

Archaeology Wales

Lletyr Bugail Wind Turbine, Llangwryfon, Aberystwyth

Archaeological Watching Brief



By Philip Poucher

Report No: 1483

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Archaeology Wales

Lletyr Bugail Wind Turbine, Llangwryfon, Aberystwyth

Archaeological Watching Brief

Prepared For: Wardell Armstrong LLP & PEP Renewables

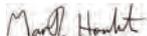
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July 2016

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Non-Technical Summary

An archaeological watching brief was carried out during groundworks associated with the construction of a single wind turbine on land at Lletyr Bugail, Llangwryfon, near Aberystwyth in Ceredigion (SN 6142 6924). The work was carried out by Archaeology Wales Limited at the request of Wardell Armstrong LLP, on behalf of their clients PEP Renewables. The work was set as a condition of planning permission (planning reference no. A140396).

The groundworks revealed a thin (0.1m to 0.2m) topsoil deposit of mid reddish-brown clayey-silt, which had a peat-like consistency in places. Several small fragments of 19th century pottery were recovered from this deposit. This overlay subsoil deposits of stony, mid reddish-brown to orange-brown, silty-clays, which appeared natural in origin. An underlying deposit of fragmented shale and sandstone bedrock was also noted throughout the site. A field bank crossed the site, but was built over topsoil deposits, indicating a relatively modern date.

No finds, features or deposits of archaeological significance were noted within the site area.

1 Introduction

- 1.1 In June 2016 Archaeology Wales Ltd (AW) was commissioned by Wardell Armstrong LLP, on behalf of their clients PEP Renewables, to undertake an archaeological watching brief during groundworks associated with the installation of a single wind turbine on land at Lletyr Bugail, Llangwryfon, near Aberystwyth in Ceredigion (SN 6142 6924, Figures 1 - 3).
- 1.2 The requirements for an archaeological watching brief were placed as a condition of the planning permission for the development (planning application number A140396) by Ceredigion County Council, on the advice of Dyfed Archaeological Trust – Planning Services (DAT-PS), in their capacity as archaeological advisors to the local planning authority.
- 1.3 An approved Written Scheme of Investigation (WSI) was produced by Wardell Armstrong LLP in accordance with the Standard and Guidance for Archaeological Watching Briefs (ClfA 2014) and was designed to provide an approved scheme of archaeological work to be implemented during the construction works (Appendix II).
- 1.4 The watching brief was undertaken in June 2016. The AW project number for the work is 2448 and the site code is LBL/16/WB. The project details are summarised in the Archive Cover Sheet (Appendix III).

2 Site Description (Figures 1 & 2)

- 2.1 The site lies at roughly 300m AOD, on the west facing slope of Mynydd Bach, a ridge that is situated 7.6km southeast from the coastline on a low plateau that rises 13.5km to the northwest to become the Cambrian Mountains. The site area currently comprises rough grassland, bounded by a combination of scrub and field boundary banks to the north, west and south, whilst the east of the site is limited by a low stone wall.

- 2.2 A short distance to the northeast lies an existing wind farm. The settlement pattern is one largely of dispersed farmstead, the closest settlements being the small hamlet of Trefenter, located approximately 1km to the southwest, and the village of Llangwryfon, 2km to the northeast. The nearest large town is Aberystwyth, just under 13km to the northwest.
- 2.3 The underlying solid geology is mapped as a combination of sandstone and mudstone associated with the Mynydd Bach formation, which was formed approximately 428 to 444 million years ago during the Silurian Period in a local environment dominated by deep seas. This is mapped as being overlaid by a mixed till deposited up to two million years ago by glacial outwash associated with seasonal and post glacial meltwaters (BGS viewer 2016).

3 Archaeological and Historical Background

- 3.1 A detailed archaeological and historical background to the area has been produced as part of a Heritage Statement by ADAS in 2014. The following is a brief summary of those findings.
- 3.2 There is very little recorded evidence of activity during the Palaeolithic period (650,000 – 8,500 BC) in this area. As is the case elsewhere in Wales, most artefactual evidence comes from coastal sites. There is a similar paucity of evidence for the Mesolithic period (8,500 – 4,000 BC), and indeed the Neolithic period (4,000 – 2,400 BC), although some evidence of Neolithic activity has apparently been discovered on the banks of the Afon Beidog, which lies to the west and is partly fed by a small stream that crosses the site.
- 3.3 A burnt mound (PRN 9961) is also recorded on the banks of the Afon Beidog, which is likely to date to the Bronze Age (2,400 – 700 BC). A barrow cemetery and a field system are recorded *circa* 1.5km to the south of the site, at Llyn Eiddwen and Hafod Ithel (PRN 5154), but the closest recorded Bronze Age site is a possible cairn, *circa* 850m to the southeast of the site (PRN 6134).
- 3.4 An Iron Age (700 BC – AD 43) hillfort, known as Caer Argoed (PRN 1996), lies 1.7km to the north of the site, overlooking the Afon Wyre. Other defended enclosures lie further afield, but evidence of Iron Age land-use, settlement patterns and funerary practices have not been established within the general area. Iron Age or Romano-British industrial activity is recorded on the edge of Cors Fochno at the northern edge of Ceredigion, but this is some distance from the site. Evidence of Roman-British (AD 43 – 410) activity closer to the development area is absent, with the closest recorded activity either at the Roman forts at Trawsgoed 5.5km to the east or, potentially, at Coed y Grip 3.5km to the west.
- 3.5 There is no recorded evidence of activity in the vicinity during the early medieval period (410 – 1066), although a possible 9th to 11th century inscribed stone has been recorded in the churchyard at Llangwryfon (PRN 773). This lack of activity may indicate that less intensive land use and more ephemeral settlement and agricultural activity was taking place in the area of the site during this period. During the medieval period (1066 – 1539), a series of enclosures and a building were established to the east of the site (PRNs 12128, 12139, 12196 & 25541), within 80m of the access track on Banc Pwllrainllwyn. The site appears to represent an upland agricultural settlement and is

now a Scheduled Ancient Monument (CD151 - Figure 3). An associated field boundary (PRN 12101) is recorded extending from the main enclosure. Another possible medieval Hafod site is recorded further to the west (PRN 6137), while documentary evidence suggests that the possible medieval settlement of Maespeydauk was located in this area (PRN 10927).

- 3.6 During the post-medieval (1539 – 1900) and modern periods, several rural farmsteads, cottages and associated agricultural buildings and enclosures developed throughout the upland landscape, although none are recorded within the development area.

4 Aims and Objectives

- 4.1 As stated within the approved WSI (Appendix II), the main aim of the watching brief was to investigate, interpret and characterise any archaeological remains should they be present. In addition, should potentially significant remains be revealed that could not be dealt with under the watching brief remit, then the works would help inform the Local Planning Authority and allow an informed decision to be made on the requirements for further archaeological work.

- 4.2 The general aims of the watching brief were to:

- allow the monitoring archaeologist to signal that an archaeological find has been made before it is destroyed;
- provide the opportunity for appropriate resource allocation if the archaeological find cannot be dealt with under the watching brief remit;
- Determine the presence or absence of buried archaeological remains within the proposed development site;
- Determine the character, date, extent and distribution of any archaeological deposits and their potential significance;
- Determine the levels of disturbance to any archaeological deposits from plough damage or from any other agricultural/industrial practices or later building activities;
- Investigate and record all deposit and features of archaeological interest within the area to be disturbed by the development;
- Determine the likely impact on archaeological deposits from the proposed development;
- Disseminate the results of the fieldwork through an appropriate level of recording.

5 Methodology

The methodology for this archaeological watching brief follows that set out in the approved WSI (Appendix II). In brief, this work included the following key elements:

5.1 *Watching Brief*

- 5.1.1 The archaeological watching brief was undertaken during topsoil stripping and levelling works undertaken across the site, which included the access track and the area of the crane foundation pad, turbine base and substation. This revealed sufficient ground deposit to determine the presence or absence of archaeological features. The main site access to (and including) the site compound had previously been established as part of the existing Llangwryfon Wind Farm complex to the east. The initial section of trackway from the site compound also ran along a pre-existing trackway, where ground deposits had already been stripped of topsoil and compacted stone laid. The area of new groundworks undertaken under archaeological watching brief conditions is illustrated in Figure 3.
- 5.1.2 Groundworks were undertaken by a mechanical excavator using a toothless bucket with the exception of exposed bedrock deposits, which were removed with a toothed bucket, under archaeological observation.
- 5.1.3 The exposed deposits were subsequently recorded by detailed, measured, sketch drawings, high resolution digital photographs (using a 14MP camera) and written records using AW recording systems. A summary of recorded contexts are included in Appendix I.
- 5.1.4 The on-site archaeological work was undertaken by Hywel Keen (AW). The overall management of the project was undertaken by Philip Poucher.
- 5.1.5 All works were undertaken in accordance with the **CIfA's** *Standards and Guidance for an Archaeological Watching Brief* (2014) and current Health and Safety legislation.

5.2 *Finds*

- 5.2.1 A small number of pottery sherds were recovered from the topsoil deposit (100) in the southern part of the site. These finds were readily identifiable as 19th century in date, and once noted were discarded. No other finds were recovered.

5.3 *Palaeo-Environmental Evidence*

- 5.3.1 No deposits suitable for environmental sampling were encountered during the course of the excavation.

6 Watching Brief Results (Figure 3, Photos 1 – 15)

- 6.1 The access trackway extended from the pre-existing Wind Farm trackway and site compound, to the area of the single wind turbine development to the south. Initially this track followed the line of a pre-existing farm track, which had been previously stripped down to the underlying fragmented bedrock deposits and overlaid with compacted stone (Photos 1 & 2).
- 6.2 Where the development diverged from the already developed areas, a large crescent shaped area located on sloping ground on the northern side of a small stream was stripped of topsoil (Photos 3 & 4). This measured 61m from north to south, and at most was 25m wide. It was initially stripped to the natural subsoil and underlying bedrock interface. Topsoil (100) and subsoil deposits (101) were very thin across this area; even combined they were at most 0.2m deep. Both deposits were also very similar, comprising a mid reddish-brown clayey-silt with very frequent angular stone inclusions. The main distinguishing feature between the topsoil and subsoil deposits was an increase in clay content in the subsoil, although the interface between the two was indistinct. Underlying bedrock deposits consisted of fragmented shale and sandstone (102), which was exposed at surface level in some areas.
- 6.3 Topsoil and subsoil deposits had been largely scoured away from the area surrounding the small stream (Photo 5), which crosses the area in an east – west direction, eventually feeding into the Afon Beidog to the west. This area was not stripped, as ground levels were built up across this hollow using excavated material from surrounding groundworks.
- 6.4 To the south, the land undulated, but initially rose to a local summit, with topsoil and subsoil deposits generally increasing in thickness and becoming more distinct. A roughly rectangular area was stripped on the ground that rose to the south of the stream, as far as a small east-west orientated ridge (Photos 6 & 7). The stripped area measured 73m from north to south, and up to 23m wide. The topsoil was up to 0.15m thick, and showed a continuation of the topsoil deposit (100) recorded to the north of the stream. A small collection of 19th century pottery fragments were recorded, spread throughout this deposit. The subsoil (101), a mid reddish-brown silty-clay, was lightly compacted and intermixed with upstanding bands of shale bedrock. The subsoil reached a maximum depth of 0.2m in this area.
- 6.5 The trackway strip continued for 58m to the south of this area, approximately 6m wide (Photos 9 & 10). To the south of the ridge the topsoil became darker and had a more peat-like consistency (103), indicating an area of localised waterlogging. This deposit was typically 0.2m thick, and extended for *circa* 24m before reverting back to the typical topsoil recorded elsewhere (100). Below the topsoil in this area (100/103) was a subsoil deposit of mid orange-brown silty-clay (109) with frequent angular stone inclusions.
- 6.6 At SN 61454 69336 the trackway cut through a field boundary bank (105), orientated approximately west northwest to east-southeast (Photo 8). The bank was built directly on top of a thin (0.2m thick) layer of gleyed soil (deposit 104) that had formed over peat-like topsoil (103). The bank material (106) consisted of a mix of topsoil that had a dark peat-like consistency and subsoil, and was around 1m high and 1.5m wide, with steep sides and a rounded top, surmounted by a post and wire fence-line. The bank had been reinforced with low stone revetting (107 to the south, 108 to the north), consisting of a single thickness of large, flat, unworked stone laid in rough coursing up to 0.5m high. No bonding material was noted.

- 6.7 The area stripped for the crane pad was 36m long and 19m wide, and the turbine base was 16m in diameter, partially overlapping with that of the crane pad (Photos 11 – 14). The same sequence of topsoil (100), overlying subsoil (109), and underlying fragmented bedrock (102), was noted throughout.
- 6.8 No finds, features or deposits of archaeological interest were revealed within the development area.
- 6.9 The context descriptions for the watching brief are presented in Appendix I.

7 Conclusions

- 7.1 An archaeological watching brief was undertaken in June 2016 during groundworks associated with the construction of single wind turbine and associated works on land at Lletyr Bugail, Llangwryfon, near Aberystwyth in Ceredigion.
- 7.2 The requirements for an archaeological watching brief were placed as a condition of the planning permission for the development (planning application number A140396) by Ceredigion County Council, on the advice of Dyfed Archaeological Trust – Planning Services (DAT-PS), in their capacity as archaeological advisors to the local planning authority. A previous archaeological assessment of the area had demonstrated the potential for archaeological remains associated with an upland agricultural settlement to the east, believed to be medieval in date.
- 7.3 The groundworks revealed relatively thin deposits of a mid reddish-brown clayey-silt topsoil (100) across the site, at most 0.2m thick. An area of darker topsoil with a more peat-like consistency (103) was noted around a field bank, indicating an area of localised waterlogging. The depth of topsoil indicates that the site had undergone little agricultural improvement, although some fragments of 19th century pottery were recovered, suggesting possible manuring and possible light ploughing in the 19th century. A field bank (105) was constructed on top of the topsoil, so probably represents a relatively modern feature.
- 7.4 Underlying the topsoil were relatively thin and stony deposits of mid reddish-brown silty-clay (101) and mid orange-brown silty-clay (108) subsoils, overlying a fragmented shale and sandstone bedrock (102). These deposits appeared to be naturally occurring and previously undisturbed.
- 7.5 No finds, features or deposits of archaeological interest were revealed during the groundworks.

8 Sources

British Geological Survey Viewer. 2016. Accessed 25/06/16
<http://mapapps.bgs.ac.uk/geologyofbritain/home>

Chartered Institute for Archaeologists. 2014, *Standard and Guidance for an Archaeological Watching Brief*.

Leighton, D K & Silvester, R J 2003 'Upland Archaeology in the Medieval and Post-Medieval Periods' In RCAHMW *The Archaeology of the Welsh Uplands* RCAHMW: Aberystwyth

Manley, J 1990 A preliminary survey of the undated small settlements of Wales *Archaeologia Cambrensis CXXXIX*, pp.21-55

Webster, J 2016 *Lletyr Bugail Wind Turbine, Llangwryfon, Aberystwyth, Ceredigion: Written Scheme of Investigation for an Archaeological Watching Brief* Wardell Armstrong Archaeology

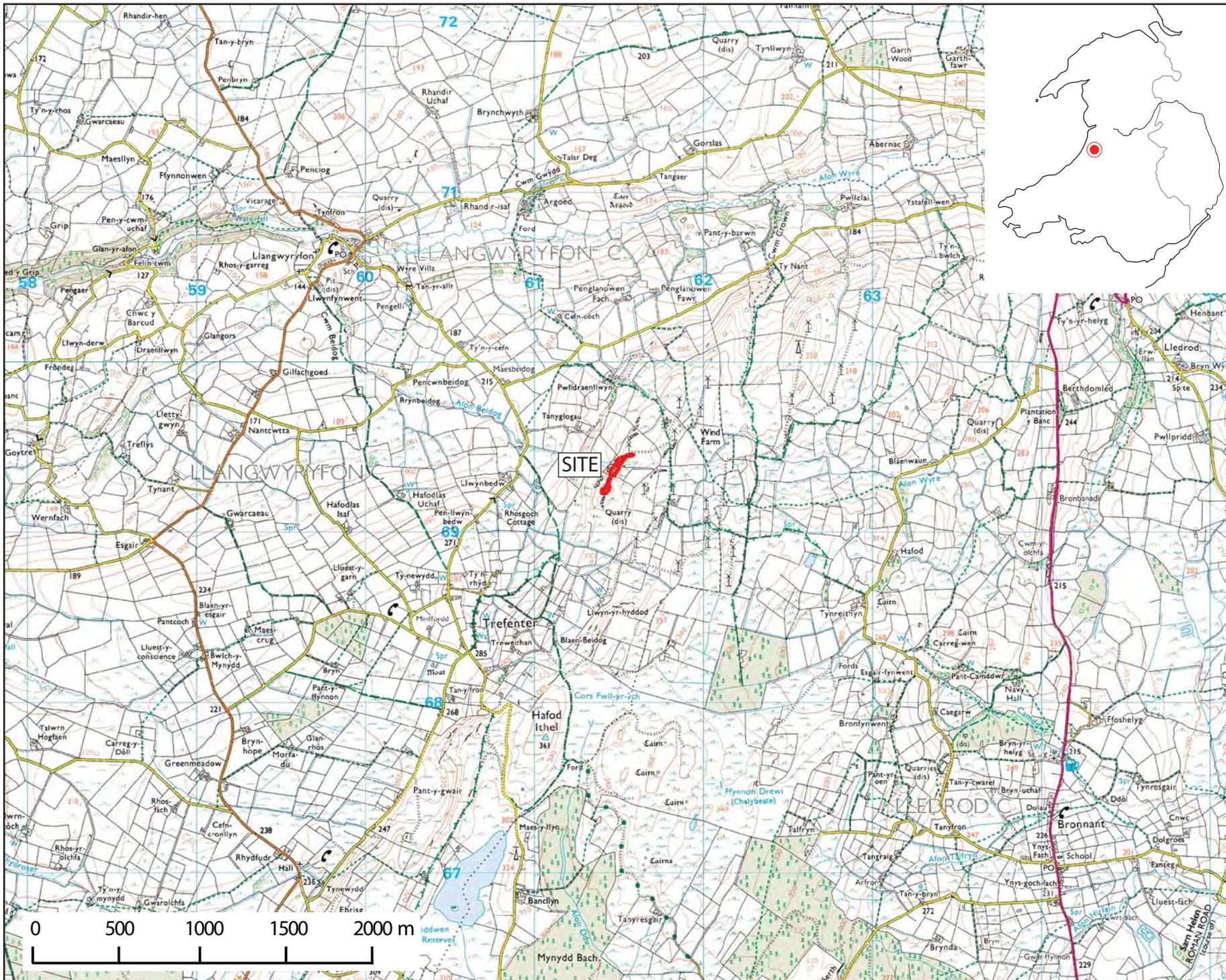
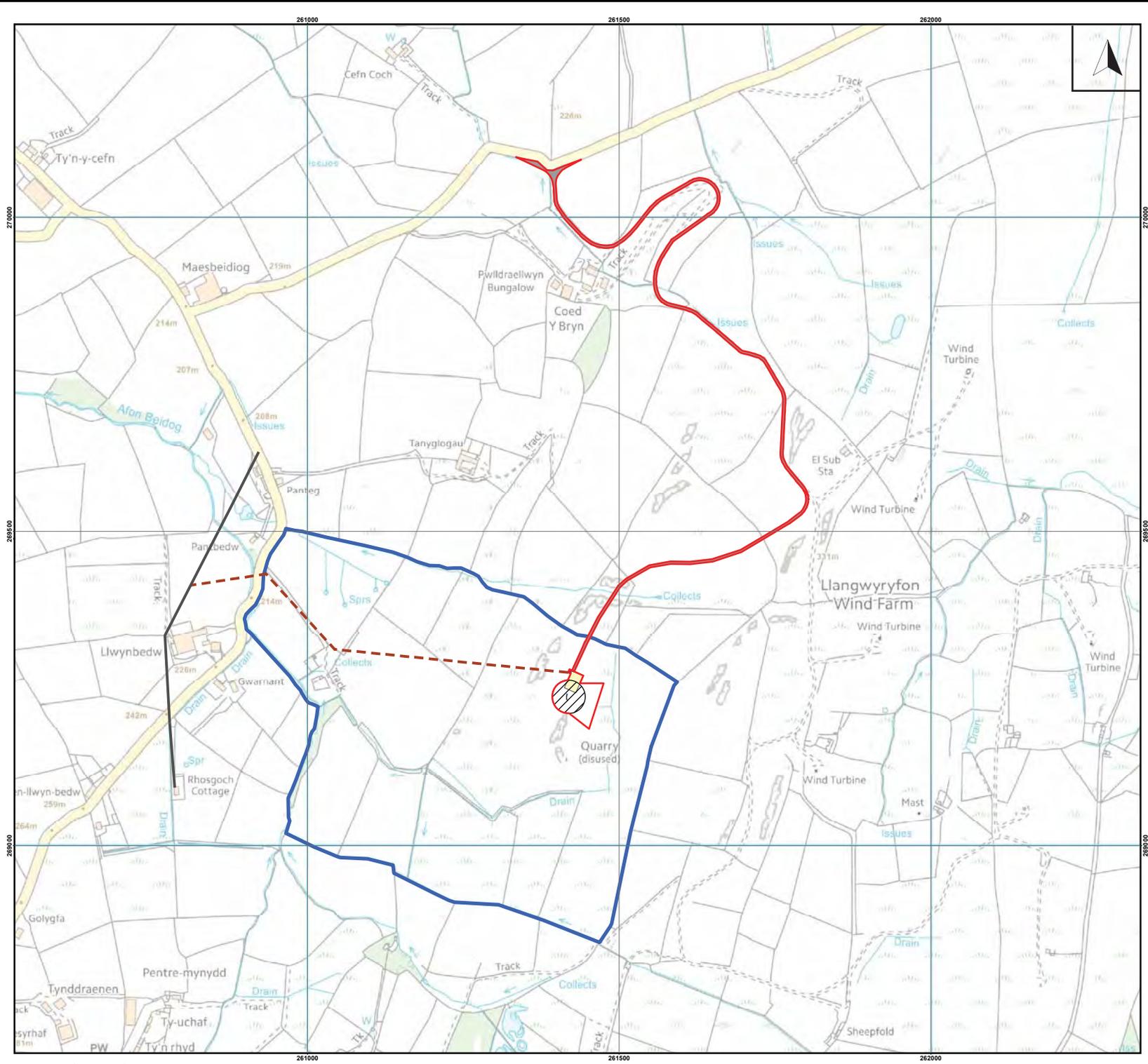


Figure 1: Location map, 1:30,000 @ A4

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**Proposed Wind Turbine
Lletyr Bugail,
Llangwryfon, Ceredigion**

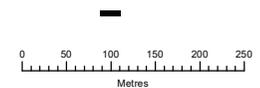
Location Plan

-  Ownership boundary
-  Application boundary
-  Turbine (GR: 261419, 269237)
-  Crane pad
-  Substation
-  Swept path area
-  Access track
-  Existing line
-  Indicative grid connection

Figure 2: Site location plan, as produced by ADAS in 2014. Reduced from original scale



Drawn by P. Taylor Date 20/05/2014
 Verified by A. Leeder Date 20/05/2014



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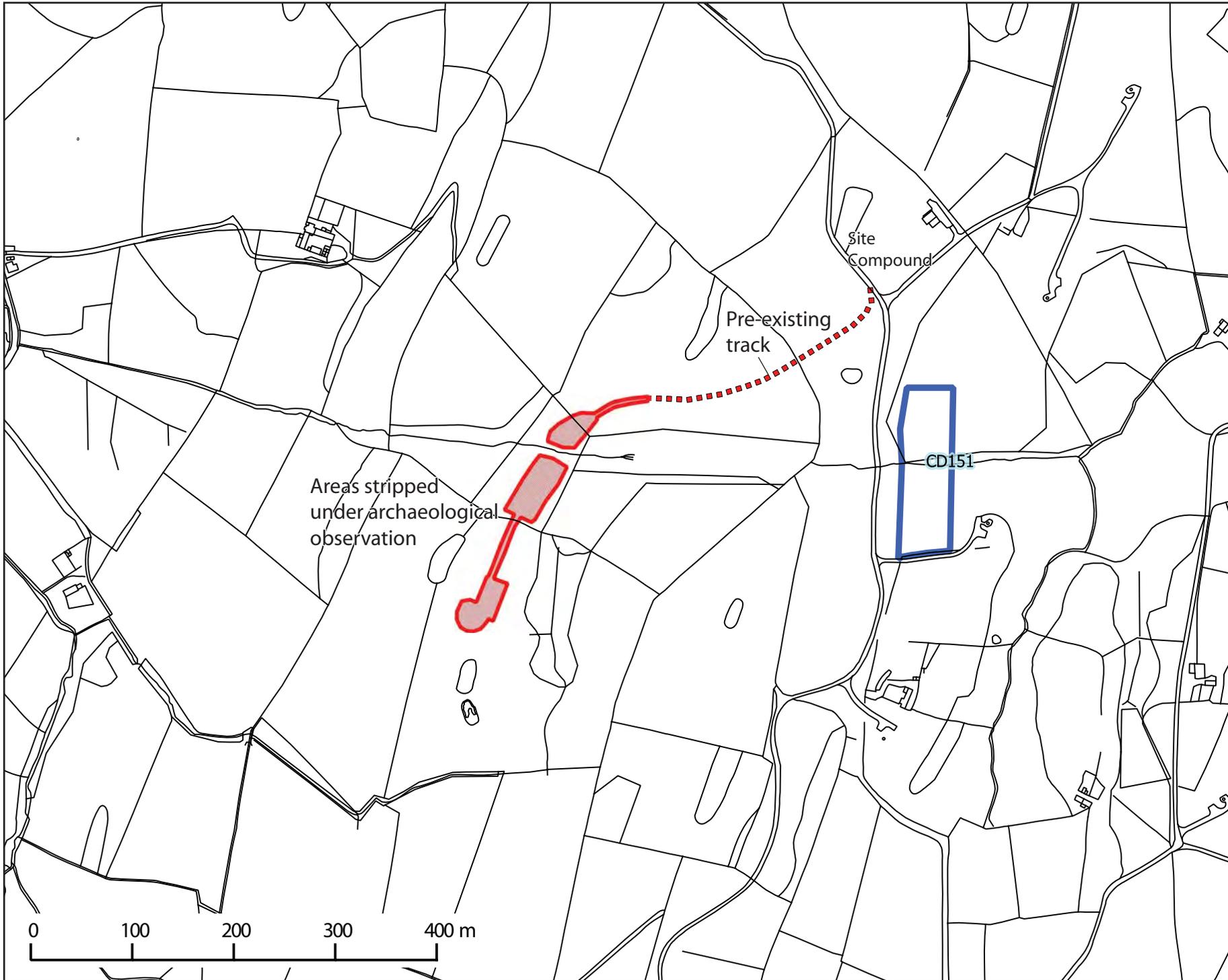


Figure 3: Site plan, showing areas stripped and observed during the archaeological watching brief. Also showing location of Scheduled Ancient Monument (CD151), in blue.
1:5000 @ A4



Photo 1: View from the site compound of the pre-existing track towards the site, prior to groundworks commencing. Facing north.



Photo 2: East facing shot along the pre-existing trackway at the start of the topsoil strip.



Photo 3: South facing shot of the initial groundworks at the northern end of the strip. 2m scale.



Photo 4: North facing shot of the area stripped to the north of the small stream. The darker patches represent areas of exposed fragmented bedrock. 2m scale.



Photo 5: South facing shot of the stream crossing and area beyond prior to groundworks.



Photo 6: North facing shot of the stripped area immediately to the south of the stream. 1m scales.



Photo 7: Northwest facing shot of trackway strip on high ground to the south of the stream. 1m scales.



Photo 8: East facing section of through boundary bank (105-7). 1m scale.



Photo 9: South facing shot of the trackway strip, taken from the field boundary. 1m scales.



Photo 10: South facing of trackway strip on approach to the crane pad. 1m scales.



Photo 11: Southwest facing shot of the crane pad strip. 1m scale.



Photo 12: Northwest facing shot of the crane pad strip. 1m scales.



Photo 13: North facing shot of the stripped area, including the turbine base and crane pad. 2m scale.



Photo 14: South facing shot of a typical sample section revealed in the crane pad strip. 1m scale.



Photo 15: Southwest facing shot of the completed strip.

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APPENDIX I: Context List

Context Descriptions

Context Number	Context Type	Description	Dimensions (Length x width x thickness)
100	Layer	<ul style="list-style-type: none"> • Topsoil • Moderate, mid reddish-brown clayey-silt • Abundant, small-medium sub-angular stone • Four small sherds of 19th century pottery 	Across site, 0.1m to 0.2m thick
101	Layer	<ul style="list-style-type: none"> • Subsoil • Moderate, mid reddish-brown silty-clay • Abundant, small-medium sub-angular stone • No finds 	Across site, 0.1m to 0.2m thick
102	Layer	<ul style="list-style-type: none"> • Fragmented bedrock deposits • Fairly compact, light brown sandy-clay • Very abundant (c.60%), medium-large angular shale and sandstone fragments • No finds 	Across site, depth not determined.
103	Layer	<ul style="list-style-type: none"> • Topsoil • Moderate, dark brown clayey-silt with organic inclusions • Common, small-medium sub-angular stone • No finds 	24m x >6m, 0.2m thick
104	Layer	<ul style="list-style-type: none"> • Gleyed topsoil • Fairly compact, light grey-brown, silty-clay • Rare, small-medium, sub-angular stone • No finds 	6.9m x >6m, 0.2m thick
105	Structure	<ul style="list-style-type: none"> • Field Boundary bank • Linear (orientated WNW – ESE) • Steep, vertical to slightly concave sides. Rounded top • Constructed of embanked material (106) encased in low stone revetting (107 & 108). • Built overlying deposit 104. • No finds, but stratigraphically modern 	Length not recorded (>6m), 1.5m wide, 1m high.
106	Deposit	<ul style="list-style-type: none"> • Banked material for field boundary 105 • Moderate, mixed dark brown clayey-silt with organic components and mid reddish-brown silty clay • Common, small-medium sub-angular stone inclusions • No finds 	Length not recorded (>6m), 1.5m wide, 1m thick.
107	Revetting	<ul style="list-style-type: none"> • Stone revetting for field boundary 105 (north side) • Vertical wall, built of large, flat, unworked sandstone • Roughly coursed • No bonding material present. 	Length not recorded, 0.25m wide, 0.5m high

108	Revetting	<ul style="list-style-type: none"> • Stone revetting for field boundary 105 (south side) • Vertical wall, built of large, flat, unworked sandstone • Roughly coursed • No bonding material present 	Length not recorded, 0.25m wide, 0.5m high
109	Layer	<ul style="list-style-type: none"> • Subsoil • Fairly compact, mid orange-brown silty clay • Abundant, small - medium sub-angular stone • No finds 	>110m x > 20m, 0.2m thick

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APPENDIX II:
Written Scheme of Investigation



PURE ENERGY PROFESSIONALS

Lletyr Bugail Wind Turbine, Llangwryfon, Aberystwyth, Ceredigion

Written Scheme of Investigation for an Archaeological Watching Brief

JUNE 2016

PLANNING REFERENCE: A140396
SITE CODE: LBL 16
DATE ISSUED: June 2016
JOB NUMBER: CP11795
REPORT NUMBER: 1.0/arch

Pure Energy Professionals

Lletyr Bugail Wind Turbine, Llangwryfon, Aberystwyth, Ceredigion

Written Scheme of Investigation for an Archaeological Watching Brief

June 2016

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DESK BASED ASSESSMENTS
ARCHAEOLOGICAL EVALUATION
ARCHAEOLOGICAL EXCAVATION
GEOPHYSICAL SURVEY
TOPOGRAPHIC AND LANDSCAPE SURVEY
HISTORIC BUILDING RECORDING
EIA AND HERITAGE CONSULTANCY

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1 INTRODUCTION AND CONTEXT OF THE PROJECT

- 1.1.1 Wardell Armstrong Archaeology (WAA) has been commissioned by Pure Energy Professionals (Hereafter referred to as 'the client') to prepare a Written Scheme of Investigation (WSI) for an archaeological watching brief during the construction of a new wind turbine at Lletyr Bugail, Llangwryfon, Aberystwyth, Ceredigion (NGR: SN 6142 6924). The watching brief is required to inform upon the potential archaeological resource and the impact upon it from the construction of a new access road, sub-station building and the foundation base for a new wind turbine along with associated service runs. Planning consent has been given by Ceredigion County Council (Application Reference: A140396), with conditions including for archaeological monitoring.
- 1.1.2 The development is likely to affect below ground archaeological remains, should they be present, and as a result the Local Planning Authority requires a programme of archaeological monitoring be undertaken during all intrusive works associated with the development. Should significant archaeological deposits or features be revealed during the archaeological watching brief then works will cease to enable the Local Planning Authority (LPA) to consider potential additional mitigation strategies.
- 1.1.3 A watching brief is defined as 'a programme of monitoring and investigation carried out during a non-archaeological activity within a specified area of land or development where construction operations may disturb or destroy archaeological remains' (CIFA 2014a).
- 1.1.4 This document provides a methodology for a watching brief and has been developed to best practice as stipulated in the planning condition (Dated: 23rd May 2015). In addition the WSI conforms to the guidelines and standards laid down in the following documents:
- *Standard and Guidance for an Archaeological Watching Brief*, Chartered Institute for Archaeologists: Reading (CIFA 2014a).
 - *Code of Approved Conduct for the Regulation of Arrangements in Field Archaeology*, Chartered Institute for Archaeologists: Reading (CIFA 2014b).
 - *Management of Archaeological Research Projects in the Historic Environment* (Morphe), English Heritage 2006.
 - *Wardell Armstrong Archaeology: Excavation Manual*, Wardell Armstrong Archaeology, internal document, edition 1.2 (WAA 2012).

2 BACKGROUND

2.1 Location and Geological Context

- 2.1.1 The site is located approximately 1km to the northeast of Trefenter to the immediate west of an existing wind farm. The nearest large town is Aberystwyth, just under 13km to the northwest. The area of investigation currently comprises rough grassland bound by a combination of scrub and hedges to the north, west and south, whilst the east of the site is limited by a low stone wall.
- 2.1.2 The site lies at roughly c.300m AOD (Above Ordnance Datum) on the west facing slope of Mynydd Bach, a ridge that is situated 7.6km southeast from the coastline on a low plateau that rises 13.5km to the northwest to become the Cambrian Mountains.
- 2.1.3 The underlying solid geology is mapped as a combination of sandstone and mudstone associated with the Mynydd Bach formation formed approximately 428 to 444 million years ago during the Silurian Period in a local environment dominated by deep seas. This is mapped as being overlain by a mixed till deposited up to 2 million years ago by glacial outwash associated with seasonal and post glacial meltwaters (BGS 2016).

2.2 Historical and Archaeological Background

- 2.2.1 The information below is based on the evidence collected during a previous Heritage Statement undertaken as part of the current phase of works (ADAS 2014). It is not intended to reproduce the full content of that report here and for further details please refer back to this original document.
- 2.2.2 Little known archaeological work has been undertaken within 1km of the study area and the main focus of that undertaken has been on previously known sites, as such there is currently an inherent bias in the dataset which makes it extremely difficult to provide an accurate representation on the potential for archaeology to be revealed.
- 2.2.3 *Palaeolithic (650,000-8,500 BC)*
- No records directly associated with this period have been identified by CADW, with in the study area, records from the HER are restricted a burnt mound at Tan-Yglogau which is broadly attributed to the prehistoric period. Evidence of Palaeolithic activity in Wales as a whole is limited and restricted to occupation horizons, hearths and evidence from caves (Aldhouse-Green 2000) Artefactual evidence from the middle and upper Palaeolithic periods within Wales, consists of triangular hand-axes, leaf-point, burins and scrapers from predominantly coastal locations in the Severn Estuary and less frequently from the marches.
- 2.2.4 *Mesolithic (8,500 BC-4,000 BC)*

There is a similar paucity of evidence in both the HER and CADW records for structures or artefacts from the Mesolithic period. In the wider landscape upland habitation sites from the Mesolithic are well represented in Wales e.g. Llyn Brenig, Gwynedd, and Waun Figen Felen, Powys (Berridge, 1979, 1980, 1981); as well as plethora of coastal sites e.g. Goldcliff and Redwick in the Gwent Levels (Bell, 2007).

2.2.5 *Neolithic (4,000-2,400 BC)*

Evidence of Neolithic activity is also absent from the study area, the HER and CADW archives have no records for this period. Evidence of Neolithic activity has been found nearby on the banks of the Afon Beidog. Across Wales, a number of isolated farmsteads have been attributed to this period, which suggest dispersed, rural settlement, nonetheless, evidence remains limited in south-west Wales (Lynch, 2000).

2.2.6 *Bronze age (2,400-700 BC)*

Direct evidence of Bronze Age activity in the study area, is also absent from the HER and CADW records. In the wider landscape, a possible cairn attributed to the Bronze Age is located approximately 850m to the south-east of the proposed turbine location and a burnt mound (HER no. 29907) is recorded 1.6km from the site on the banks of the Afon Beidog. An extensive barrow cemetery and field system of bronze age date is recorded c. 1.5km to the south at Llyn Eiddwen and Hafod Ithel (HER no. 5154). To the east of the barrow cemetery is a ring barrow (HER no. 67 1965) excavated in 1936.

2.2.7 *Iron age (700 BC-AD 43)*

The HER and CADW contain no records specifically attributed to the iron age period for the study area. Two hillforts are located nearby: Caer Argoed, 1.7km to the north of the development, and Gaer Fawr, 4.2km to the north-east. The construction of this hillforts is thought to stem from climatic deterioration in the bronze age which led to greater pressure on agricultural land and resulted in the development of defended settlements. However, a lack of archaeological investigation in this area renders iron age land-use, settlement patterns and funerary practices in the valleys and coastal plains around these hillforts an unknown quantity (Manley, 1990). Evidence of industrial activity possibly lead and copper working, was found at Llangynfelyn on the periphery of Cors Fochno, west of Borth. Charcoal recovered from the industrial deposits were submitted for radiocarbon dating and dates of 60BC – 90AD and 20AD – 220AD were obtained, which suggest late Iron Age – Roman Activity (Page *et al.* 2012).

2.2.8 *Romano-British (AD 43-410)*

Direct evidence of Romano-British activity in the study area is absent, the HER and CADW archives contain no records of monuments from this period. Roman influence is largely concentrated to the west of the study area. Evidence of new large-scale industries is apparent during this period, such as the Dolaucothi gold mine in Carmarthen (RCAHMW 2014). Possible Roman smelting works have been alluded to during the later Iron Age on the shores of the Dyfi Estuary. Radiocarbon evidence indicates this continued into the Roman period, the nature of this activity is at present uncertain, some form of processing associated with lead smelting seems the most likely. A Roman fort at Erglodd, c.500m to the southeast of the Llangynfelyn smelting site, may also be relevant, suggesting a Roman military presence in the area possibly to secure local metal resources (Page *et al.* 2012). Nonetheless, given the isolated nature of the area, in the landscape around the proposed development Iron Age settlement types and material culture traditions may have persisted into the early medieval period.

2.2.9. *Early medieval (AD 410-1066)*

The HER and CADW contain no records specifically attributed to the early medieval period for the study area. In the wider landscape three wells at Ffynnon Drewi (HER no. 6130) are attributed to this period in the HER. Woodland regeneration occurred from the 7th century onwards in some areas, whilst an open landscape and peat accumulation persisted in others. An increase in population during the Romano-British period is thought to have led to a general expansion in settlement activity and land-use in upland areas of Wales. Nonetheless, there is a general lack of evidence for early medieval settlement and agricultural activity in the landscape around the site during this period (Leighton & Silvester 2003, 32), which may reflect less intensive land use and more ephemeral settlement in the area following the contraction of Roman central authority.

2.2.10. *Medieval (AD 1066-1539)*

The HER and CADW contain records of five sites within the wider study area from this period. A scheduled enclosure of medieval date on Banc Pwllrainllwyn approximately 430m from the proposed turbine location and approximately 80m from the proposed access track. The HER records a field boundary that is thought to be connected to the scheduled enclosure. The foundation of a rectangular building of possible medieval date is recorded by the HER immediately adjacent to the eastern end of the proposed access track. The site of a small medieval settlement is indicated by documentary records at Maespeydauk. A medieval trackway across Cors Fochno has also been recorded (Page *et al.* 2012).

2.2.11. *Post-medieval (AD 1539-1800)*

The CADW archive contains six entries for grade ii listed buildings of post-medieval date in the study area. Of these, one is a small chapel at Capel Bethel. The other five are dispersed rural farmhouses and cottages which are in good condition and retaining significant elements of their historic character. The HER contains seventeen additional entries for heritage assets of post-medieval date in the study area. These comprise the remains of rural farmsteads, cottages and associated agricultural buildings and enclosures.

2.2.12. *19th-century and modern (AD 1900-present)*

The HER and CADW archive contain no records relating to this period for the site. The earliest detailed historic mapping available for the site are the first edition Ordnance Survey maps of 1888. These show the fields containing the proposed turbine and the access track as poorly drained rough upland pasture and working quarries. Later OS maps indicate that the quarry fell into disuse in the 20th century. In the last twenty years the construction of Llangwryfon wind farm and its associated trackways and infrastructure, along with the development of settlement at trefenter, have been the most obvious changes in the landscape.

3 AIMS AND OBJECTIVES

3.1.1 Where archaeological remains are present, the programme of archaeological monitoring will aim to investigate, interpret and characterise them. In addition, where potentially significant archaeological remains are revealed that are unable to be dealt with inside the watching brief remit, the works will help inform the Local Planning Authority and allow an informed decision to be made upon the requirement for further archaeological work.

3.1.2 The general aims of the watching brief are to:

- allow the monitoring archaeologist to signal that an archaeological find has been made before it is destroyed;
- provide the opportunity for appropriate resource allocation if the archaeological find cannot be dealt with under the watching brief remit;
- determine the presence or absence of buried archaeological remains within the proposed development site;
- determine the character, date, extent and distribution of any archaeological deposits and their potential significance;
- determine levels of disturbance to any archaeological deposits from plough damage or from any OTHER agricultural/industrial practices or later building activities;
- investigate and record all deposits and features of archaeological interest within the areas to be disturbed by the current development;

- determine the likely impact on archaeological deposits from the proposed development.
- disseminate the results of the fieldwork through an appropriate level of reporting.

4 METHOD STATEMENT

- 4.1.1 In accordance with the Chartered Institute for Archaeologists code of best practice a scheme for an archaeological watching brief has been designed in order to satisfy the stated objectives of the project as set out under Section 3.
- 4.1.2 The watching brief is intended to observe all intrusive groundworks associated with the proposed development associated with the construction of the access roads, foundations for the wind turbine and sub-station building along with all associated service runs.
- 4.1.3 In advance of the fieldwork WAA will ensure that all reasonable measures have been taken to identify any constraints and will obtain information from the client on the presence of services, any ecological constraints, the presence of Public Rights of Way, the presence of contaminated land or any other risks to health and safety.
- 4.1.4 WAA will request that intrusive groundworks are carried out using a mechanical excavator fitted with a toothless ditching bucket to maximise the chance for identification of archaeological remains should they be present. However, a toothed bucket may be necessary in areas where substantial obstacles are present.
- 4.1.5 All machine excavation will be done under the close supervision of a suitably experienced archaeologist and, should archaeological deposits be revealed, time will be allowed for excavation by hand. Clean surfaces will be inspected and selected deposits excavated to retrieve artefactual material and environmental samples, as well as to determine their character, significance and date.

4.2 Investigation and Sampling Strategy

- 4.2.1 Archaeological features will be sampled sufficiently to characterise and date them and to determine their significance i.e. 10% of fills of linear features (unless the linear features are substantial in which case an alternative sampling strategy will be discussed with the planning archaeologist) and 50% of pit fills. Smaller discrete features such as postholes will be a 100% sampled.
- 4.2.2 Measures will be taken to protect particularly significant, valuable or sensitive archaeological remains from exposure, accidental damage and / or theft.

4.3 Recording

- 4.3.1 Archaeological deposits and features will be recorded according to accepted CIFA professional standards as set out in the WAA Field Manual (WAA 2012) and sufficient data will be recorded to allow the preparation of a report setting the results of the watching brief into their archaeological context and local regional research frameworks.
- 4.3.2 Archaeological contexts will be recorded and numbered individually on *pro-forma* context sheets. A further more general record of the work, comprising a description and discussion of the archaeology is to be maintained as appropriate. Context sheets are to be primarily filled in by the archaeologist excavating the feature or deposit.
- 4.3.3 The internal site code used for this site will be **LBL 16** along with the internal project reference **CP11795** will be referenced on all paperwork. Once an accession number has been provided by the district, this will be added to all paperwork in addition.
- 4.3.4 A plan indicating the location of the non-archaeological groundworks and the location of any archaeological features encountered will be drawn at an appropriate scale of 1:100 or at a larger scale where appropriate.
- 4.3.5 All features will be recorded using a Trimble TSC3 GPS unit with sub-centimetre accuracy with each point recorded in relation to the OSGB36 geod model and coded to an internal database to provide a dataset that records feature type, context number, associated drawing numbers and any other feature specific information that may be relevant. This plan will provide a geo-referenced three dimensional plan of the site, in addition, features that require more detailed illustration will be undertaken in relation to a feature specific baseline (that will be surveyed in using the GPS) and drawn at an appropriate scale on polyester based drafting film and labelled in relation to a site specific drawing register.
- 4.3.6 Sections will be drawn at a scale of 1:10. Significant archaeological features will normally be drawn in plan at a scale of 1:20 or 1:10 if appropriate. All detailed plans and sections will be related to the 1:100 or 1:1250 plans and the latter will be accurately related to the National Grid.
- 4.3.7 All plans and sections are to be levelled with respect to AOD and are to be drawn on polyester based drafting film and clearly labelled.
- 4.3.8 A full digital photographic record of the work will be kept. The photographic record is to be regarded as part of the site archive.
- 4.3.9 Wardell Armstrong Archaeology will ensure that the complete site archive including finds and environmental samples is kept in a secure place throughout the period of fieldwork and post excavation works.

4.4 Human Remains

- 4.4.1 In the unlikely event that human remains, both inhumations and/or cremations, be exposed during the course of the watching brief then all works will cease immediately and the local police and coroner informed. The area will be screened from view and discussions will be held with the LPA Planning Archaeologist and the client on options for their appropriate preservation in situ or for their removal in accordance with professional standards and guidelines once the antiquity of the remains have been suitably proven.
- 4.4.2 Wardell Armstrong Archaeology will have available within the team or on call an appropriately qualified and experienced osteoarchaeologist to supervise the excavation and removal of any human remains (where this is necessary) from the site.
- 4.4.3 In the event that human burials are discovered and are required to be removed, a Ministry of Justice Licence will be required (in accordance with Section 25 of the Burial Act 1857) before the remains can be lifted. The need for a Ministry of Justice Licence applies to both inhumation and cremated remains. Application for a Licence will be made by WAA.

4.5 Finds recovery and processing and treatment

- 4.5.1 All artefacts recovered during the course of the watching brief are the property of the landowner/client. They will be suitably bagged, boxed and marked in accordance with WAA internal procedure and a suitable repository agreed with the LPA Planning Archaeologist. The treatment of finds will follow ClfA guidance (ClfA 2014c).
- 4.5.2 On completion of the project modern material, unstratified remains and objects that have been assessed as having no obvious grounds for retention will be discarded after a period of six months, unless there is a specific request to retain them.
- 4.5.3 Records of artefact assemblages will clearly state how they have been recovered, sub-sampled and processed.

4.6 Treatment of treasure

- 4.6.1 Finds falling under the statutory definition of Treasure (as defined by the Treasure Act of 1996 and its revision of 2002) will be reported immediately to the relevant Coroner's Office, the landowner/client and the LPA Planning Archaeologist. A Treasure Receipt (obtainable from either the FLO or the DCMS website) will be completed and a report submitted to the Coroner's Office and the FLO within 14 days of understanding the find is Treasure. Failure to report within 14 days is a criminal offence.
- 4.6.2 The Treasure Receipt and report will include the date and circumstances of the discovery in addition to the identity of the finder (put as unit/contractor) and (as exactly as possible) the location of the find.

4.7 Environmental Sampling

- 4.7.1 A structured programme of environmental sampling appropriate to the aims of the project will be implemented. The strategy and methodology for the sampling of deposits with palaeo-environmental potential will be in accordance with English Heritage Centre for Archaeology Guidelines "*Environmental Archaeology – A guide to the theory and practice of methods, from sampling and recovery to post-excavation*" (2011).
- 4.7.2 WAA's Environmental and Geo-Archaeological Officers will undertake the processing and examination of deposits if there is potential for exceptional significance or the requirement for specialist procedures.
- 4.7.3 Where deposits are dry, bulk samples for the recovery of charred plant remains, small bones and finds, will be taken from sealed and datable features such as pits, ditches, hearths and floors. Each context will normally be sampled. The size of the sample is expected to be in the range of 40-60 litres per context or 100% of smaller contexts. Samples will not be taken from the intersection of features.
- 4.7.4 Mollusc samples of 2 litres each will be taken vertically from appropriate sections to investigate the changes of vegetation through time.
- 4.7.5 Where deposits are wet, waterlogged or peaty, monoliths will be taken along cleaned vertical surfaces for the retrieval of pollen, diatoms, ostracods and foraminifera. The numbers to be taken will be agreed with the LPA Planning Archaeologist.
- 4.7.6 For wet, waterlogged or peaty deposits, bulk samples of 20 litres will be taken from visible layers or spits for the retrieval of plant macro-remains and insects.
- 4.7.7 Environmental samples from dry deposits will normally be processed by flotation following the fieldwork and the residues will be sorted to retrieve small bones, small finds and charcoal that has not floated. Environmental samples from wet deposits will normally be sent to specialists for processing in laboratory conditions.
- 4.7.8 Where guidance is relevant the appropriate English Heritage papers will be followed (English Heritage 2005; 2006; 2007; 2011).

4.8 Reporting

- 4.8.1 Upon completion of the watching brief fieldwork WAA will produce an appropriate report, a draft of which will be supplied to the client for comment in the first instance. Once approved by the client a copy of the report will be forward to the Local Authority Planning Archaeologist.

4.8.2 Should little or no archaeology be revealed it is expected that the production and submitting of a suitable report be undertaken within 4-5 weeks of the completion of the fieldwork. If significant and / or substantial deposits be revealed then the submission of the report may take longer due to the additional work required, in this event discussions will be held with the LPA archaeologist about the requirements for a post-excavation assessment or interim report to aid in the discharge of conditions.

4.8.3 External specialists will only be called upon during compilation of the report if the character of the archaeological resource cannot be adequately determined without their input.

4.9 Archive Preparation and Deposition

4.9.1 WAA will make arrangements for the deposition of the site archive with the appropriate museum once fieldwork has been completed. Once a suitable repository has been provided all records will include the event specific accession number and WAA will follow any specific guidelines requested.

4.9.2 The site archive, will include all project records and cultural material produced by the watching brief, and will be prepared in accordance with the Archaeological Archives Forum and EAC guidelines (Brown 2011; Perrin *et al* 2014).

4.9.3 On completion of the project WAA will arrange for the archive to be deposited in accordance with the appropriate museum. Should no archaeology be revealed then the final report will be provided to the local HER and appropriate periodical.

4.10 Monitoring and Liaison

4.10.1 WAA will allow the site records to be inspected and examined at any reasonable time during or after the archaeological fieldwork by the client, the LPA Planning Archaeologist or any designated representative of the Local Planning Authority.

4.10.2 WAA will liaise closely with the LPA Planning Archaeologist throughout the course of the development and will arrange for on-site meetings at key decision points.

4.11 Dissemination

4.11.1 A copy of the final report will be provided to the Historic Environment Records office on the completion of the works and will be available on demand.

4.11.2 A summary of the work will be submitted to the editor of *Archaeology in Wales* for publication, dependant on the quality and quantity of the archaeology the LPA may become involved in the final scope of the article submitted.

4.12 Health and Safety

- 4.12.1 WAA will conduct the work in compliance with the Health and Safety at Work Act 1974 and will also follow the guidance set out in *“Health and Safety in Field Archaeology”* produced by the Standing Conference of Archaeological Unit Managers 1997.
- 4.12.2 WAA maintains a Health and Safety Policy and has available appropriate expertise in Health and Safety advice. Site staff will have an appropriate level of training to enable them to carry out fieldwork safely.
- 4.12.3 WAA will abide by the client’s health and safety methodology as well as producing their own internal risk assessment document, all WAA staff will assist the client in maintaining the site in a safe condition. Hazards will be appropriately identified and managed including identification of buried and above ground services/utilities. Deep excavations will be appropriately fenced with relevant signage. Deep excavations will be shored, stepped or battered as appropriate for safe access and egress and allow for the required works to be conducted in a safe manner.
- 4.12.4 In addition to the risk assessment which will be undertaken prior to commencement of fieldwork, where appropriate a COSHH assessment will also be undertaken. Once on site these documents will be assessed and any variations will be documented and added to the appropriate document. These will be re-evaluated as periodically during the course of the fieldwork to make sure that they remain consistent to the site specific risks. All members of WAA and visitors will be required to be inducted and sign these documents on first arrival to site to show that they have read and understood the contents and any variations to the documents will be communicated as required.
- 4.12.5 During the fieldwork appropriate safety clothing will be worn by WAA staff at all times. The client will be requested to provide details of their own risk assessment before fieldwork commences. If there is conflict between the client’s risk assessment and that of WAA then the client’s will take priority, unless it is perceived to be placing the field team at greater risk.
- 4.12.6 The client will be asked to provide all information reasonably obtainable on contamination and the location of known services before the archaeological watching brief commences.

4.13 Staffing

- 4.13.1 The project will be directly managed by a full Member of the Chartered Institute for Archaeologists or an archaeologist of equivalent standing.
- 4.13.2 The standards and codes of conduct of the Chartered Institute for Archaeologists will be adhered to at all times.

- 4.13.3 As far as is possible WAA will inform the LPA Planning Archaeologist of the start date of the work (at least ten working days before) and arrange for monitoring visits to be undertaken if appropriate.
- 4.13.4 WAA will keep the client and the LPA Planning Archaeologist informed of the progress of work and will notify both immediately if particularly important archaeological remains are encountered.
- 4.13.5 The watching brief will be monitored for the Local Planning Authority by Zoe Bevans-Rice, Planning Archaeologist, Dyfed Archaeological Trust on behalf of Ceredigion County Council.
- 4.13.6 The following members of the WAA team will be available, if necessary to advise when necessary:
- Environmental Archaeology: Don O’Meara MSc., M.A., BA (Member of Association for Environmental Archaeology)
 - Palaeoentomology and Environmental Archaeology: Emma Tetlow PhD, MPhil, BSc, MCIFA (Member of Association for Environmental Archaeology, Quaternary Research Association and European Association of Archaeologists)
 - Finds and Archives Officer: Megan Stoakley M.A., BA
 - Flint Expert: David Jackson BA Hons
 - Osteoarchaeologist: Damian Churchill M.A., BA Hons
 - Numismatics: Frank Giecco MIFA, DipArch, BA Hons
 - Geoarchaeology and Pollen: Nick Daffern MSc, BA (Hons) (Member of the Quaternary Research Association and the Association for Environmental Archaeology).

References

- Aldhouse-Green, S. (2000) Palaeolithic and Mesolithic Wales. In Lynch, F., Davies, J. L. and Aldhouse-Green, S. *Prehistoric Wales*. Stroud: Sutton Publishing Ltd.
- BGS (2016) *Geology of Britain Viewer*, <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>, British Geological Survey, accessed 01st June 2016
- Berridge, P J, (1979) 'Waun Fignen Felin', *Archaeology in Wales* 19, 11.
- Berridge, P J, (1980) 'Waun Fignen Felin', *Archaeology in Wales* 19, 19-20.
- Berridge, P J, (1981) 'Waun Fignen Felin', *Archaeology in Wales* 21, 20.
- Bell, M., ed. (2007) Prehistoric coastal communities: the Mesolithic in Western Britain. Council for British Archaeology Research Report, 149. Council for British Archaeology, York,
- Brown, D.H. (2011) *Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation*, Archaeological Archives Forum
- CIFA (2014a) *Standard and Guidance for an Archaeological Watching Brief*, Chartered Institute for Archaeologists, Reading
- CIFA (2014b) *Code of Approved Conduct for the Regulation of Arrangements in Field Archaeology*, Chartered Institute for Archaeologists, Reading
- CIFA (2014c) *Standard and guidance for the collection, documentation, conservation and research of archaeological materials*, Chartered Institute for Archaeologists, Reading
- English Heritage (1991) *Management of Archaeological Projects (MAP2)*, English Heritage, London
- English Heritage (2005) *Guidance for best practice for treatment of human remains excavated from Christian burial grounds in England*, English Heritage, London
- English Heritage (2006) *Management of Research Projects in the Historic Environment*, English Heritage, London
- English Heritage (2007) *Understanding the Archaeology of Landscapes: A Guide to good recording practice*, English Heritage, Swindon
- English Heritage (2011) *Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation*, English Heritage, London
- Leighton, D.K. & Silvester, R. J. (2003) Upland Archaeology in the Medieval and Post-Medieval Periods. In RCAHMW *The Archaeology of the Welsh Uplands*. RCAHMW: Aberystwyth
- Lynch, F. (2000) The Earlier Neolithic. In Lynch, F., Davies, J. L. and Aldhouse-Green, S. *Prehistoric Wales* Stroud: Sutton Publishing Ltd.

Manley, J. (1990) A preliminary survey of the undated small settlements in Wales.

Archaeologia Cambrensis CXXXIX. pp. 21-55

Page, N., Hughes, G., Jones, R. and Murphy, K. 2012. Excavations at Eglodd, Llangynfelyn, Ceredigion: prehistoric/Roman lead smelting site and medieval trackway. *Archaeologia Cambrensis*, 161, 285-356

Perrin, K *et al* (2014) *A Standard and Guide to Best Practice for Archaeological Archiving in Europe*, EAC Guidelines 1, Europae Archaeologia Consilium: Namur

WAA (2012) *Wardell Armstrong Archaeology: Excavation Manual*, Wardell Armstrong Archaeology, Unpublished internal document, Edition 1.2

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Archaeology
Wales

APPENDIX III:
Archive Cover Sheet

ARCHIVE COVER SHEET

Lletyr Bugail Wind Turbine, Llangwryfon, Aberystwyth

Site Name:	Lletyr Bugail Wind Turbine
Site Code:	LBL/16/WB
PRN:	-
NPRN:	-
SAM:	-
Other Ref No:	-
NGR:	NGR SN 6142 6924
Site Type:	Rural uplands
Project Type:	Watching Brief
Project Manager:	Philip Poucher
Project Dates:	June 2016 - July 2016
Categories Present:	Post-Medieval/Modern
Location of Original Archive:	AW
Location of duplicate Archives:	Paper copies with RCAHMW, Aberystwyth
Number of Finds Boxes:	0
Location of Finds:	N/A.
Museum Reference:	N/A
Copyright:	AW
Restrictions to access:	None

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