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HORIZON NUCLEAR POWER

WYLFA NEWYDD, ANGLESEY

AREA 14

ARCHAEOLOGICAL POST-EXCAVATION ASSESSMENT REPORT

DECEMBER 2021

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HORIZON NUCLEAR POWER

WYLFA NEWYDD, ANGLESEY

AREA 14, 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 archaeological fieldwork programme was undertaken in support of a Development Consent Order application. The fieldwork programme was divided into defined areas and this report details the results of the archaeological excavation at Area 14.

The site consisted of three areas, two in the southeastern part of Field L1 and L20, centred on NGR SH 36000 93800 and covering 1793m^2. The archaeological work was undertaken between 26th June 2017 and 1st September 2017.

The most significant remains recorded consisted of an occupation spread with associated pits and post holes forming a distinct activity group of likely Early Neolithic date, of which several subtle phases survived. There was a sunken feature / structure with associated lithic artefacts and a subsequent series of partially overlapping deposits consistent with surfaces and occupation. These were linked to short-lived phases of establishment, use and development. The large number of worked stone artefacts and waste material/debitage formed assemblages associated with different elements of the group.

There were a significant number of postholes and stakeholes cut through the later surface. The number and spatial distribution of stakeholes and postholes preserved meant that the function and form of any structure/s is uncertain, but it is hypothesised that they were part of a wooden supported structure, possibly a temporary hut or something more transient such as a windbreak, which encircled or contained the main surface. It was not currently possible to refine the understanding of the postholes and stakeholes to determine whether they are all contemporary and associated or whether they represent several structures. Structurally there may be some distinctions since postholes are dug and filled and stakeholes are hammered in and examination of the patterning could influence the interpretation.

A single re-cut pit was determined to be of Early Medieval date (AD 771-988) and demonstrated the presence of isolated activity spots within the landscape during this period and highlighted that without artefactual material present recognising such activity requires intensive scientific dating methods.

Elements of a later rectilinear field system aligned northeast-southwest were seen in L1 and L20. The field system is most likely to date to the medieval or post-medieval period, but this is based on morphological similarities to such features in the region and a very small finds

assemblage. It was certainly out of use by the time of the earliest historical mapping. There was no clear evidence for occupation, such as features or discarded rubbish, within the enclosed areas, and the fields may have been used for either arable production or for pastoral use. The system may be more extensive and potentially similar ditches were revealed in other excavation Areas within the project (including Areas 1 and 17).

CRYNODEB

Comisiynwyd Wardell Armstrong LLP (WA) gan Horizon Nuclear Power i gyflawni asesiad ol-gloddio 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 diffiniol, mae'r adroddiad hwn yn manylu canlyniadau cloddfa archaeolegol yn Area 14.

Roedd Area 14 yn cynnwys tri llecyn, yn ne-ddwyrain caeau L1 a L20, wedi eu canoli ar NGR SH 36000 93800 ac yn mesur 1793m². Cwblhawyd y gwaith maes archaeolegol rhwng y 26ain o Awst a'r 1af o Fedi 2017.

Y gweddillion mwyaf sylweddol a nodwyd oedd lledaeniad o ddyddod meddiannaeth gyda phydewau a thyllau-pyst cysylltiedig yn dangos gweithgaredd amlwg dros sawl cyfnod sy'n debygol o ddyddio i'r Neolithig Cynnar. Roedd yna nodwedd neu strwythur suddedig gydag arteffactau carreg cysylltiedig a nifer o ddyddodion dilynol, a oedd yn gorgyffwrdd, sy'n gyson ac arwynebau meddiannaeth. Cysylltwyd y rhain a nifer o gyfnodau byr o sefydlu, defnydd a datblygu. Roedd y nifer mawr o arteffactau a naddion cerrig yn ffurfio casgliadau cysylltiedig â gwahanol elfennau yn y grŵp.

Roedd nifer sylweddol o dyllau-pyst a stanciau wedi eu torri trwy'r arwyneb diweddarach. Mae'r nifer a phatrwm y stanciau a thyllau-pyst yn golygu bod dehongliad o ffurf a phwrpas unrhyw strwythr yn ansicr ond rhagdybiwyd eu bod yn rhan o strwythr pren, efallai cwt dros dro neu ataliwr gwynt, o amgylch y prif arwyneb. Nid oedd yn bosib gwella dealltwriaeth o'r tyllau-pyst a stanciau i ddarganfod os oeddynt yn gyfoes ac yn gysylltiedig, neu os oeddynt yn perthyn i nifer o strwythurau gwahanol. Mae gwahaniaeth rhwng y nodweddion gan fod stanciau yn cael eu taro i'r ddaear tra bod pyst yn cael ei rhoi mewn pydew, gall hyn gael dylanwad ar y dehongliad.

Roedd un pydew wedi ail-dorri a ddyddwyd i'r canoloesoedd cynnar (771-988 OC) sy'n dangos presenoldeb mannau o weithgaredd arunig yn y tirwedd yn ystod y cyfnod. Mae hefyd yn dangos yr angen i ddefnyddio dulliau gwyddonol pan and oes arteffactau, i adnabod

nodweddion o'r cyfnod.

Nodwyd elfennau o gyfundrefn caeau petryalog diweddarach, wedi ei drefnu gogledd-ddwyrain - de-orllewin, yng nghae L1. Mae'n debyg bod y gyfundrefn yn dyddio i'r canoloesoedd neu ol-ganoloesoedd, ond mae'r dehongliad yn seiliedig ar forffoleg debyg i nodweddion eraill yn yr ardal a'r casgliad bach iawn o arteffactau. Mae'n bendant bod y gyfundrefn allan o ddefnydd erbyn amser y mapiau hanesyddol cyntaf. Nid oedd unrhyw dystiolaeth bendant o feddiannaeth, fel nodweddion neu sbwriel, yn y caeau. Mae'n bosib i'r caeau gael eu defnyddio ar gyfer tir âr neu fugeiliol. Mae'n bosib bod y gyfundrefn yn fwy eang, nodwyd ffosydd tebyg mewn safleoedd eraill yn ardal y prosiect gan gynnwys Area 1 a 17.

ACKNOWLEDGEMENTS

Wardell Armstrong LLP (WA) thanks Horizon Nuclear Power for commissioning the project, and for all their assistance throughout the work.

Wardell Armstrong LLP also thanks Ian Halfpenney at CADW, Ashley Batten, Inspector of Ancient Monuments for North East Wales also at CADW (formerly of Gwynedd Archaeological Planning Service (GAPS), Jenny Emmett, Senior Planning Archaeologist at Gwynedd Archaeological Planning Service and Sean Derby (GAPS). Thanks go also to Headland Archaeology who carried out the evaluation and Wessex Archaeology who undertook the excavation and subsequent site summary report, and to Jones Bros Ltd plant hire company for their help throughout this project.

The assessment report was written by Vix Hughes. The figures were produced by Helen Phillips and Valeria Tiezzi. The prehistoric pottery assessment was undertaken by Frances Lynch, the lithic artefacts were assessed by Miguel Gonzalez and the finds assessment report was compiled by Sue Thompson. Freddie Sisson wrote the palaeoenvironmental report and supervised the environmental team who consisted of Megan Lowrie, Katherine Bostock and Jyoti Stuart. The palaeoenvironmental assessment was edited by Lynne F Gardiner. The project was managed by Frank Giecco and Damion Churchill, who also edited the report.

1 INTRODUCTION

1.1 Project Circumstances and Planning Background

1.1.1 Between June and September 2017, Wessex Archaeology undertook an archaeological excavation in Area 14, Fields L1 (southeastern part) and L20 at Wylfa Newydd, Anglesey, Wales, centred on National Grid Reference (NGR): SH 36000 93800 (Figure 1). This excavation was one of multiple defined areas excavated as part of a large scheme of works commissioned by the Horizon Nuclear Power (HNP). The intention is to construct a nuclear power station, related plant and ancillary structures and offsite power station facilities for which a Development Consent Order application has been submitted to The Planning Inspectorate (EN010007).

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. 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 14, PRN76020 has been assigned to the prehistoric surface, flint scatter and associated features. Additional PRNs are presented in Table 1.1.

Table 1.1: primary reference numbers (PRNs) for Area 14

PRN	Description	Associated context numbers/PRNs
PRN92003	Probable structure, Neolithic to Early Bronze Age	(14188)
PRN92004	Occupation layer, Early Neolithic	
PRN92005	Postholes and stakeholes, Neolithic to Early Bronze Age	
PRN92006	Postholes, Neolithic to early Bronze Age	
PRN92007	Pits, uncertain	[14135], [14181]
PRN92008	Pit, early medieval	[14126]/[14137]
PRN92009	Rectilinear field system, medieval/post-medieval	{14186}, {14187}, [14120=14139], {14189}

1.3 Project Documentation

1.3.1 The project conforms to a brief prepared 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 14, the results of this scheme of archaeological excavation and the subsequent programme of post-excavation assessment and accords with the Post-Excavation Assessment Method Statement. It follows on from a series of works consisting of desk-based assessments, geophysical surveys and two sets of evaluation trenches, 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 14 was undertaken between 26th June 2017 and 1st September 2017, in Fields L1 and L20 (Figure 2). The area of investigation targeted features recorded during the previous archaeological evaluation.

1.3.4 The site consisted of three areas: two in the south-eastern part of Field L1 (North 1186m^2); L1 (South 157m^2) and L20 (450m^2) totalling 1793m^2.

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 2014a), 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 2014b).

2.2 Archaeological Excavation

2.2.1 The archaeological excavation comprised the strip map and sample of three areas: two in the south eastern part of Field L1 and an area in Field L20, totalling 1793m^2. These defined areas were identified for archaeological excavation and Area 14 was targeted on an area of ditches and pits revealed by the archaeological evaluation. The main area of features was 100% excavated using a 'chequerboard' grid method in which all lithics were 3D located.

2.3 Aims and objectives

2.3.1 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 Area 14 excavation:

- *to address archaeological research objectives posed by the Research Framework for the Archaeology of Wales (CIfA Cymru/Wales 2017).*
- *Gain confirmation of the date, nature, character and extent of potential medieval and prehistoric sites in an order that can be placed into the wider context of Anglesey during these periods. There is particular emphasis on obtaining accurate C14 dates in order that the chronology of sites and ceramic sequences can ascertained.*
- *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 (such as the adjacent SSSI site) and the sea.*
- *Gain insights into regional, national and international trade (via the analysis of recovered artefacts) especially in such products as pottery, glass and metalwork, and how the development of social networks fitted into this.*
- *Gain insights into social organisation and settlement hierarchies.*
- *Identify and understanding early field systems.*
- *Develop a better understanding of industrial activity during the prehistoric periods, particularly with reference to stone quarrying and stone / ore resource use in coastal regions and the exploitation of superficial deposits of stone and ore. It is notable that two large, stone, outcrops are present within field L01 and there is some evidence that these have been quarried in the past.*

2.3.2 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).

2.3.3 An area of what is considered to be a Neolithic – Early Bronze Age deposit comprising (14169), (14175) and material contained within underlying natural strata (14103), was 100% excavated in a chequerboard' format and all lithics were 3D located and manually plotted (see Section 5.3.1).

2.3.4 A number of the features had been previously identified during the 2017 Headland evaluation and in these cases the features were re-excavated to either fully remove the remaining fill material, or to re-establish the features in the wider context of the

excavation.

2.3.5 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.

2.3.6 All finds encountered were retained on site and initially stored by Wessex Archaeology. The material was then transferred to the Wardell Armstrong (WA) Carlisle office where they were identified, quantified 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. On completion of this project, 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):

- unstratified material;
- modern pottery;
- and material that has been assessed as having no obvious grounds for retention.

2.3.7 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 summary where applicable.

2.3.8 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 are 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

3.1.1 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 14/35-2016.

3.1.2 The Site Archive comprises the material and documentary archives as follows (Table 3.1).

Category	Quantification
Context Sheets	101
Small finds	5420g (approx. 365 items, 5.42kg)
Bulk finds	4597g (4.597kg)
Environmental samples	9 samples (171 l): originally 16 were logged
Monochrome film	0
Digital photographs	131
Rectified photographs	0
Hand drawn plans	5
Hand drawn sections	40
GPS survey pre-excavation plans	Yes
GPS survey excavation plans	Yes
TST surveyed excavation plans	No

Table 3.1: Quantification of excavation data

4 BACKGROUND

4.1 Location and Geological Context

4.1.1 Area 14 is located on the north Anglesey coast, approximately 1.2km northwest of the centre of Cemaes, situated to the east of the proposed development area (Figure 1). The site comprised two Fields, L1 and L20, centred at National Grid Reference (NGR): SH 36000 93800. It is located 125m to the south of the coastline and the Tre'r Gof Site of Special Scientific Interest (SSSI) lies to the south and within the southern limit of Field L1.

4.1.2 Area 14 lay on undulating coastal ground at approximately 10m above Ordnance Datum (aOD), with low rocky cliffs dropping to Cemaes Bay to the north (Plate 1). The ground slopes down to the south-west towards the Tre'r Gof SSSI.

4.1.3 Prior to the archaeological excavation, the fields were in use as improved agricultural land, characterised by enclosed arable and pasture 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 14 comprised a mid orangey yellow 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 mid brown silty sand, up to 0.3m thick. A similarly brown sandy clay ploughsoil subsoil lay below this and was up to 0.5m 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 2012b) and was reviewed and updated later (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 14. 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 14.

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 2012b).

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 14. Across Anglesey remains of this date are seen to 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 There are changes and transitions over time including the change from communal burial practices and their sites to individual burials, as evidenced in the form of urn burials containing cremated remains and inhumations within cists.

4.2.6 Few Bronze Age settlements have been identified on Anglesey. A number of the undated enclosures on Anglesey may date to the late prehistoric period, such as the cropmark feature found to the north of Llanfechell, located 1.4km southeast of the Wylfa Newydd Development Area.

4.2.7 Burnt mounds dating to the Bronze Age (*c.*2600-700 BC) are also common throughout Anglesey and North Wales (GAT 2012b). These are typically located near to, or alongside watercourses either in groups or individually (*Ibid.*). Burnt mounds can be 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*).

4.2.8 Prehistoric remains were uncovered during the evaluation phase in nearby Fields K1, K4 and C15, 570m to the southwest. These consisted of a substantial burnt mound and a large number of pits which contained both prehistoric pottery and lithic tool debitage. Prehistoric activity was also noted within Field L1, in the form of an unusual, coastal burnt mound, 310m to the northwest (Wessex 2016).

4.2.9 ***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 14.

4.2.10 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 2012b, 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.

4.2.11 Evidence of small enclosed settlement sites, consisting of a single or a cluster of roundhouses, hut sites, rectilinear enclosures and concentric enclosures which are sometimes palisaded are also located around Anglesey (Cuttler *et al.* 2012). These likely

date to the late Iron Age and Romano-British (43-410) periods (*Ibid.*). Examples of known sites include farmsteads found at Cefn Du, Cefn Cwmwd and Melin y Plas which was discovered during the A55 archaeological works (*Ibid.*).

4.2.12 The archaeological evaluation trenches in Fields L8 and L12 uncovered significant prehistoric activity, in the form of a hilltop ring ditch, 240m to the south-southeast (Wessex 2016).

4.2.13 ***Period 4 – Roman (AD 43 – 410):*** There is no known Roman activity within Area 14. Anglesey was invaded in *c.*AD 60-61 by the Roman army and there is evidence of settlement sites, ephemeral military establishments (Jacobs 2015), scatters of Roman artefacts and Romano-British enclosure sites in Anglesey.

4.2.14 ***Period 5 - Early Medieval (AD 410 – 1100):*** There is no previously known Early Medieval activity within Area 14, although an important cemetery site has been excavated 170m to the west, within Area 15. Some light settlement evidence, assigned to the Early medieval period following radiocarbon dating, has also been found slightly closer, within Area 12.

4.2.15 Evidence of early medieval settlement in Anglesey is largely based on references made on 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 the wider Welsh Christian burial practices of the 8th to 9th centuries (*Ibid.*).

4.2.17 Other evidence includes occasional findspots include inscribed stones and a rare small fortified site at Porth Wen may have related to the 9th century Viking raids.

4.2.18 ***Period 6 - Medieval (1100 – 1539):*** By the 12th century, Area 14 was located within the *Talybolion commote* (a recognised regional unit of royal administration) with a royal manorial centre located at Cemaes (GAT 2012b).

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 Tre'r Gof ("township of the smith") is documented from the 12th Century and its thought to have been an early medieval township or hamlet, within the commote of Talybolion but the precise location is unknow and all that remains are the names of two recently demolished farmsteads Tre'r Gof Isaf and Tre'r Gof Uchaf and in the name of the SSSI to the south of field L1.

4.2.21 Wylfa ("lookout point") is also documented from the later medieval period as part of the township of Caerdegog but the original hamlet's location is unclear. It is therefore possible that the industrial and domestic activity potentially present within these investigation areas represents elements of these 'lost' medieval hamlets of Wylfa or Tre'r Gof.

4.2.22 The precise location of the medieval settlement of Llanbadrig is also unknown and there is some evidence that this parish encompassed much of the north-west corner of Anglesey (along with the parish of Llanfechell), including the hamlet of Tre'r Gof. The 12th century church of Llanbadrig is located approximately 2km to the northeast, and it may have earlier origins.

4.2.23 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 can be seen as agricultural land with intermittent farmsteads, small hamlets, and villages (*Ibid.*).

4.2.24 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 there is evidence of ridge-and-furrow, associated land clearance cairns, terraces, field boundaries, open fields, pens and small enclosures with examples previously seen in a survey of the Mynachdy Estate and at Cafnan (Jacobs 2015).

4.2.25 The Medieval landscape also had 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, to churches on the periphery of known settlement sites.

4.2.26 South and east of Area 14 evaluation trenches and excavations in fields L2 (Area 17) and L4 (Area 1) revealed the presence of several ditches which corresponded to surveyed geophysical anomalies and others that were not. The dates and relationships are

uncertain, those within Area 17 are thought to be medieval, but they form functional boundaries within the landscape.

4.2.27 ***Period 7 - Post-medieval (1539 – 1750):*** During the 17th and 18th centuries, Cemaes and Cemlyn Bay became principle centres of shipbuilding, fishing and later brickmaking and copper mining (*ibid.*).

4.2.28 Although the rural landscape established during the medieval period continued into the post-medieval period there were fewer landowners that controlled larger areas of land and there were changes towards a more 'estate' systems with additional in houses and farmsteads established.

4.2.29 ***Period 8 – Industrial and Modern (AD 1750 – present):*** In the 19th century small-scale gentrification of the countryside continued with larger country houses and farmhouses being constructed or the existing ones being remodelled.

4.2.30 Agricultural land saw improvements to increase productivity during the post-medieval period such as draining of bog-land and changes to farming techniques, ploughing, manuring, enrichment, drainage, stock breeds and crop choices. The late 18th to 19th 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.

4.2.31 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.

4.2.32 The archaeological evaluations (Headland 2017, Wessex 2016) have demonstrated that this is not the complete picture and that there is a more complex landscape spanning the medieval to post medieval periods on Anglesey. Upstanding elements that can survive include clawdd (plural cloddiau) which can refer to a ditch or bank, and frequently appears in place-names (CPAT 2002, 8). Within northwest Wales, the term is usually used to describe an earthen bank, often stone-faced (ibid.). An unusual feature of stoneclad cloddiau is that the facing stones are commonly laid with their long axis vertical (DSWA 2013).

4.2.33 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 18th century onwards but declined in the early 20th century.

4.2.34 Population varied during this period with associated fluctuations in buildings such as 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.

4.2.35 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 persisted 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*).

4.2.36 Construction of the two Magnox reactors and the Central Electricity Generating Board (CEGB) Power Station was a massive undertaking, involving excavating 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 2012b), 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 also prepared by Jacobs (2015) to support the DCO application.

4.3.2 For Area 14 the results did not suggest any specific archaeological potential other than background agricultural remains such as field boundary ditches and ancient field systems. There are indications that the area, known as Tre'r Gof 'township of the smith', may have originated as an early medieval township or hamlet which no longer survives. In addition, the church of Llanbadrig, 2km to the northeast may be associated with this location and there are documents related to the township from the 12th Century.

4.3.3 ***Geophysical Survey:*** No specific potential archaeological features, other than the buried remains of former field boundaries, were identified during the geophysical survey (GAT 2011a, 2011b and 2012).

4.3.4 ***Archaeological Evaluation:*** A total of 84 trenches were excavated in Field L1 and a total of 12 within Field L20, each measured 1.8m wide and between 30m and 50m long (Headland 2017).

4.3.5 The highlighted results included a group of stakeholes and two postholes identified beneath a charcoal-rich silt clay layer in Trench 2287. A fragment of charcoal from this deposit was radiocarbon dated to 3851+/- 30 BP, indicating that the material was deposited in the Early Bronze Age. Lithic artefacts were also recovered from the postholes (Headland 2017). In Trench 2114, which was parallel with the western edge of the later excavation area, an elongated pit was found. The pit contained five lithic artefacts, including a double-platform core. Samples of charcoal returned a radiocarbon dates between 5046 +/- 29 and 4913 +/- 29 Cal BP, suggesting Neolithic activity (Headland 2017, 13).

5 ARCHAEOLOGICAL EXCAVATION RESULTS

5.1 Introduction

5.1.1 The three areas produced varied results. In the L1 south) there was a single excavated feature. The main part of L1 (north) revealed a number of features associated with flint working activity and thought to be of late Mesolithic to early Neolithic date and a much later rectilinear field system. In Field L20 to the east was a sparse cluster of pits and a smaller part of, potentially, the same later field system.

5.2 Results

5.2.1 An average of 0.3m of mid brown silty sand topsoil **(14101)**, and up to a further 0.5m of mid brown sandy clay subsoil **(14102)**, was removed to reveal the archaeological horizons above the geology. The natural geological substrate **(14103)** comprised mid orangey yellow sandy clay, representing glacial till; consistent with the mapped geology.

5.2.2 All features were sealed by the subsoil and truncated the underlying natural substrate.

5.3 Period 2 Late Mesolithic to Early Neolithic

Phase 1

5.3.1 The earliest phase of archaeology encountered at Area 14 consisted of a made surface and probable structural elements seen as **{14188}**, PRN92003, as well as a number of pits visible in two mains groups; one focused on the surface, and a second loose cluster in Field L20. In the case of the surface and structure/s there was a datable assemblage of stone artefacts consistent with the late Mesolithic to early Neolithic date. The pits had less dating evidence in terms of artefacts but in some instances dating may be possible / refined by scientific means, namely radiocarbon dating (Figure 4).

5.3.2 The earliest component of the activity was a layer seen as **(14169)**, which might have been contemporary with **(14175)**. The deposits were described as bedding layers but may have resulted from trample or have been part of the original stripping of the area prior to construction. There were 30 worked stone artefacts / lithics recovered from deposit **(14169)** and four from deposit **(14175)**. It should be noted that there were also 101 finds attributed to the natural geology deposit **(14103)**, it has been assumed, given that for the finds with 3D recorded data correspond spatially with **(14169)**, that those from **(14103)** are from the lower part of **(14169)**.

5.3.3 Truncating layer **(14169)** was a somewhat irregular oval feature **[14178]**, which was 11.5m long, 2.5m wide and 0.3m deep (Plate 2). This was filled by a light greyish orange

silty sand with occasional charcoal **(14179)**, that contained 74 lithics. The original interpretation of the feature was as construction for the surface **(14141)**, however it is equally plausible that the feature was the base of a sunken feature / structure in its own right and represents an earlier phase of activity, with the artefacts resulting from this activity (Figure 5).

Phase 2

5.3.4 Overlying the fill **(14179)** was layer **(14141)**, (Plate 3) with variations seen as **(14168)** and **(14170)**, (seen as **2287-004** in the evaluation). It is possible that the layers indicate: multi-phase development of the surface; slight variations in activity; or may result from the variety of different source material used for the construction. Deposit **(14168)** was noted as having heat affected stones within it, distinguishing it from the others. Deposit **(14170)** contained a small amount of charcoal as confirmed by the sample, which also produced a single small flint. A radiocarbon date from a sample of oak (*Quercus* sp.) charcoal from occupation layer **(14170)** produced a radiocarbon age of 5020±30 BP, which equates to a calibrated calendar date of 3943 - 3710 cal BC, in the Early Neolithic Period. Charcoal recovered from deposit **(2287-004)** during the evaluation was subjected to radiocarbon analysis which retuned a date of 3851±30BP, which equates to a calibrated calendar date of 2458 - 2207 cal BC, in the Late Neolithic to Early Bronze Age period. This may indicate that the sedimentation, during and after use occurred over a prolonged period (Figure 6).

5.3.5 Layer **(14141)**, PRN92004 was up to 0.09 m deep and comprised a brown clay with a moderate amount of charcoal and charred plant remains as inclusions, confirmed by the sample. It also contained a significant scatter of flint debitage, consisting of 143 lithics, which included two whetstones SF 14118 and SF 141153. A small number (seven) of additional flints were recovered from the sediment samples. Deposit **(14141)** is likely to have been initially laid down as an intentionally constructed surface and then subsequently walked on, reworked, and material such as the flint/chert debitage and charcoal deposited during its use.

5.3.6 In this respect deposit **(14141)** resembles an occupation / activity layer and approximately a quarter of the lithics (38 of 143) were blades or blade fragments. The flint assemblage is consistent with a possible Mesolithic/early Neolithic date. This is suggested by the characteristics of the blade-based/blade-like removals, with a clear emphasis on the production of narrow flakes and blades alongside evidence for somewhat more expedient flake production. However, there are few of the highly regular/prismatic blades and bladelets that are especially characteristic of Mesolithic

technologies and there remains some ambiguity to the dating.

5.3.7 Within the combined surface and occupation layer **(14141)**, (including **14168** and **14170**) a number of stakeholes and postholes were visible. These are suggestive of a light, partly wooden structure contemporary with the development of the occupation deposit. Structural evidence includes four postholes **[14152]** (=**2287-006** evaluation), **[14162]**, **[14163]**, **[14165]**; and nine stakeholes **[14153 – 14160]** and **[14164]** (=**2287-005** grouping). Posthole **[14152]**, (seen previously as **2287-006**) contained a single, distinctive dark brown silty sand deposit (**2287-007**) that contained charcoal, numerous stones and seven lithic artefacts (Figure 7). The postholes and stakeholes have been assigned PRN92005.

5.3.8 Within the adjoining layer **(14170)** two postholes were visible - **[14142]**, PRN92006. (Plate 4) and **[14176].** The remaining adjoining layer **(14168)** appeared to be truncated by a single very shallow feature **[14166]**, which was either a poorly preserved posthole or small pit.

5.3.9 In the outer portion, where the surface and occupation material may have weathered away, leaving only the natural geology **(14103)**, a further four postholes were seen **[14104]**, **[14148]** (=**2287-008** evaluation), **[14150]** and **[14161]**. In addition, there were two postholes seen to truncate the earliest deposit **(14169)** and it was unknown whether they were part of the earlier phase of activity or part of the later postholes sequence. A small number of worked stone artefacts were recovered from two of the posthole fills (**14172**/**14171** and **14143**/**14142**).

5.3.10 The stakeholes **[14153**-**14160]** and **[14164]** ranged from between 0.06 to 0.18m in width and between 0.02m and 0.09m in depth and exhibited variable profiles, from V-shaped, U-shaped, to broadly bowl shaped.

5.3.11 The number and spatial distribution of stakeholes and postholes preserved meant that the function and form of any structure/s is uncertain, but it is hypothesised that they were part of a wooden supported structure, possibly a temporary hut or something more transient such as a windbreak, which encircled or partially encircled surface **(14141)**.

5.3.12 Although tenuous there is some slight evidence of repeated action over time and that the surface, occupation and structural feature **{14188}** may not have been a single phase event and represent activity over a significant period of time. Confirmation of this hypothesis would require fuller, detailed analysis.

5.4 Period 5 Early Medieval

Phase 3

5.4.1 Beyond the surface and structure Group **{14188}** were three pits **[14135]**, **[14126]/[14137]** and **[14181]**, PRN92007. Although in close spatial proximity to the Early Neolithic activity the form of the features was at variance. One of the pits **[14126]**, was confirmed as being Early Medieval by radiocarbon date, the others remain undated (see Undated features) but potentially associated (Figure 8 and 9).

5.4.2 Pit **[14137]**, PRN92008, to the southeast, was oval in plan, 0.18m deep and the single fill **(14138)** contained frequent heat affected stones and a small amount of charcoal but no artefacts (Plate 5). The fill was truncated by a second, later, deeper oval pit **[14126]** to the immediate southeast. Pit **[14126]** contained a single fill **(14127)**, also rich in heat affected stones, which yielded fragments of fired clay, three flints likely to be residual particularly given the proximity to the dense concentration to the northwest, a worked stone artefact (rubbing stone) and a moderate amount of charcoal and charred plant remains, confirmed by the sample. A radiocarbon date was obtained from a barley (*Hordeum* sp.) grain from fill **(14127)** and produced a radiocarbon age of 1130±30 BP, which equates to a calibrated calendar date of AD 771 - 988. Both pits were heavily affected by rooting and there was no evidence of clay linings. The burnt material may have been deliberately discarded into the pits or it may have been part of the function of the pits, perhaps as fire pits.

5.5 Period 7 Post-medieval

Phase 4

5.5.1 The elements of a probable former field system were seen to comprise four ditch groups **{14186}**, **{14187}**, **[14120=14139]** and **{14189}**, PRN92009; Plates 6 and 7) and was observed below the modern Fields L1 and L20. The field system may have been more extensive and included the more irregular ditch **[14114=14124]** but this could not be substantiated (Figure 10).

5.5.2 The field system was rectilinear in plan orientated northeast-southwest and only the northern ditch **[14120=14139]** was identified as an anomaly visible in the geophysical survey.

5.5.3 Ditch **{14186}** was aligned northeast-southwest, exposed for c. 47m along the northwest side of the field system, and continued beyond the limits of the excavation. A total of five sections **[14110=14116=14131=14133=14147]** were excavated along the length of the

boundary ditch, and these were additional to an intervention seen in the earlier evaluation (**2115-005**, Headland 2017). The feature appears to have been a single construction with gently concave sides and a broad flat base, U-shaped profile. Ditch **{14186}** measured 0.7-1.2m wide by 0.15m deep, on average. It contained a single mid brown sandy silt fill, seen as **(14111**, **14117**, **14130**, **14134** and **14146)**. This yielded only a small amount of artefactual material, which consisted of three prehistoric (residual) chert fragments from **(14130)** and two very small (11g) fragments of 18-19th century post-medieval pottery from **(14146)**. This was in addition to: a very small sherd of Buckley type pottery and a single iron horseshoe both of post-medieval date; a small amount of slag / industrial waste; and probable residual flint artefacts retrieved from the evaluation ditch fill (**2115-005**), (Headland 2017, 18). This provides a date at which the upper part of the feature was infilling but the origin of the feature may be earlier (Figure 11).

5.5.4 To the northwest of ditch **{14186}** was the parallel ditch **{14187}**, 1.9m away. Ditch **{14187}** was generally narrower than ditch **{14186}**, at 0.8 - 1m wide, but of a similar depth (Plate 6). It was aligned northeast-southwest, visible for a 28m length and terminated at the northeastern end.

5.5.5 Five sections **[14112=14118=14122=14129** and **14145]** were investigated in ditch **{14187}** during the excavation phase. The feature appears to have a terminus **[14122]** at the northeastern end but no discernible formal end to the southwest. The ditch was of a single construction with a gentle U-shaped concave profile (Figure 11). It contained a single mid greyish brown sandy silt fill with occasional stone inclusions, seen as **(14113**, **14119**, **14123**, **14128** and **14144)** of which only fill **(14128)** produced a single fragment of flint and there was a fragment of 18-19th century post-medieval pottery within fill **(14144)**, (see finds section).

5.5.6 To the northeast was the probable eastern return of the field enclosure, seen as ditch **[14120=14139]**, (Plate 7). This feature corresponded to a linear anomaly seen in the geophysical survey. The relationship between ditches **{14186}** and **[14120=14139]** was not examined as it lay beyond the excavated area. Ditch **[14120=14139]** was aligned northwest-southeast and exposed for 11m along the northeast side of the field system. The two sections excavated along the length of the boundary ditch demonstrated a single construction with a narrow U-shaped concave profile, 0.48m wide and up to 0.3m deep. It contained a single fill described as a dark greyish brown sandy silt fill, seen as **(14121)** and **(14140)** which contained no artefactual material. Although not defined in the archaeological recording it is noted that this ditch almost certainly truncated the group

of features **{14188}** and therefore post-dates them. It was also seen to visibly truncate the pit **[14181]** (Plate 12) but was not recorded as such.

5.5.7 At a distance of 47m to the southeast in Field L20 was ditch **{14189}**, which was on the same northeast-southwest alignment as ditches **{14186}** and **{14187}** and may have effectively formed a continuation on the other side of the current field boundary. The boundary **{14189}** extended over 11m and incorporated two termini suggesting a probable field entrance within the limits seen.

5.5.8 Three sections were investigated during the excavation phase including the two termini **[14006]** and **[14014]** and a third section **[14016]** to the southwest Plate 8). There was an additional section seen in the earlier evaluation (**2000-005**, Headland 2017). The feature appears to have been a single construction with a gently concave sides and base forming a broad U-shaped profile. Ditch **{14189}** measured 1.1m wide by 0.4m deep. It contained a single mid greyish brown silty sand fill with occasional stone inclusions, seen as **(14007**, **14015** and **14017)**, which contained no artefactual material. The feature was roughly reflective of the line of the current field boundary, to the northwest and may have been an earlier incarnation of that boundary.

5.5.9 Within the much smaller southern area in L1 was an undated ditch **[14114=14124]**, aligned northwest-southeast and exposed for 10m. It was more irregular in plan but may have formed the southwestern portion of the field system. The two sections excavated along the length of the boundary ditch demonstrated a single construction with straight sides and an open V-shaped profile, 1.2-1.8m wide and up to 0.3m deep (Plate 9). It contained a single described as a mid brown sandy silt fill, with a moderate amount of rounded stones, seen as **(14115)** and **(14125)**, which contained no artefactual material.

5.5.10 Ditch **[14108]**, seen within the main southeastern L1 area, was on a different alignment to those grouped to form the possible enclosure system. It was aligned east-west, seen for over 15.5m and extended beyond the excavated areas. Ditch [14108] was investigated in two sections during the excavation with one section being a re-excavation of the ditch seen in the evaluation (**2115-010**). It demonstrated a single construction with a steep sided U-shaped concave profile, 1.1m wide and up to 0.4m deep (Plate 10). It contained a single fill described as a mid greyish brown sandy silt fill, seen as **(14121)** and **(14140)** which contained no artefactual material. The varied orientation of this ditch might suggested it is of a different date/phase than those aligned northeast-southwest, perhaps later.

5.6 Undated features

5.6.1 Beyond the surface and structure Group **{14188}** were two undated pits **[14135]**, and **[14181]**. Although in close spatial proximity to the Early Neolithic activity the form of the features was at variance. The pits were not identical to the Early Medieval dated pit **[14126]** but could potentially be associated (Figure 10).

5.6.2 Pit **[14135]**, to the east, was sub-square in plan and the single fill **(14136)** contained no artefactual material and the deposit yielded no charred plant remains for scientific dating (Plate 11).

5.6.3 Pit **[14181]**, to the north, was circular in plan and had been truncated by the later ditch **[14120=14139]**, (Plate 12), but whether it dated to the prehistoric or historic periods was unknown. It contained two fills, the lower **(14182)** was essentially redeposited natural, while the upper fill **(14183)** was a deliberate, possibly discarded, deposit with traces of charcoal confirmed by the sample and discolouration from being heated, but no artefacts for dating.

5.6.4 A spread of undated pits was seen in Field L20 including **[14001**, **14005**, **14008** and **14012]**. They could not be securely attributed to either the Prehistoric or any later Period, by spatial or morphological means, therefore they remain undated so as not to produce a biased interpretation.

5.6.5 Pit **[14001]** was circular, 0.16m deep and contained a single fill **(14002)**, which had a proportion of heat affected stones, charcoal and a small amount of charred plant remains but no artefacts (Plate 13).

5.6.6 Pit **[14005]**, to the south, was circular, 0.18m deep and contained two identified fills (Plate 14). The lower fill **(14004)** appeared to be redeposited natural, although charcoal was present, while the upper fill **(14003)** was darker, with occasional charcoal and charred plant remains. It contained a fragment of prehistoric handmade pottery with thumb print and impressed decoration, a rubber for use with a saddle quern and a fragment of worked chert artefact, all suggestive of a discarded or accumulated sediment (Figure 11).

5.6.7 Pit **[14008]**, west of **[14005]**, was circular, 0.15m deep, with a single fill **(14009)** that contained no artefactual material (Plate 15).

5.6.8 To the northeast was pit **[14012]** which was circular, 0.35m deep and contained three fills. At the base was fill **(14019)**, above which was **(14018)**. The uppermost fill **(14013)** had rare charcoal inclusions and small patches of heat affected clay and yielded a small

fragment of fired clay, indicative of burnt material discarded close to source (Figure 11).

5.6.9 In addition, within Area L20 the ambiguous feature **[14010]** was only partly exposed and extended beyond the 0.8m length visible. It may have been an elongated pit or a linear ditch, trending northeast-southwest. The unremarkable 0.15m deep single fill **(14011)** contained no artefacts.

5.6.10 The small posthole **[14106]** in Field L1 was described as having timber present within the fill **(14107)**, which given the lack of other preserved wood, would suggest that this was of a more recent date, potentially Modern, thus accounting for the survival.

6 FINDS ASSESSMENT

6.1 Introduction and Methodology

6.1.1 A total of 111 bulk finds weighing 4,597g were recovered from 12 contexts from an archaeological investigation on Area 14 (Table 6.1). A further 326 artefacts were allocated Small Find numbers with a combined weight of 5,420g, recovered from seven contexts (Table 6.2). The finds assemblage was transferred to Carlisle and assessed by Wardell Armstrong.

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 2014b). 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 (CIfA Cymry/Wales 2017).

6.1.4 Quantification of bulk finds by material and context is given in Table 6.1 and lithics (and small finds) quantification in Tables 6.2. Quantification of finds recovered from the environmental samples is given in Table 6.3.

Context	Material	Quantity	Weight (g)	Period / Date	Comments
14003	Lithic	1	5	Prehistoric	Chert
14013	Fired Clay	13	187	PM-Mod	Miscellaneous fragments
14127	Fired Clay	1	1	PM-Mod	Miscellaneous fragments
14103	Lithic	19	185	Prehistoric	Chert
14103	Lithic	11	105	Prehistoric	Flint
14127	Lithic	3	28	Prehistoric	Flint
14128	Lithic	1	1	Prehistoric	Flint
14130	Lithic	3	16	Prehistoric	Chert
14141	Lithic	13	92	Prehistoric	Chert
14141	Lithic	7	95	Prehistoric	Flint
14169	Lithic	4	30	Prehistoric	Chert
14169	Lithic	4	24	Prehistoric	Flint
14171	Lithic	2	1	Prehistoric	Flint
14179	Lithic	5	20	Prehistoric	Chert
14179	Lithic	4	23	Prehistoric	Flint
14003	Pottery	9	89	Prehistoric: mid to late	Handmade, thumb print and impressed decoration

Context	Material	Quantity	Weight (g)	Period / Date	Comments
				Neo??	
14145	Pottery	1	15	Post-medieval	Buckley Type body sherd BUCK
14146	Pottery	2	11	Post-medieval	Buckley type base sherd. BUCK
14003	Stone	7	3505	Prehistoric - Roman	Saddle quern rubber 220x170x40mm and Whetstone - burnt and fragmented 160mm x 57mm x 30mm.
14127	Stone	1	164	Prehistoric - Roman	Rubber? Roughly triangular wedge fragment. 130x90x50mm. Surface wear
Total		**111**	**4597**		

Table 6.1 Quantification of bulk finds (this does not include lithic small finds, nor finds from samples)

6.2 Prehistoric Pottery – *Frances Lynch*

6.2.1 There are 9 pieces of Late Neolithic/ Early Bronze Age pottery from the upper fill (context 14003) of Pit [14005]. This site is in Field L20, some 50m to the south of an area of prehistoric activity in Field L1 North. The pit from which the pottery came was part of a scattered group of 5 pits about 10m apart. Pit [14005] had two recognisable fills, the pottery being in the upper one (14003). The photograph (Plate 14) suggests that it is a simple bowl-shaped pit about 0.60m in diameter and 0.18m deep filled with dark soil and charcoal and some small stones. A stone rubber from a saddle quern and a burnt and broken whetstone are recorded from this pit as well as the pottery (WA report p.21). The other pits are described as containing burnt material with no artefacts.

6.2.2 There are 5 different pots represented amongst the 9 sherds, mostly by only a single sherd. No rims or bases are present but all are decorated, by fingernails or incised lines, some of them hyphenated.

6.2.3 **Pot 1**

6.2.4 A sherd (60 x 50 x 14mm) possibly from close to a shoulder or cordon, with a smaller one (30 x 20 x 13mm) from a similar position on the pot. Below the rounded cordon or shoulder there is a horizontal line of finger nail marks and below that, two lines of much deeper, wider nail impressions probably made by jabbing with an up-turned finger from the side. This will have come from a large jar.

6.2.5 The fabric is rather low-fired and soft and rather lightweight considering the thickness of the clay. It contains some small stone grits (perhaps quartz and rhyolite) but might also contain grog. The colour is a pinky beige but there is no dark core, but the small sherd is darker and the surface of the larger one is grey in part (? Smoked)

6.2.6 **Pot 2**

6.2.7 A single body sherd with a rather undulating surface (56 x 40 x 10-12mm) decorated with a vertical line of paired fingernail marks. This is likely to have been an overall pattern: there is a hint of another line alongside this one. This is probably from another fairly large jar.

6.2.8 The fabric is rather harder than Pot 1 but the constituent clay and grits seem to be the same: a few very small specks of quarts and some other darker stone visible on the smooth outer surface which is a yellowy pink. The inner surface is also smooth, a pale grey colour and very similar in texture to the inner surface of Pot 1.

6.2.9 **Pot 3**

6.2.10 A single sherd (30 x 23 x 9mm) from a smaller vessel decorated with hyphenated lines. At the top is a fine line of hyphenated impressions, probably with another one above, and below is a band of sloping hyphenated lines, deeper and wider.

6.2.11 The fabric is bright red on the outside, yellower on the inside. There are a few small rounded grits in the narrow grey core. Both surfaces are smooth and carefully finished.

6.2.12 **Pot 4**

6.2.13 A very small sherd (20 x 15 x 7mm) with 1 (and possibly 3) incised lines 5-6 mm apart.

6.2.14 The fabric is red on the outside and yellower on the inside as Pot 3. It is not the same pot as 3 but is very much in the same tradition.

6.2.15 **Pot 5**

6.2.16 Two decorated sherds and 2 fragments with incomplete wall belong to this pot. All are yellowy pink with a grey core and a yellow interior surface. The fabric is low-fired and rather soft and has become badly abraded. There are small stone grits.

6.2.17 The larger sherd (30 x 25 x 8mm) comes from a rounded body and is decorated with 5 diagonal lines which may be hyphenated. The smaller piece (32 x 22 x 8mm) has a single line, possibly hyphenated. The inner curve suggests a small diameter.

6.2.18 **Comment**

6.2.19 The presence of hyphenated decoration on relatively thin red pottery immediately suggests a Beaker tradition. The two large, rather cumbersome, jars, however, are not of a kind that normally occur in spreads of Beaker sherds, even in settlement contexts. For instance, in Anglesey at Llanfechell (Smith 2013), at Parc Cybi (Area E) (Kenney et al 2020) and amongst the early finds from Newborough Warren (Lynch 1991), all the sherds, came from quite finely decorated, thin, small Beakers. These were very much like those used in contemporary burial contexts at around a horizon of about 2200 Cal BC (Needham 2005). The same is true of the Beaker material from the old ground surface below Brenig 51 (Lynch 1993) and that below the barrows at Trelystan (Britnell 1982).

6.2.20 The two large jars from Area 14 (pots 1 and 2) are very similar in fabric. They also share a preference for fingernail decoration. Alone, they might be considered to belong to one of the Late Neolithic Impressed Wares, perhaps Grooved Ware, which in North Wales tends to have this rather lightweight fabric (Lynch in Kenney et al 2020). It is present, for instance not far away, at Llanfaethlu (Lynch for CR Archaeology unpublished). However, the recent discovery at Borras near Wrexham (Grant 2015 and updates) of a series of pits containing large Pot Beakers (Gibson and Snape 2013) and more extensively decorated bowls and jars with a considerable similarity to Grooved Ware, makes it more likely that this small collection at Wylfa should be classified as Domestic Beaker, a style not previously well represented in Wales (Gibson 1982). The radiocarbon date for the Borras material is around 2100-1900 cal BC, broadly similar to the date (3851 cal BP – 1800 cal BC) for activity in Field L1 North.

6.2.21 This is the first example of a large assemblage of what is now called Domestic Beaker pottery from North Wales. It comes from pits similar, in size and clustered arrangement, to those which contain earlier styles of Neolithic pottery, from Ebbsfleet Ware, through Mortlake and Fengate to Grooved Ware - at Borras and at other sites. In North Wales there is a hint, from area excavations such as those at Parc Cybi near Holyhead (Kenney forthcoming) and from surface scatters under monuments such as Brenig 51 (Lynch 1993) and Trelystan (Britnell 1982) that the sherds found there, from ‘classic Beakers’ presumably used domestically, are not the product of the same kind of activity as whatever gives rise to the digging and filling of clusters of pits. This may be a factor of chronology. The surface scatters and the ‘classic’ sherds may belong to the pre-fusion Beaker phase (Gibson 1982 i 75-6; Needham 2005) while the heavily decorated material in pits may reflect a behaviour learnt from earlier peoples, just as their pottery has clearly absorbed stylistic traits from nearly every earlier ceramic tradition.

6.3 Post-medieval Pottery

6.3.1 A total of three post-medieval pottery sherds were recovered from two contexts, weighing 26g (Table 6.1). They were in good condition with some evidence of post-depositional abrasion.

6.3.2 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).

6.3.3 The post-medieval pottery comprised wheel thrown Buckley-type red earthenware (BUCK). The single body sherd from context **(14145)** had a thick black glaze both internally and externally and is likely part of a large storage jar. There is an issue with the provenance of this context as it is a cut, so it remains unclear whether it is from the fill of **[14145]** which would be **(14144)** or whether it is a typos/misread and should be **(14146)**, fill of **[14147]**. The two interventions were adjacent but each in one of the parallel ditch groups **{14186}** and **{14187}**. Two base sherds recovered from context **(14146)** were fragments of a possible cup or small jar with an internal glaze.

6.3.4 The post-medieval pottery sherds were 18th to 19th century in date.

6.4 Fired Clay

6.4.1 A total of 14 fragments of fired clay, weighing 188g, were recovered from two contexts (Table 6.1). The artefacts are in poor condition and highly abraded.

6.4.2 The fragments comprise unidentifiable, miscellaneous artefacts which may have originated as ceramic building material and are likely to be of late post-medieval to modern date.

6.5 Stone

6.5.1 Eight stone objects were recovered as bulk finds from two contexts during the excavation at Area 14, weighing 3,669g (Table 6.1), a further 15 were recovered as small finds and are discussed below.

6.5.2 The stone comprised a large fragment of a rubber for a saddle quern and a fragmented and burnt whetstone from context **(14003)** and a roughly triangular possible rubbing stone from context **(14127)** which showed surface wear.

6.5.3 It is difficult to date theses artefacts, however, given the presence of the pottery and lithic finds, they are likely of prehistoric provenance with a possible Neolithic to Bronze Age

date. Similar objects have been recovered with a suggested late prehistoric to Roman date from other areas within the wider project and during the A55 road building scheme (Smith 2012).

6.6 Lithics

6.6.1 A total of 372 (3412.47g) lithic artefacts were recovered during the archaeological excavation at Area 14 (Table 6.2).

Context Number	SF Number	Length /mm	Width /mm	Thickness /mm	Weight (g)	Class	Category
14103	14190	21	11.3	2.3	0.56	Debitage	Chip
14103	14199	15.7	28	8.5	3.01	Debitage	Core preparation flake
14103	14194	16.4	8.7	3.7	0.71	Debitage	Chip
14103	14193	17	6.9	0.9	0.13	Debitage	Chip
14141	14192	23.2	10.3	1.6	0.33	Debitage	Blade
14141	14191	15.6	8.6	2.7	0.26	Debitage	Chip
14141	14188	30	57.9	19.9	27.67	Debitage	Core preparation flake
14141	14187	8.5	11.7	1.6	0.19	Debitage	Chip
14141	14185	22	24.9	7.7	3.93	Debitage	Flake frag
14141	14184	39.3	45.7	25.9	50.15	Debitage	Flake frag
14141	14182	10	11.3	3.4	0.47	Debitage	Blade frag
14141	14181	37.8	45.9	29.8	68.92	Core	Core
14141	14180	14.9	11.3	2.6	0.38	Debitage	Chip
14103	14179	23.4	13.9	3.4	1.31	Debitage	Flake
14169	14178	10.3	7.5	1.9	0.27	Debitage	Chip
14177	14177	27.2	20.8	4.6	2.16	Debitage	Flake
14169	14176	14.3	7.3	1.8	0.27	Debitage	Chip
14169	14175	18.7	18	4.8	1.73	Debitage	Flake
14103	14174	20	13.1	3.5	0.85	Debitage	Flake
14102	14173	52.1	55.2	20.9	56.72	Debitage	Flake
14103	14172	15.9	11.4	3.3	0.59	Debitage	Chip
14103	14171	49.4	34.1	23.6	46.23	Core	Core fragment
14103	14170	9	8.3	0.6	0.09	Debitage	Chip
14103	14169	12.7	7.2	4.3	0.4	Debitage	Chip
14103	14170.1	17.4	6.1	1.5	0.23	Debitage	Burin spall
14103	14170.2	16.4	8.2	1.4	0.24	Debitage	Chip
14103	14169.2	35.5	19	11.3	5.43	Core	Core fragment
14103	14169.1	20.5	37.5	9.2	8.32	Debitage	Core preparation flake
14103	14168	22.4	7	1.7	0.34	Debitage	Burin spall
14103	14160				8.43		
14103	14161	11.3	20.1	7.9	2.11	Debitage	Chip
14103	14162	11.8	7.6	1.6	0.16	Debitage	Burin spall
14103	14163	14.7	21.7	5	1.6	Debitage	Flake frag

Context Number	SF Number	Length /mm	Width /mm	Thickness /mm	Weight (g)	Class	Category
14103	14167.2	11	7.1	1.3	0.13	Debitage	Chip
14169	14164	28.3	17	6.9	3.45	Debitage	Flake
14169	14165	21.7	18.2	7.1	3.52	Debitage	Flake
14103	14166	31.6	20.1	5.9	4.06	Debitage	Blade frag
14103	14167.1	21.1	7.9	1.8	0.38	Debitage	Burin spall
14103	14140	27.1	16.8	3.9	2.14	Debitage	Flake
14103	14141	34.8	40.4	32.6	71.06	Core	Core
14103	14142.1	13.8	14.9	3.4	0.8	Debitage	Blade frag.
14103	14142.2	13	11	1.9	0.22	Debitage	Chip
14141	14143	21.5	9.1	1.6	0.3	Debitage	Burin spall
14103	14144	27.2	12.4	5.1	1.29	Debitage	Chip
14103	14146	8.3	10.7	1.2	0.2	Debitage	Chip
14103	14147	33.3	29.4	10.4	8.32	Debitage	Flake frag.
14103	14148	27.3	8.5	2.9	0.9	Debitage	Blade
14103	14155	34.6	17.1	7.5	4.35	Debitage	Blade
14103	14156	28.6	25.5	14.7	9.69	Debitage	Flake
14103	14159	6.6	6.4	0.9	0.06	Debitage	Chip
14141	14131	9.7	5.8	4.2	0.23	Debitage	Chip
14141	14132	54.3	41.1	17.4	29.98	Debitage	Flake
14103	14133	8.4	17.2	6.3	1.14	Debitage	Chip
14103	14134	24.3	15.7	6.5	2.41	Debitage	Flake
14141	14136	11.3	21	7.1	1.84	Debitage	Chip
14141	14137	9.1	9.7	1.6	0.15	Debitage	Chip
14141	14138	28.3	9	3.6	0.88	Debitage	Blade
14141	14129	42.3	38.8	20.8	35.88	Debitage	Flake
14141	14108.3	8	8.8	3.2	0.27	Debitage	Chip
14141	14109	8.9	8.2	1.7	0.1	Debitage	Chip
14141	14110	24.3	14.2	8.7	1.33	Debitage	Flake
14141	14111	30.5	11	3.6	104	Debitage	Blade
14141	14112	17.5	14.1	2.2	0.75	Debitage	Chip
14141	14114	12.6	9.8	2.51	0.25	Debitage	Chip
14141	14115				29.99		
14141	14116	13.7	5.8	1.8	0.18	Debitage	Chip
14141	14117	25.4	11.7	1.9	0.65	Debitage	Blade
14141	14120	18.2	15.5	6.9	2.18	Debitage	Flake
14141	14121	10.8	7.3	1.4	0.1	Debitage	Chip
14141	14124				1.24		
14141	14125	20.3	21	5.6	2.17	Debitage	Flake
14141	14126	33.4	16.7	4.7	3	Debitage	Blade
14141	14127	20.5	14.5	4	1.22	Debitage	Chip
14141	14128	13.9	10.7	2.1	0.41	Debitage	Blade frag
14103	14104	51.4	40.2	23.2	52.97	core	Core fragment
14103	14106	24.7	11	4.6	1.63	Debitage	Chip
14103	14102	32.7	33.2	8.8	10.66	Debitage	Flake

Context Number	SF Number	Length /mm	Width /mm	Thickness /mm	Weight (g)	Class	Category
14103	14107.1	13.4	9.7	2	0.2	Debitage	Chip
14103	14107.2	10.2	7.2	1.8	0.15	Debitage	Chip
14141	14108.1	9.3	7.5	3	0.26	Debitage	Chip
14103	14105	24	9.1	2.8	0.73	Debitage	Burin spall
14103	14103.2	13.7	8.7	1.6	0.22	Debitage	Chip
14103	14103.1	16.4	19.8	2.8	0.69	Debitage	Chip
14103	14101.2	15	12.3	3.3	0.5	Debitage	Chip
14103	141238.1	30	27.5	35.4	26.7	Core	Core fragment
14103	141236	20.1	17.9	7.8	1.87	Debitage	Flake
14103	141235	21.6	17.5	7.7	2.49	Debitage	Blade frag
14103	141235.2	21.2	10.8	2.9	0.66	Debitage	Blade
14103	141234	24.8	11.4	2.4	0.72	Debitage	Blade
14103	141233	35.9	26.4	9.1	7.79	Debitage	Flake
14103	141232	39.4	24.2	11.6	10.6	Debitage	Flake
14141	141230	38.3	28.6	11.8	13.06	Debitage	Flake
14141	141227	39.1	32.1	16.2	20.32	Debitage	Flake
14141	141228	17.9	10.5	2.5	0.37	Debitage	Blade
14103	141226	52.5	34.7	18.4	23.64	Debitage	Flake
14103	141225	21.4	17.5	5.1	1.38	Debitage	Blade frag.
14103	141224	26.4	20.8	16.1	11.19	Retouched tool	Scraper
14103	141223	38.2	40.5	8.6	13.31	Retouched tool	Denticulated
	14221	36.3	33.4	11.3	15.9	Retouched tool	Denticulated/serrate
14141	141241	24.2	51.8	30.9	38.02	Core	Core fragment
14141	141240	14.4	13	6.6	0.88	Debitage	Chip
14141	141242	31.6	16.3	6.9	3.19	Debitage	Flake
14141	141243	30.7	17.9	22.3	15.7	Core	Core
14141	141239	26.5	19.4	7	4.22	Debitage	Flake
14103	141238.5	38.5	16.2	5.2	3.07	Debitage	Blade
14103	141238.4	36.1	23.7	6.4	5.18	Debitage	Flake
14103	141238.3	22.5	23.7	7.6	4.36	Debitage	Flake
14103	141238.2	40.3	30.3	11.1	11	Debitage	Flake
14141	141244	24	19	17	8.85	Core	Core
14179	141251.3	25.7	9.2	3.3	0.79	Debitage	Blade
14179	141251.2	33.7	25.6	8.5	6.8	Debitage	Flake
14179	141251.1	47	41.4	15.5	33.99	Debitage	Flake
14179	141250.5	19.3	15.2	3	0.88	Debitage	Blade frag
14179	141250.4	25	13	4.4	1.21	Debitage	Core preparation flake
14179	141250.3	40.2	13.6	2.9	2.14	Debitage	Blade
14179	141250.2				3.68		
14179	141250.1	43.2	32.7	15.9	23.39	Debitage	Core preparation flake
14141	141249.2	21.4	11.2	4.6	0.99	Debitage	Blade

Context Number	SF Number	Length /mm	Width /mm	Thickness /mm	Weight (g)	Class	Category
14141	141249.1	35.2	14.1	7	3.06	Debitage	Core preparation blade
14141	141248.3	19.4	8.7	2.5	0.44	Debitage	Chip
14141	141248.2	18.6	21.2	4.9	2.05	Debitage	Flake
14141	141248.1	30.5	32	7.5	6.98	Debitage	Flake
14141	141247	18.8	11.5	4.2	0.83	Debitage	Chip
14141	141245.4	16.8	7.6	2.6	0.29	Debitage	Burin spall
14141	141245.3	13	11	1.9	0.3	Debitage	Chip
14141	141245.2	22.1	12.6	4.2	1.02	Debitage	Blade
14141	141245.1	14.6	27.2	3.5	1.13	Debitage	Flake
14179	141260	52.4	24.1	11.8	14.69	Debitage	Flake
14179	141259.2	22.6	15.9	7.9	2.33	Debitage	Flake
14179	141259.1	21.5	20.7	6.2	1.95	Debitage	Flake fragment
14179	141257.2	35.1	30.8	16.1	20.49	Debitage	Flake
14179	141257.1	33.9	35.2	14.7	20.94	Debitage	Flake
14179	141256.2	21.5	18.5	6.9	2.52	Debitage	Flake
14179	141256.1	26.9	23	10.7	8.97	Debitage	Flake
14179	141255.2	30.3	26.6	8.6	7.23	Debitage	Flake
14179	141255.1	38.9	50.2	11.4	25.22	Debitage	Flake
14179	141254.4	19.8	14.4	3.3	0.93	Debitage	Flake
14179	141254.3	30.1	13.4	6.8	3.36	Debitage	Core preparation flake
14179	141254.2	40.4	17.7	4.6	3.9	Retouched tool	Piercer
14179	141254.1	36.8	24.5	7.6	7.78	Debitage	Flake
14179	141252.5	14.2	18.7	3.3	0.77	Debitage	Chip
14179	141252.4	21.8	12.5	3.8	1.1	Debitage	Blade fragment
14179	141252.3	17.6	15.2	4	1.49	Debitage	Flake
14179	141252.2	29.2	20.3	5.6	4.01	Debitage	Flake
14179	141252.1	33.9	30.8	14.6	18.46	Debitage	Flake
14141	141120	19.8	20	6.1	2.67	Debitage	Flake fragment
14141	141118	33.9	16.7	16.6	3.04	Debitage	Blade
14103	141117	69.2	39	26.2	55.89	Core	Core
14169	141116	43.4	26.6	23	18.61	Debitage	Flake
14103	141115	0.7	0.6	2.24	0.26	Debitage	Chip
14169	141114	1.12	1.03	0.31	6.05	Debitage	Flake
14169	141113	1.61	1.42	0.54	18.97	Debitage	flake
14169	141112	1.1	0.54	0.22	2.03	Debitage	Blade
14169	141111	1.03	0.51	0.28	2.06	Debitage	Core preparation flake
14169	141110.2	0.56	0.77	0.18	1.36	Debitage	Flake
14169	141110.1	1.1	0.34	0.1	0.66	Debitage	Blade
14169	141109	0.47	0.48	0.13	0.59	Debitage	Chip
14169	141108						
14103	141106	1.22	0.55	0.11	1.06	Debitage	blade

Context Number	SF Number	Length /mm	Width /mm	Thickness /mm	Weight (g)	Class	Category
14103	141107	1.32	0.77	0.68	9.17	Debitage	Core preparation flake
14103	141103	0.71	0.53	0.1	0.63	Debitage	chip
14103	141102	0.38	0.21	0.15	0.22	Debitage	Chip
14103	141102.2	0.3	0.22	0.06	0.07	Debitage	Chip
14103	140002.1						
14103	141101	0.48	0.38	0.04	0.18	Debitage	Chip
14103	14100	58.3	35.5	62.9	195	Core	Core fragment
14141	141130	43.9	18.9	7.6	6.03	Debitage	Core preparation blade
14141	141129	46.4	34.3	32.1	65.02	Core	Core fragment. Single platform blade core
14141	141127	15	23	4.4	1.49	Debitage	Flake
14141	141126	38.1	11.3	5.5	1.94	Debitage	Blade
14141	141125	23.3	16.4	4.8	1.52	Debitage	Flake
14141	141124	33.2	42.6	14.3	18.86	Debitage	Flake
14141	141123	33	14.2	4.2	1.96	Debitage	Blade
14169	141122	18.6	12	1.8	0.43	Debitage	Chip
14141	141121	18.3	25.5	4.5	2.02	Debitage	Flake
14141	141160.1	44.3	65.6	44.4	118	Core	Core fragment
14141	141156	21	17.2	6.9	2.15	Debitage	Flake
14141	141157	19.1	18.8	4.6	1.39	Debitage	Chip
14141	141159	17.4	10.4	6.3	0.83	Debitage	Blade
14141	141155	36.3	29.5	35.5	46.8	Core	Core fragment
14141	140052	35.4	20.6	8.1	4.4	Debitage	Blade
14141	141160.2	25.1	24.2	8.4	4.67	Debitage	Flake
	140051	42.1	29.5	30.6	36.04	Core	Core fragment
14141	141149	19	24.8	4.5	2.18	Debitage	Flake
14141	141148	47.9	47	16.2	34.84	Debitage	Flake
14141	141147	3.01	21.3	9.9	5.11	Debitage	Flake
14141	141145	60.1	31.2	15.8	21.55	Debitage	Core preparation flake
14141	141144	31	11.5	4.5	1.51	Debitage	Blade
14141	141143	23.5	13.2	4.6	1.1	Debitage	Blade
14141	141141	28.9	13	3.6	1.15	Debitage	Blade
14141	141140	16.8	15.7	3.3	1.05	Debitage	Flake
14141	141139	21.7	19.2	4.7	2.03	Debitage	Flake
14141	141138	16.9	13.2	3.8	0.84	Debitage	Blade frag
14141	141137	29.7	14.4	5	2.2	Debitage	Blade
14141	141136				7.46		
14141	141135	14.6	10.3	2.8	0.53	Debitage	Blade fragment
14141	141134	34.4	23.1	8.6	6.64	Debitage	Flake
14141	141133	50.7	51.5	18.7	50.28	Debitage	Flake

Context Number	SF Number	Length /mm	Width /mm	Thickness /mm	Weight (g)	Class	Category
14141	141132	26.6	34.3	8.9	8.88	Debitage	flake fragment
14141	141131	36.9	21	13.7	9.48	Core	Core fragment
14141	141169	29.5	17.1	6.3	2.83	Debitage	Blade fragment
14141	141168	37	15.1	8.2	2.57	Debitage	Core preparation flake
14141	141166	34	12.7	4.5	1.73	Debitage	Blade
14141	141165.2	14.8	10.7	2.7	0.35	Debitage	Chip
14141	141165.1	36	15.5	4.6	2.62	Debitage	Blade
14141	141164	25.4	38.1	11	7.79	Debitage	Flake
14141	141163	30.9	15.4	2.2	0.92	Debitage	Flake
14141	141162	37.4	31.5	30.4	44.37	Core	Core fragment
14141	141161	20.8	13.3	3.7	1.13	Debitage	Chip
14175	141179	43.5	7.9	4.7	1.57	Debitage	Core preparation blade
14141	141184	28.7	10.2	3.4	0.86	Debitage	Blade
14141	141183	35.8	15.4	6.5	5.06	Debitage	Blade
14141	141182	30.5	10.2	2.8	0.87	Debitage	Blade
14175	141181	50.1	17.3	7.8	5.81	Debitage	Core preparation flake
14175	141178	36.5	39.2	20.9	34.52	Core	Core fragment
14175	141177	24.8	18.3	5	1.83	Debitage	Flake
14103	141175	27.1	12.2	3.2	1.1	Debitage	Blade
14141	141174	33.9	25	9.8	7.79	Debitage	Flake
14103	141173	33.8	21.1	7.8	5.64	Debitage	Blade fragment
14103	141172	44.3	38	36.2	60.53	Core	Core fragment
14103	141171.6	18.8	24.3	10.4	4.72	Debitage	Chip
14103	141171.5	29.8	16.5	4.2	1.88	Debitage	flake
14103	141171.4	19.1	12.6	8.7	2.16	Retouched tool	Microlith
14103	141171.3	25.1	21.1	5.5	2.83	Debitage	Flake
14103	141171.2	19.7	26.8	5.8	2.83	Debitage	Flake
14103	141171.1				20.04		
14169	141198	31.6	44.9	21.2	44.68	Core	Core fragment
14169	141197	20.9	19.6	7.4	2.39	Debitage	Flake
14169	141196				11.06		
14169	141195	16.9	19.8	7	3.02	Debitage	Flake
14169	141193	25.3	11	3.4	0.69	Debitage	Blade
14141	141190	37.4	27.2	7.7	8.54	Debitage	Flake
14141	141189.3	7.6	8.6	2.2	0.18	Debitage	Blade fragment
14141	141189.2	22.7	11	4.5	1.01	Debitage	Blade fragment
14141	141189.1	28.8	11.5	4.8	1.14	Debitage	Blade
14141	141188	23.6	17.7	1.7	0.69	Debitage	Chip
14141	141187	9.1	24.7	8.8	1.24	Debitage	Chip
14141	141186	7.1	7.6	1.1	0.08	Debitage	Chip
14141	141185.2	23.2	7	1.8	0.33	Debitage	Burin spall

Context Number	SF Number	Length /mm	Width /mm	Thickness /mm	Weight (g)	Class	Category
14141	141185.1	24.1	11.7	3.1	1.23	Debitage	Blade fragment
14169	141207	46.2	28.4	27.8	54.9	core	Core fragment
14169	141206	55.5	28.1	12.9	16	Debitage	Flake
14169	141205	48.1	49.5	34	95.28	core	Core fragment
14141	141204.2	10.3	15.1	3.8	0.51	Debitage	Chip
14141	141204.1	20.9	15.4	4.1	1.25	Debitage	Flake
14141	141203.2	19.6	10.9	2	0.42	Debitage	Blade
14141	141203.1	22.8	15.1	4.9	1.32	Debitage	Flake
14141	141202	27.8	32.4	11.2	10.02	Debitage	Flake
14141	141201.2	35.3	32.1	13	20.61	Debitage	Flake
14141	141202.1	19.6	18.6	12	4.39	Debitage	Core preparation flake
14141	141200	10.5	8	1.7	0.15	Debitage	Blade fragment
14141	141200.1	15.2	8.7	5.6	0.49	Debitage	Chip
14141	141218	21.1	10.5	2.1	0.62	Debitage	Blade
14141	141217	12.9	9.2	2		Debitage	Blade fragment
14141	141216	34.8	15.9	5.5	3.09	Debitage	Flake
14141	141215	41.9	16.4	5.1	4.26	Debitage	Blade
14141	141213.3	17.7	11.2	5	0.69	Debitage	Chip
14141	141213.2	19.7	29.6	9.4	5.97	Debitage	Flake
14141	141213.1	27.6	23.4	8.2	6.02	Debitage	Flake
14141	141212	24.1	7.6	2.8	0.42	Debitage	Burin spall
14141	141211	24.6	8.8	4.9	0.9	Debitage	Blade
14141	141209	37.4	31.7	12	14.06	Debitage	Flake
14141	141208	37.8	27.2	15.7	11.17	Debitage	Flake
14170	141220.2	49.2	17.3	7.1	4.23	Debitage	Blade
14170	141220.3	18.6	36.3	6.1	4.75	Debitage	Chip
14170	141220.4	68.2	16.2	6.3	12.7	Debitage	core preparation blade
14170	141220.1				41.08		
14170	141219	34.7	18.5	26.2	29.7	Core	Core fragment
14179	141263.3	18.4	13.6	4.7	1.46	Debitage	Blade fragment
14179	141263.3	11.5	27.6	8.4	2.55	Debitage	Core preparation flake
14179	141263.2	31.9	14.5	3.6	2.02	Debitage	Blade fragment
14179	141263.1	38.4	26.9	10.6	10.48	Debitage	Flake
14179	141261.3	23.5	12.7	3.1	1.21	Debitage	Blade fragment
14179	141261.2	35	38.1	12.7	15.86	Debitage	Flake
14179	141261.1	23.7	31.6	37.4	36.81	Core	Core fragment
14179	141283.2	27.7	19.2	3.9	2.02	Debitage	Blade fragment
14179	141283.1	32	13.4	4.4	1.33	Debitage	Blade
14179	141275.5	32.2	11.5	2.1	0.96	Debitage	Blade
14179	141275.4	16.7	21.5	4.2	1.33	Debitage	Flake fragment
14179	141275.3	26	15.1	5.8	2.84	Debitage	Flake

Context Number	SF Number	Length /mm	Width /mm	Thickness /mm	Weight (g)	Class	Category
14179	141275.2	25.2	11.7	2.3	0.49	Debitage	Blade fragment
14179		23.3	23.7	12.5	9.91	Debitage	Flake
14179	141271.1	25	15.5	6	1.9	Debitage	Blade fragment
14179	141271.2	33.5	44.7	15.3	24.02	Debitage	Flake
14179	141270.2	11.7	10.3	2	0.24	Debitage	Blade fragment
14179	141270.1	18.2	20.2	7.8	2.51	Debitage	Flake
14179	141269	22.1	43.1	24.9	25.46	Core	Core fragment
14179	141268	58	22.6	19.9	14.57	Debitage	Core preparation flake
14179	141267	19.9	10	3.4	0.6	Debitage	Blade
14179	141266	22	15.1	8.6	2.25	Debitage	Flake
14179	141265.3	14	28	4.6	1.49	Debitage	Chip
14179	141265.2	23.6	23.9	10.5	5.89	Debitage	Flake
14179	141265.1	16	10.7	3	0.54	Debitage	Chip
14179	141264.2	29.1	30.7	14.3	12.53	Debitage	Flake
14179	141264.1	45.6	27.6	19.6	27	Debitage	Core preparation flake
14179	141274	32.7	30.3	10.5	10.27	Debitage	Flake
14179	141273	37.1	42.4	10.5	19.53	Retouched tool	Serrated
14179	141272.2	26.5	27.4	9.2	8.86	Debitage	Flake
14179	14272.1	56.1	18	7.2	9.27	Debitage	Core preparation flake
14179	141271.1	20.8	19.6	5.1	1.34	Debitage	Flake fragment
14179	141271.9	21.2	14.6	6.3	1.53	Debitage	Chip
14179	141271.8	18.4	23.4	6.3	1.83	Debitage	Flake
14179	141471.7	31.1	16.7	5.4	2.82	Debitage	Flake
14179	141271.6	33.6	22.9	7.1	5.97	Debitage	Flake
14179	141271.5	19.6	31.9	8.8	7.05	Debitage	Flake frag
14179	141271.4	26.1	40.5	14.1	18.86	Debitage	Flake
14179	141271.3	20.8	40.8	16.8	15.49	Debitage	Core preparation flake
14127	14127.1	40.2	30	17.4	26.5	Core	Core fragment
14127	14127.2	39.3	7.5	4	1.41	Debitage	Blade
14127	14127.3	24	9.8	2.2	0.54	Debitage	Flake
14128	14128	25.6	11.2	4.7	1.2	Debitage	Blade fragment
14130	14130.1	25	16.5	9.4	4.61	Debitage	Flake
14130	14130.2	33.6	14.3	12.3	7.31	Debitage	Flake
14130	1400331.3	29.8	20.2	9.2	4.87	Debitage	Flake
14171	14171.1	19.5	11.9	2.8	0.84	Debitage	Blade fragment
14171	14171.2	15.5	14.4	2.5	0.61	Debitage	Blade fragment
14169		19.8	11.2	3	0.57	Debitage	Chip
14169		20.5	10.7	4.8	1	Debitage	Core preparation flake
14169		20.9	26.1	8.8	2.87	Debitage	Flake fragment
14169		35.2	20.7	18.4	18.9	Core	Core fragment

Context Number	SF Number	Length /mm	Width /mm	Thickness /mm	Weight (g)	Class	Category
14169	14169.5	45.5	11.6	15	6.27	Debitage	Core preparation flake
14169	14169.6	19.3	50.2	18.2	17.34	Debitage	Core preparation flake
14169	14169.7	28.4	10	5.9	2.05	Debitage	Chip
14179	14179.1	14.9	8	7.4	0.79	Debitage	Chip
14179	14179.2	13.9	7.3	3.3	0.4	Debitage	Chip
14179	14179.3	19	28.5	6.6	3.82	Debitage	Flake fragment
14179	14179.4	33.5	18.1	10	8.15	Debitage	Blade
14179	14179.5	40.1	25	7.9	6.79	Debitage	Flake
14179	14179.6	45	27.7	10.5	12.48	Debitage	Flake
14179	14179.7	29.3	15.1	10.7	3.72	Debitage	Flake fragment
14179	14179.8	21.4	12	4.5	0.99	Debitage	Blade
14179	14179.9	24.6	25.1	7.3	3.94	Debitage	Flake
14141	14141.1	46.3	13.1	7.7	4.06	Debitage	Core preparation flake
14141	14141.2	28.5	15.2	7.2	3.4	Debitage	Flake
14141	14141.3	21.5	19.1	6.4	2.49	Debitage	Flake
14141	14141.4	19.3	9	2.8	0.65	Debitage	Chip
14141	14141.5	21.4	10	4.5	0.78	Debitage	Chip
14141	14141.6	13.1	7.7	1.9	0.24	Debitage	Chip
14141	14141.7	9.8	13.2	3.7	0.49	Debitage	Chip
14141	14141.8	57.7	35.8	37.5	86.4	Core	Core fragment
14141	14141.9	24.6	28	10.7	5.91	Debitage	Flake
14141		19	10.5	3.7	1.07	Debitage	Chip
14141	14141.11	30	8.8	2.6	0.57	Debitage	Blade
14141	14141.12	25.6	9.5	2.3	0.57	Debitage	Blade
14141	14141.13	19	10.7	2.1	0.46	Debitage	Blade
14141	14141.14	15.9	10.1	2.2	0.36	Debitage	Blade
14103	14103.1	54.8	42.5	34.7	91.73	Core	Core
14103	14103.2	40.9	50.6	13.2	15.65	Debitage	Flake
14103	14103.3	23	17.9	5.9	2.1	Debitage	Flake
14103	14103.4	22.7	17.6	8.2	3.64	Debitage	Flake
14103	14103.5	28.7	16.8	5.1	1.9	Debitage	Blade
14103	14103.6	23.7	17.2	5	1.66	Debitage	Flake fragment
14103	14103.7	17	14.9	6.1	1.63	Debitage	Chip
14103	14103.8	18.7	13.6	4.3	1.25	Debitage	Chip
14103	14103.9	20.9	12.5	6.6	1.86	Debitage	Chip
14103		20.1	26.3	6.9	2.92	Debitage	Flake fragment
14103	14103.11	10.8	28.6	6.8	1.97	Debitage	Chip
14103	14103.12	41.8	28.9	10.4	14.32	Retouched tool	Knife
	14103.13	26.1	21.7	6.8	3.3	Debitage	Flake
14103	14103.14	12.6	27	7	1.96	Debitage	Flake fragment
14103	14103.15	30.2	16.7	7.4	3.23	Debitage	Blade fragment
14103	14103.16	42.8	14.3	14	7.53	Debitage	Core preparation

Context Number	SF Number	Length /mm	Width /mm	Thickness /mm	Weight (g)	Class	Category
							flake
14103	14103.17	21.3	12.9	5.8	1.49	Debitage	Blade
14103	14103.18	19.5	23.9	17.4	10.71	Core	Core fragment
14103	14103.19	5.8	6.5	1.3	0.05	Debitage	Chip
14103	14103.2	90	7.9	2.8	0.28	Debitage	Chip
14103	14103.21	34.5	23.3	5.6	4.42	Debitage	Flake
	14103.22	23.6	41.7	31.3	39.96	Core	Core fragment
14103	14103.23	28.9	33.5	30.6	30.11	Core	Core fragment

Table 6.2 Lithics quantification

6.6.2 All the lithics within the assemblage were individually examined and assigned to a category according to debitage, core or tool type. Cores/core fragments were further classified by platform and removal type; complete specimens and tested nodules were individually weighed. The condition and degree of cortication was noted for each artefact, along with evidence of burning, breakage and use. Dating was attempted throughout. The lithics were individually numbered and recorded in order to facilitate revisiting the material and appending further data at a later stage. Bulk records were used for burnt unworked flint, which was quantified by piece and by weight. The data was entered directly on to a MS Excel spreadsheet.

6.6.3 ***Methodology***. The detailed typological and attribute analysis involved the recording of the physical characteristics of the worked stone, raw material identification and the metrical analysis of tools and waste. In addition, the material was characterised in technological terms. All the lithics within the assemblage were individually examined and assigned to a broad category according to debitage, core, or tool type with further distinctions made using the sub-category field.

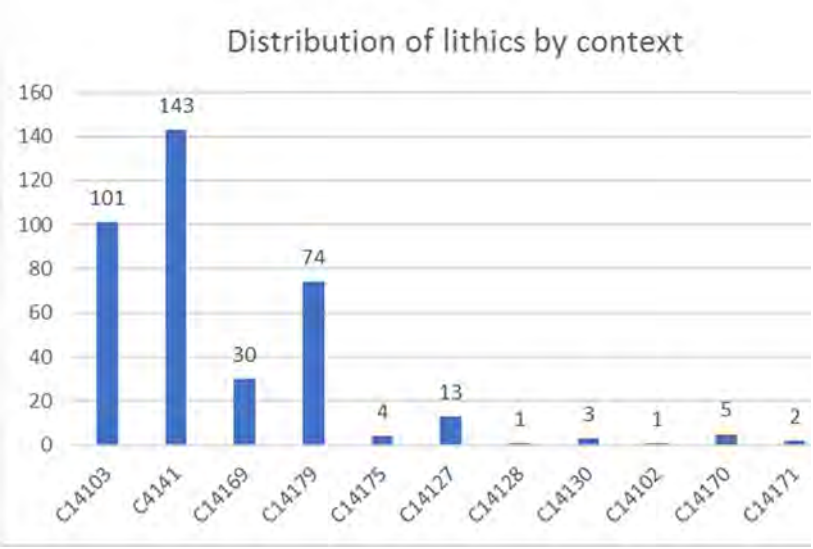
6.6.4 Debitage categories include flakes, blades, bladelets, unclassifiable waste and chips. Unclassifiable waste is here shattered pieces, frequently non-bulbar, which are produced during knapping. Particular unretouched flake types, such as those from polished or ground implements, core rejuvenation flakes and thinning flakes, were recorded as separate categories. The terminology for retouched forms uses standard morphological descriptions, for example Bamford (1985, 73-77), Healy (1988, 48-49) and Saville (1981, 7-11). Flakes and blades were also characterised and quantified in terms of their position within a generalised reduction sequence. Each one was assigned to a primary, secondary or tertiary stage. Such an approach has its limitations, and it necessarily needs to be set alongside more qualitative observations on flake character and on the nature of broken material. However, it does provide a basis for establishing whether or not particular

assemblages contain all, or only selected, stages in the reduction sequence of particular cores and/or tools. It should be noted that pieces of stone recognised as natural or representing thermal fractures (unless intentionally modified in some way) have been left out of the discussion.

6.6.5 Cores/core fragments were classified by platform and removal type; complete specimens and partially worked nodules were individually weighed. Chips were defined as pieces whose broadest surface was less than 10mm^2, including small flakes or fragments of flakes (Newcomer & Karlin 1987, 33). The condition and degree of cortication was noted for each artefact, along with evidence of burning, breakage and use.

6.6.6 ***Raw material***. The assemblage, as a whole, derives equally from black chert and flint with a small number of other lithologies. The proportions are of interest because they represent a selective use of raw material. There were 284 worked stone fragments of flint, 87 of chert and one of quartz. Flint is not readily available, found locally only as pebbles from drift or from beach deposits, eroded from the drift, in quite small sizes. Black chert is more readily available from cobbles from the drift or from in situ tabular material outcropping in the limestone of North East Anglesey. The chert is available as larger nodules but is not of such good flaking quality as flint. The use of different materials may vary in different periods and there is a possibility of deliberately imported material being introduced. The larger proportion of chert waste pieces to retouched pieces may therefore be because its working produced more waste or because, being more readily available, it was used less economically. However, the proportion of retouched pieces to waste may also vary because some pieces were made off-site, so a detailed study of the context of finds is needed.

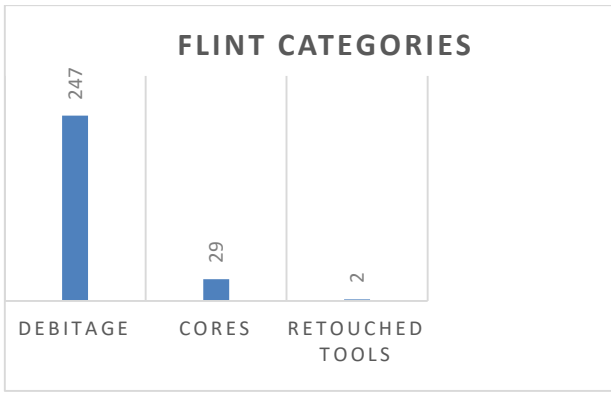
6.6.7 ***The assemblage:*** the vast majority of the assemblage derives from the fill of cut features, with 348 (93.5%) worked lithics originating from four individual contexts **(14103**, **14141**, **14179**, **14169)**, the rest of the contexts produced small assemblages of under 10 worked lithics. It is likely that these smaller assemblages represent residual material introduced into the fills of later features.

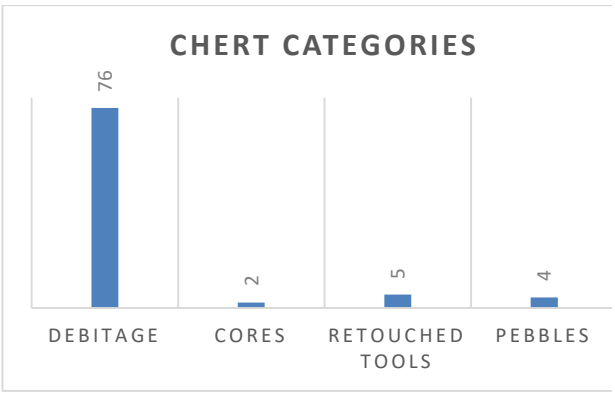


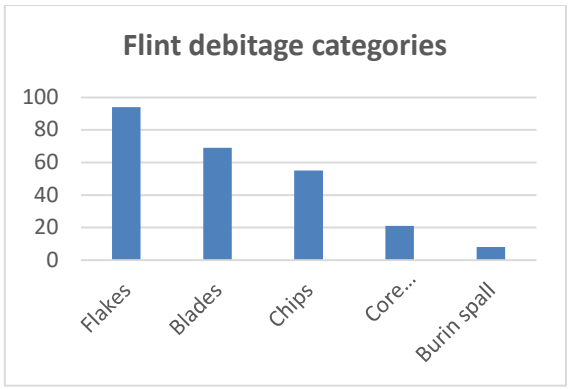
6.6.8 ***Technology:*** the method of manufacturing is determined to a large extent by the quality of the raw material. The black chert is available locally and flakes readily but not finely. The exact source of the flint has not been studied but where cortex is present it seems to be from rounded pebbles, some quite small but occasionally larger with only partially rolled nodular cortex. The use of pebbles restricts technique as shown by the presence of waste split pebble fragment and of small pebble-backed scrapers. Pebble flint is often split by the anvil technique producing bipolar cores and flat scalar flakes. This technique may be period related.

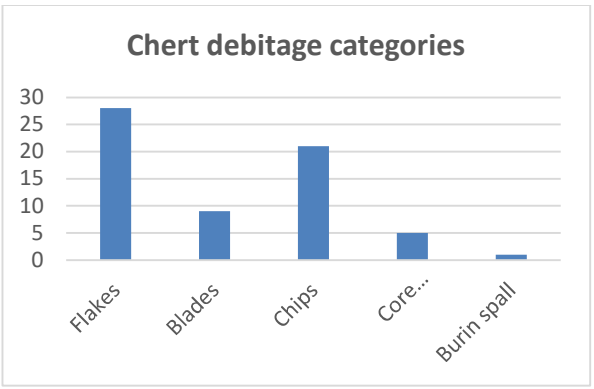
6.6.9 The technological traits of the assemblage, particularly the characteristics of the blade-based/blade-like removals, strongly suggest a Late Mesolithic/Early Neolithic date, with a clear emphasis on the production of narrow flakes and blades alongside evidence for somewhat more expedient/unskilled flake production. Many of the blades are best described as blade-like flakes and there are few of the highly regular/prismatic blades and bladelets that are especially characteristic of Late Mesolithic/Early Neolithic technologies. Much reduction appears to have been undertaken using direct hard hammer percussion although there are suggestions of the use of a softer hammer on some of the finer blade-based removals.

6.6.10 Surviving cores are dominated by single platform pieces, invariably worked partly around their circumferences, and bearing a mixture flake, blade-like and blade scars. Other core types include examples of a core on a flake and unclassifiable flake cores. The lack of chert cores could suggest a lack of curation, probably due the easy access to these sources in contrast with the flint strategy that tends to exhaust every core or even flakes and also suggest that primary reduction of chert was occurring elsewhere.









6.6.11 The seven retouched tools from Area 14 account for a very low percentage (1.8%) of the assemblage. It is dominated by serrate/denticulate pieces on flakes. The most diagnostic pieces of the whole assemblage are an end scraper on a tertiary blade, a type D microlith fragment and a distal fragment of a backed knife, which can be dated to the later Mesolithic.

6.6.12 Alongside the retouched pieces a number of pieces showed macroscopically visible traces of use and it is probable, in common with other Late Mesolithic / Early Neolithic assemblages where use wear analysis has been carried out (Bradley 1988, 1993, Anderson-Whymark 2013, 166-169), that a substantial proportion of unretouched pieces have been utilised as tools.

6.7 Small Finds

6.7.1 The small finds recovered from Area 14 comprise lithics and stone artefacts and were in moderate to good condition. The lithic small finds are discussed along with the bulk finds section above (Table 6.2).

6.7.2 Fifteen stone artefacts with a combined weight of 1,956g were recovered as small finds from three contexts.

6.7.3 The stone small finds include whetstones; SF 141153 and SF 14118, both from **(14141)** were fine-grained, flat elongated pebbles with clear wear (possibly made out of

mudstone). SF 141214 was similar with a flat base and hollow; the object was heavily worn. Possible whetstones SF 14123 and SF 141128 were elongated pebbles with possible wear. SF 14122 was a wedge-shaped elongated pebble with possible wear (which may have been used as a pounder). SF 14152 comprised a saddle quern rubber and SF 14150 comprised a grinding stone / quern rubber fragment.

6.7.4 Natural pebbles purposed for use include SF 14195, which is a flat triangular stone possibly used as a whetstone. SF 141119, SF 141237 and SF 141246 were flat rounded pebbles with no obvious artificial wear. A heavily worn chert artefact SF 14196 appeared unworked.

6.8 Finds from Environmental Samples

6.8.1 A total of 292g of finds were recovered from four environmental samples (Table 6.3). The finds are generally small in size, very abraded and highly fragmented.

Context	Sample	Material	Weight (g)	Period / Date	Comments
14013	14002	Fired Clay	4		Abraded
14141	14108	Flint	5	Prehistoric	Worked
14141	14109	Flint	24	Prehistoric	Worked
14141	14109	Stone	251		Atypical stones. Includes 1 possible whetstone
14141	14110	Flint	8	Prehistoric	Worked
Total			**292**		

Table 6.3 Quantification of finds from environmental samples

6.8.2 *Fired Clay:* Small fragments of clay fragments weighing 4g were recovered from a single environmental sample.

6.8.3 *Lithics:* Approximately 37g of flint was recovered from three environmental samples. The flint fragments have been included in the lithics assessment.

6.8.4 *Stone:* 251g of atypical stones were retained. These included rounded pebble fragments and a fragment of an elongated pebble whetstone.

6.9 Statement of Potential

6.9.1 The finds recovered from Area 14 are of high archaeological potential. The prehistoric finds assemblage may be suitable for further analysis, including illustration and comparative research alongside the other archaeological sites at Wylfa and also other sites in the wider vicinity.

6.9.2 The site has produced an important lithic assemblage. This would give an opportunity to

explore diverse themes relating to the nature, significance and scale of flint technology and its use, both at the site and within the wider landscape. Such themes include, but are not limited to:

- the chronology of flint and use at the site and continuities or disruptions in lithic-working traditions across the Mesolithic and Neolithic, choices made in the selection, acquisition and use of raw materials.
- Strategies and approaches were taken to lithic reduction the spatial and temporal organisation of lithic reduction and tool use, both at the site and within the wider cultural landscape
- The nature of the products and how these relate to the range of activities conducted at the site
- The nature of the deposition and discard of flint waste and useable products, and how these may relate to the wider concerns of the communities using them.

6.9.3 This report is based on a preliminary examination and quantification of the lithic material recovered during the recent investigations at the site. So far, no comprehensive cataloguing of the material has been attempted and this may be undertaken both for the purposes of archiving and to provide a tool for approaching the material's further analysis.

7 PALAEOENVIRONMENTAL ASSESSMENT

7.1 Introduction

7.1.1 Nine bulk samples were taken during the excavation on Area 14 A total weight of 308kg (171l) of sediment was processed for this stage of works. Further details for each sample can be found in Table 7.1.

7.1.2 This environmental assessment was undertaken by Freddie Sisson.

7.2 Methodology

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

7.2.2 The bulk environmental samples were processed at Wardell Armstrong LLP. The colour, lithology, weight and volume of each sample was recorded using standard Wardell Armstrong pro forma recording sheets. cf. Table 7.1. The samples were processed with 500-micron retention and flotation meshes using the Siraf method of flotation (Williams 1973). Once dried, the residues from the retention mesh were sieved to 4mm and the artefacts and ecofacts removed from the larger fraction and forwarded to the finds department. The smaller fraction was scanned with a magnet for microslags such as hammerscales. This fraction was then examined for smaller artefacts such as beads. Once fully sorted, and all relevant material removed, the retent residues were discarded.

7.2.3 The flot plant macrofossils and charcoal were retained and scanned using a stereo microscope (up to x45 magnification). Any non-palaeobotanical finds were noted on the flot pro forma, cf. Table 7.2. Once fully sorted and all relevant material removed the flots were discarded.

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

7.2.5 The plant remains identified to species as far as possible, using Jacomet (2006) and Cappers and Neef (2012). Nomenclature for cereals followed Cappers and Neef (2012).

7.2.6 In the absence of single growth entities such as charred plant remains and hazel nutshell fragments charcoal will be utilised for radiocarbon determinations. Charcoal was only identified to species to select the shortest-lived species for radiocarbon determination once the report author had determined what they would like dated. Where no short-lived species were observed the youngest i.e. twig, branch or periderm fragments from longer-

lived species were selected. Once this was achieved no further identification was undertaken. Identification was undertaken using Hather (2000), Schweingruber (1982) and the author's own reference collection. Nomenclature followed Stace (2010).

7.2.7 Methodology employed for the treatment of the samples is fully expanded upon in the Wardell Armstrong LLP Technical Manual No 2. (2018) and determined by Wardell Armstrong (2019).

7.3 Results

7.3.1 Sandy silt dominated the samples' sediment matrix with lesser quantities of sandy/silty clay sediments, further data can be observed in Table 7.1

7.3.2 Flot and finds data is presented in Table 7.2.

7.3.3 Artefactual material recovered from the dried residues were minimal but contained examples of ceramic building material (CBM), flint, industrial waste, pottery and worked stone, see table 7.2 for further detail. Any meaningful artefacts from the samples will be discussed in chapter 6 of this report.

7.3.4 CPR: Charred plant remains (CPR) were present in five samples and was in relatively good condition. From these five samples two yielded more than 45 examples of CPR these were: **(14003) <14003>** from the fill of pit **[14005]** and **(14127) <14103>** from the tertiary fill of an unknown feature. Barley (*Hordeum* sp.*)* grains were identified from **<14103>** and were submitted for radiocarbon dating.

7.3.5 CHARCOAL: Charcoal was present in all nine samples and was in relatively good condition. Of these samples four yielded more than 5g of charcoal, these were: **(14002) <14001>** from the secondary fill of pit **[14001]**, **(14105) <14101>** from the secondary fill of pit **[14104]**, **(14127) <14103>** from the tertiary fill of an unknown feature and **(14170) <14111>** from an occupation layer which was identified as oak (*Quercus* sp) for radiocarbon submission.

7.3.6 SHELL: No shell was recovered from Area 14.

7.3.7 BONE: Only on sample contained some small bone fragments this was **(14127) <14103>** from the tertiary fill of an unknown feature and had a total weight of less than 1g.

7.3.8 MAGNETIC MATTER: Magnetised material was present in all of the samples and was examined under a microscope (x45 magnification) and was seen to be entirely made up of small naturally occurring stones.

7.4 Discussion

7.4.1 Due to all the ecofacts in seven of the samples being recovered from secondary or tertiary fills no meaningful discussion can be had as it is all likely to be waste deposits into the pits or other unknown features. The ecofacts from the two occupation layers in samples

<14109> and **<14111>** had such small amounts that this is likely to be deposited through other forms of deposition such as pedoturbation.

7.5 Statement of potential and recommendations

7.5.1 The ecofactual material offers further potential for assessing the types of plants and trees being husbanded at Wylfa but only if the features from which they are recovered are first dated through absolute or typological methods.

7.5.2 *Radiocarbon suitability*: material from samples listed in 7.3.4 and 7.3.5 may be suitable for 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.

7.5.3 If there is charcoal and CPR present within a context listed in Tables 7.2 but not stated within sections 7.3.4 or 7.3.5 these can undergo further assessment to gauge their suitability for submission.

7.5.4 Care must be employed for 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.

7.5.5 *Retention and discard*: At this stage all ecofactual material should be retained until initial radiocarbon dates are received.

7.5.6 The magnetised material from all samples may be discarded as it offers no further potential.

7.6 Acknowledgments

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

Table 7.1 Sample Information

C	<>	TQ	Cut	Desc	Matrix	PW	PV	SW	SV
14002	14001	1	14001	secondary fill of pit	silty sand	12	6	4219	2800
14003	14003	1	14005	fill of pit	silty sand	9	5	3660	2000
14004	14004	1	14005	fill of pit	silty sand	8	5	3447	2180
14105	14101	1	14104	secondary fill of pit	sandy silt	12	8	2445	1400
14127	14103	4		tertiary fill	silty sand	45	27	19788	12360
14138	14104	4	14137	fill of pit - tertiary fill	silty sand	46	26	30024	18200

14141	14109	6		occupation layer	silty sand	70	38	24365	15000
14170	14111	3		occupation layer	sandy silt	57	27	12553	8300
14183	14113	4	14181	fill of pit - tertiary fill	sandy clay	49	29	8184	5400

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

Table 7.2 Flot and Finds Information

		Flots				Retent								
C	<>	WF	VF	CPR	Ch	Ch	Bo	CBM	CPR	Fl	IW	MM	Po	WS
14002	14001	4.9	20	4	-	5	-	-	10	1	-	<1	-	
14003	14003	31.4	80	55	0.51	<1	-	13	-	-	52	7	-	
14004	14004	2.2	15	6	0.08	-	-	-	-	-	-	<1	-	
14105	14101	29.4	100	-	7.43	<1	-	-	1	-	-	<1	-	
14127	14103	115.2	200	46	4.05	6	<1	-	1	-	-	6	-	
14138	14104	97.8	160	-	1.35	<1	-	-	-	-	-	<1	-	
14141	14109	101.2	180	9	0.69	<1	-	8	-	7	-	1	1	251
14170	14111	110.2	300	-	7.5	12	-	135	-	1	-	<1	-	
14183	14113	39.5	85	-	0.16	2	-	-	-	-	-	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); CBM=ceramic building material(g);Fl=count of flint sherds; IW=industrial waste(g); MM=magnetised material(g); Po=count of pottery sherds; WS=worked stone(g)

8 RADIOCARBON DATING

8.1 Introduction

8.1.1 One charred cereal grain and one charcoal sample were submitted to Beta Analytic for radiocarbon determination. The samples were 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 in the form of the radiocarbon certificates can be found in Appendix 5.

8.1.2 A barley (Hordeum sp.) grain from <14103> of tertiary fill **(14127)** from a pit provided a radiocarbon age of 1130±30 BP (Beta-553493, 95.4% probability calAD 771-988) and therefore of Early Medieval date.

8.1.3 A sample of oak (Quercus sp.) charcoal from <14111> from occupation layer **(14170)** provided a radiocarbon age of 5020±30 BP (Beta-553494, 95.4% probability 3943-3710 calBC), and therefore of Early Neolithic date. The use of oak, however, means that the 'old wood' effect needs to be taken into consideration.

Lab code	Sample id	Context description	Material submitted	Radiocarbon age BP	1σ 68.2%	Relative Probability	2σ 95.4%	Relative Probability
Beta-553493	A14_(14127)_<14103>	Tertiary fill of unknown feature	Cereal grain (barley)	1130±30	calAD 888-969	68.2%	calAD 860-988	86.7%
							calAD 805-842	5.5%
							calAD 777-791	3.2%
Beta-553494	A14_(14170)_<14111>	Occupation layer	Charcoal (oak)	5020±30	3932-3875 calBC	38.4%	3822-3710 calBC	49.7%
					3807-3766 calBC	29.8%	3943-3856 calBC	44.4%
							3843-3835 calBC	1.3%

Table 7.2 Carbon 14 Results

8.2 Discussion

8.2.1 The ecofacts in seven of the samples were recovered from feature fills which means that they may represent waste deposits discarded into the pits or ditches and as such are not at their primary location of activity. They can indicate types of activity occurring in the vicinity and detail background environmental conditions for the period in which they

were deposited. The ecofacts from the two occupation layers in samples <14109> and <14111> had such small amounts that this is likely to be deposited through other forms of deposition such as pedoturbation.

8.3 Statement of potential

8.3.1 The ecofactual material offers further potential for assessing the types of plants and trees being husbanded at Wylfa but only if the features from which they are recovered are first dated through absolute or typological methods.

8.3.2 Datable artefacts were recovered during the excavation of archaeological remains in Area 14, These artefacts indicate the archaeological activity on this site dated to the Neolithic/Early Bronze Age period, although potentially earlier in diagnostic terms. In general, the rate of recovery of datable artefacts during excavation is notably poor in the region and sites such as this are rare. As such, environmental samples are of high importance to provide data helping to establish a chronology and narrative. Because of this, the charcoal and charred plant remains present should be used in absolute dating methods in samples from the archaeological features. It is critical that the archaeological potential of these deposits with regards to the environmental data is fully realised following assessment.

8.3.3 *Radiocarbon suitability*: material from samples listed may be suitable for additional 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 context/feature from which it derives.

8.3.4 If there is charcoal and CPR present within a context listed in the table but not stated in the text these can undergo further assessment to gauge their suitability for submission. Care must be employed for 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 origin of the feature but can indicate when it was in use or going out of use.

8.3.5 *Retention and discard*: At this stage all ecofactual material may be considered for retention until initial radiocarbon dates are received. The magnetised material from all samples may be discarded as it offers no further potential.

9 CONCLUSIONS

9.1 Interpretation

9.1.1 The archaeological excavation of Area 14, in the southeastern part of Field L1 and in Field L20, within the proposed development site of a new nuclear power station at Wylfa Newydd, Anglesey, allowed the investigation of the archaeological potential revealed by the geophysical survey and the results of the archaeological evaluation. The geophysical survey (ASWYAS 2015, GAT 2011a, 2011b and 2012) revealed the potential existence of a linear ditch feature. The evaluation identified the remains of a potential surface and features suggestive of structural remains in Trench 2287 and Trench 2114, radiocarbon dated to the Neolithic and Early Bronze Age (see above paragraphs 4.3.5 and 9.2.4 for dates).

9.1.2 The archaeology encountered within the excavation area consisted of three main periods of activity. Post-medieval linear features appeared to constitue a field system and were found to contain datable ceramics. An isolated Early medieval pit was dated from a sample sent for radiocarbon determination. Most importantly discrete features (pits, clusters of postholes and stakeholes) and occupation deposits contained lithic artefacts dating to the Late Mesolithic to Early Neolithic and pottery dating from the Late Neolithic to Early Bronze Age.

9.1.3 All features were sealed by the subsoil and truncated the natural substrate. There were few intercutting features either discrete or linear in form and very few features had more than one fill. The post-medieval linear remains extended over 50m and continued beyond the limits of the excavated area, while the occupation and structural features were focused in the northern part within a small 15m by 5m area. The few, relatively small, isolated features were scattered at a low density across the area. It was possible to establish a relationship between the prehistoric occupation activity and the later rectilinear field system, which demonstrated that the field system stratigraphically post-dates the occupation, and at least one pit seen in the case of **[14181]**. The features may therefore be restricted to three major periods, the Neolithic to Early Bronze Age, Early Medieval and Post-medieval, with no discernible continuity between these phases of activity. For each Period present on the site there was only one to two observable phases of activity.

9.1.4 The earliest remains of Late Mesolithic/Early Neolithic date were seen as the surface, occupation, structures and artefacts forming group **{14188}**. The original feature **(14178)** was interpreted as construction for the surface **(14141)**. However, it is plausible that the

feature was the base of an earlier sunken feature / structure and represents an earlier phase of activity. There was evidence from the stratigraphy to indicate a series of partially overlapping deposits, which might have been derived from several short-lived phases of establishment, use, and abandonment.

9.1.5 The postholes and stakeholes were identified as having been cut through, or contemporary with, the occupation deposit, rather than being sealed by it. The number and spatial distribution of stakeholes and postholes preserved meant that the function and form of any structure, or structures, remains uncertain. It is hypothesised that they were part of a wooden, supported structure, possibly a temporary hut or something more transient such as a windbreak, which encircled or contained surface **(14141)**. It was not currently possible to refine the understanding of the postholes and stakeholes to determine whether they were all and associated and contemporary, or whether they represent several structures. Structurally there may be some distinctions, since postholes are dug and filled and stakeholes are hammered in, and examination of the patterning could influence the interpretation.

9.1.6 The large number of worked stone artefacts and waste material/debitage formed assemblages associated with different elements of the group **{14188}**. This included those related to the earlier deposit **(14169)**, the cut feature **[14178]**, and those that may be stratigraphically later and overlay the floor surfaces **(14141**, **14168** and **14170)**. These were all within the potential footprint of the wooden structure.

9.1.7 The grouped feature is interpreted as a possible Early Neolithic occupation site with evidence of stone tool production, either for immediate functional use, or for retention and trade. The site may, therefore, have seen industrial and domestic use. The site may have been located in close proximity to exploitable resources including the raw materials for artefact production and for comestibles for the occupants. The black chert was certainly available locally.

9.1.8 The single confirmed pit **[14126]** which re-cut pit **[14137]** of Early Medieval date (AD 771-988) demonstrated the presence of isolated activity spots within the landscape. Without recognisable artefactual material present relating to later periods, the identification of such activity had to rely on scientific dating methods and has emphasised the importance of this. The pit may indicate a particular activity taking place at a specific point in the landscape. The activity may have been contemporary with the settlement site recorded nearby within Area 12, where features contained cereal grain dated to AD 652 – 765.

9.1.9 Overlying the earlier remains and extending across all parts of Area 14 were a number of

ditches that may have been post-medieval in origin. The post-medieval date relies on two sherds of pottery and an iron horseshoe recovered during the evaluation (Headland 2017) and two sherds from one ditch intervention fill **(14146)** from the excavation.

9.1.10 If contemporary, these features may have formed a rectilinear field system on a northeast-southwest alignment **{14186}**, **{14187}**, **{14189}**, **[14120=14139]** and possibly **[14114=14124]**. Identification of the enclosure system was based on the features being morphologically similar with compatible fill material. The parallel ditches **{14186}** and **{14187}** were thought to be a trackway, which is a viable interpretation, assuming they were contemporary in use. They may also be the remains of ditched boundaries either side of a denuded upcast bank (clawdd) or hedge boundary. The gap between the two ditches was less than 2m indicating that if the ditches were contemporary and formed a trackway it would probably have been for pedestrian access, since the space would be relatively confined for a wheeled vehicle or for moving large numbers of animals. It is thought that these features belong to a single phase of activity, and were being infilled in the post-medieval period, but their exact date of origin was unclear.

9.1.11 Due to the restricted area exposed, it was unclear whether the field system was designed to provide a number of focused small, enclosed fields with specific functional use or whether they were more extensive and reflected land ownership. The field system does not correlate with any historic mapping but does follow the orientation of the current field layouts. There was no clear evidence for occupation, such as features or discarded rubbish, within the enclosed areas, and the fields may have been used for either arable production or for pastoral use (grazing or segregating stock). The field system is most likely to date to the post-medieval period, but this is based on morphological similarities to such features in the region and the features may have originated earlier. The layout may be part of open-field farming with the ditches forming boundary and drainage features associated with relict narrow strip fields.

9.2 Significance

9.2.1 The Late Mesolithic to Early Bronze Age lithic production evidence, supported by Early Neolithic radiocarbon dates from evaluation trench 2114 and from the excavation (deposit 14170), is of considerable importance. The lithics assemblage is the second largest of the Wylfa excavation sites and of very high regional significance (section 6.6 above). Continuity of activity into the Early Bronze Age is supported by a radiocarbon date obtained during the evaluation (Trench 2287) from deposits in preceisly the same area. About 50m to the south of these occupation deposits was pit [14005]. The assemblage of nine sherds of pottery from this pit is described as "the first example of a large assemblage of. . . Domestic Beaker pottery from North Wales" (section 6.2 above). The remains associated with the occupation site are of high regional significance and can contribute to published research aims(IFA Wales 2003, 2011, CIfA Cymru/Wales 2017). Remains of this type and date are rare and Area 14 will produce valuable information on aspects of prehistoric industry and environment. There are specific research aims related to settlement in the Neolithic to Early Bronze Age and the accumulating data is advancing the understanding of the forms, chronology, landscape setting, environmental context and function of such features.

9.2.2 The Area 14 excavation has confirmed that the occupation site forms a very important part of the prehistoric landscape. Bronze Age flint scatters are known on Anglesey, but confirmed occupation sites are rare. There is a general awareness that features possibly related to Neolithic to Early Bronze Age settlement, including pit clusters and postholes, may be under-represented since they are not usually clear in non-invasive surveys and even as part of archaeological excavations they may be present only as undated features and therefore unknown. However, excavations remain the most certain method with larger areas producing clearer results. This can be seen with the recent investigations along the route of the A55 (Cuttler et al 2012) that have identified a greater concentration of settlement sites than previously recorded. These mainly consist of pits and associated features, pottery and worked flint assemblages and some post holes, compatible with the findings for Area 14.

9.2.3 To the immediate west of the excavated area, approximately 30m from the structure **{14188}**, a large feature was identified in the evaluation (Trench 2114). The fills demonstrated multiple phases of infilling, including evidence of an initial phase of natural slumping of the feature edges and deliberate backfilling episodes. The upper fills were charcoal rich and produced five lithic artefacts, including a double-platform core were

recovered from the feature. Radiocarbon analysis of charcoal returned dates of between 5046±29 Cal BP (between 3951 – 3773 BC) and 4913±29 Cal BP (between 3763-3644 BC), which demonstrated a Neolithic date (Headland 2017, 13). The presence of such a feature in the vicinity raises questions of whether it shares any commonalities to Area 14 Group **{14188}** and if they result from the same activities or if they are distinct and discrete entities. There is also the issue of how closely dated the two features may be, is there the possibility that they are contemporary or are they demonstrating a reuse of the landscape over longer periods of time. If this is the case is location a factor, including the proximity to the coast.

9.2.4 There is also added significance as the occupation and settlement are within a landscape that includes burnt mounds, the closest being 57m away to the north in Area 13 Field L1E and in Fields L3 (Area 1, to the east) and C16 (to the south). Establishing the relationship of burnt mounds to contemporary settlement in northwest Wales has been highlighted as important (Kenny 2012). A recent overview of radiocarbon dates from 44 burnt mound sites in north-west Wales established that the majority belong to the period between the Neolithic and the end of the Bronze Age (Kenny 2012, 266), corresponding to the era in which the occupation of Area 14 occurred.

9.2.5 The large amount of worked stone artefacts from Area 14 provides a significant assemblage from known and secure contexts and this can help to determine what types of artefacts are present and act as a comparison to other assemblages from different type sites and in different regions. They can also be important in contributing data to tell us about daily life during the Neolithic to Early Bronze Age.

9.2.6 With the finds assemblage from Area 14 it is possible to gain further insights on aspects that rely on material culture such as social change during the Neolithic to Early Bronze Age or later eras, and understanding regional, national and international trade and how the development of social networks fitted into this. In some instances, this can be crucial to a wider understanding, as seen from ongoing work in places such as Orkney (Card 2018). There is also an element of difference that comes from the geographical conditions of being an island and this can influence activities and artefacts available and in use (Evans 1973).

9.2.7 The Area 14 material can also help to develop a better understanding of industrial activity during the prehistoric periods, particularly with reference to stone quarrying and stone / ore resource use in coastal regions and the exploitation of superficial deposits of stone and ore. It has been noted that two large stone, outcrops are present within Field L1 and

there is some evidence that these have been quarried in the past.

9.2.8 The single pit (although there may be others) of Early medieval date and the later Post-medieval rectilinear field system, form part of the wider setting of Wylfa's archaeological landscape. Other elements of these remains are seen in the nearby fields including further west within L1 itself (Areas 11, 12 and 13), to the east (Area 1, Field L3), south (K1, K4, C10 and C16) and southeast (Area 2, Fields L8 and L12). Within the rest of Field L1 there are a number of other features of various dates, including a Late Iron Age cluster of utilised tree throw / pit features (Area 11 L1W, Wessex 2018b, 5; Headland 2017 Trench 2196). There were also undated linear and penannular ditches and a pit of Early Medieval date centred on Area 12 L1C (Wessex 2018c; Headland 2017 Trenches 2236 and 2237) and an Early medieval cemetery excavated within Area 15.

9.2.9 There is some potential for the rectilinear field system in Area 14 to contribute to the understanding of Anglesey archaeology, although its significance is moderately low due to the later and undated nature of the remains. Without being able to confirm an independent date for each element then it only has a limited scope to fit into the development of the wider historic landscape.

9.2.10 Trying to establish dates and patterns of field systems is crucial in developing the understanding of the Anglesey landscapes over time and how people are living in and moving through them. These boundaries, drainage and possible trackways, with further study, may be found to fit with earlier patterns of land divisions, perhaps medieval, perhaps even earlier. The significance of the individual 'site' may be enhanced when looked at on a regional scale and this may not be apparent until research and synthesis has been applied. A good example of where this can be seen is the West Heslerton project (Powlsand et al 2014).

9.2.11 If the dates can be confirmed, then the suggested interpretation of the field system as being related to pastoral function increases the significance. This is because the further understanding and identification of pasture land in locations other than upland locations particularly such locations as coastal wetlands is one of the research aims (Hounsell 2016, 11; IFA Wales 2003, 2011, CIfA Cymru/Wales 2017). The field system may form an extension of fields established or related to the enclosure seen in L8 and L12 or in L4 or L2. In the case of the former (L8 and L12) then they may form a significant part in understanding how sites work in the landscape, permanent versus seasonal use and understanding the social role of hillforts (Gale, 2010).

9.2.12 The features and deposits are repositories of palaeoenvironmental data. There is

particular emphasis on obtaining accurate C14 dates in order that the chronology of sites and ceramic sequences can ascertained. The soil samples from the features contained quantities of charcoal and charred plant 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. Notably the environmental assessment also identified assemblages of charred plant remains and charcoal with the potential to identify different fuel sources, uses and even phases.

9.3 Recommendations

9.3.1 The significance of the prehistoric artefact assemblages from Area 14 will be increased if certain activities can be related to specific deposits that can, in turn, be radiocarbon dated. Use of the spatial recording of individual finds should be made during the analysis phase. 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. The dating of archaeological remains will expand our understanding of the archaeology of the Isle of Anglesey regarding the regional research framework of Wales (CIfA Cymru/Wales 2017).

9.3.2 The results of the Area 14 archaeological excavation should be incorporated along with the results of wider Wylfa Newydd scheme and the results disseminated to the interested parties and public. This should be done 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.

9.3.3 The excavation of the Early Neolithic to Bronze Age occupation site, associated surfaces and structures, artefacts and the recovery of ecofactual material requires full analysis. This will provide better characterisation and understanding of the activities and will contribute to research aims on the wider setting of prehistoric sites and exploitation of the natural environment. In particular, the Area 14 data should be combined with data from other Areas including Areas 1, 2, 3 and Fields L3 C13, K4, K11 etc and will further enhance the recent regional review carried out by Kenny (2012).

9.3.4 The full analysis of data from Area 14 should be utilised to consider issues discussed as part of the Framework including what settled or other forms of occupation might have existed and how they can be recognized. In addition, why so little settlement evidence is seen for the Early Neolithic and Bronze Age and does this reflects the nature of the

archaeological resource or are there other factors involved. It will also be crucial to understand how evidence for settlement fits into patterns of land use and determining if there are detectable regional variations.

9.3.5 A full analysis of the appropriate 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 Early Neolithic to Bronze Age since the secure data relates to that era. Special regard should be considered in the potential of the environmental samples. These may potentially enhance interpretation and clarify the relationships of the features identified in Area 14. This would include submitting any further material suitable for radiocarbon dating, to further refine the duration of the various Prehistoric features and obtain a better understanding of the site development, particularly through the use of Bayesian statistics which been demonstrated benefits (Whittle, Bayliss and Healy 2011). Dating of any discrete features with suitable material should be undertaken as they could not be dated by artefact, stratigraphical or morphological means and there are identifiable prehistoric and historic periods to which they may be attributed.

9.3.6 The dating, characterisation and pattern of historic field systems is identified as a specific research aim in the WSI (HNP 2015, 2016) and full analysis of the environmental evidence from the rectilinear field system 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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Wessex Archaeology 2018c, Wylfa Area 12 Fields L1C (central): Site summary Report Unpublished report ref. 209730.012 (Horizon Doc Ref: WYN-WES-CON-REP-00014)

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APPENDICES

APPENDIX 1: CONTEXT INDEX

Context Number	Context Type	Description	Width	Height/Depth	Discussion
Field L20					
14001	Cut	Circular with concave sides and base	0.53m	0.16m	Pit, filled by 14002
14002	Fill	Mid greyish brown silty sand, frequent burnt stones, low frequency of charcoal	0.53m	0.16m	Fill of pit [14001]
14003	Fill	Dark brown sandy silt, occasional sub-rounded stones, low frequency of charcoal	0.55m	0.08m	Fill of pit [14005]
14004	Fill	Mid yellowish brown sandy silt, frequent roots	0.74m	0.13m	Fill of pit [14005]
14005	Cut	Circular with concave sides and base	0.74m	0.18m	Pit, filled by 14003 and 14004
14006	Cut	NE-SW aligned linear ditch, gentle U-shaped profile	1.1m	0.3m	Ditch terminus, filled by 14007
14007	Fill	Mid brown silty sand, moderately frequent sub-rounded stones	1.1m	0.3m	Fill of ditch [14006]
14008	Cut	Circular with concave sides and base	0.52m	0.15m	Fill of pit [14009]
14009	Fill	Mid greyish brown silty sand, rare small stones	0.52m	0.15m	Pit, filled by 14008
14010	Cut	NE-SW aligned linear ditch, gentle U-shaped profile, concave sides and base	0.5m	0.15m	Ditch terminus, filled by 14011
14011	Fill	Mid greyish brown silty sand, low frequency of sub-rounded stones	0.5m	0.15m	Fill of ditch [14010]
14012	Cut	Oval to sub-circular with steep concave sides and base	0.65m	0.35m	Pit, filled by 14013, 14018 and 14019
14013	Fill	Dark brown silty sand, occasional burnt material (clay, rare charcoal)	0.42m	0.06m	Fill of pit [14012]
14014	Cut	NE-SW aligned linear ditch, gentle U-shaped profile, concave sides and base	1.1m	0.45m	Ditch terminus, filled by 14015
14015	Fill	Mid greyish brown silty sand, low frequency of sub-rounded stones	1.1m	0.45m	Fill of ditch [14014]

Context Number	Context Type	Description	Width	Height/Depth	Discussion
14016	Cut	NE-SW aligned linear ditch, gentle U-shaped profile, concave sides and base	1.25m	0.4m	Ditch, filled by 14017
14017	Fill	Mid greyish brown silty sand, low frequency of clustered sub-rounded stones	1.25m	0.4m	Fill of ditch [14016]
14018	Fill	Mid brownish grey silty sand	0.65m	0.16m	Fill of pit [14012]
14019	Fill	Mid brown silty sand	0.3m	0.2m	Fill of pit [14012]
Field L1					
14101	Layer	Mid brown silty sand	N/A	0.3m	Topsoil
14102	Layer	Mid brown sandy clay	N/A	0.5m	Subsoil
14103	Layer	Mid orangey yellow sandy clay	N/A	N/A	Natural Geology
14104	Cut	Circular, moderately steep concave sides and base	0.43m	0.12m	Pit, filled by 14105
14105	Fill	Mid greyish brown sandy silt, with low frequency of charcoal	0.43m	0.12m	Fill of pit [14104]
14106	Cut	Sub-circular, steep sided narrow concave base	0.19m	0.22m	Posthole, filled by 14107
14107	Fill	Dark greyish brown sandy silt with moderately frequent charcoal and wood fragments	0.19m	0.22m	Fill of posthole [14106]
14108	Cut	E-W aligned linear ditch, gentle U-shaped profile, concave sides and base	1.1m	0.4m	Ditch, filled by 14109
14109	Fill	Mid greyish brown sandy silt, occasional small angular stones	1.1m	0.4m	Fill of ditch [14108]
14110	Cut	NE-SW aligned linear ditch, gentle U-shaped profile, concave sides and base	0.98m	0.13m	Ditch, filled by 14111
14111	Fill	Mid greyish yellow brown sandy silt, low frequency small angular stones, rare charcoal	0.98m	0.13m	Fill of ditch [14110]
14112	Cut	NE-SW aligned linear ditch, gentle U-shaped profile, concave sides and base	0.82m	0.2m	Ditch, filled by 14113

Context Number	Context Type	Description	Width	Height/Depth	Discussion
14113	Fill	Mid greyish brown sandy silt, occasional small angular stones	0.82m	0.2m	Fill of ditch [14112]
14114	Cut	NW-SE aligned linear ditch, moderately steep straight sides and narrow flat base	1.18m	0.3m	Ditch terminus, filled by 14115
14115	Fill	Mid brown silty sand, rare charcoal	1.18m	0.3m	Fill of ditch [14114]
14116	Cut	NE-SW aligned linear ditch, gentle concave sides and flat base	1.05m	0.1m	Ditch, filled by 14117
14117	Fill	Dark greyish brown sandy silt	1.05m	0.1m	Fill of ditch [14116]
14118	Cut	NE-SW aligned linear ditch, gentle U-shaped profile, concave sides and base	0.85m	0.24m	Ditch, filled by 14119
14119	Fill	Dark greyish brown sandy silt	0.85m	0.24m	Fill of ditch [14118]
14120	Cut	NE-SW aligned linear ditch, gentle U-shaped profile, concave sides and base	0.41m	0.16m	Ditch, filled by 14121
14121	Fill	Dark greyish brown sandy silt	0.41m	0.16m	Fill of ditch [14120]
14122	Cut	NE-SW aligned linear ditch, gentle U-shaped profile, concave sides and base	1.03m	0.27m	Ditch terminus, filled by 14123
14123	Fill	Mid greyish brown silty sand, osscaional rounded small stone	1.03m	0.27m	Fill of ditch [14122]
14124	Cut	NW-SE aligned linear ditch, open V-shaped profile, moderately steep straight sides and pointed base	1.85m	0.32m	Ditch filled by 14125
14125	Fill	Mid brown sandy silt, rare stones	1.85m	0.32m	Fill of ditch [14124]
14126	Cut	Oval, moderately steep concave sides and base	1m	0.35m	Pit, filled by 14127, cuts pit 14137
14127	Fill	Mid greyish black silty gravel, with frequent heat affected stones	1m	0.35m	Fill of pit [14126]
14128	Fill	Mid greyish brown silty sand	0.6m	0.13m	Fill of ditch [14129]

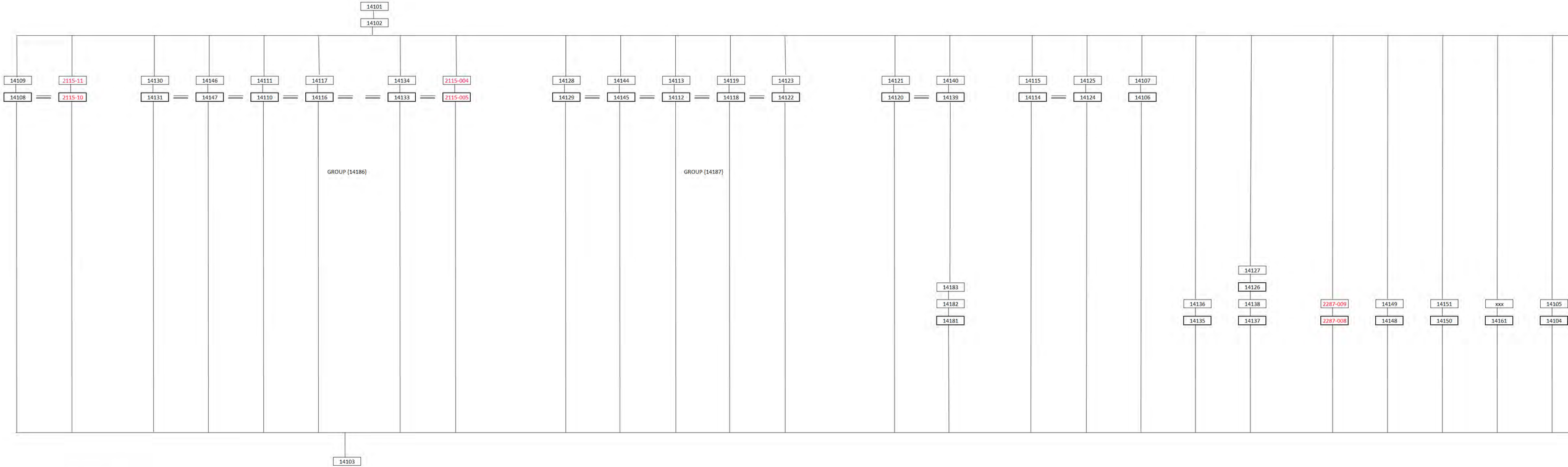
Context Number	Context Type	Description	Width	Height/Depth	Discussion
14129	Cut	NE-SW aligned linear ditch, gentle U-shaped profile, concave sides and base	0.6m	0.13m	Ditch, filled by 14128
14130	Fill	Mid greyish brown silty sand	1.22m	0.21m	Fill of ditch [14131]
14131	Cut	NE-SW aligned linear ditch, gentle U-shaped profile, concave sides and flat base	1.22m	0.21m	Ditch, filled by 14130
14132	Layer	Same as 14141 ?			uncertain
14133	Cut	NE-SW aligned linear ditch, shallow profile, concave sides and flat base	0.7m	0.15m	Ditch, filled by 14134
14134	Fill	Mid greyish brown silty sand	0.7m	0.15m	Fill of ditch [14133]
14135	Cut	Circular to sub-square, concave sidees and flat base	0.8m	0.22m	Pit, filled by 14136
14136	Fill	Mid brown clayey silt	0.8m	0.22m	Fill of pit [14135]
14137	Cut	Oval, moderately steep concave sides and flat base	0.8m	0.18m	Pit, filled by 14138, cut by pit 14126
14138	Fill	Mid greyish black silty gravel, with frequent heat affected stones	0.8m	0.18m	Fill of pit [14137]
14139	Cut	NE-SW aligned linear ditch, vertical sides and flat base	0.48m	0.3m	Ditch, filled by 14140
14140	Fill	Dark greyish brown sandy silt	0.48m	0.3m	Fill of ditch [14139]
14141	Layer	Mid to dark brown clay, with moderately freqent charcoal inclusions	2.1m	0.09m	Surface
14142	Cut	Circular, vertical sides and narrow concave base	0.24m	0.2m	Posthole, filled by 14143
14143	Fill	Mid greyish brown sandy silt	0.24m	0.2m	Fill of posthole [14142]
14144	Fill	Mid greyish brown sandy silt, occasional small rounded stones	0.7m	0.16m	Fill of ditch [14145]
14145	Cut	NE-SW aligned linear ditch, gentle U-shaped profile, concave sides and base	0.7m	0.16m	Ditch, filled by 14144
14146	Fill	Mid greyish brown sandy silt, occasional small rounded stones	0.95m	0.17m	Fill of ditch [14147]

Context Number	Context Type	Description	Width	Height/Depth	Discussion
14147	Cut	NE-SW aligned linear ditch, gentle U-shaped profile, concave sides and flat base	0.95m	0.17m	Ditch, filled by 14146
14148	Cut	Circular, vertical sides and narrow concave base	0.35m	0.25m	Posthole, filled by 14149
14149	Fill	Dark reddish brown sandy silt	0.35m	0.25m	Fill of posthole [14148]
14150	Cut	Circular, vertical sides and narrow concave base	0.38m	0.1m	Posthole, filled by 14151
14151	Fill	Dark orangey brown silty clay	0.38m	0.1m	Fill of posthole [14150]
14152	Cut	Oval, vertical sides and narrow concave base	0.42m	0.35m	Posthole
14153	Cut	Oval, shallow feature, concave sides and base	0.05m	0.08m	Stakehole
14154	Cut	Oval, shallow feature, concave sides and base	0.06m	0.08m	Stakehole
14155	Cut	Oval, shallow feature, concave sides and base	0.05m	0.05m	Stakehole
14156	Cut	Oval, shallow feature, concave sides and base	0.05m	0.05m	Stakehole
14157	Cut	Oval, shallow feature, concave sides and base	0.18m	0.1m	Stakehole
14158	Cut	Oval, shallow feature, concave sides and base	0.09m	0.1m	Stakehole
14159	Cut	Oval, shallow feature, concave sides and base	0.08m	0.1m	Stakehole
14160	Cut	Oval, shallow feature, concave sides and base	0.06m	0.1m	Stakehole
14161	Cut	Oval, shallow feature, concave sides and base	0.12m	0.09m	Posthole, (no fill recorded)
14162	Cut	Oval, shallow feature, concave sides and base	0.18m	unknown	Posthole, (no fill recorded)
14163	Cut	Oval, shallow feature, concave sides and base	0.2m	unknown	Posthole, (no fill recorded)
14164	Cut	Oval, shallow feature, concave sides and base	0.1m	unknown	Stakehole
14165	Cut	Oval feature, concave sides and flat base	0.11m	unknown	Posthole, (no fill recorded)
14166	Fill	Circular, shallow feature, concave sides and flat base	0.17m	0.03m	Posthole, filled by 14167
14167	Cut	Mid orangey brown sandy silt, rare charcoal	0.17m	0.03m	Fill of posthole [14166]

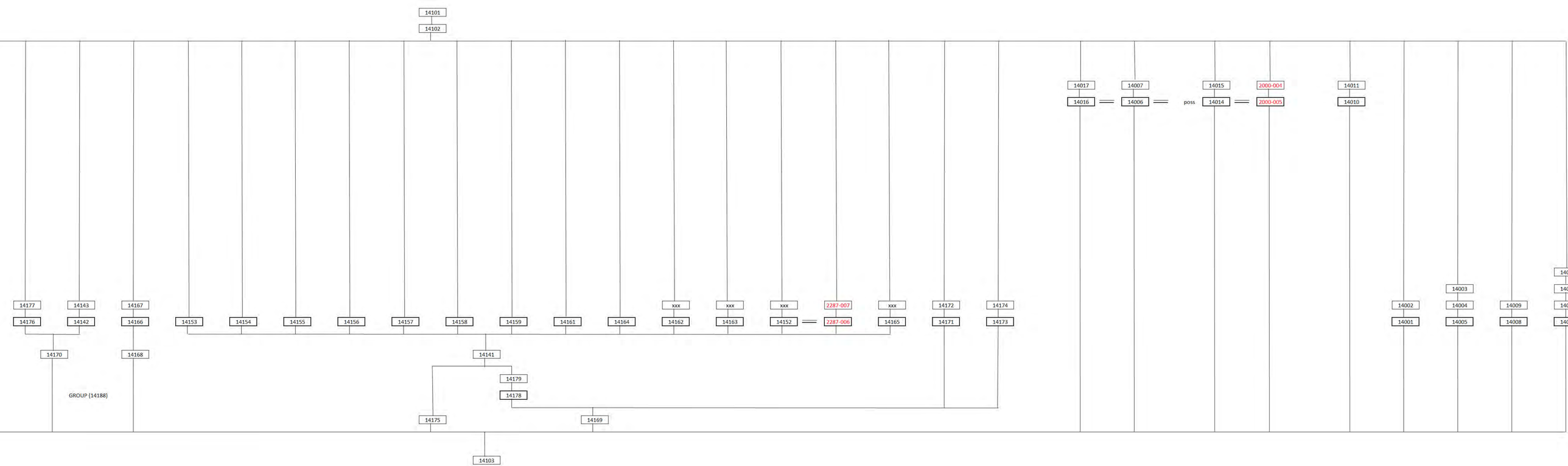
Context Number	Context Type	Description	Width	Height/Depth	Discussion
14168	Layer	Mid brown sandy silt, rare charcoal	4.44m	unknown	Surface
14169	Layer	Dark reddish brown sandy clay	1.6m	0.17m	Surface
14170	Layer	Mid brown clayey silt, low frequency of charcoal	1m	unknown	Occupation / surface
14171	Cut	Circular, shallow feature, concave sides and flat base	0.18m	unknown	Posthole, filled by 14172
14172	Fill	Mid brown silt	0.18m	unknown	Fill of posthole [14171]
14173	Cut	Circular, shallow feature, concave sides and flat base	0.12m	unknown	Posthole, filled by 14174
14174	Fill	Mid brown silt	0.12m	unknown	Fill of posthole [14173]
14175	Layer	Mid orangey brown silt	2m	0.08m	Bedding material
14176	Cut	Circular, shallow feature, concave sides and base	0.3m	0.22m	Posthole, filled by 14177
14177	Fill	Mid yellowish brown sandy silt	0.3m	0.22m	Fill of posthole [14176]
14178	Cut	Irregular oval, irregular sides and base	2.8m	0.3m	Construction feature, filled by 14179
14179	Fill	Light greyish orange silty sand, occasional charcoal	2.8m	0.3m	Fill of [14178]
14180	void	void			
14181	Cut	Circular, irregular sides and gently concave base	1.2m	0.21m	Pit, filled by 14182 and 14183, cut by ditch 14139 in plan
14182	Fill	Mid brown silty sand, rare charcoal	1.2m	0.11m	Fill of pit [14181]
14183	Fill	Mid grey, black mottling, silty sand	0.95m	0.09m	Fill of pit [14181]
14184	Cut	Circular, shallow feature, concave sides and base	0.2m	0.19m	Posthole, filled by 14185
14185	Fill	Mid greyish orange silty sand	0.2m	0.19m	Fill of posthole [14184]
14186	Group	NW-SE linear ditch, 14110, 14116, 14131, 14133 and 14147			Boundary ditch
14187	Group	NW-SE linear ditch, 14112, 14118, 14122, 14129 and 14145			Boundary ditch

Context Number	Context Type	Description	Width	Height/Depth	Discussion
14188	Group	Surfaces/ deposits 14141, 14168, 14169, 14170 and 14175: Construction feature 14178: numerous stakeholes and postholes			Activity centre focused on structure
14189	Group	NW-SE linear ditches, 14006, 14016 and 14014			Boundary ditches with entrance

APPENDIX 2: HARRIS MATRIX



11111 Wessex excavation number
22222 Wessex or Headland evaluation number



11111 Wessex excavation number
22222 Wessex or Headland evaluation number

APPENDIX 3: PLATES

Plate 1; General working shot of Fields L1 / L20, facing SW

Plate 2; Feature **[14178]**, including small finds *in situ*, facing S, 0.5m scale

Plate 3; Deposit **(14141)**, part excavated, facing S, 2m scale

Plate 4; Example posthole **[14142]**, facing S, 0.5m scale

Plate 5; Pit **[14137]**, truncated by pit **[14126]** (foreground), facing N, 1m scale

Plate 6; Ditches **[14187]** (0.5m scale) and **[14186]** (1m scale), facing NE

Plate 7; Ditch **[14120=14139]**, facing NW, 1m and 0.5m scale

Plate 8; Ditch **[14016]**, facing SW, 1m scale

Plate 9; Ditch **[14114]**, facing NW, 0.5m scale

Plate 10; Ditch **[14108]**, facing E, 1m scale

Plate 11; Pit **[14135]**, facing NE, 1m scale

Plate 12 Pit **[14181]**, facing NW, 1m scale

Plate 13; Pit **[14001]**, facing W, 1m scale

Plate 14; Pit **[14005]**, facing SW, 1m scale

Plate 15; Pit **[14008]**, facing W, 1m scale

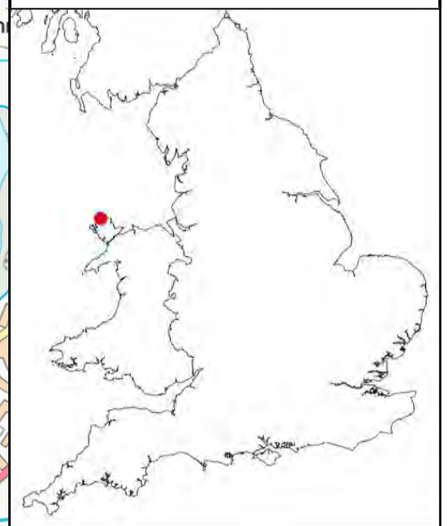
APPENDIX 4: FIGURES

DO NOT SCALE FROM THIS DRAWING

Wylfa Newydd development area

Excavation area

Hot spots



Mynydd y Wylfa
Cemaes Bay
Cemlyn Bay
Cerrig Brith
Porth-y-Pistyll
Area 9 (F1)
Area 11 L1(w)
Area 12 L1(c)
Area 13 L1(e)
Porth y Wylfa
Wylfa Head
Area 14 (L1/L20)
Area 1 (L3/L4)
Penrhyn
Fford Y Traeth
Area 17 (L2)
Area 16 (K2)
Tormar Cottage
Area 2 (L8/L12/L16)
Cemaes
High Street
Felin Gafnan
Area 5 (A1)
Area 3 (K11)
Tyddyn-Goronwy
Maen Y Bugail
Area 4 (E3)
Tyddyn Sydney
Swn Y Mor
Cafnan
Area 7 (A3)
10
13
11
12
8
15
7
9
6
14
5
16
17
Area 8 (A9)
Area 18 O6
Area 19 O5(n)
Tregele
EV9
Area 20 O5(s)
Fford Y Felin
Cemlyn Lodge
Caerdegog Isaf
Mynydd-Lthel
Nanner
234000/392000
Foel Fawr
Gors
237000/392000
Cromlech
Caerdegog Uchaf
Groes-Fechan
Tyn Cae
The Bungalow
0
1km

REVISION	DETAILS	DATE	DR'N	CHK'D	APP'D

CLIENT

Horizon Nuclear Power

PROJECT

Area 14,
Wylfa Newydd, Anglesey

DRAWING TITLE

Figure 1:
Wylfa Newydd development area and excavated sites

DRG No.	REV
CL12283-1401	A

DRG SIZE	SCALE	DATE
A3	1:12,500	Feb 2020

DRAWN BY	CHECKED BY	APPROVED BY
HP	DAC	FG

wardell armstrong

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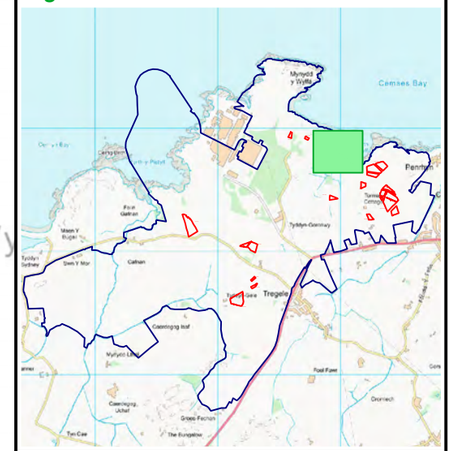
DO NOT SCALE FROM THIS DRAWING

Wylfa Newydd development area

Excavation area

Excavation areas in vicinity

Figure location:



Area 12 L1(c)

Area 13 L1(e)

Area 14 (L1/L20)

Rock

Rock

Rock

Coastal Slope

Shingle

Shingle

Shingle

Coastal Slope

Path (um)

Drain

FB

FB

235850/393700

236125/393700

0

100m

REVISION	DETAILS	DATE	DR'N	CHK'D	APP'D

CLIENT

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PROJECT

Area 14,
Wylfa Newydd, Anglesey

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Figure 2:
Detailed site location

DRG No.		REV
CL12283-1402		A
DRG SIZE	SCALE	DATE
A3	1:1,250	Jan 2020
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HP	FG	FG

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DO NOT SCALE FROM THIS DRAWING

(14000) Context numbers

Limit of excavation

Period 2 Neolithic and Early Bronze Age 4000 – 1500 BC

Period 5 Early Medieval AD 410 – 1100

Period 7 Post-medieval AD 1539 - 1750

Undated

Inset location

Trench location

[14122] [14118] [14133] [14181] [14139] [14135] [14184] [14170] [14142] [14120] [14116] [14148] [14141] [14168] [14150] [14161] [14106] [14178] [14137] [14126] [14112] [14104] [14145] [14110] [14129] [14147] [14131] [14108] [14124] [14114]

Group {14187}

Group {14188}

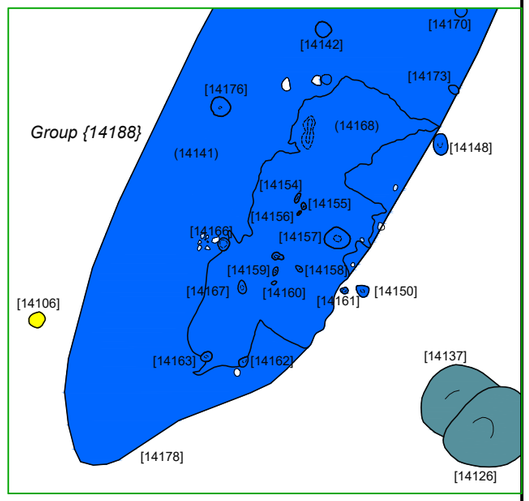
Group {14186}

natural (14103)

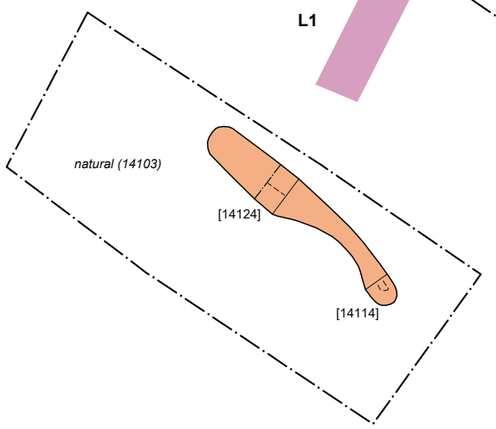
Trench 2115

Trench 2287

L1



1. Detail of group {14188} 1:100



L20

[14001] [14012] [14014] [14006] [14010] [14016] [14005] [14008]

Group {14189}

Trench 2000

Trench 2126

0 20m

REVISION	DETAILS	DATE	DR'N	CHK'D	APP'D

CLIENT: Horizon Nuclear Power

PROJECT: Area 14, Wylfa Newydd, Anglesey

DRAWING TITLE: Figure 3: Area 14; Period plan

DRG No.	REV
CL12283-1403	A

DRG SIZE	SCALE	DATE
A3	1:250	March 2020

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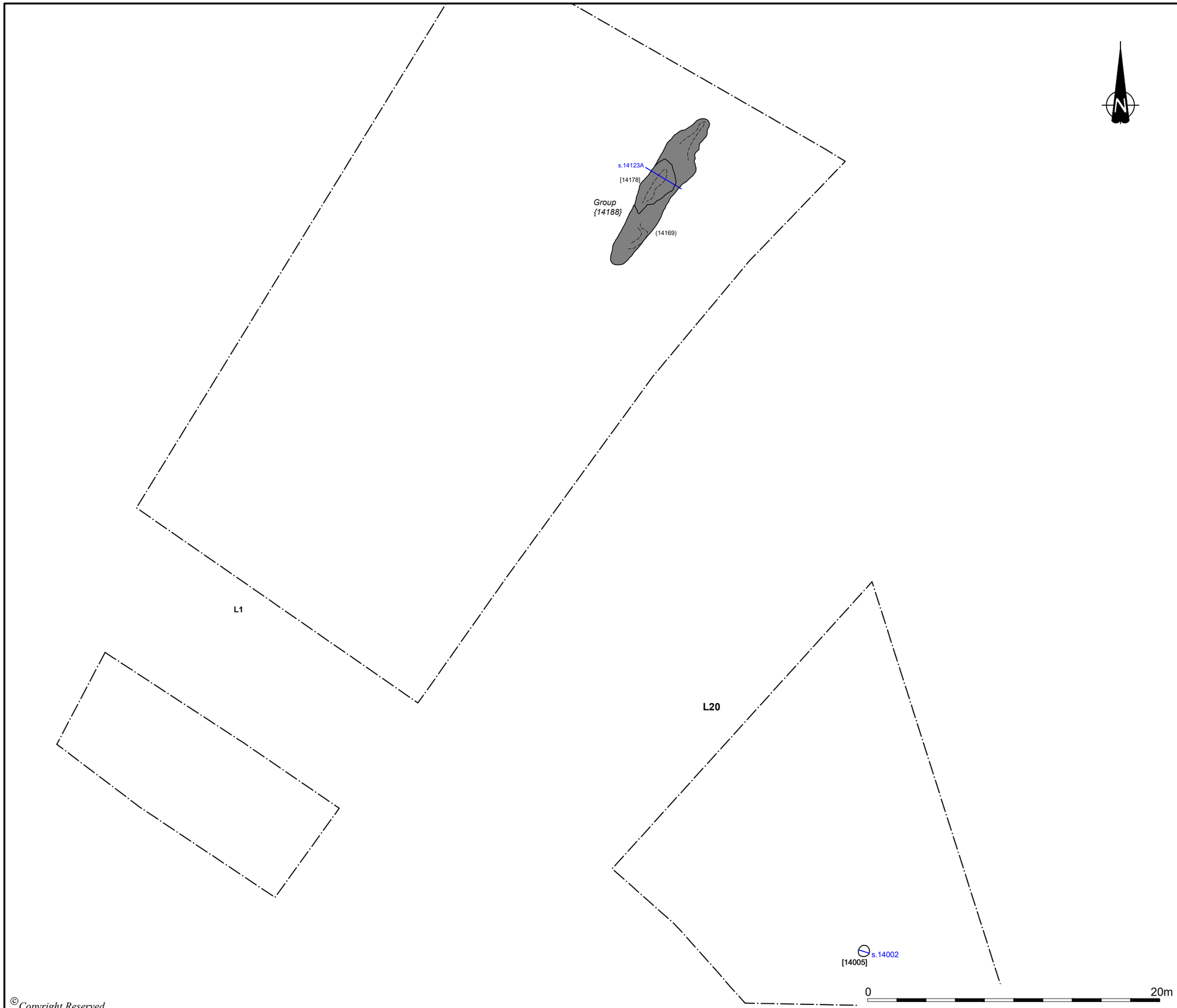

DO NOT SCALE FROM THIS DRAWING

(14000) Context numbers

Sections shown in further figures

Sections not shown in further figures

Limit of excavation

Excavated area

REVISION	DETAILS	DATE	DR'N	CHK'D	APP'D
B	Addition of context numbers and feature [14005]	12/05/21	HP	MH	MH

CLIENT

Horizon Nuclear Power

PROJECT

Area 14,
Wylfa Newydd, Anglesey

DRAWING TITLE

Figure 4:
Area 14; Phase 1 plan

DRG No.		REV
CL12283-1404		B
DRG SIZE	SCALE	DATE
A3	1:250	March 2020
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VT	FG	FG

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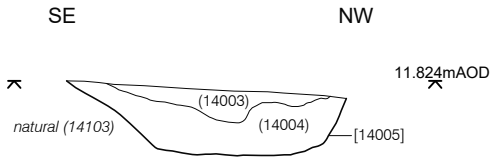
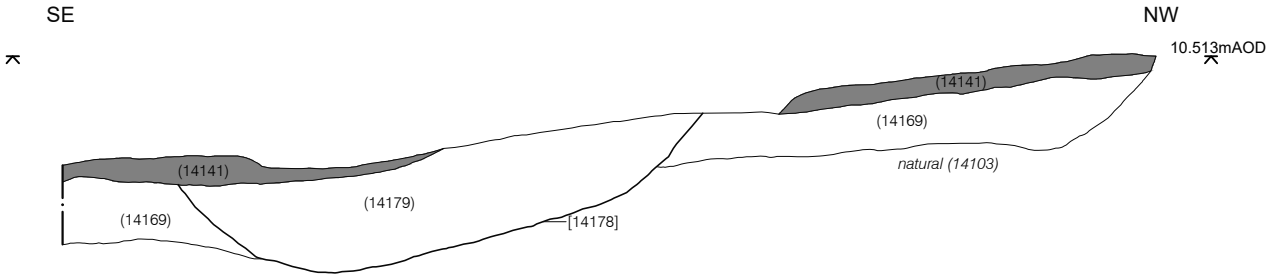


Section 14002. North-east facing section across pit [14005].



Section 14123A. North-east facing section across features [14178] and (14141).

0 1m

DO NOT SCALE FROM THIS DRAWING

(14000) Context numbers

Limit of excavation

Height mAOD

Stones

Phase 2 feature

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D
B	Addition of section 14002	11/05/21	HP	MH	MH

CLIENT

Horizon Nuclear Power

PROJECT

Area 14,
Wylfa Newydd, Anglesey

DRAWING TITLE

Figure 5:
Area 14; Phase 1 sections

DRG No	REV
CL12283-1405	B

SIZE	SCALE	DATE
A4	1:20	March 2020

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VT	FG	FG

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DO NOT SCALE FROM THIS DRAWING

(14000) Context numbers

Sections shown in further figures

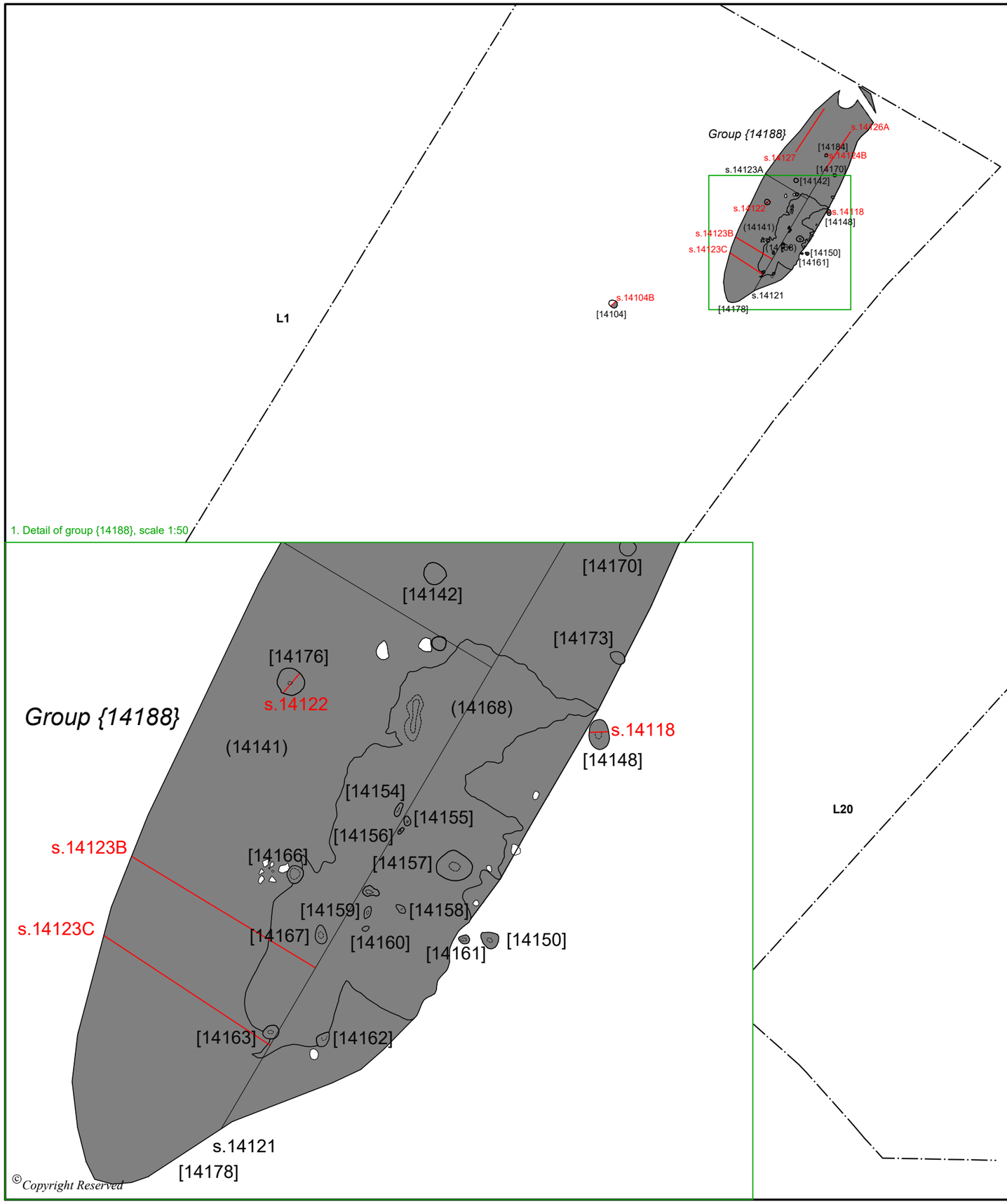
Sections not shown in further figures

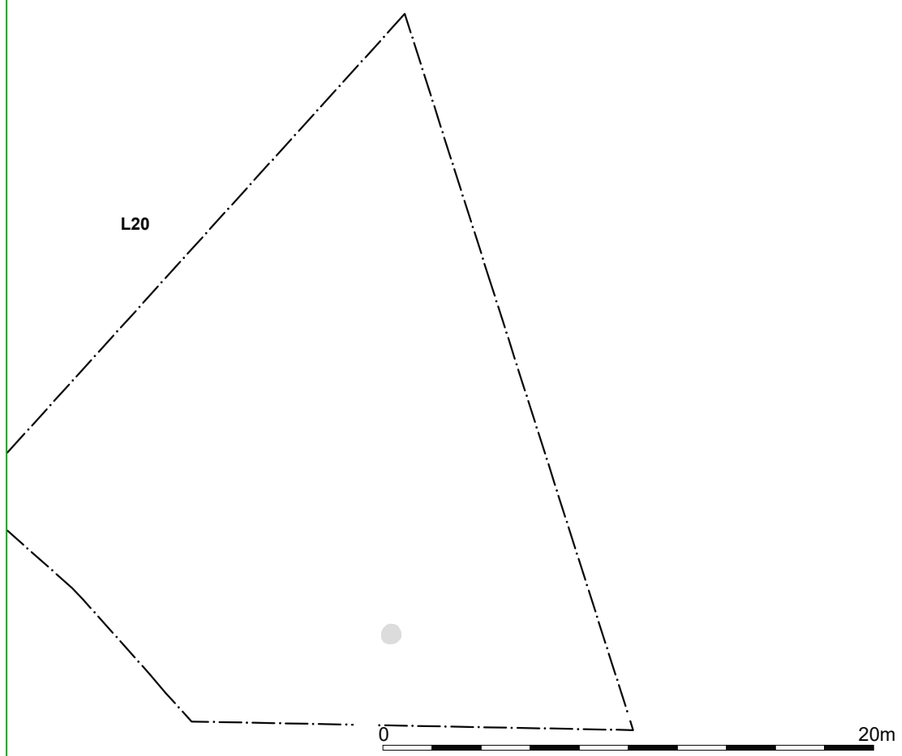
Limit of excavation

Excavated area

Inset location

Previous phases





REVISION	DETAILS	DATE	DR'N	CHK'D	APP'D
B	Enlarging of insert	11/05/21	HP	MH	MH

CLIENT

Horizon Nuclear Power

PROJECT

Area 14,
Wylfa Newydd, Anglesey

DRAWING TITLE

Figure 6:
Area 14; Phase 2 plan

DRG No.	REV
CL12283-1406	B

DRG SIZE	SCALE	DATE
A3	1:250	March 2020

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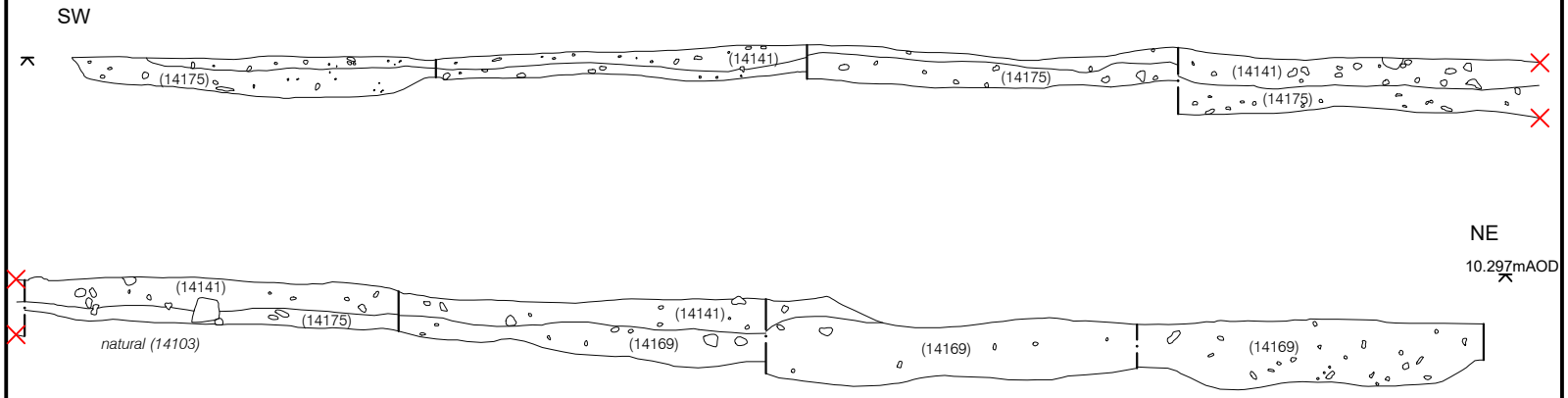
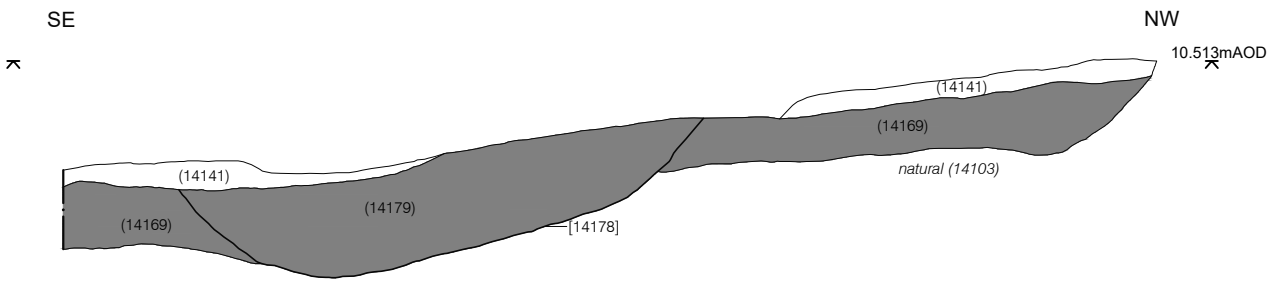


Section 14121. Mirrored sections across group {14188}.



Section 14123A. North-east facing section across features [14178] and (14141).

0 1m

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(14000) Context numbers

Limit of excavation

Height mAOD

Stones

Phase 1 features

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D

CLIENT

Horizon Nuclear Power

PROJECT

Area 14,
Wylfa Newydd, Anglesey

DRAWING TITLE

Figure 7:
Area 14; Phase 2 sections

DRG No	REV
CL12283-1407	A

SIZE	SCALE	DATE
A4	1:20	March 2020

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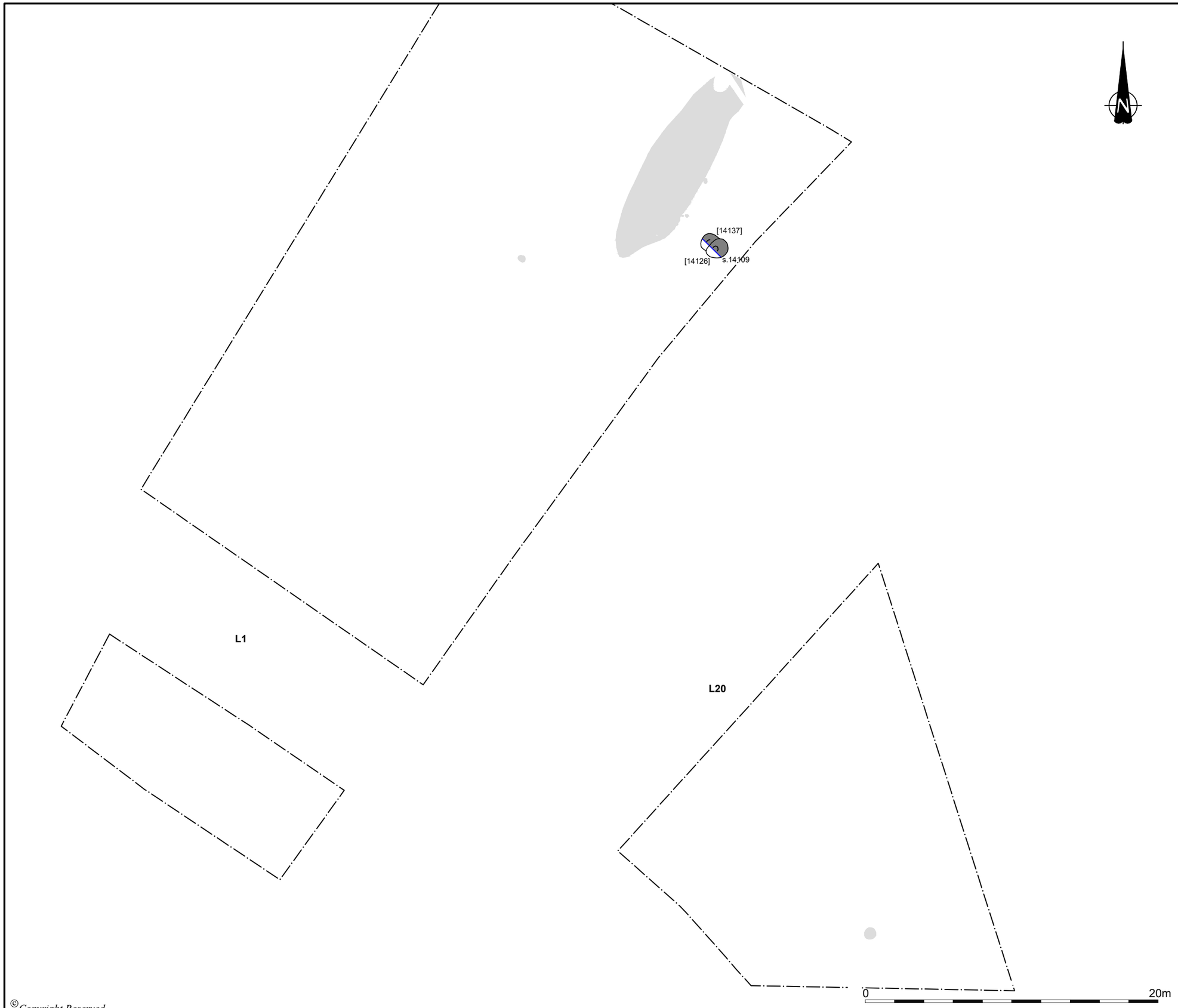

DO NOT SCALE FROM THIS DRAWING

(14000) Context numbers

Sections shown in further figures

Sections not shown in further figures

Limit of excavation

Excavated area

Previous phases

REVISION	DETAILS	DATE	DR'N	CHK'D	APP'D
B	Addition of previous phase features	[illegible]	HP	MH	MH

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Horizon Nuclear Power

PROJECT

Area 14,
Wylfa Newydd, Anglesey

DRAWING TITLE

Figure 8:
Area 14; Phase 3 plan

DRG No.	REV
CL12283-1408	B

DRG SIZE	SCALE	DATE
A3	1:250	March 2020

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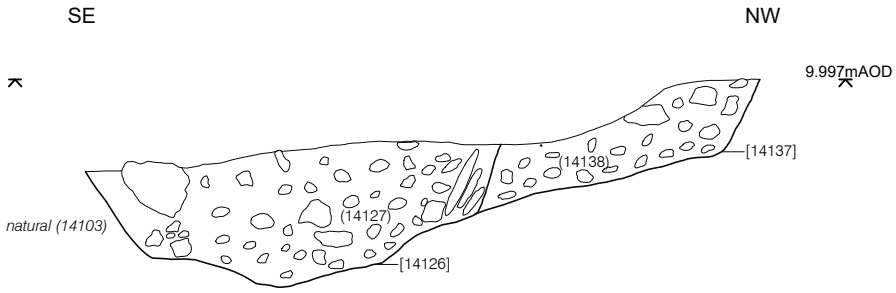

Section 14109. North-east facing section across pits [14126] and [14137].

0 1m

DO NOT SCALE FROM THIS DRAWING

(14000) Context numbers

Limit of excavation

Height mAOD

Stones

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D

CLIENT

Horizon Nuclear Power

PROJECT

Area 14,
Wylfa Newydd, Anglesey

DRAWING TITLE

Figure 9:
Area 14; Phase 3 section

DRG No	REV
CL12283-1409	A

SIZE	SCALE	DATE
A4	1:20	March 2020

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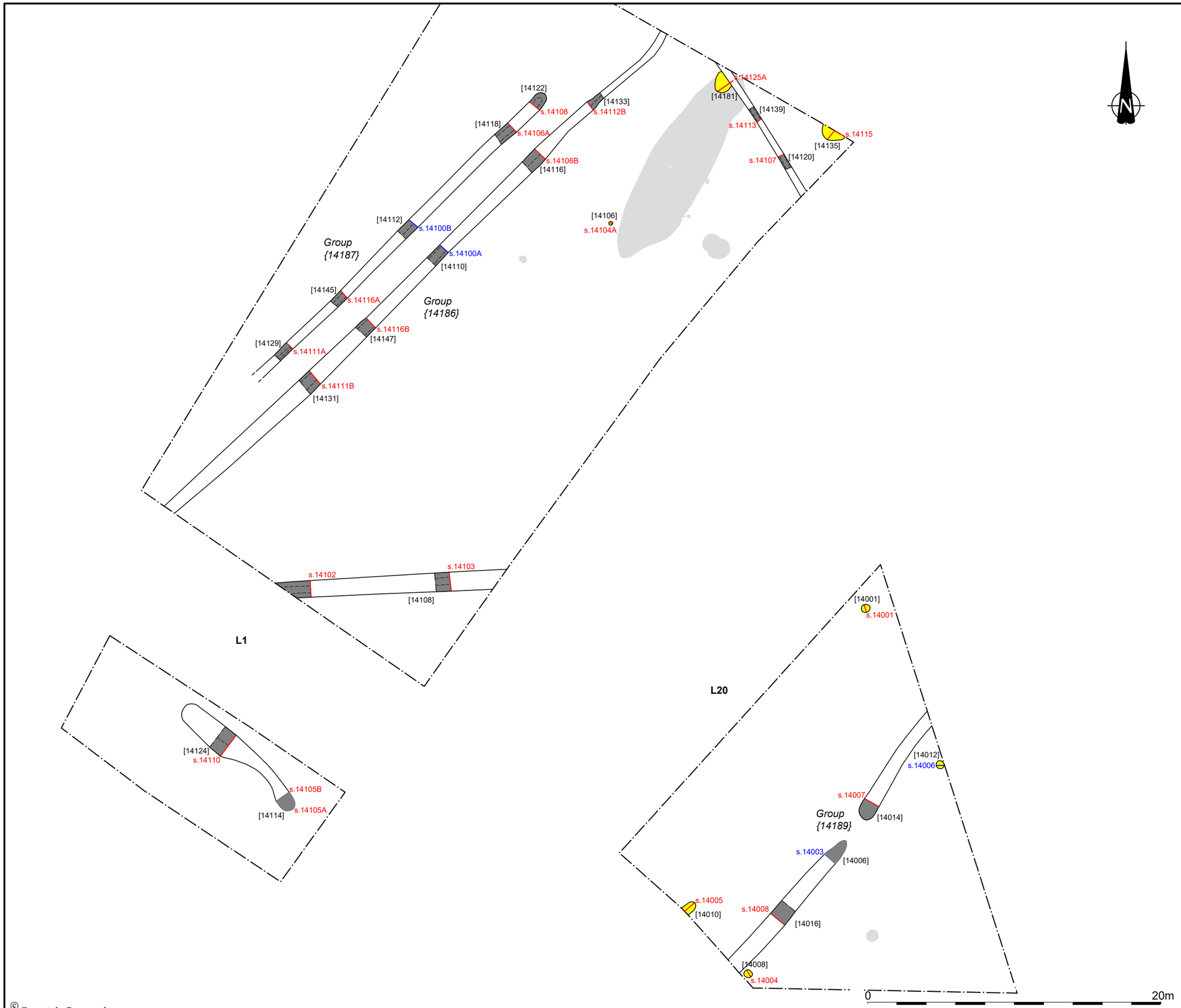

DO NOT SCALE FROM THIS DRAWING

(14000) Context numbers

Sections shown in further figures

Sections not shown in further figures

Limit of excavation

Excavated area

Previous phases

Undated

REVISION	DETAILS	DATE	DR'N	CHK'D	APP'D
B	Phase allterations	11/05/21	HP	MH	MH

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PROJECT

Area 14,
Wylfa Newydd, Anglesey

DRAWING TITLE

Figure 10:
Area 14; Phase 4 and undated features plan

DRG No.	REV
CL12283-1410	B

DRG SIZE	SCALE	DATE
A3	1:250	March 2020

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VT	FG	FG

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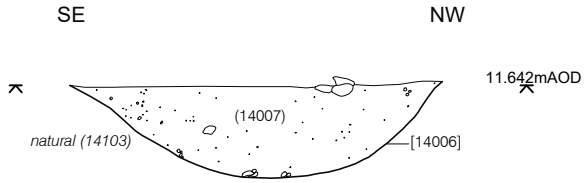
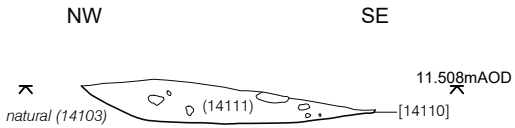
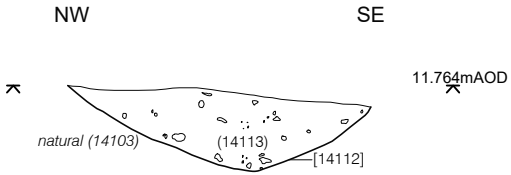
Phase 4 sections:



Section 14003. North-east facing section across ditch terminus [14006].

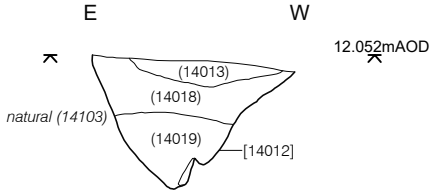


Section 14100A. South-west facing section across ditch [14110].



Section 14100B. South-west facing section across ditch [14112].

Undated section:



Section 14006. North facing section across pit [14012].

DO NOT SCALE FROM THIS DRAWING

(14000) Context numbers

Limit of excavation

Height mAOD

Stones

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D
B	Removal of section 14002	11/05/21	HP	MH	MH

CLIENT

Horizon Nuclear Power

PROJECT

Area 14,
Wylfa Newydd, Anglesey

DRAWING TITLE

Figure 11:
Area 14; Phase 4 and undated features sections

DRG No	REV
CL12283-1411	B

SIZE	SCALE	DATE
A4	1:20	March 2020

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VT/HP	FG	FG

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0 1m

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APPENDIX 5: RADIOCARBON CERTIFICATES

BetaCal 3.21

Calibration of Radiocarbon Age to Calendar Years

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

(Variables: d13C = -24.3 o/oo)

Laboratory number **Beta-553493**

Conventional radiocarbon age **1130 ± 30 BP**

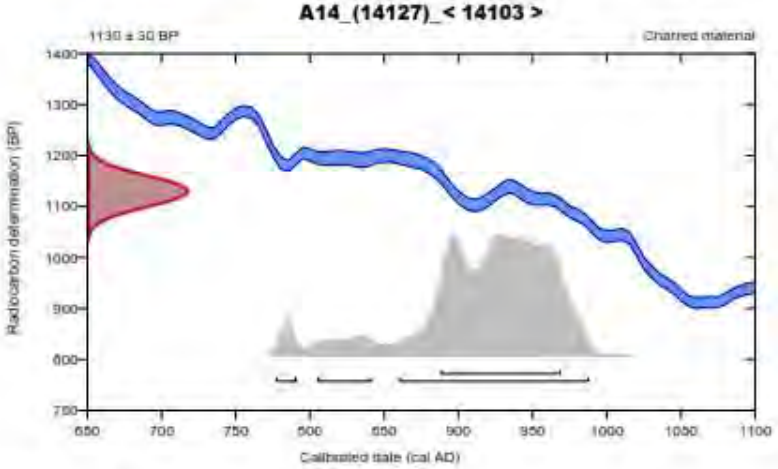
95.4% probability

(86.7%)	860 - 988 cal AD	(1090 - 962 cal BP)
(5.5%)	805 - 842 cal AD	(1145 - 1108 cal BP)
(3.2%)	777 - 791 cal AD	(1173 - 1159 cal BP)

68.2% probability

(68.2%)	888 - 969 cal AD	(1062 - 981 cal BP)

A14_(14127)_< 14103 >



Database used

INTCAL13

References

References to Probability Method

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

References to Database INTCAL13

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

Beta Analytic Radiocarbon Dating Laboratory

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BetaCal 3.21

Calibration of Radiocarbon Age to Calendar Years

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

(Variables: d13C = -26.1 o/oo)

Laboratory number **Beta-553494**

Conventional radiocarbon age **5020 ± 30 BP**

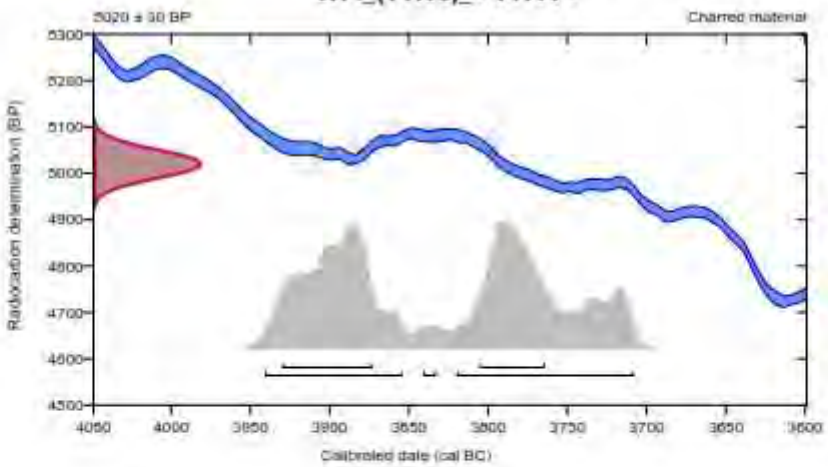
95.4% probability

(49.7%)	3822 - 3710 cal BC	(5771 - 5659 cal BP)
(44.4%)	3943 - 3856 cal BC	(5892 - 5805 cal BP)
(1.3%)	3843 - 3835 cal BC	(5792 - 5784 cal BP)

68.2% probability

(38.4%)	3932 - 3875 cal BC	(5881 - 5824 cal BP)
(29.8%)	3807 - 3766 cal BC	(5756 - 5715 cal BP)

A14_(14170)_< 14111 >



Database used
INTCAL13

References

References to Probability Method

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

References to Database INTCAL13

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

Beta Analytic Radiocarbon Dating Laboratory
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APPENDIX 6: GAZETTEER OF FEATURES ENCOUNTERED IN AREA 14

Feature	*Date*	*Description*	*Easting, northing*
Structure/ dwelling	Early Neolithic to Early Bronze Age	A sunken structure with associated lithic artefacts and a subsequent series of partially overlapping deposits consistent with surfaces and occupation, with associated pits.	235991,393817
Pit	Early Medieval	An isolated re-cut pit determined through radiocarbon dating to be of early medieval origin	235994,393813
Large Rectilinear Field System	Medieval or Post Medieval	Elements of a later rectilinear field system aligned northeast-southwest likely to date to the medieval or post-medieval period, based on morphology and a very small finds assemblage	239577,393815

APPENDIX 7: POST-EXCAVATION ASSESSMENT METHOD STATEMENT

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

HORIZON

WYLFA NEWYDD

POST EXCAVATION ASSESSMENT METHOD STATEMENT

APRIL 2019

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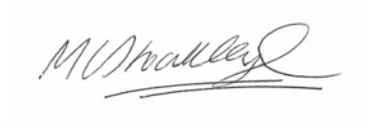
Wardell Armstrong LLP
Marconi Road, Burgh Road Industrial Estate, Carlisle, Cumbria CA2 7NA, United Kingdom
Telephone: +44 (0)1228 550575 www.wardell-armstrong.com

DATE ISSUED: April 2019

JOB NUMBER: **CL12271**

PREPARED BY:

Megan Stoakley — Finds and Archive Specialist



Lynne Gardiner — Senior Environmental Archaeologist

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 (CIfA) Standard and Guidance for Archaeological Excavation (2014) sections 3.4 to 3.6, and for human remains The British Association of Biological Anthropology and Osteoarchaeology Human Bones from Archaeological Sites. In addition, GAPS require reference to Society of Museum Archaeologists (1993), Selection, Retention and Dispersal of Archaeological Collections: Guidelines for use in England, Wales and Northern Ireland, as well as Welsh Office Circular 60/96, (1996), Planning and Historic Environment: archaeology.
This current document identifies the stages of the PXA process, then describes the broad tasks required for each stage. The document concludes with a report template containing individual sections within the PXA report and UPD.

Requirement for and Purpose of the Post Excavation Assessment

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

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

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

Post Excavation Assessment Stages and Outputs

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

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

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

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

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

Stage 1 Processing

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

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

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

Stage 2 Archival Preparation

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

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

Stage 3 Data Assessment

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

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

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

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

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

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

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

Report Template

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

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

2. **Introduction**

2.1 Site location (include eight digit NGR), site code/ PRN reference, and Event Number

2.2 Scope of the project.

2.3 Dates/duration of fieldwork.

2.4 Outline of the site's character (including topsoil, subsoil and substrata descriptions, past land use impacts on preservation and impact of bioturbation) and how the site fits into the local archaeological landscape.

2.5 Brief summary of previous work including directly relevant nearby sites (i.e. likely to be part of same archaeologically represented activity), geophysical results, metal detecting results and evaluation results.

2.6 Explanation of the purpose of the assessment report and organisation of the report (refer to this report template and include as appendix 1).

2.7 *Site location map related to the development area.*

2.8 *Plan of site and excavated area (usually these will be the same).*

3. **Summary of the excavation methodology**

3.1 Proposals set out in the approved Written Scheme of Investigation for the fieldwork (copy of the Written Scheme of Investigation sections 4 and 5 only as appendix 2).

3.2 Any variations from the Written Scheme of Investigation with justifications.

3.3 Site planning strategy with justifications for the applied methodology.

3.4 A description of any avoidance strategies or re-burial methods used to preserve unexcavated archaeological remains in situ, indicating whether or not these will be subject to a monitoring scheme and, if so, providing a description of it or references to supporting relevant documentation.

4. **Site archive**

4.1 Summary details of the contents and organisation of the project archive

4.2 Quantification of documentary archive (including catalogues and indices) and details of current (give date) location of the paper archive. Details of the digital archive and arrangements for storage security.

4.3 Summary of work carried out on the documentary archive during post-excavation assessment.

4.4 Quantification of material archive (by storage box) and details of current (give date) location.

4.5 Summary of work carried out on the material archive, including nature of processing and cleaning, and any necessary preliminary conservation/stabilisation.

4.6 Details of any samples sent for scientific analysis or dating as a necessary precursor to costing a programme of analysis.

4.7 Agreed destination of the site archive (in all instances this will be the Oriel Museum, Anglesey) with a statement of any receiving repository conditions if necessary.

4.8 OASIS reference supported by completed data collection form as appendix 3.

4.9 *Representative sample photographs of site features that aid understanding of the assessment of stratigraphic data*.

5. Stratigraphic data

5.1 Summary of the nature of the investigated features/deposits described by phase in chronological order (not by individual context or feature), supported by a Harris matrix/matrices in appendix 4 (use context group numbers if appropriate).

5.2 Statement of significance of the stratigraphic data.

5.3 *Final pre-excavation plan.*

5.4 *Either an overall plan for all phases or individual phase plans or both as appropriate to the site's complexity.*

5.5 *Sections of key features with a location plan showing position of sections.*

5.6 *If relevant a more detailed plan of key structures.*

5.7 *Where relevant a structure through motion model illustration(s).*

6. Artefacts

6.1 Quantification (by weight in grams for bulk finds) of finds by type.

6.2 Description of condition, stability and the immediate and longer term conservation and storage needs by artefact group.

6.3 An assessment of the character, range and variety, date, meaning and significance of all recovered artefact groups.

6.4 Statement by a recognised specialist on the research potential of each individual artefact group. If no further work beyond assessment is considered necessary this should be clearly indicated.

6.5 Statement of significance for the retention of material and a proposal for a fully justified discard strategy for low/nil value assemblages, in agreement with GAPS/CADW.

6.6 *Supporting finds illustrations at appropriate scales (for the assessment wherever practicable scaled photographs should be used rather than line drawings).*

7. **Palaeoenvironment**

7.1 Quantification (by weight in grams) of the retents and flots available for analysis. Quantification by sample bucket where further portions of a sample are available and the assessment sub-sample has revealed that further sample processing is worthwhile for the additional data it may reveal. Sub-sampling will have been sufficient to characterise and understand a sample.

7.2 Factual summary of each type of sample (e.g. bulk organic, dendrochronological, monolith), quantity, preservation, post-depositional processes, curation and storage need by ecofact group.

7.3 An assessment of the character, range, variety and significance of all ecofactual groups (likely to include plant macrofossils, pollen, animal bone, shell, snails and insects).

7.4 Statement by a recognised specialist on the research potential of each individual ecofact group, including potential to provide scientific dating. If no further work beyond assessment is considered necessary, this should be clearly indicated.

7.5 Statement of significance for the retention of material and a proposal for a fully justified discard strategy for low/nil value assemblages, in agreement with GAPS/CADW.

7.6 *Representative photographs of key assemblages*.

8. **Human remains**

8.1 For inhumations quantify by number of burials and then summarise information on skeletal completeness in a table divided as >75%, -75%, -50%, <25%. For cremations, bone remains from each context should be quantified by weight in grams.

8.2 Factual data about the bone assemblage, describing the provenance of the skeletal material and the general condition of the remains. The condition of the bone will influence the information that can be gained from the assemblage.

8.3 Statement by a recognised specialist on the research potential of the human remains.

8.4 Note on the long-term arrangements for the curation or reburial of the human remains.

8.5 *Plans showing the location of burials or other deposits of human remains*

8.6 *Photographs and/or drawings of inhumation burials in situ or a structure through motion 3d model.*

9. **Discussion**

9.1 A brief summary of the character and significance of the site as represented through its stratigraphic, artefactual and palaeoenvironmental data. Include where relevant the results of any documentary research. If no further work beyond assessment is considered necessary, this should be clearly indicated. If further work is required then include 9.2, 9.3 and 9.4 below.

9.2 A tabulated list of relevant sources discovered (relevant books, articles, HER data, archival sources) quantity, variety, level of study of sources during post-excavation assessment.

9.3 Indicate applied studies that will be necessary for further analytical work. These might include, for example, comparative analysis, archival and/or cartographic research and intra and inter-site spatial analyses, site morphological studies, absolute dating methods, scientific techniques not covered by the standard suite of applications (e.g. specific chemical analyses, thin sectioning for soils or ceramic research, isotope studies, scanning electron microscopy, specific biological analyses etc).

10. **Statement of potential**

10.1 A summary of the potential of the data in terms of local, regional, national and international importance, referencing as relevant regional and national period and subject specific research agendas. This should include:

- an appraisal of the extent to which the site archive might enable the data to meet the original research aims of the project;
- a statement of the potential of the data in developing new research aims, to contribute to other projects and to advance methodologies;
- an assessment of the relevant level at which the site data might be published e.g. site specific publication, project landscape overview or background contextual data (choose one only).

10.2 An informed strategy for the detailed analysis of some or all data groups as recommended by relevant specialists to enable a reconstruction of the history and use of the site to be developed, in line with the site's relevant research potential

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

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

11 Bibliography of sources used in the compilation of the PXA

12. Updated Project Design

12.1 Introduction including purpose of the UPD to provide details of a programme of analysis leading to the appropriate mechanism for the dissemination of the results of the project. Also, to provide a basis for costing the programme of analysis, publication and deposition of the archive.

12.2 Justification for the contents of the proposed programme of analysis and any theoretical approaches to be deployed, in relation to the site's statement of potential and proposal for publication/dissemination as appropriate:

- inclusion of main results in an overall synthetic volume only
- thematic paper on a specific research theme
- internet publishing through journal or proprietary website (stating whether all catalogues will be available and interactive)
- short illustrated site report for a journal
- section/chapter in edited monograph
- fully illustrated site monograph
- popular booklet (additional publication only and not to be the primary publication).

12.3 Proposal for analysis of the stratigraphic data concentrated on key feature groups.

12.4 Detail of illustrations required to support the stratigraphic analysis.

12.5 Detail of retention and discard strategy for the material archive.

12.6 Proposals for scientific dating (potentially an initial suite of dates and a second after provisional results from the artefact and ecofact analysis are received).

12.7 Proposals for a Bayesian analysis to refine chronologies, following consultation with Cadw regarding to the selection of contexts and samples for scientific dating.

12.8 Proposals, where relevant, for other forms of scientific analysis such as lipids, strontium or oxygen isotope analysis.

12.9 Details of illustrations required to support the artefact analysis.

12.10 Requirement for conservation works on material archive.

12.11 Proposals for further research, including archive visits and comparative analysis of other investigated relevant sites in order to contextualise the site data.

12.12 Details of resultant technical/archive report.

12.13 Publication report synopsis where relevant, including any additional illustrations required.

12.14 Proposals for monitoring and continued liaison with GAPS and CADW throughout the post-excavation analytical programme.

12.15 Staged programme and timetable for any proposed further work up to and including publication and archive deposition. Task list and Gantt chart.

Task breakdown for PXA

1. **Processing**

1.1 Environmental sample processing

1.2 Cleaning human remains

1.3 Bulk finds cleaning

1.4 Small finds cleaning

1.5 Artefact stabilisation

2. **Archival preparation**

2.1 Finds marking

2.2 X-raying metal objects

2.3 Archive box purchase

2.4 Boxing

2.5 Site record checking and cross-referencing

2.6 Compilation of list of archival sources

2.7 Records scanning

3. **Data assessment**

3.1 Zooarchaeological remains

3.2 Insects

3.3 Snails

3.4 Shells

3.5 Plant macrofossils

3.6 Pollen

APPENDIX 1 METHOD STATEMENT: STAGE 1 FINDS PROCESSING

Finds processing and assessment summary

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

Washing and cleaning

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

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

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

All metalwork (including copper alloy, lead and iron) and oyster shell is dry-brushed. Delicate metal and non-metal small finds are dry-brushed and placed in crystal boxes in trays on acid-free tissue paper. Plaster/mortar are dry-brushed and placed in labelled trays.
Human remains (cremated and non-cremated) are processed differently and will require different cleaning methods depending on their state of preservation. Non-cremated articulated and disarticulated human remains in good condition will undergo the same processing as bulk finds, but the bones are not immersed in water. The human remains will only be marked depending on the requirements of the curator and county repository. Human remains in poor condition must not be wet-washed and will have to be dry-brushed for remains to stabilise.

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 500µm sieve and washing the sample through until all of the sediment has been removed. The latter is essential or the fluid in which the sample is stored will become cloudy. Once clean the sample is removed from the sieve to an airtight jar and stored in ethanol (95% alcohol).

Paraffin Flotation

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

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

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

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

METHOD STATEMENT STAGES 2 AND 3 FINDS ASSESSMENT

Summary

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

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

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

Stage 2

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

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

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

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

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

Time estimates for finds marking and bagging and boxing

Marking 30-40 seconds per artefact e.g. per bone, per pot sherd.

Bagging and boxing 1 box at 6 kg full capacity – 30-40 minutes.

Stage 3

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

Time estimates for preliminary recording

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

Materials costs to be considered to PXA

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

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

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