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BAE

Haughley Moat: an auger survey

K.Krawiec and E.Hopla

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Haughley Moat: an auger survey

by

Kristina Krawic and Emma Hopla
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Summary

In October 2010 BA-E were commissioned to undertake an auger survey and radiocarbon dating program in advance of remedial restorations work on a motte and bailey castle site, Haughley, Suffolk. The proposed works involved the removal of vegetation and the deepening of the moat profile which may disturb in situ medieval deposits. The auger survey characterised the general sequence of deposition to be represented by a poorly humified leaf litter sealed by material that had eroded out of the motte and the moat ditch sides. The leaf litter indicates that the moat contains material that probably dates from the abandonment of the site rather than from the working life of a castle. Documentary sources indicate this site was relatively short-lived being destroyed during Prince Henry's rebellion in 1173 so occupation deposits were not expected. There was, however, evidence for something that obstructed the auger in the base of the moat which may relate to the destruction of the stone foundations of the keep. Radiocarbon dating confirmed that even at a depth of 2.50m the material that infills the moat is fairly recent and therefore can be removed to reinstate the moat.

KEYWORDS: Haughley, Suffolk, organics, Radiocarbon dating

Contact address for authors:

Birmingham Archaeo-Environmental
Institute of Archaeology and Antiquity
University of Birmingham
Edgbaston
Birmingham
B15 2TT

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Suffolk County Council
Archaeological Service
Shire Hall
Bury St Edmunds
Suffolk

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1. INTRODUCTION

In October 2010 BA-E were commissioned by Suffolk County Council Archaeological Service to undertake an auger survey at the motte and bailey castle at Haughley, Suffolk in order to recover material suitable for radiocarbon dating (Fig.1). The proposed remedial conservation works include removal of vegetation and a desilting of the moat in order to allow it to reflood. This is to prevent access to the monument which is suffering from erosion and vandalism.

The castle is thought to have been constructed sometime in the 1100's in the reign of King Stephen by Hugh de Montfort. It is one of the largest motte and bailey castles still extant but probably one of the most short-lived, being destroyed in 1173. The revolt of Prince Henry against his father King Henry II led to its destruction by the Earl of Leicester and his Flemish army.

The auger survey was designed to characterise the deposits infilling the moat and identify any intact medieval deposits through radiocarbon dating. The locations of the auger transects were restricted due to parts of the moat being too soft underfoot or too wet to access. The main areas that were accessible were on the east side, at the junction between the motte ditch and the bailey ditch, and the northern arm of the motte ditch.

2. METHODS

2.1 Auger Survey

The auger survey was undertaken using an Eikjelcamp gouge corer. The stratigraphy of the deposits was logged in the field using the Troels Smith (1955) method and the locations of the cores were recorded using a dGPS.

2.2 Radiocarbon Dating

Two samples of roundwood were submitted for radiocarbon dating to Beta Analytic Inc., Florida, to establish the chronology of sediment accumulation. The sample underwent acid/alkali/acid treatment prior to AMS dating.

3. PRELIMINARY RESULTS OF FIELDWORK

The transects (1, 2, 10, 11 and 12) located at the motte and bailey ditch junction characterised the deposits as follows (Fig.2). Full core logs can be found in Appendix I.

Motte and Bailey Junction
The basal deposit of the moat was a black poorly humified leaf litter. This overlay the natural chalky grey clay which the moat is cut through. The leaf litter was overlain for the most part by a grey brown silt clay which contained coarse flint and sand particles. The upper deposits recorded in Cores 8 and 9 in Transect 3 have successive layers of coarser material overlying the basal deposits (Figs.3 and 4). In this area the

motte is particularly damaged and shows sign of erosion. The layers of flint rich silty sand most likely relate to erosion episodes of the motte material.

Motte ditch
The northern arm of the motte ditch was characterised in Transects 3-9. The deepest part of the ditch was located in Transects 6 and 7 being up to 2.60m deep. The ditch became shallower to the east, in Transects 3-5, being 1.10-1.75m deep (Fig). This may correspond to a widening of the ditch to the west.

The basal deposit in this section of the ditch conforms to the poorly humified leaf litter seen in the motte and bailey junction. In places this overlay a gritty brown grey silt clay, although this was an intermittent deposit and not seen in all the cores. For the most part this leaf litter was overlain by a coarse brown silt clay although the sequence in Core 9, Transect 3 was more varied. The upper deposits were a coarse sandy silt material interbedded with organic silt deposits suggesting that periods of erosion have led to the deposition of this coarser material

The cores in Transects 8 and 9 were obstructed at about 0.60-0.90m below ground level. The auger was unable to penetrate beyond this depth and was clearly striking something extensive and tough, like stone.

Dating
A sample of wood was recovered from Core 10 at 0.79m below ground level for radiocarbon dating (Table 1). The results show a modern age, i.e. the dated fraction incorporates material living within the last 50 years. This may indicate that this horizon is not secure and has become contaminated from overlying deposits.

A second piece of wood was selected from lower down the profile from Core 21, Transect 6 at 2.50m below ground level. This was to ensure minimal contamination from modern deposits. However, this deposit also proved to be modern suggesting that no intact sediments from the life of the castle survive in these locations.

4. CONCLUSIONS

The motte and bailey castle at Haughley was a fairly short lived structure and was not rebuilt after it fell in 1173. The brief occupation and use of the site contributed to the lack of material infilling the moat. The basal deposits very much resembled the upper deposits and consist primarily of poorly humified leaf litter. This suggests that the deposits in the base of the ditch are representative of a heavily vegetated and therefore abandoned site and are not indicative of occupation.

The radiocarbon dating has shown that the basal leaf litter material to be recent, being subject to active biological processes. It seems clear that the moat has not been subject to the build up of material that is usually expected. The deposits within it do not date from the life of the castle and therefore will not contribute to the understanding of the castle within its landscape

The current state of the motte is poor with several trees uprooted and clearly subject to damage from unauthorised public access. The upper deposits in the northern arm of the moat show the effects of this damage with layers of erosion material which in all likelihood derive from the motte. The presence of an obstruction between Transects 8 and 9 may be large pieces of stone. The keep would have been built out of

wood but the castle foundations are listed as being made of stone. It is possible that once the keep was destroyed only the stone foundations remained and through neglect and vandalism may have fallen into the base of the moat.

5. RECOMMENDATIONS FOR FURTHER ANALYSIS

The radiocarbon dating has shown the moat to be infilled with recent deposits derived from the vegetation growing at the site. This material may therefore be removed under archaeological supervision to reinstate the moat.

6. ARCHIVE

The remaining radiocarbon samples are currently stored at BAE and will be held for a maximum of one year.

ACKNOWLEDGEMENTS

Thanks are due to David Gill and the Suffolk team for their help in the field.

REFERENCES

Troels-Smith, J. (1955). Karakterisering af lose jordater (characterisation of unconsolidated sediments). *Denmarks Geologiske Undersogelse*, Series IV/3, 10, 73.

Figures

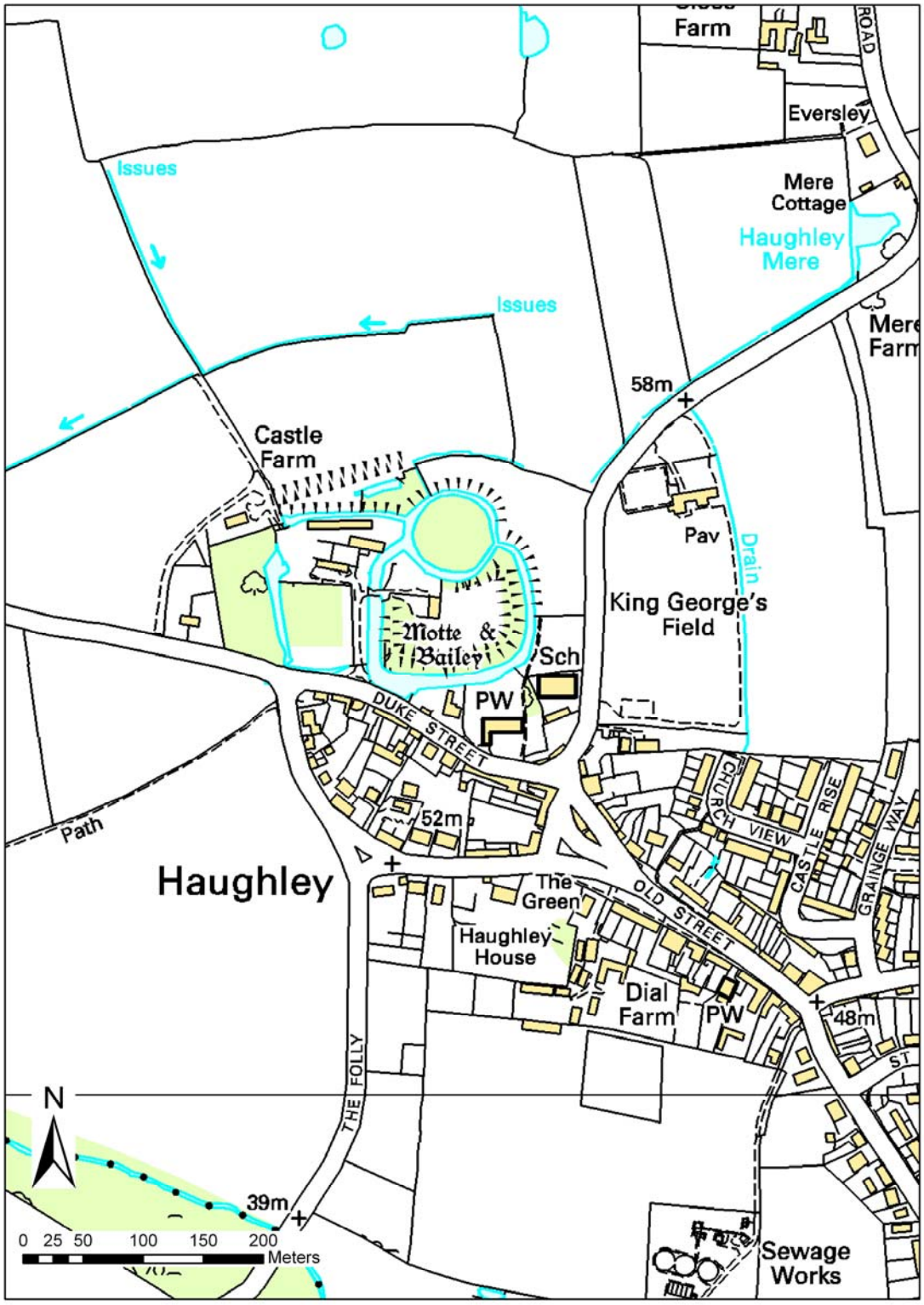

Figure 1: Site location

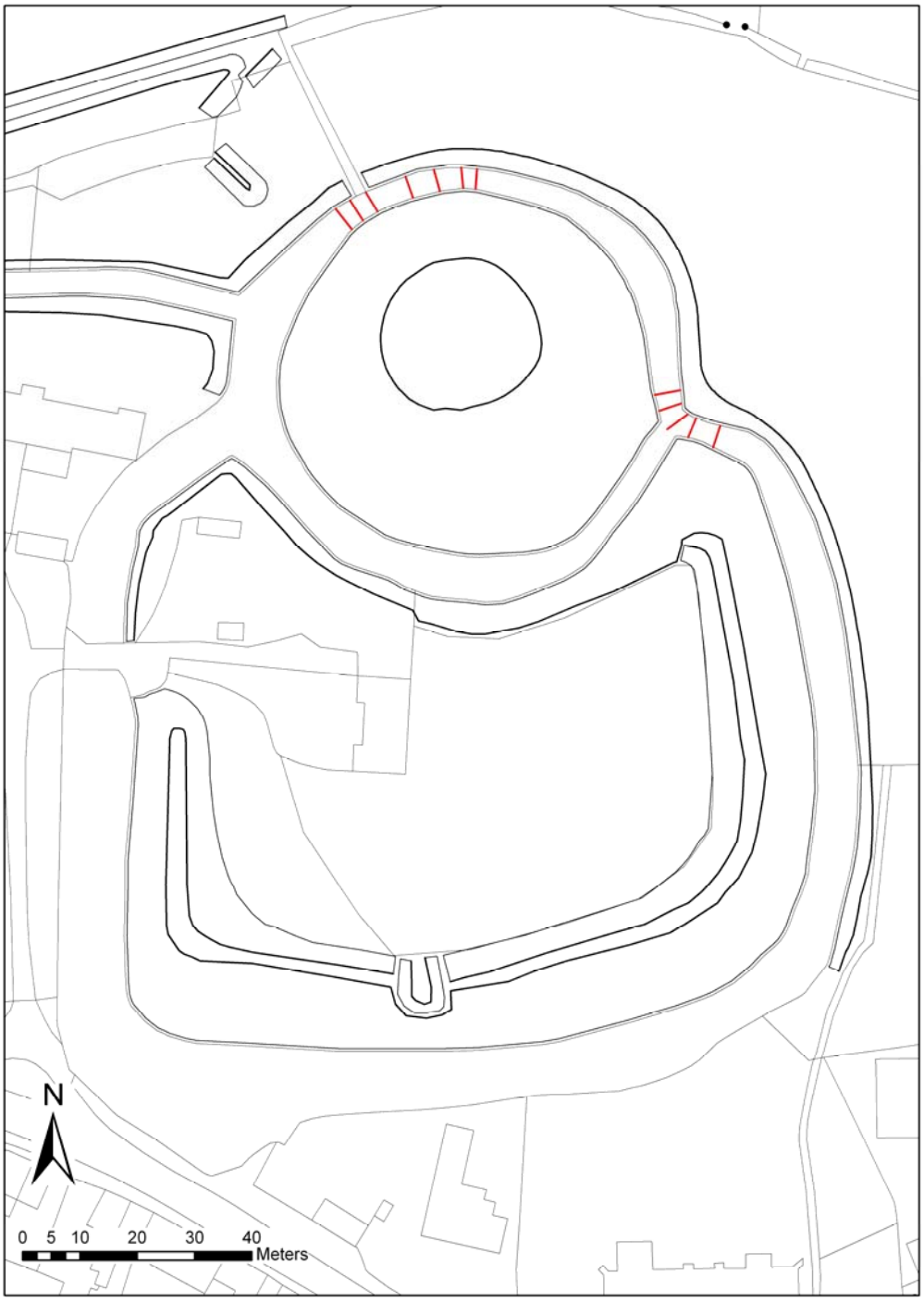

Figure 2: Transects

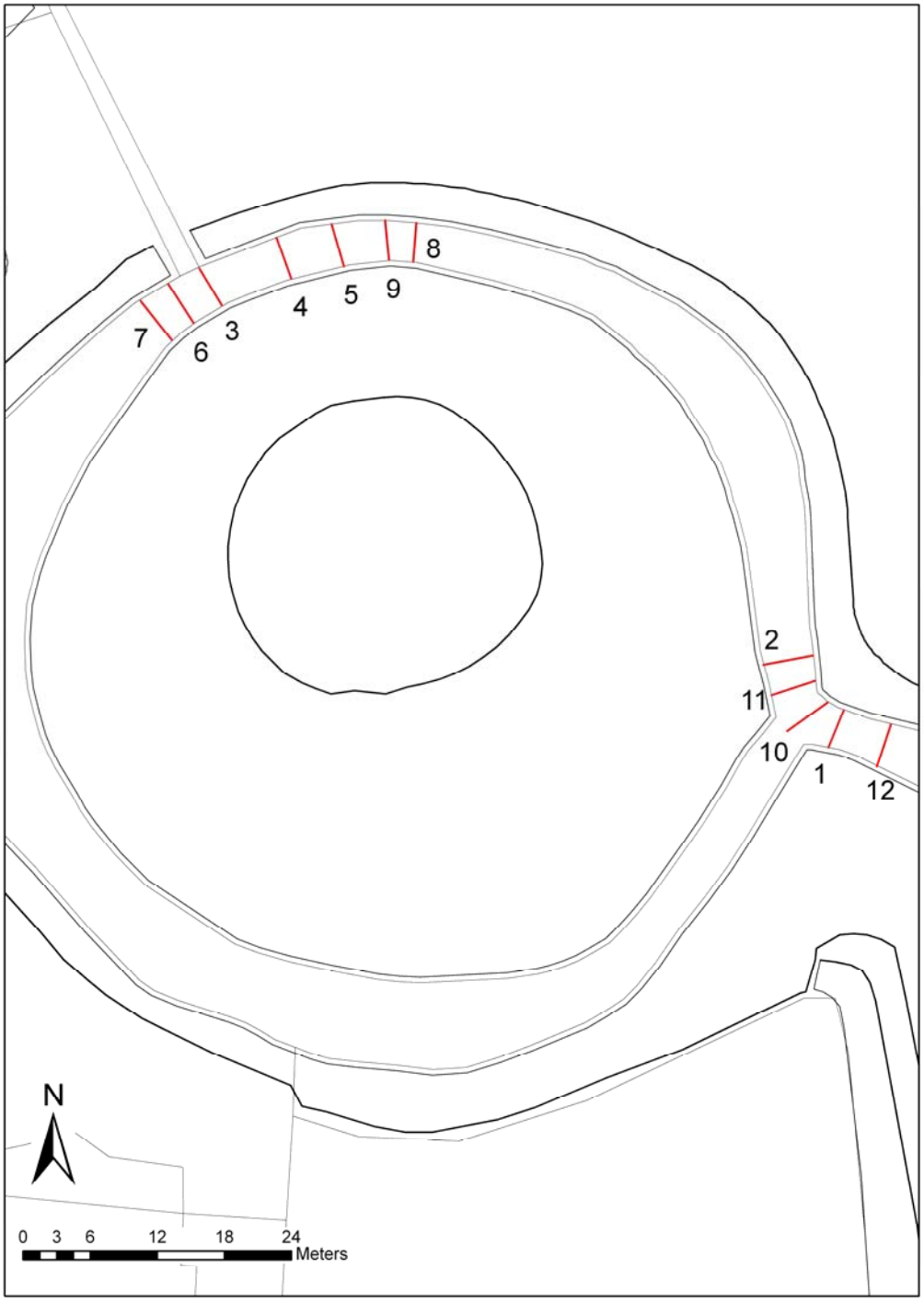

Figure 3: Transect numbers

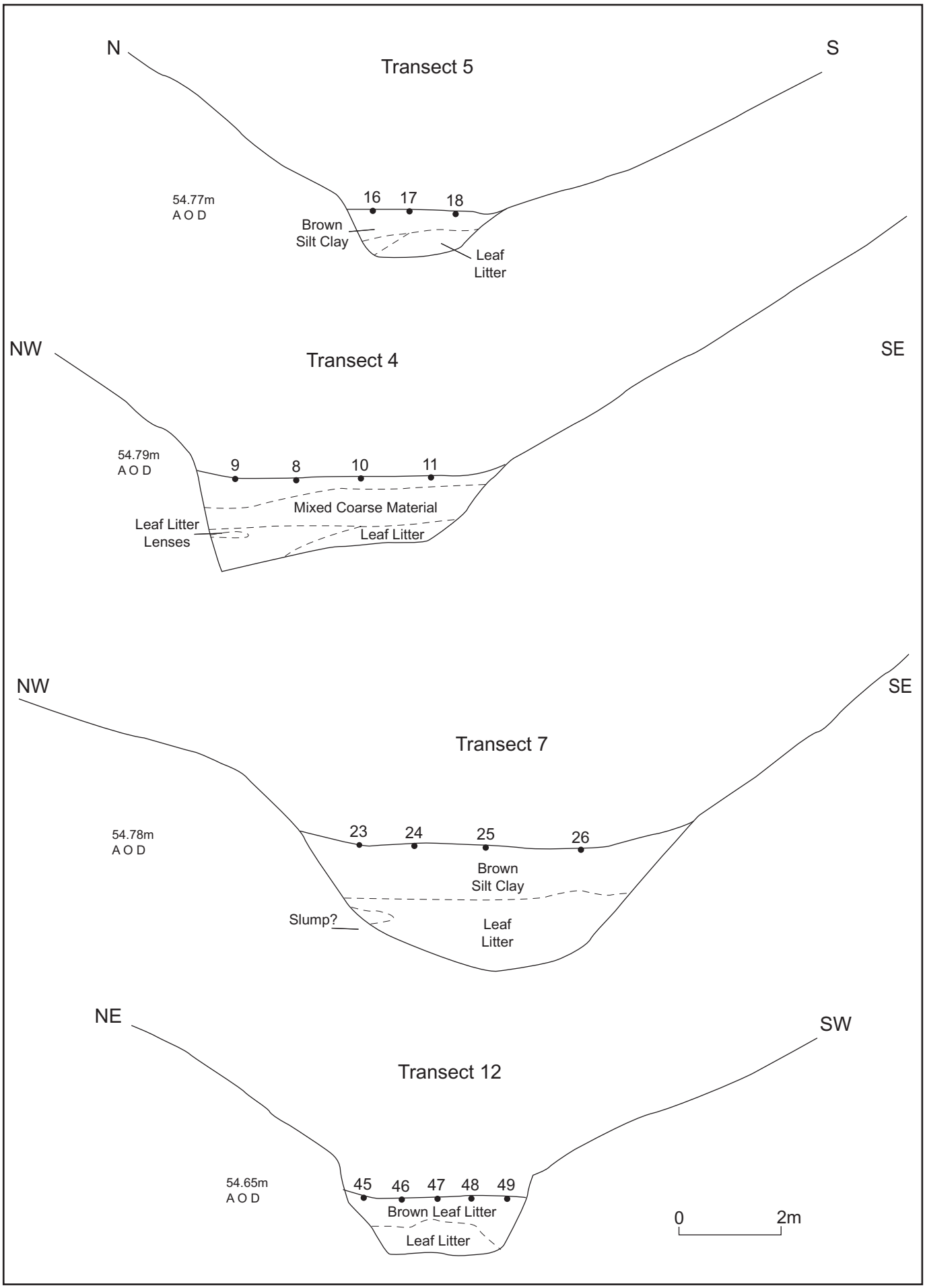
N
S
Transect 5
54.77m
A O D
16
17
18
Brown
Silt Clay
Leaf
Litter
NW
SE
Transect 4
54.79m
A O D
9
8
10
11
Mixed Coarse Material
Leaf Litter
Lenses
Leaf Litter
NW
SE
Transect 7
54.78m
A O D
23
24
25
26
Brown
Silt Clay
Slump?
Leaf
Litter
NE
SW
Transect 12
54.65m
A O D
45
46
47
48
49
Brown Leaf Litter
Leaf Litter
0
2m

Fig.4

Table 1: Radiocarbon dates

Lab number and depth	Material	13C/12C	Radiocarbon Age	Calibrated Age
BETA-287326 Core 10, 0.79m	wood	-27.2o/oo	Cal BP 280 to 170 and Cal BP 150 to 0 Cal BP 0 to 0	Cal AD 1670 to 1780 and Cal AD 1800 to 1950 Cal AD 1950 to 1960
BETA-288270 Core 21, 2.50m	wood	-25.6o/oo	Cal BP290 to 0	Cal AD 1660 to 1960

APPENDIX 1 - BA2131 Haughley Moat core logs

Transect 1

Core 1

0-0.55m

Da	St	El	Dr	UB
2	0	0	2	0

Dh2, Ag1, Th1

Upper brown silt, abundant twigs leaves, modern plant remains

0.55-0.90m

Da	St	El	Dr	UB
1	0	0	2	1

Ga3, Ag1

Very sticky stiff blue grey clay, abundant chalk fragments, no organics

Core 2

0-0.65m Not recovered, too wet

0.65-0.90m

Da	St	El	Dr	UB
5	0	0	2	0

Dh2, Ag1, Th1

Black poorly humified organic silt

0.90-1.30m

Da	St	El	Dr	UB
1	0	0	2	4

Ga3, Ag1

Very sticky stiff blue grey clay, abundant chalk fragments, no organics, hit a stone

Core 3

0-0.90m Not recovered, too wet

0.90-1.10m

Da	St	El	Dr	UB
5	0	0	2	0

Dh2, Ag1, Th1

Black poorly humified organic silt

1.10-1.25m

Da	St	El	Dr	UB
1	0	0	1	1

Ga3, Ag1

Very sticky stiff blue grey clay, abundant chalk fragments

Core 4

0-0.45m Not recovered, too wet

0.45-0.81m

Da	St	El	Dr	UB
5	0	0	2	0

Dh2, Ag1, Th1

Black poorly humified organic silt

1.10-1.25m

Da	St	El	Dr	UB
1	0	0	3	1

Ga3, Ag1

Very sticky stiff blue grey clay, abundant chalk fragments

Transect 2

Core 5

0-0.78m Not recovered, too wet

0.78-1.21m

Da	St	El	Dr	UB
1	0	0	2	1

Ga3, Ag1

Very sticky stiff blue grey clay, abundant chalk fragments, hit a stone

Core 6

0-1.13m Not recovered, too wet

1.13-1.17m

Da	St	El	Dr	UB
3	0	0	2	0

Dh2, Ag1, Th1, ptm+

Brown organic silt, poorly humified organics, twigs, possible mollusc frags, hit a stone

Core 7

0-1.00m Not recovered, too wet

1.00-1.20m

Da	St	El	Dr	UB
5	0	0	2	0

Dh2, Ag1, Th1

Black poorly humifed organic silt

1.20-1.33m

Da	St	El	Dr	UB
2	0	0	1	1

Ag3, Ga 1, ptm+

Brown organic silts, abundant pale rootlets, occ mollusc frags

1.33-1.94m

Da	St	El	Dr	UB
1	0	0	2	3

Ga3, Ag1

Very sticky stiff blue grey clay, abundant chalk fragments, hit a stone

Transect 3

Core 8

0-0.15m

Da	St	El	Dr	UB
1	0	0	2	0

Ga3, Ag1

Brown silty sand with modern roots throughout

0.15-1.40m

Da	St	El	Dr	UB
2	3	0	2	1

Ggmin2, Ag2,ptm+

Mixed grey sandy silt with bands of sand and chalk frags at base (slump material), occ mollusc frags

1.40-1.45m

Da	St	El	Dr	UB
5	0	0	3	2

Dh2, Ag1, Th1

organic layer, black poorly humified leaf litter

1.45m Base

Core 9

0-0.60m

Da	St	El	Dr	UB
1	0	0	1	0

Ggmin3, Ag1

Orange brown very coarse sand, occ silt and modern roots

0.60-0.90m

Da	St	El	Dr	UB
1	0	0	2	1

Dh2, Ag1, Th1, Ggmin+

Coarse grey sandy silt, large chalk frags, flint, dark rootlets and poorly humified leaf litter

0.90-0.92m

Da	St	El	Dr	UB
4	0	0	3	1

Dh1, Ag3

Black poorly humified organic silt, visible plant material

0.92-0.99m

Da	St	El	Dr	UB
3	0	0	3	1

As2, Ag2, Dh+, Ggmin+
Grey brown silty clay, occ chalk and coarse material, organics

0.99-1.09m

Da	St	El	Dr	UB
4	0	0	3	4

Dh1, Ag3
Black poorly humified organic silt, woody fragments

1.09-1.22m

Da	St	El	Dr	UB
3	0	0	3	4

As2, Ag2, Dh+, Ggmin+
Grey brown silty clay, occ chalk and coarse material, organics

1.22-1.60m

Da	St	El	Dr	UB
3	0	0	3	1

As2, Ag2, Dh+, ptm+
Brown sticky silt clay, occ mollusc frags and pale rootlets

1.60-1.75m

Da	St	El	Dr	UB
1	0	0	1	1

As2, Ag2, Dh+, Ggmin+, ptm+
Light grey wet silt clay, occ molluscs, plant material, chalk frags

1.75-2.00m

Da	St	El	Dr	UB
1	0	0	3	1

As3, Ag1, Ggmaj+
Stiff chalk rich clay

Core 10

0-0.76m

Da	St	El	Dr	UB
3	0	0	3	0

As2, Ag2, Dh+, Ggmin+, ptm+
Grey brown silty clay, occ chalk frags, wood, mollusc frags and well humified organics

0.76-0.98m

Da	St	El	Dr	UB
3/4	0	0	3	1

Ag2, Ggmin2, Dh+
Grey black sandy silt, very organic towards base

0.98-1.25m

Da	St	El	Dr	UB
4	0	0	2	1

Ag1, Dh3
Black poorly humified leaf litter

Core 11

0-0.90m

Da	St	El	Dr	UB
3	0	0	2	0

Ag2, Ggmin1, Dh1
Brown coarse silt with flint frags, woody frags, becoming siltier with depth

0.90-1.15m

Da	St	El	Dr	UB
4	0	0	2	1

Ag1, Dh3
Black poorly humified leaf litter

1.15-1.25m

Da	St	El	Dr	UB
3	0	0	3	1

As2, Ag2, Dh+, Ggmin+
Grey brown silty clay, occ chalk frags, wood, and well humified organics

1.25-1.50m

Da	St	El	Dr	UB
2	0	0	2	3

As3, Ag1, Ggmaj+
Stiff dry clay with chalk fragments

Transect 4
Core 12

0-0.47m

Da	St	El	Dr	UB
2	0	0	2	0

As3, Ag 1, Ggmaj+
Coarse brown silt clay, large chalk pieces, occ rootlets

0.47-0.80m

Da	St	El	Dr	UB
2	0	0	2	1

As3, Dh1, Ggmaj+
Yellow grey stiff clay, occ black organics and chalk frags

0.80-0.90m

Da	St	El	Dr	UB
3	0	0	2	1

Ag2,As2, Dh+, Ggmaj+
Grey brown silty clay, occ chalk frags and organics, hit a stone?

Core 13

0-0.57m

Da	St	El	Dr	UB
3	0	0	1	1

Ag2,As2, Dh+, Ggmaj+
Brown, wet silt clay, occ chalk frags and poorly humified organics

0.57-1.05m

Da	St	El	Dr	UB
3/4	0	0	1	1

Ag3,As1, Dh++, Ggmaj+
Dark brown organic wet silt clay, leaf litter, hit stone at base

Core 14

0-0.40m

Da	St	El	Dr	UB
3	0	0	2	0

Ag2,As2
Brown silt clay

0.40-1.20m

Da	St	El	Dr	UB
4	0	0	2	1

Ag2, Dh2, Ggmaj+
Black brown mottled poorly humified organic silt, hit a stone at base

Core 15

0-0.80m

Da	St	El	Dr	UB
3	0	0	2	0

Ag2,As2, Dh++
Brown silt clay with modern leaf litter

Transect 5
Core 16

0-0.35m

Da	St	El	Dr	UB
3	0	0	2	0

Ag2,As2
Brown silt clay

0.35-0.60m

Da	St	El	Dr	UB
2	0	0	2	1

Ag2,As2, Dh, Ggmaj+
Stiff yellow brown silt clay, chalk frags and occ organics

0.60-0.90m

Da	St	El	Dr	UB
3	0	0	3	1

Ag2,As2, Ggmin+, Dh+
Brown grey gritty silt clay, occ chalk and rootlets

Core 17

0-0.38m

Da	St	El	Dr	UB
3	0	0	2	0

Ag2,As2
Brown silt clay

0.38-0.94m

Da	St	El	Dr	UB
4	0	0	2	1

Ag1, Dh3
Black poorly humified leaf litter

Core 18

0-0.40m

Da	St	El	Dr	UB
3	0	0	2	0

Ag2,As2
Brown silt clay

0.40-0.76m

Da	St	El	Dr	UB
4	0	0	2	1

Ag1, Dh3
Black poorly humified leaf litter

0.76-1.10m

Da	St	El	Dr	UB
2	0	0	3	3

As3, Ag1, Ggmaj+
Stiff,dry, grey clay with chalk fragments

Transect 6
Core 19

0-0.78m

Da	St	El	Dr	UB
3	0	0	2	0

Ag2,As2, Ggmin+
Brown gritty silt clay

0.78-1.00m

Da	St	El	Dr	UB
2	0	0	2	1

Ag2,As2, Ggmin+, Dh+
Grey gritty silt clay, occ chalk and rootlets

1.00-1.20m

Da	St	El	Dr	UB
4	0	0	2	1

Ag1, Dh3
Black poorly humified leaf litter

1.20-1.50m

Da	St	El	Dr	UB
3	0	0	2	1

Ag2,As2, Ggmin+, ptm+
Brown gritty silt clay, occ mollusc frags

1.50-2.00m

Da	St	El	Dr	UB
2	0	0	3	3

As3, Ag1, Ggmaj+
Stiff, dry, grey clay with chalk fragments

Core 20

0-1.14m

Da	St	El	Dr	UB
2	2	0	2	0

As2, Ag1, Ggmaj1
Grey brown silt clay, mixed slump deposit

1.14-2.40m

Da	St	El	Dr	UB
4	3	0	2	4

Ag1, Dh3, Ggmin+
Black poorly humified leaf litter, occasional bands of brown grey silt clay 5cm thick

2.40-2.60m

Da	St	El	Dr	UB
3	0	0	2	1

Ag2, As2, Dh+, Ggmin+
Mid brown grey silt clay, poorly humified monocot remains, chalk frags

2.60-2.63m

Da	St	El	Dr	UB
4	0	0	2	1

Ag1, Dh3
Black poorly humified leaf litter

2.63-2.66m

Da	St	El	Dr	UB
2	0	0	3	3

As3, Ag1, Ggmaj+
Stiff, dry, grey clay with chalk fragments

Core 21

0-0.55m

Da	St	El	Dr	UB
3	0	0	1	0

Ag2,As2, Ggmin+
Brown gritty silt clay

0.55-1.20m

Da	St	El	Dr	UB
4	3	4	2	4

Ag1, Dh3, Ggmin+
Black poorly humified leaf litter, laminated with grey silt clay 10cm thick laminations

1.20-2.60m

Da	St	El	Dr	UB
4	0	0	2	1

Ag1, Dh3
Black poorly humified leaf litter

2.60m

Da	St	El	Dr	UB
2	0	0	2	3

As3, Ag1, Ggmaj+
Stiff, dry, grey clay with chalk fragments

Core 22

0-0.63m

Da	St	El	Dr	UB
3	0	0	1	0

Ag2,As2, Ggmin+
Brown gritty silt clay

0.63-1.28m

Da	St	El	Dr	UB
4	3	4	2	4

Ag1, Dh3, Ggmin+
Black poorly humified leaf litter, laminated with grey silt clay 10cm thick laminations

1.28-1.55m

Da	St	El	Dr	UB
2	0	0	3	3

As3, Ag1, Ggmaj+
Stiff, dry, grey clay with chalk fragments

Transect 7
Core 23

0-0.97m

Da	St	El	Dr	UB
3	0	0	1	0

Ag2,As2, Ggmin+
Brown gritty silt clay

0.97-1.09m

Da	St	El	Dr	UB
3	0	0	2	1

Ag2, As2, Dh+, Ggmin+
Mid brown grey silt clay, occ poorly humified organics

1.09-1.16m

Da	St	El	Dr	UB
4	0	0	2	1

Ag1, Dh3
Black poorly humified leaf litter

1.16-1.36m

Da	St	El	Dr	UB
3	0	0	2	1

Ag2, As2, Ggmin+
Brown grey silt clay, chalk fragments

1.36-1.42m

Da	St	El	Dr	UB
2	0	0	3	3

As3, Ag1, Ggmaj+
Stiff, dry, grey clay with chalk fragments

Core 24

Too wet unable to recover

Core 25

Very wet, not good recovery
0-1.00m

Da	St	El	Dr	UB
3	0	0	1	0

Ag2,As2, Ggmin+
Brown gritty silt clay

1.00-2.37m	**Da**	**St**	**El**	**Dr**	**UB**
	4	0	0	1	1

Ag1, Dh3
Black poorly humified leaf litter, reed frags

Core 26

0-0.84m	**Da**	**St**	**El**	**Dr**	**UB**
	3	0	0	1	0

Ag2,As2, Ggmin+
Brown gritty silt clay

0.84-1.80m	**Da**	**St**	**El**	**Dr**	**UB**
	4	0	0	1	1

Ag1, Dh3
Black poorly humified leaf litter

Transect 8
Core 27

0-0.50m	**Da**	**St**	**El**	**Dr**	**UB**
	3	0	0	1	0

Ag2,As2, Ggmin+
Brown gritty silt clay

0.50-100m	**Da**	**St**	**El**	**Dr**	**UB**
	2	0	0	3	3

As3, Ag1, Ggmaj+
Stiff, dry, grey clay with chalk fragments

Core 28/29/30

0-0.60m	**Da**	**St**	**El**	**Dr**	**UB**
	3	0	0	1	0

Ag2,As2, Ggmin+, Dh++
Brown gritty silt clay, occ organics, hit stone? Unable to continue

Transect 9
Core 31

0-0.60m	**Da**	**St**	**El**	**Dr**	**UB**
	3	0	0	1	0

Ag2,As2, Ggmin+
Brown gritty silt clay

0.60-1.00m	**Da**	**St**	**El**	**Dr**	**UB**
	2	0	0	3	3

As3, Ag1, Ggmaj+
Stiff, dry, grey clay with chalk fragments

Core 32

0-0.85m	**Da**	**St**	**El**	**Dr**	**UB**
	4	0	0	1	0

Ag1, Dh3
Black poorly humified leaf litter, poorly recovered as wet

0.85-1.00m	**Da**	**St**	**El**	**Dr**	**UB**
	2	0	0	3	3

As3, Ag1, Ggmaj+, ptm+
Stiff, dry, grey clay with chalk and mollusc fragments, hit stone at base

Core 33

0-0.40m

Da	St	El	Dr	UB
3	0	0	2	0

Ag2,As2, Ggmin+
Brown gritty silt clay

0.40-1.00m

Da	St	El	Dr	UB
4	0	0	1	1

Ag1, Dh3
Black poorly humified leaf litter, poorly recovered as too wet, hit stone at base

Core 34

0-1.00m

Da	St	El	Dr	UB
4	0	0	1	1

Ag1, Dh3
Black poorly humified leaf litter, poorly recovered as too wet

Core 35

0-0.80m

Da	St	El	Dr	UB
4	0	0	1	1

Ag1, Dh3
Black poorly humified leaf litter, poorly recovered as too wet, hit stone? at base

Transect 10
Core 36

0-0.40m

Da	St	El	Dr	UB
3	0	0	1	0

Ag1, Dh3
Brown poorly humified leaf litter

0.40-0.75m

Da	St	El	Dr	UB
3	0	0	2	1

Ag2, As2, Dh+, Ggmin+
Mid brown wet grey silt clay, chalk and organic frags

0.75-1.00m

Da	St	El	Dr	UB
2	0	0	3	2

As3, Ag1, Ggmaj+
Stiff, dry, grey clay with chalk fragments

Core 37

0-1.30m too wet to recover

Core 38

0-1.30m too wet to recover

Core 39

0-0.78m

Da	St	El	Dr	UB
3	0	0	1	0

Ag1, Dh3
Brown poorly humified leaf litter, very wet

Transect 11

Core 40

0-0.40m	**Da**	**St**	**El**	**Dr**	**UB**
	3	0	0	2	0

Ag2,As2, Ggmin+
Brown gritty silt clay

Core 41

0-0.90m too wet to recover

0.90-1.50m	**Da**	**St**	**El**	**Dr**	**UB**
	2	0	0	3	2

As3, Ag1, Ggmaj+
Stiff, dry, grey clay with chalk fragments

Core 42

0-0.90m Too wet to recover

0.90-1.00m	**Da**	**St**	**El**	**Dr**	**UB**
	2	0	0	3	2

As3, Ag1, Ggmaj+
Stiff, dry, grey clay with chalk fragments

Core 43

0-1.30m	**Da**	**St**	**El**	**Dr**	**UB**
	3	0	0	1	0

Ag1, Dh3
Brown poorly humified leaf litter, very wet

1.30-1.50m	**Da**	**St**	**El**	**Dr**	**UB**
	2	0	0	3	2

As3, Ag1, Ggmaj+
Stiff, dry, grey clay with chalk fragments

Core 44

0-1.40m too wet to recover

1.40-1.50m	**Da**	**St**	**El**	**Dr**	**UB**
	2	0	0	3	2

As3, Ag1, Ggmaj+
Stiff, dry, grey clay with chalk fragments

Transect 12
Core 45

0-0.40m	**Da**	**St**	**El**	**Dr**	**UB**
	3	0	0	2	0

Ag2,As2, Ggmin+
Brown gritty silt clay

Core 46

0-0.45m	**Da**	**St**	**El**	**Dr**	**UB**
	3	0	0	1	0

Ag1, Dh3
Brown poorly humified leaf litter, very wet

0.45-1.10m	**Da**	**St**	**El**	**Dr**	**UB**

	4	0	0	1	1

Ag1, Dh3
Black poorly humified leaf litter

1.10-1.50m	**Da**	**St**	**El**	**Dr**	**UB**
	2	0	0	3	2

As3, Ag1, Ggmaj+
Stiff, dry, grey clay with chalk fragments

Core 47

0-0.80m	**Da**	**St**	**El**	**Dr**	**UB**
	3	0	0	1	0

Ag1, Dh3
Brown poorly humified leaf litter, very wet

0.80-1.00m	**Da**	**St**	**El**	**Dr**	**UB**
	4	0	0	1	1

Ag1, Dh3
Black poorly humified leaf litter

1.00-1.50m	**Da**	**St**	**El**	**Dr**	**UB**
	2	0	0	3	2

As3, Ag1, Ggmaj+
Stiff, dry, grey clay with chalk fragments

Core 48

0-0.45m	**Da**	**St**	**El**	**Dr**	**UB**
	3	0	0	1	0

Ag1, Dh3
Brown poorly humified leaf litter, very wet

0.45-1.10m	**Da**	**St**	**El**	**Dr**	**UB**
	4	0	0	1	1

Ag1, Dh3
Black poorly humified leaf litter

1.10-1.50m	**Da**	**St**	**El**	**Dr**	**UB**
	2	0	0	3	2

As3, Ag1, Ggmaj+
Stiff, dry, grey clay with chalk fragments

Core 49

0-0.50m	**Da**	**St**	**El**	**Dr**	**UB**
	3	0	0	1	0

Ag1, Dh3
Brown poorly humified leaf litter, very wet

0.50m-1.00m	**Da**	**St**	**El**	**Dr**	**UB**
	2	0	0	3	2

As3, Ag1, Ggmaj+
Stiff, dry, grey clay with chalk fragments