Archaeoleg Brython Archaeology

Post-Excavation Assessment of Potential
Wylfa Hotspot 5

Document Number B1703.AP.HS5.02

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Wylfa Newydd Development, Hotspot 5

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' 5 (EVENT PRN 46038) a gloddiwyd fel rhan o'r gwaith clirio cynnar.

Roedd cloddfa Hotspot 5 (NGR SH34629265) yn mesur 728m^2 ac wedi ei leoli i asesu potensial y safle yn dilyn arolwg geoffisegol ac arolwg ffosi gan Wessex Archaeology. Yn ystod y gwerthusiad darganfyddwyd dystiolaeth o dwmpath llosg posib a phydewau. Darganfyddwyd ychydig ddarnau o blisgyn cnau collen yn y samplau amgylcheddol a gasglwyd.

Wrth gloddio'r safle darganfyddwyd dwmpath llosg gyda nifer o weddau o ddyddodi, cafnau, pydewau a ffos ddraen phosib. Casglwyd arteffactau gan gynnwys gwrthrych fflint a gwrthrychu carreg. Mae dyddiadau Radiocarbon o bydew tân crwn yn awgrymu bod y twmpath llosg yn dyddio i'r Oes Efydd Hwyr a'r Oes Haearn Cynnar.

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 was 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 5 (EVENT PRN 46038), which was excavated during early clearance works.

The excavation area of 728m^2 at Wylfa Hotspot 5 was defined following a geophysical survey and archaeological trial trench evaluation by Wessex Archaeology to address the archaeological potential of the site. Upon stripping a suspected burnt mound and pits were recorded. Environmental samples from the mound produced sporadic fragments of charred hazelnut shell.

Excavation of these features revealed a burnt mound with several phases of deposition, troughs, pits and a possible drainage ditch. Finds recovered during the excavation include a flint object and stone finds. Radiocarbon dates from organic material recovered from soil samples of a circular pit suggest that the burnt mound activity dates from the Late Bronze Age to Early Iron Age.

1 Introduction

During August 2017 to January 2019, Archaeoleg Brython Archaeology CYF. (ABA), commissioned by HNP, conducted a phased programme of excavation of a burnt mound and associated features at Wylfa Hotspot 5, Anglesey (NGR SH34629265) 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^2 (*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 46040)
- Hotspot 8 (EVENT PRN 46041)
- Hotspot 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 5 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, a suspected burnt mound and associated pit features were identified. Environmental samples from the mound produced sporadic fragments of charred hazel shell. Excavation of Hotspot 5 by ABA revealed that the burnt mound consisted of potentially four major phases of deposition, in addition to uncovering associated troughs and pits, a colluvial deposit and undated drainage ditches.

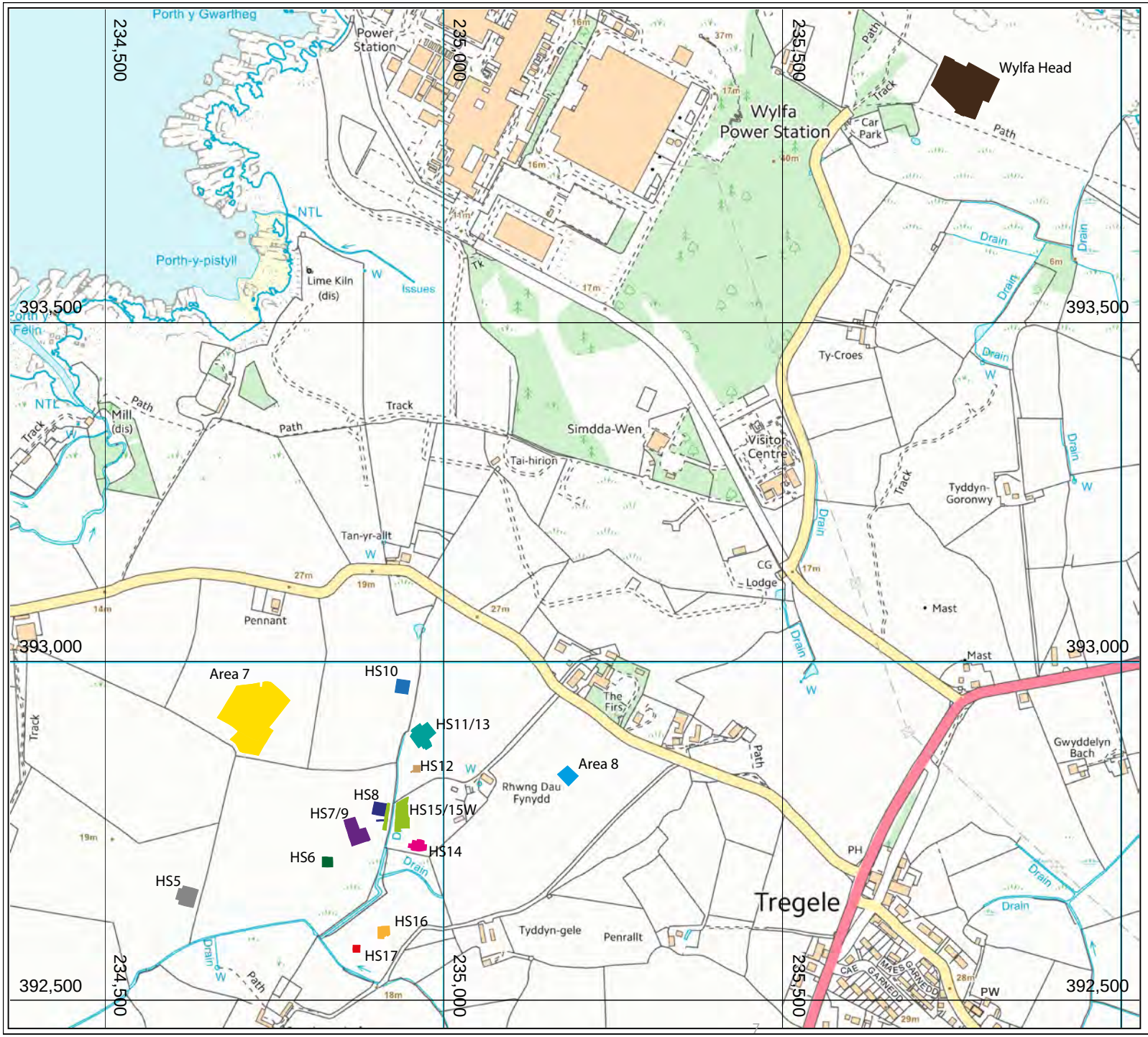
All archaeological works were undertaken in accordance with the Written Scheme of Investigation (WSI [Horizon Nuclear Power, 2016; 2017]), and in line with paragraph 5.8.21 of the overarching National Policy Statement for Energy (EN-1 [Department of Energy and Climate Change, 2011]). The work was monitored 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 5, 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 5 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 (CIfA 2014a; 2014b), and 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 CIfA's standards and guidance (CIfA, 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.



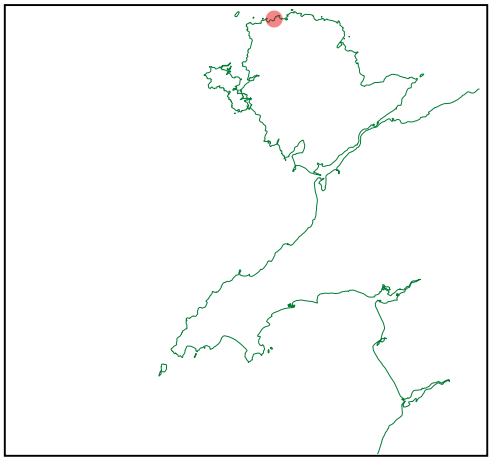


Figure 1
Location plan showing the areas excavated by ABA in the Wylfa Newydd Devleopment Area

Key

- Wylfa Head
- Area 8
- Area 7
- Hotspot 5
- Hotspot 6
- Hotspot 7/9
- Hotspot 8
- Hotspot 10
- Hotspot 11/13
- Hotspot 12
- Hotspot 14
- Hotspot 15
- Hotspot 16
- Hotspot 17

Project No.
AB1703

Drawn By:
IGP

Date:
09/06/2021

Location:
SH35439322

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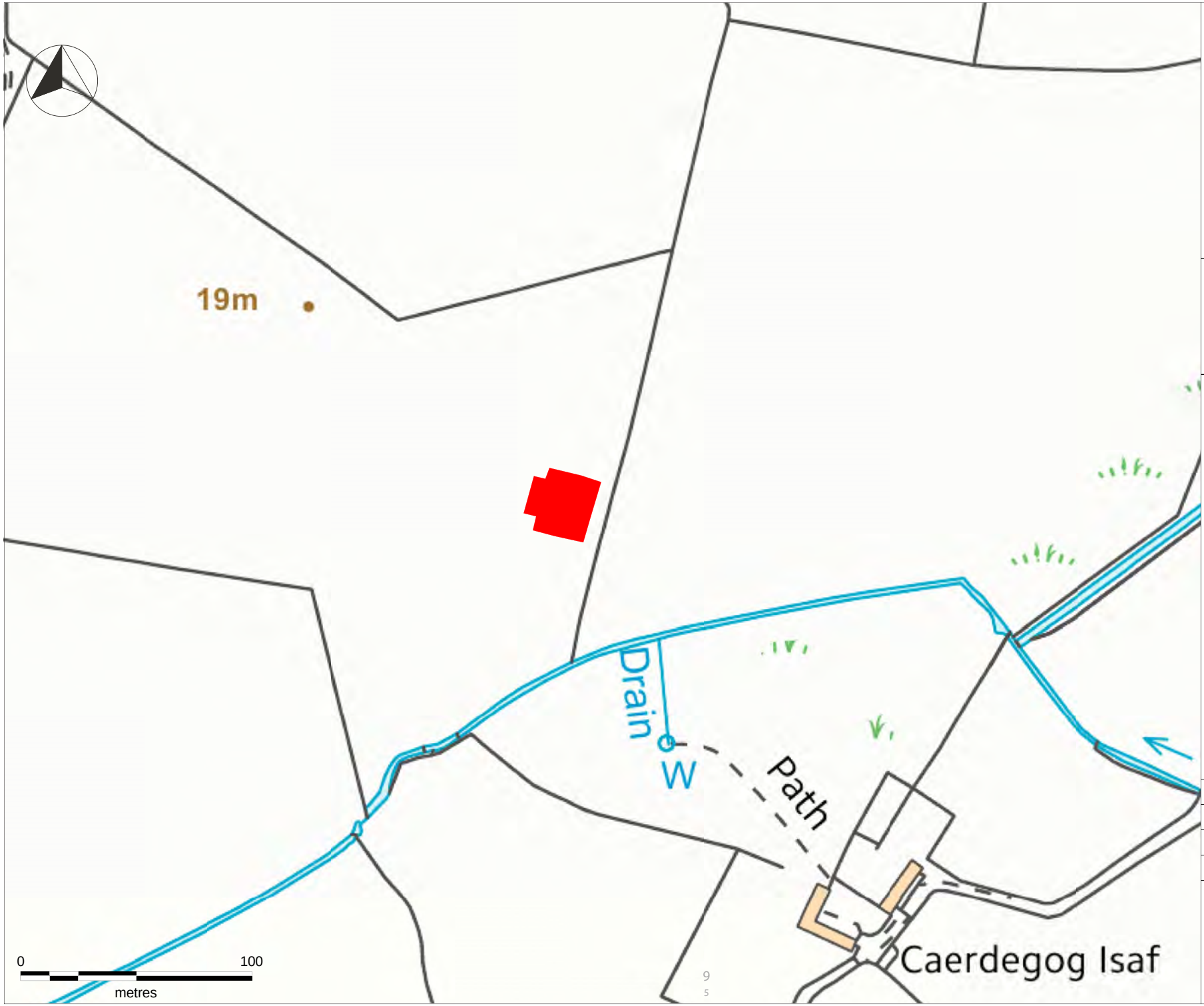
2 Project Background

2.1 Site Location

Hotspot 5, located in Hotspot Zone 1a, sits approximately 1km west of Tregele and 1km south of the existing decommissioned Wylfa power station in a southerly sloping field on the edge of marsh land. The pastural field was previously labelled 'A7' during the archaeological trial trench evaluation (*Figure 2*). The investigation area was at a height of approximately 17m AOD, centred on NGR SH34629265, and measured approximately 728m^2.

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 low-grade metamorphism (BGS, 2019).



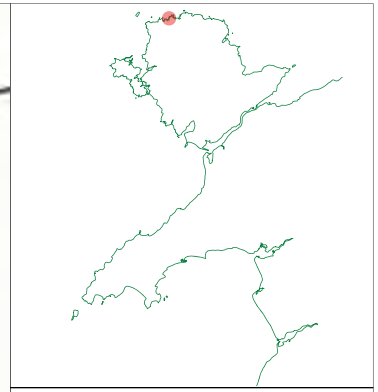


Figure 2
Location Plan, Hotspot 5.

Key

Hotspot 5

Drawn By: LWP

Date: 31/01/19

Location: SH34629265

Project: AB1703 Hotspot 5

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2.3 Archaeological and Historical Background Data

Historic mapping and documentary sources consulted by ABA did not indicate the presence of the pits, burnt mound, ditches or any other archaeological features identified during the excavation of Hotspot 5. However, Anglesey is rich in archaeological sites and artefacts dating from the Mesolithic to modern 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 re-arrangement 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 & 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. As well as the burnt mound identified and excavated in Hotspot 5 (HER PRN GAT 91839) examples were also identified in Hotspot 7-9 (HER PRN GAT 91846) and Area 8 (HER PRN GAT 61102/91837). Burnt mounds are usually located close to water sources and although their function has been widely debated, with interpretations including cooking locations for hunting parties, tanning, brewing, washing and as saunas, it is accepted that their main function was the heating of water with hot stones.

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 he development area was scant. Few sites of this period have been identified on Anglesey, the majority of known sites are ecclesiastical, including a 9th century cross slab (HER PRN GAT 3059) from Llanbadrig which pre-dates the 12th 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 12th century. The area would have been within the Kingdom of Gwynedd which was sub-divided 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 12th 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 have 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 16th and 17th centuries and are likely to have been removed in the 19th 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 19th 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). Anomalies observed during the survey were interpreted as a probable burnt mound feature.

2.5 Original Evaluation Results

Archaeological investigations undertaken in 2015-2016 indicated a fairly consistent non-archaeological deposit of 0.1-0.45m of brown sandy loam topsoil, overlying 0.02-0.58m of yellow brown silt loam subsoil across Field Group 1, in which Field A8 is located. Natural deposits of orange brown sand or clay lay at 0.2-0.8m below ground level. A total of 45 trenches were opened in Field A8, with 24 of those containing recorded archaeology (Wessex Archaeology, 2016).

The Hotspot 5 excavation targeted the location of Trench 315 which contained a burnt mound (31505) that measured approximately 8m by at least 1.8m and 0.47m in depth. Deposit 66604 recorded adjacent to Trench 315 was not excavated, however, when viewed together in plan it appeared that they represented separate elements of a single mound that measured at least 15m by 1.8m. Possibly associated with the burnt mound, unexcavated pit feature (31506) was also recorded. Environmental samples from the mound produced sporadic fragments of charred hazel shell (Wessex Archaeology, 2016).

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 (as 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 identification of a burnt mound during evaluation the following, relevant, research objectives (RO) was 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 excavations revealed a burnt mound and associated troughs, pits and a drainage ditch, in addition to prehistoric artefacts, the following archaeological research questions was identified in the WSI for Strip, Map and Sample areas (Horizon Nuclear Power, 2017).

Prehistoric;

Q.2. Are the burnt mounds/spreads the by-product of a specific function and what is that function?

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.5. What evidence do the ditch features provide for prehistoric landscape organisation and enclosure?

Q.6. What is the relationship between the ditches and other prehistoric features such as settlement features and burnt mounds/spreads?

Q.7. What relationships or patterns, if any, can been seen between these potential 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?

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 CIfA's best practice guidance, regulations and standards (CIfA, 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 was undertaken 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. 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. All non-funerary type archaeological remains were excavated in accordance with the following strategy (ABA, 2018):

- 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 includes 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 as relevant 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 in line with the regulations of the Chartered Institute for Archaeologists Standards and Guidance (CIfA, 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 distributed to stakeholders. Printed versions will only be produced if specifically requested. ABA will hold a digital version of the archive indefinitely.

3 Excavation Results

Excavation of Hotspot 5 (EVENT PRN 46038) revealed a series of pits, a large burnt mound, troughs and a possible well. Several modern, mechanically cut, field drains running north to south and north-east to south-west truncated a high proportion of the investigated area (*Figure 3*). The results of the excavation were first described in the ABA 2018 site summary report.

3.1 Quantification of Excavation Data

Data Category	Number
Context	100 (11 voided)
Small finds	6 (12664.1g / 12.6641kg)
Environmental samples	49 (1459 litres / 147 buckets)
Digital photographs	208 JPEG / 208 NEF
Rectified photographs	41.6 GB
GPS surveyed digital data	1.196 KB
Hand drawn plans	18
Hand drawn sections	28

Allocated PRNs

PRN	Feature
HER PRN GAT 91839	Burnt Mound
HER PRN GAT 91840	Possible Well
HER PRN GAT 91841	Pit

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 100 contexts were recorded during the excavation (*Appendix III*). Upon investigation 11 contexts were found not to be of archaeological interest.

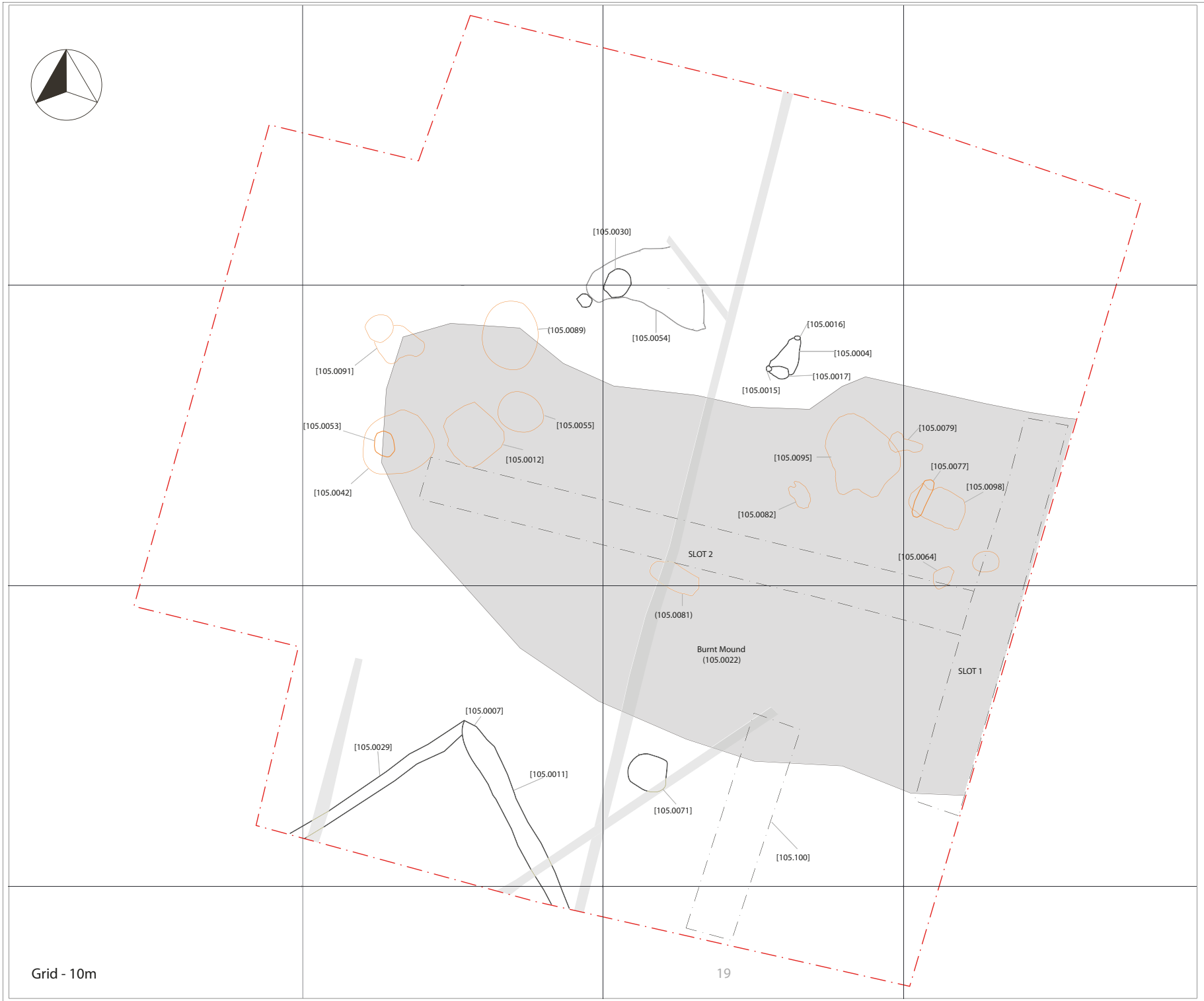
The physical relationship between features excavated at the site suggested seven potential groupings and/or phases withing the limits of Hotspot 5:

1. Natural alluvial deposits;
2. Period 3 (phase 1) - Early burnt mound activity, likely Late Bronze Age/Iron Age in date, with a possible hiatus;
3. Period 3 (phase 2) - A possible well intercutting the hiatus layer;
4. Period 3 (phase 3) - Mid burnt mound material overlying earlier burnt mound features, with late burnt mound features intercutting the deposits;
5. Period 3 (phase 4) - Late burnt mound activity and site abandonment;
6. Period 8 - Modern field drains; and
7. Undated burnt mound activity.

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 Natural deposits

The topsoil (105.0001) consisted of a firm light brown sand silt overlaying a light-yellow brown sand silt subsoil (105.0002). Directly underneath, a yellow red silt sand natural/geological deposit (105.0003) extended across Hotspot 5 and took on a green hue in permanently waterlogged areas. Alluvial deposits of mid grey silt clay, (105.0068) and (105.0100), were uncovered beneath the natural across the south and centre of Hotspot 5 and measured approximately 20m in length. Located in the northern section of the excavation area, and north of burnt mound (105.0022), a tree throw (105.0054) with three fills, (105.0061), (105.0062) and (105.0063), of mid orange brown to brown grey clay silt was excavated. No associated archaeological finds and/or features were identified.



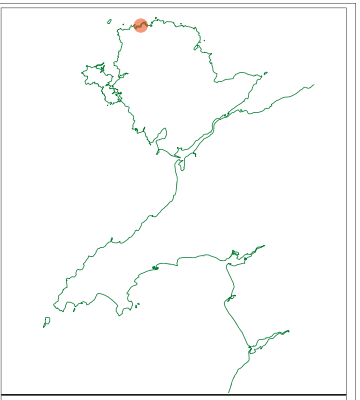


Figure 3
Site Plan, Hotspot 5.

Key

- Limit of Excavation
- Land Drains
- Extent of Burnt Mound
- Label lines
- Slots
- Natural Features
- Late Bronze Age/Early Iron Age Features
- Undated Features

Drawn By: DPN/LWP (edits by KM)
Date: 31/01/19 (last edit 09/03/21)
Location: SH34629265
Project: AB1703 Hotspot 5

Archaeoleg Brython Archaeology

3.2.2 Period 3 (Later Bronze Age to Iron Age)

3.2.2.1 Phase 1 - Early burnt mound activity with possible hiatus

The burnt mound (105.0022) (HER PRN GAT 91839), located towards the eastern extent of the excavation area was excavated in two 1.5m wide slots running north to south and east to west across the mound. In the western extent of the excavation three troughs, [105.0012], [105.0042] and [105.0055], were identified, of which [105.0012] was stone lined (*Plate 1 and 2*). Trough [105.0012], oriented northwest to southeast, contained three fills, (105.0013), (105.0027) and (105.0032), of which (105.0013) was the primary fill consisting of a compact mid grey black silt sand with frequent inclusions of medium to large angular stones. A possible grinding stone (SF002) was recovered from this fill.

Trough [105.0042] was sub-circular in plan with moderately steep convex sides and had a flat base measuring 2.75m in length, 2.08m in width and 0.77m deep. The feature contained six deposits, two of which were noteworthy, (105.0052) and (105.0043)(*Plate 3 and Figure 4 and 5*). Fill (105.0052) was early in the sequence and consisted of a loose mid grey sand silt with inclusions of wood, charcoal flecks and angular lumps of limestone and schist slabs ranging in size from 0.05m to 0.46m. This was considered a deliberate backfill and some of the larger schist slabs may indicate that trough [105.0042] was stone lined. Fill (105.0043) was the latest deposit within trough [105.0042] and extended beyond the feature's northern edge. It consisted of angular unburnt limestone chunks (approximately 0.05-0.16m in size), within a mid-orange brown silt. Fill (105.0043) was a deliberate dump of unfired material and probably represented an unused stockpile of stones for burnt mound industrial processes. Small find (SF003), a polished stone or potential quern stone was recovered from this fill. In the base of trough [105.0042], a sub-circular stone lined pit [105.0053] was excavated, measuring 0.70m in length, 0.60m wide and 0.45m deep (*Plate 4*). The fill (105.0088) consisted of dark grey silt clay with frequent inclusions of charcoal and wood fragments. Radiocarbon dating of organic material recovered from the fill returned a Late Bronze Age to Iron Age date of *c.* 905-806 BC. The plant materials dated are thought to be present due to backfilling (*Appendix V*).

Trough [105.0055] was sub-circular in plan with near vertical straight sides and a flat base measuring 1.43m in length, 1.13m wide and 0.40m deep (*Plate 5 and Figure 6 and 7*). There was no indication that this trough was stone lined but it did appear to have been sealed with orange clay, (105.0056) and (105.0060), which overlaid a mid-grey clay sand trample layer (105.0072).

Spread in patches across the burnt mound, deposits (105.0041) and (105.0049) were truncated and overlain by almost all the features and deposits associated with the burnt mound. Deposit (105.0041) was irregular in plan with an undulating profile extending approximately 25m in length, 14m wide and 0.18m deep. The deposit consisted of a dark to mid grey silt clay with inclusions of charcoal fragments and angular to sub-angular burnt and unburnt limestone chunks measuring 0.04-0.42m in size. Deposit (105.0049), a dark mid grey silt clay measuring 6.66m in length and 0.18m deep is considered to have been a continuation of deposit (105.0041). Small find (SF006), a piece of worked stone, was recovered from (105.0049).

A hiatus in site activity was represented by a diffuse deposit (105.0040) (*Figure 8*) located in discrete patches across the southern limit of Hotspot 5. It had a maximum breadth of 2.35m and depth of 0.14m and consisted of dark brown grey silt with occasional inclusions of small rounded gravel. The deposit seems to have derived from processes associated with standing water and bioturbation likely signifying a rise in the water table during the use of the burnt mound.

Plate 1. Trough [105.0012]. View from the South-West, 1m scale.

Plate 2. Trough [105.0012]. View from the South-East, 2m scale.

Plate 3. Trough [105.0042]. View from the South, 1m scale.

Plate 4. Stone lined pit [105.0053] in the base of trough [105.0042]. View from South, 0.5m scale.

Plate 5. Trough [105.0055]. View from the North-West, 0.5m scale.

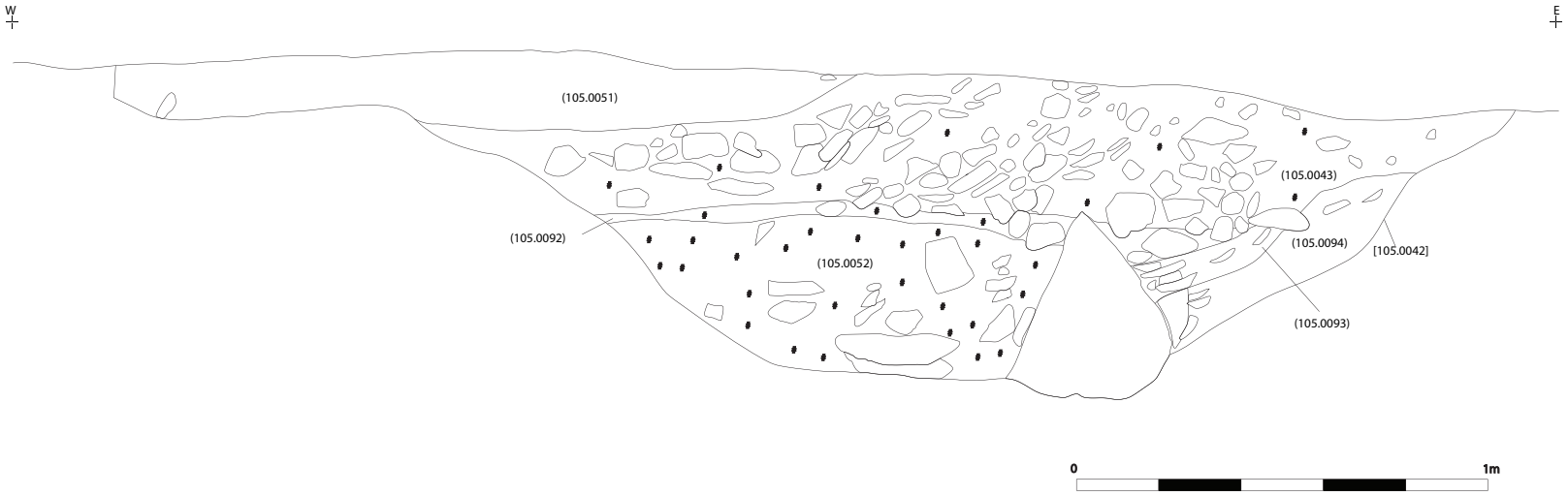


Figure 4. South Facing Section of Trough [105.0042]

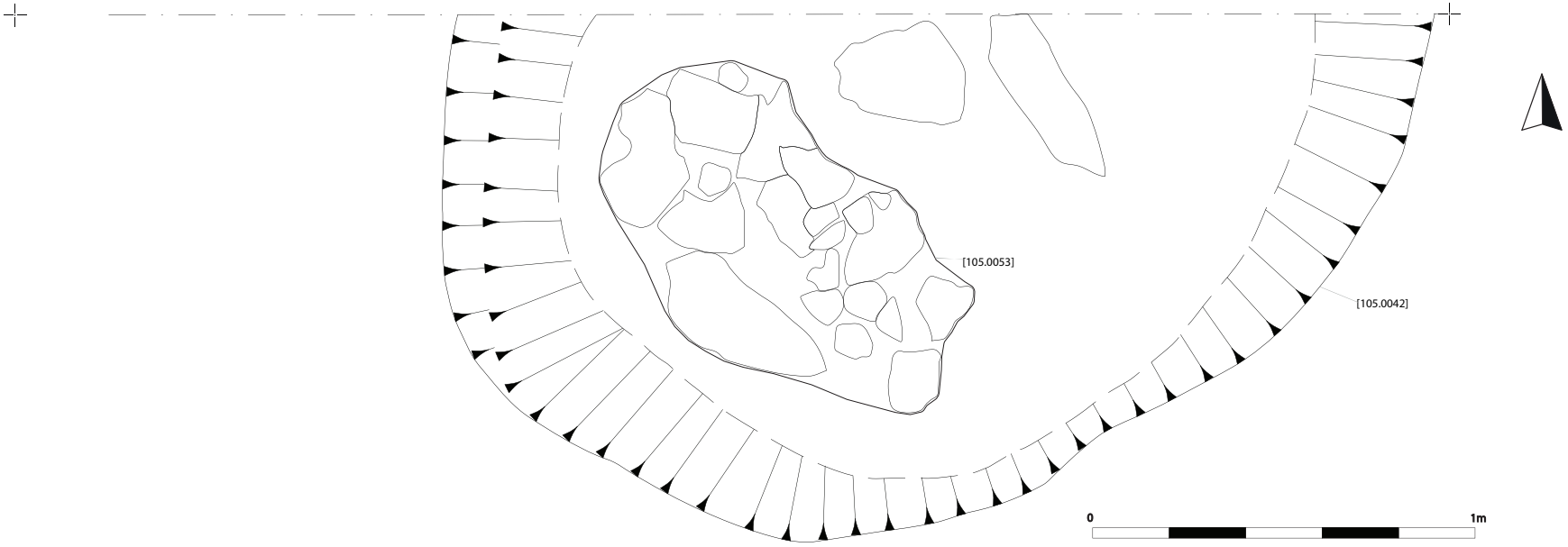


Figure 5. Plan of Trough [105.0042] showing pit [105.0053] cut into the base.

Figure 4
South facing section of Trough [105.0042].

Key

\# Charcoal

Figure 5
Plan of Trough [105.0042] showing pit [105.0053] cut into the base.

Drawn By: KM

Date: 28/02/20 (edited 09/03/21)

Location: SH34879274

Project: AB1703 Hotspot 5

Archaeoleg Brython Archaeology

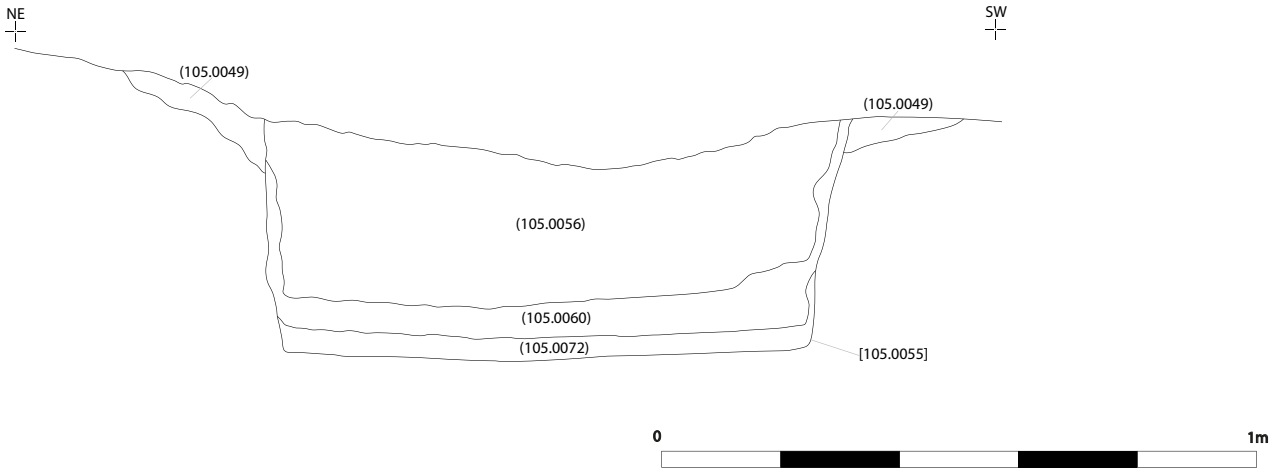


Figure 6. SE Facing Section of Trough [105.0055]

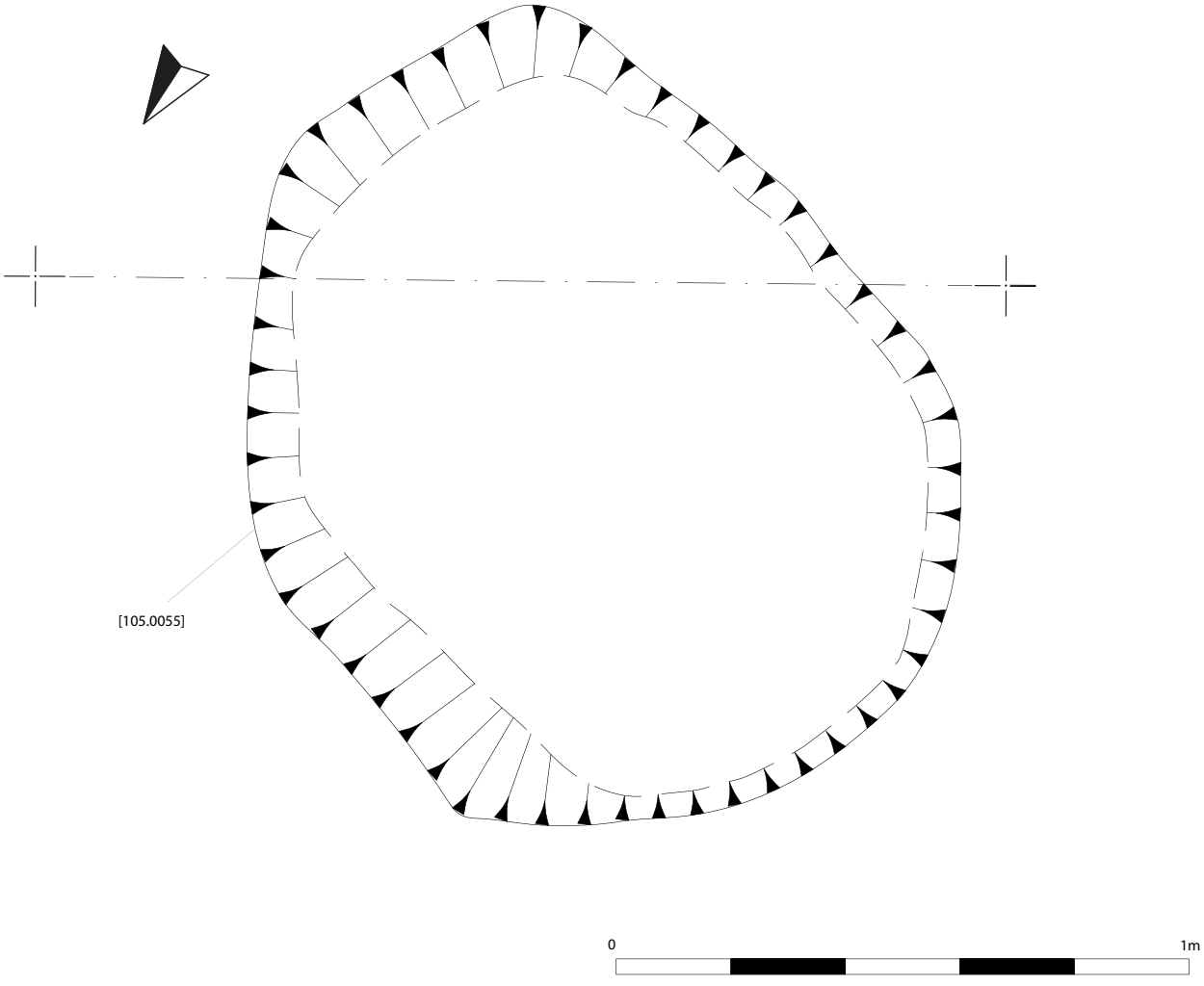
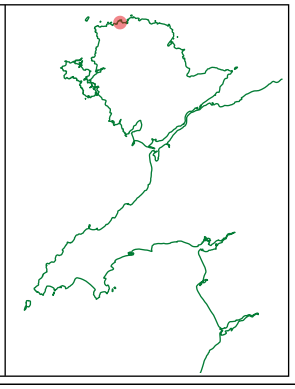


Figure 7. Plan of Trough [105.0055]

Figure 6
SE Facing Section of Trough [105.0055]
Figure 7
Plan of Trough [105.0055]

Project No.
AB1703
Drawn By:
KM/IGP
Date:
16/03/2021
Location:
SH34969272



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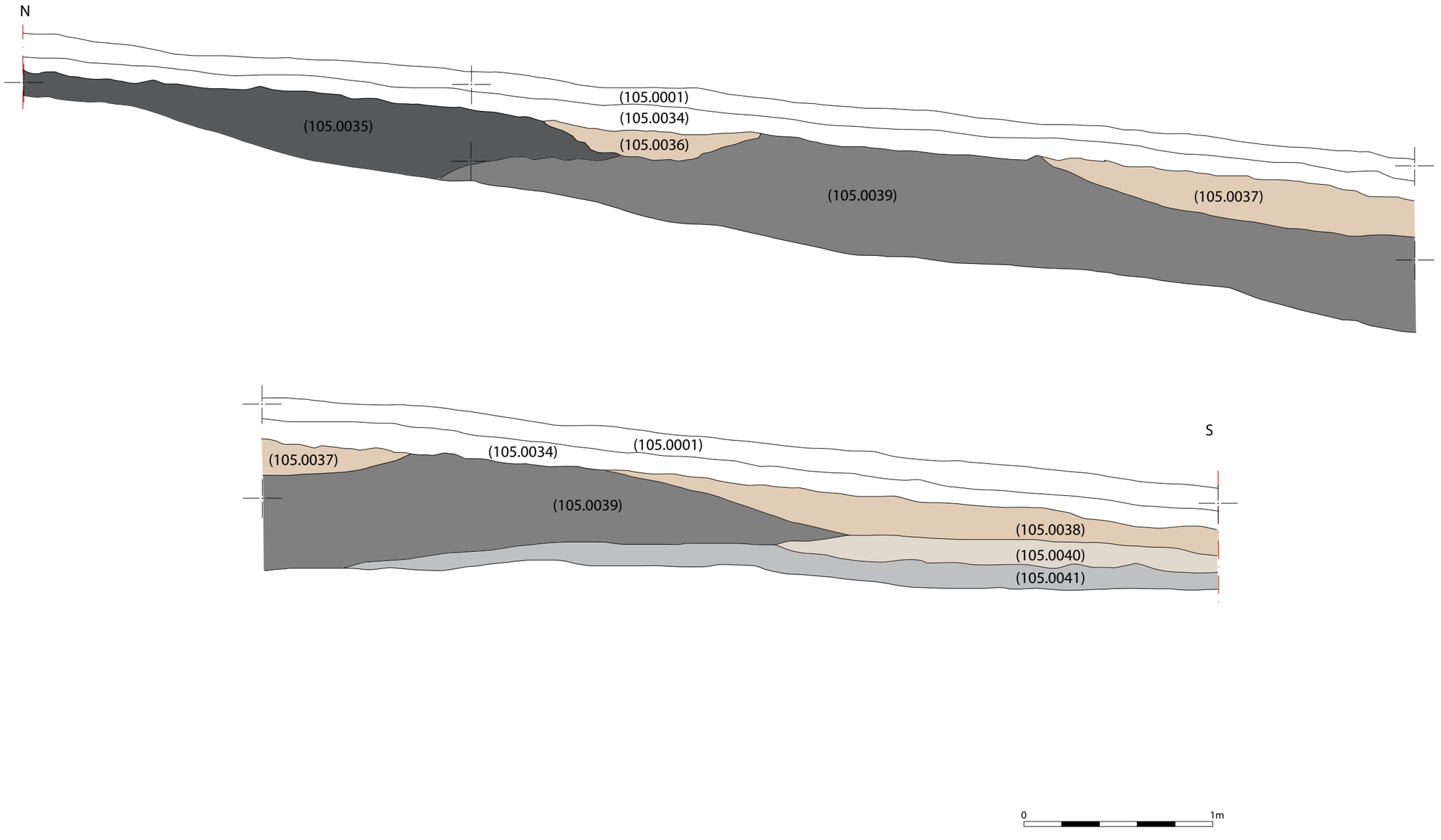


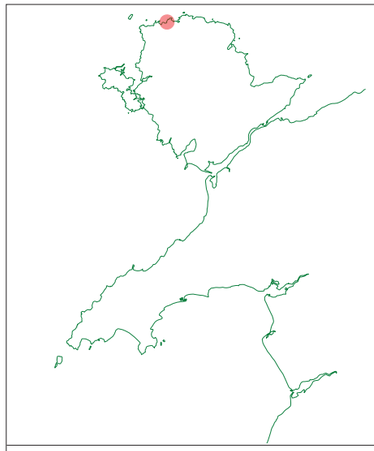


Figure 8
West facing section drawing of Slot 1 showing stratigraphic relationships between different phases of burnt mound activity.

Key

- Limit Of Excavation
- Section point
- Earliest Burnt Mound Deposit
- Early Disuse Deposit
- Burnt Mound Deposit
- Later Burnt Mound Deposit
- Final Disuse Deposits

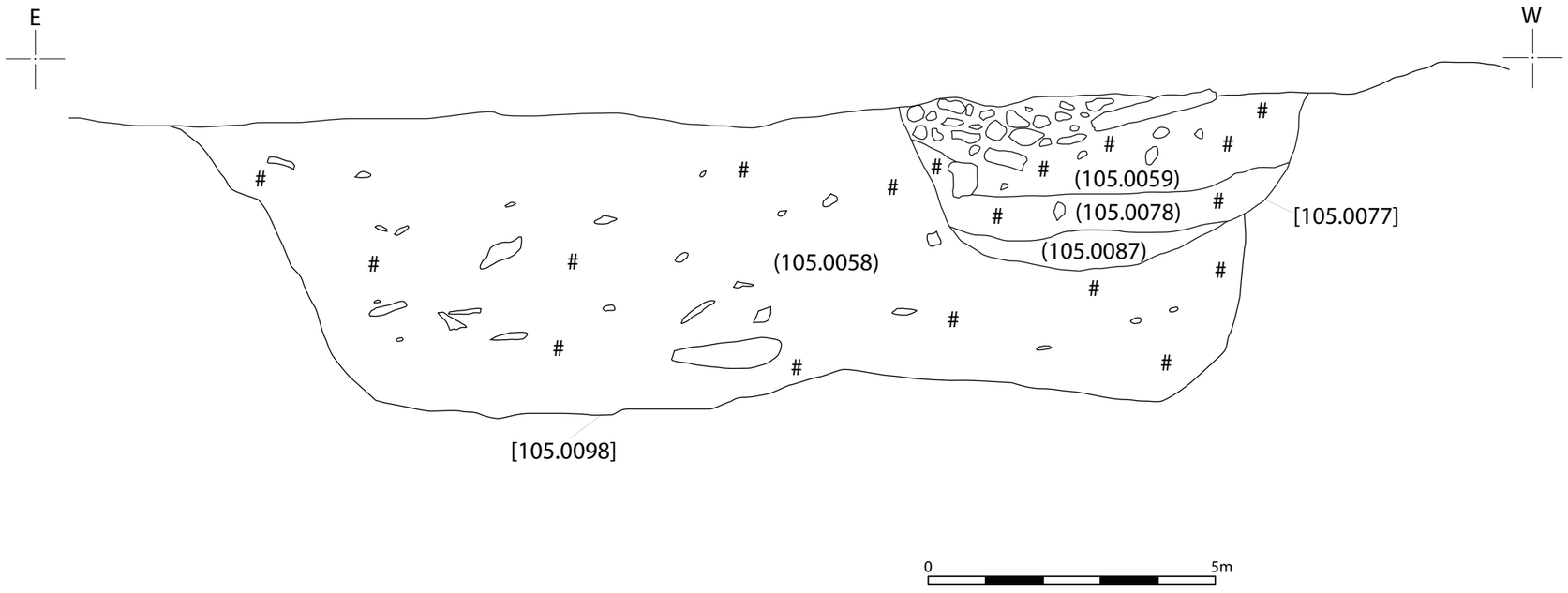
Drawn By: KM

Date: 10/03/21

Location: SH34719289

Project: AB1703 Hotspot 5

Archaeoleg Brython Archaeology



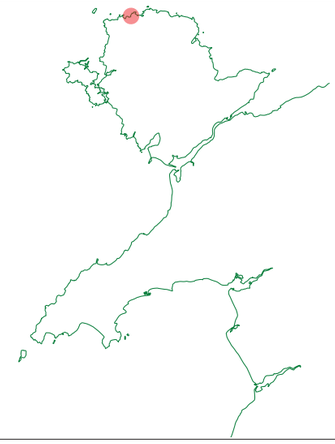


Figure 9
North facing section of intercutting troughs [105.0077] and [105.00989].

Drawn By: KM

Date: 09/03/21

Location: SH34719289

Project: AB1703 Hotspot 5

Archaeoleg Brython Archaeology

3.2.2.2 Phase 2 - Possible well

Within the south-eastern section of the excavation area, and south of the burnt mound, a possible well [105.0071] (HER PRN GAT 91840) was excavated. The sub-circular pit, with a diameter of 1.23m and depth of 0.6m, had a concave base and vertical, slightly undercut, sides with some indication of stepping along the eastern edge. The fill (105.0070) consisted of dark grey black silt peat with notable inclusions of wood and hazelnut shells. Two small finds, a worked blue schist stone fragment (SF004), and a worked chert stone flake (SF005) were recovered from this fill. Though no direct relationship could be established with the burnt mound, this feature cut through hiatus layer (105.0040) and lay below diffuse deposits (105.0036) and (105.0037), associated with the later burnt mound activity.

3.2.2.3 Phase 3 - Mid burnt mound activity

Mid burnt mound activity was associated with various deposits of burnt mound material, (105.0039), (105.0045), (105.0046), (105.0047), (105.0048) and (105.0050), overlying the earlier burnt mound features described in section 3.2.2.1 and, in turn, cut by burnt mound features associated with the later burnt mound activity.

Deposit (105.0048), excavated in the western section of (105.0022), consisted of a mid-brown grey clay silt with inclusions of angular to sub-angular burnt limestone chunks (approximately 0.06-0.11m in size) and flecks of charcoal. The deposit extended 5.36m in breadth and was 0.34m thick. Stratigraphically contemporary with (105.0048), deposit (105.0047) was located in the centre of the excavated area and measured approximately 6.56m in breadth and 0.53m in depth. The deposit consisted almost entirely of burnt limestone chunks (0.05-0.10m in size), thinly coated in light brown grey silt.

A later phase of activity was defined by three deposits, (105.0039=105.0046), (105.0045) and (105.0050), located in the east of the burnt mound. The deposits measured approximately 7.8m, 7.21m and 2.04m in breadth, and 0.6m, 0.3m and 0.17m thick respectively. All three fills consisted of a dark grey clay silt with inclusions of charcoal flecks and angular burnt limestone chunks raining in size from 0.04-0.09m.

3.2.2.4 Phase 4 - Late burnt mound activity and abandonment

A second cluster of features was excavated towards the north-east extent of burnt mound (105.0022) and consisted of two intercutting troughs, [105.0077] and [105.0098], a burnt spread [105.0095], and a discrete pit [105.0064]. These features were sealed by burnt stone deposit (105.0035) which was the final deposit of burnt mound material on the site.

The rectangular trough [105.0077] consisted of straight, vertical sides and a concave base, and measured 1.53m in length, 0.50m in breadth and 0.32m in depth. Orientated on a north-east to south-west alignment this feature cut trough [105.0098].The sides and base were lined with irregular slabs of schist forming a rough box. This contained an accumulation of burnt mound material (105.0059), (105.0076), (105.0078), (105.0084), (105.0085), (105.0086) and (105.0087), consisting of dark grey black to brown clay silt and layers of flat schist stones. The function of this feature was likely to hold water and appears to be contemporary with the burnt mound process.

The burnt spread (105.0095) was an irregular shape in plan which sat in a hollow with a slightly undulating profile extending 2.9m in length, 1.9m in width, and was 0.1m thick. Deposit (105.0096) overlaid the burnt spread and consisted of a dark grey sand silt with inclusions of charcoal and angular burnt limestone fragments, 0.02-0.05m in size with evidence of *in situ* burning. The sub-circular pit [105.0064] consisted of near vertical sides and flat base measuring 0.98m in diameter

and 0.15m deep. The fill (105.0069) consisted of loose black-brown silt clay with regular inclusions of large burnt stone. These features overlay the mid phase burnt stone deposit (105.0046).

Trough [105.0098] was rectangular shape in plan with near vertical straight sides and a flat base measuring 1.85m in length, 1.19m in width and 0.48m in depth. Orientated on a north-west to south-east alignment. There is some indication that the feature may have been clay lined (105.0099) and was filled with burnt mound material (105.0058) and truncated by trough [105.0077] at the north-west end (*Plate 6 and Figure 9*), indicating re-visitation and reuse of the burnt mound.

The final phase of activity was located in the north-east of the burnt mound and consisted of a mid-brown clay silt (105.0035) with inclusions of angular burnt limestone chunks measuring 0.04-0.15m in size. The deposit measured approximately 2.8m in breadth and 0.39m thick.

A colluvial deposit (105.0038) overlay the burnt mound and associated features. The deposit consisted of mid-brown grey clay silt with inclusions of small rounded stones and measured 0.3m in thickness. Its uniform nature suggests that it was not disturbed in relationship with the burnt mound and indicates the burnt mound's final abandonment.

Potentially contemporary with (105.0038) were two discrete deposits, (105.0036) and (105.0037), consisting of a firm mid-grey brown clay silt with moderate inclusions of angular limestone chunks (approximately 0.03-0.10m in size), and likely derived from the underlying burnt mound deposits. The discrete deposits measured between 1.16-0.15m in thickness.

Plate 6. Intercutting troughs [105.0077] -fully excavated, and [105.0098] - half sectioned, with fill (105.0058) still *in situ*. View from the North, Scale 1m.

3.2.3 Period 8 (Modern activity)

Three features that had no physical relationship with the burnt mound were investigated and consisted of the terminus [105.0007] and two profile slots, [105.0011] and [105.0020] of a drainage ditch feature running north west to south east. The ditch measured 6.43m in length, 0.79m wide and 0.18m deep and contained a single deposit (105.019) of dark brown silt clay with a high organic component.

A large tree throw [105.0004], excavated to the north of the burnt mound, was sub-circular shape in plan with moderate concave sides and an irregular base. The fill (105.0024) consisted of a mid-brown grey silt clay with inclusions of sub-angular limestone chunks, approximately 0.02-0.05m in size.

3.2.4 Unphased features

Possibly related to the burnt mound, a sub-circular pit [105.0091] (HER PRN GAT 91841) was excavated at the north-western section of the burnt mound. The pit had shallow concave sides and a concave base measuring 0.93m in diameter and 0.06m deep and was sealed by a discrete deposit of burnt mound material (105.0090). The function of this pit is unknown and its direct relationship with the burnt mound is unclear. Therefore, this pit is classified and an unphased feature.

4 Assessment of Potential and Significance

All finds were treated in accordance with the guidelines set out in Watkinson and Neal's (1998) and CIfA'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 5 a total of six small finds were recovered, with a combined weight of 12,193g. The finds assessment was compiled by Sue Thompson, and the full finds assessment report is included as Appendix IV.

4.1.1 Lithics

A single flint object, SF001 (78g), was recovered from unstratified topsoil deposits. The fragment was highly abraded and may be part of a multi-platform core of Neolithic to Bronze Age date. As a single unstratified object, it is of little interest, however, it may warrant further analysis as part of the wider project.

4.1.2 Stone

Four stone finds (12,515g), in good condition, were recovered during the Hotspot 5 excavation. The stone finds comprised of two sandstone stone, each with a shallow hollow; SF002 likely part of a shallow grinding stone, and SF003 a roughly rectangular block of fine sandstone. Hollowed stones were recovered from several sites on Anglesey during the A55 road building scheme which had a variety of uses (Smith, 2012) (*Appendix IV*), however, no obvious use can be attributed to these examples.

SF004, a roughly triangular, wedge shaped fragment of slate or schist with evidence of possible sooting was recovered from (105.0070), the fill of pit [105.0071]. SF006, a coarse sandstone cobble does not show evidence of use or wear. Further analysis may be warranted on the worked stone.

4.1.3 Industrial waste

Approximately 18g of industrial waste was recovered from environmental samples <20> and <30>, and are of low archaeological significance. No further work is warranted on the possible finds from environmental samples.

4.1.4 Ceramic Building Material (CBM)

A total of 1,770g of possible CBM fragments were recovered from 15 environmental samples. On further assessment by the finds specialist, it was revealed that the fragments were burnt or heated stone rather than CBM, and are of low archaeological significance.

4.2 Palaeoenvironmental Assessment

A total of 49 bulk environmental samples were taken during the excavation of Hotspot 5. Forty-seven samples, weighing 1554kg were procced by WA. Samples were processed according to guidelines stipulated in the Wardell Armstrong LLP. Technical Manual No. 2 (2018) and Wardell Armstrong (2019). 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 (*Appendix V*). Due to samples being damaged in storage and transit, two samples were deemed unfit for processing by WA. The full report by Freddie Sisson is included as Appendix V. No bone or shell material was recovered from the environmental samples.

4.2.1 Results

Overall, the samples were dominated by a silt clay sediment matrix, with lesser quantities of sand clay and clay silt sediment. Artefactual material recovered from the dried residues were minimal and contained fragments of ceramic building material and industrial waste that are of low archaeological significance. The material recovered from the flots are outlined below.

4.2.1.1 Charred plant remains (CPR)

The CPR recovered were in relatively good condition and obtained from eight samples, of which two samples contained over ten items; sample <29> from (105.0062) the secondary fill of a possible pit or tree throw [105.0054], and sample <45> from (105.0070) a peat and wood layer of a possible well [105.0071]. The charred plant remains are in such small quantities that they would not inform of any plant husbandry practices at Hotspot 5 or in the wider area of Anglesey or Wales.

4.2.1.2 Charcoal

The charcoal ranged from good to poor preservation and was present in forty-three samples, of which 20 yielded more than 5g. . Identification of species of the charcoal from samples <6>, <9>, <11>, <15>, <16>, <18>, <19>, <26>, <28>, <30>, <32>, <33>, <34>, <38>, <40>, <43>, <46>, <47> in particular can help to improve knowledge on the types of species being exploited for burning activities in the wider Anglesey landscape as these are the most likely remains from burnt mound activities. The most likely charcoal to have been burnt *in situ* is from sample <15> and <18>, from inside and under burnt mound (105.0022). Only charcoal from the sample <43> of fill (105.0088) from trough [105.0042] was identified to species as this context was requested for radiocarbon determination. The charcoal warrants further analysis that should be undertaken following Huntley (2010) (Appendix V).

4.2.1.3 Magnetic Material

The magnetised material recovered from the dried retents was examined under a microscope for microslags but none were present, with the magnetic material comprising only of small stones that are of no archaeological significance.

4.2.1.4 Wood

A total of 1954g of wood was recovered from sample <45> (105.0070), a peat and wood layer of a possible well [105.0071], and is considered to be part of backfilling and of low 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 two samples were suggested from radiocarbon dating, of which one was successfully dated. 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
43	105.0088 – fill of pit	Rose	905-806 cal BC (95.4%)	Late Bronze Age - Iron Age

5 Discussion and Statement of Potential

Hotspot 5 was targeted for excavation because of the potential for prehistoric archaeology identified during evaluation trenching. Excavation identified a later prehistoric burnt mound with associated troughs and pits, and a well which could not be directly associated with the burnt mound activity. The features were sealed by a colluvial layer, which was cut by a later drainage ditch. Due to the small number of datable artefacts recovered during the excavation of Hotspot 5, the information gained from the assessment is limited. However the excavation 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.

Excavated in two slots running north to south and east to west, the bunt mound revealed evidence of several potential phases of deposition. All of the deposits and features associated with the burnt mound, including five potential troughs [105.0012], [105.0042], [105.0055], [105.0077] and [105.0098], two pits [105.0091] and [105.0064], and a burnt spread (105.0095) likely represents an accumulation of waste burnt mound material from water heating activity over an extended period of time.

Three troughs, [105.0012], [105.0042] and [105.0055], were associated with the earliest phase of activity which suggests that the burnt mound was either intensively used for a short period of time or regularly for an extended period of time. None of the troughs associated with this phase were intercutting yet all of the troughs were in the same general area at the western edge of the mound, possibly suggesting that all or some were used contemporaneously. Trough [105.0012] was stone lined and schist slabs in the fills of [105.0042] suggest it may also have been stone lined whereas [105.0055] was sealed with orange clay. This could suggest that the troughs were used for different processes which required a different method of lining, it is also possible that as only traces of stone lining were identified in [105.0042] the schist slabs may have been re-used in trough [105.0012]. A hiatus in activity at the burnt mound was represented by a gravelly layer of silt which may have been caused by standing water over the site for an extended period of time.

The last phase of activity appears to have been concentrated at the eastern side of the mound where two intercutting troughs, [105.0077] and [105.0098], were identified. Deposit (105.0096) showed evidence of in situ burning suggesting that fires were set on previous episodes of dumping, likely due to the mound itself being slightly elevated and dryer than the surrounding wet ground. The fact that the two troughs associated with this phase of activity, prior to abandonment, were not contemporary and [105.0098] was completely backfilled by the time [105.0077] was constructed.

Various deposits of burnt mound material which were deposited between these two main phases of activity cannot be directly associated with any troughs. This material may have been associated with troughs which lie outside the excavation area or could have been associated with above ground troughs such as hollowed tree trunks.

Artefactual evidence of prehistoric activity was demonstrated by the recovery of an unstratified worked lithic (SF001), a possible multi-platform core of Neolithic to Bronze Age date. In addition, worked stone finds, SF002 and SF003, possible grinding stone fragments from trough [105.0012] and [105.0042], and a fragment of schist or slate with evidence of sooting from well [105.0071] were also recovered. It is difficult to closely date the stone artefacts, however, similar artefacts have been recovered from Prehistoric and Roman sites on Anglesey. The worked stone is of local significance and moderate archaeological potential and should be considered alongside similar material recovered as part of the wider project. Radiocarbon dating of circular pit [105.0053] returned a Late Bronze Age to Iron Age date. However, to fully address and determine the

chronology of archaeological remains recorded at Hotspot 5 multiple samples recorded from the same, stratigraphically sound context should be submitted for radiocarbon dating.

Radiocarbon dating, although limited, has shown that the activity in Hotspot 5 likely dates to the Late Bronze Age and Early Iron Age. Dating of troughs associated with a burnt mound identified in Hotspot 7-9 (HER PRN GAT 91846) also provided dates from these periods but slightly earlier, the burnt mound in Area 8 (HER PRN GAT 91837) was dated to Middle to Late Bronze Age. It is likely that a better understanding of the way these sites were used, whether contemporary or sequentially, could be gained with further radiocarbon dating.

The modern activity at the site, that had no physical relationship with the burnt mound, i.e. terminus [105.0007], slots [105.0011] and [105.0020], and tree throw [105.0004] is of no archaeological significance.

It is evident from the excavation and observations of the undulating nature of the ground at the edge of the wet ground to the south of Hotspot 5 that the surrounding area has high potential for similar archaeological deposits. The waterlogged nature of the ground to the south 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 5 excavation in order to date evidence of past activities, and samples were taken to better understand the past environment and land use. During the excavation a series of pits, a burnt mount, troughs and a possible well, and several modern mechanically cut field drains were revealed. Burnt mound activity at the site indicated four possible phases: early activity dated from the Later Bronze Age to Iron Age with a possible hiatus, mid activity overlaying earlier burnt mound features with late burnt mound features intercutting the deposits; and late burnt mound activity. Determining a definite chronology for the archaeological remains recorded at Hotspot 5 from the feature typology, lack of stratified finds, and scarcity of radiocarbon dates is problematic. 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 an examination of the stratigraphy and contextual analysis of the datable finds.

Prehistoric;

1. Are the burnt mounds/spreads the by-product of a specific function and what is that function?
2. 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')?
3. What relationships or patterns, if any, can been seen between these Prehistoric features and their wider landscape setting?
4. What evidence do the ditch features provide for Prehistoric landscape organisation and enclosure?
5. What types of artefacts are present in the SMS zones?
6. What can these artefacts tell us about daily life and ritual activity?
7. Were those artefacts, which may be found in the SMS Zones, produced locally?

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 finds analysis as recommended by the specialist assessment reports (*Appendix IV and V*) are produced:

- Stone - Further analysis may be warranted on the worked stone
- Lithics - May warrant further analysis as part of the wider project
- Charcoal – Further analysis may help to improve knowledge on the types of species being exploited for burning activities and assess fuel types. Charcoal from samples <6>, <9>, <11>, <15-16>, <18-19>, <26>, <28>, <30>, <32-34>, <38>, <40>, <43> and <46-47> are of particular interest.

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.

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Appendix I

AB1703 Archaeoleg Brython Archaeology

Project Team

AB1703 Archaeoleg Brython Archaeology Project Team

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Stuart Elder

Thomas Eley

Marta Estanga Lopez de Murillas

Lucia Fernandez Rabanal

Sean Finlay-Scott

James Fish

Amy Gamman

Catherine Godsiffe

Sergio Gomez-Carrion

Paul Hickman

Karen Hole

Vickki Hudson

Rocio Jimenez Diaz

Mark Jones

William Jones

Trevor Jose

Callum Knauf

Leslie Law

Timothy Lewis

Karl Macrow

Meagan Mangum

Sharon Martin

Antonio Luis Martinez Rodriguez

Elena Matteacci

Georgina Merckel

Lucy Morrison

Tomasz Moskal

Alexis Mosley

Ramon Navas Losada

Cindy Nelson-Viljoen

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

Area	PRN	Description	Easting	Northing	Period	Summary
Wylfa Head	91809	Lithic Scatter	235752	393877	Early Neolithic	Flint scatters consisting of a number of flint tools and debitage recovered from stoney layer (10.1954) that had evidence of being heat affected
Wylfa Head	91810	Pits, Wylfa Head	235746	393880	Early Neolithic	Two 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 Head	91811	Lithic Scatter	235802	393867	Early Neolithic	Lithic 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 date
Wylfa Head	91812	Neolithic Pits, Wylfa Head	235765	393810	Early Neolithic	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 stones
Wylfa Head	91813	Postholes	235787	393865	Late Iron Age/Early Romano-British	Three posthole groups, [10.2706], [10.2902] and [10.2910], each consist of three postholes forming a triangle. Postholes groups [10.2706] and [10.2902] was located along the southern edge of burnt daub patch (10.2614)
Wylfa Head	91814	Roundhouse	235790	393863	Late Iron Age/Early Romano-British	Roundhouse 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] and [10.2745]. The roundhouse was heavily truncated by later activity
Wylfa Head	91815	Ditch	235778	393873	Late Iron Age/Early Romano-British	East to west aligned ditch identified below later stone walls and located north-west of roundhouse (HER GAT PRN 91814). The ditch may represent an early boundary. Radiocarbon dating of fill (10.2610) returned a mid to late Roman date
Wylfa Head	91816	Multi-post Structure (Granary)	235751	393873	Late Iron Age/Early Romano-British	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 cardinal points of the compass. The most northerly row consisted of [10.0135], [10.0356] and [10.0233]. The central row consisted of [10.0317], [10.0231] and [10.02777]. The most southerly row consisted of [10.0296], [10.0183] and [10.0187]
Wylfa Head	91817	Enclosed Settlement	235781	393862	Late Iron Age/Early Romano-British	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 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 easily interpreted due to later truncation. A large stone lined pit (HER PRN GAT 91823) is likely to be contemporary with the settlement, although radiocarbon dating suggested it may be later.
Wylfa Head	91818	Roundhouse	235779	393854	Late Iron Age/Early Romano-British	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 fill (10.1165) of posthole [10.1167] and fill (10.2008) of posthole [10.2007] returned a Late Roman date
Wylfa Head	91819	Settlement Features	235742	393872	Late Iron Age/Early Romano-British	Possible settlement features identified in the north-western section of site that are likely contemporary with the later enclosed phase of settlement (HER GAT PRN 91818). The features included a stone lined drain [10.0845], post holes and gullies
Wylfa Head	91820	Platforms	235746	393860	Late Iron Age/Early Romano-British	Three rock-cut platforms with patched of heat discoloured bedrock was identified to the west of roundhouse (HER GAT PRN 91818). Radiocarbon dating of deposit (10.0439) returned a middle Roman date

Appendix II – Gazetteer of sites excavated by ABA

Wylfa Head	91821	Industrial Activity	235768	393833	Late Iron Age/Early Romano-British	Area of industrial activity identified north of southern boundary wall (10.2013), largely truncated by the early medieval cemetery. Features included walls and postholes, suggesting the presence of a structure, and pits containing slag.
Wylfa Head	91822	Ditch	235741	393883	Romano-British	A ditch [10.1022] at the western edge of the excavation area which was truncated by later activity but may have formed part of an enclosure system with ditch [10.1176].
Wylfa Head	91823	Stone Lined Pit	235794	393858	Late Iron Age/Early Romano-British	Large oval pit located within sub-rectangular structure (10.2782) north-east of roundhouse (HER GAT PRN 91818). The pit contained a rectangular lining of large schist orthostats in base of the cut with the western edge left open for access via a stepped slope
Wylfa Head	91824	Cemetery	235778	393845	Early Medieval	Early medieval cist cemetery that consisted of 315 graves. Human remains in varying degrees of preservation recovered from 109 graves representing 119 individuals
Wylfa Head	91825	Ditch	235778	393849	Post-Medieval/Modern	East-west aligned post medieval ditch pointed to square rock-cut shaft (HER GAT PRN 91826). The ditch truncated several early medieval graves. No dating evidence was recovered
Wylfa Head	91826	Shaft	235732	393851	Post-Medieval/Modern	Rock-cut shaft located on the crest of highest part of site to the west of post medieval ditch (HER GAT PRN 91825). No dating evidence was recovered
Wylfa Head	91827	Pits and Postholes	235732	393862	Undetermined date	Small pits and post-holes which appeared to form structures, windbreaks or fences and laid rough stone surfaces identified on the top of the hill at the western edge of the excavation area. No dating evidence was recovered
Area 7	91828	Pits	234727	392882	Neolithic	Three pits [07.0559], [07.0533] and [07.0477] that contained charcoal and burnt stones. Pit [07.0559] located north-east of Funerary Enclosure contained a burnt saddle quern (SF07.0013), two pieces of Graig Lwyd stone from Penmaenmawr (SF07.0014 and 07.0015) and a polished axe (SF07.0012). Pit [07.0533] to the south of pit [07.0559] contained a polished stone (SF07.0010)
Area 7	91829	Partially Enclosed Settlement	234728	392926	Iron Age	A hilltop enclosure comprising roundhouse with associated partial enclosure ditch, small ditches and gullies and group of pits and postholes likely representing a granary structure concentrated in the northern part of the site
Area 7	91830	Cemetery	234718	392898	Early Medieval	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). Fifty-one graves were excavated. No human remains were recovered.
Area 7	91831	Funerary Enclosure	234715	392887	Early Medieval	Funerary Enclosure 1 was located in the southern central area of the site and contained one grave (G0.053). The largest of three complete enclosures with continuous ditch enclosing an area of 32 square metres
Area 7	91832	Funerary Enclosure	234723	392880	Early Medieval	Funerary Enclosure 2 was located south-east of the cemetery and contained three burials (G07.031), (G07.032) and (G07.033). Identified by evaluation Trench 97. An entrance way or causeway was located on the eastern side
Area 7	91833	Funerary Enclosure	234715	392873	Early Medieval	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 enclosure ditch enclosed an area of approximately 10.8 square metres. The entrance or causeway was located on the eastern side
Area 7	91834	Funerary Enclosure	234706	392890	Early Medieval	Funerary Enclosure 4 located to the west of funerary enclosure 1 contained one central grave (G07.009). The enclosure ditch was heavily truncated to the east and west and enclosed an area of approximately 12 square metres
Area 7	91835	Intercutting Pits	234709	392877	Undetermined date	Two groups of intercutting pits located to the west of funerary enclosure 3. Group 1 consisted of pits [07.0176], [07.0264] and [07.0367]. Group 2 consisted of pits [07.0542], [07.0177] and [07.0542]

Appendix II – Gazetteer of sites excavated by ABA

Area 7	91836	Ditches	234705	392872	Undetermined date	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 southern edge of the cemetery
Area 8	91837	Burnt Mound	235186	392829	Middle to Late Bronze Age	Deposit (08.0003) identified as burnt mound 21404 during evaluation. Heavey agricultural activity resulted in substantial plough damage. No dating evidence was recovered. Associated trough [08.0019] located to the north-east and below the burnt mound contained one large loom weight (SF001) and charcoal.
Area 8	91838	Former Boundary	235174	392831	Post-Medieval/Modern	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 modern backfill and debris. Ditches identified as clawdd boundary 2116 during evaluation and same as HER PRN GAT 61137
Hotspot 5	91839	Burnt Mound	234623	392652	Later Bronze Age to Iron Age	A large burnt mound, measuring approximately 25m x 14m, showing evidence of phases of activity, along with a number of troughs including [105.0012] which was stone lined.
Hotspot 5	91840	Possible Well	234622	392644	Later Bronze Age to Iron Age	Well [105.0071] located south of burnt mound (105.0022). Consisted of sub-circular pit with slightly undercut sides with some indication of stepping along eastern edge. Worked blue schist stone (SF004) and chert (SF005) was recovered from fill (105.0070)
Hotspot 5	91841	Pit	234613	392658	Undetermined date	Sub-circular pit [105.0091] located at north-western section of burnt mound (105.0022) and sealed by a discrete deposit of burnt mound material (105.0090). Function unknown
Hotspot 6	91842	Pit	234835	392703	Neolithic to Early Bronze Age	Sub-circular pit [106.0034] located toward the eastern extend of site containing charcoal, worked chert and flint.
Hotspot 6	91843	Trackway	234828	392706	Undetermined date	South-West to North-East aligned trackway [106.0008] which had a metalled stone surface, may be same as trackway (HER PRN GAT 91851) observed in Hotspot 7-9. Pre-dates enclosure system in same area which was dated early medieval/medieval.
Hotspot 6	91844	Enclosure Gullies	234829	392704	Early medieval to 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 PRN GAT 91849) and Hotspot 11-13 (HER PRN GAT 91861). Struck flint (SF002) was recovered from gully [106.0010]
Hotspot 7-9	91845	Stakeholes and Pits	234863	392740	Neolithic/Early Bronze Age	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 stone and a flint scraper. Pit [109.0135] pre-dated the burnt mound activity. Pit [109.0125] contained a possible axe roughout.
Hotspot 7-9	91846	Burnt Mound	234877	392737	Late Bronze Age to Iron Age	Burnt mound material (109.0154) identified as burnt mound (134508) in Trench 1345 during evaluation. Stretched across southern central part of site it contained a spindle whorl (SF020), worked chert (SF021). Evidence of phasing lost due to later ploughing.
Hotspot 7-9	91847	Possible Working Area	234883	392746	Later Iron Age and Romano British	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 the well. These features may be associated with the Iron Age/Roman-British settlement identified in Hotspot 15 (HER PRN GAT 91875).
Hotspot 7-9	91848	Pits, Gullies and Ditches	234879	392750	Undetermined date	Several features of indeterminate function including: northwest-southeast aligned linear gully [109.0130] cutting through burnt mound (109.0154); ditch [109.0152], possibly a continuation

Appendix II – Gazetteer of sites excavated by ABA

						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
Hotspot 7-9	91849	Ditch	234863	392763	Undetermined date	North-East to South-West aligned ditch [109.0008] located at northern end of site. It continuing beyond limit of excavation and terminated north of the bedrock outcrop (HER PRN GAT 91850).
Hotspot 7-9	91850	Possible Quarrying	234860	392751	Undetermined date	Possible tool marks identified on outcrop of schist. Possible quarrying location for nearby settlement and long-cist cemeteries.
Hotspot 7-9	91851	Trackway	234864	392737	Undetermined date	Short section of trackway (109.0085) running from the north-east to the south-west (continued beyond limit of excavation). May be the same as (HER PRN GAT 91843) located to the south-west.
Hotspot 7-9	91852	Pits	234865	392765	Undetermined date	A number of undated pits of no apparent function identified in Hotspot 7-9.
Hotspot 8	91853	Stone Surface	234912	392781	Undetermined date/Likely Romano British	A surface of laid schist slabs, orientated North-South measuring approximately 2m x 1.5m. Likely associated with Romano British features in the vicinity.
Hotspot 8	91854	Ditches	234907	392786	Undetermined/Neolithic	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 Age features. The western ditch [108.0011] was orientated north-east to south-west and was undated.
Hotspot 8	91855	Pits and Postholes	234908	392780	Late Iron Age	A number of pits and postholes located at the south-eastern quarter of Hotspot 8. Likely to represent truncated postholes forming a structure, possibly a granary. Late Iron Age date obtained from pit [108.0053].
Hotspot 8	91856	Filed Clearance	234901	392774	Undetermined date	A deposit of stones, likely representing field clearance identified at the southern limit of excavation.
Hotspot 10	91857	Pit	234933	392962	Late Neolithic Early Bronze Age	A discrete pit [110.017] which was radiocarbon dated to the Late Neolithic or Early Bronze Age, 1.3m in diameter and 0.45m deep.
Hotspot 10	91858	Ditches	234938	392956	Undetermined date	A series of four ditched identified within the excavation area. The earliest by stratigraphy were a pair of parallel ditches [110.008] & [110.014] at the southern edge of the area which 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 5m in length, terminated 0.5m north of ditch [110.020] and ran into the western baulk. The nature of the ditches suggests that they relate to a relict field systems.
Hotspot 11-13	91859	Pits, Stakeholes, Postholes and Stone Bank	234958	392894	Neolithic	A number of prehistoric features including a stone bank (113.0186), two pit groups and stone lined furnace or oven [113.0136] with associated stakeholes at the western side of the excavation area.
Hotspot 11-13	91860	Enclosure	234977	392902	Undetermined date	An apparent square or rectangular enclosure with an entrance orientated to the south-east was excavated at the north of the Hotspot. Stratigraphically pre-dated the early medieval features.
Hotspot 11-13	91861	Ditch	234969	392895	Undetermined date	Ditch [113.0032] pre dated the early medieval features and cut enclosure (HER PRN GAT 91860). The ditch traversed the entire excavation area on a north-west to south-east orientation.

Appendix II – Gazetteer of sites excavated by ABA

Hotspot 11-13	91862	Cemetery	234967	392893	Early medieval	The cemetery contained 21 graves aligned east-west, mostly long-cists, suggesting an early medieval date. No human remains were recovered, possibly due to the acidic nature of the soil.
Hotspot 11-13	91863	Ditch	234979	392878	Undetermined date	At the southern extent of the excavation area a small east-west oriented ditch [113.0110] which may have formed part of an enclosure system.
Hotspot 12	91864	Possible Quarrying	234952	392837	Undetermined date	A schist outcrop showing signs of possible quarrying. Could potentially be associated with Romano-British structures or early medieval long-cists in the wider area.
Hotspot 12	91865	Pit	234965	392838	Post-Medieval/Modern	A pit [112.0004] which contained a sherd of post-medieval white glazed pottery.
Hotspot 14	91866	Wetland Consolidation	234957	392727	Late Neolithic/Early Bronze Age	An area of wetland consolidation on the edge of marshy ground close to Early Bronze Age roundhouse (HER PRN GAT 91868).
Hotspot 14	91867	Pit	234964	392729	Undetermined date	A possible refuse or storage pit (114.0069) which pre dated the Early Bronze Age roundhouse (HER PRN GAT 91868).
Hotspot 14	91868	Roundhouse	234966	392727	Late Neolithic/Early Bronze Age	A timber built roundhouse comprising post ring, central hearth and ring gulley with a diameter of approximately 8m.
Hotspot 15	91869	Pits	234936	392792	Undetermined date	A group of pits at the northern end of the excavation area, stratigraphically earlier that the stone-built phase of the settlement. Function unknown, possibly Late Bronze Age/Early Iron Age.
Hotspot 15	91881	Ditch	234941	392789	Late Bronze Age to Iron Age	A shallow ditch [115.0215] running north to south and underlying the eastern enclosure wall may have formed part of an earlier enclosure associated with the pits and postholes.
Hotspot 15	91882	Postholes	234938	392792	Undetermined date	A line of three, closely spaced postholes [115.0276], [115.0277] and [115.0278] near the north edge of the excavation may have been associated with each other but no clear function. Likely Late Bronze Age/ Early Iron Age in date.
Hotspot 15	91870	Nine-Post Structure	234936	392789	Romano-British	A group of nine postholes in the area which may form part of a sub rectangular structure (HER PRN GAT 91870); [115.0393], [115.0394], [115.0422], [115.0402], [115.0458], [115.0392], [115.0391], [115.0346] and [115.0400]. Possible Granary.
Hotspot 15	91871	Postholes	234933	392782	Undetermined date	Three postholes, [115.0355], [115.0436] and [115.0361], located in the centre of the excavation area overlying the large nine-post/orthostat structure in the centre of the excavation (part of HER PRN GAT 91875). As such these may be contemporary with the later stone-built phase or predate it.
Hotspot 15	91872	Post-Built Structure	234937	392775	Undetermined date	A sub square post built structure, likely Iron Age/Romano-British in date.
Hotspot 15	91873	Pits	234935	392771	Undetermined date	Three pits, [115.0420], [115.0300] and [115.0305], excavated to the south of structure (HER PRN GAT 91872)
Hotspot 15 (W)	91874	Pits	234915	392760	Undetermined date	Three pits, [215.0009], [215.0021] and [215.0031], excavated at the southern end of Hotspot 15W. Likely contemporary with features pre-dating stone built phase of settlement.
Hotspot 15	91875	Stone Built Settlement	234934	392775	Late Iron Age/Romano-British	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 Burnish Ware DOR BB1. It appears the settlement was abandoned after a large burning episode.

Appendix II – Gazetteer of sites excavated by ABA

Hotspot 15	91876	Trackways	234943	392763	Late Iron Age/Romano-British	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 trampled into a shallow depression in the clay natural. Stratigraphically the trackways were contemporary with the stone built settlement.
Hotspot 15	91877	Post-Settlement Activity	234936	392773	Undetermined date	Acitvity in the area following abandonment of the settlement. Represented by a rough stone surface and the capping of the well, a number of small postholes of undetermined function likely represent later temporary structures or agricultural activity in the area.
Hotspot 16	91878	Pits	234909	392600	Late Iron Age/Romano-British	Three pits [116.0005], [116.0012] and [116.0002] which were cut into alluvial deposits. No artefacts recovered and function not apparent.
Hotspot 16	91879	Pit	234906	392597	Post-Medieval/Modern	Pit containing sherds of post-medieval pottery.
Hotspot 16	91880	Pits and Ditch	234915	392605	Undetermined date	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] contained charcoal and a fragment of preserved wood. No dating evidence was retrieved from any of the features.

Appendix III

AB1703 Wylfa Newydd Early Clearance Works

Hotspot 5 Context Register

Appendix III. AB1703 Hotspot 5 Context Register

Context #	Category	Feature type	Length (m)	Breadth (m)	Diameter (m)	Depth (m)	Context description
105.0001	LAYER	TOPSOIL	0	0	0	0.20	MODERATELY COMPACT BROWN SAND SILT
105.0002	LAYER	SUBSOIL	0	0	0	0	LOOSE AND SOFT LIGHT YELLOW BROWN SAND SILT WITH FEW SMALL STONES (0.03-0.07M) AND ROOTING
105.0003	LAYER	GEOLOGY	0	0	0	0	COMPACT PALE MOTTLED YELLOW RED SILT SAND WITH 10% ANGULAR LIMESTONE FRAGMENTS
105.0004	CUT	PIT	1.00	0.90	0	0.20	IRREGULAR OVAL WITH GRADUALLY SLOPING SIDES LEADING TO A CONCAVE BASE
105.0005	VOID						VOID
105.0006	VOID						VOID
105.0007	CUT	DITCH	6.00	1.00	0	0.18	NORTH WEST TO SOUTH EAST ORIENTED LINEAR WITH GRADUALLY SLOPING SIDES LEADING TO A CONCAVE BASE
105.0008	LAYER	LAYER	0.56	0.48	0	0.09	FIRM LIGHT YELLOW GREY SILT CLAY WITH SOME SMALL STONES
105.0009	CUT	PIT	0.56	0.48	0	0.09	IRREGULAR DEPRESSION/CUT WITH IRREGULAR SIDES AND BASE
105.0010	VOID						VOID
105.0011	CUT	DITCH	0.95	0.71	0	0.05	NORTH TO SOUTH LINEAR WITH GRADUALLY SLOPING SIDES LEADING TO A FLAT BASE
105.0012	CUT	PIT	1.95	1.50	0	0.50	NORTH WEST TO SOUTH EAST SUB RECTANGULAR WITH VERTICAL SIDES LEADING GRADUALLY TO A FLAT BASE
105.0013	FILL	PIT	1.95	1.50	0	046	COMPACT MID GREY BLACK SILT SAND WITH FREQUENT MEDIUM AND LARGE STONES
105.0014	LAYER	LAYER	1.50	1.00	0	0.50	LOOSE DARK GREY BROWN CLAY SILT WITH 60% SMALL TO MEDIUM (0.05-0.10M) ANGULAR AND SUB ANGULAR STONES WHICH WERE FREQUENTLY HEAT AFFECTED
105.0015	CUT	PIT	0.45	0.48	0	0.14	OVAL WITH IRREGULAR SIDES AND BASE

Context #	Category	Feature type	Length (m)	Breadth (m)	Diameter (m)	Depth (m)	Context description
105.0016	CUT	STAKE HOLE	0	0	0.12	0.07	CIRCULAR WITH VERY STEEP SIDES LEADING SHARPLY TO A CONCAVE BASE
105.0017	CUT	POST HOLE	0	0	0.20	0.05	CIRCULAR WITH GRADUALLY SLOPING SIDES LEADING GRADUALLY TO A CONCAVE BASE
105.0018	FILL	DITCH	0.95	0.71	0	0.05	LOOSE DARK BLACK BROWN CLAY SILT WITH INFREQUENT PEBBLES
105.0019	FILL	DITCH	6.00	1.00	0	0.18	LOOSE MID BROWN SAND CLAY WITH ORGANIC INCLUSIONS
105.0020	CUT	DITCH	0.90	0.83	0	0.12	WEST TO EAST LINEAR WITH GRADUALLY SLOPING SIDES LEADING GRADUALLY TO AN IRREGULAR BASE
105.0021	FILL	DITCH	0.90	0.83	0	0.12	LOOSE DARK BLACK BROWN CLAY SILT WITH INFREQUENT PEBBLES
105.0022	LAYER	LAYER	25.00	14.00	0	0.87	LOOSE DARK GREY BROWN BURNT MOUND DEPOSIT WITH 50% MEDIUM ANGULAR AND SUB ANGULAR STONES WHICH WERE FREQUENTLY HEAT AFFECTED
105.0023	FILL	STAKE HOLE	0	0	0.12	0.07	LOOSE MID BROWN SILT SAND
105.0024	FILL	PIT	1.00	0.90	0	0.20	LOOSE MID BROWN SILT SAND WITH MODERATE SMALL ANGULAR STONES
105.0025	FILL	PIT	0.45	0.48	0	0.14	LOOSE, MID BROWN SILTY SAND WITH OCCASIONAL SMALL ANGULAR STONES
105.0026	FILL	POST HOLE	0	0	0.20	0.05	LOOSE MID ORANGE BROWN SILT SAND
105.0027	FILL	PIT	1.95	1.50	0	0.04	LOOSE GREY ORANGE CLAY WITH OCCASIONAL CHARCOAL FLECKS
105.0028	FILL	DITCH	5.00	0.44	0	0.13	LOOSE BROWN YELLOW SAND CLAY WITH FREQUENT SMALL TO MEDIUM ANGULAR AND SUB ANGULAR STONES
105.0029	CUT	DITCH	5.00	0.44	0	0.13	NORTH EAST TO SOUTH WEST LINEAR WITH GRADUAL SIDES
105.0030	CUT	TREE THROW	1.00	0	0	0.17	EAST TO WEST ORIENTED IRREGULAR FEATURE WITH IRREGULAR SIDES AND BASE
105.0031	FILL	TREE THROW	1.00	0	0	0.17	FIRM DARK GREY BROWN SAND SILT WITH FLECKS OF ORANGE AND CHARCOAL, AND INFREQUENT STONE
105.0032	FILL	PIT	0	0.30	0	0.20	COMPACT GREY CLAY WITH FREQUENT CHARCOAL

Context #	Category	Feature type	Length (m)	Breadth (m)	Diameter (m)	Depth (m)	Context description
105.0033	FILL	PIT	1.55	0.87	0	0.45	NORTH WEST TO SOUTH EAST ORIENTED SCHIST LINING OF TROUGH WITH ROUGH FACING AND PACKED INTO THE CUT WITH CLAY
105.0034	LAYER	LAYER	14.00	0	0	0.20	LOOSE MID GREY BROWN SAND SILT WITH SMALL (0.20-0.50M) SUB ANGULAR STONES
105.0035	LAYER	LAYER	2.80	0	0	0.40	LOOSE MID BROWN CLAY SILT WITH 80% ANGULAR HEAT AFFECTED STONE
105.0036	LAYER	LAYER	0.40	0	0	0.16	COMPACT MID GREY BROWN CLAY SILT WITH MEDIUM SIZED ANGULAR STONES
105.0037	LAYER	LAYER	2.60	0	0	0.30	COMPACT DARK GREY BROWN CLAY SILT WITH MODERATE SMALL STONES
105.0038	LAYER	LAYER	4.65	0	0	0.3	COMPACT MID BROWN GREY CLAY SILT WITH VERY FEW SMALL STONES
105.0039	LAYER	LAYER	7.80	0	0	0.60	LOOSE DARK GREY BROWN CLAY SILT WITH 80% HEAT AFFECTED ANGULAR STONES (<0.10M)
105.0040	LAYER	LAYER	3.20	0	0	0.10	COMPACT DARK BROWN GREY CLAY SILT WITH OCCASIONAL SMALL STONES
105.0041	LAYER	LAYER	3.20	0	0	0.14	COMPACT MID GREY SILT CLAY WITH FREQUENT SUB ANGULAR STONES
105.0042	CUT	PIT	2.75	2.08	0	0.77	SUB CIRCULAR WITH STEEPLY SLOPING SIDES LEADING GRADUALLY TO A CONCAVE BASE
105.0043	FILL	PIT	2.34	2.08	0	0.37	LOOSE ORANGE BROWN CLAY SILT WITH 80% MEDIUM TO LARGE ANGULAR STONES AND OCCASIONAL CHARCOAL
105.0044	LAYER	LAYER	0	0	0	0.30	FIRM GREY CLAY SILT WITH CHARCOAL FLECKS AND BURNT STONE
105.0045	LAYER	LAYER	7.21	0	0	0.30	LOOSE DARK GREY SILT WITH 80% HEAT AFFECTED STONES (0.03-0.07M)
105.0046	LAYER	LAYER	0	1.72	0	0.47	LOOSE DARK GREY SILT WITH 80% HEAT AFFECTED STONES (0.05-0.10M)
105.0047	LAYER	LAYER	6.56	0	0	0.53	LOOSE LIGHT BROWN GREY SILT WITH 90% HEAT AFFECTED ANGULAR STONES (0.05-0.10M)
105.0048	LAYER	LAYER	5.36	0	0	0.34	LOOSE MID BROWN CLAY SILT WITH 80% ANGULAR TO SUB ANGULAR HEAT AFFECTED STONE (0.06-0.11M) AND RARE CHARCOAL FLECKS

Context #	Category	Feature type	Length (m)	Breadth (m)	Diameter (m)	Depth (m)	Context description
105.0049	LAYER	LAYER	6.66	0	0	0.18	FIRM DARK GREY SILT CLAY WITH 50% ANGULAR STONES (0.04-0.40M) AND 5% CHARCOAL
105.0050	LAYER	LAYER	0	2.04	0	0.17	LOOSE DARK GREY BLACK
105.0051	LAYER	LAYER	0	0	0	0	VERY COMPACT LIGHT GREY CLAY
105.0052	FILL	PIT	7.10	1.40	0	0.38	LOOSE MID GREY SAND SILT WITH COMMON CHARCOAL AND OCCASIONAL MEDIUM AND LARGE STONES
105.0053	CUT	PIT	0.70	0.60	0	0.45	CIRCULAR WITH VERTICAL SIDES
105.0054	CUT	PIT	4.20	2.12	0	0.45	EAST TO WEST CURVED LINEAR WITH GRADUALLY SLOPING SIDES AND A CONCAVE BASE
105.0055	CUT	PIT	1.43	1.13	0	0.40	SUB OVAL WITH NEAR VERTICAL SIDES LEADING SHARPLY TO A FLAT BASE
105.0056	FILL	PIT	1.43	1.13	0	00.31	LOOSE MID ORANGE BROWN CLAY SILT WITH 80% ANGULAR STONES (0.04-0.19M) AND 10% MANGANESE AND CHARCOAL FLECKS
105.0057	VOID						VOID
105.0058	FILL	PIT	1.85	1.19	0	0.48	FIRM GREY BLACK CLAY SILT WITH 70% MIXED ANGULAR STONE, 10% CHARCOAL AND OCCASIONAL ROUNDED STONES
105.0059	FILL	PIT	4.53	0.50	0	0.18	COMPACT DARK GREY BLACK CLAY SILT WITH CHARCOAL
105.0060	FILL	PIT	0	0	0	0.11	SOFT MID ORANGE SILT CLAY WITH 20% CHARCOAL AND <10% IRON OXIDE AND MANGANESE FLECKS
105.0061	FILL	PIT	0	0	1.24	0.21	COMPACT MID ORANGE BROWN CLAY SILT WITH STONES
105.0062	FILL	PIT	0	0	2.12	0.24	MODERATELY COMPACT MID BROWN GREY CLAY SILT WITH RARE SMALL STONES
105.0063	FILL	PIT	0	0	1.31	0.10	MODERATELY COMPACT DARK BROWN GREY
105.0064	CUT	PIT	0.92	0.70	0	0.15	OVAL WITH NEAR VERTICAL SIDES LEADING SHARPLY TO A FLAT BASE
105.0065	FILL	DITCH	2.54	0.25	0	0.21	MODERATELY COMPACT MID BROWN GREY CLAY WITH 50% SMALL TO LARGE ANGULAR STONES
105.0066	CUT	DITCH	2.54	0.25	0	0.21	NORTH WEST TO SOUTH EAST LINEAR WITH VERTICAL SIDES LEADING GRADUALLY TO A FLAT BASE

Context #	Category	Feature type	Length (m)	Breadth (m)	Diameter (m)	Depth (m)	Context description
105.0067	CUT	DITCH	2.90	0.64	0	0.20	EAST TO WEST CUT OF MODERN STONE FILLED DRAIN
105.0068	LAYER	LAYER	0	0	0	0.15	VERY COMPACT MID GREY SILT CLAY WITH FREQUENT CHARCOAL FLECKS
105.0069	FILL	PIT	0.92	0.70	0	0.15	LOOSE BLACK BROWN SILT CLAY WITH FREQUENT LARGE HEAT AFFECTED STONES
105.0070	FILL	PIT	1.35	1.15	0	0.60	FRIABLE DARK GREY BLACK SILT PEAT WITH ROOTING AND SCHIST FRAGMENTS
105.0071	CUT	PIT	1.35	1.15	0	0.60	SUB CIRCULAR WITH NEAR VERTICAL SIDES LEADING SHARPLY TO A FLAT BASE
105.0072	FILL	PIT	0	0	0	0.04	SOFT MID GREY CLAY SAND WITH 10% MIXED STONE AND OCCASIONAL CHARCOAL
105.0073	VOID						VOID
105.0074	VOID						VOID
105.0075	VOID						VOID
105.0076	FILL	PIT	1.53	0.50	0	0.07	PIT LINING OF HARD FLAT BLUE GREY SCHIST STONES MEASURING FROM 0.17 X 0.14 X 0.02M TO 0.42 X 0.29 X 0.03M
105.0077	CUT	PIT	1.53	0.50	0	0.32	NORTH EAST TO SOUTH WEST ORIENTED RECTANGULAR CUT WITH ROUNDED CORNERS AND VERTICAL SIDES LEADING GRADUALLY TO A CONCAVE BASE
105.0078	FILL	PIT	1.48	0.50	0	0.30	FIRM GREY BROWN CLAY SILT WITH 70% POORLY SORTED HEAT AFFECTED ANGULAR STONES, WITH OCCASIONAL CHARCOAL AND ROUNDED STONES
105.0079	CUT	PIT	1.00	0.60	0	0.10	EAST TO WEST ORIENTED IRREGULAR CUT WITH GRADUALLY SLOPING SIDES AND A CONCAVE BASE
105.0080	FILL	PIT	1.00	0.60	0	0.10	LOOSE DARK BROWN GREY SAND WITH SMALL STONES AND CHARCOAL
105.0081	LAYER	LAYER	2.10	0.95	0	0.10	COMPACT DARK ORANGE GREY SILT SAND WITH COMMON SUB ANGULAR STONES
105.0082	VOID						VOID
105.0083	VOID						VOID

Context #	Category	Feature type	Length (m)	Breadth (m)	Diameter (m)	Depth (m)	Context description
105.0084	FILL	PIT	1.53	0.50	0	0.08	SOFT BROWN GREY CLAY SILT WITH <5% SMALL ANGULAR STONES AND OCCASIONAL CHARCOAL FLECKS
105.0085	FILL	PIT	1.53	0.50	0	0.07	BASE STONES IN PIT, GREY SCHIST SLABS MEASURING FROM 0.30 X 0.26 X 0.05M TO 0.33 X 0.29 X 0.03M
105.0086	FILL	PIT	1.53	0.50	0	0.20	PIT LINING OF VERTICAL SUD RECTANGULAR GREY SCHIST SLABS MEASURING UP TO 0.20 X 0.32 X 0.03
105.0087	FILL	PIT	1.53	0.50	0	0.12	SOFT BROWN GREY CLAY SILT WITH 15% MIXED ANGULAR STONES AND 2% CHARCOAL FLECKS
105.0088	FILL	PIT	0	0	0.30	0.45	COMPACT DARK GREY SILT CLAY WITH CHARCOAL FLECKS AND WOOD FRAGMENTS
105.0089	LAYER	LAYER	0	0	2.20	0.10	LOOSE BROWN BLACK SILT CLAY WITH OCCASIONAL BURNT STONE
105.0090	FILL	PIT	2.00	1.23	0	0.06	COMPACT DARK BLACK BROWN SAND CLAY WITH FREQUENT SMALL TO MEDIUM ANGULAR TO SUB ANGULAR STONES AND OCCASIONAL CHARCOAL
105.0091	CUT	PIT	0.93	1.00	0	0.06	SUB CIRCULAR WITH GRADUALLY SLOPING SIDES AND A CONCAVE BASE
105.0092	FILL	PIT	1.40	1.10	0	0.05	COMPACT MID GREY CLAY WITH SOME STONES AND CHARCOAL
105.0093	FILL	PIT	0.60	0.40	0	0.08	COMPACT BROWN ORANGE CLAY SILT WITH 70% MEDIUM STONES
105.0094	FILL	PIT	0.60	0.60	0	0.20	COMPACT GREY BROWN CLAY SILT WITH OCCASIONAL MEDIUM STONES
105.0095	CUT	PIT	2.90	1.90	0	0.10	IRREGULAR WITH GRADUALLY SLOPING SIDES AN IRREGULAR BASE
105.0096	FILL	PIT	2.90	1.90	0	0.10	COMPACT BLACK GREY SAND SILT WITH CHARCOAL AND SMALL SUB ANGULAR STONES
105.0097	VOID						VOID
105.0098	CUT	PIT	1.85	1.19	0	0.48	NORTH EAST TO SOUTH WEST ORIENTED RECTANGULAR CUT WITH ROUNDED CORNERS AND VERTICAL SIDES LEADING GRADUALLY TO A FLAT BASE
105.0099	FILL	PIT	0.65	0.50	0	0.20	SOFT YELLOW GREY SILT CLAY WITH RARE CHARCOAL FLECKS
105.0100	LAYER	LAYER	20.00	20.00	0	0.18	FIRM PLASTIC MOTTLED ORANGE AND GREY SAND CLAY WITH IRON OXIDE FLECKS

Appendix IV

AB1703 Wylfa Newydd Early Clearance Works

Hotspot 5 Finds Assessment

Appendix IV. AB1703 Hotspot 5 Finds Assessment

FINDS ASSESSMENT HOTSPOT 5

Introduction

A total of 12 artefacts, weighing 12,193g, were recovered from an archaeological investigation at Hot Spot 5. One of the finds was missing from the assemblage. The finds comprised stone artefacts which were in moderate to good condition. Small Find numbers were assigned to finds on site.

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/).

The finds assessment was compiled by Sue Thompson.

Quantification of finds by material and context is given in Table 1; quantification of artefacts recovered from the environmental samples is given in Table 2.

Context	SF	Material	Qty	Wgt (g)	Comments
105.0001 / unstrat	1	Flint	1	78	Flint - core
105.0013	2	Stone	1	1516	Fine sandstone, shallow hollow
105.0043	3	Stone	1	917	Fine sandstone, hollowed pebble. Mould? Lamp?
105.0070	4	Stone	1	1332	Slate? Schist? Triangular wedge shaped. Natural fragment? Some sooting?
105.0070	5				MISSING
105.0049	6	Stone	1	8750	Coarse sandstone, natural cobble?
Total			**5**	**12593**	

Table 1: Finds quantification by Material, Context and Small Find Number

Stone

Four stone artefacts with a combined weight of 12,515g were recovered from four contexts and were in good condition.

The stone comprised two fine sandstone stones, each with a shallow hollow; **SF2** was an irregular fragment of fine sandstone measuring 180 x 140 x 40mm which may be part of a shallow grinding stone. **SF3** was a roughly rectangular block of fine sandstone measuring 110 x 70 x 50mm with a shallow kidney shaped hollow on one surface. Hollowed stones were recovered from several sites on Anglesey during the A55 road building scheme which had a

variety of uses (Smith 2012), however, no obvious use can be attributed to these examples.

A roughly triangular, wedge shaped fragment of slate or schist, **SF4**, was recovered from context (**105.0070**). It did not appear to be worked, although it did display some possible sooting. **SF6** comprised a coarse sandstone cobble measuring 250 x 180 x 80mm. The stone is rounded but irregular but does not show evidence of use or wear.

Further analysis may be warranted on the worked stone.

Lithics

A single flint object, **SF1**, weighing 78g was recovered from unstratified topsoil deposits.

The fragment was highly abraded but may be part of a multi-platform core of Neolithic to Bronze Age date (*Pers. Comm.* M Gonzalez 2020).

As a single unstratified object, it is of little interest, however, it may warrant further analysis as part of the wider project.

Finds from Environmental Samples

Industrial Waste: roughly 18g of possible industrial waste were recovered from two samples (Table 2).

CBM: A total of 1,770g of possible CBM fragments were recovered from 15 environmental samples. On further assessment by the finds specialist, it was revealed that the fragments were burnt or heated stone rather than CBM.

Recommendations: While they need to be considered alongside the bulk finds assemblage, a separate data set is appropriate for the finds from environmental samples, as it represents a separate recovery and quantification strategy for the retrieval of finds.

No further work is warranted on the possible finds from environmental samples.

Context	<E>	Industrial Waste (g)	CBM (g)
105.0014	105.0001		20
105.0008	105.0004		15
105.0024	105.0006		7
105.0045	105.0014		256
105.0047	105.0016		75
105.0049	105.0018		31
105.0050	105.0019		4
105.0035	105.0020	<1	
105.0039	105.0022		1194
105.0038	105.0023		121
105.0040	105.0024		<1
105.0069	105.0030	17	11
105.0083	105.0036		12
105.0060	105.0039		<1
105.0068	105.0042		12
105.0089	105.0044		6
105.0058	105.0049		6
Total			**1770**

Table 2: Finds from Environmental Samples

Statement of Potential

It is difficult to closely date the stone artefacts, however, similar artefacts have been recovered from prehistoric and Roman sites on Anglesey. The worked stone is of local and regional significance and moderate archaeological potential and should be considered alongside similar material recovered as part of the wider project.

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Other

Pers. Comm. M Gonzalez (2020), *Consultation of Lithics Specialist.* WA Carlisle.

Appendix V

AB1703 Wylfa Newydd Early Clearance Works

Hotspot 5 Palaeoenvironmental Assessment

Appendix V. AB1703 Hotspot 5 Palaeoenvironmental Assessment

7 Palaeoenvironmental assessment

7.1 Introduction

7.1.1 Forty-nine bulk samples were taken during the excavation on Hotspot 5 at Wylfa Newydd Nuclear Power Plant located in Anglesey, North Wales. Only 47 were suitable for processing to which a total weight of 1,554kg (986l) of sediment was processed for this stage of works; samples **<105.0031>** and **<105.0041>** were not received. Two of the processed samples were subsequently voided (samples **<105.0036>** and **<105.0049>**) Further details for each sample can be found in Table 7.1.

7.2 Methodology

7.2.1 This report presents the results of the assessment of the environmental samples, palaeobotanical and charcoal remains in accordance with Campbell et al. (2011) and English Heritage (2008). The assessment will establish the significance of the material and will only provide identifications where it was practicable to do so, such as, small quantities of plant material or charcoal identifications where radiocarbon determinations are sought. The report will focus on the preservational qualities and note the potential of the material to warrant analysis.

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.

7.2.3 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. Table7.2. Once fully sorted and all relevant material removed the flots were discarded.

7.2.4 The four common palaeoenvironmental materials (namely plant remains, charcoal, shell and bone), along with magnetic matter, will be listed within the results section and where none were present this will be stated.

7.2.5 In the absence of single growth entities such as charred plant remains and hazel nutshell fragments charcoal will be utilised for radiocarbon determinations. Charcoal was only identified to species to select the shortest-lived species for radiocarbon determination once the report author had determined what they would like dated. Where no short-lived species were observed the youngest i.e. twig, branch or periderm fragments from longer-lived species were selected. Once this was achieved no further identification was undertaken. Identification was undertaken using Hather (2000), Schweingruber (1982) and the author's own reference collection. Nomenclature followed Stace (2010).

7.2.6 This environmental assessment was undertaken by Freddie Sisson.

7.3 Results

7.3.1 Silty clay dominated the samples' sediment matrix with lesser quantities of sandy clay and clayey silt 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 Artefactual material recovered from the dried residues were minimal but contained examples of ceramic building material and industrial waste.

7.3.4 CPR: The charred plant remains (CPR) were in relatively good condition and were present in eight samples. Of these, two samples contained over 10 items, these were **(105.0062) <105.0029>** from the secondary fill of unknown feature **[105.0054]** and **(105.0070) <105.0045>** from a peat and wood layer in an unknown large pit.

7.3.5 CHARCOAL: The charcoal ranged from good to poor preservation and was present in 43 samples. Of these twenty yielded more than 5g these were: **(105.0024) <105.0006>** from pit fill **[105.0015]**, **(105.0027) <105.0009>** from secondary pit fill of trough **[105.0012]**, **(105.0031) <105.0011**> from the fill of treespill **[105.0030]**, **(105.0046) <105.0015>** from burnt stone deposit in mound **[105.0022]**, **(105.0047) <105.0016>** from burnt stone associated with mound **[105.0022]**, **(105.0049) <105.0018>** from the base layer beneath mound **[105.0022]**, **(105.0050) <105.0019>** from burnt stone deposit associated with mound **[105.0022]**, **(105.0043) <105.0026>** from the fill of possible trough **[105.0042]**, **(105.0061) <105.0028>** from unknown upper fill **[105.0054]**, **(105.0069) <105.0030>** from the burnt stone fill of pit **[105.0064]**, **(105.0059) <105.0032>** from the dark charcoal fill of a stone lined trough/pit, **(105.0078) <105.0033>** from the lower silty clay fill of a stone lined trough/pit, **(105.0080) <105.0034>** from the fill of discreet pit **[105.0079]**, **(105.0056) <105.0038>** from the deliberate backfill of burnt mound material into trough **[105.0055]**, **(105.0072) <105.0040**> from trample deposit in base of trough **[105.0055]**, **(105.0088) <105.0043>** from a grey layer in circle in trough **[105.0042]**, **(105.0090) <105.0046>** from pit fill **[105.0091]**, and **(105.0096) <105.0047>** from an unknown spread and pit.

7.3.6 Only charcoal from the sample **<105.0043>** of fill **(105.0088)** from trough **[105.0042]** was identified to species as this context was requested for radiocarbon determination. To that end Rosaceae was observed.

7.3.7 Wood: 1954g of wood was recovered from sample **<105.0045>** from peat and wood layer **(105.0070)** from a pit.

7.3.8 SHELL: No shell was recovered form Hotspot 5.

7.3.9 BONE: No bone was recovered from the samples in Hotspot 5.

7.3.10 MAGNETIC MATTER: The magnetised material recovered from the dried retents was examined under a microscope (x45 magnification) from microslags but none were present with the magnetic material comprising only of small stones.

7.4 Discussion

7.4.1 The charred plant remains are in such small quantities that they would not inform of any plant husbandry practices at Hotspot 5 or in the wider area of Anglesey or Wales. Hotspot 5 was given a tentative prehistoric date in the site summary report (Brython 2018), however the

quantities of the charred plant remains would be unsuitable to aid in further understanding or assisting with the prehistoric regional research agenda for Wales (2017).

7.4.2 Of the samples which yielded more than 5g of charcoal there is very little discussion that can be undertaken due to the majority originating in the backfill of various features (see. 7.3.5). The charcoal from these features was likely to have been deposited during primary or secondary backfilling.

The most likely charcoal to have been burnt *in situ* comes from **<105.0015>** from inside mound **[105.0022]** and **<105.0018>** from under mound **[105.0022]**.

7.4.3 The wood in **<105.0045>** was part of the backfill and cannot give any meaningful discussion of the feature.

7.4.4 The magnetic material consisted wholly of naturally magnetic small stones and can tell us nothing about site usage.

7.5 Statement of potential and recommendations

7.5.1 The large number of samples yielding charcoal can help to improve knowledge on the types of species being exploited for burning activities in the wider Anglesey landscape. Specific focus should be given to those discussed in 7.3.5 as these are the most likely remains from burnt mound activities. The charcoal from these samples may help to assess fuel types in specific types of burnt features when put into wider context. The charcoal from other contexts could also be used, if required, to assess types of wood preferred and managed in the wider landscape but the features these examples are recovered from would first need to be dated by absolute or typological means. The charcoal warrants further analysis; this should be undertaken following Huntley 2010.

7.5.2 The charred plant remains are in such small quantities that they offer no scope for examination of crop husbandry practices or palaeodiets. No further work is warranted.

7.5.3 *Radiocarbon suitability*: The most suitable remains for a radiocarbon date are those charcoal assemblages discussed in 7.3.5.

7.5.4 It must be stated that if a radiocarbon determination is sought from charcoal then the fragment must be identified to species prior to submission to select the shorter lived species to mitigate against the potential 'old wood effect' that may present a radiocarbon age far older than the feature.

7.5.5 *Retention and discard*: At this stage all ecofacts should be retained should further work be required and only be discarded as appropriate once initial radiocarbon dates have been obtained and full analysis of the charcoal has been undertaken.

7.5.6 The magnetic material from all samples may be discarded as it holds no significance towards the site.

7.6 Acknowledgments

7.6.1 Freddie Sisson supervised the environmental team who consisted of Rebecca Blakeney, Megan Lowrie, Katherine Bostock, Jyoti Stuart, Paul Sherwood, , Charlotte Manning, , Sean Johnson, Charles Rickerby. This report was edited by Lynne F. Gardiner.

7.7 References

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Table 7.1 Sample Information

C	<>	TQ	Cut	Desc	Matrix	PW	PV	SW	SV
105.0014	105.0001	4	105.0022	Fill of test slot within burnt mound	sand	37	33	24124	15250
105.0018	105.0002	4	105.0011	Ditch fill	sandy clay	36	31	2020	2300
105.0021	105.0003	4	105.0020	Ditch fill	silty clay	36	34	5652	4700
105.0008	105.0004	1	105.0009	Fill of burnt area	silty sand	8	5	1437	1500
105.0025	105.0005	1	105.0015	Pit fill	silty clay	11	9	3405	2500
105.0024	105.0006	4	105.0004	Pit fill	silty clay	45	27	13155	8500
105.0019	105.0007	4	105.0007	Fill of ditch terminus	silty clay	40	34	3930	2700
105.0013	105.0008	4	105.0012	Fill of trough	silty clay	52	28	22211	20000
105.0027	105.0009	1	105.0012	Secondary fill of trough	sandy clay	8	5	2415	1500
105.0028	105.0010	4	105.0029	Fill of drain line	silty clay	37	36	6927	4140
105.0031	105.0011	2		bioturbation	sandy clay	24	18	5136	4000
105.0026	105.0012	1	105.0017	Fill of posthole	silty sand	2	1	173	140
105.0032	105.0013	1	105.0012	Packing of stone trough	silty clay	7	5	1361	1000
105.0045	105.0014	4		Burnt stone deposit associated with mound [105.0022]	clayey silt	40	20	23959	17600
105.0046	105.0015	4	105.0022	Burnt stone deposit in mound	sandy silt	49	26	33767	20900
105.0047	105.0016	4		Burnt stone deposit associated with mound [105.0022]	silty clay	46	23	33048	22200
105.0048	105.0017	4		Burnt stone deposit associated with mound [105.0022]	sandy silt	48	30	28854	24600
105.0049	105.0018	4		Base layer beneath mound 105.0022	silty clay	36	20	20752	14400
105.0050	105.0019	4		Burnt stone deposit associated with mound [105.0022]	sandy clayey silt	45	26	21543	14500
105.0035	105.0020	4		Small burnt deposit	sandy clay	54	32	37240	23550
105.0037	105.0021	4	105.0022	Mixed layer/ secondary deposit of burnt mound	clayey silt	51	29	25259	10000
105.0039	105.0022	4	105.0022	Large burnt deposit of centre of burnt mound	silty clay	54	27	33598	22150
105.0038	105.0023	4		Colluvial deposit associated with burnt mound [105.0022[	sand	60	29	42750	28000
105.0040	105.0024	4		Waterlogged abandonment deposit associated with mound 105.0022	silty clay	43	29	11209	7500
105.0041	105.0025	4		Use deposit associated with burnt mound [105.0022]	silty clay	45	31	4186	2625
105.0043	105.0026	4	105.0042	Fill of possible trough	sandy clay	51	31	24632	9900
105.0051	105.0027	4		Colluvial clay deposit	silty clay	52	33	11276	700

C	<>	TQ	Cut	Desc	Matrix	PW	PV	SW	SV
105.0061	105.0028	4	105.0054	Upper fill	silty clay	46	28	8652	5400
105.0062	105.0029	4	105.0054	Secondary fill	silty clay	42	26	9720	6300
105.0069	105.0030	1	105.0064	Burnt stone fill of pit	clayey sand	10	6	4360	3400
105.0059	105.0032	2		Dark charcoal fill of stone lined trough/pit	silty sand	23	14	8524	5900
105.0078	105.0033	3		Lower silty clay fill of stone lined trough/pit	clayey silt	33	22	15249	12000
105.0080	105.0034	2	105.0079	Fill of discreet pit	silty sand	28	18	10018	6800
105.0081	105.0035	1		Layer of unfired burnt mound material	silty clay	5	4	2931	2000
105.0083	105.0036	1		VOID	silty clay	6	5	1815	2000
105.0077	105.0037	2		Silt between and under lined trough pit	silty clay	20	13	8791	6700
105.0056	105.0038	2	105.0055	Fill of pit	silty sand	29	18	19708	14600
105.0060	105.0039	1	105.0055	Fill of pit	silty clay	10	9	4400	3800
105.0072	105.0040	1	105.0055	Fill of pit	silty clay	10	6	2425	1600
105.0068	105.0042	2	105.0042	Trample deposit in trough	clay	22	15	4389	2850
105.0088	105.0043	2	105.0042	Grey layer in circle in trough	silty clay	17	7	3073	2500
105.0089	105.0044	2		Brown-black layer nearby stone trough	silty clay	20	12	4909	3200
105.0070	105.0045	4	105.0071	Peat and wood from large pit	silty clay	30	27	7760	13500
105.0090	105.0046	4	105.0091	Fill of pit	silty clay	53	31	26444	18260
105.0096	105.0047	4	105.0095	Fill of spread and pit	clayey silt	44	24	15778	12300
105.0052	105.0048	4	105.0042	Grey sandy clay from inside trough	silty clay	43	25	8790	6900
105.0058	105.0049	4		VOID	silty clay	46	24	22945	15600

Key: C=context; <>=sample number; TQ=tub quantity processed; Cut=cut number of feature; Desc=description of context; Matrix=sediment matrix when processed; PW=processed weight(kg); PV=processed volume(l); SW=sorted weight(g); SV=sorted volume(ml), blue shading denotes subsequently voided samples post-processing

Table 7.2 Flot and Retent Information

		Flots				Retent				
C	<>	WF	VF	CPR	Ch	Ch	Wo	IW	CBM	MM
105.0014	105.0001	14.6	90	-	-	<1			20	<1
105.0018	105.0002	126.6	350	-	-					
105.0021	105.0003	21.6	100	-	-	<1				<1
105.0008	105.0004	0.9	5	-	0.24	<1			15	<1
105.0025	105.0005	0.1	1	-	-	<1				5
105.0024	105.0006	27.5	70	6	0.09	5			7	2
105.0019	105.0007	64.2	200	-	-	2				<1
105.0013	105.0008	14.4	50	2	0.11	2				<1
105.0027	105.0009	7.6	45	-	0.67	8				7
105.0028	105.0010	6.7	50	-	<0.01					
105.0031	105.0011	65.4	100	-	7.16	47				<1
105.0026	105.0012	0.2	1	-	-					
105.0032	105.0013	1.1	5	-	0.71	3				<1
105.0045	105.0014	1.3	7	-	-	<1			256	<1
105.0046	105.0015	18.3	100	-	-	5				<1
105.0047	105.0016	27.5	100	-	0.18	6			75	<1
105.0048	105.0017	117.4	200	-	0.26					7
105.0049	105.0018	1.4	10	-	-	6			31	<1
105.0050	105.0019	19.8	60	2	0.14	7			4	<1
105.0035	105.0020	31.8	150	-	0.14	4		<1		<1
105.0037	105.0021	65.4	80	-	0.27	2				8
105.0039	105.0022	55.5	250	-	-	<1			1194	<1
105.0038	105.0023	10.3	40	-	<0.01	<1			121	<1
105.0040	105.0024	3.6	15	-	-	<1			<1	<1
105.0041	105.0025	113.1	200	-	-	<1				<1
105.0043	105.0026	65.9	100	-	-	40				<1
105.0051	105.0027	5.7	40	-	-	3				<1
105.0061	105.0028	24.3	70	6	0.1	7				<1

		Flots				Retent				
C	<>	WF	VF	CPR	Ch	Ch	Wo	IW	CBM	MM
105.0062	105.0029	20.8	65	13	0.15	<1				<1
105.0069	105.0030	0.2	1	-	-	9		17	11	
105.0059	105.0032	49.6	100	-	21.33	18				<1
105.0078	105.0033	15.8	53	-	2.7	38				4
105.0080	105.0034	68.9	100	-	25.46	36				<1
105.0081	105.0035	0.3	1	-	-	<1				5
105.0083	105.0036	<0.01	1	-	-				12	<1
105.0077	105.0037	3.9	15	-	-	<1				3
105.0056	105.0038	1.5	3	-	0.42	16				6
105.0060	105.0039	0.4	2	-	-	3			<1	<1
105.0072	105.0040	38.7	180	1	29.57	6				
105.0068	105.0042	6	30	-	-	<1			12	
105.0088	105.0043	13	80	-	0.26	112				<1
105.0089	105.0044	5.6	20	-	<0.01	1			6	<1
105.0070	105.0045	148.3	550	19	0.19		1954			
105.0090	105.0046	8.3	25	-	0.28	256				<1
105.0096	105.0047	1.8	10	1	-	21				4
105.0052	105.0048	11.1	50	-	<0.01	135				
105.0058	105.0049	15.1	35	-	-	39			6	<1

Key: C=context; <>=sample number; WF=flot weigh (g); VF=volume of flot (ml); CPR= count of charred plant remains; Ch=charcoal (g); Wo=wood (g); IW= industrial waste (g); CBM=ceramic building material (g); MM=magnetic material (g), blue shading denotes subsequently voided samples post-processing

Appendix VI

AB1703 Wylfa Newydd Early Clearance Works

Radiocarbon Dating Results

BetaCal 3.21

Calibration of Radiocarbon Age to Calendar Years

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

(Variables: d13C = -25.9 o/oo)

Laboratory number **Beta-554154**

Conventional radiocarbon age **2700 ± 30 BP**

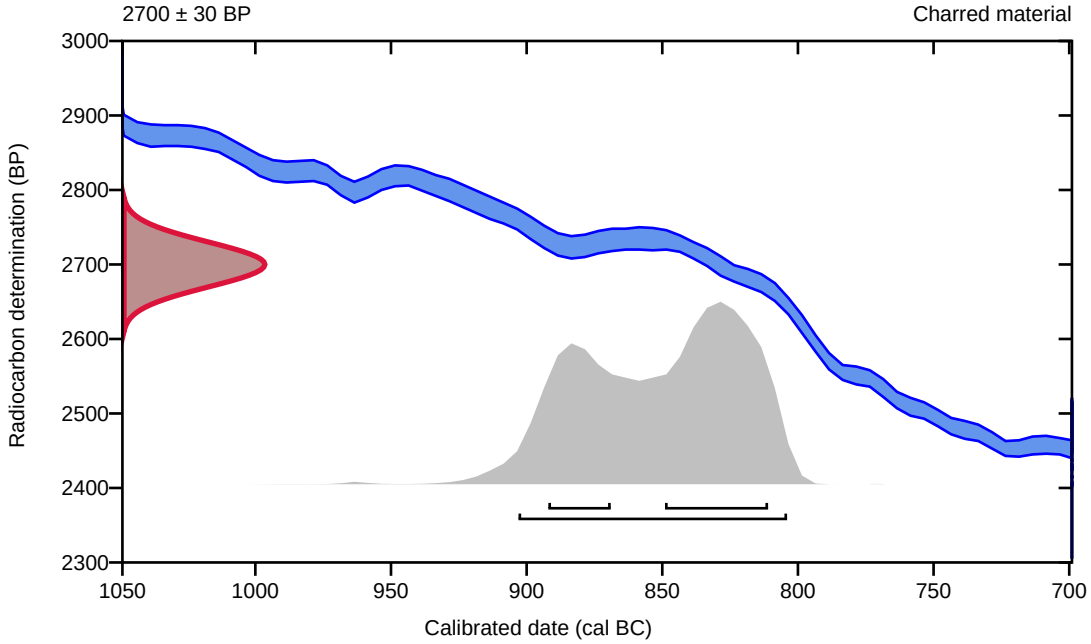
95.4% probability

(95.4%)	905 - 806 cal BC	(2854 - 2755 cal BP)

68.2% probability

(45.6%)	851 - 813 cal BC	(2800 - 2762 cal BP)
(22.6%)	894 - 871 cal BC	(2843 - 2820 cal BP)

HS5_(105.0088)_< 43 >



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

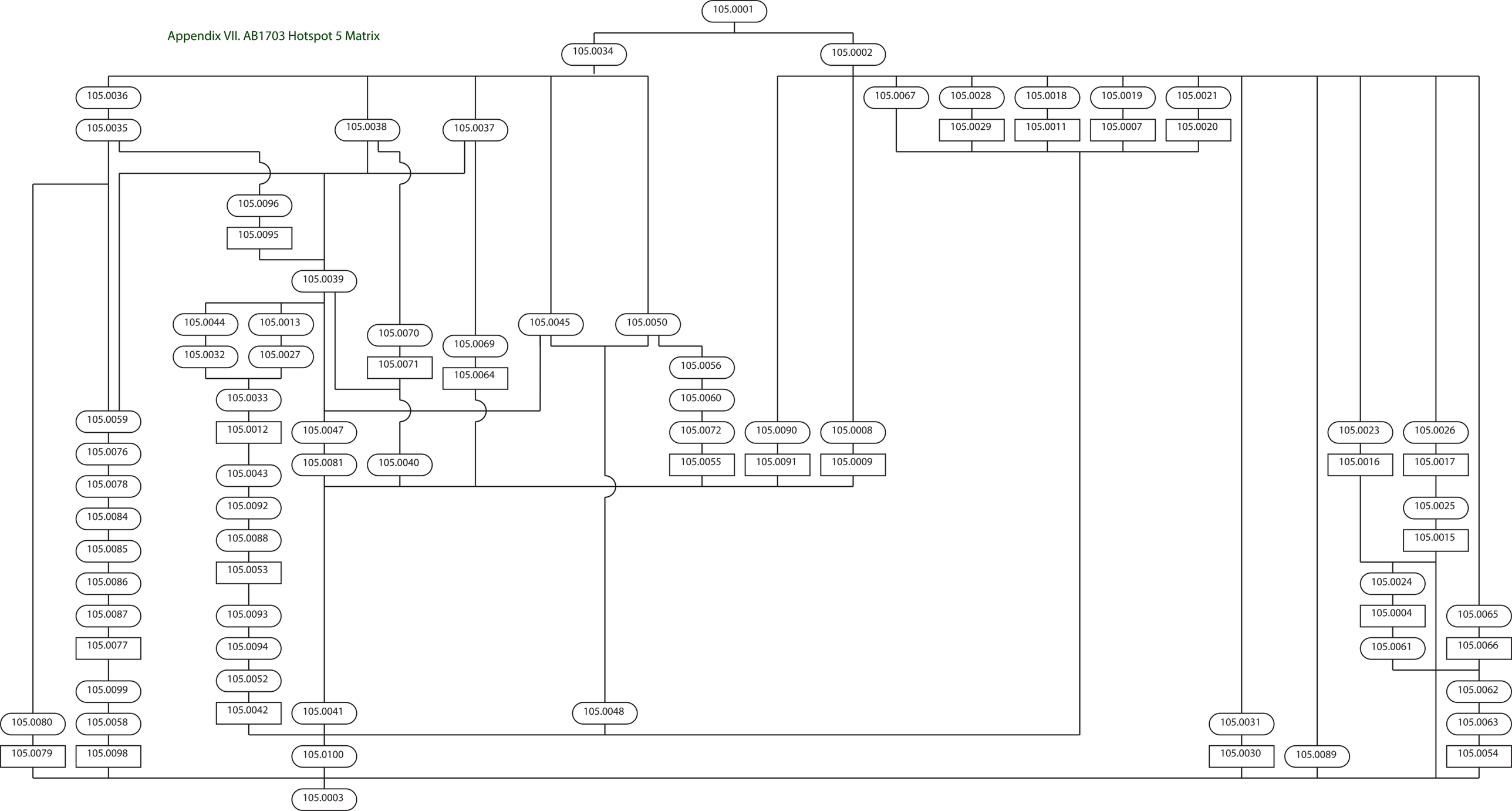
4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

Appendix VII

AB1703 Wylfa Newydd Early Clearance Works

Hotspot 5 Harris Matrix

Appendix VII. AB1703 Hotspot 5 Matrix



Appendix VIII

AB1703 Wylfa Newydd Early Clearance Works

Post Excavation Assessment Methodology

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

HORIZON

WYLFA NEWYDD

POST EXCAVATION ASSESSMENT METHOD STATEMENT

APRIL 2019

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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 (CIfA) 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 Archaeological Sites. In addition, GAPS require reference to Society of Museum 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.

<u>Stage 4 PXA and UPD Reporting</u>

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.

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.

12.11 Proposals 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

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.

<u>Time estimates for finds washing and cleaning</u>

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 500µm 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 9l 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 300µm 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 300µm 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.

Time estimates for finds marking and bagging and boxing

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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