

Lindhurst Wind Farm, Mansfield, Nottinghamshire

Archaeological Watching Brief Report



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Archaeological Watching Brief

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Archaeological Watching Brief

Summary

Wessex Archaeology was commissioned by RWE Npower Renewables Ltd to undertake an archaeological watching brief on excavations associated with the construction of five wind turbines and associated infrastructure on land off Blidworth Lane, Lindhurst, Mansfield, Nottinghamshire (hereafter 'the Site'). The Site is approximately centred on National Grid Reference (NGR) 4575 3580.

The scope of the watching brief comprised a partial monitoring strategy in accordance with a Written Scheme of Investigation (WSI) by ARCUS (2009) and approved by Nottinghamshire County Council and in line with planning policy guidance set out in PPG16.

Archaeological monitoring was undertaken over approximately 0.5 hectares divided between seven areas across the site. The aim of the watching brief was to preserve through record the presence/absence, date, nature, and extent of any buried archaeological remains and features. This report presents a brief description of the methodology followed, the results, and interpretation of the findings.

Historical analysis of the area indicated the possibility of Roman and Prehistoric activity in the vicinity of the site, however, no archaeological materials relating to these periods were recovered and intensive ploughing of the area made it unlikely that any shallow archaeological features would survive. A large number of features were identified across the monitored areas thought to relate to former tree cover. These features were heavily truncated, although it was observed that they may not have been pulled down but felled in such a way to leave the roots to rot in place. This could constitute evidence for woodland management consistent with the area's inclusion within Sherwood Forest during the medieval period.



Archaeological Watching Brief

Acknowledgements

This project was commissioned by RWE Npower Renewables Limited and Wessex Archaeology is grateful to Andy Clayton in this regard. Wessex Archaeology would also like to thank Ian Gardner of RWE Npower Renewables and the onsite contractors from the Lagan Group for facilitating access to the site and for their cooperation during this project. The work was monitored by Ursilla Spence and Chris Robinson on behalf of Nottinghamshire County Council.

The archaeological watching brief was undertaken by Michael Hartwell, James Thomson, and Lucy Dawson. The report was researched and compiled by James Thomson. The project was managed for Wessex Archaeology by Richard O'Neill.



Archaeological Watching Brief

1 INTRODUCTION

1.1 **Project Background**

- 1.1.1 Wessex Archaeology was commissioned by RWE Npower Renewables Limited (hereafter 'the Client') to undertake an archaeological watching brief during excavations in the construction of Lindhurst Wind Farm, Blidworth Lane, Mansfield, Nottinghamshire (hereafter 'the Site'). The Site is approximately centred on National Grid Reference (NGR) 4575 3580.
- Wessex Archaeology agreed to follow a Written Scheme of Investigation 1.1.2 (WSI) prepared in 2009 by ARCUS which was approved by Nottinghamshire County Council (NCC). This detailed the scope of the archaeological monitoring and the methods and standards to be employed. This report presents a brief description of the methodology followed, the results of the monitoring, and an interpretation of the findings.

1.2 The Site, location and geology

- The Site is located approximately 1km to the southeast of Mansfield and 1.2.1 west of Blidworth Lane occupying an area of high ground with the terrain falling gently to the north and east, and steeper to the south towards Rainworth Water. Within the site the terrain falls from approximately 125m aOD to 115m aOD.
- 1.2.2 The current land use within the Site is arable farmland comprising of irregular geometric fields around a narrow surfaced lane from Blindworth Lane to Lindhurst Farm.
- 1.2.3 The underlying geology of the area is pebble beds on the Sherwood Sandstone series.

2 **METHODOLOGY**

2.1 Aims and scope

- 2.1.1 The principal aim of the watching brief was to provide information concerning the presence/absence, date, nature, and extent of any buried archaeological remains and to investigate and record archaeological features revealed during the excavations and groundworks.
- 2.1.2 The scope of the watching brief was partial (ARCUS 2009), comprising monitoring as, and when, appropriate. In addition to the proposed monitoring of soil stripping in the area of the site compound and at two turbine locations (ibid.) NCC required additional monitoring that was undertaken along two access roads and in the area of the substation.



2.2 **Watching Brief**

- 2.2.1 In accordance with the WSI (ARCUS 2009), an archaeological watching brief was maintained by a suitably qualified member of Wessex Archaeology staff on all groundworks within the designated monitoring areas.
- 2.2.2 Groundworks were carried out by a tracked 360° excavator fitted with a grading bucket. Intervention areas were located using a base plan of the area provided by the Client.
- 2.2.3 All recording was undertaken using Wessex Archaeology's pro forma recording system, supported by a photographic record. The photographic record comprised 21 black and white 35mm prints and an additional 131 digital images.
- 2.2.4 Archaeological deposits were planed at a scale of 1:20 with cross-sections through features drawn at a scale of 1:10. Drawings were drawn on inert materials and adhered to accepted drawing conventions.

2.3 **Best practice**

2.3.1 All works were conducted in compliance with the Institute for Archaeologists' Standards and Guidance for an Archaeological Watching Brief (Revised 2008).

2.4 Copyright

2.4.1 This report may contain material that is non-Wessex Archaeology copyright (e.g. Ordnance Survey, British Geological Survey, Crown Copyright), or the intellectual property of third parties, which we are able to provide for limited reproduction under the terms of our own copyright licences, but for which copyright itself is non-transferrable by Wessex Archaeology. You are reminded that you remain bound by the conditions of the Copyright, Designs and Patents Act 1988 with regard to multiple copying and electronic dissemination of the report.

ARCHAEOLOGICAL AND HISTORICAL BACKGROUND 3

3.1 Introduction

3.1.1 A full assessment of the impact of the proposed wind farm at Lindhurst on archaeology and cultural assets was produced by Land Use Consultants (2006). The results of this assessment are summarised below.

3.2 Prehistoric period (650,000 BC-AD 43)

3.2.1 Although there is little known about the region during the prehistoric period, the discovery of an assemblage of prehistoric flints and two ring ditch enclosures attest to human activity in the region probably dating to the Neolithic (4000-2400 BC) and Bronze Age (2200-700 BC).

3.3 Romano-British to Anglo-Saxon periods (AD 43-1066)

Following the Roman conquest of AD 43 the area around Mansfield 3.3.1 remained part of the Iron Age tribal polity called the Corieltauvi. An enclosure believed to be from the Romano-British period and located south



- of the Site in the Rainworth Water valley, is suggestive of settlement in the region from this period.
- During the Danelaw, in the 9th and 10th centuries, Lindhurst was located 3.3.2 within the wapentake (administrative division) of Broxtowe North, and by the 11th century was part of the large Anglo-Saxon estate of Mansfield.

3.4 Medieval to Modern period (AD 1066-present)

- The name Lindhurst derives from the old English for Lime-wood, and is first 3.4.1 mentioned as a parish in charters dating to the 13th century potentially containing several small settlements (Ursilla Spense Pers. Comm.). The parish lay within Sherwood Forest, which from the Norman conquest of 1066 was under Royal ownership and from which parts were granted to monastic estates during the 12th and 13th centuries. The forest at Lindhurst, however, remained in royal ownership until sold into the private ownership of the Duke of Portland in the 18th century.
- Lindhurst appears to have remained forested through the 16th. 17th and 18th 3.4.2 centuries, with deeds and charters relating to the area describing it as woods. There was no call for parliamentary enclosure of the area and no Tithe Award for the area in the 19th century, suggesting that the area had been deforested and the present fields created in the mid-19th century. The fields had certainly been created by the production of the first edition Ordnance Survey in 1887 where the land was shown parcelled out in fields which have remained virtually identical to the present day.

4 **RESULTS**

4.1 Introduction

- 4.1.1 In total 7 trenches were excavated totalling an area of approximately 0.5 hectares (Figure 1). Trenches 1, 2, & 7 were located northwest of the corner of Blidworth Lane and the lane leading to Lindhurst Farm. Trenches 4 & 6 comprised excavations associated with the foundations and access road of Turbine 2. Trench 3 comprised the foundation excavation for Turbine 3, and Trench 5 the excavation for the access road to Turbine 4.
- 4.1.2 The following sections provide a summary of the information held in the site archive. Observed features and contexts for each trench are tabulated as Appendix 1.

4.2 Stratigraphic sequence

- 4.2.1 The depth of the stratigraphy was observed to be fairly uniform within the monitored areas. The topsoil across the Site was a mid brown sandy loam, humic from repeated cultivation, with a typical depth of c.0.5m below ground level (bgl). The subsoil was considerably sandier becoming slightly clayey towards the southeast of Trench 5. Throughout these sediments were occasional to moderate quantities of well rounded pebbles that also formed occasional concentrations within the subsoil.
- 4.2.2 In addition, made ground was observed in the compound and sub-station area overlying buried topsoil ((102), (201), and (702)). The made ground was irregular in depth, becoming thicker towards the southeast, and comprised of redeposited dark grey topsoil.



Where deeper excavations were undertaken (Trenches 3 and 4) natural 4.2.3 deposits were observed comprising of layers of fine orange sand with a reddish hue. Sparse patches of discolouration were observed within these contexts to a depth of c.2.1m bgl that were interpreted to having likely been a result of bioturbation by roots. Beyond this depth clear geological banding was visible. Throughout these layers were occasional to moderate quantities of well rounded pebbles.

4.3 Archaeological features

- 4.3.1 The Site had been subjected to intensive ploughing with scars observed to c.0.55m bgl in all monitored areas except for Trenches 2 and 7 which were located across the edge of a field and road verge.
- 4.3.2 Features identified were restricted to those thought to be associated with former tree cover and were observed sparsely across all monitored areas (occupying 3-5% of each area). Several of these features were excavated to ascertain their depth, date, and nature ([204], [403], [405], [704], and [706]) (Figures 2-5). Although these features had been largely truncated by ploughing some survived to a depth of c.0.5m with irregular steep sides and irregular rounded base. The primary fills of these features were of fine light grey sand consistent with soils observed beneath recently removed hedges (103). The shape of the features and their fills were not consistent with tree throws but were more likely the result of trees, having been cut to ground level with the roots left to rot in situ.
- 4.3.3 Occasional small charcoal fragments were identified across the subsoil with rare concentrations located in proximity to tree clearance features. Two features excavated in Trenches 2 and 7 indicated evidence for in situ burning of vegetation ([204] and [706]) (Figure 3-4), although these appear to have been discrete instances.
- 4.3.4 An additional observation made during the course of the watching brief was the presence of large sub-angular stones in the hedgerow west of Trench 3 running north to the track leading to Lindhurst Farm. These stones were uncommon to the area and their placement along the field boundary suggests they were relocated following disruption during ploughing from a buried structure, or structures, in an adjacent field.

4.4

4.4.1 No artefacts were recovered from within the monitored areas.

5 CONCLUSIONS

5.1 Discussion

- 5.1.1 Historical analysis of the area indicated the possibility of Roman and Prehistoric activity in the vicinity of the site, however no archaeological materials relating to these dates were recovered from within the monitored areas.
- 5.1.2 The absence of archaeological material does not signify the absence of human activity in the area, but does make it unlikely that any intensive or intrusive activities were undertaken before the post-medieval period. Furthermore shallow archaeological features were unlikely to have survived



due to intensive ploughing throughout the post-medieval and modern periods. The only exception to this was the field containing potential structural material redeposited along the field boundary.

5.1.3 Despite ploughing, a large number of features were identified across the monitored areas thought to relate to former tree cover. These had been largely truncated, however it was observed that they had probably been felled in such a way to leave the roots to rot in place. This could constitute evidence for woodland management consistent with the area's inclusion within Sherwood Forest during the medieval period.

5.2 Conclusion

5.2.1 Archaeological monitoring during the construction of Lindhurst Wind Farm located little direct evidence for human activity prior to the post-medieval period. Despite the subsoil horizon having been largely truncated by repeated ploughing, significant evidence remained to indicate that the area had been covered with vegetation.

6 **ARCHIVE**

6.1 **Preparation**

6.1.1 The project archive, consisting of all primary written documents, plans, sections, photographs, and electronic data, will be prepared by Wessex Archaeology staff in accordance with the requirements of the repository museum and in line with guidelines published by the United Kingdom Institute for Conservation (1990), Museums and Galleries Commission (1992), and English Heritage (1991).

6.2 **Deposition**

- 6.2.1 The physical Site archive will be deposited with the relevant Museum archive under an accession number to be confirmed.
- 6.2.2 Two copies of the report will be prepared for the client and additional copies will be submitted with the Site archive, and to the Historic Environment Record (HER).
- 6.2.3 An OASIS form will be completed at http://ads.ahds.ac.uk/project/oasis/ for inclusion in the ADS database. This will include an electronic copy of the report in PDF format.

Table 1: Archive index

Sheet	Quantity
Written Scheme of Investigation	1
Risk Assessment	1
Test Pit/Trial Trench Record	7
Context Record	11
Graphic Register	1
Drawings	3
Photographic Record	5
Photographic contact sheets	1
Photographic negative sheets	1



BIBLIOGRAPHY

- ARCUS. 2009. Written Scheme of Investigation for an Archaeological Watching Brief at Lindhurst Wind Farm, near Mansfield, Nottinghamshire. Unpublished ARCUS report ref: 1307.1(1)
- English Heritage. 2006. Management of Research Projects in the Historic Environment: The MoRPHE Project Manager's Guide. London; English Heritage.
- English Heritage. 1991. Management of Archaeological Projects, London; English Heritage.
- Institute of Field Archaeologists (IFA). 1994 (revised October 2008). Standards and Guidance for an Archaeological Watching Brief. Available: www.archaeologists.net.
- Land Use Consultants. 2006. Lindhurst Wind Farm: Environmental Statement. Unpublished LUC report ref: 3536.01.
- Museum and Galleries Commission. 1992. Standards in the museum care of archaeological collections.
- United Kingdom Institute of Conservation (UKIC). 1990. Guidelines for the Preparation of Excavation Archives for Long Term Storage.



7 **APPENDIX**

Table 2: Sediment descriptions: Trench 1

Trench 1			
Depth bgl	Context	Sediment description	Interpretation
0.00-0.30m	101	Mid to dark brown silty sand with frequent pebbles <5cm	Topsoil
0.30-0.40m	102	Mid greyish brown silty sand with frequent pebbles <5cm	Layer
0.30m	103	Cut for recent grubbed out hedgerow, 3m wide	Grubbed out hedgerow
0.30m	104	Mixed orange and grey sand.	Fill of [1003]
0.40m	105	Mid orange fine sand with pebble inclusions	Subsoil

Table 3: Sediment descriptions: Trench 2

Trench 2			
Depth bgl	Context	Sediment description	Interpretation
0.00-0.30m	201	Dark brown silty sand with grey hue and moderate pebbles <5cm	Topsoil
0.30-0.40m	202	Mid grey silty sand with brown hue and frequent pebbles <5cm	Layer
0.40m	203	Mid orange sand with brown hue and frequent pebbles <5cm	Subsoil
0.30-0.76m	204	Sub-circular cut with steep sides and rounded base	Shrub bowl
0.75-0.92m	205	Mid grey sand with brown hue and common pebbles <5cm	Heat effected natural
0.38-0.75m	206	Very dark grey sand with abundant charcoal.	Burnt remains of shrub and fill of [2004]
0.30-0.38m	207	Mid brown silty sand with grey hue.	Fill of [2004]



Table 4: Sediment descriptions: Trench 3

Trench 3			
Depth bgl	Context	Sediment description	Interpretation
0.00-0.50m	301	Mid brown humic sandy loam with moderate pebbles <7cm.	Topsoil
0.50-0.80m	302	Mid orange sand with moderate pebbles.	Subsoil
0.50-0.55m	303	Linear scars aligned NE-SW and spaced 1.9m apart. Filled by [301].	Plough scars
0.80-1.40m	304	Orange sand with patches of red & yellow hue. Moderate pebble <5cm in pockets.	Natural
1.40-2.10m	305	Mid orange sand with red hue and sparse pebbles <5cm.	Natural
2.10-3.00m	306	Orange sand with geological banding and very rare pebble inclusions.	Natural

Table 5: Sediment descriptions: Trench 4

Trench 4			
Depth bgl	Context	Sediment description	Interpretation
0.00-0.50m	401	Mid brown humic sandy loam with frequent pebble <5cm and rare <10cm.	Topsoil
0.50-0.80m	402	Mid orange sand with frequent pebble <8cm and sparse concentrations of pebble <4cm.	Subsoil
0.50-0.55m	403	Shallow steep rounded cut, truncated.	Shrub bowl
0.50-0.55m	404	Light grey sand with common pebble <4cm.	Fill of [403]
0.50-0.84m	405	Sub-round cut with steep sides and rounded base.	Shrub bowl
0.80-1.50m	406	Orange sand with red hue.	Natural
1.50-3.33m	407	Light brown sand with occasional yellow patches and occasional pebble <15cm.	Natural
0.50-0.84m	408	Light grey sand with common pebble <4cm.	Fill of [405]



Table 6: Sediment descriptions: Trench 5

Trench 5					
Depth bgl	Context	Sediment description	Interpretation		
0.00-0.50m	501	Mid brown sandy loam with pebble inclusions	Topsoil		
0.50-0.60m	502	Orange sand with occasional patches of a red hue and frequent pebble inclusions. Becomes clayeyer to SE of trench. Occasional charcoal.	Subsoil		

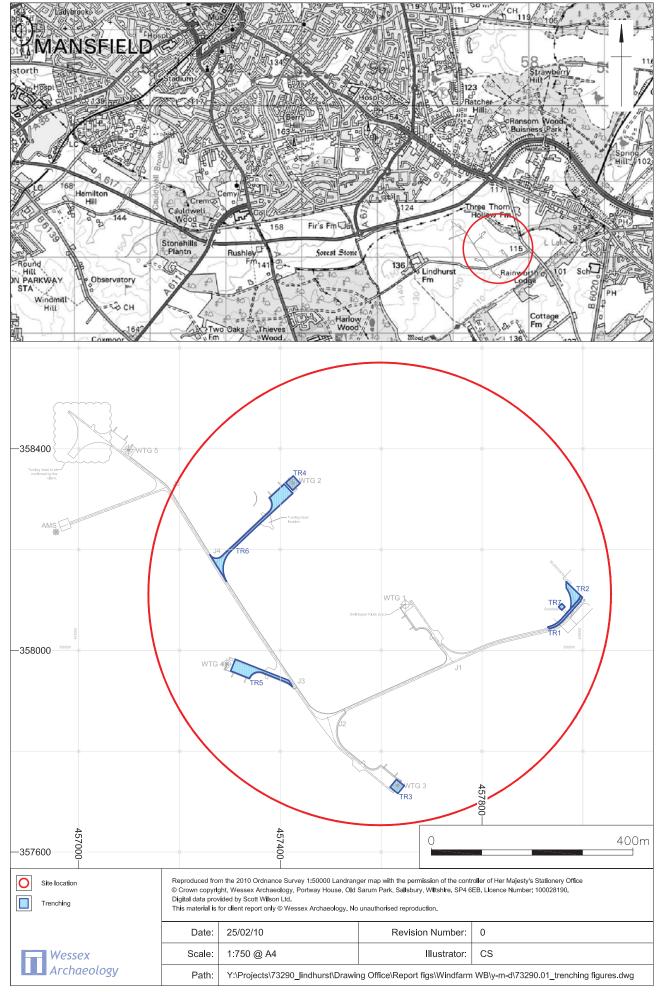
Table 7: Sediment descriptions: Trench 6

Trench 6			
Depth bgl	Context	Sediment description	Interpretation
0.00-0.45m	601	Mid orange humic sandy loam with occasional pebble <6cm	Topsoil
0.45-0.50m	602	Orange sand with occasional patches of red hue, moderate to common pebbles <15cm, and rare charcoal towards SW of trench. Occasional patches of light grey sand likely to be top of shrub bowls. Occasional shallow plough marks aligned NE-SW.	Subsoil

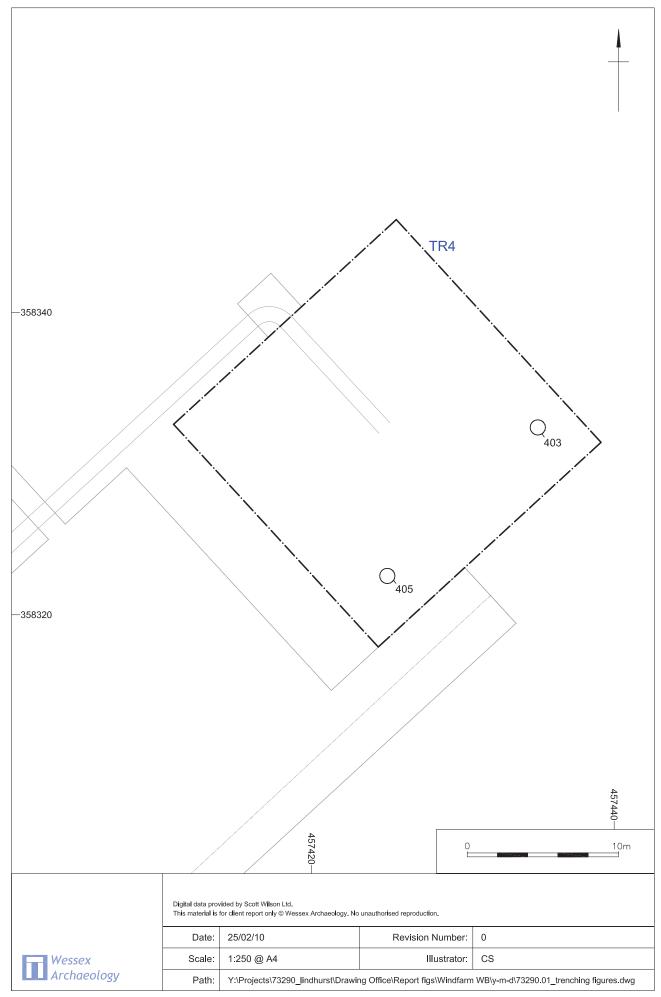


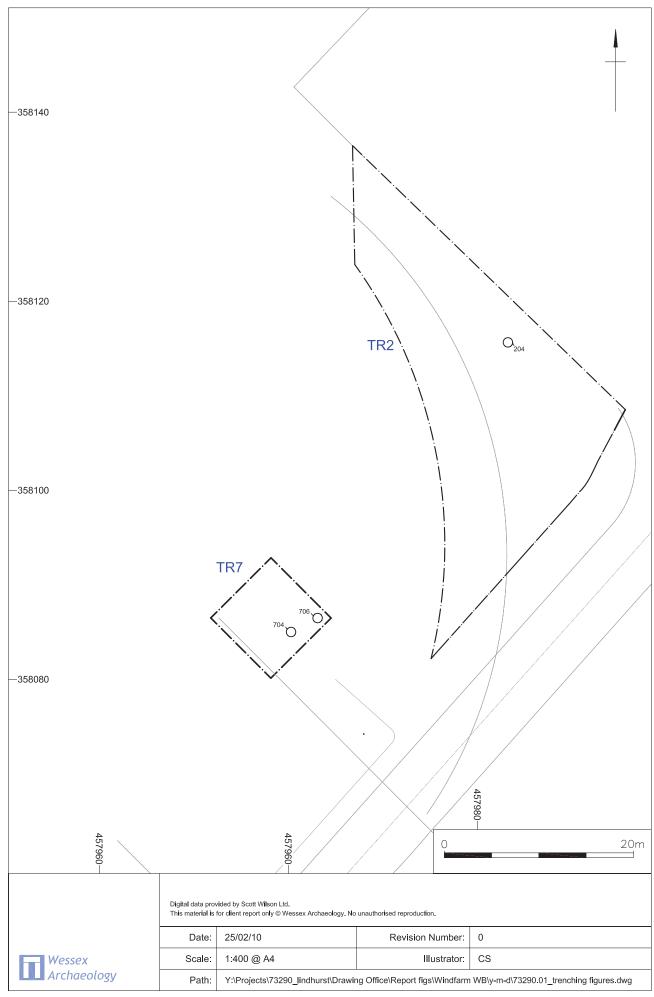
Table 8: Sediment descriptions: Trench 7

Trench 7			
Depth bgl	Context	Sediment description	Interpretation
0.00-0.50m	701	Mid brown humic sandy loam with occasional pebble <4cm	Topsoil
0.00-0.35m	702	Mid brown gravelly humic sand with common unsorted angular to well rounded pebble. Overlays (701) thicker to east.	Made ground
0.50-0.70m	703	Mid orange sand with moderate pebble and occasional charcoal flecks. Occasional patches of grey sand likely to be shrub bowls.	Subsoil
0.70-1.10m	704	Sub-oval cut with steep sides and irregular base.	Shrub bowl
0.70-1.10m	705	Light grey sand with occasional pebble <4cm	Fill of [704]
0.70-1.00m	706	Irregular linear cut with steep sides and irregular base.	Shrub bowl
0.70-1.00m	707	Very dark grey sand with frequent charcoal and occasional pebble.	Burnt remains of shrub, fill of [706]
0.70-0.94m	708	Light grey sand with occasion pebble <5cm.	Fill of [706]
0.70-0.80m	709	Mid orange sand with red hue and occasional pebble <3cm.	Burnt soil, fill of [706]
0.70-1.00m	710	Mid orange sand with light grey patches and occasional pebble <3cm.	Bioturbation



Site location Figure 1







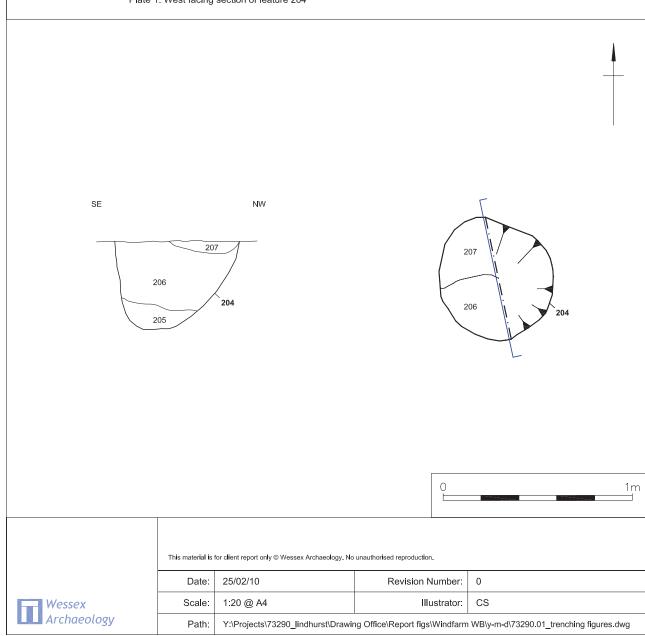




Plate 2: East facing section of feature 704

