ARCHAEOLOGICAL EVALUATION ON SITE OF PROPOSED ATTENUATION RESERVOIR MIDDLETON STOP, KINGS LYNN NORFOLK

Work Undertaken For
King's Lynn Internal Drainage Board

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Report Compiled by

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ARCHAEOLOGICAL PROJECT SERVICES

CONTENTS

1. SUMMARY

An archaeological evaluation was undertaken at the site of a proposed flood attenuation reservoir at Middleton Stop, Kings Lynn, Norfolk. The evaluation comprised a programme of augering to investigate and date the sedimentary sequence at the site and create a palaeotopographic model.

Sub surface modelling of the auger data revealed a peat filled stream along the western and lowest part of the site. The base of this peat was carbon dated to the middle Neolithic period (c 3200BC). A Roman period (c. 100AD) carbon date from the top of the peat on the highest part of the site demonstrates the survival of a 3000 year long sequence of organic deposits. Overlying these deposits were sediments associated with a marine inundation, probably during the late or post Roman period.

Figure 1 - General location plan

2. INTRODUCTION

2.1 Definition of an Evaluation

An archaeological evaluation is defined as; “a limited programme of non-intrusive and/or intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site. If such archaeological remains are present Field Evaluation defines their character and extent, quality and preservation, and it enables an assessment of their worth in a local, regional, national or international context as appropriate” (IFA 2008).

2.2 Planning Background

Archaeological Project Services was commissioned by the King's Lynn Internal Drainage Board to undertake archaeological evaluation at the site of a proposed flood attenuation reservoir at

Middleton Stop, Kings Lynn, Norfolk. It is anticipated that the results of the fieldwork are to be used in support of a planning application to construct a flood attenuation reservoir at the site

The fieldwork was carried out over three days between the 29th October and the 19th November 2012 in accordance with a Written Scheme of Investigation produced by APS in accordance with a brief issued by the Norfolk Historic Environment Service.

2.3 Topography and Geology

The proposed development is located on southwest outskirts of Kings Lynn, Norfolk in the Civil Parish of North Runcton and in the administrative district of Kings Lynn and West Norfolk, centred on National Grid Reference TF 6427 1857. To the northwest the approximately 8 hectare area of development is bounded by the A149 Queen Elizabeth Way and to the northeast by the Middleton Stop drain.

The site lies close to the boundary of soils of the Wallasea 2 and Adventurers 2 Associations as mapped by the Soils Survey of England and Wales. (Hodge et al. 1984). The former comprise deep stoneless calcareous clayey soils developed from marine alluvium and the latter largely fen peats. Local topography is slightly undulating and lies at elevations of between 0.5 and 1.5m OD. The site is currently under arable cultivation.

2.4 Archaeological Setting

The site lies within an area of fen deposits but close to the fen edge which follows an irregular but

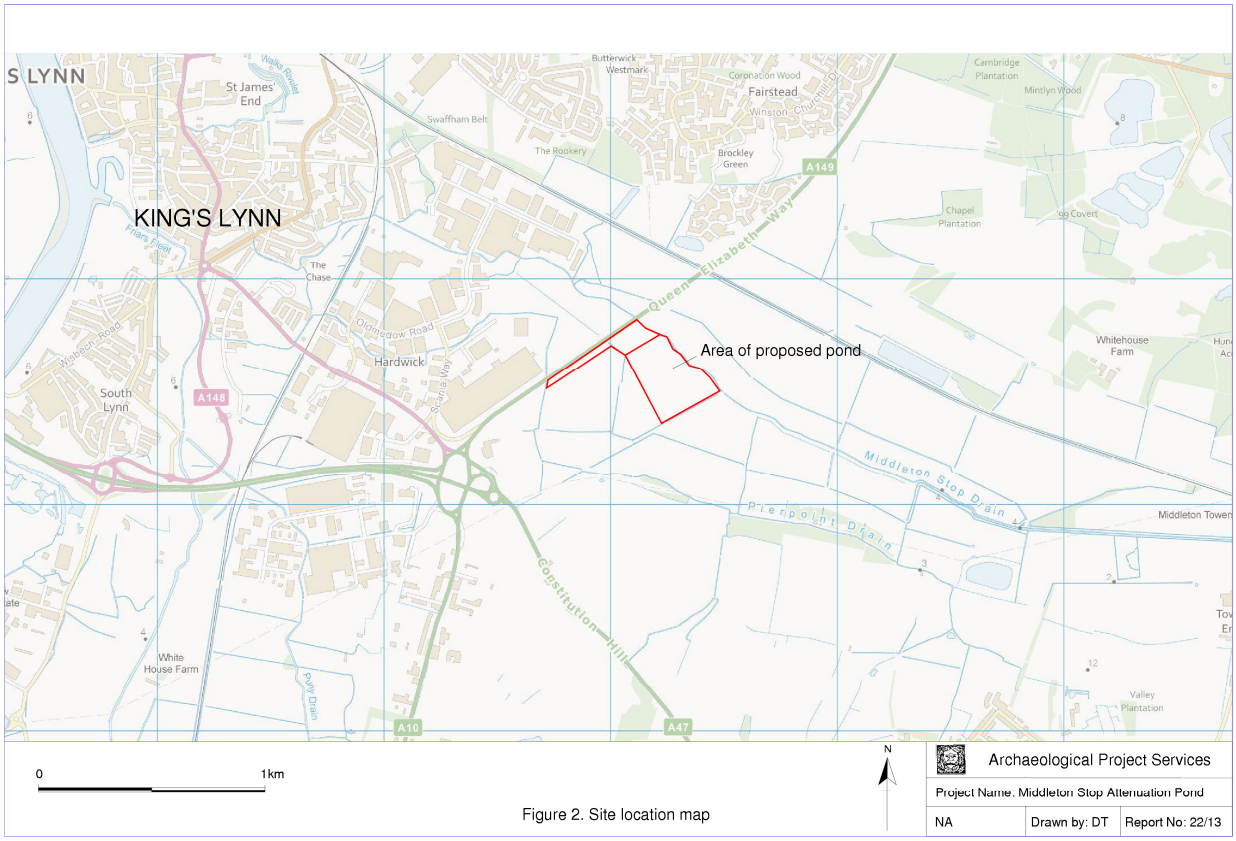


Figure 2. Site location map

generally north south alignment from Kings Lynn northwards.

A number of archaeological investigations of a site approximately 250m to the northeast have identified archaeological remains of Mesolithic, Neolithic, Early Bronze Age and medieval date (NHER 36320). Excavations undertaken at this site in 2004 recovered Mesolithic and Neolithic worked flint from buried soils and tree throw holes. Evidence for Late Neolithic\Early Bronze Age activity alongside a palaeochannel was identified and excavation of a burnt flint mound revealed an underlying trough. Medieval remains recorded at the site comprised a series of intercutting ditches surrounding a sandy knoll.

A number of records of nearby medieval, post medieval or undated linear banks and earthworks which probably relate to drainage or flood defence activities are also contained within the NHER (38307, 38312, 38306). Record 383312 relates to an intermittent earthwork bank associated with the Middleton Stop Drain which bounds the northeast side of the proposed area of development

To the west of the site, evidence of medieval agriculture in the form of ridge and furrow earthworks and circular stack stands have been recorded (38235). Within five hundred metres to the west of the site the remains of a medieval moated site and the deserted medieval settlement of Hardwick have been identified through the work of the National Mapping Programme and are recorded under NHER reference (38259)

3. AIMS

The aim of the evaluation was to gather information to establish the presence or absence, extent, condition, character, quality and date of any archaeological deposits in order to enable NLA to formulate a policy for the management of archaeological resources present on the site.

4. AUGER SURVEY

Plate 1. The site looking south from the northeast corner

4.1 Methodology

A 50m grid was laid across the site using a survey grade Sokkia GRX1 GPS system (Fig. 3) and a series of 35 locations plotted for augering. In the event one of the locations lay on the current flood embankment of the drain and was not augered, leaving 34 locations in all. In addition to the

auger holes the site was surveyed at closer intervals to allow the creation of a topographic map of the modern ground surface which undulates markedly (Fig. 6).

The auger survey was conducted using a 25mm diameter gouge auger one metre in length that is hand operated and allows the addition of extension rods that permit coring to a depth of approximately 10m. The cores were cleaned in the field and described and logged, with depth measurements recorded from ground surface. Coring was in general undertaken until till or diamicton (boulder clay) was recorded in each borehole, but in five of the boreholes coring was blocked by stone or gravel obstructions that prevented further hand augering. Since in all these cases the palaeosol or 'glacial' sands had been recorded further augering was not deemed necessary.

After assessment of the auger results, two borehole locations were selected for the recovery of intact cores from the surface to the underlying clays. These were chosen on the basis that they would recover the longest and best preserved palaeo-environmental sequences noted from the auger survey and also permit the recovery of radiocarbon samples that would allow the chronology of the organic deposits on the site to be adequately dated. These cores have not been split or logged for this report except for those cores from which radiocarbon samples were needed.

4.2 **Survey results**

Plate 2. Area of proposed reservoir looking east.

The field logs for each borehole are presented in Appendix 1. After the initial detailed recording of sediment type, level of organic humification and oxidation, and colour (Munsell colour) it was found that the cores were fairly consistent and later records were not always given a Munsell colour. Water ingress was recorded in some boreholes but not consistently across all. The data are presented in a series of reconstructed sections across the site (Figs. 4 and 5).

The borehole logs show a fairly consistent sequence across the whole site. The site is underlain by glacial chalky clays, diamicton, which was proved in all except five boreholes. The elevation of the clay surface varies across the site with a low of -2.34m OD in BH26 along the western edge of the site and a high of -0.68m OD in BH23. The clays are generally overlain by sands upon which a palaeosol has developed in all those sequences not truncated by later events. On the western half of the site a series of boreholes at the western end of each transect tend to show a deeper sequence and in four boreholes (BH27, BH26, BH18 and BH17) organic silts reflect waterlain sediments probably laid down in a stream (see topographic discussion).

Fig. 3. Location of the 34 auger holes and surface levels across the site.

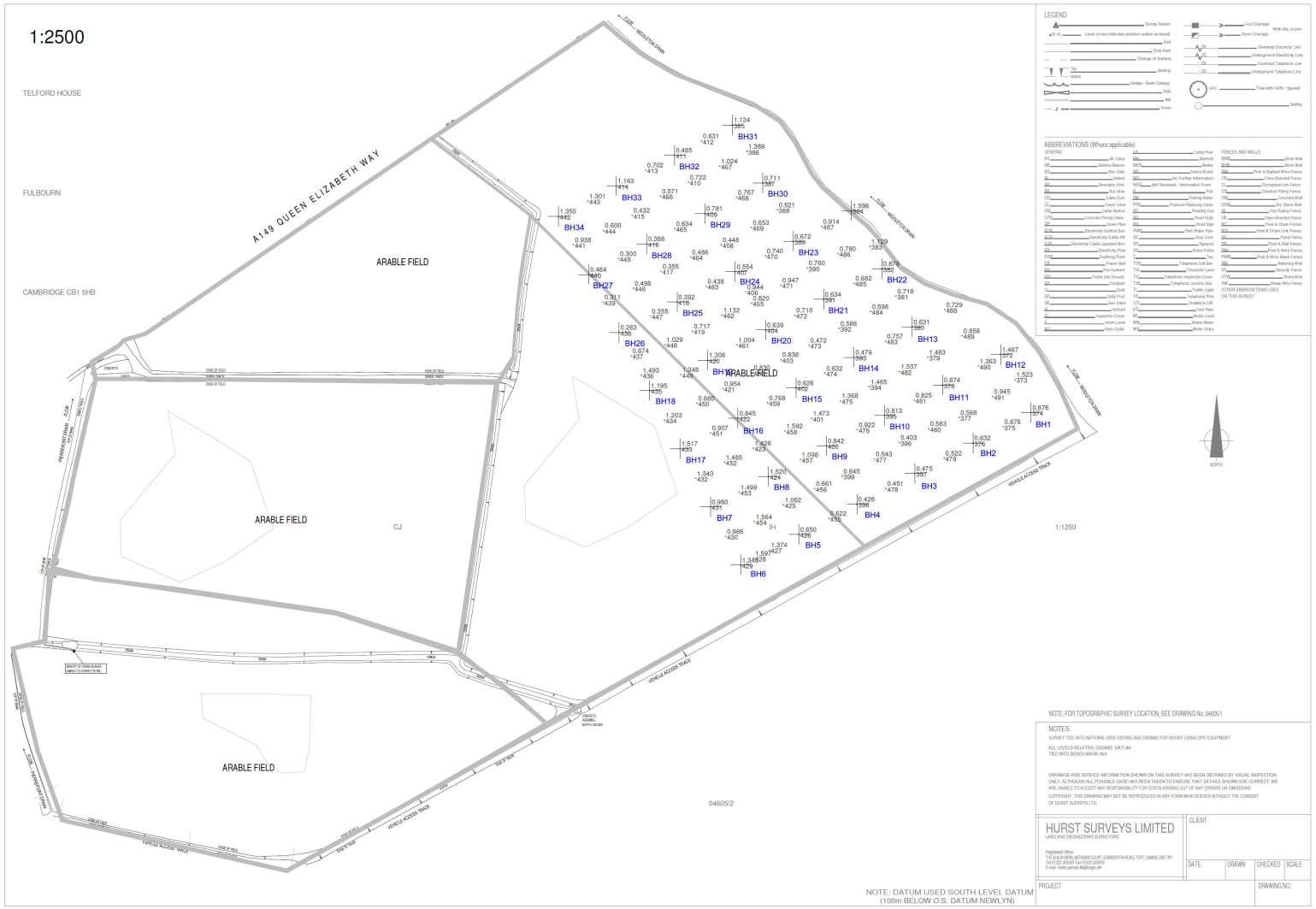


Figure 4 Four northern auger transects on the site

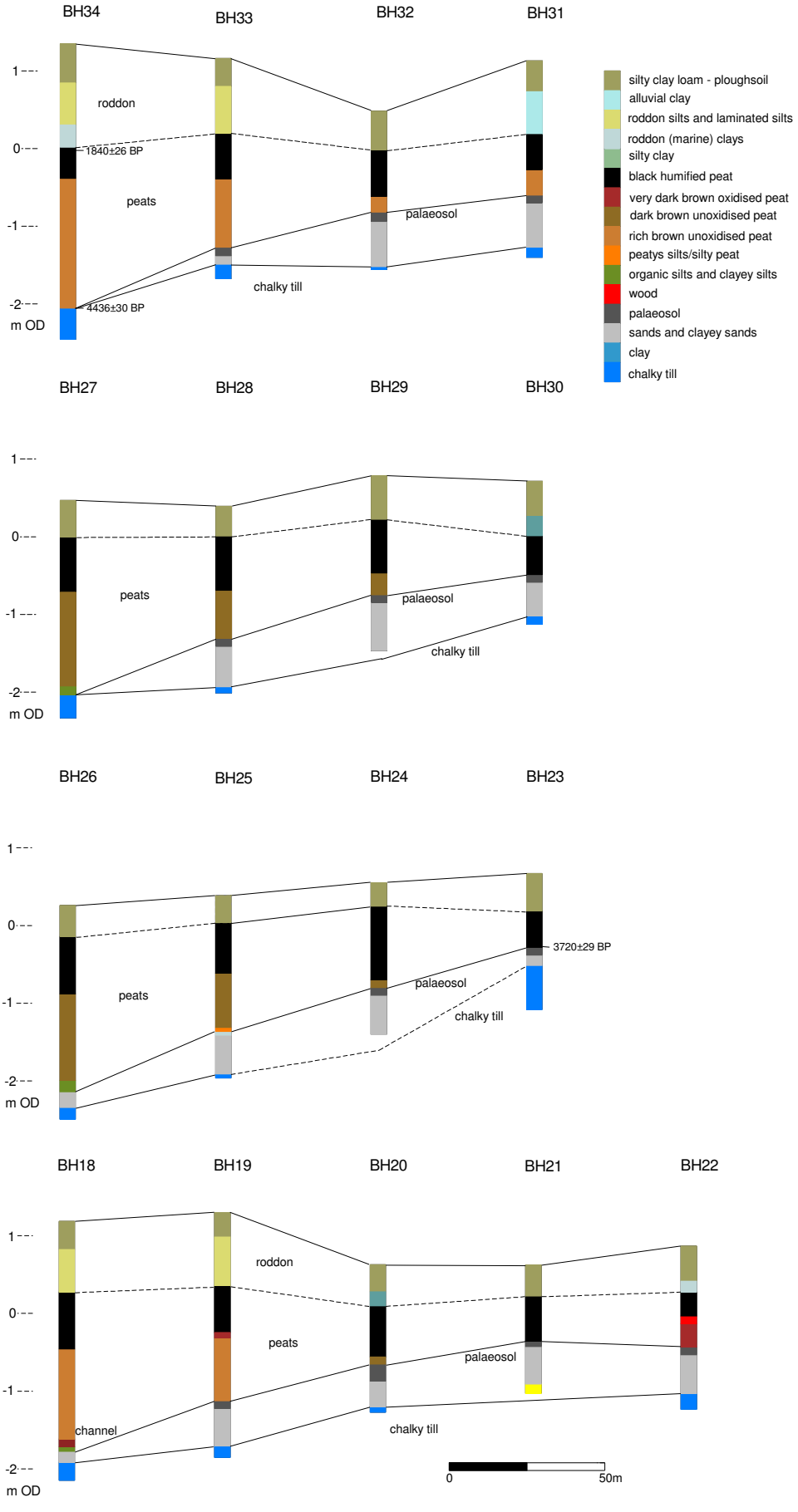
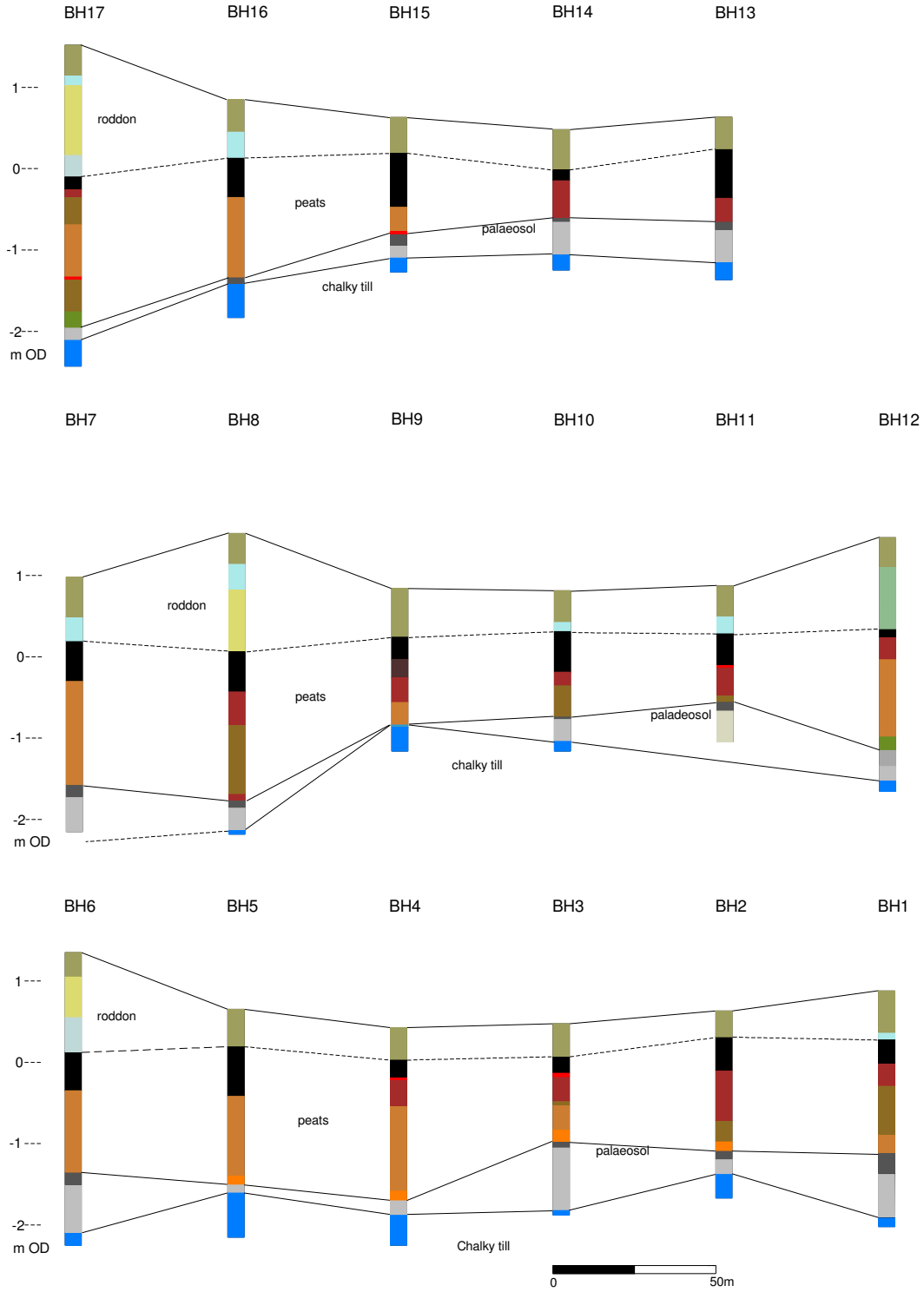


Figure 5 Three southern auger transects on the site



The palaeosol is absent from these boreholes where the stream channel was eroded or cut any former landsurface. The palaeosol tends to rise to the east and its upper (highest) surface lies at -0.28m OD in BH23.

The palaeosol is overlain by a sequence of peats that reaches a maximum depth of 2.07m in BH34. These peats vary across the site in response to the water table and level of de-watering that they have suffered. The lower peats in boreholes below -1m OD have rich brown unoxidised moist fibrous peats with the likelihood of excellent preservation of plant and insect micro and macrofossils. These grade upwards into brown unoxidised, dark brown and very dark brown oxidised humified peats and black well humified peats, the latter probably lying above the present average summer water table and suffering degradation on a seasonal basis. These upper black peats are compacted and very dry in areas of higher elevation or where a significant overburden of later deposits occurs. The peats are locally woody, but frequently include occasional wood and roundwood fragments, and also reed. The upper surface of the peats is fairly uniform, lying just above 0m OD, except where later sediments have compressed them or they have been eroded.

The peats are generally overlain by alluvial clays and silty clays, but in some areas roddon sediments - silty clays, silts and laminated sediments – overlie the peats and indicate a marine incursion across the site. These roddon deposits are most clearly represented in boreholes BH6, BH5, BH17, BH18, BH19, BH33 and BH34, but the thicker overburden of clays and silty clays in BH12 and BH31 may also reflect roddon sediments. The upper sediments comprise the modern day ploughsoil which is composed of a silty clay loam, although it does vary slightly across the site, particularly on the roddons. Along the north-eastern edge of the site and on the lower lying ground the ploughsoil has a more recent alluvial component.

In order to establish the chronology of these sediments points in the sequences sampled from boreholes BH23 and BH34 were selected for radiocarbon dating. The selected cores were split and logged (see below) and samples for dating taken from the base and top of the peat sequence in BH34, reflecting the longest, and perhaps best preserved sequence of organic sediments recorded from the site, and from the base of the peats at their highest point on the site in BH23. This latter date gives us some idea of the rate at which the peats overtook the landscape.

Core logs

BH23 Core sample 50-150
0-12 empty – compression
12-29 dark greyish brown (10YR 4/2) silt loam
29 sharp boundary
29-55 very dark brown (10YR 2/2) compressed oxidised humified peat with occasional wood fragments
55-74 very dark brown (10YR 2/2) compressed fibrous oxidised and humified peat;
C14 73-74cm - 3720±29 BP
74 sharp boundary
74-82 brown (10YR 4/3) sandy organic silt – palaeosol
82-96 greenish grey (Gley 1 5/5GY) slightly sandy clay with roots
96-100 light grey (5Y 7/2) sandy clay

BH34 Core sample 100-200
0-4 Empty – compression
4-11 brown (10YR 5/3) alluvial clay
11-33 grey (Gley 1 5/N) alluvial cloay with red brown mottling and a fine sand lens (1-2mm) at 16.5cm
33 disturbed boundary
33-49 oxidised black (10YR 2/1) humified fibrous compacted peat;
C14 37-38cm – 1840±26 BP
49-84 very dark brown (10YR 3/2) fibrous humified compacted peat with occasional wood and reed – oxidising on exposure
84-89.5 dark yellowish brown (10YR 4/4) compacted moss
89.5-100 dark yellowish brown (10YR 3/4) compacted rich brown fibrous peat with occasional wood

BH34 Core sample 300-400
0-17 very dark grey (10YR 3/1) woody peat – partially oxidised
17-32 dark brown (10YR 3/3) unoxidised partly humified peat with common small roundwood
32-38 dark brown (10YR 3/3) peats with small twigs and reed leaves
38-44 dark brown 910YR 3/3) humified silty peat with reed fragments,
C14 - 40-41cm – 4436±30 BP
44-50 dark greyish brown (10YR 4/2) sandy peaty silt with organic fragments – palaeosol
50-56 dark greenish grey (Gley 1 4/10Y) sandy clay with organic fragments/roots?
56-71 light greenish grey (Gley 1 7/5G) clay with chalk and occasional root penetration
71-90 sandy clay with chalk and flint – occ. penetrating roots
90-100 white (Gley 1 8/N) stiff clay with chalk

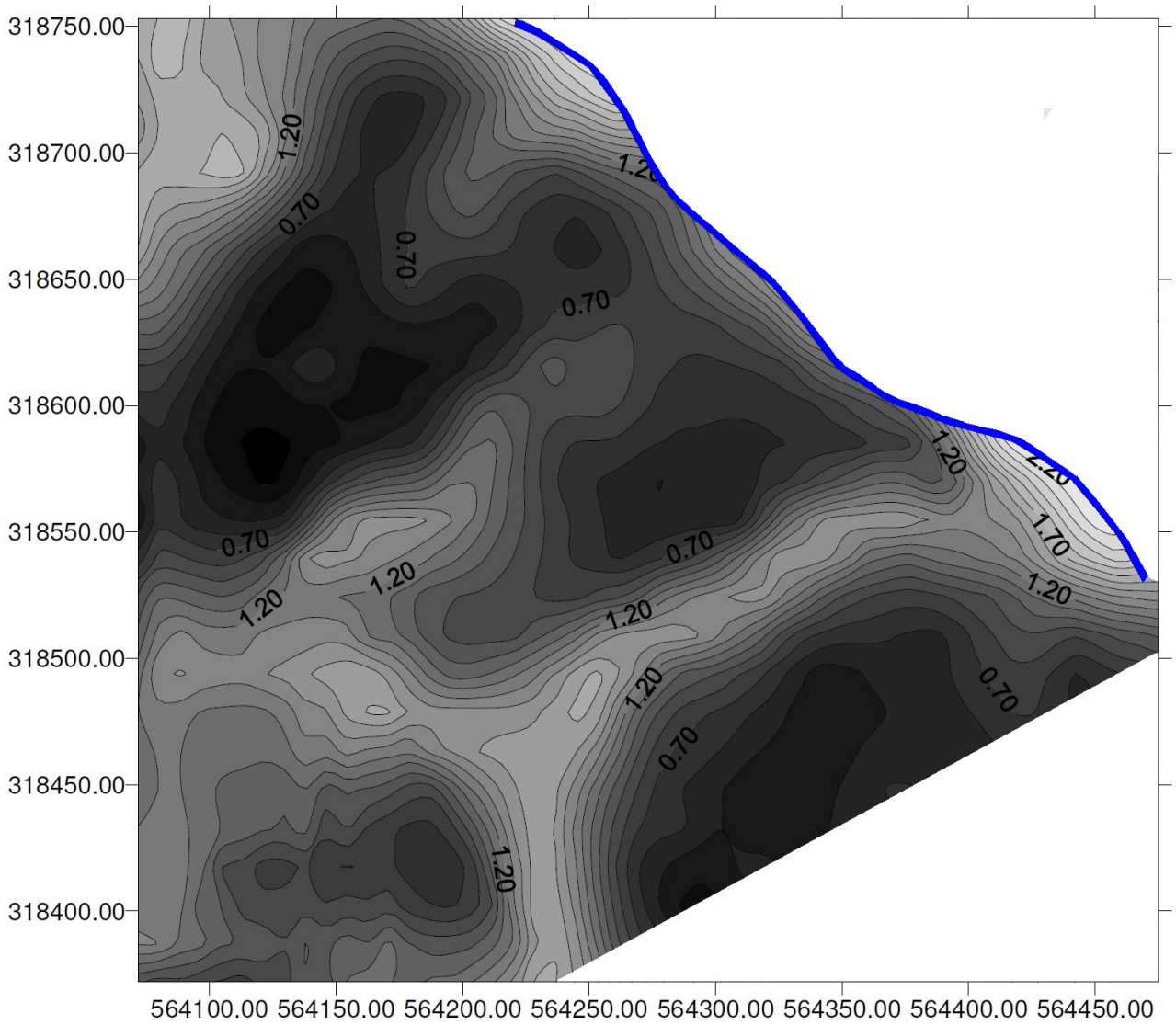
Table 1. AMS Radiocarbon dates obtained from the cores (calibration curves are given in Appendix 2)

Lab.no.	borehole	material	13C/12C Ratio	Conventional Radiocarbon Age	Calibrated Age at 2 sigma
SUERC-44030	BH23 50-150 73-74cm	Peat	-28.6 ‰	3720±29BP	2201-2032 cal BC
SUERC-44163	BH34 100-200 37-38cm	Peat	-27.4 ‰	1840±26BP	87-105 cal AD (4.1%) 121-241 cal AD (91.3%)
SUERC-43895	BH34 300-400 40-41cm	Phragmites leaves	-24.8 ‰	4436±30BP	3329-3217 cal BC (27.9%) 3182-3158 cal BC (3.6%) 3124-3003 cal BC (54.9%) 2991-2929 cal BC (9.1%)

The base of the organic sequence in BH34 is dated to the middle Neolithic (Table 1). This sample lies at approximately -2m OD. The sample from the base of the peats in BH23, which lies at -0.26 m OD is dated to the Neolithic/Bronze Age transition, perhaps a thousand years later. During this time period the water levels must have risen allowing the expansion of peats across the landscape and through an elevation of approximately 1.8m. This rise in water levels reflects the rising sea levels during this period (Brew *et al* 2000; Waller 1994).

The top of the peats in BH34 have been dated to the Roman period. This indicates that the peat deposits on the site contain a sequence that spans just over three thousand years, including the whole of later prehistory and the very early 1st millennium AD. It also indicates that the roddon deposits relate to the period of post-Roman marine incursion.

Figure 6. Modern topography of the site based on the survey data



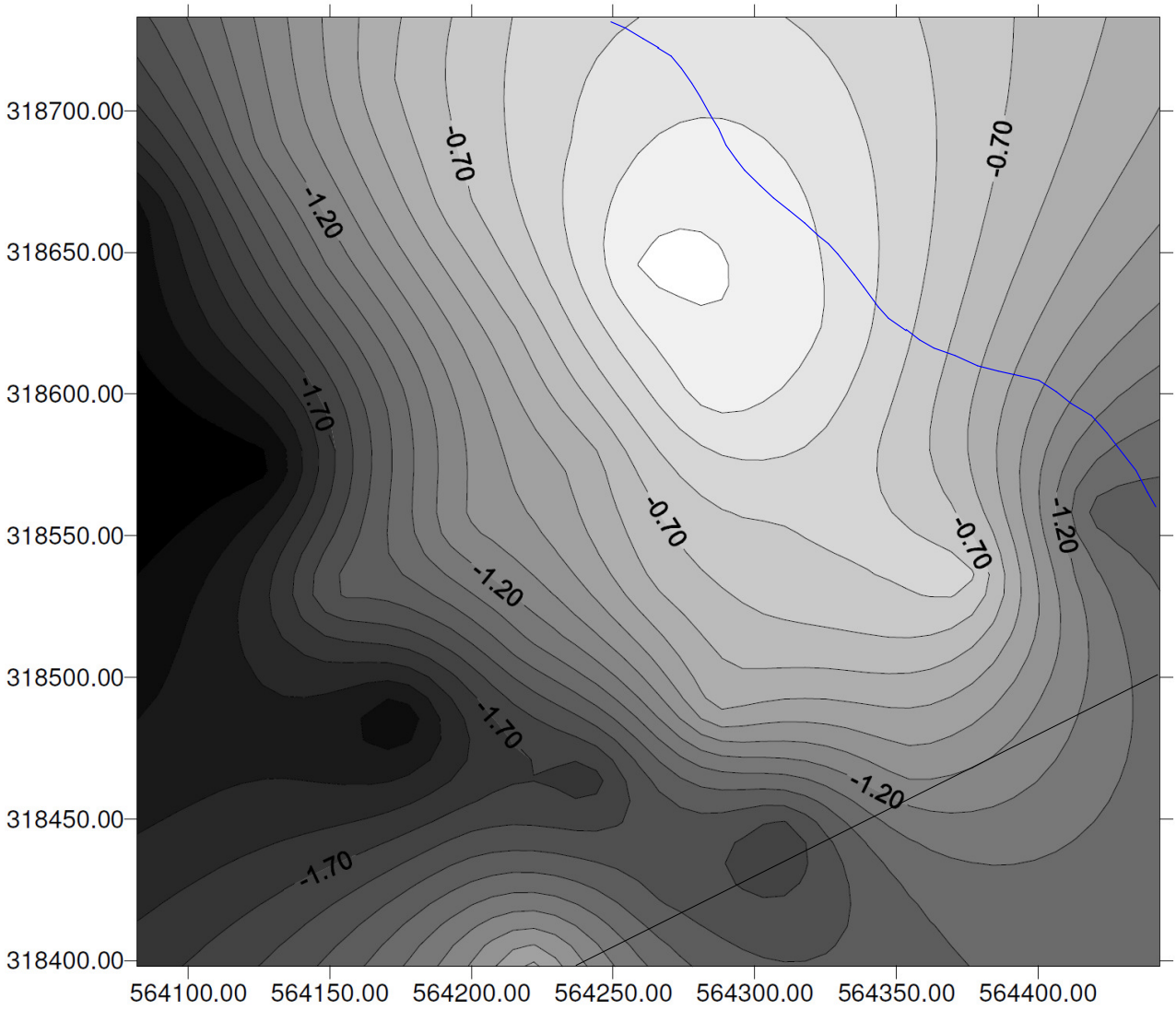
The modern topography of the site, illustrated in Fig. 6, reflects this later sedimentary history. The ridges, or roddons, across the site illustrate the former courses of the creeks that drained the landscape in the post-Roman period when the site probably lay in a saltmarsh zone.

This modern topography is at complete odds with that revealed by the auger survey. Fig. 7 presents a model of the pre-peat surface, a combination of palaeosol (old landsurface) and stream channel and valley. The course of the Neolithic stream that drained the valley lies along the western margin of the site, before turning to the south-east at its upstream end. The land to the north east, which at the present day comprises some of the lowest ground, was a local high spot in the Neolithic period, overlooking the stream channel to the west.

Recommendations

There is very little archaeological potential for anything post-dating the Neolithic, but the sub-surface topography suggests a 'high spot' beneath the peats on the north east edge of the site bordering the Middleton Stop Drain. This is reflected in the OD height of the palaeosol beneath boreholes BH21, BH22, BH23 and BH30, at -0.8m OD and above, and in boreholes BH11, BH13, BH14, BH29 and BH31 where it lies above -0.7m OD.

Figure 7. Sub-surface topography based upon the auger survey. The low ground along the western edge and across the south west corner reflects the Neolithic stream channel.
It is possible that this slightly higher ground on the floodplain of the stream, which may have formed a



small promontory overlooking the stream channel, may have been favoured for settlement in the Neolithic. Evaluation of this area with one or two trenches would allow this suggestion to be tested.

The palaeoenvironmental sequence on the site affords an important local resource. Besides the landscape history of the site in terms of its waterlogging in the Neolithic, growth of peat over 2-3 thousand years, subsequent inundation during the post-Roman relative rise in sea level, and final reclamation, the two metres of organic deposits spanning some 3000+ years through later prehistory is in good condition in the BH34 core and will contain an important palaeoenevironmental history of local and regional changes in vegetation and landscape during this period. The early part of this sequence at the base of BH34 may also contain evidence for any Neolithic activity occurring on the floodplain and adjacent interfluves, and could include material that might be contemporary with any archaeological evidence should any be discovered on the site.

5 ACKNOWLEDGEMENTS

I should like to thank Neil Jefferson for undertaking the surveying on the site. Leslie Bode assisted with the augering. Dale Trimble produced the initial topographic plots (Figs. 6 and 7) using the survey and auger data. The radiocarbon dating was undertaken by the Radiocarbon Laboratory at the Scottish Universities Environmental Research Centre at East Kilbride.

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Appendix 1
Auger hole logs

BH1	GL – 0.876m OD
0-45	Brown (10YR 4/3) clay loam
45-52	Brown clay loam with small grey patches
52-60	Dark grey (5Y 4/1) clay
60-90	Black and very dark brown completely humified peat
90-116	Very dark brown humified peat – water coming in
116-120	Dark brown oxidising fibrous peat
120-123	Very dark brown fibrous peat
123-176	Dark brown oxidising fibrous peat with wood at 139-143, 152-154, and 159-162
176-200	Very rich brown fibrous peat with wood fragments
200-225	Very dark grey (10YR 3/1) slightly sandy silt with visible organics and occasional wood fragments
225-230	Dark grey (10YR 4/1) slightly silty sand with organics
230-250	Grey (Gley 1 6/1) medium sand
250-278	Grey sands
278-290	Stiff sandy clay with chalk clasts
BH2	GL – 0.632 m OD
0-32	Brown (10YR 4/3) clay loam
32-73	Black humifed peat
73-135	Very dark brown humified peat, water ingress between 80-100
135-160	Dark brown oxidising fibrous peat with occasional wood
160-172	Dark brown (10YR 3/3) slightly sandy silty fibrous peat with wood fragments
172-182	Dark greyish brown (10YR 4/2) slightly sandy organic silt with visible wood fragments
182-200	Grey (Gley 1 6/N) very slightly clayey fine to medium sands with roots
200-230	Light grey (Gley 1 7/N) clay
BH3	GL – 0.475 m OD
0-40	Dark greyish brown (10YR 4/2) silty clay loam
40-60	Black humified peat
60-65	Wood
65-95	Dark brown humified peat- oxidised
95-100	Dark brown fibrous humified peat, oxidising on exposure
100-130	Rich brown oxidising fibrous peat with wood fragments
130-145	Rich brown oxidising silty peat with occasional wood fragments
145-153	Dark brown (10YR 3/3) slightly sandy peaty silt
153-172	Grey (Gley 1 6/N) fine to medium sands
172-206	Grey sands
206-230	Very pale brown (10YR 7/4) sands
230-236	Sandy clay

BH4	GL – 0.426 m OD
0-40	Dark greyish brown (10YR 4/2) silty clay loam
40-62	Black and very drak brown humified peat
62-65	Wood
65-96	Very dark brown oxidised well humified peat
96-97	Wood
97-180	Rich brown fibrous oxidising peat with wood fragments, wood at 146-152cm
180-200	Brown fibrous peat
200-212	Slightly sandy dark grey (7.5YR 4/1) peaty silt, sharpish boundary below
212-230	Bluish grey (Gley 2 6/10B) sands
230-258	Bluish grey (Gley 2 6/5B) soft clay
258-268	Stiff clay with chalk
BH5	GL – 0.650 m OD
0-46	Dark greyish brown (10YR 4/2) silty clay loam
46-107	Black oxidised humified peat, water in at 100
107-205	Rich brown oxidising peat with occasional wood – wood at 160-165
205-215	Dark grey (10YR 4/1) slightly sandy peaty silt
215-225	Bluish grey (Gley 2 6/10B) sands
225-260	Bluish grey (Gley 2 5/5B) soft clay
260-280	Clay with chalk
BH6	GL -1.348 m OD
0-30	Brown (10YR 5/3) silty clay loam
30-40	Brown (7.5YR 5/3) clayey silt
40-80	Brown (7.5YR 5/3) silty clays
80-100	Greyish brown (10YR 5/2) stiff clay
100-122	Greyish brown (10YR 5/2) stiff silty clay
122-170	Black humified peat, water at 165
170-195	Rich brown unoxidised fibrous peats with wood at 185-200
195-230	Brown humified non-fibrous peat
230-270	Unoxidised brown non-fibrous peat
270-285	Dark greyish brown (10YR 4/2) slightly sandy silt with organics – palaeosol
285-325	Fell out of auger – grey blue sands
325-344	Yellow brown sands
344-360	Clay with chalk
BH7	GL – 0.980 m OD
0-30	Dark greyish brown (10YR 4/2) silty clay loam
30-50	Brown (10YR 5/3) clay loam
50-78	Mottled grey and brown stiff clays
78-127	Black and very dark brown humified oxidised peat
127-255	Rich brown unoxidised slightly fibrous peat
255-270	Slightly sandy silt with organics – palaeosol?
270-300	Sands – lost from auger
300-313	Sands – lost from auger
	Clay not proved – auger stopped by stones/gravel at 313

BH8	GL – 1.52 m OD
0-38	Dark greyish brown (10YR 4/2) silty clay loam - ploughsoil
38-70	Brown (10YR 5/3) mottled clay
70-83	Brown (7.5YR 5/3) silt
83-106	Brown (7.5YR 5/3) laminated slightly sandy silts
106-110	Silty clay
110-146	Laminated fine silts and silty clays
146-195	Black humified oxidised peats
195-235	Dark brown unoxidised slightly fibrous peat with occasional wood
235-320	Brown unoxidised humifed peat
320-328	Completely humified dark brown peat
328-337	Very dark greyish brown (10YR 3/2) slightly sandy humified organic silt
337-358	Very dark grey (Gley 1 3/N) sandy clay
358-364	Grey sand
364-370	Stiff chalky clay
BH9	GL – 0.842 m OD
0-60	Brown (10YR 4/3) silty clay loam with patches of peat pulled up by the plough
60-87	Black humified peat
87-110	Banded black peat with thicker bands of brown clay
110-140	Black and very dark brown peat with wood
140-168	Rich brown unoxidised peat with wood
168-171	Grey clay with wood fragments (roots?)
	No evidence of a soil horizon!
171-200	Light greenish grey (Gley 1 7/10Y) soft clay with penetrating woody roots
BH10	GL – 0.813 m OD
0-39	Brown (10YR 4/3) silty clay loam
39-50	Grey (10YR 5/1) clay – alluvial
50-100	Black humified peat
100-117	Very dark brown humified peat with wood
117-154	Dark brown unoxidised peat with wood
154-157	Slightly sandy peaty/organic silt – palaeosol?
157-165	Dark grey (10YR 4/1) silty sand with organic traces
165-184	Bluish grey (Gley 2 6/10B) slightly clayey sands
184-197	Clays
BH11	GL – 0.874 m OD
0-38	Brown (10YR 4/3) silty clay loam
38-58	Clay loam
58-98	Black humified peats
98-100	Wood
100-134	Black and dark brown peats with wood, water in but peats oxidised
134-142	Brown unoxidised fibrous peats with occasional wood
142-154	Greyish brown (10YR 5/2) slightly sandy silty clay with wood/root fragments
154-178	Light greenish grey (Gley 1 7/10Y) soft clay with occasional flint pebbles and penetrating roots
178-192	Bluish grey (Gley 2 6/10B) slightly sandy clay, stopped at 192 (clay with chalk probably about 200?)

BH12	Gl – 1.467 m OD
0-37	Brown (10YR 4/3) silty clay loam
37-47	Brown (7.5YR 5/4) silty clay
47-80	Brown (7.5YR 5/30 silty clay
80-113	Greyish brown (10YR 5/2) stiff silty clay
113-150	Black humified peat – upper junction slightly disturbed, becoming browner with depth and water at 135
150-245	Rich brown unoxidised peat with degraded wood and more humified to base
245-255	Organic mud
255-262	Brown slightly sandy organic silt
262-280	Dark grey (10YR 4/1) silty sand
280-298	Grey, slightly blue, sands
298-312	Chalky clay
BH13	GL – 0.631 m OD
0-40	Silty clay loam
40-59	Black humified peat – water at 59
59-100	Black humified peat
100-128	Very dark brown fibrous oxidised humified peat
128-138	Dark greyish brown (10YR 4/2) slightly sandy silt – palaeosol
138-155	Bluish grey (Gley 2 6/10B) sandy clay with penetrating roots
155-178	Olive brown sticky sands
178-200	Yellow and yellow brown calcareous sandy clays
BH14	Gl – 0.479 m OD
0-50	Brown (10YR 4/3) silty clay loam
50-63	Black humified peat
63-108	Black and very dark brown humified and oxidised peat with wood fragments
108-113	Sandy silt with organics – palaeosol
113-125	Greenish grey (Gley 1 6/10Y) clayey sand
125-143	Very pale clay
143-153	Sandy clay
153-173	Stiff clay
BH15	GL – 0.626 m OD
0-49	Silty clay loam – ploughsoil
44-110	Black humified oxidised peats, water at 100
110-140	Rich brown oxidising fibrous peat
140-143	Wood
143-157	Dark greyish brown (10YR 4/2) sandy silt with organics – palaeosol
157-172	Bluish grey (Gley 2 6/10B0 sandy clay
172-190	Staiff clay
BH16	GL – 0.845 m OD
0-40	Brown (10YR 4/3) silty clay loam
40-55	Light brownish grey (10YR 6/2) and yellowish brown (10YR 5/4) clay
55-72	Greyish brown (10YR 5/2) clay
72-120	Black humified peat – water at 112
120-218	Rich brown unoxidised fibrous peat with occasional wood
218-226	Grey sandy silt with organic fragments – palaeosol
226-268	Stiff clay

BH17	GL – 1.517 m OD
0-38	Brown (10YR 4/3) silty clay loam
38-50	Brown (7.5YR 5/4) clay – roddon?
52-62	As above but greying and a bit more silty
62-88	Brown (7.5YR 4/2) laminated silty clays - roddon
88-100	Poorly laminated silty clays
100-136	Brown (7.5YR 5/2) silty clay – laminations pretty much lost
136-162	Greyish brown (10YR 5/2) clayey silts
162-178	Black humified peats
178-188	Black and very dark brown woody peat
188-220	Dark brown paryially oxidised humified peat
220-284	Rich brown unoxidised slightly fibrous humified peat
284-288	Wood
288-327	Brown fibrous peat with wood fragments
327-347	Dark greyish brown (10YR 4/2) slightly sandy organic silt
	Sharp boundary
347-362	Greenish black (Gley 1 2.5/10Y) waterlain slightly sandy silts with shells
362-390	Bluish grey soft clay
390-395	Pale clay
BH18	GL – 1.195 m OD
0-36	Brown (10YR 5/3) silty clay loam
36-64	Brown (7.5YR 5/4) clay – roddon?
64-91	Grey (2.5Y 5/1) clay
91-164	Black humified peat
164-280	Rich brown unoxidised peats with occasional wood fragments
280-290	Smooth brown non fibrous humified peat
290-296	Dark greyish brown (10YR 4/2) organic silts
296-310	Grey (Gley 1 5/N0 slightly sandy clay
310-333	Very pale chalky clay
BH19	GL – 1.306 m OD
0-31	Brown (10YR 5/3) silty clay loam
31-70	Brown (7.5YR 5/4) clay – roddon?
70-95	Grey (2.5Y 5/1) clay
95-161	Black humified peat with occasional wood, slightly unoxidised near base
161-242	Rich brown compacted oxidising peat
242-252	Dark grey (10YR 4/1) slightly sandy silt – palaeosol?
252-280	Grey (10YR 5/1) very sandy silty clay
280-300	Grey clayey sands
300-315	Clay
BH20	GL – 0.639 m OD
0-35	Brown (10YR 5/3) silty clay loam
35-54	Clay loam
54-119	Black humified peats, compacted between 67 and 100
119-129	Unoxidised brown peat
129-150	Dark greyish brown slightly sandy silt with organics – palaeosol?
150-170	Slightly blue grey clayey sands with penetrating roots
170-183	Blue green sands
183-190	clay

BH21	GL – 0.634 m OD
0-40	Brown (10YR 4/3) silty clay loam
40-98	Black humified compacted peat
98-105	Dark greyish brown (10YR 4/2) sandy silt – palaeosol
105-135	Greeny blue sands

135-153	Lost – sands
153-165	Sandy gravel
	Stopped by gravels at 170
BH22	GL – 0.878 m OD
0-45	Brown (10YR 4/3) silty clay loam
45-59	Brown (10YR 5/3) silty clay
59-90	Black humified compacted peat
90-100	Wood
100-130	Black and very dark brown oxidisied peat with frequent wood
130-140	Sandy silt – palaeosol
140-165	Grey sands with penetrating roots
165-190	Greeny grey clayey sands
190-210	Clay
BH23	GL – 0.672 m OD
0-48	Brown (10YR 4/3) silty clay loam
48-95	Black humified peat, silty clay patches at 70, probably mud down cracks in the peat as a result of dessication
95-105	Dark greyish brown (10YR 4/2) slightly sandy silt – palaeosol
105-118	Bluish grey clayey sands
118-135	Green slightly sandy clay with occasional stone
135-175	Clay
BH24	GL – 0.554 m OD
0-40	Brown (10YR 4/3) silty clay loam- base disturbing top of peat
40-125	Black humified compacted peat with occasional wood, water at 100
125-135	Brown unoxidised peats with wood fragments
135-145	Brown peaty silt with sand grains – palaeosol
145-155	Bluish grey sandy clay
155-195	Olive sands
	Clay below 195
BH25	GL – 0.392 m OD
0-35	Brown (10YR 4/3) silty clay loam
35-100	Black compacted humified peat, wood at 100
100-170	Brown unoxidised peats with frequent wood
170-175	Brown silty humified peat
	Sharp boundary
175-180	Brown clays – channel floor?
180-195	Bluish grey slightly sandy clay
195-230	Bluish grey sands with penetrating roots
230-235	Clay

BH26	GL – 0.263 m OD
0-40	Brown (10YR 4/3) silty clay loam
40-114	Black humified compacted peat
114-225	Brown unoxidised peat with occasional wood, roundwood to 40mm
225-240	Dark greyish brown (10YR 4/2) silty clay –waterlain
240-250	Silty sandy grey clay
250-255	White clay
255-260	Grey sands
260-275	Very pale grey clay with chalk
BH27	GL – 0.464 m OD
0-47	Brown (10YR 4/3) silty clay loam
47-118	Black humified compacted peat, with wood fragments near base
118-240	Brown unoxidised peats with frequent wood fragments
240-250	Dark greyish brown (10YR 4/2) silty clay
250-260	Slightly sandy bluish grey clay
260-280	White/grey clay
BH28	GL – 0.388 m OD
0-38	Brown (10YR 4/3) silty clay loam
38-108	Black humified compacted peat with occasional wood- wet at 82
108-170	Brown unoxidised peat with occasional wood
170-180	Organic silt with occasional wood – palaeosol
180-210	Bluish grey sandy clay
210-232	Yellow brown sands
232-240	Clay
BH29	GL – 0.781 m OD
0-56	Brown (10YR 4/3) silty clay loam
56-125	Black humified compacted peats
125-153	Brown unoxidised peats
153-163	Organic sandy silt – palaeosol
163-183	Bluish grey clayey sands, stone at 183
183-225	Greenish grey slightly clayey sands
	Stopped by stoney sands at 225
BH30	GL – 0.711 m OD
0-45	Brown (10YR 4/3) silty clay loam
45-68	Clay loam
68-77	Disturbed clays and peat
77-120	Black humified compacted peat with frequent wood, water at 100
120-130	Dark greyish brown (10YR 4/2) slightly sandy silt – palaeosol
130-154	Lost – wet sands
154-173	Greenish grey sands
173-184	Clay

BH31	GL – 1.134 m OD
0-40	Brown (10YR 4/3) silty clay loam
40-80	Clay – becoming greyer with depth – roddon?
80-95	Stiff grey clay – alluvial?
95-115	Black humified compacted peat
112-115	Oblique clay filled crack
115-140	Black humified peat, wood at 134
140-173	Rich brown fibrous unoxidised peat with occasional wood
173-183	Sandy silt with organcis – palaeosol
183-203	Bluish grey sands
203-240	Grey brown sands
240-253	Clay
BH32	GL – 0.485 m OD
0-50	Brown (10YR 4/3) silty clay loam
50-110	Black humified compacted peat, water at 100
110-130	Rich brown unoxidised peat with wood fragments
	Sharp boundary
130-142	Brown (10YR 4/3) sandy silt – palaeosol
142-158	Bluish grey sandy clay
158-174	White clay
174-200	Greenish grey sands
200-204	Pale grey/white clays
BH33	GL – 1.163 m OD
0-36	Brown (10YR 4/3) silty clay loam
36-75	Fine silts – roddon
75-96	Grfey silt clay
96-155	Black humified compacted peat
155-243	Rich brown peat with wood fragments
243-254	Brown (10YR 4/3) slightly sandy organic silt – palaeosol
254-265	Dark grey clayey sands
265-273	Pale greenish grey clay
273-283	Clay
BH34	GL – 1.350 m OD
0-50	Brown (10YR 4/3) silty clay loam
50-76	Silts – roddon
76-84	Sandy (very fine) silts – tidal
84-104	Very fine sands
104-133	Grey brown clay
133-173	Black humified compacted peat
173-340	Rich brown oxidising peats with occasional wood
	Sharp boundary – erosional
340-348	Grey clay
348-380	Pale grey white clay

Appendix 2
Radiocarbon dates

Scottish Universities Environmental Research Centre

Director: Professor R M Ellam

Rankine Avenue, Scottish Enterprise Technology Park,
East Kilbride, Glasgow G75 0QF, Scotland, UK
Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898
www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE
22 January 2013

Laboratory Code	SUERC-43895 (GU29348)
Submitter	James Rackham Environmental Archaeology Consultancy 25 Main Street South Rauceby, Sleaford Lincolnshire NG34 8QG
Site Reference	Middleton Stop, Kings Lynn
Context Reference	40-41cm
Sample Reference	MKL12/BH34/300-400
Material	Reed : cf Phragmites leaves
$\delta^{13}C$ relative to VPDB	-24.8 ‰
Radiocarbon Age BP	4436 ± 30

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standards, background standards and the random machine error.

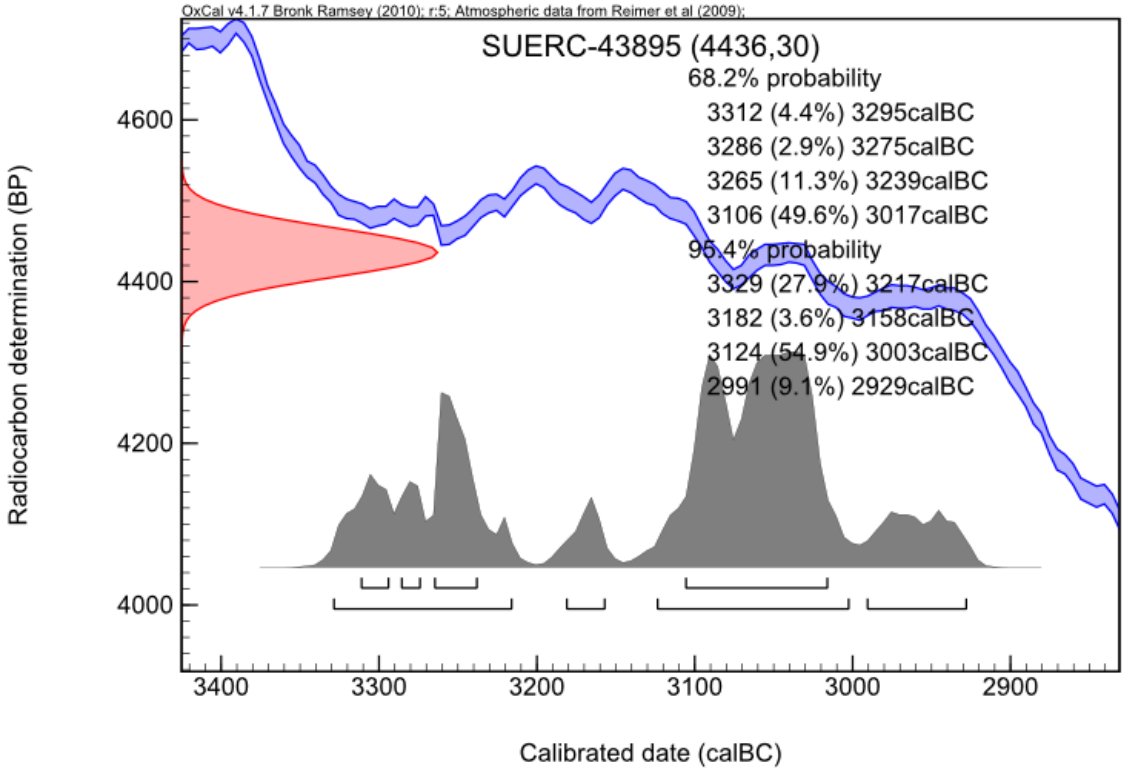
The calibrated age ranges are determined using the University of Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.1 (Bronk Ramsey 2009). Terrestrial samples are calibrated using the IntCal09 curve while marine samples are calibrated using the Marine09 curve.

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email g.cook@suerc.gla.ac.uk or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- Date :-

Checked and signed off by :- Date :-

Calibration Plot



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RADIOCARBON DATING CERTIFICATE
29 January 2013

Laboratory Code	SUERC-44030 (GU29350)
Submitter	James Rackham Environmental Archaeology Consultancy 25 Main Street South Rauceby, Sleaford Lincolnshire NG34 8QG
Site Reference	Middleton Stop, Kings Lynn
Context Reference	73-74cm
Sample Reference	MKL12/BH23/50-100
Material	Peat : Humic Acid dated
$\delta^{13}C$ relative to VPDB	-28.6 ‰
Radiocarbon Age BP	3720 ± 29

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standards, background standards and the random machine error.

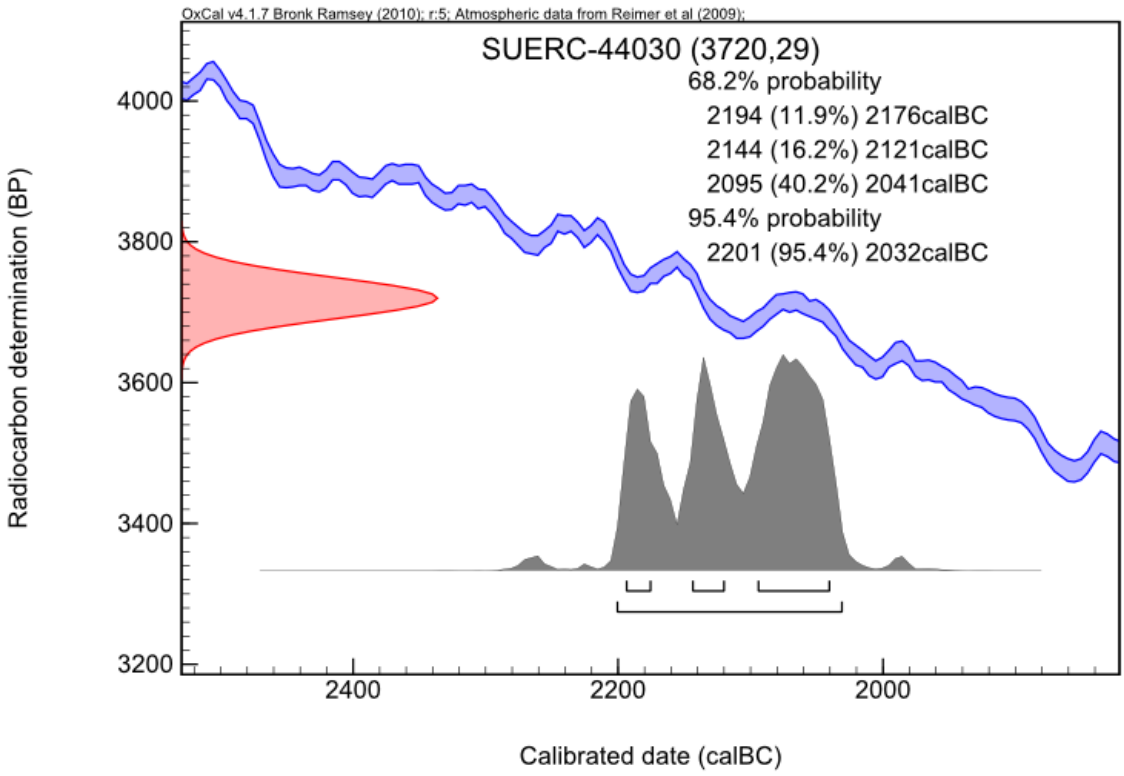
The calibrated age ranges are determined using the University of Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.1 (Bronk Ramsey 2009). Terrestrial samples are calibrated using the IntCal09 curve while marine samples are calibrated using the Marine09 curve.

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email g.cook@suerc.gla.ac.uk or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- Date :-

Checked and signed off by :- Date :-

Calibration Plot



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www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE
12 February 2013

Laboratory Code	SUERC-44163 (GU29349R)
Submitter	James Rackham Environmental Archaeology Consultancy 25 Main Street South Rauceby, Sleaford Lincolnshire NG34 8QG
Site Reference	Middleton Stop, Kings Lynn
Context Reference	37-38 cm
Sample Reference	MKL12/BH34/100-200
Material	Peat : Humic Acid dated
$\delta^{13}C$ relative to VPDB	-27.4 ‰
Radiocarbon Age BP	1840 ± 26

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standards, background standards and the random machine error.

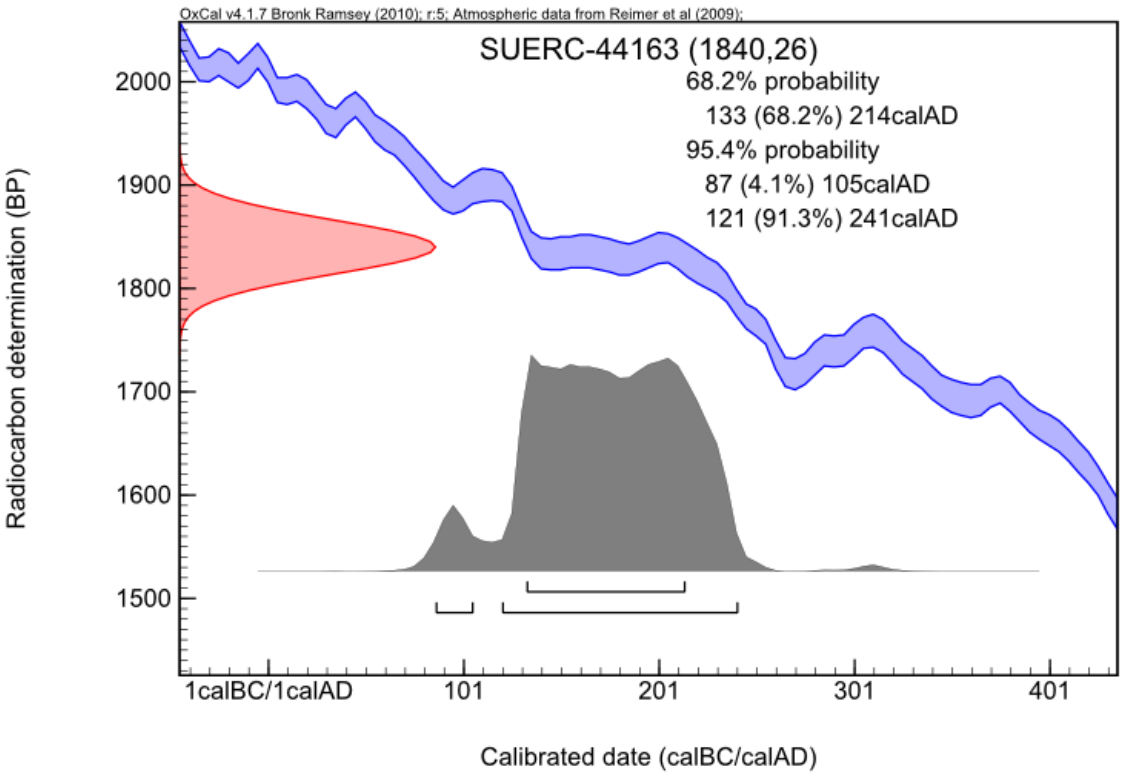
The calibrated age ranges are determined using the University of Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.1 (Bronk Ramsey 2009). Terrestrial samples are calibrated using the IntCal09 curve while marine samples are calibrated using the Marine09 curve.

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email g.cook@suerc.gla.ac.uk or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- Date :-

Checked and signed off by :- Date :-

Calibration Plot



10. BIBLIOGRAPHY

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Hodge, CAH, Burton, RGO, Corbett, WM, Evans, R, and Searle, RS., 1984 Soils and their use in Eastern England, Soil Survey of England and Wales 13

IFA, 2008, Standard and Guidance for Archaeological Field Excavations.

11. ABBREVIATIONS

APS Archaeological Project Services

IFA Institute of Field Archaeologists

NHER Norfolk Historic Environment Record

NLA Norfolk Landscape Archaeology

Appendix 1 – Written Scheme of Investigation

TABLE OF CONTENTS

1 SUMMARY

ARCHAEOLOGICAL PROJECT SERVICES

1.1 *A programme of archaeological works is required in*

advance of the construction of the Middleton Stop flood attenuation reservoir at Kings Lynn, Norfolk. This will comprise evaluation works to address the archaeological potential of the site, followed by appropriate mitigation measures which will be dependent on the results of the evaluation phase.

1.2 *In the first instance the evaluation of the site will comprise a geo-archaeological study to investigate the character and sequence of sediments at the site. The results of the auger survey will also be used to compile a palaeo-topographic model.*

1.3 *Four test pits will also be excavated to investigate the stratigraphic sequence and to retrieve carbon 14 samples from peat deposits known to survive at the site. The locations of these will be determined by the results of the auger bore-hole survey.*

1.4 *The site lies in an archaeologically sensitive area, close to the fen-edge and the site of a deserted medieval settlement, known prehistoric remains and also surface finds of Roman date.*

1.5 *The results of the fieldwork and subsurface topographic model will be incorporated into a final report describing the results of the investigations.*

2 INTRODUCTION

2.1 This document comprises a Written Scheme of Investigation for a programme of archaeological works to be undertaken in advance of construction of a flood attenuation reservoir at Middleton Stop, Kings Lynn, Norfolk.

2.2 This document contains the following parts:

2.2.1 Overview.

2.2.2 Stages of work and methodologies.

2.2.3 List of specialists.

2.2.4 Programme of works and staffing structure of the project

3 SITE LOCATION

3.1 The proposed development is located on southwest outskirts of Kings Lynn, Norfolk in the Civil Parish of North Runcton and in the administrative district of Kings Lynn and West Norfolk, centred on National Grid Reference TF 6427 1857. To the northeast the approximately 8 hectare area of development is bounded by the A149 Queen Elizabeth Way and to the northeast by the Middleton Stop drain.

4 SOILS AND TOPOGRAPHY

4.1 The site lies close to the boundary of soils of the Wallasea 2 and Adventurers 2 Associations as mapped by the Soils Survey of England and Wales. (Hodge et al. 1984). The former comprise deep stoneless calcareous clayey soils developed from marine alluvium and the latter largely fen peats. Local topography is slightly undulating and lies at elevations of between 0.5 and 1.5m OD. .

5 ARCHAEOLOGICAL OVERVIEW

5.1 The site lies within an area of fen deposits but close to the fen edge which follows an irregular but generally north south alignment from Kings Lynn northwards.

5.2 A number of archaeological investigations of a site approximately 250m to the northeast have identified archaeological remains of Mesolithic, Neolithic, Early Bronze Age and medieval date (NHER 36320). Excavations undertaken at this site in 2004 recovered Mesolithic and Neolithic worked worked flint from buried soils and tree throw holes. Evidence for Late Neolithic\Early Bronze Age activity alongside a palaeochannel was identified and excavation of a burnt flint mound revealed an underlying trough. Medieval remains recorded at the site comprised a series of intercutting ditches surrounding a sandy knoll (Norfolk Heritage Explorer).

5.3 A number of records of nearby medieval, post medieval or undated linear banks and earthworks which probably relate to drainage or flood defence activities are also contained within the NHER (38307, 38312, 38306). Record 383312 relates to an intermittent earthwork bank associated with the Middleton Stop Drain which bounds the northeast side of the proposed area of development

5.4 To the west of the site, evidence of medieval agriculture in the form of ridge and furrow earthworks and circular stack stands have been recorded (38235). Within five hundred metres to the west of the site the remains of a medieval moated site and the remains of the deserted medieval settlement of Hardwick have been identified through the work of the National Mapping Programme and are recorded under NHER reference (38259)

6 AUGER BOREHOLE SURVEY

6.1 Aims and objectives

6.1.1 The overall aims and objectives of the auger borehole survey are:

- To characterise the sediments on the site to a depth of three metres or to the surface of underlying boulder clay
- To develop a palaeotopograhic model to assist in establishing the potential for the survival of archaeologically sensitive deposits on the site.
- To construct a basic model of the sub-surface topography of the site.

6.2 Site operations

6.2.1 <u>General considerations</u>

- All work will be undertaken following statutory Health and Safety requirements in operation at the time of the survey.
- The work will be undertaken according to the relevant codes of practise issued by the Institute of Archaeologists (IfA), under the management of a Member of the institute (MIFA). Archaeological Project Services is IfA registered organisation no. 21.
- Any and all artefacts found during the investigation and thought to be 'treasure', as defined by the Treasure Act 1996, will be removed from site to a secure store

and promptly reported to the appropriate coroner's office.

6.3 Auger Bore Hole Survey Methodology

6.3.1 Augering will be conducted by hand using a 1m long, extendible 25mm diameter gouge auger .

6.3.2 Augering will extend through all fen deposits overlying boulder clay with the depths and character of all sediments logged in the field.

6.3.3 A total of 32 auger holes will be recorded, distributed in the pattern shown in Figure 1.

6.3.4 The location of each borehole will be plotted onto the Ordnance Survey National Grid and Ordnance Datum using a survey grade differential Thales GPS system and its height above OD recorded.

7 TEST PITS

7.1 Aims and objectives

7.1.1 The main aim of the excavation of the test pits:

- Dating of the peat deposits at the site.

7.1.2 The objectives of the investigation will be to

- Retrieve samples for Carbon 14 dating from the basal contact of the peat in each test pit
- Record the stratigraphic sequence of deposits at the site

7.2 Test Pit Methodology

7.2.1 Removal of the topsoil and any other overburden will be undertaken by mechanical excavator using a toothless ditching bucket. To ensure that the correct amount of material is removed and that no archaeological deposits are damaged, this work will be supervised by Archaeological Project Services. On completion of the removal of the overburden, the nature of the underlying deposits will be assessed by hand excavation before any further mechanical excavation that may be required. It is anticipated that all deposits overlying the boulder clay will be dug by mechanical excavator.

7.2.2 Investigation of any archaeological features revealed in the test pits will be undertaken only as far as required to determine their date, form and function. The work will consist of half- or quarter-sectioning of features as required and, where appropriate, the removal of layers. Should features be located which may be worthy of preservation in situ, excavation will be limited to the absolute minimum, (ie the minimum disturbance) necessary to interpret the form, function and date of the features.

7.2.3 All deposits encountered will be recorded on Archaeological Project Services

pro-forma context record sheets. The system used is the single context method by which individual archaeological units of stratigraphy are assigned a unique record number and are individually described and drawn.

7.2.4 Plans of features will be drawn at a scale of 1:20 and sections at a scale of 1:10. Should individual features merit it, they will be drawn at a larger scale.

7.2.5 Throughout the duration of the test pitting a photographic record consisting of black and white prints (reproduced as contact sheets) and colour slides will be compiled. The photographic record will consist of:

- the site before the commencement of field operations.
- the site during work to show specific stages of work, and the layout of the archaeology within individual trenches.
- individual features and, where appropriate, their sections.
- groups of features where their relationship is important.
- the site on completion of field work

7.2.6 Should human remains be encountered, they will be left in situ with excavation being limited to the identification and recording of such remains. If removal of the remains is necessary the appropriate Ministry of Justice licences will be obtained and the local environmental health department informed. If relevant, the coroner and the police will be notified.

7.2.7 Finds collected during the fieldwork will be bagged and labelled according to the individual deposit from which they were recovered ready for later washing and analysis.

7.2.8 The spoil generated during the investigation will be mounded along the edges of the test pits with the top soil being kept separate from the other material excavated for subsequent backfilling.

7.2.9 The precise location of the trenches within the site and the location of site recording grid will be established by an GPS survey.will be machine excavated through all deposits overlying boulder clay.

7.2.10 It may be necessary to step one, or both sides of the test pits to ensure safe working

8 POST EXCAVATION

8.1 Stage 1

- The deposit data recorded for each auger hole will be used to identify the

presence and extent of all deposits overlying boulder across the site and used, with the OD height at each location, to produce a basic topographic model of the upper surface of mineral sediments underlying these peats.

- This will be constructed as a contour plot with the peat areas shaded to illustrate their extent and depth and if appropriate will utilise similar data from adjacent areas to refine the model.

8.2 Stage 2

- A report will be produced detailing the results of the auger survey and describing the palaeo-topography and sediment sequence across the site and identifying areas of the site might be considered to have the highest archaeological potential. This report will also make a preliminary assessment of the potential of the palaeoenvironmental sequence represented by any peat deposits and make recommendations if appropriate for environmental sampling and assessment during any further investigations.

8.3 Stage 3

- The results of the subsurface topographic model will be integrated into a single report with the C14 dating from peat deposits within the test pits.

9 REPORT DEPOSITION

9.1 Copies of the report will be provided to the client, the Norfolk Historic Environment Record, the English Heritage Regional Science Advisor within 1 month of the completion of the relevant phase of on-site works.

10 ARCHIVE

10.1 The documentation, finds, photographs and other records and materials generated during the investigation will be sorted and ordered in accordance with the procedures in the Society of Museum Archaeologists' document *Transfer of Archaeological Archives to Museums* (1994), and any additional local requirements, for long term storage and curation. This work will be undertaken by the Finds Supervisor, an Archaeological Assistant and the Conservator (if relevant). The archive will be deposited with the receiving museum as soon as possible after completion of the project, and within 12 months of that completion date.

10.2 Prior to the project commencing, Norfolk Museums Service will be contacted to obtain their agreement to receipt of the project archive and to establish their requirements with regards to labelling, ordering, storage, conservation and organisation of the archive.

10.3 Upon completion and submission of the evaluation report, the landowner will be contacted to arrange legal transfer of title to the archaeological objects retained during the investigation from themselves to the receiving museum. The transfer of title will be effected by a standard letter supplied to the landowner for signature.

11 PUBLICATION

11.1 Details of the investigation will be input to the Online Access to the Index of Archaeological Investigations (OASIS).

11.2 If appropriate, notes on the findings will be submitted to the appropriate national journals: *Britannia* for discoveries of Roman date, and *Medieval Archaeology* and the *Journal of the Medieval Settlement Research Group* for findings of medieval or later date.

12 CURATORIAL RESPONSIBILITY

12.1 Curatorial responsibility for the project lies with the Norfolk County Council Historic Environment Officer. As much notice as possible will be given in writing to the curator prior to the commencement of the project to enable them to make appropriate monitoring arrangements.

13 VARIATIONS AND CONTINGENCIES

13.1 Variations to the scheme of works will only be made following written confirmation of acceptability from the archaeological curator.

13.2 Should the archaeological curator require any additional investigation beyond the scope of the brief for works, or this specification, then the cost and duration of those supplementary examinations will be negotiated between the client and the contractor.

14 PROGRAMME OF WORKS AND STAFFING LEVELS

14.1 The auger survey will be undertaken by James Rackham, project environmental archaeologist, and 1 assistant.

14.2 The test pitting will be undertaken by Archaeological Project Services staff comprising 1 Project Officer and Assistant

15 SPECIALISTS TO BE USED DURING THE PROJECT

15.1 The following organisations/persons will, in principle and if necessary, be used as subcontractors to provide the relevant specialist work and reports in respect of any objects or material recovered during the investigation that require their expert knowledge and input. Engagement of any particular specialist subcontractor is also dependent on their availability and ability to meet programming requirements.

Conservation	Conservation Laboratory, City and County Museum, Lincoln.
Pottery Analysis	
Prehistoric:	Dr D Knight, Trent and Peak Archaeological Trust or Dale Trimble mentored by Dr Knight.
Roman:	Alex Beeby, APS Roman pottery specialist mentored by or B Precious, independent specialists
Anglo-Saxon:	Dr A. Irving (formerly Boyle) APS independent pottery specialist

Medieval and later:	Alex Beeby mentored by Dr. A. Irving APS Independent pottery specialists
Other Artefacts	J Cowgill, independent specialist; or G Taylor, APS
Human Remains Analysis	R Gowland, independent specialist
Animal Remains Analysis	Matilda Holmes, Independent specialists
Environmental Analysis & Geoarchaeology	James RackhamEnvironmental Archaeology Consultancy
Radiocarbon dating	Beta Analytic Inc., Florida, USA
Dendrochronology dating	University of Sheffield Dendrochronology Laboratory

16 INSURANCES

16.1 Archaeological Project Services, as part of the Heritage Trust of Lincolnshire, maintains Employers Liability Insurance of £10,000,000, together with Public and Products Liability insurances, each with indemnity of £5,000,000. Copies of insurance documentation can be supplied on request.

17 COPYRIGHT

17.1 Archaeological Project Services shall retain full copyright of any commissioned reports under the Copyright, Designs and Patents Act 1988 with all rights reserved; excepting that it hereby provides an exclusive licence to the client for the use of such documents by the client in all matters directly relating to the project as described in the Project Specification.

17.2 Licence will also be given to the archaeological curators to use the documentary archive for educational, public and research purposes.

17.3 In the case of non-satisfactory settlement of account then copyright will remain fully and exclusively with Archaeological Project Services. In these circumstances it will be an infringement under the Copyright, Designs and Patents Act 1988 for the client to pass any report, partial report, or copy of same, to any third party. Reports submitted in good faith by Archaeological Project Services to any Planning Authority or archaeological curator will be removed from said planning Authority and/or archaeological curator. The Planning Authority and/or archaeological curator will be notified by Archaeological Project Services that the use of any such information previously supplied constitutes an infringement under the Copyright, Designs and Patents Act 1988 and may result in legal action.

17.4 The author of any report or specialist contribution to a report shall retain intellectual copyright of their work and may make use of their work for educational or research purposes or for further publication.

18 BIBLIOGRAPHY

Hodge, CAH, Burton, RGO, Corbett, WM, Evans, R and Seale, RS, 1984 Soils and their use in Eastern England, Soil Survey of England and Wales 13

Norfolk Heritage Explorer, http://www.heritage.norfolk.gov.uk/

Specification: Version , October 2012

Appendix 2

THE ARCHIVE

The archive consists of:

3	Daily record sheets
1	Auger hole records
1	Bore hole records

All primary records are currently kept at:

Archaeological Project Services
The Old School
Cameron Street
Heckington
Sleaford
Lincolnshire
NG34 9RW

The ultimate destination of the project archive is:

Norwich Castle Museum
Castle Meadow
Norwich
Norfolk
NR13JU

Norfolk Historic Environment Record Number: ENF130074

OASIS Record No: archaeol1-145060

The discussion and comments provided in this report are based on the archaeology revealed during the site investigations. Other archaeological finds and features may exist on the development site but away from the areas exposed during the course of this fieldwork. *Archaeological Project Services* cannot confirm that those areas unexposed are free from archaeology nor that any archaeology present there is of a similar character to that revealed during the current investigation.