Archaeological evaluation at land off the B4399 Rotherwas, Herefordshire







© Worcestershire County Council

Worcestershire Archaeology
Archive and Archaeology Service
The Hive, Sawmill Walk,
The Butts, Worcester
WR1 3PD

Status: Revision 1

Date: 21st March 2016 Author: Andrew Mann

Contributors: Derek Hurst and Elizabeth Pearson

Illustrator: Carolyn Hunt

Project reference: P4751 Report reference: 2322

HER reference: EHE80199.

Oasis id: fieldsec1-245862

Contents

Sı	Summary	1
R	Report	
1		2
1.1		2
2		
3		
3 .1		
3.2		2
3.3	•	
3.4		
	3.5 Artefact methodology, by Derek Hurst	
	3.5.1 Artefact recovery policy	
	3.5.2 Method of analysis	3
3	3.5.3 Discard policy	
3.6	B.6 Environmental archaeology methodology, by Elizabetl	n Pearson4
	3.6.1 Sampling policy	
	3.6.2 Processing and analysis	
	3.6.3 Discard policy	4
3.7	3.7 Statement of confidence in the methods and results	
4	4 The site	4
4.1	1.1 Topography, geology and archaeological context	4
4.2	1.2 Current land-use	5
5	5 Structural analysis	5
	5.1.1 Phase 1: Natural deposits	
Ę	5.1.2 Phase 2: Prehistoric	
	5.1.3 Phase 3: Post-medieval	6
	5.1.4 Phase 4: Undated	
	5.2 Artefact analysis, by Derek Hurst	6
	5.2.1 Summary artefactual evidence by period	
	5.2.2 Summary	
	5.2.3 Recommendations	
	Further analysis and reporting	
	5.2.4 Discard and retention	
	·	8
	5.3.1 Significance	
6		
6.1		
6.2		
7	- 3	
7.1		
7.2		ne site10
7.3	,	
8	•	
8.1	1 3	
8.2		
9	· · · · · · · · · · · · · · · · · · ·	
10	10 Acknowledgements	11
11		
_	<u> </u>	:= = =

Archaeological evaluation at land off the B4399, Rotherwas, Herefordshire

Andrew Mann

With contributions by Derek Hurst and Elizabeth Pearson

Summary

An archaeological evaluation was undertaken at Rotherwas Industrial Estate, Rotherwas, Herefordshire (NGR SO 53322 37589). It was commissioned by Archaeology and Planning Solutions on behalf of their client Sol Environment, who intend to construct a power plant on this site, for which a planning application will be submitted to Herefordshire County Council.

Eight trenches were excavated across the proposed development area. Of most interest was a small pit of probable prehistoric date. In the base of the pit were a number of stake holes, suggesting there had been some form of superstructure, although the original function of the pit could not be established. After use the pit had been filled with hot fire debris containing frequent charcoal lumps and fired clay fragments. Although only one pit was identified it suggests that the prehistoric activity seen at the adjacent Rotherwas Futures site may extend outside the limits of that excavation into the proposed development site.

The only other features identified during the evaluation are of agricultural origin and are of medieval to post-medieval date. They include a small area of terracing on the north side of Dinedor Hill and a number of field boundary and drainage ditches. A single French drain was also identified.

Report

1 Background

1.1 Reasons for the project

An archaeological evaluation was undertaken at land of the B4399 Rotherwas, Herefordshire (NGR SO 53322 37589) (Figure 1). It was commissioned by Archaeology and Planning Solutions on behalf of their client Sol Environment, who intend to construct a power plant on this site, for which a planning application will be submitted to Herefordshire County Council.

The proposed development site is considered to include heritage assets, namely extant earthworks including probable post-medieval field systems, undated terracing and potential heritage assets of prehistoric to early medieval date, the significance of which may be affected by the application.

No brief has been prepared by Herefordshire County Council (the Curator), but this report aims to conform to the generality of briefs previously issued, for which a project proposal (including detailed specification) was produced (WA 2016).

The project also conforms to the *Standard and guidance: Archaeological field evaluation* (ClfA 2014) and *Standards for archaeological projects in Herefordshire: issue 1* (Herefordshire Archaeology 2004).

The event reference for this project, given by the HER is EHE80199.

2 Aims

The aims of this evaluation are:

- to describe and assess the significance of the heritage asset with archaeological interest;
- to establish the nature, importance and extent of the archaeological site;
- to assess the impact of the application on the archaeological site.

3 Methods

3.1 Personnel

The project was led by Andrew Mann (BA (hons); MSc), who joined Worcestershire Archaeology in 2014 and has been practicing archaeology since 2001, assisted by Jamie Wilkins (BA (hons)), and Aidan Woodger (BA (hons); MSc). The project manager responsible for the quality of the project was Simon Woodiwiss (BA (hons); MClfA). Illustrations were prepared by Carolyn Hunt (BSc (hons); Elizabeth Pearson (MSc; AClfA) contributed the environmental report, Derek Hurst contributed the finds report.

3.2 Documentary research

An archaeological desk-based assessment (DBA) was undertaken by Archaeology and Planning Solutions (2016).

Cartographic sources

1840 Lower Bullingham and Dinedor tithe maps

1887 OS map

1905 OS map

1930 OS map

Aerial photographs

1941 aerial photograph (Historic England Archives Section. RAF/13N/UK795).

1961 aerial photograph (Historic England Archives Section. 58/RAF/4471).

3.3 Fieldwork strategy

A detailed specification has been prepared by Worcestershire Archaeology (WA 2016).

Fieldwork was undertaken between 7 March and 11 March 2016.

Eight trenches, amounting to just over 568m² in area, were excavated over the site area of 3.277ha, representing a sample of 1.7%.

The location of the trenches is indicated in Figure 2. Trenches 1, 2, 4, 5 and 8 were positioned to target earthwork features identified in the walkover survey that formed part of the DBA (Archaeology and Planning Solutions 2016).

Deposits considered not to be significant were removed using a 360° tracked excavator, employing a toothless bucket and under archaeological supervision. Subsequent excavation was undertaken by hand. Clean surfaces were inspected and selected deposits were excavated to retrieve artefactual material and environmental samples, as well as to determine their nature. Deposits were recorded according to standard Worcestershire Archaeology practice (WA 2012). On completion of excavation, trenches were reinstated by replacing the excavated material.

3.4 Structural analysis

All fieldwork records were checked and cross-referenced. Analysis was effected through a combination of structural, artefactual and ecofactual evidence, allied to the information derived from other sources.

3.5 Artefact methodology, by Derek Hurst

The finds work reported here conforms with the relevant sections of *Standard and guidance for the collection, documentation, conservation and research of archaeological materials* (ClfA 2014), with archive creation informed by *Archaeological archives: a guide to the best practice in the creation, compilation, transfer and curation* (AAF 2011), and museum deposition by Selection, retention and dispersal of archaeological collections (SMA 1993).

3.5.1 Artefact recovery policy

The artefact recovery policy conformed to standard Worcestershire Archaeology practice (WA 2012; appendix 2), and assemblages also includes a small quantity of material recovered from an environmental sample, taken from a pit fill (506).

3.5.2 Method of analysis

All hand-retrieved finds were examined. They were identified, quantified and dated to period. A *terminus post quem* date was produced for each stratified context. The date was used for determining the broad date of phases defined for the site. All information was recorded on pro forma sheets. Artefacts from environmental sampling were also examined, and these are also included below.

The pottery and ceramic building material was examined under x20 magnification and referenced as appropriate by fabric type and form according to the fabric reference series maintained by Worcestershire Archaeology (Hurst and Rees 1992 and www.worcestershireceramics.org).

3.5.3 Discard policy

The following categories/types of material will be discarded after a period of 6 months following the submission of this report, unless there is a specific request to retain them:

- unstratified post-medieval material in general, and;
- generally where material has been specifically assessed as having no obvious grounds for retention.

Any discard will be subject to the collection policy of the relevant depository and to confirmation by the latter.

3.6 Environmental archaeology methodology, by Elizabeth Pearson

3.6.1 Sampling policy

Samples were taken according to standard Worcestershire Archaeology practice (2012). A total of two samples (each of 40 litres) from an undated, but probably prehistoric pit (505) were taken from the site (Table 1).

Context	Sample	Other	Feature type	Fill of	Period	Sample volume (L)	Volume processed (L)	Residue assessed	Flot assessed
506	1	SE quadrant	Pit	505	?prehistoric	40	40	Yes	Yes
506	2	NE quadrant	Pit	505	?prehistoric	40	40	Yes	Yes

Table 1: List of environmental samples

3.6.2 Processing and analysis

The samples were processed by flotation using a Siraf tank. The flots were collected on a 300mm sieve and the residue retained on a 1mm mesh. This allows for the recovery of items such as small animal bones, molluscs and seeds.

The residues were scanned by eye and the abundance of each category of environmental remains estimated. A magnet was also used to test for the presence of hammerscale. The flots were scanned using a low power MEIJI stereo light microscope and plant remains identified using modern reference collections maintained by Worcestershire Archaeology, and a seed identification manual (Cappers *et al* 2012). Nomenclature for the plant remains follows Stace (2010).

Charcoal was examined using a low power Meiji microscope to distinguish between oak and non-oak fragments, then the cell structure of selected fragments was examined in three planes under a high power microscope and identifications were carried out using reference texts (Schweingruber 1978, Brazier and Franklin 1961 and Hather 2000) and reference slides housed at Worcestershire Archaeology.

3.6.3 Discard policy

Scanned residue and flots will be retained for archive.

3.7 Statement of confidence in the methods and results

The methods adopted allow a high degree of confidence that most of the aims of the project have been achieved. However, as access was not available at the time to evaluate the lower parts of the development area butting the B4399 it remains uncertain whether archaeological features exist in that part of the site.

4 The site

4.1 Topography, geology and archaeological context

The site, centred on NGR SO 5335 3758, covers an area of approximately 7ha, is located within a long narrow field which is bounded by the B4399 along the north, by woodland and fields to the

south-east and by a house and its grounds to the west. The ground rises to the south-east from around 51.3m on the B4399 to around 60m AOD into the woodland on the hillside.

The underlying geology consists of Lower Old Red Sandstone of the Raglan Mudstone Formation partly overlain by river terrace deposits of clay, silt, sand and gravel (BGS 2014).

The DBA (Archaeology and Planning Solutions 2016) identified the presence of earthworks that are likely to be post-medieval field boundaries visible on 1840 tithe map and later Ordnance Survey mapping. An area of terracing in the middle of the site seen during the walkover survey is undated, but is likely to be of medieval or more likely of post-medieval date.

Although no other sites were identified within the proposed development area the DBA also showed that the site lay in an area rich in significant archaeological remains. The closest to the development site were found during excavations at Rotherwas Futures, across the B4399, approximately 130m to the north. There pit groups and burnt mounds of Neolithic to Bronze Age date were identified (Miller 2011).

Approximately 600m to the west prehistoric settlement remains were also identified during the construction of the B4399. During these works the nationally important prehistoric track known as the Rotherwas Ribbon was also identified (Jackson and Sworn 2014).

To the south, on top of Dinedor Hill, there is an Iron Age hillfort and the proposed development site is likely to have been farmed during this period. A large curvilinear enclosure of 6th-7th century AD date identified at the Rotherwas Futures site suggests there was some local early medieval activity, but there is no evidence to suggest that the development site was occupied during this period and it is likely to have remained as agricultural land through the medieval and post-medieval periods (Archaeology and Planning Solutions 2016).

4.2 Current land-use

The site is currently under pasture.

5 Structural analysis

The trenches and features recorded are shown in Figures 2-7. The results of the structural analysis are presented in Appendix 1.

5.1.1 Phase 1: Natural deposits

Natural deposits were identified in all trenches but were variable across the site. In Trenches 1, 2, 3, 4, 6 and 7 it consisted of a firm greyish sand deposit with frequent small angular sandstone fragments. In places, specifically in Trenches 6 and 7 these were interspersed with areas of firm pinkish-red clay. In places through Trenches 1, 6 and 7 the laminated grey sandstone bedrock cropped out and was visible in the base of the trench.

In the lower area of the site (Trenches 3, 5 and 8) firm and cohesive fluvial sand and gravels were identified in sondages that were sealed by firm alluvial clays of orange yellowish-brown colour (Plate 1). This alluvium was of variable depth, being between 0.15-0.60m thick. Although not completely removed during the evaluation, sondages were excavated by machine through this deposit to establish its thickness and identify any other significant horizons or deposits below. No significant deposits were identified but it was established that the alluvium lay directly over sand and gravel terrace deposits.

In Trench 1 there were also a number of layers of re-deposited natural (contexts 101-111) that appeared to be hillwash/colluvium (Plate 2). These appeared to sit directly on the sandstone bedrock and were up to 1.33m thick.

5.1.2 Phase 2: Prehistoric

Only one probable prehistoric feature was identified, pit 505, in Trench 5 (Figure 3; Plate 3). The small sub-oval pit contained eleven stake holes in the base that suggest the feature originally had a superstructure (Plate 4), however none of this survived and the original function of the pit has not been established. Subsequently the pit had been filled with a rich charcoal fill, including moderate fired clay fragments. Light firing to the base of the pit suggests that this material may have been deposited in the pit while hot, although as the edges of the pit were not heavily fired it suggests it had not been burnt in-situ.

5.1.3 Phase 3: Post-medieval

In Trenches 2, 6 and 8 post-medieval drainage ditches and land drains were identified that are related to the extant earthworks visible across the site. In Trench 2 an north-east to south-west aligned land drain (203) was identified (Figure 4; Plate 4), and although not associated with any datable finds it is likely to be of post-medieval date. This lay directly beneath and on the same alignment as an earthwork ditch and bank. Although no relationship could be established between the two features it is likely they were related and excavated at the same time. At the very least it suggests that the earthwork ditch was excavated after the land drain had been inserted, confirming its late date.

In Trenches 6 and 8 two drainage ditches were identified running approximately north-east to south-west, running downslope of Dinedor Hill (Figures 5 and 6; Plates 5). Both these ditches, 603 and 805 were visible as extant earthworks and both had cut through the subsoil, indicating they were of recent origin. A single tile fragment of probable post-medieval date was recovered from the fill (804) of ditch 805.

5.1.4 Phase 4: Undated

The extant earthwork terraces in the middle of site remain undated but appear to have been truncated by drainage ditch (603). This suggests that they may be of earlier post-medieval or medieval date. The terracing is aligned in a north-east to south-west direction and covers an area of approximately 0.45ha. Two terraces edges survive forming a middle platform 10.0m wide and 96.0m long (Figure 7; Plate 6). There was no evidence to suggest the terraces had been reveted to prevent erosion downslope and it is likely to have been formed by ploughing from the upper side only.

A possible ditch (112) cutting in to the hill wash deposits in Trench 1 remains undated. This feature was not visible in the opposing trench side and may not be of anthropogenic origin.

5.2 Artefact analysis, by Derek Hurst

The artefactual assemblage recovered is summarised in Tables 2-3.

The assemblage came from a site dated from the post-medieval period onwards (see Table 2) where little was stratified, though see below for possible earlier material also being present. Using pottery as an index of artefact condition, this was generally poor with sherd size being much lower than average, though much of this material was not abraded.

Period	Material class	Material subtype	Object specific	Count	Weight(g)
medieval	ceramic		pot	4	7
post-medieval	ceramic		brick	4	462
post-medieval	ceramic		pot	4	9
post-medieval	ceramic		roof tile(flat)	5	387
modern	ceramic		pot	1	1
modern	glass		bottle	2	177
undated	ceramic	fired clay		31	198
undated	stone		?pot-boiler	1	8

Table 2: Quantification of the assemblage

5.2.1 Summary artefactual evidence by period

Only post-medieval and modern deposits were in evidence and even residual material from earlier periods was sparse, with only medieval finds being positively identified.

Context	Material class	Material subtype	Object specific type	Count	Weight(g)	Tpq date
100	ceramic		pot	4	7	19 th /20 th century
100	ceramic		pot	4	9	
100	ceramic		pot	1	1	
100	ceramic		brick	2	340	
100	ceramic		roof tile(flat)	1	94	
100	glass		bottle	2	177	
506	ceramic	fired clay		5	140	Undated
506	ceramic	fired clay		6	7	
506	ceramic	fired clay		4	4	
506	ceramic	fired clay		16	47	
506	stone		?pot-boiler	1	8	
800	ceramic		brick	2	122	17 th /18 th century
800	ceramic		roof tile(flat)	4	293	
804	ceramic		roof tile(flat)	1	157	13 th –18 th century

Table 3: Summary of context dating based on artefacts

5.2.2 Summary

The only finds of interest were associated with pit fill 506 and these could not be positively dated, though, on balance, they are likely to be of (?earlier) prehistoric date, given the general assemblage composition of the finds assemblage.

5.2.3 Recommendations

Further analysis and reporting

No further work required on the assemblage.

5.2.4 Discard and retention

Only the medieval pot might be worth retaining.

5.3 Environmental analysis, by Elizabeth Pearson

The environmental evidence recovered is summarised in Tables 4 and 5.

Low to moderate levels of environmental remains were recorded from the fill (506) of pit 505. These included a moderate quantity of small charcoal fragments, some of which were identified as hazel (*Corylus avellana*) and oak (Quercus *robur/petraea*) from the north-east quadrant (sample 2). There was a difference in condition, as the possible oak charcoal was partially vitrified, and therefore had been heated to a high temperature. The different condition of the hazel and oak charcoal suggests two different sources, with the oak possibly being associated with the iron slag and clinker-like material, as the high temperature required to produce the former may have caused the partial vitrification of the charcoal. The charcoal demonstrates some potential for providing evidence of the fuel economy and use of woodland resources – information which is rare for, at least, early prehistoric deposits.

A single fragment of hazelnut and a single charred barley grain from the south-east quadrant may derive from domestic waste.

The single fragment of hazelnut shell has been selected for radiocarbon dating.

context	sample	charcoal	charred plant	artefacts	comments
506	1	mod	occ	occ- fired clay, fe slag, fe object, heat-cracked stones, ?clinker	
506	2	mod		occ- fired clay, heat-cracked stone, smithing waste.	

Table 4: Summary of environmental remains; occ = occasional, mod = moderate

context	sample	preservation type	species detail	category remains	quantity/diversity	comment
506	1	?wa	unidentified root fragments	misc	+++/low	probably modern and intrusive
506	1	ch	unidentified wood fragments, Corylus avellana nut shell	misc	++/low	mostly charcoal
506	1	ch	Hordeum vulgare grain (hulled)	grain	+/low	
506	2	ch	cf Quercus robur/petraea wood, Corylus avellana wood, unidentified wood fragments	misc	++/low	cf <i>Quercus</i> ?vitrified
506	2	?wa	unidentified root fragments	misc	+++/low	probably modern and intrusive
506	2	ch	unidentified seed/spore	seed	+/low	

Table 5: Plant remains from pit fill 506: **Preservation** ch = charred, min = mineralised, wa = waterlogged, ?wa = waterlogged or uncharred. **Quantity** + = 1 - 10, ++ = 11 - 50, +++ = 51 - 100, ++++= 101+

5.3.1 Significance

The environmental evidence has potential to provide information on the fuel economy and use of woodland resources, and to a limited degree on the use of food resources.

6 Synthesis

6.1 Prehistoric

The alluvial deposits identified in Trenches 3, 5 and 8 were also identified during the archaeological excavation at Rotherwas Futures, across the B4399 in 2008-9 (Miller 2011). During that excavation it was established that this alluvium sat upon sand and gravel terrace deposits, which has also been confirmed during this evaluation. In Trench 3, it was also noted that in places this alluvium sat directly on the weathered sandstone natural. During the excavation at Rotherwas Futures, this alluvial deposit had been cut by features of Late Neolithic and Early Bronze Age date suggesting the material had been deposited during the early Holocene.

Similarly pit [505] in Trench 5 also cut through this deposit and its likely prehistoric date suggests that similar features may be located in the lower part of the development site on this alluvium. This feature may be an outlier to and associated with the prehistoric focus of activity across the road at Rotherwas Futures. As no prehistoric features were identified through the road corridor during the construction of the B4399, between the Rotherwas Futures site and the proposed development site (Jackson and Sworn, 2014) it may indicate that features of this date will be sparse on this side of the B4399.

A radiocarbon date has been submitted from material in pit 505, this section will be amended on confirmation of its date, but at present pit 505, based on its form is thought to be prehistoric in date.

6.2 Post-medieval

Ditches 112, 603 and 805 are all visible on the surface as earthworks or are visible on the 1840 tithe map as field boundaries and are therefore of probable later post-medieval date. The probable post-medieval tile fragment from the ditch fill 804 also supports this conclusion. The bank identified in the earthwork survey, partially crossed by Trench 2, was created during the insertion of a stone filled land drain (203) to the south, and although undated is also likely to be post-medieval in date.

It is worthwhile noting the prevalence of historic features associated with water management, the tank and reservoir just outside of the development area, the pipes associated with them (a number of metal pipes lie close to the ground surface), and the complex of ditches on the lower parts of the site.

6.3 Undated

The terracing which survives as earthworks remains undated, but as they are truncated by later post-medieval drainage ditches they are likely to be of earlier post-medieval or medieval date. The significant amount of hill wash seen in Trench 1 also remains undated. It may be of early Holocene date, but given that on the 1905 and 1930 OS mapping a quarry and a covered reservoir are visible further upslope of Trench 1, on Dinedor Hill, this material may be associated with that activity.

7 Significance

7.1 Nature of the archaeological interest in the site

The majority of the earthworks are of post-medieval date and few confirmed earlier features were identified during the evaluation. The pit, of probable prehistoric date, does indicate that there is potential for archaeological remains on the lower ground where alluvium has been deposited. This pit has evidence of a superstructure and contained interesting if not wholly interpretable finds and ecofacts. Similar features identified during the excavation at Rotherwas Futures may be expected around Trench 5 and towards the B4399. More such features are very likely to exist within the development area, though the physical constraints on the area available for sampling with trenches is not ideal and it is difficult to predict the density of any prehistoric features.

7.2 Relative importance of the archaeological interest in the site

Prehistoric sites may still be considered rare generally for Herefordshire. Any that may exist within the development area are also going to relate to a developing picture of prehistoric activity initiated by the excavations of the Rotherwas Ribbon and Rotherwas Futures sites. The mitigation of impacts on these archaeological sites, however, has established a precedent for the treatment of similar remains and is considered to be applicable to the present development site. These remains are of more local importance.

Of the later features none would be considered to be of any great archaeological significance.

7.3 Physical extent of the archaeological interest in the site

The results of the evaluation suggest that the areas of the site that are hill slope are likely to have little of archaeological interest. Bearing in mind the low sample level that was achievable the evaluation suggests that the lower lying area of the site is likely to contain features of prehistoric date but that this is more likely to be within the northern half of the site (Fig 8).

8 The impact of the development

8.1 Impacts during construction

The proposed development is very likely to require ground disturbance that will adversely affect significant archaeological deposits within the area indicated on Figure 8.

8.2 Impacts on sustainability

The results of the evaluation suggests that there are no archaeological remains of sufficient importance or rarity to require preservation in-situ, however the historic environment is a non-renewable resource and therefore cannot be directly replaced. It is therefore recommended that mitigation through recording and investigation be undertaken as this can produce an important research dividend that can be used for the better understanding of the area's history and contribute to local and regional research agendas (cf NPPF, DCLG 2012, section 141).

9 Publication summary

Worcestershire Archaeology has a professional obligation to publish the results of archaeological projects within a reasonable period of time. To this end, Worcestershire Archaeology intends to use this summary as the basis for publication through local or regional journals. The client is requested to consider the content of this section as being acceptable for such publication.

An archaeological evaluation was undertaken on behalf of Archaeology and Planning Solutions on behalf of their client Sol Environment at land off the B4399, Rotherwas Herefordshire (NGR SO 53322 37589; HER ref EHE80199).

Of most interest was a small pit of prehistoric date that contained a number of stake holes that are thought to have supported a super-structure. The latter had not survived and the pit had been filled with hot fire debris containing frequent charcoal lumps and fired clay fragments. Although only one pit was identified it suggests that the prehistoric activity seen at Rotherwas Futures may extend outside the limits of that excavation into the proposed development site.

The only other features identified during the evaluation are of agricultural origin and are of medieval to post-medieval date. They include a small area of terracing on the north side of Dinedor Hill and a number of field boundaries and drainage ditches. A single stone filled land drain was also identified.

10 Acknowledgements

Worcestershire Archaeology would like to thank the following for their kind assistance in the successful conclusion of this project, Alan Thomas (Archaeology Planning and Solutions), Sol Environment and Julian Cotton (Herefordshire planning archaeologist).

11 Bibliography

Archaeology and Planning Solutions (2016) Biomass Energy Facility, Rotherwas, Herefordshire, Archaeological Assessment prepared for Sol Environment. Unpublished, internal document.

Association for Environmental Archaeology 1995 Environmental archaeology and archaeological evaluations. Recommendations concerning the environmental component of archaeological evaluations in England, Working Papers of the Association for Environmental Archaeology, 2

BGS 2014 *Geology of Britain Viewer*, http://mapapps.bgs.ac.uk/geologyofbritain/home.html, British Geological Survey, accessed 16 March 2016

Brazier, J D, and Franklin, G L, 1961 Identification of hardwoods: a microscope key, Dept of Scientific and industrial research, Forest Products Research Bulletin, 46, Her Majesties Stationary Office. London

Cappers, T R J, Bekker, R M, and Jans, J E A, 2012 Digitale Zadenatlas van Nederland: Digital seed atlas of the Netherlands, Groningen Archaeological Studies, 4, Barkhuis Publishing and Groningen University Library: Groningen

ClfA 2014 Standard and guidance: Archaeological field evaluation, Chartered Institute for Archaeologists

DCLG 2012 *National Planning Policy Framework*, Department for Communities and Local Government

English Heritage 2011 Environmental archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation, Centre for Archaeology Guidelines Hather, J G, 2000 The identification of the northern European hardwoods: a guide for archaeologists and conservators, Archetype Publications Ltd

Herefordshire Archaeology 2004 *Standards for archaeological projects in Herefordshire: issue 1*, Herefordshire Council Planning Services, document dated 27 August 2004

Hurst, J D, and Rees, H, 1992 Pottery fabrics; a multi-period series for the County of Hereford and Worcester, in Woodiwiss, S G (ed), Iron Age and Roman salt production and the medieval town of Droitwich, CBA Res Rep, 81, 200-9

Jackson, R, and Sworn, S, (2014) Investigations along the route of the Rotherwas Access Road, Herefordshire. Worcestershire Archaeology, Worcestershire County Council, report **1968**

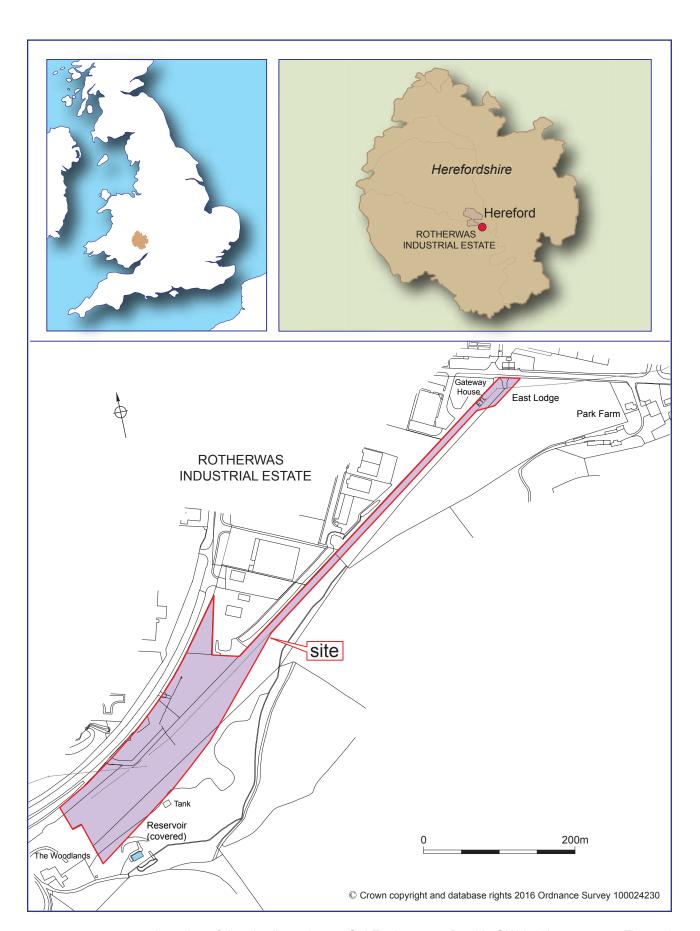
Miller, D, (2011) *Archaeological work at the Rotherwas Industrial estate, Herefordshire (Rotherwas Futures).* Worcestershire Archaeology, Worcestershire County Council, report **1837**

Schweingruber, F H, 1978 Microscopic wood anatomy: structural variability of stems and twigs in recent and subfossil woods from central Europe, Swiss Federal Institute of Forestry Research Stace, C, 2010 New flora of the British Isles, Cambridge University Press, (3rd edition)

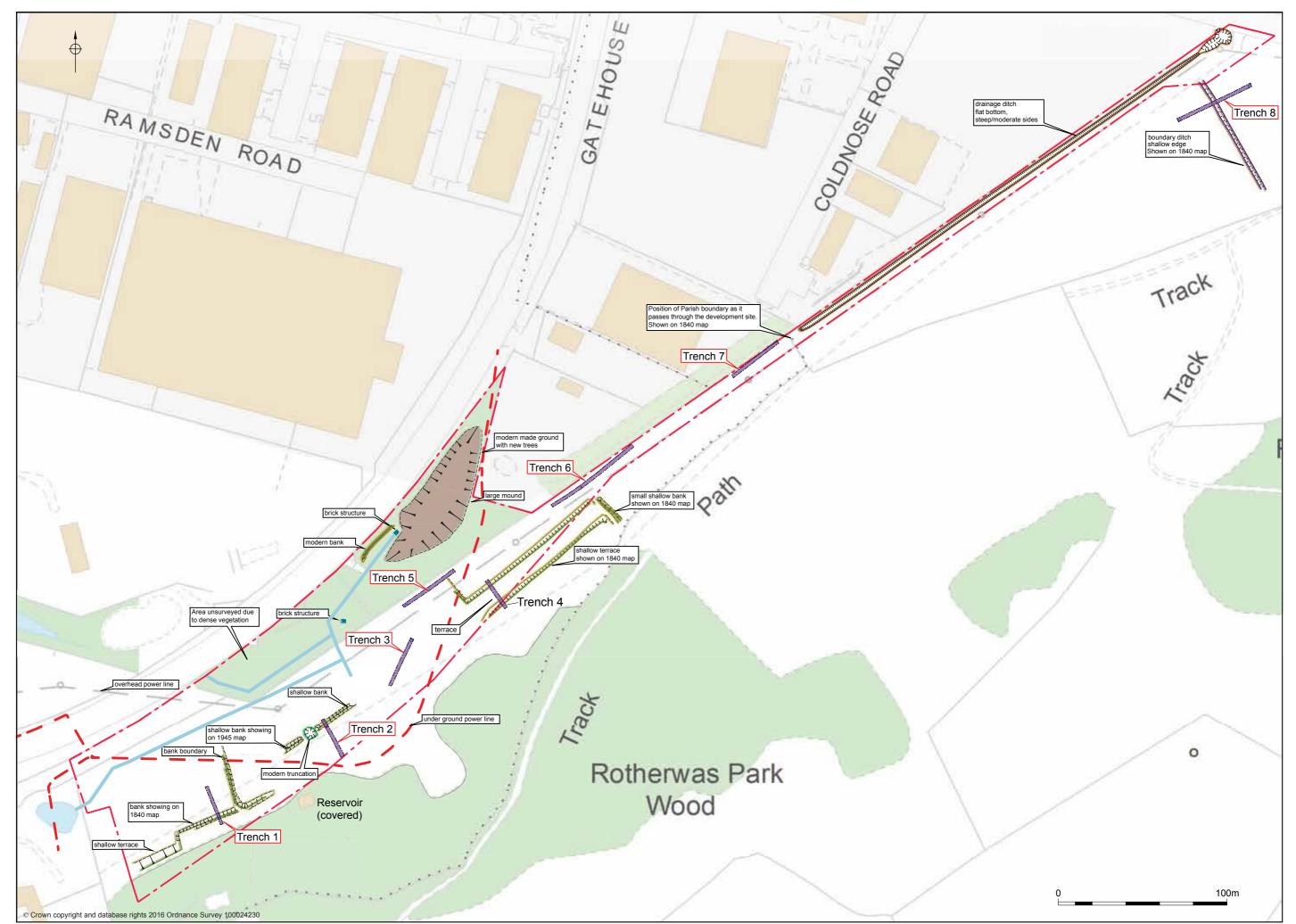
WA 2012 *Manual of service practice, recording manual*, Worcestershire Archaeology, Worcestershire County Council, report **1842**

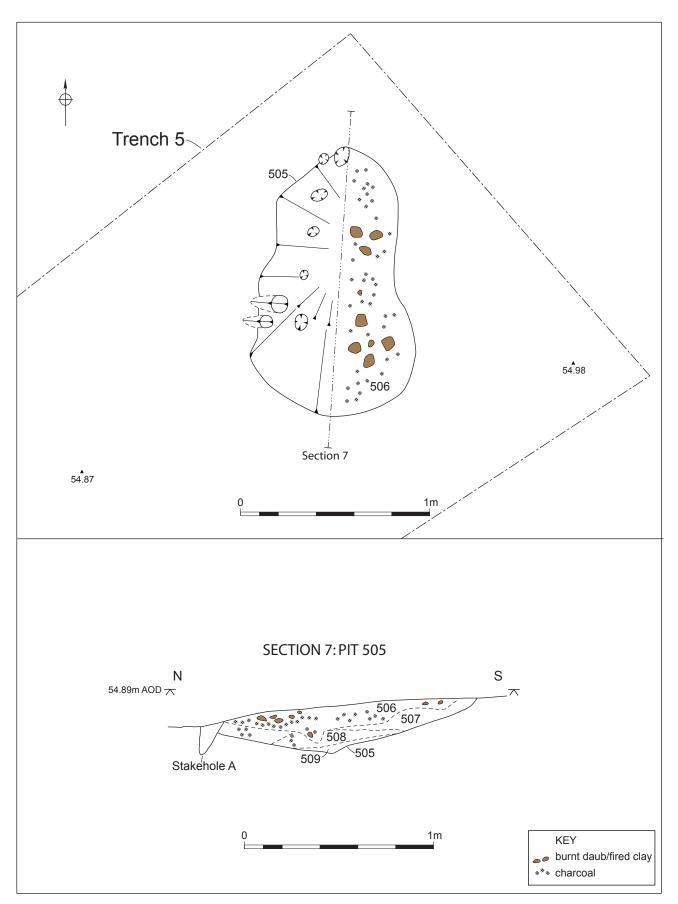
WA 2016 Proposal for an archaeological evaluation at Rotherwas Industrial Estate, Herefordshire, Worcestershire Archaeology, Worcestershire County Council, unpublished document dated 12 January 2016, **P4751**

Figures



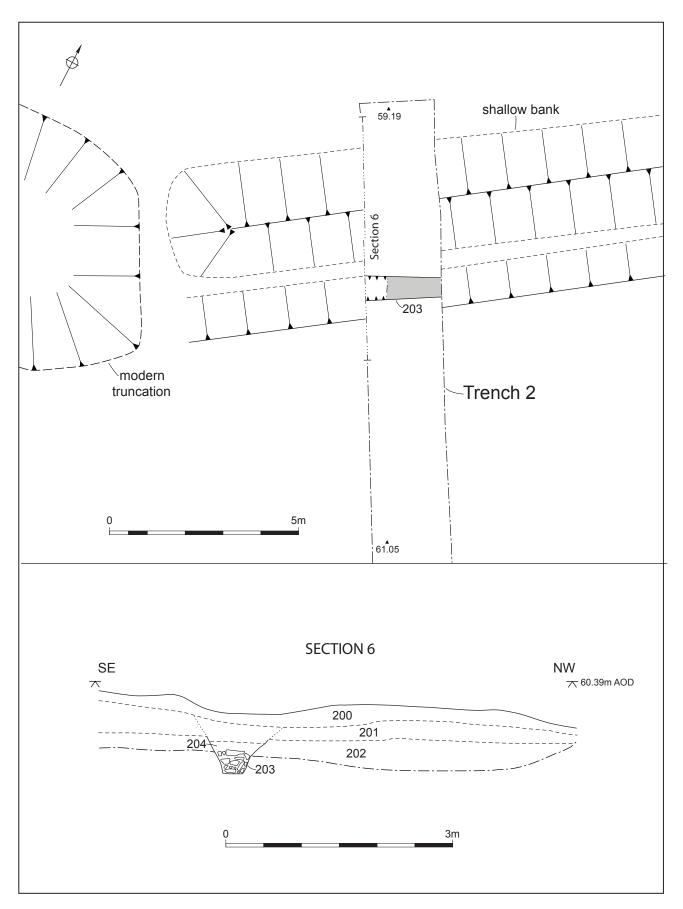
Location of the site (based upon Sol Environment Drg No SK00-00)



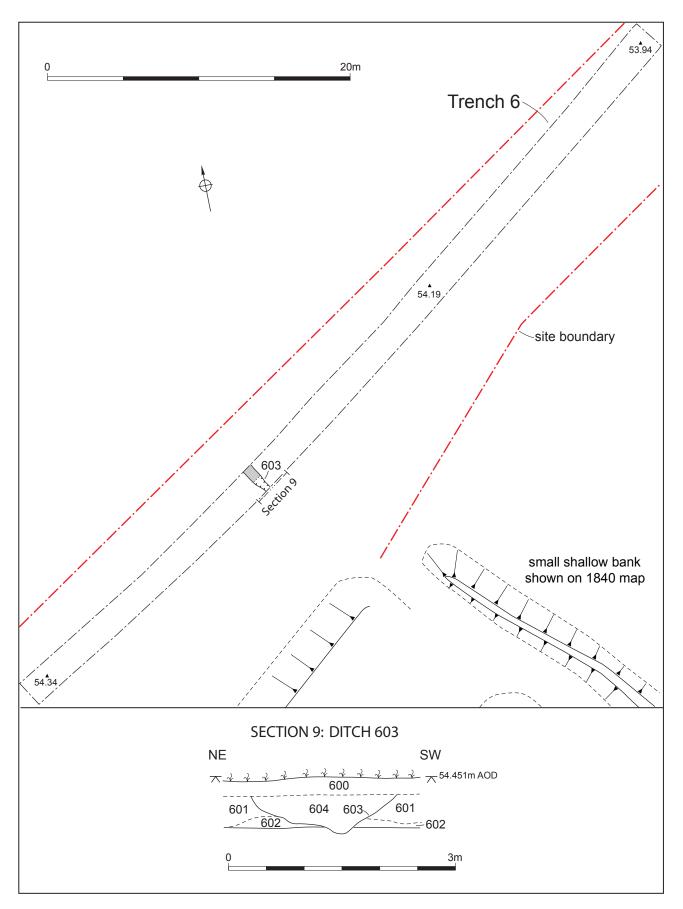


East end of Trench 5 with plan and section of Pit 505

Figure 3

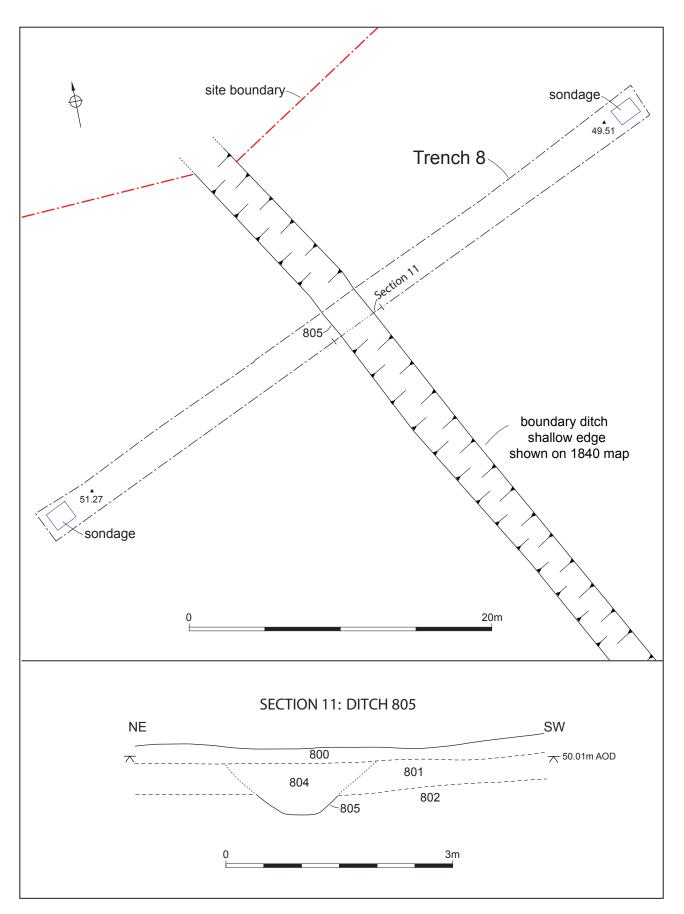


Trench 2: plan of north end and section of 203



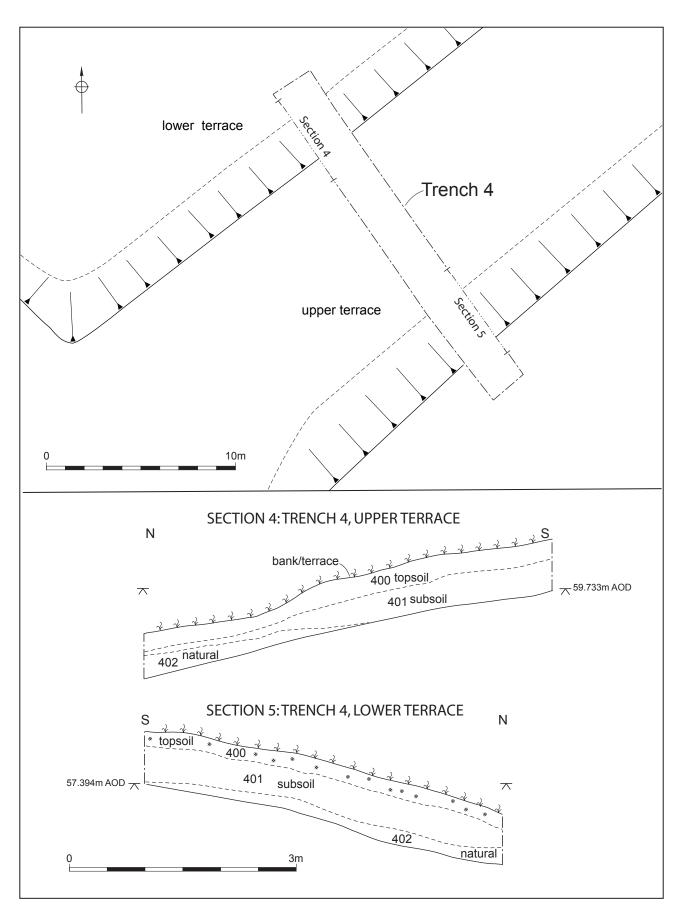
Trench 6 plan and section of ditch 603

Figure 5



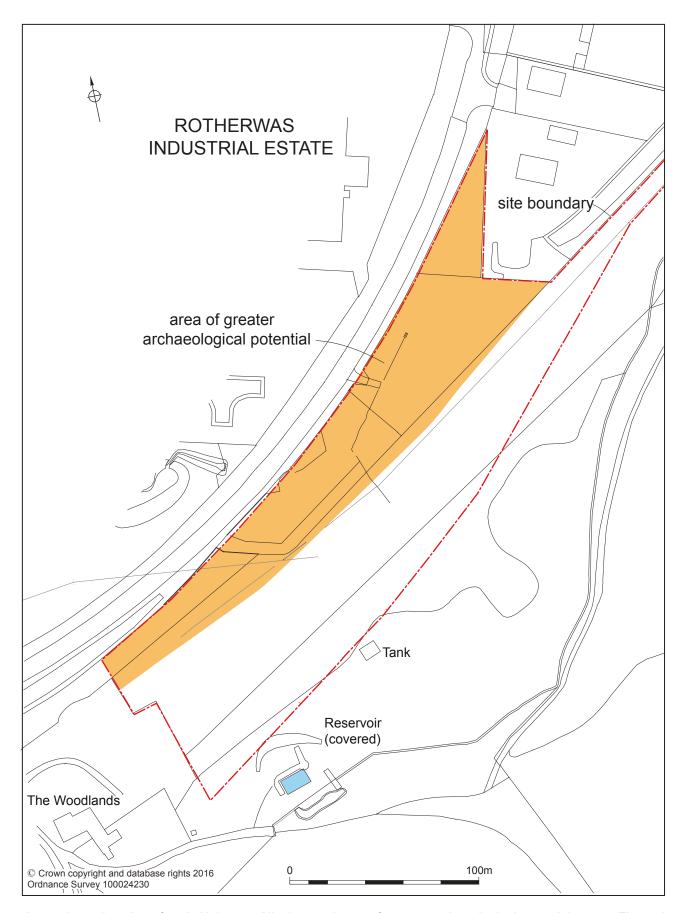
Trench 8 plan and section of ditch 805

Figure 6



Trench 4 sections

Figure 7



Approximate location of early Holocene Alluvium and area of greater archaeological potential

Figure 8

Land off the B4399, Rotherwas					

Plates



Plate 1: Trench 5, showing alluvium overlying sand and gravel terrace deposits. 1m scale.



Plate 2: colluvial/hillwash deposits in Trench 1. 1m scales.



Plate 3: Pit 505 half-sectioned. 1m scale.



Plate 4: Pit 505 fully excavated. 1m scale.



Plate 4: Stone land drain (203), below earthwork depression. 1m scale.



Plate 5: Section through ditch 603, 1m scale, facing south-east.



Plate 6: Trench 4, lower terrace facing west, 1m and 0.5m scales

Appendix 1 Trench descriptions

Trench 1

Maximum dimensions: Length: 24.15m Width: 2.0m Depth: 0.80-1.88m

Orientation: NNW-SSE

Main deposit description

Context	Feature type	Description	Interpretation	Thickness/Depth
100	Layer	Soft mid greyish brown silty clay	Topsoil	0.15m
101	Layer	Moderately Compact mid brownish orange silty clay	Possible hill wash. Contains greenish sandstone fragments.	0.20m
102	Layer	Soft light brownish orange silty clay	Fine silt clay. Sits below 101. Possibly more hill wash or thin layer of subsoil.	0.12m
103	Layer	Moderately Compact mid reddish brown silty clay	Mid brown silty clay including sandstone flecks. Possible hillwash or layer of natural.	0.20m
104	Layer	Compact	Sandstone blocks and fragments. Possible hillwash or possible layer of natural.	0.25m
105	Layer	Compact	Layer of sandstone blocks and fragments. Possibly hill wash or possibly natural. Unclear.	0.25m
106	Layer	Moderately Compact mid reddish brown silty clay	Layer of silty clay, possibly hill wash or possibly natural. Unclear.	0.20m
107	Layer	Compact	Sandstone blocks and fragments. Possible layer of hillwash or possible layer of natural. Unclear.	0.20m
108	Layer	Moderately Compact mid reddish brown silty clay	Layer of silty clay, possibly hillwash, possibly natural. Unclear.	0.25m

Context	Feature type	Description	Interpretation	Thickness/Depth
109	Layer	Compact	Layer of sandstone blocks and fragments. Possibly hillwash, possibly natural. Unclear.	0.35m
110	Layer	Moderately Compact mid reddish brown silty clay	Layer of silty clay. Possibly hillwash but possibly natural. Unclear.	0.20m
111	Layer	Compact	Layer of sandstone blocks and fragments. Possibly hillwash, possibly natural. Unclear.	0.55m +
112	Ditch cut	Unknown shape in plan only seen in section. Gradual break of slope to moderate sides and concave base. 1.30m wide.	Cut of possible ditch. As this appeared to be upslope of the area of a terrace / bank on the surface it appeared possible that it was a ditch. Does not appear in the East section of the trench.	0.45m
113	Fill	Soft mid greyish brown silty clay	Fill of possible ditch [112]. Similar to subsoil / topsoil (100) but cleaner and slightly more clayey. May be material that washed downslope into the ditch [112]. No finds.	0.45m

Maximum dimensions: Length: 25.0m Width: 2.10m Depth: 0.70m

Orientation: NNW-SSE

Main deposit description

Context	Feature type	Description	Interpretation	Height/Depth
200	Layer	Soft mid greyish brown silty clay	Topsoil	0.12m
201	Layer	Soft mid orangey brown silty clay	Subsoil.	0.34m
202	Layer	Moderately Compact mid reddish brown sandy clay	Sandy clay natural containing large sandstone pieces and manganese flecks.	0.20m +

Context	Feature type	Description	Interpretation	Height/Depth
203	Ditch cut	NE-SW aligned land drain, vertical sides and flat base. Filled with medium-large angular sandstone blocks. 0.43m deep, 0.67m wide.	Cut of field drain. Not clear if it cuts sub-soil (201). Filled with sandstone and limestone blocks to create a drain. Likely post-medieval due to style. This cut has left a earthwork depression in the topsoil.	0.43m +
204	Fill	Medium-large angular sandstone blocks.	Large sandstone and limestone cobbles and boulders within a silty clay matrix. Boulders and pebbles create egress for a drain. Allows water to flow through gaps in stones. Post-medieval field drain style.	0.43m +

Maximum dimensions: Length: 30.71m Width: 1.90m Depth: 0.81m

Orientation: NE-SW

Main deposit description

Context	Feature type	Description	Interpretation	Height/Depth
300	Layer	Soft mid greyish brown clay loam	Topsoil	0.47m
301	Layer	Soft mid brownish orange silty clay	Subsoil.	0.31m
302	Layer	Compact mid brownish orange sandy clay	Alluvium. Sandy clay at SW end, becomes a more clayey sand at NE end.	0.15m
303	Layer	Compact greyish pink sand with frequent small angular sandstone fragments.	Weathered bedrock natural. Located 1.23m below ground surface.	

Maximum dimensions: Length: 19.80m Width: 2.20m Depth: 0.82m

Orientation: NNW-SSE

Main deposit description

Context	Feature type	Description	Interpretation	Height/Depth
400	Layer	Soft mid greyish brown clay loam	Topsoil	0.20m
401	Layer	Soft mid brownish orange silty clay	Subsoil - but also bank / terrace material. Terraces seem to be worked soils.	0.50m
402	Layer	Compact mid brownish red sandy clay	Natural. Clay with some sandy / sandstone patches.	

Trench 5

Maximum dimensions: Length: 37.0m Width: 2.00m Depth: 0.76m

Orientation: ENE-WSW

Main deposit description

Context	Feature type	Description	Interpretation	Height/Depth
500	Layer	Soft mid greyish brown silty clay	Topsoil	0.40m
501	Layer	Soft mid brownish orange silty clay	Subsoil	0.21m
502	Layer	Moderately Compact mid orange/yellow-brown silty clay.	Alluvium - cut by pit [505].	0.60m
503	Layer	Compact	Gravel natural. Found 1.12m below ground surface.	

Context	Feature type	Description	Interpretation	Height/Depth
504	Layer	Loose dark blackish black	Clinker topsoil found on north side of Trench 5. Moden dump.	0.08m
505	Pit cut	Sub-oval pit cut in plan with a sharp break of slope to moderate concave sides and a rounded base. Appears to have a number of small stake holes in the base that did not cut through the pits fill. Orientated N-S along long axis.	Feature that presumably has a superstructure based on the stakes. The clayey bases (508) and (509) are not reddened which may suggest that the structure was not used for burning itself but had sufficiently hot material thrown into it after it was abandoned.	0.35m
506	Fill	Moderately Compact mid greyish brown silty clay	Fill of pit 505. Contains frequent charcoal and fire clay / burnt daub. Fire remnant.	0.20m
507	Fill	Moderately Compact mid greyish brown silty clay	Fill of pit 505. Less charcoal than in 506.	0.19m
508	Fill	Firm mid reddish orange silty clay	Firm area of burnt / heat affected silty clay at bottom of pit 505.	0.08m
509	Fill	Compact mid pinky red silty clay	Could be in-situ or re-deposited fire hardened natural. Located at base of 505.	0.04m

Maximum dimensions: Length: 60.0m Width: 2.00m Depth: 0.64m

Orientation: ENE-WSW

Main deposit description

Context	Feature type	Description	Interpretation	Height/Depth
600	Layer	Soft dark greyish brown silty sand	Topsoil	0.22m
601	Layer	Soft light brownish yellow silty clay	Subsoil	0.40m
602	Layer	Compact mid orange/yellowish-brown silty clay	Alluvium	0.54m
603	Ditch cut	N-S aligned ditch cut, still visible as an earthwork. Cuts through the subsoil (601), has a sharp break from the surface, moderately steep concave sides and a rounded base.	Post-medieval drainage ditch. Cuts earthwork terrace and through the subsoil.	0.50m
604	Fill	Soft mid greyish brown silty clay	Fill of ditch 603.	0.50m

Maximum dimensions: Length: 34.0m Width: 2.00m Depth: 0.70m

Orientation: ENE-WSW

Main deposit description

Context	Feature type	Description	Interpretation	Height/Depth
700	Layer	Soft dark greyish brown silty sand	Topsoil	0.10m
701	Layer	Soft light brownish orange silty clay	Subsoil.	0.60m
702	Layer	Compact	Natural geology consisting of firm and cohesive pinkish-red sandy clay and greyish angular sandstone fragments and laminated bedrock.	
703	Modern track surface.	Loose dark black clinker and stone.	Clinker topsoil on north side of trench. Seen in Trench 5 too. Modern dump.	0.08m

Trench 8

Maximum dimensions: Length: 49.0m Width: 2.10m Depth: 0.82m

Orientation: ENE-WSW

Main deposit description

Context	Feature type	Description	Interpretation	Height/Depth
800	Layer	Friable mid greyish brown silty clay	Topsoil	0.20m
801	Layer	Soft mid yellowish brown silty clay	Subsoil	0.41m
802	Layer	Firm mid yellowish brown silty clay	Alluvium	0.54m +
803	Layer	Compact sands and gravels	Gravels and sand natural.	

Context	Feature type	Description	Interpretation	Height/Depth
804	Fill	Soft mid greyish brown sandy clay	Fill of post-medieval ditch [805].	0.70m
805	Ditch cut	SE-NW aligned ditch cut still visible as an earthwork to the south. Has a sharp break from the surface with moderate, flat sides and a flat base. Cuts through the subsoil (801). 1.96m wide and 0.70m deep.	Post-medieval drainage ditch. Similar to 603. Cuts subsoil.	0.70m

Appendix 2 Technical information

The archive (site code: EHE80199)

The archive consists of:

- 7 Context records AS1
- 1 Photographic records AS3
- 163 Digital photographs
- 1 Drawing number catalogues AS4
- 11 Scale drawings
- 1 Sample records AS17
- 1 Sample number catalogues AS18
- 8 Trench record sheets AS41
- 1 Box of finds/scanned residues, flots and selected sorted remains from flots
- 1 CD-Rom/DVDs
- 1 Bound hard copy of this report

The project archive is intended to be placed at:

Hereford Museum and Art Gallery,

Broad Street,

Hereford

HR4 9AU.

Tel: 01432 383593/260692