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LAND NORTH OF 52 CHAPELFIELD ROAD, GUYHIRN, CAMBRIDGESHIRE

AN ARCHAEOLOGICAL EXCAVATION RESEARCH ARCHIVE REPORT

CHER: ECB 6074

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NGR: TF 4005 0419	Report No: 6059
District: Fenland	Site Code: ECB 6074
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Project dates (fieldwork)	*December 2019*		
Previous work (Y/N/?)	*Y*	*Future work (Y/N/?)*	*N*
P. number	*P8210*	*Site code*	*ECB 6074*
Type of project	*Archaeological Excavation*		
Site status	*-*		
Current land use	*Agricultural*		
Planned development	*Housing*		
Main features (+dates)	*Romano-British ditches, pits and postholes*		
Significant finds (+dates)	*Roman salt-making briquetage*		
Project location			
County/ District/ Parish	*Cambridgeshire*	*Fenland*	*Guyhirn*
HER/ SMR for area	*Cambridgeshire HER*		
Post code (if known)	*-*		
Area of site	*0.115ha*		
NGR	*TF 4005 0419*		
Height AOD (min/max)	*c.2.9m AOD*		
Project creators			
Brief issued by	*CCC HET*		
Project supervisor/s (PO)	*Archaeological Solutions Ltd*		
Funded by	*Grafton Ventures*		
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LAND NORTH OF 52 CHAPELFIELD ROAD, GUYHIRN, CAMBRIDGESHIRE

AN ARCHAEOLOGICAL EXCAVATION
RESEARCH ARCHIVE REPORT

SUMMARY

In December 2019 Archaeological Solutions (AS) carried out an archaeological excavation of land north of 52 Chapelfield Road, Guyhirn, Cambridgeshire (NGR TF 4005 0419). Prior to excavation, the site was subject to a trial trench evaluation (Browne and Clarke 2019) which recorded several linear features and pits which contained briquetage, the remnants of the clay vessels, tanks, and supports used in saltmaking.

The excavation revealed further linear features as well as pits and numerous postholes which can be rationalised into at least two post-built structures. Further briquetage was recovered in fairly substantial amounts and ash and charcoal rich fills were recorded in several of the features. However, no in situ *saltmaking vessels were recorded and no hearths or other features to represent primary evidence of saltmaking were recorded. Environmental analysis was carried out to determine whether or not the ditch features that were present could represent feeder channels for bringing salt-water to the site. No indication of saline conditions was recorded in these samples. The site appears to have been used for the deposition of remains associated with saltmaking but not to have been the location at which this practice took place. It appears likely that the site may have had an ancillary function associated with the saltmaking industry.*

The identification of saltmaking debris at this site, alongside the previous identification of a possible saltern site, through fieldwalking and aerial photography, to the north-east, suggests that further evidence of saltmaking must exist in the surrounding area; perhaps further examples of the deposition of saltmaking debris but also the locations at which saltmaking actually took place.

1 INTRODUCTION

1.1 In December 2019 Archaeological Solutions (AS) carried out an archaeological excavation of land north of 52 Chapelfield Road, Guyhirn, Cambridgeshire (NGR TF 4005 0419; Figs. 1 & 2). The excavation was required by Cambridgeshire County Council Historic Environment Team (CCC HET), as advisors to the LPA, to provide for the remaining requirements of a planning approval condition for the development (Fenland Council Approval Ref. F/YR16/1077/F) on advice from CCC HET. It follows a previous trial trench evaluation of the site carried out as the initial requirement of the condition (Browne and Clarke 2019), which revealed the presence of archaeological remains.

1.2 The excavation was undertaken in accordance with a brief issued by Kasia Gdaniec of CCC HET (dated 25th October 2019), and a written scheme of investigation (specification) prepared by AS (dated 15th November 2019) and approved by HET. The project conformed to the Chartered Institute for

Archaeologists (CIfA) *Code of Conduct* and *Standard and Guidance for Archaeological Field Evaluation* (2014), and the document *Standards for Field Archaeology in the East of England* (Gurney 2003).

Planning policy context

1.5 The National Planning Policy Framework (NPPF 2019) states that those parts of the historic environment that have significance because of their historic, archaeological, architectural or artistic interest are heritage assets. The NPPF aims to deliver sustainable development by ensuring that policies and decisions that concern the historic environment recognise that heritage assets are a non-renewable resource, take account of the wider social, cultural, economic and environmental benefits of heritage conservation, and recognise that intelligently managed change may sometimes be necessary if heritage assets are to be maintained for the long term. The NPPF requires applications to describe the significance of any heritage asset, including its setting that may be affected in proportion to the asset's importance and the potential impact of the proposal.

1.6 The NPPF aims to conserve England's heritage assets in a manner appropriate to their significance, with substantial harm to designated heritage assets (i.e. listed buildings, scheduled monuments) only permitted in exceptional circumstances when the public benefit of a proposal outweighs the conservation of the asset. The effect of proposals on non-designated heritage assets must be balanced against the scale of loss and significance of the asset, but non-designated heritage assets of demonstrably equivalent significance may be considered subject to the same policies as those that are designated. The NPPF states that opportunities to capture evidence from the historic environment, to record and advance the understanding of heritage assets and to make this publicly available is a requirement of development management. This opportunity should be taken in a manner proportionate to the significance of a heritage asset and to impact of the proposal, particularly where a heritage asset is to be lost.

2 BACKGROUND

2.1 Description of the site

2.1.1 The site is located *c.* 380m to the north of the river Nene on the north-eastern side of the village of Guyhirn, in the parish of Wisbech St Mary. The site is currently vacant land at the north end of Chapelfield Road at Guyhirn Field and extends to some 0.115ha. It consists of a small triangular plot adjacent to the existing houses at the end of Chapelfield Road and an adjacent AWA pumping station (Figs. 1 & 2).

2.1.2 To the south-east is a modern (late 20th century) housing development, consisting of dwellings lining Chapelfield Road, Yokine Gardens, Waverley Close, and Hillcrest drive. Surrounding land is currently undeveloped and in use as agricultural land

2.2 Topography, Geology and Soils

2.2.1 The site lies on Ampthill Clay/Kimmeridge Clay/West Walton formation geology, with superficial alluvial deposits, at *c*.2.9m AOD, some 380m to the north of the course of the river Nene. The surrounding landscape is overwhelmingly flat with little variation in elevation for some distance.

2.2.2 The site is located on a roddon. The mid to late Holocene deposits of the fenland region include exceptionally preserved tidal creek networks, locally known as roddons (Smith *et al*. 2010). Roddons represent former watercourses and are now raised banks of silt and fine sand. They have proved ideal for human settlement as they are firm, stable and slightly elevated (Smith *et al*. 2012).

2.3 Archaeological and Historical Background

2.3.1 Prehistory is not well-represented in the area surrounding the excavation site. The only entries on the Cambridgeshire Historic Environment Record (CHER) for the area of prehistoric date relate to the discovery of a Bronze Age socketed axe in Guyhirn (CHER MCB27340) and cropmarks representing a circular enclosure and associated features of possible Iron Age to Roman date (CHER MCB27338).

2.3.2 Evidence for Roman period activity in the area is more extensive. Of particular significance is the Roman saltern that lies to the north-east of the site (CHER 09590 ECB2869). This was identified through field-walking, which recovered quantities of briquetage and pottery and through aerial photography which identified enclosures and evidence of settlement. Fieldwalking and trial trenching to the east of Chapelfield Road identified pottery and part of a Romano-British field system possibly connected to a farmstead immediately to the north (CHER 09218). Further evidence recorded from aerial photographs for Roman settlement has also been identified in the area (CHER 09437).

2.3.3 Anglo-Saxon pottery was recorded during an archaeological assessment carried out at the northern end of Chapelfield Road in the early 1990s (CHER 10082A). Beyond this, evidence for activity during this period is absent in the area surrounding the development site.

2.3.4 Similarly, medieval activity is not well-represented. St Mary Magdalene's Church in Guyhirn was built by Gilbert Scott in 1878 on the reputed site of a medieval predecessor (CHER CB14878). Aerial photographic assessment has identified medieval field systems in the area between Guyhirn and Wisbech St Mary (CHER MCB17859) and fired clay, briquetage, charcoal, burnt flint, faunal remains and four sherds of medieval pottery were recovered from a layer of naturally formed layered silt during archaeological investigation ahead of the Wisbech St Mary Anglian Water pipe (CHER MCB19319). Beyond this medieval evidence has not been identified in the area surrounding the site.

2.3.5 Known post-medieval activity is slightly more abundant in the surrounding area. This includes the redundant Chapel of Ease 350m to the south-east (CHER 03830), Ashtree Farmhouse in Wisbech (CHER 11748), ditches recorded during an

assessment at Waverley Close (CHER MCB15869), a man made layer containing pottery and clay pipe at Guyhirn High Road (CHER MCB17773), a ditch recorded during a watching brief at Guyhirn High Road (CHER MCB18449), the River Nene Navigation (CHER MCB20859), the 19th century vicarage (CHER MCB23737), and a former tollhouse located on the High Road (CHER MCB27339).

3 ARCHAEOLOGICAL EVALUATION

3.1 Prior to excavation, the site was subject to a trial trench evaluation (Browne and Clarke 2019). Three 20m long trenches (Fig. 3) were opened using a 20 tonne 360° excavator using a 2.2m-wide toothless ditching bucket, representing an 11% sample of the 0.115ha development area. Two extensions were made to Trench 1 (Fig. 3) to better understand features in the vicinity of this trench.

3.2 In the western part of the site, the evaluation recorded the presence of a large pit-like feature which was interpreted as being directly associated with salt making during the Roman period. The recovery of diagnostic briquetage fragments from the fills of this pit suggests that salt production was being undertaken in the immediate vicinity. This pit was respected to the west by a north-south aligned ditch, which produced further fired clay briquetage as well as pottery. As this pit was only partly excavated it was considered not possible to conclude whether it was directly associated with salt production or functioned as a waste pit for broken-up and disused salt hearths. In the northern part of Trench 1, this ditch was in-turn respected by a narrow gully, on a perpendicular east-west alignment, that extended between Trenches 1 and 2. The presence of six postholes alongside this beamslot-like feature was considered to represent a possible building.

3.3 In Trenches 2 and 3, to the east, smaller quantities of fired clay/briquetage were recovered from the ditches excavated here. On a compatible east-west alignment with the possible Roman features excavated in Trenches 1 and 2, a ditch at the eastern end of Trench 3 produced unabraded Roman pottery and finds suggestive of domestic occupation.

3.4 Extending across the full extent of the site, the features of probable Roman origin were overlain by a series of three north-west to south-east aligned ditches, which ran on the same alignment as the current network of dykes in the local landscape. Although further small assemblages of fired clay, Roman pottery, animal bone and cereal grains were recovered from these ditches, these are considered to be residual and arrived in these ditch fills as a result of these features truncating earlier Roman deposits.

4 EXCAVATION METHODOLOGY

4.1 Excavation was required within the area of archaeological significance identified between the three trial trenches excavated during the preceding trial trench evaluation (Browne and Clarke 2019). A contingency in case discrete features extend beyond this area was included, to be utilised by agreement with CCC HET. Within this area, machine-stripping was undertaken to an agreed standard, using a

toothless ditching bucket, and under the supervision of a professional archaeologist. The exposed sub-soil was cleaned by hand and archaeological deposits and features planned and reviewed with CCC HET before being subject to excavation and recording. Metal detector survey was undertaken prior to and during stripping.

4.2 The excavation comprised the following sequential stages:

- Mechanical stripping of topsoil and subsoil
- Metal detector survey
- Base planning of archaeological features at this horizon
- Review with CCC HET
- Excavation of archaeological features

5 DESCRIPTION OF RESULTS

5.1 Phasing

5.1.1 The excavation recorded approximately 60 archaeological features, the most prominent of which were large ditches arranged on a variety of different alignments (Fig. 3; Plates 1-4). A number of postholes, representing possible structures were also recorded. Ceramic evidence suggests that the majority of these features were of mid to late 2nd century date, however, in the stratigraphically later features, it appears likely that this Roman pottery may be residual.

5.1.2 Due to direct stratigraphic relationships between a number of features, it is possible to determine the chronological development of the ditch system represented at the site within this mid to late 2nd century framework (Figs 3b-c).

Phase	Period	Date
1	Romano-British	*mid/late 2nd century AD*

Table 1. Summary of phasing.

5.2 Deposit model

5.2.1 The natural substrate recorded across the excavation site (L1002) was a pale yellow (although this varied to some extent) soft to friable mixture of sand and silty sand, consistent with the site's location on a roddon. In the southern part of the site, L1002 was overlain by L1005 a 0.2 to 0.6m thick layer of Type 1 hardcore, consisting of compact, pale grey, large round gravel which formed a levelling layer for concrete layer L1003 and block paving L1004. In the south-east corner of the site L1002 was overlain by subsoil L1001, a firm, dark brown silty clay. Overlying L1001 and directly overlying L1002 across the remainder of the site was topsoil L1000. This was a soft, dark brown silt with very occasional sub-angular flint.

5.3 Phase 1. Romano-British

The Ditch System

Sub-Phase 1 (Figs. 3a,b & c, 4-6)

5.3.1 The stratigraphically earliest features in the observed ditch system were F1085 (Plate 6), F1093 (Plate 8), F1095 (Plate 7), and F1099 and its recut F1101 (Plate 9). Very few finds were recovered from these features. The most substantial of these, Ditch F1085, however, contained a Colchester-type one-piece copper alloy brooch of a type that continued to be manufactured until the end of the 1st century AD (Bayley & Butcher 2004, 148-149). The other features, with the exception of F1093 which produced only animal bone, all contained small to moderate quantities of briquetage, which suggested that they had some association with the salt making activity that is understood to have occurred here during the Romano-British period.

5.3.2 All of these features ran on broadly east to west alignments, with each varying slightly from this orientation. The most southerly, F1093, only ran for slightly more than 5m, with its western terminus forming one of the few features in the relatively blank space in the central southern part of the excavation area and its eastern end truncated and obscured by the later north-north-west to south-south-east aligned F1033. To the north of this, F1095 was truncated at its eastern end by F1062, a short linear feature which was itself cut by F1033 and F1016. To the west, the cut of F1095 became increasingly indistinct, gradually petering out at a distance of approximately 4m from the point at which it was cut by F1062. Slightly more than 5m to the north of F1095, and running on the same alignment, was the significantly more substantial Ditch F1085. This feature extended beyond the limits of the excavated area to both the east and west. Towards the east it was cut by the broadly north-west to south-east aligned ditches F1033 and F1007. To the west, F1085 continued into the area in which a large pit-like feature, which was interpreted as being directly associated with salt making during the Romano-British period, was recorded during the preceding evaluation (Browne and Clarke 2019). No indication of the pit was recorded during the excavation meaning that its relationship with F1085 was not observable and that its extent was probably not as great as was predicted on the basis of the results of the evaluation (Browne and Clarke 2019). Notably, however, more than 1.5kg of briquetage was recovered from F1085 and, as this feature had 11 fills, it is possible that the pit recorded previously was, in fact, the terminus of this feature. Further to the north was F1099. This was recorded during the preceding evaluation as Ditch 10 and Ditch Terminus 61 (Browne and Clarke 2019). Excavation has shown that, to the east at least, F1099 was recut by F1101. It is possible that this represents cleaning out of a silted-up feature.

Feature	Seg.	Context	Plan/ profile (dimensions)	Fill description	Comments/ relationships	Finds
F1085	A	L1110A	Linear, moderately steep sides, concave to flattish base (>14.00 x 1.98 x 0.61m)	Yellow to light pink friable/soft sandy clay	Ditch. Cut by F1033 and F1007	Pottery (7) 151g; ABone 486g; Cu alloy brooch 9g; Briquetage (109) 1655g
		L1086A		Pale grey brown silty sandy clay		
		L1097A		Light grey friable sand and ash		
		L1109A		Dark grey to black friable mix of		

				charcoal/ash and sand		
		L1108A		Light grey firm clay		
		L1107A		Light brown-grey friable silty sandy ash		
		L1106A		Light grey ashy sand with frequent briquetage		
		L1105A		Mid brown-grey friable silty sand		
		L1091A		Mid grey to light blue friable sandy ash		
		L1092A		Mid brown friable sandy silt		
		L1111A		Mid brown grey friable silty sand		
	B	L1086B		Pale grey brown silty sandy clay		
		L1087B		Pale to mid brown silty sandy clay		
		L1088B		Pale reddish grey friable		
		L1089B		Dark grey brown friable silty sandy clay		
F1095	A	L1098A	Linear, moderately steep sides, narrow concave base (6.00 x 0.37 x 0.24m)	Light grey brown friable sandy silt	Cut by F1062	Briquetage (5) 95g
		L1096A		Mid greyish brown firm silty clay		
	B	L1096B		Mid greyish brown firm silty clay		
F1093	A	L1094A	Linear, gently sloping sides, stepped to the east, rounded base (6.00 x 0.66 x 0.16m)	Mottled mid yellow brown friable sandy clay	Cut by F1033	ABone 10g
	B	L1094B		Mottled mid yellow brown friable sandy clay		
F1099	A	L1100A	Linear, steep, near vertical, sides, rounded base (6.00+ x 0.47 x 0.43m)	Medium yellow grey firm silty sand	Recut by L1101. Cut by F1033	Briquetage (1) 83g
	B	L1100B		Medium yellow grey firm silty sand		
F1101	A	L1102A	Linear, steep sided, narrow base (6.00+ x 0.4 x 0.28m)	Black to dark brown firm silty sand	Recut of L1099. Cut by F1033	Fuel Ash Slag (9g); Briquetage (14) 111g
	B	L1102B		Black to dark brown firm silty sand		

Table 2. Sub-Phase 1 features

Sub-Phase 2 (Figs. 3a,b & c, 4-6)

5.3.3 The next feature in the stratigraphic sequence was Gully F1062, a short, slightly curving linear feature aligned north-west to south-east (Plate 8). It cut F1095 and was cut to the south-east by F1033. To the north it was cut by Pit F1060. Its function is not clear but could have had a drainage function in this environment. Finds consisted of animal bone and briquetage.

Feature	Seg.	Context	Plan/ profile (dimensions)	Fill description	Comments/ relationships	Finds
F1062	A	L1081A	Linear, steep sides, rounded concave base (2.5 x 0.53 x 0.33m)	Mid grey brown friable silty sand	Cut by F1016 and F1061. Cut F1095	ABone 80g; Briquetage (3) 26g
		L1082A		Mid grey brown friable silty sand		
	B	L1081B		Mid grey brown friable silty sand		
		L1082B		Dark grey brown friable silty sand		

Table 3. Sub-Phase 2 features

Sub-Phase 3 (Figs. 3a,b & c, 4-6)

5.3.4 Ditch F1033, which ran on a north-north-west to south-south-east alignment, constituted the third stage in the observable chronological development of the ditch system (Plates 10, 11). This feature extended beyond the limit of excavation to the south and it appears likely that it also did so to the north, although its northern extent was obscured by Ditch F1007 which ran on a north-west to south-east alignment and cut across the earlier feature. F1033 cut all of the broadly east to west aligned linear features assigned to Sub-Phase 1 (F1085, F1093, F1095, F1099, and F1101). Almost 2.5kg of briquetage was recovered from this feature along with slightly lesser quantities of Romano-British pottery.

Feature	Seg.	Context	Plan/ profile (dimensions)	Fill description	Comments/ relationships	Finds
F1033	A	L1034A	Linear, moderately steep sides, concave base (24.00+ x 1.3 x 0.45m)	Yellow grey friable silty sand	Cut F1093, F1062, F1095, F1095, F1099, F1101. Cut by F1007	Pottery (20) 733g; ABone 533g; Briquetage (131) 2447g
		L1035A		Dark grey brown friable silty sand		
		L1036A		Mid greyish brown friable silty clay		
		L1037A		Mid brown grey friable silty clay		
	B	L1034B		Mottled yellow brown friable sandy clay		
		L1037B		Dark grey to black friable silty clay		
		L1090		Mid brownish yellow friable sandy clay		
	C	L1034C		Pale grey friable silty sand		
		L1036C		Mid yellow grey soft sandy silt		
		L1037C		Mid grey brown friable silty sand		
	D	L1034D		Mid grey brown friable silty sand		
		L1037D		Dark grey brown firm silty clay		
	E	L1037E		Dark grey to reddish brown friable silty, sandy clay		

Table 4. Sub-Phase 3 features

Sub-Phase 4 (Figs. 3a,b & c, 4-6)

5.3.5 The next feature in the stratigraphic sequence was Pit F1060 (Plate 12). This cut F1033 at a similar point at that to which it was cut by Ditch F1016 and the larger

Pit F1061. F1060 also cut the undated F1059. It contained three fills (L1064, L1065, and L1066) and, like F1061, which cut it, it was overlain by deposits L1076 and L1077. Finds consisted of pottery, animal bone and briquetage in fairly small quantities. These came solely from L1064, the basal fill. The function of this feature is unclear and it may simply have been created to dispose of refuse material. Despite the presence of briquetage within its basal fill, no clear direct link to the production of salt is apparent.

Feature	Seg.	Context	Plan/ profile (dimensions)	Fill description	Comments/ relationships	Finds
F1060	-	L1064	Sub-circular, moderately sloping sides, flat base (0.92+ x 0.3+ x 0.33m)	Mid blue grey firm clay	Cut by F1016, F1061. Cut F1033	Pottery (1) 16g; ABone 9g; Briquetage (4) 39g
		L1065		Mid blue grey soft silty clay		
		L1066		Mid grey brown firm silty clay		

Table 5. Sub-Phase 4 features

Sub-Phase 5 (Figs. 3a,b & c, 4-6)

5.3.6 Pit F1061 (Plate 12) cut F1062, F1060 and Ditch F1033, placing it fifth in the sequence of development of the ditch system observable at Chapelfield Road. This fairly large feature had multiple fills and contained significant quantities of briquetage. It also yielded small amounts of a material described as fuel ash slag but which has similarities to 'cramp' a vitreous slag-like material found in Orkney as a result of the fusing of sand through heating (Photos-Jones *et al*, 2007). Despite inferences made during excavation, there is no corroborative evidence to suggest that this feature was used to store water used in the saltmaking process. Its relationships with other features are not indicative of feeder channels or leats serving it and it appears to have been cut partially through a refuse pit (F1060).

Feature	Seg.	Context	Plan/ profile (dimensions)	Fill description	Comments/ relationships	Finds
F1061	-	L1068	Sub-circular, variable sides, flattish base (2.5+ x 2.37+ x 0.55m)	Mid blueish grey friable silty sand	Cut F1062, F1060, F1033 Cut by F1016	Pottery (2) 240g; ABone (107g); Briquetage (27) 520; Fuel Ash Slag 71g
		L1067		Mid yellowish grey friable sand		
		L1069		Mid yellowish brown firm silty clay		
		L1070		Mid grey blueish brown friable silty sand		
		L1071		Dark grey brown soft clay, charcoal and peat		
		L1072		Dark grey brown soft charcoal and silty clay		
		L1073		Mid grey brown firm silty clay		
		L1074		Mid grey firm silty clay		
		L1075		Mid grey brown firm silty clay		

Table 6. Sub-Phase 5 features

5.3.7 Overlying F1060 and F1061 and the undated F1059 were three further deposits, two of which contained moderate quantities of briquetage. The earliest of

these, L1076, was a soft silty clay. This was overlain by L1078 which was a soft peat that was, in turn, overlain by L1077, a mixture of silty sand and ash.

Feature	Seg.	Context	Dimensions	Fill description	Comments/ relationships	Finds
-	-	L1076	? x 3.45m x 0.55m	Dark reddish brown soft silty clay	Overlay L1063, L1066, L1071, L1072, L1075	ABone 28g; Briquetage (13) 678g
-	-	L1078	? x 0.2 x 0.05m	Dark grey brown soft peat	Overlay L1076	-
-	-	L1077	? 3.85 x 0.53m	Mid reddish brown friable sandy silt and ash	Overlay L1076 and L1078	ABone 150g; Briquetage (22) 591g

Table 7. Deposits overlying F1060 and F1061 and the undated F1059

Sub-Phase 6 (Figs. 3a,b & c, 4-6)

5.3.8 Ditch F1016 (Plate 13) extended from beyond the limit of excavation to the west and traversed the entire width of the excavated area before continuing beyond the eastern limit of excavation. In the west, it appeared to run from the approximate location in which the large pit-like feature identified during the preceding evaluation (Browne and Clarke 2019) was recorded. However, as no indication of this pit was recorded during the excavation phase of the project, the relationship between it and F1016 remains unknown. Towards the east, F1016 cut F1060, F1061, F1062 and F1033. At the eastern edge of the excavated area, it was cut by the later Ditch F1012 and to the west by F1007. It had a V-shaped profile with steeply sloping sides and a narrow base. The presence of a variety of different fills in each excavated segment suggests that the feature was infilled gradually and perhaps at different rates in different areas.

5.3.9 F1016 contained seven sherds (378g) of Romano-British pottery and was the most recent feature that could be confidently assigned a Roman date. The Ditches F1007 and F1012, which cut F1016, despite containing Roman pottery, were considered to be later due to their position, scale and alignment. In addition to the pottery, F1016 contained 39g of animal bone, almost 6kg of the cramp-like fuel ash slag material, and nearly 4kg of briquetage from salt production.

Feature	Seg.	Context	Plan/ profile (dimensions)Dimensions	Fill description	Comments/ relationships	Finds
F1016	A	L1047	Linear, steep sides, narrow, rounded base (20.00+ x 1.2 x 0.62m)	Light grey brown friable/loose sandy silt	Cut F1060, F1061, F1062 and F1033. Cut by F1012 and F1007	Pottery (7) 378g; ABone 39g; Fuel Ash Slag 5763g; Briquetage (72) 3849g
		L1048		Mid grey brown friable/loose sandy silt		
		L1049		Dark red brown firm silty clay		
		L1050		Dark grey brown firm silty clay		
		L1051A		Mid grey brown firm silty clay		
	B	L1051B		Dark grey brown friable silty clay		
	C	L1017		Pale grey brown friable sandy silt		
		L1018		Dark grey brown firm silty clay		
		L1019		Mid grey brown firm		

				silty clay		
		L1020		Pale grey brown friable sandy silt		
		L1021		Dark grey brown firm silty clay		

Table 8. Sub-Phase 6 features

Possible structures

5.3.10 In the northern part of the site, in the area between Ditches F1099/F1101, F1033, and F1085, a concentration of 28 postholes was identified. The only finds recovered from these consisted of a gram each of burnt bone from Postholes F1155 and F1177. Nevertheless, with no other dating evidence present at the site, they are tentatively considered to have been broadly contemporary with the other activity that was recorded here.

5.3.11 At the time of excavation, these postholes were recorded as forming two structures. St1112, to the east consisted of a single central row of seven postholes with a parallel row of three more widely-spaced postholes to the south-east and triangular formation of four postholes, with its based aligned parallel to the central row, to the north-west (Plate 14). Slightly further to the south-east were a further nine postholes which could have been associated with St1112, although they displayed no clear structural configuration. It is possible that further postholes existed to the east, which may have put this group into greater context, but any such postholes might have been truncated/removed during the creation of Ditches F1033 and F1007.

5.3.12 To the west, a group of eight postholes was identified as Structure St1179 (Plate 15). This group displayed less obvious structural configuration than St1112 and yielded no artefactual evidence.

5.3.13 Within their groups, these features had very similar fills, with slight variations in colour but not composition. There was little variation in size between the features forming St1179 but slightly more variation between those forming St1112.

Feature	Seg.	Context	Plan/ profile (dimensions	Fill description	Comments/ relationships	Finds
F1127	-	L1128	Sub-circular, moderately steep sides, concave base (0.35 x 0.32 x 0.08m)	Light grey brown friable silty sandy	Part of St1112	-
F1129	-	L1130	Sub-circular, moderately steep sides, concave base (0.27 x 0.2 x 0.02	Mid grey brown friable silty sand	Part of St1112	-
F1131	-	L1132	Sub-circular, moderately steep sides, concave base (0.25 x 0.25 x 0.20m)	Mid grey brown friable silty sand	Part of St1112	-
F1133	-	L1134	Sub-circular, moderately steep sides, concave base (0.34 x 0.24 x 0.09m)	Mid grey brown friable silty sand	Part of St1112	-
F1135	-	L1136	Sub-circular, moderately steep sides, concave base (0.4 x 0.35 x 0.09m)	Mid grey brown friable silty sand	Part of St1112	-
F1137	-	L1138	Sub-circular, moderately steep sides, concave base (0.26 x 0.21 x 0.18m)	Mid grey brown friable silty sand	Part of St1112	-
F1141	-	L1142	Sub-circular, moderately steep sides, concave base (0.33 x 0.32 x 0.2m)	Dark grey brown firm silty clay	Part of St1112	-

F1143	-	L1144	Sub-circular, moderately steep sides, concave base (0.54 x 0.44 x 0.26m)	Dark grey brown firm silty clay	Part of St1112	-
F1145	-	L1146	Sub-circular, moderately steep sides, concave base (0.30 x 0.23 x 0.18m)	Dark grey brown firm silty clay	Part of St1112	-
F1147	-	L1148	Sub-circular, moderately steep sides, concave base (0.4 x 0.32 x 0.26m)	Dark grey brown firm silty clay	Part of St1112	-
F1149	-	L1150	Sub-circular, moderately steep sides, concave base (0.4 x 0.36 x 0.24m)	Mid grey brown friable silty sand	Part of St1112	-
F1151	-	L1152	Sub-circular, moderately steep sides, concave base (0.45 x 0.42 x 0.21m)	Mid grey brown friable silty sand	Part of St1112	-
F1153	-	L1154	Sub-circular, moderately steep sides, concave base (0.3 x 0.29 x 0.05m)	Mid grey brown friable silty sand	Part of St1112	-
F1155	-	L1156	Sub-circular, moderately steep sides, concave base (0.3 x 0.3 x 0.18m)	Mid grey brown friable silty sand	Part of St1112	Burnt Bone 1g

Table 9. Constituent features of St1112

Feature	Seg.	Context	Plan/ profile (dimensions)	Fill description	Comments/ relationships	Finds
F1113	-	L1114	Sub-circular, moderately steep sides, concave base (0.36 x 0.30 x 0.12m)	Light grey friable silty sand	Part of St1179	-
F1115	-	L1116	Sub-circular, moderately steep sides, concave base (0.26 x 0.24 x 0.12m)	Light grey friable silty sand	Part of St1179	-
F1117	-	L1118	Sub-circular, moderately steep sides, concave base (0.32 x 0.3 x 0.11m)	Light grey friable silty sand	Part of St1179	-
F1119	-	L1120	Sub-circular, moderately steep sides, concave base (0.61 x 0.52 x 0.4m)	Light grey friable silty sand	Part of St1179	-
F1121	-	L1122	Sub-circular, moderately steep sides, concave base (0.36 x 0.27 x 0.12m)	Light grey friable silty sand	Part of St1179	-
F1123	-	L1124	Sub-circular, moderately steep sides, concave base (0.3 x 0.28 x 0.13m)	Light grey friable silty sand	Part of St1179	-
F1125	-	L1126	Sub-circular, moderately steep sides, concave base (0.3 x 0.28 x 0.08m)	Pale grey friable silty sand	Part of St1179	-
F1180	-	L1181	Sub-circular, moderately steep sides, concave base (0.38 x 0.35 x 0.21m)	Pale grey friable silty sand	Part of St1179	-

Table 10. Constituent features of St1179

Feature	Seg.	Context	Plan/ profile (dimensions)	Fill description	Comments/ relationships	Finds
F1139	-	L1140	Sub-circular, moderately steep sides, concave base (0.41 x 0.33 x 0.05)	Mid grey brown friable sandy silt	-	-
F1157	-	L1158	Sub-circular, moderately steep sides, concave base (0.34 x 0.33 x 0.17m)	Mid grey brown friable sandy silt	-	-
F1159	-	L1160	Sub-circular, moderately steep sides, concave base (0.35 x 0.35 x 0.13m)	Mid grey brown friable sandy silt	-	-
F1161	-	L1162	Sub-circular, moderately steep sides, concave base (0.3 x 0.3 x 0.11m)	Mid grey brown friable sandy silt	-	-
F1163	-	L1164	Sub-circular, moderately steep sides, concave base (0.2 x 0.2 x 0.04m)	Mid grey brown friable sandy silt	-	-

F1171		L1172	Sub-circular, moderately steep sides, concave base (0.38 x 0.38 x 0.08m)	Dark grey brown friable sandy silt	-	-
F1173	-	L1174	Sub-circular, moderately steep sides, concave base (0.35 x 0.35 x 0.05m)	Mid grey brown friable sandy silt	-	-
F1175	-	L1176	Circular, moderately steep sides, concave base (0.27 x 0.27 x 0.14m)	Mid grey brown friable sandy silt	-	-
F1177	-	L1178	Circular, moderately steep sides, concave base (0.27 x 0.27 x 0.12m)	Mid grey brown friable sandy silt	-	Burnt Bone 1g

Table 11. Features possibly associated with St1112

Other features

5.3.14 A handful of other features were recorded across the site. None of these, except Pit F1054 contained finds of any kind. The pottery from F1054 suggests that it was broadly contemporary with the other dateable features recorded at the site. With the predominance of Romano-British evidence at the site, it is reasonable to suggest that the majority of these undated features were also of Roman date. Some of these features were stratified beneath dateable features and, as such, must be of Romano-British date or earlier. Such features include Pits F1023, F1025, F1059, and F1083.

5.3.15 F1040 was a ditch terminus located adjacent to the west of F1033. It appeared to follow the same north-north-west to south-south-east alignment and may have run parallel to F1033 to the south-east beyond the limit of excavation. It was cut by the small Pit F1045 and both were cut by the larger Pit F1043. It appears possible that the function of F1040 was similar to that of F1033. With limited artefactual evidence it is difficult to assign functions to many of the other features present here. Whatever their purpose, it is likely to have been in keeping with the overall function of the site, even if it was only for the discard of waste materials generated during the operation of the site.

Feature	**Seg.**	**Context**	**Plan/ profile (dimensions)**	**Fill description**	**Comments/ relationships**	**Finds**
F1023	-	L1024	Sub-oval, steep sides, flattish base (0.8+ x 0.73 x 0.36m)	Mid yellow brown friable sandy clay	Cut by F1007	-
F1025	-	L1026	Sub-oval, moderately steep sides, flattish base (0.92 x 0.76 x 0.18m)	Mid yellow brown friable silty clay	Cut by F1007	-
F1029	-	L1030	Sub-oval, gently sloping sides, rounded base (0.71 x 0.6 x 0.15m)	Pale yellow friable sandy clay	Located immediately adjacent to F1031	-
		L1038		Dark grey to black friable silty sandy clay		
		L1039		Mottled yellow brown friable silty sandy clay		
F1031	-	L1032	Sub-oval, gently sloping sides, rounded base (0.75 x 0.3 x 0.16m)	Mid yellow brown friable sandy clay	Located immediately adjacent to F1029	-
F1040	-	L1041	Linear, gently sloping sides, rounded base (1.5 x 0.8 x 0.2m)	Light grey friable silty sand	Cut by F1043 and F1045	-
		L1042		Mottled yellow brown friable silty sandy clay		

F1043	-	L1044	Sub-oval, moderately steep sides, rounded base (0.8 x 0.66 x 0.28m)	Pale yellow grey friable silty sandy clay	Cut F1040 and F1045	-
F1045	-	L1046	Sub-oval, moderately steep sides, rounded base (0.35 x 0.34 x 0.18m)	Pale yellow grey friable silty sandy clay	Cut F1040. Cut by F1043	-
F1052	-	L1053	Sub-circular, steep sides, rounded base (0.16 x 0.16 x 0.12m)	Mid grey brown friable silty sandy clay	Located adjacent to F1054	-
F1054	-	L1055	Irregular in plan, gently sloping sides, flat base (0.51 x 0.36 x 0.05m)	Dark grey brown friable silty sandy clay	Located adjacent to F1052	Pottery (1) 17g
F1057	-	L1058	Sub-circular, moderately steep sides, flat base (1.44+ x 0.6+ x 0.16)	Pale grey friable silty sand	Cut by L1007 andL1016	-
F1059	-	L1063	Indistinct in plan, sides not observed, flat base (?? x 1.03 x 0.42m)	Mid grey friable sandy silt	Cut by L1016, L1007, L1061, L1060	-
F1083	-	L1084	Circular, moderately steep sides, flat base (0.8 x 0.8 x 0.15m)	Dark grey brown friable silty sand	Cut by L1007	-
F1103	-	L1104	Sub-oval, moderately steep sides, flat base (0.4 x 0.4 x 0.15m)	Mid green grey firm silty clay	Cut F1099. Cut by F1101	-

Table 12. Other features of possible Romano-British date

5.4 Later features (Figs. 3a, b & c, 4-6)

5.4.1 Ditches F1007 (Plates 10, 11, 16 & 17) and F1012 (Plates 18 & 19) traversed the excavated area on a north-west to south-east alignment. They lay 15m apart and ran parallel to one another. They were similar in size, both approaching 3m in width and 1m in depth. Finds were more abundant in F1007 but it is likely that this is due to the greater number earlier features through which it was cut in comparison to F1012. Both contained Romano-British pottery and briquetage but this is considered to be residual and not representative of their true date. These features were identified during the preceding trial trench evaluation (Browne and Clarke 2019). At that stage they were considered to be of post-Roman date due to their alignment and similarity with the surrounding fields and drains, which was considered to strongly suggest that they were of relatively recent origin. Nevertheless, they showed evidence for extensive mollusc preservation within their fills and column sequences were taken from their profiles in 10cm blocks to investigate changing conditions in the features over time using mollusc shells as a proxy. One of the intentions of this analysis was to investigate water conditions and whether either of the features had carried salt water at any point in their lifespan and, by extension, whether they may have acted as feeder channels for salt working. The results of this analysis, see Summers (below) showed predominantly freshwater conditions. No clear evidence of salt or brackish water was identified and it is more likely that these features acted as drainage channels for freshwater rather than being saltwater feeder channels for the salt working. The pattern of infill in the bases of these features was considered during excavation to indicate slumping of the natural material into the ditch but the regularity of their profiles might instead indicate an act of clearing our scouring out of the features to improve their efficiency to carry water. This would be supportive of a drainage function.

Feature	Seg.	Context	Plan/ profile (dimensions)Dimensions	Fill description	Comments/ relationships	Finds
F1007	A	L1008A	Linear, moderately steep sides, flattish base (24.00+ x 2.9 x 0.88m)	Pale cream yellow brown friable silty sand	Cut F1023, F1057, F1016, F1085, F1083, F1033	Pottery (72) 637g; ABone 170g; Burnt Bone 26g; Burnt Flint 12g; Fuel Ash Slag 37g; Shell 7g; Briquetage (191) 948g
		L1009A		Dark brown grey friable clay silt		
		L1010A		Dark brown grey friable silty clay		
		L1011A		Dark brown grey friable silty clay		
	B	L1008b		Mid grey brown loose sandy silt		
		L1009B		Dark grey brown firm silty clay		
		L1010B		Dark grey to brown/black firm silty clay		
		L1011B		Dark brown to black friable silty clay		
	C	L1008C		Pale yellow grey friable sand		
		L1009C		Dark blue grey firm silty clay		
		L1010C		Dark grey brown friable silty clay		
		L1011C		Dark reddish grey brown friable silty clay		
	D	L1022D		Dark grey to black friable silty sandy clay		
		L1008D		Mid grey brown friable silty clay		
		L1009D		Dark brown grey friable silty sandy clay		
		L1010D		Dark red brown friable silty sandy clay		
		L1011D		Mid reddish brown friable silty sandy clay		
F1012	A	L1027A	Linear, moderately steep sides, flat, slightly concave base (16.00+ x 3.0 x 1.0m)	Light yellow brown friable sandy silt	Cut F1016	Pottery (1) 5g; Briquetge (266) 3387g
		L1028A		Light yellow brown friable sandy silt		
		L1013A		Dark grey brown firmish clayey silt		
		L1014A		Dark grey brown firm clayey silt		
		L1015A		Dark brown firm clay silt		
	C	L1056C		Light yellow brown friable sandy silt		
		L1027C		Light grey brown friable to loose sandy silt		
		L1013C		Mid grey brown firm clayey silt		
		L1014C		Dark red brown firm clayey silt		
		L1015C		Dark brown firm clay silt		

Table 13. Later features

6 SPECIALISTS' FINDS AND ENVIRONMENTAL REPORTS

6.1 The Roman Pottery

Andrew Peachey

Excavations recovered a total of 132 sherds (2526g) of Roman pottery in a well-preserved but moderately fragmented and sparsely distributed condition. The bulk of the assemblage was contained as small groups in three ditches, notably Ditch F1007 (Table 14). Based on the relatively limited diagnostic sherds present, the assemblage appears to consistently date to the mid to late 2nd century AD with occasional contemporary sherds in further ditch and pit features. The pattern of consumption is decidedly utilitarian, with a seeming focus on large jars produced by major industries in and around the Fenland region, supplemented by white ware flagons, and with a complete absence of any fine ware (including samian ware). The presence of the coarse wares is broadly similar to various sites on the eastern side of the Fenland, such as the salt-production site at Denver (Gurney 1986, 117), where the supply pattern was heavily influenced by the major industry in the Lower Nene Valley and supplemented by other wares traded along the water ways. However, the absence of fine ware remains conspicuous and is perhaps attributable to the limited consumer demands of an industrial site or the limited sample size recovered.

Feature	Sherd Count	Weight (g)	R.EVE
Ditch F1007	85	756	0.35
Ditch F1016	13	581	1.15
Ditch F1033	20	733	0.35
Other ditches (three features)	10	183	-
Pits (three features)	4	273	0.15
Total	*132*	*2526*	*2.00*

Table 14. Quantification and Distribution of Roman pottery

Methodology

The pottery was quantified by sherd count, weight (g) and R.EVE with fabrics examined at x20 magnification in accordance with 'A Standard for Pottery Studies in Archaeology' (Barclay *et al* 2016), developed from the guidelines of the Study Group for Roman Pottery. Fabric codes and descriptions (Roman) were cross-referenced, where possible, to the National Roman Fabric Reference Collection (Tomber & Dore 1998) or regional kiln/type series, while local or indistinguishable coarse wares were assigned an alpha-numeric code and are fully described in the report. All data has been entered into a Microsoft Excel spreadsheet that forms part of the site archive.

Fabric Descriptions

VER WH	Verulamium region white ware (Tomber & Dore 1998, 154-5; Seeley and Drummond-Murray 2005, 84)
LNV WH	Lower Nene Valley white/parchment ware (Tomber & Dore 1998, 119).
GOD WS	Godmanchester white-slipped ware (Evans 2003, 209: P05.2). A pale-mid orange fabric with cream/pale-brown slipped surfaces. The fabric comprises a fine calcareous clay with inclusions of sparse quartz (<0.2mm) and red/black iron rich grains (0.25-1.5mm).
LNV RE	Lower Nene Valley reduced (sandy) ware (Perrin 1996, 116; Rollo 2001, 59).

HOR RE Horningsea reduced ware (Tomber and Dore 1998, 116; Evans 1991, 35; Evans 2017, 52). Mid to dark grey surfaces with a reduced mid-grey core and sometimes oxidised margins. Inclusions comprise common quartz (0.1-0.5mm) with sparse limestone and grog/ironstone (generally <2mm) and occasional flint (0.5-5mm).

GRS1 Sandy grey ware 1. Mid to dark grey surfaces over a lighter/pale grey core. Inclusions comprise common quartz (0.1-0.25mm), sparse fine mica and sparse black iron rich grains (0.25-1.5mm). A hard fabric with a slightly abrasive to smooth feel.

ROB SH Romano-British shell-tempered ware (Tomber & Dore 1998, 212), wheel-made with common, moderately sorted shell (0.5-7mm, occasionally larger).

SOB GT Southern British grog-tempered ware; storage jars only (Tomber & Dore 1998, 214)

Roman Fabric	Sherd Count	Weight (g)	R.EVE
VER WH	1	14	-
LNV WH	4	148	1.25
GOD WS	4	75	0.10
LNV RE	14	199	0.10
HOR RE	14	435	0.25
GRS1	44	677	0.10
ROB SH	49	920	0.20
SOB GT	2	58	-
Total	*132*	*2526*	*2.00*

Table 15. Quantification of Roman fabric types

The Roman Pottery

The most distinctive component of the assemblage is scarce sherds of white ware flagons. Ditch F1007 (L1010 Seg.A) contained the r-rib strap handle of a flagon from Verulamium (VER WH), most likely to have been traded in the late 1st to 2nd centuries AD, before the fabric was entirely superseded by white wares from the Lower Nene Valley to the west. The latter fabric (LNV WH) included a small ring-necked flagon in the same feature, F1007 (L1011 Seg.D), which is likely to be contemporary with the VER WH and comparable to 'early' examples at Orton Hall Farm (Perrin 1996: fig.83.90). Conversely a larger LNV WH ring-neck flagon with a more pronounced rim profile in Ditch F1016 (L1021 Seg.C) is more typical of examples limited to a mid to late 2nd century AD distribution at Orton Hall Farm (Perring 1996: fig.86.160). Such a chronology is further supported by a white-slipped jar, also from across the fen but to the south-west at Godmanchester (GOD WS), which exhibits a grooved lid-seated rim comparable to examples recorded in mid to late 2nd/early 3rd century AD kilns at the town (Evans 2003, fig.25.10-11).

The bulk of the reduced coarse wares could not be attributed a source and are likely to have been produced locally (GRS1), although this fabric group contained little diagnostic material other than highly fragmentary everted bead rims from utilitarian jars or cooking pots. Limited proportions of the coarse wares (Table 15) could be attributed to the Horningsea industry (HOR RE), on the southern Fen-edge, or to the Lower Nene Valley (LNV RE), which was also the likely source of the shell-tempered wares (ROB SH). The HOR RE and ROB SH appear limited to large jars or storage jars, with the former including a vessel with a strongly everted plain rim in Ditch F1033 (L1090 Seg.B) (potentially after Evans 2017: type J10.4). The ROB SH included robust but highly fragmented plain rim jars in Ditch F1016 (L1050) and Pit F1061 (L1070) (potentially after Perrin 1999: vessel 463). The HOR RE vessel has a heavy soot residue on the inside of the rim and neck, while the ROB SH vessels have traces of soot on their exterior. This suggests that they may have been used as

part of an industrial process on the site as they significantly exceed the size of typical cooking pots. Although lacking any diagnostic sherds, the grog-tempered wares (SOB GT) in the assemblage may also be added to this category of large vessel as they appear entirely derived from storage jars with heavily-combed external surfaces and may have acted as containers for water, grain/flour, or salt.

In contrast the LNV RE vessels are more finely finished and commensurate with tablewares or dining vessels. They notably include a dish with an overhanging rim that is imitating samian ware Form 36 (in Ditch F1033, L1037) which typically has a currency that only begins in the mid/late 2nd century AD (i.e. Perrin 1999: vessels 95-7). Body sherds in Ditch F1016 (L1020) appear to be from a bulbous narrow-neck jar with highly burnished surfaces, a neck cordon, and mid body cordon that was decorated with burnished oblique lines, comparable to types used throughout the 2nd century (i.e. Perrin 1996: fig.85.132). The sample size of this assemblage is perhaps too limited to allow firm conclusions to be drawn but it supports a fairly narrow phase of activity in the mid to late 2nd century AD, potentially with a focus on the use of larger vessels as part of, or associated with, industrial activity which was supported by limited utilitarian domestic/occupation activity that does not appear to have utilized or benefited from the extensive fine wares in circulation in this period.

6.2 The Briquetage

Andrew Peachey

Excavations recovered a total of 1139 fragments (20740g) of briquetage in a relatively highly fragmented condition and with a limited distribution in a low number of Roman ditches and a pit (Table 16). Associated pottery dates this material to the latter half of the 2nd century AD. The briquetage represents discarded industrial components used in salt-making. This Roman industry is well-attested in the fenland of Cambridgeshire, the south Lincolnshire, and in the coastal region of the Wash (and former fenland) of west and north-west Norfolk. Known salt-making sites include locations *c.*10-15km to the east at Denver and Nordelph (Gurney 1986; Percival 2001b), *c.*20km to the north-east at Middleton and Kings Lynn (Percical 2001a; Peachey 2014), and *c.*20km to the north-west at Cowbit (Morris 2001a).

The archaeological features are situated within an investigation area that forms part of a wider area previously subject to an archaeological trial-trench evaluation. This preceding evaluation recovered a significant assemblage of briquetage associated with a saltern (Timberlake 2019). The range of trough fragments and supports (pedestal and bar) recorded here reflects types present in the assemblage from the evaluation but with a distinctively lesser degree of variation and apparently poorer preservation (higher fragmentation), which is likely to reflect the distance of the features from the saltern, and potentially the narrow chronological range of these features. Salt production on and around the saltern may have occurred over a longer duration.

Material type	Frequency	Weight (g)	Briquetage types present
Ditch F1016	150	7426	Pedestal, bar, trough
Ditch F1033	168	3576	Pedestal, trough
Ditch F1012	266	3387	Pedestal, bar, trough
Pit F1061	62	1889	Pedestal

Ditch F1007	269	1710	Trough
Ditch F1085	109	1655	Trough
Other deposits (6 features)	28	399	Trough
Un-stratified	87	698	Misc. only
Total	1139	20740	

Table 16. Quantification of briquetage in feature groups

Methodology

The fired clay and CBM were quantified by fragment count and weight (g) per context, with fabrics examined at x20 magnification. The briquetage was classified using the method developed by Morris for Cowbit, Lincolnshire (Morris 2001a, 35). All data were entered into a Microsoft Excel spreadsheet that will be deposited as part of the archive. Occasional cross-joining fragments were identified and reconstruction was attempted where viable.

Technological Traits

The briquetage was manufactured in a single, fairly homogenous, albeit crudely mixed and formed, fabric. It was united by the consistent use of common to abundant chopped organic temper, now present only as burnt-out voids, typically linear. It is likely that this represents chopped grass, straw and chaff (0.5-5mm, occasionally to 15mm). Fragments occurred in a range of colours, including off-white to pale/mid orange to dark red-brown, but individual fragments were consistently coloured, sometimes with slightly darker (redder) cores. During the evaluation, multiple fabric types were differentiated, several based on colour, which it was acknowledged may have been influenced by diagenetic change resulting from exposure to heat and the alkalinity of the hot brine solutions. In this instance, the examination of varying coloured fragments did not find any meaningful variation in the actual fabric of the material, but is notable that variants with sand, grog or shell temper identified during the evaluation (Timberlake 2019, 22) are absent in this assemblage. The fabric is also comparable to the most common type at Middleton (Percival 2001a, 185), and appears to represent a development in the fabric of briquetage characteristic of the mid-late Roman period (Morris 2001b, 354).

Briquetage was used to construct a range of troughs (salt pan vessels) and associated supports (pedestals and bars) that were designed to begin the concentration process after saltwater had been channelled off the tidal-creeks, to create increasingly concentrated brines until sub-crystalline salt could be collected for further drying and concentration in moulds or pots to create salt cakes. The range of equipment within this process in the Fenland has been well-defined, though it is likely that the scale of the industry, including its use of feeder ditches and modified inlets, remains understated due to later silting obscuring salterns from survey (Lane 2005, 49-51). The briquetage pedestals and supports would have elevated a series of troughs above a hearth pit or structure, for which Lane and Morris (2001, fig. 133) have suggested an accepted model. The assemblage includes relatively small fragments of trough (base and side), at least two size variants of pedestal (Types 1 & 2) that are only represented by truncated basal fragments, a further type (Type 3) potentially representing the top of both pedestal types, and two size variants of

support bar that would have helped stabilise the troughs underpinned by the pedestals, and perhaps affix the troughs to one another (Table 17). The high level of fragmentation hinders the definition, and efforts to reconstruct the form, of briquetage types. However, this fragmentation may reflect that this assemblage was deposited after being raked or broken out from a hearth, so that the hearth pit could be re-used.

Class	Form	Fragment Count	Weight (g)	Minimum no. of objects
Trough	Base	52	2147	?
	Side	46	863	?
Support	Pedestal –type 1 (basal, large)	32	2495	2
	Pedestal –type 2 (basal, small)	100	3191	5
	Pedestal – type 3 (top?)	21	1640	5?
	Bar (large)	5	272	5?
	Bar (small)	11	361	6
Misc.	Small non-diagnostic fragments	872	9771	n/a
Total		1139	20740	

Table 17. Quantification of briquetage types

Troughs (salt pan vessels)

It is highly likely that the troughs utilised would have had a shallow pan-like profile. Basal fragments were contained in Ditches F1007, F1012 and F1033 and were consistently *c*.40mm thick with a slightly rough base and a smoother internal surface that has a 1-3mm thick white-saline residue adhering to it. Separate fragments in Ditch F1033 have either flat or slightly concave surfaces, with the latter possibly from the junction approaching the wall of the trough rather that reflecting a more semi-cylindrical profile. These fragments also suggest that the walls rising from the base were noticeably thinner, consistent with the side-fragments also recorded. The side fragments of the troughs are typically *c*.15-20mm thick and appear relatively flat. Numerous small fragments were recorded in Ditches F1012, F1016, F1062, F1085, F1101 and Pit F1060 but no cross-joins could be identified to form more substantial fragments or profiles, and no rim fragments or clips were identified. This is in stark contrast with the briquetage from the preceding evaluation (Timberlake 2019, 22-23). It is also notable that in contrast to the residue on the basal fragments, no residue was recorded on the side fragments, perhaps consistent with the raking of the brine and salt as it was allowed to concentrate. This would prevent crystallisation occurring on the sides, whereas the heat applied to the base may have meant that it could not be prevented there.

Supports

The most common type of support appears to have been a pedestal with a tapering rectangle shape (square in horizontal section), which here have been sub-divided into three types that represent variations in size and extent (Table 17: Pedestal – Types 1-3). A larger variant of this pedestal (Type 1) has a base 110mm^2 that tapers gently to a height of >160mm (with a section ≤70mm^2) and the top missing (truncated/broken). A partially reconstructed example of a Type 1 pedestal was contained in Ditch F1016 (L1017 Seg.C) (Plate 20), while the more fragmentary remains of a second example was also contained in Ditch F1016 (L1050). A smaller

variant (Type 2) has a base 85mm^2 that tapers gently to a height of >110mm (with a section ≤45mm^2), also with the top missing (truncated/broken). Substantial basal fragments of Type 2 were contained in Ditch F1016 (L1020) (Plate 22) and (L1049) while more fragmentary examples were contained in Ditch F1033 (L1037 Segs.A & D) and Pit F1061 (L1077). No complete examples of pedestal Types 1 or 2 were recorded, with both always exhibiting a broken top, mirroring the pattern of truncation evident on the comparable size variants of pedestal recorded from the suggested saltern during the preceding evaluation (Timberlake 2019, 25). However, the broken tops of pedestals were also recorded (as Type 3), though it remains unclear which size variant they belonged to, although potentially both. They have a flat square top *c*.50mm^2 and include re-constructed examples in Ditch F1016 (L1017 Seg.C) and Pit F1061 (L1070) (Plate 21). More fragmentary examples occurred in Ditches F1012 (L1015 Seg.A), F1033 (L1036 Seg.B) and Pit F1061 (L1076).

Comparable pedestals have been recorded across the region, including at Cowbit, Langtoft and Market Deeping, where it has been noted that they were recovered from salt-working deposits dated to the late Roman period (Lane & Morris 2001, 363). Comparable square-based pedestals were also recorded at Middleton (Percival 2001a, 188) and Kings Lynn (Peachey 2014, 71). At Cowbit, a model for a saltern oven was proposed (Lane & Morris 2001, fig. 22), and the pattern of residues on these pedestal may support a similar utilization at this site. Where present, residues on pedestals are approximately 1mm thick white-saline with a fairly smooth feel. On the larger pedestal Type 1, residue is present on the sides but not the base, suggesting that they may have been deployed on a slab under the troughs. On the smaller pedestal Type 2, residue is present on the sides and base, suggesting that they may have rested on, or within, the salt pans (troughs), supporting an upper layer of smaller containers, as per the proposed model.

Adding stability and lateral support to the salt pans (troughs) underpinned by the pedestal would have been a series of small supports in the form of fairly crudely-formed, hand-squeezed bars. These also appear to consist of larger and smaller variants, possibly reflecting differing load-bearing capacities/requirements similar to the pedestals; a division previously noted at Denver (Gurney 1986, 128) and Kings Lynn (Peachey 2014, 72). Both types have a solid circular section, with the larger variant limited to a single example in Ditch F1012 (L1014 Seg.A) with a diameter of *c*.50-60mm that expands to a flat foot *c*.80mm wide (Plate 26), suggesting that it was placed vertically or horizontally, probably around the lower trough in a saltern oven. In contrast, the smaller support bars have fractures at each end that suggest that they were affixed at an approximate 45 degree angle, possibly to act as brackets that stabilised the upper troughs or vessels, affixing them to the oven wall or to each other. The length of the larger bar is incomplete, but the smaller bars are typically *c*.85-95mm long with a diameter of *c*.30-35mm. Examples of these were recorded in Ditches F1012 (L1014 Seg.A), F1016 (L1020) (Plates 23-25) and (L1050). Similar crudely-made support bars were relatively common during the preceding evaluation, where they appear to exhibit little standardisation (Timberlake 2019, 25).

Discussion

The group of briquetage from the excavated area supports the conclusions of the evaluation (Timberlake 2019, 33) and perhaps clarifies at least one phase of activity within the life span of the saltern. The homogenous briquetage deposited in these particular ditches and a pit appears to represent an episode of raking out, clearance and refurbishing of a salt hearth oven in the latter half of the 2nd century AD, potentially only a single phase within industrial activity spanning the middle/late Iron Age to late Roman period, as suggested by the wider range of briquetage recorded in the evaluation trenches that were able to investigate the core area of salt production directly over the saltern. However, this assemblage may instead clarify the chronology of that saltern, and suggest a shorter currency that may conform to the perceived 2nd-3rd century flourit of salt-making sites either side of the Fen Causeway, a possible intensification resulting from the abandonment of salterns further north due to changes in tidal conditions (Lane 2005, 54).

The range of salt pan (trough), pedestal and support bar fragments present suggests that this phase of salt working utilised a similar technological arrangement to that attested to in the well-preserved group from Cowbit (Lane & Morris 2001: fig.22) and is also closely consistent with briquetage from Middleton (Percival 2001a, 192), Nordelph and Downham West (Percival 2001b), and Kings Lynn (Peachey 2014), while also sharing several common traits with Denver (Gurney 1986). However, this group is not of sufficient extent, preservation or diagnostic value to provide further insights into the salt extraction process.

Nonetheless, it is clear that while salt-working is widely attested across the fenland region, including on the west and south-west margins (Silvester 1991). This phase of industry at Guyhirn is part of a mid to late Roman pattern that extends from the eastern fen edge and the Nar Valley (Norfolk) into the north-eastern area of the Fens. This pattern has been extensively explored by Lane (2005, 48: fig.1) who defined a clear correlation with ‘marine’ silts and silty-clays situated between the fen-edge and fen islands in this area and noted that in contrast to those in Lincolnshire or the west fens, this Roman salt working more often did not have an Iron Age precursor. The location of these salterns also has a strong bias towards Roman transport infrastructure, notably the Fen Causeway, River Welland and the Wash, which would have acted as conduits to distribute the final product and highlight the economic value of a relatively marginal, albeit large-scale, rural industry to the wider province.

6.3 The Small Finds

Andrew Peachey

Fill L1092 (Seg. A) of Ditch F1085 contained a single Roman copper alloy brooch (SF26). It was found in a slightly encrusted condition with a broken pin and catch plate, weighing 9g, and with a moderately-pitted mid-green patina. The brooch is a Colchester-type one-piece brooch (Hull T90; Mackreth 2011: type 3.1) with an intact spring of eight turns, whose end is fastened by a small rivet on the underside. The curved bow (58mm long; 19mm deep) has a D-shape section with two faint moulded grooves on the concave ‘front’ creating a slight rib, and a flat ‘reverse’. A front-facing

hook extends back over the bow holding the external chord of the spring in place. The arms (20mm span, 5mm thick) appear to be undecorated short wings but are too encrusted to exhibit any certain detail, and no axis bar is visible. This type of brooch is common in the region, and typically dated to the mid 1st century AD (*c*.AD25-60), with manufacture commencing in the pre-Roman Conquest period influenced by continental types, and the type maintaining a declining currency to the end of the 1st century AD (Bayley & Butcher 2004, 148-149)

6.4 **The Animal Bone**

Julie Curl

Methodology

An assessment was carried out following a modified version of guidelines by English Heritage (Davis 1992) and Baker and Worley (2014). All of the bone was examined to determine range of species and elements present. A record was also made of butchering and any indications of skinning, hornworking and other modifications. When possible, ages were estimated along with any other relevant information, such as pathologies. Measurements were taken where appropriate following Von Den Driesch (1976) but a tooth record following Hillson (1996) could not be complied due to a lack of suitable material. Counts and weights were noted for each context and counts made for each species. Where bone could not be identified to species, they were grouped as, for example, 'large mammal', 'bird' or 'small mammal'. Attempts were made, where possible, to refit possible fragments in the same bag and these were included in NISP counts. Information was recorded into an Excel database and a summary catalogue appears as Table 20. The full record is available as Appendix 2.

The bone assemblage

Quantification, provenance and preservation

A total of 2856g of bone, consisting of 172 elements, was recovered from this excavation, with the totals quantified by period, feature type, count and weight in Table 18. The bulk of the remains (85%) were derived from ditch fills, 14% was produced from pit fills and the remaining 1% of the bone was recovered from postholes and unstratified soils. Some features did not contain any dateable evidence, but the remaining features contained Roman pottery that largely suggested a 2nd to 4th Century AD occupation.

Feature Type	Total weight	Total Count
Ditch	2441g	146
Pit	400g	21
Posthole	2g	2
Terminus of ditch	9g	2
Unstratified	4g	1
Totals	2856g	172

Table 18. Quantification of the faunal remains by feature type, weight and count

The remains are in good condition, although a good deal of fragmentation has occurred from butchering, which was seen throughout the assemblage, with few reasonably complete bones present.

Six deposits produced burnt bone, including cattle and sheep remains. Burning varied in intensity from charred and blackened to blue/grey and fully oxidised white bone. These burnt remains are likely to indicate that at least some of the remains were disposed of in fires which may be cooking fires, industrial or domestic. Burnt bone was found in ditch and posthole fills, the later might suggest some burnt remains and ash were used for post-packing.

Only one bone showed canid gnawing, which was a sheep radius from Ditch fill L1094A. This might suggest scavenger activity around the dumped rubbish and perhaps even buried bone by the canid responsible.

Species range and modifications and other observations

Eight species were positively identified in the assemblage. The assemblage is quantified by species, feature and NISP in Table 19.

Cattle were found in fifteen contexts. Most remains are from adult animals, with one juvenile of a few months old identified in Ditch fill L1037A. Most of the bones are from secondary, meat-bearing bones and heavily butchered. One cut juvenile mandible from Ditch fill L1037A suggests that the tongue was also used for meat. A chopped cattle radius from Ditch fill L1010A showed a clean edged hole that is typical of bones pushed onto spits for roasting. Skinning evidence was also seen with cuts on a talus and metatarsal. One pathology was noted amongst the cattle remains with distorted growth on a proximal metatarsal, which would suggest strain from use as a traction animal.

Sheep/goat remains were recovered from eleven contexts. The majority of the ovicaprid bone was from adult animals, with one juvenile bone from the Roman Ditch fill L1037A. The ovicaprid remains all appear to be sheep in this assemblage and of a light and delicate build, suggesting ancient Soay-like sheep, which would be typical for the period. Elements were largely secondary butchering and meat-bearing bones, most of which had been butchered. The butchering did include one metatarsal with a cut from skinning.

A total of 55% of the bone by fragment count was unidentifiable to species, but many of these were small fragments of shaft and other bone, these were recorded as '**mammal**'. Some of these fragments had been burnt and many showed butchering.

Type	Species			Total
	Cattle	Mammal	Sheep/goat	
Ditch	44	79	23	146
Pit	7	10	4	21
Posthole		2		2

Terminus of ditch		2		2
Unstratified		1		1
Total	51	94	27	172

Table 19. Quantification of the faunal remains by feature, species and NISP.

Discussion and conclusions

The bulk of the animal remains are derived from secondary butchering. Meat came from the two main domestic species of cattle and sheep. Some primary butchering is evident and these bones may be direct waste from processing or the bones used for stews and soups. It is interesting to note that the only juvenile remains of cattle and sheep were both discovered in the same ditch fill (L1037), which would suggest remains from consumption of excess juvenile stock.

The lack of smaller species is perhaps partly due to a small assemblage and a recovery bias, but may also suggest adverse preservation for small species. It may be possible that the bulk of the meat was supplied by the kept stock on site. The remains in this assemblage are broadly similar to others of a similar size and date and suggest that these animals were kept for their multiple uses, with cattle providing traction and sheep providing wool, as well as breeding, milk and meat.

Table 20. Summary catalogue of the animal bone
Catalogue of the animal bone recovered from ECB6074
Listed in context order.

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Key:
NISP = Number of Individual Species elements Present
Measure = Measureable following Von Den Driesch, 1976.
Count = Countable following Davis, 1992.

Ctxt	Seg	Type	Date	Ctxt Qty	Wt (g)	Species	NISP	Ad	Juv	Neo	Element range	Meas	Cou	Butchering	Burnt	Gnaw	Comments
1009	B	Ditch	Roman	3	167	Cattle	3	3			scapula frag, neural spine			chopped			chopped vertebra spine
1009		Ditch	Roman	2	108	Cattle	2				pelvic frag, proximal MT			chopped, cut			distorted growth on MT
1010	D	Ditch	Roman	3	39	Sheep/goat	3	3			mandible, radius frags		1	chopped	3		all burnt black-grey
1010	D	Ditch	Roman	3		Cattle	1	1			LM1						
1010	D	Ditch	Roman			Mammal	2				fragments						
1010	A	Ditch	Roman	5	65	Cattle	1	1			radius			chopped, spit			hole from being pushed on spit?
1010	A	Ditch	Roman			Sheep/goat	1	1			LM1						
1010	A	Ditch	Roman			Mammal	3				fragments						
1011	D	Ditch	Roman	11	93	Mammal	11				fragments						
1011		Ditch	Roman	3	6	Mammal	3				fragments						
1011	C	Ditch	Roman	1	6	Mammal	1				broken fragment						
1011	A	Ditch	Roman	3	26	Sheep/goat	2	2			radius shaft, LM1			chopped			

1011	A	Ditch	Roman			Mammal	1				chopped frag			chopped			
1011	D	Ditch	Roman	4	15	Mammal	4				fragments				4		burnt grey to white
1017	A	Ditch	Undated	3	66	Cattle	3	3			pelvic frags		1	chopped			
1020		Ditch	Roman	14	364	Cattle	6	6			pelvic, calcaneus, radius, mandible		2	chopped, cut			
1020		Ditch	Roman			Sheep/goat	2	2			tibia, metatarsal			cut mt			
1020		Ditch	Roman			Mammal	6				fragments						
1021	C	Ditch	Roman	5	52	Cattle	1				iph		0.5				
1021	C	Ditch	Roman			Sheep/goat	1				humerus			chopped			humerus chopped mid shaft
1021	C	Ditch	Roman			Mammal	3				fragments						
1024		Ditch	Undated	2	153	Cattle	2	2			talus, humerus		1	chopped, cut			
1034		Ditch	Roman	2	41	Cattle	2	2			pelvic frags		1	chopped			
1035	A	Ditch	Roman	4	70	Cattle	2	2			talus, dph		1.5	cut			
1035	A	Ditch	Roman			Mammal	2				fragments						some iron and ?cess attached
1036	B	Ditch	Roman	13	120	Cattle	3	3			mandible, iso Dp4, femur head			chopped, cut			cut mand, chopped femur head
1036	B	Ditch	Roman			Sheep/goat	2	2			tibia, MT			chopped			light and delicate build
1036	B	Ditch	Roman			Mammal	8				fragments						
1036	A	Ditch	Roman	4	12	Sheep/goat	2	2			talus, radius		1	chopped, cut			small, light build
1036	A	Ditch	Roman			Mammal	2				fragments						
1037	D	Ditch	Roman	10	82	Cattle	1				mandible			cut			

											frags						
1037	D	Ditch	Roman			Mammal	9				fragments						
1037	A	Ditch	Roman	4	12	Sheep/goat	4	4			ulna, pelvic frags		1	chopped, cut	4		burnt black
1037	A	Ditch	Roman	9	251	Cattle	3		3		mandible, femur, iso LM2		1	cut, chopped			dp4 in full wear
1037	A	Ditch	Roman			Sheep/goat	1		1		mandible, femur, iso LM2						dp4 in wear
1037	A	Ditch	Roman			Mammal	5				fragments						
1037	C	Ditch	Roman	5	74	Cattle	1	1			talus		1	cut			cut on side of talus
1037	C	Ditch	Roman			Sheep/goat	1	1			tibia fragment			chopped			
1037	C	Ditch	Roman			Mammal	3				fragments						
1041		Terminus of ditch	Roman	2	9	Mammal	2				fragments						
1050	A	Ditch	Roman	2	36	Sheep/goat	2	2			tibia, humerus			chopped			Chopped mid shaft, dark stained bone
1051	B	Ditch	Undated	1	3	Mammal	1				rib frag			chopped			
1058		Pit	Undated	7	106	Cattle	2	2			femur frags			chopped			
1058		Pit	Undated			Mammal	5				fragments						
1064	C	Pit	Roman	1	9	Cattle	1	1			upper P3						
1067		Pit	Undated	1	73	Cattle	1				tibia - proximal shaft						
1070		Pit	Roman	6	34	Sheep/goat	1	1			scapula frag		1	chopped			
1070		Pit	Roman			Mammal	5				fragments						
1076		Pit	Undated	3	28	Sheep/goat	3	3			tibia frags			cut, chopped			

1077		Pit	Undated	3	150	Cattle	3	3			tibia fragments, proximal metatarsal			cut, chopped			
1082	B	Ditch	Undated	6	80	Mammal	6				fragments						large mammal frags
1086	A	Ditch	Roman	20	274	Cattle	12	12			upper and lower molars, femur head, jaw frags			cut, chopped	3		light burning
1086	A	Ditch	Roman			Mammal	8				fragments						
1086	B	Ditch	Roman	1	212	Cattle	1	1			humerus			chopped, cut			chopped mid shaft
1090		Ditch	Roman	1	3	Sheep/goat	1	1			LM2						
1094	A	Ditch	Undated	1	10	Sheep/goat	1	1			radius		1	chopped		1	gnawed
1102		Ditch	Undated	1	1	Mammal	1				broken fragment						
1156		Posthole	Undated	1	1	Mammal	1				burnt frag				1		burnt grey to white
1178		Posthole	Undated	1	1	Mammal	1				burnt frag				1		burnt white
U/S		Unstratified	Undated	1	4	Mammal	1				burnt frag				1		burnt white

6.5 The Mollusc Assemblage

Julie Curl

Methodology

The molluscs were identified to species using a variety of reference material. Shells were catalogued by species and where appropriate, counts were made of the number of individual species present (NISP), counts of top and base shells and an estimate of the minimum number of individuals (MNI). Bivalve shells are known to be used as painter's palettes and the remains are examined for any traces of pigments. Shells are also examined for any cut marks that would confirm their use for food from the prising apart of the shells or removal of meat with a knife. Information was recorded into an Excel database and a summary catalogue appears in Table 22. The full record is available in the digital archive.

The assemblage

A total of 11g of shell, consisting of 17 elements, was recovered from this excavation site, which is quantified by feature type in Table 21 by feature, species and NISP. Most of the remains were found in a Roman ditch fill, with a small quantity from unstratified soils.

Context	Seg	Type	Period	Ctxt Qty	Weight	F	M	L	Fos	Species	NISP
U/S		U/S	Undated	1	4		1			Oyster	1
1011	C	Ditch	Roman	16	7		1			Cockle	1
1011	C	Ditch	Roman			15				Ramshorn Snails *Planorbarius corneus*	15

Table 21. Quantification of the mollusc assemblage

Species

Three species of molluscs were identified, two marine in origin and one from freshwater.

Marine species

An incomplete marine Oyster was found in unstratified soils, which had been cut, indicating its use for meat. A single Cockle shell fragment was recorded from the Roman Ditch fill L1011C.

Freshwater shells

A group of Great Ramshorn Snails (*Planorbarius Corneus)* were seen in the Ditch fill L1011C. These snails are a common species in a variety of freshwater habitats, including ponds and ditches. The small juveniles of these snails can be transported

from one body of water to another trapped in fur and feathers of visiting birds and mammals.

Discussion and conclusions

This is a small shell assemblage of mixed origin. Such small numbers of marine shells would perhaps suggest redeposited food waste. The Ramshorn Snails are a common species in a variety of freshwaters, including ponds and ditches.

Context	Seg	Type	Period	Ctxt Qty	Weight	Freshwat	Marine	Land	Fossil	Species	NISP	Top	Base	MNI	Apex	Fragmen	Distort	Worms	Sponge	Barnacle	Attached	Cuts	Comments
U/S		U/S	Undated	1	4		1			Oyster	1	1							1			1	
1011	C	Ditch	Roman	17	7		1			Cockle	1												
1011	C	Ditch	Roman			15				Ramshorn Snail	15				8	7							varying sizes (ages) of Great Ramshorn Snail, *Planorbarius corneus*

Table 22. Catalogue of the mollusc remains from ECB6074

6.6 The Environmental Samples

Dr John Summers

Introduction

During the archaeological excavation of land north of Chapelfield Road, Guyhirn, 56 bulk samples for environmental archaeological analysis were taken and processed. Roman dates of 2nd-3rd century are attributable to many of the excavated features. In the absence of evidence to the contrary, this investigation assumes a Roman date for all of the sampled deposits. These include a number of postholes which formed a possible structure.

Samples taken during the archaeological evaluation of the site indicated preservation of charred cereal remains resulting from nearby Roman settlement. A prevalence of sedges, rushes and reeds in the samples suggested that they were exploited for fuel for the salterns and domestic hearths, most probably in the form of peat (Fosberry 2019).

Methods

Samples were processed at the Archaeological Solutions Ltd facilities in Bury St. Edmunds using standard flotation methods. The light fractions were washed onto a mesh of 500µm (microns), while the heavy fractions were sieved to 1mm. The dried light fractions were sorted under a low power stereomicroscope (x10-x30 magnification). Botanical and molluscan remains were identified and recorded using reference literature (Cappers *et al.* 2006; Jacomet 2006; Kerney and Cameron 1979; Kerney 1999) and a reference collection of modern seeds. Potential contaminants, such as modern roots, seeds and invertebrate fauna were also recorded in order to gain an insight into possible disturbance of the deposits.

Two column samples (<18> and <20>) were taken in 10cm intervals through ditches F1007D and F1012A for the purpose of mollusc analysis. These samples were also processed by flotation, sorted under a low power stereomicroscope (x10-x30 magnification), with mollusc shells identified using reference literature (Kerney and Cameron 1979; Kerney 1999).

Charcoal identifications were made for three samples. All fragments >2mm were examined and all suitable pieces were fractured on three planes (transverse, tangential and radial) for microscopic analysis. Transverse sections were characterised using a low-power stereomicroscope (x10-x30 magnification), and the microscopic features in the tangential and radial planes were examined using a metallurgical microscope with magnification up to x400. Identifications were made using reference literature (Schweingruber 1978). Quantification was by fragment count and weight (to the nearest 0.001g).

Results

The data from the bulk sample light fractions are presented in Table 23.

Economic evidence

Carbonised plant macrofossil remains were recorded in 20 of the bulk sample light fractions, 18 of which were from the 28 non-posthole samples (64%). Samples from the numerous postholes (Samples <31> to <62>), many of which may have been structural, contained very few carbonised remains and provided no evidence to advance any understanding about the activities associated with the possible structure in the north of the site.

In the remaining non-posthole deposits, carbonised cereal remains were generally the most recorded and were present in 14 samples. Cereal grains were present in low densities and included glume wheat, identified as spelt wheat (*T. spelta*) from chaff remains; hulled barley, identified as six-row (*H. vulgare* var. *vulgare*) by asymmetric grains and six-row lax-eared rachis segments; occasional oat (*Avena* sp.) grains; and a single free-threshing type wheat grain (*t. aestivum/turgidum* type). Barley and glume wheat were most common and likely to represent the primary economic crops. The free-threshing type wheat grain in ditch fill L1022 (F1007) could represent a short rounded spelt wheat grain misidentified as free-threshing type wheat or perhaps a weed contaminant amongst other cereals. In the absence of floret bases to determine whether a domestic species was present, oat grains could represent wild oats growing as part of the arable weed community. Some pea/bean seeds (large Fabaceae) were also present in L1014 and L1015 of Ditch F1012 and are likely to have been part of the diet at this time.

Cereal chaff was also frequently encountered, including barley rachis, wheat glume bases and rachis, and straw culm nodes. These are likely to represent crop processing by-products, which could have been generated by the routine, day-to-day processing of cereals for consumption. However, there may also have been some use of crop processing by-products as fuel in the salterns, although the density of remains is low and not on the same scale as dense chaff fuel deposits from other Roman features, such as kilns and ovens (e.g. van der Veen 1989). Use of chaff amongst the fuel resource was postulated at Middleton, Norfolk (Murphy 2001c) and other salterns, and it is also noted that it was used as temper in the briquetage (*ibid.*).

Non-cereal seeds of likely arable weed taxa were present in a number of deposits and included medium Fabaceae (vetch/tare type), dock (*Rumex* sp.), campion (*Silene* sp.), goosefoot (*Chenopodium* sp.), oraches (*Atriplex* sp.), cleavers (*Galium aparine*), chess (*Bromus secalinus* type) and other wild grasses (Poaceae). Some possible indicators of grassland habitats were present in the form of meadow/bulbous buttercup (*Ranunculus acris/bulbosus*) and ribwort plantain (*Plantago lanceolata*) but the number of specimens was low. There was also a signature for wet ground and fen conditions, in the form of sedge (*Carex* sp.), common spike-rush (*Eleocharis*

palustris) and great fen sedge (*Cladium mariscus*). These could represent gathered fenland vegetation that may have contributed to fuel resources (see below).

Fuel

Charcoal was identified from the three features with the greatest assessed quantities, which were L1035A (F1033), L1070 (F1061) and L1086A (F1085). The number of fragments was fairly limited and many of them were quite small, making identification challenging. Identification was attempted for all available fragments >2mm. All three samples (Table 24) were dominated by fragments of willow/poplar (*Salix/Populus* sp.). Willow and poplar are difficult to separate based on microscopic wood anatomy in charcoal but given the local fenland environment during the Roman period, it is likely that these specimens represent willow growing in wet areas, such as wet hollows, and by streams and ponds (cf. Stace 2010, 318-332). The small number of birch (*Betula* sp.) fragments in L1035A are also likely to represent trees growing in areas of heath or wetter peaty soils (cf. Stace 2010, 292-294). A number of very small twigs showing pith and a single year's growth, with a diffuse-porous vessel pattern remained unidentified. These remains indicate that local wetland environments were exploited for fuel wood. Given the association with briquetage and saltern debris, it is probable that willow wood was one of the fuel resources used in the process. Charcoal from a late Roman saltern at Middleton, Norfolk (Gale 2001b) contained a much wider range of tree taxa, while that from an early Roman saltern at Morton Fen, Lincolnshire, was much more limited, primarily alder and willow/poplar (Gale 2001a), and comparable to the present assemblage. This indicates that saltern sites made the most of locally available fuel resources and that the limited range of trees represented at Guyhirn is likely to reflect poor availability of local woodland resources, except for scrubby areas of local wetland. However, too few higher concentration samples of saltern waste were available from the present excavation to address this issue in detail.

It was postulated in the evaluation that gathered vegetation or peat fuel may have been used, based on the presence of reed and grass stems, as well as seeds of sedge and spike-rush (Fosberry 2019). Such vegetative remains were not common in the samples from the excavation but their presence in the evaluation is significant. In addition, relatively small numbers of carbonised seeds of plants from such sources in the present assemblage indicate that peat fuel or gathered vegetation is likely to have contributed to the fuel resource at the site. The small number of relevant remains may indicate that reeds, sedges or peat had a fairly limited role in activities at the site. However, as noted above, all of the samples were of relatively low density and too few higher concentration samples of saltern waste were available to address this issue in detail.

Carbonised plant macrofossils from the late Roman saltern at Middleton, Norfolk, were similarly low density and are considered to have been generated primarily as fuel residues (Murphy 2001c). The remains from this

site were taken to indicate use of cereal chaff, reed and sedge/sedge peat as fuel (*ibid.*). Likewise, the early Roman saltern at Morton Fen, Lincolnshire, produced evidence for the use of cereal chaff, coastal and grassland vegetation as fuel, likely imported specifically for the task (Murphy 2001b). As noted above, chaff was also recovered from the Guyhirn samples and could have contributed to the fuel resource for salt working.

Other fuel residues included fuel ash slag (vitreous silica-based slag), which was recorded as common and abundant in a number of deposits, including F1007, F1061, F1085 and F1101. This is likely to be material from fires over silica-rich substrates and has no direct bearing on identifying the types of fuels burned. Similar material was recovered from samples at Middleton Fen (Murphy 2001c).

Palaeoenvironmental reconstruction of Ditches F1007 and F1013 (molluscs)

Two large ditch features, F1007 and F1012, showed evidence for extensive mollusc preservation within their fills and column sequences were taken from their profiles in 10cm blocks to investigate changing conditions in the features over time using mollusc shells as a proxy. One of the intentions of this analysis was to investigate water conditions and whether either of the features had carried salt water at any point in their lifespan and, by extension, whether they may have acted as feeder channels for salt working. The results from this work are shown in Table 25.

Ditch F1007D

The basal samples (40-73cm) from F1007D contained relatively few mollusc shells. In these samples, aquatic taxa made up over 90% of the identified specimens, mostly the diminutive nautilus ram's-horn (*Gyraulus crista*). This is a species that is common to a range of permanently wet habitats, including quiet rivers, ponds, canals and weedy ditches (Kerney 1999, 67). A few shells of the common pond snail (*Lymnaea peregra*), a ubiquitous species of all kinds of aquatic habitats (Kerney 1999, 56) were recorded between 50cm and 60cm. Also present were indeterminate specimens of *Anisus* sp. and *Lymnaea* sp. This indicates that during the initial silting of F1007, it is likely to have been dominated by freshwater conditions and been permanently waterlogged throughout the year. The small range of terrestrial taxa included *Vallonia pulchella* and *Cochlicopa* sp., indicating damp/wet grassy habitats.

A peak in the number of shells was present between 20cm and 40cm, representing the base of fill L1011D. The number of shells was 248 in Sample <18c> and 81 in Sample <18d>. These were dominated by shells of aquatic and wetland taxa, although to a lesser extent than the basal 33cm. The most numerous shells were again of *Gyraulus crista*, which is indicative of permanently wet conditions. Other aquatic taxa were those that can tolerate seasonal desiccation (*Anisus leucostoma* and *Planorbis planorbis*) and it is likely that during this period the feature largely contained standing water,

although occasional drying out may have occurred. This may have been only in drier years rather than on a seasonal cycle. All aquatic indicators from this part of the fill were for freshwater only. There was also a proportion of marsh taxa (*Succinea pfeifferi*) and ephemeral wet habitats (*Lymnaea truncatula*), which likely occupied wet vegetation in the ditch margins. The most common terrestrial taxon was *Vallonia pulchella*, which is typical of water meadows, moist pastures, marshes and dune slacks (Kerney 1999, 108).

The number of shells declined rapidly in the upper 20cm of the feature (0-20cm), with no shells recovered from the upper 10cm (Sample <18a>). The taxa in the 10-20cm sample were dominated by terrestrial taxa (*Vallonia pulchella* and *Cochlicopa* sp.), with a small number of aquatic taxa (*Anisus leucostoma* and *Gyraulus crista*). This would appear to suggest that the silting of the ditch at this point made its fill predominantly dry, although only nine shells were present in this sample, making this interpretation tentative.

Ditch F1012A

The shells from F1012A were generally quite comparable to those from F1007A, although the overall number of shells was greater, particularly towards the middle of the sequence.

The basal 35cm (60-95cm) of the deposit showed a similarly small number of shells in the deposits to the basal fills of F1007D, although with remarkably few shells in the basal 25cm, which produced a total of only 8 shells. These basal 25cm of deposits may represent primary silting and slumping of material from the newly formed sides of the ditch, resulting in rapid deposition and little chance for mollusc communities to develop and be deposited in number. Bulk samples from L1013 contained greater numbers of shells (Table 1) but it is difficult to know precisely what part of the deposit was sampled in these instances.

The upper portion of L1013 and its interface with L1014 was slightly richer (60-70cm; Sample <20g>). Like the samples from the base of F1007D, *Gyraulus crista* was the dominant taxon. This was accompanied by margined ram's-horn (*Planorbis planorbis*) and small numbers of *Lymnaea* sp. and *Anisus* sp. *Planorbis planorbis* is a species characteristic of shallow pools and swampy ditches, including those liable to dry up during the summer (Kerney 1999, 58). However, the dominance of *Gyraulus crista* implies that the ditch is likely to have been permanently wet during most of this time. A small number of shells of *Hydrobia ventrosa*, a snail of low to moderate salinities that is often found in drainage ditches in coastal marshes (Kerney 1999, 31), were recorded in Sample <2> of L1013 (Table 23). These represent the only indication of more saline/brackish conditions from any of the samples from Ditches F1007 or F1012 and were significantly outnumbered by a range of freshwater aquatic molluscs, indicating that prevailing conditions were fresh rather than salt/brackish water.

A significant increase in the number of shells preserved and recovered occurred in the central fills of the feature (30-60cm). This is similar to the pattern seen in L1007D although the number of specimens was considerably greater. The largest number of shells were from *Gyraulus crista*, indicating permanently wet conditions. A few shells of *Bithynia tentaculata*, a species of slow-moving well-oxygenated water, such as rivers, canals and drainage dykes (Kerney 1999, 39) between 30cm and 50cm also support such an observation. Also present were significant numbers of *Planorbis planorbis*, *Lymnaea* sp. (predominantly *Lymnaea peregra*) and *Anisus* sp. (*Anisus leucostoma*), all of which can tolerate desiccation. It is possible therefore that periodic drying out of the ditch occurred, if not seasonally then at least during dry years. Some marsh taxa were recorded in the form of *Succinea/Oxyloma* sp. (30-50cm) and *Lymnaea truncatula* (30-40cm). Terrestrial taxa included a proportion of damp/wet grassy habitats (*Vallonia pulchella* and *Carychium tridentatum*), similar to the rest of the assemblage. Also present were snails of tall grasses and ground litter (*Cochlicopa lubrica* and *Punctum pygmaeum*) and some species of short dry grassland (*Pupilla muscorum* and *Vallonia costata*).

The upper 30cm (0-30cm) contained more limited numbers of shells, dominated by terrestrial taxa in the upper 20cm, reducing to 40% terrestrial types between 20cm and 30cm. In the upper 20cm, terrestrial snails were predominantly of wet grassland species *Vallonia pulchella*, while aquatic taxa included a small number of *Gyraulus crista*, *Lymnaea* sp. and *Anisus* sp. Between 20-30cm, the terrestrial taxa were still dominated by *Vallonia pulchella*. Wetland and aquatic taxa included *Lymnaea truncatula*, which ephemeral wet habitats (Kerney 1999, 51), and *Succinea/Oxyloma* sp., the common species of which are marsh/fen taxa (Kerney 1999, 76-79). Other species included *Anisus leucostoma* and *Planorbis planorbis*, both of which are able to tolerate seasonal desiccation. On balance, the molluscs from this portion of the ditch indicate wet conditions but with likely seasonal rather than permanent standing water. This is consistent with the more advanced silting of the feature by this point in time.

Summary

The molluscs from Ditches F1007 and F1012 show predominantly freshwater conditions, which were probably permanently wet during the early silting, becoming more susceptible to drying, either seasonally or perhaps less regularly, as the ditch silted further. In the upper profiles, the signature for standing water was lower and the shells suggest regular drying and areas of marshy grassland surrounding during the last stages of silting. No clear evidence of salt or brackish water was identified and it is more likely that these features acted as drainage channels for freshwater rather than being saltwater feeder channels for the salt working.

The strongest evidence for salt water in deposits from the site was *Hydrobia ulvae*, a snail of brackish and salt water in estuaries, intertidal mudflats and saltmarsh (Kerney 1999, 33). This was recovered from F1085A and F1061

(Table 23). Both of these features were associated with fuel ash slag, other fuel debris and probable waste material from salt working. It is likely that these shells were deposited with this debris, having originated in salt water used for salt extraction. There was no other evidence from any of the features for brackish or salt water within the excavation area. Combined with the archaeological evidence, the mollusc shells from the site as a whole indicate that it is unlikely that any of the excavated features acted as feeder channels for contemporary salt working.

At the site of Middleton, Norfolk, molluscs included a wide range of marine/ estuarine gastropods and bivalves, with no freshwater types present (Murphy 2001a). Some of the hydrobiid shells at Middleton also showed evidence of exposure to fire, indicating that they were likely to have been deposited in waste from evaporating hearths (*ibid*). As noted above, this is a possible source for the shells of *Hydrobia ulvae* in F1085 and F1061.

Discussion

The analysis of bulk samples from the site has provided some limited information regarding Roman diet and economy, which was primarily concentrated on spelt wheat and hulled barley. These crops were a common component of the regional Roman arable economy, although do not reflect the diversity shown at larger agricultural sites. The presence of cereal chaff and arable weed seeds may provide evidence for day-to-day crop processing as part of routine food preparation activities, although the use of chaff fuel at Roman salterns is a common occurrence (e.g. Murphy 2001b; 2001c). It is possible that local subsistence agriculture could have been concentrated on the raised ground of the roddon or on the drier fen edge to the east.

Fuel associated with nearby salt working activity included probable willow and some birch from local wet woodland or scrub habitats. Gathered fenland vegetation or peat is also likely to have been used but evidence indicates that this may not have been intensive, although the density of remains within the samples was generally low, making it difficult to be certain of the relative significance of different potential fuel resources. As noted above, some cereal chaff fuel could also have been employed.

Molluscs show that the site was generally quite wet during the Roman period, with shells of aquatic molluscs widespread throughout sampled pits and ditches. Evidence for standing water was common within the ditches, including F1007 and F1012, which demonstrated freshwater conditions, becoming more prone to seasonal drying as they silted up. Very little evidence for brackish or salt water was identified and it is proposed that the small number of *Hydrobia ulvae* shells in F1085 and F1061 were introduced with saltern waste rather than reflecting local hydrological conditions in these features. On balance, the evidence indicates that the ditches within the excavation area were primarily boundaries and drainage ditches, and that it is unlikely that any of them acted as feeder channels for nearby salt working.

Sample number	Context	Feature	Description	Spot date	Volume taken (litres)	Volume processed (litres)	% processed	Flot (g)	Cereals			Non-cereal taxa		Hazelnut shell	Charcoal		Molluscs		Contaminants					Other remains
									Cereal grains	Cereal chaff	Notes	Seeds	Notes		Charcoal>2mm	Notes	Molluscs	Notes	Roots	Molluscs	Modern seeds	Insects	Earthworm capsules	
1	1015	###	Ditch	Roman	40	20	50%	56	X	-	HB (1), Trit (1)	X	Large Fabaceae (1), *Silene* sp. (1), *Plantago lanceolata* (1), Medium Poaceae (1)	-	-	-	XXX	*Anisus leucostoma*, *Carychium* sp., *Cochlicopa* sp., *Gyraulus crista*, *Lymnaea peregra*, *Lymnaea truncatula*, *Planorbis planorbis*, *Pupilla muscorum*, *Vallonia* sp., *Vertigo* sp.	X	XX	X	X	-	Amphibian bone (X)
2	1013	###	Ditch	Roman	40	40	###	16	-	-	-	X	Large Fabaceae (1)	-	X	-	XXX	*Anisus leucostoma*, *Cochlicopa* sp., *Gyraulus crista*, *Hydrobia ventrosa*, *Lymnaea peregra*, *Planorbis planorbis*, *Pupilla muscorum*, *Succinea/ Oxyloma* sp., *Vallonia* sp., *Vertigo* sp.	X	XX	-	-	-	-
3	1014	###	Ditch	Roman	40	40	###	68	-	-	-	X	*Bromus* sp. (1), Large Poaceae (1)	-	X	-	XXX	*Anisus leucostoma*, *Cochlicopa* sp., *Gyraulus crista*, *Lymnaea palustris*, *Lymnaea peregra*, *Lymnaea truncatula*, *Planorbis planorbis*, *Pupilla muscorum*, *Succinea/ Oxyloma* sp., *Vallonia* sp.	X	XX	-	-	-	-

4	1011	###	Ditch	2nd-3rd C AD	40	40	####	19	X	-	Hord (1)	-	-	-	X	-	XX	*Anisus leucostoma, Gyraulus crista, Lymnaea palustris, Lymnaea peregra, Lymnaea truncatula, Planorbarius corneus, Planorbis planorbis, Succinea/ Oxyloma* sp., *Vallonia* sp., *Vertigo* sp.	X	XX	-	-	-	-
5	1010	###	Ditch	2nd-3rd C AD	40	40	####	60	-	-	-	-	-	-	-	-	XXX	*Anisus leucostoma, Cochlicopa* sp., *Gyraulus crista, Lymnaea peregra, Lymnaea truncatula, Planorbarius corneus, Planorbis planorbis, Pupilla muscorum, Succinea/ Oxyloma* sp., *Vallonia* sp., *Vertigo* sp.	XX	XX	-	-	-	-
6	1022	###	Ditch	2nd-3rd C AD	40	40	####	23	XX	-	HB (1), Hord (1), E/S (2), FTW (1), Trit (3), NFI (6)	XX	*Ranunculus acris/ bulbosus (*1), Amaranthaceae (1), *Galium aparine* (1), *Eleocharis sp.* (1), *Carex* cf. *trinervis* (1), *Carex* spp. (2), Cyperaceae (1), Medium Poaceae (1)	-	X	-	XX	*Anisus leucostoma, Carychium* sp., *Cochlicopa* sp., *Gyraulus crista*, *Lymnaea truncatula, Planorbis planorbis, Succinea/ Oxyloma* sp., *Vallonia* sp., *Vertigo* sp.	X	XX	-	-	-	Calcined bone (X), Fuel ash slag (XX)
7	1024	###	Pit	-	20	20	####	9	-	-	-	-	-	-	X	-	X	*Gyraulus crista, Lymnaea truncatula, Vallonia* sp.	X	XX	-	-	-	-
8	1027	###	Ditch	Roman	40	20	50%	14	-	-	-	-	-	-	-	-	X	*Gyraulus crista*	X	X	-	-	-	Small mammal bone (X)

9	1009	###	Ditch	2nd-3rd C AD	40	20	50%	22	-	-	-	-	-	-	-	-	XX	*Anisus leucostoma*, *Gyraulus crista*, *Vallonia* sp.	X	X	-	X	-	Fuel ash slag (XXX)
10	1013	###	Ditch	Roman	40	40	####	36	X	-	NFI (1)	X	*Cladium mariscus* (1)	-	X	-	XXX	*Anisus leucostoma*, *Cochlicopa* sp., *Gyraulus crista*, *Lymnaea peregra*, *Lymnaea truncatula*, *Planorbis planorbis*, *Vallonia* sp., *Vertigo* sp.	X	XX	-	-	-	-
11	1035A	###	Ditch	Roman	20	20	####	18	X	X	Trit (1), NFI (2), Spelt GB (1), Culm (5)	XX	*Rumex* sp. (1), *Eleocharis palustris* (1), *Bromus secalinus* (3), *Bromus* sp. (4), Large Poaceae (3), Medium Poaceae (1)	-	XX	Diffuse porous	X	*Vertigo* sp.	XX	XX	-	XX	-	Monocot culm (1), Dung pellet? (1), Amphibian bone (X), Calcined bone (X)
12	1036A	###	Ditch	Roman	40	40	####	26	X	-	Trit (1)	X	Medium Poaceae (1)	-	XX	Diffuse porous	XX	*Gyraulus crista*, *Lymnaea truncatula*, *Planorbis planorbis*, *Vallonia* sp.	X	XX	-	-	X	-
13	1037A	###	Ditch	Roman	40	40	####	12	-	-	-	X	*Carex* sp. (1)	-	X	-	XX	*Anisus leucostoma*, *Cochlicopa* sp., *Vallonia* sp.	XX	XX	-	-	-	Dung pellet? (1)
14	1042	###	Ditch	Roman	20	20	####	25	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
15	1053	###	Post Hole	-	10	10	####	1	-	-	-	-	-	-	-	-	X	*Vallonia* sp.	X	-	X	-	-	-
21	1086	###	Ditch	Roman	20	20	####	66	-	-	-	X	Polygonaceae (1)	-	X	-	X	*Gyraulus crista*, *Planorbis planorbis*, *Succinea/ Oxyloma* sp., *Vallonia* sp.	X	X	-	-	-	Fuel ash slag (XXX)

22	1078	###	Ditch - Burnt Turf / Peat	Roman	1	1	####	4	XX	X	HTB (1), HB (5), Hord (1), Trit (2), Oat (2), NFI (5), 6-row lax-ear Hord rachis (1), E/S GB (1), Culm (3)	-	-	-	X	-	XX	*Vallonia* sp.	X	X	-	-	-	Fuel ash slag (XX)
23	1070	###	Pit	Roman	20	10	50 %	76	XX	XX	HTB (1), HB (4), Hord (1), E/S (4), Trit (1), Oat (1), NFI (2), 6-row lax-ear Hord rachis (3), Hord rachis (2), Spelt GB (2), E/S GB (1), E/S SF (4), E/S rachis (1), Culm (11)	XX	cf. *Crataegus* sp. (1), *Rumex* sp. (1), *Silene* sp. (1), *Atriplex* sp. (1), *Carex* sp. (1), Cyperaceae (1), *Bromus secalinus* (2), Large Poaceae (2)	-	X X	Diffuse porous incl. RW	XX	*Carychium* sp., *Cepea* sp., *Gyraulus crista, Hydrobia ulvae, Planorbis planorbis, Succinea/ Oxyloma* sp.	X	X	-	-	-	Fuel ash slag (XX)
24	1077	###	Pit	Roman	20	10	50 %	12	X	-	HB (1)	X	*Galium* sp. (1)	-	X	-	XX	*Cepea* sp., *Cochlicopa* sp., *Hydrobia ulvae, Trichia hispida* group, *Vallonia* sp.	XX	XX	-	-	-	-
25	1091A	###	Ditch	Roman	40	40	####	##	-	X	Spelt GB (1)	X	*Rumex* sp. (1), *Chenopodium* sp. (1), Amaranthaceae (1), *Galium* sp. (1), *Bromus* sp. (2), Large Poaceae (3)	-	X	-	XX	*Anisus leucostoma, Hydrobia ulvae, Lymnaea truncatula, Pupilla muscorum, Succinea/ Oxyloma* sp., *Vallonia* sp., *Vertigo* sp.	X	XX	-	-	-	Fuel ash slag (XXX)

26	1092A	###	Ditch	Roman	40	40	####	##	X	X	HB (1), Trit (2), Culm (3)	X	*Persicaria* sp. (1), *Galium* sp. (1), *Cladium mariscus* (1), Large Poaceae (2)	-	X	-	XX	*Anisus leucostoma, Cochlicopa* sp., *Gyraulus crista, Hydrobia ulvae, Succinea/ Oxyloma* sp., *Vallonia* sp.	X	XX	-	-	-	Fuel ash slag (XXX)
27	1094	###	Ditch	-	20	10	50%	7	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
28	1086A	###	Ditch	Roman	20	20	####	9	XX	XX	HB (5), Hord (1), E/S (1), Trit (7), NFI (11), Spelt GB (13), E/S GB (21), E/S SF (3), E/S rachis (2), Trit rachis (1), Culm (6)	XX	Medium Fabaceae (1), *Bromus secalinus* (4), *Bromus* sp. (13), Large Poaceae (7)	-	XX	Diffuse porous	X	*Carychium* sp.	X	X	-	XX	-	Bone (burnt phalanx) (1), Fuel ash slag (XX)
29	1097A	###	Ditch	Roman	20	20	####	17	X	X	Hord (1), NFI (1), Culm (1)	X	Medium Fabaceae (1), *Bromus* sp. (1), Large Poaceae (1)	-	X	-	-	-	X	X	-	-	-	Burnt bone (X), Fuel ash slag (X)
30	1102A	###	Ditch	-	20	20	####	82	X	X	HB (2), NFI (2), Culm (2)	X	*Bromus* sp. (1)	-	X	-	XX	*Anisus leucostoma, Gyraulus crista, Succinea/ Oxyloma* sp., *Trichia hispida* group, *Vallonia* sp.	XX	XX	-	-	X	Fuel ash slag (XXX)
31	1104	###	Post Hole	-	20	20	####	18	X	X	E/S (1), Oat awn (1)	-	-	-	X	-	X	*Vertigo* sp.	XX	XX	-	-	-	-
32	1114	###	Post Hole	-	10	10	####	11	-	-	-	-	-	-	-	-	-	-	X	XX	-	-	-	-
33	1116	###	Post Hole	-	10	10	####	2	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-

34	1118	###	Post Hole	-	10	10	####	13	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	Small mammal bone (X)
35	1120	###	Post Hole	-	10	10	####	6	-	-	-	-	-	-	-	-	-	-	-	X	XX	-	-	-	-
36	1122	###	Post Hole	-	10	10	####	5	-	-	-	-	-	-	X	-	-	-	-	X	X	-	-	-	-
37	1124	###	Post Hole	-	10	10	####	5	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
38	1126	###	Post Hole	-	10	10	####	2	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
39	1128	###	Post Hole	-	10	10	####	12	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
40	1132	###	Post Hole	-	10	10	####	21	-	-	-	-	-	-	-	-	-	-	-	X	X	X	-	-	-
41	1136	###	Post Hole	-	10	10	####	25	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
42	1134	###	Post Hole	-	10	10	####	5	-	-	-	-	-	-	-	-	-	-	-	X	X	-	X	X	-
43	1142	###	Post Hole	-	10	10	####	13	-	-	-	-	-	-	-	-	-	-	-	X	X	-	X	-	-
44	1144	###	Post Hole	-	20	20	####	14	-	X	Culm (1)	-	-	-	X	-	XX	*Anisus leucostoma, Cochlicopa* sp., *Lymnaea truncatula, Pupilla muscorum, Succinea/ Oxyloma* sp., *Vallonia* sp.	XX	XX	-	-	-	-

45	1150	###	Post Hole	-	10	10	###	39	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
46	1138	###	Post Hole	-	10	10	###	2	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
47	1140	###	Post Hole	-	10	10	###	11	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
48	1152	###	Post Hole	-	10	10	###	31	-	-	-	-	-	-	-	-	-	-	X	X	-	X	-	-
49	1154	###	Post Hole	-	10	10	###	4	-	-	-	-	-	-	-	-	X	*Vallonia* sp.	X	X	-	-	-	-
50	1156	###	Post Hole	-	10	10	###	12	-	-	-	-	-	-	-	-			X	X	-	-	-	-
51	1158	###	Post Hole	-	10	10	###	8	-	-	-	-	-	-	-	-	-	-	XX	X	-	-	X	-
52	1160	###	Post Hole	-	10	10	###	1	-	-	-	-	-	-	-	-	-	-	X	X	-	X	-	-
53	1162	###	Post Hole	-	10	10	###	2	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
54	1164	###	Post Hole	-	10	10	###	7	-	-	-	-	-	-	-	-	X	*Vallonia* sp.	XX	XX	-	-	X	-
55	1168	###	Post Hole	-	10	10	###	4	-	-	-	-	-	-	-	-	-	-	X	X	-	X	-	-
56	1172	###	Post Hole	-	10	10	###	2	-	-	-	-	-	-	-	-	-	-	XX	XX	-	-	X	-

57	1176	###	Post Hole	-	10	10	####	12	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
59	1178	###	Post Hole	-	10	10	####	1	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
60	1146	###	Post Hole	-	10	10	####	1	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
61	1148	###	Post Hole	-	10	10	####	10	-	-	-	-	-	-	-	-	-	-	-	X	XX	-	X	-	-
62	1181	###	Post Hole	-	10	10	####	2	-	-	-	-	-	-	-	-	-	-	-	XX	XX	-	X	X	-

Table 23. Results from the bulk sample light fractions from Chapelfield Road, Guyhirn. Abbreviations: HB = hulled barley (*Hordeum* sp.); Hord = barley (*Hordeum* sp.); E/S = emmer/ spelt wheat (*Triticum dicoccum/ spelta*); FTW = free-threshing type wheat (*Triticum aestivum/ turgidum*); Trit = wheat (*Triticum* sp.); Oat (*Avena* sp.); Rye (*Secale cereale*); NFI = not formally identified (indeterminate cereal grain).

			***Betula* sp.**		***Salix/ Populus* sp.**		**Indet diffuse porous RW**	
Sample	**Context**	**Feature**	**Count**	**Weight (g)**	**Count**	**Weight (g)**	**Count**	**Weight (g)**
11	1035A	1033	2	0.148	14	0.803	-	-
23	1070	1061	-	-	20	1.799	9	0.116
28	1086A	1085	-	-	19	0.401	4	0.043

Table 24. Charcoal identifications from selected contexts

Sample	18a	18b	18c	18d	18e	18f	18g	20a	20b	20c	20d	20e	20f	20g	20h	20i	20j
Context	1011D	1011D	1011D	1011D	1010D	1009D	1008D	1015	1015	1015	1015/ 1014	1014	1014	1014/ 1013	1013	1013	1027
Feature	1007	1007	1007	1007	1007	1007	1007	1012	1012	1012	1012	1012	1012	1012	1012	1012	1012
Depth	0-10cm	10-20cm	20-30cm	30-40cm	40-50cm	50-60cm	60-73cm	0-10cm	10-20cm	20-30cm	30-40cm	40-50cm	50-60cm	60-70cm	70-80cm	80-90cm	90-95cm
Volume (litres)	1	1	1	1	1	1	1.3	1	1	1	1	1	1	1	1	1	0.5
Anisus leucostoma (Button ram's-horn)	-	2	5	4	-	-	1	-	-	3	15	9	1	-	-	-	-
Anisus sp.	-	-	47	15	-	1	1	1	-	8	52	66	6	2	-	-	1
Bithynia tentaculata (Common Bithynia)	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-
Carychium tridentatum (Slender herald snail)	-	-	-	-	-	-	-	-	1	1	-	-	1	-	-	-	-
Carychium sp.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Cochlicopa lubrica (Slippery moss snail)	-	-	2	1	-	-	-	-	-	-	1	2	2	-	-	-	-
Cochlicopa sp.	-	1	4	2	-	-	-	-	-	-	1	2	1	-	-	-	-
Gyraulus crista (Nautilus ram's-horn)	-	1	83	23	28	24	23	-	1	14	138	723	552	38	-	-	4

Lymnaea peregra (Common pond snail)	-	-	-	1	-	3	-	-	-	-	4	19	10	1	-	-	-
Lymnaea truncatula (Marsh pond snail)	-	-	5	1	-	-	-	-	-	5	5	-	-	-	-	-	-
Lymnaea sp.	-	-	22	14	1	5	6	1	1	1	77	200	80	3	-	1	-
Oxyloma pfeifferi (Pfeiffer'samber snail)	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Oxyloma/ Succinea sp.	-	-	-	5	-	-	-	-	-	4	4	1	-	-	-	-	-
Planorbis planorbis (Margined ram's-horn)	-	-	2	2	-	-	-	-	-	1	7	44	26	8	-	-	-
Planorbis sp.	-	-	6	4	-	-	-	-	-	3	21	50	41	3	-	-	-
Punctum pygmaeum (Dwarf snail)	-	-	-	2	-	-	-	-	-	-	-	1	-	1	-	-	-
Pupilla muscorum (Moss chrysalis snail)	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-
Vallonia costata (Ribbed grass snail)	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-
Vallonia pulchella (Smooth grass snail)	-	1	18	2	1	-	-	9	4	6	5	11	11	-	-	-	-
Vallonia sp.	-	4	37	3	1	3	1	5	6	17	12	10	25	3	-	-	-
Vertigo pygmaea (Common whorl snail)	-	-	12	1	1	-	-	-	1	1	-	4	6	-	-	-	-
Vertigo sp.	-	-	4	-	-	-	1	-	-	1	1	-	2	-	1	-	1
Total	**0**	**9**	**248**	**81**	**32**	**36**	**33**	**16**	**14**	**65**	**344**	**1149**	**766**	**59**	**1**	**1**	**6**

Table 25. Mollusc identifications from Columns <18> and <20>

7 DISCUSSION

7.1 Roman saltmaking in the fens

7.1.1 The fenland basin comprises the largest area of Holocene deposits in Britain and has a complex palaeoenvironmental history (Smith *et al* 2012). At the commencement of the Postglacial interval, the Fen basin was dry land drained by a series of rivers flowing into a major outlet that ran out through the Wash. Early Mesolithic hunter-gatherers camped adjacent to ponds and lakes on the river terraces and probably used the river valleys as their main access routes. Rises in sea level have caused periodic incursion of water into the surrounding fl at fen plains, resulting in the deposition of silts and estuarine clays. The environment created as a result was one of extensive salt-marshes with fresh water fens and large expanses of peat generated under waterlogged, anaerobic conditions (Seale 1975; Hall 1996). This created conditions conducive to saltmaking in the fenland region and this area contains some of the earliest known saltmaking in the UK, with evidence for the production of salt in the middle Bronze Age having been identified at Welland Bank Quarry (Lane 2005, 47).

7.1.2 Roman saltmaking sites lie mainly on the edge of the Roman fen and were closely associated with roddons, like the one that the current site is located on (Hall 1996, 169; fig.94). Roman saltmaking sites in the fens have been identified as dense spreads of fragmented ceramic materials, often covering an area little more than 30m diameter. This material represents the remains of hearths, ovens, shallow ceramic containers and objects which supported or clipped together the containers in or on the heating structures (Lane 2005, 47). This is how the Roman saltern that lies to the north-east of the current site (CHER 09590 ECB2869) was identified. Field-walking recovered quantities of briquetage and pottery and aerial photography identified associated enclosures and evidence of settlement. In Lincolnshire, the known salt-making sites appear to have operated mainly during the 1st to 2nd centuries AD whereas, in the southern parts of the fens, in Norfolk and Cambridgeshire, the known sites date mainly to the 2nd and 3rd centuries AD (Lane 2005, 47). Dating evidence from the Chapelfield Road site would appear to be consistent with this pattern.

7.2 Salt production

7.2.1 For the production of salt, certain apparatus and conditions are required. The first of these is a supply of saline water. The environmental conditions that would have been prevalent at the time in this fenland landscape would have meant that salt-water was in ready supply. None of the excavated Fenland sites appeared to be located on active salt-water creeks, with manmade ditches being the favoured way of directing brine to the working areas (Lane 2005, 53). Certainly numerous ditches were present at the current site. Also present were numerous fragments of briquetage, representing the troughs, or salt pan vessels, and the associated pedestals and support bars that were integral to the evaporation and concentration process. These would have been associated with hearths to supply heat to aid the evaporation process. No indication of such hearths was present at the current site either during excavation or during the preceding evaluation (Browne and Clarke

2019). Indications of the direct application of heat were present in the form of material described as ‘fuel ash slag’ which was recovered from several features across the site. At Broomhey Farm in Kent, this material has been identified as clay vitrified through the presence of salt which acts as a flux to lower the melting point of the clay (Miles 2004, 315).

7.2.2 Without clear evidence for hearths, it cannot be stated with any certainty that salt-making was being carried out at the current site. It is possible that such features were obscured by later features or existed beyond the limits of the excavated area. However, environmental analysis of the ditches recorded in the excavated area, which are potentially feeder ditches for the provision of salt-water to the salt making site, provided very little evidence for brackish or salt water conditions within them at any point. Shells of the marine species *Hydrobia ulvae* were found in F1085 and F1061 but it appears likely that these were attached to the briquetage that was deposited into these features. Overall, the environmental evidence indicates that the ditches within the excavation area were primarily boundaries and drainage ditches, and that it is unlikely that any of them acted as feeder channels for salt working within the immediate vicinity. Small numbers of examples of marine species such as oyster and cockle were recovered during excavation but it is likely that these represent food waste of the type that may be found at any Romano-British site.

7.2.3 No indication of the large pit-like feature, recorded during the preceding evaluation (Browne and Clarke 2019) and which was interpreted as being directly associated with saltmaking during the Romano-British period, was recorded during the excavation. A similar feature, Pit F1061, which also contained multiple fills and significant quantities of briquetage, was recorded to the east. It is possible that F1061 was associated with salt production. Its flat base could have made it suitable for containing apparatus associated with this industry. However, there was no such apparatus found *in situ*, there was no indication of heating of the surrounding soils, and ash- and charcoal-rich fills were not present until higher up in the feature’s fill sequence which suggests the deposition of refuse material from elsewhere. It is possible that the primary function of the pit was not for the disposal of waste materials and that it became used for this only when its primary function was fulfilled, however, there are no clear indications of any other function, either through the artefacts and materials recovered from it or through its spatial relationships with other features.

7.2.4 The site also lacked the other appurtenances of saltmaking, such as settling tanks, or indicators such as the ‘red hills’ and ‘black hills’ that often accompany such sites (Biddulph 2017, 224). However, the various ashy fills noted in several of the recorded features may represent the same material as that from which these mounds were composed. With the obvious presence of debris from the saltmaking process, this site was clearly associated with this industry despite the lack of evidence for it having been carried out within the immediate vicinity of the excavated site. It appears most likely that this association is limited to the use of this site for the deposition of refuse and debris generated as part of the saltmaking process. The most obvious source for this debris material may be the putative saltern site (CHER 09590 ECB2869), identified through fieldwalking and from analysis of aerial photographs, to the north-east. This site, however, has not been subject to

excavation and may represent another location at which saltmaking refuse was dumped with the true location of the saltern somewhere else in the vicinity.

7.2.5 The Fenland Survey (Silvester 1991) recorded the presence of a group of at least fourteen early Romano-British salterns along the west and south-western margins of the Cambridgeshire Fens some distance to the west of Wisbech the nearest group of sites to Wisbech St. Mary and Guyhirn may be those of late Roman date found along the line of the Fen Causeway between Upware and Denver (Timberlake 2019, 33). Lane (2005, 47), however, suggests that in the southern parts of the fens, in Norfolk and Cambridgeshire, that the known sites date mainly to the 2nd and 3rd centuries AD, which might be considered to be the middle part of the Romano-British period. Nonetheless, the archaeological work conducted at this site, in conjunction with the possible saltern previously identified to the north-east (CHER 09590 ECB2869), might be indicative of a concentration of saltmaking in this area that has previously been unidentified. The topographical and environmental conditions which appear to have prevailed here during the Romano-British period would certainly make this a viable area in which this industry could flourish.

7.2.6 Many salterns are likely to have been small-scale operations only serving a fairly localised market but others may have been incorporated into villa estates and run as an economic concern alongside the cultivation of crops and livestock farming (Biddulph 2017, 229). Not far away, in the vicinity of March, it has been suggested that there were ports from which locally produced salt was exported (McCarthy 2013, 60). This suggests the presence of a fairly large-scale and well-organised salt industry in the southern fenland region. It is possible that the salt industry was controlled by the putative Imperial Fenland estate (Stukeley 1776, after Hall and Coles 1994, 121; Richmond 1955, 130-131; Salway 1970; Whitwell 1982; Millett 1992, 120). However, the Imperial Fen Estate theory is now often rejected (e.g. Fincham 2002) and may be an over-simplification of the much more complex development of settlements along the fen edge during the Roman period (Evans 2013, 13-15).

7.3 Evidence for other activity at the site

7.3.1 A concentration of postholes in the central northern part of the site has been identified as representing two structures, St1179 and St1112, with a further group of postholes that may be associated. Finds were limited from these features but their proximity to features of Romano-British date has been taken to suggest that these features were contemporary. St1112 was rectilinear in form whereas St1179 displayed a less obvious structural form. There is, therefore, little in the arrangement of the postholes forming these groups to indicate the function of the structures. They could have formed small storage sheds or represent racks for stacking the apparatus associated with saltmaking. At the salt production site recorded at Denver in Norfolk, a ring-gully was recorded which was interpreted as a the eaves-drip gully for a small hut (perhaps a store) or covered stack, possibly of fuel used in the salt-production process (Gurney 1986, 136), and it is possible that the structures recorded at the current site filled a similar role.

7.3.2 Analysis of the environmental samples taken during excavation has shown the presence of cereal chaff and arable weed seeds that may provide evidence for day-to-day crop processing as part of routine food preparation activities. However, the use of chaff fuel at Roman salterns is a common occurrence (e.g. Murphy 2001b; 2001c). The animal bone assemblage consisted of 172 elements, weighing 2856g. The bulk of this assemblage appears to have been derived from secondary butchering although some primary butchering is evident and it has been suggested that these bones may be direct waste from processing or bones used for stews and soups. Some burnt bone was also present and this was considered to represent food waste disposed of in fires. The overall character of these assemblages suggests the presence of domestic occupation in the vicinity and may indicate that this site was used for the disposal of both industrial waste from saltmaking and domestic waste. It is likely, however, that the disposal of this material represents the final acts at the site. Its function during the time that the structures were in use and the ditches acted as boundaries or drainage features is perhaps most likely to have been as some kind of yard associated with the saltmaking industry but not containing the apparatus involved in the production of salt.

7.4 The later features

7.4.1 The trial trench evaluation which preceded excavation here recorded the presence of three ditches which truncated the Roman remains, which resulted in the incorporation into their fills of large quantities of saltmaking briquetage. Their orientation along the dominant north-west to south-east axis of the surrounding fields and drains strongly suggests these divisions are of relatively recent origin (Browne and Clarke 2019). These features were also recorded, as Ditches F1007 and F1012, during the excavation. Environmental samples from these features were investigated to determine whether or not they could have held salt-water and were therefore features of late date within the Roman sequence of occupation. This analysis showed no evidence for saline conditions within these features and this may be considered to confirm the previous conclusions regarding their function.

8 CONCLUSIONS

8.1 The preceding trial trench evaluation concluded that the recovery of a large quantity of briquetage from features in the western part of the development area strongly suggested the presence of significant remains associated with salt making in the immediate vicinity (Browne and Clarke 2019). The character of the archaeology recorded during the excavation was in keeping with that recorded previously but did not produce primary evidence of saltmaking. Timberlake (2019, 33) suggested that further work at this site would reveal evidence of saltmaking in the form of brine tanks and elongated hearth pits with the remains of hearth structures and a profusion perhaps of *in situ* dumped briquetage furniture (bricks and pedestal supports) plus larger fragments of the briquetage vessels themselves. It is possible that such evidence exists beyond the limit of excavation but, beyond being used for the deposition of refuse material from this industry, none of the recorded features could be directly related to saltmaking. The lack of evidence for saline

conditions in the ditches suggests that they did not operate as feeder channels to supply salt-water to the site.

8.2 It is possible that the putative saltern site previously recorded to the north-east (CHER 09590 ECB2869) is the source of the material recovered from this site or this might indicate the presence of multiple locations at which saltmaking was carried out in this area. The prevailing topographical and environmental conditions of this area during the Romano-British period would have made it a suitable location for this industry to flourish. With, thus far, only briquetage recovered as surface finds and as refuse material deposited into unrelated features, it is clear that there must still exist primary evidence of Romano-British saltmaking somewhere in the immediate vicinity.

DEPOSITION OF THE ARCHIVE

Archive records, with an inventory, will be deposited with any donated finds from the site at Cambridge County Council Archaeological Store. The archive will be quantified, ordered, indexed, cross-referenced and checked for internal consistency.

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APPENDIX 1 CONCORDANCE OF FINDS

Feature	Context	Seg.	Description	Spot Date (Pot Only)	Pot Qty	Pottery (g)	A.Bone (g)	Other Material	Other Qty	Other (g)
1007	1008		Fill of Ditch					Briquetage	5	145
1007	1009		Fill of Ditch	Roman	1	8	108			
1007	1009	B	Fill of Ditch	Roman	2	9	167	Briquetage	18	42
1007	1010	A	Fill of Ditch	2nd C AD	8	102	65	Fuel Ash Slag		1
1007	1010	A	Fill of Ditch					B.Flint		1
1007	1010	A	Fill of Ditch					Briquetage	55	575
1007	1010	B	Fill of Ditch	Roman	2	32		Briquetage	3	30
1007	1010	C	Fill of Ditch	Roman	2	20		Briquetage	2	16
1007	1010	D	Fill of Ditch	Mid 2nd-3rd C AD	7	163	39	B.Bone		11
1007	1010	D	Fill of Ditch					Briquetage	8	56
1007	1011		Fill of Ditch				6	Briquetage	3	6
1007	1011	A	Fill of Ditch	2nd-3rd C AD	11	154	26	B.Flint		12
1007	1011	A	Fill of Ditch					Briquetage	112	454
1007	1011	C	Fill of Ditch	Roman	3	27	6	Fuel Ash Slag		37
1007	1011	C	Fill of Ditch					Briquetage	46	242
1007	1011	C	Fill of Ditch					Shell		7
1007	1011	D	Fill of Ditch	2nd C AD	49	241	93	B.Bone		15
1007	1011	D	Fill of Ditch					Briquetage	17	144
1012	1013		Fill of Ditch					Briquetage	6	34
1012	1013	B	Fill of Ditch					Briquetage	3	11
1012	1014	A	Fill of Ditch					Briquetage	180	2482
1012	1014	B	Fill of Ditch					Briquetage	8	29
1012	1015	A	Fill of Ditch	Roman	1	5		Briquetage	61	798
1012	1015	B	Fill of Ditch					Briquetage	7	24
1016	1017	A	Fill of Ditch				66	Fuel Ash Slag		48
1016	1017	C	Fill of Ditch					Briquetage	11	1587

1016	1018	A	Fill of Ditch					Briquetage	6	132
1016	1020		Fill of Ditch	?2nd C AD	1	52	364	Fuel Ash Slag		791
1016	1020		Fill of Ditch					Briquetage	20	1336
1016	1021		Fill of Ditch							
1016	1021	C	Fill of Ditch	Mid-Late 2nd C AD	5	151	52	Briquetage	41	522
1016	1024		Fill of Ditch				153	Fuel Ash Slag		5903
1012	1027		Fill of Ditch					Briquetage	1	9
1033	1034		Fill of Ditch	Roman	1	32	41	Briquetage	7	562
1033	1035	A	Fill of Ditch				70	Briquetage	13	102
1033	1036	A	Fill of Ditch	Roman	2	35	12	Briquetage	7	187
1033	1036	B	Fill of Ditch					Briquetage	1	180
1033	1036	C	Fill of Ditch					Briquetage	5	49
1033	1037		Fill of Ditch	Late 2nd-3rd C AD	7	241		Briquetage	2	61
1033	1037	A	Fill of Ditch	Roman	4	59	251	Fuel Ash Slag		3
1033	1037	A	Fill of Ditch					Briquetage	74	931
1033	1037	A	Fill of Ditch					B.Bone		12
1033	1037	C	Fill of Ditch				74			
1033	1037	D	Fill of Ditch	Mid 2nd-4th C AD	3	103	82	Briquetage	5	369
1040	1041		Fill of Ditch Terminus	Roman	2	27	9	Briquetage	1	45
1016	1048	A	Fill of Ditch					Fuel Ash Slag		3362
1016	1049		Fill of Ditch					Fuel Ash Slag		202
1016	1049		Fill of Ditch					Briquetage	5	999
1016	1049	A	Fill of Ditch					Fuel Ash Slag		1661
1016	1050		Fill of Ditch	Mid/Late 2nd-Early 3rd C AD	4	121		Briquetage	37	1709

1016	1050	A	Fill of Ditch	Roman	3	257	36			
1016	1051		Fill of Ditch					Briquetage	14	385
1016	1051	B	Fill of Ditch				3	Fuel Ash Slag		538
1016	1051	B	Fill of Ditch					Briquetage	16	756
1054	1055		Fill of Pit	Roman	1	17				
1057	1058		Fill of Pit				106			
1060	1064	C	Fill of Pit	Roman	1	16	9	Briquetage	4	39
1061	1067		Fill of Pit					Briquetage	8	149
1061	1067		Fill of Pit				73	Fuel Ash Slag		10
1061	1070		Fill of Pit	(M2? +) Roman	2	240	34	Fuel Ash Slag		61
1061	1070		Fill of Pit					Briquetage	19	471
1061	1076		Fill of Pit				28	Briquetage	13	678
1061	1077		Fill of Pit				150	Briquetage	22	591
1061	1077		Fill of Pit							
1062	1082	B	Fill of Ditch				80	Briquetage	3	26
1085	1086	A	Fill of Ditch	Roman	7	151	274	Briquetage	8	79
1085	1086	B	Fill of Ditch				212	Briquetage	101	1576
1033	1090	B	Fill of Ditch	Late 1st-4th C AD	3	263	3	Briquetage	17	161
1085	1092	A	Fill of Ditch					Cu Brooch*	1	9
1093	1094	A	Fill of Ditch				10			
1095	1096	B	Fill of Gully					Briquetage	5	95
1099	1100		Fill of Ditch					Briquetage	1	83
1101	1102		Fill of Ditch					Fuel Ash Slag		9
1101	1102		Fill of Ditch					Briquetage	8	67
1101	1102	B	Fill of Ditch				1	Briquetage	6	44
1155	1156		Fill of Post Hole					B.Bone		1
1177	1178		Fill of Post Hole					B.Bone		1
U/S	U/S		Unstratified					B.Bone		4

U/S	U/S		Unstratified					Briquetage	87	698
U/S	U/S		Unstratified					Shell		4
U/S	U/S		Unstratified - F1033B				206	Fuel Ash Slag		46
U/S	U/S		Unstratified - F1033B					Briquetage	37	974

*Cu Brooch was recovered from the residue of enviro sample 26

OASIS DATA COLLECTION FORM: England

Printable version

OASIS ID: archaeol7-397661

Project details

Project name	Land north of 52 Chapelfield Road, Guyhirn - ARCHAEOLOGICAL EVALUATION
Short description of the project	In December 2019 Archaeological Solutions (AS) carried out an archaeological excavation of land north of 52 Chapelfield Road, Guyhirn, Cambridgeshire (NGR TF 4005 0419). Prior to excavation, the site was subject to a trial trench evaluation (Browne and Clarke 2019) which recorded several linear features and pits which contained briquetage, the remnants of the clay vessels, tanks, and supports used in saltmaking. The excavation revealed further linear features as well as pits and numerous postholes which can be rationalised into at least two post-built structures. Further briquetage was recovered in fairly substantial amounts and ash and charcoal rich fills were recorded in several of the features. However, no in situ saltmaking vessels were recorded and no hearths or other features to represent primary evidence of saltmaking were recorded. Environmental analysis was carried out to determine whether or not the ditch features that were present could represent feeder channels for bringing salt-water to the site. No indication of saline conditions was recorded in these samples. The site appears to have been used for the deposition of remains associated with saltmaking but not to have been the location at which this practice took place. It appears likely that the site may have had an ancillary function associated with the saltmaking industry. The identification of saltmaking debris at this site, alongside the previous identification of a possible saltern site, through fieldwalking and aerial photography, to the north-east, suggests that further evidence of saltmaking must exist in the surrounding area; perhaps further examples of the deposition of saltmaking debris but also the locations at which saltmaking actually took place.
Project dates	Start: 01-12-2019 End: 24-12-2019
Previous/future work	Yes / No
Any associated project reference codes	P8210 - Contracting Unit No.
Any associated project reference codes	ECB 6074 - Sitecode
Type of project	Recording project
Site status	None
Current Land use	Cultivated Land 4 - Character Undetermined
Monument type	DITCHES Iron Age
Monument type	PITS Iron Age
Monument type	POST HOLES Iron Age
Significant Finds	BRIQUETAGE Iron Age
Investigation type	"Full excavation"
Prompt	Planning condition

Project location

Country	England
Site location	CAMBRIDGESHIRE FENLAND WISBECH 52 Chapelfield Road, Guyhirn
Study area	0.12 Hectares
Site coordinates	TF 4005 0419 52.617018845561 0.068921663302 52 37 01 N 000 04 08 E Point
Height OD / Depth	Min: 2.9m Max: 2.9m

Project creators

Name of Organisation	Archaeological Solutions Ltd
Project brief originator	Cambridgeshire County Council Historic Environment Team
Project design originator	Jon Murray
Project director/manager	Jon Murray
Project supervisor	Daniel Ryan
Project supervisor	Archaeological Solutions Ltd
Project supervisor	John Haygreen
Name of sponsor/funding body	Grafton Ventures

Project archives

Physical Archive recipient	Cambridgeshire County Council Archaeological Store
Physical Contents	"Animal Bones","Ceramics","Industrial","Metal","Worked stone/lithics"
Digital Archive recipient	Cambridgeshire County Council Archaeological Store
Digital Contents	"none"
Digital Media available	"GIS","Images raster / digital photography","Spreadsheets","Survey","Text"
Paper Archive recipient	Cambridgeshire County Council Archaeological Store
Paper Contents	"none"
Paper Media available	"Context sheet","Drawing","Map","Photograph","Plan","Report","Section","Survey "

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Land north of 52 Chapelfield Road, Guyhirn, Cambridgeshire. An Archaeological Excavation. Research Archive Report
Author(s)/Editor(s)	Newton, A.A.S,
Other bibliographic details	Report No: 6059
Date	2020
Issuer or publisher	Archaeological Solutions Ltd.

Place of issue or publication	Bury St Edmunds

Entered by	Danielle Helen Hall (danielle.hall@ascontracts.co.uk)
Entered on	29 June 2020

OASIS:

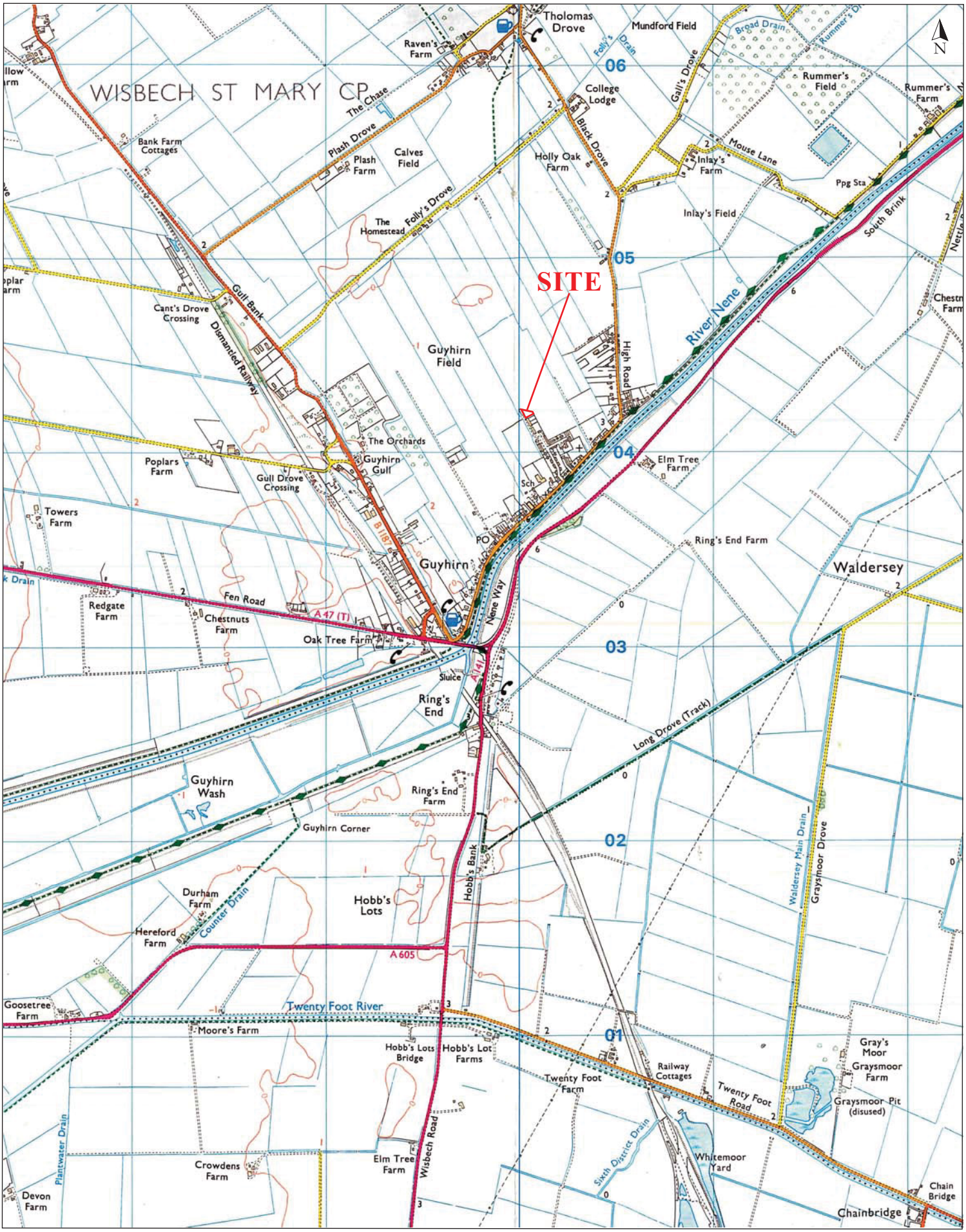

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Fig. 1 Site location plan

Scale 1:25,000 at A4

52 Chapelfield Road, Guyhirn (P8210)

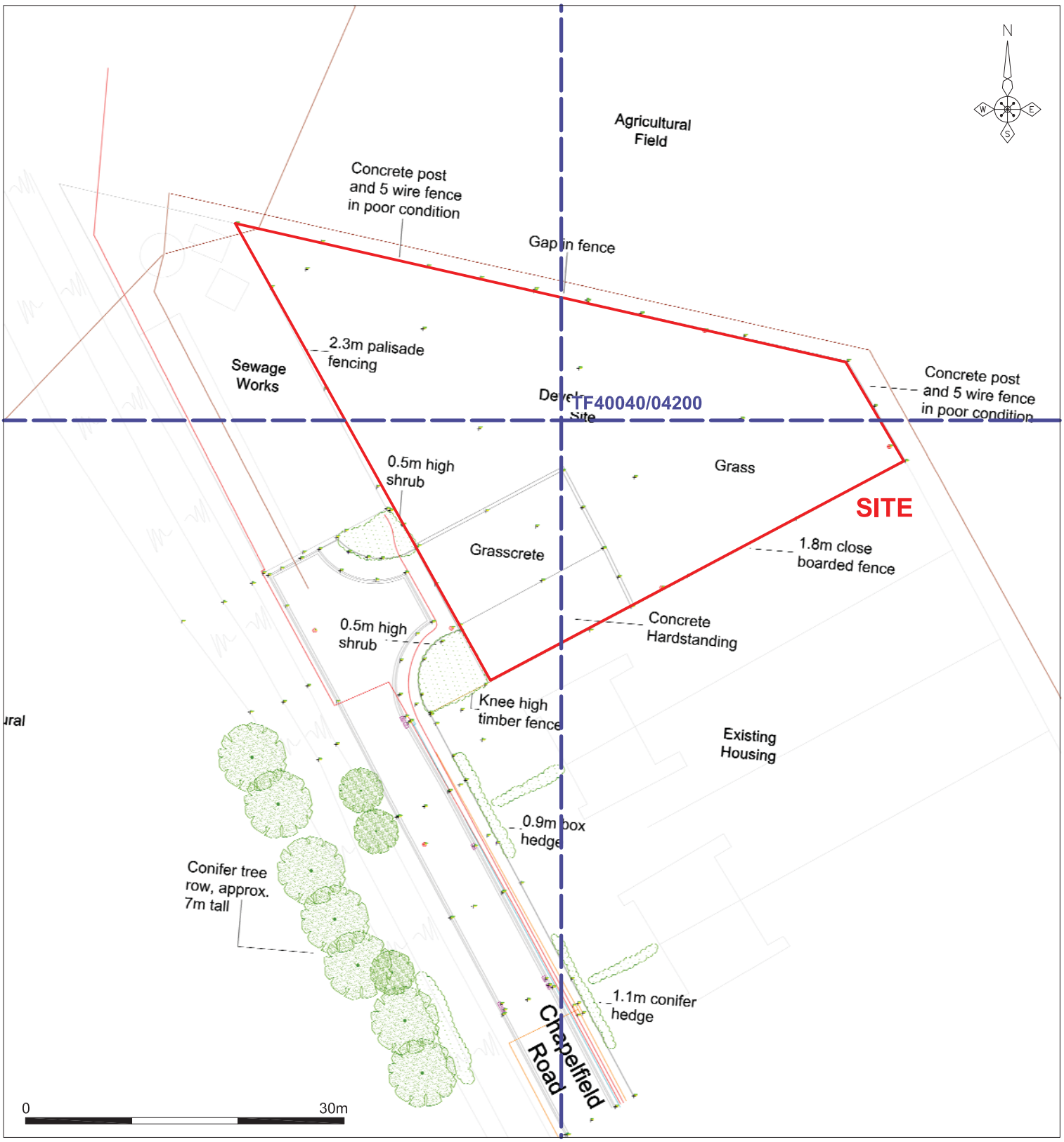

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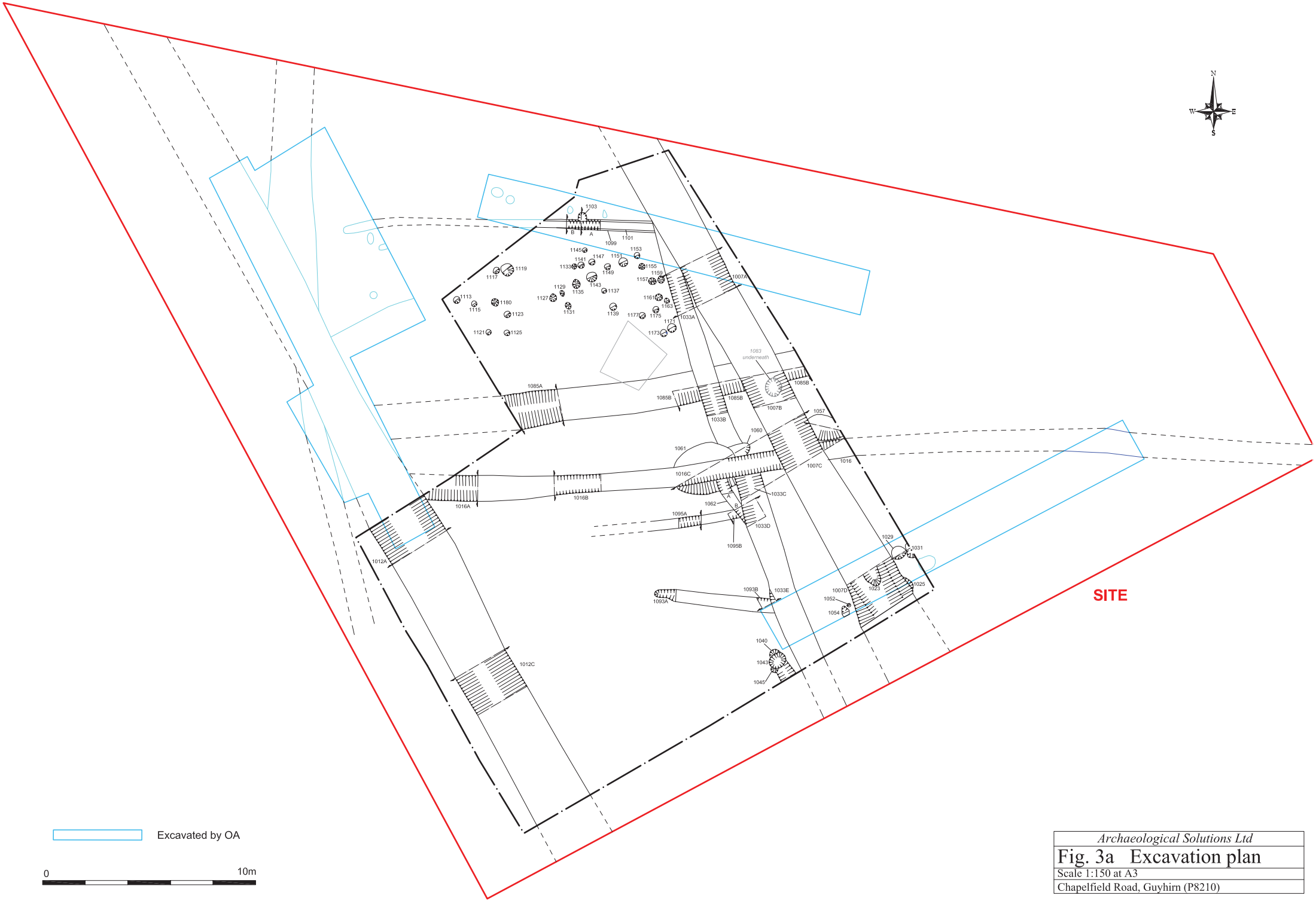
Fig. 2 Detailed site location plan
Scale 1:500 at A4
Chapelfield Road, Guyhirn (P8210)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1117
1129
1135
1143
1137
1113
1115
1180
1127
1161
1163
1123
1131
1139
1177
1175
1171
1033A
1121
1125
1173
1083
underneath
1085A
1085B
1085B
1085B
1007B
1033B
1057
1060
1061
1016
1007C
1016C
1033C
1062
1016A
1016B
1095A
1033D
1095B
1012A
1029
1031
1093B
1033E
1007D
1025
1023
1052
1093A
1054
SITE
1040
1043
1045
1012C
Excavated by OA
0
10m
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Fig. 3a Excavation plan
Scale 1:150 at A3
Chapelfield Road, Guyhirn (P8210)

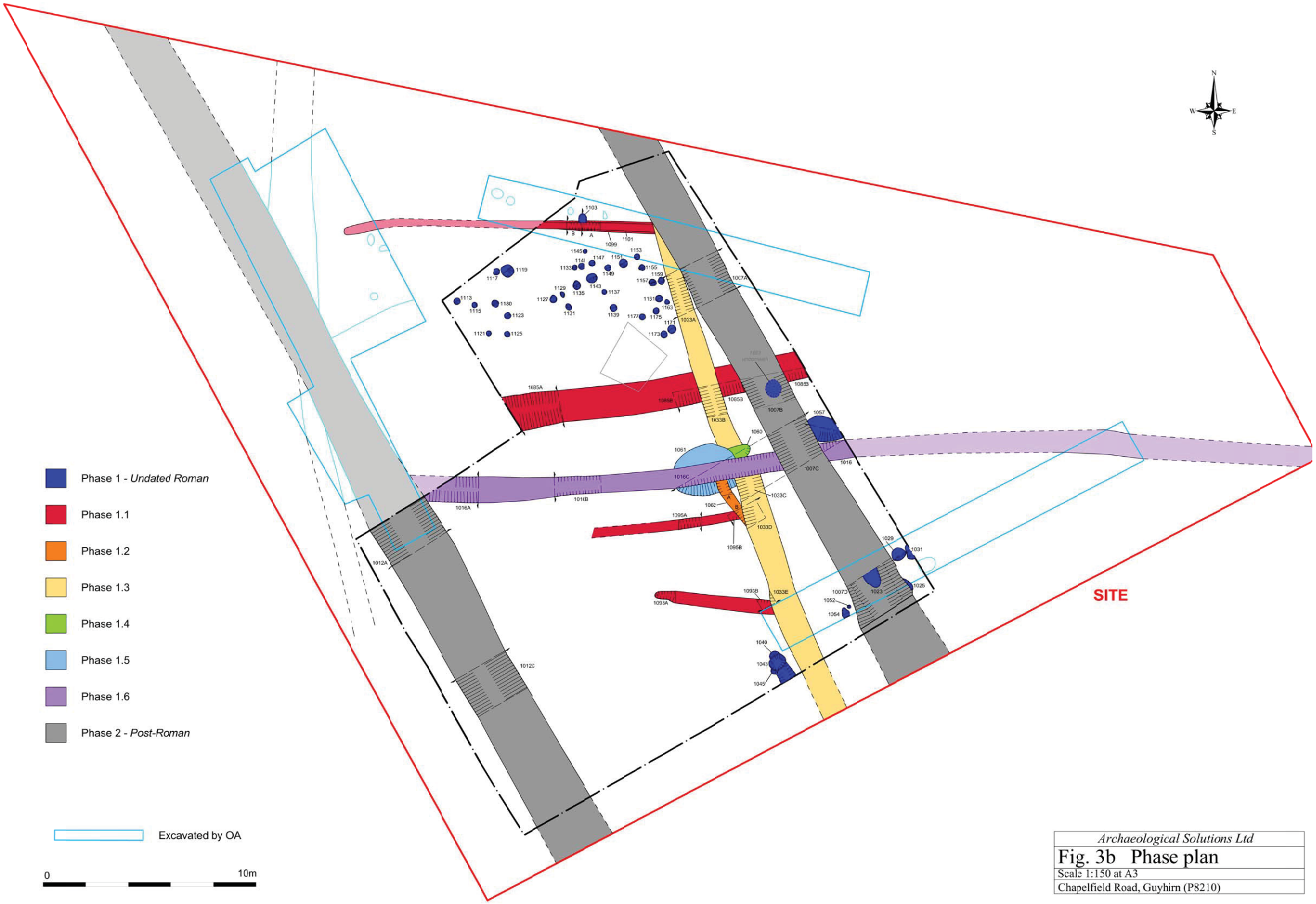

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Fig. 3b Phase plan

Scale 1:150 at A3

Chapelfield Road, Guyhirn (P8210)

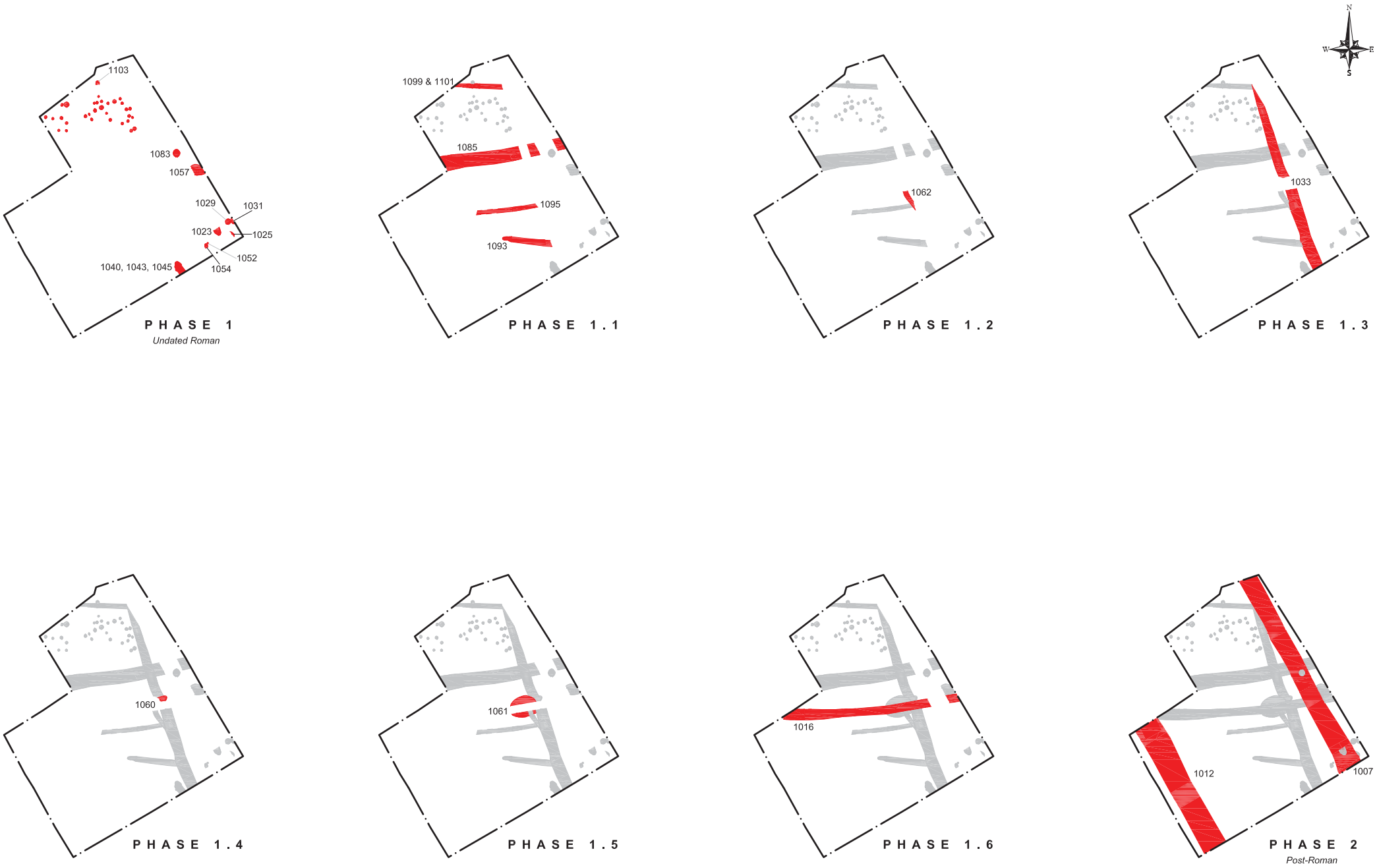

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Fig. 3c Phase plan
Scale 1:400 at A3
Chapelfield Road, Guyhirn (P8210)

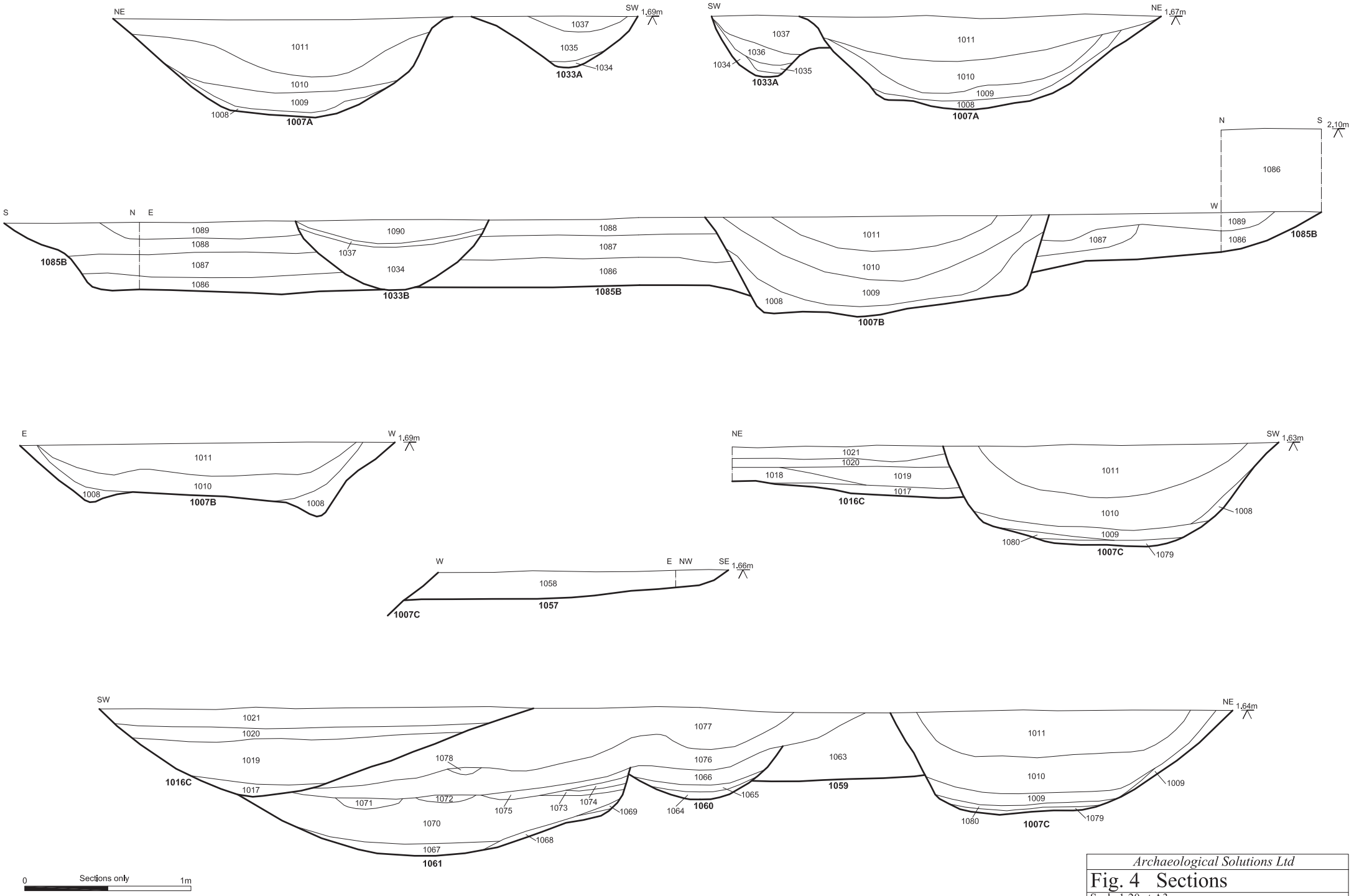

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Fig. 4 Sections
Scale 1:20 at A3
Chapelfield Road, Guyhirn (P8210)

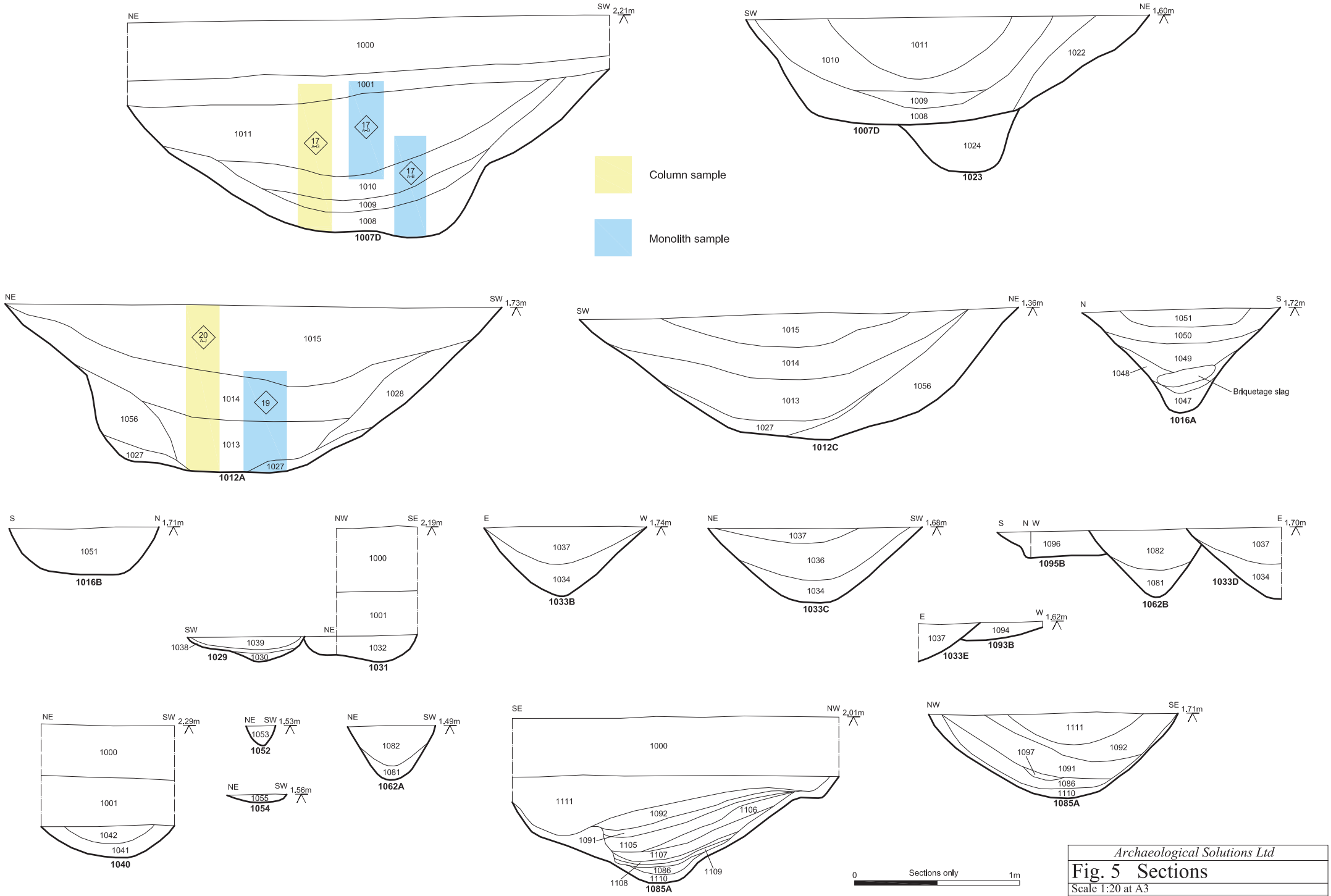

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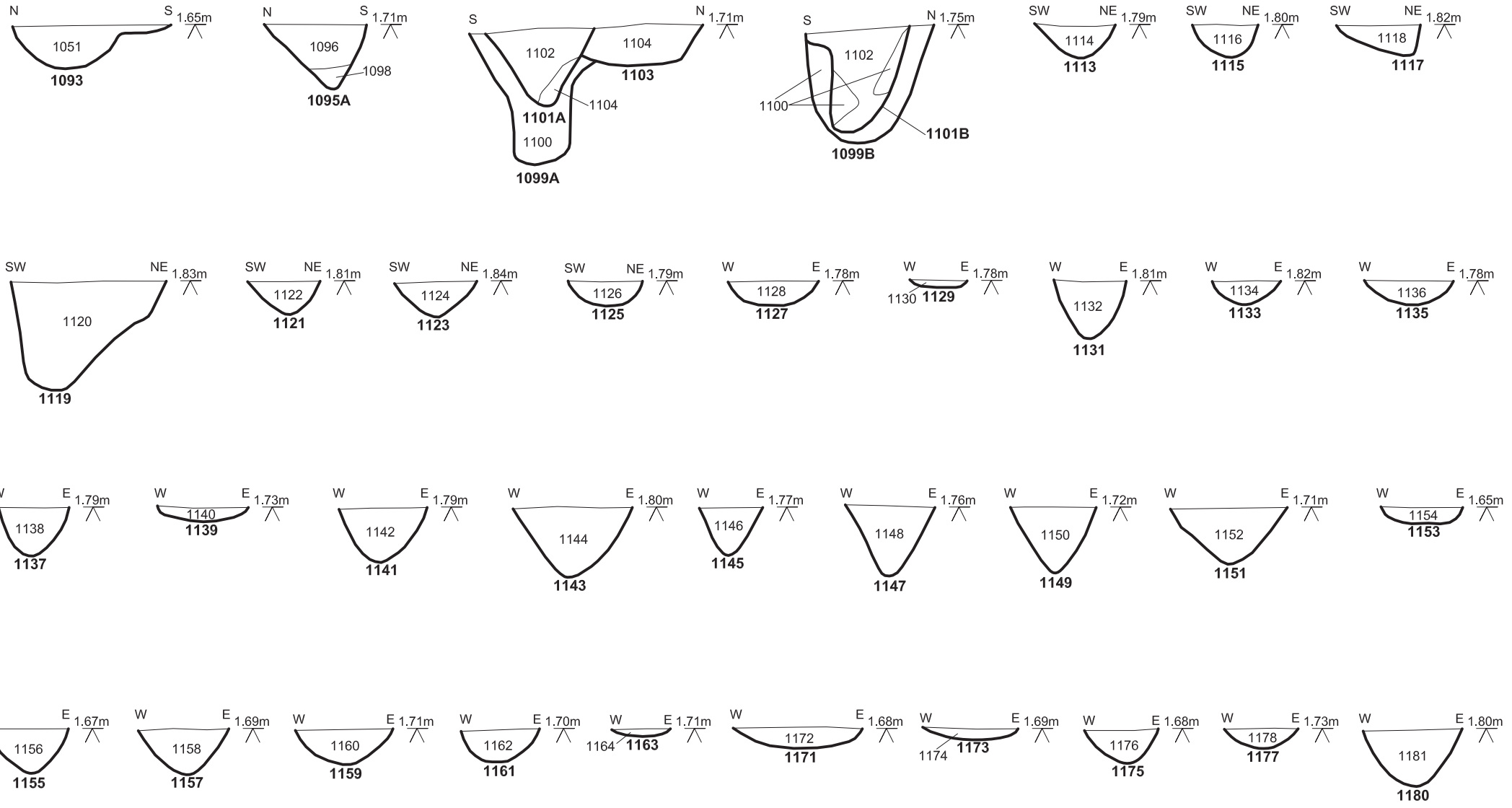
Fig. 5 Sections	
Scale 1:20 at A3	
Chapelfield Road, Guyhirn (P8210)	



Archaeological Solutions Ltd
Fig. 6 Sections
Scale 1:20 at A4
Chapelfield Road, Guyhirn (P8210)