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

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HORIZON NUCLEAR POWER

WYLFA NEWYDD, ANGLESEY

AREA 19 ARCHAEOLOGICAL POST-EXCAVATION ASSESSMENT REPORT

DECEMBER 2021





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#### AREA 19, ARCHAEOLOGICAL POST-EXCAVATION ASSESSMENT REPORT

#### DECEMBER 2021

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## SUMMARY

Wardell Armstrong LLP (WA) was commissioned by Horizon Nuclear Power to undertake the post-excavation assessment for archaeological excavations at the proposed new nuclear power station at Wylfa Newydd, Anglesey, Wales, centred on National Grid Reference (NGR): SH 36350 93450. The excavation was required as part of the site preparation prior to a Development Consent Order application. The excavation was divided into defined areas and this report details the results of the archaeological excavation at Area 19.

Area 19 consisted of a single area within field O5 North, 90m to the northeast of Area 20 O5 South, centred on NGR SH 35300 92722 and covering 795m<sup>2</sup>. The archaeological fieldwork was undertaken by Wessex Archaeology between 13<sup>th</sup> September 2017 and 22<sup>nd</sup> February 2018.

The site uncovered three grouped features, including an ancillary structure, a stone-built structure, and a further possible structure of unknown function, associated with occupation and activities of Iron Age date. There were also undated pits and ditches positioned away from the structural remains revealed during the investigation.

The exact shape of the stone-built structure **{19199}** and the position of any entranceway remained obscure as it was incomplete, although the preserved portions demonstrated that it was built of squared blocks, which constituted the wall elements, and horizontal stones, laid contiguously as an internal flat surface. This form of construction is in contrast to other Iron Age structures within the region built of orthostats (upright stone slabs).

To the immediate southwest was an ancillary structure **{19124}** which had a preserved southern curvilinear wall and deposits that indicated the internal area was to the north. It was not clear if the structure comprised a completely stone built foundation or whether several of the associated postholes may have represented an open sided roofed structure. The pits and spreads located along the northern side, might suggest such a layout. It is conjectured, given the likely heat affected debris in several of the features, that the ancillary structure **{19124}** may have been a functional workshop area, although there no direct evidence of such activity was noted.

To the northeast of the stone-built structure **{19199}** was further potential structure of uncertain form and function **{19198}**. It was unclear whether the group represented a partially stone-built structure, a post-built structure, or several phases of a building, or whether it reflects a number of smaller, 4 or 6 post-built structures respecting the stone-built structure **{19199}**, rather than representing a single building.



A ditch identified to the southwest of the structures could indicate that an enclosure was established at some point. The ditch may also have assisted with drainage as well as serving as a boundary ditch. However, no comparable ditches were identified, and the size and form of the potential enclosure could not be established.

The pits in the vicinity of the ditch were well defined and deliberate but the fills contained no artefactual material and their origin and function remain uncertain.

# Crynodeb Area 19

Comisiynwyd Wardell Armstrong LLP (WA) gan Horizon Nuclear Power i gyflawni asesiad olgloddio archaeolegol ar gyfer cloddfau archaeolegol ar safle arfaethedig gorsaf bŵer niwclear Wylfa Newydd, Ynys Môn, Cymru, wedi ei ganoli ar Cyfeirnod Grid Cenedlaethol (NGR): SH 36350 93450. Ymgymerwyd ar y rhaglen waith maes archaeolegol i gefnogi cais Orchymyn Cydsyniad Datblygu (EN010007). Rhannwyd y rhaglen gwaith maes i lecynnau ddiffiniedig, mae'r adroddiad hwn yn manylu canlyniadau cloddfa archaeolegol yn Area 19.

Roedd Area 1 wedi ei leoli mewn un llecyn yng ngae O5 North, 90m i'r gogledd-ddwyrain o Area 20 O5 South, ac yn mesur 795m<sup>2</sup> wedi eu canoli ar NGR SH 36300 93700. Cwblhawyd y gwaith maes archaeolegol gan Wessex Archaeology rhwng y 13eg o Fedi 2017 a'r 22ain o Chwefror 2018.

Darganfyddwyd grŵp o dair nodwedd, gan gynnwys adeilad atodol, adeilad carreg, ac adeilad posib arall o bwrpas ansicr, yn gysylltiedig â meddiannaeth ac actifedd yn ystod yr Oes Haearn. Roedd hefyd pydewau a ffosydd o ddyddiad anhysbys wedi eu lleoli i ffwrdd o weddillion yr adeiladau.

Nid oedd siâp union nac lleoliad mynedfa i adeilad {19199} yn amlwg gan ei fod yn anghyflawn. Lle oedd rhannau o'r adeilad mewn cyflwr gwell gellir gweld bod y waliau wedi eu hadeiladu o flociau sgwarog a'r llawr o gerrig gwastad cyfagos. Mae'r ffurf yma o adeiladu yn wahanol i nifer o adeiladau lleol o'r Oes Haearn sydd wedi eu hadeiladu o orweithiaist (cerrig wedi ei gosod ar eu pen).

Yn union i'r de-orllewin roedd adeilad atodol {19124} gyda wal gromlinog a dyddodyn yn dangos bod ochr mewnol yr adeilad i'r gogledd. Nid oedd yn amlwg os oedd gan yr adeilad sylfaen cyflawn o gerrig neu fod nifer o dyllau pyst yn cynrychioli adeilad gyda tho ac ochrau agored. Roedd pydewau a lledaeniadau ar hyd ochr ogledd yr adeilad yn awgrymu gallai ochrau'r adeilad wedi bod yn agored. Mae'n bosib, gan fod malurion o nifer o'r nodweddion wedi llosgi, bod yr adeilad wedi ei ddefnyddio fel gweithdy, er bod dim tystiolaeth uniongyrchol wedi ei nodi.



I'r gogledd-ddwyrain o adeilad carreg {19199} roedd adeilad potential arall o ffurf a phwrpas ansicr {19198}. Nid oedd yn amlwg os oedd y grŵp yn cynrychioli adeilad gydag elfennau carreg, adeilad o byst, neu nifer o agweddau o adeiladu mewn un adeilad. Gall y nodweddion hefyd gynrychioli nifer o strwythurau llai o 4 neu 6 postyn, yn parchu'r adeilad carreg {19199}, yn hytrach na un adeilad.

Mae'n bosib bod ffos nodwyd i'r de-orllewin o'r adeiladau yn dangos bod lloc wedi ei sefydlu ar ryw adeg. Mae'n bosib i'r ffos wedi gweithio fel draen yn ogystal â ffin i'r safle. Ni ddarganfyddwyd unrhyw ffosydd cysylltiedig felly nid oedd yn bosib sefydlu maint a siâp y lloc posib.

Roedd pydewau yn ardal y ffos yn amlwg ac wedi eu creu yn bwrpasol ond ni ddarganfyddwyd arteffactau ynddynt ac mae eu dyddiad a phwrpas yn ansicr.



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The assessment report was written by Vix Hughes. The figures were produced by Helen Phillips and Valeria Tiezzi. The finds assessment was undertaken by Sue Thompson. Freddie Sisson wrote the palaeoenvironmental report and supervised the environmental team who consisted of Megan Lowrie, Sadie Brown, Jyoti Stuart, Paul Sherwood, Saskia Winslow, Charlotte Manning. The palaeoenvironmental assessment was edited by Lynne Gardiner. The project was managed by Frank Giecco and Damion Churchill, and Frank Giecco edited, and approved the initial report with Lynne Gardiner reviewing this version and approval by Frank Giecco.



## 1 INTRODUCTION

#### 1.1 **Project Circumstances and Planning Background**

1.1.1 Between September 2017 and February 2018, Wessex Archaeology undertook an archaeological excavation in Area 19, Field O5 North at Wylfa Newydd, Anglesey, Wales, centred on National Grid Reference (NGR): SH 35300 92722 (Figure 1). This excavation was one of multiple defined areas excavated as part of a large scheme of works commissioned by Horizon Nuclear Power (HNP). The archaeological fieldwork programme was undertaken in support of a Development Consent Order application (EN010007). The fieldwork programme was divided into defined areas and this report details the results of the archaeological excavation at Area 19.

### 1.2 **Primary Reference Numbers (PRNs)**

1.2.1 Historic Environment Record event numbers ('PRNs') were assigned following discussions between Wessex Archaeology and Nina Steele, Senior Historic Environment Record Archaeologist at Gwynedd Archaeological Trust (and later, Jane Kenney, Senior Archaeologist at Gwynedd Archaeological Trust). PRN45392 has been assigned to the Wylfa Newydd project as a whole and further event numbers have also been assigned to 'noteworthy components' of the project. Within Area 19, PRN76023 has been assigned to Iron Age activity. Additional, feature-specific PRNs for Area 19 are presented in Table 1.1.

PRNs	Description	Associated context
		numbers/PRNs
PRN91999	Structure group, Late Bronze Age/Early Iron Age	{19124}
PRN92000	Stone built structure remains, Early Iron Age	{19198}
PRN92001	Stone built structure remains,	{19199]
PRN92002	Ditch, uncertain	[19011=19033]

Table 1.1: Primary reference numbers (PRNs) gazetteer for Area 19

#### 1.3 **Project Documentation**

1.3.1 The project conforms to a brief issued by HNP which was prepared in consultation with the Gwynedd Archaeological Planning Service (GAPS), the archaeological planning advisor to the Isle of Anglesey Council. A Written Scheme of Investigation (WSI), was then produced to provide a specific methodology based on the brief for a programme of archaeological excavation (HNP 2015). This was agreed with the archaeological planning advisor prior to the fieldwork taking place. This is in line with government advice as set out in Section 5.8 of the National Policy Statement for



Energy (EN-1) (Department for Energy and Climate Change 2011).

- 1.3.2 This report outlines the fieldwork undertaken on site at Area 19, the results of this scheme of archaeological excavation and the subsequent programme of post-excavation assessment. It follows on from a series of works consisting of desk-based assessments, geophysical surveys and two phases of evaluation trenching, culminating in the excavation fieldwork. The previous elements of work have been fully reported on (see bibliography where relevant).
- 1.3.3 The excavation of Area 19 was undertaken between 13<sup>th</sup> September 2017 and 22<sup>nd</sup> February 2018, in Field O5 North (Figure 2). The area of investigation targeted features recorded during the geophysical survey and archaeological evaluation of the area. The site consisted of an area measuring 795m<sup>2</sup>. A larger 8352m<sup>2</sup> excavation, Area 20, was excavated 90m to the southwest.



## 2 EXCAVATION METHODOLOGY

### 2.1 Standards and Guidance

- 2.1.1 The archaeological excavation was undertaken following the Chartered Institute for Archaeologists (CIfA) Standard and guidance for archaeological field excavation (CIfA 2020a), and in accordance with the Wessex Fieldwork Recording Manual (2015).
- 2.1.2 The fieldwork programme was followed by an assessment of the data as set out in the aforementioned standards, as well as the guidelines from Historic England (MoRPHE 2015) and the Standard and guidance for the collection, documentation, conservation and research of archaeological materials (CIfA 2020b).

## 2.2 Archaeological Excavation

- 2.2.1 The archaeological excavation of Area 19 comprised the strip map and sample of an area totalling 795m<sup>2</sup> (Plate 1). These defined areas were identified for archaeological excavation based on the results of the previous geophysical survey and archaeological evaluation.
- 2.2.2 The general aims of the project were:
  - to ensure the adequate recording of any archaeological remains revealed by the strip map and sample work;
  - 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;
  - to determine (so far as possible) the stratigraphic sequence and dating of the deposits or features identified;
  - 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;
  - 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;
  - 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.

And specifically, for the excavations in Field O5, including Area 19,



- To confirm the date, nature, character and extent of potential prehistoric and medieval sites in an order that can be placed into the wider context of Anglesey during these periods, with a particular emphasis on obtaining accurate C14 dates in order that the chronology of sites and ceramic sequences can ascertained.
- To understand the wider settings of prehistoric sites with specific reference to 'Understanding how sites work in the landscape, permanent/seasonal use and understanding the social role of hillforts' (Gale, 2010). It is possible that the remains within the proposed investigation area form part of the wider setting of the prehistoric and / or medieval remains seen to the west and south.
- To undertake detailed analysis of prehistoric artefacts and their contexts in order to understand the chronological and typographic development, and use, of the artefacts.
- To gain insights into the local farming economy and the wider exploitation of the natural environment with particular reference to the exploitation of lakes and bogs.
- To gain insights in social change during the Late Bronze Age / Early Iron Age period via analysis of the material culture.
- To identify and understand early field systems, their development and degree of continuity.
- To further understand and identify pasture land in locations other than upland locations specifically such locations as coastal wetlands, elevated wetlands and moors.
- To develop the understanding of known, but poorly understood, monument types, such as that seen here.
- To gain insights into social organisation and settlement hierarchies.
- 2.2.3 Deposits considered not to be archaeologically significant were removed by a 360° tracked mechanical excavator with a toothless ditching bucket, under close archaeological supervision. The area was subsequently cleaned by hand. All possible features were inspected, and selected deposits were excavated by hand to retrieve artefactual material and environmental samples. In the case of burnt spreads or extensive deposits these were excavated in quadrants. Once completed all features were recorded according to the Wessex standard procedure (Wessex Archaeology 2015).
- 2.2.4 On completion the excavated area was reinstated by replacing the excavated material in the reverse sequence of which it was removed. Topsoil and subsoil were excavated and stored separately to prevent mixing.
- 2.2.5 All finds encountered were retained on site and returned to Wessex North's office where they were processed and quantified, before being transferred to Wardell Armstrong's Carlisle office to be identified and dated to period. A *terminus post quem*



was then produced for each stratified context under the supervision of the WA Finds Officer, and the dates were used to help determine the broad date phases for the site. Following assessment, the finds were cleaned and packaged according to standard guidelines (Watkinson and Neal 1998). Please note, the following categories of material will be discarded after a period of six months following the submission of this report, unless there is a specific request to retain them (and subject to the collection policy of the relevant depository):

- modern pottery;
- and material that has been assessed as having no obvious grounds for retention.
- 2.2.6 The work is primarily summarised by investigation for clarity but related features and remains are linked throughout. Where contexts could be identified between the investigations, they have been done so and the evaluation contexts are integrated into the excavation phased narrative where applicable.
- 2.2.7 Within the defined Periods (see below) broad phasing has been ascribed to the features, deposits and structures encountered during the investigations, and the results are presented below in chronological order. The Periods used are derived from those identified in the Research Framework for the Archaeology of Wales (CIfA Cymru/Wales 2017) and are consistent throughout the different Areas of work, but within these the Phases may not be directly compatible. The dating and phasing is provisional as is appropriate for an assessment of the site and may be refined in the light of evidence produced from detailed analysis of the dataset. It is also noted that imposing rigidly defined periods on a continuous process is somewhat of a contrivance but is done so for simplicity.
  - Period 0 Natural Drift Geology
  - Period 1 Palaeolithic and Mesolithic 250 000 4000 BC
  - Period 2 Neolithic and Early Bronze Age 4000 1500 BC
  - Period 3 Late Bronze Age and Iron Age 1500 BC AD 43
  - Period 4 Roman AD 43 410
  - Period 5 Early Medieval AD 410 1100
  - Period 6 Medieval AD 1100 1539
  - Period 7 Post-medieval AD 1539 1750
  - Period 8 Industrial and Modern AD 1750 present
  - Undated



#### 3 SITE ARCHIVE

#### 3.1 **Description**

- 3.1.1 A full professional archive has been compiled in accordance with the project specification, and the Archaeological Archives Forum recommendations (Brown 2011). The archive will be deposited with the Oriel Ynys Môn, with copies of the report sent to the Gwynedd Archaeological Trust HER, available upon request. The archive can be accessed under the unique project identifier WA19/CL12283/Area 19/35-2016.
- 3.1.2 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.
- 3.1.3 The Site Archive comprises the material and documentary archives as follows (Table 3.1).

Category	Quantification
Context Sheets	183 ( <i>13 void</i> )
Small finds	0
Bulk finds	0.87kg
Environmental samples	39 samples (504 I)
Monochrome film	0
Digital photographs	523 – some missing,
	WD68 107 photos not transferred
Rectified photographs	0
Hand drawn plans	18
Hand drawn sections	64
GPS survey pre-excavation plans	Yes
GPS survey excavation plans	Yes
TST surveyed excavation plans	No

#### Table 3.1: quantification of data table



### 4 BACKGROUND

### 4.1 Location and Geological Context

- 4.1.1 Area 19 is located on the north Anglesey coast, approximately 480m west of Tregele, situated to the southeast of the proposed development area (Figure 1). The site comprised one field, centred at National Grid Reference (NGR): SH 35300 92722. The coastline is approximately 1km to the north.
- 4.1.2 Area 19 lies on undulating ground at approximately 21m above Ordnance Datum (aOD) in a low point in the landscape, and there is a small brook to the south.
- 4.1.3 Prior to the archaeological excavation, the fields were in use as improved agricultural land, characterised by enclosed arable fields.
- 4.1.4 The underlying solid geology within the area of investigation is mapped as mica schist and psammite of the New Harbour Group formed during the Ediacaran period between 541 to 635 million years ago. This is overlain by superficial deposits of Devensian till deposited up to 2 million years ago during the Quaternary period, in a local environment dominated by ice age conditions (BGS 2019). The natural substrate observed during the works at Area 19 comprised a mid orangey grey sandy clay, which is consistent with the mapped geologies above.
- 4.1.5 The overlying soil is freely draining slightly acidic loam (Cranfield Soil and Agrifood Institute 2019) and was identified on the site as a dark brown silty sand, up to 0.25m thick, with mudstone inclusions. A paler relict ploughsoil subsoil lay below this and was up to 0.15m thick.

## 4.2 Historical and Archaeological Background

- 4.2.1 An archaeological baseline assessment was produced to assess the known historical and archaeological background of the site and the surrounding landscape to a distance of 6km (GAT 2012) and was later reviewed and updated (Jacobs 2015). It is not intended to repeat that information here and what follows is an overview relating directly to the immediate environs of Area 19. For further details please refer to the original documents.
- 4.2.2 *Period* **1** *Palaeolithic and Mesolithic (25 000 4000 BC):* There is no known Palaeolithic or Mesolithic activity within Area 19.
- 4.2.3 The earliest known activity on Anglesey is in the form of Mesolithic flint scatters located close to the coast, south of the proposed development area (GAT 2012).



- 4.2.4 *Period 2 Neolithic and Early Bronze Age (4000 1500 BC):* There is no previously known Neolithic or Early Bronze Age activity within Area 19. Across Anglesey remains of this date include megalithic and ceremonial sites, funerary sites, artefact scatters and find spots, with a small amount of settlement evidence from postholes and pits.
- 4.2.5 Developments in this period include the change from communal burial practices to individual burials, as evidenced in the form of urn burials containing cremated remains and inhumations within cists.
- 4.2.6 Burnt mounds dating to the Bronze Age (*c*.2600-700 BC) are also common throughout Anglesey and North Wales (GAT 2012). These are typically located near to, or alongside watercourses either in groups or individually (*ibid*.). Burnt mounds are found at Carrog (PRN 27515) located nearly 2km to the east of the proposed development site, and east of Penciw (PRN 3565) located nearly 6km to the east of the proposed development site (*ibid*).
- 4.2.7 *Period 3 Late Bronze Age and Iron Age (1500 BC AD 43):* There is no previously known Late Bronze Age and Iron Age activity within Area 19.
- 4.2.8 Evidence for activity of this period on Anglesey comes from hillforts, small enclosed settlement sites (roundhouses, fields etc.), finds including hoards, but very little funerary evidence (GAT 2012, Cuttler *et al.* 2012). Hillforts and related fortifications continue from the latter part of the Bronze Age into the Iron Age (*c*.800 BC 43 AD). One of the largest promontory forts on the island at Dinas Gynfor is located almost 3km northeast of the Wylfa Newydd Development Area.
- 4.2.9 Archaeological evaluation trenches and later excavation in Fields L8 and L12 uncovered significant prehistoric activity, in the form of a hilltop ring ditch, 1.2km to the northeast (Wessex 2016).
- 4.2.10 The archaeological evaluation and excavations revealed that the surrounding landscape contained settlement and industrial remains dating from perhaps the Bronze Age to Romano-British periods. The remains were extensive, and the stone structures generally well preserved in Field O5 (Area 20) to the southwest, Field O6 (Area 18) to the northwest and Field E3 (Area 4) to the north.
- 4.2.11 At Area 4 the excavation revealed a large Romano-British fortified enclosure at the top of the hill with evidence for internal structures, and further buildings to the immediate west. Numerous pits and ditches were recorded surrounding the enclosure and although the majority of these did not have an obvious function several were clearly



ovens or kilns (Wessex 2018a).

- 4.2.12 In Area 20, the Iron Age to Roman remains encountered included stone-built roundhouses, wells, storage pits, enclosures and trackways. A feature of the Iron Age period remains was the use of orthostats for the roundhouses and enclosure walls and even some storage pits were lined with upright slabs. Water management was also an important feature, two of the wells appeared to draw water from a nearby stream and some of the roundhouses were slightly raised, perhaps to avoid wet ground. All houses contained capped drains, although it was not clear whether these were for general drainage or a specific industrial purpose. Some houses contained evidence for burning activity, including hearths and burnt deposits (Wessex 2018b).
- 4.2.13 Period 4 Roman (AD 43 410): There is no known Roman activity within Area 19. Anglesey was invaded in c. AD 60-61 by the Roman army and evidence of settlement sites, ephemeral military establishments (Jacobs 2015), scatters of Roman artefacts and Romano-British enclosure sites have been revealed, such as those seen in Areas 4 (Field E3) and 20 (Field O5 South), (Wessex 2018a and b).
- 4.2.14 *Period 5 Early Medieval (AD 410 1100):* There is no previously known early medieval activity within Area 19.
- 4.2.15 Evidence for early medieval settlement in Anglesey is largely based on references made in documentary sources (Headland Archaeology, 2017) which suggests a pattern of disparate farming sites located close to small ecclesiastical complexes across Anglesey *ibid.*).
- 4.2.16 Archaeological excavations have established that there is often a spatial relationship between early medieval settlement sites and cemetery site locations on Anglesey (Jacobs 2015) and it is thought that the use of long cist burials is consistent with wider Welsh Christian burial practices of the 8<sup>th</sup> to 9<sup>th</sup> centuries (*ibid.*).
- 4.2.17 Other evidence includes occasional findspots of inscribed stones, and a rare small fortified site at Porth Wen may have related to the 9<sup>th</sup> century Viking raids.
- 4.2.18 **Period 6 Medieval (1100 1539):** By the 12<sup>th</sup> century, Area 19 was located within the *Talybolion commote* (a recognised regional unit of royal administration) with a royal manorial centre located at Cemaes (GAT 2012).
- 4.2.19 The Talybolion commote was subsequently sub-divided into a number of smaller administrative centres called '*trefi*' (Jacobs 2015) which included: the ecclesiastical parishes of Llanfechell and Llanbadrig; the townships of Cemaes, Clegyrog, Llanfechell



and Caerdegog; and the hamlet settlements of Cafnan, Tre'r Gof, Gwaunydog and Llanddygfael (*ibid*.).

- 4.2.20 Documentary sources indicate that the pattern of medieval settlement on Anglesey during this period was characterised by largely unequal settlements with discrete areas of nucleation (Jacobs 2015). This pattern influenced later post-medieval and early-modern patterns and survives as agricultural land with intermittent farmsteads, small hamlets, and villages (*ibid*.).
- 4.2.21 Archaeological evidence indicates that the practice of open-field farming, with narrow strips of arable pasture within large unenclosed fields located close to settlements was common and evidence of ridge-and-furrow, associated land clearance cairns, terraces, field boundaries, open fields, pens and small enclosures survive.
- 4.2.22 The medieval landscape also contained agricultural buildings, domestic dwellings, mills and other structures though none are known to survive as complete upstanding remains. Only ecclesiastical elements show such survival on Anglesey. The distribution of medieval churches and settlement sites varies to include churches situated at the centre of each village or hamlet, and churches on the periphery of known settlement sites.
- 4.2.23 *Period* 7 *Post-medieval (1539 1750):* During the 17<sup>th</sup> and 18<sup>th</sup> centuries, Cemaes and Cemlyn Bay became principle centres of shipbuilding, fishing and later brickmaking and copper mining (*ibid*.).
- 4.2.24 Although the rural landscape established during the medieval period continued into the post-medieval period, fewer landowners controlled larger areas of land with more 'estate' style systems and additional in houses and farmsteads established.
- 4.2.25 *Period 8 Industrial and Modern (AD 1750 present):* In the 19<sup>th</sup> century small-scale gentrification of the countryside continued with larger country houses and farmhouses being constructed and existing ones being remodelled.
- 4.2.26 Agricultural land saw improvements to increase productivity during the post-medieval period implemented through the draining of bog-land and changes in farming techniques, ploughing, manuring, enrichment, drainage, stock breeds and crop choices. Such late 18<sup>th</sup> to 19<sup>th</sup> century land improvements are likely to have removed any remains of earlier surface and buried near surface features, though fairly deep soils may have protected features cut into the substrata.
- 4.2.27 The recorded remains of post medieval field boundary systems are only part of the



preserved landscape. For example, documented and existing boundaries may have been in place much earlier and subsequently denuded and buried, while newer ones added to extend areas of ownership or use.

- 4.2.28 The archaeological evaluations (Headland 2017, Wessex 2016) have demonstrated that this is not the complete picture and a more complex landscape was exploited during the medieval and post medieval periods on Anglesey. Upstanding elements that can survive include clawdd (plural cloddiau). Within northwest Wales, the term is usually used to describe an earthen bank, often stone-faced (GAT 2012). An unusual feature of stoneclad cloddiau is that the facing stones are commonly laid with their long axis vertical (DSWA 2013).
- 4.2.29 With the rise of the Industrial Revolution, the amount of industrial activity, such as mining, quarrying and brickmaking on Anglesey dramatically increased from the late 18<sup>th</sup> century onwards but declined in the early 20<sup>th</sup> century (Jacobs 2015).
- 4.2.30 Population varied during this period with associated fluctuations in building construction including new / remodelled wealthy dwellings, and more functional and modest ones becoming more common. This can be particularly identified for wartime accommodation and the more recent Power Station construction.
- 4.2.31 In 1960, the Central Electricity Generating Board (CEGB) applied for consent to build the existing Power Station with consent being granted in late 1961 (*ibid*.). In 1963 work began on the construction of the two Magnox reactors (*ibid*.). The construction of the Power Station continued throughout the 1960s, with Wylfa being the last and largest of this design of reactor (*ibid*.). The Existing Power Station was officially commissioned in 1972 (*ibid*.).
- 4.2.32 Construction of the two Magnox reactors and the Central Electricity Generating Board (CEGB) Power Station was a massive undertaking, involving excavations of 13m below the existing ground level. The work took place for the CEGB between 1963 and 1972.

## 4.3 **Previous Work**

4.3.1 **Documentary Research:** An archaeological desk-based assessment was originally prepared in 2012 by Gwynedd Archaeological Trust (GAT 2012), which set out the archaeological and historical background of the site and provided an assessment of the significance of all known and potential heritage assets up to 6km from the area of investigation to support the site preparation and clearance phase of works. An updated desk-based cultural baseline assessment was prepared by Jacobs (2015) to



support the DCO application.

- 4.3.2 The Desk-Based Assessment (GAT 2012) noted that the existing field system may have ancient antecedents of which those remaining fossilised in the current landscape may only be partial remains.
- 4.3.3 *Geophysical Survey:* The survey (ASWYAS 2015) did not identify defined features of archaeological origin, but suggested anomalies of a geological nature.
- 4.3.4 Archaeological Evaluation: Evaluation trial trenching took place in 2016 (Wessex 2016, Headland 2017). A total of 24 trenches were excavated in Field O5, 18 by Wessex and a further six by Headland. The trenches were 1.8 m wide and between 30m and 50m long. Subsequently, the field became the focus of two open area excavations, Areas 19 and 20.
- 4.3.5 Eleven of the trenches identified archaeological remains consisting of boundary ditches, pits, postholes, stone deposits and a subterranean structure.
- 4.3.6 Area 19 was focused on the location of Trench 2083, which had revealed a concentration of features which included the remains of a potential prehistoric burnt mound [2083-026] and a possible cremation [2083-006] that contained small unidentifiable burnt bone fragments (Headland 2017, 22). There were also several pits, including [2083-022], [2083-038], [2083-029], [2083-037], [2083-012], [2083-016] and [2083-019], some of the smaller ones may have been postholes. The deposits infilling the majority of the features contained at least a small amount of charcoal. A number of these features contained elements of slag and burnt clay, indicative of industrial processes in the vicinity (Headland 2017, 23).
- 4.3.7 Potential structural remains identified included a second, a roughly linear arrangement of intercutting large post-holes to the northeast of the trench. The most substantial [2083-040] contained a ring of large irregularly hewn stones (2083-041), which represented the remains of packing to support a relatively substantial post. This had truncated earlier features implying that the larger feature was possibly a reestablishment of a pre-existing structure. The latest feature in the sequence was a shallow ovoid with a flat slab of stone (2083-053), interpreted as a probable post pad (Headland 2017, 23).



## 5 ARCHAEOLOGICAL EXCAVATION RESULTS

#### 5.1 Introduction

- 5.1.1 The excavation of Area 19 was undertaken between 13<sup>th</sup> September 2017 and 22<sup>nd</sup> February 2018, in Field O5 North (Figure 2). The area of investigation targeted features recorded during the geophysical survey and archaeological evaluation. The site consisted of one 795m<sup>2</sup> area. The larger 8352m<sup>2</sup> Area 20 excavation was 90m to the southwest.
- 5.1.2 The excavation revealed a variety of features including linear ditches, pits, postholes and stone-built structures (Plate 2).
- 5.1.3 Results are detailed below, deposit numbers are given in (parenthesis), cut numbers are given in [square brackets], and structure numbers are given in {braces}.

### 5.2 Results

- 5.2.1 An average of 0.2m of mid brown silty clay topsoil (19001), and a further 0.15m of mid orangey brown silty clay subsoil (19002), were removed to reveal the archaeological features above the geology. The natural geological substrate seen as (19003) and (19126) comprised a mid-grey clay, representing glacial till; consistent with the mapped geology. All features were stratigraphically sealed by the subsoil and truncated the underlying natural substrate.
- 5.2.2 The excavation revealed a focus of concentrated activity towards the northeast covering an area approximately 20.5m by 14.5m, with a lower density of features across the remainder of the area. A number of grouped features were uncovered and found to be of Iron Age date. The three grouped features consisted of:
  - Group **{19124}** Ancillary Structure (amorphous focus of possible wall, postholes and deposits), PRN91999;
  - Group **{19198}** Uncertain Structure (postholes and pits), PRN92000; and
  - Group **{19199}** Stone-built Structure, PRN92001.
- 5.2.3 The grouped features, **{19124}**, **{19198}** and **{19199}**, have all been broadly dated to the Iron Age period but may have been constructed and used in any number of ways and the absolute chronology and therefore the duration of each phase is unclear.
- 5.2.4 A suggested phasing is outlined below, based on subtle stratigraphic relationships and a degree of spatial association, but it remains hypothetical and serves to help test the data. It may be subject to change, partly on the basis of further radiocarbon dating, as it becomes available and partly through comparison to other sites, especially the



adjacent Area 20 results.

- 5.2.5 There was also several undated features which may belong to the same broad period and contemporary or may be from a different time period altogether (Figure 3).
- 5.3 Period 3 Late Bronze Age and Iron Age

## 5.3.1 *Phase 1*

- 5.3.2 The earliest phase of archaeological activity was probably the establishment of the Ancillary Structure Group **{19124}** (Figure 4).
- 5.3.3 *Group* **{19124}***:* during this phase a short stretch of wall was constructed in a shallow cut seen as **[19169]** and **[19181]**. The wall **{19137}** was built of sub-rounded and sub-angular stones and either there were no preserved facing stones or it was more akin to a cobble built wall (Plate 3). The wall was curvilinear, extended for over 3m, measured 0.5m wide and reached a maximum height of 0.3m. No artefacts were contained within the wall itself or the construction backfill **(19168)** and **(19182)**.
- 5.3.4 No stratigraphic relationship could be established between group **{19124}** and the adjacent stone-built structure **{19199}**. There were also several shallow deposits that may have been related to the construction period. These included internally, to the north of wall **{19137}**, layer **(19151)**, which was overlain by layer **(19150)** and this was sealed by stony surface **(19125)**. The wall **{19137}** may have functioned as a foundation for an additional structure, which was either circular or a curved structure, serving as an outhouse with a protected southern side and more open northern side. Alternatively, the majority of this structure may have been dismantled prior to the construction of the stone-built Structure **{19199}**.
- 5.3.5 In addition to the stone wall {19137}, a number of postholes were identified [19127, 19129 (Plate 4), 19131, 19143, 19147, 19170, 19173, 19177 and 19179]. There was a significant degree of variation in size, form and fills of the features comprising Group {19124}. The postholes were either circular or oval in plan, ranged in size from 0.25 0.68m in width and between 0.1 0.3m in depth. The majority of postholes had a single unremarkable fill. Only two included stones that may have been remnants of post packing, [19143], (Plate 5) and [19147] (Figure 6). From fill (19128) of posthole [19127] a fragment of animal bone was recovered and from fill (19178) of posthole [19177] a fragment of fired clay was found. The fills contained no other artefactual material. In addition, a sample of oak charcoal from fill (14148) of posthole [14147] produced a radiocarbon age of 2500±30 BP, which equated to a calibrated calendar



date of 788-537 BC, in the Early Iron Age. The postholes formed an approximate curvilinear distribution along the northern circumference of what might have been a continuation or precursor of wall **{19137}**.

- 5.3.6 Phase 2
- 5.3.7 This second phase of activity comprised the construction of the stone-built structure {19199} and the commencement of features associated with a potential structure to the northeast; Group {19198} (Figure 5).
- 5.3.8 *Group* **{19199}**: a somewhat ambiguous construction cut seen as **[19185=19193]** and **[19195]** was difficult to detect in plan. Within it was a stone structure **{19162}**, described as a sub-rectangular dry-stone wall (Figure 6). It comprised small areas of two coursed squared blocks (reaching a maximum 0.4m in height) which constituted wall elements and included **(19164)**; horizontal stones laid contiguously as a possible internal flat surface (Plate 6). There is also a strong possibility that structure **{19197}**, thought to be part of Group **{19198}** might actually have been a continuation of **{19162}**. The stones of **{19162}**. The wall element was approximately 1.15m wide, while the potential internal stone surface covered an area of up to 6m by 4m.
- 5.3.9 Group **{19198}**: This group was initially interpreted as a possible roundhouse, with the partial stone wall {19197} that formed a ring with a number of postholes. However, it was difficult to confirm a curvilinear arrangement of postholes, anticipated if Group {19198} was indeed as described in the records. The spatial arrangements could indicate the presence of one or more structures of undefined dimensions. There were eleven postholes [19063, 19066, 19080, 19083, 19091, 19093, 19108, 19110, 19112, 19157 and 19160]. The postholes were either circular to oval in plan, ranged in size from 0.33 - 0.7m in width and between 0.1 - 0.33m in depth. The majority of postholes had a single unremarkable fill, though postholes [19063 (Figure 6; Plate 7), 19091 (Figure 6; Plate 8), 19157 and 19160] did contain stones probably related to post packing. The upper fill (19065) of posthole [19063] produced a radiocarbon date of 2170±30 cal BP, which equates to a calibrated calendar date of 360-116 BC, within the Iron Age. Apart from the curved wall **{19197}**, which may actually have been part of Group **{19199}**, it was difficult to identify the curvilinear arrangement proposed within the records. It is therefore possible that the potential structure **{19198}** might actually be one or more small rectilinear structures. In addition, there were a number of probable posthole features identified in the evaluation including [2083-025, 2083-



**048** and **2083-046**], that would form part of this group. Feature [**2083-040**], was much larger at 0.9m diameter, and it contained fired clay and a sheep tooth more suggestive of a pit.

5.3.10 Posthole **[19110]** was truncated by a later posthole **[19112]** (Plate 9), and there were probable relationships between **[19063]** and **[19066]** and postholes **[19091]** and **[19093]** (Figure 6). Although the stratigraphic relationships could not be clearly defined between them it did suggest that there were potentially two phases of postbuilt structures, with the later phase consisting of **[19063]**, **[19091]** and **[19112]**.

## 5.3.11 *Phase 3*

- 5.3.12 This phase consisted of the continued development of the Ancillary Structure Group {19124}, the establishment of pits in the area of the potential structure {19198}, and the continued use of the stone-built structure {19199} (Figure 7).
- 5.3.13 Group {19199}; there was little direct evidence of activity during this phase, though deposits (19186) and (19194) overlying the stones {19162}, but only seen within their respective wall cuts, [19185 and 19193], might have accumulated during this phase. The only potential feature of this phase (although the stratigraphy was uncertain) was an extremely shallow, small pit [19120], which appeared to overlie the stones of {19162} (Plate 10). The fill yielded oak (*Quercus* sp.) charcoal which provided a radiocarbon age of 2100±30 BP, which equated to a calibrated calendar date of 197-47 BC.
- 5.3.14 Group {19124}: there was no clear evidence for rebuilding at this stage but based on stratigraphic evidence, there would appear to have been two layers deposited at this time. Both were similarly stony mid brownish grey clay with frequent small to medium stones of reasonably consistent size and distribution. The density of stones was sufficient to suggest a possible rough surface, albeit trampled and degraded. Layer (19125) was located within the confines of the postulated ancillary structure {19124} (Figure 8; Plate 11). It covered an approximately circular area 3.4m in diameter, to the north of wall {19137} although no stratigraphic relationship was established between the two. It was up to 0.13m thick, sealed posthole [19173] and was overlain by deposit (19149).
- 5.3.15 Layer **(19138)** was positioned to the northeast between walls **{19162}** and **{19137}** and may have been a surface. It covered an amorphous area approximately 3.5m by 1m and was up to 0.2m thick (Figure 9). It was overlain by deposit **(19133)**. Survey



suggested that there should be a stratigraphic relationship, but none was present in the context recording.

- 5.3.16 Pit [19187] was seen to the southeast of the ancillary structure {19124} and it had one fill (19188) which did not produce any artefactual material. The feature was truncated by later disturbance [19189] and a later pit [19191=19135] (Figure 9). The position of the pit indicated that it was outside the structure, defined by wall {19137}.
- 5.3.17 To the north of the ancillary structure **{19124}** was an irregular pit **[19175=19183]** which had a single moderately stony fill seen as **(19176)** and **(19184)**, devoid of artefactual material.
- 5.3.18 Adjacent to this was a spread of material **(19134)** (Plate 12), seen as **[2083-026**] in the evaluation, filled by **(2083-025)** and **(2083-024)**, (Headland 2017, 21). The spread was approximately 2.4m by 1.8m and 0.1m thick. It was a dark brownish grey silt with frequent angular stones and a low density of charcoal. The deposit was interpreted as waste from heating activity in close proximity.
- 5.3.19 *Group* **{19198}**: attributed to this group were a number of posthole or pit features, and it is hypothesised that this later phase of activity may have consisted exclusively of pits **[19057, 19059, 19097** and **19102]** (Plates 13 & 14). The pits were all oval or slightly irregular and varied in size from 0.76 1.4m in width and between 0.08 0.4m in depth. All had a single fill apart from pit **[19059]** (Plate 13), which was very regular and had three fills **(19060, 19061** and **19162)**. None of the pit fills contained any artefactual material. There was no conclusive evidence that the pits were later than the postholes associated with the potential structure **{19198}** but the relatively restricted area suggested that it would have been spatially difficult for the two feature types to co-exist.
- 5.3.20 Although it is difficult to confirm, a number of pits located to the south of the various structural remains were attributed to this phase of activity. It was unknown if they were contemporary with the similar pits to the northeast. The pits included [19004, 19007, 19009, 19013=19036, 19022, 19031, 19037, 19039, 19045, 19048, 19050, 19069 and 19075]. The features were all regular in plan, with concave to straight sides and gently concave to flat bases. The pits ranged in size from 0.56 2.1m in width / diameter and between 0.09 0.46m in depth. The shallower pits generally had only one fill, while the deeper, better preserved ones, demonstrated multiple fills, up to a maximum of five in the deepest pits.



- 5.3.21 Only two pits produced any finds, all fired clay fragments. These were seen in fill (19010) of pit [19009] (Plate 16) and the lower fill (19006) in pit [19004]. Pit [19004] was distinct in that the lower fill (19006) was a concentrated burnt deposit which was overlain by a very sterile clayey fill (19005) (Plate 15). The other pits demonstrated a variation in the fill, in terms of colour, texture and inclusions and this may indicate that they filled at different rates and the sediments were from a range of sources. Some fills appeared to show post-depositional affects from waterlogged conditions, visible as brown mottling e.g. [19045] (Plate 17).
- 5.3.22 The pits appeared to extend to the north and were seen in the evaluation as features [2083-012], [2083-016], [2083-017], [2083-019], [2083-022], [2083-027], [2083-029], [2083-037] and [2083-038]. The smaller, steeper sided examples, [2083-012] and [2083-016], which measured up to 0.95m in diameter were more reminiscent of large post-holes. Each contained at least one charcoal rich deposit (2083-010)/ (2083-014), perhaps indicative of the burning of a post. Two of the deposits, (2083-010) and (2083-011) within post hole [2083-012] contained high proportions of both fired clay and fuel-ash slag, indicative of the presence of a nearby furnace. A smaller, charcoal filled, possible stake hole [2083-017], 0.08m wide, was located in close proximity to post hole [2083-016], (Headland 2017 23).

# 5.3.23 Phase 4

- 5.3.24 This phase comprised much less demonstrable activity with a later pit **[19135=19191]** observed near the ancillary structure **{19124}** and later pit **[19089=19098]** near the potential structure **{19198}**. There was no evidence of construction, modification or alterations to the earlier structures. The activity in this phase would appear consistent with a period of limited use. In the southwestern part of the site there were later phased features that consisted of pit **[19054]** and ditch **[19017=19025]**.
- 5.3.25 Pit [19089=19098] was large, with up to three fills (19100), (19101) at the base and a stonier fill (19099) at the top. None of the fills had artefactual material within them. The lower fills seemed consistent with gradual accumulation.
- 5.3.26 Pit **[19135=19191]** was a medium sized pit with up to three fills seen as a stonier base fill **(19141)**, overlain by **(19142)**, and fill **(19136)** at the top (Figure 11; Plate 18). None of the fills had artefactual material within them. The fills may have resulted from discarded material. The pit was sealed by layer **(19156)**.
- 5.3.27 Pit [19054] was a well-defined medium sized pit with a sequence of two fills, (19055)



and **(19056)** (Figure 11). The fills appeared to show post-depositional effects of waterlogged conditions, visible as brown mottling. There was no artefactual material from either fill.

5.3.28 Ditch **[19017=19025]** truncated pit **[19013=19036]**. The ditch was slightly curvilinear, aligned northwest-southeast and exposed for c. 8m and continued beyond the limit of excavation. The feature appears to have been a single construction boundary ditch with steeply sloped sides, a gently concave base and a well-defined terminus **[19017]** at the northwest end. Ditch **[19017=19025]** measured up to 1.5m wide by 0.4m deep (Plate 19). It contained up to four fills **(19018, 19019, 19020 and 19021** (Figure 11), none containing artefactual material. The fills were consistent with gradual infilling by natural accumulation, with possible open stable periods. The fills were characteristic of waterlogged conditions indicating that the ditch may also have served to assist drainage as well as function as a boundary. There was no evidence of directional infilling to demonstrate the position of any associated bank.

# 5.3.29 *Phase 5*

- 5.3.30 Phase 5 solely comprised infilling deposits preserved in the uppermost depressions where the features were present. These were seen as spreads of material overlying the large but discrete areas of Groups **{19124}** and tumble **(19163)** over **{19199}**.
- 5.3.31 *Group* **{19124}**: the ancillary structure had deposits that overlay the wall **{19137}** and were probably the result of disuse, accumulation and percolation of sediments (Plate 20). These consisted of layer **(19156)**, which was overlain by **(19155)**. Layer **(19156)** was a dark greyish brown clay with occasional stone, whereas **(19155)** was notably less stony. Above this were two other layers **(19152)** and **(19153)** (Figure 11). Deposit **(19152)** was a dark brown deposit, similar to **(19154)**. Layer **(19153)** which overlay **(19152)**, was a mid orangey brown silt, likely to have resulted from natural sedimentation.
- 5.3.32 There were two other layers, likely to belong to this phase, (19133) and (19149). Layer (19133) was a mid-greyish brown silt with frequent small stones seen to overlay the stony surface (19138).
- 5.3.33 Layer **(19149)** was a small deposit of mid orangey brown clay with frequent charcoal inclusions, which overlay the stony surface **(19125)**. The deposit may have been related to occupation and therefore be more appropriate in Phases 3 or 4 but there is insufficient information to determine this.



5.3.34 Deposit (19163) was a mid-brown silty clay with frequent light grey sub-rounded to sub-angular stones throughout the deposit. This was interpreted as a layer of tumble following the abandonment of the stone-built structure {19162}.

## 5.4 Period 7 Post-medieval

5.4.1 An extensive deposit **(19106)**, approximately 12m in diameter and up to 0.4m thick, was seen to have accumulated in the depression overlying the stone features in the northern part of the site (Figures 13 & 14; Plate 21). The deposit was a mid orangey brown silt with frequent small stones and rare charcoal inclusions. A single fragment of Buckley type pottery was recovered, which dated to the post-medieval period. The deposit was interpreted as a lower subsoil, below **(19002)**.

### 5.5 Undated Features

- 5.5.1 Although it was likely that the majority of features encountered formed part of the Iron Age activity, there were a number of features that had no clear associations, and although they may have been contemporary with the main focus of occupation, this could not be confirmed. These comprised features [19041] and [19043] and ditch [19011=19033]. All three were located in the southern corner of the site and extended south beyond the limit of excavation (Figure 13).
- 5.5.2 Feature **[19041]** measured 2m long, 1.3m wide and 0.19m deep with concave sides and base. It contained a single fill **(19042)**, which was a light brown silty gravel with no artefactual material. The feature was interpreted as a pit but, as it was somewhat ambiguous, it may have been a tree throw or other naturally infilled depression.
- 5.5.3 Feature **[19043]** was an elongated oval in plan with clear steep concave sides and a flat base (Plate 22). It measured 2.8m by 2m and was 0.5m deep, with a single mid greyish brown silt fill **(19044)** that contained no artefactual material. The feature was interpreted as a pit, but it was comparable in form with ditch **[19017=19025]** to the northeast, suggesting this may have been a ditch terminus.
- 5.5.4 Ditch **[19011=19033]** was aligned east-west, extended over 6.5m in length, and was 0.46m wide by 0.09m deep (Plate 23). The terminus **[19033]** was reasonably well defined and the single fill, seen as **(19012)** and **(19034)**, was a mid-greyish brown silty clay with no artefactual material. The ambiguity of the feature means that it may have been a shallow ditch, possibly a hedgeline, plant bedding trench or a worn linear depression. If it was part of a wider system of small linear ditches, then the focus was to the south.



### 6 FINDS ASSESSMENT

### 6.1 Introduction and Methodology

- 6.1.1 A total of 15 artefacts, weighing 509g, were recovered from three contexts from the archaeological investigation of Area 19.
- 6.1.2 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 2020b). All artefacts have been boxed according to material type and conforming to the deposition guidelines recommended by Brown (2011), EAC (2014) and Oriel Ynys Môn.
- 6.1.3 The material archive has been assessed for its local, regional and national potential in line with the archaeological research framework for Wales (ClfA Cymru/Wales 2017).
- 6.1.4 Quantification of bulk finds by material and context is given in Table 6.1; quantification of artefacts recovered from the environmental samples is given in Table 6.2.

Context	Material	Quantity	Weight (g)	Period/date	Comments
19062	Slag?	1	63	-	Not slag. Iron pyrites?
19106	Lithic	11	423	-	Chert. Missing
19106	Pottery	1	12	Post-med to modern	Red earthernware, black glazed. Buckley type. Jug? Handle
19125	Fired clay	1	10	?	Powdery, sandy fabric, vitrified surface. Abraded
19125	Lithic	1	1	-	Missing
	TOTAL	15	509		

Table 6.1: quantification of finds by material and context

## 6.2 **Post-medieval Pottery**

- 6.2.1 A single sherd of post-medieval pottery, weighing 12g, was recovered from context (19106) and was in good condition with no evidence of post-depositional abrasion.
- 6.2.2 The pottery was examined with a x10 hand lens and recorded according to published national guidelines (PCRG, SGRP & MPRG 2016). Where possible, mnemonic fabric codes were assigned when they could be identified; this was undertaken using material published by MOLA (2015).
- 6.2.3 The pottery sherd comprised part of a wheel thrown body and partial handle of a probable jug or large mug, of Buckley-type red earthenware (BUCK) with an even black glaze both internally and externally. This likely dates to the 18<sup>th</sup> or 19<sup>th</sup> century.



## 6.3 Lithics

6.3.1 Twelve lithic artefacts were recovered during the archaeological investigation, comprising flint and chert. All were missing from the material assemblage transferred to Wardell Armstrong for assessment.

### 6.4 Fired Clay

- 6.4.1 A single fragment of fired clay was recovered from context (19125), weighing 10g.
- 6.4.2 The fragment comprised a soft powdery oxidised fabric which had been subject to intense heat and was vitrified on one surface. The fragment is heavily abraded and not closely dateable.

#### 6.5 **Stone**

6.5.1 A single fragment of stone weighing 63g was recovered from context **(19062)**, believed to be slag. Following assessment, it was confirmed to be a piece of unworked natural stone (possibly iron pyrites?).

#### 6.6 **Finds from Environmental Samples**

6.6.1 Approximately 386g of finds were recovered from ten environmental samples and were in poor to good condition (Table 6.2).

Context	<>	Material	Weight (g)	Comments
19006	19002	Fired clay	4	
19010	19004	Fired clay	34	
19064	19009	Stone	157	Whetstone/burnisher, flat rectangular with
				rounded corners, 101x53x11mm
19111	19018	Fired clay	1	
19125	19023	Fired clay	<1	
19128	19024	Bone	<1	
19132	19026	Mortar?/burnt	186	Lightweight, crumbly, frequent stone inclusions
		earth?		
19196	19050	Fired clay	4	
19192	19052	Bone	<1	
		Total	386	

 Table 6.2: finds from environmental samples

- 6.6.2 **Bone:** A total of approximately 1g of bone fragments were recovered from two environmental samples. The animal bone is in very poor condition and has a chalky appearance. The bone likely comprises burnt / roasted domestic food waste and is not identifiable to anatomical element or species.
- 6.6.3 *Fired Clay:* A total weight of around 43g of fired clay fragments were recovered from



six samples. The fragments were a hard, oxidised fabric and were heavily abraded.

- 6.6.4 **Stone:** A single stone artefact was recovered from sample <19009> **(19064)**, comprising an almost complete whetstone. The flat whetstone was roughly rectangular in shape with rounded corners, and measured 101mm x 53mm x 11mm and weighed 157g. A similar artefact was recovered during the A55 road scheme which was identified as a metalworking burnisher (Smith 2012).
- 6.6.5 *Mortar:* A total of 186g of heavily abraded fragments of a crumbly porous material with frequent stone inclusions were recovered from sample <19026> (19132). The fragments were recorded as mortar, although this is unlikely.

### 6.7 Statement of Potential

- 6.7.1 The bulk finds recovered from Area 19 are of local interest but are of low archaeological potential. The finds recovered from environmental samples are similarly of low archaeological potential, with the exception of a possible metal-working burnisher.
- 6.7.2 While the finds from environmental samples 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.



### 7 PALAEOENVIRONMENTAL ASSESSMENT

#### 7.1 Introduction

7.1.1 A total of 39 bulk samples were taken during the excavation at Area 19. A total weight of 1,127kg (504l) of sediment was processed for this stage of works. Further details for each sample can be found in Table 7.1.

### 7.2 Methodology

- 7.2.1 This report presents the results of the assessment of the environmental samples, palaeobotanical and charcoal remains in accordance with Campbell *et al.* (2011) and methodologies stated in Wardell Armstrong (2018;2019). 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. Table 7.2. Once fully sorted and all relevant material removed the flots were discarded. Charcoal was identified to species using nomenclature in Stace (2010).
- 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).

- 7.3 Results
- 7.3.1 Sandy/silty clays dominated the samples' sediment matrix with lesser quantities of sand/silt sediments, further data can be observed in Table 7.1.
- 7.3.2 Artefactual material recovered from the dried residues were minimal but contained examples of ceramic building material (CBM), industrial waste, mortar, pottery and worked stone. Further information is presented in Table 7.2.
- 7.3.3 Charred Plant Remains (CPR) were only present in **(19182)** <**19035**> from the deliberate backfill of a cut **[19181]**. They were in poor condition and were indeterminate cereal grains.
- 7.3.4 Charcoal was present in twenty-four samples and was in relatively good condition. From these samples four yielded more than 5g, these were: (19006) <19002> from deliberate pit backfill [19004], (19032) <19005> from the deliberate backfill of dumped material in pit [19051], (19119) <19021> from the fill of posthole [19118], (19121) and <19022> from the secondary fill of pit [19120]. The charcoal was identified for radiocarbon purposes and only oak (*Quercus* sp.) was observed.
- 7.3.5 No shell was recovered from Area 19.
- 7.3.6 Bone was recovered from two samples in extremely small fragments with a combined total weight of less than 1g.
- 7.3.7 Magnetized matter was present in twenty-three samples and was examined for microslags under a microscope (x45 magnification). No microslags were present with the material being made up entirely of small naturally occurring stone.

## 7.4 Radiocarbon

- 7.4.1 Three charcoal samples were submitted to Beta Analytic for radiocarbon determination.
- 7.4.2 The sample was treated according to Beta Analytics methodology (Beta Radiocarbon



Dating 2020 unpub.). The production of the radiocarbon age followed Riemer *et al.* (2013) and was calibrated to the calendar timescale following Bronk Ramsey (2009). The full results are presented in the form of radiocarbon certificates in Appendix 5.

- 7.4.3 The charcoal from all three samples was identified as oak (*Quercus* sp.) prior to submission.
- 7.4.4 Sample <19010> from fill **(19065)** of posthole **[19063]** provided a radiocarbon age of 2170±30 BP (Beta-554955, 95.4% probability 360-116 cal BC).
- 7.4.5 Sample <19022> from the fill **(19121)** of pit **[19120]** provided a radiocarbon age of 2100±30 BP (Beta-554954, 95.4% probability 197-47 cal BC).
- 7.4.6 Sample <19030> from fill **(19148)** of posthole **[19147]** provided a radiocarbon age of 2500±30 BP (Beta-554956, 95.4% probability 788-537 cal BC).

# 7.5 Discussion

- 7.5.1 The CPR is in such a small quantity that it provides little meaningful discussion.
- 7.5.2 The charcoal was all identified as oak (*Quercus* sp.). This suggested that oak was being used as a fuel at Area 19 like other areas of the Wylfa excavations, perhaps even that it was used and managed as a long-term fuel source. In the wider landscape this shows a similar practice to the wider Anglesey landscape such as at Melin y Plas, Penwynydd and Ty Mawr (Cuttler *et al.*, 2012); these three sites all produced remains of oak charcoal and these sites were occupied from the Neolithic through to the Roman era.

## 7.6 Statement of potential

- 7.6.1 The CPR offer no further potential, while the charcoal can give further insight into fuel husbandry in North Wales from the prehistoric to Roman periods.
- 7.6.2 *Radiocarbon suitability*: material from samples listed may be suitable for further radiocarbon determination. 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.
- 7.6.3 Care must be employed for charcoal selection as this must also be based on the suitability of the feature, for example, a tertiary pit fill or secondary fill of gully would be unlikely to provide a usable date for the feature.
- 7.6.4 Retention and discard: At this stage all ecofactual material may be retained until


further radiocarbon dates have been obtained. The magnetic matter from all samples may be discarded as it offers no further potential.



#### Table 7.1: sample data

С	<>	TQ	Cut	Desc	Matrix	PW	PV	SW	SV
19005	19001	1	19004	fill of pit	silt	12	8	1620	1150
19006	19002	2	19004	deliberate backfill of pit	sandy clay	18	14	4264	4700
19010	19004	2	19009	fill of trough	sandy clay	27	13	4757	4900
19032	19005	2	19031	deliberate backfill of dumped	silty clay	27	12	5832	4600
				material pit fill					
19077	19007	2	19075	secondary fill of pit	silty clay	20	10	2171	1600
19079	19008	4	19075	secondary fill of pit	clayey	52	26	8082	6500
					sand				
19064	19009	1	19063	fill of posthole	clayey silt	10	6	4118	3000
19065	19010	1	19063	fill of posthole	silty clay	12	6	3773	2750
19067	19011	1	19066	fill of posthole	sandy clay	9	5	2806	2280
19068	19012	1	19066	fill of posthole	clayey silt	5	2	1978	1400
19104	19014	1	19091	fill of post pipe	sandy clay	13	8	4432	3550
19106	19015	4	10107	layer of subsoil	silty sand	55	31	1/803	11/00
19107	19016	4	19107	layer	silty sand	50	32	18481	13500
19109	19017	1	19108	fill of posthole	silty clay	18	8	5082	4100
19111	19018	1	19110	fill of postnole	slity clay	/	3	616	1200
19113	19019	1	19112	primary fill of pit	sandy clay	8	5	1268	1000
19114	19020	1	19112	secondary fill of pit	clayey	16	9	2843	2300
10110	10021	1	10110	fill of postbolo	sanu	2	1	240	FEO
10121	19021	2	19110	secondary fill of nit	silty cand	2	16	240	90E0
19121	10022	2	19120	uncatogorized lavor in		52	20	14265	11000
19125	19025	4		structure - 19124	sand	52	29	14205	11000
19128	19024	1	19127	fill of posthole	clavey silt	17	9	3562	3600
19130	19025	3	19129	fill of posthole	sandy clay	31	14	8684	8000
19132	19026	3	19131	secondary fill of posthole	clav	36	17	8460	6000
19136	19027	4	19135	secondary fill	sandy clay	49	23	17474	12950
19144	19028	2	19143	secondary fill of posthole	silty clay	20	11	7616	5600
19150	19029	1		layer in structure - 19124	clay sand	13	7	4410	2000
19148	19030	1	19147	secondary fill of posthole	clay	11	6	3850	3000
19167	19032	4	19165	burnt layer in pit	silty clay	47	27	4684	5200
19172	19033	2		deposit of burnt natural	sandy clay	22	16	3619	2800
19178	19034	1	19177	secondary fill of pit	silty sand	8	5	2559	1800
19182	19035	4	19181	deliberate backfill -	sandy clay	34	22	3330	3200
				roundhouse wall cut					
19171	19036	1	19170	secondary fill of pit	clay	12	5	6210	2500
19174	19037	1	19173	fill of posthole - post packing	sandy clay	5	3	482	700
19180	19038	1	19178	deliberate backfill - secondary	clay	11	5	2913	2950
				fill					
19176	19039	3	19175	secondary fill of pit	clay	34	15	8020	6500
19134	19049	4		uncategorised layer	silty clay	72	34	41369	26800
19196	19050	4	19195	secondary fill of wall	sandy clay	45	24	26480	20800
				construction					
19188	19051	1	19187	fill of pit	clay	11	5	3576	2700
19192	19052	2	19191	secondary fill of pit	silty clay	29	12	2885	4380

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



#### Table 7.2: flot and finds from sample data

			Fl	ots		Retent					
С	<>	WF	VF	CPR	Ch	Ch	Во	HS	MM	Мо	WS
19005	19001	2.6	20	-	-	-	-	-	7	-	-
19006	19002	6.7	25	-	-	72	-	4	9	-	-
19008	19003	2.2	25	-	-	-	-	-	-	-	-
19010	19004	1.2	10	-	-	-	-	34	12	-	-
19032	19005	9.8	30	-	0.13	7	-	12	<1	-	-
19077	19007	1.2	15	-	-	-	-	-	4	-	-
19079	19008	5.8	15	-	-	<1	-	-	14	-	-
19064	19009	1.2	5	-	-	1	-	-	<1	-	157
19065	19010	6.1	20	-	-	2	-	-	<1	-	-
19067	19011	1.3	5	-	-	<1	-	-	<1	-	-
19068	19012	<0.01	<1	-	-	<1	-	-	<1	-	-
19104	19014	0.9	5	-	-	-	-	-	-	-	-
19106	19015	15.6	50	-	-	<1	-	<1	18	-	-
19106	19016	14.6	50	-	-	<1	-	-	4	-	-
19109	19017	4.4	30	-	-	<1	-	-	<1	-	-
19111	19018	0.1	1	-	-	<1	-	<1	-	-	-
19113	19019	<0.01	<1	-	-	<1	-	-	<1	-	-
19114	19020	9	30	-	-	-	-	-	3	-	-
19119	19021	0.1	1	-	-	23	-	-	-	-	-
19121	19022	7.5	35	-	-	310	-	-	<1	-	-
19125	19023	5.5	25	-	-	<1	-	<1	5	-	-
19128	19024	0.3	2	-	-	-	<1	<1	-	-	-
19130	19025	0.9	5	-	-	-	-	11	-	-	-
19132	19026	6.5	30	-	-	<1	-	-	<1	186	-
19136	19027	2.7	15	-	-	-	-	4	7	-	-
19144	19028	1.8	5	-	-	<1	-	-	-	-	-
19150	19029	1.9	5	-	-	-	-	-	-	-	-
19148	19030	0.1	2	-	-	<1	-	-	-	-	-
19167	16032	9.1	20	-	-	<1	-	-	-	-	-
19172	19033	0.6	3	-	-	<1	-	-	-	-	-
19178	19034	0.6	3	-	-	-	-	<1	-	-	-
19182	19035	4.8	10	2	-	-	-	-	-	-	-
19171	19036	0.1	1	-	-	-	-	-	-	-	-
19174	19037	<0.01	<1	-	-	-	-	-	-	-	-
19180	19038	<0.01	1	-	-	-	-	3	-	-	-
19176	19039	2.8	15	-	-	<1	-	-	<1	-	-
19134	19049	18.2	100	-	-	<1	-	107	<1	-	-
19196	19050	1.1	20	-	-	<1	-	4	2	-	-
19188	19051	0.2	3	-	-	<1	-	-	-	-	-
19192	19052	1.9	7	-	-	-	<1	<1	<1	-	1

Key: C=context; <>=sample number; WF=weight of flot(g); VF=volume of flot(ml); CPR=count of charred plant remains; Ch=charcoal(g); Bo=bone(g); HS=heated stone(g); MM=magnetised material(g); Mo=Mortar(g); WS=worked stone(g)



## 8 DISCUSSION

#### 8.1 Interpretation

- 8.1.1 The archaeological excavation of Area 19 in Field O5 North, within the proposed development site of a new nuclear power station at Wylfa Newydd, Anglesey, allowed the investigation and recording of the archaeological potential revealed by the results of the archaeological evaluation. It must be noted that the site is only 90m from the substantial site of Area 20 and its dataset may aid interpretation.
- 8.1.2 The remains were located across Field O5 North but were focused and most densely concentrated towards the northeast, covering an area of approximately 20.5m by 14.5m (Figure 3). The remains were found to be relatively complete in terms of their plans but were truncated or affected vertically, so that the upper elements of the features are incomplete.
- 8.1.3 The archaeology revealed in the open area excavation consisted of pits, postholes, two certain {19137} and {19162} and one possible {19197} stone wall structures and spreads of stony material. These were scientifically dated to the Iron Age and appeared to cover the period 788 116 BC.
- 8.1.4 There were a significant number of smaller (0.6m and less) circular features of variable depths and diameters. Determining whether individual features were small pits or large postholes was difficult in many instances, as the features did not have characteristics to clearly illustrate their function. There were few features with preserved postpipes (where posts have rotted in place) or in situ packing material. Nor were many of the potential small pits filled with material suggesting discarded rubbish from adjacent activities. Judgements were made on comparisons of position, size, form, colouration, inclusions and spatial associations. It is recognised that as such this is subjective and open to reinterpretation.
- 8.1.5 The site uncovered three grouped features, the ancillary structure **{19124}**, the stonebuilt structure **{19199}**, and a further proposed structure **{19198}**, associated with occupation and activities of probable Iron Age date. However, no defined stratigraphic relationships between the structures were observed. There were also pits and ditches positioned away from the structural remains.
- 8.1.6 The structures consisted of partially surviving stone wall sections, partial stone surfaces, postholes and pits. Further pits and a possible rake-out deposit was also revealed, which are thought to be associated with the structures. The structures are



considered too small to constitute domestic dwellings and are thought to be associated with other activities, possibly as-yet-unidentified industrial processes.

- 8.1.7 As a whole, the remains highlighted the presence of a stone-built structure **{19199}**, although its exact shape, and the position of any entranceway, remains uncertain. It was incomplete but the preserved portions demonstrated that it was built of squared blocks which constituted wall elements and horizontal stones laid contiguously as an internal flat surface. This form of construction is not typical of Iron Age structures in the region, built of orthostats (upright stone slabs).
- 8.1.8 To the immediate southwest was the ancillary structure **{19124}** which had a southern curvilinear wall preserved and deposits that indicated the internal area was to the north. It was not clear if the structure was a completely stone built foundation structure or whether several of the associated postholes may have allowed it to be an open sided roofed structure. The pits and spreads located along the northern side, might hint at such a layout. It is conjectured, given the suggested heat affected debris in several of the features that the ancillary structure **{19124}** may have been a functional workshop area.
- 8.1.9 To the northeast was a further proposed structure. The lack of clarity as to whether wall **{19197}** was part of this structure or part of **{19199}** makes a confident interpretation difficult. It was unclear whether the group comprised a partial stone-built structure, a post-built structure, or several phases of a building, or whether it represents a number of smaller, 4 or 6 post-built structures respecting the stone-built structure **{19199}**.
- 8.1.10 Further to the southwest was a concentration of well-defined pits. There is often a difficulty in ascribing a functional origin to pits, as in this case, they show evidence of being left open rather than immediately filled with debris and there is a consequential need to discard the excavated material. Hence pits can have a different primary purpose, including the extraction of sediment or use as below ground storage, to the secondary use for rubbish disposal. The various defined pits in the sequence had no observed material consistent with discarded rubbish and their origin and function remain ambiguous.
- 8.1.11 The ditch to the southwest of the pits could indicate that after at least one of the pits was used and backfilled an enclosure was established. The ditch may also have assisted with drainage as well as a boundary ditch. However, no comparable ditches were identified and the size and form of the potential enclosure could not be



established.

- 8.1.12 The adjacent Field O6 (Area 18), to the north, appeared to represent a continuity of the activity seen in Field O5. The possible trackway in Area 18 although undated was comparable with the form and fabric of structures dated to the late Iron Age through to the Roman eras, on Areas 4 and 20. It may not have extend as far as Area 19, as a formal built trackway, but it may have been part of a route to and from that site.
- 8.1.13 Due to the nature and dispersal of the archaeological remains it was not possible to establish a relationship between the disparate elements of the site. It could be argued that the characteristics of each imply that they were broadly contemporary and could represent zonal activities occurring at the same time. However, without detailed dating information it is difficult to be certain, and activity at the site may have sporadic, with features coming into and going out of use at different points.
- 8.1.14 The archaeological remains in Area 19 were seen to demonstrate a moderately complex stratigraphic sequence. Although all the overall features were sealed by the subsoil and truncated the natural substrate, there were variations in stratigraphic sequences. In some of the Groups, such as **{19198}**, there were few intercutting features, most were discrete, and few had more than one fill. In the other Groups **{19124}** and **{19199}** there were intercutting features and deposit sequences, although it is noted that there are a few cases where anticipated relationships have not been established. The vertical and horizontal truncation, and incompleteness, of some of the features has led to ambiguous data, with multiple possible interpretations.
- 8.1.15 For the main Iron Age period present on the site there were five suggested phases of activity, but it is noted that these may be spurious, and some comparisons may warrant further analysis. The features may form interconnected entities established for an unknown duration.
- 8.1.16 The overall interpretation of the site, somewhat hampered by the circumstances, suggested the presence of structures of uncertain function, but possibly associated with some small-scale industrial process. The site may have been for limited domestic use, given the small size and low number of artefacts, with the occupation subsidiary to the main focus on other activities The purpose of the site might have been to provide specific items or carry out particular activities, perhaps for the nearby population and inhabitants, possibly those at the site to the southwest (Area 20).



8.1.17 The site would appear to be reasonably well planned with zoned activity areas and there was some evidence of repeated use, although the duration and whether it was seasonal, intermittent or continuous and longer-term was unclear.



## 9 STATEMENT OF POTENTIAL

#### 9.1 Significance

- 9.1.1 There is potential for the evidence recovered from Area 19 to contribute to the understanding of Anglesey archaeology, and although it is of moderate regional significance, due to the poorly dated nature of the relatively complex remains, can contribute to general published research aims (IFA Wales 2003, 2011, CIFA Cymru/Wales 2017). Even without being able to produce a tightly dated sequence of activities the site can be fitted into the development of the wider historic landscape.
- 9.1.2 The general form of the features, the stratigraphy and the large stone construction indicate that the remains in Area 19 are related to the extensive settlement excavated in the southern part of O5 (Area 20) 90 m to the southwest. All these remains are considered nationally significant due to their scale, preservation and rarity.
- 9.1.3 Stone-built Iron Age roundhouse settlements were a part of the landscape and other examples can be seen at Ty mawr, Holyhead (Kenney 2009 and 2007) and Din Lligwy on the east coast (Houlder 1978).
- 9.1.4 The remains uncovered in Areas 18, 19 and 20 are part of wider Iron Age to Roman activity in this region. A small river is located 380m to the west of the area which branches and where the river divided, a wet marshy area had been created. This river, and the associated low-lying wetlands, appeared to be a focus for activity with features and finds of the wider prehistoric period being present along the banks of this river and in the associated marshy areas.
- 9.1.5 The Area 19 excavation has confirmed that Iron Age occupation does form an important part of Wylfa's archaeological landscape and, together with Areas 18 and 20, can be compared and contrasted with the two other main foci at Area 4 to the north and Area 2 to the northeast. As such, they would play a significant part in understanding how sites work in the landscape, permanent versus seasonal use and understanding the social role of hillforts (Gale 2010).
- 9.1.6 Features can be repositories of palaeoenvironmental data. There is particular emphasis on obtaining accurate radiocarbon dates in order that the chronology of sites and ceramic sequences can be ascertained. The soil samples from the features contained quantities of charcoal remains. This augments their archaeological potential, as there is 'a general scarcity of environmental data from Anglesey' (Cuttler et al. 2012, 241) with which to reconstruct ancient farming practices and changes in



the landscape. The environmental assessment identified small assemblages of charcoal from the occupation site and with more extensive investigation and sampling, there is potential to identify different fuel sources, uses and even phases within this group of features, which could help place the site in context with other Areas across the project.

9.1.7 Due to the lack of artefactual evidence from Area 19 it is difficult to gain further insights on many aspects that rely on material culture such as social change during the Iron Age or later eras, or understanding regional, national and international trade and how the development of social networks fitted into this. The low level of rubbish discarded on Iron Age sites is a noted phenomenon (Hill 1995). The finds assemblage did not provide good dating evidence for the site and is of low archaeological potential.

## 9.2 **Recommendations**

- 9.2.1 The archaeological remains will expand on our understanding of the archaeology of the Isle of Anglesey regarding the regional research framework of Wales (CIfA Cymru/Wales 2017). In order to do this, there is a need to combine the various datasets already produced into a searchable database that can allow the information to be unified and interrogated in a rapid and meaningful manner. This could also assist in producing an accessible resource for digital deposition and public dissemination.
- 9.2.2 In addition, the results of the Area 19 archaeological excavation should be incorporated along with the results of the wider Wylfa Newydd scheme and an ordered archive deposited at the suitable repositories for both physical and digital material, with the production of a detailed report at the Historic Environment Record (HER) and publication.
- 9.2.3 The excavation of the site, and the recovered ecofactual material, at Area 19 requires full analysis. This will provide fuller dating, characterisation and distribution of Iron Age activity on the site which will contribute to research aims on the wider setting of sites and exploitation of the natural environment.
- 9.2.4 Further analysis of targeted environmental samples and the plant species present in the charred plant remains will provide insights into the local farming economy and the wider exploitation of the natural environment. This will be particularly focused on the Iron Age since the secure data relates to that era.



- 9.2.5 The extremely small finds assemblages warrant no further work other than that the fired clay should be considered alongside other areas with the wider project and the whetstone/ burnisher recovered should be fully analysed.
- 9.2.6 The dating, characterisation and pattern of historic field systems is identified as a specific research aim in the WSI (HNP 2015, 2017). The potential ditch features and how the site could have been accessed from other contemporary sites may assist with providing a date for the remains which would help in understanding the development and degree of continuity of land divisions in Anglesey.



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APPENDICES



## **APPENDIX 1: CONTEXT INDEX**

Context Number	Context Type	Description	Width	Height/Depth	Discussion
19001	Layer	Mid brown silty clay	N/A	0.15-0.25m	Topsoil
19002	Layer	Mid orangey brown silty clay	N/A	0.15m	Subsoil
19003	Layer	Mid orangey grey clay	N/A	N/A	Natural geology
19004	Cut	Oval, moderately steep concave sides and base	0.8m	0.24m	Pit, filled by 19005 and 19006
19005	Fill	Mid brownish grey clayey silt, rare small stones	0.8m	0.16m	Upper fill of pit [19004]
19006	Fill	Black ashy silt, Very rich in charcoal	0.65m	0.08m	Lower fill of pit [19004]
19007	Cut	Circular, moderately steep concave sides and flat base	1.1m	0.27m	Pit, filled by 19008
19008	Fill	Dark grey clayey silt, rare heat affected small stones	1.1m	0.27m	Fill of pit [19007]
19009	Cut	Oval, moderately steep concave sides and flat base	1.22m	0.39m	Pit, filled by 19010
19010	Fill	Mid grey clay, occasional medium sub-angular stones	1.22m	0.39m	Fill of pit [19009]
19011	Cut	WSW-ENE aligned linear, gently concave sides and base	0.36m	0.08m	Ditch, filled by 19012
19012	Fill	Mid greyish brown, orange flecked, silty clay, rare small sub- angular stones	0.36m	0.08m	Fill of ditch [19011]
19013	Cut	Oval, steep concave sides and base	1.8m	0.3m	Pit, filled by 19014, 19015 and 19016, cut by ditch [19017]
19014	Fill	Dark brownish grey, sandy silt, rare small stones	1.8m	0.09m	Lower fill of pit [19013]
19015	Fill	Light brownish grey silty clay	1.8m	0.04m	Middle fill of pit [19013]
19016	Fill	Mid greyish brown sandy silt	1.8m	0.1m	Upper fill of pit [19013]
19017	Cut	NW-SE aligned curvi-linear, moderately steep concaves sides and base	1.5m	0.4m	Ditch terminus, filled by 19018, 19019, 19020 and 19021, cuts pit [19013]
19018	Fill	Light brownish grey silty clay	1.5m	0.14m	Lower fill of ditch [19017]
19019	Fill	Mid greyish brown sandy silt	1.5m	0.1m	Middle fill of ditch [19017]
19020	Fill	Dark brown sandy silt	1.5m	0.1m	Middle fill of ditch [19017]



Context Number	Context Type	Description	Width	Height/Depth	Discussion
19021	Fill	Mid greyish brown sandy silt	1.5m	0.17m	Upper fill of ditch [19017]
19022	Cut	Oval, moderately steep concave sides and base	2.1m	0.32m	Pit, filled by 19023 and 19024
19023	Fill	Dark reddish brown silty clay, occasional stones	0.9m	0.09m	Lower fill of pit [19022]
19024	Fill	Dark reddish brown silty clay, moderately frequent small- medium sub-angular stones	2.1m	0.32m	Upper fill of pit [19022]
19025	Cut	NW-SE aligned linear, moderately steep asymmetrical sides and flat base	1.43m	0.4m	Ditch, filled by 19026, 19027, 19028, 19029 and 19030
19026	Fill	Mid blueish grey silty clay, occasional small stones, iron panning	1.1m	0.15m	Lower fill of ditch [19025]
19027	Fill	Mid yellowish grey sandy clay, occasional small stones, iron panning	0.15m	0.09m	Middle fill of ditch [19025]
19028	Fill	Dark blueish grey silty clay, rare small stones	0.82m	0.05m	Middle fill of ditch [19025]
19029	Fill	Light grey sandy clay, occasional small stones, iron panning	0.46m	0.1m	Middle fill of ditch [19025]
19030	Fill	Mid buesih grey sandy clay, moderately frequent small to medium sub-angular stones, charcoal inclusions	1.43m	0.32m	Upper fill of ditch [19025]
19031	Cut	Oval, gently concave sides and base	0.67m	0.09m	Pit, filled by 19032
19032	Fill	Light blueish grey silty clay, frequent medium sub-angular stones, charcoal inclusions	0.67m	0.09m	Fill of pit [19031]
19033	Cut	WSW-ENE aligned linear, gently concave sides and base	0.46m	0.09m	Ditch, filled by 19034 terminus
19034	Fill	Mid greyish brown, silty clay, rare small sub-angular stones	0.46m	0.09m	Fill of ditch [19033]
19035	Void	void			void
19036	Cut	Oval, steep concave sides and base	2m	0.46m	Pit, filled by 19071, 19072, 19073 and 19074
19037	Cut	Oval, gently concave sides and base	0.56m	0.09m	Pit, filled by 19038
19038	Fill	Dark reddish black silty clay, occasional medium sub-angular stones	0.56m	0.09m	Fill of pit [19037]



Context Number	Context Type	Description	Width	Height/Depth	Discussion
19039	Cut	Circular, gently concave sides and base	1.12m	0.29m	Pit, filled by 19040, cut by pit [19054]
19040	Fill	Dark greyish brown clayey silt, occasional rounded stones	1.12m	0.29m	Fill of pit [19039]
19041	Cut	Elongated sub-oval, gently concave sides and flat base	1.29m	0.19m	Uncertain feature, filled by 19042
19042	Fill	Light brown silty gravel	1.29m	0.19m	Fill of uncertain feature [19041]
19043	Cut	Elongated sub-oval, steep concave sides and flat base	2m	0.5m	Pit, filled by 19044
19044	Fill	Mid greyish brown clayey silt	2m	0.5m	Fill of pit [19043]
19045	Cut	Oval, steep straight sides and flat base	0.8m	0.22m	Pit, filled by 19046 and 19047
19046	Fill	Dark greyish brown clay, occasional small stones	0.8m	0.15m	Lower fill of pit [19045]
19047	Fill	mid brownish grey silty clay, occasional small stones	0.65m	0.08m	Upper fill of pit [19045]
19048	Cut	Oval, gently concave sides and flat base	0.6m	0.09m	Pit, filled by 19049
19049	Fill	Mid greyish brown clay, rare small stones	0.6m	0.09m	Fill of pit [19048]
19050	Cut	Sub-circular steep curved sides and flat base	1.16m	0.38m	Pit, filled by 19051, 19052 and 19053
19051	Fill	Light brown silty sand, medium sub-angular stones at lower interface, charcoal inclusions	1.16m	0.14m	Upper fill of pit [19050]
19052	Fill	Dark brown silty sand, rare small stones	0.9m	0.11m	Middle fill of pit [19050]
19053	Fill	Mid brown silt, frequent gravel	0.75m	0.09m	Lower fill of pit [19050]
19054	Cut	Circular, steep concave sides and gently concave base	1.58m	0.46m	Pit, filled by 19055 and 19056
19055	Fill	Light greyish brown sandy clay, rare small stones	1.58m	0.24m	Lower fill of pit [19054]
19056	Fill	Light blueish grey silty clay	1.58m	0.22m	Upper fill of pit [19054]
19057	Cut	Oval, gently concave sides and uneven base	0.8m	0.15m	Pit, filled by 19058
19058	Fill	Mid greyish brown silty clay, moderately frequent small stones	0.8m	0.15m	Fill of pit [19057]
19059	Cut	Circular, moderately steep concave sides and flat base	1.4m	0.29m	Pit, filled by 19060, 19061 and 19062



Context Number	Context Type	Description	Width	Height/Depth	Discussion
19060	Fill	Mid grey silty clay, occasional small stones, rare charcoal inclusions	0.28m	0.29m	Lower fill of pit [19059]
19061	Fill	Mid grey silty clay, rare small stones	0.1m	0.29m	Lower fill of pit [19059]
19062	Fill	Mid blueish grey silty clay, moderately frequent small- medium stones, rare charcoal inclusions	0.95m	0.29m	Upper fill of pit [19059]
19063	Cut	Circular, steep straight sides and concave base	0.7m	0.38m	Posthole, filled by 19064 and 19065, poss cut by [19066]
19064	Fill	Dark brownish grey silty clay, occasional small to medium stones, charcoal inclusions	0.7m	0.38m	Lower fill of posthole [19063]
19065	Fill	Mid yellowish grey silty clay, rare small stones	0.3m	0.35m	Upper fill of posthole [19063]
19066	Cut	Circular, steep straight sides and concave base	0.57m	0.2m	Posthole, filled by 19067 and 19068, poss cuts [19063]
19067	Fill	Dark brownish grey silty clay, rare stones	0.07m	0.2m	Lower fill of posthole [19066]
19068	Fill	Mid yellowish grey silty clay	0.57m	0.2m	Upper fill of posthole [19066]
19069	Cut	Oval, gently concave sides and base	0.6m	0.05m	Pit, filled by 19070
19070	Fill	Light yellowish brown, red patches, silty sand, rare roots	0.6m	0.05m	Fill of pit [19069]
19071	Fill	Mid blueish grey silty clay, frequent rounded stones	0.85m	0.27m	Lower fill of pit [19036]
19072	Fill	Dark brownish grey sandy clay, moderately frequent sub-angular stones	0.7m	0.27m	Middle fill of pit [19036]
19073	Fill	Light blueish grey sandy clay, frequent sub-angular stones, medium sized	2m	0.27m	Upper fill of pit [19036]
19074	Fill	Light blackish grey sand, occasional stones, charcoal inclusions	0.4m	0.14m	Middle fill of pit [19036]
19075	Cut	Oval-Circular, steep concave sides and base	0.9m	0.37m	Pit, filled by 19076, 19077, 19078 and 19079
19076	Fill	Mid greyish brown silty clay, moderately frequent small stones, rare charcoal inclusions	0.8m	0.27m	Lower fill of pit [19075]



Context Number	Context Type	Description	Width	Height/Depth	Discussion
19077	Fill	Dark greyish brown silty clay, frequent charcoal inclusions, humic	0.9m	0.27m	Middle fill of pit [19075]
19078	Fill	Mid yellowish brown silty clay, moderately frequent small stones	0.9m	0.27m	Middle fill of pit [19075]
19079	Fill	Mid greyish brown silty clay, rare charcoal inclusions	0.9m	0.27m	Upper fill of pit [19075]
19080	Cut	Oval, moderately steep concave sides and concave base	0.33m	0.15m	Posthole, filled by 19081 and 19082
19081	Fill	Mid grey silty clay, rare small stones	0.28m	0.09m	Lower fill of posthole [19080]
19082	Fill	Dark grey silty clay, rare small stones and charcoal inclusions	0.33m	0.06m	Upper fill of posthole [19080]
19083	Cut	Circular, gently concave sides and base	0.24m	0.06m	Posthole, filled by 19084
19084	Fill	Mid grey silty clay, rare small stones	0.24m	0.06m	Fill of posthole [19083]
19085	Void	Void	Void	Void	Void
19086	Void	Void	Void	Void	Void
19087	Void	Void	Void	Void	Void
19088	Fill	Dark greyish brown clayey silt, occasional small stones	0.76m	0.08m	Fill of pit [19097]
19089	Cut	Oval-Circular, steep concave sides and base	>0.2m	>0.1m	Pit, filled by 19090
19090	Fill	Mid brown clayey silt, occasional small stones	>0.2m	>0.1m	Fill of pit [19089]
19091	Cut	Oval, steep concave sides and concave base	0.6m	0.3m	Posthole, filled by 19092 and 19104, poss cuts [19093]
19092	Fill	Mid brown silt, with several medium sub-srounded stones, upright	0.38	0.3	Lower fill of posthole [19091]
19093	Cut	Oval, steep straight sides and flat base	0.55m	0.35m	Posthole, filled by 19094 and 19105, poss cut by [19091]
19094	Fill	Mid brown silt, occasional small stones	0.5m	0.35m	Upper fill of posthole [19093]
19095	Void	Void	Void	Void	Void
19096	Void	Void	Void	Void	Void
19097	Cut	Circular, gently concave sides and base	0.76m	0.08m	Pit, filled by 19070
19098	Cut	Oval-Circular, steep concave sides and base	2.5m	0.45m	Pit, filled by 19099, 19100 and 19101



Context Number	Context Type	Description	Width	Height/Depth	Discussion
19099	Fill	Dark greyish brown sandy silt, moderately frequent small- medium stones	2.05m	0.13m	Upper fill of pit [19098]
19100	Fill	Mid blackish grey clay	2.2m	0.05m	Middle fill of pit [19098]
19101	Fill	Dark reddish brown sandy silt, occasional small stones	2.5m	0.3m	Lower fill of pit [19098]
19102	Cut	Circular, moderately steep concave sides and base	0.8m	0.26m	Pit, filled by 19103
19103	Fill	Dark greyish brown sandy silt, occasional small-medium stones	0.8m	0.26m	Fill of pit [19102]
19104	Fill	Light reddish brown silt, grit inclusions	0.2m	0.3m	Upper fill of posthole [19091]
19105	Fill	Light brown silt, rare small stones	0.05m	0.35m	Lower fill of posthole [19093]
19106	Layer	Mid orangey brown silt, frequent small-medium sub-angular to sub-rounded stones, rare charcoal inclusions	12m	0.4m	
19107	Void	Void	Void	Void	Void
19108	Cut	Oval, steep straight sides and flat base	0.4m	0.24m	Posthole, filled by 19109
19109	Fill	Mid brownish grey silty clay, ne large sub-angular stone, occasional small stones	0.4m	0.24m	Fill of posthole [19108]
19110	Cut	Oval, gently concave sides and base	0.35m	0.12m	Posthole, filled by 19111, cut by pit [19112]
		Mid grevish brown silty clay			Fill of posthole
19111	Fill	occasional small stones	0.35m	0.12m	[19110]
19112	Cut	Oval, gently concave sides and base	0.56m	0.13m	Pit, filled by 19113 and 19114, cuts posthole [19110]
19113	Fill	Light yellowish grey silty clay, occasional small stones	0.56m	0.04m	Lower fill of pit [19112]
19114	Fill	Mid brownish grey silty clay, occasional small stones	0.56m	0.09m	Upper fill of pit [19112]
19115	Void	Void	Void	Void	Void
19116	Void	Void	Void	Void	Void
19117	Void	Void	Void	Void	Void
19118	Void	Void	Void	Void	Void
19119	Void	Void	Void	Void	Void
19120	Cut	Oval, moderately steep concave sides and uneven base	1.1m	0.15m	Pit, filled by 19121



Context Number	Context Type	Description	Width	Height/Depth	Discussion
19121	Fill	Dark brown silt, mottled with black ash, frequent charcoal inclusions	1.1m	0.15m	Fill of pit [19120]
19122	Void	Void	Void	Void	Void
19123	Void	Void	Void	Void	Void
19124	Group	Possible Roundhouse, stone structure and postholes	5.75m		Roundhouse
19125	Layer	Mid brownish grey clay, frequent small-medium stones	3.4m	0.13m	Stony deposit
19126	Layer	Mid grey clay	unknown	N/A	Natural geology
19127	Cut	Sub-circular, steep concave sides and uneven base	0.48m	0.15m	Posthole, filled by 19128
19128	Fill	Mid greyish brown silty clay, occasional sub-rounded stones	0.48m	0.15m	Fill of posthole [19127]
19129	Cut	Circular, steep concave sides and uneven base	0.45m	0.16m	Posthole, filled by 19130
19130	Fill	Dark greyish brown silty clay, moderately frequent small- medium stones	0.45m	0.16m	Fill of posthole [19129]
19131	Cut	Sub-circular, gently concave sides and uneven base	0.68m	0.1m	Posthole, filled by 19132
19132	Fill	Dark greyish brown silty clay, moderately frequent small- medium stones	0.68m	0.1m	Fill of posthole [19131]
19133	Layer	Mid greyish brown, moderately frequent small stones	unknown	0.12m	Deposit - external to {19137}
19134	Layer	Dark brownish grey sandy silt, frequent angular stones, occasional charcoal	1.8m	0.1m	Deposit, burnt
19135	Cut	Oval-Circular, steep concave sides and uneven base	1.3m	0.35m	Pit, filled by 19136, 19141 and 19142
19136	Fill	Dark greyish brown sandy clay, moderately frequent small- medium stones	1.3m	0.27m	Upper fill of pit [19135]
19137	Structure	Light grey schist stones, 2 courses max, on edge, sub- rounded	0.5m	0.3m	Stone structure, fill of [19185=19193]
19138	Layer	Mid brownish grey clay, frequent small-medium stones	1m	0.2m	Stony deposit
19139	Fill	Very frequent, medium, sub- angular stones	0.12m	0.15m	Lower fill of posthole [19143]
19140	Fill	Frequent, medium, sub-angular stones	0.08m	0.15m	Lower fill of posthole [19143]
19141	Fill	Sub-angular stone in base of pit	0.33m	0.15m	Lower fill of pit [19135]



Context Number	Context Type	Description	Width	Height/Depth	Discussion
19142	Fill	Light greyish brown silty clay	0.33m	0.15m	Middle fill of pit [19135]
19143	Cut	Sub-circular, steeply concave sides and flat base	0.6m	0.15m	Posthole, filled by 19139 and 19144
19144	Fill	Light greyish brown sand, occasional small stones	0.48m	0.15m	Upper fill of posthole [19143]
19145	Void	Void	Void	Void	Void
19146	Void	Void	Void	Void	Void
19147	Cut	Sub-circular, steeply concave sides and flat base	0.25m	0.2m	Posthole, filled by 19140 and 19148
19148	Fill	Light greyish brown silty sand	0.13m	0.15m	Upper fill of posthole [19147]
19149	Layer	Mid orangey brown silty clay, frequent charcoal inclusions	0.2m	0.06m	Deposit, post- occupation accumulation
19150	Layer	Mid orangey brown clayey silt, occasional stones	0.6m	0.1m	Deposit, post- occupation accumulation
19151	Layer	Light brownish grey silty clay, occasional gravel		0.07m	Pre-construction deposit
19152	Layer	Dark greyish brown silty clay	0.6m	0.1m	Deposit, post- occupation accumulation
19153	Layer	Mid orangey brown clayey silt	0.24m	0.06m	Deposit, post- occupation accumulation
19154	Layer	Dark greyish brown silty clay	0.15m	0.08m	Deposit, post- occupation accumulation
19155	Layer	Mid greyish brown sandy clay	0.9m	0.11m	Deposit, post- occupation accumulation
19156	Layer	Dark greyish brown sandy clay, occasional stones	0.65m	0.15m	Pre-construction deposit
19157	Cut	Oval, gently concave sides and uneven base	0.44m	0.13m	Posthole, filled by 19158 and 19159
19158	Fill	Mid greyish brown silt	0.44m	0.07m	Upper fill of posthole [19157]
19159	Fill	Very frequent, medium, rounded stones	0.44m	0.13m	Lower fill of posthole [19157]
19160	Cut	Oval, irregular concave sides and uneven base	0.5m	0.1m	Posthole, filled by 19161
19161	Fill	Dark blueish brown silty clay, very frequent, medium, sub-	0.5m	0.1m	Fill of posthole [19160]



Context Number	Context Type	Description	Width	Height/Depth	Discussion
		angular stones			
19162	Structure	Light grey schist stones, 2 courses max, majority laid flat, sub-angular	1.1m - 2m	0.35m	Stone structure, fill of [19185=19193]
19163	Layer	Light grey stones, sub-rounded to sub-angular	7.3m	0.35m	Stone tumble
19164	Structure	Light grey schist stones, 2 courses max, sub-angular	0.7m	0.35m	Possible wall
19165	Cut	Sub-circular gently concave sides and uneven base	1.04m	0.26m	Uncertain feature, filled by 19166, cut by [19169]
19166	Fill	Light grey silty clay	1.04m	0.26m	Fill of uncertain feature [19165]
19167	Layer	Dark reddish brown silty clay	1.04m	0.08m	Deposit / fill wihitn [19165]
19168	Fill	Dark brown silty clay	0.43m	0.07m	Fill of [19169]
19169	Cut	Curvilinear, gently concave sides and flat base, SW terminus	0.43m	0.07m	Construction cut, filled by 19168
19170	Cut	Sub-circular, gently concave sides and base	0.62m	0.09m	Pit / posthole, filled by 19171
19171	Fill	Mid brownish grey silty clay, rare small stones	0.62m	0.09m	Fill of pit / posthole [19170]
19172	Layer	Dark reddish brown silty clay, rare charcoal	unknown	unknown	next to void feature 19118
19173	Cut	Circular, steep straight sides and concave base	0.3m	0.2m	Posthole, filled by 19174
19174	Fill	Mid brown silty clay, frequent sub-angular medium stones	0.3m	0.2m	Fill of posthole [19173]
19175	Cut	Irregular ovoid, uneven concave sides and base	1.6m	0.15m	Pit, filled by 19176
19176	Fill	Dark brown silt, moderately frequent small sub-angular stones	1.6m	0.15m	Fill of pit [19175]
19177	Cut	Circular, steep straight sides and flat base	0.54m	0.12m	Pit / posthole, filled by 19178
19178	Fill	Dark greyish brown silty clay, moderately frequent small stones	0.54m	0.12m	Fill of pit / posthole [19177]
19179	Cut	Oval - Circular, steep straight sides and concave base	0.6m	0.3m	Posthole, filled by 19180
19180	Fill	Dark greyish brown silty clay, frequent sub-angular to sub- rounded small to medium stones	0.6m	0.3m	Fill of posthole [19179]



Context Number	Context Type	Description	Width	Height/Depth	Discussion
19181	Cut	Curvilinear, gently concave sides and flat base, SW terminus	0.43m	0.07m	Construction cut, filled by 19182
19182	Fill	Dark brown silty clay, rare charcoal inclusions	0.43m	0.07m	Fill of [19181]
19183	Cut	Irregular ovoid, uneven concave sides and base	1.2m	0.3m	Pit, filled by 19184
19184	Fill	Mid yellowish brown silty clay, moderately frequent stones	1.2m	0.3m	Fill of pit [19183]
19185	Cut	Curvilinear, shallow concave sides, flat base	1.07m	0.4m	Wall construction cut, filled by {19162}
19186	Fill	Mid greyish brown silty clay, moderately frequent small stones	1.07m	0.27m	Fill of [19185], overlying {19162}
19187	Cut	Circular, moderately steep concave sides and concave base	0.9m	0.14m	Pit, filled by 19188, cut by [19191]
19188	Fill	Dark greyish brown silty clay	0.9m	0.14m	Fill of pit [19187]
19189	Cut	Sub-circular, gently concave sides and flat base	0.8m	0.04m	Pit / disturbance, filled by 19190, cuts [19187]
19190	Fill	Mid grey silty clay	0.8m	0.04m	Fill of [19189]
19191	Cut	Oval-Circular, steep concave sides and concave base	1.3m	0.35m	Pit, filled by 19192, cuts [19187]
19192	Fill	Mid greyish brown sandy clay, moderately frequent small- medium stones	1.3m	0.27m	Fill of pit [19191]
19193	Cut	Curvilinear, shallow concave sides, flat base	0.61m	0.06m	Wall construction cut, filled by {19162}
19194	Fill	Mid greyish brown silty clay, occasional small stones	0.61m	0.06m	Fill of [19193], overlying {19162}
19195	Cut	Curvilinear, shallow concave sides, flat base	0.61m	0.06m	Wall construction cut, filled by {19162} and {19197}
19196	Fill	Mid greyish brown silty clay, occasional small stones	0.61m	0.06m	Fill of [19195], overlying {19162} and {19197}
19197	Structure	Light grey schist stones, 2 courses max, majority laid flat, sub-angular	0.5m	0.3m	Possible wall, fill of [19195]
19198	Group	Possible Roundhouse, postholes and pits	4.5m		Roundhouse
19199	Group	Probable Roundhouse, stone structure	4.35m		Roundhouse



#### **APPENDIX 2: HARRIS MATRIX**



11111 Wessex excavation number 22222 Wessex or Headland evaluation number



## **APPENDIX 3: PLATES**



Plate 1; General view of Area 19 working conditions, facing SW



Plate 2; General view of Area 19 features, facing S, 2 x 0.5m scale





Plate 3; Wall {19137}, facing W, 1m scale



Plate 4; Posthole [19129], facing SE, 0.5m scale





Plate 5; Posthole [19143], facing E, 0.2m scale



Plate 6; Stone-built Structure **{19199}**, features **{19162}** and **{19197}**, facing W, 1m, 2m scale





Plate 7; Postholes [19063] and [19066], facing W, 0.5m scale



Plate 8; Postholes [19091] and [19093], facing NE, 1m scale





Plate 9; Postholes [19110] and [19112], and [19108] (right), facing SW, 0.5m scale



Plate 10; Pit [19120] part-excavated, facing NE, 0.5m scale





Plate 11; Deposit (19125), facing E, 2m scale



Plate 12; Deposit (19134), facing NE, 2m scale





Plate 13; Pit [19059], facing SW, 1m scale



Plate 14; Pit [19102], facing NW, 1m scale





Plate 15; Pit [19004], facing SE, 0.2m scale



Plate 16; Pit [19009], facing NE, 1m scale





Plate 17; Pit [19045], facing SW, 0.4m scale



Plate 18; Pit [19135], facing SE, 1m scale





Plate 19; Ditch [19017], pit [19013] to right, facing SW, 1m scale



Plate 20; Deposits adjacent to wall {19137}, facing SW, 2m scale




Plate 21; Deposit (19106), facing W, 2 x 1m scale



Plate 22; Pit [19043], facing SW, 2m scale





Plate 23; Ditch [19011], facing S, 1m scale



#### **APPENDIX 4: FIGURES**



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Area 19, Wylfa Newydd, Angelsey

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Figure 4: Area 19; phase 1 plan

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Section 19004. Wrap around section across ditch [19017] and pit [19013].







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Section 19040C and 19041. Wrap around section across group {19124}.



Section 19057A. South-west facing section across pits [19191], [19187] and [19189].

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Section 19004. Wrap around section across ditch [19017] and pit [19013].



Section 19008. NW/NE facing section across pits [19039] and [19054].



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#### **APPENDIX 5: RADIOCARBON CERTIFICATES**













### APPENDIX 6: GAZATTEER OF FEATURES ENCOUNTERED IN AREA 19

Feature	Date	Description	Location (NGR)
Settlement remains	Iron Age	Evidence of an Iron Age settlement; building, curvilinear wall, stone- built structure, postholes	235309, 392726



# APPENDIX 7: POST-EXCAVATION ASSESSMENT METHOD STATEMENT

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

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HORIZON

WYLFA NEWYDD

POST EXCAVATION ASSESSMENT METHOD STATEMENT

**APRIL 2019** 





DATE ISSUED: JOB NUMBER:

April 2019 CL12271

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**APPROVED BY:** 

Frank Giecco

Technical Director

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# WYLFA NEWYDD POST EXCAVATION ASSESSMENT METHODOLOGY

#### Introduction

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

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

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



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

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

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

# Post Excavation Assessment Stages and Outputs

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

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



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

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

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

# Stage 1 Processing

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

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



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

# Stage 2 Archival Preparation

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

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

# Stage 3 Data Assessment

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



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

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

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

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

# Stage 4 PXA and UPD Reporting

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

# Report Template

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



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

## 2. Introduction

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

# 3. Summary of the excavation methodology

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

#### 4. Site archive

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



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

# 5. Stratigraphic data

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

# 6. Artefacts

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



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

# 7. Palaeoenvironment

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

# 8. Human remains

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



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

# 9. Discussion

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

# 10. Statement of potential

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



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

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

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

# 12. Updated Project Design

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



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

### Task breakdown for PXA

### 1. Processing

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

#### 2. Archival preparation

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

#### 3. Data assessment

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



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

# APPENDIX 1 METHOD STATEMENT: STAGE 1 FINDS PROCESSING

#### Finds processing and assessment summary

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

#### Washing and cleaning

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


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

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

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

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

## Time estimates for finds washing and cleaning

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

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



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

## APPENDIX 2 METHOD STATEMENT: STAGE 1 ENVIRONMENTAL PROCESSING

### Environmental processing and assessment summary

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

### General Biological Analysis sample

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

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



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

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

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

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

## Recording of the Environmental Data

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

## Waterlogged Samples

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

## Paraffin Flotation

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



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

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

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



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

### Summary

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

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

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

### Stage 2

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

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

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



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

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

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

## Stage 3

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

# Time estimates for preliminary recording

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

# Materials costs to be considered to PXA

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

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

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