



Land North of 52 Chapelfield Road, Guyhirn, Wisbech St Mary, Cambridgeshire Archaeological Evaluation Report

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Land North of 52 Chapelfield Road, Guyhirn, Wisbech St Mary, Cambridgeshire

Archaeological Evaluation Report

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Summary

Between the 2nd and 12th of July 2019 OA East undertook a small, three trench evaluation for Grafton Ventures Ltd on land to the north of 52 Chapelfield Road, Guyhirn, Wisbech St Mary, Cambridgeshire. A large pit was partly revealed in the western part of the development area that produced a substantial quantity of fired clay briquetage of forms typical of Romano-British salt production. This pit was probably associated with a wider set of both structural remains to the north and a boundary ditch to the west which produced further assemblages of briquetage and Roman pottery sherds. Taken together, these remains strongly suggest Romano-British salt making activity in the immediate vicinity. Roman activity appeared to have extended into the eastern part of the site where a further ditch was encountered which produced evidence of foodstuffs and further pottery sherds suggestive of domestic occupation. These remains were truncated by a later series of three parallel boundary ditches, which shared an alignment with the current field boundaries surrounding the site.

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The project was managed for Oxford Archaeology East by Nick Gilmour. The fieldwork was directed by David Browne, who was supported by Thomas Houghton. Survey and digitising was carried out by Thomas Houghton and Sarita Louzoulo. Thanks to the teams of OA staff that cleaned and packaged the finds under the management of Natasha Dodwell, processed the environmental remains under the direction of Rachel Fosberry, and prepared the archive under the supervision of Kat Hamilton.

1 INTRODUCTION

1.1 Scope of work

1.1.1 Oxford Archaeology East (OA East) was commissioned by Grafton Ventures Ltd to undertake a trial trench evaluation at the site of a on a 0.115ha plot of waste land north of 52 Chapelfield Road, Guyhirn, Cambridgeshire (Fig. 1; TF 4005 0419).

1.1.2 The work was undertaken as a condition of Planning Permission (planning ref. F/YR16/1077/F) to inform the Planning Authority in advance of a submission of a Planning Application. A Brief (Stewart 2018) was set by the Cambridgeshire County Council Historic Environment Team (CCC HET) and supplemented by a Written Scheme of Investigation (WSI) produced by OA East (Blackbourn 2019) detailing the Local Authority's requirements for work necessary to inform the planning process. This document outlines how OA East implemented the specified requirements.

1.2 Location, topography and geology

1.2.1 Located c.380m north of the River Nene on the north-eastern side of the village of Guyhirn, the site comprises a triangular shaped plot of waste land, at a height of c.2.9m OD, on the edge of a modern housing estate.

1.2.2 The underlying bedrock geology consists of West Walton Formation, Amphill Clay Formation and Kimmeridge Clay Formation which is overlain by superficial deposits of alluvium (<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>, accessed 2nd August 2019).

1.2.3 Significantly, the site is also located upon a roddon, the dried raised bed of an old watercourse such as a river or tidal-creek above the surrounding fens, which were historically preferred for building purposes (Blackbourn 2019).

1.3 Archaeological and historical background

1.3.1 A full search of the Cambridgeshire Historic Environment Record (CHER) of a 1km radius centred on the evaluation site was commissioned from CCC HET (under licence number 18-3767). The following is a summary based on the results of the CHER search, with pertinent records shown on Fig. 1.

1.3.2 Roman and Saxon occupation was found on a site to the immediate south (EHNMR 1001736); unfortunately, the published records of this site are very scanty. Several areas of both Roman salt making and settlement activity are noted in the immediate environs of Guyhirn. This salt making is frequently found throughout the fens, particularly upon tidal inlets (Blackbourn 2019, Fawn, Evans, Mc Master & Davies 1990).

Prehistoric

1.3.3 There are no known prehistoric remains recorded within 1km of the site.

Romano-British

- 1.3.4 Roman pottery has been recorded 1km to the west (CHER 03791, not illustrated) and Samian has also been recovered from the same area (CHER 03790, not illustrated) dating to the Hadrianic or Antonine period.
- 1.3.5 Fieldwalking and trial trenching took place 100m southeast of the site. A number of Roman pottery sherds were recovered, and excavations revealed Roman field systems possibly connected with a Roman farmstead (CHER 09218).
- 1.3.6 Some of the tidal creeks in the area were active in the Roman period and would have provided the location for salt making sites, evidence of a possible saltern lies to the north of the site (ECB 2869).

Anglo-Saxon and medieval

- 1.3.7 Anglo-Saxon pottery was recovered immediately southwest of the site (CHER 10082a).

Post-medieval

- 1.3.8 Guyhirn Church known as the Chapel of Ease is located approximately 350m southeast of the site (CHER 03830, not illustrated) and dates to the 17th century. Saint Mary Magdalenes Church is located 1km southwest of the site (CB 14878, not illustrated) and is a Victorian building which sits on the site of a former medieval church.
- 1.3.9 A watching brief conducted 300m southwest of the site identified a single ditch which was dated to the post-medieval period due to finds recovered comprising post-medieval pottery, clay pipe and animal bone (MCB 18449). Further excavation took place 800m to the southwest and revealed a layer of alluvium overlain by a black silt which contained post-medieval finds (MCB 17773, not illustrated). A layer of subsoil was also recorded containing pottery dating to the 16th to 17th century as well as clay tobacco pipe.
- 1.3.10 Fieldwalking and an evaluation along Waverley Close 250m southeast of the site revealed evidence for 19th century field boundaries and ditches (MCB 15869).

Undated

- 1.3.11 An archaeological evaluation immediately southwest of the site uncovered linear features in each of the three trenches, as well as a pond (CHER 10082; French 1991). These features were undated; however, Anglo-Saxon and medieval pottery was found at the site.
- 1.3.12 Traces of four interlinked rectilinear enclosures (located to the north of two parallel ditches representing a possible hollow way) have been recorded 500m southwest of the site (MCB 21134).

2 AIMS AND METHODOLOGY

2.1 Aims

2.1.1 The project aims and objectives defined in the WSI (Blackbourn 2019) were as follows:

- i. establish the presence or absence of archaeological remains on the site, characterise where they are found (location, depth and extent), and establish the quality of preservation of any archaeology and environmental remains;
- ii. provide sufficient coverage to establish the character, condition, date and purpose of any archaeological deposits;
- iii. provide sufficient coverage to evaluate the likely impact of past land uses, and the possible presence of masking deposits; and
- iv. provide – in the event that archaeological remains are found – sufficient information to construct an archaeological mitigation strategy, dealing with preservation, the recording of archaeological deposits, working practices, timetables, and orders of cost.

2.2 Methodology

2.2.1 Service plans were consulted before any work was undertaken and all trenches were scanned by a qualified operator using a CAT and Genny with a valid calibration certificate.

2.2.2 In accordance with the WSI (Blackbourn 2019), a total of three 20m long trenches were opened using a 20 tonne 360° type excavator using a 2.2m-wide toothless ditching bucket, representing an 11% sample of the 0.115ha development area. Liaison with Gemma Stewart of CCC HET resulted in two further extensions to be opened to Trench 1. The northern extension was opened to better understand ditch **19**; it measured 9m by 3.7m, on a north to south orientation to the east of the original trench. The central extension (10.9m from the northern end) measured 5.5m and 1.5m wide, on a north-south axis, extending to the west of the original trench to provide the full dimensions of ditch **29**.

2.2.3 All machine excavation was supervised by a suitably qualified and experienced archaeologist.

2.2.4 Spoil was stored to the sides of the trenches with topsoil and subsoil stored separately to enable sequential backfilling post excavation.

2.2.5 Surveying was done using a survey-grade differential GPS (Leica GS08) fitted with “Smartnet” technology with an accuracy of 5mm horizontal and 10mm vertical.

2.2.6 Spoil, exposed surfaces and features were scanned with a metal detector. All metal-detected and hand-collected finds were retained for inspection, other than those which were obviously modern.

2.2.7 All archaeological features were hand-excavated. All archaeological features and deposits as well as trenches were recorded using OA’s pro-forma sheets. Trench locations and plans were recorded at appropriate scales and digital photographs were taken of all relevant features and deposits.

- 2.2.8 Bucket samples of 90 litres of excavated soil were taken from each trench, in order to characterise artefactual remains in the topsoil and other soil horizons above the archaeological level.
- 2.2.9 All finds were retained for inspection.
- 2.2.10 A total of thirteen bulk environmental samples were taken for processing at OA's environmental facility at Bourn.
- 2.2.11 A total of two monolith samples were taken for processing at the excavation stage under the instruction of Cambridgeshire County Council following Oxford Archaeologies guide lines and procedures.
- 2.2.12 Site conditions were good for the time of year, with dry weather and clear bright skies.

3 RESULTS

3.1 Introduction and presentation of results

3.1.1 Descriptions of the ground conditions encountered, features identified, and artefacts recovered are given in this section. Further trench descriptions with dimensions are given in Appendix A (Tables 1 and 2) supplemented by artefact and environmental reports, included as Appendices B and C. Figure 2 provides an overall plan of the results of the evaluation. Selected sections are presented as Figures 3a-b. The location of the site upon a former channel/roddon shown on LIDAR imagery is presented as Figure 4.

3.2 General soils and ground conditions

3.2.1 The soil sequence in the trenches was uniform. As indicated by LIDAR imagery of the site (Fig. 4), the underlying natural geology (69) appeared to consist of the silt make-up of a former channel/roddon, consisting of yellowish brown silt, which in turn was overlain by a single dark brown silt topsoil (1). Bucket sampling of the excavated topsoil yielded two sherds (20g) of Roman Sandy grey ware and Pink Grog-tempered ware pottery.

3.2.2 Ground conditions throughout the evaluation were generally good, and the site remained dry throughout. Archaeological features, where present, were easy to identify against the underlying natural geology.

3.3 General distribution of archaeological deposits

3.3.1 Figure 2 provides a plan of the results of the evaluation. Archaeological features were present in all of the trenches. A large pit was partly revealed in the southern part of Trench 1. Both the northern part of Trench 1 and the western part of Trench 2 revealed groups of post holes. Linear ditches extending through all of the trenches probably represent two differing alignments of land division. The earlier ditch network appeared to have lain on a north-south and east-west axis which was later overlain by a parallel series of ditches on a northwest to southeast axis. An isolated pit also lay in the central part of Trench 3.

3.4 Trench descriptions

Trench 1 (Plates 1-5)

3.4.1 Trench 1 was located in the western part of the site. The southern part of the trench exposed a sequence of four stratified deposits (34-37) along its eastern baulk, contained within a large, 0.6m deep pit cut (30; Fig. 3a, Section 10). These deposits consisted of a successive sequence of dark brown, reddish brown and mid-light grey silt. As these deposits did not continue to the western trench baulk, its western edge had apparently lain within Trench 1 and been completely truncated by ditch 29. The eastward extension to Trench 1 uncovered the pit's northern extent, indicating that this feature measured 10m across from north to south and was in excess of 4m in diameter from east to west. The primary deposit (36) in this pit yielded 386 fragments (4.511kg) of fired clay (Appendix B.2) and 11g of animal bone (Appendix C.1).

- 3.4.2 This pit may have been respected to the west by ditch **65**, uncovered in the smaller western extension to Trench 1 (Plate 7). On a north-south alignment, it measured 1m wide and 0.3m deep with a U-shaped profile (Fig. 3a, Section 9). Its primary fill (64) consisted of light brownish grey silt with occasional charcoal fragments. This was overlain by a light brownish orange clay (63) in-turn overlain by light greyish blue silty clay (62). The ditch fills produced a combined total of 414 fragments (3.077kg) of fired clay.
- 3.4.3 The eastward extension to Trench 1 uncovered a northward continuation to ditch **65** as ditch **47=71**. Ditch cut **47** (1.9m wide x 0.62m deep) contained a sequence of five grey silty clay/clayey silt fills (48-52) between 0.1-0.2m thick and ditch cut **71** (1.1m wide x 0.4m deep) contained a similar sequence of four fills (17, 22-24). The fills in cut **71** yielded a combined total of 185 fragments (4.814kg) of fired clay, a sherd each of Roman Black-burnished (26g) and Sandy grey (13g) ware pottery (Appendix B.1), and 25g of animal bone.
- 3.4.4 There was evidence for the re-cutting/clearing out/maintaining of this ditch alignment with vestiges of earlier cuts (**70** and **19**) observed at the base of both excavated sections into this ditch alignment (Fig. 3a, Sections 7 and 19; Plate 6). Ditch cut **70** contained a single homogenous fill (53) of dark reddish grey silt with frequent charcoal inclusions; it contained five pieces (0.561kg) of fired clay. Ditch cut **19** was similarly filled by three successive charcoal rich fills (66-68) consisting of brownish/yellowish grey sandy silty clay, which yielded a further 12 fragments (0.439kg) of fired clay.
- 3.4.5 Approximately 2m to the east of ditch **47=71=65** lay the western terminus of a narrow gully (**61**), which lay on a perpendicular east-west alignment (Fig. 3a, Section 18). It measured 0.25m wide and 0.25m deep with a U-shaped profile. Its fill (60) consisted of mid yellowish grey silt that contained 21 fragments (0.106kg) of fired clay. This gully appeared to continue to the east, equating to gully **10** in Trench 2.
- 3.4.6 To the south of the gully terminus lay three sub-circular post holes (**55**, **57** and **59**) that measured between 0.3-0.5m in diameter and 0.05-0.2m deep with U-shaped profiles (Fig. 3a, Sections 15 and 16). The post holes were similarly filled with dark brownish grey silt (54, 56 and 58) that each produced a quantity of fired clay, totaling 54 fragments (0.199kg).
- 3.4.7 Both pit **30** and ditch cut **65** were truncated by ditch **29**, which lay on a northwest to southeast alignment. It measured 2.3m wide and 0.75m deep with a flat-based profile (Fig. 3a, Section 9; Plate 7). A slump of light brownish grey silt fill (32) was observed to extend down its eastern side, which probably resulted from the fill of truncated pit **30**. The overlying fill (31) consisted of dark greyish brown clayey silt with rare flint inclusions that produced 1436 fragments (6.563kg) of fired clay and a small fragment (1g) of animal bone.
- 3.4.8 A further slot was excavated into this ditch to the north (cut **18**) which was found to truncate ditch cut **71** (Fig. 3a, Section 19; Plate 6). Its dark brown (20) and light grey (21) silt fill yielded a further 20 fragments of fired clay (1.496kg), a sherd of Roman Sandy grey ware pottery (21g) and 63g of animal bone.

Trench 2 (Plates 8-10)

- 3.4.9 Trench 2 uncovered the eastward continuation of gully **61** excavated in Trench 1. Its cut (**6=10**) measured 0.4m wide and 0.3m deep, with a U-shaped profile (Fig. 3b, Section 3). The dark greyish brown fill (5=9) contained 82 fragments (0.991kg) of fired clay, 20g of animal bone and charred cereal grains of barley and spelt wheat (Appendix C.2).
- 3.4.10 To the north of the gully lay a group of four sub-circular post holes (**8, 12, 14** and **16**; Fig. 3b, Sections 3-6) which measured between 0.3-0.4m in diameter and 0.12-0.2m deep with U-shaped profiles. Their fills (7, 11, 13 and 15 respectively) varied between mid brown to light brownish grey silt that each produced a small quantity of fired clay (totaling 53 fragments; 1.258kg) and 6g of animal bone.
- 3.4.11 The gully was truncated to the east by ditch **4**, which lay on a parallel northwest-southeast alignment to ditch **18=29** excavated in Trench 1. It measured 2.9m wide and 0.6m deep with a U-shaped profile (Fig. 3b, Section 1). Its primary fill (3) consisted of dark brown silt with rare flint, chalk and charcoal inclusions which produced seven sherds (74g) of Roman pottery in a variety of fabrics including: Sandy grey ware, Shell tempered ware, Black-burnished ware, Brown surfaced grey ware and Lower Nene Valley Parchment ware. This fill was overlain by an upper fill consisted of mid brown silt (2) which yielded a further two sherds (8g) of Sandy grey ware. In addition, a total of 104 fragments (0.704kg) of fired clay and 0.369kg of animal bone was recovered from these fills. The southeastward (unexcavated) continuation of this ditch was uncovered by Trench 3.

Trench 3 (Plates 11 and 12)

- 3.4.12 Trench 3 encountered an east-west aligned ditch (**38**) at its eastern end. It measured 1m wide and 0.5m deep with a U-shaped profile (Fig. 3b, Section 13). Its fill (37) consisted of light grey silt which produced a large sherd (165g) of Roman Shell tempered ware pottery and three small fragments (4g) of Sandy grey ware. These sherds were retrieved along with 11 fragments (0.239kg) of fired clay and 0.562kg of animal bone. The ditch fill also contained charred cereal grains of barley and spelt wheat.
- 3.4.13 To the southwest lay a single sub-circular pit (**40**), which measured 0.5m in diameter and 0.1m deep with a U-shaped profile (Fig. 3b, Section 12). Its pale cream brown silt fill (39) contained a small sherd (5g) of Roman Sandy grey ware pottery and small calcined fragments (4g) of sheep/goat.
- 3.4.14 Beyond the unexcavated continuation of ditch **4** encountered in Trench 2, lay a further ditch (**46**), which lay on a parallel northwest-southeast alignment. It measured 1.4m wide and 0.6m deep, with a U-shaped profile, and contained a sequence of five fills (Fig. 3b, Section 11). The primary fill (45) consisted of an iron-pan encrusted light brown silt. This fill was overlain by light brownish grey silt (44), capped with a 0.02m thick charcoal rich dark grey silt (43) which produced charred barley and spelt wheat grains. These fills were overlain by upper fills consisting of mid greyish brown (42) and light brown (41) silt which produced six sherds (58g) of Roman Shell tempered and

Sandy grey ware pottery. The fills also produced a combined total of four fragments (0.266kg) of fired clay and 0.820kg of animal bone.

3.5 Finds summary (Appendix B.1-2)

3.5.1 The evaluation work produced a total of 25 sherds (0.394kg) of Romano-British pottery, that although fragmentary, are unabraded. The pottery was recovered from ditch cuts **18** and **71** in Trench 1, topsoil and ditch cut **4** in Trench 2, and ditch cuts **38**, **46** and pit **40** in Trench 3. The largest finds assemblage consisted of 25.85kg of fired clay, amongst which c.12.07kg was identified as briquetage, consisting of elements (pans, brick/pedestal/disc-like supports, props, clips, wedges and firebars) typical of Iron Age and Romano-British coastal/fenland salt making (Appendix B.2.1). A small amount of salt slag (0.432kg) was also recovered. In addition, this assemblage also included a few fragments of possible loomweight (70g). The largest quantities of briquetage were recovered through the excavation of a pit (**30**) partly revealed in Trench 1, as well as from the fills of both a possibly contemporary boundary ditch to the west (ditch **47=71=65**) and a later ditch (**29**) that truncated the pit's western edge. Small quantities of fired clay were also recovered from the features excavated in Trenches 2 and 3. The only significant quantities of animal bone were recovered from the fills of ditch **4** (0.369kg) in Trench 2 and ditch **38** (0.562kg) in Trench 3. Further food remains, present as charred cereal grains of barley and spelt wheat, were most abundant in samples from ditch **10** in Trench 2 and ditches **38** and **46** in Trench 3.

4 DISCUSSION

4.1 Reliability of field investigation

- 4.1.1 The archaeological features were clearly visible within the evaluation trenches. The natural geological horizon of the roddon beneath the topsoil into which features were cut was also clearly identifiable. The range of feature types observed in the trenches comprised a large pit and small pit, post holes and ditches. The brown and grey feature fills contrasted strongly with the yellowish brown naturally lain silts of the underlying roddon. Both the feature fills and underlying natural deposits were free draining, with no standing water observed in any of the excavated trenches to hinder their identification.
- 4.1.2 Therefore, the results of the evaluation trenching are considered to have a good level of reliability.

4.2 Evaluation objectives and results

- 4.2.1 LIDAR imagery of the site demonstrates its position upon the silt bed of a former river channel - a roddon (Fig. 4). Roddons were targeted for settlement during the Romano-British period as they offered slightly elevated firm ground, advantageous for settlement within the fen.
- 4.2.2 In the western part of the development area, the evaluation has established the presence of a large pit-like feature (**30**) probably directly associated with salt making during the Roman period. Whilst not *in situ*, the excavation of many identifiable diagnostic briquetage fragments from the fills of the pit (pans, brick/pedestal/disc-like supports, props, clips, wedges and firebars), resulting from broken-up brine boiling hearths, strongly suggests salt production was being undertaken in the immediate vicinity (Appendix B.2). The pit appeared to have been respected to the west by a north-south aligned ditch (**47=71=65**), which produced further fired clay briquetage fragments along with a few sherds of unabraded Roman pottery. In the northern part of Trench 1, this ditch was in-turn respected by a narrow gully (**6=10=61**), on a perpendicular east-west alignment, that extended between Trenches 1 and 2. The presence of six post holes alongside this beamslot-like feature suggests a building may have lain immediately to the north of pit **30**, possibly associated with the salt making activity.
- 4.2.3 In the eastern part of the development area, lesser quantities of fired clay were recovered from the ditches excavated in Trenches 2 and 3. On a compatible east-west alignment with the possible Roman features excavated in Trenches 1 and 2, the ditch (**38**) excavated at the eastern end of Trench 3 produced unabraded Roman pottery sherds and evidence for foodstuffs (animal bone fragments and charred cereal grains) indicative of domestic settlement. It is also possible this feature may also represent the remains of outlying enclosures and activity associated with the salt making activity uncovered in the western part of the site.
- 4.2.4 Extending across the full extent of both the western and central parts of the development area, the features of probable Roman origin described above were overlain by a series of three northwest to southeast aligned ditches, on a shared axis

with the current network of dykes in the local landscape to the northwest of the River Nene. Although further small assemblages of fired clay, Roman pottery, animal bone and cereal grains were recovered from these ditches, these artefacts and ecofacts are considered to be residual in nature, which probably worked their way into the ditch fills as a result of these features truncating earlier Roman deposits.

- 4.2.5 The absence of any later material from these ditch fills reflect the site's rural location in the post-Roman agricultural landscape. Although there was a lack of protective subsoil, the presence of shallow structural remains in Trenches 2 and 3 suggests a good degree of survival of archaeological remains on the site.

4.3 Interpretation

Roman salt making and settlement remains

- 4.3.1 The evaluation has revealed evidence for Roman salt making on the site in the form of the partly revealed pit feature (30) uncovered in the western part of the development area. As this pit was only partly excavated it is not possible at this stage to conclude whether this pit itself was directly associated with salt production or functioned as a waste pit for broken-up and disused salt hearths. However, the recovery of a comprehensive range of briquetage furniture and salt slags typical of the Roman salt making industry strongly suggests that at least one Roman salt hearth was present in the immediate vicinity of Trench 1. These salt hearths essentially evaporated saltwater collected from tidal streams/channels in a series of clay vessels (briquetage) suspended/supported over a clay-lined heat source (described fully in Appendix B.2.30). The fuel would be dug from the nearby fen or imported from turbaries (Hall and Coles 1994, 115). Many of these structural elements have previously been excavated at sites in the Cambridgeshire-Lincolnshire fens at Cowbit, Langtoft and Market Deeping (Appendix B.2.10-24). Importantly, a few sherds of unabraded Roman pottery associated with briquetage was also recovered from the ditch to the west of the pit to support a Roman date, although these were not closely datable. The structural features (post holes and gully/beamslot) encountered in the northern part of Trench 1 and the western part of Trench 2 possibly represent the remains of a building associated with salt making, which appears to extend from the pit towards the northern boundary of the site.
- 4.3.2 It is unclear whether these remains represent the presence of a site geared solely towards salt making or formed part of a cottage industry within a more domestic setting (Fawn, Evans, McMaster and Davies 1990). The recovery of evidence for domestic foodstuffs along with further sherds of unabraded Roman from ditches in the eastern part of the site perhaps alludes to wider settlement on the underlying Roddon. The desk-study identified evidence for both salt making to the north and a farmstead to the southeast of the site (see Section 1.3.5-6). This pattern would fit the model postulated for Roman settlements in the Lincolnshire fenland, located southeast of their nearby related salt pans to avoid smoke in the prevailing wind (Hall and Coles 1994, 115). Salt making remains are a common trend in the rich archaeological settlement landscape of the Roman Cambridgeshire-Lincolnshire fenland (for examples see Appendix B.2.28). At the confluence of the roddon with the

River Nene, a settlement site at this location would have been ideally placed for trade on the local river network (Appendix B.1.14). The briquetage (and possibly pottery) assemblage suggests a Late Roman date for this site which complements the known salt making site on the roddon silts at Middleton and also along the Fen Causeway at Downham West and Nordelph along the Cambridgeshire/ Norfolk fen edge (Appendix B.2.28).

Post-Roman land division

- 4.3.3 The set of three post-Roman ditches traversing the western and central parts of the site truncated the Roman remains, which resulted in the incorporation into their fills of much of the salt making briquetage recovered from the site. Their orientation along the dominant northwest to southeast axis of the surrounding fields and drains strongly suggests these divisions are of relatively recent origin.

4.4 Significance

- 4.4.1 Although no *in situ* Roman salt hearths were uncovered, the recovery of a large quantity of briquetage from features in the western part of the development area strongly suggests the presence of significant remains associated with salt making in the immediate vicinity of Trenches 1 and 2 with evidence for wider settlement of the period also encompassing the eastern part of the site. Of lesser importance are the later set of ditches which truncated these remains, which probably represent a more recent system of land division, currently of uncertain date.

APPENDIX A TRENCH DESCRIPTIONS AND CONTEXT INVENTORY

Trench Number	Approximate orientation	Length (m)	Max. width (m)	Average depth of Topsoil (m)	Average total depth (m)
1	NW-SE	20	5.9m	0.5	0.7
2	WNW-ESE	20	2.2m	0.45	0.45
3	SW-NE	20	2.2m	0.5	0.6

Table 1: Trench descriptions

Trench	Context.	Cut	Category	Feature Type	Width	Depth	Colour	Fine comp.	Coarse comp.	Thick.	Shape in Plan
	1		layer	top soil			Dark Grey Brown	Silt		0.45	
2	2	4	fill	ditch	1.9	0.5	Dark Mid Brown	Silt	Rare Chalk & Flint	0.5	
2	3	4	fill	ditch	2.3	0.6	Dark Brown	Silt	Rare Chalk, Charcoal & Flint	0.6	
2	4	4	cut	ditch	2.9	0.6					linear
2	5	6	fill	gully	0.35	0.25	Mid Brownish Grey	Silt		0.25	
2	6	6	cut	gully	0.35	0.25					linear
2	7	8	fill	post hole	0.4	0.12	Mid Brown	Silt		0.12	
2	8	8	cut	post hole	0.4	0.12					sub-circular
2	9	10	fill	gully	0.4	0.3	Dark Greyish Brown	Silt		0.3	
2	10	10	cut	gully	0.4	0.3					linear
2	11	12	fill	post hole	0.3	0.15	Light Brownish Grey	Silt		0.15	
2	12	12	cut	post hole	0.3	0.15					circular
2	13	14	fill	post hole	0.35	0.2	Light Brownish Grey	Silt		0.2	
2	14	14	cut	post hole	0.35	0.2					sub-circular
2	15	16	fill	post hole	0.4	0.2	Light Brownish Yellow	Silt		0.2	
2	16	16	cut	post hole	0.4	0.2					sub-circular
1	17	71	fill	ditch	0.8	0.4	Mid Brownish Red	Silt	Rare Charcoal	0.4	
1	18	18	cut	ditch	0.6	0.7					linear
1	19	19	cut	ditch	1.4	0.6					linear
1	20	18	fill	ditch	0.6	0.6	Dark Brown	Silt		0.6	
1	21	18	fill	ditch	0.25	0.35	Light Grey	Silt		0.35	
1	22	71	fill	ditch		0.1	Dark Brown	Silt	Rare Chalk & Charcoal	0.1	
1	23	71	fill	ditch		0.3	Dark Brownish Black	Silt	Moderate Charcoal	0.3	
1	24	71	fill	ditch		0.3	Light Brownish Grey	Silt		0.3	
1	25	19	fill	ditch		0.3	Light Greyish & Yellowish Brown	Silt		0.3	
1	26	19	fill	ditch		0.3	Mid Brown	Silt	Occ Charcoal	0.3	

Trench	Context.	Cut	Category	Feature Type	Width	Depth	Colour	Fine comp.	Coarse comp.	Thick.	Shape in Plan
1	27	19	fill	ditch		0.3	Light Yellow	Silt		0.05	
1	28	19	fill	ditch		0.3	Mid Greyish Brown	Silt		0.3	
1	29	29	cut	ditch	2.3	0.75					linear
1	30	30	cut	pit	0.4	0.7					unknown
1	31	29	fill	ditch	2.3	0.75	Dark Greyish Brown	Clayey Silt	Rare Flint Rare Charcoal	0.75	
1	32	29	fill	ditch	0.6	0.6	Light Brownish Grey	Silt		0.2	
1	33	30	fill	pit	2.2	0.4	Dark Brown	Silt		0.4	
1	34	30	fill	pit	2.2	0.15	Dark Reddish Brown	Silt		0.15	
1	35	30	fill	pit	2.2	0.2	Light Brown	Silt		0.2	
1	36	30	fill	pit	2.2	0.4	Mid Grey	Silt		0.3	
3	37	38	fill	ditch	1	0.5	Light Grey	Silt		0.5	
3	38	38	cut	ditch	1	0.5					linear
3	39	40	fill	pit	0.5	0.1	Pale Creamy Brown	Silt		0.1	
3	40	40	cut	pit	0.5	0.1					rounded corner square
3	41	46	fill	ditch	0.35	0.1	Light Cream	Silt		0.1	
3	42	46	fill	ditch	1.3	0.3	Mid Greyish Brown	Silt		0.3	
3	43	46	fill	ditch	0.5	0.02	Dark Black	Silt	Charcoal	0.02	
3	44	46	fill	ditch	0.75	0.3	Light Brownish Grey	Silt			
3	45	46	fill	ditch	1.2	0.5	Light Brown	Silt	Iron Pan	0.5	
3	46	46	cut	ditch	1.4	0.6					linear
1	47	47	cut	ditch	1.9	0.62					linear
1	48	47	fill	ditch	0.42	0.1	Mid Grey	Silty Clay	Occ Charcoal	0.1	
1	49	47	fill	ditch	0.72	0.2	Light Yellowish Grey	Clayey Silt		0.2	
1	50	47	fill	ditch	0.5	0.1	Dark Grey	Silty Clay	Freq charcoal	0.1	

Trench	Context.	Cut	Category	Feature Type	Width	Depth	Colour	Fine comp.	Coarse comp.	Thick.	Shape in Plan
1	51	47	fill	ditch	0.8	0.11	Light Yellowish Grey	Clayey Silt		0.11	
1	52	47	fill	ditch	0.89	0.14	Light Yellowish Grey	Clayey Silt		0.14	
1	53	70	fill	ditch	1.8	0.15	Dark Reddish Grey	Clayey Silt	Freq Charcoal	0.15	
1	54	55	fill	post hole	0.35	0.2	Dark Brownish Grey	Silt		0.2	
1	55	55	cut	post hole	0.35	0.2					sub-rectangular
1	56	57	fill	post hole	0.3	0.2	Dark Brown	Silt		0.2	
1	57	57	cut	post hole	0.3	0.2					circular
1	58	59	fill	post hole	0.5	0.05	Light Greyish Brown	Silt		0.05	
1	59	59	cut	post hole	0.5	0.05					circular
1	60	61	fill	gully	0.25	0.25	Mid Yellowish Grey	Silt		0.25	
1	61	61	cut	gully	0.25	0.25				0.25	linear
1	62	65	fill	ditch	0.75	0.2	Light Greyish Blue	Silty Clay		0.05	
1	63	65	fill	ditch	0.9	0.2	Light Brownish Orange	Clay		0.1	
1	64	65	fill	ditch	0.7	0.1	Light Brownish Grey	Silt		0.1	
1	65	65	cut	ditch	1	0.3					linear
1	66	19	fill	ditch	0.85	0.21	Mid Brownish Grey	Silty Clay	Freq. Charcoal	0.21	
1	67	19	fill	ditch	1.2	0.14	Light Yellowish Grey	Sandy Silt		0.15	
1	68	19	fill	ditch	0.78	0.15	Mid Grey	Clay	Freq. Charcoal	0.15	
	69	0	layer	natural			Yellowish brown	Silt			
1	70	70	cut	ditch	1.8	0.35					linear
1	71	71	cut	ditch	1.1	0.4					linear

Table 2: Context inventory

APPENDIX B FINDS REPORTS

B.1 Roman pottery

By Séverine Bézie

Introduction

B.1.1 A total of 25 sherds, weighing 394g (10.5 estimated vessel equivalent (EVE)), of Roman pottery was recovered from the site (Table 1). A minimum of 22 individual vessels which, although fragmentary, are unabraded and few show surface residues surviving (8% of the total of the vessels only) and traces of burning and/or sooting (20% of the total of the vessels). The assemblage has an average sherd weight (ASW) of 15.76g.

Trench	Feature	Sherd count	Weight (g)	Weight (%)
1	Ditch 18	1	21	
	Ditch 71	2	39	
		3	60	15.23
2	Layer 1	2	20	
	Ditch 4	9	82	
		11	102	25.89
3	Ditch 38	4	169	
	Pit 40	1	5	
	Ditch 46	6	58	
		11	232	58.88
Total		25	394	100.00

*Table 3: The pottery quantified by trench and feature (**bold** = trench totals)*

Methodology

- B.1.2 The pottery was examined in accordance with the guidelines set down by the Study Group for Roman Pottery (Barclay *et al.* 2016, 12-18). The total assemblage was studied and a catalogue prepared (Table 5).
- B.1.3 All the sherds have been counted and weighed to the nearest whole gram. The pottery was divided into fabric groups defined on basis of inclusion types present and a sample was examined using a x10 magnifying lens. The fabric codes are descriptive and abbreviated by the main letters of the title (Sandy grey ware = SGW). Vessel form was also noted, also any decoration, residue and levels of abrasion.
- B.1.4 National publications (Tomber and Dore 1998; Tyers 1996) were used for identifying the fabrics and forms.

The Pottery

B.1.5 Eight Roman pottery fabrics were identified during this evaluation (Table 4).

Fabric name: abbreviation <i>Published reference</i>	Form	Sherd count	Weight (g)	EVE	Weight %
Shell tempered ware: STW	Jar	5	217		55.08
Sandy grey ware: SGW <i>Biddulph et al 2015, GRS</i>	Beaker/Bowl, Beaker/bowl/cup, jar, jar/bowl, lid	13	85	10.5	21.57
Black-burnished ware: COL BB 2 <i>Tomber and Dore 1998, 131</i>	Jar	1	26		6.60
Bourne-Greetham Shelly ware: BOG SH <i>Tomber and Dore 1998, 156</i>	Jar	1	23		5.84
Dales Shelly ware: DAL SH <i>Tomber and Dore 1998, 157</i>	Jar	2	19		4.82
Brown surfaced grey ware: BSGW <i>(Suffolk Archaeological Unit)</i>	Jar	1	11		2.79
Pink Grog-tempered ware: PNK GT <i>Tomber and Dore 1998, 210</i>	Jar	1	8		2.03
Lower Nene Valley Parchment ware: LNV PA <i>Tomber and Dore 1998, 118</i>	Flagon	1	5		1.27
	Total	25	394	10.5	100.00

Table 4: The pottery fabrics and forms, listed in descending order of weight (%)

The fabrics and Forms

- B.1.6 The whole assemblage is constituted of Romano-British (mid 1st to 4th centuries AD) coarseware pottery.
- B.1.7 Over half the assemblage (55.08% by weight) comprises regionally produced Shell tempered ware – utilitarian – which consists exclusively of jars. Only one example with a blackened surface is decorated with a horizontal riling on the body, its production dated to the 2nd century AD (Brown 1994, 49-51).
- B.1.8 Two other categories of shelly ware are represented in the assemblage, even if in a minor proportion, as there is only one example for the first group and two examples for the second group. The first group is a Bourne-Greetham ware (Lincs), an undecorated jar manufactured between the 1st century and the 4th century AD. The second group is constituted of two sherds of Dales Shelly ware (Lincs): one undecorated jar with an iron deposit inside the wall and one undetermined and undecorated form. These examples were manufactured between the 3rd century and the 4th century AD.
- B.1.9 Also well represented is the Sandy grey ware group (21.57% by weight), locally produced grey ware – utilitarian – beaker/bowl/cup, jar, jar/bowl and lid. Jars are the most common vessel type. Typically, they are undecorated with an average rim of 13cm and a few examples have soot residues surviving on surfaces. More than a third of the Sandy grey ware group presents a black slip on the outside surface (38.46% of the grey ware group), similar of the Black Burnished ware tradition. Although spanning

the whole of Romano-British period most of the Sandy grey ware assemblage is typical of the mid-2nd to 3rd centuries AD.

- B.1.10 The Black-burnished ware 2 example, which is probably a local copy of the Colchester Black-burnished ware 2 (Essex), is also represented, with a single jar fragment. This type was manufactured during the 3rd and 4th centuries AD.
- B.1.11 A single fragment of Brown surfaced grey ware is represented, an undecorated jar manufactured between the late 1st century and the 2nd century AD. This fabric is to link with Fabric 21 (Suffolk Archaeological Unit) or Fabric 47c (Marney 1989, 193).
- B.1.12 Only one jar of Pink Grog-tempered ware family fabric is represented. The jar is decorated with wavy and irregular incised lines and combing decoration. It was manufactured from c. AD 160/170 to 410 (Marney 1989, 174-5). This fabric seems equates to the Soft Pink Grogged ware group (Woodfield 1983, 78-9).
- B.1.13 The Lower Nene Valley Parchment ware group consists of one sherd of undecorated flagon. This type was manufactured between the 3rd century and the 4th century AD.

Summary

- B.1.14 Guyhirn is located in a rich archaeological landscape with Roman settlements at Wisbech (c. 9km to the north-east), March (c. 8km to the south), Coldham (c. 7km to the south-east), Westry (c. 6km to the south), Murrow (c. 4.8km to the north) and Tholomas Drove (c. 2.5km to the north). These settlements show a common link with saltern remains (briquetage) and agricultural activities, making Guyhirn part of an exchange area with local town markets ideally joined by rivers – Guyhirn is located on the northern bank of the Nene River – and roads, like the main one in the southern vicinity of the site, Fen Causeway, linking Water Newton (Peterborough, *Durobrivae*) to Brampton (Norfolk). Therefore, Guyhirn was ideally placed to receive a range of imports and local wares.
- B.1.15 The pottery recovered during this evaluation is a small sized ceramic assemblage of stratified Roman pottery that was found within five ditches and one pit identified as a pit. The pottery mostly comprises locally produced coarse wares with pottery spanning the whole of the Roman period was identified. And, although the assemblage has survived in relatively good condition, the absence of fine wares and its smallness means that it is not possible here to make a diagnostic closely datable.
- B.1.16 This assemblage, therefore, has been added to the corpus of known local Roman pottery. It has the potential to contribute to our understanding of ceramic manufacture, use and deposition within the environs of Roman Guyhirn, particularly when combined with any material gathered during further excavation.

Recommendations for further work

- B.1.17 No further analysis is recommended at this stage of works.
- B.1.18 If the site does progress to full excavation it is recommended that the pottery from all stages of archaeological works be analysed together to allow for the fullest interpretation of the complete assemblage. A larger assemblage would have good

potential to answer both local and regional research questions and inform of the manufacture, use and deposition of ceramics within Guyhirn at this time.

Retention and display

B.1.19 OA East curates the pottery and archive. The site archive is currently held by OA East and will be deposited with the appropriate county stores in due course. The assemblage should be kept as a result of its high potential for further analysis as part of the excavation assemblage.

Summary Roman pottery catalogue

Cxt.	Cut	Trench	Feature	Fabric family	Dsc	Form	Quantity	Weight (g)	Spot date
1		2	Layer	SGW	U		1	12	C2-C4
1		2	Layer	PNK GT	D	JAR	1	8	c AD 160/170-410
2	4	2	Ditch	SGW	RU	JAR/BOWL	1	4	MC1-C4
2	4	2	Ditch	SGW	RU	LID	1	4	MC1-C4
3	4	2	Ditch	SGW	D	JAR	1	12	MC1-C4
3	4	2	Ditch	SGW	U		1	4	MC1-C4
3	4	2	Ditch	STW	U	JAR	1	23	C1-C4
3	4	2	Ditch	STW	U	JAR	1	16	C3-C4
3	4	2	Ditch	STW	U		1	3	C3-C4
3	4	2	Ditch	BSGW	U	JAR	1	11	LC1-C2
3	4	2	Ditch	LNV PA	U	FLAGON	1	5	C3-C4
17	71	1	Ditch	COL BB 2	U	JAR	1	26	C2-C3
20	18	1	Ditch	SGW	U		1	21	C2
23	71	1	Ditch	SGW	D	JAR	1	13	c AD 270-420
37	38	3	Ditch	SGW	RD	BEAKER/BOWL	1	2	MC1-C4
37	38	3	Ditch	SGW	D	BEAKER/BOWL/ CUP	1	1	MC1-C4
37	38	3	Ditch	SGW	D	BEAKER/BOWL/ CUP	1	1	MC1-C4
37	38	3	Ditch	STW	BU	JAR	1	165	C1-C4
39	40	3	Pit	SGW	U	BEAKER/BOWL	1	5	C2
42	46	3	Ditch	STW	D	JAR	4	52	C2
42	46	3	Ditch	SGW	U		1	3	C2
42	46	3	Ditch	SGW	U		1	3	LC1-C2
Total							25	394	

Table 5: Summary pottery catalogue (Key: B - base, BSGW - Brown surfaced grey ware, COL BB 2 - Colchester Black-burnished ware 2, Cxt - context, D - decorated body sherd, Dsc - description, LNV PA - Lower Nene Valley Parchment ware, PNK GT - Pink Grog-tempered ware, R - rim, SGW - Sandy grey ware, STW - Shell tempered ware, U - undecorated body sherd. C - century, E - early, L - late, M - mid)

B.2 Fired clay and briquetage

By Simon Timberlake

Introduction

- B.2.1 A total of **25.85kg** of fired clay was recovered from 26 different excavated contexts within three separate evaluation trenches sampled at the site of this suggested Roman saltern which lay adjacent to the edge of a roddon. Amongst this fired clay was identified c.12.07kg of briquetage consisting of the following elements which are typical of Iron Age and Romano-British type coastal-fenland salt making briquetage assemblages. Included are fragments of the salt-making pans (troughs or other vessels; 4083g), fragments of the moulded brick supports (2759g), the pedestal supports (3630g), the 'pinch props' (18g), clay 'clips' for attaching the pans (418g), briquetage 'pots' (75g), a fragment of a disc-like support (68g), clay wedges (70g), firebars (290g), fragments of the clay hearth lining or hearth platform material (192g), a salt mould sherd (33g), alongside a small amount of salt slag (432g) (Lane and Morris 2001; Hathaway 2013; Zant 2016 and Poole, C. (Specialist Report 8) in Biddulph *et al.* 2012 for comparison). Just a few fragments of what might be described as disintegrated and possibly re-burnt loomweight (70g) and coarseware ceramic (6g) were also noted amongst this.
- B.2.2 The briquetage elements from Guyhirn have now all been categorized and described within the fired clay catalogue (Table 7) and in the Results (Section B.2.5-27) of this report. The various fabric types identified have now been simplified, and the descriptions of these provided (up to a maximum of nine different types) within the catalogue attached; all of these being variants or intermediaries between yellow, red and brown silty clays with a high organic content and differing amounts of grit or grog as additional inclusions.
- B.2.3 Based upon its form and style of manufacture this salt-making debris is Middle Iron Age to Romano-British in date (Lane and Morris 2001, 359). Whilst some of the briquetage elements are demonstrably Iron Age in form, others appear to be classically Romano-British, dating from the Early Roman (pre-200 AD) to the Late Roman periods. This suggests a mixture of briquetage from different periods. In other words, a continuity in saltworking.

Methodology

- B.2.4 The fired clay was identified visually using an illuminated x10 magnifying lens and compared where necessary with an archaeological reference collection. The pieces were tested with dilute hydrochloric acid to determine the presence of carbonate and then (where possible) fitted together, and the fabric composition and original sizes determined.

Results

Undiagnostic fired clay

- B.2.5 A total of 13.78kg of undiagnostic (mostly non-briquetage) fired clay debris was separated out when examining this assemblage. Most of this does not appear to have been worked into a daub (*i.e.* with addition of organic and grit or grog inclusions and its use a 'plaster'), yet much of it does appear to have been used, most of it being laminated with some moulded into shape. Several different fabric types were identified, all of these fairly similar, most being well-fired pink to buff-coloured silty clays (only occasionally with reduced centres) with a fine mica content and occasionally crushed or broken flint, either intentionally or unintentionally added.
- B.2.6 The laminated and blocky nature of at least 75% of this material suggests it could have been used for lining a large fire pit, perhaps one used to hold the pans for the boiling of brine and the production of salt. Alternatively, this 'slab clay' could have been used for lining the brine tanks and pits. However, the majority of this clay appears to have been intensively fired.
- B.2.7 There were differences in the proportions of undiagnostic fired clay to briquetage between the various contexts, yet none of these were thought to be significant, given that in most cases there was very clear evidence here for redeposition.
- B.2.8 A small proportion of the undiagnostic and highly fragmented clay pieces containing inclusions of grog, flint and organic as probable temper may have been fragments of re-burnt and broken-up loomweight, yet the complete absence of diagnostic features made the determination of this impossible

Briquetage

- B.2.9 Seven main fabric types (nine in total) were identified amongst the 12.07kg of briquetage examined (Table 6). This shows a dominance in the yellow and red fabrics which are perhaps the most contrasting two in terms of texture and composition. The relatively unfired (or un-refired) pan vessel body sherds are composed dominantly of brown (B) or yellow-brown (YB) fabrics which have ceramic-like inclusions, whereas the heavily re-fired and sometimes salt-contaminated and bleached sherds are dominated by the yellow-red (YR), yellow (Y) and occasionally red (R) fabrics, which suggests that the appearance of the briquetage is not just influenced by composition (which it may be) but also by the diagenetic changes following its exposure to heat and the alkalinity of the hot brine solution. The actual number of different fabric compositions present here may thus be less than it seems. Clearly though the pedestal supports (Types 1 and 2) and also the various brick supports are made from clay mixes of different composition; the minimum number of compositionally different fabrics here probably being 5 – 6. The organic material present within these briquetage fabrics is almost certainly a wheat chaff used as temper (Poole 2012).

Fabric type	Colour	Composition/ texture	Approx. proportion (g)	Use
B	light-mid brown	burnt-out organic (holes) with round grit + BF + grog	1013	unfired/ unused pan vessel sherd
YB	yellow-brown	similar but more porous with less grog inclusion	1228	pan vessel sherd
Y	pale yellow	v porous lightweight with much burnt-out organic and few other inclusions	2757	pan vessel sherd +pedestal support (Type 2) + wedge + mould pot
YR	yellow-pink	porous with much burnt-out organic and minor BF/ grog	1107	pan vessel sherd + hearth lining
YR 1	yellow-red	porous with mod burnt out organic and greater incl BF + grit	1103	pan base + pot + square brick supports
YR 2	yellow-red	similar to YR 1 but with lower porosity (i.e. denser) and incl round quartz grit + fl	1396	wedge-shaped brick supports + hearth platform
R	red	porous + lightweight but with often with a red surface 'slip' with less burnt-out organic	2510	firebar + pedestal support (Types 1+3) + pinch prop + clay 'clips' + disc + trough base + pan vessel sherd
R2	red	denser red sandy silty clay with some burnt-out organic	380	square brick support
SH	pink	denser red silty clay with abundant shelly grit as temper	63	firebar/ brick

Table 6: Briquetage fabric types

Salt pan vessel (troughs)

B.2.10 Given the fragmentary nature of this assemblage no large or particularly diagnostic sherds of these sub-cylindrical trough-like vessels had survived, the largest of these being c.80-90mm in diameter and almost exclusively body sherds from the sides of these fairly typically-shaped Iron Age-Early Roman briquetage vessels (Lane and Morris 413-414 and App. B.2 Fig. 18). Just one or two upper rim and basal rim fragments were identified within this, although the range in thickness within these sherds plus some useful curvatures present within some of the larger pieces suggest rectangular-sub-cylindrical to trapezoidal-shaped pans with straight rims and steep-near vertical sides of perhaps 50-60mm (high) and thickened bases of perhaps 150-200mm (wide). Several examples of crenulated (thumb-impressed) decorated rim(s) suggest the presence of a different type of (perhaps earlier) pan (as seen at Stanford Wharf, Essex: SEE Poole in Biddulph *et al.* 2012, 21& 26 & 32). A total of 4083g of these vessel sherds were identified, more than 95% of them as thin (7-10mm thick) body sherds (App. B.2 Figs 1-2).



App. B.2 Fig. 1: Largest body sherd of a briquetage vessel

App. B.2 Fig. 2: Crenulated rim sherd (arrow) and base

Clay 'clips'

- B.2.11 A total of 418g (47+) of clay 'clips' - the pressed clay lumps used as fixings to attach the edges of (a group of) salt pan troughs together upon the hearths - were identified amongst this large collection of anomalous pieces of fragmented briquetage. Although small, these items are important to recognize as they are diagnostic of these large interfitting pan arrangements such as those described by Lane and Morris (2001, 361, 421 and 423) from some of the best-preserved assemblages of Iron Age – Roman fenland salt-making briquetage (such as those found at Ingoldmells in South Lincolnshire). Typically, these clips are 'dabs' of pressed clay, some of which may be found still attached to the rims of the fragmented salt pans (such as those from context 31 (31e)). The individual 'clips' are often less than 20-30mm wide and weigh as little as 3g. Up to 217g of partially abraded detached 'clips' were separated out from the fragmentary briquetage elements recovered from context 31, whilst another 87g came from context 64. More typically sums of between 10-20g might be expected from amongst 50-100g of fragmentary briquetage. Oftentimes though these clips are difficult to recognize, or at least be certain of, as they may sometimes just consist of amorphous clay lumps. However, the presence of semi-circular markings on one of the trough rims (App. B.2 Fig. 3) might be better explained by the regular application of clay 'clips' to a normal straight-sided rim top - as Lane & Morris (2001, 422 fig.134.4) have aptly demonstrated in the case of the Ingoldmells Beach Roman briquetage vessels.



App. B.2 Fig. 3: Loose clay 'clip' (LH side) and a 'clip' still attached to the pan vessel rim (RH) (31)

Pedestal support (Type 1)

B.2.12 Of the 3648g of pedestal support briquetage recorded from the 20 different contexts sampled some 1440g was identified as Type 1: round cylindrical roughly moulded red clay fabric (R) made pedestals (up to 110mm high) with slightly flared bases and occasionally flared or flattened tops of between 45-55mm in diameter (App. B.2 Fig. 4). These were recorded from at least four different contexts (17, 31, 36 and 64) – sometimes alongside the various other pedestal types. The largest number (18 fragments) came from context 36. Similar type pedestal supports have been recorded from amongst Iron Age and Roman briquetage at Stanford Wharf, Essex (Poole in Biddulph *et al.* 2012, 26 and 34) and in the Cambridgeshire-Lincolnshire Fens at Cowbit, Langtoft and Market Deeping (Lane & Morris 2001, 362-363). It is difficult from the available comparisons to determine whether these forms are more typically Roman than Iron Age, although the former seems the more likely.



App. B.2 Fig. 4: Type 1 roughly moulded squat cylindrical pedestal (context 36)

Pedestal support (Type 2)

B.2.13 By far the best-made pedestal supports were those of Type 2 – these were variably sized tapering rectangular supports (up to 100mm + tall) possessing a slightly rounded square x-section (typically 45 x 60mm) and were made of a yellow (Y) clay briquetage fabric (App. B.2 Fig. 5). The base of a much larger example of a similar tapered (pyramidal) pedestal was recovered from context 17 (App. B.2 Fig. 6) – this was c.95 x 100mm square at its base and of unknown height (the top half was missing). It is possible that this larger flat-topped support may have been used in conjunction with the smaller support much as is shown in App. B.2 Figure 18 (in a reconstruction of the Late Iron Age – Roman pans and hearth found at Ingoldmells Beach, Lincolnshire). Similar examples to this pedestal type were found at Jersey Way in Roman Middlewich, Cheshire (Zant 2016, 1210 fig.34), at Stanford Wharf in Essex (Poole in Biddulph *ibid.* 26 and 34) and within the Cambridgeshire-Lincolnshire Fens at Cowbit, Langtoft and Market Deeping (Lane and Morris 2001, 363 fig.115.22). At all three sites these were identified as being Late Roman in date. Type 2 pedestal fragments were recovered from contexts 9, 31, 36 and 64 (totalling 1825g) – thus they were from similar contexts to Type 1.



App. B.2 Fig. 5: Type 2 square-pyramidal support

App. B.2 Fig. 6: Large well-moulded variant of Type 2

Pedestal support (Type 3)

B.2.14 This was a crudely-made small pedestal support manufactured of squeezed-clay which was probably made on-site as necessity demanded. Some of the examples (*e.g.* context 23 in App. B.2 Fig. 7) were partially hollow. There was no particular standard (dimension) evident here – all of the examples were small and sub-cylindrical to lenticular in shape and anywhere between 23mm x 15mm and 70mm x 30mm in size. A total of just 126g of fragments were recorded from contexts 23, 31, 36 and 62. Something similar was recorded from the Cambridgeshire-Lincolnshire Fens at the saltworking sites of Cowbit, Langtoft and Market Deeping (Lane and Morris 2001, 362

fig.114.16) where this 'type' of pedestal was identified as being Middle Iron Age to Early Roman.



App. B.2 Fig. 7: Small pedestal of squeezed-clay (context 23)

Pedestal support (Type 4)

B.2.15 Just two examples of this early and relatively crudely moulded 'horned' pedestal were identified within contexts 9 and 31 (total 114g). However, the best example of this squeezed-clay lenticular-shaft shaped support comes from context 9 where the well-preserved pedestal is 80mm tall, 20mm thick and between 30-55mm wide; the widest part being at the top between the two short horn projections (App. B.2 Fig. 8). Similar (but slightly different) small horned pedestals were recorded from a Middle-Late Iron Age saltworking site at Market Deeping in Lincolnshire (Lane and Morris 2001, 277-278 figs 94 and 95), yet the overall form of this type suggests some sort of continuity with an earlier Bronze Age salt-making tradition (*ibid.* 272).



App. B.2 Fig. 8: A horned lenticular clay support

Pinch-prop pedestal support

B.2.16 Just two examples of this crude and probably opportunistically made squeezed clay pedestal support were identified from contexts 62 and 64 (18g in total). These would probably not have been identified as such weren't it not for the description of these within the finds report from Stanford Wharf, Essex (Poole in Biddulph *et al.* 2012, 37 fig.8.6.37). The examples were little more than squeezed blobs of clay used to separate the underside of the pan from adjacent ones or the clay hearth edge.

Clay wedge

B.2.17 Clear examples of these clay wedges used to support the edge of the boiling pans within the hearth pits were either rare or difficult to identify within the Guyhirn briquetage assemblage. These elements are commonly referred to at Stanford Wharf, Essex where they appear to have been essential to the operation of the Roman salt making hearths (Poole in Biddulph *et al.* 2012, 24, 27 and 36 fig.8.5). Just one small wedge was identified for certain from context 36 (70g).

Wedge-shaped brick support

B.2.18 Wedge-shaped brick supports may have taken the place of clay wedges at Guyhirn. These are considerably more abundant within the briquetage assemblage and make up a much larger percentage of the total weight of fired clay (App. B.2 Figs 14 and 15). In total 1339g of wedge-shaped brick fragments were recorded from contexts 9 (278g) and 31 (1061g). Some but not all of these were square-ended (some possessing round internal faces), large, and substantially made (range: 40 x 80 x 50 and 70 x 65 x 50 and 110 x 100 x 50-35), with several examples possessing raised bevels on their external rim (undersides) e.g. context 31 (31d+e). Refitting pieces of one of these wedge-shaped bricks which may have been used to lift the edges of one of the saltpans above the sides of the hearth pit can be seen in App. B.2 Fig. 9. The bricks were invariably made from a tougher tempered fabric and it is tempting to speculate that these may have needed to hold the weight of the tanks and withstand the (sometimes) high temperatures of the hearths.



App. B.2 Fig. 9: Wedge-shaped brick support. NOTE the fire-reddened underside and heavily tempered (gritted) fabric (context 31). The arrow indicates the raised bevel rim (underside)

Square brick supports (various types)

B.2.19 At least two different types of square brick support made of different clay fabrics were encountered. The presence sometimes of a slightly concave upper surface (in context 7 some 30 fragments of a square brick 80mm tall weighing 1238g was identified) confirms the most likely use of these bricks as support(s) for the pans. Square bricks were recorded from contexts 7 and 31 (total 1420g).

Disc support

B.2.20 Just one example of a flat disc-like briquetage support (a single fragment weighing 68g) was recovered from context 31 (App. B.2 Fig. 10). This was interpreted as being part of a shallow stand of c.120mm diameter and 15mm thick of uncertain purpose. A possible analogue of this was recorded from the Roman salt making site of Ingoldmells Beach, Lincolnshire (Lane and Morris *ibid.*, 423 fig. 134), but it appeared to have been smaller.



App. B.2 Fig. 10: Edge of a circular disc-like flat stand or support (context 31): piece 40mm wide

Firebars

B.2.21 A total of 290g of putative firebar fragments were recovered from contexts 23, 31, 36, 60 and 64. Some of these fragments had square sections of c.40 x 40 mm, although most consisted of short triangular wedge-shaped, bevelled and sometimes hollow elements, most of which were intensely burnt and may have formed part of a clay grate. These were made from various fabric types, most typically the red (R) porous briquetage, but occasionally also from denser gritted fabrics, including perhaps the single shelly briquetage fabric (SH) from context 31 (63g) (App. B.2 Fig. 11). A variety of different firebar elements (as fragments) were recorded from Stanford Wharf, Essex (Poole in Biddulph *et al.* 2012, fig. 8.4) – none of them that similar to the examples from Guyhirn.



App. B.2 Fig. 11: Cross-section through a possible fire bar fragment from context 31. NOTE the dense shelly fabric in this sample

Hearth lining/ platform

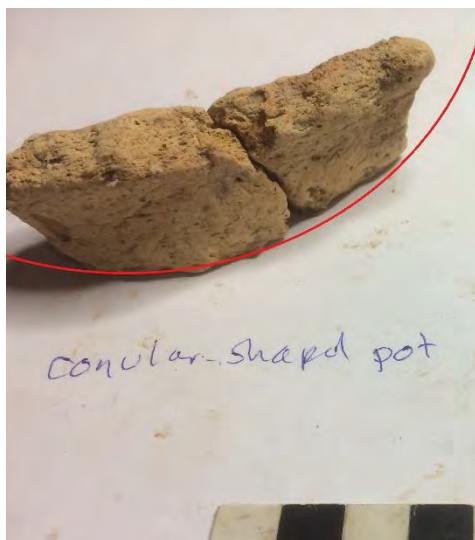
- B.2.22 A relatively small amount (192g) of probable hearth-lining/ hearth platform was identified within the Guyhirn briquetage assemblage. Fragments of similar linings and platforms have been recorded in briquetage from the Cambridgeshire-Lincolnshire Fens at the saltworking sites of Cowbit, Langtoft and Market Deeping (Lane and Morris 2001, 362 figs 116 and 119) and from Stanford Wharf, Essex (Poole in Biddulph *et al.* 2012, fig. 8.7) where it was recognized as such. Hearth lining and platform in the present instance was recovered from contexts 23 (135g) and 42 (57g).

Salt mould

- B.2.23 Shallow briquetage vessels which may have been moulds for salt were identified from contexts 17 (18g) and 64 (25g). These consisted of short round pots barely in excess of 100-120mm in diameter. The largest was 180mm in diameter but was barely 20mm deep. Similar examples have been recorded from Iron Age contexts at Stanford Wharf (Poole in Biddulph *et al.* 2012, fig. 8.2).

Briquetage pots

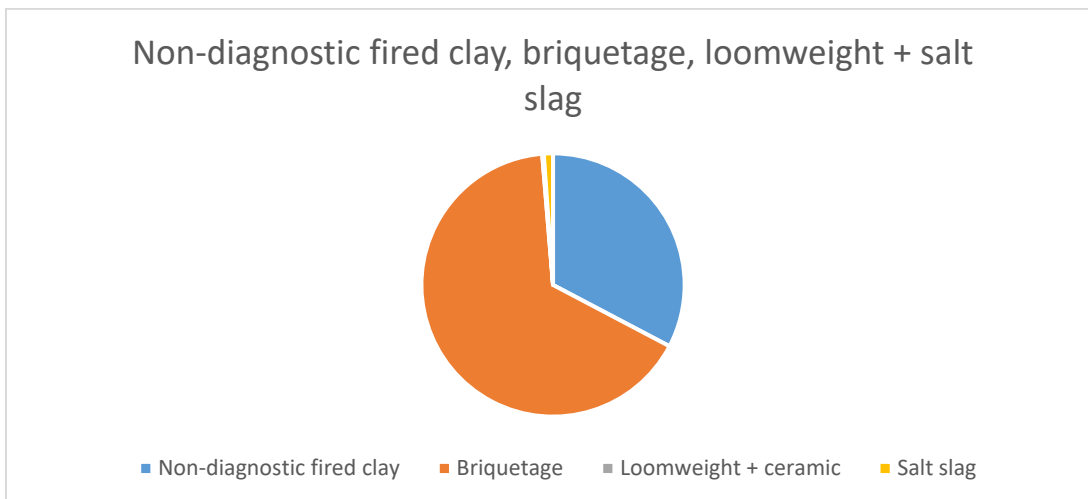
- B.2.24 Basal rim sherds including two re-fitting pieces from the base of a conular-shaped pot of c.120mm diameter recovered from context 31 (48g) may have been associated with salt collection (App. B.2 Fig. 12). Similar examples noted at Stanford Wharf, Essex were described as moulds (Poole *ibid.*), whereas at the saltworking sites of Cowbit, Langtoft and Moreton some of these are described as round-bottomed pans. Pans of this small size are unlikely, a much better explanation being salt collection. A total of 130g of sherds were accounted for from contexts 31 and 36.



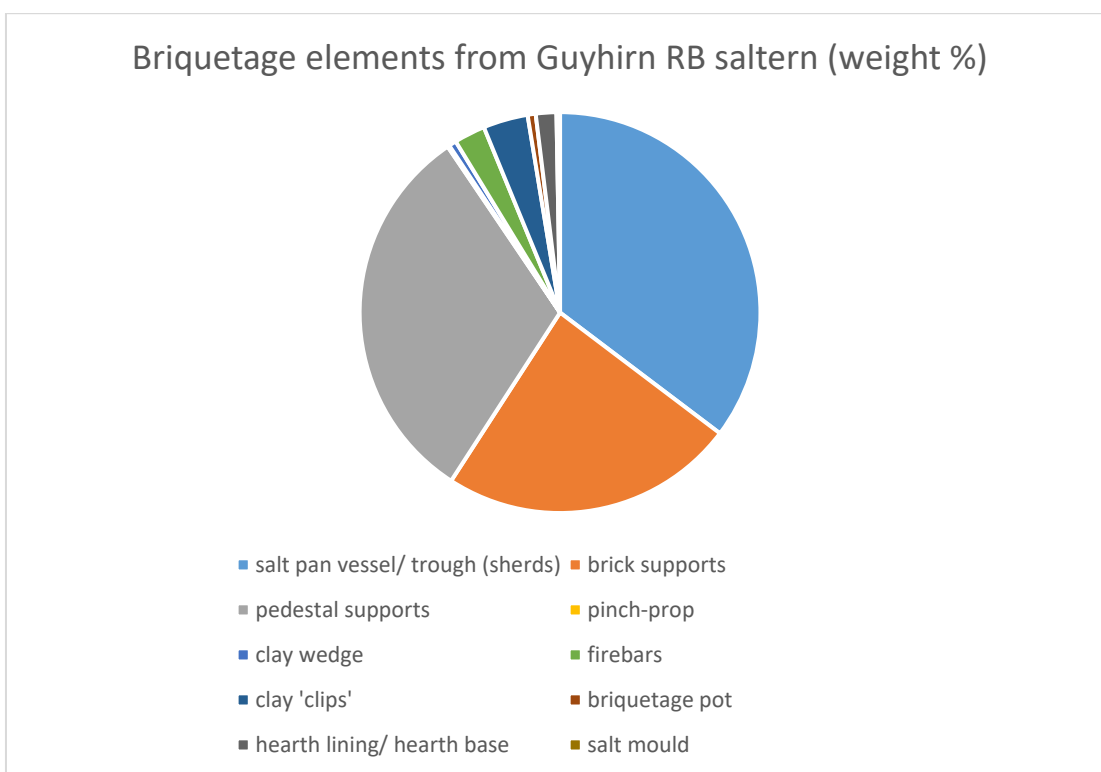
App. B.2 Fig. 12: Base of a conular-shaped briquetage pot from context 31

Salt slag

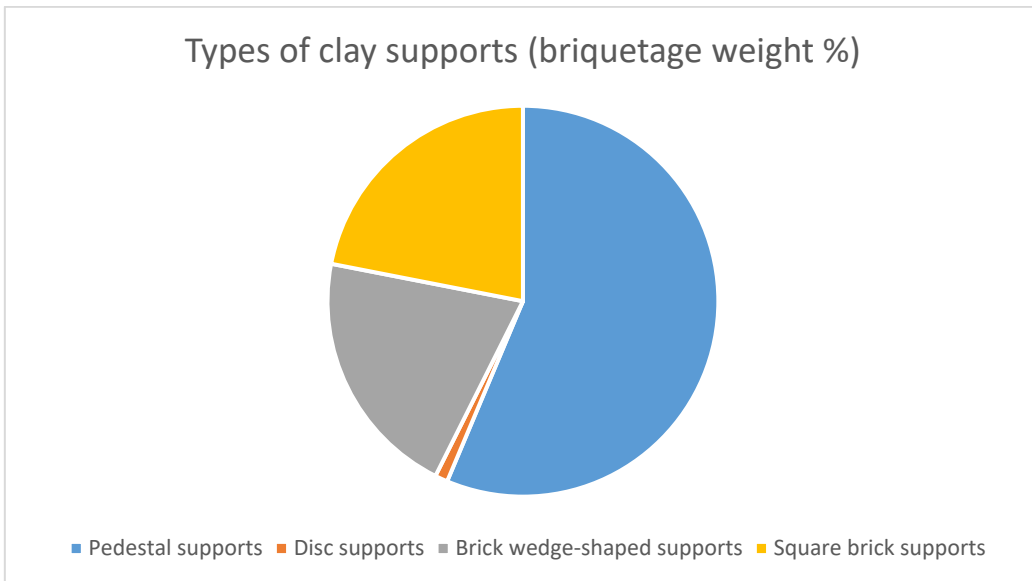
- B.2.25 A total of 432g of porous cindery salt slag with a white efflorescent coating on it was recovered from amongst the briquetage; this rarely forming discrete masses, but more commonly present just as coatings on the fired clay. Discrete pieces of slag present just in small amounts was recovered from contexts 3 (22g), 5 (196g), 9 (12g), 23 (115g), 31 (9g) and 64 (29g). Almost certainly these represent instances of the pans having boiled over depositing salt onto the clay beneath. Salt slag as such is rarely recorded within the archaeological literature, but undoubtedly it was common.
- B.2.26 The ratios of undiagnostic fired clay to briquetage *etc* within fired clay assemblage plus the ratio of the various identified categories of briquetage element are shown graphically within App. B.2 Figs 13-14. Likewise, the differing proportions of clay briquetage supports and the range(s) of pedestal types can be seen in App. B.2 Figs 15-16.
- B.2.27 An assessment of the variety and condition of the briquetage vessel fragments and furniture (supports) recorded within Table 7 confirms the conclusion already suggested that there are no significant differences between the assemblages recorded from different contexts, and that most contexts contain material which has (to some extent) been redeposited. The implication is that in most cases we are looking at what is probably a secondary assemblage, but one associated closely with the geographic site and probably also with some of the pit-like features recorded.



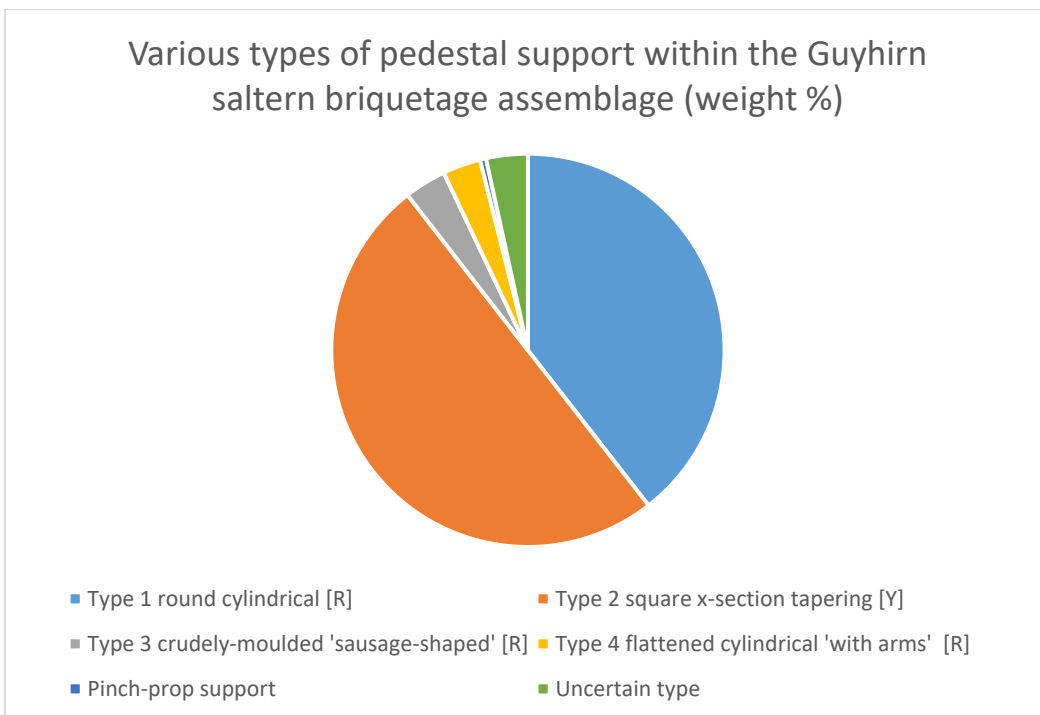
App. B.2 Fig. 13: Proportions of undiagnostic fired clay, briquetage and salt slag within the fired clay



App. B.2 Fig. 14: Proportions of the different briquetage element (types) present within the briquetage assemblage



App. B.2 Fig. 15: Different types of clay support present within the assemblage



App. B.2 Fig. 16: Various types of pedestal support recognized within the briquetage

Discussion

B.2.28 Despite its very fragmentary nature it has been possible to confirm here that we are looking at a comprehensive collection of briquetage furniture and residual vessel debris associated with trough-like brine boiling pans and hearths of the Middle-Late Iron Age to Late Roman date. Suitable parallels for this would be the Fenland salt making sites of Outgang Road, Langtoft [Middle Iron Age] (Lane in Lane & Morris 2001, 250-262), Cowbit and Morton Fen, Lincolnshire [Late Iron Age – Early Roman] (Lane and Trimble in Lane & Morris *ibid.*, 13-157), and Downham West, Nordelph and Middleton in Norfolk [Early – Late Roman] (Crowson in Lane & Morris *ibid.*, 162-238 &

302-320). There are elements present within the Guyhirn briquetage which suggest salt making activity as early as the Middle Iron Age (for example the crudely-made but well-preserved horned pedestal support), as well as during the Late Iron Age – Early Roman period (the occurrence of the clay ‘clips’ affixed to the briquetage vessel rim such as those noted at Ingoldmells Beach, Lincs.(Lane & Morris *ibid.* 410-424)), and during the Late Roman period. The latter evidence is perhaps the most abundant, and is defined by the ubiquitous presence of both cylindrical (Type 1) and tapered square-section pedestal supports (Type 2) which by all accounts (i.e. Lane & Morris *ibid.* 359; Poole in Biddulph et al. *ibid.*, 21-22 and Zant *ibid.* 109-110) are Late Roman in date - therefore within the period 200-400 AD. So, we are looking at some evidence for there being earlier salt making activity at Guyhirn, and also evidence for there being some continuity in production, yet the main activity would appear to be late, which accords with the Late Roman exploitation of the roddon silts for salt making at Middleton and also along the Fen Causeway at Downham West and Nordelph along the Cambridgeshire/ Norfolk fen edge.

B.2.29 Iron Age and Roman salt making sites within the Fens as revealed by the Fenland Survey (Silvester 1991) include a group of at least 14 Early Roman salterns located along the west and south-western margins of the Cambridgeshire Fens some distance to the west of Wisbech (and just to the east of the River Welland), whilst the nearest group of sites to Wisbech St. Mary and Guyhirn are probably those of Late Roman date found along the line of the Fen Causeway between Upware and Denver (SEE Lane & Morris *ibid.* Fig.107). Projecting the line of this causeway eastwards and we end up some miles to the south of Guyhirn, an area within which briquetage and salterns haven’t been found – at least until recently. Archaeological work within this area may thus reveal further evidence for saltworking associated with this Roman landscape feature.

B.2.30 It is perhaps not necessary at this stage of investigation of the Guyhirn site to attempt to fully interpret the salt production process used, but most likely this is of a model similar to that interpreted for both the Iron Age and Early Roman periods and illustrated in Lane & Morris *ibid.* Figures 121 and 133, which are reproduced here in their entirety. Suffice it to say, saltwater would have been channelled off the tidal roddons to begin the concentration process within clay-lined (?) evaporation pans. Subsequently the weak brines were collected then boiled for a long time within a series of linked trough like (sub-cylindrical) clay (briquetage) vessels placed within specially prepared elongated sunken hearth pits. The sub-crystalline salt would then have been removed into collection pots or into small briquetage salt moulds for further drying and consolidation into salt cakes. In this form (i.e. in pots or ‘boxes’) the salt was probably then transported and distributed. This method of salt production within the briquetage pans/ troughs laid upon the hearths is shown here in App. B.2 Figures 17 and 18.

B.2.31 We can be fairly certain now that we are looking at this type of salt production here at Guyhirn, and any future work should thus address the need to identify brine tanks as well as these 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. The most likely

scenario is that most of the surviving saltworking remains will be Early – Late Roman in date, although there could be evidence for earlier Middle to Late Iron Age works within the near vicinity.

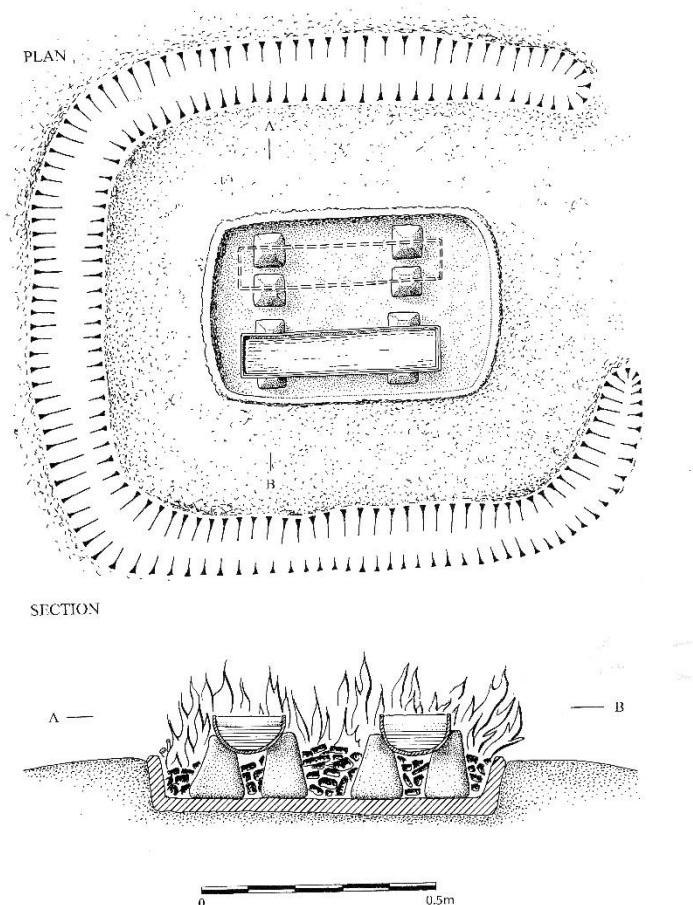


Figure 121 Possible reconstruction of Fenland salt production Middle Iron Age hearth system

App. B.2 Fig. 17: Reconstruction of a Middle Iron Age Fenland salt hearth with briquetage pans (Lane and Morris 2001)

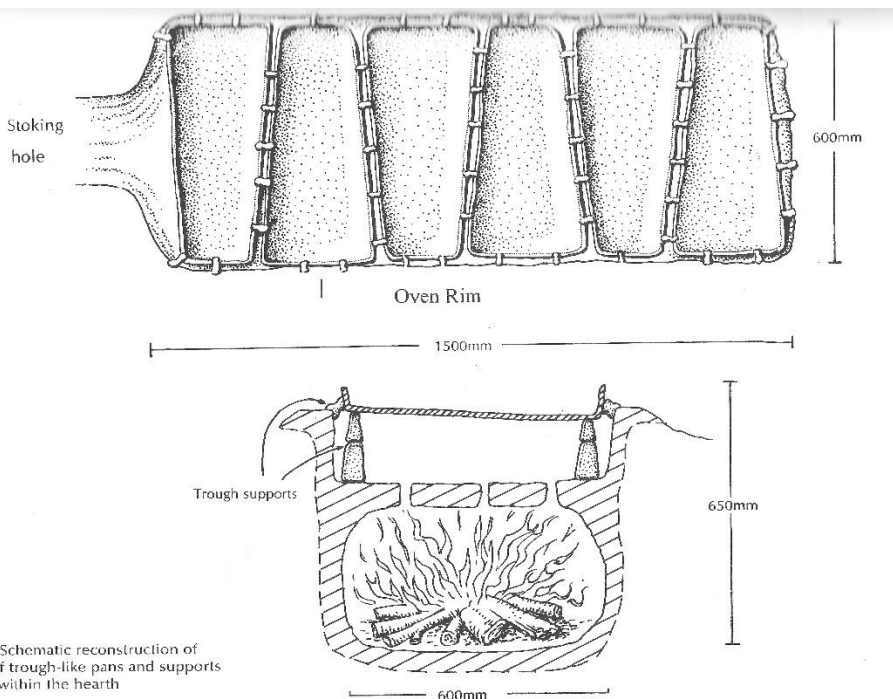


Figure 133 Schematic reconstruction of arrangement of trough-like pans and supports within the hearth

App. B.2 Fig. 18: Reconstruction of a Late Iron Age – Early Roman hearth with briquetage pans from Ingoldmells Beach, Lincs. (Lane and Morris 2001)

Disposal

B.2.32 None of the material should be disposed of in advance of further work on site. At that (post-excavation) stage the various different assemblages may be compared, and if necessary, the evaluation material (or some of this material) disposed of.

Catalogue of fired clay and briquetage

Cxt. & SF no. <>	Cut	Trench	Nos. pieces	Size (mm)	Type	Overall weight (kg)	Recognisable briquetage elements	Size (mm)	Individ. weights (g)	Description /condition
2	4	2	1	35	thin coat of salt slag on briquetage	0.009				good
2b	4	2	1	60	uncertain: possibly a loomweight or kiln fragment?	0.07				NOT obviously briquetage - but may have been re-used
2c	4	2	10	20-45	non-diagnostic fired clay + vessel sherds	0.06	3 vessel body sherds [YB]		24	50% good
3	4	2	92	15-120 (av 40)	non-diagnostic fired clay + vessel sherds	0.543				broken-up c. 60% eroded (round redeposit)
3	4	2					1 trough basal rim	115 long 35 wide	87	fire stained underneath ok

Cxt. & SF no. < >	Cut	Trench	Nos. pieces	Size (mm)	Type	Overall weight (kg)	Recognisable briquetage elements	Size (mm)	Individ. weights (g)	Description /condition
3	4	2					30 vessel body sherds [YR] + [YB]		200	x2 types vessel fabric, 60% good
3b	4	2	4	20-30 (av25)	glassy salt slag on briquetage	0.022				good
5	6	2	20	15-95 (av 40)	white-brown crystal powdery/ cindery salt slag on briquetage	0.196				good – formed on outer rim of trough/ hearth
5b	6	2	3	20+35+50	non-diagnostic fired clay	0.037				
7	8	2	45	15-80 (av 60)	non-diagnostic fired clay + brick (supports)	1.238	c.30 frags of broken brick support (concave top surface). [YR1]	80mm tall	1040	good (x2 refit)
9	10	2	3	20-45 (av 30)	white-brown crystal powdery salt slag on briquetage	0.012				good
9b	10	2	3	40-80	pedestal supports	0.073	2 pedestal support (type 4) [R]	80 (tall) x30-55x20		v good (arm-like branches at top)
9c	10	2	53	15-100 (av 40)	non-diagnostic fired clay + vessel sherds + wedge-shaped brick supports + pedestal support	0.673	10 vessel body sherds [YB]		174	good
9c	10	2					1 pedestal support (type 2) [Y]	45x60+	61	good
9c	10	2					1 wedge-shaped brick support [YR2]	70+x65-50	278	good
11	12	2	2	20	non-diagnostic fired clay	0.004				poor
13	14	2	1	20	non-diagnostic fired clay	0.004				
15	16	2	5	15-25	non-diagnostic fired clay + vessel sherds	0.012	2 vessel body sherds [Y]		3	moderate
17	71	1	17	10-70 (av 40)	non-diagnostic fired clay +	0.214				50% good

Cxt. & SF no. <>	Cut	Trench	Nos. pieces	Size (mm)	Type	Overall weight (kg)	Recognisable briquetage elements	Size (mm)	Individ. weights (g)	Description /condition
					vessel sherds + supports					
17	71	1					3 vessel body sherds [YR]		22	good
17	71	1					1 mould rim (c.180mm dia?) [R]		18	good
17	71	1					2 pedestal support (type 1) frags		48	good
17b	71	1	11	20-70 (av 38)	non-diagnostic fired clay + vessel sherds	0.109	7 vessel sherds incl straight rim [B]		89	good
17b	71	1					1 clay 'clip'? [R]		3	good
17 <1>	71	1	21	20-90	v large pyramidal (tapering) pedestal support (type 2) [Y]	1.012	all re-fitting pieces of (probably) the same support – round cornered	100x90x 100+ (tal) – top broken off	1012	v good - photograph
20a	18	1	196	20-80 (av 30)	non-diagnostic fired clay + vessel sherds	1.479				broken-up and salt stained c. 50% eroded and redeposited
20a	18	1					34 vessel body sherds [B] + [YR]		166	c.40% unweathered
20a	18	1					11 clay 'clips' ?		50	
20b	18	1	3	25 + 35 + 65			3 vessel body sherds [B]		25	x2 diff types – also fresh + weathered
21	18	1	3	25-35	non-diagnostic fired clay + vessel sherds	0.017	1 vessel body sherd [YR]		2	good
23	71	1	80	13-95 (av 50)	non-diagnostic fired clay + vessel sherds + supports + hearth + salt SL	2.00				
23	71	1					4 vessel body sherds [YR]		37	50% good
23	71	1					1 trough rim [R]	20 wide	34	good
23	71	1					1 pedestal support (type 3) [R] hollow	70+ long 30 wide	39	x1 v crudely moulded
23	71	1					1 firebar (frag) [R]	30 wide	20	slag encrust

Cxt. & SF no. < >	Cut	Trench	Nos. pieces	Size (mm)	Type	Overall weight (kg)	Recognisable briquetage elements	Size (mm)	Individ. weights (g)	Description /condition
23	71	1					3 hearth lining	90+ long	135	ok
23	71	1					1 clay ' clip '	35	6	good
23	71	1					4 salt slag	40-90	115	light on clay
23 <15>	71	1	5	35	non-diagnostic fired clay + vessel sherd	0.044	1 vessel body sherd		8	moderate
23 b	71	1	49	15-100 (av 40)	non-diagnostic fired clay + vessel sherd	0.508	9 vessel body sherds [B]		214	80% good
23b	71	1					3 frags firebar [R]		19	
23c	71	1	2	60 + 70	briquetage pan vessel sherds	0.07	vessel body sherds [B]	9mm thick	70	Good
24	71	1		39	non-diagnostic fired clay + vessel sherds	0.453				poor
24	71	1					3 vessel body sherds [YR]		18	poor
24	71	1					1 clay ' clip '		1	poor
31	29	1	470	7-35 (av 25)	non-diagnostic fired clay + vessel sherds	0.884	53 vessel body sherds [YR]		145	x2 types vessel fabric <20% good
31	29	1					1 coarseware ceramic? [B]		6	
31	29	1					+8 + clay ' clips? '		15	poor
31	29	1					4 small salt slag		9	all eroded
31b	29	1	7	30-50	briquetage pan vessel sherds	0.034	7 vessel body sherds [B]	7mm thick	34	moderate - good
31c	29	1	11	25-80 (av 35)	briquetage pan vessel sherds	0.163	11 vessel body sherds [B]: grog, flint, chalk + qtz grit + veg temper (reduced centre) w brown interior+ext	6-10mm thick		v good - vessel possibly unused (no salt stain)
31d	29	1	333	20-120 (av 35)	non-diagnostic fired clay + vessel sherds + pedestal supports + brick supports	2.822	56 vessel body sherds [B] + [YB]	6-10mm	325	50% good - remainder var weathered

Cxt. & SF no. < >	Cut	Trench	Nos. pieces	Size (mm)	Type	Overall weight (kg)	Recognisable briquetage elements	Size (mm)	Individ. weights (g)	Description /condition
31d	29	1					1 red sandy brick support [R2]	70x80x50 (tall)	380	good
31d	29	1					2 pedestal suppt (type 1) fragments	55mm diam at top	72	good
31d	29	1					2 pedestal suppt (type 4) [R]	45mm wide at top	41	good
31d	29	1					10 clay 'clips'		60	good
31d	29	1					3 wedge-shaped brick support [YR2] straight edge + raised base	110x100x50-35	781	good condition – salt bleached on top
31e	29	1	234	10-100 (av 35)	non-diagnostic fired clay + vessel sherds + pedestal supports +bricks	2.660	55 vessel body sherds [YR]		548	50% in good condition
31e	29	1					6 pedestal support (type 1) frags [R]	40-50mm in diam (top surf)	102	good (all frags)
31e	29	1					3 pedestal support (type 2) [Y]		37	moderate (frags)
31e	29	1					2 pedestal support (type 3) [R]	23 x 15mm diam	22	good
31e	29	1					2 round conular-shaped pot (refit frags) [YR1]	120mm diameter base	48	moderate
31e	29	1					1 circular disc (stand) [R]	120mm diameter	68	good
31e	29	1					10 clay 'clips' (some with wall attached) [R]		142	good
31e	29	1					3 wedge-shaped – square brick supports (v dense) [YR2]	50x70x30 (thick) + 40x80x50-30 (with raised rim underside SEE 31d)	280	moderate
31e	29	1					1 square x-section firebar? [SH]	40x40x45 section	63	moderate
36	30	1	381	15-110 (av 45)	non-diagnostic fired clay +	4.380				

Cxt. & SF no. <>	Cut	Trench	Nos. pieces	Size (mm)	Type	Overall weight (kg)	Recognisable briquetage elements	Size (mm)	Individ. weights (g)	Description /condition
					vessel sherds + pedestal supports + hearth					
36	30	1					56+ vessel body sherds [Y]		620	40% good
36	30	1					18 round pedestal support (type 1) [R]	110x50 + 80x65	1008	80% good (fragmented)
36	30	1					8 sub-square taper pedestal support (type 2) [Y]	90x60-40	596	good
36	30	1					1 crudely moulded pedestal support (type 3) [R]	70x35	51	good
36	30	1					3 wedge-like fire bars [R]	60x40	85	good
36	30	1					2 clay 'clips' attached [R]	40		good
36	30	1					1 round briquetage pot [Y]	50 diam	17	good
36 <4>	30	1	5	40-80 (av 45)	non-diagnostic fired clay + vessel sherds	0.131				moderate
36 <4>	30	1					4 vessel body sherds [Y] + [B]		60	60% good
36 <4>	30	1					1 clay wedge? [Y]	80x25-15	70	good
37	38	3	1	180	round cake of cindery white/brown porous salt slag c. 25-55mm thick	0.170				good - probably formed around the rim edge of a sub-circul/round ended hearth
37 b	38	3	10	23-40	non-diagnostic fired clay + vessel sherds	0.069	1 vessel body sherd [Y]		11	good
42	46	3			non-diagnostic fired clay + vessel sherds	0.255	3 vessel body sherds [YB]		20	moderate
42	46	3					hearth platform? [YR2]		57	
42	46	3					3 pan base frags [YR1]		15	moderate

Cxt. & SF no. < >	Cut	Trench	Nos. pieces	Size (mm)	Type	Overall weight (kg)	Recognisable briquetage elements	Size (mm)	Individ. weights (g)	Description /condition
44	46	3	4	15-25	non-diagnostic fired clay	0.011				moderate - poor
53	70	1	1	21	non-diagnostic fired clay + vessel sherds + support? + WC	0.517				
53	70	1					5 vessel body sherds [B] + [YB]		49	60% good
53	70	1					1 pedestal support (uncertain type) with salt slag		100	good
53 <11>	70	1	4		non-diagnostic fired clay + vessel sherds	0.044	2 vessel body sherds		10	moderate
53 <11>	70	1					1 vessel base with slag		15	moderate
54	55	1	8	20-30	non-diagnostic fired clay + vessel sherds	0.028	1 vessel body sherd [Y]		5	moderate
56	57	1	33		vessel sherds + base	0.139				30% good
56	57	1					2 refit pieces trough base [R]	90	57	good
56	57	1					17 small vessel body sherds [Y]		58	<5% good
58	59	1	13	10-32 (av 25)	vessel sherds	0.032	vessel body sherds [YB]		32	60% good
60	61	1	21	15-40 (av 30)	non-diagnostic fired clay + vessel shclip + firtebar	0.106	7 vessel body sherds [Y]		34	good
60	61	1					1 clay 'clip'		10	good
60	61	1					x2 wedge-shaped fire bar frags		8	poor
62	65	1	34	12-65 (av 35)	non-diagnostic fired clay + vessel sherds + support	0.180				75% good (fragments)
62	65	1					15 vessel body sherds [Y] x1[B]		85	
62	65	1					1 pinch prop [R]		6	

Cxt. & SF no. < >	Cut	Trench	Nos. pieces	Size (mm)	Type	Overall weight (kg)	Recognisable briquetage elements	Size (mm)	Individ. weights (g)	Description /condition
62	65	1					1 pedestal supp (type 3) [R]		14	
62	65	1					1 clay 'clip'		4	
62 <13>	65	1	1		vessel sherds	0.014	2 vessel body sherds [Y]		14	poor
64 <14>	65	1	5		vessel sherds etc	0.025				
64 <14>	65	1					3 vessel body sherds		14	poor
64 <14>	65	1					2 pot or mould rims		10	poor
64 b	65	1	374	10-110 (av 35)	non-diagnostic fired clay + vessel sherds + support	2.858	70 vessel body sherds x50 [YB] + [B]		574	75% good
64b	65	1					1 mould 20mm deep and 180mm diam?		15	
64b	65	1					9 pedestal support (type 1) frags. [R]		210	good
64b	65	1					4 pedestal support (type 2) frags [Y]		119	good
64b	65	1					2 wedge bevelled firebars [R]		95	moderate
64b	65	1					1 pinch prop [R]		12	good
64b	65	1					1 clay 'clip' attached wall	90	87	good
64b	65	1					2 salt slag		29	
68	19	1	12		non-diagnostic fired clay + vessel sherds + support?	0.439				
68	19	1					1 vessel body sherd [B]	65	36	good
68	19	1					1 pedestal support (uncertain type)	40	25	good

Table 7: catalogue of fired clay and briquetage

APPENDIX C ENVIRONMENTAL REPORTS

C.1 Animal bone

By Hayley Foster

Introduction and methodology

- C.1.1 The animal bone from the site represents a small faunal assemblage weighing 1.3kg (Table 8). There were 26 fragments recorded retrieved from hand collection and environmental samples. Bone was recovered solely from ditches. The species represented include cattle (*Bos taurus*), sheep/goat (*Ovis/Capra*), pig (*Sus scrofa*), horse (*Equus caballus*) and amphibian. The material likely dates to the Roman period.
- C.1.2 The method used to quantify this assemblage was based on that used for Knowth by McCormick and Murray (2007) which is modified from Albarella and Davis (1996). Identification of the faunal remains was carried out at Oxford Archaeology East. References to Hillson (1992), Schmid (1972), von den Driesch (1976) were used where necessary.

Results of analysis

- C.1.3 The assemblage was heavily dominated by cattle remains making up 65.4% of the identifiable remains retrieved.
- C.1.4 The condition of the bone is fair with heavy levels of fragmentation.
- C.1.5 Ageing data was minimal, however dental wear indicates that cattle were slaughtered between 40-50 months of age according to dental wear of a mandible and third molar from ditch **46** and ditch **38**.
- C.1.6 Calcined sheep/goat fragments were retrieved from environmental samples from pit **40** and hand collected material from ditch **4**.
- C.1.7 While the volume of bone recovered was not abundant, the remains do indicate that there were signs of domestic activity in those features where bone was recovered. Cattle would have made up the bulk of the resident's diet, not only due to the higher number of fragments, but because cattle yield more meat than both sheep and pig.

Species	NISP	NISP%
Cattle	17	63.0
Sheep/Goat	5	18.5
Horse	2	7.4
Pig	2	7.4
Amphibian	1	3.7
Total	27	100.0

Table 8: Total number of identifiable fragments (NISP) by species for hand-collected material

Recommendations for further work

- C.1.8 The assemblage is of a small size and cannot provide any further significant interpretations. Should further faunal remains be recovered from the site, a broader understanding of trends in husbandry practices and spatial distribution would be more viable.

C.2 Environmental samples

By Rachel Fosberry

Introduction

- C.2.1 Eleven bulk samples were taken from features within the excavated trenches at the site. The purpose of this assessment is to determine whether plant remains are present, their mode of preservation and whether they are of interpretable value with regard to domestic, agricultural and industrial activities, diet, economy and rubbish disposal.
- C.2.2 Samples were taken from layers and deposits that are thought to be associated with Roman salt making.

Methodology

- C.2.3 The samples were processed by tank flotation using modified Siraff-type equipment for the recovery of preserved plant remains, dating evidence and any other artefactual evidence that might be present. The floating component (flot) of the samples was collected in a 0.2mm nylon mesh and the residue was washed through 10mm, 5mm, 2mm and a 0.5mm sieve.
- C.2.4 A magnet was dragged through each residue fraction for the recovery of magnetic residues prior to sorting for artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds. The dried flots were subsequently sorted using a binocular microscope at magnifications up to x 60 and an abbreviated list of the recorded remains are presented in Table 9.
- C.2.5 Identification of plant remains is with reference to the Digital Seed Atlas of the Netherlands (Cappers et al. 2006) and the authors' own reference collection. Nomenclature is according to Zohary and Hopf (2000) for cereals and Stace (2010) for other plants. Carbonized seeds and grains, by the process of burning and burial, become blackened and often distort and fragment leading to difficulty in identification. Plant remains have been identified to species where possible. The identification of cereals has been based on the characteristic morphology of the grains and chaff as described by Jacomet (2006).

Quantification

- C.2.6 Text For the purpose of this assessment, items such as seeds and cereal grains have been scanned and recorded qualitatively according to the following categories:
- # = 1-5, ## = 6-25, ### = 26-100, #### = 100+ specimens
- C.2.7 Items that cannot be easily quantified such as charcoal and molluscs have been scored for abundance
- + = rare, ++ = moderate, +++ = abundant

Results

- C.2.8 Preservation of plant remains is by carbonisation and there are also untransformed seeds and rootlets that could be modern intrusions, or they may be contemporary with the deposits sampled having been preserved through waterlogging or desiccation. Foraminifera and ostracods are present in many of the samples and are likely to be an indicator of the marine silts that salt was extracted from.
- C.2.9 Charred plant remains are present in several of the samples, often as stems of reeds (*Phragmites australis*) and grasses which could be an indication of their use as kindling for fuel, possibly as peat as seeds of sedges (*Carex* sp.), spike-rush (*Eleocharis* sp.). Charcoal volumes are generally very low.
- C.2.10 Evidence of food remains are present as charred cereal grains of barley (*Hordeum vulgare*) and grains and chaff of spelt wheat (*Triticum spelta*) and are most abundant in Sample 5, fill 37 of ditch **38** in Trench 3 and are also present in Sample 1, fill 9 of ditch **10** (Trench 2) and Sample 10, fill 43 of ditch **46** (Trench 3). Weed seeds from these assemblages include bromes (*Bromus* sp.), cleavers (*Galium aparine*) and docks (*Rumex* sp.).
- C.2.11 Samples taken from a possible pit (**40**) produced burnt mammal bones (not human).

Trench	Cut no.	Context No.	Sample No.	Feature type	Volume processed (L)	Flot Volume (ml)	Cereals	Chaff	Weed Seeds	Charred stems	Forams	Ostracods	Snails from flot	Estimated charcoal volume (ml)	Pottery	Burnt mammal bones
1	19	17	2	Ditch	16	50	0	#	#	#	0	0	+	<1	0	0
1	29	31	3	Ditch	18	50	0	0	##u	0	+	0	+++++	<1	0	0
1	30	36	4	Unknown	16	20	0	#	#u	#	++	++	+	<1	0	0
1	47	53	11	Ditch	8	30	0	0	0	0	0	0	++	<1	0	0
1	47	53	12	Ditch	8	65	0	0	#	0	++	0	+	<1	0	0
1	65	62	13	Ditch?	8	5	0	0	0	0	+++++	+	++	<1	0	0
1	65	64	14	Ditch?	8	10	0	0	0	#	+++	++	+	<1	0	0
1	19	23	15	Ditch	16	25	0	0	0	#	++	+	+	<1	0	0
2	10	9	1	Ditch	16	100	##	#	#	#	0	0	+	2	0	0
3	38	37	5	Ditch	16	25	##	###	#	0	+++	+	+++	1	0	0
3	40	39	8	Small Pit	24	10	0	0	#	#	++++	+	++	3	#	#
3	40	39	9	Small Pit	20	15	0	0	0	#	++++	+++	+	<1	0	#
3	46	43	10	Ditch	12	20	#	0	##u	##	0	0	0	5	0	###

Table 9: Environmental samples

Discussion

- C.2.12 The recovery of charred cereal remains is an indication of Roman settlement that is closely associated with roddons and salterns. The local vegetation was dominated by sedges, rushes and reeds, all of which would have been exploited for fuel for the salterns (as well as for domestic hearths), most probably in the form of peat. In the Fenland Survey for the Wisbech Area, it is suggested that peat was dug from nearby fen or brought in from turbaries for use as fuel to boil the salt solution and aid evaporation (Hall and Palmer 1996, 172).

C.2.13 Foraminifera are present in most of the samples and would have occurred naturally in the marine silts. Ostracods are also aquatic organisms with species that inhabit freshwater and marine environments. The presence of several different species of both foraminifera and ostracods indicates their potential for environmental reconstruction.

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APPENDIX E OASIS REPORT FORM

Project Details

OASIS Number	oxfordar3-361128		
Project Name	Land North of 52 Chapelfield Road, Guyhirn, Wisbech St Mary, Cambridgeshire		
Start of Fieldwork	2/7/19	End of Fieldwork	12/7/19
Previous Work	None	Future Work	

Project Reference Codes

Site Code	ECB5918	Planning App. No.	F/YR16/1077/F
HER Number	ECB5918	Related Numbers	

Prompt	NPPF
Development Type	Housing
Place in Planning Process	After full determination (eg. As a condition)

Techniques used (tick all that apply)

- | | | |
|--|---|---|
| <input type="checkbox"/> Aerial Photography – interpretation | <input type="checkbox"/> Grab-sampling | <input type="checkbox"/> Remote Operated Vehicle Survey |
| <input type="checkbox"/> Aerial Photography - new | <input type="checkbox"/> Gravity-core | <input checked="" type="checkbox"/> Sample Trenches |
| <input checked="" type="checkbox"/> Annotated Sketch | <input type="checkbox"/> Laser Scanning | <input type="checkbox"/> Survey/Recording of Fabric/Structure |
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| <input type="checkbox"/> Documentary Search | <input type="checkbox"/> Phosphate Survey | <input type="checkbox"/> Topographic Survey |
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| <input type="checkbox"/> Fieldwalking | <input type="checkbox"/> Photographic Survey | <input type="checkbox"/> Visual Inspection (Initial Site Visit) |
| <input type="checkbox"/> Geophysical Survey | <input type="checkbox"/> Rectified Photography | |

Monument	Period	Object	Period
Boundary Ditches	Roman (43 to 410)		Choose an item.
Salt Making Activity	Roman (43 to 410)		Choose an item.
	Choose an item.		Choose an item.

Insert more lines as appropriate.

Project Location

County	Cambridgeshire	Address (including Postcode) 52 Chapelfield Road Guyhirn Wisbech St Mary Cambridgeshire PE13 4EE
District	Fenland	
Parish	Wisbech St Mary	
HER office	Cambridgeshire	
Size of Study Area	0.115 ha	
National Grid Ref	TF4005 0419	

Project Originators

Organisation	Cambridgeshire County Council
Project Brief Originator	Gemma Stewart
Project Design Originator	Kathryn Blackbourn
Project Manager	Nick Gilmour

Project Supervisor David Browne

Project Archives

	Location	ID
Physical Archive (Finds)	Cambridgeshire County Council Stores	ECB5918
Digital Archive	OA East	WSMCRG19
Paper Archive	Cambridgeshire County Council Stores	ECB5918

Physical Contents	Present?	Digital files associated with Finds	Paperwork associated with Finds
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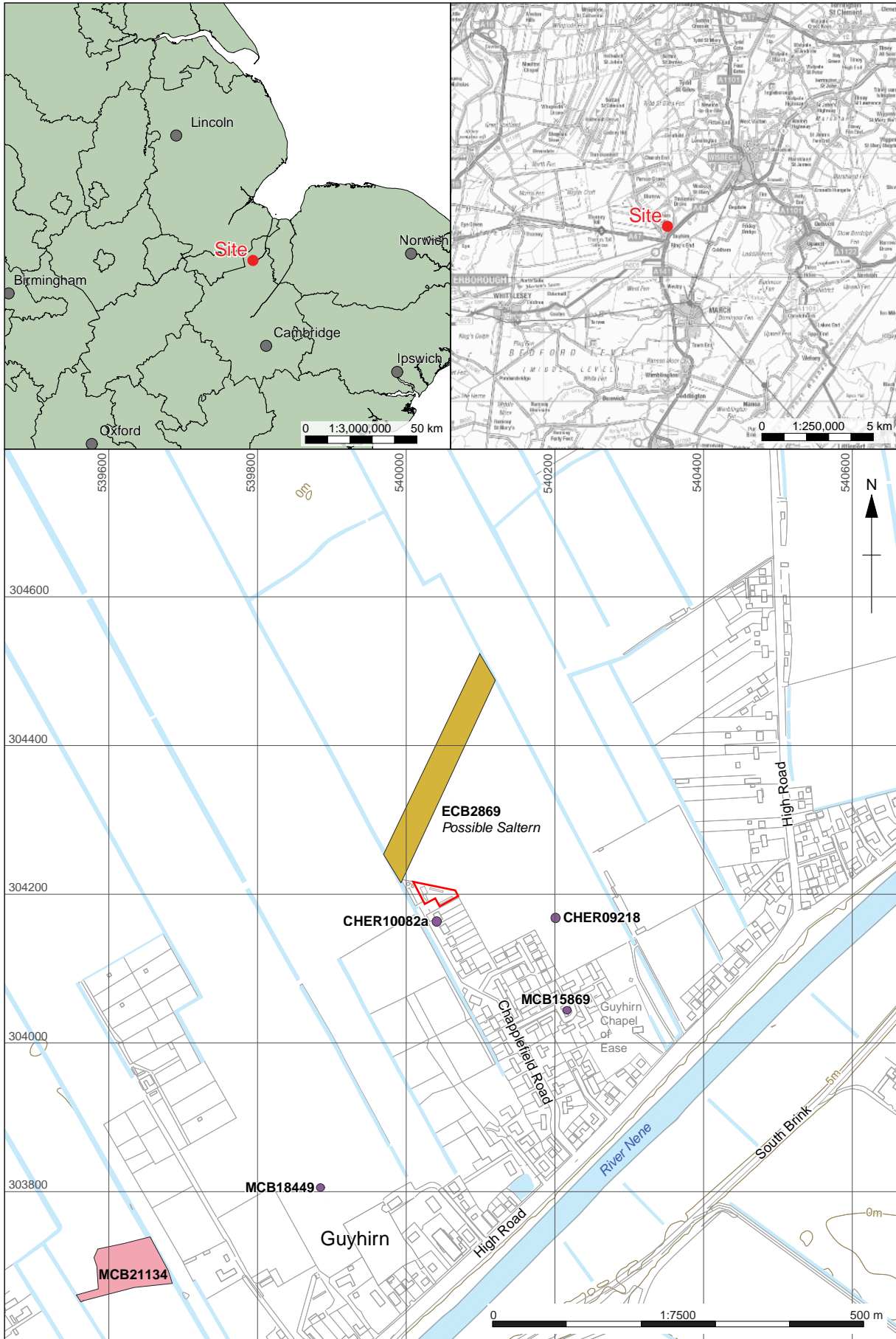
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Further Comments



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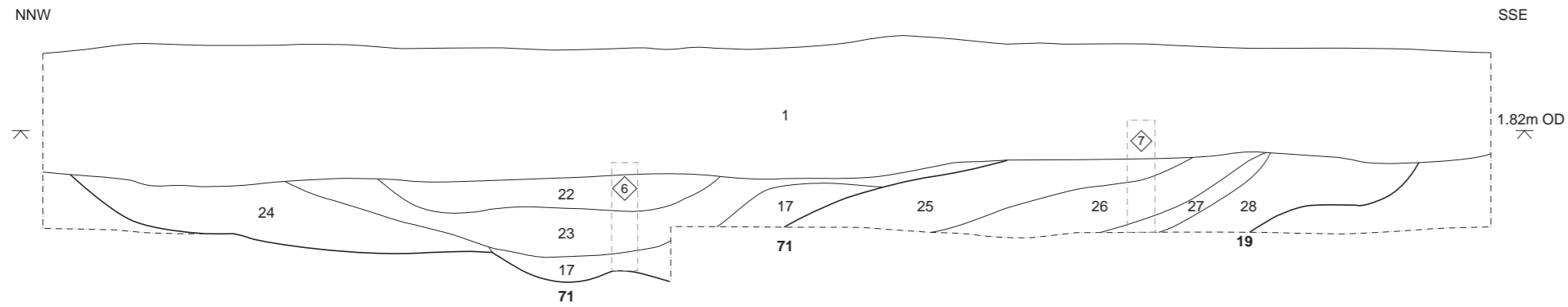
Figure 1: Site location showing archaeological trenches (black) in development area (red), with HER records within 1km of the site



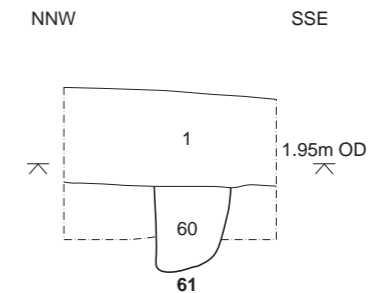
Figure 2: Trench plan

Trench 1

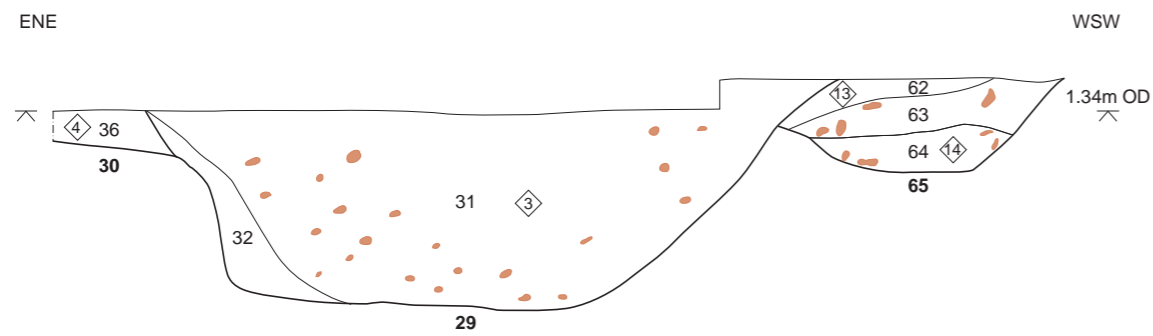
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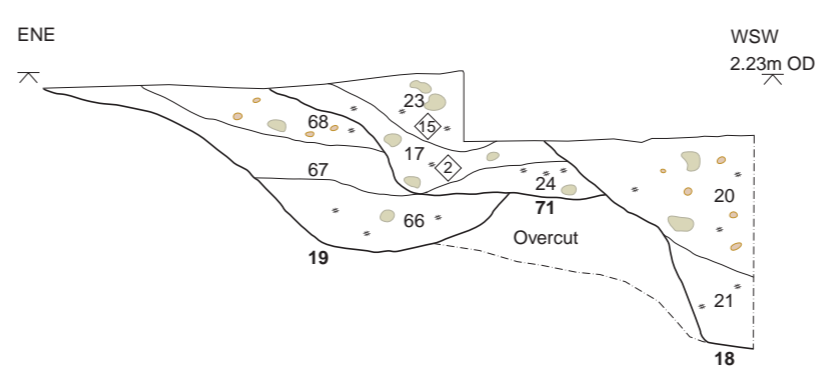
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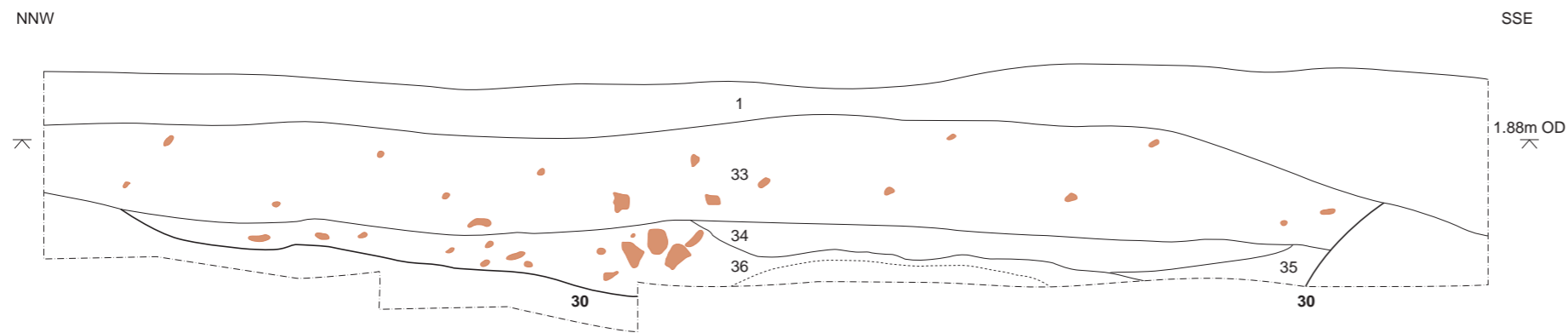
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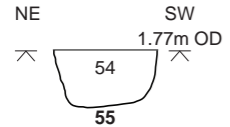
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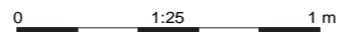
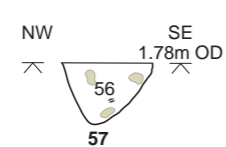
Section 10



Section 15



Section 16

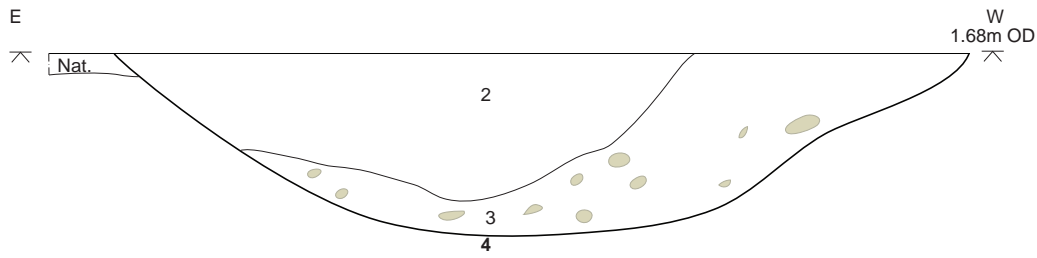


Key	
	Cut
	Deposit horizon
	Top of surface/natural
	Limit of excavation
	Deposit conjectured
	Column sample
	Charcoal
	Briquetage
	Clay
	Stone
117	Cut number
116	Deposit number
	Sample number
4.51m OD	Ordnance datum

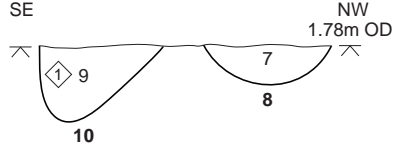
Figure 3a: Selected sections from Trench 1

Trench 2

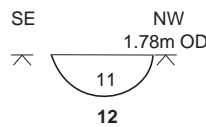
Section 1



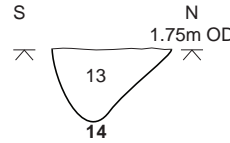
Section 3



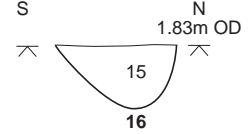
Section 4



Section 5

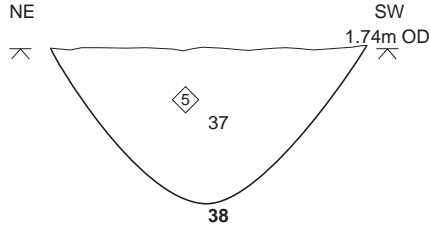


Section 6

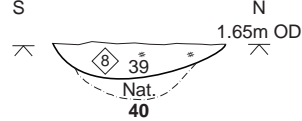


Trench 3

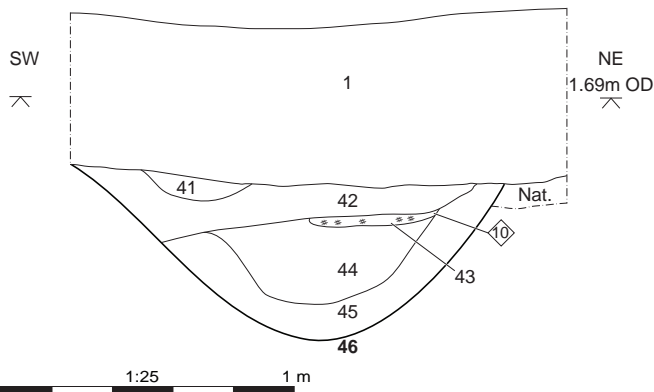
Section 13



Section 12



Section 11



Key	
	Cut
	Deposit horizon
	Top of surface/natural
	Limit of excavation
	Charcoal
	Clay
117	Cut number
116	Deposit number
	Sample number
4.51m OD	Ordnance datum

Figure 3b: Selected sections from Trenches 2 and 3



Figure 4: site overlaid on LiDAR image showing the former channels/roddons



Plate 1: Trench 1, looking north-north-west, prior to additional machining



Plate 2: Trench 1, looking north-north-west, with additional mitigation areas



Plate 3: Trench 1, looking south-south-east, prior to additional machining



Plate 4: Trench 1, looking south-south-east, with additional mitigation areas



Plate 5: Trench 1, showing original west-facing section of trench prior to additional machining



Plate 6: Trench 1: north-north-west facing section of ditches 18 & 19



Plate 7: Trench 1: north-north-west facing section of ditches 29 & 65 and feature 30



Plate 8: Trench 2, looking east.



Plate 9: Trench 2, looking west.



Plate 10: Detail shot of features in Trench 2, looking south-west



Plate 11: Trench 3, looking south-west



Plate 12: Trench 3, looking north-east



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