# Archaeoleg Brython Archaeology



**Post-Excavation Assessment of Potential** Wylfa Hotspot 16

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# Wylfa Newydd Development, Hotspot 16

Post-Excavation Assessment of Potential

Prepared for Wardell Armstrong LLP.

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# Crynodeb

Comisiynwyd Archaeoleg Brython gan Horizon Nuclear Power Ltd. (HNP) i gyflawni rhaglen o waith cloddio archaeolegol rhwng 2017 a 2019 yn ystod gwaith clirio cynnar cyn cyflwyno cais Orchymyn Cydsyniad Datblygu (OCD/DCO) ar gyfer Orsaf Bŵer Wylfa Newydd ar Ynys Môn, Gogledd Cymru.

Wedi cwblhau'r cloddio commisynwyd Wardell Armstrong LLP. ac Archaeoleg Brython gan HNP i ddarparu crynodeb o ganlyniadau'r gwaith ac i gyflawni rhaglen o waith ôl-gloddio rhwng Medi 2019 a Mawrth 2020 i asesu arwyddocâd a photensial yr archif a'r darganfyddiadau.

Adroddiad Asesiad o Botensial yw'r ddogfen hon ar gyfer archif a chasgliad arteffactau safle Hotspot 16 a gloddiwyd fel rhan o'r gwaith clirio cynnar.

Roedd cloddfa Hotspot 16 (NGR SH34919260; EVENT PRN 46047) yn mesur 275m<sup>2</sup> ac wedi ei leoli i asesu potensial y safle yn dilyn arolwg geoffisegol ac arolwg ffosi gan Wessex Archaeology. Yn ystod y gwerthusiad nodwyd dri pydew a therfyn ffos, dehongliwyd hyn fel tystiolaeth o anheddiad cynhanesyddol posib.

Yn ystod cloddio darganfyddwyd nifer o bydewau a nodweddion o siâp afreolaidd. Darganfyddwyd nifer o arteffactau gan gynnwys teclynnau carreg, darnau o bren a chrochenwaith ol-ganoloesol.

Mae dyddiadau radiocarbon yn awgrymu dyddiad Oes Haearn Hwyr i Rufeinig Cynnar i'r nodweddion.

## Summary

Brython Archaeology, commissioned by Horizon Nuclear Power Ltd. (HNP), undertook a phased programme of excavation in 2017-2019 in advance of the submission of a Development Consent Order (DCO) application for the construction of the proposed Wylfa Newydd Power Station on the Isle of Anglesey, North Wales.

Wardell Armstrong LLP. (WA) and Brython Archaeology were subsequently commissioned by HNP to provide a summary of the results of the archaeological excavation and to undertake a programme of post-excavation during September 2019 to March 2020 to assess the significance and potential of the site archive and finds.

This is an Assessment of Potential Report of the archive and finds assemblage of Hotspot 16, which was excavated during early clearance works.

The excavation area of 275m<sup>2</sup> at Wylfa Hotspot 16 (NGR SH34919260; EVENT PRN 46047) was defined following a geophysical survey and archaeological trial trench evaluation by Wessex Archaeology to address the archaeological potential of the site. During the evaluation three pits and a ditch terminus were identified and interpreted as evidence of potential prehistoric settlement.

The targeted excavation of the area revealed several pits and irregular shaped features. Artefacts recovered included lithics, wood fragments and post-medieval pottery.

Radiocarbon dating of organic material recovered from soil samples suggests that a circular pit and the irregular shaped features excavated date from the Late Iron Age to Early Roman period.

# 1 Introduction

During August 2017 to January 2019, Archaeoleg Brython Archaeology CYF. (ABA), commissioned by HNP, conducted a phased programme of excavation of potential prehistoric and post-medieval features at Wylfa Hotspot 16, Anglesey (NGR SH34919260) in advance of the submission of a Development Consent Order application (PINS reference number EN010007) for the construction of the proposed Wylfa Newydd Power Station. The excavations at the Wylfa Newydd development site involved 30 open area excavations, with some undertaken as set piece excavations and others as strip map and sample excavations. In total 32 strip, map and sample areas, described as 'Hotspots' were identified, and organized into four zones referred to as 1a, 1b, 2 and 3 within the Written Scheme of Investigation (WSI; Horizon Nuclear Power, 2016; 2017). Fourteen of these areas were excavated by ABA totalling an area of approximately 25,578m<sup>2</sup> (*Figure 1 and Appendix II*):

- Wylfa Head (EVENT PRN 46035)
- Area 7 (EVENT PRN 46036)
- Area 8 (EVENT PRN 46037)
- Hotspot 5 (EVENT PRN 46038)
- Hotspot 6 (EVENT PRN 46039)
- Hotspot 7-9 (EVENT PRN 4640)
- Hotspot 8 (EVENT PRN 46041)

- Hotspots 10 (EVENT PRN 46042)
- Hotspot 11-13 (EVENT PRN 46043)
- Hotspot 12 (EVENT PRN 46044)
- Hotspot 14 (EVENT PRN 46045)
- Hotspot 15 (EVENT PRN 46046)
- Hotspot 16 (EVENT PRN 46047)
- Hotspot 17 (EVENT PRN 46048)

Two supplementary excavation areas, Hotspot 8B and Hotspot 15 West, were opened to investigate the interaction between the archaeology in Hotspot 8 and Hotspot 15. This phase of fieldwork was concluded in January 2019. In February 2019 it was announced that the Wylfa Newydd project was being put into a suspended state. As a result of this all further works on the site have been suspended.

Prior to the excavation of the Wylfa Hotspot 16 site it had been subject to an archaeological Desk Based Assessment (DBA) (Cooke *et al.*, 2012), magnetometer geophysical survey (Hopewell, 2011a; b; Hopewell 2012) and a programme of evaluation trenching by Wessex Archaeology (2016). During the evaluation three pits and ditch terminus were identified as a potential Prehistoric settlement. No artefacts were recorded during the evaluation phase. Excavation of these features by ABA revealed possible Late Iron Age/Roman features and pits, post-medieval and undated pits, and an undated ditch.

All archaeological works were undertaken in accordance with the Written Scheme of Investigation (WSI [Horizon Nuclear Power, 2016; 2017]), and in line with paragraph 5.8.21 of the overarching National Policy Statement for Energy (EN-1 [Department of Energy and Climate Change, 2011]). The work was monitored by Gwynedd Archaeological Planning Services (GAPS), cultural heritage advisors to the Local Authority. WA have been employed by the HNP as cultural heritage consultants for the project and within this capacity have provided guidance and advice during the works. The key historic environment stakeholders are:

- Cadw The principal Welsh government body responsible for the historic environment of Wales; and
- GAPS The curators responsible for monitoring archaeological investigations undertaken as part of development in the region.

During the fieldwork and post-excavation work an archaeological record and archive of the site, AB1703 Hotspot 16, was created. WA was appointed by HNP to undertake a programme of assessment of the archaeological potential of the evidence accumulated during the excavations and ABA was selected to undertake a portion of this work under a sub-contract agreement with WA. The excavated finds and environmental samples were handed over to WA in April 2019.

The purpose of this document is to report on the post-excavation assessment of the Hotspot 16 archive and finds assemblage, and to create an ordered archive for deposition. This report is written and structured to conform to MoRPHE guidelines, the Charted Institute for Archaeologist' standards required of post excavation assessment (ClfA 2014a; 2014b), and is in line with the recommendations as stated in the ABA site summary report (ABA, 2018). Digital copies of this report are to be submitted to HNP and relevant stakeholders. The archive and finds assemblage were stored in accordance to ClfA's standards and guidance (ClfA, 2014a: 2014b) while under the curatorship of ABA. The paper archive and digital data, including photographs will be lodged with the Royal Commission on Ancient and Historical Monuments of Wales (RCAHMW) in Aberystwyth on completion of the project. ABA will hold a digital version of the archive indefinitely.



# 2 Project Background

### 2.1 Site Location

Hotspot 16, located in Hotspot Zone 1a, sits approximately 650m west of Tregele in a low-lying field, previously labelled 'A11' during the archaeological trial trench evaluation. The site is located at the northern edge of a flat plateau on the edge of marshland to the west (*Figure 2*). The investigation area was at a height of approximately 18m AOD, centred on NGR SH34919260, and measured approximately 275m<sup>2</sup>.

### 2.2 Geology and Topography

Superficial deposits in the area consist of Till, Devensian – Diamicton. These are sedimentary deposits which formed between 11.6 and 11.8 thousand years ago during the Quaternary period, indicating a landscape dominated by Ice Age conditions. The underlying bedrock geology consists of Mica schist and psammite of the New Harbour Group. This is a metamorphic bedrock which formed between 635 and 541 million years ago during the Ediacaran period. These rocks were originally sedimentary, formed in deep seas, later altered by Iow-grade metamorphism (BGS, 2019).



### 2.3 Archaeological and Historical Background Data

Historic mapping and documentary sources consulted by ABA did not indicate the presence of the pits, ditches or any other archaeological features identified during the excavation of Hotspot 16. However, Anglesey is rich in archaeological sites and artefacts dating from the Mesolithic to medieval period. The information below is summarised from reports and archaeological baseline assessments (Cooke *et al.*, 2012; Parry *et al.*, 2012; Jacobs, 2015; Wessex Archaeology, 2016; ABA, 2017; Headland Archaeology, 2018).

Mesolithic finds in the area generally consist of flint scatters and tools located at a number of locations across Anglesey, generally close to water sources and often at coastal locations. The nearest possible Mesolithic activity recorded is at Cemlyn Bay, located approximately 2km to the west of the existing decommissioned Wylfa power station, in the form of flint scatters (HER PRN GAT 31584). Another discovery of three blade-like flint flakes (HER PRN GAT 7046) is recorded approximately 8km to the south near Llyn Alaw. Two possible Mesolithic lithic scatters (HER PRN GAT 91809/ HER PRN GAT 91811) were identified during the early clearance works at the Wylfa Head excavation area, approximately 350m east of the existing decommissioned power station.

Evidence for Neolithic activity in the area is abundant, mostly represented by megalithic funerary monuments, including chambered and passage tombs. These tombs would have been held the remains, both skeletal and cremated, of numerous individuals of the early farming communities which constructed them. Such monuments were often in use for long periods of time spanning both the Neolithic and Early Bronze Age periods, some examples show evidence of rearrangement and alteration to accommodate changing funerary practices. A ruined chambered tomb (HER PRN GAT 3046) is located approximately 1.8km to the south-east at Llanfechell. A limited number of domestic sites have been recorded on Anglesey, with the closest being the Early Neolithic settlement at Llanfaethlu, located approximately 8km south-west of the existing decommissioned Wylfa power station. The settlement of at least three Early Neolithic houses is the first of its kind to identified in Wales and one of the first in the UK (Rees and Jones, 2015). Evidence of Neolithic activity was identified during the early clearance works at the Wylfa Head excavation area where a group of stone axes and polishing tools were identified in a pit (HER PRN GAT 91812).

Few Bronze Age settlements have been identified on Anglesey but evidence of activity during this period, such as barrow and cairn construction and erection of standing stones, remains visible in the landscape. During the Bronze Age, settlements become apparent on high, defendable ground suggesting the establishment of centres of power, likely organised into tribes or clans. During early clearance works an undefended Bronze Age roundhouse (HER PRN GAT 91868) was identified at Hotspot 14. The nearest Scheduled Monument dating to the Bronze Age is Meini Hirion (AN 30), a group of three standing stones, which may form part of a Prehistoric complex along with the previously mentioned ruined chambered tomb (HER PRN GAT 3046), located approximately 2km south-east of the existing decommissioned Wylfa power station. Prehistoric burials in the later part of the period appear to have moved away from the communal tradition with the appearance of individual urned cremations and crouched cist inhumations. Arguably the most common feature type associated with the Bronze Age is burnt mounds. Evidence of these features are plentiful in the region and as many as twenty burnt mound deposits were identified within the footprint of the Wylfa Newydd development area. The closest recorded burnt mound (HER PRN GAT 61102/91837) is located east of Rhwng Dau Fynydd, approximately 1km south of the existing decommissioned Wylfa power station and was excavated in Area 8. Further burnt mounds were excavated in Hotspot 5 (HER PRN GAT 91839) and Hotspot 7-9 (HER PRN GAT 91846) during the early clearance works.

Prior to the commencement of the archaeological evaluation and early clearance works no Iron Age activity had been recorded at the site. The closest recorded Iron Age enclosure (HER PRN GAT 61454) is found north of Penymorwydd, located approximately 4km south-east of the existing decommissioned power station at Wylfa. A number of undated large enclosures and ring-gullies were identified in the development area during the evaluation phase, excavation during early clearance indicates that some of these date to the Iron Age. A partially enclosed hilltop settlement with a single roundhouse and possible granary (HER PRN GAT 91829), dated to the Iron Age, was identified in Area 7. Unenclosed and low-lying Iron Age settlements were also identified at Hotspot 15 (HER PRN GAT 91875) and Area O5 South, occupation of these settlements is likely to have spanned from the Iron Age through to the Romano British period.

The closest evidence of Roman activity to the Wylfa Newydd development site previously identified was a probable fortlet (HER PRN GAT 37976) near Cemlyn Bay, near the western extent of the development area, and Roman coins (HER PRN GAT 998) and brooch (HER PRN GAT 999) found at Cemaes Fawr Farm, located approximately 2km east. During evaluation and early clearance Roman and Romano British archaeology was identified at a number of locations. At Area 4, approximately 500m south of the existing power station, a possible Roman invasion camp (HER PRN GAT 92053) was identified. Iron Age/Romano British settlements were identified at Wylfa Head (HER PRN GAT 91817), Area O5 South, and Hotspot 15 (HER PRN GAT 91875).

Prior to the evaluation and early clearance works evidence of early medieval archaeology within the development area was scant. Few sites of this period have been identified on Anglesey, the majority of known sites are ecclesiastical, including a 9<sup>th</sup> century cross slab (HER PRN GAT 3059) from Llanbadrig which pre-dates the 12<sup>th</sup> century church (HER PRN GAT 3052). During evaluation an early medieval cist cemetery (HER PRN GAT 91824) was identified at Wylfa Head, this was fully excavated during the early clearance works. A second cemetery (HER PRN GAT 91830) which included four square funerary enclosures (HER PRN GAT 91831,91832,91833,91834) was identified at Area 7, and a possible group of family graves at Hotspot 11-13 (HER PRN GAT 91862).

Documentary and physical evidence suggests that the area was extensively habited and utilised by the 12<sup>th</sup> century. The area would have been within the Kingdom of Gwynedd which was subdivided into a number of regional commotes (Cwmwd) which would have had a royal manorial centre (Mardref) to act as a focus for administration and taxation (Cooke *et al.*, 2012). The proposed development area was within the commote of Tanybolion, the Mardref was located approximately 1km east at Cemaes. No medieval settlements have been recorded in the area and the existence of settlements is largely known from documentary sources. Two place names that are however spatially closely associated with the site are:

- Tre'r Gof (township of the smith) documented from the 12<sup>th</sup> century and is thought to have been a medieval township or hamlet with the commote of Talybolion.
- Wylfa (lookout point) documented from the later medieval period as a farm that was part of the township of Caerdegog.

Although no physical evidence of the hamlets has been identified it is possible that buried archaeology remains below later farms.

Evidence of early post-medieval field systems across the site was identified through desk based assessments, geophysical survey and confirmed during evaluation and early clearance works. Many of these are likely to date to the 16<sup>th</sup> and 17<sup>th</sup> centuries and are likely to have been removed in the 19<sup>th</sup> century during episodes of land improvement and creation of larger fields for new farming techniques. It is likely that much of the land improvement during the 19<sup>th</sup> century was driven by the estates which held the land, these include Carreglwyd, Plas Coch, Cefn Coch and Bodorgan (Cooke *et al.*, 2012).

Although no large estate houses were ever located within the proposed development area large houses with associated ancillary buildings, landscaped grounds and gardens were constructed at several former farms including Wylfa, Simdde Wen and Cestyll (Cooke *et al.*, 2012).

During WWII a Chain Home radar station (HER PRN GAT 36597/3658) was established at Wylfa Head to identify enemy aircraft and to manage the shipping routes for Liverpool.

The current landscape is dominated by the now decommissioned Wylfa power station which was constructed in the 1960s and was operational until 2015. As well as the present building much of the surrounding area was impacted by the construction of the plant but recent work shows that buried archaeology survives in close proximity to impacted areas.

### 2.4 Original Geophysical Survey Results

Geophysical surveys were carried out during the assessment of the site (WYAS, 2015; Hopewell 2011a: 2011b; Hopewell, 2012). The surveys did not demonstrate the presence of significant archaeological remains within the excavation area.

### 2.5 Original Evaluation Results

The archaeological evaluation undertaken in 2015-2016 indicated a fairly consistent nonarchaeological deposit of 0.1-0.45m of brown sand loam topsoil, overlying 0.02-0.58m of yellow brown silt loam subsoil across Field Group 1, in which Field A11 is located. Natural deposits of orange brown sand or clay lay at 0.2-0.8m below ground level.

A total of 11 trenches were opened in Field A11, with eight containing archaeology. Of these trenches six contained undated ditches, and three contained undated pits. Alluvial deposit of blue grey or grey brown sand clay were recorded in Trenches 1383 and 1384. Peat deposits of dark grey brown silt with a high organic content was recorded in Trench 1385.

A burnt mound (138408) was identified in Trench 1384, the burnt mound consisted of a black sand silt sealed by a layer of alluvium and measured approximately 3m by 1.8m and overlay a prehistoric deposit (138403), two stake holes (138409 and 138410) and a pit (138411). Deposit 138403 contained charred crop material including hulled barley grains, wheat grains and glume wheat chaff, in addition to charred wild or weed plant seeds such as blinks, sedges, heath grass, tubers and heather or ling stems.

A second burnt mound (23304) was identified in Trench 233, the burnt mound was not excavated but measured 2.45m by 1.8m, and was sealed by two alluvial deposits.

Trench 361 identified Ring gully (36106). The Ring gully consisted of a single continuous ring gully measuring 0.3m wide and 0.08m deep (Wessex Archaeology, 2016).

Hotspot16 targeted the location of Trench 1383 which contained evidence of Prehistoric activity comprising three pits and a ditch. It was suggested that the features were ephemeral Prehistoric settlement features dating to between the Neolithic and Bronze Age.

### 2.6 Original Aims and Objectives

According to the WSI (Horizon Nuclear Power, 2016: 2017), the general aim of the excavations at the Wylfa Newydd development site was to gather additional information of the extent, condition,

depth, character, quality, stratigraphic sequence and date of the archaeological remains within the excavation areas and to preserve the revealed remains, in record, in anticipation that their physical remains may be destroyed by future development works. The results of the investigations are to be disseminated through the deposition of an ordered archive at suitable repositories for both physical and digital material, the deposition of a detailed report at the Historic Environment Record and the production of a publication article, at a level of detail appropriate to the significance of the results.

### 2.6.1 Archaeological Strip, Map and Sample Aims

- 1. To ensure the adequate recording of any archaeological remains revealed by the strip map and sample work.
- 2. To identify, investigate and record the character, nature, extent and relationships of the archaeological remains discovered, to the extent possible by the methods put forward in the specification.
- 3. To determine (so far as possible) the stratigraphic sequence and dating of the deposits or features identified.
- 4. To integrate the results of the work into the wider historic and archaeological context of the landscape and to address relevant regional research objectives where applicable and so far as is possible.
- 5. To disseminate the results through deposition of an ordered archive at the suitable repositories for both physical and digital material, the deposition of a detailed report at the Historic Environment Record (HER) and publication at a level of detail appropriate to the significance of the results.
- 6. To undertake the works in such a way as to allow sufficient data to be gathered to address the various research objectives outlined below. This includes the investigation and recording of features, the identification, recording and collection of artefacts and ecofacts (including environmental samples) and the use of appropriate analytical methodologies/techniques when examining the record/artefacts.

### 2.6.2 Archaeological Strip, Map and Sample Objectives

The relevant archaeological framework documents identified in the WSI (Horizon Nuclear Power, 2016: 2017) were:

- Review of the Research Framework for the Archaeology of Wales: North West Wales Neolithic and Early Bronze Age (Burrow, 2010);
- Review of the Research Framework for the Archaeology of Wales: North West Wales Later Bronze Age and Iron Age (Gale, 2010);
- A Research Framework for the Archaeology of Wales Romano British (AD 43-AD 410) (Davies, 2017);
- A Research Framework for the Archaeology of Wales: North West Wales Early Medieval c. AD 400-1070 (Edwards *et al.*, 2016); and
- A Research Framework for the Archaeology of Wales: North West Wales Medieval c.AD 1100 1539 (Longley, 2010).

Due to the discovery of a burnt mound and ring gulley during the evaluation, the following, relevant, research objectives (RO) were identified:

- 1. The setting of the information gained from archaeological investigation into a broader regional and national (including Britain and Ireland) context;
- 2. Gaining insights into the local farming economy and the wider exploitation of the natural environment with particular reference to the exploitation of lakes and fens/bogs (such as the adjacent Tre'r Gof SSSI site) and the sea; and
- 3. Gaining insights into long distance trade (via the analysis of recovered artefacts) especially in such products as pottery, glass and metalwork.

As the evaluation revealed pits and diches believed to be ephemeral Prehistoric features, and the excavation recovered lithics and post-medieval pottery the relevant archaeological research questions stated below were identified in the WSI for Strip, Map and Sample areas (Horizon Nuclear Power, 2017).

### Prehistoric;

- Q.1. Are the possible structural features associated with isolated structures or part of a larger settlement?
- Q.3. What is the functional and stratigraphic relationship between the burnt mounds/spreads and other spatially associated features in particular reference to possible structural features (post holes) and ditch type features ('troughs')?
- Q.4. What relationships or patterns, if any, can been seen between these Prehistoric features and their wider landscape setting?
- Q.8. What types of artefacts are present in the SMS zones?
- Q.9. What can these artefacts tell us about daily life and ritual activity?
- Q.10. Were those artefacts, which may be found in the SMS Zones, produced locally?

The excavations, however, revealed archaeological results differing from those observed during evaluation. Additionally, there are seven farmsteads within the Wylfa Newydd Development Area (Jacobs, 2015: Assets 119, 146, 154, 173, 225, 263, 286). Land drains and enclosure ditches associated with these farmsteads, as well as other agricultural features and artefacts of a post medieval to modern date not directly associated with these assets were identified in both SMS zones. Therefore, the following questions should also be addressed:

- Q.11. What can the ditches and land drains tell us about the process of enclosure and land improvement in the post-medieval to the modern periods in the SMS zones?
- Q.12. What evidence is there for the types of farming and land use in this area in the postmedieval and modern periods in the SMS zones?
- Q.13. What can artefacts indicative of the material culture of the medieval, post-medieval and modern periods, in these zones, tell us about the connections between this area and the wider world through trade and consumption?

### 2.7 Field Methodology

The investigations were undertaken in accordance with the scope and methodology outlined in the WSI (Horizon Nuclear Power, 2016: 2017), and as described in the Site Summary Report (ABA, 2018). All works complied to ClfA's best practice guidance, regulations and standards (ClfA, 2014b: 2014c).

### 2.7.1 Surveying and Setting Out

The original excavation area was set out by Jones Brothers Balfour Beatty Joint Venture (JBBBJV). The excavation area and all archaeological features were subsequently surveyed by ABA using a Leica Viva GPS system, all surveys were tied into the Ordnance Survey National Grid.

### 2.7.2 Excavation and Sampling

### 2.7.2.1 Mechanical Excavation

All mechanical excavation and stripping works were overseen by ABA. Topsoil and other overburden were removed using a tracked 360° excavator fitted with a toothless ditching bucket. Mechanical excavation proceeded to a depth sufficient to address the objectives of the excavation. Mechanical excavation ceased when the first archaeologically significant horizon was encountered or when the absence of any archaeological 'horizon' was adequately demonstrated. Spoil from the stripping operations were stockpiled in bunds outside of the archaeological excavation area. After the completion of mechanical excavation, both the spoil heaps and the stripped surface were scanned with a metal detector and visually inspected. Any artefacts of potential archaeological interest identified were recovered and their location accurately recorded (Horizon Nuclear Power, 2016; ABA, 2018).

### 2.7.2.2 Hand Excavation

After the removal of deposits overlying the archaeological horizon, the area was manually cleaned, and all features investigated and recorded. As pre-excavation plans of all visible features were prepared by GPS survey; this was printed out and brought to site to be checked and enhanced by hand planning. Unstratified artefacts or small finds exposed during the cleaning were collected. All hand cleaned surfaces, features and archaeological layers were scanned for metal object signals using a metal detector. Excavation priorities were assessed by taking these signals into account (ABA, 2018).

All non-funerary type archaeological remains were excavated in accordance with the following strategy:

- Positive features likely to obscure earlier archaeological features 100%;
- Discrete negative features of less than 1m in diameter at least 50% by area in addition to all stratigraphic relationships;
- Discrete negative features of more than 1m in diameter at least 50% by area in addition to all stratigraphic relationships;
- Discrete negative features containing good artefact assemblages 100%;
- Non-structural linear negative features at least 10% by area in addition to all stratigraphic relationships and termini;
- Structural negative features 100% unless otherwise agreed with the Consultant;
- Hearths, pyre remains or other features with evidence of deliberate in situ heating 100%;
- All intersections between features, all terminals of linear features, and all other features 25% unless otherwise agreed with the Consultant; and

• The location of all small finds, except for those discovered within discrete features, were recorded in 3D by a GPS system tied into the OS NGR system, with an accuracy of ± 5mm.

### 2.7.2.3 Recording

All excavated contexts were fully recorded in line with the standards set out in the WSI (Horizon Nuclear Power, 2016) using appropriate ABA pro-forma recording sheets:

- A complete drawn record of archaeological features and deposits was compiled this included both plans and sections, drawn to appropriate scales (1:20 for plans, 1:10 for sections). The Ordnance Datum (OD) height of all principal features and levels were calculated and plans/sections have been annotated with OD heights;
- All photogrammetry and drawing control points were located in 3D by a GPS system tied into the OS NGR system, with an accuracy of ± 5mm; and
- The photographic record was compiled using digital cameras equipped with an image sensor of not less than 10 megapixels, these were taken as high-quality JPEG and RAW images, TIFF images will be created from RAW files for final archiving. Digital images were subject to managed quality control, curation processes which will embed appropriate metadata within the image and ensure long term accessibility of the image.

### 2.7.2.4 Paleoenvironmental Sampling

General environmental sampling was undertaken in accordance with Historic England's (2011) environmental archaeology guide in sampling methods for post-excavation analysis (ABA, 2018).

• Bulk environmental soil samples for plant macro fossils, small animal bones and other small artefacts were taken from appropriate well sealed and dated/datable archaeological contexts.

### 2.7.3 Archiving

The creation, compilation, transfer and deposition of the archaeological archive followed the regulations of the Chartered Institute for Archaeologists Standards and Guidance (ClfA, 2014a; 2014b). At the time of writing the finds assemblage was under the curatorship of WA, and the digital and paper archive under the curatorship of ABA. Upon completion of the project the paper archive and all digital data including photographs will be lodged with the Royal Commission on Ancient and Historical Monuments of Wales (RCAHMW) in Aberystwyth. Digital copies of the report will be submitted to Horizon who will then distribute it to stakeholders. Printed versions will only be produced if specifically requested. ABA will hold a digital version of the archive indefinitely.

# 3 Excavation Results

During the excavation of Hotspot 16 (EVENT PRN 46047) a number of features, some dating from the Late Iron Age to Early Roman period, were identified including six pits, a ditch, and four other features later deemed natural due to their irregular shape and diffuse fill (*Figure 3*). The results were first described in the ABA 2018 site summary report.

### 3.1 Quantification of Excavation Data

Data Category	Number
Context	31
Small finds	8 (1054.6g / 1.0546kg)
Environmental samples	7 (280ltr / 28 buckets)
Digital photographs	21 JPEG / 21 NEF
Rectified photographs	25.9 GB
GPS surveyed digital data	740 KB
Hand drawn plans	9
Hand drawn sections	10

### Allocated PRNs

PRN	Feature
HER PRN GAT 91878	Pits
HER PRN GAT 91879	Post-Medieval Pits
HER PRN GAT 91880	Pits & Ditch

### 3.2 Phasing/Stratigraphic Sequence

Post-excavation work involved checking and collating the site records, grouping contexts and phasing the stratigraphic data. A stratigraphic Harris Matrix was constructed from this data and included as Appendix VII. A total of 31 contexts (*Appendix III*) were identified during the Hotspot 16 excavation. Based on the results of the excavation three potential phases and/or groups of activity were identified within the limits of Hotspot 16:

- 1. Period 4/5 Late Iron Age/Romano-British;
- 2. Period 7 Post-Medieval; and
- 3. Undated.

Period	Dates
0 Natural	
1 Palaeolithic to Mesolithic	250 000 - 4000 BC
2 Neolithic to Early Bronze Age	4000 - 1500 BC
3 Late Bronze Age to Iron Age	1500 BC - AD 43
4 Roman	AD 43-410
5 Early Medieval	AD 410 - 1100
6 Medieval	AD 1100 - 1539
7 Post-medieval	AD 1539 - 1750
8 Industrial and Modern	AD 1750 - present
Undated	

### 3.2.1 Period 4/5 - Late Iron Age/Roman Pits and feature [116.0002] (HER PRN GAT 91878)

Situated in a wetland area and cut into natural alluvial deposits, circular pit [116.0005] had moderately steep sides and a concave base. It measured 0.90m in diameter and 0.37m in depth, and contained two fills. The primary fill (116.0004) was a soft dark red brown clay silt with small sub angular stones, measured 0.23m in depth, and contained twigs (Figures 4 and 5). The secondary fill (116.0003) was a soft mid grey brown clay silt with infrequent small sub angular stones and measured 0.14m in depth. It was likely filled by a natural silting process with alluvial deposits being washed back into the feature. Radiocarbon dating of organic material recovered

from the secondary fill (115.0003) of pit [116.0005] returned a Late Iron Age to Early Roman date of *c*. 55 BC - 70 AD.

Located east of pit [116.0005], two other irregular shaped features were excavated and also dated to the Late Iron Age to Early Roman period. Pit [116.0012] was truncated by an evaluation trench. It was sub-circular measuring 2.0m in diameter and 0.42m in depth with steep, irregular and sometimes undercutting sides leading gradually to a flat base. The pit contained two fills. The primary fill (116.0011) consisted of soft dark green brown silt clay and measured 0.23m in depth. This deposit was dated to *c*. 166 cal BC – 20 cal AD. The secondary fill (116.0010) was a soft mid grey brown silt clay with occasional inclusions of sub angular stone and measured 0.19m in depth. Both fills were likely filled by a natural silting process and contained organic material in the form of roots. Feature [116.0002] was considered natural due to its irregular shape and single diffuse fill (116.0001) which was dated to *c*. 55 BC – 70 AD. The cut measured 1.89m in length, was 1.8m wide and 0.1m deep.

### 3.2.2 Period 7 - Post-Medieval Pits (HER PRN GAT 91879)

Located south of pit [116.0005], a subcircular pit [116.0016] measuring 1.60m in diameter and 0.30m deep was excavated. The pit had gradually sloping sides leading gradually to a flat base. It was filled by primary fill (116.0015), a 0.04m thick deposit of red grey clay, possible forming a lining for the base of pit though it did not cover the entire base. The secondary fill (116.0014), a 0.06m to 0.10m thick deposit of mid-blue grey clay, may represent a relining of the pit. Tertiary fill (116.0013) was 0.2m thick and consisted of large, loose schist stone in a grey silt clay matrix, the lower stones in this fill had deformed the clay layer (116.0014) below (*Figures 6 and 7*). Six sherds of post-medieval pottery (SF003) were recovered from fill (116.0013).

### 3.2.3 Undated Pits and Ditch [116.0018] (HER PRN GAT 91880)

A second shallow circular pit [116.008], located north-west of [116.0005], was also cut into natural alluvial deposits, it had a shallow depth of 0.15m and may have been truncated by later activity. It measured 0.71m in diameter and was filled by a compact dark grey brown silt clay with small pebbles (116.0009).

A small semi-circular pit [116.0020] located in the north-east corner of the site, with steep sides and a flat base measuring 0.80m in diameter and 0.40m in depth, was truncated on its west side by linear ditch [116.0018]. Pit [116.0022], located west of [116.0020] measured 1.96m in diameter and 0.28m in depth was circular in plan with gradually sloping sides and an undulating base. Its fill

(116.0021) was compacted dark grey brown clay with large schists stones concentrated at its base and was also cut by ditch [116.0018], on its east side. Ditch [116.0018] was orientated north to south and was cut at its southern end by evaluation Trench 1383 and did not continue beyond the trench. It measured 0.90m wide and 0.40m in depth, it had near vertical sides with a concave yet undulating base. It was filled (116.0017) with a firm mid grey clay.

A large oval pit [116.0025], situated to the east of [116.0022], had concave sides and an undulating base. It had a primary fill (116.0023) of compact black grey silt clay with a significant amount of charcoal inclusions (Plate 1). The upper fill (116.0024) consisted of a brown grey silt clay and contained a large piece of possibly worked wood. The wood was not structural within the pit and was likely part of the backfill.



Plate 1. Mid excavation through pit [116.0025], showing wood fragments (SF004). View from the North, 1m scale.







# 4 Assessment of Potential and Significance

All finds were treated in accordance with the guidelines set out in Watkinson and Neal's (2001) and ClfA's (2014a; 2014b) standards and guidelines in collecting, packaging and documenting of archaeological materials. The finds assemblage and environmental samples were handed over to WA in April 2019 for curation and assessment of potential. All processing of artefact and ecofacts were undertaken away from site. At the time of writing the finds assemblage was under the curatorship of WA.

### 4.1 Finds Assessment

During the excavation of Hotspot 16 a total of eight small find numbers (SF) were assigned to 14 artefacts with a combined weight of 874g. The finds assessment was compiled by Sue Thompson, with contributions from Miguel Gonzalez. The full Finds Assessment Report is included as Appendix IV.

### 4.1.1 Post-Medieval pottery

Six (158g) post-medieval pottery sherds were recovered from the site. The pottery was in moderate condition, and several refitting sherds were noted. SF003, consisting of five sherds of Buckley ware from pit [116.0016] are from the same storage jar (BUCK), with a very hard fired red earthenware, brown-black glaze and had frequent inclusions of small stones. One unstratified rim sherd (SF006) of brown glazed coarse red earthenware (CRE) represented a large bowl or pancheon.

The pottery is typical of household utilitarian items dating the 18th and 19th century, and of low archaeological interest. No further analysis was recommended.

### 4.1.2 Lithics

Two lithics were recovered during the excavation; SF007 was unstratified, and SF001 from subsoil context. SF001 consist of a mesial fragment of a polished axe made of volcanic tuff, defined as thick-butted (type A) with a double-convex cross section. SF007 was a primary blade made of local fine-grained black chert. The technological and typological aspects of the assemblage indicate a Neolithic date. Further work may be warranted should the project proceed to publication.

### 4.1.3 Stone

One unstratified fragment (SF008) of fine-grained grey stone was recovered, weighing 37g. The fragment displayed surface wear but did not appear to be worked and is not archaeological. No further analysis was recommended.

### 4.1.4 Wood

Two unstratified wood artefacts, SF002 and SF004, were recovered and had a combined weight of 600g. SF002 comprised an unworked fragment of possible rooting. SF004 consisted of degraded

fragments of timber, the function of which is unknown, with no identifiable tool marks. Further analysis could include radiocarbon dating and species identification of SF004 if required.

### 4.2 Palaeoenvironmental Assessment

A total of seven bulk environmental samples, weighing 289kg, were taken during the excavation of Hotspot 16, and were processed by WA. Samples were processed according to guidelines stipulated in the Wardell Armstrong LLP. Technical Manual No. 2 (2018) and Wardell Armstrong (2019) [*Appendix V*]. The assessment identified the significance and potential of the material for further analysis, and provided identification to species where practical to do so on material selected for radiocarbon dating. The full report by Freddie Sisson is included as Appendix V. No magnetic material, bone or shell fragments were recovered from the environmental samples.

### 4.2.1 Results

Overall, the samples were dominated by a sand silt sediment matrix. No artefactual material was recovered from the dried residues. The material recovered from the flots is outlined below.

### 4.2.1.1 Charred Plant Remains (CPR)

The environmental samples yielded 12 CPR in poor condition from sample <1> an organic fill of the ditch terminus (116.0003), sample <3> from pit [116.0002], and sample <5> the fill of pit [116.0012]. Due to paucity and poor preservation the CPR they can give no meaningful discussion about the site or wider palaeoecological practices and is not suitable for further analysis.

### 4.2.1.2 Charcoal

Charcoal was present in four samples, in poor condition, with a combined weight of less than 1g. Due to poor preservation the charcoal is not suitable for further analysis.

### 4.2.1.3 Wood

Wood was recovered from two samples. Sample <1> an organic fill of the ditch terminus (116.0003) yielded 3g. Sample <5> the fill of pit [116.0012] yielded 45 g and appears to be a natural deposit. The wood was in a good to poor state of preservation and offers little discussion, although the best preserved ecofact recovered came from the top fill of [116.0012]. The wood from sample <1> consisted of small fragments and offers no further potential. The wood from sample <5> appeared to be a natural deposit and not of archaeological significance.

### 4.3 Radiocarbon Dating Results

Samples for radiocarbon dating were selected based on the archaeology of the site, i.e. selecting viable contexts that would yield useful information, and the results obtained from bulk environmental sample assessment, i.e. selecting suitable material for dating from the samples

obtained from the selected contexts. Based on this criteria three samples were submitted for radiocarbon dating. The samples were sent to Beta Analytic Radiocarbon Dating Laboratory for analysis. Prior to dating, it was suggested that the charcoal samples were identified to species to select the shorter-lived species to mitigate against the potential 'old wood effect' that may present a radiocarbon date range older than the feature. In the absence of single growth entities such as charred plant remains and hazel nutshell fragments, charcoal was chosen for radiocarbon determinations. Where no short-lived species were observed the youngest i.e. twig, branch or periderm fragments from longer-lived species such as oak were selected (*Appendix V*). The results are presented in Appendix VI, and summarised below:

Sample	Context	Material	Date (probability %)	Period
1	116 0003 fill of pit	Barlov	55 cal BC –	Late Iron Age – Early
1	110.0003 – fill of pit	balley	70 cal AD (95.4%)	Roman
3	116.0001 – fill of pit Barl	Parlov	55cal BC –	Late Iron Age – Early
		balley	70 cal AD (94.8%)	Roman
5	116.0011 – fill of pit Indeterminate	Indotorminato	166 cal BC –	Late Iron Age
5		indeterminate	20 cal AD (95.4%)	Late II OII Age

# 5 Discussion and Statement of Potential

The Hotspot 16 excavation targeted three pits, a ditch and the edge of a gravel island discovered during the evaluation, with the suggestion that they were ephemeral Prehistoric settlement features roughly dated between the Neolithic and Bronze Age (Wessex Archaeology, 2016). Upon excavation six pits and a ditch were investigated. The majority of the finds assemblage dates from the late post-medieval to modern periods.

Evidence of Prehistoric activity was not identified in secured contexts associated with features but was demonstrated by unstratified worked lithic finds consisting of a polished stone axe (SF001), lithic fragments and stone finds, likely dating to the Neolithic period. Though limited, the Prehistoric artefacts are of local interest and should be considered along with similar object recovered from nearby sites on the Wylfa Newydd development site and further afield.

Radiocarbon dating of Barley and indeterminate charred plant remains recovered from pit [116.005] and [116.0012], and feature [116.0002] revealed Late Iron Age to Roman dates. The material dated was described as being in poor condition and generally considered as unsuitable for radiocarbon dating, the consistency in dates obtained from multiple features suggests that this may not be the case.

The stone filled pit [116.0016] contained post-medieval pottery sherds (SF003), suggesting a postmedieval date for this feature and is of little archaeological value. The remaining pits and ditch are undated, and due to the poor preservation and paucity of charred plant remains and charcoal samples, the likelihood of radiocarbon dating of these features is small. Determining a definite chronology for the archaeological remains recorded during the excavation from the feature typology, lack of stratified finds, and scarcity of suitable samples for radiocarbon dating is problematic.

It is evident from the excavation of Hotspot 16 that the surrounding area has potential for similar archaeological deposits. The waterlogged nature of the ground to the east of the excavation could also potentially hold a wealth of palaeoenvironmental information which could aid understanding of the development of the surrounding landscape and increase understanding of completed and future archaeological excavations.

### 5.1 Conclusion and Realisation of Original Aims and Objectives

The original aims and objectives stated in section 2.6 has largely been met in that material was recovered during the Hotspot 16 excavation to date evidence of past activities. During the excavation possible Late Iron Age/Roman features and pits, post-medieval pits, undated pits, and ditch were revealed. Recovered artefacts included lithics, post-medieval pottery and fragments of wood. The paucity and poor preservation of charred plant remains were deemed unsuitable for further analysis but Barley was identified and successfully dated suggesting further analysis may be possible to advance understanding of the past environment and land use at the site. Due to the limited number of datable features and artefacts of archaeological value the information obtained during the assessment is limited. However, the excavation and assessment has revealed a site which has archaeological potential that requires further analysis to properly understand the archaeological features identified and how they relate to their wider setting. To fulfil the potential of the site data the updated objectives and research questions have been set out below to provide a framework for the proposed further analysis. Addressing the aims and objectives will be achieved through a detailed examination of the stratigraphy and contextual analysis of the datable finds.

### Prehistoric;

- 1. What relationships or patterns, if any, can been seen between these Prehistoric features and their wider landscape setting?
- 2. What types of artefacts are present in the SMS zones?
- 3. What can these artefacts tell us about daily life and ritual activity?
- 4. Were those artefacts, which may be found in the SMS Zones, produced locally?

### Post-Medieval;

- 1. What can the ditches and land drains tell us about the process of enclosure and land improvement in the post-medieval to the modern periods in the SMS zones?
- 2. What evidence is there for the types of farming and land use in this area in the post-medieval and modern periods in the SMS zones?
- 3. What can artefacts indicative of the material culture of the medieval, post-medieval and modern periods, in these zones, tell us about the connections between this area and the wider world through trade and consumption?

# 6 Proposal for Further Work

The results from the investigation of the Prehistoric assemblage is of local interest and should be considered along with similar findings from neighbouring archaeological areas. It is proposed that a detailed site report, incorporating stratigraphic and further specialist analysis as recommended by the specialist assessment reports (*Appendix IV and V*) are produced:

- Lithics Further work may be warranted should the project proceed to publication; analyses may include comparative research with the other archaeological sites at Wylfa and illustration.
- Wood Further analysis could include radiocarbon dating and species identification of SF004.

# 7 Storage and Archive Deposition

At the time of writing the paper and digital archive was held at the ABA offices in Bangor, Gwynedd. The finds assemblage and environmental samples were under the curatorship of WA. Upon completion of the project, and with agreement with HNP and the relevant stakeholders, the paper archive and digital data, including photographs will be lodged with the Royal Commission on Ancient and Historical Monuments of Wales (RCAHMW) in Aberystwyth, under an accession number yet to be assigned. ABA will hold a digital version of the archive indefinitely.

# Bibliography

Archaeoleg Brython Archaeology (ABA). 2017. *Wylfa Newydd Cemetery. Method statement for archaeological excavation*. Report B1703.01.01.

Archaeoleg Brython Archaeology (ABA). 2018. *Site Summary Report Hotspot 16; Wylfa archaeological works on behalf of Horizon Nuclear Power*. Report WYN-BRY-CON-REP-00004 v1.2.

Archaeological Services (WYAS). 2015. *Wylfa Newydd Proposed New Nuclear Power Station Anglesey Geophysical Survey*. Report 2720.

Burrow, S. 2010. A Research Framework for the Archaeology of Wales: Neolithic and earlier Bronze Age. [online] Available

at <u>https://www.archaeoleg.org.uk/pdf/reviewdocs/neolithicbibliography.pdf</u> [Last accessed September 2019].

British Geological Survey: Geology of Britain Viewer. NERC Science of the Environment [online] Available at <u>https://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html</u> [Last accessed September 2019].

Charted Institute for Archeologist (CIfA). 2014a. *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives*. Reading: CIfA [online] Available at <u>https://www.archaeologists.net/sites/default/files/CIFAS&GArchives\_2.pdf</u> [Last accessed September 2019].

Charted Institute for Archeologist (CIfA). 2014b. *Standard and guidance for the collection, documentation, conservation and research of archaeological materials*. Reading: CIfA [online] Available at <u>https://www.archaeologists.net/sites/default/files/CIfAS&GFinds\_1.pdf</u> [Last accessed September 2019].

Charted Institute for Archeologist (CIfA). 2014c. Standard and guidance for archaeological excavation. Reading: CIfA [online] Available

at <u>https://www.archaeologists.net/sites/default/files/ClfAS&GExcavation\_1.pdf</u> [Last accessed September 2019].

Cooke, R., Davidson, J. and Hopewell, D. 2012. *Proposed Nuclear Power Station Wylfa, Ynys Môn: Archaeological Baseline Assessment Report*. GAT report 999.

Davies, J.L. 2017. A Research Framework for the Archaeology of Wales - Refresh of the Research Framework for the Archaeology of Wales: Romano British (AD 43-AD 410). [online] Available at <u>https://www.archaeoleg.org.uk/pdf/review2017/romanreview2017.pdf</u> [Last accessed September 2019].

Department for Energy and Climate Change. 2011. Overarching Policy Statement for Energy (EN-1). The Stationary Office: London.

Edwards, N., Davies, D. and Hemer, K.A. 2016. A Research Framework for the Archaeology of Wales: North West Wales - Early Medieval c. AD 410-1070 Research Framework for the Archaeology of Wales. [online] Available

at <u>https://www.archaeoleg.org.uk/pdf/refresh2016/earlymedrefresh2016.pdf</u> [Last accessed September 2019].

Gale, F. 2010. Review of the Research Framework for the Archaeology of Wales: North West Wales – Later Bronze Age and Iron Age: Summary of comments on Late Bronze Age/Iron Age Research Agenda.

Headland Archaeology. 2017. Wylfa Newydd Proposed New Nuclear Power Station. Archaeological Trial Trenching: Post-Excavation Assessment and Updated Project Design.

Headland Archaeology. 2018. Wylfa Newydd Proposed New Nuclear Power Station. Archaeological Trial Trenching: Post-Excavation Assessment and Updated Project Design - Final.

Historic England (formerly English Heritage). 2011. Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (second edition). [online] Available at <u>https://historicengland.org.uk/images-books/publications/environmental-archaeology/</u> [Last accessed September 2019].

Hopewell, D. 2011a. *Preliminary Outline Interpretation of Potential Archaeological Magnetic Gradient Anomalies in Phase 1 Area, Wylfa*. GAT report 936.

Hopewell, D. 2011b. *Proposed Nuclear Power Station, Wylfa, Ynys Mon. Archaeological Evaluation: Targeted Geophysics.* GAT report 987.

Hopewell, D. 2012. *Proposed Nuclear Power Station, Wylfa, Ynys Mon. Archaeological Evaluation: Geophysical Survey, Interim report.* GAT report 1019.

Horizon Nuclear Power. 2016. Written Scheme of Investigation for Archaeological Excavation of Potential Cemetery Site.

Horizon Nuclear Power. 2017. Written Scheme of Investigation: Archaeological Strip Map and Sample and Paleoenvironmental Assessment.

Jacobs UK Ltd. 2015. *Wylfa Newydd Proposed New Nuclear Power Station*. *Cultural Heritage Desk-Based Survey*. Winnersh Report WN03.03.01-S5-PAC-REP-00016.

Longley, D. 2010. A Research Framework for the Archaeology of Wales: North West Wales – Medieval c.AD 1100 – 1539 Research Framework for the Archaeology of Wales. [online] Available at <u>https://www.archaeoleg.org.uk/pdf/reviewdocs/medievalreview.pdf</u> [Last accessed September 2019].

Parry, I., Parry, L., Evans, R., Hopewell, D., Davidson, A., Williams, T. and Berks, T. 2012. *Arfordir Coastal Heritage: Final Report*. GAT report 1044.

Rees, C. and Jones, M. 2015. *Results of Targeted Archaeological Excavation at: Proposed Site for Ysgol y Llannau, Llanfaethlu*. C.R.Archaeology report CR84-2015.

Watkinson, D. and Neal, V., 1998. First aid for finds. Rescue. The British Archaeological Trust.

Wessex Archaeology. 2016. *Wylfa Newydd, Isle of Anglesey Archaeological Trial Trenching*. Ref 1940.59 v4.0.

# Appendix I

AB1703 Archaeoleg Brython Archaeology

Project Team

### AB1703 Archaeoleg Brython Archaeology Project Team

Francesca Allen James Fish Vanesa Alvarez Amy Gamman Jessica Baumgardner Catherine Godsiffe Edward Baxter Sergio Gomez-Carrion Alexandre Belvir Paul Hickman Dagmara Bialek Karen Hole Freya Blockley Vickki Hudson Ethan Bradley Rocio Jimenez Diaz **Rose Britton** Mark Jones Ciara Butler William Jones Florencia Cabral Trevor Jose Callum Knauf Harry Careless Kate Carlin Leslie Law Angel Anselmo Carrera **Timothy Lewis** Alonso Karl Macrow **Brett Connolly** Meagan Mangum Alexander Coogan Sharon Martin Sophie Cooledge Antonio Luis Martinez Rebecca Costella Rodriguez Brenton Culshaw Elena Matteacci Pedro da Silva Georgina Merckel Stuart Elder Lucy Morrison Thomas Eley Tomasz Moskal Marta Estanga Lopez de Alexis Mosley Murillas Ramon Navas Losada Lucia Fernandez Rabanal Cindy Nelson-Viljoen Sean Finlay-Scott Declan New

Tomasz Neyman Jennifer O'Donnell Edmund Palka **Craig Parkinson Gethyn Phillips** Jeannette Plummer Sires **Stephen Porter** Blazej Prus Gary Reid Clair Richardson Louis Roper Kurt Russell Karolina Saxerbo Sjoberg Victoria Scott James Sinclair Robert Slabonski Elena Stefani Stuart Stokes Luke Tremlett Michael Tunnicliffe Harri Twigg Kerri Waite April Williams **Edward Worsley** Luke Yates

# Appendix II

AB1703 Wylfa Newydd Early Clearance Works

Site Gazetteer
Appendix II – Gazetteer of sites excavated by ABA

Wylfa Head91809Lithic Scatter235752393877Early NeolithicFlint scatters consisting of a number of flint tools and debitage recovered from stoney layer (10.1954) that had evidence of being heat affectedWylfa HeadPits, Wylfa Head235746393880Early NeolithicTwo large pits [10.01372] and [10.1994] located in the north-western corner of site. Both pits were sub-circular in plan and possibly contemporary. Pit [10.1994] contained fire-cracked stone (10.1964) and the remains of a burring episode (10.2725) dug through two palaeosols (10.2621) and (10.2790). The assemblage was indicative of Mesolithic activity and included classic microlithic forms and bladelets. Radiocarbon dating of spit (10.2730) returned a Late Neolithic dateWylfa Head91811Lithic Scatter235765393810Early NeolithicWylfa HeadNeolithic Pits, Head235765393810Early Neolithicforms and bladelets. Radiocarbon dating of spit (10.2730) returned a Late Neolithic date Large pit excavated at the southern limit of site, possibly consisting of two intercutting pits [10.0010] and [10.0008]. The pit contained three Neolithic axes (SF1210, SF1211 and SF1212), whetstones (SF1035 to SF1037) and a cache of small polishing stonesWylfa Head91813Postholes235787393865Romano-BritishThree posthole groups, [10.2706], [10.2902] and [10.2902] was located along the southern edge of burnt daub patch (10.2614)Wylfa Head91814Roundhouse235790393863Romano-BritishRoundhouse located in the north-eastern section of site and consisted of burnt daub patch (10.22745]. The roundhouse was heavily truncated by later activity<	Area	PRN	Description	Easting	Northing	Period	Summary
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Wylfa HeadPits, Wylfa Pits, WylfaTwo large pits [10.01372] and [10.1994] located in the north-western corner of site. Both pits were sub-circular in plan and possibly contemporary. Pit [10.1994] contained fire-cracked stone (10.1964) and the remains of a burring episode (10.1996)Wylfa Head1235746393880Early Neolithicstone (10.1964) and the remains of a burring episode (10.1996)Wylfa Head91811Lithic Scatter235802393867Early NeolithicLithic scatters identified in test slot [10.2725] dug through two palaeosols (10.2621) and (10.2790). The assemblage was indicative of Mesolithic activity and included classic microlithic forms and bladelets. Radiocarbon dating of spit (10.2730) returned a Late Neolithic dateWylfa HeadNeolithic Pits, HeadEarly NeolithicEarly NeolithicLarge pit excavated at the southern limit of site, possibly consisting of two intercutting pits [10.0010] and [10.0008]. The pit contained three Neolithic axes (SF1210, SF1211 and SF1212), whetstones (SF1035 to SF1037) and a cache of small polishing stonesWylfa Head91812Wylfa Head235787393865Romano-BritishThree posthole groups, [10.2706], [10.2902] and [10.2902] was located along the southern edge of burnt daub patch (10.2614)Wylfa Head91814Roundhouse235790393863Romano-BritishRoundhouse located in the north-eastern section of site and consisted of burnt daub patch (10.2745]. The roundhouse was heavily truncated by later activity	Head	91809	Lithic Scatter	235752	393877	Early Neolithic	(10.1954) that had evidence of being heat affected
WylfaPits, Wylfawere sub-circular in plan and possibly contemporary. Pit [10.1994] contained fire-crackedHead91810Head235746393880Early Neolithicstone (10.1964) and the remains of a burring episode (10.1996)WylfaLithic Scatter235802393867Early NeolithicLithic scatters identified in test slot [10.2725] dug through two palaeosols (10.2621) and (10.2790). The assemblage was indicative of Mesolithic activity and included classic microlithic forms and bladelets. Radiocarbon dating of spit (10.2730) returned a Late Neolithic dateWylfaNeolithic Pits, HeadStarly NeolithicLarge pit excavated at the southern limit of site, possibly consisting of two intercutting pits [10.0010] and [10.0008]. The pit contained three Neolithic axes (SF1210, SF1211 and SF1212), whetstones (SF1035 to SF1037) and a cache of small polishing stonesWylfaNeolithic Pits, HeadStarly NeolithicThree posthole groups, [10.2706], [10.2902] and [10.2902] and [10.2902] was located along the southern edge of burnt daub patch (10.2614)WylfaRomano-BritishRoundhouse located in the north-eastern section of site and consisted of burnt daub patch (10.2745]. The roundhouse was heavily truncated by later activity							Two large pits [10.01372] and [10.1994] located in the north-western corner of site. Both pits
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Wylfa HeadNeolithic Pits, HeadSame and Same and Sam	Head	91810	Head	235/46	393880	Early Neolithic	stone (10.1964) and the remains of a burring episode (10.1996)
Wylfa(10.2790). The assemblage was indicative of Mesolithic activity and included classic microlithic forms and bladelets. Radiocarbon dating of spit (10.2730) returned a Late Neolithic dateHead91811Lithic Scatter235802393867Early Neolithicforms and bladelets. Radiocarbon dating of spit (10.2730) returned a Late Neolithic dateWylfaNeolithic Pits,Late Iron Age/EarlyNeolithicwhetstones (SF1035 to SF1037) and a cache of small polishing stonesWylfaLate Iron Age/EarlyLate Iron Age/EarlyThree posthole groups, [10.2706], [10.2902] and [10.2902] was located along the southernWylfaLate Iron Age/EarlyRomano-BritishRoundhouse located in the north-eastern section of site and consisted of burnt daub patchWylfaNeolithic235790393863Romano-BritishRoundhouse was heavily truncated by later activity	\\/.dfa						Lithic scatters identified in test slot [10.2/25] dug through two palaeosois (10.2621) and
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WylfaNeolithic Pits, HeadNeolithic Pits, 235765Sign of two intercenting pitsWylfa91812Wylfa Head235765393810Early Neolithic[10.0010] and [10.0008]. The pit contained three Neolithic axes (SF1210, SF1211 and SF1212), whetstones (SF1035 to SF1037) and a cache of small polishing stonesWylfaLate Iron Age/Early HeadLate Iron Age/Early 	Tieau	91011		233002	393007		Large nit excavated at the southern limit of site, possibly consisting of two intercutting nits
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Wylfa HeadPostholes235787393865Late Iron Age/Early Romano-Britishforming a triangle. Postholes groups [10.2706] and [10.2902] was located along the southern edge of burnt daub patch (10.2614)Wylfa Head91814Roundhouse235790393863Romano-BritishRoundhouse located in the north-eastern section of site and consisted of burnt daub patch (10.2614) and nearby postholes [10.2745], [10.2835], [10.2793], [10.2784], [10.2817] and							Three posthole groups, [10.2706], [10.2902] and [10.2910], each consist of three postholes
Head91813Postholes235787393865Romano-Britishedge of burnt daub patch (10.2614)WylfaLate Iron Age/EarlyLate Iron Age/EarlyRomano-BritishRoundhouse located in the north-eastern section of site and consisted of burnt daub patch (10.2614) and nearby postholes [10.2862], [10.2835], [10.2793], [10.2784], [10.2817] andHead91814Roundhouse235790393863Romano-British[10.2745]. The roundhouse was heavily truncated by later activity	Wylfa					Late Iron Age/Early	forming a triangle. Postholes groups [10.2706] and [10.2902] was located along the southern
WylfaRoundhouseRo	Head	91813	Postholes	235787	393865	Romano-British	edge of burnt daub patch (10.2614)
Wylfa      Late Iron Age/Early      (10.2614) and nearby postholes [10.2862], [10.2835], [10.2793], [10.2784], [10.2817] and        Head      91814      Roundhouse      235790      393863      Romano-British      [10.2745]. The roundhouse was heavily truncated by later activity							Roundhouse located in the north-eastern section of site and consisted of burnt daub patch
Head    91814    Roundhouse    235790    393863    Romano-British    [10.2745]. The roundhouse was heavily truncated by later activity	Wylfa					Late Iron Age/Early	(10.2614) and nearby postholes [10.2862], [10.2835], [10.2793], [10.2784], [10.2817] and
	Head	91814	Roundhouse	235790	393863	Romano-British	[10.2745]. The roundhouse was heavily truncated by later activity
East to west aligned ditch identified below later stone walls and located north-west of							East to west aligned ditch identified below later stone walls and located north-west of
Wylfa Late Iron Age/Early roundhouse (HER GAT PRN 91814). The ditch may represent an early boundary. Radiocarbon	Wylfa					Late Iron Age/Early	roundhouse (HER GAT PRN 91814). The ditch may represent an early boundary. Radiocarbon
Head  91815  Ditch  235778  393873  Romano-British  dating of fill (10.2610) returned a mid to late Roman date	Head	91815	Ditch	235778	393873	Romano-British	dating of fill (10.2610) returned a mid to late Roman date
Multi-post structure located in the north-west corner of site. Identified below later stone							Multi-post structure located in the north-west corner of site. Identified below later stone
structures and consisted of three rows of three post arranged equally and aligned with the			Multi post				structures and consisted of three rows of three post arranged equally and aligned with the
Wulfa Structure Late Iren Age/Early [10.0323] The central rew consisted of [10.0317] [10.0321] and [10.02777]. The most coutherly	Wulfa		Structuro			Late Iron Age/Early	[10.0222] The control row consisted of [10.0217] [10.0221] and [10.02777] The most southerly
Head 91816 (Granary) $235751$ 393873 Romano-British row consisted of [10.0296] [10.0183] and [10.0277]. The most southeny	Head	91816	(Granary)	235751	393873	Romano-British	row consisted of [10.0296] [10.0183] and [10.0187]
An enclosed settlement with substantial stone built walls forming the northern and eastern	Ticau	51010	(Granary)	233731	555075		An enclosed settlement with substantial stone built walls forming the northern and eastern
boundaries, presumably of a sub-square enclosure. A timber built roundhouse, heavily							boundaries, presumably of a sub-square enclosure. A timber built roundhouse, heavily
truncated by an early medieval cemetery, is likely to be contemporary. A number of internal							truncated by an early medieval cemetery, is likely to be contemporary. A number of internal
stone built structures were identified including sections of curving walls which could not be							stone built structures were identified including sections of curving walls which could not be
easily interpreted due to later truncation. A large stone lined pit (HER PRN GAT 91823) is likely							easily interpreted due to later truncation. A large stone lined pit (HER PRN GAT 91823) is likely
WylfaEnclosedLate Iron Age/Earlyto be contemporary with the settlement, although radiocarbon dating suggested it may be	Wylfa		Enclosed			Late Iron Age/Early	to be contemporary with the settlement, although radiocarbon dating suggested it may be
Head91817Settlement235781393862Romano-Britishlater.	Head	91817	Settlement	235781	393862	Romano-British	later.
Ring of 18 postholes with a small number of central postholes located on top of plateau							Ring of 18 postholes with a small number of central postholes located on top of plateau
occupied by later cemetery. Heavily truncated by later medieval burials. Radiocarbon dating of							occupied by later cemetery. Heavily truncated by later medieval burials. Radiocarbon dating of
Wylfa Late Iron Age/Early fill (10.1165) of posthole [10.1167] and fill (10.2008) of posthole [10.2007] returned a Late	Wylfa	01010		225770	202054	Late Iron Age/Early	fill (10.1165) of posthole [10.1167] and fill (10.2008) of posthole [10.2007] returned a Late
Head 91818 Roundhouse 235779 393854 Romano-British Roman date	Head	91818	Roundhouse	235779	393854	Romano-British	Koman date
Possible settlement reatures identified in the north-western section of site that are likely	\\/.lfa		Sattlamant			Lata Iran Aga/Early	Possible settlement reatures identified in the north-western section of site that are likely
Head 91819 Features 235742 393872 Romano-British included a stope lined drain [10.0845] nost holes and guillies	Head	01810	Features	235742	303873	Romano-British	included a stope lined drain [10.0845] post holes and guillies
Three rock-cut platforms with patched of heat discoloured bedrock was identified to the west	neau	51019	reatures	255742	39307Z	Normano-Diffusit	Three rock-cut platforms with patched of heat discoloured bedrock was identified to the west
Wylfa Late Iron Age/Farly of roundhouse (HER GAT PRN 91818) Radiocarbon dating of deposit (10.0439) returned a	Wylfa					Late Iron Age/Farly	of roundhouse (HER GAT PRN 91818). Badiocarbon dating of deposit (10.0439) returned a
Head 91820 Platforms 235746 393860 Romano-British middle Roman date	Head	91820	Platforms	235746	393860	Romano-British	middle Roman date

						Area of industrial activity identified north of southern boundary wall (10.2013), largely
Wylfa		Industrial			Late Iron Age/Early	truncated by the early medieval cemetery. Features included walls and postholes, suggesting
Head	91821	Activity	235768	393833	Romano-British	the presence of a structure, and pits containing slag.
Wylfa						A ditch [10.1022] at the western edge of the excavation area which was truncated by later
Head	91822	Ditch	235741	393883	Romano-British	activity but may have formed part of an enclosure system with ditch [10.1176].
						Large oval pit located within sub-rectangular structure (10.2782) north-east of roundhouse
Wylfa		Stone Lined			Late Iron Age/Early	(HER GAT PRN 91818). The pit contained a rectangular lining of large schist orthostats in base
Head	91823	Pit	235794	393858	Romano-British	of the cut with the western edge left open for access via a stepped slope
Wylfa	01001	<i>c</i> .	225770	202045		Early medieval cist cemetery that consisted of 315 graves. Human remains in varying degrees
Head	91824	Cemetery	235778	393845	Early Medieval	of preservation recovered from 109 graves representing 119 individuals
wyifa	01025	Dital	225770	202040	De et Meellevel (Meelewe	East-west aligned post medieval ditch pointed to square rock-cut shaft (HER GAT PRN 91826).
Head	91825	Ditch	235778	393849	Post-Medieval/Modern	I ne ditch truncated several early medieval graves. No dating evidence was recovered
Wyifa	01076	Chaft	225722	202051	Dest Medioval/Medern	KOCK-Cut shaft located on the crest of highest part of site to the west of post medieval ditch
пеац	91620	Shart	255752	292021	Post-Medieval/Modern	(HER GAT PRN 91625). No dating evidence was recovered
Wulfa		Pits and				sinal pits and post-noies which appeared to form structures, which leaves of fences and faid
Head	01827	Postholes	235732	303862	Undetermined date	area. No dating evidence was recovered
Tiedu	91027	1 03(10)63	233732	393002	Undetermined date	Three nits [07,0550] [07,0533] and [07,0477] that contained charceal and burnt stenes. Dit
						[07.0559] located porth-east of Eunerary Enclosure contained a burnt saddle guern
						(SE07.0013) two pieces of Graid Lwyd stope from Penmaenmawr (SE07.0014 and 07.0015) and
						a poliched ave (SE07 0012). Pit [07 0533] to the south of pit [07 0559] contained a poliched
Area 7	01878	Pits	234727	302882	Neolithic	stone (SE07.0010)
711007	51020	Partially	254727	572002		A hillton enclosure comprising roundhouse with associated partial enclosure ditch small
		Enclosed				ditches and gullies and group of nits and postholes likely representing a grapary structure
Area 7	91829	Settlement	234728	392926	Iron Age	concentrated in the northern part of the site
711007	51025	bettientent	23 17 20		lioninge	Early medieval cist cemetery with three square funerary enclosures excavated in the southern
						part of the site with a fourth heavily truncated by later activity (HER PRN GAT 91831 – 91834).
Area 7	91830	Cemeterv	234718	392898	Early Medieval	Fifty-one graves were excavated. No human remains were recovered.
						Funerary Enclosure 1 was located in the southern central area of the site and contained one
		Funerary				grave (G0.053). The largest of three complete enclosures with continuous ditch enclosing an
Area 7	91831	Enclosure	234715	392887	Early Medieval	area of 32 square metres
						Funerary Enclosure 2 was located south-east of the cemetery and contained three burials
		Funerary				(G07.031), (G07.032) and (G07.033). Identified by evaluation Trench 97. An entrance way or
Area 7	91832	Enclosure	234723	392880	Early Medieval	causeway was located on the eastern side
						Funerary Enclosure 3, the southernmost of the enclosures was the smallest and contained one
						large central grave (G07.054) and a smaller juvenile grave (G07.052) to the north. The
		Funerary				enclosure ditch enclosed an area of approximately 10.8 square metres. The entrance or
Area 7	91833	Enclosure	234715	392873	Early Medieval	causeway was located on the eastern side
						Funerary Enclosure 4 located to the west of funerary enclosure 1 contained one central grave
		Funerary				(G07.009). The enclosure ditch was heavily truncated to the east and west and enclosed an
Area 7	91834	Enclosure	234706	392890	Early Medieval	area of approximately 12 square metres
						Two groups of intercutting pits located to the west of funerary enclosure 3. Group 1 consisted
		Intercutting				of pits [07.0176], [07.0264] and [07.0367]. Group 2 consisted of pits [07.0542], [07.0177] and
Area 7	91835	Pits	234709	392877	Undetermined date	[07.0542]

						Two large ditches [07.0114] and [07.0115] traversed the southern edge of site along a north-
						west to south-east direction. They may have served as drainage ditches or delineated the
Area 7	91836	Ditches	234705	392872	Undetermined date	southern edge of the cemetery
						Deposit (08.0003) identified as burnt mound 21404 during evaluation. Heavey agricultural
						activity resulted in substantial plough damage. No dating evidence was recovered. Associated
					Middle to Late Bronze	trough [08.0019] located to the north-east and below the burnt mound contained one large
Area 8	91837	Burnt Mound	235186	392829	Age	loom weight (SF001) and charcoal.
						Double ditch field boundary, [08.0004] and [08.0006], aligned northwest to southeast running
						parallel to each other and continued beyond the limit of excavation. Both ditched contained
		Former				modern backfill and debris. Ditches identified as clawdd boundary 2116 during evaluation and
Area 8	91838	Boundary	235174	392831	Post-Medieval/Modern	same as HER PRN GAT 61137
Hotspot					Later Bronze Age to Iron	A large burnt mound, measuring approximately 25m x 14m, showing evidence of phases of
5	91839	Burnt Mound	234623	392652	Age	activity, along with a number of troughs including [105.0012] which was stone lined.
						Well [105.0071] located south of burnt mound (105.0022). Consisted of sub-circular pit with
Hotspot					Later Bronze Age to Iron	slightly undercut sides with some indication of stepping along eastern edge. Worked blue
5	91840	Possible Well	234622	392644	Age	schist stone (SF004) and chert (SF005) was recovered from fill (105.0070)
Hotspot						Sub-circular pit [105.0091] located at north-western section of burnt mound (105.0022) and
5	91841	Pit	234613	392658	Undetermined date	sealed by a discrete deposit of burnt mound material (105.0090). Function unknown
Hotspot					Neolithic to Early Bronze	Sub-circular pit [106.0034] located toward the eastern extend of site containing charcoal,
6	91842	Pit	234835	392703	Age	worked chert and flint.
						South-West to North-East aligned trackway [106.0008] which had a metalled stone surface,
Hotspot						may be same as trackway (HER PRN GAT 91851) observed in Hotspot 7-9. Pre-dates enclosure
6	91843	Trackway	234828	392706	Undetermined date	system in same area which was dated early medieval/medieval.
						Series of intercutting gullies recorded across site that may represent two square enclosures
						with entrances located to the north-west sides. The north east enclosure consisted of gullies
						[103.0005] and [106.0012]. Gully [106.0012] was truncated by [106.0010], which along with
						[106.0013] formed the south-west enclosure. Gully [106.0010] was truncated by ditch
						[106.0021]. The gullies and enclosure appear similar to those identified in Hotspot 7-9 (HER
Hotspot		Enclosure			Early medieval to	PRN GAT 91849) and Hotspot 11-13 (HER PRN GAT 91861). Struck flint (SF002) was recovered
6	91844	Gullies	234829	392704	medieval	from gully [106.0010]
						Group number (109.0101) consisted of a small pit and 35 stakeholes, likely forming a
						windbreak or small structure, located 7m north of burnt mound (HER PRN GAT 91846). Pit
						[109.0109] was cut into bedrock and contained firecracked stone, prehistoric pottery, grinding
Hotspot		Stakeholes			Neolithic/Early Bronze	stone and a flint scraper. Pit [109.0135] pre-dated the burnt mound activity. Pit [109.0125]
7-9	91845	and Pits	234863	392740	Age	contained a possible axe roughout.
						Burnt mound material (109.0154) identified as burnt mound (134508) in Trench 1345 during
Hotspot					Late Bronze Age to Iron	evaluation. Stretched across southern central part of site it contained a spindle whorl (SF020),
7-9	91846	Burnt Mound	234877	392737	Age	worked chert (SF021). Evidence of phasing lost due to later ploughing.
						Several features including a stone spread (109.0143) overlaying well [109.0214] cut below
						current ground water table with compacted stone surface (109.0210) abutting the stones of
Hotspot		Possible			Later Iron Age and	the well. These features may be associated with the Iron Age/Roman-British settlement
7-9	91847	Working Area	234883	392746	Romano British	identified in Hotspot 15 (HER PRN GAT 91875).
Hotspot		Pits, Gullies				Several features of indeterminate function including: northwest-southeast aligned linear gully
7-9	91848	and Ditches	234879	392750	Undetermined date	[109.0130] cutting through burnt mound (109.0154); ditch [109.0152], possibly a continuation

						of gully [109.0132]; north-east to south-west aligned ditch [109.0198] that cut pit [109.0204] and ditch [109.0207]; northeast to southwest aligned ditch [109.0207]; and pit [109.0205]. No
						dating evidence was recovered
						North-East to South-West aligned ditch [109.0008] located at northern end of site. It
Hotspot	01040	Dital	224062	202762	I la determe in e d'alete	continuing beyond limit of excavation and terminated north of the bedrock outcrop (HER PRN
7-9 Hotspot	91849	Ditch	234863	392763	Undetermined date	GAT 91850). Possible tool marks identified on outcrop of schict. Possible guarrying location for pearby
7-9	91850	Quarrying	234860	392751	Undetermined date	settlement and long-cist cemeteries.
						Short section of trackway (109.0085) running from the north-east to the south-west (continued
Hotspot	01051	Table	224064	202727	II. data and a data	beyond limit of excavation). May be the same as (HER PRN GAT 91843) located to the south-
/-9	91851	Trackway	234864	392/3/	Undetermined date	West.
потярот 7-9	91852	Pits	234865	392765	Undetermined date	A number of undated pits of no apparent function identified in Hotspot 7-9
1 2	51052	110	231005	572705	Undetermined	
Hotspot					date/Likely Romano	A surface of laid schist slabs, orientated North-South measuring approximately 2m x 1.5m.
. 8	91853	Stone Surface	234912	392781	British	Likely associated with Romano British features in the vicinity.
						Two ditches identified in Hotspot 8. Ditch [108.0035]=[108.043] was orientated North-South at
						the eastern side of the excavation area, it produced a Neolithic date and was cut by Late Iron
Hotspot	01054	Ditchoc	224007	202706	Undetermined (Neelithic	Age features. The western ditch [108.0011] was orientated north-east to south-west and was
0	91034	Ditches	234907	392700	Undetermined/Neolithic	A number of pits and postholes located at the south-eastern quarter of Hotspot 8. Likely to
Hotspot		Pits and				represent truncated postholes forming a structure, possibly a granary. Late Iron Age date
8	91855	Postholes	234908	392780	Late Iron Age	obtained from pit [108.0053].
Hotspot		Filed				A deposit of stones, likely representing field clearance identified at the southern limit of
8	91856	Clearance	234901	392774	Undetermined date	excavation.
Hotspot	01057	D.,	224022	202062	Late Neolithic Early	A discrete pit [110.017] which was radiocarbon dated to the Late Neolithic or Early Bronze Age,
10	91857	Pit	234933	392962	Bronze Age	1.3m in diameter and 0.45m deep.
						A series of four diffiched identified within the excavation area. The earliest by stratigraphy were
						orientated east-west. These were cut by a narrower ditch [110.007] orientated approximately
						north-south. Ditch [110.026]=[110.028], which was orientated north-east to south-west was
Hotspot						5m in length, terminated 0.5m north of ditch [110.020] and ran into the western baulk. The
10	91858	Ditches	234938	392956	Undetermined date	nature of the ditches suggests that they relate to a relict field systems.
		Pits,				
		Stakenoles,				A number of prohistoric features including a stope bank (112,0196), two nit groups and stope
Hotspot		and Stone				lined furnace or oven [113,0136] with associated stakeholes at the western side of the
11-13	91859	Bank	234958	392894	Neolithic	excavation area.
						An apparent square or rectangular enclosure with an entrance orientated to the south-east
Hotspot						was excavated at the north of the Hotspot. Stratigraphically pre-dated the early medieval
11-13	91860	Enclosure	234977	392902	Undetermined date	features.
Hoterset						Ditch [113.0032] pre dated the early medieval features and cut enclosure (HER PRN GAT
11_13	91861	Ditch	234969	302805	Undetermined date	orientation
1113	21001	Ditteri	23,700	572075	onacternineu uate	orientation

						The cemetery contained 21 graves aligned east-west, mostly long-cists, suggesting an early			
Hotspot						medieval date. No human remains were recovered, possibly due to the acidic nature of the			
11-13	91862	Cemetery	234967	392893	Early medieval	soil.			
Hotspot						At the southern extent of the excavation area a small east-west oriented ditch [113.0110]			
11-13	91863	Ditch	234979	392878	Undetermined date	which may have formed part of an enclosure system.			
Hotspot		Possible				A schist outcrop showing signs of possible quarrying. Could potentially be associated with			
12	91864	Quarrying	234952	392837	Undetermined date	Romano-British structures or early medieval long-cists in the wider area.			
Hotspot	01065	D''	224065	202020					
12	91865	Pit	234965	392838	Post-Medieval/Modern	A pit [112.0004] which contained a sherd of post-medieval white glazed pottery.			
Hotspot	01000	Wetland	224057	202727	Late Neolithic/Early	An area of wetland consolidation on the edge of marshy ground close to Early Bronze Age			
14	91866	Consolidation	234957	392727	Bronze Age	roundnouse (HER PRIN GAT 91868).			
Hotspot 14	91867	Pit	234964	392729	Undetermined date	(HER PRN GAT 91868).			
Hotspot					Late Neolithic/Early	A timber built roundhouse comprising post ring, central hearth and ring gulley with a			
14	91868	Roundhouse	234966	392727	Bronze Age	diameter of approximately 8m.			
						A group of pits at the northern end of the excavation area, stratigraphically earlier that the			
Hotspot						stone-built phase of the settlement. Function unknown, possibly Late Bronze Age/Early Iron			
15	91869	Pits	234936	392792	Undetermined date	Age.			
Hotspot					Late Bronze Age to Iron	A shallow ditch [115.0215] running north to south and underlying the eastern enclosure wall			
15	91881	Ditch	234941	392789	Age	may have formed part of an earlier enclosure associated with the pits and postholes.			
						A line of three, closely spaced postholes [115.0276], [115.0277] and [115.0278] near the north			
Hotspot						edge of the excavation may have been associated with each other but no clear function. Likely			
15	91882	Postholes	234938	392792	Undetermined date	Late Bronze Age/ Early Iron Age in date.			
						A group of nine postholes in the area which may form part of a sub rectangular structure (HER			
Hotspot	01070	Nine-Post	224026	202700	Demons - Dritish	PKN GAT 918/0); [115.0393], [115.0394], [115.0422], [115.0402], [115.0458], [115.0392], [115.0392],			
15	91870	Structure	234936	392789	Romano-British	[115.0391], [115.0346] and [115.0400]. Possible Granary.			
						Infee positiones, [115.0355], [115.0436] and [115.0361], located in the centre of the excavation			
Hotcoot						HEP DPN GAT 01875) As such those may be contemporary with the later stope built phase or			
15	01871	Postholes	234033	302782	Undetermined date	nedate it			
Hotspot	510/1	Post-Built	234755	572702					
15	91872	Structure	234937	392775	Undetermined date	A sub square post built structure, likely Iron Age/Romano-British in date.			
Hotspot						Three pits, [115.0420], [115.0300] and [115.0305], excavated to the south of structure (HER PRN			
15	91873	Pits	234935	392771	Undetermined date	GAT 91872)			
Hotspot						Three pits, [215.0009], [215.0021] and [215.0031], excavated at the southern end of Hotspot			
15 (W)	91874	Pits	234915	392760	Undetermined date	15W. Likely contemporary with features pre-dating stone built phase of settlement.			
						Stone-built roundhouse, well, raised floor building and a walled enclosure. A probable stone			
						building identified in Hotspot 15 West (215.0004) also likely relates to this phase of activity.			
						Radiocarbon dating of organic material recovered from occupation layer (215.0005) within this			
						stone building returned a Late Iron Age to middle Roman date of c. 4-130 AD. Twelve sherds of			
						pottery were also recovered from this occupation layer with many being identified as Black			
Hotspot		Stone Built			Late Iron Age/Romano-	Burnish Ware DOR BB1. It appears the settlement was abandoned after a large burning			
15	91875	Settlement	234934	392775	British	episode.			

						The convergence of two trackways associated with the stone-built settlement. Trackway
						[115.0072] ran north south, with its northern end indistinct whilst to the south it extended
						beyond the limit of excavation. Trackway [115.0005] ran northwest-southeast and extended
						beyond the eastern limit of excavation. These trackways consisted of stones and pebbles
Hotspot					Late Iron Age/Romano-	trampled into a shallow depression in the clay natural. Stratigraphically the trackways were
15	91876	Trackways	234943	392763	British	contemporary with the stone built settlement.
		Post-				Acitvity in the area following abandonment of the settlement. Represented by a rough stone
Hotspot		Settlement				surface and the capping of the well, a number of small postholes of undetermined function
15	91877	Activity	234936	392773	Undetermined date	likely represent later temporary structures or agricultural activity in the area.
Hotspot					Late Iron Age/Romano-	Three pits [116.0005], [116.0012] and [116.0002] which were cut into alluvial deposits. No
16	91878	Pits	234909	392600	British	artefacts recovered and function not apparent.
Hotspot						
16	91879	Pit	234906	392597	Post-Medieval/Modern	Pit containing sherds of post-medieval pottery.
						A number of undated features within excavation area. [116.0008] was a shallow pit which may
						have been truncated. Pit [116.0020] was truncated by ditch [116.0018]. Pit [116.0025]
Hotspot						contained charcoal and a fragment of preserved wood. No dating evidence was retrieved from
16	91880	Pits and Ditch	234915	392605	Undetermined date	any of the features.

# Appendix III

AB1703 Wylfa Newydd Early Clearance Works Hotspot 16 Context Register

# Appendix III. Hotspot 16 Context Register

Context #	Category	Feature	Length	Breadth	Diameter	Depth	Context description
		type	(m)	(m)	(m)	(m)	
116.0001	FILL	PIT	1.89	1.60	0	0.10	COMPACT DARK BROWN CLAY SILT
116.0002	CUT	PIT	1.89	1.60	0	0.10	IRREGULAR WITH GRADUALLY SLOPING SIDES AND AN IRREGULAR BASE
116.0003	FILL	PIT	0.89	0.90	0	0.14	SOFT MID GREY BROWN CLAY SILT WITH OCCASIONAL SMALL SUB ANGULAR STONES
116.0004	FILL	PIT	0.50	0.30	0	0.23	SOFT DARK RED BROWN CLAY SILT WITH OCCASIONAL SMALL SUB ANGULAR STONES
116.0005	CUT	PIT	0.99	0.90	0	0.37	SUB CIRCULAR WITH STEEP SIDES LEADING GRADUALLY TO A FLAT BASE
116.0006	FILL	PIT	2.26	0.64	0	0.08	SOFT MID BROWN GREY CLAY WITH FREQUENT MEDIUM SUB ANGULAR STONES
116.0007	CUT	PIT	2.26	0.64	0	0.08	IRREGULAR WITH GRADUALLY SLOPING SIDES AND AN IRREGULAR BASE
116.0008	СUТ	PIT	0.72	0.71	0	0.15	CIRCULAR WITH STEEP SIDES LEADING GRADUALLY TO AN UNDULATING BASE
116.0009	FILL	PIT	0.72	0.71	0	0.15	COMPACT DARK GREY BROWN SILT CLAY WITH SOME PEBBLES
116.0010	FILL	PIT	1.54	2.00	0	0.19	SOFT MID GREY BROWN SILT CLAY WITH OCCASIONAL MEDIUM TO LARGE ANGULAR AND SUB ANGULAR STONE
116.0011	FILL	PIT	1.52	2.00	0	0.23	SOFT DARK GREY BROWN SILT CLAY WITH OCCASIONAL SMALL TO LARGE STONE
116.0012	СUТ	PIT	1.54	2.00	0	0.42	SUB CIRCULAR WITH IRREGULAR UNDERCUT SIDES LEADING IRREGULARLY TO A FLAT BASE
116.0013	FILL	PIT	1.70	1.52	0	0.20	LOOSE LIGHT GREY SILT CLAY WITH FREQUENT LARGE STONES
116.0014	FILL	PIT	1.70	1.52	0	0.10	FIRM MID BLUE GREY CLAY WITH PEBBLES
116.0015	FILL	PIT	0	0	0.95	0.04	FIRM MID RED GREY SILT CLAY WITH OCCASIONAL SMALL AND MEDIUM STONES
116.0016	СUТ	PIT	1.70	1.52	0	0.30	SUB CIRCULAR WITH GRADUAL SIDES LEADING GRADUALLY TO A FLAT BASE

Context #	Category	Feature	Length	Breadth	Diameter	Depth	Context description
		type	(m)	(m)	(m)	(m)	
116.0017	FILL	DITCH	1.00	0.90	0	0.40	FIRM MID GREY CLAY WITH RARE SMALL SUB ANGULAR AND SUB
							ROUNDED STONES
116.0018	CUT	DITCH	1.00	0.90	0	0.40	NORTH TO SOUTH LINEAR WITH NEAR VERTICAL SIDES LEADING
							SUDDENLY TO A CONCAVE BASE
116.0019	FILL	PIT	0	0	0.80	0.40	FIRM MID BROWN GREY SAND SILT WITH COMMON SMALL SUB
							ANGULAR AND SUB ROUNDED STONES, AND OCCASIONAL MEDIUM
							ANGULAR STONE
116.0020	CUT	PIT	0	0	0.80	0.40	SEMI CIRCULAR WITH VERY STEEP SIDES LEADING SHARPLY TO A FLAT
							BASE
116.0021	FILL	PIT	2.04	1.60	0	0.28	COMPACT DARK GREY BROWN CLAY WITH OCCASIONAL MEDIUM AND
							LARGE SUB ANGULAR AND SUB ROUNDED STONES
116.0022	CUT	PIT	2.04	1.60	0	0.28	SUB CIRCULAR WITH GRADUAL SIDES LEADING GRADUALLY TO AN
							UNDULATING BASE
116.0023	FILL	PIT	1.50	1.30	0	0.30	COMPACT BROWN GREY SILT CLAY WITH OCCASIONAL CHARCOAL
116.0024	FILL	PIT	0.52	0	0	0.05	COMPACT BLACK GREY SILT CLAY WITH 15% CHARCOAL
116.0025	CUT	PIT	2.04	1.60	0	0.33	OVAL WITH STEEP SIDES LEADING GRADUALLY TO AN UNEVEN BASE
116.0026	FILL	DITCH	1.48	0.60	0	0.27	COMPACT DARK GREY BROWN CLAY WITH OCCASIONAL MEDIUM AND
							LARGE SUB ANGULAR AND SUB ROUNDED STONES
116.0027	CUT	DITCH	1.48	0.60	0	0.27	NORTH TO SOUTH LINEAR WITH GRADUAL SIDES LEADING
							IMPERCEPTIBLY TO AN UNDULATING BASE
116.0028	FILL	PIT	1.33	1.70	0	0.40	COMPACT MID GREY SILT CLAY WITH OCCASIONAL SMALL SUB
							ANGULAR STONES
116.0029	CUT	PIT	1.33	1.70	0	0.40	SUB CIRCULAR WITH GRADUAL SIDES LEADING GRADUALLY TO A
							CONCAVE BASE
116.0030	LAYER	GEOLOGY	0	0	0	0	NATURAL
116.0031	LAYER	TOPSOIL	0	0	0	0	TOPSOIL

# Appendix IV

AB1703 Wylfa Newydd Early Clearance Works Hotspot 16 Finds Assessment

### Appendix IV. AB1703 Hotspot 16 Finds Assessment

# WYLFA HOTSPOT 16: FINDS ASSESSMENT

### Introduction

A total of eight Small Find numbers were allocated to 14 artefacts, weighing 874g, recovered from an archaeological investigation on Hot Spot 16. The finds assemblage was transferred to Carlisle and assessed by Wardell Armstrong. It was noted at this point that one small find was missing from the assemblage.

All finds were dealt with according to the recommendations made by Watkinson & Neal (1998) and to the Chartered Institute for Archaeologists (CIfA) Standard & Guidance for the collection, documentation, conservation and research of archaeological materials (CIfA 2014b). All artefacts have been boxed according to material type and conforming to the deposition guidelines recommended by Brown (2011), EAC (2014) and The Oriel Museum. The project has the unique identifier WA 2019 / CL12283 / AB1703.

The material archive has been assessed for its local, regional and national potential in line with the archaeological research framework for Wales (https://www.archaeoleg.org.uk/areanorthwest.html).

The finds assessment was compiled by Sue Thompson. Lithic artefacts were assessed by Miguel Gonzalez.

Quantification of bulk finds by material and context is given in Table 1.

### **Post-medieval Pottery**

Six post-medieval pottery sherds, weighing a combined total of 158g, were recovered from context (**116.013**) and as unstratified. The pottery was in moderate condition, and several refitting sherds were noted.

The pottery was examined with a x10 hand lens and recorded according to national guidelines (PCRG, SGRP & MPRG 2016). Where possible, mnemonic fabric codes were assigned when they could be identified; this was undertaken using material published by MOLA (2015).

The five sherds recovered as **SF3** (**116.013**) included occasional refitting sherds of the same Buckley ware storage jar (BUCK), with a very hard fired red earthenware with frequent small stone inclusions and brown-black glaze. An unstratifed rim sherd of a brown glazed coarse red earthenware (CRE), **SF6**, represented a large bowl or pancheon.

The pottery sherds are typical of household utilitarian items dating to the 18<sup>th</sup> and 19<sup>th</sup> centuries.

No further work is recommended.

### Lithics

A total of two unstratified lithics (778.05g) were recovered during the archaeological investigation at Hot spot 16.

The assemblage has been rapidly assessed, quantified and individually assigned to a broad category according to debitage, core or tool type with a further distinction made using sub-category field.

A mesial fragment of a polished axe (**SF001**) is made of volcanic tuff. Despite its state of conservation, we can define the axe as a thick-butted (type A), with a double-convex cross-section (Butler 2005).

A primary blade made of local fine-grained black chert was also recovered (SF007).

The technological and typological aspects of the assemblage from Hot Spot 16 clearly indicates a Neolithic date.

Further work may be warranted should the project proceed to publication; analyses may include comparative research with the other archaeological sites at Wylfa and also illustration.

### Stone

A single unstratified fragment of a fine-grained grey stone was recovered weighing 37g SF8.

The stone fragment displayed surface wear but did not appear to be worked and is nonarchaeological.

No further work is recommended.

### Wood

Two small find numbers were assigned to unstratified wood artefacts, **SF2** and **SF4**. The wood had a combined weight of *c*.600g (wet weight) and was in poor condition.

The wood comprised unworked fragments of possible rooting (**SF2**), and degraded fragments of timber (**SF4**). It was not possible to identify tool marks or the purpose of the fragments.

Further analysis could include radiocarbon dating and species identification of **SF4** if required.

### **Finds from Environmental Samples**

No artefacts were recovered from environmental samples.

### **Statement of Potential**

The post-medieval pottery is of local interest but is of low archaeological potential. The wood fragments were undiagnostic although may provide material suitable for radiocarbon dating if required.

The prehistoric artefacts of regional interest and should be considered along with similar objects recovered from nearby sites.

### Bibliography

Andrefsky, Jr, W. 2005, *Lithics: Macroscopic approaches to analysis*. Cambridge Manual in Archaeology, 2<sup>nd</sup> edition. Cambridge University Press.

Ballin, T. B. 2000, Classification and Description of Lithic Artefacts. A discussion of the basic lithic terminology. *Lithics* **21**: 9-15.

Brown, D.H. 2011, Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation. Archaeological Archives Forum.

Butler, C. 2005, *Prehistoric flintwork*. Stroud: Tempus.

CIFA 2014b, Standards and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials. Reading: Institute for Archaeologists.

Europae Archaeologia Consilium (EAC) 2014, A Standard and Guide to Best Practice for Archaeological Archiving in Europe. EAC Guidelines 1: Belgium.

PCRG, SGRP, MPRG 2016, A Standard for Pottery Studies in Archaeology. Medieval Pottery Research Group.

Watkinson, D.E. & Neal, V. 1998, *First Aid for Finds. RESCUE: The British Archaeological Trust.* London.

### Websites

https://www.archaeoleg.org.uk/areanorthwest.html. [Accessed on 03 January 2020].

MOLA 2015, Medieval and Post-medieval Pottery Codes. Museum of London Archaeology:

https://www.mola.org.uk/medieval-and-post-medieval-pottery-codes [Accessed on 10 October 2019].

Context	SF	Material	Qty	Wgt (g)	Period	Refined Date	Comments
							Polished Stone Axe fragment, fine
U/S	1	Stone	1	74	Prehistoric	Neolithic	grained white/ buff stone
116.0004	2	Wood	5	1	Modern?	20 <sup>th</sup> C??	Fragments of roots. Stored in Fridge
							Black glazed earthenware body
							sherds. Buckley ware. Storage jar?
116.013	3	Pottery	5	114	Post-med	17th-19 <sup>th</sup> C	BUCK
							Fragments of degraded timber. Stored
116.0023	4	Wood	5	600			in Fridge
-	5	MISSING	-	-	-	-	MISSING
							Brown glazed red earthenware,
U/S	6	Pottery	1	44	Post-med	18th-19th	pancheon? Rim sherd CRE
U/S	7	Stone	1	4	Prehistoric	Neolithic	Chert
U/S	8	Stone	1	37	-	-	Fragment of unworked stone
Total			14	874			

Table 1: Quantification of Finds by Small Find Number

# Appendix V

AB1703 Wylfa Newydd Early Clearance Works Hotspot 16 Palaeoenvironmental Assessment

### Appendix V. AB1703 Hotspot 16 Palaeoenvironmental Assessment

#### 7 Palaeoenvironmental assessment

#### 7.1 Introduction

7.1.1 Seven bulk samples were taken during the excavation on Hotspot 16 at Wylfa Newydd Nuclear power plant located in Anglesey, North Wales. A total weight of 289kg (203I) of sediment was processed for this stage of works. Further details for each sample can be found in Table 7.1

#### 7.2 Methodology

- 7.2.2 The bulk environmental samples were processed at Wardell Armstrong LLP. The colour, lithology, weight and volume of each sample was recorded using standard Wardell Armstrong pro forma recording sheets. cf. Table 7.1 The samples were processed with 500-micron retention and flotation meshes using the Siraf method of flotation (Williams 1973). Once dried, the residues from the retention mesh were sieved to 4mm and the artefacts and ecofacts removed from the larger fraction and forwarded to the finds department. The smaller fraction was scanned with a magnet for microslags such as hammerscales. This fraction was then examined for smaller artefacts such as beads. Once fully sorted, and all relevant material removed, the retent residues were discarded.
- 7.2.2 The flot plant macrofossils and charcoal were retained and scanned using a stereo microscope (up to x45 magnification). Any non-palaeobotanical finds were noted on the flot pro forma, cf. Table 7.2. Once fully sorted and all relevant material removed the flots were discarded.
- 7.2.3 This environmental assessment was undertaken by Freddie Sisson.

#### 7.3 Results

- 7.3.1 Sandy silt dominated the samples' sediment matrix with lesser quantities of sandy/silty clay sediments, further data can be observed in Table 7.1
- 7.3.2 Flot and finds data is presented in Table 7.2.
- 7.3.3 Not artefactual material was recovered in the samples from Hotspot 16.
- 7.3.4 CPR: The site yielded twelve indeterminate charred plant remains (CPR) in total which were in poor condition. They were present in (116.0003) <1> an organic fill of [116.0005], (116.0001)
  <3> an organic fill of [116.0002] and (116.0011) <5> the top fill of [116.0012].
- 7.3.5 CHARCOAL: Charcoal was present in four of the samples in poor condition; the combined weight was less than 1g.
- 7.3.6 SHELL: No shell was recovered at Hotspot 16.
- 7.3.7 BONE: No bone was recovered in the samples from Hotspot 16.
- 7.3.8 MAGNETIC MATTER: No magnetised material was recovered in the samples from Hotspot 16.
- 7.3.9 WOOD: The wood recovered from Hotspot 16 samples was in a good to poor state of preservation. Sample (116.0003) <1> taken form the organic fill of [116.0005] yielded 3g. Sample (116.0011) <5> taken from the top fill of [116.0012] presented 45g.
- 7.4 Discussion

- 7.4.1 Due to the paucity and poor preservation of the CPR and charcoal they can give no meaningful discussion about the site or wider palaeoecological practices.
- 7.4.2 The wood also offers little discussion, although the best preserved ecofact recovered it came from the top fill of **[116.0012]** and is unlikely to be of any archaeological significance.

### 7.5 Statement of potential and recommendations

- 7.5.1 There is no potential for any further work on the CPR or charcoal due to insufficient quantity and poor condition.
- 7.5.2 The wood from **<1>** is small fragments and offers no further potential. The 45g piece collected form **<5>** appears to be a natural deposit and not of archaeological significance.
- 7.5.3 *Radiocarbon suitability*: The wood from **<5>** is the only ecofact that has radiocarbon potential but could only be used to date the fill in which it was found, the feature should first be dated by absolute or typological methods before this piece of wood is sent for radiocarbon analysis.
- 7.5.4 *Retention and discard*: At this stage I would recommend that all ecofactual material is retained until a decision on radiocarbon requirements is made.

#### 7.6 Acknowledgments

7.6.1 Freddie Sisson supervised the environmental team who consisted of Megan Lowrie, Katherine Bostock, Jyoti Stuart, Charlotte Manning and edited by Lynne F. Gardiner.

#### 7.7 References

- Campbell, G, Moffett, L and Straker, V 2011, Environmental Archaeology. A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (second edition), English Heritage, Portsmouth
- Wardell Armstrong 2018, Environmental Archaeology, Wardell Armstrong LLP Technical Manual No. 2, version 3
- Wardell Armstrong 2019, Horizon, Wylfa Newydd, Post excavation assessment method statement, unpublished report

Table 7.1 Sample Information

С	<>	TQ	Cut	Desc	Matrix	PW	PV	SW	SV
116.0003	1	4	116.0005	Organic fill	clayey silt	40	32	5601	3700
116.0004	2	4	116.0005	Organic fill	silty clay	31	24	4248	5000
116.0001	3	4	116.0002	Organic fill	clayey silt	55	33	9525	6000
116.0010	4	4	116.0012	Top fill	clayey silt	36	28	3010	2600
116.0011	5	4	116.0012	Top fill	silty clay	37	26	3172	2350
116.0028	6	4	116.0029	Fill	clayey silt	42	29	1466	1100
116.0023	7	4	116.0025	Pit fill	silty clay	48	31	714	1250

Key: C=context; <>=sample number; TQ=tub quantity; Cut=cut of feature; Desc=description of context; Matrix=sediment matrix; PW=processed weight (kg); PV=processed volume (I); SW=sorted weight (g); SV=sorted volume (mI)

Table 7.2 Finds and Flot Information

			FI		Retent		
С	<>	WF	VF	CPR	Ch	Ch	Wo
116.0003	1	381.3	1500	3	< 0.01		3
116.0004	2	243.8	1000		< 0.01	<1	
116.0001	3	45.8	150	5	0.07	<1	
116.0010	4	208.9	700				45
116.0011	5	275	800	4		<1	
116.0028	6	13.3	55				
116.0023	7	18.2	90				

Key: C=context; <>=sample number; WF=weight of flot (g); VF=volume of flot (ml); CPR=count of charred plant remains; Ch=charcoal (g); Wo=wood (g)

# Appendix VI

AB1703 Wylfa Newydd Early Clearance Works Hotspot 16 Radiocarbon Dating Results

# **Calibration of Radiocarbon Age to Calendar Years**

(High Probability Density Range Method (HPD): INTCAL13)

(Variables: d13C = -21.0 o/oo)

Laboratory number Beta-554180

Conventional radiocarbon age 2000 ± 30 BP

95.4% probability

(94.8%)	55 cal BC - 70 cal AD	(2004 - 1880 cal BP)
(0.6%)	84 - 80 cal BC	(2033 - 2029 cal BP)

68.2% probability

(64.8%)	40 cal BC - 26 cal AD	(1989 - 1924 cal BP)
(3.4%)	42 - 46 cal AD	(1908 - 1904 cal BP)



#### Database used INTCAL13

### References

**References to Probability Method** 

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360. References to Database INTCAL13

Reimer, et.al., 2013, Radiocarbon55(4).

# **Beta Analytic Radiocarbon Dating Laboratory**

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

# BetaCal 3.21

# **Calibration of Radiocarbon Age to Calendar Years**

(High Probability Density Range Method (HPD): INTCAL13)

(Variables: d13C = -21.5 o/oo)

Laboratory number Beta-554181

Conventional radiocarbon age 2000 ± 30 BP

95.4% probability

(94.8%)	55 cal BC - 70 cal AD	(2004 - 1880 cal BP)
(0.6%)	84 - 80 cal BC	(2033 - 2029 cal BP)

68.2% probability

(64.8%)	40 cal BC - 26 cal AD	(1989 - 1924 cal BP)
(3.4%)	42 - 46 cal AD	(1908 - 1904 cal BP)



Database used INTCAL13

References

**References to Probability Method** 

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360. References to Database INTCAL13

Reimer, et.al., 2013, Radiocarbon55(4).

# Beta Analytic Radiocarbon Dating Laboratory

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# BetaCal 3.21

# **Calibration of Radiocarbon Age to Calendar Years**

(High Probability Density Range Method (HPD): INTCAL13)



#### Database used INTCAL13

### References

**References to Probability Method** 

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360. **References to Database INTCAL13** Reimer, et.al., 2013, Radiocarbon55(4).

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# Appendix VII

AB1703 Wylfa Newydd Early Clearance Works Hotspot 16 Harris Matrix Appendix VII. AB1703 Hotspot 16 Matrix



# Appendix VIII

AB1703 Wylfa Newydd Early Clearance Works Post Excavation Assessment Method Statement

ENERGY AND CLIMATE CHANGE ENVIRONMENT AND SUSTAINABILITY INFRASTRUCTURE AND UTILITIES LAND AND PROPERTY MINING AND MINERAL PROCESSING MINERAL ESTATES WASTE RESOURCE MANAGEMENT

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HORIZON

WYLFA NEWYDD

POST EXCAVATION ASSESSMENT METHOD STATEMENT

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### WYLFA NEWYDD POST EXCAVATION ASSESSMENT METHODOLOGY

#### Introduction

This document has been prepared to provide the client with an explanation of the Post Excavation Assessment (PXA) process and to provide Wardell Armstrong's own technical team, with clear guidance on undertaking the PXA for the Wylfa Newydd archaeological mitigation works. Post Excavation Assessment (PXA) is the first stage of a process of post-excavation analysis, publication and archive deposition. It provides quantification and initial assessment of the archive resulting from excavation and provides a framework to inform further investigation and publication. It is designed to ensure that Horizon Nuclear Power meet their requirements to secure discharge (by the two primary stakeholders: Gwynedd Archaeological Planning Service (GAPS) and CADW) of the early works archaeological mitigation programme at Wylfa Newydd.

It is based on the requirement described in the Written Scheme of Investigation for Trial Trenching and Excavation (2015) and Written Scheme of Investigation for Strip Map and Sample Excavation and Paleoenvironmental Assessment (2016). It is informed by the following guidance, Association of Local Government Archaeological Officers (ALGAO) Advice Note for Post-Excavation Assessment (2015), Conservation principles for the sustainable management of the historic environment in Wales CADW (2011), Chartered Institute for Archaeologists (ClfA) Standard and Guidance for Archaeological Excavation (2014) sections 3.4 to 3.6, and for human remains The British Association of Biological Anthropology and Osteoarchaeology Human Bones from Archaeologists (1993), Selection, Retention and Dispersal of Archaeological Collections: Guidelines for use in England, Wales and Northern Ireland, as well as Welsh Office Circular 60/96, (1996), Planning and Historic Environment: archaeology. This current document identifies the stages of the PXA process, then describes the broad tasks required for each stage. The document concludes with a report template containing individual sections within the PXA report and UPD.

### **Requirement for and Purpose of the Post Excavation Assessment**



The PXA will follow a staged process of post excavation assessment detailed in Written Scheme of Investigation for Trial Trenching and Excavation (2015) and the Written Scheme of Investigation for Strip Map and Sample Excavation and Paleoenvironmental Assessment (2016).

As stated in the ALGAO *Advice Note for Post-Excavation Assessment*, "following the completion of archaeological fieldwork, it is standard practice for a post excavation assessment (PXA) to be undertaken". CIfA describe the purpose of a PXA as a means by which "the findings should be assessed against the original project design to determine the extent to which the original research aims have been met, and the identification of any new research questions to be incorporated in a post-excavation project design". CIfA further state that PXA work "must be carried out by suitably qualified and experienced staff, who must be apprised of the project design before commencing work. The post excavation manager should preferably be a corporate member of CIfA. The level of assessment of records and materials should be appropriate to the aims and purpose of the project".

In brief the PXA process involves cleaning, processing, sorting and cataloguing the finds and environmental samples and the ordering of the documentary site records to create an archive, and then assessment of that archive to focus further analysis and reporting on that archive. The archive consists of two elements, the material archive (finds, processed environmental samples and human remains) and the documentary archive (site records and ancillary research documentation such as notes on archival sources).

### Post Excavation Assessment Stages and Outputs

The PXA consists of four separate, largely, though not necessarily, sequential stages; processing of the finds, palaeoenvironmental samples and any human remains (the material archive); archival preparation for data assessment and deposition (both material and documentary archive); data assessment and finally reporting. The outputs are two stand alone documents, although often bound together under a single cover as they will be in this case. The documents are the Data Assessment Report (DAR) which quantifies the data, identifies its significance and potential for further research, and the Updated Project Design (UPD), which scopes the response necessary by achieving the site's research potential and provides the basis for a cost for doing so.

The proposed work described in the UPD is entirely separate from the PXA and will form a future stage of work involving any necessary post-excavation research and leading to the



publication of the results of the excavation. This future stage concludes with the deposition of the entire project archive with the Oriel Museum Anglesey. Funding of the required future research, publication and archive deposition for long-term curation is a requirement to secure final discharge of the 2017-2019 phase of fieldwork at the Wylfa site.

For Wylfa Newydd each site will have a separate DAR and UPD to allow GAPS/CADW and the client, to be fully appraised of the justifications for further analytical work. Each site can then be discussed in relation to its specific significance before arriving at a consensus with regard to further work requirements. There will also be a need for an overview DAR and UPD which will have two functions:

- To succinctly summarise the findings of the individual site DARs and UPDs following consultation and provide a cohesive assessment of the whole project as well as a basis for an overall justified costing for future work requirements.
- To provide a research statement regarding the overall potential of the Wylfa Newydd development area. Clearly many of the sites will not merit the publication of a standalone report. Consequently, the research potential of such sites will be best realised in contributing to period-based volumes that address regional research framework questions.

# Stage 1 Processing

A summary of the processing requirements is given below. A more detailed breakdown of the required procedures for finds is contained in appendix 1 and for environmental samples in appendix 2.

Environmental sample processing involves sieving individual 10 litre tubs of soil samples for bulk samples (collected from site) in a purpose-built water filtration tank. The flots (floats) and retents (sinks) are then dried, bagged and labelled. More specialised forms of sample processing may be required for other samples taken such as column samples for insects, pollen monoliths or cores, but these represent only a tiny fraction of the samples collected. Human remains (cremated and non-cremated) require different cleaning methods depending on their state of preservation. Non-cremated articulated and disarticulated human remains in good condition will undergo wet cleaning but without the bones being immersed in water. Human remains in poor condition must not be wet-washed and will have to be dry-brushed to avoid unnecessary damage to the remains.



Bulk finds are cleaned by washing. Small finds are cleaned according to the requirements of the material, this usually but not always involves washing. Following cleaning, most finds will need to be dried and some may require stabilisation to preserve them. Cleaning and stabilisation by material and object will be as described in Watkinson & Neal (1998). Specialist conservation will not be routinely undertaken at this stage as this will involve items being sent away to specialist laboratories and the consequent costs, but the conservation need will be defined by a specialist in conservation. Where an immediate conservation need is identified this will be addressed to ensure item stability.

## Stage 2 Archival Preparation

Three tasks are required in stage 2 in relation to the material archive, marking in accordance with Oriel Museum guidelines, X-raying metal objects and boxing the finds and human bones for long term curation. There will be some need to carry out X-ray photography of metal objects to be able to identify them and assess their significance. Finds, mainly pottery, will need to be marked as appropriate. As some Prehistoric and Roman pottery is of a sandy fabric this can sometimes be difficult to place a mark directly on the fabric so clear nail varnish is required to prepare the location of the mark. Following marking the finds will be bagged and boxed. The archive boxes need to be made of acid free cardboard for long term conservation storage and will need to be purchased specifically for the project.

The documentary archive should have been appropriately ordered, indexed and catalogued before it left site, but it will require checking and final cross-referencing before it can be assessed. The checking will involve both digital and paper-based records and include a finalisation of plan and section data, both hand-drawn and recorded through a digital medium. Relevant HER entries will need to be listed in full detail. All records will need security copies. Paper records (drawn plans, sections and record sheets) will be scanned for digital archiving. The digitisation of all hand drawn plans and sections is to be avoided as not cost effective. Drawings for digitisation can be selected in the analysis phase when it is known which drawings will contribute to the publication. This ensures that all digitisation will be 'heads up' and only for the purposes of report illustration rather than 'heads down', thus removing the need for digitisation tablets and increasing efficiency.

### Stage 3 Data Assessment

In all cases the assessment begins with a quantification of the items to be assessed, whether it be sample residues, finds or site records. The material archive assessment involves separate



assessments of ecofacts, artefacts and any human remains. Further details of the finds assessment are contained in appendix 3.

Every flot and retent will be examined to establish whether they contain plant macrofossils, zooarchaeological remains, snail shells etc, artefacts or metal working residue. Ecofacts, residues and any artefacts are then extracted and examined. Ecofactual assemblages are identified and characterised. The assessment of individual ecofactual assemblages must be undertaken by a suitably-qualified palaeoenvironmentalist.

The finds assessment involves the quantification, identification and dating of the recovered artefacts. The finds assessment can only be compiled by a suitably-qualified finds specialist who can identify and spot-date the artefacts. Where necessary, specialists with local expertise will be consulted, especially regarding the pottery assemblages.

Radiocarbon dating, or any other form of absolute scientific dating, will be undertaken at the assessment stage, though some samples may need to be sent for testing to identify their suitability for dating. As this is an assessment a full suite of dates suitable for Bayesian analysis will not be undertaken but the potential for such future work will be highlighted in the UPD. The documentary archive assessment involves identifying each site's stratigraphic phases assisted by a Harris Matrix. It is required that this will be done using the Harris Matrix generator software. Duplicate and false contexts will be identified, recorded and discarded.

### Stage 4 PXA and UPD Reporting

Stage 4 results in the creation of the PXA report and the UPD. A detailed template for producing these documents follows. The documents produced will be technical grey literature reports and not publication reports.

# Report Template

The following report template is laid out in accordance with the desired structure and layout of the report. Sentences in italics refer to the required illustrations whether drawings or photographs.



## 1. Non-technical summary, including reasons for work, aims and summary results

### 2. Introduction

- 2.1 Site location (include eight digit NGR), site code/ PRN reference, and Event Number
- 2.2 Scope of the project.
- 2.3 Dates/duration of fieldwork.
- 2.4 Outline of the site's character (including topsoil, subsoil and substrata descriptions, past land use impacts on preservation and impact of bioturbation) and how the site fits into the local archaeological landscape.
- 2.5 Brief summary of previous work including directly relevant nearby sites (i.e. likely to be part of same archaeologically represented activity), geophysical results, metal detecting results and evaluation results.
- 2.6 Explanation of the purpose of the assessment report and organisation of the report (refer to this report template and include as appendix 1).
- 2.7 Site location map related to the development area.
- 2.8 Plan of site and excavated area (usually these will be the same).

### 3. Summary of the excavation methodology

- 3.1 Proposals set out in the approved Written Scheme of Investigation for the fieldwork (copy of the Written Scheme of Investigation sections 4 and 5 only as appendix 2).
- 3.2 Any variations from the Written Scheme of Investigation with justifications.
- 3.3 Site planning strategy with justifications for the applied methodology.
- 3.4 A description of any avoidance strategies or re-burial methods used to preserve unexcavated archaeological remains in situ, indicating whether or not these will be subject to a monitoring scheme and, if so, providing a description of it or references to supporting relevant documentation.

### 4. Site archive

- 4.1 Summary details of the contents and organisation of the project archive
- 4.2 Quantification of documentary archive (including catalogues and indices) and details of current (give date) location of the paper archive. Details of the digital archive and arrangements for storage security.
- 4.3 Summary of work carried out on the documentary archive during post-excavation assessment.



- 4.4 Quantification of material archive (by storage box) and details of current (give date) location.
- 4.5 Summary of work carried out on the material archive, including nature of processing and cleaning, and any necessary preliminary conservation/stabilisation.
- 4.6 Details of any samples sent for scientific analysis or dating as a necessary precursor to costing a programme of analysis.
- 4.7 Agreed destination of the site archive (in all instances this will be the Oriel Museum, Anglesey) with a statement of any receiving repository conditions if necessary.
- 4.8 OASIS reference supported by completed data collection form as appendix 3.
- 4.9 Representative sample photographs of site features that aid understanding of the assessment of stratigraphic data.

# 5. Stratigraphic data

- 5.1 Summary of the nature of the investigated features/deposits described by phase in chronological order (not by individual context or feature), supported by a Harris matrix/matrices in appendix 4 (use context group numbers if appropriate).
- 5.2 Statement of significance of the stratigraphic data.
- 5.3 Final pre-excavation plan.
- 5.4 Either an overall plan for all phases or individual phase plans or both as appropriate to the site's complexity.
- 5.5 Sections of key features with a location plan showing position of sections.
- 5.6 If relevant a more detailed plan of key structures.
- 5.7 Where relevant a structure through motion model illustration(s).

### 6. Artefacts

- 6.1 Quantification (by weight in grams for bulk finds) of finds by type.
- 6.2 Description of condition, stability and the immediate and longer term conservation and storage needs by artefact group.
- 6.3 An assessment of the character, range and variety, date, meaning and significance of all recovered artefact groups.
- 6.4 Statement by a recognised specialist on the research potential of each individual artefact group. If no further work beyond assessment is considered necessary this should be clearly indicated.



- 6.5 Statement of significance for the retention of material and a proposal for a fully justified discard strategy for low/nil value assemblages, in agreement with GAPS/CADW.
- 6.6 Supporting finds illustrations at appropriate scales (for the assessment wherever practicable scaled photographs should be used rather than line drawings).

### 7. Palaeoenvironment

- 7.1 Quantification (by weight in grams) of the retents and flots available for analysis. Quantification by sample bucket where further portions of a sample are available and the assessment sub-sample has revealed that further sample processing is worthwhile for the additional data it may reveal. Sub-sampling will have been sufficient to characterise and understand a sample.
- 7.2 Factual summary of each type of sample (e.g. bulk organic, dendrochronological, monolith), quantity, preservation, post-depositional processes, curation and storage need by ecofact group.
- 7.3 An assessment of the character, range, variety and significance of all ecofactual groups (likely to include plant macrofossils, pollen, animal bone, shell, snails and insects).
- 7.4 Statement by a recognised specialist on the research potential of each individual ecofact group, including potential to provide scientific dating. If no further work beyond assessment is considered necessary, this should be clearly indicated.
- 7.5 Statement of significance for the retention of material and a proposal for a fully justified discard strategy for low/nil value assemblages, in agreement with GAPS/CADW.
- 7.6 *Representative photographs of key assemblages.*

### 8. Human remains

- 8.1 For inhumations quantify by number of burials and then summarise information on skeletal completeness in a table divided as >75%, -75%, -50%, <25%. For cremations, bone remains from each context should be quantified by weight in grams.</p>
- 8.2 Factual data about the bone assemblage, describing the provenance of the skeletal material and the general condition of the remains. The condition of the bone will influence the information that can be gained from the assemblage.
- 8.3 Statement by a recognised specialist on the research potential of the human remains.



- 8.4 Note on the long-term arrangements for the curation or reburial of the human remains.
- 8.5 Plans showing the location of burials or other deposits of human remains
- 8.6 Photographs and/or drawings of inhumation burials in situ or a structure through motion 3d model.

## 9. Discussion

- 9.1 A brief summary of the character and significance of the site as represented through its stratigraphic, artefactual and palaeoenvironmental data. Include where relevant the results of any documentary research. If no further work beyond assessment is considered necessary, this should be clearly indicated. If further work is required then include 9.2, 9.3 and 9.4 below.
- 9.2 A tabulated list of relevant sources discovered (relevant books, articles, HER data, archival sources) quantity, variety, level of study of sources during post-excavation assessment.
- 9.3 Indicate applied studies that will be necessary for further analytical work. These might include, for example, comparative analysis, archival and/or cartographic research and intra and inter-site spatial analyses, site morphological studies, absolute dating methods, scientific techniques not covered by the standard suite of applications (e.g. specific chemical analyses, thin sectioning for soils or ceramic research, isotope studies, scanning electron microscopy, specific biological analyses etc).

# 10. Statement of potential

- 10.1 A summary of the potential of the data in terms of local, regional, national and international importance, referencing as relevant regional and national period and subject specific research agendas. This should include:
  - an appraisal of the extent to which the site archive might enable the data to meet the original research aims of the project;
  - a statement of the potential of the data in developing new research aims, to contribute to other projects and to advance methodologies;
  - an assessment of the relevant level at which the site data might be published e.g. site specific publication, project landscape overview or background contextual data (choose one only).
- 10.2 An informed strategy for the detailed analysis of some or all data groups as recommended by relevant specialists to enable a reconstruction of the history and use of the site to be developed, in line with the site's relevant research potential


(where no further work is recommended this section is not required). This strategy must include provision to incorporate the results of any earlier phases of archaeological work on a specific site, reappraising materials and artefacts recovered during earlier assessment and evaluation phases and, where appropriate, earlier excavation results - including, where possible, from neighbouring sites

10.3 Map of the site in context at a regional or local level, showing other relevant sites and where appropriate connections and networks.

# 11 Bibliography of sources used in the compilation of the PXA

# 12. Updated Project Design

- 12.1 Introduction including purpose of the UPD to provide details of a programme of analysis leading to the appropriate mechanism for the dissemination of the results of the project. Also, to provide a basis for costing the programme of analysis, publication and deposition of the archive.
- 12.2 Justification for the contents of the proposed programme of analysis and any theoretical approaches to be deployed, in relation to the site's statement of potential and proposal for publication/dissemination as appropriate:
  - inclusion of main results in an overall synthetic volume only
  - thematic paper on a specific research theme
  - internet publishing through journal or proprietary website (stating whether all catalogues will be available and interactive)
  - short illustrated site report for a journal
  - section/chapter in edited monograph
  - fully illustrated site monograph
  - popular booklet (additional publication only and not to be the primary publication).
- 12.3 Proposal for analysis of the stratigraphic data concentrated on key feature groups.
- 12.4 Detail of illustrations required to support the stratigraphic analysis.
- 12.5 Detail of retention and discard strategy for the material archive.
- 12.6 Proposals for scientific dating (potentially an initial suite of dates and a second after provisional results from the artefact and ecofact analysis are received).
- 12.7 Proposals for a Bayesian analysis to refine chronologies, following consultation with Cadw regarding to the selection of contexts and samples for scientific dating.
- 12.8 Proposals, where relevant, for other forms of scientific analysis such as lipids, strontium or oxygen isotope analysis.



- 12.9 Details of illustrations required to support the artefact analysis.
- 12.10 Requirement for conservation works on material archive.
- 12.11Proposals for further research, including archive visits and comparative analysis of other investigated relevant sites in order to contextualise the site data.
- 12.12 Details of resultant technical/archive report.
- 12.13 Publication report synopsis where relevant, including any additional illustrations required.
- 12.14 Proposals for monitoring and continued liaison with GAPS and CADW throughout the post-excavation analytical programme.
- 12.15 Staged programme and timetable for any proposed further work up to and including publication and archive deposition. Task list and Gantt chart.

## Task breakdown for PXA

## 1. Processing

- 1.1 Environmental sample processing
- 1.2 Cleaning human remains
- 1.3 Bulk finds cleaning
- 1.4 Small finds cleaning
- 1.5 Artefact stabilisation

## 2. Archival preparation

- 2.1 Finds marking
- 2.2 X-raying metal objects
- 2.3 Archive box purchase
- 2.4 Boxing
- 2.5 Site record checking and cross-referencing
- 2.6 Compilation of list of archival sources
- 2.7 Records scanning

## 3. Data assessment

- 3.1 Zooarchaeological remains
- 3.2 Insects
- 3.3 Snails
- 3.4 Shells
- 3.5 Plant macrofossils
- 3.6 Pollen



- 3.7 Bulk finds
- 3.8 Small finds
- 3.9 Absolute dating laboratory consultation
- 3.10 Scientific analyses specialist consultation
- 3.11 Creation of phased matrices
- 3.12 Incorporation of phased data into project GIS
- 4. **Reporting**
- 4.1 PXA
- 4.2 UPD

# APPENDIX 1 METHOD STATEMENT: STAGE 1 FINDS PROCESSING

## Finds processing and assessment summary

At stage 1 the finds will be cleaned (usually but not always involving washing). At stage 2 the finds will marked, bagged and boxed. Once this is done in stage 3 the finds will be quantified and assessed; this involves the creation of an Excel spreadsheet into which are recorded numbers of items, weight and spot-dating and the finds are cross-referenced to the stratigraphic contexts from which they were derived. Having done this in stage 4 a report will be prepared on the assessment results. The work will be solely aimed at identifying significant assemblages for further future analysis as will be detailed in the Updated Project Design. The following specification allows for the cleaning of bulk finds.

## Washing and cleaning

Bulk artefacts (pottery, animal bone, glass, ceramic building material) are bagged up on-site and returned to the post-excavation department. The finds are washed and cleaned using two bowls (one to wash, one to rinse) and toothbrushes. The finds are placed in trays linked with newspaper – the site code, context number and (if applicable) the small find number is written either on the newspaper or on a tag attached to the tray with permanent marker. To increase the efficiency and speed of the finds' drying time, a drip-tray system is employed in



which finds are put on newspaper first before being placed in the tray. This ensures excess water is soaked up (and is particularly useful for large, heavy fragments such as architectural stone and ceramic building material).

Organic finds are processed differently and will depend on whether they have been recovered from waterlogged deposits; leather, shale, jet, wood and worked bone that has been recovered from waterlogged deposits needs to be kept dark, dry and cool. Objects are cleaned primarily with soft wet brushes and they are bagged (with water in the bags) and are put in an organics fridge.

All metalwork (including copper alloy, lead and iron) and oyster shell is dry-brushed. Delicate metal and non-metal small finds are dry-brushed and placed in crystal boxes in trays on acid-free tissue paper. Plaster/mortar are dry-brushed and placed in labelled trays.

Human remains (cremated and non-cremated) are processed differently and will require different cleaning methods depending on their state of preservation. Non-cremated articulated and disarticulated human remains in good condition will undergo the same processing as bulk finds, but the bones are not immersed in water. The human remains will only be marked depending on the requirements of the curator and county repository. Human remains in poor condition must not be wet-washed and will have to be dry-brushed for remains to stabilise.

# Time estimates for finds washing and cleaning

It must be emphasised that finds washing is hugely dependent on a wide range of variables, including the original burial environment (acidic soils, different soil types e.g. clay versus sand) and previous activity on the site (agricultural activity such as ploughing may damage the finds).

Find type	Weight	Time
Prehistoric pottery	1kg	1-2 hours
Roman pottery	1kg	1-1.5 hours
Saxon pottery	1kg	1-1.5 hours
Medieval pottery	1kg	1 hour
Post-medieval pottery	1kg	1 hour
CBM & daub	1kg	1-1.5 hours
Animal bone (good condition)	1kg	1-1.5 hours
Animal bone (bad condition)	1kg	1-2 hours



Human bone (complete skeleton, good condition)	7-8kg	1-1.5 days
Human bone (bad condition)	1kg	1-2 days
Glass	1kg	1-1.5 hours
Metalwork	1kg	1-1.5 hours
Oyster shell	1kg	1-1.5 hours
Flint	1kg	1 hour
Stone	1kg	1 hour
Leather	1kg	1-1.5 hours
Archaeometallurgical waste	1kg	1 hour
Plaster/Mortar	1kg	1-2 hours
Clay Pipe	1kg	1-1.5 hours

# APPENDIX 2 METHOD STATEMENT: STAGE 1 ENVIRONMENTAL PROCESSING

## Environmental processing and assessment summary

For environmental samples in stage 1 the samples will be processed. In stage 2 this material will be dried, bagged and sorted. In stage 3 this material will be examined to establish whether or not they contain plant macrofossils, zooarchaeological remains, artefacts or metal working residue. Having done this in stage 4 they will be required to prepare a report on the assessment results. They will not be instructed to analyse the materials derived from the flots and retents at the assessment stage. The work will be solely aimed at establishing significant flots and retents for further future analysis as will be detailed in the Updated Project Design. The following specification allows for the processing and assessment of bulk environmental samples and for waterlogged materials from a General Biological Analysis sample (GBA).

## General Biological Analysis sample

The colour, lithology, weight and volume of the sample will be recorded on the sample sheet. The sample will be then be processed. All samples will be floated on a 250-300 mm mesh and the heavy residues washed over a 0.5-1 mm mesh as required by SCCAS. The flot should be air dried.

The flot should be 100% sorted with all relevant material being recovered, once this process has been completed, the remaining material may be discarded. Any plant remains should be quantitively recorded. All ecofactual material should be removed as should relevant artefactual material. Earthworm and nematode capsules should be counted but not recovered. If charcoal-rich a 2mm sieve should be used, the resultant material should then be



subject to the same process outlined above. The data from the flot sorting should then be recorded into a spreadsheet (Excel) or database (Access).

Once dried the entire retent residue should be sorted. In order to ease sorting, the dried residues may be passed over a 4mm mesh, this also aids charcoal retention of a suitable size for ID. The dried residues should be described (colour, lithology, weight and volume of the individual fractions).

The <4mm fraction will be scanned with a magnet in order to pick up micro-slags, and 100% sorted for the recovery of artefacts and ecofacts.

The fine fraction will be sorted and any relevant material recovered. The sorted residues can then be discarded. Any resulting artefactual and ecofactual material should be recorded (abundance/actual quantities dependent on material and weighed).

# Recording of the Environmental Data

Where possible quantify, counts of over 50 individuals per species can be referred to by levels of abundance, such as +=50-100, ++=100-200, +++=200-500 and ++++ to indicate greater than 500. If identification is not to species level then a distinction between cereals and weeds species (or non-economic taxa) should be made. The presence of chaff should be noted. For long term storage, the plant remains should be stored in soda glass tubes with sample information, and identification (where relevant) clearly marked using pencil and a Tyvek label placed inside the tube.

# Waterlogged Samples

Between 250 and 500ml of a 1l sub sample from the GBA is processed by placing the material in a 500 $\mu$ m sieve and washing the sample through until all of the sediment has been removed. The latter is essential or the fluid in which the sample is stored will become cloudy. Once clean the sample is removed from the sieve to an airtight jar and stored in ethanol (95% alcohol).

# Paraffin Flotation

The remaining 9I of the GBA will be placed into a bucket filled with hot water to disaggregate the sample. A handful of the material is then placed in a  $300\mu m$  sieve and washed until as much of the sediment as possible has been removed. The material is then tipped from the



washing sieve into a further sieve and allowed to drain and dry. Once the sample has been completely processed, it will then be left to dry for an hour. The sample is then tipped back into the bucket and enough paraffin to coat the sample is added –multiple buckets may be required if the sample is large. This will be then allowed to stand for 15 minutes and cold water added to the bucket.

The bucket is then allowed to stand for a further 15 minutes. At this stage any insect sclera should have risen to the surface of the water as the paraffin adheres favourably to the chitin which forms the exoskeleton of the beetle. The top 2cm of bucket is then poured off through a  $300\mu m$  sieve and this process is repeated twice more.

At the end of this process, the flots within the sieve will be washed using domestic washing up-liquid until all traces of both the paraffin and detergent have been removed. The latter is essential as any trace of either left on the flot will render the storage medium cloudy. The sample is then stored in ethanol (95% alcohol) inside an airtight jar.



# **METHOD STATEMENT STAGES 2 AND 3 FINDS ASSESSMENT**

## Summary

The finds assessment involves the quantification, identification, dating and significance assessment of the recovered artefacts. The assessment of significance happens in stage 4 when the context of the finds can be taken into account as their significance is not solely based on the object's intrinsic interest. The finds assessment can only be compiled by a suitably-qualified finds specialist who can identify and spot-date a wide range of artefacts.

The finds assessment will adhere to a number of national guidelines, including CIFA (2017), Historic England, EAC (2014), Brown (2011) and Watkinson & Neal (1998) as well as the specific county museum's own standard requirements plus national and regional fabric codes (prehistoric through to post-medieval pottery). The finds assessment will make recommendations to be included in the UPD (updated project design). These may include further literary research and comparative analysis, AMS C14 dating, strontium or oxygen isotope analysis, Bayesian scientific methods plus illustration / photography.

The following specification allows for the quantification, identification and dating and significance assessment of the finds.

## Stage 2

Certain types of find, when dry, are then marked; this can be dependent on the curator and the county repository. Finds, including pottery, CBM, animal bone, glass and clay tobacco pipe, are marked with the site code, context number, small find number and the museum accession number (if applicable). The finds are marked using permanent Indian ink (Winsor & Newton); for finds with rough surfaces (applicable to all types of pre post-medieval pottery), a small patch of acrylic or nail varnish is applied to provide a smoother surface.

Types of finds and ecofactual remains that are not marked include human bone, leather, shale, jet, all metalwork, plaster/mortar, oyster shell, slag and wood.

Once the finds are dry and marked, they are quantified and bagged in zip-lock self-sealable bags and the site code, context number, small find number and museum accession number is written on the bags. For small finds and delicate/fragile artefacts, 2 layers of acid-free ridged



foam is cut and inserted into the bag beforehand and the artefact is sandwiched between the two layers.

The non-metal artefacts, when bagged, are placed in acid-free archive boxes and they are ordered by material type and by context. Boxes should not weigh over 6kg. Metal artefacts and some organic finds are kept in Stewart tubs with a bag of silica gel and humidity strip indicators. WA Ltd's in-house archive labels are then put on the front of the box.

<u>Time estimates for finds marking and bagging and boxing</u> Marking 30-40 seconds per artefact e.g. per bone, per pot sherd. Bagging and boxing 1 box at 6 kg full capacity – 30-40 minutes.

# Stage 3

Once processed (cleaned and dried stage 1 and marked stage 2) the finds will need to be assessed. In stage 3 preliminary recording and description of the assemblage is undertaken and an Excel spreadsheet is created. This stage is where the artefacts are quantified, weighed, spot-dated and where additional comments / notes are made. The Excel spreadsheet (or Access database) forms a critical part of the finds assessment and every finds report must have one. The preliminary recording is conducted by a suitably-qualified finds specialist, with a proven record and appropriate local knowledge.

# Time estimates for preliminary recording

Recording and describing 1 box (6 kg) of finds = 1-3.75 hours dependent on the nature of the items.

# Materials costs to be considered to PXA

In addition to the person costs there is a material cost for storage materials, including boxes, silica gel, acid free tissue and zip-lock bags, for the artefacts and the human bone. For example, finds and documentary archive boxes need to be acid free for long term storage. Appropriate temporary storage and monitoring of waterlogged artefacts is required, prior to conservation.

There will be some need to carry out X-ray photography of metal objects to be able to assess their significance.



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