CA1	Probable Cannon				508553.09 6464401.69	WF	ISA	50 m
HA1	Carisbrook (possibly)				515045 6461955	WF	OSA	100 m
HA122	Sonar Target				500505.6 6449732.6	WF	OSA	50 m
HA138	Sonar Target				504831.35 6462581.89	WF	OSA	50 m
HA52	Sonar Target				498347.52 6392925.68	OftW	OSAr	50 m
HA61	Sonar Target				498398.56 6393553.55	OftW	OSA	50 m
HA68	Wreck				498407.62 6393620.09	OftW	OSA	100 m
HA90	Sonar Target				498311.99 6394662.17	OftW	ISA	50 m
HA102	Sonar Target				498267.34 6393862.75	OftW	ISA	50 m
HA121	Sonar Target				497834.03 6430902.59	OftW	OSA	50 m
HA133	Sonar Target				498987.44 6443815.26	OftW	ISA	50 m
HA143	Sonar Target				497084.81 6421066.66	OftW	OSA	50 m
HA154	Sonar Target				498979.07 6443812.46	OftW	ISA	50 m
HA1001	Sunbeam (possibly)	00897		Live	496719.788 6439047.215	OftW	OSA	100 m
HA1002	Day Jet	00895		Dead	498924.265 6428676.953	OftW	OSA	50 m
HA1003	Unknown Craft	02119	101775	Live	497031.018 6422183.054	OftW	OSA	100 m

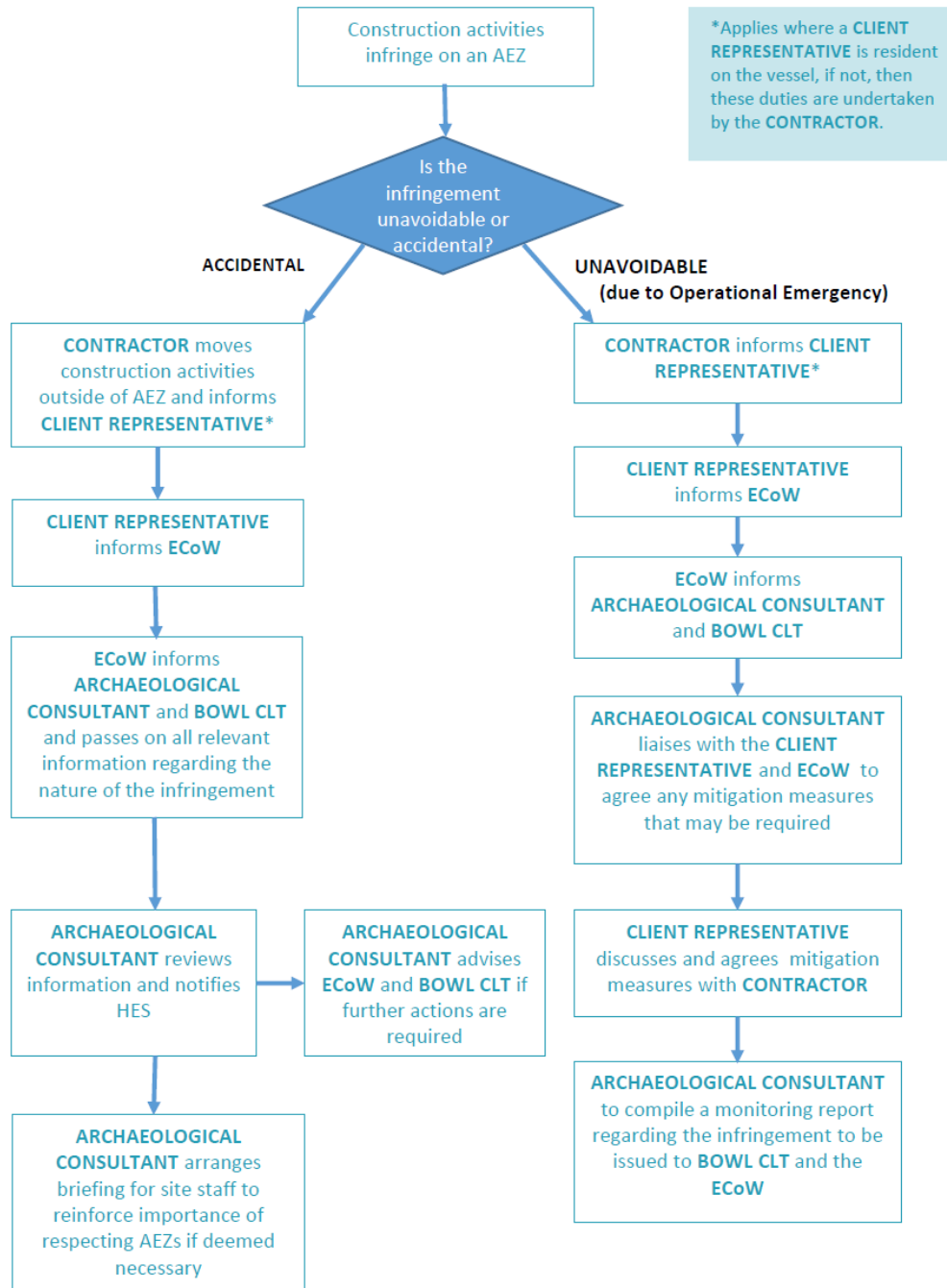
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HA No.	Name/Type	SeaZone ID/ UKHO ID	NMRS ID	Status	Position WGS 84 UTM 30N	Location	Study Area	Extent of AEZ
HA1004	Unknown Craft	02116	101773	Dead	498756.869 6418503.008	OfTW	OSA	50 m
HA1005	John Dunkin	02096	101769	Live	497192.683 6417336.969	OfTW	OSA	100 m
HA1006	Unknown Aircraft	02117	101711	Live	497335.503 6410124.405 (Position Unreliable)	OfTW	OSA	100 m
HA1008	Bpt No 31	02068		Live	496876.409 6391921.638	OfTW	OSA	100 m

Appendix C: Protocol for Infringement of Archaeological Exclusion Zone

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Protocol for Infringement of Archaeological Exclusion Zone



Acronyms:

- Client: Beatrice Offshore Windfarm Limited (BOWL)
- BOWL CLT: BOWL Consents and Licensing Team
- ECoW: Environmental Clerk of Works
- HES: Historic Environment Scotland, the statutory body for archaeology and cultural heritage in Scotland
- AEZ: Archaeological Exclusion Zone

Appendix D: Preliminary Record Form

Beatrice Marine Archaeological WSI and PAD


Protocol for Archaeological Discoveries: Offshore Renewables Projects

Preliminary Record Form Page 1 of 2

Preliminary Record Form: Discoveries on the Seabed/ on board / in the inter-tidal zone / on land

Company Name:
Vessel/Team Name:
Site/sea area Name:
Date:
Time of compiling information:
Name of compiler (Site Champion):
Name of finder (if different to above):

Time at which discovery was encountered:
Vessel position at time when anomaly was encountered:
a) Latitude
b) Longitude
c) Datum (if different from WGS84)
Original position of the anomaly on the seabed, if known:
Notes on likely accuracy of original position stated above:
a) How accurate is the position?
b) Is the position the original position or has the material been moved by operations?
c) Details of circumstances and activity that lead to the discovery



Beatrice Marine Archaeological WSI and PAD

Protocol for Archaeological Discoveries: Offshore Renewables Projects

Preliminary Record Form Page 2 of 2

Preliminary Record Form: Discoveries on the Seabed/ on board / in the inter-tidal zone / on land

Description of the find/anomaly:

Apparent size/extent of the anomaly:

Details of any find(s) recovered:

Details of photographs, drawings or other records made of the find(s) (e.g. location figure):

Details of treatment or storage of find(s):

Date and time Nominated Contact informed:

General notes:

If discovered on the seabed:

a) Derived from: e.g. Obstacle Avoidance Sonar, Cable Tensiometer?

b) Apparent size/extent of anomaly (length, width, height above seabed)

c) Extent of deviation/route development

Signed:

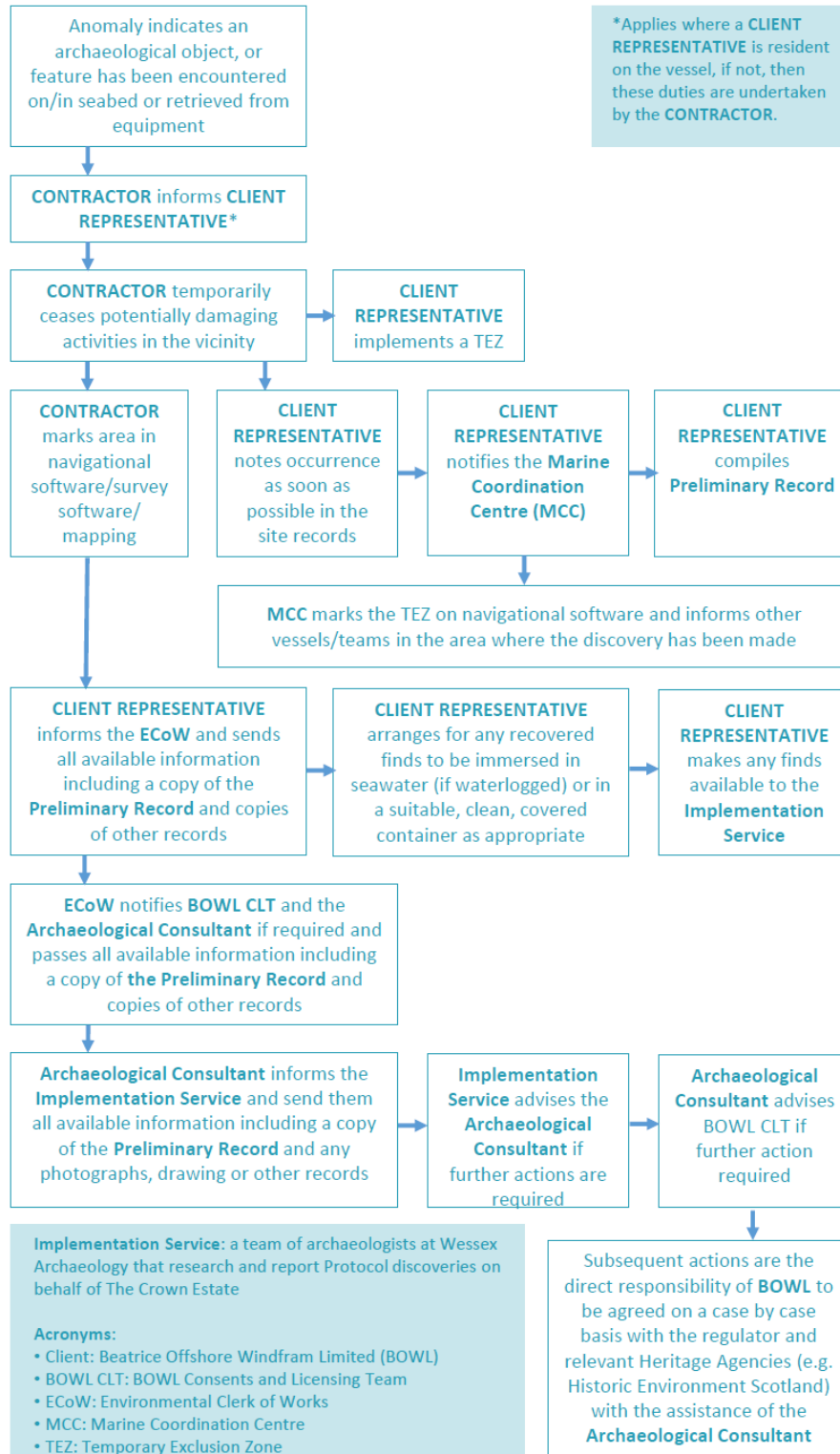
Date:

 **THE CROWN
ESTATE**

Appendix E: Protocol for Reporting Finds of Archaeological Interest

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Protocol for Reporting Finds of Archaeological Interest



Appendix F: Figures

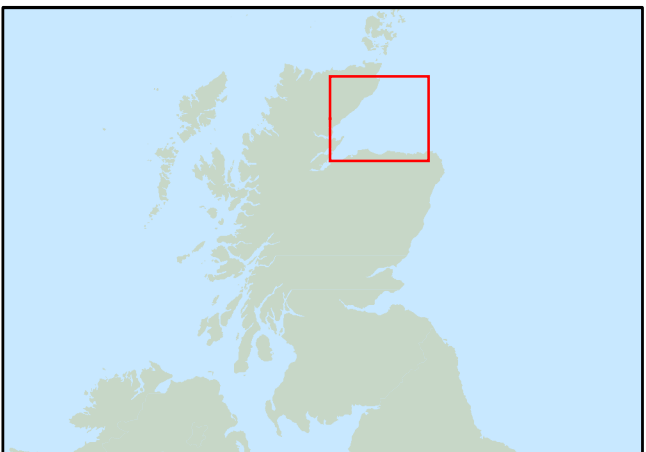
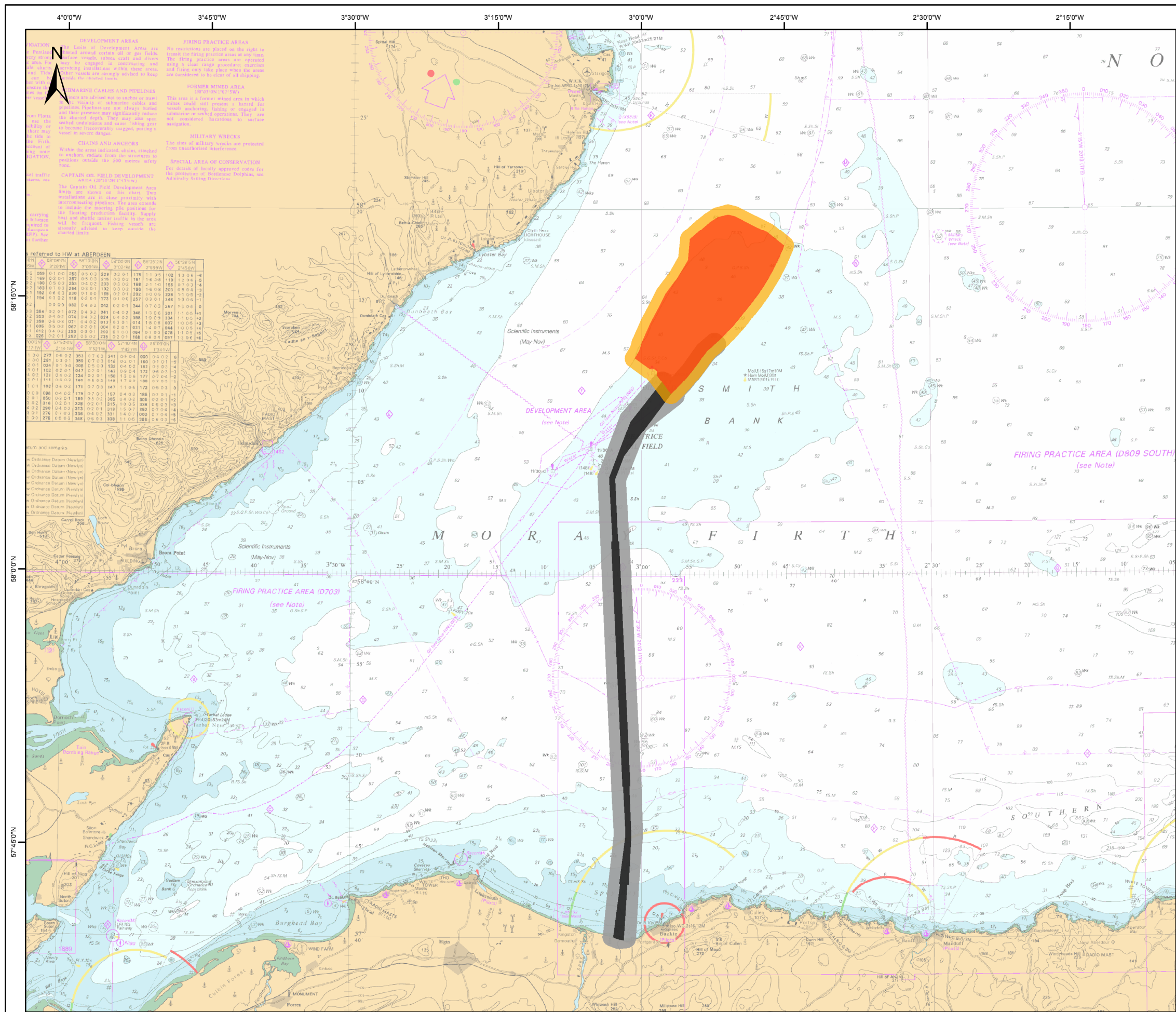
Figure 1 Overview of the Development area.

Figure 2 Cultural heritage assets and targets within the WF study areas.

Figure 3 Cultural heritage assets and targets within the OfTW, northern 1/3.

Figure 4 Cultural heritage assets and targets within the OfTW, middle 1/3.

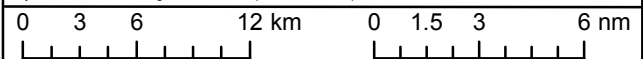
Figure 5 Cultural heritage assets and targets within the OfTW, southern 1/3.



Legend

- OWF Inner Study Area
- OWF Outer Study Area
- OFTW Inner Study Area
- OFTW Outer Study Area

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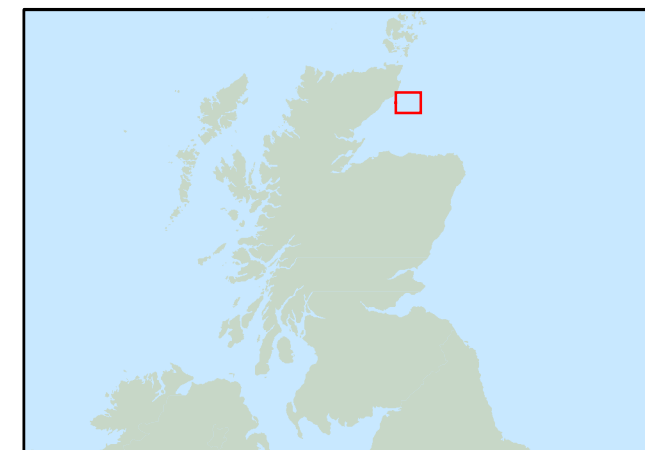
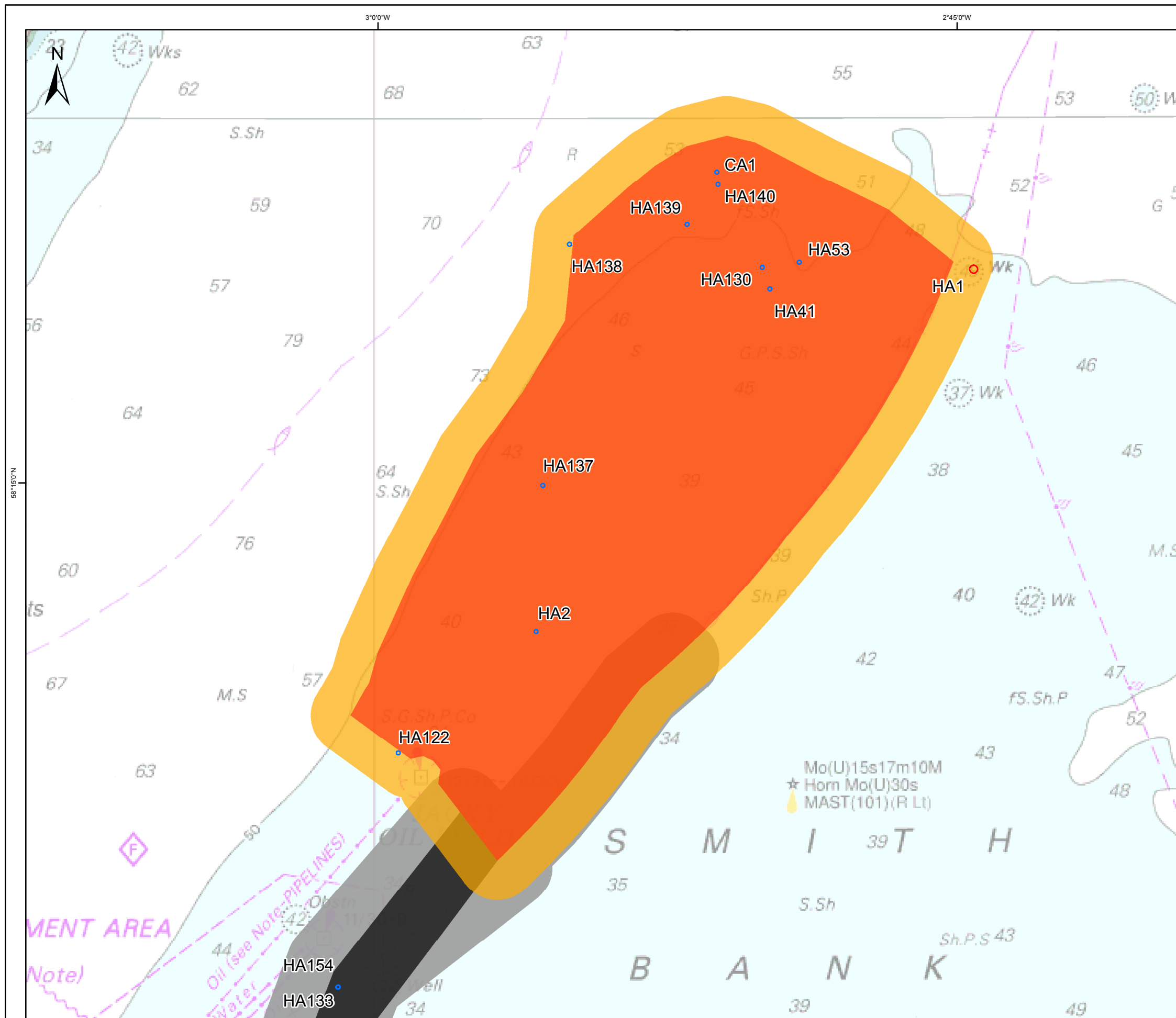
UK Offshore Development

Figure 1

Beatrice Project Study Areas

Drawn: MM	Checked: LR	Approved: LR
Date: 11/03/2015	Scale: 1:400,000 @ A3	
Drawing Number: BEA-MAP-SSER-421	Version: 02	
Datum: WGS84	Projection: UTM30N	

Beatrice
Offshore Windfarm Ltd



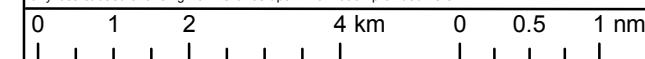
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Archaeological Potential

- High - 100m AEZ
- Medium - 50m AEZ

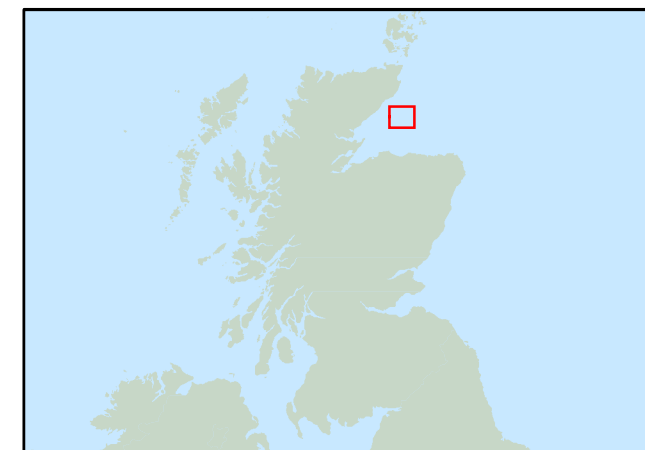
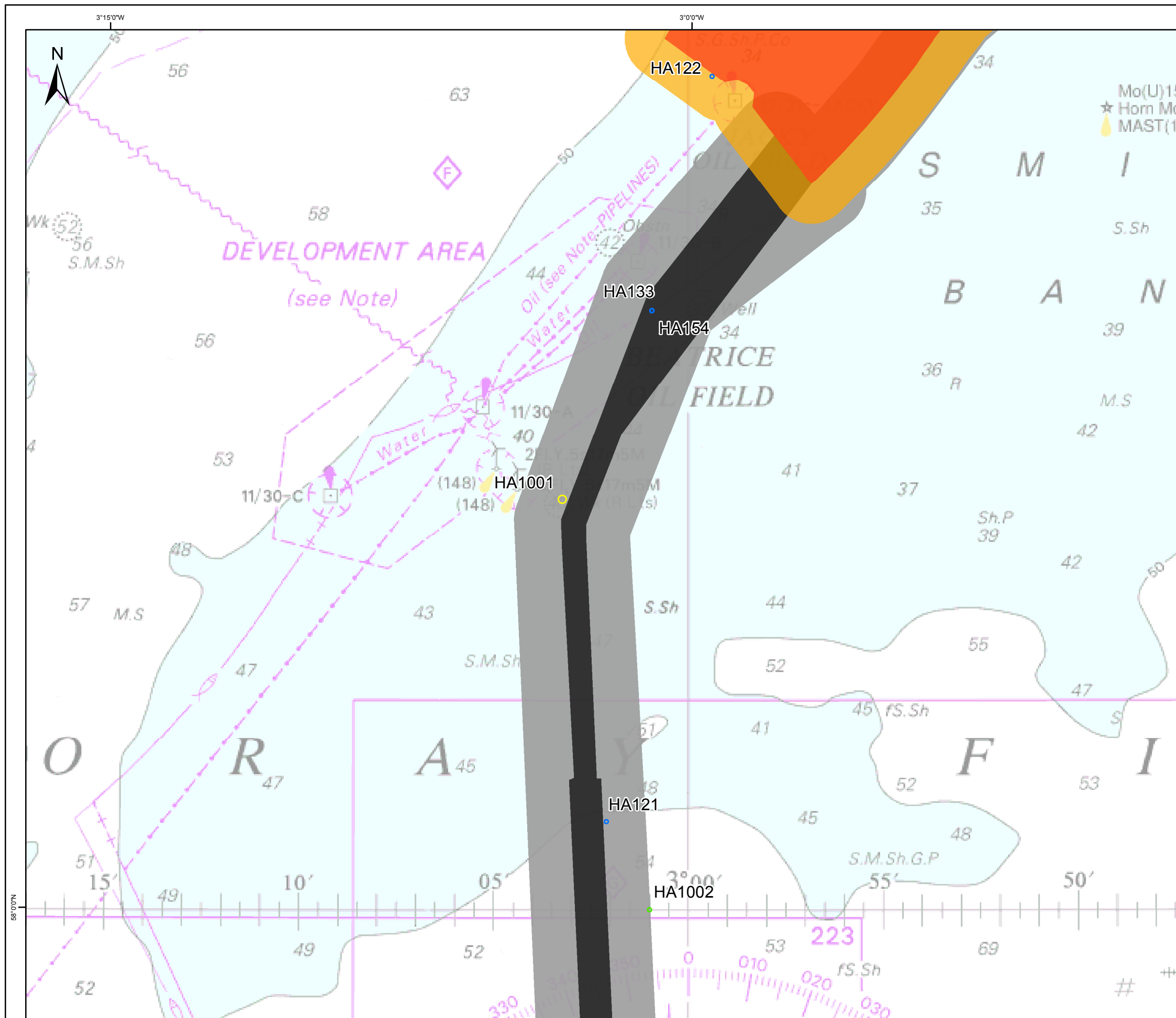
- OWF Inner Study Area
- OWF Outer Study Area
- OfTW Inner Study Area
- OfTW Outer Study Area

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UK Offshore Development		
Figure 2		
Cultural Heritage Assets and Targets Within WF Study Areas		
Drawn: MM	Checked: LR	Approved: LR
Date: 02/02/2017	Scale: 1:100,000 @ A3	
Drawing Number: BEA-MAP-SSER-422	Version: 05	
Datum: WGS84	Projection: UTM30N	

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Offshore Windfarm Ltd



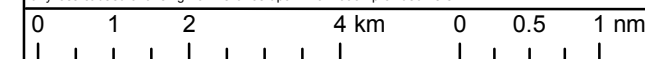
Legend

Archaeological Potential

- Medium - 50m AEZ
- Wreck, live - 100m AEZ
- Wreck, dead - 50m AEZ

- OWF Inner Study Area
- OWF Outer Study Area
- O&TW Inner Study Area
- O&TW Outer Study Area

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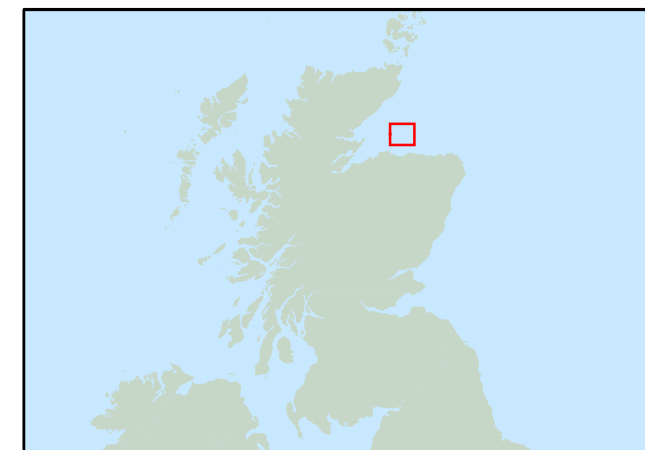
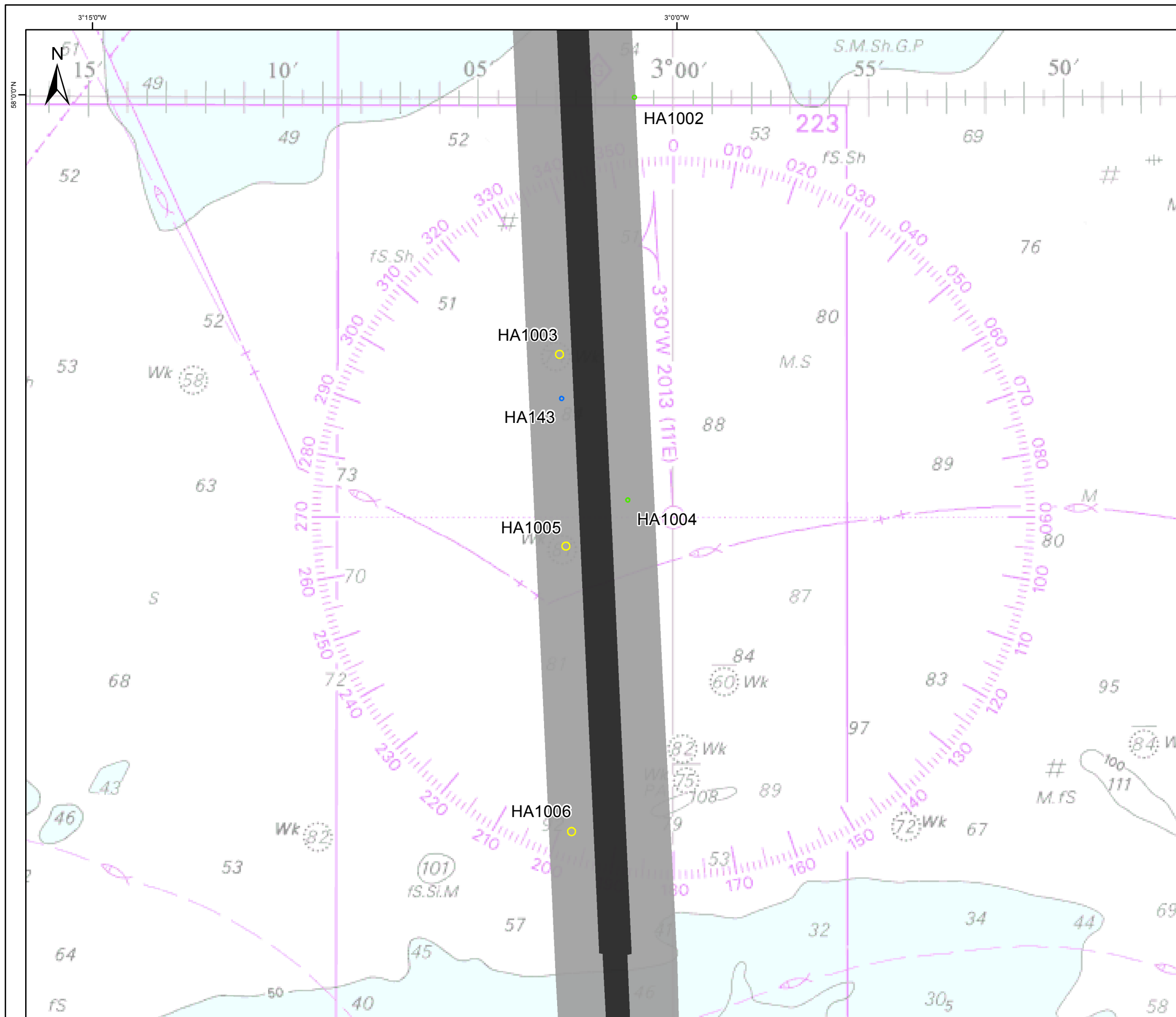


UK Offshore Development

Figure 3
Cultural Heritage Assets and Targets
Within the O&TW, Northern 1/3

Drawn: MM	Checked: LR	Approved: LR
Date: 13/05/2016	Scale: 1:100,000 @ A3	
Drawing Number: BEA-MAP-SSER-423	Version: 05	
Datum: WGS84	Projection: UTM30N	

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Legend

Archaeological Potential

Medium - 50m AEZ

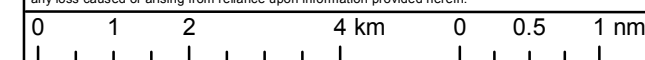
Wreck, live - 100m AEZ

Wreck, dead - 50m AEZ

OfTW Inner Study Area

OfTW Outer Study Area

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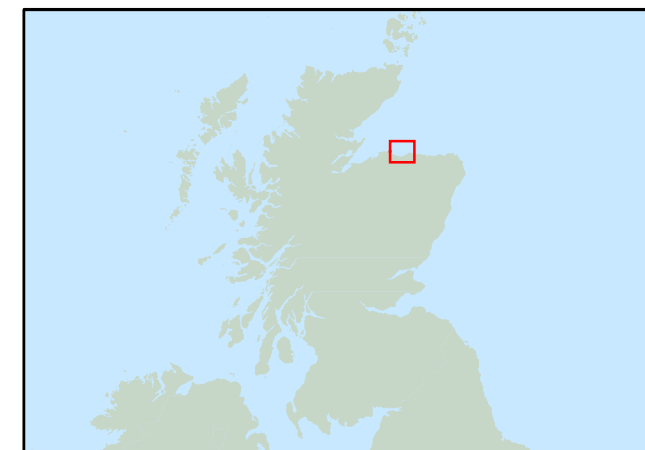
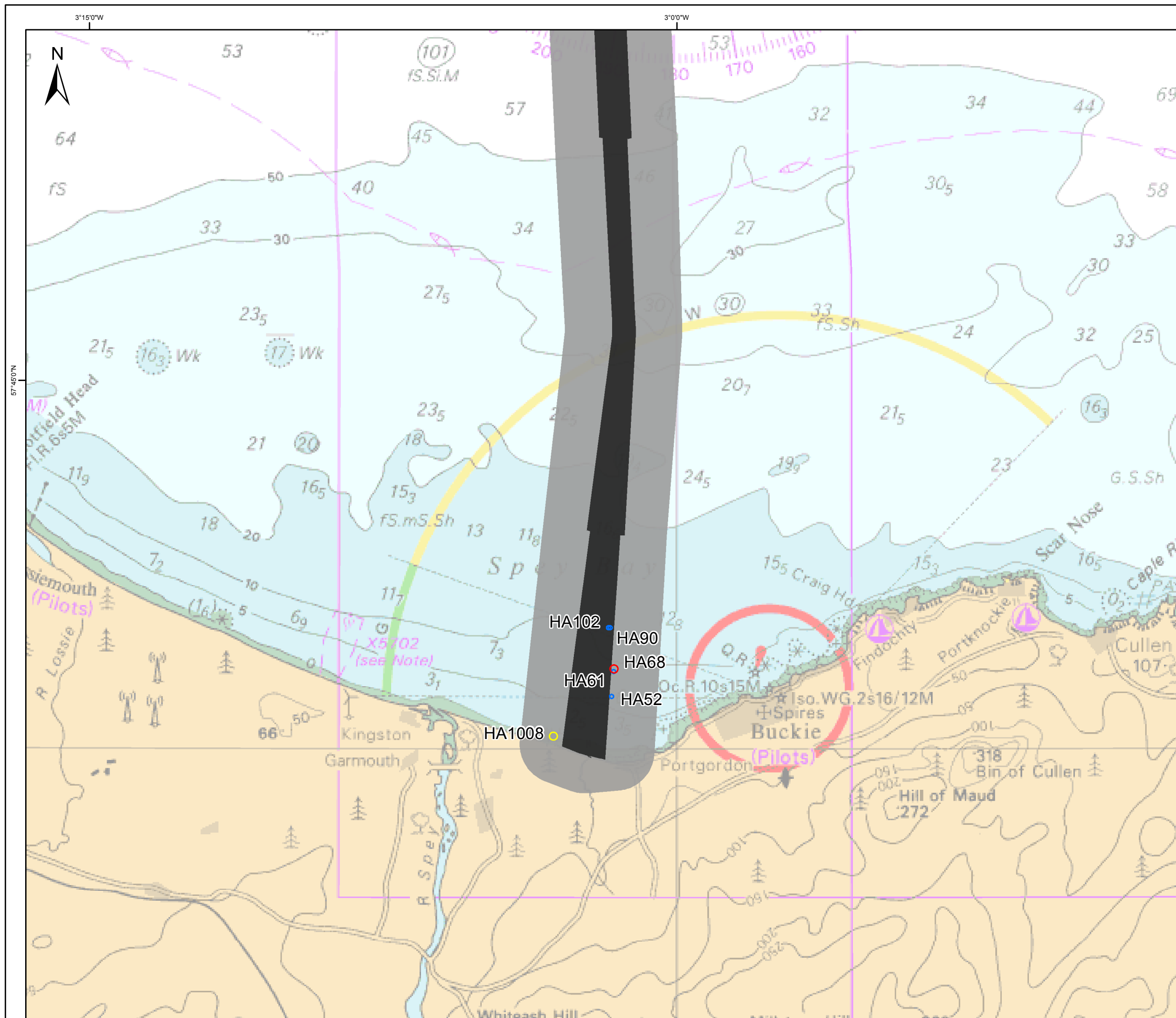
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Figure 4

Cultural Heritage Assets and Targets Within the OfTW, Middle 1/3

Drawn: MM	Checked: LR	Approved: LR
Date: 13/05/2016	Scale: 1:100,000 @ A3	
Drawing Number: BEA-MAP-SSER-423	Version: 05	
Datum: WGS84	Projection: UTM30N	

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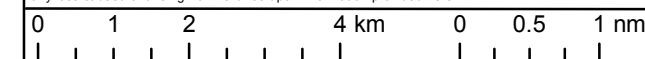


Legend

Archaeological Potential

- High - 100m AEZ
- Medium - 50m AEZ
- Wreck, live - 100m AEZ
- O&TW Inner Study Area
- O&TW Outer Study Area

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Figure 5

Cultural Heritage Assets and Targets Within the O&TW, Southern 1/3

Drawn: MM	Checked: LR	Approved: LR
Date: 13/05/2016	Scale: 1:100,000 @ A3	
Drawing Number: BEA-MAP-SSER-423	Version: 05	
Datum: WGS84	Projection: UTM30N	

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